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— AND —

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CHANGE OF TITLE.

NEWS Being Substituted for REVIEW.

Hereafter this journal will be known as the California Architect and Building News. This change has been decided upon as shortening the title line one syllable, and as more appropriate to the objects and character of the journal. We presume that our readers and friends will cheerfully acquiesce in the adoption of the new name as more appropriate and convenient.

Pacific Coast Association of Architects.

The regular monthly meeting of the Association was held on Friday, the 6th inst., President Laver in the chair. The number present and the interest manifested in the proceedings were exceedingly gratifying, and confirmatory of the hopes of its projectors and founders, that the Association will in time become one of great importance and influence generally, and of special value to the profession on this coast.

After the reading and adoption of the minutes of the previous meeting, the committee appointed at the December session to consider and report upon the designs presented for a front page and heading for this journal, made their report, which will be found in another column of this issue, to which we call the special attention of architectural draughtsmen and students generally upon this coast; hoping that the inducements offered in the way of premiums, and the guide therein furnished, may result in something handsome in itself, and alike creditable to the successful parties, and the young men of the profession generally. This may fairly be considered as the commencement opportunity for our young men, to be followed by other inducements hereafter to be devised, calculated to stimulate ambitions and open up a broader field to those who have resolved upon the architectural as the chosen pursuit of life.

The committee on by-laws reported progress, awaiting such action as may be adopted in the matter of resolving the Association into a *chapter* of the "American Institute of Architects."

The Secretary submitted his report in reference to signatures by the architects of San Francisco to the petition in favor of Mr. Laver's appointment as architect of the New City Hall, to which scarcely a single architect in the city called upon had declined to add his name; and those who had declined did so upon other grounds than opposition to the appointment. The petition as signed was, by vote of the Association, handed to Mr. Laver, who with appropriate and earnest remarks returned thanks to the Association and members of the profession generally, for this kindly expression of confidence and professional esteem.

The matter of forming a "School of Designs" was discussed favorably, with unanimous approval of the adoption of measures in the near future calculated to enlist the interest of students of architecture in higher and more perfect architectural culture and attainments. Many of the young men in the profession exhibit qualifications to become competent architects, and will in time enter upon the practice of the profession with the qualifications acquired through the preparatory advantages enjoyed, whether the Association assist them in their studies by establishing schools of designs and otherwise, or refuse the helping hand by barring the doors of opportunities, and leaving them to work out their future unassisted. Consequently we consider a perfected movement of the kind suggested one of vital interest to the profession generally, as through its influence our offices will be supplied with more competent draughtsmen, and the "coming architects"—those who will work the field now occupied by many of us who have grown gray through long years of diligent study and application to the duties of our profession—will be the better qualified to pick up the threads broken by retirements or the hand that severs all earthly ties, and the generous helping of those who are striving to learn will bring its own reward.

The Secretary also reported the acknowledgment of the receipt by the American Institute of Architects, convened in annual session, of the application of Messrs. Wright, Curlett, Welsh, Sanders, Babson, and J. E. Wolfe, to become members, with the information that the applications were hailed with manifestations of great pleasure, as completing the circle of the Institute's influence from the Atlantic to the Pacific shores of our great country. We hope that this coast will be duly represented at the next annual convention, in the person of a representative from the membership in California. We may add, that since the meeting of Friday last the members elect have received their credentials, or notices of election.

A resolution appreciative of Mr. Wright's course in connection with the egresses from theaters and public halls was passed unanimously.

The President then called the attention of the Association to the fact of the death of the late Mr. George Edmund Street, a distinguished English architect, whose exceptionally high reputation placed him in the profession second to none living. Also, President Royal Institute British Architects, a Royal Acadamecian, a Fellow of the Society of Arts, Professor of Architecture at the Royal Academy, London, England, Architect of the New Law Court, London, and many large public and private buildings in Europe. In addition to his splendid qualifications as an architect, he also possessed fine literary abilities, having published a book on Brick and Marble architecture in Italy, and another on Gothic architecture in Spain; and in various ways established his superior abilities as an architect and writer, in the broader and more comprehensive senses. The death of eminent men in any profession causes a feeling of regret and sympathy in all hearts; but in the case of Mr. Street the sentiment of sorrow is more special to the architectural profession, particularly as he has been called away almost in the prime of life, and before his great work was fully completed.

A committee of three was then appointed, consisting of Messrs. Wright, Sanders, and J. E. Wolfe, to prepare suitable notice of the sad event.

The meeting then adjourned, to meet the first Friday in February.

Inventors and Progress.

One who sign himself "Inventor" writes in answer to some strictures passed upon inventors by a Stockton paper, claiming that inventors are idle, designing persons, who are always endeavoring to live without work, always looking for the opportunity to entrap some unwary capitalist into investing money in their inventions. Such remarks applied to the inventors in general is a base, ungrateful slander. One has only to look into the present working of any department of the arts or manufactures to learn the service of invention to industry. Every item of progress, from the rude processes and appliances of the ancients, has been the work of the inventors. As a rule, the improvements have cost a great amount of experiment and effort and actual outlay to those who have achieved them. There is, of course, now and then a happy thought; but the average of effort for each invention is very great. It is but natural that the successful laborer in the field of invention should desire to enjoy a part of the fruits of his labor, and the people of the United States and other civilized countries have decided that his claim is a just one. What would farming be without the triumphs of the inventor? Contrast the labor it is now possible to accomplish by one man's labor with what was done by a man in the early days. Contrast the gang-plow with the forked stick, the self-binding reaper with the sickle, the thrashing outfit with the flail. People who decry the service of the inventor to the industries are relics of a bygone age. They have no part or parcel in the progress of the day. Agriculture has enjoyed her full share of the inventors' attention, and while she has been advanced, they, in turn, or many of them, have become enriched. It is a case of useful labor well requited, and there is much of it to do. Excellent as are our agricultural tools and machines, no one can tell what further improvement may come to them through the inventor's earnest efforts.—*Mining and Scientific Press.*

☞ **Subscription price of this journal is $2.00 in advance.**

The Oakland Hall of Record.

We refer to the recent trial of a case in one of the courts of Alameda County, in which the profesional integrity of the architect of the Hall of Records, erected in 1879, was sought to be impeached, mainly in view of its bearing upon the profession generally. Whether justifiable or not, it is the common rule among the masses to criticise, and impose upon the several classes of professions the odiums created by the personal acts of individual members. The great injustice of this rule, however, must be admitted by all reasonable and intelligent men. There can be no profession or calling named in which there are no faulty natures and dispositions—the church of the Most High itself, and the numerous benevolent institutions designed for good to mankind, not excepted. It therefore follows, that individuals alone should be held responsible for their acts, without any reflection upon the class with which, by business or professional relationship, they may be connected.

We do not propose to enter into the merits of the case referred to, in which Mr. Nutting charged that the architect, Mr. Stokes, received money as a bribe, by which the public interests of Alameda County were made to suffer; if such was the fact, the jury decided the charge not sustained, from lack of proof or otherwise, as the case may be, and so far vindicated the defendent, leaving him at least legally exonerated from the charge. Still, the fact that the charge was made, with many presumes the occurrence of some irregularity, which, whether justified or not, has created a public sentiment for and against each of the respective parties to the suit: as the theory is universally accepted, that where there is smoke there must, in the nature of things, be some fire. Consequently, it is an unfortunate affair, as, beyond all possible prevention, some will cling to the probability of moral guilt, although the acquittal removes all legal responsibility. The case suggests two considerations worthy of notice: First, as sustaining the recent efforts of the architects of this coast in founding and sustaining an architectural association, designed to cultivate and bring into practice a higher sense of duty among its members, and the adoption of such regulations as shall deter those who might be unmindful of the responsibilities which rest upon them from violating good faith and honest performance of every trust. With this as the foundation, the beauties of the structure should be further exemplified by rules and regulations which would render irregularities by members a dangerous and venturesome expedient. We have an exemplification of this proposition in a recent exposure of an attorney in this city, who, seemingly having committed some irregular professional act, was subjected to investigation by the Bar Association, and being found guilty, the case was reported to the higher court, which, having the power to do so, suspended the offending party from certain privileges for a term of six months. The mere suspension, however, is but a small proportion of the penalty inflicted, the greater being the impairment of his hitherto good name and reputation. As far as the individualities of the parties to the irregular transaction were concerned, we presume that the members of the bar had no special interest; but realizing that if they sustained the gentleman who, for the time being at least, disregarded the purity of obligations resting upon him as an attorney, by continuing him in undisturbed fellowship as a member of the bar, they would thereby assume, in effect if not in fact, the responsibilities of the questionable transaction; and as a necessary protection to their common interests and the reputation of the bar, the course pursued was adopted.

The Architectural Association, however, has no powers above its own organization, whose authority may be invoked to inflict punishments. But this it can do: Establish unimpeachable rules of practice, admit to membership none but worthy and qualified men, and exercise a mutual watchcare over the general interests of the profession, holding to strict accountability every member who shall be found guilty of wrong-doings. And in cases where it is fully deserved, follow the example of the Bar Association, so far as to let the public understand the estimate in which the association holds its members when guilty of crooked procedures. By such a course, and other wise and self-protecting regulations, the honorable men in the profession will surround themselves with defenses which must prove personally beneficial; while the community will be advised as to who are unwilling to assume or have violated society rules and regulations, leaving it to owners to choose between men of recognized competency and integrity, and those who prefer not to bind themselves under obligations which furnish at least reasonable assurance of faithfulness and honesty. But space will not permit enlargement upon the many suggestions which naturally arise in the consideration of the matter in hand. Again: the subject-matter of this article presents strong arguments in favor of the position assumed by this journal upon the matter of "competitions." The plans in the case in question were competitive; and those presented by Mr. Stokes being approved, upon merit or through personal influence, as the case may be, he was naturally awarded the superintendence, which led to the suit referred to. Had it been otherwise, and the gentlemen having the matter in hand devoted as much time to the selection of a recognized competent and responsible architect as they did in the matter of competition, they would at least have secured a far more handsome building at the same outlay, and quite as likely avoided the unpleasant issues which have developed from the course pursued. Mr. Stokes might have been the selected party, but if so, it would have been under widely different circumstances; and with integrity on the part of the managing powers, he would have held himself above all money approaches from those performing the work of construction. The system of competition for plans involves and invites departures from rectitude on the part of all concerned, and the sooner it is entirely abandoned, and the "cat's-paw" use that is so generally made of the profession in such cases dispensed with, the better it will be for all parties concerned and the common interests of the profession.

A Curious Building.

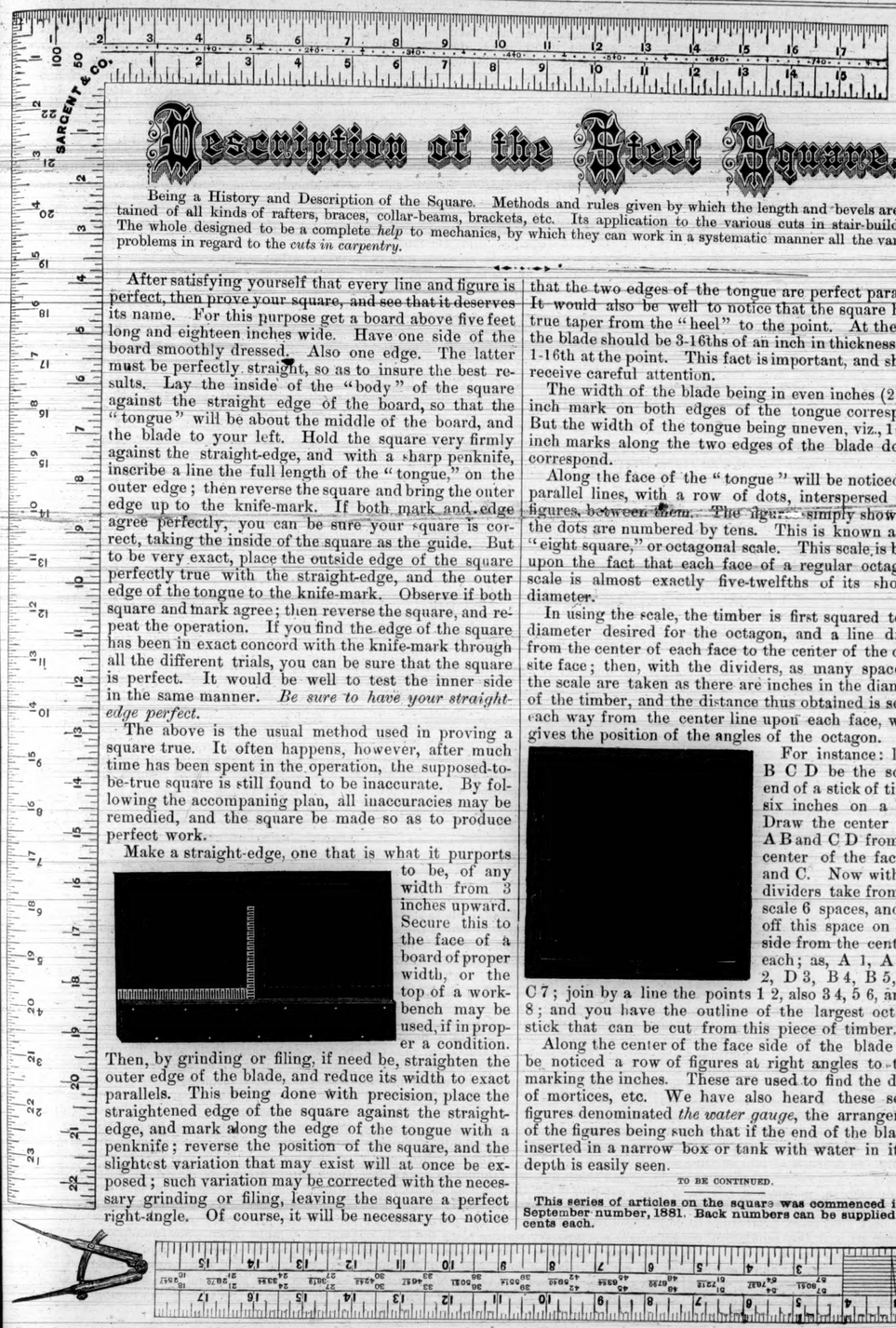
A writer in the *British Advertiser* makes mention of a little church in Essex, built in the early part of the eleventh century, of which the walls are composed merely of portions of trunks of trees—thick outside slabs—split or roughly hewed off, measuring twelve to eighteen inches across, and ten to twelve inches thick, roughly joined with tongues, but smooth on the inside. These uprights, never more than five to six feet high, were originally tenoned into a head and sill, but in restoration, carefully carried out some years ago, the sill had to be removed, and the lower ends of the timbers cut off as far as they had rotted, and a new sill on brick work substituted. Substantially, however, we see a wooden chapel of the eleventh century, and the timbers sound and healthy, standing as they were then set up. One of them on the north side, where there was an original doorway, has a notch cut into it for the purpose of holding a holy water vessel. It seems pretty certain that this chapel was erected for the purpose of receiving as a temporary resting place the body of St. Edmund, the King. So here is an open book on the earliest wooden construction in England, which any one may read.—*Southern Manufacturer and Builder.*

A Lesson In It.

Although the recent falling of two brick buildings in the city of New York was attended with fatal consequences, the occurrence has had a wholesome effect in other connections. It has at least aroused and vitalized the attention and energies of the Building Bureau of that city, the "inspectors" of which have found well-nigh two hundred unsafe buildings, which the occupants have been warned to vacate, the owners notified to tear down immediately, and the police placed on watch over them, to give timely warning in case of sudden imminent danger. There has also been found nearly as many other buildings so much out of repair that the owners have been notified of the necessity for further investment on repair account.

The fact that the greater number of the condemned buildings are not old, dilapidated affairs, but of more modern construction, illustrates the departures from right rules and practices in constructive science so generally practiced in almost all cities during the last ten or twenty years. In numerous cases, the old idea of "building well" has given way to the shoddy class of constructions, particularly those erected for rent or sale. It is astonishing how little value is placed on human life and health by those who build houses for other people to live in. The controlling purpose of such owners is economy, cheapness of construction, with but little regard to the many bad consequences which so generally follow in such cases. It is well and [illegible] for owners of real estate, and all others, to use legitimate and wise economy in all things; but no one should be permitted to practice savings which endanger the life or health of others. And as we know of nothing in the common order of things which is more dangerous to life and limb than buildings so constructed that they are liable to tumble down at any moment, and that, too, as a rule, with no preceding warning to those unfortunate enough to be found under their roofs.

There are three *special* reasons why the matter of house building should be legislated upon, and laws and ordinances passed regulating the manner of construction, and the quantity and quality of material to be used. The first of these is that already mentioned, the great desire of owners to secure large returns upon their investments. This is all right and proper, when fair and just considerations control in all other directions. But when sought at dangerous risks to others, and with no regard to common rights, there should be some means provided to regulate matters. Again: there are thousands of reckless men claiming to be practical mechanics, who should be under such control as would prevent them perpetrating the bad things so often done to the disgrace of mechanical pursuits—men who care nothing for consequences, however sad and terrible they may be, so that by the operation they pocket the larger amount of filthy lucre. It is no uncommon thing to hear such men express their entire indifference to all that may happen as the result of their imperfect work, so that they "get it off of their hands" and obtain their pay. The third special reason is, that there is to be found in every city of any note men professing to understand the the science of architecture, who are almost profoundly ignorant of all right architectural knowledge, and incapable of determining the compressive, tensile, or any other quality or value of the material employed, simply gaining positions as architects by means of misrepresentations or the sale of their *worthless* services at a nominal price. It is not to be wondered at, that buildings erected under such circumstances should tumble down, nor should their falling cause regret or sympathy upon the part of others, so that those who caused, designed, and executed their erections, and no others, should be occupants at the time of the tumbling.



Description of the Steel Square.

Being a History and Description of the Square. Methods and rules given by which the length and bevels are obtained of all kinds of rafters, braces, collar-beams, brackets, etc. Its application to the various cuts in stair-building. The whole designed to be a complete *help* to mechanics, by which they can work in a systematic manner all the various problems in regard to the *cuts in carpentry.*

After satisfying yourself that every line and figure is perfect, then prove your square, and see that it deserves its name. For this purpose get a board above five feet long and eighteen inches wide. Have one side of the board smoothly dressed. Also one edge. The latter must be perfectly straight, so as to insure the best results. Lay the inside of the "body" of the square against the straight edge of the board, so that the "tongue" will be about the middle of the board, and the blade to your left. Hold the square very firmly against the straight-edge, and with a sharp penknife, inscribe a line the full length of the "tongue," on the outer edge; then reverse the square and bring the outer edge up to the knife-mark. If both mark and edge agree perfectly, you can be sure your square is correct, taking the inside of the square as the guide. But to be very exact, place the outside edge of the square perfectly true with the straight-edge, and the outer edge of the tongue to the knife-mark. Observe if both square and mark agree; then reverse the square, and repeat the operation. If you find the edge of the square has been in exact concord with the knife-mark through all the different trials, you can be sure that the square is perfect. It would be well to test the inner side in the same manner. *Be sure to have your straight-edge perfect.*

The above is the usual method used in proving a square true. It often happens, however, after much time has been spent in the operation, the supposed-to-be-true square is still found to be inaccurate. By following the accompaning plan, all inaccuracies may be remedied, and the square be made so as to produce perfect work.

Make a straight-edge, one that is what it purports to be, of any width from 3 inches upward. Secure this to the face of a board of proper width, or the top of a workbench may be used, if in proper condition.

Then, by grinding or filing, if need be, straighten the outer edge of the blade, and reduce its width to exact parallels. This being done with precision, place the straightened edge of the square against the straight-edge, and mark along the edge of the tongue with a penknife; reverse the position of the square, and the slightest variation that may exist will at once be exposed; such variation may be corrected with the necessary grinding or filing, leaving the square a perfect right-angle. Of course, it will be necessary to notice that the two edges of the tongue are perfect parallels. It would also be well to notice that the square has a true taper from the "heel" to the point. At the heel the blade should be 3-16ths of an inch in thickness, and 1-16th at the point. This fact is important, and should receive careful attention.

The width of the blade being in even inches (2), the inch mark on both edges of the tongue correspond. But the width of the tongue being uneven, viz., 1½, the inch marks along the two edges of the blade do not correspond.

Along the face of the "tongue" will be noticed two parallel lines, with a row of dots, interspersed with figures, between them. The figures simply show that the dots are numbered by tens. This is known as the "eight square," or octagonal scale. This scale is based upon the fact that each face of a regular octagonal scale is almost exactly five-twelfths of its shortest diameter.

In using the scale, the timber is first squared to the diameter desired for the octagon, and a line drawn from the center of each face to the center of the opposite face; then, with the dividers, as many spaces of the scale are taken as there are inches in the diameter of the timber, and the distance thus obtained is set off each way from the center line upon each face, which gives the position of the angles of the octagon.

For instance: let A B C D be the square end of a stick of timber six inches on a side. Draw the center lines A B and C D from the center of the faces A and C. Now with the dividers take from the scale 6 spaces, and lay off this space on each side from the center of each; as, A 1, A 8, D 2, D 3, B 4, B 5, C 6, C 7; join by a line the points 1 2, also 3 4, 5 6, and 7 8; and you have the outline of the largest octagon stick that can be cut from this piece of timber.

Along the center of the face side of the blade will be noticed a row of figures at right angles to those marking the inches. These are used to find the depth of mortices, etc. We have also heard these set of figures denominated *the water gauge*, the arrangement of the figures being such that if the end of the blade is inserted in a narrow box or tank with water in it the depth is easily seen.

TO BE CONTINUED.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Competitive Designs.

REPORT OF THE COMMITTEE TO WHOM WAS REFERRED THE SUBJECT-MATTER OF THE FOLLOWING REPORT.

To the Pacific Coast Association of Architects:

GENTLEMEN—On the 4th of November last, an invitation was issued by the proprietors of THE CALIFORNIA ARCHITECT AND BUILDING NEWS, to the architectural draughtsmen and students of the coast, calling for a design for a new front page and heading for their journal. Two premiums, the first of $25, and the second of $15, were also offered by this Association for the two best designs.

In compliance with that invitation, seven designs were received, and duly inspected at the regular meeting of the Association in December last, at which also the undersigned were appointed a committee of three to consider said designs and make the awards.

In due time, the commitee met, and finally agreed upon the following recommendations:

1. To return all the drawings received to their respective authors, with criticisms thereon.

2. To readvertise for new designs, inviting all to compete, and adding $20 to the sum of premiums (offered by the proprietors of the CALIFORNIA ARCHITECT AND BUILDING NEWS), and dividing that sum into three several premiums of $30 for the first, $20 for the second, and $10 for the third best design submitted.

3. To recommend the adoption of local as well as architectural features in the designs.

4. The competition to remain open for three months; i. e., from January 1st to April 1st, 1882. The drawings to be submitted at the first regular meeting of the Association in that month.

The committee also recommend the issuance of the following

ADDRESS TO THE ARCHITECTURAL DRAUGHTSMEN AND STUDENTS OF THE PACIFIC COAST.

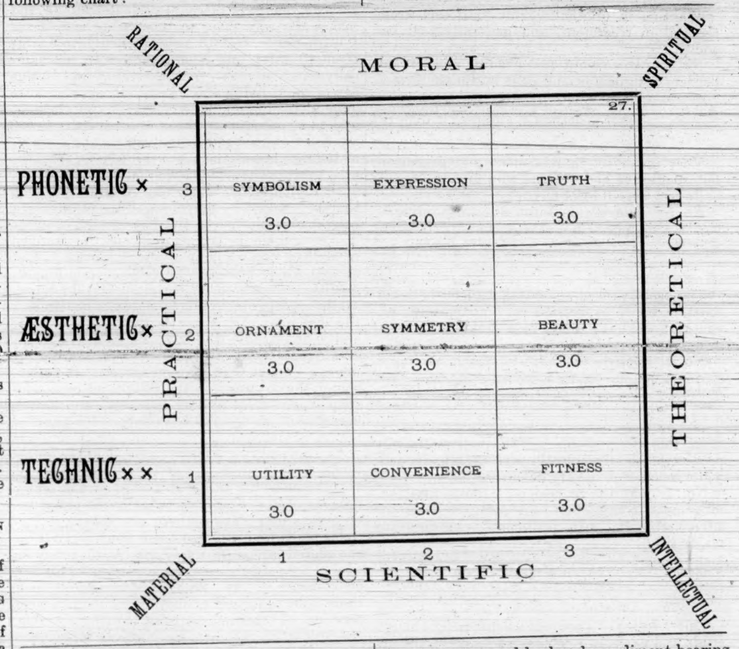
GENTLEMEN—In response to the late offer of two premiums for designs for a new front page for the CALIFORNIA ARCHITECT AND BUILDING NEWS, seven designs were received. The same having been laid before the P. C. Association of Architects, the undersigned were appointed a committee of three to consider the same.

Upon careful examination, none of the designs were found fully appropriate for the purpose intended. It was therefore deemed best to return the drawings to the respective authors, with criticisms thereon. At the same time, to avoid the appearance of breaking faith with the competitors by failing to make an award, their consent was in most cases obtained to the mode of procedure proposed. Moreover, $20 additional has been added to the premiums, making the total sum $60. The competition will remain open three months, from the 1st of January to the 1st of April, 1882. The drawings to be submitted at the first regular meeting of the P. C. A. O. A., to be held in the month of April next. The committee also stipulate, that to obtain a premium the drawings must be so perfect as to admit of transference to the block; the size to be exactly the same as the printed portion of the present front page of the CALIFORNIA ARCHITECT AND BUILDING NEWS; the title to be the same as at present, substituting NEWS for REVIEW; the designs to include such local as well as architectural features as will best identify it with the city, State, and coast. The designs may embrace the whole page, or any part thereof, leaving space equal to two full columns of advertisements already contracted for; but these may be disposed in any way, so long as they do not unduly interfere with the harmony of the design.

Before proceeding to criticise the designs submitted, the committee deem it necessary to establish some definite rules by which they are to be guided, and for reference in commenting favorably or otherwise on your designs. These rules or canons of criticism are those formulated for the first time by Prof. Kerr, in his History (vol. 1, intr'n, sec. 2), and may be briefly stated as follows:

1. Utility; convenience; fitness;—technic.
2. Ornament; symmetry; beauty;—æsthetic.
3. Sybolism; expression; truth;—phonetic.

These rules are more clearly presented by the following chart:



The first term is used to cover all the lower utilitarian qualities of a design, together with such mechanical excellencies of execution as may be appropriate to the subject and its uses.

The second term is employed to express those qualities which afford pleasure to the senses, and includes harmony, euphony, and many other qualities, together with such peculiar artistic beauties of execution as the subject demands.

The third term embraces all those still higher and nobler qualities of art which add to mechanical excellency and beauty of form, the crowning glories of poetry, symbolism, and truth.

To fully apply these measures of excellence, and to justly discriminate between the good and the bad qualities of a design, as well as to faithfully point out the false and true principles prevailing therein, is often a difficult and delicate task; and the committee, while striving to be just, hope to avoid in their brief examination at least all tendency to hypercriticism. At the same time, they believe they fully appreciate the importance of the task committed to the young designers of the profession on this coast, and desire to encourage to the utmost all efforts on their part, however humble, to break through the trammels of mere usage, and rise to the purer and freer atmosphere of utility, beauty, and truth.

In considering the designs submitted, we have endeavored to classify them: 1st, Into half-page designs. 2nd, Heading and side border designs. 3rd, Head designs. 4th, Full page. These are numbered 1 to 7, in the order named, which, however, does not indicate in any way the degree of merit attached to each.

Giving a value of three to each quality in our table of equivalents, we determine their merit accordingly.

Design No. 1. Half-page, major title, borne in frieze carried on columns of the four orders, central medallion of architecture, inclined scrolls being minor title, sybolic subjects below, tools and architectural fragments, string divides page in center, and broken by pediment bearing date, etc., in the center.

Technical qualities, fair; utility and convenience prevail; fitness, somewhat wanting in details; æsthetic qualities, moderate; ornamental parts, ill drawn; symmetry, fair; beauty, not conspicuous; phonetic elements, largely developed; sybolism and expression, strong; truth, deficient; prevailing feeling of unoriginality, with a manifest absence of local features to identify the design with the Golden State; to sum up:

Technical qualities—utility 3, convenience 3, fitness	2—8	
Æsthetic " ornament 1, symmetry 2, beauty	1—4	
Phonetic " symbolism 2, expression 3, truth	2—7	
Total equivalents of merit,		19
Possible total equivalents of merit,		27

Design No. 2. Half-page, central space containing figures sybolizing painting, architecture, and building; first part of major title borne on panel below figure; second half of major title combined with minor title on scrolls crossing center of page, ornamentation very elaborate; the whole wanting in utility and fitness; arrangement of titles confusing and inconvenient; the symbolism deficient in appropriate and definite character; the ornamentation without meaning; the whole tinctured with a strong flavor of unoriginality. The half-page defect is increased by the absence of all lines of connection with lower part of page, and by a general overloading of ornaments, which the undoubtedly skillful drawing and beauty of execution does not relieve. The total absence of local features is also a fatal defect.

Technical qualities—utility 1, convenience 1, fitness	1—3	
Æsthetic " ornament 3, symmetry 2, beauty	2—7	
Phonetic " symbolism 2, expression 1, truth	1—4	
Total equivalents of merit,		14

No. 3. Initial letter heading, and left side bold architectural border; also, right side and bottom lighter medieval, in original suggestion, very conventional in general design.

Technical qualities—utility 3, convenience 2, fitness	1—6	
Æsthetic " ornament 2, symmetry 2, beauty	2—6	
Phonetic " symbolism 1, expression 1, truth	1—3	
		15

Wanting in originality, but local and architectural in treatment, and generally well balanced.

No. 4. Unconventional heading and left side border continued around page by simple lines.

Technical qualities—utility 1, convenience 1, fitness	0—2	
Æsthetic " ornament 0, symmetry 0, beauty	0—0	
Phonetic " symbolism 2, expression 2, truth	1—5	
		7

Very imperfect in treatment and execution, but suggestive and original in a higher degree; quite wanting in local features.

No. 5. Conventional initial letter heading.

Technical qualities—utility 3, convenience 2, fitness	1—6	
Æsthetic " ornament 2, symmetry 2, beauty	2—6	
Phonetic " symbolism 1, expression 1, truth	1—3	
		15

The useful and pleasing qualities fairly developed, those of expression very moderately; execution good, but wanting in originality of general design and local expression.

No. 6. Conventional initial letter heading.

Technical qualities—utility 2, convenience 2, fitness	1—5	
Æsthetic " ornament 1, symmetry 2, beauty	1—4	
Phonetic " symbolism 1, expression 0, truth	1—2	
		11

In this design, the useful qualities largely predominate. The pleasing are less pronounced, while expression is very deficient.

No. 7. Full-page design; architectural arrangement comprising two compartments for advertisements, with pedimented heading for major title.

Technical qualities—utility 2, convenience 2, fitness	1—5	
Æsthetic " ornament 1, symmetry 2, beauty	1—4	
Phonetic " symbolism 1, expression 0, truth	0—1	
Total equivalents of excellence		10

This "design of a young draughtsman," though crude and unskillful in the execution of the ornamental parts, is otherwise well executed. The design, though commonplace and wanting in originality in almost every particular, is at least an effort in a direction untried by others, and capable of successful development.

Respectfully submitted.

GEO. H. SANDERS.
WILLIAM CURLETT.
JOHN M. CURTIS.
Committee.

NOTE.—Competitors will please bear in mind that the drawings should be made on *white* cardboard; that the ink should be dead black; the lines strong, sharp, and clear, and as little rubbing out as possible done, as the smoother the surface the better will be the transfer. The points suggested will have considerable bearing upon the final result. Some of the designs presented showed evident lack of care in providing draughting squares and triangles with perfect edges. It should be borne in mind that bruised, crooked, or irregular edges are apt to produce results fatal in all cases of competition where artistic neatness is a consideration.

The United States will manufacture more cotton goods this year than ever before. The commercial reports show that the Southern mills have taken 45,000 bales so far, against 35,000 bales last year, an increase of 29 per cent., while the Northern mills have increased their consumption from 291,914 to 344,489 bales, an increase of 15 per cent.—*Chattanooga Tradesman.*

It is a Common Occurrence

For mechanics, in all the branches, to set up in defense of defective workmanship that it has been "done according to specifications and price." So far so good. But the effect of this upon the mechanical interests is bad. We do not claim that men should do more than they agree to do for a given sum; but all temporizing with and prostitution of quality in the mechanical arts and sciences work a common injury, inasmuch as it *lowers the standard* of mechanical qualifications, and makes the way easy, to those who have never "learned a trade," to pick up enough to enable them to enter into competition with mechanically-educated men. We also realize that in this age of rapid living and love of money, the more general inclination is in favor of the cheaper, and as a consequence the markets of the world are flooded with shoddy productions of all kinds, at the sacrifice of the more skillful and intrinsically good. The same state of facts rules in reference to house-building, and all that pertains thereto; and the prevailing disposition, as a rule, bids welcome to the lesser, and in effect discourages the better, or demands the sacrifice of skillful workmanship at about the same cost of that which possesses no recommendations in quality. This is to be regretted and deplored, as the cheapening process necessarily compels the lessening of pay to the producing classes, and enables those who have no principles to increase their wealth by the savings made in securing the "make shifts" obtainable, at the sacrifice of the interests of the skillful millions who spend their whole lives at hard toil, and only a very few of whom ever rise above the "hand to mouth" condition.

The inequalities existing throughout the entire world mainly grow out of the subserviency of the masses to the will and wishes of the lesser number. It matters not what those possessed of means may desire, there are always multitudes ready and willing to sell their services at the offered price. Scarcely any bid that may be offered for personal services goes begging for any great length of time, and only a few stand upon their right to fix and maintain a value upon such services. If this was confined to ordinary labor operations, in which mere physical force were necessary, it would be less objectionable. But unfortunately it reaches farther, entering the mechanical spheres, where genius, skill, and mental qualifications are a necessity, and subjects men of intelligence and moral worth to the disadvantages which produce these inequalities.

While there may be no practical remedy for this state of things, the mechanically artistic and skillful are perhaps innocently, still greatly, at fault, in their close application to the development of the special sciences to which they devote their lives, without due regard to the influences which surround them, and the methods and means that are necessary to secure and protect their rights. By this system of argument we desire to illustrate the folly of competent men yielding to conditions which are injurious in every right sense.

If the better class of mechanics would come together and combine in earnest efforts calculated to create better conditions and advantages, they could accomplish the object. We hold that any class of men, influenced by unimpeachable motives, with right intent controlling their acts, can accomplish anything to which they intelligently apply their energies. And we hold, further, that if with united and honest purposes the better class of contractors and mechanics would reach harmonious understandings among themselves, and adopt wise and prudent measures to correct the evils that exist, and make known the rights which should prevail, instead of yielding to and becoming participants in the wrong practices established by unprincipled men, a better state of affairs would soon prevail, and all pleas in excuse for poor workmanship would end.

But unfortunately, too many good mechanics adopt the theory that nothing can be done to interpose an effectual remedy, and therefore submit to the wrongs that be, without any effort to change them. When men say they "can't," of course that ends the matter; for those who are fixed in the doctrine of "can't," seldom make any effort to *do*. It is resolute and determined *doing* that solves all difficult problems, and smooths and equalizes the rough things of life.

We hope that the time will yet come, and that within our day, when the mechanics of San Francisco will enter upon the great work of reform in mechanical pursuits; and by united, unselfish, upright efforts, join hands as brothers in the common interests of all. We advocate no society affiliations designed to set up or favor extortions, or to establish financial obstructions in the way of general business prosperities; but we most earnestly favor all combinations of men having for their purpose the proper regulation of matters which involve their best interests individually, and the development of that which is right between man and man.

Utilization of Scrap Tin.

The vast heaps of scrap tin found about tinware works, and the quanties of refuse tin cans that form such an item in city waste, have often been made the subject of experiment to separate the tin coating from the sheet iron. Melting the scrap gives only a spongy iron, and the extraction of the tin by the action of acids or chlorine gas is too expensive, so that hundreds of tons of this material are wasted every year, and all the experiments to save it appear to prove abortive. The latest experiments, however, seem to promise a cheap method of recovering both the tin and the iron in a pure and useful shape. The tin scraps are placed in a furnace where the temperature and the supply of air can be carefully adjusted. This gives a roasting in free air that causes the film of tin on the iron to oxidize. The alloy of tin and iron under the film of tin is next oxidized, and then the scrap is taken from the furnace, and the coating of oxides on the iron is shaken off by simple machinery. This leaves the iron in a comparatively pure state, while the powdered oxides may be smelted with other tin ores, or, as is preferred by the inventor of the process, they may be submitted to the action of hot sulphuric acid, which dissolves the oxide of iron, leaving the tin untouched. The tin may then be separated from the solution of sulphate of iron and melted; while the solution may be evaporated to dryness and then placed in retorts to recover the sulphuric acid, the residue in the retorts being valuable in making paints. The waste heat from the retorts is used to assist in roasting the scrap and in evaporating the solution of sulphate of iron. Waste fruit-tins are first roasted to remove the solder that may cling to them, and are then treated by the same process. The process is one that it may be hoped will save a great deal of money now lost without recovery, and do much to rid manufacturing cities of many unsightly heaps of refuse.—*The Druggists Circular and Chemical Gazette.*

Two-cent Stamps.

We would particularly call the attention of those sending us stamps, either for copies of the CALIFORNIA ARCHITECT AND BUILDING REVIEW, or for the payment of books, to send us the amount in TWO-CENT stamps. We have now a plethora of three and six cent stamps on hand, and only desire stamps of the smaller denomination, either ONE or TWO cent.

Unsightly and Damaging Sand-Hill.

The most objectionable "sand-hill" remaining within the populated portion of San Francisco is that bounding on and extending west from Franklin Street, with the line of O'Farrell Street as about its center; its altitude being about sixty feet above the grade of Franklin Street. By it, nearly two full blocks are rendered worthless for all practical purposes, while its existence retards the grading and improvement of other valuable property between Franklin Street and Van Ness Avenue, north of O'Farrell Street. Why this hill is permitted to remain is a matter of general remark and surprise. There are but few if any more eligible and beautiful building sites within the city limits than the two blocks referred to would be, if reduced to a building grade. Why the owners of such desirable property should permit it to remain in its present wretched condition is not explainable by any practical business theory. It is commonly understood that economy is the real cause—the hope that the public will need the sand for various purposes, and in time, by degrees, will cart the hill away, without expense to the owners thereof. In the mean time, the expenses are heaping up cost, far in excess of the fancied economy, in the shape of interest, taxes, etc., while time and waiting are not likely to add anything to after value. Desirable building property has already reached about full value, and it is not likely that five or ten years hence building lots in the blocks referred to will be worth any more than they would bring at the present time if the sand-hill was removed. It is also an assured fact, that the cost of grading will be greater in the future than it would be at the present time, as the "fills"—places of deposit for removed material—are fast disappearing, and becoming less every day; and even admitting, for argument's sake, the unlikely possibility that labor may be less, the decrease in "dumps" will more likely increase instead of diminishing cost of grading in the future. The practical facts in this connection are, that grading and excavations, which twenty years ago were effected at from 15 to 20 cents per cubic yard, cannot be done now for less than 30 to 40 cents, and as high as 50 and 60 cents have been paid within the past six or eight years, when "times have been lively." Those who delay grading their property until Mission Creek and the water front fillings are completed will pay a considerable advance on present cost, as "dumps" miles away will have to be found. Besides this, the maintenance of this sand-hill is an injury to the surrounding property. If it was removed, many fine residences would be erected upon lots at present covered by sand drifted from the hill in question, while the graded property itself would doubtless be improved. Consequently, we hold that the hill is, and should be declared by the authorities of the city, a great *public nuisance*, and its removal compelled by legal process, if there is sufficient law for that purpose; and if there is not, there should be. Property owners should no more be permitted to maintain nuisances in the shape of sand-hills, which compromise the improvement of an entire neighborhood, than other citizens have to violate the regulations enacted to prevent like offenses in other forms. The owners of the property in question may claim that they have a right to do as they please with their own, and that they will grade when it suits them. Such is their legal privilege, with this qualification: that *personal rights and privileges* cease at the point where infringement upon the rights and interests of others, or the city and community at large, begins. And there exists no shadow of question that the matter under discussion is detrimental to all immediate surroundings, injurious to many who own valuable adjacent property, and subversive of the city's and taxpayers' rights generally. We wonder at the patience and submission of owners of the surrounding property, and that they have not moved in efforts to abate the nuisance, particularly City Assessor Badlam, whose elegant residence stands at the south-east corner of Franklin and O'Farrell streets, at the base of the obnoxious sand-hill, from which, during the windy season in particular, he receives "abundant showers of sand." And although his house stands at a high elevation, and faces the west, never once has it been his pleasure to behold the sun sinking beneath the western horizon, except, perchance, from a perch upon the roof.

West from this hill, between Gough and Octavia Streets, there are two other less objectionable hills, separated by the O'Farrell Street cut, but being mainly rock formation, they are less injurious to the adjacent property; but their unsightliness is a great drawback to improvements in the neighborhood, and they should be removed.

We again repeat, that the section of city in question has no superior in point of eligibility and desirableness for first-class residences, being well elevated, on the "southern slope," and lying between two, and within convenient access to three or four, lines of street railroads; and all the arguments favor immediate grading, while present facilities for deposit of the material exist. And in view of the improbability of a compensating rise in the value of the property by delaying operations, and the continuous loss in interest and tax expenses from year to year, divests the case of all feasible arguments in favor of a continuance of these *unsightly* and *damaging hills*.

The Plank Sidewalk Nuisance.

Ever since the personal injuries recived by us in April last, through the defective condition of the sidewalk in front of property owned by Mr. John D. Spreckels, and at which that gentleman has not so much as expressed a regret, although the occurrence to us was a most serious one, we have very naturally noticed the like "stumbling blocks" in various parts of the city, and have seen many men, women, and children stumble over them, with greater or less injurious effects. Hundreds of children at play are tripped up and thrown violently on the hard planking, and sometimes they have to be assisted to their homes, with bleeding noses and lacerated or bruised hands and faces. Many ladies, too, in "delicate conditions" are made to stumble; and fierce oaths from time to time issue forth from manly lips, under the provocation of sudden shocks and jars occasioned by these *cruel* and *mean* obstructions in our public thoroughfares.

We have a society for the "prevention of cruelty to animals," and there should be one, the objects of which should be the arrest, conviction, and punishment of every owner of property maintaining, permitting, or failing to remedy every defect in the sidewalks in front of his property, of the character referred to. It is but little less than *unfeeling brutality* on the part of persons who, by any means, whether neglects or positive acts, causes injury to another. The shooting down and killing of another who inflicts a blow with the fist is generally accepted by juries as a justifying provocation for the act; but the effect of one or many fist-blows are harmless compared with the injury of a limb for life, a wrenched back, or other severely painful happening occasioned by the willful and deliberate neglects of property owners.

These stumbling blocks abound more or less all the year through, but with the setting in of the rainy season they become more numerous. The rains cause the planking to swell, and if the resistance is sufficient within a given space, the planks which are the less firmly spiked bulge up and form ugly ridges, measuring from a fraction of an inch up to three, four, five, and in some cases six inches. It is unnecessary to repeat, that these ridges in sidewalks are exceedingly dangerous affairs.

The Mission section of the city is particularly cursed in many parts with this kind of sidewalks. There are a number on Valencia street, with several fearfully large "tripper ups" between 22nd and 23rd streets. On Capp street, between 20th and 21st streets, there are many bad ones, besides innumerable lesser specimens on every street. There ought to be a "privilege act" passed by the city—a law that would establish the right of the poor in such neighborhoods to tear up and use for fire-wood or otherwise the planking of all sidewalks not kept in perfect repair by their legal owners. We understand that this is rather an absurd proposition; but if there could be some peremptory measure provided which would impart a forcible lesson upon negligent owners, it would exert a wholesome influence. The slow process of law to recover damages for sprained ankles, dislocated limbs, split or displaced knee-caps, sprained backs, etc., makes many submit to their injuries rather than seek redress by the way of the legal tribunals, and thoughtless and *unfeeling* men, who should be made to pay for their neglects, become hardened in their indifferences.

Mutilated Coins.

Not until people flatly refuse to take mutilated coins, remarks the *Banking and Mercantile Register*, will the nefarious practice of clipping them die out. A coin with a hole bored in it is not worth its face value. It is easy to understand that the clippings, filings, and borings, melted together, amount to a valuable consideration, and it is apparent that the old coins have lost all that this new piece amounts to. This is the reward of the coin clipper, and his trade pays well. During Queen Elizabeth's reign, in England, the coin clippers drove a flourishing trade. Clipping coins to save the metal clipped off had become such a source of loss, that it was declared high treason, and made punishable with death. The penalty continued long after, but it seemed to accomplish no staying results. In one day, for example, seven men were hanged in London, and one woman burned, for clipping. Still the clipping went on. One coin clipper, when about to be hanged, offered thirty thousand dollars for a pardon; and Macaulay says, that this evidence of how the crime paid did more to encourage it, far more, than the hanging of the men did to discourage it. Public opinion was against the hanging, and favored the clippers, as they took so little from each piece that it amounted to almost nothing.

To show how the abuse of the coins went on, it is related that in 1695, a lot of coin that should have weighed two hundred and twenty thousand ounces was weighed, and really showed one hundred and fourteen thousand ounces. Nearly half the value had been abstracted.

The penalty for coin clipping in the United States, at the present time, is a fine of two thousand dollars and two years in prison. How soon the practice will die out altogether it rests entirely with the people to decide.—*Leffel Mechanical News.*

The term "charcoal" on tin plates is a fraud, and always was. None but coke irons have ever been used in the manufacture of tin plate. In fact, the most ductile irons made in England or on the continent of Europe are smelted with coke. This country produces brands of iron better adapted to making tin that any in the world. Our best West Tennessee and Alabama irons are as much superior to British brands for tin plate as they are for boiler iron or carwheels. —*Chattanooga Tradesman.*

"First-Class."

The indiscriminate application of the term "first-class" to almost everything done or produced divests it of any practical, defined, or certain meaning. Yet people are deceived by it, and frauds of the most shameless character are perpetrated by promises and pledges that the thing proposed is or shall be "first-class." That portion of the old adage, "that fools build houses," etc., is fully exemplified in most cases when people pay their money to some *preacher* of the "first-class" doctrine, who makes his way through life by *practicing* "first-class" deceptions. The man who intends to cheat and defraud is quickest to parade his "first-class" promises, and those who talk most about their "first-class" abilities are generally the least qualified to do anything correctly. The term certainly means superiority; but there are tens of thousands of things done and sold as "first-class" which do not possess a single superior quality. It is used in common practice as a decoy—a cloak or covering so elastic in character as to fit anywhere and everything—and those who are deceived by it simply expose their innocence and inexperience, if not their weakness and want of common sense.

Those who build houses on speculation, and save in their construction every dollar there can be saved without prejudice to disposal, and who almost scrupulously avoid everything of really first-class character, never attempting to introduce more than the absolutely necessary and feasible, will fairly *swear* that such buildings are "first-class," built by day's work, etc.; in all of which there is but the one purpose—to sell. And we rather strongly incline to the opinion that there are but few of that race of people living now who used to consider it a sin to lie; and the form which the new departure in moral rectitude assumes is shaped altogether by the circumstances surrounding. The general rule of restraint is limited to the gravity of the occasion. If a little twisting will serve the purpose, it is made to answer; but when "great big whoppers" are necessary, the majority of people are not afraid to resort to them.

Many also *seek* deception. The larger number of owners of property contemplating the erection of buildings, if they happen to interview a qualified and capable architect who talks of matters and possibilities intelligently and practically, become scared at the actual facts presented, and go in search of some pretender, who at once begins to talk "first-class" everything, when nothing better than the slop-shop standard is either contemplated or understood by him. Still his *talk* is "first-class," inasmuch as it serves to deceive the party who prefers deception to facts; and the sequel in innumerable cases has been attended with irremedial regrets to those who have danced to the music—"*first-class.*"

The same rule runs through all lines of mechanical operations, and in all classes of dealings. The man who attempts to sell an article, and has the temerity to suggest the possibility of defects, will often miss a sale; while his neighbor who recommends identically the same article as *first-class* will find ready customers.

Thousands of *really* "first-class" goods, wares, and merchandise are known and protected by the producer's "trade-mark" and "label," and those who desire the standard articles are governed thereby in their purchases. But the teredos in business bore into the sound timbers of trade, and basely imitate the "trade-mark," by which they dispose of terrible impositions as "first-class"—original; and the masses of purchasers who are governed only by the sense of cheapness seek the imposition, rather than exercising good judgment and finding, and being willing to pay the price for, the genuine.

In architectural and mechanical pursuits, it may be safely accepted as a rule, that those who in reality enjoy "first-class" qualifications refer to "first-class" buildings and workmanship cautiously, knowing that the term implies much more than one in five hundred desire to pay for; while the lesser classes, who understand absolutely nothing about the practical application thereof, resort to its use for the purpose of deceiving and cheating. During our practical, and by no means limited, experience, we have proven the rule as invariably correct, to doubt if not despise every boaster of "first-class" qualification, not one in a thousand of whom could, if their lives were the penalty of failure, define the proper meaning of the term "first-class" in house-building.

Injurious Resorts.

With no intention to overstep the legitimate lines which should control in the conduct of a journal of this character, and recognizing that the moral aspect of the subject-matter alluded to may not be strictly in keeping with its special purposes, we nevertheless feel justified in noticing the matter referred to, in the light of its damaging effects upon the young mechanics and working-men generally of this city. Our mission is to elevate and ennoble mechanical as well as architectural pursuits, and to rebuke, as far as our influence may extend, everything of evil character calculated to demoralize and work harm to those whose best interests we profess and hope to serve.

The matter alluded to is the almost innumerable lager-beer cellar resorts which abound in San Francisco. It is painful to contemplate the work of moral, mental, and physical degradation and destruction which is nightly conducted in these places, designated by various classic, poetical, patriotic, and fanciful names, and surrounded within and without by all the allurements which uncultured men can conceive, to allure the unthoughtful to low revelries, falsely denominated pleasures.

It is no matter of surprise that the low-minded, vulgar, and unrefined should seek these places, and accept as pleasurable the low order of vulgarities dealt out as amusements; but it is both astonishing and lamentable that so many men, young and old, who are qualified by nature and intellect to aspire to and attain a much more refined and elevated manhood, should settle down into and encourage by their presence and applause that which, in every tendency and influence, is demoralizing and injurious to the intellectual, moral, and physical nature. Apprentices, journeymen mechanics, and working-men of all classes should remember and contemplate the fact, that earnest study—mental and moral culture—is the only sure road to pre-eminence in any line of art or mechanism, and that every hour wasted under influences calculated to contaminate and corrode the better sentiments of mind and heart is just so much of positive loss.

The injuries imposed by these places are manifold—the two prominent being, first, the physical and moral effects upon the parties themselves. The breathing of "cellar air," air naturally impure, and rendered still more so by the heat and smoke emitted from gas and other lights, with impurities increased by repeated use—passage through human lungs, only to be thrown out and again re-breathed—and all this intensified by the smoke and fumes of cheap cigars, sold "5 to 10 for a quarter"—the offensive odors of clothes impregnated with grease and other substances, which would require many days of sunshine, if they were exposed thereto, to remove the smell and purify them—these must and do work terrible injury physically, while the blasphemies, vulgarisms, low jests, and indecent conversations indulged in are equally injurious to morals and the finer sentiments.

Secondly—Those who thus spend the hours of evening, and more generally until the clock strikes twelve, or later, must and do become less qualified for the duties of the succeeding day. From weariness and want of proper rest, both the physical and intellectual powers are enfeebled, and the labors of the succeeding day are performed with a burdened sluggishness, sometimes amounting to a hatred of life itself.

In view of these things, and the many others which naturally enter into an extended review of the subject-matter under notice, we appeal to the mechanics and working-men, and especially to the apprentice classes and youths of our great city, and of all other cities and places where this journal is read, to reflect upon and measure the value of what we have stated; and as they hope for advancement and comfort here, and a better life beyond, to turn away from every place and pleasure, as from a great and dangerous evil, which is calculated to impair or imperil their better manhood and morals, and to seek those which in effect shall improve and ennoble every emotion and sentiment of the soul. Seek the good, for the jewels which adorn life are only found in the paths of prudence and virtue.

Selecting Timbers.

Rankine says that there are certain appearances characteristic of good wood, to what class soever it belongs. In the same species of wood that specimen will in general be the strongest and the most durable which has grown the slowest, as shown by the narrowness of the annular rings. The cellular tissue, as seen in the medullary rays (when visible), should be hard and compact. The vascular or fibrous tissue should adhere firmly together, and should show no woolliness at a freshly cut surface; nor should it clog the teeth of the saw with loose fibers. If the wood is colored, darkness of color is in general a sign of strength and durability. The freshly cut surface of the wood should be firm and shining, and should have somewhat of a translucent appearance. In wood of a given species, the heavier specimens are in general the stronger and the more lasting. Among resinous woods, those which have the least resin in their pores; and among non-resinous woods, those which have least sap or gum in them—are in general the strongest and more lasting. Timber should be free from such blemishes as "clefts," or cracks radiating from the center; "cup shakes," or cracks which partially separate one layer from another; "upsets," where the fibers have been crippled by compression; "wind-galls," or wounds in a layer of wood, which have been covered and concealed by the growth of subsequent layers over them; and hollow or spongy places in the center or elsewhere, indicating the commencement of decay.—*Mining and Scientific Press.*

An enormous amount of railway construction is now in progress in this country. It is estimated that 8,000 miles will be added to our railway system this year, against 7,174 miles last year. If all the projects now under way are completed, next year will see a still greater addition. The list of railroads now under construction comprises 15,886 miles of new road, to be completed by October 1st, 1882, which would make about 12,000 miles to be built next year. Most of these new roads are in the Southern and Western States. *Bullion*, in commenting on this enormous increase, says: "If the nearly 16,000 miles of road proposed to be constructed will cost, say, $40,000 a mile to build, making an aggregate cost of $640,000,000, and that enormous sum will pay a fair income yearly, the principal, though sunk, is not wasted." In 1880, the 84,225 miles of road in operation in this country paid on their aggregate capital dividends to the amount of over 3 per cent.—*Industrial News.*

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

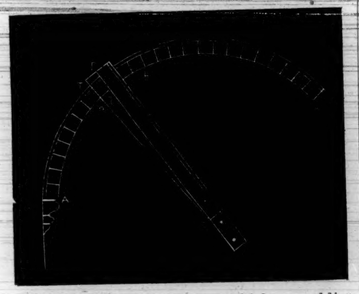
[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

BUSINESS MANAGER OF ARCHITECT: In putting on a molding around a circular head of a window, it is necessary, of course, to kerf the molding in order that it may bend without breaking. Is there any rule by which we may know just how much solid wood to leave between each kerf? G. F., Healdsburg.

ANS.—There are many solutions to this problem, but for simplicity and exactness, the following rule, by the author of MECHANICS' GEOMETRY, is better than any other which I can at present call to memory:



"Let A B C be a curve to which a molding or other work is to be bent: Supposing the stuff to be one inch thick, take a strip equal to this, and run a gauge line on to the thickness of a veneer; then make a cut down to veneer. This done, lay a strip on the drawing, keeping the cut opposite S the center of the given curve. Fasten the lower part of strip; its face is now on line S P. Move it to the left until cut at S closes, which causes its face to be on line S T and gives for solid wood between each kerf 2 3. Here it must be kept in mind, that the same saw with which the cut was made in strip must be used for kerfing the work."

BUSINESS MANAGER OF ARCHITECT: I have always noticed that the ends of the joist in a brick building are always beveled where they rest on the walls. Is there any prarticular reason for such bevel? PROPERTY OWNER.

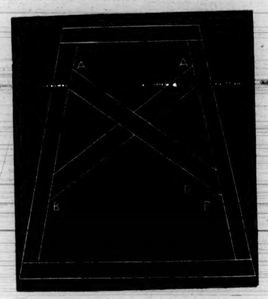
ANS.—One of the principal reasons is, that in case of fire the joists may burn and fall out without pulling the wall down. Also in case of long spans, the *springing* of the joists will not endanger the wall.

BUSINESS MANAGER OF ARCHITECT: What is a lancet window? By answering you will oblige a workman in SAN MATEO.

ANS.—It is a narrow window with acutely pointed arch head. Seldom used except in churches.

BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise. L. R., Berkeley.

Our correspondent is rather indefinite, but we think the following will explain his wants:



The cut represents a frame, the posts of which inclines one foot in six feet rise. Let the distance B B represent seven feet. The braces are run at an angle of 45°. The post inclining one foot in six, leaves the distance at A A six feet. We have given the rule in a previous number. In this case the brace would be 8 ft. 5 13-16 inches.

The New Odd Fellows' Hall.

Some months since the building committee of the Odd Fellows' Hall Association issued an invitation to architects to compete for the plans for a new building, to be erected on the lot forming the southwest intersection of Market and Seventh streets.

The premiums offered were respectively $500, $300, $150, for the three best plans. The size of lot is 150x165. The limit of cost was fixed by the committee at $200,000.

Six architects competed: Messrs. Wright & Sanders, McDougall & Son, W. Schrof, J. J. Newsom, Newsom Bros., and P. Portois. The plans presented by Wright & Sanders were awarded the first premium, McDougall & Son the second, and W. Schrof the third.

As yet, the committee have not fully determined upon the course to be pursued in reference to the plans, as modifications affecting cost and the arrangement of building may be found advisable.

The matter will likely be fully settled at an early day, as it is the intention to commence operations during the spring months, provided a satisfactory disposal of the old property can be effected.

The Tensile Strength of Glass.

Traulionie gives the tensile strength of glass at from 2,500 to 9,000 pounds per square inch, according to kind; crushing strength 6,000 to 10,000 pounds per square inch; transversely, by his own trials, Millville (N. J.) flooring glass, one inch square, and one foot between the end supports, breaks under a load of about 170 pounds, consequently it is stronger than granite, except as regards crushing, in which the two are about equal. It is suggested that glass will shortly be used for many purposes where other and much inferior materials are exclusively employed. Glass may be used as water conduits to better advantage than cast-iron or terra cotta, as it is impervious to moisture, and proof against corrosion or chemical action. It is already considerably in use for flooring, and it has lately been successfully experimented with for railway sleepers under exceptionally severe conditions.—*Mining and Scientific Press.*

Illustrations.

Plate A. As promised in our December issue, we present in Plate A the design of the "Tabor Grand Opera House and Hotel," Denver, Col. It is unnecessary for us to add more at this time in reference to this handsome edifice, as a very full description was given last month.

Plate B represents a neat and not costly design for a country residence, the plans for which are shown by *Plate C*. It contains, besides halls and bath-room, eleven rooms, including library off of parlor and dining rooms, 7 ft. 6 in. by 11 ft., and children's or dressing room on second floor, off of main chamber, 7 ft. 6 in. by 9 ft. 6 in., with laundry, pantry, and closets additional. The plans were prepared for erection at Reno, Nevada, for Mr. R. L. Fulton, of the *Reno Gazette*. Its cost, complete, erected in a good and substantial manner, may be fixed at $4,500, with the contingency of something less, if plainness and cheapness of finish are observed, and twice or thrice that amount by the adoption of expensive finishes.

Plates D and *E* represent a convenient one-story cottage, capable of erection anywhere from $1,600 and upward, according to manner of construction and other circumstances.

We repeat what has been frequently stated in this journal, that the margins in cost of buildings are large, varying from ten to five hundred per cent. for those of similar size and convenience, the enlarged cost being in the class of materials and finishes employed, and the grade of workmen engaged. Some house-builders *throw* work together, while others execute it in a skillful and workman-like manner; and those who desire good work can only obtain it from the hands of competent men, while those who want what is known as cheap buildings, *i. e.*, those that cost the lesser amounts, can best serve their purposes by employing the *botches*, as far as first outlay is concerned. But experience has fully established the folly of shoddy workmanship and material in house construction. Far better to contract with responsible and good contractors, as after expenditures for repairs and keeping things in order outweigh all first considerations of economy.

Owners may rely upon this as a fact, that the class of architects and builders who indulge in representations of their abilities to effect great results at small cost, mean simply that they are adepts at producing inferior building, and deceiving those who have had but little experience in house construction. The "*Cheap Johns*" in any line of operations do not deal in things of intrinsic value, but at the same time will swear that the *trashy* things offered by them are *first class*.

Cotton and Straw Houses.

It is said that fire-proof houses can be built of cotton and straw. In preparing these materials, raw cotton of inferior quality, the scattered refuse of plantations, and sweepings of factories are mixed and converted into a paste, which becomes as hard as stone, and then is called architectural cotton. It may be made in large slabs, whereby the building of a house would be rapid in comparison with the practice of laying brick after brick, and at about one-third the cost. For the other part, wheat straw is treated in a way already known, and converted into pasteboard. The sheets thus prepared are soaked in a solution which hardens the fibers, and they are then compressed under enormous power into beams and boards of any required size. The effect of the soaking is said to render them difficult of combustion.—*Southern Manufacturer and Builder.*

☞ Subscription price of this journal is $2.00 in advance.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

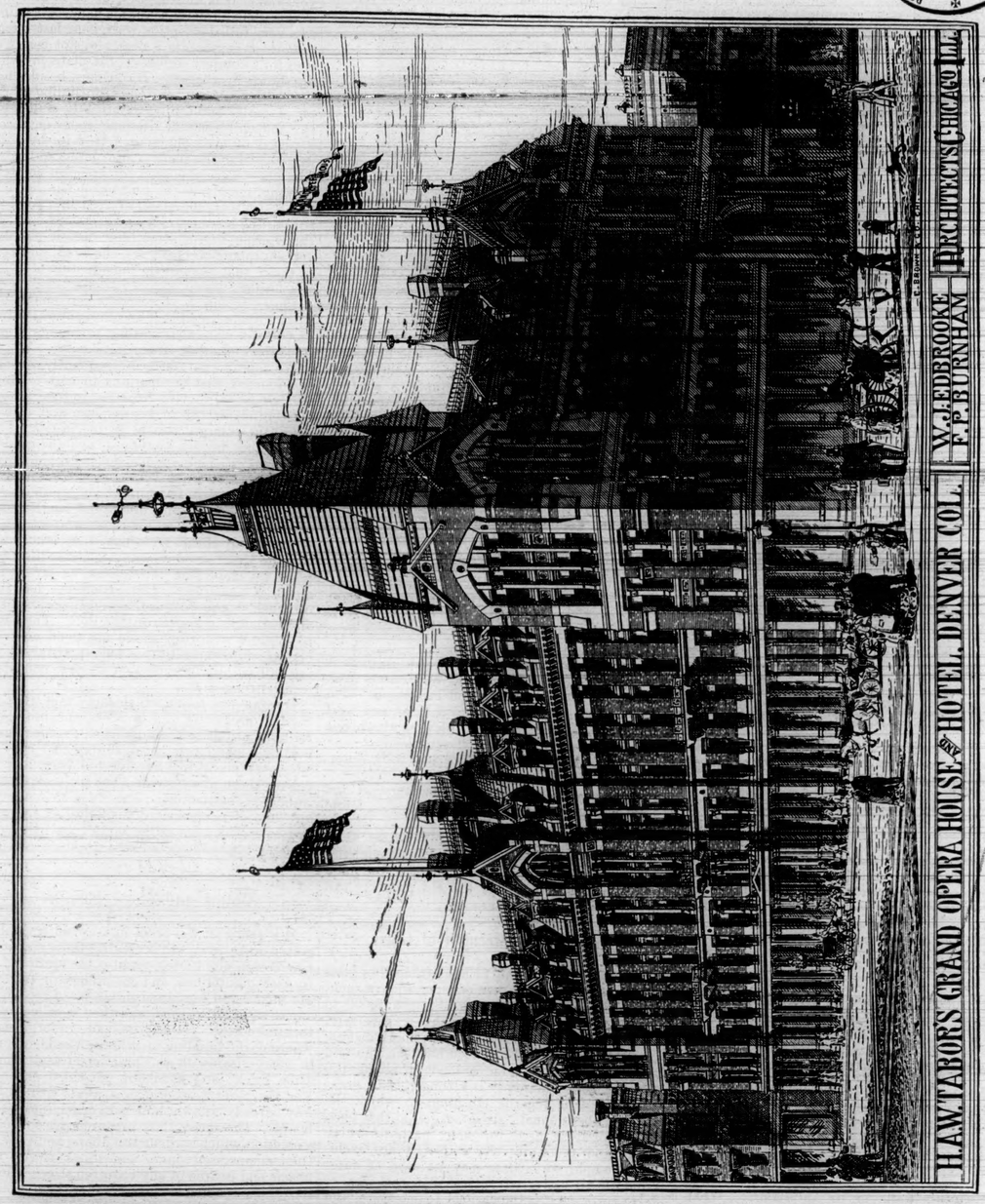


PLATE A.

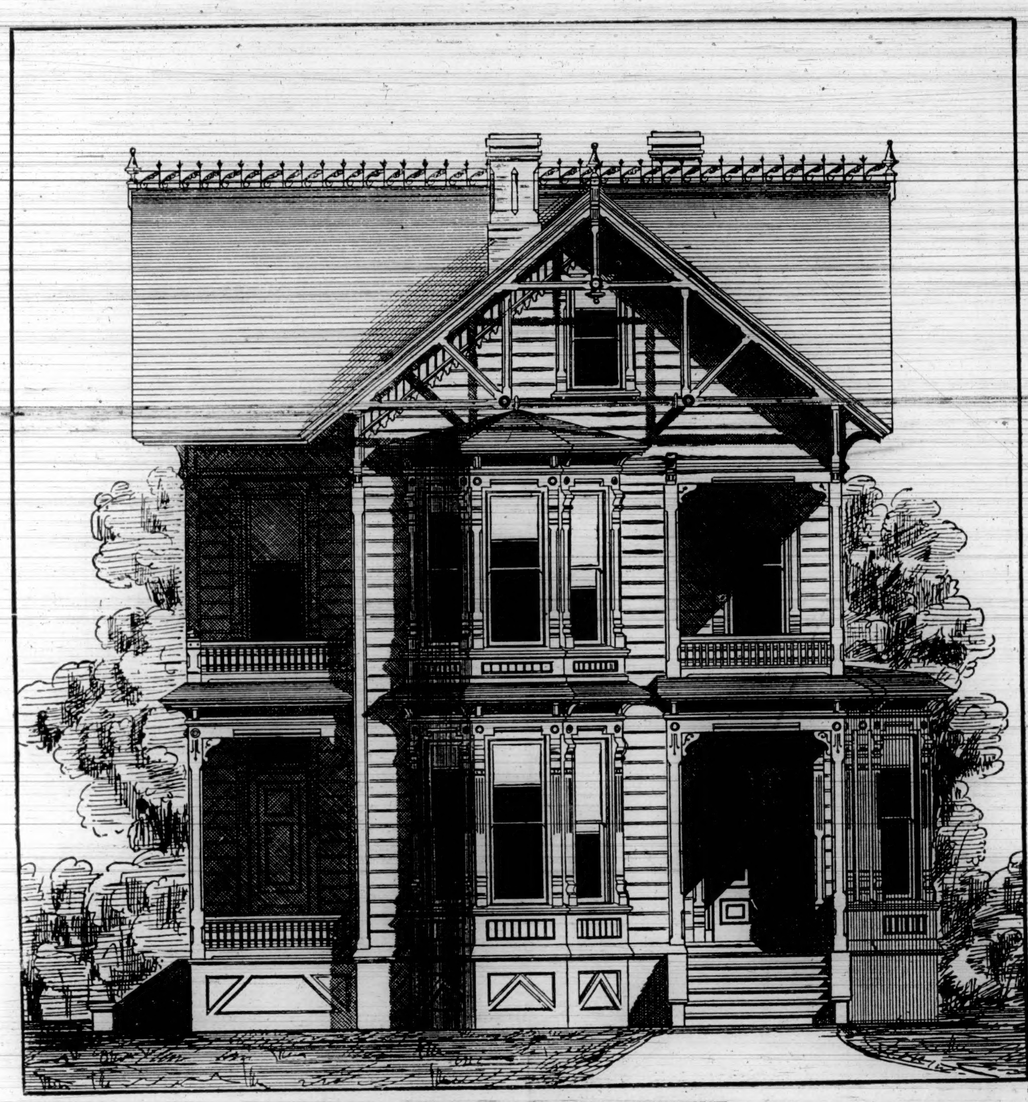


PLATE B.—DESIGN FOR COUNTRY RESIDENCE.

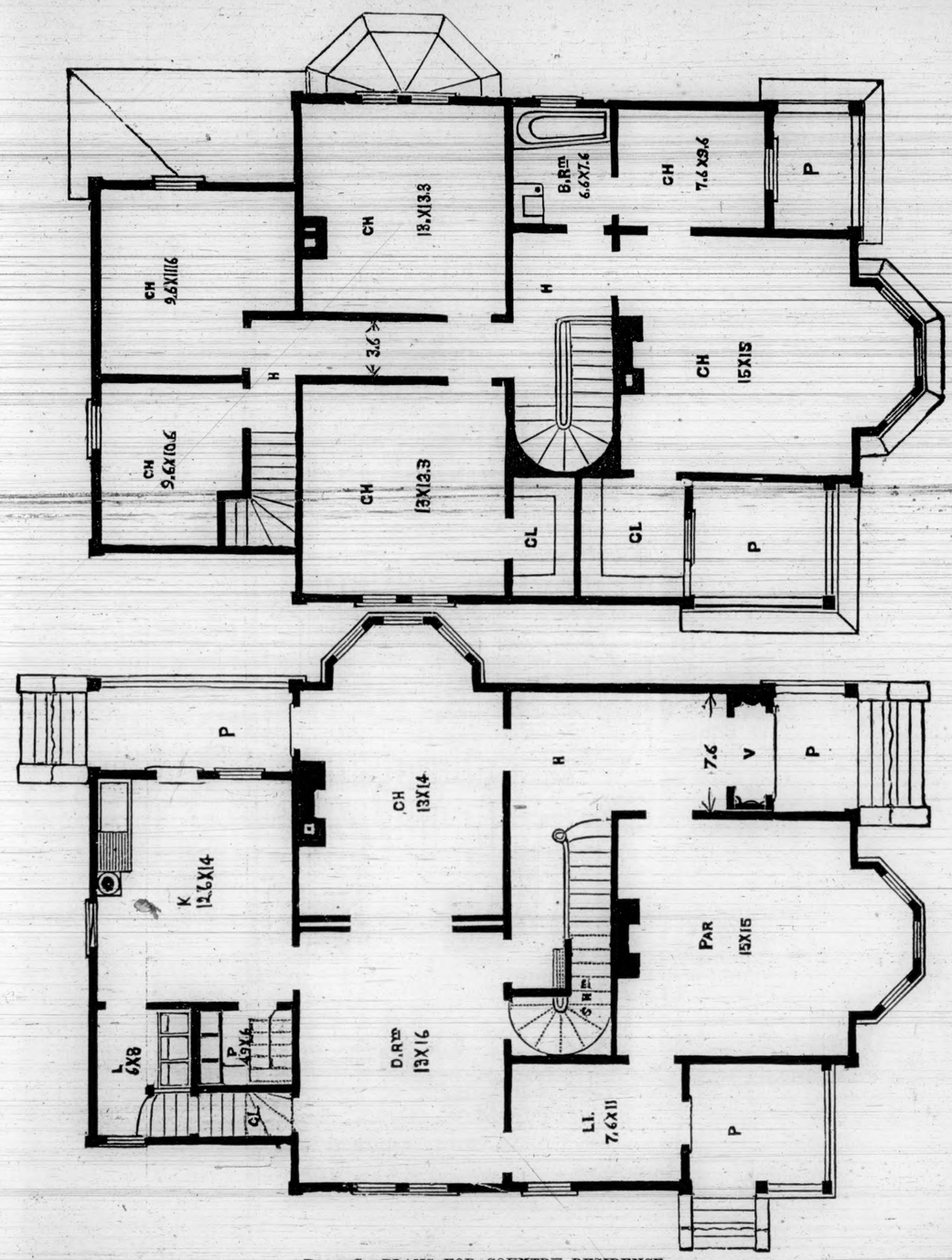


PLATE C.—PLANS FOR COUNTRY RESIDENCE.

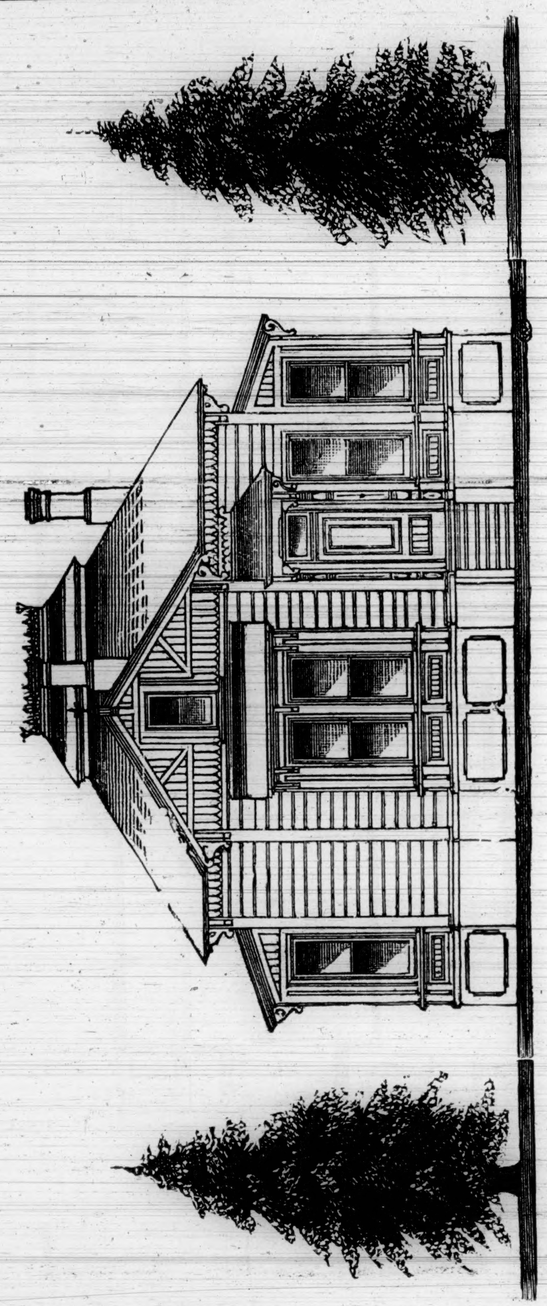
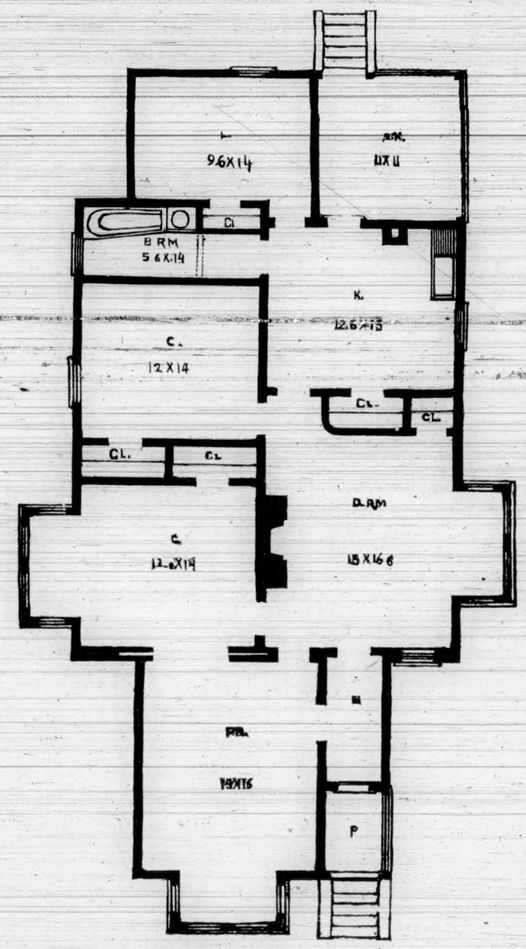


PLATE D.—DESIGN FOR ONE-STORY COTTAGE.



GROUND PLAN FOR ONE STORY COTTAGE.

Leaky Roofs.

There can be no other excuse given for leaky roofs than absolute carelessness or bad workmanship, except in cases where the materials of which they are constructed have yielded to the laws of wear and tear, and fail longer to serve the purposes for which they were originally intended. If the roof work of buildings is properly executed, they should remain perfectly water-tight so long as the material will last. Yet it is a common occurrence that leaks develop themselves with the first rain that falls after their completion, and more or less tinkering is found necessary, for the reason, that when work of any kind is defective in its first execution, continual repairing or renewal as a whole becomes a necessity.

Under such circumstances, owners are apt to complain, and feel almost revengeful toward the parties by whom the work was done; and in an abstract view of the case, such feelings are sustained by the provocations experienced. But behind this there is another fact, which seldom enters into the consideration; and that is, that owners are more generally guilty of very unwise procedures in the premises, in practicing the almost universal rule of seeking *cheapness*, and *presuming* competency on the part of cheap workers; while all the facts in mechanical operations demonstrate the utter impossibility of obtaining good things at a low price, except by mere chance. Cheapness and good quality do not run in the same channel. And it is only so far as owners are careful to engage or enter into contract with thoroughly competent mechanics—aiming more to secure good work than to save a few dollars in expenditures—can they reasonably expect to obtain good work, either in roofs or anything else. This is as true in reference to building houses as it is in relation to goods and merchandise; and so long as owners follow the practice of admitting botches in competition with competent mechanics, and accept their low estimates with favor, making no distinction between mechanics in a proper sense and *mechanical frauds*, no right or intelligent cause of complaint can exist. If men undertake to do work for ten or twenty per cent. less than a right and paying price, it is but natural that they should seek to compensate the discrepancy by doing the work undertaken in quality on a par with the price for which the work is undertaken. And more than this, there are thousands who call themselves mechanics, who could not, if paid ten right prices, execute good work.

We do not justify this course on the part of mechanics, but it is a natural and rational sequence, under the order of things that prevail; and neither imperfect roof work nor any other class of work is to be wondered at. If the rule prescribed the lesser class upon the basis of lack of competency, instead of good men, because of higher demands for more perfect and valuable services, the condition of things would be changed, and in the long run to the advantage of those having work done at a fair price, as the after expenses made necessary by poor workmanship would in many cases more than compensate the difference in first execution.

We assert it as a fact, beyond successful contradiction, that roofs in all cases can be made entirely impervious to the rains, and that all leaks in them result from the causes enumerated—except that occasionally, men who receive a proper compensation, and claim to be good mechanics, are possessed of the mean disposition of excessive greed, and sometimes do "rascally things" for the sake of enlarging the sum of profits on their operations. But under no circumstances does there exist a single good reason why the roofs of buildings should not always be entirely water-tight.

It is also true that the party selected as architect may possess no really practical knowledge of roof work, nor of any other feature of practical construction; but this fact does not excuse the mechanic for defects in workmanship. Neither ugliness of design nor inconvenience of arrangement precludes good work; and if the architect in the superabundance of his stupidity shall have betrayed his total unfitness, as many do, to perform architectural services, the mechanic is not thereby relieved from the faithful performance of his duties. In some parts of the world the mechanic is held to strict accountability for defects, although he may have faithfully followed the instructions and requirements of plans, specifications, details, and the personal orders of the architect—the presumption being that those who undertake the construction of buildings as "master mechanics" understand more completely the necessities involved; and the laws do not permit the shifting of responsibilities from those who *do* to those who *direct* the doing. We wish it were so in this country, as such laws would drive away from the architectural profession thousands who assume its practice, without any of the qualifications necessary to a fair or perfect knowledge of its great and grand principles, theories, and practical demonstrations; and with them would go thousands more of men who use mechanical pursuits as means by which to make money, while in fact mechanical science is to them as little understood and as mysterious as would be the dead language to an untutored heathen.

The Agricultural Ant in Texas.

The existence of ants who carried on some of the processes of agriculture was known as far back as the time of Solomon, as proved by the well-known passages in the Book of Proverbs, in which he praises their exceeding wisdom, and bids the sluggard to consider their ways; but as investigations of the habits of European ants led to the discovery that they none of them make provision for winter use, for the good reason that as they hibernate they do not require to do so, it came to be believed that Solomon had only adopted a popular fallacy; modern research has, however, proved that, after all, Solomon was correct, for there are two species inhabiting the countries bordering upon the Mediterranean that harvest seeds, and now we have from the other side of the Atlantic a full description of the mode of life and operations of farmer ants. Mr. McCook, a Presbyterian minister of Philadelphia, provided by the liberality of his congregation with time and means for careful investigation, records that the *Pogonomyrmex barbatus* of Texas carries on what may be well and justly called "farming," like a true backwoodsman. As soon as a new colony is founded, the settlers proceed to clear the ground. This they do by biting through the stems of the grasses, allowing them to wither, and then pulling up the roots, and having cleared a circular space varying in diameter from one to ten feet, according to the strength of the community, this is afterwards kept free from all growth save of one particular species of grass, the seeds of which form their favorite food. It has been surmised that they sow the crop, but Mr. Cook's investigation failed to establish the proof of this; but they do not rely solely on the produce of their own clearing, but make diverging roads—in some cases upwards of 60 feet in length and 2 inches in width—into the surrounding jungle, and send out foraging parties in search of various grass seeds. These are borne home and deposited in their subterranean dwellings, the work being carried out from early morning till sunset, but with a rest of some hours during the heat of the day, when the busy workers retire underground for protection from the sun's rays. They possess advantages and disadvantages as compared with the human worker, one advantage being that they always carry their tools, reaping-hooks and rakes, with them, whilst the disadvantage is that these implements once injured cannot be replaced. This is graphically portrayed by a row of toothless queens. Their care of the garnered stores is shown by their careful drying on the surface of their nests of grain, which has been rendered damp by an inflow of water, and their rejection of grains which may in consequence show symptoms of sprouting.

The clearings affected by these industrious insects sometimes seriously interfere with man's culture of the land, and he is driven to waging war with them. Repeated plowings of the surface fail to extirpate them, and recourse must be had to poison or to traps. Nor are they destitute of the means of defense, as the pain inflicted by the sting of these emmets is equal to that caused by a wasp's sting.—*Journal of Applied Science.*

If in the past, in the conduct of this journal, we have in anything erred, or been unjust or unfair toward any one, we shall frankly acknowledge, and as far as may be in our power correct, every act of unfairness or injustice, so far as they may be made to appear. We have had neither enemies to punish nor friends to serve, in the past, and shall strive to maintain in the future a faultless integrity in everything appearing in this journal. Inspired in our editorial work by neither envy, jealousy, nor malice in any connection, it will always be more pleasing to make favorable and kindly references to matters and things in general; but duty will compel us to even severe criticism of such as may be irregular, harmful, and monstrous in character. We have and shall dispute the right of any architect to pursue professional practices which shall tend to demoralize and disgrace the profession as a whole. And we regret the fact that there are some in San Francisco, disguised as architects, who do reflect discredit upon an honorable profession, and by their unprofessional course, and ignorance of all correct understandings of the science of architecture, bring *upon the profession* reflections among property owners which work injury to good and competent men. And we also regret that there exists among mechanics, in the various branches, a much too general undervaluing of correct principles; an inclination as much to succeed and prosper by intrigue and cunning device and scheming, as by honorable and square dealings.

Seeking and securing advantages by the lesser, instead of assuming the higher and better, courses of action, is more the rule than the exception. And to such an extent has this disposition grown in California, that scarcely anything that will *win* is considered by the majority too monstrous for application. Consequently there will necessarily arise cases which will demand severe comment from us, and we shall deal with them plainly, for the sole purpose of correcting the wrong and defending the right; at the same time, not forgetting that perfection is not possible in men, and that the best may err. But if with one accord, and with strong earnest purpose, each and all shall aid in checking the impure currents in both architectural and mechanical pursuits, it may confidently be anticipated, that in the future better conditions and increased benefits will be enjoyed by all.

The mechanic who reads a paper published in the interests of the trade he is engaged in is sure, in the end, to command better wages than the workman who plods away in the same old ding-dong style of his forefathers, and takes no paper pertaining to his trade. It is easy to pick out of a shop the men who read from among the workmen. The well-read man gets all the best work, greater pay, and is nearly always constantly employed, and he deserves these advantages, for his extra readiness is sure to be a source of profit to his employer.—*Builder and Wood-Worker.*

Some Great Engineering Projects.

The shortening of commercial routes by means of ship railways and ship canals seems to be the great ambition of the engineers of to-day.

In addition to the De Lesseps ship canal at Panama, the Eads ship railway at Tehuantepec, the Florida ship canal, the Chesapeake and Delaware ship canal, the Cape Cod canal, and others in the interior of this country, there are several other important projects of like nature under way or in prospect in various parts of the world. The old project of connecting the bay of Fundy and Baie Verte, on the Gulf of St. Lawrence, across the Isthmus of Chignecto, has lately taken new form. It is now proposed to make the connection by a ship railway eighteen miles long, thus making a short cut for navigation between the United States and the ports on the St. Lawrence gulf and river, and saving the long and dangerous voyage around Nova Scotia.

The projector of the ship railway, Mr. H. G. C. Ketchum, writes us, that the plan grew out of a desire to save lockage and a deep channel in the design of the Baie Verte canal. His first plan was to lift vessels by hydraulic power on pontoons, and then float them through the canal. The idea then occurred, that they might as well be lifted to the surface of the ground, and hauled across the neck of land on rails. The road may be level and perfectly straight from end to end. The plan has been submitted to the Dominion Government, and is favorably entertained. Mr. Ketchum has issued an interesting pamphlet relative to the project, which may be considered at greater length elsewhere.

Across the ocean, the construction of the tunnel under the British channel, connecting England with the continent, is being prosecuted with an energy which is indicative of ultimate success, and thus far no obstacles have been encountered to make the undertaking a difficult or exceptionally hazardous one.

In France, the connection of the Atlantic with the Mediterranean by a ship canal, to save the long and stormy voyage around the Spanish peninsula, is under serious consideration, and the Council-General of the Seine have just adopted a resolution approving of the project.

The ship canal across the Isthmus of Corinth, in Greece, to shorten the route to Constantinople and the ports of the Black Sea, has, we believe, been definitely determined upon.

In the far east, a bolder and more important project is in contemplation, with a view to shortening the commercial route to China and Japan by 600 miles or more. At the head of the Malay peninsula is the Isthmus of Kraw, connecting Upper with Lower Siam; and by the cutting of a ship canal at this point, about 30 miles in length, the need of sailing around the peninsula might be obviated. At Kraw, the Malayan peninsula, which stretches southward for 500 miles to Signapore, is at its narrowest breadth, and the distance across from the side of the Indian Ocean to that of the China Seas is further decreased by the existence of natural water ways for some distance inland from both shores. From side to side, it is no more than 50 miles, and the Pakchan River, on the western coast, and the Htassay on the eastern, afford the ready means of further reducing it. The distance, therefore, over which it would be necessary to cut a canal would probably not exceed 30 miles The neighboring districts are known to be fertile, and to contain great mineral wealth. A tin mining company has been established for more than ten years at Malewon, on the Pakchan, and gold has been found in the neighboring stream of the Lenya. So far as known, the engineering difficulties are not of a stupendous character, and political drawbacks and considerations fortunately do not exist.

The French appear to have taken the lead in proposing this important commercial short-cut, and if the opinion of the London *Times* is well founded, the Government of British India will not decline to actively participate in its execution.—*Scientific American.*

Texas Coal and Iron.

As Texas has never yet had a geological survey, the extent of her coal strata is not well defined. It is supposed, however, to embrace about thirty thousand square miles, in the northern and western portions of the State. Over this great area, coal has been found at a great many places, but at no place has it been mined except to a very small extent. It is a bituminous coal, and almost, if not quite, precisely similar to the McAllister coal of the Indian Territory. Some anthracite has also been discovered in this coal territory. The railroads are now penetrating the coal formations of Texas, and this great source of wealth will now doubtless be rapidly developed. So far, it is a virgin field.

In addition to the true coals of Texas, there is an immense bed of lignite, which extends apparently across the entire State from northeast to southwest, in the eocene formation. It is said to be at some points twenty feet thick. This lignite much resembles cannel coal, and doubtless would be made quite equal to it by a process of pressure by machinery. It is very fat in various oils and gases.

Texas is peculiarly blessed with iron. In eastern Texas, there are immense deposits of hematite or brown oxide of iron. It runs through many counties, often forming high hills, which are literally filled with it. These ores contain from forty to seventy-five per cent. of metal. In some places they are worked to some extent. The region in which these ores are located is heavily timbered; so that charcoal for reduction can be had at a nominal figure. The iron turned out is of excellent quality. In Robertson, Limestone, and other counties of central Texas, the same quality of ores exist, and generally in close proximity to immense beds of lignite. But perhaps the grandest accumulation of iron ores in Texas, and probably anywhere else, are in Llano and Burnett counties. It is here in connection with primitive rock, and appears mostly as magnetite. It rises out of the granite in immense seams and dikes. It has been wrought to a small extent, and found to yield from seventy-five to ninety per cent. of metallic iron, equal to the best Swedish. There is plenty of timber for charcoal and limestone for flux. Besides, coal has been found near by, and it is known to be abundant a little farther to the north. Soapstone is abundant in the same localities, valuable for furnaces.—*Chattanooga Tradesman.*

Mr. Warren H. Williams, well-known to the architects generally in this city, paid us his usual annual holiday call, on the 5th inst. We were pleased to see him in person, and exchanged congratulations and good wishes for mutual continued health and prosperity. As is well known, Mr. Williams is practicing the profession at Portland, Oregon, with marked success. He reports gratifying prosperity at Portland during the past year, and a favorable outlook for 1882. In his behalf, we state to those of his large circle of friends in this city upon whom he failed to call, that an early return to his field of labor rendered it impossible for him to extend his personal visits as much as he desired.

In common with all the older established architects in San Francisco, we entertain the most kindly feelings toward the gentleman named, he being the son and student of one of the most worthy, in his lifetime, and highly esteemed members of the profession, whose death was chronicled in Volume I. of this journal.

The Female Inventors of Antiquity.

Netocris, the spouse of Nebuchadnezzar, is described by M. Baudrillart as the soul of his works, and to her is attributed the design of the lake named after her, which served the double purpose of a fortification, and a dam against the Euphrates when in flood. The famous hanging gardens are also attributable to female influence: to the longing of a Median princess, born in a more elevated region, for the coolness and shade of her native mountains. There were five of these gardens, about four English acres each, on terraces supported by columns, and covered with mold thick enough for the largest trees to take root in it. One of the columns was hollow, and contained a hydraulic machine to raise the required quantity of water. In fact, the art of gardening, with all its modern appliances, including irrigation and the transplantation of grown trees, was practiced in Babylon as effectively as in the Bois de Boulogne or Hyde Park. The Roman writers speak of silk as a product of India, and it was unknown in Europe, except as an imported and rare article, prior to the sixth century; but the Chinese claim for an empress named Siling-Chi, who lived B. C. 2650, the discovery of the art of breeding and domesticating silkworms, that of winding off their cocoons, and the fabrication of stuffs of silk. She was deified as the discoverer in the threefold capacity, and down to our time, according to M. Baudrillart, the Chinese empresses, attended by their maids of honor, have been in the habit of making annual sacrifices to Siling-Chi, and have deemed it a duty to rear silkworms. The export of the seeds of the mulberry tree and the eggs of the worm was prohibited under pain of death, and the prohibitory law was rigidly observed for ages, till a Chinese princess, bethothed to a king of Khotan, unwilling to dispense with silk, contrived to smuggle some of the seeds and eggs across the frontier in her hair. But the secret did not reach Europe till A. D. 552, when two monks of the order of St. Basil made a present to Justinian of some of the seeds and eggs, which they brought from China in the hollow of their pilgrim staves.—*Quarterly Review.*

How to Obtain this Journal Free of Cost.

To any of our subscribers or other parties who will forward to this office four new names in addition to their own, and *eight dollars in cash* or by postal money order, bank check, or other circulating medium, we will send this journal for the year 1882, and a copy of the *Steel Square and its Uses*, free of charge. Single subscription price, $2.00 per annum; steel square and its uses, 75 cents.

Or we will furnish *ten copies* for one year, sent to separate addresses, for *fifteen dollars* to the parties securing the ten new names; in addition to which we will send or give a copy of *Palliser's Useful Details*, price $3.00, or either *two* of the following named books: "Palliser's Model Homes," "100 Useful Designs," "Stepping-stone to Architecture," "Practical Draughtsman," "Proportions," or "Saw Filing."

To Imitate Black-Walnut.

A new process by which ordinary wood has imparted to it the appearance of walnut, suitable for office, steamboat, and other cabinet work, has been recently described. Birch, beech, alder, or similar woods, are first thoroughly dried and warmed, then coated once or twice with a liquid composed of one part by weight of walnut peel, dissolved in six parts of soft water, by heating it to boiling, and stirring. The wood thus treated is, when half dry, brushed with a solution of one part by weight of bichromate of potash in five parts of boiling water, and, after drying thoroughly, is rubbed and polished.—*Druggists' Circular.*

Retrospect.

In looking back over the course of prices for the past year, there has been nothing discouraging to the legitimate dealers in real estate. There has been no extraordinary advance, but property in every part of the city has been firmly held, and scarcely any losses can be recorded against those who bought wisely. It was supposed that the great rise in the stock market during the fall and winter of 1880 and 1881 would lead to an excited real estate market during the spring of the latter year; but such did not prove to be the case. At no time during the year was there any evidence of a general speculative movement. Property has been very firmly held in the business and fashionable quarters of the city. If there has been any disappointment, it has been in the lack of interest in West Side property, especially on the Riverside Drive and the streets adjacent.

The past year has been distinguished by a very great building movement. The Nineteenth and Twelfth Wards have increased, of course, more largely than any others. The new building has followed the line of the backbone of the island, that is, up Lexington, Madison, and Fourth avenues. A notable building movement is that which has sprung up on the flat grounds above One Hundred and Twenty-fifth Street. It is evident that the building activity for the coming year will be largely in that direction, and that the time cannot be far distant when all the low-lying ground north of the Central Park up to the Harlem River will be covered with houses.

One of the special features of the building of the past year has been the construction of immense buildings for offices on the lower part of the island and of great apartments and flats on the central zone of the city. The use of the elevator is changing the architecture of New York. While less space is being taken up, buildings of greater hight are everywhere in course of erection. This change in our method of house construction bids fair to make New York in the course of time the most densely populated city in the world; that is to say, it will have the greatest number of inhabitants to the square mile. There seems to be no end to the demand for suites of rooms. Apartment houses cannot be erected in sufficient numbers to supply the demand.—*New York Real Estate Record.*

Our Redwood Proposition.

We of less experience than our veteran brethren of the pen and press, who have passed over the shoals and snags of early training, sometimes fail to make our intent and meaning so clear and plain as to preclude misconstruction by others.

The Humboldt *Times* takes us to task as follows:

"The California ARCHITECT will publish a series of articles early in the year on the redwood and its uses. It informs its readers that many erroneous notions exist about this tree and lumber, which it hopes to correct from an experience of more than thirty years. The ARCHITECT asks its contempories to "reserve further statements in reference to this matter until its articles are printed." When we reflect that there are thousands of men in various callings who have known nothing but redwood for a quarter-century, we are inclined to think the announcement is a shrewd advertising dodge. In this county it is well known that redwood is used for building anything and everything from a board fence to a fortune. The particulars will not be eagerly sought for."

Our contemporary exposes an aptness to jump at conclusions; and if in all cases its leaps are as distant from the correct as in our case, its course must be as irregular and circuitous as the Northern Pacific Coast Railroad. There was not the slightest attempt conceived on our part at "a shrewd advertising dodge," nor did we propose to furnish any new light upon the redwood question to those who live in or near redwood forests, and are so thoroughly familiar with all the facts of the case that they cannot be further informed.

We had in mind the simple purpose of correcting erroneous statements which have appeared in several Eastern journals in reference to California redwood.

We trust that our good brother of the *Times* has been one of those who has reaped a "fortune" from the use of redwood, and if he has not, we hope that fortune will smile upon him, and strew the remaining portion of his life's pathway with as many golden eagles as there are redwood trees around or in sight of his *sanctum sanctorium*.

Thirty odd years in the practical use of California's most prominent wood, for all purposes for which it is used, including proprietorship in a "redwood sawmill," erection of buildings, etc., etc., certainly furnishes us a basis upon which to found the conclusion of competency to "know whereof we speak."

Machinery and Mechanical Skill.

The wonders of mechanism, says the Boston *Journal of Commerce*, have furnished material for essays, anecdotes, sketches, for lectures and lessons without number. The close imitation of sentient human judges by insensate material when formed into acting machinery; the microscopic wonders of production in watch-making machinery—screws so small that to the unaided eye they appear like grains of minute seeds; the automatic handling of metals in process of conversion from mass to individual shapes; the exact reproduction of periods of time or of acts by machines which count, and register, and measure, and return;—all these are admirable and admired.

But the skilled workman makes possible the wonder-working machine. He must first make the initial screw, the first wheel, form the first gear tooth, lay out the first congeries of levers, inclined planes, rotating wheels, and reciprocating movements that make a completed machine. It should always be borne in mind that the machine never improves itself; it is simply a reproducer; and even to continue to be a reproducer it must have its own waste supplied and resupplied by continual additions made by the trained hand, backed and guided by the intelligent brain. So, when we are inclined to argue the progress of the race by the achievements of machinery in our day, let us never forget that these achievements are not only primarily the outgrowth of individual human skill, but must also be kept up to their present standard by individual human skill; and that no progress whatever can possibly be made without the perpetual presence and active operation of the skill of the individual workman.—*Leffel Mechanical News.*

Green and Red Lights in Vegetation.

Why will grass not grow under our trees? M. Paul Bert has shown that green light hinders the development of the plants. Plants inclosed in a green glass frame wither and die as though they were in darkness. M. Regnard finds that plants epecially require the red rays. If sunlight is deprived of the red rays, the plants soon cease to thrive.

Send for a copy of the "Steel Square and its Uses," handsomely bound and illustrated. Price, 75 cents.

The Boston Society of Architects, with whose co-operation the recent test of fire-proof building materials was made in that city, not satisfied with the information obtained from the first trial, has taken steps to secure, if possible, a second and much more comprehensive test, in which the different kinds of fire-proof construction shall be subjected to strains such as they would endure in actual practice, and each material shall be used over a considerable surface, and exposed to a fierce and long-continued heat, the fire being kept up, if possible, until all the varieties of construction have succumbed. By the side of these, and subject to the same conditions, it is proposed to place one or more examples of the ordinary so-called fire-proof structure, consisting of naked iron beams, carrying brick arches, and supported by unprotected cast-iron columns, as well as corrugated iron-work, with and without concrete filling, brick vaults and various kinds of fire-resisting shutters and doors. The subject is one of vital importance to all who own or insure warehouse, office, or banking buildings, or the property contained in them. At this moment, the United States Government has some fifty millions of dollars invested in freestone or granite piers and unprotected iron columns, supporting bare wrought-iron girders, which in their turn carry the brick arches of the floors and roof; and private individuals in the city of New York alone have about as much more; yet the unanimous opinion of experts, sustained by some private tests, is that in point of security against fire these costly edifices are little better than frames of timber and plank, and far inferior to timber frames covered with wire-cloth and plastered. The accumulation of costly goods in our great cities is now so enormous that it has become a matter of imperative necessity to discover some mode of constructing buildings which can be depended upon to contain them safely. Scores of patentees claim to have solved the problem, but a thorough comparative test of the various inventions has never been made, and it would be much for the interest of all underwriters, owners, or lesses of buildings for the reception of valuable goods to respond to the appeal of the Boston Society of Architects, and contribute toward the fund which must be raised before the project can be carried out.—*The American Architect and Building News.*

Slate and Glass.

The problem as to the best material for building purposes is, perhaps, as remote of solution as ever. But we notice that considerable discussion is being had in this matter, and two articles, not generally esteemed worthy of mention in connection with the subject, are coming to the front. These are slate and glass. It is said that the former is a good substitute for marble and granite in public buildings. Builders assert that slate is more lasting than either marble or granite, and is impervious to heat. Slate, it is said, will absorb the rays of the sun, can be planed, sawed, or ground like wood, grows harder by exposure to the weather, and is a building stone that will last for ages. There are four colors, green, red, and variegated, and purple, and it is proposed by parties interested in the development of the use of slate to erect a building as a specimen, to be inspected by all whom it may concern. A Pittsburg paper, which has given some attention to glass as a structural material, says that perhaps not one builder or contractor in ten, if told that the common grades of glass have a crushing strength nearly four times as great as that credited, by experienced engineers, to the strongest quality of granite, would accept the statement as true. Yet it is said to be a fact, and being so, the query as to why glass has not received more attention from architects as a structural material, naturally suggests itself.—*Chattanooga Tradesman.*

The Woods of Columbia.

We learn, says the *North-western Lumberman*, from consular reports forwarded from Carthagena, United States of Colombia, the following information relating to the timber of that republic: Besides cedar, mahogany, lignum-vitæ, nispero, limoncillo, and colorado timber, there exists an abundance of other valuable woods, such as vivaseca, lancewood, rosewood, guayba uraba, dividivi, and santa-cruz. There are also a number of wood, of the first quality for naval construction, such as corazon verde (green-heart), etc.

There is a wood called olleto, out of which piles can be made that cannot be destroyed by the teredo. Of the woods mentioned, the supply of cedar and mahogany is inexhaustible; of ebony, rosewood, colorado, and lignum-vitæ, nearly so. A cargo of timber can be procured that will average nearly 800 ft. per stick. The writer has a hewed stick of cedar which measures 42 x 48 in., 19 ft. long, and a hewed stick of mahogany which measures 24 x 34 in., 32 ft. long. He has seen a canoe 63 ft. in length by 4 ft. 4 in. in width, that had been hollowed out of the heart of a cedar tree, and one of 70 ft. in length by 10 ft. in width that was hollowed out of the heart of a campana tree. There are several trees standing in the forests near Monteria that have a circumference of 30 ft.—*Timber Trades Journal.*

The Sanitary Science of the Pentateuch.

A writer in the *Journal of Science* thinks that the knowledge of sanitary science possessed by Moses was in advance of that of to-day. He says: "So peculiar is human progress, that it has taken three thousand years to bring the civilized world to a point less advanced than that occupied by Moses. Less advanced, we say, emphatically; because, if we now admit the value of personal cleanliness, the importance of avoiding putrescent and loathsome matters, and of expelling them rapidly from our cities, and if we are theoretically aware of the disinfecting and deodorizing power of earth, we are far from embodying this, our knowledge, in the practice of actual life. As to the avoidance of blood of the flesh of foul-feeding animals, and of such as are liable to introduce entozoa into our systems, we do not recognize, even verbally, the importance of the Mosaic teachings. We eat 'blood puddings,' we feed swine with blood and with foul-smelling offal, and then we eat the animals which have been gorged on this revolting diet. And we pay the price of this uncleanliness in shortened lives and in waning vigor. We again call attention to the remarkable physiological insight displayed in the sanitary code of the ancient Israelites, and we repeat the question, Whence did it spring?"—*Sanitary Engineer.*

No State in the Union is in better condition than Tennessee. The census returns show a steady improvement in the last ten years, both in the variety and amount of the products of the soil, in manufactures, mining, and business generally, and a very gratifying gain in the population. It is safe to compute the gains to the State in new homes, new farms, stocks, bonds, new business undertakings, and in cash capital since 1865, at $500,000 000. This, over and above the the mere expenditures for the generally comfortable living of the people, ought to be very satisfactory, and should silence those who would prevent capital and immigration from coming into the State, which, after more than one hundred years of labor by an honest, hard-working, and thrifty people, they declare to be so pauperized that the poor man cannot pay for their daily bread.—*Chattanooga Tradesman.*

Intending house-builders should be most careful in attending to the bedroom department. We make no objection to the house being well provided with entertaining rooms, and those of ample dimensions; but we do most strongly object to the system, too often adopted, of obtaining these at the expense of cramped passages, stairways, and confined bedrooms. Nothing adds so much to the comfort of a man's life as good roomy bedrooms, and nothing to the convenience of a family as plenty of them. Architects, in claiming, and unfortunately getting, ample space for reception, dining, and other rooms, and giving the least dimensions to the bedrooms, seem to forget that in no room does a man spend so much of his time as in the latter. It should, therefore, be so large as to give plenty of room, and to have the bed so placed that when the window or door is open it will not be in the line of direct draft. Ask a physician, and he will tell you, that in cases of severe illness, there is nothing he dreads so much as the confined room in which his patient is placed; the air in it is always foul, and can only be made fresh at a fearful risk. Looking at the question from all sides, we are strong advocates for large bedrooms, indeed, for their comprising the best rooms in the house—for the confined closets which our architects and builders often deem it right to give us we have a profound contempt. There can be no real health enjoyed when a person lives more than half his time in a little cramped-up room.—*Builder and Wood-Worker.*

Dark Houses.

A dark house is always unhealthy, always an ill-aired house. Want of light stops growth, and promotes scrofula, rickets, etc., among the children. People lose their health in a dark house, and if they get ill, they cannot get well again in it. Dr. Edwards, of Paris, says the action of light tends to develop the different parts of the body in that just proportion which characterizes the species, and that in warm climates, the exposure of the whole surface of the body to the action of the light will be very favorable to the regular conformation of the body. Humboldt confirms this in the account of his voyage to the equinoctial regions. He says: "Both men and women (whose bodies are constantly inured to the effect of light) are very muscular, and possess fleshy and rounded forms. It is needless to add, that I have not seen among this people a single case of natural deformity."—*Builder and Wood Worker.*

There is nothing new under the sun. Luminous paint, which produces beautiful effects in the dark, is being introduced as a novelty, when in fact the Emperor of China, in the year of grace, 976, possessed a painting, the subject of which every morning left its frame to go and take a walk, and was only on view at night. The Emperor naturally thought there was something peculiar about the artist, but it turned out that he made his paints of a luminous substance extracted from the oyster. To-day, a thousand years later, oyster-shells and sulphur are astonishing our grown-up minds.—*Industrial News.*

The *American Manufacturer* says: "The industrial development of the South is advancing by leaps and bounds, and the beauty of it is the fact that the other sections of the country have no feeling of jealousy, but, on the contrary, have only words of encouragement. We are glad that this feeling exists—glad in behalf of the South, glad in behalf of the other sections, and glad in behalf of our common country, in whose greatness and progress we all take pride."—*Chattanooga Tradesman.*

Renewal and Payment of Subscriptions.

We trust that every present subscriber will at once renew his subscription, and each induce at least five others who have not, to subscribe. We mean progression and improvement in our publication work, and hope our friends will sustain us handsomely. Send $2 for 1882. Remittances by postal money-order, bank-check, or any other convenient means will be duly acknowledged. If postal stamps, send the two-cent denomination. We want a circulation of not less than

20,000 PAYING SUBSCRIBERS.

BOUND VOLUMES FOR 1881

Now ready for delivery, price, $2.50. We have on hand a few copies of 1880, and will forward either or both to any address.

The Strength of Wood.

At the late fair of the Massachusetts Charitable Mechanics' Association, held at Boston, there were exhibited interesting tests of constructive material, among these, of pine columns, which had in some instances supported remarkable pressure. One of these columns, originally twelve feet long, yielded to a pressure of 190,000 pounds; the weak spot being a large knot, which acted as a wedge, and caused the destruction of the column at less than the proper figures for a sound piece. Another column was twelve feet long, and tapering from seven and three-fourths to six and a half inches in diameter. This stick showed its weakest point at the smaller end, the crumbling of the fibers taking place in that part. A seasoned hard pine girder, eleven inches square and ten feet long, bore the astonishing load of 751,000 pounds.—*Southern Manufacturer and Builder.*

Tramps.

Fifty years ago there were no tramps, but there were plenty of apprentices. Then everybody could learn a trade; now boys are shut out by the arbitrary laws of trades' unions; manufacturers dare not employ any boys, and the beneficent, time-honored apprenticeship is entirely abolished. Boys without trades grow up without education, and become idle members of society, living upon their relatives when times are good, and when they cannot keep them longer, the youngsters are turned loose upon society perfect outlaws. If the apprentice system can be again introduced, which means the destruction or modification of trades' unions, we shall see a wholesome change. Tramps are the result of the abolishment of the apprentice system; let us encourage home manufactures and home manufactures by teaching trades to the young.—*Manufacturer and Builder.*

Growth of Portland, Oregon.

The *Oregonian* reports $1,150,075 expended in building improvements at Portland, during 1881. The larger operations are reported: one of $85,000; one of $50,000; two of $43,000; three of $40,000; two of $25,000; one of $22,000; one of $15,000; two of $12,000; four of $10,000; and so on down to small amounts. The $50,000 building was "the largest and handsomest residence erected during the year, for Hon. J. N. Dolph, containing twenty-two rooms, all finished in toa and black walnut. Mr. H. W. Cleveland of San Francisco, architect.

Street improvements are reported at a total of $283,538.37. Anticipations for 1882 are large.

☞ **Subscription price of this journal is $2.00 in advance.**

Market Reports.

LUMBER.—Owing to causes stated in another place, the demand for lumber has been light during the past month. There are large contracts to fill in the near future, that will give many of our lumber dealers all they want to do to furnish it on time and in the quantity needed.

Receipts since January 1st, 1882:

Lumber.....
Shingles.....
Laths.....

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet		$22 50
" 41 to 50 " "		23 50
" 51 to 60 " "		24 50
" 61 to 70 " "		26 50
" 71 to 80 " "		28 50
Refuse Rough	"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over,	"	32 50
" 4 " and under, and 1¼x4 and 1¼x6	"	35 00
Flooring and Stepping		
Rough Clear for Flooring, $1 less than above rates.		
Second quality Flooring and Stepping	per M feet	27 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" 2 sides	"	35 00
Deck Plank, Rough	"	33 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17½

Redwood.

Rough Merchantable	per M feet	22 50
" Refuse	"	18 50
Surface No. 1	"	35 00
" 1 x 6	"	32 50
" No. 2	"	27 50
Rustic, No. 1, 1 x 8	"	32 50
" No. 1, 1 x 10	"	35 00
" No. 2	"	30 00
" Under 10 feet	"	30 00
T. & G., 1¼ x 4 and 1¼ x 6	"	35 00
" 6 in. 12 ft. and over	"	32 50
" " 7 to 11 feet	"	30 00
" " under 7 feet	"	27 50
" No. 2	"	27 50
T. & G., Beaded, 12 feet and over	"	35 00
" " 7 to 11 feet	"	30 00
" " under 7 feet	"	27 50
Half-inch Surface	"	30 00
Pickets, Fancy	"	27 50
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ¾ inch	"	25 00
Shingles	per M	2 50
Battens, ⅝ inch, lineal feet	"	1c

NAILS.—Remain same as last month; Since January 1st, 1882, we have imported..... kegs.

10 to 60 pennies, are quoted at		$4 25
8 " "		4 50
6 " "		4 75
5 and 4 " "		5 25
4 and 5 pennies, brad heads, at		5 50
6 " "		5 75
8 " "		6 00
10 and upward "		5 25
3 penny fines "		7 75

PAINTS.—The PIONEER is the only brand quoted, as its excellent qualities, and the fact that it is strictly a home production, has about driven all other brands out of market.

We quote Pioneer White Lead 8½ cts. per lb.

Building Intelligence.

We are well pleased at being able to chronicle the year just passed as being the most prosperous one that our State has witnessed for six years. The country has vied with the city in erecting stately mansions. From all parts we have received gratifying intelligence of contemplated improvements. This state of feelings has been brought about principally by two causes: two successive years of bountiful crops, and the non-speculating by farmers in mining stocks. Our exchanges are filled with accounts of barns being built, granaries erected, fences being repaired, houses being newly painted and furnished, new school-houses to take the place of the old rookeries that have for so long in many places served for "meeting places to teach young ideas how to shoot." In fact, farmers are not content to "keep the old house in repair for just one more winter"; they have in many places already secured lumber and other materials, so that when a spare day comes along they can help the village carpenter to put up a good substantial farm-house.

Very few contracts have been let in this city during the past month. This is due to two causes—rainy weather and the holidays. Work has been commenced on Blythe's new building, and contracts have been signed for the excavations, iron work, and brick work for the first section, 60 x 140. The store on the corner of Geary and Dupont has been leased by a prominent firm at a large rental.

A rumor has been on the street that one of the oldest hotel buildings in the State is to be torn down to make way for a fine business block. Many an old '49er will be sorry to see it taken away. If the report should be true, it will be the means of building up a locality that was once the liveliest part of town, but for many years past has degenerated into one of the dullest.

SAN FRANCISCO.

Improvements have been commenced on the property bounded by Geary and Market, east of Dupont. Five-story and basement brick building. Owner, T. H. Blythe; architect, F. R. Lueders; contractor for brick work and excavations, J. W. Fry. Total amount of contract, including iron work, about $45,000.

Four-story brick building, with basement, on north side of Ellis Street, between Stockton and Powell. Owners, N. & E. W. Hopkins; architect, Chas. W. Geddes; brick work, W. E. Stevens; carpenter work, T. H. Day. Cost, in the neighborhood of $50,000.

Two-story and basement frame dwelling, brick foundation, on Scott Street, near Haight. Owner and builder, J. Scheerer; days' work; cost, $3,500.

Two-story building, store and dwelling, on Hayes Street, near Gough. Owner, Benjamin Daniels; architect, W. H. Bayless; contractor, J. Dutton; cost, $3,500.

Two-story frame building on south side of Valencia St., between Seventeenth and Eighteenth. Owner, H. Bergerot; architect, W. H. Bayless; contractor, —— Downey; cost, $1,700.

Repairs to building, 514 Sixth Street. Owner, Hibernia Bank; architect, P. Huerne; contractor, —— Kraeger; cost, $1,000.

Additional story, with extensions in rear, with brick basement, 561 Mission Street. Owners, Allen & White; contractor, —— Kraeger.

Additional story to building, 510 Howard Street. Owner, —— Geary; contractor, —— Riley.

Three-story frame building for furniture factory, on Bluxome Street, between Fifth and Sixth. Owner, —— Crandall.

Store fixtures for Nolan Brothers, on Market Street below Dupont. Architect, T. J. Welsh; contractor, Alex. Flood.

Three-story and basement frame building on Stockton St., between Pacific and Broadway. Owner, —— Ketterman; contractors, Chase & Buckley; cost, $4,300.

Tank building on Mission Street, between Spear and Main. Contractor, W H. Wickersham.

OAKLAND.

Two-story addition to frame building on corner of Seventh and Webster. Owner, A. Davis; Day's work; cost, $2,500.

Remodeling of house on Webster near Seventh. Cost about $500.

Oakland View Homestead, westerly side of Vernon Street near junction of Lee. Owner, Thomas Ewing; architect, Chas. F. Mau; contractor, Robt. Smilie; cost, $20,000.

Alterations to dwelling on corner of Twelfth and Jackson. Owner, Hester Hands; architect, C. F. Mau; cost about $5,000.

One-story dwelling on Kirkham Street between Eighth and Tenth. Owner, Dr. Shardlow; architect, C. F. Mau; contractors, Haskell, Smilie & Co.; cost, $2,000.

HAYWARDS.

Two-story and basement frame dwelling near depot. Owner, —— Spear; architects, Wolfe & Son; contractor, B. F. Ellis; cost about $2,200.

BODIE.

The foundry owned by Wells & Kilpatrick, which was lately burnt down, is now being rebuilt.

MERCED.

Record vaults in connection with the Court House. Architect, H. D. Mitchell; contractors Hughes & McCann; cost, $12,000.

SAN LEANDRO.

Two-story frame building for manufactory. Owner, L. B. Connor; contractor, B. F. Ellis; cost, $2,500.

FRESNO.

Two-story frame building for blacksmith shop. Owners, Atkinson & Gray.

Two-story frame building for hotel. Builder, C. M. Jones.

One-story frame building for carpenter shop. Builder, Mr. Dearneal.

SAN MIGUEL.

Catholic church; architect, T. J. Welsh; contractor, R. Doyle.

COLUSA.

Two-story frame building. Owner, S. Pence; contractor, J. C. White; cost, $2,800.

Publication Notices.

We received too late for notice in our December issue, the first number of *The Manufacturer and Inventor*, published by U. E. Wren, N. Y.: a monthly journal of twelve pages, very neatly printed and illustrated. Its general character is indicated by its title. The salutatory says, in part: "*The Manufacturer and Inventor* has for its object the ci culation of advertisements of both manufacturers and inventors, among all trades and manufacturing interests, and in all the leading cities, towns and villages in the United States." Its selection of reading matter is good.

American Sanitary Engineering, by Edward S. Philbrick, C. E., published by the *Sanitary Engineer*, N. Y., is before us. It contains 129 pages of matter and practical diagrams in reference to sanitary plumbing and sanitary matters generally. It is one of the best American books published on the subjects named, and should be read by every architect, plumber and all owners of buildings. The intelligent discussion of sanitary theories, questions and principle cannot be too largely indulged in, as they involve the health and life of mankind to a degree unequaled by any other one cause—epidemics and sweeping scourges excepted. If the great mass of communities generally, and especially those of large cities, could be made to realize the terrible consequences which daily result from defective plumbing and sewer work, there would be less contentment and quietude in the ordinary class of buildings, in which n ucre than "usual care" has been observed in matters of sanitary import.

We therefore recomend the careful and attentive perusal of the publication under notice, as supplying a large amount of practical information. Price $2.00.

The Mechanic's SLIDE RULE, *and How to Use It*, by Fred. T. Hodgson, contains a number of valuable rules for its use, measurements of timbers, etc. Price 25 cents.

LAKEY'S VILLAGE AND COUNTRY HOUSES, containing one hundred pages of designs, is one of the best of its kind published. The illustrations are neatly executed, and of practical modern design; and many of them suitable for adoption on the Pacific coast. We heartly recommend it as worthy a place in every gentleman's library who enjoys a taste for architectural matters, as well as to all architects and builders.

THE ART AND SCIENCE OF CARPENTRY MADE EASY, by William E. Bell, *revised and enlarged edition*, published in 1881, is a book of great merit, and should be read and studied by every carpenter. Too many of our working-men are content with "knowing enough for all practical purposes," overlooking the great fact, that by reading and studying instructive books much more of valuable information may be obtained, which would so far simplify the daily manipulations of material as to remove or render easy of comprehension, the difficult problems which sometimes arise, adding perplexities to the toils of the day. Price $5.00.

All books noticed in these columns can be had at publishers prices at this office.

"*Practical Lessons in Architectural Drawings*, by William B. Tuthill, A. M., Architect, published by Comstock, N. Y., is one of the most practical and useful books of its kind that we have noticed. It contains 33 full-page plates of illustrations (one in colors), and 33 wood-cuts, showing methods of construction and representation."

"*This book was suggested by the frequent call for a work of a restricted technical character, one which would give to the student who already has some knowledge of geometrical drawings, the information necessary to properly prepare his work for the mechanic.*"

It may also be read with advantage by many *practicing* architects, who judged by their delineations in construction, have as yet learned but little correctly. Copies can be had at this office, at publisher's prices. $2.50.

"*Palliser's Useful Details*," and "*Model Homes*," are also in large demand, at $3 and $1 respectively. They are both good and useful publications.

"*Saw-Gumming Tongues*," by George Preston Brown, is one of the best practical books on the subject published. Every plumber, architect, and owner should have a copy. It treates the subject handled vigogously and practically. Price $1.25.

We have received new invoices of "The Art of Saw Filing," by Holly, and the "Workshop Companion," both valuable and instructive little works, copies of each of which should be in the hands of every mechanic. Prices $1, and 35 cents, respectively.

Copies of all the works from time to time noticed in this journal may be had at this office at publisher's prices. When stamps are remitted for books or subscriptions to this journal, our friends will oblige by sending the two-cent denomination, or one-cent and three-cent if the two-cent are not obtainable. The larger denominations are inconvenient.

Palliser, Palliser & Co.'s Useful Details.—Since their introduction in our catalogue of useful publications, the sales have been large. We have a full supply on hand. Sold at publisher's price, $3.00 each set, 20x26 inches, with 40 pages of detail drawings.

A supply of all books mentioned in our catalogue constantly on hand.

Cameron's Plasterers' Manual.—While all its suggestions may not harmonize with our California practice, it is "an invaluable book of reference, containing many useful instructions which cannot be retained in the memory; such as tables, dimensions, capacity of cisterns, weights, measures, etc. Price, 75 cents.

The Art of Saw-Filing, by H. W. Holly. A really valuable treatise on the subject named. Every carpenter should secure a copy. But few mechanics know how to file saws properly, and those who perchance may be proficient can give no special rule for the result. Thousands of dollars are wasted every day by saws not being properly filed and set, and whole volumns of oaths are repeated, caused by the vexations attending irregular and ill-shaped saw teeth. Correct saw-filing is an essential to good work and the workman's comfort. Price, 75 cents.

The Carpenters' Manual, by John D. Edwards. A very useful little book, containing a large range of practical ideas in connection with mechanical studies. Carpenters and builders will find it of much more value than its cost—50 cents.

Modern Architectural Designs and Details, published by William F. Comstock, successor to Bricknell & Comstock, in 10 parts, makes—bound—a very handsome and valuable book of designs for houses, and plates of details, useful alike to architects and builders. The "parts," or numbers, separately, can be had at this office, at publisher's price, of $1 each, or the ten "parts" neatly bound for $10. All other books on architecture, steel square, and all other subjects, can be had through this office at publisher's rates. Orders from all sections of this western coast, and places bordering upon the waters of the Pacific Ocean, filled with promptness.

The Steel Square and Its Uses, by F. T. Hodgson, is an excellent little book, which should be in the hands of every carpenter. It contains numerous illustrations and treatises upon the Square, and excellent information for those who have not acquired a *full* knowledge of the use of that important mechanical instrument. Wise heads, who "know it all," do not need this or any other work or advice; but men who "live to learn" will find much in its pages to instruct them. Price, 75 cents; to be had at this office at publisher's price.

The Work-Shop Companion is full of valuable information to mechanics, housekeepers, and all classes, in the form of receipts, rules, methods, processes, etc., for almost everything in general use in workshops and households. Price, 35 cents; to be had at this office at publisher's price.

The California Architect and Building News.

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Full page, inside, one insertion	32 50
Each subsequent insertion	25 00

Reasonable reductions for advertisements continued six or twelve months.

CHANGE OF TITLE.

NEWS BEING SUBSTITUTED FOR REVIEW.

Hereafter this journal will be known as the CALIFORNIA ARCHITECT AND BUILDING NEWS.

BACK NUMBERS OF THIS JOURNAL.

Since we commenced our series of articles on the HISTORY, DESCRIPTION, AND USES OF THE STEEL SQUARE, we have had an unusual demand for back numbers containing said articles. We regret to say that we have on hand but a

☞ FEW NUMBERS ☜

of each month, counting from last September, and would advise those who want a complete series of this journal to send AT ONCE for any copies necessary to make their set complete.

BOUND VOLUMES.

Bound Volumes of 1881 are now ready for delivery. Sent postpaid to any part of the United States upon receipt of $2.50.

A limited number of Bound Volumes of 1880 on hand, to be had at the same price.

Meeting of the Architectural Association.

The regular monthly meeting of the Association was held on the 3rd inst., at which there was an improved attendance, and increased interest manifested. President Laver in the chair.

After the regular business was transacted, Mr. Harold D. Mitchell delivered an address before the Association, which will be found in another portion of this issue. It was well received, and contains suggestions of practical interest to all owners of property as well as to architects, and will repay perusal.

The president and secretary were instructed to adopt and forward to the association of British Architects, London, an expression of sympathy and condolence on the death of George Edmund Street.

It was also resolved that the Association hold a public meeting in April next, at which an address is to be delivered, and the presentation of premiums awarded for the best design for frontispiece or heading for this journal. *We hope that the architectural draughtsmen and students of the profession on this coast will receive increased encouragement by the announcement of this fact.* A committee of three, consisting of Messrs. Curlett, Sanders, and Mitchell, were appointed to select a speaker for the occasion.

Applications for membership were received, and other matters of interest receiving attention, the Association adjourned to meet the first Friday in March.

In Memoriam of George Edmund Street, R. A.

WHEREAS, The announcement of the death of George Edmund Street, of London, having been received by the Pacific Coast Association of Architects with profound sorrow and regret, it was deemed proper by the Association, that we join with our professional brethren of England and the entire civilized world, in adding tribute to the memory of him who in life enjoyed so pre-eminent a position in the profession.

The loss by death of leading men in any profession or pursuit of life naturally creates a void which, for the time being, none who remain feel competent to fill.

While the intelligent world bows in submission to the decree of Him who cannot err in the removal of loved and honored ones from the paths of life, from circles of friends and kindred dear, and the association of trusting and admiring minds, it is but right that those who are spared should unite in expressions of sorrow and words of common sympathy. Therefore be it

Resolved, That the Pacific Coast Association of Architects, meeting at the city of San Francisco, State of California, recognizes an irreparable loss to the profession generally in the death of our late professional brother, George Edmund Street.

Resolved, That this Association sincerely regrets the untimely death of him who in life became one of the best and brightest lights of the profession, and by his superior intelligence and devotion to the science of architecture added so much to its intelligent development, purity, and grandeur, and by his skill as an artist and power as a writer, won for himself the high esteem and admiration of his architectural brethren throughout civilization.

Resolved, That this Association extends its sincere sympathy and condolence to our brethren of England in the great loss sustained by the profession; and to the bereaved family and friends of him whose loss we mourn.

Resolved, That a copy hereof be forwarded to the Royal Institute of British Architects, and through it to the family of our deceased brother, George Edmund Street.

A Monument to the Honored Dead.

That one should be erected in this city to the memory of the late beloved Chief Magistrate of the United States, James A. Garfield, cannot admit of a question; and its accomplishment should be as free from error as the life of him whose name will be inscribed upon its tablets was pure and honest.

The gentlemen having the matter in hand enjoy good reputations among their fellow-men in the business and ordinary relationships of life. But in the matter of securing designs and providing for the erection of a monument, they have not thus far exhibited any special qualifications. Their first step, the invitation for designs, was an error, with a large intermixture of injustice and unfairness, as far as the conditions thereof are concerned. They have asked architects to spend time, skill, and labor in working up and designing a monument suitable to the memory of the great and good man whose memory it is to perpetuate, and offered a compensation by no means adequate for the purpose. It is expected that architects will produce something really handsome, something which in art designing requiring the same amount of artistic ability and labor would command five or ten times the sum offered as first premium. And to render the inadequacy and injustice more complete, the architect who produces the most elegant conception is to be debarred the rightful privilege of superintending the execution of his own mind's creation. This is how the matter at present stands, and the course pursued shadows forth a purpose of some character not clearly made manifest by the invitation for designs, and justifies the inquiry whether the committee have selected some one who they consider *specially* qualified to superintend the execution of the work. If so, they should have confined the preparation of the design to such party, and not seek to buy, by means of competition, at insignificant compensation, the skill and artistic conceptions of competent architects to assist those who may be unable to conceive or produce on paper a suitable design for the purpose contemplated. There is certainly an error in procedure, and the gentlemen of the committee should amend their action, and shape matters so that the successful designer shall enjoy the fair and equitable privilege of consumating in practical execution that which by his skill shall received the first award.

To those familiar with such matters, the affair as at present presented involves a question as to the unimpeachableness of future management, and the committee should endeavor to amend their action in the premiums so far had, and yield the right to the successful architect to perfect his production by details and personal superintendence.

We cannot refrain from repeating our disapproval of the too common practice of seeking to obtain the artistic and skillful labors of architects at unfair and insufficient pay, and using their productions with as little advantage or profit as possible to those whose mind work is unchecked except by the slumbers of night.

The Forests of Louisiana.

The New Orleans *Democrat* says that the most valuable and important woods suitable for lumber, in the State, are the oak, of several varieties, principally the live and white; the pine both long and short leaf: the cypress, cottonwood, gum, and black-walnut. Each of these trees has its particular use and advantage, which makes it especially adapted to one of those numerous industries in which wood forms the principal material. There are other States which have good box-timber, others again with plenty of material for house-building, for shipbuilding, or for staves; but Louisiana possesses such a variety of timber as would make it a field for every one of the sixty odd industries into which wood enters, from the simple sawmill lumber to the best veneering, polished and fancy woods. The pine is the most abundant tree in the State, and constitutes over a third of the lumber wood of Louisiana. The cypress is unexcelled for shingles. Walnut and gum are well adapted to cabinet making. The first is master of the furniture field, while the gum has a brilliant future before it, and promises to be its successor at an early day. The cottonwood has been found fully equal to the famous white pine of Michigan for boxes, and even stronger and more durable. The live-oak is admittedly the best timber for ship-building in the world. Growing in the swamps, it becomes completely impervious to water, and will resist water-rotting longer than any other wood known. The white oak has been found unexcelled for staves for the tougher barrels and casks. In shipping this timber to Europe, New Orleans does a large business. The ash and smaller oaks are unexcelled for fuel; they are firm and hard, and give a long-lasting and hot fire. Excellent charcoal is furnished by the pine. These varieties of woods are to be found in nearly every portion of the State, and cover nineteen-twentieths of the forest area of Louisiana. It is estimated that the State of Louisiana contains about 80,000,000,000 feet of good lumber, more than twice as much as Michigan; and 300,000,000 cords of wood fuel, worth, when sawed, some fifteen times the assessed value of the State, some $20,000,000.—*American Architect.*

Leaden Pipes and Cement.

Leaden pipes and cement both play such important parts in the building trade that their mutual relations offer a subject of great practical interest. In this country, if we are not mistaken, the notion is very prevalent among practical men of the trade that the two things harmonize to perfection, and that no reason exists why they should not be placed together, even in the most intimate contact. It is believed, that agreeing at first and for a season, they agree permanently or forever, that is to say, as long as they respectively exist or continue good for use.

It would appear, however, that the foregoing common notion touching leaden pipes and cement must be somewhat modified, if not surrendered, if recent communications from Germany are to be accepted as true. In the underground apartment of the railway station edifice at Brunswick, a part of the tube system connected with the water-closets ceased to answer its purpose; in words, it became disordered. On examination, it was found that a leaden pipe of 0.013 meter internal, and 0.02 meter outer diameter, so far as it lay in the mason-work and was surrounded by cement, had been destroyed, corroded by external influences. The corroded parts exhibited a reddish gray color and a granular quality.

The condition of the pipe, and generally the circumstances of the case, suggested, in view of the known nature of the cement, that the destruction of the pipe had resulted from the alkali in the cement being set free. The case seemed sufficiently interesting to justify the sending of the injured pipe to the celebrated professor of chemistry, Dr. Fr. Knapp, in order to obtain his opinion.

With characteristic readiness to impart knowledge and oblige inquirers, Dr. Knapp, after a little while, replied by letter as follows: "Cements, and especially Portland cements, possess the peculiarity that, in the act of hardening and by reason of their content of lime in excess, they give off free alkali (kali, natron, potash), which, along with the water of the cement paste, form what is usually called lye, or corroding lye. Under the influence of water and air the lead becomes coated with a thin layer, a sort of lead lime, which adheres very firmly, and (as a rule) forms a protective covering against further corrosion. Even this protective covering, however, does not resist the operation of the alkali (kali, natron), and is easily taken up by it, so that, the protecting sheet being withdrawn, the corrosion proceeds. As the piece of pipe you have sent me (with your permission I add it to my collection) clearly shows, the corrosion, in accordance with the foregoing view, has not gone on from within outwards, but from without inwards; and furthermore, in the concrete case, the strongly crystaline quality of the lead has furthered and hastened the destruction. In order to arrive at a conclusive judgment, an investigation of the case in all details, and not merely of the leaden pipe, would of course be necessary."

In answer to the question, What means should be applied to prevent the occurrence of such mischiefs? Professor Knapp replied: "If my supposition as to the cause of the destruction is correct, then I should recommend, as a preventive remedy, the repeated washing of the cement plaster, after the hardening, in order to remove the alkali which has become free. Perhaps a coating of the leaden pipe with gypsum before applying the cement might be advantageous. It is to be presumed that cements of different origins are very different or unlike in their influence upon lead."

So far concludes Professor Knapp, as reported by Herr Albert Fuldner, an engineer connected with the management of the Brunswick railway. Soon after the publication of the foregoing statement, the case became the subject of discussion in the Polytechnical Society of Berlin. On that occasion, in answer to the question, Can leaden pipes be laid in cement without danger? Herr Elster said: "It often happens that masses or pieces of lead which have lain during some years in a cellar, become partially corroded, but in such cases we must presume that the lead was not pure, but was adulterated with zinc, and that an electrical operation came into play especially on damp ground."

Some one remarked that when sulphur or gypsum is in the cement, the lead may be thus corroded.

Herr Maerz said: "When the drainage and other pipes were being laid in my father's house, the contractor refused to lay the lead in cement, for the reason that the lead would be corroded by the cement." Herr Maerz promised to make further inquiries on the subject, and report the result.

Later, apparently at a subsequent session of the Polytechnical Society, Herr Maerz resumed the subject, saying:

"I have further taken pains to find out how far it is true that leaden pipes are affected by cement, and from many practical pipe layers I learn that lead brought into contact with cement becomes hard, brittle, and easily broken, and in a short time ceases to be impervious to water, so that to lay leaden pipes in cement is a mistake. Masons whom I questioned were of the opposite opinion. They said that in cement lead holds out perfectly good, but not in lime. It was, of course, safe to take for granted *a priori* that leaden pipes would not keep good in moist lime, since alkaline substances affect lead."

In order to gain additional knowledge of an experimental kind, continued Herr Maerz, "I applied to the Machinists' Union, from some ten of whose members I obtained the answer that lead by no means keeps good in cement. A single member said that he had known a leaden pipe connected with a water-closet to last many years in good condition, though it was built in with cement. Perhaps a good deal depends upon the quality of the cement, of what sort it is, though I know nothing definite on that point. On the other hand, I was told that lead in lime keeps good, though not in cement—a flat contradiction of what I had been assured by others. In places where old metals are dealt in, it is alleged that old lead pipe offered for sale is at once examined for traces of cement, and if they are found on it the pipe is for the most part marked as worthless."

Herr Maerz finally described an experiment he was about to try with the object of testing the influence of cement on lead, and thus settling the question in controversy. Whereupon, Herr Elster remarked that in his opinion it all turned on the point of moisture. If moisture is present the lead will be destroyed by lime, etc., as it enters into the basic as well as acid combinations.

Dr. Darmstaedter closed the discussion with the remark that in the destruction of leaden pipes by cement carbonic acid probably plays a part, as it is combined with lead in the formation of carbonate of lead. That corrosion may take place the addition of moisture is necessary, and without it Herr Maerz's experiments can yield no results.—*Brick, Tile, and Metal Review.*

The Position of the Skilled Mechanic.

No matter to what extent the refinement in machine tools may be carried, it is in the end the careful and painstaking operation of the skilled mechanic that must bring the products of these tools to a perfection that will meet the requirements of modern demands. The lathe will not turn so round that, in this respect, its production cannot be improved by the handwork of the skilled machinist; nor will the milling or planing machine produce surfaces so true that he is not called upon to rectify them with the file and scraper. Now, as ever, the beautiful finish on iron and steel is the result of the individual effort of the operator, rather than of the perfection of tools.

Years ago the opinion prevailed to a considerable extent, that the services of the highly skilled mechanic would not be so much a matter of necessity in the future as in the past, but those who built on such grounds built poorly. The man will always be superior to the machine, and must always see better than he can perform.

One man may direct the efforts of fifty skilled workmen to the production of good work; but fifty men cannot get good work from one unskilled workman. Improved tools and mechanical appliances will simply assist the artisan in the production of fine work; but the greater the refinements of these tools and appliances, the greater must be his skill. Instead of relieving him of his responsibilities, which would be in every sense a misfortune, they add to them, which makes him, in every way, the better, in being able to meet them.

Altogether, the position of the skilled mechanic is in every way satisfactory, in its relation to improved machine production; and the tools and appliances of the future, however refined, can never usurp his place in the industries of the world, nor relieve him of the part he is to play in future mechanical advancement.—*Mining and Scientific Press.*

Description of the Steel Square.

Being a History and Description of the Square. Methods and rules given by which the length and bevels are obtained of all kinds of rafters, braces, collar-beams, brackets, etc. Its application to the various cuts in stair-building. The whole designed to be a complete *help* to mechanics, by which they can work in a systematic manner all the various problems in regard to the *cuts in carpentry.*

It will no doubt seem superfluous to many mechanics in this age of progress, to insert in this series of articles a description of the Board Measure, as it was on squares, made twenty years ago. During the past two months we have received several letters on this very subject, and we, in deference to their wishes, insert a description of the now ancient way to find the number of feet in a board.

According to the old way, an *approximate* measure only was found; the contents were given in feet, and the fractions were disregarded. It would not do in these days to call a board sixteen feet, when in reality it measured five inches over that amount.

The engraving shows that the figures are arranged diagonally instead of being directly under each other, as will be seen by referring to our border. The use of this measure is simlar to the one described below. This scale has been given up for want of accuracy, and is only to be found on the cheaper grade of squares.

The scale in use at present, and the one adopted by our first-class manufacturers of squares, is known as the "ESSEX BOARD MEASURE." It is always found on the back of the "body" of the square, and is used by combining it with the inch graduations on the outer edge.

Under the figure 12, of the inch graduation marks, along the outer edge of the "body" will be found the figures 8, 9, 10, 11, 12, 13, 14, 15, which represent the length of the board to be measured. The board measure in feet and inches will be found under the particular inch-mark along the outer edge of the board to be measured. Suppose the board measure is required of a board 8 feet long and 6 inches wide: Find the figure 8 in the scale, immediately under the 12-inch graduation mark, and pass the pencil along to the left, on a line with the figure 8 to the graduation mark 5, which represents the width of the board, and you stop in the scale at the figure 4, which is 4 feet, the board measure required.

If the board is the same length and 10 inches wide, look under the graduation mark 10, on a line with the figure 8 before mentioned, and you will find 6 feet 8 inches board measure. If 18 inches wide, then to the right under the graduation 18, and 12 feet is found to be the board measure.

If 13 feet long and 7 inches wide, find the figure 13 in the scale under the before-mentioned graduation mark 12, and on the same line, under the 7 inch graduation (which represents the width), will be found 7 feet 6 inches board measure.

If the board is half this length, take half of the above result; if double the length, then double the result. In this way the scale covers all length of boards.

If the board is 27 feet in length, take 13 and 14 foot lengths and add them together. The above illustrations apply to boards one inch in thickness. It is evident, therefore, that the amount of lumber contained in any piece of timber may be readily obtained by first finding the number of feet in a board 1 inch thick, and multiplying by the number of inches contained in the thickness of the timber.

Near the junction of the "BODY" and "TONGUE" on the "BACK" of the square, between the figures 2 and 4, will be found the "HUNDREDTHS" or "DIAGONAL" scale. The fine lines between the figures 2 and 4, parallel with the edge of the tongue, divide the inch into TENTHS. The diagonal lines which cross the parallel lines subdivide the tenths into hundredths, thus forming a scale by which we can readily obtain the "hundredths of an inch."

The diagonal scale is formed as follows: One inch is divided into 10 equal parts, both above and below; from the top of the first perpendicular, draw a line to the first division below; continue parallel lines, as shown in the cut of square in our border; the first division on the second line from the top becomes one-hundredths of an inch, and each of the others on the parallel lines, one-tenth.

The scale of hundredths reads downwards from the second parallel line, at the intersection of the first diagonal at the right hand corner, this being the hundredths of an inch; the space next below is two-hundredths, the next three-hundredths, and so on to the last, which is ten-hundredths, or one-tenth of an inch. Many sets of drawing instruments contain this scale, the use of which is identical with that found on the square.

TO BE CONTINUED.

In response to a question proposed to us during the last month, we would say that the Octagonal scale can be used for any size of timber. If the timber is larger in size than the numbers of divisions in the scale, double or treble the measurements as may be necessary.

The Octagon scale is also on most of the pocket rules, given on two lines, marked M and E. The divisions on the line M will be found to correspond with those on the square, and are used in the same way.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Japanning and Japans.

When finished wood, papier-mâché composition, or materials are varnished in the usual manner and left to dry in the air, the drying is in most cases imperfect, and the coating more or less uneven. If the surface thus varnished is heated for some time to a temperature of from 250° to 300°, F., or higher, it is found that the whole of the solvent or vehicle of the gums or resins in the varnish is soon driven off, and the gummy residue becomes liquefied or semi-liquefied, in which state it adapts itself to all inequalities, and if the coating is thick enough, presents a uniform glossy surface, which it retains on cooling. This process of drying out and fusion secures a firm contact and adhesion of the gums or resins to the surface of the substance varnished, and greatly increases the density of the coating, which enables it to resist wear and retain its gloss longer.

This process of hardening and finishing varnished or lacquered work by the aid of heat constitutes the chief feature of the japanner's art.

In practice, the work to be japanned is first thoroughly cleansed and dried. If of wood, composition, or other porous material it is given while warm several coats of wood filler, or whiting mixed up with a rather thin glue size, and is, when this is hardened, rubbed down smooth with pumice stone. It is then ready for the japan grounds. Metals as a rule require no special preparation, receiving the grounds directly on the clean, dry surface.

In japanning, wood and similar substances require a much lower degree of heat and usually a longer exposure in the oven than metals, and again a higher temperature may be advantageously employed when the japan is dark than when light-colored grounds are used; so that a definite knowledge of just how much heat can be safely applied and how long an exposure is required with different substances and different grounds can only be acquired by practical experience.

The japanner's oven is usually a room or large box constructed of sheet metal, and heated by stove-drums or flues, so that the temperature—which is indicated by a thermometer or pyrometer hung up inside, or with its stem passing through the side wall midway between the top and bottom of the chamber—can be readily regulated by dampers. The ovens are also provided with a chimney to carry off the vapors derived from the drying varnish, a small door through which the work can be entered and removed, and wire shelves and hooks for its support in the chamber. The ovens must be kept perfectly free from dust, smoke, and moisture.

A good cheap priming varnish for work to be japanned consists of:

Shellac (pale)	2 ounces.
Rosin (pale)	2 "
Rectified spirit	1 pint.

Two or three coats of this is put on the work in a warm, dry room. A good black ground is prepared by grinding fine ivory black with a sufficient quantity of alcoholic shellac varnish on a stone slab, with a muller, until a perfectly smooth black varnish is obtained. If other colors are required, the clear varnish is mixed and ground with the proper quantity of suitable pigments in a similar manner: for red, vermilion or Indian red; green, chrome-green or Prussian blue and chrome-yellow; blue, Prussian blue, ultramarine, or indigo; yellow, chrome-yellow, etc. But black is the hue commonly required. The following are good common black grounds:

1.

Asphaltum	1 pound.
Balsam of capivi	1 "
Oil of turpentine	q. s.

The asphaltum is melted over a fire, and the balsam, previously heated, is mixed in with it. The mixture is then removed from fire and mixed with the turpentine.

2. Moisten good lampblack with oil of turpentine, and grind it very fine with a muller on a stone plate. Then add a sufficient quantity of ordinary copal varnish and rub well together.

3.

Asphaltum	3 ounces.
Boiled oil	4 quarts.
Burnt umber	8 ounces.
Oil of turpentine	q. s.

Melt the asphaltum, stir in the oil, previously heated, then the umber, and when cooling thin down with the oil of turpentine.

An extra fine black is prepared from:

Amber	12 ounces.
Asphaltum (purified)	2 "
Boiled oil	½ pint.
Resin	2 ounces.
Oil of turpentine	16 "

Fuse the gum and resin and asphaltum, add the hot oil, stir well together, and when cooling add the turpentine.

A white ground is prepared from copal varnish and zinc white or starch. Large japanners seldom make their own varnishes, as they can procure them more cheaply from the varnish maker.

From one to six or more coats of varnish are applied to work in japanning, each coat being hardened in the oven before the next is put on. The last coat in colored work is usually of clear varnish, without coloring matters, and is in fine work sometimes finished with rotten stone and chamois. For ordinary work the gloss developed in the oven under favorable conditions is sufficient.—*Scientific American.*

Tracing the Storms.

The matter of a Signal Service system for the Pacific coast, by which we may be enabled to fix their entrance on this coast and trace their direction, has long been talked of and desired. The prospects are now that the system will soon be inaugurated. Lieut. C. H. Kilbourne has recently returned from a trip north, where he went to select sites for the establishment of the new Service stations, which it is thought that Congress will this winter appropriate funds for. He reports, as the result of his observations, that the general path of storms upon the Pacific coast is from the west eastward, with a southeasterly trend. The storm center strikes about Victoria, and the southern outer circle of the storm usually strikes Cape Flattery, the most north-western point on our territory, first. The full force of the storms is felt in British Columbia, where the winds work great ravage. Therefore, a station upon Cape Flattery would give the first indications of approaching storms. For this reason Flattery is chosen as one of the proposed posts. Another station will be established at the mouth of the Columbia or on Tillamook rock.

Another point that the lieutenant is specially instructed to investigate is at Cape Mendocino. The benefit arising from taking observations at those points can hardly be estimated, as the whole system of calculations must be based mainly upon them. There are now but two coast stations—that in this city, and the San Diego station. It is thought that, in addition to these stations, another will be established at Cape Disappointment. In the event of an appropriation being passed for these stations this winter, an independent coast weather service will be inaugurated here, the observations of which will eventually add much to the general knowledge of the meteorology of the Pacific coast.

Defective Flues.

As usual, after a few days of very cold weather, accounts come in from all quarters of damage done by "defective flues." The worst of these occurrences during the past week seems to have been the total destruction of the Hartford High School Building, involving a loss of one hundred and twenty thousand dollars. It is true that accounts disagree as to whether the catastrophe should be attributed to a "defective flue" or an "overheated furnace," but in point of fact these expressions mean the same thing; and if they really indicate the origin of the fire, either of them simply means that through the ignorance or neglect of some one, wood-work was placed in the construction in dangerous proximity to apparatus for containing and conveying burning fuel, gas, and heated air, and on its temperature being raised to a degree somewhat higher than usual, on account of the necessary urging of the neighboring fire, it obeyed the natural law provided for it, and entered into combustion. There is nothing new or surprising about this; and the needful thickness of the walls of flues, the necessary distance of wood-work from them and from heated furnaces or pipes, and the proper means of protecting exposed surfaces, are all well known: so that the explanation of the destruction of such a structure by the theory of overheated furnaces or defective flues always, to the professional mind, casts a serious imputation on those who had the care of building it. The architect may not be, and very probably is not, at fault; indeed, in such cases, he is usually the one who pleads for safe and solid construction, to be overruled by his committee, who decline to sanction any departure from the common modes of building; but such matters should no longer be left to chance or caprice. Let school committees and school architects build for themselves what they will, they have no right, and should be forcibly prevented from trifling with the lives of the children whose safety is intrusted to their care. It is humiliating to reflect that school-houses, even the most costly ones, are considered by underwriters to be among the more hazardous of ordinary buildings, and this quite independent of the planning, which is such that the burning of one during school hours is almost always attended with serious or fatal casualties. There is in England a certain society for promoting the erection of churches, which employs its large income in assisting poor parishes to provide themselves with houses of worship. In the exercise of this charity it has acquired a very great and beneficial influence over ecclesiastical architecture, by publishing a set of rules for convenient and suitable planning, and strong and sincere construction, which must be observed by those who apply for its aid. These rules are strictly enforced by the simple means of refusing any grant whatever to a church not built in accordance with them. It would not, perhaps, be amiss to provide for imposing similar care upon the builders of school-houses, by prohibiting the expenditure of public funds on any in which such an accident as that at Hartford would be possible. If architect, contractor, and committee knew that their only chance for obtaining money to pay for such a building depended upon the certificate of disinterested experts, that under no circumstances could the children who were to occupy it be burned, suffocated, trampled to death, or even seriously frightened or injured, on account of fire, the standard of school-house construction would soon be materially raised.—*American Architect and Building News.*

Send for a copy of the "Steel Square and its Uses," handsomely bound and illustrated. Price, 75 cents.

The Toilers and Workers.

In reviewing the greatness of own fair land of freedom—great in itself, in its wealth and endless resources, and among the nations of the earth unequaled in its rapid attainment of the enviable position reached within a few generations—naturally invites inquiry as to the secret of this unparalleled advancement from infancy to national manhood and vigor. Century after century rolled over the inhabitants of the "parent countries," the nations of the Old World, only to find, at the end of each, the masses still groping in the mists and gloom of mastery and servitude. Liberty of thought, the exercise of mind powers among the workers, were held in restraint, and freedom of action denied, the "masters" assuming all the higher rights and privileges to themselves, and exacting of those under them uncomplaining obedience to every command and dictation.

Thus for ages the mechanical world moved not beyond the prescribed limits and grooves which customs, sometimes cruel in their severities, had defined for the classes. Yet but little murmuring was heard, because men had been trained to accept those conditions, and taught to feel that there could be no other.

But in the course of human events, as though the great power wrapped in the mantles of impenetrable mystery and infinity had tired at the sight of this unequal condition of things, the day star of release was made to appear, with the discovery of the great American continent, and the pilgrim landing was but the escort to the results which have followed. The beginning, true, was small, and the number of those who first began the work of rolling away the ponderous stones which had so long held the working classes of earth in the sepulchral-like slumbers of submissive servitudes and enforced ignorance, was small; but in due time, the dawn of deliverance appeared, and the gates of human progress were opened upon the American continent, and wide-spreading fields by degrees revealed, in which the oppressed of every land might find a refuge and a home. Slowly at first, but steadily, the work went on, and the taper-light of advancement, lighted by the pilgrim fathers, the pioneers of freedom, expanded into more brilliant rays, until it reflected across the waters of great oceans, and was seen by thousands whose fathers and grandsires had lived through centuries and died under systems of oppression, without realizing that the invisible order of things had appointed to all men the right to think and act for themselves.

That which has followed and resulted from this small beginning is beyond the power of pen or tongue to write or tell; nor is it our purpose to dwell upon the historical incidents and wonderful developments which have ensued. The point aimed at is to invite the reflection of the laboring and mechanical masses to a consideration of the state of facts which have been strewn all along our nation's pathway from then till now. Have they used the innumerable advantages and privileges opened up to them as wisely as they might have done? Have they controlled the currents of events so as to gather unto themselves the fruits of their toil, in the richness and fullness made possible by grand opportunities? It cannot be denied that the brains and strong arms of the working classes have been the power that has moved and kept in motion the great machinery of progression, and opened up the resources of this mighty continent; and that from their ranks have sprung nearly all the great minds and intellects which have mastered and encompassed all sciences, and placed our earth almost in converse with the numberless planets and systems which, through inconceivably numerous cycles of time, have continued to swing out in incomprehensible space. It is only sometimes that the children of fortune, and those born in palaces and abodes of luxury, have added mechanical or scientific gems to the world's great cabinet of precious things. These come more from those inured to earnest, persistent mental and physical toil, who live by doing and to do. But is it not also a fact, that many who have plowed and planted more have reaped and gathered but little? How many millions of men of genius and sterling abilities and worth have spent their lives, consumed their talent, and shortened their stay on earth, through excessive application and devotion in perfecting devices and discoveries originating with them, or completing those begun and in part completed by others? Yet it can scarcely be claimed that compensating results have always followed their efforts. These few reflections suggest the question, whether the toilers of the world have not failed to enjoy that richness and largeness of reward so faithfully earned and deserved, through excessive application to the special objects of their lives, without due appreciation of the compensations which should ever be the heritage of those who bring forth new things in thought or in material form, or who, by their labor, assist in beautifying this footstool of God, in skillfully manipulating the great resources of our earth.

The Chinese Problem

Cannot be too earnestly agitated by those having the best interests of the United States and its thousands of hard-working inhabitants at heart. It is not a question made prominent by unprincipled demagoges, for the purpose of rallying the masses in movements through which the leaders may and expect to secure large personal or political advantages; but one of universal importance, bearing heavily upon all interests, and threatening serious injury to every class of labor, manufacture, and to capital itself. While California has been and always will be the greater sufferer from Chinese immigration, because her "Golden Gate" is the more convenient ingress, still, it is only a matter of time, when, if restriction is not provided and enforced against their coming, other cities and States of this country will smart under the like scourge, with that which has been so severely felt within the cities and States of this Western coast.

The people of the Eastern States have been slow in accepting the great facts of the issue, and have inclined to question and disregard the voice of their Western brothers, who, groaning under the load imposed upon them through the presence of scores of thousands of the Mongolian race, have cried in strong and earnest tones for relief. This cry has been and is sincere, and comes from every section and from all classes: for all, *all* have been made to realize the thousand-fold greater evils arising from the competitions and aggressive movements of the Chinese on this coast, than the few advantages that may have been gained through cheap Chinese labor.

There is nothing more necessary and essential to the welfare and prosperity of the Pacific States than the right kind of immigration; and if the Chinese element was not *absolutely injurious*, the people of the "Flowery Kingdom" would be welcome to our midst, as compensating for the absence of people of our own race and affiliations. But the experiences of the past thirty odd years in California have fully demonstrated the fact, that Chinese competition, in either labor, manufacture, or any of the common pursuits which give employment to the masses, is of the most objectionable and damaging character; while, as it has before been stated in this journal, even capital itself on this coast has felt the effects of Chinese encroachments. The few who have formed Chinese alliances in business relationships have doubtless profited thereby; while Chinamen themselves have been the greater gainers in learning our customs, mechanical arts, methods of business, etc., which in time will be used by them with master hands. For they are as selfish and unscrupulous as they are cunning and treacherous, and will utilize every advantage gained to their own benefit.

All this is fully demonstrated in San Francisco. During the entire time of its existence as a city, with all the many millions of dollars gained by the Chinese people, not one of them has ever invested a single dollar in the purchase and improvement of real estate for *residence* purpose outside of what is known as the Chinese quarters, which in themselves, as a whole, are a disgrace to the city in which they are permitted to exist. These quarters have always been overcrowded and filthy in the extreme; still the additional thousands added to their former number, by arrivala within the current year, have been stowed away within limits wherein all laws of health and all sanitary regulations have been held in constant disregard.

This city and State have suffered enormously more from the presence of the Chinese than it is possible to estimate. But for them, there would have been a much larger population, sand-lotism would never have been heard of, Dennis Kearney would have remained unknown, and the terrible pressure that rested upon the business interests of this city during '78-79 would never have occurred. But they furnished pretext for the hue and cry of demagogues—"The Chinese must go"; and all business interests were, for a period, prostrated and paralyzed, and the laboring classes borne down to almost starvation. Under these circumstances and conditions, it is but reasonable and right that the people of this coast should continue to agitate the Chinese question, and ask and demand a solution of the problem which, in its practical operation, has been so disastrous to all classes, and which will most assuredly work terrible injury to the entire country, if not checked by congressional legislation of the most stringent and positive character.

An Iron-clad Contract.

A ship-building firm on the Thames has undertaken to build an iron-clad of novel construction for the Brazilian Government, under a contract which includes a novel series of penalty clauses. The ship is designed to steam fifteen knots per hour, but if she fails by a quarter of a knot a penalty of £2,000 is to be paid; and so for every quarter of a knot in an ascending scale, until for a shortcoming of a knot of speed per hour a penalty of £16,000 will have to be paid; while the loss of a knot and a quarter will involve a fine of £32,000, and if a speed of less than thirteen and a half knots per hour can only be attained, a sum equal to one-sixth of the total price of the vessel will be forfeited. If, again, the vessel when launched draws an inch of water more than the draught named in the contract, £1,000 is to be deducted from the price to be paid for the ship, and so on, again in ascending scale, until a penalty of £25,000 is reached for six inches excess of draught.—*American Architect.*

There are at present in the Old World and the New World more than 100,000 railway locomotives. Their total force is equal to 30,000,000 horse power, and all the other steam engines on the globe are estimated at 46,000,000 horse power. The technical "horse power," however, is really equal to three average horses, and each horse to about seven men; the aggregate power, therefore, of all the engines being vastly more than the effective force of all the human workers living. Four-fifths of the steam engines now at work have been made within a quarter of a century or so.—*American Inventor.*

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

TO CUT A RAKE CROWN MOLDING SO AS TO MITER WITH A PLUMB EAVE.

"Make the *plumb* cuts down the sides of the box as shown at A A, and cut the miter across the top as usual; but remember, a *square miter* will not do.

"TO GET THE SIDE BEVEL.—Measure the diagonal of the rise of one foot run of the common rafter, measuring across the square from 6 to 12 (for a quarter pitch), which will be nearly 13½ inches. Now lay down the square to 12 and 13½, the same as laying out a miter, and use the *long* bevel. The *down* bevel will be the same as that of a common rafter.

"This rule applies to *any* pitch, by taking the pitch line of one foot run, and taking this with 12 to obtain the miter, using the *long* bevel. The same bevel will also do for mitering rake, facia, and frieze, or *any* raking member to a level one standing plumb."

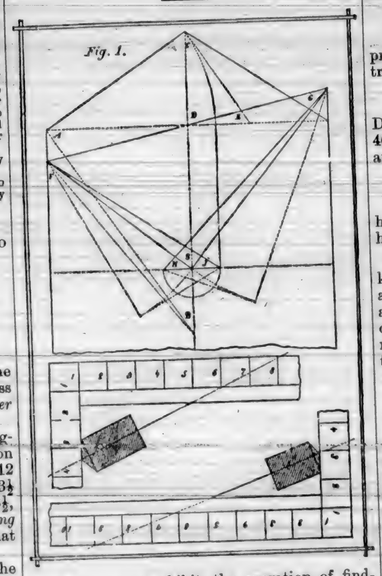
The above is taken from a work entitled, "The Carpenters' Pocket Companion." We will forward a copy of the same to any address upon receipt of ONE DOLLAR.

BUSINESS MANAGER OF ARCHITECT: Can an architect residing in Victoria, B. C., become a member of the Association of Architects in San Francisco. L., New Westminster.

ANS.—The object of the Association is to include every architect on the Pacific slope, British Columbia as well as California.

BUSINESS MANAGER OF ARCHITECT: Will you please explain, in your Everybody's Column, the difference between fire-clay and ordinary clay.
RAVENSWOOD.

"The main chemical difference between fire-clay and ordinary clay is that the former contains no lime or iron. These substances are not objectional for ordinary building brick, but they render the material unfit to resist strong heat, as they cause the brick to vitrify first and to fuse finally, when high temperatures are attained. In physical appearance the fire-clay or *slate-clay* is gray or grayish yellow; massive, dull, or glimmering from admixture of particles of mica. Its fracture is slaty, approaching sometimes to earthy. It is soft, sectile, and easily broken. It adheres to the tongue, and breaks down in water. It occurs along with pit coal. For making fire-brick it is ground, and reduced into a paste with water. Common clay or *loam* is soft to the touch, and forms with water a somewhat tenacious paste, but is in general more compact, more friable, than the plastic clays, which are more readily diffusible in water. Although soft to the touch, the common clay wants unctuosity, properly so called. It is usually of a bluish or blackish color. Those of its strata which effervesce with acids partake of the nature of marl. It is employed in the manufacture of bricks, tiles, and coarse pottery ware."



The above cut exhibits the operation of finding a section of the hip rafters for an obtuse and acute-angled building, with the steel square.

Figure 1.—The plan and elevation of an obtuse and acute-angled building; also, the elevation of the common rafters. Join F S and G S, the plan of the hip rafters. Draw A B and C E at right angles to A C, the common rafter; join B F. To find the lengths of the hip rafters: from the point A as center, with A C as radius, describe an arc; from the point C, and extend to the line H J, join F J and G H, the lengths required.

To find the backing, or section of the hip rafters for the obtuse angle when in position, place the square on the line of the rafter, with the distance A B on the blade, and the distance C D on the tongue; then the tongue gives the angle required. To find the section of the hip rafter for the acute angle, take the distance F B on the blade, and C E on the tongue; then the tongue gives the angle to form the section required.

To find the section or backing of a hip rafter for right-angled buildings, place the square on the line of the rafter, with the length on the blade and the rise on the tongue; then the tongue gives the angle required.

The angle to cut the sides of the common and jack rafters are the same for both. The angle to cut the face of the jack rafters are at H and J. The lengths of the jack rafters are found by dividing the common rafter into as many parts as there are jack rafters required. The horizontal and vertical lines for cutting the hips are shown by the dotted lines drawn from G H and F J.

To find the length of the common rafter A C, place the blade of the square on the line A D; square up twelve inches from the point A to the line A C; then the length from the point of intersection to the point A, multiplied by the number of feet in the line A D, gives the length required; also the horizontal and vertical cuts for the ends of the rafters. The same operation applies to finding the lengths and cuts of braces.

The above is taken from a new work entitled, "Steel Square Problems." A copy of the Steel Square and Its Uses, and Steel Square Problems sent to any address upon receipt of $1.25.

BUSINESS MANAGER OF ARCHITECT: What proportion does the rough lumber cut from a tree bear to the clear lumber.
INQUIRER, Santa Rosa.

ANS.—It varies in different localities. In Del Notre and Humboldt counties, it is about 46 per cent.; in Mendocino, about 56 per cent.; and in Sonoma, 76 per cent.

A "young mechanic" wants us to inform him how to tell whether butts are for left or right hand doors.

Lay the butts on the bench or table with the knuckle-joint towards the right hand. If they are open at the top they are right hand, if open at the bottom they are left hand. A door that opens away from you to the right, is called a right-hand door. If it opens away from you to the left, it is called a left-hand door.

Cistern Water.

We have received frequent inquiries regarding the use of cistern water for drinking purposes. No general reply can be given that will hold good in all cases. Under certain conditions cistern water is found to be very pure, and excepting for the flat, insipid taste, is preferable to most well water. First, then, in considering whether cistern water is fit to drink, we ask whether the roof on which it falls is of tin, wood, lead, or slate. Are any injurious metals employed for gutters or leaders? Is the house surrounded by overhanging trees, from which the leaves collect in the gutters and are washed into the cistern? Do pigeons or fowls frequent the roof, and soil it? For these and other reasons it is not advisable to permit the first washings of the roof to enter the cistern. The cistern itself should be well made, carefully cemented, and thoroughly cleansed at least every two years. It should have free access of pure air, not the air of a cellar, and the pump-pipe should not reach too near the bottom so as to stir up the sediment. It is well to throw into the cistern from time to time a peck of freshly burnt charcoal. One corner of the cistern may be walled off with porous brick, so as to strain the water that passes through, and the pump-pipe may be placed within this little cell. Lead pipe must under no circumstances be placed in a cistern, because lead is attacked by soft water, and here both exterior and interior are exposed to its action. Iron is less objectionable, but it is preferable to have it coated within and without with asphalt varnish, or, better yet, with india-rubber. When cistern water acquires a bad smell, stop using it, except for cooking or making tea. If it is during the dry season, when you cannot afford to pump it out and cleanse it, try the addition of charcoal and forcing air through it. Cisterns ought not to be in close proximity to drains and cess-pools, although they are much safer than wells similarly situated. — *Boston Journal of Chemistry.*

REMOVAL OF STRONG ODORS.—It is said that ground mustard is an excellent agent for cleansing the hands after handling odorous substances, such as cod-liver oil, musk, valerianic acid, and its salts. Scale pans and vessels of various kinds may also be readily freed from odor by the same substance.

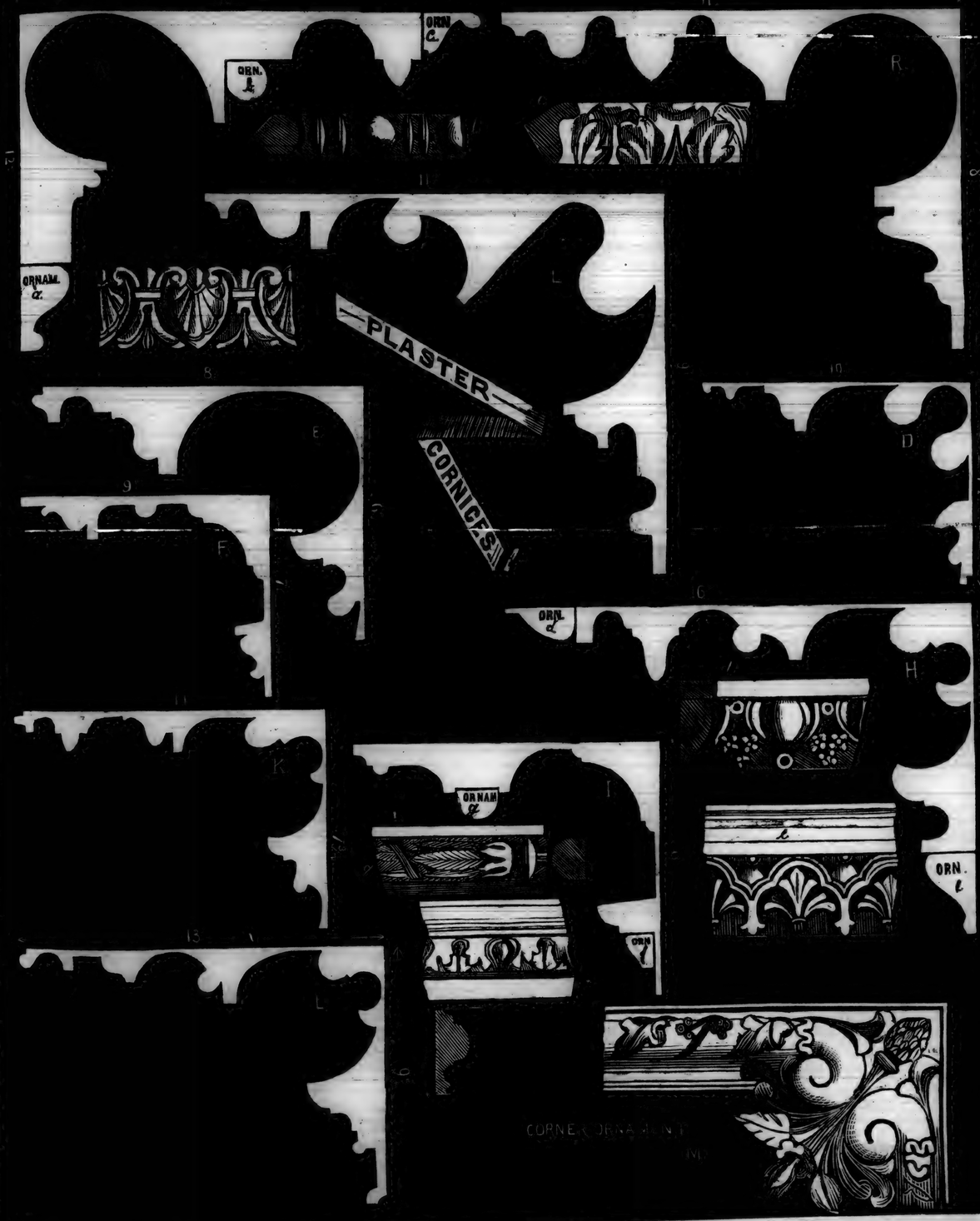


PLATE 1.—PLASTER CORNICES AND ORNAMENTS.

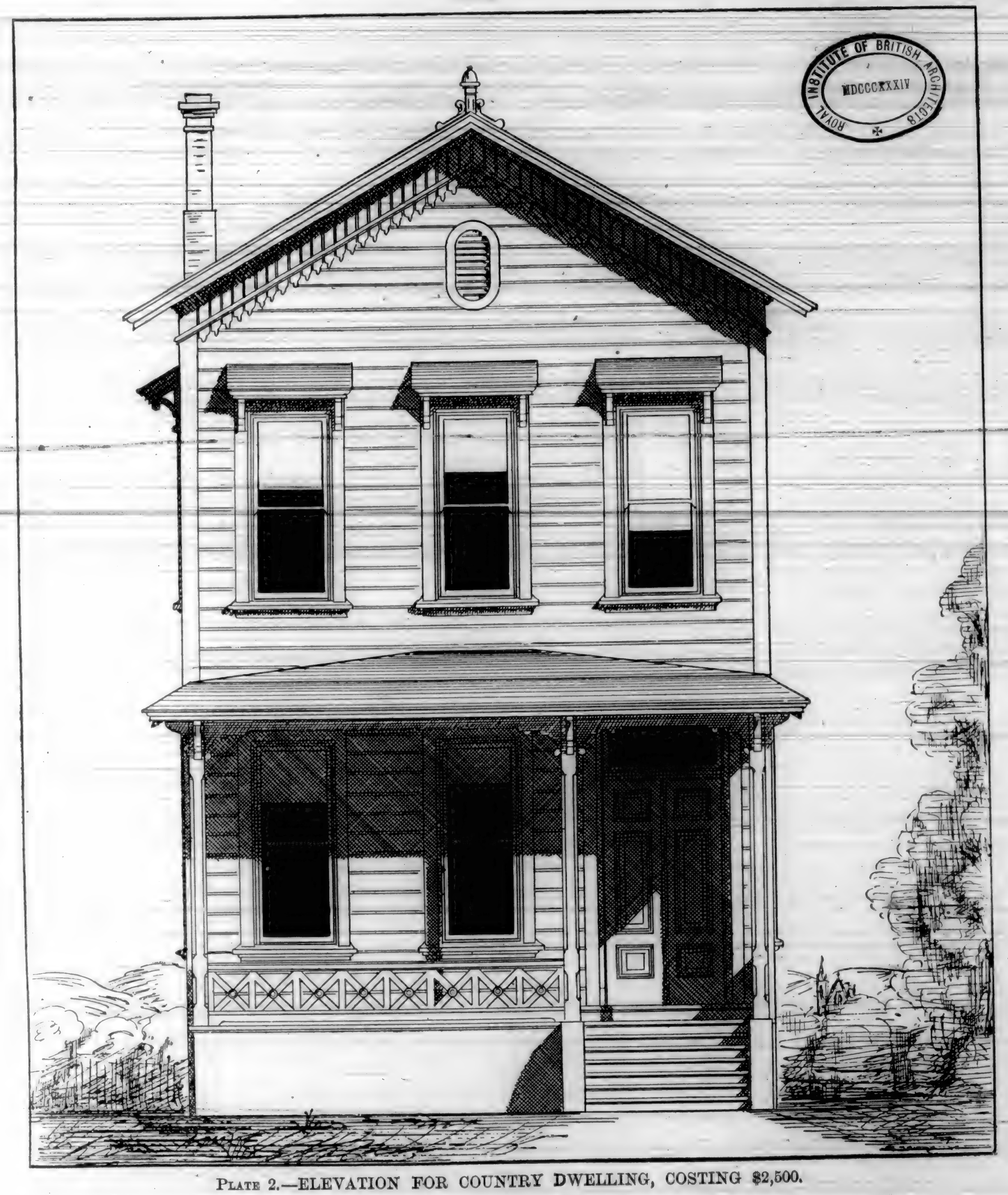


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PLATE 2.—ELEVATION FOR COUNTRY DWELLING, COSTING $2,500.

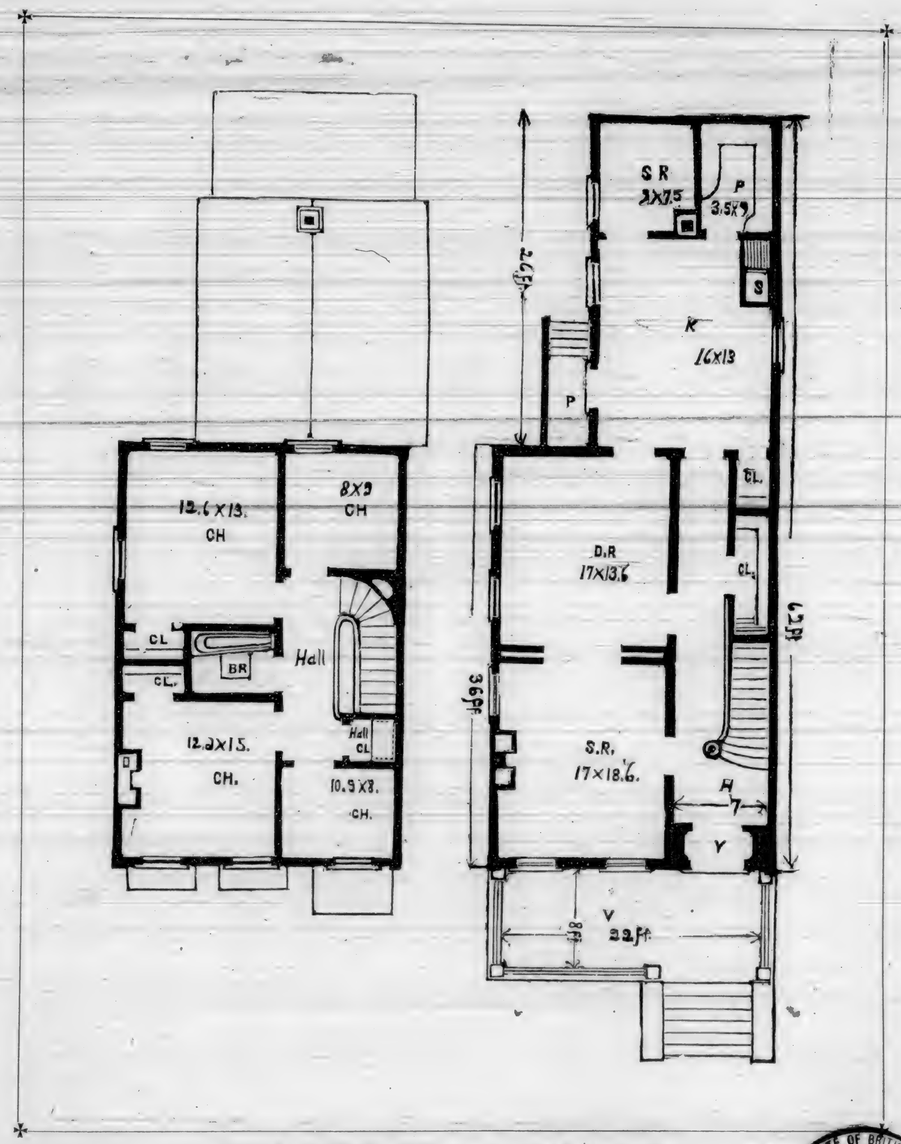

PLATE 3.—GROUND PLAN FOR COUNTRY RESIDENCE.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

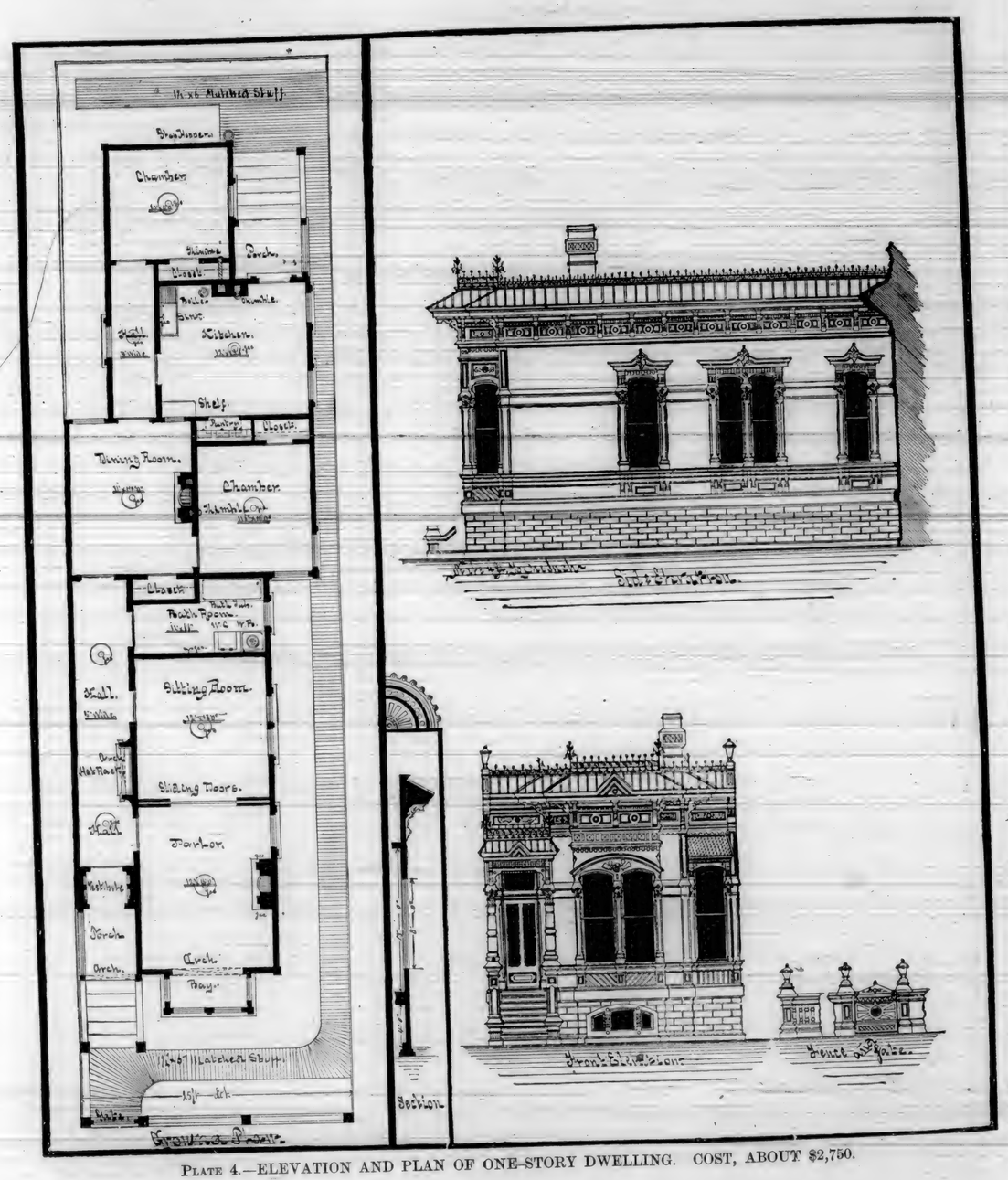

PLATE 4.—ELEVATION AND PLAN OF ONE-STORY DWELLING. COST, ABOUT $2,750.

Architecture in America: Its History up to the Present Time.

Architecture, venerable with ages of honor, yet holds a prominent position in the progress of the world, and puts forth ever and anon new claims to attention. While America remained a colony, there was neither time nor opportunity for the practice of the fine arts. A new country, far removed from all the comforts belonging to an advanced civilization, its early settlers found themselves fully occupied in supplying their immediate wants and protecting themselves from the savage enmity which they had by their exorbitant greediness of gain awakened. When the Revolution was over, however, and the country's independence a foregone conclusion, Congress, in spite of heavy debt, poor credit, and an army of growlers, proceeded to lay out a national capital, and erect buildings. To the nations of Europe they looked for models in architecture, as well as in law and government; and therefore the classic styles, as they are called, then very popular, were at once adopted. The first public building of any note erected in America was the Capitol, at Washington. It is of the Renaissance, and consists of two stories, rising from a lofty basement. The ground plan is a central pavilion, with north and south wings. The principal façade is on the east side, where a portico of Corinthian columns thirty feet in hight fronts the pavilion, while pilasters of the same order are continued along the wings. The right middle columns project so as to admit of another inner row, and these sixteen columns support a noble pediment, adorned with a bas-relief, the subject being allegorical. The approach to this imposing portico is by a flight of broad marble steps. The central portion of the edifice is, for the most part, occupied by a circular apartment, measuring about one hundred feet in diameter and hight, and known as the Rotunda. It is ornamented with paintings and bas-reliefs illustrative of our national history. The paintings are separated from one another by gilded pilasters, which rise to the dome, forming the roof. The pediment of the north wing is especially noticeable for its sculptures, representing America surrounded by a group of figures emblematic of her history and sources of wealth; as, the Pioneer, the Miner, the Indian, Education, etc. The original dome of the Rotunda, which sprung directly from the roofing, has been replaced by one of dimensions corresponding to the present size of the building. Upon a solid octagonal base rests the lofty drum, pierced by two rows of narrow arched windows, separated by pilasters. From the top of the entablature rises a second narrower base, its cornice separated by inverted consoles, and from this spring the ribs of the dome. They are thirty-two in number, and support a lantern. The whole is crowned by a bronze statue of America. This dome, two hundred and forty-one feet in hight, is imposing from its size, and forms the principal feature in every view of the city, and bears a considerable resemblance to the dome of St. Paul's, London—almost equaling the latter in architectural beauty and effect.

Besides the numerous buildings of the Renaissance style erected in Washington, others, not only by the Government, but by banking corporations, commercial houses, etc., have been erected in various parts of the country.

There is much that we can study over in our styles of to-day which may give us some idea of how we actually stand in reference to true taste; for that is founded on unchangeable laws: and that it is so, we should feel thankful, because nothing save a breach of those laws can ever permit us to wander far from the truth; and should we so stray, a consideration of those laws will surely lead us back again to the point from whence we deviated.

The laws we allude to are founded on common sense, and therefore cannot lead us into error by clinging to them.

That the Renaissance is open to a vast deal of objection, there is no doubt, for it will not stand the test of close investigation tried by those laws; so that, although we have gained much by the adaptability of iron to ornamental architecture, we have, through its means, run riot in the field of taste; and in endeavoring to outdo the past, have very likely subjected the present to a charge of absurdity.

In fact, we have suffered our art to become a mere vehicle of whim; a thing of fashion, to be enjoyed for a season, like a lady's bonnet, and then be set aside for some newer fangle, which may become popular, not on account of its intrinsic merit, but by reason of mere novelty. For it is unfortunately the fact that our most sensible architects are compelled to follow in the track of capricious Fashion, or be left lingering and neglected by the wayside. While deploring this state of affairs, we must follow the old saying, "For those who live to please, must please to live."

The truth is—and I shrink not to declare it—that our brethren on this continent do not assert their native independence, nor exercise their inventive taste, which would give them character at home and abroad.

Is there any reason why American architects should not be something more than mere copyists of European models? I think they would undoubtedly be more respected by the age they live in, as well as by ages yet to come, if their works carried more the stamp of originality; in fact, more truly American, unreflected from the other side of the water.

Why, I ask, should we citizens of the wealthiest republic under the sun, both in finance and inventive genius, be compelled to follow in the footsteps of England and the continent of Europe? Why should Charles Eastlake be the dictator and we his diciples in this our latest revival in architecture, if some of the examples which we see occasionally perpetrated in San Francisco by a very few—thank goodness—of our young conceits in this "very latest." I say it is a great misfortune to the public at large, that these ingenious gentlemen cannot all be skewered with antique pins upon one of their "so-called" Eastlake elevations, and sent spinning down the illimitable reaches of eternal bosh. This class of charlatans, who have not the capacity to learn, and who build houses so flimsy the wonder is they don't fall down like a pile of ginger-bread, who start out as architects of some new school or other, and think they are the masters. It would be a charity if some one would curb the vaulting ambition of these pretenders with a hod and shovel, or some other implement of labor.

The rapid strides which our country has taken during the last thirty years lead us to give more attention to the architectural beauty of our edifices. One of these is the use of better materials: brick, stone, and iron, are now principally employed in our cities in such buildings as are intended to be permanent. The use of iron as a building material is confined, for the most part, to the last few years, except in the form of bands and rods to strengthen weak walls, its lightness and cheapness recommending it particularly in roofing. It is also molded into pilasters, columns, etc., for commercial houses and public buildings, but it is far inferior to stone, which it replaces; then again it warps when exposed to fire, and bends under great pressure, so that an iron building cannot begin to compare with the noble stone front.

At the same time, there are some *radical* defects, the most serious of these is the sacrifice of *security* to *cheapness* in the building of walls; a fault, I am happy to say, not so often chargeable upon the architect or builder, as upon the corporation or private individual who authorizes the execution of such work. Then again we are in too much haste, "a fault characteristic of us as a nation"; the consequence is, we resort to shams, and top out these eight-inch walls with entablatures and brackets of painted and sanded redwood, where the red will be cropping out all too soon.

In the erection of dwelling houses we have made much advance within the last twenty years, and no one will doubt the prevalence of an American style, especially the palatial mansions of our railway magnates, mining men, etc., which have been built regardless of expense, and which, though sometimes over-ornamented, seem almost perfect, both in architecture and arrangement.

The time must come sooner or later (and why not now?), when an original *American style* must be born of the national genius; then may the brain of our profession find ample scope for the fullest development of the æsthetic; and in a region so boundless that the sun's course across it marks a semi-circle, surely there is plentiful room for fancy.

We allow all possible credit to the architects of England and France, as well as the rest of Europe, for what they have done and are now doing. But their position in reference to architecture is very different from ours in many respects. Their taste must more or less be governed by the institutions they live under, and the demand upon them to keep alive in their works the history of past ages. The American architect has no such nightmare squatting on his breast. To him the past is as nothing compared to the mighty future. His thoughts are unchained by the commands of rulers; and his *patron* is the *public*, whose favor he must win, but whose extensive liberal opinion is more worthy of his best efforts than the despotic patronage of any emperor or king on the face of the earth.

In our national style we would be governed altogether by the fitness of design. Its fitness for the purpose for which it is to be erected. Its fitness for the locality where it is to stand. Its fitness in the material chosen, not alone as regards strength and durability, but with respect to color also. The fitness of ornamentation is a feature of our national style which should be especially attended to. *Let us have no leaves or flowers that belong not to our soil, no animals that never had an existence, such as griffins, dragons, and the like.* None of these: let everything be American in feeling and effect. Such is my idea of what a national style ought to be.

Does the American architect feel nervous as to his ability to originate such a style, and with the vast amount of information that he has in nobly edited books and accurate engravings, such as no other profession can boast of, to aid him in his glorious task? There is one good and substantial reason for our present conglomerate of architecture. Our nation is made up of many different nationalities, whose architects coming to this country bring with them the ideas of design common in their respective lands; and not alone that, but they keep up those early teachings by importing their country's architectural books and engravings.

English and American architects have taken the publications with which London can so liberally supply them. Let us patronize home industry, and the public will take a growing interest in this departure, and will expect to hear from our professional friends on subjects more akin to ourselves as a people; for no foreigners, as a body, hold the

institutions they have left in such regard as to desire their being transplanted in the architecture of this country. They simply accept this importation of old-time thoughts, for the reason that they find no pure architectural features native to this country of their adoption.

The next important thing, perhaps, in reference to our architecture is to let scientific and constructive skill proceed in their onward course unshackled by considerations of decoration or artistic beauty. Beauty is utility in blossom; and science and art are ever coeval.

The architect must throw the traces around the neck of circumstances, architecture being, like ourselves, very much the creature of circumstances. Art dwells not in any particular class of buildings, or in any particular style, but in the soul of the true artist; and its mission is not to exhibit an old style, but to imbue the necessary construction of the day with life, vigor, and sentiment. No age has been richer than our own in means and appliances, or presented scope for greater originality, and everything points to progress in our architecture—progress in many respects eclipsing anything that has gone before. We cannot again build Egyptian pyramids, Roman amphitheaters, or Greek temples, and we need not regret this; for placing architecture in a higher sphere, bringing it into loftier associations, we may and can build works of which the Roman masters of by-gone ages would have been proud, and at the same time we must not narrow up or pinch our ideas. Adoption of any particular historic style, as the manner of Queen Anne's reign, shows a narrowness of mind and mistaken idea of the true nature of fine art.

We want a style broader than anything that the architecture of Queen Anne's reign suggests, and such is the one in question—a truly American conception, which may include all styles and all periods of art, and be not a little influenced by the ecclesiastical style of the Gothic, which was so highly prized by three of England's leading architects—Barry, Scott, and the late lamented G. R. Street. While other men were studying Virtruvius, Chambers, etc., Barry (who designed the grandest Gothic building in the world, the Palace of Westminster, in London) and his colleagues were studying the inexhaustible beauties of the Gothic style, and like true artists, got hold of an idea, and worked it out; then began the battle of the styles in England. Gothic won the day, and on the heads of our late professionals rests all the glory.

Then, again, all excess is disorder. Dr. Johnson's definition of superstition is, "Religion without reason"; and the *exact proportion*, the "golden mean" in the use of ornament in architecture, as of *wine* in *gastronomy*, will forever be the *true test* of a mature intelligence and a well-balanced judgment; the frivolous and the slip-shod will never understand it.

Living, as we are, in an age of the world when knowledge is strewn broadcast over every country, and inspired with a spirit of emulation spurring us on to excel even the best works of our noble predecessors, surely we may indulge the hope that, after the present fever of gaudy excess and delirium in ornament has spent itself, True Art will be elevated to an honorable distinction above all shams and counterfeits; for notwithstanding our theories of "original sin" or of human depravity, Truth still lives, still rules the world, whether expressed in architecture, religion, or ethics—and the devoted art student, ever walking modestly, tractably, and manfully with *nature* (the loving mother of us all), shall meet his reward in a greater faith, a brighter hope, and a truer love at every progressive step towards the ineffable light of THE OMNISCIENT.

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The readers of this journal will bear testimony to the fact, that we have pursued a course in its conduct calculated to elevate and ennoble the practices of the architectural profession in this city, and to discountenance all jealousies, inharmonies, and unfair procedures; and to cultivate and stimulate those kindly and fraternal relationships which should control and characterize the acts of men assuming the responsible position of architects.

Such being our purposes, reference to professional irregularities becomes exceedingly unpleasant, and it is with regrets that the allusions herein contained are made and justified by well-sustained facts.

The point in issue is the dishonorable effort put forth by some architects to secure engagements. It is *notoriously* the case with *one*, and there are several of the same class, who obtain the greater part of their work through personal and persistent solicitation, and influences other than professional merit in themselves. We *know* of cases in which, after arrangements have been completed between owners and architects, such parties have sought to intervene and disrupt completed arrangements, and by a system of *falsifying* and *misrepresentation*, both as to their own capabilities and integrity, and the qualifications of those against whose just business rights and interests such *mean*, and not too much to add, dishonorable and *dishonest*, procedures have been instituted, to rob others out of secured business engagements. The facts in one recent case will suffice in illustration to show the corruption and baseness existing in some natures. A gentleman having purchased a lot, engaged an architect to prepare plans and specifications. When the preliminary plans were about completed, the owner was called upon by the *notorious* party, who was informed of the fact that an architect had been engaged. Instead of accepting this as conclusive in the matter, this same individual began his *usual* unscrupulous method of sending *influences* to change the owner's determination, and break up the engagement already secured by a brother architect. It was not a contest to win in honorable competition, but an effort to supplant and *cheat* a professional brother out of that which to him possessed a moneyed value; for it must be admitted that when an architect obtains a professional engagement with an owner, it at once becomes a matter of actual cash value, and its loss by the intrigue or connivance of others amounts to nothing less in effect than direct robbery. This state of things is mainly the result of the unregulated surroundings of the profession during past years. The absence of society influences and established rights, rules, and principles of action, have produced in the profession all the irregularities which in the nature of the case must follow when personal interests and caprice alone shape and control in matters which should be regulated by the wise counsel and good judgment of many.

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The following is taken from Mr. Kidder's report to the committee:

In order to ascertain what amount of water the bricks would absorb in their natural condition, two bricks of the same kind as those which were treated with the water-proofing were immersed in water, and at the end of one hour one brick had absorbed 9 7-10 per cent. of its weight of water, and the other 10 per cent. This was all that the bricks would absorb, as the weight of the bricks did not increase after several hours' immersion. To ascertain the effect of freezing on the saturated bricks, one of them was exposed, for a few hours, to a temperature somewhat below the freezing point of water, and the freezing of the water in the bricks burst a piece some three or four square inches in area, and about one-half an inch thick at its thickest part, out of one face of the brick.

To test the protecting qualities of the water-proofing, three of the same kind of bricks, treated on all sides with water-proofing, were immersed in water at a temperature of about 65° Fahrenheit for 70 hours, when no increase could be detected in the weight of the bricks due to immersion.

One of the bricks was afterwards immersed in water which was for a short time at a temperature of 78° Fahrenheit, and at the end of 43 hours it had absorbed 6-10 of one per cent. of its weight of water. After 120 hours further immersion in water at 65° Fahrenheit, it had absorbed 1 7-10 per cent. of its weight of water. This brick had several small cracks in it, through which this small amount of water probably entered the brick.

Two other bricks of the same kind, treated on all sides, were immersed in water at 65° Fahrenheit for 1½ hours without absorbing any water.

In 45 hours' immersion one brick absorbed 8-10 of one per cent. of its weight of water, while the other brick absorbed no water at all.

During sixteen days' immersion the brick which before had absorbed a small amount of water took up 1 3-10 per cent. of its weight of water, while the other brick took up only 7-10 of one per cent. of its weight of water. Both of these bricks had a large number of small cracks, and it was probably in these cracks that the small amount of water taken up by the bricks was contained.

The results of these tests may be summed up as follows:

Bricks *not* treated with water-proofing were entirely saturated after one hours' immersion, when they contained about 1-10 of their weight of water.

Three bricks treated on all sides with the water-proofing solution absorbed *no* water during 70 hours' immersion in water at the ordinary temperature.

Two bricks during sixteen days' immersion absorbed 1-144 and 1-73 of their weight of water respectively. The protecting power of the water-proofing is destroyed by immersing bricks treated with it in water at a higher temperature than 100° Fahrenheit, and probably even at a temperature of 85°. But bricks in ordinary situations would never be subjected to the presence of water at such high temperatures. The bricks tested were treated with water-proofing about two months before the tests were made.—*American Architect.*

Ventilation.

With respect to ventilation, it is the thing that the natural man abhors. In reference to it, I feel inclined to paraphrase that which has been said about charity, namely, that it is an emotion of the mind in which A never sees B in want, without desiring to relieve him, not with the goods of A, but with the goods of C. Similarly, it may be said that when A feels the atmosphere of a room stuffy, he desires it to be changed, not at the risk of himself, A, catching cold, but at the risk of B, or any person other than A. If a proof of this were wanted, let me refer you to any assembly where there is some big man whose orders are taken—a judge on the bench, or a chairman of a meeting. What is the direction to the attendant when the judge or chairman feels there is a need of ventilation? "I feel the air of this court or room very close; open two of those windows down there;" not "open two of the windows near me." The big man, with the natural fear of ventilation, lets somebody else bear the burden, while he himself gets the benefit. It is very rarely, indeed, that the man "down there" has either the readiness or the courage to protest. The only instance that occurs to me of the kind is that of Sydney Smith, when, as a curate, sitting at a dinner largely attended by the higher orders of the clergy, he said to the waiter, who was about to open a window close by, "Don't give me my death of cold; open one behind a bishop."—*Sir F. J. Bramwell, to the Society of Arts.*

Electrical Ball Finding.

Professor Bell has submitted to the Paris Academy another electric method (in addition to that of the induction balance) for detecting a projectile in the human body. It consists in inserting a fine needle near where the ball is supposed to be. This needle being connected by wire with one terminal of the telephone, while a metallic plate laid on the skin is connected with the other terminal, when the point of the needle reaches the ball a current arises (the ball and the metallic plate naturally forming a couple), and a sound is heard in the telephone. The needle may be inserted in several places with little pain, and the pain may be prevented by means of ether spray. The method has been tested on a piece of beef containing a ball. Contact of the needle with bone gave no sound, but there was a distinct sound whenever the ball was reached. The arrangement may be modified by introducing a vibrator into the circuit; a musical sound is then heard when the needle meets the ball. The circuit may also comprise a weak battery. In this case there is a sound from the moment the needle enters the skin; but at contact with the ball the sound is greatly intensified.

institutions they have left in such regard as to desire their being transplanted in the architecture of this country. They simply accept this importation of old-time thoughts, for the reason that they find no pure architectural features native to this country of their adoption.

The next important thing, perhaps, in reference to our architecture is to let scientific and constructive skill proceed in their onward course unshackled by considerations of decoration or artistic beauty. Beauty is utility in blossom; and science and art are ever coeval.

The architect must throw the traces around the neck of circumstances, architecture being, like ourselves, very much the creature of circumstances. Art dwells not in any particular class of buildings, or in any particular style, but in the soul of the true artist; and its mission is not to exhibit an old style, but to imbue the necessary construction of the day with life, vigor, and sentiment. No age has been richer than our own in means and appliances, or presented scope for greater originality, and everything points to progress in our architecture—progress in many respects eclipsing anything that has gone before. We cannot again build Egyptian pyramids, Roman amphitheaters, or Greek temples, and we need not regret this; for placing architecture in a higher sphere, bringing it into loftier associations, we may and can build works of which the Roman masters of by-gone ages would have been proud, and at the same time we must not narrow up or pinch our ideas. Adoption of any particular historic style, as the manner of Queen Anne's reign, shows a narrowness of mind and mistaken idea of the true nature of fine art.

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Expansion of Cement and Concrete.

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The following is taken from Mr. Kidder's report to the committee:

In order to ascertain what amount of water the bricks would absorb in their natural condition, two bricks of the same kind as those which were treated with the water-proofing were immersed in water, and at the end of one hour one brick had absorbed 9 7-10 per cent. of its weight of water, and the other 10 per cent. This was all that the bricks would absorb, as the weight of the bricks did not increase after several hours' immersion. To ascertain the effect of freezing on the saturated bricks, one of them was exposed, for a few hours, to a temperature somewhat below the freezing point of water, and the freezing of the water in the bricks burst a piece some three or four square inches in area, and about one-half an inch thick at its thickest part, out of one face of the brick.

To test the protecting qualities of the water-proofing, three of the same kind of bricks, treated on all sides with water-proofing, were immersed in water at a temperature of about 65° Fahrenheit for 70 hours, when no increase could be detected in the weight of the bricks due to immersion.

One of the bricks was afterwards immersed in water which was for a short time at a temperature of 78° Fahrenheit, and at the end of 43 hours it had absorbed 6-10 of one per cent. of its weight of water. After 120 hours further immersion in water at 65° Fahrenheit, it had absorbed 1 7-10 per cent. of its weight of water. This brick had several small cracks in it, through which this small amount of water probably entered the brick.

Two other bricks of the same kind, treated on all sides, were immersed in water at 65° Fahrenheit for 1½ hours without absorbing any water.

In 45 hours' immersion one brick absorbed 8-10 of one per cent. of its weight of water, while the other brick absorbed no water at all.

During sixteen days' immersion the brick which before had absorbed a small amount of water took up 1 3-10 per cent. of its weight of water, while the other brick took up only 7-10 of one per cent. of its weight of water. Both of these bricks had a large number of small cracks, and it was probably in these cracks that the small amount of water taken up by the bricks was contained.

The results of these tests may be summed up as follows:

Bricks *not* treated with water-proofing were entirely saturated after one hours' immersion, when they contained about 1-10 of their weight of water.

Three bricks treated on all sides with the water-proofing solution absorbed *no* water during 70 hours' immersion in water at the ordinary temperature.

Two bricks during sixteen days' immersion absorbed 1-144 and 1-73 of their weight of water respectively. The protecting power of the water-proofing is destroyed by immersing bricks treated with it in water at a higher temperature than 100° Fahrenheit, and probably even at a temperature of 85°. But bricks in ordinary situations would never be subjected to the presence of water at such high temperatures. The bricks tested were treated with water-proofing about two months before the tests were made.—*American Architect.*

Ventilation.

With respect to ventilation, it is the thing that the natural man abhors. In reference to it, I feel inclined to paraphrase that which has been said about charity, namely, that it is an emotion of the mind in which A never sees B in want, without desiring to relieve him, not with the goods of A, but with the goods of C. Similarly, it may be said that when A feels the atmosphere of a room stuffy, he desires it to be changed, not at the risk of himself, A, catching cold, but at the risk of B, or any person other than A. If a proof of this were wanted, let me refer you to any assembly where there is some big man whose orders are taken—a judge on the bench, or a chairman of a meeting. What is the direction to the attendant when the judge or chairman feels there is a need of ventilation? "I feel the air of this court or room very close; open two of those windows down there;" not "open two of the windows near me." The big man, with the natural fear of ventilation, lets somebody else bear the burden, while he himself gets the benefit. It is very rarely, indeed, that the man "down there" has either the readiness or the courage to protest. The only instance that occurs to me of the kind is that of Sydney Smith, when, as a curate, sitting at a dinner largely attended by the higher orders of the clergy, he said to the waiter, who was about to open a window close by, "Don't give me my death of cold; open one behind a bishop."—*Sir F. J. Bramwell, to the Society of Arts.*

Electrical Ball Finding.

Professor Bell has submitted to the Paris Academy another electric method (in addition to that of the induction balance) for detecting a projectile in the human body. It consists in inserting a fine needle near where the ball is supposed to be. This needle being connected by wire with one terminal of the telephone, while a metallic plate laid on the skin is connected with the other terminal, when the point of the needle reaches the ball a current arises (the ball and the metallic plate naturally forming a couple), and a sound is heard in the telephone. The needle may be inserted in several places with little pain, and the pain may be prevented by means of ether spray. The method has been tested on a piece of beef containing a ball. Contact of the needle with bone gave no sound, but there was a distinct sound whenever the ball was reached. The arrangement may be modified by introducing a vibrator into the circuit; a musical sound is then heard when the needle meets the ball. The circuit may also comprise a weak battery. In this case there is a sound from the moment the needle enters the skin; but at contact with the ball the sound is greatly intensified.

Market Reports.

LUMBER.—Fair demand, steady supply, prices firm, is all we can chronicle.

Receipts since January 1st, 1882:

Lumber	19,428,450
Shingles	5,185,500
Laths	3,308,500

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	32 50
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	35 00
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping, per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths, per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts, per piece	17½

Redwood.

Rough Merchantable, per M feet	22 50
" Refuse "	18 50
	25 00
Surface No. 1 "	32 50
" 1 x 6 "	27 50
" No. 2 "	32 50
Rustic, No. 1, 1 x 8 "	35 00
" No. 1, 1 x 10 "	30 00
" No. 2 "	30 00
" Under 10 feet "	35 00
T. & G., 1¼ x 4 and 1¼ x 6 "	32 50
" 6 in. 12 ft. and over "	30 00
" 7 to 11 feet "	27 50
" under 7 feet "	27 50
" No. 2 "	35 00
T. & G., Beaded, 12 feet and over "	30 00
" 7 to 11 feet "	27 50
" under 7 feet "	30 00
Half-inch Surface "	27 50
Pickets, Fancy "	20 00
" Rough, Pointed "	17 50
" Square "	25 00
Siding, ½ inch per M	2 50
Shingles "	1c
Battens, ½ inch, lineal feet "	

NAILS.—Remain the same as last month. Since January 1st, 1882, we have imported 8,480 kegs.

10 to 60 pennies, are quoted at	$4 25
8 " "	4 50
6 " "	4 75
5 and 4 " "	5 25
4 and 5 pennies, brad heads, at	5 50
6 " "	5 75
8 " "	6 00
10 and upward "	5 25
3 penny fines "	7 75

PAINTS.—The PIONEER is the only brand quoted, as its excellent qualities, and the fact that it is strictly a home production, has about driven all other brands out of market.

We quote Pioneer White Lead 8½ cts. per lb.

Unpropitious Weather.

The severe north winds which have so largely prevailed during the past six weeks, without sufficiency of rain to counteract their bad effects, have materially checked the progress of contemplated improvements in San Francisco. The quantity of rain that has thus far fallen is far below the average for the same extent of usual wet season, and unless copious showers descend in time to compensate for the lack thus far experienced, the winter of 1881–82, may be numbered among the dry seasons in California.

That such should be the case is greatly to be regretted. As full recovery from the depression of former years, and a return to wonted prosperity only fairly set in with 1881, we are scarcely prepared for a set back by reason of an unpropitious season, or otherwise. Still it is not too late for an abundance, and we hope and trust that the later rains may fully atone for the lightness of the early showers. The prevalence of the north winds is quite as much to be regretted as the limited supply of rain.

Steel Square Problems. A new work explaining the uses of the Steel Square. Sent postpaid to any address upon receipt of 50 cents.

Building Intelligence.

Very few contracts have been let this month, or in fact this year, so far. 1882 has started in very poorly compared with 1881, in the number of buildings being erected. The dry weather has, no doubt, caused some to wait awhile before erecting dwellings. The high prices of lumber, hardware, and other materials have caused the non-erection of several dwellings that have been *figured on*, estimates being too high to meet owners' views. Such contracts as have been signed during the month will be found below.

SAN FRANCISCO.

Excavations and brick foundation for two-story and basement dwelling on southeast corner of Post and Gough. Owner, Jacob Levi, Sen.; architects, Wolfe & Son; contractors, Byron Bros.; cost, $1,100.

Three-story frame building with brick basement on northwest corner of Powell and Post. Owner, J. W. Williams; architect, H. D. Mitchell; contractor, R. P. Hurlbut; cost, $10,000.

Two-story tenement frame building on the north side of Ellis, between Laguna and Octavia. Owner, Jerome English; architects, Curlett & Eisen; contractor, David Perry; cost, $4,000.

Two-story frame dwelling on south side of California street, between Buchanan and Laguna. Owner, C. P. Blethen; architects, McDougall & Son; contractor, T. H. Day; cost, $7,000.

Two-story frame dwelling on southwest corner of Fair Oaks and Twenty-first streets. Owner, S. W. Dick; architects, McDougall & Son; contractor, J. Furness; cost, $5,000.

Repairs and alterations to building on northeast corner of Sansome and Pacific. Owner, R. H. McDonald; architect, J. Marquis; contractor, B. F. Ellis; cost, about $10,000.

Two-story frame dwelling on corner of Twenty-fourth and Sanchez. Owner, J. M. Cohen; architect J. Gosling; contractor, J. Martin; cost, $3,000.

Additions to brick building on Pine street, between Kearand Montgomery. Owner, ——Hennessey; Days' work.

One-story frame dwelling on Kisling street, between Eleventh and Twelfth. Owner, J. E. Tosney; architect, J. T. Kidd; contractor, T. Sullivan; cost, $1,287.

Two-story and basement frame dwelling on Jackson street, between Octavia and Laguna. Architects, Wright and Sanders; contractor, J. Robinson; cost, about $12,000.

Two-story frame building—stores and dwelling—on Post street, west of Polk. Owner, Levi Straus; architect, J. P. Gaynor; contractors, Bowles and Darrow; Cost, about $6,000.

Contract for carpenter work on Blythe's building has been let to Thos. H. Day. About $35,000.

Two-story frame building on corner of Fifteenth and Mission. Owner, ——McNicol; contractor, ——Laherty; cost, $3,500.

Two-story frame building on Scott street, between California and Sacramento. Owner, W. E. Norwood; architect, J. Marquis; contractor, W. M. Fletcher; cost, $5,500.

Northwest corner of Lake and Second Avenue. Two-story frame dwelling with basement. Owner, Mrs. A. De Watson.

Frame building on corner of California and Fourth Avenues. Owner, Jos. Colando.

South San Francisco. On Fifth Avenue. A two-story frame building to be used for a manufactory. Owner, J. Bouile. Days' work; cost, about $2,000.

FRESNO.

One-story and basement frame dwelling at Washington Colony. Owner, Geo. Rowell; contractor, C. F. Carlson; cost, $2,000.

One story and basement frame dwelling. Owner, Chas. Burke; contractor, C. F. Carlson; cost, $1,400.

One story frame dwelling. Owner, Judge Holmes; architect, ——Atkinson; contractor, ——Madera; cost, $2,500.

One-story frame dwelling. Owner, Dr. Graves; cost, $1,700.

One-story frame cottage. Owner, E. Hall; architect, W. J. Beers; Days' work; cost, 3,000.

Two-story and basement brick building on Mariposa street for stores and offices. Owners, M. J. Donahue and others; architect, W. H. Donahue; contractor, ——Clifford; cost, $15,000.

NEWARK.

Tank Building, tanks, etc. Owner, E. A. Davis; architect, H. Geilfuss; carpenter work, J. Lenzen; brick work, ——McCarthy; cost, about $5,000.

BERKELEY.

Frame dwelling for C. L. Storch. Builder, C. Beardslee, cost, $1,700.

RIVERSIDE.

Two-story frame dwelling on Brockton Avenue. Owner, Capt. B. B. Handy; cost, $2,500.

Two-story brick building on Main street. Owner, S. J. Branch; cost, $2,500.

WOODLAND.

One-story residence on North Court street. Owner and builder, Al. Sears.

CHICO.

Building for a flour mill. Owners, Hubbard and Shand; contractor, L. Hansen.

Publication Notices.

The Mechanic's SLIDE RULE, *and How to Use It*, by Fred. T. Hodgson, contains a number of valuable rules for its use, measurements of timbers, etc. Price 25 cents.

LAKEY'S VILLAGE AND COUNTRY HOUSES, containing one hundred pages of designs, is one of the best of its kind published. The illustrations are neatly executed, and of practical modern design; and many of them suitable for adoption on the Pacific coast. We heartly recommend it as worthy a place in every gentleman's library who enjoys a taste for architectural matters, as well as to all architects and builders.

THE ART AND SCIENCE OF CARPENTRY MADE EASY, by William E. Bell, *revised and enlarged edition*, published in 1881, is a book of great merit, and should be read and studied by every carpenter. Too many of our working-men are content with "knowing enough for all practical purposes," overlooking the great fact, that by reading and studying instructive books much more of valuable information may be obtained, which would so far simplify the daily manipulations of material as to remove or render easy of comprehension, the difficult problems which sometimes arise, adding perplexities to the toils of the day. Price $5.00.

All books noticed in these columns can be had at publishers prices at this office.

"*Practical Lessons in Architectural Drawings*, by William B. Tuthill, A. M., Architect, published by Comstock, N. Y., is one of the most practical and useful books of its kind that we have noticed. It contains 33 full-page plates of illustrations (one in colors), and 33 wood-cuts, showing methods of construction and representation."

"*This book was suggested by the frequent call for a work of a restricted technical character, one which would give to the student who already has some knowledge of geometrical drawings, the information necessary to properly prepare his work for the mechanic.*"

It may also be read with advantage by many *practicing* architects, who judged by their delineations in construction, have as yet learned but little correctly. Copies can be had at this office, at publisher's prices. $2.50.

"*Sewer-Gas and its Dangers*," by George Preston Brown, is one of the best practical books on the subject published. Every plumber, architect, and owner should have a copy. It treates the subject handled vigogously and practically. Price $1.25.

We have received new invoices of "The Art of Saw Filing," by Holly, and the "Workshop Companion," both valuable and instructive little works, copies of each of which should be in the hands of every mechanic. Prices $1, and 35 cents, respectively.

Copies of all the works from time to time noticed in this journal may be had at this office at publisher's prices. When stamps are remitted for books or subscriptions to this journal, our friends will oblige by sending the two-cent denomination, or one-cent and three-cent if the two-cent are not obtainable. The larger denominations are inconvenient.

Palliser, Palliser & Co.'s Useful Details.—Since their introduction in our catalogue of useful publications, the sales have been large. We have a full supply on hand. Sold at publisher's price, $3.00 each set, 20x26 inches, with 40 pages of detail drawings.

A supply of all books mentioned in our catalogue constantly on hand.

Cameron's Plasterers' Manual.—While all its suggestions may not harmonize with our California practice, it is "an invaluable book of reference, containing many useful instructions which cannot be retained in the memory; such as tables, dimensions, capacity of cisterns, weights, measures, etc. Price, 75 cents.

The Art of Saw-Filing, by H. W. Holly. A really valuable treatise on the subject named. Every carpenter should secure a copy. But few mechanics know how to file saws properly, and those who perchance may be proficient can give no special rule for the result. Thousands of dollars are wasted every day by saws not being properly filed and set, and whole volumns of oaths are repeated, caused by the vexations attending irregular and ill-shaped saw teeth. Correct saw-filing is an essential to good work and the workman's comfort. Price, 75 cents.

The Carpenters' Manual, by John D. Edwards. A very useful little book, containing a large range of practical ideas in connection with mechanical studies. Carpenters and builders will find it of much more value than its cost—50 cents.

Modern Architectural Designs and Details, published by William F. Comstock, successor to Bricknell & Comstock, in 10 parts, makes—bound—a very handsome and valuable book of designs for houses, and plates of details, useful alike to architects and builders. The "parts," or numbers, separately, can be had at this office, at publisher's price, of $1 each, or the ten "parts" neatly bound for $10. All other books on architecture, steel square, and all other subjects, can be had through this office at publisher's rates. Orders from all sections of this western coast, and places bordering upon the waters of the Pacific Ocean, filled with promptness.

The Steel Square and Its Uses, by F. T. Hodgson, is an excellent little book, which should be in the hands of every carpenter. It contains numerous illustrations and treatises upon the Square, and excellent information for those who have not acquired a *full* knowledge of the use of that important mechanical instrument. Wise heads, who "know it all," do not need this or any other work or advice; but men who "live to learn," will find much in its pages to instruct them. Price, 75 cents; to be had at this office at publisher's price.

The Work-Shop Companion is full of valuable information to mechanics, housekeepers, and all classes, in the form of receipts, rules, methods, processes, etc., for almost everything in general use in workshops and households. Price, 35 cents; to be had at this office at publisher's price.

The California Architect and Building News.

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BACK NUMBERS OF THIS JOURNAL.

Since we commenced our series of articles on the HISTORY, DESCRIPTION, AND USES OF THE STEEL SQUARE, we have had an unusual demand for back numbers containing said articles. We regret to say that we have on hand but a

☞ FEW NUMBERS ☜

of each month, counting from last September, and would advise those who want a complete series of this journal to send AT ONCE for any copies necessary to make their set complete.

BOUND VOLUMES.

Bound Volumes of 1881 are now ready for delivery. Sent postpaid to any part of the United States upon receipt of $2.50.

A limited number of Bound Volumes of 1880 on hand, to be had at the same price.

Illness of the Editor.

It is with much regret that we announce the serious illness of the senior editor of this journal. On the 19th of February he contracted a very severe cold, which in a few days settled into a serious attack of pneumonia. Erysipelas soon after made its appearance, and for a while it was in much doubt whether he would survive the disease. Skillful doctors and tender nursing, aided by a robust constitution, gained the mastery, and we are happy to announce that upon the date of this issue, he is well enough to sit up and converse with his friends.

We cannot but thank his many professional brethren who have called upon him during his sickness for the kind welfare they have expressed for his recovery. From the nature of the disease they have not been permitted to see him, but the kind words left on their cards will be the source of much gratification and pride when he peruses them, when fully restored to health. It shows the esteem in which he is held when scores of inquiries have been made each day upon his recovery.

We have done the best we could in this issue to keep up the high standard of this journal to which the senior editor has always endeavored to maintain since its inception. The earnest articles which have appeared month after month from the pen of the sick journalist will of course be missed. But we have the proud satisfaction of knowing that we have *tried* to approach the editor's style of writing, and hope that all shortcomings will be passed over. Our experience in the business department of this journal has been of much benefit to us in this emergency, and we lay this issue before our many readers, assuring them that with the large corps of writers we have at our command, and with the return of the editor to his usual good health, the great goal of his ambition will ultimately be reached; viz., the universal adoption of the CALIFORNIA ARCHITECT AND BUILDING NEWS by architects, mechanics, and the public generally, as the leading paper on the Pacific coast in regard to mechanical, architectural, and scientific matters generally.

We are happy to state, just before going to press, that the editor has so far recovered as to be able to sit up and converse freely with his friends. His physicians assure us that he is entirely out of danger, and in the course of another week will be able to appear again in his sanctum.

When oil is heated sufficiently in a closed vessel from which the air is excluded, it turns to gas, which occupies many times the bulk that the oil did. This is the philosophy of pop-corn, and explains its tendency to burst into curious forms on being roasted.

"Eastlake."

Desiring to convince himself that the *monstrosities* denominated "Eastlake" by some of the architects in this city had no connection whatever with the unique and beautiful designs projected by Charles L. Eastlake, of Leinster Square, London, the editor of this journal, forwarded to the gentleman whose name has been given to the "NEW STYLE," a copy of our criticism on said style (as published in October number, 1881), together with designs of so-called Eastlake houses. Mr. Eastlake kindly answered the letter with permission to publish his views.

"* * * *Judging from the specimens I have seen illustrated may be said to* BURLESQUE *such doctrines of art, as I have ventured to maintain by criticism of modern works, or deduced from the study of ancient examples.*"

The above quotation at once expresses the tenor of the letter, and his opinion of the samples sent to him of the travesties on his style.

We defer publishing the letter in full until our next issue, on account of the illness of the senior editor. He has spent much time and study on this subject, and we know his views will be much more acceptably received by the numerous readers, who look with pleasure to the monthly appearance of his earnest articles in this journal.

Pacific Coast Association of Architects.

The regular monthly meeting of this association was held in the rooms of the Art Association on Friday evening, March 3rd. Vice-President John Wright presided, in the absence of the President.

Mr. J. C. Cebrian was elected a member of the association.

The secretary was instructed to insert in the notices of the next meeting that the meeting would consider the advisability of at once becoming a chapter of the American Institute of Architects. Also that a nominating committee would be appointed for the purpose of selecting officers for the ensuing term.

Interesting remarks followed, in which all present took part, showing the benefit this association has already been in keeping up the dignity of the profession, and by a thoroughly understood schedule of rates, enable the client and architect to agree at once upon the value of service rendered.

Meeting adjourned to meet on the first Friday in April.

TO IMPROVE POOR DRAWING-PAPER.—To size poor drawing-paper, take 1 oz. of white zinc, 1 oz. of white soap, and ½ oz. of alum. Soak the glue and the soap in water until they appear like jelly, then simmer in 1 quart of water until the whole is melted. Add the alum, simmer again, and filter. To be applied hot.

CO-PARTNERSHIP NOTICE.

WOLFE & SON, ARCHITECTS.

From and after this date, my son, George H. Wolfe, will have an equal interest with me in the **ARCHITECTURAL BUSINESS**, *conducted by me singly for the past three years, under the firm name of Wolfe & Son. He will also have an equal interest in the* **CALIFORNIA ARCHITECT AND BUILDING NEWS.**

JAMES E. WOLFE.

San Francisco, March 1st, 1882.

Interesting to Architects.

Two decisions of interest to architects and builders have just been delivered by the French Cour d' Appel. The first is simply a reiteration of the principle so often affirmed by the English courts, that when a penal clause has been incorporated in a contract, obliging the contractor to pay a stipulated sum as ascertained damages for every day of delay beyond a fixed time, this clause must be sustained, as being the expression of the free intention of the parties, and the court can do no more than determine the actual number of days' delay chargeable to the contractor. The other decree applied to a case in which a dealer, who had furnished supplies to a sub-contractor for public work, on the bankruptcy of the sub-contractor applied to the principal contractor for his pay, on the ground that the agreement entered into on behalf of the State prohibited all sub-contracts, and provided that in case any such were made the principal contractor, together with his "caution," or forfeit money, should be held answerable for the work which he had delegated to another. The court held that this clause was intended simply as a guaranty to the State of the responsibility of the principal contractor, whether he made sub-contracts or not, and did not render him accountable to third parties, who had contracted with his sub-contractor, but between whom and himself there existed no legal relation.—*American Architect.*

Chimneys and Flues.

The importance of careful workmanship in the erection of chimneys is clearly demonstrated by the almost numberless conflagrations which from time to time have had their origin in "defective flues." Still these often-repeated warnings have but little effect upon the *careless class* of chimney builders, who are reckless to all after consequences, and rush their work through with no other concern than to reach payment for their labor.

There are doubtless hundreds, and perhaps thousands, of houses in San Francisco, and all large cities, which daily barely escape destruction by fire from the many unfilled joints in the brick-work of chimneys, particularly the cheaper class of buildings erected upon the economy principle, in the erection of which, for the sake of saving a few dollars, owners engage the *cheapest* man, asking no questions as to mechanical competency, beyond the volunteer statement of the parties that they "do first-class work," and with whom everything is first-class.

Nor do those who have suffered the loss of millions of dollars in payment of insurance policies exercise prudent concern in this connection. If there was a law compelling owners to produce the certificate of a competent chimney inspector, before an insurance company would accept risks, particularly upon frame buildings, fires from defective flues and chimneys would seldom happen.

Neither do owners of property sufficiently realize the risks that exist in connection with this feature of house construction. Contentment follows the laying up of bricks and mortar in the shape of a chimney, by all parties concerned, without any special practical anxiety in reference to the manner in which the work is done; and if the chimney builder is careless or incompetent, he may leave one or forty cracks and holes, either of which being sufficient, under certain circumstances, to furnish a means of communicating fire to the wood-work. Still these facts create no special or general attention; and the erection of defective chimneys and flues goes on daily, and thousands of conflagrations follow; and owners of property and insurance companies remain unconcerned, until fire after fire from this prolific cause destroys property, and insurance companies are called upon to foot the loss.

Security in this matter is both possible and practicable: first in the engagement of really competent masons to do the work—men who realize the contingencies involved in the careless laying of a single brick, or a single unfilled joint; and secondly, every chimney built should be plastered on the *outside*, as well as in the flues. The expense of this extra yet necessary precaution against defects would add but little to the cost of a building, and would afford positive security.

One Benefit from Dry Seasons.

The lands of this State most subject to drouth would never be provided with facilities for irrigation were it not for occasional dry years. These force irrigation problems to the front, and cause irrigating ditches to be built. We are undoubtedly indebted to dry years for all the irrigating canals and ditches that now exist in the State. Nor is this all. The land never gets a rest only when a dry year gives it one. It is constantly harrassed to produce the same crops, year after year. There is no rotation and no use of fertilizers. The quality of the land therefore rapidly deteriorates—an occasional dry year alone helps it, by giving it a rest. More tree and orchard planting is always done after a dry year, too, for the moisture-protecting and very beneficial aid of trees in warding off the effects of dry north winds, are always most plainly seen in a dry year. We do not mean to say that this season will be a notably dry year, for it will not be by any means. Present appearances indicates that we will have a full average harvest, taking the State as a whole. The crops look well in the Sacramento, Sonoma, Napa, and many other valleys. The rain which fell, came down in such gentle, soaking showers, that none of it was lost. The crops in the most of the San Joaquin Valley will be a failure, and the season will be a disastrous one for sheep and cattle in the most of the southern and southeastern counties. This, we believe, is the worst that can at present be said.—*Real Estate Circular.*

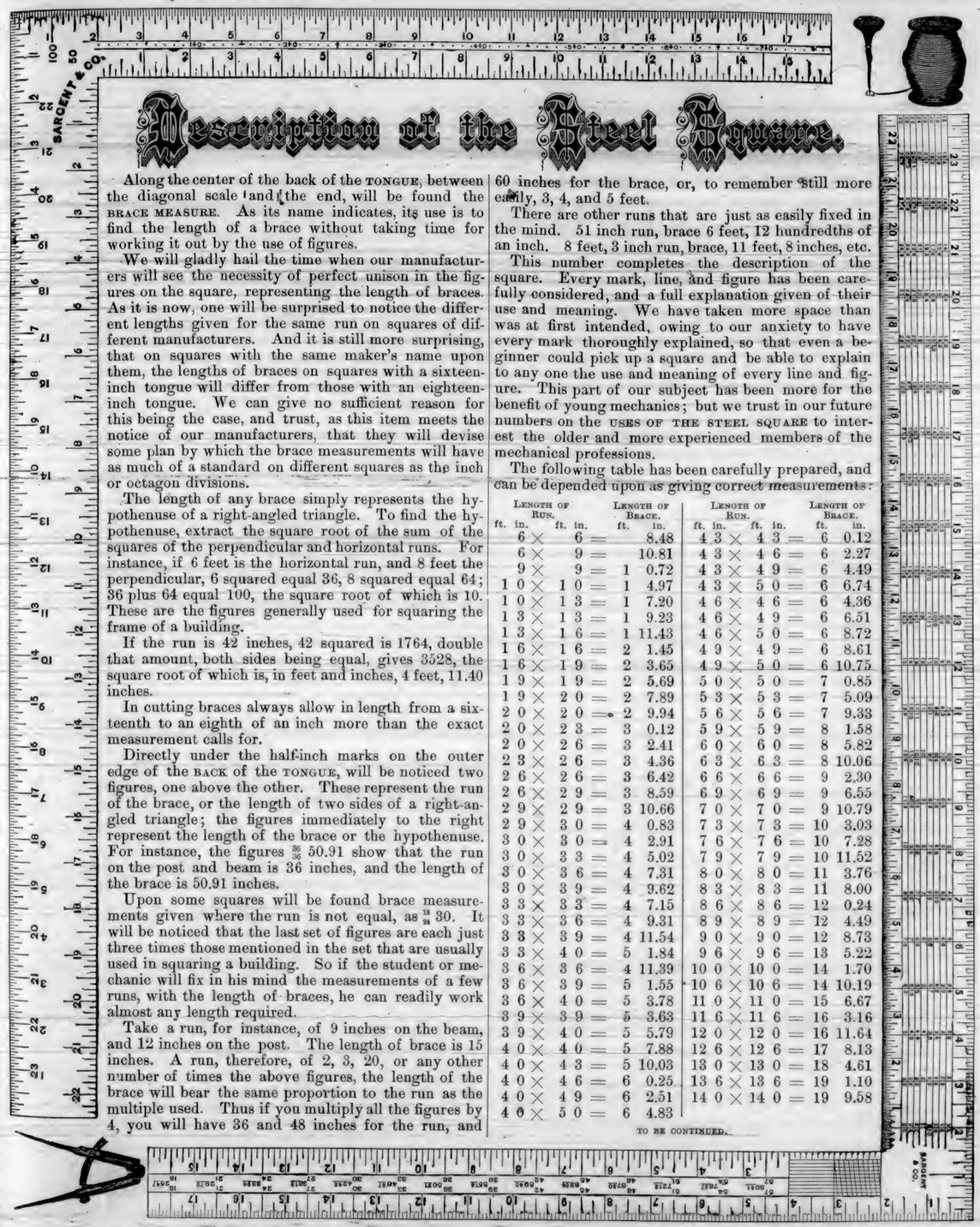
Puget Sound—The Mediterranean of the West and its Lumber Trade.

Puget Sound, Washington Territory, perhaps the least known in the East of all our important water surfaces, is the one for which its acquaintances claim the largest future fame. It covers an area of 2,000 square miles, with a breadth rarely exceeding ten miles, and has a coast-line of 1,500 miles. Its shores are bold and its water deep, and it is quite free from shoals and reefs. The large lumber vessels which frequent the sound are bothered to find good anchorage, scarcely less than a hundred fathoms of water appearing anywhere. So deep are the waters of this Mediterranean of the West, says a recent visitor, that a great commodore of the United States Navy once innocently almost ruined the chances of one of the Puget Sound towns for being the final terminus of the Northern Pacific Railroad, by taking his ship up to the town. On sounding the water for anchorage ground, he failed to find as little as thirty fathoms of water anywhere, excepting one place, and that so near the bank that there was danger of the ship going ashore when swinging with the tide. He had to depart and anchor at the other place, where there is a large natural bay, affording excellent advantages of the kind he was seeking. The pure water of this sound swarm with fish. There are eighty-five varieties, it is said. The salmon is the prince of fish here. The catch of salmon sometimes amounts to 40,000,000 pounds a year. A species of cod is also very abundant. It is dried and salted in large quantities.

The principal industry of the sound is lumbering. The timber comprises ash, dogwood, alder, white oak, maple, cottonwood, spruce, hemlock and laurel, among other varieties; but these are in limited quantities. The greater part of the timber is yellow fir and cedar. This vast fir forest is thought to be the finest tract of valuable timber land on the face of the earth. It covers an area of 32,000 square miles, according to the rough estimates which are current in the Territory. It is accesible from every point on the sound, and from the ocean coast for a vast distance southward. The proprietors of the logging camps fell their first trees so close to the shore that they could be made to fall directly into the water if desired. The yellow fir is from 150 to 300 feet high, the trunks being from 5 to 12 feet in diameter at man's hight from the ground. The first lumbermen cut only the five and six foot trees. The saw-mills could not handle logs which were larger than that. Even yet there is no saw-mill on Puget Sound which can saw a log that is more than eight feet in diameter. The consequence has been that at first, for many years, the axmen left the small trees and the very large ones; and a piece of timber land which has been cut over once presents the singular phenomenon of a collection of small and of gigantic trees, with none of medium size among them. Since the enlargement of the mills, some camps are sending their men over the ground a second time to fell the big timber. The firs are cut off about five or six feet from the ground. The butts are generally unsound.

It requires from half an hour to an hour to fell a good-sized tree. A large number of the fir tree trunks are unsound. The principal defect is what is called a "shake." It is a small track inside the tree, formed by the swaying of the tall tree in the wind. When such a crack forms, it soon becomes filled with the turpentine-like balsam which is characteristic of the fir. The woodchopper at work on a big tree is frequently astonished by driving his ax through one of these fissures and seeing several gallons of turpentine suddenly run out. If the tree, when felled, is found to be defective, it is left where it lies. If sound, it is cut up into logs from 30 to 130 feet in length, and hauled out of the woods. Sticks 150 feet long are sent out. The United States is exceedingly jealous of this vast tract of valuable timber land. It permits the timber to fall only into the hands of those who wish to do a legitimate business in logging. The regulations are quite strict, both as to keeping the land out of the hands of speculators, and as to the waste of timber. To buy a square section of timber land costs $1,600. The logger employs about six men and a team of eight oxen. He builds a rough camp and boards the men. His running expenses are about $35 a day, and he is able to get out of the woods about 30,000 feet a day. The rafts of logs are towed off to the neighboring saw-mill at a cost of $1.50 per thousand feet, and he sells them there at the rate of $6 per thousand feet.

The yellow fir is known in the East as Oregon pine or Puget Sound pine. It is a wood of great value, owing to its toughness and strength. The first cargoes of it were sent to San Francisco about twenty-five years ago. The length and beauty of the timber attracted the attention of Admiral Farragut, who caused tests of it to be made at the Mare Island navy yard. Still other tests were made at the navy yard in 1878, by Constructor Much, for the purpose of discovering the sizes of scantling required for building the United States screw steamer Manzanita with Pacific Coast woods instead of with oak. Tests have also been made recently in the oak. It is proved that yellow fir is fully the equal of Eastern white oak in tenacity, strength, and toughness. There is no doubt left upon the point, and yellow fir is now the universal building wood on the Pacific Coast.—*Scientific American.*



Description of the Steel Square.

Along the center of the back of the TONGUE, between the diagonal scale and the end, will be found the BRACE MEASURE. As its name indicates, its use is to find the length of a brace without taking time for working it out by the use of figures.

We will gladly hail the time when our manufacturers will see the necessity of perfect unison in the figures on the square, representing the length of braces. As it is now, one will be surprised to notice the different lengths given for the same run on squares of different manufacturers. And it is still more surprising, that on squares with the same maker's name upon them, the lengths of braces on squares with a sixteen-inch tongue will differ from those with an eighteen-inch tongue. We can give no sufficient reason for this being the case, and trust, as this item meets the notice of our manufacturers, that they will devise some plan by which the brace measurements will have as much of a standard on different squares as the inch or octagon divisions.

The length of any brace simply represents the hypothenuse of a right-angled triangle. To find the hypothenuse, extract the square root of the sum of the squares of the perpendicular and horizontal runs. For instance, if 6 feet is the horizontal run, and 8 feet the perpendicular, 6 squared equal 36, 8 squared equal 64; 36 plus 64 equal 100, the square root of which is 10. These are the figures generally used for squaring the frame of a building.

If the run is 42 inches, 42 squared is 1764, double that amount, both sides being equal, gives 3528, the square root of which is, in feet and inches, 4 feet, 11.40 inches.

In cutting braces always allow in length from a sixteenth to an eighth of an inch more than the exact measurement calls for.

Directly under the half-inch marks on the outer edge of the BACK of the TONGUE, will be noticed two figures, one above the other. These represent the run of the brace, or the length of two sides of a right-angled triangle; the figures immediately to the right represent the length of the brace or the hypothenuse. For instance, the figures $\frac{36}{36}$ 50.91 show that the run on the post and beam is 36 inches, and the length of the brace is 50.91 inches.

Upon some squares will be found brace measurements given where the run is not equal, as $\frac{18}{24}$ 30. It will be noticed that the last set of figures are each just three times those mentioned in the set that are usually used in squaring a building. So if the student or mechanic will fix in his mind the measurements of a few runs, with the length of braces, he can readily work almost any length required.

Take a run, for instance, of 9 inches on the beam, and 12 inches on the post. The length of brace is 15 inches. A run, therefore, of 2, 3, 20, or any other number of times the above figures, the length of the brace will bear the same proportion to the run as the multiple used. Thus if you multiply all the figures by 4, you will have 36 and 48 inches for the run, and 60 inches for the brace, or, to remember still more easily, 3, 4, and 5 feet.

There are other runs that are just as easily fixed in the mind. 51 inch run, brace 6 feet, 12 hundredths of an inch. 8 feet, 3 inch run, brace, 11 feet, 8 inches, etc.

This number completes the description of the square. Every mark, line, and figure has been carefully considered, and a full explanation given of their use and meaning. We have taken more space than was at first intended, owing to our anxiety to have every mark thoroughly explained, so that even a beginner could pick up a square and be able to explain to any one the use and meaning of every line and figure. This part of our subject has been more for the benefit of young mechanics; but we trust in our future numbers on the USES OF THE STEEL SQUARE to interest the older and more experienced members of the mechanical professions.

The following table has been carefully prepared, and can be depended upon as giving correct measurements:

Length of Run.				Length of Brace.		Length of Run.				Length of Brace.	
ft.	in.		ft.	in.		ft.	in.		ft.	in.	
6	×	6	=	8	48	4	3	× 4 3 =	6	0	12
6	×	9	=	10	81	4	3	× 4 6 =	6	2	27
9	×	9	=	1	0 72	4	3	× 4 9 =	6	4	49
1	0	× 1 0	=	1	4 97	4	3	× 5 0 =	6	6	74
1	0	× 1 3	=	1	7 20	4	6	× 4 6 =	6	4	36
1	3	× 1 3	=	1	9 23	4	6	× 4 9 =	6	6	51
1	3	× 1 6	=	1	11 43	4	6	× 5 0 =	6	8	72
1	6	× 1 6	=	2	1 45	4	9	× 4 9 =	6	8	61
1	6	× 1 9	=	2	3 65	4	9	× 5 0 =	6	10	75
1	9	× 1 9	=	2	5 69	5	0	× 5 0 =	7	0	85
1	9	× 2 0	=	2	7 89	5	3	× 5 3 =	7	5	09
2	0	× 2 0	=	2	9 94	5	6	× 5 6 =	7	9	33
2	0	× 2 3	=	3	0 12	5	9	× 5 9 =	8	1	58
2	0	× 2 6	=	3	2 41	6	0	× 6 0 =	8	5	82
2	3	× 2 6	=	3	4 36	6	3	× 6 3 =	8	10	06
2	6	× 2 6	=	3	6 42	6	6	× 6 6 =	9	2	30
2	6	× 2 9	=	3	8 59	6	9	× 6 9 =	9	6	55
2	9	× 2 9	=	3	10 66	7	0	× 7 0 =	9	10	79
2	9	× 3 0	=	4	0 83	7	3	× 7 3 =	10	3	03
3	0	× 3 0	=	4	2 91	7	6	× 7 6 =	10	7	28
3	0	× 3 3	=	4	5 02	7	9	× 7 9 =	10	11	52
3	0	× 3 6	=	4	7 31	8	0	× 8 0 =	11	3	76
3	0	× 3 9	=	4	9 62	8	3	× 8 3 =	11	8	00
3	3	× 3 3	=	4	7 15	8	6	× 8 6 =	12	0	24
3	3	× 3 6	=	4	9 31	8	9	× 8 9 =	12	4	49
3	3	× 3 9	=	4	11 54	9	0	× 9 0 =	12	8	73
3	3	× 4 0	=	5	1 84	9	6	× 9 6 =	13	5	22
3	6	× 3 6	=	4	11 39	10	0	× 10 0 =	14	1	70
3	6	× 3 9	=	5	1 55	10	6	× 10 6 =	14	10	19
3	6	× 4 0	=	5	3 78	11	0	× 11 0 =	15	6	67
3	9	× 3 9	=	5	3 63	11	6	× 11 6 =	16	3	16
3	9	× 4 0	=	5	5 79	12	0	× 12 0 =	16	11	64
4	0	× 4 0	=	5	7 88	12	6	× 12 6 =	17	8	13
4	0	× 4 3	=	5	10 03	13	0	× 13 0 =	18	4	61
4	0	× 4 6	=	6	0 25	13	6	× 13 6 =	19	1	10
4	0	× 4 9	=	6	2 51	14	0	× 14 0 =	19	9	58
4	0	× 5 0	=	6	4 83						

TO BE CONTINUED.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

The Timber Supply of Europe.

From an approximate summary of the timber production and trade of Europe, as given by the *Journal of the Agricultural Society of France*, may be drawn some lessons which may be of benefit in showing the dangers threatening our timber supply, and the advantages of an intelligent public policy of preservation. A man in business cannot be expected to sacrifice himself for the benefit of posterity, but the Government should see to it that such great resources should not be sacrificed in one generation. The policy of Austria has almost a counterpart in that of this country. Sweden and Norway have exhausted their oak as we almost our walnut, and, according to the *Journal*, their pine is going the way of ours. The following are the figures given by the paper mentioned above: Sweden and Norway, which still do a large export trade in deals, are now compelled to buy their oak in Poland; and in Russia the forests along the shores of the Baltic, in Finland, and in the southern provinces, are rapidly thinning, so that the forest produce of the empire is now only one in ten. There are about 34,000,000 acres of forest in Germany (of which 20,000,000 are in Prussia), estimated to be worth £500,000,000, and bringing in an income of £10,000,000 per annum. The State forests are taken great care of in all parts of Germany, in Prussia alone £100,000 being spent every year in replanting; yet the imports of timber exceed the exports by over 2,000,000 tons. The oak and the beech are the kinds of trees which do best in Denmark, but the timber trade of that country is very small. Austria and Hungary have upwards of 43,000,000 acres of forest; but in Austria proper the State does not possess more than seven per cent. of the wooded area, as owing to the wasteful policy of the Ministry of Finance from 1855 to 1872 more than 5,000,000 acres were sold for sums so far below their value that there was a popular saying in Vienna, "If you want to become rich, buy State forests." The speculation came to an end in 1873, but Austria is now obliged to buy most of her timber in Bosnia and Montenegro. Servia and Roumania have some very fine forests; but Italy, though her forest area extends over nearly 14,000,000 acres, does not do much in the way of a timber trade, as the roads leading to the forests are so bad that it is almost impossible to move the timber when cut. Much the same is the case with Spain, which has 8,500,000 acres of forest; while Portugal, which has only 1,000,0000, finds a good market for her timber. Sweden and Norway export about £32,000,000 worth of timber every year, and at this rate their fine forests will soon be exhausted.—*North-western Lumberman.*

Polishing Wood.

Turned articles must be brought to a fine, smooth surface with the finest sand-paper, and the direction of the motion should be occasionally reversed, so that the fibers that are laid down by being rubbed one way may be raised up and cut off. To apply the polish, which is merely a solution of shellac in alcohol, take three or four thicknesses of linen rag, and place a few drops of polish in the center; lay over this a single thickness of linen rag, and a drop or two of raw linseed oil over the polish. The rubber is then applied with light friction over the entire surface of the work, while revolving in the lathe, never allowing the hand or mandrel to remain still for an instant, so as to spread the varnish as evenly as possible, especially at the commencement, and paying particular attention to the internal angles, so as to prevent either deficiency or excess of varnish at those parts. The oil in some degree retards the evaporation of the spirit from the varnish, and allows time for the process; it also presents a smooth surface and lessens the friction against the tender gum. When the varnish appears dry, a second, third, and even further quantities are applied in the same manner, working, of course, more particularly upon those parts at all slighted in the earlier steps.

Flat surfaces are polished in a similar manner. The wood must be filled, as it is called, and for this nothing is better than whiting, colored so as to resemble the wood, and kept dry. Rub the latter with linseed oil, and then sprinkle it with whiting. Rub the latter well in, wipe it off carefully and give time to dry. This is far superior to size.

The polisher, however, generally consists of a wad of list, rolled spirally, tied with twine, and covered with a few thicknesses of linen rag. Apply a little varnish to the middle of the rubber, and then inclose the latter in a soft linen rag, folded twice. Moisten the face of the linen with a little raw linseed oil, applied to the middle of it by means of the finger. Pass the rubber quickly and lightly over the surface of the work in small circular strokes, until the varnish becomes nearly dry; charge the rubber with varnish again, and repeat the rubbing till three coats are laid on, when a little oil may be applied to the rubber, and two more coats given it. Proceed in this way until the varnish has acquired some thickness; then wet the inside of the linen cloth, before applying the varnish, with alcohol, and rub quickly, lightly, and uniformly the whole surface. Lastly, wet the linen cloth with a little oil and alcohol, without varnish, and rub as before until dry. Each coat is to be rubbed until the rag appears dry, and too much varnish must not be put on the rag at one time. Be also very particular to have the rags clean, as the polish depends in a great degree upon keeping everything free from dust and dirt.

Outside Ladder Accident.

We have been consulted, during the month past, in reference to our opinion in the matter of one of those occurrences which several months ago we predicted would occur, and which we again predict will be a matter of frequent occurrence hereafter. The responsibility for a dislocated thigh is the issue. Our answer: the injured party must bear both the pain of the accident and all consequent expenses. The case is this: A certain owner engaged a "roofer" to do some roof work on a building, the approach to which was by one of those *miserable traps*, an outside wooden ladder, secured to the wall of the building with nails, and the rounds of the ladder itself secured to the uprights in the same manner. The roofer proceeded with and completed his work, and after having left the roof as completed, he returned and again ascended the ladder for the purpose of recovering a chisel, which had been forgotten, and in his final descent of the ladder one of the rounds gave way, and the roofer fell, with a dislocated thigh as the result. Had the fall occurred during the execution of the work, the owner might have been responsible; but inasmuch as the injured party returned to the roof of his own accord, and for purposes in which the owner had no interest, he, the broken-thigh man, cannot recover damages from the owner.

This is but one of many cases that will occur from like cause. It needs no spirit of prophecy nor special inspiration to foretell coming events in this connection. It is simply a matter of common sense—mechanical judgment. Such ladders are seldom made with any special regard to strength and firmness. Two pieces, of 2 x 3 or 2 x 4 inches, for uprights, of Oregon pine lumber, with 1 x 3 or 1 x 4 inch rounds or slats, joined into the uprights, and nailed generally with 10-penny, but sometimes, when the larger nails are scarce, 8 or 6-penny, whichever is most acceptable, are used, without any consideration of the strength or holding value of either, so that *two* nails are represented in the face of the slats. When new, such ladders are barely safe for the purposes for which they are intended; and when subjected for a few years to the effect of natural wear and tear, exposure to rains, dews, sun, etc., they certainly cannot be, and they are not, safe means for *perpendicular* ascent up the walls of two or three story buildings, particularly as the uprights are almost always nailed close against the walls, so that parties ascending are compelled to take hold of the slats. And in cases of older persons, whose knee-joints may be in any degree weakened by age or infirmities, the hands and arms are made to do service in drawing the body upward, and this extra pull above increases the danger. Men advanced in years, and those of more than one hundred and forty pounds avoirdupois, should never attempt to climb these neck, back, leg, or arm breakers. The removal of every one of these risky wooden affairs should be compelled by law, and their construction hereafter prohibited. Well-made, wrought-iron ladders, firmly secured, should alone be permitted where outside ladders are a necessity. Chief of the Fire Department Scannell should interest himself in this matter, or some day or night he may be required to take care of one or several firemen with broken limbs, or worse, caused by attempts to reach roofs of buildings by the dangerous means under notice.

Contractors and Architects.

The demands of the contractors for certain changes in the printed agreements which are furnished by architects for signature, previous to the commencement of work, have not as yet been agreed to. In fact, it is doubtful if the architects will agree to the conditions sought to be imposed at all. One of them is that in case of dispute for extra work arbitrators be appointed—one by the contractor, one by the architect, and another by the proprietor of the building. This the architects claim would cause a great deal of useless labor and annoyance. They claim that in all the leading cities the matter of extra pay is left in the hands of the architect, and they do not see any necessity for having any exception made in the case of London. In the mean time the contractors have had a lengthy set of rules drawn up by W. R. Meredith, Q. C., and submitted to the architects. It is stated they will not tender for any work offered by those architects who refuse to agree to the terms laid down by them.—*London (Ont.) Gazette.*

Dovetail.

Is the generally received derivation of this technical term correct? I do not remember to have seen any other suggested, and turning to the only English dictionary within ready access, I find: "Dovetail, joint in form of a dovetail spread." It seems probable that the word is no more derivable from "dove" than "rabbet"—another term of carpentry—from "rabbit," but is one of many familiar technical terms borrowed from the French. The French *douve* (which appears in German as *daube*) is a cask-stave, and is connected, Littré says, by Ducange with L. Latin *doga*, a vase, a cup—the transition from *doga* to *douve* being normal. So "dovetail," if *douve-taille* as surmised, would have meant such "cutting" (French *tailler*) as was applied to cask-staves. Whether such staves are precisely dovetailed, affects the question but little. Their joints were necessarily water-tight, and thus a very close joint may well have been called a "dovetail." It is right to add that the compound word *douve taille* (possibly obsolete) does not appear in any of the several French dictionaries I have consulted.—*Notes and Queries.*

How to Make the Chinese Law Effective.

It has been claimed by many that it will always be impossible to exclude the Chinese from this coast, no matter what law may be passed by Congress. It is claimed that though a law of Congress may limit the number of Chinese landing at ports of the United States, that law cannot be made to apply to the ports of Mexico or British Columbia. It is said that, when they find they cannot land in one of the United States ports they will land either in a British Columbian or Mexican port, from whence they can cross the line into the United States. Such evasion of the law can hardly be accomplished however, for three reasons: first, because neither the British Columbian nor Mexican authorities will permit the wholesale landing of the Chinese on their shores. Their presence is no more desired in either of those countries than it is here; and second, even if the Chinese could land in that way, and without opposition steal across the line, the cost of their reaching almost any point in California from the foreign point they were launched at, would of itself be a prohibition to their entrance. The Pacific States should at once adopt the same rule as that adopted in Australia. That rule makes it incumbent on any Chinaman who has been in the country before the passage of the excluding act, to have a certificate stating that fact, which he is required to exhibit at all times on demand of a designated city or county official. If it is found that he is an interloper, he can be confined and kept at work until an opportunity occurs to remit him to his own country. No one seems to think that the Australians have done anything very savage or uncivilized in passing thic law; but when a similar law is proposed on the Pacific coast, the majority of the Eastern people and papers cry aloud that it would be uncivilized and barbarous, and is proposed solely to satisfy the hoodlum element of the Pacific Coast. The fact that the voters of the State have once, by an overwhelming majority, decided against Chinese immigracion, seems to count for nothing with the Atlantic people and papers.—*Real Estate Circular.*

The Trials of an Architect.

Another example of the trials which afflict architects is furnished us by one of the profession. This gentleman, with his partner, was commissioned to build a small structure for a certain town, and the appointment was announced in the local journals. Soon after, one of the town council which appointed the architects in question was approached by the city engineer of a neighboring community, who desired him to lay before the next meeting of the council a sketch-plan, which he would furnish without charge, for the chance of having it preferred to those already accepted. The councilor reminded him that the architects of the building had been already appointed, to which he replied that he knew it, but thought he could design a building which would be cheaper than any that Messrs. A and B would draw, and his charges for his services would moreover be less than those of the actual appointees. Even this combination of merits failed to satisfy the councilor, who declined to act as the surveyor's messenger in the case. Our correspondent suggests that an engineer employed and paid at the public expense might be expected to occupy his leisure moments in perfecting himself in his own profession, for his own and his employers' good, rather than in attempts to thrust himself, uninvited, into business which belonged to other people.

To this we can only reply that the restrictions laid upon professional men acting under public employment differ greatly, so that there may be no reason why the city surveyor of X should be forcibly prevented from engaging in any employment which suits him during his spare hours, and if he feels an irresistible attraction toward the practice of architecture, that may be enough to justify him in neglecting his opportunities for advancement in his own profession. Moreover, tastes, as well as men, vary in the selection of modes for securing business as well as in other things, and such a method of solicitation as that said to have been adopted by the individual in question, while it would seem intolerably contemptible and humilating to some delicately organized persons, is regarded by others as a praiseworthy manifestation of business talent and "push." Whatever may be the merits of this particular case, the rule that the better class of achitects will occasionally have to struggle for their commissions with the cheap and hungry ones who hang about the flanks of building committees and public bodies is not likely to be soon changed. There will always be in architecture, as in all other professions, men who for one reason or another can afford to work at a lower price than their fellows, and it is likely that their will also always be clients who will consider it an economy to employ them, and it usually happens that the latter get about what they pay for, while the former have no reason to be dissatisfied.—*The American Architect.*

Workmen in an Employer's Shop.

Every man in a workshop ought to constitute himself the guardian of his employer's property, and not only should he avoid waste himself, but as far as practicable he should discourage it in others. If this were done, millions of dollars would be saved to the country; a much larger percentage of profits would go into the pockets of the employer; manufacturers would be enriched, and, in the end, the workmen would be proportionately benefited. Strange that these simple facts should have so little weight; but so it is. Waste by another is cruel to the man who has to pay, it does not, cannot benefit the the person guilty of it, and it is a dead loss to the nation. And every scrap of material so destroyed makes the product more costly, and consequently dearer. In the interest of workmen, it is important that these facts should be borne in mind. Wages bear a relative proportion to cost of raw materials, and both combined determine the price of commodities; the cheapness of the latter augments their sale, increases their production, enhances the demand for labor, and tends to keep up wages; the reverse is equally true. If, therefore, an obvious duty is neglected or carelessly performed, the men mainly responsible ultimately suffer, and that suffering will be in an exact ratio to that which produced it.

One great remedy for the losses incurred by waste is a closer supervision of every detail of the undertaking, whatever it may be. This, however, involves extra expense. If the men can contribute to a saving in this respect, they will indirectly reap the advantage. To overlook this fact shows a lamentable ignorance of the internal economy of a workshop, and of the forces and influences always at work for the purpose of bringing about a given result. And the men who complain of strict supervision are just those who need it most, and who, without it, would render large contracts next to impossible, for the simple reason that they would not pay, and could not therefore be executed. Many a builder and contractor has been ruined by the wastefulness of his employees and negligence of his foreman. A careful man is a jewel in a workshop.—*Builder and Wood Worker.*

Steel Square Problems.

A new work explaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

Heating Buildings.

In spite of the professions of our heating and ventilating engineers, the warming of public buildings is a thing which is not properly understood. It is an easy matter to set up fire-places or radiators or coils of steam pipes, in a number of rooms, and to fancy that by so doing a building is efficiently warmed. In nine cases out of ten such proceedings only cause greater complaints than before; not of cold but of draughts, the reason being that as soon as the door of any one of these rooms is opened a current of cold air from the colder passage flows into the room, creating a draught which is worse than any degree of steady cold. A very little reflection should show authorities on these matters that unless the passages, halls, and corridors of buildings are warmed as well as the rooms there must be a continued inequality of temperature which nature strives to remedy through the agency of draughts. If a large building is to be warmed by any of the means indicated, it must be warmed all through, for it is just as important to apply heating arrangements outside the rooms as inside.—*Industrial World.*

The wire cable is now doing regular work on State street, Chicago, and the horseless cars are ceasing to create sensation on their regular trips. The cable has been laid on the length from Twenty-first to Thirty-ninth street, and is about in actual operation. The grip car drivers succeed in running without trouble from one cable to another where breaks occur, and on the straight track everything seems a success. The cable has been laid around the Madison street corner, and so round the corner to complete the circuit, but cars are not yet running on this length—the problematical one of the service. To grip the the cable to traverse a sharp curve successfully is the only serious question as yet in wire cable traction, and while the authorities are quite sanguine, it is a question whether the present operation will not prove more tentative than otherwise. Since the above writing, a grip car is reported to have been successfully run round the corner, stopped, and started at frequent intervals to show that there were no fortuitous circumstances at work, and the jumps made between the cables to get on the main line again. It will probably be some days before traffic is carried around the curves, as there are a few minor changes to be made. Horses are therefore used at this point for the present.—*The American Engineer.*

An interesting discovery is reported from Pola, the chief naval station of the Austrian empire, and formerly a station of the Roman fleet. Near the huge amphitheater, only second to the Coliseum in size and massiveness of construction, some workmen were lately engaged in digging an ice cellar for the use of the squadron and the naval arsenal, when, at about a yard's depth from the surface, they came upon a statue nine feet three inches in hight, representing a Roman emperor, and in a state of almost perfect preservation. This effigy, executed in Grecian marble of the finest quality, is stated to be the most beautiful and highly finished effigy of its kind in existence. It has not as yet been recognized as the potrait of any particular emperor, but would appear to be rather an ideal or typical presentment of the Roman Cæsar. It is supposed that this noble statue originally adorned one of the niches of the vestibule belonging to the theater built by Augustus Cæsar in honor of his daughter, Julia, and bearing her name.—*The Tradesman.*

☞ **Subscription price of this journal is $2.00 in advance.**

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

BUSINESS MANAGER OF ARCHITECT: In reading works on architecture, I find that mortar as prepared by the ancients was much more durable than that in use at the present time. How was mortar made in early times? Can you give me a list of "*the lost arts*"? L. R., Berkeley.

ANS.—"The ancient masons were so very scrupulous in the process of mixing their mortar, that it is said the Greeks kept ten men constantly employed for a long space of time to each basin; this rendered their mortar of such prodigious hardness, that, Vetruvius tells us, the pieces of plaster falling off from old walls served to make tables.

It was a maxim among the old masons to their laborers that they should dilute the mortar with the sweat of their brows; that is, labor a long time, instead of drowning it with water to have it done the sooner.

The weakness of modern mortar, compared to the ancient, is a common subject of regret; and many ingenious men take it for granted that the process used by the Roman architects in preparing their mortar is one of those arts which are now lost, and have employed themselves in making experiments for its recovery.

But the characteristic of all modern artists, builders among the rest, seems to be to spare their time and labor as much as possible, and to increase the quantity of the article they produce, without much regard to goodness; and perhaps there is no manufacture in which it is so remarkably exemplified as in the preparation of common mortar."

We will answer the second question in a future issue.

We received a communication from W. M. B., of River View, in regard to chimneys. It is too long for publication. He takes the stand that the throat of a chimney should be smaller than the number of inches contained in a horizontal section of the flue. We think our correspondent is at fault in this regard, as the frequent rushes of cold air into the chimney from the opening of doors, etc., sends a gush of smoke into the room, by obstructing the upward current of rarified air. We will condense the article and publish it in a future issue.

BUSINESS MANAGER OF ARCHITECT: A claims that a brick wall laid with the *Flemish bond* is stronger and therefore more preferable than the *English bond*. B claims that it is the appearance alone of the former that gives it the preference. Which opinion is the more correct?

C. C. Sacramento.

ANS.—The *Flemish bond* presents the neater appearance; the *English bond* being the stronger. The former was introduced into England in the time of William and Mary, and from its neat appearance was so generally introduced that today it is very seldom that the old English bond is to be seen.

(The disposition of bricks in a wall, of which every alternate course consists of headers, and of which every course between every two nearest courses of headers consists of stretchers, constitutes *English bond*.

The dispositions of bricks in a wall (except at the quoins) of which every alternate brick in the same course is a header, and of which every brick between every two nearest headers is a stretcher, constitutes *Flemish bond*.)

GLASS ROOFING.—In a paper published in Germany by the Hanover Society of Engineers and Architects, the comparative advantages and disadvantages of glass roofing are thoroughly considered. Hail, it appears, is not so damaging to such structures as is commonly supposed. It is seldom destructive of glass an eighth of an inch thick, and a thickness of a quarter of an inch is almost absolutely safe. The use of glass more than half an inch thick, however, has proved objectionable for roofing purposes, as it is said to be liable to spontaneous fracture.

Although the wealth of Great Britain is nearly double that of the United States, this country leads in production, while the value of manufactures is about equal in the two countries.

The process of whitening sugar was discovered in a curious way. A hen that had gone through a clay puddle meandered thence into a sugar-house. She left her tracks on a pile of sugar. It was noticed that wherever her tracks were the sugar was whitened. Experiments were instituted, and the result was that wet clay came to be used in refining sugar.

A writer mentions a peculiarity of newly tempered circular saws, which, when laid down to cool, commence to hum, and if not quickly replaced in the furnace will crack. The humming begins in a low musical key, and rises in tone until it ends in a snap. The saw does not always crack through from the eye to the perimeter, and it never does so if it is got into the furnace while humming in a low tone. If the crack proceeds but a part of the way, it is from the bottom of a tooth or space and toward the eye. Saw makers do not seem to be able to explain this singular and costly phenomenon.

There is constantly great danger of fire in the use of close cooking-ranges on the large scale now so common in eating-houses, great warehouses, and other places. These stoves give out an enormous heat, and are usually connected with old flues, having only four inches of brickwork round them. The walls surrounding the ranges, or furnaces as they might be called, become so heated that it is in many cases impossible to bear the hand on them, and all the adjoining woodwork becomes in course of time converted into a species of tinder, which blazes up to an enormous extent on the application of a spark.

The yield of California coal oil is increasing to such an extent that exports are likely, shortly, to take place to China, Japan, Australia, and Mexico.

TO RESTORE SPOTTED VARNISH.—If the varnish has been blistered by heat or corroded by strong acids, the only remedy is to scrape or sand-paper the article, and revarnish. Spots may often be removed by the following process: Make a mixture of equal parts of linseed oil, alcohol, and turpentine, slightly moisten a rag with it, and rub the spots until they disappear. Then polish the spot with ordinary blotting-paper. Varnish injured by heat can hardly be restored in any other way than by removing it and applying a fresh coat.

In a paper on "The White Pine and the Lumber Industry of Michigan," says the *Quebec Chronicle*, "the writer shows that the quantity of pine timber in that state has decreased from 135,000,000,000 ft. on 20,000,000 acres of land to 35,000,000,000 ft. on 10,571,000 acres. Some 5,000,000,000 ft. are now annually taken away, so that in seven years the supply will be exhausted. It almost seems a despairing task to hope ever to raise forests for another such an enormous production, and science will have to devise other materials as a substitute for wood."

The *North-western Lumberman* gives some colossal figures covering the product of shingles. It works out the problem that 800,000,000 to 1,000,000,000 ft. of logs are yearly made into shingles; and, allowing 5,000 shingles for each 1,000 ft. of logs, the output for eight years ending 1880 was exactly 21,229,391,485 shingles *not a fraction of a shingle more or less!*

TO BORE HOLES IN PORCELAIN.—It is sometimes necessary to bore one or more holes in porcelain, but the usual way of doing this is not easy. If, however, an ordinary drill be hardened, and kept moist with the oil of turpentine, it will easily penetrate the porcelain. The drill commonly employed in connection with scroll-cutting machines answers very well.

TO MAKE STENCIL INK.—A good and cheap stencil ink in cakes is said to be obtained by mixing lamp-black with fine clay, a little gum arabic or dextrin, and enough water to bring the whole to a satisfactory consistency.

Georgia pine is fast taking the lead as a finishing wood for office furniture, book-cases, and other useful purposes.

Our Illustrations.

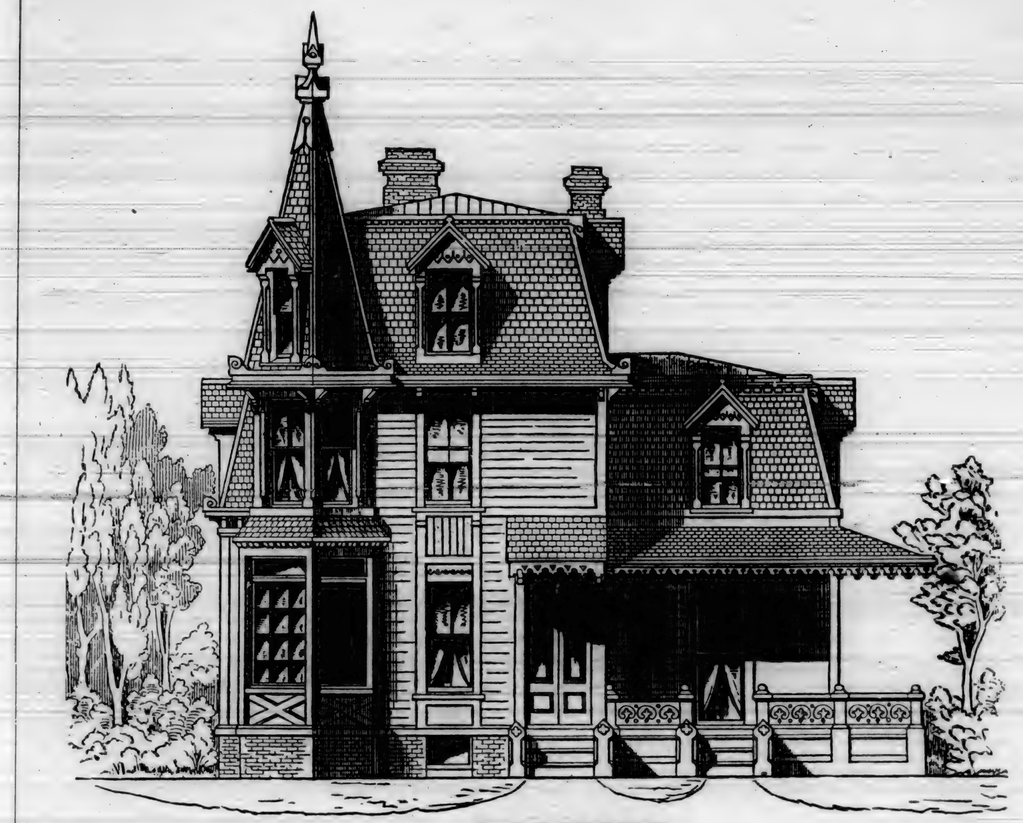
Plate 1 is taken from Lakey's Village and Country Homes. It is a neat design for a suburban house, and can be built for about $5,000 to $7,000, according to finish.

Plates 2 and 3 show the elevation and interior view of a church recently built in this city. Messrs. Wright & Sanders are the architects.

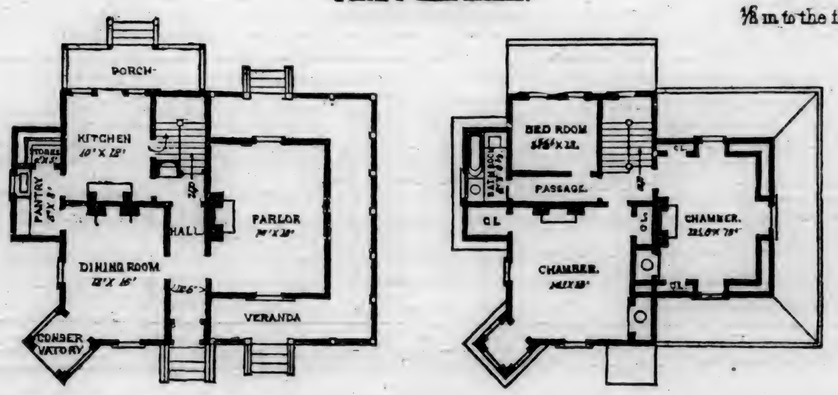
Poison in Houses.

The ideas contained in the following remarks by Dr. Willard Parker of New York, are in such perfect accord with those always advanced by this *Journal*, that it is with pleasure we present them them to our readers.

"We are living in the wrong kind of buildings, and everything is wrong. Previous to the introduction of Croton water in this city, I don't remember a single case of diptheria. There were numerous cases of croup, and some which resembled diptheria, now and then. It is a disease which depends on malaria or bad air. It attacks families and goes through all the members. I had a friend, a physician, who depended on his cellar for all the air for his furnace. His six children were all stricken with the disease, and all of them died. And there are cases of that description everywhere. I say that if we have diptheria there is something wrong about our sewers. *If I were to build a house I would not have it connected in any way with a sewer.* I should construct a sort of annex, where I should have all the sewers, closets and all the pipes of the house. I suppose most of you would object to having a vault filled with dead bodies a few yards from your house, and connected with it by a pipe. Yet this is practically what we do with our sewers. Water is no protection from them—from the germs of poison which generate and live in the foul air. This matter demands our most earnest attention, for we are in a very critical and unhealthy condition."



FRONT ELEVATION.



1/8 in to the foot.

PLATE 1.—COUNTRY RESIDENCE.—See "Our Illustrations."

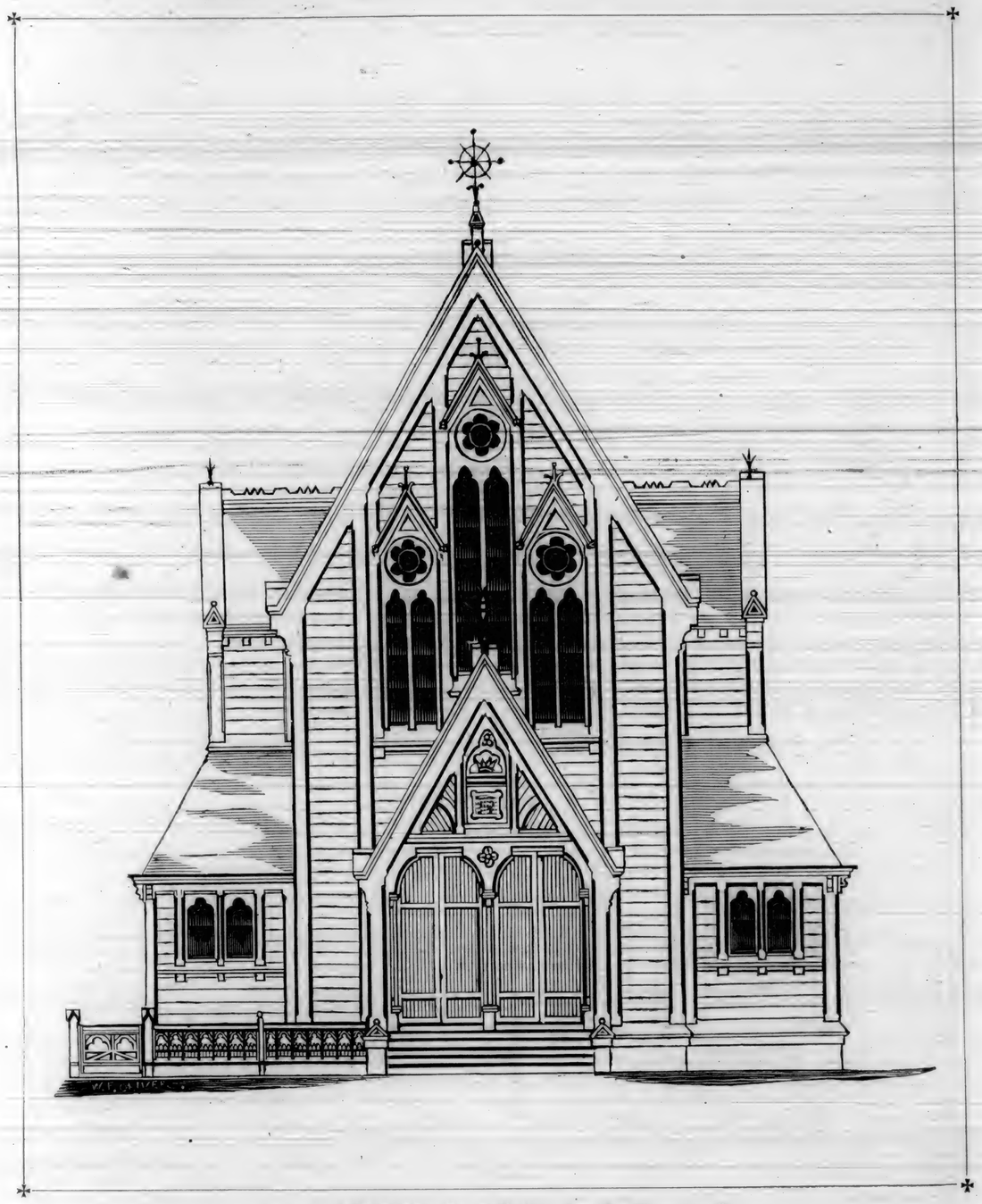


PLATE 2.—ELEVATION OF CHURCH.—See "Our Illustrations."

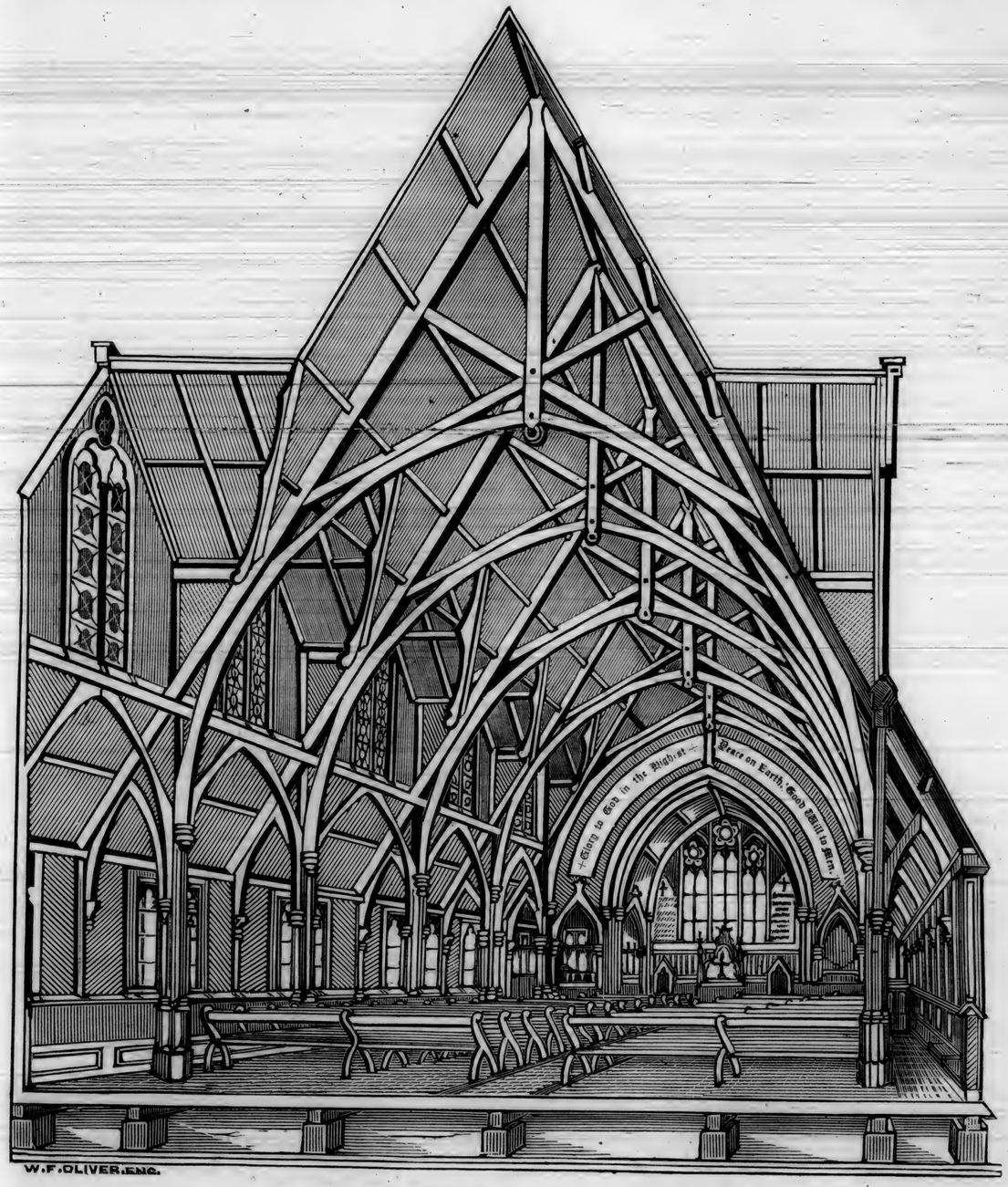


PLATE 3.—INTERIOR VIEW OF CHURCH.—See "Our Illustrations."

THE FRANKLIN GIRDER.

THE MOST ECONOMICAL CONSTRUCTION

—OF ANY MODE AND AT A—

PRICE OF ABOUT ONE-HALF

OF THOSE IN COMMON USE

OF SAME LENGTHS,

—AND TO SUSTAIN—

EQUAL SAFE LOADS.

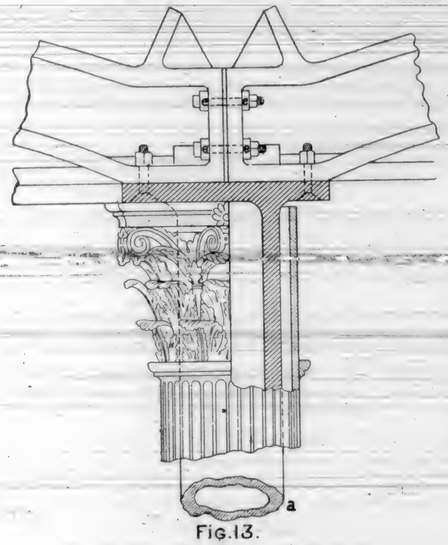


Fig. 13.

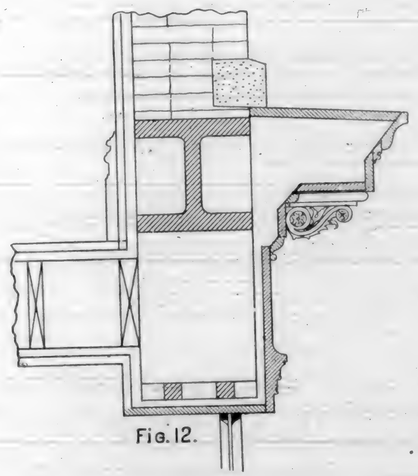


Fig. 12.

Employing Cast Iron compressively in every part, without taxing in the least its comparatively feeble tensile resistance,

AN OBJECT NEVER BEFORE ATTAINED.

Cast Iron possesses the enormous compressive resistance of 93,000 pounds to every square inch of cross section. The great objection to cast iron, caused by contraction of the parts in cooling, the heavier parts controlling and drawing away from the lighter parts, producing inherent weakness in tensile strain—does not in the least impair its strength when compressively employed. The Value of this Invention has been most favorably commented on by the scientific press of this country, London, Paris, and Germany. It has also been received with much favor by the Professors of Civil Engineering of many of the Colleges of this country, as well as Engineers engaged in Railroad and Bridge Construction.

These Girders for Architectural use are made of any length, and to sustain any required load—the safe to the breaking load being in the ratio as one is to three—and at a price of one-half of those in common use in this city.

A TWENTY-FIVE-FOOT GIRDER, with Brick work on it, is now in front of Premises, No. 231 First Street. Suitable to sustain 100 tons. Price, $200. Wrought Iron Girders to sustain same load and of same length, will cost double that Amount.

FIGURE 13

Represents the ends of two long Girders spanning the entire fronts, bolted together, and bolted to a Patent Fire-Proof Column—a Substantial Construction to resist Fire and Earthquake disturbance.

FIGURE 12

Shows the Girder encased with the Cornice, Frieze, and Soffit.

Prices given for any Length of Girder, and to Sustain any Weight.

P. H. JACKSON & CO.

2 CALIFORNIA ST., and 231 FIRST ST., SAN FRANCISCO.

To Property Owners, Architects, Builders, Iron Founders

—AND THE—

SETTERS OF ROUCH PLATE CLASS,

AND OTHERS.

It is the intention of the undersigned to maintain the rights vested in him, both by being the sole licensee, and by power of attorney for this coast by the owner of Thaddeus Hyatt's patent, granted August 27th, 1867, for illuminated basements, basement extensions, sidewalks, and roofs, which was reissued on September 27th, 1881, embracing sixteen claims; and all those who are in interest in whole or in part, in past and future infringements, are alike responsible for such acts. The manufacturer of the iron frames or castings for the lights and the furnisher and setter of the glass each of them are alike responsible for such violations. Hyatt made application for his patent in 1856, and it was granted in 1867, and his patent for novelty dates from the state of the art in 1856, and the exclusive right from August, 1867. The state of the art at the time of his first invention was: The basement of the buildings stopped at the face-line of the building, the same as the story above it, and like it, was closed between the piers by doors and windows, the area being an open space. The space underneath the sidewalk was used as a coal vault, and these vaults, at the building side, were bounded by the area wall, the area wall being curbed on three sides. By Hyatt's construction, this opening over the area way was covered by an illuminating roof, which was also a pavement to walk on, and becomes a bond or bridge to unite the basement and the space under the sidewalk, and lighting them by both vertical and angular rays of light, making by such construction an illuminating roof suitable to be walked upon, extending over the extended basement apartment.

Hyatt, in his patent specifications, says that the only actual basement extension which he found that assimilated to his new device, was where the area way alone was taken into the basement, and not the vault beyond it; and this areaway was covered with a skylight which was above and not on a level of the street, and it was set on an incline against the building. Then the sky-light was cut off from the sidewalk by an iron railing. A sky-light is a shield against the weather, a covering to an opening in a roof. The iron railing to the sky-light shows the weak and dangerous character of such structures. Besides, the iron railing was a barricade to the doorways of the building. The following claims on Hyatt's late reissued patent will best explain who are infringers.

THE BASEMENT EXTENSION IS COVERED BY HYATT'S PATENT AS FOLLOWS:

CLAIM 9. Buildings in which the basement is enlarged by union of the vault or coal-hole space, as an open chamber, and uniting or combining the two with the basement, substantially as and for the purpose herein described.

BUILDINGS IN WHICH THE AREA SPACE IS MADE TO BECOME A PORTION OF THE BASEMENT AS FOLLOWS, IS COVERED BY THIS PATENT:

CLAIM 8. Buildings in which the area space is made to become a portion of the basement by means of a water-tight roof of iron and glass, constructed as a platform or stoop to be walked over, substantially as and for the purposes herein set forth and illustrated.

CLAIM 7. Buildings in which the approaches over the areaway to its doorways from the sidewalk or traveled footway of the public street are formed by means of a solid water-tight translucent bridging of iron and glass, which serves the double purpose of stoop and roof, substantially as and for the purposes set forth and illustrated.

CLAIM 6. Improved buildings made by combining illuminating roofs and roof pavements as build appliances, with the main structure of the building as integral portions thereof, substantially as and for the purposes herein set forth and illustrated.

CLAIM 5. Illuminating roofs and roof pavements as building appliances, formed by combining perfected vault-covers or illuminating-tiles as a new building material, substantially as and for the purposes herein set forth and illustrated.

CLAIM 4. An illuminating-tile as a new building material, constructed substantially as and for the purposes herein set forth and illustrated.

CLAIM 11. Buildings in which the sunk areas are covered or roofed with iron and glass in stoop or platform shape for being walked over, where the metallic portions are formed, joined, and made water-tight by means of rising lips or water-backs, and by means of nosings made with an overlap or drip, substantially as and for the purposes herein set forth and illustrated.

CLAIM 14, Buildings in which the sunk areas are roofed over with iron and glass in stoop or platform manner for being walked over, where the areal light-space is enlarged by the employment of an iron girder, beam, or supports laid parallel with the face of the building, in lieu of an area wall and coping, substantially as and for the purposes herein set forth and illustrated.

CLAIM 15. An illuminating-roof of metal and glass, where the metal surface or plate that carries the glasses, and in which they are fixed and made water-tight, forms the general strength as well as roof-surface, in combination with the rafters, supports, or framing, the construction being such as to secure the two-fold object of equalizing and distributing the the strength of the iron while equalizing and distributing the light of the glasses, substantially as herein set forth and illustrated.

CLAIM 16. All illuminating step-roof composed of glass and metal—that is to say, where the metal and glass are composed into illuminating-sills and illuminating-risers, and these are again combined to form an illuminating-roof—substantially as and for the purposes herein set forth and illustrated.

THADDEUS HYATT.

Witnesses:
JUSTUS BRAUER,
T. C. BRECHT.

It will be seen that these claims embrace, first, the incorporating the area space, also the space under the sidewalk, as being Hyatt's invention and secured by his patent.

It will also be seen that the use of rough plate-glass, no matter what size or shape, used over the basement extension as described, is entirely covered by the patent, and the maker of the iron frames for these tiles, also the furnisher and setter of the glass, and every party in interest, including owner and architect, are equally liable for the violation of the rights secured to Mr. Hyatt, and it is the purpose of the undersigned to maintain, by suit at law, parties in such interest, both in the past and in future infringements.

P. H. JACKSON,

Sole licensee for the manufacture on the Pacific coast, and attorney for the owner of the patent.

HYATT'S PATENT FIRE-AND-BURGLAR-PROOF SKY-LIGHTS.

The public are requested to examine the large sky-lights now being erected on the rears of Mr. McCreary's building, corner Pine and Davis streets, also Senator Fair's building, corner Sansome and Pine streets. By the use of these heavy sky-lights, which are both fire and burglar proof, *no extra charge in rates is made by the insurance companies than if no sky-lights were used,* as they are not destroyed by fire as the wood and sheet-iron sky-lights in common use. Besides, the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

There are many deep stores in this city that are much in need of light, and by an addition of these sky-lights all light can be obtained, besides security against theives is maintained.

The appearance of the sky-light, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan building, as altered, has these sky-lights on the rear of the deep stores.

P. H. JACKSON & CO.

Sole Licensees and Manufacturers for the Pacific Coast of Hyatt's Patents.

2 California St., and 231 First St.

SAN FRANCISCO.

Fire Escapes.

Since the recent fire in New York, by which several lives were lost, a great deal of energy has been expended in devising means of escaping from burning buildings. According to various individual views the fire service should be converted into a brigade for carrying portable fire escapes; buildings should be provided with fire escapes of all forms and devices, and they should be carried around as the personal property of the individual. Inventors are setting up fire escapes and inviting the interested public to witness what a simple matter it is to escape when there is no fire, and in process of time—not a very long time—the business of the patent office will feel the effect of the present agitation, and—what then? Unless all previous experience goes for nothing, things will settle down quietly until a repetition of the recent disaster shall bring about recurring activity and succeeding quiet.

There is nothing phenomenal in the present activity in this direction. It is simply a repetition of what has occurred in every instance of the kind during the past fifteen years, and will undoubtedly end in exactly the same way; that is, in adding to the record in the patent office by which the date of this fire, as of others in which human life was sacrificed that have preceded it, can be fixed with reasonable accuracy.

At best, fire escapes afford an unnatural means of leaving a burning building. The inmates are not accustomed to their use, and it is usually demonstrated that they are out of order when wanted, and often but little less dangerous—especially to women and children—than the fire itself. This is of course without saying that they have not in some instances been of value, but that, generally speaking, they have not been a success. To such an extent is this true that it would seem time attention was turned in some other direction for safety, particularly so since, notwithstanding the progress of the past twenty-five years, it seems to be a fact that the prospect of the inmates getting off with their lives, in the event of a fire in the average city building, is less to-day than ever before.

It does not matter how nearly or how entirely fire-proof the outside of a building may be, since fires by which lives are sacrificed, as a rule, originate in the interior.

The fact that in broad daylight the burning of a building from which all the occupants could have quietly walked in a few minutes, should result in the loss of several lives—how many may never be known—is evidence of something wrong with the interior construction.

Sometimes the industry carried on in a building calls for the accumulation of considerable quantities of combustible material, but this was not the case to any extent in the instance noted; the trouble being that in this building, as in hundreds of others, the whole interior seems to have been constructed with special reference to rapid combustion.

It may be—probably is—difficult, if not practically impossible, to make the interior of a building fire proof, but it has been demonstrated, if it ever needed demonstration, that floors and partitions can be constructed so as to check the progress of a fire for a considerable time. It has even been proved, and is constantly being shown, that wood work can be rendered nearly incombustible, yet this knowledge seems to serve but little useful purpose so far as the security of human life is concerned. If more attention was paid, in ways that are well known, to rendering the spreading of a fire throughout the entire building not impossible, but a question of a little time, and less to the devising of fire escapes that are never used, it is probable that, in the event of a fire, people would walk quietly out of the building in an ordinary way.

With reference to fire escapes, the passage by the way of the stairs in common use is the most natural one, and, if properly constructed, this part of the building should be the last to yield to a fire instead of the first, as is too often the case. The location of the stairs is known to all in the building, and in a panic every one turns to them instinctively as a means of egress. At least this part of a structure, together with the halls and approaches, could be made so nearly fire proof, and so little dependent on the other parts for stability, as to provide a fire escape always in place, and in condition to be approached and used, at least as long as any part of the building was tenable.

The rendering of the loss of life in the instance of a fire in our high city buildings improbable, is not so much the matter of new inventions as the putting in practice of common-sense ideas well known. It resolves itself into a mere matter of dollars and cents, versus human life.—*American Machinist.*

Linseed Oils.

The linseed oils of the market are manufactured from linseed (*Linum usitissmum*), and are obtained by a cold or heated pressure of the seeds, and an oil of great purity results from the former, while the latter process gives a much larger production. The specific gravity of the commercial article is 0.9347, and it stands at the highest point of gravity of all the unctuous oils except that of castor oil, which is 0.9611. Fictitious oils are those which have been manipulated by experts, for greater revenue in its traffic, and is sold as *pure* boiled oil. The pure linseed oil is the best for painting and for the manufacture of varnishes. This oil, whether boiled or raw, unites with all pigments, and forms a smooth, compact mass, and when diluted spreads evenly and uniformly over all surfaces. There are more or less of the adulterated oils constantly on sale, and a few hints as to tests may be mentioned here. M. Heidenreich has found the application of a few drops of sulphuric acid, upon a glass plate on which a little of the suspected oil is placed, will detect its purity or show the colored fraud. A piece of crystal sheet glass laid over a sheet of white paper, then put a drop of the acid on ten drops of the oil to be tested; when whale or cod oil is present a peculiar centrifugal motion is seen, then a red color, increasing in intensity, and then afterwards becomes violet on the edges. When rape or turnip-seed oil, a greenish blue ring is gradually formed at a certain distance from the acid, and some yellowish brown bands proceed from the center. Of tallow or oleine, a brown color. Linseed oil has a brown magna, turning to a black. Oil of poppies and sweet almonds turns to a canary color, or yellow, passing to an opaque yellow. A common method of testing oils is to heat them sufficiently to odorize them, when the tell-tale senses are made aware of the double. The presence of fish oil in a vegetable oil is readily ascertained by agitation with a little chlorine gas, which blackens the fish oil, but has little or no effect on a seed oil. There is still another mode, and that is by its density. M. Laurot, a Parisian chemist, finds the use of his oleometer is a test for oils by measuring them when heated. The oleometer is put into a cylinder filled with oil, and this into another containing boiling water. The meter is graded so as to lower to zero in pure colza oil so heated, and he finds that it stops at 210 deg. in linseed oil, at 124 deg. in poppy seed oil, and at 83 deg. in fish oil, all having the same temperature; and any variation from the foregoing, changing the density of the oils, he can easily infer the amount of adulteration. The pure linseed oil from the crusher's tank is what is wanted by painters, as well as the public generally, and in some instances it is given; but no patent improvements can better it. It is a *fixed oil* by nature, and is in no need of further *fixing* by dealers to enhance their profits. The crushers of oil can sometimes improve the seed by properly cleansing it before sending it to press; and then after passing through that process to store it in large tanks of sufficient capacity to settle the oil, to free it from foots before it is drawn into casks for the market. This oil is naturally a siccative or drying oil, and never becomes rancid. To protect itself from exposure, a thin film hardens on the surface, and will keep good a long time; but eventually becomes fatty, when it may be used as a gilders' size. Linseed oil, when combined with pure white lead, in the form of paint, and applied to the sunny sides of a building, is one of the best combinations for whiteness and body known to painters. Its durability in such heated exposures is three or four years, when it becomes "chalky," and subsequently deteriorates rapidly from the action of the elements. The causes of decay in such mixtures is partly due to the carbonate of lead, and the constituent gases which compose the oil. Linseed oil is composed of carbon, hydrogen, and oxygen, and when applied as above, in thin coatings to exterior places, the oil in drying absorbs oxygen from the air, and the paint becomes hard and firm to the touch. But this tendency to imbibe oxygen is fatal to the solidity of the paint, though the oil becomes a solid. There is no evaporation, as in volatile oils; but instead, it takes from the atmosphere large volumes of oxygen, and by it disengages the carbon and hydrogen, leaving a disintegrated mass of lead, resin, and color in a state of impalpable powder. This is my theory of the chalking of white-lead paints as applied by the trade; and as beauty is only skin deep, we must submit to the chemistry which reveals it.

The tendency of seed oils to absorb oxygen accounts for the spontaneous combustion of various substances when besmeared with these oils. Linseed oil combines with more durable solidity with oxide of zinc and a large proportion of the sulphate of barytes, or some lead with the bulk composed of the carbonate of lime, or common whitening. There is less of opaqueness or body to paints of this class, and they do not work so freely under the brush, or give as bright tone to colors, as when pure lead is used. In drying, the zinc and barytes form a hard, solid surface; the oxygen is not so rapid in forming a part of it, and the oil retains the other component gases for a longer period, thus making the mixture a more durable covering as a paint for exposed outside work. The humid acids floating in the air do not attack the paints so readily; and for this reason they retain their brilliancy much longer than the carbonates of lead. There are many chemical paints, claiming to be a superior to pure white lead in covering qualities, are so successful in foisting their compounds on the market, by reference to their only redeeming feature, namely, durability.

J. E. W. C.

Mutual Antagonism in Woods.

It is interesting, and it may be instructive to some, to learn that certain kinds of wood, although of great durability in themselves, act upon each other in such a way as to produce mutual destruction. Experiments with cypress and walnut, and cypress and cedar, prove that they will rot each other while joined together, but on separation the rot will cease, and the timbers remain perfectly sound for a long period.—*Manufacturers' Gazette.*

Steel Square Problems.

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The Chemistry and Potency of Sewer-Gas.

Dr. Letheby of London found, by analysis, that the elements of sewer-gas are sulphureted hydrogen, sulphide of ammonium, carbureted hydrogen, oxygen, nitrogen, and carbonic acid gas. It contains, also, organic matter. The constituents are not always the same, nor do they always exist in the same proportion. The noxious effects of the gas are due to the sulphureted hydrogen, sulphide of ammonium, and the organic matter. These are always found in sewer-gas, in varying quantities, and it is an important fact for every one to know that the two gases named are among the most dangerous known to chemistry, at least of those about which anything is popularly known. Even when greatly diluted, the first is deadly poisonous to man and animals. Air, otherwise pure, containing one part in two thousand of sulphureted hydrogen will instantly kill birds. Air one two-hundredth part of which is sulphureted hydrogen will kill dogs; and a mixture of one part in two hundred and fifty will end the life of a horse. Although it has never been practically tested, it is believed that air containing one per cent. of this dangerous gas will cause the immediate death of man. The danger which it brings to man's life, in the company of those other elements with which it forms sewer-gas, is apparent.

Advantage was taken of the destructive power of sulphureted hydrogen, some years ago, to rid the garden of the Luxembourg, in Paris, of the crows which infested it. These annoying birds had become so numerous that they were actually a terror, and were driving people from the garden. It was not safe to attempt to shoot them, since there was a possibility of doing injury to the people themselves. The device was adopted of placing in the hands of the gardeners a small bag containing sulphereted hydrogen, to which was attached a tube that could be thrust into the foliage of a tree, and into the midst of a flock of the birds, without disturbing them. The gas was then allowed to escape, when the crows immediately fell to the ground lifeless. The proceeding was so noiseless a one, that it was easily carried on till all were killed and the garden freed.

This extremely poisonous gas may be produced by acid-liquids turned into drains. It frequently seems to become concentrated, and causes death quite unexpectedly. Men have dropped dead while at work in the sewers of London, apparently from breathing it, and in some instances it has found its way into bedrooms through waste-pipes, not sufficiently diluted, and has caused instant death. If in a comparatively pure state, its effects are so exceedingly dangerous, in small quantities, it must, under other circumstances, be considered capable of doing much harm. Its known effects are, when present in air which is breathed, headache, vomiting, drowsiness, etc. This is observable in the rooms of the chemist, where, for experiment or otherwise, the noxious gas is generated. A simple trace of it in the air will often produce a debilitated condition resembling typhoid fever. In chemical analysis the operator and those around him suffer frequently from chronic poisoning of the blood by it; it is, also, the cause of typhoid or malarial fevers.

The effects of sulphide of ammonium on the system are similar to those of the first-named gas. A good many experiments have been made to determine the manner in which sulphureted hydrogen and sulphide of ammonium produce their noxious influence. The results have been interesting, and throw much light on sewer-gas poisoning. It is a well-known fact that the red corpuscles of the blood are its most important constituents. Their chief office is to take up oxygen in the lungs, and convey it to all parts of the body. The most important function of the body, probably, is the carrying power of these corpuscles. The body will do without food or drink for a number of days; but if this function is interfered with, even for a few minutes, death ensues. This is illustrated in suffocation by drowning or otherwise. No person is in a condition of health unless the red corpuscles perform their duty properly and efficiently. Chemical research has shown that the active principle of the red corpuscles is a very interesting compound, to which the name of hemoglobin has been given. In plainer terms, this compound is a portion of the substance of the red corpuscles, and upon this the oxygen-carrying power of the corpuscles depends. Hence, anything which interferes with this hemoglobin interferes with the oxygenation of the system.

Experiments on the blood of animals have shown that sulphureted hydrogen and sulphide of ammonium have a very destructive influence on the hemoglobin of the red corpuscles. Whenever they are brought into contact with these corpuscles each is robbed of its oxygen, and if the action continues the gases will utterly destroy the hemoglobin, and reduce the corpuscles to a condition which renders them worse than worthless. The hemoglobin is not only deprived of its oxygen-carrying power, but it is deadened, and becomes extraneous and *effete* matter in the blood. The result is apparent. The body cannot live for an instant without oxygen. It is the stimulus which supports vitality. Shut off the oxygen, and death follows at once; cut off a portion of the supply, and some derangement, even though not immediately fatal, must ensue. The condition of the blood of animals which have been poisoned by these gases shows the action to be that given above. The blood is black and thick, like the dead blood which has flowed from a wound.

From this destructive influence upon the red corpuscles, it may be easily understood what the nature of the danger is which persons who are exposed to sewer-gas must encounter, and how they may be injured by it. The peculiar, marked anemia, or blood-poisoning, of those who have suffered from sewer-gas poisoning, is explained by these facts. There still seems to be an influence in sewer-gas, derived from the organic constituents, which, also, not infrequently modifies the action of the other two gases. There is no doubt that the organic elements are as poisonous, or deleterious as the decaying particles of animal or vegetable matter wherever found, for that is all that they are.

In many diseases the poison of the malady seems to be eliminated largely by the bowels, and the fecal discharges evolve gases which are capable of propagating disease. This is particularly true of typhoid fever, and does not fail in the case of cholera, and possibly of cholera morbus, which is held by many to be cholera in an incipent stage, though there is reason to doubt it. Many leading scientists discredit the germ theory of the spread of disease. They believe that chemical gases generated by disease in one organism may produce a ferment, so to speak, in another, and the result is the reproduction of the same disease. It is known that strychnine produces a certain effect on the blood, as the woorara used by the South American Indians in poisoning their arrows does, and which results in death. There are no germs of disease in either case. There are no specific disease germs in the decomposing flesh of a corpse, and yet a few particles of the putrid flesh introduced by accident into the blood, as a student works in the dissecting-room, will poison the system, and may produce death. So the poisonous particles which are given off by a diseased person may float through the sewer, and on the wings of its gas be transmitted to the living and sleeping apartments of any family whose house has defective drainage, and when in contact with blood already deteriorated by sewer-gas, cause a ferment, or disease, in the system, the whole action being precisely analogous to that of yeast. Small-pox may be transmitted in this manner from the discharge of the pustules. Yellow fever may be propagated by fecal, vomital, and urinal discharges; but in this case it seems that the poison itself must come in direct contact with the person. The noxious gases of the sewer may be oxydized, and consequently destroyed. All that is necessary is to give them the benefit of plenty of pure air.

To summarize: The poisonous elements of sewer-gas are sulphureted hydrogen, sulphide of ammonium, and organic matter. The first is a deadly poison, and in a sufficient quantity its fatal effects are immediate. In small quantities it weakens the vitality of the system, by counteracting the oxygen-carrying power of the blood. It is always present in sewer-gas, and a very small amount will produce, or pave the way to, disease. The noxious gases which by fermentation reproduce the disease from which they originated, are borne hither and thither by sewer-gas through defective drains, and into houses in distant parts of a city.—*Sewer-Gas, and its Dangers.*

"The Murderous Sewers."

Such was the term recently used by a city contemporary, in referring to the sewerages in San Francisco. But sewers are murderous only so far as the *agencies* of death exist in them. They neither "lie in wait" nor seek the opportunity to destroy human life, but perpetuate their operations according to organic laws and conditions; and the murderous aspect of the case lies with those who employ, and those who execute the wretched work so often done by *miserable incompetents*, who understand no more of sanitary and sewer sciences than an untamed ape would be able to comprehend the philosophies of the ancients.

Murderous they are, so far as they are made the instruments of death to TENS OF THOUSANDS; but the responsibilities in issue rest not upon the sewers, but upon the *soulless many* who assume to understand, and are employed by owners to do the sewer work of buildings. Any human being possessed of two hands, with the physical power to use them, can dig a sewer trench and place pipe in it, to *look like* a system of sewerage; but this is the least material feature of the case, and requires no more than physical effort. But beyond this there is something which demands intelligence and mechanical skill, combined with a proper knowledge and appreciation of the principles and necessities involved.

If our contemporary had made his application to "murderous" *sewer layers*, it would have been more nearly correct; for it is feasable in argument, that the man who inserts sewers connecting with buildings in which people live or labor, in which there is a single imperfect joint, or any possibility for the escape of sewer gases, is *in effect* a murderer. For whether a man, woman, or child is deprived of life through the agencies of deadly drugs, the pistol, knife, or *badly constructed sewers*, the effect is the same upon the death-stricken individual; and the fact is too well established to admit of question, that sewer gases are deadly in their effects, and that multitudes have found early and untimely repose in death by being compelled to breathe atmosphere impregnated with sewer gas.

The strangest feature of the case is, that with all the well-known facts, so little practical interest is taken in the matter. The subject is talked over and discussed in print, but beyond the personal interest sometimes put in practice by individuals, the evil is increasing with the extending and multiplication of sewers, as nine-tenths of the sewer work done in this city is faulty and imperfect.

Shortness of Life Among Architects.

It is only a short time ago, remarks the *Saturday Review*, that any one conversant with the artistic politics of the day would, if asked to name the architects who had in the course of the competitions, official or unofficial, which were at that time in higher favor than they have since become, taken the foremost position as competitors, if not as combatants, have undoubtedly put in the front line Digby Wyatt, Scott, Edward Barry, Burges, Street, to name them in their order of departure. Now all of these are dead—Scott only, just an old man, and the rest in middle age. Every one of the men, in fact, over whom any real battle at that time raged has, with the exception of Mr. Waterhouse, left the scene. The *Times* attempted to sketch, with a keener eye to faults than merits, the difference between the old and the new taste in architecture by pairing off Mr. Street with Mr. Decimus Burton, who had died a few days before, aged eighty-one. The comparison might have been more telling if it had included a third architect, who died on the very day before Mr. Street, and who was, although a year older than Mr. Burton, rather the first of the new than the last of the old school. More than forty years ago, when prominent men of the Gothic school who have since been famous and died were still unheard of, Anthony Salvin seemed destined to lead the revived school of mediæval art. But he was rather torpid in the important matter of ecclesiastical architecture, and so, while making proof of his mastery of castellated construction at the Tower, at Windsor, at Alnwick, and in his own modern castle of Peckforton, as well as of considerable taste in country houses, he practically became an outsider in the animated conflict of styles which has filled up the intermediate years.

There is never an effect without some cause, and it is better to seek what explanation can be given for the remarkable shortness of life among conspicuous architects, than idly to lament the losses. No doubt, as the phrase goes, it is the pace which kills; but there is something more than the mere speed to account for the dangers and the casualties of the architectural race. The nature of the broken country which has to be crossed tells against safety as much as the mere speed. Some men kill themselves by over-devotion to an art, and others by an over-devotion to a profession; but it is the hard and peculiar fate of an architect to be following both an art and a profession. His education in composition matches with that of a painter in painting. His education in construction matches with that of an engineer in engineering. Once he is in practice, the thought needful to marry beauty with utility in his designs is only the beginning of troubles. He has to settle his accounts with employers, who may be stingy and overreaching, exacting and capricious, ignorant and prejudiced, vain and half instructed; with contractors too often incompetent, dishonest, or insolvent; with workmen too stupid to understand and too obstinate to obey. Add to this the wear and tear of railways, the severities of weather, and it will be seen that the career of a successful architect is one which tells with unusual severity on the human frame. Yet there is no remedy which could be thought of which would not be worse than the disease. To separate the profession of artistic and of constructive architect would be to extend and perpetuate a system which has already, in the hands of speculative builders, worked so much woful mischief to the national taste.—*British Architect.*

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What Next?—Evolutions in Styles of Architecture.

Public taste in matters architectural, both as regards the erection of buildings, their exterior delineations and decorations, and the interior finishes, appointments, and furniture, have of late years become matters of constant change. To meet the wants of the present generation, it is necessary that architects should be as versatile in their conceptions as the artist whose perpetual thinking is to find some new idea, some hitherto untouched or newly embellished subject, differing from, if not surpassing, those which have preceded. In former periods, the classic orders were, to a certain extent, revered for their grandeur and semi-sacredness, and those who dared to innovate did so with cautious hand, seeking to invest the new with grandeurs and beauties co-equal with the old.

But as time rolled on, a spirit of recklessness and disregard for former things largely controlled; and while many beautiful results followed, thousands of architectural abnormities have also from time to time appeared, sometimes gaining a temporary prominence, but soon passing away among the host of other unmeritorious and no longer accepted conceptions.

In harmony with this, an exchange says: "The Eastlake is no longer popular (in the Eastern States). The so-called Queen Anne style is said to be dead and laid upon the shelf. What is to follow is a matter of some concern to those who cater to fashion." (The term *fashion* is well applied, for a considerable portion of that which is passed off as architecture is a mere *fashion*—a whim, a caprice of the imagination without *order* or *style*.—Ed.) "The public is capricious and will always be swayed by fashion. Fashion has decreed a change in household furnishings. What is it going to be?"

Another exchange adds: "That the present direction of public taste is plainly toward the French art. The public has tired of the straight lines, the sharp angles, and the formal decorations derived from English models, and is turning again to the more graceful, if less serviceable, productions of the French. The change so far is manifested principally in ornamental details. The strong lines, and solid, serviceable, construction, which have come to us from England, are retained; but they are refined, and, to many tastes, rendered more pleasing by the graceful and flowing ornamental lines of which the French make such frequent use. * * * The general tendency is in the direction of catholicity, and more pleasing variety than has heretofore prevailed, rather than toward the adoption of any one school, to the exclusion of all others."

The *Deutsche Bauzeitung* of December 14th contains a plan and section of the ill-fated Ring-Theater in Vienna, together with a very intelligent description of the fire which destroyed it. The walls of the building were unusually thick, particularly the one separating the stage from the auditorium, and other precautions were taken in the construction to avoid danger from fire. The roof was of iron, and an ample system of water-pipes was provided, arranged especially with reference to a possible conflagration on the stage, and a wire-gauze curtain hung behind the proscenium arch. The gas-lights were carefully arranged, and due watchfulness insisted upon; and, as the *Bauzeitung* says, the danger of fire was no greater than in a hundred other theaters. The real fault of the building—one which cost nearly a thousand lives—was in the planning of the staircases and entrances. Although five flights of stairs led from the upper portion of the auditorium to the ground floor, and one more led to the royal box, and two served the stage end of the theater, every one of them had the fatal fault of being inclosed in a room by itself, opening only by a door into the vestibules or passages. One side of the building adjoined the neighboring houses, but the other side and the front and rear bordered on open streets. Unfortunately, it had been found desirable to give the portion facing the principal side street to restaurants, so that there was no public entrance to the theater except in the middle of the front. Of the two gallery staircases, which were inclosed by other rooms on the lower floor, one was accessible only by a tunnel under the parquet floor, and the other opened into a crooked passageway leading to the front entrance. The grand staircases themselves, situated on either side of the main vestibule, were not only awkwardly winding, but reversed in direction, so that the persons descending them were directed against the wall which inclosed the auditorium, at a distance of only a few feet, and in such a manner as to meet face to face the crowd from the parquet pouring out of a door in the same wall. The two streams mingling were obliged to turn at a right angle to reach the main vestibule, which they again entered face to face with the multitude descending the stairs on the other side, and a second turn was necessary to direct them toward the entrance doors. According to the information gathered by the *Bauzeitung*, the fire began by the accidental wafting of a "border," painted on jute canvas, into the gas-lights close by. A moment later the curtain caught, and was drawn blazing by the current of air into the auditorium, kindling the papier-mâché decorations in all directions. Apparently no effort whatever was made to put in operation the various protective devices which existed. A turn of the hand would have thrown streams of water in every direction over the building, but the valve was left untouched; the wire curtain might have been dropped in a few seconds, but it was neglected; the doors of special exit, which would have saved multitudes, were not unlocked; the oil-lamps provided to illuminate the passages in case of failure of other means were not lighted, and the gas being turned off at the first alarm by an unreflecting official, the terror-stricken fugitives were left to grope their way in darkness through passages which were notoriously difficult to follow, even in clear light.—*American Architect.*

Among the many fillers in use for porous hard wood, this is recommended as one of the best: Stir boiled oil and corn starch into a very thick paste, add a little japan, and reduce with turpentine, but add no color for light ash. For dark ash and chestnut use a little raw sienna; for walnut, burnt umber and a slight amount of Venetian red; for bay wood, burnt sienna. In no case use more color than is required to overcome the white appearance of the starch, unless it is wished to stain the wood. The filler is worked with brush and rags, in the usual manner. Let it dry forty-eight hours, or until it is in condition to rub down with No. 0 sand-paper, without much gumming up, and if an extra fine finish is desired, fill again with the same materials, using less oil, but more of japan and turpentine.—*American Inventor.*

A story is told of a farmer who built a stone wall four feet high and six feet thick, so that when it should fall over it would be higher than before. We don't suppose that our friends, Munn & Co., publishers of the *Scientific American*, contemplated any sudden upsetting in their old offices in the "World" building, 37 Park Row, but certain it is that being burned out completely and hastily about noon January 31st, before night they were installed in more desirable offices in a much better building at 261 Broadway, with new furniture and fixtures. Their books and papers were preserved, and the *Scientific American* and the *Scientific American Supplement*, and their extensive patent business, go right along, as if nothing unusual had happened.

Competitive Designs.—No. 7.

In the consideration of any subject involving diversified and conflicting interests, there must naturally be disagreements as to conclusions set up by the respective interests; particularly so at the present, when each individual presumes competency in his own judgment to decide all questions submitted. This is all right and proper when judgment is called in exercise upon matters of familiar import, in connection with which daily contact and experiences have trained and qualified the mind to grasp and understand correctly the underlying principles involved in the matter upon which judgment is to be passed. But men may, and often do, gather up false ideas, and theorize themselves into beliefs from superficial understandings, which may be, and often are, egregiously erroneous, and greatly at variance with the essential facts involved; and when by force or privilege of circumstance it becomes possible to vitalize such errors, and by any means improve them upon others, a wrong is inevitable. It is a well-known fact that men of great learning and culture often form absurd and unsustainable conclusions in reference to matters not within the *direct compass* of their special lines of thought and experiences. The human mind is not so constructed as to be able to comprehend and understand in detail every principle of right. A heresy or fashion may be theorized into a fact or virtue from certain standpoints, which, when assailed and scrutinized by the light of truth, betrays the uncertainty of human yearnings, and the possibility of mistakes; consequently it can but occasionally happen that the basis of competitions are correct. Those who handle them seldom enjoy better than a vague idea of the involvements; and this imperfect knowledge renders exact fairness next to impossible. And if the parties controlling happen to be of that class which invariably survey facts and reach conclusions from a selfish standpoint, injustice is an assured certainty.

It is all very well for committees and commissioners to meet and determine upon propositions, and submit them with restrictions for the acceptance of others; but neither the submittal on the one hand, nor acceptance on the other, removes or modifies the inherent injustice. And it is fair to claim that men who set up or dictate that which is *in itself unfair and unjust*, whether through design or ignorance, are not entitled to the credit of rightful action. To render a proposition or act fair and just, all interests must be considered, and a correct balance of equitable rights conceded to all parties; and every encroachmont upon this rule becomes a positive wrong.

Those who claim for themselves integrity of purposes very naturally and constantly, from their standpoint, repudiate all imputations of designed injustice; but all lines and measures of right, drawn or set up upon error, are false and unsound. Exact justice is that code of moral and business reasoning, determination, and action which accords as much as it claims; and those who ask or practice more or less than this depart from the lines and rules of right. But in the matter of competitions, this theory is but seldom practiced; the prevailing disposition being to gain large advantage with as little cost as possible to those seeking them, and but limited consideration for those whose services are sought to be obtained. And this condition of things being well understood by architects, it has invoked the practice of means and measures which should never be known with favor in an honorable profession, one which gives to artful and calculating men decided advantages over those who are too honest or modest to attempt the advancement of their personal interest by any means not strictly honorable and unimpeachable. Competitions naturally incite a species of direct humbuggery, and not a few of the successful resort to this as a means of winning success. "Commissions" and "committees," by inviting general or even restricted competitions, create the necessity for all the deception that can be worked in, even by those who produce meritorious designs. For the man who presumes that the superiority of his drawings will outweigh the personal influences which surround forty-five fiftieths of the competition cases, simply accepts a delusion as a fact. If not more than three or five were permitted to engage in any competition, and each and all of them receive fair pay for the services rendered, the evil would be only measurably modified, but not wholly remedied. For even then, in nine out of ten cases, the sharpest manipulator of influences, with remarkable merit in his plans, would secure the first award.

The line of argument presented may lead some of our readers to conclude that architects must be a peculiar, if not an untrustworthy, set of men. But this does not follow. It may be safely claimed that, as a class, they are as pure as any like number of men in any profession, and the questionable things stated come not from personal or professional baseness, but from the necessities which grow out of the nature of things known to surround competitions generally. In the preparation of a set of drawings for competitions much labor and expense becomes necessary, and those who engage in the work know full well that unless the plans made by them receive one of the awards offered, all the time, labor, and coin expended must be to them a entire loss. And but few men live who would not use every possible means available to avoid such a result; and but few men could be found so pure and generous as to permit defeat, when by a little "wire-pulling," or other not flagrantly improper means, they could secure decision in their favor.

But in addition to the financial issues involved, there is the other, and to many greater, consideration of ambition and reputations—considerations which are calculated to inspire every energy of the mind and physical nature to the utmost extent. Defeat in anything attempted is painful, with increased mortification when brought about by comparisons. And ambitious men, rather than tamely submit to defeat, would suffer and endure anything within the bounds of reason. When subjected to such tests, the pressure becomes severe, and that which under other circumstances might be recognized as wrong and unfair assumes a virtue when such assumption may be used to advantage. This rule prevails in all relationships, and neither senators, legislators, governors, ministers, judges, lawyers, nor the "purest business men" are free from the reflection of wrong acts and decisions through force of pressures brought to bear upon them. And when a full and perfect understanding of the whole subject, considered in all of its bearings, is not possessed, the liability to err becomes greater. But we are met with the statement, that those who prepare and present plans in competition simply submit *samples* of their work, subject to the contingencies surrounding the submittal. But the *sample* idea is another strained and unfair proposition. Plans made by special direction, to fit a certain lot, and for certain defined uses and purposes, are special and not sample in character. Samples of goods, wares, and merchandise are legitimate submittals in contests for trade, because whether accepted or rejected they retain their market and merchantable value, and the merchant loses nothing but the opportunity to reap the profits of success as a bidder. But not so with competitive plans. Being made for a specific purpose, they possess no value outside of that purpose, and their author must lose, not only the opportunities of after profits in the way of commissions, etc., but his whole stock in trade, as far as his plans are concerned, become an absolute and entire loss, having no value whatever. And as before stated, this hard fact provokes a vast amount of wrong-doing, and "committees" and "commissions" are often "played" by shrewd competitors, in their skillful efforts to avoid such absolute loss, for which there is no relief or remedy in the event of a rejection.

American vs. French Landlords.

A daily paper expresses great delight over a heavy jury verdict against a property owner whose area being open caused serious damage to a careless passer-by. This is one of the perils of householding which property owners in this country must face, and which tends to keep up rents. A careless servant fails to properly cover the coal-hole, and the man or woman who is injured thereby gets heavy damages from the innocent owner of the house. Juries in America look upon railroad companies and landlords as enemies of the human race, and always punish them severely when they get a chance for owning houses and accommodating the public on transportation lines. People here who rent furnished houses must charge a high rent, for there is no recompense for furniture ill-used or destroyed. The petty courts afford no protection to the property of the owners of the apartments or the furniture. In regard to such matters as these, Paris is very different from New York. The traveler finds, to his astonishment, that in France the law favors the owner of property. They are not liable for damages when an accident occurs to a passer-by. In the eye of the French law it is the police who are to blame if coal-holes are left open and areas unguarded. Then careless and wasteful Americans, who rent suites of rooms furnished, are very much astonished when they leave their apartments to find that they are responsible for the damage done to the furniture. Every sou is charged up against them. If the carpets are permanently ruined, or the furniture broken, or the walls scratched, the tenants who were privy to the mischief have to pay roundly for their carelessness. We all know how different it is in New York. Here the tenant is tempted in every way to be careless, for the landlord knows that the court is not his friend but his enemy, and that there is no redress for the destruction of his property. Any drunkard here can bring an action for damages if he slips and is injured in front of a house. The only remedy the householder has is to get all he can for his property in the way of rent, and insure himself against all possible losses. Certainly eleven out of every twelve jurors belong to the house-renting class, and cannot be depended upon to do justice to the owners of the property to which they pay tribute. If we want rentals to assimilate to those of Paris and London, we must treat property holders with more justice.—*N. Y. Real Estate Record.*

A Good Point.

Considering the haste prevailing in building operations at the present day, and the granting of the certificates for new houses immediately upon their completion—a certificate, by the bye, rarely refused, and even then in a most ineffectual manner—we may fearlessly express it as our opinion, that if a proper examination of the degree of dryness of walls, and the rooms which they inclose, were made, nearly every new dwelling, as it is now handed over to the public for habitation, is injurious to health. Why, houses are begun in the spring, and receive their tenants in August! And this is not only the case with private dwellings: even in the case of municipal buildings—schools, for instance, where the greatest care ought to be exercised—the same practice very frequently prevails. No one will affirm that such buildings could be sufficiently dry under such circumstances, unless it is his intention to deceive himself.

Market Reports.

LUMBER.—Fair demand, steady supply, prices firm, is all we can chronicle.

Receipts since January 1st, 1882:

Lumber	28,098,050
Shingles	6,185,500
Laths	3,673,000

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	35 00
Flooring and Stepping	35 00
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping, per M feet	27 50
Ship Plank, Rough	28 50
" Planed 1 side	32 50
" " 2 sides	35 00
Deck Plank, Rough	33 50
" Dressed	37 50
Laths, per M	3 75
Wool Slats	10 00
Shakes	12 00
Redwood Posts, per piece	17½

Redwood.

Rough Merchantable, per M feet	22 50
" Refuse	18 50
Surface No. 1	35 00
" 1 x 6	32 50
" No. 2	27 50
Rustic, No. 1, 1 x 8	32 50
" No. 1, 1 x 10	35 00
" No. 2	30 00
" Under 10 feet	30 00
T. & G., 1¼ x 4 and 1¼ x 6	35 00
" 6 in. 12 ft. and over	32 50
" " 7 to 11 feet	30 00
" " under 7 feet	27 50
" " No. 2	27 50
T. & G., Beaded, 12 feet and over	35 00
" " 7 to 11 feet	30 00
" " under 7 feet	27 50
Half-inch Surface	30 00
Pickets, Fancy	27 50
" Rough, Pointed	20 00
" " Square	17 50
Siding, ½ inch	25 00
Shingles, per M	2 50
Battens, ½ inch, lineal feet	1c

NAILS.—Remain the same as last month. Since Janury 1st, 1882, we have imported 49,170 kegs.

10 to 60 pennies, are quoted at	$4 25
8 " "	4 50
6 " "	4 75
5 and 4 " "	5 25
4 and 5 pennies, brad heads, at	5 50
6 " "	5 75
8 " "	6 00
10 and upward "	5 25
3 penny fines "	7 75

PAINTS.—A new company has made its appearance, introducing the OMAHA WHITE LEAD. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8¾ cts. per lb.

ATTENTION, DRAUGHTSMEN!

Our New Heading!

All designs for the New Heading of this journal are to be given to the Secretary of the Pacific Coast Association of Architects, Room 11, 240 Montgomery Street, on or before Friday, the 7th day of April, 1882.

Any information cheerfully given, with a sample copy of the journal, to those competing for the design.

Building Intelligence.

There is but little to report this month. The letters received from our numerous correspondents give assurance that many buildings will be erected in the different counties. We are still of the opinion that labor will be both scarce and high. Even now the ranks of the unemployed have become exceedingly thin. The demand for skilled labor in several of the different trades is fully equal to the supply.

To those contemplating building, we would say that *now* is the time to carry out their projects, as, judging from the number of plans that are being prepared in the different architects' offices, we can say, almost to a certainty, that everything in the building line will not be less in value than at present, with chances decidedly in favor of prices advancing.

Should the new Odd Fellows' Hall be built this year, and the buildings be erected in its vicinity that are talked of consequent upon its erection, masons and carpenters will be in such demand that wages will be up to a higher price than has ruled for many years.

SAN FRANCISCO.

Two-story and attic frame dwelling with brick basement on corner of Post and Gough streets. Owner, Jacob Levi, Sr.; architects, Wolfe & Son; contractor, Moore Bros.; brick work, Byron Bros.; total cost, about $18,000.

One-story brick building with basement on Beale street, between Market and Mission. Owner, W. W. Montague & Co.; contractors (brick work) W. E. Stevens, (carpenter work) Chas. Kinsman; cost, $8,000.

Repairs and alterations to house on Sutter street, between Laguna and Buchanan. Owner, L. Getz; architect, W. Mooser; contractor, Sanchez; cost, $3,000.

Two-story double tenement house on Hyde street near McAllister. Owner, Etienne Taniere; architect, W. Mooser; contractor, Laherty; cost, $8,000.

Three-story frame building on Sixteenth street, between Folsom and Harrison. Owner, A. Morgenthau; contractor, A. G. Fitzpatrick; cost, about $12,000.

One-story frame building on Clay street, near Baker. Owner, Jas. Brannan; architect, H. T. Bestor; contractor, W. H. Wharff; cost, $1,200.

One-story frame building on corner of Howard and Spear. Owner, Wigmore; contractor, Brotherton; cost, $2,800.

Two two-story frame buildings on corner of Pine and Octavia. Owner, White; architects, Schmidt & Havens; contractor, J. Furness; cost, ——.

One-story and basement frame dwelling on Treat Avenue, near Twenty-fourth.

Two-story and basement frame dwelling on Sutter street, between Franklin and Gough. Owner, Mrs. M. P. Payne; architects, Curlett & Eisen; contractor, Creighton; cost, $16,500.

Two-story frame dwelling on Octavia, between California and Sacramento. Owner, J. G. Severance; architect, Chas. Geddes; contractors, Powell and Cogswell; cost, ——.

One-story frame dwelling on California street, between Broderick and Devisadero. Owner, Adolph Rapp; architect, H. Geilfuss; contractor, Sylvester Grant; cost, $2,150.

Two-story frame dwelling on Pine street, between Buchanan and Webster. Owner, H. Hinkle; cost, about $5,000.

Three-story frame building on Fourth street, between Harrison and Bryant. Owner, C. E. Boman; cost, $3,000.

Additions and alterations to a three-story building on corner of Mission and Mary. Owner, Donahue; contractor, Smith.

Additions and alterations to old church building on corner of Mission and Mary. Owner, C. Wunchie; architect, Schroepfer; contractor, Plums.

Two-story frame building on Seventh street, between Mission and Howard. Owner, Wm. Pullen.

One-story frame building on Tenth street, between Mission and Howard. Owner, G. Hertel; contractor, F. Reinicke; cost, $2,100.

Two-story frame building on corner of Third and Brannan. Owner, E. B. Pierce; architect, Curtis; contractor, G. B. Green; cost, $2,500.

A two-story frame building at foot of Powell street, for the United States. Contractor, Wilcox.

One-story frame building on corner of Montgomery Avenue and Vallejo.

One-story frame building on Valencia, near Twenty-third. Owner, Houston; Contractor, Ferguson.

Frame buildings on corner of McAllister and Buchanan. Owner, L. Junker; contractor, Jerry O'Brien.

SACRAMENTO.

Two-story frame dwelling on corner of Twelfth and M streets. Owner, L. B. Mohr; architects, Babson and Seadler; contractors, Carle & Croly; cost, $8,000.

WOODLAND.

Three-story frame building with brick basement on Lincoln Avenue. Owner, Samuel Hogan; architect, Frank Deestine; contractor, Stephen Blue; cost, $18,000.

FRESNO.

One-story frame building. Owner, J. Donahue; contractor, J. Lee; cost, $1,000.

One-story frame dwelling. Owner, J. M. Brady; contractor, M. R. Madera.

One-story frame dwelling. Owner, Rosseau; contractor, J. Welsh.

One-story frame dwelling. Owner, La Mott; contractor, C. Spano.

SAN JOSE.

Two-story frame dwelling on Lincoln Avenue. Owner, S. Newhall; architect, J. O. McKee; contractor, Jacob Lenzen; cost, $3,800.

RIVERSIDE.

Additions to the Glenwood cottages. Owner, F. A. Miller; contractors, Woodward & Brown; cost, $10,212.

Building for the M. E. Church. Carpenter work, Battles, Fales, and Pulz; masons, Downs and Sheldon; cost, 5,000.

BIGGS.

One-story frame building. Owner, F. F. Carnduff; contractor, J. W. Myers.

On railroad land south of Biggs, frame building for powder-house. Owner, Farmers and Mechanics' Store; contractor, J. N. Myers.

ALAMEDA.

Two-story residence on Railroad Avenue, west of Webster. Owner, A. Hoffman.

One-story cottage on Central Avenue, near Webster. Owner, Mrs. E. Boyd.

New Style of Building.

Several novel features in building have just been introduced in an eight-story business house being erected in New York by Mr. Vernon K. Stevenson. The tide of opinion in the fire department and among insurance companies having lately turned against iron beams, the owner has placed on his floors thick wooden beams one foot from center to center, and filled the interstices with cement, thus forming a solid floor two feet in thickness, which he claims will resist the penetration of fire for several days; whereas, he says, "the iron beams would bend with the heat and fall out, and the building cave in." The stairs are of slate; the walls three feet in thickness. The whole of the building is finished in cherry and California redwood, which has very much the appearance of mahogany. This attempt to utilize native instead of foreign wood seems to have succeeded very well.—*The Tradesman.*

Publication Notices.

All books noticed in these columns can be had at publishers prices at this office.

The Mechanic's SLIDE RULE, *and How to Use It*, by Fred. T. Hodgson, contains a number of valuable rules for its use, measurements of timbers, etc. Price 25 cents.

LAKEY'S VILLAGE AND COUNTRY HOUSES, containing one hundred pages of designs, is one of the best of its kind published. The illustrations are neatly executed, and of practical modern design; and many of them suitable for adoption on the Pacific coast. We heartly recommend it as worthy a place in every gentleman's library who enjoys a taste for architectural matters, as well as to all architects and builders. Price, $5.00.

THE ART AND SCIENCE OF CARPENTRY MADE EASY, by William E. Bell, *revised and enlarged edition*, published in 1881, is a book of great merit, and should be read and studied by every carpenter. Too many of our working-men are content with "knowing enough for all practical purposes," overlooking the great fact, that by reading and studying instructive books much more of valuable information may be obtained, which would so far simplify the daily manipulations of material as to remove or render easy of comprehension, the difficult problems which sometimes arise, adding perplexities to the toils of the day. Price $5.00.

"*Practical Lessons in Architectural Drawings*, by William B. Tuthill, A. M., Architect, published by Comstock, N. Y., is one of the most practical and useful books of its kind that we have noticed. It contains 33 full-page plates of illustrations (one in colors), and 33 wood-cuts, showing methods of construction and representation."

"*This book was suggested by the frequent call for a work of a restricted technical character, one which would give to the student who already has some knowledge of geometrical drawings, the information necessary to properly prepare his work for the mechanic.*"

It may also be read with advantage by many *practicing* architects, who judged by their delineations in construction, have as yet learned but little correctly. Copies can be had at this office, at publisher's prices. $2.50.

"*Sewer-Gas and its Dangers*," by George Preston Brown, is one of the best practical books on the subject published. Every plumber, architect, and owner should have a copy. It treates the subject handled vigogously and practically. Price $1.25.

We have received new invoices of "The Art of Saw Filing," by Holly, and the "Workshop Companion," both valuable and instructive little works, copies of each of which should be in the hands of every mechanic. Prices $1, and 25, respectively.

Copies of all the works from time to time noticed in this journal may be had at this office at publisher's prices. When stamps are remitted for books or subscriptions to this journal, our friends will oblige by sending the two-cent denomination, or one-cent and three-cent if the two-cent are not obtainable. The larger denominations are inconvenient.

Palliser, Palliser & Co.'s Useful Details.—Since their introduction in our catalogue of useful publications, the sales have been large. We have a full supply on hand. Sold at publisher's price, $3.00 each set, 20x26 inches, with 40 pages of detail drawings.

A supply of all books mentioned in our catalogue constantly on hand.

The Carpenters' Manual, by John D. Edwards. A very useful little book, containing a large range of practical ideas in connection with mechanical studies. Carpenters and builders will find it of much more value than its cost—50 cents.

The California Architect and Building News.

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Each subsequent insertion	25 00

Reasonable reductions for advertisements continued six or twelve months.

BACK NUMBERS OF THIS JOURNAL.

Since we commenced our series of articles on the HISTORY, DESCRIPTION, AND USES OF THE STEEL SQUARE, we have had an unusual demand for back numbers containing said articles. We regret to say that we have on hand but a

☞ FEW NUMBERS ☜

of each month, counting from last September, and would advise those who want a complete series of this journal to send AT ONCE for any copies necessary to make their set complete.

BOUND VOLUMES.

Bound Volumes of 1881 are now ready for delivery. Sent postpaid to any part of the United States upon receipt of $2.50.

A limited number of Bound Volumes of 1880 on hand, to be had at the same price.

Our New Heading.

In our May number, we will have the pleasure of placing before our readers and the public generally our new heading, lately adopted by the Pacific Coast Association of Architects as one worthy of being presented to the architects and draughtsmen of the East as a sample of talent of their California brethren on this coast. We will also present the design taking the second premium.

Advertisers would do well to secure space early, as most of our room is now taken. Space on the covers outside cannot be had at any price, and as the inside room is very limited, an early application is absolutely necessary.

We recognize in our recovery the tender mercies of an all-wise Providence, who spares and and smites as to him seemeth good, and none may say, Why doest thou? Although our naturally strong and robust constitution might be interposed in plea of recovery, yet neither that nor the strength of vigorous manhood can stay service and execution when the summons is issued calling us from the pursuits of life to the realities which lie beyond the limits of time.

This is fully illustrated in our case; for while we over whose head has rolled more than sixty-one years have been restored to health, another loved one, under the same roof with us, in early manhood, strong and robust in an eminent degreee, from like diseases in part with our own sank away into the arms of death within a few short days, while we were permitted to tarry yet a little longer amidst the scenes of time; and we trust for purposes of good to all who may in any manner come within our influence, either in domestic and social life, in our editorial capacity, and in all business relationships.

Only a few constitutions, however, humanly considered, could have passed through the same ordeal, beginning with pneumonia of very bad type, which was followed within five days with a severe attack of erysipelas in the face and head, and these accompanied by pile troubles of the worst kind.

The management of this journal and its contents for the month of March, and also the present month, has been in the hands of our junior partner; and while we feel pleased at his success, we trust that our patrons have found no fair cause of complaint. We have heard none, and if we may judge from the rapid increase of subscribers during the past thirty days, we may conclude that more than usual satisfaction was given.

From Mr. Charles L. Eastlake.

The following letter from Mr. Eastlake would have appeared in an earlier issue, but for causes already understood by the readers of this journal.

In our issue of October, 1881, we gave expression to our views and opinions in reference to the so-called, misnamed, and much-abused "Eastlake style" of architecture. The article referred to has met with universal approval, and has been copied into scores of technical journals, and many of daily issue in this and other sections of the country.

While some neat and in themselves consistent examples of house construction are to be found under the denomination of "Eastlake," so called because "Eastlake," as a name, has the ring of poetry and romance in it, and serves well in beguiling that class of owners who are ever seeking novelties and peculiar ideas and notions, often accepting monstrous violations as "beautiful," and special features which may be and often are infamous perversions of good taste and correct judgment, architecturally considered, as architecture.

Being satisfied in our own minds that Mr. Eastlake's name was being improperly used throughout the United States, and particularly so in California, by its being applied to any fanciful and by no other name explainable style of houses, we addressed a letter to that gentleman, and received the following reply:

LONDON,
41 Leinster Square, Bayswater, W.,
26th January, 1882.

Sir—I beg to thank you for your letter of the 19th ult., enclosing an extract from the CALIFORNIA ARCHITECT AND BUILDING REVIEW, in which reference is made to my books, and to a style of architectural design in America which I am erroneously supposed to have originated.

As you are good enough to ask for my views on the subject, I can assure you that they entirely accord with the opinion expressed by the writer of the article in question.

For some years past, it has been my fate to see illustrations and hear of objects manufactured in America under the name of "Eastlake furniture," which I not only never designed, but which represent a taste very far removed from, and often directly opposed to, the principles of art-workmanship I have endeavored to advocate.

That I cannot be held responsible for these inventions, may be inferred from the fact that not a single American manufacturer producing such articles as I have mentioned has thought it worth while to consult me on the subject.

I now find, to my amazement, that there exists on the other side of the Atlantic an "Eastlake style" of architecture, which, judging from the specimens I have seen illustrated, may be said to burlesque such doctrines of art as I have ventured to maintain by criticism of modern works, or deduce from the study of ancient examples.

I feel greatly flattered by the popularity which my books have attained in America, but I regret that their author's name should be associated there with a phase of taste in architecture and industrial art with which I can have no real sympathy, and which by all accounts seems to be extravagant and *bizarre*. I am, sir,

Your obedient servant,
CHARLES L. EASTLAKE.

There is a hardship in this state of facts for which, however, there can be no relief to Mr. Eastlake, since the world is full of men ready to *use* and *abuse* whatever may fall in their way, whether it be the reputation, personal rights, or property of others, so that money can be made by so doing. But it is not likely that this—in fact, *no style* of architecture will be of more than exceptional occurrence upon this coast, as the immoderation and extravagance practiced by those who have sought to force the "style" into more general use have simply served to restrict and restrain public appreciation, and hasten the time when the excessively *Eastlakish*—by which we mean those fantastic conceptions which in construction can only stand as nondescripts, unrecognized by any term or title within the range of architectural authorities, and disowned by the gentleman whose name is misused—shall stand as examples of the freaks of folly which at times may exist, even in the practice of architecture.

A Southern States paper gives some facts which show that those who prate continually about the imminent exhaustion of forests leave a most important forest country out of account. The States of Tennessee, Alabama, Arkansas, Florida, Georgia, South Carolina, and West Virginia contain, in the order named, from 58 to 66 per cent. of forest land whereas Maine and Michigan, which now produce one-half of the lumber used, contain only 47 and 40 per cent. of forest land. North Carolina, Louisiana, and Mississippi have an even greater extent of forest land, still untouched, than the States just named. Neither is the world generally aware of the good quality of the timber in the South. All the trouble is that, owing to the absence of snow, the wood is not won so cheaply as in the North.

Pacific Coast Association of Architects.

The regular monthly meeting of the Pacific Coast Association of Architects was held in the rooms of the Art Association, on Friday eve, April 7th. President Laver presiding.

Owing to the absence of the secretary through illness, his place was ably filled by J. B. Whittemore.

A proposition for membership was received and referred to a special committee, owing to the absence of the regular investigating committee.

Theo. A. Eisen, Esq., then delivered an able speech, which is printed in full in another part of this issue. It was well received by the members of the association, who vied with each other in favorable comments upon the subject-matter and views as presented by the speaker.

A motion was made and carried that the committee on the new heading for the CALIFORNIA ARCHITECT AND BUILDING NEWS reconsider their report as presented to this association in January, so that, if deemed advisable, premiums will be awarded to the best two designs.

*(It will be remembered that the association offered two prizes of $25 and $15 for the best two designs for a new heading of this journal. At the December meeting, 1881, seven designs were presented. Nearly all of them had one serious fault—*WANT OF ORIGINALITY. *One of them being almost a counterpart of an Eastern journal as regards the shape of the letters and the flourishes between them. As the intention of all parties concerned was to have something different from any journal printed, it was deemed advisable to raise the premium, and call for new designs. This action did not meet with the approval of many who felt interested. The above resolution is simply placing the matter in the hands of the committee for the purpose of reconsidering their report, so that the two premiums offered at the time referred to may be awarded if the committee so decide.—Ed.)*

A recess of five minutes was then taken for the purpose of examining the new designs for the heading of the CALIFORNIA ARCHITECT AND BUILDING NEWS. Designs were submitted by the following parties: A. T. Matthews, Oliver Everett, Wm. Schrof, and Vesta Schallenberger. The designs were referred to the same committee that reported upon those received last December; viz., Messrs. Sanders, Curlett, and Curtis.

Motion made and carried that a special meeting of this association be called on Friday evening, April 15th, to consider the subject of forming this association into a Chapter of the American Institute of Architects. A committee consisting of Messrs. Babson, Wright, and Eisen were appointed to make a report upon the subject at that time. Secretary was instructed to announce the above-mentioned meeting in the usual manner.

Cats vs. Imperfect Plumbing.

An ingenious woman in Hoboken, N. J., recently invented what may perhaps prove to be an improvement on the peppermint test for leaky waste-pipes. Noticing an offensive odor in the parlor of the house which she occupied, she suspected a defect in the waste-pipes, and sent to the agent to request that a plumber might be sent to examine them. The agent assured her that the plumbing was perfect; but this did not satisfy her, and after consultation with her neighbors, she procured a vial of oil of peppermint and poured it into a washbowl in the upper story. The perfume of peppermint was soon apparent in the parlor, and the woman went again for the agent, assuring him that there must be a leak in the pipe on the first story. He was still incredulous, and to make her proofs still more convincing, she devised a new test. After borrowing two cats from her friends, she purchased some oil of valerian, and stationing the cats in the parlor, went upstairs, and poured the valerian into the basin, in the same way that the peppermint had been previously applied, and then descended to watch the result. Cats are extremely fond of the odor of valerian, and it was not long before both of them began to sniff the air, and move toward the door of a closet through which the waste-pipe ran. The door was opened for them, and they immediately sprang upon a certain shelf, where they remained, purring with satisfaction. A third time the woman went to the agent, who, though still unbelieving, consented so send a plumber to make further investigations, and on cutting away the plastering so as to expose the pipe, a joint was found completely separated at the place which the cats had indicated.—*American Architect and Building News.*

"Huckstering" Mill-Work.

The complaint is general among mill-owners in reference to a far too common practice among contractors, of what is termed "huckstering the mill-work" of buildings around, with a view to securing all legitimate, and sometimes forcing advantages of questionable, fairness. The complaint is reasonable in itself, and we presume fully justified by the prevailing practices of many contractors; but not all. Some rise to the right standard, and place true values to themselves upon work figured on by them, and are willing to accept what to them may appear as reasonable on the part of "mill-men" and others for the respective portions of the work contemplated.

It is presumed that when a contractor is intrusted by an owner or architect with plans and specifications for estimate, that the intention of the party figuring is to carry out as nearly as possible the true and fair meaning and requirements thereof. Upon receiving the plans the first effort is to secure a low mill bid. For this purpose one or several of the mill owners are requested to bid for furnishing the mill-work. In good faith the mill-man spends his time and labor, and gives to the contractor an estimate, for which he agrees to deliver at the building all such mill work as may be necessary to complete that part of the work. Securing the lowest bid, the contractor uses it for the purpose of forming a correct estimate to hand to the architect. Generally, before the bids are opened by the latter party, the estimates of the different mills are "*well talked over*" among the contractors. Upon the awarding of the contract, it has got to be too common a custom for the successful party to either segregate the work, or secure a still lower bid by visiting mills that have not figured on the work, and endeavor to obtain a lower estimate. Failing to obtain a concession, the contractor commences to *piece-work* the job. To one he will give the making of the frames; to another will be given the cornice, etc., and so on. It frequently happens that the mill work of several different parties is put into a house, the result being anything but favorable to the mill having the largest share of the work.

The contractors declare that they have a right to get their work done in the cheapest manner, as long as it is satisfactory to the architect. This we do not deny; it is in the *way they take* that is so galling to the mill-man. If the contractor should figure his own mill-work, and after a contract has been awarded to him should strive by all legitimate means to get the work done at a lower figure than his estimate, the mill-man would not have quite so just cause for growling. But, for the purpose of getting a low bid, for the contractor to go around and secure estimates by notifying the mill owners that the lowest bid would secure the work, and then after the contract has been awarded to endeavor by HUCKSTERING to secure a still lower figure, is a practice that cannot be too severely commented upon.

We have been repeatedly called upon to lay this matter before our readers, but have refrained from so doing, hoping that with the increasing volume of trade that is being showered in our midst the practice would become obsolete. The competition among mechanics, however, is so great, that the evil appears to be on the increase, and should call for energetic action from our mill-men.

The remedy is very simple. Let each mill-man keep a *black list*, in which should be entered the names of every one that is acting in accordance with the above complaint, and refuse in future to estimate upon any work whatever for such parties as seek to make a living by the HUCKSTERING OR PIECING-OUT of mill-work.

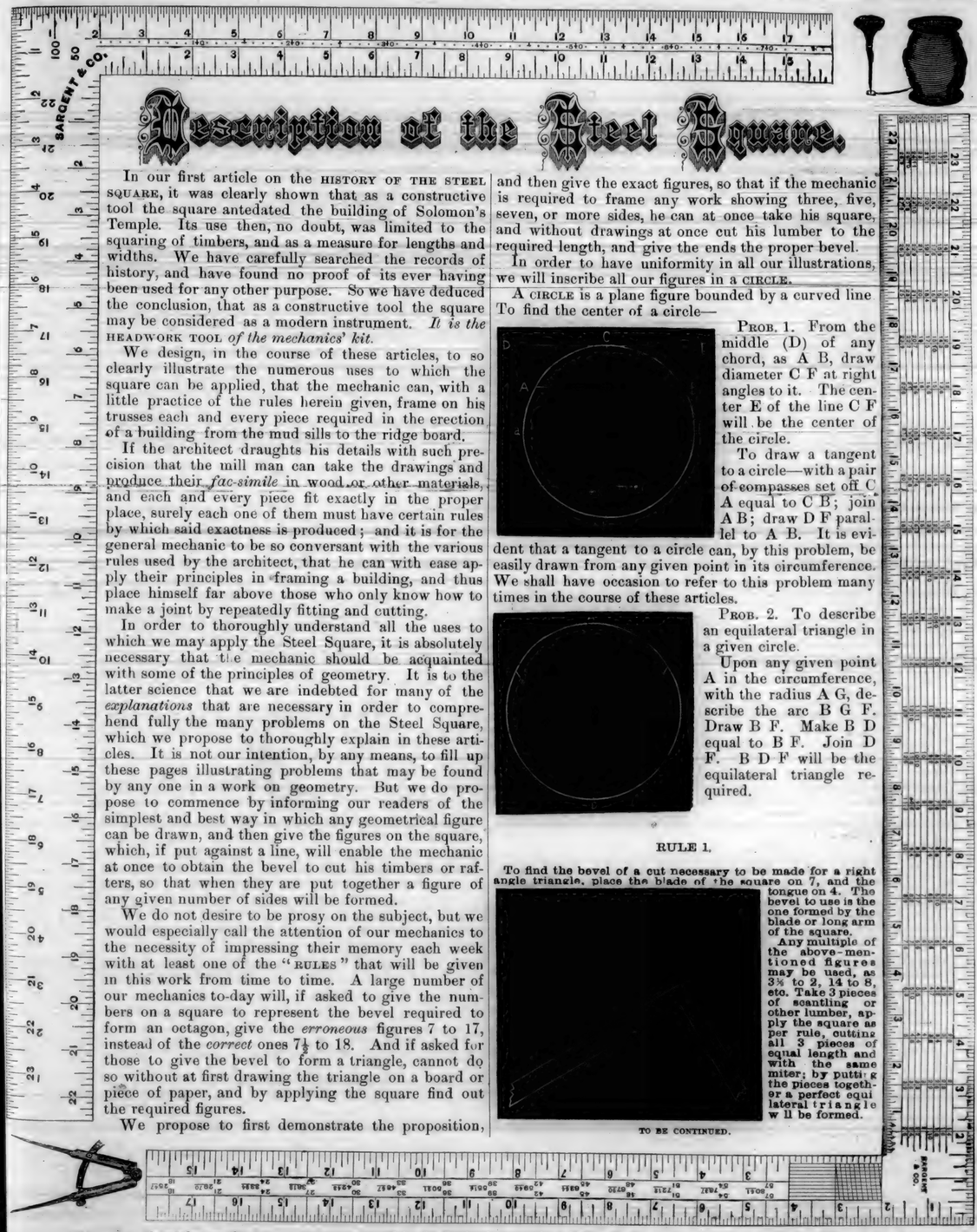
Fire-Proof Dwellings.

In view of the many destructive fires amongst domestic dwellings, we wonder that the use of light iron joists and fire-proof floors is not more extensive than at present. Half the danger and destruction resulting from a fire in some domestic dwelling would be avoided by the use of such. It is generally the case that fires are first discovered when localized by a single room, and it is only the rapid destruction of the whole of the interior of a dwelling house, and often serious loss of life, which we at present take as a matter of course. We think that in a few years to come the entire destruction of a dwelling because one room has caught fire will be thought as outrageous as the destruction of a row of houses from a conflagation in one would be at present. A fire may very easily be starved out by want of combustible material, a great deal easier than it can be extinguished by water when wood or other combustible material has once caught. In the localization of a fire in the room in which it occurred would lie best protection to life and property against fire. It is not as if such protective means need require excessive outlay. A floor of iron joists and non-inflammable material can be laid, we believe, almost as cheap as the present wooden floors. To complete the isolation of each room the doors may be made, at no increase of present cost of wood, so impregnated with chemicals that it is no longer inflammable. These improvements will surely come in time; like all others, they may be foretold long before the public eventually receives the benefit of them.—*The Mechanic.*

Registration of Draughtsmen.

Draughtsmen should awaken to their interests and adopt some place for their headquarters. We have on hand now applications from Oakland, Portland, Santa Barbara, and two offices in this city for draughtsmen. We have the addresses of several, but all of them happen to be busy. We want to make a complete directory of all the draughtsmen on this coast. We shall charge a fee for registering of $2.50. This to be paid only once, and entitles the one paying to the privilege of securing information in regard to work for as long time as he remains in the State, whether six months or six years. No other fee whatever will be exacted as long as the party's name is on our books. We have found it necessary to charge a small fee, owing to the fact that postage-stamps, etc., cost money; and in answering the various applicants, we have found that, in the course of a month, many stamps are necessary. We think that it is no more than right that the parties benefited should be the ones to pay the costs. Hence we shall exact a registration fee of $2.50.

☞ **Subscription price of this journal is $2.00 in advance.**



Description of the Steel Square.

In our first article on the HISTORY OF THE STEEL SQUARE, it was clearly shown that as a constructive tool the square antedated the building of Solomon's Temple. Its use then, no doubt, was limited to the squaring of timbers, and as a measure for lengths and widths. We have carefully searched the records of history, and have found no proof of its ever having been used for any other purpose. So we have deduced the conclusion, that as a constructive tool the square may be considered as a modern instrument. *It is the* HEADWORK TOOL *of the mechanics' kit.*

We design, in the course of these articles, to so clearly illustrate the numerous uses to which the square can be applied, that the mechanic can, with a little practice of the rules herein given, frame on his trusses each and every piece required in the erection of a building from the mud sills to the ridge board.

If the architect draughts his details with such precision that the mill man can take the drawings and produce their *fac-simile* in wood or other materials, and each and every piece fit exactly in the proper place, surely each one of them must have certain rules by which said exactness is produced; and it is for the general mechanic to be so conversant with the various rules used by the architect, that he can with ease apply their principles in framing a building, and thus place himself far above those who only know how to make a joint by repeatedly fitting and cutting.

In order to thoroughly understand all the uses to which we may apply the Steel Square, it is absolutely necessary that the mechanic should be acquainted with some of the principles of geometry. It is to the latter science that we are indebted for many of the *explanations* that are necessary in order to comprehend fully the many problems on the Steel Square, which we propose to thoroughly explain in these articles. It is not our intention, by any means, to fill up these pages illustrating problems that may be found by any one in a work on geometry. But we do propose to commence by informing our readers of the simplest and best way in which any geometrical figure can be drawn, and then give the figures on the square, which, if put against a line, will enable the mechanic at once to obtain the bevel to cut his timbers or rafters, so that when they are put together a figure of any given number of sides will be formed.

We do not desire to be prosy on the subject, but we would especially call the attention of our mechanics to the necessity of impressing their memory each week with at least one of the "RULES" that will be given in this work from time to time. A large number of our mechanics to-day will, if asked to give the numbers on a square to represent the bevel required to form an octagon, give the *erroneous* figures 7 to 17, instead of the *correct* ones 7½ to 18. And if asked for those to give the bevel to form a triangle, cannot do so without at first drawing the triangle on a board or piece of paper, and by applying the square find out the required figures.

We propose to first demonstrate the proposition, and then give the exact figures, so that if the mechanic is required to frame any work showing three, five, seven, or more sides, he can at once take his square, and without drawings at once cut his lumber to the required length, and give the ends the proper bevel.

In order to have uniformity in all our illustrations, we will inscribe all our figures in a CIRCLE.

A CIRCLE is a plane figure bounded by a curved line To find the center of a circle—

PROB. 1. From the middle (D) of any chord, as A B, draw diameter C F at right angles to it. The center E of the line C F will be the center of the circle.

To draw a tangent to a circle—with a pair of compasses set off C A equal to C B; join A B; draw D F parallel to A B. It is evident that a tangent to a circle can, by this problem, be easily drawn from any given point in its circumference. We shall have occasion to refer to this problem many times in the course of these articles.

PROB. 2. To describe an equilateral triangle in a given circle.

Upon any given point A in the circumference, with the radius A G, describe the arc B G F. Draw B F. Make B D equal to B F. Join D F. B D F will be the equilateral triangle required.

RULE 1.

To find the bevel of a cut necessary to be made for a right angle triangle, place the blade of the square on 7, and the tongue on 4. The bevel to use is the one formed by the blade or long arm of the square.

Any multiple of the above-mentioned figures may be used, as 3¾ to 2, 14 to 8, etc. Take 3 pieces of scantling or other lumber, apply the square as per rule, cutting all 3 pieces of equal length and with the same miter; by putting the pieces together a perfect equilateral triangle will be formed.

TO BE CONTINUED.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Methods of Chemically Reproducing Drawings.

The following excellent account of the various processes in use for copying plans by the agency of light is translated in the *American Architect* from the pages of *Le Génie Civil:*

For reproducing a drawing at a different scale from the original, or for copying plans on very thick paper, the assistance of a camera, sensitive plates, re-agents of various kinds, and an operator skilled in the difficult manipulations of the photographic art will be needed; but anything which is or can be drawn in line on thin paper or tracing cloth may be copied with simple materials and without skilled assistance.

The simplest method of accomplishing this consists in the employment of the so-called ferro-prussiate or "Marion" paper, which is prepared by covering one side of the sheet with a mixture of red prussiate of potash (ferrocyanide of potassium) and a salt of peroxide of iron; under the influence of light, that is, under the white portions of the drawing to be copied, the ferric compound is reduced to the state of a ferrous salt, which gives with the red prussiate of potash an intense blue coloration, analogous to Prussian blue. This coloration is not produced in the portions of the sensitive paper protected from the light by the black lines of the drawing to be copied, and on washing the print the design appears in white lines, on a blue ground.

The formula for preparing the sensitive paper is as follows:

Dissolve 8 parts of red prussiate of potash in 70 parts of water; dissolve separately 10 parts of ammoniacal citrate of iron in 70 parts of water; filter the two solutions through ordinary filtering paper, and mix them. Filter again into a large flat dish, and float each sheet of paper to be sensitized for two minutes on the surface of the liquid, without allowing any of this to run over the back of the paper. Hang up the sheets in a dark place to dry, and keep them from light and dampness until used. They will retain their sensitiveness for a long time.

The paper being ready, the copy is easily made. Procure either a heavy sheet of plate glass, or better, a photographer's printing-frame, and lay the drawing to be copied with the face against the glass; on the back of the drawing lay the prepared side of the sensitive paper, place upon it a piece of thick felt, and replace the cover of the printing-frame, or in some other way press the felt and papers firmly against the glass. Expose, glass side up, to sunshine or diffused daylight, for a time varying with the intensity of the light and the thickness of the paper bearing the original drawing from a few minutes to several hours. It is better to give too much than too little exposure, as the color of a dark impression can be reduced by long washing, while a feeble print is irremediably spoiled. By leaving a bit of the sensitive paper projecting from under the glass, the progress of the coloration can be observed. When the exposure has continued long enough the frame is opened and the sensitive sheet withdrawn and thrown into a pan of water, to be replaced immediately by another, if several copies are desired, so that the exposure of the second may be in progress while the first is being washed and fixed. The water dissolves out the excess of the re-agents used in the preparation of the paper, and after several washings with fresh water the print loses its sensitiveness and becomes permanent. It is advantageous, after several washings with water, to pass over the wet surface a weak solution of chlorine or of hydrochloric acid, 3 or 4 parts of acid to 100 of water, which gives brilliancy and solidity to the blue tint, and prevents it from being washed out by long soaking. This should be followed by two or three rinsings with fresh water, and the print may then be hung up to dry, or placed between sheets of blotting paper.

This mode of reproduction, whose simplicity has led to its adoption in many offices, has the inconvenience of giving a copy in white lines on a blue ground, which fatigues the eye in some cases, while the application of other colors is impracticable. By repeating and reversing the process, copying the white line print first obtained on another sensitive sheet, a positive picture, representing the black lines of the original by blue lines on a white ground, can be obtained; or the same result may be reached by a different mode of treating the sensitive paper.

Several varieties of paper called "caynoferric," or "gommoferric," are sold, which have the property of giving a positive image. The mode of preparation is nearly the same for all: Three solutions, one of 60 parts by weight of gum-arabic in 300 of water; one of 40 parts ammoniacal citrate of iron in 80 parts of water; one of 25 parts perchloride of iron in 50 of water, are allowed to settle until clear, and are then decanted, mixed, and poured into a shallow dish, the sheets being floated on the surface as before, and hung up to dry. The solution soon becomes turbid, and must be used immediately; but the paper once dry, is not subject to change, unless exposed to light or moisture. The reactions involved in the printing process are more complex than in the first process, but present no particular difficulty. Under the influence of light and of the organic acid (citric) the perchloride of iron is reduced to a protochloride, and on being subjected to the action of ferrocyanide of potassium the portions not reduced by the action of the light, that is, the lines corresponding to the black lines of the original drawing, alone exhibit the blue coloration. The gum plays also an important part in the process by becoming less soluble in the parts exposed to light, so as to repel in those portions the ferrocyanide solution. The mode of printing is exactly the same as before, but the paper is more sensitive, and the exposure varies from a few seconds in sunshine to fifteen or twenty minutes in the shade. The exact period must be tested by exposing at the same time a slip of the sensitive paper under a piece of paper similar to that on which the original drawing is executed, and ruled with fine lines, so that bits can be torn off at intervals, and tested in the developing bath of ferrocyanide of potassium. If the exposure is incomplete, the paper will become blue all over in the ferrocyanide bath; if it has been too prolonged no blue whatever will make its appearance, but the paper will remain white; if it is just long enough, the lines alone will be developed in blue on a white ground.

During the tests of the trial bits the printing-frame should be covered with an opaque screen, to prevent the exposure from proceeding further. After the exact point is reached the print should be removed from the frame and floated for a few moments on a bath of *saturated* solution of ferrocyanide of potassium, about one part of the solid crystals to four of water. On raising it the design will be seen in dark blue lines on a white ground. It is necessary to prevent the liquid from flowing over the back of the paper, which it would cover with a blue stain; and to prevent this, the edges of the print turned up all around. On lifting a corner, the progress of the development may be watched. As soon as the lines are sufficiently dark, or blue specks begin to show themselves in the white parts, the process must be immediately arrested by placing the sheet on a bath of pure water. If, as often happens, a blue tint then begins to spread all over the paper, it may be immersed in a mixture of 3 parts of sulphuric acid, or 8 parts of hydrochloric acid, to 100 parts of water. After leaving it in this acidulated liquid for ten or fifteen minutes, the design will seem to clear, and the sheet may then be rinsed in a large basin of water, or under a faucet furnished with a sprinkling nozzle, and a soft brush used to clear away any remaining clouds of blue; and finally, the paper hung up to dry.

The ferrocyanide bath is not subject to change, and may be used to the last drop. If it begins to crystallize by evaporation, a few drops of water may be added. The specks of blue which are formed in this bath, if not removed by the subsequent washings, may be taken out at any time by touching them with a weak solution of carbonate of soda or potash. The prints may be colored in the usual way.

Rapid Destruction of Lumber East.

The most of the lumber now used in the Atlantic States is drawn from Michigan, Minnesota, and Wisconsin. It has lately been officially estimated that the supply of lumber in those States will be exhausted in ten or eleven years. When the supply in those three States is exhausted, it is almost certain that the Atlantic States will begin to draw upon the red and pine woods of the Pacific Coast for building lumber and railroad ties. The destruction of timber for these and other domestic purposes East is unparalleled. During the year 1881, over one billion eight hundred million feet of lumber entered Chicago alone. Redwood and good pine timber land on this coast will advance very much within the next ten to fifteen years, we think. On the subject of the rapid destruction of timber, the N. Y. *Nation* says:

Chicago is now the greatest lumber center the world has ever seen. Its shipments reach the Atlantic and to beyond the Rocky Mountains. The Chicago Lumber Exchange regulates the lumber trade of the country. In lumber Chicago is king; but its reign is almost over. Its immense lumber yards will soon be empty, and with the pine forests of the lakes will disappear the commercial advantages which its central position in relation to these forests has given to it as their chief point of distribution. No city of the United States can ever hope to rival Chicago in the volume of its present lumber business. New Orleans or San Francisco will probably become the successful competitor in the race for second place. Both are the natural outlets for vast forests of great commercial importance, and both are conveniently situated for a great foreign and domestic lumber trade.

Science of Perfumes.

By a process known as infleurage, which is the exposure of beef fat to fresh flowers in close boxes until it is thoroughly permeated and charged with their odors, the perfumes of six flowers are obtained, which could in no other manner known to science be preserved apart from the fresh petals. Those flowers are violet, jasmine, tube-rose, rose, orange flower, and cassic (cinnamon flower). From those six there are fifty or more combinations made for the simulation of the odors of other flowers. Sweet-pea is made with jasmine and orange flower; hyacinth is counterfeited by jasmine and tube-rose; lily of the valley by violet and tube-rose. But the resources of the perfumer are by no means confined to the pomades, as the scented fats are termed. He uses many essential oils, the principal of which are sandal-wood, bergamot, lemon, rosemary, neroli (made from bitter orange flowers), patchouli, and ottar of roses. It is very difficult to get the last named in a pure state, because its great cost tempts to dishonest adulteration. Very often rose-geranium oil is substituted for it. Musk is another important ingredient, entering, as it does, into almost all perfumes, except those which are actually imitations of flower odors, or, as styled by perfumers, "natural," as, for instance, heliotrope, tube-rose, white rose, and violet.—*Boston Herald.*

The Consistency of San Francisco Architecture.

Architecture, or the art of constructing abodes for mankind, has its origin in the human necessities, as regards shelter and protection. And as the exigencies in reference to the climate of different portions of the world, combined with the social and business relations of inhabitants of any stated era and place, are and have been of such various natures, so must architecture, to be true and consistent with the appellation, be in strict concord with such deviations of custom.

The earliest houses that were built having perished long before histories were written, such structures therefore cannot now be recorded nor described. It is, however, easy to conceive, though impossible to know with certainty, how they arrived at their different stages of improvement; for, as we have above alluded, architecture must have owed its birth to necessity, as it owed its embellishments afterwards to luxury.

Man's first care would naturally be directed to the discovery or construction of some kind of shelter against the inclemencies of the weather the region in which he was placed; for as cold in and heat in their extremes could not well be endured under the bare canopy of heaven, his best affections, no less than his natural wants, would prompt this. The cave of the Egyptian shepherd or the hut of the savage are no more connected with science and forethought than the lair of the wolf or the more artful structures of the fowls of the air.

Probably one of the first authenticated accounts rendered us of building in contradistinction with the primitive abodes above referred to, we find in the eleventh chapter of Genesis, when they built a city upon the plains of Shinar, "and a tower reaching up to the heavens." But as to the style and taste displayed, we know of nothing more than their work, taken from an artificer's standpoint, must have been of a substantial character.

Now let us consider the above as fundamental to the various degrees of improvement which is manifest in the architecture of succeeding eras. Let us begin with the time when Cæsar invaded England, and which was immediately afterwards characterized by England accepting the more advanced and enlightened ideas of Roman work, in striking contrast with the wattle and clay huts which were formed by stakes driven into the ground, interwoven with wicker-work, and afterwards having the interstices and crevices filled with moss, daubed upon the exterior with clay, and the roof thatched with dried coarse grass as security against the weather. Let us touch upon the various degrees of improvement succeeding the same; works under the Norman *regime*, owing their massive construction and battlemented parapets to the warlike spirit of the time, and indicative of ordinary comfortable shelter, allied with defense against invasive trespassers; works under the Plantaganets and following reigns, where fortication qualities are secondary to the luxury and comfort of the people.

In accepting England as a criterion of progression, we do not intentionally overlook the Roman and Grecian empires, the cradle of architecture; but our reference to the Saxon work being made, as being a more thorough exemplification of progression, resulting in the present degree of perfection or imperfection attending our present condition. Our present condition! What is it? Are the works now being constructed and prosecuted by the enlightened community of the nineteenth century, and particularly of San Francisco—are they in as strict concord with the usages, customs, and conditions of the people? Are they as thoroughly consistent with our wants and domestic customs as the primitive huts were to the inhabitants of the barbarous ages? In a measure, we are regretfully compelled to answer in the negative; for apparently the designs of façades, as exhibited in our modern buildings, fall far short in a majority of cases of being a truthful index, of the purpose and method of construction of the same. We must admit that we are but sham imitators of truthful import.

What is more inconsistent than a huge pile of brick and mortar carried up until the required altitude is attained, during which performance wooden scantling brackets are left protruding for the purpose of retaining cornices, belt courses, bay-windows, and massive pilasters supporting the same, and which are affixed after the structure has been virtually finished, and not until then is the work deemed substantial and correct.

We heard a gentleman exclaim the other day, upon perceiving a remarkable truthful representation of oak graining executed upon a redwood surface, "What a palpable lie!" We suppose the interpretation of this utterance in thorough terms would be, that a commonly called "white lie," relying upon its own merits as a lie only, would be admissible, and deserving of some honor; but a lie or sham assuming the arrogance of a truthful representation, and withholding the least key to the penetrable eyes of truth, is beyond all claims to respect.

We are compelled to admit that the mass of our designs to be perversions of truthful intent, in reference to the copied style prevailing, considered with the modes of construction and materials used; but are we, as architects, to blame? No, and yes; *No*, because many of our profession, whose daily bread is dependent upon their avocation, and perchance in the employ of a client whose architectural ideas are orthodox in a local sense, and persistent that his structure shall possess all the parasitical appendages upon its face, in the shape of galvanized iron, wooden, and cemented ornamental work, jointed, perhaps, with putty-knife rulings; are they, then, to refuse him the culmination of his fancies, and jeopardize his consideration in the way of lucre? However great our allegiance may be to the glory and honor of the profession, the temptation to cater to the necessaries of life will generally override many conscientious scruples relative to our professional feelings and pride, and we are thus prone to yield to the desires of our employer.

Although there are cases in which an architect is granted full license to render, both in design and in plan, as he may deem worthy and practicable, he in such a case bears the entire responsibility of the completed works, assuming the satisfactory standard, in a speculative point of view, to the eyes of the owner, aside from the many adverse criticisms oftentimes tendered by such an owner's friends. What bliss it is for an architect to have but the owner to satisfy! an owner with judgment to guide and direct, as he may desire, independent of the many proffered suggestions, both *pro* and *con*, from members of his social and business circles, is indeed a boon to an architect.

It being an architect's misfortune to have his productions monumental, and occular illustrations of his ability or disability, as the case often is, it is indeed unfortunate for him that his inspirations should be so biased by extraneous causes, and for which denial of executive freedom he has no remedy, save that of ability and standing, acknowledged by the public at large, and which is generally only attained by years of so-called experience, and independence, perhaps, in a pecuniary sense. We therefore offer this last in palliation for a San Francisco architect to essay productions, for which he himself may have no sympathy with. Thus far for the negative; and in assuming the affirmative to the question above cited, "Are we as architects to blame?" we vouchsafe the statement that the fault has lain with the architects as a body in their failure in establishing a precedent as to genuine artistic taste, and which we are happy to state is now fast being acquired. You perhaps ask the question how, to which we answer, by what we are now doing, and have been doing the past year, enjoying a professional union, at present as a local body, and perhaps in the immediate future in constituting ourselves a chapter of the "American Institute of Architects."

As a local body we stand before the public, not as members of a trades-union, nor of a protective association, guaranteeing ourselves a stated commission as compensation for services rendered, but as a body whose members meet in social fellowship for the exchange of professional ideas and the promulgation of high art, endeavoring to establish that model of taste in design and adaptation to climate and materials as shall be consistent with the wants of our community; and with the help of our Eastern brethren serving to mold the architectural ideas of the general public into that channel which leads to perfection.

Having so far touched upon an evil and the hopes of eradicating the same, let us now go farther into the minutiæ of this evil, and where these departures from the path of architectural rectitude lie; and having so far opened fire upon brick business blocks, with non-fireproof excrescences, let us now direct our artillery upon those wooden houses, sometimes styled mansions, those models of classic architecture, with Frisco-American variations, and of which the more humble often exhibit the best evidence of taste, as exemplified by the sides and rear of such houses, looking upon the back yards, where at least there is no sham, but the outlines of an honest shingle roof.

Imagine the incongruity of these honest outlines being concealed upon the principal façade by a classic cornice, balustrading and ribbed parapets, porticoes supported by massive columns, these in turn borne by concealed two-by-four and four-by-four-inch posts, all of these adornments constructed of wood, and with the ingenuity of the house-painter so dyed as to represent the clearest white marble or the exquisite sandstone, and as such appears until the sun has left its gauge-marks in the nature of warps, checks, etc., a glaring condemnation and advertisement of "sham"—"I wood I were, but I am knot."

If we must have the bodies of our houses constructed of wood, in compliance with our desires as California residents, and which seem to have been principally instigated by the fear of earthquakes and the close proximity to the timber regions, why shall we not allow the materials to suggest the style, and not allow the incubus of a foreign style to fasten its tentacles upon bogus rock?

The advent of the prevailing Eastern domestic architecture should be hailed with satisfaction in our midst, and with certain modifications is undoubtedly consistent with the above interpretation. Why should not we as Californians, a people famed for their originality, be at par with the humble Swiss, who in his chatelet shows no prevarication of its construction; on the contrary the lines of beauty delineated in its adornments, being in quiet harmony with the surroundings, and a truthful index of its formation and uses.

In closing and in recapitulation, it behooves us to maintain the credit which is due San Francisco in the production of works, which certainly, as far as pertaining to the tenantable convenience of its hotels, business blocks, and residences, it bids fair to ultimately rank secondary to none; and here we again exemplify that architecture is contingent to the customs and conditions of mankind. The mass of San Fancisco's residents, living in better style proportionate to their circumstances than perhaps elsewhere, their abodes are endowed with the latest improvements conducing to comfort and ease, and

the interior arrangement of our houses is generally of a high and novel order.

But this is not sufficient for the rapidly increasing refinement of our people. Gratification to physical comfort does not satisfy a refined mind, unless that comfort is associated with the truly beautiful and consistent adaptation.

"Such is the strength of Art, rough things to shape,
And of rude commons, rich enclosures make."

THEO. A. EISEN.

Removal of Fixtures.

During the past month we have been consulted in several instances in regard to the liabilities of landlord and tenant, and the right of the latter to remove gas fixtures, bells, etc., which he may have placed in a building during his occupancy thereof. We have examined the law applying to such cases, as given in various decisions in courts in different parts of the country, and give the result in as concise language as possible:

"The presumption of law which arises from 'the position of the parties,' when they stand to each other in the relation of landlord and tenant, is one in the least degree favorable to an intention to permanently benefit the freehold; in fact, an intention to permanently benefit the freehold, on the part of a tenant annexing articles to the soil, can never be presumed solely from the relation of the parties as landlord and tenant.

"It will depend in a great degree of a consideration of 'the mode and degree of annexation,' 'the nature and character of the fixture, and the use for which it is intended,' to determine whether a fixture is 'movable' or 'irremovable'; in other words, these two latter incidents now become the most important *indicia* of the intention.

"If the article is so firmly annexed to the freehold, or incorporated therewith, that it cannot be removed without permanent injury to the freehold, the tenant will not be allowed to remove it. It is a proper question for a jury to determine whether the removal of a fixture would cause substantial injury to the freehold, and such a direction on the part of the judge is a good test of the mode and extent of annexation."

"Where a yearly tenant of a house had, at his own expense, hung bells, but quitted the premises without removing them, it was held that, by remaining fixed to the freehold after the expiration of the term, they become the property of the landlord, and that the tenant could not maintain trover—*i.e.*, action for goods found—for them after the landlord had severed them from the freehold."

In a later case, the tenant had caused to be placed in the building a system of electrical bells, for his own convenience, and claimed the right to remove them, although in his lease all improvements were to revert to the landlord. The tenant did remove them, and the landlord recovered full damages, with a little extra thrown in.

"In the absence of a special contract, tenant's fixtures cannot be removed after the termination of a lease, and this rule applies whether the lease determines by effluxion of time or by re-entry on forfeiture."

The result of the authorities may be stated—first, that fixtures go, at the expiration of the term, to a landlord, unless the tenant has, during the term, exercised his right to remove them; secondly, that the tenant may remove the fixtures, notwithstanding the term has expired, if he remains in possession of the premises; thirdly, that his right to remove fixtures after his term has expired, is subject to this further qualification, viz., that the tenant continues to hold the premises under a right still to consider himself as tenant.

"The right of a tenant to sever and remove movable fixtures is frequently governed by express covenants. When this is the case, the rights of the parties will, of course, depend upon the legal constructions of such covenants."

"A general covenant to repair extends not only to buildings but to fixtures, and a tenant is precluded by such a covenant from removing fixtures. A tenant may also deprive himself of his right to remove fixtures, by undertaking to repair and yield up in good repair, improvements and fixtures.

"If a tenant, on the determination of his tenancy, takes any fresh interest in the premises, he should take care to reserve expressly his right to remove those fixtures which he had, under the old tenancy, a right to sever and remove, otherwise the tenant may lose his property in them altogether; and it may be generally stated that the right of a tenant to remote fixtures may be divested by any new agreement for the use and employment of the land in which there is no mention of the fixtures. Suppose a tenant from year to year, or without any express covenant to repair, erects structures or improvements, and subsequently takes a lease of the same premises, with a general covenant to repair, the lessee would be restrained from removing those fixtures at the determination of the tenancy so created, although he might have removed them previously to the commencement of his lease.

"Where the outgoing tenant stipulates with the incoming tenant for the purchase of the fixtures at a valuation, the landlord should, in all cases, be made a party to such an agreement; otherwise, if the fixtures are allowed to remain until the incoming tenant has taken possession, the landlord may dispute the right of purchase and sale, and claim the fixtures, on the ground that the outgoing tenant has divested himself of the right to remove the fixtures by neglecting to exercise his right during the term."

Paper-Hanging.

The art of putting on, or "hanging" paper is very simple, and is easily learned; but to make a tasteful choice of paper for various situations is not so easy, hence the following remarks, which may be of service to the workman or others on whom the selection of paper may devolve.

Walls to a room should be regarded only in the light of a frame-work to what the room contains, and should be decorated so as to bring into prominence, and not eclipse, the other parts of the chamber. Nothing destroys the effect of a room so much as a handsome but staring wall paper, or a wall so profusely ornamented as to strike upon the eye to the exclusion of the rest of the decorations, thus bringing forward what should be the background into the most conspicuous place. A modern drawing-room is always difficult to decorate artistically, because of the taste of its builders for heavy cornices, prominent mantelpieces, and rooms too lofty for their size; and as all these misnamed "embellishments" are too costly to remove by tenants, the only plan to pursue is to destroy their effect by exercising both taste and ingenuity. First, with regard to the ceiling, the ornamental plaster boss in its center should be removed, and the ceiling tinted a color that harmonizes with the wall paper, as no harmonies can be hoped for when what produces them is surmounted with the glaring white of an ordinary ceiling. The tint used must be one that softens into the wall paper, not one that contrasts; thus, if the tone of the room is that of a soft gray-blue, the ceiling should be a clear flesh-pink; or should a gray-green, picked out with black, be the chosen color, then it should be colored a subdued lemon.

Some people cover their ceilings with a whole colored paper, and border it with a stenciled pattern representing the thin garlands so familiar upon Queen Anne decorations; but this is a more troublesome plan than the simple coloring, which answers all the purpose. The walls, if they are lofty, require a high dado. These high dadoes give a look of comfort and "home," that is absent from the modern high pitched room papered with one uniform pattern. The dado is divided 3 feet to 4 feet from the ceiling, and the coloring of the lower portion must always be heavier than that used on the upper, or a top-heavy look will be given to the room. When many pictures are to be hung up, the lower part of the dado should be of a whole color, either a whole colored paper, or a painted wall, as pictures are only shown off upon such a background. Where a whole tint is used for the lower part of the dado, the upper portion should be decorated with a frieze paper of a good bold pattern, but of subdued coloring, and of tint that harmonizes with the lower. Thus, the color used about the frieze should be the same as that on the lower part, but of a lighter shade, intermixed with some other colors that form a harmonious link between the two shades. Contrasts must be carefully avoided, but pale pinks, blue, and ambers can be blended together above a subdued gray-blue ground. The two portions of the dado should be joined together with a light wooden (black or brown) railing, or with a line of paint.

The dado decorations can be altered by placing the pattern paper upon the lower part, and leaving the upper plain colored, with or without a stenciled pattern upon it. This will suit a room where not many pictures are required, or that is already rather dark. Some part of the wall should always be in plain color, as the eye requires rest; and no pattern, however subdued in hue, can give the relief to the mind that a bit of plain coloring affords; and this scarcity of ornament in one part of a room is amply repaid by the effect it gives to such parts as are bright and should be bright. The true theory of effect is to use but one or two bright colors in a room, and to surround them by soft and subdued tints that throw up and do not destroy their brilliancy; a number of bright colors placed together destroy each other, and leave no impression upon the mind but glare and vulgarity. Having settled upon your paper and ceiling, have the wood-work and cornice of the room painted either a shade lighter or darker than the walls, and shroud up the mantelpiece with curtains, etc., of satin sheeting embroidered with crewels, and instead of the usual looking-glass over the fireplace, have a mirror surrounded with brackets holding china; or have a black, wooden mantelpiece made with squares of looking-glass set in. The background of your room being thus completed in a manner really to be a background, your furniture will look twice as well as if it were stared out of countenance by the walls; and one need hardly add that all your friends will delight in a room that throws up and brings out their dresses and faces, instead of killing them by its glaring tints.—*Hints for Painters.*

Asphalt, and its Commercial Value.

Asphalt, on account of the high value it has in the market, is often adulterated with coal-tar pitch. Formerly, its purity was determined by testing its elasticity, or determining the depth to which a weighed iron point would penetrate. These, however, are unsatisfactory for practical determinations. A new method proposed by H. Hauschild is as follows: One gramme, which has previously been heated up to 200°, is shaken up with five cubic centimeters of alcohol. If the solution contains only two per cent. of pitch, it will show a distinct yellow to green fluorescence, which becomes more intense as the percentage of pitch increases.—*D. Töpf. and Zgl. Ztg.*, 12, 401.

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

The preparation of ceilings for whitewashing (or calcimining as this operation is sometimes pretentiously called) is an operation requiring some skill and knowledge of "how to do it." A dirty ceiling, which has been subjected to successive coats of whitewash, whether of lime or of whiting and glue-size, cannot be made solidly and smoothly white by additional whitewashing. The mass has become spongy and sucks up the water so quickly that the material cannot be evenly distributed. In such case the only way is to begin anew, to go at once "down to hard pan" by removing all the previous applications by washing and scraping. This is best effected with a broad-bladed, square-pointed putty-knife, keeping the ceiling wet meanwhile. Plaster (hard finish) is not of uniform density, and some spots are much more absorbent than others. To remedy this a mixture of soft soap and alum, dissolved in water, should be applied with a broad calcimine brush. A mass of unsuitable material may be cheaply put upon a ceiling; but when the same shall require repainting, the cost of labor will be greater in removing the previous coating than will be the whole cost of repainting. These remarks, too, apply equally to all kinds of painting; and reference is made to the whitening and tinting of ceilings only because of the general impression that this kind of work may be performed by anybody. . . . .

White lead improves by keeping, and when of good quality will go much farther and last much better than when employed fresh; moreover, paint made with new lead has a tendency to become yellow. It should not be exposed to the air or it will turn gray.—*Work Manual No. 3.*

Printing from electrotypes was first successfully practiced in 1841, by Jos. A. Adams, a wood engraver of New York.

West Virginia produces nearly one-quarter of all the nails made in the United States.

False Report Corrected.

In time for our last issue we received a letter from Woodland, Yolo County, furnishing what was supposed by us to be reliable information in reference to the erection of a building at that place. Not supposing that Yolo County could produce a character so despicably mean as to practice the deception of sending us a statement of the kind referred to, containing not a word of truth in any particular, we gave it a place in our list of building reports. As suggested by the *Woodland Democrat*, which journal referred to the matter, it is a pity there is not a law for the punishment of such characters. No man having the least degree of manly honor in his composition would descend to any such unclean work; and we do not begrudge the small-minded Woodland falsifier all the pleasure derivable from his—well, we presume he thinks it smartness.

The Chinese Craze.

The civilized but sadly unenlightened world is just now greviously afflicted with crazes, due, let us hope, to the culmination of the period of sun spots, and, like the solar disturbances, likely soon to wane and leave the world sane again.

One, perhaps the worst, symptom of the malady shows itself in malignant attacks by the noble Caucasian upon so-called inferior races, because of their unwarranted successes in the struggle for wealth and position. In Europe, the terrible Shemite is the victim. The Jew is essentially bad, and a peril to Christian civilization, because he is industrious, thrifty, prudent in business, and determined to get on in the world. He wickedly amasses wealth, crowds himself into high places in the professions, in art, in literature, and threatens to make himself the political as well as the financial master of Europe. So the noble Caucasian cries, "Down with him!" and, where circumstances favor, proceeds to put him down by mobbing him, destroying his property, and outraging his wife and children.

On this side the Atlantic the anti-Shemitic mania afflicts but few; but the anti-Mongolian mania threatens to be general. Already it has raged in Congress to a degree calculated to humiliate all sane Americans now and for years to come. The pictures which Congressmen draw of the certain submergence of Christian civilization in this country by swarming hordes of heathen Chinese is so appalling that Congress threatens to pass a law to prevent it by stopping immigration from that side of the world; thereby adoptiug towards the Chinese the same policy of exclusion which the Chinese so long exercised against the "outside barbarians." Having compelled China to open her ports and allow Americans to go thither to trade and to upset by missionary operations the social and religious order of the empire, the superior race now finds itself in the position of the fisherman in the Arabian Nights after he had forced the cork of the magically sealed bottle and would fain have the genie shut himself up again. The case would be pitiful if it did not originate in craze and lead to national dishonor.

The reasons for abusing and excluding the Chinese are curiously like those given in Europe for similarly treating the Jews. At first it was said that they were poor and filthy and ignorant; that they were religiously perverse; that they were incapable of becoming good citizens; that they did not, or would not, or could not, "blend" socially and vitally with the superior Caucasian. Now their great fault is that they will not keep down; that they actually aspire to dominate; and that when suffered to compete with their superiors, they show a capacity to come to the front that is positively alarming. The following from the San Francisco *Alta* illustrates this phase of the subject with curious felicity. Changing "Chinaman" to "Hebrew," it might be mistaken for a literal translation of recent French, German, or Russian utterances arising from the peculiar though kindred race mania prevailing in Europe. The *Alta* says:

"Wherever a Chinaman gains a foothold there he stays. If, for instance, our lumbermen were to adopt that class of labor, they would exclude other competition, and finally find themselves dependent upon the heathen Chinese. What that dependence means, all who have experienced it know. It means the supremacy of Chinese over Americans. When the Chinaman runs out an American, it is only a question of time when the Chinese capitalist shall run out the American capitalist. His money is cheaper, as the labor of his countrymen is cheaper. In every employment they have entered the Chinese have mastered their work. They are the best imitators in the world. The man who belittles or minimizes a Chinaman is a fool. The Chinese are dangerous because they are adepts. In all the arts and sciences we find them rapidly catching up with modern progress. They are reaching out everywhere. It was but recently that the advent of a Chinese ship created commotion on the Thames. It will create more commotion before they are done with it. The Chinese go to stay. A few rebuffs do no dishearten them. Knowing their capacity to underlive and undersell their competitors, they are tenacious in the extreme. They don't know any such word as fail.

"If the Chinese were intellectually inferior to Caucasians the danger would be less. But they are not. In commerce especially they are the keenest, wisest, and most forehanded people in the world. Besides, they live cheaper, and can afford to undersell us. Merchants of San Francisco, take this point into your consideration and digest it. You cannot, if you would, evade it. It is a foregone conclusion that every trade the Chinese are admitted into they will finally control. And when Chinese laborers or operatives have displaced Americans, it is simply a little while until Chinese capitalists give their American compeer 'the grand bounce.' They get money cheaper; they live cheaper; how can you compete with them? It can't be done. Our only resource lies in exclusion. We do not sow our fields with thistles, neither should we permit noxious weeds to overspread our commercial garden.

"Merchants of San Francisco, you have a great and pressing duty to perform. Your self-preservation demands Chinese exclusion. See to it that you exclude them in time; else you shall ultimately find your investments unprofitable, your business withering, and your occupation gone. With a full knowledge of the probable effects, we sound this note of warning to American capitalists. They cannot compete with the cheaper capital of China."

"Bill Nye" was a true prophet; and to be consistent, before the craze passes, Congress ought to pass a resolution to the following effect:

"*Resolved:* America is the home of the Free and the land of the Brave. We are the Smartest people in the world. Our national doors are opened wide; but all immigrants must come under bond that they will not try to compete with Us."—*Scientific American.*

Our Illustrations.

Plates 1 and 2 represent a front and side view of a very handsome residence now being erected on the southeast corner of Post and Gough, for Jacob Levi, Esq. Plates 3 and 4 being the ground plans for the same. Its cost will be about $20,000 when completed.

Henriksen's Elevater Clutch.

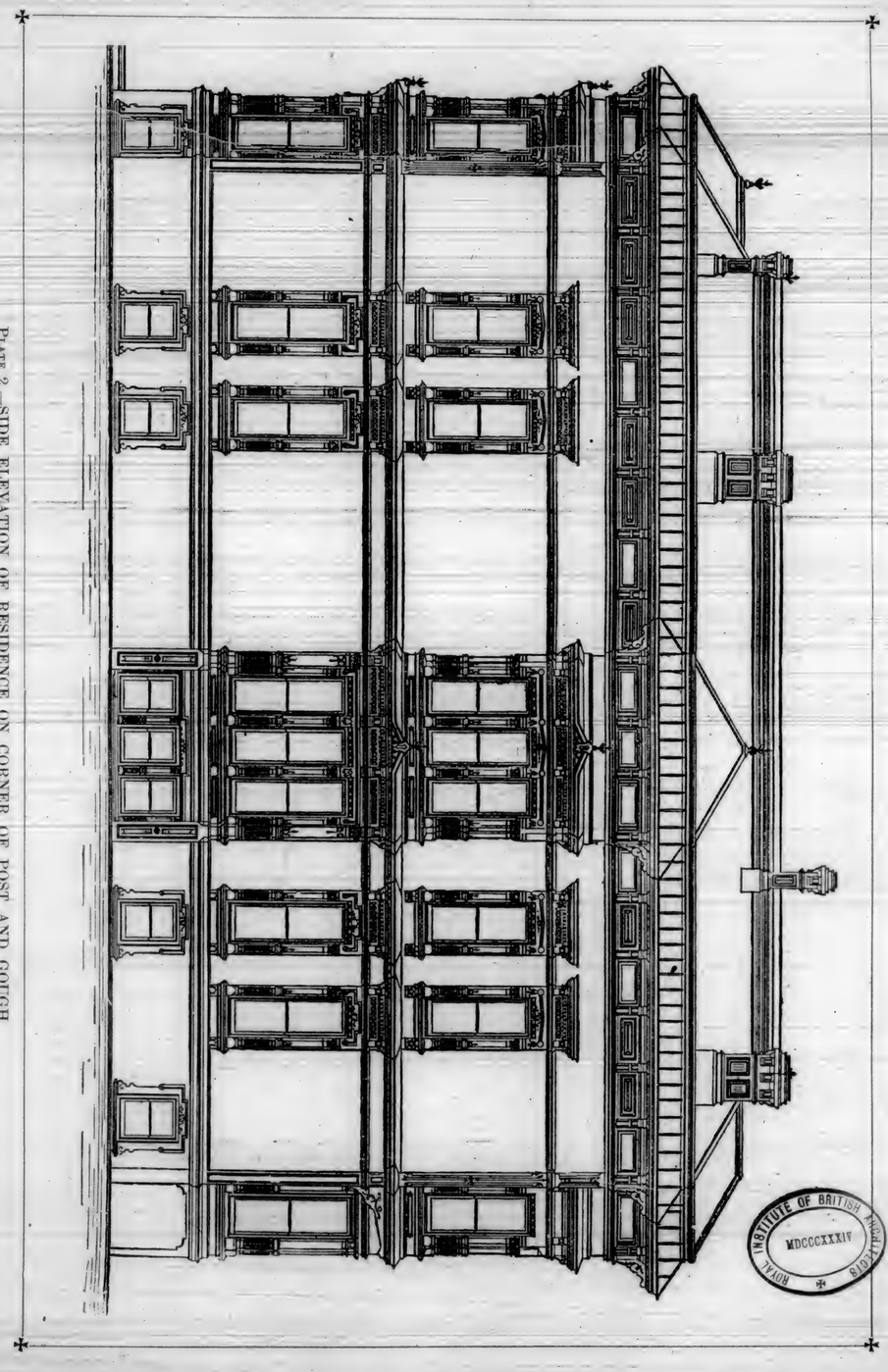
We are pleased to notice the success that has met our fellow-townsman B. E. Henriksen, and his safety clutch. His present address is 108 Liberty St., New York City. Boston, Chicago, Baltimore, and Philadelphia are in his line of travel; and from the flattering notices that have been given of his invention in many of the eastern journals, we have no doubt he has met with the success due to his San Francisco invention. We hope soon to see his smiling, happy face, and can assure him of a hearty welcome back to his home.

Steel Square Problems.

A new work explaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

PLATE 1.—FRONT ELEVATION OF RESIDENCE ON CORNER OF POST AND GOUGH.



ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

PLATE 2.—SIDE ELEVATION OF RESIDENCE ON CORNER OF POST AND GOUGH.

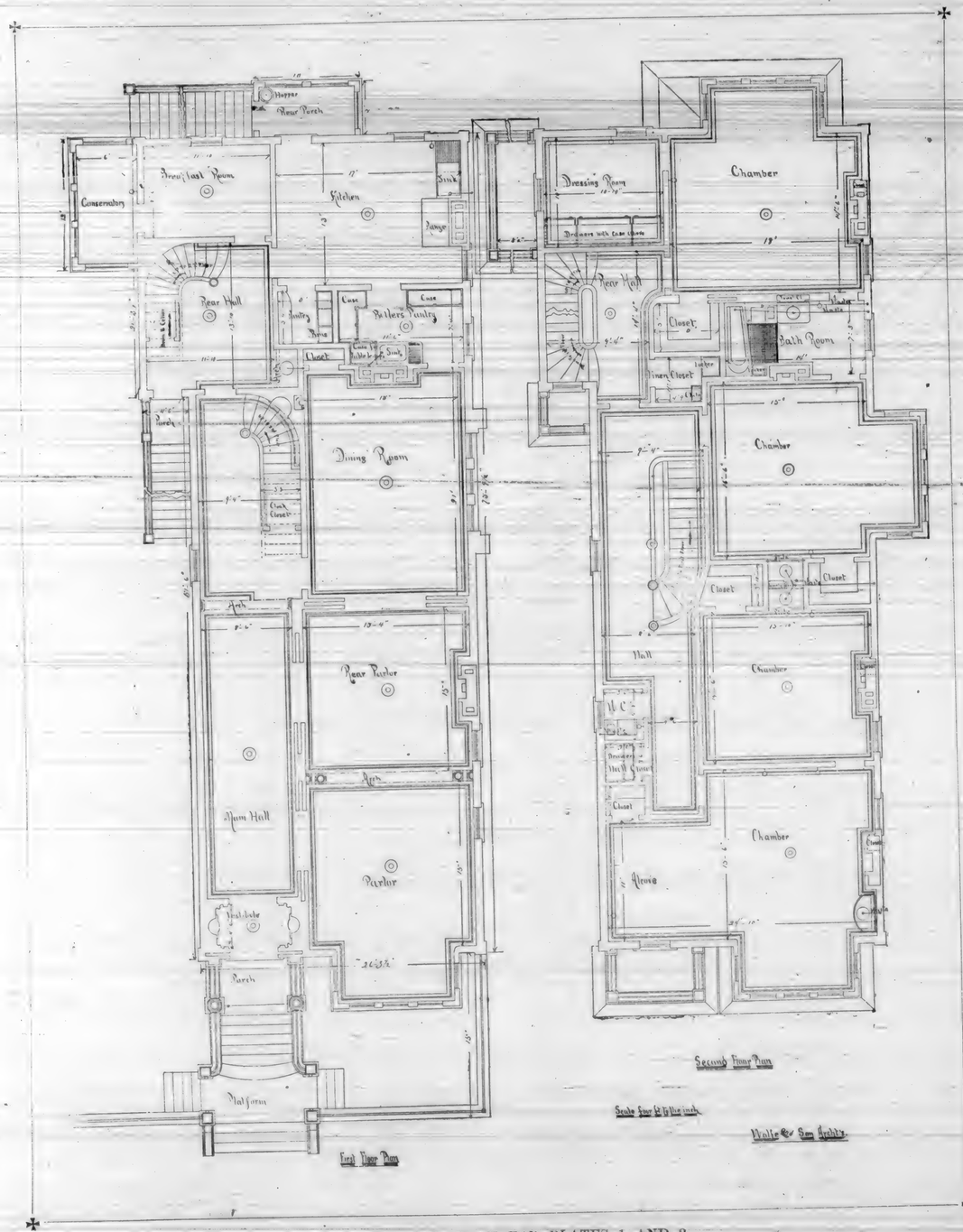


PLATE 3—GROUND PLAN FOR PLATES 1 AND 2.

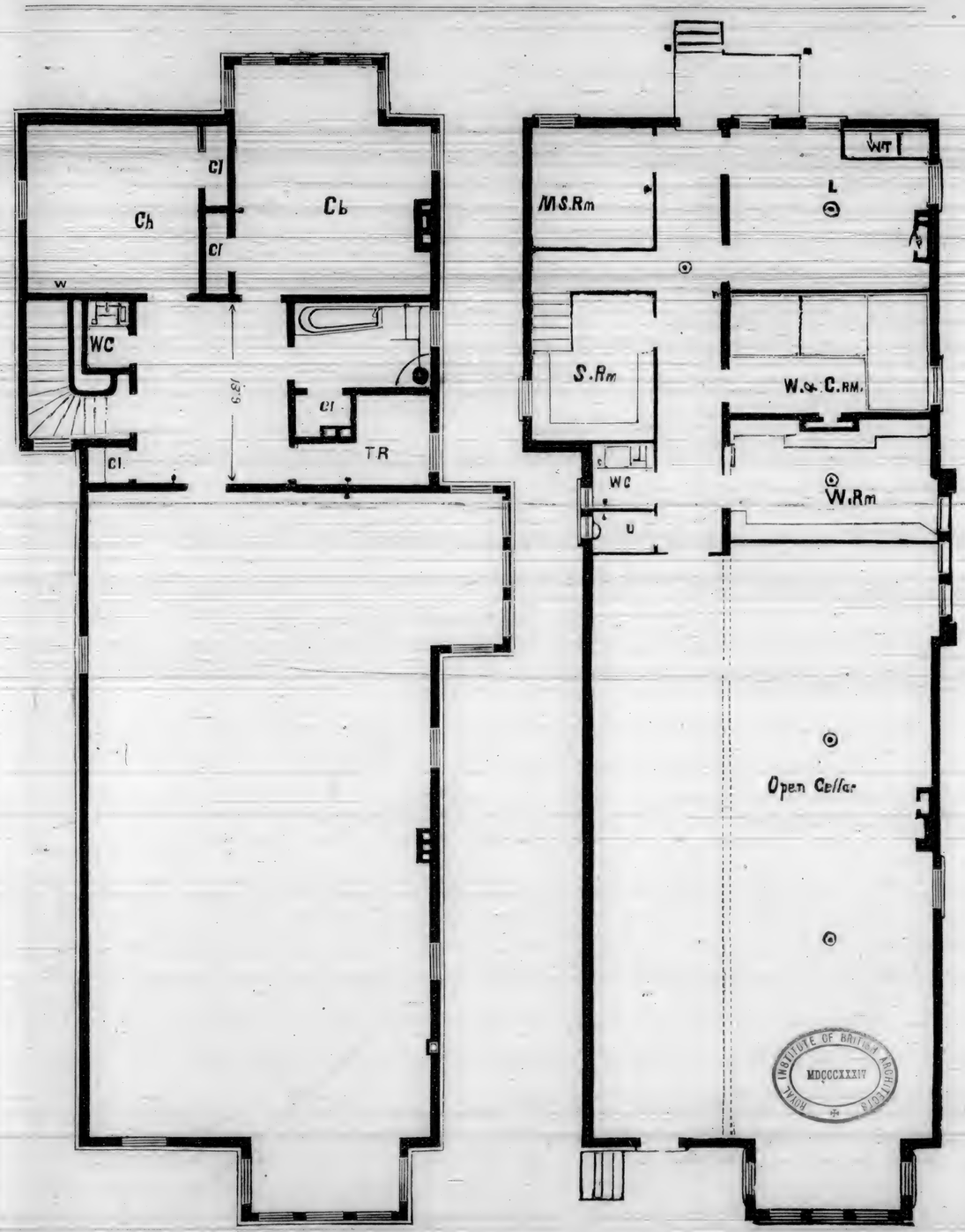


PLATE 4.—GROUND PLAN FOR PLATES 1 AND 2.

The Discussion of the Academy of Medicine on Plumbing.

At the last meeting of the New York Academy of Medicine, recently, the subject of plumbing, introduced at the last previous meeting, was continued in a paper with the somewhat mysterious title: "The Struggle for Life against Civilization and Æstheticism," by Dr. Frank H. Hamilton, whose name was made so familiar to the country and the world last summer, as consulting physician in the case of President Garfield.

It first reviewed briefly the paper of the preceding meeting, and the discussion upon it, and criticised some things that were then said. Speaking of plumbers, the author expressed his belief that, as a class, they were as honest and upright as any other class of citizens, and as anxious to do good work according to their knowledge. But they had many difficulties to contend with; as, for instance, the fact that

"No pipes are perfectly impervious, as Dr. Doremus very conclusively showed, a few weeks ago, by passing various gases through them. And even though they could be made impervious they will not last more than a few years—the length of time depending on their thickness, the character of the substances passing through them, and their exposure to the oxidization of the air. So it may happen that there may be a leak in the pipes which no foresight can prevent; and though, by pouring oil of peppermint in the pipe, you may prove that there is such a leak, you may not be able to find where it is. All these difficulties are increased by the fact that the pipes in our houses are generally incased in plaster or courses of brick-work, where their defects can be neither seen nor remedied."

He said that by means of sewer gases, it was certain that typhoid fever and diphtheria were propagated, and it was his own conviction that many other zymotic diseases, as Asiatic cholera, might be, and sometimes were, propagated by them. It was thought by many that it was enough for safety to have water traps, but it was well known, he said, that water was no protection against these foul gases, for they readily passed through it. There was no remedy, he said, against sewer gas except the proper use of chemicals, supplied to the traps daily. He believed that to secure the best protection, all plumbing fixtures should be placed in an "annex" to the dwelling. Not a few of our lately constructed and most elegant mansions had not an inch of plumbing in those portions usually occupied by the family, he said. Another concession that civilization must make was, that we return to the open fireplace—"the best ventilators ever invented"—as a means of warming our dwellings.

Sanitary engineers were no doubt performing a much-needed and very useful service, but there was no evidence that up to the present day they had done anything more than investigate the evils they had been asked to remove.

At the close of the paper, Professor Doremus showed the Academy the results of experiments to prove that sewer gases—as ammonia and sulphuretted hydrogen—easily pass through water traps. He had before them several glass traps, prepared beforehand, in which the different gases were stated to have passed through the water and shown the proper reaction on paper in the other side of the tube (which appeared to be closed, though that was not stated). He also believed that the only means of protection was by the use of chemicals in the traps. He recommended manganate of soda and sulphate of magnesia, which, when mixed, gave off ozone, the great purifier. These should be supplied to water-closet traps every time they were used, by a mechanical contrivance.

Dr. John S. Billings, U. S. A., upon being called on by the president, spoke at some length upon the subject of "House Sanitation in Large Cities." He said he took a more cheerful view of the situation, and of the power of sanitary engineering to prevent danger, than was done by the author of the paper.

Referring to Prof. Doremus's experiments, he said that they did not prove anything as regards the passage of sewer gases through traps of water-closets connected with a properly arranged soil pipe. The gas in Prof. Doremus's flasks is almost pure, and the amount of water in the half-inch glass tube is very small and soon saturated.

In the soil pipe the offensive gases are greatly diluted with air, and the very careful experiments of Dr. Carmichael of Glasgow, made with an ordinary water-closet and soil pipe which had been used for a long time, showed conclusively that the amount of gases which pass through a water trap from a ventilated soil pipe is so extremely minute that it can only be detected by the most delicate test, and is so diluted with air that it is not dangerous to health. The difference in the effect of dilution upon gases and upon germs was pointed out.

There is no such thing as a sewer gas of peculiar and definite composition. Sewers contain various kinds of gases, in constantly varying proportions. These gases do not produce specific contagious diseases, such as diphtheria, scarlet fever, or typhoid fever.

It is not, however, correct to say that they produce no disease and are never dangerous. When not diluted they tend to produce debility, loss of appetite, headache, nervous prostration, etc., and to dispose the system to be affected by the true immediate or specific causes of disease. But when sufficiently dilute they are not dangerous, and this dilution can be secured, so far as the house is concerned, by thorough ventilation of the soil pipe, provided that the communication between the sewer and the soil pipe be cut off by a trap and fresh-air inlet. Under such conditions the proportion of offensive and dangerous gases in the soil pipe is very small, and the amount absorbed by the water in the closet traps is almost inappreciable.

The case is somewhat different as regards the minute particles or germs contained in sewer air, at least under certain circumstances.

It is true that, as yet, we are not able to speak positively as to these supposed germs. We can only act upon probabilities, but in speaking to an audience of physicians I feel sure they will appreciate this, for they have to act on probabilities only in every case they treat.

Now it is highly probable that what are known as the specific contagious diseases are not produced by gases arising from the decomposition of vegetable or animal matters, or of excreta, but from minute living particles or organisms, produced from other similar particles or organisms.

If diphtheria, scarlet fever, or typhoid fever could be produced by combinations of filth, moisture, and temperature, it is impossible to explain why these diseases do not constantly prevail in some cities in India, China, etc.; nor upon this theory is it possible to explain why they are more prevalent now than they were fifty years ago.

Now the danger to health from these germs cannot be entirely removed by dilution. If the virus of sheep-pox or of vaccine be diluted until not more than one inoculation out of fifty takes effect, it will still be found that when it does take, the effect is the same as if pure virus had been used.

Does the water trap prevent the passage of these germs?

The experiments of Dr. Carmichael show that it does, and that an organic putrescible fluid will remain unchanged when exposed only to the air immediately above such a trap. A pin-hole in the soil pipe is far more dangerous than a trap.

From these experiments, as well as from those of Wernich, Pumpelly, and others, I think that the estimate of the dangers of house drainage has been placed much too high. The real difficulty seems to me to be, not that the resources of sanitary science and engineering are not sufficient to secure safe plumbing, but that the people at large who are willing and able to pay for good work do not know to whom to apply to get it.

In this matter physicians are the natural advisers and leaders, and it is very satisfactory to find that they are investigating the subject. I would only urge upon them to go cautiously, and not to rush into extremes. There are a few competent advisers, and some skillful and honest plumbers; and the physician should know who these are and where they are to be found.

At the conclusion of Dr. Billings's remarks, Dr. E. G. Janeway said that specific disease germs would not pass through a water trap; so far as scarlet fever was concerned, he had never seen a case that he thought could possibly have come from the sewer, and he challenged any one present to tell him of a case.—*Sanitary Engineer.*

Chicago's Experiment.

Occasional mishaps in the shape of ruptured cable and temporary troubles with the grip cars cause more or less comment and annoyance in the working of the cable system in this city. In the case of "broken cable" the fault rests as yet entirely with inexperienced grip hands, and it is only a matter of time when trouble from this cause must to the greatest extent cease. We think, however, that street cable railway companies will do well, judging from what we see and hear in this city, to procure the best kind of intelligent help in running the grip cars, as it will certainly prove in the long run the most economical course. The breaking of the cable in itself is a matter of no great cost, but the loss by temporary stoppage of traffic and the expenses incurred in reinstating horse service for the time being would surely compensate for the excess in cost between common and skilled help. We have before stated that the question of turning corners might prove a hard one to solve. This is being proved, notwithstanding the reports of successes which we have published. We hear that the cable now turning the corners is wearing badly, and that a strand in it frequently gives out. It is yet an unsolved problem, this turning of corners by wire cable traction, and will yet necessitate much mechanical ingenuity to economically overcome the varied opposing elements to a successful issue.—*The American Engineer.*

American versus English Nailmakers.

Foreign competition in this branch is relaxed by the action of the American nailmakers, who have advanced prices from 15c. to 20c. per keg. These advanced rates, which are much above those demanded by English makers, have of course greatly improved the chances of English nails in Canada, Australia, and other neutral markets, though many even of our own colonists appear to be strongly biased still in favor of the American article, owing to its greater uniformity of quality. It is not denied that English manufacturers can produce as good or even a better nail than the Americans, but they do not always do so; and the merchants who conduct the trade are apt, in buying, to sacrifice higher considerations to cheapness. The Americans are wiser in their generation, and, frankly recognizing the impossibility of competing with English makers in cheapness, they strive to excel in quality, uniformity, and excellence of patterns. On the whole, these tactics have been of great service to them, and have given them a footing in many markets from which it will be no easy matter to dislodge them.—*Scientific American.*

Traveling Expenses.

The question and answer found in the following extract will no doubt be of much interest to the architects on this coast. It is a question that has been asked us several times, but we have deferred publishing an answer until the new by-laws of the Pacific Coast Association have been perfected. Some provision, no doubt, will be made in the new Code for just such emergencies as mentioned by the correspondent.

"To the Editors of the American Architect:

"*Dear Sirs*—Will you be so kind as to inform me in your next issue the customary practice of the profession in the following or similar cases? When an architect is engaged to design and superintend the erection of any building situated any distance from the city where he resides and practices, whether it is 5 or 500 miles, and agrees to be compensated according to the schedule of prices set forth by the American Institute of Architects, is he or is he not entitled to charge the cost of traveling expenses; also for time spent in travel in excess of the 5 per cent.?

"Again, when the client, for reasons of his own, employs a superintendent subject to architect's orders, is not the architect entitled to 5 per cent. for full professional services, when no agreement for less than 5 per cent. was made in consequence of employment of superintendent, although the fact of the competency of the superintendent renders the frequency of the architect's visits not as necessary as if there had been no superintendent employed? C.

"[The custom among architects everywhere is to charge for actual traveling expenses in addition to their regular commission. An additional charge for time spent in traveling to work at a distance is very often made by previous agreement of the parties, but is, we think, left by the schedule for settlement in that way, instead of according to any fixed rule.

"The architect's compensation is always understood to be exclusive of the salary of a clerk of the works, or local superintendent, who is, or should be, employed by the client in every important construction, to watch the details of the work under the direction of the architect.—Eds. American Architect.]"

The Late Mr. G. E. Street, R. A.

Mr. George Edmund Street was born at Woodford, Essex, in 1824, and educated at the Collegiate School, Camberwell. His architectural studies were begun under Mr. Owen Carter, at Winchester, and completed under the late Sir George Gilbert Scott, with whom he remained five years. Like his master, Mr. Street adopted the Gothic style in the buildings he designed, and the numerous essays and lectures which he has written upon architecture have all been directed to illustrate the history and principles and promote the progress of that style. His principal literary efforts are "The Brick and Marble Architecture of North Italy in the Middle Ages," 1855; and "Some Account of Gothic Architecture in Spain," 1865. Mr. Street has for many years been largely engaged in the work of erecting and restoring churches and other ecclesiastical buildings all over the country. To mention only the most prominent among his architectural works, he was the architect of the Cuddesden Theological College, of the new chapel and school rooms of Uppingham College, and of new churches at Bournemouth, Garden street, Westminister; St. Philip and St. James's, Oxford; St. John's, Torquay; All Saints', Clifton; St. Saviour's, Eastbourne; St. Margaret's, Liverpool; and St. Mary Magdalen, Paddington. Among his restorations may be noticed the churches of Eccleshall, Wantage, Uffington, in Berks, and Stone, in Kent, and Jesus College Chapel, Oxford. He was also the architect of the Earl of Crawford and Balcarres' house at Dunecht. Perhaps his most considerable work in church building was the erection of then ave of Bristol Cathedral in the Early English style. He was engaged upon the restoration of the nave and building of a new choir in Christ Church Cathedral, Dublin, and on building a new synod-house in connection with the Cathedral for the Irish Church. But in London Mr. Street's reputation will mainly rest upon the Royal Courts of Justice in the Strand, now approaching completion. He was appointed architect for this gigantic undertaking in 1868, after a competition in which the most famous architects of the day, including Sir Gilbert Scott and Mr. E. M. Barry, took part. Although a great deal still requires to be done before the interior of the building is finished, the outer shell is fairly complete, and the public are able to judge of the imposing effect which the New Law Courts will present as they are approached from the Strand. Mr. Street was appointed in 1850 diocesan architect to the diocese of Oxford, and he subsequently filled similar posts in the dioceses of York, Ripon, and Winchester. He was a Fellow of the Institute of Architects, of which he has been Vice-President, and a Fellow of the Society of Antiquaries and of other societies. In 1866 he was elected an Associate of the Royal Academy, and was advanced to be a Royal Academician on June 29th, 1871. He was also a member of the Imperial and Royal Academy of the Fine Arts at Vienna, and a Knight of the Legion of Honor.—*London News.*

Tinkering.

An unfortunate weakness of some in charge of machinery is a desire to be constantly tinkering at it, under the mistaken impression that they are improving its performance. The reverse is the truth oftener than otherwise. With new engines and machines, it sometimes happens that the parts chafe a little through some oversight in fitting up, and require to be eased; but when it comes to resetting valves and general overhauling, though there may be instances where it is required, in most cases it is a mistake to attempt it.

Here and there, perhaps, a little slide-valve engine has been set cold, so that when it gets to work hot, the valve does not work properly; but most automatic engines, we might doubtless say all, have been correctly set by the indicator before being out of the shop, and no one can correct their performance by merely guessing at what is going on in the cylinder, and assuming that the performance can be improved by shifting the eccentrics hap-hazard.

Engines which require the fewest repairs are those that have had the least tinkering done upon them; and that, as a rule, applies all over. It is the same in the machine shop; some are eternally on bad terms with their lathes, or shapers, or planers. We recall one man who was so often upon his knees about his lathe, and had so many quarrels with its performance, that he gained a nickname, which stood in lieu of his proper one; and after all his fussing with his lead-screw, and feed-gear, and cone-pulley, and bearings, he did the poorest work in the shop. Perhaps because he was a tinker.

It is a good thing to know when a machine is in order, and to keep it so; in other words, "let well enough alone."—*The Wood-Worker.*

Steel Square Problems.

A new work explaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

Market Reports.

Lumber.—A very brisk demand, with stiff prices, and bright future prospects, exactly express the state of the lumber market. A false report was circulated among the contractors that an advance in lumber had been made, but there was no foundation whatever for the rumor.

Receipts since January 1st, 1882:

Lumber	41,871,376
Shingles	9 099,760
Laths	4,907,350

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	
Flooring and Stepping	35 00
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping ... per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts per piece	17½

Redwood.

Rough Merchantable ... per M feet	22 50
" Refuse "	18 50
Surface No. 1 "	35 00
" 1 x 6 "	32 50
" No. 2 "	27 50
Rustic, No. 1, 1x8 "	32 50
" No. 1, 1 x 10 "	35 00
" No. 2 "	30 00
" Under 10 feet "	30 00
T. & G., 1¼ x 4 and 1¼ x 6 "	35 00
" 6 in. 12 ft. and over "	32 50
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
" " No. 2 "	27 50
T. & G., Beaded, 12 feet and over "	35 00
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
Half-inch Surface "	30 00
Pickets, Fancy "	27 50
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	25 00
Shingles per M	2 50
Battens, ⅝ inch, lineal feet "	1c

Nails and Hardware.—Some of the articles in most general use have had a sharp advance during the past month. This is particularly noticeable in the price of locks. Nails remain the same.

Nails.—Remain the same as last month. Since January 1st, 1882, we have imported 52,106 kegs.

10 to 60 pennies, are quoted at	$4 25
8 " "	4 50
6 " "	4 75
5 and 4 " "	5 25
4 and 5 pennies, brad heads, at	5 50
6 " "	5 75
8 " "	6 00
10 and upward "	5 25
3 penny fines "	7 75

Paints.—A new company has made its appearance, introducing the Omaha White Lead. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8 cts. per lb.

The value of the lumber cut yearly on the Pacific coast, at the rate of $10 per 1,000 ft. at the port or place of shipment, is $6,000,000, says the *North-western Lumberman.* A thousand years would not suffice to exhaust the giant woodlands extending from Alaska to Santa Cruz, so that on a very rough estimate this portion of the resources of the Pacific slope is worth at least $6,000,000,000.

The Boston *Transcript* says that an East Boston lady was recently requested by the board of health to have traps placed under the sinks and basins in her house, and when an inspector a few days later examined the premises, it was found that she had placed there several rat-traps.

☞ **Subscription price of this journal is $2.00 in advance.**

Building Intelligence.

With this month the building season of 1882 may be said to have been busily begun. We hope the present activity may continue during all the summer months. This can hardly be expected, however, as the high prices of materials and labor, seriously affect the building of houses for tenement purposes. We know of several jobs after being figured upon, were given up, as the lowest bids offered would not justify the property owners to build, owing to the high prices of lumber, hardware, etc. It will be observed that there are more houses reported that are intended for better class of dwellings than we have been able to chronicle for some time past.

It has always been the aim and object of the managers of this journal to present to its readers as full and as complete a report of buildings being erected as it was possible to obtain both in city and country. To secure information from the interior, it has been our custom to forward to responsible parties each month a blank circular, which, upon being returned to us with the blanks filled out with the necessary information, enabled us to give to our readers news from different parts of the country. We are glad to state that this system will soon be superseded by a much improved plan, the working of which will be seen after this issue in the number of buildings reported from the country.

In our last, one of those *smart* (?) men who no doubt earn their living by not obeying a certain commandment, managed to get hold of one of our blanks, and filled it out in a manner best suited to his illiterate taste. We refer to the item in our last from the town of Woodland. The report given was incorrect in every particular, no such building by such parties as were mentioned being even contemplated. We thank Bro. Saunders, of the Woodland *Democrat*, for his kindness in publishing the card we sent to him, explaining the appearance of the article in this journal. A card in connection with this matter will be found in another part of this issue.

SAN FRANCISCO.

Bush street between Montgomery and Kearney, four-story and basement brick building. Owner, Mrs. Barbara Suter; architect, H. Geilfuss; contractors, Conrad and Miller; cost, $35,000.

Two-story frame dwelling, brick basement, on northeast corner of Buchanan and Jackson. Owner, Mrs. Lemmon; architect, W. Cleaveland; contractor, —— Munns; cost, $12,000.

Southwest corner of Laguna and Sacramento. Two-story frame dwelling with basement. Owner, J. C. Reis; architects, Schmidt & Havens; contractor, C. Chrisholm; cost, $19,000.

North side Golden Gate Avenue between Van Ness and Franklin, double two-story and basement frame dwelling. Owner, H. Frazer; architect, Schmidt; contractor, Langstaff; cost, $7,000.

Three-story frame building on northwest corner Larkin and Grove. Owner, —— Klinecklaus; architects, Kentzer & Raun; contractor, F. Klatt; cost, $8,000.

One-story and basement brick addition to building No. 31 Market street. Owner, M. J. O'Connor; architect, P. Huerne; brick work, O. E. Brady; carpenter work, —— McCready; cost, $4,050.

Two-story frame building on corner of Twenty-fourth and Valencia. Owner, P. Schenckel; architect, —— Apponyi; contractor, Dryer; cost, $9,640.

Three-story brick building with basement on Bryant street near Eighth. Owners, Spivalo & Forman; contractor, J. Grant; cost, $15,000.

Two-story frame dwelling on Beaver street. Owner, Rev. Dr. Beckwith; architect, Chas. Geddes; contractor, R. B. Hicks; cost, $4,000.

Repairs and remodeling building corner Drumm and Oregon streets. Owner, S. C. Hastings; day's work; cost, $4000.

Two-story frame dwelling on south side of O'Farrell between Jones and Taylor. Owner, H. Schmidt; contractor, —— James; cost, $3,000.

Two-story frame building, brick foundation, on southwest corner McAllister and Buchanan. Owner, T. Juncker; architect, —— Bayless; contractor, J. T. O'Brien; cost, $5,000.

North side Fell between Octavia and Laguna streets, two-story and basement frame dwelling. Owner, W. Hewe; architect, W. Winterhalter; contractor, W. Hewe; cost, $3,000.

Two-story frame building on Hayes street near Gough. Owner, Mrs. Kalzee; architect, W. Schroepfer; contractor, H. Meyn; cost, $9,000.

Two three-story frame dwellings on north side Fell between Franklin and Gough streets. Owner, T. Sullivan; architects, Schmidt & Havens; contractor, J. Furness; cost, $11,000.

Two-story and basement frame dwelling on southeast corner of Post and Octavia. Owner, —— Anspacher; architect, C. Geddes; contractor, R. Hicks; cost,

Two-story frame dwelling on south side Geary between Octavia and Laguna streets. Owner, Mrs. Josephs; architects, Schmidt & Havens; contractors, Waterbury & Maxwell; cost, $4,100.

Two-story and basement frame dwelling, brick foundation, on south side Geary between Webster and Fillmore; Owner, D. Cole; contractor, —— Fish; cost, $10,000.

Two-story and attic frame dwelling on east side Scott between California and Sacramento streets. Owner, Mr. Norwood; architect, J. Marquis; contractor, W. M. Fletcher; cost, $6,000.

Three-story frame dwelling on south side of Pine near Scott street. Owner, —— Lewis; contractor, —— Pluns; cost, $4,500.

Two-story frame dwelling on southeast corner of Pacific and Fillmore. Owner, G. E. Ludington; architects, Percy & Hamilton; contractor, —— Jackson; $5,000.

Two-story frame dwelling on Geary street between Octavia and Lguna. Owner, ——; architects, Schmidt & Havens; contractors, Waterbury & Maxwell; cost, $5,000.

Three-story frame dwelling on corner of Gough and Bush. Owner, J. E. Ruggles; architect,—— Smith; contractor, —— Sanchez; cost, $7,000.

Two-story frame dwelling on northeast corner Pacific avenue and Scott street. Owner, Capt. Williams; contractor, —— Treadwell; architect, —— Smith; cost, $4,500.

Additions to building on Beale street between Mission and Howard. Owner, J. R. Sims; contractor, Thos. Day; cost, $2,200.

Alterations to building corner Fourth and Clara streets. Owner, —— Marron; architect, T. J. Welsh; contractors, McCann & Jeffars; cost, $2,000.

Two one-story and basement frame dwellings on Church street between Twenty-eighth and Twenty-ninth. Owner, and builder, R. Bergfeld; cost respectively, $1,200 and $1,700.

One-story frame dwelling on Dore street between Harrison and Bryant. Owner, P. Birch; architect, J. T. Kidd; contractor, T. Sullivan; cost, $800.

Two-story frame tenement on Central Avenue between Bush and Sutter. Owner and builder, D. F. McGraw; cost, $2,400.

One-story frame building on Sutter street, near Broderick. Owner, Maggie McKee; contractor, —— McKee; cost, $2,700.

Two-story frame building on southeast corner of Pine and Fillmore streets. Owner, —— Schoenfeld; architect, W. Winterhalter; contractor, F. Crowley; cost, $6,0 0.

Repairs and alterations to building on south side of California near Fillmore. Owner, F. Wittram; contractor, —— Jackson; cost, $2,500.

Repairs to buil ling on Webster street between Bush and Pine. Owner, Mrs. Phillips; day's work.

Five frame dwellings on northeast corner of Ellis and Laguna streets. Owner, H. Hinkle; day's work.

One-story frame dwelling on Broderick between California and Sacramento streets. Contractor, —— Pluns; cost, $1,000.

Additions to building on Baker between Sutter and Post streets. Owner, W. Ellard.

Two-story frame dwelling on Buchanan street near Golden Gate Avenue. Owner and builder, —— Cram; cost, $1,500.

Repairs to building on Hayes street near Laguna. Owner, Gallagher; day's work.

Repairs on building corner Jackson and Leavenworth street. Owner, ——, Brawling; contractor, J. T. Blake; cost, $900.

Three two-story frame dwellings on east side of Fillmore between Washington and Jackson streets. Owner, J. F. Fortmann; day's work; cost, $7,500.

One-story frame building at Black Point, for the Phelps Manufacturing Company. Day's work.

One story frame dwelling on northeast corner of Filbert and Buchanan streets. Owner, Jas. Sudden; contractor, Frichette; cost, $1,500.

Repairs to two-story frame on north side Ellis between Taylor and Jones streets. Owner, W. O. Davis; contractor, J. Grant; cost, $1,100.

Repairs to dwelling on Leavenworth between Green and Union streets. Owner, L. Waddams; contractor, W. Simon; cost, $1,500.

Alterations and repairs to building corner of Jackson and Larkin streets. Owner, H. Pierce; architect, Ed. Swain; contractor, A. Flood; cost, $4,000.

Alterations to building 1216 Geary street. Owner, J. Kahn; architect, —— Blum; contractor, A. Flood; cost, $5,000.

Repairs to dwelling on Post street between Powell and Mason. Owner, Mr. Frank; architects, Schmidt & Havens; contractor, A. Norton.

Repairs and additions to building junction of Vallejo and Montgomery Avenue. Owner, Mr. Boem; day's work; cost about $2,500.

Two-story frame on Pacific street between Sansome and Battery. Owner, G. Costa; day's work; cost, $1,000.

Repairs to building junction of Market and Oak streets. Owner, D. Nightingale.

One-story frame on Nineteenth near Castro street. Owner, Mrs. Lyons; contractor, —— McInnerny; cost, $700.

One-story frame on Douglass near Seventeenth street. Owner, M. Meibach; contractor, E. Ehrmann; cost, $900.

Four one-story and basement frame dwellings on Fifteenth near Dolores street. Owner, Mrs. Thompson; day's work; cost, $3,000.

Two-story and basement frame dwelling on Valencia near Sixteenth street. Owner, Chas. Welsh; day's work; cost about $3,700.

Repairs and additions in rear 1058 Howard street. Owner, —— Ross; contractors, S. G. Happ & Co.; cost, $1,100.

One-story and basement frame dwelling on Jessie street between Seventeenth and Eighteenth. Owner, Miss E. Donahue; contractor, M. D. Killelea; cost, $1,250.

Repairs to dwelling on Jessie between Eighteenth and Nineteenth streets. Owner, Mr. Kennedy; day's work; cost, about $600.

Repairs to Pacific Oakum Factory on corner of Eighteenth and Harrison. Owner, S. F. Weeks & Co.; day's work; cost about $1,000.

Repairs and alterations to frame building on Howard street near Nineteenth. Owner, F. Gailhouse; contractor, S. M. Hills; cost, $2,000.

Two-story frame dwelling on Twenty-fourth street near San Jose Avenue. Owner, G. Edwards; contractor, —— Cs man; cost, $2,000.

One-story frame building on west side Treat Avenue between Twenty-fourth and Twenty-fifth streets. Owner, Jos. Cantor; contractor, —— Downey; cost, $1,000.

One-story frame on Alabama near Twenty-sixth street. Owner, W. Dunn; contractor, J. Nelson; cost, $800.

Two-story frame on Harrison between Twenty-fifth and Twenty-sixth streets. Owner, W. T. Garratt; contractor, L. H. Nolte; cost, $2,500.

Two-story frame building on Mission and Twenty-ninth streets. Owner, J. Bergstrom; contractor, P. J. Smith; architect, —— Smith; cost, $1,000.

Repairs to frame dwelling on Harrison and Park Avenue. Owner, H. Hugg; contractor, —— Tildon; cost, $800.

Two-story and basement brick building on north side of Post street between Dupont and Stockton. Owner, J. Apel; architect, Hoffmann; cost about $20,000.

Two-story frame dwelling on north side Geary between Fillmore and Steiner streets. Owner, Robt. White; architect, H. T. Bestor; contractor, A. Jackson; cost, $5,000.

Repairs to M. E. Church on Powell near Pacific street. day's work; cost about $3,000.

Alterations to building on Green street near Mason. Owner, P. Marsicano; architect, Hillert; contractor, Classen; cost, $1,500.

Alterations to building on Turk and Polk streets. Owner, C. Mangels; architect, H. Geilfuss; contractors, Conrad & Miller; cost about $1,000.

Two-story and basement frame dwelling on Jones near Ellis street. Owner, A. W. Baldwin; architect, H. Geilfuss; contractor, S. Grant; cost, $4,500.

California between Laguna and Buchanan two-story frame and basement. Owner, Mrs. J. Newgas; architects, Newsom Bros.; contractors, Knight & Littlefield; cost, ——.

Vault in Masonic Cemetery. Owner, Mrs. A. Mau; architects, Moore & Whittemore; contractors, Matthews, McGrath & Cox; cost, ——.

SAN LUIS OBISPO.

The bank is putting in large vaults. Architect, H. D. Mitchell; contractor, Neaglee; cost, $1,500.

ALAMEDA.

One-story cottage on Pearl street. Owner, L. A. McDermith; contractor, Bones; cost, $2,200.

One-story cottage on Railroad Avenue, near Chapin street. Owner, G. Hart; cost, $2,500.

One-story cottage on Alameda Avenue, near Willow. Owner, Mrs. Joyce.

FRESNO.

One-story frame building on Mariposa street. Owner, E. Wimmer; contractor, —— Bohunin; cost, $2,500.

Two-story frame dwelling on I street. Owner, C. A. Munn; contractor, J. Lee; cost, $2,500.

RIVERSIDE.

The Congregational Society are erecting a church in the Redlands near town. Cost about $2,500.

Frame dwelling and barn. Owners, Judson & Brown; contractor, A. W. Boggs.

NAPA.

Additions to the Odd Fellows' Building. Cantractor, J. Cox; cost, about $6,000.

ANAHEIM.

Two-story brick building. Owner, B. Dreyfuss & Co.; cost, $10,000.

From Kentucky to Florida stretches a nearly continuous forest, which has scarcely been touched by the lumbermen.

Publication Notices.

All books noticed in these columns can be had at publishers prices at this office. Sent post-paid to any address.

Practical Lessons in Architectural Drawings	$ 2.50
Carpentry made Easy	5.00
Mechanics' Geometry	5.00
Gould's Carpentry	3.00
Model Homes	1.00
Haney's Alphabets	2.00
Palliser's Details	3.00
" Specifications	.50
Carpenter and Joiner	7.50
Artisan	5.00
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Saw Filing	.75
Carpenter's Pocket-book	1.00
Village and Country Houses	5.00
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Workshop Companion	.35
Carpenter's Manual	.50
Atwood's Geometry	2.50
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" Supplement to Village Builder	4.00
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" Street, Store and Bank Fronts	4.00
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" Stables, Outbuildings, Fences, etc	2.50
" Specimen Book, 100 Architectural Designs	1.00
Cameron's Plasterer's Manual	.75
Croft's Progressive American Architecture	6.00
Cumming's Architectural Details	6.00
Gould's Carpenter's and Builder's Assistant, new ed.	3.00
" American Stair Builder's Guide	3.00
Guillaume's Interior Architecture	3.00
Hussey's Home Building	.50
Mitchell's Stepping Stone to Architecture	5.00
Palliser's American Cottage Homes	1.00
" Model Homes	1.50
Powell's Foundations and Foundation Walls	15.00
Wither's Church Architecture	3.00
Woollett's Villages and Cottages, or Homes for all	1.00
" Old Homes made New	9.00
Wooden and Brick Buildings, 4to, 2 vol. each	1.50
Ames' Alphabets	2.00
Standard Sign Writer	.50
Fancy Alphabets	1.00
Practical Draughting	1.00
Proportions	
☞ Sole Agents in California for ☜	
Steel Square and its uses	.75
Steel Square Problems	.50
Modern Architectural Details	10.00

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Full page, inside, one insertion	32 50
Each subsequent insertion	25 00

Reasonable reductions for advertisements continued six or twelve months.

The First Chapter of the American Institute of Architects West of the Rocky Mountains.

At the last meeting of the Pacific Coast Association of Architects, it was decided to change the name and character of the old organization, by making it a Chapter of the American Institute of Architects. A Constitutlon and By-Laws had been carefully prepared, and were read *ad seriatim*. Printed copies were ordered to be ready in time for the next special meeting, April 12th. This journal will be in print by that time, so we cannot give a report until our June issue, when we will present the Constitution and By-Laws in full.

We bid farewell to the old Association, and extend a cordial greeting to San Francisco Chapter of the American Institute of Architects, by which name, in future, the old organization will be known.

Our New Heading.

After a greater delay than was anticipated at first announcement, we present in this issue the new design for the heading of this journal. As to its merits in design and artistic execution, we await the criticisms of our readers and contemporaries.

To us it possesses a value far beyond its intrinsic qualities, in the fact that it is the generous, voluntary bestowal of the *Pacific Coast Association of Architects*, now known as the SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

For the purpose of inducing our draughtsmen to become more proficient in originality of designs and skillful in execution thereof, the P. C. Association of Architects (at that time called) offered two premiums of $25 and $15 for the best two designs for a heading or frontispiece for this journal. It was generally understood by the Association and all parties interested, that *originality* was to be one of the main features. Seven designs were presented, and were referred to a special committee. The committee in their report decided that the drawings were not such as contemplated, and so called for new designs. Twenty dollars was added to the premiums, and three months time was given to present them.

At the meeting on April I, four designs were presented on the second competitive set. The parties competing were A. T. Matthews, Oliver Everett, Vesta Schallenberger, and W. Schrof. Prizes were awarded to the first three in the order named: 1st prize, $30; 2nd prize, $20; 3rd prize, $10.

We congratulate Mr. Matthews upon his success in producing a design so meritorious in character as to win the first preminm. A still further source of pride to him lies in the fact that this is the first competitive inducement that has been presented to the students and draughtsmen in the profession on this Coast. In competitions of this character, where the judges are so well qualified by practical experience in the determination of awards as were the committee into whose hands this matter was specially intrusted, and the Association as a whole, before which the designs were laid prior to any action on the part of the committee, the result as given by them must always be gratifying to all parties interested; and we hope that in future contests our young draughtsmen will strive in their efforts to outrival those in the East. This they can do, but study and strict application are necessary before they can arrive at the high standard necessary.

We regret that the party presenting the second design did not take more time in working out a truly good conception. It received many very complimentary remarks, and had our young friend bestowed the proper amount of care and time upon the study and execution of his *truly original*, his chances for the first premium would have been materially increased. We say in all kindness to the young men in the profession, that success upon merit is a timid bird, unless the degree of merit is very positive. When the contest is close, a single irregular line, a slur, or an innocent blot may turn the issue.

The third design was presented by quite a young student. It is the intention to present to our readers and the public generally the designs as they were handed in to the Association, so that all may judge of their respective merits. By so doing, it will enable those competing to notice in what manner they could have improved their designs, and thus be of much practical value to them.

After Many Years.

With this issue the CALIFORNIA ARCHITECT AND BUILDING NEWS enters upon a new era of prosperity. Far different is the outlook now from what it was in the dark and dull times when this journal was first started. THEN, predictions as to the number of months which we would publish the NEWS were freely discussed on the corner, and generally among the mechanics.

Now, we can truly point to our journal as an example of what determination and energy will do. At the outset, neither of the editors connected with the publication of this representative organ of the profession enjoyed the least practical knowledge of the necessities and responsibilities that were required to make a success of a journal of this character. We are more than pleased with the success of our efforts.

We can justly point with pride to the

HIGH STANDARD

of our advertising columns. The first firms in the city and State are represented. Eastern inventors and material-men are beginning to find out that the best way to reach the great mass of the consumers of their various commodities is to put an advertisement in this journal. Those that have done so have reaped a rich reward, as is easily proved by their keeping their "ads" in permanently. Some of them having already favored us for more than a year. This they most certainly would not have done unless they had reaped a

GOLDEN HARVEST

for their outlay.

It is the aim and object of the editors to make this an influential journal, and a source of valuable information to architects, contractors, mechanics, and others. Strenuous efforts will be made in each number to have it a little better than its predecessor. This we can easily accomplish, but our friends must help us; this they can do by coming forward and help swell our subscription list. We want and we intend to have at least

TEN THOUSAND

paying subscribers. Measures will keep pace with the means, and the faster and more freely the latter come to hand, the more vigorous will be the former.

Measuring Dressed Lumber.

A planing-mill owner in the South submits the following: "Please state through the columns of your valuable journal the rules or customary ways of measuring flooring and ceiling as it goes to the planer. Namely, if a board is six inches wide and twelve feet long, would it be measured as having six feet of contents when it comes from the machine? Again: if a board be twelve feet long and six inches wide as sawed, but so crooked upon its edges that an inch in the width must be lost in dressing, would it be measured as six feet, or as but five, when dressed? In other words, will you give us the customary rules for measuring dressed and matched ceiling and flooring?"

Lumber passing through a machine is measured as though in the rough. A six-inch strip of course loses in its width by dressing, but it is customary to call it six-inch strip still when computing it for measurement and sale. Before the days of machine dressing, a purchaser bought his lumber in the rough and handed it over to his carpenter to prepare for laying on the floor. He did not ask the manufacturer to sell it to him for what it would absolutely measure when dressed, neither did he expect the carpenter to pay for the decrease caused by dressing. This was a loss which was as much a contingent necessity as was the loss of ends or widths in boards which must need be cut to fill a certain place in the work. It was a loss which was figured for in the estimated cost of the material needed for the building. The introduction of machinery did not shift the responsibility of this

loss; it simply provided for doing more cheaply and efficiently the labor which had hitherto been done by hand. The loss remains the same, and upon the same party. Hence no change in the custom of measuring took place on the introduction of machine dressing.

The second proposition of our correspondent, however, introduces a different element. If a board is crooked it must be measured straight, if entitled to measurement in the grade for which it was intended. Usually crooked lumber loses in grade, but if passed, can be measured only for what it will make. If it is a wedge strip, it is to be measured at its narrow end, for it can only make so wide a piece of flooring as can be manufactured with parallel lines. If it is crooked so that an inch is lost in making it straight, the loss falls on the manufacturer at the sawmill, not upon the planing-mill, and only to the reasonable extent of ordinary loss in dressing upon the purchaser of the planed lumber. Such a strip as our correspondent describes should be measured at five inches in the rough, and would be considered as a piece of five-inch flooring when matched and dressed. This rule holds good in all markets of which we have knowledge.—*Ex.*

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There are many things connected with the location of the redwood that have been a source of deep study amongst our scientists. Why should the trees only be found along the California fog belt? Why is it that in ravines opening towards the ocean, exposed to the fogs, the bottom should be covered with a heavy growth of redwood timber, and as we ascend up the steep mountain-sides the redwood gradually diminishes in size and number, until it is lost to our view on account of its place being taken by the pine and a thick undergrowth of various woods. We have personally noticed this fact, that in the bottom of the ravines we find the redwoods fully developed, but disappear almost entirely on the summits of the various mountain ranges. Fog seems to be as absolutely essential to the redwood as the sun is necessary to flowers.

It must not be supposed by our readers that our immense forests of redwoods do not contain any other kind of timber. Fir, pine, and spruce are liberally sandwiched amongst the redwood. This may or may not be advantageous to the millman. When the loggers and choppers start out to their work, they generally make a clean sweep as they go. Pine or redwood, the path is made clear. But when the logs get to the mills, they have to be assorted. The sharp, full-swedged teeth of the saws that cut their way with so much velocity through the soft redwood will not do for the hard flint knots of the pine, and so when a supply of pine logs are on hand, the teeth of the saws are generally changed.

One immense advantage the redwood has over the timber in forests in the Eastern and Western States, is its size. We have seen trees standing so close together that a man on horseback would find much difficulty in getting between them. Many of them will not have even the smallest branch for at least one hundred feet from the ground. We have frequently seen trees cut into logs, that would make in lumber at the mill over 100,000 feet. Logs at the mills on Humboldt Bay will average over seven feet in diameter. Twelve and fifteen feet diameter is very common for logs, although when they are of that size they are halved or quartered by blasting. One of the largest and finest churches in the city of Santa Rosa is built completely from lumber obtained from one tree; even the shingles were made from bolts obtained from the same source. Speaking about knots, the meanest of them all is a hard, flinty, dry, redwood knot. If our Eastern friends do not think so, let them take a dry redwood board with one of the above-described knots. Let him have a nice sharp saw, and just as he gets near a knot, let him give a little extra hard push so as to get through quick; take our word for it, a surprise will be in store for the man with the saw, for he will actually think a "*blizzard*" has struck a sand dune, and deposited the contents of it in his eyes and down his back. And then let him examine his saw, even if it is SPAULDING'S best. (Our friends of the Pacific Saw Works in this City thoroughly understand this knotty subject, and the temper of their saws is such that even a hard redwood knot is successfully cut by their saws.)

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An erroneous impression prevails amongst some of our subscribers in regard to the reproductive power of the redwood. When a tree has been cut down, shoots will soon make their appearance, which in a few years grow to considerable dimensions. Now, in all earnestness, we think there ought to be a law to protect these young shoots of future grants, and a very stringent one at that. No immediate fear of this generation using all the redwood timber in sight, but the important problem is presented to us of forests completely denuded of their timber in the course of the next sixty or seventy years, and how shall we reforest them?

We earnestly call upon our law makers to devise laws that will stop such acts of vandalism as the following: A man had a nice clearing on one of the bottoms of a river in Humboldt County. It was observed that for a few months of the year the sun was hid from the bottom by a line of tall trees on the ridge of the mountains above. Hiring a few men, as wages was very low at that time, the trees were so thinned out on the ridge that the sun shone resplendently on the "clearing" a few hours more each day, thus enhancing the value of the land at a sacrifice of thousands of feet of lumber.

On the same river, a few miles from the above-mentioned place, a small company took possession of a tract of land, and in order to make a clearing cut down trees without discrimination. Over a hundred trees were thus cut down for the sake of a few acres of sun-lit bottom land. Such acts as the above should be punished, and the sooner a law is framed to meet such cases as the above mentioned, the better it will be for the future generations in California.

The successful introduction of logging railroads in various parts of this State, has brought under tribute an immense acreage of the finest redwood in the State. When the senior editor has fully recovered from the effects of his recent severe illness, he will present many new and original ideas in regard to the great redwood lumber interests of the only State in the Union that produces this splendid lumber.

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All movements having for their object the elevation and improvement of the mechanical and laboring interests, and the advancement of the working classes, will receive our hearty co-operation and support, so long as moderation, wise council, and prudent action characterizes such movements. This will be the case, if the better and more intelligent men step to the front, and assume control and direction; but if the overzealous and imprudent become the moving and leading spirits, the influence may be disastrous. Men of right mind and honest motives will gather and cluster around the pure and good in every direction, while from the impure and wrongful they will fly with swift tread. We therefore council, that whatever the mechanical and laboring classes may undertake, that prudence, discretion, and good judgment be exercised; for power and success are found in these, while failure is sure to follow all harsh, selfish, and unwise actions.

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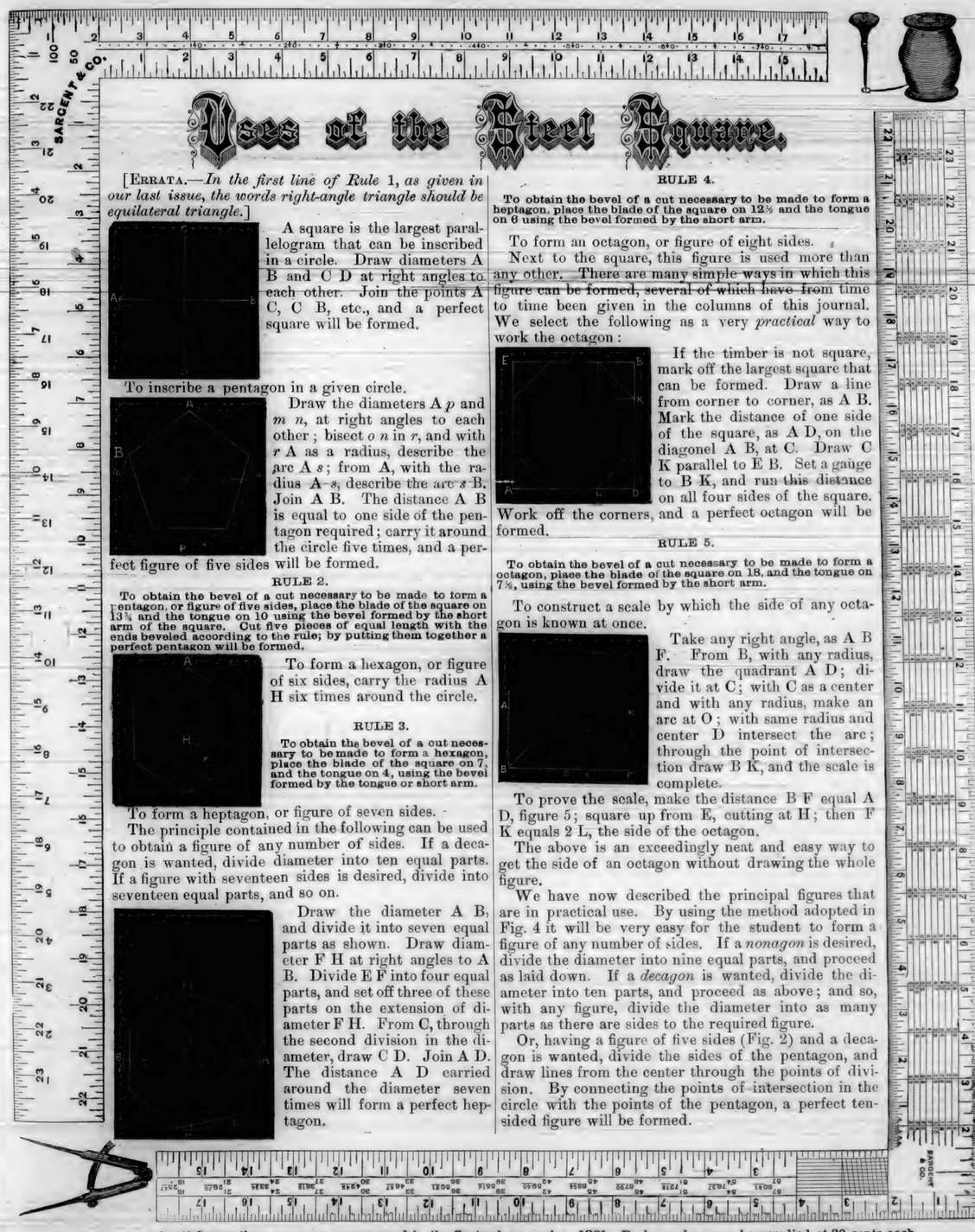

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A square is the largest parallelogram that can be inscribed in a circle. Draw diameters A B and C D at right angles to each other. Join the points A C, C B, etc., and a perfect square will be formed.

To inscribe a pentagon in a given circle.

Draw the diameters A *p* and *m n*, at right angles to each other; bisect *o n* in *r*, and with *r* A as a radius, describe the arc A *s*; from A, with the radius A *s*, describe the arc *s* B. Join A B. The distance A B is equal to one side of the pentagon required; carry it around the circle five times, and a perfect figure of five sides will be formed.

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To form a hexagon, or figure of six sides, carry the radius A H six times around the circle.

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The principle contained in the following can be used to obtain a figure of any number of sides. If a decagon is wanted, divide diameter into ten equal parts. If a figure with seventeen sides is desired, divide into seventeen equal parts, and so on.

Draw the diameter A B, and divide it into seven equal parts as shown. Draw diameter F H at right angles to A B. Divide E F into four equal parts, and set off three of these parts on the extension of diameter F H. From C, through the second division in the diameter, draw C D. Join A D. The distance A D carried around the diameter seven times will form a perfect heptagon.

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To prove the scale, make the distance B F equal A D, figure 5; square up from E, cutting at H; then F K equals 2 L, the side of the octagon.

The above is an exceedingly neat and easy way to get the side of an octagon without drawing the whole figure.

We have now described the principal figures that are in practical use. By using the method adopted in Fig. 4 it will be very easy for the student to form a figure of any number of sides. If a *nonagon* is desired, divide the diameter into nine equal parts, and proceed as laid down. If a *decagon* is wanted, divide the diameter into ten parts, and proceed as above; and so, with any figure, divide the diameter into as many parts as there are sides to the required figure.

Or, having a figure of five sides (Fig. 2) and a decagon is wanted, divide the sides of the pentagon, and draw lines from the center through the points of division. By connecting the points of intersection in the circle with the points of the pentagon, a perfect ten-sided figure will be formed.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

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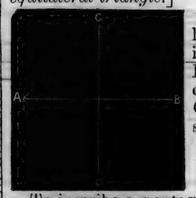

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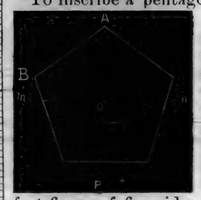

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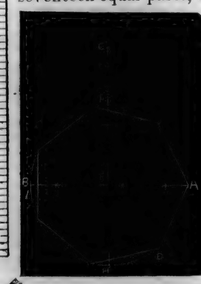

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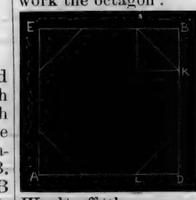

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To prove the scale, make the distance B F equal A D, figure 5; square up from E, cutting at H; then F K equals 2 L, the side of the octagon.

The above is an exceedingly neat and easy way to get the side of an octagon without drawing the whole figure.

We have now described the principal figures that are in practical use. By using the method adopted in Fig. 4 it will be very easy for the student to form a figure of any number of sides. If a *nonagon* is desired, divide the diameter into nine equal parts, and proceed as laid down. If a *decagon* is wanted, divide the diameter into ten parts, and proceed as above; and so, with any figure, divide the diameter into as many parts as there are sides to the required figure.

Or, having a figure of five sides (Fig. 2) and a decagon is wanted, divide the sides of the pentagon, and draw lines from the center through the points of division. By connecting the points of intersection in the circle with the points of the pentagon, a perfect ten-sided figure will be formed.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

The Architecture of the Renaissance.

This new style of architecture, which is known by the distinctive name of the RENAISSANCE, that is to say, the new birth of Roman architecture, first sprang into existence in Italy as early as the beginning of the fifteenth century. It reached its zenith in that country in the course of the same century, and at the beginning of the following became a model for all other countries, in which, however, the Gothic style prevailed for some time longer, and maintained its ground against the encroachment of its rival. In Italy, on the other hand, the pointed style was abandoned, except in isolated instances, and notably in Lombardy. The style which was thus introduced into the countries north of the Alps was consequently accepted there as one which was already developed, and the buildings constructed in it were mere imitations of the Italian; moreover, after it was introduced, it underwent no further change or development, and on that account was designated, especially in Germany, as the Italian style.

At the early epoch of its existence the new style of architecture displays not so much an alteration in the arrangements of the spaces and of the main features of the buildings, as in the system of ornamentation and in the aspect of the profiles. The object and construction of the buildings of the period in question were very different from the collosal monuments of ancient Rome, which were now to serve as an example; and consequently the model was mainly copied in the decorative details, principally in the columnar orders with their various entablature. It is owing to this cause that the façades appear to a certain degree to be merely appendages to the main building. Architects, moreover, could not at once abandon the customary freedom of conception which had been permissible in the Romanesque style, nor subject their imagination to the strict rules of Roman architecture, by surrendering all endeavors to attain picturesque effects. Roman architecture was consequently not at first a model which secured that slavish obedience which became its prerogative in later times. At the outset, moreover, the essential character of Roman architecture was not fully understood, as far as material and construction are concerned: It was consequently only in the case of buildings which did not require a total abandonment of the prevalent style that Roman architecture was at first employed.

In accordance with the tendency of the age, ecclesiastical architecture, which had assumed such prominence during the prevalence of the Byzantine, Romanesque, and Gothic styles, was now thrown into the background; whilst the style of the Renaissance was brought to the front, in the construction of castles and palaces. The varieties that occur in the style of the Renaissance are therefore not to be considered, as in the case of the previous styles, as the result of time and national peculiarity, but rather as the effects of individual and assumptive personal conceptions.

The first period of this modern style of architecture is also its brightest one. The façade of the Certosa, at Pavra, may be cited as the most notable instance. This was begun by Ambrogio Borgognone in 1473, and is very rich in sculpture; but the rest of the building, with the exception of the dome, which is also Renaissance, belongs still to the Gothic period.

The invention of printing exercised a considerable influence on the development of this style of architecture. The works of Vitruvius were translated into Italian and printed in 1521, and were soon extensively circulated. Owing to the tendency and predilection for classical antiquity which were then beginning to be displayed, as well as to the scanty knowledge of Roman architecture which the world then possessed, it is not to be wondered at that these works soon came to be viewed as an authority. But although the writings of Vitruvius, and laws of architecture based on the classical monuments themselves, were considered as authoritative, still the traditional forms were employed in a new spirit and in a new manner. A striving for the picturesque is perceptible amidst the massiveness of the new style. At first this tendency was confined within discreet bounds, but after the first twenty years of the sixteenth century it was extended to an undue degree.

During the flourishing period of the Renaissance, architecture showed less hankering after mere richness of detail, and strove rather after noble simplicity; and this tendency was exhibited even in interiors, although in a modified degree. This flourishing period lasted scarcely fifty years, and occurred at the middle of the sixteenth century, and during its prevalence decoration was kept in due bounds, and in harmony with the principal forms. At the same time it cannot be denied that a certain architectural beauty, or at least a pleasant effect, was often produced in the later period of the Renaissance when the decoration was no longer so well regulated, and when the details were not in such strict accordance with the main object of the design.

The artistic influence of Italy came into operation in France sooner than in other European countries, for as early as the fifteenth century the Renaissance style was introduced there by Italian architects; as, for instance, by Fra Gioconde, who was summoned thither by Louis XII. But at that epoch, the Flamboyant style was still in its vigor, and the buildings then erected could not extricate themselves from its influence. The consequence was that a blending of the two styles temporarily prevailed.

In the second half of the seventeenth century, the better tendencies of the Renaissance period disappear, and the new edifices display proofs of a deterioration of taste; the degeneration which had set in continued to increase with time, as may be gathered from the various buildings of the reign of Louis XIV. In accordance with the disposition of that monarch, architecture was for the future only to give expression to that proud pomp which characterized all the undertakings and the whole reign of the grand monarque.

The principal architectural activity of this period was displayed by Jules Hardouin Mansard, who was head architect to the king, and the head of an influential school. He freely introduced mirrors in the embellishment of rooms, especially in connection with the fireplaces, and may be said to have now become a distinctive feature in the decoration of interiors. On Mansard's death, a new system of decoration arose for interiors, which is often known under the designation Roccoco. This style will be described in a future issue.

The Renaissance style was introduced in Germany about the middle of the sixteenth century. Spain and England adopted the style about the same time.

It must be remarked that the sculptured ornament of the early Renaissance was distinguished by its excellent effect, due partly to the fact that the separate portions of the decoration were varied both in their bulk and in the degree of projection given to them, but more to vigorous undercutting and skillful disposition of light and shade, so that when seen from a distance only a few points stand out in prominent relief. It is only on a close inspection that the more delicate lines of the leaves, tendrils, and figures which connect together these large masses display themselves. The masterly manner with which Renaissance ornament is treated appears chiefly in the fact that all portions are not dealt with alike, the finest effects being obtained by the subordination of individual portions and the prominence given to those which are most important. The ornaments are also so arranged as to form a pleasing contrast with the containing or adjoining architectural lines, and are fitted and subordinated to them—a matter of the highest importance. In this respect the later Renaissance cannot boast of equal success. On the contrary, more salient ornaments began to be uniformly employed, and in too great profusion. Increased richness of effect was, it is true, thus arrived at, but the productions lost in grace what they gained in richness. As a sort of counterpoise to this tendency, the architectural moldings and details were executed in a more decisive and prominent way, so as to keep the decorative details in subordination to the main plan. On the other hand, ornamentation tried by dint of increased extravagance to accommodate itself to the exaggerated architectural features. The result of this was that the style became heavy and inartistic.

The *Sanitary Engineer* contains a letter from a practical plumber, which is full of interest for those careless or uninstructed plumbers, architects, or amateurs who still continue to countenance the dangerous practice of using chimney-flues as conduits for the foul vapors of vaults or drains. According to this correspondent, a soil-pipe in a large Western hotel was carried into a flue of a chimney which was constantly warm. There could hardly be much question that an ascending current of greater or less force would be constantly maintained in such a flue, so long as the supply of air was kept up from the soil-pipe; but in spite of this the foul gases diffused themselves so rapidly through the brickwork into the rooms adjoining the chimney as to cause a deep stain in the plastering, and to render it "as soft as putty." In addition to this, as the letter says, "the stench created was terrible." What could have caused the softening of the plaster we do not quite understand, unless, perhaps, some oxidation of the ammonia from the pipe into nitric acid may have taken place in the pores of the mortar; but we can fully comprehend the discoloration and the stench, which were only the natural result of the arrangement. The writer adds that "the soil-pipe has since been run through the chimney and about six inches above it. There has been no trouble since." We hope besides this all the plaster over the flue, if not the whole of the inclosing brickwork, has been removed and replaced with fresh material. If this has not been done, we can assure all whom the information may concern that the rooms through which the flue passes will for a long time be dangerous to their occupants. The organic filth with which the bricks and mortar are saturated will, notwithstanding the cutting off of further supplies, and the cessation of "trouble," continue for many months, or even years, in a state of what may be called malignant decomposition, pouring volumes of virulent though subtle poison into the air. Disinfection, as ordinarily practiced, can do little toward purifying walls so corrupted; nothing short of complete extirpation of the materials exposed and the substitution of new can give any real security.—*The American Architect and Building News.*

Removal of Metallic Particles from the Cornea.

The "Glasgow Medical Journal" (February, p. 150) quotes from the "Revista de Sciencas Medicas" the following hint as to the treatment of foreign metallic bodies in the cornea. A blacksmith, while forging a piece of iron received in his left eye a splinter of the metal. Every effort made according to the ordinary methods for its removal having failed, Dr. Rodriguez employed a wash consisting of rose water, 90 grammes; iodine, 0·05 gramme; potasium iodide, 0·05 gramme. The result was satisfactory, the particle of metal being converted into iodide of iron and dissolving out, and the cornea regaining its normal condition.

Tinting Suburban Residences.

The subject of painting suburban villas is attracting more attention now than formerly. The styles heretofore prevalent have become too negative in their effects to suit the cosmopolitan æsthete. And it is for this reason we must cater to tastes that have had an education in other countries. With us the burden of coloring has become too heavy, assuming the austere to coldness. Such colors, like the natural stones when massed in large structures, look well invariably, but soon they become monotonous from their stern, unyielding nature. Few venture out of sight of some known color, and others copy leaden hues draped in sable fringes, because, forsooth, some other house has been thus hideously shrouded in the habiliments of mourning.

When buildings, new or old, are to have new coatings of paint, they should be patterned after the opening of spring-time, with the gayly hued flowers. The blooming tinted fields, ablaze with parterres of bright yellow and purple, with variegated patches, lighting up the green sward with their gay attire. Such gay adorning colors make our home spots more endearing, and we look forward, when returning to them, as the sunshine where we can enjoy the home sweet home of the family circle amid its joyous surroundings. A house in color is far more attractive than those whose vestments are carbonated with lead, and they will out-wear those without color, as the former is a protector.

For a country residence Plate B, in the January number of the CALIFORNIA ARCHITECT AND BUILDING NEWS, is a fine one for the exhibition of color. Supposing its site to be well adorned with trees and ornamental foliage, the house would look well in a suit of colors on body and its outlines. The first to have a light shade of yellow or peach bloom, with the second a light dove-tinted blue, the sash and doors of mahogany color. The base, steps, and landings a light red sandstone. The roofing and other coverings a deep blue-green, with chimneys of house colors. The effect of such a scheme of coloring is fine when blended with exteriors of sky and earth; it will be found in harmony with all nature. Should the taste require more subdued shades, a body color of pearly hue might be substituted in lieu of the warm tint named above. The February number contains Plate No. 2; here we have an elevation of a plain dwelling, with an ordinary village surroundings. This style of house will look well in one shade of light cream-color, or it may be trimmed with pure white, roofings dark Indian red or Prince metallic, doors oak, and the sash bronze-green. The steps and floorings to base line be done in granite or a marble of the same tone. Plate No. 4 in the same number represents a one-story house of elaborate finish. This building would look well in two colors, the body of a light canary-color with a tint of canary-olive for the outlines, picked in with the light in the paneling and columns, doors and vestibule walnut or rosewood, and sash to match. The steps variegated marble, and the blocked base. The same or crome-orange and blue in alternate blocks, with walks of granite along the front and sides. The coping of roof blue slate-color and chimneys in base colors. It may be said that such a code of colors are too exotic in tone, and tropical in their nature. That is very true, they have a very strong inclination to strong hues, but such a scheme properly managed must have a unique effect if supported by proper relatives. In the March number there is in plate No. 1 a neat suburban residence. A building in this style dressed in a suit of any lively colors will have a fine effect. In a suit of light drab, with light or dark shade for trimmings, roofing in deep blue slating color, with bronze sash and walnut doors, brick underpinning red, lined with white or black. I have tinted this sketch in canary-yellow, with a subdued crome for the outlines with light prussian blue slating, and its effect is bright and cheerful with the green foliage flanking its sides, while the grass plats in front mass in full dress parade.

In Plate 2 there is an elevation of a church which we would suggest a coloring in which it would look attractive. The rustic to have a light olive, trimmed with a warmer tint in which yellow prevails, roofing Indian red, doors in rosewood. The pediment over entrance a dove-colored blue, serving as a background for tablet. Sashes in deep vermilion where the glass is not stained, but if colored, the sash bars should be deeped with a tuscan red, and made in tone with ultramarine blue. The steps and risers to be laid in with light sandstone and a similar shade for base, if of wood. Let not the color blindness of the past prevail, but rather cultivate imitation of nature and put off the sackcloth and ashes of the past, and let the rainbow of promise shine in all its beauty.

J. E. W. C.

Scarcity of Draughtsmen.

For the first time in many years, Architects find it very difficult to secure the services of competent draughtsmen. During the prevalence of the dull times, during the past two years, the more energetic and competent ones betook themselves to places that were not affected with Kearneyism, or ground down by the encroachments of a foreign population. Some engaged in other occupations, and do not see the wisdom of making any change for the *present boom*, not knowing that it is destined to last for any length of time.

From Santa Barbara on the south to Portland, Oregon, on the north, we hear of inquiries for draughtsmen. Architects in Sacramento, Oakland, etc., have been obliged to let work stand, while trying to secure competent workmen. Two things have worked around to cause this state of facts. The farmers have had "two years of plenty," and a third is almost assured. Consequently all our country Architects are fairly busy, needing the services of help that a year ago was dispensed with, even if it did cause the *head* of the office a few hours more of work in evenings and Sundays. *Now*, the Architect finds it more profitable to spend *his* time interviewing his friends in regard to future improvements, while his assistant in the office prepares the plans from sketches which his superior has given to him.

Another cause may be found in the stagnation of the mining market. Capital will not lie idle, when there is any show whatever for its investment. Now as mining stocks fail to return any investments worth considering, capitalists look around for other and safer methods of putting their money where a sure return will await them. No surer and safer method exists than in the purchase of real estate, and the erection of houses either for rent or speculation.

One but needs examine our report in last month and this number's "BUILDING INTELLIGENCE," to see at once that an unusually large number of buildings are in process of erection. With such a showing in this city, and with work starting up all over the State, it does not seem surprising that draughtsmen's services are at a premium.

We do not intend that our Eastern friends, who read this article, should understand there is an opening here for a number of draughtsmen immediately, and California-like, pack up their things and start for this place, trusting to luck to get into a good office for an indefinite time. At present 15 or 20 good draughtsmen could possibly secure profitable engagements, but for how long a time would depend greatly upon their qualifications.

Should any of our Eastern friends desire to make the "Golden State" their home, we will take pleasure in informing them of their chances to secure employment. When writing, state age, qualifications, etc., so that we may not make false statements to those desiring draughtsmen. Be sure and state the number of years you have been engaged as draughtsman, and the degree of skill at which you have arrived. All such will have to register themselves, the same as if they were already here.

Our "REGISTER FOR DRAUGHTSMEN" is open to all, and the same conditions apply to all, whether in this State or not. A fee of $2.50 is charged. When paid, it entitles the payee to information as long as he remains in the State, even if it be 20 years. No other expense is attached in any manner. As we stated in our last, this fee has become a necessary charge for us to make, owing to the fact that many letters are sent to us every month, and so far we have borne the expense of stamps, etc., without a murmur. But owing to the fact that this Journal is an assured success, and that soon an extra clerk will be needed, part of whose duties will be the supervision of the Book of Registration, we think it no more than just that the parties benefitted should share part of the expense. Hence the Registration Fee of $2.50.

Ventilation and Fresh Air.

Fireside comforts are almost inseparable from the idea of an open fireplace; and from a hygienic standpoint, too, the old-fashioned chimney, or an open grate, is far superior to a closed stove. But it should not be forgotten, writes Dr. Oswald, in the *Popular Science Monthly*, that the operation of the chimney-draft alone is insufficient to correct the vitiated air of a small room; it merely creates an outward current. An open window completes the renovating process; in cold weather a few minutes are sufficient to revitalize the in-door atmosphere for a couple of hours. Only the blindest prejudice can deny the pleasant effect of such an influx of life-air; it revives the azotized lungs as a draft of cool water refreshes the parched palate. Colds are never caught in that way. The very name is a misleading misnomer; inflection or influenza would be the right word. Long exposure to a freezing storm, in certain cases, induces a pure pleuritic fever—a very rare affection, and entirely different from the only too familiar catarrh.

What we call a cold is caused by the influence of impure air, or dust, on the sensitive tissue of our respiratory organs; subsequent exposure to the open air merely intimates the crisis of the disorder—the discharge of the accumulated mucus through the nose or throat. Fresh air is here only the proximate cause, as in tooth-ache, or in those paroxysms of retching following upon the first respiration of a half-drowned person. If we postpone the crisis by persistently avoiding the open air, the unrespirable matter, instead of being discharged, will be deposited in the tissue of the lungs in the form of tubercles.

One of the questions most frequently asked in respect of professional practice is answered in *La Semaine* according to the French custom. Some individual, apparantly a manufacturer, writes to inquire whether he has not a right to the original drawings and specifications of a building which he has just had constructed for him, and if the architect refuses to give them up, whether he is not entitled to keep back a part of his commission. To this *La Semaine* replies that "the architect is bound to deliver up to his client a copy of the plans and specifications; but that these documents are usually furnished at the beginning of the work, for the assistance of the client in discussing and fixing the details of arrangement and construction, and if these are mislaid or thrown aside, he is not required to furnish a second set."—*The American Architect and Building News.*

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

FRIEND ARCHITECT: I often find difficulty in getting my paper to stick to my draughting boards. I use mucilage made by myself from the best Gum Arabic, but after the paper is seemingly stuck, it will curl off. What is the remedy to apply?

DRAUGHTSMAN.

One of the difficulties with Gum Arabic lies in the fact that when it is thoroughly dry, it becomes brittle and the object falls off. A good and simple remedy for this difficulty lies in the addition of from five to ten drops of glycerine to each fluid ounce of mucilage. Also, be sure there is no dust on your board before you attempt to stick your paper on.

BUSINESS MANAGER OF ARCHITECT: In your "History of the Steel Square," you gave a very good description of the early history of that instrument. In your researches in regard to the square, you might have noticed the invention of the saw; if so, please interest many of your readers by relating who invented the saw, at what time, etc.

R. & H.

Our researches into the history of the square necessarily led us to notice all the different tools. When or where the first saw was made is simply a matter of conjecture. From the description of the Ark and the Temple of Solomon, we naturally conclude that the saw must have been known at that time. It is represented on the obelisks of Egypt. How they were kept in order, however, is a puzzle, as we do not read of any drawings of files or anything that could be used to keep saws in order. According to the Greeks, the invention of the saw was ascribed to Dædalus, or his pupil Talus. This most certainly is a mistake, as centuries before their time the outline of a saw was inscribed on the Egyptian Obelisks.

The first saw-mill was erected in the Island of Madeira in 1420; and the next at Breslau, in Austria, in 1432.

From the Syriac translation of the Bible we find that Pumps were invented by Otesibus of Alexandria, 224 B. C., and were wholly or partially made of cast brass or bronze.

BUSINESS MANAGER OF ARCHITECT: A claims that a 2x6 inch brace, with the upper end nailed to the plate and the lower end to the floor, is stronger than if the same piece was placed vertically, and the upper end nailed to a stud and the lower end to a joist. Your decision is respectfully desired, as B claims the latter method is much the best, as the brace is liable to sag if nailed the way A suggests, and is therefore liable to interfere with the "plumb" of the building.

L. A. & R. B., S. F.

We think the former method is the stronger, although it is hardly as convenient as the latter, which is the one generally employed in this State. In the latter method, the strain is upon the nails that secure the plate to the stud; while in the former, the plate is held by nails in the several studs, and therefore a brace from it to the floor should keep the side of the building stiffer, than if nailed to only one stud. We do not think the sagging of the brace as mentioned by B will interfere with the "plumb" of the building. It would cause such a small difference that it could not be noticed with the plumb bob.

OUR CABLE ROAD MANAGERS should take precautions against passengers getting out on the side farthest away from the sidewalk. How would the Chicago plan do in this city, of having a small wire gate on the side toward the middle of the track and thus compel travelers getting out on the safe side. It is safe for passengers sitting on the dummy, as they can easily see ahead; but passengers on the rear platform are not so fortunate. A bar or wire gate across the inner side of front and rear platforms would, we think, materially lessen the numerous accidents that occur.

BUSINESS MANAGER OF ARCHITECT: Some time ago I had some red paint sent to me to be used on a barn. A few months after I applied it, it began to peel off. My neighbors say the paint was very much adulterated with brick dust. How can I tell whether such is the fact or not?

R., Sonoma Co.

Take some of the paint (as dry as possible) and heat it gently until the water and oil have been evaporated. Place some of the dry paint in a crucible, and pour upon it dilute nitric acid in quantity enough to dissolve the mass. The acid will dissolve the lead, but leave the brick dust behind. Wash the dust in water, and after drying send it back to the firm from which you obtained the paint, and we have no doubt they will cheerfully forward you the pure red lead.

AN IMPORTANT FACT.—Sheet lead is sometimes placed at the joints of stone columns, with a view to equalize the pressure, and thus increase the strength of the column. But experiments have proved that the effect is directly the reverse, and that the column is materially weakened thereby. Does this singular fact apply to cast iron, and other materials?

IN ANSWER TO A YOUNG PAINTER in Sacramento we would say, that the action of driers in paint is not thoroughly understood. They are put in to cause the oils to thicken and thus solidify more rapidly. The drying of linseed oil is caused by the absorption of oxygen, and there is no doubt that for the most part, driers act as carriers of oxygen to the oil, a very small quantity producing considerable effects. The best driers are litharge, acetate of lead, red lead, sulphate of zinc, etc., etc.

"Theophrastus, quoted by Pliny, attributes the first use and digging of stone from the quarry to Carmus, grandson to Agénor, King of Tyre. Bricks, which were in use from the earliest ages, being mentioned in Holy Writ, would no doubt have continued in use, had not Nature at last discovered to those who dug for that poor material, her mines of freestone and marble, which then promised a longer duration; and on the discovery of stone men naturally conceived the idea of nobler and more magnificent structures."

Steel Square Problems.

A new work explaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

Our Illustrations.

Plate 1 presents another proof of the growing popularity of this journal throughout the Eastern States. Mr. Gulbranson of Boston has kindly furnished us the designs and plans shown in plate 1. It is well suited to the taste and fancy of many who having the proper site for such an edifice, will appreciate its peculiarities and picturesque appearance. It is designed and adapted for a country residence, but some of its special features may be found in erections in this city, in buildings in which the owners have sought the "something new" more than appropriateness in city architecture.

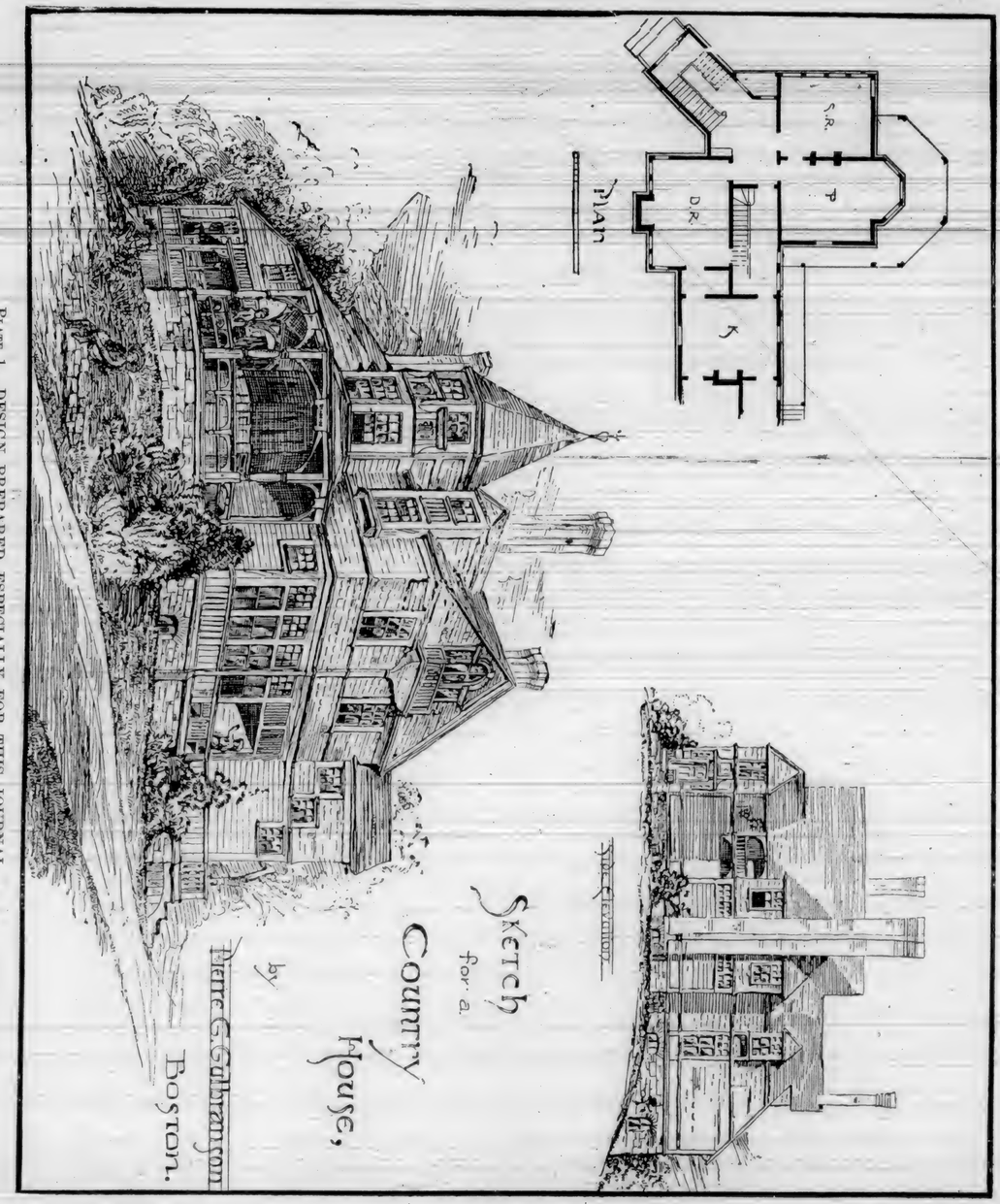
Front elevation and ground plans, plates 2 and 3, are those of a residence erected by us in 1876, for Mr. John W. Coleman, at the northeastern intersection of Eighth and Brush sts., in the city of Oakland. During successive years, moderate enlargement and improvements followed, until in 1881, a thorough change was made, producing the elevation and plans as shown by plates 4 and 5. While a considerable portion of the original building is utilized in plate 3, all distinctive traces thereof are obliterated.

In affecting the last alteration, cost and expense were held secondary to elegance and comfort. While not attempting to aproximate the *magnificient* palatial homes that we read about, yet in all that is necessary to real comfort, and a very *considerable* degree of elegance, is to be found in the residence under notice, equalling in numerous particulars the grandeurs to be found in edifices costing thrice the amount expended in this case. As a whole, Mr. Coleman's premises and improvements rank with the finest and most desirable in Oakland.

Labor Strikes.

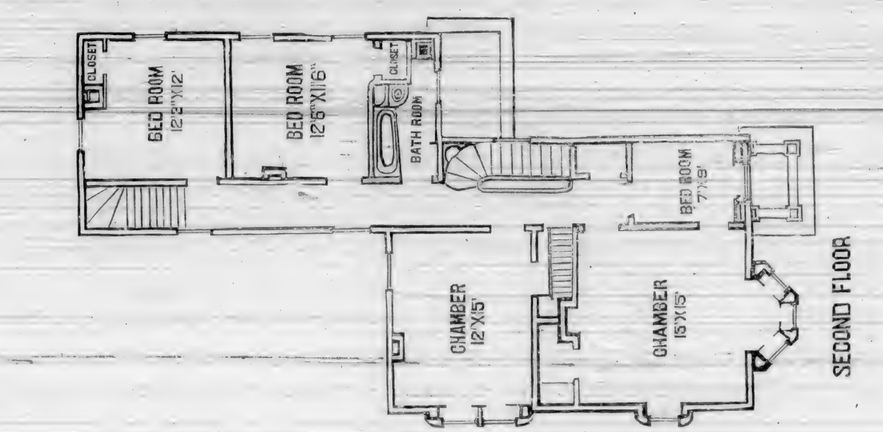
The New York *Times* contains a sensible editorial upon the effects and causes of the strikes in the building trades which have been so numerous this season. In no other branch of industry has it been found practicable to increase wages to such an extent as in that of building, and the *Times* rightly regards the advance as excessive, and as likely to lead to a considerable reaction. There is no question that in New York, where the strikes have been most numerous and successful, building has been materially checked, and although the structures now in progress must be completed, the volume of new work is likely to be much smaller at the end of this season than it was a year ago. It was found that the great increase in prices which took place early last year attracted so many newcomers to the city that the rates of wages which the workmen regarded at the beginning of the summer as much too low to satisfy their needs were with difficulty sustained until the autumn, and a similar course of events is inevitable in the future. As the *Times* says, strikes are almost always the precursors of a period of stagnation and dullness in trade. So long as a business continues brisk, and with good prospects for the future, the competition among employers for good workmen insures a quiet but steady advance in the wages of such men; but when the limit of the market is reached, and the outlook begins to be unfavorable, the advance ceases, and the inferior workmen then, with characteristic impudence, endeavor to secure by force what they find cannot be had in the natural course of events. For a time the employers, bound by their contracts, are compelled to yield, but the completion of every contract throws upon the labor market a certain number of unemployed men, and a comparatively slight diminution in the total volume of building operations leaves a residuum of workmen in each trade who must compete with their fellows for such wages as they can get.

PLATE 1.—DESIGN PREPARED ESPECIALLY FOR THIS JOURNAL.



FRONT ELEVATION.

PLATE 2.—BEFORE ALTERATION.



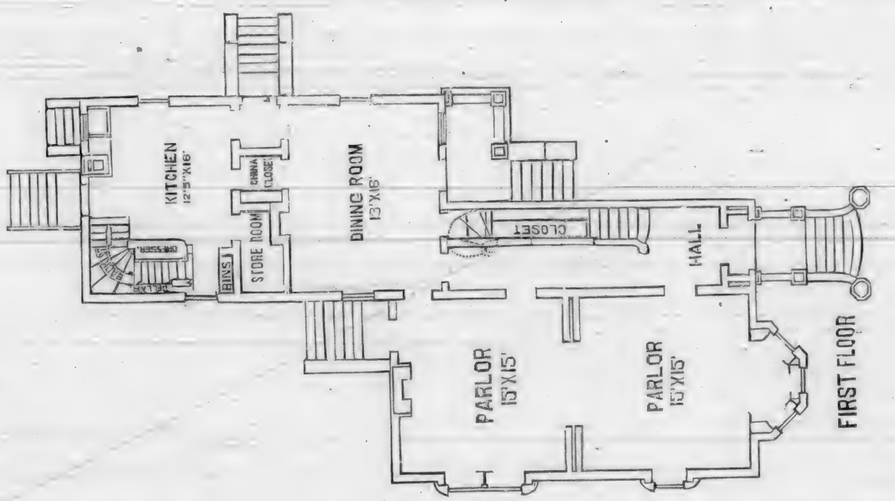
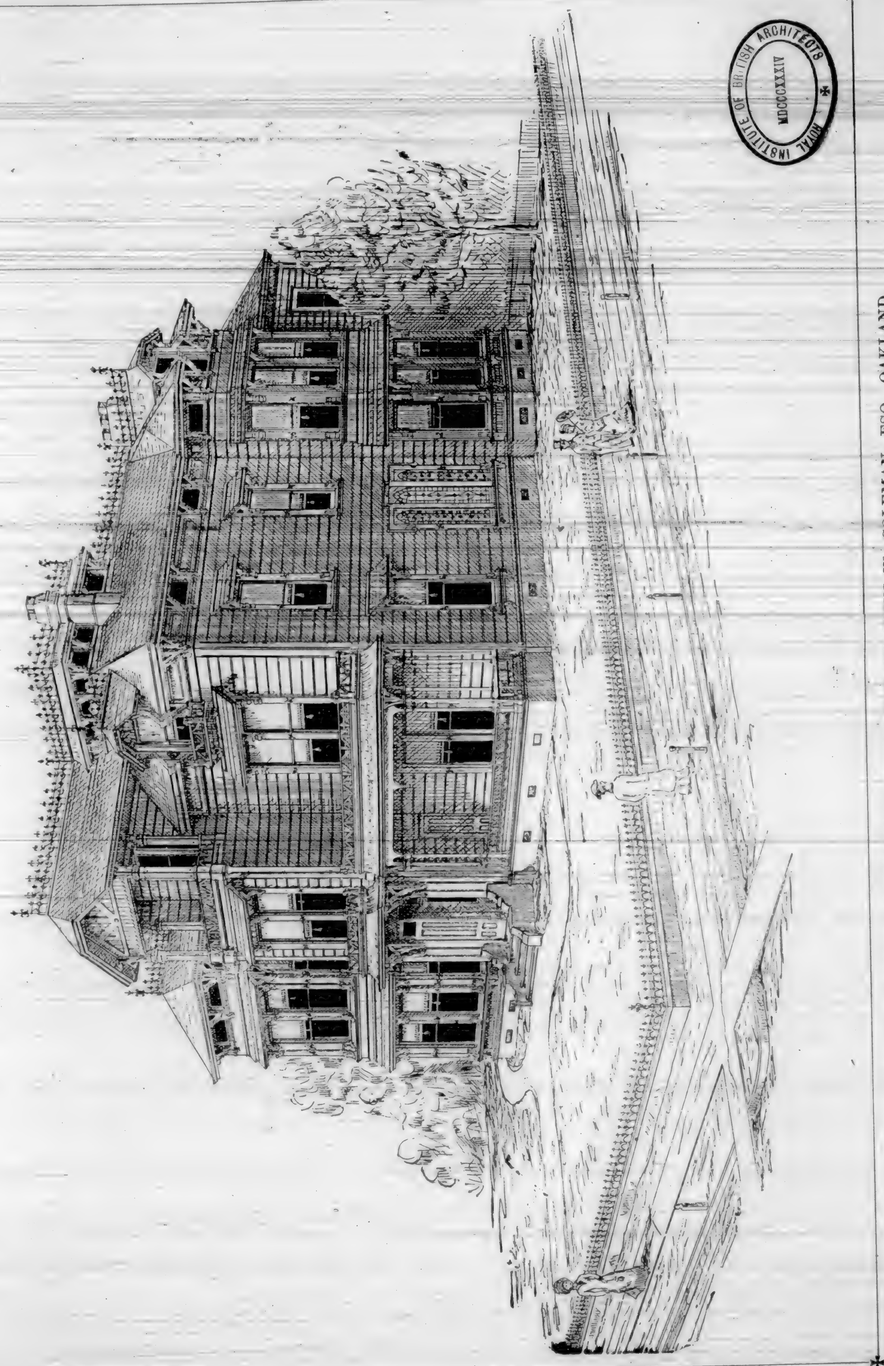
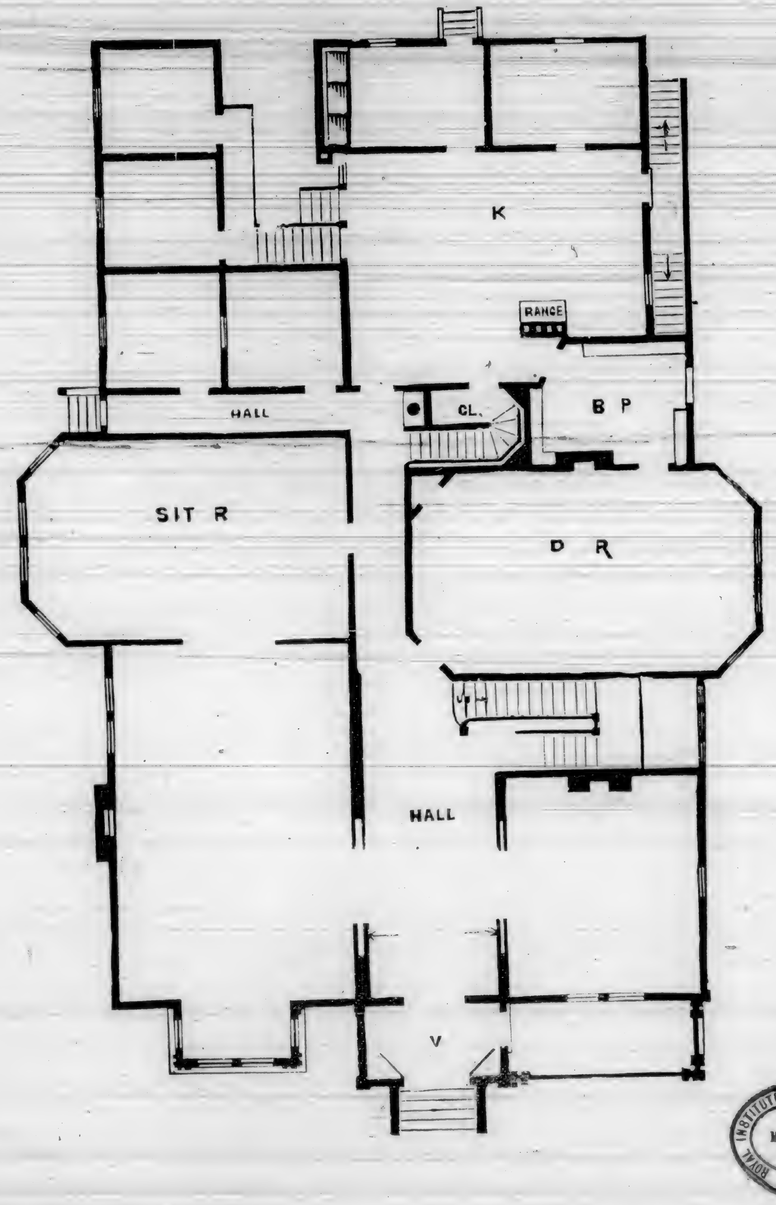


PLATE 3.—BEFORE ALTERATION.



ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIX

PLATE 4.—AFTER ALTERATION—RESIDENCE OF JOHN W. COLEMAN, ESQ., OAKLAND.



ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIX

PLATE 5.—AFTER ALTERATION.

THE FRANKLIN GIRDER.

THE MOST ECONOMICAL CONSTRUCTION

— OF ANY MODE AND AT A —

PRICE OF ABOUT ONE-HALF

OF THOSE IN COMMON USE

OF SAME LENGTHS,

— AND TO SUSTAIN —

EQUAL SAFE LOADS.

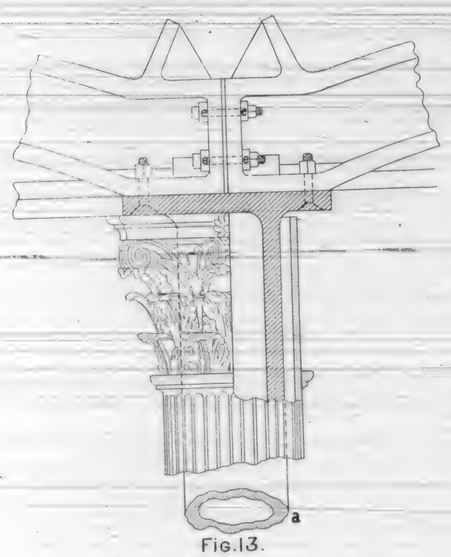


Fig. 13.

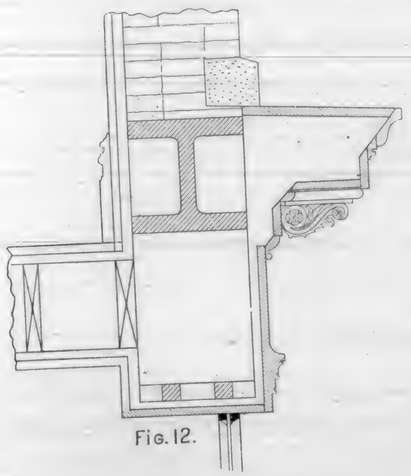


Fig. 12.

Employing Cast Iron compressively in every part, without taxing in the least its comparatively feeble tensile resistance,

AN OBJECT NEVER BEFORE ATTAINED.

Cast Iron possesses the enormous compressive resistance of 93,000 pounds to every square inch of cross section. The great objection to cast iron, caused by contraction of the parts in cooling, the heavier parts controlling and drawing away from the lighter parts, producing inherent weakness in tensile strain—does not in the least impair its strength when compressively employed. The Value of this Invention has been most favorably commented on by the scientific press of this country, London, Paris, and Germany. It has also been received with much favor by the Professors of Civil Engineering of many of the Colleges of this country, as well as Engineers engaged in Railroad and Bridge Construction.

These Girders for Architectural use are made of any length, and to sustain any required load—the safe to the breaking load being in the ratio as one is to three—and at a price of one-half of those in common use in this city.

A TWENTY-FIVE-FOOT GIRDER, with Brick work on it, is now in front of Premises, No. 231 First Street. Suitable to sustain 100 tons. Price, $200. Wrought Iron Girders to sustain same load and of same length, will cost double that Amount.

FIGURE 13

Represents the ends of two long Girders spanning the entire fronts, bolted together, and bolted to a Patent Fire-Proof Column—a Substantial Construction to resist Fire and Earthquake disturbance.

FIGURE 12

Shows the Girder encased with the Cornice, Frieze, and Soffit.

Prices given for any Length of Girder, and to Sustain any Weight.

P. H. JACKSON & CO.

2 CALIFORNIA ST., and 231 FIRST ST., SAN FRANCISCO.

UTILIZE YOUR BASEMENT APARTMENTS

In the Business Part of the City by using

HYATT'S PATENT ILLUMINATING ROOF

— AND —

BASEMENT EXTENSION.

THE LENSES MAGNIFY, HEAT, AND DO NOT BREAK.

SEE ALL NEW BUILDINGS ON THE BEST BUSINESS MART.

The present dark, damp Cellars, or Coal Vaults, of old buildings made light, cheerful, and well-ventilated Business Apartments suitable for Offices.

Read the following of the many Testimonials received:

LEVI STRAUSS & Co., Importers, 14 and 16 Battery Street,
SAN FRANCISCO, March 4, 1881.

MESSRS. P. H. JACKSON & Co., No. 2 California Street:

The alteration made by you by cutting out the six door sills and risers on the front part of our store, 14 and 16 Battery Street, and substituting HYATT'S PATENT ILLUMINATING ROOF, is quite satisfactory in making in the basement apartment below, in the front part, all that we could desire as regards light. **Our entry clerks are now able to work without the use of gas.**

LEVI STRAUSS & CO.

The **Basements of Messrs. Murphy, Grant & Co's Buildings,** on Bush and Sansome Streets, have been altered and are now lighted by this Improvement.

HYATT'S PATENT

FIRE AND BURGLAR-PROOF SKYLIGHTS.

The public are requested to examine the large Skylights now being erected on the rear of **A. B. McCreery, Esq.'s, Building,** corner Pine and Davis Streets; also **Senator Fair's Building,** corner Sansome and Pine Streets. By the use of these heavy Skylights, which are both fire and burglar-proof, **no extra charge in rates is made by the Insurance Companies than if no Skylights were used,** as they are not destroyed by fire, like the wood and sheet-iron skylights in common use; besides the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

☞There are many deep stores in this city that are much in need of light, and by an addition of these Skylights all light can be obtained, besides security against thieves is maintained.

The appearance of the Skylight, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan Building, as altered, has these Skylights on the rear of the deep stores.

P. H. JACKSON & CO.

Sole Licenses and Manufacturers for the Pacific Coast of Hyatt's Patents,

No. 2 California Street and No. 231 First Street,

SAN FRANCISCO.

Foul Air in School Rooms.

It is seldom that an assembly room of any kind can be found in which the air is not overcharged with impurities. Some of the worst rooms we have known have been those in which the air ought to have been the purest, namely, school-rooms. Yet it is seldom, we trust, that the conditions obtaining in school-rooms are quite as deleterious as those found recently in the Packer Institute, Brooklyn, a well endowed school for young women. In response to persistent complaints by the young ladies the "Sanitary Engineer" had the air of the class rooms analyzed, finding in some of them "an amount of impurity present greater than in a crowded theater, in smoking cars, and three times as great as in the public schools of Boston or Philadelphia."

Our contemporary pertinently remarks that such an institution "should be able to claim not only that it furnishes the means of mental culture, but that its pupils are supplied with at least as pure air as is found in the public schools of Boston and Philadelphia. Certainly, this is not a very high standard, but to secure it the amount of air supply in the Packer Institute must be quadrupled, and the amount of heating surface largely increased."

A more outspoken statement of the case by the "Times" says that "there were two classrooms in which the proportion of carbonic acid found in the air was twice as great as that present at 11 o'clock at night in the pit of two of the worst ventilated London theaters, and was only exceeded, according to Buck's tables, by that detected in a few German schools, and in the English mines."

To send young people to study in such an atmosphere is simply criminal.—Scientific American.

Plumbers Brought Under the Law.

A plumber is no longer, in the cities of New York and Brooklyn at least, an ordinary person following a private avocation which he may take up or lay down at will without the knowledge or interference of the powers that be. He is distinguished above his fellow-citizens by being registered at the Health Department, his designs upon the community are known and officially recognized, and he is, in short, a marked man. To pursue his calling without thus placing himself on record subjects him to the penalty of a misdemeanor. We alluded the other day to the distinction which lightning-rod men have recently enjoyed, in the holding of a congress of European scientists with sole reference to the uses and abuses of their art. The Plumbers' Registration Act is also, in its way, a sort of promotion of a hitherto obscure and unorganized trade to something like official rank. There is an increment of dignity to its followers, but none at all of emoluments—these, it is popularly supposed, being already of almost princely magnitude.

The whole truth about plumbers can probably never be known, and the logical relation between the benefits they render to mankind and the bills they present will always remain a gloomy mystery. That they deal with the most vital of sanitary conditions, and have it in their power to prolong or abbreviate human life to an extent unknown to any other of the mechanical trades, is sufficiently clear. There is an evident reason why a man should not be permitted to sell gunpowder without a license; and a man who deals in sewer gas it quite as powerful for mischief—much more so, in fact; inasmuch as he finds his way and carries his wares into the most peaceful and unsuspecting households. The poisonous elements which it is his duty to restrain and conduct safely away he may, in indifference if not in malice, turn in full activity upon a host of victims. There is not much to choose between dying by pestilence or by explosion—or rather, the preference should be decidedly given to the speedy over the lingering process. No prudent housekeeper would put a keg of gunpowder in the cellar, or a toy pistol in the hands of the children; but where either or both of these have slain their thousands, defective plumbing has destroyed its tens of thousands, and so insidiously that when the blow falls, or whence it comes, no man is able to determine.

Under the present act, which was passed by the legislature of New York and went into effect on the first of March, nothing more is required than that every plumber shall register his name and location at the Health Department, and that all work of this description in buildings hereafter erected shall be under the control of that department. It has been judiciously remarked that while these are wholesome measures, they do not go far enough to insure the public safety. There is no provision by which plumbing done in buildings now standing can be brought up to the proper degree of thoroughness; there is no qualification required, no evidence of competency, skill, or previous experience on the part of the individual who enrolls himself as a plumber, and by so doing acquires a sort of certificate of fitness for his work, or what will be very generally received as such by his customers. Something of this kind—not an examination in the dead languages, or the Binomial Theorem, but a test such as a competent plumber would himself apply to a workman seeking employment—would be eminently proper, and would give a largely increased sense of protection as a result of the new system. But a step in the right direction has at least been taken, and one which will, no doubt, lead in the fulness of time to such complete regulation of this industry as will afford all possible safeguards to the life and health of the community.—*Mechanical News.*

A Few Kindly Words.

It has been, and will be, our purpose to vitalize and stimulate among the Architects of S. F. those better sentiments and more kindly and fraternal feelings and relationships, which should control and characterize the acts of men assuming the practice of so honorable and responsible a profession as the Architectural; and if the harvest of results has not been so abundant as desired, there is this one solid source of comfort; that the yield thus far gives promise of much greater in the future.

There are two inevitables in the social, business and professional intercourses and relationships of life, viz.: that the deportment, manners, bearings, and acts of individuals or classes of men toward each other, by a natural law of the human mind, lead either to mutual and kind, equitable and right understanding, and results pleasing and honorable in character; or to the opposite of these, stimulated and controlled by the lesser impulses, passions, and debasements of heart and nature.

The men of all professions are supposed to possess and are looked up to by the non-professional classes as possessing, more than ordinary infirmities, intelligence and integrity; and so far as they sustain and justify this enviable distinction, they are trusted and honored. But when from any cause, incentive, or motive whatever, they drop down from this higher and more honorable position, and pursue practices and incivilities among themselves and toward each other, calculated to lower and lessen their advantages and influence, it naturally follows that the "outside world" should lose confidence and sneer at those who might, but fail to, protect their own best interests; and virtually forbid and drive away the confidence and respect which might be secured and maintained by the simple observance and exercise of those better and purer qualities of mind and heart, which elevate our common humanity above all lesser thoughts, motives, and actions; and inspire to undeviating kindness and earnest efforts for the promotion of the welfare of others, as well as our own.

It is this enlarged and more generous principle of action, which has led to the development of tens of thousands of noble charities, and works of enterprise and benevolence; and thrown open the doors of thought all over the world, producing numberless results in art, science, and mechanism, which otherwise might never have been revealed. It is the mingling and commingling—the comparing and burnishing of thought with thought in individuals—that lead to new revealments; and the facts of history clearly prove that no one man has ever "learned it all" in any department of human affairs, and that the wisest and best of men have acquired the better knowledge possessed, only through earnest study and contact with other minds: while those who rely upon their own unaided selfish knowledge of things, soon pump the well dry.

French Architects' Fees.

An important decision has lately been delivered by the Third Chamber of the Civil Tribunal of the Seine, which determines the much-disputed point whether the fee or honorarium of an architect should be reckoned on the limit price fixed before competition, or on the amount of tender accepted. M. Bourdeix, architect, had been commissioned to prepare the plans of a house for M. Jacobi. Various contractors submitted tenders more or less below limit price, the reduction in one case amounting to over 35 per cent. As a rule, in France, the construction of a building is not undertaken by one, but by several contractors, each taking his own particular branch, such as masonry, carpenter's work, plumbing, etc. When the time for payment came, M. Bourdeix, to whom all accounts were submitted, settled with the contractors at the price of their tenders, but claimed from M. Jacobi 5 per cent. on the original limit prict (*devis*). This claim was contested. The owne. paid into court 5 per cent. upon the sums actually dispersed. The tribunal, however, decided that M. Bourdeix was entitled to percentage on the full *devis*, basing its judgment on the ground that all the contractors, having tended considerably below the limit, more care and supervision were necessary on the part of the architect to insure good quality in the work. This decision will no doubt be accepted as regulating fees, and will make a considerable difference in the incomes of many French architects.—*London Architect.*

Morton's Sash Chain.

Since the introduction of these chains in this market, the inquiries in regard to their stability and usefulness have been very general. The inventor has sent samples to the principal architects, so that all erecting buildings may judge of the *vast superiority* of these chains over the now old-fashioned sash-cord. If these chains are put on according to directions, and have the size correspond to the weight of sash, they are guaranteed for years. If not absolutely misused, they will be just as good ten years hence as when first put on.

Circulars with price list may be had by application to the inventor, Thomas Morton, 65 Elizabeth St., New York City. Samples may be seen at the principal architects' offices.

If it is true, as sanitary writers declare, that planting sunflowers about the premises is a preventive of malaria, then Oscar Wilde may not have lived in vain.

Water Waste.

BY PROF. HENRY ROBINSON, C. E.

One of the most fruitful causes of waste of water in houses has been found to arise from the direct flushing of the closets from the water pipes. The rule in England is to prohibit this, and to require the insertion of a small service box supplied by the service pipe, and containing about two gallons of water. This being in direct commnnication with the valve of the closet, prevents more than a regulated amount of water being used at each flush of the closet. It has been found in practice that, without such an arrangement as this, enormous waste arises, and it cannot be too strongly urged on those who have to advise in the regulation of water supply in large towns, to adopt the most stringent rule on this point. Besides the prevention of waste, the introduction of such an appliance as the service box reduces the pressure to a uniform head, which would not be the case were the flush to be taken direct from the service pipe; and beyond this, it is found that any leakage in connection with a service box is attended with inconvenience to the householder, and this results in the prompt rectification; whereas, a leak direct into the closet might continue without inconvenience to the inhabitants, but with certain loss to the water company.

Glasgow may be quoted as a town where excellent rules are in force. The regulations here are that no water closet is to be supplied direct from a service pipe, but must be supplied from a cistern on the same flat as the closet, and no water closet is to be supplied by a tap of any kind. Also, that every cistern for the supply of a water closet must be fitted with an efficient waste-preventing apparatus, so constructed as not to be capable of discharging more than two gallons of water at each flush, and so that it can not be made to flow continuously, either by intention or neglect. It is further required that the cistern must contain from five to eight flushes in all places where the supply of water is not constant. Also, that the cisterns supplying all pan closets must have a proper service box attached.

Leeds is another large town which may be referred to. Here the regulation is as follows: Every water closet has to be provided with a service cistern of lead or cast iron, with a ball cock attached thereto, and every such service cistern has also to be provided with a proper double valve waste preventer; and every such valve or valves has to be so arranged as to let down at each pull or lift of the valves a quantity of water not exceeding two gallons. Also, that no pipe by which water is supplied to any water closet is permitted to communicate, directly or indirectly, with any part of such water closet, or with any apparatus connected therewith, except the service cistern thereof. In London also, the water companies have strict rules requiring the use of waste water preventers.

The above regulations may be regarded as being the outcome of the practical experience of English water engineers. In the water works with which we are connected, we have similar rules, and require them to be rigidly enforced. We do not consider that any alternative, such as specially devised valves, however ingenious, ought to be introduced. There exists a great amount of recorded experience in England, all pointing to the same conclusion, and all indicating the saving that has been effected by putting into force such rules as have been given.—*The Sanitary Engineer.*

Watch-making machinery has been brought to such perfection that screws are made with it, having nearly 600 threads to the inch. It takes 144,000 of them to weigh a pound.

Market Reports.

LUMBER.—Our merchants all report an increasing trade. Prices have not undergone any change as yet.

Receipts since January 1st, 1882:

Lumber	45,679,982
Shingles	12,416,372
Laths	6,102,360

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough "	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" " and under, and 1¼x4 and 1¼x6	35 00
Flooring and Stepping	35 00
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping.....per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts per piece	17½

Redwood.

Rough Merchantable per M feet	22 50
" Refuse "	18 50
Surface No. 1 "	35 00
" 1 x 6 "	32 50
" No. 2 "	27 50
Rustic, No. 1, 1 x 8 "	32 50
" No. 1, 1 x 10 "	35 00
" No. 2 "	30 00
" Under 10 feet "	30 00
T. & G., ½ x 4 and 1¼ x 6 "	35 00
" 6 in. 12 ft. and over "	32 50
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
" " No. 2 "	27 50
T. & G., Beaded, 12 feet and over "	35 00
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
Half-inch Surface "	30 00
Pickets, Fancy "	27 50
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	25 00
Shingles per M	2 50
Battens, ½ inch, lineal feet "	1c

NAILS AND HARDWARE.—All kinds of hardware are very firm in prices.

NAILS.—Since January 1st, 1882, we have imported 56,200 kegs.

10 to 60 pennies, are quoted at		$4 25
8	" "	4 50
6	" "	4 75
5 and 4	" "	5 25
4 and 5 pennies, brad heads, at		5 50
6	" "	5 75
8	" "	6 00
10 and upward	"	5 25
3 penny fines	"	7 75

PAINTS.—A new company has made its appearance, introducing the OMAHA WHITE LEAD. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8 cts. per lb.

The above is an illustration of one of those useful inventions that have been lately made, and is one of the few that seem destined to live through the coming years, on account of its simplicity and strength, and the ease with which they may be applied. Very few tools are necessary to insert this safe-guard against burglars. A 13--16 inch bit for the bolt, a smaller one for the thumb key, a small screw-driver and a chisel are all that is required. Since their introduction in this market, they have almost superceded every other bolt; and in every village and hamlet on the Pacific Coast, samples may be seen of the Ives Burglar-Proof Door Bolt; manufactured by Hobart B. Ives, New Haven, Conn.

Honest Plumbers in Edward III.'s Time.

What has become of the plumbers' ordinances approved by Edward III. in 1357, which ordain "that every one in the trade shall do his work well and lawfully?" How much pleasanter a world this would be if the plumbers had only continued to do their work "well and lawfully!" A legion of fevers would never have carried off their holocausts of victims; many of our finest and most historic mansions would not have been burned down through the careless leaving of lighted braziers, and untold sovereigns would have been saved to house owners and occupants. It is matter for serious consideration whether, considering the vital importance of plumbers' work, it should not be more strictly looked after. Certainly any system of house inspection, whether compulsory or voluntary, to be efficient, must comprise a more particular inspection of plumbing than is usual at present. It is one thing to inspect the drainage system of a house, and quite another to inspect the workmanship of pipes and joints. In the days of Edward III. the plumbers—in theory at any rate—were men of uncompromising honesty, for they were forbidden by their own ordinances to buy up lead "to the damage of the commonalty."—*Land.*

Building Intelligence.

A very full report is published in this issue. It will be seen that the erection of buildings in every portion of the State is increasing in a manner that is delightful, to behold after the dull times of the past four years.

PERFECT ACCURACY IN STATEMENTS is the motto to which we have bent our energies. We make it a point to be careful in our estimates, so that no one may be misled. We have been informed that several of our estimates made in our list were not sufficient to cover the *whole* cost of the improvements. When the work is let separate it is very difficult to get the *exact* cost of all the different branches. When a building is under way it at once becomes an object for our canvassers to notice, and the contractor is "interviewed." Generally the amount of the carpenter's contract is easily determined; but if he has no control over the plumbing, plastering, etc., we have to make an estimate as near the truth as possible.

During the past month we have personally visited several towns, and made arrangements to have the "Building Intelligence" forwarded to us regularly each month. It is our intention to visit several towns each month, so that in a short time we will be able to present a full report from every part of the State.

SAN FRANCISCO.

Two-story brick building near junction of California and Market. Owner, Nicholas Luning; architects, Wright & Sanders; contractor, J. S. Burpbee; cost, $8,000.

Seventeen one-story frame buildings for stores, on Ellis, between Mason and Taylor. Owners, J. Morton & Co.; architect, Joe Gosling; contractor, G. A. Hastings; cost, $9,500.

Two-story and attic frame dwelling on northeast corner Green and Leavenworth. Owner, R. Carmany; architect, —— Smith; contractor, Gray & Stover; cost, $4,500.

Two-story frame, brick foundation, northwest corner Pine and Fillmore. Owner, G. F. Roberts; architects, Newsom Bros.; contractors, Moore Bros; cost, about $7,000.

Two-story, four-tenement house, on Washington, between Buchanan and Webster. Owner, Mrs. Tuttle; architect, —— Curtis; contractors, Thompson & Treadwell; cost, $2,500.

Two-story attic and basement frame dwelling on northeast corner Pacific Avenue and Steiner. Owner S. B. Welsh; architect, —— Smith; contractors, Gray & Stover; cost, $8,000.

Two-story and basement frame dwelling on Sacramento, between Pierce and Scott streets. Owner, H. Williams; architect and builder, W. H. Wharff; cost, $3,100.

Two-story and basement frame, on California, between Pierce and Scott. Owner, —— Easton; architect, —— Marquis; contractor, —— Perry; cost, $5,500.

Three-story frame building on Third street, near Townsend. Owner, P. Doherty; architect, T. J. Welsh; contractor, —— Doherty; cost, $3,700.

Two-story and basement brick building on Park Avenue, between City Hall Avenue and McAllister St. Owner, H. Wahmuth; architects, Schmidt & Havens; contractors, Walker Bros.; cost, $9,000.

Three-story frame, brick basement, on Howard St., between Seventh and Eighth. Owner, G. Monnier; architect, W. Mooser; contractor, B. H. Harding; cost, $14,000.

Two-story and attic frame dwelling on Twelfth Street, near Mission. Owner and builder, M. Doane; cost, $5,500.

Two-story frame dwelling on Stevenson, near Nineteenth. Owner and builder, P. Griffin; architects, Meeker & Banks; cost, $2,500.

One-story and basement frame on Laguna, between Ellis and O'Farrell. Owner, L. Zeiss; architect, W. Schrof; contractors, Walker Bros.; cost, $2,000.

Six two-story and basement frame on Golden Gate Avenue, corner Polk. Owner, W. Sharon; architect, —— Gaynor; contractor, W. M. Fletcher; cost, $28,000.

Third Street, between Howard and Folsom. Alterations and additions to buildings owned by —— Swift, Esq.; architect, E. R. Swain; contractor, W. M. Fletcher; cost, $10,500.

Additions to building 938 Geary Street. Owner, J. B. Wooster; architect, H. C. Macy; contractor, W. Evans; cost, $2,800.

Three three-story frame on Geary, between Polk and Van Ness Avenue. Owner, T. H. Buckingham; architect, E. R. Swain; contractor, F. Crowley; cost, $——

North side Geary, between Van Ness and Franklin. Two-story frame building for school house for Ladies' Protection and Relief Society; architect, J. C. Pelton; contractor, J. Blake; cost, $2,400.

Three-story frame, brick foundation, on corner Sutter and Buchanan. Owner, C. Jones; architects, Schmidt & Havens; contractor, F. Klatt; cost, $5,500.

Three-story frame on east side Taylor, near Geary. Owner, A. Morganstern; architect, W. Winterhalter; contractor, F. Weinoehl; cost, $6,000.

Four one-story and basement frame, on corner Lyon and Greenwich. Owner, F. Wasserbaum; architects, Townsend & Wyneken; contractor, Phil. Ferrety; cost, $3,200.

Alterations to three-story frame on Mission Street, near First. Owner, J. Tompkinson; day's work; $6,000.

Two-story frame on Mission Street, between Main and Spear. Owner, Payne Bros.; architect, H. Geilfuss; contractor, T. H. Day; cost, $1,600.

Three-story frame dwelling, on California, near Fillmore. Owner, Antonio Sturin; contractor, R. Cook; cost $2,600.

Repairs to two-story frame dwelling 2023 California street. Owner, H. Gerke; days' work; cost, $1,000.

Repairs to building 2507 Clay street. Owner, C. Wilson; contractor, R. Cook; cost, $2,500.

Repairs to building on Pine street, between Steiner and Pierce. Owner, A. J. Rulofson; architect, H. D. Mitchell; contractor, J. Geary.

Repairs to building 806 Bush street. Owner, Mrs. Hughes; contractor, S. M. Hills & Co.; cost, $2,800.

Two one-story frame dwellings on Olive Court. Owner, J. W. Cudworth; Contractor, A. N. Nelson; cost, $1,200.

Repairs to dwelling on Sacramento, between Fillmore and Steiner. Owner, J. Kehoe; contractor, R. Cook.

Two-story frame dwelling on Kentucky, near Sierra street. Owner, H. McCrea; contractor, B. F. Ellis; cost, $2,300.

Three-story frame building on Kentucky, near Sierra street. Owner, Bellman; Architect, G. A. Bordwell; days' work; cost, $5,000.

Additions to three-story frame dwelling on Howard, near First. Owner, J. McGrath; contractor, Jos. Dutton; cost, $4,000.

Repairs to building 71 Natoma. Owner, J. Daly; day's work; cost, $700.

Repairs, 707 Bush. Owner, S. M. Mouser; architects, Percy & Hamilton; contractor, Sanches; cost, $800.

Alterations on Washington, between Larkin and Polk. Owner, T. E. Smith; architects, Moore & Whittemore; contractors, Conrad & Miller.

Buildings on Fifth near Natoma have been lowered, and a new front put in. Owner, N. P. Perrine; day's work.

Two-story frame building on south side Fell, between Gough and Franklin. Owner —— Bailey; Architect, J. Gosling; day's work; cost, about $6,500.

Two-story frame dwelling on Third street, near Brannan. Owner, H. Toner; day's work; cost, $800.

Alterations to building on East street, between Mission and Market. Owner, M. W. Kain; day's work; cost, $1,500.

Two-story frame building on Mission, near Twentieth st. Owner, W. Rustemeyer; architect, H. Geilfuss; contractor, —— Girvin; cost, $3,500.

Two-story frame building on Haight street, near Webster. Owner, Abbott; architect, J. Marquis; contractor, Ingerson; cost, $5,000.

Four-story and basement brick building on north-east corner Post and Dupont. Owner, W. M. Lent; architect, J. P. Gaynor; estimated cost, $100,000.

Two-story and basement frame building on corn r Kearney and Greenwich. Owner, F. Layman; architects, Townsend and Wyneken; contractor, Plummer; cost, $7,500.

Repairs to buildings on Union, near Hyde. Owner, Hibernia Bank; architect, P. Huerne; contractor, Buckley; cost, $1400.

Repairs to dwelling on Howard, near Twelfth. Owner, Hibernia Bank; architect, P. Huerne; contractor, McCready; cost, $900.

Repairs, 1212 Pacific street. Owner, J. Lomax; contractor, S. M. Hills; cost, $550.

Additions to residence on Pine near Mason. Owner, J. R. Jarboe; architects, Curlett & Eisen; contractor, Creighton; cost, $4,000.

SACRAMENTO.

Two-story frame dwelling on H Street, near Eighth. Owner, Grove L. Johnson; architects, Babson & Seadler; contractor, E. A. Bovyer; cost, $5,500.

One-story and basement frame dwelling on corner Twenty-first and H. Owner, H. Kuhn; architect, N. D. Goodell; contractor J. White; cost about, $1,000.

One-story frame on P Street, between Thirteenth and Fourteenth. Owner D. G. Dickman; architect, N. D. Goodell; contractor, J. White; cost, $1,200.

Two-story frame dwelling on Fourth, between N and O. Owner, Chas. Sellinger; cost, $3,500.

Repairs to brick building on Second, between Q and R. Owner, Cronin; contractor, A. Henley; cost, $600.

Two-story frame dwelling on Twelfth, between K and L. Owner, Mrs. E. N. Butler; contractor, W. H. Mead; cost, $1,700.

Two-story frame dwelling with attic and brick basement. Owner, Mr. Mohr; architects, Babson & Seadler; contractors, Carle & Croly; cost, $7,000.

One-story frame, brick basement, corner J and Eleventh. Owner, Thomas Armstrong; builder, J. Fitzpatrick; cost, $2,000.

Two-story and basement brick building on J Street, between Tenth and Eleventh. Owner J. Greisel; architect, N. D. Goodell; contractor, M. Madden; cost, $5,000.

Two-story frame brick basement, corner Tenth and M. Owner, J. Nottingham; architect and builder, M. Madden; cost, $4,500.

Two-story frame, brick basement, on N Street, between Sixth and Seventh. Owner, Capt. Dwyer; architect and builder, M. Madden; cost, $4,000.

Two-story frame, brick basement on H Street, between Fourteenth and Fifteenth. Owner, H. S. Letner; architect, N. D. Goodell; contractor, M. Madden; cost, $9,000.

Two-story brick building corner Twenty-eight and M. Owner, Scheld's Brewery; architect and builder, M. Madden; cost $5,000.

One-story and basement frame dwelling, corner T and Sixteenth. Owner, R. Nuttall; architect and builder, M. Madden; cost $1,800.

Two-story brick stable between I and J, Eighth and Ninth. Owner, E. A. Burr; architect, N. D. Goodell; contractor, M. Madden; cost, $850.

One-story and basement frame cottage corner Twenty-first and M Streets. Owner G. Wendt; architect and builder, M. Madden; cost $1,500.

Repairs and additions to Union Brewery corner Twentieth and O Streets; contractor, M. Madden; cost, $800.

Alterations to Pacific Brewery, corner Ninth and P; contractor, M. Madden; cost, $500.

One-story frame cottage on Tenth and W. Owner, John Bockoff; contractor, M. Madden; cost $900.

Additions to one-story frame on Fifth Street, between O. and P. Owner John Friend; contractor, M. Madden; cost $600.

Alterations to frame dwelling 708 L Street. Owner M. Everett; contractor, A. P. Andrews; cost, $500.

Repairs to brick building corner Twelfth and H. Owner, P. Bohl; day's work; cost, $800.

Two-story frame with basement on H Street, between Thirteenth and Fourteenth. Owner, H. Barchers; architect, J. Ough; contractor, J. White; cost, $6,000.

Two-story and basement frame dwelling on N Street, between Eleventh and Twelfth. Owner, C. N. Hartwell; architect and builder, J. Ough; cost $5,000.

German Evangelical Church on Tenth Street, between O and P; architect, A. A. Cook; contractors, Fallner Bros.; cost $3,000.

Two-story frame, brick basement, on Fourth Street, between N and O. Owner, Chas. Sellinger; architect, N. D. Goodell; contractor, J. White; cost, $3,500.

One-story and basement frame, on Twenty-first and H. Owner. A. Kuhn; architect, N. D. Goodell; contractor, J. White; cost, $1,000.

One-story frame on Twenty-third, near F. Owner and builder, J. Middlemiss; cost, about $650.

One-story frame on Nineteenth and M. Owner, A. T. Driver; builder, —— Traynor; cost, $900.

One-story and basement frame dwelling on Sixteenth and N. Owner, F. Schnouff; builders, Vandercook & Murdock; cost, $2,000.

BERKELEY.

Three-story frame, brick foundations, on Atherton Street. Owner, Harmon Seminary Company; architect, G. C. Meeker; contractor, R. McKillican; cost, $18,000.

One-story frame corner University Avenue and Walnut Street. Owner, J. H. Atchinson; contractor, C. R. Lorl; cost, $1,800.

Two-story frame building. Owner and builder, Geo. A. Embury; cost, $2,000.

One-story frame on Shattuck Avenue. Owner, Mrs. F. Clark; contractor, A. H. Broad; cost, $800.

Two-story frame on Shattuck Avenue. Owner, Samuel Wakehani; contractor, A. H. Broad; cost, $1,500.

One-story frame on Audubon Street. Owner, Chas. Hedges; contractor, A. H. Broad; cost, $2,600.

Large green house on the grounds of Capt. Ainsworth; architects, Matthews & Son; cost, $10,000.

SEATTLE.

Three-story frame building, brick basement, on corner of Fifth and Spring Streets. To be used for a hospital, and owned by the Sisters of Mercy; contractors, Wright Bros.; cost $17,000.

Two-story brick building on corner Commercial and Washington. Contractor, John Keenan; cost, $16,000.

Two two-story frame dwellings corner Second and Senaca. Contractor, D. B. Jackson.

ALAMEDA.

Three one-story and basement frame dwellings on corner of Oak and Alameda Avenue. Owner, J. Maristaney; architect, C. F. Mau; cost, about $6,000.

One-story and basement frame on corner of Buena Vista Avenue and Minturn Street. Builder and owner, J. J. Stachler; cost, $800.

Two-story frame corner Walnut and Central Avenue. Owner, Henkel; contractor ——Dencke.

One-story cottage on west side Pearl Street, between Central and Encinal Avennes Owner, C. P. Robinson; builders, Gilbert & Brown; cost, $2,000.

One-story and basement cottage on Railroad Avenue, near Webster. Owner, A. Hoffman; cost, $2,000.

One-story frame dwelling on Pearl Street, near Central Avenue. Owner, E. J. Robinson; cost, $1,600.

Two-story frame residence on Central Avenue. Owner, Mrs. M. E. Farvis; cost, $3,400.

WOODLAND.

One-story frame building on corner Second and Lincoln Avenue. Owner, —— Culver; contractor, Joe Caldwell; cost, $1,950.

One-story frame building on Second Street. Owner, —— Green; contractor, Amsberg & Co.; cost, $1,700.

One-story frame on North Street. Owner, Mr. Garoutte; contractor, W. Carson; $1,675.

The old Masonic Lodge is being altered into a lodging house; day's work; cost, about $500.

Frame building for wagon-shop. Owner, F. Knox.

Frame dwelling. Owner, C. H. Garoutte; contractor, W. H. Curson.

LOS ANGELES.

Two-story and attic frame dwelling. Owner, Hon. J. F. Crank; architects, Curlett & Eisen; day's work; cost, $15,000.

STOCKTON.

The building on the corner Main and California is being altered so as to be used for a theater. Owners, Southworth & Humphrey; architect, Chas. Beasley; contractor, Carle & Croly; cost, $11,000.

One-story frame on California Street. Owner, H. E. Stoetzer; contractor, A. Ehmann; architect, H. Geilfuss; cost, $1,500.

PORTLAND, OREGON.

First National Bank is erecting a large brick building; architect, Clinton Day; cost, $75,000.

CALISTOGA.

Frame dwelling and stable near town. Owner, A. L. Tubbs; architect, Clinton Day; cost, $18,000.

OAKLAND.

Two frame cottages on Market, corner Fourteenth. Owner, —— Parize; contractor, A. Herbst; cost, $3,000.

Two-story and basement frame on Clay, between Fourteenth and Fifteenth. Owner, Dr. Reilley; contractor, J. E. Hannah; cost, $3,000.

Four one-story and basement frames on corner East Twelfth and Second Avenue. Owner, C. L. Taylor; architects, Taylor & Copeland; contractors, Hitchcock & Bandin; cost, $7,500.

Repairs to frame building on Broadway, opposite Fourteenth. Owner, F. Blake; day's work; cost, $1,000.

LINCOLN.

Two-story frame building. Owner, Henry Nader; architect, N. D. Goodell; contractor, J. White; cost $3,000.

EUREKA, H. B.

The Odd Fellows are erecting a new building. Contractor, Jas. Simpson; cost, $18,500.

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Building Prosperities.

During the current year, a fairly prosperous condition of things has existed in San Francisco, in connection with the building interests. Although no very large or costly commencements have thus far been made, there has been a gratifying number of moderate-class buildings for business and residence purposes; many more in number during the past three months than have been recorded within a similar period since the commencement of this journal, in 1879. We are pleased to notice that the daily journals of San Francisco have not, during the current year, run into enthusiastic but unsustained statements, crying *boom*, when, in reality, no boom has existed. The interest of San Francisco will be as well or better served and enhanced by unexaggerated statements, than by any system of inflation that can be resorted to; as candid and reliable men are seldom influenced by representations which carry upon their face the impress of improbability or excess. There are, however, quite a number of important building movements nearing commencement, and the prospects indicate a lively building trade during the year. There has already been sufficient work started to engage all the skilled workers in wood, and it has been difficult for some of our prominent contractors to supply themselves with competent workmen. And the supply of certain kinds of building materials has been exceedingly limited, that of lime being subject to orders, with delays in delivery in numerous cases of from five to twenty days. An advance in the price of skilled and unskilled labor has been general in all lines of mechanical operations in connection with house building; and a material advance in the price of plastering-work rules, with no probability of a decline. In fact, present prices for plastering-work should be fully sustained, as during the three or four years preceding 1881 a cruel, unwise, and demoralizing competition prevailed among plasterers in San Francisco, to such an extent that it became difficult for architects or owners to obtain fair work, because, as if by common consent, or from determined purpose to oppress each other, plasterers so thoroughly depressed prices among themselves, that but few did better financially than make both ends meet, while the greater number were unable to pay their bills, and were compelled to liquidate indebtedness by partial or *pro rata* settlement; and many others departed suddenly but quietly, not considering their indebtedness, nor the wishes or claims of their creditors a sufficient bar to their going.

Applying the prices which ruled during the "terrible depression," some owners argue that the "present is an expensive time to build." But this is a mistaken conclusion. Present prices average less in many respects than they were prior to the commencement of the sand-lot era; and with few exceptions, are not in excess of fair and legitimate profits. There is a class of owners of real estate, and people generally, who never willingly pay fair and right value for anything. Avarice and extreme selfishness drive from them all consideration of equities between person and person; and any and all propositions which do not present special advantage to them are rejected; or, if circumstances enforce acceptance, a feeling of dissatisfaction ensues, for no other reason than that the transaction divides the equities, giving to both payee and payor right and proper compensation for money, labor, materials, and things, exchanges "in consideration," etc. But this does not suit some people, and thousands of building lots remain vacant from year to year, because their owners cannot find some one who will improve the same at a cost of ten to forty per cent. less than the improvement is fairly worth.

But there is a great number who neither seek nor desire to avoid the payment of right prices for what they have done, as is shown by our monthly report of building intelligence; which reveals the fact that buildings are being erected in all parts of the city, and largely for "private residences," which strongly indicates permanency of purpose on the part of their owners.

There can be no better evidence of universal prosperity in San Francisco and all parts of the Pacific Coast, than the fact that not only every qualified draughtsman is employed, but the lesser kind are utilized to the extent of their abilities, so that there is no surplus of draughtsmen of any class in San Francisco, while we are in receipt of letters from Los Angeles, Santa Barbara, Oakland, Sacramento; Portland, Walla Walla, etc., requesting us to "send draughtsmen." But we have exhausted the names upon our draughtsmen's registry, and can fill no more orders at present. We mention this simply as a fact, and not for the purpose of causing the immigration of draughtsmen from other places. There has heretofore been a large surplus in this line, and should there be a decline in present activities, the home supply will equal the demand.

San Francisco Chapter of Architects.

The regular monthly meeting of the chapter was held the 2nd inst., President Wright in the chair. The attendance was good, and a lively interest manifested in the business of the chapter.

A deputation from "San Francisco Union No. 22, of the Brotherhood of Carpenters and Joiners of America," was present, and laid before the chapter an address, in which the objects and purposes of the Union were set forth, and asking that the members of the chapter use their influence and professional authority in furthering the objects of the Union. The address was read before the chapter by a member of the delegation, after which it was received by the chapter, and referred to a committee of three, consisting of Messrs. Wolfe, Sanders, and Mitchel.

Mr. Albert Pissis, having been duly proposed at a prior meeting, was elected a member of the chapter.

Propositions for membership were received, and referred to a committee, as provided in the by-laws.

The President, Mr. John Wright, then read an address, containing many suggestions of interest. We publish it in full in this issue.

A special meeting was called for June 9th, for the purpose of considering the constitution and by-laws, as per amendments of the committee.

Superficiality.

It is sometimes amusing to contemplate the frills put on and the self-importance assumed by a class of persons who, having gained a limited amount of knowledge in any special pursuit, *imagine* that they, more than any other within similar range of opportunities, have become proficient in matters which in their very nature and extent defy comprehension and conquest except by long years of diligent application, devotion, and study.

Young men of flighty ambitions, soaring far beyond the limits of natural abilities, more frequently fall into this unfortunate error, accepting the superficial rather than by patient and diligent application aiming and pressing on until the really substantial and practical is secured. This specialty of character is to be found in all trades and professions, with much more of injury than benefit to any. Very frequently, after a short or moderate term of instruction or service as student or apprentice, the taught arrogates a knowledge greater than is accorded to the teacher. Consequently, the world is full of self-conceited, incompetent, and unqualified pretenders in all lines of pursuit, who, to gain even a moderate degree of success, must resort to methods, schemes, tricks, deceptions, and fraudulent devices, to make appear something seemingly meritorious. And this system of misrepresentation and falsification has become monstrous in proportions and magnitude, because the masses *practically* prefer being deceived. Plain, fair, and faithful representations of facts and things are appreciated only by a few, as compared with those who are better pleased when the embellishments of excessive statements and high colorings are added. And this gives vitality and zest to those who make their way through life by resort to deceptive practices; for, as the possession of gold is the main object of life with infinitesimally nearly all mankind, there are but few so conscientiously scrupulous as to reject any proposition around which golden "eagles" hover.

History of the "Lost Arts."

For some time past we have been engaged in the work of collecting information in regard to the "Lost Arts." The result of delving into the secrets of the past will appear shortly in these columns. We would be under obligations to any one who will aid us in this work by forwarding us items in connection with the above subject.

A $20,000 "Outside Ladder" Suit.

A suit for damages has been commenced in the Superior Court of San Francisco by Charles Kropp, against C. M. Mason, who for cause of action states, in effect, that the said Mason owns three houses on Seventh Street, and the roofs being in leaky condition, defendant engaged plaintiff to make said roofs water-tight. The means of ascent to said roofs was the usual dangerous and unsafe "outside ladder," so universal in connection with nearly all moderate cost houses, and many of no mean pretentions. We notice this particular case as illustrating what has several times been stated in this journal as likely to occur, and which we again repeat will be of frequent occurrence hereafter, as time and weather perform the work of destroying the fibers and strength of the wood, and rust and corrosion eat away the *few* nails employed in making these destined to be neck, back, and limb breaking ladders. It is simply preposterous for any one to assert that pieces of 1x3 inch lumber, gained into 2x3 or 2x4 inch uprights, and nailed to the perpendicular walls of a building, are sufficient and safe for ascent for any considerable length of time, particularly when there is no more mechanical judgment and care exercised than is practiced in a majority of cases in making and putting up "outside ladders"; in which the "gaining in" is imperfectly done, and no special attention paid to the nailing.

The result of the case mentioned will be one of interest to property owners, and mechanics and others employed to ascend roofs by the risky contrivance adopted so generally in this city. Should Mr. Mason be mulcted into $20,600.50—the sum sought to be recovered by Mr. Kropp—it will establish the responsibility feature of "outside ladders"; and if the plaintiff fails to recover, it will be a lesson to those who may hereafter be engaged by owners to risk their lives and limbs upon climbing perpendicular *dead-falls* nailed to the sides of buildings, for the purpose of performing roof or other work, to reach which no *safe means* of access is provided by the owner. The mere thought of a man, particularly if well-fed, healthy and weighty, climbing perpendicularly up the side of a building, with only *four* 10*d*, 8*d*, and sometimes 6*d* nails between him and a broken back, neck, leg, or eternity, is sufficient to cause a feeling of horror to pass through those who have any regard for the safety of their fellow-kind.

Where are our Draughtsmen Gone?

During the past three years, a single intimation from an architect that a draughtsman was wanted would have brought to his office numerous applications for the position. In fact, he would have had several, the qualifications of whom could have been tested before engaging their services. Now it is an impossibility to engage even a very ordinary draughtsman at advanced remuneration. The question naturally arises, Where have they all gone? We can answer the question, satisfactorily to ourselves at least, by looking at the numerous applications on our secretary from architects in Santa Barbara, Oakland, Sacramento, Portland, Walla Walla, etc., all desiring the services of a competent draughtsman. From this fact, we conclude that the demand in the country has absorbed all our draughtsmen whose services were not permanently engaged. We received a long telegram from an architect who desired a competent man in his office, agreeing to pay his fare, but we have been unable to fill the order.

This state of affairs, more than anything else, shows the prosperity that is dawning upon our State. The scarcity of draughtsmen, proving that most of our architects are busy, will show to our carpenters, masons, material men, laborers, etc., that this year, at least, need not have an idle day to their account.

The Designs and Models of the Garfield Monument.

In another article in this issue we refer to the generally admitted failure of the committee having the matter in hand, in obtaining a design for the Garfield Monument, so artistic and meritorious in design, fitness, general character, and detail, as to compel adoption *per force* of intrinsic merit.

The criticisms of the press and public have been anything but complimentary to those engaging in the competitive contest, and mainly so because the committee FAILED TO DESTROY ON FIRST SIGHT some of the wretched burlesques upon the designer's act submitted. Perhaps a *majority* of the presentations should have been consigned to the waste basket, as not possessing a single pleasing or artistic feature.

Had this been done, it would, to some extent at least, relieve the few better designs (one of the best of which appears in this issue of this journal) of the unfavorable influence created by the presence of so many lamentable failures to combine and twist into some new form and shape features common in all cemeteries, and illustrated in hundreds of printed designs for monuments contemplated or erected.

The good and beautiful in part if not as a whole, as represented in some of the better designs, was largely overshadowed by the many inappropriate and almost comical attempts; and the disappointment at seeing so many subjects of ridicule and so little to admire created a sentiment of disfavor to all. That there is merit in some of the designs and models cannot be denied, and if the more meritorious only had received a second consideration the prevailing adversity of judgment and public opinion would have been greatly modified, and criticism toned down to a milder tenor.

Some of the gentlemen submitting designs deserve more credit than they have received in this connection, as far as personal abilities, talent, and honesty of purposes are concerned; and the case as it stands is simply another exemplification of the danger of being found in bad company. A much more favorable impression would have been made for the better if the worst of the designs, the wretched abortions, had been kept from view.

This case presents another strong argument in favor of that rule of the Chapter of Architects which reads: "*Architects accepting should receive a true and definite list of those against whom they are to compete*, and should also be paid a reasonable sum for their services, according to the extent of the work, whether successful or not."

This provision suggests a reformation in the very unfair practice hitherto adopted by committees, of making their invitations too general and opening the door to all, thus placing the veriest pretender and fraud, practically on the same footing with intelligent and competent men; while if careful discrimination was made the rule, and when something fine and artistic was required, selecting those of acknowledged competency and abilities, and offering them right and proper compensation, and closing the doors against the many who, under a general opportunity, rush in for the purpose of worming their way into public notice.

The whole system of competitions for designs as generally practiced is entirely wrong and unjust; and if the architects of this city were a unit in behalf of their own best interests in this and numerous other respects, every man of them would unite in the noble work now being done by the San Francisco Chapter in reforming abuses, and elevating the profession to its proper and rightful standing, position, and influence.

An Exceptional Picnic.

Although picnicking is no part of architectural, mechanical, or any other science, we cannot permit the occasion to pass without noticing the really grand picnic ovation given by Whittier, Fuller & Co. to their employees, and nearly, if not quite, three thousand invited guests additional. If it had been an ordinary affair, with a few miles' ride in the cars, a little music, a few dances, a considerable or large amount of drunkenness, etc., it might be passed without notice. But in view of the fact that the firm provided more than thirty cars—two well-filled trains, requiring several locomotives to bear the happy mass of humanity over the road, together with all reputable things usual on picnic occasions—of music, banners, dancing, etc., they transcended all ordinary bounds; first, in in the presentation of a Japanese parasol to each lady present on the train, which was followed by printed programmes of games, dances, etc., very handsomely executed; and these by the presentation of printed numbers to each lady, entitling the holders of lucky numbers to prizes; and these by the gift of fans—all demonstrating a degree of liberality seldom met with. And to all this was added the prohibition of all intoxicating beverages, so that when the hour of return to San Francisco arrived, every head was clear and steady; and the day, beautiful in its clear sunshine, invigorating in its sweet and balmy breezes, was spent without a single marring incident, except the sore limbs, sprains and bruises which generally happen to some of those who seek glory, fame, and the first prize, by contest in the usual running and other games provided for such occasions. The picnic to Turner's Park, Redwood City, will be long remembered by others beside the employees of Whittier, Fuller & Co.

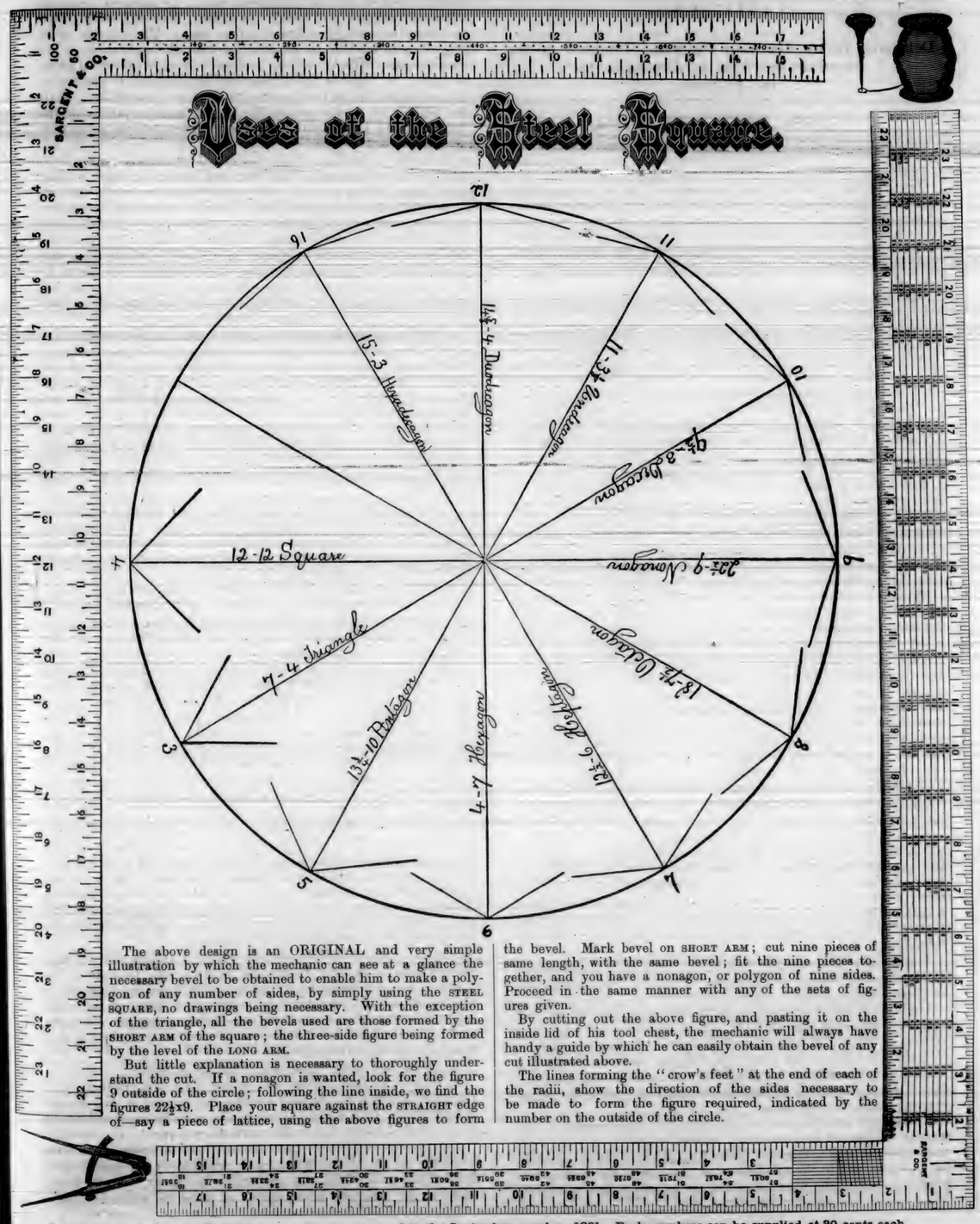
To Make Brick Walls Water-Tight.

The Sylvester process and its results are described fully by Mr. Dearborn in a paper read by him before the American Society of Civil Engineers, May 4th, 1870.

The process consists in using two washes or solutions. The first composed of three-quarters of a pound of castile soap dissolved in one gallon of warter, laid on at boiling heat with a flat brush. When this has dried, twenty-four hours later apply in like manner the second wash of half a pound of alum dissolved in four gallons of water. The temperature of this when applied should be 60° to 70° Fahr. After twenty-four hours, apply another soap wash, and so on alternately until four coats of each have been put on. Experiments showed that this was sufficient to make the wall water-tight under forty feet head of water.

At the time of application the walls had been saturated and the weather was cold. The gate chambers were covered over and heated thoroughly with large stoves. The drying, cleaning the walls with wire brushes, and applying the the mixture took ninety-six days. Twenty-seven tons of coal were used for the drying and one ton for heating the soap solution. Eighteen thousand eight hundred and thirty square feet of wall were washed with four coats. The drying and cleaning of the walls costs six and a half cents per square foot, and the plant, materials, and labor of applying the wash cost three and three-eight cents per square foot.

The vast fir forest of Puget Sound is thought to be the finest tract of valuable timber land in the world. It covers an area of about 32,000 square miles, according to the rough estimates current in the Territory. It is accessible from every point of the Sound, and from the ocean coast for a vast distance southward.



The above design is an ORIGINAL and very simple illustration by which the mechanic can see at a glance the necessary bevel to be obtained to enable him to make a polygon of any number of sides, by simply using the STEEL SQUARE, no drawings being necessary. With the exception of the triangle, all the bevels used are those formed by the SHORT ARM of the square; the three-side figure being formed by the level of the LONG ARM.

But little explanation is necessary to thoroughly understand the cut. If a nonagon is wanted, look for the figure 9 outside of the circle; following the line inside, we find the figures 22½x9. Place your square against the STRAIGHT edge of—say a piece of lattice, using the above figures to form the bevel. Mark bevel on SHORT ARM; cut nine pieces of same length, with the same bevel; fit the nine pieces together, and you have a nonagon, or polygon of nine sides. Proceed in the same manner with any of the sets of figures given.

By cutting out the above figure, and pasting it on the inside lid of his tool chest, the mechanic will always have handy a guide by which he can easily obtain the bevel of any cut illustrated above.

The lines forming the "crow's feet" at the end of each of the radii, show the direction of the sides necessary to be made to form the figure required, indicated by the number on the outside of the circle.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

ADDRESS.

Delivered before the San Francisco Chapter of the American Institute of Architects, by the President,

JOHN WRIGHT, ESQ.

GENTLEMEN—While I feel sensible of the honor you have done me in electing me President of the first Chapter of the American Institute of Architects established on this Coast, and for which I return my sincere thanks, I also feel that the office is no sinecure, and that to properly fulfill the duties of the position might well tax abilities far beyond those to which I can lay claim.

But not to waste words in mere preliminary formalities, I will at once address myself to the task of reviewing the work already accomplished during the past year by the Association lately brought to an end; and will endeavor to sketch out, as briefly as I can, and submit for your consideration, something like a system by which it seems to me our Chapter may be made most useful for the future: first, to the public; second, to the rising generation who are so soon to take our places; and lastly, to ourselves as responsible members of the profession, for I hold that no efforts put forth in the interest of the general good ever fail to redound in most abundant measures to those by whom the effort has been made.

First, then, I submit that during the past twelve months we have made substantial progress in accomplishing the objects for which our Association was formed. As the forerunner of a Chapter, it was necessarily preliminary. The work it had to accomplish was that of preparation and formulation, and, as the event proved, was probably better accomplished in that way than by the formation of a Chapter at that time.

True, our numbers are yet limited; there are more of the profession outside our borders than within, many of those whom we would gladly hail amongst us, and who could most worthily assist us in the objects for which we are associated, still hold aloof from us, and many of those who would themselves be greatly benefited by taking part with us, fail to see their way to joining our ranks. Be it our part to conciliate the one class, and encourage and invite the other, to the end that with the association of numbers our influence may increase and extend, and by the harmonious and united action of a powerful body, the truest and highest principles of professional practice may be promoted amongst ourselves, as well as the efficient and faithful observance of those same principles in our respective dealings with the public, and which, after all, can alone justify our corporate existence.

During the year six of our number have been elected Fellows of the American Institute of Architects, and together with our late President constitute a fellowship of seven. We have lately formed a chapter in connection with the above body, the first on the Coast, to be followed, let us hope, by many others, as State after State develops and progresses in science and art under the fostering influences of prosperity, civilization, and refinement.

During the year, also, an experiment has been made which demands more than passing notice, and which I mean to make the text for the remarks which follow.

I allude to the successful inauguration of a system of competitions amongst the architectural students of the city and vicinity. True, this was of a very limited character, and participated in by but few; but the designs received evinced a degree of merit hardly to be hoped for in a first trial, and certainly worthy not only of commendation, but systematic development and encouragement.

The theory and practice of art, united in the person of the master builder of old, produced works which succeeding ages may hope perhaps to emulate, but never to excel, unless, indeed, by a return, not to the conditions of the past—for that is impossible—but to the practice of similar principles and methods, though worked out in a different way. In modern times the office of designer and builder have been divorced, with consequences exceedingly detrimental to each. The former is no longer, as in ancient times, charged with the execution of his own designs. His knowledge and experience is therefore likely to lessen as regards the adaptation of materials to special or general purposes, and to become more or less superficial; while the builder, no longer responsible for the artistic quality of the design which he executes, has less and less scope as well as encouragement for the development of knowledge, taste, and skill in the execution of his work. How utterly wrong is all this, and how impossible for either the one or the other to succeed in producing a satisfactory result! Again, while the arts of printing and photography have been instrumental in rendering all who desire it familiar with almost every architectural structure of any note in the civilized world, there has been developed an excessive tendency nowadays to adopt the forms of art, without regard to the materials in which they are to be embodied, together with an indiscriminate selection of details of every age and style, without regard to the simple principles involved in their origin, growth, and development.

Speaking professionally, the greatest need of the present day is, first, true taste and accurate knowledge of art in the designer, united with a thorough knowledge of materials and their proper adaptation to truthful construction; second, a public whose educated tastes will detect and condemn every subterfuge, and whose sense of the *ideal* will be satisfied only by the *real*; third, a system of professional instruction for our students or young designers which shall educate teachers as well as taught, and which in effect shall be practical, sufficient, and sure, and which shall embrace not only the highest but the lowest level of the art.

Assuming these three propositions to be granted: with regard to the first, I would suggest that at every regular meeting of the Chapter, papers should be read on the exceedingly varied and instructive topics with which the general theme of Architecture so greatly abounds.

We live in an age of vast development of the material sciences; and the importance of their judicious application and economical adaptation to the endlessly varying wants of constructive design furnishes a never-failing source from which to draw for a subject.

The best methods of construction, past and present, with such suggestions of still greater improvements as may from time to time occur. The questions of interest surrounding the subject of *plan*, with its developments, historical and national. The great question of a universal style, parallel to that still greater problem, that of a universal language to which it bears a large anology. The development of a truthful treatment of material in construction, before alluded to, and an equally important matter, the adoption of the most substantial of materials, though attended, it may be, with a sacrifice of mere meretricious ornament which possesses in itself neither use, beauty, nor meaning. Then the question of ornament itself, and its proper treatment in harmony with the material in which it is to be executed. All these, together with many others too numerous here to particularize, might be taken up as specialties by different members of the Chapter, and pursued systematically; and, if followed by discussions and criticisms, would doubtlessly prove eminently beneficial to all concerned.

For the general public, who are apt to imagine that on matters architectural their knowledge is complete, periodical lectures would probably be of great use in arousing interest in the many subjects in which the public have so much at stake, as well as establishing in their minds true principles of taste, and a just and critical judgment as to what constitutes true beauty in architectural design.

Thirdly, and most important of all, the students.

It is evident that unless our young men are gradually prepared by intelligent training to take our places in the professional ranks, that either those ranks will be replenished by raw recruits unfitted for the work they have to do, or that foreign talent, of which there is so great an abundance ever pressing at our doors, will step in and supply the public need in designing our dwellings and public buildings, thereby fixing upon us the national peculiarities of style to which its representatives are respectively most attached—generally at variance with the prevailing characteristics of our national taste, and ill-adapted to our climatic requirements. At the best, we shall possess but a feeble and soulless jumble, ever varying with the latest importation of professional taste.

How much better that our young men should be thoroughly furnished through careful study and assiduous training, by the best and most practical methods within our and their reach; so that they may themselves supply the public demand, and by harmony of effort and unity of thought strive to found and establish on this Pacific Coast a school of our own, which shall be free from the inherent defects which a variety of foreign styles and methods of building are sure in some degree to possess. To this end, I beg to make the following propositions, to be followed by such action in the premises as in your good judgment may be deemed best.

First. To establish a free class for architectural students belonging to the Chapter. The class to be instructed by members of the Institute who shall take up such special branches of study as they may consider themselves best fitted to impart, and who shall give their services free of charge.

Second. That the system of study and reading, which may be arranged in harmony with the above, be supplemented by periodical competitions among articled students.

Third. That at the end of three years, a six months' traveling studentship, providing for a tour in the Eastern States and Europe, be established; the privilege of which shall be given to the student obtaining the prize in a competition to be held at that time; the expenses of said student not to exceed say six hundred dollars, and to be paid out of a fund created by the fees of life members. Such fees to be invested as a nucleus of a fund to be kept sacred for the above purpose. In case the interest of said fund be found insufficient for the purpose, the balance to be paid by the Chapter.

The result of some such course would be a systematic study of styles and modes of construction, historical and national, from the best models and under the best available tuition, thus rendering the student familiar with the development of the art from the earliest times. Also the comparative study of real buildings as a final preparation for the chosen work of his life, the success of which would be almost assured by such a conclusion of his arduous study. And lastly, the placing of a sufficient inducement before the student to lead him to devote himself with earnestness to the work before him.

Strikes as a Symptom.

Nearly every class of workmen employed in the building trade in New York City have been engaged of late in striking for higher wages. In most cases, through the thoroughness of their combinations, they have succeeded in attaining their object. The great activity in building which has prevailed during the past two years has brought into requisition a large force of mechanics and laborers, and given them steady employment at wages that are almost unprecedented. They have shared fully in the prosperity of the trade. So long as the business continued active and profitable, the demand for good workmen and competition among employers insured a normal advance of wages, and there was no intimation of strikes. But latterly there have been premonitions of a check in building operations. There have been symptoms of a danger of overdoing. The rise in wages and in the prices of material has so advanced the cost of building and pushed up rents that the limit of an effective demand appears to be reached, if, indeed, it is not already passed. Accordingly, employers begin to feel compelled to resist applications for still higher wages. It is only when that point is reached that strikes begin. But the first symptoms of a falling off in the demand for new buildings do not operate at once to check the work already going on. The men are still busy, and existing contracts must be completed, and, consequently, strikes are likely to be successful at first. The carpenters, the joiners, the masons, the stone-cutters, the painters, the plumbers, and all the rest of them have their unions and associations, through which a stoppage of work may be effected. The builders are anxious to complete what they have in hand and to fulfill their present contracts as speedily as possible, and so they are apt to yield to avoid embarrassment.

But notwithstanding the success of most of the strikes in the building trade, their action may, nevertheless, be in conflict with their own best interests. It gives another turn to the screw which is checking the operations upon whose activity they depend. It adds another item to the cost of building, gives another pressure to the rents that are already resisted, and strains the expense of living to a higher degree. The probable effect of this will be to produce a reaction in the building trade and a period of comparative dullness. When people refuse to pay such high rents and feel unable to buy such costly buildings, there is no alternative but to stop building or to build cheaper. Then employers will be obliged to pay lower wages or to discharge their workmen. When that time comes there will be strikes against reductions, but they will not be successful, because builders will be in a position to dispense with a certain amount of labor without loss, and the force of competition will be thrown among the workmen themselves. They will be idle part of the time, they will be compelled to accept lower wages when they work, and if they are intelligent and thoughtful they will realize that they contributed, by their persistent demands, quite as much as venturesome capitalists to the reaction that followed their season of prosperity.

Labor unions, when used as an instrument of coercion to force wages beyond the level which employers would be induced by self-interest to pay, contribute to the violent fluctuations to which our material prosperity is subject. They prevent the free play of the influences of supply and demand at just those critical times when they should effect an easy adjustment of industrial forces. By insisting upon carrying wages too high, and keeping them up too long, they compel an abrupt check upon activity, and a positive depression, when an earlier but more gradual slackening would have brought business into an equable channel of normal progress. Our industries are subject to violent ups and downs. When prosperous they are apt to be "booming." Prices go too high, wages insist on closely following them, and when the inevitable overdoing is reached there is a reaction, and labor suffers first and most. Strikes rarely occur on the rise, but generally at the turn and on the fall. They are not a symptom of prosperity. When the market is active, and prices good, every reasonable demand of workingmen is generally granted, and cannot be long refused. It is when the demand for products, of whatever kind, falls off, supplies accumulate, and prices begin to go down, that employers pause, refuse to advance wages further, or feel compelled to reduce them. Then we hear of strikes; strikes in factories, in mines, and in the trades. They indicate a check in prosperity, perhaps an impending reaction, possibly a coming depression, and among the forces that make these violent or severe are labor combinations, which prevent a normal adjustment of one of the most important elements in industrial operations.—*Carpentry and Building.*

If the abolition of fencing were a possible measure of economy, the nation might speedily enrich itself by turning that outlay into an available form. It is reliably estimated that the total cost of fences in the United States is equal to the national debt. The State of Indiana alone has 344,000 miles of fence, which is presumed to have cost not less than $100,000,000.

Erecting Wrought-Iron Chimneys.

A novel plan for erecting the castings of fire-brick hot-air stoves and wrought-iron chimneys is being pursued at the Pennsylvania Steel Works, Harrisburg. Two new blast-furnaces, with six Whitwell stoves, 60 feet high and 18 feet diameter, are in course of erection there. Instead of putting the bottom plates of the stove together on the ground, and building the rings up from the bottom to top, at the works mentioned a commencement is made with the top plates and top ring of the stove. They are first erected on the ground, and riveted and calked complete; then with three very large screw-jacks, having a lift of about six feet, and placed at equal distances around the site of the stove, worked by men with winch-handles, this first ring is carefully and evenly lifted high enough to enable the workmen to put on the next ring of the plates, five feet deep. This ring is also riveted and calked complete; then another ring is added and lifted, and so on till the whole stove is completed. The wrought-iron chimney, 175 feet high, for working these stoves, was erected in the same way.—*Iron.*

Ivy.

Who does not remember the town-loving old lady who expressed her horror of a country life "because the ivy made all the houses damp!" The old lady did but express the common idea upon the subject; but it is a very erroneous idea nevertheless. The attachment of ivy to walls, so far from injuring them and causing dampness, is an advantage. If the walls are dry when planted ivy will keep them so. If damp, as the plant overspreads their surface the dampness will disappear. Where dampness prevails, ivy sucks out the moisture, and its thick foliage will prevent the access of rain to the structure; and thus it is not only a remover, but a preventive of dampness. The only danger attending the planting of ivy on buildings is where fissures occur in the walls, in which case the shoots and roots will enter, and, if left undisturbed, their growth will soon begin to tell upon the building, and will, by increase of growth, push against the sides of the opening, thereby enlarging it, and eventually so weaken the wall as to cause it to fall. Where the wall is sound there is no such danger, for the plant does not make fissures, although quick to discover them.—*Land.*

☞ **Subscription price of this journal is $2.00 in advance.**

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

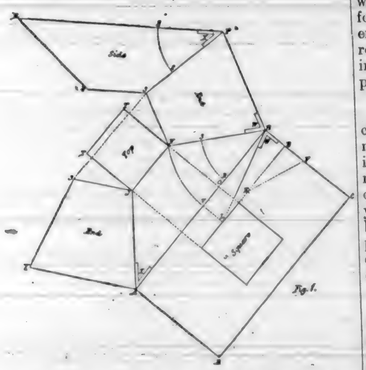
We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

BUSINESS MANAGER OF ARCHITECT: Will you please give in your "always looked for monthly" an explanation of the construction of an oblong with slanting sides? I have a flume 4x6 feet in size. At the end of the flume I want to fix on a box 6 feet in depth, so that the opening in the lower end will be 2 feet 6 inches square. What rule will I follow so I can cut, out of sheet iron, the sides and ends so as to have a perfect fit?

G. N. NELSON, Sierra Co.

ANS.—An explanation of the above problem will shortly be found in our articles on the Steel Square and its Uses. Not wishing to anticipate anything that has been mapped out in those articles, we present to our correspondent the method used by R. Riddell in one of his master works entitled "Mechanic's Geometry."



The letters A B C D show an oblong base which is to have slanting sides; these, when together at the top, form a square of any given size, as that shown on base.

Extend upper side of square, cutting at E on the right; make E F equal E B. Now determine on perpendicular hight of sides and ends, say E K; join K F; make O N equal K F, square over N J; join J A and N B; this gives one side of the work.

Next find slant of ends by making B V equal B N; square down from V to L; join L B; this gives bevel W as the cut for ends. The bevel being reversed and applied as shown, gives a direction to draw B P, which make equal B C; draw from N parallel with B P; make N S equal one side of top as N T; join S P; draw from S parallel with N J; make S T on the left equal S T on the right; join S J; draw from A parallel with J S; make A Y equal A D; join Y S. This completes one side and both ends.

To find the side which stands on the base D C, take bevel X already given and apply it as shown at P; or take B for center, and with any radius draw the circle 2.3; with same radius and P center, 2.3; make both circles equal; draw from P through 3; make P R equal A B; draw from S parallel with P R; make S 4 equal S N; join 4 R. This completes sides, ends, and top.

FRIEND BUILDING NEWS: I noticed highly polished saws rust much quicker than ordinary ones. What is the best way to remove the rust when formed on the blades? Living near the ocean I am very much bothered with my saws getting rusted. By answering the above a favor will be conferred on one of your oldest subscribers.

T. S., Ocean View.

ANS.—If very rusty scour first with emery slightly moistened with *dilute* sulphuric acid; rinse well and thoroughly dry; finish with oil and emery flour.

SMELL OF PAINT.—To get rid of this most objectionable odor in a chamber or a living-room, slice a few onions and put them in a pail of water in the center of the room; close the doors, leave the window open a little, and in a few hours the disagreeable smell will have almost gone. Another method is to plunge a handful of hay into a pailful of water, and let it stand in the newly painted room over a night; this plan is also effectual. The foregoing have the important advantage of being simple remedies, as the necessary materials are always easily obtainable. Yet another plan, but it is rather more complicated. Place a grate of lighted charcoal on a piece of flag or slate in the center of the room, and throw on it a handful or two of juniper berries; shut out all ventilation from the room for twenty-four hours. The doors and windows can then be opened, when it will be found that the nasty, sickly smell of paint has entirely gone. The furniture may be left in the room during the process, and none of it will be injured. But the best way to avoid the smell of paint is by not having the painters in the house.

Black walnut can now be manufactured very cheaply. One part of walnut peel extract is mixed with six parts of water, and the wood is coated with the solution. When the material is about half dry a solution of bi-chromate of potash with water is rubbed on it, and then your walnut is ready. Furniture dealers have been known to make excellent walnut from very poor pine, but the difference was slightly perceptible; however, this method is said to defy detection.

An experienced cabinet-maker says that the best preparation for cleaning picture frames and restoring furniture, especially that somewhat marred and scratched, is a mixture of three parts of linseed oil and one part spirits of turpentine. It not only covers the disfigured surface, but restores wood to its original color, leaving a luster upon the surface. Apply with a woolen cloth, and when dry, rub with woolen.

Single vs. Double Tenons.

WORCESTER, MASS., May 8th, 1882.

All other things being equal, which do you consider the strongest, a single or double tenon?

INQUIRERS.

["Inquirers" do not say what their framing is for. Theoretically, a single tenon is stronger than a double one, and its mortise also weakens the timber into which it is framed less than two mortises would. Practically, a double tenon would be used with a joint bolt for drawing the framing together, placed between the two tenons; or it might be advisable to use two tenons to diminish the effect of shrinkage, as for instance in a door, where a double tenon often answers better than a single one.—EDS. AMERICAN ARCHITECT.]

An Improved Bench Vise.

A cheap, convenient, and easy operated bench vise for carpenters' use has been lately patented by Mr. Jesse L. Parker, of Fountain City, Wayne Co., Ind. In the accompanying engraving, which illustrates the invention, A and B are the jaws of a vise, and C is a bench leg provided with a slot, to permit the up and down travel of the vise. A tenoned screw block is mortised into the jaw B, its tenons moving in the bench leg, and its shoulders bearing against the inside of the leg. The upper screw passes into the block through the jaws A B, and draws them together. The screw block also serves to guide the vise up and down in the leg C, and is held at any desired elevation by a lever, catch, and spring, upon the side of the leg. A notched treadle G, designed for holding the lower ends of the jaws in any desired position, passes through and is pivoted to a longitudinally slotted block F, which extends rearward through a corresponding opening in the jaw B. The treadle extends outward from the jaw A, for the convenience of the foot of the operator, and is held in its desired position by a spring on its under side and a catch plate on its upper side. It will be readily seen that this vise may be adjusted to any hight and to any size, with very little trouble to the operator.

Do the Chinese Invent?

Heretofore it has been popularly supposed that the Chinese invented the printing-press, gunpowder, and the mariner's compass. The best authority seems to deny them the honor of these inventions. The Count de Gobineau, in his able "History of the Diversity of the Races," absolutely lays it down that they had nothing to do with these inventions. It is a well-known fact, says Senator Jones of Nevada, that the Chinese have been in a state of general decadence for the last 500 years. Their pottery, their porcelain, and all their other arts are in a very low state compared to what we know they were 500 years ago. They have been constantly deteriorating in arts and manufactures. Prof. Draper, on page 303 of his "Intellectual Development of Europe," says: "The practical Arabs had not long been engaged in those fascinating but wild pursuits when results of very great importance began to appear. In a scientific point of view, the discovery of the strong acids laid the foundation of chemistry; in a political point of view, the invention of gunpowder revolutionized the world." Again, on page 352, "they, that is, the Arabs, also introduced inventions of a more curious kind—gunpowder and artillery. The cannon they used appears to have been made of wrought iron. But perhaps they more than compensated for their evil contrivances by the introduction of the mariner's compass." The late Mr. W. F. Mayers, Chinese Secretary to the British Legation at Peking, a critical Chinese scholar, in vol. 6 of the Journal of the North China Branch of the Royal Asiatic Society, page 82, treating of the introduction and use of fire-arms among the Chinese, says, after noting the Chinese authorities: "As regards gunpowder, therefore, it is concluded that, firstly, no proof of its invention by the Chinese can be adduced; secondly, there is reason to believe that it may have been introduced from India or Central Asia about the fifth or sixth centuries of our era."—*Industrial News.*

PLATE 1.—COMPETITIVE DESIGN FOR THE GARFIELD MONUMENT. ALBERT PISSIS, ARCHITECT.

PLATE 2.—SECOND PREMIUM DESIGN IN THE LATE COMPETITION FOR A NEW HEADING FOR THIS JOURNAL. O. EVERETT, DEL.

PLATE 3.—THIRD PREMIUM DESIGN. V. SCHALLENBERGER, DEL.

Who is to Blame?

THE DESIGNS FOR THE GARFIELD MONUMENT.

It is generally conceded, by those who have examined the designs submitted in competition for the Garfield monument, that none of them reach any high standard of excellence, nor either of them sufficient merit to warrant adoption.

If the committee having the matter in hand have failed—as failed they have—to secure a suitable design for a monument to the memory of our beloved and honored Garfield, there is a reason for such failure; which should serve in the future as a lesson for all similar committees, in their invitations to architects to engage in design and plan competitions. The facts of the case are clearly as follows:

First. While the committee may, individually and collectively, possess and enjoy enviable reputations, and virtues as numerous as the stars in the firmament which surround our earth, still we say to them, as was said to the exemplary young man more than eighteen hundred years ago, "But one thing thou lackest," and that is a *common sense, just and fairly liberal understanding and appreciation* of the worth and value of the services of those who, by unceasing and perpetual study and application, have qualified themselves to combine in thought and conception, and produce in lines and colors, objects truly artistic and beautiful.

This undervaluation of the services of men whose pursuits in life require and receive almost ceaseless thought and attention, very generally running into and absorbing the hours appointed for sleep and rest, is one of great injustice; and is mercilessly imposed in thousands of cases by committees of otherwise good and intelligent men. One thing is very certain: that no one of the gentlemen composing the Garfield Monument Committee would be willing, as an *exclusive business proposition*, to devote as many days and hours, or one-half the amount of deep thinking and study and skillful labor required in maturing and perfecting a *really artistic and suitable* design for the monument in question, for any such sum as that offered as first premiums, unless, beyond such premium amount, there were other inducements of compensating character. And yet these same gentlemen, in the abundance of their *innocence* (!) or decided lack of *knowledge and right understanding* (!) of matters, have sought to secure at half compensation the services of those who have acquired and perfected their professional skill, artistic qualifications, and conceptive attainments, by and through the arduous, critical, and oftentimes severe channels of *absolute devotion*, and unceasing meditation in the mystic realms of thought, from whence come conceptions and visions of beautiful things, to be developed in tangible shape by the mind and hand manipulations of the devotees of the designer's art.

Secondly. It was a decided mistake on the part of the committee, and another striking illustration of their *innocence* (!), in withholding from the successful party the *rightful right* to superintend the practical delineation of his own conceptions. This feature alone would deter many from entering into such contests, as but few competent men would be willing to risk the detail manipulation of their conceptions to others who, perchance, from *lack of ability*, or from *special motives*, might materially compromise beauties and grandeurs, which, under the masterly treatment of the mind and hands which originated the ideal, might be made conspicuous and pleasing.

Thirdly. We know, and state the fact, that many architects and designers of well-established capabilities refused to engage in the competition, upon the grounds and for the reason that they considered the propositions of the committee unfair, and in violation of all those right and equitable considerations which should control in all such cases.

If the committee conclude to adopt either of the designs so far presented, its members will lay themselves liable to severe criticism, as the public generally, and especially those who have donated to the "fund," expect to see a memento worthy the illustrious dead whose memory it is intended to perpetuate.

The withholding of the right from the successful competitor to superintend construction was, to state it in the mildest form, a mistake on the part of the committee, and one which has given rise to many queries and questions as to the purpose of such a course; and to some extent, at least, whether justified in fact or not, created the surmise that a "job" motive may be concealed somewhere. There can be no disputing the fact that the party who conceive and originate a meritorious design, and possesses the artistic abilities to delineate the same on paper, should be the better qualified to detail and superintend its construction. With this as a fact, the question is then pertinent, Why was the superintendence of construction withheld? Many excuses may be *made to fit*, but the appearances are not favorable to spotlessness of purpose; and the committee would have improved their standing before the community had they pursued a course less liable to criticism.

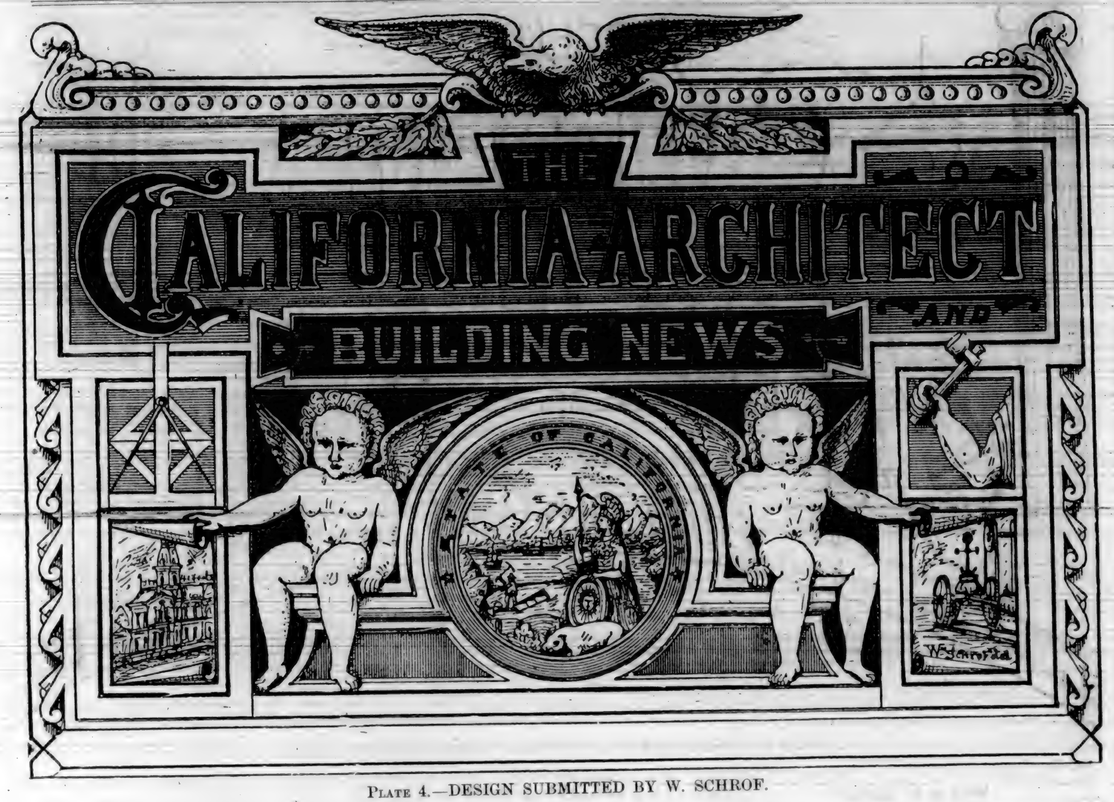


PLATE 4.—DESIGN SUBMITTED BY W. SCHROF.

Our Illustrations.

Plate 1 represents one of the designs submitted for the Garfield monument. It is the work of Mr. Albert Pissis. In another part of this issue will be found our criticism upon the designs.

Plates 2 and 3 received the second and third premiums in the late competition for a new heading for this journal.

Plate 4 is a design submitted by W. Schrof, architect. We leave criticism upon all the designs to our readers and professional brethren, and will be pleased to hear from them on the merits of the respective designs. The accompanying letter from Boston is respectfully dedicated, through the editors of this paper, to the architects and draughtsmen of this city:

BOSTON, May 27th, 1882.

EDITORS THE CALIFORNIA ARCHITECT:

Gentlemen—I am in receipt of your specimen number of the ARCHITECT. I was attracted by the excellent *handling* of the design upon cover, which I consider much superior to its *design*. If the original design was marked with pen and ink the price paid, to wit, $30, as first prize, was, in my opinion, very small compensation for the amount of skill, to say nothing of labor displayed in its execution. Trusting you will receive this as an honest opinion from the other slope,

I am, yours truly,

"ARCHITECT."

Architectural Styles.

The following description of the various Architectural Styles was published in the Cotta German Quarterly. The author has endeavored to characterize the styles with which we are acquainted by individual attributes, with a view to assure an easy comprehension and comparison of the same.

I. OLD INDIAN STYLE.—Childlike helplessness. Pretentious mode of expression combined with mythical freedom of imagination.

II. EGYPTIAN STYLE.—Solemn earnestness and imposing aspect.

III. GRECIAN STYLE.—Nobility of expression and of the whole effect. Stately calm.

IV. ROMAN STYLE.—Manly vigor in form and conception.

V. CHINESE STYLE.—Punchinello.

VI. EARLY CHRISTIAN BASILICA STYLE.—Expression of independence with the struggle for freedom from foreign influences.

VII. THE ROMANESQUE STYLE.—An expression of melancholy, but at the same time combined with gentility in sacred and private buildings, and grimness in castle and strongholds.

VIII. MOORISH STYLE.—Free vent to overwrought fancy, and eccentric tone in conjunction with spectacular display. The spirit of chivalry permeates the whole.

IX. THE POINTED OR GOTHIC STYLE.—The expression of inward faith till it attains exaggerated enthusiasm, ever pointing heavenwards.

X. ENGLISH LATE GOTHIC (TUDOR) STYLE—Gives the notion of practical worldly wisdom and self-reliance, and pursues its own course when allied to what is incongruous.

XI. RENAISSANCE STYLE:
Commencement: Delight at meeting again after a long separation.—Approaches.
Middle: Appreciation and influence of new relations, established after a long interruption.
End: Feeling of uneasiness; efforts to obtain Freedom.

XII. BAROQUE STYLE.—Freedom when attained misused to excess. Afterwards the following phases occur:
1ST PHASE: Stagnation.—Physical and moral exhaustion.—Sleep.
2ND PHASE: Transition to waking and rousing, owing to various influencing forces and visions of the past.
3RD PHASE: Beginning of the present lethargic and meaningless wanderings, clinging now to this, now that prominent object.
4TH PHASE: The present day.—Fully brisk and awake, but still under control.—Efforts to find the right path, at one time approaching, at another departing, from the smooth track, because the goal still appears indistinct and assumes various aspects.

☞ **Subscription price of this journal is $2.00 in advance.**

UTILIZE YOUR BASEMENT APARTMENTS

In the Business Part of the City by using

HYATT'S PATENT ILLUMINATING ROOF

—AND—

BASEMENT EXTENSION.

THE LENSES MAGNIFY, HEAT, AND DO NOT BREAK.

SEE ALL NEW BUILDINGS ON THE BEST BUSINESS MART.

The present dark, damp Cellars, or Coal Vaults, of old buildings made light, cheerful, and well-ventilated Business Apartments suitable for Offices.

Read the following of the many Testimonials received:

LEVI STRAUSS & Co., Importers, 14 and 16 Battery Street,
MESSRS. P. H. JACKSON & Co., No. 2 California Street: SAN FRANCISCO, March 4, 1881.

The alteration made by you by cutting out the six door sills and risers on the front part of our store, 14 and 16 Battery Street, and substituting HYATT'S PATENT ILLUMINATING ROOF, is quite satisfactory in making in the basement apartment below, in the front part, all that we could desire as regards light. **Our entry clerks are now able to work without the use of gas.** LEVI STRAUSS & CO.

The **Basements of Messrs. Murphy, Grant & Co's Buildings,** on Bush and Sansome Streets, have been altered and are now lighted by this Improvement.

HYATT'S PATENT

FIRE AND BURGLAR-PROOF SKYLIGHTS.

The public are requested to examine the large Skylights now being erected on the rear of **A. B. McCreery, Esq.'s, Building,** corner Pine and Davis Streets; also **Senator Fair's Building,** corner Sansome and Pine Streets. By the use of these heavy Skylights, which are both fire and burglar-proof, **no extra charge in rates is made by the Insurance Companies than if no Skylights were used,** as they are not destroyed by fire, like the wood and sheet-iron skylights in common use; besides the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

☞There are many deep stores in this city that are much in need of light, and by an addition of these Skylights all light can be obtained, besides security against thieves is maintained.

The appearance of the Skylight, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan Building, as altered, has these Skylights on the rear of the deep stores.

P. H. JACKSON & CO.

Sole Licenses and Manufacturers for the Pacific Coast of Hyatt's Patents,

No. 2 California Street and No. 231 First Street,

SAN FRANCISCO.

The Carpenters and Joiners Union.

The address from *San Francisco Union No.* 22, read before the Chapter of Architects on the 2nd instant, contains no intimation of a purpose or intent to originate or join in strikes or forced measures for the assertion and maintainance of assumed or positive rights; but deals rationally, logically, and reasonably with the grievance set forth, and asks of the architects of San Francisco that assistance and relief which should be extended by all, and which has been the rule in most of the leading offices for many years. Deeming the address well worthy the space it occupies, we publish it in full.

To THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

Gentlemen—The Carpenters and Joiners Union of San Franscisco, being Union No. 22 of the Brotherhood of Carpenters and Joiners of America, send you greeting.

In presenting our Union to your notice we respectfully submit to your consideration the reasons for forming an organization of our craft, and also our objects and aspirations for the future. We believe that such declaration on our part will meet with your approval, and we hope for your sympathy and patronage wherein we are worthy.

In the architects of San Francisco we recognize a body of gentlemen with whom our business brings us in immediate contact, and to whose ideas and designs the labor of our hands gives existence and reality. This fact should create a bond of sympathy between you and us; in the existence of such bond we have perfect confidence, and to its virtue we now apply the test.

Among the various craftsmen whose labors, under your direction, contribute to the architectural beauty of our city and the comfort and convenience of its inhabitants, the carpenter and joiner holds the most prominent and important place. The labor of his hands, more than that of any other, gives form and reality to the designs which emanate from among you. The relation between our craft and your profession, therefore, renders the inference natural that any grievance which we labor under should interest you, particularly when such grievance tends to destroy the taste and lower the skill of the workman.

We believe that the process in architecture and the development of the beauty in art depend in a great measure on the skill and ability of the various workmen engaged in the construction of our buildings. The design of the artist must mainly depend on the skill of the workman, hence his degradation involves the degradation of art.

All that we have thus far premised will, we hope, be admitted by your honorable body; we will, therefore, submit now our reasons for organizing. The business of contractor or builder in this city is followed by some who have very little knowledge of the science or practice of building, and whose only object is to make money. The condition of the building business is such (and has been so for the past ten years), that every item of material, either raw or manufactured, is regulated by a fixed scale of prices, except the labor of carpenters and joiners.

The result is that in all jobs open for competition, (which are by far the largest number), the only item which is open to reduction is our labor, and no two of them will fix the same value thereon. Having secured the job, the successful bidder naturally desires to make all the profit he can; to effect this he must bend all his energies to economize the material, because that he cannot cheapen; but the carpenter's labor, having no fixed value, offers him the largest field for exercising an economy which is as injurious to the owner as it is unjust to the working-man.

Every portion of the work that he can conveniently so dispose of is sublet, or, as it is called, pieced out. The miserable class of men who seek such piece-work are generally inexperienced or bad workmen, who could not compete as mechanics with those who have made the knowledge of the business the object of their lives. When these piece-workmen cannot obtain that kind of work, they will seek employment in that grade to which they properly belong, that is, unskilled labor.

That portion of the work which cannot be sublet to advantage or with profit to the contractor, he is compelled to have performed by the day. The main object being to cheapen labor, quantity is what he is ever after, and a wretched ambition is created among the workmen to see who will perform the largest day's work, utterly regardless as to how it is performed, for in this degrading competition quality is a secondary consideration. To perform his work well, and possess any taste in finishing it workmen *are not in demand*. This system has a damaging effect on the spirit and skill of the workmen, encourages them to disregard their work, lowers their minds, and tends to injure the entire community.

To remedy this wretched condition of things, we have formed this Union. We desire to improve the conditions of our lives and those of our fellows; and to effect that object, we do not deem it necessary to injure any one. We indorse the great principle of society, "that one man's right ends where that of another one begins"; therefore, while we desire to protect ours, we will not invade those of another, but will endeavor to protect our members against impositions of any kind. We will discountenance all attempts to exact an extraordinary amount of labor from men for the purpose to enrich any individual; such a practice is unjust both to the owner and the working-man. We hope to encourage a spirit of taste and a desire for imformation among our members; teach them to know that they are men, useful and valuable to society—equal to any and slave to none. We believe that long hours of labor are an obstacle to the mental improvement of the workman, and desire, therefore, to obtain a reduction therein through the force of reason, being satisfied that the judgment of our fellow-citizens, when concentrated on that question, will acknowledge the justice of our demands.

In brief, our objects are: to encourage and foster a spirit of fraternity among our members; to inculcate a just pride of the craft in their minds, and incite them to improvement in its practice. We intend to unite all carpenters and joiners worthy of the name for their welfare and mental improvement; teach them their duty towards one another and towards society; that, thus understanding their own rights, they may be able to acknowledge and respect the rights of others—BEING TRUE TO THEMSELVES THEY CANNOT BE FALSE TO ANY. Such are the objects we have in view, and the results we hope to achieve. The evils we complain of are acknowledged by many members of your honorable body as injurious to your clients; but as long as the members of our trade remain disorganized, these evils cannot be abated. The Carpenters and Joiners Union of San Francisco has been formed to effect a reformation in the building business, or at least in that portion which pertains to our profession. It is certainly a reformation that will produce no injustice to any, but will, on the contrary, be beneficial to all and to the community. With this purpose in view, we ask of the architects in this city their aid and patronage; the object is undoubtedly worthy of all lovers of justice, and the workman's appeal against injustice should ever be to the "chief fabricator" (the architect) of the building. Our craft has in the past produced many of the great artists whose creative genius has left monuments of architecture for the admiration and improvement of those who followed them. Had the system which prevails now here existed then, posterity would have little to admire, because the monuments would scarce outlive the builders.

The aid we ask of you is, that you positively forbid piece-work or the subletting of any portion of the carpenters' and joiners' work of all buildings under your control and superintendence; also, inasmuch as our primary object is to encourage and *compel* the performance of honest work and foster a spirit of taste and craft pride among our fellows, that you would advise the employment of our members in preference to men that are unable or unwilling to understand any honesty in work, and only "do it so that it will pass."

The above, gentleman, are the objects of our Union, stated in brief; they can be found more fully explained in the copy of our constitution which we herewith present you. On these objects we base our claim for that aid and patronage that we have asked. The wisdom of these objects and the merits of our claim are for your honorable body to decide.

Respectfully submitted by order of San Francisco Union No. 22 of the Brotherhood of Carpenters and Joiners of America.

EDWARD OWENS, President.
THOMAS C. ROWE, Rec. Sec.
N. B. CHURCHILL, Fin. Sec.
WILLIAM F. O'HALLARON, Cor. Sec.

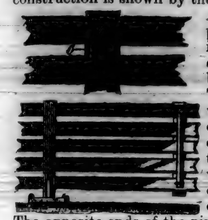
Law versus Influence.

A case of deserved retribution occurred in Chicago last week, to which we invite the attention of would-be law-breakers, if there are any such among our readers. A certain Joseph Flugel, in defiance of the statute, erected a frame house some two years ago within the building limits. The contractor, who is held jointly responsible with the owner for infractions of the ordinance, was arrested and fined, but through political influence the fine was remitted, and some informalities having been discovered in the wording of the statute, no further prosecution was undertaken, and the structure was completed. An account was then sent in for the contract price, but the ungrateful owner, quite unmindful of the troubles which the builder had undergone in his behalf, neglected to pay it, and suit was finally entered to compel him to do so. The attorney for the owner at first pleaded that the work was improperly done, but finding that the evidence would not support this assertion, he retracted it, and set up the novel defense that the house had been erected in violation of the law, and that the contractor could not recover compensation for doing an illegal act. The judge held that this plea, although not an extremely magnanimous one, was a sufficient answer to the suit, and ordered judgment for the defendant, at the same time remarking that if he had the power he would send both parties to jail. The counsel for the contractor, having no other way of consoling himself for his defeat, proposes, it is said, to take revenge on the owner by applying to the Mayor and the Superintendent of Buildings to have the house condemned and torn down. We should be glad to think that this attempt was likely to succeed, but there are many difficulties in the way, and we fear that the vindictive lawyer will be again beaten.—*American Architect.*

The London *Builder* attributes the marvelous durability of mortar in Italy to the fact that the lime remains in a pit covered with water for two years before it is used, whereas in England lime is slaked and used the same day. Most building specifications even require newly slaked lime.

New Portable Fence.

Mr. Oscar E. H. N. Reichling, of Marion, Grant County, Iowa, has patented an improved portable fence, that is easily erected or taken down, and stands firmly when erected. The construction is shown by the accompanying cut.



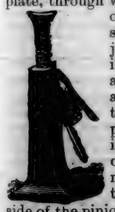
A base plate, A, is provided with a slot into which the lower end of the upright board, C, is placed. This board is provided with a series of apertures to receive the ends of transverse pins, D, which have a greater diameter in the middle than at the ends. The opposite ends of the pins are passed into an upright board corresponding with the first, but which rests on the base plate. The two uprights are then pressed together by means of wedges driven into the base plate through aperatures provided for this purpose. The upright boards are prevented from coming together by the thickness of the middle part of the pin, D, and in the opening between the boards are placed the slats which have a shoulder formed at each end that rests upon the pin, D, and prevents swaying endwise. The upper slat is provided with notches in its under edge into which the pins, D, pass, and thus serves to bind the several posts together. The slats are stiffened by means of a board, H, resting upon and crossing them on one one side, and provided with a loop at the top and bottom, through which a bar is passed resting on the other side. The base plate is held to the ground by wooden spikes driven through it, or by pins having heads that catch on the plate.

The slats of any panel can be opened at any time, conveniently and rapidly, by removing the board, H, and the rod. This is easily done, as none of the parts are nailed together.—*Scientific American.*

An Improved Lifting Jack.

An improvement in lifting jacks, as shown in the accompanying engraving, is patented by Mr. Jonathan Beihl, of Slippery Rock, Butler County, Pa.

The standard of the lifting jack is made in two parts, one part being formed with a channel extending from its upper to near its lower end, and the otherpart serving as a face plate to cover the channel in the first part. In the channel is placed a rack bar, which moves vertically, and which receives motion from a pinion journaled in plates secured to the face plate of the standard, and back of the plates is a slot in the face plate, through which the cogs of the pinion and of the rack bar engage. The shaft upon which the pinion is journaled is extended at one of its ends beyond the journal plate, and has a square enlargement, and a power lever is pivoted to this enlargement by a pin which passes through the lever and rests in a groove formed across one side of the enlargement. By this means, the lever has a lateral motion to and from the pinion. The side of the pinion next to the lever is formed with projections with which the lever engages for turning the pinion to elevate the rack bar. The opposite side of the pinion is formed with a racket, with which a pawl, that is pivoted in a notch formed in the upper part of the frame, engages for holding the pinion from backward movement, and holding the rack bar and weight at any desired point. This jack is simple, compact, cheaply made, and easy to operate.—*Scientific American.*



Market Reports.

LUMBER.—The demand for lumber is on the increase, as will be apparent from our report in "Building Intelligence." The price of Surfaced R. W. lumber, first quality, has been increased $2.50 per thousand. It is to be regretted that such is the fact, as it will have a tendency to stop many improvements that are in contemplation It is to the credit of our lumber merchants in this city that they depreceate any advance in prices, considering that the rates charged gave ample compensation for all risks involved. The advance was caused by the mill men in the producing districts. At the meeting of the Lumber Association, it was resolved that hereafter no *drummers* be employed, or no member of the Association should "go" on the bonds of a contractor.

Receipts since January 1st, 1882:

Lumber	69,859,381
Shingles	13,322,761
Laths	6,588,100

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough			18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,			32 50
"	4	" and under, and 1¼x4 and 1¼x6	
Flooring and Stepping			37 50
Rough Clear for Flooring, $1 less than above rates.			
Second quality Flooring and Stepping		per M feet	27 50
Ship Plank, Rough		"	28 50
"	Planed 1 side	"	32 50
"	2 sides	"	35 00
Deck Plank, Rough		"	33 50
"	Dressed	"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17½

Redwood.

Rough Merchantable	per M feet	22 50
" Refuse	"	18 50
Surface No. 1	"	37 50
" 1 x 6	"	35 00
" No. 2	"	27 50
Rustic, No. 1, 1 x 8	"	35 00
" No. 1, 1 x 10	"	37 50
" No. 2	"	32 50
" Under 10 feet	"	32 50
T. & G., 1¼ x 4 and 1¼ x 6	"	37 50
" 6 in. 12 ft. and over	"	35 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	27 50
T. & G., Beaded, 12 feet and over	"	35 00
" " 7 to 11 feet	"	30 00
" " under 7 feet	"	27 50
Half-inch Surface	"	30 00
Pickets, Fancy	"	27 50
" Rough, Pointed	"	20 00
" Square	"	17 50
Siding, ½ inch	"	25 00
Shingles	per M	2 50
Battens, ⅝ inch, lineal feet	"	1c

NAILS AND HARDWARE.—All kinds of hardware are very firm in prices.

NAILS.—Since January 1st, 1882, we have imported 114,675 kegs.

10 to 60 pennies, are quoted at			$4 25
8	"	"	4 50
6	"	"	4 75
5 and 4	"	"	5 25
4 and 5 pennies, brad heads, at			5 50
6	"	"	5 75
8	"	"	6 00
10 and upward	"	"	5 25
3 penny fines	"	"	7 75

PAINTS.—A new company has made its appearance, introducing the OMAHA WHITE LEAD. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8 cts. per lb. and 7¾ cts. in "ton" lots.

Steel Square Problems.

A new work expaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

Building Intelligence.

A single glance at our list will prove that building operations are more brisk than at any time for the past five years. With the improvements that will be commenced in the next 60 days—of which we are well advised—every mechanic will have employment at full wages, for some time to come.

SAN FRANCISCO.

Frame building for church for the Plymouth Congregation on Post street between Webster and Buchanan. Architects, Wright & Sanders; contractor, J. S. Burpee; cost about $30,000.

Gasometer buildings and improvements on Steiner and Francisco streets. Owners, Central Gas-light Co; architect, Harold D. Mitchell; contractors, Hughes & McCann; cost about $150,000.

Two-story and basement frame dwelling, brick foundation, on north-east corn r of Sutter and Taylor. Owner, Dr. C. Cushing; architect, H. C. Macy; contractor, J. W. Wissinger; cost, $6,800.

Two two-story and basement frame dwellings on Gough street near Hayes. Owner, B. Daniels; architect, W. H. Bayless; contractor, —— Fennell; cost, $7,000.

Two two-story and basement frame dwellings on Mission street between Sixth and Seventh. Owner, Dr. Whittaker; architect, —— Woegel; contractor, —— Plunz; cost, $9 000.

Frame building—six tenement—on Mason street between Pacific and Broadway. Owner, J. Shirley; architect, W. P. Moore; contractor, A. Jackson; cost about $8,500.

Three-story and attic frame building on the north-east corner of Sixth and Mission. Owner, Mr. Rowland; architect, J. Marquis; contractors, McCann & Jeffars; cost, $45,000.

Two two-story frame dwellings on the corner of Pine and Broderick. Owner, T. S. Merchant; architect, J. Marquis; contractor, David Perry; cost, $5,500.

Two-story frame dwelling, with basement and brick foundation, on south side Haight between Buchanan and Webster. Owner, Mr. Abbott; architect, J. Marquis; contractor, —Ingerson; cost, $8,000.

Four-story and basement, brick building, on Geary street near Taylor. Owner, J. Pierce; architects, Schmidt & Havens; contractor, T. C. Riddell; cost, $31,000.

Two-story and basement frame dwelling on north-east corner Van Ness avenue and Turk streets. Owner, B. Gallagher; architects, Schmidt & Havens; contractors, Quinn & Hennessey; cost, $7 500.

Two-story and basement frame on north side Page between Buchanan and Webster. Owner, Mrs. Healey; contractor, R. McCann; cost, $5,000.

Two-story and basement frame on north side of California between Octavia and Laguna. Owner, F. Wieland; architects, Kenitzer & Raun; contractors, Mahoney Bros.; cost, $10,000.

Two-story frame dwelling on north side of Washington between Franklin & Gough. Owner, Mr. Greenebäum; architects, Townsend & Wyneken; contractor, — Farnsworth; cost, $9,000.

Three-story frame on Howard street between Fourteenth and Fifteenth. Owner, — Behrman; architects, Schmidt & Havens; contractor, F. Klatt; cost, $6,000.

Two two-story frame, brick foundations, on Howard street between Twenty-fourth and Twenty-fifth. Owner, H. C. Somers; day's work; cost, about $6,500.

Two two-story frame, with brick basement, on south-east corner Sacramento and Van Ness avenue. Owner, N. Van Bergen; architects, Kenitzer & Raun; contractors, Conrad & Miller; cost, $16,000.

Two-story and brick basement on corner Clay & Van Ness avenue. Owner, J. B. Stetson; architect, H. C. Macy; contractor, ——; cost, about $3,500.

Four two-story, brick foundation, dwellings on north side Golden Gate avenue between Hyde & Larkin. Owner, J. Shea; architect, J. Devlin; contractor, R. Doyle; cost, $22,000.

Two-story frame, brick foundation, on north side Green near Leavenworth. Owner, Colonel Finnegass; architects, Schmidt & Havens; contractor, W. Pluns; cost, $4,800.

Three-story frame building on east side Fremont between Mission and Howard. Owners, Clot & Messe; contractor, R. McCann; cost, $8,000.

Two-story frame building on Mission between Twenty-seventh and Twenty-eighth. Owner, Lippett, Leak & Co; contractor, — Brown; cost, $3,000.

Two-story frame on Twenty-third between Mission and Valencia. Owner, L. Foge; architect, W. Winterhalter; contractor, Thom Wobrdien; cost, $2,600.

One-story frame, brick foundation, on Twentieth street between Valencia and Guerrero. Owner, S. Blackburn; contractor, George Tressler; cost, $2,000.

One-story brick building on Tenth street between Market & Mission. Owners, F. Thomas & Co; architect, J. M. Curtis; contractor, — Sanchez; cost, $1,600.

One-story and basement frame dwelling on north side California near Devisadero. Owner and builder, W. G. Hughes; cost, $2,500.

One-story and basement frame dwelling on Church street near Twenty-ninth. Owner and builder, R. Bergfeld; cost, $1,700.

Repairs to two-story frame on corner Gough and Austin. Owner, George Winterburn; contractor, D. Keller; cost, $3,000.

Two-story frame stable on corner Sacramento and Octavia. Owner, John Cooper; day's work; cost, $1,800.

Two-story frame dwelling on south-east corner Sacramento & Baker. Owner, — Mulligan; architect, T. J. Welch; contractor, J. W. Smith; cost, $3,000.

Two-story frame dwelling on north side Geary between Devisadero and Broderick. Owner, C. Welch; contractor, J. Blake; cost, $3,200.

Alterations to two-story frame on east side Pierce near Turk. Owner, J. D. Powers; contractor, W. Pluns; cost; $3,900.

A pavilion and one-story frame on Baker street between

Beach and Jefferson. Owner, P. H. Hink; architect, C. F. Mau; contractor, — Crohn; cost, $6,000.

Three barns and one two-story stable (frame) on old county road near Industrial School. Owner, George C. Smart; contractor, — Sprague; cost, $10,000.

Three-story frame, brick basement, on Howard between Seventh and Eighth. Owner, Mrs. M. J. Brady; architect, W. Mooser; contractor, Quinn & Hennessey; cost, $9,500.

Tank frame and tanks, 914 Stockton between Clay and Washington. Owners, Kim, Wing & Co.; architect, T. J. Welch; contractor, George Tressler; cost, $4,500.

Additions to dwelling corner California and Octavia. Owner, Mrs. Atherton; contractor, — Tilden; cost, $3,000.

One-story and basement frame school-house on corner Buchanan and Waller. Owner, Protestant Orphan Asylum; architects, Cleveland and Swain; contractor, A. Flood.

Repairs to two-story frame on Fell near Buchanan. Owner, Bethel; contractor, J. T. O'Brien; cost, $1,800.

Repairs to frame on north side Grove between Van Ness and Franklin. Owner, J. Maguires; contractor, J. Hamilton; cost, $1,200.

Two-story frame dwelling on Cook street near Point Lobos avenue. Owner, — Cardie; contractor, W. B. Warren; cost, $1,500.

One-story frame on west side Baker near Pine. Owner, J. S. Adams; contractor, S. M. Hills; cost, $1,300.

One-story frame on south side Post near Lyon. Owner, M. Aylward; day's work; about $800.

Repairs 2216 California. Owner, Braunschweiger; architects, Kenitzer & Raun; about $800.

Repairs to building 2412 Sutter. Owner, Diggins Bros.; day's work; cost, $800.

Repairs to building on Octavia between Fulton & McAllister. Owner, Thomas Cleary; day's work.

Two-story frame building on Third street near King. Owner, Burns & Kneese; day's work.

Repairs to building on Clara between Fourth and Fifth. Owner, J. Mahan.

One-story frame on Eighteenth and Stevenson. Owner, J. Carrol; contractor, J. Haden; cost, $1,100.

Two-story frame on Valencia street between Nineteenth and Twentieth. Owner, Hugh Curran; architect, W. P. Moore; contractor, J. Blake; cost, $3,200.

Repairs to building on Alabama between Twenty-third and Twenty-fourth. Owner, R. T. Brown; day's work; $800.

Repairs to building 232 Capp. Owner, Mr. Wente; contractor, W. F. Muller; $600.

Alterations to brick warehouse on Berry street between Fourth and Fifth. Owner, Mr. Richard on; contractor, G. T. Watterson; cost, $1,500.

Two-story frame on corner Third and Berry. Owner, Pope & Talbot; day's work; cost, about $2,800.

Additions to building corner Folsom and Main. Owner, California Oil Works; day's work; cost, about $3,500.

Frame building corner Second and Folsom. Owner, Pacific Foundry; about $900.

Repairs to building 28 Perry; day's work. Owner, P. Heyfron; cost, $750.

Repairs Fourth and Bryant. Owner, J. F. Swift; day's work; $600.

Repairs to building on north side of Union between Buchanan and Webster. Owner, J. W. Cudworth; contractors, Gray & Stover; cost, $1,400.

One-story frame building corner Chestnut and Steiner; day's work; cost, $1,400.

Additions to four two-story frame on west side Leavenworth near Broadway. Owner, H. B. Meyer; day's work; cost, $1,500.

Alterations 1619 Washington street. Owner, I. E. Smith; architect, W. P. Moore; contractors, Conrad & Miller; cost, $2,000.

Three-story frame on Montgomery avenue between Filbert and Greenwich. Owner, Martino Pianduchi; day's work; cost, about $2,500.

Alterations to building on Rausch street between Howard and Folsom. Owner, Mrs. Heffinger; contractor, — Appel; cost, $1,500.

One-story frame on Mission near Seventh. Owner, Dunn & Co.; contractor, W. H. Wolf; cost, $800.

Repairs to two-story frame corner Bryant and Decatur. Owner and builder, Thomas Jones; cost, $1,200.

One-story frame corner First and Frederick. Owner, H. Peery; $600.

Two-story frame on Brannan street near Mail Dock. Owner, American Salt Co.; contractor, C. Kinsman; cost, $3,000.

Repairs to M. E. Church on Mission street between Eighteenth and Nineteenth. Cost, about 2,800.

Two-story and basement frame on Buchanan and Webster. Owner, — Higgins; architect, Warren; contractor, R. McCann; cost, $4,500.

Two-story brick building on Townsend between Second and Third. Owner, — Kittle & Co; contractor, J. Hughes; cost, $20,000.

Alterations to Cal. Cigar Box Co. building on Berry street near Fourth; day's work; cost, $2,000.

Repairs to frame building on Fourth street near Townsend. Owner, D. Cardaire & Co; contractor, — Lehouse; cost, $1,750.

Improvements to coal depot, Beale Street Wharf. Owner, Oregon Improvement Co; day's work; cost, $3,000.

One-story frame and basement on Larkin street near Lombard. Owner, R. Webber; contractor, —— Inwood; cost, $1,250.

Filbert and Hyde, two-story frame and basement dwelling. Owner and builder, Wm. Simon; cost about $3,000.

Repairs to two two-story frames, 413 Golden Gate Avenue. Owner, J. M. Johnson; a g's work; $1,000.

Frame dwelling on Nebraska between Alabama and El Dorado streets. Owner, Mrs. Kelly; architects, McDougall & Son; $1,000.

Alterations Shotwell street between Twenty-first and Twentieth. Owner, Mrs. Hardell; architect, H. Geilfuss; contractor, —— Stecher; $500.

Alterations to building California and Stockton. Owners, French Bank; architect, A. Pissis; contractor, R. McCann; $2,000.

Two-story frame, with basement, on Shipley near Ninth. Owner, Mrs. Mary Feeny; contractor, — Beecher; cost, $2,000.

SACRAMENTO.

Two-story and basement frame on corner of Tenth and H streets. Owner, L. Williams; architects, Babson & Seadler; contractors, Carle & Croly; cost, $16,000.

One-story brick building on L Street. Owners, Huntington, Hopkins, & Co.; architect, N. D. Goodell; contractor, M. Madden; cost, ——

Additions to building 508 J street. Owner, H. Fisher; contractors, Carle & Croly; cost, $4,000.

Three-story brick building on the south side of the Square. Owner, J. F. Hill.

Rebuilding of the Metropolitan Theater on K street. Architect, W. H. Hamilton; contractors, Carle & Croly; cost, $12,975.

SAN JOSE.

Two-story brick building on south side Santa Clara street, between San Pedro and Orchard. Owner, J. Lavidan; architect, Theo. Lenzen; contractors, Kenney & Leddy; cost, $6,325.

Frame building with brick basement on south side of the Alameda, between Los Gatos Creek and the Fair Grounds. Owner, N. Cadwallader; contractor brick work, — Otto; architect, Theo. Lenzen; carpenter work by the day; cost, about $12,000.

Seven miles from San Jose, between the Monterey Road and Cayote Creek, two-story frame dwelling. Owner, H. Schelckard; architect, Theo. Lenzen; contractor, Jacob Lenzen; cost, $3,170.

ALAMEDA.

Two-story frame dwelling corner Grand street and Central avenue. Owner, H. Michaels; architects, Babson & Seadler; builders, Gilbert & Brown; cost, $7,000.

Two-story attic and basement frame dwelling on Alameda avenue, between Chesnut and Willow. Owner, Eugene Bissell; contractor, J. H. DeNise; cost, $4,000.

One-story and basement frame, corner Alameda avenue and Willow street. Owner, H. R. Jacobson; contractor, Shainer & Mosher; cost, $2,600.

One-story and basement frame cottage on Central avenue near Willow street; contractor, Millington; cost, about $2,500.

Repairs to two-story frame on Webster near Pacific avenue. Owner, D. Scully; contractor, C. Christinsen; cost, about $400.

Repairs to two-story frame on Park street near Railroad avenue. Owner, J. M. Kay & Son; contractor, S. Hatfield; cost, $500.

One-story and basement cottage corner Pearl and Santa Clara avenue. Owner, D. Penman; architect, — Chandler; contractor, S. Hatfield; cost, $2,000.

OAKLAND.

Two-story frame, brick foundation, on Vernon street (Oak View Homestead). Owner, Thos. Ewing; architect, C. F. Mau; contractor, — Smiley; cost, $4,000.

Two-story frame building corner High street and East Twelfth. Owner, Miller & Windsor; contractor, F. A. Brown; cost, $1,000.

Two-story and attic frame dwelling at Highland Park. Owner, Mr. Leaske; contractor, F. A. Brown; cost, $4,000.

Conservatory at Temescal. Owner, Captain Ainsworth; architects, Matthews & Son; day's work; cost, $10,000.

Two-story frame dwelling at Fruit Vale. Owner, J. M. Dawley; architects, Matthews & Son; day's work; cost, about $9,000.

Two-story attic and basement frame dwelling on Thirteenth and Castro. Owner, I. E. Barber; architect, Clinton Day; contractor, — Childs; cost, about $12,000.

One-story and basement frame on Willow street between Fifth and Atlantic. Owner, Thos. Hart; contractor, Thos. Dignon; cost, $750.

One-story frame on Ninth avenue near East Sixteenth street. Owner, Mr. Davis.

Four one-story and basement frame cottages on corner of Wood and Taylor. Owner, J. T. Jeffreff; contractors, Knowles & Wellbye; cost, $5,500.

One-story and basement frame cottage corner Willow and Taylor. Owner and builder, R. H. Jones; cost, $1,200.

Two-story frame cottage corner Seventh and Chester. Owner, John May; contractor, W. P. Kelley; cost, $1,600.

Two-story frame, brick foundation, at Highland Park. Owner, T. E. Polk; architects, Taylor & Copeland; day's work; cost, about $6,000.

Alterations to two-story frame near Mills' Seminary. Owner, J. A. Benson; architects, Taylor & Copeland; contractor, — Lawrence; cost, $1,000.

MT. EDEN.

Two-story frame dwelling. Owner, L. Schafer; contractor, C. F. Mau; cost, $8,000.

Two-story frame dwelling. Owner, H. Peterman; architect, Schmidt & Havens; contractor, — Haskell; cost, $5,000.

ST. HELENA.

Additions to the school-house on Oak avenue. Cost, $2,300.

SEATTLE.

The Catholics are erecting a church. Contractors, Park & Griffith; cost, complete with pews, etc., $5,200.

SAN BERNARDINO.

A theater is in process of erection by Messrs. J. Waters & H. Brinkmeyer; cost, about $15,000.

LIVERMORE.

Two-story brick building. Owner, — Hawley; day's work; cost, $10,000.

One-story and basement frame. Owner, Wm. Callahan; cost, $1,500.

One-story frame dwelling. Owner, — Harris; contractor, — Hatch; cost, $1,000.

PORTLAND.

Contracts were let for two new public school-houses. Davidson & Sharno, contractors; cost, $27,398 and $27,698 respectively.

STOCKTON.

Five-story brick building for flour-mill. Owner, Sperry & Co.; architects, Percy & Hamilton; contractors, Ed. P. Allis & Co.; manager, J. R. Cross; cost about $125,000.

SAN RAFAEL.

Two-story and attic frame dwelling. Owner, Thos. Menzies; architects, Wright & Sanders; cost about $20,000.

TULARE.

Building for stores and lodge room. Owner, Olcese & Garibaldi; architect, H. D. Mitchell; cost, $7,000.

OAKLAND.

Frame cottage on Clay street between Fourteenth and Fifteenth. Owner, —— Hyde; contractor, —— Englishman, cost, $2,500.

Old Ladies' Home. Architects, McDougall & Son; contractor, —— Herbst; cost, $23,000.

BERKELEY.

One-story frame cottage on San Pablo Avenue. Owner, J. Jensen; architect, H. Geilfuss; contractor, —— Herbst; $1,400.

WOODLAND.

Frame building on Third street. Owner, S. Barnes; contractor, Mr. Blake; $1,175.

One-story building on Railway street. Owner, C. E. Dingle; contractor, W. H. Carson; $1,500.

Two-story barn on Railway street. Owner, W. Shellhammer; day's work.

Small dwelling near town. Owner, Mrs. Roberts; $700.

Repairs and additions to the Hesperion Cottage. Contractor, W. H. Carson; $2,300.

Alterations to building on Front street. Owner, S. Hyman; day's work.

Alterations to two houses owned by —— Sprague. Contractor, Amesberry & Co; $800.

FRESNO.

One-story brick building for distillery and wine cellar. Owners, George H. and H. C. Eggers; architect, H. Geilfus; day's work; cost, about $12,000.

Two-story brick building on Mariposa street. Owner, W. Robertson. Contractor, W. Betteridge; cost, $1,800.

One-story and basement brick building. Owner, S. A. Miller; contractor, W. Betteridge; cost, $8,500.

One-story frame building. Owners, Dr. S. Leach and O. Froclich; contractor, — Oldfield; $1,500.

RIGGS.

Two large bridges are being built over the Cherokee Canal; day's work; J. W. Myers, Supt.

Frame barn. Owner, W. F. Boulwan; contractor, J. W. Myers.

One-story frame building. Owners, T. & J. Webb.

Frame building for wagon shop. Owner, John Sha.

REDDING.

One-story brick building, 75x140, corner California and Butte streets. Owner, Hon. C. C. Bush; contractor, A. J. Bryan.

CENTREVILLE.

Two-story frame and basement frame dwelling. Owner, S. H. Hall; architects, S. & J. C. Newsom; contractors, Knight & Littlefield; cost, $4,100.

Book Notices.

Interiors and Interior Details.—A new work containing 52 large quarto plates, comprising a large number of original designs of halls, stair cases, parlors, library rooms, dining rooms, wood mantels, sideboards, furniture, wood ceilings, etc., making a valuable series of *suggestion for architects and architectural designers.* Also a large collection of interior details, suited to the requirements of carpenters, builders, and mechanics. By William B. Tuthill, A. M. We will send the above work to any address upon receipt of the price, $7.50.

Modern House-Painting.—The want of a work of this character has long been felt. A very meritorious effort has been made to supply this want by Messrs. E. K. Rossiter and F. A. Wright, architects of New York. They have prepared a work containing numerous *colored lithographic plates*, exhibiting the use of color in exterior and interior house-painting, and embracing examples of simple and elaborate work, in plain, graded, and party-colors. The great merit of this work is in the colored plates, by which any one can see at a glance how a house would appear if painted according to the authors' directions. Sent to any address upon receipt of $5.00.

Village and Country Homes.—Nearly one hundred designs 9x12 inches. Price $5.00.

Standard Sign-Writer and Letterers' Companion.—A new invoice just received. Price $2.00.

Kansas City Review of Science.—No. 1 of Vol. VI has come to hand of this, one of the most valued of our numerous exchanges. The editor has excelled himself in the first number of the new volume, and has given his readers a series of articles, each one of which is worth more than the price of the book per year. $2.50 is the low rate for which the *Review* is sent to any address.

All books noticed in these columns can be had at publishers prices at this office. Sent post-paid to any address.

Practical Lessons in Architectural Drawings	$ 2.50
Carpentry made Easy	5.00
Mechanics' Geometry	5.00
Gould's Carpentry	3.00
Model Houses	1.00
Haney's Alphabets	2.00
Palliser's Details	3.00
" Specifications	.50

The California Architect and Building News.

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Reasonable reductions for advertisements continued six or twelve months.

Owners Want too Much for Their Money.

This is an oft-repeated saying among contractors, and great stress is laid upon the injustice of the course claimed to be pursued by many owners. But for argument's sake, admit that parties contemplating the erection of buildings do propose and offer to pay but seventy-five, eighty, or ninety cents for every dollar's worth of material and labor received. Are contractors bound to accept the proposition? It always requires two or more to complete a bargain, and no proposition made by one party is binding upon another until the second *voluntarily* accepts that which is proposed by the first. Consequently, those who accept such unfair proposals, and deliberately enter into oppressive obligations, simply because somebody wants them to do so, certainly do not demonstrate the possession of any large amount of sound business sense. No one in this free land of ours is *obliged* to submit to unjust exactions in business transactions, particularly when business is active, and those who propose to do intend and will carry out their purposes, whether the cost be more or less than their limits. One thing is certain, thousands of building contracts have been let in San Francisco for *less sums* than owners were willing to pay; and a large amount of money, greater than has been, might have been handled by contractors, had a wise and correct system of figuring prevailed among them. But admit again for argument's sake, that owners do seek to secure the improvement of their property for less than actual cost, does it become the duty, and is it a virtue on the part of contractors, to bow the business knee and bare the manly brow to such propositions? Certainly not. And yet it matters not how mean a proposition may be, there are hosts of hungry men—hungry for the pleasure of signing one or many contracts, and controlling a few thousand dollars, with more of doubt and uncertainty than assured profits at the end of the operations. The fact is, that building contractors, as a rule, have been more earnest and determined in purposes to obtain work, and *beat* the next man, than in devising and maturing correct and safe methods of figuring. The average number of contractors who estimate by the safe rule of *certainties*, minus all speculative suppositions, is small compared with the many who figure to win, risking the chances upon the various devices so generally resorted to by *low figurers* to save, omit, and economise, and ride over plans and specifications to the full extent of possibilities.

If owners do ask for more than is right, the generality of contractors have assisted in creating that disposition by reckless *under*-bidding; and the manifestation of a willingness to serve any man who asks their service, with scarce ever a firm, manly, and determinative *refusal* to yield when propositions are advanced, seeking abatement of the sum proposed as a right and proper cost, and other methods of obtaining much for little pay.

The facts are, that the contracting business has been and is overcrowded; the mediocre, wholly incompetent, and shamefully deficient outnumbering the more competent, reliable, and safe men. Hence innumerable wrongs in various shapes and forms have developed and attached to the building contracting business, and the drift of things generally has been to pile up stumbling blocks in the way of good men and *general success*; rendering it difficult for any not enjoying *special advantages*, to pursue the business with profit. And as one of the natural results of this irregular condition of things, impressions prevail among a considerable number of property owners, that by a little effort on their part in manipulating arrangements, understandings, and preliminary movements, they can save from five to twenty per cent. in outlays for building purposes, which they often do, because of the yielding by contractors to almost any proposition which presents the slightest prospects for work, thereby virtually sanctioning operations adverse to the best interest of the mechanical classes.

Architects vs. Economy.

The full report in our Building Intelligence has been the subject of much remark among those most interested, partly on account of the great percentage of buildings that have been erected without the services of the architect being called into requisition. We have reported buildings the cost of which have been over $10,000, and the owners thereof have had the buildings erected, the carpenter drawing the plans and carrying them out, no architect being in supervision of the job.

Owners sometimes deceive themselves, and imagine that they can get along as well without, and save the expense of an architect in the erection of the buildings. Some may have done so to their satisfaction, but the more general experience is, that it is a very unwise course for an owner to pursue. By it, many a building has been spoiled in its arrangement and construction, and the loss in diminished rents, vacant premises, and the continually occurring repairs, amount to as much each six months, on an average, as would have paid a competent architect full fee for his services.

Owners are often brought to grief by their mistakes in the means employed by them to avoid an architect's fees, and obtain the plans and details necessary for their buildings. In order to obtain the latter, and get rid of the "fee," some "friend carpenter" is intrusted with the whole matter of plans, specifications, and construction. In such cases, *repentance comes too late to the victimized owner.* The party to whom the work is intrusted makes the plans, and the work is commenced with a "*smile*" all around. The frame is inclosed, and the partitions set. A practical plumber is called in, who puts in the gas and water pipes under the carpenter's superintendence, and for a while things go on swimmingly. The walls are plastered, and then the first trouble begins. The good wife who is to inhabit the mansion now gets her first practical idea of how the house will look on the inside when finished. Rooms are found to be out of proportion; closets wanting; gas and water pipes in wrong place; not head room enough for the stairs, etc. Changes are begun, and until the building is finished, the general order of the day is to "*fix*" up things to correspond with the owner's "*improved*" ideas.

The house is finished, and it would amuse a "professional" if some of the balance sheets of a first year's residence in some of the "no-architect's houses" could be shown to outsiders. We had the pleasure of seeing one of these documents, and here are a few of the items.

Taking up and replacing floors to fix water pipes	$11
Changing sink, and adding a trap, none having been provided	9
Raising of one corner of the house, it having settled so much that it had to either go up or owner go out	32
Repairing leaks in roof	7
Whitening walls stained by leaking of roof	5

But we will not continue our enumeration of the evils which are incident to every house whose plans has not been thoroughly studied and specified before the commencement thereof.

Such cases as the above are well known to more than one of the architects of this city, and many a "served him right" is indulged in, upon the principle that a competent physician laughs at the sufferings of a patient whose pains and agonies result from self-treatment or quack practice, or the educated lawyer smiles when his client gets himself into a *terrible fix* by intrusting his case to some pettifogger, or who tries to work out the intricacies and problems of law by his own self-conceited legal ingenuity.

San Francisco Chapter American Institute of Architects.

The regular meeting of this chapter was held on the 7th ult. A large attendance was present, and the good feeling and interest taken in all the subjects brought before the chapter excelled those of any meeting since its organization.

The committee appointed to consider the address presented by the Brotherhood of Carpenters and Joiners were granted further time, as the subject is of such importance that a report, unless thoroughly discussed, might not express the views of all the members of the chapter.

The Constitution and By-Laws as amended were adopted as a whole, and two hundred and fifty copies were ordered printed.

George H. Wolfe was unanimously elected Corresponding Secretary.

Proposition for membership was received, and several members came forward and paid their dues. On motion, all dues that have been paid or shall be by the 1st of September, 1882, shall be considered as paid in full to that date, provided the initiation fee shall also have been paid.

A communication was received from the Metal Roofers and Sheet Iron Cornice Maker's Union. It being very late, action thereon was postponed until next meeting.

Draughtsmen and Builders.

We would call particular attention to the ad., on page 106, of DRAWING INSTRUMENTS, AND HOW TO USE THEM. Also to the publication, "Carpentery Made Easy," page 12.

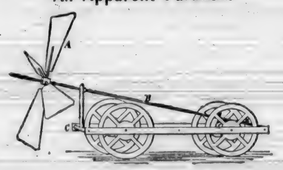
"American Cottage Homes" is a new work just issued, and well deserves the favorable mention it has received in the Eastern journals. It contains plans, elevations, perspective views, sections, details, also specifications, form of contract, and descriptive letter-press on back of each plate. It is illustrated by 40 9x12 plates, with over 260 drawings. It will be sent to any address upon receipt of publishers' price.

Necessity and Invention.

Given the best material, ample facilities, and a high order of inventive skill to devise something new, such material, facilities, and skill had much better be turned to other account if there be not a demand for the article in question. Invention is the offspring of necessity in the fullest sense, and unless the something produced fills a niche in the wall of wants, the inventor had better have devoted his brains, time, and material to other employment. It is the disregard of this phase of the great natural law of "demand and supply" that cumbers the patent-office with specifications of so many inventions that come to naught. The number of improved bootjacks, rat-traps, and miscellaneous articles which have been patented is legion. Men mistake invention for a business, and enter into it as they would in selling dry goods or making shoes; possessing a knack for invention they bring forth an array of articles intended for almost every use in the calendar. Some of these are very cunningly contrived, no doubt, but the reason why they fail to bring remuneration to the inventor for the time, labor, and money expended in perfecting them is that the world's economy does not require them. There has been a waste of forces. The vital trouble lies in the fact that these inventors look at the matter from the wrong end. They set about to make "something," trusting that its radically new character will find a place for it, instead of trying in the first place to discover what thing the exigencies of this or that trade demand. Sometimes one of this class will succeed in hitting upon a valuable invention. We will say that his work is some piece of mechanism connected with cotton manufacture. He immediately begins to adapt the principles of his invention, or a modification of them, to iron-working or some other branch of industry, and oftentimes loses what he gained in his mania for inventive experiment. The "professional" inventor rarely succeeds in the long run.

And yet the field for invention is by no means closed. There is every encouragement to-day for inventive genius. Great and revolutionary as have been our improvements in machinery, industry awaits and will pay for others. There is need of more perfect appliances for treating cotton between the field and the factory; a machine is wanted to manipulate jute and like fibers, to the end that we may make such staple products and compete with the poorly paid labor of countries across the water. A fortune awaits the successful inventor in these and many other fields, but in every one the necessity must first exist. In many instances the pressure of circumstances almost compels the invention of the thing desired. We see this nowhere better illustrated than in the annals of prison life. Some of the most curiously contrived tools known to mechanical experts have been fabricated by prisoners in their endeavors to escape. Here an imprisoned convict, lacking tools or material, contrives to make a key by scraping lead from a water pipe, melting it in a spoon over a fire made from splinters of his furniture, and casting it into form, and with it opens intricate locks. Others perform almost superhuman feats in the way of producing inventions for cutting iron bars, drilling through iron doors, breaking through heavy stone walls, and constructing ladders, weapons, files, saws, hammers, and other tools. The same conditions exist where legitimate invention is concerned. It does not depend so much on the facilities that the inventor has at his command as on the necessity for the thing which he seeks to produce.—*Carpentry and Building.*

An Apparent Paradox.



Some months ago a question was proposed to me by an engineer of the United States Navy, and it was this: "Can a windmill be made to propel a vehicle directly against the wind, the wind blowing parallel to the axis of the windmill, and at right angles to the axles of the vehicle?" I replied that I believed it could.

After a warm discussion, in which several other engineers present took part, the discussion closed without any decision of the question. I might say that but one of the disputants agreed with me in my views of the question. As I believe in a practical demonstration of all theories, a few weeks afterward I made a model, like the one shown in the accompanying engraving. It consisted of four brass clock wheels 2″ in diameter, and two strips of brass, *C D*, held together by three round bars, also used in making clocks. The spindle of the windmill, *B*, was made of a large-sized steel knitting-needle. The windmill, *A*, was 4″ in diameter, the blades being made of sheet copper soldered to wire spokes at an angle of 45° with the axis *B*. A pinion, *E*, $\frac{3}{8}$″ in diameter outside, and having 8 teeth, was fastened to one of the axles, and a worm $\frac{1}{4}$″ in diameter, with a pitch of ten threads to the inch, was placed upon the spindle *B*.

This little piece of mechanism was placed before a Root blower and nicely adjusted. When the blower was set in motion by hand, the model began to move towards the open end of the air pipe, and the harder the blast, the faster the model ran, contrary to the predictions of those who beheld it. Some even said it would move backwards.

This may be interesting to the readers of the *American Machinist*, and perhaps some of them will be kind enough to explain *how* and *why* it moves, as it is settled beyond a doubt that it does move, and with considerable rapidity, against the wind.—*American Machinist.*

Jumping at Conclusions.

The world is full of error and injustice, by reason of the prevailing disposition among mankind to prejudge the acts and sayings of their fellowmen, and to concoct and assert intentions and purposes *for others* never dreamed of by the parties upon whom the responsibilities are sought to be cast. This disposition to prejudicate is almost universal, and is, as a rule, false and unfair to a greater or lesser extent: not unfrequently absolutely so, and in millions of cases practiced from evil motives, and for purposes of the basest character. The man who by word or act places himself in a position where criticism or attack is possible is certain to be "picked to pieces," it matters not how pure and worthy the actuating motives in him may have been or is, or how free from wrong intent; if the *possibility* of impeachment, by forced constructions, misapplied reasonings, or theorizings *made to fit*, to the exclusion of real truth and fact, the sacrifice is demanded with a cool indifference as to personal rights of explanation or interpretation.

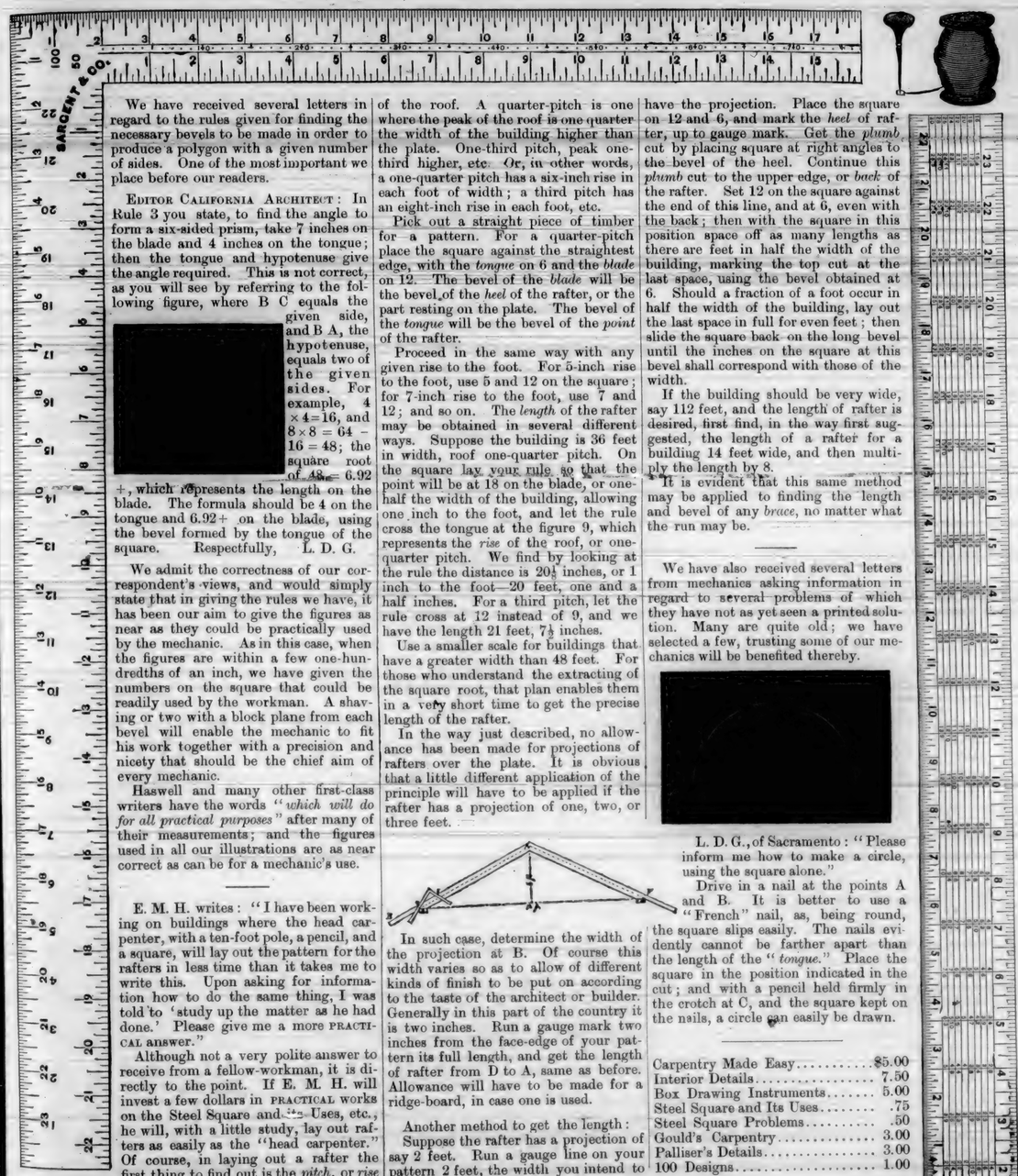
There are but few men—none of any material consequence or influence in the affairs of life—who have escaped this terrible tendency of the age to misrepresentations. And this evil has thrived and grown and become popular, because the masses derive pleasure from the unreal, fanciful, and visionary. The plain, matter-of-fact rule seems tame and unsatisfying in comparison with the exaggerated, overwrought, and high-strung statements and stories provided by that liberal-minded class of beings who so freely *give* away without charge their own interpretations of other people's acts and sayings, caring nothing for the correct truths and motives involved. These tongue and pen pictures, overwrought and highly colored though they be, seem to meet the liking of the present generation; and because they are received with general favor, the cursed evil is found to flourish in all grades and ranks of society, from the imperial throne down to the scavanger's hut. In this respect the old Bible Saw is most emphatically true, that "all men are liars." People do not like to bear—and will not gently—the opprobrious charge of lying; yet absolutely, the man or woman does not live, and never has, who at times and under circumstances has not misjudged the motives and mistaken the acts of others, in some form or shape. Thus it has been with the best and purest, and a thousand *times* more so with the great mass of humanity, with whom pure truthfulness and just judgment, at the sacrifice of that which will gratify personal feelings, and give scope and force to interested or malicious representations and motives, are as but the foam upon the ocean's surface, or the feather before the resistless storm.

Draughtsman's Paper.

A lecture was recently delivered before a Berlin drawing society on paper for the use of draughtsmen. Drawing-paper, now-a-days, certainly admits of division. The common sort, for rough drawings, is made from hemp, with a small portion of wood pulp added. This paper, although fairly adapted for the pencil, does not take corrections readily. It is altogether unfitted for water-color sketches. The paper prepared by the lecturer, Herr Wendler, and known as Wendler paper, is manufactured in two shades, a white and a yellowish. The latter is preferred by architects. The double animal-sized drawing-paper is somewhat equivalent to Whatman's paper, and takes India-ink very well. Whatman's paper is triple-sized, and drawn on linen. As tracing-paper, silk-paper may be considered the cheapest, and some of the best draughtsmen, etc., use no other. The French tracing-paper is cheap, but soon turns yellow. The German is far less brittle. The Whatman papers are very good, but very dear. That known as Ingres paper, after the great painter, is specially adapted for chalk drawings. It is prepared in some twenty shades. The Belgian-toned paper has a more regular grain than the French. The Canson Mongolfier paper is a rival to the Ingres, and has a large sale. The different kinds manufactured by Whatman would fill a page to mention. Bristol and Piries papers are also well known.—*Mechanical News.*

S. F. Chapter A. I. A.

At the next regular monthly meeting, the first Friday in August, nominations will be made for officers of the ensuing term, according to the provisions of the Constitution and By-Laws lately adopted.



We have received several letters in regard to the rules given for finding the necessary bevels to be made in order to produce a polygon with a given number of sides. One of the most important we place before our readers.

EDITOR CALIFORNIA ARCHITECT: In Rule 3 you state, to find the angle to form a six-sided prism, take 7 inches on the blade and 4 inches on the tongue; then the tongue and hypotenuse give the angle required. This is not correct, as you will see by referring to the following figure, where B C equals the given side, and B A, the hypotenuse, equals two of the given sides. For example, $4 \times 4 = 16$, and $8 \times 8 = 64 - 16 = 48$; the square root of 48 = 6.92 +, which represents the length on the blade. The formula should be 4 on the tongue and 6.92+ on the blade, using the bevel formed by the tongue of the square. Respectfully, L. D. G.

We admit the correctness of our correspondent's views, and would simply state that in giving the rules we have, it has been our aim to give the figures as near as they could be practically used by the mechanic. As in this case, when the figures are within a few one-hundredths of an inch, we have given the numbers on the square that could be readily used by the workman. A shaving or two with a block plane from each bevel will enable the mechanic to fit his work together with a precision and nicety that should be the chief aim of every mechanic.

Haswell and many other first-class writers have the words "*which will do for all practical purposes*" after many of their measurements; and the figures used in all our illustrations are as near correct as can be for a mechanic's use.

E. M. H. writes: "I have been working on buildings where the head carpenter, with a ten-foot pole, a pencil, and a square, will lay out the pattern for the rafters in less time than it takes me to write this. Upon asking for information how to do the same thing, I was told to 'study up the matter as he had done.' Please give me a more PRACTICAL answer."

Although not a very polite answer to receive from a fellow-workman, it is directly to the point. If E. M. H. will invest a few dollars in PRACTICAL works on the Steel Square and its Uses, etc., he will, with a little study, lay out rafters as easily as the "head carpenter." Of course, in laying out a rafter the first thing to find out is the *pitch*, or *rise* of the roof. A quarter-pitch is one where the peak of the roof is one quarter the width of the building higher than the plate. One-third pitch, peak one-third higher, etc. Or, in other words, a one-quarter pitch has a six-inch rise in each foot of width; a third pitch has an eight-inch rise in each foot, etc.

Pick out a straight piece of timber for a pattern. For a quarter-pitch place the square against the straightest edge, with the *tongue* on 6 and the *blade* on 12. The bevel of the *blade* will be the bevel of the *heel* of the rafter, or the part resting on the plate. The bevel of the *tongue* will be the bevel of the *point* of the rafter.

Proceed in the same way with any given rise to the foot. For 5-inch rise to the foot, use 5 and 12 on the square; for 7-inch rise to the foot, use 7 and 12; and so on. The *length* of the rafter may be obtained in several different ways. Suppose the building is 36 feet in width, roof one-quarter pitch. On the square lay your rule so that the point will be at 18 on the blade, or one-half the width of the building, allowing one inch to the foot, and let the rule cross the tongue at the figure 9, which represents the *rise* of the roof, or one-quarter pitch. We find by looking at the rule the distance is 20¼ inches, or 1 inch to the foot—20 feet, one and a half inches. For a third pitch, let the rule cross at 12 instead of 9, and we have the length 21 feet, 7½ inches.

Use a smaller scale for buildings that have a greater width than 48 feet. For those who understand the extracting of the square root, that plan enables them in a very short time to get the precise length of the rafter.

In the way just described, no allowance has been made for projections of rafters over the plate. It is obvious that a little different application of the principle will have to be applied if the rafter has a projection of one, two, or three feet.

In such case, determine the width of the projection at B. Of course this width varies so as to allow of different kinds of finish to be put on according to the taste of the architect or builder. Generally in this part of the country it is two inches. Run a gauge mark two inches from the face-edge of your pattern its full length, and get the length of rafter from D to A, same as before. Allowance will have to be made for a ridge-board, in case one is used.

Another method to get the length: Suppose the rafter has a projection of say 2 feet. Run a gauge line on your pattern 2 feet, the width you intend to have the projection. Place the square on 12 and 6, and mark the *heel* of rafter, up to gauge mark. Get the *plumb* cut by placing square at right angles to the bevel of the heel. Continue this *plumb* cut to the upper edge, or *back* of the rafter. Set 12 on the square against the end of this line, and at 6, even with the back; then with the square in this position space off as many lengths as there are feet in half the width of the building, marking the top cut at the last space, using the bevel obtained at 6. Should a fraction of a foot occur in half the width of the building, lay out the last space in full for even feet; then slide the square back on the long bevel until the inches on the square at this bevel shall correspond with those of the width.

If the building should be very wide, say 112 feet, and the length of rafter is desired, first find, in the way first suggested, the length of a rafter for a building 14 feet wide, and then multiply the length by 8.

It is evident that this same method may be applied to finding the length and bevel of any *brace*, no matter what the run may be.

We have also received several letters from mechanics asking information in regard to several problems of which they have not as yet seen a printed solution. Many are quite old; we have selected a few, trusting some of our mechanics will be benefited thereby.

L. D. G., of Sacramento: "Please inform me how to make a circle, using the square alone."

Drive in a nail at the points A and B. It is better to use a "French" nail, as, being round, the square slips easily. The nails evidently cannot be farther apart than the length of the "*tongue*." Place the square in the position indicated in the cut; and with a pencil held firmly in the crotch at C, and the square kept on the nails, a circle can easily be drawn.

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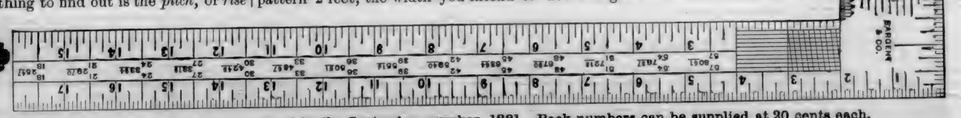

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Dwelling-House Sanitation.

BY GLENN BROWN.

[The following, from the pen of Glenn Brown, Esq., a brother architect of Washington, D. C., is a portion of a lengthy, ably written article upon the subjects discussed, and should be read by *all classes* of people; for all, rich and poor, are alike liable to the evils and dangers so fully presented by the writer.]

"Pure air, pure water, and a pure soil."—HIPPOCRATES.

The question of proper sanitary arrangements in our homes is a matter of such vital importance that an attempt to instruct the public in the most approved arrangements for sanitation needs no apology.

The subject is specially significant to the head of the family, as a citizen having the good of the community at heart, and as a parent having the welfare of those immediately under his charge involved in his care and guardianship; and although it is with the sanitary arrangements of the home as such that we have to deal in this article, the home is but part of society at large, and our remarks apply to questions which affect all, and in which all are interested.

It is impossible for any one to breathe vitiated air or gas, or drink impure water, or eat tainted food, and yet live and grow in health. Such conditions are seriously detrimental to the constitution—very often fatal. Many deaths do occur, as well as much trouble, expense, and pain, which might all be avoided, provided the heads of households would take the trouble to inform themselves on these weighty matters of every-day life. There is nothing which can compensate us for the loss of health, certainly neither wealth, nor the comforts and luxuries which accompany wealth. We all acknowledge this, and yet how strange to see the indifference and carelessness which the majority of mankind are constantly manifesting about this very point; when the proper precautions to be observed for the preservation of health are within the reach and adoption of all who will but think and act.

We shall, in this article, describe the different sanitary arrangements necessary in a home, according to the present status of sanitary science, to guide those desiring information, so they can judge whether the best practice is being carried out in their own case.

The sanitary arrangements of a house consist of its situation, exposure to light and air, heating, ventilation, and drainage, in their proper selection, planning, and workmanship.

The situation of the house is first to be determined. By carelessness in this particular, one may get into a malarious district, where fever and ague would be unavoidable, or one may have his house located on a soil where the water never drains off, and where the gases caused by decayed matter are constantly rising into the house and causing disease. The proper position of the house in regard to sunlight and the prevailing winds is a matter of importance; for in the sunlight we find health and comfort, while cold and wet winds are always hurtful in their effects, and to be avoided. In the heating apparatus (by which hot air is supplied), care must be taken that the air which is to be warmed shall be pure. It must be neither too hot nor too dry for breathing, as the lungs are thereby affected. The air is liable to be contaminated by coming from a foul source, over a sewer drain, or from a badly ventilated cellar, and after its entrance into the house by absorbing gases from the overheated surface, cracks, or joints of the heating apparatus.

The art of ventilating properly requires that the impure air which comes from our lungs, the foul exhalations which come from our bodies, and are absorbed by the air, as also the vitiated air which is caused by combustion, or comes from other sources, may all be carried off, and an abundant amount of fresh, pure air may be supplied in its place.

The proper arrangement of the plumbing has the most important part to play as respects the health of a family. In what manner sewer gas affects the health is a much-disputed question; that it does, and causes typhoid fever, dysentery, diphtheria, and other similar diseases, is an established fact. Dr. De Verona, in his work on sewer gas, says: "If the physiological effects which follow the breathing of sewer gases are actually produced by what then enters the organism, it must be something besides oxygen, hydrogen, nitrogen, carbon, and sulphur, in their various combinations. There exists in living sewage multitudes of living germs. These germs are capable of growth and self multiplication. . . . . They are infinitely small, light, capable of being lifted by the slightest current of air; in fact, their habitat is watery vapor. In pure, dry air they immediately perish; in impure air, charged with moisture, they live for a time yet undetermined; in humid air, charged with putrified animal matter, they live, nourish themselves, and acquire the full vigor of their nature. If, now, they are deposited in a proper indus, they reproduce themselves by myriads." We must leave it to the physician or the scientist to find whether or not the specific germ disease theory of Pettenkofer, or the putrefactive ferment theory of Sanderson or Beale, deserves the more credit. It is the duty of all who have the sanitary arrangement of their homes to superintend to endeavor to keep foul air and gases out of their houses and away from their water and food. Whether it comes from the refrigerator through the waste, and is absorbed by our milk, meat, or other food, and thus taken into the system; whether it enters our wells, pumps, or cisterns, through natural conduits from cesspools or sewers, or our tanks through their waste; or whether it comes through the water-closet, wash basin, or from a foul cellar, and is drawn into the system with the breath—it is equally deleterious to those who dwell in the house, and affects, as matter of course, the men who have their business down town and in the open air less than those who stay constantly in the house and breathe these deleterious gases and germs all day. This sewer gas is truly very subtle, and will find its way through the smallest crevice; floors, brick and stone walls, offer but a slight impediment to its passage, and it contaminates the water, air, or food with which it comes in contact. To show how dangerous this contamination may be, we will quote an extract from the report made by the Massachusetts Board of Health in 1871 on the causes of typhoid fever. It concludes that its propagation is caused by a poison as definite as that which causes vaccine, and divides the means of propagations under three heads: "First, drinking water made foul by the decomposition of any organic matter, either animal or vegetable, and specially by the presence of excrementitious matter discharged from the bodies of those suffering from typhoid fever; second, propagation by air contaminated by any form of filth, and specially by privies, cesspools, pig styes, manure heaps, rotten vegetables in cellars, and leaky and obstructed drains; third, by emanations from the earth, occurring specially during the autumnal months and in seasons of drought." Dr. Bowditch of Boston, by private investigation in this country and Europe, concludes that consumption is increased by residence on damp soil, and it has been proved that thorough drainage of localities decreases the annual rate of consumption.

The financial aspect of the loss of health cannot be computed by the actual time lost during sickness. The time consumed by other members of the family while waiting on the sick one, doctors' bills, medicines, and luxuries, tend to make sickness very costly; impoverishing those who are in moderate circumstances.

It is impossible to compute how much a man loses by half doing his work when he is not well. The *Plumber and Sanitary Engineer* truly says: "Modern research has classed these diseases as preventable, and we may be pretty sure that they are governed by physical laws as immutable as the law of gravity, and depending only for their propagation and development upon circumstances and combinations which are within human control, and for which we are therefore to be held responsible."

Having shown the evils which may be produced by bad sanitation in our homes, and how these effects are liable to be produced, we will now give a description of the different sanitary arrangements in general use, pointing out the faults in each, and also naming the ones which are approved by the best authorities, with the reasons for their approval.

The proper general arrangements for the sanitary protection of our homes will be first discussed, then we will proceed to the special arrangements for the same purpose.

It is an advantage for a house in our latitude to have a southern exposure; with it, we get the cool breeze in the summer and the cheering effects of the sun in winter. There are many good authorities who consider sunlight necessary to our health, the Germans making it a requisite in their school plans. With a northern exposure one gets but a cold and cheerless outlook; the front yard or pavement will remain damp and unhealthy, especially if not well drained. Eastern exposure has no advantage over a western; but either eastern or western exposure is preferable to a northern. A lot, in a city, having a southern with an eastern or a western exposure is very desirable, for then we obtain sunlight on three sides of our house; keeps the front and back yards dry and healthy, and adds to our comfort and pleasure. In the country, our house can have windows on all sides, and it is very desirable that buildings in cities should be detached from other buildings whenever it is possible. When thus by itself, a house will be surrounded by light and air that is comparatively pure, and it is much easier so to avoid those abominations, dark rooms, as well as to thoroughly ventilate the house.

In the situation of a house a site must be selected, when possible, where the natural soil is good for the health, and will not harbor disease. The best soil for this purpose is deep gravel or sand, which will readily drain off the water and allow free access to the air. A fertile soil, an impervious subsoil (clay), or rock near the surface retains the water, and thus hastens decay, and makes a suitable atmosphere in which disease germs may live. If it be not possible to select one's building site in regard to the natural drainage, the lot must be drained artificially. Drainage of site and foundation should be done by land tiles having an efficient outlet, but in no case connecting directly with cesspools or sewerage system. The smallest size tiles will answer for the largest house. The bottom of all cellars should be concreted with an asphalt coating on top of the concrete. This will tend to keep the deleterious gases from rising into the house from the ground.

Radiant heat, that is, heat which passes through the air without heating it, and which only heats the bodies with which it comes in contact, is considered less hurtful than heated air. Sunlight and open fires produce radiant heat; stoves, steam and hot water coils, first heat the air, and by that our bodies are heated, and give off a small amount of radiant heat; furnaces give us only heated air.

Heating and ventilation are so intimately connected in our dwelling-houses, that it will be convenient to treat of them together. Stoves and furnaces are the modes of heating most generally used, and the proper material of which they

should be made, and how they should be arranged, are matters of importance to the health of households. In this country stoves are manufactured almost exclusively of cast and sheet iron. On the continent of Europe there are a great many porcelain stoves in use. They are large and unwieldly, and are nearly air tight, thus heating the air in the room, and taking off none of the effete air, except what is withdrawn through crack and joints. Parties who visited the Centennial will remember seeing these porcelain stoves on exhibition. The objection to the use of stoves lies in the fact that they heat the air of the room by actual contact with it, and afford no means of taking away the vitiated air. Of all stoves, the open stove is the most conducive to health, giving off radiant heat, and also allowing egress for vitiated air, thus to a certain extent taking the place of an open fireplace. In selecting stoves for heating our homes, the open or grate stoves should be chosen, and there should be an inlet for the fresh air, either made particularly for ventilation back of the stove, so that the air can be warmed to fifty degrees, so it will not chill any one as it comes in; or the air may be admitted at the meeting rail of the window sash, by letting down the upper and hoisting the lower sash about half an inch. This will not bring the sash above the stop bead, and it will allow the air to enter between the two sashes, the air being deflected upward and thoroughly mixed with the air of the room without causing disagreeable drafts.

In heating stoves care must be taken not to heat them to redness, as Dr. Derby states the gases of combustion will pass through red-hot cast iron.

(To be continued.)

The Paradox Wheel.

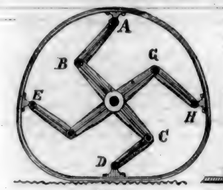

Fig. 1.

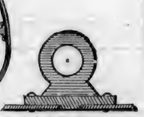

Fig. 2.

So called from its appearance; for, seeing that all the internal parts, *a b c d* and *e f g h*, are pivots which support the whole of the internal parts, and that the cross in the center is also free on the axle after the manner of a pair of scissors, a collapse appears inevitable; whereas the axle continues as firmly in the center as in the ordinary wheel with fixed spokes, and the elastic tire gives way, and flattens on the ground with the same freedom as if the load were merely placed on the top of the elastic tire; and (as I shall show) gives us a base equal to the sleepers which (on a railway) support proportionately a locomotive engine (see Fig. 1). This wheel might also be named the leg wheel, or the walking wheel, from its appearance.

By publishing this invention, I am showing to our readers my "trump card"; for so important is a means of reducing the horse power required for traction on a common road to the same low amount (for the same load) as is required on a railway, that its general adoption would amount to a revolution in locomotion on common roads.

I am aware that others have tried to effect the same object; but one mistake has been to make the internal part of a wheel elastic; whereby the load only descends nearer to the ground, instead of the tire becoming uniformly flat next the ground, as is the case in this invention. In other designs the two wheels on each side have not been independant of each other, whereby guiding has been prevented.

In order to show that my object has been attained, I will explain why it is that so great a proportionate tractive power is required on the common road.

The common wheel acts somewhat after the manner of a cheese cutter, and grinds to powder annually millions of tons of road metal, and also falls into and has to be dragged out of every rut, little and big; this amounts to a lot of up-hill work, and accounts for the extra power required. By the adoption of my invention these evils are avoided; as there is always a base or foundation sufficient to make the tractive power no more than that of a railway on the same gradients—mind, I say, on the *same* gradients; which we know are more favorable on a railway.

To compare, let us suppose a cart has 5-foot wheels, and the tire to flatten one-eighth, or about 2 feet; width, say 4 inches; total surface bearing, 1 foot 4 inches; and, say, total weight, 1½ tons. Now, a locomotive engine will weight about twenty-four times this, which, ×1 foot 4 inches = 32 feet super, for sleepers, which, divided by say 5 sleepers, gives each 8 feet 7 inches long by 9 inches wide, which is not far from the truth.

The tires should be one piece of spring steel, tempered clock spring, of width and thickness as engineering data may dictate. The ends of the tire may be riveted to the bearing, same as the other three, but the ends must be shut into the dovetail, cast as part of *one* of the four bearings, which is shown at bottom of Fig. 2. The other parts of the tire should be *malleable* cast-iron.

Other advantages resulting are, that carriage springs are needless, the tires being themselves the springs; and all noise, jolting, and vibrations are done away with, so that the motion will be as easy as can well be imagined.—*J. H. Huxley, in English Mechanic.*

Fine Public Buildings.

Some fault has been found with Congress because of the liberal appropriation for fine buildings in various parts of the country. If, however, there is a surplus of money, it could not be much better employed than in constructing handsome edifices. Our post-offices, custom-houses, and court buildings should be structures worthy of what is destined to be the most powerful nation on the face of the globe. In eighteen years the United States will have as large a population as Germany and France combined, and there will be no richer nation potentially on the globe. The federal government does not come in immediate contact with the people except through custom-houses and post-offices, and it is desirable that our voting population should be duly impressed by the wealth and importance of the country to which they belong. There is no justification for any waste or extravagance, but it is manifestly unwise for federal buildings in any of the States to be cheap or mean structures. New York ought to have a superb custom-house, the finest in the world; a great emigrant depot should also be established in this city under the direct auspices of the federal government, for immigration is not a local but a national matter. Let Americans, wherever they go, see in every large city evidences of the might of the country to which they belong. In Athens, in its glory, architects, sculptors, and artists were not permitted to work for private persons. The State monopolized their services, and the government of the United States should be the especial patron of architects and builders of the better class.—*Real Estate Record.*

☞ **Subscription price of this journal is $2.00 in advance.**

EVERYBODY'S COLUMN.

"FAS EST AB HOMTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

CALIFORNIA ARCHITECT: To find the length of rafters for a quarter pitch roof, I generally use the rule to allow 1½ inches to each foot of half width of building. This works well for short rafters, but does not do on long ones. What are the correct figures to use? S. L. T.

ANS.—The above is a very common rule used where accuracy is but little cared for. It makes the rafters about one half of an inch too long for each 8 feet in length. See our article on Steel Square and its Uses, page 95, this issue.

BUSINESS EDITOR OF ARCHITECT: I want to know of a *practical* way to describe the arc of a circle too large for a pair of dividers. Please inform me the best way of so doing.

MILLWRIGHT, Santa Clara.

ANS.—Let *a c* be the chord, and *o b* the hight of the required arc, as laid down *on the drawing*. On a separate piece of paper, *s e m n*, draw *a c*, *o b*, and *a b*, also *b e* parallel to the chord *a c*. It is well to make *b s* and *b e* a little longer than *a b*. Then cut off the paper carefully along the lines *s b* and *b e*, so as to leave remaining only the strip *s a b e m n*. Now if the straight sides '*s b* and *b e*' be applied to the drawing so that any parts of them shall touch at the same time the points *a* and *b*, or *b* and *c*, the point *b* on the strip will be in the circumference of the arc, and may be pricked off. Thus any number of points in the arc may be found, and afterwards united to form the curve.

In answer to E. M., we would say, that the reason he has never found the crushing strength of redwood given in the tables in different works on the crushing strength of materials, is simply because no extended experiments have been made (the results of which have come to our knowledge) of the comparative strength of redwood with other woods. Will inform our readers of such tests when made.

PRACTICAL LESSONS

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DELVING INTO THE SECRETS OF THE PAST.

The Lost Arts.

What are the Lost Arts? We often see allusions made to them; "few and far between"—only allusions. Sometimes we may hear some one art specified as a lost art. Nothing very definite, however, and always in a fragmentary way. When we come to give the subject serious study and investigation, we find many vague notions regarding the matter. Persons claiming to be well read speak of the Lost Arts, but are not able to say just what they are. If you, my reader, have a desire to find out by books or any other way what they are, just how many there are, who the people were who knew and practiced them, and at what period in history, you will have considerable of a task before you. Go to the best libraries on this coast, hunt through all the encyclopedias, through all the lexicons, phrase collections, art dictionaries, art histories, essays, monographs, and the whole gallery of magazine literature of the last score of years, and you will rise from that weary search, like Ruth from the fields of Boaz, with but few grains of wheat. You may then wonder if *anybody* knows anything about them. Possibly you may begin to conclude that the story is a myth. Are there any lost arts?

We once wandered over much of this wilderness. In our search we met a wise man whom we approached reverently, and asked hopefully, "Sire, what are the Lost Arts?" He adjusted his memory, and scanning the horizon of the illimitable past, he meditated. But memory came back with no treasure. He only said, "Go to Wendell Phillips—he knows."

Still seeking, I fell in with another wise man, in whom I had reposed much confidence; and I asked, "Sire, what are the Lost Arts?" He closed his eyes a moment and "looked backward." Then with a smile of pity he said, "Go to Wendell Phillips—he knows."

The labor is long, I see; but I will go on. In my search I saw another wise man, and I said, surely he will know; he seems to have traveled far; I went to him timidly, with doubt in my face, and said modestly, "Sire, what are the Lost Arts?" With a serious eye he looked upon me and replied: "Who knows except it be Wendell Phillips? His talk on 'The Lost Arts' will save you much weary seeking."

These wise men all know the same thing, I said. It must be true. Then I set myself to hunting "Phillips's Lost Arts." I remember with what unbounded hope, what expectant joy, I had once gone to sit at the feet of an Apollo, and hear him all through the long evening tell the touching story of "The Babes in the Wood"—that old tale that had so held spell-bound many a young eye in the gloaming; though my childhood had small share of such charm. The old castle, the dear boys, the silent, bad men, the great, dark wood, the pretty redbreasts—all were to come back again, I was sure. But, as you may know, they did not come.

Well, I found "Phillips's Lost Arts"; and it was, I thought, the "Babes in the Wood" over again. Amid the tropical wilderness of Mr. Phillips's beautiful flowers of thought and brilliant rhetoric, it was somewhat difficult to find the Lost Arts. Certainly, they were not catalogued. But it was a museum in which I could ramble. And Mr. Phillips whispered just then in my ear, "Egypt." Then I turned and looked toward the Nile. There was the Sphynx—lithograph of God—still sitting upon the sands where she had sat so long—so long—watching—watching with sad, earnest eyes. She has seen all—everything. She *knows* everything, I said. I will consult the oracle.

With what we can gather from such histories of Babylon and Ninevah and Thebes and Memphis as we have, and with such suggestions as may come from other sources, let us see what conclusion we may come to as to the Lost Arts.

If Mr. Phillips is correct in his statements, this nineteenth century, up to within the last ten years, has enjoyed little art and few inventions that Egypt and Assyria and Greece and Rome did not know—know better, even, than do we. Has all art been once lost, then? Have these ancient peoples, as he says, anticipated us in every form of art and beauty, even to our stories, our dramatic plots, and our Irish bulls?

It has been supposed, until comparatively recent times, that transparent glass was not known to the ancients. Glass is said, by Roman writers, to have been discovered by accident by the Phœnicians on the Syrian coast. Wilkinson suggests that it is more likely to have been in Egypt, where the materials for glass abound. Real glass was certainly known to the Egyptians at least 4,000 years ago. They did not use it for windows, it is true, for they did not need them; but they did use it for drinking and cooking vessels, for ornaments, and for other purposes. Cut glass was invented by Lehman, an Austrian, at Prague, about 1600. But cut glass and ground glass and glass blown into all shapes required have been found in the tombs of Egypt and the chambers of buried Pompeii. Glass vessels found in Rome, Greece, and Etruria are by shape and pattern known to be Egyptian. So the making of cut glass was a lost art, though making transparent glass may not be.

The Egyptians had the art of introducing different colors into a vessel, which has never been attained by modern workers in glass, with all the improvements that have been made. The best Venetian artists have not reached the Egyptian secret.

Sometimes these bright colors are interlined with gold—blue, green, red, and gold alternating. These were not on the surface, but all passed vertically through the entire substance, so that horizontal sections showed the same pattern. They were mosaics in glass, supposed to have been made by fusing delicate rods of colored glass. Birds and other animal were thus made to perfection in solid glass, the pattern running through and showing the same on both sides, as if cut out of a solid block of colors. The designs of these patterns are often so delicate that parts of figures can be detected only by a lens. Under the microscope, the iridescent colors on a duck's neck can be seen. Such art has never been attained in modern times, we think.

They had the art, also, of engraving on gems: probably done with the diamond. In the museums of Rome and other cities of Europe may be seen seal-rings from Egypt, having engravings of the human figure and other forms too small to be clearly seen by the naked eye. There is a ring shown in the museum at Parma, once worn by Michael Angelo, that has on it an engraving of seven women, the figures so small that they cannot be distinguished without a glass. Mr. Phillips mentions one of this kind Hercules, the interlacing muscles of which, and the separate hairs on the eyebrows, could be seen, under the microscope. Rawlinson speaks of a stone from Ninevah, only twenty inches long and ten wide, that contained an entire treatise on mathematics. Cicero, quoted by Phillips, says he saw the entire Illiad of Homer written on a skin that could be put into a common nutshell. It is inconceivable that engraving or writing so minute and delicate could be made without the aid of lenses. In fact, lenses have been found in the Assyrian excavations, and doubtless were used in Egypt. But the microscope is a modern European invention. So the knowledge of it must have been lost.

What the famous Murrhine vases were, we do not know. The Roman writers describe them as Assyrian, and made of a stone found only in Asia. It was of many colors, beautifully blended and iridescent. It has been suggested that it was *fluor-spar*. The Egyptians imitated it in their glass-porcelain.

The Egyptians also had the skill to imitate the finer precious stones. The immense emeralds spoken of by ancient writers are doubtless imitations in glass, as no such stones have ever since been found or known in a natural state. One is named as being six feet long and four and a half feet broad. A statue formed from one stone was thirteen and a half feet high. An obelisk named was sixty feet high, made of four emeralds. To form such figures of glass showed greater skill, even, than to imitate the natural stones. They imitated the colors of all the finer gems—the emerald, the amethyst, the ruby, the sapphire—to the minutest tint, in all their glowing beauty and radiance, so perfectly as to deceive, not only the common people, but the expert; and made pearls that no unaided eye can distinguish from the natural ones. Such art has not since been seen.

The Egyptians were noted for their manufactures of linen, cotton, and woolen cloths; also, for embroidery. These were of such excellence that they were in demand in foreign countries. Cloth of cotton and linen mixed was also made. The wonder is, that the thread was spun and the cloth woven by means, apparently, of the simplest and rudest machinery. The skill that could produce the fabrics described by ancient writers, on such looms as are figured on the monuments where is seen the actual process of construction, is simply marvelous. And we do not see their best products either, for these were not consigned to the tombs. The beauty of the fine, costly clothing of the rich people of Thebes and Memphis has never been seen—at least, since the glory of Rome declined. It can never be known. Perhaps it perished with the people. A singular feature of those cloths was that the warp had double, treble, or even quadruple the number of threads that the woof had. A specimen in the British museum is thin, transparent, and very delicate in texture. It has 140 threads to the inch in the warp, and 64 in the woof; and the thread is so fine that it required 100 hanks to weigh one pound. There is a specimen of Indian manufacture, shown at the East India house, spun by hand, that required 250 hanks to weigh a pound. Some of these fabrics used for scarfs are fringed like our silk shawls, and woven with a selvage. Some are ornamented with stripes of indigo-blue and fawn color, the thread being colored before weaving. A specimen found near the old city of Memphis surpasses all others in fineness, having 270 double threads, equal to 540 single threads, to the inch. Its color is a brown, and it is covered with hieroglyphics so finely drawn that the lines can scarcely be traced by the eye. The threads are perfectly even—not a break or knot, as is seen in our best cambrics. The feeling of these linen cloths to the touch is like that of our silk. They had nets, also, for catching fish and birds, of such fineness of structure, that one of them could be drawn through a finger-ring, and each single thread was made up of 150 finer threads. Amasis, King of Egypt, had a corselet the threads of which were formed of 365 distinct threads. It was ornamented with figures of animals worked in threads of gold. Pliny says that the king sent several of these as presents to the Greek rulers. Many of the cloths of Egypt had patterns worked in colors on the loom, as well as those made by the dyeing or printing process. These rivaled the famous fabrics of Babylon, worked with the needle. The invention of weaving threads of gold and silver is said to have been made in Asia. But the art was early known in Egypt, or nearly 4,000 years ago. It was carried to Greece and Rome, and writers

speak of tunics made wholly of threads of gold, worn by Agripina, Tarquin, and Heliogabulus. All these textures were made by means of implements that we should call barbarous. We may safely say that such art and skill have not been seen since the decline of the Roman empire.

The Egyptians knew how to dye by chemical processes; for they used acids to make the cloth take the color equally, and also to change the color, to give any color they wished. The bright colors used were blue, scarlet, and purple. These are immortal. They have never faded. They are as bright to-day, seemingly, as when laid on. How they made them so, we do not know. *We* cannot make them, that is certain. In the tombs of Egypt, in the ruins of Babylon, in the buried chambers of Pompeii and Cyprus, the royal purple and scarlet still flame out when brought to light, as they did 2,000 or 3,000 years ago. Even in later times, only 500 years ago, the illuminated missal of the monk shows a color we cannot now produce. Ruskin, lecturing to his art students, says: "We English think we are the best chemists in the world; but we cannot make such a scarlet." The French at Lyons say, "We are the best dyers in Europe"; but the girls in Cashmere will show them three hundred distinct shades that they cannot make, or even hardly distinguish—so Mr. Phillips says.

It is said that the oriental eye can distinguish shades that no western vision can detect. This may explain the Cashmere story; but the art to produce the fadeless colors of Thebes and Ninevah is, we think, a lost art.

By our common chronology, over 3,000 years before the Christian era metals were used in Asia. Mr. Phillips says, "They can work more wonders in them there to-day than we can, and they have always done so." He says again, "When the English plundered the Summer Palace of the Emperor of China, they were astonished at the curiously wrought metal vessels of every kind, far exceeding in skill the work of any people in Europe." It has been thought that English steel is the best in the world. But the first quality of English steel put into a chronometer watch or a surgeon's lancet will rust in the climate of India. "Metallurgy is the glory of chemistry," says Phillips; "and the best steel is the triumph of metallurgy; perfect steel is the marvel of science." Now Sheffield is the great center of the English steel manufacture; but when, to-day, a watchmaker in London wishes the best steel, he has learned to send, not to this scientific center, but to the Punjaub of India, where there is no science at all. Oriental steel has been noted through all history. The Indian steel and Damascus steel do not rust. A Damascus blade can be twisted like a corkscrew, and the point made to touch the hilt, and it shines to-day as it did a thousand years ago.

Then, oriental steel will take an edge that no English or Swedish steel will. A Hindoo, says Phillips, will cut floss silk, floating in the air, with his saber. And he tells the story of Saladin, who drew his keen blade across an eider-down pillow, and laid it in two pieces; and severed a scarf, floating almost like gossamer, before it could reach the floor. "Now," he says, "we can produce nothing like this." Then we must say that the art of producing oriental steel and a Damascus blade are lost arts.

Then there are the wonders of the mechanical powers that the Egyptians used with such marvelous results. These results have never been explained. No one can tell the secret. They are unaccountable. We have steam hydraulic power, and many forms of combination of the simple mechanic powers. They had the lever, the inclined plane, and the pulley. How they, with these simple tools, could do the work they did, we don't know. It is a lost art. We can move the obelisk, true. They cut it out of the quarry in one piece, and carried it 150 miles, sometimes 800 miles, and so far as we can know, by help of their own illustrations, only with the aid of the above rude instruments. Herodotus says they used a crane. Possibly, at any rate they hung the capital of Pompey's Pillar, weighing 2,000 pounds, 100 feet high. The weight of the obelisk before the temple of Karnak, the greatest in Egypt, is given by Wilkinson as 300 tons. There are colossal figures that weighed over 800 tons; and a monolith is named that weighed 5,000 tons. The obelisks sometimes were more than 90 feet long They could not draw them straight out, on account of the narrow entrance to the quarry. They had to lift them bodily from their bed, and swing them clear. They lifted stones 40 feet long to the top of the doors and to the roofs of their largest temples; all this they did with their primitive machinery. Wilkinson says no insight by their paintings or their sculpture is given into the secret of their mechanical knowledge. So we leave it. We can only read and wonder. It is a lost art.

These are some of the lost arts. There are doubtless many others. Unless we know what ones have been continued through all ages, or at what period certain inventions and discoveries have been made, we cannot always say what are lost arts and what are not. The Hebrews learned many of the arts from the Egyptians and have carried the knowledge to every nation. Some were transmitted from Egypt and Assyria to Greece and Rome, some went out of sight with the decline and fall of these empires, and some were taken up by the races that overran Rome, and so have been perpetuated. The Egyptians understood much of geometry and astronomy, we know. All of what they knew in these sciences has never been communicated to others—at least, has not reached modern times. If they knew all the geometry and astronomy that Smith gives them credit for in his history of the great pyramid, then much of their skill is a lost art. He says they really squared the circle. No modern has ever worked this problem; so that is a lost art.

There are many other things that we have been accustomed to consider modern discoveries, and which have been set down to the credit of modern superiority of ingenuity and invention; notably among these are the steam engine, the railroad, electricity, the telescope. But Wendell Phillips says they had all these in Egypt. He says a French engineer saw the painting of a ship full of machinery, the arrangement of which could be accounted for only on the supposition that steam was the motive power. He says they had canals superior to the Suez Canal; that complete systems of ventilation were used and fully understood by them; that Solomon's Temple was protected by a system of lightning rods. Syphons were invented in Egypt, at least 1,500 years before Christ; and the bellows was in use as early as that. So, says Mr. Phillips, of all the discoveries and inventions of this boasting nineteenth century, ninety-nine in a hundred have been anticipated by the ancients. This is too sweeping, we think; we do not think all the statements can be fully verified. They doubtless knew more than we perhaps credit them with; and they had knowledge of some arts that we have never known—Lost Arts.

To sum up, these are some of them: Mosaics in glass; the introducing animals in colors into solid glass, the figure running through, both sides showing the same; the making of the Murrhine vases; artificial precious stones of mammoth sizes; manufacture of linen cloth that rivaled silk, and cloth of gold thread on machines of simplest construction, and then covered with figures the lines of which are so delicate that the eye can scarcely trace them; large fish nets of such fine texture as to be drawn through a finger-ring; producing colors that have not faded in nearly 4,000 years; metal vessels from China, that surpass the skill of any people in Europe or America; oriental steel seen in a Damascus blade and a Hindoo cimeter; malleable glass, that Prof. Silliman declares to be a physical impossibility that no amount of evidence will convince him of; glass vessels found in China, though not Chinese, that are miracles of skill, and inexplicable; chemistry that has not even been approached in modern times; mechanic powers that are simply marvels that cannot be explained; and if the statements in regard to their building on astronomical principles the great pyramid are correct, they had a knowledge that would seem must have come by divine revelation. Such are the Lost Arts.

The Willow as a Timber Tree.

And there are some trees which are deserving of more attention than has yet been given them in this country. The willows, for instance, have seldom been cultivated in a large way; and yet there are few trees so easily grown, or which will pay better for cultivation. They adapt themselves to a wide range of soil and climate. They grow on high ground and on gravelly soils not less than by the sides of streams, where we most commonly see them. They are of rapid growth, and yield a large return. The osier-willow is especially useful, we know, for the manufacture of baskets, chairs, and other articles of furniture, and we import it to the extent of $5,000,000 annually, when we might produce it easily in almost any part of our country. We hardly think of the willow as a timber tree or for the production of lumber, but only as yielding a cheap, poor sort of fuel. But in England the wood is greatly prized for many purposes. While it is light, it is also tough; it does not break into slivers. Hardly any wood is so good, therefore, for the lining of carts and wagons used in drawing stone or other rough and heavy articles. It makes excellent charcoal, especially for the manufacture of gunpowder. It bears exposure to the weather, and boards make of it are very serviceable for fences. Some species of it are admirable for use as a live fence or hedge. On account of its comparative incombustibility, the willow is eminently useful for the floors of buildings designed to be fire-proof. It grows to a large size and furnishes a great amount of lumber. There is a white willow growing at Stockbridge, Mass., which at four feet from the ground measures twenty-two feet in circumference, and extends its branches sixty feet in every direction. Tradition says it was brought from Connecticut in 1807 by a traveler, who used it as a riding switch. The Hon. Jesse W. Fell, in giving an account of experiments in tree-planting on an extensive scale in Illinois, says: "Were I called upon to designate one tree, which, more than all others, I would recommend for general planting, I would say unhesitatingly it should be the white willow." Prof. Brewer says: "In England, where it is often sixty to seventy feet high in twenty years, there is no wood in greater demand than good willow. It is light, very tough, soft, takes a good finish, will bear more pounding and knocks than any other wood grown there, and hence is used for cricket bats, for floats to paddle-wheels of steamers, and brake-blocks on cars It is used extensively for turning, planking coasting vessels, furniture, ox-yokes, wooden legs, shoe-lasts, etc." Fuller says: "It groweth incredibly fast—it being a by-word that the profit by willows will buy the owner a horse before that by other trees will pay for a saddle." The basket willow, well cultivated, will yield a net income of $150 a year to the acre. On the whole, therefore, it would seem that the various kinds of willow, the economic value of which has been hitherto entirely overlooked in our country, are eminently deserving of attention, and will amply reward those who cultivate them.—*Popular Science Monthly.*

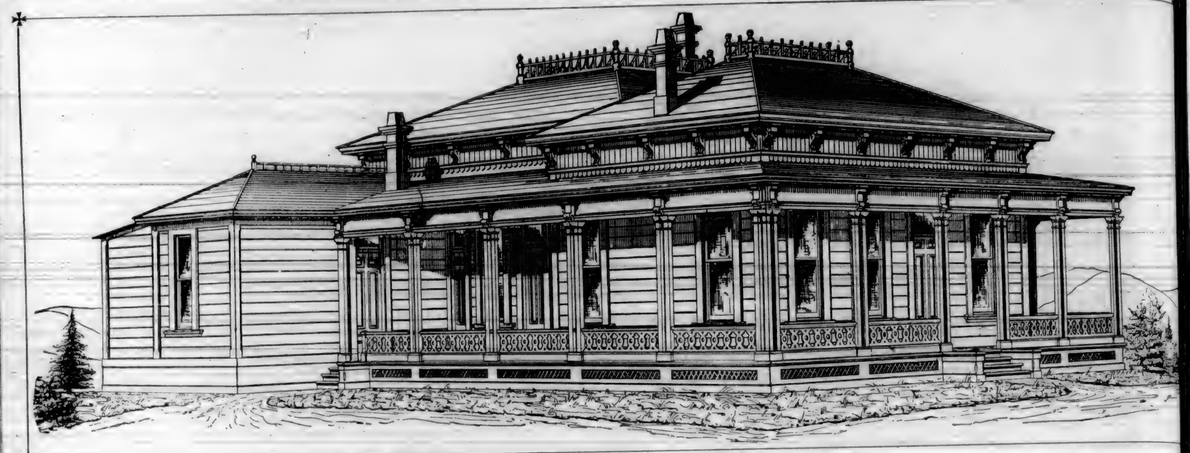

PLATE 1.—PERSPECTIVE VIEW OF COUNTRY DWELLING.

Our Illustrations.

Plate 1 is the perspective of a very convenient country house; Plate 2 being the front elevation, and Plate 3 the side elevation. It is the intention to make a large attic over the dining and sitting room portions of the building, to be used for a store-room and the apartments of the "hired help" during the harvest season. Plate 4 is the ground plan.

Garfield Memorial.

EASTERN COMMENTS.

We advise our young readers who are sometimes tempted to throw away their time and reputation by entering into second-rate competitions, to read in the CALIFORNIA ARCHITECT AND BUILDING NEWS the comments upon the designs submitted for the Garfield Memorial which the people of California are intending to erect. As every one may not have heard of this artistic event—the most important one in the history of the Pacific Coast—we ought, perhaps, to premise that some months ago circulars were sent out announcing that it was in contemplation to spend some twenty-five thousand dollars, if we recollect rightly, upon a monument which should do honor at once to our late lamented President and the people of California, and inviting competitive designs for the structure, upon terms the most discreditable to the individuals offerings them, and the most degrading to those foolish enough to accept them, which we ever saw in print, except, perhaps, those set forth in the amazing invitations by which State house commissioners south of Mason and Dixon's line encourage the fine arts. In brief, all the persons desirous of immortalizing their names in connection with the California Garfield Memorial were required to furnish full working-drawings, specifications, and details, the proper value of which should be at least fifteen hundred dollars for each set, and were promised in return that *one* among them *might* be chosen to receive the magnificent sum of three hundred dollars, for which he would be obliged to abandon his drawings, papers, and models absolutely to the committee, and sign a receipt in full of all claims and demands. Although architects are popularly supposed to have an idiotic passion for doing work for nothing, even the Californians, unaccustomed as they are to such contests, were attracted by the disparity between the service asked for and its reward, and have come by insensible degrees, as the extract well shows, to look upon the competition as a farcical combat between objects of deserved ridicule, whose struggles after a preposterously inadequate prize afford legitimate sport to the more rational lookers-on. To a certain extent their opinion is justified, and although we can pity the folly of those who responded to the almost insulting invitation, we must condemn them as having done what they could, not only to lower themselves and cloud their own future prospects, but to degrade and injure the profession to which they claim to belong; and it will do no harm for the Californians to consider at the same time, while they are laughing at the "Nightmare-Mauresco-Japanese" models offered for their choice, whether the mode which they have adopted for securing a design for their costly monument without paying the designer seems likely to prove entirely successful.—*American Architect.*

Laying Walnut Veneer.

First have the veneer and the surface to be veneered very smooth, by going over with a fine toothing plane to make out all saw marks. The veneer must be left a little larger than the surface to be covered. The wood—not veneer—must be well mixed with thin glue; you can do this by dipping the brush in the glue and then in the boiling water, and then allowed to dry. Have very good glue, boiling hot, laid on the wood and veneer, lay the one on the other, and then well press together, having first damped that side of the veneer not to be glued with hot boiling water by a sponge. If a large piece, it will require a hot iron run over the surface to keep it down. It will all spoil if the iron is too hot. It must be clamped or weighted by laying boards on all night.

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Palliser's American Cottage Homes, illustrated by 260 drawings, with forms of contract, specifications, sections, details, etc. We are the only agents for this new work on this coast. On receipt of the publishers price, $5, we will forward a copy to any address.

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A compound for artificial stone, which has received late protection by patent, consists of three and one-half parts of clean sand to one part of Portland cement, mixed thoroughly, and combined in a working consistency with a composition consisting on the one part of five gallons of water, and on the other part of one gallon of the mixture made of the following ingredients and in the following proportions, to wit: one gallon of silicate of soda, one pound of carbonate of iron, one and a half pounds of graphite, two pounds of raw umber, and two gallons of rain water at the boiling temperature, and all thoroughly mixed.

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PLATE 2.—FRONT VIEW OF COUNTRY DWELLING.

PLATE 3.—SIDE VIEW OF COUNTRY DWELLING.

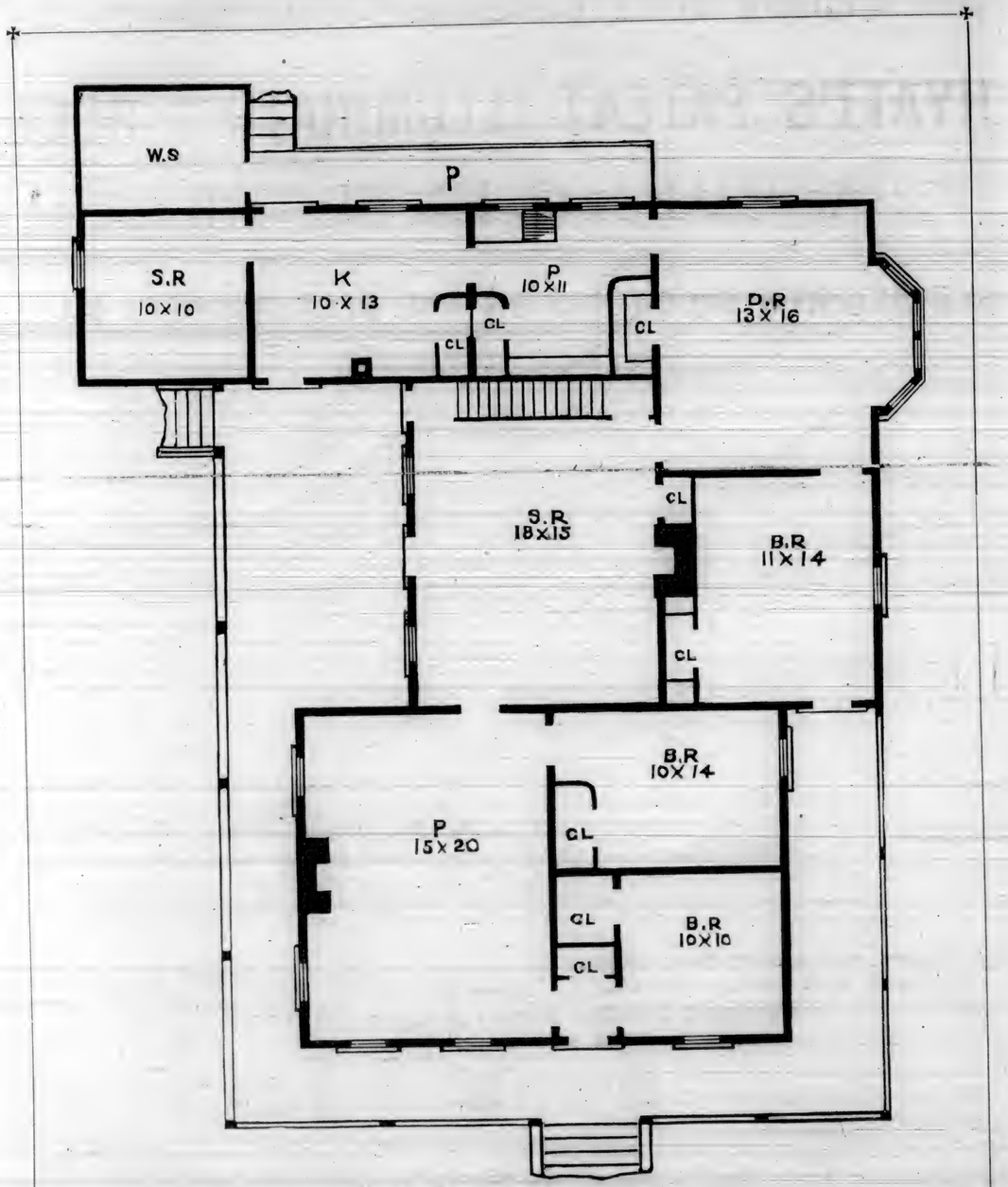

PLATE 4.—GROUND PLAN OF COUNTRY DWELLING.

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In the Business Part of the City by using

HYATT'S PATENT ILLUMINATING ROOF

—AND—

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THE LENSES MAGNIFY, HEAT, AND DO NOT BREAK.

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The present dark, damp Cellars, or Coal Vaults, of old buildings made light, cheerful, and well-ventilated Business Apartments suitable for Offices.

Read the following of the many Testimonials received:

LEVI STRAUSS & Co., Importers, 14 and 16 Battery Street,
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MESSRS. P. H. JACKSON & Co., No. 2 California Street:

The alteration made by you by cutting out the six door sills and risers on the front part of our store, 14 and 16 Battery Street, and substituting HYATT'S PATENT ILLUMINATING ROOF, is quite satisfactory in making in the basement apartment below, in the front part, all that we could desire as regards light. **Our entry clerks are now able to work without the use of gas.**

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The Public are requested to examine the **large quarter circle** skylights, recently erected in the rear of **Senator Fair's** building corner Sansome and Pine. Also **A. B. McCreery's** building corner of Pine and Davis. By the use of these heavy Skylights, which are both fire and burglar-proof, **no extra charge in rates is made by the Insurance Companies than if no Sky-lights were used,** as they are not destroyed by fire, like the wood and sheet-iron skylights in common use; besides the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

☞There are many deep stores in this city that are much in need of light, and by an addition of these Skylights all light can be obtained, besides security againt thieves is maintained.

The appearance of the Skylight, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan Building, as altered, has these Skylights on the rear of the deep stores.

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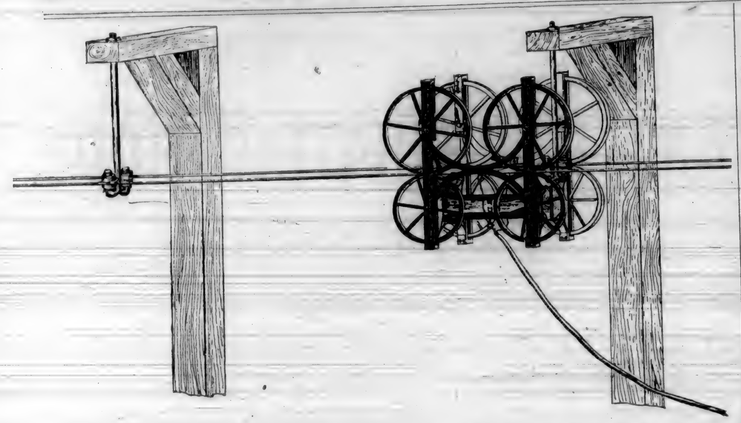


McGlashan's Train Telegraph.

The above cut is an illustration of an incalculable beneficial invention made by C. F. McGlashan of Santa Barbara, California. It is the object of the inventor to furnish a practical method of establishing constant telegraphic communication between any number of moving railway trains and any number of stations. By its use, conductors are enabled to tell the exact location of other trains on the same track, thus doing away with any possibility of accident by the collisions of moving trains.

The cut shows a side view of truck, posts, and wires. The posts are ordinary telegraph posts, set from four to twenty feet from the railroad tract, and at distances of from sixty to one hundred feet apart. Beams one and a half feet long project inward from the top of the posts toward the track, and from these the wires are supported above and alongside the tract about sixteen feet from the ground. The hight of the wires is immaterial except when directly over the side of the car, when they must clear the head of a person climbing up the side ladder of a car. The truck is drawn along by the moving railway car, by means of a rubber tube. The two halves or sides of the truck are insulated from each other, and from each side a wire passes down through the rubber tube into the car (not shown), and is attached to the usual telegraphic instruments, consisting of key, sounder, and relay. The bracings of the truck are entirely beneath the wires.

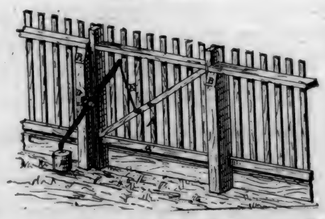
In the tube are two wires which may be attached to any portion of the braces of either side, as the electric current is communicated through the wheels simultaneously to any portion of the metallic braces. The upper wheels are from twelve to eighteen inches in diameter, and are provided with self-lubricating boxes. The lower wheels may be much smaller than represented, as their only office is to assist in clasping the wires, and in preventing the possibility of the truck's jumping the track. The tube passes around a drum in the car, which is provided with a spring which takes up all slack. In case of the derailing of the car, the tube lengthens out to any desired extent, so that no damage will be done to either truck or wires.

On March 25th the practical utility of the invention was tried on the S. P. R. R. The trial was a perfect success. The truck in passing the supports did not make the slightest perceptible halt. Perfect communication was kept up by the following process: Battery wires are attached to opposite end of each main wire, the other end of each wire remaining "open." The current passes up one battery wire to the main wire, along which it passes to the truck drawn by the moving train. Communicating with the metallic wheels and braces on this side, it descends one of the insulating wires contained in the tube, to the instruments in the car. After passing through these instruments, it ascends the other wire contained in the tube, to the other side of the truck, and the other main wire, along which it passes to the other or farther battery wire. Each battery wire is connected with ordinary telegraphic instruments and with ground wires. The circuit is completed through the earth.

The weight of the truck, actual size, used in the experiment was ten pounds, yet it glided along so smoothly that its tension never at any time exceeded three pounds. The inventor, in answer to an objection that the cost of wires and poles is great, replies that safeguards to life and property are not costly at any price. He adds that his "train telegraph" will give train dispatchers absolute control over train men, and nothing will be left to their judgment, and train men will thus become what railroad men desire, machines to run by order. Each truck is provided with scrapers and knives to keep these wires clear of obstructions, and so fitted are the trucks that they cannot be torn from the wires.

We shall watch the full development of this invention with much interest, and will lay before our readers, from time to time, articles of interest in connection with it, so that full justice may be done to a worthy California inventor.

Gate-Closer.



The bearing *D* is fixed to the gate-post *B* in an inclined position, and the lever *C* has a journal *c* pivoted on the incline bearing. Its position is such that when the gate is opened the lever moves around the post. At *F* is shown the weight, and at *E* the line connecting the lever with the gate. Henry Gross, Tiffin, Ohio, is the patentee.

Maple for Cabinet-Work.

Almost every one knows something about maples, but very few, even of experienced cabinet-makers and carpenters, ever think of these woods as being available for anything but firewood, or, perhaps, for the making of some delicate box where white holly is not available. The white maple (*acer rubrum*) is one of the whitest woods growing in this country, only exceeded in that respect by one or two. It is, however, on account of its extreme softness and general lack of strength, practically valueless. The sugar maple (*acer saccharinum*) is one of the most useful trees we have. While it is very cheap in our markets, we cannot consider that it is a valueless tree, this low price of the timber resulting from the fact that it is not fashionable, and has not been used to any extent for anything save mill-work and rough carpentry. Its grain is very fine, and, in hardness and general adaptability for fine carving and cabinet-work, stands next to box-wood. Beech somewhat exceeds it in the fineness of grain, but is not nearly so beautiful. The great strength of maple renders it valuable in all kinds of delicate work, preventing it from being readily broken, and, at the same time, allowing a slenderness of construction quite inconsistent with any weaker material. Almost all maple has in its structure a certain waviness which causes it, when polished, to reflect light and to appear almost dapple. Other varieties are the well-known bird's-eye maple, which, thirty or forty years ago, was a very popular wood for certain kinds of cabinet-work. Many persons suppose that the bird's-eye maple is a separate or peculiar tree, differing from other maples. This is a mistake. Most of the rock-maples have a tendency to form little hillocks beneath the bark, and each layer of wood during growth is evenly covered over with these projections, which do not grow larger, but retain their original size. The result of this is, that when a slice is taken through one of these little lumps or pits, we find that the grain of the wood is bent up or down in a circle, and, of course, reflects the light differently from that part which is horizontal. In what are called bird's-eye maple trees, these little hillocks or pits in the bark are disposed closely together and regularly throughout the tree. In opening such a tree, when the cut is parallel to the bark, we have a board showing the bird's-eye maple markings. If, however, the cut is made radially, it passes through the hillocks vertically, and, as they extend from the heart to the bark of the tree, we have something which produces upon the wood the effect of a wave. When a log is sawn so as to show the eyes, it is known as bird's-eye maple; and when cut radially, so as to make the waves most prominent, it is called waved maple, or, in some places, curly maple. The wave pattern will almost always be found in any bird's-eye board by looking at the edge, and *vice versa*. Maple has one advantage which has been improved very little by cabinet-makers, and that is its susceptibility to staining processes. The wood is capable not only of being ebonized, but of taking several very beautiful colors. We have seen bird's-eye maple for small work stained to a very beautiful drab, which harmonizes well with both furniture and decorations. The supply of this wood is abundant, and, fortunately, can be obtained in large size. Hitherto its principal value has been for fire-wood.—*Furniture Gazette.*

Steel Square Problems.

A new work expaining the uses of the Steel Square. Sent post-paid to any address upon receipt of 50 cents.

The American Workingman.

Dr. Lyon Playfair, one of the most prominent of Englishmen of science, and a member of Parliament, who has lately returned to his native country from a tour in the United States, has published some of the results of his observations of men and things in this country, which convey some very instructive and suggestive statements bearing upon the industrial future of the United States. Coming as they do from a representative Englishman, of large views, thoroughly competent by reason of his intimate familiarity with the industries of his own country, and favored with every facility for obtaining accurate information, Mr. Playfair's opinions are of special interest.

Mr. Playfair publishes in a recent number of *Macmillan's Magazine* a paper entitled, "Industries of the United States in Relation to the Tariff," in which we find some material for future consideration, and some comments on the position of the workingman in the manufacturing States, which last specially interests us here. We shall give, therefore, in the following a brief summary of the author's impressions on this subject:

Mr. Playfair states that the true American mechanic, by descent, education, and training, is excellently adapted to his work. His chief center is in New England, though he is rapidly spreading everywhere. The original settlers in New England were men of strong will, and above the average of the old country in education and enterprise. Their early love for education is shown in the fact that soon after their settlement they established Harvard College. These men landed on a rough, inhospitable coast covered with wood, and they had few tools with which to conquer nature. They were obliged to be men of many resources. In possession perhaps of a single tool, they turned it to many purposes, and if it did not suit they altered it. This reliance, inventiveness, and industrial application developed together.

The soil of the New England States is the poorest for agricultural purposes, while the climate is not sufficiently changeable for a large variety of crops. The rocky and poor soil upon which the early settlers landed forced the increasing population into manufactures and commerce, so that they acquired habits of industry and thrift. As they gradually extended westwards and southwards, better climate, land, and raw material opened up new sources of wealth, and the qualities acquired by the first colonists enabled their descendants to take advantage of improved conditions.

The New Englanders never forgot that their superior education had been of powerful assistance to them as early settlers, and they kept up knowledge among their descendants. It is a rule among Americans that the school-house must precede the factory, and that capital applied to industry without knowledge is worthless.

Even the Puritan sense of religion, Mr. Playfair believes, has had great effect on manufactures. The commandment, "Thou shalt not steal," is carried out in manufactures. When cotton goods are sold, the material is wholly cotton, and is not weighted with China clay or sulphate of baryta. The 600,000 muskets sent out to Turkey during the war were made to shoot and not to sell.

American goods, he affirms, are dear, but they are true and good. The example of New England spreads over the Union, and has produced an honest and efficient workman everywhere. The high price of labor gave a great stimulus to the invention of labor-saving machinery, while the patent laws wisely encouraged inventions.

Thus, the true American mechanic is generally superior to, though not dearer than, the mechanics who enter by immigration. He is too dear for inferior work. But even in the case of imported labor, American industry has a great advantage over other countries. The emigrant arrives in the full power of production, while the country which sent him forth had to pay for his childhood during the years in which he possessed no productive value.—*Builder and Woodworker.*

Market Reports.

LUMBER.—Stirring times with steady demand is all that can be said of the market the past month.

Receipts since January 1st, 1882:

Lumber	80,417,261
Shingles	14,321,761
Laths	7,611,100

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	
Flooring and Stepping	37 50
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping....per M feet	27 50
Ship Plank, Rough	" 28 50
" Planed 1 side	" 32 50
" 2 sides	" 35 00
Deck Plank, Rough	" 33 50
" Dressed	" 37 50
Laths	per M 3 75
Wool Slats	" 10 00
Shakes	" 12 00
Redwood Posts	per piece 17½

Redwood.

Rough Merchantable	per M feet 22 50
" Refuse	" 18 50
Surface No. 1	" 37 50
" 1 x 6	" 35 00
" No. 2	" 27 50
Rustic, No. 1, 1 x 8	" 35 00
" No. 1, 1 x 10	" 37 50
" No. 2	" 32 50
" Under 10 feet	" 32 50
T. & G., 1¼ x 4 and 1¼ x 6	" 37 50
" 6 in. 12 ft. and over	" 35 00
" " under 7 feet	" 32 50
" " No. 2	" 27 50
T. & G., Beaded, 12 feet and over	" 35 00
" " 7 to 11 feet	" 30 00
" " under 7 feet	" 27 50
Half-inch Surface	" 30 00
Pickets, Fancy	" 27 50
" Rough, Pointed	" 20 00
" " Square	" 17 50
Siding, ½ inch	" 25 00
Shingles	per M 2 50
Battens, ¾ inch, lineal feet	" 1c

NAILS.—Since January 1st, 1882, we have imported 138,672 kegs.

10 to 60 pennies, are quoted at	$4 00
8 " "	4 25
6 " "	4 50
5 and 4 " "	5 00
4 and 5 pennies, brad heads, at	5 25
6 " "	5 50
8 " "	5 75
10 and upward "	6 00
3 penny fines "	7 50

PAINTS.—A new company has made its appearance, introducing the OMAHA WHITE LEAD. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8 cts. per lb. and 7¾ cts. in "ton" lots.

Building Intelligence.

SAN FRANCISCO.

Operations continue brisk both in city and country. We hear of many improvements to be made by our farmers after the harvest is over. Mechanics are scarce.

Owing to the large number of buildings at present being erected, we have deemed it necessary to abbreviate the terms used. Hence in this and in future issues the following letters will have the accompanying meaning: *A.*, architect; *C.*, contractor; *O.*, owner; *O.* and *B.*, owner and builder. The points of compass by E., W., N., and S.

In our last issue the building reported on corner Clay and Van Ness avenue, the cost was given as $3,500. *It should have been* $35,000. *O., Steison; A., H. C. Macy.*

Five-story and basement brick building corner Turk and Mason. *O.*, Schroth & Westerfield; *A.*, A. Schroepfer; brick work, G. T. Waterson; carpenter work, G. B. Wilcox; cost, $46,000.

Corner Dolores and Sixteenth streets, nave and tower to church. *O.*, St. Francis Society; *A.*, P. Huerne; carpenter work, Glenan & McManus; brick work, O. E. Brady; cost, $30,000.

Additions and alterations to frame dwelling N. W. corner Van Ness and California. *O.*, Mrs. Pope; *A.*, Wright & Sanders; day's work; cost, $10,000.

Three-story frame addition to building S. W. corner Bush and Stockton. *O.*, J. Hugg; *A.*, V. Hoffmann; *C.*, G. Krohn; cost, $17,500.

Three-story and basement brick building on Mission street, between Second and Third. *O.*, Otto Muser; *A.*, Curlett & Eisen; *C.*, Ellis & Kincaid; cost, $12,000.

Two two-story and basement frame dwellings on E. side Leavenworth, between Eddy and Turk. *A.*, C. J. Wingerter; *A.*, V. Hoffmann; *C.*, Hutchinson & McLean; cost, $12,000.

Two-story and basement frame dwelling on W. side Leavenworth, between Eddy and Turk. *O.*, C. J. Wingerter; *A.*, V. Hoffmann; *C.*, Hutchinson & McLean; cost, $6,000.

Additions to three-story brick building, Pine, between Front and Davis. *O.*, Gen. Kirkham; *A.*, J. P. Gaynor; *C.*, — Pratt; cost, $4,000.

Alterations and additions to dwelling corner Washington and Taylor. *O.*, W. T. Coleman; *A.*, J. M. Curtis; day's work; cost, $8,560.

Fitting up offices corner Market and Main. *O.*, Union Packing Co.; *A.*, J. M. Curtis; *C.*, Gray & Stover; cost, $1,2 0.

Additions to three-story brick building on Battery, near Bush. *O.*, Well Bros. & Co.; *A.*, J. P. Gaynor; cost, $9,000.

Four-story and basement brick building, F. st, near Dupont. *O.*, Schweitser: *A.*, Schmidt & Havens; *C.*, Gray; cost, $50,000.

Two two-story frame dwellings on Sutter, between Hyde and Leaveuworth. *O.*, P. Conner; *A.*, Schmidt and Havens; *C.*, Mahoney Bros.; cost, $16,000.

S. W. corner Larkin and Fulton, five two-story frame buildings—flats. *O.*, Mrs. A. Skae; *A.*, Schmidt & Havens; *C.*, R. Smilie; cost, $18,500.

Two-story frame, Valencia, between Eighteenth and Nineteenth. *O.*, H. D. & D. N. Schumacher; *A.*, Schmidt & Havens; *C.*, W. Plums; cost, $5,600.

Two two-story frame—four flats—Turk street, between Polk and Larkin. *O.*, J. H. Von Ahnden; *A.*, Schmidt & Havens; *C.*, F. Klatt; cost, $12,000.

Two two-story frame dwellings with stable, O'Farrell, between Buchanan and Webster. *O.*, Mrs. Georgie Days; *A.*, Schmidt & Havens; *C.*, J. Dutton; cost, $8,000.

Three-story frame on Broadway, between Webster and Fillmore. *O.*, — Hewston; *C.*, Knight & Littlefield; cost, $7,000.

Three two-story frame N. side Broadway, between Mason and Taylor. *O.*, M. D. Sweeny; day's work; cost, $8,500.

Two-story frame corner Lyon and California. *O.*, B. F. Sterrett; *A.*, H. D. Mitchell; *C.*, J. Geary; cost, $4,500.

Repairs to dwelling on Fell street, between Van Ness and Franklin. *O.*, — Brooks; *A.*, T. J. Welch; *C.*, J. T. Blake; cost, $3,500.

Fitting up offices, etc., S. E. corner Davis and Sacramento. *O.*, Sol. Wangenheim & Co.; *C.*, W. B. Kreger; *A.*, Wolfe & Son; cost, $1,500.

Tenth street, between Howard an Mission, one-story and basement cottage. *O.*, — Jansen; *A.*, — Schroepffer; cost, $2,200.

Three-story brick building on E. side Main street, between Market and Mission. *O.*, Cutting Packing Co.; *A.*, H. D. Mitchell; *C.*, W. E. Stevens; cost, $50,000.

Two-story frame, attic, and brick basement, on corner Gough and Washington streets. *O.*, F. Goad; *A.*, Curlett & Eisen; *C.*, D. Perry; cost, $43,000.

Repairs and additions to building corner Valencia and Sixteenth. *O.*, Dean & Simpson; *A.*, McDougall & Son; *C.* Fitzpatrick; cost, $10,000.

Two-story frame, brick basement, on W. side Scott, between Post and Geary. *O.*, R. J. Techau; *A.*, Godart; day's work; cost, $12,000.

Two-story and basement frame dwelling on S. side O'Farrell, between Steiner and Pierce. *O.*, E. Preston; *A.*, Townsend & Wyneker; *C.*, Magrane; cost, $6,000.

Two three-story frame dwellings on S. side California, between Buchanan and Laguna. *O.* and *B.*, C. L. Hinkle; cost, $13,000.

Two-story and basement frame dwelling on S. side Steiner, between Ellis and Eddy. *O.*, Jos. Scheerer; *C.*, F. Guteran; cost, $3,000.

Two-story and basement frame dwelling on S. E. corner Bush and Broderick. *O.*, F. Maxson; *A.*, Curtis; *C.*, J. Dutton; cost, $2,200.

Two-story frame dwelling, brick basement, W. side of Church, between Twenty-eighth and Twenty-ninth. *O.*, Father Breslin; *A.*, T. J. Welsh; *C.*, B. Duffy; cost, $3,000.

Two-story and basement, double dwelling, W. side of Shotwell, between Fourteenth and Fifteenth. *O.* and *B.*, Jos. Goss; cost, $3,800.

Two-story frame, brick basement, on N. W. corner Fulton and Buchanan. *O.*, J. Hayes; *A.*, T. J. Welsh; *C.*, J. W. Smith; cost, $3,500.

Two-story frame dwelling on Ivy avenue, between Polk and Van Ness. *O.*, P. R. Schmidt; *A.*, Schmidt & Havens; *C.*, Plums; cost, $ —.

Repairs, alterations, etc., to building corner Sansome and Halleck. *O.*, Alaska Commercial Co.; *A.*, Kenitzer & Raun; *C.*, Mahoney Bros.; cost, $15,000.

Two-story frame on W. side Pierce, between Bush and Pine. *O.*, George Edwards; day's work; cost, $3,800.

Six two-story frame tenements on S. side Bush, between Webster and Fillmore; *O.*, C. L. Taylor; *C.*, T. Nash; cost, $5,000.

Additions to two-story building N. side Commercial, between Front and Davis. *O.*, H. Frank; *C.*, J. Cox; cost, $2,000.

Alterations and repairs to two-story frame E. side Webster, near O'Farrell. *O.*, W. Wolf; *A.*, S. & J. C. Newsom; day's work; cost, $3,500.

Alterations 17 Turk street. *O.*, Haskell; *A.*, Townsend & Wyneken; *C.*, D. Perry; cost, $3,000.

Repairs to two-story frame corner Golden Gate avenue and Webster. *O.*, C. Worth; *C.*, Geo. Hansbrough; cost, $2,500.

Two-story and basement frame on W. side Laguna, between Ellis and Willow avenue. *O.*, Badger; *A.*, T. J. Welch; *C.*, P. Laherty; cost, $2,750.

One-story frame, brick foundation, W. side Laguna, be-

tween Ellis and Olive avenue. *O.*, J. P. Meadau; *A.*, J. Gosling; *C.*, T. J. Hamilton; cost, $2,500.

Two one-story frames corner Fifteenth and Dolores. *O.*, Mrs. E. Bolton; day's work; cost, $2,600.

Additions and repairs on Minna street, between Third and New Montgomery. *O.*, Sisters of St. Vincent School; *C.*, F. Crowley; cost, $4,000.

Two-story frame corner Sanchez and Dorland. *O.*, C. B. Williams; day's work; cost, $2,500.

One-story and basement frame cottage, Church, near Twenty-first. *O.*, W. Colton; *A.*, W. Schrof; *C.*, A. J. Brown; cost, $2,000.

Repairs and additions to three-story frame on Fifth street, near Howard. *O.*, N. P. Perrine; *C.*, J. T. Whitney; cost, $3,000.

Brick building on corner of Greenwich and Battery, *O.*, Captain Roxbury; *A.*, Pelton; cost about $30,000.

Two-story frame building on Tenth street, between Bryant and Brannan. *O.*, E. Lord; day's work; cost, $2 250.

Two-story frame dwelling corner Connecticut and Napa. *O.* and *B.*, C. M. Hawes; cost, $4,000.

Buildings South San Francisco, between Fifteenth avenue and Islais creek. *O.*, Poly, Heilbron & Co.; *C.*, H. G. Giles; cost, $4,500.

Repairs to two-story frame on Seventeenth avenue, near R. R. avenue. *O.*, L. Funcke; *C.*, F. Barker; cost, $2,500.

Three-story and basement frame on Kentucky, near Sierra. *O.*, V. Bellman; *A.*, Geo. Bordwell; day's work; cost, $5,000.

Two-story frame on Kentucky, near Sierra. *O.*, H. McCrea; *C.*, B. F. Ellis; cost, $2,500.

Repairs to building junction Market and Turk. *O.*, Coll Deane; *C.*, E. Farrell; cost, $8,000.

Repairs to frame Powell, between Ellis and Eddy. *O.*, E. J Stoddard; *A.*, Schmidt & Havens; *C.*, O. E. Brady; cost, $6,000.

Two-story frame, brick basement, N. W. corner Union and Steiner. *O.*, H. Holtmeir; *C.*, A. H. Taylor; cost, $3,800.

Two-story and attic frame dwelling N. E. corner Jackson and Fillmore. *O.* and *B.*, — Shephard; cost, $5,000.

Two-story frame, brick basement, N. E. corner Fillmore and Willey. *O.*, — Logan; *A.*, H. T. Bestor; *C.*, A. Jackson; cost, $3,500.

Two two-story frame dwellings on N. side Bush, near Pierce. *O.* and *B.*, G. Edwards; cost, $4,000.

Repairs on two-story frame 1218 Jackson street; *O.*, — Bruce; *C.*, J. Grant; cost, $2,500.

Two-story frame N. side Filbert, between Laguna and Buchanan. *O.*, — Galloway; *C.*, J. Geary; cost, $1,500.

One-story and basement frame E. side Beidemann street, between Ellis and O'Farrell. *O.*, J. Connell; day's work; cost, $1,400.

Alterations and repairs to three-story frame S. side O'Farrell, near Pierce. *O.*, P. H. Jones; *C.*, J. F. Bryne; cost, $1,500.

One-story frame cottage on Eleventh avenue, near R. R. avenue. *O.*, J. A. C. Dirks; *C.*, C. E. Dunshee; cost, $1,600.

Additions to slaughter-house, First avenue. *O.*, Poly, Heilbron & Co.; *C.*, H. G. Giles; cost, $1,500.

Two-story frame addition to St. Joseph Orphan Asylum, Eighteenth avenue, between Q street and Silver avenue. *C.*, H. G. Giles; cost, $1,000.

Two-story and basement frame dwelling, Sierra, near Kentucky street. *O.*, R. J. Linehan; *C.*, T. Sullivan; cost, $1,800.

Two-story frame dwelling corner Sierra and Iowa; *O.*, J. Gillick; *C.*, C. E. Dunshee; cost, $1,800.

Alterations and additions to two-story frame dwelling, Iowa street, near Solano. *O.* Mr. McLean; *C.*, B. F. Ellis; cost, $2,500.

One-story frame, Nebraska, near Alameda. *O.*, Mrs. M. Kelley; *A.*, McDougall & Son; *C.*, J. S. Happ; cost, $1 250.

One-story frame corner Twenty-fourth and Treat avenue. *O.*, J. Alpers; *C.*, J. H. Wyman; cost, $1,500.

One-story frame, Church street, between Twenty-second and Twenty-third. *O.*, Mr. Mayhew; *C.*, W. Walsh; cost, $1,300.

Two-story frame corner Fourth and Bryant. *O.*, Buttgenbach; *C.*, O. Ratz; cost, $1,000.

Alterations to frame, Sixteenth street, near Dolores. *O.*, Mr. Anderson; *C.*, C. M. Mason; cost, $1,600.

Repairs to one-story frame corner Sutter and Lyon. *O.*, E. Lyon; day's work; cost, $1,000.

Repairs to frame dwelling, Folsom, near Ritch. *O.*, Mr. Seller; *C.*, — Barker; cost, $500.

One-story frame, Post, between Baker and Lyon. *O.*, Mrs. Katie Lyon; *C.*, J. W. Smith; cost, $600.

Repairs to two-story frame, Turk, near Buchanan. *O.* and *B.*, G. Hartman; cost, $400.

Mission, near Twentieth, one-story frame. *O.* and *B.*, A. Small; cost, $900.

Alterations to two-story frame, Page, near Gough. *O.*, — Wertch; *C.*, H. J. Weiss; cost, $900.

Alterations, Dore street, between Bryant and Brannan. *O.*, Thomas Hagan; *C.*, B. Franklin; cost, $750.

Alterations, Kentucky, near Sierra. *O.*, V. Bellman; *C.*, J. Rose; cost, $500.

Repairs, N. side O'Farrell, near Laguna. *O.*, Lane; *C.*, J. G. Bernard; cost, $1,000.

Repairs, S. side O'Farrell, between Pierce and Scott; *O.*, H. Doscher; day's work; cost, $900.

One-story frame S. side Bush, near Scott. *O.*, Mrs. Wolter; day's work; cost, $900.

Alterations and additions to two-story frame S. E. corner Jackson and Taylor. *O.*, Lloyd Tevis; *A.*, Kenitzer & Raun; day's work.

Two-story and basement, double dwelling, E. side Pierce, between California and Sacramento. *O.* and *B.*, Thomas Rendall.

Two-story frame N. side Market, between Fifteenth and Sixteenth. *A.*, T. J. Welch; *C.*, J. L. Binet.

Three-story addition to 450 Bryant. *O.*, J. Curry; *C.*, — Ingerson; cost, $1,600.

SACRAMENTO.

Two-story and basement brick building on J street, between Tenth and Eleventh. *O.*, J. Breuner; cost, $9,000.

Brick building on Second street, between I and J. For depot of Omaha White Lead Co. *O.*, Scofield & Tevis; *A.*, Newsom & Gash; *C.*, Geo. D. Nagle; cost, $17,000.

Building for the First Artillery Regiment. *C.*, M. Madden; cost, $9,600.

OAKLAND AND VICINITY.

At Emory Station, West Oakland, the Judson Manufacturing Company are erecting works and buildings for the manufacture of nails, etc. They consist of two two-story frame, brick foundation, three one-story frame, two one-story brick buildings, and one one-story and basement brick building. *A.*, G. F. Clapp; *C.*, E. R. Forsythe; cost about $50,000.

Two-story frame, West Oakland. *O.*, — King; cost, $5,000.

Six one-story frame cottages on Division street, between Cedar and Bay. *O.*, T. Page; *C.*, J. Underwood; cost, $4,200.

Two-story frame corner Eighth and Willow. *O.*, R. Orth; *C.*, Knowles & Wellbye; cost, $2,500.

Repairs to frame, Chester, near Seventh. *O.*, T. Kenney; *C.*, T. F. Broderick; cost, $500.

Repairs to two-story frame corner Ninth and Chester. *O.*, Y. Abrego; *C.*, R. P. Sanches; cost, $750.

Two-story frame corner Twelfth and Center streets. *O.*, — Peters; *C.*, W. H. Curkin; cost, $2,500.

Three frame cottages, Eighth, near Eighteenth. *O.*, Hon. P. Thompson; *A.*, Matthews & Son; *C.*, F. Dahl; cost, $6,000.

One-story frame cottage corner Franklin and Fifteenth. *O.*, L. W. Wessig; *A.*, Matthews & Son; *C.*, F. Dahl; cost, $2,000.

One-story frame cottage at Highland Park. *O.*, E. C. Sessione; *A.*, Matthews & Son; *C.*, Brown; cost, $2,500.

Corner Eighth and Franklin, two-story frame. *O.*, P. Boogar; *C.*, — Denke; cost, $2,500.

OAKLAND.—One-story frame cottage, Thirteenth street, between Wood and Willow. *O.*, J. Fahrenholz; *A.*, McDougall & Son; *C.*, S. Hatfield; cost, $1,500.

SEATTLE.

Two-story brick building on Commercial street. *O.*, McNaught, Walker & Renton; *C.*, McDonald & Reitze; cost, $9,500.

Two-story and basement brick building. *O.*, Boyd & Poncin; *A.*, W. E. Boone; *C.*, Ranke & Lohse; cost, $18,000.

Two-story brick building—city offices and engine house. *C.*, E. W. Rea; cost, $8,000.

Frame building for M. E. Church. *A.*, W. E. Boone; day's work; cost, $8,000.

Two-story frame building for Sisters of Charity; day's work; cost, $20,0 0.

Frame building for the Catholic Society. *A.*, Donald McKay; cost, $8,000.

Three-story brick building. *O.*, J. H. Marshall; *A.*, W. E. Boone; *C.*, J. Keenan; cost, $18,000.

ASTORIA.

Three-story and basement brick building. *O.*, I. O. O. F. Association; *A.*, Clinton Day; cost, about $30,000.

MARTINEZ.

Two-story frame dwelling, brick foundation, near town. *O.*, Dr. Strentzel. *A.*, Wolfe & Son; *C.*, Sylvester & Langabee; cost, about $9,000.

MISCELLANEOUS.

ST. HELENA.—One and one-half-story frame dwelling. *O.*, Wangamann; *C.*, W. H. Castnea, Jr.

Frame school-house. Cost, $2,230.

NAPA.—Two-story brick building on Brown street. *O.*, G. Migliavacca; *C.*, George Weildberger; cost, $3,000.

SAN PABLO.—Frame cottage for Father Cummings. *C.*, Kennedy & Co.; cost, $3,500.

TEMASCAL.—Two-story frame dwelling. *O.*, C. Taylor; day's work; cost, $2,500.

One-story frame. *O.*, G. Bassi; day's work; cost, $1,500.

One-story, attic, and basement frame. *O.*, Ladies' Relief Society; *A.*, McDougall & Son; *C.*, A. Herbet; cost, $32,000.

WEST BERKELEY.—Additions and repairs to the West Berkeley Mill. *O.*, Schuster & Niehaus; cost, $3,500.

BERKELEY.—One-story cottage. *O.*, — Flint; *C.*, C. B. Lord; cost, $2,000.

Near Gas Works, one-story and basement frame. *O.*, Mr. Plaint; *C.*, C. B. Lord; cost, $1,000.

COLUSA.—Repairs to building; new barn. *O.*, D. N. Arnold; *A.*, Matthews & Son; day's work; cost, $3,500.

WILLOWS.—Three-story frame building for hotel. *C.*, Carle & Croly; cost, $16,500.

MODESTO.—Building for stores. *C.*, Carle & Croly; cost, $12,400.

SAN RAMON.—Two-story frame cottage. *O.*, Aug. Hemme; *A.*, H. C. Macy; *C.*, J. McCready; cost, $5,000.

MISSION SAN JOSE.—Three-story brick building for seminary. *O.*, Very Rev. J. S. Alemany; *A.*, P. Huerne; brick work, O. E. Brady; carpenter work, J. L. Binet; cost, $25,000.

BIGGS.—Two-story frame barn. *O.*, Major Biggs; *C.*, J. W. Myers; cost, $800.

Two frame dwellings near town. *O.*, W. T. Boulivare; *C.*, J. W. Myers; cost, $2,000 each.

Frame barn by same parties as above. Cost, $1,000.

RED BLUFF.—Two-story brick building on Main street. *O.*, Independent Order Good Templars; *A.*, Hans Hansen; *C.*, Johnson & Saffell; cost, $9,000.

REDDING.—Court-house and jail. *C.*, A. J. Bryan; cost, $11,000.

SAN JOSE.—One-story brick building. *O.*, Electric Light Co.; *C.*, C. Drew; cost, $2,280.

STOCKTON.—One-story and basement brick warehouse corner Main and Sacramento. *O.*, Continental Oil Company; *A.*, Newsom & Gash; *C.*, G. D. Nagle; cost, $11,000.

TAMALPAIS.—Boat-houses, summer-house, etc. *O.*, Hall McAllister; *A.*, Newsom & Gash; *C.*, McCann & Jeffars; cost, $2,500.

BYRON SPRINGS.—One-story frame hotel, and additions to old building. *O.*, L. R. Mead; *A.*, Newsom & Gash; *C.*, W. Jess; cost, $4,000.

REDWOOD CITY.—One and one-half-story frame cottage. *O.*, Horace Hawes; *A.*, Schmidt & Havens; *C.*, J. Lenzen; cost, $6,500.

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The California Architect and Building News.

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San Francisco's Garfield Monument.

The committee having the matter in hand have decided the awards of premiums, and selected and adopted the design which they have been pleased to denominate the best of the more than twenty designs and models submitted. In this they have defied the opinions and criticisms of the press and public, and virtually asserted that they, as a committe, were masters of the situation, and were endowed with æsthetic discrimination and wisdom far greater than the thousands of contributors and others who failed to discover intrinsic merit in any of the designs presented sufficient to warrant adoption.

But the committee having the authority to act, and there being no power greater to restrain their actions, they have bravely resisted the will and pleasure of the greater number, and carried out their own views. How far this course may redound to the credit of the gentlemen of the committee remains to be seen; but during the lifetime of many now living, the monument, when erected, will be looked upon by hundreds as one of the errors of the period, although the masses may forget the circumstances surrounding the procurement and adoption of the design, and may admire it for what it is worth, remembering more the grandeur of the character to whose memory it will be dedicated than the mistakes of the men who manipulated its erection.

In addition to the ill-advised course pursued by the committee in the matter of premiums, the withholding of superintendence, etc., a wide breach of equity was permitted, in allowing those who wished to submit models in competition with drawings, thereby giving a large advantage to the model contestants. Had the design presented in the model adopted been reduced to a paper drawing, it is questionable whether it would have received the first award. On paper it might not have made so good an impression; while if two or three of the paper designs had been worked up into models they would quite as likely have been preferred.

Another injustice was done, even as far as the models were concerned. That submitted by Mr. Wells certainly possessed considerable if not equal merit with that of Mr. Happensberger, whose model design received the first premium. But the latter was larger and more imposing in appearance, and in size overshadowed that of Mr. Wells. So that in a multiplicity of ways, the affair has been a series of errors.

If the committee had been composed of men qualified for the duties assigned it, they would have established such qualities as would have made matters work fairly between all parties: such as prescribing that all designs should be in drawings, or all models; and if the latter, then the size and proportion should have been regulated, as no one but the committee could prescribe and regulate that feature. It was not possible for the contestants to fix a standard, each working according to his own judgment, and so far rendering it a matter of chance as to who should happen to hit upon the more acceptable and captivating proportions. However, the matter is ended by the adoption of a design which will look very nice when completed, and some may think it beautiful, and perchance we may be among its admirers when we shall have forgotten the questionable and unfair procedure of the committee, and also lost sight of the fact of how much more handsome a design might have been obtained.

We have no personal acquaintance with Mr. Happensberger, nor any sentiment or feeling adverse to that gentleman, and we congratulate him upon his success, and hope that he may be successful in every undertaking of his life. And we are also right heartily glad that California has produced a man to the manor born, to bear off so enviable a prize.

Our Modesty, and a Subscription Boom.

A sense of delicacy on our part restrains us from urging and pressing our claims for patronage to the extent justified by the facts surrounding and entering into our publication work.

That we have succeeded in producing and establishing upon a permanent basis in San Francisco a journal which ranks most favorably with the *best of like publications* east of the Sierra Mountains is fully confirmed by the voluntary credit bestowed upon us from all quarters of the United States, and from countries beyond the broad Atlantic and Pacific oceans.

And if this be true, as true it is, then we hold that the people of the Pacific Coast should rally as one man to our support, and at once increase the number of regular paying subscribers beyond all parallel in publication ventures of this character.

NOT ONLY ARCHITECTS, nearly all of whom in California favor us with their subscription, and like good and true men—with two or three exceptions—promptly pay the $2 yearly subscription; NOT ONLY CONTRACTORS, hundreds of whom are among our prompt paying patrons; NOT ONLY JOURNEYMEN MECHANICS, multitudes of whom are anxious for the date of publication to roll round, that they may reap the information and instruction to be found in each succeeding number, a large majority of whom PAY LIKE HONEST MEN for what they receive, while the lesser number, who waste a hundred times the amount of each year's subscription in the baser pastimes of beer-drinking and corner-grocery allurements, preferring to pilfer and obtain the wealth of our columns at our expense, or the expense of those who entertain the opinion that a journal worth reading is worth the coin, and should be paid for: but every OWNER OF REAL ESTATE, whether improved or unimproved, all HEADS OF FAMILIES, and ALL CLASSES OF PERSONS, without distinction as to calling or occupation, should subscribe for this journal, because it contains matter and information not to be found in any other journal published within the Pacific States, and of a character full of vital importance and deep interest to every one, involving as they do the proper construction of building, and the all-essential, the sanitary features and problems in connection with the erection of homes for loved ones, and abiding places for those who dwell in rented houses.

Mechanics who *fail* to subscribe certainly deprive themselves of a source of information which others of their class have found to be worth ten times its cost in the practical instruction received from its columns.

Besides all of which, we submit the question, whether the enterprise displayed in working up and perfecting a journal of its present high standing does not merit and deserve a large and liberal support from the people of the Pacific States? Then let all who can, SUBSCRIBE; and that none may have reasonable excuse, we will furnish this journal free of charge to all those who are *really unable* to pay $2 per annum, and will so state and verify their case to us.

Novel Insurance Case.

A novel case in insurance law is reported in the *Fireman's Journal*. It seems that the owner of a certain building applied for insurance upon it, and received two policies of twenty-five hundred dollars each. As it turned out, at or about the time of the delivery of the policies the property intended to be insured was actually on fire, and the question arose whether the insurance companies were liable for the loss. According to the authority quoted in the *Journal*, the decision must turn upon the precise time of the beginning of the fire, which a jury would have to determine according to the evidence. If the contract of insurance was consummated, or, as the lawyers say, "the minds of the parties had met," before the breaking out of the fire, the companies would be liable, even if the policies had not been delivered; but if at that moment the fire had actually begun, then there was no liability, for the reason that the subject-matter of the contract of insurance—the house—was no longer in the condition in which it was assumed to be, and which formed the basis of the contract, since no one would knowingly insure a burning building. On the other hand, the same authority remarks that if a policy of insurance should expire during the progress of a conflagration in the building covered by it, the company issuing the policy would be held for the whole loss, even though the fire might have just commenced at the hour which terminated the policy, and the main part of the destruction might have occurred subsequently.

American Institute of Architects.

It is announced that the next convention of the American Institute of Architects will meet on the 25th of next October, at the Gibson House in Cincinnati. Special arrangements have been made for the accommodation of members and others present, and it is urged that the various Chapters of the Institute make their representation as large as possible, on the ground that Cincinnati is a city specially interesting to the profession.

San Francisco Chapter of Architects.

The regular monthly meeting of the Chapter was held on the 4th inst., with a goodly number of members present; President John Wright presiding. After roll-call and the reading of minutes, the following report of special committee was read and unanimously adopted:

To the Officers and Members of San Francisco Chapter of Architects.

Your committee to whom was referred the address of the Brotherhood of Carpenters and Joiners of America, respectfully report that we have carefully reviewed and considered the statements and requests set forth in said address; and while the grievances therein contained appeal to us as architects individually, and should receive our personal and professional influence in the correction and abatement of the unwise and injurious practice alluded to, and made the subject-matter of said address; and while we heartily sympathize with the better classes of mechanics, whose interests and advantages in life's great work are more or less compromised or injuriously affected by irregular and harmful methods and customs, particularly those of the character complained of, which during seasons of comparative or absolute dullness assume large proportions—we are of the opinion that any action or expression by San Francisco Chapter, either directly or constructively not in accord with the objects and purposes of this association, as set forth in Secs. 1 and 2, Art. 2, of the organic laws of the Chapter, would be of questionable propriety, as it would establish a precedent by which all classes of building operatives, conceiving hardships upon them, would feel warranted in appealing to the Chapter upon all disputed questions and issues, and asking and expecting more than might consistently be within the power of the Chapter to afford or effect.

At the same time, your committee hold that wherein this Chapter in its affiliate relationship, and its members individually, may be able to exert an influence calculated to encourage and increase greater mechanical skill and proficiency among house-building artisans, without injustice to any other legitimate and proper interest, it is their duty to do so; and as expressive of the sense of this Chapter, we offer the following resolutions:

Resolved, That we as a Chapter, and as practicing architects, look with disfavor upon and condemn, and in our individual capacities will forbid, the practice of parties letting any part or portion of work contracted for, and under our control, respectively, by the rule or system known as *piece work*.

Resolved, That we as practicing architects, and as members of San Francisco Chapter, realize the wisdom and necessity of extending every possible encouragement and protection in our power, to elevate, ennoble, and improve the opportunities of those whose efforts are in the direction of greater perfection in mechanical operations, and who by legitimate efforts may by striving to correct abuses and develop systems and practices calculated to increase mechanical proficiencies, and inspire higher ambitions among those whose intellectual and physical energies are devoted to the development of the finer and more perfect in the mechanical arts and sciences.

Respectfully submitted,

JAMES E. WOLFE,
H. D. MITCHELL,
GEO. H. SANDERS.

A communication of similar import to the foregoing was received from a committee representing the METAL ROOFERS' AND SHEET-IRON CORNICE MAKERS' UNION of San Francisco, the subject-matter of which, that of "piece" or "job" work, was freely discussed, resulting in the reiteration of the sentiments expressed in the foregoing report, and the expression of decided opposition on the part of any member present to the "piece-work" system under any circumstances. We are authorized in saying that, while the Chapter in its associated capacity can present no practical relief or remedy beyond an expression of opinion, its members individually pledge themselves to use their professional influence in abatement of the evil referred to.

By unanimous vote it was ordered that the newly adopted Constitution and By-Laws of the Chapter be inserted in the CALIFORNIA ARCHITECT AND BUILDING NEWS. It will be found in this issue.

The committees on application for membership reporting favorably upon W. H. Kirk as an associate and Charles V. Pierce as draughtsman members, they were each duly elected.

Members of the Chapter and applicants for membership are requested to bear in mind Sec. 5 of Art. 6 of the By-Laws, which requires that the initiation fee MUST accompany all applications for membership.

As the Constitution and By-Laws of the Chapter fixes September as the time for its annual session and the election of officers, a nominating committee of three was appointed, consisting of Messrs. Wolfe, Laver, and Gash, to report at an adjourned meeting to be held on the evening of August 18th.

The facts and conditions impregnating and surrounding the present organization being such as to dispel all doubt as to the success and permanency of the Chapter, many prominent members of the profession, who have thus far remained disinterested, have signified their intention to affiliate, and assist by their presence and influence in making the Chapter equal to the most successful in the land.

Pacific Coast Press Association.

We have not space to spare for an extended notice of the fourth annual session of the Press Association of this coast, and the splendid concomitants which render the occasion one in many of its features never to be forgotten by those who were present.

The special legislative business of the association, and the election of officers were promptly disposed of, resulting as follows: President, Wm. H. Barns, *Weekly Call*, San Francisco; 1st Vice-President, D. McPherson, *Sentinel*, Santa Cruz; 2nd Vice-President, Ed. Hoole, *Enterprise*, Chico; Secretary, E. A. Weed, *Mission Journal*, San Francisco; Corresponding Secretary and Historian, L. P. McCarty, *Statistician*, San Francisco; Treasurer, F. K. Krauth, *Encinal*, Alameda Co.; Ex. Committee. W. Saunders, *Democrat*, Woodland; Frank M. Dallum, *Journal*, Haywards; and W. H. Fenton, *Argus*, Auburn.

Reaching Pacific Grove Retreat on the evening of July 18th, we found hundreds of ladies and gentlemen assembled at the entrance, to witness the arrival of the press representatives; while the boys gathered on the roadway in front, and shouted "Hurrah! hurrah!" as each coach in turn drove up to the platform. The time spent at the grove and the evening entertainments were of the most pleasing and satisfactory character, except that the restaurant accommodations might be considerably improved by lessening *quantities* and improving *style* and *quality* of dishes served.

The drives enjoyed by the entire company on the 20th, through miles of pine forest, to Cypress Point, and from thence to Pebble Beach, and again back, through the town of Monterey, to the old Catholic Church, completed in 1794, and which, after the abandonment of Carmel Mission, was dedicated as the parish church; thence to the grove—was pleasant and interesting; the very peculiar, attractive and weirding like appearing Monterey cypress trees being conspicuous among the many objects of interest.

On the 21st, the company five twelve-seated vehicles, were driven to the old Carmel Mission, where two hours were spent in contemplating the ruins of the old church commenced in 1770, by the vererable Franciscan Junipero Serra, who fourteen years later was buried within the walls whose foundations his own hands had helped to lay, and whose grave was recently opened with the intent to remove what remained of the pioneer missionary of Carmel; but the fragments found were so few that they were returned to their original resting place. We were personally assured by the guardian of this sacred spot that none of the remains originally buried within the old church—Carmal,—have been removed, statements recently appearing in the daily journals to the contrary notwithstanding.

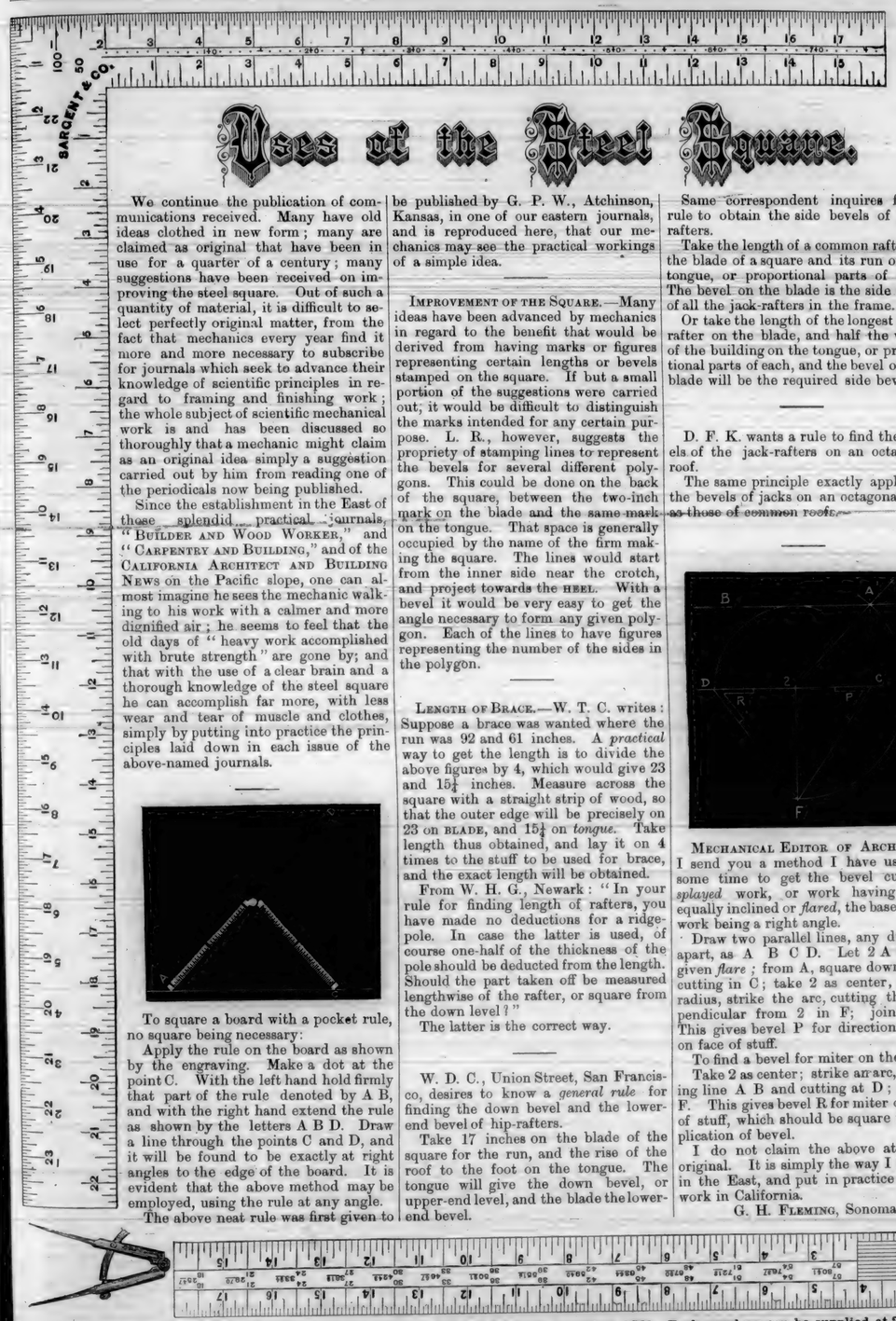
Lunch hour having arrived, the baskets were brought, and a hearty luncheon enjoyed within the walls of the old church; after which the magnificent bathing establishment of the Hotel Del Monte; the hotel itself, with its one hundred and twenty-six acres of trees of natural; and cultivated growth, its miles of splendidly macadamized walks and road-ways, and its innumerable beds of natures beautiful flowers—were all enjoyed to the fullest extent possible under the circumstances.

Two impromptu musical and literary entertainments were managed by Mr. Barns at the grove, to the great delight of the many hundreds of people sojourning at that quiet retreat, where neither tragedy, opera, comedy, minstrels, nor Terpsichorean pleasures are common.

On Saturday morning the company turned faces homeward, some going direct, and others by way of Santa Cruz; but all with the pleasant reflections that the pleasures of the fourth session of the Pacific Coast Press Association ended unmarred by a single regretful incident.

Houses Built of Cotton.

Of all substances apparently the least likely to be used in the construstion of a fire-proof building, cotton would perhaps take the first rank and paper the second; and yet both these materials are actually being employed for the purpose indicated, and their use will probably extend. Compressed paper pulp is successfully used in the manufacture of doors, wall panelings, and for other similar purposes, with the result that all risk of wrapping and cracking is obviated, while increased lightness is attained, and the fear of dry rot is forever banished. Papier-mache, after having served a useful purpose in an obstrusive manner for years as a material for small trays, paper-knives, and other such light articles, has now suddenly assumed a still more important position in the industrial world. A still more striking advance has been made in the employment of cotton as a building material. A preparation called celluloid, in which cotton is a leading ingredient, has been used lately as a substitute for ivory in the manufacture of such artibles as billiard balls and paper-cutters; and now a Canadian manufacturer has invented a process by which compressed cotton may be used not merely for doors and window frames, but for the whole *facade* of large buildings. The enormous and increasing demand for paper for its normal uses as a printing and writing material, prevents the extended use of papier-mache as a building material, for which it is so well suited in so many ways; but the production of cotton is practically unlimited, and there seems to be a large field available for its use in its new capacity as a substitute for bricks—or at least plaster—and wood. Treated with certain chemicals and compressed, it can be made fire-proof, and as hard as stone, absolutely air and damp proof; and a material is thus produced admirably adapted for the lining—internal and external—of buildings of which the shell may or may not be constructed of other material, while it easily lends itself to decorative purposes.



Uses of the Steel Square.

We continue the publication of communications received. Many have old ideas clothed in new form; many are claimed as original that have been in use for a quarter of a century; many suggestions have been received on improving the steel square. Out of such a quantity of material, it is difficult to select perfectly original matter, from the fact that mechanics every year find it more and more necessary to subscribe for journals which seek to advance their knowledge of scientific principles in regard to framing and finishing work; the whole subject of scientific mechanical work is and has been discussed so thoroughly that a mechanic might claim as an original idea simply a suggestion carried out by him from reading one of the periodicals now being published.

Since the establishment in the East of those splendid practical journals, "BUILDER AND WOOD WORKER," and "CARPENTRY AND BUILDING," and of the CALIFORNIA ARCHITECT AND BUILDING NEWS on the Pacific slope, one can almost imagine he sees the mechanic walking to his work with a calmer and more dignified air; he seems to feel that the old days of "heavy work accomplished with brute strength" are gone by; and that with the use of a clear brain and a thorough knowledge of the steel square he can accomplish far more, with less wear and tear of muscle and clothes, simply by putting into practice the principles laid down in each issue of the above-named journals.

To square a board with a pocket rule, no square being necessary:

Apply the rule on the board as shown by the engraving. Make a dot at the point C. With the left hand hold firmly that part of the rule denoted by A B, and with the right hand extend the rule as shown by the letters A B D. Draw a line through the points C and D, and it will be found to be exactly at right angles to the edge of the board. It is evident that the above method may be employed, using the rule at any angle.

The above neat rule was first given to be published by G. P. W., Atchinson, Kansas, in one of our eastern journals, and is reproduced here, that our mechanics may see the practical workings of a simple idea.

IMPROVEMENT OF THE SQUARE.—Many ideas have been advanced by mechanics in regard to the benefit that would be derived from having marks or figures representing certain lengths or bevels stamped on the square. If but a small portion of the suggestions were carried out; it would be difficult to distinguish the marks intended for any certain purpose. L. R., however, suggests the propriety of stamping lines to represent the bevels for several different polygons. This could be done on the back of the square, between the two-inch mark on the blade and the same mark on the tongue. That space is generally occupied by the name of the firm making the square. The lines would start from the inner side near the crotch, and project towards the HEEL. With a bevel it would be very easy to get the angle necessary to form any given polygon. Each of the lines to have figures representing the number of the sides in the polygon.

LENGTH OF BRACE.—W. T. C. writes: Suppose a brace was wanted where the run was 92 and 61 inches. A *practical* way to get the length is to divide the above figures by 4, which would give 23 and 15¼ inches. Measure across the square with a straight strip of wood, so that the outer edge will be precisely on 23 on BLADE, and 15¼ on *tongue*. Take length thus obtained, and lay it on 4 times to the stuff to be used for brace, and the exact length will be obtained.

From W. H. G., Newark: "In your rule for finding length of rafters, you have made no deductions for a ridge-pole. In case the latter is used, of course one-half of the thickness of the pole should be deducted from the length. Should the part taken off be measured lengthwise of the rafter, or square from the down level?"

The latter is the correct way.

W. D. C., Union Street, San Francisco, desires to know a *general rule* for finding the down bevel and the lower-end bevel of hip-rafters.

Take 17 inches on the blade of the square for the run, and the rise of the roof to the foot on the tongue. The tongue will give the down bevel, or upper-end level, and the blade the lower-end bevel.

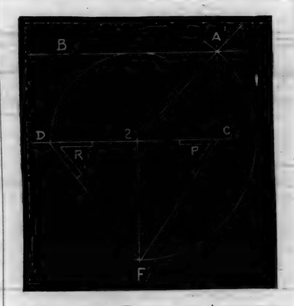
Same correspondent inquires for a rule to obtain the side bevels of jack-rafters.

Take the length of a common rafter on the blade of a square and its run on the tongue, or proportional parts of each. The bevel on the blade is the side bevel of all the jack-rafters in the frame.

Or take the length of the longest jack-rafter on the blade, and half the width of the building on the tongue, or proportional parts of each, and the bevel on the blade will be the required side bevel.

D. F. K. wants a rule to find the bevels of the jack-rafters on an octagonal roof.

The same principle exactly applies to the bevels of jacks on an octagonal roof as those of common roofs.



MECHANICAL EDITOR OF ARCHITECT: I send you a method I have used for some time to get the bevel cuts for *splayed* work, or work having sides equally inclined or *flared*, the base of the work being a right angle.

Draw two parallel lines, any distance apart, as A B C D. Let 2 A be the given *flare*; from A, square down a line cutting in C; take 2 as center, and A radius, strike the arc, cutting the perpendicular from 2 in F; join C F. This gives bevel P for direction of cut on face of stuff.

To find a bevel for miter on the edge: Take 2 as center; strike an arc, touching line A B and cutting at D; join D F. This gives bevel R for miter on edge of stuff, which should be square for application of bevel.

I do not claim the above at all as original. It is simply the way I learned in the East, and put in practice on my work in California.

G. H. FLEMING, Sonoma Co.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Dwelling-House Sanitation.—II.

BY GLENN BROWN.

"Pure air, pure water, and a pure soil."—HIPPOCRATES.

Furnaces, if we except stoves, are the form of heating apparatus most generally used in this country, and from their cheapness in first cost, and from the small amount of labor required to keep them in order, there does not seem to be anything now in the market that will compete with them in the above respects. With care, they may serve their purpose well, but they must be carefully selected, arranged, and properly cared for.

Furnaces are found in the market manufactured of wrought and cast iron and soapstone. In selecting the kind of furnace to be used, one should get it with a large heating surface, so that it may heat the air sufficiently without becoming red-hot, else the air will be heated to an injurious degree, and the gases of combustion will be allowed to escape through the pores of the cast-iron into the fresh-air supply, and then through the lungs into our system. Dr. John S. Billings, U. S. A., says: "The lassitude and headaches caused by furnace heat does not arise, as most people suppose, from the air being over-heated or too dry; but from the carbonic oxide, one of the products of combustion, which gets into the fresh-air supply through the joints or cracks." Although wrought iron may not transmit gas at a red heat, the joints are more liable to get out of order, as it contracts and expands in a greater degree than cast-iron, when acted upon by cold and heat. The heating surfaces of both cast and wrought iron furnaces may decompose the air itself, when they become red-hot, forming acid gases with the iron, which are injurious to the health. Wrought iron fails from oxidation much sooner than cast-iron; so cast iron, provided it has as large a heating surface, will be found better than either soapstone or wrought iron for furnaces. Be careful to select a furnace with as few joints as possible; they are always weak places through which the gas may escape. The inlet for the fresh air, which is to be heated and distributed through the house, should have the greatest care taken in its location. It should commence at least seven or eight feet above the ground, and it must not be placed so that the foul air from the stables or the back yard will be drawn directly into it, and carried into our living rooms. Extreme care should, moreover, be taken, that the source from which the air comes is pure; also, lest parties putting in the furnace should carry the cold air over a sewer (no sewer drain should be allowed under the cellar floor, but they will be often found in this position). The cold-air duct should be above the cellar floor, and lined with metal, tin being one of the most suitable metals for this purpose; made in this way, it is not possible for the gases from the ground or drains to enter the fresh-air duct. The fresh air should never be taken directly from the cellar, for in that case we would have our air—and be it remembered this is the air which we are to breathe in our rooms—vitiated by the exhalations which rise from the ground, by any gas which may escape from the sewer drains, and by any decayed vegetable matter that may be in the cellar. There is a class of stoves called latrobes (fireplace furnaces they would be more properly called), which are extensively used in Washington, Baltimore, and vicinity, and as far as our knowledge extends, they invariably take the air to be heated directly from the cellars. These same cellars are often made the receptacle for all the refuse of the house, and are damp, having water and decayed matter in them. This state of things is dangerous; the air supply should be brought from a purer source. The water pan, or evaporator, of furnaces must be properly filled with water, so the air supplied will not be disagreeably dry. Unless this is looked after by the head of the house, it is apt to be kept full of rubbish instead of water.

Hot water and steam heat are both excellent modes of heating when properly arranged, and proper allowance is made for the supply of pure fresh air. Both kinds of apparatus have their advantages. They may take the place of a furnace. Pure air which is brought in from the outside is heated by the steam or hot water coils, and then distributed by pipes to different parts of the building. In this case as much care should be taken that the air which is to be heated is pure, and that the source from which it comes is clean, as in the case of a furnace. This way of using steam or hot water for heating may be considered the best, as by it pure air is easily obtained; and it has this advantage over the furnace: there is no danger of the fresh air being contaminated by the gases which may get into the hot-air chamber of the furnace during combustion, by either overheating, or through the joints and cracks. A building may also be heated with steam or hot water, by either of them being distributed through pipes to different parts of the house, and then giving off their heat through radiators. In a room heated by radiators the vitiated air is breathed over and over again, unless there is an inlet made for fresh air back of each radiator, so the air may be partially warmed, so that no one will be chilled by it when it enters the room. Of course a small amount of pure air comes in constantly through the crevices around the windows and doors, and even through the wall itself; but this is not in a sufficient quantity. Looking at the hot water or the steam-heating apparatus from the point of safety, any one will readily see that there is much less danger of fire than with a furnace or stove, so it is necessary to take fewer precautions. Steam and hot water pipes are not liable to set wood-work on fire, although there are cases on record where it seemed probable that steam pipes caused the wood with which it came in contact to be charred. Furnace flues improperly set or arranged, have been and probably will continue to be the means of destroying an untold amount of property.

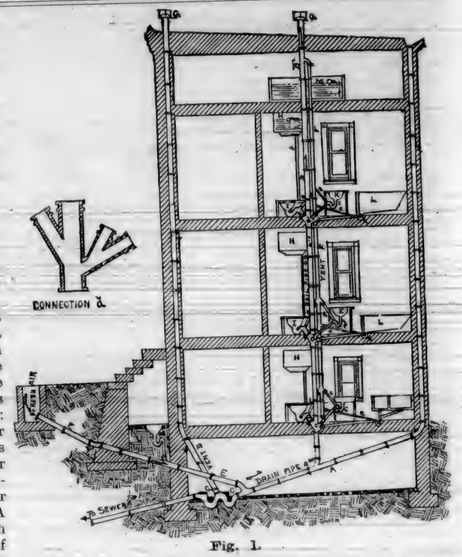


Fig. 1.

Mr. Charles Hood says, in regard to steam and hot-water apparatus: "The first cost incurred for the erection of the two kinds of apparatus will differ but little when the work is done in an equally substantial manner; but the wear and tear and repairs of a hot-water apparatus will be less than of a steam apparatus." Hot water also has the advantage over steam, in a heating apparatus, of being less liable to explosion, or to set wood-work on fire; although steam is not dangerous in either respect when properly managed. It is claimed for steam heat that it is more easily managed, that is, we may have a large or a small amount of heat more readily than with hot water.

Heating by an open fireplace is really the most conducive to health, provided it has enough power to heat the room comfortably. The only difficulty with the open fireplace is that it is not economical, so much heat is lost by being carried up the chimney. Its advantages are, that it takes off the vitiated air, and causes the pure air to find its way through the crevices, or some inlet made specially for it, and adds to our cheerfulness. It is impossible in our cold, winter weather, north of the Potomac River, to keep our rooms comfortable by open fires alone; so we have to combine this mode of heating with a furnace, steam, or hot-water apparatus. We consider the best mode of heating to be an open fireplace, combined with a hot-water or a steam-heating apparatus. The manner of working in this case is this: the fresh air is taken from a pure source, heated by the steam or hot-water coils, carried through proper ducts into the rooms of our house, warm and pure. The open fireplace furnishes us with heat by direct radiation, thus giving us an opportunity of warming rapidly any portion of the body which may be cold. It also carries off the vitiated air which is produced by the breath or combustion. In this manner, by proper care, a sufficient amount of pure air is obtainable, and the bad or impure is withdrawn. Mr. J. P. Putnam of Boston, in his articles on the open fireplace, mentions a fireplace that he is putting in his own house, which may possess the advantages of a combination of the fireplace and the hot-water apparatus. This is an open fireplace that utilizes the heat, which goes up the chimney in smoke, in warming the fresh air brought in from the outside, the pure air is then introduced into the rooms through registers placed over the mantel. In this case, as in the common, open fireplace, the vitiated air goes out through the chimney. From Mr. Putnam's account, this would appear to be a practical mode of utilizing the heat that would be otherwise lost with the open fireplace.

There have been numerous patents and patterns to effect the same purpose, and there really seems to be no reason why some of them have not been brought into a more extended use.

As a matter of course, it is only the wealthy who can afford this double mode of heating mentioned above; and in writing of the different modes of heating, we have endeavored to explain the difficulties in each class, and how these difficulties may be best avoided.

Let us next take for consideration the important portion of the sanitary arrangements of a house which appertains to plumbing. It is generally, through the water-closets and wash-basins, from the sewers or the drains that the greatest harm comes to the members of the household.

The proper materials to be used inside the house for drain and soil pipes is cast-iron with lead joints. No drain tiles (terra-cotta pipes) should be used inside a building, because of their liability to have been cracked or imperfectedly formed when put in, or else to crack after being placed in position, as well as their further liability to break by the settling of the foundation. All tiles must be covered to protect them from breakage; imperfect tiles are very easily employed by careless workmen, because when hidden from sight by the earth covering, their imperfections are not observable. Through the smallest crack or crevice sewer-gas will find its way into the ground, from the ground into the cellar, from the cellar through the floors into the interior of the house. In this connection we must recollect that all baneful gases do not come from the street sewer, but from the drain and soil pipes inside the house itself; so that even if the gas were shut off from the sewer by a trap (see figure 1 C), the gas generated inside the house drains would come through any crack. In all old houses in which the best plumbing was done, lead soil pipes were used, and lead pipes are still advocated by the English authorities. But there have been a great many objections to the use of lead discovered which show that it never ought to be employed as drain or soil pipes, or as traps. Rats will eat holes in it, and where the joints are soldered galvanic action occurs, and holes are also this way produced in it. It is supposed that sewer gas itself acts on lead injuriously, causing it to be perforated by small holes. From any of the above-mentioned causes a house may be filled with sewer-gas, the occupants being unaware of its presence until they are stricken down with disease. Lead pipes, not having the stiffness of iron, when run nearly horizontal, sag from their own weight, thus forming a trap where water would stand constantly, and interfere with the proper ventilation of the plumbing system.

Iron drains have only the disadvantage of rusting readily. This is overcome by dipping the pipes in gas-tar. Iron pipes prepared in this way, with enameled iron or porcelain traps, form the best materials of which to make drain and soil pipes with their connections. There are iron enameled soil pipes manufactured, which are excellent, but quite costly. For supply pipes most authorities still name lead as the best material, but on account of the ease with which ingredients of certain kinds of water act upon it, it is doubtful whether tin-lined lead pipes or iron pipes porcelain-lined would not be preferable.

(To be continued.)

Talks About Tools.

However irksome the task may be, the proper sharpening of tools is worthy of the most careful study of those who would attain proficiency in their use. Some may suppose that sharpening a tool is one of the easiest things imaginable, and that to speak of making it a study is to employ far too dignified a word; but such is hardly likely to be the view of any but of the inexperienced. The tools to be seen on far too many carvers' benches bear witness to the fact that proper sharpening is not easy, or if it is, that their owners have yet to acquire the art. If the only object be to obtain an edge, without regard to the shape of it or the manner in which it is obtained, the simplicity of sharpening may be granted. But it has already been shown in these "Talks" that there is a close connection between the "handiness" or usefulness of a tool and the mode in which it has been sharpened. And a little reflection will discover to the most inexperienced learner that edged tools generally, besides carvers' tools in particular, are sharpened or brought to an edge in various ways and in accordance with the purpose for which they are required. The mortice and paring chisel of the maker, for example, though flat tools, are brought to an edge from one side only. The carvers' firmer is brought to an edge from both sides. The mortise chisel is brought to an edge at a different angle with the stone from the paring chisel, not only that the edge may be thicker, but that it may work in a certain direction—a direction corresponding with that of the mortice. Again, the maker's chisels, whether mortise or paring, are sharpened quite flat; whereas the carvers' firmer, excepting, perhaps, the smallest sizes, presents when properly sharpened an edge slightly rounded. Yet each of these tools is flat. And that there are edges *and* edges may be illustrated by a reference to the familiar pocket-knife which its youthful owner has essayed to sharpen a dozen or twenty times, only to find its capacity for mischief effectually, and to him disagreeably, reduced. It is plain, therefore, that it is necessary not only to have an edge, but to have one of the right sort. In saying this much there is not the slightest desire to dishearten the learner, but merely to vindicate, if such be thought necessary, the proposition contained in the opening sentence of this paper. It would be unreasonable to suppose that the principles indicated in what has just been said could be apprehended without reflection; and there can be no intelligent sharpening until they have been apprehended.

In addition to this, only attention and practice will enable the learner to overcome what may be termed the mechanical difficulty of sharpening—to obtain that command of the wrist which shall insure the scroll tool or voluter being brought to an edge from one end to the other, at one angle only, and without rubbing away more from one part than another. Inattention to these points is frequently the cause of the bad working of a tool. The close connection between good tools and good work has often been pointed out; and so long as this is the case, so long will the proper sharpening of tools be worthy of careful study. The irksomeness of sharpening may be granted, and we shall hope to point out the way in which the best result may be obtained with the least possible expenditure of time and trouble.

In the first place, a good stone is most important. A good stone cuts fast without being cut fast, and presents a surface unimpaired by shakes or holes caused by brittleness. Some twenty years ago the carver's choice of stones was almost entirely limited to "Charnley Forest" and "Turkey"—good specimens of the latter fetching high prices; but as in tools so in stones, our American cousins have widened the limits within which our choice may be exercised, and now we have "Niagara," "Washita," "Arkansas," the latter of which is excellent, though the others are not to be depreciated. The stone when bought is flat: *keep it so.* It is the practice of some carvers to sharpen scroll tools and voluters by rubbing on the stone with a motion backward and forward as in sharpening flat tools, and the stone is seen with a series of hollows of various sizes running lengthwise. But the practice of carvers generally, and experience may be said to support the practice, is to sharpen all but flat tools with a motion which, beginning at one end of the edge, ends at the other, and so on. It is, of course, for this latter mode of sharpening that the flat stone is recommended, and for this mode of sharpening that it is desirable to *keep* it flat. Reference has already been made to the importance of the tool being brought to an edge from one end to the other at *one angle only.* But sharpening in the way recommended on a *hollow* stone this result is almost impossible. To keep a stone flat, even without rubbing it down, is not particularly difficult if the stone is a good one, and a good "sweep" is taken in sharpening the tool. A short, jerky motion must be avoided if the tool is to be free from ridges at the edge. Beginning at one end of the edge of an ordinary scroll tool, the other end should not be reached until the length of a good-sized stone has been covered. A stone for a firmer should be slightly hollow that the edge may be slightly round, but if a stone is too hollow for a firmer it is too hollow, for a scroll tool, and should be rubbed down. Good slips are no less important than a good, flat stone. How greatly the insides of tools are neglected? Some tools are to be seen sharpened almost entirely from the back, whereas they should be sharpened almost, if not quite, as much from the inside. And this can be done with as little trouble by the simple expedient of fixing the slip so that both hands are available for pressure on the tool.—*Cabinet Maker (Eng.).*

Hints on Painting Old Wood-work.

As soon as there have been one or two hard frosts to kill most of the flies, it will be an excellent time to paint wood-work in the kitchen, or any other part of the house. Saying nothing of the economy of painting, it is an excellent practice to apply a thin coat of paint to all the wood-work of the kitchen once in two or three years. Good paint always saves much hard labor in keeping such parts of a house clean. Some doors that are used often need painting every year to keep them at all decent. It is not best to put on thick, heavy coats, as these are needlessly expensive, and after a few years will look bad. The same amount of paints, applied often in thin coats, will look better and cost little more.

Where wood-work is much soiled, especially by hands not scrupulously clean, it is sometimes difficult to make even the best of paint hold well. It will dry soon enough, but will afterwards peel off, for paint will not adhere well to a dirty, greasy surface. This is particularly the case in rooms where washing and cooking are usually carried on.

In order to make paint stick and become about as firm as the wood itself, wash the surface thoroughly with moderately strong lye, using a short swab, then wipe it off with a cloth wrung out in fresh water. This will remove all grease and dirt that prevent the paint from taking a firm hold.

Paint for such places should be made of the best white lead, mixed to the consistence of thin cream, with two parts of the best boiled linseed oil, and one part of good lacquer, or "liquid drier." Such paint will dry in one day and become sufficiently hard to handle in a few days. A very small quantity of lamp-black will make a beautiful lead-color. Yellow ocher may be added until the paint is of the desired shade for floors, mop-boards, or wainscoting. Pure white-lead for the body will make a much more durable paint for floors than most other kinds. The use of zinc-white, which is much superior to white-lead in some situations, as, for instance, in privies, is attended by a little difficulty, because it must be applied very thick, to cover well when used alone; but a second coat, not so thick, may be put on over other paint, and it will add greater brilliancy and will not tarnish from sulphurous gases frequently rising from sink-drains, etc., nor from the exclusion of light, which causes white-lead paint to turn yellow.—*Ex.*

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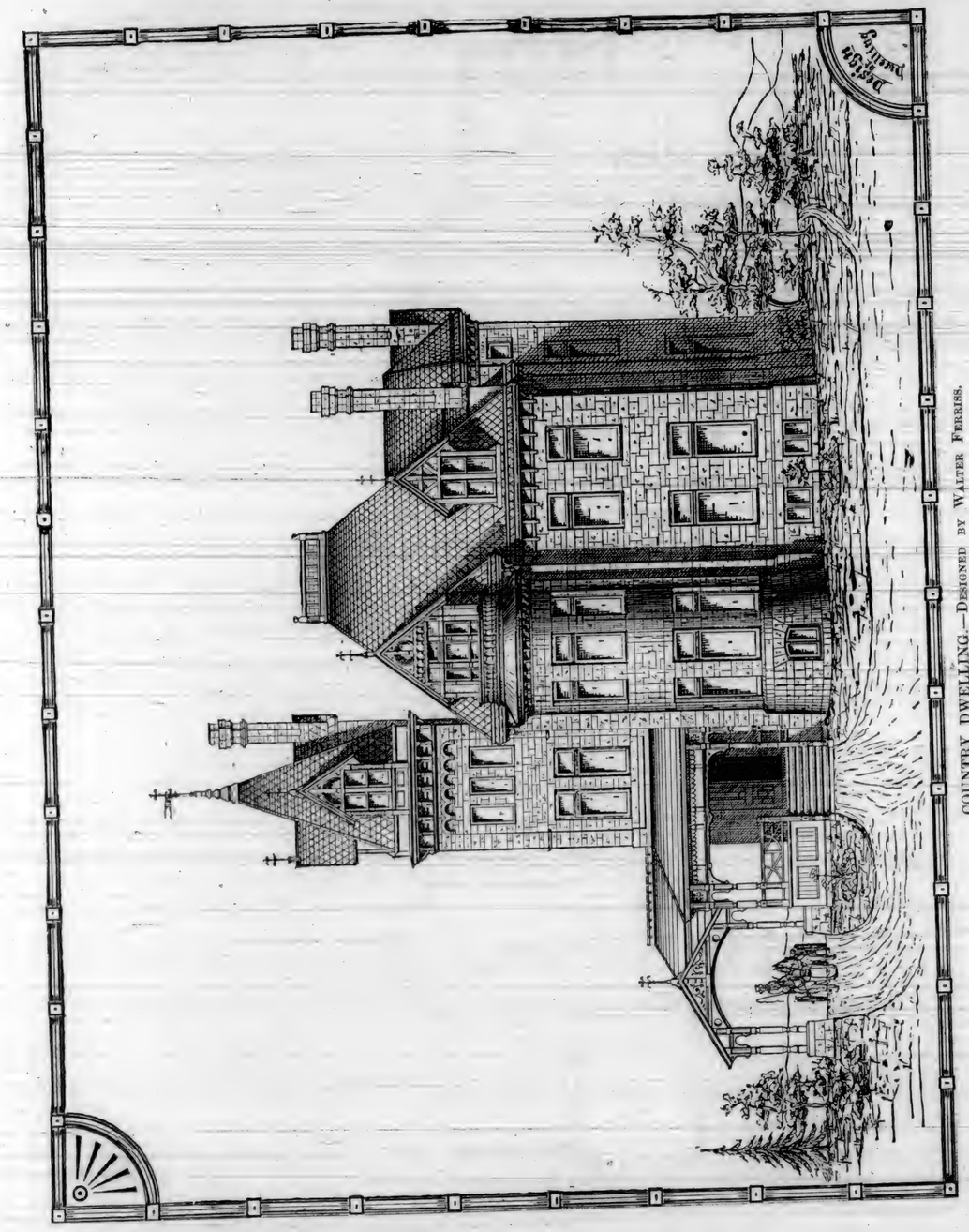

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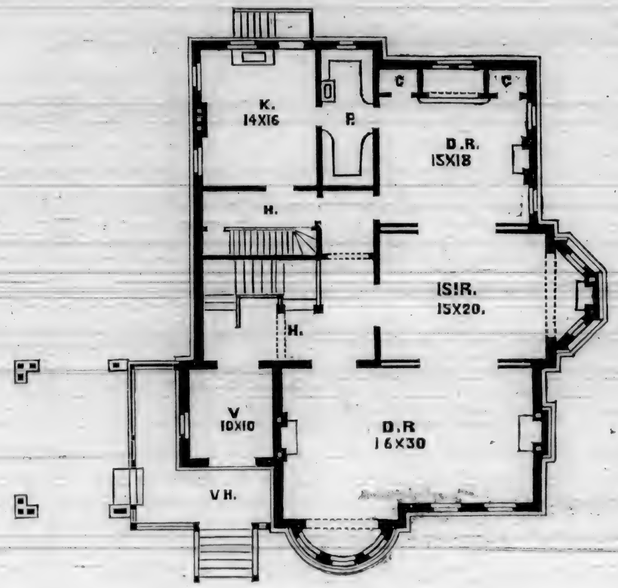

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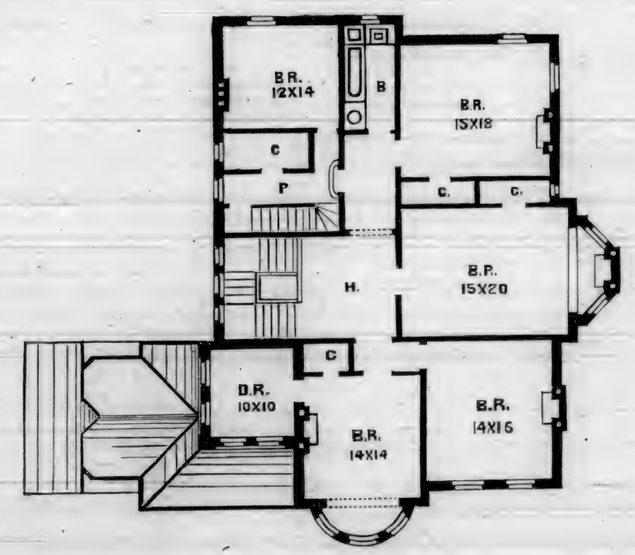

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EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

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To render thick paper quite translucent, saturate it (while warm) with Canada balsam or castor oil.

Logs and planks split at the ends because the exposed surface dries faster than the inside. If muriatic acid be saturated with lime and applied to the ends, like whitewash, the chloride of calcuim formed attracts moisture and prevents splitting.

In a new decision by the Missouri Court of Appeals, in the matter of a property owner's petition for injunction against a telegraph company which had put up a pole opposite his premises, under a permit from the Board of Public Improvements, it was stated that the power of the board to give such permits might be so limited as to exclude the erection of anything unsightly.

A recent invention provides a window, the sash of which slides up and down in the usual way, with counterweights passing over pulleys. A portion of the length of the window jambs is a pivoted swinging frame, so that both sashes may be run up into the frame, and swing out horizontally or reversed, as desired. The swinging frames are mounted on hollow pivots provided with cross-pintles and rollers, over which the sash-cords pass. A spring catch in one of the side frames, operated by a lug on a rod, engages a notch in the sashes. The cords have an apertured plate to prevent twisting. The swinging frames are grooved to receive the sashes.

To sharpen worn-out files, first clean them very carefully with a little warm potash water and a stiff brush; wash and rinse in warm water, and wipe perfectly dry. Then dip them an instant in nitric acid, and wipe off the acid carefully with a rag wound on the end of a stick. It is impossible to wipe off the acid between the teeth, however, and this remains, corroding and sinking into the metal until the teeth are as long and sharp as when first made. Wash in warm water with a brush, two hours after completing the operation. If not yet satisfied with the result, repeat the whole operation.

Dr. Siemens proposes to defend the Channel Tunnel, if constructed, from hostile invasion, by placing the shore ends in communication with chambers filled with lumps of chalk, and to connect each of them by means of a pipe with a large cistern filled with dilute muriatic acid. Upon opening the communication this acid would flow into the upper portion of one of the chambers, and be distributed by perforated pipes over the chalk, giving rise to a rapid generation of carbonic acid gas, which would for half a mile or more form an insuperable barrier to the passage of human beings through the tunnel.

Plaster casts have the defect of being very soft, brittle and not water proof, so that they can not stand any wearing contract, nor rain; they may, however, be improved in this respect, as well as in their appearance, by a dip in an emulsion of one quart warm rain water, one ounce of white soap, and one ounce of white beeswax, well incorporated together. After dipping the cast is placed in a dust-free place to dry, and rubbed afterward with a soft rag until smooth. Another method is to dip the plaster cast in an alum solution, and treat as above, or to mix a little plaster with a strong alum solution, and when set, bake it in an oven, then grind it fine, mix with water, and spread it with a brush over the plaster cast. It sets quick, and takes a high polish by rubbing; if one coat is not enough, a second can be given.

Gone to Their Long Home.

Two English architects of distinction have within a few days followed their associates, Street and Scott, to their eternal rest. Joseph Aloysius Hansom, the elder of the two, had completed, in his eightieth year, a life full of success and happiness. Beginning his career as an apprentice to his father, a joiner, when only thirteen years old, his general capacity and taste for design led to his transfer to the office of an architect of ability, under whom he acquired a knowledge not only of his new profession, but of many other matters in which his active mind interested itself. He married early in life, and soon afterward entered into busines on his own account, winning almost at the outset, the important competition for the Birmingham Town Hall. Although the Town Hall Commissioners took the usual advantage of his youth and inexperience, and drove him into bankruptcy before the work was completed, he gained a reputation, and was thenceforth never without employment. In the first few years of poverty, after his misadventure with the Birmingham Commissioners, he was induced to undertake work not strictly within the scope of his profession, and at the suggestion of friends perfected and patented what he called a "Safety Cab," which was subsequently introduced in London, and has made his name a household word wherever the English language is spoken. In 1842, the idea of founding an illustrated journal for the service of the building trades and professions occurred to him, and on the 31st day of December in that year he issued the first number of the *Builder*. He had not, however, sufficient capital to carry on this enterprise, and soon transferred it to other parties, to devote himself thenceforth wholly to his profession. Much of his work was ecclesiastical, and being himself a devout Catholic, a large part of the modern Romanist churches in England were designed by him or his son, who was for many years his partner. The beautiful church of St. Philip Neri an Arundel is probably familiar to our readers from the drawings published in the English professional journals, and the Convent of Our Lady at Plymouth is in some respects even more admirable. Besides these, the *Builder* enumerates fifty-five other churches executed from his designs, with many secular or semi-ecclesiastical structures.

A day or two after Mr. Hansom's decease died Mr. George Somers Clarke, also an ecclesiastical architect of great ability. His designs were generally in that massive style first introduced, we believe, by Mr. James Brooks, but were at the same time thoroughly well studied and graceful in a dignified and simple way. In matters relating to his profession he was unusually intelligent and well informed, and few of the younger architects gave promise of greater distinction. With the next English mail we shall undoubtedly receive further details of his career, which although so short has brought him honor enough to satisfy a moderate ambition, and will try to select some of the most interesting particulars for the benefit of the younger readers.—*American Architect.*

Chimney and Smoke Flues.

Why is it that about seventy-five per cent. of all the fires that occur in dwellings, and very many other buildings, have their origin in defective flues? Now a little care upon the part of the builder would prevent this. No flue should be less than 8x8, or the length of one brick square in the clear, and this size should be maintained from bottom to top, regularly built, not contracted at some points and expanded at others. The walls adjacent to the flue should be laid close, and every joint of the bricks be slushed or entirely filled with mortar. The inside of the flue should be well pargeted with mortar that will adhere to the bricks; simple lime and sand mortar will not be effectual, although used in common, if not almost universally. When the flue becomes heated, which it will at times, common mortal will peel off and leave the joint exposed for the admission of smoke and fire, and at points where the wood, such as flooring and timbers supporting the same, approaches too near the brick work of the flue, will ignite, and the fire will extend between the ceiling floor along the joist, and will have control of the building before it is visible to outsiders or inmates of the house, and the building is either seriously damaged or entirely destroyed for the want of a little care and attention in the construction of the flue. Pargeting mortar should have a portion of cow's hair about the same proportion that is usually put into lime intended for the first coating of plastering mortar—put upon lath-work or ceilings, or, what is equally as effectual, horse manure in the same proportion thoroughly mixed in the lime and sand mortar. As a further safeguard at the intersection of floor with chimney flues, there should be at least eight inches between the inside of the flue and the wood-work of said floor; or, what would answer the same purpose, insert clay pipe, corresponding in size to the flue from a point at least one foot below the floor timbers to a point one foot above top of said flooring. If the pipe cannot be procured in single length, thereby requiring piecing, the joints should be connected with rebating joints. I have named 8x8 inches above as a minimum, the proper size for stove flues; but for fireplaces, grates, etc., they should be, if possible, 8x12 inches, or one brick by one and a half Bricks in the clear, and for furnaces, 12x12 inches, or one and a half bricks square in the clear. By having the flues large they will be more certain of good draught.

It cannot be said that we have improved our method of flue building over that used a generation or so back, that is, so far as safety from fire is concerned. Care was taken then to construct the flues sufficiently large to admit the passage of a boy or "sweep," who cleaned them out; and those neglecting to keep their chimneys clean were subject to a fine. Many of us will recall the quaint procession of chimney-sweeps which used to be a familiar street scene. Usually it was headed by an old negro as "boss," and included six or eight little darkies, ranging in age from fifteen down to a little four-year old. In some cases, even the smallest sweep had difficulty in making his way up the flue, and I recollect where a little chap got caught half-way up, and called down in plaintive tones that he could go no farther. The owner of the apartment was at a loss to know what to do, but a happy thought struck him, when he called up the chimney, hinting to the imprisoned sweep that he was about to kindle a fire. In a few minutes the little darkey was singing out, "Sweep ho!" on the roof.—*Builder and Wood-worker.*

☞ Science of Carpentry Made Easy, $5.00.

CONSTITUTION AND BY-LAWS

OF

SAN FRANCISCO CHAPTER

OF THE

American Institute of Architects.

FOUNDED MAY, A. D. 1881, AS THE PACIFIC COAST ASSOCIATION OF ARCHITECTS, AND RE-ORGANIZED AS SAN FRANCISCO CHAPTER, MAY, 1882.

CONSTITUTION.

ARTICLE I.

NAME.

SEC. 1. The name of this Society shall be *San Francisco Chapter of the American Institute of Architects.*

ARTICLE II.

OBJECTS.

SEC. 1. Its objects shall be to unite in fellowship the architects of the Pacific Coast; to encourage, promote, and sustain professional standing, dignity, and harmony; to stimulate friendly intercourse, and to combine in efforts for the promotion of the artistic, scientific, and practical proficiencies in the profession.

SEC. 2. The means of accomplishing this end shall be: regular monthly meetings of the members for the introduction and discussion of subjects of professional and general interest and importance; the reading of essays; lectures upon topics of special, technical, and general chararcter; the establishment of schools, or the adoption of other practical measures for the better education and qualification of architects, and the diffusion of more thorough and perfect knowledge in the correct and more advanced theories, principles, and practice of the science of architecture; exhibition of architectural drawings; the formation of a library; the collection of designs, models, and specimens of building materials; and such other means and measures as shall be best calculated to promote the objects of the Chapter.

ARTICLE III.

MEETINGS.

SEC. 1. The Chapter shall meet in annual session in September of each year; and monthly, as provided in the By-Laws.

ARTICLE IV.

OFFICERS.

SEC. 1. The officers of the Chapter shall be a President, Vice-President, a Recording and a Corresponding Secretary, and Treasurer.

SEC. 2. No one shall be eligible to the office of President, unless he shall be a Fellow in good standing in the "American Institute of Architects."

ARTICLE V.

MEMBERSHIP.

SEC. 1. The membership shall consist of: first, Fellows; second, Associates; third, Draughtsmen; fourth, Articled Students; fifth, Corresponding Members; sixth, Honorary Members; seventh, Life Members.

SEC. 2. The qualifications to *Fellow* membership shall be the regular practice of the profession within the State of California, or States or Territories adjacent thereto, as contemplated by the Constitution and By-Laws of the Chapter, for a period of not less than one year prior to application for such membership, and the payment of such admission fees and monthly dues as may be established by the By-Laws; except that architects, who may have resided in other States, and who shall remove and locate themselves within the jurisdiction of this Chapter, shall, upon sufficient proof that they have practiced the profession as hereinbefore defined in this section, be entitled to *Fellow Membership* by complying with the requirements of the By-Laws.

SEC. 3. *Associate Membership* shall include such practicing and non-practicing architects as may not desire to become Fellows, and who shall pay into the funds of the Chapter the amount of admission fees and monthly dues prescribed in the By-Laws for Associate Members.

SEC. 4. *Draughtsman Membership* shall include those who shall be vouched for by two or more Fellows members, as being proficient in general office duties, but have not practiced as principals, and who shall pay into the funds of the Chapter the amount of fees and dues established by the By-Laws for Draughtsman Members.

SEC. 5. *Articled Student Membership* shall include those only who shall have studied architecture in the office of a practicing architect for a period of not less than one year next prior to seeking membership, and the payment of such admission fees and monthly dues as are defined in the By-Laws for Student Members.

SEC. 6. *Corresponding Membership* shall include those who shall contribute essays and original articles upon matters and subjects of Architectural, Mechanical, Constructive, and other scientific and practical import.

SEC. 7. *Honorary Membership* shall be conferred at the pleasure of the Chapter.

SEC. 8. *Life Membership.* Those who shall pay into the funds of the Society the sum of one hundred dollars shall be entitled to and enjoy Life Membership.

SEC. 9. In all cases of application for membership in either of the first four grades enumerated, the party desiring membership shall be regularly proposed in writing, by a Fellow of the Chapter, and seconded by another; the proposition to be submitted to an Investigating Committee, and upon the report of such Committee a ballot shall be had, whether the report of the Committee be favorable or unfavorable; and if not more than three adverse ballots are cast, he shall be declared elected.

SEC. 10. No member shall be entitled to vote upon the admission of members above the grade or rank of his own membership.

SEC. 11. All personal interest in the funds or property of the Chapter shall cease with the resignation of any member who shall resign, or from any other cause ceases to be a member.

ARTICLE VI.

MANAGEMENT.

SEC. 1. The management of the affairs of the Chapter, and the election of officers and members, shall be in accordance with the provisions of such By-Laws regulating the same as may be enacted by the Chapter, not in conflict with the Constitution.

ARTICLE VII.

AMENDMENTS.

SEC. 1. This Constitution shall be altered or amended only upon a two-thirds vote of the Fellow members present at a regular meeting, or a special meeting called for the purpose, at which not less than a majority of the Fellow members of the Association shall be present; the proposed amendment or alteration having been previously discussed at either a regular or special meeting, and the vote thereupon shall be taken by yeas and nays.

BY-LAWS.

ARTICLE I.

SEC. 1. The objects, aims, and purposes of this Chapter shall be as defined in Article II., and the OFFICERS as provided in Article IV., of the Constitution.

ARTICLE II.

MEETINGS.

SEC. 1. This Chapter shall convene in *Annual Session* the first Friday in September of each year, for the purpose of receiving the annual reports of officers, the election of officers for the ensuing year, and the transaction of such other general business as may be presented.

SEC. 2. The *regular meetings* of the Chapter, other than as provided in the preceding section, shall be held the first Friday in each month.

SEC. 3. QUORUM.—Five Fellow members shall constitute a quorum at all regular and special meetings.

SEC. 4. *Special meetings* of the Chapter may be called by the Secretary whenever the President or Vice-President shall be requested in writing by five Fellow members, setting forth the purposes in full of such meeting; but no other business than that specifically stated in said call shall be considered at such special meeting. The Secretary shall notify all the members of such special meetings when called, at least three days prior to the time fixed for said meeting.

ARTICLE III.

NOMINATIONS AND ELECTION OF OFFICERS.

SEC. 1. The officers of the Chapter shall be elected by written ballot at the regular meeting in the month of September of each year, and otherwise as may become necessary in cases of vacancies occurring from any cause.

SEC. 2. The *nominations* for annual election of officers shall be made at the regular meeting in the month of August of each year, either by open nominations, or through a nominating committee. But in either case, the names of the nominees must be presented to the Chapter at the regular meeting next prior to the time fixed for the election of officers, or at a special meeting called as provided in Section 4, Article II., for that purpose. But under no circumstances shall an election be held at the time and meeting when the nominations are submitted.

SEC. 3. The officers elected as provided in this article shall enter upon the discharge of their official duties on the evening of their election, *after* the annual reports of the retiring officers shall have been submitted to the Chapter.

SEC. 4. All officers elected as provided in this article shall hold office for the period of one year, or until their successors are elected; except that should any elected officer fail to discharge the duties of his office satisfactorily to the Chapter, his office may at any time be declared vacant by a majority vote of those present at any regular meeting of the Chapter, and the vacancy then and there be filled by nomination and election, provided the Secretary shall have notified the delinquent officer, by personal or postal service, of the intended action at least one month prior to such action being had.

ARTICLE IV.

REPORTS OF OFFICERS.

SEC. 1. At the annual meeting in each year, the respective officers of the Chapter shall make a full report in writing of all matters intrusted to their care, custody, or control during the terms of their offices, respectively.

ARTICLE V.

DUTIES OF OFFICERS.

SEC. 1. The PRESIDENT, or in his absence the Vice-President, shall preside at all meetings of the Chapter. In the absence of both the President and Vice-President, a presiding officer shall be chosen *viva voce*.

SEC. 2. It shall be the duty of the presiding officer to preside at all meetings of the Chapter, and preserve order therein; see that the Constitution and By-Laws are properly observed and enforced; that all officers and committees perform their respective duties; appoint all committees not otherwise provided for; have the casting vote in all cases of ties; the right to vote for admission of members and for officers of the Chapter; sign all warrants authorized by the Chapter; and perform such other duties and functions as are laid down in Cushing's Manual for presiding officers.

SEC. 3. The RECORDING SECRETARY shall keep a record of the proceedings of the Chapter, and of all matters of which record shall be deemed advisable by the Association. He shall also provide a registry in which the Constitution and By-Laws of the Chapter are inscribed, and secure the signature of every member thereto. He shall also have custody of the Seal and Archives of the Chapter, and preserve for reference all documents, reports of Committees, and papers which may from time to time be presented to the Chapter for its consideration, and all communications ordered to be "placed on file." He shall conduct all domestic corrsepondence, and draw all warrants upon the Treasurer for moneys ordered paid by the Chapter or the Executive Committee. He shall notify applicants for membership of their election, shall keep a complete roll of membership, and issue notices for all regular and special meetings of the Chapter.

SEC. 4. The CORRESPONDING SECRETARY shall conduct all foreign correspondence, by which it is understood all correspondence beyond the jurisdiction of this Chapter, as defined in Section 2 of Article V. of the Constitution, and shall perform the duties prescribed in Sections 4 and 5 of Article XI. of the Constitution and By-Laws of the American Institute of Architects, and perform such other corresponding duties as the interests of the Chapter may require.

SEC. 5. The records and correspondence of the Chapter shall at all reasonable times be open to the inspection of any member of the Chapter in good standing.

SEC. 6. The TREASURER shall collect all moneys due the Chapter, and disburse the funds only as directed by the Chapter, or upon the order of the Executive Committee, duly signed by the President and Recording Secretary.

SEC. 7. He shall keep the accounts of the Chapter in books belonging to it, which shall be at all times open to the inspection of the officers; and shall report at every annual meeting, and oftener if required, on the state of the funds.

ARTICLE VI.

PROPOSITIONS FOR MEMBERSHIP.

SEC. 1. All propositions for membership must contain the names and residences of the applicants and their referees, and that of the party proposing. The application, being in due form, shall be referred to a Committee of three, appointed by the presiding officer to investigate the standing and qualifications of the applicant. Such Committee to report the result of their investigation at the next ensuing regular meeting.

SEC. 2. No application for membership shall be acted upon at the meeting upon which the same shall have been submitted to the Chapter, other than the appointment of an Investigating Committee.

SEC. 3. Upon the report of such Committee, the Chapter shall proceed to ballot, and if not more than three of the members present shall vote against the applicant, he shall be declared elected, and admitted to membership.

SEC. 4. Corresponding, Honorary, and Life Members shall be proposed and elected by ballot, subject to the provisions of Section 1 of this Article.

SEC. 5. The admission fee provided in Article VIII. shall accompany all applications for membership.

SEC. 6. Rejected candidates shall not be again proposed for a period of six months following their rejection. And no ballot resulting in the rejection of a candidate shall be reconsidered without the *unanimous assent of all those who participated* in, and at time, place, and meeting when such unfavorable balloting shall have been held, and before any who may have voted shall have retired.

SEC. 7. Candidates elected to membership, who shall fail for a period of three months to signify their acceptance thereof by signing the Constitution and By-Laws, and paying the initiation fee, shall be considered to have declined affiliation; and can afterward obtain membership only by reproposal and election.

SEC. 8. Applicants for membership shall *not be present* during the reading and consideration of the report of the Investigating Committees in their cases respectively, except by special invitation of the Chapter.

ARTICLE VII.

MEMBERSHIP—PRIVILEGES—MANAGEMENT.

SEC. 1. The *membership* of this Chapter shall be as defined in Article V. of the Constitution.

SEC. 2. The management of the affairs of the Chapter shall be vested in the "Fellow members."

SEC. 3. *Associate members* shall be entitled to all the benefits of the Chapter; the right to participate in all debates and discussions of a technical character; to vote on applications for membership other than of Fellows, but shall have no right to vote on matters of legislation, and questions before the Chapter for its decision, nor to hold office.

SEC. 4. *Draughtsman members* shall enjoy the rights and privileges accorded to Associates, except that of voting for the admission of Associate members.

SEC. 5. *Articled Student members* shall be entitled to the privilege of attending the regular and special meetings of the Chapter; may enjoy the right, by permission of the Chapter, to present and debate matters of special interest to their class, and to ask for information upon matters and subjects of special interest, but shall have no right to vote, except upon the admission of Student members.

SEC. 6. *Corresponding, Honorary, and Life Members* shall enjoy all the rights and privileges of the Chapter, except that of voting and holding office; except that the rights and privileges of members of the Chapter who become Corresponding, Honorary, or Life Members shall not be affected thereby.

SEC. 7. It shall be the duty of Draughtsman members, upon beginning the general practice of the profession, to notify the Secretary of the fact; and after having so practiced for the period of one year, they should cease to be Associates, and become Fellows. Associates who may desire advancement to membership as Fellows, shall make application to the Chapter in writing, which application may be acted upon without delay, or by majority vote of the Fellows present, be referred to a Committee of three, and be subject to the provisions of Section 1, Article VI.

SEC. 8. No member who shall be over six months in arrears shall be entitled to vote or hold office; and if twelve months or more in arrears, shall be considered as having withdrawn, and can only be reinstated by being balloted for as at first, and upon payment of all indebtedness to the Chapter.

ARTICLE VIII.

FEES AND DUES—RESIGNATIONS.

SEC. 1. The admission fee for membership in this Chapter as Fellows shall be six dollars; Associates, four dollars; Draughtsmen, three dollars; Articled Students, two dollars. Members of the subordinate grades may advance to Fellow membership by paying the additional fee, making the total sum of six dollars.

SEC. 2. The dues for Fellow members shall be six dollars yearly; for Associates, four dollars; Draughtsmen, three dollars; and Articled Students, two dollars—payable in each case in two (or one, if preferred) installments, respectively maturing and payable the first day of September and March of each year.

SEC. 3. Any member who shall have paid the annual amount of dues, and who shall be absent from the jurisdiction of this Chapter for the continuous period of one year, shall be exempted from the payment of dues accruing during the period of his absence, if he shall have previously given written notice to the Secretary of his intention to be absent.

SEC. 4. All *resignations* shall be submitted in writing to the Secretary, who shall present the same to the Chapter at the next ensuing meeting. But a resignation shall not discharge the member presenting it from the payment of unpaid dues.

ARTICLE IX.

ORDER OF BUSINESS, AND RULES OF ORDER.

SEC. 1. 1. Calling the Roll.
2. Reading Minutes of Previous Meeting.
3. Reading Minutes of Special Meeting.
4. Reports of Standing Committees—Executive, Trustees, Finance, etc.
5. Reports of Special Committees.
6. Reports of Committees on Applications for Membership.
7. Balloting on Applications for Membership.
8. Propositions for Membership.
9. Annual Address.
10. Reading Communications.
11. Unfinished Business.
12. New Business.
13. Reading of Papers, Debates, Addresses, etc.

SEC. 2. RULES OF ORDER may be suspended by a majority vote of the Fellows present. But NO BY-LAW of this Chapter shall be suspended under any circumstances, except as provided in Article XIV.

SEC. 3. At the annual meeting of each year the President, or such other person as he shall designate for the purpose, shall deliver THE ANNUAL ADDRESS.

SEC. 4. No motion or resolution shall be debated until it shall have been duly moved and seconded and each speaker shall be confined strictly to the motion under consideration.

SEC. 5. No question shall be stated by the Chair unless properly moved and seconded, nor be open for discussion until stated by the presiding officer; and while a motion is pending before the Chapter, the only motions in order shall be:

1. To Lay on the Table.
2. The Previous Question.
3. To Indefinitely Postpone.
4. To Definitely Postpone.
5. To Recommit.
6. To Refer.
7. To Amend.

Each of which shall have precedence in the order in which they are arranged; and the first three shall be decided without debate.

SEC. 6. The previous question shall be put only when demanded by a majority of members present entitled to vote. When so demanded it shall be in the following form: "*Shall the main question now be put?*" If decided affirmatively, the main question shall then be put without further debate.

SEC. 7. An amendment to an amendment shall be in order, and take precedence of the amendment; but a motion to amend an amendment to an amendment shall not be entertained.

SEC. 8. A substitute shall be considered in the light of an amendment, and shall be treated as such. But no substitute or amendment shall be entertained, the object of which shall, in purpose or effect, introduce a subject different from that under consideration.

SEC. 9. The proceedings of the Chapter, not otherwise provided for, shall be governed by the rules and parliamentary usages and practices laid down in "Cushing's Manual."

SEC. 10. Discussions of religious or political subjects shall not be permitted at any meeting of the Association.

ARTICLE X.

EXECUTIVE COMMITTEE.

SEC. 1. The President, Vice-President, Recording and Corresponding Secretaries, and the Treasurer of the Chapter, together with the Board of Trustees, shall constitute an Executive Committee.

SEC. 2. The duties of said Committee shall be to exercise control and supervision over the affairs of the Chapter, provide rooms, make all purchases and contracts not otherwise provided for, but shall not incur any liabilities in excess of the amount of unappropriated funds in the hands of the Treasurer, except by special instruction from the Chapter, and shall perform such other service as may be for the best interest of the Chapter.

SEC. 3. Said Committee shall make a full written report of its acts and doings at the annual meeting, and whenever required by the Chapter, which reports shall be filed in the archives of the Chapter.

SEC. 4. The President and Recording Secretary of the Chapter shall act *ex officio* as officers; five members constituting a quorum of the Committee.

ARTICLE XI.

TRUSTEES.

SEC. 1. At the annual election of officers in each year, there shall be elected by ballot three Trustees, who shall hold office for the period of one year, or until their successors are elected.

SEC. 2. Said Trustees shall organize as a Board as soon after their election as practicable, by the election of a Chairman and Secretary.

SEC. 3. The duties of said Trustees shall be to take charge of, and hold in trust for the Chapter, all funds over an amount in the hands of the Treasurer necessary to meet the current expenses of the Chapter; all property and valuables which may come into the possession of the Chapter by gift, purchase, transfer, or otherwise; deposit all moneys in their possession, belonging to the Chapter, in such bank or savings institution, or invest the same in such securities, as the Chapter may from time to time direct. They shall also make a full written report of their official acts, and the state and condition of the funds, investments, and properties of the Chapter at each annual meeting, and whenever required by the Chapter. And at the expiration of their terms of office, they are to deliver up all moneys, properties, and valuables of every nature and kind, together with all books, papers, and other things belonging to the Chapter.

SEC. 4. Each Trustee shall give a separate bond for the faithful performance of his duty, in such amount as the Chapter may from time to time require.

ARTICLE XII.

DEPORTMENT AND PRACTICES OF MEMBERS.

SEC. 1. Should any member be reported to the Chapter in writing, by any responsible party, under a properly attested affidavit, as guilty of unprofessional practices or disreputable conduct, calculated to reflect reproach upon the profession and this Chapter, the matter shall be referred to the Executive Committee for investigation; and said Committee shall notify the member so charged, requesting his attendance at a meeting of the Committee appointed for the purpose; and after a full investigation of the charges and facts, the Committee shall have the power to dismiss, or report the case to the Chapter for further action.

SEC. 2. Should the Committee find the charges of sufficient importance to justify action on the part of the Chapter, they shall prepare a statement to that effect, with recommendations as to the proper course to be pursued.

SEC. 3. Should the charges be sustained, the offending member may be reprimanded by the chair, censured by a vote of the Chapter, or be expelled by two-third vote of the Fellows present voting in favor thereof, provided that the offending member shall have been notified of the action of the Chapter, and allowed one month to arrange and make his defense.

SEC. 4. A vote involving censure or expulsion shall be decided by ballot. Two-thirds of those present and entitled to vote being necessary in all cases of expulsion.

ARTICLE XIII.

DUTIES OF AN ARCHITECT.

All of the following are included in the ordinary charge of five per cent.

Preliminary sketches.
Working drawings and plans sufficient for an estimate and contract.
Preparation of contract and bond if required.
Detailed drawings and instructions for execution.
General superintendence of works (exclusive of clerk of works).
Examining and passing the accounts, and certifying to payments.
Preparing rough estimates of cost by cubing or otherwise.

An architect is bound, under the five per cent. charge, to provide one set of drawings and one set of tracings, with duplicate specification; it being understood that the architect is paid for the *use* only of the drawings and specification, and that they remain the property of the architect.

PROFESSIONAL PRACTICES AND ARCHITECTS' CHARGES.

The following Scale of Charges for Professional Services is strictly in accord with, and not in excess of, those established by the American Institute of Architects and the Chapters under its jurisdiction in New York, Boston, Rhode Island, Philadelphia, Albany, Baltimore, Chicago, Cincinnati, St. Louis, and other States and cities of America, and the Architectural Societies of England, France, Germany, Sweden, and other European countries.

For full professional services (including superintendence), 5 per cent. upon the full cost of the work.

Partial Services:

For preliminary studies, 1 per cent.

For preliminary studies, general drawings, and specifications, $2\frac{1}{2}$ per cent.

For preliminary studies, general drawings, details, and specifications, 4 per cent., exclusive of superintendence.

For works costing less than $5,000, and for monumental and decorative work, designs for furnitnre, etc., special rates in excess of the above.

For the alteration and remodeling of buildings previously erected, an additional charge to be made for surveys, measurements, etc., according to the time, skill, and trouble involved. An additional charge to be made for alterations and changes in plans after they shall have been prepared according to agreement and instructions given by clients.

All traveling expenses and the value of extra time required in traveling to be paid by clients, in cases where the work in hand is beyond reasonably easy distance from the architect's office.

Additional charges to be made for visits for professional consultations, and in accompanying travel, whether by day or night; in negotiations for sites, party walls, and all services incidental to general operations.

The payment of architects' fees shall mature as the work progresses, one-half the amount thereof being payable upon completion of the plans and specifications on buildings and works costing less than $10,000, with earlier payments on larger operations, and additional payments as the work progresses, with final settlement upon completion.

Until the actual cost of contemplated work is determined by competitive or other competent estimates, the charges for architects' services are to be based upon the *proposed* cost thereof.

Architects are entitled to professional compensation upon the *entire cost* of the building or works when completed, including all fixtures and appurtenances necessary to render the same fit for use or occupancy. Also to a fair additional compensation on furniture, or other articles designed or purchased by the architect.

Should the owner have come into possession of, or in any way furnish, materials of any nature or kind required in the execution and completion of any building or works, the true value thereof shall be computed and added to the sum of all contracts, and the architects receive commissions upon the total sum.

Drawings, as instruments of services, are in all cases the property of the architect.

In cases of failure of contractors to complete the work undertaken, thereby involving extra labor, trouble, and vexation upon the architect, the architect shall be entitled to extra compensation, according to the extra services required.

Valuations.—The following definite charges are recognized:

For Valuation of Property, the charge throughout is one (1) per cent. on the first $5,000, and one-half ($\frac{1}{2}$) per cent. on the remainder, up to $50,000. Below $5,000, and beyond $50,000, by special arrangement. These charges do not include traveling expenses, nor attendance before juries, arbitrators, etc.

Arbitration Fees.—The charges shall be regulated according to the time and professional skill required, based upon a charge of not less than $25 per day to each party, for each and every day of such service. The time occupied each day, whether one or more hours, shall constitute a day in this connection.

Per day.—The charges per day which shall be made by practicing architects depend upon their professional position; but the mininum charge shall not be less than fifteen dollars per day. The full time employed in traveling, making estimates, preparing statements, etc., to be included.

The charge per day *for draughtmen's* services employed in architects' office shall be ten dollars, including the supervision of the architect, and the usual office expenses of paper, ink, etc.

Clerk of Works.—In work of importance, where a "clerk of works" is necessary, he shall be appointed by or with the consent of the architect, as the proper carrying out of plans and specifications can only be secured when such clerk of works shall be fully competent, and willing to obey and enforce the directions of the architect. The owner to pay the expense of said clerk of works.

Competition.—In all cases where designs in competition are solicited, the architects accepting should receive a true and definite list of those against whom they are to compete, and should also be paid a reasonable sum for their services, according to the extent of the work, whether successful or not. Competitions should not extend beyond works of a *public character*.

The sum offered as premium should never be merged in the architect's usual commission, but should be considered an honorary reward for the skill displayed, and as an offset to the risks and uncertainties of a competition.

Sketches and Consultations.—In cases where an architect prepares sketches for work, or is consulted and gives advice, and his services are not further required, charges for said sketches or consultations are to be made—the basis of charge being the time employed. If the sketches shall have been studied, and drawn out so far as to exhibit a complete design, the charge is one (1) per cent. on the estimated cost of the work; the sketches in all cases remaining the property of the architect.

Superintendence and Detail Drawings.—In the making up of the five per cent. usual commission, two and one-half per cent. is to be considered as the proper apportionment for the contract drawings and specification, one and one-half ($1\frac{1}{2}$) per cent. for the detail drawings, and one (1) per cent. for the superintendence. No member of this society shall recive any fee or compensation for his services from any person or persons other than his original employer.

Changes in Plans.—In cases where an architect shall have prepared plans according to the instruction and approval of the owner, and for any cause or reason, either before or after the same shall have been submitted for estimate, the owner shall change his purposes, and abandon the execution of a part or portion of the improvements contemplated by the original drawings, the architect shall be entitled to full compensation, as though no changes had been made; and also to compensation for all additional work and drawings rendered necessary by such changes.

ARTICLE XIV.

DUTIES AND RIGHTS OF MEMBERS.

SEC. 1. It shall be the duty of all members of this society to aim at excellence in conduct and qualification; to have an eye single to the interests of their employers, and to the advancement of the art; and while, in nature of society and business, each will come into competition with the other, our emulation should be to perform the *best* work, rather than the most of it.

SEC. 2. It shall be the duty of all members of the Chapter to maintain their rightful authority in the direction of all work under their charge, not recognizing the right of interference from any source; and to discourage and discountenance all methods of obtaining professional engagements, not of a worthy and reputable character, and by direct negotiations with owners or their *legal* agents.

SEC. 3. It shall be the duty of the members of this Chapter to refrain from and discountenance any and all attempts to supplant a fellow-member by proposals abating charges, or by any other violation of the strict rules of right and honorable practice, so as to deprive him of any properly and fairly secured business advantage or engagement.

ARTICLE XV.

AMENDMENTS.

SEC. 1. These by-laws may be amended at any regular meeting of the Association, provided that the proposed amendments shall have been submitted and read at a previous regular meeting, and also a copy thereof in printed form delivered or mailed to each member at least twenty days prior to the date of proposed final action thereon. A two-thirds vote of the members present and entitled to vote shall be necessaryto final adoption.

SEC. 2. All amendments adopted as provided in Section 1 shall take effect immediately after adoption, unless otherwise specially provided.

UTILIZE YOUR BASEMENT APARTMENTS

In the Business Part of the City by using

HYATT'S PATENT ILLUMINATING ROOF

—AND—

BASEMENT EXTENSION.

THE LENSES MAGNIFY, HEAT, AND DO NOT BREAK.

SEE ALL NEW BUILDINGS ON THE BEST BUSINESS MART.

The present dark, damp Cellars, or Coal Vaults, of old buildings made light, cheerful, and well-ventilated Business Apartments suitable for Offices.

Read the following of the many Testimonials received:

LEVI STRAUSS & CO., Importers, 14 and 16 Battery Street,
SAN FRANCISCO, March 4, 1881.

MESSRS. P. H. JACKSON & CO., No. 2 California Street:

The alteration made by you by cutting out the six door sills and risers on the front part of our store, 14 and 16 Battery Street, and substituting HYATT'S PATENT ILLUMINATING ROOF, is quite satisfactory in making in the basement apartment below, in the front part, all that we could desire as regards light. **Our entry clerks are now able to work without the use of gas.**

LEVI STRAUSS & CO.

The **Basements of Messrs. Murphy, Grant & Co's Buildings,** on Bush and Sansome Streets, have been altered and are now lighted by this Improvement.

HYATT'S PATENT

FIRE AND BURGLAR-PROOF SKYLIGHTS.

The Public are requested to examine the **large quarter circle** skylights, recently erected in the rear of **Senator Fair's** building corner Sansome and Pine. Also **A. B. McCreery's** building corner of Pine and Davis. By the use of these heavy Skylights, which are both fire and burglar-proof, **no extra charge in rates is made by the Insurance Companies than if no Sky-lights were used,** as they are not destroyed by fire, like the wood and sheet-iron skylights in common use; besides the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

☞There are many deep stores in this city that are much in need of light, and by an addition of these Skylights all light can be obtained, besides security againt thieves is maintained.

The appearance of the Skylight, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan Building, as altered, has these Skylights on the rear of the deep stores.

P. H. JACKSON & CO.

Sole Licenses and Manufacturers for the Pacific Coast of Hyatt's Patents,

No. 2 California Street and No. 231 First Street,

SAN FRANCISCO.

SUBURBAN RESIDENCE.—Designed by Walter Ferriss.

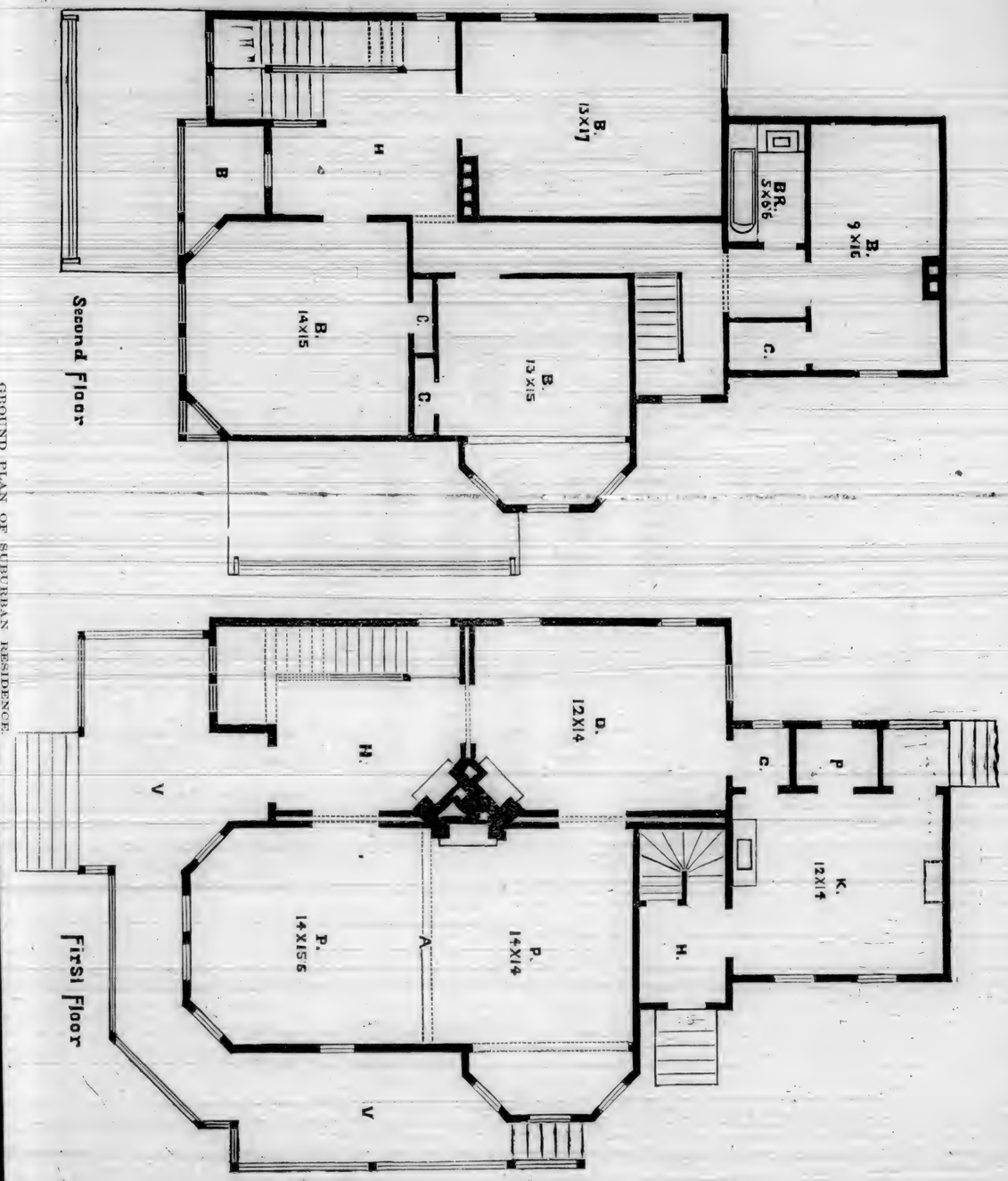
Nice Times for Architects and Artisans in the Fourteenth Century.

"Wyckham was Bishop of Winchester, but it must be remembered that during the Middle Ages there were no architects but what were monks or ecclesiastics, as all the learning was confined to the monasteries.

"Wyckham was paid by the king *one shilling daily* as salary, and *three shillings a week* for his clerk of the works, as architect of the castle palace—a gorgeous style of composition introduced by Wyckham in the royal palace of Windsor during a reign of this patron, Edward III. To obtain artisans, the king issued writs to the sheriffs of several counties, directing them under a penalty of one hundred pounds to provide a certain number of workmen, and send them to Windsor within ten days, to be employed at the king's rates of wages, as long as was necessary. And because divers of these workmen did afterward clandestinely leave Windsor, and were entertained by other persons upon greater wages, to the king's damage and manifest delay of his work, the sheriff's were ordered to make proclamation that those persons who should presume to employ any of the fugitive artisans should be dispossessed of all their property. The sheriffs were also directed to arrest the runaways, and commit them to Newgate."

Beading Circular Work.

A common thumb-gauge may be very readily converted into a labor-saving tool for sticking beads—either edge quirk, or center beads—by slitting one end of the gauge tail and fastening the bit of any bead plane in it in an upright or plumb position. The slot in the gauge should be made long enough to leave room near the end for putting in a screw so as to tighten the bit. This tool makes a scraping cut, which, although not as smooth as may be done on straight work, may be made to look tolerably fair by sandpapering well. The general form of the beaded work will be far superior to that worked out by hand.



GROUND PLAN OF SUBURBAN RESIDENCE.

Sash Windows.

The sash window is one of those modern inventions which persist in spite of tastes and numerous modifications. It seems to have been introduced about the period of the Classic revival in England, and to have maintained its position as the most convenient kind of window fitting. Architects have never been very partial to it; during the Gothic mania it was abused more than any other feature of modern houses, and was pronounced one of the ugliest remnants of Classic taste. The French casement and the mullioned window have been always more popular. One of the stock arguments used by the Gothicist during the "Battle of the Styles" was the use of too prosaic a form, while on the other side the Classicist was not inclined at all at that time even to defend a feature which he had been endeavoring to improve. As every one knows, there was, and is still, a strong desire to conceal the framework, either by painting the woodwork black or some dark shade, or by inserting plate glass in the frames. We have lived to see a very opposite fashion set in. The Queen Annist rejoices to make the frames a visible part of the window, and to fill the sashes with as many small panes of glass with thick, white bars as he can. But it is with the various improvements that have been made in the mechanism of the sash window that we are now concerned. Several modifications have been made and patened for opening window sashes and for cleaning them. Though the casement window has been admired, it has had a bad reputation for failing to keep the wet out, in spite of numerous ingenious appliances for fastening. The recent patents that have been brought out for lifting windows, and for enabling the sashes to be opened for cleaning, are evidences of a desire to improve and perfect an appliance that has met with public approval, and which is now a pronounced feature in modern houses. The chief mechanical drawbacks of the sash window are the difficulty of raising heavy sashes, the want of a lifting power, the tendency of the sash to hang on one side, difficulty of cleaning the sashes, the breakage of the cords, the inefficiency of the usual window fastenings, and the rattling of the sashes in windy weather. Many if not all of these drawbacks have been made the subjects of patents. Thus we have the admirable arrangement of Mr. R. Adams, the "anti-accident window," by which the sashes are balance pivoted, so that either of the sashes can be turned round so as to enable the outside to be cleaned without risk of accident; another (Philips') "reversible" window, constructed on a similiar plan, and for the same purpose, by which the ordinary sashes can be made to swing round for cleaning from the inside. In this case the sashes are hung clear of the slips and inside bead; the check to the wet being made by rabbeting the side of the sash and fixing in it a metal bar with a screw, the latter being made to form the pivot for turning on. Other various patents have been introduced for hanging the sashes, so that they may be removed from the frames without taking off the inside beads. Gurman's sash pocket is a simple method, though not now generally known, by which the weights can be easily taken out and the sashes cleaned. Bullivant's patent is another well-known modification. Messrs. Leggott are the patentees of a window lift and fastener which command approval. By the action of a screw working into a rack in the sash frame both sashes can be opened simultaneously, or only the bottom sash. Sash cords and weights are thus dispensed with, and a source of trouble and expense avoided, and no sash fastener is required, as the sashes are locked by the screw and rack motion in any position. Another invention recently patented, the "imperial window," facilitates ventilation and cleaning. The top sash is made longer to run up into a casing about 12 inches, so that it can be lowered for ventilation at the meeting rails, and other improvements are made by which the sashes can be readily taken out and cleaned. The old-fashioned sash lines and weights are certainly behind the age; the inconvenience, difficulty of removing the beads, taking out the pocket pieces, and repairing the lines, are well know by all householders; and any suggestion for hanging the sashes without cords and weights is worthy of consideration. There is, of course, a mechanical difficulty in doing this so as to allow only one sash to be open at a time, but it is easy to devise means of getting at the weights and cords without the trouble it now entails. It is an advantage, too, to make the sashes so that they can be balanced on pivots, or raised in a horizontal position. The air-tight tongues which are withdrawn into grooves by turning a key enable either of these positions to be attained very quickly, as in Mr. R. Adam's reversible window; and windows with these movable tongues can be made very air and dust tight—not a small advantage in crowded town streets.

Many devices have been proposed for opening and closing sash windows, particularly wide, heavy sashes with plate-glass. One of the best of these is Meakin's "self-acting sash fastener and opener," too well known to need description here. In the same class of appliances the architect ought not to lose sight of Adam's patent fanlight opener, or the rack and screw adjustment of Messrs. Leggott. It is unnecessary to name other ingenious appliances of the same kind, our objects being merely to indicate a few of the principal aims, in all of which the advantages of the sliding sash window are preserved and maintained. The simplest of these appliances are the best. The advantage of the sash window over other forms is that it does not occupy room; it can be opened or closed in its own area (a great consideration in town houses) the sashes can be regulated at pleasure to allow any amount inlet and outlet of air, one of the best forms of ventilation, and, if properly constructed, it is the securest form of window, and the most water-tight. The present style of building has brought the sash window into repute again, and the villas and suburban dwellings of the metropolis are now all filled with them. Few of these, however, are fitted up in a style superior to that of windows of fifty years ago. Very seldom we find any attempt made to introduce improvements of the kind we have mentioned. The sash lines and weights are of the commonest description, the pulley stiles have no arrangement for easy access to the weights, the sashes shake about, and the window sill is seldom properly double sunk or grooved; the fastenings are of the most trumpery kind, and there is no plan by which the sashes can be cleaned except by getting outside. It may be asked, Why are not these inventions now more generally adopted? The speculative builder has no inclination to introduce specialties in building; so long as the tenant is satisfied with the old arrangements, he does not feel himself justified in going in for fittings of an expensive character. The smaller class of tenants have not the desire or inclination of saving trouble to themselves or promoting their own comfort; but the architect has no such excuse to plead for not specifying the best means of saving the domestic labor and insuring domestic completeness. Some of these appliances have been disregarded by the profession on account of their complexity, or that they are too cumbrous for every-day use; and this is a fault which inventors are very apt to commit, and which a little more thought would have enabled them to avoid.—*Building News.*

☞ **Subscription price of this journal is $2.00 in advance.**

The Hammer.

Taking as its text the ancient legend of the Mechanic's Associations, "By hammer and hand, all arts do stand," the *Economist* pays the following glowing tribute to this implement of industry:

The hammer is the universal emblem of mechanics—those skilled in uniting and binding together of meterials. With the hammer are alike forged the gliding sword of contention, and the dusty plowshare of peaceful agriculture. Its workmanship ornaments the trappings of war, and nails the olive-branch of peace above the gate. In ancient warfare it stood pre-eminent, apart from the instruments it wrought and formed. The old battering ram of the Greeks was nothing but the rude conception of a huge hammer. In heathen mythology it was always the symbol of might and strength. It was the sole weapon of the dreaded God of thunder, Thor, the mighty rival of Odin. His hammer was fashioned by cunning dwarfs, and possessed the wonderful property of returning to his hand after being hurled. To the heathen Teutons the sign of the hammer was analogous to that of the golden cross of Christianity. In the hammer lies the wealth of a nation. By it are forged the ponderous engines that almost shake the world, and the tiny needle which unites alike the costly silks and satins of a queen, and the rough homespun of a laborer.

The hammer, too, is no partisan. It is an instrument of the savage and the civilized. Its merry clink points out the abode of industry and labor. Its handle is extended, inviting all to grasp, and with its unyielding head, by the help of the strong arm, forges happiness and prosperity. It is, in fact, a domestic deity presiding over the aspiration of wealth and ambition. Not a stick is pointed, not a house is built, not a ship floats or a carriage rolls, or a wheel spins or an engine thunders; not a press speaks or a bugle peals, a spade delves or a banner floats—without having endured the blows of the hammer. So it instructs and teaches us that great ends and large results can only be accomplished by good, hard, vigorous blows. That if we would attain usefulness, and reach the full perfection of what we are capable of becoming, we must not shrink back from the hardships, buffetings, and hard knocks of life, but early learn to cultivate the power of patient endurance.

Scientific Paradoxes.

The water which drowns us can be walked upon as ice. The bullet which, fired from the musket, carries death will be harmless if ground to dust before being fired. A chrystallized part of the oil of roses, so graceful in its fragrance, a solid at ordinary temperatures, though readily votatile, is a compound substance, containing exactly the same elements, and exactly the same proportions, as the gas with which we light our streets. The tea which we daily drink, with benefit and pleasure, produces palpitations, nervous tremblings, and even paralysis if taken in excess; yet the peculiar organic agent called "theine," to which tea owes its qualities, may be taken by inself (as theine, not tea) without any appreciable effect. The water which will ally our burning thirst augments it when congealed into snow, so that Captain Ross declares the natives of the Arctic rerions "prefer enduring the utmost extremity of thirst rather than attempt to remove it by eating snow." Yet if the snow be melted, it becomes drinkable water. Nevertheless, although if melted before entering the mouth it assuages thirst like other water; when melted in the mouth it has the opposite effect. To render this paradox more striking, we have only to remember that ice, which melts more slowly in the mouth, is very efficient in allaying thirst.

IVES' PATENT DOOR BOLTS.

Sold by all Hardware Dealers.

(APPLIED WHOLLY BY BORING.)

HOBART B. IVES, NEW HAVEN, CONN.

Sole Manufacturer and Patentee.

Hygiene in Painting.

Hygiene relates to considerations for the general promotion of health and the prevention of disease; but we are now going to show wherein painting affects the health of those who dwell in city-built modern houses. A new house, when completed and freely ventilated, offers you a clean habitation, with its bright, cheerful rooms full of new odors emanating from the fresh combination of materials utilized in its general make-up. You feel imbued with a sense of purity in the atmosphere that fills each apartment, as you pass through the several suits that form the domicil; it exhilarates the senses, and sends a good cheer streaming through every fiber of of your body, and are thus made happy by the *newness* you see, feel, and breathe. These effects do not appear when you chance to enter an old house with a label on it "To Let"; but, on the contrary, the odors are numerous, your senses are shocked, a repulsive feeling takes possession of you, and in disgust you quit the tenement for a breath in the open air. Now, we believe that a large percentage of buildings in this city that have been promiscuously occupied by the moving and roving house population are detrimental to health. For when we take into consideration the thousands of humanity that have occupied these houses from time to time as dwellings, any one of which has thrown off in exhalations a vast amount of impurities from their bodies as waste upon the air contained in these badly ventilated tenements. The porous system is said to contain 28,000 pores to the square inch, or about seven millions for the entire surface. These in healthy persons are constantly throwing off impurities from our bodies, or useless matter, which, if retained, act as poisons to the system. Then the freighted air which carries off this effete matter, being impeded in its progress, deposits some of its burden on the walls or wood-work of every appartment, and thus the work goes on for years. The landlord is called upon to clean the house, and it is whitened, not cleansed, and this is all that he can afford to do, say his agents. The interior of houses are suffered to go on from year to year accumulating the solid accretions of unhealthy matter, and in many cases of noxious effluvia, which in time disseminate its deathly seeds to whole families, and the fatality is ascribed to other remote causes. The present style of painting common houses inside is to paint and grain the entire wood-work, because it is so easily cleansed, but is never thoroughly done. This style of work is undoubtedly good in all living rooms and hall-ways; but the parlors and sleeping apartments should be done in plain color, the body coats of lead paints, and finished with zinc in a flat or glossless finish. The object of painting rooms in this manner is to have them in a condition that subsequent coats of thin layers can be easily applied when deemed necessary for the thorough disinfection of the premises. The walls, when done in distemper colors, carry more by absorption than paints in oil, and for that reason they need entire removal before renewal. This remark applies to all compositions of whitening or zincs, and then the new coats will be fresh, sweet, and clean. To renovate a house after years of occupancy, it is necessary to remove all former accumulations by scraping and washing before new work is applied. Then will follow the painting, whitening, graining, and varnishing, and when this work is accomplished the house will once more be fitted for habitation. There are a large amount of the "to let" tenements that are never thoroughly cleansed; because the rentals are low, property is allowed to depreciate for want of healthful repairs. A house that is properly kept up to the sanitary requiremets of health will not wait long for a tenant, and will rent enough better to pay the owner a handsome return for the outlay. There is nothing that attracts the attention of those who want a home more than a fine-looking house, bright and cheerful in aspect, as to exterior; then the interior should have its counterpart fresh from the painter's hands, making it fit for any one who loves a sweet home. J. E. W. C.

What Mechanics Read.

From G. C. W., *Lockport, N. Y.*—In a late number a correspondent says that he is astonished at the statement of Mr. Robert Riddell, that 95 per cent. of the mechanics of this country are regular patrons of dime novels and the light literature now so generally published. If the 95 per cent. represented real mechanics he would have cause for his feelings, but the facts of the case are that the 95 per cent. are not mechanics. Five per cent. may be mechanics, but the others are not deserving the name. The 5 per cent. stow away more sound sense in one evening's reading than the 95 per cent. are capable of mastering in a month. Here is a specimen of one of the 95 per cent. fellows, taken from Chordal's letters. He says: * * * * I was in the office of a certain engineer the other day, and a mutton-headed boy about 19 years of age came in. He was a machinist. His father owned a shop, and he had served his time in it. He wanted to learn to "draft," he said. Said his father wanted him to learn; he wanted to learn himself, and his father would pay all reasonable bills. Torsion, the engineer, began to catechise him. "What have you ever drawn?" "Nothing." "What have you ever wanted to draw?" "Nothing." "What have you ever made rude sketches of?" "Don't know as I ever wanted to draw anything, and could not make a 'draft' if I wanted to, because I never learned how." "That's all right," said Torsion, "you will never draft anything, and will never be wanted to. I'll see your father this week." Torsion turned to me and said he had a dozen such fellows to deal with every month, and treated them all the same. "But," said he, "when some greasy boy slips in here and pulls out some horribly original drawing, and asks me why the ink lines run when he puts color on, or how a fellow's to judge good India ink, or how this thing is to be drawn so another can understand it, then I quit work and stay by that fellow, and place my time, library and office at his disposal."—*Carpentry and Building.*

Market Reports.

LUMBER.—Stirring times with steady demand is all that can be said of the market the past month.

Receipts since January 1st, 1882:	
Lumber	108,573,868
Shingles	22,921,761
Laths	8,409,350

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough		"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	32 50
"	4 " and under, and 1¼x4 and 1¼x6		37 50
Flooring and Stepping			
Rough Clear for Flooring, $1 less than above rates.			
Second quality Flooring and Stepping		per M feet	27 50
Ship Plank, Rough		"	28 50
"	Planed 1 side	"	32 50
"	" 2 sides	"	35 00
Deck Plank, Rough		"	33 50
"	Dressed	"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17½

Redwood.

Rough Merchantable	per M feet	22 50
" Refuse	"	18 50
Surface No. 1	per M feet	$37 50
" 1 x 6	"	35 00
" No. 2	"	27 50
Rustic, No. 1, 1 x 8	"	35 00
" No. 1, 1 x 10	"	37 50
" No. 2	"	32 50
" Under 10 feet	"	32 50
T. & G., 1¼ x 4 and 1¼ x 6	"	37 50
" 6 in. 12 ft. and over	"	35 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	27 50
T. & G., Beaded, 12 feet and over	"	35 00
" " 7 to 11 feet	"	30 00
" " under 7 feet	"	27 50
Half-inch Surface	"	30 00
Pickets, Fancy	"	27 50
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	25 00
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

NAILS.—Since January 1st, 1882, we have imported.....142,458 kegs.

10 to 60 pennies, are quoted at	$4 00
8 " "	4 25
6 " "	4 50
5 and 4 " "	5 00
4 and 5 pennies, brad heads, at	5 25
6 " "	5 50
8 " "	5 75
10 and upward "	5 00
3 penny fines "	7 50

PAINTS.—A new company has made its appearance, introducing the OMAHA WHITE LEAD. With the large demand that is confidently expected this year, the agents should be able to control a fair amount of patronage.

The PIONEER brand has been successfully introduced into every town and hamlet on the Pacific coast, and has given universal satisfaction. We quote price at 8 cts. per lb. and 7¾ cts. in "ton" lots.

Building Intelligence.

SAN FRANCISCO.

Owing to the large number of buildings at present being erected, we have deemed it necessary to abbreviate the terms used. Hence in this and in future issues the following letters will have the accompanying meaning: *A.*, architect; *C.*, contractor; *O.*, owner; *O.* and *B.*, owner and builder. The points of compass by E., W., N., and S.

Improvements on lot S. W. corner Mission and Fifth, four-story frame, brick basement, on Fifth street and three-story frame and brick basement on Mission street. Stores, dwellings, and lodging house. *O.*, P. J. Donohue; *A.*, T. J. Welch; carpenter work, J. W. Smith; brick work, O. E. Brady; plumbing, McNally & Co.; painting, B. Bradley; plastering, Headley and Mulvihill; total cost about $120,000.

Alterations and additions to block of buildings, S. W. corner of Taylor and Eddy. *O*, A. Chavanne; *A.*, A. Pissis; *C.*, G. W. Hansbrough; $16,000.

Five two-story frame dwellings N. W. corner California and Fillmore; *O*, E. F. Preston; *A.*, Schmidt & Havens; *C.*, R Smilie; $16,000.

Additions to building corner Golden Gate avenue, and Laguna street. *O.*, Mark Sheldon; *A.*, Wolfe & Son; *C.*, Moore Bros.; $8,500.

Two-story frame building, Eighteenth near Jessie. *O.*, J. F. Westheimer; *A.*, Wolfe & Son; *C.*, W. J. Peters; $2,200.

Six two-story and basement frame dwelling, on N. side Oak street, between Octavia and Laguna. *O.*, H. P. Hale; *A.*, Swain & Cleaveland; *C.*, Girvin & Munnis; $35,000.

Three two-story frame, S. side Sacramento, between Pierce and Steiner. *O.*, G. L. Reynolds; *A.*, Meeker & Banks; *C.*, J. Treadwell; $8,000.

Two-story frame, N. side California near Fillmore *O.*, E. J. Delaney; *A.*, Schmidt & Havens; *C.*, Walker Bros.; $6,000.

Two-story frame, W. side Fillmore, between Pine and California. *O.*, G. Robinson; *A.*, T. J. Welch; *C.*, Moore Bros.; $4,000.

Two-story brick building, Bay street near Webster; *O.*, Merry, Faull & Co; *C.*, Walker Bros.; *A.*, H. T. Bestor; $7,000.

Two-story and basement frame dwelling, corner Scott and O'Farrell. *O.*, J. Dowling; *A.*, R. Warren; days' work; $7,000

Two three-story frame, Mason near Pacific. *O.*, Shirley; *A.*, W. P. Moore; *C.*, A. Jackson; $9,000.

Two-story frame dwelling, S. E. corner Laguna and Sacramento. *O.*, L. F. Whitney; *A.*, H. D. Mitchell; *C.*, Mahoney Bros; $10,000.

Two-story and basement frame dwelling, N. side California near Fillmore. *O.*, J. O. Van Bergen; days' work; $6,000.

Two two-story and basement frame dwelling, corner Pine and Franklin. *O.*, G. W. Webber; *A.*, T. J. Welch; *C.*, J. Dougherty; $8,000.

Wharf and one-story building at Pacific Rolling Mills. *C.*, Richardson; $48,000.

Repairs to three-story frame, corner Sierra and Louisiana. *O.*, Pacific Rolling Mills; days' work; $4,000.

Two-story frame building, Potrero Point. *O.*, Pacific Rolling Mills; days' work; $1,900.

Two-story frame building, Filbert street between Montgomery and Sansome. *O.*, P. McDermott; *C.*, J. Dougherty; $2,500.

Two-story frame, Polk near Ellis. *O.*, A. Gurdis; *C.*, Watts; $2,800.

Two-story frame dwelling with stable, on Cedar avenue near Larkin. *O.*, Mrs. Gunter; *A.*, A. Schroepfer; *C.*, H. Meyn; $3,850.

Two-story and attic, brick basement, corner Van Ness avenue and Willow avenue. *O.*, W. B. Summers; *C.* and *B.*, W. H. Wharff; $12,000.

Additions to three-story frame, N. side Ellis between Van Ness avenue and Franklin. *O.*, Mrs. Armstrong; $2,000.

Two-story and basement frame, E. side Gough near

O'Farrell. *O.*, T. R. Church; *A.*, J. C. Pelton; *C.*, T. J. Hamilton; $10,000.

Two two-story and basement frame, S. E. corner Scott and O'Farrell. *O.* and *B.*, J. Dowling; *A.*, R. Warren; $7,500.

Four two-story and basement frame, N. side Grove near Laguna. *O.*, G. Middlehoff; *A.*, W. H. Bayless; *C.*, J. Klose; $10,000.

Two-story and basement frame dwelling, S. side Fulton near Van Ness avenue. *O.*, M. Nolan; *A.*, Townsend & Wyneken; *C.*, J. Dougherty; about $4,000.

One-story and basement frame cottage, Lundy Lane between Virginia street and Esmeralda; *O.*, J. J. Willow; *C.*, N. C. Post; $1,200.

Two-story frame on Folsom near Fremont. *O.*, H. Myers; *A.*, Curlett & Eisen; *C.*, W. B. Kreger; $1,400.

Repairs to frame building, S. side Union between Jones near Leavenworth. *O.*, Mr. Kappa; *C.*, J. P. Hansen; $1,000.

Addition and repairs to building, Leavenworth near Union. *O.*, Mrs. M. Kemp; *C.*, S. M. Hills; $1,000.

Repairs to frame dwelling, N. W. corner Washington and Leavenworth. *O.*, J. H. Wise; *C.*, S. M. Hills; $750.

Three-story frame building, Howard street between Beale and Main. *O.*, Risdon Iron Works; *C.*, C. Kinsman; $3,500.

Two-story frame, Illinois street, between Napa and Sierra. *O.* and *B.*, O. W. Hermann; $1,500.

Two-story addition to brick building, N. side Broadway between Dupont and Stockton. *O.*, G. P. Hossatt; *C.*, J. Bonde; $3,500.

One-story and basement frame, N. side Vallejo, between Polk and Van Ness avenue. *O.*, Mr. Lanzendorf; *C.*, F. V. Acker; $1,700.

Three-story frame, corner Filbert and Gough. *O.*, Kranz; days' work; $5,000.

Three one-story and basement frame cottages, corner Fillmore and Moulton. *O.*, Mrs. McCormack; *C.*, G. Barker; $3,000.

One-story and basement frame, S. side Union between Webster and Fillmore. *O.*, Fricke; *A.*, W. Schrof; *C.*, A. Norton; $2,000.

Two-story frame, brick basement, E. side Fillmore between Washington and Jackson; *O.*, J. F. Ortmann; days' work; $4,000.

Two-story frame, corner Steiner and Wildey; *O.* and *B.*, I. E. Alexander; $3,1-0.

Alterations to two-story frame N. side Bush near Octavia. *O.*, C. Hillerbrandt; days' work; $500.

Two-story and basement frame with stable, on S. side Golden Gate avenue, between Laguna and Buchanan; *O.*, Kramer; *A.*, Schmidt & Havens; *C.*, Pluns; $9,-34.

Two-story frame, E. side Fillmore, between Pacific and Broadway; *O.*, G. H. Sanderson; *A.*, H. D. Mitchell; $10,000.

Two-story frame, N. E. corner Geary and Gough; *O.*,— ; *A.*, Schmidt & Havens; *C.*, Mahoney Bros.; $10,000.

Two-story frame, brick basement, S. side O'Farrell, near Laguna; *A.*, J. Goalling; *C.*, McCann & Jeffars; $12,000.

Two-story and basement frame, S. side Ellis, between Buchanan and Laguna; *O.*, Fisher; *A.*, McDougall & Son; *C.*, Sylvester & Langabee; $

Repairs to two-story frame, corner Polk and Ash avenue. *O.*, J. W. Worse; days' work; $1,500.

Two-story frame, Polk street, between Golden Gate avenue and Turk street. *O.* and *B.*, W. Evans; $500.

Repairs to building on Essex street. *O.*, Babcock; *A.*, Cuthbertson; *C.*, Moore Bros.; $700.

E. side Sansome, between Pine and Bush. *O.*, Mrs——; *C.*, Mahoney Bros.; $10,000.

Additions to building, Beale and Fremont streets, near Folsom. *O.*, Whittier, Fuller & Co.; days' work; $4,000.

Repairs to three-story frame, Natoma, near New Montgomery. *O.*, Hagust; *C.*, G. Snyder; $1,900.

Three-story frame tenement, S. side Bu h, between Webster and Fillmore. *O.*, C. L. Taylor; *A.*, Taylor & Copeland; days' work; $6,000.

Additions to two-story frame, N. side Union, near Webster. *O.*, Mrs. Strachan; *C.*, Robinson & Gillespie; $1,300.

Additions and repairs to three-story frame, W. side Taylor, near O'Farrell. *O.*, Mrs. Gunn; *A.*, T. J. Welch; *C.*, P. Lynch; $1,000.

Additions to two-story frame, S. E. corner Larkin and Geary. *O.*, Becker Bros.; *C.*, McGinnis; $800.

Two-story frame, S. E. corner Mission and Twelfth. *O.*, M. Doane; days' work; $2,500.

One-story and basement frame, S. side Clinton Park, between Guerrero and Dolores. *O.*, N. Pierce; *A.*, Townsend & Wyneken; *C.*, Bruce & Gilmore; $1,100.

One-story and basement frame, Lapidge street, between Eighteenth and Nineteenth. *C.*, F. Gonyeau; $900.

Two two-story and basement frame, Hill street, between Valencia and Guerrero. *O.*, S. W. Fuller; *C.*, G. R. Lang; $8,000.

Two-story and basement frame, Twenty-fourth street, near San Jose avenue. *O.* and *B.*, Geo. Edwards; $2,700.

Two-story and basement, frame, Twenty-fourth street, between San Jose avenue and Dolores. *O.* and *B.*, Geo. Edwards; $2,500.

Two-story frame, corner Twenty-third and Howard. *O.*, Mrs. Saul; *A.*, Wright & Sanders; *C.*, R. Doyle; $5,2 0.

One-story and basement frame, N. W. corner Jackson and Octavia. *O.*, Mrs. Delaney; *A.*, W. P. Moore; *C.*, J. L Binet; $5,000.

Two-story frame dwelling, corner Point Lobos avenue and Second avenue. *O.*, P. Donaghy; *A.*, Curlett & Eisen; *C.*, W. P. Clark; $2,500.

Alterations to two-story frame, corner Webster and Jackson. *O.*, E. Allen; *A.*, Curlett & Eisen; *C.*, A. Pare; $1,500.

Two-story and basement frame, on corner Capp and Twenty-first; *O.*, A. M. Jewell; *C.*, H. J. Knapp; $3,700.

One-story frame Folsom near Sixteenth. *O.* and *B.*, John Center; $800.

Two story frame, E. side Tenth between Harrison and Bryant. *O.*, B. F. Gilman; days' work; about $5,000.

One-story frame, W. side Spear near Market. *O.*, Allen, Tuggle & Co.; *C.*, S. M. Hills; $2,000.

Alterations to frame, California near Devisadero. *O.*, Sage; *A.*, W. H. Bayless; days' work, $2,300.

Additions to three-story brick, N. W. corner California and Davis. *O.*, Grangers' Bank Association; *A.*, W. H. Bayless; *C.*, J. Wessinger; $10,300.

Alterations to frame building, Mission street between Eighteenth and Nineteenth. *O.*, J. Hodgboom; *C.*, Sanchez; $2,300.

Two-story and basement frame, Twenty-first and Guerrero. *O.*, D. A. Hulse; *C.*, Sanchez; $4,500.

Two-story and basement double dwelling, Taylor and Lombard. *O.*, H. Werden; *A.*, Geilfuss; *C.*, H. Thom Wohrden; $7,850.

Two-story basement and attic frame, with two-story stable, S. side Golden Gate avenue between Gough and Franklin. *O.* Mr. Schwamm; *A.*, Geilfuss; *C.*, B. Dryer; $6,000.

Repairs to dwelling, William street, between Geary and O'Farrell. *O.*, J. B. Foreman; *C.*, L. Nolling; $1,000.

Two-story frame, Fulton near Pierce. *O.*, C. Goodall; *A.*, C. Geddes; *C.*, W. F. Curtis; $5,000.

Repairing to frame, McAllister and Pierce; *O.*, Goodall; *A.*, Geddes; *C.*, W. F. Curtis; $3,500.

Additions to Sbarboro's premises, Washington street below Montgomery; *A.*, T. J. Welch; *C.* Peters.

Frame building for a hall, on corner Twenty-fourth and Church; *O.*, Chas. Duveneck; *A.*, T. J. Welch; *C.*, J. L. Binet; $2,965.

SACRAMENTO.

Two-story and basement frame, on N. side I street, between Fourteenth and Fifteenth. *O.*, W. W. Grissim; *A.*, N. D. Goodell; *C.*, L. B. Churchill; $3,625.

Two-story frame dwelling, brick basement, on Tenth street, between U and V. *O.*, F. Kuns; *A.*, N. D. Goodell; *C.*, J. White; $2,625.

Two-story frame dwelling brick basement, on Fourth street, between N and O. *O.*, C. Sellinger; *A.*, N. D. Goodell; *C.*, J. White; $2,438.

Alterations to brick building, J street, between Eight and Ninth. *O.*, J. Gouth; *A.*, N. D. Goodell; *C.*, M. Madden; $2,825.

One-story frame dwelling, brick basement, on J street between Twelfth and Thirteenth. *O.*, Eugene Lamet; *A.*, N. D. Goodell; *C.*, H. Coates; $2,071.

Alterations to building, on J street, between Second and Third. *O.*, H. S. Crocker & Co.; *A.*, N. D. Goodell; *C.*, J. White; $950.

Two-story frame dwelling, brick basement, on S. side N street, between Eleventh and Twelfth. *O.*, Henry Weinrich; *C.*, Jos. Ough; $6,500.

Two-story frame dwelling, on N street, between Eleventh and Twelfth. *O.*, C. M. Hartwell; *C.*, Jos. Ough; $4,000.

Two-story brick building, near Yolo bridge, for flouring mill; *O.*, Pioneer Flour Mills Co.; *A.* Babson & Seadler; days work.

Remodeling of two-story brick building, corner Twelfth and H. *O.*, C. H. Krebs; *A.*, Babson & Seadler; *C.*, B. F. Pike; $3,000.

One-story frame, for school-house, Twenty-seventh and J. *O.*, Sacramento city; *A.*, Babson & Seadler; *C.*, Carle & Croly; $3,000.

ALAMEDA.

One-story frame dwelling, with stable, Santa Clara avenue and Sherman street. *O.*, R. Baker; *C.*, C. Nelson; $1,900.

One-story and basement frame dwelling on Sherman street, near Railroad avenue. *O.*, Mrs. Boston; *C.*, J. Conrad; $700.

Repairs to dwelling on Santa Clara avenue and Grand street. *O.*, Williams; *C.*, L. Denet; $500.

One-story and basement frame dwelling, on Alameda avenue, between Chestnut and Willow. *O.*, E. Kerchhoff; *C.*, C. Christansen; $1,000.

Two-story attic and basement frame dwelling, corner Union street and Central avenue. *O.*, F. N. Delanoy; *C.* and *B.*, Gilbert & Brown; $10,000.

OAKLAND.

Two-story double frame dwelling, Seventh street, near Chester. *O.*, Harr Bros.; *A.*, C. F. Mau; *C.*, Smilie; $6,000.

Two-story frame brick foundation, San Pablo avenue and Sixteenth street. *O.*, Geo. Sylvester; *C.*, J. E. Hannah; $3,500.

One-story brick building, E. Twelfth street and Eleventh avenue. *O.*, White & Waterman; *C.*, G. W. Flick.

Repairs to building, Telegraph avenue, near Sixteenth. *O.* and *B.*; J. A. Carlton.

Two-story frame dwelling at Fruit Vale. *O.*, Smith; *A.*, Curlett & Eisen; *C.*, G. W. Flick; $3,500.

MISSION SAN JOSE.

One-story frame dwelling. *O.*, A. Lebrecht; *A.*, Wolfe & Son; *C.*, J. I. Murray; $1,600.

Two-story frame dwelling brick foundation. *O.*, J. Gallegos; *A.*, W. J. Cuthbertson; *C.*, S. Morrell; $5,500.

CLAYTON.

Three-story stone building for wine cellar. *O.*, J. Levi; *A.*, Wolfe & Son; about, $5,000.

WILLOWS.

One-story and basement brick building. *O.*, Hockheimer & Co; *A.*, Wolfe & Son; *C.*, Walker & Merwin; $8,169.

SAN JOSE.

Two-story frame building, brick basement, on W. side Monterey road, 1 mile S. of San Jose. *O.*, H. W. Cottle; *A.*, Theo. Lenzen; *C.*, J. Lenzen; $4,397.

SANTA CRUZ.

One-story octagon brick building for Hall of Records. *C.*, Cal. Bridge Co.; Brick work, S. T. Bowers; $10,470.

NAPA.

Two-story frame dwelling. *O.*, J. W. Coleman; *A.*, Wolfe & Son; days' work; $2,000.

WALLA WALLA.

Two-story and basement brick building. *O.*, Kennedy, Howard & Barrett; *A.*, F. P. Allen; $32,000.

Two-story brick building for jail and engine house. *A.*, F. P. Allen; $10,000.

Brick building for Planing Mill. *O.*, Glassford; *A.*, F. P. Allen; $8,000.

Two-story and basement brick building. *O.*, C. Maire; *A.*, F. P. Allen; $8,000.

Two-story frame dwelling. *O.*, Wm. O'Donnell; *A.*, F. P. Allen; $10,000.

Two-story and basement frame building for school-house. *A.*, F. P. Allen; $18,000.

DALLES.

Two-story and basement frame dwelling, corner Court and Eighth. *O.*, W. R. Abrams; *A.*, A. Bradford; *C.*, C. A. Stowell; $3,000.

Two-story and basement brick building for court-house. *A.*, W. H. Williams; *C.*, N. J. Blagen; $23,000.

Two-story brick school-house, corner Court and Sixth; *A.*, N. J. Biagen; $7,000.

DAVISVILLE.

Block of frame buildings for stores. *O.*, G. Hosg; *A.*, Babson & Seadler; days' work; $3,000.

MISCELLANEOUS.

WOODLAND.—One-story brick building, corner Main street and Railroad avenue. *O.*, Rothe.

One-story frame cottage on Railroad street. *O.*, J. B. Elston; $2,000.

Frame cottage on Railroad street. *O.*, W. Knox; $2,500.

Additions to brick building on Main street. *O.*, P. Krellenberg.

Extension to two-story brick winery. *O.*, Clark.

Extension to two-story brick store. *O.*, Krelenberg.

One-story frame, on Railway street. *O.*, W. Knose; *C.*, G. K. Glenn; $2,100.

One-story frame, on Railway street. *O.*, W Knose; *C.*, G. K. Glenn; $2,100.

One-story frame on Railway street. *O.*, Elston; *C.*, Joe Caldwell; $2,700.

Stables, etc., at race track; $2,000.

SALEM.—Five-story brick building, 140 x 55, with two sixty-foot wings, for woolen mills.

RIVERSIDE.—Two-story frame dwelling. *O.*, A. Parker; *C.*, A. W. Boggs; $5,000.

Congregational church at Lugonia. *C.*, R. A. Davis, $3,000.

One and one-half story cottage. *O.*, Mrs. B. W. Brown.

Two-story brick building corner Main and Seventh.

Two-story brick building, at Lugonia, for store and I. O. G. T. society. *O.*, G. A. Cook.

Additions to building owned by W. A. Hayt & Son.

MERCED.—Two-story frame building. *A.*, Taylor & Copeland; days' work; $18,000.

HALF MOON BAY.—Contract has been let to J. Fleming for the foundations of a Catholic church. *A.*, T. J. Welch.

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The California Architect and Building News.

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On the Full Tide of Prosperity.

Such is the fact in California, in all branches of mechanical operations, and especially in connection with house building. The monthly reports of "Building Intelligence," contained in each issue of this journal, clearly illustrates the degree of prosperity attending the building business in San Francisco at the present time, and during the current year; and by comparison, showing a large increase over the preceding year, although 1881 was a year which, in its business results, gladdened the hearts of thousands who had walked under dark clouds during the preceding half decade.

We question whether there is a street—wide or narrow—within the limits of San Francisco, upon the lines of which there are no building improvements under way; while in some cases there are buildings in various stages of progress upon almost every block, from alteration and repair jobs up to fine business structures, expensive residences, and rows of houses for renting.

Consequently there is universal employment for all competent mechanics, in all branches of mechanical pursuits, and the demand for labor is so great that the employment of incompetent men is unavoidable, and the labor of the "scrubs" has to be utilized to the best advantage. Hence an increase of wages rules in all directions. Carpenters are receiving the wages paid ten years ago, ranging from $3 for very common hands to $4 for *good men*. Brick layers' wages for good hands run up to $5 and $5.50 per diem, with limited supply. We have been requested by several master masons to invite the immigration to San Francisco of competent brick layers, with assurances of immediate employment. But we do so cautiously, remembering that some ten or twelve years ago inducements were held out, and unqualified statements promulgated in eastern cities, which caused a rush for California, which flooded the labor market, and resulted in a common injury to the State and to hundreds who came; who, after the great pressure ceased, found it difficult to obtain employment, and were in time reduced to severe straits, many finally leaving the State with no kindly reflections. Still, a moderate increase in present number of brick layers would find ready engagement.

The journeymen plumbers and gas-fitters have united in a society movement for increase of wages, fixing the rates at $4 per day. They have also decided upon the re-organization of the Plumbers' and Gas-fitters' Guards—a result induced by the present most gratifying condition of the building interests generally, and the regular receipt of full week's pay each Saturday evening.

The Carpenters' and Joiners' Union have, in addition to finding employment for all its members, also made a move to reduce the hours of labor on Saturday, fixing the time of quitting work at 4 o'clock.

The lathers—always among the first to exact increase of pay when the *slightest opportunity* offers—have run up the price for lathing fully double on the rates prevailing during preceding years.

We have in former issues this year referred to the bettered state of things existing in California, and stated facts just as they were; but the work of improvement has gone on solidly and steadily, until the demand for labor has absorbed all that there was available, and leaves the market at present unsupplied in part.

The indications all favor a continuance of prosperity, and the masses are made happy by reaping the benefits flowing from an outpouring of gold from the purses of those who have it in abundance. As far as the common comforts of life are concerned, there is at present far greater equality among the people of California as a whole, as none willing to labor need be idle; and when all hands are busy at from fair to excellent wages, want and suffering is eliminated from common life, and the streams of happiness flow gently and sweetly, or roughly and ruggedly, just as each by his own acts shall make them, except when uncontrolable affliction intervenes; and with the rich and wealthy, they can have and enjoy no more of temporal things than just the amount of happiness derived from them; and it is a debatable question whether the *peace, contentment*, and *quiet joys* and *solid comforts* of the humbler home is less *soul-satisfying* than those of palaces and abodes of luxury. We pray God that present prosperities may continue; but that with it, men may cultivate the higher and better sentiments of living, and seek to use and employ the blessings, now being so freely showered upon us as a people, wisely and prudently, rather than recklessly spending all that is received, seemingly defying the future with its possibilities, and forgetting the times that have been, when to obtain employment even at reduced pay was a privilege enjoyed only by a portion of our working classes.

Another Absurd Competition Proposition.

We see noticed in the *American Architect and Building News* a circular that has been issued for plans for school buildings in the city of Brooklyn, New York, which should be treated with the utmost contempt by architects generally. Plans are solicited for one school building to cost fifteen thousand dollars, one to cost twenty thousand, and one, twenty-five thousand. For each, complete working plans are to be provided, showing drainage, provision for heating, etc., with the express stipulation that NO PLAN WILL BE RETURNED. For all this work, the recompense offered is one hundred and fifty dollars, or six-tenths of one per cent. for the twenty-five-thousand building, a little more, our contemporary remarks, than "one-sixth the price which would be paid to an architect of any character for *one* set of drawings." The "prize" for the cheaper buildings—singular to say—is better, but far below a proper sum, amounting to two hundred dollars, or one per cent. for the twenty-thousand building, and two hundred and fifty for the fifteen-thousand building.

Had this proposition originated among the inmates of some lunatic asylum, and been by them promulgated, architects would be prepared to receive the same as one of the freaks of diseased minds, and treated it accordingly. But coming from men controlling the educational interest of the city of Brooklyn, with the appointment of the president of the board of education, the chairman of the school-house committee, the superintendent of public instruction, the superintendent of the buildings of the board of education, and the city building commissioners as a committee to decide the merits of the plans submitted and award the prizes, sets one to thinking and searching for the motive actuating the parties in control. Dishonesty and unfairness are conspiculously evident upon the face of the transaction. If the gentlemen managing the affair flatter themselves they are governed by upright, honest business considerations, they fail to comprehend to what extent they are deceived; for if they know anything about the value of the services called for, they know they are asking labor without the intent to return more than a fractional compensation, which is neither honest nor just; and as they do not make an appeal for gratuitous contribution of plans, for the public good or otherwise, they cannot free themselves from the impurities of intent sustained by their acts. If the purpose is to comply with certain existing municipal requirements which render the advertisement for plans a necessity, they have adopted the most successful method possible of shutting off all honorable competition, as no architect governed by upright and honest professional views and purposes would permit himself to draw a line upon any such understandings as those held out in the circular; and good and fair-minded men being thus excluded from the competitions, the parties *for whose special benefit* the matter is being manipulated will have a clear course, and the dear people will pay the bill—not six-tenths of one per cent., but more likely several times the right and proper charges established by the architectural chapters and associates the world over.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the Chapter was held Sept. 1st, in the rooms of the Art Association. The number present and the interest manifested were especially gratifying to those who attended.

The report of the committee upon the awarding of the premiums for the competitive designs for the CALIFORNIA ARCHITECT AND BUILDING NEWS was received. The committee were granted till the next regular meeting to make their decision for the purpose of correcting an apparent error in printed report.

L. Goodrich of San Jose was elected a Fellow member; W. G. Matthews of Oakland was proposed as a member.

A beautifully bound volume of the Constitution and By Laws was presented to the Chapter by its President, John Wright, Esq. A vote of thanks, preceded by a brief speech, was

tendered to the President for his generous gift, which was unanimously adopted by a rising vote.

Messrs. Sanders, J. E. Wolfe, and Laver were appointed a committee to investigate the matter of establishing classes for the tuition of articled students in the profession.

A spirited contest then took place for the election of officers for the ensuing term, the result of which is as follows: President, John Wright; Vice-President, William Curlett; Recording Secretary, Geo. H. Wolfe; Corresponding Secretary, Theo. A. Eisen; Treasurer, W. P. Moore; Executive Committee, S. Babson, T. J. Welch, G. H. Sanders; Trustees, A. Laver, B. E. Henriksen, J. Gash.

George H. Wolfe, William Curlett, and W. P. Moore were appointed as a committee to arrange for a lecture to be delivered at the next meeting.

J. E. Wolfe and George H. Sanders were appointed a committee to co-operate with the corresponding secretary to prepare an address to be delivered before the American Institute at their next convention, which is to be held in the city of Cincinnati, October 25th and 26th, 1882.

The Mechanics' Fair, San Francisco, 1882.

The tens of thousands of patrons who have enjoyed the pleasure of attending the Seventeenth Industrial Exhibition of the Mechanics' Institute of San Francisco will cheerfully bear testimony to its more than usual excellence. The present Fair building is considerably smaller than the structure occupied during the past six or eight years for exhibition purposes, but what it lacks in relative area is fully compensated by improved arrangements and conveniences; and its greater neatness of finishes, and the liberal application of white paint, gives it an air of cheerfulness which has not existed in any of the former Fair buildings. The general exterior appearance is of fair architectural merit, considering the fact that it is a frame edifice erected to serve the purposes of perhaps the next ensueing decade, by which time, or at an earlier date, a permanent brick building is likely to be erected, covering the entire block, which contains six fifty vara lots, or an area of 113,437' 6". This space properly utilized, with all the advantages possible of application introduced, a permanent building may be constructed, which will stand for generations as a monument to the wisdom and intelligence of those who shall direct its consummation, provided wisdom, intelligence, and unselfishness of purposes shall control the acts of those who may participate and direct the planning and construction of what should be a model edifice. For the Institute membership being almost exclusively composed of men engaged in the mechanical and constructive arts and sciences: workers in all manners of woods, metals, stones; material composites of every class and kind; architects, designers, inventors, etc., there *should be* no failure in the noble work of rearing a magnificent structure for permanent use, from the dome, towers, and turrets of which the loved ensign of freedom and the banners of the mechanical industries of our State shall float more beautifully, as with seeming inanimate pride at the honor of waving over an edifice architecturally faultless, in arrangements perfect, and in conveniences, safety, and comfort, complete in every detail.

To accomplish all this, however, will require the services of men uncontrolled and *uncontaminated* by a single sentiment of personal ends and purposes, and of large intelligence and clean hands. Such men the Institute has always had within its membership, and among its managing representatives, and it is fair to presume that time will increase rather than diminish the moral elements which have hitherto made the Mechanics' Institute of San Francisco and its numerous exhibitions great successes.

We cannot enter into a detailed notice of all that is to be seen on exhibition, nor is it necessary to do so, as the daily press has regularly presented the general facts of interest occurring or to be seen, so that our Pacific Coast readers have had served to them all that we could say, and perhaps in better shape, leaving it for us simply to add indorsement to the numerous favorable notices which have been published from day to day.

As pertinent to the interests represented in this journal, we refer specially to the exhibit of paints, oils, varnishes, etc, by the house of Whitter, Fuller & Co., who have never failed to assume a leading position in their line at each successive exhibition, while the business intelligence and integrity of the firm have won for it an enviable reputation wherever the Pacific Coast trade in paints, oils, and painters materials extends. This firm deserve special mention, in view of the fact that they have established in San Francisco a white lead manufactory, which produces an article as good as the best produced anywhere. These works, together with the manufacture of mirrors, etc., give employment to hundreds of workmen, and daily support to numerous families; and in addition to the manufacturing forces, a large corps of employees are engaged as office, receiving, and delivery clerks, porters, teamsters, and helpers generally.

John Mallon, as usual, makes a large display of cut and ornamental glass for house, church, steamboat, and all other purposes. Mr. Mallon, we believe, is the pioneer worker in his art, and deserves well of all who need anything in his line, and desire artistic workmanship and honest dealings. We speak from a twenty years' experience with John.

W. W. Montague & Co. are on hand as usual, with a magnificent display of ranges, stoves, and all the numerons devices so necessary in the proper preparation of food for the table. We once had in our employ an intelligent old gentleman—so by nature, although preferring the duties of the kitchen as cook, to much higher positions for which he was by education fully qualified, who often remarked, "The good Lord sends us good provisions, and the Devil sends cooks to spoil them." The cook who could not prepare "delicious dishes" with the facilities presented by the house named must be one of that kind, whose credentials bear the date and authority by the fiend who is said to perambulate the universe of mankind seeking whom he may devour; if by no other means, then by the hands of the provision spoiler, the "miserable cook."

This firm also makes a fine display of iron mantles, tiling, and other things necessary in the completion of a well-appointed home or other building, in which due regard to æsthetics in interior finishes are observed. The question is often asked architects, Are those iron mantles serviceable? To which the proper answer is, They are, and will maintain their original appearance and conditions better than any other class of mantles.

Saws, saws, saws, innumerable. The display of saws by the Pacific Saw Manufacturing Company forms one of the most beautiful and interesting exhibits in the Fair. We notice this firm with special pleasure, as they have brought the manufacture of saws in San Francisco to a degree of perfection which challenges the world in competition, from the heavier circular, mill, hand, band, and other large saws, down to the finest and most delicately toothed blade, not excepting that class of saw instruments by which the injured, broken, and diseased limbs of mankind are sawed asunder, and that less dreaded kind which saws apart the carcasses from which the family table is supplied with "fine roasts" and tender steaks.

There is also on exhibition samples of *Asphaltum Paving Blocks*, by a New York company. We make reference to these in view of the fact that these blocks are a California invention, patented by a San Franciscan named Skinner, who, with imperfect presses and other disadvantages, failed to do more than produce in form and shape what the New York Company is now doing, if their testimonials and authenticated circulars are to be relied upon, with the utmost success. They are said to be equal almost to iron as to durability, while in numerous other particulars they are credited with qualities and properties far superior to any other material used for street or sidewalk and other purposes. It is stated that the demand for the blocks is greater than the present facilities of manufacture, which produces hundreds of thousands monthly. We regret that circumstances prevented the realization of this greater success in San Francisco.

Another item of interest is the California Wire Works display, in which, among the many interesting and beautiful things exhibited, is that of a sixteen-inch wire cable, 125 feet long, weighs 23 lbs. to the foot, is comprised of 43 miles of No. 12 wire, and capable of resisting a tension of 180 tons.

Latson & Co., hardware dealers, have on exhibition a very fine sample cabinet of bronze and other high-cost hardware.

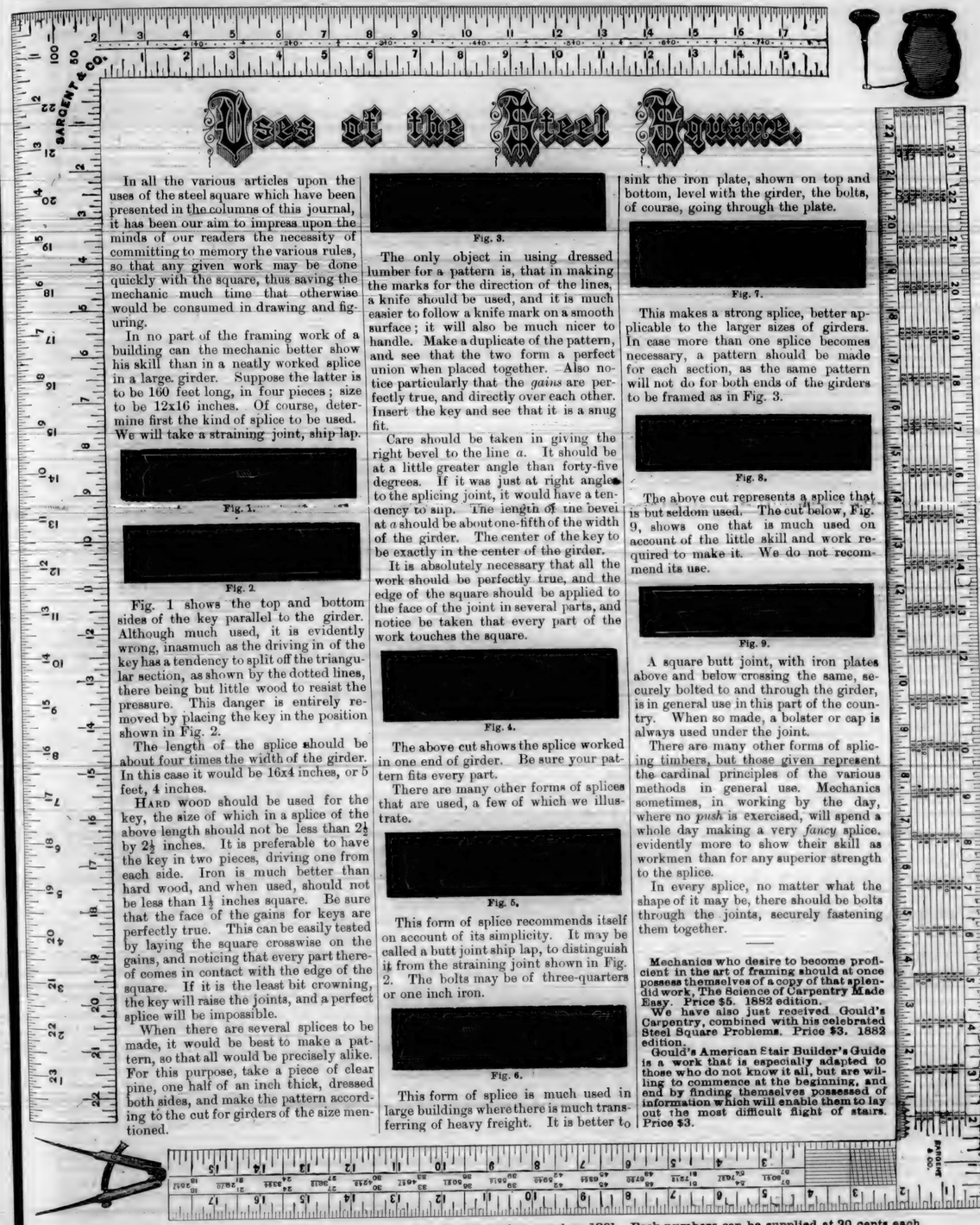
An Unjust Critic.

We notice that a would-be wonderfully wise man has arisen in the Eastern States in judgment upon the architecture and architects of the present times, who asserts, in effect, that where architects most abound, the science is the least honored; and in support of his position, selects certain churches as examples, and deals with them as monstrosities in certain particulars.

The gentleman is, in a general sense, by no means an ignoramus, but he indulges in statements of decidedly hypothetical character, and says more than facts justify. Sweeping conclusions, sustained only by isolated illustrations, are both unkind and unfair, and we wonder that intelligent men should so often be led astray by permitting themselves to be governed by the exceptions, rather than reviewing matters in a broader and more general sense, giving credit where credit is due; while they pour the venom of their dissent and condemnation upon objects and things which may deserve rebuke.

To assert that even a majority of the thousands of learned and intelligent men who have made architecture a study have in the main failed to develop the beauties of the science, and that there exists but little to their credit, is an exhibition of asperities far too common among men who claim to be governed by right motives. Such things are not to be wondered at in the vulgar-minded, but come with ill grace from those who have had the advantages of education and the surroundings of social refinement.

That architects sometimes fail to do themselves full justice, and err in their conceptions and delineations, must be admitted. But even in this, the profession is at no special disadvantage, any more than the medical profession is to be condemned because physicians sometimes expedite the transition of mortals from earth to the realms where departed spirits dwell; nor the legal fraternity, because lawyers sometimes lose cases which might have been won by greater diligence and wiser management. Hence, all criticisms controlled by a fixedness of purpose to reveal and expose all the bad that can be found, and conceal or reject the good, shows a lack of that magnanimity which should in all cases govern the written or oral utterances of those who arrogate to themselves the privilege of expressing personal opinions upon the productions or acts of others.



Uses of the Steel Square.

In all the various articles upon the uses of the steel square which have been presented in the columns of this journal, it has been our aim to impress upon the minds of our readers the necessity of committing to memory the various rules, so that any given work may be done quickly with the square, thus saving the mechanic much time that otherwise would be consumed in drawing and figuring.

In no part of the framing work of a building can the mechanic better show his skill than in a neatly worked splice in a large girder. Suppose the latter is to be 160 feet long, in four pieces; size to be 12x16 inches. Of course, determine first the kind of splice to be used. We will take a straining joint, ship lap.

Fig. 1.

Fig. 2

Fig. 1 shows the top and bottom sides of the key parallel to the girder. Although much used, it is evidently wrong, inasmuch as the driving in of the key has a tendency to split off the triangular section, as shown by the dotted lines, there being but little wood to resist the pressure. This danger is entirely removed by placing the key in the position shown in Fig. 2.

The length of the splice should be about four times the width of the girder. In this case it would be 16x4 inches, or 5 feet, 4 inches.

HARD WOOD should be used for the key, the size of which in a splice of the above length should not be less than 2½ by 2½ inches. It is preferable to have the key in two pieces, driving one from each side. Iron is much better than hard wood, and when used, should not be less than 1½ inches square. Be sure that the face of the gains for keys are perfectly true. This can be easily tested by laying the square crosswise on the gains, and noticing that every part thereof comes in contact with the edge of the square. If it is the least bit crowning, the key will raise the joints, and a perfect splice will be impossible.

When there are several splices to be made, it would be best to make a pattern, so that all would be precisely alike. For this purpose, take a piece of clear pine, one half of an inch thick, dressed both sides, and make the pattern according to the cut for girders of the size mentioned.

Fig. 3.

The only object in using dressed lumber for a pattern is, that in making the marks for the direction of the lines, a knife should be used, and it is much easier to follow a knife mark on a smooth surface; it will also be much nicer to handle. Make a duplicate of the pattern, and see that the two form a perfect union when placed together. Also notice particularly that the *gains* are perfectly true, and directly over each other. Insert the key and see that it is a snug fit.

Care should be taken in giving the right bevel to the line *a*. It should be at a little greater angle than forty-five degrees. If it was just at right angles to the splicing joint, it would have a tendency to slip. The length of the bevel at *a* should be about one-fifth of the width of the girder. The center of the key to be exactly in the center of the girder.

It is absolutely necessary that all the work should be perfectly true, and the edge of the square should be applied to the face of the joint in several parts, and notice be taken that every part of the work touches the square.

Fig. 4.

The above cut shows the splice worked in one end of girder. Be sure your pattern fits every part.

There are many other forms of splices that are used, a few of which we illustrate.

Fig. 5.

This form of splice recommends itself on account of its simplicity. It may be called a butt joint ship lap, to distinguish it from the straining joint shown in Fig. 2. The bolts may be of three-quarters or one inch iron.

Fig. 6.

This form of splice is much used in large buildings where there is much transferring of heavy freight. It is better to sink the iron plate, shown on top and bottom, level with the girder, the bolts, of course, going through the plate.

Fig. 7.

This makes a strong splice, better applicable to the larger sizes of girders. In case more than one splice becomes necessary, a pattern should be made for each section, as the same pattern will not do for both ends of the girders to be framed as in Fig. 3.

Fig. 8.

The above cut represents a splice that is but seldom used. The cut below, Fig. 9, shows one that is much used on account of the little skill and work required to make it. We do not recommend its use.

Fig. 9.

A square butt joint, with iron plates above and below crossing the same, securely bolted to and through the girder, is in general use in this part of the country. When so made, a bolster or cap is always used under the joint.

There are many other forms of splicing timbers, but those given represent the cardinal principles of the various methods in general use. Mechanics sometimes, in working by the day, where no *push* is exercised, will spend a whole day making a very *fancy* splice, evidently more to show their skill as workmen than for any superior strength to the splice.

In every splice, no matter what the shape of it may be, there should be bolts through the joints, securely fastening them together.

Mechanics who desire to become proficient in the art of framing should at once possess themselves of a copy of that splendid work, The Science of Carpentry Made Easy. Price $5. 1882 edition.

We have also just received Gould's Carpentry, combined with his celebrated Steel Square Problems. Price $3. 1882 edition.

Gould's American Stair Builder's Guide is a work that is especially adapted to those who do not know it all, but are willing to commence at the beginning, and end by finding themselves possessed of information which will enable them to lay out the most difficult flight of stairs. Price $3.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Dwelling-House Sanitation.—III.

BY GLENN BROWN.

"Pure air, pure water, and a pure soil."—HIPPOCRATES.

Concerning the size of soil and drain pipes, the best authorities all agree that they should be as small as possible consistent with their properly carrying off the solid and fluid matter which comes into them. Small pipes are thoroughly flushed and washed, and are kept clean more easily by the water discharged through them than if they were large. It has been discovered that large pipes fill with slime and sediment, only allowing sufficient room for the regular amount of water that passes through them, thus really destroying all that is supposed to be gained by the large pipes. In small pipes this storage of filth is avoided. Mr. George E. Waring says on this subject: "It is the decomposition of such material in soil-pipes and sewers alone that we are to find the seat of the enemy of which we hear so much under the name of sewer-gas. . . . There is no safety in sewerage or in house drainage, until the production of these gases is stopped; and there is no manner of accomplishing this short of the entire cleanliness of every pipe-drain and sewer which serves for the removal of foul organic matter. . . . The belief is general that if a given amount of sewage can be discharged through a small pipe, it can surely be discharged through a large one; that is not true, for reasons given before." Thus by having small pipes we keep out of the house itself a large amount of decomposing matter, which would accumulate in the large soil and drain pipes, and we have less impure gas to carry off by ventilation. Except in houses that are unusually large, the soil and drain pipes should not exceed four inches in diameter. This has been found to be the best size for pipes that are to be used inside for house drainage. (Fig. 1, A and B.)

In the proper ventilation of soil and drain pipes, water-closets, and traps, we find the only way of excluding sewer-gas from our homes. Proper ventilation carries off all gases which may be generated in the different parts of the plumbing system, and it also takes off any gas which may get into the house drains from the sewer. This gas is supposed to be excluded from the house drains by the double running trap. (Fig. 1, C C.)

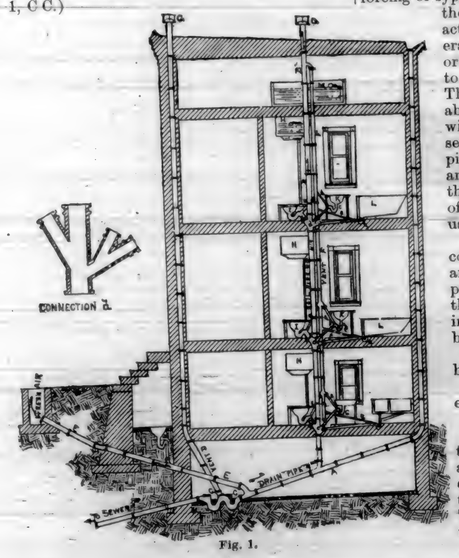


Fig. 1.

By referring to Fig. 1, the following description of the best sanitary arrangement of plumbing fixtures will be readily understood:

A B, the soil-pipe, four inches in diameter, running through the roof, full size, and capped with an Emerson's ventilator; so no matter in what direction the wind may blow, it assists in creating a current of air through the pipes in the direction indicated on the cut by the arrows.

A, the drain-pipe, running along the cellar wall, and attached thereto by iron brackets, with a double running trap (C C), just before leaving the house. This drain should always be put above the cellar floor, so that any defect may be readily noted and properly attended to. The cellar floor should have its surface drain towards the running trap (C), where a screw tap, water and gas tight, should be placed, so the trap may be opened easily in case of necessity. E is the outlet to the street connecting with the drain-pipe inside the running trap (C). By this inlet to the drains, or outlet from the house system, fresh pure air is supplied to the whole system of soil and drain pipes inside the house. The heat in the house during nine months of the year would cause a draft from the street through the pipes E A B through the roof to the outside of the house, in the direction shown on the drawing by arrows. In the warm months wind blowing in any direction would tend to produce the same result by its actions on the Emerson's ventilator, and also by the heat produced on the roof of the house being greater than the heat at the inlet on the pavement. The pipe E also acts as an outlet for the column of air which is forced downward by the discharge of the water-closets in the upper stories, which would otherwise force the traps in the water-closets, wash-basin, bath-tubs, etc., in the lower stories of the house, thus allowing free access to sewer-gas into all the rooms.

D, the pipe running from its connection between the double running trap (C C), above the roof. This pipe is put in, in case gas from the sewer should, by back pressure, force the first trap to allow the gas to escape without forcing the second part of the trap, and entering the house portion of the plumbing system.

F, the large vent-pipe with which the small vent-pipes (*e e e*) from the traps of water-closet, wash-basins, etc., connect. This vent prevents forcing or syphonage of the traps; in either case the trap would be emptied. It also acts as a duct through which gas generated in the traps or branch pipes, or any gas which may find its way into these branches, will find egress. This pipe (F) must join the soil-pipe above the point where it is connected with a branch drain-pipe, or continue separately through the roof. Drain-pipes must be kept free from deposit; and where this cannot be effected by the flushing from water-closets, one of Roger Field's flush tanks should be used.

d, the proper fitting to employ in connecting water-closets, wash-basins, and bath-tubs with the soil-pipe; the practice of running the waste from the wash-basin or bath-tub directly into the water-closet trap should never be allowed.

C C, the traps to water-closets, wash-basins, and bath-tubs.

H, the tank for flushing water-closets, drain and soil pipes.

I, the water-closets.

According to the present light upon the subject, the above arrangements are the best that can be adopted to exclude sewer-gas, provided we select the proper water-closets and traps. The kind of water-closets and traps to use will be treated of farther on in this article. Where it is necessary to make the plumbing cheaper than described above, we must first discard one running trap (Fig. 1, C) at the point where the drain leaves the house; and the vent pipe D, which goes to the roof as an outlet for gas in the case of back pressure, next the vents to traps (C C C), may be left out, provided the fixtures are placed close to the soil-pipe that runs through the roof; but this is not advisable. In the cheapest plumbing work the following points should be insisted upon: soil-pipe (B) running through the roof full size, the drain pipe (A) being kept above the cellar floor, the fresh air inlet (E), and one running trap (C).

All water-closets, wash-basins, bath-tubs, sinks, etc., must have separate traps, and no part of the plumbing must be concealed behind the plastering, but so arranged that it may be readily inspected. There are several things which are often done in the plumbing of a house that need to be carefully avoided. The overflow pipe, or tell-tale, from the tanks should never have an entrance into the soil-pipe, as, the trap on it being rarely used, the water in the trap would evaporate, and the gas would be absorbed by the water in the tank. The wastes from our refrigerators should never be run into the soil or drain pipe, as thus our food is liable to become tainted and unhealthy. Overflow pipes had better empty into the kitchen sink, where they will be readily seen, and where there will be no possibility of their conducting the gas into either our water or edibles.

Unless the water supply is ample, there should be a tank into which the water will rise slowly, or may be pumped. This tank is to supply all the water except for drinking and eating purposes, and must be properly covered to keep out impurities. The water for drinking must be brought directly from the street main.

There is considerable difference of opinion as to the best kind of closet to be used. The patents and patterns are numerous, and their number is constantly increasing. They are found in the market manufactured of iron, plain, painted, and enameled, and of porcelain, the latter material being the best, but the most costly. These patterns may, for convenience, be divided into four classes: the hopper (Fig. 2); pan closet, which is most commonly used at the present time (Fig. 3); the plunger closet; and valve closet (Figs. 4 and 5); the two last named being often called the improved water-closet. Hopper closets are now manufactured short and long. The best sanitarians agree that the plain short hopper closet (Fig. 2), when well trapped and ventilated, and having a supply of about two gallons of water from a tank to properly flush the bowl, is the best arrangement in the market for a water-closet. By referring to Fig. 2, it will be seen that the bowl (*a*) connects directly with the trap (*d*).

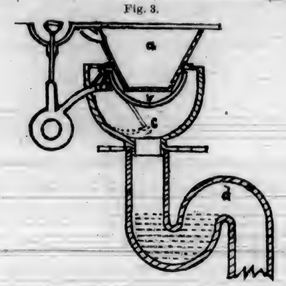
Fig 2

HOPPER CLOSET.

After reading a description of the other closets, and seeing their defects, the reason why this simple closet is the best will be obvious.

Fig. 3 shows the pan closet which has been in almost universal use in this country; *a* is the bowl; *b* the pan; *c* the cesspool, as it has been aptly called; and *d* is the trap by which it connects with the soil-pipe. It has been found in practice that the chamber (*c*) accumulates a large amount of filthy matter, which is in a constant state of putrefaction, giving off its deleterious gas, or acting as a medium for the conveyance of

Fig. 3.



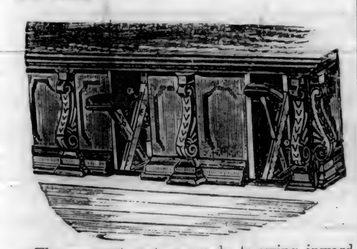
PAN CLOSET.

causative germs. The supposed water seal in the pan is so slight that it readily evaporates, and we get a supply of these organic germs every time the pan is opened. The manner in which the bowl (*a*) is set on the cesspool (*c*), bedded in putty, makes it at any time liable to become loosened, and when this occurs there would be a constant supply of sewer-gas from the chamber (*c*). It is impossible to get at this portion (*c*) of a pan closet to clean it with soap and water without taking the whole thing to pieces, and this can only be done by a practical plumber at considerable cost. In fact, it is out of sight and out of mind. A very small proportion of the people who use them know there is such a part to the closet as the cesspool (*c*).

(To be continued.)

Automatic Folding Seat for Counters, Tables, etc.

The inventor claims for this device extreme simplicity, practicability, and cheapness. The seat is properly secured upon the end of a long lever whose lower end is pivoted under the counter or table so as to swing out therefrom far enough to bring the seat to a proper level, when its further movement is arrested, and the seat supported by means of a stop upon two diagonal guide bars between which the swinging arm moves.



The arm and seat are made to swing inward automatically by means of a counterbalancing weight upon a cord which is attached to the seat lever, and passes therefrom over a pulley under the counter or table. When the seat is drawn outward for use, the weight is elevated and upheld by the weight of the person seated. So soon as the person rises, the seat is automatically raised thereby, and folded in out of the way. The seat may be readily made single or double, of any desired material or style, and be adapted to a great variety of conditions and combinations, and to all positions where a folding seat is desirable.—*Industrial Review.*

It has been suggested that the wire fences which bound a multitude of western farms might be turned into telephone connections of small cost, to the social advantage, if no other, of the occupants of farm-houses.

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

[While this column is open to all, farmers as well as mechanics, engineers as well as architects, we would call particular attention to one and all to have their questions and the information desired to be in accord, as far as possible, with the interests of this journal and for the carrying out of those principles for which the only monthly of its kind this side of the continent, was established. We will endeavor to answer all questions in a fair and impartial manner, and if it becomes necessary, will furnish cuts for the illustrations of any problem, provided we regard the solution thereof as beneficial to the majority of our readers. We would urge upon our patrons the necessity of being pointed in their questions, concise in the language used; let the writing be distinct, and one side of the paper only to be used; give full name and address, and particularly mention if their proper name shall be used.

We want it distinctly understood that the responsibility of signed articles rests with the authors.

Correspondents will please direct all communications to the business manager of this journal—240 Montgomery street, rooms 12 and 13.]

EDITOR ARCHITECT: How can I tell good brushes for a draughtsman's use?

K. L., Oakland.

ANS. Dip the brush into clean water, and holding it vertically, shake out the water; if the brush is well made, the hair should come naturally to a nice even point. The swell in the side of the brush should not be too abrupt.

The following tables will be found of much benefit to parties residing in the country, who desire to know the weight of doors, sashes, blinds, etc., so as to form a basis for railroad expenses:

WEIGHTS OF DOORS.

	1 Inch.	1¼ Inch.	1½ Inch.
2 ft. 0 in. x 6 ft. 0 in.	20 Lbs.	25 Lbs.	32 Lbs.
2 " 6 " x 6 " 6 "	27 "	33 "	38 "
2 " 8 " x 6 " 8 "	.....	35 "	40 "
3 " 10 " x 6 " 10 "	.....	.....	48 "
3 " 0 " x 7 " 0 "	.....	.....	50 "

WEIGHTS OF WINDOWS.

	1¼ Inch.	Glazed.	Unglazed.
7 x 9	.....	18 Lbs.	6 Lbs.
8 x 10	.....	15 "	6½ "
9 x 12	.....	20 "	7½ "
9 x 13	.....	21 "	8 "
10 x 12	.....	21 "	8 "
10 x 14	.....	23 "	8½ "
10 x 16	.....	26 "	9 "

WEIGHTS OF BLINDS.

7 x 9	11 Lbs.	2 ft. 6 in. x 6 ft. 8 in	25 Lbs.
8 x 10	13 "	2 " 8 " x 6 " 8 "	24 "
9 x 12	14 "	2 " 10 " x 6 " 10 "	25 "
9 x 13	17 "	3 " 0 " x 6 " 6 "	24 "
10 x 12	17 "	3 " 0 " x 7 " 0 "	25 "
10 x 14	19 "	3 " 0 " x 7 " 6 "	28 "
10 x 16	21 "	3 " 0 " x 8 " 0 "	31 "
10 x 18	22 "		
10 x 20	25 "		

WEIGHTS OF LUMBER—DRY.

Sugar Pine, rough, per M. ft.	2,500
Yellow Pine, " "	2,700
Rustic, "	2,000
Flooring, "	1,900
Ceiling, ⅜ in. thick, "	800
" ½ " " "	1,200
" ⅝ " " "	1,400
" ¾ " " "	1,600
Common Boards, surfaced one side, per M. ft.	2,000
Dimensions, rough, "	2,700
Shingles, per bunch	40
Pickets, per 100 ft. of Lumber contained	200

FRIEND ARCHITECT: Will you kindly furnish me the formula for making *plumbers' black or soil?* I do not want to infringe upon "*shop secrets*"; but a knowledge of the above composition will greatly oblige an AMATEUR.

ANS. It is composed of glue and lamp-black dissolved in water. The proper proportions of glue and lamp-black to use in making the soil may be determined by actual experiment. If the soil adheres well to the pipe and is not easily rubbed off by the finger, it may be considered right. On the other hand, if it can be easily rubbed off, it is evident that a little more glue is required. We do not know that any special directions are necessary to give with reference to making the soil, beyond what is presented above. Plumbers' soil is quite a curiosity to a tinner. A tinner or galvanized-iron worker applies acid to the edges of his metal in order to cause the solder to adhere. A plumber applies soil to such portions of his pipe with which solder is likely to come in contact to which he does not wish solder to adhere. Accordingly, the plumber's use of soil is directly opposite to the tinner's use of acid or rosin. Soil in its general appearance is black, and in consistency is about the same as common molasses.

Tin Roofs.

A tin roof properly put on and kept properly painted will last about 30 years. A tin roof ought not to be painted for the first time until it has been on about 30 days, so as to get the grease off the tin, and all the rosin should be carefully scraped off.

It is sometimes necessary, on buildings where there is much dampness or steam, as stables, blacksmith shops, round-houses, etc., to paint the tin one coat on the under side before laying. After the roof has been painted the first coat, it should be painted again in about a year, and after that, once in three years is enough.

There are two kinds of tin: one, the coating of which is all tin—that is, the tin proper, sometimes called "bright tin"; the other, the coating of which is a composition, part tin and part lead; this is called "tern," "leaded," or "roofing" tin. This last is a little cheaper than the "bright," and will not rust any quicker, but we think, as do many others, that the sulphur in our soft-coal smoke eats through the "leaded" coating sooner than through the "tinned."

Of tin there are two sizes, 10″x14″ and 14″x 20″, and two grades as to thickness, IC the light, and IX the heavy.

For a steep roof, one-sixth pitch or over, the IC, 14″x20″ tin ("leaded," if high up where little smoke will get to it; "bright," if low down where much smoke will get to it), put on with a standing groove, and with the cross seams put together with a double lock, makes as good a roof as can be made.

For flat roofs, the best roof is made with the IX, 10″x14″, "bright" tin, laid with cleats; but the others make good roofs, and any of them will last for 25 years at least.

All tin roofs should be laid with cleats, and not by driving the nails through the tin itself.

A Philadelphia paper notes the use of wood joists in the construction of a fire-proof building in that city, on Walnut Street, above Fourth. It says that, strange as such a statement may appear, it is a matter of fact that many New England builders contend that the wood joists, encased in plaster, are proof against any ordinary fire, and for many reasons are much preferred by them to the ordinary regulation fire-proof iron joists. The joists are "stripped" on the outside, and over these strips irons are run, and on these the plaster is spread. The theory is, that in an ordinary fire these joists thus treated will be fireproof, and only when the fire has reached such a fury that the building must go anyway will they be affected. Here comes in one of the advantages claimed for them. When a building is being burned by a furious fire the iron joists expand and crush out the walls and do other damage. The wood joists would simply be burned up without injuring the walls at all.

A Boston novelty is a glass veneer, which is said to be meeting with a good deal of favor.

PLATE 1.—ELEVATION OF COUNTRY RESIDENCE.

Our Illustrations.

Plate 1 represents the elevation of a very convenient and commodious country residence, now in process of erection at Martinez, Plates 2 and 3 being the ground plan of the same. The cost will be about $9,500.

Plate 4 is the elevation of a suburban villa taken from Lakey's Village and Country Homes, Plates 5 and 6 being the ground plans of same. We are making arrangements, shortly to be completed, to make the cuts in this journal equal to those of any periodical published in the United States.

The introduction of electric lights seems to have brought about an increased consumption of gas, the contrast between the electric light and the ordinary gas light creating a demand for more powerful burners.

Practical Lessons in Architectural Drawing.

The scheme adopted in this work is to select more or less simple examples in the several classes of construction—frame, brick, and stone—and by carefully working out the drawings in the order in which they are required in actual building, and by explanations in the adjoining text, to put the work in such shape that it can be readily understood and comprehended. The examples have been given a varied character, in order that as many different ideas as possible may be illustrated. The last chapter deals with the coloring of architectural working drawings, and is illustrated by a plate in colors. Sent post-paid to any address, upon receipt of the publisher's price, $2.50.

Though a strong man, the carpenter cannot raise his frame without assistance.

Work Manuals.

The following are the titles of the volumes already received :

I. CEMENTS AND GLUES.
II. THE SLIDE RULE, AND HOW TO USE IT.
III. HINTS FOR PAINTERS, DECORATORS, AND PAPER HANGERS.
IV. CONSTRUCTION, USE, AND CARE OF DRAWING INSTRUMENTS.
V. PROBLEMS IN CARPENTRY AND JOINERY SOLVED BY THE AID OF THE STEEL SQUARE.

Upon receipt of twenty-five cents in postage-stamps, we will mail either of the above-named to any address.

In the beginning of the last century it was suggested to the mind of a Frenchman to use wood for the manufacture of paper, by observing that the nests of wasps were made of this material.

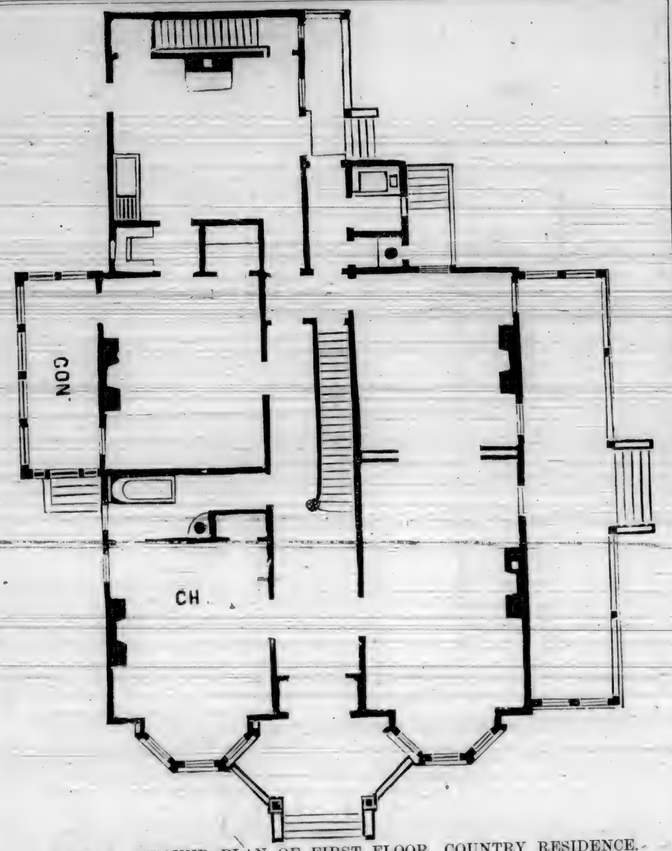


PLATE 2.—GROUND PLAN OF FIRST FLOOR, COUNTRY RESIDENCE.

Revised Work on Carpentry.

We have just received an invoice of GOULD'S CARPENTRY, combined with his STEEL SQUARE PROBLEMS. Every carpenter and mechanic should possess a copy, as the low price ($3) places it within the reach of all.

Also, by the same author, the AMERICAN STAIR BUILDER'S GUIDE. A very useful work to all mechanics. Price $3.

Ourselves.

Scarcely a day passes in which we do not receive, by letter and personally, additional proof, at home and from abroad, of the great popularity and enviable reputation attained by this journal, in addition to the numerous favorable notice which appear in California and Eastern contemporaries, following each monthly issue.

While this very naturally affords us pleasure, it also reaches far beyond and higher than any mere sentiment of vanity, and invites and inspires to more advanced purposes and determinations to improve and make grandly successful the little waif which was launched into existence as a quarterly in 1879, when dark and gloomy clouds hung over all interests in California, and the life's blood of enterprise and prosperity had coagulated in the veins of business life, and the voice of discouragement and despondency was heard on every hand.

But it has surmounted all obstacles, and today is known and recognized throughout the entire expanse of our own great country, and to a considerable extent in foreign lands, as a "well-conducted, ably managed journal." The *Alameda Encinal* thus speaks of us :

"The *California Architect and Building News*. . . . We have several times referred to this journal in terms of praise, feeling confident it deserves every good word we could say of it. The *Architect*, as it is familiarly called, is sound in all its departments. It is carefully and judiciously edited, always truthful, clear, and unbiased in its statements. Aside from its special interests to builders, and those contemplating improvements, it is a journal for the home circle, being both pleasing and edifying."

We had about *one thousand* clips of notices of the foregoing character which some soulless creature stole from us; soulless—because he who would rob an editor of his portfolio does not contain within the skin that covers his vile carcass enough of manly virtue and integrity to entitle him to equal considerations that would be accorded to a dog with character sufficient to induce his master to provide a license-tag for his neck to save him from the lariat of the merciless pound-master.

Wonders of Simple Tools.

A complicated engine, like the common wood-worker, the printing-press, a compound lathe, or various forms of spinning and weaving machines, is really one of the most wonderful things in the world. Most of such contrivances are the product of the combined thought, study, experience, and ingenuity of generations and ages; yet some of the simplest tools, either in their construction or use, represent a degree of ingenuity and manual skill which is astonishing. A common file is one of the simplest of tools to look at, and to a careless view one of the easiest to make. Files have been in use from the beginning, and rank with the hatchet and hammer in simplicity and usefulness. From the time the naked savage smoothed his arrow head with a bit of sharp, gritted stone, and the handle of his club with a piece of dried fish skin, to these days of finely finished work, the race of man has employed some form of file to accomplish mechanical results. Yet the making of the hardened steel file which is now so universal requires a delicacy of touch and exactness of movement that is wonderful. The diagonal cut upon the sides of a common "three-cornered" file appear to the eye to be absolutely regular, uniform in their relative distance, and alike in depth; the keenest vision is unable to detect any irregularity, and their cutting seems to be the work of a delicate and accurate machine. A close scrutiny also shows that the cuts grow finer, closer, and shallower, by almost imperceptible degrees of variation, as they approach the tapering point. Upon the smaller files of the regular sizes there are more than two hundred of these parallel cuts to the inch, and in some of delicate make, for special purposes, this degree of fineness is greatly exceeded. Yet this wondrously delicate and accurate work is done, not by the aid of machines with minute micrometer screws and gauges, but with a simple hammer and chisel in the workman's hand. The advance of the chisel upon the blank at each cut of the two hundred and fiftieth part of an inch, neither more or less, is regulated simply by the unaided sense of touch. The weight of the blow, also diminishing or increasing at each stroke by a fraction of an ounce as the cutting approaches or recedes from the point, is regulated solely by the judgment of the workman. All this is done without pause or hesitation to correct or re-adjust, and with a rapidity which shows itself in the cheapness of the finished file. File-cutting is rendered still more delicate and difficult by the varying hardness of the same bit of steel at different points in its surface, which would cause blows of equal force to make cuts of varying depth and width. This unequal hardness must be perceived as the cutting progresses, and allowance must be made for it all through the operation. Doubtless all this seems easy enough to the practiced file-cutter, and he does his work without even thinking of these difficulties. Yet the education of hand, nerve, and brain to such a perfection of movement is certainly a most wonderful illustration of perfectfon attained in the use of tools. For more than one hundred years efforts have been made to cut files by machinery, with only partial and moderate success, the process, simple as it appears, being too delicate for less perfect instruments than the human hand and brain.—*Builder and Wood-worker.*

PRACTICAL LESSONS
—IN—
ARCHITECTURAL DRAWING,
PRICE, POST-PAID, $2.50.

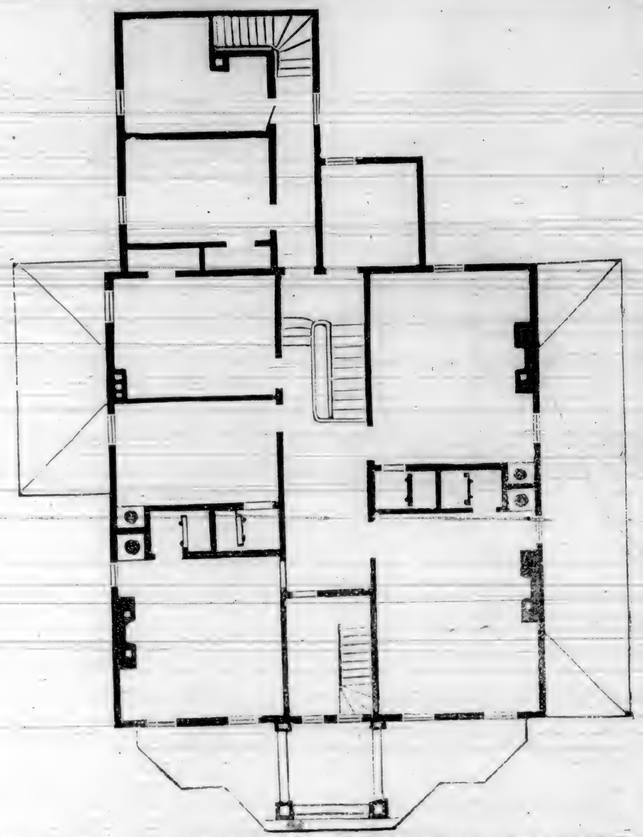


PLATE 3.—GROUND PLAN OF SECOND FLOOR COUNTRY RESIDENCE.

With or Without an Architect.

It is altogether possible that mistakes, sometimes of material consequences, should be made by owners in the improvement of their real estate, whether they employ an architect, or venture to plan and superintend the erection of buildings unaided by the advice and judgment of one at least *presumed* to have educated himself in the essential secrets of the constructive and mechanical arts, in connection with house planning and construction; and who by daily experiences *should be* far better qualified to suggest, determine, and direct building operations than one whose store of architectural, mechanical, and building knowledge is entirely superficial, incidental, and gleaned from sources of uncertain and hypothetical character.

Millions of dollars are unwisely expended yearly in the erection of buildings to which present allusions fitly apply. There are but few edifices erected so perfect in every part and detail as to be beyond the reach of criticism. Faults and blemishes are almost certain to creep in, in some connection, under the best and most thoroughly competent management. The combined best judgment of the owner, and the experience and skill of a *qualified* architect, does not always result in the amplification of absolute perfection. And if this be true as a rule, to what a fearful extent must mistakes abound with those who place their building interests in the hands of that class of pretenders, who can be rated no better than sickly parasites upon the architectural profession—men wholly unqualified in intellect, and doubly so in architectural and mechanical knowledge. There are thousands of this class aping professional qualifications, particularly in the United States, where the exacting and rigid requirements of prolonged servitude and severe educational ordeals enforced in the older countries of the world are not observed, rendering it possible and easy for inefficient men to worm their way in and assert claims wholly unsustained by actual qualifications.

Consequently, when owners are so unfortunate, either perchance or from choice, to fall into the hands of such men, a great mistake is made in the selection, and, as a matter of course, errors of greater or less magnitude follow. But when an owner undertakes to assume the prerogatives of an experienced architect, he commits an error which, in multitudes of cases, reacts heavily upon his financial interests; for however much he may pride and flatter himself at the *self-satisfying* success achieved, we have yet to examine the first building erected by the plans and under the exclusive direction of the owner, in which the finger-marks of inexperienced and the lack of practical knowledge were not prominent. Nor is this more nor less than a natural sequence. Thousands of men spend a lifetime in efforts to acquire a perfected knowledge of architecture, who never succeed beyond certain limits, although earnest in their efforts, for the reason that the object of study and pursuit, in its magnitude and unlimited scope, and its innumerable details, is beyond their mastery. And this being true in reference to men who *desire and labor* to acquire knowledge in a certain direction, is it not presumption on the part of those who have never made the subject a matter of more than incidental study, and whose experiences are confined to the ordinary observations and contacts of daily life, to assert qualifications which others have secured only by years of arduous devotion and application? It is not reasonable; and, as we have before remarked, millions of dollars of gold is expended yearly in the attempted improvement of real estate, which yields a far less return than would be received if the improvements were, in detail and completeness, what they might have been made under the direction of a *skillful and qualified architect*.

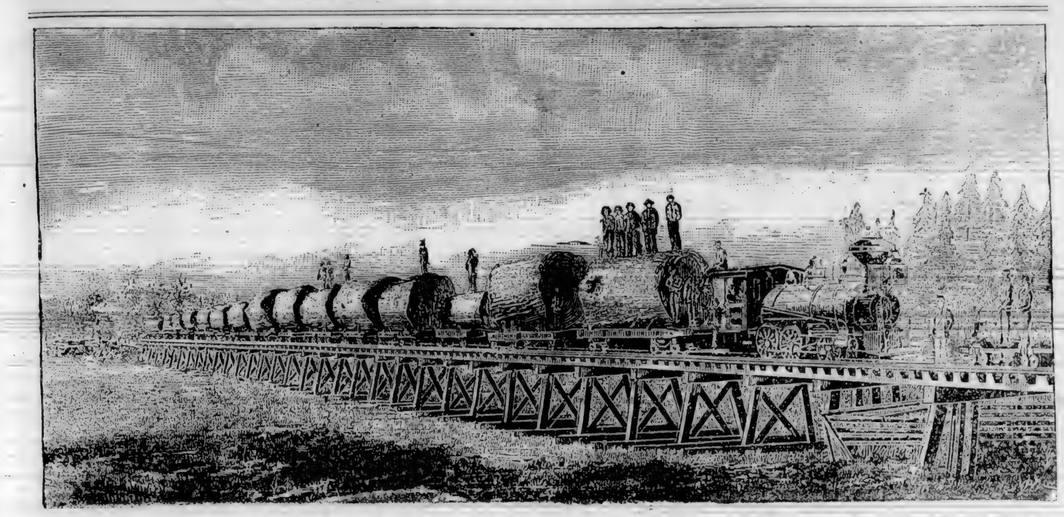
Church Acoustics.

Ask the hearers in a large church if they heard the sermon well, and probably one out of four will confess to having only heard it imperfectly, or to having lost a good deal of it. The blame in these cases will often be laid on the preacher's voice or pronunciation, or on the defective construction of the church, or the place where the hearer sits, though in reality the loss of the sermon, in whole or part, is probably owing to defective hearing. As churches are built, and preachers are paid for intelligible worship and instruction, it is extremely desirable that sermons should be heard by all who come to hear, or if this cannot be absolutely attained, by as many as possible. Yet no special attention to this object seems to be paid either in the construction of churches or the education of ministers.

The common faults of construction are: first, a roof far too high, in which the sound of the voice ascends and is in a measure lost; second, a pulpit three or four feet too high. Sound ascends easily, but descends with difficulty. Try the experiment in your own house of calling over the banisters to persons on the flat below, and then reversing the positions. In the one case you may call almost in vain, in the other you are distictly heard at once. The preacher should therefore be as little above his hearers as possible, so as to be seen distinctly by all.

The common faults in ministerial utterance are: first, a lack of distinctness in pronouncing each syllable of every word; second, sinking the voice low at the termination of the most emphatic parts of the discourse; third, shrieking at times so high that the words are lost in the unnatural sound. There seems to be no regular training at colleges and seminaries in the great science and art of elocution. Yet this training is as necessary to a preacher as training is to a singer. Many of the faults in church buildings and deficiencies in preachers could, however, be mitigated by the simple lowering of the pulpit, and providing it with a sounding-board. If hearing were made easier, there would be a greater inducement to attend church, and the proportion of attendants who cannot hear distinctly would be greatly reduced.

Would it not be well for those masters in the science of hearing, who have invented the wonderful telephone and phonograph, to turn their attention to this matter in order to discover and announce the conditions necessary to the most accurate hearing in churches? Science could not find a nobler task, seeing that at present architects are evidently working in the dark. Not one church in a dozen, probably, fulfills the best conditions for distinct hearing by the whole audience.—*Ex.*



TRAIN OF CARS LOADED WITH REDWOOD LOGS.—FROM A PHOTOGRAPH TAKEN ON THE LINE OF THE HUMBOLDT LOGGING RAILWAY, IN HUMBOLDT COUNTY, CAL.

Logging in California.

[The above cut represents so plainly such a familiar scene to many of our subscribers that it is with pleasure that we reproduce it from an engraving in a late number of the Scientific American Supplement.]

Most of the timber is now felled with saws instead of axes, as hitherto, it being found that the tree jumps better from the stump, and causes less waste by breakage, than where the ax is used. The trees are then barked, and a fire run over the ground to burn up the bark and rubbish. Green redwood burns with such difficulty that the good logs are rarely affected by the fire. And now, when all that will burn has been consumed, begins the real labor of getting out the logs. For handling these monsters no ordinary road will answer. It must be wide and smooth as a turnpike, all rocks and roots must be carefully removed, all hollows and gullies filled up; if the road is level or soft, skids must be laid down. If the logs are small, of course such care need not be taken, but for large timber it requires good engineering, and much hard work even, to build a good logging road.

With the road built, comes the labor of rolling the logs into it. Cattle alone would be useless, except for the smaller logs. Blocks and tackle, often double and sometimes triple blocks, are needed to roll them out of their beds. Nor will any ordinary teamster answer to handle the cattle. He must be a man of judgment and skill. The best teamsters command a salary of from $100 to $150 per month, and board. The "bull whacker" is usually the highest-priced man in the camp.

Once in the road, several logs are fastened together to make a "train," and are hauled to a landing to be loaded on to cars, or to the stream to be floated to the mill. The train of logs once started, there must be no stopping if it can be avoided. All along the road are stationed barrels of water. As the train moves, a man runs along beside it, and filling and refilling his pail from the barrels, throws water in front of the train, that there may be as little friction as possible. The loads hauled are sometimes enormous. One train of seven logs, hauled on Humboldt bay in 1878, by A. A. Marks, teamster, with five yoke of oxen, scaled, collectively, 22,500 feet, board measure, of merchantable lumber. No wagons are used in the woods; the logs are simply "snaked" on the ground.

Until within the last year, all this labor of handling logs in the woods has been done with cattle, but now they are in many places using steam for this purpose. The machine used is "Dolbeer's Patent Steam Logging Machine." It consists of an upright boiler and engine, somewhat similar to a portable hoisting engine, except that, instead of a reel to wind the rope on, it has two "gypsy heads," one on each end of the reel shaft. It sits on a strong frame, the sides of which are like sled runners. It has a strong purchase from the engine to the "gypsy" shaft. To move the machine around in the woods, they run a line ahead, make it fast to a tree or stump, take two or three turns around the "gypsy," and start up the engine. In this way it hauls itself wherever wanted. When the machine is in place, it is made fast to a tree or stump, and a line run to the log to be moved, and by means of snatch-blocks the log is hauled in any direction desired. By use of this machine, heavy logs are brought out of ravines and bad places, where it would be almost impossible to get them with oxen or horses. The wooden railroad, or tramway, is used in many places for transporting the logs to the streams, or to the mills; but as the more accessible timber is being cut off, these are being supplanted by iron and steel rails, and locomotives.

Our redwood mills are generally up to the times. All the modern improvements of double circulars, gang saws, pony saws, gang edgers and trimmers are in use. While double circulars are used in nearly all the redwood mills, many mills on Humboldt bay are using, besides, what is called "Evans' third saw." This is a saw hung on a horizontal arbor above the double circulars, and cuts down from the top of the log to a little below the arbor of the middle saw. While, of course, it is parallel to the two lower saws, its cut is made four inches out further into the log. Besides this saw, there is a fourth smaller saw, which is hung on a perpendicular arbor, and makes a horizontal cut into the log just at the bottom of the cut made by the third saw. The effect of running these two saws is to rabbet out a piece, extending from the top of the log to a little below the arbor of the middle saw. These three larger saws are usually from 60 to 64 inches in diameter, and mills thus arranged can cut logs eight feet in diameter. Logs larger than that must be split.

There are about forty mills engaged in cutting redwood. The largest have a capacity of 75,000 or 80,000 feet per day. Perhaps the average would be about 40,000 feet daily.

But very few, however, run all the year round, both on account of the difficulty of keeping supplied with logs, and because the places where many of them are situated are not safe harbors for shipping in winter. As very few of the mills are connected with the market by rail, nearly all the lumber is transported by sail vessels.

The amount of redwood lumber sawed by these mills in 1881 was not far from 140,000,000 feet. Of this, 95,000,000 came to the port of San Francisco, 4,500,000 feet being reshipped to New York and foreign ports. The balance of 45,000,000 feet manufactured was distributed to the lower ports in California, Mexico, South America, Sandwich Islands, Society Islands, and Australia, vessels going direct from the mills.

Mechanics' Wages Three Hundred and Fifty Years Ago.

Hengrave Hall, in Suffolk, was built by Sir Thomas Kitson, in the reign of Henry VIII.; begun in 1525 and finished in 1538. The price of labor at that time was: for masons per day, sixpence; laborers, fourpence; carpenters, sevenpence; joiners, eightpence; sawyers, sixpence; carvers, sixpence; painters, sevenpence; thatchers, fourpence. Board and lodging for mechanics, one shilling and fourpence per week. —*Gage's History.*

In England, objection is raised as to the method of binding the bundles of lath exported to that country. The most of them are bound with wire, which corrodes, and causes the bursting of the bundles, which are subjected to rough treatment on the other side. String or unwoven rope is preferred.

☞ Science of Carpentry Made Easy, $5.00.

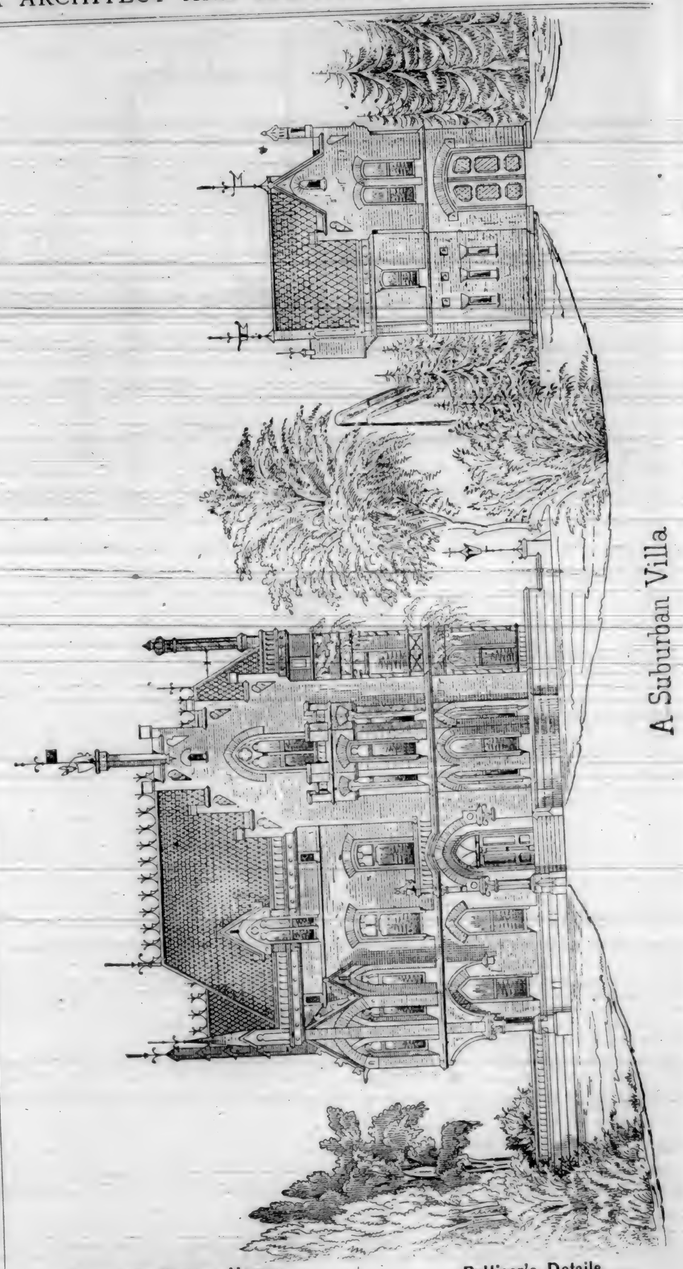
Architecture in 1882.

Never had it occurred to us to look upon the Royal Institute of British Architects as a body incorporated for the promotion of practical jokes; our eyes are, however, now open to our deficient appreciation of the capacity of that distinguished society when it unbends itself to high jinks. The subject of its principal prize for the present year was a "West-End Club" (1105), and it has crowned Mr. Beresford Pite for a marvelous "labor of an age in piled stones," a castle grim and mediæval, broad spaces of bare wall, mullioned windows, narrow loop-holed openings, porches through which an army with banners might deploy; crenelated towers bristling with conical cappings; altogether the structure in which Beauty might have slept her enchanted sleep, or out of which one of the giants whom Jack the Great quelled might have sallied on his murderous forays. There is of course a reason for all things, and we conclude that Mr. Pite is a gentleman of an ascetic frame of mind, who has learned, during the inquiries into the natural history of clubs by which he drilled himself for his great and successful effort, that the members of these frivolous bodies had the bad habit of wasting their hours in staring from large windows at the men and the women, the carriages and the horses, which throng the streets: so, as a practical apostle of morals, he made it his duty to rebuke and check such unseemly levity on the part of all who might be fortunate enough to pass the ballot of his club. The decision of the Institute was, we conclude, reached in consequence of its leading spirits being at this minute, as loyal Englishmen, much exercised by Irish lawlessness, so that they could only look upon a building for the occupation of single gentlemen as partaking of the nature of a prison for suspects, and we must own that, regarded in the light of a veiled provision for the safe keeping of Irish patriots, Mr. Pite's castle in the air is singularly appropriate. It is a pity that the Government's sudden change of policy should have frustrated such healthful intentions when the man was there to provide a nobler and a more terrific Kilmainham. Mr. Howard Ince's design for the closely affined "Casino or Club for an Inland Watering-Place" (1145), which won the first prize at the Royal Academy, is not so mirth-inspiring. Nevertheless, we are unable to see the appropriateness for its object of the somewhat solid composition of Perpendicular and Jacobean, with a tower curiously recalling—probably from some accident of drawing—but with attenuated proportions, the tower of the Record Office. If the prizeman and the adjudicators respectively were put under compulsion to produce variants of the design to serve as an inland town-hall and a marine casino, we fancy they would be puzzled as to what features to retain and what to alter.—*Saturday Review.*

Practical Lessons on the Science of Carpentry.

A work that every mechanic should have. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. This book is also of use to all who have barns, bridges, and outhouses to build, and require information how to accomplish the work. Sent post-paid to any address, upon receipt of $5.00.

Platt B. Walker, of Minneapolis, Minn., and George F. Brott, of Louisiana, propose to solve the sawdust problem, by mixing the dust with peat, and thereby producing a portable fuel. The compound thus formed cannot be easily fractured, and can be transported as easily as wood or coal. These gentlemen have secured a patent on their process.



A Suburban Villa.

American Cottage Homes.

REDUCED TO $3.00. On account of the publishers changing the location of their business, they intend to clean out effectually all their stock on hand. To do this, they have REDUCED THE PRICE OF THEIR COTTAGE HOMES TO $3.00. Will send a copy to any address, upon receipt of the price.

Palliser's Details.

REDUCED TO $2.00 PER SET. The authors are determined to close out their present lot of Details, as they intend to move to New York city. In conformity with orders to take effect after August 1st, 1882, we have reduced the price; post-paid to any address, upon receipt of $2.00.

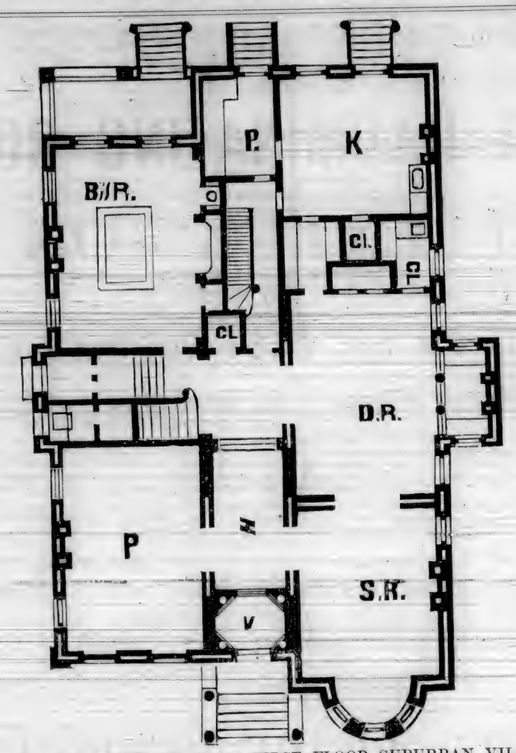


PLATE 5.—GROUND PLAN OF FIRST FLOOR SUBURBAN VILLA.

IVES' PATENT DOOR BOLTS.

Sold by all Hardware Dealers.

(APPLIED WHOLLY BY BORING.)

HOBART B. IVES, NEW HAVEN, CONN.

Sole Manufacturer and Patentee.

Peculiar Architects.

Architecture in its truer sense has for centuries occupied a high and honorable position among the beautiful sciences of the world, and deservedly stands second to none; for in addition to the high order of skill and artistic qualification necessary to qualify the architect to produce in harmonious lines and proportions the conceptions of his mind and intelligence, the after work of delineating in construction the correctness and beauties of those conceptions, is a work which none but those who have delved into and understand the thousands of *minutiæ* involved in the practice of the science of architecture, are competent to comprehend.

But the purities of the science introduced and incorporated by the masters in former ages have been departed from, and the see-saws of time, and the ever-changing fancies of the reckless æsthetics and adventures in the practice of architecture, who have aimed more at indulging the whims and caprices of clients, anxious for some new thing or style to gratify their sentiments of the beautiful—however much at variance with the principles upon which the grand structure of architecture rests—have wrought demoralizations, and opened the doors through which it has been made easy for the incompetent to enter and assume professional standing, far and largely beyond their natural or acquired qualifications.

Consequently, the profession is overrun with *peculiar individuals*, who are as little qualified for its practice as many of them would be to assume the professorship of an institute of science, whose threshold in any connection they have never crossed; and yet it is a fact that intelligent business men often fail to discover the deficiency of such parties, and distinguish between competent and incompetent architects, and are thereby led into building engagements with a class of men denominating themselves architects, to whom it is simply merciful to apply the term *peculiar*.

Complaints against "*my architect*" are of common occurrence by owners, and the profession is subjected to continuous reproach through the acts and errors of this *peculiar class*. The injustice of this general denunciation must be apparent to every discriminating mind, and the owner who permits himself to be ensnared and entrapped by a *peculiar pretender*, when by reasonable effort many good and qualified architects might be found, should acknowledge his folly and mistake, and refrain from all abuse, except against his own error, and in all after operations seek to find and entrust those into whose hands it would be safe to confide building or any other interests with assurances of safety as to abilities and moral rectitude.

Architectural Education.

A congress of architects met last month in Paris, and although no very exciting questions were discussed, the proceedings seem to have been interesting. Among the discourses delivered was one by M. Trélat, on the higher architectural education, forming a sort of supplement to that in which he considered the general subject at the congress of 1878. The substance of M. Trélat's views seems to be that architecture would be best taught in two successive and almost distinct stages. The first of these would be the technical training—the acquisition, as he says, of the instruments of the art; and this portion of architectural instruction being a matter of regular progress toward an end, could with advantage be given in special schools scattered throughout the country. The second stage having for its subject architectural design simply, should, on the contrary, be confined to a single school, carrying out its course by the well-tried and successful method of competition, but increasing its usefulness by greater care than is now possible at the Ecole des Beaux-Arts in considering the comparative merit of the designs submitted for judgment. The jury, instead of being expected to act without compensation, should be paid for a service, which is, when properly rendered, both long and difficult. The wholesome traditions of the school should, moreover, M. Trélat thinks, be maintained and defended against the danger which threatens solid artistic attainment from the cloud of attractive novelties which distract the mind of the student, and waste his time in vain pursuit of an endless succession of *armours de circonstance*; and this can best be done by placing the direction of the higher education in the hands of men of firm conviction, but freed by breadth of experience and knowledge from the prejudices of passing fashion, who should form a permanent jury to criticise or reward the work of competing students. In this way, although there might perhaps be some trouble in finding a perfectly satisfactory jury, French architecture would at least gain the advantage of being guided in a certain fixed direction, instead of wandering erratically toward all points of the compass in seccession, and its ultimate progress would be so much the more rapid in consequence.—*American Architect.*

A new plan to deaden floors has been patented, and is being tested in a new building at Philadelphia. A 6x3 plank is inserted between each joist two inches from the bottom of the joists, and projecting four inches beneath. Underneath the intervening planks the ceiling boards are nailed and the space filled with sawdust to within one inch of the joists. By this method the waves of sound are carried off, and it is claimed that the most vigorous hammering cannot be heard in the story underneath.

Spirits of turpentine is now made from sawdust and refuse of the saw-mill. It is extracted by a sweating process, and yields fourteen gallons of spirits, three to four gallons of resin, and a quantity of tar per cord. The spirits produced has a different odor from that produced by distillation.

☞ Science of Carpentry Made Easy, $5.00.

Concerning the relative value of cedar and pine, an exchange says that a recent examination of a bridge built some twelve years since, in which both woods were used, revealed the fact that the pine supports had so far decayed as to be entirely useless, while the cedar was still intact.

It is asserted that articles of iron or brass may be bronzed by dipping them into melted sulphur mixed with lamp-black. The surface, after being drained off, will take a beautiful polish, and presents the appearance of oxidized bronze.

UTILIZE YOUR BASEMENT APARTMENTS

In the Business Part of the City by using

HYATT'S PATENT ILLUMINATING ROOF

—AND—

BASEMENT EXTENSION.

THE LENSES MAGNIFY, HEAT, AND DO NOT BREAK.

SEE ALL NEW BUILDINGS ON THE BEST BUSINESS MART.

The present dark, damp Cellars, or Coal Vaults, of old buildings made light, cheerful, and well-ventilated Business Apartments suitable for Offices.

Read the following of the many Testimonials received:

LEVI STRAUSS & Co., Importers, 14 and 16 Battery Street,
SAN FRANCISCO, March 4, 1881.

MESSRS. P. H. JACKSON & Co., No. 2 California Street:

The alteration made by you by cutting out the six door sills and risers on the front part of our store, 14 and 16 Battery Street, and substituting HYATT'S PATENT ILLUMINATING ROOF, is quite satisfactory in making in the basement apartment below, in the front part, all that we could desire as regards light. Our entry clerks are now able to work without the use of gas.

LEVI STRAUSS & CO.

The **Basements of Messrs. Murphy, Grant & Co's Buildings,** on Bush and Sansome Streets, have been altered and are now lighted by this Improvement.

HYATT'S PATENT

FIRE AND BURGLAR-PROOF SKYLIGHTS.

The Public are requested to examine the **large quarter circle** skylights, recently erected in the rear of **Senator Fair's** building corner Sansome and Pine. Also **A. B. McCreery's** building corner of Pine and Davis. By the use of these heavy Skylights, which are both fire and burglar-proof, **no extra charge in rates is made by the Insurance Companies than if no Sky-lights were used,** as they are not destroyed by fire, like the wood and sheet-iron skylights in common use; besides the occupant of the premises may feel his goods are safe from robbers during the time the building may be closed.

☞There are many deep stores in this city that are much in need of light, and by an addition of these Skylights all light can be obtained, besides security against thieves is maintained.

The appearance of the Skylight, as seen from the front of the store when the sun is on it, glistens with the thousands of hexagon lens. The Cosmopolitan Building, as altered, has these Skylights on the rear of the deep stores.

P. H. JACKSON & CO.

Sole Licenses and Manufacturers for the Pacific Coast of Hyatt's Patents,

No. 2 California Street and No. 231 First Street,

SAN FRANCISCO.

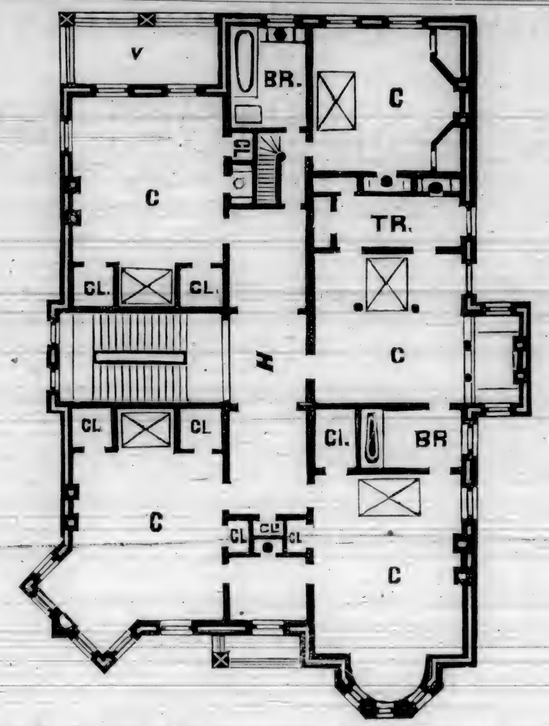


PLATE 6.—GROUND PLAN OF SECOND FLOOR SUBURBAN VILLA.

Removal Notices.

MESSRS. MILNE & GANTS have removed from their old stand to 618 WASHINGTON STREET. A full supply of their PERFECTION WATER CLOSET always on hand.

SYMMES & STOW, having purchased the business formerly conducted by THOMAS DAY & Co., will be pleased to see all the old customers at 122 and 124 Sutter St.

T. J. BASS & Co. have removed to 14 and 16 Ellis St.

A. F. NYE & Co. have removed to 609 and 611 Market St.

HAROLD D. MITCHELL, architect, removed to 405 California St.

CUBLETT & EISEN have secured still another office in same building as present located, for a private reception and business office.

J. KEMP & Co. removed to 112 Mission St.

H. MACY, architect, removed to 124 Sutter St.

KIRBY & SON, architects, located at 106 Leidesdorff St.

Market Reports.

LUMBER.—Receipts still continue large, and the demand keeps pace with the arrivals.

Receipts since January 1st, 1882:

Lumber	122,006,815
Shingles	32,538,011
Laths	11,773,360

A correct price list of lumber will be found below:

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough "	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping...per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths...per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts...per piece	17½

Redwood.

Rough Merchantable...per M feet	$22 50
" Refuse "	18 50
Surface No. 1 "	37 50
" 1 x 6 "	35 00
" No. 2 "	27 50
Rustic, No. 1, 1 x 8 "	35 00
" No. 1, 1 x 10 "	37 50
" No. 2 "	32 50
" Under 10 feet "	32 50
T. & G., 1¼ x 4 and 1¼ x 6 "	37 50
" 6 in. 12 ft. and over "	35 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
" " No. 2 "	27 50
T. & G., Beaded, 12 feet and over "	35 00
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
Half-inch Surface "	30 00
Pickets, Fancy "	27 50
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	25 00
Shingles...per M	2 50
Battens, ¾ inch, lineal feet "	1c

NAILS.—Since January 1st, 1882, we have imported...152,320 kegs.

10 to 60 pennies, are quoted at	$4 75
8 " "	5 00
6 " "	5 25
5 and 4 " "	5 75
4 and 5 pennies, brad heads, at	6 00
6 " "	6 25
8 " "	6 50
10 and upward	6 75
3 penny fines "	7 50

PAINTS.—The price of paint has been reduced owing to the competition of Eastern firms. The best white lead can now be had for 6½ cents per pound.

According to Edwin Alden & Bros.' American Newspaper Catalogue, just issued, there are 12,158 newspapers published in the United States and the Canadas. Total in the United States, 11,522; Canadas, 636. Published as follows: Dailies, 1,152; Tri-Weeklies, 80; Semi-Weeklies, 150; Weeklies, 9,078; Bi-Weeklies, 23; Semi-Monthlies, 202; Monthlies, 1,290; Bi-Monthlies, 12.

Building Intelligence.

We present a very complete report in this issue. Although the list is a very large one, it will be noticed that but very few of the better class of dwellings have been started the past month.

We take pride in the improvement we have made in arranging the items of building news. A glance, almost, will suffice to enable the reader to find the location of any desired improvement.

The mark "x" signifies between.

SAN FRANCISCO.

O'Farrell, cor Larkin. Two-story frame building.
O.—G. G. Burnett.
A.—Wolfe & Son.
C.—Sylvester & Langabee.
$11,500.

Sutter, No. 1418. Enlargement and repairs.
O.—P. Stern.
A.—Wolfe & Son.
$800.

Market, opposite Dupont. Five-story and basement, brick.
O.—W. J. Somers.
A.—W. P. Moore.
C.—George Richardson, mason; J. Treadwell, carpenter; *Franklin Girders, P. H. Jackson.*

Fillmore, x Jackson and Pacific. Two-story frame—flats.
O.—Mrs. Letcher.
A.—C. Geddes.
C.—Waterbury & Maxwell.
$4,200.

Ellis, x Leavenworth and Hyde. Two-story and basement frame.
O.—Hoeischer.
A.—Kenitzer & Raun.
C.—W. Fluns.
$7,000.

California, x Octavia and Laguna. Two-story attic and basement frame.
O.—S. Foorman.
A.—C. Geddes.
C.—A. Jackson.
$10,000.

Pine, cor. Van Ness. Additions and repairs.
O.—Geo. Hearst.
A.—Kenitzer & Raun.
O.—Mahoney Bros.
$15,000.

Pine, cor. Van Ness. Alterations and repairs.
O.—L. Schloss.
A.—Kenitzer & Raun.
C.—Mahoney Bros.
$3,500.

Buchanan, cor. Eddy. Three two-story and basement frame.
O.—Ludwig.
A.—H. Geilfuss.
C.—Meyn.
$12,000.

Second, cor. Townsend. One-story brick warehouse.
O.—A. A. Cohen and Wm. Sharon.
C.—S. M. Hills.
$14,000.

Tehama, nr Fourth. Alterations three story brick.
O.—Fortman & Co.
C.—Huwe.
$3,000.

Clara Avenue, opp. Buena Vista Avenue. Two-story and basement frame.
O.—R. Llewellyn.
A.—W. H. Bayless.
Days' work.
$10,000.

Haight, x Pierce and Scott. Two-story basement and attic frame.
O.—S. G. W. Schulte.
A.—Schmidt & Havens.
C.—Waterbury & Maxwell.
$7,500.

Hoff Avenue, x Sixteenth and Seventeenth. Two-story frame, four tenements.
O.—John Whalen.
C.—H. J. Weiss.
$5,000.

Potrero Avenue, cor. Army. Two frame buildings.
O.—S. Bloom.
Days' work.
$4,000.

Golden Gate Avenue, x Gough and Octavia. Two-story and basement, frame.
O.—Chas. Mellon.
A.—T. J. Welch.
C.—Ingerson.
$4,700.

Golden Gate Avenue, x Franklin and Gough. Two-story and basement, frame.
O.—Kreutz.
A.—H. Geilfuss.
C.—B. Dryer.
$6,000.

Jackson, cor. Mason. Three two-story frame.
O.—S. B. Blake.
A.—Meeker & Banks.
Days' work.
$8,500.

Sacramento, nr Laguna. One-story and basement frame.
O.—J. F. Hobson.
A.—W. F. Smith.
C.—Treadwell & Co.
$3,000.

Bush, nr Leavenworth. Additions to frame.
O.—Bradley.
A.—J. C. Pelton.
C.—T. J. Hamilton.
$7,000.

Baker, N. W. cor. Sacramento. Five one-story and basement cottages.
O. & B.—G. & W. Hinkle.
$11,500.

Sacramento, N. E. corner Baker. Five one-story and basement cottages.
O. & B.—G. & W. Hinkle.
$11,500.

Sacramento, cor. Lyon. Three two-story frame.
O.—W. K. Van Allen.
Days' work.
$7,500.

California, x Baker and Lyon. Two-story frame.
O.—F. B. Wilde.
Days' work.
$4,000.

Baker, N. E. cor. California. One-story and basement frame.
O.—J. Habergarten.
C.—W. Fluns.
$1,100.

Pine, cor. Steiner. Repairs and additions to church.
O.—Dominican Fathers.
A.—T. J. Welch.
C.—J. Blake.
$3,000.

Sansome, x Pine and Bush. Four-story and basement, brick.
O.—Eyers.
A.—J. Marquis.
C.—Brick work, Calvert. C.—Carpenter work, S. S. Emory.
$40,000.

Larkin, nr Sutter. Alterations to frame.
O.—Mrs. Atherton.
A.—J. Marquis.
C.—Ingerson.
$1,050.

Bush, nr. Pierce. Two two-story frame.
O.—George Edwards.
Days' work.
$5,000.

Jackson, cor. Fillmore. Two-story basement and attic frame.
O.—T. H. Jones.
C.—Shepard.
$7,000.

Filbert, x Steiner and Pierce. Two-story and basement frame.
O.—F. Alexander.
C.—E. L. Gifford.
$2,500.

Fillmore, cor. Greenwich, One-story and basement frame.
O.—John Heyn.
Days' work.
$1,000.

Pine, nr. Taylor. Additions to stable.
O.—Senator Fair.
Days' work.
$4,700.

Battery, x Jackson and Pacific. Repairs to iron building.
O.—F. Barnard & Co.
A.—T. J. Welch.
C.—T. G. Barnard.
$1,500.

Bush, nr Leavenworth. Alterations and additions.
O.—Rutherford.
Days' work.
$1,500.

Mission, x Thirtieth and Thirty-first. One two-story; two one-story frame.
O.—F. Kelterer.
C.—F. Ronicke.
$3,400.

Twenty sixth and Hampshire. Additions to frame.
O.—F. McAleers.
Days' work.
$1,300.

Army, cor. San Bruno Road. Two-story frame.
O.—Geo. Nicholas.
C.—J. McPoland.
$1,500.

Adair, nr. Howard. One-story and basement cottage.
O & B.—H. J. Weiss.
$1,600.

Eureka, x Twenty-second and Twenty-third. Improvements in nursery.
O.—H. Meyer.
C.—H. J. Weiss.
$2,000.

Broadway, x Sansome and Montgomery. Two-story frame.
O.—A. Chichizola.
C.—G. Rocca.
$2 350.

Fulton, x Scott and Devisadero. One-story frame.
O.—J. Sullivan.
Days' work.
$1,000.

Waller, x Buchanan and Webster. One-story and basement frame.
O.—Egelman.
C.—J. Dutton.
$1,150.

Pacific, x Jones and Leavenworth. One-story frame.
O.—Vennekohl Bros.
A.—F. Hillert.
C.—A. N. Nelson.
$1,800.

Vallejo, x Hyde and Larkin. One-story frame cottage.
O.—Mrs. Neely.
A.—Townsend & Wyneken.
C.—A. N. Nelson.
$1,200.

Natoma, x First and Second. Three-story frame building.
O.—Mrs. Hayes.
Days' work.
$2,500.

Howard and Seventh. Alterations to frame.
O.—Mrs. Squires.
C.—W. Odell.
$400.

Folsom, nr Sixth. One-story frame building.
O.—A. Russ.
C.—Conrad & Miller.
$2,000.

Stockton, cor. Post. Alterations to frame building.
O.—Stahl & Maack.
A.—V. Hoffmann.
C.—G. Krohn.
$9,000.

Bryant, cor. Seventh. Two-story frame.
O.—Pac. Cream Tartar Works.
C.—F. Bernard.
$4,000.

Tenth, nr Harrison. One-story frame building.
O.—McAvoy.
Days' work.
$1,500.

Howard, nr Fourth. Alterations to three-story frame.
O.—Pickett.
A.—T. J. Welch.
Days' work.
$1,600.

Page, x Franklin and Gough. Repairs and additions.
O.—Mrs. Mury.
C.—F. Wienoehl.
$3,000.

Seventeenth, x Church and Sanchez. Two-story frame dwelling.
O.—W. Siebrecht.
Days' work.
$2,600.

Cedar Avenue, x Larkin and Polk. Repairs to frame dwelling.
O.—F. S. Wensinger.
C.—J. McInnes.
$1,000.

Leavenworth, nr Vallejo. Repairs to two-story frame.
O.—Mrs. Guess.
C.—S. M. Hills.
$1,250.

Mason, x Union and Filbert. Repairs to two-story frame.
O.—Mrs. Ryder
C.—S. M. Hills.
$750.

Fifth, nr Brannan. Two-story frame building.
O.—Fuchs & Euler.
Days' work.
$1,000.

Hartford, x Nineteenth and Twentieth. One-story and basement frame.
O.—S. Jones.
Days' work.
$1,600.

Van Ness, x Sacramento and California. Repairs and additions.
O.—W. B. Bradbury.
Days' work.
$7,000.

Cedar Avenue, cor. Larkin. Three-story frame building.
O.—F. S. Wensinger.
Days' work.
$10,000.

Els, nr Stockton. Fitting up offices.
O.—T. J. Bass & Co.
C.—S. M. Hills.
$4,000.

Capp, x Seventeenth and Eighteenth. Repairs to frame.
O.—H. White.
C.—S. M. Hills.

Broadway, nr Octavia. Two-story frame.
O.—D'Alameda.
A.—G. A. Bordwell.
C.—J. C. Gilson.
$2,190.

Webster, x O'Farrell and Ellis. Repairs to two-story frame.
O.—Judge Freelon.
C.—R. Cook.
$1,700.

Ridley, nr Mission. Two-story frame dwelling.
O.—P. C. Casey.
A.—Kidd.
C.—J. Blake.
$1,800.

Russ, nr Folsom. Two-story and basement frame.
O.—J. Phillips.
A.—B. Henriksen.
C.—J. Kline.
$5,500.

Mason, x Bush and Sutter. Repairs to two-story frame.
O.—Geo. Lovegrove.
A.—Percy and Hamilton.
C.—Gray & Stover.
$1,600.

First, cor. Laurel Place. Additions to frame dwelling.
O.—P. J. Donahue.
A.—T. J. Welch.
C.—J. W. Smith.
$4,500.

Clinton Park, nr Market. One-story frame cottage.
O. & B.—J. Campbell.
$600.

Stockton, x Jackson and Pacific. Repairs to frame.
O.—Zabaldano.
Days' work.

Grove, x Webster and Fillmore. Additions to frame.
O. & B.—J. Hinkle.

Harrison, x Twenty-third and Twenty-fourth. Repairs to frame.
O.—McLoughlin.
$850.

Twenty-fifth and Treat Avenue. One-story and basement frame.
O. & B.—J. Kane.
$900.

Valencia, cor Twenty-first. Alterations to frame.
O.—Mrs. Bruns.
C.—F. Klatt.

Grove, x Franklin and Gough. Repairs to frame.
O.—Shaddy.
Days' work.

Pine, x Larkin and Polk. Repairs to frame building.
O.—City of S. F.
Days' work.

Fillmore, x Haight and and Waller. Repairs to frame dwelling.
O. & B.—Laherty.

Geary, nr Baker. Repairs to frame.
O.—Hurlbert.
Days' wo k.

Harrison, x Twenty-fourth and Twenty-fifth. One-story and basement frame.
O.—Clinton.
O.—T. F. Mitchell.
$1,300.

Rondel Place, off Sixteenth. Alterations to frame.
O.—Dobbler.
C.—C. L. Horton.
$800.

Twenty-seventh, nr Church. One-story frame.
O.—G. Cash.
C.—McLoughlin.

Twenty-first, cor Shotwell. Additions and alterations.
O.—H. Ebbinghausen.
A.—H. Geilfuss.
C.—Conrad & Miller.
$3,200.

Pine, cor. Leavenworth. Two two-story frame.
O.—W. Sharon.
A.—J. P. Gaynor.
C.—W. M. Fletcher.
$12,000.

Seventeenth. near Dolores. One-story and basement frame.
O.—E. Coffin.
A.—W. P. Moore.
C.—Terrill & Slaven.
$2,000.

Powell, No. 1413. Additions to building.
A.—T. J. Welch.
C.—F. Buckley.
$1,524.

SACRAMENTO.

Sixth, cor. L. Two-story frame building.
O.—1st Artillery Regiment.
A.—N. D. Goodell.
C.—M. Madden.
$10,000.

Ninth, x G and H. One-story and basement frame cottage.
O.—B. Sheils.
A.—N. D. Goodell.
C.—B. F. Bell.
$1,670.

I, x Third and Fourth. One-story and basement brick building.
O.—J. Rider.
A.—N. D. Goodell.
C.—E. A. Boyer.
$2,000.

H, x Seventh and Eighth. Alterations and repairs.
O.—F. H. Russell.
A.—N. D. Goodell.
$2,000.

Sixthteenth, near O. Two one-story frame cottages.
O.—Simon Ash.
C.—John Atwood.
$1600.

J, x Fifth and Sixth. Remodeling brick building.
O.—A. J. Vermilya.
A.—A. A. Cook.
C.—Carle & Croly.
$2,800.

Fifteenth, and L. Frame residence.
O.—Mrs. J. Harrison.
C.—John White.
$1,500.

K, near Fifteenth. One-story frame cottage.
O.—E. Himmel.
$1,100.

Second, cor. M. Two-story frame, brick cellar.
O.—H. Winters.
A.—A. A. Cook.
C.—John White.
$3,770.

I, x Tenth and Eleventh. Raising and remodeling.
O.—W. A. Chittendon.
A.—A. A. Cook.
C.—F. Cady.
$1,800.

Ninth, cor. K. I. O. O. F. Encampment Hall.
A.—A. A. Cook.
C.—Nelson Wilcox.
$1,650.

J, x Front and Second. Remodeling Fremont Hotel.
O.—P. Bryding.
A.—A. A. Cook.
C.—E. F. Woodward.
$2,850.

Second, x I and J. Fitting up offices.
O.—Scofield & Tevis.
A.—Newsom & Gash.
C.—G. D. Nagle.
$2,400.

ALAMEDA.

Santa Clara Ave., near Willow. Two-story frame dwelling.
O.—W. P. Thomas.
C.—Gilbert & Brown.
$4,000.

Willow, and Railroad Ave. One-story and attic frame dwelling
O. & B.—C. A. Brown.
$1,800.

Encinal Ave., nr Oak. Two-story and attic frame dwelling.
O.—Captain Williams.
C.—J. Millington.
$2,000.

Central Ave., x Second and Third Ave. One-story frame cottage.
O. & B.—Thompson.
$700.

Union, cor. Buena Vista Ave. One-story frame cottage.
O. & B.—Stackley.
$1,000.

Railroad Ave., nr Paru. Additions to building.
O.—C. Cellarius.
C.—A. Denke.

San Antonio Ave., x Union and Grand. Additions to building.
O.—J. R. Spring.
A.—Babson & Seadler.
C.—Gilbert & Brown.
$2,000.

OAKLAND.

San Pablo Ave. Station. Two one-story frame cottages.
O.—Klinker.
A.—S. & J. C. Newsom.
C.—Dowling.
$4,000.

Seventeenth, x Sixth and Seventh Avenues. Additions to two-story frame.
O.—L. H. Wakefield.
A.—S. & J. C. Newsom.
C.—Knight & Littlefield.
$1,600.

Tenth, cor Jefferson. Four two-story frame dwellings.
O.—Lamoreux.
A.—Matthews & Son.
C.—A. Childs.
$8,000.

Central Ave., x Twelfth and Thirteenth. One-story brick building.
O.—White & Wallman.
C.—Geo. Flick.
$3,000.

Twenty-third, x Valdez and Waverly. One-story and basement frame cottage.
O.—C. Ashton.
A.—S. & J. C. Newsom.
C.—C. Kimball.
$2,000.

Seventh Ave., x Tenth and Eleventh. Two-story frame building.
O.—A. Malpas.
A.—S. & J. C. Newsom.
Days' work.
$1,000.

Harrison, No. 1,268. Additions to building.
O.—W. P. English.
C.—Haskell & White.
$600.

Frame building near Lake Merritt.
O.—Rouse.
A.—Newsom & Gash.
Days' work.
$1,500.

Jefferson, cor. Twelfth. Two-story frame residence.
O.—O. B. Smith.
$4,500.

San Pablo Ave. and Sixteenth. Two-story building—stores and dwelling.
O.—J. C. Estey.

Filbert, near Twelfth. Two-story frame.
O.—Benson.

Wood, x Chase and Taylor. Three one story cottages.
O.—J. Ziegenbein.

Taylor, cor. Wood. Two-story frame residence.
O.—W. S. Jeffries.

East Oakland.—Additions.
O.—Dr. Pinkerton.
C.—Haskell & White.
$400.

MISCELLANEOUS.

Maxwell. Two-story brick school house.
O.—Colusa County.
A.—S. & J. C. Newsom.
C.—J. M. Warren.
$30,000.

Centreville. Two-story and basement frame.
O.—Dr. Hall.
A.—S. & J. C. Newsom.
C.—Knight & Littlefield.
$5,500.

Stege. One-story brick building.
O.—Vulcan Powder Co.
A.—H. C. Macy.
C.—C. Holmes.
$1,200.

Fresno. Two-story brick building.
O.—J. Ryan.
C.—J. Clifford.
$6,000.

One and one-half story frame building.
O.—Hughes & Son.
Days' work.
$6,000.

One-story frame dwelling.
O.—L. Einstein.
A.—Kenitzer & Raun.
C.—Carlson & Bro.
$4,000.

One-story frame dwelling.
O.—Chas. Schloch.
C.—W. J. Beers.
$1,000.

One-story frame building.
O.—John Miller.
C.—W. J. Beers.
$600.

Wheatland. One-story brick building.
O.—Farmers' Bank.
A.—A. A. Cook.
C.—Swain & Hudson.
$4,233.

San Jose. Second near San Antonio. Two-story frame dwelling.
O.—Mrs. M. E. Bassett.
A.—J. O. McKee.
C.—W. A. Boyler.
$2,600.

At the Willows. Two-story and basement frame.
O.—T. B. Keesling.
A.—J. O. McKee.
C.—Carter & Clark.
$6,000.

Cor. Sunol and the Alameda. Two-story brick.
O.—John Davey.

Additions to flour mill.
O.—Moody.
C.—J. Lenzen.

Pleasant Valley. Two-story frame building.
O.—J. M. Pleasants.
A.—A. A. Cook.
C.—T. D. Ball.
$2,000.

Ukiah. One-story frame building.
O.—Mendocino County.
A.—A. A. Cook.
C.—W. A. Evans.
$8,240.

Tehama. Two-story brick dwelling.
O.—J. C. Tyler.
A.—A. A. Cook.
Days' work.
$16,000.

Seattle. Four story brick and iron building.
O.—Leary & Yesler.
A.—W. E. Boone.
C.—Ranke & Loshe.
$40,000.

Red Bluff. Two-story brick building.
O.—Red Bluff Lodge, I. O. O. F.
A.—A. A. Cook.

Chico. Two-story frame dwelling.
A—A. A. Cook.
C.—A. J. Bryan.
$5,000.

Colusa. Two-story brick building.
O.—Colusa City.
A.—J. C. Matthews.
C.—Burrell.
$20,000.

Two one-story and basement cottages.
O.—S. H. Wade.
A.—J. C. Matthews & Son.
C.—W. Dahl.
$4,000.

Napa. Additions to building.
O.—William Hunter.

Division. St. Two-story and basement frame dwelling.
O.—H. Goodman.
A.—J. Marquis.
C.—H. H. Knapp.
$6,000.

Tamalpais Station. One-story attic and basement cottage.
O.—Hall McAllister.
A.—Newsom & Gash.
C.—G. D. Nagle, mason; J. T. O'Brien, carpenter.
About $20,000.

Princeton. Two-story frame near town.
O.—Jos. McVay.
C.—W. Herrin.
$7,000.

Frame dwelling near town.
O.—Hugh Williams.
C.—W. Herrin.
$4,000.

Woodland and vicinity. Main, cor. Railway. Two-story brick, 80x140.
O.—Freeman, Porter & Co.
A.—W. H. Carsen.
C.—McMullen & Scott, masons; carpenter work by the day.
$25,000.

Main, cor. Second. Two-story brick for town hall and engine house.
O.—R. H. Beamer.
C.—Craft, mason; carpenter work by the day.
$15,000.

Railway. Two-story frame.
O.—Cohen.
C.—Cadwell.
About $15,000.

Main. Iron front to two stores.
O.—F. Ogburn.
C.—W. H. Carson.
$800.

Second. One-story frame
O.—McGommow.
$800.

Near Cacheville. Two story frame.
O.—Hoppins.
C.—W. H. Winnie.
$6,000.

Hungry Hollow. Two-story frame.
O.—Foster.
C.—Blake.
$4,000.

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—AND—
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Labor Movements in San Francisco.

During the long period of severe dullness which preceded 1881, and which was the outgrowth of Kearneyism and the new Constitution, the working classes of California were compelled to submit to reductions in wages, and thousands found it difficult to obtain employment, even at low rates of compensation. But with the revival of the building business, which set in during the last past year, and especially so during the present year, wages in nearly all lines of mechanical pursuits have gained firmness; and many families among the working classes, who had struggled through the dark days of dullness, have been made comparatively happy by the return of better times, satisfied for the time being with the improvement in engagements and pay. No movement of special moment was inaugurated having for its object a general advance in wages through concerted society organization, many of which had in former years flourished; but from the financial inabilities on the part of the membership to perpetuate them, and business conditions not seeming to justify their continuance, they were permitted to die out. But the increased activities of the year have induced reorganization and a revival of the society affiliations in nearly all the branches of labor.

This is, so far, well. The banding together of men with common interests is as it should be, as all pursuits in life are benefited by the assembling of those engaged in them, when the objects and purposes actuating are based upon the right, and wise counsel prevails. But when influenced and controlled by rabid minds, bent upon the accomplishment of projects not within the bounds of sound reason and for the common good of all, action is apt to be brought about, calculated to arouse opposition within and without, and raise obstacles and antagonisms prejudicial if not destructive in character.

The developments and improvements in scientific and mechanical spheres are as much the result of free discussion and the interchange of thought among the leading men engaged in them respectively, through societies, assemblies, conventions, the publication of books and papers, and similar methods, as from special personal abilities and effort. By these means, men gather information and secure new ideas, which enables them to extend and enlarge upon first thoughts and conceptions, and produce results which would never be reached by them if debarred from the benefits and advantages derived from mutual, personal affiliations.

The great obstacle in the way of better results in labor organizations exists in the limitedness of purpose. Some one idea which becomes the prominent or sole factor of the movement is made the issue from the beginning, and its enforcement is insisted upon with rigid persistence, either with or without the approval of opposing interests, or any effort being made to reconcile the opposition. Hence we advise that labor movements shall make haste slowly, deliberate wisely, and act prudently. The general on the battle-field who holds special advantages in forces and position may press and defeat the adversary according to his own pleasure; but in business battles, where the rights of all parties in conflict are protected under the law, the advantages cannot long remain one-sided. If labor for the time being asserts and secures prestige, capital submits only so long as compelled to do so, refusing unconditional surrender while seeking for shelter in more quiet and undisturbed retreats. Hence the necessity for higher and broader purposes in labor organizations than the arbitrary and dictatorial objects more generally made the basis of action.

We speak not a word against wise labor organizations, but heartily commend them, with these qualifications: that they be established on broad principles of mutual rights, and more for the purpose of the culture and improvement of the membership than the arbitrary enforcement of any single peremptory requirement.

For enforced results are never permanent, when the means of escape are possible. And if the mechanics of California would unite and establish organizations of the character suggested, it would enhance their interests, and secure to them a power and influence for good far greater than all the one-purpose movements that can be conceived. There is a vast volume of talent and mental and moral excellence within the circles of labor in California, which may be developed and rendered almost irresistible, by the concerted action of the laboring classes. And it is a matter of surprise to us, that so many intellectually competent men should permit the multiplied favorable opportunities within their reach to pass unimproved. "It can't be done," is the sluggard's reply. What right thing is there that honest men banded together on right principles cannot do? Rugged mountains have been crossed by the foot of man, and the "iron horse" has made his way through snow drifts and over lofty peaks; oceans have been reduced almost to mill-ponds in effect, by massive vessels, designed and built by man, defying the rudest storm, and fleeing before the fierce winds; continents have been discovered by men of will power; and our own great nation is the result of the doings of the determined souls whose feet first trod the virgin soil of America. In all the successful works of life, it requires the exercise of the will power, which, sustained by pure motives, is irresistible.

The "Carpenters' and Joiners' Union" has secured the concession from the bosses of the men quitting at four o'clock on Saturdays for full time. There seems to have been but little opposition to this arrangement, which is likely to continue during the winter months, as men can do but little after that hour through the season of early sunset. And should the spring work start up early and lively, the rule may extend through the coming year. But if there should be a let-down in building activities, and the market be flooded with labor-seeking employment, it is not likely that men requiring steady work to meet daily demands will remain idle for the sake of sustaining the eight-hour rule on Saturdays. We hope, however, that our future prosperity as a city may be such as will enable continuance of the rule, and that for years to come the concession of two hours on Saturday may be sustained.

The other special movement of the Union—that of breaking up the piece-work system—has been to some extent beneficial, as its presentation to the Chapter of Architects has enlisted a greater interest therein by the members of the Chapter, and the general discussion of the question among contractors has exposed the error of the method to such an extent, that none are willing to admit themselves guilty of the practice. Many, however, who disclaim culpability in this regard, do so very gently, and often with a very cherry-colored countenance, as if inclined to blush a little while protesting their innocence. But the members of the Union may rest satisfied that no piece-work will be permitted by the members of the Chapter, with their knowledge, on works under their superintendence.

The plumbers, marble-workers, and others have also revived or created society organizations; but in some cases may have demanded more than circumstances justify, unless a very propitious condition of business continues. All attempts to introduce new rules and regulations, calculated to increase cost and expenses, are destined to meet opposition; and unless there is power and force in the aggressive ranks, either in abundance of work or other controlling circumstances, the feebler must yield and accept the terms offered by the stronger. Consequently, it is wise on the part of those who seek to better their condition to forbear harsh measures, and strive to conciliate and accomplish their purposes by persuasive and argumentative means. The views expressed by us may not prove acceptable to all, or even a majority of the working classes, but they are the gleanings of fifty years' experience, and we are very well satisfied of their practical correctness. We have witnessed the rise and fall of scores of movements of various import—political, mechanical, professional, and others—which have gone down to dust and the slumbers of oblivion through unwise and injudicious management. We therefore hope wise counsel will prevail in the ranks of the laboring classes, and that prudence and equity and fairness may govern all their acts.

Early Rains—A Bad Omen.

Although there is no rule governing the seasons in California, which may be relied upon as invariable, still, the experiences and observations of the "oldest inhabitants" upon this coast sustain the theory that copious showers prior to the month of November indicate shortness of rain supply for the season. The month of September ending with rain, followed by heavy showers during the early days of October, does not argue well for a satisfactorily wet winter. No State in the Union is so disadvantageously affected by lightness of rainfall as California, as there exists *two* great interests, vital to the common welfare, while in other States

there is, as a rule, but *one*—that of agriculture in its various ramifications; while to this in the Golden State is to be added the great mining interests, which without sufficient rains suffer to a greater or less extent. Consequently the common interests of the State hinge upon the rainfall of the respective seasons, abundance and prosperity resulting in the years of abundant rains, while depressions and dullness ensue in years when the heavens fail to furnish the requisite quantity of water.

We hope that there may be a failure this year in the fulfillment of the commonly accepted theory that early rains presage a light, wet season, and that the present business outlook may not be dimmed by too much sunshine and "beautiful weather" during the months when, for the common good, muddy streets, miry roadways, and moderate floods are more to be desired.

The unexpected "first rains of the season" found but few prepared for them, and as usual, considerable damage has been experienced in building spheres, as the result of unfinished roofs, unprotected openings, etc. Many contractors and owners have suffered considerable damage to their works and property by neglecting to prepare in time for the uncertain storms, which neither come nor tarry because people are or are not prepared to receive them. But the experiences of the past thirty years fully demonstrate the fact that those who fail to adopt precautionary measures against rain storms by the early day in September, or who take it for granted that the rains are entirely over before the 1st of July, assume considerable risk in so doing. Heavy rains have fallen on or before the 12th of September in several years since 1850, and in as many or more cases late in the month of June.

A Word of Caution to Eastern Mechanics.

While gladly welcoming the immigration of mechanics from all parts of the world, of those who desire to locate in San Francisco or other parts of California, we deem it to be our duty to extend a word of warning to such to beware of erroneous reports in reference to the rates of wages prevailing upon this coast, and the probabilities of ready and permanent employment.

Sometimes the zeal and earnestness of writers for journals and newspapers override good judgment, and induce statements greatly in excess of actual conditions. The magnifying and inflation of real facts sometimes embellishes articles for publication, and glowing accounts are read with special interest, and accepted as true; and thousands of mechanics and others have been misled, and financially and otherwise injured, by being influenced away from good situations with false hopes of bettering their future prospects.

Our object in writing this article is simply to correct, as far as our influence may extend, any wrong idea that may have attained in other cities and States, in reference to the building interests of California. From information before us, it appears that quite a number of mechanics have left their eastern homes and good situations, and come to California, under the impression that business was brisk in this State, and wages higher than east of the Rocky Mountains; and that some of them have not realized their expectations. We therefore extend the following correct information, based upon personal knowledge as practicing architects, to wit:

The building business during 1878–79 was so light that only a minor proportion of the mechanics were employed, and positive distress existed among the working classes. 1880 shaded up a little better, followed by a still greater improvement in 1881, during which year, at times, but not continuous by the entire working forces were employed. With the commencement of 1882 a still greater improvement set in, and wages increased over the rates paid in 1879 and 1880, from $2.50 to $3 for carpenters, to $3 and $3.50, and in some cases $4. The latter amount being the exception. At times during the current year there has been a scarcity of good mechanics, and some advertizing has been done to secure help to forward work undertaken under a forfeiture for over-time. These temporary pressures and scarcities of help gave color at the time to liberal statements in reference to the necessity for a greater number of mechanics in San Francisco. But as we have stated, the pressure was but temporary, growing out of the fact that during a few months an unusual amount of work was let, among which some *half-dozen* buildings, costing from lesser amounts up to $150,000 or more. And these not being fairly distributed through the season, but bunched within a period of sixty to ninety days, necessarily exhausted the supply of workmen to rush them through, which being done, released the pressure, and again equalized the supply and demand for labor. During this condition of things increased wages were offered in some cases, with doubtful probabilities of the increase being sustained during the winter months, and not the slightest prospects for advance in the future over the figures stated. Brick-layers have at times been scarce, with wages at $5.50 per day for best men. But the amount of brick-work done during the year has been no more than sufficient to comfortably employ the resident working forces, except that for a *limited period* master masons found it difficult to obtain a sufficient number of workmen.

The same state of facts exist in connection with other mechanical branches, and for the information of mechanics in other States, we append the ruling rates of wages in the several lines. As before stated, carpenters, $3 to $4; brick-layers, $4 to $5.50; plasterers, $3 to $4; plumbers, $4 to less for scrubs; painters, $3 to $4 for special hands; laborers, $1.50 to $3 for mortar men and hod carriers; stair builders, $3.50 to $4.

We hope, however, that the facts furnished will not discourage any one from coming to California, who desires to change their places of residence, as there is room and opportunity for thousands of *competent*, energetic, and industrious people to settle down in the various cities and places of the Pacific coast, with good prospects of success. But let none come with the fancied idea that it is only necessary to *reach* California to secure all that heart and soul can wish, or that this is a State where wealth is obtained by the holding out of the hand, or the folding of arms until the Goddess of Fortune shall pour into the lap of the patient waiter gold sufficient for all the future necessities of life.

The Lateral Support Question.

Once more this question is being or will be ventilated, in the case of William Ede vs. James Phelan, in which the plaintiff seeks to recover $2,500 as damages arising from the defendant having excavated his property, adjoining that of the plaintiff, to a depth of fifteen feet below the official grade of sidewalk, for building purposes. It is claimed that the defendant did not "give any previous or reasonable notice of his intention," etc., and is therefore liable for the expenses incurred by the plaintiff in underpinning the walls of his building or buildings.

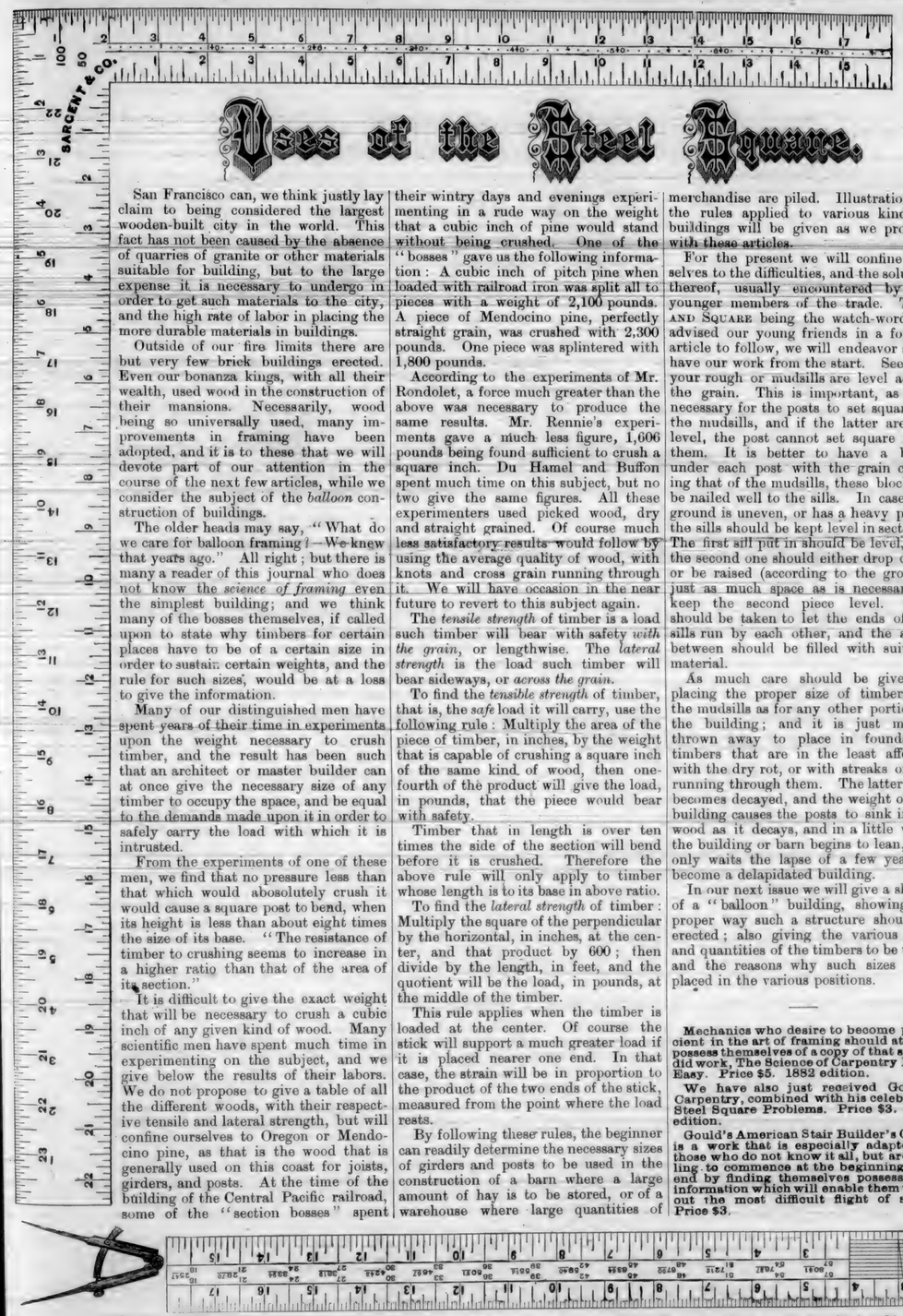
The City Ordinance, Section 5, Chapter VI, Order 1,281, as amended May 16th, 1876, very justly and equitably provides that all owners desiring to improve their property, may, by giving due and proper notice of intention, and using proper care, excavate to a depth of fourteen feet for building purposes, without being required to underpin the property of others. But Section 832 of the Civil Code annuls this ordinance, and as interpreted by the Fourth District Court, decided by Judge Morrison and affirmed by the Supreme Court, in the case of Ziele vs. Hood, that owners excavating must take care of and underpin the property of coterminous owners. But we have before argued, and still hold—although the case cited was decided in Ziele's favor—the question is not conclusively settled, as there is no *clearly expressed* conclusion as to whether the obligation is imperative upon parties excavating for the purposes of construction to do more than use ordinary and reasonable care in making such excavations, leaving it for the coterminous owner to protect and secure his own premises and property, by underpinning and otherwise. The Code expresses the right of owner to "excavate for purposes of construction," but in no clear and intelligent sense imposes the duty of building walls to uphold the adjoining buildings; and the decision quoted is based in part upon the assumed or proven fact that the defendant did not do certain things, his neglect to use proper care being one of the propositions operating to his disadvantage. As it appears to us, the courts have reversed the intent of the law in making the rights of the party excavating *subject* to the rights of the coterminous owner to lateral support; while the Code expressly state that the lateral support rights are to be "*subject to the right of the owner of the adjoining land to make proper and usual excavations for purposes of construction*, on using ordinary skill and taking reasonable precaution to sustain the *land* of the other, and giving previous reasonable notice to the other of his intention to make such excavations." As it appears to us, the language of the Code is complicated, contradictory, and indefinite, furnishing grounds for almost endless argument, and the basis of any sort of decision by the courts. And however clear it may be to legal minds, it requires a vast amount of explanation and twisting to make its clearness transparent to persons of no more than ordinary business sense and understanding. But as the law in the case is likely to be more fully ventilated and determined in the issue of Ede vs. Phelan, we shall await the final decision with interest. Judge Waymire having denied the demurrer of the defendant, it is altogether likely that both the contestants will seek with earnestness to win.

It is to be regretted that a law affecting so large and varied interests should be so worded as to leave any doubt as to the meaning and intent aimed at. Certainly the Code as it now stands cannot be made to harmonize with its four several and separate propositions, as reviewed in the July, 1880, number of this journal.

The Detroit "Free Press," in the columns to which its "funny man" is not allowed access, speaks its mind as follows:

"It would seem as though something should have been learned from our experience with wooden pavements; but there is nothing in public or municipal action to show it. Year after year the Board of Public Works goes around ramming new blocks into interstices in the oozy, half-rotten pavements, and calls it repairing. Year after year citizens who have postponed and fought off repaving, until the streets in front of their property are mere filth holes, half filled with rotten splinters, petition for renewed pavements of wood. And year after year the council orders such pavement. Nothing, probably, but the pestilence so recklessly invited will put a stop to the evil.

"Yet there ought to be wisdom and foresight enough to lock the stable door before the horse is stolen. It would be far wiser, better, more economical in every way, to stop the wood paving now, than to wait until driven to it by the dire consequences of outraging sanitary laws."



Uses of the Steel Square.

San Francisco can, we think justly lay claim to being considered the largest wooden-built city in the world. This fact has not been caused by the absence of quarries of granite or other materials suitable for building, but to the large expense it is necessary to undergo in order to get such materials to the city, and the high rate of labor in placing the more durable materials in buildings.

Outside of our fire limits there are but very few brick buildings erected. Even our bonanza kings, with all their wealth, used wood in the construction of their mansions. Necessarily, wood being so universally used, many improvements in framing have been adopted, and it is to these that we will devote part of our attention in the course of the next few articles, while we consider the subject of the *balloon* construction of buildings.

The older heads may say, "What do we care for balloon framing?—We knew that years ago." All right; but there is many a reader of this journal who does not know the *science of framing* even the simplest building; and we think many of the bosses themselves, if called upon to state why timbers for certain places have to be of a certain size in order to sustain certain weights, and the rule for such sizes, would be at a loss to give the information.

Many of our distinguished men have spent years of their time in experiments upon the weight necessary to crush timber, and the result has been such that an architect or master builder can at once give the necessary size of any timber to occupy the space, and be equal to the demands made upon it in order to safely carry the load with which it is intrusted.

From the experiments of one of these men, we find that no pressure less than that which would absolutely crush it would cause a square post to bend, when its height is less than about eight times the size of its base. "The resistance of timber to crushing seems to increase in a higher ratio than that of the area of its section."

It is difficult to give the exact weight that will be necessary to crush a cubic inch of any given kind of wood. Many scientific men have spent much time in experimenting on the subject, and we give below the results of their labors. We do not propose to give a table of all the different woods, with their respective tensile and lateral strength, but will confine ourselves to Oregon or Mendocino pine, as that is the wood that is generally used on this coast for joists, girders, and posts. At the time of the building of the Central Pacific railroad, some of the "section bosses" spent their wintry days and evenings experimenting in a rude way on the weight that a cubic inch of pine would stand without being crushed. One of the "bosses" gave us the following information: A cubic inch of pitch pine when loaded with railroad iron was split all to pieces with a weight of 2,100 pounds. A piece of Mendocino pine, perfectly straight grain, was crushed with 2,300 pounds. One piece was splintered with 1,800 pounds.

According to the experiments of Mr. Rondolet, a force much greater than the above was necessary to produce the same results. Mr. Rennie's experiments gave a much less figure, 1,606 pounds being found sufficient to crush a square inch. Du Hamel and Buffon spent much time on this subject, but no two give the same figures. All these experimenters used picked wood, dry and straight grained. Of course much less satisfactory results would follow by using the average quality of wood, with knots and cross grain running through it. We will have occasion in the near future to revert to this subject again.

The *tensile strength* of timber is a load such timber will bear with safety *with the grain*, or lengthwise. The *lateral strength* is the load such timber will bear sideways, or *across the grain*.

To find the *tensible strength* of timber, that is, the *safe* load it will carry, use the following rule: Multiply the area of the piece of timber, in inches, by the weight that is capable of crushing a square inch of the same kind of wood, then one-fourth of the product will give the load, in pounds, that the piece would bear with safety.

Timber that in length is over ten times the side of the section will bend before it is crushed. Therefore the above rule will only apply to timber whose length is to its base in above ratio.

To find the *lateral strength* of timber: Multiply the square of the perpendicular by the horizontal, in inches, at the center, and that product by 600; then divide by the length, in feet, and the quotient will be the load, in pounds, at the middle of the timber.

This rule applies when the timber is loaded at the center. Of course the stick will support a much greater load if it is placed nearer one end. In that case, the strain will be in proportion to the product of the two ends of the stick, measured from the point where the load rests.

By following these rules, the beginner can readily determine the necessary sizes of girders and posts to be used in the construction of a barn where a large amount of hay is to be stored, or of a warehouse where large quantities of merchandise are piled. Illustrations of the rules applied to various kinds of buildings will be given as we proceed with these articles.

For the present we will confine ourselves to the difficulties, and the solution thereof, usually encountered by the younger members of the trade. TRUE AND SQUARE being the watch-word we advised our young friends in a former article to follow, we will endeavor so to have our work from the start. See that your rough or mudsills are level across the grain. This is important, as it is necessary for the posts to set square on the mudsills, and if the latter are not level, the post cannot set square upon them. It is better to have a block under each post with the grain crossing that of the mudsills, these blocks to be nailed well to the sills. In case the ground is uneven, or has a heavy pitch, the sills should be kept level in sections. The first sill put in should be level, and the second one should either drop down or be raised (according to the ground) just as much space as is necessary to keep the second piece level. Care should be taken to let the ends of the sills run by each other, and the space between should be filled with suitable material.

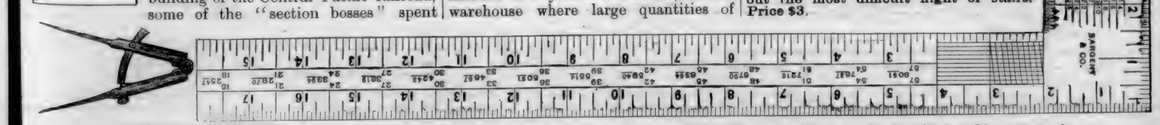
As much care should be given in placing the proper size of timbers for the mudsills as for any other portion of the building; and it is just money thrown away to place in foundation timbers that are in the least affected with the dry rot, or with streaks of sap running through them. The latter soon becomes decayed, and the weight of the building causes the posts to sink in the wood as it decays, and in a little while the building or barn begins to lean, and only waits the lapse of a few years to become a delapidated building.

In our next issue we will give a sketch of a "balloon" building, showing the proper way such a structure should be erected; also giving the various sizes and quantities of the timbers to be used, and the reasons why such sizes were placed in the various positions.

Mechanics who desire to become proficient in the art of framing should at once possess themselves of a copy of that splendid work, The Science of Carpentry Made Easy. Price $5. 1882 edition.

We have also just received Gould's Carpentry, combined with his celebrated Steel Square Problems. Price $3. 1882 edition.

Gould's American Stair Builder's Guide is a work that is especially adapted to those who do not know it all, but are willing to commence at the beginning, and end by finding themselves possessed of information which will enable them to lay out the most difficult flight of stairs. Price $3.



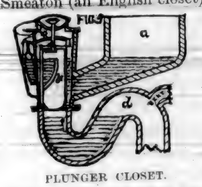
This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Dwelling-House Sanitation.—IV.

BY GLENN BROWN.

"Pure air, pure water, and a pure soil."—HIPPOCRATES.

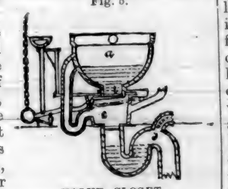
Of the plunger closets there is a large number in the market, differing only in the detail of their parts, all having a plunger (Fig. 4, *b*), which holds a large amount of water in the bowl (*a*), and when this plunger is drawn up the water is let out of the bowl, thoroughly flushing and washing the traps, soil and drain pipes. We name among the more prominent of this style of closet, Jennings, Demarest, Adie's, and Smeaton (an English closet).



PLUNGER CLOSET.

Fig. 4 is a sectional view of the Demarest closet, it being one of the best of the above-named class. The good points in this style of closet are that it retains a large amount of water, which in its discharge carries off all the fecal matter, also thoroughly flushing the drains, forcing down any gas that may be in soil-pipes, and not letting it into the house; but its defective points are in the closet itself. The large chamber (*c*), which contains the plunger, overflow valve, and hand rod of the plunger, becomes foul in a short time. The plunger (*b*) and the other portions of this chamber (*c*) become coated with a foul decaying matter, that breeds the very germs and generates the gas which forms a medium for the germs, that very it is desirable to keep out of the house. This apartment is also carefully concealed, and requires a plumber to open and clean it.

Fig. 5.



VALVE CLOSET.

Fig. 5 shows one of the valve closets, which has to have such nicely adjusted parts that they are liable to get out of order. Hair, paper, a string on the valve (*b*), or sediment might even thus keep the valve open, allowing the water to escape from the bowl (*a*), and permitting the gas to come into the rooms from the space (*c*) between the tap (*d*) and the bowl. This space (*c*) in position, and in being a chamber where foul matter can collect, somewhat resembles the cesspool (Fig. 3, *c*) in the pan closet. Both the plunger (Fig. 4) and the valve closet (Fig. 5) usually have water seal traps (*d*), and the plunger or valve portion was patented with the idea that a water-trap was not effectual in preventing the harmful parts of sewer-gas from entering the house. Quite recently, however, it has been conclusively demonstrated that sewer-gas does not pass through a water seal to an injurious degree, and that the organic germs in sewer-gas will never pass through a water-trap. Dr. Neil Carmicheal of Glasgow, Scotland, draws the following conclusion from his experiments: "Water-traps are, therefore, for the purpose for which they are employed, that is, for the exclusion from the house of injurious substances contained in the soil-pipes, perfectly trustworthy."

Quite recently a new class of closets have been put into the market. These closets have no mechanical valve or plunger, but they are so arranged as to keep the bowl partially full of water; and having their supply from a tank or cistern, are readily flushed.

The "Brighton," manufactured by Henry C. Meyer, New York, and the "Tidal Wave," manufactured by Henry Huber & Co., New York. Taking the Brighton as a type of this class, we find it has a small amount of water retained in the bowl, so as to keep the porcelain from becoming foul. Fig. *a* is a section of this closet.

The Dececo closet, recently designed by Col. George E. Waring, and put in the White House in Washington, so as to have a syphon action emptying the bowl at each discharge. See Fig *b*.

Those closets have scarcely been in use long enough to enable us to judge properly of their merit; but it is quite a stride in the right direction, getting rid of mechanical valves. Another

Fig. a.

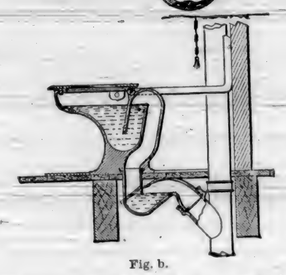


Fig. b.

recent improvement is a flushing rim, which may be made on any style of closet. This rim supplies the water to all parts of the bowl at the same time.

The advantage of a simple short hopper closet (Fig. 2), made of porcelain, with a porcelain ventilated trap, lies in its simplicity, and therefore it is not liable to get out of order. Its whole surface (Fig. 2, *a*) above the trap (*d*) is readily accessible to any one, and is thus easily washed and kept clean just where cleanliness is most needed—inside the water-trap. The large supply of water from the tank (Fig. 2) empties the trap, and thoroughly washes the soil and drain pipes. By obtaining these important points in this closet, and by the proper ventilation of the soil and drain pipes as described before, we have the most effectual mode known, at the present state of sanitary science, for preventing sewer-gas or causative germs from entering our homes. In this connection, it cannot be too well remembered that the thorough washing of the bowl with soap and water is all-important; as otherwise a sediment will collect, which is both offensive and deleterious.

Where urinals are used they should be made of porcelain, and have slate floor, with slate sides, to the compartment. A good substitute for urinals in a private house is the slop-dish, or pan, made by J. L. Mott of New York, placed directly over the bowl of the water-closet, the seat being made to lift up. Soap and water should be unsparingly used on all urinals.

A water-trap is an appliance with a water-seal, connecting water-closets, wash-basins, bath-tubs, etc., with the soil and drain pipes, so arranged as to prevent the ingress of sewer-gas to the house. Traps are made of lead, iron, plain, painted, and enameled, and of porcelain (Fig. 1, *c*). Lead traps should not be used, from reasons already stated in the account of lead pipes, and also for the reason that they are liable to have holes punched into them by servants, if they should become stopped. Porcelain or enameled iron ones are the best; but plain or painted iron ones should be preferred to lead.

Where traps other than S-traps (Fig. 6) have been used, such as the cylindrical (Fig. 8), or D-traps (Fig. 8), which are larger than the pipe running into or from them, it has been found in practice that all portions of the trap in excess of the amount of water flowing through them fill with putrefactive matter, and really from the S-trap (see Fig. 7). These traps, containing a large amount of water, were made so the water in them would not be withdrawn by suction or syphonage, which result is accomplished by ventilating the S-trap, as shown in the cut (Figs. 6 and 7).

The vent also carries off the gas that may be generated in the drain-pipes, or other parts of

Fig. 6.

S TRAP VENTED.

Fig. 7.

HALE S TRAP VENTED.

the drainage system. The S-trap is the best trap for use under all fixtures requiring them, if the trap is ventilated to prevent syphonage; but where there is not a ventpipe to the traps, these small traps are in constant danger of losing their seal by syphonage, and a trap with a large body of water having a screw attachment so it could be cleaned out when necessary.

Fig. 8.

CYLINDER TRAP.

Bowers' patent trap is probably the best in a case of this kind. The lower half is made of glass, and unscrews, so it can be easily seen and cleaned. (Fig. 9.) The ball used in it may be considered almost an excessive precaution, since it has been proved the causative germs would not pass through a water seal trap.

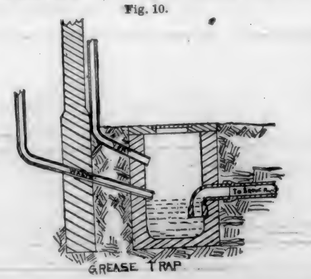
Fig. 9.

BOWER'S PATENT TRAP.

Sinks should have a large grease-trap, with water and gas tight cover, that can be easily removed, where the grease would collect and be taken out. Grease which is in the water is deposited in the pipe or trap as soon as it becomes chilled.

Some good sanitarians insist upon a grease-trap outside the house, as the water is more certain to deposit its grease from the difference of the temperature inside and outside the house.

Fig. 10.



A trap of this kind should be made according to Fig. 10, with a man-hole for cleaning it out. Bell-traps (Fig. 11) should never be used as they often are in cellars and areas, as their water seal is so slight that the water evaporates in a short time, leaving the sewer-gas free access to the house. In the country where it would be difficult or impossible to have a water supply, sub-soil irrigation, with earth-closets, is the best management. Concerning this mode of treatment, Col. George E. Waring, Jr., says: "Still sewerage can be safely depended on in a village or rural establishment when there is sufficient amount of lawn or garden to absorb the waste by underground irrigation, beginning at a point sufficiently far from the cistern or well. Disposed of in this way, and made to feed a vigorous vegetation, all the liquid matter of the house may be safely treated, by a small lawn or garden combined, with earth-closets."

Fig. 11.

BELL TRAP.

Cesspools should never be allowed where we obtain our drinking water from wells or pumps, as the well and cesspool are apt to be connected by natural conduits or by filtration through the soil, thus contaminating our drinking water.

Cleanliness has an important part to play in house sanitation. The bowls of water-closets, urinals, as well as the parts under the seats, should be frequently and thoroughly cleaned with soap and water. For this purpose the fixtures and appurtenances should all be readily accessible. Rubbish, decayed animal or vegetable matter, or anything of that kind, should never be allowed to remain in the cellars; cellars should, on the contrary, be kept rigorously clean, and also properly ventilated, to take off any dampness or foulness which it might be impossible to exclude in any other manner.

Deodorizing and disinfecting properly belong to house sanitation. Bad smells do not necessarily indicate dangerous gases, but are a sure warning of danger that will follow.

In purifying our homes, we must be careful to use something which will not only destroy bad smells (a complete deodorizer), but which will also destroy the dangerous emanations that are likely to arise from the same source. Chlorine and its compounds are deodorizers. Copperas is an excellent deodorizer, and also a disinfectant. Being cheap and readily procured in any part of the country, it is one of the best substances to use for the above purpose.

Deodorization and disinfection must only be relied on in case of need; the real source of the trouble should be gotten rid of as soon as possible; with everything in a proper condition of cleanliness and ventilation, there would be no need of deodorization or disinfection.

We would finally advise all who have homes, and wish them arranged properly in a sanitary point of view, to call in a competent architect and sanitary engineer. Without such assistance, they must not expect to have their homes in a proper sanitary condition, more than they should expect a broken arm to knit and heal in good condition unless it has been set by a competent surgeon.

An Important Publication.

The *Northwestern Lumberman* of Chicago is now engaged in the compilation of a new directory of all the saw mills in the United States and Dominion of Canada, which stupendous undertaking it expects to have completed in December next. The event will be signalized by the publication, in January, 1883, of a mammoth extra number of the *Lumberman*, which, its publishers claim, will be the largest single copy of any trade journal that has ever been published; it will contain about two thousand pages, and it is now announced that an edition of thirty thousand copies will be printed for distribution among lumber and mill men all over the world.

An edition of twenty thousand was first announced, but the publishers assure us that the number of saw-mills developed by their canvas thus far so greatly exceeds their expectation that the extra ten thousand copies will be required to cover the ground over which they intend to distribute this mammoth number. Besides the list of saw-mills, which will be printed in full, this extra will contain the *Lumberman's* Tenth Annual Review of the White Pine Lumber and Shingle Product of the Northwest, giving the production in detail of each saw and shingle mill, with comparative statements showing the amounts of lumber and shingles manufactured each season for ten years, with stocks of logs and lumber carried over at the close of each season, etc. It will also contain carefully drawn plans, elevations and specifications for the construction of model saw and planing mills, showing all the improvements made in mill architecture, construction and arrangement of machinery, with illustrations of all the latest improvements in the way of machines for sawing and dressing lumber. The new directory will also be published in book form, and besides the name and post-office address of the owner or operator of each mill, will give its average daily capacity, whether run by steam or water power, and the kind of lumber manufactured. The list will be arranged in alphabetical order by States, Territories, and Provinces, with the towns also arranged alphabetically in each. The price of the book has not yet been fixed, but will be announced in due time; advertisers who desire to avail themselves of the opportunity to reach all the saw-mills at once, presented by the *Lumberman's* mammoth extra, will do well to secure space at an early date.

The Blue Process of Copying Tracings.

As we have had several inquiries recently in regard to the best method of copying tracings by what is known as the "blue printing process," we will give a brief description of the method employed by us; we do not say it is the best, but it certainly is as simple as any other, and has always given us perfect satisfaction.

The materials required are as follows:

1st. A board a little larger than the tracing to be copied. The drawing-board on which the drawing and tracing are made can always be used.

2d. Two or three thicknesses of flannel or other soft white cloth, which is to be smoothly tacked to the above board to form a good smooth surface on which to lay the sensitized paper and tracing while printing.

3d. A plate of common double-thick window glass of good quality, slightly larger than the tracing which it is wished to copy. The function of the glass is to keep the tracing and sensitized paper closely and smoothly pressed together while printing.

4th. The chemicals for sensitizing the paper. These consist simply of equal parts, by weight, of citrate of iron and ammonia and red prussiate of potash. These can be obtained at any drug store. The price should not be over 8 or 10 cents per ounce for each.

5th. A stone or yellow glass bottle to keep the solution of the above chemicals in. If there is but little copying to do, an ordinary glass bottle will do, and the solution made fresh whenever is is wanted for immediate use.

6th. A shallow earthen dish in which to place the solution when using it. A common dinner plate is as good as anything for this purpose.

7th. A brush, a soft paste brush about 4 inches wide, is the best thing we know of.

8th. Plenty of cold water in which to wash the copies after they have been exposed to the sunlight. The outlet of an ordinary sink may be closed, by placing a piece of paper over it with a weight on top to keep the paper down, and the sink filled with water, if the sink is large enough to lay the copy in. If it is not, it would be better to make a water-tight box about 5 or 6 inches deep, and 6 inches wider and longer than the drawing to be copied.

9th. A good quality of white book-paper.

Dissolve the chemicals in cold water in the following proportions: 1 ounce of citrate of iron and ammonia, 1 ounce of red prussiate of potash, 8 ounces of water. They may all be put into a bottle together and shaken up. Ten minutes will suffice to dissolve them.

Lay a sheet of the paper to be sensitized on a smooth table or board; pour a little of the solution into the earthern dish or plate, and apply a good even coating of it to the paper with the brush; then tack the paper to a board by two adjacent corners, and set it in a dark place to dry; one hour is sufficient for the drying; then place its sensitized side up, on the board on which you have smoothly tacked the white flannel cloth; lay your tracing which you wish to copy on top of it; on top of all lay the glass plate, being careful that paper and tracing are both smooth and in perfect contact with each other, and lay the whole thing out in the sunlight. Between eleven and two o'clock in the summer time, on a clear day, from 6 to 10 minutes will be sufficiently long to expose it; at other seasons a longer time will be required. If your location does not admit of direct sunlight, the printing may be done in the shade, or even on a cloudy day; but from one to two hours and a half will be required for exposure. A little experience will soon enable any one to judge of the proper time for exposure on different days. After exposure, place your print in the sink or trough of water before mentioned, and wash thoroughly, letting it soak from 3 to 5 minutes. Upon immersion in the water, the drawing, hardly visible before, will appear in clear white lines on a dark blue ground. After washing, tack up against the wall, or other convenient place, by the corners to dry. This finishes the operation, which is very simple throughout.—*The Locomotive.*

Flats, or Apartment Houses.

The building of flat or apartment houses, occupied by all the appurtenances of many families under one roof, must go on in increasing ratio with the immense rise in the value of real estate, and consequent increase of rents in our most populous cities; and no form of structure will more tax the ingenuity of the architect, and probably be of more importance in the near future, than these. In this country they are as yet comparatively new, but already some very obvious defects have become the subject of complaint. Of these the most serious is the difficulty of securing anything like ventilation for the interior rooms. To light them well is probably out of the question, under such conditions as prevail in this city, and as yet their ventilation cannot be considered to have been satisfactorily dealt with. The close, stuffy smell of the hallways and inner rooms of even high-priced flats in the middle of blocks is familiar to every one. To get exposure directly to the outside air is impossible, and the comfort of the flat must depend on the architect's skillful arranging of his make-shift air shaft, and the rooms which must necessarily depend on this "hole in the wall" of two adjoining houses for such little ventilation as they can receive. In London the bad condition of apartment houses in this respect has led to comment by the *Lancet*, which is of the opinion that the most redeeming feature about living in flats, from a sanitary point of view, is that the families occupying them do not often have children to suffer from the unwholesome atmosphere. In this aspect, the objection of landlords to children may after all be a blessing in disguise to the tenant.—*Sanitary Engineer.*

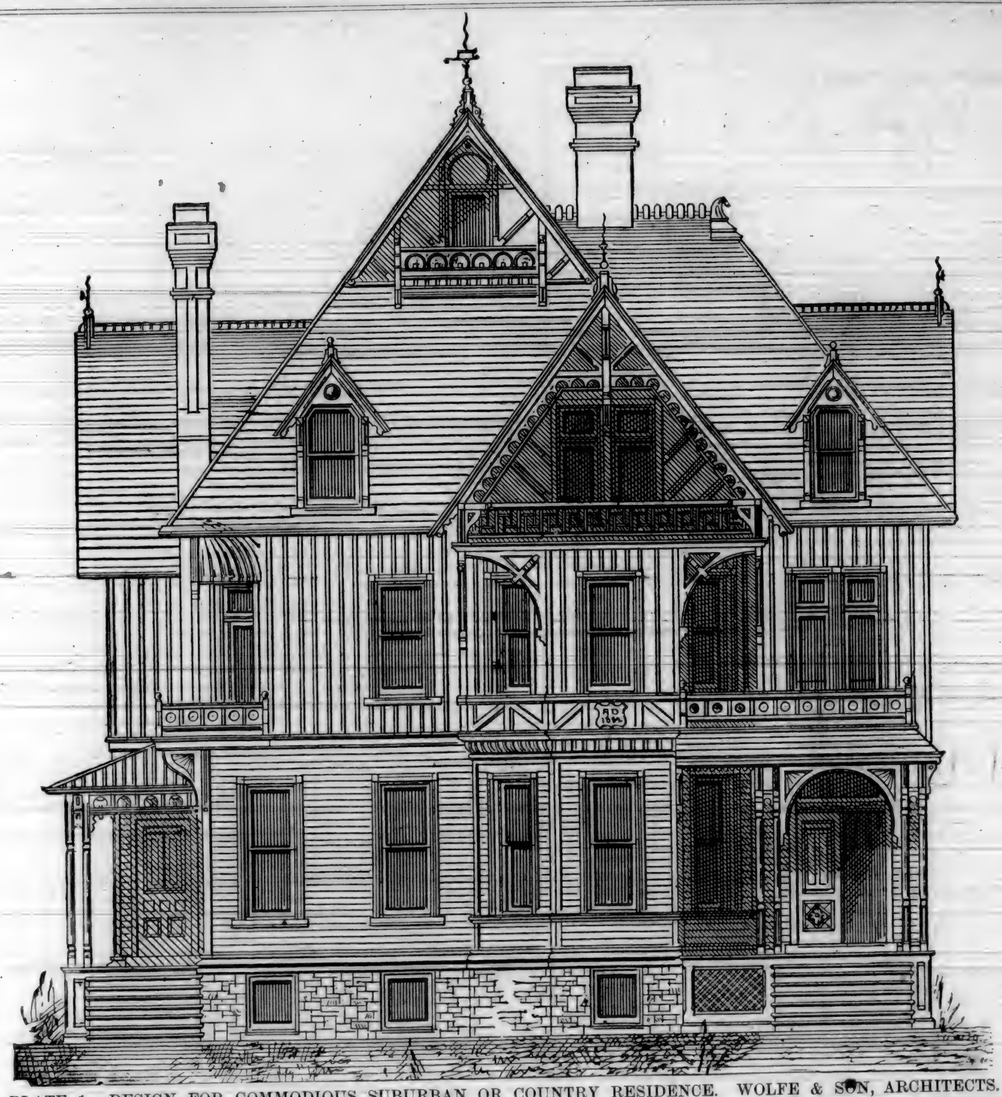


PLATE 1.—DESIGN FOR COMMODIOUS SUBURBAN OR COUNTRY RESIDENCE. WOLFE & SON, ARCHITECTS.

Practical Lessons in Architectural Drawing.

The scheme adopted in this work is to select more or less simple examples in the several classes of construction—frame, brick, and stone—and by carefully working out the drawings in the order in which they are required in actual building, and by explanations in the adjoining text, to put the work in such shape that it can be readily understood and comprehended. The examples have been given a varied character, in order that as many different ideas as possible may be illustrated. The last chapter deals with the coloring of architectural working drawings, and is illustrated by a plate in colors. Sent post-paid to any address, upon receipt of the publisher's price, $2.50.

Palliser's Details.

REDUCED TO $2.00 PER SET. The authors are determined to close out their present lot of Details, as they intend to move to New York city. In conformity with orders to take effect after August 1st, 1882; we have reduced the price; post-paid to any address, upon receipt of $2.00.

American Cottage Homes.

REDUCED TO $3.00. On account of the publishers changing the location of their business, they intend to clean out effectually all their stock on hand. To do this, they have REDUCED THE PRICE OF THEIR COTTAGE HOMES TO $3.00. Will send a copy to any address, upon receipt of the price.

Practical Lessons on the Science of Carpentry.

A work that every mechanic should have. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. This book is also of use to all who have barns, bridges, and outhouses to build, and require information how to accomplish the work. Sent post-paid to any address, upon receipt of $5.00.

In Germany, sawdust is combined with glue, or some other intensely adhesive material, to form a plastic mass from which are wrought door-knobs, piano-keys, and a variety of objects.

☞ **Science of Carpentry Made Easy, $5.00.**

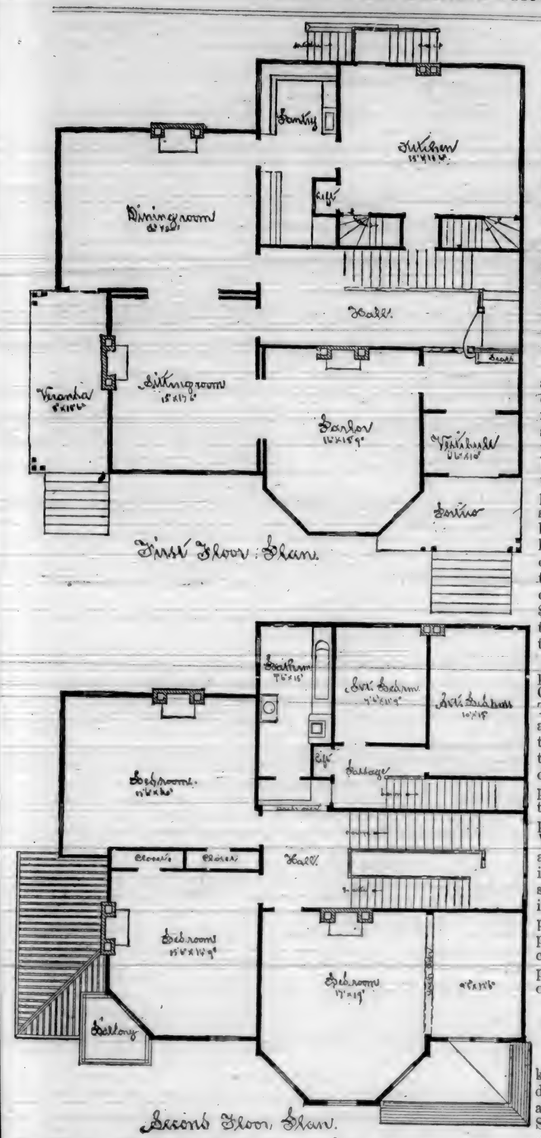


PLATE 2.—GROUND PLAN FOR SUBURBAN RESIDENCE.

Our Illustrations.

Plates 1 and 2 are the plans and elevations for a very desirable country or suburban home. The arrangement of rooms for persons who receive much company is admirable. It will be noticed that the three principal rooms on first floor can readily be thrown into one room. The cost of such a house can be made to vary from $8,500 to $15,000. If built according to the design, and painted according to the more modern and advanced ideas, its appearance will be very artistic and striking.

Plate 3 is the elevation and plan for a beautiful country residence. The arrangement of the rooms is specially convenient. A servant can answer the door-bell, and not disturb anything going on in either parlor or dining-room. A servant's room could easily be added on by making the kitchen part 1½ stories high; or by building on a room at the end of the kitchen. Its cost may be put down from $3,500 to $5,000, according to the height and finish of the basement, etc.

We have received a fine plate from the Mechanical Company of New York. Their work is very nice; and if the drawings furnished them are such as they ought to be, they guarantee to produce as fine cuts as any process now in operation in the United States. Their prices are very reasonable. We regret that we are unable to present their engraving in this issue, as we are so crowded with matter that is of so much interest to the profession and business men, property owners and mechanics, that we were compelled to leave their plate over till next issue.

Francke's Monuments.

A superior work of its kind. Designs for every description of monuments and tombstones. Price $9. Sent post-paid to any address on receipt of the price. Large size, 12x18 inches.

Proposed Plumbing Law for California.

A movement in the right direction is at last being made by the more worthy class of plumbers in San Francisco. We have earnestly endeavored through the columns of this journal to awaken an interest in this matter, and we are glad to notice the movement inaugurated. We have been shown a form of a plumbing law for this State, similar to that of New York, which works well. The object of the proposed law is to empower boards of health to control, by approval or rejection, the plumbing and drainage works of buildings generally. It is hoped to secure the passage of the law by the next legislature, and through its protective provisions surround the plumbing business with safeguards calculated to secure the community against the terrible effects of sewer gas, which has sent so many thousands to untimely graves. The matter is being managed by those who understand its importance, and who have no other special object or motive in view than the public welfare, and to restrict the operations of that large class of so-called plumbers, who understand nothing correctly about sanitary principles or decent workmanship, and who have, at least indirectly, been instrumental in imposing the sorrows of sickness and death upon innocent multitudes.

Supplement to this Journal.

On the first of this month we issued an edition of 15,000 copies of a Supplement to the CALIFORNIA ARCHITECT AND BUILDING NEWS. In size it is 26x38 inches, folded into four pages, 19x26. We have given a goodly number of illustrations and ground plans of country and suburban residences in different styles of architecture. It is interspersed with entertaining matter, and will no doubt receive due attention from those into whose hands they may fall.

The object of the Supplement is to inform those who have not seen our regular monthly publication that we have, after a struggle of nearly four years, succeeded in placing upon a sure and paying foundation an architectural and mechanical journal that will, we hope, in the near future, be without a peer in the United States.

In order to accomplish our ambitious aspirations, it is absolutely necessary that our subscription list be increased to a number that is represented by the figures 25,000. This can be accomplished if we receive subscriptions from but a part of those receiving the Supplement. Should any one be so unfortunate as not to receive a copy of the latter, we will immediately mail them one upon notification.

A few slight errors crept into the columns of the Supplement, one of which we regret. We gave a list of the principal architects of San Francisco, with the location of their respective offices. We inadvertently missed Mr. A. P. Moore, 330 Pine street. Mr. Moore is treasurer of the San Francisco Chapter of Architects, and is universally esteemed for his social as well as his professional character. Mr. P. J. O'Connor should also have appeared in regular order, with place of business, 640 Market street. We by no means intended to do injustice to either gentlemen.

In our Supplement we did not insert a single paid advertisement. We devoted the space entirely to forwarding our claims upon the community, and endeavoring to show why a journal of the character of this should be supported by every architect, mechanic, and property owner in the State.

In a short time we will issue

☞ SUPPLEMENT No. 2. ☜

We guarantee an issue of 25,000 copies. A limited number of advertisements will be received. We positively will make no deviation from our rule; viz., *No advertisements received except those which strictly belong to the building interest.*

We intend a copy of Supplement No. 2 shall be sent to every *bona fide* property owner on the Pacific Coast, as well as every architect, mechanic, contractor, etc. Advertisers will see at once the great benefit that will result to them by securing a space in this mammoth edition. No such opportunity has ever been offered in California to place your wares and inventions before the people that use them.

The Supplement will consist of eight pages, in size 16x23½. Each page will be divided into four columns. A square will be the space of one inch by the width of the column, 3⅛ inches. For terms, address the business manager of the journal.

Indexed Atlas of the World.

But one copy remains of this magnificent work. They are not for sale in any bookstore, and it is but seldom that a copy can be had. This last copy is bound in half-morocco, and will be sent post-paid upon receipt of the price, $35.

☞ **Subscription price of this journal is $2.00 in advance.**

Farm Architecture: Houses and Barns.

BY E. C. GARDNER.

(Extracts from a lecture delivered at the annual meeting of the Massachusetts Board of Agriculture. Take the lecture as a whole, it is the spiciest, most entertaining and instructive that we have read for some time. Mr. Gardner has had it printed in pamphlet form. A copy can be had by forwarding 15 cents to E. C. Gardner, Holyoke Mass.)

Farm architecture, in its essentials, is precisely identical with all other domestic architecture the world over, from London to Kamtschatka, from the Aleutian Islands to Patagonia. It is building the shell that incloses and protects the family. It is a matter of common sense—of evolution, if you please. . . . .

Before setting out upon the hard, uninteresting turnpike of practical details, let me refer to a familiar and most significant fact. We read of people who awake some fine morning and find themselves famous. We Americans awoke a short time ago and found ourselves artistic, or, at least, enthusiastically determined to become so. Cheap chromos led the procession, and now fill the air as the painted leaves fill the woods in October. Dadoes and drapery demand our admiration. The stork is abroad in the land; Eastlake corners and angles assert their rectitude; white china is dismissed in disgrace, not because it shows dirt, but because it does not show peacocks' plumes, butterflies, and poppies. House and sign painters are exhorted to compound impossible hues for the outside of our buildings. Freehand drawing has become a part of public instruction; and the boy who, when we were young, would have been whipped for making pictures on his slate in school-time, and caricaturing the master on the fly-leaf of his "Webster's Speller," is the favorite pupil, specially detailed to embellish the blackboard for examination-day with his sketches.

Farmhouses and barns in their architectural study must be separated into two classes: those already built, those which are to be built—the old and the new; the former being, perhaps, the most important, certainly the more numerous. The average New England farmer clings

AN EARLY SETTLER.

to the delusion that it is impossible to make two farms of one by short division. It does not occur to him, if, happily, he has two sons, that he may assign the old house to one of them, build a new one for the other, and when he dies divide his acres equally between the two. He has found it hard to get a living from the whole farm; how, then, shall his sons support themselves and their extravagant, artistic wives from half of it? As a rule, the sons prefer to support themselves and their artistic wives in some other way, and will accept neither the old house nor the new.

AN EARLY SETTLER RENEWED.

Still, for the sake of the argument, we will suppose that the cards are out, the cake baked, and both the old house and the new in eager demand. With due respect to age, we will consider the old house first, beginning, where we usually begin in making acquaintance, with the outside. On this point, the external appearance, there will be more to condemn concerning the new than the old; for the old farmhouse is commonly a picturesque object. Architecturally viewed, its general form and composition are satisfactory, for the simple reason that the man who built it knew what he wanted, built what he wanted in the simplest fashion, and then stopped.

AN OLD PURITAN.

The usual faults in the farmhouses of former years are the absence of porches (I wonder our grandmothers didn't catch their death-colds sitting on the stone door-steps when they came home from quilting and singing-school), the small windows and poor glass, the steep, narrow stairways, the low ceilings, and the dark cellars, not infrequently damp as well as dark. The latter is the most serious defect, the most difficult to remedy. If a house cellar is damp, persistently damp and moldy, tear the house down. Then build in a dry spot.

THE OLD PURITAN REVISED AND ENLARGED.

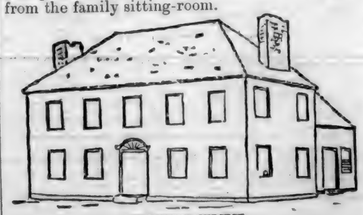
The absence of porches, and the ease with which they can be appended to the old house, has been suggested. But they need not be elaborate or fanciful; they should be generous in size. I am sorry for a house that tries to look hospitable and inviting by holding out a stingy little balcony four or five feet wide. Eight, ten, or twelve feet are none too much. But the wide piazza-roof must not be allowed to keep out the southern sun. Better omit the roof, if it stands on the south side, using a cloth awning for shade when needed. The morning and evening rays are glad to enter aslant beneath an overhanging roof; and a wide north veranda is a capital place for the noonday rest. To take out the small windows of poor glass, and substitute larger and better, is also a simple matter. The window of a house is like the eye of the soul. If it is single and clear, the whole house will be full of light and cheerfulness. The narrow stairs cannot often be improved, except by giving up a part or the whole of an entire room, as has been suggested; and the low ceilings need no improving, unless they are extremely low; indeed, just at present, low ceilings are the height of fashion.

Old houses are sometimes subjected to another indignity, against which we cannot too strongly protest. The old finish is torn out and made into kindling-wood, and the queer old moldings and flutings of the architraves, the bases, the wainscots and panelings, the chair-rails, ceiling-beams, and corner-posts, ruthlessly demolished. It is vandalism to destroy these honest, homely features. By all means let them stand. . . . . Above all things don't commit the unspeakable folly of filling up, burying alive, the old fireplace. If it is too large for the modern wood-pile, line it with fresh bricks (molded patterns cost but little more); and never make an apology for the high, stiff, old wooden mantel. Rather let us weep for our own stupidity if we cannot see and bring out the beauty it contains. The frequent superiority of these old members arises from the fact that they are the product of more thought and less machinery. The thought was not spread so thin. Hand and brain worked together then more than now.

There are several reasons why the first or principal floor of a house should not be too high up in the world. From the picturesque standpoint the lowly estate is decidedly preferable, especially as the underpinning is usually treated. But other reasons for keeping the living-rooms well above the surface of the ground are too important to be disregarded. A free circulation of air and plenty of light underneath the first floor are indispensable to the best sanitary condition. These can be most easily secured when at least half the cellar or basement story is above the ground. The porch and the main entrance hall may perhaps be upon a lower level. For warmth and dryness the cellar-wall above the ground, commonly called the underpinning, should be hollow—two thin walls of stones, of bricks, or one of each; which introduces the subject of materials.

A farmhouse should be the very type of stability, repose, completeness, and perfect adaptation to its condition and surroundings. For these reasons, I should say that a cheap wooden frame is not the best kind of farmhouse to build. A well-constructed wooden house is good; a well-built house of stones or bricks is better, and costs but little more.

Concerning the internal arrangements of farmhouses, only general suggestions can be given. Situation, size, and desired cost—the taste, needs, and aims of its occupants are conditions that vary indefinitely, and should be met with absolute directness and honesty. If the peculiarity of the situation requires the kitchen to be in the front corner of the house, that is the right place for it. If it makes the pantry next neighbor to the main stairway, that proximity should be accepted as best for both. The room or rooms most constantly used by the most important members of the family should be those which, all things considered, are most desirable for such occupation. But rank varies in different families. With some the highest consideration is given to the children, with others to parents, with others to visitors and rich relations. I should vote for the children. I think most housekeepers who, in common phrase, "do their own work," would like a kitchen to be light, sunny, and cheerful, with windows looking out upon the garden, orchard, or fields of grass and grain—not into the barn-yard or sink-drain—and a view of hills and and woods beyond. Even if the heavier housework is done by hired help, this room, which is the workshop, and in which the daughters of the house must serve their apprenticeship, if they would ever manage households of their own, should be as comfortable as possible, and not placed beyond easy access and oversight from the family sitting-room.



A PROMISING SUBJECT.

Truly, it is a serious question, one of the legitimate side issues in a discussion of the planning of farmhouses; for our home-life does depend to a wonderful extent upon the character and plan of the house we live in. If, for instance, there is one large, cheerful sitting-room, which contains all we have for general use in the way of comfort, beauty, luxury—a room in which the best thought and the best work of the household finds daily exercise and expression—it will soon be found that another room for any sort of company is a sheer waste of resources. On this great command hang all the law and the prophets of domestic architecture; our houses should be built to live in; not for show, not for company, not for fashion, but to furnish to the occupants the greatest amount of comfort and enjoyment all the time. Nothing should be so fine that it may not be seen and heard and enjoyed every day, nothing so poor and mean that we must hide it from our visitors. And it will follow, as the day the night, that the home which is most freely and largely enjoyed by its inmates will be the most delightful in the hospitality it affords to kindred and friends.

THE PROMISE FULFILLED.

The modern French roof—a fashion that, having nothing to recommend it, has already passed out of fashion—is interesting in comparison with its humble prototype, the old gambrel roof. Even with its scroll-sawed brackets and cast-iron cemetery-fence on the roof, it is less attractive than the old house, and not half as susceptible to improvement. Here, as in so many other things, the new fashions are greatly inferior to the old. Why not, then, imitate the old outright, it may be asked, if they are always better? They are not in all respects; and, moreover, in architecture, as in patent medicine, we should "beware of imitations."

THE "ITALIAN VILLA" IN AMERICA.

As we go out to the barn, let us look back at the house a moment to see how it is painted. We might profitably spend an entire evening in discussing color alone; we have only time for a hasty glance. To step at once upon absolutely safe and solid ground, and broad ground, too, we may say that Nature—who never utters discordant sounds, never makes a mistake in her colors, which are always elegant, always in the height of fashion—has an infinite variety, from the most brilliant hues that can be conceived to the rare, pale tints that no man can name or classify; and she uses them lavishly on her own work. She manifests her gentle spirit, and at the same time her unerring sense of fitness, by painting the works of human hands a quiet, unobtrusive gray, treating them kindly, harmoniously as far as possible, but never allowing them to wear such garments of color as she bestows upon her own perfect creations. She paints every fence and wood-pile, every roof and artificial stone-heap, every bridge, barn, and house, the same quiet gray. Still I do not think the good mother will resent our temerity if we sometimes humbly strive to imitate certain tints from her palette; always keeping on the safe side, and not attempting to outshine our teacher. She shows us many shades of gray, of brown, of olive, of maroons, and of umbers, as well as the warmer tints of drab and yellow. Even the good old Venetian red, with a broad frame and background of green, is not to be despised. Above all things, we should study her combinations; for a discord in color is as gross a violation of natural law as is a discord in musical sounds.

A FRENCH CHATEAU.

I omitted to speak of house-drainage, in order to bring the drains together, and will not now discuss the sanitary bearings of the subject—although in this respect we are but half civilized; our friends and neighbors are dying by the hundreds, of sewers, cess-pools sink-drains, and poisoned wells—and thousands more are half dead, but, keeping on the common ground of economy and thrift, I wish to remark that every sewer, cess-pool and waste-pipe, every barn-yard, pig-pen, and cellar, in which water is not absorbed as soon as it appears, is an intolerable nuisance, and a wicked waste upon a farm. It is so everywhere, but less inexcusable in villages, because the dwellers in town do not depend directly upon saving these raw materials of agriculture for their incomes, and to save them

TELESCOPIC ARCHITECTURE.

is more difficult. It is the special duty of farmers, of all men, to make two blades of grass grow where one grew before. To this end every particle and atom of these valuable volatile elements should be saved—saved by absorption. Water in the shape of drains and ditches, to convey these waste, or rather wasted, elements to some remote outlet, stream, or even a covered pit, to be cleaned out once or twice a year, or not at all, is a highway robber. If it can be compelled to distribute the sewage of the house precisely where it is needed, by sub-irrigation, that is a wise economy.

THE BIG END OF THE TELESCOPE.

It is a mistake to suppose that houses or barns or mills are any better for being piled one story above another. Unless land is worth many thousand dollars an acre, it is cheaper and better to keep the whole establishment as nearly as possible on a common level. The days when the farmer tied two pieces of wood together, and with that primitive implement pounded out a bushel of rye, put it in one end of a bag, with a stone in the other to keep the balance true, laid it across his horse's back, mounted the whole, and rode off to mill, are among the days that were. Farmers and their boys do not spend their evenings making flails, nor need they build "barn floors" to swing them on.

The farmhouse of the future will be built mainly of bricks and stones. It will be broad and not high. The windows will be large. Shade-trees will stand at a respectful distance, allowing the sun to rest upon it in healthful benediction. Each room will have an open fireplace, wisely contrived to give the greatest amount of heat and ventilation with the least consumption of fuel. A steam-boiler, which is only a scientific tea-kettle, will hold a slice of the summer months beneath the double roof all winter long. Sunshine and good cheer will prevail from cellar to attic, from outer court to innermost chamber. The roof will not leak; the chimneys will not smoke. Rats and mice will not raise armies and fight battles in its hidden cavities. The kitchen will be a workshop fully equipped, a studio in which the fine art of cooking will be learned and practiced. There will be a private room for every adult, and every child old enough to take care of a room. There will be a library full of books, and a sitting-room so cozy, so interesting, so homelike and charming, that the parlor, if there happens to be one, will be literally left out in the cold.

Co-operation, nineteenth-century inventions, railroads, telegraphs, and telephones are bringing us nearer and nearer together, are making us more and more dependent upon one another, upon mutual intelligence and good behavior. More and more it is the duty of every man and patriot to let the light of his life and of his home illumine the world, and leave it better that he found it.

San Francisco Chapter American Institute of Architects.

The regular meeting of the Chapter was held Friday evening, October 6th, J. Wright, Esq., presiding. It was very pleasing to notice the large attendance, and the general good feeling that was manifested in the discussions of the different subjects brought before the meeting.

Mr. W. G. Matthews was elected a Fellow member of the chapter. Mr. E. J. Molera and J. Gosling were proposed as members.

The committee appointed to investigate the matter of establishing classes for the tuition of articled students of the profession reported as follows. Several of our prominent scientific men have offered to teach classes in their several branches during the winter months. One of our most noted sculptors and modelers said he would take pleasure in giving lessons to the students in modeling. Another would give lessons in aesthetics. And in all the different branches professors have manifested willingness to devote one evening a week to the advancement of the articled students of the profession.

The students will see at once the advantage of availing themselves of the openings thus presented during the long winter months. There will be no charge in connection with these lessons. They are the outgrowth of the general good feeling that has been engendered by the formation of the San Francisco Chapter, and one of the legitimate fruits of the organization. Any information will be cheerfully given to any student, by calling on the Secretary, room 11, 240 Montgomery street.

A standing offer was made to the Chapter, tendering the use of a car free to the grand red woods in Sonoma County, the Chapter to go in a body and survey the wondrous beauties of nature. The offer was kindly accepted. The excursion to take place upon any time the Chapter may select.

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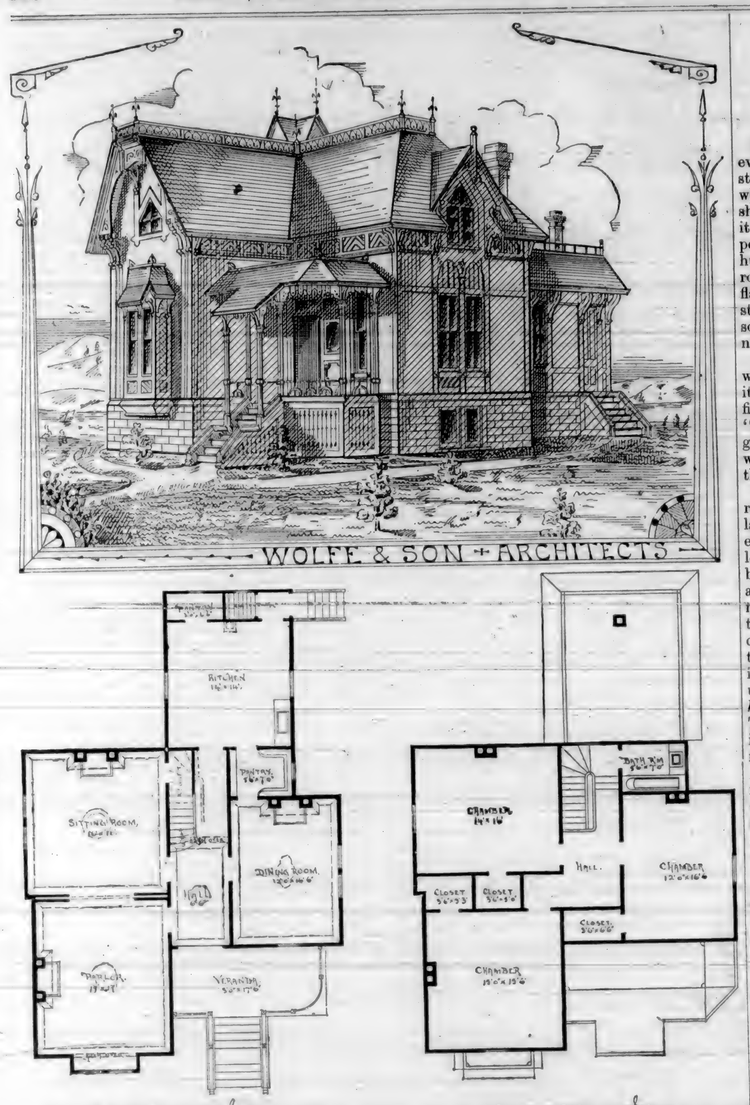

PLATE 3.—PLANS AND ELEVATION FOR COUNTRY HOME.

Priming for Oil Paint.

O. Kall, of Heidelberg, prepares a substitute for boiled oil by mixing ten parts of whipped blood, just as it is furnished from the slaughter-houses, with one part of air-slaked lime sifted into it through a fine sieve. The two are well mixed and left standing for twenty-four hours. The dirty portion that collects on top is taken off, and the solid portion is broken loose from the lime at the bottom, the latter is stirred up with water, left to settle, and the water poured off after the lime has settled. The clear liquid is well mixed up with the solid substance before mentioned. This mass is left standing for ten or twelve days, after which a solution of permanganate of potash is added, which decolorizes it and prevents putrefaction. Finally the mixture is stirred up, diluted if necessary with more water to give it the consistence of very thin size, then filtered, a few drops of oil of lavender added, and the preparation preserved in closed vessels. It is said to keep a long time without change. A single coat of this liquid will suffice to prepare wood or paper, as well as lime or hard plaster walls, for painting with oil colors. This substance is cheaper than linseed oil, and closes the pores of the surface so perfectly that it takes much less paint to cover it than when primed with oil.—*Deutsche Industrie Zeitung.*

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

Something about the Grindstone.

There are comparatively few persons that ever have had the pleasure of grinding on a stone that was properly *rigged up*. Let us see what kind of a *rig* we will find in the carpenter shop on the first farm we come to. Well, here it is. A stone of about fifty or seventy-five pounds, hung on a rickety frame, with treadle hung on a pivot, and shaft hung on four friction rollers, with two out of the four rollers worn so flat, that they will not turn. However, the stone turns "all the same," and reminds a person of an eccentric on a steam-engine; we find no water, no trough, and no dipping pot.

We will now go to the next shop, and see what kind of a *rig* they have there. Well, here it is: A stone rigged in all respects like the first, only this one has a trough, that would not "even hold potatoes"; here we find a man grinding a chisel, and a boy pouring on water which soaks into the dry stone about as fast as the boy pours it on.

Let us go into one more shop, and see the rig they have there. We find a stone not much larger than the first two. But, mark the difference in this *rig*: we see a stiff wide frame, long shaft with polished journals, running on babbit-metal, and a fly-wheel of about 130 lbs; also a large trough full of clean water; we also notice that the stone is all boxed up excepting that portion upon which the tools are held; consequently, if the stone is turned ever so fast, the water will not fly off onto the person grinding. We also notice an old hatchet lying under the frame, the use of which being to *hack* the stone occasionally on the *high* places. This *hacking* makes the stone cut much faster in those places, and consequently this stone did not remind us of an *eccentric*.

There is no economy in hanging a stone much smaller than three hundred pounds. This size does not need a fly-wheel. A stone much smaller than the above would need a fly wheel as much as a sewing machine or a cutting-off circular saw.

Perhaps a few hints on *power* grindstones would not be amiss. Grindstones should always turn *from* you (i. e., the top of the stone). They should always be *boxed* up, with no more of the stone exposed than is actually necessary. They should run in a trough of clean water. A *dipping pot* should never be used. The wetter and cleaner a stone is, the faster it will cut away the iron or steel.

Two hundred revolutions of a stone that runs as fast as the water will stay on it, will cut away as much iron as three hundred revolutions will if the stone runs very slow. Large stones should be geared down, or else have a long shaft, so that the pulley will be out of the way.

E. H. DAVIES, Santa Clara.

(We would be pleased to hear from Mr. Davies on the subject, how to pick out a perfect grindstone.

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PRACTICAL LESSONS

—IN—

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The Would-be Great London Light of Journalism.

We were surprised and yet somewhat amused in reading the preface to a bound volume of the *Illustrated Carpenter and Builder*, London, evidently penned by one who looked down upon "all the world and the rest of mankind," as but tributary to the greatness of the concern represented by his pen. A measurement of his head at the time might have proven an interesting item in physical science, as illustrating to what enormous dimensions that portion of the human frame may expand under certain conditions. He says—presumptuously assuming the *Builder* to be the fountain head of class journalism—"Another point of importance to which we must briefly refer is the establishment in America of *several* papers of a similar character to our own." This sentence portrays either a deliberate purpose to misrepresent, or inexcusable ignorance on the part of a would-be leading London class journal writer as to the actual state of facts made by him the subject of misrepresentation. For at the time the preface was written there were many journals published in America devoted to the various interests represented in the *Builder*, and the term "several" used in the preface was deceptive and misleading, as its proper significance means more than two, but not many. If truthfulness and fairness had controlled this London writer, he would have stated, while claiming great things for his own journal, that a considerable *number*, many times *several* American journals had, seemingly to him, imitated the London publication, and with truthfulness added, many of them equaling if not excelling us in interesting matter, editorial ability, and progressive skill and enterprise.

He further adds: "The old proverb that imitation is the sincerest of flattery seems to obtain in our case, since we find a *host* of imitators." Here the poor fellow cuts his own throat, for in this immediate connection he has stated that there were only *several* imitators, while now he finds them rising in host-like numbers before him. Editors should exercise at least a safe degree of precaution in the use of words when penning statements intended to impose upon the credulity of their patrons. *Several*, not many, and *host*, a large number, are not reconcilable when referring to the identical same thing. He then continues by saying: "From the *civilized* cities of the West, to (*uncivilized?*) San Francisco, from whence a copy of *an imitator* has but just reached us, and which contains one-third of one of our numbers. From city to city of the States they are finding out that the industries for which we have now long and successfully represented on this side are wanting in their newspapers in America." (The italicizing is ours; the language the *Builder's*.)

THE CALIFORNIA ARCHITECT AND BUILDING NEWS being the only journal ever published in San Francisco devoted to architectural building and sanitary sciences, it is fair to infer that the slur in the above quotation was intended for us; but if so, the absence of truthfulness is so emphatic that we are warranted in questioning every line of the preface, and regarding its statements of *asserted* facts as hypothetical in the broadest sense.

We have in nothing imitated our British contemporary. So far from it, our entire editorial and publication work was arranged, constructed, and put into execution long before we had so much as seen a copy of the London book. And as to any one of our issues containing "one-third of one of our (the *Builder's*) number" is concerned, the statement is simply a reckless perversion of facts, as our selections from its columns were infrequent, and never extensive. And so far as we may have extracted from its columns, we pursued the common practice of journalism throughout the civilized world, and a privilege which every journal published to a greater or less extent practices—the London light included. And whatever of privilege we may have availed ourselves of was paid for by us through a New York agency. But with the rapid increase of exchanges, which now number nearly if not quite three hundred, we found so many containing information and matter so much better adapted to our purposes, that after the first year we discontinued our subscription to the London work. We are not in the least disadvantageously affected because our contemporary is not among the number of our exchanges, as the facilities within ourselves are sufficient to enable the issue of our journal monthly, or daily if we wished, to the entire satisfaction of our patrons, without the aid of those who are capable of misrepresenting us. There are but few journals published in which a greater amount, proportionally, of original matter appears, and we are content to realize the fact that our editorial and publication work has been and continues to be a success, notwithstanding our demise as a publication might have been a source of exultation to our British contemporary.

One might reasonably suppose, from the tenor of the quotations under notice, that the journal in question was the light of the journalistic world, and that all others were but the lesser reflected luminaries of the great would-be London central publication. To imagine one's self so poised above all others of human kind or origin would, to the soul so diminutive and full of self-conceit as to indulge the thought, be a pleasant dream. But the London journal forgets that the stain—if such it be—of common humanity rests upon its garments, and that others have reached heights as great, and descended into depths of enterprise as deep, as have been reached by the would-be leading class journal of her Majesty's dominions.

Restrictions on London Builders.

The building trade of London has been legislated upon at various times to such an extent, that if all the acts still in existence, which were intended to regulate it, should be literally put in force, there is, perhaps, scarcely a house in the course of erection within metropolitan limits which might not be interfered with and prohibited from completion, upon the ground that the conditions of some by-law or Act of Parliament, obsolete but never rescinded, had not been complied with.

Then came the Metropolitan Board of Works, with supreme power over the thoroughfares of London, to vex still further the souls of the building fraternity, and elbow them out of the way wherever they show themselves, and still seeking increased powers from Parliament to put them to further expense and annoyance at every turn. If the Metropolitan Board of Works succeed in getting their new bill through the House, no builder can erect a shed for his workmen, nor make a road for his materials to any new building, without first obtaining the authority of the Board of Works in writing, under severe penalties constantly recurring.

The Royal Institute of British Architects, at their fortnightly meeting, which took place last week, held a long discussion upon a proposal to apply to Parliament for the adoption of a General Building Act, for the purpose of regulating the supply of buildings of various kinds, with the sanitary provisions essential to all. Mr. Boult, who introduced the subject by reading an elaborate paper, asserted that, including by-laws, the number of varying codes for the government of the trade had been estimated at pretty nearly 2,000. What was wanted was simplification and intelligibility. In a General Building Act, local peculiarities might be allowed for, anomalies would disappear, and practical uniformity be substituted for it. Mr. Rawlinson, C. B., was of opinion that any General Building Act should have a wide range, and must not be centralized too much; and, as to sites of houses, he did not see how any general law was to apply to them, for some houses were built on sites that it was impossible to sewer and drain properly, and he knew some towns—he ought to have named them—the state of which was "absolutely shocking." This gentleman was severe on "jerry builders," which he wanted a law to reach. But are there not plenty of safeguards already prescribed by law, if only they were properly applied? What are our *district surveyors* for but to see that proper materials and good workmanship are used in the buildings they have to survey? Speaking as a Government official, he did not want too much centralization. He thought it would be bad for this country if, like France, they could not move a paving stone without the authority of a Government officer. Dr. Thorne, of the Local Government Board, spoke to the point, when he said the curse of large towns was the overcrowding upon area, and he might have included the suburbs of London in the same rebuke. In rural districts, where five years ago cows and sheep were grazing, houses are now so crowded together that some of them have no more outlet than if they were built in Barbican. It would not be difficult, one would imagine, to get a law passed which should prevent the country about London from being overcrowded in this way. Sanitary regulations are probably as much appreciated by the public now as they ever were or will be, but some penalty might be inflicted perhaps on builders who willfully disregard them. Before this can be done, however, they ought to be well defined. Some of those sanitary regulations, which consist in clever contrivances for letting in currents of cold air to ventilate our law courts and places of public assemblage, not unfrequently mar your enjoyment of them by sending you home with a cold and sore throat. A Mr. Hebb considered it would be impossible to frame a law that would work well for all England, and alluded to the apathy of Government on the question, as in 1875, when an attempt to codify the existing law met with a disastrous failure. Other speakers followed, but it does not appear that any resolution was passed.—*Timber Trades Journal.*

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Spirits of turpentine is now made from sawdust and refuse of the saw-mill. It is extracted by a sweating process, and yields fourteen gallons of spirits, three to four gallons of resin, and a quantity of tar per cord. The spirits produced have a different odor from that produced by distillation.

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The Mechanics Fair for 1882 is Ended.

The recent exhibition in San Francisco was a success, financially, to the institution under whose auspices it was conducted, and in excellence of arrangement and management, as well as creditable and practically beneficial to exhibitors. The Institute having at last secured a permanent lodgment for its pavilion, in the possession of a block 275x412½ feet, bounded by four streets, annual, or bi-annual exhibitions are now an assured certainty. The waste of money heretofore involved, *first*, in expending many thousands of dollars in the erection of an exposition building on the lot now occupied by the Lick House, to be demolished with loss at the end of a short occupancy; *second*, a like more costly construction on Union Square, to fare the same fate; *third*, and this followed by a still greater expenditure of money, in the erection of the building on Mission, Eighth and Market streets with like result, has consumed $100,000 or more, which might have been used to good advantage in the erection of a permanent edifice. The amount of money sunk in the several erections and the tearing down of temporary places of exhibition would go a long way toward paying for the present lot, or in the erection of a substantial and commodious brick building. But as this wastage is now ended, except the further loss which will be sustained when the present frame shell shall give place to a brick or other construction less destructible than wood, the accumulations from annual exhibitions will enable the reasonably early completion of a building which will be an ornament to the city of San Francisco.

In our September number we noticeed a few of the exhibits, and add in this number a few more, not having the space for full mention of all.

Weed & Kingswell's display of brass work and devices equaled any other in the same line, in character and merit. This firm is one of the oldest in San Francisco, and turns out as fine brass work as any establishment on the Pacific Coast. They received a gold and silver medal for brass and plumbers' goods respectively.

P. H. Jackson received silver medal for a device for more complete combustion of coal. The same gentleman has made cast-iron girders a specialty, and we hope his device in this direction may yield him a fortune. They are good beyond all question, and may be made to carry any reasonable span, or any amount of weight with safety. A practical specimen of the "Franklin Girder" may be seen in the brick building now in course of erection on Market Street, opposite the Phelan building.

Llewellyn Steam Condenser and Heater, a San Francisco invention, received a diploma. From practical knowledge and observation we are enabled to state as a fact that it is a "good thing."

J. B. Jardine, a practical, working machinist of San Francisco, made display in power shears, punching machines, boiler tubes, etc., which secures him a bronze medal. Of our own knowledge, we can say that Mr. Jardine is a skillful and practical workman.

W. W. Montague & Co., silver medal for marbleized mantles, grates, etc.

Whittier, Fuller & Co., gold medal for California manufactured oils and paints, beside three silver medals for mixed paints, ground in oil and in colors, Pacific rubber paint, and California made glue.

John Mallon & Son, gold medal for stained and ground glass for architectural work, and silver medal for cut and embossed work.

The Titus Sewer Trap, a San Francisco invention, received silver medal.

B. E. Hendrickson, silver medal for safety clutch for elevators. We know of nothing better for the purpose.

Latson & Co., diploma for bronze building hardware.

S. H. Herring, diploma for best rustic furniture.

T. J. Bass, silver medal for artists' materials.

Tradesmen, artists, and dealers and producers generally, who become provoked and jealous because competitors in their respective lines have secured medals or premiums at the hands of committees of examination and awards, in connection with local or State fairs, should bear in mind that the present age is one in which people must make displays in some shape to secure notice and increased patronage; and those who win the emblems of superiority through fair expositions deserve every advantage attained thereby. Perhaps many who prefer to limit the exhibition of their goods, wares, merchandise, and inventions within the compass of the walls of their stores and shops, and show windows, might obtain gold or silver medals or diplomas, provided they would avail themselves of offered opportunities calculated to attract attention and increase patronage.

A Valuable Combustion Device.

We have before us a pamphlet published by P. H. Jackson in reference to a "*Device for the more Complete Combustion of Coal by means of the Eliminating Gases of Hydro-Carbon being continually drawn from the top of the burning fuel.*" It would afford us pleasure to reprint the entire contents of the pamphlet in our columns, so that our readers might have the full benefit of Mr. Jackson's explanation in detail. But as we are "full for this issue," we can only call attention to the matter, leaving it for those who desire to be more fully informed to call on Mr. Jackson, or send for a copy of the pamphlet, in which the theory of the device upon its own merits, and in comparison with others, is intelligently argued and maintained, showing its practical superiority and economic value. We reproduce the special claims set up by the inventor, in his own words:

1. It is simple in construction, and accomplishes a great end in saving now a wasted wealth.

2. It will burn under most any circumstances, when once under way.

3. The oxygen of the atmosphere, being the life and vital force of the combustion of fuel, is heated, and has ready access at the bottom and top, on the outside and in the center of the burning mass and in sufficient quantities requiring twelve times the quantity in weight to one of weight of coal, burning nearly all the combustible gases, consequently losing but little in waste.

4. The intimately mixing of the gases of hydro-carbon, called coal gas, such as we burn from gas jets, with that of the oxygen of the atmosphere, when ignited in the mixed state, burns with great heat, similar to that of the Bunsen burner, or the blow pipe.

5. The continuous drawing away of the combustible gases hydro-carbon from the top of the coal in the consuming chamber to beneath the fire, is automatic in its action, and is with sufficient force to prevent its escape through the passage for the exit of the carbonic acid gas. In case fresh coal is put on top of incandescent coal, excessive cooling immediately takes place, also excessive formation of combustible gases. In other appliances this gas wholly, or in smoke burners partially, goes to waste, but with my device it is drawn down beneath the fire again and again, to be consumed as fast as formed.

6. The peculiar constructed chambers below the fire for the passage of the atmosphere on both inside and outside of the chamber containing the gases of hydro-carbon, by which the latter is acted upon with double the force to that in common steam injectors, and such like appliances for producing vacuums.

7. I claim the chemical compound as applied that attracts and passes off the destructive element carbonic acid gas which is generated by complete combustion of carbon. In a furnace similar to this, sixty-five pounds of bituminous coal burnt twenty-five and a half hours.

The device and subject presented should enlist the attention of all parties using coal as a fuel, as it proposes a saving in cost, in addition to its many other practical advantages. It is applicable to steamboats, steamships, locomotives, stationary engines, smelting furnaces, heaters, furnaces, stoves of all kinds, and last though not least, the power horses of the street cable roads of San Francisco.

Advance in Price of Labor.

Employees in all lines of mechanical operations are at present receiving advanced pay over the rates ruling during the last former five years. The general revival of business in California has restored a healthful tone in the labor market, and the demand being equal and in some lines greater than the supply, the tendencies have been in favor of the working classes, as the absorbtion of surplus in supply in all cases is the next thing in effect to positive insufficiency. As long as labor goes begging, and employers can pick and choose from the mass of seekers after work, prices remain at the option of the masters, and the less proficient classes suffer from the impossibility to secure engagements. But when doors are open in all directions to competent help, the *dependent* under less favorable circumstances become the *independent* classes, and employers of necessity yield to the natural tendencies, submitting to more conciliatory rules and regulations, and accepting concessions which would be declined under a reversed state of affairs.

The fact that labor in *commanding* and *demanding* better remuneration argues well for the common interests of the State at large, as well as to the mechanical classes specially; as this can exist and be sustained only when general prosperity prevails. During periods of depression in business, reduction of pay to operatives is insisted upon as a necessity, and it is simply a reversal of advantages when it becomes possible for the workers to assert their rights and claims for better pay. Low wages and scarcity of employment is the result of restricted activities, and may be termed the cold and cloudy season in business affairs, which holds back and prevents the germination of the seeds of prosperity; while sustained conditions which warrant the laboring classes in demanding better pay, and induces employers to yield increased remuneration to their workmen, may be denominated the season of sunshine and showers, which causes the seed of business to fructify and bring forth golden harvests.

The impoverishment of those who are forced to depend upon their daily earnings for the common necessities and comforts of life reacts upon the general prosperity of the country; and while the few with secured sufficiencies of this world's good may be able to live above the severities, storms, discomforts, and privations imposed upon the less favored, the great mass of the community become mere livers from day to day, as best they can, and the blight of despondency and the murky atmosphere of unhealthful business life robs thousands of hearts and homes of those joys and pleasures made possible by the great order of things established by the invisible power of light and love, that watches the sparrow's fall and clothes the valleys and hills alike with verdure and beautiful flowers, and makes the trees to bear fruit, and fields to yield mountains of seed for the sustenance and comfort of mankind.

Now is the time to subscribe for 1883. Send us $2, and we will send the numbers for the balance of the year 1882 free.

San Francisco Plumbers.

The *American Plumber* for September, after copying an article from this journal in relation to sewer and plumbing matters in San Francisco, in which we stated among other things: "Beside this, there is no other place on earth where meaner and less skillful plumbing work is done, by a class of beings calling themselves 'practical plumbers'—a title stolen from the truly practical and competent, many of whom we have in San Francisco, under which they disguise themselves, while neither knowing nor caring anything about the finer and essential points involved in skillful sanitary plumbing." Our contemporary adds: "This is rather rough on the 'Frisco plumbers, and we fear that the ARCHITECT must be mistaken." We assure our Eastern contemporary that we are not mistaken in the statements made, nor in any part thereof. That the facts are just as stated by us. We have in San Francisco as good, competent, faithful, and honest plumbers as can be found in any city in the Union, but we have also very many as incompetent as men can well be. And our "rather rough on the 'Frisco plumbers" is not a word in exaggeration of existing facts. The fact that there is no plumbing law upon the statute books of this State, nor any city ordinance providing restrictions in the execution of plumbing work, leaves the field open and clear to any fellow who chooses to hang out his "practical plumber" sign, and scores of them have availed themselves of the easy opportunity to set themselves up as master plumbers, being unable to secure employment as competent journeymen, and aware of the fact that hundreds of owners are such absolute dolts as to always accept, at least for the first time, the man who offers to do plumbing work at the least cost, rejecting the competent men as too high in their charges. The matter of good work at proper prices, and abortive attempts at workmanship, resting altogether upon the item of cost.

As illustrative of our position in this matter, we will relate but a single case, given to us as fact, by one of the leading plumbing firms of this city. A lad of sixteen summers engaged with the firm referred to, as an apprentice, at $4 per week. As such he worked for six months; at the end of that time he demanded an increase of wages. This being refused, the youth stated that he would quit and begin business on his own account. This it is stated he did; and we submit whether, with such specimen of "practical plumbers," we were not fully justified in saying all that we did. It needs no argument to convince intelligent plumbers that so far as this and other *similar types* of mechanically educated frauds are concerned, that they have not the slightest correct knowledge of plumbing and sanitary sciences. If it becomes necessary, we have it in our power to prove conclusively the hardest thing we have thus far charged in the columns of this journal, in connection with plumbing and sanitary matters, in which tinsmiths, stove dealers, and others destitute of a single well-learned thing or principle will figure conspicuously.

SAN FRANCISCO, Oct. 9th, 1882.

TO THE EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS:

Dear Sir—Having a knowledge of your interest in all questions that concern the health and comforts of our home life, and especially in regard to that which pertains to the work of the plumber; and any change in the manner of connecting waste water pipes which will lessen the chance of foul odors being given off from the contents of the pipes into the rooms where washbasins or bath-tubs are located, and the especial pipe I wish to refer to is the overflow pipe, will at least receive your attention. As is now the custom, the pipe which is attached to the outlet near the top of the vessel (either bath or basin) is a continuation of the waste pipe, and whenever the vessel is used and the plug withdrawn to allow the dirty water to pass off, a portion of such water is thrown up into this overflow pipe, the greasy parts of which adhere to the sides of the pipe, there to remain and decompose until the vessel is used again, when it receives more of the same filth, which in time emits an odor which is often mistaken for sewer gas. The remedy I propose would be to have the overflow pipes entirely separate from the waste pipes, and have it run to the outer air, and by that means, instead of its being a nuisance, its being flushed by a current of pure air would be a benefit to the room where it was placed. Some may say this would entail the extra expense of another pipe, but such is not the case, as in all plumbing work of to-day provision is made for safety pans and waste pipes leading from them either through the side of the building or down to the ground. And by increasing the size of this safety pipe to one and one-quarter inches, it would suffice for both purposes. But I would suggest, instead of the pipes ending at the ground level, they be made to discharge outside the buildings, at least two feet above the ground, either at the side or rear of the building, as circumstances may require. D.

We are pleased to receive the foregoing suggestions from one of the well-known really practical plumbers of San Francisco, and hope that others will follow with criticisms or recommendations. There is a large latent pen and thought talent among the plumbers of this city, and in their own defense we should receive many similar communications. As the result of the many bad things that have been done in the plumbing line by incompetent, and sometimes by otherwise good workmen, under the pretext that being compelled to "figure low," so as to secure work which would otherwise be intrusted to spoilers of good material, upon its "cheap" principle, a sentiment not by any means complimentary to the plumbing trade prevails; and we are surprised at the apathy manifested by the better class of plumbers, in not striving to relieve themselves from the common prejudice existing. It is a poor defense for good men who, by the acts of others, are brought under even unmerited censure, to draw around them the mantle of confidence in their own abilities, while the general opinion prevails that all plumbers are cast in the same mold, and are alike defective.

We fully understand the injustice of sweeping denunciations, and do not approve them; but however unjust they may be, those against whom they are cast must bear them, unless they adopt successful methods of relief. The columns of this journal are free to the use of all Intelligently written articles in defense of better workmanship, and the improvement of mechanical operations.

A new invention in the production of cement sewer pipes consists in placing the pipes after molding in an air-tight chamber and subjecting them to the action of carbonic acid gas and water for six or eight days. The gas is produced by burning charcoal in a common coal stove. As it passes into the air-tight chamber where it is absorbed by the pipe, it is cooled by passing through a hollow box immersed in a tank of cold water, so that no gas is permitted to enter the chamber at a temperature not above 60° Fahrenheit. By this means, the patentee claims to get the same effect on cement in a few days that it would get if placed in a cool, damp cellar for fifteen or twenty years.—*Boston Commercial Bulletin.*

☞ Subscription price of this journal is $2.00 in advance.

Francke's Monuments.

SPECIAL NOTICE TO ARCHITECTS AND MARBLE WORKERS.

We have just received an invoice of the above celebrated work. In size it is 12x18 inches, and contains numerous illustrations of monuments and tombstones, from the simple slab to the stately mausoleum; also designs for mortuary chapels, sarcophagi, vaults, obelisks, etc. The price of this work has been reduced to the sum of $9, upon receipt of which we will forward a copy to any address.

A Legitimate Use for Skim Milk.

Phillip Heinze of No. 603 First Avenue, was accused in the Jefferson Market Police Court yesterday with having in his possession nineteen quarts of skim milk. He stated that he supplied the steamship line for Havre with condensed milk, and as an accommodaion, he procured the skim milk for its officers. They had it mixed with red lead for painting the vessel's smokestacks. In support of his statements, he produced an order from the captain of the steamship Canada for the milk in question. Justice Ford discharged him.—*N. Y. Tribune.*

Market Reports.

LUMBER.—With the present demand, there is no danger of either a fall in prices, or of our merchants being able to keep a large stock on hand.

Lumber	140,964,315
Shingles	39,494,011
Laths	18,042,269

Pine.

Common Rough, up to 40 feet, per M feet		$22 50
"	41 to 50 " "	23 50
"	51 to 60 " "	24 50
"	61 to 70 " "	26 50
"	71 to 80 " "	28 50
Refuse Rough	"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over,	"	32 50
" 4 " and under, and 1¼x4 and 1¼x6		37 50
Flooring and Stepping		
Rough Clear for Flooring, $1 less than above rates.		
Second quality Flooring and Stepping	per M feet	27 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough.	"	33 50
" Dressed.	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17½

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	37 50
" 1 x 6	"	35 00
" No. 2	"	27 50
Rustic, No. 1, 1 x 8	"	35 00
" No. 1, 1 x 10	"	37 50
" No. 2	"	32 50
" Under 10 feet	"	32 50
T. & G., 1¼ x 4 and 1¼ x 6	"	37 50
" 6 in. 12 ft. and over	"	35 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" No. 2	"	27 50
T. & G., Beaded, 12 feet and over	"	35 00
" " 7 to 11 feet	"	30 00
" " under 7 feet	"	27 50
Half-inch Surface	"	30 00
Pickets, Fancy	"	27 50
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	25 00
Shingles	per M	2 50
Battens, ⅝ inch, lineal feet	"	1c

NAILS.—Since January 1st, 1882, we have imported 169,240 kegs.

10 to 60 pennies, are quoted at		$4 75
8 "	"	5 00
6 "	"	5 25
5 and 4 "	"	5 75
4 and 5 pennies, brad heads, at		6 00
6 "	"	6 25
8 "	"	6 50
10 and upward "		5 75
3 penny fines "		7 50

PAINTS.—The price of paint has been reduced owing to the competition of Eastern firms. The best white lead can now be had for 6½ cents per pound.

Building Intelligence.

Building operations still continue brisk, as will be seen by our report. The late rains has put a damper on the erection of buildings in the country; but in our judgment it is only a temporary lull. Mission property is looking up, and next year there will be a larger increase of buildings erected in that part of the city than has been witnessed for many years.

SAN FRANCISCO.

Folsom and Tenth. Nine two-story frame.
O.—Mrs. C. H. Robinson.
A.—Schmidt & Havens.
C.—C. A. Hussey.
$35,000.

Ninth, cor. Jessie. Five two-story frame.
O.—A. P. Hotaling.
A.—Kenitzer & Raun.
C.—Ed. Farrell.
$18,000.

Leavenworth, nr Ellis. Two two-story frame.
O.—W. Sharon.
A.—Gaynor.
C.—W. M. Fletcher.
$13,000.

Jackson and Fillmore. Four two-story double frame.
A.—H. C. Macy.
C.—J. J. McCready.
$15,000.

Eddy and Taylor. 13 two-story frame.
O.—N. Luning.
A.—Schmidt & Havens.
C.—Walker Bros.
$29,000.

Washington Avenue, nr Howard. Eight two-story frame.
O.—A. P. Hotaling.
A.—Kenitzer & Raun.
C.—Ed. Farrell.
$12,000.

Pine and Leavenworth. Four two-story frame.
O.—W. Sharon.
A.—Gaynor.
C.—W. M. Fletcher.
$29,000.

Fillmore, x Jackson and Pacific. Two-story attic and basement frame.
O.—W. A. Johnson.
A.—Smith.
C.—J. Robinson.
$8,000.

Oak, x Gough and Octavia. Two-story and basement frame.
O.—J. Flaharty.
A.—J. Gosling.
Days' work.
$4,000.

Waller and Buchanan. One-story attic and basement cottage.
O.—J. Nightingale.
A.—J. Marquis.
C.—T. J. Hamilton.
$4,500.

Guerrero and Ridley. Two-story frame.
O.—Capt. Rogers.
A.—J. C. Felton.
C.—W. Clark.
$5,500.

Filbert, nr Buchanan Three one-story frame.
O.—Jas. Aitken.
A.—Behrens.
Days' work.
$3,500.

Larkin, nr Union. Two-story and basement frame.
O.—Mrs. C. Hines.
C.—C. Murphy.
$3,400.

Oak, nr Octavia. Two-story and basement frame.
O.—G. Purlensky.
A.—Schmidt & Havens.
C.—H. Thom. Wohrden.
$4,000.

Clay, x Leavenworth and Hyde. Alterations and repairs.
O.—F. Cordee.
A.—Curlett & Eisen.
C.—D. Perry.
$2,500.

Pine and Jones. Conservatory.
O.—Jas G. Fair.
A.—Gaynor.
C.—Wilcox.
$3,000.

Union, x Jones and Leavenworth. Two-story frame.
O.—F. Kapke.
C.—J. P. Hanson.
$3,100.

O'Farrell, x Powell and Mason. Raising and additions.
O.—Marchand.
C.—G. R. Bowles.
$4,000.

Ellis, nr. Powell. Additions to frame.
O.—Feast.
C.—Rowels.

Ninth, nr Utah. Additions to Glass Works.
O.—Falconer.
$600.

Ellis, nr Larkin. Repairs to frame.
O.—B. B. Kennedy.
Days' work.

Pine, x Baker and Lyon. One-story and basement frame.
O.—T. Crow.
C.—T. F. Mitchell.
$1,110.

Howard, x Twenty-ninth and Thirtieth. Two-story frame.
O.—Buckley.
C.—T. F. Mitchell.
$3,500.

Twenty-fourth, nr Potrero Avenue. Repairs to frame.
O.—N. Oleant.
C.—T. F. Mitchell.
$1,000.

Sixteenth and Nebraska. Buildings for match factory.
O.—Newbauer.
A.—Wolfe & Son.
C.—McIntosh.
About $1,300.

Baker, nr Sutter. One-story frame.
O.—P. Martin.
Days' work.
$1,500.

Harrison and Essex. Additions and alterations.
O.—H. Miller.
A.—A. Laver.
C.—C. H. Atkinson.

Bryant Avenue, and Mariposa. Barns and sheds.
O.—Miller & Lux.
C.—C. H. Atkinson.

Essex Street, and Laurel Place. Repairs to brick dwelling.
O.—Captain Nelson.
C.—R. P. Huribut.
$4,000.

Berry, nr Fourth. Repairs to frame.
O.—Cal. Cigar Factory.
Days' work.
$2,500.

Waller and Buchanan. Alterations.
O.—Protestant Orphan Asylum.
A.—Swain & Cleaveland.
C.—A. Flood.
$15,000.

Clinton Park, nr Market. One-story frame cottage.
O.—J. Hetzel.
C.—G. Sauer.
$900.

Fourth Street, nr King. Repairs to frame.
O.—A. T. Spotts.
Days' work.

Laguna, nr Greenwich. One-story frame.
O. & B.—R. Brotherton.
$1,500.

Union, nr Buchanan. One-story frame.
O. & B.—J. W. Cudworth.
$800.

Sacramento, and Van Ness Avenue. Frame building for church.
O.—First Presbyterian Society.
A.—Wright & Sanders.
C.—Gray & Stover, Carpenters. Waggoner, Mason.
$25,000.

Twenty-third and Valencia. Four two-story frame.
A.—T. J. Welch.
Days' work.
$15,000.

First, x Folsom and Harrison. Interior decorations.
O.—P. J. Donahoe.
A.—T. J. Welch.
C.—J. W. Smith.
$1,460.

McAllister, x Gough and Octavia. Two-story frame flats.
O.—Mrs. McGinney.
A.—T. J. Welch.
C.—J. Doherty.
$6,725.

Pine and Steiner. Remodeling church.
O.—Dominican Fathers.
A.—T. J. Welch.
C.—J. Blake.
$2,140.

Geary, nr Polk. Three-story frame.
A.—H. C. Macy.
C.—F. Klatt.
$6,500.

Sixth, x Folsom and Howard. Alterations to frame.
O.—L. Dumas.
A.—Behrens.
C.—L. D. Frichette.
$1,500.

Hill Street, nr Valencia. Two-story frame addition.
O.—D. J. Stack.
A.—H. D. Mitchell.
Days' work.
$1,200.

Sutter, nr Kearny. Alterations and fitting up store.
O.—Chenowith & Lewis.
A.—E. De Pierre.
C.—Cook & Tromson.
$7,060.

Hyde, x Clay and Sacramento. Two-story and basement frame.
O.—Mr. Niebaum.
A.—W. Mooser.
C.—A. Pare.
$7,000.

Ellis, x Laguna and Buchanan. Two-story frame.
O.—T. Metzlar.
A.—Schmidt & Havens.
C.—Waterbury & Maxwell.
$3,500.

Post, x Dupont and Stockton. Four-story and basement brick.
O.—I. Levy.
A.—Schmidt & Havens.
C.—Walker Bros.
$30,000.

Fell, near Polk. One-story frame.
O.—Geo. Cumming.
Days' work.

Buchanan, nr California. Two-story frame dwelling.
O.—A. Montpellier.
A.—Schmidt & Havens.
C.—F. Klatt.
$6,250.

Eddy, x Mason and Taylor. Alterations to frame.
O.—S. N. Locke.
A.—Schmidt & Havens.
O.—Walker Bros.
$3,600.

Montgomery Avenue, nr Broadway. One-story and basement frame.
O.—H. Waggoner.
C.—Ziegler.
$3,000.

Greenwich, near Kearny. Repairs to frame.
O.—Mr. Block.
A.—T. J. Welch.
C.—Kidd.
$1,000.

Lombard, x Dupont and Kearny. Additions and repairs.
O.—S. Menzies.
C.—C. Chisholm.
$6,500.

Stockton, near Chestnut. Two-story frame.
O.—Grimm.
A.—Mooser.
C.—Bonde.
$2,200.

Chestnut, x Powell and Mason. Repairs to two-story frame.
O.—G. G. Wilkes.
C.—Zeigler.
$800.

Green, near Montgomery. Two-story and basement frame.
O.—H. Kohler.
Days' work.
$3,000.

Lombard, x Kearny and Dupont. Repairs to frame.
O.—J. Browell.
C.—J. P. Hanson.
$1,000.

Green, near Leavenworth. Two-story and basement frame.
O.—Runyon.
A.—Meeker & Banks.
C.—Gray & Stover.
$4,000.

California, nr Polk. Frame stable.
O.—Allyn & White.
C.—W. B. Kreger.

O'Farrell, near Hyde. Repairs to frame.
O.—Boyd.
C.—W. Little.
$2,500.

Post and Webster. Five two-story and base frame.
O.—L. Taussig.
A.—Schmidt & Havens.
C.—Haskell & White.
$18,500.

Beale, x Folsom & Harrison. Two-story brick building.
O.—Whittier, Fuller, & Co.
A.—Percy & Hamilton.
C.—W. M. Fletcher.
$7,600.

Bush, nr Fillmore. Two-story frame.
O.—S. Siegel.
A.—J. Gosling.
C.—T. J. Hamilton.
$5,500.

Bush, x Scott and Pierce. Repairs to two cottages.
O.—Taussig.
A.—Schmidt & Havens.
C.—Haskell & White.
$800.

Pine, x Sansome and Montgomery. Five-story and basement brick.
O.—J. G. Fair.
A.—J. P. Gaynor.
C.—Butler & McGown. Masons. Mahoney Bros. Carpenters.
About $100,000.

California and Middle St. Two two-story and base frame.
O.—E. H. Miller.
A.—W. P. Moore.
C.—A. Jackson.
$16,000.

OAKLAND.

San Pablo Avenue Station. One-story cottage.
C.—Herbst.
A.—S. & J. C. Newsom.
$1,200.

Washington, x Webster and Fillmore. Two-story and base frame.
O—Mrs. Newgass.
A.—S. & J. C. Newsom.
C.—J. McKay.
$4,000.

Third Avenue, East Oakland. One-story frame cottage.
O.—E. T. Cooper.
A.—Newson & Gash.
C.—Haskell & White.
$3,600.

Adeline, nr Eighteenth. One-story frame cottage.
O.—C. C. Nordhausen.
A.—Newson & Gash.
C.—Wilkins.
$3,250.

Central Avenue, and Market. Conservatory, etc.
O.—Hart.
A.—Matthews & Son.
C.—Haskell & White.
$1,500.

Tenth, x Franklin and Webster. Additions and repairs.
O.—Ice Company.
C.—Haskell & White.

Watt's Tract. Frame school-house.
O.—City of Oakland.
A.—W. H. Kirke.
C.—R. Smilie.
$6,500.

Twenty-fourth and Filbert. Additions.
O.—J. Good.
A.—W. J. Cuthbertson.
C.—A. G. Lockhart.
$500.

BERKELEY.

Walnut and Virginia. One-and-a-half-story frame.
O. & B.—A. H. Broad.
$1,900.

Elsworth St., One-story frame.
O.—Orlando Smith.
C.—Isaac Hall.
$1,800.

Bancroft Way. Two-story frame.
O.—H. A. Palmer.
C.—A. H. Broad.
$3,500.

Atherton St. One-and-a-half-frame.
O. & B.—G. A. Embury.
$2,000.

Oxford, cor. Virginia. One story frame.
O.—Haskeley.
C.—Daniel Willis.
$2,200.

Bancroft Way. Two-story frame.
O.—Congdon.
C.—Schon.

Elsworth St. One-story frame.
O.—Silas Carl.
C.—Isaac Hall.
$1,800.

Berkeley Way. One-story frame.
O.—L. S. Clark.
C.—C. R. Lord.
$1,100.

Choate, cor. Dwight. One-story frame.
O.—Calhoun.
C.—John Spencer.
$1,200.

North Berkeley Depot. Repairs.
$400.

Bancroft Way. Repairs.
O.—Mrs. Walcott.
$2,000.

SACRAMENTO.

Twelfth and K. Two-story frame residence.
O.—F. Elliott.
A.—N. D. Goodell.
$5,500.

I, x Second and Third. One-story brick building.
O.—M. Graf.
C.—D. Falconer.
$3,500.

K, x Seventh and Eighth. Improvements and additions.
O.—Eagle Cracker Bakery.
$5,000.

K, x Tenth and Eleventh. One-story brick building.
O.—Sac. Grangers' Association.

Front, x R and S. Two-story building.
O.—W. R. Knights.
$3,200.

In our last, the architect for improvements to Scofield & Tevis, building should have been A. A. Cook instead of those given.

MISCELLANEOUS.

Red Bluff. Cor. Oak and Washington. Two-story brick building.
O.—I. O. O. F.
A.—A. A. Cook.
C.—Swain & Hudson.
$15,972.
Bricks are being laid for $12 per M. in the New Odd Fellows Hall Building.

One-story building.
O.—O. A. Lovett.
C.—J. M. Morris.
$1,935.

One-story brick building.
O.—Chas. McCarthy.

One-story brick building.
O.—M. Corrigan.
C.—O. P. Fuller.

Two-story brick building.
O.—W. H. Bahney.
C.—O. P. Fuller.

Cor. Main and Oak. Two-story brick building.
O.—J. Clements.
A.—A. A. Cook.
O.—Swain & Hudson.
$13,340.

Menlo Park. Additions to frame.
O.—R. Burke.
A.—T. J. Welch.
Days' work.
$4,000.

Two-story attic brick basement frame dwelling with stable.
O.—John Parrot.
A.—Schmidt & Havens.
C.—C. Chisholm.
$30,000.

Woodland. One-story cottage.
C.—Dr. L. B. Holmes.
O.—G. K. Glenn.
$1,200.

Alameda. Park Avenue, x Alameda and Encinal Avenue. Two one-story frame cottages.
O.—Miss Colley.
C.—Gilbert & Brown.
$4,400.

Encinal Avenue, nr Walnut. Two-story frame dwelling.
O.—J. Bennet.
Days' work.
$2,000.

Fresno. Brick building for hotel.
O.—J. A. Blasingame.
C.—C. S. Peck.
$26,000.

Healdsburg. Two-story frame dwelling.
O.—H. Barnes.
C.—P. Greist.

Geyserville. Two story frame dwelling.
O.—Mrs. P. Archambeau.
C.—Greist & Favour.

Large barn nr town.
O.—L. G. Ellis.
C.—Harris & Winder.

One-story frame.
O.—A. H. Stites.
C.—A. Leigh.

Vacaville. Two-story and attic frame building.
O.—W. W. Smith.
A.—Taylor & Copeland.
C.—Burpbee.
$11,565.

San Jose. Ten miles from town. Two-story frame.
O.—P. Martin.
A.—Theo. Lenzen.
C.—M. D. Green.
$5,400.

Second, nr San Fernando. Additions and alterations.
O.—Theo. Lenzen.
A.—Theo. Lenzen.
Days' work.
$4,000.

Buildings at Fair grounds.
C.—Switzer.
$600.

Cor. Seventh and Santa Clara. One-story cottage.
O.—Rev. A. Calhoun.
C.—W. C. Hamilton.
$3,000.

Cor. First and El Dorado. Three-story brick building.
O.—Jas. Phelan.
A.—L. Goodrich.
$32,600.

Rear of Farmers' Union Store. Two-story brick building.
$4,500.

Monterey Road. Eight miles from town. Two-story frame.
O.—J. H. Lee.
A.—Theo. Lenzen.
C.—J. D. Stewart.
$3,000.

Sixth, x Santa Clara and San Fernando. Two-story frame.
O.—G. W. Blackford.
A.—Theo. Lenzen.
C.—J. Lenzen.
$4,000.

The California Architect and Building News.

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— AND —
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GEO. H. WOLFE, Business Manager,
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Either of these journals, in connection with the CALIFORNIA ARCHITECT AND BUILDING NEWS, will be sent to one address for $2.50 per year.

General Items.

As has been stated in the several issues of this journal during the current year, a large degree of activity has prevailed in building circles since January, 1882, sometimes approximating a boom in proportions and extent. And although there have been few—very few—single improvements of large dimensions and cost—fewer of the expensive kind than were commenced in 1881—the character of buildings erected in 1882 speak well for the prosperity and growth of San Francisco in a three-fold sense; first, the mere fact that a comparatively large number of houses have been built presumes the employment of mechanics and laborers generally, and consequent bettered circumstances and comforts to the working classes of the community, which in itself is a pleasing feature to contemplate; secondly, the improvements being confined mainly to private residences of various cost, some of them being moderately elegant in design, appointments, and comforts, and a good class of tenements in single residences and flats, none of which seem to remain long unoccupied, evidences the increase of population, and the expansion and general growth of the city; and thirdly, all this is being done mainly from the cash resources of owners, with far less resort to mortgages for the purpose of raising the necessary building fund, demonstrates the fact that the financial conditions of the masses are much improved over former years, when perhaps three out of every five cases of building improvements were incumbered by mortgages. This view of matters is supported by the following, from Magee's *Real Estate Circular*:

"The savings banks did a very light business last month. One of the smaller banks—the Humboldt—led off in its loans. It lent $119,800 on city property. The Hibernia Bank only lent $81,325, the German Bank, 67,750, and the Savings Union, $65,150. The Hibernia Bank released $438,400, but $300,000 of that sum are to be credited to the release of an old mortgage last month, lately renewed at a lower rate of interest. The German Bank released $213,375, and the Savings Union $78,070. All of the banks continue to report a very light demand for money. The low rate of interest of 6 per cent., the banks paying the mortgage tax, tempts few or no persons to speculate. Those who now borrow are doing so to improve property they already own, or to acquire homesteads for actual occupation. There is no speculation or excitement, in short, in any kind of city real-estate, consequently borrowers now are not speculative in any sense of the word. The number of real estate mortgages recorded last month was 145, of the value of $964,760. There were 161 releases, aggregating $1,311,783. The real estate loans made by private capitalists were very heavy last month; they lent $555,735. Mr. Blythe borrowed from John Parrott last month $375,000, at 6 per cent., on his Market Street property, releasing at the same time an old loan of $275,000."

There is a great deal of talk as to what is to be done in the near future, and although the statements made may be in excess of the undeveloped facts of the future, still there are movements and transactions on foot which give color to large anticipations; and from all that we know or have been able to learn, we are warranted in predicting continued building prosperity in San Francisco for 1883.

All present appearances indicate an undiminished if not increased demand for both skilled and unskilled labor, with perhaps partial and temporary exceptions during the winter months. And whatever break may occur, will be most felt by the less proficient classes, whose services, as a matter of course, are the first dispensed with. When a lessening of forces becomes necessary, the better men are selected and retained, and the inferior discharged. This fact should inspire every man who is compelled to rely upon his daily earnings for the means of support for himself and family to qualify himself to hold his situation so long as there is work in his line for any one to perform. The abject poverty of some mechanics and laborers is the result of their individual neglects and gross indifference to the important duty of filling well and faithfully a position among the best of their fellow-workmen. Indolence and carelessness have kept multitudes in poverty, who might have bettered their condition by energetic efforts to overcome the disadvantages surrounding them. And those who willfully disregard the common law of life, in matters involving their best interests, richly desire all the evils which they bring upon themselves through their persistent omission or willful neglect to secure to themselves benefits which are within the reach of all who act manfully and wisely in the contests of life.

Some people affect to believe that they derive no benefit from advertising, for the reason that they cannot trace any particular transaction to any particular advertisement. Neither can we attribute the growth of vegetation to any particular drop of rain or ray of sunshine, but it is very evident that without rain or sunshine it would fail to flourish.

Redwood Lumber.

TRUE AND FALSE ESTIMATES CONSIDERED.

The *Post-Intelligencer*, of Seattle, W. T., has some severe strictures on Prof. Sargent's article, recently published in the *North American Review*. An extract from the article reads as follows:

"The belt of redwood forest along the California coast has always suffered severely at the hands of the lumbermen, and many of its finest and most accessible trees have already been removed. A large amount of this valuable timber is still standing—less, however, than has generally been supposed; and at the present rate of consumption, the commercial importance of this forest will have disappeared in a few years more."

This the Washington Territory paper calls "the very error of the moon, so to speak." It says:

"In Humboldt County, Cal., the whole area of the redwood forest has been mapped and platted. There are something like 500,000 acres of that timber in that county alone. Disinterested experts estimate 100,000 feet of lumber per acre as an average, if not a small yield. At eighteen dollars per thousand feet, the redwood of Humboldt County alone would just about pay the present national debt. There are immense untouched bodies of redwood in Del Norte County—to the north of Humboldt—in Mendocino, Sonoma, Marin, and Santa Cruz counties to the south. We do not know what the writer means by a few years. The oldest child begotten by any one of the babes born to-day will not live to see the supply of redwood exhausted on this coast. A statement so wild as the above leaves little room for the reception of what else the writer has to say as trustworthy material upon which to base an opinion as to the extent and value of our forest growths. We will not follow him further in this direction. He evidently is not at home in the woods."

An interesting feature of these comments is the estimate of the amount of redwood standing in Humboldt County. It is placed at 50,000,000,000 feet, while the forestry bulletin of California, prepared under the directions of Prof. Sargent, put it at 25,825,000,000 for the entire State. According to the opinions of practical lumbermen who have traveled through the redwood region, a poor guess would be of more value than the figures issued by government.—*Northwestern Lumberman.*

Even admitting that the area of redwood is what is claimed, we would like to inquire how many thousands upon thousands of acres are situated so far from tide water, and of so much difficulty of access, as to almost preclude the possibility of the trees ever being cut for lumber. There are magnificent bodies of timber lying in between the different ridges, that the only way we see could ever be got out, would be by cutting the logs in the bottom of the cañon or ravine, and have a wire cable road running over the hill with cars made especially for carrying lumber. The same power could be utilized for the cable that is used for sawing the logs. There are places, however, that are two steep and difficult of access for even a cable road; and only those who have lived in the redwoods know what difficulties there are to encounter in the construction of a wagon road through the redwoods. Again, no allowance has been made for the great increasing demand for our own State, and the VERY RAPIDLY GROWING DEMAND FOR EX-

PORT TRADE. This last item is destined to be in a few years no small factor in the decimation of our noble forests. Again, no allowance has been made for the millions of feet that are being wasted by fires, and the absolutely wanton destruction of clearing lands for the sake of convenience. We know of one party who actually hired a lot of cheap men to cut down timber from the top of a ridge, simply that the sun might shine a little longer on his clearing. We are inclined to the opinion that while the figures given by the W. T. papers represent the amount of lumber actually to be seen, the amount given by Prof. Sargent is about that which is actually available for future use. One of the problems of the future to be considered is an easy and economical method of getting lumber out of apparently inaccessible places. We shall be pleased to hear from our friends in the redwoods upon this subject.—ED. CAL. ARCHITECT.

Another Attempt to Obtain Plans without Pay.

The accompanying letter explains itself, and serves to illustrate how meanly unfair some well-to-do men can be, and how the architectual profession is undervalued by some people, because of the bantering, huckstering methods pursued by that class of non-competents, calling themselves architects, who enjoy no proper estimate or understanding of the duties and responsibilities of a qualified architect, and who entertain no right conception of the dignity of the profession. It is this class of men in America who have belittled the profession, and in certain spheres created the presumption on the part of so many property owners, that the skill, services, and labors of architects are of but little value, and can be obtained for any consideration that may be offered, even the shadowy honors of being recognized as an architect without merit. Hence some even wealthy men play with the opportunities thus afforded, and put forth invitations for competitions which lack all semblance to fair-mindedness. The letter reads:

SEATTLE, W. T., Sept. 30, 1882.

EDITOR CALIFORNIA ARCHITECT.

Sir: Having read in the current number of your paper an artitle headed "Another Absurd Competition Proposition," I am induced to forward you in that connection the inclosed scrap, clipped from a Seattle paper, containing a proposition in my opinion even more preposterous than the Brooklyn absurdity, for as you will perceive by the published notice that the gentleman intimates, with a directness and decision as distinct as it is delicate, that it is entirely dependent on his gracious will and pleasure whether or not he ever pays *anything* to anybody. I am pleased, however, to be able to say that the invitation did not seem quite satisfactory to the profession here generally, for though there are eight advertised architects in Seattle, and perhaps as many more who don't advertise, only two responded to the call.

The building is intended to be a handsome three-story brick and iron corner block, extending some fifty or sixty feet on both streets.

Respectfully,

* * *

NOTICE TO ARCHITECTS.

I will receive plans for the building to be erected on corner of Mill and Front Streets until August 3rd next.

The plan approved and accepted will be paid for, and no other, and all may be rejected at my option.

Particulars at my office. JOHN LEARY.

SEATTLE, July 25th, 1882.

All such absurd and unbusiness-like propositions can only be classed as practical insults, manifesting a disposition on the part of the proposer to obtain a something valuable in itself and to the party proposing, with no corresponding disposition manifest to return fair recompense for the value obtained. And the common reply of a willingness to pay for such plans as may be approved, is but a subterfuge to cover a wrong act. For in a majority of cases, the real purpose is to- *find out* certain involvements, and to gain desired information without cost.

No just and fair-minded man would be guilty of asking of others the expenditure of time, skill and labor, without a cheerful willingness to propose recompense, or a sense of duty to pay for the services performed at his instigation. It is the brutal-minded who seek to secure and serve their own purposes at the expense of others, without consideration of the rights of others; men who, having gained an advantage in this world's goods, use its power in oppressing and humiliating others less fortunate, with no sentiment of that royal virtue, Be just unto others as well as to thyself.

But so long as the architectural profession is incumbered with parties who consent to crawl, and yield to any and all demands made upon them to ape the architect, while better fitted for the hoe and shovel, or perchance the jack-plane or trowel, it may be expected that there will be others to whistle and laugh at the wagging tails of the canines, who dare not attempt either to bark or bite, even though a kick should accompany the whistling.

One thing is very certain, that no such proposition would be noticed by any architect possessed of fair qualifications, or appreciating the virtues which should characterize those who venture in paths once trod by such men a Michael Angelo, Wren, and thousands more even of these latter years, who placed and places value upon their conceptions, delineations, and services.

If such advertisments as Mr. Leary's read—Wanted. A few incompetent paper spoilers, and boys desiring a little practice in line making and shading, to practice on attempts at plan-making for a building, etc., there would be no offense, for the service of such parties would be equally as valuable as the proposition of Mr. Leary, of Seattle, or the Brooklyn people are honorable and fair.

All such cases as that under notice are arguments why Chapters of architects and architectural societies should be established in all parts of the country, and such rules, regulations, and procedures established as will at least inform owners that qualified architects are not creatures whose services may be obtained without fair and just compensation. An architect's time, skill, and labor are to him as much of value as the knowledge of law or medicine is to those who plead before courts of justice in defense of their clients, or stand by the bed-side of the sick or dying, administering to their relief, when disease or death spreads the shadows of sorrow around fond and loving hearts.

If Mr. Leary wanted a steam boiler and engine or other thing made of special pattern, it would be just as reasonable for him to make known his wants by advertisment or personal application, requesting boiler-makers, for instance, each to make a boiler, and when made, the one accepted by him would be paid for, or, at "his option," all of them might be rejected. Is it likely that any worker in metals or other materials would be such an unmitigated simpleton as to notice the proposition? And would not the reply be, The man is a fool? The analogy is harmonious, for if the iron used in the one case cost more than the paper, office rent, etc., in the other, the time and study required of an architect to qualify for correct plan-making, is a matter of long years of diligent application, and possesses a value, and competent architects so understand the matter, and it were well that all property owners reached the same conclusion.

☞ Science of Carpentry Made Easy, $5.00.

Logging Interests.

A great storm has prevailed in northwestern California, which has seriously affected logging interests, and reduced the intended output considerably. The Eureka *Times* states that the damage sustained will mount up into the hundreds of thousands of dollars. In all the camps large crews were at work, and efforts were being made to get down to market before the rains set in, so that a sufficient amount of logs to supply the mills all winter would be at hand. The storm lasted two weeks, and during that time camps were shut down, and it is estimated that the log supply will be 10,000,000 feet short of the amount that would have been put into stream had the weather been more favorable. The mill men and contractors have suffered great loss by reason of heavy expenses during the storm.

"Building."

A new architectural and mechanical paper has made its appearance in the literary world. It is published by W. T. Comstock, the successor of the old architectural publishing firm of Bicknell & Comstock. This fact is sufficient to prove to its readers that nothing will be left undone to place it on an equal footing with the other really good journals published in the same place. In the initial number, the article on perspective will be found of much interest to students and mechanics. Attention is called to the large "ad." in the September and October issues of the "CALIFORNIA ARCHITECT," in which the future designs of the editor are fully set forth. "*Building*" is published in New York City, and will be sent to any address upon receipt of $1.00. To those who wish to subscribe for a shorter time, so that they may judge of the merits of the journal, the sum of twenty-five cents in postage stamps will secure a copy for three months. Address W. T. Comstock, 6 Astor Place, New York City. P. O. Station D., or the office of this Journal.

The Sanitary Engineer.

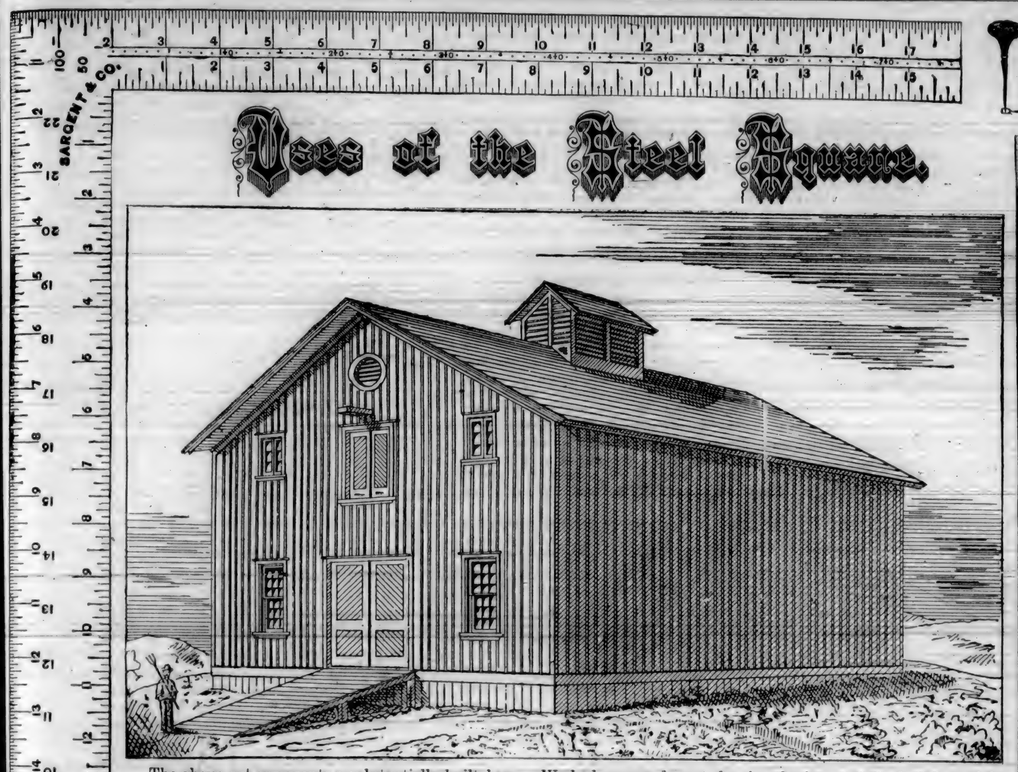
The true spirit of enterprise has characterized the management of our New York contemporary from its commencement, and as a new feature its managers now propose to supply a deficiency created by the refusal of Congress to grant an appropriation to defray the expense of continuing the publication of the Bulletin of the National Board of Health—a valuable source of information, which, extinguished, creates a vacuum in sanitary intelligence greatly to be regretted. To repair this damage, and restore to some extent at least the almost universal advantages of the National Board's Bulletin, our contemporary has so arranged with the Board that hereafter the more valuable portions of what would appear in the Bulletins, were they continued, will be found in the columns of the *Engineer*.

Index to Volumes I. to IV.

We are having carefully prepared a full index to all articles in volumes I. to IV. It will be of the same size as our regular journal, so that those who preserve their monthly issues for binding at the close of the year, by securing an index first, can have it bound with their monthly numbers. We will send one to every subscriber. Any one failing to receive it should notify us at once.

☞ $2.50.

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Model Homes," for $2.50.



Uses of the Steel Square.

The above cut represents a substantially built barn. We had prepared a cut showing the frame of the building, giving the sizes of the various sills, joists, girders, etc., but by an accident just before going to press, the plate was mashed so it was impossible to use it. It will appear in our next, with a full explanation of the same.

We would advise all those who desire a full series of these articles on the Steel Square to immediately send for any or all of the back numbers, as there are but very few remaining of several different months.

☞ $10.00.

We will send the "California Architect and Building News" for 1883, and one copy of "Francke's Celebrated Work on Monuments," for $10.00. Every architect and marble-worker should have a copy of this work.

☞ $5.50.

We will send the "Science of Carpentry Made Easy" and the "California Architect and Building News" for one year, for the sum of $5.50.

☞ $3.50.

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Useful Details," for $3.50.

☞ $4.25.

We will send the "California Architect and Building News" for 1883, and one copy of "American Cottage Homes," for $4.25.

☞ $6.00.

We will send the "California Architect and Building News" for 1883, and one copy of "Science of Carpentry made Easy," for $6.00.

Any one sending us 5 new subscribers to the "California Architect and Building News," we will give one copy each of "American Cottage Homes" and "Model Homes."

☞ $3.50.

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Useful Details," for $3.50.

☞ $4.25.

We will send the "California Architect and Building News" for 1883, and one copy of American Cottage Homes," for $4.25.

☞ $10.00.

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☞ $5.50.

We will send the "Science of Carpentry Made Easy" and the "California Architect and Building News" for one year, for the sum of $5.50.

Practical Lessons in Architectural Drawing is a work that should be in the hands of all those who desire to be proficient in the use of drawing instruments. Sent post-paid to any address for $2.50.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

The Triangle.

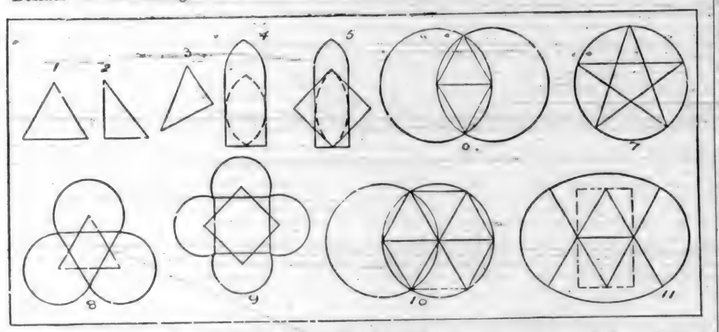
SPEECH DELIVERED BY J. GASH, ESQ., BEFORE THE SAN FRANCISCO CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, NOV. 3, 1882.

Mr. President and Gentlemen:

I have taken for papers to read before you this evening a subject which I am fully aware you are all as familiar with as I am, being, as it were, the alphabet of our profession. And though I may not read to you anything that is new, yet what I have to say will, I am sure, recall to your minds many pleasant thoughts of the days when you were studying the alphabet of our profession—geometry. From that alphabet I have selected the triangle for my subject. That this may indeed be justly called the Alpha of architectural design, we have only to study the architecture of Egypt, Greece, and Rome; and for its zenith we may take Gothic architecture in France, Germany, and England; and there we see it applied in almost every portion of those sacred edifices that were erected throughout Christendom.

That Christianity should lay a strong claim to its use in her sacred edifices, is not much to be wondered at, as the foundations of its belief was based on the trinity of which the *triangle* is so justly symbolical.

Besides its use amongst the ancients as a



symbol of the Diety, having neither beginning nor end, and being perfect in all its parts, it is not strange that it should be readily applied by Christians in buildings erected by them for worship.

The crystals of gold, the noblest of metals, is an equilateral triangle. The diamond, the the most valuable of gems, crystallizes in the form of the octahedron, each face forming an equilateral triangle.

That its use was well known to the Egyptians, we have only to study the architecture of her pyramids, and there we see its use was almost as well known as it is by ourselves at the present day. In their measurements we find, according to M. Jornard, a French writer on Egyptian antiquities, that the triangle whose sides measure 3, 4, and 5 was a symbol frequently employed by Egyptian priests, and was sometimes called the Egyptian triangle. It was with them the symbol of universal nature. The base representing Osiris, or the male principal; the perpendicular, Isis or the female principle; and the hypotenuse Horus, their son, or the product of two principles.

On these numbers, 3, 4, and 5, is based the solution of the 47th proposition in Euclid, that the square of the hypotenuse of a right-angled triangle is equal to the sum of the other two sides, supposed to be discovered by Pythagorus; but Plutarch and other ancient writers say that this solution was well known to the Egyptian priests and communicated to him.

Its use amongst pagan nations we find by reading heathen mythology. The double triangle of five points being worn as a talisman and an emblem of health, and was also used as an emblem of fellowship. This form of double triangle is sometimes called the five-pointed star, and perhaps for the above reasons have been adopted as an emblem in our national flag. The double equilateral triangle being an emblem of perfection, with the all-seeing eye, has been adopted by Free Masonry, and worn by its members to the present day.

That the triangle was used in Grecian and Roman architecture, we have only to examine the geometrical construction of their theaters, and there we see it brought into use more especially in a Roman theater described by Vitruvius, where he speaks of four equilateral triangles being so placed that their points must so touch the circumference of the circle which formed the ground plan of the auditorium.

That its use was known for both its advantage in shedding the rain off the roofs of buildings, and also as a matter of strength, we may see in many of the Roman buildings, especially the Roman Pantheon, and the Temple of Peace, founded by Cladius.

But it is in the Christian epoch that it has been especially used, and its different variations mark the several changes of Gothic architecture, a few of which I will briefly touch on, trusting you will patiently bear with me—a favor I shall feel grateful for. Before referring to these it may be well to see how many changes a triangle may undergo, and what figures may result from those changes. Taking the equilateral triangle described by the intersection of two circles with a common radius, and describing another triangle on the opposite side, we get what is called a lozenge; and drawing four lines at right angles to each other, and touching the four angles formed by the two triangles, we get the most perfect rectangle, being a figure the square of whose longest side is three times the square of the shorter side. Next to the square, this is the only quadrilateral figure whose sides bear any geometrical proportion to each other, and is the result of two inverted equilateral triangles.

Producing the legs of two inverted equilateral triangles formed by the two circles above referred to, we get a hexagon, being the most perfect polygon, and by the wisdom of an all-wise Creator, selected by the honey bee in the architectural construction of its cells.

Again, taking the apex of one of the above triangles as center, and one of the legs produced as radius, and describing an arc to touch where the other leg and circle meet, and doing the same with the other side, we get the oval, all resulting from the equilateral triangle.

Bisecting the sides of an equilateral triangle, and joining the points of section, we form four equilateral triangles, and from these we make the trefoil, a figure so much used in gothic tracery, a marked feature especially in early English.

Two inverted equilateral triangles, drawn with a circle, form the basis of a hexafoil for Rose windows, the finest example of which is perhaps in the south transcept of Rouen Cathedral.

For the quatrefoil we are indebted to the square, which is much used in connection with the trefoil, especially in Henry VII. chapel in Windsor, which is, perhaps, the finest specimen of Gothic architecture in England.

In tracery the isoceles triangle is much used, being already referred to as a talisman amongst the ancients; the sum of the five angles of the two triangles forming the star, being 180°, or two right angles; the sum of the three angles of the equilateral triangle being the same. This figure or star from the bases of the pentagon by joining its several points, and is much used in Gothic tracery; the best examples being found in the Church of St. Owen, in Rouen; and an example also in the Rose window in Sutter Street church in our own city. There is also an example in the Rose window at Ames Cathedral.

The right-angled triangle whose sides measure 6, 8, and 10, almost all builders are familiar with; but why those numbers should produce such a figure, or why such a figure should be governed by such numbers, require some modern Pythagorus, as this mystery remains so far unveiled.

The next triangle in geometry is called a scalene triangle, being the result of circumstances, and cuts no figure in architecture, save a good reminder never to have such about our work, which should be perfect like the equilateral triangle, and square like the right-angled triangle. I will now occupy a few moments of your time in reading the uses of the equilateral triangle in Gothic architecture.

It is worthy of remark, that while the equilateral triangle formed the basis of Gothic architecture, not only in doors, windows, and ground-plan, and in the grand and stately arches of its aisles and transcepts, but even in those delicately clustered columns with emblematical foliage for capitals that supported those vaulted canopies, the architects of those grand old buildings never lost sight of one fact that is well worthy of all future members of this profession to follow; that is, as near as possible apply the laws of geometry in our work; and whatever decoration you may be stimulated to adorn your work, let it have some object or cause; not the result of a mere whim, but based on some fundamental principle. While you go from one period to another in Gothic architecture you find the equilateral triangle used in Gothic windows; and as you leave this you next come to the lancet window, being only the change of location of the center of the arc.

You take the two equilateral triangles above referred to as forming a lozenge, and their height will give the points of the spring of the arch in windows much used in early English, which in later perods was lengthened as circumstances required.

For examples of the double equilateral triangle as used in the ground-plan of gothic churches, I would refer you to the churches of Winchester, York, Salisburg, Norwich, Exeter, and others. While I am fully aware that I have read to you nothing new, I would say that in reading over works looking for notes on the above, I have met with much that was indeed interesting, so that in this respect any of us will be well paid by getting up papers on some subject connected with our profession for our mothly meetings.

The *Carpenter*, formerly published in New York, has been moved to Philadelphia. The address is 613 Callowhill Street.

☞ $2.50. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Model Homes," for $2.50.

The Cracking of Paint.

Last month we received a lengthy communication from a prominent carriage manufacturer in regard to the cracking of paint, and the remedy therefor. Some of the questions asked were such as to require much time and study for satisfactory answers. We have consulted some of our best-informed mechanics, and gleaned various items from our many exchanges, and trust the answer we give to our correspondent will be appreciated by all who take an interest in painting and good workmanship.

We first consider the *cause of the cracking of paint.* While around on our investigating tour, we propounded this question many times, and no two answers agreed. One would say, "You had too much oil in your paint"; another, "Too much japan." Again, "There was not enough of oil"; and a very sedate-looking individual whispered in our ear, "That the paint dried too quick."

From the mass of answers we received we have deduced the opinion that the cracking of paint on carriages, hacks, etc., is due more than anything else to the *hurried manner in which it is applied*, aided in a measure by the too liberal use of oil.

A great many painters persist in mixing their paints so as to have them elastic all the way through; by so doing, they expect to have a tough, elastic surface, that will give like rubber to the swelling and shrinking of wood. Provided the paint remained just that way, all would be well. But sooner or later, the paint is bound to dry *hard*, and when it does, it naturally contracts; when its elasticity gets to the utmost limits, the paint will give way, and spread open in large cracks. This fact is the same with the house-painter as well as those who work on carriages.

One great fault to be found with the painter is, he supposes his work to be thoroughly dry, when, in fact, it is not half-way dry. In the good old days it took six months or more, with fine drying weather, to get a job ready for finishing on the elastic principle. Now many a job is put through in less than a month, and the work is supposed to stand just the same.

There are two ways of finishing work: one on the *elastic* principle, and the other is the quick process, or *flat coating*. Few will give the time necessary for the first way. The different coats should be put on very thin, and each to be allowed to thoroughly dry before another is put on. The *flat coating* can also be hurried so that it will crack badly.

To avoid the cracking of paint, the following ideas, if carried out, will be found to work admirably. Let every part of the wood, inside and out, be properly primed with fresh priming. Let the priming get perfectly dry; then mix every coat of lead so that it will dry hard. Mix the filling with japan and varnish, so that this may dry firm and hard; use no oil in it. Have every coat dead color. Do not apply the coats too heavy; have them as thin as possible to answer your purpose, and let each get thoroughly dry before putting on another. Place enough coats on to fill the grain of the wood, making a perfect surface. Then you will have on a body of paint firmly bound together and thoroughly dry. When paint is thoroughly dry, it can shrink no more, as it only shrinks when in the process of drying; and if it does not shrink, it cannot crack.

If the paint is not well protected by varnish, it will perish in time, sooner or later, owing to how well it is protected. Once a year is enough to have a carriage varnished to be kept in order, though no rule is laid down; except when it commences to look as if it wanted varnishing, have it done. Don't wait till it wants burning off before attending to it.

Nowadays painters will paint jobs in two weeks, and wonder at the cracks. The blame is generally laid on the material, or anything else that is handy and suitable, but the real fact of the case is finishing the job in two weeks, requiring the coats to dry as hard as possible, and trust to luck for results.

☞ $10.00. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Francke's Celebrated Work on Monuments," for $10.00. Every architect and marble-worker should have a copy of this work.

Work yet to be Done.

One of our most intelligent and experienced sanitary experts has the following sensible say in a private letter—so sensible and valuable that we copy entire: Despite all the agitation of late years, it is amazing how much yet remains to be done in the line of sanitary work. When after four years spent in recommending sanitary reform I began the practical work of remedying bad drainage and plumbing, I had to confess astonishment at the small results that has been accomplished in the way of improvement. The sewer-gas scare, dating from before 1876; the two outbreaks of yellow fever at the South; the diffusion of official health document; the publication of sanitary periodicals and books, with the wide dissemination of information by the press and on the lecture platform—all seem as but a drop in the bucket, in view of what yet remains to be done. We have scotched the snake, not killed it, and the ground has been barely scratched for the seed of reform. We need to start a sanitary boom, and ought to make household hygiene as popular and attractive as household decoration. People should be impelled to search out antique nuisances and the sources of old-fashioned contagion with as much ardor as they now track "grandfathers' clocks" and carved oaken side-boards. We already see one good result of the art decoration fever, in the taste for bare floors and hard-finished walls. A sanguine man may have faith that in time a healthy house will be as much admired as an artistic one, and that even bric-a-bric may pale in glory before perfect plumbing and ventilation. The character of our people is such, and the condition of our climate so different, that we cannot always follow foreign experience in sanitary matters. Hence it is vitally important to study local conditions and requirements, and at least take the first step toward practical success by employing only men of competency in supervising sanitary work.—*The American Plumber.*

A California Tree.

The region around Guerneville, in Sonoma Co., is somewhat noted for its remarkable growth of large timber. The following account of the saw-logs cut from one of the "giants of the forests," recently felled, will no doubt be found especially interesting to our eastern friends. The details can be relied upon, as they were furnished by Mr. W. L. Van Doren to the editor of the *Petaluma Argus.*

"The standing height of the tree was 347 feet, and its diameter near the ground was 14 feet. In falling, the top was broken off 200 feet distant from the stump, and up to the point of breaking the tree was perfectly sound. From the tree saw-logs were cut of the following lengths and diameters: 1st, 14 feet long, 9 feet diameter; 2nd, 12 feet long, 8 feet diameter; 3rd, 12 feet long, 7 feet 7 inches diameter; 4th, 14 feet long, 7 feet 6 inches diameter; 5th, 16 feet long, 7 feet diameter; 6th, 16 feet long, 6 feet 10 inches diameter; 7th, 16 feet long, 6 feet 6 inches diameter; 8th, 16 feet long, 6 feet 4 inches diameter; 9th, 16 feet long, 6 feet 3 inches diameter; 10th, 18 feet long, 6 feet diameter; 11th, 12 feet long, 5 feet 10 inches diameter; 12th, 18 feet long, 5 feet 6 inches diameter. It will thus be seen that 180 feet of this remarkable tree was converted into saw-logs. As the length and diameter of each log is given, the reader can, at leisure, figure out the quantity of inch lumber the tree contains. If, instead of being cut into lumber, it had been worked up into 7-foot pickets, it would have afforded fencing material to inclose a good-sized ranch."

Can any of our mill men in the East furnish us with statistics exceeding those of the above-described "giant"?

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

ED. ARCHITECT: Will the charring of timber effectually prevent it from decaying?

W. A., Guerneville.

ANS.—If the timber is perfectly sound and well seasoned, the effect of charring will be to preserve it for an indefinite time. Should the wood be green, charring can only be expected to prevent infection, as decaying may begin at the center, and proceed, without ever appearing at the surface of the beam. This is the reason why so many fence posts that have been charred have failed to meet the expectations of those who put them in the ground.

BUSINESS MANAGER OF ARCHITECT: Will you please inform me how many feet of redwood is being shipped per month to the East? What part of the finish of the buildings is it being used for?

R. J. B.

ANS.—We will endeavor to obtain the number of feet that have been shipped in 1882, and will inform our readers in the December issue of this journal. The demand for California redwood is increasing very fast in eastern cities, especially so in New York. We confess that we would be sorry to see a large demand for this lumber east of the Rocky Mountains, as the immense drain that is now being made on our forests will in forty years from now almost decimate them of this really choice timber. It must be remembered that in each successive year there will be a much larger amount of lumber cut in order to meet the home demand; and from practical observation we do not think we have any too much timber in sight to meet the demands in the future for the use of the young folks that are now growing up around us.

Why do not some of our California inventors grapple with the problem of straw lumber. There is no State in the Union that presents so many advantages as California in regard to obtaining large quanties of the raw materials. If a ton of straw will make 1,000 feet of lumber, surely the plains of Colusa and Stanislaus can be relied upon to produce thousands of tons of straw, and therefore thousands of thousands feet of lumber. Who will be the first to move in the matter?

We believe the lumber is used principally for store finish and wainscoting, where it is desirable to have a contrast of light and dark woods.

BREAKAGE OF COLD-CHISELS.—The usual cause of chisels breaking is from overheating, too high temperature, and by striking the finishing blows on the edge. A chisel should not be finished in dressing it by hammering on the edges.

CALIFORNIA ARCHITECT: What is the difference per degree of heat between the expansion of cast and wrought iron?

ANS.—Cast-iron expands $\frac{1}{162000}$ of its length for one degree of heat; wrought-iron, $\frac{1}{143000}$.

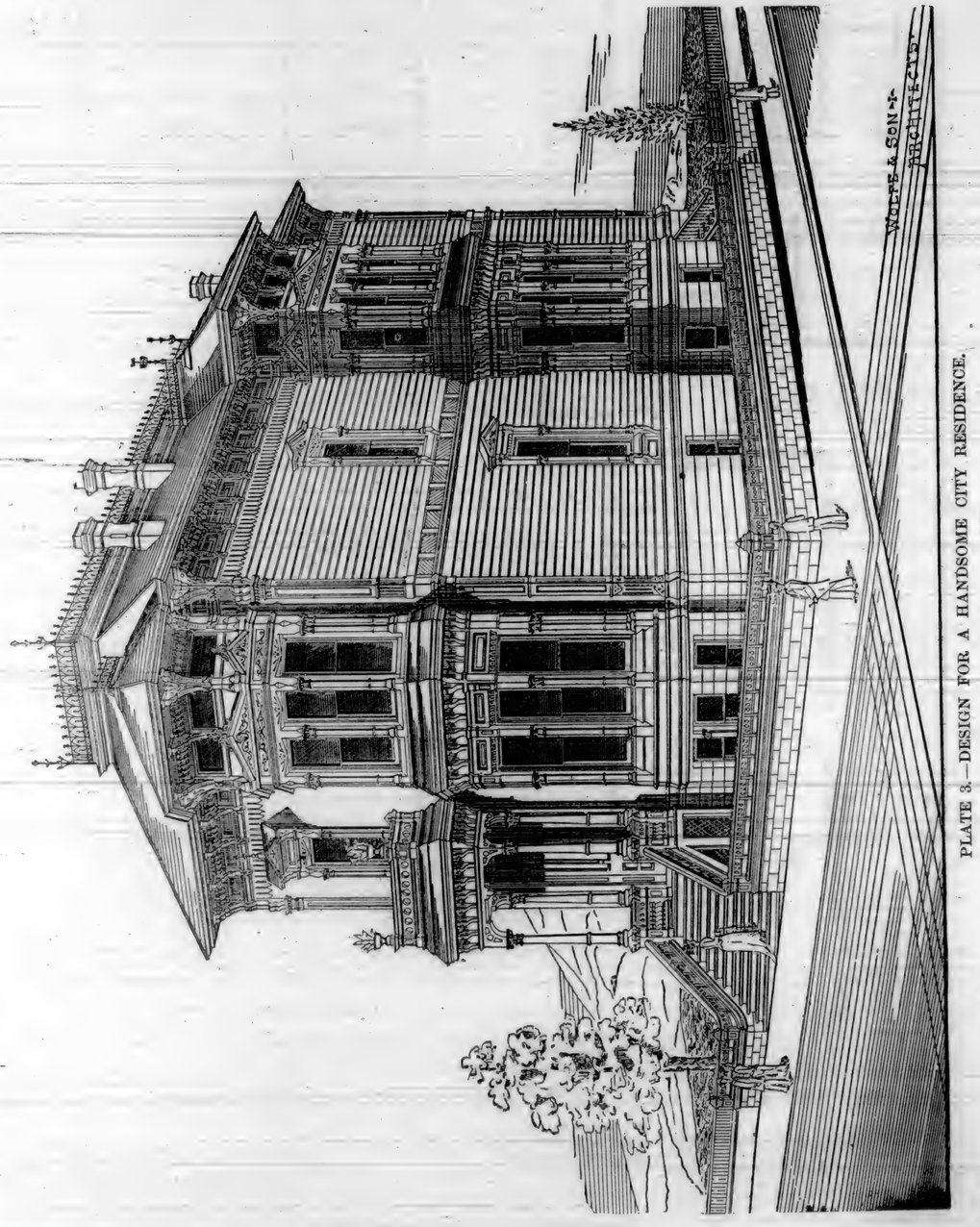


PLATE 3.—DESIGN FOR A HANDSOME CITY RESIDENCE.

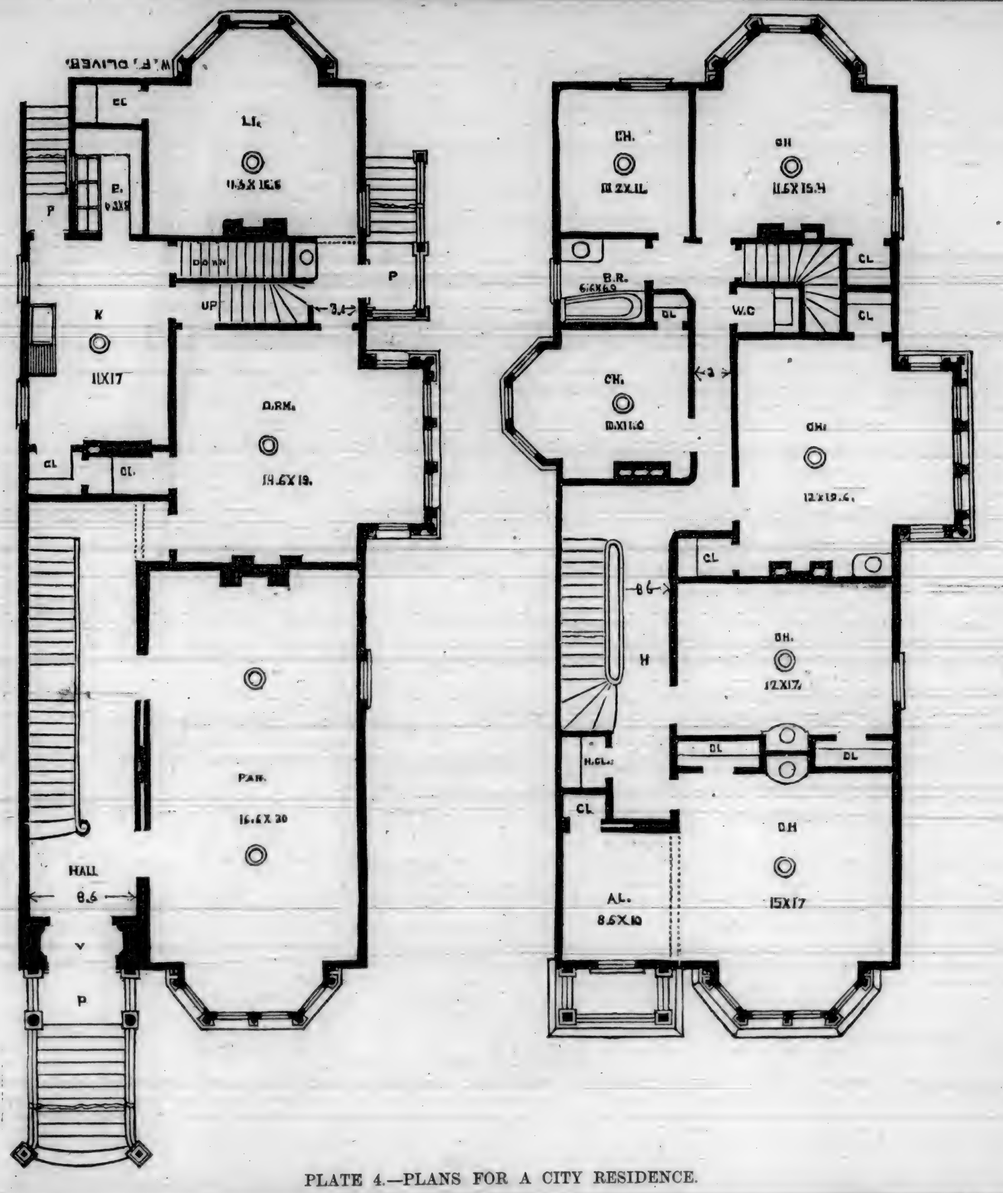


PLATE 4.—PLANS FOR A CITY RESIDENCE.

The Time to Form Clubs.

In our next issue we will give a list of papers with which we have formed business connections, and by which we can offer this journal, and any one of the really good papers published in the East, for a less sum than it will take to subscribe for them separately. We are also making arrangements by which we can give our subscribers a choice of the best architectural and mechanical books published, in connection with the "CALIFORNIA ARCHITECT," at a cost but little in excess of that of the books alone. Do not order any Eastern paper until you have either seen our December issue or written to us in regard to our terms.

☞ $5.50. ☜

We will send the "Science of Carpentry Made Easy" and the "California Architect and Building News" for one year, for the sum of $5.50.

Any one sending us 5 new subscribers to the "California Architect and Building News,' we will give one copy each of "American Cottage Homes" and "Model Homes."

☞ $4.25. ☜

We will send the "California Arhitect and Building News" for 1883, and one copy of "American Cottage Homes," for $4.25.

☞ $6.00. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Science of Carpentry made Easy," for $6.00.

Less Income from Poorly Planned Buildings.

Incompetency and lack of good judgment, and absence of right understanding of actual necessities, are often clearly manifest in the erection of buildings; and if a correct computation of the yearly losses to owners of buildings within the United States in rentals and income from their real estate improvements, resulting from inexcusable and unpardonable errors committed in the conception, maturing, and carrying out of the plans adopted, compared with what might have been accomplished at comparatively trifling advance, and in some cases actual less cost, could be reached, the total would assume proportions sufficient to build an entire city like that of San Francisco every year.

Of course, every man has a right to do as he pleases with his property, but when he does that which, to his neighbors and passing observers, appears unwise, unæsthetic, and practically less good than it might have been, his acts naturally become the subject of criticism; and he should not feel aggrieved even though rated by some one as a "stupid."

The "bump" of economy in many individuals is by far too largely developed; and, becoming a controlling influence upon the mind and nature of the person, leads to numerous errors. It seems to us, that if some men and women could but realize how ridiculous and sometimes contemptible they make themselves appear to others, and how much they compromise their own interests by the persistent application of a fancied economy—cheap—rule of action, i. e., asking, expecting, and requiring more for a stated consideration than is just and fair, they would resort to more reasonable and sensible methods, and accept the gilded rays if not the full splendor of the golden rule—"Do unto others as ye would have them do unto you." But this is next to impossible to some people; hence, in the matter of erecting buildings, the smaller elements of human nature assume control, and all that is done is tinctured if not overwhelmed by illiberality and unfairness—a disposition to obtain a dollar's worth in every connection for sixty cents, more or less, according to the degree of inequity actuating.

Consequently, the "cheapest architect" is hunted up: cheapest simply in the abstract use of the term, but in all essential respects often the most expensive by a thousand per cent. Yet the proffer of services at low rates enchants the seeker of "cheap" commodities; and the veriest knave or blockhead calling himself an architect often secures engagement against the better and far more competent man, who, honoring his profession, entertaining a due regard for its dignity, and recognizing its responsibilities, refuses to accept insufficient compensation for his services. The result that follows is twofold: the owner is deservedly financially injured, sometimes to a large amount, through the incompetency of his cheap architect to conceive or execute good, practical, and proper plans for the improvement contemplated; or, if not so, he is made to pay the full and proper commission of five per cent. or more in other ways, so that the cheap man finally laughs at the exacting client, and enjoys all the financial benefits—perhaps more than the rejected architect who demanded in the premises fair and right remuneration for his services.

No one enjoying fair business intelligence can, upon any right business hypothesis, presume for one moment that men who undertake obligations at less than compensating rates can afford, in justice to themselves, to be scrupulously correct in their transactions. The thing is absurd. And these men who, as architects, huckster their services at nominal prices, and in addition pay large percentages to solicitors, who hunt up, and in innumerable cases persecute, owners by persistent solicitations, cannot afford to respect the right, proper, and defensible rules of integrity and correct dealings. They must have money sufficient to meet the numerous contingencies; and, strange as it may appear, some who have uniformly undertaken architectural works, not only below the regular rates of charges established by the architectural societies the world over, but for less than actual cost of preparing plans, specifications, details, etc., have grown rich. This *fact* needs no comment; it carries its own explanation.

But this rule of economy is carried beyond the architect, and enters into every transaction connected with the operation in hand. The effort to secure cheapness in materials and workmanship of every class is persistent, and often accompanied with the absurd proposition of first-classedness, a something which, under the circumstances, is not possible, and the demand for it simply betrays the ignorance of the party demanding. But those extreme economists, generally being in themselves first-class misunderstanders of right and fair things, are easily humbugged into the belief that their cheaply obtained results are first-class, even though destitute of a single first-class quality or feature, and the delusion to them is as good and satisfying as would be the genuine article.

☞ $10.00. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Francke's Celebrated Work on Monuments," for $10.00. Every architect and marble-worker should have a copy of this work.

White Lead and Zinc.

The carbonates of lead is the purest form of white lead known to the trade, and it is therefore used by painters where great body or covering quality is desired. This form of lead, when ground pure in linseed oil, is not permanent; it eventually succumbs to the action of solar heat. It would last far longer if painters were to use a *coarse grade*, which would admit the oil between the particles, thus affording a clinch or bind for the oil, when the duration of both oil and lead would be extended. It is a great mistake to suppose that because acetic acid is used in corroding lead that it remains to act upon other substances; for the simple fact of its union with oxide of lead it is lost in the carbonates of white lead; and when levigated and ground it is a pure carbonate and not an acetate of lead. The grinding of white lead to a fine, impalpable powder has a great deal to do with its stability when compounded with oil and exposed to the weather. It will last longer when stained or colored with earthy mixtures; but when applied as a white paint to surfaces of sunny exposure, it will chalk in two or three years. At this stage its decay is rapid; and if not recoated it will be soon blown or washed away. The causes which tend to the rapid decay of the carbonate of lead and oil are solely due to their constituent gases of which they are composed. The oil is composed of carbon, hydrogen, and oxygen, and when applied as above in their coatings on exteriors of buildings, the oil in drying absorbs oxygen from the air, and the white compound becomes hard and firm to the touch. The affinity of the oxygen in the oil to that in the air is fatal to the solidity of the mixture or paint, though the oil by it becomes a solid. The action is not like that of the volatile oils; but instead, it absorbs or takes from the atmosphere large volumes of oxygen, and by it disengages the carbon and hydrogen, leaving a disintegrated mass of lead and resin. This tendency of seed oils is further demonstrated by the spontaneous combustion of various substances when besmeared with these oils. Therefore, if there is no other protector present, pure white lead is sure to be left to the mercy of the elements. The use of raw or boiled linseed oil as the vehicle to bind the lead makes but a very little difference in the lasting qualities; but the harder the oil dries, the more durable the lead will be. The process of oxidizing the lead cannot be improved to any extent or advantage to the painter, and as to corroders, the mode now used is about the same as that of the old Dutch process. Climatic influences hasten or retards the durability of white lead. In semi-tropical countries the oil disintegrates so rapidly that white lead will not be serviceable more than half the time that prevails in a more temperate zone. The hardness of zinc has induced many painters, as well as some manufacturers, to incorporate the zinc with white lead, in order to have an article which will extend the durability of the carbonate of lead. There is as yet no formula by which the proportions can be agreed upon; for some think a mixture compounded with one-half zinc, and others that a one-third proportion, would be sufficient to harden without affecting the body of the lead. To this latter view we are inclined to admit it as a corrective in sunny exposures. In such cases, a small proportion of blanc de zinc, thoroughly stirred into a mixture of pure white lead, will no doubt change the nature of its chemistry sufficiently to give to the compound a more lasting quality. J. E. W. C.

Indiana Walnut in 1834.

In the course of a recent conversation concerning Indiana timber in general and walnut in particular, with one of our pioneer settlers who came to this country in 1834, says the American *Wood-worker*, the old gentleman remarked: "The walnut timber used to be a great deal of bother to us in those days. In clearing our lands we usually felled the trees, then rolled them into log-heaps and burned them. Walnut was the meanest wood of all, as it was almost impossible to burn it. I knew a neighbor to spend the best part of some three weeks trying to reduce an immense walnut tree to ashes. Some years later there was a saw-mill erected a few miles away, and the owner bought a great deal of timber, some of which he sawed up, but most of it he shipped in the log to Cincinnati. I had sold him considerable timber, when one day he came to me and asked what I would take for a large walnut tree that had fallen in a swamp a year or two before. I told him he might have it for nothing if he would take it out of the way. He told me afterwards that he had made quite a little sum out of it; but had I that tree now I could sell it for $400. Many and many a fine walnut tree did we cut for a coon. We had no particular use for walnut then. It was in the way, and we took the quickest and best methods of getting rid of it. Sometimes we made rails of it, but it was frequently so curled and twisted that it was impossible to split it. We would probably have ridiculed the idea then that these curled and twisted logs might some day have made us wealthy, or that a big walnut knot would ever have any value."

The smallest circular saws in successful use are those used in cutting the center slit in steel pens. These saws are no larger than a nickel piece, and not thicker than common paper, and yet they revolve about 4,000 revolutions per minute. The rigidity, notwithstanding their thinness, is due to this high rate of velocity.

BUILDER AND WOOD-WORKER, CARPENTRY AND BUILDING, BUILDING.

Either of these journals, in connection with the CALIFORNIA ARCHITECT AND BUILDING NEWS, will be sent to one address for $2.50 per year.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the Chapter was held November 3rd, 1882. A large number of members was present. Vice-President Wm. Curlett presided. Minutes of preceding meeting were read and approved.

E. J. Molera and Joseph Gosling were elected members of the Chapter. Proposition of W. Ferris to become a member as Draughtsman was received and referred to a committee.

Committee on Articled Students reported progress. It is the intention of the committee to send communications directly to the practicing architects of this district, stating the objects and benefits to be derived from following the plans proposed, and thus secure a full list of the Articled Students in the profession.

The trustees were instructed to take the necessary steps to have this Chapter incorporated under the laws of the State of California.

The Chapter then had the pleasure of listening to a very able and instructive lecture by John Gash, Esq. His subject was "THE TRIANGLE." Mr. G. handled the subject in a masterly manner, and the lecture throughout showed evidence of much careful study on his part. After the lecture, the speaker illustrated his ideas upon the blackboard. A vote of thanks was tendered Mr. Gash for his able effort. The full speech will be found in another part of this issue.

James E. Wolfe made a few remarks upon the subject of "DRY ROT IN TIMBER," and promised the Chapter, in the course of three months, to deliver a lecture either upon that or some kindred subject.

Responsibility of Architects.

A rather singular case is considered in the article on Jurisprudence of Building in the last number of *La Semaine des Constructeurs*, which contains so exact a statement of the extent of the responsibility of architects as to be worth a brief mention. It seems that a certain architect was employed by a proprietor residing at a distance to build a villa. The first estimate of the cost amounted to twenty-two thousand francs; but this was revised and increased to twenty-five thousand. The actual expense of the building, including additions of fencing and shed, was forty-two thousand francs. The architect brought in a bill for commission on the whole forty-two thousand francs, which the owner refused to pay, offering, instead, the usual percentage on the estimated cost of twenty-five thousand. This the architect declined to accept, and claimed his whole bill. The proprietor then, to justify himself for refusing payment, represented that the architect had injured him in various ways. In the first place, he had spent on the buildings nearly twice his original estimate; in the second place, he had failed to exercise proper care: in ordering double sashes and blinds in places where they were unnecessary; in planning corridors in the interior of the house only twenty-three inches wide, so that they could not be used for passage-ways and needed to be enlarged; and in allowing a beam to be built into a chimney, under a fireplace, which could not be used in consequence. In view of these things, the proprietor demanded that the architect should pay the lost of enlarging the corridors, damages for the loss of the use of the fireplace, and reimbursement of the cost of the unnecessary outside sashes and blinds; besides the expense of modifying a lighting-rod, which was asserted to have been improperly placed. The correspondent who asks the opinion of *La Semaine*, and who seems to be an impartial observer of the dispute, adds that the assertions of the proprietor in regard to matters of fact were correct; but that he had inhabited the house for two years without making any complaint, and that it was not until the architect had sent in his bill that his sufferings seemed to begin.

To this statement of the case *La Semaine* makes reply, that in general an architect is at fault if he omits to supervise the works under his charge with due care; if he allows the building to be erected on a bad or yielding soil; if he permits the use of improper materials; if his plans indicate weak or vicious construction; and if he neglects to require the observance of the public laws and regulations, as well as of any conditions or restrictions concerning which his employer has given him notice. Whether the fact that the cost of the construction exceeded the estimate should be regarded as a fault on the part of the architect depends, says *La Semaine*, upon circumstances. If the architect, unknown to the proprietor and without his authority, should bring him into expense, the latter would naturally refuse to pay the cost of the extra work, and the question of responsibility should then be decided; but as the architect has unquestioned authority to order the execution of extra works asked for by the proprietor or arranged with his consent, the fact of its having been paid for without remonstrance was evidence that the additional work in the present instance was carried out by the architect with at least the assent of his client, and in this case he was entitled to commission on the whole cost. For vicious constructions required by the drawings or permitted by the architects, he was certainly responsible, and both he and the contractor were jointly liable for damage caused by building in the beam under the fireplace; but in regard to the sashes and shutters there might be a question as to their superfluous character, and the twenty-three-inch corridors, although unusual, could hardly be classed as constituting a vicious construction, particularly as the proprietor did not notice the inconvenience of them until he had lived in the house for two years.—*The American Architect.*

☞ $5.50. ☜

We will send the "Science of Carpentry Made Easy" and the "California Architect and Building News" for one year, for the sum of $5.50.

A Builder's Foreman.

To begin with, a foreman must be a skillful workman, or it will manifestly be impossible for him to direct those who are placed under his control and guidance. Indeed, unless a foreman be capable of taking his place among a number of workmen, and by quickness of perception, carefulness, and the exhibition of superior manipulative skill, proving to them that he has a perfect mastery in these directions, his authority over them will be minimized. Workmen are appreciative in the highest degree of real talent and knowledge in their leaders; but so, also, they are not slow in exhibiting their contempt for those who merely assume such characteristics. When a foreman has demonstrated his capabilities for laying out work, and in arranging the various processes for completing it, he has done much towards insuring successful results, and he will gain the respect alike of master and man. Further, a good foreman should become thoroughly conversant with the peculiarities of construction and the action of machines and machine tools, of which so many varieties exist, and which are of infinite importance as to economy of time and money. Without such accurate knowledge he could certainly not estimate, with any degree of exactitude, the amount of duty to be obtained from the use of such appliances, nor the approximate cost of the work to be done by them.

In conducting and governing properly the multifarious duties of the workshop or the factory, a ready method of delineating forms and of thus conveying to others through the medium of the eye his own ideas of pieces of mechanism or of the details of machinery, is a necessary accomplishment for a foreman. By such means he will readily instruct his men, and that in a manner which no mere verbal explanation would make intelligible. Pencil and chalk discreetly used by the foreman thus become one of the most forcible and plain teachers of workmen.

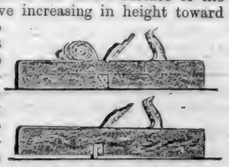
The previous training and experience of the latter prepare them to understand sketches; and thus he who can best produce the latter economizes the time of all concerned, and saves his employers from needless expense.

The power of making diagrams with precision and rapidity is, in fact, an invaluable acquisition for the leader of a staff of mechanics. It is a qualification which, like many others requisite for making a really efficient foreman, can only be gained by constant practice; and we most earnestly advise those young workmen who aspire (as all should do) to come to the front and "take the lead," to miss no opportunity for acquiring it. A fair knowledge of geometry and arithemetic and of the nature of the materials employed in works of construction is simply indispensable. The foreman, too, must be possessed of prompt energy and of a readiness of expedient so as to enable him to grapple successfully with emergencies and overcome practical difficulties that may crop up unexpectedly, as subsidences of foundations, break-downs of machinery, etc.

A duly qualified foreman will find no difficulty in deciding as to the length of time which should be occupied over any detail placed for completion in the hands of a workman under him, for he knows how long it would take him to do it himself. It would be easy to extend our remarks upon the practical essentials of good foremanship, but it seems scarcely desirable to do so; and therefore, with a word or two as to moral requirements, we will conclude. Among these last stand out prominently a love of truth and a total absence of duplicity. Let it be generally known that a foreman is above and beyond acting or speaking otherwise than conscientiously, and his moral power will be great indeed. Faith will then be placed in his judgment; and while working people will, as a rule, repay him with respect and ready obedience, employers will as certainly repose in him the utmost confidence.

Improved Bench Plane.

The improvement consists in a stirrip pivoted to the sides of the plane in such a manner that the cross piece of the stirrup passes through a transverse groove in the under surface of the plane, this groove increasing in height toward the rear of the plane, so that when the plane is drawn backward it will be slightly raised by this stirrup, so that the cutting-edge of the plane iron cannot slide on the board being planed, the object being to prevent dulling the cutting-edge of a plane iron by the backward movements of the plane. The upper figure of the engraving shows the position of the stirrip while the plane is being moved forward, and the lower figure shows the plane as lifted by the stirrip during its backward movement. This invention was recently patented by Mr. Geo. F. Sawyer, of Livingston, Tex.



☞ $3.50. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Useful Details," for $3.50.

Our Illustrations.

Plates 1 and 2 are fully explained under our article on the Steel Square and its uses.

Plates 3 and 4 are the plans and elevation of a handsome city residence. The plan is well worth study. There is no waste room in the house, every inch being utilized. The house can be built on a narrow lot, and therefore explains why the space was so economized. The cost can be made to vary so much that we will merely say, by leaving off the basement, it could be built for from $7,000 to $10,000. With the plan as shown, $3,000 added to the latter figure will be the cost in San Francisco.

Plate 5 is the plan and elevations of a commodious suburban residence. It can be built for about $7,000. The cut was made by the Mechanical Co., of New York.

Franke's Monuments and Headstones.

This work consists of 40 folio plates and contains 76 designs, giving elevations, plans, and accurately drawn details of moldings and ornamental parts. The geometrical elevations and plans are drawn to scale, and perspective views are introduced to show the general effect when executed and in place. Substantially and elegantly bound in half morocco. Price $9 per copy (reduced from $12), postage paid.

We can furnish any book or periodical on Architecture, Building, and Mechanics, published in this or any other country. In fact, we can furnish any kind of book published, on receipt of publisher's price.

Science of Carpentry.

A work that every mechanic should have. It is designed to make the science and art of carpentry clear, and comparatively easy to all who require information on the subject. Sent post-paid to any address upon receipt of $5.00.

Indexed Atlas of the World.

But one copy remains of this magnificent work. They are not for sale in any bookstore, and it is but seldom that a copy can be had. This last copy is bound in half-morocco, and will be sent post-paid upon receipt of the price, $35.

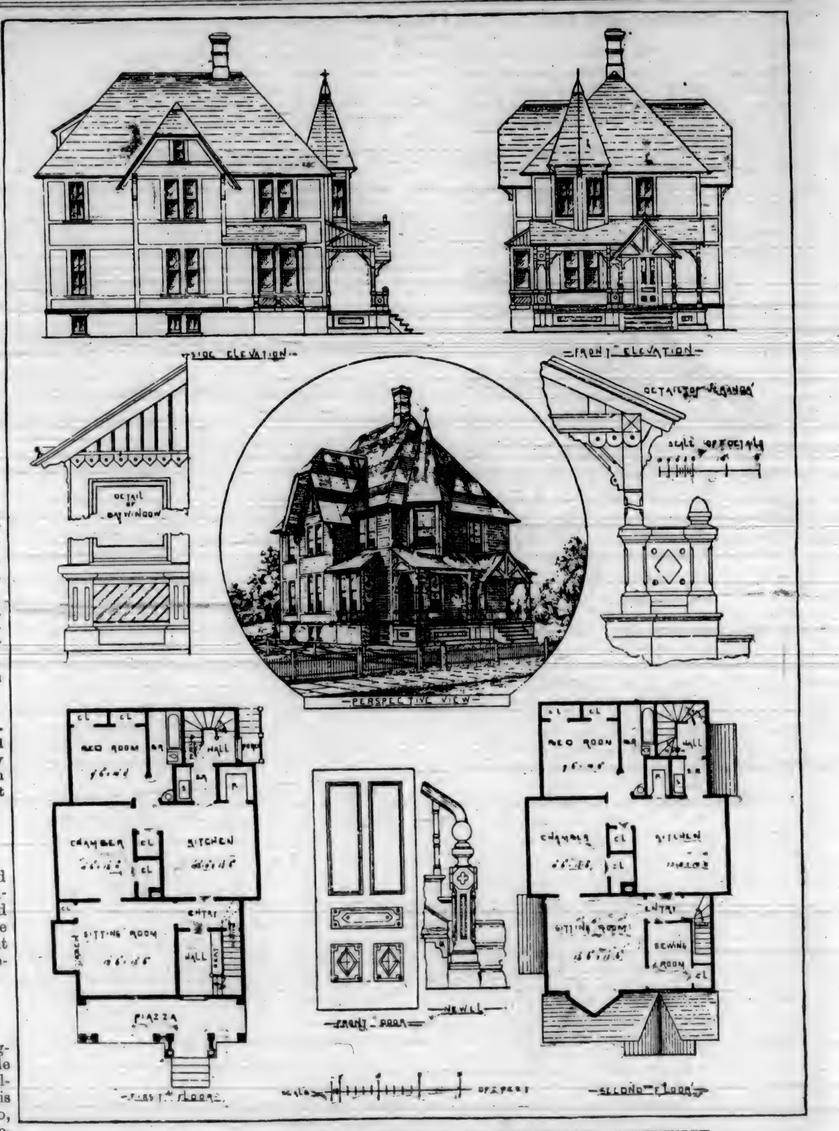


PLATE 5.—PLANS AND ELEVATIONS OF SUBURBAN RESIDENCE.

IVES' PATENT DOOR BOLTS.

Sold by all Hardware Dealers.

(APPLIED WHOLLY BY BORING.)

HOBART B. IVES, NEW HAVEN, CONN.

Sole Manufacturer and Patentee.

As we predicted a year ago, the introduction of the above celebrated bolts is driving all the poorer quality entirely out of market; and wherever one goes on the Pacific Coast, he will find the Ives patent to be *the* popular safeguard against the intrusion of burglars. They are for sale by all of our principal hardware dealers.

The Barrel.

A gentleman who has been reading upon the subject says that the invention of the barrel, made of strips of wood, and rendered tight and strong by hoops, finds in history no notice of origin or inventor. Pliny attributes it to the Gauls of the Po, in Lombardy. There is, however, good reason to believe that the barrel was in use before the Gauls reached Italy, perhaps before their existence as a people. In one of the inscriptions copied by Wilkinson from Egyptian monuments may be seen two slaves emptying grain from a wooden-hooped vessel, while a scribe keeps tally and a sweeper stands by to sweep up the kernels. Close by, a poor victim is undergoing the bastinado, for a short measure or petty theft. The measure is barrel-shaped, precisely like the *kaye* of modern Egypt, and would apparently hold about a peck. The age of this inscription is not indicated.

First-Class Journals.

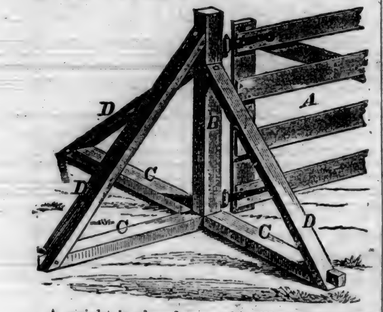
BUILDER AND WOOD-WORKER, CARPENTRY AND BUILDING, BUILDING

We will send either one of the above journals, and the CALIFORNIA ARCHITECT AND BUILDING NEWS to one address for one year, for $2.50. Send in your orders immediately.

Improved Gate Post.

Mr. Wm. H. Taylor, of St. Louis, Mo., has lately received letters patent on an improved gate post, which we illustrate in the accompanying cut. The design of the invention is to have supports so constructed that they will prevent all sagging of the gate.

The post B consists of a triangular lever, having a base or sill piece C, and an inclined piece D. The sill piece rests upon the ground, and its inner end abuts against the post. One end of the inclined piece is secured to the post at or near its top, and its other end is secured to the sill piece at or near its outer end.



A weight is placed upon the sill piece between the joint of the two members and the post. In prairie countries the weight may consist of a box filled with dirt. This device may by applied to old posts already in the ground, or to a post when the gate is first swung.

The inclined piece may be secured to the post and to the sill piece in any desired way. One of these supports may be applied to each of the three sides of the post, the gate being swung to the other side, and thus support the post in all directions.

Expert Judges in Competitions.

A correspondent asks us whether any means can be invented "to teach committes who have public buildings in charge that a gratuitous competition without expert judges will not bring them a single design worthy of execution." To this we can reply at once that there is a very effectual means for accomplishing the desired end, and that is, the refusal of reputable architects to enter such competitions. As soon as it is understood here, as it is in other civilized countries, that no architect will respond to any invitation to compete except on the terms recognized by the profession—that the award shall be publicly made by experts of reputation, and that the execution of the building, or other structure, at the usual commission, shall be confided to the winner of the competition—then, and not till then, shall we see the last of the ridiculous, unfair, and disgraceful scrambles which are maintained by the folly and at the expense of those architects, particularly the younger ones, who imagine that they are to obtain some private advantage by degrading themselves and betraying the interests of the profession, for the benefit of persons who, to say the least, will not be rendered more scrupulous in treating them by witnessing their own disloyalty to their fellows. There is in this country plenty of work for all the architects in it to do, at a fair remuneration. No one else can do it, so that they are sure of the employment, and if they choose to do it for less than it is worth, they have only themselves to thank. A beginning has already been made in St. Louis, by an agreement of a large number of architects to have nothing to do with competitions where certain proper conditions—the appointment of expert judges among them—are not complied with. If a similar understanding could be arrived at between the architects of other places, we should soon see a great change in the conduct of competitions, which, instead of artifices for deluding, cheapening, and degrading the profession, would become the recognized and honorable means for introducing the younger architects to lucrative practice, while the established and busy ones, in return for the loyalty of their juniors, would gladly lend their influence in sustaining these against the attempts of astute selfishness to take advantage of their youthful hopefulness and lack of caution.—*American Architect.*

$3.50.

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Useful Details," for $3.50.

Visiting Shops and Learning New Wrinkles.

The worst-conducted and most unprofitable machine-shops are those whose proprietors are chronically averse to adopting any ideas originated in other establishments than their own. In these days of rapid mechanical progress, it is only a question of time as to the rotting out or failure of such concerns. A knowledge of new ideas and improved methods of doing shop-work can usually be obtained, if sought for in the proper direction, but that knowledge is not likely to be pressed upon shop-owners by those originating the improvements, except when they are secured by patents or otherwise, as private property. While the most notable of these new devices and processes are set forth publicly by the technical press, there are a great many valuable ones that are, for obvious reasons, not fully explained (only attention called to them) in print, and that are free to be adopted by any one, without royalty or any other expense than that of putting them into use. To lay hold of these kinks and devices, it is only necessary to visit shops where they are originated or applied. The usual excuse of "no time to get away" ought not to be strong enough to prevent foremen, superintendents, and proprietors from making occasional journeys to other machine-shops, either near by or some hundreds of miles distant, observing how they do work, and comparing general methods and even smaller details.

Hardly a machine-shop in the land could fail to be benefited by the introduction of more or less of the devices brought out in other shops. The best and most successful shops are those that realize this fact and act upon it. They search for new methods for facilitating good work already used elsewhere, as well as originate such methods themselves. A foreman or superintendent could profitably pack his gripsack, and spend a week in visiting shops every six months, if the knowledge of improved processes brought back each time should enable him to turn out work faster and better than before.

As a rule, machine-shop proprietors are ready and willing to afford visitors every opportunity to see what is going on in their establishments. It is worthy of note that those whose productions have the widest and best reputation are most courteous and obliging in their treatment of visitors, including all who come to acquire new ideas to put into practical use. True, they often furnish their competitors gratis with many useful plans and methods of manufacture, but the general good-will and mechanical reputation thereby created more than repays them for the original ideas so freely imparted. In some of the most highly esteemed machinery establishments in this country, whose names are regarded as synonymous with excellence of production, especial pains are taken to escort visitors through the various rooms and departments, and to explain every machine or process of doing work with which the visitor wishes to become acquainted. The time thus taken from work and tendered free to visitors is worth, in a large shop, considerable money every year; but, valuable as it is, the proprietors find it greatly to their pecuniary interest to keep up the custom.

By so doing, a few of them have acquired not only an excellent reputation in every part of our own country, but, as well, in all enlightened countries abroad, the money value of which it would be hard to estimate.

Occasionally a machine-shop has secrets to guard and will not admit visitors, but their number is few, and the secrets almost always leak out.

This is a good season to make a tour among machine-shops, with a note-book and pencil, gathering "points" for practical application.—*American Machinist.*

Usefulness of Trade Journals.

The encouragement of trade journals augurs well for the advancement of manufactures. No matter how skilled may be a workman, his fellow-craftsmen possess secrets of which he is ignorant, and which can, as a rule, only receive their proper dissemination by being published in the specialty or technical papers that are doing so much for the elevation of the American artisans and their numerous callings, in which the public is so intensely interested. Every mechanic who prides himself in his particular line ought to subscribe regularly to a trade journal—one representing most closely the branch of work in which he is engaged. This should be read closely and carefully, and the hints and suggestions thrown out must be noted with the view of giving them practical tests. By pursuing this commendable course, a greater degree of technical skill is acquired at a trifling expense of time and a small outlay of money. Then, too, a knowledge is obtained as to the better class of new text-books appearing from time to time bearing on the exact sciences and applied mechanics. Beside all this, the general news of particular localities as to the progress thereof is an especial feature characterizing these papers, of which sight cannot be lost without detriment to the loser. To be well posted is as much stock in trade with a mechanic as to a merchant or professional man. The trade journal is fast becoming, under wise and careful guidance, as much of a necessity as the daily paper.—*Western Industrial Journal.*

Keep the Cellar Clean.

A great deal of sickness families suffer could be easily traced to the cellar. The cellar not unusually opens into the kitchen; the kitchen is heated and the cellar is not. Following natural laws, the colder air of the cellar will rush to take the place of the warmer and therefore lighter air of the kitchen. This would be well enough if the cellar air was pure, but often it is not; partly decayed vegetables may be there, or rotten wood, etc. The present time is opportune for a thorough cleansing of the cellar. A day should be taken to throw out and carry away all dirt, rotten wood, decayed vegetables, and other accumulations that have gathered there. Brush down the cobwebs, and with a bucket of lime give the walls and ceiling a good coat of whitewash. If a whitewash brush is not at hand, take an old broom that the good wife has worn out, and spread the whitewash on thick and strong. It will sweeten up the air in the cellar, the parlor, and the bedrooms, and it may save the family from the afflictions of fevers, diphtheria, and doctors.—*American Artisan.*

Scarcity of Back Numbers.

Two months ago we put into execution a plan that we had been maturing for some time; viz., the issuing of a mammoth supplement to the CALIFORNIA ARCHITECT AND BUILDING NEWS. Twenty-five thousand have been distributed all over the Pacific Coast. Since the issuing of the supplement we have been more than pleased with the goodly number of new subscriptions that have poured in upon us, the result flowing from a judicious distribution of the mammoth edition of our supplement.

We were hardly prepared, however, for the large demand made upon us for back numbers of the CALIFORNIA ARCHITECT. We would say in all earnestness to those who wish to secure a complete series of this journal that they will have to send in their orders in a very short time, or else we will be unable to fill them. But few copies are left of several dates, notably that of September, 1881. In that number we gave the most complete HISTORY OF THE STEEL SQUARE that has yet been published. Nearly all of our leading journals copied the article, either in full or gave copious extracts from it. This fact alone shows that the time necessary to compose the article was well spent, and of substantial benefit to thousands of readers.

Forward your orders early. Thirty-two copies are all that remains of two different months, and twenty-one copies of the date referred to.

We have but very few bound volumes left. When these are disposed of it will be impossible for us to fill any more orders. We will send, post-paid, to any part of the United States a bound volume of either 1880 or 1881 for $2.50.

Its Influence for Good.

We do not desire to arrogate to ourselves any more credit than is our rightful due, in connection with the publication of this journal. But it must be clearly evident to every intelligent observer who is familiar with the conditions existing in this city, in connection with building, mechanical, and sanitary matters, prior to and during the first year of this journal's existence, and the very much improved state of affairs at the present time prevailing in the same connection, that a great change has by some means been brought about, better general understandings established, and a common desire created to correct abuses which had grown upon and insinuated themselves into every branch of the building interests. The architectural profession and the mechanical branches have never appeared to better advantage than at the present time, although there are still numerous improvements necessary to complete a reasonably perfected order of things, which we trust will, at least in part, be brought about in time through the columns of this journal.

The reason for this is self-evident. Prior to 1879, the year of its first issue, there had been no publication issued upon this coast in the architectural and building interests; and both the professional and mechanical interests were without any influence calculated to correct and hold in check the bad, or to encourage the better inclined in efforts to build up right and honorable methods of procedure; consequently a business demoralization ensued, and irregularities were as often the rule as the exception.

What we claim is this: that within the past three years, within which time this journal has gained its present enviable position as a representative publication, the members of the profession in this city and throughout the entire coast have been drawn more closely together, and relationships and friendships established which had never before existed; and hundreds of contractors in the various branches have acknowledged the goodly influence of our humble efforts.

We desire to be prudent and moderate in our claims, and make them a matter of comment at the present time with no more than prudently selfish motives; for neither our own nor the acts of any other human beings are entirely free from a degree of selnshness; but so long as that motive is controlled by fair and right considerations of the interests of others, it is legitimate and commendable. If, then, we have accomplished *some* good in the past, and rendered ourselves worthy of confidence, why should we not receive that undivided and hearty support which will enable us to accomplish still greater good, and secures to us the available means which will strengthen our hands and embolden our hearts in the work thus far so successfully prosecuted?

It should be borne in mind that whatever is done to create and sustain healthful influences of any character works to the benefit of those who lend the helping hand. And if, by our untiring exertions, we have rendered ourselves worthy of the approval thus far received, and our purse is replenished through our labors, our recompense is well earned and fully due; and none should do otherwise than congratulate us upon the success of the enterprise which returns us a little recompense in coin, and yields so many benefits to our kind readers.

☞ $4.25. ☜

We will send the "California Architect and Building News" for 1883, and one copy of American Cottage Homes," for $4.25.

To Build a Chimney that will not Smoke.

The chief point is to make the throat not less than four inches broad and twelve long; then the chimney should be abruptly enlarged so as to double the size, and so continued for one foot or more; then it may be gradually tapered off, as desired. But the inside of the chimney, throughout its whole length to the top, should be plastered very smooth with good mortar, which will harden with age. The area of a chimney should be at least one-half a square foot, and no flues less than sixty square inches. The best shape for a chimney is circular, or many-sided, as giving less friction (brick is the best material, as it is a non-conductor), and the higher above the roof the better.

Whiffs of Sewer-Gas.

A good deal has been said at various times about the terrible effects which may be expected to follow a whiff of offensive gas inhaled in passing a sewer grating in the open street. There are no facts known to medicine which justify the belief that such a whiff would have any effect at all. If stinks could kill, the inhabitants of London would speedily undergo a serious diminution of numbers, and many foreign cities would be left as desolate as the ruins of Palmyra. The high probabilty is that those sewer-gases which are the most offensive to the nose are the least likely to be deleterious, if *only on account* of the haste *which is made to escape from them, and of the impossibility of their presence being unperceived.* That they should be injurious to passers-by, except to the extent of producing nausea or disgust in some delicate person, seems inconceivable, especially when it is considered how largely and how rapidly they became diluted with air as they escape and are thus exposed to the chemical influence of the great purifier, oxygen. A far more subtle enemy to health, whether at home or at the seaside, is to be found in the oftentimes cherished presence of what may be comprehensively called household dirt. The dirt of an ordinary house, the dirt which may be wiped from the walls, swept off the furniture, and beaten out of the carpets, would be sufficient, if it were powdered in the form of dust over the patients in the surgical wards of a great hospital, to bring all their wounds into a condition which would jeopardize life. It cannot be supposed that such dirt is innocuous when it is breathed or swallowed, and it certainly possesses the property of retaining for long periods the contagious matter given off by various diseases.

Grimshaw on Saws.

A dear, good old friend, clothed in bright, new garments, has found his way to our desk. While engaged in answering our many correspondents, the postman gently deposited a neatly wrapped book on our mass of correspondence, and we dropped our letters in order to give friend Grimshaw's work a true California welcome. Robert Grimshaw has done nobly in producing such a work; and Claxton & Co. of Philadelphia deserve well-merited praise for the remarkably neat and clear style in which they have gotten up this book. It must have taken years of close study and inquiry to enable one to produce such a work as "Grimshaw on Saws." In it are given details of the manufacture of every kind of saws known to the trade; the proper methods of filing, setting, swaging, gumming, etc.; the care and uses of saws; tables of gauges; capacities of saw-mills; lists of saw patents, and other valuable information. The work contains 280 pages, and is illustrated by 354 cuts. The latter are far superior to those of any other work of a similar character published. We will take pleasure in showing this work to any of our patrons. The price of the book is $4.00. We will send a copy to any address upon receipt of the price. Every mechanic and millman on the coast should have one in his library.

Curiosity of Tree Growth.

An interesting observation on tree rings is recorded by Prof. Bachelart in *La Nature.* During a visit to the ruins of Palenque, Mexico, in 1859, M. Charnay caused all the trees that hid the façade of one of the pyramids of the place to be cut down. On a second visit in 1880, he cut the trees that had grown since 1859, and he remarked that all of them had a number of concentric circles greatly superior to their age. The oldest could only have been 22 years of age, but on a section of one of them he counted 250 circles. A shrub 18 months old at most, had 18 concentric circles. M. Charnay found the case repeated in every species, and in trees of all sizes. He concluded that in a hot and moist climate, where nature is never at rest, it may produce, not one circle a year, but one a month. The age of a monument has often been calculated from that of trees that have grown on its ruins. For Palenque, M. Larainzar calculated 1,700 years, having counted 1,700 rings in a tree. M. Charnay's observation requires the number to be cut down to 150 or 200 years, making a considerable difference, a matter of 1,500 years. Prof. Bachelart asks whether M. Charnay took account of certain colored rings which some tropical trees present in cross section, and which are to be distinguished from the annual circles.

BUILDER AND WOOD-WORKER, CARPENTRY AND BUILDING, BUILDING.

Either of these journals, in connection with the CALIFORNIA ARCHITECT AND BUILDING NEWS, will be sent to one address for $2.50 per year.

Give the Boys a Chance.

How many boys who, having chosen a trade and entered into their apprenticeship, have been doomed to remain inferior workman, because of being denied a fair opportunity of developing the best that was in them, would be hard to estimate. The young apprentice, if he is satisfied with the trade he has chosen, and has ambition to equal if not excel some of his fellow-apprentices, will naturally look for and expect to receive encouragement from some source. He looks up to the older apprentice, to the journeyman, to the superintendent, or to his employer for advice, and in most instances receives a cold reply to his inquiries. The best boys are generally the timid ones; the forward boy, in many instances, not being treated as kindly as the boy who seems to lack self-esteem. There is always a "spark of human kindness" extended to those who seem most dependent on others. And in no place should this generous feeling be so liberally shown as in the machine-shop, where the names of the tools and the nature and perplexing variety of the work to be done would puzzle the mind of a timid boy. Therefore, those having control of either men or boys should use civil and polite language in giving directions, keeping in mind the fact that, should the head get impatient and ill-tempered, every member will be affected in like manner. A boy should receive every encouragement and advice until he has sufficient self-reliance to depend on his own ability to do a job unaided; every chance should be given him to learn all that is requisite to make him a thorough mechanic, as it is as much injury to the reputation of a shop to turn out an inferior workman (a chunker) as it it to turn out an inferior and defective engine or tool. The employer or foreman should not be always watching the apprentice in hopes of detecting him wasting either time or material; for if a boy has an idea in his head which he desires to perfect—whether it be in the shape of a pair of legs made into calipers, a trysquare, in the "truth" of which he has implicit reliance, an accenter punch, hammer or tool, or, maybe, a valuable shop hint that had escaped your sight—you can rely upon it he will find (not steal) both time and material to do the job to his liking. He is boss of that job, and you may depend upon it.

Thomas F. Hagerty, in the *American Machinist*, says, relative to the last year of his apprenticeship: "The practice at that time was to employ many apprentices and very few journeymen. One of the partners of the firm generally acted as foreman—the reverse of this is the practice of the present day. A task of so many pieces was set before each boy or man as a day's work; all work over that number was paid for by the piece. The tools in use at the time were of the most inferior kind, and each hand had to keep his own lathe and bench tools in order in his own time. Any tool which could be devised to aid in performing the task in less time was eagerly sought for. One part of the work occupied two hours' time every day, which with the proper tool, specially designed for the purpose, could have been done better and with more uniformity in five minutes. I conceived the idea of inventing a tool to do this job, but fearing to receive the usual brutal rebuff from the boss, I set to work to perform the task in my own time. I devoted my spare hours at night to the drawing, and half the dinner-hour every day to the pattern, until it was finished. I had castings made, and the parts finished and ready to put together and try on the first opportunity I could get. The boss came 'nosing around' the boys' bench drawers, and in mine he found the prospective device, which would have given him a monopoly of one branch of his business had not his own meanness prevented it. His discovery embraced a frame and a few small shafts and screws, two little gooved wheels, and a bifurcated lever and handle. I am charitable enough to believe that he supposed that it was some kind of a toy I was making at the expense of his time and material; but without waiting for an explanations, he began to curse and fret, and finally broke up my device with a hammer, and threw the parts into the scrap heap. I had no redress left me, as to attempt a remonstrance with him would have led to fisticuffs; therefore I had to grin and bear it. I need hardly say that when my apprenticeship time expired I left the shop, and that a rival shop received the benefit of that and many other inventions, which enabled them to manufacture and sell their goods more cheaply than before. Several patents were issued years afterwards to other parties for the application of the principles embodied in my device, for other purposes. This is one of many instances which I could relate where the first efforts of the apprentice to bring out and apply his individual talent was checked by ignorant and unkind rebuffs. Therefore, I say give the boy a chance."
—*Western Industrial Journal.*

Any one sending us 5 new subscribers to the "California Architect and Building News," we will give one copy each of "American Cottage Homes" and "Model Homes."

Practical Scientific Research.

There is a growing conviction among thinking men that money is well spent in promoting really practical scientific investigations. The number of obscure points which are daily brought to the attention of busy men is much greater than might be surmised by those not called upon to meet industrial and commercial questions. The busy engineer, mechanic, electrician, and chemist are sure to meet problems of great importance at almost every turn, and many are the regrets that they express that the pressure of necessary routine work renders it impossible for them to study, and perchance solve, some of the questions they are forced to ignore.

The more wide-awake business houses are beginning to see the benefit to be derived from a thorough study of processes for manufacture, from more carefully made machinery, from a more thorough utilization of mechanical and chemical forces previously wasted, and from the positive guaranty which a competent expert can give that the goods they manufacture and sell are of exactly the quality demanded.

But few business firms, however, are willing to go so far as to employ men and furnish facilities for the more elaborate and generally useful investigations; such work has usually been performed by college professors.

Notwithstanding the eminent ability of many of the men who have thus contributed to science, it must be admitted that their results are frequently more or less unsatisfactory. For this there may be several explanations: college professors are often overworked; they are often embarrassed for want of means to procure necessary books and apparatus; and, lastly, they do not, as a rule, mingle freely with the busy practical men to whom industrial and scientific questions are daily being presented. The consequence is that very many scientific professors are devoting themselees to what they term "pure research," and are carrying their theories far beyond the limits of usefulness and common sense. It seems to be true that we must look outside the colleges for a large share of the practical scientific work now waiting to be done.

Much can be accomplished if each well-trained worker will give a small portion of his own time, outside of business hours, to the investigation of some one question which he deems of real importance. Let the work be done without haste, thoroughly, conscientiously, and without regard to preconceived theories, let results be minutely recorded when obtained, and, finally, let all be carefully digested and printed in some wide-awake journal for which it is appropriate.

The various scientific and trade associations can do much good in the same direction, by setting apart moderate sums of money to be judiciovsly expended for the promotion of scientific and practical investigation of the various questions presented. Most societies have among their members men who are fully competent to conduct elaborate and useful experiments, and derive therefrom results of real value to all. It is a good sign when such work is encouraged by associations of practical men, and we are glad to note that many societies now have funds, the proceeds of which are employed for the encouragement of original research upon practical questions.—*The Sanitary Engineer.*

Edge Tools.

All cutting and piercing edge tools operate on the principle of the wedge. A brad-awl furnishes an example which all can readily understand. The cutting edge of the awl severs the fibers of wood as the instrument enters, and the particles are compressed into a smaller compass, in the same manner as when a piece of wood is separated by a wedge. A chisel is a wedge in one sense; and an ax, drawing-knife or jack-knife is also a wedge. When a keen-edged razor is made to clip a hair or remove a man's beard, it operates on the principle of the wedge. Every intelligent mechanic understands that when a wedge is dressed out smoothly, it may be driven in with much less force than if its surface were left jagged and rough. The same idea holds good with respect to edge tools. If the cutting edge be ground and whet to as fine an edge as may be practical with a fine gritted whetstone, and if the surface back of the cutting edge be ground smooth and true, and polished neatly, so that one can disern the color of his eyes by means of the polished surface, the tool will enter whatever is to be cut by the application of much less force than if the surfaces were left as rough as they usually are when the tool leaves the grindstone. All edge tools, such as axes, chisels, and planes, that are operated with a crushing instead of a drawing stroke, should be polished neatly clear to the cutting edge, to facilitate their entrance into the substance to be cut.

Damage to Lead Pipes by Rats.

In the cellar of a house in Berlin, a large number of rats had recently taken up their permanent abode. Notwithstanding traps and poison, the vermin could not be got rid of. The brickwork was carefully examined, and a good many holes were discovered, which probably served as nests for the rats or led to the outside soil. All the openings were filled with cement, and the walls of the cellar pointed. The floor, which had hitherto been loose, was laid with bricks and cement. The rats disappeared; but after a short time a wet spot was observed in the brickwork, near where the water supply pipe ascended. On examination, a number of dead rats were found in a space of the cutting made for the pipe, which had not been filled up when the pipe had been moved, and close by, the lead pipe had been gnawed right through. The above may be very easily explained. A family of rats had settled in the cutting; exit had been cut off by the closing up of all the holes; the rats, trying to get out, had attacked the lead pipe as being the softest material in their prison. They gnawed until they had made an opening, when they were drowned by the outflowing water.—*The Builder.*

Sawed veneers preserve the natural color and grain of the wood better than sliced.

Market Reports.

LUMBER.—Receipts since January 1st:

Lumber	158,454,808
Shingles	52,259,254
Laths	13,433,710

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping ..... per M feet	27 50
Ship Plank, Rough	28 50
" Planed 1 side	32 50
" " 2 sides	35 00
Deck Plank, Rough	33 50
" Dressed	37 50
Laths	per M 3 75
Wool Slats	" 10 00
Shakes	" 12 00
Redwood Posts	per piece 17½

Redwood.

Rough Merchantable	per M feet $22 50
" Refuse	18 50
Surface No. 1	37 50
" 1 x 6	35 00
" No. 2	27 50
Rustic, No. 1, 1 x 8	35 00
" No. 1, 1 x 10	37 50
" No. 2	32 50
" Under 10 feet	32 50
T. & G., 1¼ x 4 and 1¼ x 6	37 50
" 6 in. 12 ft. and over	35 00
" 7 to 11 feet	32 50
" under 7 feet	30 00
" No. 2	27 50
T. & G., Beaded, 12 feet and over	35 00
" " 7 to 11 feet	30 00
" " under 7 feet	27 50
Half-inch Surface	30 00
Pickets, Fancy	27 50
" Rough, Pointed	20 00
" Square	17 50
Siding, ½ inch	25 00
Shingles	per M 2 50
Battens, ⅝ inch, lineal feet	" 1o

NAILS.—Imports since January 1st ..... 173,101 kegs.

10 to 60 pennies, are quoted at	$4 75
8 " "	5 00
6 " "	5 25
5 and 4 " "	5 75
4 and 5 pennies, brad heads, at	6 00
6 " "	6 25
8 " "	6 50
10 and upward " "	6 75
3 penny fines	7 50

PAINTS.—The price of paint has been reduced owing to the competition of Eastern firms. The best white lead can now be had for 6¼ cents per pound.

Building Intelligence.

Although we present a full report, our list shows a falling off from those of the past few months. The elect on just concluded has so engrossed the minds of many of our citizens and capitalists that but little attention has been paid to building operations. The early advent of winter has had considerable to do with the partial stoppage of improvements, while the high prices of mason's labor and materials have materially affected the building of brick houses. The latter is a matter that will be regulated entirely by the demand. As far as we can learn, there is little probability of any large jobs being commenced this winter.

SAN FRANCISCO.

Pacific, nr Steiner. Two-story attic and basement frame.
O.—Lathrop.
A.—W. J. Smith.
C.—J. Robertson.
$7,500.

Steiner, x Pine and California. Two two-story frame.
O.—W. Frost.
A.—G. E. Voelkel.
C.—P. Laherty.
$7,000.

Bush, x Scott and Devisadero. Four two-story frame.
O. & B.—Geo. Edwards.
$10,000.

Market, nr Seventh. Two-story brick building.
O.—F. S. Wensinger.
A.—Swain & Cleaveland.
C.—McCann & Jeffars.
$17,000.

Twenty-first and Treat Ave. Two-story frame.
O.—G. Krebs.
A.—Kemitzer & Raun.
C.—G. R. Lang.
$9,500.

Folsom and Twenty-fourth. Two one-story frame and improvements.
O.—N. B. & N. R. R. Co.
Days' work.
About $9,000.

Jackson, x Sansome and Montgomery. Two-story brick building.
O.—Presidio R. R. Co.
A.—Percy & Hamilton.
C.—Terrill & Slaven.
$9,000.

Fillmore and Chestnut. Two-story frame.
O.—Wm. McAllister.
A.—W. P. Curlett.
C.—Cummings & Redman.
$7,000.

Post, nr Dupont. Four-story and basement brick building.
O.—Jacob Levy.
A.—Shmidt & Havens.
C.—Walker Bros.
$24,000.

Adler and Montgomery Ave. One-story and basement frame.
O.—B. Wagner.
A.—G. Zeigler.
$4,000.

Ellis, x Leavenworth and Hyde. Two-story and basement frame.
O.—Mrs. Noble.
A.—Schmidt & Havens.
C.—W. Pluns.
$6,300.

Front, nr Market. Fitting up stores.
O.—Ackerman Bros.
C.—J. W. De Gear.
$1,500.

Dupont, nr Vallejo. Additions.
O.—J. Castiagretto.
Days' work.

Salinas Place, cor. California. Additions, etc.
O.—D. Poole.
C.—Treadwell & Co.
A.—Townsend & Wyneken.

Improvements to second floor of New City Hall.
A.—A. E. Hatherton.
C.—D. Brown.
$12,282.

Improvements to third floor of New City Hall.
C.—J. K. Dalmas.
$28,919.

Dupont, nr Union. Repairs and alterations.
O.—Ravonnie.
C.—L. Wiseman.
$500.

Jones Alley, x Washington and Jackson. Four-story brick.
O.—H. Pierce.
C.—A. Flood.

O'Farrell, nr Taylor. Improvements.
O.—J. C. Hawkins.
$500.

Fulton and Polk. One-story and basement frame.
O.—Miss D. Dockery.
A.—B. E. Henricksen.
Days' work.
$3,000.

Lyon, nr Bush. Repairs to frame cottage.
O.—Mrs. Hoadley.
C.—W. B. Warren.
$500.

Broadway, x Octavio and Laguna. Additions to frame.
O.—Mrs. Nelson.
C.—D. W. Ross.
$1,100.

Eighteenth and Noe. One-story and basement cottage.
O.—P. Ryan.
C.—P. Laherty.
$1,100.

Devisadero, nr Ellis. Additions to frame building.
O.—Mulhern.
C.—P. Laherty.
$1,000.

Polk, x Green and Union. One-story frame.
O.—Bradley.
C.—G. B. Bowles.

Devisadero, x Sacramento and Clay. Alterations to frame.
O.—S. Loughran.
Days' work.
$1,500.

Vallejo, x Franklin and Gough. Additions.
O.—W. Brooks.
C.—W. Little.
$900.

Eddy, x Mason and Taylor. Additions to frame building.
O.—Mr. Locke.
A.—Schmidt & Havens.
C.—Walker Bros.
$3,250.

Nineteenth and Mission. Additions to brewery.
Days' work.
$1,500.

Capp and Nineteenth. Alterations.
O.—D. Callahan.
Days' work.

Spear and Bryant. Sheds.
O.—Oregon R. & N. Co.
C.—J. C. Gibson.
$7,000.

Octavia, x Vallejo and Green. Two-story frame.
O.—Mrs. Stevens.
C.—W. P. Clark.
$2,400.

Fulton, x Van Ness and Franklin. Two-story frame.
O.—McDonald.
A.—T. J. Welsh.
C.—J. Dougherty.

Eighteenth, nr Guerrero. Two-story frame.
O.—C. Carroll.
C.—H. J. Weiss.
$1,800.

Ritch, x Brannan and Townsend. Three-story frame.
O.—D. L. Farnsworth.
Days' work.
$4,500.

Fell, nr Buchanan. Three two-story frames.
O.—Layng.
C.—Dutton.

Market, nr Ecker. Fitting up store.
O.—Le Count Bros.
C.—Hussey.
$2,500.

Fifth and Bluxome. One-story frame.
O.—H. P. Coon.
C.—J. T. Grant.
$3,000.

Mason and Bay Sts. Five two-story frame, one two-story brick.
O.—Cal. Wire Works.
Masons. — O'Connor & Hayes.
C.—Days' work.
$3,600.

Channel, x Third and Fourth. Frame building.
O.—C. A. Hooper & Co.
C.—C. Green.
$2,000.

Fifth, nr Bryant. Two three-story frame.
O.—Korbel & Bro.
Days' work.
$3,000.

Mission, nr Third. Repairs to Opera House.
C.—Cook & Trounson.
$600.

Bluxome, x Fourth and Fifth. One two-story frame.
O.—Hawley Bros.
Days' work.
$1,500.

Dolores and Twenty-eighth One-story and basement frame.
O.—L. Kragen.
C.—R. Bergfeld.
$18,000.

Hardy and Seventeenth. One-story and basement frame.
O.—P. Gillogly.
$300.

Seventeenth, nr Diamond. Two-story frame.
O.—H. Murphy.
C.—F. M. Schweitzer.
$2,000.

Eighteenth, nr Eureka. Additions.
O.—Mr. Dooley.
Days' work.

Eureka, nr Nineteenth. Two-story frame.
O.—Spencer.
Days' work.

Fair Oaks, nr Twenty-second. Additions.
O.—D. F. Mulville.
C.—J. Binet.
$600.

Fair Oaks, nr Twenty-second. Two-story frame.
O.—F. W. Kearn.
Days' work.
$2,400.

Octavia, nr Vallejo. Four one-story and basement frame cottages.
O.—Capt. R. W. Raymond.
A.—H. D. Mitchell.
$3,500.

Clay, x Broderick and Devisadero. Two-story and basement frame.
O.—T. J. Haynes.
A.—Theo. A. Eisen.
C.—Moore Bros.
$2,700.

Maple Court, nr Ridley. Two-story frame.
O.—A. A. Rosenberg.
A.—E. A. Hatherton.
Days' work.
$4,000.

Taylor, nr Post. Additions.
O.—Winterburn.
C.—Martin & Burkis.
$2,000.

Treat Avenue, nr Twenty-first. One-story and basement frame with stable.
O. & A.—H. Geilfuss.
Days' work.

Hyde St., No. 421. Alterations to frame.
O.—T. McGinnis.
A.—B. E. Henriksen.
C.—S. Grant.
$1,000.

O'Farrell, x Dupont and Stockton. Fitting up stores.
O.—N. Gamboni.
A.—B. E. Henriksen.
C.—Wm. Little.

McAllister, x Gough and Octavia. Two-story frame.
O.—Mrs. McGinney.
A.—T. J. Welsh.
C.—J. Dougherty.
$6,600.

Jackson, x Webster and Fillmore. Two-story frame.
O.—D. F. Harrington.
A.—T. J. Welsh.
C.—J. T. Blake.
$7,000.

California, x Webster and Fillmore. Two-story frame.
O.—J. Cronin.
A.—T. J. Welsh.
C.—J. McGeary.
$5,000.

SACRAMENTO.

K, x Fifth and Sixth. Two-story brick.
O.—Geo. Cooper.
A.—N. D. Goodell.
C.—E. A. Bovyer.
$3,300.

K, x Fifth and Sixth. One-story brick.
O.—Chas. Smith.
C.—D. & D. Falconer.
$2,000.

Twentieth, cor. I. Two-story frame.
O.—H. T. Hoffman.
$2,000.

H, x Seventeenth and Eighteenth. One-story cottage.
O.—Mr. Kerns.
$1,700.

Repairs to brick building.
O.—U. S. Mesick.
A.—N. D. Goodell.
C.—Carle & Croly.
$9,017.

OAKLAND.

Market and First. Four two-story buildings.
O.—Pacific Nail Co.
C.—Cameron & McDonald.
$50,000.

Seventeenth and West. One-story and basement frame.
O.—Leonard.
C.—F. N. Smith.
$1,200.

Twenty-second, nr Myrtle. Repairs to frame.
O.—Mr. Thompson.
C.—G. H. Fones.
$500.

Filbert, nr Twenty-first. One-story frame.
O. & B.—R. Smille.
$1,400.

Oak, nr Lake Merritt. Alterations to frame.
O.—Stanford.
C.—R. McKillican.

Fourteenth, cor. Castro. Two-story and basement frame.
O.—Mr. Playter.
A.—Wright & Sanders.
C.—Burpee.
$15,000.

Twelfth and Market. Repairs.
O.—J. Hart.
A.—Matthews & Son.
C.—Haskell & White.
$2,000.

Repairs—West Oakland.
O.—Jacquemon.
A.—Matthews & Son.
C.—N. L. Hinkley.
$2,000.

Eleventh Avenue and Eighteenth. Two frame cottages.
O.—Wade.
A.—Matthews & Son.
C.—Dahl.
$4,0 0.

Broadway, x Twentieth and Twenty-first. Two one-story frame.
O.—G. W. Manuel.
C.—B. C. Allen.
$2,500.

Thirteenth, x Clay and Washington. Frame stable.
O.—Brown & Son.
C.—B. McKillican.
$4,000.

At Fruit Vale. Two-story and basement frame.
O.—Schmidt.
A.—Theo. A. Eisen.
C.—Geo. Flick.
$4,000.

MISCELLANEOUS.

Alameda. Santa Clara Ave., cor. Third Ave. One-story and basement frame.
O.—Mrs. Schmadeke.
A.—C. F. Man.
C.—J. Millington.
$4,200.

Napa. Two-story frame dwelling.
O.—W. S. Brown.
A.—Matthews & Son.
$4,000.

Woodland and vicinity. Two-story frame.
O.—O. Schuler.
C.—S. Caldwell.
$3,000.

One-story frame.
O.—Mr. Groutte.
C.—W. Curson.
$2,050.

Two-story barn.
C.—Gilbert.
$1,500.

Near Cacheville. Alterations.
O.—Mrs. Packman.
C.—Mr. Curran.
$1,600.

Capay. Frame barn.
O.—J. Freeman.
Days' work.

Pleasanton. R. C. Church building.
A.—F. Huerne.
C.—W. B. Kreger.
$4,000.

Stockton Ave. Two-story Frame.
O.—W. L. Manly.
A.—J. O. McKee.
C.—J. Lenzenr
$3634.

San Jose. Additions to Fredericksburg Brewery.
O.—Schnabel & Co.
A.—A. Schropfer.
C.—Otto, brick; Hube, carpenter.
$25,000.

Stockton. Two-story and basement frame.
O.—M. P. Henderson.
A.—Percy & Hamilton.
C.—Carle & Croly.
$5,000.

Fresno. Distillery and wine house.
O.—R. Barton.
A.—H. Geilfuss.
Days' work.
$12,000.

Belmont. Pavilion at Park.
O.—Yanke Bros.
A.—B. C. Henriksen.
Days' work.
$5,000.

Livermore. Additions to dwelling.
C.—Rachael Taylor.
C.—T. D. Phelps.
$700.

One and one-half-story frame dwelling.
O. & B.—B. D. Morrill.
$1,800.

Additions to frame dwelling.
O.—Mrs. Lizzie Oliver.
C.—Wm. Sanderson.
$800.

One-story frame building.
O.—Chris. Shmidt.
C.—Wm. Sanderson.
$800.

Colusa. Repairs to grist-mill.
O.—Malcolm.
Days' work.
$1,500.

The California Architect and Building News.

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Reasonable reductions for advertisements continued six or twelve months.

In San Francisco, November 17th, 1882, after a lingering illness,

Mary A. H., wife of James E. Wolfe,

Aged sixty-eight years and nine months.

Since our November issue, and after a companionship of nearly forty-five years, the wife of the senior editor of this journal has passed to a realization of that which lies beyond the limits of human life. During the prolonged and severe illness of months preceeding her death, she suffered patiently, as one sustained by faith in a glorious immortality beyond the grave; and while loved ones mourn her loss, their sorrows are mellowed by the sweet reflection that their loss is, in truth, her eternal gain.

Retrospect of 1882.

The year of 1882 has been one of general prosperity, not only in San Francisco, but in all parts of California and the Pacific States and Territories; and the demand for skilled labor has at times far exceeded the supply of good mechanics, and at no time during the past twelve months has there been an excess of *competent* workmen in any of the branches connected with house building, and as a general thing contractors have been forced to employ second to tenth rate men at wages greater than the value of the services rendered. And when this is the case it may be regarded as a fact that "times are lively"; for the engagement of inferior workmen is the result of pressures and the absence of a sufficient number of the better class to fill the demand. This same state of facts exists in all other mechanical operations. The number of *first-class* workmen in San Francisco is sufficient only to meet the emergencies of moderate activities; so that, when brisk times set in, contractors are frequently bothered to find a full force of *good hands*, and as a consequence the more or less worthless class find employment.

The building improvements for the year have been confined mainly to family residences and tenement houses, among which two-story "*flats*" are numerous. The number of brick structures erected during the past twelve months has not been large nor costly, the most expensive being that owned by Wm. M. Lent, situated north-east corner Post and Dupont Streets, and costing about $100,000; James G. Fair's building, situated on Pine Street beween Montgomery and Sansome Streets, costing approximately $100,000; W. J. Somers' building, Market Street opposite Dupont Street, approximately $100,000; Schroth and Westerfield's building, north-west corner of Turk and Mason, costing about $50,000; T. H. Blythe's, Dupont and Geary, costing approximately $90,000. These constitute the principle brick constructions, with a limited number additional, costing $25,000 and less.

Master masons have at times been "driven to their wit's end" to secure competent help. And should there be an increased number of brick structures erected during 1883, it will be necessary to secure additional labor from abroad. The reason why this seeming scarcity of journeymen brick-layers exists, with but few brick edifices under way, is found in the fact that owners are becoming more and more convinced of the folly of inserting wood mud sills and foundations, which last but for a limited time, and the wisdom and economy of adopting brick. Hence a majority of the wooden constructions are now erected upon the more durable foundation; and as this view of matters becomes still more general, scarcely a frame building of any importance will be constructed without brick foundations. So that with a brisk season of entirely wooden buildings, the whole present force of brick layers in San Francisco will find constant work.

Additional to all this, there are the following factors, in part respectively accounting for the scarcity of brick masons' help. Fresno, Red Bluff, Willows, and Truckee have been nearly entirely destroyed by fire, and the rebuilding has been mainly of brick. The prosperous state of things generally has led to the erection of brick buildings in nearly every town and city in the State. The property abounding throughout Oregon and Washington Territory has induced the erection of very many brick edifices at Portland, Seattle, and other places, all of which have drawn upon San Francisco for brick layers. Beside this, the matter of erecting one or two fire protection brick walls, and the partition walls, and brick nogging of frame buildings in San Francisco in so many cases, have required millions of brick, and engaged the labor to lay them. As showing approximately the total of the year's improvements in San Francisco, we have compiled the following from the monthly issues of this journal, which may be relied upon as approximately correct. Owing to the difficulties in obtaining from architects and owners correct statements of costs, and the fact that we may have failed to obtain a full list of *all* the buildings commenced, and the extras, in very many cases reaching from five to twenty per cent. on the contract prices. Our monthly reports may be reasonably set down as averaging fully ten per cent. less than the actual sum of outlay.

The following table will show the number of frame and brick buildings, with the number of repairs and alterations that have been made during the year 1882:

	Frame Build'gs.		Brick Build'gs.		Repairs and Alterations.	
	No.	Cost.	No.	Cost.	No.	Cost.
January	6	$13,000	2	$35,000	4	$8,000
February	13	53,387	1	35,000	2	12,500
March	19	47,850	1	8,000	3	5,500
April	55	185,650	1	20,000	23	38,700
May	49	141,300	4	117,000	17	39,450
June	54	344,750	..	.....	27	46,000
July	66	250,750	5	189,000	34	160,900
August	68	329,865	2	10,500	19	48,750
September	68	219,900	3	154,000	35	85,324
October	89	313,435	3	137,600	24	60,100
November	33	198,300	4	58,000	22	22,351
December	20	55,500	1	25,000	8	12,600
Total	540	$2,153,087	27	$848,100	218	$540,225

Total number of building operations of all classes during 1880 397
Total cost of same $1,754,435

Total number of same 1881 533
" cost " " " $3,790,732

Total number of same 1882 785
" cost " " " $3,896,212

In the above estimate for 1882 we have allowed ten per cent. for value of buildings that may have been missed by our reporters, improvements too small to be mentioned each month, and for value of extra work on cost of contracts reported.

Although the number of buildings exceeds that of last year by 252, the *value* of them shows but a small advance over 1881. This is owing to the fact that in the latter year there were many large buildings erected, the aggregate cost of which was over a million dollars; while in 1882 but few large buildings were built, and none to approach in value as in 1881 the Phelan Building, Sugar Refinery, etc. All in all, the year just closing has been the most prosperous one that we have seen for ten years, and the indications at present are that the year 1883 will exceed the present one in value of building improvements.

The Past, Present, and Future of this Journal.

The present number closes its fourth volume, including the quaterly of 1879, and we extend to our patrons hearty thanks for the very liberal support received, hoping that each succeeding monthly issue may not only merit a continuance of present success, but gain for it such reputation for excellence as to insure a subscription list equaling any class journal published in the English language.

Its issuance as a monthly in 1880 was received with gratifying favor, yet but few entertained the thought that it would become a permanent publication. Our best friends doubted its permanency, while expressing kind words of encouragement with wishes that prosperity greater than our highest ambitions might be realized. Prophets and the sons of prophets predicted its early demise, and knowing ones fixed the limits of its existence within the bounds of six months; within which time we were to be laid in our editorial casket, and over our ashes were to be placed the tablet of failure. But we can afford to forgive, while we smile at those who wished us well but feared we would not succeed; and to those who would have rejoiced had we gone down under the numerous adverse and disadvantageous conditions and circumstances of almost continued personal or family affliction, and the death of two loved ones within the last past eighteen months, together with the difficulties and arduous labors required in

overcoming the many obstacles encountered in working up and utilizing facilities necessary to better success; we simply ask that they lay aside all unkindnesses in the future, and like true and good men lend a helping hand in making sure the foundations of this the first journal ever published within the Pacific States in the interest of architectural, mechanical, sanitary, and house-building sciences.

If all the facts of its history were related and made the basis upon which to repeat a similar enterprise, it is doubtful whether within the entire territory of the United States a man or set of men could be found who would be willing to undertake the venture. At its inception as a quarterly, Kearneyism was rampant, business of every class and character depressed and demoralized, thousands of workmen unemployed, poverty and distress almost universal, and the then outlook one of a discouraging character. And even after the gods of evil had withdrawn their inspirations, and the sand-lot conclaves began to wither and sink into merited oblivion, it required the genial sun of nearly two years' bettered state of things to reinstate and restore the era of prosperity with which California is now and has been blessed since the crushing out and destruction of the never-to-be-forgotton evil days or 1879. In addition to all this, no journal of its character had ever been attempted upon this coast, and the undertaking was looked upon as chimerical. The avenues of information were unopened, and the fields of knowledge in matters necessary to make the enterprise a success remained unexplored. Architects, owners, and mechanics had learned to live without a home journal devoted to their interests, depending upon such as might be sent from abroad—overlooking the fact that this coast in nearly all of its building requirements differs widely from those of other States and cities, with scarcely a corresponding feature in either styles, plans, materials, or methods of construction.

It is generously and generally conceded that this journal has, during its publication as a monthly, exercised a material influence for good in architectural and mechanical circles; and it is and will continue to be the purpose and aim of its managers to increase and enlarge its influence; and whatever can be will be done in that direction.

Our greater cause of complaint and regret is, that while it is commended and recommended by architects generally, enjoys the enviable position of being the recognized official organ of the profession upon this coast, receives the liberal patronage of so large a number of mechanics in this city and all parts of the United States, and there being so large a number of those well qualified to write up instructive articles for publication, yet but few employ their leisure and talents in that direction. While we cheerfully feed our patrons with the best we can prepare for them, at the same time it affords pleasure to be able to introduce a new dish of intellectual viands and furnish our readers with a change of diet. We hope that in the future there will be an improvement in this connection, and that our architettural brethren, mechanics—among whom there are hundreds well qualified to present new or discuss old theories and subjects—and our friends generally, will devote some of their leisure in writing up articles. There are many practical-minded parties who, feeling that they lack the educational qualifications, neglect to exercise their talent through fear of failure to clearly express their views. To such we say: Do the best you can; and so far as necessary we will repair and strengthen, whenever a word or line needs correction or improvement. We propose this for the purpose of encouraging the efforts of those who lack confidence, yet in mind and thought are rich in valuable suggestions; practical men who have gathered largely from the prolific fields of experience, from whence to the world has from time to time come many of its truest and most valuable lessons. Full of hope and bright in prospects for the future, we close the volume for 1882; asking that its defects, omissions, and errors may be forgotton, and that the volume for 1883 may excell in every department those of former years. We wish one and all of our kind readers prosperity, health, and every blessing, and hope that at the end of the coming year but few of their number shall have been called to pass to scenes beyond mortal life, and that those who are spared yet another year may at its end be the better from its enjoyment, and the better prepared to meet the inevitable, whenever the time shall come to each to lay aside the cares and toils of life to enter beyond the veil which to mortal mind enshrouds the future in solemn mystery.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the Chapter was held in the rooms of the Art Association on Friday evening, December 1st. A goodly number were present. In the matter of attendance, this Chapter, we think, will compare favorably with any belonging to the Institute.

The members were called to order by the President, J. Wright, Esq. Reading of the minutes and preliminary work were proceeded with as usual.

Committee on "Articled Students" were granted further time. Mr. W. Ferris was elected a member as draughtsman. The report of Mr. Eisen, while acting as secretary was received, and ordered spread in full upon the minutes.

Under the head—"For the good of the Chapter"—a member referred to the fact that carpenters and contractors were in the habit of retaining the originals, or making tracings of the drawings intrusted to them for execution, and whenever found convenient, of palming off such tracings either as their own, or as just suitable for an owner's use, with the remark that by using such tracings, the value of an architect's services could be dispensed with. Houses of the value of more than $10,000 have been built by plans furnished the owner by contractors, at no cost whatever for the plans to the owner.

It is a custom with some mill prorpietors to copy parts of details intrusted to them for execution, and to profit by their use in other connections than those for which the details were made—thus virtually defrauding the originator of benefits which should accrue alone to him. The compliment to the architect producing something so neat and beautiful as to be selected and placed on exhibition in planing mills for the selection and use of others, without cost for the design, is a specie of compensation not calculated to meet office rent and expenses, nor supply daily requirements.

"Nipping" things of even far less cost and value in other connection is punishable under the laws regulating community life; but unfortunately there is no law that shields and protects the labor and production of architects from being "nipped" by any one who may have access to them.

The introduction of this subject caused a lively interest to be taken by all the members present, and various remedies were proposed.

One member gave as his views that the proper way to stop the evil was to require full fees from all contractors for plans, specifications, and details when ordered by them. Also all contractors to be required to return all drawings and specifications to the architect.

Another member contended that it was impossible to prevent contractors copying plans, details, etc. He made it an invariable rule that before giving the certificate of the last payment, every drawing, memorandum, etc., should be returned to the architect. The only way possible to shut off the pilfering of designs was by educating the people to perceive the difference between the work of the professional architect and of his imitator. One of the grand principles for which this Chapter was founded is the education of the members to a higher and nobler standard in the practice of architecture. From the nature of his profession the architect should be a thorough mechanic; a popular error being that the architect is merely an educated carpenter. Our mission as a chapter is to show the difference between the architects—educated mechanic though he be—and a contractor's plans. It will be difficult for the Chapter to remedy the evil of contractors' copying plans, so long as the latter conceives it not to be dishonorable to filch the labor and skill of architects, without right and proper compensation.

The president made a few well-timed remarks, arguing that everything possible should be done by the Chapter to correct all irregularities of practice on the part of all parties concerned in general building operations, and to discourage the practice of plan and detail copying by either builders or mill-men. Correct and practical plans and details are not the work of a moment, but require study, care, time, and labor in their production; and it cannot be claimed as just or honest on the part of those who wrongfully appropriate such productions to their own uses and purposes without fair and just remuneration. The necessities of the case are a higher moral sentiment, favoring the rights of each and all and discouraging irregularities in every form. Architects are entitled to the enjoyment of all the profits and advantages arising from the exercise of their professional skill and labor; and it is but an act of common fairness and justice that contractors, mill-men, and owners should concede this equitable proposition and govern themselves accordingly.

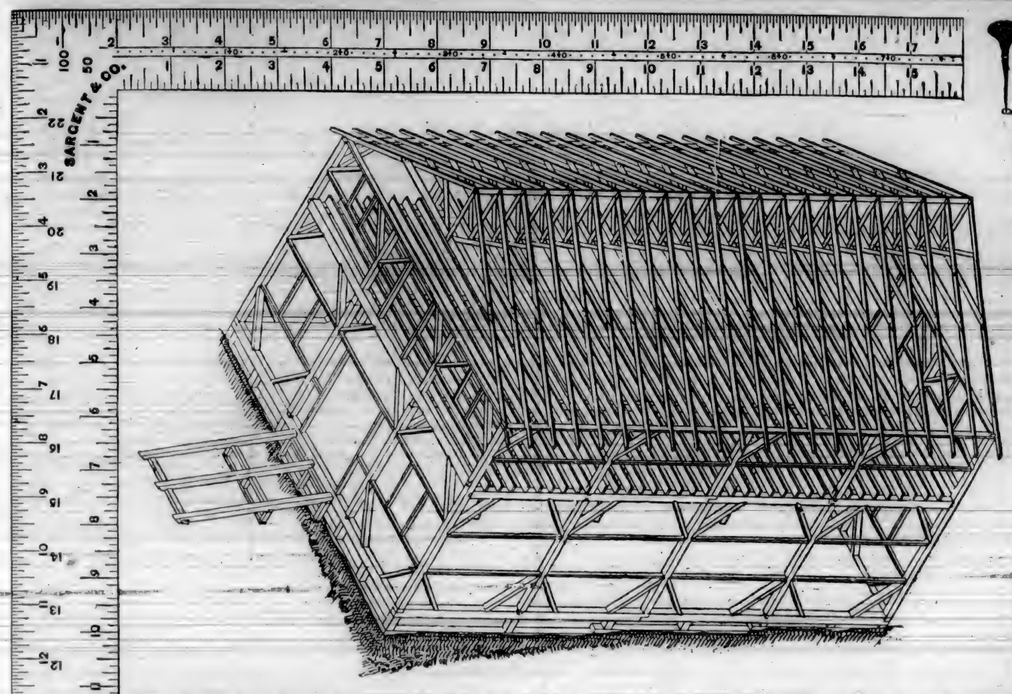
In harmony with the views expressed, a committee of three were appointed to take into consideration the subject-matter, and report at the next regular meeting.

The subject of a national style of American Architecture was introduced by Mr. Macy. It was argued that America, as the offspring of England, continued to a large extent to ape the architecture of the barbaric ages. Not a sacred edifice was erected where the worshipers did not assemble under pagan lines of architecture: Even upon our business streets sea-side cottages are being erected. The æsthetic craze is upon us, and until its reign is over, Americans cannot lay claim to founding a style peculiarly their own.

The secretary was instructed to notify the members of the Chapter residing outside of this city of the proceedings of this Chapter, and to request them at their earliest convenience to forward papers to be read at the regular meetings.

The Good Work Goes On.

We gladly welcome to our subscription list the large ingathering of new subscribers, and the renewal of old subscriptions. The conclusion is rapidly gaining ground that the best interest of all parties engaged in the erection of buildings, whether as architects, builders, workmen, or owners, are best and substantially subserved by perusing the monthly issue, of this journal. Let the good work go on, and soon we will produce an architectural publication unexcelled by any of its kind published within the United States. In both heart and hand, we are prepared for the better and greater work, and are eager for the day to arrive when we shall feel justified in laying aside a profitable professional business to enter upon exclusively editorial carear.



The above cut was intended to accompany the engraving given in our last number; but for the reasons then given its presentation was delayed. We show the frame-work of a substantially built barn. In order to carry out the principles laid down in our October number, we have placed our building on uneven ground.

The size of the mud sills will depend greatly on the character of the ground. Should the latter be soft and yielding, 4x16 inches, sound red wood, free from sap, would be the proper size timbers, in absence of brick or stone foundations. This size can be varied if the ground is firm. On a stiff, cement soil, even 2 inches would be thick enough for the sill. Be sure and have every part of your sill rest firmly on the ground. In order that it may do so, put your sill in its place, and with a piece of timber held perpendicular, strike several blows on the top of the sill; turn the latter over and remove the dirt from the *smooth spots*, placing it in the depressions. A little practice will enable any one to get the sill right on the second or third trial. *Be sure your sill is level across the grain.*

We will commence from the front corner and place our sills along the side of the barn. Lay the first piece as shown, level both ways. Let the second piece of sill lap over the first piece, and the third piece over the second. Secure the ends together by means of spikes. Place the sills all around in a similar manner.

Foundation being now ready, the main sill should next be placed in position. It should not be less than 8x10. Generally the longer lengths are preferable for sills on account of a less number of splices being required. Where the sill is near the ground it is the usual custom simply to halve the joints together. When this is done, they should be well nailed together. Too much care cannot be given in having the main sills level across the grain.

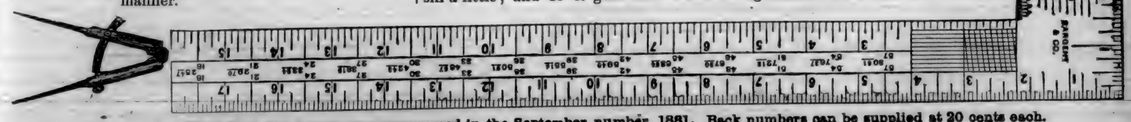
Right here we will call attention to a simple fact that has been the cause of more hump-backed, crooked barns and buildings than any other thing that we can mention. Great care, perhaps, has been exercised in having the foundations perfect; the sill picked out on account of its regularity and placed properly in position; posts placed here and there to keep the sill level, etc., etc. And here is where the fault comes in. The sill is up, and "Here, John and Tom, you finish the underpinning while the rest of us rush the joist on"; and so the "rest of them" will pile up a great weight of lumber on the sills, while John and Tom are cutting in the underpinning. John happens to be where the weight of the joist is the heaviest, and does not allow for the sag in the sill caused by the weight above; and so cuts his underpining in *snug*. Tom happens to be in a place where no weight has been placed, and he cuts *his* posts in *snug*, and perhaps raises the sill a little; and so it goes all around the building. You can rest assured that the top plate will have just as many little depressions as the sill must needs have from following the course laid down.

And again, in following the usual way of cutting studding, one stud is very apt to be an eighth of an inch longer or shorter than its neighbor; and if the shorter studs should happen to be placed in the little depressions mentioned above, the top plate will be! either decidedly out of level, or else there will have to be a *Dutchman* between the top of stud and the plate. Long studding, especially, should be cut in a miter-box, one set of men doing the gauging and sawing, and another taking out the gains with a chisel.

The correct way to do is to cut in all the underpinning, bracing, etc., before any weight whatever is placed on the sills. Then sight along the top of the sills, and if all is right, then go ahead.

In the cut as shown we have not represented as many posts in the underpinning as there should be, as we did not want to confuse the reader by too many lines. On the side, one post between those shown is amply sufficient.

Although we show a run-way from the front door, it is not calculated that teams will *go in* thereby. They can go around and the barn so arranged that a clear drive through the building can be made, so that hay and other materials can be placed in any part of the barn without being handled more than is necessary.



This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

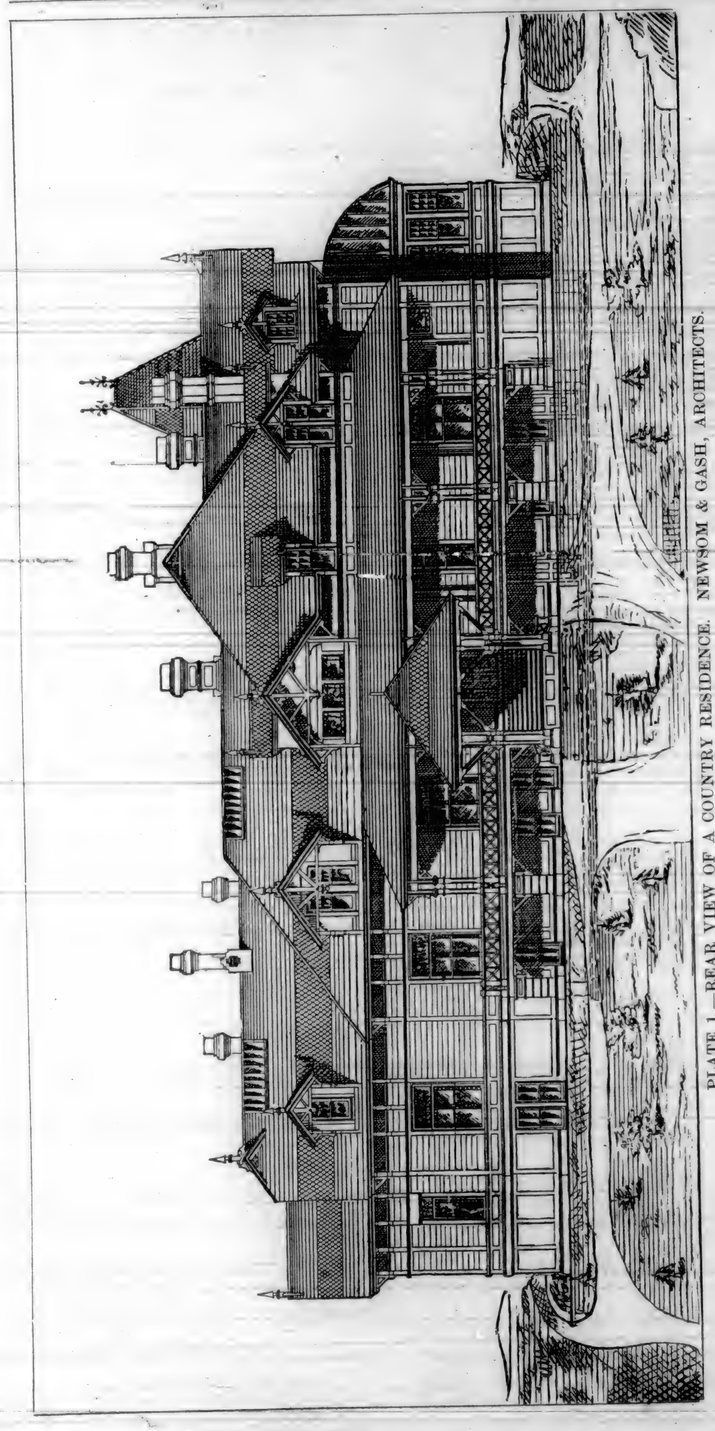


PLATE 1.—REAR VIEW OF A COUNTRY RESIDENCE. NEWSOM & GASH, ARCHITECTS.

ERRATA.

Under the cut on page 171 the words "Rear View" should be "Front View."

Our Illustrations.

Plates 1, 2 and 3 are the front and rear views with plan, of a commodious suburban residence. It can be built for $20,000. This figure may be changed either way according to the style of finishes used. Newsom & Gash are the architects.

Plates 3, 4 and 5 are the plans and elevation of a very convenient country home. It can be built for about $3,500. The arrangement of the rooms is all that can be desired in such a house.

Next year we will show our readers a decided improvement in regard to our cuts. We have made arrangements by which the drawings sent to us for reproduction will be given in a style not inferior to any journal published. We will also give a full description of each illustration, and the figures for which the buildings can be erected in California at the time of each issue. The latter fact is important to bear in mind, as the country home published in this issue would have had a smaller amount placed in its value had it been given in our issue of the same date last year.

Royal Institute of British Architects.

Through the kindness of its secretary we have been furnished full reports of the proceedings of the ROYAL INSTITUTE OF BRITISH ARCHITECTS, which we shall notice at length in the January number of this journal. A cursory review of its pages reveals a large amount of valuable matter, and demonstrates the fact that the architects of the mother country are alive to their truest interests as men, and to the interests of the profession to which their time, energies, and talents are devoted.

In this connection we again call upon our friends—architects, mechanics, and owners alike—to rally to the support of this journal, as by its greater financial success its management will be able to reach beyond all present attainments, and make it what this coast really needs, a supremely representative journal. Its circulation has heretofore reached to nearly every State in the Union, and to many cities and places beyond the limits of American territory; and its rapid augmentation of subscription patronage during the current year points to the time as near at hand when its circulation will be unsurpassed by any journal of its character, and we hope that none whose interests are represented in its columns will permit any opportunity to pass, to aid us in the consummation of the grand results in contemplation. We have demonstrated the sincerity of promises heretofore made by the improvements incorporated during the past twelve months; yet what has been done in comparison with that intended is but as the dews of night as compared with copious showers.

A Neat Answer.

"What is the use," contemptuously said a poor woman to a lady candidate of an important school board, "of teaching our girls drawing when they are only going to be servant-maids?" "Well," replied the lady candidate, "the great objection to servant-maids of the present day is, that through rough handling they break valuable glass and china put into their hands. They lack the delicate touch necessary for the right handling of them, and there is nothing so calculated to cultivate this delicate handling as the art of drawing, and hence it qualifies them for whatever may be their position in life."

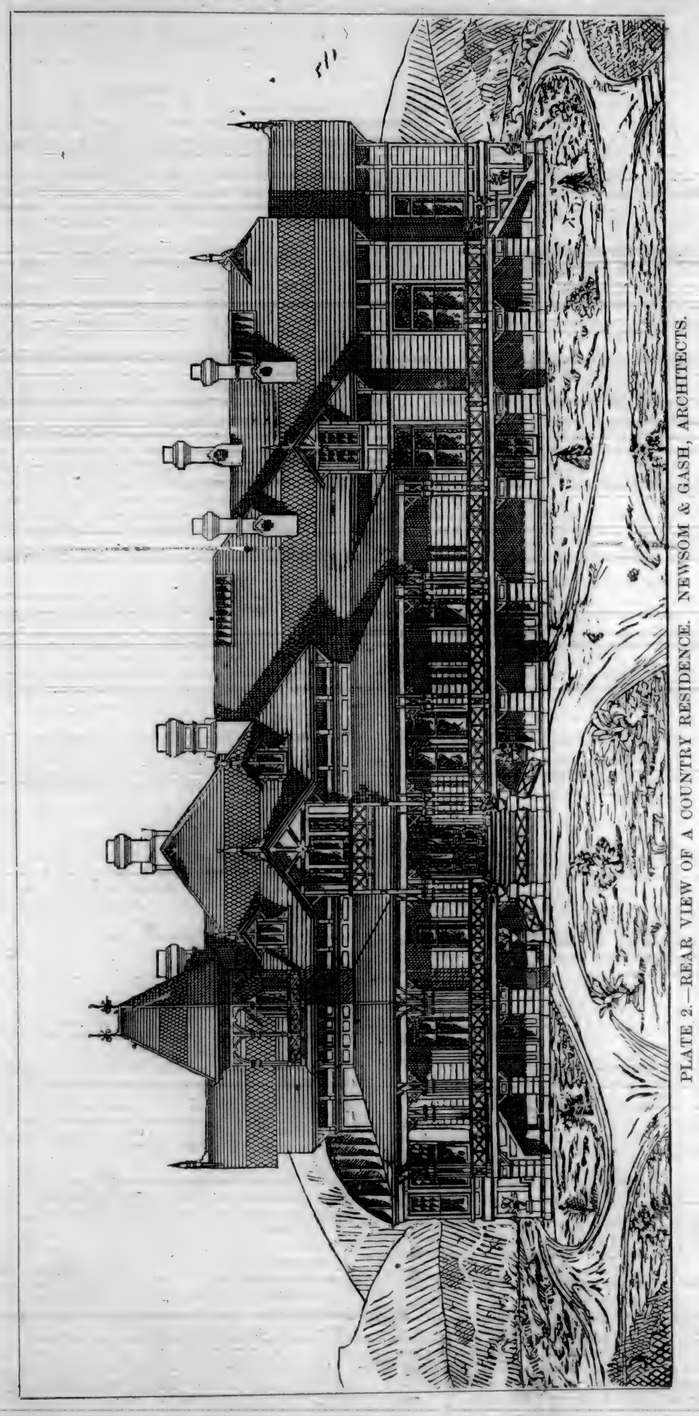


PLATE 2.—REAR VIEW OF A COUNTRY RESIDENCE. NEWSOM & GASH, ARCHITECTS.

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The Use and Abuse of Screws in Wood-work.

Archimedes is credited with the invention of the screw, but whether the famous geometrician's labors extended much further than the enunciation of the scientific principles and the mechanical power of the screw, it is difficult to say. If he made a screw, he certainly must have tried its effect, and was probably well pleased with its performance, for in the whole range of mechanical appliances in the constructive arts there is not a more useful article than the screw. Archimedes is further reported to have said, "Give me a prop, a position, and a lever strong enough, and I will move the world," and, no doubt, if these conditions could be granted to him, he, as well as others after him, could lift the earth, or aught upon the earth, by a combination of the tremendous lifting and driving powers exercised by a series of screws, apart from the lever. Screws are various, and of various sizes, forms, and materials, but the same principal runs through them all, whether they be manufactured for use in metal or wood-work, or for expecting a lifting, driving, or pressing power separately. Our object here is not to treat of screw-cutting, but rather screw-driving in wood-work, and to throw out some useful hints to the building constituency, and particularly workmen. The use and abuse of screws is a matter of importance to architects, builders, and their clients, for it is according to the way screws may be applied in several building and kindred operations that good or bad workmanship will be evidenced.

Screws are more extensively used than formerly in putting together various kinds of wood framing, and even in cabinet and chair work screws are pressed into service in places where their use would not have been tolerated by manufacturers in the earlier portion of the present century. Although their existence is generally concealed in furniture and fancy work, they are often present, nevertheless, and too often they are used as a substitute for dowels, dovetails, and tenons in the manufacture of cheap work. It is an instructive and remarkable fact that our building workmen of a century or two back, in many operations in carpentry and joinery, discarded, as far as was possible, the use of nails or screws, depending more on carefully jointed work, put together by means of mortise, tenon, dovetail, hard-wood dowel, or oaken pin. Their work might have taken a longer time to execute than that done by our present race of joiners and wood-workers, but it was infinitely more lasting, and kept together so long as the timber or wood continued sound. The nearly universal remedy now for every broken article on the part of the jobbing joiner and cabinet-maker is to repair it with the aid of a nail or a screw. Glue is even often dispensed with, or used where it will exercise little sustaining power, and colored putty is not only made to cover the heads of sunken nails and screws on the face of a piece of work, but used also to hide bad joints and workmanship. Some years ago the writer examined an old oaken staircase and hand-rail in a college, which work was executed more than two centuries since, and in the construction of which not a nail nor a screw was used. From time to time, over long years, some slight repairs were made, but the workmen during their operations were never able to discover that a nail had been used in the original construction. There were mortises and tenons, grooves and tonguing, wooden pins or dowel work, but no iron fastening of any kind. The writer also examined more than one old roof in which the use of iron spikes, nails, and other iron fastenings was dispensed with, and the joining of the timber was effected without their aid. In the hinging of doors and other framework it is necessary to use screws, but, unfortunately, many workmen, if not watched or cautioned, will not do the screwing properly or in a workmanlike manner. In deal, pine, and other soft woods a brad-awl is sufficient to make an opening for the screw, which opening, of course, should be less than the thickness of the body, and short of the length of the screws used. It will be found, however, that most workmen, not content with tapping the screw a fourth of an inch or so to give it a hold before applying the screw-driver, will actually drive the screw into the wood two-thirds of its length with the hammer. This the workmen will do to save themselves trouble. If there be two hinges upon a door, and if each hinge has eight screw-holes—four in each plate—the chances are that the workmen will drive half of the screws nearly home in the door-stile and frame with his hammer rather than take the trouble of driving them gradually home with the screw-driver. Hence, if the door be a massive or heavy one, the weight of it will tend to the hinges loosening, and after a time will follow a train of other ills—the "dragging" and "rubbing" of doors, and their makeshift cure is what is known as "easing" them. If remonstrated with for driving a screw nearly home with the hammer, the workman may probably say (as some workmen certainly think) that a few turns of the screw in the wood are sufficient. This is an erroneous and michievous idea. A screw that is nearly driven its whole length with a hammer cannot make a regular and corresponding thread or spiral in the wood, and therefore its binding and maintaining power in keeping the hinge in its place is all but gone. Workmen should be made to drive every screw home gradually with the screw-driver, and not only an odd one. In hardwood operations as well as in soft woods, particularly in hinge work, screws should be properly driven, and the aperture or opening made for the passage of the screws should be much less than the thickness of the screw to be driven. The screw will bite a sufficient passage for itself. In hard wood, however, it is necessary to give a little more freedom of entry to the screw than in soft wood, and a gimlet is needed for making the suitable opening instead of the brad-awl.

A difficulty is often experienced by persons who wish to withdraw a screw, by finding that though it will turn round under the application of the screw-driver, yet it will not unscrew out. In this case a well-grounded suspicion may be entertained that the screw in question was driven, or nearly driven, home originally by the hammer, instead of gradually by the screw-driver, and that no regular thread corresponding with the screw exists in the wood. Under such circumstances it becomes necessary often to wrench off the hinge or hinges by force, at the risk of their breaking, and this often happens. When hinges have lain undisturbed for years on old doors or other framings, perhaps for a quarter of a century or double that time, it becomes difficult to extract the screws, although they may have been originally properly driven. This arises from the screws rusting in the wood and sometimes from other causes. Workmen themselves often fail to withdraw a screw, and are forced to break the hinge to enable them to get under the head of the screw, and wrench it out. They often split, and break too, fancy and delicate woodwork articles in their efforts to take off hinges, locks, mountings, and other finishings, despite that simple methods exist for extracting screws that have rusted in the wood. One of the most simple and readiest methods for loosening a rusted screw is to apply heat to the head of the screw. A small bar or rod of iron, flat at the end, if reddened in the fire and applied for a couple or three minutes to the head of the rusted screw will, as soon as it heats the screw, render its withdrawal as easy by the screw-driver as if it was only a recently inserted screw. As there is a kitchen poker in every house, that instrument, if heated at its extremity, and applied for a few minutes to the head of the screw or screws, will do the required work of loosening, and an ordinary screw-driver will do the rest without causing the least damage, trouble, or vexation of spirit. In all work above the common kind, where it is necessary to use screws, and particularly in hinge-work and mountings, fancy fastenings and appliances affixed to joinery or furniture work, we would advise the oiling of screws or the dipping their points in grease before driving them. This will render them more easy to drive and also to withdraw, and it will undoubtedly retard for a longer time the action of rusting.

As matters obtain now in carpentry, joinery, furniture, and other wood workmanship, with regard to screws, although they cannot be dispensed with, yet it would be advisable in sundry classes of wood-work to minimize their use, and in other cases to do without them altogether. They can seldom be used with advantage to the displacement of mortise and tenon or good dovetail or dowel work. The growing practice of putting together wood with screws bespeaks a decadence of skilled labor, and of nails and screws there are far too many pressed into service in workshops and dwellings. While admitting the usefulness of the screw in various ways, we have here endeavored briefly to show its abuse in wood-work, and at the same time to afford some hints for better methods of procedure in building and kindred workmanship. —*Ex.*

To Young Achitects.

A worthy literary friend, having a taste in early life for the violin, was told by his master that to succeed he must serve an apprenticeship of seven years, practicing ten hours a day, and then he might expect to know a little. Let young architects likewise realize what is before them, and cultivate the power of executing artistic sketching and design in all their multifarious branches, Gothic and Classic, Mediæval and Ancient, and practice the modes of excuting such work in pencil and pen, color and crayon, and likewise seek acquaintance with the most natural as well as approved methods of construction ; and acquire a facility to calculate the various strains, breaking, crushing, and safe weights of all the known materials under their varying circumstances; understand the many kinds of timber and stone, metals, and materials of all descriptions; acquire familiarity with all the various artificers' work, bricklayer and mason, carpenter and ironfounder, slater and plasterer, plumber and painter, glazier and decorator, efficiency to any one of which it takes the artificer himself a lifetime to acquire; and learn the technicalities of the measuring and pricing in these various trades, of which the artificer himself is in many cases uninformed; study sanitation, ventilation, and the jurisprudence of building, Building Acts, Fire Prevention Acts, Sanitary Acts, and all the Local Government Board requirements, the light and air, the party-wall and compensation cases; start with the level and theodolite, and study the technicalities of land surveying; and by the time they have further learned what are the requisites for good planning, in all the known requirments of modern dwellings, ecclesiastical, manufacturing, and public buildings, they will, at any rate, be ready for starting business on their own account,

Knowledge is power, and the duly qualified architect should not be among the least powerful in the community.

Advice to apprentices : Begin at the bottom of your business and work up. N. B. Well-diggers excepted.

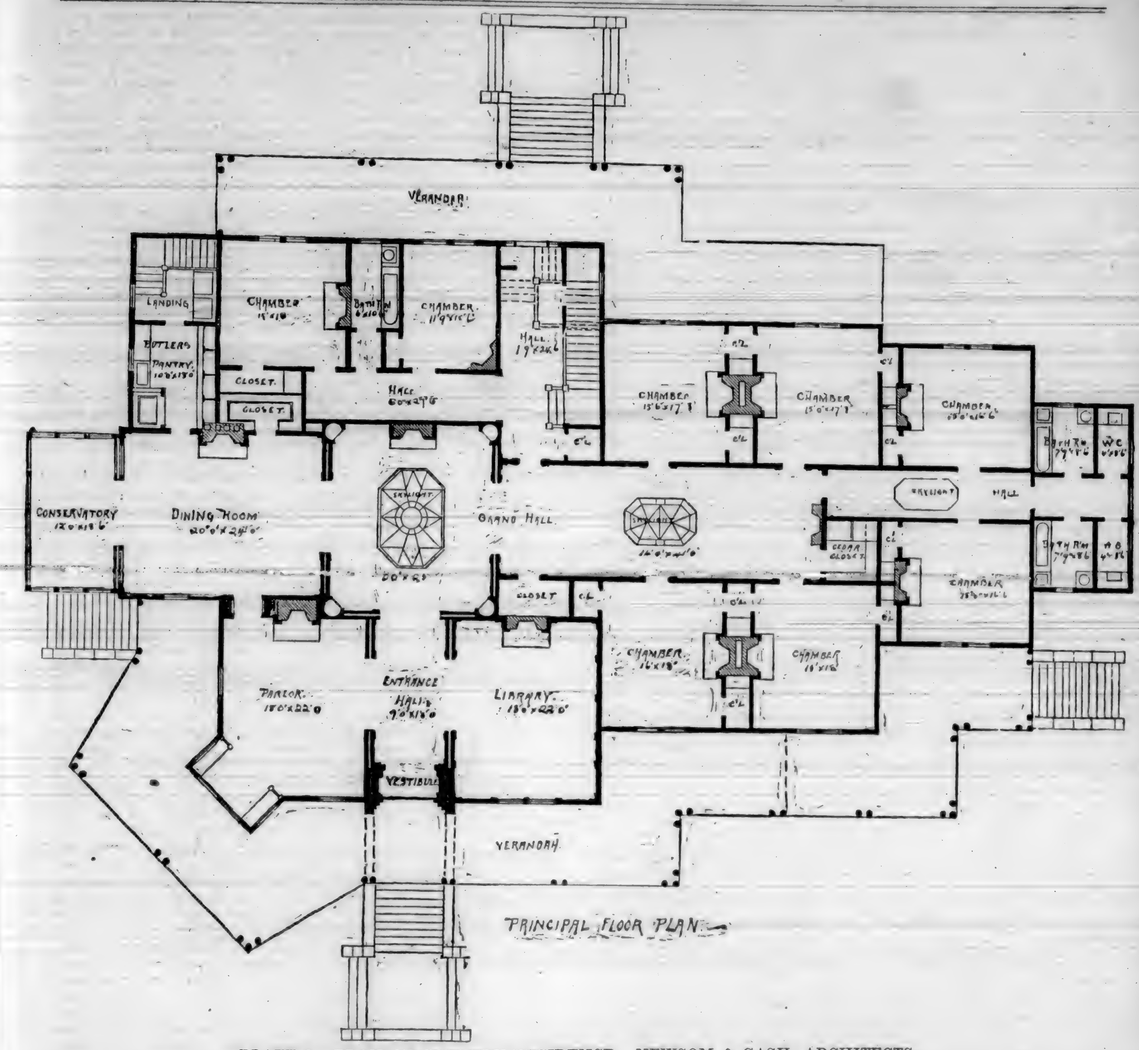

PLATE 3.—PLAN OF COUNTRY RESIDENCE. NEWSOM & GASH, ARCHITECTS.

How to Clean Pens.

A writer in a German paper states that it is a custom in offices in that country to have a sliced potato on the desk in commercial houses. He does not state whether the esculent should be raw or not, but as it is not for the purpose of making kartoffel-salat, it is probably raw. It is used to clean steel pens, and generally acts as a pen-wiper. It removes all ink-crust, and gives a peculiarly smooth flow to the ink. He also states that the Hamburg clerks pass new pens two or three times through a gas flame, and then the ink will flow freely.

The pleasant odor of cedar seems inseparable from the wood. Pieces of white cedar stumps which had long been under water at the entrance of New York harbor had the odor of newly grown wood.

Scandinavian Floors.

The chamber floors found in the northern parts of Sweden and Norway are laid with boards cut from the tree without being sawed parallel, and consequently retaining all the taper of the tree. The edges of the boards are tongued and grooved, and the joiners who cut the tongues and grooves work in pairs, one pulling and the other propelling the tool that does the work. In consequence of the boards tapering, they are laid with a broad and narrow end, meeting alternately, and thus a dovetail is effected along the whole length of the boards, and a very curious appearance is the result.—*Timber Trades Journal.*

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Ambiguous Specifications.

Ambiguous specifications are due either to carelessness or want of practical knowledge. In either case they are to be condemned. In the former case they are especially to be condemned. There may be an excuse for a want of practical knowledge; there is none for carelessness. Orderly arrangement and adequate description are naturally to be expected. The specification is as needful as the drawings, and if it be incomplete the architect's work is imperfect, and so in all probability will be the work of the builder. The incompleteness of a specification is a sure sign of an unstudied building. A well-prepared specification proves thought, and makes the architect master of his design. But if he do not himself understand it, he cannot expect others to understand it. They may, guess at his meaning; but guesses, when money, appearance, and durability are at stake, are not advisable. Obscure intentions cannot be embodied in lucid instructions. Nor can obscure thoughts. Want of knowledge may sometimes be concealed in generalities; but in specifications, when concealed, it is often revealed. The studious avoidance of practical details tells its tale; and when generalities soar, the result is not invariably happy.

Stereotyped specifications are likewise the cause of confusion. Stereotyped specifications are mostly ambiguous specifications. Specifications to be serviceable should be adapted to requirements; and, as the requirements of no two jobs are alike in every respect, the stereotyped specification will only apply in part. Cutting out and inserting in no way improve them. Every job requires its separate specification. The outline, or general arrangement, of specifications may be—in fact, should be,—similar, so far as the test of practice stamps it with approval. But all the nice explanations of details required for each job should be strictly original, and introduced at the right places, that the estimator and the foreman may readily comprehend the architect's wish or intention.

Ambiguous specification are downright evils. They offer loopholes for evasions and furnish grounds for exactions. To them is doubtless attributable the great difference frequently seen in tendering. As read by some, certain works are suggested; as read by others these works are overlooked. The shrewd, careful reader notes that certain works are necessary, but he does not provide for them, knowing to a certainty that others will not. Were he to provide for them the job would be lost, and if he lost the job he would for certain nothing gain; whereas, by taking it in its incompleteness he has at least the possibility of gain. The bareness of the possibility is a strong temptation to wrong. Thus it is that swindling occasionally begins with putting in the foundations and ends with scrubbing the floors. Where lies the fault? In the architect's office or the builder's? The truthful answer is—in both.

Keenness of competition means lowness of price; lowness of price entails cutting of work; cutting of work is another name for theft; and theft by rights should send man to prison. When a builder takes work in the full consciousness of the specification's incompleteness, he burdens himself with the responsibility of the due performance of all things needful. However loose or vague a specification may be, it is pretty well sure to contain some such stipulations as these: "The contractor shall provide for all works, and do all the several matters and things required for the thorough performance of the contract"; and "the contractor shall hand over the building clean and perfect throughout on completion." In submitting his tender, he announces his determination to execute the work in accordance with the specification, and since the specification requires thoroughness, honor asserts that thoroughness should be had. This, however, is no excuse for the architect. The work should be clearly specified in his office, then all would tender alike; fair prices should be obtained, and the evils of sharp practice should be banished. There will be a certain amount of sharp practice under any circumstances so long as men are in haste to get rich, but the fault and the blame would then rest with the evil-door. If when a specification is clear, or tolerably clear, the shifty contrived to disregard its plainness and wrest its obvious meaning, much worse must the case be with a specification that even the honest can barely understand. This proves the need of clearness. If the work of the ambiguous specification is honorably performed, the builder has to pay the penalty of the architect's negligence.

Hammers.

To most persons a hammer is simply a hammer, but every mechanic knows that there is a great variety of hammers, from the tiny lump of steel with which the watch-maker taps the mandril of a balance-wheel to the huge trip-hammer under which tons of hot iron are molded into shape. The hammer, in fact, plays an important part in the mechanic arts, each one presenting its peculiar form, size, weight, and material. In some trades there is great skill and dexterity required in the use of the hammer. Any one who has seen the operation of riveting a boiler has admired the sleight of hand with which the strikers round up the head of a rivet in less time than it takes to write about it. The blows follow one another with wonderful accuracy and rapidity, and when the rivet-head is finished it looks as smooth and regular as if it had been cast in a burnished mold. Take even the process of driving an ordinary nail, and it is remarkable what a difference there is in the method of a novice and that of a carpenter. The one hits one side, often bends or breaks the nail, or bruises the finger that holds it. The carpenter hits with precision, and drives the nail home with well-directed blows. The deft hammering of coppersmiths is proverbial, pounding metal into any required shape. The copper plates that are used by engravers are hammered hard in long strips by the use of large steel hammers with faces as smooth as that of a mirror. The most accurate hitting is required in this process, because the hammer-face is flat, and must be held perrectly level to avoid cutting deep gashes in the plates. When it is necessary to make bevels on these plates, a skilled workman will make a bevel with a hammer in a few minutes that would require hours if made by filing and polishing. Silversmiths learn to be very expert in the use of the hammer. Spectacle-makers can take the temples of a pair of ladies' spectacles and temper them by dexterous planishing between hammer and anvil. A blacksmith always has an assortment of hammers with which to shape the ductile iron. File-cutters are required to use hammers with great judgment. Each tooth in a hand-made file is made by the burr raised by tapping a sharp chisel held to the soft file. After each blow the chisel is set up against the burr of the last stroke and another burr is raised, and so on until the file is finished. The force of the blow measures the size of the burr raised, so that the regularity of the file depends upon the evenness of the hammer-stroke. Many files are made by transferring processes by machinery, but the hand-made files command the highest price, while with many peculiar forms of files the hand-work is indispensable, and the regularity of hammer-work a necessity. One of the most difficult jobs to be done with a hammer is to straighten large flat plates of metal. An expert workman will here do, with a few strokes of the hammer well directed, work that a non-expert cannot do at all. Indeed, without great skill, the attempt to straighten plates with a hammer generally results in making the crookedness worse. The gold-beater's hammer is wielded day by day by the trained hand, although an hour of it would fatigue the novice. The calker has a peculiar long hammer. The ax and the adze are but sharpened hammers. Machinists use great copper hammers for work where they wish to strike blows without marring the object struck. Among the queerest hammers in use is a magnetic hammer. There was once a Yankee peddler who used one of these to great advantage. He was peddling a fancy soap. He would go into a store, pull out his advertising card, "Buy my unequaled soap," and before the astonished store-keeper could remonstrate he would tack up one of his cards on a rafter or wall where it could not be taken down without a step-ladder. The way he did it was to hold up his card to the required spot with one outstretched arm, standing on tiptoe. He had a magnetized hammer with a long handle, and in his mouth a few tacks. He put one tack on the hammer, point outward, and with one tap sunk it into the required place to secure his card out of reach. Recently, in South Brooklyn, a tall bill-poster pursued this plan of posting advertisement-cards on telegraph poles so high that it required the line-men to climb up the poles to get the cards down.—*Ex.*

Extra Work on Buildings.

It is of course open to the builder to prefer a claim for extra work. Then come other evils. The claim is perhaps compromised. Omissions are made to set against extras; this may be just as between the architect and the builder; but is it just as between the architect and the proprietor? If the "extras" were necessary, and the "omissions" were likewise necessary, the house must orginnally and eventually have been a long way removed from the requisite completeness. If the claim is allowed, the builder receives justice. But how stands the case with the architect and the proprietor? It is then the latter who pays the penalty of his adviser's negligence. If, as sometimes happens, the claim is disputed, an angry controversy ensues; and the architect being his own arbitrator, the builder goes to the wall. What then becomes of justice between the architect and the builder? If, as sometimes happens, the claim is wholly ignored, the architect carries the point, the proprietor has his house—but what becomes of justice between the three? Whatever works are necessary in the opinion of the architect, but not shown on his drawings, or set forth or implied in his specification, are justly deemed extras, justly claimed as extras, and should be justly paid as extras. To withhold payment for work executed is theft, as much as the willful omission of contract work is theft. It is all very well to point to the clauses of an ambiguous specification, clauses wide enough to embrace everything under the sun, and show that the building is to be given up perfect. Ideas differ widely as to perfection. The man who has tendered from an ambiguous specification thinks his work perfection when he has executed soundly all necessary works. The author of the ambiguous specification may include in his idea of perfection many other works not actually necessary. This, therefore, should be an axiom in the composition of a specification. Every essential work, and every work of opinion and taste, and all nice points of construction, should be clearly specified and explained; while all minor works, if not described at length, should be explicitly mentioned, or at least, clearly implied.

☞ **Subscription price of this journal is $2.00 in advance.**

Book Notices.

The Builders' Guide and Estimaters' Price Book.

This work is chiefly intended to assist the BUILDER AND CONTRACTOR, in making estemates of the cost of work they may be competing for. A great deal of information often required by contractors cannot be obtained without trouble and serious loss of time, consequently their, estimates are frequently guessed at, and then tenders for construction are either absurdly too high or ridiculously low. This little book is intended, in a measure, to remedy this defect in estimating, by bringing before the estimater the details to be estimated as far as possible, and their approximate cost. It is impossible, however, to quote prices that will suit every locality, or all time, but we have provided for this by leaving a blank column where prices may be entered in pencil to suit locality and time. The prices given in this book are only intended to form a basis upon which the contractor can place a percentage; they are approximately correct, but in all cases we advise a comparison with the prices current. We will send a copy to any address upon receipt of the publisher's price, $2.

The Modern House-Carpenter's Companion and Builder's Guide.

By W. A. Sylvester. Pocket size, 114 pages, 35 full-page plates. Cloth, price, $1.25.

Many workmen have wondered why some practical carpenter did not get up a hand-book on carpentering for the coat-pocket, which contained rules and illustrations for doing such jobs of work as are constantly required, with reliable information to assist in estimating the cost and other matters essential to carpenters and builders, that could be sold at a price within the reach of every workman. Here is just that book. It has much information not usually given in large and costly works on carpentry (of from $5 to $15), and will be of great convenience to workmen. Among the illustrations and descriptions of the different kinds of work are the following: Pitch, hip, valley, mansard, and French roofs, tresses, the angle rafter on a French roof, straight and winding stairs, splayed and circular work, mitering circular moldings, rake moldings, gothic and elliptic arches, etc.; also information to assist in estimating on stone work, brick work, framing and boarding, lathing and plastering, clapboarding and shingling; thickness and weights per sq. ft. of sheet lead and zinc for flashings, table of board, plank and scantling measure, table of braces, table giving the sizes, thicknesses and weights of sash for 2, 4 and 12 lighted windows, sizes of frames, and amount of line required for each weight; also sizes of sash for skylights and cellar windows; table of square roots of numbers from 1 to 100, table of diameters, circumferences and areas of circles, from 1-64 inch to 24 inches; table of decimal parts of feet and inches, with fractional equivalents, etc.; rules for estimating sizes of bins to hold a given number of bushels of grain, apples, or potatoes; or a given number tons of coal; for estimating size of tank to hold a certain number of gallons; table giving the weights of various materials, besides a few arithmetical rules and tables, including the metric system tables of weights and measures—making the handiest and most complete for the price yet published. It is a book which every workman should own, in order to accomplish his work properly, and to thereby fit himself to become a master of his trade, whether he intends ever going into business on his own account or not. The book is actually indispensable to the master carpenter or builder who would avail himself of every advantage that can be of service to him in his business. Copies mailed to any part of the United States on receipt of price.

The Slide Rule, Simplified, Explained and Illustrated.

Showing its wonderful powers of calculations, and its rapidity in solving all questions relative to MECHANICAL TRADES. Designed especially for the instruction of YOUNG CARPENTERS AND JOINERS.

The design of this work is to furnish a cheap and simple illustration of the marvelous powers of the SLIDE RULE, an instrument capable of giving the young carpenter a most thorough and practical instruction in the principles of his art, and clearly imparting the means by which difficulties may be overcome, and yielding an inexhaustible source from whence he may continually draw supplies to enable him to consummate his designs with vigor and success, thus preventing a waste of time, labor and material, which everywhere arises from want of knowledge and skill.

The slide rule is not a modern invention. It was known about the time Wm. Penn landed in Pennsylvania, and founded the city of Philadelphia. Yet, strange to say, after the lapse of so many years, an instrument combining so much of everything that a workman should know, has, in this country, been allowed to remain almost unknown, except as a tool for the most common purposes, entirely different from what was intended by its ingenious inventor.

We can heartily recommend this work to our mechanics, as par excellence the best book treating on the Slide Rule yet published. It is a large-sized book, illustrated by 32 full-page plates descriptive of the problems involved by the use of the Slide Rule, with a clear explanation of all the principles connected therewith.

We will mail a copy to any address upon receipt of the publisher's price, $3.

☞ **$2.50.** ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Model Homes," for $2.50.

Proposed Plumbers' Registration Law.

In previous issues we have noticed the fact of a movement among the plumbers of San Francisco, having for its object the passage of a law by the legislature at its next session, which will confer certain powers upon the Board of Health, in reference to the sewerages and plumbing work of all buildings which may be erected after its passage, and requiring the registration of all master and journeymen plumbers, etc.

This is a movement in the right direction, but it will require very sound and far-reaching judgment on the part of those managing the matter, to so frame and shape the intended enactment, as to render its working and enforcement both practical and certain. It is a matter of question whether a law or "an act" of the character proposed by the printed form issued by the plumber's organization would furnish the remedy sought for, unless improved and strengthened in several particulars. While the object aimed at is to introduce and impose such restrictions and regulations in the execution of plumbing work as will prevent the terrible botchery heretofore so extensively practiced in this city and State, and while all competent and qualified plumbers will readily comply with the requirements of such a law, the tinsmiths, stove-dealers, tailors,. and other frauds who style themselves "practical plumbers," while enjoying no practical knowledge of the plumber's art, will also assume the forms of registration for the purpose of securing a legal badge as plumber, although in practice a mechanical ass. This feature should be guarded, and covered by the provisions of the law, so that those only who are qualified by thorough, practical experience as plumbers, or who have made plumbing and sanitary science a matter of intelligent study, should be permitted to undertake plumbing work. We contend that in all the mechanical departments of labor, where human life and health is to any considerable extent dependent upon the manner of execution, it is right and proper that laws should be enacted calculated to protect the public health. To prevent malpractice, and save communities from fraudism in medical science, the law provides that those who claim to be doctors must possess certain evidence as to their qualifications, in the form of diplomas, before they are permitted to avail themselves of the privileges conceded and accorded to those fortified with the necessary emblems of qualification. In numerous other connections, the right to practice and pursue is properly restricted and regulated by national and State laws; and there are numerous good and sufficient reasons why individual rights should be restricted by law in the matter of plumbing work, as its improper execution is one of death's most effective weapons in separating loved ones forever. We are aware that this more serious view of the matter does not receive the attention its nature and importance demands; still the great fact that tens of thousands die yearly through the agency of sewer-gas machinery—i. e., poorly executed plumbing work—remains and repeats itself every moment of time; and if the intelligent gentlemen engaged in the matter under notice succeed in securing the enactment of a law which will remedy the evils complained of, they will be entitled to everlasting remembrance by the community at large, and by the reputable architects in San Francisco in particular.

☞ **$10.00.** ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Francke's Celebrated Work on Monuments," for $10.00. Every architect and marble-worker should have a copy of this work.

A GREAT MISTAKE.

Special to Those Who Advertise.

The advertiser who reaps the harvest from advertising is the man who keeps his announcements before the world all the time, year in and year out, when business is good and when business is dull. It is the spasmodic advertiser, the man who goes in for two or three months and then drops out for six months, who will tell you that advertising does not pay. Probably it does not pay him, but it pays his competitor who has the shrewdness and courage to keep his name and address staring people in the face all the time. If everybody was ready to buy a certain article at a certain season, and wouldn't buy at any other time, then advertising in this particular season would completely cover the ground; but people buy at all times, and if you want their business you mustn't drop out of sight, even for a day.

Fairbanks, the scale man, knew what he was about when he gave an advertising solicitor an order, although he had more business than he could attend to, remarking that his reason for doing so and for keeping his name constantly in print was to so familiarize people with his scales, that when a school-boy in the backwoods spelt *scales* he would think or *Fairbanks*. He knew, further, that the boy who connected his name with scales would sometime become a man and a possible purchaser.

We heard of a salesman not long since who happened to be traveling for a firm that didn't believe much in advertising. He said it took him longer to explain to customers who his firm was than it did to sell the goods, when he succeeded in making a sale.

The indirect effects of advertising are often far greater than the direct results. The head of a large house once told the writer that while his firm advertised to the extent of many thousands of dollars yearly, they received no orders to speak of direct from their advertising. The indirect results, however, were all that could be desired. No salesman has any occasion to waste his time in a historical and biographical description of the members of his firm. They are known wherever the English language is spoken and in other foreign countries.

The moral is plain—keep your name so prominently before the public in connection with the special article you manufacture, that when that article is wanted your name will instantly be thought of as the maker.

Sewer Gas in Barber Shops.

A new danger has been discovered by the *Lancet*, a danger of breathing sewer gas from the waste pipes of barber's basins, when being shampooed. The danger is the more serious, because the whiff of germ-laden gas would pass unnoticed among the scents and sweet odors of the barber shop, and the unconscious victim, while breathing rose and jasmine, would also be absorbing the bacteria of various diseases. Probably the basins of the aveage barber shop are no better plumbed than other fixtures, are untrapped wastes and syphoned traps may make as many open connections with the drain as are found in the average of other buildings, but, on the whole, we regret that the *Lancet* has directed attention to this subject, because it gives opportunity to the barber to ask the man in the chair to take one more article than is on the list now. When the present category of oils and scents, bay rum and hair reviver is gone through, there will hereafter remain the inquiry, whether the m. c. will not take a little disinfectant through an atomizer. On behalf of the shaved community we protest.

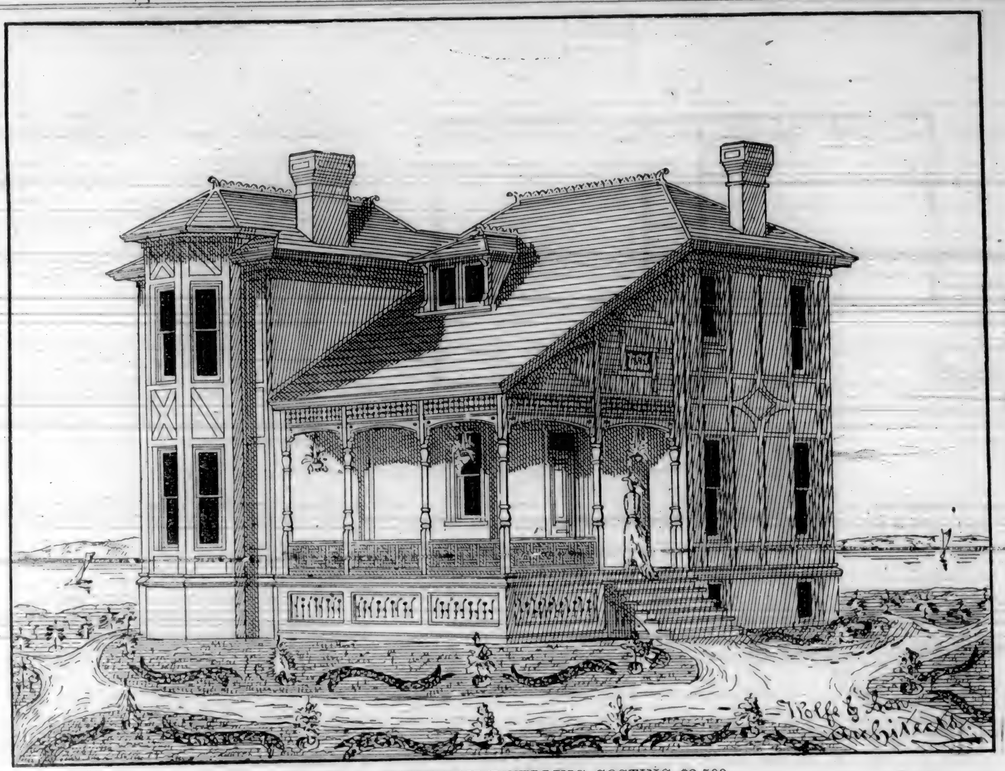

PLATE 4.—SUBURBAN DWELLING COSTING $3,500.

Tar Roofs.

The London *Builder* says that the German government has on several occasions pointed out to farmers and others interested in agriculture that too great an expenditure of capital on buildings is a mistake. With a view of illustrating the application of this principal of economy to roofing, the *Cologne Gazette* points out that the system of using tar for roofing purposes is at the same time economical and suitable for agricultural buildings, and what is said may serve as an answer to a recent inquiry in our own pages. The framework of the roof can be of relatively slight construction on account of the nature of the covering it is intended to support, and the perpendicular height of the roof can be one-eighth to one-tenth of the entire depth of the building. The distance of the rafters is arranged according to the width of the covering material, the scale being that from the middle of one rafter to the middle of another. The distance should be $2\frac{3}{8}$ inches less than the width of tar roofing sheets.

Immediately upon the rafters comes boards, and upon these (exactly in the center of the separate rafters) are placed strong laths, about 2 in. wide and $1\frac{3}{4}$ in. thick, the upper edges being taken off. The roofing sheets are now placed so as to cover the spaces between the laths, and are nailed. Over the laths are placed strips of paper, 5 in. to 6 in. wide, fastened with nails at intervals of $2\frac{3}{8}$ in.

In order to make the sheets lie smoothly upon the boarding, it is suggested, in case they are too dry, to soften them by immersion in water. It is recommended that the workmen should not wear heavy-nailed boots, and also, that if the rain comes on, the roof should not be walked upon immediately after. When the entire surface of the roofs is covered with sheets, the strips of paper (or caps) already named, as well as the joints, are painted over with a hot mixture of coal tar and pulverized lime. Pure dry sand is at once sprinkled over this coating, and particular care must be taken that all the nail-heads are well covered. When the paint is dry the whole surface of the roof is once more coated with the same mixture, and is sanded.

The object of this careful method of overlaying the roof with several coatings of specially prepared solutions is to preserve in the tar those oleaginous and fatty properties which it soon loses if exposed to the air, and the retention of which is an indispensable condition of its resistance to water. Clay and sand do not afford sufficient protection, and they are removed by violent winds.

Reference is made to various systems of coating the tar roof with protective substances, for the purpose indicated. One of the most successful methods consists of a mixture of cow dung and thin white lime, which is spread over the entire surface of the roof. If such a coating is not applied the tar paint must, during the first four years, be annually renewed, which enhances the cost of the roof. If the last-named protective composition is used, and renewed every two years, the coating of tar and lime can be dispensed with. Particular mention is, however, made of a coating of tax mixed with Portland cement, the tar being well heated and used in the proportion of 111 pounds to 200 pounds of cement. The mixture should be kept well stirred during the preparation, and should be applied as soon as made. This particular method has been tried in many cases in Germany, and, according to the journal quoted from, its satisfactory results have caused its adoption upon a scale of progressive importance.

Re-gumming Circular Saws.

It is estimated that three times re-gumming a non-perforated circular saw costs nearly the price of a new saw. Perforations in the line of the gullet lessen this cost. The metal in the track of the perforations is softer than the teeth, because the sawdust left in them when the plate is scoured, after tempering, burns when the plate is flattened, and draws the temper of the holes.—*Grimshaw on Saws.*

Breathe pure air, if you would have sound lungs. It is wicked for a young girl with weak lungs to sit on the anxious seat in a house of prayer, where the exhalations of a thousand bodies and the poison of carbonic oxide fill the closed room, even if the preacher seems to her like God's angel. Pure air in the house, pure air in the hall, pure air in the workshop, pure air in the church—this is the prime necessity, and without this, upholstery and painted glass, and labor-saving inventions, and the prayers of the man of God, are all mockery. The gospel of pure air is the saving gospel to those who mourn that so many are cut off in the morning of their days, and that consumption is the scourge of the race of man.—*Herald of Health.*

☞ $4.25. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "American Cottage Homes," for $4 25.

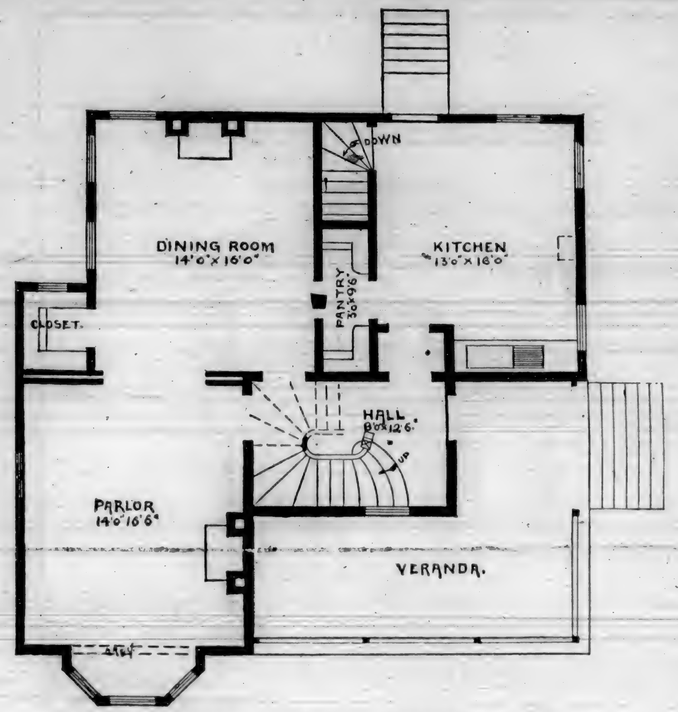

PLATE 5.—FIRST FLOOR PLAN OF SUBURBAN DWELLING.

EVERYBODY'S COLUMN.

"FAS EST AB HOSTE DOCERI."

"To find the inclination of roofs that the shingles may last the longest."

The shingles will last the longest (other things being equal) when the roof dries more quickly which will be the case when the water runs off as rapidly as possible.

We have not space to print the full algebraical solution, but the result shows that the height of the roof above the eaves should equal half the width of the house—that is, one half pitch. In practice, however, roofs are seldom made so steep in this part of the country.

FRIEND ARCHITECT: Please tell me how to compute the number of joists it takes in a building when spaced 16 inches from centers.

AMATEUR.

ANS.—Multiply the length of the building in feet by 3, and divide the product by 4. For instance: the building is 124 feet long = $124 \times 3 = 372 \div 4 = 93$, the number of joists required. This rule is applicable, no matter what the thickness of joints may be, as long as they are spaced 16 inches from centers. Allow one extra, except when the end sills are utilized in place of joist. Of course deduct when the latter is the case.

During a recent tornado in Brewer, Me., a plank was blown with such force against a cistern with wooden walls an inch and a half thick, that the board penetrated some distance through the wall into the water. It was found that the board was wedged in so closely that the water did not leak, and the owner simply sawed the plank off, leaving the wall in the cistern all right.

☞ $3.50. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Palliser's Useful Details," for $3.50.

The Gig Saw.

The spring strained saw, commonly known as the gig, jig, fret, or scroll saw, has a pull cut only; the return being effected by the same means that keep it strained. It is light running, and generally used for cutting out fine curved or scroll work, although of late years the band saw is superseding it for outside work.

Gig sawing really divides itself into two branches—sawing in irregular shapes on the outside of a piece of material, and the same process on the inside, known as fret work.

The short and readily detachable blades of the strained gig saw can be so quickly withdrawn from one cut and inserted in another starting hole, that the band saw has no chance to enter the field of fret work.

It may be said to have influenced American architecture, which seems largely to have been arranged so as to give every opportunity possible, from crest and barge board to porch and railing, for the display of scroll sawing.

Regarding the antiquity of the saw, it is instanced that a frame saw is shown in a painting of Herculaneum. The sawyers are at each end, one standing and the other sitting. The bench to which the timber is secured by clamps is supported by four-legged stools. The saw blade is strained in the middle; the teeth stand perpendicularly to the plane of the frame. Frame saws were common in Egypt many centuries previous to this time.

☞ $5.50. ☜

We will send the "Science of Carpentry Made Easy" and the "California Architect and Building News" for one year, for the sum of $5.50.

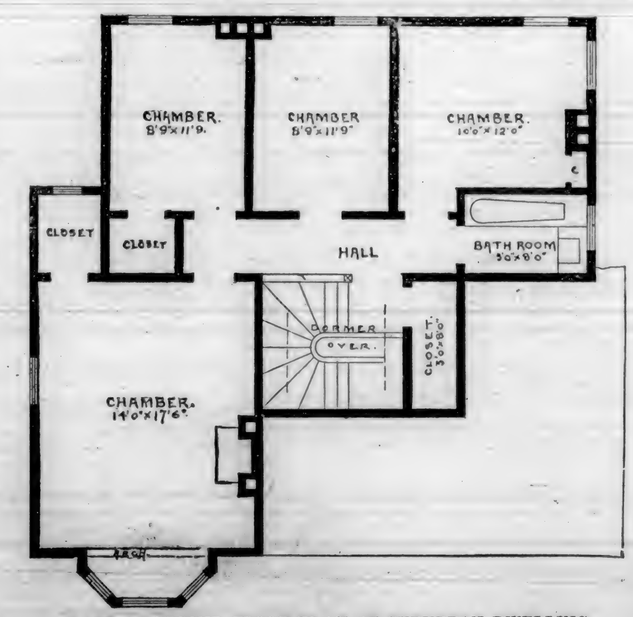

PLATE 6.—SECOND FLOOR PLAN OF SUBURBAN DWELLING.

Sixteenth Annual Session of the American Institute of Architects.

The Institute convened in annual session at Cincinnati, Oct. 26th, 1882. In the absence of President Walter, E. S. Littell of the New York Chapter presided, A. J. Bloor performing the duties of his office as Secretary. The annual address was delivered by Col. George Ward Nichols of the Cincinnati College of Music. The various reports of officers, trustees, and committees were received and duly acted upon; also the names of new members elected since the session of 1881 as Fellows of the Institute, among which are the following from San Francisco: Seth Babson, G. W. Sanders, James E. Wolfe, John Wright, William Curlett, Thomas J. Welsh, (Augustus A. Laver has also been a Fellow member for many years, and it is mainly through his influence that the union between the San Francisco organization and the parent institution was brought about. This representation of seven members in the grand body gives to California rather more than its quota, as the total membership of the Institute is restricted by its laws to seventy-five). Various subjects and matters of interest were introduced, discussed, and considered, bearing upon the numerous important features involved in the science and practice of architecture in its more intelligent and comprehensive senses. The matter of increasing the limit of membership to one hundred Fellows (without limitation to Associate membership) was discussed at length, together with other changes in the present rules and organic laws of the Institute.

At two o'clock the officers and members and invited guests of the Institute sat down to a sumptuous repast and enjoyed the hospitalities of Cincinnati Chapter. The remaining hours of the afternoon were spent in visiting the various more important buildings of the city; and, by special invitation of Mrs. George Ward Nichols, the Rockwood pottery. The citizens of Cincinnati seem to have vied with each other in extending invitations and hospitalities, and the Merchantile Library threw open their doors for the free use of the members of the Institute.

The evening session was called to order by the president *pro tem.* The nominating committee reported the following as officers for the ensuing year: For President, Thomas W. Walter of Philadelphia; Treasurer, O. P. Hatfield, New York; Secretary, William R. Ware, New York; Board of Trustees, H. M. Congdon, I. C. Cady, A. J. Bloor, Napolean Le Brun, all of New York; Committee on Publication, A. J. Bloor, New York; H. H. Holly, New York; John McAuthur, Jr., Philadelphia; Geo. C. Mason, Jr., Newport, Rhode Island; Committee on Education, Professor W. R. Ware, New York; Professor N. Clifford Ricker, Champaign, Illinois; H. Van Brunt, Boston, Massachusetts; Alfred Stone, Providence, Rhode Island; A. Potter, New York; Secretary of Foreign Correspondence, T. M. Clark, Boston; all of whom were unanimously elected. The thanks of the Institute were expressed by a rising vote to retiring Secretary Bloor, for his efficiency as Secretary during the term of his office.

The second day of the session was opened at 10 A. M. A salutary letter from San Francisco Chapter, and communications from other sources, were read.

The report of the Secretary for Foreign Correspondence was read, giving among other things an account of the discovery of the remains of an important Roman town near the City of Thomar in Portugal, made by the Chevalier de Silva, of Lisbon. It was known that Thomar was situated upon or near the site of the Roman town of Nabactia, but no important traces of the latter have been found until M. de Silva, amusing himself during a morning walk in the fields by turning over a few sods with his cane, almost immediately exposed a fragment of mosaic pavement. The discovery was followed up, and it appears from his last letters that other pavements have been found, and the forms and situation of the principal buildings of the ancient city ascertained.

Mr. Clem Olhaber, smoke inspector of Cincinnati, made statements in reference to smoke consumers. He stated that there were 400 smoke consumers within the circuit of his duties, working well and satisfactory to all parties, and that he met with but little opposition to the enforcement of the smoke ordinance. (It is about time that smoke consumers were ordinanced into use in San Francisco. We see no good reason why persons or companies should enjoy rights and privileges in the erection of smoke stacks and chimneys, to the injury of large districts of valuable tenement property and residences. And as our cable-street railroads and others disregard the interests of the cummunity in this respect, they should be compelled by imperative laws to comply with the laws of equitable rights, which recognize no privilege in any person or persons to enhance their own interests to the injury of others.)

Mr. A. C. Nash of Cincinnati read an able paper "in regard to the establishment of a valid test of professionable ability," in which was urged the establishment of a board of examiners, composed of gentlemen eminent for their professionable attainments, whose duty it should be to ascertain by rigid examination the qualifications of candidates for degrees, with vested rights to grant diplomas in accordance with the rank and standing of the applicants.

(There should be National and State boards of this character, established by Congress and State Legislatures, so as to prevent the assumption of the title of architects by those who arrogate to themselves the name of architect, while grossly ignorant of the grand principles and science upon which architecture rests. We shall revert to this subject hereafter.—Ed.)

An elaborate paper by Glenn Brown of Washington, D. C., in reference to "water-closets," was presented by Secretary Bloor. (It will be remembered that a series of articles written by Mr. Brown especially for this journal appeared in its columns during the past few months.)

On motion of Mr. Crapsey, the convention adjoined to meet at Providence and Newport, subject to the call of the Board of Trustees.

The session throughout appears to have been pleasant in a general sense to those attending, and especially profitable in the numerous valuable matters and subjects introduced. The Institute is certainly doing a good work by its organization, and the intelligent and educated of the profession should to a man, by their membership and attendance at its yearly gatherings, assist in the grand objects of the Institute, thereby, to some extent at least, helping to resist and hold back the tide of degeneracy which has to so large an extent flooded in upon the profession through the encroachments of unqualified pretenders and the indifference of the truly qualified to defend and sustain their high calling in life.

An old Hungarian miller is reported to have given this rule for telling a good millstone: "When about to select a stone, take a flask of gin and pour it upon the stone; if the stone absorbs the liquor so that the surface appears dry, it is a good one; but if the gin remains on the surface, the stone is good for nothing."

We would suggest that the same rule will not apply to the selection of a miller.

☞ **Subscription price of this journal is $2.00 in advance.**

More Railroad Inventions Wanted.

With the rapidly increasing traffic on American railroads there is a demand for greater facilities for loading and unloading freight. It would seem that an improvement in the construction of warehouses might be made that would render the rapid handling of heavy freight an easy matter, as compared to the present clumsy and inconvenient structures.

There is hardly any country station but has more or less heavy freight to handle, and frequently much trouble is experienced for the want of proper appliances for the work. Of course at terminal stations something has been done by way of cranes and derricks, hoisting machinery, etc., but even the best regulated warehouses are open to radical improvemeuts in apparatus and appliances for moving heavy as well as light and bulky freight. This is worth the study of inventors.

There is also a chance for improving platforms, so that moving goods from the cars to the warehouses may be an easy matter, without the use of the ordinary trucks.

Another thing that interferes with the rapid handling of freight is the location of the doors of freight cars midway between the ends. Ordinarily, this is the proper place for the door, and is preferable for a single door. But if a car were so constructed that goods could be loaded in any part of its length, it would certainly be more convenient than with a central door. This might be accomplished by constructing the car with a system of slide doors the entire length of its sides, so that a car might be loaded in sections, and much sooner than if loaded from the middle. This would also facilitate unloading. Appliances for loading and unloading goods from platform cars are nearly satisfactory, but may be improved.

This is an inviting field for the inventor. But if any American inventor would reach the top of the ladder of fame at a single bound, let him produce a station indicator that will inform railway passengers where they are when they arrive at a station. How well the human machine fails to do this is well known by every railway traveler. For a brakeman to speak the name of a station so that any human being can understand it seems to be one of the lost arts, and it remains for the inventor to produce a substitute to perform this duty. This has already been accomplished so far as "braking" is concerned. Now let us have a reliable station indicator.

Then there is a want of a humane invention to prevent people being caught in frogs and switches, guard rails, etc. Hundreds of people are killed or maimed every year by being caught in the "boot-jack" portion of frogs and held fast, and run down by cars or locomotives. This trap is a peculiar one. A person slides his foot into the wedge-shaped opening, where it is held in horizontally, while the rail heads prevent his lifting his foot vertically, and before he can extricate himself he is a mangled corpse. Some devices have been tried to prevent these horrors, but none is effective. It will not do to fill this space with any rigid substance, for the wheel flanges must have room. Some yielding substance, as a spring, may be made to fill the space, so as to keep the feet out of the trap and yield to the pressure of wheel flanges. This is a serious evil, and there is no doubt that the railway community will reward the inventor who will produce an effective remedy.—*W. S. H., in Scientific American.*

A log was recently cut on Skagit waters, Puget Sound, which was nine feet in diameter at the stump. The first cut was 24 feet long, and the next log 32 feet in length, and 78 inches in diameter at the big end, while the third was 36 feet long, and measured 63 inches—in all 92 feet of logs, and an average diameter of over five feet.

ACME VENTILATOR

This is of double the usual power for producing a vacuum for the Exhaustion of Sewer Gas, Foul Air, or for increasing Chimney Draft, and the Principle is equally applicable for raising water as in that of a Steam Injector, and with increased power to those in general use.

By reference to the illustration it will be seen that the chamber C is for the exit of the contents of pipe or pipes D, which is in communication with the apartment or apartments below to be acted on. The chamber C is surrounded by the atmospheric current BB, passing by its mouth between the COWLS, and it also surrounds the atmospheric current passing through the center at A. By this means the inside and outside, (all around) the mouth of the exit chamber C is acted on to produce a partial vacuum by both atmospheric currents of double the usual power for exhausting the sewer gas, foul air, or increasing the smoke draft, or other gaseous substance to be drawn up and floated away in space. In some devices the mouth of exit pipe C is only surrounded by one passing atmospheric current BB, and in others it surrounds and receives only the influence of the atmospheric current at A passing through the center, neither combining but the single feature and acting on one edge only; while this device combines both features, acting on both edges to draw and drain the whole. In the devices mentioned having the influence of but one atmospheric current, may be likened in a degree to that of a stream of water quiet in one-half its width, and the other half, by an incoming stream, may be moving rapidly forward. The action of the water at rest where the moving current impinges on its side is not to move it forward as a whole, but to reverse the motion in part as it approaches the bank or shore, as the shore retains its hold in its quiet state, as that of the moving current opposite is to move it forward, hence reverse action takes place near the shore to that of the moving current which cause the eddies we see along the shores of our rivers. The point or line of inertia of a large body acted only upon at its rim or edge, instead of effecting to move its whole area, is likened to the instance mentioned. The atmospheric pressure at the earth's surface is fourteen and three-fourths pounds per square inch, or 2124 pounds per square foot. The passing through of the two atmospheric currents B and A, shown in the drawing, creates a partial vacuum by its operation on both sides of the mouth of the chamber C, and the atmospheric pressure at the lower end or connections of pipe D, being fourteen and three-fourths pounds to the inch, forces up the foul air, sewer gas, or whatever may be the contents of the apartments below to restore the equilibrium.

The principle of this device is equally applicable as an improved steam injector, the steam passing through the chambers B and A, which are of diminished size and enclosed at one end, creating a vacuum in chamber C, which will have great power for lifting liquids as well as gasses.

P. H. JACKSON.

☞ **These Ventilators are on Sale by the Plumbers of San Francisco and Oakland.**

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FRANKLIN GIRDER

The Most Economical Construction Made.

It is so proportioned and equalized that the opposing forces and strains in a great measure neutralize each other, by which means the material in use is economically employed, so that the price for them for buildings is **about one-half of those in common use in this city.** They are made of any length and to sustain any desired load: the proportion of the safe to the breaking load being as 1 is to 3, or for a girder to sustain 100 tons, the breaking load will not be less than 300 tons, and guaranteed as such in every case. The scientific Press of this country and Europe have most favorably commented on this invention, as the Scientific Press, Scientific American, Railway Review, The California Architect and Building News, and Architect and Builder; also the London Engineer, and Paris and German scientific Papers. Two of these girders, 25 feet long, sustain the front wall, 17 inches thick, of Mr. Somer's new building on Market Street, opposite Dupont Street, this city. The rise or verse sine of these girders for the bay windows over them can be kept within any limit usual in such cases. They are made of any length **for buildings** not to exceed 50 feet, and to sustain any load not exceeding 1000 tons. For Bridges, the length and sustaining capacity may be increased.

P. H. JACKSON,
Civil Engineer.

P. H. JACKSON & CO.

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The present dark, damp cellars, or coal vaults of old buildings made light, cheerful, and well ventilated business apartments. Ingall's Patent Refracting Ungula Lens, of great refracting power, and of a form difficult of breakage either by extremes of temperature, or by hard usage incident to travel over their surface. These, used in conjunction with mirrors, reflect the rays of light below the beams to the rear of dark basements. Refracting lens of any kind will not direct the light back where the illuminating tiling is above the ceiling; hence the use of reflectors requisite in such cases.

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Architects' Superintendence.

A case of considerable importance to architects and employers came before the Nottingham County Court recently, and is reported in the *Building News*. The simple facts of the case were these: An architect of the above town sued a local physician for the balance of an account owing for professional services. The defendant instructed the plaintiff to prepare plans for a house in the "Æsthetic style." A tender was accepted, and the plaintiff informed the defendant that it was necessary to appoint a clerk of works, as it was not expected that an architect could visit the building more than twice or three times a week, and it was the duty of the clerk of works to superintend the minor details. The defendant, however, thought a clerk of works unnecessary. The building was finished, and the plaintiff sent in his account; but the defendant paid only a portion of it, as he contended there were certain details not properly carried out, that the drains were defective, and the house consequently unhealthy. It was contended at the trial that these were details which could not properly come under the architect's notice; but that would have been obviated by the employment of a clerk of works. His honor took this side of the matter, and ultimately a verdict for the plaintiff was given for £25 and costs. The case has more than one point of interest for the architect and the employer: there is a certain amount of supervision expected from the architect, under the ordinary and customary usage of the profession. What does this consist in, and how many visits ought an architect to make a week to a building which he has undertaken to superintend? It so happens there is no written or traditional rule of the profession which defines such attention, and that in point of fact architects have to consult their own time and convenience in superintendence of works under their charge. It is a hard thing to say how much attention an architect ought to give to a work. The answer would necessarily depend on various considerations: the kind of contractor employed, his character for honesty and integrity, the class of building, whether it required more than usual care in details, the size and cost of the building, etc. It would be simply impossible to lay down a hard-and-fast rule: each case must be judged on its merits. Of course it is no excuse for an architect to plead a large practice, and that in consequence he could not make so many visits to a certain building; the cost of the building ought not also to have anything to do with the superintendence: for if an architect, in however an extensive a practice, takes a work, he is expected to carry out his engagement as much as any less busy practitioner. And men of large practices can well afford to leave small works to small men. An employer at least expects to receive from his architect such a fair amount of supervision as will guarantee to him that the work has been carried out in accordance with the design and intention of the specification; and yet it is possible to conceive such an amount of supervision inadequate to detect errors in workmanship or scamped work, such as bad drainage details. For example: no ordinary amount of supervision on the part of the architect can obviate such a blunder as giving a drain a deficient fall, of making a clumsy or imperfect junction with the sewer, of seeing that every pipe is sound and well jointed, or that the joints and workmanship of the interior sanitary arrangements are perfect in every detail. These are things likely to be neglected directly after the architect's back is turned. Nor, for the same reason, could an architect be charged for negligence in not detecting every bad brick or piece of timber introduced. It would be clearly out of reason to expect him to be always present on the works and watch everything done or every material brought into the building; so that the superintendance of an architect can only be reasonably understood to mean a general inspection of the works, and this is the opinion the judge of the Nottingham County Court formed upon the evidence adduced. Referring to the details, he said "these were clearly the duties of a clerk of the work, and if the defendants did not choose to engage one, he must abide by the consequence, for an architect could not be expected to be present to superintend these details."

The law affecting building contracts is not very explicit with regard to the question of the architect's duties in this respect. The law imposes on an architect, that he should be duly qualified to practice his profession, and that he should use a reasonable amount of care and skill in its practice. In ordinary contracts there is nothing said about what an architect's superintendence means. No case appears to have been decided, which defines the limits of the architect's authority in the general superintendence of works, and in the absence of such terms the duty has to be implied, and the law, indeed, dictates what any prudent man would consider fair. When an architect undertakes to superintend the erection of a building, he is supposed to exercise a reasonable amount of skill and attention, and the law would imply neither more nor less. The case we have quoted so far defines the limit of the architect's duties in respect of general superintendence, and, in the absence of an express agreement, the evidence of usage only is admissible. It is to be regretted that we have no decisions or legal authority which define the architect's duties with regard to superintendence, for them is ample evidence in the architect's practice to prove that much of the success of a contract work depends upon the attention given to details. Yet the case decided the other day shows what the legal mind would understand as reasonable in similar cases, and to this extent it will be useful as an authority.

Our readers may ask what is implied by reasonable superintendence. It is quite certain, as we have said, that an architect can only be required to exercise a general supervision over the works. The setting out of the building correctly, the construction of the walls and floors and roofs, so far at least as they relate to their proper thickness, materials, and strength to resist pressure or weight, are all matters which strictly come within the architect's duty to see properly executed, as these are all matters for which his skill as an architect has been retained. They are matters also which always upon the proper carrying out of the drawings and specifications, for it is very evident if a wall blew or fell down, or a floor gave way, it would imply a want of due skill in proportioning the thickness of the wall or the beams of the floor; and as these things are shown in drawings, the architect is reasonably expected to see that they are carried out. But it may be fairly surmised that he cannot be held responsible for the introduction of inferior materials, or even for the bad workmanship of any part of a building over which he can only give a general supervision. If a wall gives way or a floor breaks down from bad material introduced in the substance of it, or from an imperfect connection or detail, which could not reasonably have been inferred from the specification and intention of the architect, he is clearly not liable, but the builder is the responsible party. Of course, we are supposing no case of negligence on the part of the architect to be proved. By the French code both the architect and the builder are liable during ten years for negligent construction, and a similar code, we believe, is in force in Lower Canada. With regard to drains, they are generally left to circumstances, and the architect rarely does more than indicate their position on the plan. The levels, joints, and junctions, are points which, however important to be attended to, cannot fairly be said to come within the architect's general superintendence, as usually implied in building contracts. The law, in fact, holds the architect responsible for all relating to design and construction, but cannot require him to exercise the same care as regards workmanship, as it would be unreasonable to suppose he could always be on the works. The question, indeed, is of such vital importance to architects, that it naturally brings to the front another of considerable moment; namely, the employment of a clerk of works. It seems to us that architects whose practice is extensive should require in all cases the employment of clerks of works. In country practice of a moderate kind it is usual to do without their services, yet the saving is dearly purchased, and the demands made on the architect become more onerous. It is to the interest of the architect that a clerk of works be employed, and it is certainly to the interest of the employer. In no building is it possible to see that all the materials and labor are of the nature described in the specification and shown in the drawings, without one; and we think it the duty of the profession to lay down some rule by which they may place themselves in a position of independence. When ought the clerk of works to be employed, and on what kind of work? are questions that might very well be left to an architect's discretion. In the case we have mentioned the plaintiff informed his employer that a clerk of works must be engaged, as an architect could not be expected to visit a building more than twice or three times a week. The defendant refused to have one, and the result was that the drains were defective. The judge observed, with much truth, that a clerk of works could not be considered merely as an ornamental appendage, for, as a matter of fact, the duties he was expected to perform were of a very important character. If architects desire to maintain their position as general supervisors of buildings, the sooner they come to a decision on these questions the better; and the employment of an efficient clerk of works ought to be considered almost as necessary a condition of good building as the employment of an architect.

Items of Interest.

A new form of window is being introduced in London, England, for preventing accidents in cleaning, and securing good ventilation. The two side-bars of each of a pair of ordinary sash frames are divided into two parts vertically, and the part carrying the glass is swiveled or pivoted in the side pieces, at a point central to its height. The frame with the glass is held in position by two small bolts in the top rail, which shoot into the side strips. When this latter fastening is effected, the two sashes may slide up and down in an ordinary way. It will be seen that to clean this kind of window there is no necessity for servants to go outside.

The placing of the plumbing business of New York under control of the Board of Health is working a much-needed reform in that city. Instances are constantly coming to light showing that unscrupulous plumbers have greatly hazarded the health of their customers by dishonest work. This fact appears as often in the dwellings of the better classes, where expense has not been spared, as in the residences of poor people. Suits for damages have been successfully prosecuted against plumbers, in a number of instances. This new law requiring scientific inspection of plumbing works admirably in New York, and it would be well if it were enforced in all large cities.

☞ $10.00. ☜

We will send the "California Architect and Building News" for 1883, and one copy of "Francke's Celebrated Work on Monuments" for $10.00. Every architect and marble-worker should have a copy of this work.

Gas Traps.

Innumerable efforts have been continued for many years past, in the development of a perfect trap for the purpose of resisting the inlet of sewer gas at sinks, wash-basins, etc. Many of the attempts have been entire failures, only a few being found worthy of application. Among the very best in use is the device known as the *Garland Gas Trap*, which has met with extensive adoptions, is a California invention, and enjoys a good reputation, backed up by strong recommendations from those who have used them. Its construction is designed to complete a perfect seal against sewer gas, even after the trap shall have syphoned or the water forming the seal evaporated.

Index to Volumes I. to IV.

We are having carefully prepared a full index to all articles in volumes I. to IV. It will be of the same size as our regular journal, so that those who preserve their monthly issues for binding at the close of the year, by securing an index first, can have it bound with their monthly numbers. We will send one to every subscriber. Any one failing to receive it should notify us at once.

Mulay Saws on the Pacific Coast.

Mulay saws are very little used on the Pacific Coast. As far as we can learn, none are in use on Puget Sound, and only a few in Mendocino and Humboldt, the great redwood districts of California. There they are employed in a few mills only, to take the slabs off the largest logs, to reduce their size.—*Grimshaw on Saws.*

Indexed Atlas of the World.

But one copy remains of this magnificent work. They are not for sale in any bookstore, and it is but seldom that a copy can be had. This last copy is bound in half-morocco, and will be sent post-paid upon receipt of the price, $35.

Publication Notices.

All books noticed in these columns can be had at publishers prices at this office. Sent post-paid to any address.

Practical Lessons in Architectural Drawings	$ 2.50
Carpentry made Easy	5.00
Mechanics' Geometry	5.00
Gould's Carpentry	3.00
Model Homes	1.00
Haney's Alphabets	2.00
Palliser's Details	3.00
" Specifications	.50
Carpenter and Joiner	7.50
Artisan	5.00
Hand Railing	7.00
Carpenter's Companion	.50
Saw Filing	.75
Carpenter's Pocket-book	1.00
Village and Country Houses	5.00
Sewer Gas and its Dangers	1.25
Workshop Companion	.35
Carpenter's Manual	.50
Atwood's Geometry	2.50
Bicknell's Village Builder and Supplement	10.00
" Supplement to Village Builder	4.00
" Detail Cottage & Constructive Architecture	10.00
" Cottage and Villa Architecture	6.00
" Street, Store and Bank Fronts	4.00
" Public Buildings	3.50
" School House and Church Architecture	3.00
" Stables, Outbuildings, Fences, etc	2.50
" Specimen Book, 100 Architectural Designs	1.00
Cameron's Plasterer's Manual	.75
Croff's Progressive American Architecture	6.00
Cumming's Architectural Details	6.00
Gould's Carpenter's and Builder's Assistant, new ed	3.00
" American Stair Builder's Guide	3.00
Guillaume's Interior Architecture	3.00
Hussey's Home Building	3.00
Mitchell's Stepping Stone to Architecture	.60
Palliser's American Cottage Homes	5.00
" Model Homes	1.00
Powell's Foundations and Foundation Walls	1.50
Wither's Church Architecture	15.00
Woollett's Villages and Cottages, or Homes for all	3.00
" Old Homes made New	1.10
Wooden and Brick Buildings, 4to, 2 vol. each	9.00
Ames' Alphabets	1.50
Standard Sign Writer	2.00
Fancy Alphabets	.50
Practical Draughting	1.00
Proportions	1.00
☞ Sole Agents in California for ☜	
Steel Square and its uses	.75
Steel Square Problems	.50
Modern Architectural Details	10.00

Market Reports.

LUMBER.—Receipts since January 1st:

Lumber	177,594,308
Shingles	57,436,504
Laths	15,298,210

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts per piece	17½

Redwood.

Rough Merchantable per M feet	$22 50
" Refuse "	18 50
Surface No. 1 "	37 50
" 1 x 6 "	35 00
" No. 2 "	27 50
Rustic, No. 1, 1 x 8 "	35 00
" No. 1, 1 x 10 "	37 50
" No. 2 "	32 50
" Under 10 feet "	32 50
T. & G., 1¼ x 4 and 1¼ x 6 "	37 50
" 6 in. 12 ft. and over "	35 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
" " No. 2 "	27 50
T. & G., Beaded, 12 feet and over "	35 00
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
Half-inch Surface "	30 00
Pickets, Fancy "	27 50
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	25 00
Shingles per M	2 50
Battens, ¾ inch, lineal feet "	1c

NAILS.—Imports since January 1st 180,882 kegs.

10 to 60 pennies, are quoted at	$4 70
8 " "	5 52
6 " "	5 05
5 and 4 " "	5 57
4 and 5 pennies, brad heads, at	6 00
6 " "	6 25
8 " "	6 50
10 and upward "	5 75
3 penny fines "	7 50

PAINTS.—The price of paint has been reduced owing to the competition of Eastern firms. The best white lead can now be had for 6¼ cents per pound.

Building Intelligence.

The year just closing has been a very busy one in regard to building operations. In an article on the first page in this issue we give a *resume* of the year's work. We are preparing a general statement in regard to building activities on the Pacific Coast, and will give it in our January number. Our advices are up to the 5th of this month, and as we wish to give a report for the full year, we delay the information until the next issue. But few contracts have been let the past month. 1883 promises to exceed the present year in number and value of building improvements.

SAN FRANCISCO.

Market, x Seventh and Eighth. Two-story brick.
O.—Geo. T. Mayre.
A.—C. Geddes.
O.—W. E. Stevens.
$25,000.

Vallejo, nr Gough. Four one-and-one-half-story frame.
O.—Capt. Raymond.
A.—H. D. Mitchell.
C.—M. Lynch.
$3,500.

Geary, nr Buchanan. Two-story frame.
O.—A. P. Stanyan.
C.—Drury.
$3,500.

Pacific, nr Steiner. Repairs.
O.—Brown.
Days' work.
$3,000.

Waller, nr Webster. One-story and basement frame.
O.—C. Shephard.
C.—Wiseman.
$3,000.

Howard, nr Twelfth. Three-story frame.
O.—W. Patterson.
A.—W. H. Bayles.
C.—J. Dutton.
$5,500.

Greenwich, nr Webster. Four one-story frame.
O.—Mrs. Ring.
C.—H. A. Sheldon.
$4,000.

Pine, nr Mason. Three-story and basement frame.
O.—S. Burbridge.
A.—McDougall & Son.
C.—Cogswell.
$8,000.

Austin, nr Franklin. Two-story frame.
O.—J. Toothaker.
Days' work.
$1,500.

Foot of Taylor St.—Repairs.
O.—Triton Boat Club.
A.—T. A. Eisen.
C.—F. Acker.
$900.

Golden Gate Avenue, x Franklin and Gough. Alterations.
O.—Mrs. Mocker.
A.—Townsend & Co.
Days' work.

Union nr Steiner. Additions.
O.—F. Pixley.
$1,000.

Julian Avenue, nr Fifteenth.
O.—T. H. Bonney.
C.—J. H. McKay.
$3,000.

Nevada, nr Utah. One-story frame.
O.—P. Biggins.
$2,000.

Montgomery and Sacramento. Repairs and additions.
O.—A. B. Crogan.
A.—J. Marquiz.
C.—J. V. Lawrence.

Stockton and Post. Additions.
O.—Staahl & Maack.
$500.

Steiner and Jackson. Repairs to school-house.
C.—N. Murphy.
$1,200.

Ohio, nr Broadway. Repairs.
O.—F. Beger.
C.—J. Bonde.
$700.

Seventh, nr Bryant. One-story frame.
O.—E. Painter & Co.
Days' work.
$2,500.

Sutter, above Dupont. Fitting up store.
O.—M. Gray.
A.—H. D. Mitchell.
C.—Jas. Geary.
$1,900.

Devisadero, x Ellis and O'Farrell. Two-story frame.
O.—J. McDonald.
A.—T. J. Welsh.
Days' work.
$5,000.

Fremont and Harrison. R. C. church.
A.—P. J. Welsh.
C.—A. G. Fitzpatrick.
About $12,000.

Twenty-third, nr Valencia. Two two-story frame.
O. & B.—F. Crowley.

Lyon, x Clay and Washington. One-story and basement frame
O.—L. P. Rixford.
A.—R. Warren.
C.—Bruce & Rose.
$2,000.

Beale, No. 123. Three-story Frame.
O.—J. R. Sims.
Days' work.
$3,000.

SACRAMENTO.

Twentieth and I. One-story and basement frame.
O.—F. H. Coffman.
C.—J. L. Atwood.
$2,000.

Twentieth, x I and J. One-story and basement frame.
O.—N. G. Eldred.
C.—J. L. Atwood.
$1,000.

Twentieth, nr I.—Improvements.
O.—Siebenthaler.
$600.

H, nr Seventeenth. Two one-story and basement frame.
O.—F. Kern.
C.—Vandercook.
$3,400.

Twelfth, nr G. One story and basement frame.
O.—C. Estee.
O.—W. H. Mead.
$1,200.

H, nr Seventeenth. One-story and basement frame.
O.—Y. W. Gunn.
Days' work.
$1,400.

Seventh, x M and N. Two one-story and basement frame.
O.—Bates & White.
A.—T. J. Hamilton.
C.—Vandercook.
$4,000.

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The California Architect and Building News.

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Building Prospects for 1883 in San Francisco.

At no time within the past ten years has the general business and monetary outlook, and the universal feeling of confidence among all classes, indicated more favorably than at the present time, particularly in building circles. There are numerous rumors of contemplated costly structures and business buildings afloat, which, if only in part carried into effect, will give employment to the greater number of house operatives, and absorb the entire working forces of really *qualified mechanics*.

In 1879, the number of unoccupied dwellings in San Francisco were variously estimated at from 1,200 to 3,000. During 1880 the greater number of these found tenants, in addition to the 397 new buildings erected during that year. In 1881, 533 additional houses were added, all of which were readily rented, but few of any class remaining unoccupied. During 1882, 785 new improvements were made, scarcely any of which remained empty one month after completion; and, as a rule, was rented prior to or immediately after completion, leaving still a large number of "house hunters" who have not been able to obtain satisfactory homes. Many desiring a change of residence have been required to hunt long and diligently, and in numerous instances, have been compelled to accept unsatisfactory places until more suitable could be found.

The question is frequently asked, What causes the recent and present demand for houses? The answer is found in the fact that the immigration to San Francisco, and the natural increase of population, have largely augmented the number of inhabitants; in addition to which, since the paralyzation of the mining-stock system of robberies, people generally have devoted their time, energies, and means to legitimate pursuits, and have made money. Instead of sinking their earnings in the bottomless pit of stock gambling, ninety out of every one hundred dollars put in being a clean loss to those silly enough to risk their means in stock ventures, the surpluses of earnings over current expenses have been placed in banking institutions, until the accumulation of coin in the bank vaults has reduced the interest upon deposits to so small a figure that the purchase and improvement of real estate is deemed far more profitable; and in hundreds of cases people of moderate means, who have kept themselves poor to feed the stock fiend, have recovered from the mad folly of overreaching to acquire rapid wealth, and have adopted the wiser course of taking care of their means, and investing safely in building improvements. Beside which, there are but few who cannot now afford to live better, and occupy more commodious houses, than they could three years ago.

Under the existing state of things, the fact is well assured, that any reasonable number of dwellings erected during 1883 will be readily rented, and at rentals paying satisfactory interest upon moneys invested in the improvements. We have systematically rebuked the wild and unsustained "boom" statements of the daily press, and shall continue to do so whenever they are made, believing that the truthful presentation of actual conditions will serve a better and more healthful purpose, and be more appreciated by our readers and the public generally.

Being the only journal devoted to architectural and building matters upon the Pacific coast, and our reports being always as nearly correct and reliable as it is possible to make them, with the uncertainties surrounding the gathering of information upon building matters, making due allowance for the misrepresentations sometimes designedly or otherwise imposed upon us, and typographical errors, which seems almost unavoidable, we ask our fellow-citizens whether we are not entitled to their individual support, without distinction as to profession, business, or avocation.

In one of the decisions rendered by the Supreme Court of Winsconsin recently, a point of interest to builders was brought out, showing the necessity of carefully preparing a contract. The builder upon demanding his money was confronted by the owner, who claimed that he used rotten timber. The contract, however, had stipulated the fact that the decision of the architect as to the quality of the material should be final. The latter having approved the timber, the owner had to foot the bill.

A Misrepresentation of Building Operations in San Francisco for 1882.

In the December issue of this journal we gave a summary of the number and cost of buildings erected in San Francisco during the year 1882, showing the increase in number of buildings erected over 1881 to be 252, with an increase in outlay of only $105,489. This result and showing were based upon our monthly reports, in the making up of which all reasonable care had been exercised, and may be relied upon as approximately correct.

But, as has frequently been the case, the *Evening Bulletin*, in its issue of December 22nd, seven days later than our publication, preferred to set aside our statements, and gave its readers a rehash of "*Buildings in Progress*," which was and is both silly and untruthful. Our summary gave the total expenditures for the year to be $3,896,212, as against $3,790,723 for 1881, making the gain as above stated; while our contemporary, in the article referred to, says: "A rough computation places the excess in value at $2,000,000," a difference of just $1,894,511. The statement of the *Bulletin* was a decidedly "rough" deal on facts, and a little "rough" on the man who penned the article, as he furnishes in the same article the proof of his misstatement of "Buildings in Progress" as follows: "*Sugar Refinery at South San Francisco, etc., $1,500,000.*" *Facts:* This refinery building was reported in the May, 1881, number of this journal as in progress, and was one of the larger improvements of that year, with but little to be done in 1882, except its machinery work; so that it cannot in any sense be included in the progress movements of 1882, having been a factor in reports of 1881. But as our contemporary needed something to make up its $2,000,000 "rough computation," it selected the building in question at $1,500,000, regardless of the facts that by so doing it produced evidence sufficiently conclusive to expose its utter disregard of truthful statements, as every one familiar with the building interests of San Francisco knows that the refinery was built in 1881, and that to place it among the "Buildings in Progress" in December, 1882, was a terrible leap into the vortex of untruth.

"*South-east corner of Fifth and Mission, etc., —$200,000.*" *Facts:* At the corner designated, the old drug-store building of many years' standing still remains, and is occupied as a drug store. But on Mission, between Fifth and Mary Streets, west of Fifth Street, there is a block of buildings in progress for Mr. Donahue, which will cost not over $135,000. The contracts figure up at less than $125,000.

Various other buildings heretofore duly reported in this journal are then itemized, ending the list with—"*Larkin near O'Farrell Street. Modest frame building. Cost $2,500.*" *Facts:* No such structure within sight of the corner named. There is one on the lot forming the south-west intersection of Larkin and O'Farrell, owned by G. G. Burnett, Esq., Wolfe & Son, Architects, which will cost about $10,000. Also one on Larkin, one and one-half blocks north of O'Farrell Street, costing $9,500. But none in the vicinity mentioned, costing $2,500. It is unnecessary to criticise further, the above showing sufficiently clear the unreliableness of the *Bulletin's* "Buildings in Progress" article, and removing the pins from under the "rough computation" of $2,000,000. Brother Fitch and his adjutants would do well to accept the

reports of this journal, both monthly (which it has done sometimes without giving us credit) and our yearly summary of Building Intelligence.

Holiday Slaughter of Trees.

At Christmas time even the humblest have their few pennies to spend in buying a Christmas tree. Churches are decked with evergreens; the fronts of stores are literally hidden by the large quantities of young trees before them; in nearly every dwelling, one or more of the young saplings may be found; and to furnish the immense number of wreathes and garlands required for ornamenting windows, etc., many of the infants of the forest are annually cut. The markets in San Fransisco are principally supplied from the region around Guerneville, Sonoma County. How many have ever thought that this immense drain, year after year, will ultimately cause a large vacant space in the forests that by right ought to be filled with young trees? We hope that the Legislature now in session will pass a law forbidding the cutting of young trees for ornamental purposes. The *Northwestern Lumberman* has the following upon this subject:

"The spruce and fir forests of Maine are now suffering extensive inroads to supply Christmas trees and evergreen for the holidays. The business is particularly heavy along the line of the Knox & Lincoln road, having grown to an important extent year by year. The trees leave the State at the rate of many car loads a day while the holiday traffic lasts, and, as everybody knows, are used in a variety of ways for trimming stores, churches, public places, homes, etc., before the conventional Christmas eve arrives. The State of Maine is a main source of supply, though evergreen is obtained from various sections of the country. The supplies have been so drawn upon that the forests are showing it, and the sacrafice continues, and will so long as people cry for luxury, and handlers can coin money, as many do at present. If 100,000 young trees were swept away yearly, even in Maine alone, it would be only the conservative and sensible ones who would lament. The merry-makers rarely reflect that they are denuding more of nature's tree store for one item of general enjoyment than all the forestry societies in the country could replace in years. Warren is one of the great distributing points in Maine for the sale of evergreens for Christmas, and scattered through the State are several firms doing an immense business."

Articled Architectural Students.

One of the objects of San Francisco Chapter of Architects is to establish classes for architectural students, to be conducted by gentlemen of recognized abilities in teaching the art of sketching, drawing, mathematics, geometry, modeling, carving, etc.

All articled students engaged in the offices of practicing architects, members of the Chapter, may avail themselves of the advantages of the classes, without cost or charges of any kind, except that those who desire to unite with the Chapter as student members have an opportunity to do so at the nominal changes established by the By-Laws. This, however, is optional with students.

The term *Articled Students* is intended to include those only who are under written contract or agreement to serve a term of years in the offices where engaged. Lads and young men who are under no such engagements may, by entering into written agreements with their employers, become entitled to the privileges offered in this connection. All such are requested to hand their name to the Secretary of the Chapter, George H. Wolfe, without delay, so as to expedite the formation of classes.

San Francisco Chapter, A. I. A.

The regular montly meeting of this Chapter was held on Friday evening, January 5th, 1883, President John Wright presiding. Minutes of the preceding meeting were adopted as read.

The committee on Articled Students presented a full report; the report was ordered to be printed in the form of a circular, that endeavors may be made to carry out the ideas suggested.

The committee on incorporating the Chapter was granted further time.

A communication was received from H. Saxon Snell of London, England, presenting the Chapter with a volume of his work entitled, "Charitable and Parochial Establishments." On motion, the same was received, and the Secretary instructed to thank the donor.

G. H. Wolfe was appointed Librarian for the remainder of this year.

On motion, a committee of three were appointed to draft laws in reference to the underpinning of buildings. Committe appointed, J. E. Wolfe, Macy, and Babson. The President was added to the committee.

Small Bed-Chambers.

There is reason to believe that more cases of dangerous and fatal disease are gradually engendered annually by the habit of sleeping in small, unventilated rooms than have occurred from a cholera atmosphere during any year since it made its appearance in this country. Very many persons sleep in eight-by-ten rooms, that is, in rooms the length and breadth of which multiplied together, and this multiplied again by ten for the height of the chamber, would make just eight hundred cubic feet, while the cubic space for each bed, according to the English apportionment for hospitals, is twenty-one hundred feet. But more, in order "to give the air of a room the highest degree of freshness," the French hospitals contract for a complete renewal of the air of a room every hour, while the English assert that double the amount, or over four thousand feet an hour, is required. Four thousand feet of air every hour! and yet there are multitudes in the city of New York who sleep with closed doors and windows in rooms which do not contain a thousand cubic feet of space, and that thousand feet is to last all night, at least eight hours, except such scanty supplies as may be obtained of any fresh air that may insinuate itself through little crevices by door or window, not an eighth of an inch in thickness. But when it is known that in many cases a man and wife and infant sleep habitually in thousand-feet rooms, it is no marvel that multitudes perish prematurely in cities; no wonder that infant children wilt away like flowers without water, and that five thousand of them are to die in the city of New York alone during the hundred days that shall include the fifteenth of July, eighteen hundred and

Another fact is suggestive, that among the fifty thousand persons who sleep nightly in the lodging-houses of London, expressly arranged on the improved principles of space and ventilation already referred to, it has been proven that not one single case of fever has been engendered in two years! Let every intelligent reader improve the teachings of this article without an hour's delay.—*The Builder.*

"Hose Drainage and Sanitary Plumbing."

This is the title of a neat little handbook of 205 pages, edited by Mr. Paul Gerhard, and published by D. Van Nortram, N. Y., containing many valuable suggestions upon the subject-matter indicated by its title. Every architect, plumber, and owner should possess a copy. Price, 50 cents; to be had at the office of this journal. Owing to the crowded state of our columns, we delay criticism till next issue.

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Modern House Carpenter's Companion	1.25	3.00
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Wither's Church Architecture	10.00	11.00
Sewer Gas and its Dangers	1.25	2.75
Workshop Companion	.35	2.10
Reed's Houses for Everybody	1.50	3.00

Any one sending us the names of three new subscribers, with $6, will receive a copy of the CALIFORNIA ARCHITECT AND BUILDING NEWS free.

Any one sending us the names of ten new subscribers, with $20, will receive a copy of the CALIFORNIA ARCHITECT AND BUILDING NEWS free, and $5 worth of books selected from the above list.

A club of twenty-five new subscribers entitles the sender to a copy of the CALIFORNIA ARCHITECT AND BUILDING NEWS, and $20 worth of books selected from the above list.

Uses of the Steel Square.

The mechanic's success as a *foreman* depends greatly on his ability to keep the men employed under him busy all the time; not a minute must be allowed for men to wonder what is next to be done, and so that no delay may be made in the raising of the frame of the barn, it is necessary that men be set to work framing the various timbers required, while part of the gang are completing the foundations. The rafters being the part, for young men, the most difficult to frame, we will see how they are being prepared. The building is 40x60 feet. Size of rafters 2x6 inches. Roof ¼ pitch. The length being the first thing required, we will find it by several different ways, and see if they agree. First, the old way of obtaining the length of the hypotenuse of a right-angled triangle, two sides being given. In this case the two sides would be 20 and 10. Squaring 20 and 10 and adding the products together gives 500, the square root of which is 22.36 or 22 feet 4.32 inches—22 feet 4⅜ inches. This is as near correct as is practical.

Or, let one inch on the square represent one foot. Then 10 inches on the tongue of the square and 20 inches on the blade will represent the two dimensions as above. Then place the point of your rule on the figure 20 on the blade of the square, allowing it to cross the tongue at the figure 10. You will notice that the length is 22⅜ inches scant, or allowing one foot to the inch, 22 feet 4⅜, the same as the previous method. This is the quickest and most practical way of getting the length of the rafters; by using a smaller scale as ½ inch to the foot, ¼ inch to the foot, etc., you can easily get the length of rafter for any width of building.

A scale of 1½ inches to the foot will also be found to be very convenient, as each ½th of an inch on the square will represent one inch on the rafter.

Still another way is by means of a "*fence.*" We well remember when we were first shown this way of getting lengths of rafters and braces. Hodgson, in his work on the square, has fully described the process. As we used the "*fence*" long before his work appeared in print, we may be pardoned if our language partakes somewhat of the character of that author's writing. Our "*fence*" was made somewhat different from those in general use. One day, while sauntering around the foundry at Santa Rosa, we came across two pieces of iron three feet long, 1½ inches wide, and ⅜ of an inch thick. A row of holes ¼ inch diameter, and spaced one inch apart, went directly through the center of the two pieces from end to end. My companion suggested that they were just the thing for making a "*fence.*" The owner kindly gave us the two pieces, provided we would let him see the "*fence*" after it was made. A strip of wood 10 inches long, just the thickness of a common square, was procured, and fastened between the two iron pieces, so as to be in the middle. The holes gave us the means of securing the piece of wood. The square was then inserted in the openings caused by the wood, so that the tongue was one side and the blade on the other, a small bolt, with a thread for a nut on one end, was placed in one of the holes near each end of the square, and the nut put in so as to draw the two pieces of iron together, thus firmly securing the square. That was the kind of "*fence*" we first saw used. It was, however, too heavy to be carried around in a tool chest, and after a short time it was discarded. A much handier and lighter one can easily be made from wood, using screws to draw it together to hold the square.

Now let us apply our "*fence.*" Select a straight piece of timber for a pattern. The roof is to be ¼ pitch; so place the square that the figures 12 on the blade, and 6 on the tongue are directly even with the top edge of your "*fence.*" The two sides of the square and the edge of the fence will form a right-angle triangle, bearing the same proportions precisely as the triangle formed by half the width of the building, the height of the roof and the rafter. Now if the same proportions are found in one of such measurements, twenty times (or ½ the width of the building), those figures would give us the exact length of the rafter.

Commence at one end of the piece you have selected for the pattern, and lay your fence against its edge. With a sharp-pointed *awl* mark on the pattern the exact shape of the square that is exposed outside of the fence, the long bevel of the square being towards the heel of the rafter. Then move the fence along, placing it so the long bevel will commence again precisely at the point of the short bevel, opposite the right angle of the square. Mark again as before; do this twenty times; the last mark will be the upper-end cut of the rafter, and will show its exact length.

If the roof is ½ pitch, take 12 on the blade and 8 on the tongue; if ½ pitch, then 12 on blade and 12 on tongue. A general rule to be used, and one easily to be remembered, to mark the bevels for any pitch of roof, is to place the 12-inch mark on the blade even with the top edge of your *fence*, and that mark on tongue that corresponds with the rise of the roof in feet even with the same edge, you will then have the exact angle for the rafter of one foot in length. Proceed as above. Thus, if the roof has 5 inches to the foot, place square at 12 and 5. If 11 inches, then at 12 and 11, and so on.

When the length of the rafter is equal to the width of the building, the pitch of the roof so formed is known as the GOTHIC.

Several precautions must be observed in using a *fence*. See that the fence is held firmly against the edge of the pattern, and that the figures used are precisely even with the edge of the fence. A *scratch awl* sharply pointed should be used, and the aim should be to use exact measurements.

The way we have described is to be used when no projection of rafter is required. In the case the latter is necessary, gauge a line the width of the required projection the full length of the pattern. *Gauge always from the crowning edge.* Then proceed as before, using the gauge line instead of the edge of the pattern.

If a ridge board is used, deduct ½ of its thickness from the length of the rafter, measuring the distance square from the end of the upper bevel.

If there is a fraction of a foot, proceed as follows: If the roof is quarter pitch, and there is a fraction of say 8 inches, place the square with the 4-inch mark on the blade, and the 2-inch mark on the tongue, in the same manner precisely as before, and the distance between these points will be the extra length necessary. No matter what the pitch may be, the same rule will apply.

We have just received two new works which should be in the possession of every mechanic:

THE MODERN HOUSE COMPANION AND BUILDER'S GUIDE. Price, $1.25.

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Each one written by a *practical* man, and well worth the price.

SCIENCE OF CARPENTRY MADE EASY. Price, $5.00.

Or, by special arrangements with the author, we are able to send one year's numbers of the CALIFORNIA ARCHITECT AND BUILDING NEWS together with the above work for

$5.50.

This series of articles on the square was commenced in the September number, 1881. Back numbers can be supplied at 20 cents each.

Something about the Saw.

Few people know the meaning of the figures which are stamped upon the heel of the hand-saw. Experts doubtless imagine it is to represent the number of teeth to the inch. However, this is not correct, for the figure is always one more than there is teeth to the inch. For instance, if a saw is marked "9," there will be just one tooth for each one-eighth of an inch. Consequently there will be only eight teeth to the inch.

Perhaps the best saw-set is a good vise; a vise that has straight and smooth jaws; jaws that will pinch thin paper their entire length.

By placing the saw in such a vise as this, with not more than one-half of the tooth projecting above the jaw, and using a nice punch and suitable-sized hammer, the saw can be set better, perhaps, than with any other saw-set ever invented. Of course, a *wide* saw cannot be set in a common-sized vise; but *wide* hand-saws or any other kind of wide saws do not work as well as *narrow* ones. A saw should only be of sufficient width to give it strength and stiffness, and *all* saws should be thinner on the back than on the edge. There is no economy in using a poor saw.

In filing "cut-off" hand-saws, *always* point the file *upward*, and towards the *point* of the saw. The more the file is inclined upward and *forward*, the better the saw will cut, provided the saw is filed by an expert. It must be borne in mind, that the more the file is inclined the more difficult is the filing.

"Rip saws" should be filed exactly the reverse of a "cut-off" saw, only the *less* inclination the better. A rip saw will do good work filed *straight across*, and is very much less work to keep it in running order.

Rip circular saws, as well as *cut-off* circular saws, should have a fly-wheel when they can be used without being in the way; and when saws of different sizes are used on the same shaft, there should be pulleys of different sizes that could be changed in an instant. As the verge of all saws require the same speed(?), which is, perhaps, about from 7,000 to 9,000 feet per minute, if the power is limited, 7,000 feet per minute will do very well.

Saw tables should be made to raise or lower in an instant to any desired point, not only for sawing rabbets, grooves, etc., but to place the table so the saw will just reach through the lumber. It requires only about one-half of the power to saw inch lumber with a 12 or 14 inch saw when the table is raised so the saw will only reach through the lumber than with the same saw when the table is down to its lowest. The saving of power is not the only advantage in having the saw just reach through the lumber, for lumber can be sawed much straighter, and far less liable to heat the saw.

SOMETHING ABOUT THE FENCE.

It is always better to have the *fence* the whole length of the table, but there should be an offset from the center of the saw to the farther end of the fence of not less than an eighth of an inch. There should also be a "relieving lever," to throw the fence *out of line*; as in case there is to be *fine* sawing done of thin pieces, for instance, strips for lattice work, where a good many pieces are to be sawed from one piece of plank. In this case the fence should be thrown *out of line* so that the lumber will *hug* the fence, and saw each piece exactly the same thickness. But if rough sawing is to be done, the lever must be reversed, and the fence thrown out of line in the opposite direction, so that the lumber will pass along freely without binding between the saw and fence.

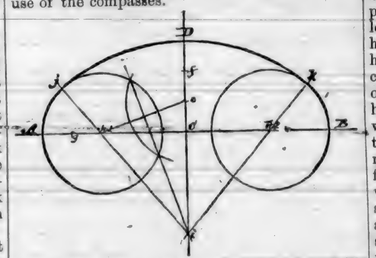
Rollers that are put on springs to press the lumber to the fence should have a slight inclination *forward*, which will make them have a tendency to *climb* the lumber, and keep it firm upon the table.

A *cutting-off* saw, either hand, band, or circular, should never be used in sawing obliquely across the grain, of more than 25 or 30°. All *miters* should be sawed with a *rip saw*, either by hand or with power. A common-sized tooth circular *rip saw*, if properly filed and set, will make better miter joints than any *cutting-off saw* that ever was hung.

E. H. DAVIES.

Santa Clara.

We promised a correspondent to illustrate in this issue how an ellipse could be made by the use of the compasses.



Draw any line. Mark any two points as A B. Bisect the line between the points by perpendicular C, D, L. The distance C D is to be one-half the width of the required ellipse. Divide C D into 3 equal parts. Measure off from A and B the length of 2 of these parts as points, *h* and *z*. Join *h* and *e*. Bisect line *g e*, and continue the line until it intersects with the line D C L. At L is the center from which to describe the sides of the ellipse, and the points *h* and *z* are the centers from which to describe the ends.

To BEND A GOOSENECK.—Fill the lead pipe full of sand, ram it in well, and plug up both ends, bend it carefully over your knee or around a barrel.

To A. L., of Healdsburg: A good thing to use in patching small scars in plastering is plaster of Paris mixed with common flour paste. If the plaster is mixed with water it sets almost instantly; but when mixed with paste, it sets quite slowly, giving time to use it as may be desired.

A flour barrel is 28 to 30 inches high, and 20 or 21 inches in diameter at the largest part. This note may be of use in fitting up closets and pantries.

Mr. F. A. Rollo Russell, an English sanitary engineer, has come to the conclusion that the upper parts of buildings are by far the most healthy, and that even second stories possess decided advantages over ground floors. He finds that the climate undergoes less variation on hills and on the tops of lofty buildings, being cooler in the summer and warmer in the winter than on the surface of the earth. It has been observed that frost strikes the valleys first, and that in cold weather the thermometer on the hill-tops does not fall as low as in the valleys.

The Man-hole Scare.

The outcry against the system of open ventilation of the public sewers into the center of the carriage-ways, lately raised, has had a powerful effect in alarming the minds of the general public, whose confidence in such matters is based on the opinions of experts. Its example has caused medical officers of health to be so bold in their statements concerning the evils arising from the gases escaping from the man-holes, that the average member of the community half believes that the sewerage systems of our best towns, instead of being the means of carring disease away from our homes, are actually the carriers of it to our very doors.

The Medical Officer of Health for the parish of Chiswick startled his Board a few weeks ago by stating that he knew of no other cause for a case of enterie fever in the parish than the exhalations from the man-hole ventilator in the street where it occurred. The Board promptly ordered an inquiry into the case, with a view to knowing if their sewerage system, just completed at a cost of nearly 80,000*l.*, was really a means of distributing disease and perhaps death. Dr. Corfield, Professor of Hygiene in University College, was called in, and has presented his report on the case. The man-hole ventilator alleged to be the cause was about 40 ft. from the house in which the case occurred. Inside the house he found that the scullery sink-stone was connected directly to the sewer, and that the only protection from the inrush of gas into the house from it was a small bell-trap with a water-seal of at most ½ in. When he removed the top of the trap, and held a lighted wax match over the mouth, the indraught was sufficiently powerful to cause the flame to flicker violently. He further found that the water service was intermittent, and that one cistern alone supplied the water-closet and the taps inside the house. He stated that, in his opinion, the disease was more probably caused by the sanitary defects inside the house than by the exhalations from the man-hole. In this moderate opinion, experts will join. In such a case comment is needless. We will only venture to say that it raises in the mind an uneasy suspicion that medical men look upon the man-holes as a cause to which they can refer every case presenting a difficulty of explanation, or in which they are too careless to make diligent search for the real cause.—*Ex.*

Specimens of Letters Received.

SEBASTOPOL, SONOMA CO., Dec. 14th, 1882.

Dear Sir—I wish to make my husband a Christmas present, and, as he has expressed a wish for the "*Science of Carpentry*," I cannot give him anything that will be more acceptable; so please send it as soon as you can, together with your excellent journal for 1883. I send you $6 by express to-day. MRS. ——.

We received a gratifying number of similar missives during the holidays, from the wives and mothers of mechanics, and we hope to win the kind consideration of thousands more.

RIVERSIDE, SAN BERNARDINO CO., CAL., December 18th, 1882.

Dear Sir—Supplement No. 1 noted and appreciated, more especially the enterprise prompting same. Accompanying find $2, in consideration of which please send the ARCHITECT AND BUILDING NEWS to S. & S.

We might add hundreds more of similar import from all parts of the Pacific coast and the Eastern States, but give the above as sufficient to illustrate the rapidly increasing interest felt in this journal. Let the good work go on, until every mechanic and owner of real estate in the land shall have his name entered upon our subscription list.

PLATE 1.—ELEVATION OF A COMMODIOUS DWELLING COSTING $10,000.

A Proud Record.

PERMANENT ADS.

The success of a journal of this description depends greatly on the character of its advertisments; and when business men continue to to keep their wares before the public by a judicious use of printers' ink, it follows that the parties inserting the "ads" are being greatly benefited. We present below a list of the firms who have advertised continuously with us since the first issue of this journal, in 1879.

Weed & Kingwell, California Brass Works.
Bigelow & Morris, Western Iron Works.
F. H. Rosenbaum & Co., plate-glass, etc.
Turner, Kennedy & Shaw, lumber dealers.
J. Kemp & Co., turning, sawing, carving, etc.
Whittier & Fuller, Pioneer Lead Works.
W. W. Montague & Co., mantles, tiles, etc.
Pacific Rolling Mills.
J. R. Sims & Son, iron doors, girders, etc.
J. Mallon, Pacific Glass Works.
W. Holst, Glass Works.
Commercial Insurance Company.
Lucas & Co., Golden Gate Plaster.
Kellett & McMurray, plaster decorations.
Renton, Holmes & Co., lumber dealers.
J. Marquis, standard hoppers.
C. H. & G. W. Burr, premium hoppers and weather strips.
W. E. Stevens, patent chimneys.
J. Browell, patent chimneys.
Spaulding & Co., Pacific Saw Works.
Dunham, Carrigan & Co., bronze, hardware, iron, steel, and mechanics' tools generally.

In addition to the above, the principal plumbers in the city have kept their cards in permanently.

The plasterers have been well represented, as a glance at their column will show.

The carpenters have done nobly in sustaining their part of the good work in supporting a home journal. Many of them have been greatly benefited by their "ads," as we know of parties in the country who have obtained help through the aid of those advertising.

The principal stair builders in the city have the satisfaction of knowing that their business has been increased by keeping their cards in the proper place.

In fact, brick layers, masons, metal roofers, asphaltum workers, etc., all testify to the great value of this journal as an advertising medium.

We sincerely thank our brother professionals for their cordial indorsement of the CALIFORNIA ARCHITECT, and their generous support, as shown by the large number of business cards.

Trusting that the future course of this journal will be such as to give entire satisfaction to those who have so worthily enabled us to build it up to its present standard, we present this initial number of a new volume with its many improvements to our readers, promising them that it will be our aim to make still further changes for the better in each successive issue until we can boast that we have no superior in all the broad range of journalism.

THE ARTIST'S ALBUM.

A large work, beautifully illustrated; will be forwarded to any address, upon receipt of price—$8.00.

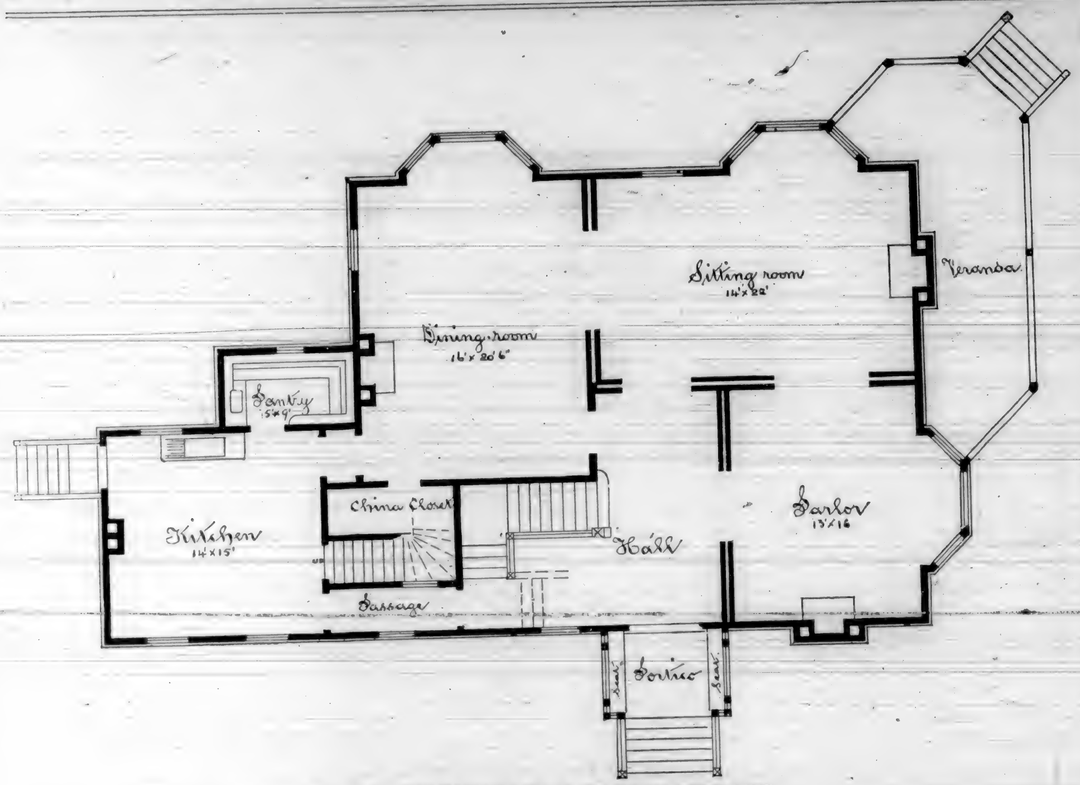


PLATE 2.—FIRST STORY PLAN OF $10,000 DWELLING.

Some Facts About Bricks.

An average day's work for a bricklayer is 1,500 bricks on outside and inside walls; on facings and angles and finishing around wood or stone work, not more than half of this number can be laid. To find the number of bricks in a wall, first determine the number of square feet of surface, and then multiply by 7 for a 4-inch wall, by 14 for an 8-inch wall, by 21 for a 12-inch wall and by 28 for a 16-inch wall. For staining bricks red, melt one ounce of glue in one gallon of water; add a piece of alum the size of an egg, then one-half pound of Venetian red, and one pound of Spanish brown. Try the color on the bricks before using, and change to light or dark with the red or brown, using a yellow mineral for buff. For coloring black, heat asphaltum to a fluid state, and moderately heat true surface bricks and dip them. Or make a hot mixtute of linseed oil and asphalt; heat the bricks and dip them. Tar and asphalt are also used for the same purpose. It is important that the bricks be sufficiently hot, and be held in the mixture to absorb the color to the depth of one-sixteenth of an inch. —*Railroad Journal.*

Hotel Plumbers.

Our attention was called to the following advertisement in a daily paper:

"A situation wanted by a young man as porter; understands plumbing and gas-fitting; a handy man around hotel, or as watchman."

It is just such handy men that in attempting to do plumbing sometimes cause a great deal of trouble. If this advertiser was a good plumber he could earn from three to three and a half dollars a day. A porter's wagers are about two dollars; the advertisement, therefore, implies that he is a better porter than plumber.

The average hotel plumber is a dangerous man to have around, and if the registration provisions of the plumbing law were strictly enforced in this city, these men would be prevented from tampering with work that none but a skilled plumber should touch. If the plumbing societies want to perform a real service they should appoint a first-class committee, which should make it its business to look after men not registered, and see that the law is carried out. The medical societies are constantly hunting out the frauds and quacks, and they are vigilant in seeing that the law for such cases is enforced. This is what reputable plumbers should do.—*Sanitary Engineer.*

Substitutes for Lumber.

While on the one hand numerous practical men are setting forth the imminent danger of total exhaustion of the available timber supply of this country in the not very distant future, and are energetically striving to establish a correct public sentiment as to preserving and planting trees, on the other hand inventors appear to be bending their energies toward making wood entirely unnecessary for building, manufacturing, or fuel, or indeed for any purpose whatever. When the possibility of making lumber out of straw, which should fill the place of that obtained by "slaying the monarchs of the wood," was first suggested, many were disposed to regard it as a canard, pure and simple, or at best, nothing more than an impracticable idea. To-day this is an accomplished fact. Not only this, but other materials are rapidly supplanting lumber in all directions. Wire is taking its place in fences; metal, slate, and felt are employed for roofing; machinery is constructed more of metal and less of wood, and wire laths, iron posts, joists, beams, and ceilings are coming into more general use. Among the latest inventions is a glass veneer, which, it is said, can be made in so close imitation of the ornamental woods as to defy the closest inspection. With the discovery that the glass can be so made as to lose its customary fragility, is revived the suggestion of the entire feasibility—even advisability—of constructing houses entirely from glass. All these facts indicate that when the predicted lumber famine comes, it will not affect building and manufacturing interests so seriously as one might suppose. Still, we should hardly advise the proprietors of saw and planing mills, and wood-working establishments in general, to make immediate preparations for changing their business. There is plenty of good timber in this country, and neither this generation nor the next will see it entirely supplanted by any of the would-be substitutes.—*The Lumber World.*

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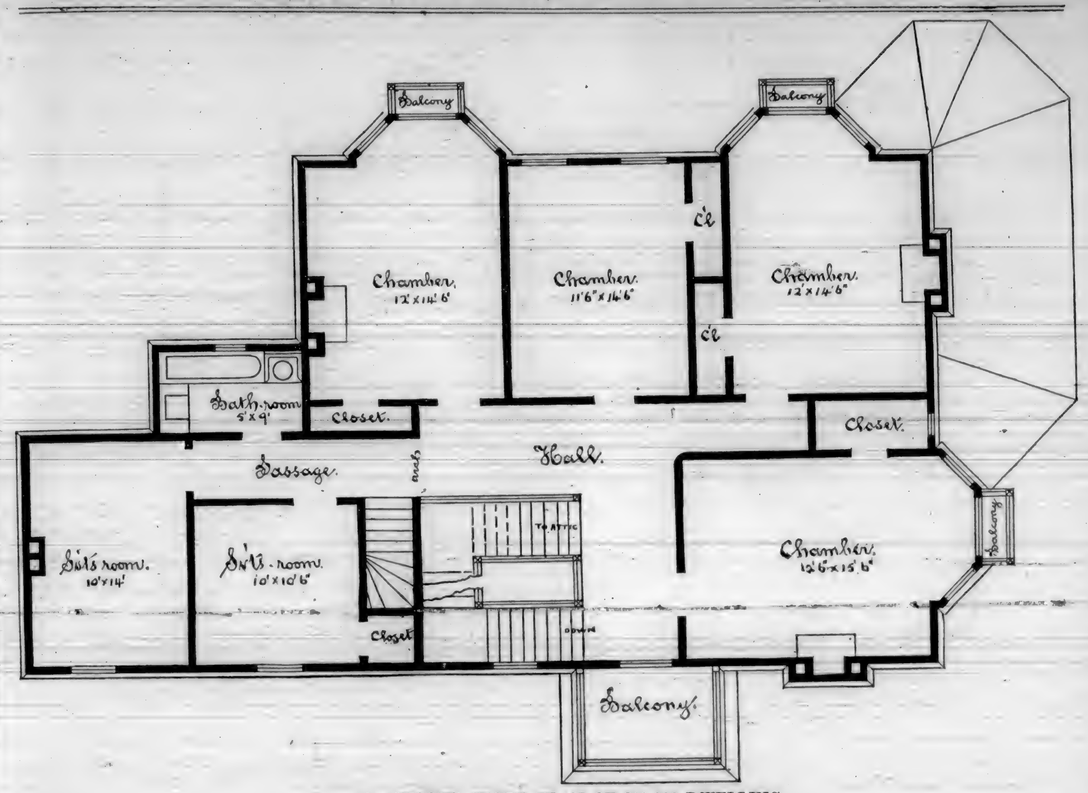

PLATE 3.—SECOND STORY PLAN OF $10,000 DWELLING.

The Snow-Storm of New-Year's Eve, and its Effect upon Shingled Roofs.

We know of nothing that has happened in San Francisco within the past thirty-two years which caused such general excitement of a pleasing character as the mantle of snow which fell on the 31st of December, 1882. The day was ushered in with a low degree of temperture, and the remark, "It feels like snow," was expressed by thousands, yet perhaps but few anticipated that a snow-storm was really nigh at hand.

The usual number of worshipers wended their way to the various churches, prepared with mantles and wraps for the "cold snap" only, not anticipating the necessity for umbrellas on their return home; consequently, when the respective congregations were dismissed, there was great excitement at anticipated damages to fine dresses and Sunday outfits, mingled with laughter and delight at the sight of the falling snow-flakes, as they fell in rapid succession, until the white covering from the clouds spread itself over everthing not under cover, to the depth of several inches. Conjecture places the total fall at from three to six inches—four to five probably being nearer the exact quantity; but as the ground was moistened by the dews and damps of preceeding days, and remaining unfrozen, a large proportion of the snow melted away before the snowing ceased. To persons accustomed to the usual snow-falls of winter, in the mountains of California and other sections of the Pacific coast, and places where each returning season brings its regular snow-storms, that under notice possessed less interest; but the thousands of children and young people who had never witnessed a fall of snow, and the older portions of the community who have but twice before within the history of California as a State seen the "ground covered," became jubilant, and snowballing was the order of the day. At every corner along the promiment streets of the city, crowds of boys, young men, and older heads gathered to indulge in the sport of pelting passers-by, without respect to age or sex; while the drivers and conductors of cars, and those who held the reins in milk-wagons, hacks, and vehicles generally, became targets at every crossing of streets—the poor Chinaman receiving very special attention wherever he dared to venture beyond the threshold of his abode.

HOW ROOFS OF HOUSES WERE AFFECTED.

In the construction of roofs in San Francisco the only consideration has heretofore been to make them secure from leaks during rainstorms—snow being one of the overlooked possibilities. But the snow of New-Year's eve demonstrates that should snow fall to the depth of twelve inches, more or less, great damage would result, particularly to the class of dwellings where the roofs pitch from center to sides of buildings with tin gutters along the side walls, emptying through conductors at the rear ends of the buildings. As a general thing, this class of gutters are badly constructed, being put in with just sufficient grade to discharge the water, one-quarter inch to the foot, sometimes less, and in thousands of cases not more than three or four inches fall in fifty feet. In our practice as architects, we have experienced great difficulty in enforcing a pitch of half-inch to each foot, contractors contending that any degree of slant will discharge water at the lower end, disregarding the material fact that the greater the pitch the more perfect will be the wash and durability of tin gutters, and less the liability of *debris* remaining in the waterways to absorb and retain the moisture from fogs, dews, and rains, and consequent corrosion and rust of the tin. Then again, the mean economy of restricting the width of the tin, so that the butts of the shingles lap but two or three inches over the edges of the metal, is a fruitful cause of leaks, and the fallacy of both flat and narrow gutters were fully demonstrated by the slight fall of snow of New-Year's eve; the snow filling the waterways, particularly where it was blown in drifts to an increased depth, and choking the small conductor outlets of two to four inches, thus preventing the escape of the rain which terminated the snow fall from running off; and, as a consequence in hundreds of cases, flooding up over edges of the gutters, and into the buildings. Thousands of tin pans, buckets, tubs, children's bath-tubs, etc., were brought into requistion, and some of our better circumstanced citizens were compelled to undergo muscular exercise in the manipulation of the water receivers, which produced soreness of limbs by no means pleasant, and blessing the reverse of piety fell from the lips of hundreds of angered heads of families.

Another suggestion is introduced in connection, to wit: 1882 ended with a snow fall of say five inches, with the above results. But as per-

PLATE 4.—PERSPECTIVE VIEW OF DWELLING COSTING $3,000.

Our Illustrations.

Having perfected arrangements by which drawings can be reproduced in a superior manner, we present in this issue numerous plates by far surpassing in execution those we have hitherto published. It has been our aim from the first inception of this journal to secure a better process for producing cuts from drawings than could be found in San Francisco. Acting upon this worthy motive, we have, in turn, tried many of the different processes used in various parts of the United States, and we leave it to our readers to judge of our success in the selection of the best. We do not intend to halt in our efforts, and trust that each succeeding number will show that our efforts are continually pointing towards advancement.

Plate 1, is the elevation of a very convenient house. Plainness and neatness are its principal characteristics. Plates 2 and 3 are the plans. It will be noticed that every part of the house is easily accessible from the front hall; even the kitchen is in direct communication, by the aid of a well-lighted passage-way; there are doors at each end of the passage, so that with proper care no smell from the kitchen can enter any other part of the house. By opening the sliding doors, the lower part of the house can be made into a grand promenade. The windows facing the veranda run down to the floor, so that an easy exit is obtained. The veranda can be used for a smoking-room, being placed on the side of the house away from the wind. The kitchen is large, well lighted, and easy of access from dining-room, hall, and yard.

The arrangement of the bedrooms, etc., in second story, cannot fail to meet the wants and taste of any one desiring comfort. They are all well lighted, of good size, and easy of access. The bath-room is placed where no danger need be feared from sewer-gas, and is handy to every room in the second story. Closets abound in every room save one, and in that, if needed, one could be placed in either of three corners. Stairs are shown to the attic, which can be laid off into several very comfortable rooms, if needed. From the attic a flight of stairs could be placed to a deck on the roof, from which a view of the country can be obtained. The cost of this plan—allowing San Francisco prices for everything—will be about $10,000. This figure can be changed either way, according to styles of finishes.

Plates 4 to 8, are the elevations and plans of a picturesque country house. A glance at the plans show at once the convenient arrangement of the rooms. Its cost will be in the neighborhood of $3,000.

haps one-half the quantity thawed during the prevelance of the storm, its average depth was at no time more than two to three inches. We ask, had the themometer ranged below zero, so that no thawing would have occurred, and the rains come as they did, to wet and add weight to the snow, would not some of the light constructions yielded to the unusual weight thrown upon them? Any number of roofs are constructed with rafters of 2x3 inch lumber, many of them without any collar beams or braces, and we doubt whether they would sustain the weight of six inches of wet snow. And we are very confident that if a fall of twelve inches should occur, there would be an extensive caving in of roofs in California. With the possibility of an old-fashioned snow fall before us, it will be well for architects and owners to see to it in the future that substantial roofs are placed on their buildings. The tin and composition and shingled hip-roofs were all right this time, but in cases of heavy snows, we question whether many of these would not suffer damage, for the reason that but few roofs are constructed on this coast for other purposes than simply strength to sustain them under ordinary conditions, with no provision for the contingency of heavy snows.

INDEXED ATLAS OF THE WORLD.

Beautifully bound, in morocco; but one copy remains. Price, $35.00.

Improvement in Chimneys.

The best chimneys are made by inclosing hard-baked glazed pipe in a thin wall of bricks. Such chimneys will not only draw better than those made in the usual way, but there will be less danger from "defective flues." A four-inch wall of bricks between us and destruction by fire is a frail barrier, especially if the work is carelessly done or the mortar has crumbled from the joints. To build the chimneys with double or eight-inch walls makes them very large, more expensive, and still not as good as when they contain the smooth round flues. To leave an air chamber between them for ventilating is better than to open directly into the smoke flue, because it will not impair the draught for the fire, and there will be no danger of a sooty odor in the room when the circulation happens to be downward, as it will be occasionally. The outside chimney, if there is one, should have an extra air chamber between the very outer wall and the back of the fireplace to save heat, a precaution that removes to a great extent the common objection to such chimneys. A very large per cent. of fires comes from defective chimneys.—*Scientific American.*

☞ **Science of Carpentry Made Easy, $5.00.**

☞ **Subscription price of this journal is $2.00 in advance.**

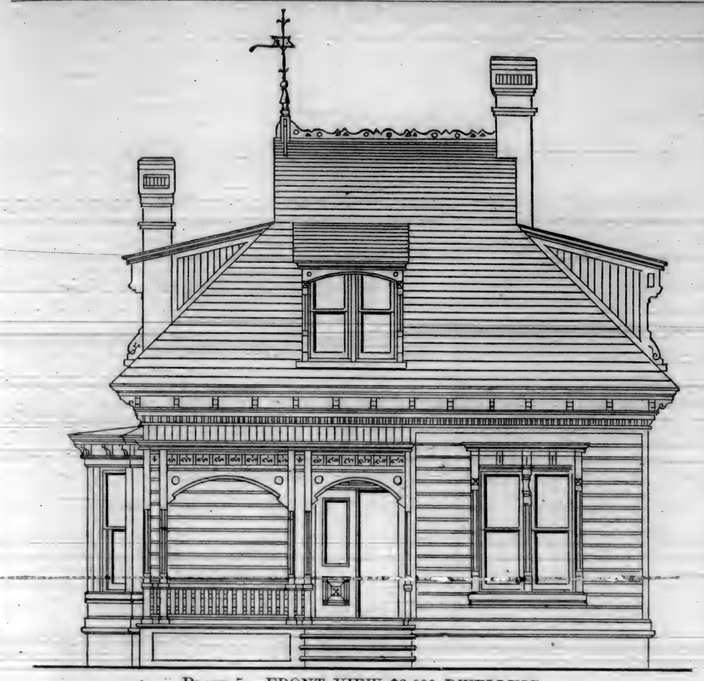

PLATE 5.—FRONT VIEW $3,000 DWELLING.

Credit to Whom Credit is Due.

"*Clippings*" from standard journals and publications are absolutely necessary for the success of modern *news distributors*. One will soon get weary of perusing articles by the same author in repeated successive issues of any paper. The use of the clipping shears is an accomplishment apparently easily obtained, but none know better than an editor who truly endeavors to give proper credit for every article clipped, the difficulty in selecting proper articles, and the care necessary to give credit to the proper authors. One of our most esteemed contemporaries announces that every article after January first will be copyrighted. The editors of the journal are compelled to take this step on account of the pilfering of its articles by another paper published in the same interest. We have frequently seen in the two journals articles so nearly alike that if it was not for the high standard and integrity of the parties publishing the *Northwestern Lumberman*, we would be in doubt which party to give credit to. We are pleased to see one of our most esteemed exchanges take the step it has in this matter; and in future there will be no excuse for an editor not giving proper credit to whom it is due.

We are greatly amused at an English journal having quite an article on this subject in its preface. We quietly looked over its pages, and among its articles was one entitled "Laziness." The editor must have had a superabundance of that well-known quality at the time he inserted the "*clipping*," as the article was an original one with the senior editor of this journal, and appeared in the January number, 1881, sometime before its publication in England.

Again: in our last issue we clipped an article and gave credit to the paper from which it was taken. After we received the proof, upon looking over later exchanges, we found precisely the same article in three of them, and what is peculiar, they were all original, because no credit was given in any of the journals to the original author. An editor stands a good chance to "get in a pickle," as it were, in such a case. It would be manifestly wrong to give credit to any particular paper. The editor, however, has the remedy in his own hands. Just mark "Ex" after the article, and that will at least show that it is the work of some man's brain besides the one that presents it to his readers.

In the future it will be our aim to give credit for every article published except those that are original with the editors of this journal. By so doing, our readers can readily see the immense amount of work necessary to produce a journal of the character of the CALIFORNIA ARCHITECT AND BUILDING NEWS.

Straw Lumber—Suggestion to Farmers.

A few months ago we inserted an article in regard to straw lumber. Several of our exchanges saw fit to copy, and the result has been that numerous inquiries have reached us in regard to the manufacture of lumber from straw. That lumber can be so made is an indisputable fact. It can be used for all the purposes of ordinary lumber and as easily worked.

A gentleman from the East has requested us to draw attention to the matter, and ask farmers and those interested to forward us information in regard to the given amount of straw that can easily be delivered at any certain point, and the price thereof.

Convenient water privileges will be the great desideratum. Mills that manufacture the lumber in general use only require the sawdust and waste slabs and edgings for fuel. But with straw lumber it is intended that there shall be but little waste, and additional sources of supply for fuel will have to be looked for in case of the establishment of the new mill. We shall be pleased to hear from our farmers in regard to the matter.

Index to Vols. 1–4.

All parties who desire a copy of this index should at once send to this office. We have had a large number printed, and in the confusion attending the distribution of so many, doubtless some will be overlooked. A postal directed to this office, will be answered by the immediate forwarding of a copy.

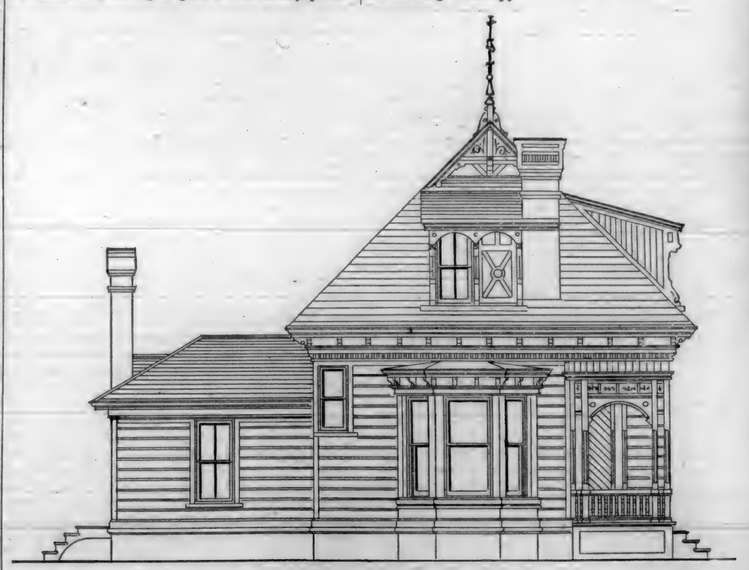

PLATE 6.—SIDE VIEW $3,000 DWELLING.

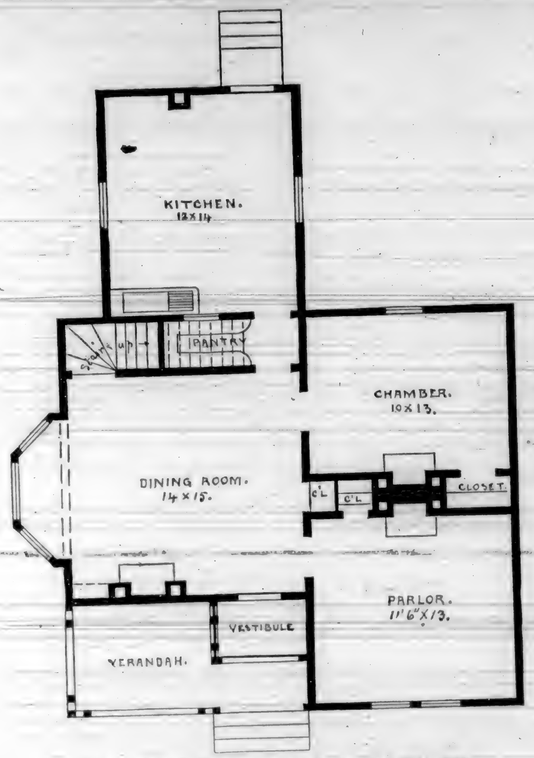

PLATE 7.—FIRST FLOOR PLAN $3,000 DWELLING.

Veterans' Home Competition Plans.

On December 20th, the gentlemen appointed to examine the plans for the "Veterans' Home" met for that purpose, and found to their dismay no more than three attempts by architects to meet the unreasonable requests of the committee having the matter in hand. The refusal of the leading architects of the city to countenance the effort of the committee to secure a large amount of other people's time and labor without offer of compensation, deserved the contempt placed upon it by the members of the profession, and leads us to hope that the influence of this journal will at least in time work a reformation in the matter of competitive plan making, which will correct the base and absurd notion that architects as a class are ready and willing at all times to jump at any proposition that may be made, to use up time, paper and ink, with professional services and studies thrown in, without offered compensation. It has always been a matter of surprise and annoyance to qualified members of the profession, that men of intelligence and business integrity and abilities should so far lose sight of every principle of right and justice as even to suggest, much less to seriously propose to intelligent architects, the making of plans in competition without accompanying the proposition with adequate and reasonable offers of remuneration. And we hope the time will arrive when not a single man who is worthy the name of an architect, and who has any regard for the standing and reputation of the profession, will do otherwise than scorn every attempt made by individuals, associations, committees, or commissions to procure plans for buildings of any character without proper and just recompense. The practice of obtaining plans upon the conditions offered in the case under notice, and many others of similar or worse character, has grown to be an injurious evil, amounting practically to this—the creation of a general idea that architects are a class of men whose time and professional skill possess but little value, and may be had upon the slightest inducements.

One thing is certain—that but few really qualified and competent architects will engage in these often-repeated, uncompensated, competitive contests, which are calculated in their effect to to demoralize and infringe the rules, principles, and practices which should govern and control in all cases, and create the sentiment in the public mind that the skill, experience, and services of architects have, in part at least, but circumstantial value, entitled only to such considerations as others may see fit to set upon them.

It is true that no one is compelled to enter into such contests; but that fact does not relieve the purposes and disposition of the parties making the proposal from the charge of seeking to obtain from others something which confessedly possesses value, without any assurance of payment for the services rendered. The fact that the successful party may secure compensation is but poor payment and satisfaction to those who may have earned equally as much by labors performed; and not unfrequently the intrinsically and practically more meritorious are set aside, while the lesser succeed through skillful manipulations of advantages and showings on paper which deceive the unpracticed eyes of the novices who generally control such matters. Some of the worst things perpetrated in the erection of buildings have been in connection with competition plans; and as a rule, numerous changes are made in the plans adopted, and more generally the cost in execution is greatly increased over original calculations. And the man who enters into a competitive contest upon the square basis of following the lines made by those inviting the competition, will find himself defeated in nine out of ten cases. To be successful, every possible art and device must be resorted to, and all cavilings upon points of honest representations quieted. We have carefully watched these competitive frauds, and have long since been convinced of their gross injustise, with scarce a redeeming case in mind. And further: we have facts at command to satisfactorily substantiate the fact that in many instances success has been the result of purchase or special personal favoritism. It is a broad assertion for us to make, but we make it intelligently, that the unimpreachable competitive transactions are exceedingly limited. Sometimes committees are innocently, on their part, led to accept and approve unskillfully prepared plans, which in cases augment a large increase in outlay, because those "behind the throne are greater than the throne itself"; and it is only as the work progresses that innocent committeemen discover and realize the mistake they have made. Nor is the objectionable features of such cases always attributed to the architects engaged in the contests, as there are but few cases in which unseen influences are not brought to bear for purposes by no means clearly apparent in the premises.

Our knowledge of the gentlemen having the "Home" matter in hand forbid the thought that they mean otherwise than exactly right; but the principle involved being absolutely wrong, less than wrong could not reasonably be expected in the consummation of the matter in hand.

Since preparing the foregoing for print, statements have appeared in the San Francisco *Chronicle* fully sustaining our position, and revealing the fact that the honorable committee have at least gathered about them a very disagreeable state of things, which might have been avoided by their selecting three competent and honorable architects to make plans, and giving to each fair pay for the services exacted; or rather selecting some *one* good architect, and allowing him singly to fulfill the requirements of the committee, as any member of the profession in San Francisco who has acquired by study and practice, an amount of architectural knowledge sufficient to entitle him to recognition as a qualified architect, could have accomplished all that was necessary in the case, and saved all the unpleasant issues which have grown out of an unrestricted invitation. Up to the present writing, Messrs. McDougall & Son's plans appear to be the more acceptable to the committee, and we have every confidence in the integrity and ability of the gentlemen named, and believe them to be as free from any intrigue in the matter as men can well be under such circumstances; but other of the contestants seem to measure the severity of their condemnation of the committee's act, by the depth of their disappointment, which seems to be without limit. The statements of the several gentlemen interviewed by the *Chronicle* reporter, questioning the results,—if the plans rejected had been approved, is perhaps justified; as under-valuation in such cases is the rule, and if a bond to complete according to said plans had been accepted, it would have amounted to nothing, as there are numerous methods of avoiding the responsibilities of bonds of that character. And the "shoddiness of constructions" would doubtless have occurred, as a necessity to personal, financial safety on the part of the proposed bonding architects, who to secure the adoption of their plans, named an amount scarce sufficient for the erection of the merest shells, and not within twenty per cent. of the cost of a really good, substantial, well-constructed buildings. Personally, we should have been pleased had the committee accepted the plans of the angered architects, as in that case they would have learned by experience the folly of promiscuous, unresisted, competitive plan seeking, which thows open the doors of opportunity to every pretender, and practically reduces the skill, experience, and abilities of the educated architects, to a level with incompetents, or lifts the latter at once to a professional eminence which would never be gained by them through a lifetime of personal attempts at regular practice.

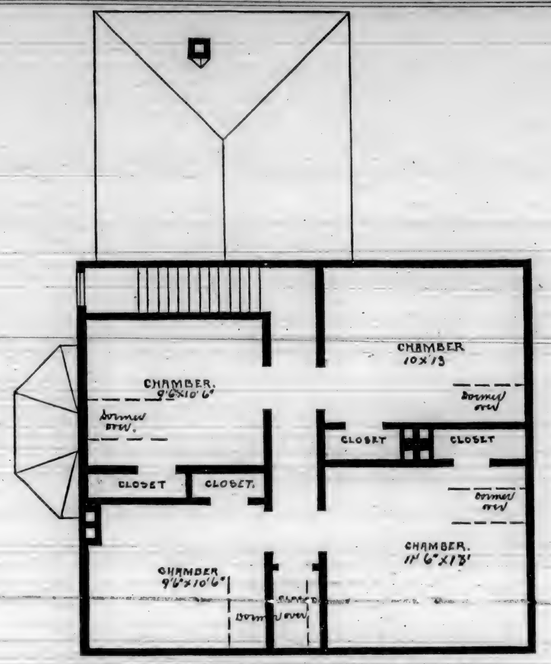

PLATE 8.—SECOND FLOOR PLAN $3,000 DWELLING.

Final Action.

The gentlemen managing the Veteran Home matter, met on Saturday, the 6th inst., and decided, by an unanimous vote, to adopt the McDougall & Son's plans. In substantiation of all that we have said in this and other connections of similar character, the following was developed, viz: that the invitations soliciting architects to complete upon the uncertain and unsatisfactory basis proposed in the invitation resulted in three sets of plans being submitted, although there are some sixty or more architects in San Francisco; that only two of these received special consideration; that the Newsom plans were at first favored by some of the Committee, upon the grounds of stated cost. To secure their adoption, their authors proposed a price at which the building could not be built, and if they had entered into a responsible bond to carry out their plans at the cost proposed, they would have found themselves or their bondsmen involved in a loss of several thousand dollars. This we state upon our own practical knowledge of the cost of buildings, and in opposition to the expressed view of the Newsom Bros. They may consider themselves fortunate in escaping the difficulties which would have been realized by them had they been successful in having their plans adopted.

It was further developed, that some of the gentlemen of the Committee were incapable of intelligent decision as to the merits of the respective plans, as some of them confessed to the fact that they had had "competent outside parties" to pass their opinion upon the plans, and upon the result of the judgment of such parties conclusions had been reached by members of the Committee. This fact needs no comment, and clearly sustains our position as to the unqualified unjustness of competitive contests for plans.

Had the Committee selected the Messrs. McDougalls, or any other competent architects, without contest, they would have secured, perhaps, precisely the same plans, or others equally meritorious, without any of the unpleasantnesses which have occurred, and saved all the annoyances which have grown out of this competition; for certainly the bandying back and forth of "they lie," between members of the Committee and the Committee as a whole and the defeated architects, cannot be pleasing to either parties. The Newsoms have insisted and persist in charging unfair and double dealing upon the Committee, and claiming that the whole transaction has been more or less permeated with falsehood on the part of the Committee, while the Committee in session personally gave the "lie" to the Newsom statements. As to the real merits of the contest we know nothing, beyond the sayings and bickerings of the respective parties; but the sum of the whole matter strongly sustains us in our condemnation of competitive plan making, which in scarce a single instance is not surrounded with a state of facts similiar in character to those appearing in the case under notice.

How to Select a File.

Most of our readers have more or less use for files, and a little information on how to select them cannot come amiss: On starting out to purchase a file, bear it well in mind that there are several qualities made by some file makers, as many as four qualities—first, second, third, and fourth. The first quality is, of course, the best, and represents about 75 per cent. of a file manufacturer's product, the other qualities taking up the remaining 25 per cent. Firm names are always stamped on files before they are tempered, and if, after they are finished, any of them are found to be poorly cut or badly tempered, the firm name is ground off, and one of several fancy names coined for all qualities below the first is stamped on each file belonging to a certain quality. Thus if a file maker should select the word "Jumbo" for his second quality files, all of his files which are too poor for the first quality and too good for the third have "Jumbo" stamped on them. First-quality files only bear the name of the maker, while fourth-quality ones generally bear no name at all, and are seldom seen and more seldom sold. When you have thought of all these things, ask the dealer for a first-quality file, bearing the name of some well and favorably known file maker—one that you have heard of yourself, if you ever heard of one. Select the heaviest file in the box (if there is any difference in the weight of them), for a heavy file is generally truer than a light one of nominally the same size, and is better for recutting—a recut file, by the way, being just as good as a new one. Take the file to the light and hold it in a horizontal position, the point of it toward you. The teeth of the file will now be pointing toward you, enabling you to detect easily any and all imperfections that a bad file is heir to. If the confirmation of the teeth is irregular or uneven, or if the color of the file is not uniform, let it severely alone. A spotted or mottled file denotes uneveness of temper. If, on the other hand, the file presents a clean, white color, it denotes that the temper of it is hard and even throughout; and if, besides this, it has regular and perfect teeth and bears the maker's name, you may rest assured that it is an excellent file. The best files are tempered at a low heat. Files of certain sizes and numbers made since the first of June are of uniform weight, the file manufacturers of the United States having agreed upon a standard of weights and sizes.—*The Wood-Worker.*

The Old Home of Henry Clay.

The house is built of brick and is quite modern in its architecture. It commands an extensive view of the surrounding country, and its front is handsomely decorated with growing flowers of almost every description. It is a rectangular structure with two wings, and appears to have been constructed for comfort rather than for show. The interior is nicely furnished and richly finished in white ash and butternut woods cut from the place. Ash formerly predominated here, and from this circumstance the place derived the name of Ashland. —*The Builder.*

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Modern Architectural Designs and Details.

The plan of this work is very comprehensive in its character. Numerous designs are given illustrating the Eastlake, Elizabethan, and Queen Anne styles of architecture. Complete plans of each, together with full and comprehensive details, are produced in a manner that will gratify the tastes of any architect or property owner. Price, $10.00.

Lakey's Village and Country Homes.

This is a large work, and just suited to those parties in the country who live too far away from an architect to secure his services. Designs are given for all prices of village and country homes. Several pages of details are also introduced. Price, $5.00.

American Cottage Homes.

This work has had an unprecedented sale in the United States since the reduction in price. The book is a large one, and contains many illustrations in the prominent later styles of architecture. Prices are given for which each design can be built. In California, however, the price in nearly every instance would have to be almost doubled to correspond to cost of work in this State. Being sole agents on this coast for the above work, we are prepared to make liberal terms to agents. Price, $3.00.

Detail Cottage and Constructive Architecture.

To the general country mechanics, this work is invaluable. Every part of a building is thoroughly detailed, including store fixtures, counters, fences, etc. Price, $10.00.

Model Homes.

A work containing a great many designs in the prevalent New England style. Price, $1.00.

Complete and Comprehensive Details.

This is the first work of its kind ever published in this country. The author justly remarks, "Ideas are as necessary as tools. Tools have no edge without them." These details furnish the mechanic with nearly eleven hundred ideas, and practical ideas that you can use every day. 40 plates 20x26 inches in size, are given for the small amount of $2.00. AGENTS CAN MAKE $5.00 PER DAY STEADY, HANDLING THIS WORK. Being sole agents on this coast, we are prepared to make liberal terms to canvassers.

Artistic Homes.

A. W. Fuller, a well-known architect, has given to the general public, for a small price, a very neat work containing 44 plates in the Queen Anne style of Architecture. Price, $3.50.

Interiors and Interior Details.

A large work, and as its name implies, contains details for every style of interior finish. The plates are all handsomely lithographed. Price, $7.50.

Practical Lessons in Architectural Drawing.

There is not a draughtsman in this country but that will be benefited by the possession of this work. As its name implies, it is strictly a PRACTICAL WORK. Price, $2.50.

Modern House Painting.

A new work of novel design, presenting numerous elevations of houses in colors precisely as they will appear when finished. Price, $5.00.

MECHANICAL PUBLICATIONS.

Steel Square and its Uses.

Probably no work of modern times has met with so cordial a welcome from mechanics in every part of the country as the one under notice. Over 800 copies have been sold through our agency since its introduction on this coast. Every mechanic should possess a copy. Price, 75 cents.

Science of Carpentry made Easy.

The work, *par excellence*, for every mechanic to have in his possession. It is thoroughly practical in its character, and contains much information not to be found in any other publication. It excels in its methods of obtaining the length and bevels of every description of rafters, both common, hip, and valley. By special arrangements with the author we are enabled to give this work and the CALIFORNIA ARCHITECT AND BUILDING NEWS, for one year for the sum of $5.50. Price of book alone, $5.00.

Gould's Carpentry Combined with Steel Square Problems.

A work similar in character to the above. The author, being a practical mechanic, has endeavored to make his ideas so plain that any one by reading, with a little study, can thoroughly master all the problems incident to the use of the Steel Square. Price, $2.50.

American Stair Builder's Guide.

By the same author as the above work. With the aid of the rules and illustrations given, the young mechanic can, in a very short time, be enabled to lay out any and all kinds of stair work. Price, $3.00.

Builder's Guide and Estimator's Price Book.

This work is chiefly intended to assist the Builder and Contractor in making estimates of the cost of work they may be competing for. It is written by the author of the STEEL SQUARE AND ITS USES, which fact is a guarantee that the book is practical in its character. Price, $2.00.

Modern House Companion and Builder's Guide.

A handbook of carpentry for the coat pocket. Among the illustrations and descriptions of the various kinds of works are the following: Pitch, hip, valley, and mansard roofs, angle rafters on French roofs, mitering circular moldings, stair work, etc. Every mechanic should possess a copy, and thereby fit himself to become a master of his trade. Price, $1.25.

Our space is too limited to notice fully every book on our list. Besides those enumerated, we can send the following-named works to any address in the United States upon receipt of the price:

Grimshaw on Saws	$4.00
Francke's Monuments	9.00
Plasterer's Manual	75
Foundations and Foundation Walls	1 50
Sewer Gas and its Dangers	1.25
Art of Saw Filing	75
Carpenter's Pocket Companion	50
Workshop Companion	35
Mechanics' Geometry	5.00
Standard Sign Writer	2.00
Fancy Alphabets	50
Street, Store, and Bank Fronts	4.00
Village Builder and Supplement	10.00
Artisan	5.00

Hods: Their Construction and Use.

Hods are of two kinds. One form of hod is devised for carrying bricks, and the other for the transportation of mortar. While differing somewhat in purpose and balance, the two species of hod are yet so closely allied as to be utterly indistinguishable when apart. Indeed, it is a matter of grave interest to men that during the whirl of centuries, when every other inanimate thing has, through the indomitable perseverance of invention, been forced through a process of evolution that has robbed it of almost every semblance of its pristine nature, the hod remains to-day in structure and design exactly as the hod originally was. At present hods are cheap. Eighty-four cents will purchase one. The craze for all that is æsthetic, early English, Japanese, Etruscan, or antique has passed by the hod unchallenged. The early Irish hod reigns supreme.

The dimensions of a mortar hod are as follows: Length of bowl, 22⅜ inches; mean depth of bowl, 9½ inches; greatest width of bowl, 9¼ inches; height of back piece, 12⅜ inches; width of pieces forming lateral sections of bowl, 11¼ inches. The dimensions of a brick hod, it will be seen, are different. They are as follows: Length of bowl, 23⅞ inches; mean depth of bowl, 8 inches; greatest width of bowl, 8½ inches; height of back piece, 10¼ inches; width of pieces forming lateral sections of bowl, 8⅞ inches. It is generally conceded that the mortar hod is built larger than the brick hod, so as to make the weight when both are loaded as nearly equal as possible.

The shank or handle is 4 feet 2½ inches for each species of hod, and the shoulder rest is always 9 inches long, 3 inches wide, and 1¼ inches thick. This shoulder rest is attached to the inverted ridge pole of the hod, and prevents the edge from cutting into the shoulder of the proprietor.

Touching the materials used in hod building, it may be said that the earliest ideas still obtain. Iron hods have been tried, but abandoned, because they were liable to rust and to become cracked when dropped six or seven stories by proprietors, who invariably and instantly relinquish all ideas and implements of labor at the stroke of 12 and of 6. The verdict of ages is that the bowl of the hod shall be of yellow pine, and the shank a hickory pole with the bark on. In constructing a hod, it is found necessary to use thirty-three nails for the brick species, and twenty-nine nails and four screws for the kind intended for mortar. The screws are used in the latter instance to fasten the two arms of the shank to the bowl, because screws do not leave holes, as do nails when they become loosened. Small holes allow mortar to escape, and are therefore open to objections. In making the bowl of a hod, eight-penny nails are used; four-penny nails answer best for the shoulder rest, and shingle nails for securing a narrow slip of sheet iron that runs over the top of the back piece of the bowl for the purpose of imparting additional strength. All of the nails are machine made, with the exception of those used in fastening the shank to the bowl, which are hand made and highly malleable. The mortar hod, besides having four screws, is lined at the seams with white lead. It has been considered somewhat superior to the brick hod. The weight of hods one hour after completion is ascertained to be exactly as follows: Brick hod, 9 pounds 6 ounces; mortar hod, 10 pounds 3 ounces. Fifteen bricks are carried in the common hod.

There is a widespread impression that the shank of a hod is steamed after being split into the V-shape necessary to accommodate the bowl. This is erroneous. The shank, after being slit for a distance of 7½ inches, is violently forced asunder by pressure against the wedge-like base of the bowl, and is secured within that position.

Very many hods are owned privately, and many thousands more are owned by a large company up town, which makes hods and rents them to builders along with its patent hod elevators, The introduction of hod elevators, oddly enough, met with no opposition from individual proprietors of hods, but, on the contrary, was warmly welcomed by them. The elevators do the work of many men, but as building has increased in a satisfactory ratio, there has always been enough work for men who decided to adopt the hod as a means of advancement or sustenance. Indeed, so well have the individual hod proprietors in question adapted themselves to the existing state of things, that they absolutely refuse to climb higher than the second story now, and builders must, perforce, employ the elevators for stories of a loftier pitch.

At no time in the annals of the city has the hod industry been at a higher tide of prosperity. Thus the outlook for the hod is as bright as its history has been unvarying.—*New York Sun.*

Sawdust in the Upper Mississippi.

The statement was made some time ago on what seemed to be good authority, that the upper Mississippi was gradually becoming filled with sawdust, and that it was or soon would be detrimental to navigation. *Wood and Iron* says that a joint committee of prominent business men and steamboat men of St. Paul and Minneapolis have been making an investigation of this matter, and found no sawdust accumulating in the main channel, and think the accumulation in the eddies and shallows will prove and advantage, instead of, as was at one time feared, a serious impediment, to navagation; that is, by lodging on the wing-bars and shallows, it serves the purpose of protecting them from the washing of the current, by which the sand was removed and deposited in the main channel.

Shingling Seat or Jack on Steep Roofs.

The best and cheapest plan adopted for the purpose is made about in this manner: Take a bar of iron about 1¼ inch by ¼ inch, 15 or 16 inches loug, flatten out to an edge, one end to a thin blade, then bend to a right angle 5 inches from the other end, drawing out a small point projecting out and down at or near the angle. The flattened end is pushed up under a course of shingles, until the sharp point at the angle rests upon the thick end of the shingle of the course upon which the iron rests; a slight stroke will set the point in the shingle and prevent any possiblity of sliding out of place. One of the above irons every eight or ten feet with a 2x4 scantling laid from one to the other is all the help a person will need on any roof, however steep it may be.—*Builder and Wood-worker.*

Band Saws.

Band-sawing, an art or industry which from the advantages it possesses over other methods of dividing wood is growing so rapidly and steadily into public favor as to be by many considered the saw of the future, is essentially a modern invention. Probably the earliest known attempt to saw wood by this means was made in 1808, by Wm. Newberry; but, although his machine contained all the essential features of the modern machine, it failed as a practical tool, because at that time band saws could not be made of sufficient length, except by brazing a number of short pieces together, a process which was found very detrimental to the uniformity and tenacity so requisite in these saws. Although a band saw when at work appears a very simple thing, merely a narrow pliable band or belt of steel, with a notched or serrated edge, running over two pulleys, it has, in the process of its manufacture, offered a paradoxical problem. It must be soft and flexible enough to work rapidly round the pulleys, yet hard enough to retain a keen cutting edge; whilst stiff and tough, to resist firmly the pushing and straining tendency of a quick feed.

Many attempts were made to overcome these difficulties, but it was not until a young and beautiful empress led the fashion by wearing crinolines, and all-powerful fashion imperiously demanded the production of long lengths of thin, light, pliable, highly tempered steel, that saw makers, after many failures, hit upon the right method of producing their blades of sufficient length and uniformity of temper to render the band saw machine a success.

At the French Exhibition of 1855 was shown what was probably the first *really practicable* band-sawing machine, and the merits of the new system were at once recognized, a demand for such tools immediately arose, and, as is always the case, many competitors started to supply the demand, till at the present day few wood-working establishments are without one or more of these machines, chiefly, however, employed on the lighter kinds of work; for, although our clever American cousins have already adapted the band saw to the cutting up of large round timber—feeding the saw on the rack-bench principle, as described in a recent number of the *Timber Trades Journal*—it has not yet reached that wide application for heavy work to which its many merits entitle it.

To M. Perin, of Paris, undoubtedly belongs the honor of introducing the band saw as a practical tool to the public, and although it is a notorious and somewhat singular fact that French band saws are chiefly made from Sheffield steel, the trade has hitherto remained mainly in the hands of our neighbors across the Channel, but at least one English firm, that of Messrs. Moses Eadon & Sons, of President Works, Sheffield, has throughout competed steadily and successfully with their foreign rivals.

In 1856 Messrs. Eadon took out a patent—No. 1,628—for the manufacture of solid endless band or belt saws, and their system was for a time a great success; but experience and the continued march of improvements have shown that these saws can be made with one joint at much less cost, and with great uniformity of strength, temper, and substance, than by the other method; they have therefore abandoned their original plans, and, guided by long practical experience, have erected new and special machinery which, they claim, enables them to make band saws of a *quality* and *price* which must ultimately give them a monopoly of this now important trade. A full description of their processes of manufactures, from the crude iron to the finished saw, was given in the pages of this *Journal* on July 24th, 1880.

As the action of a saw is to sever the wood by cutting or tearing away the material, it is obvious that the thinner it can be had the more economical it is, both of power and material—two most important considerations in these days of keen competition, and with the ever-increasing scarcity and dearness of timber. Herein lies one of the main claims of the band saw to popular favor, for not only is the blade itself thin in comparison, but it requires a comparatively small or narrow set; consequently it wastes less wood and requires less power to effect its passage through a log.

The band saw shares with the circular saw alone the great advantage of a continuous cut, there is no loss of time or power by a non-cutting back stroke, the sawdust also being constantly carried down; it requires no blower, as does it nearest rival, the jigger saw, to prevent clogging, and to enable the workman to see the line he is cutting to. Moreover, the length of the band saw gives it a great immunity from heating, there being but a very small proportion of its length (say 2 or 3 per cent.) in actual frictional contact, and this again cooled by the rapid passage of the saw through the air.

As the best band-sawing machines are now made with tables to cant to any angle, this saw is used extensively for cutting beveled or ship timber, for which purpose and for curves and bent timber it is probably unrivaled. The band saw is also rapidly growing into favor for sawing cold iron and steel, and as band *knives* they are much used for cutting skins, india-rubber, cloth, etc., etc.; but on account of these, however interesting, scarcely comes within the scope of a journal devoted to timber.

The band saw, however, like every other tool, possesses its disadvantages. Chief amongst these is its inability to break, and although the fault is doubtless sometimes in the saw, a far more frequent cause will be found in careless or irregular setting and sharpening, it being plain that unless the greatest uniformity is maintained in both these important matters, the tension will be unequal and the saw drag.

In setting it should be remembered that soft wood requires a larger set than hard wood, and that small curves are better cut with more set than is necessary for larger curves. In sharpening care should be taken, not only to keep the teeth uniform in size, but to keep the bottom of the gullet nicely rounded, by which the chances of fracture are rendered much less than when the bottom of the tooth forms an acute angle. It is universally admitted that thick, round-edged files are the best for sharpening band saws. The blade being extremely thin, the tension is difficult to keep, changing instantly with the temperature, and the pulleys should be eased to prevent it breaking when cooling down after working.

Too coarse a feed will not only cause the saw to choke, but will cause the back to be crowded and get longer, like the edge of a leather belt that is constantly running against the strap guides.

It may be taken as a maxim that the larger the pulleys, and consequent curve of the saw, the less is the liability to fracture, and the pulleys should in all cases be covered with a ring of india-rubber, which is now made specially for this purpose, for not only are the teeth protected thereby, but the blade is given a greater "grip" when the pulleys are so covered.

In spite of these little disadvantages (and it is hoped that a perusal of the cause and effect will lead to a greater care being taken by removing the one to prevent the other), there can be doubt the band saw has a great future before it; and the sight of a band saw, well made, well set and sharpened, working on a good machine, under the hands of a man "as knows his business," is one to cause an old-fashioned sawyer to exclaim: "Of all the saws I ever saw saw, I never saw a saw saw as this saw saws!"
—ROBT. RENTON EADON, in the *Timber Trades Journal.*

Reckless Bidding.

Notwithstanding that a healthful and prosperous condition of things has ruled in San Francisco in building operations during the past year, as far as the number of contracts let are concerned, a singular recklessness and virtual disregard of results has prevailed among contractors in all the various branches of house construction, by which opportunities for profitable contracts have been largely sacrificed to the prevailing spirit of reckless bidding to secure contracts at all hazards. It is a matter of grave doubt whether contractors, *as a whole*, have gained five per cent. upon their financial standing during the past twelve months. That is to say, if after deducting the losses generally that have been made from the profits realized *as a whole* upon contracts, the contracting fraternity are financially five per cent. better off at the end than at the beginning of 1882. Some, of course, have done well, but the much larger number have gained nothing more than a living from the contract-money used during the progress of work executed by them, while scores have paid pro ratio, with debit accounts against them of greater or less magnitude, augmenting, perhaps, to as great a sum as the total of profits enjoyed by those who have been successful.

We refer to this state of facts because of its demoralizing influence upon the building business. Men who undertake work at less than fair recompense naturally seek to equalize the discrepency by the avoidance of contract and specification obligations. Even those otherwise disposed to act honestly, when placed under the pressure of financial losses, are apt to practice the old maxim of self-preservation as the first law of nature, and to lessen or avoid disastrous financial results, seldom accept the situation and faithfully recognize and fulfill the obligation resting upon them, if there exist any possible means of escape. When losses and impaired credit are placed in the balances with honesty and integrity, the former more generally outweighs the latter, and for the time being, at least, moral ethics become valueless.

To the uninformed it may appear strange that such a state of facts should exist among so intelligent a class of men as the average of California contractors. But when the additional fact is considered that very many are pursuing the contracting business "on cheek"—i. e., men possessing no right knowledge of the science of construction or mechanical principles; men so utterly incapable to perform the duties of journeymen that they could not find engagements upon any works upon which mechanical skill and proficiency was a perequisite to employment—the wonder ceases. We have seen contracts originating from offices in which all right architectural rules were ignored, signed with "his (X) mark," and that, too, in one instance, wherein the sum of contract was nearly $10,000. Is it, then, to be wondered at that with inability on the part of the contractor to even sign his own name, that irregularities should occur? If the evils resulting from this condition of affairs were confined to the degenerate characters causing them, decent men might laugh. But the pernicions effects are felt by the good and worthy, who must, to some extent at least, compete with the inferior element; for, unfortunately, the generality of owners, in ignorance of the underlying facts, are willing to risk engagement with the latter on the basis of low price, rather than pay better men more than an insignificant increased sum of money, if any. Good men, as contractors, are desired by owners, but as a rule actually preferred only when they consent to accept the profitless amount figured out, or more generally *guessed at*, by mechanical scalawags.

It is to be regretted that the responsible and reliable class of contractors submit to all this

without some practical effort to correct the error; that they accept the situation and seek to work around the thorny hedges, rather than by united, intelligent effort seeking to clear away the obstructions which confines building operations within the restriction placed upon it by the methods and acts of the inferior classes. While owners, as a rule, are anxious to save all that is possible in the cost of erecting buildings, not one in twenty would be willing to enter into contract with "scrub" contractors, with an intelligent understanding of the risk they run by so doing of receiving inferior building and workmanship. And it appears plain to us, that if proper measures were adopted by the intelligent and competent men engaged in the erection of buildings, to convince owners, through right showing of the facts known to exist in this connection, a change could be wrought in building procedures which would soon place the inferior contracting element where it should be, beyond the reach of figuring in competition on buildings requiring mechanical integrity and ability.

OUR EXCHANGES.

American Architect and Building News.

This is the only weekly architectural journal published in the United States. The editors, during the past month, in a well-written full-page card, show the benefits that may be derived from every student or draughtsmen in architects' offices subscribing personally to the journal. They justly claim that those receiving benefit from a publication that has SO MUCH INFLUENCE ON THE FUTURE COURSE OF THE YOUNG MEN IN THE PROFESSION, should receive the support of those benefited. The subscription price is $6.00 per year in advance.

Builder and Wood Worker.

This Journal has made grand and rapid strides during the past year towards securing the goal of its ambition; viz., the establishment of a periodical that will compare favorably with any of the same character in the world. The price has been reduced to $1.00 per year. Every mechanic on the coast should at once subscribe.

Carpentry and Building.

Brother Williams in each successive number endeavors to rival its predecessor in the illustrations and practical subjects presented. Well worthy is this journal a place in the library of every one intending to build, as well as in the possession of every practical mechanic. Price, $1.00 per year.

Manufacturer and Builder.

This old-established journal is now in its fourteenth year, proof positive that the editor has succeeded in meeting the wants of the general public. Terms, $2.00 per year in advance.

The Carpenter.

An eight-page journal published in the interests of the workingmen. 50 cents per year.

The Wood Worker.

A new applicant for public favor, and can be had for $1.00 per year. Well worthy of the price.

The Sanitary Engineer.

The most successful of modern sanitary journals. Every article is written by a professional, and therefore the ideas advanced can be depended upon as representing the most brilliant thoughts of the foremost sanitary writers in America. It is a weekly Journal, and is furnished subscribers at $3.00 per year.

The Mechanical News.

But few journals equal the *news* in the artistic manner in which the various designs are executed. Each one shows a master hand. This journal is also superior in the originality of its articles, combining, as they do, practical suggestions in regard to every matter connected with the mechanical trades. Published every two weeks. Price, $1.00 per year.

Scientific American, with Supplement.

This long-established journal has been a regular visitant to our sanctum each week. Nights are sometimes advanced into the wee small hours ere we reluctantly lay this paper down. Every article is well worthy of perusal. The two together can be had for $7.00 per year in advance.

American Machinist.

A weekly edition, beautiful illustrations, DECIDEDLY ORIGINAL ARTICLES, a large corps of correspondents. Surely all these are worth the small price, $3.00 per year. Every machinist, engineer, founder, boiler maker, pattern maker, and blacksmith should vie with each other in extending a royal patronage to this journal.

The Mechanic.

Now in its 13th volume, which fact alone proclaims success. 16 pages. 50 cents per year.

The Artisan.

Published at Nashville, Tenn. There are other papers of this name, and subscribers will be careful in mentioning the one desired. Terms, $2.00 per year.

The Artisan.

Of Cincinnati. Its circulation is principally among the workers in mills and manufactories. 50 cents per year.

Engineering News.

A weekly journal. Price, $1.00 per year. Its name indicates those for whom it is intended.

The Tradesman.

The principal circulation of this journal is in the Southern States. Terms, $2.00 per year.

Timber Trades Journal.

One of the standard publications in England. It contains full information in regard to the price of lumber, etc., from all the manufacturing centers on the islands, as well as the continent. Its trade notes are copied in many different journals, a proof that it is recognized as standard.

American Inventor.

A journal devoted solely to industrial interests. Its name denotes the purpose for which it was established. Price, $1.00 per year.

American Engineer.

$4.00 per year in price; a hundred times that amount in value to every practical engineer in the country. Although not in the category of professionals in this line, we have spent many a pleasant evening studying the problems and communications presented in this truly valuable journal.

The Decorator and Furnisher.

Subscription price, $4.00 per year, including a patent binder. This is a large journal of 38 pages. Every page is illustrated with beautiful designs for decorations, including curtains, draperies, furniture designs, handsome patterns for ceilings in colors, tiles, panels for grates, etc. "Seasonable suggestions," is a group of four figures, decidedly original, and will cause a ripple to spread on the features of old and young. The reading matter is especially instructive to all those who desire pleasant surroundings in their homes.

The Art Amateur.

This old-established journal will deserve the patronage it has received. The illustrations are far superior to what the name indicates, many of them being works of art. The CHARCOAL SKETCHES given in the January number are decidedly *unique*. The lead-pencil sketches by Walter Shirlew are worthy of close study. *Ceramic* decorations are given in profusion. *Interiors* also receive special attention. The literary matter is exceptionally interesting for a journal of this character.

The Builder.

We welcome this NEW journal on our list. We think the editor has made a mistake in not prefixing "AMERICAN" be the two words forming the title, as an English journal by the name chosen has been in existence a long while. The editor has an exceedingly happy style of writing, and we have no doubt the new-comer will be well received. The price has been fixed at $2.00 per year.

The Northwestern Lumberman.

In an article in this issue, entitled "Credit to whom it is due," we have said several things in regard to this old-established journal. The articles in this periodical are well worthy the attention of every lumb r producer, as well as those who use it after it is manufactured. We will be glad when the time comes for the editors to establish a branch paper on this coast, as the lumber interests here are assuming gigantic proportions. Just think of it, friend *Lumberman*, before that 50 (?) billion of feet of lumber is used up, which is supposed to be in this State! Price, $4.00 per year.

The above embrace a part of the numerous exchanges on our list. Space forbids a more extended report in this issue. Of State exchanges, we have so many that it would be impossible for us to mention them all without too great a sacrifice of original articles. There is not a county in this State or Oregon from which we do not receive several papers marked x. The advantage to those seeking BUILDING INTELLIGENCE is at once apparent. The editors of some of the x are not satisfied with sending us their respective papers, but in addition, send us full written lists of all building operations in their immediate neighborhood. Again: as errors will creep in once in a while, our country brethren have in many instances sent us postals notifying us of the mistake. Notably is this the case in regard to Brother Saunders of the *Woodland Democrat*. A party procured one of our blanks and sent us false information. Upon learning the falsity of the statement sent us, we immediately sent a lengthy card to Brother S., offering to pay for it as an ad. Not only did Brother S. publish the card in full, and ever add a well-worded caution to such false itemizers in the future, but kindly and respectfully declined any pay. Aided by such worthy help from every part of the State, it is no wonder that our journal has become to be looked upon as the GREAT REPRESENTATIVE OF THE BUILDING INTERESTS ON THIS COAST.

Fire Protection of Mills and Construction of Mill Floors.

The author of this work, C. J. H. Woodbury, has evidently spent years of *practical* life amongst the mills and factories of the East. It if seldom one picks up a work that contains so much *practical information* written in such a clear, easy style. Electric lighting is treated in a manner that at once arrests the attention of the reader, and is of great value to all mill owners. The price has been fixed at $2.50, so that every one can afford to have this work in their library. We will refer to this work again in another issue.

Vibration in Buildings.

This is a trouble which manufacturing establishments often have to contend with. It is occasioned by the vibration of some other object, which strikes the key or note of the building—a sort of responsive vibration, and is termed synchronous. An exchange in speaking on this matter says: "At one of the print-works at North Adams, Mass., a new and unoccupied building was found to vibrate in consequence of the puffing of a small steam engine sixty feet away. At Centredale, R. I., it has been necessary to change the height of the column of water flowing over the dam, to prevent the excessive vibration of the adjacent mill. At Amesbury, Mass., out of eleven mills that are near the river, two vibrate when water in certain quantities flows over the dam, but the tremor can be wholly stopped by changing the flow of water. The most frequent cause of vibration is due to the running of the machinery, and it has repeatedly happened that a complete cessation has been obtained by increasing or lessening the speed at which the machinery is run. This is not always profitable or possible, and the fact that this vibration results in a loss of power, variously estimated at from ten to twenty per cent., is a strong argument in favor of the construction of one-story mills, which would necessarily vibrate much less than factories having a height of six or eight stories. But it is not alone the loss of power that has to be considered; for in addition, there is the straining of building and machinery, and in the manufacture of textile fabrics this unsteadiness causes a great breakage in the threads and consequent damage to the material."

Straw Lumber.

Resent newspaper statements convey the information that a company has been formed for the purpose of engaging in the manufacture of straw lumber, after the process devised by Mr. S. H. Hamilton, of Lawrence, Kan.

The first publicity given to Mr. Hamilton's process was at the meeting of the American Association for the Advancement of Science, last year; and in our "Association Notes" for that year we gave a brief statement of the invention, which at the time attracted much attention from its novelty and the meritorious features claimed for it.

The company above referred to has lately erected a large mill in Lawrence, Kan., and is now engaged in turning out straw lumber in limited quantities. The machinery used has been constructed specially for the purpose, but in some respects it resembles that used in paper manufacture. All kinds of straw are used, the raw material being first made up into pulp in the usual manner, and than rolled into thin sheets, twenty-four of which would make an inch in thickness. While wet and hot, and in a condition to readily absorb liquids, these sheets are passed through a vat containing certain chemical impregnating substances heated to 280° Fah., by which treatment they become thoroughly impregnated with the materials of the bath. The sheets are than passed through a series of polished iron rollers; cement is applied to them by a special arrangement provided for the purpose, and the ultimate result is the production of a hard, firm, and completely fire-proof slab, which is properly described by the name "straw lumber" which is given to it. After manufacture, the lumber is allowed to thoroughly dry, an operation which takes from a week to a month, according to thickness. Upon the thoroughness of the drying depends its consequent freedom from warping. The drying is done in a dry-storehouse, kiln-drying being found not to answer.

On the authority of the *Northwestern Lumberman*, we glean that thus far the straw lumber has been made principally into flooring, ceilings, blackboard strips, and friction wheels. The present machinery can only turn out boards of different thicknesses, 13 feet long and 3 feet wide, which can be sawed into any shape, the same as common lumber. They cannot be split into thinner slabs, but must have the right thickness for the use intended. With the extension of the use of the new material, additional machinery will be provided for turning out material of any length, width, and thickness that may be desired. While the capabilities of straw lumber, in the estimation of our contemporary, seem limitless, the manufacturers make no extravagant claims for it, only seeking to have it applied to the more simple and practical wants until experience in its manufacture and uses shall enable them to intelligently extend its sphere.

When finished, it looks like what it is—a slab made from straw. The surface has an appearance of unevenness, which is deceptive, for while it looks rough, it is found to be smooth. The fibrous character of materials of which it is made give it a streaky appearance. It is very hard, compact, and firm, saws perfectly smooth, and a nail can be driven through it very cleanly, and without cracking, splitting, or tearing, as wood often does. The makers claim that it can be readily polished, finished, and decorated upon the surface in any desired manner, and that it can be worked, sawed, planed, etc., the same as wood. The new material is affirmed to be as strong, or stronger, than wood, to surpass it in endurance, and to possess water and fire proof qualities to an extraordinary degree. For floors and ceilings it is said to have shown itself to possess all the meritorious qualities claimed for it. Friction wheels made of it are affirmed to have outlasted three sole-leather wheels. It is much heavier than wood slabs of equal dimensions, and this may be an objection for certain uses. It is proposed to use it extensively for veneer. It is reported that the new material is about to be used in the construction of a large six-story building, covering an entire block, which is about to be erected by Mr. John V. Farrell, an extensive dry-goods operator in Chicago.—*Manufacturer and Builder.*

Monument to Victor Emmanuel.

The commission which has charge of the national monument to King Victor Emmanuel of Italy, finding none of the plans submitted in the last great competition quite satisfactory, has opened a new one, for which a year of preparation is given, the designs not being received until December 1st, 1883. Some modifications are made in the first programme, the site being now definitely fixed on the Capitoline Hill, upon the ground now occupied by the barracks of the municipal guards and the residence of the general of the Capuchins. The total height of the monument is restricted to twenty-nine metres, and an equestrian statue of the late king is to form the most important portion. Considering the magnificent dimensions contemplated in the most of the designs of the previous competition, these very modest requirements are a little surprising, and it certainly seems as if the Italians had concluded that sixteen hundred thousand dollars was too much to devote to a dead man's memory; but the new plan contemplates the extension of the Corso to the foot of the Capitoline Hill, and the construction of a grand staircase leading upward to the monument, so that the cost of the whole project will at least be very considerable. What, if any, may be stipulations as to the cost of the work and the premiums offered we do not learn, or whether the competition is to be confined to Italians, as was once proposed.—*American Architect.*

The Mysteries of Metals.

Notwithstanding the wonderful progress, says an exchange, that has been made during the last half-century in the constitution and working of the useful metals, there is yet a vast deal to be learned. The metals, when pure, are commonly supposed to be simple elements, yet there are some reasons for supposing that it may be proved that at least some of them are compounds. Even the great Faraday give utterance to the thought that the dreams of the alchemist might yet be realized that gold and other metals might be found to be compounds, and that means might be divised whereby those compounds might beseparated, and afterward so differently reunited that the baser metals might be converted into precious. The changes which are wrought in iron and steel by converting, annealing, and hardening processes are far from being understood by the most advanced matallurgists of the present day. The mysteries of hydrogen gas and its intimate relations with iron are as much a puzzle as they were fifty years ago, and the theory advanced by Graham, that hydrogen is a metal, is still maintained by many chemists. It is only a few years ago that absolutely pure iron became known to scientists, and it is now shown to be a metal almost as "unstable as water," and still found in the laboratory as a great curiosity. What had previously been known as pure iron was shown by Jacobi to be a compound of iron and hydrogen. He first separated the two so-called elements. During the process the iron increased in volume, changed from a dark to a silver-white substance, very ductile, and so soft as to be nearly as readily cut as lead. The experiment proved that hydrogen played an important part in hardening and tempering—as much so as carbon—but how or why none know to this day. It is found that much more difficulty is experienced in rolling and otherwise manipulating gold in a factory where much electricity is generated by the action of machinery than in a room where no machinery is in operation, and where, consequently, frictional electricity is absent. The trouble is manifested in a disposition of the edges of the plates of thin bars to crack. Many other peculiarities, already known, might be mentioned, and there is no doubt that closer observation will largely increase the number of curious and yet inexplicable phenomena connected with the working and general characteristics of the metals, both useful and precious.—*Mechanical News.*

A Love of a Room.

A young working-girl of this city, by the exercise of her own innate good taste, and putting every spare penny where it would do the most good, has furnished forth a charming room at comparatively small expense, and sufficiently æsthetic to please the most fastidious person. The floor, painted by her own hands, is a dark walnut shade, partly covered by a large rug made of cheap ingrain carpet in a small pattern of cream and olive, bordered by a broad band of plain olive felt. The inexpensive wall paper is plain olive, flecked, with pink, finished by a narrow olive frieze, terminating at the corners with a cluster of four tiny pink fans. One window faces a dingy brick wall, and she painted the window panes in bright water colors, following a pretty traced pattern, which gives a bit of stained glass quite effective in the pretty room. The other window is draped gracefully with long full folds of sprigged muslin, depending from rings on a plain pine roll, to be replaced in the winter with a heavier curtain of olive cotton flannel.

The furniture is light wood, and a lamp with rosy transparency stands on a five o'clock teatable of unvarnished wood, and throws a soft light over the room, which also contains books, shelves of pine, a couple of second-hand easy-chairs, and a small dry-goods box for shoes, covered by her own hands, with pink and olive cretonne. A large clothes-horse, on which she pasted the story of Cinderella in Walter Crane's pictures, over olive paper, shuts of the wash-stand and bedstead from view. The toilet accessories, set off with fresh sprigged muslin over a pink lining, are a pink and white washbowl and a large pitcher of the quaint shape that comes now in the cheaper grades of china; a second-hand wardrobe, draped with a *portiere* of olive Canton flannel, contains the unæsthetic dust-pan, brooms, and other homely articles necessary to neatness and comfort, all trifles of that description bought at the five-cent counters. A pretty willow rocking-chair, ornamented with olive and pink ribbons, and a knitted hassock to match, the two latter Christmas gifts, stand on the rug.

On the olive-draped mantel are grandma's Nankin teapot, two tall silver candlesticks and a large ginger jar, not decorated and spoiled with gummed-on pictures, but left in its pristine blue and white beauty, filled with white daisies gathered on Sunday afternoon walks. Two or three photographs of good subjects, that are better than chromos and cost less, hang on the wall, and complete the pretty refuge of this proud and industrious girl, who is self-respecting enough to earn her own living rather than to be dependent upon her rich relations.—*Hartford Times.*

Increasing Handsomely.

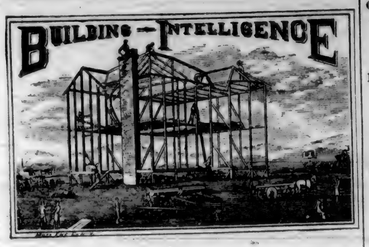
Our acknowledgments are due to the large number of mechanics and others representing all classes of society, and almost every profession and calling—ladies and well-to-do property owners included—who nave handed in or forwarded by mail their names and subscription amounts to this journal during the past thirty days. No better evidence of its popularity and appreciation by those whose interests are specially represented in its columns, and by owners of real estate and communities generally, can be offered than that of liberal subscription patronage. We hope that within the succeeding thirty days a thousand or two more new names will be received, and every present subscriber who has not will immediately forward by mail, call and pay at this office, or be prepared with the cash to pay up when called upon by the representatives of this journal for the subscription amount for 1883.

DEALERS IN BUILDING MATERIALS AND HOUSE FURNISHING GOODS,

Will best subserve their interests by advertising in the columns of this journal, which is taken by very many owners, and by all architects—except a few acrimonious dispositions who feed and live upon the delusion that they stand high above even their superiors in architecural knowledge.

Tempering a Chopping Ax.

Take six pounds of tallow and two pounds of bees-wax, and one ounce of finely pulverized sal ammoniac. Melt the tallow and bees-wax together, and then put in the sal ammoniac. Pour the mixture into a sheet-iron box, which, for convenience, should be two feet long, four inches wide, and four inches deep. A box of these dimensions will hold enough of the mixture for tempering any sized ax, hoe or other tool. When the ax is ready for tempering, heat to a white red; then put it into the mixture deep enough to cover the steel all over. Let it remain from one to two minutes, then put in the water the same way. Then draw to a blue color and return to the mixture as before. Then hold it over the fire until it becomes dry, and then put it back into the water to cool. Never heat the steel more than to a light red when forged out.



SAN FRANCISCO.

Sutter, cor. Polk. Three-story brick building.
O.—Sutter St. R. R. C'.
A.—Kenitzer & Raun.
C.—Mahoney Bros.
About $100,0 0.

California, cor. Broderick. 4 two-story frame.
O.—C. Blethen.
A.—G. E. Voelkel.
C.—Conrad & Miller.
$28,600.

Steiner, x Pine and California. Two story and basement frame.
O.—W. Trost.
A.—G E. Voelkel.
C.—P. Laherty.
$7,500.

Taylor, nr. Turk. Raising and additions.
O.—Mejasson.
A.—Huerne & Everett.
C.—W. B. Kreger.
$10,000.

Hyde, nr. Ellis. Two-story and basement frame.
O.—Dinsmore.
A.—Schmidt & Havens.
C.—Haskell & White.
$6,000.

Sansome, nr. Jackson. Two-story brick.
O.—Novello & Pitto.
C.—Novello.
$5,000.

Polk and Fulton. Two-story frame.
O.—J. Dollard.
A.—B. E. Henriksen.
C.—S. Grant.
$4,400.

Franklin and McAllister. Additions.
O.—U. S. Brewery.
A.—H. Geilfuss.
C.—Fuchs & Hewe.
$5,000.

McAllister, nr. Scott. Three story frame.
O.—C. Lind.
A.—Wright & Sanders.
C.—A. Flood.
$20,000.

Lyon, x Clay and Washington. One-story and basement frame.
O.—L. P. Rixford.
A.—R. Warren.
C.—Bruce & Rose.
$2,000.

Sutter, nr Taylor. Four-story frame.
O.—Mrs. Renton.
A.—C. Geddes.
C.—W. E. Stevens (mason); Grant (carpenter).
About $40,000.

Market, x 18th and 19th. Two-story and basement frame.
O.—Dr. Miller.
A.—H. D. Mitchell.
C.—F. W. Kern.
$4,000.

Nineteenth and Sanchez. One-story and basement frame.
O.—J. Watt.
C.—G. G. Gillespie.
$1,400.

Seventeenth and Hardie. One and-one-half-story frame.
O. & B.—J. S. Ayer.
$2,000.

Hardie, x 16th and 17th. One story frame.
O.—J. S. Ayer.
$700.

Church, nr 16th. One-story frame.
O.—Hurnung.
C.—Powell.
$900.

Shotwell, nr 17th. Two-story frame.
O.—Mrs. Woods.
C.—Depuy.
$790.

Tenth, nr Folsom. Two-story frame.
O.—H. Schalzeter.
A.—G. E. Voelkel.
C.—Laherty.
$4,000.

San Bruno Road, nr 28th. Two-story frame.
O. & B.—Schroff.

Shotwell, x 22nd and 23rd. Two tanks and frame, 90 feet high.
O.—Landers.
C.—Treadwell.
$7,000.

Magdalen Asylum. One-story frame barn.
Day's work.
$390.

Market, nr East. Additions.
O.—P. Harder.
$100.

Sutter, nr Larkin. Two-story frame.
O.—W. Meyer.
C.—Denke.
$1,500.

Jackson, nr Fillmore. 2 two-story frame.
O. & A.—C. K. Kirby.
C.—Greenwood.

Union, nr Larkin. Two-story frame.
O.—Mrs. K. Heins.
C.—J. Ambrose.
$2,000.

Powell and Francisco. Repairs to Brewery.
Day's work.
$2,000.

Fulton, nr Polk. Three-story frame.
O.—College of Pharmacy.
A.—Percy & Hamilton.
C.—W. M. Fletcher.
$5,000.

Pine, cor Stockton. Repairs to dwelling.
O.—S. Wilson.
A.—Wright & Sanders.
Day's work.
$90,000.

Howard, x 4th and 5th. Two-story frame.
O.—J. B. Gorman.
Day's work.
$2,500.

Clay, east of Sansome. Repairs.
O.—Lick Trust.
C.—T. Moffett.
$2,000.

Guerrero, x 15th and 16th. One-story frame.
O.—S. M. Smith.
A.—H. D. Mitchell.
C.—J. W. Wilber.
$2,000.

Grove, nr Fillmore. Alterations.
O.—H. Froomberg.
A.—T. A. Eisen.
C.—W. Wiescarver.
$3,000.

Post, x Kearny and Dupont. Alterations to Morton House.
O.—E. Barron.
A.—P. J. O'Connor.
C.—Mahoney Bros.
$15,000.

Clay and Sansome. Additions to Niantic Block.
O.—Capt. Thompson.
A.—W. Patton.
C.—J. W. Wessinger.
$8,000.

Clay, nr Gough. Two-story and basement frame.
O.—W. S. wood.
A.—A. Laver.
C.—J. T. O'Brien.
$20,000.

Hill, x Valencia and Guerrero. Two-story frame.
O.—W. Leman.
A.—C. Geddes.
C.—G. Lang.
$2,700.

OAKLAND.

Filbert, nr 16th. One-story cottage.
O.—C. A. Stonefiesel.
A.—S. & J. Newsom.
C.—Ingerson.
$1,600.

Point Station. Additions to school-h use.
A.—S. & J. Newsom.
C.—N. N. Hinckley.
$6,115.

Filbert, x 16th and 17th. Two-story frame.
O. & B.—J. E. Abbott.
A.—Taylor and Copeland.
$3,000.

Second, nr Brush. Alterations.
O.—J. O'Connor.
C.—W. H. Weilbye.
$1,000.

Myrtle Street, nr 16th. Two-story frame.
O.—J. Westman.
$1,600.

ALAMEDA.

Encinal Ave. cor Walnut. One-story and basement frame.
O.—Mr. Pope.
C.—Chrisjohnson.
$1,100.

Morton, x Central and Santa Clara Ave. One-and-one-half-story frame.
$1,400.

Additions.
O.—Tharp.
C.—J. C. Jameson.
$1,200.

SAN JOSE.

San Fernando, cor. Market. One-story frame.
O.—J. Auzeralis.
A.—Theo. Lenzen.
C.—W. S. Boyles.
$1,500.

One-story brick, rear Washington Block.
O.—M. Murphy.
A.—Theo. Lenzen.
C.—W. S. Boyles.
$1,000.

Market Street. Brick building.
O.—G. Peirano.
A.—Theo. Lenzen.
C.—J. Sbarboro.

At Baker field there are additions being made to the hotel. O.—Mrs. E. Eitel.

Near Astoria a Sash Factory is being built by Hansen Bros.

A large hotel is being built at the new town of Ontario, by the Chaffey Bros. C.—A. W. Boggs.

At San Diego, a large two-and-a-half-story frame building, brick basement, is being built. O.—J. P. Christensen.

At Healdsburg, a three-story frame building for the Seventh Day Adventists. A.—H. T. Bestor. Day's w rk. $12,000.

SACRAMENTO.

Fourth, x I and J. Improvements.
O.—J. McGuire.
$4,000.

ST. HELENA.

One-and-a-half-story frame.
O.—Dr. Ely.
C.—J. C. Mixon.
$1,300.

Frame dwelling near town.
O.—James Dowdle.
$5,000.

LUMBER.

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping.....per M feet	27 50
Ship Plank, Rough..... "	28 50
" Planed 1 side..... "	32 50
" " 2 sides..... "	35 00
Deck Plank, Rough..... "	33 50
" Dressed..... "	37 50
Laths..... per M	3 75
Wool Slats..... "	10 00
Shakes..... "	12 00
Redwood Posts..... per piece	17½

Redwood.

Rough Merchantable..... per M feet	$22 50
" Refuse..... "	18 00
Surface No. 1..... "	37 50
" 1 x 6..... "	35 00
" No. 2..... "	27 50
Rustic, No. 1, 1 x 8..... "	35 00
" No. 1, 1 x 10..... "	37 50
" No. 2..... "	32 50
" Under 10 feet..... "	32 50
T. & G., 1¼ x 4 and 1¼ x 6..... "	37 50
" 6 in. 12 ft. and over..... "	35 00
" " 7 to 11 feet..... "	32 50
" " under 7 feet..... "	30 00
" " No. 2..... "	27 50
T. & G., Beaded, 12 feet and over..... "	35 00
" " 7 to 11 feet..... "	30 00
" " under 7 feet..... "	27 50
Half-inch Surface..... "	30 00
Pickets, Fancy..... "	27 50
" Rough, Pointed..... "	20 00
" Square..... "	17 50
Siding, ½ inch..... "	25 00
Shingles..... per M	2 50
Battens, ½ inch, lineal feet..... "	1c

NAILS.

10 to 60 pennies, are quoted at.....	$4 70
8 " "	5 02
6 " "	5 05
5 and 4 " "	5 07
4 and 5 pennies, brad heads, at.....	6 00
6 " "	6 25
8 " "	6 50
10 and upward "	5 75
3 penny fines "	7 50

Gas Meters as Helps to Fires.

In most buildings designed for multiple tenancy, like our great apartment houses and the capacious office buildings which comprise so large a part of the business part of this city, it is customary to provide a separate gas meter for each room or suite of rooms. These meters are commonly placed in closets and out of the way corners, and are very apt to be surrounded with much combustible matter.

The connections of meters with the gas pipes are usually, if not always, of lead, a metal that is easily fusible, and the solder with which the plates of the meter are joined together yields even more readily to heat.

Let a fire break out in a building containing, as many buildings do, a score or more of these fragile fire feeders, and the hot air sweeping in advance of the fire will quickly melt the lead or solder. The outpouring gas fill the building with an explosive atmosphere which hastens the spread of the flames, and keeps up an inexhaustible supply of fuel. Such burning gas jets, sometimes of great size, are to be seen after almost every city fire, w.. nothing is left of a building but blackened and broken walls.

The gas poured into burning buildings through such openings doubtless helps materially to account for the surprising suddenness with which many great buildings have been swept by flames; and in all cases the outflow of gas must seriously counteract, if it does not altogether thwart, the efforts of the firemen.

The remedy for this great evil is not so easy to point out. It is obvious that where a multitude of meters are to be distributed through a building, they should be more securely incased, and provided with infusible connections; or some means should be devised whereby the gas supply shall be automatically shut off whenever the temperature rises so as to imperil the integrity of the meter. There should also be near the outer door and readily accessible to firemen some means by which the connection of the house with the gas main in the street can be quickly closed.

There is clearly an opportunity here for useful and profitable invention.—*Scientific American.*

The Hugunin Window Balances.

These balances are not sash locks or catches, but adjustable mechanical substitutes for sash weights; balancing sashes automatically, by controlled friction. They are made in three sizes and widths and put up in neat card boxes, properly labeled, and containing one dozen each, with full directions for applying. They are as easily and cheaply applied as the sash cord pulley. The use of the screw balance greatly simplifies and lessens the expense of fitting up windows by avoiding the use of box casings, pockets, and the hanging of the sash with weights. The balances are put into the sash channels of the frame, and are not attached to the sash—allowing the ready removal of the latter for cleaning, etc. The sashes are both locked with the meeting rail lock, as with weights, at one operation. The rocking-hinge improvment made in 1882 renders it unnecessary to straighten the edges of the sashes so nicely from bevels, etc., and from want of squareness in the window frame to which applied. Samples may be seen at this office.

The California Architect and Building News.

VOLUME IV. NUMBER 2. | SAN FRANCISCO, FEBRUARY, 1883. | $2.00 per Annum, in Advance. Single Copies, 20 Cents.

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—AND—
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BOUND VOLUMES OF THIS JOURNAL.

Through the kindness of a few of our subscribers sending us numbers of which we were short, we have been enabled to have sixteen complete volumes of this journal bound. When these are gone, we will be unable to supply any more complete sets.

Bound volumes of 1879, 1880, 1881, and 1882 (in one book) complete, with all ads. and covers removed, will be sent to any address upon receipt of $8.00.

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" " 1881 and 1882, each $2.50
" " 1880 (only a few left).....$2.00

In 1880 the subscription price of this journal was only $1.50, and we have put the price of bound volumes accordingly.

Volumes of 1882 and the sixteen full sets are all supplied with a full index.

Any one failing to receive a complete index will be supplied by sending a postal card to this office with their address.

Our Fourth Volume.

With the January number we began the fourth volume of this journal. In reality it should be the fifth volume, as it was started in 1879 as a quarterly. We date, however, from January, 1880, as in that year we began its issue as a monthly.

Starting as we did in such a dull period of this State's history, we are more than pleased with our success. There is not a county in the State that this journal does not have many readers. On the Sandwich Islands we have numerous subscribers. Mexico, Oregon, Washington Territory, British Columbia, Nevada, Colorado, and adjacent territories are all well represented on our subscription lists.

This journal is the official organ of the San Francisco Chapter of the American Institute of Architects. In our Professional Column, we have the cards of the leading architects of this coast. It is looked for monthly by a host of material-men who eagerly scan it Building Intelligence. The mechanic awaits its regular appearance, sure of a feast of good items in the various mechanical trades.

This journal is an assured success, as a glance at its advertising pages will show. Our pages are always full, and we have added two pages extra in the last several numbers. This fact ought to convince every material-man that this is *par excellence* the journal in which to advertise their goods, that they may be brought before the parties most interested.

We sincerely thank the various papers for their kindly notice of the beginning of a new volume. In our January number we made no reference to such fact; the only way it could be noticed was by the change of the numbers on our cover, showing that No. 1, Vol. 4, had made its appearance. The fact that so many of our country papers noticed the new volume by such a clew shows that the interest in this journal is not confined to the select few.

Amendment to Section 832 of Civil Code.

Senator Cronan of this city has introduced an amendment to section 832 of the Civil Code, which we hope will receive the approval of both branches of the legislature, and the signature of the Executive. It is a well-known fact that many valuable improvements have been and are delayed, by reason of the requirements of the section as it now stands upon the statute books of the State, and the sooner it is changed the better it will be for the taxable interests of the city. There are cases in which the change may work a seeming hardship, but any one who will disinterestedly review the matter must reach the conclusion that all obstacles in the way of new, better, and more taxable improvements should be removed. The whole matter resolves itself into these two propositions: first, shall owners of unimproved property, desiring to improve the same, have imposed upon them the additional expense of taking care of and underpinning the adjoining premises, the foundations of which are not located at a reasonable and proper depth or shall the owners of such improved foundationed property be required to protect and underpin the same at their own cost? We trust that Senator Cronan will bring to bear the many strong arguments sustaining the change, and that the building interests of San Francisco and other cities will no longer be hindered by the Code as interpreted by the Supreme Court. The section as it stands is a bad conglomeration of the rights and privileges of coterminous owners, and a legal decision either way may be construed from its by no means explicit language.

Prospective Building Improvements.

WHY WE DO NOT REPORT THEM.

Since the first of the year we have received several notes asking that we report in this journal all prospective improvements with which we may be cognizant. We have also been asked, by several on the street, questions relating to the same subject.

We have listened kindly to the suggestions made, and have given the same answer to all; and we desire to make our explanation public, that all may understand the position we assume in the matter.

Any one familiar with the times as they were in 1878 and 1879 will well remember the almost painful anxiety portrayed in the faces of our contractors when a job happened to be in an architect's office for figuring. And architects were careful in giving information in reference to prospective improvements until all the necessary drawings and writings were prepared.

It was during this dull and anxious period with architects and contractors that this journal was started. One of the main reliances for steady increase and continuance of its subscription patronage was to present a truthful report of the buildings in process of erection each month, with the name of the owner, architect, contractor, and cost of same.

In order to get the various items correctly, it was necessary to first obtain the confidence of the different architects, not only in the city, but also throughout the State. Thanks to a personal acquaintanceship with many of our brother professionals, we succeeded beyond our expectations in securing their hearty support and earnest co-operation. From the start we informed all those who furnished us information, that we would only publish contracts after they were signed. The wisdom of this course was soon apparent. We do not remember in all our experience in this city of any period in which so many jobs were figured on that did not go ahead as in the latter part of year 1880 and in 1881. Columns could have been written about contracts that were soon to be let, etc., and that ended in nothing being done.

In the early part of 1882 an association of architects was formed in this city. It has gone on increasing in strength, until it is now one of the largest in the United States in membership. Through its agency the architects are becoming more and more attached to the principles of their profession, and are daily cultivating those social and professional courtesies which should exist among gentlemen assuming the responsible position of practicing architects and which are exemplified by a hearty shake of the hand and a hail brothers well met.

The course we have taken has met the approval of a large majority of the architects of this city and State. Our position, in a few words, is as follows:

By the course we have pursued, we have the pleasure of being welcome to nearly every architect's office in the city. Many of them show us plans in preparation for various edifices contemplated, or in process of preparation, and give us much information in regard to future improvements. When we make our monthly tour for building intelligence, we are always kindly received, and in many instances are

told that a job is expected to be let before we go to print, and if we will call again information in regard to it will be cheerfully given. Of course, we become acquainted with many facts in regard to future improvements, every confidence being placed in us by our brother professionals, and it would be unkind—nay, it would be treacherous—on our part, if we gave a single hint in regard to the facts we learn from our monthly visits, which has not passed beyond all contingencies, and reached a point beyond reasonable probability of suspension, or the possibility of interferences from any source. By this intimation we mean this: that a very large number of cases might be cited in which, after the order to prepare plans have been given, other scheming and unprincipled men, calling themselves architects, but not so as far as any of the more honorable, gentlemanly, and professional attributes are concerned, have brought personal and friendly influences to bear, and resorted to intrigues and misrepresentations by which they have dishonorably diverted engagements made with others to themselves. For this reason, principally, we refrain from publishing anything but what we know to be facts. Another reason is, that fully five per cent. of the jobs figured on do not go ahead, and it is not the purpose of this journal to litter its pages with accounts of things that may never be. What we want is simply *plain, indisputable facts*, and these we propose to give as true as close attention and careful inquiry will accomplish.

Gladly welcome will be the day when the cares and troubles of a professional career are over, and those of a journalistic character alone be assumed.

Proceedings S. F. Chapter of Architects.

The regular meeting of the Chapter was held Friday evening, 2nd inst., President John Wright presiding. The meeting was largely attended and interesting in character. The Committee on Articled Students' Class reported progress, and received instructions to proceed with the matter in hand, and to organize the respective classes. (The opening class in Modeling will be organized, under the instruction of Mr. F. Marion Wells, on the evening of February 13th.—Ed.) The motion to advertise the contemplated movement in this connection in the California Architect and Building News was unanimously adopted. The organization of classes in Drawing, Mathematics, and Carving will succeed that of Modeling as rapidly as circumstances will permit. It is hoped and requested that all students desiring to avail themselves of the valuable opportunities presented in the Chapter's efforts to benefit and perfect the young men in the profession will at once report to the Secretary, Mr. George H. Wolfe. There will be no charge to *articled* students; those who are not articled can also join the classes upon paying a nominal fee.

The articles appearing in the present issue, in relation to the appointment of "School Department Architect," and that in reference to this journal furnishing anticipatory reports of "contemplated improvements," were read and approved by vote of the Chapter.

The committee previously appointed to prepare amendments to sec. 832 of Civil Code, relating to the rights of coterminous owners, and the underpinning of buildings, reported that a bill, covering the ground, had been presented by Senator Cronan for action by the present Legislature, and is now pending.

Mr. Pissis read a very interesting address—subject, "Paris School of Designs"—which was ordered to be published in full in this journal. It will be found in another column. A vote of thanks was tendered him for his able effort.

A delegation from the Carpenters' Union appeared before the Chapter, specially in reference to the practice permitted by some of the architects in San Francisco of allowing contractors to sublet the finishing of buildings, in part or as a whole, by "piece-work," instead of having the work done by day labor. The unfairness and injustice of the custom was fully argued by the delegation, setting forth its injurious effects and tendencies as against worthy and capable workmen, many of whom were frequently thrown out of employment by reason of piece-workers offering to "lump" work at prices which would yield current day wages only by slighting the work, crowding in all the working time possible, and rushing it through with but little regard to quality of workmanship, thus debasing and demoralizing the standard of mechanical science, and working a common injury upon competent men, and imposing inferior work upon owners.

While the Chapter cannot control and prevent or regulate the questionable practice, the expression of all present disfavored the piece-work system. Many of the members of the Charter insert a clause in their specifications: "No piece-work will be allowed"; but this is harmless as against contractors who let piece-work when unaccompanied with a contract penalty. The agitation of the matter will, in time at least, induce all reputable architects to incorporate a penalty clause in contracts issued by them. The general sentiment of the members favored the adoption of some practical method calculated to favor the interests of the better class of mechanics. It was suggested to the delegation that the Union, from time to time, inform the Chapter of all cases of piece-work coming to its knowledge.

The meeting throughout was one of great interest, and members who failed to be present, and those architects who have not affiliated, missed the pleasures of one of the best meetings ever held by the architects of this city.

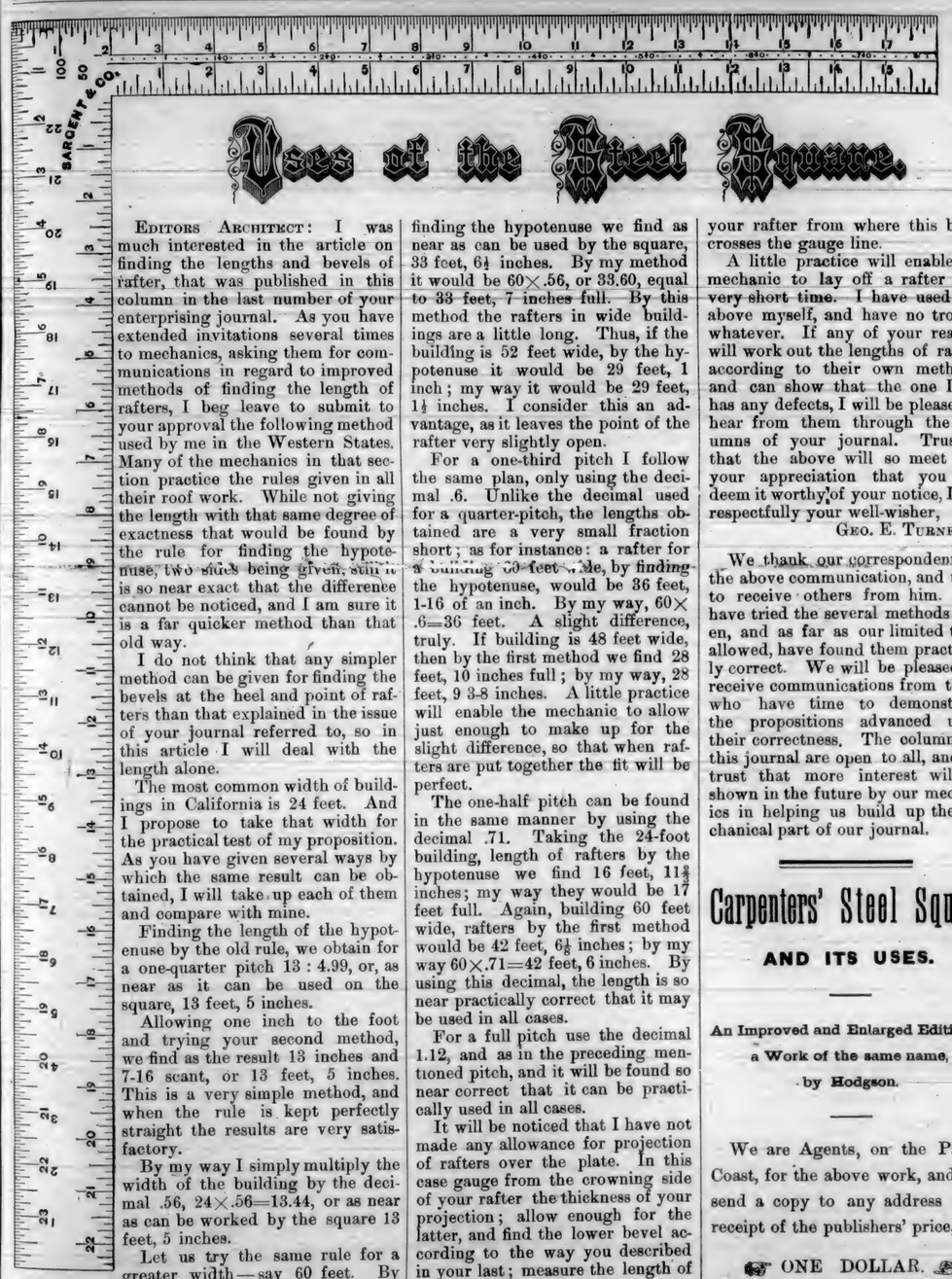
As Others See Us,

ESPECIALLY OUR ESTEEMED COUSIN, J. B.

Architecture has no status with Brother Jonathan, is not recognized as a profession, and is commonly reduced to the level of the signboard. The most highly educated men, therefore, do not become architects, and the result is plain. Whenever we find anything beyond the general run of indigenous wooden houses, it is usually of the most abject, commonplace kind, or a wonderfully ambitious failure. Whether in school-houses or in any other kind of structure, architecture in its highest æsthetic conditions is never found. Even the capitol at Washington, built of white marble, can, at best, be regarded only as a costly piece of architectural floundering. If, instead of parodying the styles of Europe, unsuitable both to the country and the people, American architects would as steadily set themselves to develop artistic buildings of their own (embodying, of course, the great fundamental truths which are present in all great architecture), in the same manner as American educationists have developed a school system, the result would perhaps be more respectable. Nor in the matter of scientific school-planning have they, as yet, done anything serious. Two rows of rooms with a corrider down the middle and a staircase at each end can scarcely be called planning. The German, in this respect, plodding heavily on, beats the quick American hollow, for in his school-houses every part of the fabric has its purpose as certainly as in any building of the thireenth or fourteenth century. This is the more remarkable because school building is no longer with Americans any new subject, and because in other walks their science holds its own. Fertile of invention, and quick to seize new ideas, they are usually first in the field with useful inventions, such as the sewing-machine (to quote one only among a thousand), yet their workmanship is never equal to that of England. America is striving to raise the quality of workmanship, and to manufacture within her own borders all kinds of things hitherto imported from Europe. To instance only one, carpets are now being largely made, and if English manufacturers do not yet know it, the fact will speedily be felt. In the struggle after science, good workmanship, and extended manufactures, one weak point has been keenly felt: America is profoundly ignorant of art. Further: she knows so much as to know her ignorance in this respect. Competition in all manufactures requiring artistic design (and what manufacture does not?) must result in failure if wanting in this initial necessity. Efforts are therefore now being made in the direction of art education with a purpose. This purpose is no other than the creation of a national school of designers who at all points shall be able to cope successfully with the artists of Vienna, Paris, and London. The movement has its beginning in Boston, where by good fortune one of the best English instructors in elementary art and design, Mr. Walter Smith, has been induced to settle. —*English School Board Journal.*

How It Works in New York.

The first case under the new plumbing law of New York came up in the Court of Special Sessions a few days ago. The defendant was John F. Crotty, of No. 232 East One Hundred and Twenty-First Street. The attorney who appeared in behalf of the Board of Health to urge the prosecution of Crotty stated that Crotty accepted the contract to do the plumbing for five houses at Alexander Avenue and One Hundred and Thirty-Fifth Street. The specifications approved by the Board of Health embraced basins properly trapped, house drains trapped at the sewer, and all traps ventilated by a pipe extending from the heel of this trap to the ventilating pipe running to and through the roof. Crotty, however, ran the pipe a short distance above the heel of one trap, and then terminated it, leaving the mouth open. He ran a branch waste-pipe into the room. The end of one of the large soil-pipes was left open in the celler, the opening being concealed by a beam. There were also many other serious defects in the plumbing of the houses. The connections had been made with iron ferules instead of brass or copper. In one case Crotty had sawed off pieces of lead pipe and used these sections as ferules. Some of the joints were left open, the pipes being merely telescoped into each other. At some of the joints putty was used, and at others putty and lead. There was not a properly arranged and set-up trap or connection in the whole five houses. Crotty acknowledged that he had violated the law, but urged that it had been at the instigation of the owner, who had provided the material, and ordered him to proceed with the work just as he had done. He said that he had worked with all his might to rectify his bad work, and put the entire plumbing in the houses in first-class order. He declared that he would not violate the law again knowingly or willfully. Justice Bixby said that Crotty was guilty of an act that secretly threatened the health and lives of any persons who might occupy those houses. He had made up his mind to send Crotty to the penitentiary, and inflict the full penalty of the law in case of his conviction; but the sanitary inspector had supported Crotty's statement that he was doing all in his power to remedy the evil, and therefore he should impose a fine of fifty dollars. This leniency would not be shown to Crotty again if he engaged in any more "skin" work, and no other plumber need be encouraged to attempt deceit in the hope of avoiding severe punishment. Crotty paid his fine and was discharged from custody. An equally effective exposition of the methods of the Crottys in every city would be a public benefit.—*The Sanitary News.*



Uses of the Steel Square.

Editors Architect: I was much interested in the article on finding the lengths and bevels of rafter, that was published in this column in the last number of your enterprising journal. As you have extended invitations several times to mechanics, asking them for communications in regard to improved methods of finding the length of rafters, I beg leave to submit to your approval the following method used by me in the Western States. Many of the mechanics in that section practice the rules given in all their roof work. While not giving the length with that same degree of exactness that would be found by the rule for finding the hypotenuse, two sides being given, still it is so near exact that the difference cannot be noticed, and I am sure it is a far quicker method than that old way.

I do not think that any simpler method can be given for finding the bevels at the heel and point of rafters than that explained in the issue of your journal referred to, so in this article I will deal with the length alone.

The most common width of buildings in California is 24 feet. And I propose to take that width for the practical test of my proposition. As you have given several ways by which the same result can be obtained, I will take up each of them and compare with mine.

Finding the length of the hypotenuse by the old rule, we obtain for a one-quarter pitch 13 : 4.99, or, as near as it can be used on the square, 13 feet, 5 inches.

Allowing one inch to the foot and trying your second method, we find as the result 13 inches and 7-16 scant, or 13 feet, 5 inches. This is a very simple method, and when the rule is kept perfectly straight the results are very satisfactory.

By my way I simply multiply the width of the building by the decimal .56, 24×.56=13.44, or as near as can be worked by the square 13 feet, 5 inches.

Let us try the same rule for a greater width—say 60 feet. By finding the hypotenuse we find as near as can be used by the square, 33 feet, 6½ inches. By my method it would be 60×.56, or 33.60, equal to 33 feet, 7 inches full. By this method the rafters in wide buildings are a little long. Thus, if the building is 52 feet wide, by the hypotenuse it would be 29 feet, 1 inch; my way it would be 29 feet, 1½ inches. I consider this an advantage, as it leaves the point of the rafter very slightly open.

For a one-third pitch I follow the same plan, only using the decimal .6. Unlike the decimal used for a quarter-pitch, the lengths obtained are a very small fraction short; as for instance: a rafter for a building 50 feet wide, by finding the hypotenuse, would be 36 feet, 1-16 of an inch. By my way, 60×.6=36 feet. A slight difference, truly. If building is 48 feet wide, then by the first method we find 28 feet, 10 inches full; by my way, 28 feet, 9 3-8 inches. A little practice will enable the mechanic to allow just enough to make up for the slight difference, so that when rafters are put together the fit will be perfect.

The one-half pitch can be found in the same manner by using the decimal .71. Taking the 24-foot building, length of rafters by the hypotenuse we find 16 feet, 11⅜ inches; my way they would be 17 feet full. Again, building 60 feet wide, rafters by the first method would be 42 feet, 6⅛ inches; by my way 60×.71=42 feet, 6 inches. By using this decimal, the length is so near practically correct that it may be used in all cases.

For a full pitch use the decimal 1.12, and as in the preceding mentioned pitch, and it will be found so near correct that it can be practically used in all cases.

It will be noticed that I have not made any allowance for projection of rafters over the plate. In this case gauge from the crowning side of your rafter the thickness of your projection; allow enough for the latter, and find the lower bevel according to the way you described in your last; measure the length of your rafter from where this bevel crosses the gauge line.

A little practice will enable the mechanic to lay off a rafter in a very short time. I have used the above myself, and have no trouble whatever. If any of your readers will work out the lengths of rafters according to their own methods, and can show that the one I use has any defects, I will be pleased to hear from them through the columns of your journal. Trusting that the above will so meet with your appreciation that you will deem it worthy of your notice, I am, respectfully your well-wisher,

Geo. E. Turner.

We thank our correspondent for the above communication, and trust to receive others from him. We have tried the several methods given, and as far as our limited time allowed, have found them practically correct. We will be pleased to receive communications from those who have time to demonstrate the propositions advanced upon their correctness. The columns of this journal are open to all, and we trust that more interest will be shown in the future by our mechanics in helping us build up the mechanical part of our journal.

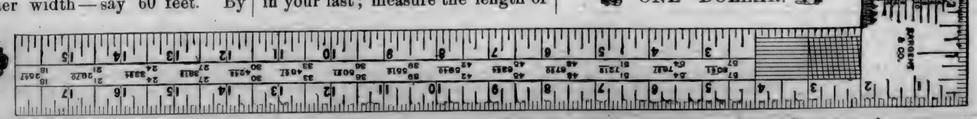
Carpenters' Steel Square

AND ITS USES.

An Improved and Enlarged Edition of a Work of the same name, by Hodgson.

We are Agents, on the Pacific Coast, for the above work, and will send a copy to any address upon receipt of the publishers' price,

☞ ONE DOLLAR. ☜



This series of articles on the square was commenced in the September number 1881. Back numbers can be supplied at 20 cents each.

Patent Paints.

The modern system of compounding paint has adapted itself to the mercenary spirit of the age, and patent mixtures are most exclusively of this class. The new invention of a mode of mixing a particular paint has its origin in the brains of some mediocre duffer in pigment, whose knowledge is so meager that when the compound is made (not being aware of its chemistry), regards it as an original mixture, and forthwith has it patented. A wise man in ancient times said there was "nothing new under the sun," but in these days, if there is nothing new, there is a plethora of evolution that makes *new* developments. These cheapened crude paints are manufactured for the market, and are sent in trade all over the country, with flaming color lists, which attract the eye of the uninitiated, who buy them because the colored cromo list represents a better paint, and on these proofs only are these patented paints sold everywhere.

The following is a sample of late patents for roofing paint issued August 29th, 1882:

Claim—"The herein described composition of matter to be used for painting roofs of houses and iron fences, consisting of benzine, sulphate of iron, oxide of iron, asphaltum varnish, oxid of lead, Japan, burnt umber, hard rubber, bisulphate of carbon and coal tar, in the proportion specified." Another issued May 16th, 1882: Claim—1. "The herein described paint for roofs, consisting of a mixture of coal tar, turpentine, sulphuric acid and a suitable pigment material, substantially as herein described. 2. A composition for painting roofs, consisting of a mixture of coal tar, turpentine, sulphuric acid and asphaltum, when mixed in the proportions as herein described." In the claim noted first, there is nothing really binding except the rubber and coal tar, which, when well diluted by the benzine, would render it a fleeting mixture. The pigments enumerated form a singular body-guard quite too-too to need the superfluous support of asphalt varnish or Japan. It is very apparent that the vehicle to carry this heavy load of ingredients is too weak to bear the burden imposed, and when sublimated under a solar heat, the motor generated will cause the vehicle to travel like chaff, and even to fly before the wind from all metallic roofs, and be of little use on any other surface.

The latter claim quoted is even more vile, its binder consists of coal tar of no permanent value, and when attenuated with spirit of turpentine, will soon vanish under ordinary temperature. Another patentee claims to originate a coating mixture for all exterior surfaces, as the following will show: "I claim the improved process of covering exposed surfaces or walls, consisting in first coating said surfaces or walls with the described mixture of pulverized gypsum and glue, and then painting them substantially as described." All dope mixtures of this and similiar nature have been in use for scores of years (without a patent), and many of them far superior to this one. And what is true of one is the virtue of all, they all need subsequent *substantial* painting. Their only use is to cheapen the work, and it generally does this effectually, for the painting that follows such primings is not homeogenous, and therefore they will not combine and form a solid permanent surface coating. There are no glue preparations for outside work that will stand like the oil, the pure linseed oil priming which dries firm, and is the foundation for all kind of work that needs to be honestly done. The cheap patent mixtures are generally for the use of contractors for doing work under price, and the work is patent, for it speaks for itself, it needs no advertising. The fictitious paste paints in vogue are made for the general public and country dealers. This class of goods are wholesaled at figures that offer great inducement for buyers to stock their stores with them, being fully assured of much larger returns for their investment. Merchants who deal in these patent paints wink at the gullibility of the public buyer, and smile blandly over their profitable sales. Painters who have served an apprenticeship to their trade do not need these bogus paints for to do good, creditable work at painting. He needs only pure lead and oil, which forms the basis of all colors and shades needed in house-work. The modern chemist has not improved on these, and failing to do that, has often assisted and has made formulas of soluble mixtures and silicate pastes, as substitutes for reliable paints. There are wants it may in its purer silicate form serve to fill, but as a substitute for white lead it is a failure. It is claimed that the silicate combination with sulphate of baryta forms a fine white paint, yet the tendency to use water freely makes it unfit for wood, while it may answer for textile fabrics, card-board, etc. The sulphate of baryta is now very generally employed in the manufacture of cheap white paints ground in oil, and pass under a multitude of brands as pure white lead. As a white paint, it is inferior in every way as to body or covering quality, yet compounded with it makes a very serviceable paint, and may be used as a priming for all classes of cheap work. The so-called permanent white or artificial sulphate of baryta is one of the compounds of liquid glass, and under the name of blancfix, it is used by card-makers, paper stainers, and paper collar manufacturers to a very large extent. The advocates of these and other patent paints say with truth, that lead paints are more deleterious to health than the new compounds. Yet while we admit that, we do not concede any equality to liquid or soluble glass mixtures with the former. The artificial sulphate is obtained from native minerals, such as heavy spar, witherite or carbonate of baryta, and when manufactured produces a fine white pigment. This substitute, when mixed with dextrine, starch, or other binding material in connection with the liquid silicates of soda, offers a paint of a fire-proof nature, free from the odors of linseed oil, lead, or turpentine. A paint of this kind should be employed in painting the casings of elevator shafts and the wood-work of sleeping-cars; it would burn less rapidly if tinted with such a coat of fire-proof material, and thus give more time for the rescue of human life.

J. E. W. C.

A New Floor Covering.

A new and desirable papier maché process for covering floors is described as follows: The floor is thoroughly cleaned. The holes and cracks are then filled with paper putty, made by soaking newspapers in a a paste made of wheat flour, water and ground alum, as follows: To one pound of flour add three quarts of water and a tablespoonful of ground alum, and mix thoroughly. The floor is then coated with this paste, and then a thickness of manilla or hardware paper is put on. If two layers are desired, a second covering of manilla paper is put on. This is allowed to dry thoroughly. The manilla paper is then covered with paste, and a layer of wall paper of any style or design desired is put on. After allowing this to thoroughly dry it is covered with two or more coats of sizing, made by dissolving one-half pound of white glue in two quarts of hot water. After this is allowed to dry, the surface is given one coat of "hard oil-finish varnish," which comes and is bought already prepared. This is allowed to dry thoroughly, when the floor is ready for use. The process is represented to be durable and cheap, and, besides taking the place of matting, carpet, oil-cloths or like covering, makes the floor air tight, and can be washed or scrubbed.

Prospects for the Season.

The inquiry, "What are the prospects for the season?" is repeated by thousands daily. All are anxious to learn the general condition of things at present concealed within the womb of the future, to be known only as brought forth and developed day after day. None are so wise as to be able to tell with certainty what is to be; but it is possible to judge of the future probabilities by the "signs of the times." Taking these as a guide, it is but reasonable to say that the future promises well, except so far as the general interests of the State may be adversly affected by insufficiency of rain. At present, the supply is unusually short, and unless, within the present or next succeeding months, increased quantities of rain descend, short crops and diminished expenditure in improvements are sure to follow

Aside from this, all indications are favorable, and the general expression on all sides is, that a prosperous year is before us. As will be seen by our monthly reports, the number of building contracts let during the thirty days prior to January 15th far exceeded in number the report for the same period in 1882; and the report in present issue shows a large increase over our February report of the past year, and from all the facts within personal knowledge, and from information possessed, it is safe to predict, all things being square, an increase in building activities over the last past very prosperous year. In our November issue we expressed our fears of a "dry season," and regret that so far the rains, upon which the prosperity of the State so largely depends, have tallied with the indications upon which we based our surmises.

How Hinges and Other Articles are Polished.

Common articles of hardware, such as screw eyes, hinges, handles, etc., are polished by tumbling in a revolving barrel. The tumbler is charged about half full with the goods mixed with the material selected according to experience as best suited to do the work. Small scraps of iron, sand, and gravel with the attrition of the metal take away the roughness and put a moderately smooth surface to the work. Then charge the work into a tumbler partly filled with leather scrap or skivings cut fine, mixed with crocus or almost any fine polishing powder; after which it can be cleaned and brightened by an additional tumbling in sawdust and lime. The above is a general feature of this kind of work. Almost every manufacturer has some peculiar system of management suited to the special kind of work made. Some use oil or water, then boil the work in lime water, and again tumble in sawdust to dry and brighten. The black oxide of iron (anvil scales) is much used where it can be had. A little plumbago is sometimes thrown into the tumbler to give the work a shining black surface. A strong barrel or keg on trunnions, with a small door for charging, is most suitable for small, light work.

Much work that has a fine finish upon the surface is polished by boys, who handle the individual pieces against a large brush wheel with crocus or whiting. With a large wheel, the process is so quick that a boy will run through with many thousand pieces in a day.—*Scientific American.*

TWO ELEGANT RESIDENCES FOR SALE, located in prime localities. One with lot 137 feet 6 inches frontage, by 120 feet deep, $75,000. The other, half 50 vara lot, with a fine residence in splendid order, $18,000. The surroundings in both cases unexceptionable. Inquire at the office of this journal.

On House-Designing.—From an Old Work.

"No art without a genius will avail,
And parts without the help of art will fail."

"Rural architecture is not only one of the most pleasing of the useful sciences—termed the 'art of necessity,' in contradistinction to sculpture and painting—but it may be esteemed the most extensive in fancy and design, requiring great taste and good judgment to compose the parts of which it consists, either in respect to a regular, systematic uniformity, or a picturesque composition, and to harmonize and combine the different masses with the surrounding scenery, or local objects on the spot.

"To be successful in these, the architect must have a mind well stored with discrimination, and possess a fertile imagination as well as a playful fancy, to enable him to diversify the effect by light, shadow, and middle tints, and to preserve the analogy of design so as to produce a pleasing effect to the eye, either in its natural simplicity, or when more elegantly decked with ornamentations.

"To design a country seat or suburban villa that will at all times attract attention and admiration, it is requisite that the architect should possess and exercise good taste as well as good judgment and inventive powers, which implies also a general perception of the whole design, the application of the several parts, and such as are the most fitting, beautiful, and appropriate. In order to accomplish this, the architect must possess a great knowledge of the various forms in architecture, and be enabled to bring them to his aid, as well as to diversify and have the art of applying and harmonizing these parts into pleasing effects. However simple a residence may be intended, it nevertheless admits of beauty as to form and proportion of parts; in fact, beauty becomes the grander when found in simpler forms, and is but seldom considered in connection with largeness and massiveness. When we refer to the large and powerful horse, it is that he is a noble animal, although enjoying all the splendor of fine proportions and form, while the pony or lighter-framed roadster become the object of special admiration for their special beauty. The eagle is spoken of as the majestic bird that soars above the howling storm, and floats upon tireless wings in midheaven, while the tiny songsters of the forest are admired and petted for the beauty of plumage and form, and the sweetness of their bird songs. The same applies to an edifice; we say that is a noble mansion, while this is a pretty cottage or a beautiful residence. In designing a dwelling, it does not depend upon or require a profusion of oranments to constitute the beautiful, but often the reverse; for simplicity and taste, which are so difficult to obtain, are closely allied, and the most tasteless designs are generally the more expensive, from the great quantity and heavy mass of material required. In others, again, a redundancy of angles and grotesque forms, with which, in architectural phrase, some houses are overburdened, being crowded with inappropriate or unmeaning ornaments, is a sure indication of a low order of architectural imagination. Architects should bear in mind that whatever is ornamental should be useful. It is use alone that sanctifies expense."

Accepting the foregoing as the correct theory in house-designing—and such it is in fact—a large proportion of the habitations of mankind at the present time are architectural failures. One may stroll through the cities and towns of the present day, and find in the constructions of latter years as much to condemn as to admire in the display of architectural efforts; and in villages and country districts only here and there cottages and country residences entitled to consideration among the beautiful; and the question naturally arises, Why is it? Is the science of architecture retrograding, and has time, experience, and the examples of ancient illustrations produced architectural degeneracy? Judging the matter by the manifest lack of architectural skill displayed by thousands who work their way into the practice of the profession, with but fractional and incidental parts of an architectural education, such a conclusion is not unreasonable; and it is in the fact that such men are liberally patronized by owners that the architecture of the present day is rendered the subject of so much adverse criticism; and it is to be regretted that the lesser class is so often preferred to those who so well and worthily fill the places made vacant by the passing away of the truly competent and qualified men of former years. That which, more than anything else, has stimulated and encouraged present seeming degeneracy, has been the penuriousness or false-economy notions of owners, in accepting the services of architectural pretenders at cheap rates, rather than pay trustworthy and competent men fair and just compensation for faithful and intelligent service.

One Reason why Plastering Cracks.

CHARGE THE FAULT WHERE IT BELONGS.

Often enough, without doubt, the masons are in fault, but far oftener plastering cracks and falls because the carpenter has failed in his duty. Even poor mortar will remain unbroken upon a rigid wall, but the best possible composition of lime, sand, and hair will quail and crumble before the shrinking of sills and floor joists, the warping and twisting of studs, and the failure of furrings to hold their place. As a coat of plastering is not absolutely inelastic, the slight bending of joists in upper floors is not sure to cause visible cracks in the ceiling below, but the settling of any part of a partition will certainly be followed by zigzag cracks that usually indicate by their course where the weak spot is to be found.

An almost universal cause of these ugly blemishes is the joining of the masonry and wood-work, as in the case of outer brick and stone walls inclosing partitions of wood, or where chimneys pass up through the frame around them. If properly constructed and resting upon solid foundations, the brick walls and chimneys are immovable. Saving a very slight settlement when they are carried up high and rapidly, they never change; but the wood that joins them, unless thoroughly seasoned—which happens "almost never"—keeps steadily changing its size and shape for a year or two at least, and possibly for a score of years.

A simple illustration of this incompatibility of wood with brick and stone work will suggest to thoughtful builders the difficulties and dangers from this source. By the ordinary modes of construction the outer ends of the joists and floor beams of a brick building rest in the walls and never more; the inner ends, if the building is too wide to be spanned by a single length, rest upon cross beams supported by posts and studs. Even if these cross sills and beams are partially seasoned when the walls are plastered, age and artificial heat will cause a considerable shrinkage in their depth, and this, of course, lets the inner ends of the partition walls, especially in the upper stories, down towards the cellar. It may be only by the smallest fraction of an inch, not enough to visibly affect the floors or wood finish, but it is easy to understand how much a settlement must affect the easily fractured sheet of mortar. The greater the number of stories—that is, the greater the aggregate depth of the horizontal timbers used for support—the greater will be the depression of the upper floors in the central parts of the building and the wider will the cracks yawn upon the walls. When the joists are laid upon a beam passing wholly beneath them, the allowance for shrinkage must be proportionately greater.

As there is no appreciable shrinkage in the length of straight-grained timber, similar results follow from an unscientific combination of horizontal timbers with the vertical studs and posts. Thus, if the outside studding extends the entire height of the walls, resting perhaps on a thin sill lying flatly upon the stone underpinning, while the partition studs are cut off at each story, and stand upon deep joists or beams, it is also inevitable that the partitions shall settle and spring to such a degree as to *tear* the plastering, and afterwards wrinkle the paper that is put on to cover the cracks. As to chimneys, it is difficult to find a frame house, however carefully built, in which they are not surrounded by cracks running out like branches from a dead tree, and these cracks usually run in such directions that they would appear to have been caused by raising the chimney slightly after the house was built, which is precisely the case; relatively to the house the chimney does rise very slowly until all the joists, sills, and horizontal beams have shrunk to their smallest dimensions, and have finished sagging and bending around the hearths and fireplaces.—*The Builder.*

Light Basements or Cellars.

Accepting the invitation of Messrs. P. H. Jackson & Co., we made personal examination of Mr. Somer's new building, on Market street, opposite Dupont, and were not disappointed in finding a handsomely lighted cellar, in which, although its length is 165 feet, we found fully one-half of the entire space sufficiently illuminated during working hours for all mechanical purposes. This is attained by the omission of all obstructing brick piers at front wall, and the introduction of ample sidewalk lights, of Hyatt's patent, for which Messrs. Jackson & Co. are the agents, the structure being further sustained over the openings in front wall by the use of the Franklin girder, which, for strength and utility, will bear the severest criticism.

The building throughout reflects great credit upon the architect, Mr. Moore, who has displayed good architectual abilities in its arrangement, construction, and lighting. There is not a poorly lighted spot within the walls in either story, while in strength of construction it is faultless. The good judgment displayed in not overburdening the roof with unnecessarily heavy, clumsy timbers is commendable, and some of the older heads in the profession, who conceive the illogical notion that great bulk of material in the construction of roofs is a necessity, will find the illustration a sufficiently strong roof for all practical purposes, even that of sustaining four feet of snow, should that quantity ever happen to fall in San Francisco. It is old fogyism exemplified to use more material than the purposes of use require for any purpose.

Saw-Mill Directory.

We have received from the N. W. Lumberman a copy of its Saw-mill edition. It contains 212 pages, giving a complete list of the saw-mills in operation throughout the United States. Pennsylvania heads the list with 1,291, Arizona has the least—8. In the United States there are a total of 15,020. Some idea of the amount of work done by N. W. Lumberman in its compilation of the above number of mills may be had by saying that it gives the number of mills in each county, in each State, with the name of the owner and the kind of wood sawed by the mill. We will take pleasure in showing this splendid edition to any one who calls. No extra price is asked. Subscribe for one year, and once during that time at least you get a copy such as the one on our table.

Ecole des Beaux Arts.*

Gentlemen—Since the interest of the Chapter has been aroused in reference to architectural education, and as we are all gradually awakening to the growing necessity of possessing in our midst a school for the purpose of educating our young men who desire to devote themselves to the study and practice of our profession, it will be useful and interesting to review and study carefully the methods of instruction pursued in different countries; to select from each what is conducive to improvement in architectural studies, as far as it can be applicable to our own limited means and numbers, and to discard that which we consider useless or injurious.

Among the art schools which are justly celebrated, the *Ecole des Beaux Arts* of Paris occupies a prominent place, and its architectural department will form the subject of my address.

The ultimate object of architecture is to erect buildings which are not only well and solidly put up, conveniently disposed for the objects for which they were intended, but they must also produce an agreeable impression upon the spectator, and conform with our ideas of the beautiful.

In order to attain these desiderata, the architect must be well acquainted with mathematical and natural sciences; he must possess a thorough knowledge of the properties of the materials employed—their qualities and cost; he must be quick in designing, skilled in the use of the pencil and the brush; he must also be conversant with the history and literature of the civilized world, in order to be acquainted with the styles of the different epochs and nations, and with the æsthetical and constructive reasons which led to the formation of such styles.

Therefore, a school of architecture, in order to be complete, must be so arranged as to afford the student facilities to obtain a knowledge in all the branches which I have just mentioned, and the Paris School of Fine Arts admirably fulfills these requirements.

Founded in the latter part of the seventeenth century, under the reign of Louis XIV., it has undergone several changes as the necessities of the times demanded. It has increased to such a degree, and its fame has become so great, that all the art schools in France have gradually become simply preparatory schools to this great institution, which numbers about twelve hundred students, four hundred of whom are architects.

Placed under the generous patronage of the Department of Fine Arts, it is liberally endowed with everything which can improve the artistic taste of the student, with large and spacious studios, handsome courtyards containing statuary, fragments of architecture, fountains, etc., museums of copies of the most celebrated works of art, both of painting and of sculpture, full-size columns and entablatures of the temples of Greece and Rome, entire fronts of the castles of the Renaissance—in fact, with everything calculated to inspire the youthful mind with noble examples of true art. It possesses a library second to none in artistic works, old etchings, photographs, coins, medals, etc.; and in the immediate neighborhood the student can avail himself of the vast collections of Louvre Museum.

Pupils are admitted to the Section of Architecture of the *Ecole des Beaux Arts* upon passing a successful examination in mathematics and history, and in ornamental or free-hand drawing; they must also be sufficiently well acquainted with the principles of architecture to enable them to make a finished sketch in twelve hours upon a given subject, such a sketch must bear evidence of a general knowledge of proportions, skillful drawing, and adaptability to the subject proposed. The school is free to all, Frenchmen and foreigners alike, without any fees for lectures or examinations, or expenses of any kind. Once admitted, the student may take part in all the competitive designs and follow the different courses, which include Analytical Geometry, Surveying, Descriptive Geometry, Perspective, Stone-cutting, Chemistry, Physics, History, and lastly, strength of materials, theoretical and practical construction.

The pupils select their studios, at the head of which is a professor who comes two or three times a week to direct them in their work and advise them in reference to their productions. The studios are not divided in accordance with the advancement of the pupils in classes, but each contains among its members from the mere beginner to the skilled and already well-known student endeavoring to obtain that highest honor in the gift of the Academy of Fine Arts, namely, the Prize of Rome. This system of bringing together students in different degrees of advancement affords opportunities for considerable interchange of knowledge and ideas.

The students are divided into two classes—the first and second class. They enter the second class upon their passing the necessary examinations for admission. In order to become a member of the first class, the student must have passed all his examinations in the scientific courses upon all the subjects I have already mentioned, and he must have obtained six honorable mentions in the bi-monthly competitive designs, the minimum time that can be passed in the second class before promotion to the first class being two years. The first class devotes itself entirely to competitions of the most important character, and, necessarily, of more artistic value and merit.

The manner of conducting these competitions is, I believe, peculiar to this school, and it is to their fairness, and the emulation which they encourage among the students that this school owes its success. Once every two months the students assemble in a building adapted for that purpose, containing a large number of cells. Each student signs his name on a register, and receives in turn a copy of the subject of competition—the programme, as it is called. Then he retires to the cell bearing his number. There he has twelve hours to finish a sketch of the design answering the requirements of the programme. A tracing of the sketch is taken, and the original left in the hands of the secretary, by whom it is filed. The student has two months to study up his idea and to produce a finished design, in the production of which he is greatly aided by the hints and suggestions of his professor. Upon a certain day at the end of the two months, all the designs are taken to the exhibition hall and hung up for public inspection. The next day the jury, composed of all the professors and other leading architects of Paris, assembles. The original sketches having been attached to the respective designs, the jury begin by eliminating all the productions which have not retained the main features of the original idea, and rewards are given to the most meritorious of the remaining designs, the number of rewards not being limited except by the merit of the compositions.

In addition to the architectural competitions and examinations in the scientific department, numerous free-hand drawings from the cast are required from the student.

The greatest liberty is given to the pupils to enable them to advance with rapidity in their studies. There is no compulsion to attend the lectures, no roll-call at the studios, every one follows his own inclinations, and every opportunity is given to the bright and studious to push ahead without interfering with their less fortunate and talented school-mates; by such a system every one feels a certain responsibility and learns to take pride in his own achievements. The frequent competitions and examinations keep the young artists constantly on the alert, and although the rapid advancement of some may discourage the indifferent or incapable ones, it presents a continual incentive to the ambitious and studious.

The most important of all the competitions and the only one to which foreigners are not admitted is the annual competition for the *Grand Prix de Rome*, which entitles the successful candidate to a pension for four years from the Government, with the condition of his studying his art abroad, mostly in Greece and Italy, and of sending every year the product and results of his work. Most of the eminent French architects, painters, and sculptors have obtained this prize.

The sections of painting and sculpture in the school are arranged on a similar basis as that of architecture.

The School of Fine Arts has been very much criticised for not even attempting to teach the young architect the actual practice of his profession. These criticisms are, in my opinion, unfounded. The real practice of architecture cannot be taught in schools, but must be acquired slowly by personal observation and experience, and this institution is so arranged that, without materially interfering with his studies, the student can readily accept positions from the government as sub-inspectors in public buildings, or situations as assistant to the numerous architects who are always glad to obtain the services of skillful draughtsmen understanding thoroughly the theory of construction and its necessary calculations.

I have endeavored to give as briefly as possible a general idea of the workings of the section of architecture of the *Ecole des Beaux Arts* of Paris, whose object has always been to give full scope to the individuality and originality of each of its members, to afford them every opportunity to acquire the knowledge of all that may interest the architect, and by a perfect system of examinations and competitions to reward the talented and industrious, and to encourage all in the desire of becoming worthy members of their profession.

ALBERT PISSIS.

* Speech delivered before San Francisco Chapter of Architects, by Albert Pissis, Esq., member Ecole des Beaux Arts and S. F. C. A. I. A.

Finical Finish.

If mechanics generally realized how much labor is lost in the mere ornamentation of useful tools, they would discourage it in their own practice, and in their patronage of the manufacturers. There is a grateful sense of beauty in a well-finished tool, but to the mechanical eye this finish is more in good proportion and adaptability to use than in meretricious ornamentation.

There is much time wasted in the shop by foolish experimenting to ascertain how much of fantastic "giggering" can be crowded in a small space on a bench implement. A simple scratch awl, that should be at best but a rod of quarter-inch octagon Stubs' steel, tempered and sharpened, is sometimes so crowded with filed facets and clamp-turned beadings as to become a most unhandy tool.

Sometimes more glaring substitutions of finical finish for useful form are noticed. The employment of the knurled-headed screw, or the knurled nut, for a thumb screw, or "butterfly" head screw and nut, is very common. The knurled head or nut can be formed in the lathe, and presents an elegant appearance, and it may readily be turned off a bar or rod without the previous work of forging. But when done, its entire leverage depends upon the squeezing power of the thumb and forefinger, the corrugated edge of the nut or head bedded in the tender flesh of the balls of the finger and thumb. The butterfly thumb nut must be forged, but this is no objection when these nuts and screws may be bought by the gross, drop-forged, and in just the condition for final finish. These nuts and heads are elegant and easy to handle, and, mechanically considered, are quite as ornamental as the knurled nuts.—*Scientific American.*

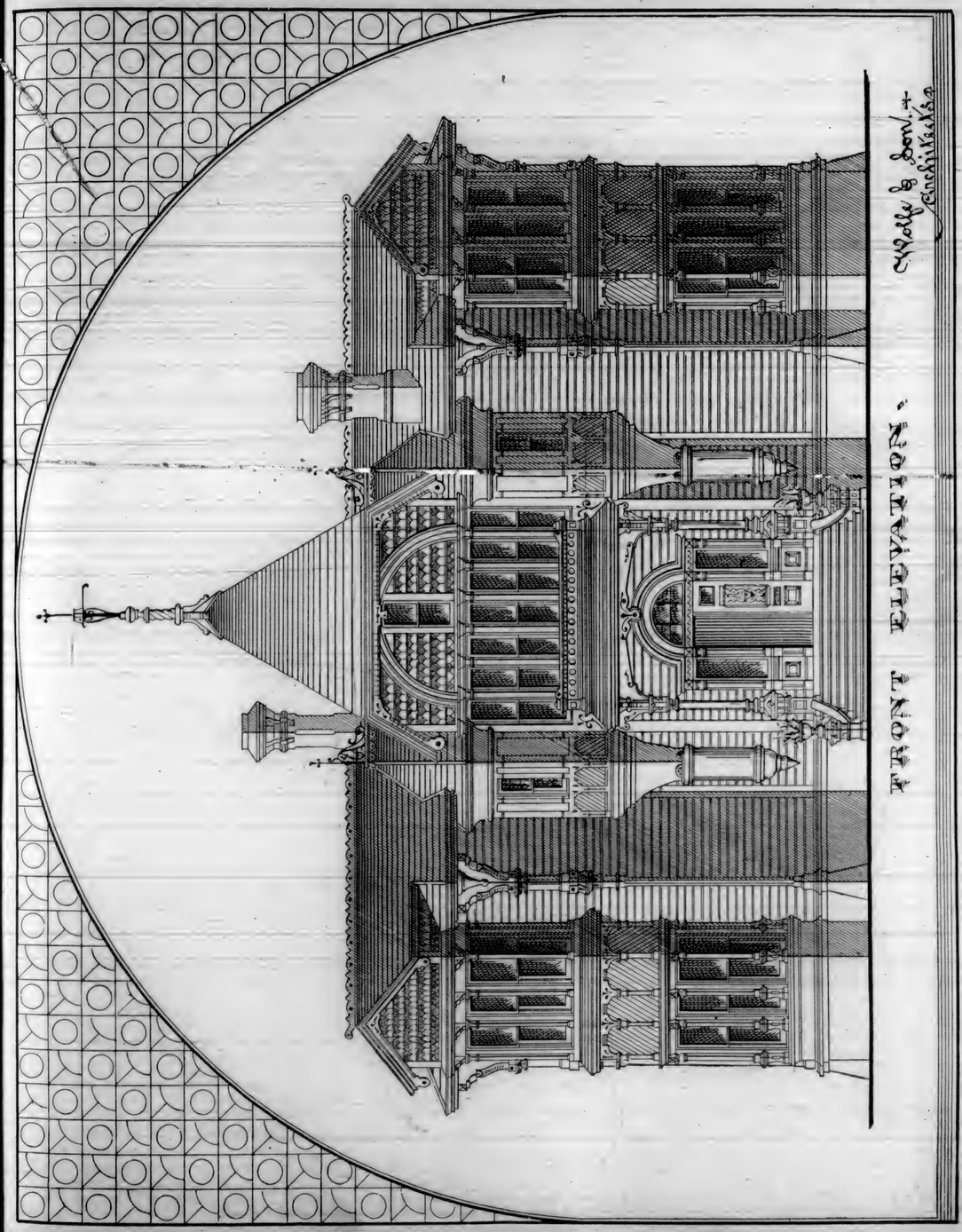
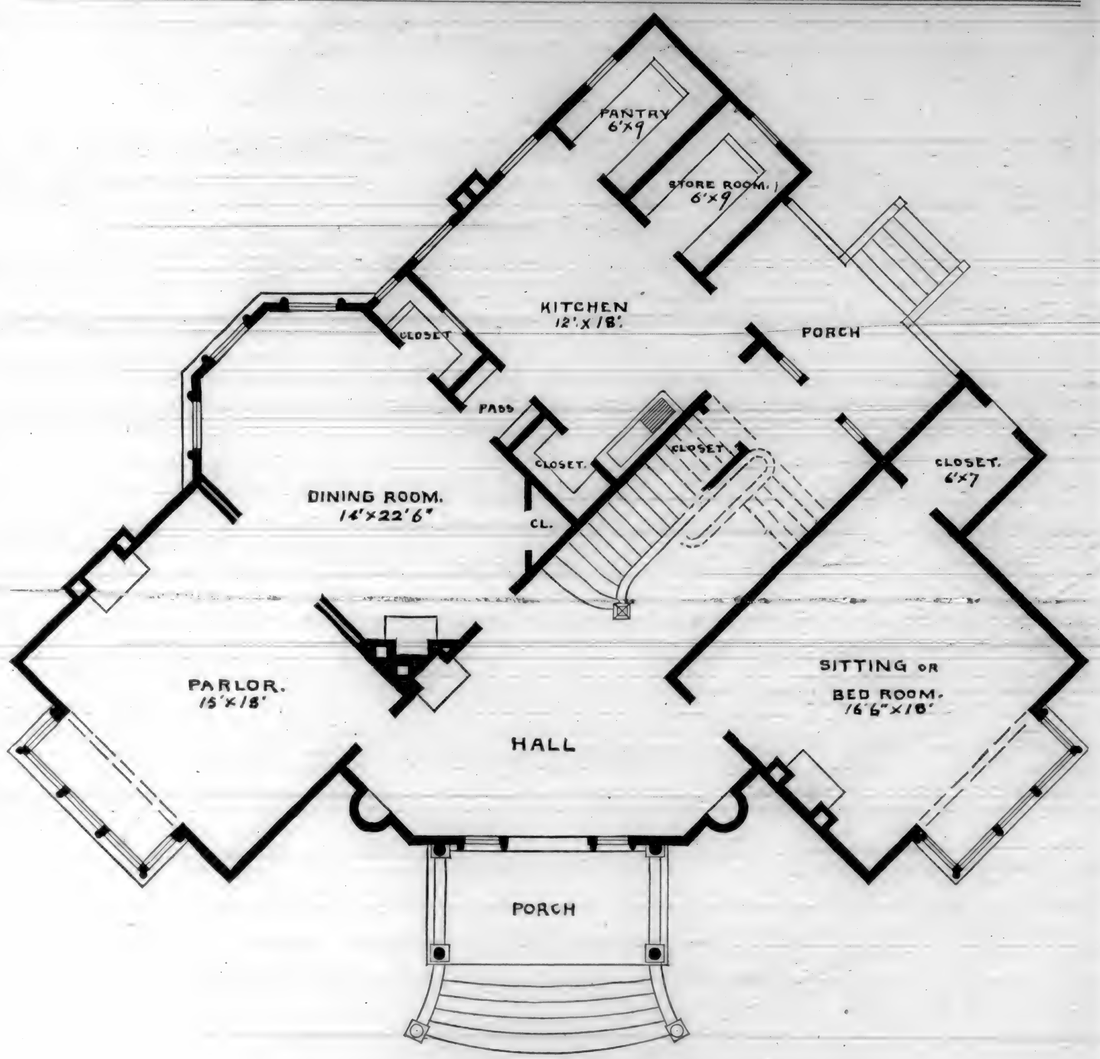


PLATE 1.—FRONT ELEVATION OF A COUNTRY DWELLING COSTING $10,000.



FIRST FLOOR PLAN

PLATE 2.—PLAN OF COUNTRY DWELLING COSTING $10,000.

All Over and Around the Country.

In the issues of January 20th and 27th, the *American Machinist* has given two pages in each number, of letters from leading manufacturers of the country, embracing every article connected with the mechanical trades. From the letters we should judge that an unusual steady activity is manifested from every section of the country, in regard to the supply of orders on hand and those sure to come in the future. As a rule, prices are not as high as they might be, but every one seems to be satisfied. The plain, practical, common-sense, "to the point" style of writing of the editors of the *Machinist*, has evidently taught their correspondents to follow their example, as all the communications are concise, and in as few words as possible explain the true state of the market. We would advise all our machinists to send after copies of the above dates, or better still, $3.00 for a year's subscription.

For Fence Posts.

A writer in an exchange says: "I discovered many years ago that wood could be made to last longer than iron in the ground, but thought the process so simple that it was not well to make a stir about it. I would as soon have poplar, basswood, or ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set seven years that were as sound when taken out as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece. This is the recipe: Take boiled linseed oil and stir in pulverized coal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot."

Indexed Atlas of the World,

Beautifully bound in half morocco. This splendid work is only sold by subscription. The edition is now almost exhausted. But one copy remains. We will forward it to any address upon receipt of $35.

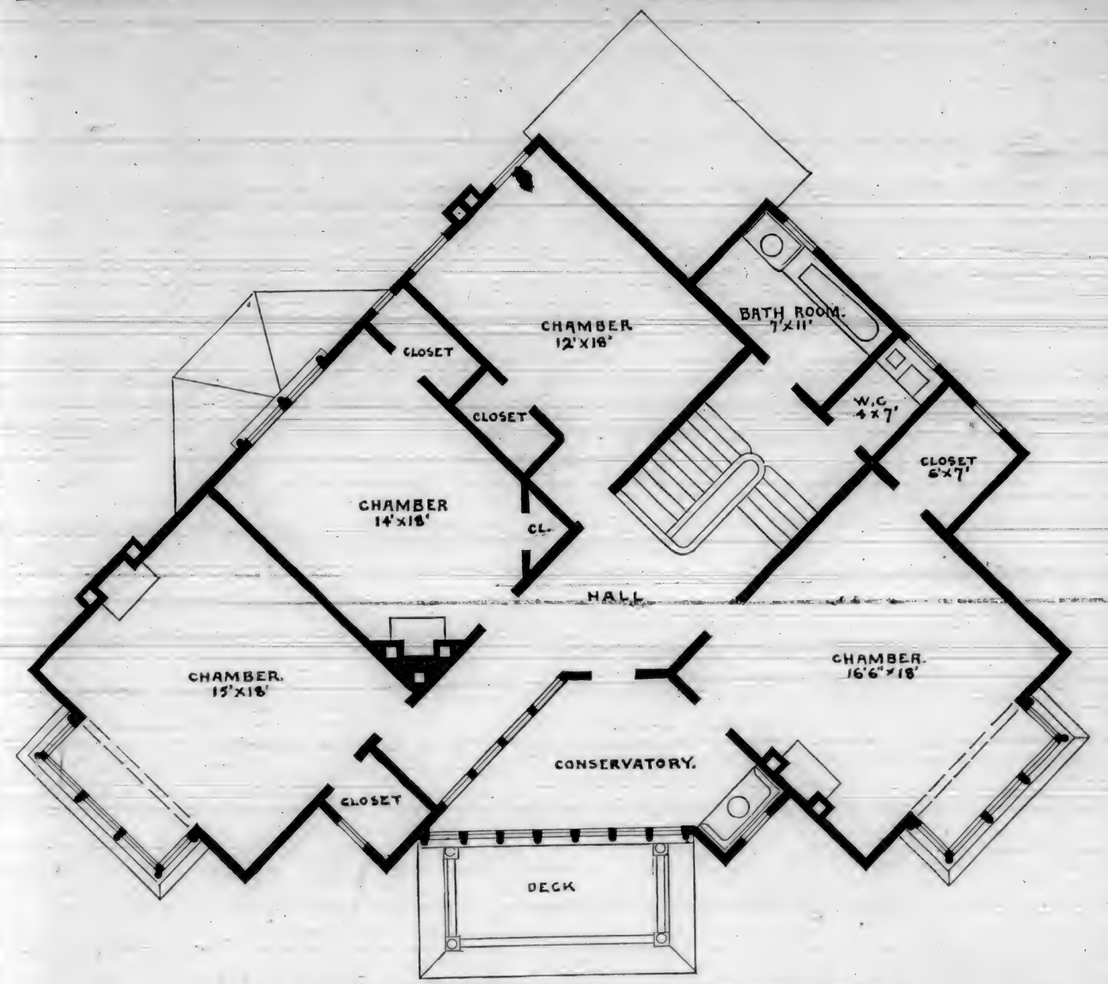


PLATE 3.—SECOND STORY PLAN OF COUNTRY DWELLING COSTING $10,000.

Queen Anne Houses.

There is no distinct American architecture at present, but the country is fast approaching that development which will produce it. Our habits and ways of living are so much like those of the people of Europe that we have adopted their styles, and we show here every feature of the different houses of the old country mixed up together. All of these styles are now in a grinding state, and just as people from all of the nations of Europe are being ground up into characteristic Americans by our ideas and surroundings, so will in time these different styles, affected by our habits, ideas, and surroundings, grind out into something new, distinctively American. As it is, the American dwellings are modeled after the European villas. Abroad this style is used only by the wealthy, but we have modified it, and have adapted it to the residences of the poor as well. The architecture of a country or an age is the outgrowth of the necessities and habits of the time. You must consider the surroundings before you build. A house that will look well on a hill surrounded by trees will not suit at all a location on a plain; and a villa in the country should be radically different from a structure located amid the bricks and mortar of a large city. The habits of the people demand different houses now than they did one hundred years ago; and of all the absurdities of modern house-building this attempt to push in the Queen Anne style of 1700 is the worst. The Queen Anne houses are not at all adapted to the times, and their absurdity has already begun to appear. In New York the style has fallen into discredit, and it will soon be as universally distasteful as it was a year ago universally popular. The Queen Anne houses will become a drug in the market, and they will depreciate the property on which they are located. They are not healthy. Their ceilings are low, and their interiors so constructed as to be ill ventilated and poisonously unhealthy. The laws of hygiene were comparatively unknown when Queen Anne lived, and the economy of warming the houses was a great consideration. Their huge fireplaces acted as ventilators, and the homes of that day were not as badly ventilated as their aped counterparts of the present. Had they possessed furnaces, gas, and plate-glass, they would never have lived in such houses. The whole style is against the dictates of common sense. The houses are a disgrace to the intelligence and taste of the country, and their costly diamond-shaped windows are only a phase of the craze for the old and ugly which has swept over America. In two years hence the style will be discontinued in the smaller cities as it now is in the larger.—*Cleveland Leader.*

The new city hall in Philadelphia contains 57,000,000 bricks, and is the largest building in the country, occupying considerable more ground than the Capitol at Washington.

Building Improvements.

THE GENERAL OUTLOOK IN THE STATE.

For ten years building improvements throughout the State have not been so brisk as they have been in the year just passed into the lapse of time. There is not a county in the State that has not been blessed with a number of goodly building improvements. Especially is this noticeable in the counties fronting on the bay. In our own county, we have given a full list of the buildings erected during the year.

Alameda County stands at the head of the bay counties in the number and value of building improvements. In the town of Alameda, buildings have been erected of the value of about $250,000. Very few single buildings cost over $5,000, the majority averaging about $2,500. This fact shows that the town is steadily increasing in permanent population, and is a sure index of a healthy and steady growth. By the way, we sincerely hope that the citizens of this enterprising village will not allow themselves to be "combined" with their sister city. Oakland seems to have aroused from the lethargy of the past few years, and her inhabitants seem waking up to the fact that it is no longer desired to be called the "suburb of the bay city." The establishment of the Judson Nail Factory in West Oakland has been the means of building up quite a town that formerly was considered out of the way. Various other enterprises are contemplated, which when built will cause the western section to teem with life. The improvements during the year figure up about $400,000. In giving the value of improvements we do not in any instance figure in the value of machinery.

Many substantial improvements have been made throughout Contra Costa County. The adaptability of a goodly portion of the land to the culture of the grape has led capitalists to invest large sums of money in their culture. A large wine cellar has just been completed near Clayton, and another one is talked of in the neighborhood of Pleasanton and Livermore. The establishment of a shipping point at Port Costa has caused a large portion of trade to be diverted to that place, and has caused quite a town to spring up, in addition to the many large granaries erected.

We cannot say much for the improvements in Solano. The establishment of Baker & Hamilton's factory at Benicia led many to believe that a new era was to dawn upon that town. Very few improvements have been made, however, and the town is still just a way station. Around Suisun many substantial dwellings have been erected. Taken as a whole, the buildings in this county are not such as to dazzle the eye of an experienced architect or builder.

Napa has kept well in the lead—in fact, we can say ahead—of her sister counties. All through the valley, one is struck with the numerous evidences of thrift. New houses are met with on every side, and from inquiry among the real estate dealers, we are assured that the improvements this year will far outnumber those of 1882. The great success of this valley lies in the fact of its small farms and vineyards, and the improvement of each one by its owner to the full extent of their means. Very few buildings have been erected costing over $5,000; the principal ones have from time to time been reported in this journal.

In beautiful Sonoma more improvements and of greater value have been built than for the previous two years put together. In the town of Sonoma the railroad has been the cause of many substantial buildings being erected. Around Santa Rosa and Healdsburg, many fine dwellings have been built; owing to the high price of hops and fruit received the past season, an unusual amount of money has been placed in circulation; those benefited have been wise in spending their money in improvements to their homes.

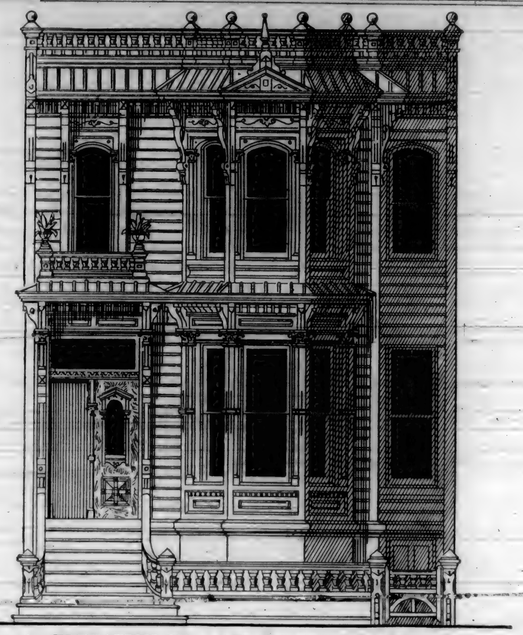


PLATE 4.—ELEVATION OF A "FLAT" COSTING ABOUT $5,000.

Marin is a beautiful name for a county, but "aristocratic" would more nearly represent the truth than the former name. The great curse of this county is the large landed interests held by a few owners, to the exclusion of the multitude. Of course property is always worth what it will bring, but the holders have always asked more than it was worth, and the choice selections have been taken by the few who wanted a pretty location without regard really to the value. Many beautiful improvements have been made, the most valuable of which is the fine mansion now in course of construction for Hall McAllister. Over $100,000 will be spent before it is complete.

San Mateo County cannot boast of many improvements the past year. The buildings erected have, from time to time, been reported. Belmont Park has been graced with a fine new pavilion, which fact will benefit picnickers.

Santa Clara has improved greatly during the season just closed. Many substantial buildings and dwellings have been erected in and around San Jose. The Phelan Block in that place has been the means of improving other property in the neighborhood.

Merced, Stanislaus, Fresno, and Kern have made rapid strides since the railroad has been in operation. The introduction of water for irrigating purposes in Fresno County has changed the whole aspect of the country. We would strongly urge upon the landed proprietors in that section to *plant trees* for fuel and other purposes. A few acres planted here and there of the *gum tree*, through the immense valley forming these four counties, would do more than anything else to remedy the one great defect—viz., a lack of rain. The trees, for fuel alone, in ten years would amount to more than the profit on any cereal that can be raised. We hope the papers all through these counties will take up this subject, and urge upon the farmers the necessity of planting trees, that in the near future wood may be plenty and rain abundant. Fresno City has been the scene of great improvements since the fire, and numerous brick buildings are in progress of erection.

To Los Angeles belongs the palm for most extensive building improvements in any county south of San Francisco. In the vicinity of Riverside, the whole face of the country has been changed by the fine orchards and vineyards that have been planted, and the numerous dwellings that have been erected. The city of Los Angeles has grown wonderfully during the past year. We learn that the completion of the railroad has been the means of causing large numbers of mechanics to emigrate to that city from the South. We trust that a goodly number of masons and bricklayers will come up this way, as, from present appearances, we will not have enough to complete the work now in contemplation. We have printed a list of the principal buildings erected during the year, and in future will be able to give in full nearly all the improvements in this section.

An unusual activity has prevailed in Sacramento during the past year. To a stranger, the city appears like an immense bee-hive. The large improvements now in progress by the railroad company have been the means of keeping hundreds of men and teams at work for months past. A large block, 300x500 feet, has been filled in so that it is higher than the levee. Buildings 100x400 feet will be erected for a foundry. Total cost of money in these improvements will be over $100,000. Our reports during the year have been very full from this county. Outside of the work on railroad property, about half a million dollars have been spent in building improvements.

Woodland has witnessed a steady growth during the past year. All the improvements have been of the most substantial character. A new hotel, where sunny rooms can be had in winter time, is a desideratum much to be desired. We also desire to publicly protest against the use of *wooden lintels* across large openings, especially when the building is intended for public use.

Red Bluff has arisen, Phœnix-like, from its ashes, and numerous buildings are in course of erection.

We have heard of but few improvements in the northern part of the State, and those of but a moderate cost. Taken as a whole, the improvements throughout the State have been of a more substantial character than those of the previous seven years. *The decrease of the mining excitement has done more to effect this result than any other cause.* The high prices of hops and fruit caused the circulation of an immense amount of money, and the receivers thereof wisely spent it in improvements of various kinds, where formerly it was wont to go in the maelstrom of Pine Street and vicinity.

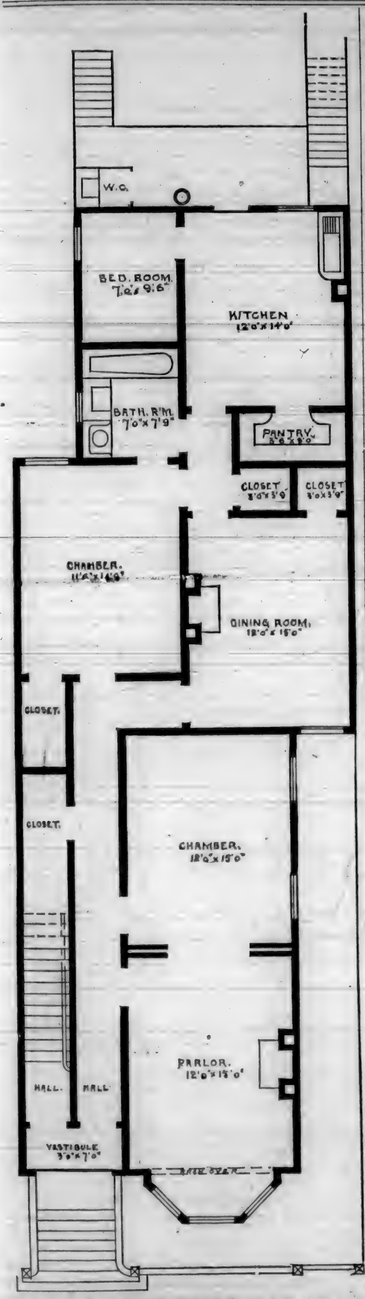


PLATE 5.—FIRST STORY PLAN OF A $5,000 "FLAT."

Our Illustrations.

We present in Plate No. 1 a design that was especially drawn for a gentleman in Marin County. The site is near the entrance to a small gorge in the mountains, and from the situation the house presents a very attractive appearance. It is intended to show a large front, with less accommodations than its exterior would lead one to suppose. The interior arrangement is all that could be desired, every room being in communication with the hall. The plans as shown are very comprehensive, and can be readily understood. The cost of such a building will be in the neighborhood of $10,000.

Plates 4, 5, and 6 are for the elevation and plans of a "Flat." A more convenient arrangement cannot well be had with the same width of lot. The plan as shown can be built for about $5,000.

Plate 7 represents the plans, etc., for a convenient country house costing about $4,500.

Sewer Gas in Barber Shops.

In our December number we inserted an article having the above noticeable heading. Credit for its authorship should have been given to the "SANITARY ENGINEER" of New York. We regret that the name of one of our most valued exchanges should have been omitted from one of its *clippings*, and can assure the editor that it was not intentional, having mistook the meaning of the first line, naturally supposing that the paper there mentioned was the one from which the article was quoted.

Weight of Iron Castings.

A recent authority gives the following easy rules for finding the weight of iron castings: Find its solid contents in cubic inches, and multiply them by .26 for the weight in pounds. For rough calculations the cubic inches may be divided by 4, the answer being pounds. Irregular castings are often puzzling to measure, and cannot be easily weighed. A rough estimate of their weight may be taken, provided they are not cored out; by weighing the pattern, if it is of soft pine, and allowing it 13 times the weight of the pattern if it is new or just out of the sand, and 14 times if it has laid in the pattern loft for some time. Rectangular masses of cast iron one foot square, and more or less than an inch thick, can be weighed by multiplying 37½ by the thickness in inches or fractions of an inch, as the case may be, as 37½ pounds is the weight of a square foot of cast-iron one inch in thickness. The weight of a cast-iron pipe may be found by multiplying the diameter of the pipe in inches by 3.1416, and again by the thickness of pipe in inches or decimals of an inch, and this product by 3.15.

☞ **Subscription price of this journal is $2.00 in advance.**

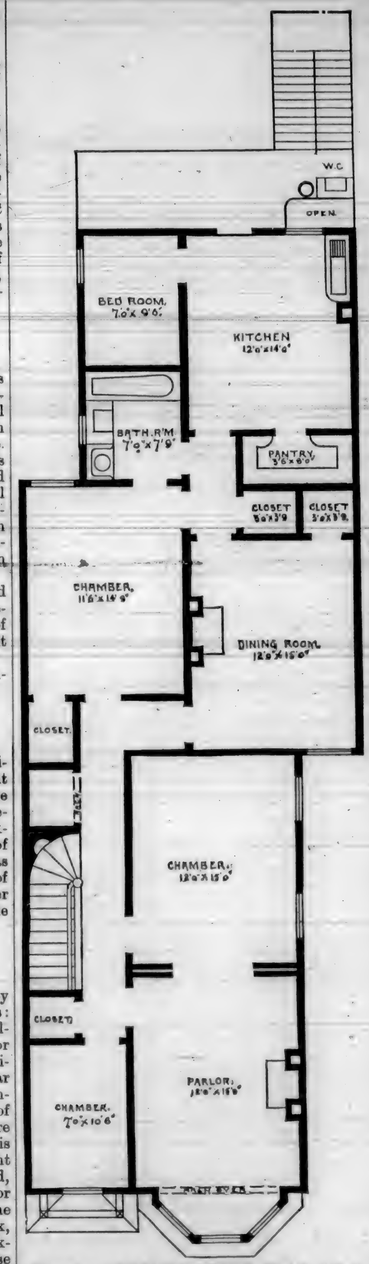


PLATE 6.—SECOND STORY PLAN OF A $5,000 "FLAT."

INDEXED ATLAS OF THE WORLD.

Beautifully bound, in morocco; but one copy remains. Price, $35.00.

THE ARTIST'S ALBUM.

A large work, beautifully illustrated; will be forwarded to any address, upon receipt of price—$8.00.

Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

ANS. TO E. J.—There is a decided advantage in using long lengths of timber for girders. The strength of the part between the posts or columns supporting the girder is about double what it would be if short lengths were used.

EDS. ARCHITECTS: How much bearing should a girder or timber have the end of which is built in a brick wall? C. E. J.

ANS.—At most, the ends of joists or girders should not be over four inches in the wall. It is an erroneous idea to suppose that a greater degree of strength is obtained by letting the ends of timbers rest on or in a wall almost its full width.

FRIEND ARCHITECT: I like your last article on the Steel Square. You fail, however, to give the numbers on the square by which the *Gothic pitch* can be obtained. Please inform me what they are. R. D. G.

ANS.—12 to 21 applied in the same manner as the other measurements will give you the *Gothic* pitch.

SIR CAL. ARCHITECT: In your last you give several methods for finding the length and bevels of common rafters. Will not the same method do for finding the length and bevels of hip rafters, by using different numbers on the square. J. S. T.

ANS.—The same method can be used by taking 17 for the run in place of 12, and the same rise to the foot as is given for the pitch of the common rafters on the same roof.

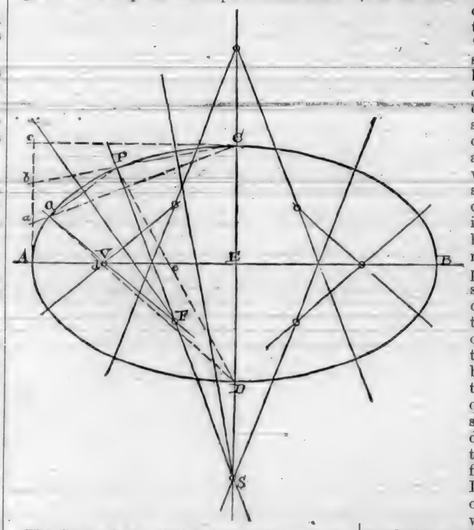
EDS. ARCHITECT: In your last you gave a list of your exchanges. I want to send for a few of them, but as you did not state the place where each was published, I do not know whom to send the money to. Please inform me.
L. R., Berkeley.

We are agents for all the papers referred to; by sending us the amount of the yearly subscription, you will receive them as soon as if sent to the publishers.

The Ellipse.

EDITOR ARCHITECT AND BUILDING NEWS: In the January (1883) number of your journal you publish by request a diagram accompanied by instructions for describing an ellipse with the compasses.

Permit me to offer another, and, what I am sure, is a better solution. And I wish to say in regard to the method of solution which I present to you, that it is the *only* one, so far as I have been able to learn, whereby a *very nearly* true ellipse *can* be described with the compasses, one of the well-known laws of that curve being that *no* part of it partakes of the properties of a circle, and consequently *cannot* theoretically be *truly* described by the compasses. But this method forms a curve so slightly differing from a true ellipse, that it is almost impossible to detect the slightest variation from the curve (formed as it properly should be by the trammel or by a string) and this method. The solution which I offer is the invention of one of the best authorities in our profession as practiced in modern years, Peter Nicholson, and can be found in his "Principles of Architecture," Vol. I., page 25 (edition of 1836), or in his "Dictionary of Architecture" (Revised Edition), Vol. I., page 367, and I ask you to publish it for the benefit of those who may have occasion to make use of the ellipse, and may not have access to the above-mentioned works. Let any one test this method on a large scale, as I have done, and I am sure they will quite agree with me that it is the nearest approach to a true ellipse (made with a trammel or string) that can be made with the compasses, and is correct for all practical purposes. I am well aware that for small work it is a somewhat tedious mode of making an ellipse, but for full-sized details I think it can be very successfully used. The accompanying figure and description will explain themselves.



The lines *A B* and *C D* being given, to describe upon them an ellipse. Draw *A c* perpendicular to *A B*, and equal to *E C*; divide *A c* into three equal parts, *A a*, *a b*, and *b c*; draw *a C* and *b C*. Divide also *A E* into three equal parts, *A e*, *d e*, and *e E*. From *D* through *e* drow *D e P*, intersecting *b C* at *P*, and from the same point and through *d* draw *D d Q*, intersecting *a C* at *Q*. Bisect *P C* by a perpendicular intersecting *C E D* at *S*, join *S P*; bisect *P Q* by a perpendicular, intersecting *S P* at *F*, join *F Q*, intersecting *A E* at *V*. Now, with *S* as center, and radius *S C* describe the arc *C P*; with *F* as center, and radius *F P* describe the arc *P Q*, and with *V* as center, and radius *V Q* describe the arc *Q A*. One (quarter) section of the ellipse is described. The mode of describing the other three sections will readily suggest itself—fix the corresponding centers to *S*, *F*, and *V*, in their relative positions as regards the other sections, and complete the curve. It will be seen that there are eight centers in all required to do so. Very respectfully, yours, etc.,
J. B. W., Architect.
San Francisco, Cal., Jan. 25th, 1883.

Some Suggestions.

A large proportion of the men working in our carpenter shops seem to have ideas and plans connected with their ordinary daily work which, though not absolutely wrong, are so far removed from the correct method, and sometimes so much opposed to nature as to cause a great deal of extra labor and annoyance. Amongst these mistaken notions might be mentioned the various plans adopted by them to bring wood, when warped or twisted, back to the proper, or rather the required, condition. It is very often found to be the case, that wood which in the board or plank is perfectly straight, or which at least appears to be so, will twist and wind in every conceivable manner when freed from restraint, and cut up into long narrow lengths, or cross-cut into short broad panels. When wood is very badly turned—i. e., when it is what is technically termed "winding"—the only remedy is to plane off the high corners and thus make it perfectly true by reducing the thickness. But if it be simply cast, one side being hollow and the other round, the defect may be easily got over. If the man, by working on some other portion of the material required for his job, can let the defective pieces stand for a day or two, then by placing the wood "hollow side" down on a plane surface, or by putting two such boards one on the top of the other, with the hollow sides facing each other, the wood will draw straight without any more trouble on the part of the man. It is always best, when possible, to work up the wood in its natural state, as even if the tendency to cast be overcome previous to working it, there is always the probability of its returning to its normal condition. Some men, when pressed for time, heat the round side on the stove. This does indeed make the wood straight, but there is a great risk of the wood opening and splitting under this toasting treatment, and this liability is very much increased if the wood be at all shaky. If required, the wood can at once be straightened without this risk, by damping the hollow side with water, when the expansion of the fiber on that side pulls it straight. It sometimes happens that a piece of wood of some considerable width, such as a carcase end or a wardrobe panel, has to be reduced from ¾ inch to ½ inch thickness. If this superfluous wood be all taken off one side, that side will become hollow, whereas if it be taken off equally on both sides the wood remains as before.

In veneering panels, etc., it is always best to veneer on the outside, that is, the side opposite the heart side, the reason for this being that veneer is apt to swell with glue being laid on, and must therefore contract after it is fixed. As the heart side has always a decided tendency to curl, the two forces counteract each other, and the wood remains the same. For this same reason, it is always best to inlay on the outside.

To some people these may appear to be trivial matters, but it is by keeping these and other little points in mind that a job may be turned out with more comfort to the man and satisfaction to the employer, and these hints, if carefully attended to, will frequently save time and expense.—*Builder and Wood-Worker.*

☞ **Science of Carpentry Made Easy, $5.00.**

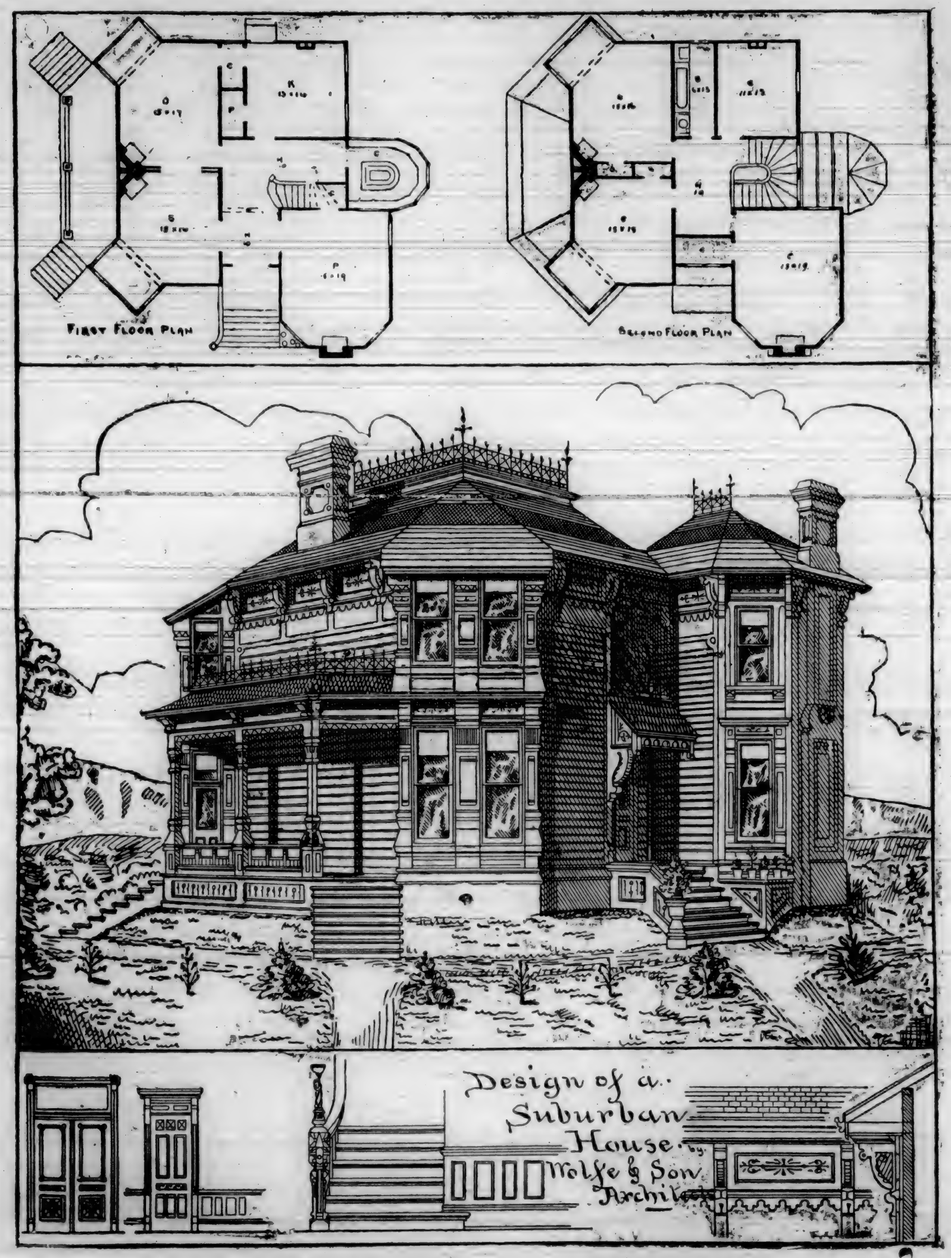


PLATE 7.—PLANS OF SUBURBAN HOUSE COSTING ABOUT $4,500.

OUR EXCHANGES.

We give below an addition to the list of the January issue of this JOURNAL of our exchanges. Space forbids giving a more extended report. It will be seen that all the journals of a scientific or mechanical character, from every part of the country, have honored us on their exchange list.

Building.

A new aspirant for public favor. Its name is somewhat indefinite, not leading any one to suppose that it treats of as many different subjects as it really does. Its articles on *perspective drawing* are alone worth the time and attention of every draughtsman in the country. Price $1 per year.

The Sanitary News.

A welcome addition to our list of sanitary journals. It presents a remarkably neat appearance; its illustrations are more than extra, and no doubt exists in our mind but that it will become the leading journal of its kind in the West. Price $2 per year.

Kansas City Review of Science.

Price $2.50 per annum. Twelve numbers to the volume. At the end of the year have them bound; cost of binding $1.50, total $4; and you have abook that could not be bought for three times that sum. Its articles on anthropology are very interesting. Each number contains fifty-six pages of reading matter of the most attractive kind, and should be in the library of every thoughtful mind in the country.

Industrial News.

This journal is published by the Inventors' Institute in the interest of inventors and the producing class, and for the encouragment of industrial talent and inventive genius. Price $1.50 per annum.

Good Health.

A journal of hygiene, devoted to physical, mental, and moral culture. The articles on the use and abuse of spirituous liquors and tobacco contain much solid reasoning. They should be read by all our young men. Price $1 per year.

American Chemical Review.

We always look with pleasure for this journal to appear. The language, for a technical journal, is written in such an easy, plain manner that it is a pleasure even for an apprentice to read. To the older minds, there is enough in each number for days of study. Terms $5 per annum.

National Car Builder.

This journal is devoted to the interests of railway rolling stock. There is not, however, a cabinet worker or first class carpenter in the country but should subscribe for this journal. Illustrations of the inside fitting of cars are numerous and of much interest to the wood workers. $1 per year.

The Dial.

A monthly index of current literature, and as such should be in the possession of every reading man and woman. $1.50 per year.

The American Ship.

Devoted to American industry, nautical commerce, shipbuilding, timber, engineering, navigation, insurance, and yachting interests. Published weekly. $3 per year.

Granite Cutters' Journal.

Devoted to the interests of stone workers. A complete epitome of the trades in which this journal circulates. $1 per year.

Brick, Tile, and Metal Review.

This journal should be in the possession of every architect, mason, and contractor in the country. It has lately been enlarged and improved, and is well worthy of the subscription price. $1 per year.

The Paper World.

"The hast caused printing to be used. . . . . Thou hast built a paper-mill."—Shakespeare. Even so, Brother Bryan, and from the products of the paper-mill thou hast presented us a journal truly gladdening unto the eye to behold. And we hope that the gladdening glistle may be in the eye of every reader in the country when they shall see your journal after sending you $2 for a year's subscription.

We are prepared to send any journal on the above list or in the January number to any address upon receipt of the subscription price.

The Chicago Cable Street-Railway.

In the *American Engineer* of January 19th, 1883, we find the report of Mr. C. B. Holmes, President of the Chicago Cable Street-Railway. The report is too long to copy in full, so we have selected such portions as will most interest those who live in the home of the cable-railway. There is much in the report of benefit to the managers of the various roads in this city, and it will be to their advantage to send after a full copy as given in the paper mentioned above.

"An important part of the new system is the cables. While the transmission of power by means of wire ropes is very old, the adaptation of cables to street-car locomotion is comparatively new, limited heretofore to San Francisco, and there under conditions which did not necessarily determine many and important problems. At the outset of our operations we found that the splice used in San Francisco would not answer our purposes, owing, probably to the much heavier work performed by our road, and the greater length of our cables. Under the supervision of the manufacturers of our ropes, a splice was adopted which they considered the best, but a short trial proved it a failure. The San Francisco splice was then tried, but it also failed. Mr. Nash, who has had charge of our ropes, then introduced a method of his own, and with anxious interest its operation was watched until long continued use has determined its advantage and success. The difficulty was to secure a splice which should not increase the size of the rope, and expose the splice to abrasion by the grips, which should not draw out when a heavy strain was brought to bear, nor yet allow the ends to loosen when the action of the cars produced a slackness of the rope; one also which should not allow one strand to creep ahead of the others, and projecting up for the grips to cut or tear it up. If nothing else had been done during the season in this department than to discover a successful method of treating this important part of the system, it would have been a season well spent, for it is vital to the operation of the road. Another important matter was the handling of the cables so as not to produce crystallization. A new rope has been made so brittle in San Francisco by a short use as to snap like glass when struck with a hammer. During all our operations so far we have not discovered any commencement of this much-feared condition. Another matter of careful study was to arrange the ropes as not to cut the winding-drums in the engine-house. The suitable coating of the cable is another and important item which has received careful study and attained reasonable success.

"The sudden changes in temperature from heat to cold, from dryness to dampness, would cause the coating to peel off, and in three hours' time the ropes would be comparatively bare and exposed to the dangerous action of the grips. A full statement of the difficulties encountered and overcome would far exceed our limits and your patience. It is with gratitude that the management can say that every difficulty has been so far solved as to relieve anxiety in this direction.

"The length of the cables are as follows: State Street, from Twenty-first Street to Madison Street, 20,290 feet; from Twenty-first Street to Thirty-ninth, 23,792 feet; Wabash Avenue, 23,608 feet; Cottage Grove Avenue, 27,770 feet; State Street loop, 4,361 feet; Wabash Avenue loop, 4,339 feet; Twenty-second Street, 2,684 feet; a total of 106,844 feet, or twenty and one-quarter miles of cable laid and in operation. . . . .

"The company has for two years been engaged in a great undertaking, which has taxed its energies and resources most heavily; but this great labor of construction is now, at least for the present, completed, and all interested have a right to look for compensating benefits from so vast an outlay. From the experience of the last year there seems to be good ground to expect reasonably satisfactory returns from the investment. The public has hoped to find in the cable system seats for all, or nearly all, and speedy transit. The former will be realized by increasing the number of cars, which is being done with energy, and the latter can be attained the moment the cars are supplied with automatic brakes and safety fenders, to do which every possible effort is being made. The whole system will work with greater ease by giving to the cables quicker motion, and this will be done as soon as the cars can be stopped quickly and with certainty, and so protected as to reduce accidents to the minimum."

Durable Colors.

One of the necessary qualifications of the painter is the knowledge of colors that will stand the sun and the weather.

The manufactured chemical colors are generally not very durable, and are therefore not suitable for outside work. The chrome yellows, chrome greens, Prussian blue, are fugitive, whether used alone or mixed. A combination of two colors of durable nature is often subject to change of tone. Of the more durable colors for external use, the ochers, Indian and Venetian reds, burnt and raw umbers, and burnt and raw siennas may be mentioned. Zinc white, though of less body than white-lead, is more delicate and durable, and one American writer says: "Zinc white should always be used in place of white-lead at the seaside, where it is especially durable. The action of the salt air injures the lead." The most durable blacks are lamp-black and vegetable black; the most durable yellows are yellow ocher and Naples yellow, both of which have a good body. Chrome yellow is fugitive, and like other lead salts, it becomes dark in bad air. Of the reds, those to be depended on are the Venetian red, Indian red, light red, and madder lake; carmine lake, vermilion, and chrome red are best avoided on the exterior. The only blue that will stand is ultramarine, though it is expensive.

Prussian blue, cobalt, Antwerp blue, and indigo will fade either singly or in combination. The umbers and siennas, burnt and raw, burnt ochers, Van Dyke brown, are permanent colors. Raw umber is very durable in both water and oil, and does not injure other pigments when mixed with them. The same may be said of yellow ocher, a natural-colored clay, which does not lose its color when mixed with lime, and hence it is well adapted for distemper painting.

Mixed greens are not so durable as those produced direct from copper, arsenic, etc., which are, however, injurious to health. Emerald green made of verdigris and a solution of arsenious acid, and Scheele's green and Vienna green, arsenites of copper, are very poisonous.—*Building News.*

Landlord and Tenant.—Defective Roof.

The Albany *Law Journal* narrates a Minnesota decision which may be cautionary to tenants of apartments, offices, and French flats. The owner of a building in Minneapolis let the various stories of it to different persons. As may be supposed, neither tenant hired the roof, and nothing was said in the brief, somewhat informal agreements made about the duty of keeping the roof in repair. In course of time the roof grew leaky; no one repaired it; a rainstorm occurred, and water percolated through the walls and floors, and drenched and ruined the stock of goods of the tenant on the ground-floor, a dealer in fire-arms and ammunition. He sued the owner of the building for damages, but the court held that the owner and general landlord is not bound, even where the building is let in portions, to make repairs unless he has agreed to do so, or the structure is becoming a nuisance. No doubt this is the rule when a tenant hires a whole building, but we think that in this city, the popular understanding is that tenants of an office, an "apartment," or a flat are entitled to look to the landlord to keep roof, hall, stairs, and the like in reasonable repair. Must they always stipulate for this in so many words? The Minnesota rule is surely very inconvenient, for if the landlord need not repair the roof, the several tenants must each have an implied right to do so, and after any heavy storms, ten or a dozen of dwellers under a leaky roof may gather upon it, squabbling as to how it shall be repaired. If such be the law, tenants should understand it.—*N. Y. Times.*

Book Notice.

We have before us an instructive little book of 202 pages, upon the subject of *House Drainage and Sanitary Plumbing*, by Mr. Paul Gerhard, civil and sanitary engineer, published by Van Nostrand, New York. The subject comprehended in its pages is intelligently handled, and should be read by every one in any manner interested in the subject upon which it treats, including owners as well as architects and builders of houses. Every sewer-layer should be compelled to read and follow its theory of putting in house drains, which, in importance, is only second to skillful plumbing work. And yet, as we have frequently stated, nothing in connection with house-building is more imperfectly done than the sewer work. We repeat, and facts will bear us out in the assertion, that the skillfully, carefully and perfectly laid and jointed side sewers laid in San Francisco will not average more than one in fifty; a large margin, truly, but is nevertheless a fact. The reasons why this is the case are many. First, the necessity for absolutely perfect work in this connection has not, hitherto, sufficiently impressed architects, contractors, and owners with the magnitude of its importance. Second, a considerable number of those *practicing* architecture possess no intelligent understanding of sanitary science, and are mere dummies in directing such works. Third, sewer-layers, as a class, a majority of whom have never read, and are unable to read, a line on the subject, enjoy no other knowledge in their special line than that of putting pipe in the ground, with a grade requiring as little excavating as possible, and sticking the joints together with a little cement, sometimes common mortar, in the *bottom* of the hub, leaving the upper half uncared for, except so far as the cement may be shoved in with a trowel after the pipes are placed together, and then smeared over with cement on the outside. We will wager $1,000 that there is not three in one hundred of runs of side sewers of any length in San Francisco which, if filled with water with two feet pressure, that will not discharge water at seven out of every ten joints occurring, and in a majority of cases the discharge will be large. Fourth, unwillingness of owners to pay a right price for perfect work, preferring to employ ignoramuses, at cheap rates, and take the chances.

The author pursues the subject of plumbing in all its ramifications in an equally intelligent manner, and presents views and theories which should be read and understood at least by all architects and plumbers.

Bids for the Erection of the "Veterans' Home."

The views expressed in the January issue of this journal in reference to the plans for the "Veterans' Home" have attracted considerable attention, and received the approval and indorsement of architects generally. The error of the committee having the matter in hand has been made the more apparent by the estimates of the several contractors who have submitted bids for the erection of the building. Messrs. McDougall & Son placed the approximate cost of their plans at about $17,000, and Newsom Bros. made a positive and definite proposition to complete theirs, under a bond, for $10,000. In this absurd proposition, there was either insincerity or want of necessary ifittelligence, as such conclusion could not be sustained by any rule of computation, either cubing, area measurement, or detail figuration. And had the Newsom plan been adopted, the discrepancy between the proposed cost of $10,000 and the estimates of bidders would have been but little if any less than that developed by the estimates for the McDougall plan. The valuelessness of a bond of the kind proposed is too well understood to require comment, and had the committee accepted a security of that character it would have realized its error in having to pay a much larger sum by the time the building would have been completed. In neither case were the figures presented with the plans as the cost of construction more than equal to two-thirds of the actual value, with this difference: the McDougall figures were given as approximate, without any assurances of certainty, thus leaving those gentlemen free from the imputation of concealed intent to entrap the committee into an expenditure unseen at the commencement; while it was sought in the other case to hoodwink the committee with a bond, which would be harmless upon the bondor, and leave the committee helpless as to the excess in cost of construction.

All of which serves to sustain us in our unqualified disapproval and condemnation of competitive plan-making, which in but a very limited number of cases, if in any, there is not more or less injustice, unfairness, and wrong, and in which as a rule gross misrepresentations and dishonorable dealings in some form or direction are not conspicuous elements.

Had the committee selected the Messrs. McDougall & Son, or any other reputable architect or firm, and consulted with them as to what character and description of building could be built for a stated sum, the party or parties selected would have been relieved from the pressures which invariably bear when the competitive method is resorted to. It is all nonsense to talk about the high standing and unimpeached reputation of architects, *or any other class of men*, when their services are sought with an "if"; and the *if* is always a prominent factor in every competitive case. Consequently, no man of intelligence engages in such contests without taking into consideration the ifs and the ands, as with scarcely an exception, something more than merely the best plans and most perfect drawings are indispensable to success.

There are no reflections due the McDougalls at the result of the figures given below, as these are the natural result of the course the committee has seen fit to pursue; and a similar result would have been a matter of record had the rejected plans been adopted. The bids submitted ran as follows:

Moore Bros., for main building, $29,000; cottages, $1,950.

G. W. Davis, general bid, $19,370.

Ingerson & Co., main building, $25,000; cottages, $1,750 each; laundry, $920.

L. Larrence, main building, $28,398; cottages, $2,300 each.

W. Commary, general bid, $28,348.

S. G. Worden, main building, $28,388; cottages, $2,098; laundry, $1,991.

John Cox, main building and laundry, $27,740; cottages, $1,780 each.

A. L. Fitzpatrick, general bid, $27,000.

A. Herbst, general bid, $27,000.

Cummings & Rebman, main building, $32,171; cottages $2,100 each; laundry, $1,565.

Removal of Grease Spots.

Whenever oil of turpentine, benzole or ether is used to remove grease spots on cloth, the application should be made on the reverse side of the cloth, by moistening it with the solvent in a circle surrounding the spot, so as to approach it gradually, having blotting-paper in contact with the spot of grease, to absorb the fat immediately; otherwise the solvent will have the effect of spreading the grease over a larger surface instead of driving it out of the cloth. In the application of a hot iron to one side and blotting-paper to the other, the heat will drive the grease out of the cloth into the paper, because the fat has a tendency to move from the hotter parts toward the cooler.

The School Department Architect.

Without intending disparagement to the claims of the other two gentlemen seeking the appointment, both of whom have heretofore occupied the place with credit to themselves—Mr. O'Connor preceding Mr. Curlett, the retiring architect, who has held the position for a considerable length of time—we congratulate Mr. Welsh upon his success in securing the appointment, and trust that his record at the end of his term of service may be entirely free from any just cause of reproach. The duties of the position would doubtless have been well performed by either of the other gentlemen, so that the successful party has the greater cause to appreciate his success, than if, as has sometimes been the case, some of the applicants had been inferior men.

We also appreciate the appointment as far as San Francisco Chapter is concerned, in its being so far recognized by "our city fathers" as the selection of one of its members to fill the responsible duties of School Department Architect. And we trust that the time is near at hand when membership in the Chapter will exercise a controlling influence in the selection and appointment of architects for all public buildings and works, and also with owners of private property in the erection of all classes of buildings. It should be so, as prominent among the aims and purposes of the Chapter, is mutual improvement, the cultivation of a higher understanding of professional duties, friendly interchanges of views, and free discussions of all matters and principles architectural, calculated to assist and increase the proficiency and draw out and establish in the members of the Chapter understandings and sentiments becoming those assuming the honorable and responsible calling of architects.

To the *few* worthy and competent gentlemen in the profession who have not identified themselves, we say kindly that they are at fault, and although they may "get along" satisfactorily to themselves, and the Chapter not suffer through lack of their membership, the united commingling of all the reputable architects of this coast in one grand Chapter brotherhood, would have a beneficial influence upon the entire profession, and place it in a more favorable light with owners than is possible with the semblance of division in our ranks.

Steam Heating for Buildings, or Hints to Steam Fitters.

By William J. Baldwin, steam heating engineer—with many illustrations. The subject of this volume, 234 pages, is one of interest to the people of this coast, and should be read by owners as well as by architects and those engaged in steam heating works, as its contents and illustrations amplify the whole subject-matter in all its connections.

Saw Filing.

By Grimshaw, is a neat little book of 77 pages, which should be in the hands of every carpenter, as well as all millwrights and others using saws. Filing saws may appear as a very simple matter, yet not one in ten who sharpen saws understand anything about the best, or right method of applying the file to the saw blade. And but few take into account the amount of extra labor expended in using saws improperly filed. It is a fact that a man will do a much larger amount within a given time, and with much more ease and comfort to himself, with a saw artistically filed and set than with one as filed by the great mass of saw filers.

The Materials of Engineering.

First of three parts—a well and carefully written volume of 364 pages by Robert H. Thurston, A. M., C. E., professor of engineering, etc. Its index refers to two hundred and fifty-one separate subjects or features, comprehending the subjects—stone, cements, timbers, and other materials, giving extended remarks upon their various peculiarities of their respective classifications, strengths, uses, applications, characteristics, etc.; including also in present number reference to nearly fifty species of timber, from the common pines, firs, and spruces, etc., to the hard-wood family, with detailed description of each; also fuels, lubricants, and a long range of tables, logarithms, and other valuable matter. It should be in the library of every civil engineer, architect, contractor, and mechanic, as its fund of information is practical as well as scientific.

☞ Subscription price of this journal is $2.00 in advance.

New Building Construction.

The public is respectfully invited to examine the

NEW BASEMENT CONSTRUCTION

OF

Mr. Somers' New Building

741 and 743 MARKET STREET,

Opposite Dupont.

W. P. MOORE, ESQ., ARCHITECT.

By this improved construction of beams and girders, and at no greater expense than usual, the basement becomes one large room, unobstructed by the usual unsightly and unnecessary brick piers, that not only divide the apartment, but take up valuable unnecessary space, and obstruct the light coming through the illuminating platform in its passage to light the rear of these deep basements. Also, by this construction, the first story front can be changed to suit different tenants.

P. H. JACKSON & CO.

Constructors of the Beams and Girders, No. 2 California St. and 231 First St., this city.

IMPROVED

BUILDING CONSTRUCTION

Franklin Girders

FOR

BUILDINGS AND BRIDGES

The most economical constructions made. They are so proportioned that the opposing forces and strains of compression and tension are to a great extent neutralized. Their cost is about 40 per cent less than those in common use in this city, and are free from their objective weakness when made up of pieces in length. These girders are made of any length, and sustain any load up to 1,000 tons.

P. H. JACKSON & CO.

2 California Street and 231 First Street, San Francisco.

The Lateral Support Issue.

The rights of coterminous owners to the lateral support of each other's land has for generations been a source of countless personal conflicts, disputes, and troubles, and innumerable law suits, involving in some cases, large amounts in damages claimed, and costs and expenses attending litigations.

The arguments on both sides of the issue appear reasonable and convincing when viewed from the respective standpoints of each, with a strong admixture of the "whose bull is gored" doctrine. The owner of improved property asserts his rights to the undisturbed enjoyment thereof, denying the rights of his neighbor to the same enjoyment, unless, if need be, the latter shall bear all the cost and expense of holding the former harmless; while the owner who proposes to make improvements contends that he should not be required to do more for his neighbor than exercise due care and precaution in the prosecution of his improvements, so as to prevent any avoidable injury to his neighbor's premises, and affording all necessary facilities to his neighbor to protect and sustain his property. This latter view of the case is certainly the better sustained by logical and reasonable arguments, and should be the rule; as in all cases of conflicting rights those which are exclusively personal should be made to yield to others which are more general in character. The personal right feature is that of owners of improved property being protected against any outlay of money not of their own choice, and the more general that of encouraging and stimulating new and better improvements. The "public good" should rise paramount in all cases, and if, as is the fact, owners of unimproved lands are often deterred from making improvements through unwillingness to bear the expense of taking care of adjoining property, the protection most feasible and politic is that which will remove the hinderances and stimulate and encourage improvements. Innumerable examples exist that where the law compelled owners desiring to build to sustain and underpin the property of coterminous owners, that rather than be forced to do so, inferior improvements have been made, or the premises have remained from year to year unimproved, or been sold to avoid the unfair demand. Mere "shanties," shops, and unimportant constructions are sometimes substituted for costly and elegant buildings, to avoid the obligation to sustain adjoining property, and many fine lots in San Francisco have remained unimproved for these reasons; and at the present time the fact is well known to every prominent architect, of owners who have refused and continue to refuse to make improvements for the reasons named. Under this state of facts, the law as it now stands, compelling those who build to protect and underpin the adjoining property, should be changed so as to permit every owner who desires to do so to improve his property in a proper and reasonable manner, without the entailment of expenses in taking care of that in which he has no interest.

The city ordinance which sustains this view of the case, establishing the right of each owner to excavate to a depth of fourteen feet, is just and proper. In New York and other large cities this same feature of law exists, defining the depths of excavations, so that all owners enjoy a common right and privilege, with the additional provision that those excavating to a greater depth shall bear the expense of coterminous underpinning. We do not advocate unlimited excavations, nor any rule or law which infringes the rights of any one to a reasonable enjoyment of his property; but there can be no sound argument adduced why those who desire to make building improvements should be deterred from doing so, rather than spend additional money to build bulkheads, put in foundations, etc., to keep safe old rickety constructions, or better buildings erected with foundations resting upon or near the surface of the ground. The lesser should yield to the greater, and it is a poor argument to urge that new and modern constructions should be taxed to sustain older and less desirable and less taxable property.

Need for More Skilled Labor in San Francisco.

During the past year there was a great scarcity of skilled labor in San Francisco in many lines of operation; so much so, that it was a common thing to see sign boards on buildings—"carpenters wanted"—and many advertisements were inserted in the daily journals offering engagements. Consequently, every carpenter worth a shilling a day found employment, and some who were not worth four bits per diem on fine work, received the pay of competent workmen; and architects, and the better class of contractors, were greatly disadvantaged, the former in being compelled, by force of circumstances, to submit to less perfect work than desired, and the latter in being unable to furnish the class of help necessary on good work. This led to an advance in wages in many cases, contractors, under the stress of conditions, being willing to submit to and even offering increased pay to secure sufficient help. And even during the dull season—since December 1st—but very few have been idle, the bosses managing to keep their forces together, fearing inability to replace them when busker times return. There is every probability that the same condition of affairs will exist in an increased form during the current year.

The same state of facts has ruled among the brick-masons, a full supply of good hands being an impossibility the greater part of the year, with no abatement during the present less busy part of the present season. Several of the more prominent of the master masons have requested us to invite labor to this city, and from appearances more must be had to fill the prospective necessities for labor. First-class brick-layers are securing as high as $5.50 per day, and with the rush of work anticipated, should it come on, as is reasonable to expect it will, there is not at present a supply of help to be had, and without some addition thereto, delays in construction is bound to follow, and perhaps arbitrary demands for excessive wages. Unfortunately, the labor ranks of our journeymen brick-layers have been reduced by many of our best workmen going to Portland, Los Angeles, and other points on this coast, where the building interests have been active, through general prosperities, fires and other causes, while the indifferent and scrubby classes have remained, making the best of such opportunities as have and may present themselves to fill the places of competent hands, in laying the foundations and building the chimneys for frame buildings, etc., on their own account. It will, therefore, be safe for quite a number of first-class journeymen brick-layers to wend their way to San Francisco.

Among the plasterers the same conditions exist to a considerable if not equal extent; so much so, that the price of lathing and plastering has advanced over the rates prevailing two years ago of fully one-third, and the journeymen have recently notified the bosses of an intended demand for increased wages.

In our recent visit among the machine shops and foundries we found a similar state of affairs—scarcity of competent skilled workmen, and a demand for increased supply. All this speaks well for this city and coast, as everywhere, from its most distant borders, and throughout intervening sections, the most encouraging accounts come to us.

The Steel Square and Its Uses, Price, $1.00.

The Great Chinese Encyclopædia.

The celebrated "Chinese Encyclopædia," which was purchased some months ago by the Trustees of the British Museum for fifteen hundred pounds sterling, has been safely lodged in that institution. It forms the most important acquisition to the great national library which has been made for some time past. The work is remarkable as having nothing parallel to it extant in the literature of other countries. It is comprised in five thousand and twenty volumes, and consists of a vast *thesaurus*, into which is digested the entire mass of Chinese literature extant at the date of its publication, classified under appropriate headings, and accompanied with illustrative drawings, plans, and maps. It includes treatises ranging from 1150 B. C. to about the year 1700 of our era, and it professes to represent every branch of Chinese literature, with the single exception of works of fiction.

It was compiled in the early part of the eighteenth century by an imperial commission under the orders of the great Emperor Kang Hi So, well known to us from the accounts of the Jesuit Missionaries whom he favored and assisted, and who were his instructors in European art and learning. This emperor was himself a great writer, and he was struck in the course of his literary investigations by the alterations and corruptions which are gradually being introduced into the texts of standard works. He therefore conceived the idea of reprinting from the most authentic editions the whole body of Chinese literature then in existence. A commission of high officials was appointed to select and classify the texts, and its labors extended over forty years, terminating in the publication of the work in 1726. For the purpose of printing it a complete font of copper type was cast, under the direction of the Jesuits, who probably superintended the printing.

Only one hundred copies were printed, a number which has been much reduced since the time of the issue by various casualties. The whole impression was distributed as presents among the princes of the imperial family and the great State officials. The type used in the production of the work is said to have been melted down shortly afterward, and converted into money to meet the exigencies of the government during a financial crisis, and in this way the means of producing a second edition was destroyed. The copies which still exist are in the hands of the families of the original recipients, from one of whom the copy just happily brought to London has been purchased. So completely private is the ownership of copies of this "Enclyopædia" in China, that no copy is known to be accessible for reference to the general body of students of that country.—*Paper World.*

How to Split a Sheet of Paper.

It is one of the most remarkable properties of that wonderful product, paper, that it can be split into two or even three parts, however thin the sheet. We have seen a leaf of the *Illustrated News* thus divided into three parts, or three thin leaves. One consisted of the surface on which the engravings are printed; another was the side containing the letter-press, and a perfectly blank piece on each side was the paper that lay between. Many people who have not seen this done might think it impossible; yet it is not only possible, but extremely easy, as we shall show. Get a piece of plate-glass and place on it a sheet of paper; then let the latter be thoroughly soaked. With care and a little dexterity the sheet can be split by the top surface being removed. But the best plan is to paste a piece of cloth or strong paper to each side of the piece to be split. When dry, violently and without hesitation pull the two pieces asunder, when part of the sheet will be found to have adhered to one and part to the other. Soften the paste in water, and the pieces can be easily removed from the cloth. The process is generally demonstrated as a matter of curiosity, yet it can be utilized in various ways. If we want to paste in a scrap-book a newspaper article printed on both sides of the paper, and possess only one copy, it is very convenient to know how to detach the one side from the other. The paper, when split, as may be imagined, is more transparent than it was before being subjected to the operation, and the printing ink is somewhat duller; otherwise the two pieces present the appearance of the original if again brought together. Some time ago, the information of how to do this splitting was advertised to be sold for a considerable sum. We now impart it to all our readers gratuitously.—*British Stationer.*

Chinese Mode of Manufacturing Sheet-Lead.

The making of sheet-lead for the lining of tea chests, etc., is a somewhat important industry of Hong Kong. It is made principally in sundry establishments to the westward. On entering one, the workmen will be seen with shears busily employed in cutting out the sheets of lead into the required sizes and shapes. The shears are simply a large pair of scissors firmly fixed to a solid block of wood two feet in height. The lower blade of the shears terminates in a square piece of iron instead of being pointed, as is the upper blade. The sheets of lead will also be observed to be of small size and somewhat irregular in shape; and this arises from the method of manufacture, as will subsequently be seen. Going farther into the shop will be seen an iron pan raised twelve inches or so above the ground, and carefully finished off.

Beneath this iron pan is a furnace, and at the side of the pan next the wall is the flue communicating with it. In this pan the lead is melted, and when judged to be hot enough, the workmen take two of the large, square paving tile, which may be seen almost anywhere in the colony, and these are then smoothly and carefully covered with several layers of unsized paper. Having placed these two tiles before him, one above the other, the workman raises the upper tile with his left hand, and taking a ladle of the proper size in his right, he dips it in the melted lead, and then pours its contents on the upper tile, and quickly presses the lead out in the form of a sheet. The paper being a bad conductor of heat, the lead does not solidify immediately it leaves the ladle, and by long practice the workmen always ladle out the same quantity of lead; the sheets made vary but little in size or thickness.—*Scientific Press.*

Articled Students and Draughtsmen.

Classes are now being formed for instruction in Modeling, Carving, Drawing, and Mathematics, under the auspices and control of the San Francisco Chapter American Institute of Architects.

Articled Students in the Profession will receive instruction free. The Classes are open to all, however, upon the payment of a small tuition fee.

The class in modeling is now being formed under the direction of F. Marion Wells. All those desiring to join this class will at once apply either to Mr. Wells, or the Secretary of the Chapter, 240 Montgomery St., S. F.

Anecdote of W. M. Hunt.

Your stories of Hunt remind me of another, hardly less amusing, and, like yours, illustrating his sense of the dignity of his art, and his peculiarly undignified way of showing it. During the last winter of his life, he one day called upon an artist to look upon a portrait which had been returned with some expression of dissatisfaction from the subject and owner; and to give his friend, the artist, the benefit of his judgment in the matter of changing and so improving the picture that it should "pass muster" as a creditable work of art, even if it did not quite suit the taste of the patron. The chief defect complained of was the complexion, which was thought to be sallow; and it was true that in the process of giving the flesh a warm glow the artist had given an impression of local yellow in the flesh tints, so strongly marked that the complexion was yellow. When Mr. Hunt entered the studio, he looked at the portrait as it stood upon the easel, and said: "They think it is too yellow, do they? They always think it is too something except good. Your yellows are all right with your reds and the general tone of the picture, and that is well enough. Look at that bit of sky in your landscape (pointing to another picture). Isn't that good for sky to your trees and foreground? But it isn't much like that," looking up at the light which poured through the window, "and who said it was? The fact is, people don't know anything about art, and the more they know about other things, the less they know about that. But they know what they like,' and they don't mean to pay till they get it. They rank portrait-painters with tailors—no fit, no pay. We ought to make a stand against the unreasonable demands of the public, and let the patron share our risk. Of course we all do the best we can, and we should be paid for our work just as we pay our doctors and lawyers, whether they bring us through or not. I would have an order for a portrait mean the best thing that I can do with a reasonable effort, and that should fulfill my obligation and entitle me to be paid. Of course, I like to have people satisfied when I am, but I am the one to be pleased. I know something about my work, and they don't, and when I am willing to let a picture go that ought to stand for something, whether they are satisfied or not. But then there is another way. You know we should paint better portraits if we didn't care a d——n for our sitters. Suppose, now, when a patron calls to order a portrait, I should say: 'I will not take your commission in the usual form, but I will hire you to sit, and pay you one dollar an hour, and if you like the picture when I call it done you can have it for a stated price, and if you don't like it you needn't take it, and there will be no favor either way.' With a sitter on such terms I think I could turn out something pretty good. I know I should have a good time. I'd manipulate him just as the barber does his victim, and if he dared to open his head about art or anything improving, I'd stop his yop with a paint-brush. I'd just have my way till I got through, and then he could have his—take it or leave it."—*Letter to the Boston Transcript.*

It is gratifying to notice that English experts on returning to their country acknowledge that there is a great deal to learn in the building trade of this country. While little is said as to any advance made by the American brotherhood of architects, the ingenuity displayed in the interior construction of our homes by the builders is greatly applauded. Our English critics will ascertain erelong that we must attend first to the useful then to the ornamental and beautiful.

☞ **Subscription price of this journal is $2.00 in advance.**

Building Intelligence.

SAN FRANCISCO.

Cor. Fulton and Larkin. One four-story frame, brick basement; three two-story frame.
O.—Mrs. Alice Skae.
A.—Schmidt & Havens.
C.—R. Smillie.
$45,000.

Geary, cor. Gough. Two-story and attic frame.
O.—A. C. Stoddart.
A.—Schmidt & Havens.
C.—Terrill & Slaven.
$8,000.

Guerrero, x 21st and 22nd. Two-story and attic frame.
O.—J. B. F. Davis.
A.—Schmidt & Havens.
C.—T. H. Day.
$10,000.

Pacific, cor. Buchanan. Two-story and attic frame.
O.—H. G. Beckh.
A.—Schmidt & Havens.
C.—Terrill & Slaven.
$10,500.

Scott, x Bush and Pine. Two two-story frame.
O.—E. Lohzen.
A.—H. Geilfuss.
C.—Thom Wohrden.
$5,000.

Ridley and Guerrero. Two-story and basement frame.
O.—A. Beth.
A.—H. Geilfuss.
C.—P. Stecher.
$7,000.

Fifteenth and Guerrero. Two-story frame.
O.—S. M. Smith.
A.—H. D. Mitchell.
C.—J. W. Wilbur.
$2,000.

California, nr Fillmore. Two-story frame.
O.—T. Corbett.
A.—T. J. Welsh.
C.—J. T. O'Brien.
$6,500.

Fremont, cor. Market. Fitting up offices.
O.—Claus Spreckels.
A.—C. Geddes.
C.—J. M. Kelley.
$5,000.

Haight, nr Market. Two-story frame.
O.—Chas. Plum.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$3,250.

Junction Haight and Market. Three-story frame.
O.—Thos. McGee.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$9,500.

Washington, near Sansome. Repairs to brick building.
O.—Lick Trust.
A.—Wright & Sanders.
C.—T. Moffatt.
$3,000.

Fair Oaks, x 22nd and 23rd. Two-story and basement frame.
O.—H. M. Stevens.
A.—Smith.
C.—F. W. Kern.
$3,000.

Hyde, x O'Farrell and Geary. Three-story frame.
O.—W. J. Kenney.
A.—McDougall & Son.
C.—J. H. McKay.
$5,200.

Russ, x Folsom and Howard. Two-story frame.
O.—J. Beirbaver.
A.—H. Geilfuss.
Day's work.
$4,200.

Shotwell, x 22nd and 23rd. Two-story frame.
O.—M. Landes.
A.—W. O. Banks.
C.—Treadwell & Co.
$3,500.

Mission, x Fifth and Sixth. Three-story and basement brick building.
O.—T. Diercks.
A.—H. Geilfuss.
C.—H. Mayn.
$18,000.

Steuart Street Wharf. Sheds.
O.—W. C. Chrisman.
$5,000.

Post, near Dupont. Alterations.
O.—W. Caser.
A.—Bestor.
C.—J. McCarthy.
$2,900.

Natoma, x Fifth and Sixth. Three-story frame.
O. & B.—John Lassen.
$3,500.

Natoma, x Fifth and Sixth. Alterations.
O.—Mr. Mallon.
A.—J. T. Kidd.
C.—T. Fox.
$1,500.

Thirteenth, nr Bernese. Two-story frame.
O.—Molloy.
C.—Flaherty.
$2,000.

Shotwell, x 14th and 15th. One-story and basement frame.
O.—John Carr.
A.—J. T. Kidd.
Day's work.
$2,000.

Twenty-fifth and Alabama. Additions.
O.—Mrs. Begeler.
C.—Norton.
$800.

Mission, nr Twenty-sixth. Alterations.
O.—O. McCann.
Day's work.
$1,500.

Virginia Avenue, nr Mission. One-story frame.
O.—A. McGillivery.
Day's work.
$1,500.

Church and Twenty-ninth. One-story and basement frame.
O.—R. Bergfeld.
Day's work.
$1,500.

Geary, near Larkin. Alterations.
O.—A. Gordon.
C.—Dawson.
$2,000.

Guerrero, near Nineteenth. 4 one-story frame.
O.—German Bank.
$6,000.

Cumberland, x Church and Sanchez. One-story frame.
O.—G. H. Springer.
Day's work.
$1,000.

Hill, nr Valencia. Two-story frame.
O. & B.—F. J. Colley.
$4,000.

Dehon, nr Seventeenth. Two one-story frame.
O.—T. Dorland.
C.—Powell.
$1,800.

Déhon, nr Seventeenth. One-story frame.
O.—J. Mills.
C.—J. Grace.
$950.

San Jose Ave, nr 29th. One-story frame.
O. & B. Loftus.
$1,100.

O'Farrell, x Powell and Mason, alterations.
O.—D. L. Scher.
A.—Kenitzer & Raun.
C.—F. V. Acker.
$2,500.

O'Farrell, x Mason and Taylor. Additions.
O.—G. M. Condee.
C.—J. W. Wilbur.
$1,900.

Haight and Steiner. Two-story frame.
O. & B.—L. W. Wellock.
$2,500.

Lasette, nr Steiner. Two-story frame.
O. & B.—Lynch.
$1,000.

Germania, nr Fillmore. One-story frame
O. & B.—R. Mowry.
$1,600.

Broderick and Sacramento. Two two-story frame.
O.—Charles Hinkle.
C.—A. H. Bailey.
$4,000.

Baker, x Sutter and Bush. One-story frame.
O. & B.—R. Mowry.
$1,600.

Taylor and Washington. Additions.
O.—W. T. Coleman.
A.—J. T. Curtis.
C.—D. W. Ross.
$1,650.

California, nr Front, Fitting up offices.
O.—C. A. Low & Co.
A.—J. T. Curtis.
C.—D. W. Ross.
1,460.

Scott Place, x Pac. & Br'dw. Two-story flat.
O.—Merrill.
A.—Townsend & Wyneken.
C.—N. C. Post.
$3,200.

Seventeenth, x Sanchez and Church. Frame cottage.
O.—M. Hickey.
A.—T. J. Welsh.
C.—Doyle.
$1,379.

Market, x Fourth and Fifth. Fitting up store.
O.—I. Hallinan.
A.—T. J. Welsh,
C.—George Hansbrough.
$500.

Tenth, nr Howard. Fitting up Church.
A.—T. J. Welsh.
C.—T. J. Blake.

First, x Folsom and Harrison. Repairs.
O.—P. Donahue.
A.—T. J. Welsh.

Sacramento and Davis. Improvements.
A.—Wolfe & Son.
$1,000.

SACRAMENTO.

Fifth and J. Alterations.
O.—F. Miller.
A.—Babson & Seadler.
O.—Carle & Croly.
$10,000.

Eleventh and P. One-story frame; brick foundation.
O.—E. Bruner.
A.—A. A. Cook.
C.—Carle & Croly.
$3,000.

Eleventh, x P and Q. One-story frame; brick foundation.
O.—R. A. Rose.
A.—A. A. Cook.
C.—Carle & Croly.
$2,980.

P Street, x 12th and 13th. One-story and basement frame.
O.—N. E. White.
A.—N. D. Goodell.
C.—J. White.
$2,170.

K, x Front and Second. Repairs to brick building.
O.—T. W. Pratt.
A.—N. D. Goodell.
C.—A. Johnson.
$1,000.

J, x 7th and 8th. Additions to brick building.
O.—L. Lotbhammer.
A.—N. D. Goodell.
C.—J. Adam Kinkele.
$2,175.

Thirteenth, x J and K. One-story brick building.
O.—E. Jacobs.
A.—N. D. Goodell.
C.—M. Madden.
$3,578.40.

California, nr Baker. Four two-story frame.
O.—S. Hart.
A.—C. Geddes.
C.—J. B. Lang.
$18,000.

Sutter, nr Dupont. Three story and basement; brick building.
O.—J. Apel.
A.—B. E. Henriksen.
C.—Krohn.
$22,000.

BERKELEY.

Grant Street. One-story frame.
O. & B.—G. A. Embury.
$1,000.

Channing Way. One-story cottage.
O. & B.—Mr. Whitney.
$1,400.

Bancroft Way. Two-story dwelling.
O.—Mrs. Hays.
C.—A. H. Broad.
$2,800.

Cor. University and San Pablo Av. Two-story frame.
O.—Neller.
A.—Hillert.
C.—Herbst.
$22,000.

Shattuck Avenue. One-story frame.
O.—M. Frick.
C.—C. R. Lord.
$500.

Shattuck Avenue. Two-story frame.
O. & B.—D. Willets.
$1,800.

University Av. Carriage shop.
O.—Payne.
Day's work.
$1,000.

Sixth and Delaware. One-story frame.
O.—P. B. McCue.
C.—Kelly.
$2,500.

Mechanical Department University. Putting in machinery.
Day's work.
$3,000.

LIVERMORE.

Additions to store.
O.—C. J. Stevens.
C.—H. T. Hatch.
$1,000.

I. O. O. F. Hall. Finishing second story.
C.—G. W. Graham.

Tank House.
O.—P. Callaghan.
$400.

One-and-a-half-story frame dwelling.
O. & B.—Geo. McBride.
$2,500.

One-story frame.
O.—F. Schouesdt.
C.—J. F. Myers.
$1,500.

One-and-a-half-story frame.
O.—F. Schonesdt.
C.—J. F. Myers.

SAN JOSE.

Two miles from town. One-story frame cottage.
O.—Dr. L. W. Frary
A.—Theo. Lenzen.
C.—P. R. Wells.
$2,700.

Additions to building of Mr. Brown, on the Alameda.
A.—Theo. Lenzen.
Day's work.
About $1,500.

ALAMEDA.

Minturn street, nr Pacific Av. Frame Cottage.
O.—C. Beerhausen.
C.—A. Denke.
$1,000.

Morton and Santa Clara Ave.
B.—G. H. Percy.
$1,200.

Webber street. One and one-half story frame.
O.—Mrs. Dodge.
A.—Townsend.
C.—W. P. Clark.
$2,500.

Pacific Avenue, near Willow. One-story frame.
O.—A. Johnson.
Day's work.
$900.

Willow, nr Santa Clara Av. One-story cottage.
O.—Baronne.
C.—J. Jamieson.
$1,500.

Alameda and Willow. Two-story frame.
O.—F. Marriott, Jr.
C.—Wassam & Pattiani.
$3,000.

Willow, x Central and Santa Clara Av. One-story and basement frame.
O.—A. J. Birchner.
C.—Gilbert & Co.
$1,500.

Central Av., nr Willow. One story frame.
O. & B.—Brown.
$2,000.

OAKLAND.

Franklin, nr Sixteenth. Two-story frame.
O.—Rev. J. Thompson.
A.—S. & J. C. Newsom.
C.—F. A. Brown.
$3,500.

Sixteenth and Grove. One story frame.
O.—Dairiae.
C.—Rimis.

Sixteenth, nr Grove. One-story frame.
O. & B.—P. Ahern.
$1,3.0.

Brush, cor. Thirteenth. Alterations.
O.—E. Bigelow.
C.—O. C. Quirk.
$700.

Broadway, x 9th and 10th. Alterations.
O.—Blake & Moffatt.
Day's work.

West Oakland. Four two-story and basement frame.
O.—Col. Woods.
A.—S. & J. C. Newsom.
C.—F. A. Brown.
$12,600.

San Pablo Road. One-story frame.
O.—C. A. Miller.
A.—G. E. Voelkel.
C.—Herbst.
$1,050.

MISCELLANEOUS.

Woodland, Main, cor College. Three story brick building.
O.—T. M. Prior & Co.
A.—W. H. Carson.
C.—Scott & McMullin.
$45,000.

Ontario. Frame building for hotel.
C.—A. W. Boggs.
$15,000.

Santa Cruz. Camp Capitola. Three frame buildings.
O.—F. A. Hihn.
B.—Alexander & Morrow.
About $5,000.

Healdsburg. Two-story frame.
O.—C. A. Reiners.
A.—H. Geilfuss.
Day's work.
$4,000.

San Rafael. Additions.
O.—W. T. Coleman.
A.—J. M. Curtis.
C.—J. White.
$3,750.

Colusa. Brick building for Hall of Records.
A.—Matthews & Son.
C.—Berwell & Keligoss.
$23,000.

South Buttes. Frame building.
O.—S. Methodist Church.
C.—J. C. White.
$2,380.

Woodland. Alterations to Congregational Church.
C.—Gilbert & Son.
$1,500.

Two-story house on Main St.
O.—A. Steiner.
Day's work.
$4,000.

Two-story house on Main St.
O.—Hartmann.
C.—W. H. Winne.
$1,975.

St. Helena. One-story frame.
O.—R. P. Dunn.
$1,400.

One-story cottage.
O.—W. J. Caughey.
$1,000.

LUMBER.

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	
Flooring and Stepping	37 50
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping....per M feet	27 50
Ship Plank, Rough.... "	28 50
" Planed 1 side.... "	32 50
" " 2 sides.... "	35 00
Deck Plank, Rough.... "	33 50
" Dressed.... "	37 50
Laths.... per M	3 75
Wool Slats.... "	10 00
Shakes.... "	12 00
Redwood Posts.... per piece	17½

Redwood.

Rough Merchantable.... per M feet	$22 50
" Refuse.... "	18 50
Surface No. 1.... "	37 50
" 1 x 6.... "	35 00
" No. 2.... "	27 50
Rustic, No. 1, 1 x 8.... "	35 00
" No. 1, 1 x 10.... "	37 50
" No. 2.... "	32 50
" Under 10 feet.... "	32 50
T. & G., 1¼ x 4 and 1¼ x 6.... "	37 50
" 6 in. 12 ft. and over.... "	35 00
" " 7 to 11 feet.... "	32 50
" " under 7 feet.... "	30 00
" " No. 2.... "	27 50
T. & G., Beaded, 12 feet and over.... "	35 00
" " 7 to 11 feet.... "	30 00
" " under 7 feet.... "	27 50
Half-inch Surface.... "	30 00
Pickets, Fancy.... "	27 50
" Rough, Pointed.... "	20 00
" " Square.... "	17 50
Siding, ⅝ inch.... per M	2 50
Shingles.... "	3 50
Battens, ⅝ inch, lineal feet.... "	1c

NAILS.

10 to 60 pennies, are quoted at....	$4 70
8 " "	5 52
6 " "	5 05
5 and 4 "	5 57
4 and 5 pennies, brad heads, at....	6 00
6 " "	6 25
8 " "	6 50
10 and upward "	5 75
3 penny fines "	7 50

The California Architect and Building News.

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THE

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—AND—

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NO OTHERS RECEIVED.

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A square is ⅜ of an inch in length by width of the column.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested, we do not send receipts.

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Through the kindness of a few of our subscribers sending us numbers of which we were short, we have been enabled to have sixteen complete volumes of this journal bound. When these are gone, we will be unable to supply any more complete sets.

Bound volumes of 1879, 1880, 1881, and 1882 (in one book) complete, with all ads. and covers removed, will be sent to any address upon receipt of $8.00.

Bound volumes 1879 and 1880, in one	$2.50
" " 1881 and 1882, each	$2.50
" " 1880 (only a few left)	$2.00

In 1880 the subscription price of this journal was only $1.50, and we have put the price of bound volumes accordingly.

Volumes of 1882 and the sixteen full sets are all supplied with a full index.

Any one failing to receive a complete index will be supplied by sending a postal card to this office with their address.

Business Outlook.

The unusually light rains for the season since November last, and particularly the meager amount that has fallen since the first of February, has stimulated speculations as to the probable effect upon the building interests during the year. It is well understood that all interests hang and depend largely upon the quantity of rain that falls during the rainy season; those so excessive in quantity as to produce floods and inundations, and others so limited as to cause the seed sown to perish without yielding adequate returns for the cost and expense of sowing, produce their respective evils and discouragements; while the years in which the heavens have distributed their showers in due season, and in sufficient quantities, have caused the hearts of all alike to rejoice, and prosperity to abound throughout the land. The wet season of 1881–82, up to the month of February was no better than the current year; but in March last copious showers came, and the deficiencies of the preceding months were in a large degree made good; and with the exception of a few localities, good crops were gathered, and general prosperity followed. And should a fair amount of rain fall during the present month of March—followed by April showers, we may reasonably anticipate a satisfactory condition of things generally, and prosperous times in building operations.

Although no notably large jobs have been reported within the current year, the number of lesser buildings for residence purposes reported in present issue, as in the two previous numbers, are largely in advance of the corresponding months of 1882; thus showing that the shortness in rain supply has not as yet worked any injury to the building trades; and even should the rainy season terminate short of a sufficient supply for agricultural and mining purposes, no very serious consequences need be anticipated as far as the building interests in San Francisco are concerned, as there is that degree of financial firmness among the owners of real estate generally, that improvements will be made as rapidly as the demand for additional buildings shall justify; and it is a well-assured fact that the demand for rentable property has hitherto been fully equal to the supply, with tendencies in favor of the demand in the future.

Anticipated speculation in cereals may induce a few to delay active building operations for the time being, until the crop results are reached; and should these turn out favorably, a large investment in property improvements may be relied upon during the more advanced months of the year.

It is to be regretted that a wiser and more intelligent course has not been pursued by the contracting fraternity of this city during the past year. But few have anything to show as gains and profits on contracts executed, while the financial "short" jobs are numerous. Eagerness to secure contracts, more than wise and judicious figuring, has controlled in a majority of cases, and losses and *pro rata* settlements have been of frequent occurrence. The very many failures which have from time to time occurred have, with few exceptions, shaken the confidence of material-men and owners in the trustworthiness of those who from year to year handle millions of dollars in the erection of buildings. The mere fact that a man is honest is not a sufficient guaranty that their bills will be paid upon maturity if the work upon which the obligations are created does not afford sufficiency of coin to meet demand. The taking of contracts for less than a paying sum is a species of unwisdom which intelligent men should reject; and it would be infinitely better that a much less amount of building was done at fair and paying rates, than to crowd the market with unprofitable work, upon which losses must occur to material-men, bondsmen, or others involved under such contracts. At present writing, the sudden disappearance of a somewhat prominent contractor is the subject of general comment in building circles, and stories are flying around in reference to many others, whose integrity as individuals is not questioned, but whose financial conditions are reported to be deplorable. Many are named as being carried by material-men—some of them in large amounts, with the possibilities of suspension and financial disaster constantly hanging over them. This is by no means a pleasing recital, but the facts suggested are beyond question, and should lead to reform on the part of those who pursue the contracting business. The next to childish argument, that work must be figured down to and be taken at a low figure to secure contracts, should not be entertained; yet it is countenanced by men who in other things exhibit a reasonable amount of good business sense. If fools see fit to pursue such a course, wiser men should permit them to indulge in their folly, until crushed beneath the ruins of their errors, they sink away into that oblivion which should come to every man whose course of business is other than wise and self-sustaining.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the above Chapter was held on Friday evening, March 2nd, 1883. Vice-president Wm. Curlett occupied the chair.

The minutes of preceding meeting were read and approved.

The committee on Articled Students reported as follows:

REPORT OF THE COMMITTEE ON CLASSES.

To the Cal. Chapter of the A. I. A.

GENTLEMEN: Your committee, appointed for the purpose of instituting classes in various elementary studies for Articled Students beg to report that they have succeeded in establishing two classes: 1st, in modeling, in charge of F. Marion Wells, sculptor; and one in drawing from models and flat studies, temporarily under the charge of G. H. Sanders, architect.

A third class, in practical architecture, will be inaugurated during the current month by Mr. Albert Pissis, architect.

There will be four pupils in each of the above classes.

Mr. John Bryant, carver, has consented to take charge of a class in carving as soon as arrangements can be made for the same.

They also hope to arrange for the mathematical class, during the current month.

It is proposed, from time to time, to exhibit before the Chapter the work of the pupils in the various classes, as they attain the necessary proficiency.

Respectfully submitted.

G. H. SANDERS,
JAMES E. WOLFE,
A. LAVER,
T. J. WELSH,
Committee.

Report was adopted.

Committee in regard to paying the claims of the competitors in the first competition for the frontispiece of the CALIFORNIA ARCHITECT AND BUILDING NEWS reported in favor of paying such claims, and awarded the first premium to Oliver Everett and the second to W. J. Cuthbertson.

Mr. P. H. Jackson then read a very able and scientific paper, which will be found in full in another column. He was warmly applauded, and a vote of thanks unanimously tendered him. He also answered many questions that were proposed by members of the Chapter in regard to his subject, and his replies showed him as one thoroughly conversant with all matters pertaining to the paper read. Meeting adjourned.

Awarding the Palm.

We think that the palm for a "cheeky" proposal should be awarded to the following correspondent:

—— Co., Feb. 19th, 1883.

FRIEND EDITORS CAL. ARCHITECT: I take your valuable journal, and find it invaluable. Will you please send me a copy of your —— No., 1882. I built a house after one of your plans and had to cut out the elevation and plans and paste them on a piece of stiff card-board, so I could have them in my chest. As I want to keep a full set of your books, I write this to please send me another one to take the place of the one I had to use. I suppose you always have a few left.

Respectfully, — R.

The above is a *verbatim* copy of a letter received from R., in one of our southern counties. The gentleman admits that he built a house from a plan taken from our journal, thus saving about $50, the amount that the plans were worth for the drawing alone. He then has the courage to write us for a copy to replace the one used, and did not even inclose a two-cent stamp to pay the postage.

We know of several cases similar to the above, and place this one before the public as a specimen of superior unintelligence on the part of one who receiveth bread and then giveth a stone.

Articled Students and Draughtsmen.

Classes are now being formed for instruction in Modeling, Carving, Drawing, and Mathematics, under the auspices and control of the San Francisco Chapter American Institute of Architects.

Articled Students in the Profession will receive instruction free. The Classes are open to all, however, upon the payment of a small tuition fee.

The class in modeling is now being formed under the direction of F. Marion Wells. All those desiring to join this class will at once apply either to Mr. Wells, or the Secretary of the Chapter, 240 Montgomery St., S. F.

American Lumberman.

We are pleased to receive on our exchange list this worthy candidate for public favor. It is printed at New Orleans, subscription price being fixed at $3.50 per annum. Published weekly. All those interested in matters in connection with the interests it seeks to foster will do well to subscribe for the journal.

Should the Wood-work of our Houses be Painted?

Of the many and varied materials which our house-builders make use of, wood unquestionably may be accounted as being one of the most beautiful. Its claim to superiority in this respect is based upon an unassailable standpoint, for its beauty is a natural qualification.

The time is not so long past when custom acquiesced in the practice of covering over house doors, and joinery work generally, constructed possibly of oak, with a paintwork imitation, if imitation it can be termed, of figured or strongly grain-marked oak. This style of paintwork was and is commonly termed "oak graining."

At times the painter's efforts assumed a ridiculous direction; for he would venture on perfectly sound wood to imitate a line of sapwood, and thus attempt to transform *perfect* into an appearance of *imperfect* wood. No conscientious effort was in the generality of cases made to imitate grained oak, but an effect which custom had consented to regard as an imitation was deemed sufficient, and so what a popular American showman a short time ago designated to an audience as "a symphony in yaller" was allowed to pass muster. The situation assumed a more grave aspect when such woods as walnut and rosewood were attempted to be imitated, and shortly after marble mantelpieces were more generally introduced into our houses, and when the house painter endeavored to transform the honest old wooden mantelpieces into marble the climax of his artistic impudence was attained, and it was about time that our architects awoke from out of their lethargy, and put a salutary check upon his further doings. He stuck, however, to his "oak graining" with exceeding tenacity for a long time, and it was only his efforts to imitate the "fancy woods" indoors which even to the present appear to have been effectually stamped out.

Seriously, the house painter is in a way a great nuisance, for not only does he often offend good taste, but his work is for the most part really disadvantageous.

How often is it to be found in these days, when public taste is centered upon what is vaguely termed "æsthetic decoration," that labor and material are expended upon the decoration of the wood-work of a room which, if it had in the first instance been expended upon the wood itself, would have secured good and really beautiful material.

The almost boundless forests of Central America contain at least some dozens of tropical hardwoods, all beautiful, all serviceable, and mostly adaptable, which would unquestionably be shipped to this country if a demand for them were created. Of late years we have seen an active demand spring up for a long-neglected and beautiful wood—American walnut—and it is not venturing too much to prognosticate that in future years we shall see many other colored woods come largely into demand in this country.

The limit of selection in blending of woods in the making up of any wood-work article is almost illimitable. The quick genius of our American cousins long ago found this fact out, and much of the wood-work to be found on the other side of the Atlantic might well put to the blush anything our modern joiners nowadays produce. It cannot be said of our modern architects that they have of late years made no effort to better the fashion in respect to the wood-work of our houses, but the effort has been almost entirely in the direction of design, while selection of material, and particularly the blending of colored woods, has been almost entirely overlooked or neglected.

Practically, as we have remarked, no effort has been exercised in the adoption and use of colored woods, so far as the blending of them together in one design is concerned. Form has been specially aimed at, color has been neglected, or, more correctly speaking, it has been handed over for the painter to deal with, natural and legitimate means have been relinquished for artificial measures, and the result has of course been altogether unsatisfactory.

Let it be pictured, a library, for instance, with walls wainscoted, roof carved or paneled, floor laid with and doors and windows constructed of suitably selected mahogany, and let such a room be contrasted with one decorated by the painter in however tasteful a manner. The two conditions would fairly represent the real and the counterfeit, the true and the false, in respect to art, yet the cost of the two productions may vary but little in the total.

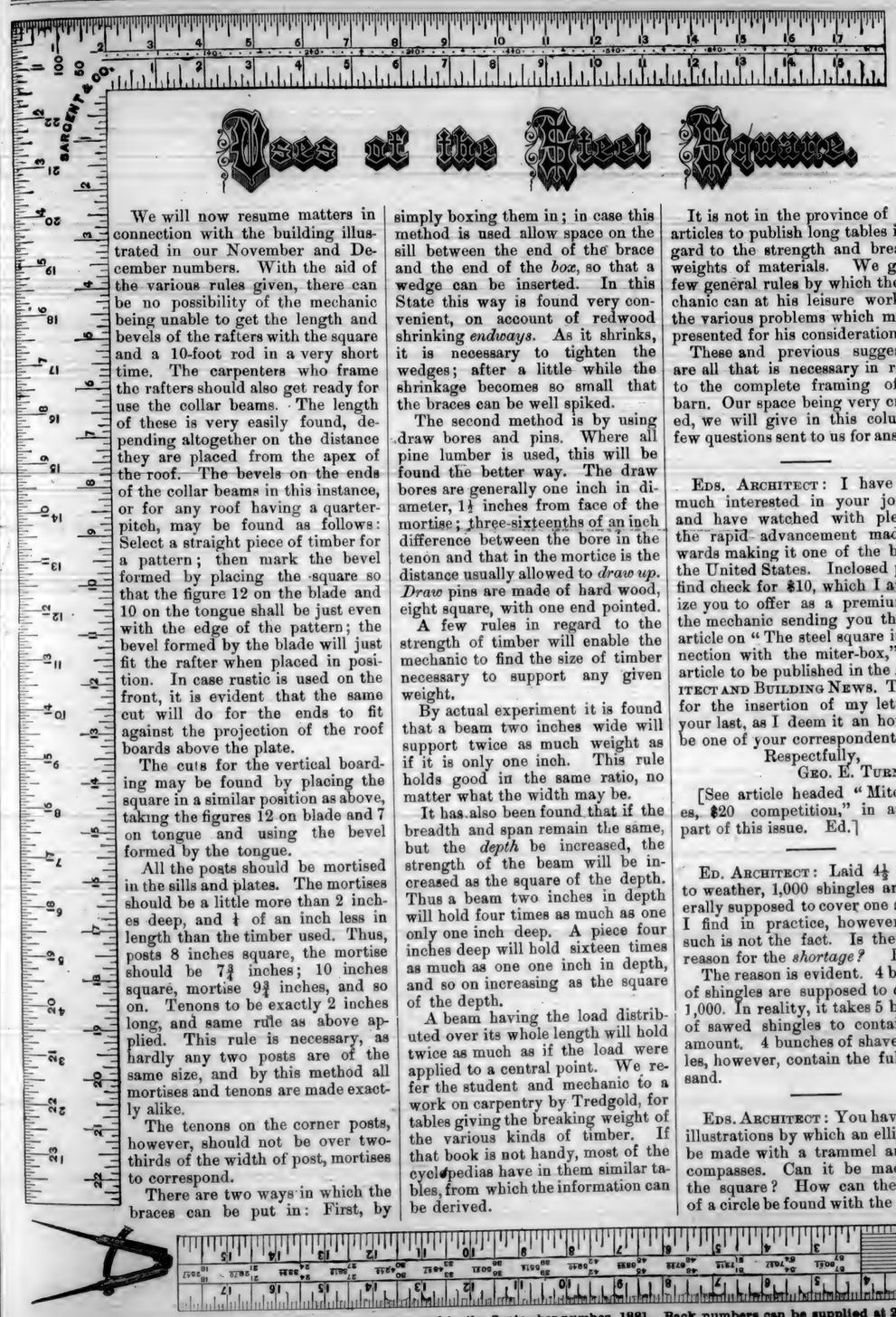
Almost the same argument may be made applicable to the wood-work of every room, and in fact to all the wood-work of a house. The drawing-room may be rendered gay, the library somber, the dining-room comfortable, the smoking and billiard-rooms cozy or airy-looking as desired, the boudoir may be made artistic and elegant. All these effects may be produced by the suitable employment of wood, and the extent of the effect can only be said to be limited by the ability of the designer. And yet these excellent opportunities are often completely neglected, or are at the best only made partial and feeble use of. For the greater part the house painter is allowed to treat the wood-work much as he pleases. It must be admitted that of late years matters in this respect have undergone considerable modification, but the change has been in a way of a negative character only. Design, in respect to form, has again come to the fore; but whilst the painter's services have been partially dispensed with, no substitute for his work has been introduced. And a worthy substitute is ready at hand. Woods of different hues and varying shades, all the tints of which are beautiful and all the shades harmonious, invite the attention of the designer.

It may be thought that architects would not continue to neglect the use of colored woods if the doing so were feasible and advantageous. But there are existent sufficient reasons for the apparent neglect. The fact is, that very little is known concerning fancy woods, and what may be termed "wood literature" is but scantily supplied to us. This is not to be wondered at, for no one other than one possessing a good trade knowledge of the subject could by any possibility deal with it. Theorists do at times attempt criticism, and often enough with absurd results. Woods are by them frequently recommended for use which have no existence other than in the imagination of the critic.

It is not, however, a difficult matter for an architect to acquaint himself with the qualities and appearances of such colored or fancy woods as mahogany, ebony, rosewood, walnut, satinwood, maple, oak, sycamore, cherry, ash, elm, pitch-pine, etc., which may be classed under the category of well-known woods, so that he may design them for use.

There is this high and unique character attached to fancy woods, that as they are beautiful in appearance, so are they correspondingly serviceable and lasting in nature. The least serviceable woods are the plainest; the most beautiful are at the same time the most lasting. Mahogany is the most beautiful wood known to mankind, and it is unquestionably in every respect the most lasting.

If mahogany is held to produce too somber or heavy and effect, then let it be lightened by blending with it some other wood, it hardly matters which, for any two will harmonize perfectly. In that fact alone lies the certainty that our arguments are justified. There can be no discord produced by the alliance of colored woods such as has nearly always been effected whenever the modern house painter has exercised his craft upon mural decoration.—*The Timber Trades Journal.*



Uses of the Steel Square.

We will now resume matters in connection with the building illustrated in our November and December numbers. With the aid of the various rules given, there can be no possibility of the mechanic being unable to get the length and bevels of the rafters with the square and a 10-foot rod in a very short time. The carpenters who frame the rafters should also get ready for use the collar beams. The length of these is very easily found, depending altogether on the distance they are placed from the apex of the roof. The bevels on the ends of the collar beams in this instance, or for any roof having a quarter-pitch, may be found as follows: Select a straight piece of timber for a pattern; then mark the bevel formed by placing the square so that the figure 12 on the blade and 10 on the tongue shall be just even with the edge of the pattern; the bevel formed by the blade will just fit the rafter when placed in position. In case rustic is used on the front, it is evident that the same cut will do for the ends to fit against the projection of the roof boards above the plate.

The cuts for the vertical boarding may be found by placing the square in a similar position as above, taking the figures 12 on blade and 7 on tongue and using the bevel formed by the tongue.

All the posts should be mortised in the sills and plates. The mortises should be a little more than 2 inches deep, and ¼ of an inch less in length than the timber used. Thus, posts 8 inches square, the mortise should be 7¾ inches; 10 inches square, mortise 9¾ inches, and so on. Tenons to be exactly 2 inches long, and same rule as above applied. This rule is necessary, as hardly any two posts are of the same size, and by this method all mortises and tenons are made exactly alike.

The tenons on the corner posts, however, should not be over two-thirds of the width of post, mortises to correspond.

There are two ways in which the braces can be put in: First, by simply boxing them in; in case this method is used allow space on the sill between the end of the brace and the end of the *box*, so that a wedge can be inserted. In this State this way is found very convenient, on account of redwood shrinking *endways*. As it shrinks, it is necessary to tighten the wedges; after a little while the shrinkage becomes so small that the braces can be well spiked.

The second method is by using draw bores and pins. Where all pine lumber is used, this will be found the better way. The draw bores are generally one inch in diameter, 1½ inches from face of the mortise; three-sixteenths of an inch difference between the bore in the tenon and that in the mortice is the distance usually allowed to *draw up*. *Draw* pins are made of hard wood, eight square, with one end pointed.

A few rules in regard to the strength of timber will enable the mechanic to find the size of timber necessary to support any given weight.

By actual experiment it is found that a beam two inches wide will support twice as much weight as if it is only one inch. This rule holds good in the same ratio, no matter what the width may be.

It has also been found that if the breadth and span remain the same, but the *depth* be increased, the strength of the beam will be increased as the square of the depth. Thus a beam two inches in depth will hold four times as much as one only one inch deep. A piece four inches deep will hold sixteen times as much as one one inch in depth, and so on increasing as the square of the depth.

A beam having the load distributed over its whole length will hold twice as much as if the load were applied to a central point. We refer the student and mechanic to a work on carpentry by Tredgold, for tables giving the breaking weight of the various kinds of timber. If that book is not handy, most of the cyclopedias have in them similar tables, from which the information can be derived.

It is not in the province of these articles to publish long tables in regard to the strength and breaking weights of materials. We give a few general rules by which the mechanic can at his leisure work out the various problems which may be presented for his consideration.

These and previous suggestions are all that is necessary in regard to the complete framing of the barn. Our space being very crowded, we will give in this column a few questions sent to us for answers.

EDS. ARCHITECT: I have been much interested in your journal, and have watched with pleasure the rapid advancement made towards making it one of the best in the United States. Inclosed please find check for $10, which I authorize you to offer as a premium for the mechanic sending you the best article on "The steel square in connection with the miter-box," said article to be published in the ARCHITECT AND BUILDING NEWS. Thanks for the insertion of my letter in your last, as I deem it an honor to be one of your correspondents.

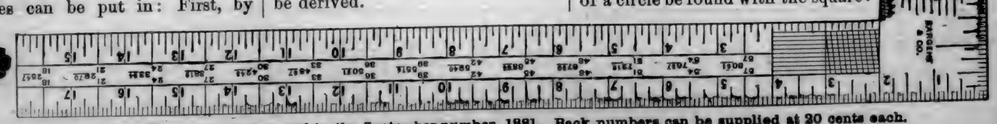
Respectfully,
GEO. E. TURNER.

[See article headed "Miter-boxes, $20 competition," in another part of this issue. Ed.]

ED. ARCHITECT: Laid 4½ inches to weather, 1,000 shingles are generally supposed to cover one square. I find in practice, however, that such is not the fact. Is there any reason for the *shortage?* R. L.

The reason is evident. 4 bunches of shingles are supposed to contain 1,000. In reality, it takes 5 bunches of sawed shingles to contain that amount. 4 bunches of shaved shingles, however, contain the full thousand.

EDS. ARCHITECT: You have given illustrations by which an ellipse can be made with a trammel and with compasses. Can it be made with the square? How can the center of a circle be found with the square?



This series of articles on the square was commenced in the September number 1881. Back numbers can be supplied at 20 cents each.

Felling a Big Redwood.

"The first question, sir," said the leading axman, politely, "when we are going to fall a big tree, is where she'll lay; because unless a man cares (i. e., is careful) to fall her right, she'll break all up, and the bigger the trunk the more liable she is to break. You can see down across the creek how that one snapped."

We looked where he pointed, and saw that a bole fully six feet in diameter, had broken squarely across; the brittleness of this timber, nevertheless, is not excessive, compared with other soft woods. Meanwhile the chopper was holding his ax in front of his unturned face, letting it hang, head down, between thumb and finger, like a plummet, while he squinted past it at the top of the tree, upon whose perfect shaft no branches grew below the upper quarter.

"I can tell by this whether she leans out of the perpendic'lar. If she does, you've got to allow for it; but this one don't, and I guess, Joe, we'll drop her right along that knoll just to the east'ard o' that oak stump—see it? But we'll have to roll that there log out of the way a little, or she'll break her back across it, sure."

Having made this simple preparation (sometimes hours are spent dragging logs to fill gullies, or in leveling knolls and getting stumps out of the way), the men returned and began chopping out some mortise-holes in the trunk about four feet above the ground. These were intended for the insertion of their iron-shod "spring-boards"—pieces of flexible planking about four feet long and six inches wide, upon which they were to stand while chopping at a height too great to reach from the ground.

The undercut was made first, and it was a fine sight to watch these stalwart men perched upon their strips of springy boards, hurling their ax-heads deep into the gaping wound, and never missing the precise point at which they aimed. I do not know any attitudes more manly or motions more muscularly graceful than those of the chopper; but perhaps the noble surroundings may count more largely than we think in this estimate.

In about an hour the undercut had approached the heart of the tree, and the men desisted from their work, which must now proceed on a scientific basis.

"As I said afore," the chopper explained, "we must fall a tree straight and true where we've fixed for it, or else she'll go to pieces. In order to do this we've got to measure it this way."

As he speaks he picks up, from near where his coat and saw and water caddy are lying, two sticks about four feet in length—one a square stiff lath, the other switch-like. Going to the tree he lays one end of the lath upon the partially exposed stump in the undercut, its extremity resting against the heart of the wood at the exact center of the bole. Then stooping and sighting along it, he moves the outer end of the lath until it points exactly along the line where the trunk is intended to be thrown.

"Joe, go out there a hundred feet or so and set a stake; I want to show these gentlemen how nicely we can drive it in with this big sledge we're goin' to let loose directly."

"Do you mean to say you will drop your tree as accurately as that?"

"You bet—hit that stake plumb; 'n' it'll take more mumble-te-peg 'n you're worth, I reckon, to pull it out afterward."

Meanwhile he went on with his mathematics. Having aimed the lath, he measured with his switch from its outer end to the "corner" at each side of the undercut, and finding one side a little shorter than the other, chopped in until he had equalized the hypotenuses of the two right-angled triangles whose straight sides were back to back in the line of the lath. The object and importance of this was to make sure that the limit of the undercut, where the strain and breakage controlling the fall of the tree (and marked by the line of upright slivers in a stump) would finally come, should be at right angles to the intended direction of that fall.

The axes were laid aside, and the spring-boards inserted in new mortises behind the tree, and a big two-handed saw set at work to make the overcut. Soon the crevice begins to open a little, and then a little more, until the cautious woodmen begin to cast their eyes aloft, watching carefully the signal that the next stroke would be the last, cutting the one remaining tendon that holds the mighty column up, for already there are sudden strange shivering motions in the densely bushy thickets of foliage that adorn its lofty crown, and dead twigs rattle down, snapped off by thrills of approaching destruction.

Then comes the final stroke of the ax, severing the last slender stay, and, with a mingled roar and scream of frightened despair, the huge mast, carrying all its lofty spars and well-set rigging, slowly leans to its fate, gathers headway, spurns with giant heel the faithless stump which hitherto has borne it proudly against every gale and torrent, and so, stately to the last, "rustling, crackling, crashing, thunders down."

Picking our way through the settling dust and *debris* of crushed branches which lie in a thousand splinters of red and green around the head of the prostrate chief, we look for the stake with which Joe challenged our credulity, but failed to find it, for it has been driven "plumb through to China," as Joe avers.—*Harper's Magazine.*

Black-Walnut Furniture.

Nearly all persons are aware of the enormous prices that have been paid during the past few years for black-walnut lumber. This wood has been in demand not only for making nearly all kinds of furniture, but for inside finishing for houses. The fashion for this wood started in the United States, spread rapidly to other countries, and now it is in active demand in every portion of Europe. During several years past fortunes have been made in buying land covered by black-walnut timber or the "stumpage," cutting down the trees, and sending them to market. Some persons have realized large sums by selling trees that were standing on portions of their farms that had not been cleared. In some instances old stumps have been sold at very high prices for veneering. Parties have gone over every part of the country in search of black-walnut lumber. Thousands have regretted that they cut down trees and used them for fuel or fences, or simply destroyed them as "cumberers of the ground." They now see that they could have realized a fortune if they had not been so hasty in their proceeding. The fashion for black-walnut furniture and finishing, which became prevalent suddenly, shows no signs of abating. The demand for the wood becomes greater as the supply becomes limited. It is transported hundreds of miles on wagons and in railway cars. It is the favorite of the maker and the buyer of furniture. Most persons prefer it to mahogany, which for centuries was the fashionable wood for decorative purposes. That it contains several desirable qualities is certain, but it is equally certain that its qualities have been greatly overrated.

The prices of black-walnut lumber is so high and the supply of it so small that the owners of land have been exhorted to engage in the culture of the trees to meet the demands of the near and distant future. Parties have figured out how much can be made by planting a given number of acres with these trees, and giving them suitable care and attention for a series of years. There is no accounting for tastes, and the origin of most fashions is obscure. Fashions come and go, and in most respects they are as unreliable as the wind. Black-walnut was first used as a cheap substitute for mahogany. It soon became its successful rival. It does not follow, however, that it will remain so. Indeed, it is very likely that mahogany may soon occupy the place it long filled, and that it will not soon be displaced. It is also likely that woods of light color will become fashionable, to the partial and complete exclusion of those that are dark. They "had their day," and perhaps may have it again. It is likely that at no very distant period improvements in "stuffing" porous woods may result in making much material valuable that is now regarded as entirely useless in the arts.—*American Lumberman.*

Important to Architects.

A question is asked in *La Semaine des Constructeurs* which is not unfrequently heard in this country, and the French opinion on the subject is of interest to all architects. It seems that a proprietor invited estimates from a number of contractors for the execution of a monument, after plans and specifications prepared by his architect. The work was not carried out; and one of the contractors sent to the proprietor a demand for payment for his trouble in making the estimate. The correspondent inquires whether he is entitled to receive such payment. To this the editor of *La Semiane* replies, that the fact of the submission of plans by a proprietor to a contractor, and an inquiry as to the sum for which he will carry them into execution, does not legally imply any engagement of that proprietor with the contractor. The process is simply an ordinary consequence of the custom of competitive bidding. The contractor knows the risk, as well as the advantage, of responding to the invitation to submit an estimate, and he is free to do so or not as he chooses. If he chooses to make a tender, he can only do so intelligently by studying the plans, and this he does for the sake of making the offer, and not as a favor to the proprietor.

Another question of some importance is also answered in *La Semaine des Constructeurs.* It appears that a certain church was in process of construction or repair, under the direction of an architect, who had made proper calculations, and had taken the necessary means, for insuring the stability of the edifice after its completion. During the progress of the work certain canters, placed to support the arches temporarily, failed, and the building was injured. The point to be determined is, whether the architect or the builder should be held responsible for the accident. The reply to this is, that as a general principle the contractor is alone responsible for defects in execution, and the architect for vices in the design. The contractor is supposed to know, better than the architect, the order in which the several portions of a construction should be carried out; he is expected to understand the modes of preventing injury or failure in *unfinished* work; he is constantly present, in person or by deputy, to direct the operations in progress, and is relied upon to watch effects and supply remedies. The architect, on the contrary, so far as regards his plans, is concerned only with the finished work, and if that is designed in accordance with the laws of stable equilibrium, his duty in relation to the plans is fulfilled. If, being present at the work, he should give wrong directions, he would have at least a share of the responsibility to bear, but in his absence the contractor is certainly bound to pursue his operations in accordance with the rules of his own art. For these reasons *La Semaine* decides that the contractor alone should be held responsible for the damage caused by the insufficient centering or other temporary support which caused the fall of the arch.—*American Architect.*

Our Illustrations.

Plate 1 presents the elevation of a 6-flat house that can be built on a lot having a frontage of 38 feet. This width can be varied a little either one way or the other. The main essentials considered are neatness and economy. A rather novel design is shown in the arrangement of the front doors for the first and second stories, all opening on the same vestibule, and yet each one perfectly distinct.

Plates 2 and 3 show the arrangement of the first and second floors. It will be noticed that it is necessary to go through a bedroom in order to reach the kitchen, in the two first-story plans. Without a hall, this cannot be helped—on the width of lot shown—unless by a sacrifice of too much room. As the "flats" are designed for a small family, for the sake of economy, a little inconvenience will sometimes have to be endured. The use of the passage-way in the basement flats, mentioned below, obviates this difficulty as far as the members of the family are concerned.

The second story, as shown, is as well arranged as the space will permit, and presents unusual conveniences in this class of house.

All the rooms in each separate tenement are well supplied with closet room, light, and ventilation; in the latter two requisites they are susnperior.

The arrangement of the basement will readily suggest itself from a study of the other floors. These flats as shown can be built for $6,000 to $7,500, according to finishes used. The aggregate rental of these flats as shown will not be less than $120 per month, and for the cost offer superior inducements to capitalists. If strict economy is considered, a bath-room on each floor could be dispensed with; one window in each small bedroom could be made to answer. These flats can be built with or without a basement. In the latter case the entrance to the yards can be readily conceived. If the basement is used for flats, a passage-way four feet wide can be made directly in the center of the building. This will enable each occupant to have all supplies brought in from the rear.

Plate 4 and the two in connection with it show the elevation and plans of a neat and substantial suburban residence of 7 rooms and bath. The plans are sufficiently plain, without explanation being required. It can be built as shown, with rough basement, for $2,700 to $3,500, according to details used.

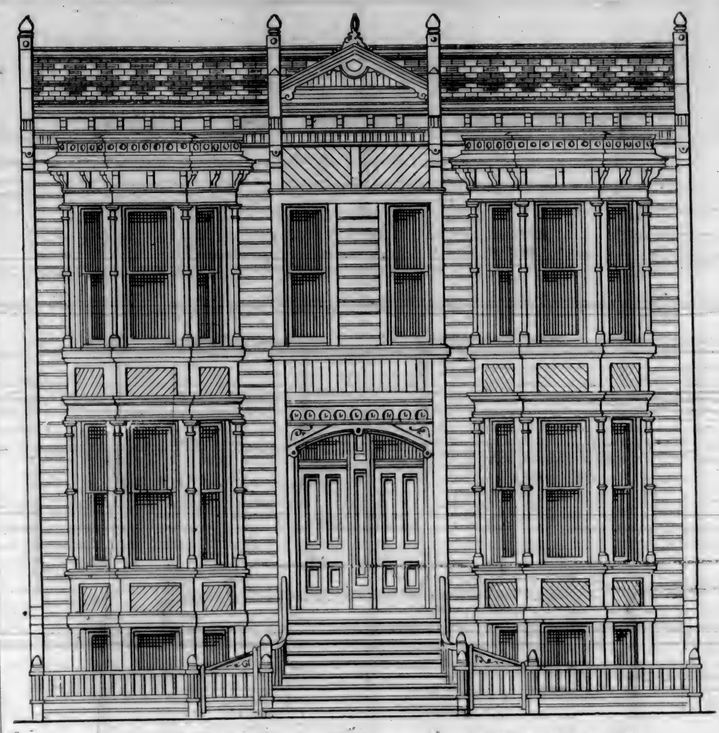


PLATE 1.—ELEVATION OF DWELLING CONTAINING SIX FLATS.
See "Our Illustrations."

Recipe for Luminous Paint.

For making luminous paint the following has been given: Take oyster shells and clean them with warm water; put them into the fire for half an hour; at the end of that time take them out and let them cool. When quite cool pound them fine, and take away any gray parts, as they are of no use. Put the powder in a crucible with alternate layers with flour or sulphur. Put on the lid and cement with sand made into a stiff paste with beer. When dry, put over the fire and bake for an hour. Wait until quite cold before opening the lid. The product ought to be white. You must separate all gray parts, as they are not luminous. Make a sifter in the following manner: Take a pot, put a piece of very fine muslin very loosely across it, tie around with a string, put the powder into the top, and rake about until only the coarse powder remains; open the pot and you will find a very small powder. Mix into it a thin paint with gum water, as two thin applications are better than one thick one. This will give paint that will remain luminous far into the night, provided it is exposed to the light during the day.

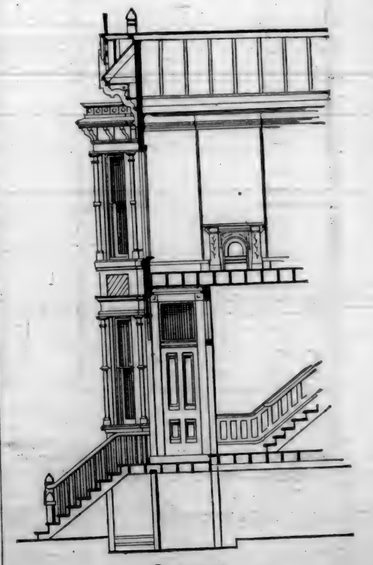
☞ Science of Carpentry Made Easy, $5.00.

Augers.

A writer says: "The first boring-tool may be assumed to be an awl of some kind. Pliny states that Dedalus invented the gimlet in 1240, B. C. It was destitute of a screw point, but it may have had a hollow pod, and a crosshead forming a handle. Awls are shown in Egyptian tombs of 1706 and 1490 B. C. The screw point was added to the gimlet in course of time, and within our own recollection, the twisted shank, which makes it self-discharging. The hint was taken from the auger proper, which may be called a magnified gimlet, now that their specific features have become closely assimilated in form and function. The auger (*terebra*) was a Greek tool.

"From the early descriptions the auger seems to have been considered a shipwright's tool. It formerly had a curved, sharpened end, and a concavity to hold the chips; this was a *pod* auger. To this a lip was subsequently added for some kinds of boring, and in course of time the depression grew into a spiral, which allows the chips to escape while the boring proceeds, instead of withdrawing the tool as the pod becomes filled. The *twisted auger* is an American invention, and was made by Lilley, of Mansfield, Conn., about the beginning of the present century, and afterward by Gurley of the same place.

"Augers may be classified as augers, annular augers, taper auger, augers with secondary bores, reamers, or countersinks, or having expansive cutters."



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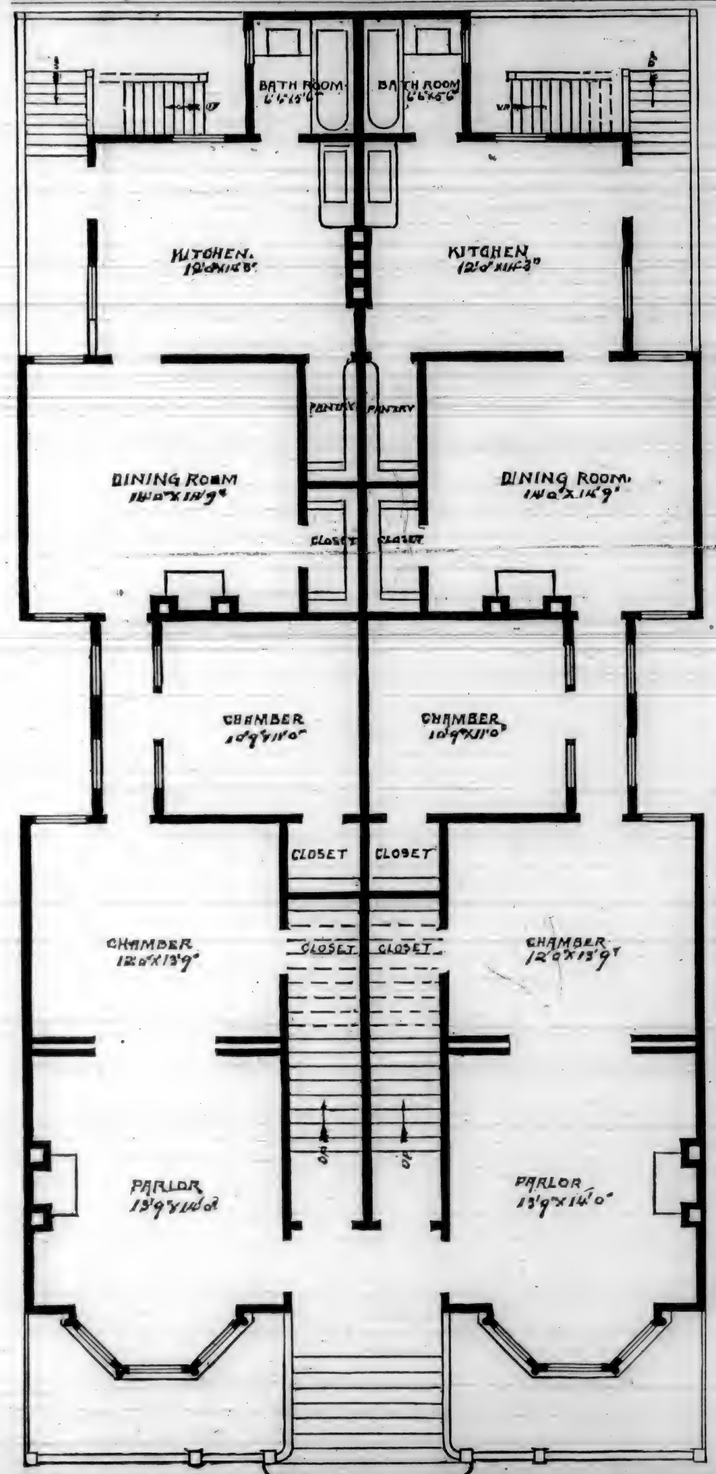


PLATE 2.—PLAN OF FIRST FLOOR 6-FLAT DWELLING. See "Our Illustrations."

Musty Smells in Untenanted Houses.

It is a cause of much wonder among those who do not study the subject, why a comparatively new house, after being in use a short time and then left vacant a few weeks, should be so impregnated with bad smells and foul atmosphere as not to be endurable for habitation until the house has been thoroughly ventilated.

A little study will lead one to soon arrive at the reason for such musty odors. The parties last inhabitating the house may have left it in perfect order according to their ideas of cleanliness; as far as outward appearance was concerned, nothing could be detected to lead any one to suppose that the *musty smell generator* would soon be in running order.

We can best illustrate the *modus operandi* of these *generators* by the following description as furnished us by the owner of the premises: "The house had only been built a little more than a year. At the expiration of that time it was to undergo a thorough change. A servant was left to sweep out and clean up generally. After a thorough (?) sweeping, the windows were washed and the almost muddy water dumped into the kitchen sink instead of being thrown into the yard hopper. The shelves in the pantry were washed, and the water also emptied in the sink. Instead of letting a bountiful supply of water run, that the trap might be thoroughly cleansed of filth, the girl simply used the cloth in brushing the water down the sink and forcing the thicker portions through the strainer.

The same thing was done up-stairs; windows and shelves washed and the dirty water dumped into the wash basin, a cloth used to wipe the basin clean, and all was right. We prefer not to put in print what took place in the bath-room. To all appearance the house looked clean. The servant went through the house, shut and locked every window and left the death-dealing *musty smell generators at work.* My advice to leave the windows open were not regarded, and as the time would not be up for several days for me to take possession of the premises to make the necessary alterations, I had no authority to leave the windows open.

Of course the gas fiend was soon at work The filth left in the traps, the dirt on the shelves, wet and but half washed, etc., soon began to putrefy; the absence completely of fresh air from the windows being closed, helped on the decaying mass, and a lively ferment took place. With such generators of musty and foul vapors, is it any wonder that in a short time the house was filled with a noxious atmosphere." We are sure, when we visited that house some days afterwards, even after sending a boy the day beforehand to open the windows all through the house, that we were met with, on opening the door, a smell that put us in mind of a certain story where a river had to be turned from its course in order to purify certain stables.

Landlords would be well paid after a tenant has left a house, to immediately give it a thorough sweeping; allow the water to run several minutes in all the sinks, basins, and water-closets; if there be a cellar, see that not a particle of vegetable matter is left around; leave a window in every room open; scatter a little chloride of lime in the cellar, and place some in a saucer in the bath-room and kitchen. It will take you but a few hours to follow these suggestions, and only a few dimes' worth of materials to carry them out. Your house, even if idle for quite a time, will be sweet and wholesome, and the little labor you have spent will be well rewarded by the praises of your new tenants upon the nice clean house they have secured.

It is estimated that there are about 6,000,000 feet of lumber used in the manufacture of toys in the United States yearly.

Interesting Information About Saws.

On few points connected with wood conversion is there more difference of opinion than the question of speeds. Commencing first with circular saws for ripping, for sawing soft and medium woods, a speed of 9,000 feet traverse per minute at the points of the teeth may be taken as a standard speed; if hard wood has to be sawn, this should be reduced to about 7,500 feet per minute, and with very hard wood 6,000 feet per minute will be found sufficient. The shape, number, pitch, and set of the saw teeth being modified to suit the nature of the wood.

In one experiment I put a circular saw, 30 inch diameter and 12 gauge, on a spindle and gradually increased the speed to between 12,000 feet and 13,000 feet per minute, when it became wavy and pliant and ran out of truth. It therefore follows that, not only is the extra speed entirely unnecessary, but it is positively detrimental, as more power is consumed, more heat engendered in the bearings, spindle, and saw-plate; extra lubrication is therefore required, and the belts deteriorate more rapidly. I should, however, prefer to err on the side of high speeds instead of low, as this necessitates perfect workmanship and finish not always found in these days of so-called "cheap" machinery.

The speed of circular saws for cross-cutting can be increased with advantage 1,000 feet beyond those used for ripping, say to 10,000 feet per minute. The difference in the cutting action of the two kinds of saw teeth will readily account for the necessity of this increase in speed. In the case of a ripping saw the action is chiefly a splitting one, the saw teeth acting like a series of small wedges, driven into and separating the longitudinal fibers of the wood, while the cross-cutting saws the fiber of the wood has to be severed across the grain, is comparatively unyielding, and the teeth of the saw meet with much more resistance. It is found necessary to make the teeth considerably more upright and more acute or lancet-shaped in their form than for cutting with the grain. Although the subject is one of great interest, time and space forbids extended remarks, and I pass to band-saws.

Owing to improvements in the manufacture of the blades and the machines themselves, the speeds of which it is safe to run band-saws has increased considerably of late years. On machines in which the saw-wheels are of small diameter, say below 36 inches, and where the arc of contact of the saw on the wheels is necessarily more acute, the speed of the saw-blade should not much exceed 4,500 feet per minute. With saw-wheels above 39 inch diameter this speed may be safely increased up to 6,000 feet per minute; this is, however, on the supposition that the saw-blades are of good quality, and that the top saw-wheel is mounted elastically, and that the machine generally is well designed and made. The proper construction and use of saws involves many important and scientific points that are unfortunately much neglected, resulting in an enormous waste of material and power.—*Mechanical World (English.)*

Any one who will call to mind the condition of the permanent way of our railways say ten or twelve years back cannot fail to be struck with the great improvement since introduced in the matter of the quality of the sleepers laid down. The waney sleepers have almost departed, and not only are the cubical contents of the modern sleepers greatly in excess of those which they superseded, but the number of them used in a mile of track has been enormously increased.

The demand for California redwood in the East is increasing. It takes a good finish, and presents a good effect.

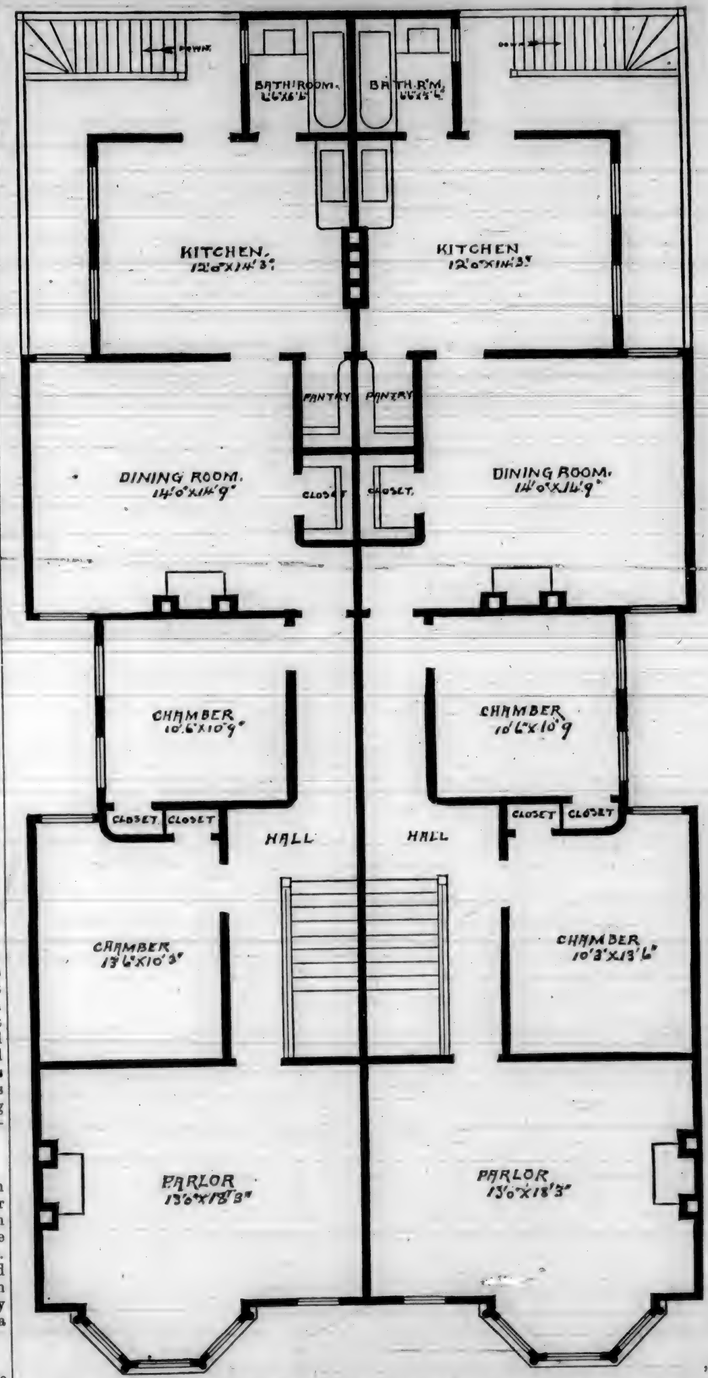


PLATE 3.—PLAN OF SECOND FLOOR, 6-FLAT DWELLING. See "Our Illustrations."

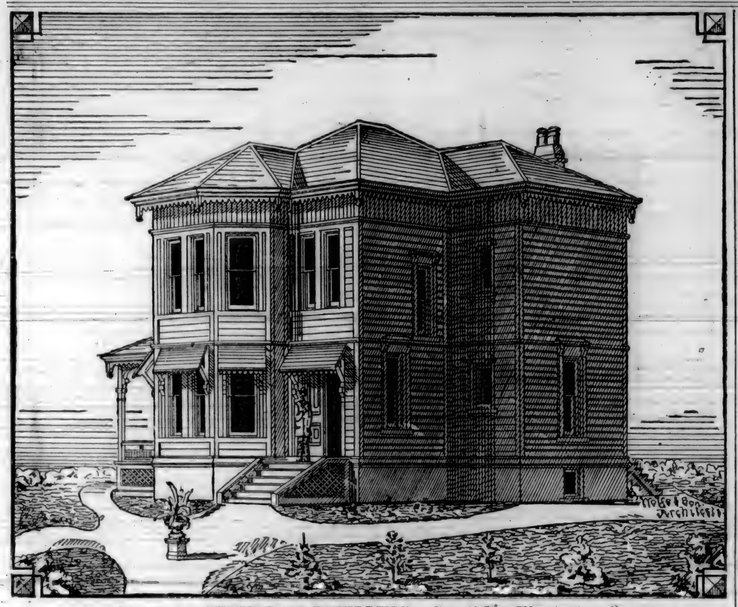


PLATE 4.—SUBURBAN DWELLING. See "Our Illustrations."

American Pyramids.

It is the generally accepted belief that the Egyptian pyramids are the only structures of the kind in the world that have any magnitude, and their existence in the Mediterranean region, that was for centuries the focus of civilization, has made them famous throughout the world. It is nevertheless true that the American continent contains at least one such monument of civilization probably as ancient as that of Egypt, and related to it ethnologically, which far surpasses the famous pyramids of that wonderful country. The great pyramid of Cholula, in Central America, is undoubtly one of the greatest constructions ever reared by human hands. Even in its present ruined condition, it is 160 feet high, 1,400 feet square at the base, and covers an area of 45 acres. The largest of the Egyptian pyramid—that of Cheops—is 461 feet high, and the length of its base 476 feet, and it covers 11 acres of ground. In comparison, some conception of the magnitude of the American structure may be formed.—*The Manufacturer and Builder.*

Miter-Boxes. $20 Competition.

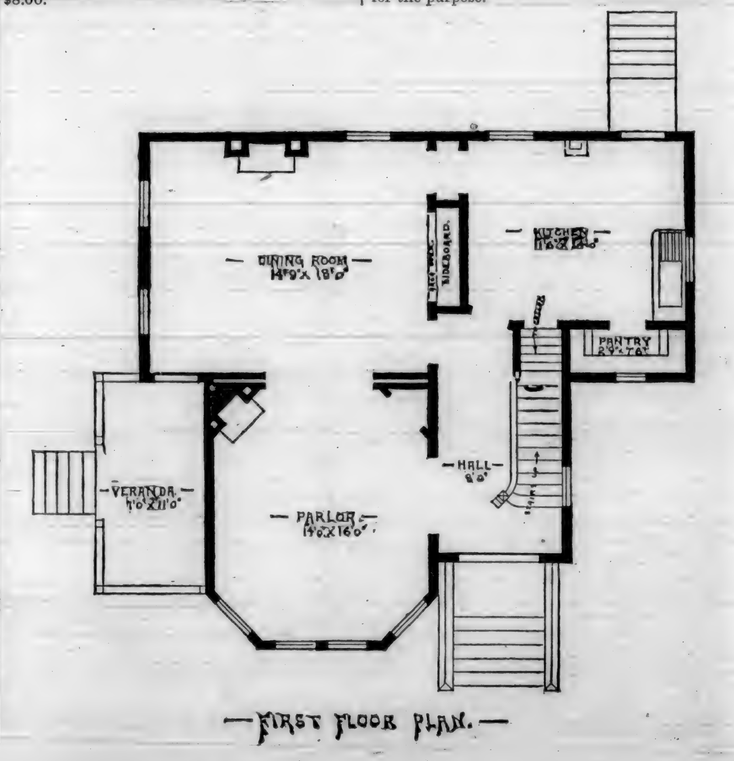
In another column we publish a communication from Mr. George E. Turner, offering $10 for the best article on miter-boxes, and the use of the square in connection therewith. We will add $10 to the above, thus making a premium of $20. His offer is limited strictly to mechanics, and is open to them in every part of the country.

We sincerely thank Mr. Turner for his generous offer; he has been in the State but a short time, and has already shown himself as one well worthy of recognition by his fellow-mechanics. We trust that in the future the mechanics on this coast will emulate Mr. T.'s example, and send us articles of practical information for publication.

That all may have a chance to gain the above premium, the offer will remain open for three months.

THE ARTIST'S ALBUM.

A large work, beautifully illustrated; will be forwarded to any address, upon receipt of price—$8.00.



—FIRST FLOOR PLAN.—

Steel Square and its Uses.

BY F. T. HODGSON.

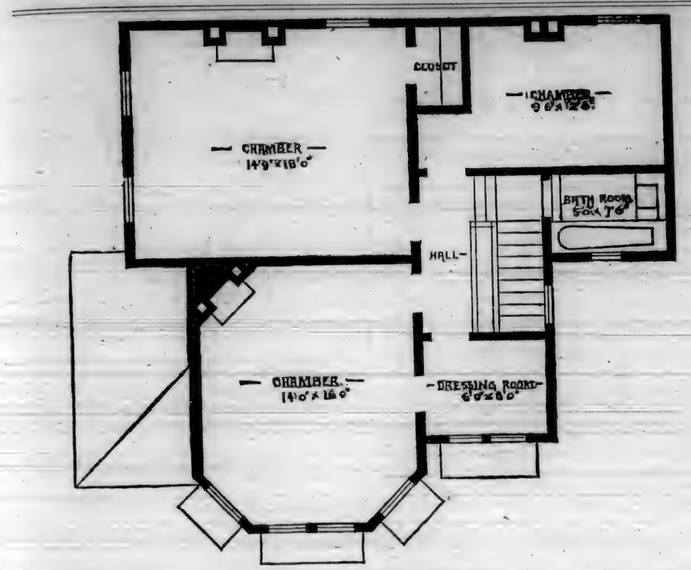
We have just received a large consignment of this valuable work by the above author. It has been enlarged, and now contains about 100 pages. Many new rules and methods are given that have not formerly appeared in print. The price is fixed at $1.00. The old edition is almost completely exhausted, and no more will be printed. We have only a few left of the smaller edition. Price 75 cents.

The author takes a just pride in desiring a copy to be in the hands of every mechanic in the United States. In order that all may possess themselves of this work we will send the CALIFORNIA ARCHITECT AND BUILDING NEWS for one year, and one copy of the enlarged edition of the STEEL SQUARE AND ITS USES, for the sum of $2.50.

The Value of Trees.

The Aztecs, before the conquest of Mexico by the Spaniards, recognized the value of trees to a country for the maintenance of moisture and the promotion of irrigation. Prescott, in his history, tells us that their law contained seven penalties against the destruction of the woods, which they deemed necessary to secure the means of maintaining irrigating canals.

An important alteration has been effected in respect to the selection of figured woods for pianoforte making. Italian walnut, once so universally used, has been to a great extent superseded by rosewood, and many other woods are now employed which were never before used for the purpose.



—SECOND FLOOR PLAN.—

American Architecture and Plumbing Seen Through English Eyes.

American architecture and plumbing were highly praised at a recent meeting of the Royal Institute of British Architects. The author of the paper, A. J. Gale, arrived in the country early last summer, and spent some time in the study of representative buildings in the principal cities. Mr. Gale came prepared to find American work much inferior to English; it is evident from his paper that he returned to England with a different impression. What was, perhaps, most surprising to him was the wonderful completeness of American houses and the elaborateness of their construction. He found American clients willing to pay for any comfort that could be procured.

In this city he devoted much attention to the work of the Board of Health and the improved tenement houses. The apartment houses were also a marked feature of the city. They were enormous blocks of buildings seven or eight stories high, and since 1879–80 had been strictly regulated by the New York Board of Health, some particulars of which organization were given. All classes of apartments houses were subject to the same regulations, and were constructed on much the same plans and lines, but in some a great amount of luxury was afforded the tenants. The entrance halls opened upon elevators with cushioned seats, and running very easily, and the buildings surrounded a court-yard, covered in the best examples. The walls were of brick, and the roofs of iron covered with slates, the staircases of iron, and the floors of iron bedded in concrete, and laid with two thicknesses of boords. The finishing of all woodwork was excellent, and the joinery was superb, and constructed in a great variety of woods. Some of these dwellings were erected by mutual associations, who thus preserved some power of choice of tenants, and in many cases the choice of apartments were put up to auction. During the past year the plumbing arrangements had been regulated by the Board of Health, and the rules were fairly representative of American public opinion on the matter. A curious feature was that the soil-pipe was usually of iron, coated inside and out with enamel or coal-tar pitch. The use of iron allowed the pipes to be suspended from the cellar roof. Lead was condemned as being less smooth, more liable to corrosion, and less easy of jointing. Indeed there was a general thoroughness about the use of iron pipes which was in advance of English practice.

The ventilation of buildings was, in many cases, very perfect, and he specially studied Dr. John Hall's Church (Fifth Avenue Presbyterian), New York, of which M. Carl Pfeiffer was the architect. The building measured 200 feet by 100 feet, and was 60 feet high, being seated for 2,000 persons. Two towers, each 100 feet high and 60 feet square, formed inlets and outlets for air. The incoming air was received in basement, and in cold weather passed over a set of steam pipes some 9,000 feet long suspended from the ceiling, the whole basement being thus converted into a heating chamber. The warmed air came up into the pews and could be regulated by the occupants. Twenty-four hours before the service the steam pipes were heated, and throughout the Sunday a powerful fan was rapidly rotated in the outlet tower, drawing off the vitiated and heated air. The windows were all double and the gas burners protected in glass niches. In summer time the incoming air was passed over ice. A steam pump and fire hydrant were provided to prevent accidents. Madison Square Theatre was ventilated and warmed, or covered, by somewhat similar apparatus.—*Sanitary Engineer.*

New Books Received.

From the house of John Wiley & Sons, 15 Astor Place, New York City, we have received copies of the following works:

The Materials of Engineering.

Steam Heating for Buildings.

Saw Filing by Grimshaw.

These works are new, and being *standard* publications, should be found in the library of every Engineer and Mechanic on the Coast.

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Art of Saw Filing	.75	2.25
Grimshaw on Saws	4.00	5.00
Carpenters' Pocket-Book	1.00	2.50
Foundations, Foundation Walls	1.50	3.00
Ames' Alphabets	1.50	3.00
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Sewer Gas and its Dangers	1.25	2.70
Workshop Companion	.35	2.10
Reed's Houses for Everybody	1.50	3.05
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The Artisan	5.00	6.00
Practical Geometry	5.00	6.00
Village Builder	10.00	11.00
Lumberman's Hand Book	1.50	3.00

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The Antiquity of the Grindstone.

The quaint illustration shown with this article will be scanned with interest by all our mechanical readers. It represents a mechanical tool that has come down to our day, with little alteration, from the remotest antiquity, its origin dating far back to the times when men first learned the art of working in metals, comparing, in respect to age, with that other venerable heirloom of antiquity—the potter's wheel. Our illustration represents a grindstone of the sixteenth century, and is taken from an ancient work printed by H. Schopperum, at Frankfort-on-the Main, in the year 1548; and in connection with it, it will doubtless prove interesting to add some remarks respecting the history and uses of this indispensable mechanical agent.

For the use of the illustration we are indebted to Mr. J. E. Mitchell of Philadelphia, from whose admirable pamphlet on "The Grindstone" we obtain the material for the following historical and mechanical summary:

In the whole range of mechanics, with all modern developments and enlarged capabilities, there has been applied no mechanism nor process yet able to supersede the grindstone in its peculiar office. It is the one thing in mechanic arts that improvement has not added to or invention displaced; while the pruning hook and plow are of equal antiquity, the spirit of improvement has touched both, but left the grindstone unchanged. Its utility in the early ages was great, and science has not lessened its value any by its perfection of other means for like results. It has been found in use among uncivilized people, and yet has its place with nations most advanced. Writers of fiction knew it would not conflict with the appearance of truth to ascribe it a place among barbarians. It is among the few implements of handicraft mentioned in Scripture, though there only named for milling purposes; it is the same in form and in universal use—a round revolving stone. In a scriptural research for the articles of handicraft mentioned then, we can look through the "eye of a needle" and find the grindstone beyond, its origin lost in the darkness of antiquity. It is not meant to confound the millstone of antiquity with the grindstone of to-day, which the encyclopædia mentions as "a flattish circular stone of various diameters, employed in the cutting and sharpening of edged tools, precious stones, etc., and the grinding of steel, glass, pottery, and the like. They are made of sandstone, or sandstone grit." The grindstone now has scarcely a wider capability or greater usefulness than when we first hear of it. Although limited as its qualifications may be, it serves its purpose as nothing else can. Improvement has furnished us wheels of composition, which only to some extent serve some of its purposes, but the grindstone still remains unsupplanted. It is a tool of the utmost nicety in proper hands and properly understood, and is capable of performing with speed and precision its limited agency, beyond the powers of any modern tool. It is perhaps found best handled in its purpose of grinding dies for cut nails, where its proper use constitutes an occupation not to be attained very perfectly by a short apprenticeship with it. That known as the "bead stone," used by makers of cut nails, is a tool of the utmost perfection of workmanship, not to be meddled with by the inexperienced, however lightly, without the result being noticed by the eye of the experienced nailer. The milling machine, the planer, the file, the lathe, and the emery wheel do much of the work of the grindstone, but it still performs to perfection its needful though limited purposes. The importance and nicety of it, as a means to a purpose, is only known by those who know how to prepare and keep it in order.

Its utility or importance could not be guessed at were one to look at a crooked and badly kept grindstone; but in the hands of those who know its merit, with its even surface running as true as any turned wheel, it will perform work with a rapidity and precision attainable by no other means. In the hands of those who are learned in its use and keeping, it is capable of adaptation to intricate and fine work; but with those who do not understand it, it is rude, and the very opposite of what the educated craftsman would select for any purpose of fine employment.

An heirloom of antiquity, but used among us as we received it, and without any attachment or improvement; capable of its complete functions only when well kept and well applied, and this is only found with those whose craft education is solely to handle it. It alone can cut and shape expeditiously that which is prepared to cut and shape all other hard materials—cast-steel hardened. It is still employed to give the finest edge, the most even surface, the brightest polish, and is the quickest to accomplish it. The emery wheel does but a few of its purposes, and nothing that we have could supply its place. The file has its own peculiar uses, but in contact with the grindstone its thousand small-cutting edges would be reduced to polished plainness. It is found a necessary implement on the farm, and is still required where the finest instruments are made, or the hardest of metals are worked. It has come to us as we have it, and in all likelihood will pass on down to other ages the same—a simple circular stone, swiftly revolving on an axle.

It accompanies those who "go down to the sea in great ships," and moves along the frontier with the advance of civilization. All nations use it, and it is perhaps with all the one piece of mechanism that bears the same form and is the same in principle. More or less directly it takes part in the greatest modern material enterprises; it has no doubt assisted to fashion the implements of many of the lost arts, and is still needed in many of the requirements of arts of the present day.

As ages revolve and invention gives to the world new devises, may it be found more the agent in forming the plowshare and pruning hook than in sharpening the sword.—*The Manufacturer and Builder.*

Prof. Moos, of Heidelberg, has found good reasons for believing that many railway accidents have been due to defective hearing on the part of engineers, or others in charge of trains. Expert medical testimony shows that railway employees are especially liable to affections of the ear.

☞ **Subscription price of this journal is $2.00 in advance.**

Paper Rails.

Wooden rails are used on some tramways, but the latest device is the formation of wood into paper for rails to take the place of steel or iron. It will be hard for the skeptical reader to swallow all that is said about this new enterprise, of which the following is a summary:

It is well known that one of the best materials for car-wheels is paper. It is now stated that paper can be utilized for the manufacture of rails, in place of steel, which has almost displaced iron. It is said in favor of the new materials that the cost per mile will be less by one-third than that of steel, and it will last much longer, being almost indestructible. There is no expansion or contraction from heat and cold, consequently no loose or open joints; and, being so much lighter than steel or iron, the rails can be made longer and connections perfectly solid, making the road as smooth as one continuous rail. The adhesion of the drivers of the engine to this material will be greater than that of steel, consequently the same weight engine will haul a larger load. There will be a great saving of fuel, and the smoothness of the rail will lessen the wear and tear of rolling stock. The rails are made wholly and entirely of paper, and so solid that the sharpest spike cannot be driven into them. The action of the atmosphere has no effect on it, will neither rust nor rot, and, with paper wheels and rails of the same material, our palatial trains will glide over the prairies at the rate of 60 miles an hour with as little jolt and jar as on an ocean steamer.

The above is a sanguine view of the virtues of paper rails, but it is a tall story. The accomplishment is, to say the least, a trifle doubtful. In the first place, there is literally no such thing as a paper car-wheel; the office of paper is merely to furnish filling, the plates and bands being of iron. If the friction and pressure were applied to paper direct, it could never stand a fraction of the grief to be encountered. It is hardly more probable that a paper rail could do any more. If it is an iron or steel rail on the half shell, stuffed with *papier mache*, it may be different, but a chunk of paper that will turn the point of a spike must be in somebody's mind.—*Northwestern Lumberman.*

The *Journal of Decorative Art*, in discussing the evils of sewer gas, calls the attention of householders to the fact that it is easy to discover its presence by utilizing the fact that it acts upon the white lead paint in such a manner as to dissolve it; and remarks that the test can be rendered complete and effective, if a portion of the woodwork were painted with silicate paint the same shade; because, resisting as it does the action of the gas, it would serve to emphasize more strongly any discoloration that might take place. As an experiment we would suggest disks being made and painted pure white with white lead paint, and across the center a band of white, of silicate or "Charlton White" painted on them. These hung up in the bathroom, w. c., or cellars, or in such places as are suspected of being inlets for sewer gas, would soon discover if there was any such gas present, and disclose the danger at once.

Wall paper should not, in the opinion of Dr. Baker, who read a paper on the subject at the recent gathering of scientists at Montreal, be manufactured in a manner to be air tight. He says that, hygienically considered, the walls of a house should be porous like our clothing, having free intercourse with the open air. He thinks that waterproof paper causes increased dampness of the walls, as a stoppage of a circulation of air prevents their drying. This prolonged dampness of the walls he considers unhealthy, and productive of other evils. Dr. Baker advocates the old-fashioned white-washed walls instead of wall paper or their substitutes. —*American Artisan.*

Practical Mechanics.

THE SAW BENCH.

No repair shop can be complete without a saw bench, one that can be used for cutting up and splitting, rabbeting, and grooving, and with the aid of a few *traps*, be made to rough out and bring into shape almost any kind of a job in this department. I wish to write just a word about what can be done with just the saw alone, leaving the *traps* for some other time. I prefer, for my use, a saw bench made of hard wood, with the table projecting over the framework, to enable me to clamp on any arrangement I please, and by means of a screw to raise and lower the front end. This bench can be made, by almost any workman, in two days, and you will have no cast-iron table or framework to keep you from driving nails or screws, or making holes and slots, for whatever purpose you choose. The belting, too, should be from beneath. If we must belt from overhead, use a counter shaft, set so as to give the use of the table in every direction. The form or outline of the slot or groove made by the saw not only depends on its size and the position it occupies on the saw arbor, but on the direction the material being worked is also moving. If we take a block of wood and move it across the bench lengthwise, the saw will simply cut a slot in width equal to the *set*, and the depth depending on the height of the table. If we drive the block at right angles, or square across the table, a groove will be formed having a cross section in the shape of a segment of a circle. Any other direction will give us a similar part of an ellipse.

Fig. 2.

In Fig. 2 is seen a variety of work cut out on this principle. No. 1 is a block to be fitted up for lagging to a pulley. It is hollowed out by passing over the saw No. 7; it is then beveled, grooved, and the corners trimmed, and is all ready for the pulley, like either No. 2 or No. 3. The sections 5 and 6 simply show what may be done on the same saw. Nos. 8 and 9 are small, half-round, hollow blocks, which are used in many places in cotton mills, and can be finished entirely on the saw bench by taking three or four in one length at a time. Blocks like No. 10 are often required, and I have seen a workman work for days on them by hand, give it up, and then try the same job over again on the saw bench, roughing them out and fitting them up in a few hours with pleasing accuracy. When it is required to cut a circular groove of a given size at a saw bench, the table can be raised and the saw gauge set to the proper angle

Fig. 3.

by means of the diagram shown in Fig. 3. If it is required to groove out the block A to the line C A D, on the saw bench, using a twelve-inch saw, first draw the circle E M O, twelve inches in diameter, the same as the saw, then lay off on the radius E K, E F, equal to A B, and draw the line at right angles for the surface of the table. With F for a center, draw the circle T H V, equal in diameter to C D. Now the line passing through M, and touching the circle at T, will make the required angle with the line M I. From the point M, lay off at right angles to S M, M L, equal to D N; set the saw gauge at this point, with the angle already found, and the saw bench is ready for the work. The teeth of the saw, for this purpose, should be very coarse, and filed so as to cut the whole length of their sides as well as their points. If three or more of the teeth could be made shorter than the rest, and at the same time be given more set, it would improve its working qualities greatly. When the saw is fastened to the arbor by means of two wedge-shaped collars, we shall have what is called a "wobble" saw. This will cut a groove having parallel sides, but the bottom will be concave in

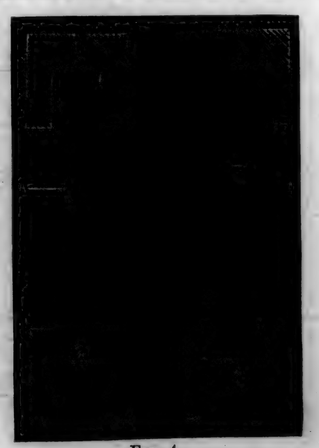


Fig. 4.

sections, as shown by No. 1, Fig. 4. This can be made to give us a groove having its sides straight, by simply jointing the saw, while in motion, with a file and a piece of emery. The work finished in this manner is shown by No. 2. By setting the saw off from the center, one corner of the groove will be deeper than the other, but the sides will still be parallel, and if the work be inclined, a dove-tail groove is produced, after passing over the saw the second time, end for end, as shown by No. 3. H R K G is the point taken by the saw in the first place, and H R I in the second. In this manner work can be easily fitted, like that shown in section by No. 4.

To enable us to use saws of all sizes, and cutters of every description, the saw bench should have a piece inlaid in the table where the saw comes through, and several pieces all fitted and ready whenever they are wanted. Fig. 5 shows just what I mean. In filing a saw for splitting, or sometimes called slitting purposes, I file the teeth as square across as possible, without taking it from the saw arbor, by standing at the front end of the bench. After setting the points a little, just slick up the corners with an oil stone, by resting it on the face of the saw, near the roots of the teeth, and bring the side in contact with the points; in this way the saw can be made to cut nice and smooth, and keep up to its work in all kinds of lumber. It is a good plan to have a good assortment of saws on hand—yes, all we can find. Old ones are just as good as new for many purposes, and if they here and need straightening, why straighten them. There is no one but can tell us how to do it, and if we never try we shall never learn.—Frank Clark, *in Cotton, Wool and Iron* (Boston).

Lumber in Mexico.—A New Departure.

The valuable timber resources of Mexico bid fair to see a merited development under the encouragement offered by the government. "Hitherto," says the Mexican Financier, "these have been almost entirely neglected, and Mexico has suffered the anomaly of drawing large supplies of lumber from American markets. Freights at sea and the cost of inland transportation have, of course, so increased the price of this lumber as to have prohibited its general use in the country. Experience has taught Mexico the importance of developing her own great resources of lumber supply. Hence, there is already an active movement to secure the rich timber lands of the Republic, either by government grants or by private purchase. In Sonora, Chihauhau, Conhuila, Durango, Sinama, Michoucan, Jalisco, Mexico, Hidalgo, and Vera Cruz there are vast quantities of fine wooda largely consumed in American markets, and the coast districts are covered with virgin forests of cedar, ebony, mahogany, and other rich woods, while in all the greater altitudes hickory and hard cedar, and pine, and larch, and oak, and sycamore and walnut flourish to perfection. The rapid advance of railroads is making these supplies more available, and for the encouragement of this industry the various State governments, as well as the general government, are offering liberal concessions to all who will utilize and further develop these great lumber resources of the land."

When it is not convenient to take locks apart in the event of keys being lost, stolen, or missing, and it is desired to fit a new key, take a lighted match or candle and smoke the new key in the flame, introduce it carefully into the keyhole, press it firmly against the opposing wards of the lock, withdraw it, and the indentations in the smoked part of the key will show exactly where to file.

A paper read before the San Francisco Chapter American Institute of Architects, on Friday evening, March 2, 1883, by P. H. Jackson, Esq.

Condemning the Use of Long Girders in one piece extending over two openings.

The subject of my remarks will be on a long cast-iron box girder, or lintel, extending over a length of two openings of Senator Fair's old building on Pine street, which, on uncovering, was found to be broken. Also on the general insecurity of long girders in buildings, when extending over two openings, be the material cast-iron, wrought-iron, or wood; and their further use should be discontinued when so applied. This girder, with another of the same dimensions, had been in the building for several years, supporting the wall on them; and the length of time it had been broken is not known, as its condition was only revealed on being uncovered. (Fig. 1.) It was 17 inches on the

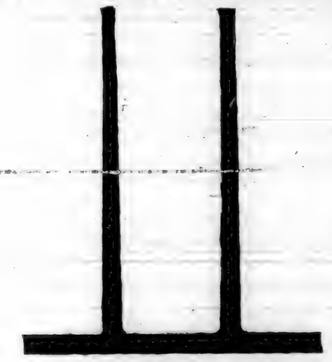


FIG 1.

bottom, by 1½ inches thick, making an area of 25½ inches, had two sides or flanges, as shown in diagram, each 19 inches up from bottom, the two top edges, each ¾ inch thick. See Fig. 1, page 49.

While the sectional area of the bottom flange subject to extension was 25½ inches, the area of the two top flanges subject to compression 1 inch down, equaled but 1½ inches ($2 \times \frac{3}{4} \times 1 = 1\frac{1}{2}$ inches), therefore the area of the bottom to that of the top was as 17 is to 1; while they should be so proportioned as to be duly balanced in resisting areas, when about to undergo rupture, in the ratio of 6⅛ to 1. For this reason, the top of the vertical rib should have had a compressive resistance in metal to meet that of the bottom of about 4 inches, in place of 1½ inches. Also, the resistance for the long length of girder on the top was insufficient to prevent lateral deflection. Therefore the metal in the bottom flange was in excess of the proportion named, and was so much waste of material, as the strength

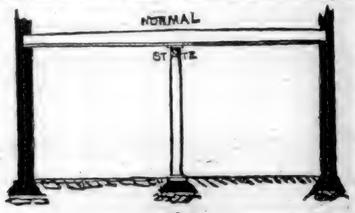


FIG. 2.

of any structure is that of its weakest part. I prefer that the top part in a cast-iron girder, subject to compression when employed for long lengths, should have even a greater amount of metal than usual, and be in the proportion of 1 to 5 instead of 1 to 6⅛. This girder was 34 feet long, and its end supports were the brick side walls—which extended upward. (Fig. 2.) The distance between these end supports was 32 feet 3 inches, and it had as an intermediate support a 14-inch-diameter round iron column.

I would give an approximate breaking weight of this girder, but its proportions are such, and the manner in which it was supported, renders it impossible by any formula. The unbroken girder, when released of its load, as Mr. Eisen, the architect of the Mission Street building where the uninjured girder and other iron work was afterward used informed me, raised off of the iron column one inch, evidencing that the the iron column had sunk that much more than the brick piers or walls on which the ends rested. Upon the hypothesis that this broken girder was similarly situated as the uninjured one, that is, that the column settled more than the brick wall on which the ends rested (which is just as likely not to be so), what were the strains and forces exerted? This will go to show the condition of all girders, when employed, be they wood, cast, or wrought iron, when made in long lengths in one piece, covering two spans, that is, having an intermediate support midway the ends.

The load on the girder caused its deflection, and the column foundation settled, as there can be no diminution in the length of the iron column, which is not the case with the end brick supports. (Fig. 3.) The strength of the girder to resist the load upon it was over its whole length, that is, the distance between the end supports with the assistance of the iron column, whatever that may have been in its resisting settlement.

When this girder broke, the old wall on it being in bond and solid as one piece of stone, most likely rested at points midway between the ends, and not following down the total deflection of the girder, thereby so relieving the load on the girder by its peculiar position, that it was not half as trying to it as it was before the girder broke; also it broke about over the column, and

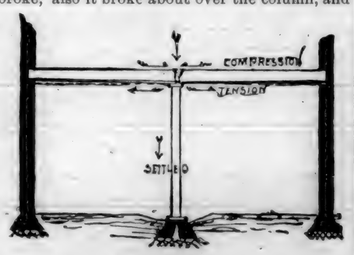


FIG. 3.

rested on it. Thereby making the girder in its broken state better able to sustain the load than before rupture took place. In my annual report to the Superintendent of buildings in New York city, on the 2nd of January, 1872, mention is made of a similar case. I will give the words of the report as follows: On the 24th of November preceding, my attention was directed to two buildings on First Avenue, between 40th and 41st streets, which had iron lintels supporting the brick front above them. These lintels were each in one piece, extending the entire width of the building, but intermediate supports were placed beneath, making the largest openings just under the length for the test as required by law. These were placed in the building previous to my connection with the department. Both of these lintels broke, one near the middle, and the other on one side, and in both the openings having the greatest span. On investigation it was found by their great length, and the unequal distribution of metal, they did not bear properly on the intermediate supports, but curved upward nearly one inch.

This is a similar case to the one in hand. In each case, when relieved of the load, taking the uninjured one as an example for the broken one, it raised up one inch from the top of the column. In the New York case, I remember well that the iron lintels were curved up in the casting, caused by the unequal distribution of the metal. The speculator who was erecting the buildings, finding they curved upward, filled in the inch space between the lintel and the head of the support with slate and cement, and when the load came on it, the lintel crushed them out; as we do not

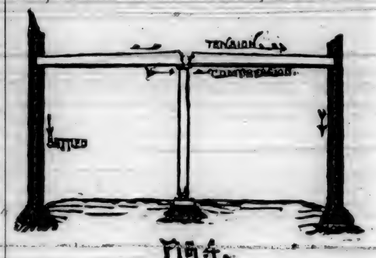


FIG. 4.

have such shoddy contractors in California such could not have been the case here. (Fig. 4.)

Suppose we take that the column remained firm, free from settlement, but the green mortar or cement of the brick piers or wall that supported the ends of the girder pressed out between the bricks, which is invariably the case in every green wall in the lower part when heavily loaded with the work above, and supporting the ends of the girders, and that the foundations for the walls settled. I measured a brick wall as it was being laid up on California street, and when it got to a height of about 17 feet, I made a level pencil line on it and on a board fence at its side, and after the wall was finished in its height, I found that the line on the green wall was ⅜ of an inch below that on the fence. The settlement of the green brick-work supporting the ends of the girder would reverse the forces and strains on the girder to that of previous mention. That is, the column, being the highest in the center, would be the fulcrum, and the girder the lever, and with not only the load on top of the girder, but we have the weight of the brick walls on each end above the girder support to break it. It is reversing the intention of the original supporting ends, they become loads instead of supports; consequently the point of fracture would be at the fulcrum column, and the girder would accommodate itself to the situation if it should break directly in the middle, as it should have been originally made.

The top of this girder, in this case presenting but an area of 1½ inches, would have to resist tension, and the bottom resist compression—just the reverse of what the girder was intended to do. The resistance to tension of cast-iron is usually computed at but 15,000 pounds to the square inch, and 1½ inches area, the part presented to resist this force, would equal but 22,500 pounds. So this practice of making long girders spanning two openings, which has been so much in vogue in San Francisco, should be discontinued. The advantage gained by the neutralizing of forces on each side of the central support is but small compensation to meet the danger in the practice. Architects have remarked to me that these double spanned girders are more to be relied on in case of earthquake oscillations or upheavals. The same reasons apply in settling of the end walls,

or the settling of the intermediate support, or the raising of either of them in an earthquake disturbance, as in the case of the broken girder. The using of cast-iron girders of long span to support heavy loads, when tensilely employed, should be condemned.

I will here quote from one of Professor Fairburn's works on the use of cast-iron beams and girders, in a case where the beams in a cotton factory broke in Oldham, England, in 1844—in which there were upwards of 20 persons buried in the ruins.

Nothwithstanding the increased security that has been gained in the form of cast-iron beams and girders, their use is nevertheless attended with danger, when either the design or construction is left to ignorant persons, and the numerous and fatal accidents which have occurred at various times, which have very naturally created in the public mind serious apprehensions of their security, and which have very naturally been traced to this cause.

In order to insure safety and attain success in their making, the following qualifications are necessary:

First, a knowledge of the properties and application of the material, when subject to three distinct strains, namely, torsion, compression, and tension, or separation or tearing the parts asunder.

Secondly, an exact knowledge of the proportion of the parts of a beam or girder so as to have the forces of extension and compression balanced when about to undergo rupture from transverse strain.

Thirdly, a knowledge of the laws which gives the expansion and contraction of metals, in order to insure sound castings and an equal degree of tension during the process of casting.

Many hold the impression because a girder beam or column, or any other support in a building or other structure, fills its *present* mission in sustaining function, it is safe for the future. We have in this case as an evidence what time does; but I do not refer to the application in this case particularly, as this was subject to vicissitudes in the manner in which it was held; but I refer to its general capacity to maintain the load for all time when employed beyond the measure of its elastic force. This distinctive point is, that the safe load should not exceed ½ of the breaking load. The strain just sufficient to balance the elasticity of common wrought-iron is computed to be 25 gross tons, or 56,000 pounds, while the measure of the elastic force of the material is computed to be 10 gross tons. Therefore, the ratio of the elastic force of the material is as 1 is to 2½, but this point of strain does not maintain recuperation when relieved of the load. With the human body, when the muscles are strained beyond the point of their elasticity, it is disabled for further use, until Dame Nature, in the fertility of her goodness, resuscitates through rest and care the disabled part in further renewed muscular development. So with us in our mechanical constructions: do not be blind that from present appearances of strength in our constructions it is indicative that it will remain so in the future, as all materials have standards of strength and possess elasticity to a greater or less degree.

I would like, before concluding, to refer to an impression that some have: if a girder is made of wrought-iron, it is much safer than made of other materials; this is not so: all materials used for supports have certain sustaining powers, and keep within the scope when employed of their elastic forces compressively and tensively under all circumstances; and all materials not subject to decay or deterioration, from excesses of temperature, will fulfill their functions, even be it of glass. A wrought-iron girder, loaded beyond the measure of its elastic force, is just as unsafe as if of other material, as there is an insidious distruction awaiting time for its complete ruin. In this I referred to the tensile resistance of common wrought-iron at 25 tons, or 56,000 pounds. In my printed article on the utilization of forces, or using cast-iron compressively, I mention the tensile limit of average wrought-iron at 60,000 pounds. It is a mistake which I desire to correct, as the rate of 60,000 pounds means refined iron—superior to the ordinary common iron—the difference being but slight in the two estimates, but I desired the correction made in the discrepancy.

Rights of Gas Companies.

A rather important case has been decided in Chicago, which concerns architects and builders perhaps as much as the parties directly involved. It seems that some years ago a house stood on a certain lot in that city, supplied with gas from a service-pipe from the main in the street. The house was pulled down, to make room for the erection of another on the same site, and the old service-pipe was capped, and left projecting slightly through the wall, another service-pipe being put in to supply the new house. By the arrangement of the new house a coal-bin was planned at the point were the old service-pipe came through the wall, and while the bin was being filled not long ago, a lump of coal struck the stump of the pipe and broke it off, allowing a great quantity of gas to escape into the cellar, where it exploded, severely injuring the mistress of the house, who brought an action for damages against the gas company. The company defended itself on the ground that all service-pipes belonged to its customers, instead of itself, and that its customers were alone accountable for injury to their property. This was the real point of the trial, the question as to the actual author of the injury not being called up at all. The suit was brought for fifty thousand dollars, as damages, and the jury awarded nine thousand, being apparently satisfied that the responsibility for the service-pipes lay in the company. It is so common to see, particularly in city buildings, the ends of abandoned gas and water pipes projecting through the cellar-walls, where they are liable to be broken at any time by settlements or accident, that the question of responsibility for their care, and for damage which may result from any injury to them, is a matter of considerable importance.—*American Architect.*

Builders' and Manufacturers' Mutual Aid Association.

We would call particular attention to the advertisement of this association in this issue. Although this association is young, it presents the same advantages possessed by its older competitors, without disadvantage to either. The objects of this association are to bring about a better acquaintance among the members of the building, manufacturing, and other trades, and the maintenance of such plans as shall tend to the mutual benefit and protection of its several members or their families; its prominent object is to pay a fund to the family or other legal representatives of its deceased members. This is done by an assessment upon each incoming member of two dollars per one thousand dollars, full benefit, and the same sum at each subsequent death, which provides a fund in the treasury which, upon satisfactory proof of death, will be paid to the legal representatives of the deceased member.

Full particulars in regard to any matters connected with this association will be given by the agent, whose office can be found (as per advertisement) at Room 11, 240 Montgomery St.

SCIENCE OF CARPENTRY MADE EASY

We will send the above work in connection with the California Architect and Building News for one year, upon receipt of $5.50.

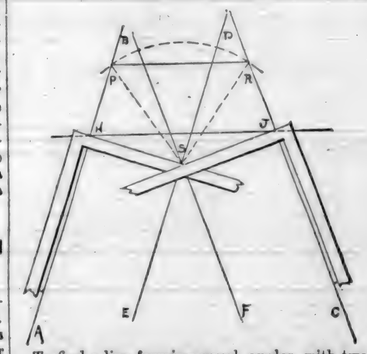
WHEELING, W. Va., February 17th, 1883.

To the Editor:

In using the word "stumpage," in referring to prices paid for timber lands, do you mean so much per thousand feet for the lumber taken off? or what is the true meaning, as understood by lumbermen? Please explain and oblige,

TWO DISPUTANTS.

The word "stumpage" is used by lumbermen to indicate standing timber. In quoting a sale of timber lands, at say "$2 per thousand stumpage," the meaning intended to be conveyed is that the purchaser pays that much upon an agreed estimate of the amount of timber standing upon the tract, the land being included in the transaction. If the actual cutting overruns the estimate, as is usually the case, the buyer is, of course, the gainer to that extent. The term stumpage may also be applied to a sale of standing timber, where the land is not included, in which it would mean the actual amount of timber cut off, log scale. The word is laid down in the latest edition of Webster as a Maine localism.—*Northwestern Lumberman.*



To find a line forming equal angles with two converging lines, A B and C D: draw E D and B F parallel, and equally distant from A B and C D, intersecting each other at the point S; from the point S as center, describe an arc, cutting the converging lines at the points P and R, which joined gives the line required.

The same can be found by the use of the square. Place, as shown, the square on the lines A B and C D; mark from the point of intersection S, cutting the lines A B and C D at the points H and J, which joined gives the line required.

L. D. GOULD.

British architects appear to concede that plumbing and other sanitary arrangements of American houses are far better than those of the English.

Practical Draughting.

The lessons in draughting given in this work are written in such a way that they will be understood by apprentices and workmen. They embrace a series of practical instructions for machinists, mechanics, apprentices, and students at engineering establishments and technical institutes. Price, $1.00.

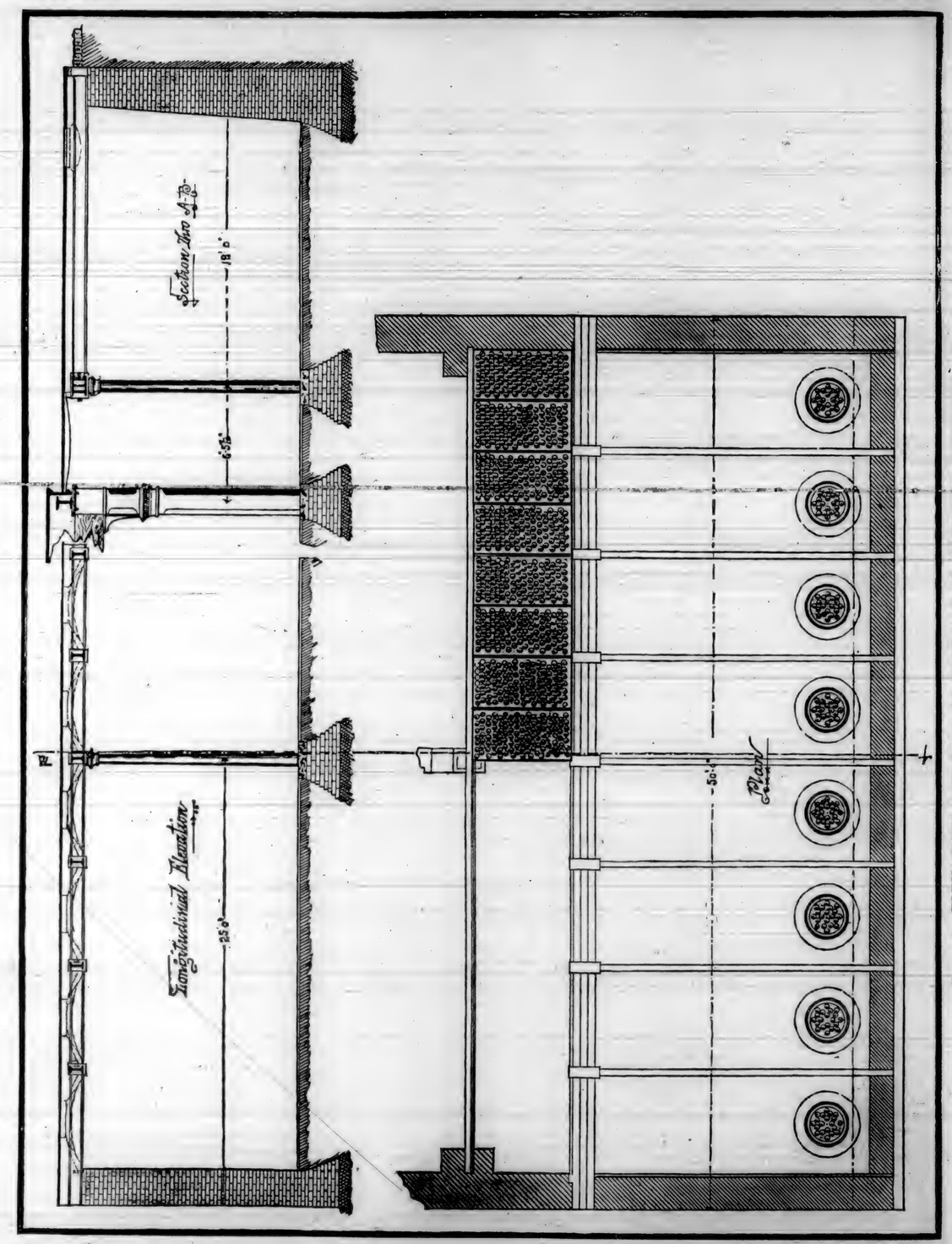


PLATE 1.—ELEVATIONS AND PLAN OF SIDEWALK OF BASEMENT EXTENSION. (See Page 50.)

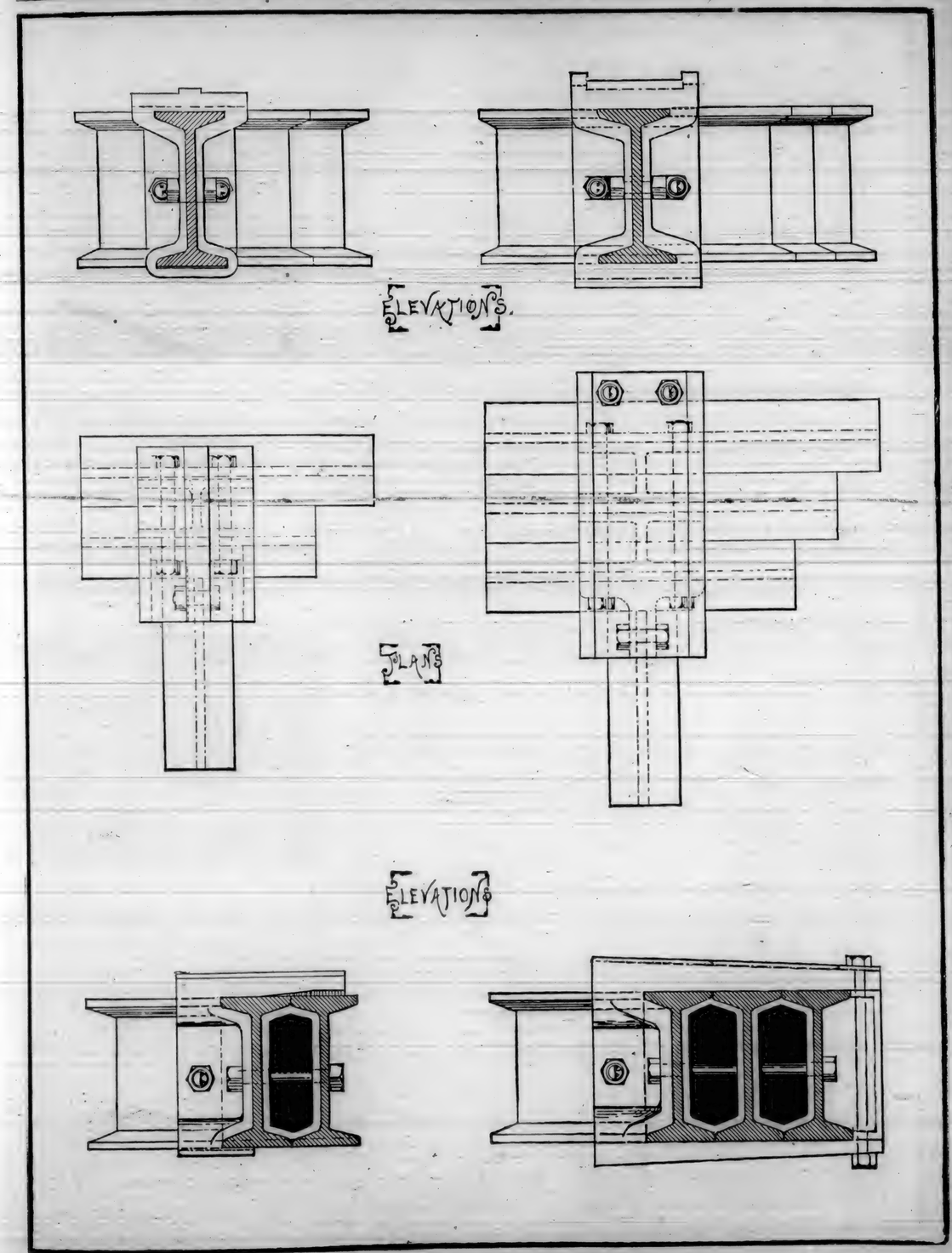


PLATE 2.—CONSTRUCTION OF GIRDERS. (See Page 50.)

Improved Building Construction.

BY THE ABSENCE OF THE USUAL ENCUMBERING PIERS AND COLUMNS IN THE BASEMENT AND FIRST STORY, AND A BETTER MEANS FOR LIGHTING TOWARDS THE REAR FROM THE FRONT OF THOSE APARTMENTS.

Plate 1, page 48, shows the longitudinal and sectional elevation of basement extension, also plan of sidewalk, beams, girders, and illuminating tile of Mr. Somer's new building, Nos. 741 to 745 Market Street, opposite Dupont Street, just finished, and occupied by F. S. Chadbourne, & Co. furniture dealers. W. P. Moore, Esq., architect.

Plate 2, page 49, shows the construction of the girders with vault-beam attached with three beams forming the girder for long lengths, and two beams forming girder for short lengths. The building extends back to the next street, is fifty feet front, and five stories in height including basement, which latter extends out under the sidewalk over twenty feet from the face of the building, making the basement and basement extension a continuous room without the usual obstructing piers and columns in basement and first story. The front has but a single central support of great strength in each basement and first story, with large show windows on the main floor, and the means for transmitting light received from the front to the rear of basement and first story of these deep buildings is a great desideratum, particularly for large retail stores. Besides, the cost is no greater, if as much, as in the usual obstructive construction which takes up valuable room, and divides the basement from the basement extension under the sidewalk. The only obstruction in this large basement room, which is the entire width of the building, is but a 11-inch face by 17-inch deep iron post, which supports one of like size above on the main floor, which in turn supports one end of each of two Franklin girders on a line of second story, each 25 feet long, spanning the 50 feet front. There is also in basement a thick 7-inch round iron column shown, that supports the ends of the two novel-constructed girders, each composed of three 10½-inch rolled wrought-iron beams, 25 feet long, making 50 feet for length of girder, with but one 7-inch diameter support. The iron cap-plate of this 7-inch column fits in the head of the column on the under-side, and on the top has two flanges on the outside, which project up on the outside of the girders, and hold them in place. In basement, the iron girder was not used, the inside ends of the vault beams would have to rest as usual on the ordinary brick piers, and would render the obstruction mentioned. In places of this kind, iron girders have been used composed of either one deep beam with several supporting columns close together, and in other places two beams form the girder, with cast-iron diaphragms between and bolted together, and with the vault-beams, resting on one side of the outside beam nearest the curb, and secured to it by wrought knee pieces; but in such a case the inside beam of girder cannot be employed to more than one-half its capacity to resist the load that rests on the side of the outside one, and transmitted indirectly by the inside diaphragm and bolts.

The strain upon both is sideways; and indirectly so, with the one away from the end of the abutting vault-beam, whose inclination is is to turn over toward the curb. The end of the vault-beam end at its bottom rests on an inclined plane, the lower flange of that part of the girder, hence the tendency of it is to slip off out toward the street, being held insecurely by the knees to the girder, the inclination is to turn over that way, hence, any calculation made as to the resistance of the two beams forming the girder to sustain the load on the side, by the formula which is computed as being loaded on the top, unless a large deduction was made for safety, would be deficient in proper result. The reason why these girders have sustained the loads is because the sidewalks have not as yet been loaded to what it is usually computed they should be. With the girder composed of three 10½-inch rolled beams, as shown and used in Mr. Somer's building, which construction is the, and not their, invention and held by P. H. Jackson & Co., Nos. 2 California and 231 First Streets, this city. The load of the end of the vault-beams on the outside is precisely as if they laid on top of the three beams composing the girder, and their weight diffused over the top, as the formula compute they should be.

The wide tongue which extends over the top of the three beams is as if integral of the vault-beam, and may be considered as a solid part of it as if rolled with the other part of the beam; or in other words, as if the vault-beam was cut away in every part but the top flange, and that extended over the top of the three beams forming the girder, and made stronger in that part to resist the load than in any other, by which means the girder is properly loaded in the manner calculated by our formulæ for beams, and not on the side, as in that of the single-beam girder, with the inclined slip off vault-beam, or the two beams tending to a circuit. The description is as follows: There are two cast-iron diaphragms which fill up the space between the three beams forming the girder, and the stress upon these diaphragms is compression, and as cast-iron's resistance to compression is 93,000 pounds to the square inch, these are held together by heavy bolts and nuts which pass first through the shoe of the connection that receives the end of the abutting vault-beam, then through the three webs of beams, and through the two diaphragms; they are to each other held in the most secure manner, as far as *internal* connections will make them.

On the outside on top is a heavy wide supporting tongue, which acts the part of the top flange of the vault-beam, extending over, as before explained. This is the great supporting power for each individual vault-beam, the lower tongue being but an assistant to it through the means of the bolts as shown, transmitting aid from the bottom to the top where three or four beams form the girder, but where two beams are the girder the lower tongue is dispensed with.

What are the forces and strains exerted on this patent connection by which any number of beams required for service may form a unit for strength to resist a side load on one of them, but transmitted as a load on top of all of them? The ends of the vault-beams are most securely held to the shoes. The top tongue is as a beam fastened at one end at the root where broken

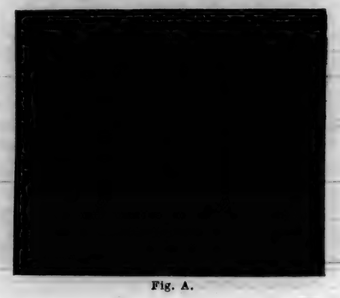


Fig. A.

off and lifted up at the other where the bolts are (see Fig. A), and the computation is to be made as to its resistance, providing the area of the bottom subject to extension in cross section is in the ratio of 6½ to 1 of the area of top subject to compression as in that of Hodgkinson's formula for beams fastened at one end and loaded at the other. (See Fig. B.)

The bottom tongue is more favorably exerted than the top one, while the force exerted on the top tongue is greatest at the root where it joins the shoe, the bottom one acts at its outer end on the bottom

Fig. B.

flange of the beam at *c*, which is the fulcrum, and the strain is mainly exerted between that and the bolts, which are immediately against *c*. This is the place where the strain mainly hinges. The strain to separate this tongue at its root by means of the long lever from there to the fulcrum *c*, and from there exerted on the adjoining resisting bolts, is comparatively light. Hence this bottom tongue is much stronger with the same quantity of metal than the top one. This construction of uniting beams forming girders when loaded on the side, equalizing the load as on the top, cannot on close investigation but commend itself to favor.

The public are respectfully invited to examine this light, airy and substantial building, so well adapted for a large retail business, where the large show windows permit such a fine display of goods on sale.

Terra Cotta Lumber.

One of the most interesting and useful inventions made within the past few years is the process of making terra cotta lumber. The making of fire-hardened clay materials, whether brick, tile, or vessels of any kind, carries us back to the dawn of history. While clay beds are to be found in vast quantities in almost all countries, the utilization of the material so lavishly bestowed by nature has been for the most part limited to brick and pottery. It is only recently that the idea has been suggested that a material might be produced from clay which would lack the brittleness of the articles so long known, and possess the exceptional and highly valuable quality of admitting of being cut and "dressed" into irregular shapes with edged tools.

Before our time anything constructed of clay had to be given its finished form while soft, and before the material had "set." Now we can make the material in large blocks, and afterward cut and shape it as we can lumber. This peculiarity, which is so valuable, is due to the same character of internal structure which wood possesses—that is, porousness. In proportion as wood is porous, within limits, of course, it is most useful for the vast varieties of building purposes to which it is applied. And so by making terra cotta porous we bring it more within the category of wood substances, and then properly name it "*terra cotta lumber.*"

It has similarities and dissimilarities of the utmost importance in contrast with wood and clay materials, and they seem to supplement each other. In other words, terra cotta lumber occupies an intermediate position between brick-like substances and lumber. It is, for instance, brittle and not fibrous; it lacks strength to resist the transverse strain which is possessed by wood, quantity for quantity; but it presents greater resistance to superimposed weight. It is fireproof, while wood is not, and it can be "dressed" by the plane and saw, which, generally speaking, clayey substances cannot be. In addition, it will receive and retain on its surface plastering or other surfacing without the application of lath. It must be borne in mind that, being at once an earthy substance, and of open or porous structure, it possesses all the qualities which appertain to those two characteristics in all substances; and it possesses the advantages not belonging to substances not having these both.

As an article of commerce and use it may be produced easily, the clay being found at hand in almost any part of the country. Hence its cheapness; hence its universal utility. Compared with other commodities it may be called home-made, like those articles of universal use produced in the farm houses everywhere. It may be applied to domestic purposes on a small scale, or to the largest public structures. Its uses, indeed, require no enumeration—they suggest themselves readily to the mind. Thus, invention in the useful arts is steadily bringing into utility the products of nature, which otherwise would lie like worthless material on the surface of the earth. If clay were valuable only for brick, piping, etc., but a small fraction of the clay would be utilized; but with this process a very large percentage of it becomes immediately useful. In this material, what New Jersey alone produces may be taken as an example.

The belt of country underlaid by these clays extends entirely across the State, and, as described by Prof. Cook, the State geologist, includes an area of 320 square miles; while the area within which these deposits have been worked up to the present time is only 68 square miles, the actual openings of the clay beds being only a fraction of this last area, so that, notwithstanding the hundreds of thousands of tons that are annually produced, the industry itself may still be regarded as in its infancy. The average depth of these clay deposits is about 400 feet, and their order of superposition is shown in the following table:

		Feet.
1.	Dark colered clay (with beds and laminæ of lignite)	50
2.	Sandy clay, with sand in alternate layers	40
3.	Stoneware clay bed	30
4.	Sand and sandy clay (with lignite)	50
5.	South Amboy fire clay bed	20
6.	Sandy clay, generally red or yellow	3
7.	Sand and kaolin	10
8.	Feldspar bed	5
9.	Micaceous sand bed	20
10.	Laminated clay and sand	30
11.	Pipe clay (top white)	10
12.	Sand clay, including leaf bed	5
13.	Woodbridge fire clay	20
14.	Fire sand bed	15
15.	Raritan clay beds: Fire clay	15
	Sandy clay	4
	Potter's clay	20

These clays form one of the most important elements of material wealth that the State possesses. Several hundred thousand tons of fire clay are dug annually and sent into maket for making fire-brick, fine pottery, sewer pipe, terra cotta ware, retorts, and crucibles, facing for wall paper, etc. The average price per ton is about $4, and the aggregate production of fire clay alone in its crude state exceeds $1,000,000. The stoneware clay from Perth Amboy is shipped to all parts of the United States, and supplies the material for most of the stoneware that is used in the country. Fine earthenware was formerly imported almost wholly from Europe, but within the last few years extensive potteries have been established at Trenton, which have been remarkably successful in the qualities of the wares made, and in finding a ready market for them. The Trenton potteries employ several thousand men, women, and boys, and produce several million dollars' worth of ware annually. Although the principal ware made is of the common white earthen and iron stone, the quality of which is fully equal to the best English ware of those grades, these works at Trenton also produce a much higher grade of decorated ware, that bids fair to supersede that which is now imported of this kind. The manufacture of pottery is rapidly increasing in quality and extent. The great abundance of the clay, its superior qualities, and its convenience to market have made it almost essential to the successful prosecution of some of the great industries of the country.

The terra cotta lumber is rendered porous by the simple device of mixing in resinous sawdust with the wet clay, and when the clay has dried burning out the saw dust, thus leaving interstices in the brick-like material. The fine clay, free from vitreous ingredients, is taken from the bed thoroughly mixed by means of small quantities of water with any desirable quantity of resinous sawdust, increased in proportion as it is desirable to make the product more porous. At Perth Amboy, where the works of the New York Terra Cotta Lumber Company are located, there are eight of these mixing mills in use, run by steam.

After a thorough mixing has been accomplished, the workmen shovel the mixture out of the mills and into a traveling trough, constructed of a wide leather belt and side walls, to the belt elevator, by means of which it is carried to the third floor. Here it is shoveled into a compressor, also worked by steam, through which it passes to the floor below, and is forced through a die into any requisite shape. Here, usually in the shape of large slabs, it is left to air dry. After partially drying here, it is carried to the first floor, and then dried on a brick flooring heated by flues running underneath it from grates. Here in a short period it is thoroughly dried and hardened.

It now goes, in the form of slabs, to the ovens, six in number, where it is piled up in layers, and, after all openings are closed, brought to an intense heat and all the sawdust burned out. This occupies forty-eight hours, and produces in that time about 180 tons of completed fireproof lumber.

It is now planed, tongued, grooved, sawed, etc., into any desirable shape, and this floor almost resembles a saw-mill or carpenter's shop. The dust of the sawing is carried off by means of a steam blower.

In conclusion, we may enumerate some uses to which it may be applied. It is light, bulk for bulk, and may be united like joiner work or nailed into place like so much wood. In the waterworks of the Holly system it has been used and pronounced admirable for filters. Saturated with petroleum, it becomes a valuable fire lighter or kindling wood, which may be used indefinitely. When immersed in boiling asphalt for a few moments, sufficient bituminous matter is absorbed to resist the action of water, for the asphalt becomes part and parcel of the material itself, and does not flake off when exposed to cold or dampness, as with common brick, solid terra cotta, or iron.

This fact and the splendid insulating qualities both of the material and the asphalt are now attracting the attention of electricians, and give reasonable hope that one of the problems of underground telegraphy has at last been solved.

The many future uses to which it may be put can be conjectured from the number of applications for patents being now made by Mr. Gilman, the inventor, for special purposes, to wit: Filters, underground electrical insulation, steam boiler and pipe sheathing, fire lighters, imperishable ground sills, waterproof brick, grain and elevator bins, refrigerators, safe and vault linings, fireproof jackets for iron columns, furnace linings, safety warehouses, etc.

Not the least noteworthy characteristic of this material is the fact that there is no waste in its manufacture, for the reason that all the remnants and edgings made by sawing, etc., find a market.—*Scientific American.*

The Art Amateur for March contains admirable full-sized working designs of clover, azaleas, and water-lilies for china painters; a South Kensington chair seat, and a chalice veil for embroiderers; a score of delicious cupids, and a page of fresh and excellent monograms, twenty-six in number, giving the letter A in successive combinations with the entire alphabet. The remaining letters are to be similarly given in future numbers. The leading article in this issue is a capital notice of the Water-Color Exhibition, by Edward Strahan, with illustrations of over thirty of the noteworthy pictures. Boughton's beautiful bainting, "Snow in Spring," is finely reproduced, and there is a good portrait of Doré, with some well-chosen examples of his work. Flower painters, fan painters, china painters, and photograph portraitists are remembered in the practical articles, and there is much pleasant and copiously illustrated talk about French furniture, Japanese art, new houses, old fashions, and a variety of other art topics. On the whole, the March number is an excellent specimen of this always attractive magazine. Price, 35 cents. $4 a year. Montague Marks, publisher, 23 Union Square, New York.

In 1851 the first saw-mill was built on Puget Sound, which was soon followed by others, until to-day there are 15 mills at work on the Sound. The largest mills cut 200,000 feet per day. It is calculated that since the first mill was built there 2,500,000,000 feet of lumber have been cut, principally fir, pine, oak and cedar.

Village Builder and Supplement.

Contains plans for cottages, villas, suburban residences, farm houses, stables, carriage houses, store fronts, schoolhouses, etc.; also exterior and interior details for public and private buildings, with approved forms of contracts and specifications. This is an original work comprising the designs of fifteen leading architects of the Eastern States. Price, $10.00.

Wheeler's Patent Wood Filler.

This celebrated Eastern preparation is now being introduced on this coast. For giving a natural and perfect finish to hard wood, it is unequaled.

Breinig's Patent Lithogen Primer.

The best and cheapest results are obtained by the use of this Primer. It does its work perfectly; less paint is required than upon any other size or priming.

Breinig's Lithogen Silicate Paste Paint.

These paints are guaranteed to stand the climate of the Pacific coast better than any other preparation. They will last longer than the best white lead. Require only thinning with turpentine or oil, according to the character of the work.

Sample cards of colors and any information furnished as per ad. on page vi.

SAN FRANCISCO.

Jackson x Webster & Fillmore. Two two-story frame.
O.—F. Wittram.
A.—W. P. Moore.
C.—A. Jackson.
$7,000.

Jackson, cor. Buchanan. Two-story frame.
O.—A. Wolters.
A.—Kenitzer & Raun.
C.—E. Farrell.
$6,000.

Geary, cor. Gough. Two-story frame.
O.—Dr. Stoddard.
A.—Schmidt & Havens.
C.—Terrill & Slaven.
$7,000.

Golden Gate Av., nr Fillmore. Alterations.
O.—G. Schutz.
A.—Behrens.
C.—L. D. Frichette.
$2,500.

Larkin, nr Bush. Improvements.
O.—G. Schroeder.
C.—B. Dryer.
$1,900.

Sacramento, nr Fillmore. Two-story frame.
O.—Wm. Patton.
C.—Cook & Johnston.
$5,000.

Bush, cor. Webster. Two two-story frame.
O.—J. O. Van Bergen.
A.—S. & J. C. Newsom.
Day's work.
$12,000.

Morton, cor. Dupont. Three-story and basement brick.
O.—F. Hellwig.
A.—Lueders.
C.—Mahoney Bros.
$20,000.

Cedar Av. x Polk & Larkin. Two-story frame.
O.—B. Fisher.
C.—J. H. McInnes.
$3,000.

Sutter, nr Jones. Alterations.
O.—R. H. McDonald.
C.—B. F. Ellis.
$8,000.

Fillmore x California & Sacramento. One story frame.
O.—J. McNulty.
Day's work.
$1,500.

Ellis x Polk & Van Ness Av. Three two-story frame.
O.—Capt. F. Gee.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$18,000.

Ridley x Guerrero & Market. Three-story frame.
O. & B.—S. D. Matthews.
$4,500.

Ridley, nr Valencia. Alterations.
O.—C. J. Holmes.
A.—Marquis.
C.—H. Sheldon.
$1,600.

Valencia, cor. 22nd. Two-story and basement frame.
O.—J. Schleff.
Day's work.
$9,000.

California, cor. Devisadero. One-story and basement frame.
O.—Jas. Keane.
A.—Kenitzer & Raun.
C.—Moore Bros.
$10,000.

Eddy, nr Jones. Four-story frame.
O.—J. Conolly.
C.—J. Oak.
$12,000.

Seventeenth & Dolores. One two-story frame. One one-story frame.
O.—J. Buss.
A.—G. E. Voelkel.
C.—F. Weineohl.
$4,500.

Howard, nr Twenty-Fifth. Two-story frame.
O.—Capt. Spear.
Day's work.
$3,200.

Treat Av. nr Twenty-fourth. Two-story frame.
O.—H. Ganther.
C.—T. F. Mitchell.
$1,800.

Bush x Sansome & Montgomery. Alterations to brick building.
O.—Bush & Schmidt.
A.—H. D Mitchell.
C.—Wilbur.
$10,000.

Fifth, cor. King. One-story brick building.
O.—Standard Oil Co.
C.—W. E. Stevens.
$10,000.

Seventeenth & Sanchez. Two-story frame.
O.—E. Dmane.
A.—W. Warren.
C.—L. Larravee.
$3,400.

Harrison, nr Main. Repairs.
O.—J. Moore.
C.—C. W. Kinsman.
$500.

Second x Folsom & Howard. Additions to building.
O.—J. Wieland.
C.—J. Haff.
$25,000.

Fourth & Berry. Two-story frame.
O.—Union Ice Co.
Day's work.
$7,000.

Octavia, cor. Ivy Av. Improvements.
O.—L. Gendotti.
A.—Eisen & Co.
Day's work.
$1,200.

Thirteenth, nr Valencia. Alterations.
O.—H. F. Sammi.
A.—G. E. Voelkel.
Day's work.

Polk, nr McAllister. One-story frame.
O.—J. J. Pfeister.
Day's work.
$500.

Ridley, nr Valencia. Three-story frame.
O.—C. J. Holmes.
A.—Marquis.
C.—Cummings & Rebman.
$8,000.

Henry, nr 14th. Additions.
O.—J. G. Wilkins.
C.—D. B. Sprangler.
$1,200.

Fifteenth, x Noe & Market. Two-story frame.
O.—Mrs. C. C. McQuade.
C.—R. M. Grant.
$2,400.

Harrison, x 24th and 25th. One-story frame.
O.—R. Ahern.
$900.

Natoma, x 6th and 7th. Additions.
O.—P. Connell.
Day's work.
$1,200.

Twentieth, nr Guerrero. Alterations.
O.—I. Thompson.
C.—T. F. Mitchell.
$800.

San Bruno Road, nr 15th Avenue. One-story frame.
O.—E. Sidel.
C.—I. T. Mitchell.
$800.

Taylor x Greenwich & Fillmore. Two-story and basement frame.
O.—G. Riedel.
A.—H. Geilfuss.
C.—J. C. Classen.
$4,800.

Castro x 19th & 20th. Two-story frame.
O.—Mrs. Banning.
A.—H. Geilfuss.
$2,500.

First x Mission & Howard. Two-story basement frame.
O.—Allyne & White.
A.—Kenitzer & Raun.
O.—Pluns.

Battery nr California. Additions.
O.—C. H. Hathaway.
A.—Marquis.
C.—Plummer.
$6,000.

Washington x Gough & Franklin. Two-story and basement frame.
O.—A. Bosquet.
A.—G. E. Voelkel.
C.—J. McKay.
$8,000.

Fair Oaks, nr Twenty-third. Two-story frame.
O.—Cleaveland.
A.—Geddes.
C.—S. E. Thompson.
$3,000.

Post x Powell & Mason. Two-story frame.
O.—Mrs. Adele Goodman.
A.—Schmidt & Havens.
C.—Haskell & White.
$8,000.

Taylor, cor. Turk. Alterations.
O.—L. Mejasson.
A.—Huerne & Everett.
C.—W. B. Kreger.
$2,200.

Jones & Lincoln. Two-story and basement frame.
O.—H. H. Bruns.
A.—Eisen & Co.
C.—J. Bruce.
$2,700.

Sutter, cor. Franklin. Two-story and attic frame.
O.—J. Spruance.
A.—Schmidt & Havens.
C.—Chisholm.
$18,000.

Geary, cor. Gough. Three two-story frame.
O.—D. S. Whitney.
A.—Schmidt & Havens.
C.—F. Klatt.
$14,000.

Fillmore x Jackson & Pacific. Two-story and attic frame.
O.—J. Washburn.
A.—Schmidt & Havens,
C.—A. Jackson.
$5,500.

Sixth & Mission. Fitting up stores.
O.—J. Moran.
A.—Eisen & Co.
C.—Waterbury & Maxwell.
$1,000.

1010 Post. Alterations.
O.—J. Eppinger.
A.—Wolfe & Son.
C.—Moore Bros.
$1,000.

1916 Sacramento. Alterations.
O.—H. W. Newbauer.
A.—Wolfe & Son.
C.—J. Furness.
$1,500.

Tyler, cor. Laguna. Additions.
A.—Wolfe & Son.
$1,800.

OAKLAND.

Franklin, nr 16th. Alterations.
O.—Mrs. E. Merrill.
C.—Henderson.

Filbert, nr Eighteenth. Two-story frame.
O. & B.—Ingerson & Gore.
A.—Taylor & Copeland.
$3,700.

Fourteenth, nr Filbert. One-story frame.
O.—G. M. Fisher.
C.—Knight & Littlefield.
$1,600.

Tenth and Kirkham. Three one-story frame.
O.—Apgar.
C.—W. A. Knowles.
$3,600.

Kirkham, nr Tenth. Two One-story frame.
O. Apgar.
C.—W. A. Knowles.
$2,400.

Seventh, nr Adeline. Two-story frame.
C. & B.—J. Kolb.
$3,500.

Eighteenth, x Curtis and Market. Two story frame.
O.—Mrs. Ainsworth.
C.—C. B. Kimball.
$3,200.

Linden, x Seventh and Eighteenth. One-story frame.
O.—Mrs. Hindermeyer.
C.—E. Child.
$800.

Union, x Eighth and Tenth. One-story frame.
O.—W. F. Kroll.
C.—Higgins & Armstrong
$1,600.

Eighth, nr Cypress. Two story frame.
O.—L. P. Burger.
C.—J. S. Tiffels.
$2,000.

Seventh and Campbell. Two-story frame.
O.—J. Wulff.
O.—J. F. Gleisner.
$3,500.

Eighth, nr Market. One-and-a-half-story frame.
O.—G. W. Scott.
C.—Knight & Littlefield.
$1,500.

SACRAMENTO.

O Street, x 16th and 17th. Two-story frame.
O.—E. F. Smith.
A.—Babson & Seadler.
C.—Carle & Croly.
$4,000.

4, x I and J.
O.—N. G. Curtis.
A.—N. D. Goodell.
C.—Carle & Croly.
$4,500.

8th & N. Two frame dwellings.
O.—C. N. Hartwell.
C.—J. Ough.
$4,500.

ALAMEDA.

San Antonio Avenue, x Park & Oak. One-story cottage.
O.—J. R. Patterson.
C.—Wasson & Pattiani.
$1,800.

Central Av. cor Third. Additions.
O.—C. Bahlheimer.
C.—A. Denke.
$1,000.

McPherson and Central Av. One-story and basement frame.
O.—S. Strevater.
C.—C. H. Fosse.
$1,000.

Morton, nr R. R. Av. One-story frame.
O. & B.—J. Sedgly.
$1,600.

LUMBER.

	Pine.
Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second quality Flooring and Stepping....per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths....per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts....per piece	17½

	Redwood.
Rough Merchantable....per M feet	$22 50
" Refuse "	18 50
Surface No. 1 "	37 50
" 1 x 6 "	35 00
" No. 2 "	27 50
Rustic, No. 1, 1 x 8 "	35 00
" No. 1, 1 x 10 "	37 50
" No. 2 "	32 50
" Under 10 feet "	32 50
T. & G., 1¼ x 4 and 1¼ x 6 "	37 50
" 6 in. 12 ft. and over "	35 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
" " No. 2 "	27 50
T. & G., Beaded, 12 feet and over "	35 00
" " 7 to 11 feet "	30 00
" " under 7 feet "	27 50
Half-inch Surface "	30 00
Pickets, Fancy "	27 50
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	25 00
Shingles....per M	2 50
Battens, ⅝ inch, lineal feet "	1c

NAILS.

10 to 60 pennies, are quoted at	$4 70
8 " "	5 02
6 " "	5 05
5 and 4 " "	5 87
4 and 5 pennies, brad heads, at	6 00
6 " "	6 25
8 " "	6 50
10 and upward	5 75
3 penny fines "	7 50

MERCED.

Two-story and basement brick.
O.—Ruffner & Dixon.
A.—H. D. Mitchell.
O.—Beck & Harrington.
$10,000.

MISCELLANEOUS.

Colusa. Two-story brick.
O.—Wm. Miller.
Day's work.
$10,000.

Near Town. Two-story frame.
O.—G. Molton.
A.—Matthews.
Day's work.
$5,000.

Two-story frame.
O.—E. Graham.
Day's work.
$2,500.

San Rafael. Fifth, x F. & G. Two-story and basement frame.
O.—Barstow.
A.—W. Wharff.
C—D. Ennis.
$4,000.

Additions to building, California Av.
O.—Mrs. J. Sims.
C.—W. Bar.
$1,000.

Petaluma. Corner B and Ninth. Frame dwelling.
O.—Blackburn.
C.—Sam. Bodd.

Riverside. Two-story brick building.
C.—F. W. Green.
$3,500.

Berkeley. Opposite Asylum. One-story frame.
O.—Mrs. Sedgwick.
C.—S. Child.
$2,000.

The California Architect and Building News.

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THE

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—AND—

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" " 1881 and 1882, each.....$2.50
" " 1880 (only a few left).....$2.00

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Any one failing to receive a complete index will be supplied by sending a postal card to this office with their address.

Building Activities and Prospects.

In previous issues of this journal during the current year, we have been enabled to present most encouraging and cheering accounts of the building prospects in San Francisco. But as the months roll round we find the increase in number of contracts let, and the amount of money expended in building operations, to be much greater than we anticipated at the commencement of the building season. The unpropitious state of the weather during the period from January 1st up to the commencement of the late rains caused a general feeling of dispondency, and the almost universal opinion prevailed that failure of crops and depression of all kinds of business were sure to follow—the building interest included. But the glorious rains which came with the closing days of March and the opening days of April, dispelled all doubts as to the crop results for 1883, and caused universal rejoicing and gladness throughout the entire State and coast.

The facts stated in another article in this issue illustrates the magnificent results reasonably to be anticipated for the current year; our building intelligence report the first quarter of 1883, exclusive of the report in present issue, being more than three times greater than that of 1882 up to the same period—a contrast which conclusively demonstrates that San Francisco is enjoying a splendid degree of prosperity, not merely in the isolated matter of building improvements, but generally; for it requires general business prosperities to enable or justify expenditures in the erection of buildings, the former always being the outgrowth of the latter.

Comparison of Building Operations.

A GOOD SHOWING ASSURED FOR 1883.

A few weeks ago, and one heard on all sides forbodings of dull times ahead for the balance of this year. Notwithstanding the discouraging rain prospects existing a few weeks ago, we felt confident that the building interest would be very brisk. This result was arrived at by almost weekly comparisons with the same dates in 1882.

We find in the previous year that the sum total of improvements—brick, frame, and alterations—reported for the first 3 months, amounted to

51 BUILDINGS OF THE VALUE OF $306,060.

For the first three months of the present year we find total improvements to be

142 BUILDINGS OF THE VALUE OF $1,013,197.

In the year 1882 we added 10 per cent. of the sum total for buildings that may have been overlooked, and for extras, etc., etc. In the amount given for this year we have added but 5 per cent. This is due to the fact that our force of reporters has been increased, and we feel confident that but few new jobs are started, upon which a call is not made by one of our reportorial staff.

Surely there is something suggestive in the above figures, which proves as correct the thoughts contained in another article in this issue, that "Capital will not remain idle."

This year promises to be one of the best in regard to building operations that this State has been blessed with for at least 10 or 12 years. Mechanics of all kinds are in demand at advanced wages. Prices of all kinds of materials are stiff, with a tendency upward. With a bountiful harvest assured, there can be but one drawback to the general prosperity, and that will be the lack of labor to move our immense grain and fruit crops.

Capital Will Not Remain Idle.

We predict a large increase of building operations this year, from the simple fact stated in the heading of this article. Money is very plentiful and will of necessity be used where it will bring in to its owner some recompense. If the wheat crop is short, and no opportunity for speculation be offered, then capitalists will invest their money in a *sure thing*; and what more favorable project offers than that of buying real estate and erecting suitable buildings for rent?

From careful inquiry we find that *rentable* houses are hard to obtain at present; and with the visit of the Knights a few months hence, there will be such a demand for accommodations that an empty house will be a very rare thing to find. Speculators are already at work trying to get up a corner in rooms.

A prominent capitalist visited our office during the month and inquired particular in reference to the cost of building FLATS. His idea is to buy lots in various parts of the city and erect apartment houses capable of accommodating four separate families. He assured us that two or three well-known gentlemen would cooperate with him in the idea he intends to carry out. His intention was to place part of his money in a flour mill, but thinks there is a much better field for investment in the erection of well built "FLATS." Property at the MISSION has been talked of as the probable location of the houses, wisely so we think, as the cable lines soon to be in operation will cause this beautiful part of our city to be eagerly sought after for comfortable homes.

Meanwhile, we are pleased to note the evident decay of the Pine Street excitement. One thing sure, if this were not so our bonanza kings would not put their millions into real estate. The withdrawal of the money from the Nevada Bank for the purpose of real estate investment is an event well calculated to make property owners all over the city feel confident in the value of their investments, and this confidence is strengthened by the fact, that the result of the bank's investment has been only obtained after a careful review of the market, and with the certain knowledge on the part of the investors that no surer, safer, or profitable way of getting a fair percentage on their money could be thought of than the one they adopted.

Surely it is well said that capital will not remain idle.

Another Proof of Prosperity.

The fact that nearly every architect's office in San Francisco is "full of work," and the entire draughtsmen's forces of the coast is fully employed, with vacancies in many of the offices for good draughtsmen, illustrates a degree of prosperity greater than has been enjoyed for many years. Nor is this confined to San Francisco; our advices from Portland, Oregon, Seattle, Los Angeles, and other points and places on the Pacific Coast, show the same state of facts, and illustrate the pleasing degree of prosperity prevailing throughout the entire western confines of our favored country.

The Gradual Decadence of the So-Called Eastlake Style of Architecture.

This style of Architecture when first introduced into California began at once to attract the attention of a certain class of property owners, who saw in the new style a chance to build fine-appearing and apparently well-constructed houses, erected in many cases to add to the value of their contiguous property.

Many scarcely gave a thought as to the manner of construction of the buildings, their sole aim being to present a showy house. This they accomplished by a liberal plastering on of "gingerbread" work, and by engaging the services of painters who were experts in the mixing of fancy colors. If Charles L. Eastlake could be brought suddenly to face with one of these imitation Chinese-colored houses (named after him), we can well imagine the looks of horror that would overspread his features, as he would gaze on the wooden foundation, painted so as to resemble moss-covered rock; hoods over windows of a chocolate color, relieved by brackets painted with a beautiful coleur de mouse; window sash of a red, the brilliancy of which could only be exceeded by that of pure vermilion; fantastically beautiful dragons with large eyes, and mouths open as if to devour the beauties of the surrounding scene; the upper sash of the windows divided into small squares, so that in case of necessity they can be taken out and used for checker-boards; a few dozen strips of wood, beautifully interlaced for a cornice, giving the birds a nice roosting place for their weary feet, etc.

How grandly kind the nature of the so-called Eastlake architects all over the State must be to thus provide for the wants of every one, birds as well as men! Tears come to the eyes of the beholders as they gaze on the emblems erected on the house-tops to the memory of the great and good demons and dragons who departed this life in the centuries B. C. May their memory ever be as green—as the ideas of some of these E. A.

We are well pleased to note the evident decay of the monstrosity ideas that have been too often of late introduced into the architecture of this coast. Many houses, built, a few years ago according to the ideas then in vogue, are now being changed into a style more in keeping with the climate of California. Wood will shrink, and California redwood will shrink endways as well as any other may. The frail but fancy work adopted in many of the dwellings under notice have become so warped and the joints so opened by shrinkage, that one would imagine the houses were twenty years old instead of but three. Another cause for the cracking, twisting, and shrinkage of the fancywork lies in the fact that from the intricacies of the different parts of the work, much of it does not receive a single touch of paint. That exposed to the gaze is well covered, but all the little nooks, corners, and parts that cannot be seen from the street, although readily accessible from a staging, fail to receive a single touch of that which is absolutely necessary to prevent lumber from cracking and shrinking, and so after a few years much of the "gingerbread" has to be removed, that the house may present a creditable appearance.

In our April number, 1882, we presented to our readers a letter from Mr. Eastlake, giving his views in regard to the style of Architecture named after him. The modesty of the gentleman mentioned forbade him saying anything more than to discountenance the use of his name to the style mentioned.

Briefly stated, his views are as follows: He "recommends good honest work, no dowels, no glue, no putty or paint, without any reference to the form of style of architecture, and his remarks and recommendations referred more particularly to furniture and inside than to outside decorations."

The grand principle of this style is contained in the two words—"honest work"; and when our architects and builders follow the true intent and meaning of those two words, they will lay the foundation for the coming new style of American Architecture.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of this Chapter was held in the rooms of San Francisco Art Association, on Friday evening, April 6th. President John Wright in the chair.

The minutes of preceding meeting were read and approved.

The Professors in charge of the various classes instituted by this Chapter reported as follows:

F. Marion Wells, in charge of the modeling class, reported that his class was well established, and the students took much interest in their study. He asked permission of the Chapter to procure casts from models in the Art Association for the benefit of the students. The Chapter acceded to his request, authorizing him to procure the necessary material, with the understanding that the bill for the same be presented at the next meeting.

Mr. Sanders, in charge of the class in drawing, reported very favorable progress of the pupils under his charge. It was the intention to have the pupils visit buildings in process of erection, and thus supplement office work by instruction in the practical part of the profession.

Mr. Pissis, in charge of the class in practical architecture, reported that he had given his class for a subject, the front entrance to the Mint. The first specimens were crude; he pointed out the defects and the remedy in each drawing, and a second trial by the students showed a vast improvement. He felt confident after another trial that their efforts would be worthy of insertion in the official organ of the Chapter.

Mr. Bryant, who is to have charge of the class in carving, was present, and expressed his willingness to give instruction as soon as a suitable place is procured. On motion, the Secretary was instructed to notify the Trustees of the Mechanics' Institute of the intention of this Chapter to establish a class in carving, and request them if possible to give a space in the fair building for the use of the students.

Proposition for membership as draughtsman was received from Mr. W. C. Jordan; Messrs Curlett, Moore, and Pissis were appointed a committee to report on same.

A work entitled "Charitable and Parochial Establishments," was received from H. Saxon Snell of London, England. It was examined with interest by all the members present. The Secretary was instructed to notify the donor of the acceptance of the work by the Chapter, and a unanimous vote of thanks was tendered the gentleman for his donation.

A portfolio of sketches was received from the Boston Architectural Association. (These sketches are published for the benefit of the profession at large, and complimentary copies are sent to the several Chapters of the A. I. A. for inspection.) Secretary was instructed to thank the Association for the kindness shown.

A committee of two—Wright and Curlett—were appointed to consider the feasibility of procuring a permanent room for the Association.

The picnic committee reported that arrangements were being made by which the Association, during the month, could visit the red woods in the neighborhood of Duncan's Mills. Report received, and the Association decided to go. The Secretary was instructed to visit the members and ascertain exactly how many could avail themselves of the opportunity.

Short Supply of Skilled Labor in San Francisco.

During the year 1882, there was at times a decided lack of skilled labor in all branches of mechanism in San Francisco, and at no time a surplus of good workmen; so much so, that signboards posted on buildings, "Carpenters Wanted," and on workshops, foundries, machine shops, etc., "Hands Wanted," were of common occurrence; and as an inducement, extra wages were in many cases offered. The brick-laying forces were also inadequate for the labor purposes of 1882, and but few jobs were carried through on time. With such a state of things prevailing during the past year, what may be expected for 1883, with the showing already made in these columns, of a threefold increase in the amount of building contracts let during the first quarter of 1883. We hope that among the thousands of new-comers to this State, there are a goodly number of first-class mechanics, all of whom will find ready employment. This shortness of labor supply is not confined to building mechanics, but extends to nearly if not quite all other classes of skilled labor. From inquiries among the machine shops, boiler makers, glass cutters, and others, we learn that the same condition of things exists, especially so as far as *competent* workmen are concerned.

Iron Girders over Store Fronts.

The cast-iron girder device used in the erection of Mr. Somer's building on Market Street was duly noticed in this journal, and recommended as possessing special, self-sustaining features, with no rests or bearings except at the ends—the centers being sustained by a perfect trap principle sufficient to carry ten times the weight placed upon them. We notice a similar modified girder construction in use in the building now in progress of erection on Mission Street between Fifth and Sixth Streets, which spans the respective openings without intervening supports between the ends. This is a desirable result in many cases, especially where open fronts are desired, while in any case, the girder referred to is unsurpassed for solidity and strength, and is less expensive than some of the other devices sometimes used. Mr. P. H. Jackson has devoted a very large amount of time and skill in working up this girder device, in which there is demonstrated a degree of mechanical science which should commend it to general favor. It is worthy the attention of architects and owners having in hand or contemplating the erection of brick buildings.

As Seen from the Railroad.

During the past month we visited the lower part of this State. But few new buildings are to be seen in progress of erection along the line of the railroad. The towns all seemed to be resting on improvements already completed. At Los Angeles, however, one sees on all sides evidences of prosperity. Numerous buildings are in process of erection on every side, some of them being fine four-story brick buildings. At Riverside and San Bernardino many building are in course of construction. Since the late rains everything has changed considerably, and every one seems to feel the effect of the welcome moisture. New buildings are talked of on every hand, and we hope next month to give a large report from this section. We have made arrangements by which hereafter we will receive the building intelligence from all the principal towns.

The new and enlarged edition of the Steel Square and its Uses, and the California Architect and Building News for one year, will be sent to any address upon receipt of $2.50.

Uses of the Steel Square.

Although all the matter given below may not strictly come under the head of Steel Square and its Uses, it has been placed in this column at the request of the parties sending us the questions that are answered; several of them are regular contributors to this series of articles, and desire to have all matter and questions together. In a short time, Part No. 1 will be finished, and our articles will then be devoted to the consideration of the more advanced mechanics.

EDS. ARCHITECT: "A flask-maker in a foundry often has occasion to change a square flask into an octagon. I want to know a rule by which the length of the pieces nailed in across the corners is obtained."

An octagon is always as 5 to 12. Take a flask 6 feet across; multiply 5 by 6=30, and divide by 12=2 feet 6 inches. Cut the miter to suit the above measurement, nail the pieces in the corners of the square box, and you have the required shape. That is, to find the length of the diagonal pieces multiply the width of box by 5, and divide the amount by 12.

In answer to questions in our last:

The above cut shows at a glance how the diameter and center of a circle can be found. Place the square as shown at A B C. The line B C will be the diameter. Place the square so that the point of the square A will touch any other point of the circle as at D, draw E F. The point of intersection H will be the center of the circle.

An ellipse can be made with the square by using that instrument in place of a trammel. The tracer or rod should have pins in the required points, which can be pressed against the inner sides of the square, as the rod is moved to form the ellipse.

J. C. is informed that no regular rule can be laid down for the projection of cornices on buildings. Much depends on the style of architecture employed. To use a general rule, however, we might say that for a building 70 feet in height, the proper projection should be about 36 inches.

Too much time and space would be required to fully answer E. R. in regard to the method of ascertaining exactly the proper sizes that *trimmers* and *headers* should be framed in order to carry any certain weight. In this State it is the usual custom in dwelling houses to make the headers either one inch thicker than the common joists, or else nail two pieces of the latter together. In stores and warehouses, the headers are generally of double thickness, or same rule can be used as for dwellings. The only advantage of the latter method is that it saves the necessity of providing pieces of extra thickness just for headers, etc. Trimmers should be of same size as the headers.

L. R. suggests an improvement in the construction of a trammel. Instead of the sides of the grooves being square, they are beveled so as to resemble dove-tails. The advantage of thus doing, is to prevent the small blocks used to slide in the grooves from slipping while describing the elliptic curve.

The grinding of tools so that a perfect bevel can be formed without unnecessary loss of material, is an accomplishment only gained by close attention and much practice One of the most common errors, especially of a novice, is to continue the grinding until a feather edge is formed. This is removed by drawing the edge across a piece of wood; after trying on his thumb the sharpness of the instrument being operated upon, a few more touches are given upon the stone. The chances are that another feather edge will be produced, and the above operation be repeated probably three or four times. This simply means a loss of from 1-32 to 1-16 of an inch of metal unused. The proper method is to grind the tool so that the edge will be of uniform thickness, and carefully noticing the limit to which it can be brought without producing a feather edge. After the latter has been formed, the operator is left without a guide to determine the thickness of the edge. Bring the edge of your tool near perfect as possible without feathering, and then finish the operation on an oil-stone.

Steel Square Miters.

In the June number of this journal, 1882, we presented an ORIGINAL diagram, giving the figures on the square, which, if used as per directions accompanying the engraving, would enable the mechanic to readily make the miter necessary to form any given figure.

The figures as given were obtained only after much labor and study. They were verified by a practical mechanic, and we presented them to our readers as being the FIRST ATTEMPT to give the general public the information contained in the article referred to.

In a late number of the *Carpenters' and Builders' Journal* we find all our figures quoted as original matter. In the April number of the *Builder and Wood Worker* we find our figures again quoted, giving credit to the first-named journal. We have noticed the same figures in several others besides these named.

We do not object to our exchanges copying any article that may be deemed worthy of a place in their columns, but we trust, at least, that due credit will be given for articles original with the editors of this journal.

This series of articles on the square was commenced in the September number 1881. Back numbers can be supplied at 20 cents each.

To E. F.: There are a great many preparations to coat blackboards, but the following is one of the best:

Alcohol 95 per cent. (4 pints); shellac, 8 ounces; lamp-black, 12 drachms; ultramarine blue, 20 drachms; powdered rotten stone, 4 ounces; powdered pumice stone, 6 ounces; dissolve the shellac in the alcohol, then add the other ingredients, finely powdered, and shake well. Be sure the surface of the boards are perfectly smooth and free from grease or dirt.

R. S. will find an answer to his question in the following:

The fancy imitation inlaid work now being introduced in the city is made as follows: The wood is first grained in oil; when dry, grain the whole in distemper; have a paper with the design drawn thereon, the back of which has been rubbed with whiting, place it on the wood, and with a pointed stick trace the design, then with a brush and quick varnish trace the whole of the design. When the varnish is dry, with a sponge and water remove the distemper where the varnish has not touched. This, if well executed, presents a most beautiful imitation of inlaid wood.

Articles which have been formerly glued, but broken again at the old place, should be thoroughly cleansed of all dirt and old glue by being soaked in hot water, using a sponge for the purpose. Do not attempt to scrape off the old material, or the pieces will no longer fit together. Dry the pieces thoroughly; warm the joints, reglue them, and you can be sure they will stick.

5 pounds of 4d nails are required to lay 1,000 shingles.

5¾ pounds of 3d fine nails are required to put on 1,000 laths.

Studding over 2 inches in thickness should have the 2 edges chamfered so that the plastering will have more room for a perfect key.

Setting out Stairs.

After determining the height of the riser from the "storey rod," the right proportion of tread must be found. Sometimes steps are arranged so that it is easier for a man to go up "two at a time" than to walk up in the proper manner. The reason is, both tread and riser are made small. When a riser is reduced, the tread must be increased; and the contrary when the riser is increased, the tread must be reduced in width. Joiners do not often break this rule, but masons very often do, notably in steps leading to and from railway stations. A simple rule may be given for finding a suitable proportion.

Take any suitable step as a standard step, that is to say, if you know of a staircase which is comfortable and easy to walk up, take it as a standard to gauge others by. Suppose you have a riser given, and require the width of a suitable tread, make use of the following proportion:

As the given riser : standard riser :: standard tread : required tread.

If the tread is given and the riser required, then—

As the given tread : standard tread :: standard riser : required riser.

To work out an example: Suppose 10 inch tread and 7 inch riser be taken as a suitable step, let 6 inch be the given riser; then by substituting the value of treads and risers for the names, we have—as 6′ : 7′ :: 10′ : the required tread; this gives $\frac{70}{6}$ or $11\frac{2}{3}$ for the size of a tread. Nicholson gives as a staddard a tread of 12′ to a riser of $5\frac{1}{2}$′. Working out the example given by this proportion, we get 11′ instead of $11\frac{2}{3}$′; either of these sizes will be an agreeable step.

A rough and ready rule for the *usual* sizes of treads and risers is to make 2 risers and one tread equal to 24 inches.

(From a new work entitled Handrailing and Staircasing.)

Unbalanced Bids.

This article is so pertinent to several similar transactions which have occurred in this city, that it is with pleasure we quote it from the *Sanitary Engineer* of February 15th:

A case illustrating the chance for fraud which exists in the ordinary method of letting work by contract to the lowest bidder, is now pending in the Supreme Court in this city.

A small sewer was to be built in the Twenty-third ward. An estimate was made by the assistant engineer in charge of that division, giving the probable quantities of the several items on which proposals were to be based, and by which the bids made were to be compared. This estimate was approved in due course by the engineer in chief of the department of parks, and the contract was advertised by the department. Several bids were received. The one which footed up the least was made by the son of the assistant engineer, who made up the estimate of the quantities. This bid was an "unbalanced" or "gambling" bid evidently, for the prices bid for all the items were very low except for "rock excavations," which was placed at $50 per cubic yard, while other bidders only bid from $5 to $7 per cubic yard for the same, but the quantity of rock excavation being estimated at only 10 cubic yards, the $50 bid was easily balanced by the low prices on the larger items. The law requires that every contract shall be let to the lowest bidder, and the Comptroller and the Park Commissioners could do nothing but award the work to this suspicious bid. But when the sewer was built it was found that there were 297 cubic yards of rock excavation instead of 10, and the contractor's final estimate for that item only was $14,850 for work not worth more than $1,500 at the most. This made the work cost the city some $13,000 more than it would if the contract had been awarded to a higher bidder on the first estimate.

The presumption of fraud in this case was so strong, owing to the peculiar relations of the assistant engineer and the successful bidder, that the chief engineer very properly took measures, in conjunction with the Comptroller, to resist the payment of the final estimate due under the contract. The contractor applied to the Supreme Court for a mandamus to compel payment, and Justice Barrett has refused to grant it, which will oblige the contractor to have the whole matter ventilated if he attempts to push his claim.

Now there was nothing inherently wrong in the contractor making such a bid as this if he had reason to believe that the amount of rock as given in the preliminary estimate would be largely exceeded in the execution of the work, provided that he had not received the grounds for his belief from his own father, who made the preliminary estimate. Many a reputable contractor has made such bids, based on his own judgment, of the unseen parts of work as opposed to that of the engineer, and has made money at it. It is sharp practice, but it is a legitimate business transaction. It is not fair, however, to the city or corporation which has to pay for the work, and its allowance offers great opportunities for fraudulent collusion, as in this case and in the cases of the canal contracts which were ventilated by Governor Tilden a few years ago.

A remedy for the evil has been sought by engineers, but so far no efficient mode of guarding against it has been put into practice. A plan which seemed to promise efficient results was devised a few years ago by the engineer of one of the city departments, who had intended to try it in the next contracts he was to let, but it happened that his head fell into the waste basket while he was preparing the papers, and his successor was afraid to venture on any new experiments until he knew whether his own head was secure on his shoulders. The plan suggested was to enumerate the items and their quantities as usual, and to affix to each a fair price for that class of work, and foot up the total. Then require each bidder to make a proposition to do the work for a gross sum, with the proviso that he should receive as full compensation for each class of work a price bearing the same proportion to the engineer's figures that his gross bid bore to the engineer's total estimate. To illustrate: Suppose that the engineer's estimate of a piece of work was:

100,000 cu. yds. earth excavation	@	$0.15	$15,000
10,000 cu. yds. rock	"	1.50	15,000
5,000 cu. yds. cut stone masonry	@	22.00	110,000
3,000 cu. yds. rubble masonry	@	6.00	18,000
2,200 cu. yds. concrete	@	5.00	11,000
Total			$169,000

Bidders would be required to name a gross sum. If, for instance, a contractor was satisfied that he could do the work for five per cent. less than the estimated cost, he would bid $160,550. In drawing the contract, the prices of all the items would be scaled down 5 per cent. and would be inserted in the contract thus:

For earth excavation	$0.14¼
For rock "	1.42½
For cut stone	20.90
For rubble	5.70
For concrete	4.75

Now if this work were let in the ordinary way, a contractor who had reason to believe the rock excavation would turn out to be much greater than was estimated, and that the rubble masonry would be increased, and the cut stone masonry diminished, might bid as follows:

For earth excavation,	100,000 cu. yds.	@ $0.10	$10,000
For rock,	10,000 cu. yds.	@ 9.00	90,000
For cut stone,	5,000 cu yds.	@ 5.00	15,000
For rubble,	3,000 cu yds	@ 11.00	33,000
For concrete,	2,200 cu yds.	@ 4.50	9,900
Total			$157,900

which would make his proposal $2,650 lower than the other man who bid fair prices.

If his surmise was correct, and the quantities were varied as he supposed, the two bids would stand as follows on the final estimate:

	By the fair bid.			By the unbalanced bid.	
Earth,	80,000 @ $0.14¼	$11,400		@ $0.10	$8,000
Rock,	30,000 @ 1.42½	4 275		@ 9.00	270,000
Cut stone,	2,000 @ 20.90	41,800		@ 3.00	6,000
Rubble,	6,000 @ 5.70	34,200		@ 11.00	66,000
Concrete,	2,200 @ 4.75	10,450		@ 4.50	9,900
Total		$102,125			$359,900

That is to say, the unbalanced bid, which was apparently the lowest, would result in costing the corporation more than three times as much as the fair bid, and would yield the contractor about 280 per cent. clear profits instead of the fair profit of 25 per cent. This is a very fair specimen of what can be either lost by careless or tricky methods of letting contracts to the lowest bidder, or saved by judicious methods. A competent engineer is as well able to judge of the proportionate prices which should be paid for certain classes of work as a contractor is. In fact, most large contractors now employ engineers to make up their figures for them, and if the proposed plan were put into practice, no attempt at fraud of the kind produced by unbalanced prices attached to erroneous quantities, could be made without being sure of immediate detection by the public and all the bidders.

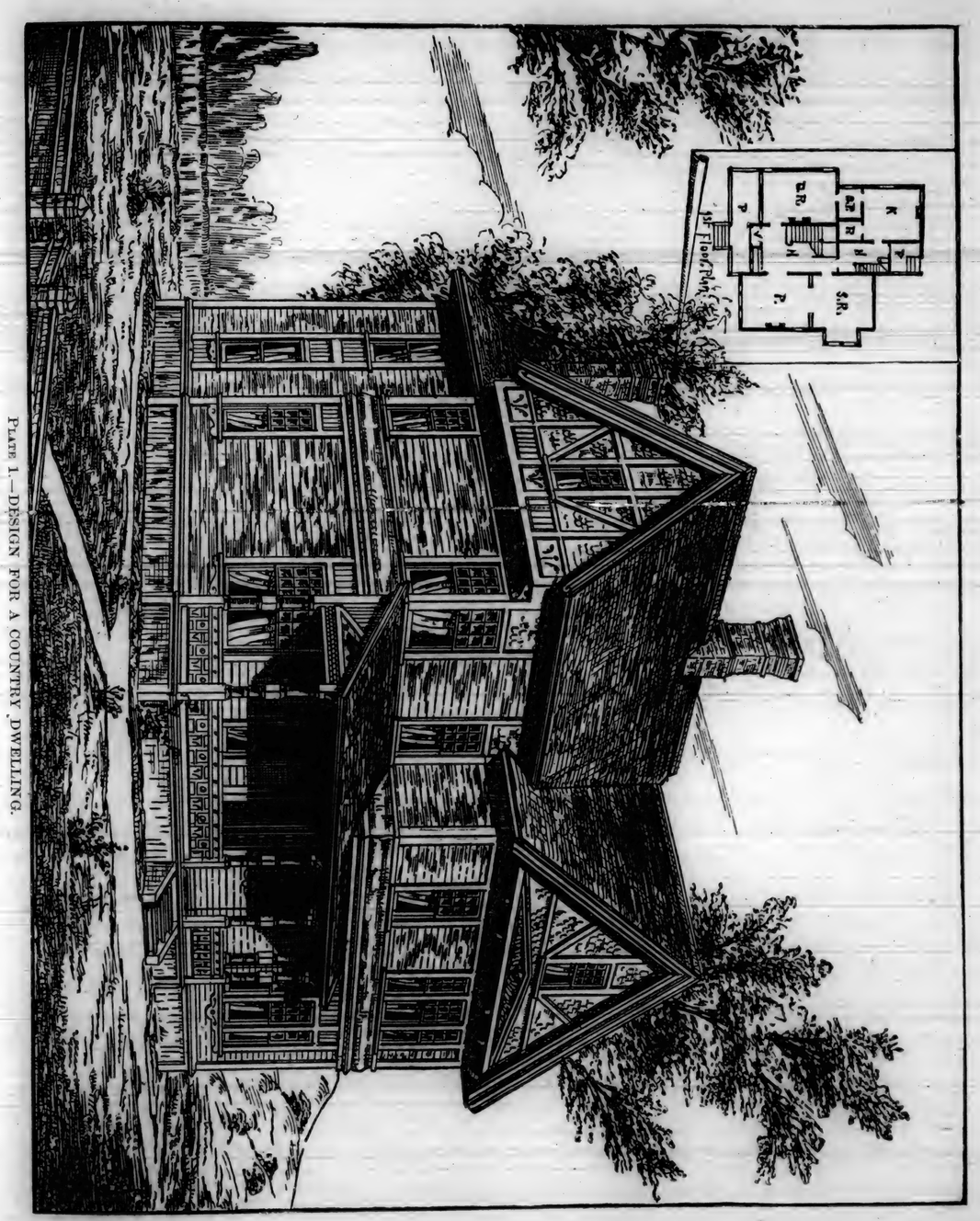

PLATE 1.—DESIGN FOR A COUNTRY DWELLING.

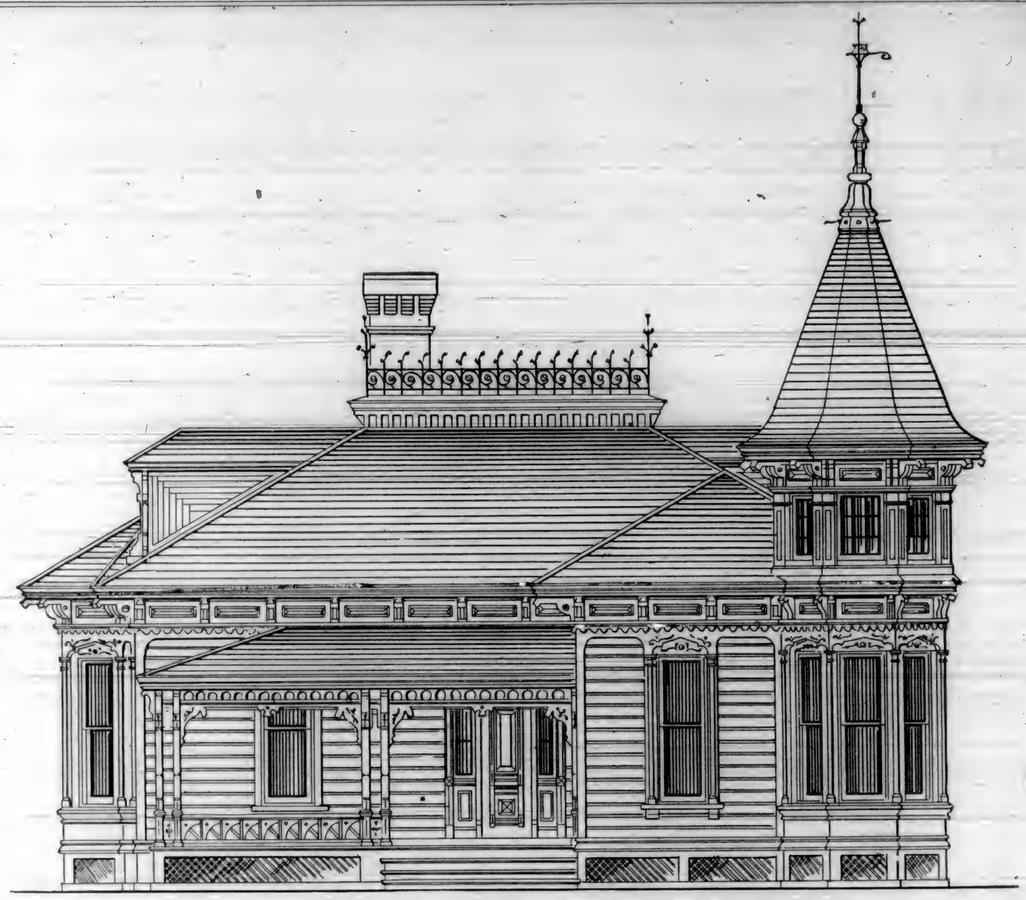

PLATE 2.—FRONT ELEVATION OF COUNTRY DWELLING COSTING ABOUT $3,500.

Our Illustrations.

Plate 1 represents a design for a commodious country dwelling. But little attempt has been made at ornamentation, the object being to present a showy house at as little cost as possible. The windows being placed in the corners is an innovation on the present popular style of bay-windows, and is certainly much less expensive. This building can be erected for from $4,500 to $6,000, depending altogether upon the styles and character of finishes used.

Plates 2, 3, and 4 show the plan, front and side elevations, of a beautiful country dwelling, costing about $3,500. This sum can be varied greatly, as almost double that amount could be used to advantage if extra nice finishes are employed. The amount quoted allows for as nice finish on the outside as is shown by the engraving and neat finishes inside. The arrangements of the rooms is such as to especially recommend the plan for a country dwelling. Stairs are shown leading to the attic. If desired, the elevation could be made 2½ ft. higher than shown, and the design thus changed into a 1½-story house. It will be noticed that the arrangement of the hall is such that in summer a perfect system of ventilation can be had, and in winter, by the use of the hall and other fireplaces, the home can be agreeably warmed in every part.

Plate 5 is an original design for a mantel.

English Wall Decoration.

There is one thing for which we cannot give the English too much praise, and that is their exquisite wall decorations. In this detail of house furnishing they are still a quarter of a century ahead of us. Some of the tile work is crude, and much of it is too sober in color; but there are public and private buildings in which the tile is employed with most exquisite taste. That there are very many gentlemen's mansions in America, where wall ornamentation is carried to a lofty, even an extravagant, pitch of splendor, I admit; but there is not one public restaurant or music hall or shop handsomely decorated in New York for every twenty in London and the minor English cities. In the theaters in England the decorating is lavish, but not tasteful. In the new Strand theater it is gaudy; and the Royalty, the Royal Comedy, the Novelty, and the other amusement halls are evidences of poor taste. But if one wishes to pay liberally he can have more comfort in any English than in an American theater. The decorations of the Savoy theater are lovely under the cool gleam of the electric light; there is nothing at once so original and pretty as this in Paris. The French seem to care but little for comfort in public places; fresh air is not one of their needs, and they hate innovations—literally hate them. Edward King, in *The Boston Journal*.

The California Redwood.

In Humboldt County, California, the whole area of the redwood forest has been mapped and platted. There are something over 500,000 acres of that timber in that county alone. Disinterested experts estimate 100,000 feet of lumber per acre as an average if not a small yield. At $18 per 1,000 feet the redwood of Humboldt County alone would just about pay the present national debt.—*Lumberman's Gazette.*

Index to Vols. 1–4.

All parties who desire a copy of this index should at once send to this office. We have had a large number printed, and in the confusion attending the distribution of so many, doubtless some will be overlooked. A postal directed to this office, will be answered by the immediate forwarding of a copy.

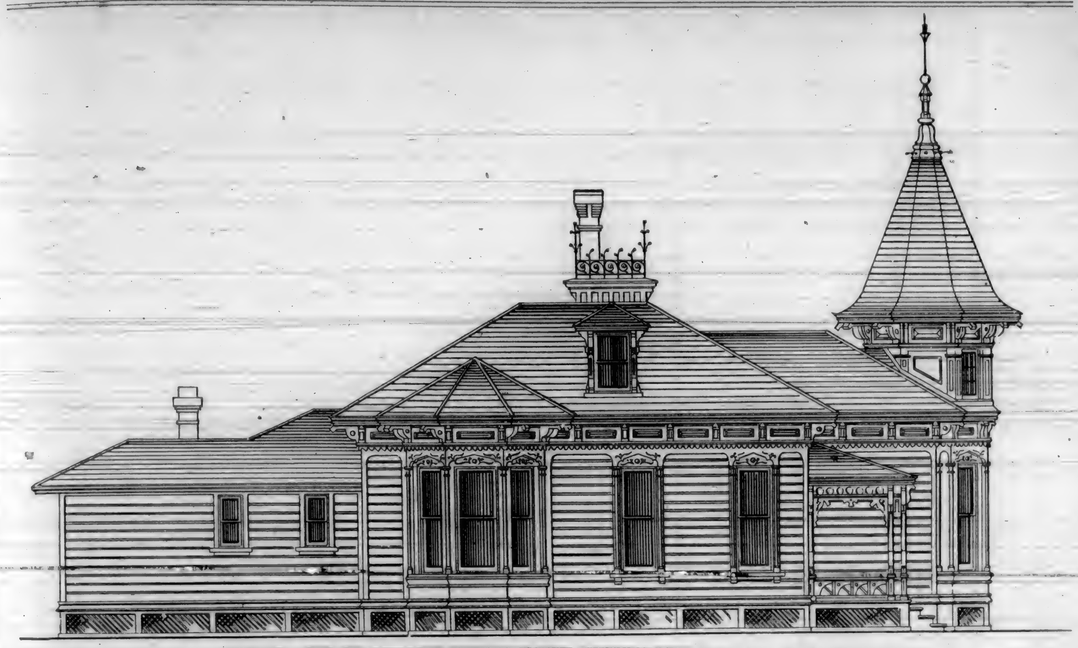

PLATE 3.—SIDE ELEVATION OF DWELLING COSTING ABOUT $3,500.

Tinting and Coloring.

There is a want felt by many when doing a little painting on their own account as to the mode of compounding the tints or colors they may wish to employ; and it is the purpose of this article to give a few hints which may prove useful to many readers of the ARCHITECT. There is a certain taste for fixing a tone to color which must necessarily come from a little practice and observation. For instance, some prime original colors, having more strength, will produce stronger effect when mixed in certain given proportions, but when of a weaker nature a larger proportion should be used to produce any given color. To make bright-toned colors, pure pigments should always be selected, and then the tone is clear and more decided. To make simple lead color, take white paint and add a little good black and a drop of blue, adding these carefully until the desired tint is obtained.

Light gray.—Is made with black and white.

Light buff.—Take yellow ochre and lighten with white.

Lemon color.—Lemon-yellow toned with white.

Stone color.—Take five parts of white lead, two of yellow, and one of burnt umber.

Straw color.—Add white to yellow of an orange tone.

Olive brown.—A little yellow added to burnt umber.

Oak color.—Lighten yellow ochre with white.

Tea green.—Mix raw umber, blue, and green to decide the shade.

Grass green.—Is made with yellow with a part of Prussian blue.

Pea green.—Lighten chrome green with white lead.

Bronze green.—Yellow deepened with black. Another shade is made by adding blue and umber.

Dove color.—Equal parts of white, blue, yellow, and red.

Fawn color.—Is made by mixing with white, yellow, red, and umber.

Snuff color.—Yellow with Van Dyke brown.

London smoke.—Van Dyke brown with yellow and white.

Chocolate color.—Indian red with black and yellow.

Claret color.—Vermilion and ultamarine blue.

Carnation red.—Carmine lake with white.

French red.—Indian red made light with English vermilion and tipped with carmine.

Copper color.—Yellow, vermilion, and black.

Maroon color.—Carmine with Naples yellow.

Rose color.—Carmine with flake white.

Drab color.—White lead with burnt umber.

French gray.—Light shade, white, yellow, and sienna. Deep, white, ochre, and Van Dyke brown.

The above formula applies to oil colors, but where color in water or distemper are used, for black use drop black, as that mixes freely. When colors are made, they should pass through a strainer, or they may be compressed with a muller or spatula on a marble slab. The latter method forms a smooth homogeneous paste paint, spreading evenly over any surface with a fine tone. J. E. W. C.

Salt and Sawdust.

The story is told in a Saginaw paper about a mill in that district that cut 18,000,000 feet of lumber annually, and the exhaust steam manufactured 20,000 bushels of salt. Thus the fuel for making the salt cost absolutely nothing. The slabs from the logs were sold for fuel at $1 per cord. That manufacturer made a fair thing on his logs, and if all could economize the product ike that, there would be but little need of bothlering aboutthe tariff question.

The new and enlarged edition of the Steel Square and its Uses, and the California Architect and Building News for one year, will be sent to any address upon receipt of $2 50.

Preventing Water Pipes from Bursting in Frosty Weather.

A simple method of preventing the bursting of water pipes during frosty weather has recently been patented by Drs. Buxton and Ross, and was exhibited at the late Electrical Exhibition at the Crystal Palace. A valve of special construction, called by the inventors a ventilating valve, is screwed or soldered into the end of the house main service-pipe in the cistern, and a piece of string or wire conducted from it to any convenient spot, and fastened to a nail or hook. When frost is expected, all that is needful is to unhook the spring, when the valve falls upon its seat, and air being admitted through the small pipe, which rises above the surface of the water, the pipes can be emptied by simply turning on the tap at the lowest point in the house service, the water in the cistern being saved. To obviate forgetfulness on the part of servants, the inventors have called in electricity to their aid. A thermometer of special construction is so arranged that when the temperature falls below 33°, a current is sent through an electro-magnet, which releases a catch, causing the valve to fall upon its seat, and at the same time opening a small pet cock at the lowest point in the house service, and draining the pipe. The battery is cut out by the fall of the catch, and when the valve is raised again, that water may flow into the pipes, the connection is made good. The electrical part of the apparatus is by no means an *essential* feature, but simply saves trouble, and prevents the possibility of allowing the pipes to remain full during frost, as the contrivance is rendered automotic by its agency.—*The Building News.*

CARPENTER AND JOINER MODERNIZED.

We will send the above work in connection with the California Architect and Building News for one year, upon receipt of $8.50.

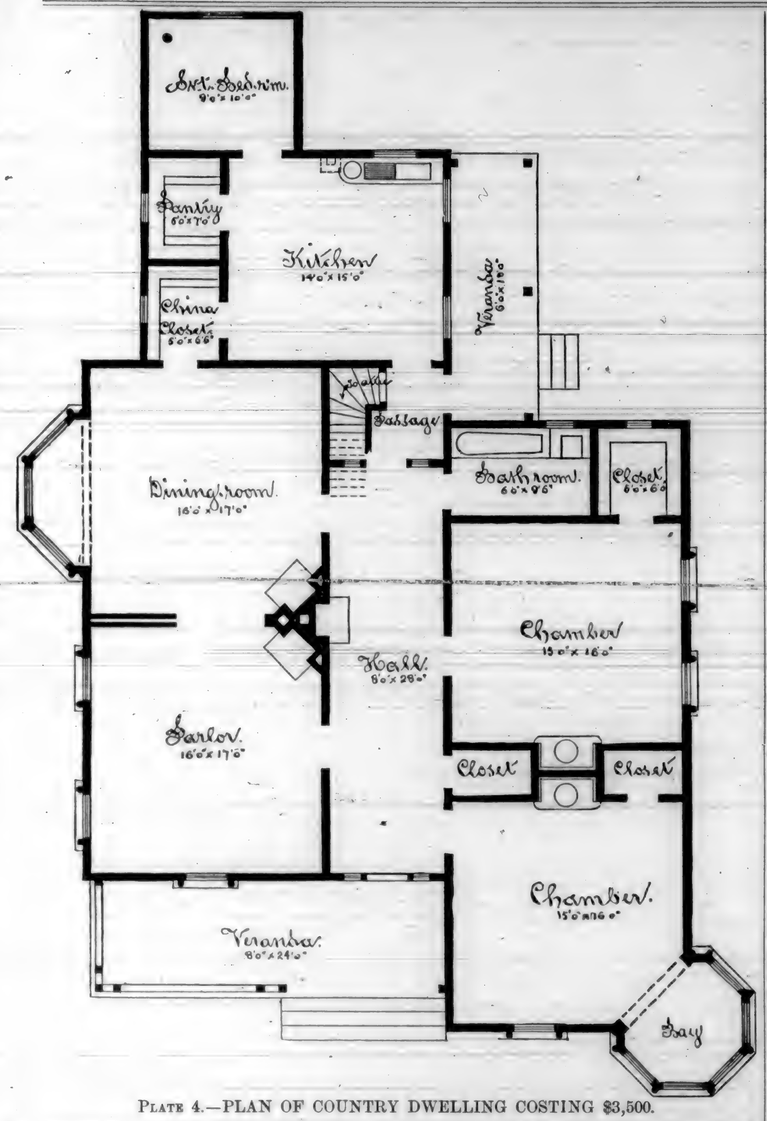

PLATE 4.—PLAN OF COUNTRY DWELLING COSTING $3,500.

Tin Roofs.

Tin roofing, to be good, must be put on with care, well turned up and over all angles, and flashed around all openings. As it is subject to expansion and contraction, leaks are always the result if proper allowances are not made. This is provided against by a raised standing joint, which costs a little more, but pays better by lasting longer; a flat joint is cheaper, but not durable. Tin should always be painted on the outer side of the sheets before using, as the sweating from condensation of vapor causes it to rust readily. Tin roofs should be painted thoroughly every two years, and in angles every fall. Tin sheets are 10x14 inches in size, and of different thickness; sized by X, XX, and XXX. XX is the best for general use, as the metal is thin, pliable, and less liable to crack under strain of contraction than thicker metal; anything thinner rusts through too easily. It is known among makers and dealers by different brands, which designate the quantity of tin actually used. Tin is bright, and of a silvery color; adheres in large, smooth flakes. Compositions of lead and tin, or zinc, are a dead smoky color, and last but a short time under the corrosive influences of salt air, smoke, and acids, these being principal causes of its decay.

It is stated that some kinds of woods, although of great durability in themselves, act upon each other to their mutual destruction. Experiments with cypress and walnut and cypress and cedar prove that they will rot each other when joined together, but on separation the decay will cease, and the timbers remain perfectly sound for a long period.

The Rights of Sanitation.

The time has arrived in this country for the stricter enforcement of a considerable body of miscellaneous sanitary law, and for the enactment and execution of new laws of the kind. This species of law, like all other law, has to struggle against ignorance, selfishness, perverseness, and wickedness. Underlying it will be found the well-defined principles of criminal law. If a man kills his neighbor, the criminal law inflicts the same penalty on him, whether he does the killing with poison, with a knife, with a club, or with a gun; but if he does the killing by means of beer poisoned with "multum," by means of a backhouse in the basement of a building let to a tenant, by means of milk containing germs of scarlet fever, by means of pork containing trichinæ, by means of tea containing a "bloom" of black lead, by means of wall-paper colored with arsenical pigments, by means of wine "doctored" to taste by admixture of plasterage," by means of a child sent to school bearing the contagion of deadly disease, by means of ships so crowded between decks with emigrants that each person has less than thirty cubic feet of air space, by means of a theater so constructed that even in case of *alarm* of fire a large percentage of the inmates are sure to be trampled to death, by means of a hospital built in defiance of every hygienic law as a monument to civic ignorance and pride, by means of a deadly drug administered by pretentious quackery—then the enactors of statutes consider their constituencies, and the elective magistrates look over their shoulders and out of the windows to observe the direction of the popular breeze. While it is very evident that public instruction must keep peace with law, it is also evident that malefactors who snap their fingers at preaching and teaching can be reached only by the infliction of dreaded penalties. The world can never be reformed by moral suasion alone.

Immanuel Kant, the most vigorous ethical soul in modern times, says: "When a man has made a worm of himself, he cannot complain if he is trampled under foot. If tenants, whose humble homes have been visited by the angel of death through the sanitary delinquency of a landlord, instead of passively submitting to their fate, would mob him and throw him into the stagnant pool under the building that he has refused to drain, or into the reeking cesspool that he has refused to clean, it would do more good than the best hygienic tract on sewer-gas ever written. If a thousand emigrants, after escaping from the foul dungeons of an ocean steamer, would turn around and abate the nuisance by burning it up—and there is some color of law for such a proceeding—it would do more public good than any act of Congress winked at by morally stupid officials. If the proprietor of an "Orange County Diary," known to be distributing milk from premises infected with small-pox, scarlatina, diphtheria, or typhoid fever, along a street where crape on many a door already indicates the sad fruits of his deadly trade, were set upon by an outraged community and hung on the nearest lamp-post, instead of being arraigned before a magistrate and "perhaps" fined ten dollars and costs, the summary proceeding would absolutely infuse a healthy ethical vigor into the makers and administrators of law." The public needs to be told again, in the trenchant language of Kant: "Let not your rights be trampled under foot by others unpunished." As long as we have a "stump tail" state of ethics on hygienic questions in the community, too rotten and feeble to beget sanitary indignation, we shall have plenty of interested men to trample uncomplaining worms under foot.—*O. W. Wight.*

☞ **Subscription price of this journal is $2.00 in advance.**

Waste of the California Redwood.

The wastefulness of this lumbering is one of the striking features of the scene. Only the largest trees are cut, those measuring less than two feet in diameter rarely being touched, and the ax is laid, not to the roots (though they are not thick and widely divergent, considering the height and weight they support), but some distance above, so that in very large specimens the massive stump, upon whose flat top you might build a comfortable house, stands ten or twelve feet above the ground, and contains hundreds of feet of sound lumber, which must be left to rot or burn. Then many trees are broken by their fall, so that large parts of them are useless; other parts may be knotty, or crooked, or inconvenient to drag out, and so only half of a great trunk will be utilized. Huge logs are consumed, also, in road-making and bridge-building in the hills, and dozens of small trees are crushed by the fall of their greater companions. Then, when a district is pretty well cleared of its best timber, fire is set in the brush and prostrate trunks. Feeding eagerly upon the resinous woods, half dried and broken, it gathers so much heat that the saplings are nearly all killed, and the flaky, tinder-like bark of the larger trees is singed in a way which must greatly injure and often destroy them. Moreover, these fires, fanned by the gusty breezes rushing in every afternoon from the ocean, often get beyond control, and sweeping through the oily tops and brittle trunks, spread blackened ruin over miles and miles of precious forest. Precious, however, it seems never to occur to the lumberman that these forests are; yet he is probably no more wasteful and careless here than elsewhere, and finds his match for heedless extravagance in nearly every pursuit that deals in what nature furnished us at the outset in abundance, but replaces only very slowly, giving abundant leisure for our repentance. The spendthrift lumberman is bad enough, but no worse than the wasteful oysterman or buffalo-hunters, reckless of the future. It is, or ought to be, a matter of rejoicing to everybody that the foresty people, under Mr. Sargeant's guidance, are paying especial attention to preserving, as far as possible, the magnificent forests of the Coast Range.—*Harper's Magazine.*

The Way It Strikes a Layman.

QUEEN ANNE HOUSES.

Of all the absurdities of modern house-building, this attempt to push in the Queen Anne style of 1700 is the worst. The Queen Anne houses are not at all adapted to the times, and their absurdity has already begun to appear. In New York the style has fallen into discredit, and it will soon be as universally distasteful as it was a year ago universally popular. The Queen Anne houses will become a drug in the market, and they will depreciate the property on which they are located. They are not healthy. Their ceilings are low, and their interiors so constructed as to be ill ventilated and poisonously unhealthy. The laws of hygiene were comparatively unknown when Queen Anne lived, and the economy of warming the houses was a great consideration. Their huge fireplaces acted as ventilators, and the homes of that day were not as badly ventilated as their aped counterparts of the present. Had they possessed furnaces, gas and plate-glass, they would never have lived in such houses. The whole style is against the dictates of common sense. The houses are a disgrace to the intelligence and taste of the country, and their costly diamond-shaped windows are only a phase of the craze for the old and ugly which has swept over America. In two years hence the style will be discontinued in the smaller cities as it now is in the larger.—*Cleveland Leader.*

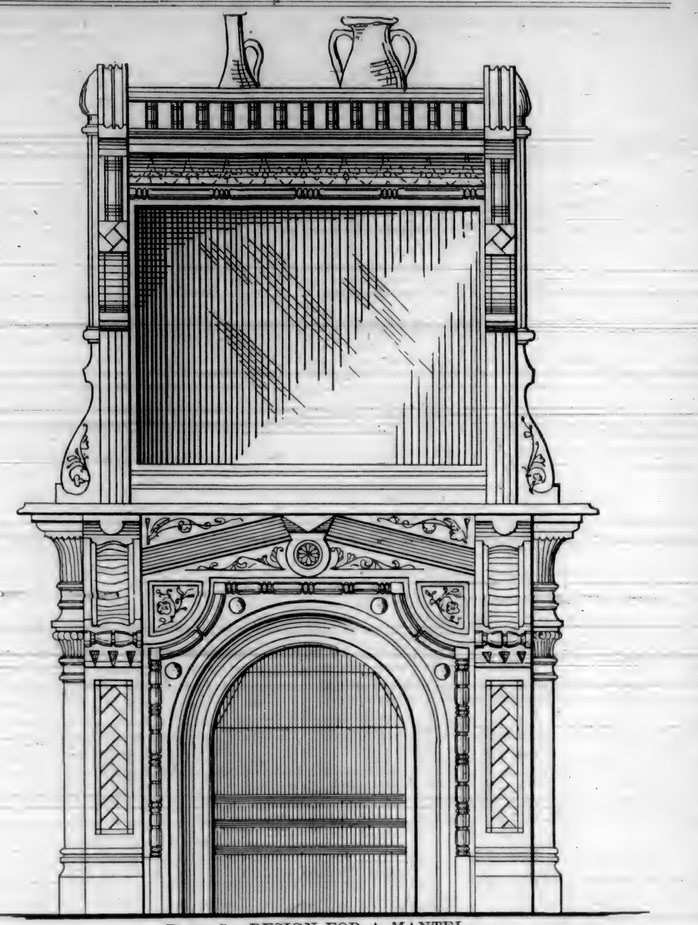

PLATE 5.—DESIGN FOR A MANTEL.

How Tacks are Made.

Described in a few words, the process of making tacks is as follows: The iron is received from the rolling mills in sheets from three inches to twelve inches wide, and from three feet to nine feet in length, the thickness varying, according to the kind of work into which it is to be made, from one-eighth to one-thirty-second of an inch. These sheets are all cut in about thirty-feet pieces, and by the immersion in acid cleaned of the hard outside flinty scale. They are then chopped into strips of a width corresponding to the length of the nail or tack required. Supposing the tack to be cut is an eight-ounce carpet-tack, the strip of iron, as chopped and ready for the machine, would be about eleven-sixteenths of an inch thick and three feet long. This piece is placed firmly in the feeding apparatus, and by this arrangement carried between the knives of the machine.

At each revolution of the balance-wheel the knives cut off a small piece from the end of this plate. The piece cut off is pointed at one end, and square for forming the head at the other. It is then carried between two dies by the action of the knives, and these dies, coming together, form the body of the tack under the head. Enough of the iron projects beyond the face of the dies to form the head, and while held firmly by them, a lever strikes this projecting piece into a round head. This, as we have said before, is all done during one revolution of the balance-wheel, and the knives, as soon as the tack drops from the machine, are ready to cut off another piece.

These machines are run at the rate of about two hundred and fifty revolutions per minute. The shoe-nail machines, for cutting headless shoe-nails, are run at about five hundred revolutions per minute, and cut from three to five nails at each revolution.

When we think of the number of machines now being run in the United States—about seventeen hundred—and of the quantity of tacks and nails they can produce, it is as much of a mystery where they go as it is what becomes of the pins.

The tack maker of fifty or sixty years ago worked as follows: He took a small rod of iron, and after heating it in a charcoal fire, hammered it down so as to make a point; then a piece was cut off, placed in a vise worked by foot power, and the head formed by a few blows of the hammer.—*The Artisan.*

Bird's-eye maple is used for firewood in Michigan, and sold for $160 a thousand in Liverpool.

The New Plumbing and Drainage Law.

The following act, entitled "An Act to grant to Boards of Health in cities and counties the power to regulate the plumbing and drainage of buildings," was passed at the late session of the Legislature of this State, and has received the signature of the Governor, and is therefore a law upon the statute books of California.

SECTION 1. On or before the first day of August, eighteen hundred and eighty-three, every master or journeyman plumber carrying on his trade shall, under such rules and regulations as the Board of Health of such [county] or city [and] county shall prescribe, register his name and address at the Health Office of such [county] or city and county; and, after the said date, it shall not be lawful for any person to carry on the trade of plumbing in any [county] or city and county, unless his name and address be registered as above provided.

SEC. 2. A list of the registered plumbers shall be published in the yearly report of the Health Office.

SEC. 3. The drainage and plumbing of all buildings, both public and private, hereafter erected in any [county], or city and county, shall be executed in accordance with plans previously approved, in writing, by the Board of Health of said [county], or city and county; suitable drawings and description of the said drainage and plumbing shall, in each case, be submitted and placed on file in the Health Office. The said Board of Health are also authorized to receive and place on file drawings and descriptions of the drainage and plumbing of buildings erected prior to the passage of this act.

SEC. 4. The Boards of Supervisors or other city or county officials, whose duty it is to make apportionments for the Board of Health of such [county or city] and county, shall make the necessary apportionment, and shall insert the same in the yearly tax levy, to provide for carrying out the provisions of this act.

SEC. 5. Any Court of record in said [county], or city and county, or any Judge or Justice thereof, shall have power to any time after the service of notice of the violation of any of the provisions of this act, and upon the affidavit of the Health Office or a member of the Board of Health of such [county], or city and county, to restrain by injunction order the further violation named in this act, or of any work upon or about the building or premises upon which the said violation exists, and no undertaking shall be required as a condition to the granting or issuing of such injunction, or by reason thereof.

SEC. 6. Any person violating any of the provisions of this act shall be deemed guilty of misdemeanor.

SEC. 7. This act shall take effect immediately.

The necessity of the enactment of a law which if enforced would limit and regulate the operations of that class of so-called plumbers who neither know nor care anything about sanitary sciences, and who are incompetent to fill places as competent journeyman plumbers, yet post themselves by sign-boards as practical sanitary plumbers, is an admitted fact among the competent plumbers and architects in San Francisco. Whether the bill just passed will accomplish the desired end, is a question yet to be solved. We have no questions as to the integrity and honesty of purpose on the part of those who secured the passage of the bill, and it may answer the purposes for which it was intended; but it might have been improved and made to cover the ground more clearly and thoroughly.

Section 1 calls for the registration of plumbers, which act of registration places all alike, good and bad, upon equal footing, securing no special advantage to the competent over the incompetent, but virtually acting as an indorsement of the very class of frauds who have created the necessity for the act. Section 2 simply authorizes the publication annually of all register plumbers, thereby helping the scaley class by placing their names before the public, among the names of good men, as practical plumbers. Section 3 makes the approval of plans by the Boards of Health obligatory, and creates the necessity of owners paying the extra cost and expense of preparing such plans, or of architects furnishing them gratuitously. Section 4 empowers Board of Supervisors to make the necessary apportionment for the carrying out of the provisions of the act; but the matter of costs and expenses are seemingly left to the discretion of the Boards of Health. Section 5 empowers any Court of competent jurisdiction to issue injunctions, etc. Section 6 defines all violations of the law as misdemeanors.

The act simply provides—more inferentially than positive—that Boards of Health shall have the power to define and regulate the means and methods "for carrying out the provisions of the act," and no limits are prescribed beyond which they shall not pass. It is presumable that such Boards will exercise all proper economies, and restrict expenditures within proper bounds; but as the law reads, extravagances and waste of public moneys are possible; and a strong public opposition is created by the fact, that under the law as it reads, Boards of Health may create places for one or several inspectors at liberal salaries, and use the power of appointment for political purposes. This is not likely to be the case in the first appointment, but hereafter such a course might be pursued. Another opposing argument is entertained in the suggestion that money in many cases may qualify merit, and scheming tinkers succeed in having their botchery passed for acceptable work. This is answered by the friends of the bill, by quoting in illustration the unimpeachableness of the gas inspector, who none will charge with the slightest irregularity. But there is a difference in the two positions. The gas inspector is exclusively under the control of the Gas Light Co., with no contingencies surrounding his appointment during good behavior; while the plumbing inspector will be liable to removal at every charge of the appointing power.

The law as passed is intended to serve a good purpose, and will so operate, so long as a qualified and honest man shall hold the position of inspector. There is also this other assurance that the spirit of the law will be enforced, viz.: Every worthy plumber will be interested in its proper enforcement, and should the appointee of the Board of Health—particularly in San Francisco—fail to discharge his duties correctly, there will always be some one to discover his irregularities and report them to headquarters, with a demand for his removal. The entire fraternity of competent plumbers will recognize the importance of watchfulness, and see that their individual interests are not tampered with by any one who shall receive the appointment of inspector, in allowing to pass any plumbing work not in accordance with the plans approved by he Board of Health. And as all such plans will be on file in the Health Office, they will be subject to inspection at all proper times, and any plumber or other person who may discover improper workmenship, or any trifling with the law, will have the right to investigate matters, and make such complaint as the nature of the case may warrant.

Since the foregoing was set in type, we have been handed a printed copy of "Rules for the Registration of Plumbers," as framed by the committee of plumbers appointed by the plumber association, which fully sets forth and defines the object of the law under notice, and develops the *modus operandi* by which the law is to be made both effectual and practical. Those rules have been prepared for submittal to the Board of Health, and if adopted by the board will qualify all seeming wants and omission in the law as past, and put at rest all the objections we have mentioned, and all that we have heard stated. With a strict enforcement of the "rules" before us, owners and tenants of buildings may rest assured that in the future a very different class of plumbing work will be done in this city, and the hitherto almost universal growl about sewer-gas and defective plumbing work will have ended. This one thing is a fixed fact—that the movement is in no way tinctured with politics, but is the outgrowth of positive necessity, and an effort on the part of the intelligent classes of practical plumbers, both masters and journeymen, to put an end to the mechanical demoralization which has in the past prevailed in the execution of plumbing work in San Francisco. As the rules referred to have not as yet been adopted by the Board of Health, and may be somewhat changed or modified before final adoption, we withhold their publication until perfected. But they are in harmony with the rules adopted by the New York Board of Health in connection with a similar plumbing law which has worked well in that city.

The Nine-Hour Movement.

The Carpenters' and Joiners' Union as an organization, representing as its name implies, the carpenters and joiners of this city, has made public the determination of its members to demand a lessening of the hours of labor from ten to nine hours per diem, without impairment of rates of wages. This conclusion has not been arrived at in haste, nor promulgated upon the spur of the moment, but is the result of prolonged deliberation and discussion; and from the standpoint occupied by those advocating the measure, the justice, fairness, and rightness of the movement is well sustained. But strong opposition will have to be encountered, and it will require more than the mere declaration of principles and rights on the part of mechanics to insure permanent success. We remember well the times—nearly fifty years ago—when the laboring classes of the country first unfolded the ten-hour banner, and resolved no longer to toil from the rising to the setting of the sun, nor to submit to that tyranny which made American freemen but little better than abject slaves, with the privileges and enjoyments of life limited to labor, eat, and sleep. The battle was fierce and protracted, but the right prevailed, and in due time the opposing elements calmed down to an acceptance of the situation.

Capital as a rule has always been arbitrary, exacting, and unyielding, demanding all that could be obtained from labor, with as small outlay as possible. "Grinding the poor" has been one of the curses inflicted upon humanity, and the source from whence has sprung the greater moral and social degeneracy of our race; and the great Author of all wisdom, truth, and love has pronounced in sacred history his utter and absolute condemnation of those who oppress the poor and make merchandise of the labors of human kind. The spirit of tyranny in some form more generally follows the acquisition of wealth. Yet we frequently read accounts of pleasing exceptions, in which the rich extend sympathy, relief, and comfort to the less fortunate, who live but little better than from hand to mouth, and of many good-hearted men who have acquired fortunes, doing noble things. But the underlying—the worm at the root—rule is, as far as labor is concerned, to utilize it to the advantage of capital, upon the most advantageous and economical terms. In manufacturing, building, and all other connections, the number of hours of labor and the pay of operatives become prominent factors. But few scruple at severe exactions to further their own interests, and the cry of "cheap labor" has been and is heard all over the world. And eyes eager for wealth have been and are turned in directions where the services of men and women can be had at least cost and with the shortest cessation from toil. The instances are few in which the financial and individual rights, interests, and comforts of the workers are first considered and fixed upon a broad and liberal basis. Long hours of labor and small pay to workers possess a fascination which blinds the minds of the larger number of employers of labor. Every one who expends money very naturally seeks to obtain the most that can be had for his outlay, but there is a rule of right and fairness, the going beyond which is neither just nor equitable.

We are well aware of the fact that the subject under discussion presents a thousand points of argument pro and con; and while we indorse and advocate all good and right movements calculated to advance the interests and better the conditions of the masses, especially those of the skilled labor classes, we advise caution, good judgment, and patience on the part of the Carpenters' and Joiners' Union, and mechanics generally. Too much haste and immature action have thwarted many a good purpose, and proved destructive to innumerable good causes.

The creation of a general sentiment in favor of any movement, and the pacification of adverse opinions, will prove far more powerful in any case than all the peremptory and arbitrary actions that can be resorted to; the former being conservative, convincing, and aggressive, while the latter tends to antagonisms and oppositions. The farmer who attempts to plant his fields without first removing the stubble and preparing the soil will have but poor return from his sowing.

In this view of the case, we presume that the carpenters and joiners have reviewed all the probabilities, and are prepared to meet the issues and responsibilities involved. The permanancy or failure of the movement is yet to be decided by practical experience. If, as all present conditions indicate, general prosperity is to continue in San Francisco, and the demand for skilled labor increased, the nine-hour rule will likely become a success, until a break-down in prosperities occurs; and even then the rule may be sustained, leaving the matter of wages to be regulated by any future stringency or reversal of building activities; for it may reasonably be anticipated that should the time arrive when again labor shall be in excess of demand, that either the nine hours or the rates of compensa- will be attacked.

The Nine-Hour Mass Meeting.

On the 30th of March, after the foregoing article had been written, the Carpenters' and Joiners' Union assembled in mass meeting, to the number of about three hundred. Speeches were made by several of those present, and the following resolution was adopted:

Resolved, That this meeting indorse the action of the Carpenters' and Joiners' Union in inaugurating the nine-hour system, and pledge ourselves to defend and sustain them in their endeavor to obtain the concession thus demanded.

A committee consisting of twelve members was then appointed to confer with the bosses, with the view of securing the consent and co-operation of the contractors in establishing the nine-hour rule as a day's labor. The moderation and manly fairness, and the absence of rash and hasty action on the part of the Union which has thus far characterized the movement, will do much toward furthering the object contemplated, and of placing it in its more favorable light before those who might otherwise be inclined to interpose opposition.

It is altogether likely that some employers will reject the proposition, and hurl anathemas at the proposed changes and those who have promoted it, with no fair or intelligent consideration of the arguments favoring the project. The contractedness and selfishness of some minds render them incapable of weighing facts and arguments not in accord with conclusions arrived at by them from premises exclusively one-sided and limited. It is a somewhat singular fact that oppositions to such movements as the one contemplated, and all others which seek to change long-established custom, are based upon *presumed and speculative effects*, with but little reference to the rights, comforts, or equities of those who ask concessions or relief. But we agree with no theory or doctrine which proposes to benefit certain classes at the sacrifice of the greater number, who perforce of circumstances are compelled to operate in dependent situations. For it must be admitted that every man and woman who lives by the product of personal toil is in that sense dependent, with the contingencies of life resting upon the more or less uncertain demand for such labor. But that fact does not sanctify the means and measures sometimes adopted to oppress labor and humiliate it at the feet of capital.

NEW PUBLICATIONS.

Cutting Tools Worked by Hand and Machines. By R. H. SMITH.

The chief object of this work is to guide the mechanical student into a correct scientific way of thinking about tools, so that they may be able, aided by practice, to judge *intelligently* whether a tool is good or bad, to criticise its details, and eventually to design new tools scientifically. It is of comparatively little importance that he should know whether the tool is in accordance with the pattern adopted by this or that maker. The author has deemed it of greater importance to explain fully a few than to mention all kinds of tools. It is written in an exceptionally easy and interesting style. It contains 224 pages, 51 wood-cuts, and 14 folding-plates. Price, $1.50.

Handrailing and Staircasing. By FRANK O. CRESWELL.

The system of handrailing introduced is simple and accurate; by its means, the face mold can be struck out on the material from which it is to be cut without the usual labor of projection and transferring. Practical working details of the stairs are given and explained, and it is the intention of this work to remove difficulties from the paths of beginners, and induce others to study this beautiful branch of an excellent trade. Price, $1.50.

Treatise on the Theory of the Construction of Bridges and Roofs. By DR VOLSON WOOD.

This is one of the most reliable and practical works that has yet been presented before the public for consideration. Every known form of bridge and roof construction is treated in a manner so as to give the student a correct and thorough knowledge of the subject. The examples are original, and many of them novel in character. The analysis is generally of a simple kind. Price, $2.50.

American House Carpenter. By R. G. HATFIELD.

This is a practical work on the art of building, comprising styles of architecture, strength of materials, construction of floors, framed girders, roof trusses, stairs, doors, mouldings, cornices, etc., with valuable tables giving the result of experiments made by the author in the strength of all kinds of building materials. This work is a valuable addition to the library of the architect, and almost indispensable to every scientific master mechanic. Price, $5.00.

Cameron's Plasterer's Manual.

Enlarged and revised edition; it contains all that was in the former edition, with all necessary corrections; in addition, it gives an entirely new chapter on practical suggestions and precautions; also new illustrations and additional recipes. Price, 75 cts.

Grimshaw on Saws.

We have just received a lot of this the most celebrated work of its kind extant. Every mill man or owner on this coast, should possess a copy. In it is found the details of the manufacture, filing, setting, swaging, gumming, etc., of every kind of saws; a list of new patents; capacities of saw mills; tables of gauges, and other valuable information. 354 illustrations. Price, $4.00.

The Carpenter and Joiner Modernized.

This valuable work contains new matter of much interest to the carpenter, stair builder, carriage builder, cabinet maker, joiner, and mason. The progress of our age is as remarkable in the building, as in the other arts, and the chief branch of it—carpentry—has had its reformations as distinctly marked as ever changing fashion demands and the requirements of modern taste look for. The modes of meeting these are fully illustrated in this work. Price, $7.50.

Each book in above list will be sent any address upon receipt of the publisher's price.

Bricklaying.

Bricklaying is the art of building with bricks, or by uniting them by cement or mortar into various forms.

The implements used by the bricklayer are a trowel, for spreading mortar and breaking bricks when a piece smaller than a whole brick is required; a hammer for making openings in the brickwork and for driving or dividing bricks, for which purposes one end is formed like a common hammer, and the other is broad and flattened, somewhat after the manner of an ax; the plumbrule, made generally of wood, having a longitudinal opening down its middle and a plummet suspended from its upper end, for carrying walls up perpendicularly; the level, consisting of a long horizontal arm, having a perpendicular branch carrying a vertical arm from which a plummet is suspended; a large square for laying out the sides of a building at right angles; a rod, usually five or ten feet long, for measuring lengths; compasses, for traversing arches and vaults; a line and line pins, for keeping the courses straight and level as the work progresses; and a hod, for carrying bricks and mortar to the workman.

Bricks are laid in courses so as to break joints, and their arrangement with regard to each other constitutes what is called the bond. There are two kinds of bond used in England and America—English, or old English, and Flemish—the former, however, being much more commonly employed than the latter.

The term "bond" generally means that part or those parts of a built structure which tie the other portions together.

In masonry it is a stone or brick which is laid with its length across a wall, or extends through the facing course into that behind, so as to bind the facing to the backing. Also known as binders, bond-stones, binding-stones, through-stones, perpend-stones, headers.

Perpend signifies that a heading stone passes through the whole thickness of a wall; binder, that it extends part of the distance across.

In what is known as heart-bond, in stone walling, there are no perpend stones, but two headers meet in the middle of the wall, and the joint between them is covered by another header.

Chain-bond is the building into the masonry of an iron chain or bar, or heavy scantling.

A cross-bond is a block-bond in which the joints of the second stretcher-course comes in the middle of the first; a course of headers and stretchers intervening.

In block and cross bond the extrados of the wall is put up in cross-bond; the intrados in block-bond.

In bricklaying, in English bond, the courses of headers alternate with the courses of stretchers. In the Flemish bond each course has headers and stretches alternately. It need hardly be remarked that the stretchers are those bricks which are placed lengthwise of the wall, and the headers are those laid endwise.—*Brick, Tile and Metal Review.*

We have received from Palliser & Co. plans and specifications of a modern 8-room cottage with tower, also showing how it can be built without tower, with only six rooms. These plans are finely finished, and give full details of mantels, stairs, doors and casings, cornices, etc. They also send us blank specifications for frame or brick buildings, costing $500 to $5,000, which include two of their new blank forms of building contract. These are perfect, have been drawn with great care and precision, and have been recently published. Architects and builders would do well to write to this office for information concerning these forms, which are in every way complete, convenient, and suitable for the purposes intended.

Dry Rot and Worm-Eaten Wood.

A question on this subject having been recently asked in the columns of our contemporary, the *Building News*, Mr. W. Stevenson, of Hull, has supplied the following answer, which will be read with interest by wood-workers in general: "Dry rot," he says, "is a term applied to damp wood under process of destruction by fungi, or low forms of vegetation. The albumen and the essential oils in the wood become the food of this secondary or parasitic vegetation; the woody tissue is broken up, and the walls of the cells destroyed, an earthy, powdery matter being left as the residue. This residue bears on its face a close resemblance to burnt or charred wood. Indeed, it is akin to burnt wood, for the albuminoid sand the essential oils, which escape under the influence and form the food of fires, have been consumed or absorbed by parasitic vegetation. The residue, an earthy, inflamable substance, is practically identical with that resulting from fire. Dry rot, or the destruction of wood by secondary forms of vegetation, is dependent upon two conditions—heat and moisture. To prevent dry rot, the wood is dried or seasoned, by which one of the elements is withdrawn. To guard against the return of this one element, the wood is painted or varnished, and hence the general application of paint or varnish. Where wood cannot be painted, preservatives are used, the object of which is to change the character of the wood, so far as its secretionary matter is concerned. In this direction, creosoting is the most common or customary, the object of which is to poison the albuminoids and the essential oils, and so render them unfit for food to low or secondary forms of vegetable life. Salts, sodas, and metallic injections have the same effect, but they are in large degree soluble in water, and in course of time become weak or disappear, and consequently they are not so largely or generally used as creosote oil. The amount of moisture necessary for the support of this secondary vegetation is very large. This is supplied by humid or stagnant air, or by damp walls or subsoils, and hence it follows that wood subject to passing air, or brought under the influence of vegetation, is free from this disease or dissolution.

"Worm-eaten wood is wood injured by mechanical action, i. e., by animal life. The same conditions are imperative to the support of this form of life as to the above, but the amount of moisture necessary in this case is very small campared with that required for the support of vegetation. Wood to be worm-eaten must be subject to damp, humid, or stagnant air, and it must be a sweet wood or the sap of a bitter or pungent wood. Ash, elm, walnut, birch, beech, and lime-tree are sweet woods, and very subject to worms. Oak and resinous wood are bitter, pungent, or unpalatable, and, except in the sap-wood, are fairly free or proof against the attack of worms. Under certain conditions, as in the roofs of churches covered down with lead, where condensation of the atmosphere ensues, and the wood absorbs the moisture, the heart-wood of even oak will fall a prey to the action of worms. In some cases the necessary moisture is supplied by the ends of the beams being inserted in walls, the materials of which are porous stone. Here the damp ends of the beams will be riddled with worms, and sponge-like, they will crumble away, and, if not supported, will fall clear off the walls. The heart-wood in this case seems to have lost its pungent qualities and to have become soft with long saturation; but, not having been seized upon by fungi, to still retain its albuminoids, and to be sufficiently endowed with them to form the food of worms.

"As to the worms themselves, they are the grubs or larvæ of the furniture beetle (*Anoblum striatum*), better known as the book-worm, an insect that will bore through volumes in search of the book-binders' paste, which is composed of flour or albumen. The beetle is subject to four stages of life—1st, the egg; 2nd, the grub or larvæ; 3rd, the pupa or chrysalis; 4th, the perfect or winged insect. The parent deposits the egg, which is provided with a supply of albumen, as in the eggs of birds where we recognize it as the 'white of the egg.' Moisture and food are thus supplied to the insect, and heat is supplied from the rarefied atmosphere of the summer season. The egg is hatched in the hole or crevice in which the parent deposited it, upon which the instinct of the animal teaches it to bore into the wood. At this stage it is small, and has exhausted its stock of food. Its boring operations are performed by powerful forceps or mandibles attached to the head, by which it detaches fragments of wood, not for the sake of forming a habitation, as some observers believe, but for the purpose of food, the object being to extract the albumen from the wood as the particles are passed through its intestines. The result is, that the grub-worm, or larvæ, increases in size as it bores in and along the wood. It will avoid touching or breaking into the neighboring chamber, and in its tunneling operations shows a remarkable instinct—one worthy of most careful study. When the grub or worm has attained its full size, it will be found to be possessed of a black head and a long, round, fatty body, at which stage it changes to the pupa. The insect is then enveloped in a case or cocoeon, from which, after absorbing the fatty store or albuminous compound secreted by and in the body of the grub, or larvæ, it emerges a perfect winged insect, in which state it has power to liberate itself from its prison of wood. I have known them in this stage, when propagated in limewood carvings, to bore for the painted surface, and to actually bore through sundry coats of paint to effect their escape. The parent insect will not bore through, or lay eggs in or upon the paint, but will reach the naked wood through some crevice or joints between the junction of two pieces of wood. In the mature insect effecting its escape, it will bore through foreign matter, like paint, that would be poisonous to the young grub or larvæ. This is owing to the fact that the perfect insect is not boring for food and sustenance, but merely to effect its escape from its prison home."

CARPENTER AND JOINER MODERNIZED.

We will send the above work in connection with the California Architect and Building News for one year, upon receipt of $8.50.

Reduction of Postage.

The Post-office Department will soon issue a circular in view of the reduction of letter-postage, which takes effect October 1st, calling the attention of postmasters and the public generally to the fact, and admonishing the former to cut down the stock of stamps kept on hand. No steps have yet been taken toward the issuing of a new stamp other than that the head of Washington, which now ornaments the three-cent stamp, will be printed upon the new two-cent issues. The color and design for the stamp have not yet been determined, but will erelong, so that in the intervening six months everything may be made ready for the change. The Canadian Government has decided not to follow the example of the United States in establishing two-cent postage.

The California Architect and Building News for one year, with a copy of the Carpenter's Pocket Companion, will be sent to any address upon receipt of $2.50.

Buying vs. Building.

The statement often made that it is cheaper to buy than to build, even when followed by the large qualification—if one can find what suits him—is erroneous. It is true, there are foreclosed mortgages, auction sales of household goods, and pawn-brokers' shops, by means of which real estate and personal property change hands with little regard for actual values, and chances to buy at low rates are often found. So there are men who build houses for themselves, which, proving unsatisfactory, their owners are willing to sell for less than their cost. There are others who, through change of residence or inability to pay their debts, are compelled to part with their homes at a pecuniary sacrifice; and speculative builders not infrequently push their enterprise so far during prosperous periods that when the real estate pendulum swings to the off-side they are compelled to unload at any price, even if such one-sided operations upset them into the slough of bankruptcy. All these things are common enough, more's the pity. Yet it is a mistake to suppose that on legitimate business grounds it is cheaper to buy than to build. Old homes cannot well be compared with new, for their relative values would be largely a matter of taste and opinion, affected more or less by change of position and the varying circumstances of different cases. It should be remembered, in favor of the new, that wooden houses as commonly built deteriorate rapidly, and the cost of improvements and repairs will increase with age—expenses that ought not to exist during the first five or ten years of the life of a new building.

As regards the houses built for sale and those built by their owners for their own occupation, there is no good reason why the latter should cost more than the former. For the common impression to that effect there are several reasons. It is assumed that the same principle applies in house-building as in some other kinds of business; and the more extensive the manufacture, the cheaper will be the product. This is true to a very limited extent only, because, as a rule, each house differs from every other in some degree, and because the best results in building require a large proportion of skilled, intelligent workmen. Another reason for this opinion seems to be based upon the most solid of all grounds—every-day experience. Men wishing to build for themselves are offered houses that are satisfactory in size and quality, at lower prices than any estimates they are able to get upon *what seems to them* the same thing, modified slightly to suit their special needs. But in the majority of cases they are not the same thing. When a man follows the building of his own house, either in the actual work or through minutely drawn plans and specifications, he expects and demands at every step, from the mouth of the drain to the top of the smoke flue, a perfection and thoroughness in all the materials and workmanship visible and invisible, that are not often found in houses built "for sale," but which he would not care for in his own if he had not seen it until it was completed. In brief, whether he intends it or not, he virtually expects the house he builds to be better than the one he would buy, not only better suited to his needs, but better in construction. For the same thing it would cost him no more to build than to buy, but he is never quite satisfied with the "same thing."—*The Builder.*

Carpenters should remember that fresh glue dries much more readily than that which has been once or twice melted. The finest ordinary glue, or that made from white bones, absorbs twelve times its weight of water in twenty-four hours; from dark bones the glue absorbs nine times its weight of water, while the ordinary glue, made from animal refuse, absorbs but three to five times its weight of water.

Building Prosperities of Portland, Oregon.

Building operations in this fair city of the North-west, are at present very lively, and from advices received from architects and builders, the present year will outrank any previous record in the number of new buildings erected.

From the columns of *The Commercial Herald*, a new aspirant for public favor, and from its appearance and the ability of its editorials, well worthy of support, we are enabled to present the following record of new buildings now in process of construction:

Brick building soon to be constructed on corner Fourth and Yamill streets. Size 100x100, 4 stories in height. Two story frame, corner East Park and D streets; owner, P. Taylor; contractor, J. C. Bennet; cost, $6,000.

J. Slavig is building a two-story frame residence, corner Sixth and Clay, to cost $3,800.

F. Opitz will construct a three-story brick block on the north-west corner of First and Pine at once.

Work has begun on the new Presbyterian church, corner of Fifth and J streets, East Portland.

Cleghorn & Bunting are rebuilding the old Eagle hotel, on Second street, between E and F, at a cost of $10,000.

H. H. Lone has under construction, on the south-east corner of Taylor and Ninth, a two-story residence costing $2,000.

The Long Island House, on the north-west corner of Front and C streets, will soon be replaced by a four-story brick.

Henry Weinhardt will soon commence construction of a four-story brick block, corner Second and Oak streets, 95x100.

Mrs. Vantine has a block of five residences under construction on Seventh, between Taylor and Yamhill, to cost $18,000.

Work on J. W. Cook's new brick block on Front street, between Ash and Pine, is progressing rapidly. It will cost about $35,000.

W. E. Robertson has commenced construction of two handsome residences on the south-east corner of Taylor and East Park streets.

A handsome residence is about to be constructed by Hon. H. W. Corbett, for his son, in the vicinity of Bishop Scott grammar school.

Captain Lewis Love will erect another large frame block on the south-west corner of Front and Clay, immediately back of his new hotel.

H. Fleckenstein has in course of erection a block of handsome residences on East Park, between Montgomery and Harrison, to cost about $25,000.

Work on the dock and warehouse of W. S. Ladd, at the foot of Taylor street, is being vigorously prosecuted. It will cost about $25,000 when completed.

H. E. Dosch, of Akin, Selling & Co., has a two-story dwelling-house in course of construction on Taylor, between West Park and Eighth, to cost about $3,000.

Foundation is being laid for Labbe Bros.' handsome four-story brick block on the north-east corner of Second and Washington. It will contain six stores.

J. A. Strowbridge's new three-story brick block on the north-east corner of Second and Yamhill will be 75x100 in size, and cost nearly $50,000 when completed.

Reconstruction of the J. C. Ainsworth building has been commenced, and a third story will be added to its previous height. Contractor, F. W. Lewis; cost, $20,000.

Goddard & Frazier have leased the property on the north-west corner of Sixth and C streets, and will commence the erection of a three-story livery stable at once.

Workmen are busily engaged tearing down the old stone foundation on the south-east corner of Front and Morrison streets, preparatory to the erection of a brick block.

A. H. Johnson will soon erect a four-story brick building to occupy the 100 feet square on the south-east corner of First and Taylor streets. It will cost about $100,000.

Workmen have moved the dwelling on the north-west corner of Fourth and Alder streets, and Mrs. Burk, owner of the property, will erect a building 25x60, for business purposes.

The excavation has been made and foundation commenced for Fred Bickel's new brick block, corner Front and C streets. The building will be 100x100, and cost about $50,000.

The two-story brick on the south-west corner of Front and Stark streets is to be torn down to make way for a handsome brick building three stories in height, to cost about $20,000.

The buildings on the lot adjoining the corner of First and Clay streets, east side, are being removed, and are to be replaced by a three-story brick. The property is owned by W. W. Spaulding.

Plans have been prepared by E. M. Burton for a row of three double residences for J. M. Kenworthy, of East Portland, to be erected on Seventh street near the Episcopal church. They will cost about $12,000.

A building will soon be erected by Messrs. D. P. Thompson and M. S. Burrell on the New Market block, north-east corner of Second and Ash streets. It will be 100x70 feet, and three or four stories high.

D. Goodsell has let the contract for a three-story frame block 50x70, on Third street near B. The building is to be completed by May 1st. The first floor will be occupied by stores, and the upper floors be fitted up for lodging rooms. Its cost will be about $10,000.

C. A. Malarkey has leased the quarter block on the north-west corner of Fourth and Morrison streets, and will remodel the present buildings into business houses, adding a new frame building to fill out the entire space leased.

Architect Sherwin is preparing plans for three handsome dwellings, to be erected by Hon. Geo. H. Williams on the half block immediately adjoining the fine residence he is erecting for himself near the Bishop Scott grammar school.

At a meeting of the board of trustees of the Odd Fellows' Orphans' Home, held last week, the plans and specifications of the building prepared by architect Krumbein were formally accepted. The cost of the building will approximate $10,000.

Construction of a $200,000 flouring mill, and $700,000 elevator in Albina, $250,000 iron works, $500,000 hotel, and $1,500,000 depot in Portland, and several hundred business blocks, stores, residences, etc., in Portland, East Portland, and Albina, during the coming season, will give to our city a building boom such as has never been witnessed in the North-west. It is likely that not less than $5,000,000 will be expended in new buildings alone during 1883.

The *Ledger* says the Episcopal college projected at New Tacoma is certain to be built. C. B. Wright, of Philadelphia, formerly President of the Northern Pacific Railroad Company, has pledged Bishop Paddock that if his friends would raise $50,000, he himself would add thereto $100,000. The Bishop, who is now in the East, announces that a large proportion of the $50,000 has been raised.

The old foundations on the ground immediately north of the National Hotel are being renovated by Canuto & Zanello. They have undertaken the contract to prepare them for a magnificent four-story brick to be erected thereon shortly. The material used for the foundation will be entirely of stone, and the extra work will probably amount to $20,000. The building will have a frontage on Front street of 100 feet.

The Willamette Iron Works have purchased the block bounded by Third, Fourth, G and H streets, paying $75,000 therefor, and will erect thereon a building for their new works. The entire plant, when completed, will have cost the comfortable sum of $250,000. The building will cover the entire block, and will be two and three stories in height, built of brick, stone, and iron, and will be completed by the last of September, but the company cannot move in before the first day of January, 1884. When finished, it will be the most complete and best arranged foundry west of Pennsylvania, and the largest on the North Pacific coast.

The authorities of the Taylor street M. E. church, have purchased of Mr. Skidmore for $14,500 a half block on the north side of Taylor street, between Tenth and Eleventh. It is proposed to erect on the new site a very fine tabernacle, costing from $35,000 to $40,000.

A commodious wharf will soon be built at Montesano.

Farmington, W. T., is to have a new steam flouring mill.

The Port Blakely saw-mill is cutting up logs as briskly as ever, at the rate of 180,000 feet a day.

A number of parties are looking at the Sinslaw country, with a view of building a saw-mill there.

The Oregon Improvement Company will soon begin building a fine wharf at Seattle, 240 feet long, running from Main to Washington street. The wharf will be built so as to leave a sixty-foot slip at the foot of Main street.

To Remove Clinkers From Stove Linings.

Once in a while we see in the papers directions for removing clinkers from the linings of stoves. Prevention being better than cure, I propose to show how they can be prevented. Three years ago I put a new lining in a No. 3 Magee heater, and no one would imagine, from examining it to-day, that it had been used more than a week. With a piece of iron about half an inch wide, bent to reach the whole lining, I scraped the surface of the lining, shake down lightly, and then put on coal. Kindlings will be required if the fire has been left to get too low, but it is better to do this earlier, as it keeps a steadier fire, and takes no more coal. I think I can explain it on correct principles. When the fire is the hottest, there are no ashes; but as the heat has decreased, the ashes have formed and settled down against the lining, and shaking does not wholly remove them. If more coal is added, the heat is sufficient to fuse the ashes on to the lining, and there they stay. Each time this is repeated more ashes adhere, and it does not take long to spoil the lining. I scraped these ashes off thoroughly the first thing, and none adhere, and it seems that the lining will never wear out.

There is another thing to be noticed. If one stirs a coal fire at the top, in the center, the fire generally goes out, because cold air goes up through the centre; but by scraping around the outside of the fire, and leaving the center undisturbed, the air going up around the fire slightly cools off the lining, and the coal in the center retains its heat sufficient to burn up again quickly without kindlings, if the replenishing has not been too long delayed. The grate must be let down often enough to prevent the accumulation of clinkers in the bottom. Once or twice a week I let down my great, replace it, and put in some wood, then some of the live coals on the top, when it burns up immediately. I then put on a hodful of coal and close the stove, and have a fire at once without the heat having gone down, and so keep a good fire all winter. This can be depended on: that scraping the ashes from the lining before replenishing a fire—*every time*—will effectually prevent clinkers from adhering.—*Ex.*

SAN FRANCISCO.

Octavia x Pine & California. Two-story and attic frame.
O.—S. Sussman.
A.—Schmidt & Havens.
C.—Thos. Moffat.
$15,000.

Mission & Bond. Frame-building, flats.
O.—Mrs. M. Brown.
A.—Schmidt & Havens.
C.—Terrill & Slaven.
$6,800.

Hyde x Post & Geary. Two two-story and basement frame.
O.—Mrs. C. Lauenstein.
A.—Schmidt & Havens.
C.—Haskell & White.
$5,500.

Buchanan & California. Alterations.
O.—A. Monpelier.
A.—Schmidt & Havens.
C.—F. Klatt.
$1,500.

Mission & Twelfth & Thirteenth. Three two-story frame.
O.—C. C. Vorrath.
A.—G. E. Voelkel.
C.—Thom Wohrden.
$12,000.

Natoma x Tenth & Eleventh. Two-story frame.
O.—C Dunker.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$2 500.

Eddy x Polk & Larkin. Four two-story frame.
O.—E. & J. Dusenbury.
A. Schmidt & Havens.
C. Terrill & Slaven.
$16,000.

Franklin & Golden Gate Avenue. Alterations.
O.—K. Strauss.
A.—Schmidt & Havens.
C.—C. Chisholm.
$1,200.

Mission x Twelfth & Thirteenth. Two two-story frame.
O.—H. Sammi.
A.—G. E. Voelkel.
C.—Thom Wohrden.
$8,000.

California nr Montgomery. Alterations, Merchants' Exchange.
A.—Newsom & Gash.
C.—G. D. Nagle.
$4,400.

Post x Kearny & Dupont. Alterations.
O.—Hollis & Berts.
A.—H. D. Mitchell.
C.—Gonyeau.
$18,000.

Main nr Market. Two-story building.
O.—Schmidt Eng. Co.
A.—H. D. Mitchell.
C.—W. E. Stevens.
$1,800.

Excavations for proposed Dominican Church.
A.—T. J. Welsh.
C.—E. Kenney.
$3,485.

Octavia x McAllister & Golden Gate Av. Two-story and basement frame.
O.—Walker.
A.—W. Curlett.
C —Kincaid & Baldwin.
$5,000.

Golden Gate Av. x Laguna & Buchanan. Three-story frame.
O.—F. Grass.
A.—Schmidt & Havens.
C.—W. Langstaff.
$6,500.

O'Farrell x Taylor & Jones. Three-story frame.
O.—W. F. Robinson.
C.—Kincaid & Baldwin.
$7,000.

Leavenworth nr Sutter. Two-story and basement frame.
O.—Mrs. Jehus.
A.—Cleaveland & Swain.
C.—E. Watts.
$6,000.

Mission cor. Mary. Three-story and basement frame.
O.—Donahue.
A.—Smith.
C.—T. J. Welsh.
$8,000.

Ellis x Laguna & Buchanan. Two-story and basement frame.
O.—Blankbury.
A.—Kenitzer & Raun.
C.—E. Farrell.
$.

Ellis nr Buchanan. Two-story and basement frame.
O.—Porter.
A.—Kenitzer & Raun.
C.—E. Farrell.
$.

Van Ness nr Ellis. Alterations.
O.—H. Sadler.
A.—Schmidt & Havens.
C.—W. Fluns.
$4,000.

Bush nr Baker. Two-story frame.
O.—J. W. Wetmore.
A.—McDougall & Son.
C.—J. H. McKay.
$5,000.

Waller nr Steiner. One-story and basement frame.
O.—Strasser.
A.—Geo. Miller.
C.—J. Blake.
$1,300.

Bartlett nr Twenty-third. Two-story frame.
O.—Capt. Stockfleth.
A.—H. C. Macy.
C.—L. D. Frichett.
$3,200.

Capp x Twenty-third and Twenty-fourth. Two-story and basement frame.
O.—C. H. Evans.
A.—S. & J. C. Newsom.
C.—J. Doherty.
$5,500.

Ellis x Hyde & Leavenworth. Two-story frame.
O.—R. H. Lloyd.
A.—Kenitzer and Raun.
C.—Conrad & Miller.
$8,000.

Turk x Hyde & Leavenworth. Two-story basement frame.
O.—Mrs. Manning.
A.—Schmidt & Havens.
C.—Heald & Gillespie.
$5,000.

Dolores nr Twenty-third. Two-story frame,
O.—N. Stone.
B.—M. H. Colley.
$6,000.

Dolores x Twenty-third and Twenty-fourth. Two-story frame.
O.—F. Sandborn,
B.—M. H. Colley.
$6,000.

Fifth and Harrison. Additions.
O.—J. Martin.
Day's work.
$2,500.

Mission nr Eighteenth. Two-story frame.
O.—C. Herring.
A.—H. Geilfuss.
C.—P. Stecher.
$2,500.

Twenty-second nr Valencia. Two-story frame.
O.—Mrs. Lewis.
C.—W. Walsh.
$3,000.

Twenty-eighth x Dolores & Church. One-story and basement frame.
O.—Wm. Dodd.
Day's work.
$1,100.

Twenty-eighth & Guerrero. Two one-story frame.
O.—Mr. Klavensawl.
C.—Lanfian.
$1,000.

Guerrero & Fair Oaks. Two one-story and basement frame.
O.—J. Cronigal.
A.—R. Warren.
C.—L. Larivee.
$3,300.

Shotwell x Fourteenth & Fifteenth. Two-story basement frame.
O.—Mrs. C. Schreiber.
A.—H. Geilfuss.
C.—R. Doyle.
$3,900.

Stevenson nr Twentieth. Alterations.
O.—S. Moore.
Day's work.
$2,000.

Twenty-eighth nr Dolores. Two-story frame.
O.—J. Riper.
C.—R. Bergfeld.
$2,000.

Sanchez Av. x Twenty-seven & Twenty-eighth. Alterations.
O.—J. Lind.
C.—J. Cordano.
$500.

Shotwell x Nineteenth and Twentieth. One-story frame.
O. & B.—J. H. Patton.
$1,000.

Stevenson nr Ninth. Three-story and basement frame.
O.—J. Kirk.
A.—Geo. Miller.
C.—G. Hansbrough.
$7,000.

Washington cor Larkin. Two two-story and basement frame.
O.—Chas. Hinkle.
Day's work.
$6,500.

Washington cor Fillmore. One story frame.
O.—G. Uhl.
A.—C. Mau.
C.—Treadwell & Thompson.

Broderick nr Bush. Thirteen two-story frame.
O.—Chas. Hinkle.
Day's work.
$45,000.

California cor Devisadero. One-story and basement frame.
O.—J. A. Keene.
A.—Kenitzer & Raun.
C.—Moore Bros.
$10,000.

Washington x Polk & Van Ness. Additions.
O.—J. F. English.
C.—W. Wharff.

Pacific nr Van Ness Avenue. Two-story frame.
O.—W. F. Canham.
C.—T. Lasby.
$1,000.

Clay cor. Broderick. Two-story frame.
O.—Shortsline.
A.—Geilfuss.
C. Conrad & Miller.
$3,000.

Seaside Gardens. Presidio Pavilion.
O.—Hink & Burkhardt.
A.—C. Mau.
C.—B. Dryer.
$7,000.

Seventh x Folsom & Howard. Additions.
O.—H. Boyle.
A.—Eisen & Co.
C.—T. J. Hamilton.
$1,500.

Eighteenth nr Howard. Two-story and basement frame.
O.—James.
A.—G. A. Bordwell.
C.—Gray & Stover.
$3,000.

Front x Filbert & Union. One-story brick.
O.—American Sugar Refinery.
C.—C. Shoenmaker.
$20,000.

Laguna cor. Fell. Additions.
O.—C. Gienger.
C.—Thom. Wohrden.

Fillmore cor. California. Alterations.
O.—C. Nobmann.
A.—Voelkel.
C.—Cook & Johnson.

Ninth x Bryant & Harrison. Three story frame.
O.—Pacific Box Factory.
A.—Mooser & Depierre.
C.—D. Roy.
$7,000.

California x Broderick & Baker. Two-story frame.
O.—W. Martin.
A.—H. T. Bestor.
C.—Girvin & Munn.
$5,000.

Gough & Ivy Av. Two two-story frame.
O.—M. Cazelis.
A.—Huerne & Everett.
C.—Kreger.
$4,000.

Fair Oaks cor. Twenty-fourth. One-story frame.
O.—T. Le Huquet.
A.—Moore.
C.—Terrill & Slaven.

Washington nr Broderick. Two-story frame.
O.—J. Mellody.
A.—Moore.
C.—Langstaff.

OAKLAND.

Cor. Fifteenth & Brush. Two-story barn.
O.—E. B. Dean.
A.—Matthews & Son.
Day's work.
$2,500.

Madison x Fifteenth and Lake. Two-story frame.
O.—Merritt.
Day's work.
$7,500.

Filbert x Eighth & Tenth. Two-story frame.
O.—H. Althorp.
A.—C. Mau.
C.—W. Dahl.
$6,000.

Third and Market. Two-story frame.
O.—L. Marini.
A.—C. Mau.
C.—W. Dahl.
$3,000.

Centre & Eighth. Additions.
O.—J. Samm.
A.—C. Mau.
Day's work.
$800.

Broadway & Tenth. Two-story brick.
O.—F. Derger.
A.—Kenitzer & Raun.

Eighteenth nr San Pablo Av. Two-story frame.
O. & B.—W. F. Curtis.
$3,800.

Twenty-first nr San Pablo Av. One-story frame.
O.—H. Swail.
A.—Eisen & Co.
C.—Lockhart & Bentley.
$3,000.

West cor. Ninth. Two two-story frame.
O.—Col. Woods.
C.—Brown.
$4,800.

Brush cor. Ninth. Two two-story frame.
O.—Col. Woods.
C.—Brown.
$4,800.

Taylor cor. Wood. Two-story frame.
O.—J. Zieglemeyer.
Day's work.
$2,000.

Poplar nr Fourteenth. Two-story frame.
O.—B. C. Cavallier.
A.—McDougall & Son.
C.—W. P. Clark.
$2,000.

Seward nr Pine. One-story frame.
O.—A. S. Scofield.
C.—W. P. Kelley.
$650.

Oakland Avenue. Two-story frame.
O.—W. H. Rouse.
A.—Newsom & Gash.
C.—Knight & Littlefield.
$10,000.

Seward cor. Wood. Two-story frame.
O.—L. Hoffschmidt.
Day's work.
$2,000.

Seventh nr Union. Additions.
O. & B.—D. H. Matheson.
$800.

Fourteenth & Webster. Two-story frame.
O.—D. H. Ward.
A.—H. D. Mitchell.
O.—Hannah.
$5,000.

Brush & Thirteenth. Two-story frame.
O.—Thos. Smith.
A.—Matthews & Son.
Days' work.
$5,000.

ALAMEDA.

Alameda Av. x Willow & Chestnut. One-story frame.
O.—A. F. Cornell.
C.—A. Denke.
$2,500.

Union St. & Alameda Av. Two-story frame.
O.—Mrs. Rimrod.
A.—Babson & Seadler.
B.—Gilbert & Co.
$4,000.

Everett St. One-story cottage.
O.—Dr. Twichell.
B.—Gilbert & Co.
$1,600.

Santa Clara Av. nr Bay. Improvements.
O.—H. Dilling.
C.—Cutting.
$600.

Central Av. x Oak & Walnut. Three two-story frame.
O.—G. Zeh.
C.—Wassum & Pattiani.
$11 000.

San Jose Av. x Oak & Walnut. One-story frame.
O.—Brown.
C.—J. C. Jamieson.

Everett nr R. R. Av. One-story frame.
O.—Dr. Twichell.
B.—Gilbert & Co.
$1,800.

R. R. Av. x Oak & Walnut. Two story frame.
O.—Mrs. Brock.
C.—Christensen.
$7,000.

STOCKTON.

Four-story brick building.
O.—Masonic Hall Association.
A.—Percy & Hamilton.
C.—Confer Bros.
$60,000.

SACRAMENTO.

J x Second & Third. Two-story brick building.
O.—Heilbron.
A.—Babson & Seadler.
C.—D. & D. Falconer.
$5,300.

Seventh x J & K. Remodeling.
O.—Anderson & Johnson.
A.—Babson & Seadler.
C.—Thos. McCaffrey.
$1,400.

Fifteenth & M. One-story frame.
O.—Robertson.
C.—Falconer.
$2,500.

Tenth & N. Additions.
C.—Falconer.
Day's work.

SEATTLE.

Occidental Hotel.
O.—J. Collins.
A.—McKay.
$80,000.

Yesler Block.
A.—Boone.
$100,000.

Kenyon Block.
$5,000.

Public School Building.
$25,000.

Graves Building.
A.—W. E. Goodrich.
$8,000.

Frame dwelling.
O.—R. C. Farnsworth.
A.—Goodrich.
$20,000.

Frame dwelling.
O.—C. H. Harrison.
A.—W. E. Goodrich.
$20,000.

MISCELLANEOUS.

San Jose. First nr Hensly Av.
O.—T. S. Montgomery.
C.—G. Saph & Co.
$3,520.

Livermore. One-and-a-half-story frame.
O.—Mrs. M. Campbell.
C.—Chas. Bradshaw.
One-and-a-half-story frame.
O.—M. Dolan.
C.—N. McCabe.

St. Helena. One-story frame.
O.—C. A. Gardner.
C.—J. C. Mixon.
$1,250.

San Leandro. One-story frame.
O.—F. Bryant.
C.—Gilbert & Co.
$2,100.

Mt. Eden. Two-story frame.
O.—A. W. Schaffer.
A.—C. Mau.
C.—W. Dahl.
$8,000.

San Rafael. Tank house, &c.
O.—H. Boyle.
A.—T. J. Welsh.
C.—Benit.
$1,400.

Knight's Landing. Masonic and Odd Fellows' Hall.
Carpenter work. — H. White.
Brick work,—Craft.
$6,000.

Woodland. One-story frame.
O. & B.—S. Caldwell.
$3,000.

Additions.
O.—C. Thomas.
$600.

Additions.
O.—G. Freeman.
$500.

Tehama. Two-story frame.
O.—H. Mooney.
C.—A. J. Bryan.
$5,500.

Chico. Two-story frame.
O.—A. H. Cren.
C.—M. Miller.
$6,000.

Two-story frame.
O.— G M. Gray.
C.—L. Hansen.

Market Reports.

No change in the price of lumber or other materials from the reports published in our last three issues.

A very simple test to ascertain whether the air of any apartment contains sewer-gas is made by saturating unglazed paper with a solution of one ounce of pure lead acetate in half a pint of rain water; let it partially dry, then expose in the suspected air—the presence of sewer-gas in any considerable quantity soon darkens or blackens the test paper.

The California Architect and Building News.

VOLUME IV.
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Bound volumes of 1879, 1880, 1881, and 1882 (in one book) complete, with all ads. and covers removed, will be sent to any address upon receipt of $8.00.

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" " 1880 (only a few left)	$2 00

In 1880 the subscription price of this journal was only $1.50, and we have put the price of bound volumes accordingly.

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Any one failing to receive a complete index will be supplied by sending a postal card to this office with their address.

OUR NEW DRESS.

Substantial Evidence of the Success of This Journal.

No better nor stronger proof of the rapidly increasing prosperity of this journal can be offered, than that contained in its present issue. As will be noticed by scanning its pages, it appears in an entire new typographical dress, with four additional pages of reading matter and two pages of new advertisements added to former issues as a permanent thing. Occasionally we have been compelled to increase the number of pages temporarily, but hereafter there will be no less than appears in the present issue, with the probabilities of being required to add more to accommodate pressure in advertisements and specially interesting matter.

While gratifying to its management, thousands of warm and earnest patrons and friends will rejoice with us at this unmistakable evidence of the increasing prosperity of the only journal published upon the Pacific Coast, devoted to architectural, building, sanitary, and other sciences, and to mechanical pursuits and interests generally.

It has heretofore been promised that improvements, without regard to expense, should follow increased success, and such promises have been faithfully observed, as comparison of the past twelve months' issues with those of earlier dates will clearly demonstrate; and the present further improvement is but another step in the same direction, to be followed by others as rapidly as circumstances may favor.

With this feature of success, that of increase of subscription patronage is fully equal, requiring a permanent increase with this issue of 500 to meet the demand, and the cheering prospects that before another year shall expire its circulation will be almost if not quite double the present number.

TO OUR ADVERTISING PATRONS

this fact is very important. Many of those who have sought its columns have reaped handsome returns for the money expended in advertisements, and it is a further certain fact that its pages present superior advantages as an advertising medium to all parties dealing in building materials, house-furnishing goods, and things pertinent to and required in connection with the erection and fitting-up of buildings, and to all manufacturers, dealers, and others represented in its advertising columns.

Its management returns grateful acknowledgments for all the encouragements and favors received, and hope that their efforts in the future to make this journal one of superior excellence will be attended with even greater success than in the past.

The Trip to Duncan's Mill.

On the 26th ult., a delegation of architects —members of San Francisco chapter—accompanied by several draughtsmen and students, accepted an invitation to visit the red wood lumber regions of Marin County. The trip was made over the North Pacific Coast Railroad, and proved of great interest and pleasure to all who availed themselves of the opportunity. As all know who have ever enjoyed the pleasures of a ride over the road, it runs through one of the most picturesque and beautiful sections of California, and to those capable of appreciating the beauties of nature in its most enchanting forms—its hills and valleys, covered with verdure, trees, and growths of untold varieties—no more pleasing picture can be found upon the Pacific Coast; the stretch of road around the shores of Tomales Bay affording a beautiful water view, with hills rising grandly upon the opposite side, and the broad ocean appearing in the distance; beyond which the timber country lies in all its grandeur, with forests of trees still standing in their majesty, while the numerous immense stumps to be seen tell that the woodman's axe has felled most of the noblest monarchs of that region.

The company was handsomely received and entertained by Mr. Duncan, and every opportunity afforded to see the country surrounding the mills, including a ride on the logging train—on which cushioned seats were improvised by the generous-hearted host—to the logging camps four or five miles away; while the flowing waters of Russian River and its contributors added interest to the ride. We are unable in this issue to give all the interesting facts learned, and will therefore be compelled to reserve them until our next, by which time we hope to have many of the sketches made by our worthily ambitious young men who were present, reduced to cuts.

The more irregular the outline of your walls, the more unsatisfactory and expensive your roofs, and in this view, remember in planning, that next to a good foundation there is nothing of more importance than an efficient covering.

Master your trade, but do not let a pride in special or expert knowledge overmaster you, for the pedantry of the workshop or laboratory is as offensive as the pedantry of the school.

Shrinkage of Redwood Lumber.

"Shrinkage in lumber varies according to the tree from which it is made. Oak will shrink in drying a half inch to the foot, while the redwoods of California show no perceptible change, and the heavy eastern or South American woods lose but little."

WE have noticed the above "*clipping*" in several of our exchanges. and we are compelled to notice it on account of a decidedly wrong statement contained therein. "*Redwoods show no perceptible change*" in shrinking. Evidently the author of that statement is not acquainted with the wood he seeks to describe.

Redwood has the peculiar faculty of shrinking *endways* as well as in width. One needs to visit but very few of our dwellings to thoroughly convince him of this fact. It has been found (by actual experience) necessary to insert the following clause in the specifications under which the contractor is held. "*All the rustic and flooring to be stacked V shaped on the ground within ten days after the signing of the contract.*"

This precaution is absolutely necessary. The contractor seeks to pick out in the first place the driest lumber for all his finish work. It is then stacked on the ground and exposed to the weather for about 30 days. The joints in the rustic are made so well that they are hardly discernible a short distance away. Unless the lumber is extra dry, it will be but a short time before the joints begin to open; in many instances, so much so, that a liberal use of putty is necessary that the building may present a creditable appearance.

In wainscoting, when partly green lumber has been used, the shrinkage is often very noticeable. In fact red wood is like almost every other kind of lumber. If wet, it shrinks considerably end ways and side ways. If perfectly seasoned, it is one of the finest woods for general use. Where wide lumber is necessary, it takes the palm, as we can furnish perfectly clear lumber 10 ft. wide, and of any length from 10 to 30 feet. Of course 10 ft. is a great width and is only intended for fairs, exhibitions etc. But as a rule, redwood lumber is placed upon the market here, having a greater average width than any other class.

We make the above statement for the benefit of our eastern friends who are daily becoming more and more conversant with our splendid redwood lumber. It is statements like that at the head of this article that bring a great many truly good things in disrepute and we are not at all anxious that our grand California homogenous commodity should be in the least discountenanced by those who seek its use, and then condemn it because it shrinks, having been led to believe that no such results follow from its use.

San Francisco Chapter, American Institute of Architects.

THE regular meeting of the above chapter was held in the usual place Friday eve. May 4th, 1883. The President John Wright presided.

The committee on obtaining a permanent room for the association reported progress.

W. C. Jordan was elected a member as Draughtsman. The committee on classes reported as follows: Mr. Sanders remarked that the members of the classes were progressing finely. He thought it was a mistaken idea of the young students to favor the course of study in any one particular class. They should all receive attention and each class be regularly attended by each pupil. The members of the Chapter were requested to devise some method by which increased attendance could be secured. Mr. Pissis reported that much better progress had been made in his class over the preceeding month.

The Secretary was instructed to procure the sketches made by the Students during the late excursion to Duncan's Mills, and arrange them for publication in the June number of the *California Architect*.

An anonymous communication was received concerning the foundations of the Garfield Monument. The Chapter refused to consider the letter on account of no signature being attached.

A Mountain of Lime.

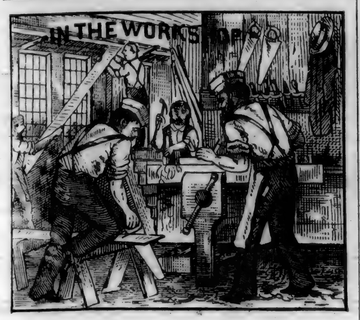
ONE of the most interesting objects pointed out to us while accompanying the late Press Excursion was a mountain of lime, situated near the town of Colton, in San Bernardino County. The mountain stands alone in a valley, and from its summit can be seen the Eden of the southern portion of our State, with its magnificent groves of oranges and lemons. Vineyards grace the landscape at every turn, and grand old San Bernardino mountain looks calmly on, carrying one's ideas back to the beginning of this world as so vividly portrayed in the GREAT BOOK.

We went over to the mountain, regretfully leaving our friends in Riverside, that we could be able to give our readers a description of the manner in which is fostered one of the great "to be" industries of the state.

Brother Holt, of the Riverside *Press*, succeeded in obtaining a complete description of the works. Our own time was too limited to obtain full information, and so we quote from our brother editor's notes.

"Two furnaces are now in operation, with a capacity of 175 barrels daily. The furnaces are 32 feet in height, one 4½ feet and the other 5½ feet in diameter; of slightly oval shape inside, lined with the best Scotch key fire-brick. The bottom is a square 12 feet high, each side 12 feet wide, braced within and without with heavy iron bars. From this rises a circle of ¼ inch boiler-iron, 16 feet high, separated from the brick circle by six inches of sifted wood-ashes, thus giving an elastic backing to withstand the expansion and contraction of the brick-work. A cast-iron ring, 1,900 pounds in weight, surmounts the circle, and above all stands a large wrought-iron hopper where all moisture is expelled from the rock before it enters the body of the furnace. Two arches on the north side of the square and two directly opposite hold four oil-burners, styled the Parsons & Northey hydrocarbon injectors. Crude petroleum stored in large tanks on the hillside above flows into iron tubes set under arches, where it is met by a jet of superheated steam, and forms with the accompanying air a hydrogen gas of tremendous heat-producing power. This flame is under perfect control, and is as easily regulated as an ordinary lamp. The calcining of limestone, which requires sixty to seventy hours in a kiln fired with wood is here accomplished in six hours. At regular intervals the draw-door is opened, and an iron car receives the red-hot lime, which is then dumped on the brick floor of the cooling room, 60 x 30 feet, where it is barreled after cooling. The barrels are then wheeled into the warehouse, 80 x 40 feet, which fronts on a siding of the S. P. R. R. From the time the rock is broken in the quarry it is on a descending grade until it is loaded into cars as marketable lime. The natural advantages of the location are great, and no pains has been spared to utilize them. In the quarry we observed the same character of solid, permanent work. High walls of stone and wood prevent the escape of rock while blasting, and a face of excellent limestone, 60 feet high, where one blast can throw down a hundred tons, allows a facility and cheapness in mining which we have never seen equaled. The rock lies in uniform layers, at an angle of 45°, and between these layers are found small veins of natural cement, gypsum, and alabaster. A judicious addition of these elements has given to this lime its high reputation for tenacity, hardness, purity, and hydraulic properties. Wherever it has been used, in brick-work, plastering, and finishing, cement-pipes, concrete-work, and whitewashing, the universal verdict has declared it superior to any lime hitherto used on this coast. It has been easily introduced into all parts of Southern California, and has even been shipped into Texas. The petroleum used is obtained at Newhall and is about 32° gravity, Oil from Puente has also been successfully used. Two large boilers, heated by oil-burners, furnish alternately the steam required. A neat and commodious boarding house has been built, where twelve employés are lodged and fed, a few rods below the works. A cooper shop will soon be added, and large contracts for staves are being filled by our lumbermen in the mountains.

The entire cost of the plant will not fall far short of $30,000. A royalty is paid to the Pacific Improvement Company, who have given a long lease of the property to the Colton Lime Company. Chas. N. Felton, President of the Pacific Coast Oil Company, is largely interested. Other prominent stockholders are J. E. Condict, President Central Gaslight Company, of San Francisco; Timothy Paige, Esq, and Dr. John Campbell, of San Francisco; E. A. Edwards, A. H. Miller, and D. W. C. Franklig, of Los Angeles, and L. F. Olmsted, of Colton, who is general manager of the company.



SETTING EDGE TOOLS.—In using the chisel for work that needs to be finely finished, the most common mistake made by beginners is to use it too long before resetting the edge on the oil-stone. Suppose that half an hour's work shortens the blade, as measured by the exact cutting edge, by 1-200th of an inch. To bring the edge once more to its original keenness requires a certain amount of rubbing on the stone, the amount corresponding to 1-200th of an inch on the flat face. In ten minutes' work the blade will be shortened by, say, about one third or 1-200th, or 1-600th of an inch, and the amount of rubbing to bring back the edge to the original sharpness after this amount of work, is not more than one-third of that needed in the first case. Thus, if in the half hour the edge be sharpened thrice instead of once, the total amount of rubbing required will be no greater than that needed at the end of the half hour, if no sharpening has been performed since the beginning of it; while, in the former case, the edge will at no time have become more than one third as blunt (*i. e.*, the edge no more than one third as thick) as it is at the end of the half hour in the latter case. Thus, by having the oil-stone always at hand, clean, and in good condition, and by having very frequent recourse to it to keep the chisel edge constantly sharp, a great deal of unnecessary labor is saved, and the work is done more nicely. Of course this rule cannot be followed unless the oil-stone is always ready to be used; otherwise much time would be lost in getting it ready so often. This rule also cannot be adopted to so great an extent with, for instance, plane-irons, with which a considerable amount of time is lost in taking the tool to pieces and putting it together again every time the edge is set. —*Cutting Tools.*

Do nothing in building by guess-work, and in its conduct trust not too much to memory, for a jotting or two at the proper time are worth a hundred jogs on the brain, for the purpose of safe recollection.

If you would set out good work, do it by practical geometry; if indifferent or bad, by the "rule of thumb."

A fair day's work for a fair day's wages should be estimated by its quality as well as its quantity.

IN planning stairs, think of your head-room from the lowest starting-point to the highest landing, or somewhere in ascending or descending stunning falls and broken limbs may accompany bruised foreheads and battered hats.

In making out building quantities do not overate them too much, for you may calculate too liberally for your own good, as well as estimate by guess-work too lowly to your own and others, loss.

Contrary to the old saying, "a carpenter is known by his shavings," he is known by the character of his work; and the state of his tools may be judged by the same standard.

The workman that makes the most noise will be often found doing the least work, and doing it badly.

Glaze your sashes with putty if you will, but make your mitres and other joints without it.

Hit the nail straight upon the head and you will save many crooked blows.

Sharpen your tools properly and you will husband your strength.

The Carpenter's Steel Square and its Uses.

WE have authority from the publishers of the above work to announce that we have been appointed

SOLE AGENTS ON THE PACIFIC COAST

for the sale of the above publication. A large shipment of books are on the way, and we are prepared to supply the trade. In accordance with our letter of instruction, in addition to the above work, we are sole and only agents for

Builder's Guide and Estimator's Price Book
Practical Carpentry
Hand Saws
Plaster and How to use it.

We particularly want to call the attention of those interested that the 75 CT. EDITION of the Steel Square and its uses is OUT OF PRINT.

The new edition has been revised and 30 pages of interesting and original matter added; it is now the best work in print, upon the subject of which it teaches. It is of a convenient size to be carried in the pocket. Single copies will be mailed to any address upon the receipt of the publisher's price.

☞ ONE DOLLAR ☜

PLAN the attic story for bedrooms if you will, but do not stow the servants in a cock-loft between the ceiling joists and the slates, which will be a frying-pan in the summer and a refrigerator in the winter—a choke-room instead of an air-space.

A KITCHEN and its belongings should not be planned solely for the comfort or ease of the cook, but for the general health of the household, for the purer the air below the purer will that be which circulates above.

BUILD with seasoned timber or you will build to your own discredit and others' loss.

Modern Perspective.

THIS new work is a treatise upon the principles and Practice of Plane and Cylindrical Perspective. The author—William R. Ware—discusses the subject somewhat differently from that generally given, greater prominence being assigned to the phenomena of parallel planes, and use being made of the laws thus established to determine the perspective of lines of intersection and of shadows—subjects that seem hitherto to have received but little attention. The author has certainly succeeded admirably in producing a work that should be in the possession of every Architect, Draughtsman, and Student in the country. The latter two classes should feel grateful that such men as W. R. Ware and others so study their future welfare, as to lay before them the results of a life's labor. Few of our students recognize the value of such a work. They should at once secure a copy, and notice the skill with which they are gently led along under the guidance of the skillful Master to thoroughly understand the Principal Rules of Perspective. Accompanying the book is a portfolio of sketches containing 27 large plates of examples of perspective in all its different phases, viz.: Perspective of Planes; division by triangles; parallel perspective; three point perspective; perspective of shadows, reflections, circles etc., curvilinear perspective; shadows by artificial light; the perspective of converging lines and numerous others. These plates are eleven by fourteen inches in size.

We have received copies of this work and can supply any orders sent. The book contains over 300 pages. Portfolio and book go together, the one explaining the other—Price for the two together $6.00.

THE *Art Amateur* for May contains some excellent simple designs for wood carving, from the Cincinnati School of Design, together with the first of a series of articles on "Practical Wood Carving for Amateurs, by Calista Halsey Patchin. Other articles of special practical value are those on portrait drapery, flower painting in water-colors, mural decoration, and embroidery in gold and silver. The May number concludes the fourth year of *The Art Amateur*, and the index for the last twelve months gives a vivid picture of the surprising wealth of designs and instruction contained in this invaluable magazine.

BEWARE.—*The Sanitary Engineer* gives this valuable piece of advice to housekeepers: Beware of disused "conveniences," and don't trust to the memory of any one for filling the visible trap with water. Better remove the whole fixture and seal up its outlet if not wanted for frequent use. Moreover, don't you put such an antiquated device as a pan-closet in a first-class house anywhere. Even if its receiver be ventilated, the vent-pipe may work the wrong way and deceive you.

Builders' Guide and Estimators' Price Book should be in the possession of every mechanic. Price $2.00.

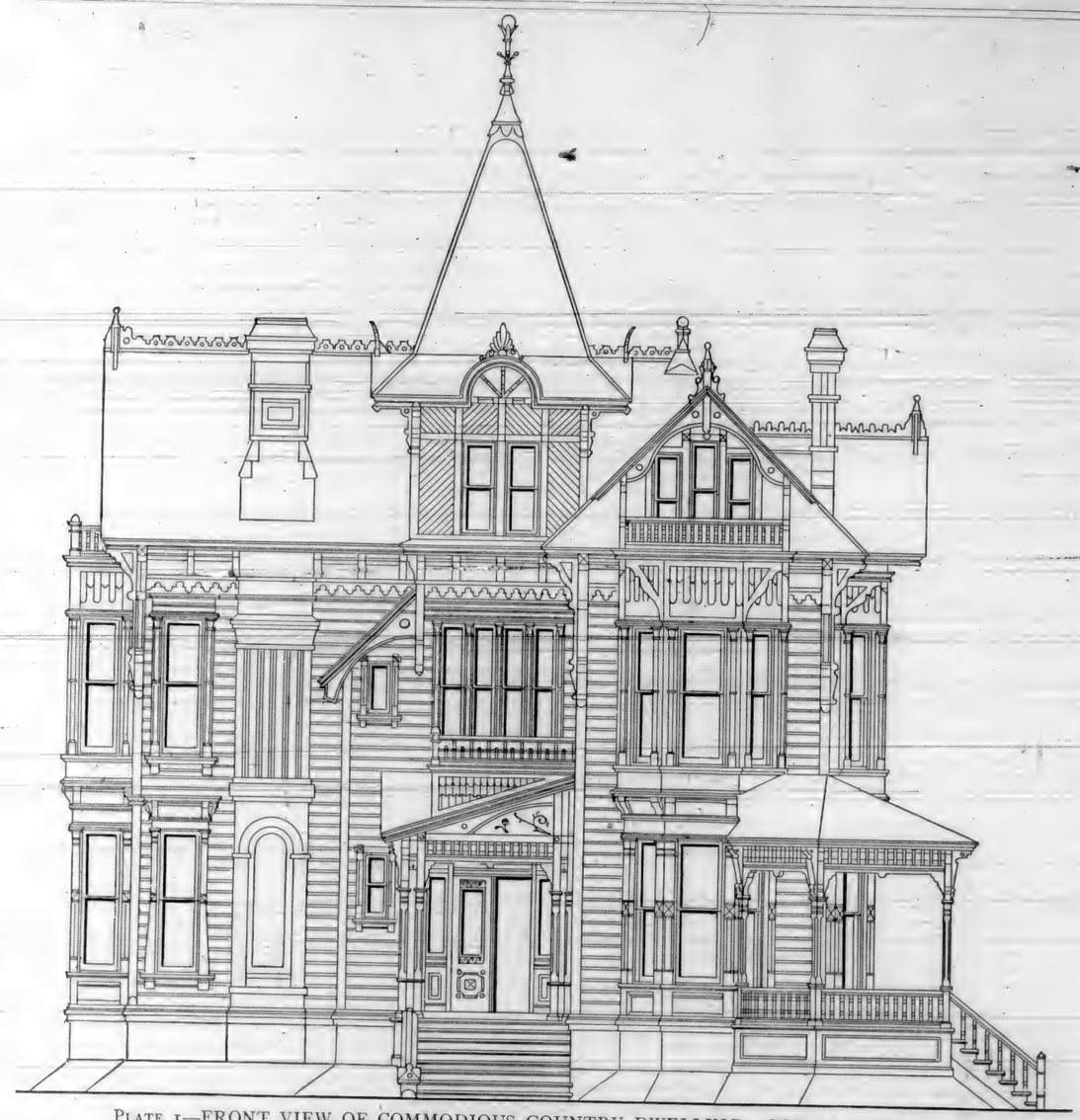


PLATE 1—FRONT VIEW OF COMMODIOUS COUNTRY DWELLING. COST, ABOUT $7,000.

Solid and Hollow Iron Columns.

A CONFUSION of ideas is sometimes found among practical men respecting the comparative strength of solid and hollow pillars. One hears it often said, for instance, that a hollow pillar is stronger than a solid one. Now this is, as one able authority has pointed out, not absolutely the case ; it is perfectly true, that comparing the strengths of two pillars of the same heighth and diameter, one solid and the other hollow, that the latter has the advantage of being economically stronger. The fact is, the solid column is stronger than the hollow of the same external diameter ; but the lesser area is more effective than the greater, because the central portions of the solid pillar are less useful in resisting the bending force than the metal in the circumference of the hollow pillar. But if the quantity of material in both the solid and hollow pillar of equal height is the same, the hollow pillar is by far the stronger. A simple geometrical construction will enable any one to understand this fact, by enabling us to proportion a hollow column of the same area as that of a solid one, by one of the diameters being given. It is shown, in fact, that hollow columns of the same area of metal as a solid one, may be made to any larger diameter, their strengths increasing proportionately till a limit is reached by the shell of the metal becoming too thin to insure a sound casting. Taking an example from Downing's work, a hollow pillar 9 inches in external diameter, having an internal diameter of 8.062 inches, and a thickness of metal of 4.7 inches, or about one half inch is five and one half times stronger than a solid pillar with the same quantity of metal. A thickness of one half inch may be regarded as a practical limit in manufacture.—*The Building News.*

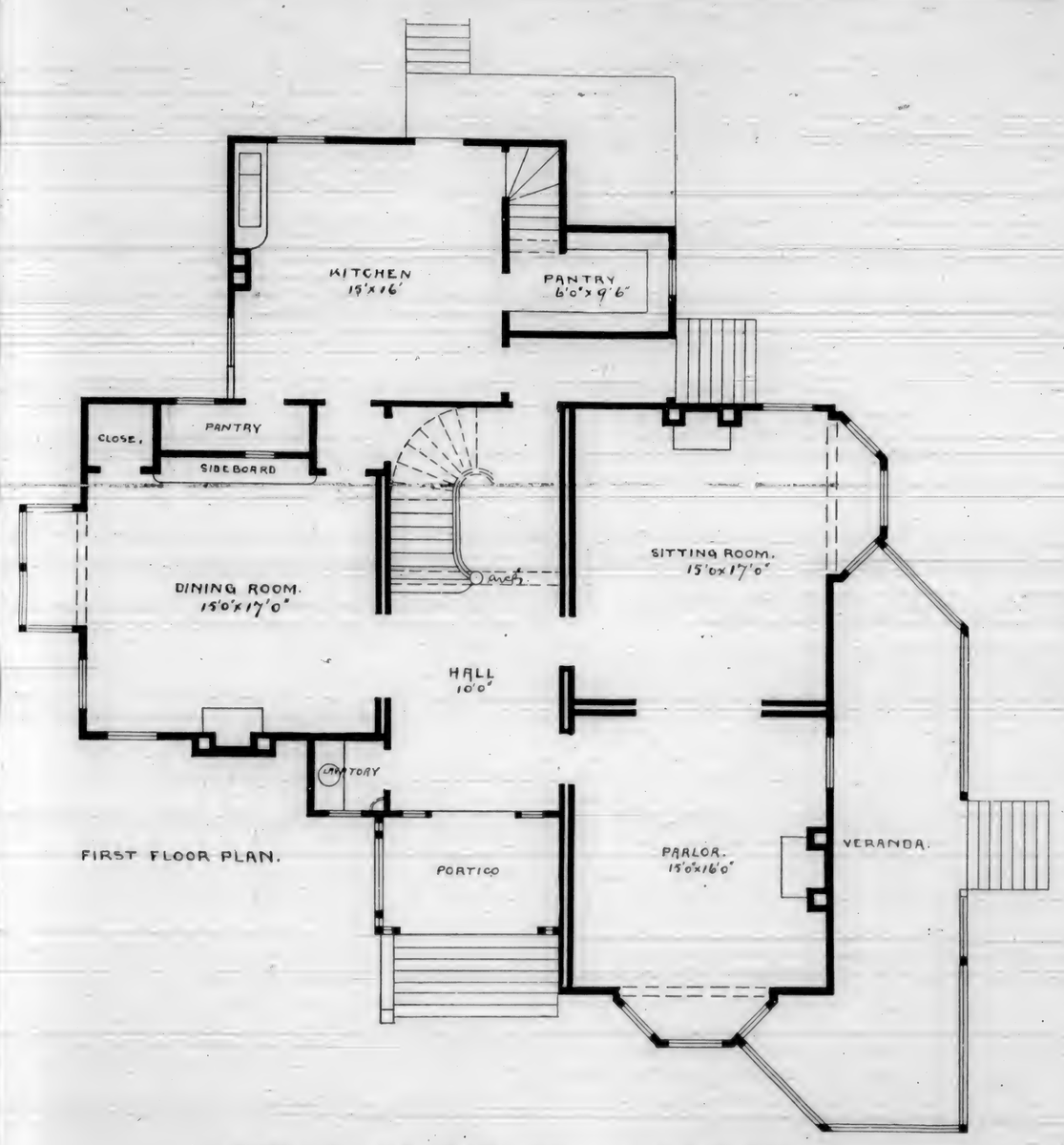


PLATE 2—FIRST FLOOR PLAN COMMODIOUS COUNTRY DWELLING.

GOOD workmanship needs no coat of paint to enhance the execution, for like sculptor's work, wood workmanship is best judged in the nude without drapery or color.

WET your bricks, wash your sand, slake your lime, but perish not your mortar with water, or your work will not be worth its bond.

LET no building workman be too proud to take a hint from the humblest laborer that attends him, for the experienced looker-on betimes sees more than the doer.

ARTIFICIAL, like natural drainage, is governed by gravitation, and the absence of a proper fall in either is as opposed to nature as a swamp is to health.

A HOUSE in danger, a family in peril.

THE builder that deceives the architect wrongs the client as well. and if he connives at bad workmanship he demoralizes the workman and constitutes himself a criminal.

Garden mold may be good for vegetables, but as a component of mortar it spells early ruin.

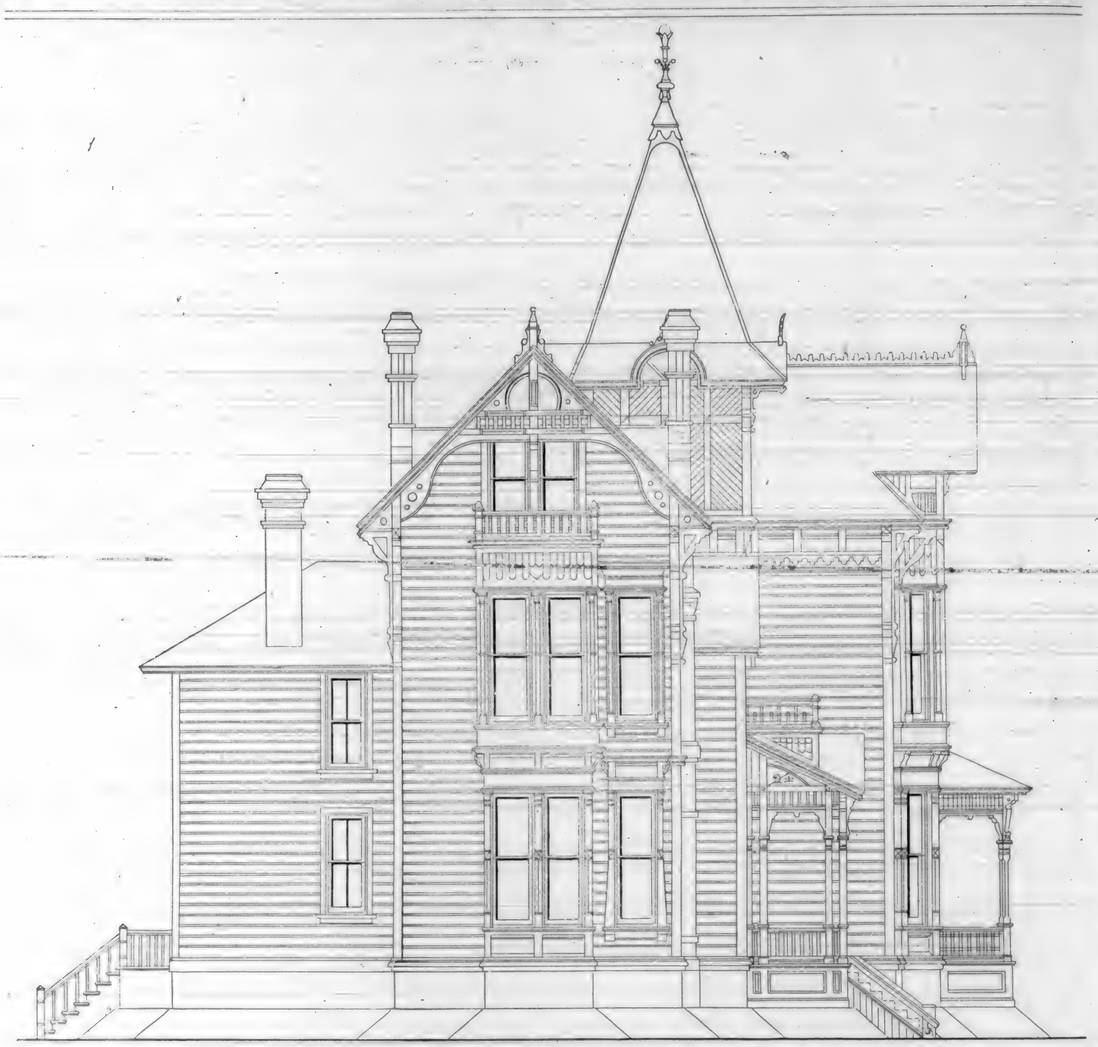


PLATE 3—SIDE VIEW OF COUNTRY DWELLING. COST, ABOUT $7000.

Our Illustrations.

PLATE 1 presents to our readers the elevation of a neat and commodious residence, suitable for a country or suburban dwelling, Plates 3, 5 and 6 being the same house, as seen from different points. Very little ornamentation on the outside has been adopted, the main idea being to show a handsome front with as little expense as possible.

In the arrangement of the rooms, as shown in Plates 2, 4, and 7, some new and striking features will be noticed. The kitchen is a little "snuggery" all to itself, and yet is in distinct connection with the yard, dining-room, and hall; an alarm at the front door can be attended to by the servant without passing through any room. The veranda is so situated that it can be used by the gentlemen for a smoking-room.

The bed-rooms on the second floor are all well supplied with closet-room. The bath-room is in the rear; two windows contained therein, so that perfect ventilation is secured. In the attic are the servant's room, children's play-room, and a billiard-room.

This house can be built for any amount from seven to ten thousand dollars, according to finishes used.

A Plethora of Money.

IN any city the amount of money loaned by savings banks on property is regarded by nearly every one as the thermometer by which the rise and fall in the values of real estate are determined

There is an immense amount of money lying idle in this city. In fact, simply to get it out of the way and that it may earn a little something for its owners, one of our principal savings banks last month invested quite a large sum in U. S. bonds. This one bank now holds nearly $10,000,000 in bonds of our own proud country.

One of the principal causes of this showing is the general prosperity among the working-men. There is no need whatever to run in debt. Consequently on the *pay-as-you-go-and-save-what-you-can* system, thousands of small depositors are placing their money in the banks; and it is these small amounts from a great number of people that is the cause of our savings institutions having a plethora of money.

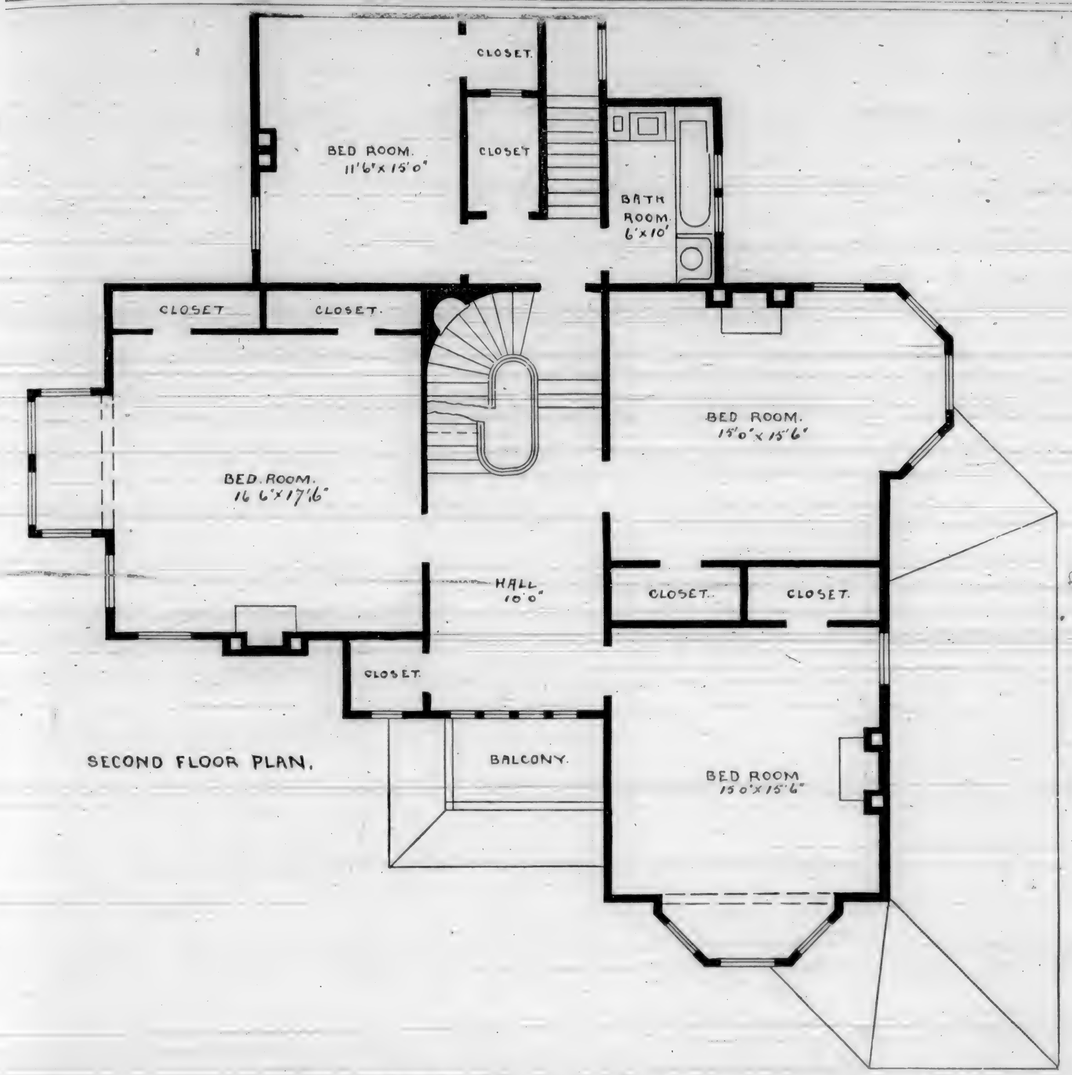


PLATE 4—SECOND FLOOR PLAN OF COUNTRY DWELLING.

Are Plastered Ceilings Obsolete?

MODERN architecture, says a correspondent, in its relation to modern discoveries of new material and the skill of artisans in the use of old material under improved conditions, both in a utilitarian and decorative view, seems to demand something of a departure from ancient methods of constructing and ornamenting buildings.

Weight of material where it does not serve to strengthen or elaborate a design, must certainly be considered obsolete in architecture. In this connection it might be well to consider the impropriety of using plaster ornaments for decorative purposes. In their representation of the vegetable kingdom they are not and can not be true to nature in any proportionate comparison, except it may be its facial outlines. In elaborating architectural beauty or engineering strength, the same may be said with the added detraction that the more we elaborate the more we weaken the structure. Consequently the application of plaster to ornamentation is by some designers but a lingering relic of unskilled artisans, and should, they think, have no place in architectural construction, except as a modeling convenience. They reason that with the skill now being applied in the use of metals and woods of various kinds, even plaster ceilings should be considered as but a temporary and imperfect method of inclosing rooms.—*The Inland Architect and Builder.*

Wheeler's Patent Wood Filler.

WE invite the attention of our patrons to an advertisement appearing in this journal, offering certain paints and "wood fillers," which are recommended as something superior, and warranted to surpass all others in that line. Being as go d as they are recommended to be, they are worth the attention of all architects, painters, wood polishers, and owners.

PERSPECTIVE is necessary in drawings; but do not carry its principles into practice in putting together workmans' ip.

HOUSES may not be built from the roof downwards, though they are often burned in that direction by plumbers' fires.

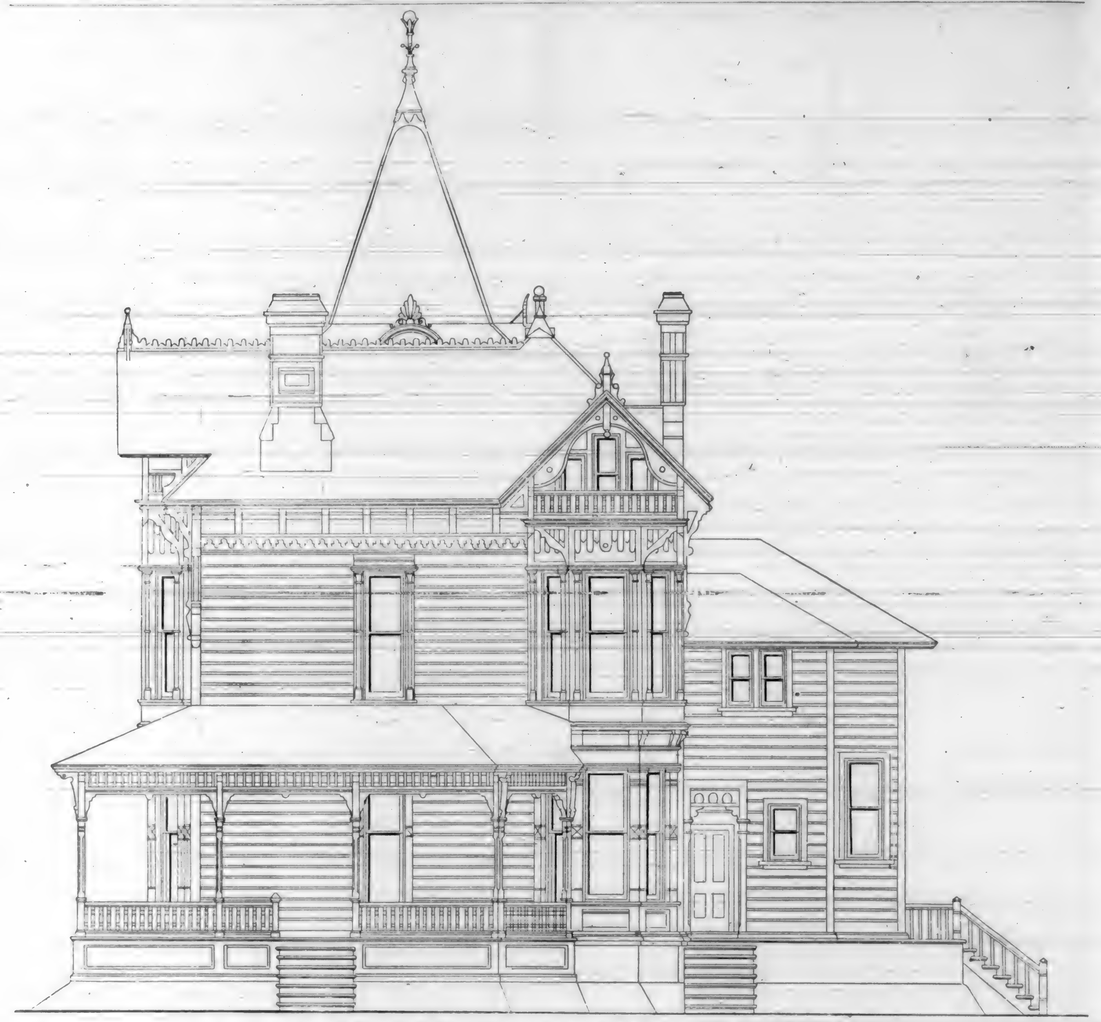


PLATE 5—SIDE VIEW OF COUNTRY DWELLING. COST, ABOUT $7,000.

Look Out For Dampness.

IT would be well for those who move into new houses in the spring to make careful inquiry as to the time when the walls were put up. The increased and unsatisfied demand for houses in this city has induced builders to press their work to completion in spite of cold weather. During the open fall the foundations for many new buildings were laid ; under ordinary circumstances the work would have been postponed until spring. Once begun, the temptation to complete a building has been so strong that walls have been built up in every part of the city when it was so cold that mortar froze, if not as soon as spread, at least during the succeeding night. Such buildings are not fit to live in. The walls will be damp for years, and will be quite sure to cause sickness. A sewer-builder related the following a few days ago : He had been summoned to a house on Prairie Avenue to discover the cause of apparent leakage from some unknown source in the basement. The occupant had an impression that the water came from a sewer. It was soon found that the water, which stood in little pools over the cemented floor, was not sewage. The conclusion was then that it came from the service pipes ; but they were found to be absolutely tight. It was finally discovered that the water had been dripping down the inside of the walls, inside the plastering, and arrested by the cemented floor, had spread out over it and formed the pools spoken of. These invariably evaporated during the night, but the hollows filled again when the sun began to warm the walls in the morning, and the dripping continued during the day. Had there been a wooden floor in the basement, the water would have escaped into the earth and no one would have known it. Inquiry revealed the fact that the house had been built during the previous winter, and an examination of the mortar behind the plastering showed that it was as soft as when laid. It needs no argument that such a house should be avoided. The one in question was a fashionable Southside block.—*Sanitary News, Chicago.*

THE *Lancet* thinks that children should wear woolen next the skin, and wear longer clothing, suspending it from the shoulders and we would hear more of health.

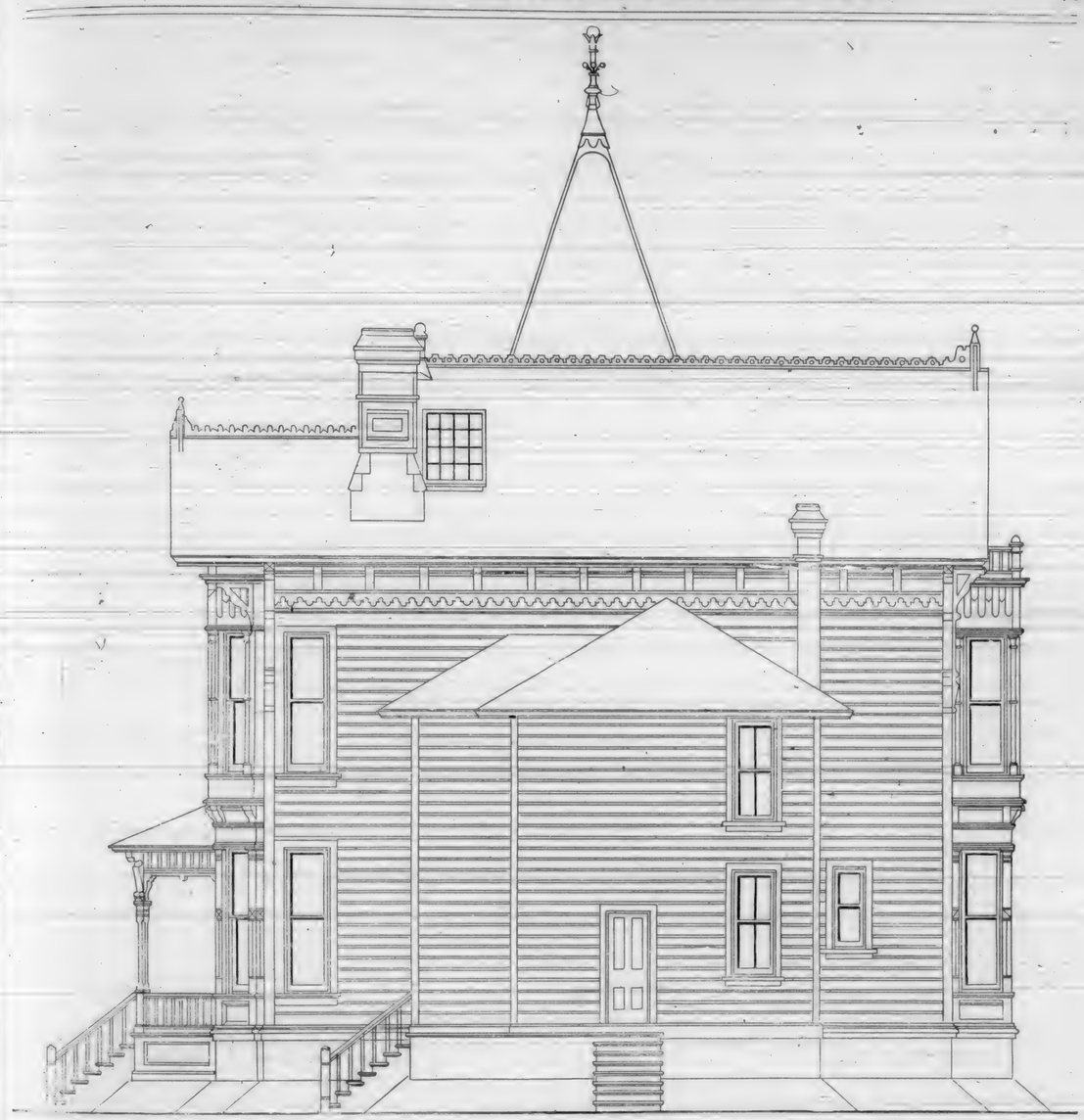


PLATE 6—REAR VIEW OF COUNTRY DWELLING.

Painting Canvas Roofs.

ONE of our readers complains that in painting a canvas roof the quantity of paint necessary to fill the canvas was so enormous, especially in hot weather, that he was quite astounded, using several gallons where he expected to use as many quarts. While this large quantity is an advantage, inasmuch as it is the resisting medium of the roof (and the larger the quantity the better in many respects is the roof), it seems desirable to obtain a coating with a less expenditure of oil and paint. In painting carriages and wagons a very good practice has been to make a quantity of wheat or rye flour paste, and with this give the canvas, after it is laid upon the roof or panel, a good and even coat The paste should be about as thick as that used for paper-hanging. This will leave the canvas as tight as a drumhead, and, at the same time, fill the surface sufficiently to prevent so great absorption of the oil. Glue size has the same effect and is easily applied. It is said that panels painted in this way are very durable, and that the paint never cracks or scales off. White-lead in oil colored with ocher is probably one of the best paints which can be applied upon the roof. Possibly, for the sake of its fire-proof qualities, a final coat or two of mineral paint might be of advantage.—*Metal Worker.*

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A recent decision of the Post Office Department is to the effect that a letter, after being sent, can be recalled by the sender upon his making application to the postmaster, who has authority to recall the same by telegraph.

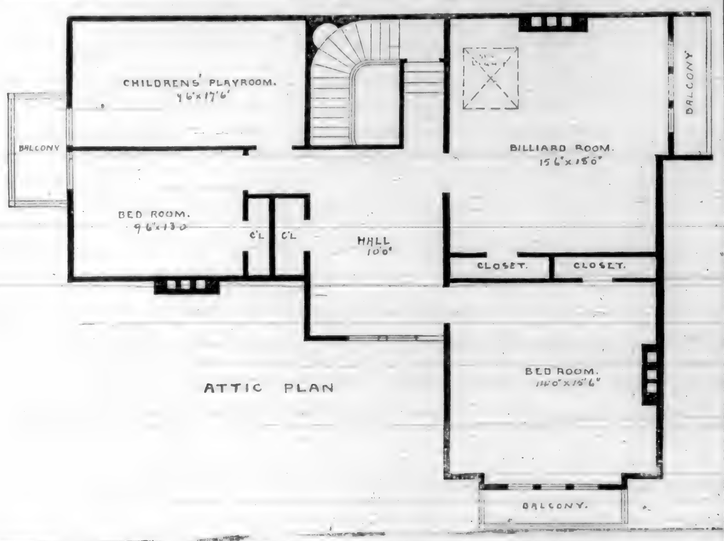

PLATE 7—ATTIC VIEW OF COUNTRY DWELLING.

The "Bulletin's" No. 1 of "New Series."

WE regret that our contemporary has "*deemed it advisable to present another series of similar designs by the same architects*" as notwithstanding the statements of the *Bulletin* to the contrary, the first series possessed no merit whatever entitling it to the respect of any one familiar with the science of architecture. We have yet to find the first architect or qualified builder who has not expressed himself unfavorably in reference to series No. 1. The few meritorious, copied-from-published-books-features that appeared were so unskilfully handled and were so manifestly the conception of others that the *Bulletin's protégé* received *no credit* from informed sources for originality; and the very stupid efforts at specification writing demonstrated the utter unfitness of the plagiarist to prepare an intelligent set of documents. In very many, if not in all of them, there were things written down in the "specifications" which have never been observed in the practical construction of the plans accompanying. We say this upon the broad principle that many of the requirements of the specifications were so thoroughly at variance with all consistent constructive practice, and so entirely unnecessary, that no competent builder ever gave them the least consideration beyond the smile induced by their ridiculousness.

The following, from the editor's remarks accompanying No. 1 of series second, has afforded much merriment to architects generally, seasoned with remarks not mentionable in a respectable journal, to wit: "It is apparent that they (the former series) have been instrumental, in a great measure, in introducing and popularizing a new style of architecture in San Francisco, as is evidenced by the form of many of the dwellings which have been erected here within the past two years." The statement quoted is so supremely ridiculous and erroneous that it would puzzle even the *Bulletin's* man to invent another more thoroughly destitute of truthfulness. Series No. 1 had about as much to do with influencing a change in style of architecture in San Francisco as the explosion of Blossom rock in the Bay of San Francisco some years ago had to do with influencing the various dynamite plots in Russia, England, and other places across the ocean.

It is but little better than a studied insult to the architects in San Francisco to assert that a single one of them, of intelligence and standing, ever derived a single thought from anything that has heretofore appeared in the *Bulletin* or that may hereafter appear from the same source. The introduction of the Eastlake style, as it is wrongfully termed, in the Eastern States was known and understood by architects generally in this city, and examples of the style had been introduced in California before Series No. 1. made its appearance; and whatever inspirations were received leading to the change in style referred to, was from original sources, and not from the imperfect attempts of the copyist who has served the *Bulletin's* purposes of leading innocent owners, in many cases, into trouble, by inducing them to undertake—with mistaken ideas of building values—the erection of buildings at prices beyond possibilities. For, as we stated in our several reviews of the first series, not one of the plans published could, with the then ruling prices for materials and labor, and much less so at the present time, be built as required by the documents defining the materials to be used and the manner of construction, be erected any way near the cost stated. We care nothing for the bolstering up, erroneous statements of the *Bulletin* or its *protégé*, that the figures of cost given have been confirmed by actual experiments. It is not true; and as we have at other times stated, we again repeat, that no one of the entire series could or can be erected for the amount published as the "total cost," making all proper allowance for the changes in price of materials and labor; more especially if all the *unusual* and *unnecessary* things called for were carried out according to the letter of the documents—a something never intended by him, if their author possessed mediocre intelligence as an architect. If not by the rules governing constructive architecture, the rule of commonsense would set aside as unwise and unmechanical many of the written requirements of the former series.

No. 1 of second series is no improvement upon those which have preceded it in the matter of "specification;" and the striking similarity of the *plan* to numbers of others in use removes all idea of originality. The unhandsome and disproportionate perspective elevation alone possessing *features* of originality in the attempts made to change appearances from *scores* of similar designs to be found in published books. As to the total of cost stated, no honest man competent to determine values would risk his reputation in making any such an assertion as that found in connection with No. 1 of series second, as a fair and reasonable estimate of cost. Thirty-three per cent. added will not pay the cost of erecting such a cottage in the manner required by the "specifications," and fifty per cent. more than the "total cost" would leave but little if any balance in the hands of the man who would undertake the work at that advance.

We have expressed ourselves thus plainly, not that we care a fig for our contemporary's departure from its legitimate line of publication, and seeking by unusual methods to increase its circulation, but because of the misleading and deceptive features of the case, in inducing people to anticipate results *entirely beyond possibilities*, and fixing standards of values at rates injurious to honest contractors, as no man living can carry out the requirements of the last nor either of the former issues for the "*total cost*" stated, without considerable loss to himself. And we hold that every attempt, of whatever character, calculated to lessen the opportunities of the working classes to receive fair remuneration for their services, is a wrong deserving the severest rebuke.

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Dr. Ayers on Sewer Gases.

THE doctor recently read a paper before the San Francisco Medical Society, giving utterance to theories upon sewer gases of a dangerous character. We had prepared a lengthy review of the practical fallacies advocated by him, but we are compelled for want of space to lay it aside. There is nothing new in the theories advanced, as they have appeared in published works upon the subject, although the doctor's effort may have impressed those who do not pursue sanitary literature with the idea of originality.

If the doctor is correct in his assertion, that sewer gases are not promotive of "any special type of disease," then indeed is the whole fabric of sanitary science defective and false. For tens of thousands of the ablest physicians and scientific-sanitary engineers and learned men of all classes throughout Christendom have borne testimony to the fact that those gases are both dangerous and deadly in their effects upon human health; and if so, as ninety-seven per cent. of intelligent people believe, they are and should be rated as of "special type," aside with small-pox or any of the numerous malarial diseases which prostrate humanity on beds of illness, and in the order of their operations fill coffins daily. And it will require infinitely better and stronger proofs than the mere say so's of a San Francisco physician, or the author of a book, to disabuse the public mind in reference to a something which has, by the teachings of those fully competent with the doctor to judge of the nature and effects of sewer gases, and the practical experiences and observations of innumerably many intelligent people, become a settled and accepted fact.

The doctor's assault of the plumbing law passed by the late legislature of California, and his ridicule of the appointment of an "engineer" of plumbing work, simply betrays his ignorance of the subject ridiculed. The "engineer" is an imaginary personage of the doctor's invention, as the law provides for no such official. And as the learned gentleman appears not to have investigated the law sufficient to understand one of its simplest provisions, it would have been wiser on his part to have withheld assertions based upon personal, unintelligent notions. It is not only likely, but very certain, that many of those who have assisted in procuring the passage of the plumbing laws referred to are in every practical sense the peers of the learned doctor, in all matters pertaining to sewer gases, and from their practical experience in connection therewith would be able to give the doctor some good advice and information.

A Great Work.

HISTORY OF THE PACIFIC STATES.

It seems to be the fashion in this country, upon the commencement of any great enterprise, to call upon the government for aid that it might be successfully carried to completion. But in the "History of the Pacific States" by Hubert Bancroft, we have an example of what can be done by the genius of one man, unaided by any governmental aid.

For the past fifteen years Mr. Bancroft has kept constantly employed no less than a dozen secretaries, cataloguing, indexing, abstracting and arranging the material from which he writes; and it is the great secret of Mr. Bancroft's success, that he has the faculty of utilizing labor in literary as in business pursuits—leaving to the author only the work of the artist; that of the artisan being performed by the secretaries.

We propose to notice each volume as it appears. We recommend it to our friends. We urge for it the serious consideration of good men; of all who have a family to rear, sons and daughters to educate; and we do so for the following reasons:

Firstly—Such work should be encouraged. The author, Mr. Hubert H. Bancroft, has performed this labor at an immense cost of time and money. Literary work of this kind does not pay pecuniarily. It is impossible that it should. Therefore, if the intelligent and prosperous members of the community withhold from it their sympathy and support, what encouragement is there for any one ever to sacrifice pleasure and gain to the public good?

Secondly—It is a history of our own country. Now, historical knowledge is the most valuable of all knowledge, for the reason that history is the recorded experiences of mankind. By knowing what others have done, we may profit by their successes while avoiding their mistakes. And of all histories, the history of our own country should be read and studied first, because it more nearly concerns us. Children should be educated not only to respect their parents and love their home, but to respect their country and tenderly to cherish its institutions. And how can they know about their country if books are not placed within their reach?

Thirdly—It will pay pecuniarily. The well-informed, intelligent man can make more money than the careless and unthinking. It is not necessary to talk of the benefits to society and to individuals of such a work as this; they are obvious. Therefore, we appeal, with all the strength and influence at our command, to every respectable member of this community, and say buy the works of Hubert H. Bancroft. Subscribe for them all at once, cheerfully, promptly; then read them, and speak of them to your friends, and thereby lend your support to a great and praiseworthy undertaking.

We will speak more fully hereafter of the scope of this great work. The full set will contain thirty-nine volumes. Two volumes are now ready for delivery, and it is proposed to have each successive issue finished so as to be delivered every fourth month.

IN the hand-saws used in England the cutting stroke is a push outwards from the shoulder of the workman. This mode of using the tool has been perpetuated by the Anglo-Saxon race in the United States, Canada, and the British Colonies. The blade of the saw is thus thrown in *compression*, and in order that it may have sufficient stiffness to prevent it buckling, it requires to be made far thicker than if it had to transmit the same force in tension only. The liability to buckle is illustrated by lads beginning to learn to saw, who not unfrequently injure a saw-blade by the unsteadiness of the thrust they give to it, which leads to the teeth catching on one side of the cut and a sharp bend or even a crack being caused in the blade. As it is almost impossible to remedy such an injury perfectly, the saw becomes permanently damaged. On this account chiefly, also, English saw-blades for hand-work are (and require to be) made of a much better quality of steel than would otherwise be necessary.

In Germany, Italy, and most of the European Continent, as well as throughout the chief peoples of Asia, handsaws are used in tension, the cutting stroke being a pull towards the chest of the worker. In consequence, the blades are made very much thinner than those of English saws, less material is converted into saw-dust and less exertion is required for given rate of cutting.

The English method, however, has this advantage, that a man standing upright can exert a considerably greater force in thrusting forward with his arms than he can in pulling inward. This is still more the case if he leans forward over his *work* because he can then throw a large portion of his *weight* on the saw-handle to drive it forward. The result is that if an English carpenter be pitched against an equally strong German carpenter, each armed with his own tool, the Englishman will saw through as great, or possibly a greater, length of the same thickness as the German will. But the Orientals *sit* to this sort of work, and planting the feet against the log being sawn, pull outwards by the contraction of all the muscles of the body. As is well known to us from our familiarity with the English style of rowing, this is by far the most powerful attitude into which the human muscular system can be thrown. Thus, unless the peculiar shape and position of his work compels, say, the Japanese carpenter, to assume an awkwardly cramped position, he is enabled, with his thin, broad, saw-blade, to get through his work with far less fatigue and with greater rapidity than an Englishman can.

Thin saws worked in tension, being extremely pliable, are more likely to make a cut that is not quite straight. The thick saw-blade of English or American make has superior stiffness, and, therefore, superior guiding power to keep the advance of the cut always in the same straight line, but this superiority in guiding power is again neutralized by the fact already mentioned of the thrust tending to bend the blade, while the pull on the thin saw tends to straighten its blade.—*Cutting Tools.*

IF the Western Union Telegraph Co., as is stated, has purchased the right to use Baxter's long distance telephone, it will not be long before conversation can be carried on between San Francisco and New York with probably two breaks only.

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Architects Sometimes Wrongfully Blamed.

As a rule, in competitions on plans, where the bidding is not restricted to selected parties, there is generally some one of the number who is wild in his estimate, frequently falling fifteen, twenty-five, and even fifty per cent. below all others. The difference of from ten to twenty-five per cent. is of common occurence; and when the bids are opened, and the low figure announced, those who have figured intelligently very naturally feel a disgust for the low man, knowing that in the sum mentioned there is not a sufficient amount to enable him to carry out and complete the work proposed by the plans and specifications, in a workman-like manner, and pay the actual cost of materials and labor. That the more careful and correct bidders should feel aggrieved, is right and proper, as every undervaluation of work encourages owners in the belief that by a little manipulation, and unrestricted bidding, some simpleton may be found who will obligate to give a dollar and ten or twenty cents worth for every dollar received under the contract. And it being the common tendency of the human mind among all classes of people, to seek the cheapest, without regard to actualities—propositions which present a saving are generally accepted, leaving the contingencies to take care of themselves. Consequently those who name a fair and honest price for the thing proposed, are presumed to be unreasonably high in their figuring, and are rejected; while the mistaken or perchance designing low man is accepted, not upon the quantum merit of the case, but because of the offer to do for a certain sum that which others of better intelligence and more just and business-like purposes feel cannot be done for the amount proposed. If the responsibilities and involvements in such cases, fell exclusively upon those guilty of such business indiscretions, there would be no cause of complaint; for if men will deceive themselves by assuming competency in estimating, while practically ignorant of all correct rules of reaching values, a little of the sweetening of bitter experience is well deserved, and should operate as a corrective. But the fact that the bad influence of all such examples works an injury to others, makes the matter one of general interest, and brings it within the province of reasonable and justified complaint. The wrongful blame upon architects lies in the fact that many of the disappointed give vent to their feelings in disaproval of architects permitting "such fellows to figure in their offices." There may be grounds for such murmuring in some cases, but not as a rule; for every well-informed architect knows full well, and in some cases by bitter experiences, that very low figuring is premonitory of trouble; and architects of intelligence and standing are never anxious to surround themselves with making contract conditions which indicate storms and disagreeable occurrences in the future. Yet, being the managing men in preparing the papers and receiving the bids, they are generally held responsible for the blunders and mistakes of all who are permitted to figure, although unable to know or control the figuring of any. In fact, those who are allowed to figure are generally guarded and careful not to extend any information to the architect, through fear of being "given away," and the webs of obscurity and secrecy are tightly woven around the figuring of those in the competition, so that no one may gain or use the advantages of knowing the figures of others. Consequently the architect should not be held responsible for the irregularities of bidders, inasmuch as he holds and exercises no control over the figuring, and it is a great injustice on the part of competitors to invent and express accusations reflecting upon the office in which they figure, because some one of their own class may have made enormous calculations of costs and values.

We intend no reference to those "architects" who impose upon the public by assumptions, presumptions, and artifices which never enter the minds of intelligent and educated men in the profession, who would scorn to be guilty of an unjust or unprofessional act. Nor are architects always responsible for the admission of all the parties joining in competitions, as owners very frequently of their own knowledge, or through friends, know some "good man," whose estimate is wanted, and who cannot be ruled out by the architect, except at the risk of being charged with special purposes in view, or with motives of a personal character. And further, the "low man" frequently proves to be one who has enjoyed the benefits of large experience, and whose "low figures" are wholly the result of oversight. As in one case within our own experience as architects, the contractor overlooked the entire item of labor, amounting to more than twelve hundred dollars, yet he failed to discover his error until long after the work was commenced. The building was satisfactorily completed, and the loss sustained without murmuring, but the effect was bad, inasmuch as through the error of a competent contractor a building was produced far below its value, and stands to be pointed at as a house costing only a certain sum—which is a fact as far as the owner is concerned, but not so as a whole, as the contractor sunk the amount stated, which does not appear in connection with the contract cost. Numerous illustrations might be cited, showing the absence of a fair, perfect system of figuring among the greater number of contractors operating in San Francisco and we think that complaints should be made in that direction rather than against competent architects, who understand fully that contracts let to good men at remunerative prices, are always attended with more pleasant and satisfactory results to all parties.

SPIRIT of turpentine is now made, says a contemporary, from sawdust and refuse of the saw mill. It is extracted by a sweating process, yields fourteen gallons of spirits, three to four gallons of resin, and a quantity of tar per cord.

Building Activities.

The transactions in real estate during the past thirty days indicate a healthful state of affairs generally, with a large amount of capital still seeking investment in desirable business property. The general talk favors the presumption that, before the fall months roll around, there will be a large increase in the erection of brick buildings for business purposes. At present there are but few of this class under way or in course of plan preparation. As will be seen by our monthly report, building operations are confined mainly to residence and tenement improvements, with no abatement in the number of contracts signed during the present as compared with previous months of the present, and for the same period of the past year. Contractors generally are busy, and all good workmen employed, notwithstanding the inauguration by the Carpenters and Joiners' Union, of nine hours as a day's labor.

A limited number of owners express a disposition to resist the nine-hour system, which went into effect on the first inst., but the opposition is feeble and will in a short time quiet down to an acceptance of the situation, provided the working classes continue the course thus far pursued, of making as little stir as possible in reference to the matter. It is only when movements of the kind are made unnecessarily conspicuous that material opposition is aroused and stimulated. But few owners of real estate will permit their property to remain unimproved, with the prospects of remunerative returns upon investments made in the erection of buildings, whether men work nine or ten hours per day. And past experiences prove that there is less ground for opposition to the new rule than many conjure up. For it is a well-established fact that contracts are let from time to time at nearly the same rates, even with an advance in price of materials and labor in prospect or in force. Ten per cent reduction in the hours of labor by no means increases total cost ten per cent., as the cost of labor on buildings is only about one eighth of the total value, and the increase cannot therefore apply to more than that proportion of the total sum; so that on buildings costing $4,000 under the ten-hour regime, the extra cost figured out by the one-tenth reduction in the hours of labor would increase the total cost, under the nine-hour rule, less than $100.

It is reasonable to presume that there will be a short lull in building improvements at this season of the year, when the greater number of those who can afford the time and expense are preparing for their usual summer vacation to, and sojourn at, the various springs and other places of resort—relaxation and pleasure. At the same time, architects generally have numerous orders in hand and plans in course of preparation, and brisk times are confidently relied upon during the remaining portion of the year.

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Value of Buildings—Results to Contractors.

THE prevailing sentiment in regard to the *Expense of building* is in many respects erroneous. Owners more generally, at the commencement of operations settle upon a sum to be expended, seldom equal to, and more frequently largely below the actual value of the thing contemplated. It is but seldom that an amount is stated, sufficient for the purposes contemplated. More is generally asked for than can possibly be obtained for the sum named, without loss to some one—if the attempt is made to comply with the demand made. Two prominent facts in this connection are worthy of notice, first that THOUSANDS of failures, ending in pro ratio settlements, have occurred in San Francisco, not so much by the wastage and squandering of contract moneys as from absolute shortage in the contract amount, less than actual values. The bread-and-butter price at which the work is undertaken will not permit the slightest departure from rigid economy in every particular, nor permit less than slavish attention to the work in hand. The profit margins are as a rule inadequate to the slightest indulgence other than close application in time and personal labor, and attention on the part of the contractor; and it is only by the exercise of every saving possibility that a majority of buildings are completed, with money enough to pay the bills for material and labor.

The second fact that may be mentioned, is that of the financial condition of eight-tenths of those who undertake contracts for buildings. Aside from a few judicious, thoughtful, careful men, the contractors operating in San Francisco have comparatively nothing to show for their many years of application to building pursuits. Nor can it be charged that our master-builders are extravagant livers, for generally speaking there are but few of them who own a roof over their heads clear of encumberances, while the greater number live in rented houses; all of which goes to sustain the statement, that the contracting business in San Francisco has hitherto been less profitable than it should have been, in view of the very large amount of money handled in building operations. All this is further sustained by the fact that but few indeed of our contractors are entrusted with contracts without bonds; a fact that would not exist, if the financial condition of contractors was such as to inspire confidence on the part of owners and materialmen. Nor is this so because they are generally considered dishonest men, for the integrity of many master-builders is not disputed; but honesty alone will not settle unpaid bills nor satisfy creditors; it requires coin to liquidate financial obligations and square accounts. Honesty in its purest sense may permeate every thought, and every intent and purpose may be pure, but if the ducats are lacking, bills cannot be paid.

It is therefore safe to say that owners, as a rule, have been largely financial gainers in the improvement of their real estate in this city, as those who have done the work cannot make an average showing of reasonably fair financial results and profits.

We do not write this as a rebuke to owners, for if men professing competency to estimate building values, see fit to throw away their time and energies in erecting buildings for less than they are worth, owners would be less than wise not to avail themselves of the benefits thus offered.

The Plumber Movements.

SINCE the April issue of this journal we have received a copy of the code of by-laws adopted by the Master Plumber Association of the City of San Francisco, defining the organic laws and executive rules of the organization. If not as perfect as they might be, they sufficiently exhibit an honest purpose on the part of the members of the society to correct the abuses which have hitherto existed in the plumbing trade, and give clear denial to all the speculations dealt in by those who have raised or repeated the cry of a "political job" in the passage of the plumbing law by the late Legislature of California. Upon the theory that all men are corrupt, the law in question may, like thousands of others framed and passed for good purposes, be used by designing and mischievous men to work out selfish purposes. There are but few laws passed which do not in cases fail to accomplish the object for which they were made. But the law recently passed, through the earnest exertions of the principal plumbers in San Francisco, is not one likely to be allowed to fall into bad hands. Those who secured its passage have a common, general interest in its perfect efficiency; and we cannot believe that the leading men in so important a branch of mechanism as the plumbing business is universally acknowledged to be, will permit the matter to pass from their control as a body into the hands of political tricksters and schemers. The good men of the plumbing art have long felt and groaned under the profligate irregularities which have to a large extent brought more or less disgrace upon the entire craft. So many bad things have been done in the name of "practical plumbers," that a very large proportion of property owners and tenants have accepted the belief that honest and competent plumbers are as scarce as incorruptible legislators in a California state legislature. It has therefore become imperative for their own interest individually, and for the redemption of the trade, that the better class of plumbers should secure such aid and assistance in legal form—all mechanical and sanitary considerations failing—to correct the existing abuses. And now that the regulating and corrective means are under the control of the more intelligent and really practical men in the plumbing business, they will deserve all the ha d things that can be said about them if in the future more perfect plumbing work is not done in this city, and a change in general sentiment in reference to plumbers brought about.

Cheap Piazzas.

PIAZZAS and porches are like parasols, they may be intended for comfort, for ornament, or for both. Probably they ought always to be both ornamental and useful, on general principles everything ought to be so, but the object of these suggestions is to indicate how the comfort of these pleasant adjuncts may be secured without the large outlay which is supposed to accompany the "good, broad piazzas and plenty of them," that form so essential a part of the air-castles of most house-builders. In its simplest form a piazza is an open shed resting against the outer wall of the house. If in the right place and of reasonably good proportion, the plain upright parts, with whatever braces are needed for strength, and the lean-to roof will not be unsightly in appearance—quite the contrary, indeed—and will afford precisely the same comfort as the more elaborate structures with turned bed-post columns, Queen Anne spindles, fantastic scroll-sawed brackets, grooves, beads, and decorations without number, and more striped paints than can be found on a dozen barber-poles. Multitudes of village and country houses are bare and comfortless both in appearance and in fact, that would be transformed into hospitable mansions by simple piazzas, which any man of common Yankee ingenuity could build for himself if he could not afford to pay for the labor. A floor of sound, narrow boards laid an eighth of an inch apart on rough joists resting upon bowlders or brick piers, will last for many years, and a boy can make it. Plain, square pieces of timber, or small tree-trunks cut in the grove and stripped of their bark would serve for posts, and a roof made of sound, seasoned, matched boards, not more than four or five inches wide, the edges painted as they are laid, and both surfaces above and below well painted afterwards, will not even begin to leak till long after it has paid for itself a dozen times over in good solid comfort. Even if after a dozen years a few drops should come through in a driving rain, or from melting snow, it is not a serious matter. We don't keep our soluble groceries nor our best silk dresses on an open piazza, not as a rule, and the tightest roof in the world will not prevent the rain and snow from blowing in beneath it. Such a plain, simple piazza built where it can be pleasantly used and large enough to serve as a semi-out-door apartment is vastly preferable to the high, narrow, formal affairs that are evidently added to the main structure, not because the builder desired to increase the comfort and convenience of the occupants, but because he hoped to increase the external beauty of the building. To build a piazza when it is not needed and cannot be used, is like parading an open parasol in the shade, or hoisting an umbrella when there is no sign of a shower.—*The Builder.*

FROM a study of the maximum temperatures naturally occurring, Mr. L. Liebermann says that a mineral oil, the flashing point of which exceeds 60 deg., may be safely used in all parts of Europe.

Practical Suggestions.

ALL sorts of devices have been made and many patented to prevent the rain from beating in under the bottom edge of an outside door in a driving storm. Many have undoubtedly noticed a great heavy, unsightly piece of inch-and-a-half plank with one edge beveled off, and nailed on the bottom edge of a door to prevent the water from being blown by the force of the wind under the door and into the room. In severe storms these old-fashioned weather strips have not accomplished what they were made for.

A much better and more workmanlike way is to take the door from its hinges, then with a carpenter's plow, holding a ⅜-inch iron, make a groove about ⅜ of an inch deep in the lower edge of the door—that is, across the lower ends of the door-stiles and the lower edge of the bottom rail, taking care to have the inward edge of the groove project when the door is in place—from ⅛ to 3.16 inches beyond the rabbet of the doorsill. After you have made the groove, with a rabbet plane work off the outward edge of the groove until you bring it nearly to a point on the outward edge of the door. This finished, the door can be put in place.

This manner of fixing a door prevents any unsightly strips of wood on the bottom of your door, yet it works well in the case of severe storms.

Some may ask what is the reason. It can easily be explained. The rain beating against the face of the door runs down to the bottom edge, and when the wind is strong, and the space between the door and sill is considerable, the water is blown across the lower edge of the weather strip and door until it reaches the inside edge, where it drips down on to the floor.

With a door made as described the wind may be strong enough to blow the water up the incline on the bottom edge of the door, but if it abates, even only for a short time, the water will run back and drop off the front edge or be blown back again up the incline.

If the force of the wind is so great as to drive the water into and across the groove it will run down the inward edge of the groove and drip off into the rabbet of the door-sill.

Thus it will be seen that it is quite important that the inward edge of the groove should project beyond the edge of the rabbet in the door-sill.

Possibly in extra hard storms, where the door is in a very exposed position, a little water may be driven under a door made this way, but it will be small, and not sufficient to cause any annoyance.

I have often wondered why carpenters and builders always put down door-sills in rooms where all the floors are to be carpeted. In my own house I have taken up all the door-sills between my rooms, and have run my carpets from one room into the other. This is especially desirable when carpets are all one pattern and rooms are used in connection. Carpenters could leave the door short enough to swing over an ordinary carpet, while the removal of the door-sills will aid many a housekeeper in sweeping.

When sills are used, odd bits of oilcloth must be got to cover the sill, and even then along either edge it leaves a good-sized crevice for the accumulation of dirt.—*Rivet, Mechanical News.*

Driven Wells.

GOOD drinking water is just as essential to health as pure air; but it is not always easy to determine if water is pure through the sense of taste or sight; water that contains considerable organic matter is sometimes offensive to the sense of smell; but this is not always the case. The best method of testing for organic impurities is to drop into a tumbler of the water just enough "permanganate of potash," or of "Condy's fluid," to give the water a pinkish color. Any organic matter contained in the water is precipitated after standing an hour, the water losing its color or becoming brownish. If, however, there are no impurities to be acted upon, the water remains of a pinkish color for hours. This is a very simple test, and a valuable one, and were it more frequently employed, and its indications heeded, there would be few cases of fever. The best plan to get pure drinking-water is by means of what is generally known as the "driven well" but which by our plan is nothing of the sort. We have seen an open well, the water of which was dangerous to health, within ten feet of a "driven well," in the water of which no impurities could be detected. It is almost impossible to find an open well of perfectly pure water, and it is hardly possible to find a driven well where the water contains impurities.

The easiest way to make a "driven well," is to get a piece of iron or steel pipe, six feet long and one and a quarter inches in diameter; make a cutting edge at one end by beveling off inside the end of pipe, with a half round file, drive this pipe down a foot or two and then draw it up, and the earth from the hole will be found inside the pipe, and can be pushed out with an iron rod. Repeat this opertion until you have gone six feet; then couple an inch pipe, six feet long, to your cutting pipe; continue this till water is reached, then attach a short piece of pipe having small holes in it, and a plug in the lower end, to your inch pipe, and drop it into the little well you have *dug*; screw on a pump and you have a well complete at about the price Mr. Green charges for the right to drive a pipe into the ground. In the decision of the Court in regard to the Green patent, the judge said, that where the earth was raised up and taken out of the well, it did not infringe Green's patent, which holds good only where a pipe is driven down so as to push the earth aside. But everybody knew that.

It has always seemed remarkable that any one should have bothered with Green's patent, when the plan above described is in all respects preferable and is hampered by no patent. Though small it is just as much an open well as if it were six feet in diameter, and any one has the undoubted right to construct such wells. If stones are encountered they may be broken and penetrated by attaching a piece of round steel, one inch in diameter and two feet long, to the end of the inch pipe. The lower end should be drawn down to a blunt point. We constructed a well on the above plan, using an inch galvanized pipe, and the supply of water is abundant for twenty families.—*Hall's Journal of Health.*

Draughtsmen and Our Draughtsmen's Registry.

DURING the past two years or more numerous applications have been made at the office of this journal by practicing architects in San Francisco, and others from Portland, Seattle, Los Angeles, and various other portions of this State and Coast, for competent draughtsmen; the very reasonable conclusion prevailing that as the representative and official organ of the profession, its management should possess special information in reference to those desiring employment as draughtsmen, and those needing help. These conclusions were and are correct; and with the view of perfecting a system which would place us in communication with the entire draughtsmen's forces in this city and elsewhere, we prepared a registry in which to enter the names of all draughtsmen, charging the sum of $2 50 to each party registering, which amount was intended to operate as a perpetual fee for all time, without increase or renewal. Under this arrangement we have been able to secure engagements to many who might otherwise have remained idle, and suffered a loss in time and wages many times greater than the cost of registration, and some who have availed themselves of the advantages offered have formed advantageous co-partnerships and are doing well. But our motives have been by some misjudged, misrepresented, and theorized and magnified into an attempt on our part to perpetrate a wrong, accompanied with the illiberal idea that our interest in the matter was stimulated by the petty and insignificant sum charged, rather than the *truthful, honest* purpose to assist and place in ready communication both employers and employés. There is so little of reason or veracity, and so much of absurdity in the insinuation, that we should not refer to it were it not that the majority of human minds are ever ready to receive and accept as true any and every statement listened to which affords the opportunity for enlargement and furnishes the basis for gossip and slander. As beasts of prey become more savage by the taste of blood, so do most of human kind give more heed to false representations intended to hurt and defame others. There is a relish and flavor in untruths which satisfy and please the unrefined moral taste of multitudes, who prefer to feed upon the false and untruthful rather than seek the sweet sustainments of honest fact, and who are ever ready to magnify mole-hills into lofty mountains and attempt to reduce the silvery orb of night into a map of moldering "green cheese," by exaggerated representations.

The fact that more or less time is consumed in all cases, and sometimes inconveniently so, in respectful courtesies to those calling for information in this connection; that letters are received and answered, postages and sometimes telegraphic expenses involved, are not considered by those who would have us serve their interests at our own cost and expense. We are willing at all times to expend both time and money in matters of a general character by which our patrons may be informed, instructed, and benefited; but those of the side personal interest assume a different aspect, and it seems to us strange that any intelligent young man should permit himself to reach or accept conclusions so foreign to actual facts as those involved in the subject-matter of this article.

As further proof of our disinterestedness as far as the fee is concerned, we state the fact that we have found situations for a number of draughtsmen who have been short of funds without exacting the fee, but have not entered their names upon the registry. And we shall continue to aid any and all who may call on us, giving preference to those who comply with registry requirements when the supply is in excess of the demand.

Cisterns.

A WRITER in the *Lumber World* presents some facts with reference to cisterns that may prove of interest to the readers of this Journal.

Cisterns of various sorts and sizes may be very cheaply and speedily made. The largest sizes should be made oblong, not more than twelve feet across, to turn brick arch over conveniently, and as long as needed. Round cisterns are best when not more than twelve feet in diameter, and as deep as necessary, though the draft of water is rather hard when more than twenty feet deep, when pumped by hand. To build a cistern, if circular, the earth should be excavated in the shape of an egg, longest down, and rounding at the bottom, making the surface of the excavations as smooth and neat as possible. Three feet from the top dig out a shelf the width of a brick, laying the brick for the arch in cement or hydraulic lime-mortar of as good quality as can be procured. Lay a course of bricks in the mortar all round the shelf, pointing the spaces well between the bricks and behind them. When this is completed, all the spaces being filled up, begin another course about one and one-half inches out from the other, filling-in all pointing as before, so that the cement, when set hard, will bind and hold the course of bricks firmly. This will draw in the cistern three inches. Continue in this way until the hole is about the size of a flour-barrel, filling-in the soil around the arch and above it, and building a neck about two feet high to finish off. The earth around ought to be fully a foot higher than the level, to turn off drainage and keep out surface-water. When this is done the interior of the cistern may be plastered on the earth, when it is firm and solid, placing a large stone or platform of bricks immediately under where the water will fall, in the bottom, and to support the pumptube, if one is used. When an earth-wall is not used, bricks should be laid in courses from the bottom, in cement, with much care, and backing each course well behind with dry sand, that the pressure of the water may not cause leaking, which is very often the case if not properly done.

Cement-mortar is usually made of two parts dry mortar-sand and one part of hydraulic cement. The bottom and walls of the cistern must be well plastered and completely covered with this mortar, without any breaks in it anywhere, at least one-half inch thick. It is best not to get it on too thick, or it may slide down to the bottom. This will dry enough in twenty-four hours to be well covered with a wash of hydraulic cement as thin as it can be laid on with a whitewash-brush. The whole should be carefully gone over with this wash, that all porosities or cracks in the plaster may be thoroughly filled and covered up. Two or three coats of this wash are better than one, as they will render the cistern as tight as a bottle. The more coats of the wash that are put on the less water will soak away through the pores of the plaster, and the tighter it will be. This is a point of considerable importance, and should always be carefully attended to.

It is, of course, convenient, when you decide how large a cistern is wanted, to know how large it ought to be made to hold the required quantity of water. For every foot of depth of the following diameters the cistern will hold:—

For 6 ft.	diameter	7.	barrels of 30 gallons.
" 7 "	"	9.598	" "
" 8 "	"	12.533	" "
" 9 "	"	14.42	" "
" 10 "	"	19.58	" "

A cistern 10 feet deep and 6 feet in diameter holds 2,100 gallons, or 70 barrels of 30 gallons each. The rule for finding the contents of any cistern is to multiply half the diameter in feet by itself. Then multiply the product by 3.1416, which gives the area of the excavation near enough for practical purposes. Multiply this by the depth in feet, which gives the cubic contents in feet. Multiply the last product by 1,728 to get the number of cubic inches. Divide the whole result by 231, the number of cubic inches in a wine gallon, and the product will be the number of gallons in the cistern. This, divided by 30, gives the number of barrels of 30 gallons each.

In conducting water from a roof to a cistern, arrangements ought to always be made for turning it off when full, as the weight of the water is apt to burst the walls if it is allowed to overflow. This should always be carefully looked after, and the conductors ought always to be turned off until the rain has fallen for some time and washed the roofs clean and clear of leaves and other trash. A small wire screen ought also to be placed over the spout-holes in the roof. Professional cistern-builders are apt to slight their work, using too little cement, or too little mortar, or not backing the walls well, or not washing them enough afterward to be tight. Any intelligent workman can make a good cistern after being shown how, and these often do the best work. It is always best to mix small quantities of mortar at a time, using it as rapidly as possible. A round cistern is much more economical of space, and holds more in proportion to depth of wall than a square one. But it is often thought best, in constructing very large reservoirs, to build them square. The following tables of both show the difference in wall and in area:—

SQUARE CISTERNS.

8 feet square	have	64	feet area and	32	feet of wall.
10 "	"	100	" "	40	" "
12 "	"	144	" "	48	" "

ROUND CISTERNS.

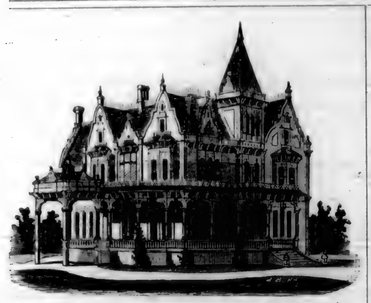
8 feet diameter	have	50	feet area and	24	feet of wall.
10 "	"	78	" "	31	" "
12 "	"	113	" "	37	" "

A 10-foot round cistern, it will be seen, has less wall than an 8-foot square one, and has 14 square feet more surface. Consequently, round cisterns are cheaper and larger than square ones, as well as stronger. In estimating the cost of a cistern the following details are useful. A brick is 8 inches long, 4 inches wide, and 2¼ thick. A wall need not be more than a brick thick, if carefully laid in cement and well backed with dry sand, so the pressure of water, when brought against it, cannot force it out of its place to cause a crack or a leak. When laid flat and lengthwise, seven bricks will make a square foot of wall. A 10-foot round cistern, 12 feet deep, will have 372 square feet of wall, and will require 2,600 bricks for a 4-inch flat wall, if the entire surface is laid upon bricks. But if only an arch is turned of bricks, and the cement-mortar is plastered on sound, solid, clay earth, not more than 1,000 bricks will be needed. Sometimes a wall is laid up with bricks placed on edge, when about 1,700 will cover the entire area, walls, bottom, arch, and all, but this is not a safe method unless a skillful workman attends to the job.

Mix the cement and sand dry before making mortar, as thoroughly as possible, placing the sand on planks, using it about an inch thick, then an inch of cement, and another inch of sand. Then mix and work thoroughly while dry. It is better to pass the whole through a screen, even if the sand has been already sifted. In wetting down, it is best not to mix more than a bucket-full at a time. In plastering the walls always begin at the bottom, allowing each course to set and get hard before putting on another, or the whole may slide down in a lumpy mass.

EDS. ARCHITECT.: "Please settle a difference of opinion by stating the proportion between the load a given floor will bear when the joists are not bridged, and the same floor thoroughly bridged, with two rows of herring-bone bridging."

A floor will not bear any more weight by being bridged. The advantage to be gained by bridging lies in the fact that an individual joist is strengthened thereby, thus increasing its power to resist a concentrated load upon it, such as a heavy book case, safe, etc.



Improvements at Portland, Oregon.

W. S. Strahan is erecting a one-story, double house on D Street between Twentieth and Twenty-first.

W. B. Todd is building a house on Eleventh Street, between H and I, for A. Nolfke. The cost is about $2,000.

James Hyland is having erected four cottages on Eleventh Street, between Stark and B, for Hugh Gearin of Oregon City. They will cost about $4,000.

E. M. Burton has made plans for three double residences, to be constructed on Seventh street near the Trinity church. They are for J. M. Kenworthy, of East Portland, and will cost $12,000.

James Cumming has about finished a new store building on Eighteenth and B streets, for A. T. Smith. It is two-story, 20 x 50, and cost $2,000.

M. S. Rosenblatt is having built a dwelling-house on the corner of Eighth and Alder streets. Sedge & Jenkins are the contractors. The cost will be about $5,000.

There are the frames of three houses on the half block bounded by H. Twelfth and Thirteenth streets. One will be for Mr. Owen, and one of the smaller ones is for Mr. Sheath.

The foundations for J. A. Strowbridge's new block, on Second and Yamhill streets, are well under way. It will be three story, and will cost as much as $50,000,

R. Weeks is building a dwelling, corner Lownsdale and Alder streets. A. C. Townsend is the contractor and Neer & La Romer, architects. The cost is about $2,500.

S. Blumauer is having a house built on Morrison and Fifteenth streets. It is a three-story residence, and will cost over $10,000.

The work of moving the two buildings on the lot owned by John Wilson at the northeast corner of Fourth and Alder streets, has been completed. Mr. Wilson has already contracted with R. Porter for the erection on the lot of a three-story brick building, with basement, which is to contain one single and two double stores. The cost of the structure will be about $40,000.

Mr Roach is building a $5,000 dwelling-house on the corner of Tenth and Market streets.

Mrs. Mary Dooling is building a cottage on the corner of Market and Fourteenth streets, to cost $1,200,

W. W. Spaulding's new three-story brick building on First, between Clay and Columbia, will cost about $20,000.

A two-story dwelling for Frank Hacheney is being built on Hall between Third and Fourth streets, to cost $2,500.

Charles. Cardinell is building a residence to cost between $4,000 and $5,000.

A large two-story double house is being constructed on Third Street between Harrison and Hall, to cost $6,000. M. J. Geist is the owner.

Frank Hacheney is filling two lots on the corner of Clay and Lownsdale streets and will build three two-story frame dwellings, to cost about $4,000.

The northeast corner of First and Main streets has been cleared, and workmen are busily engaged preparing the foundation for a three-story brick, edifice for Watson and Smith. The building will cost about $30,000.

The Catholic school, building in the Dalles will be built of brick, and cost about $30,000.

Plans have been made for a dwelling-house to be built by J. H. Lyon, on the corner of Pacific and Morrison streets, to cost $6,000.

The contracts for the foundations and iron-work of the new building to be erected on the northeast corner of Third and Washington streets by Frank Dekum, have been let respectively to McCarthy & McMahon and John Honeyman & Co.

The work of cleaning out the debris from J. C. Ainsworth's burned building, has been finished and the rebuilding is well under way. Mr. Krumbein, the architect, has let the contract to F. W. Lewis, to be completed June 1st. The improvement will cost $30,000.

The main contract for Labbe Bros.' building has been let to John Robertson. This contract includes all but the foundations and the cast iron work. It is reported that the building will exceed the announced cost—$100,000.

S. Farrell is having built a small cottage on East Park street, between Stark and Washington to cost $1500.

F. B. Winters is building a one-story house on the southwest corner of Pacific and Taylor streets to cost $1,500.

Mrs. E. F. Albright, on Taylor, between Tenth and Eleventh streets, has a two-story dwelling under way, to cost $5,000.

George Cohn is building a dwelling house on the corner of Morrison and Fourteenth streets. It is a two-story, double house, and will cost $6,000.

Mr. Cochrane is building a two-story frame building on First Street, between Clay and Market, to cost about $2,000.

The bids advertised for by the Board of School Directors for finishing up the lower stories of the Failing and Couch schools, were opened at the office of Justus Krumbein, Saturday, and bids for finishing each building were as follows: W. B. Todd, $4,000; W. L. Goodwin, $5,388; Merchant & Bridges, $6,100; Campbell & McDonald, $6,270; Sharno & Davison, $6272; P. O. Lundin, $6,280; N. O. Anderson, $6,325. In case it is concluded to finish only the south half of the Couch building, it will be done for half the prices named.

We are indebted for the above list to the Commercial *Herald*. Our material men would do well to subscribe for the *Herald* as it contains a full account of building operations in the great North west. Terms $3,00 per year.

Absorption of Moisture by Building Materials.

EVERY one connected with buildings of brick and stone knows the absorbent nature of those materials under the most favorable circumstances. It would astonish most people, adds the London *Building News* to be told what a large quantity of water is stored in the brick walls of an ordinary house after a heavy rainfall, the drying or evaporation of which must take place inside in cold weather, unless proper precautions are taken to render the walls impenetrable. The plea for hollow walls has been raised again and again, and though the system is coming to be adopted more generally less, the idea of solidity of wall structure seems to have taken too deep a hold on the ordinary building mind to be given up. Some time ago a suggestion was made that colliery owners and others who have large quantities of slag, might with profit utilize this material for building cottages and other purposes. We are not sure whether the hint was taken, but in some parts of the country the material furnishes an admirable aggregate for concrete. Where good aggregates exist, like slag, broken brick, sand-stone or furnace ashes, concrete building ought to be much cheaper than brick, as no skilled labor is required.

There is another consideration besides cost which tells in favor of concrete, and that is the non-porosity of walls so constructed. Not only does brick absorb moisture in wet weather, but it is now known to absorb animal gases as well; and here we have a condition which builders of our hospitals and infirmaries ought to be reminded of. We are not sure if concrete has been applied to any buildings in England of this kind on a large scale, but as absorbent walls are known to be injurious in harboring the germs of infection, the value of walls constructed of concrete made of burnt aggregates cannot be overrated. Slag made concrete has the great advantage of being fire-resisting, the material in its rough state having been subjected to intense heat. There is nothing in it to "kill" the cement, and the rough surface of walls built with it becomes an excellent "key" for the plastering. In the construction of walls of this material, three sizes of the slag may be used, the larger lumps being packed in layers in the middle of the wall, and the other two sizes, the larger the size of walnuts, run in with cement on each face in the proportion of eight to one.—*Manufacturer and Builder.*

THE trustees of the great suspension bridge over the East River, between New York and Brooklyn, have announced that the structure will be thrown open to the public on the 24th day of May, 1883.

The Effect of the Nine-Hour Movement.

SINCE writing another article appearing in this issue, touching upon the same subject, we have been interviewed by a considerable number of owners in regard to the nine-hour rule adopted by the carpenters' and joiners' union, and we find that a very considerable number of them are disposed not to build at present. We have repeated the arguments elsewhere appearing, that the ten per cent. reduction in the hours of labor increases the cost of buildings ten per cent. only in the cost of that one item; or in buildings where the carpenter's work is worth under the ten-hour rule—$1,000, which indicates in frame buildings a total cost of $7,000 to $8,000, the increase would be only about $100—being one-tenth added to the item of labor. But the further objection is urged, that if the nine hours is recognized by owners, it will soon be followed by a demand for eight hours as a day's labor. We hope not, as such a course will beyond question check present and promised prosperities, not so much because of the actual additional cost of building, as that public sentiment is adverse to such reduction on general principles. Consequently, it will be wise on the part of the laboring classes to be content with what they have gained in the present reduction, and not seek to prostrate building activities by attempting now, what has heretofore been tried and proved a failure. If nine hours had been accepted as a compromise at the time the eight-hour contest was waged years ago, there would have been a yielding on the part of owners, and the ground so gained might have proved permanent, instead of being a partial success, lasting but a short time.

Prescott's Patent Hangers.

THESE new hangers are fast superseding the old styles. No track is necessary where they are used, thus doing away with one of the common petty annoyances experienced by all housekeepers; when parlors are thrown open for a social dance, there is no track to come in contact with one's feet. Another great advantage lies in the fact that the action of these hangers is such upon opening a door, that the latter rises a little, and thus all wear and tear on carpets is entirely done away with. They are very easily applied, and are not visible with the door open or shut. Another great advantage is that they are not affected by shrinkage of either the door or studs. In case they get out of order, they are very easily got at to be fixed. They are made of all sizes and the price is no greater than the old-fashioned sheaves. Many of our architects are adopting them, and they can be found in the residences of many of our wealthy citizens. For full information apply to the agents, Dunham, Carrigan & Co., 110 Front Street.

SHORE up carefully if you would pull down safely.

Women as Architects.

WHY should not American women become architects? They push into all the polite and impolite professions, and architecture with its branch of "house decoration" seems an easy and fitting employment for one who has taste and a head for business. A lady who has recently died in London was a shining example of what can be accomplished by her sex in this department of art. Miss Rhoda Garrett, says the London *Times*, was the daughter of a country clergyman of small means, and one of a large family. She broke through the restrictions of home life, which are much stronger in England than here, and determined to carve an honest independence for herself. She entered the office of an architect, and having learned the trade, so to speak, set up for herself as a "house decorator," taking another lady into partnership. She soon rose to eminence in spite of delicate health, and found time to be the author of a little volume on "House Decoration" which has passed through six editions. Her social and professional life is a strong argument in support of the belief that women—ladies—may quietly succeed in "business," and attain not only money for their own needs, but fame of a high order.—*The Builder.*

About Chimneys.

THE following suggestions from the *American Artizan* for the cure of a troublesome fault of chimneys, raises the point whether it is not better to omit the inside plastering of smoke flues, relying for safety upon good bricks, good mortar, well filled joints, and, if need be, thorough plastering of the outside of the shaft, after it has been carefully inspected. We have several inquiries from subscribers as to the remedy for the formation of creosote in chimneys, which often runs down the walls of rooms, staining carpets and walls and causing much damage. The cause of this state of things, we venture to say, is owing to defective draft, and this often arises from the mason not smoothing the plaster on the inside of the chimney, which causes it to protrude and arrest the progress of the smoke, causing the consequent condensation into a liquid deposit. This may be remedied by attaching a brick to a rope and smoothing off the inside of the chimney. The trouble may arise also from a crooked chimney, in which case the remedy is plain, but the cause we have first assigned will be found to be a common one, and it would be well for those troubled with liquid oozing from chimneys, to look to the state of the inside mortar.

No matter how well arranged, water-closets immediately within a dwelling are objectionable. The minimizing of the evil partly lies in keeping them as far as possible from the sleeping-rooms.

SET out your work with accuracy, and the time you will save will bring profit as well as credit to your employer and yourself.

The Draft of Chimneys.

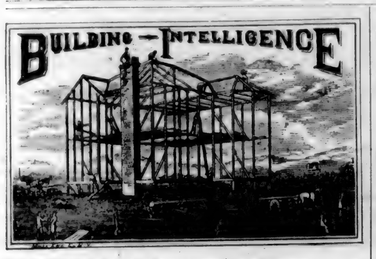
AT the closing meeting of the British Association Lord Rayleigh read a paper before the mechanical section on the effect of wind on the draft of chimneys, based upon experiments made with tubes and a fan driven by hydraulic power. He stated that a horizontal wind would usually promote a draft, except in cases where the chimney opened out upon a large expanse of wall, and so was indirectly affected. The cure in this case was to carry the chimney higher. When the wind was inclined downward to the chimney at an angle of thirty degrees and upward, there was a down-draft, and the maximum up-draft was produced by wind inclined upward at about the same angle. The simplest thing to prevent wind blowing down a chimney was to erect a T-piece on the top. In that case a vertical or inclined wind favored the draft, and the effect of a wind blowing through the T-tube was practically nothing. Mr. Park Harrison suggested as the only real remedy an increase of draft. If all the chimneys in a house could be made to open into a common cloaca, a down-draft would hardly ever occur.—*The Builder.*

Action of Open Fires.

THE way in which an ordinary open fire-place acts to create circulation of air in a room with closed doors and windows is as follows: The air is drawn along the floor towards the grate; it is then warmed by the heat which pervades all objects near the fire, and part is carried up the chimney with the smoke, whilst the remainder, partly in consequence of the warmth it has acquired from the fire, and partly owing to the impetus created in its movement towards the fire, flows upward towards the ceiling near the chimney-breast. It passes along the ceiling and, as it cools in its progress towards the opposite wall, descends to the floor, to be again drawn towards the fire-place. It follows from this that with an open fire-place in a room the best position in which to deliver the fresh air required to take the place of that which has passed up the chimney is above the projecting chimney-piece and at any convenient point in the chimney-breast between the chimney-piece and the top of the room, for the air thus falls into the warmer upward current, and mixes with the air of the room without perceptible disturbance.—*Furniture Gazette.*

TO REMOVE bolts that have rusted, without breaking them, the most effectual remedy known is the liberal application of petroleum. Care must be taken that the rusted parts are reached by it, and some time must be allowed to give it a chance to soften the layer of rust before any attempts are made to remove the bolt.

TO CLEAN MARBLE.—Chalk, powdered, and pumice stone, each one part; soda, two parts. Mix with water. Wash spots, then clean and wash off with soap and water.



SAN FRANCISCO.

Bush nr Webster. Two-story frame.
O.—L. Goodman.
A.—Wolfe & Son.
C.—J. Furness.
$6,500.

Market x Fremont & Beale. Four-story and base, brick.
O.—Mrs. M. Coleman.
A.—A. Laver.
C.—C. H. Ackerson.

Geary x Jones and Leavenworth. Three-story frame.
O.—Mrs. Merrill.
A.—Mooser.
C.—Binet.
$7,500.

Natoma x Sixth and Seventh. Three-story frame.
O.—N. C. Doyle.
A.—Mooser.
C.—P. Laherty.
$4,500.

Sacramento cor. Powell. Three—two-story frame.
O.—N. Gray.
A.—McDougall & Son
C.—A. Jackson.
$20,000

Guerrero x Twenty-fourth and Twenty-fifth. Two-story and basement.
O.—Dominican Sisters.
A.—B. E. Henriksen.
C.—J. Klein.
$20,000.

Bush x Kearny and Montgomery. Three-story brick.
O.—A. W. Bowman.
A.—Percy & Hamilton.
C.—J. Cox.
$8,000.

Mason x Union and Filbert. Three-story frame.
O.—C. Richert.
A.—Moore.
C.—C. C. Classen.
$5,000.

Taylor cor. Bush. Alterations.
O.—T. L. Lyons.
A.—Mooser.
C.—R. P. Sanchos.
$2,000.

Franklin cor. McAllister. Three—Two-story frame.
O.—B Windhaus.
A.—Geilfuss.
C.—E. Dyer.
$13,200.

Quincy Place near Pine. Four-story brick.
O.—Champion.
A.—W. P. Moore.
C.—G. Richardson.

Fourth near Bryant. Two-story frame.
O.—J. O'Neill.
A.—Townsend & Wyneken
C—Plummer.
$6,500.

Grove x Fillmore & Steiner. Two-story frame.
O.—C. R. Spilvalo.
C.—R. P. Traxler.
$7,000.

Valencia cor. Twenty-third. Three—two-story frame.
O. and B.—F. Crowley.
$18,000.

Harriett x Folsom and Howard. Two-story frame.
O.—C. B. Folsom
A.—Townsend & Co.
C.—J. J. Scott.
$2,200.

Fifteenth corner Church. Two-story frame.
O. and B.—C. Johnson.
$2,500.

Henry x Castro and Noe. One-story and basement frame.
O.—J. H. Schell.
C.—E. B. Spangle.
$1,400.

Twentieth x Dolores. Two-story frame.
O.—A. Miller.
C.—A. Klahn.
$2,000.

Battery cor. Sacramento. Additions.
O.—Campbell.
A.—Geddes.
C.—J. J. McCready.
$18,000.

Shotwell near Eighteenth. Two-story frame.
O.—J. G. James.
A.—G. A. Bordwell.
C.—Gray & Stover.
$4,500.

Turk corner Hyde. Three-story frame.
O.—D. Van Ness.
A.—Geilfuss.
C.—Kipp.
$22,000.

Harrison x Seventh and Eighth. One-story brick.
O.—Cutting Packing Co.
A.—W. F. Smith.
C.—J. F. Grant.
$30,000.

Guerrero cor. Eighteenth. Two-story frame.
O.—F. A. Hamblower.
C.—S. C. Thompson.
$6,000.

Twenty-first x Guerrero & Dolores. Two-story frame.
O.—G. Brown.
A.—O. G. Moore.
C.—Kincaid & Baldwin.
$5,500.

Guerrero near Twenty-fifth. One & one-half-story frame.
O.—Harding.
C.—F. W. Kern.
$1,500.

Buchanan near Oak.
O.—H. T. Wenzell.
A.—Schmidt & Havens.
C.—Terrill & Slaven.
$3,000.

Seventeenth near Church. Alterations.
O. and B.—J. Patterson.
$2,000.

Fifth nr Berry. One-story brick.
O.—Standard Oil Co.
C.—Quinn.

Geary near Van Ness. Additions.
O.—L. Westerfeld.
A.—Schropfer.
C.—Waterbury & Maxwell.
$2,500.

Polk cor. Grove. One—two-story frame. Four — one-story frame.
O.—W. B. Dolan.
A.—Restor.
C.—C. M. Mason.
$10,000.

Eighteenth corner Jessie. Two-story frame.
O.—Mrs. Dowdell.
C.—J. Blake.
$3,000.

Church x Sixteenth and 17th. One-story frame.
O.—F. Horning.
Days work.
$1,100.

Sanchez x Sixteenth and Seventeenth. One-story and basement frame.
O.—Quast.
C.—J. Williamson.
$1,000.

Folsom near Beale. Two-story frame.
O.—J. Pendergast.
C.—A. J. Fitzpatrick.
$15,000.

Stevenson nr First. Three-story brick.
O.—Pacific Power Co.
A.—W. F. Smith.
C.—W. M. Fletcher.
$18,000.

Mason cor. Chestnut. Seven two-story frame.
O. and B.—J. Fay.
$11,000.

Pierce nr Ellis. Tank frame.
O.—J. McGinn.
C.—Sanchez.
$1,000.

Polk cor. Clay. Three-story frame.
O.—W. Wilkinson.
A.—Wright & Sanders.
C.—Robinson.
$10,000.

Shotwell x Nineteenth and Twentieth. Two-story frame
O. and B.—W. Lewis.
$2,000.

Valencia nr Twenty-second. Additions.
O.—O. Brand.
C.—T. W. Hansbrough.
$1,200.

Twenty-eighth x Sanchez and Noe. One-story frame.
O.—Mrs. M. Gillen.
C.—A. Flood.
$700.

Tenth x Market and Mission. Additions.
O.—Thomas & Co.
C.—Leonard.
$600.

California x Fillmore and Steiner. Alterations.
O.—C. Nobmann.
A.—G. E. Voelkel.
C.—Cook & Johnston.
$5,500.

Stockton cor. Union.
O.—Mrs. C. Dunn.
A.—J. Devlin.
C.—J. J. McCready.
$27,000

Clay corner Hyde. Frame dwelling.
O.—Mrs. A. M. Conroy.
A.—Wm. Curlett.
C.—P. Crichton.
$2,200.

Devisadero nr Sacramento. Frame dwelling.
O.—L. W. McGlauflin.
A.—Wm. Curlett.
C.—C. Adams.
$4,000.

Masonic Cemetery
Tomb.
O.—Mrs. Jane Brickwedel.
A.—Wm. Curlett.
C.—Geo. Griffith.
$2,100.

Sacramento cor. Octavia. Alterations.
O.—Judge Sanderson.
A.—Wm. Curlett.
Days work.
$7,500 (about).

Eighteenth corner Jessie. Alterations.
O.—H. E. Underwood.
A.—Schmidt & Havens.
C.—Wm. Pluns.
$1,000.

McAllister cor. Fillmore. Two-story and attic frame with stable.
O.—L. Hentrich.
A.—Schmidt & Havens.
C.—Wm. Pluns.
Total cost—$2,100.

Van Ness Av. x Ellis and Eddy. Two-story frame.
O.—A. Anspacher.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$15,000.

Vallejo cor. Larkin. Alterations.
O.—J. H. Bremer.
A.—Schmidt & Havens.
C—W. Langstaff.
$7,000.

Jones x O'Farrell and Geary Three-story frame.
O.—J. B Fayard.
A.—Schmidt & Havens.
C—W. Langstaff.
$7,000.

Sixth near Harrison. Two-story frame.
O.—H. Russ.
C.—Conrad & Miller.

DIXON.

One story and basement brick.
O.—Eppinger & Co.
A.—Wolfe & Son.
C.—Madden & McGinnis.
$15,000.

SUSANVILLE.

One-story and basement brick.
O.—Grehn & Asher.
A.—Wolfe & Son.
$15,000.

SAN JOSE.

Second cor. San Fernando. Two-story brick.
O.—G. W. Rutherford.
A.—Theo. Lenzen.
C.—A. J. Saph.
$20,000.
Frame building.
O.—H. Luse.
A.—Theo. Lenzen.
C.—J. Lenzen.
$1,000.
Frame building.
O.—Hartman & Normandieu.
A.—Theo. Lenzen.
C.—J. Lenzen.
$900.

Meridian Road. One-story frame.
O.—F. A. Taylor.
A.—J. O. McKee.
C.—G. E. McDougall.
$2,175.

First. Two-story and basement frame.
O.—T. S. Montgomery.
A.—J. O. McKee.
C.—J. D. Stewart.
$3,900.

University Grounds. Two—One and one-half-story frame.
O.—J. E. Richards.
A.—J. O. McKee.
C.—W. S. Boyles.
$5,800.

Fifteenth corner Empire. Frame dwelling.
O.—A. Lundy.
A.—J. O. McKee.
Days work.
$1,800.

SACRAMENTO.

Seventh and Q. Two-story and basement frame.
O.—Mrs. E. B. Crocker.
A.—Goodell & Dillman.
C.—Madden & McGinnis.
$10,000.

J. Seventh and Eighth. Fitting up store.
O.—C. H. Gillman.
A.—N. D. Goodell.
C.—J. White.
$287.

Ninth x I and J. One-story basement brick.
O.—A. Meister.
A.—N. D. Goodell.
C.—Carle & Croly.
$2,400.

J x Seventh and Eighth. One-story and basement brick.
O.—A. Coulot.
A.—N. D. Goodell.
C—E. A. Boyer.
$1,500.

910 J. Two-story brick.
O.—Chas. Barnes.
A.—A. A. Cook.
C—J. White.
$2,253

1700 K. One-story frame.
O.—H. G. Cook.
A.—A. A. Cook.
C.—J. White.
$3,359.

LOS ANGELES.

Three-story brick building.
O.—St. Vincent Society.
A.—Kysor & Morgan.
C.—M. Fitzgucla.
$26,000.

Brick building.
O.—C. Duenmoran.
A.—Kysor & Morgan.
C.—Bell & Haskell.
$7,000.

Frame Residence.
O.—O. W. Childs.
A.—Kysor & Morgan.
$5,000.

Two-story brick building.
A.—Kysor & Morgan.
C.—C. Andrews.
$14,500.

Brick building.
O.—San Franco Estate.
A.—Kysor & Morgan.
C.—C. Willard.
$15,000.

Frame residence.
O.—J. Welber.
A.—Kysor & Morgan.
C.—J. E. Wood.
$7,500.

Agricultural College—Ontario. Three-story brick building.
A.—Kysor & Morgan.
Days work.
$18,000.

OAKLAND.

Vernal Heights. Two-story frame.
O.—G. E. DeGolia.
A.—Clinton Day.
C.—E. Child.
$4,000.

Union x Eighth and Ninth. One-story frame.
O.—J. F. Woods.
C.—C. S. Martin.
$2,000.

Tenth near Center. One-story frame.
O.—A. Heland.
Day's work.
$1,500.

Emery Station. Two-story frame.
O.—C. Diederichsen.
C.—C. R. Lord.
$2,100.

ALAMEDA.

Pacific Avenue. One-story frame.
O.—H. Koppitz.
C.—A. Denke.
$2,200.

Pacific Avenue nr Oak. Two-story frame.
O.—Mrs. Stahl.
C.—W. R. Vogt.
$3,000.

Pacific Avenue nr Willow. Additions.
O.—Westfall.
C.—C. F. Carlson.
$500.

Faru and Santa Clara Aves. Two-story frame.
O.—D. Straub.
C.—Cellarius.
$4,000.

BERKELEY.

University Avenue cor. Sixth. One-story frame.
O.—J. B. Henley.
A.—Meeker & Banks.
C.—G. A. Embury.
$1,700.

Center. Two one-story frame.
O.—C. Band.
C.—A. H. Broad.
$3,400.

Berkeley Way. One-story frame.
O.—C. Band.
C.—A. H. Broad.
$1,400.

University Avenue. Two-story frame.
O.—Dr. F. H. Payne.
C.—C. R. Lord.
$1,300

Ellsworth. One and one-half-story frame.
O.—Wood.
A.—Spencer.
C.—G. A. Embury.
$1,550.

Frame church.
O.—Catholic Society.
A.—B. J. Clinch.
C.—G. Embury.
$7,500.

One-story frame.
O.—Capt. Henley.
C.—G. Embury.
$1,700.

MISCELLANEOUS.

Yountville. Veteran's Home.
A.—McDougall & Son.
C.—Ingerson & Gore.
$15,700.

Chico. Two-story frame.
O.—F. C. Lusk.
C.—Swain & Hudson.
$20,000.

Riverside. Two-story brick block.
O.—J. R. Newberry & Co.
A.—Seymour & Stevens.
C.—Davis & Porter.
$5,000.

Walla Walla. Frame dwelling.
O.—E. Buchanan.
A.—Allen & Whittemore.
C.—A. B. Waterman.
$4,165.

Benicia. Planing mill.
O.—J. B. McKenzie.

Fresno. Two-story frame.
O.—F. F. Eggers.
A.—Geilfuss.
C.—Kipp.
$22,000.

Bolinas Bay. Two-story frame.
O.—Capt. Handerson.
A.—H. D. Mitchell.
Day's work.
$2,000.

San Rafael. Two-story Frame.
O.—Mr. Butler.
A.—Wright & Sanders.
C.—Robinson.
$10,000.

Colusa. One-story frame.
O.—C. Rimer.
C.—J. S. Steward.
$1,200.

MARKET REPORTS.

LUMBER.

Pine.

Common Rough, up to 40 feet, per M feet	$22 50
" 41 to 50 " "	23 50
" 51 to 60 " "	24 50
" 61 to 70 " "	26 50
" 71 to 80 " "	28 50
Refuse Rough	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	32 50
" 4 " and under, and 1¼x4 and 1¼x6	37 50
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second Quality Flooring and Stepping per M feet	27 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts per piece	17 50

Redwood.

Rough Merchantable per M feet	$22 50
" Refuse "	18 50
Surface No. 1 "	37 50
" 1x6 "	35 00
" No. 2 "	27 50
Rustic, No. 1, 1x8 "	35 00
" No. 1, 1x10 "	37 50
" No. 2 "	32 50
" Under 10 feet "	32 50
T. & G., 1¼x4 and 1¼x6 "	37 50
" 6 in. 12 ft. and over "	35 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	27 50
" " No. 2 "	35 00
T. & G., Beaded, 12 feet and over "	30 00
" " 7 to 11 feet "	27 50
" " under 7 feet "	30 00
Half-inch Surface "	27 50
Pickets, fancy "	20 00
" Rough, Pointed "	17 50
" " Square "	25 00
Siding, ½ inch "	
Shingles per M	2 50
Battens, ½ inch, lineal feet "	1c

NAILS.

10 to 60 pennies, are quoted at			$4 70
8	"	"	5 32
6	"	"	5 05
5 and 4	"	"	5 57
4 and 5	"	brad-heads at	6 00
6	"	"	6 25
8	"	"	6 50

The California Architect and Building News.

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THE

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AND

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Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

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" " 1880 (only a few left) $2.00

In 1880 the subscription price of this journal was only $1.50, and we have put the price of bound volumes accordingly.

Volumes of 1882 and those containing all the numbers from the first issue, bound in one volume, are supplied with a full index.

Any one failing to receive a complete index will be supplied by sending a postal card to this office with their address.

A Building Boom.

COMPARISON OF THE FIRST SIX MONTHS OF 1883 WITH THOSE OF OTHER YEARS.

THE present outlook of building operations is such as to gladden the hearts of every material man and property owner on the coast. At the beginning of the year we remarked that the building interests were alive to the grand future of this city, and that this year would be one of the most prosperous known in its history. We do not wish to be known as prophets. The very hackneyed phrase—too common in newspaper literature — "we prophesy an increased activity" &c., has never appeared in our building reports.

All the deductions and intimations of future business in building circles have been given after very careful inquiry among our business men and architects. To the latter class especially are we indebted in a great measure for so successfully placing before our readers, almost a complete record of buildings as they have been erected. And we take this means of publicly thanking the architects for their kindness in giving us the various items to enable us to present such results as we do in this issue.

We repeat again what we have said before, that we will not report a building until the contract is let. Our relations with architects are such that we hear, and in fact know of many buildings that "are in the market" long before the contract is signed. It would be manifestly unjust to the architect to report such items until everything is settled.

We find that in the first six months of 1882, there were reported of building improvements—brick, frame and alterations—

281 BUILDINGS, OF THE VALUE OF $1,238,910.

For the first six months of 1883, we find the total number to be

424 BUILDINGS, OF THE VALUE OF $2,464,898.

This is truly a good showing, and the result appears more remarkable when we take into consideration the fact that, so far, this year, there have been but few large single buildings erected. We have had no Phelan Blocks, Sugar refineries, Eagle Blocks, etc., to swell the grand total. From the first of the year there has been a steady demand for good dwellings, and as yet it is unabated.

Some of our cotemporaries—daily papers—a short time ago laid great stress upon the fact that the erection of so many buildings for "flats" would cause a great many to desert the old-fashioned buildings for the more modern dwellings. This, they argued, would result in a great many idle non-rentable houses on account of their lack of modern conveniences. These after being idle awhile would be rented for much lower figures, and thus cause parties to move from the "flats" to their old residences again.

The journals indicated did not give the property owners the credit to which they were entitled. In numerous instances, as soon as a tenant left one of the old-fashioned dwellings, the landlords immediately went to work renovating and re-modeling, and introducing the "modern conveniences" necessary. And to-day there are but comparatively few vacant houses to be had.

The amounts given for this year so far, are almost 50 per cent greater than for the whole year of 1880.

Architects generally are busily employed on sketches, plans, etc., for these patrons, many of whom are at the springs. After the 4th of July we may look for a steadily increasing business. Good workmen are now scarce, and the "boom" may receive a set back by the high price of labor and the disposition shown by the material men to add on every cent possible to their goods, whenever they think the public will submit to the imposition.

Still Onward and Upward.

WE are compelled to again enlarge this journal to meet the requirements of those who are gathering in the golden shekels by giving to the general public a full description of their wares through our advertising columns. Several ads. have been sent to us from the East during the past month, which we were compelled to decline. We do not insert any except those that relate strictly to the building interests and the furnishing of houses after completion.

We would also notify parties sending us ads. that unless their order is accompanied by a deposit, or suitable references given, we cannot insert the same. This rule is imperative.

During the past month we have enlarged our editorial corps, and it will be our aim, in each issue, to present a journal, the peer of any now printed. Further improvements are in contemplation, and we will use our best endeavors to merit the confidence reposed in us, by establishing an architectural and mechanical journal that will of necessity be found in the offices and dwellings of every property owner, architect, contractor and the trades generally.

A PORTABLE ice-freezing house is the subject of a patent granted to Mr. A. Von Krause, of West New Brighton, N. Y.

Our Original Table of Steel Square Mitres.

WE prepared, arranged, and published in the June No., 1882, of this Journal an original article, accompanied with an illustration plate, giving the figures on the steel square by which the various mitre cuts from a triangle to a 16-side polygon could be made. This table we found reproduced in a late number of the *Carpenters and Builders Journal* without credit, and afterward in the *Builder and Wood Worker* with credit given to the first-named journal. That the table in question was *extracted* from our columns admits of no question as it cannot be found in the same form and with the same figures in any book extant. We claimed no new discovery in mechanical science, but did and do claim the tables as worked out by us to be original and certainly convenient to the mechanical portion of the readers of this journal, as well as the journals which have copied us.

We challenge the editor of the paper mentioned to refer us to a page in Nicholson, Hatfield, Bell, Hodgson, OR ANY OTHER AUTHOR, which contains the information we claim as being the first to produce in the manner we did.

In our April issue we noticed the plagarism provoked by the fact stated that the *Builder and Wood Worker*— a journal edited by competent and intelligent gentlemen, who, realizing the value of the table, and knowing it to be of recent originality, having never before seen it in print—gave credit to the journal from which they copied—hardly an excusable error, as the *Wood Worker* received the article in question about the same time as the other journal did through the columns of this journal, and might have given credit where credit is due.

In our April No. we noticed the facts in issue, and charged unfairness on the part of the *Builders Journal*, at which the editor takes exception, and by vagaries seeks to make it appear that we are not entitled to special credit in the preparation of an article, which simply uniforms certain valuable and familiar facts, which for long years seems to have remained stowed away in the great store-house of our contemporary's unrevealed intelligence and knowledge—unpossessed of interest or importance sufficient to justify their publication, until WE arranged and produced them in form rendering them worthy of reproduction.

If our table of "MITRE CUTS" were old and familiar, how is it they have never appeared in print, prior to publication of this journal? And how happens it that they were so speedily reproduced in the journals named, after we published them? The attempt of our contemporary at sarcasm is very vague and feeble, and by no means disposes of the fact that the article in question was *extracted* from the columns of this journal without proper credit.

Our worthy brother editor has placed himself in a peculiar position. He intimates that the m tres in question were made according to the figures given TWENTY YEARS AGO. And yet in a book published by him only FIVE YEARS AGO he does not give the information in question.

Again, in his own book, he gives the figures on the square necessary to use to form an octagon as 7 to 17. Passing strange indeed it seems to us, that an editor TWENTY years ago should know the figures as WE published them, then writes a book only FIVE years ago, giving the figures as above, then in 1883 copies our figures and gives them as they ought to have appeared in his own work—7⅛ to 18. There is not a mechanic worthy of the name, that does not know that 7 to 17 will NOT give the octagon mitre. And the deduction is fair that if the editor mentioned does not know what figures will produce the octagon mitre, he may not know what will produce the more simple mitres and certainly cannot be expected to understand those for the more difficult cuts. However, he may have learned, since the publication of his book in 1878, the proper figures on the square for an octagon cut, which he will find correctly given in our table, together with a number of other cuts, to which he may not have given the necessary "labor and study" to become familiar with. Other examples may be quoted from the book mentioned to illustrate the danger of living in glass houses and attempting to throw stones.

The concluding paragraph from our contemporary's article deserves no notice from us as it does not state facts as far as either that journal or ourselves are concerned.

Mechanics' Lien Law.

THE following letter was received in time for the May number of this journal, but was overlooked until too late for publication:—

SAN FRANCISCO, April 11, 1883.

EDITORS OF THE CALIFORNIA ARCHITECT —*Dear Sirs:* It would be very useful to many of your readers if you would give in the ARCHITECT a statement of the law at present in operation in California in the matter of mechanics' liens on buildings. These laws have been recently changed, and there seems to be at present much doubt among persons interested in the subject as to how the law stands. Yours truly, A SUBSCRIBER.

"A Subscriber" is in error about any change in the lien law by recent legislation. It stands now just as it did in 1880. In the July number of this journal for that year there will be found, page 64, a full digest of the law as it then stood, and as it now stands, making owners liable for all claims and demands for material furnished and labor performed, without regard to the sum of contract. There is at present a case before the Supreme Court of this State, involving the question of owners' liabilities beyond the contract amount. Should a decision be rendered upon that point before our July number is issued, we will give it in this connection.

IT should always be carefully borne in mind that in bare wires, out of doors, erected for the purpose of conveying electricity, there is always more or less danger to person or property.

The Mysteries of Metals.

NOTWITHSTANDING the wonderful progress, says an exchange, that has been made during the last half-century in the construction and working of the useful metals, there is yet a vast deal to be learned. The metals when pure are commonly supposed to be simple elements, yet there are some reasons for supposing that it may be proved that at least some of them are compounds. Even the great Faraday gave utterance to the thought that the dreams of the alchemist might yet be realized—that gold and other metals might be found to be compounds, and that means might be devised whereby those compounds might be separated and afterwards so differently reunited that the baser metals might be converted into precious. The changes which are wrought in iron and steel by converting, annealing, and hardening processes are far from being understood by the most advanced metallurgists of the present day. The mysteries of hydrogen gas and its intimate relations with iron are as much a puzzle as they were fifty years ago, and the theory advanced by Graham, that hydrogen is a metal, is still maintained by many chemists.

It is only a few years ago that absolutely pure iron became known to scientists, and it is now shown to be a metal almost as "unstable as water," and still found in the laboratory as a great curiosity. What had previously been known as a pure iron was shown by Jacobi to be a compound of iron and hydrogen. He first separated the two so-called elements. During the process the iron increased in volume, changed from a dark to a silver-white substance, very ductile, and so soft as to be nearly as readily cut as lead. The experiment proved that hydrogen played an important part in hardening and tempering—as much so as carbon—but how or why none know to this day. It is found that much more difficulty is experienced in rolling and otherwise manipulating gold in a factory where much electricity is generated by the action of machinery than in a room where no machinery is in operation, and where, consequently, frictional electricity is absent. The trouble is manifested in a disposition of the edges of the plates of thin bars to crack. Many other peculiarities, already known, might be mentioned, and there is no doubt that closer observation will largely increase the number of curious and yet inexplicable phenomena connected with the working and general characteristics of the metals, both useful and precious.

GREASY COLOR.—The painter is frequently annoyed by having his paint or varnish crawl, or draw up leaving bare spots, when applying it over a painted surface. The cause is what is known as "greasy color," that is, if the paint was not mixed with oil it is a greasy pigment, such as lamp-black—but the most common trouble is too much oil. To overcome the difficulty wash the surface, or simply rub a damp shammy over it, or if it be only a small spot that appears "greasy" blow the breath upon it and the crawling will be overcome.—*Painter's Magazine.*

USES OF THE STEEL SQUARE.

Application of the Steel Square in the Construction of Roofs.

"Construction is the Anatomy of Architecture."

WHEN the term ROOF first became to be used to denote its present significance, we have no means of determining. In the Bible we find the word "housetops" used in many places, and from the description given we infer that the roofs or coverings used were nearly flat, just sufficient pitch being given to shed water. Among some of the oldest ruins now found—those in Bashan particularly—the roofs are almost flat; they were made of large flat stones, laid in a species of cement, and to this day, such was the quality of materials used, that water will run off the parts of the roofs remaining standing, with no leaking between the various stones used.

Other roofs were made of boughs of trees laid close together and covered with earth, the top being of a kind of clay cement, that was impervious to water. These roofs were well adapted also to protect the inhabitants of that part of the country from the excessively hot rays of the sun.

In the building of Solomon's Temple, the small part that was roofed was covered with boards and these with gold and silver. This may be said to have been the first metal roof ever constructed.

FIG. 1

In pictures of "ye olden times" we find the roofs to be of similar shape to our engraving, simply boughs and branches of trees covered with leaves and earth. This perhaps answered for small gatherings. When large parties congregated, the difficulty of getting branches of trees long enough to form a roof of only one pitch, suggested to some one the idea of adding on an addition similar to that shown in Fig. 2.

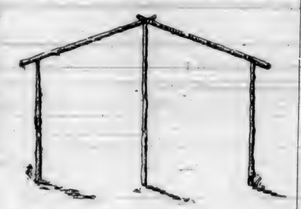


FIG. 2

In this simple manner was formed the grand principles of the construction of roofs. The supports to the ridge necessarily occupied much space, and, being in the way of the throngs that visited the great fairs held in ancient times, no doubt some thoughtful mind conceived the idea of so binding the ends of the boughs together that the roofs were almost self-supporting.

FIG. 3

In an old work we find an illustration similar to Fig. 3. The boughs were crossed and tied together with some material then in use, and a wooden pin being used to further strengthen. Braces were used as shown, and thus a considerable span could be made. This theory of the gradual development of the construction of roofs seems natural. We cannot give the date of this improvement, as the chronicles in reference thereto are very indefinite.

When hewn timber was introduced in the various parts of buildings, the natural genius of the people then in existence, led them to give their roofs all kinds of fantastic shapes, and these crude efforts were seized upon by some of the master minds, and a uniform and distinctive style of architecture was accorded to each. We in our day but imitate our predecessors in the art of improving and excelling the ideas of the generations immediately before us.

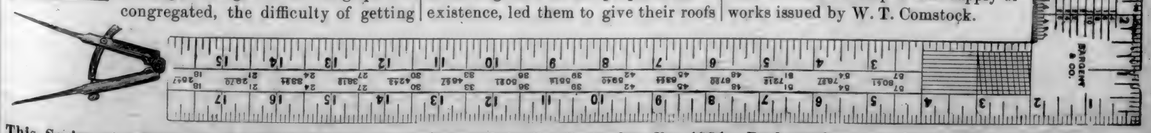
Going back to the time of the ancient Greeks, we find the roofs nearly flat, composed of large marble slabs, neatly grooved together so as to be impervious to water. They did not have the same idea of architecture that was possessed by the stately Romans. An observer justly remarks in regard to the latter, that "I have not seen the remains of any Roman buildings that have not been *roofed* with vaults and arches."

We also find that in the construction of roofs in the Norman and Gothic periods, the *tie beam* is wholly lacking. In lieu of these we find the necessity of using immense buttresses to withstand the immense outward pressure of the roofs upon the walls. Owing to the manner in which buildings are now erected, the *tie beam* is one of the principal factors in a well constructed roof.

The exact period in this world's history when the use of timber for framing roofs became general, is not exactly known. The first authentic accounts place it about the year 1325. From this period we find the roof taking more prominence in the architecture of buildings.

We do not pretend in these articles to give a full and accurate description of the history of the architecture of roofs. We only show how the gradual development of the principles of their construction may have been formed, and the remarks made are only incidental to a discussion of the principles of the scientific framing of roofs.

WE are sole agents on the Pacific Coast for the works published by the Industrial Publication Co. of New York. We also keep a full supply of works issued by W. T. Comstock.



This Series of articles on the Steel Square was commenced in the September No., 1881. Back numbers can be supplied at 20 cents each.

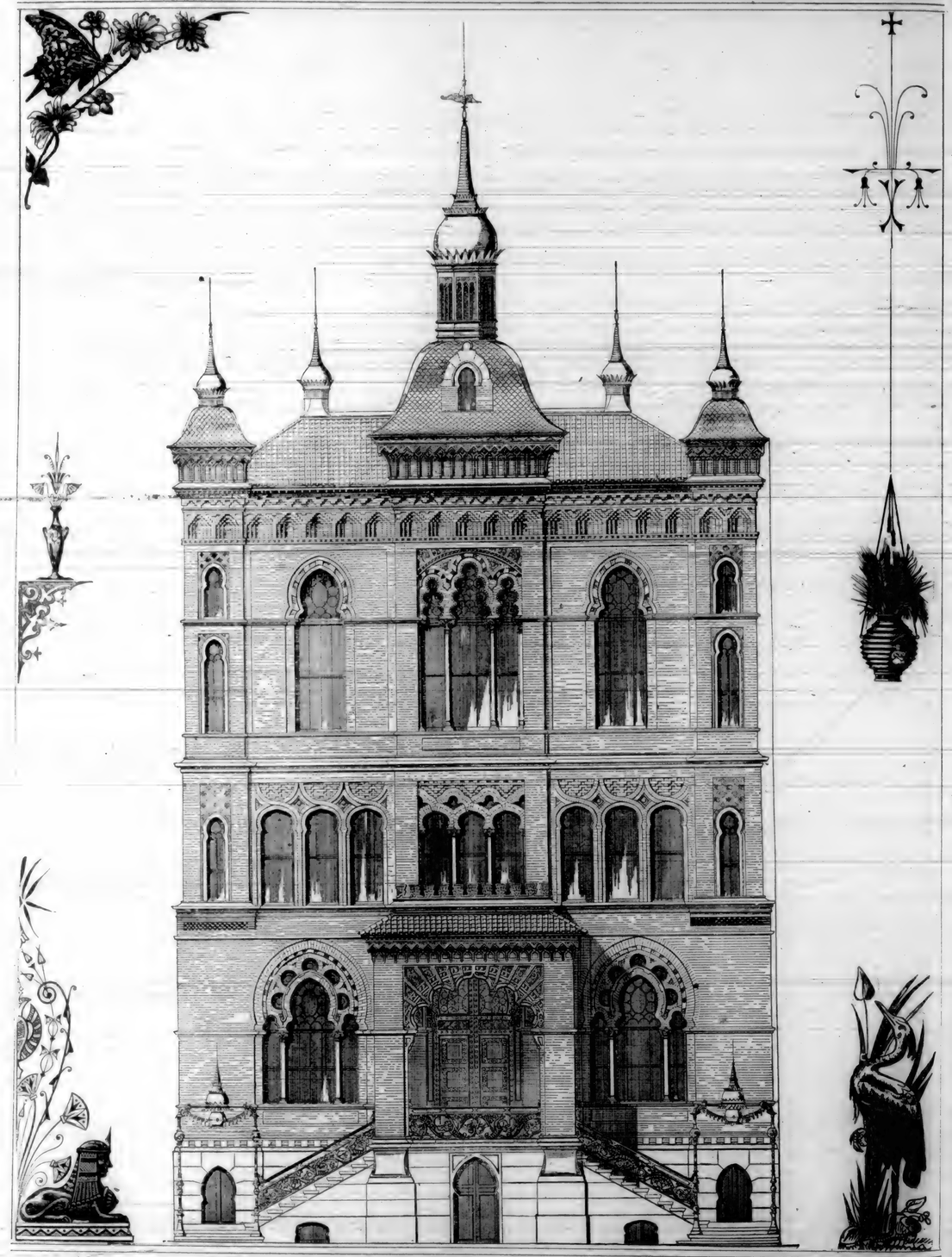


PLATE I.—FRONT ELEVATION OF THE BUILDING FOR THE PROGRESS CLUB OF NEW YORK. Guastavino & Gruvé, Architects.

New York Street Architecture.*

THE MORESQUE.

NEW YORK streets have never recommended themselves for their architectural beauty, and it is comparatively recent that any material advances have been made in the construction and reconstruction of city fronts. The fault has been, I think, with all American cities, that buildings have been put up running about the same size and general appearance throughout an entire block, and each succeeding street a counterpart of its predecessor, the cornice extending along the same sky line, and the brick or brownstone showing no ornament other than the prescribed number of iron sills and keystones, properly painted and sanded. It is true, to some extent, that the cities of Europe construct their buildings with very much this sameness of effect, but it must be allowed that the monotony of the Parisian residence is entirely different to that of the New York dwelling, inasmuch as the French exterior is broken with frequent balconies, with misplaced windows, with a pretentious *porte cochere*, with a profusion of decoration in the stonework, all tending to divert the attention from the point that they are so frequently repeated, and weariness to mind and eye is avoided by the repetition of agreeable details.

The disposition appears to have been aroused now, however, to beautify exteriors, and some of the efforts in this city are noticeable; the universal revival of the Moresque forms in decorating and furnishing has finally affected architecture and that style at present prevails more generally, I think, than any one other. Many of the façades have been constructed of iron, though iron is but little in favor with us. It has its advantages, of course; it may be moulded into a great variety of forms and shapes, restricted only in the feeling that those figures are not to be so clean cut, sharp, decisive in outline, as would be demanded of the same pattern in stone; it is admirable for those large, indefinite-appearing patterns where the details are not expected to be studied, and a little clumsiness is looked for in the figures; yet it is capable of beautiful effects. Nothing is finer than the sweep of a delicate, airy arch, apparently so fragile and weak, whilst capable of bearing the most substantial sort of a roof or supporting thousands of glass sashes. All these merits and most desirable qualities are recognized by our architects, though, notwithstanding them, they have emphatically and unmistakably discouraged the further or increased employment of iron, and its pretensions as a constructive element are ruthlessly and eternally doomed. To many its purposes seem to be so entirely distinct from architectural ends, that they are persuaded against its use as an architectural adjunct. Certainly in its natural condition as a metal, it would never be exposed in the façade of a building; it is, therefore, painted, and grained, and sanded, until it looks like absolutely nothing upon the face of the earth that is supplied by nature.

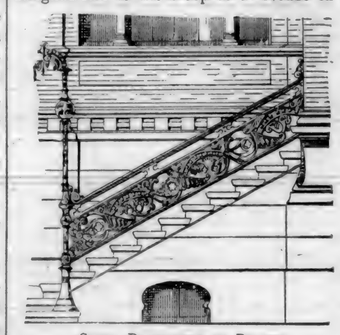
One great merit of iron is its entire freedom from the restrictions of style or form. Stone and brick have been used in every conceivable manner; if one seeks a renaissance home, and intends building of stone, the model for that stone renaissance dwelling is forthcoming at once; if a Moresque residence is desired in brick, the most elaborate example of brick Moorish construction is at hand. But the wildest architect of the crazy epochs of the renaissance never thought of iron; the suspicion of using any metal, excepting for decorative purposes, never occurred to the designers of the Alhambra. Thus our young architects have now an entirely new material, from which they can make entirely new styles; they run no risk of inconsistency or anachronism; so far as precedent goes, or is concerned, a twelfth century gargoyle would set admirably upon the volute of a Corinthian capital, or the corner of a Tuscan roof—provided it be of iron. Neverthless it is not popular, and while we have a number of buildings with iron fronts, I doubt very seriously whether they will ever attain popularity or even general approval.

In the Moorish style much scope is given to the use of iron, and the majority of buildings of this order put up of late, are made from this material. Some of those upon Broadway are certainly rich in their effect, and altogether more gorgeous than they could possibly have been made had their construction been of brick or stone. One large Moresque structure is particularly noticeable, having its front divided into the three sections of an inside wall space, dado, center and frieze; the line of the bottom of the second story windows marks the termination of the dado, the center space or wall proper extends to the fourth story where the frieze commences. The colors are of an elaborate and showy character, but well arranged; the lower portion is darker than that above; the wall space shows a flat color with a light frieze.

It is a question whether these buildings can be said to reflect the Moorish design; the principles of the order are not followed out, and the coloring, as now done, is at variance with good taste; such buildings are rather the combination of a variety of styles, a feature that is very often indulged in when one wishes to revive an ancient form and feels it should have some of the modern improvements incorporated with it. This disposition is sometimes an unfortunate one, inasmuch as it is seldom qualified, or rather allowed, to develop an improvement, but more often detracts from the appearance, and by combining differences, frequently serves to depreciate their beauties. There is no objection that should stand in the way of our artists or draughtsmen making use of all the features that have been utilized heretofore; but by all means let those features be the best attainable, and if it is desirable to enter a Romanesque building through a Grecian portal, let it be done in fact and in spirit, and have that portal purely Greek, not a mongrel admixture of nothing in particular.

The best example of recent Moorish construction shown in Yew York, I make the subject of my illustration, giving the entire front, and small detail reproductions of windows and balustrade. It is Moorish in every line and every detail; the architect has followed his model to the letter, and avoided everything in the shape of modern innovations, from the balls upon the minarets, which are just of that rotundity peculiar to this order, and slightly smaller than the swell which distinguishes Jewish architecture, to the pattern of the bronze railing upon the stoop, all things are moresque. There is but one divergence from the antique, and that is the use of iron roofing and terra cotta trimmings. This fault, however, is so slight that we might overlook it.

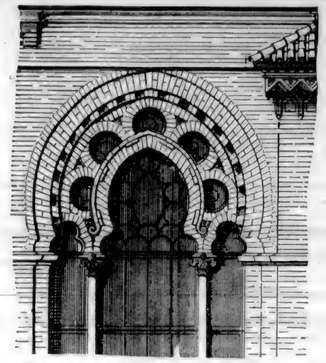
The illustration, plate one, page 88, shows the façade of the Progress Club building, now in course of construction on 59th Street; the architects are Mr. Rafael Guastavino, a Spaniard, who has made New York his home, and Mr. F. Gruvé, who have had the good fortune to design several interesting and characteristic buildings. Plans for the Progress Club were submitted in an advertised competition, and was participated in by some of the very best of our local architects. The building is entirely of brick, fifty feet front, one hundred and two feet deep, eighty-eight feet to the top of the center tower, and will cost, when completed, $90,000. The curiously designed rail to the stoop is of bronze in its



STAIR BANNISTER IN BRONZE.

natural color, with a profusion of detail that may be more clearly traced in the individual illustration given of it. The entrance door is heavy oak, studded with bronze nails, and having a fanlight of colored glass; above the balcony-like vestibule at the entrance is a projecting cornice formed of tiles or clay pipes. The intertwining band over the windows, it will be noticed, is arranged so as to run around, over and under itself, in a true Moorish fashion. The roof and the spires are covered with iron shingles and tiles, painted being in imitation of cotta, the appearance the same, with the advantages that iron is much cheaper and of course more durable, if the difference in this latter quality was thought worthy of consideration. The balls are to be gilded, and the leaf-like ornaments about their base and crown to be bronzed.

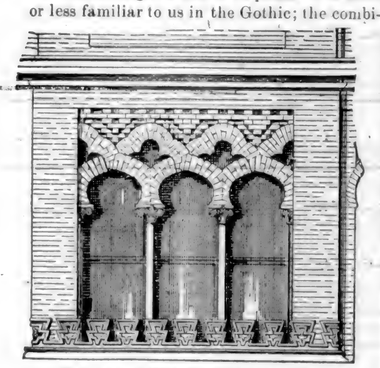
* This article and the illustrations were prepared expressly for this journal by A. Curtis Bond.



WINDOW OF LADIES' RECEPTION ROOM.

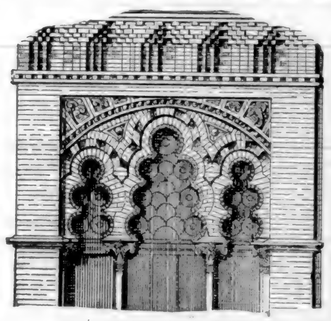
All the decorative work over the various windows is done in glazed bricks.

The contours of the arch as a principal outline is peculiarly distinctive of the true Moorish, though in one of its phases it is more or less familiar to us in the Gothic; the combi-



CENTRAL WINDOW OF BILLIARD ROOM.

nation of square and arch is another characteristic that is calculated to add the semblance of weight to a construction otherwise fragile in its appearance. The horse-shoe arch was popular with the Moorish architects in Spain, and it may be seen



CENTRAL WINDOW OF CONCERT ROOM.

in the great majority of their buildings. This arch was later broken into an infinity of smaller curves or horse-shoes, and made to intersect the sides or spring from the center of other smaller arches, and thus was shown a succession of scollopings such as may be noted in the upper central window of our building.

While I admire the Moorish designs, and delight in its appeal to my imagination, I am tempted to ask whether it is adapted to our customs and this locality; it is emphatically the style of romance and of pleasure; it enlivens the mind and inspires the thoughts; it is picturesque and striking; its interior especially encourages the dreamer and the imaginative; and how at variance is this with our dull, prosaic wintry East, where we are having snow-storms in May, have always had rectangular blocks of cheerless dwellings, all of them monotonously alike, streets solidly paved with stones that even John Ruskin would despair to make esthetic or artistic, and our amusements, entirely of an artificial character, graduating from an Academy of Music down to a beer saloon; Central Park, hedged about with "regulations that keep visitors upon the stone-paved walks and forbid any incursion upon the grass; no zoological garden, no Louvre, no art gallery, where one may instruct as well as amuse oneself; nothing, in fact, that will offer an hour's enjoyment without the imaginative destroying element of an entrance-fee, and the pleasure-killing surveillance of one of our interesting Puritanical laws.' In this community, with such accompaniments, an architecture or a sentiment that breathes of the poetry or the romance of life, seems very much out of place.

S. F. Chapter. American Institute of Architects.

THE regular monthly meeting of this Chapter was held on Friday evening, June 1, John Wright presiding. Reports on the classes established by this Chapter were received as follows:—

F. Marion Wells reported that his pupils were doing finely. Each one was possessed of an ambition to excel and stand at the head of the class. This was proven by the fact that the pupils were always on time to commence their work at the appointed hour and endeavored to carry out the instruction given them to fully meet the views of their teacher. Strict discipline was maintained; one of the pupils had shown neglect to his duties and was promptly dismissed. G. H. Sanders reported the progress of his class was better and better. After consultation with the members of his class, it had been decided, next season to institute classes in *Practical* instruction in carpenter yplumbing, etc. It was the aim to make the students thoroughly conversant with the *practical* work of every branch of the profession. Mr. Pissis' class was also improving. It was decided that owing to the regular time of the meeting of this Chapter next month, coming so near the 4th of July, that the meeting be postponed until the regular night in August, thus giving the members a chance to go in the country if so disposed.

A New Fashion that is also an Improvement.

ALTHOUGH it is sometimes difficult to draw the line sharply between a modern improvement and a modern fashion and to distinguish readily one from the other, there is still a great difference between the two, a distinction and a difference which a true philosophy would doubtless enable us to discover at all times. Unfortunately we cannot always stop to philosophize hence the mortification and defeat that are sure to follow when we find our dearly bought "improvements" turning into the ashes of a by-gone fashion. As a rule we must learn by an experience both painful and expensive, whether our condition is really improved by the new styles that are constantly intruding themselves in the countless details of building and furnishing our houses.

Certainly one of the most pleasant and attractive of the later fashions is that of arranging the plan of a house so that the entrance "hall" shall be something more than a long narrow passage into which the stairs obtrusively crowd and which contains of movable furniture at most one or two straight backed chairs and a "hat tree," a passage which is never dreamed of as valuable for any other purpose than a means of access to the inhabitable regions beyond. This fashion is something more than a fashion, it is a genuine improvement. Even so slight a change as to increase the width of the narrow way, making a little reception hall no more than a dozen feet square, is a great gain since the space so taken is just as valuable for entrance purposes and is also available for social use, either by itself or in connection with some adjoining apartment. The hall of our sketch is not merely a reception room, but with its fire-place, its broad light at either end, its raised gallery for music in case of a dance or a private musical entertainment—the gallery being a part of the staircase that climbs by easy stages to the second floor—with the wide entrance to the dining-room at the left, and to the parlor and library on the right. With all these conspicuous and comfortable features, it is the very center and heart of the home. The sense of cordial hospitality and welcome which one experiences on entering such a hall as this can never be imparted by one of the straight-and-narrow, formal and impossible-to-be-pleasantly-furnished halls that belong to the old-fashioned houses. —*The Builder.*

HEAVY damages have been awarded by a Chicago jury to a tenant against a landlord for misrepresenting the condition of the plumbing and sewerage of a residence. The tenant took it intending to keep a boarding-house, on representations that it was all right, but after moving in the furniture, found the sewerage in bad condition, and the hot and cold water faucets without pipes to supply them with water. The house was not fit to live in; the tenant removed his furniture and brought suit against the landlord for expenses incurred and other damages, and recovered $3,500.

☞Architects, Contractors, Carpenters, and Mechanic generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

AFTER the dust has been thoroughly beaten out of carpets, and they are tacked down again, they can be brightened very much by scattering corn meal mixed with coarse salt over them, and then sweeping it all off. Mix the salt and meal in equal proportions.

WHEN you have the wood-work in a room painted, it is a good plan to have about two inches of the floor painted also; have the paint the same color as that of the base board; then if, when changing carpets, the carpet will not come close to the wall, the little space left will not be so unsightly.

AN improved automatic guard for protecting the hatchway of elevators has been patented by Messrs. Joseph Byers of Newtonville, and George Taylor, of Everett, Mass. This guard is pivoted to a post, and it is raised or lowered automatically by the movement of the platform when lowered. The free end of the rod rests in a receiving jaw or loop, one part of which is free is actuated by a spring while the other part is fixed. Both parts are provided with elastic cushions which receive and prevent the guard from rebounding.

New Publications Received.

Cottage Homes.—
A NEW work, W. T. Comstock, publisher, has made its appearance. It consists of 44 large quarto plates in the styles of architecture now prevalent in the Eastern States. There are many illustrations of low-priced cottages, and this fact should cause a good sale among the interior towns. Most of the designs given are for country cottages, varying in cost fron $800 to $5000. We have received a large number of this new work, and will forward them to any address upon receipt of the publisher's price, $5.00.

Street, Store, and Bank Fronts.—
This book contains 34 designs for street fronts for dwellings, stores, and banks. Details are also given. All the designs, etc., are drawn to scale. Price, $4.00

Stables, Outbuildings, and Fences.—
24 plates, wooden and brick buildings, with details, showing sixteen plates, elevations and views of stables, outbuildings, and fences, and over one hundred miscellaneous details. Price, $4.00.

Cottage and Villa Architecture.—
This large work contains plans, elevations, views, sections, and details of low priced, medium and first-class cottages, villas, farm houses, and county seats, with specifications. All drawings to scale. Will be sent to any address upon receipt of $8.00.

Artistic Homes.—
44 full-page illustrations, by A. W. Fuller, Price $4.00.

Modern House Painting.—
By Rossiter & Wright. This is a very useful work as it exemplifies the Eastern ideas as to how a house should look after being finished. 20 large colored lithographic plates. Price, $5.00.

Mechanics' Institute Exhibition—1883.

THE preliminary announcement is made by the managers of the Institute that the "Eighteenth Industrial Exhibition" will be opened on the 11th of September next, to close October 13th. The exceptionally promising condition of things in general, in this city and throughout the State, are in themselves sufficient to justify the course adopted by the management of the Institute. The grain fields of California never promised a grander return from the seed sown than that which this year cheers and gladdens the hearts and brightens the hopes and prospects of those who plough and sow that they may reap, while those who buy and sell or grind the golden grain, are made happy in anticipation of the splendid results which are assured by the harvest of 1883. Nor is this happifying feature the only hope and boast of our favored State and coast, for the yield from millions of trees and vines was never better, nor ever did the golden rays of prosperity shine more brightly and universally than at the present time. None need be sad, nor any feel that their lot is hard, except those who fail to comprehend and grasp the splendid possibilities within the reach of all who strive to profit by the abundant advantages this year so profusely distributed everywhere. And if the management were all pious and devout men, they would scarcely perform their duties well, did they not add another feature to their programme, and suggest, if not ordain some method by which, amid the general rejoicing, themselves and their patrons might be led to acknowledge the goodness of that hand which has so bountifully poured its blessings upon us as a people. Ingratitude becomes not those who receive good things, and if forgetfulness of heaven's bounties by all classes be returned for the beneficence bestowed, need it be wondered at should future years bring us dry and parched lands, and stunted and desolating harvests?

In addition to all this, thousands of worthy and honorable men from abroad are expected to visit our city as Knights Templars, and it is well that nothing should be left undone to enlist their good opinion of us as a people, and make it possible that they return to their homes with kindly remembrance of the good times enjoyed by them in San Francisco, and with the fixed conviction that San Francisco as a city, and California as a State, are entitled to a high rank among the cities and States of our glorious Union.

As encouragements to exhibitors, gold, silver and bronze medals, diplomas, etc., will be awarded. Power will be provided for driving machinery, and all usual facilities afforded to give motion to the numerous inventions, and demonstrate the practical working of devices requiring motive power.

Natural products—cereals, fruits, vegetables, etc., will be allotted their proper share, and for the first time in several years, a Mineralogical Department will be instituted, showing samples of the most important ores and minerals found on the Pacific Coast. The Art Gallery, Horticultural Department, and all others that will add interest to the exhibition, will be provided for, and the management will aim to make the exhibition of 1883 equal, and as far as possible, superior to those of all preceding years.

Improved Process of Making White Lead.

IN the United States the manufacture of white lead is conducted according to the Dutch method. Plates or gratings of lead are exposed to the fumes of vinegar, in vessels set in tan, or stable manure, which acts as a hot-bed to warm and volatilize the vinegar. As the lead is corroded, it becomes covered with the carbonate, which is removed with hammers and ground. The process is tedious, slovenly and unhealthy, and many attempts have been made to improve it, but none of them have yielded a product equal to that which results from corrosion. Microscopically examined, the carbonate of lead formed upon the metal, is found to consist chiefly of minute crystals which are hydrated, laminated and transparent. These are mingled with a smaller quantity of exfoliated particles of the carbonate, which are opaque. These particles, it is claimed, impart to the white lead its remarkable power of resinifying oils, as well as what the trade calls its body, *i. e.*, its property of completely covering objects painted with it. By the new process workmen are not required to detatch by hand the carbonate from metal which remains uncorroded, and the product is said to consist almost exclusively of the valuable opaque particles. To effect this, the lead is first brought to the porus or spongy form, by which the surface, exposed to the slow carbonating process, is enormously enlarged, the thin mass being seemingly composed of open interlaced fibres. This is put in a close chamber, and there exposed to a mixture of atmospheric air, carbonic acid, and the vapor of acetic acid. The carbonic acid, generated by combustion, is cooled and purified before it is driven into the chamber. The air passes in warm, and care is required to maintain the proper degree of moisture. The carbonate is the shape of the metal upon which it is formed, and the material is not removed until the corrosion is complete.—*Mining and Scientific Press.*

THE bee has long been a type of the industrious worker, but there are few people who know how much labor the sweet hoard of the hive represents. Each head of clover contains about sixty distinct flower tubes, each of which contains a portion of sugar not exceeding the five-hundredth part of a grain. Some patient apiarian enthusiast, who has watched their movements, concludes that the proboscis of the bee must, therefore, be inserted into 500 clover tubes before one grain of sugar can be obtained. There are 7,000 grains in a pound, and as honey contains three-fourths of its weight of dry sugar, each pound of honey represents 2,500,000 clover tubes sucked by bees.

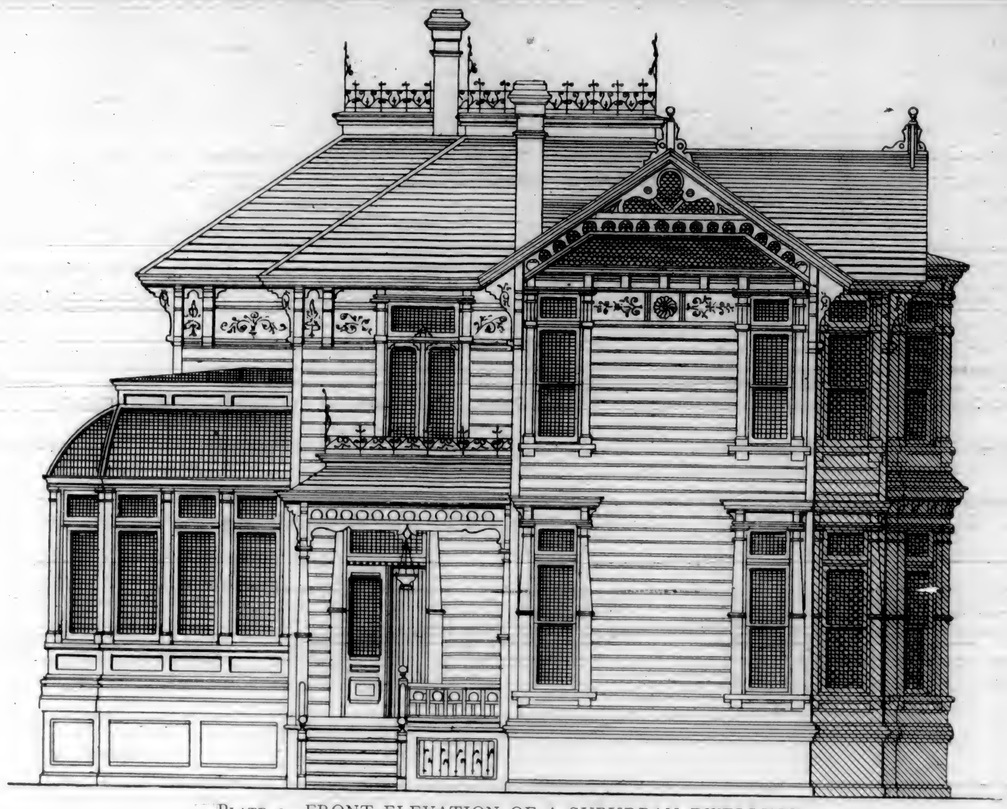


PLATE 2—FRONT ELEVATION OF A SUBURBAN DWELLING.

Will be Back in a Few Minutes.

MECHANICS should remember that "time is money." We have been very forcibly reminded of this old maxim many times since the beginning of the year. Our business relations with contractors, tradesmen, etc., are such that we have been compelled to call or send to them in regard to many things, owing to the great activity now prevailing in building circles.

The sign at the heading of this article has met our vision many times, and we earnestly request all those who of necessity have to be running in and out in order to attend to their business, to change the character of the words so as to read, "9:30. will be back in—minutes," filling the blank with the number they honestly think they will be away. A person calling will then readily understand about the time to expect to meet one at his business. Or the sign may read, "Will be back at—o'clock," filling the blank with the hour. This may seem a trivial subject to some, but to any one whose time is valuable, it is very important to know just when to meet one with whom you may have business relations.

A short time ago we wanted a carpenter to attend to some work. Our boy was sent to his shop, and in half an hour came back with the information that on the slate was, "Back in five minutes." He waited three times that length of time and then returned to the office for instructions, having first written on the slate, "Call at — office." Two hours rolled away and still no carpenter. Being in a hurry we obtained a man at another shop, and after agreeing upon terms, we were startled by the first man sent for rushing breathless into the office. He was, however, too late, and upon conversation with him, we found that he had lost another job the same week by his sign disappointing those who would willingly have waited a day to secure his services, but felt aggrieved at calling twice for nothing, with a sign staring them in the face. "Back in five minutes." Let all remember that although your own time may belong to yourself, you have no right to cause any one to lose his time, misleading him by a wrongfully written sign. Have the time definitely stated when you will return, and use your best endeavors to be punctual at the time of your own choosing.

THE article on "The Care of Fixtures" (p. 102) should have been credited to the *American Engineer*.

Floors Weakened by Gas Pipes.

A SHORT article in the *Building and Engineering Times*, on the subject of weakened floors, deals very intelligently with the harm that may be done in this direction by careless gas fitters. It is common enough, in cases where a pipe has to be led under flooring and across joists to serve a pendant, for the pipe to be taken straight across the center of the room, and the joists notched about an inch deep all the way. Workmen who do this never reflect on the harm they are doing to the floor, nor do they know that a notch cut out of the top of a joist will seriously weaken it. This at once becomes evident when it is known that the strength of a joist, which is a rectangular beam, is proportional to the depth squared. If, therefore, a groove 1 inch deep is cut across a 7 inch deal, the reduction of strength is not only one-seventh, but a great deal more, in the proportion of 36 to 49, or a loss of rather more than one-quarter of the original strength of the beam. This somewhat startling result is due to the self-evident fact that the upper part of the joist is required to be solid, in order to resist compression, just as much as the lower portion must be capable of bearing tension; and to cut a notch in the top of it is equivalent to removing the substance along the whole length of the joist to the full depth of the groove. This observation only applies to cases where the notch is cut out of the center of the span, which is the commoner practice. There is much less objection to cutting joists close to the end, and thus allowing the pipe to be laid round the room to a point where it can be run to the center between two joists. Or, if this course cannot be followed, the pipe may be safely passed through a hole bored in the middle of the joists. If this is not feasible, the indispensable notch may be cut right down to the middle of the joist, and the pipe thus laid across the neutral line; the space above being afterward filled with a tight wedge which will safely transmit the compressive stress.

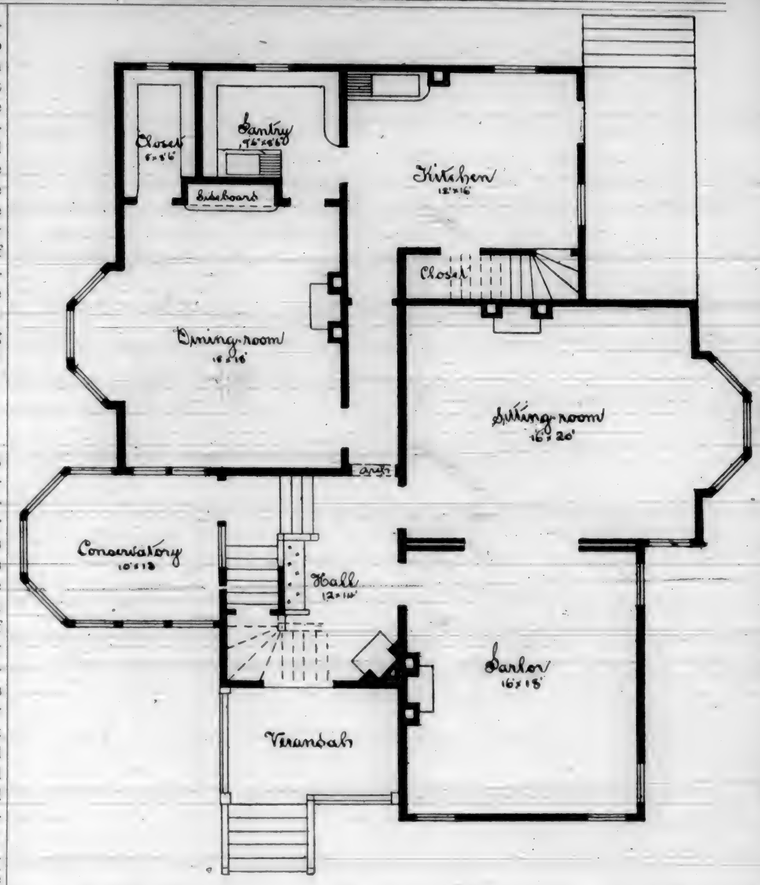


PLATE 3—FIRST FLOOR PLAN OF SUBURBAN DWELLING.

Improvement in Bricklaying.

THE recent suggestion of a correspondent, that instruction should be given at our technical schools in the art of bricklaying is worthy of careful attention. The whole number of brick laid year by year in our large cities is simply enormous, and they go into every class of structure, from the piers of a 9x12 cottage to the walls of a warehouse or factory which in itself may consume millions. In none of these works are the builders likely to put any excess of brickwork, but the workmanship displayed in laying very many of these walls is so extremely imperfect that the question may very justly be raised whether it would not pay better to employ better workmen, provided they could be had, even at higher prices, and cause them to lay thoroughly sound, solid work. If this were done, it becomes a question whether the thickness of the walls in some of these works could not be safely reduced, thus affecting a saving even at the higher cost assumed for the labor of laying.

A serious but common defect in the laying of straight work, especially in long party walls between buildings, is the tendency to put the bricks into the interior of the wall almost wholly dry—that is, with practically no mortar either above, below, or around them. The face-work of such walls is apt to be bad enough, too, for the bed of mortar is usually spread with the point of the trowel, so that the face brick rests only on two narrow ridges, one along each edge. In a large part of such work the end joints are laid with a mere dab of mortar, taken up in the wiping off with the trowel of the bed joint, but this is apt to be not one-third enough to fill this end joint really full.

It would seem an easy thing to secure the proper bedding in the mortar of the interior filling of such a wall, and the filling of all the cross joints, but experience shows that this is a very troublesome thing to secure with most bricklayers. So hard is it to secure this that very many of the walls in stores, or even in warehouses that carry heavy weights, are in a very just sense mere dry walls, possessing little more strength than that due to an absolutely dry piling of the brick between the two face-shells which serve to keep the interior of the wall in place.

It is literally true of a host of these walls, which have the appearance of being solid, that they are thoroughly honey-combed with vacant crevices, and the natural consequence follows that the real strength of the wall is thereby reduced. The strength of a wall of this general character depends upon two things among others, one the absolute weight of the wall, and the other the completeness with which each brick is bedded against its neighbor. Unless this last requirement of perfectly solid work is met, the wall must be clearly more likely to yield when any stress comes upon it from any cause.

Of the need of the best workmanship in special kinds of bricklaying, nothing need be said in this connection, for the call for improvement in plain work is clearly enough marked, and will alone require all the attention and help it is likely to receive in the great crowding of instructing duties that press upon our school officers. It may be said that other things are more needful to be attended to by our young men in schools, and this may be true. At the same time it is true, so far as practice or shop work is concerned, that subjects may justly claim attention which bear most directly upon work which is most largely in request, either in quantities done or in number of places where, if done ill, it needs amendment or correction. If 10 schools should join in sending out next year an average of 10 graduates each trained in bricklaying, even in the limited way proposed, there would be 100 centers of useful influence at once established for securing better work in this respect.—*Mechanics.*

A CROSS-CUT saw invented by an Ohio man has cutting and cleaving teeth of different altitudes, and is provided with longitudinal lines, or indentations, which are parallel with the points of the teeth, and are separated from each other by a space equal to the difference in the altitudes of the cutting and cleaving teeth.

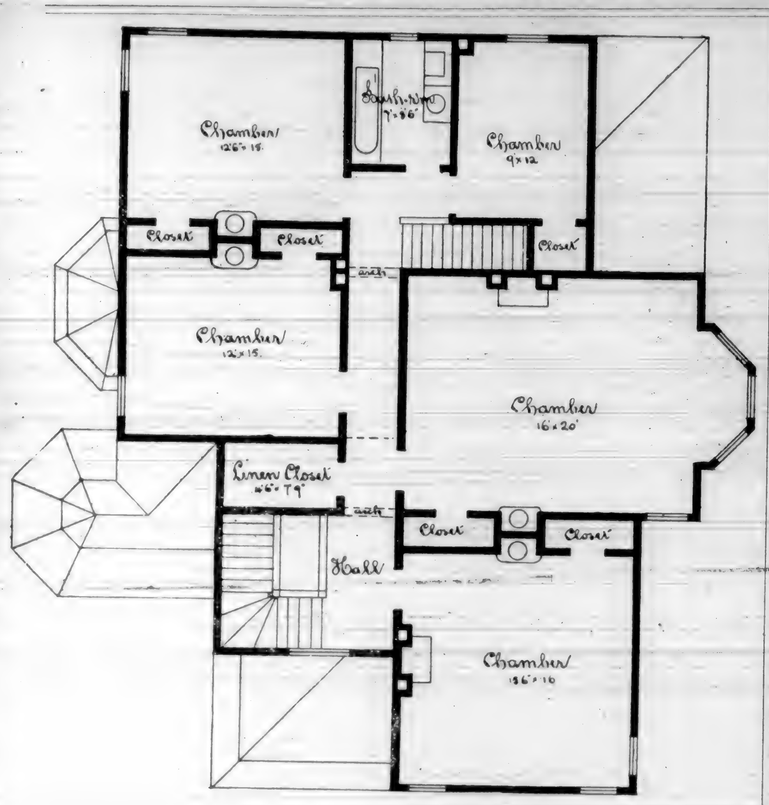


PLATE 4—SECOND FLOOR PLAN OF SUBURBAN DWELLING.

Our Illustrations.

PLATE 1, and the small detail cuts in connection therewith, were prepared expressly for this journal by A. Curtis Bond, from designs of the architects, Messrs. Guastavino & Gruvé. The article was also written by him, and we are pleased to inform our readers that hereafter he will be a regular correspondent, presenting to our readers the latest forms of architecture adopted in the East.

Plates 2, 3, and 4 are the elevation and plans of a neat suburban residence. The plans shown are very explicit and need no description. It can be built for any amount over $5,500, depending altogether upon the styles of finishes used.

Plate 5 is taken from an old work printed 125 years ago. We do not remember to have ever seen the illustration given in any other work than the one from which we have taken it. We have endeavored to give the latest information in regard to the lessons taught by these grand piles of masonry.

Plates 6 to 10 are views and plans of a cheap country cottage. Its cost can be varied from $2,500 to $3,500.

The Decay of Building Stones.

THE practical scientific study of building stones, their comparative merits and their durability when subjected to peculiar local or atmospheric influences, has yet to be made. The failure of some stones to resist fire, discolorations, and the disintegrating effects of the emanations from manufacturing centers, has resulted in their decreased use and the substitution of brick. On the 30th ult., Dr. A. A. Julian, of Columbia College, read the second part of a paper on the "Decay of Building Stones," before the New York Academy of Science. His remarks were based on observations made in this city and adjacent places.

The principle that stones are more lasting when laid on bed is clearly demonstrated in the case of all the building stones. After a structure has been erected a few years, there is no difficulty in dividing the stones laid on bed from those laid on edge, as the laminations in the latter become distinctly marked; and in some kinds this can be discovered immediately after completion, as the more porous layers dry first, thereby giving the stone a striped appearance.

In brownstone a deep decomposition was noted even when laid on bed; when exposed to the heat of the sun, the change is more rapid. The attack of the destroying agents is favored by imperfect jointing, which opens a back entrance. The discoloration in Nova Scotia sandstone might be prevented if the surfaces were vertical and placed out of reach of dripping. It is too soft for lower portions of buildings, and receives and retains the street dust. Ohio sandstone resists our climate well, and when used in Western cities is discolored but not disintegrated. There are but few limestones in the city, and the decay of Westminster Abbey, London, should warn us of the danger of using fine grained limestone until we are satisfied of its durability in this climate. The decay of marble is first shown by its becoming pitted; those set on edge show the more rapid decay. Granite shows pitting, the hornblende being first attacked. The south and west side of the Tombs show decay, while the other sides are intact. The sides affected are exposed to the sun's rays.

Dr. Julien came to the following conclusions in regard to the life of stones, defining life as the period during which the stone presented a decent appearance. Coarse brownstone, best used out of the sun, from five to fifteen years. Laminated fine brownstone, from twenty-five to fifty years. Compact fine brownstone, from one to two centuries. Nova Scotia stone will probably last from fifty to one hundred years. Ohio sandstone, the best of the sandstones, one hundred years. Caen stone, from thirty-five to forty years. Coarse dolomite marble, forty years; fine marble, sixty years; pure calcareous marble, from fifty to one hundred years. Granite from seventy-five to two hundred years, according to variety.

Bluestone is as yet untried, but will prove a good building material. Some of the best building stones in this country have not yet been brought to this city

Some of the causes that produce decay in stones are, first, solutions and hydrations of the stone and the heat of the sun.—*Scientific American.*

Chinese Customs.

THE Chinamen seem to be our antipodes in customs as well as geographically. In matters of dress they finish where the rest of mankind begin. His waistcoat is outside his coat, and his drawers outside his pants. We blacken our shoes; he whitens them. Our ladies compress the waist, theirs the feet. Our women wear long dresses, theirs long sleeves. In China the men carry the fans, and the women wear the trousers. In eatings, their customs are in striking contrast with ours. We have a soup as a first course and dessert at last: they have dessert at first and soup at last. They ignore knife and fork and spoon, and eat with two "chopsticks," both held in the right hand. They abominate beef, milk, butter, and cheese; but eat puppies, cats, rats, birds' nests, sharks' fins and snails.

With us the right hand is the place of honor; with them it is the left hand. In dating letters we place the year last; they write the year first. Instead of saying "northeast" or "southwest," they say "east-north" and "west-south." They always speak of the mariner's compass (their own invention) as pointing to the south. Here, a mother shows her affection for her child by kissing it; a Chinese mother smells of it. We locate the intellect in the brain; they in the stomach. We pay our physicians when we are sick; they pay the doctor while they are well, but as soon as they get sick the pay stops. Here, men kill their enemies in revenge; a Chinaman gets "sweet revenge" by killing himself. They mount a horse from the right side, and when they want him to go they say "Whoa!" The men ride sidewise and the women astride. We use lanterns on a dark night, they carry more lanterns at full moon than at any other time. We place a candle in a candlestick; they put the candlestick in the candle. Their detectives sound a "tom-tom" at night to give thieves and rogues notice of their coming. We ride in railroad cars, they in wheelbarrows. We draw canal boats with horses; they with men. We sell wood by measure, they by weight. We vaccinate in the arm; they in the nose. We use a soft pillow, they a block of wood. Our store signs are horizontal; theirs are perpendicular. They launch ships sidewise, ring bells from the outside, and actually turn their screws in the opposite direction from ours.—*Christian Advocate.*

To construct a well-built and convenient house, no material should be spared in places bearing the strain of the structure; do not save material in these places, as it will almost certainly be ruinous to the building in course of time; see that those rooms which are used mostly during the day-time be clustered together as much as possible; that there is not too much hall room; still, enough to insure a pleasing entrance to the house; the stairs should be comfortable and not cramped, all entrances well perfected, and the windows so disposed that they will admit sun and light in ample allowances, and, at the same time, be protected from the storms; that is, are on the opposite side from which the heavy storms are usually to be expected.

A goodly allowance of porches on the pleasant side and at all entrances will add greatly to the comfort of your home. Chimneys should be so placed as to ensure a good draft, no matter in which direction the wind may be. Concerning the exterior, the house should be in harmony with its surroundings; do not make the mistake of placing a low, flat-roofed building in a high country, or a sharp, steep-gabled structure on a flat plain.—*The Builder and Wood-worker.*

WHEN you have determined to build, the first thing to be done is to go to the best architect within your reach and consult him as to the most expeditious method of reaching the result desired. Do this before consulting any builder or contractor, and you will invariably find it to your advantage. The reason is plain. The architect stands as a disinterested third party between you and your mechanic, he having made a special study of the arrangement and convenience of modern structures, and being constantly employed in designing such, is better versed than any one else you could find. In selecting your plan, give the architect a short synopsis of what you consider best adapted to your wants, and the amount you desire to expend; then let him work the design up and submit it to you for inspection, which will enable you to see and correct all which does not suit you, and your house, when completed, will come up to your expectations.—*The Builder and Wood-worker.*

Consideration For Old Employes.

PHYSICAL vigor and mental activity are necessary in all kinds of employment and all sorts of business. Lacking either, the man is, in some degree, incompetent. The cases are exceptional where profitable employment is fitted to the infirm, whether physically weak or mentally slow. And yet there are cases where employment and occupation should be given to such persons, not alone as a matter of policy—to prevent mental and bodily injury—but as a duty. An employé who has spent the vigor of his best years in the service of an employer deserves something more in his last years than cold neglect. Even the turning out of an old horse to die is a subject for attention by the officers of humane societies.

If an employé is of any value whatever, he ought to earn for his employer something above his stipend; in fact, the labor of employés, combined with the judicious use of capital, should accumulate for the employer a competency, if not actual wealth. The wealth thus gathered represents in part, the excess of the value of the labor performed above the amount that has been paid to the laborers. Although the employé has no legal right to demand more than the agreed sum as wages, or salary, which he receives, the fact remains that the wages, or salary, may not represent the proceeds of his work in full.

This fact may not constitute even a moral claim by the employé for anything beyond his regular compensation, under any circumstances. It may be that the compensation was sufficient to have placed the employé, in his old age of feebleness, in a condition of comparative independence, but he may have neglected to provide for the inevitable rainy day. Employers have no special superogatory duties towards employés of this class. Nor is it, perhaps, incumbent on them to pension off old employés, as governments sometimes do public servants. The circumstances will alter the cases. It is not to be expected that employing establishments or individuals are to become insurers against the decrepitude of old age and its attendant incompetency. But the dictates of humanity and the demands of business policy may so far go harmoniously together as to prevent the too common spectacle of an old, faithful employé deprived not only of a position of profit because of inability, but of occupation adapted to his failing powers. There are few sadder sights than this, and pity for the unfortunate man and detestation for his though less or perhaps avaricious employer is felt by every spectator.

As men grow old in any particular service their business ways and work habits become fixed, and all the surroundings of their secular days' employments become more familiar to them than their home life. It is like casting them adrift without rudder, oars, or chart to turn out old employés under such circumstances. Who has not felt a pity for some superannuated employé thus set adrift, as he has noticed him returning occasionally to his old haunts, and looking about wistfully on scenes of which he once formed a necessary part, but in which he is now only an incumbrance and a disturbing element. Too old to start anew in another line, and possessing none of the hopefulness of youth and the ambition of mid-age, he becomes disheartened, melancholy, and perhaps imbecile, until death steps in to his relief.

There is a large manufactory in a New England State that for more than thirty years has been running with pecuniary success, employing young and old, male and female, in its various departments. When business has been dull, and the markets unstable, work has been reduced, and wages shortened, as was necessary to prevent financial disaster. But good employés were kept, if possible, even in the dullest times. There never was a strike, nor a threat of one, in this establishment. Among other humane practices and considerate measures for the comfort and well-being of their employés, this company keeps their hands even when old and unprofitable. There is one old man, now more than eighty, who has worked faithfully, for the best part of his vigorous manhood, for the company. He still works—not, however, full hours—and his employment is of so trifling a character that but for the circumstances it would be ludicrous. But the old man is proud of his employers and that he is still able to work, and is living a happy, contented life, believing that he is independent of charity and that he is still useful, if not necessary, to his employers. This is an example that might properly be followed by others.—*Scientific American.*

Genesis of a New World.

ON a beautiful summer's night, August 22, 1794, Jerome and Lefrancais de Lelande noticed a star in Aquarius, which they estimated of the seven and one-half magnitude. Six years later they thought it of the eighth magnitude. In appearance it resembles a star which is not exactly in the focus of the telescope. Herschel had observed it in September, 1782, and recorded it as an admirable planetary nebula, very brilliant, small, and elliptical. Lord Rose and Lassell perceived that it was surrounded by a ring, which gives it somewhat the appearance of Saturn.

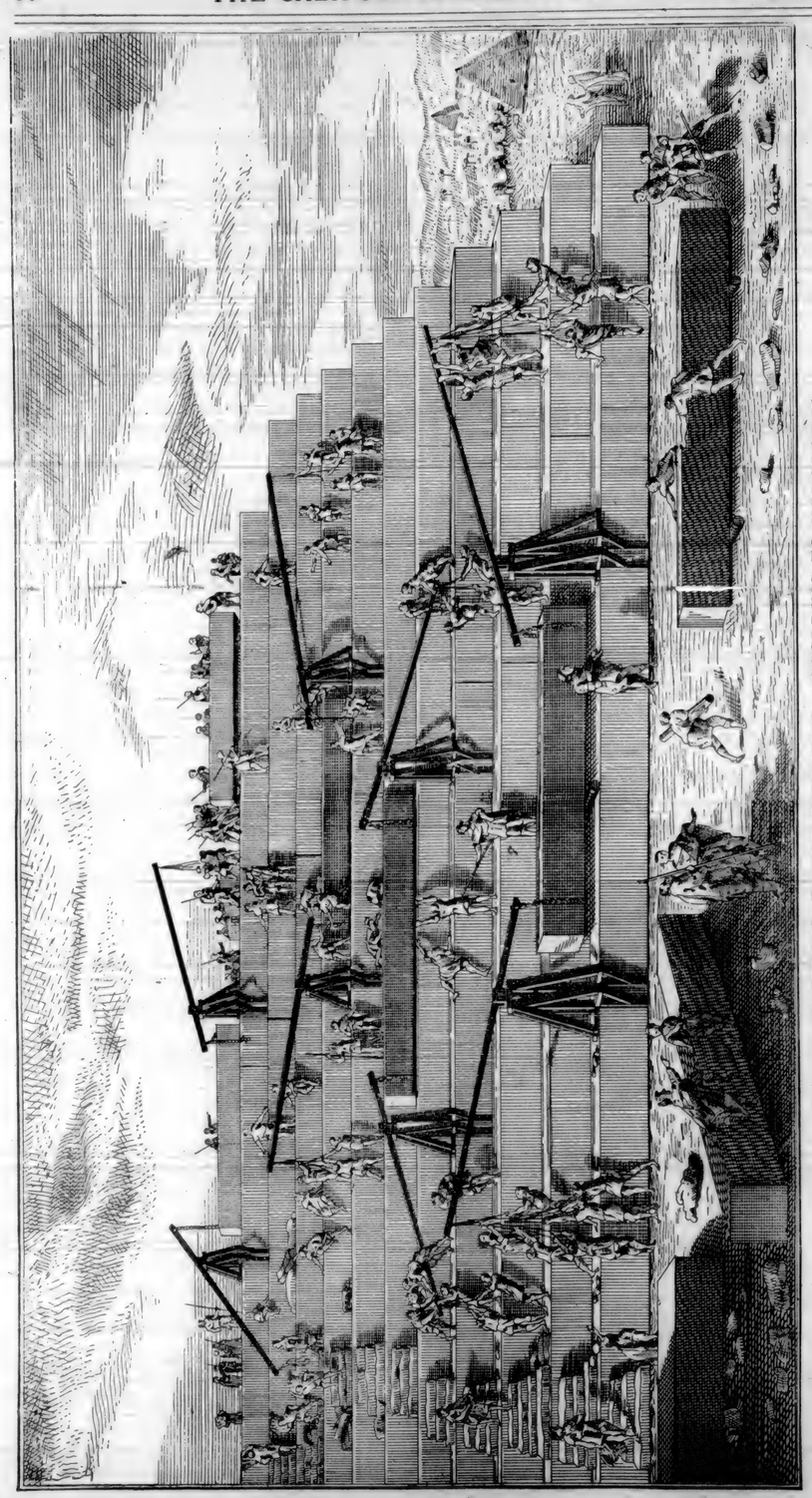


PLATE 6—BUILDING OF THE PYRAMIDS, ACCORDING TO HERODOTUS.

The Pyramids.

THE topic of the pyramids can never cease to be interesting to the intelligent and inquisitive mind. *When* were they built? *Who* built them? *How* were they built? *Why* were they built?—are queries to-day as they have been since authentic history began. Twenty-three centuries ago, the Greek Herodotus—father of history—stood before the great pyramid studying the same puzzles. He got no very clear answer to his questioning. The thousand scholars that since his day have struggled with the same problems have satisfied only, or chiefly, themselves. They have received no answer that the world accepts as final. The great pyramid at Ghizeh seems to antedate all others, and if its riddle could be solved, the mystery would be cleared. But when the architect of that monument closed its chambers to the world he buried the key in its dark bosom. The secret has been well kept. Like the inscrutable Sphinx—its companion in the grand solitude, whose lips are sealed—the great stone is silent. They have stood there and seen all History file by and said nothing. When the First Emperor drew up his French legions in the valley of the Nile, and pointing to the solemn structure by the desert, said, "forty centuries look down upon you from that pile" he spoke but the simple fact; for, indeed, like the everlasting hills it has stood there for ages. In truth we can hardly say when it was not there. The testimony of almost all authors shows that it was there nearly or quite 4,000 years ago. There are no monuments in Egypt older than this one. Some old writer speaks of it as the "terrible crystal of a former unknown time." Its age goes back, then, beyond Moses—beyond Abraham—beyond even the birth of the Hebrew or the Sanscrit languages. It is so old, indeed, that no contemporary writing relating to it exists. No book treats of it within 1,500 years of its foundation. There is, therefore, no clear history of it in existence. Almost its only record is itself. The story

of its real purpose is lost. We stand and gaze upon it and wonder what people lived there before its day long enough to develop a civilization that could produce such a structure as the great Ghizeh pyramid. Where did they originate? In whose brain grew that design? Who was the architect? We can only wonder. It seems to have been the first specimen of stone architecture known in the world—and Piazzi Smyth thinks "it came at once as a perfect specimen—an astounding, and, humanly speaking, an unexplainable mystery." If it was a gradual development, what centuries of slow growth lay between the first rude hut and such a building! He says again: "The grandeur and stability, as well as the minute perfection of its parts, are a marvel." Ferguson says: "It is the most perfect and gigantic specimen of masonry the world has yet seen." He says this with full knowledge of what Greece and her colonies, Rome and her colonies, have done in this line since this was built.

Greece was not born when this giant was being fashioned; and when we think of the long line of her famous sculptors and geniuses in the mechanic arts—of the Parthenon—and her temples on a hundred hills—we are dumb with wonder. Smyth, and Taylor before him, were so at a loss to conceive how such a structure could be produced with no previous model, that they concluded that the design was supernatural—God-given directly, and to an architect who was not an Egyptian. Smyth says "the original plans were based upon a knowledge of astronomy, geography and physics, so vastly beyond the unaided powers of man in that day that there is scientifically no resource for us but to allow that the designer *must* have been assisted by divine inspiration."

Prof. H. L. Smith, of Geneva, N. Y., speaking of the measurements of the queen's chamber in this pyramid, says: "Either there is proof here of a supernatural inspiration in the architect, or he possessed, in an age of absolute scientific ignorance, a knowledge of science equal to the most advanced of modern times."

It has always been a wonder how the Egyptians raised the great stones with which they built their temples and the pyramids. In many cases these were thirty to forty feet long, and three to four feet on the end. There has been much speculation in regard to their methods, but it is safe to say we do not know. Diodorus, a Greek writer, living about 100 B. C., says they used terraces upon inclined planes. Pliny, a Roman, 60 A. D., makes a similar statement, simply repeating it. Herodotus, a Greek, 484 B. C., says they used levers. He had visited Egypt, and got his information from the Egyptian priests, who ought to have known something about it. We will accept his story until we know better. He gives this simple description: "The stones were laid in courses, regularly diminishing in size. Each course was so much within that just below it that each front of the pyramid formed a stair. These courses can still be counted. Such being the case, it is easy to see that only time and patience were needed to raise the largest stones to any height. A very simple machine, very easy to manage (see p. 96), was placed upon the first course, by means of which the stones were lifted upon that for the second course, and when that was done, by a similar machine, stones were raised upon it to form a third, and so on to the top. "The plate shows that this machine was a simple lever, upon a pivot, turning in any direction, and worked by a great number of men." He says also that "100,000 men were employed on the great pyramid 20 years. They were ten years in getting the stones ready. Every three months they were relieved by an equal number."

The great pyramid at Ghizeh is the one to which attention has been most directed. Mr. Smyth says, "There seems to be a series of features in this pyramid which have no counterpart in any other." Without adopting the theories of Taylor or Smyth in all their fanciful details, we must admit that these indicate something more than a mere tomb in this wonderful structure. Let us notice *some* of these remarkable features.

First—the base is a perfect square; *Second*—the four sides incline toward the central vertical axis at equal angles. The angle is 51° 51′ 14″, and this is significant for it has been found that using this angle, and finding the vertical height of the pyramid by it, we obtain a very remarkable relation of lines. The height is not now what it was originally; for the top has been destroyed—cut down.

The theoretical height was found by triangulation to be 486+ British feet. One side of the square base was found to be 763+ British feet. Now the ratio of this height to twice the length of one side of this base was found to be exactly the ratio of that of the diameter of a circle to the circumference, viz., 1 to 3. 14159—a quantity much used in modern mathematics and of inestimable value. But there is no testimony in all history, no tradition or any other form of record whatever to show that this ratio was known to the human intellect for ages after this pyramid was built. How then came it to be expressed in this structure? Smyth claims that it completely solves the standing puzzle of the ages, viz., the squaring of the circle, for the height of this pyramid may be made the radius of a circle, whose circumference is exactly equal to the sum of the four sides of the square base. No other pyramid has this feature. How did the architect happen to hit it so exactly? Was it an accident or was it by design? If an accident, it is the most marvelous accident in history. If by design, how did the builder know the mathematical truth thousands of years before it became known to any other human mind?

Another wonderful accident is the angle of inclination of the passage into the pyramid on the north side. Setting aside all theories again, the measurements are there and may be accepted as mainly correct. Taking these as they are, and skillfully manipulating them, legitimately, as one may do the number 9 of the Arabic numerals, and many singular results follow as with that magical number. Did the builder play at puzzles as he built? For example, if certain measurements in the King's Chamber be taken and certain operations upon them be performed, the number 365¼ is obtained, the exact number of solar days in the year. This result has been reached in several independent ways.

Again taking certain other measurements, and performing similar operations upon them, the angle 23° 51′ 50″ is obtained. But this angle *happens* to be exactly the angle of the obliquity of the ecliptic for the year 2170 B. C., which is the date of the building of the pyramids, as believed.

But a resulting number of far greater importance than either of these has been disclosed. The cycle of the precession of the equinoxes has been computed by modern astronomers to be 25,827 years. Now exactly that number has been found in numerous instances by operations, like the above, upon the architectural lines of the great pyramid. Yet no such astronomical truth as this was known among men, historically, for nearly 2,000 years after the pyramid was built. How happens this number, then, to be builded into the whole structure as it seems to be? Is it an accident?

An English engineer had seen that the square base of the pyramid might typify a circle of which the vertical height of the pyramid was the radius, because there was found to exist that remarkable relation between the vertical height and twice one side of the base. Then he said, this circle *may* symbolize the earth's orbit, and the year may be evolved from it. And this height may also represent the radius of the earth's orbit, which will be the distance of the sun from us. So he took this vertical height in pyramid inches, changed them to British inches, then miles, and worked out the problem, and the result was 92,500,000 miles, nearly—a number almost identical with our very latest computations upon the transit of Venus, with all our refined methods.

Another striking feature, one of the curious problems of the great pyramid, is the fact of what is called its orientation—that is, its base being so fixed that its four sides face the four cardinal points exactly—due north and south, due east and west. Now, to place a structure built of layers of stone as large as those in this pyramid, and covering, as Proctor says, thirteen acres of ground, so as to be exactly in line with the cardinal points, is a work of no small difficulty to-day, even. Proctor says: "The only way it *could* be done was to cut a slant passage through the solid bed rock, directed to the pole star of that day, when crossing the meridian below the pole." This passage is toward the north. Toward the south, within the pyramid, how could a passage be cut on a true north and south line with no star to guide them? A beam of light from the north star down that north passage was re-

flected from a surface of water at the same angle as the entrance beam, and was their guide in cutting that passage. And all this was so exact that to-day astronomers can detect no error greater than about five minutes of space. This gives us some idea of the genius that directed the building of that structure.

Another interesting fact is, that this pyramid is placed almost exactly upon the parallel of 30° of N. Latitude, wha ever significance this fact may have. Then a vertical plane north and south through the pyramid marks the zero meridian for Egypt; and that entrance passage to the pyramid is in the plane of this meridian. Some other curious facts are these: This entrance passage has an angle of altitude of 26° 18′ about; and its direction is not to the exact pole of the heavens, but to a point 3° 42′ below that pole. Now it has been ascertained astronomically, that about 2170 B. C. the star called Alpha Draconis—or the brightest star in the Dragon—was just 30° 42′ below the pole, and its light would therefore shine down that passage, so that it was their north star. Showing that our north star was not their north star. At the same time Alcyone, brightest of the Pleiades, or seven stars, was on the meridian south, in the vertical plane of direction of Grand Gallery of the pyramid. At the same time also the celestial meridian of the Vernal Equinox coincided with this same Alcyone. It is supposed by those who think this pyramid is an astronomical building, that the Egyptian year began at the time thus indicated, viz., in the autumn, when the Pleiades crossed the meridian. Judge Haliburton of Halifax, by a remarkably patient research, has shown that many primative nations and also uncivilized tribes have always begun their year at this time. But a profounder problem than the beginning of an Egyptian year lies in the fact that this remarkable conjunction of stars shows also that it was the beginning of a cycle of the precession of the equinoxes, a period as before said of over 25,000 years. If, as Smyth says, this problem is recorded in the architecture of this pyramid—it is an astounding fact. Such are some if the wonders of the measurements of the great pyramid. If the conclusions are correct, they are verily wonderful. It is wonderful that any one at that age of the world, beyond the period of written history, could know the true relation of the circumference of a circle to its diameter—carried to five places of decimals; could know the shape of the earth, the length of its axis of rotation—therefore its size; and could derive a unit of linear measure from it as a standard; could know the diameter of the earth's orbit—therefore its circumference—deriving thence the sun's distance—length of a solar year and day; could so place the building that a vertical plane in it should give the true meridian for Egypt; that the opening of the entrance passage should admit the light of a star in the true north, and at the same time another passage admit the light of a star in the meridian in the south. More wonderful still, that they should know that cycle of the precession of the Equinoxes. If they did not know these things, how does it happen that the geometry of that structure gives the information? is it all assumption? has it been tortured out of the lines with no basis of fact?

Different mathematicians, by simply taking the measurements of the lines put there by the architect and solving the problems suggested by them, have made the astonishing revelations. If the results can be shown to be true, and the designer did not know the hidden secret in those lines—did not have any knowledge of the astronomical truths involved—can we help concluding, also, that he was guided and controlled by divine inspiration?

A Remarkable Work.

THE opening of the Darien Ship Canal redirects attention to one of the richest portions of the globe, which has been unnoticed for the greater part of the century. To understand its capacities we must go back to the records of the first discoveries and conquest of the Isthmus, when it paid tribute to Spain in thousands of gold and silver, and baskets of the finest pearls. Its great cities held palaces whose walls were a mile square, and fortresses which surpassed those of Europe. The ceiba tree and the tropic creepers have hidden the site of these grand ruins, but, guided by the light of history, the daring explorer will yet find not only these, but the deserted mines of gold and beds of sacred turquoise and of pearls. The history of Mexico and the Isthmus, in their early days, is one of the most fascinating pages in the world, whether to scholars or men of business, and it is fortunate that the period of reviving interest in these centuries, also, sees the announcement of the remarkable literary work which includes their history. The wealth of preparation lavished by Mr. Huburt H. Bancroft on his great "History of the Pacific States" affords a satisfaction to the world of which the volumes so far issued are a rich and surprising foretaste. The story of the conquest of a new world must have an absorbing interest, but the splendor of the natural resources of the countries reads like the tales of Eastern romance. From the treasures of material at command in his matchless library of 35,000 volumes on Pacific history, for which he has ransacked American and continental collections and Government archives, Mr. Bancroft has drawn a story of plain, authentic fact, which wears the coloring of romance. Old manuscripts, unknown to recent historians, and archives, supposed lost but brought to light by intelligent research, have added of late the missing links in the wonderful history of the discovery of America. The archives of Central American Governments, rare Spanish works, and manuscripts from the collections made by the Emperor Maximilian, and the eminent Mexican, Ramirez, have been sources of fresh and extremely interesting material, to fitly condense and convey which has been the labor to which Mr. Bancroft has devoted his best energies for twenty years, with the asistance of from twelve to twenty educated secretaries in translation and reference work. The history thus produced by an author of uncommon ability must take place as a standard authority on Western America, giving not only its past, but its natural history, in accounts of the scenery, productions and inhabitants of the countries from the Rocky Mountains to the Pacific, from Darien and Sonora to New Mexico, Arizona, California, Oregon and their sister States The information of all the writers that have ever written about these countries will be contained in Mr. Bancroft's Pacific History, a work so interesting that we expect to see it in every town and school library, if not in every household—the delight of the school-boy, for its marvelous stories of adventure; of the politician and the literary man alike, for its clear precision and its rich grasp of fact. In Europe an order of nobility would be the honor assigned a labor of such value—but the author's best reward will be to see his work read and beloved by the people for whom he wrote. The praise of the great scholars of Europe and America, of Carlyle, Herbert Spencer, Whittier, Longfellow and Draper, has been warmly given to his work, which, however, was written with the purpose to bring the information of a princely library within the reach of American homes. The large, open print, firm paper and binding have been selected to make a book welcome to the eye and lasting for use; one which will take the first rank among standard histories, and equally so in the interest of general readers.

Information in regard to the prices, etc., of this remarkable series, can be obtained by addressing Bancroft & Co., San Francisco. Inquiries addressed to this office will also receive prompt attention. Eleven volumes are now ready, and it is the intention to have a volume ready every fourth month until the series is completed.

LOW BEDS.—The use of the low bedsteads, with the trundle-bed, ignore a great and important principle, that relating to the fact that near and on the floor will be found the most poisonous gases, the carbonic acid of the sleeping room, since this is heavier than the air, falling and flowing into the lower parts of the house like water. It is cruel enough to put the children in a room which is already occupied by a sufficient number of persons—two are enough—without putting them, at the time when they are growing, and need every possible favorable condition, where they continually breath the worst air—all of it being filthy enough—malaria!

Lumber Receipts.

THE following statement in regard to lumber receipts for the first six months of this and the preceding year may be of interest to many as showing the forward state of the building interests at the present time:—

1882.		1883.	
Lumber, ft.	69,869,381.	Lumber, ft.	76,280,301.
Shingles, No.	13,322,761.	Shingles, No.	13,610,000.
Laths, No.	6,588,100.	Laths, No.	8,289,520.

The Material and Manufacture of Canes.

THE manufacture of walking-sticks and umbrella handles is an industry in which a great deal of capital is invested. The material is as various as can well nigh be conceived of. The Chicago *Times* recently had an article on the subject, from which we extract:—

Many are of imported woods, some from the tropics, China, and the East Indies. The celebrated Whongee canes are from China, where they are well known and celebrated for the regularity of their joints. which are the points from which the leaves are given off, and the stems of a species of phyllosiachys, a gigantic grass, closely allied to the bamboo. The orange and lemon are highly prized and are imported chiefly from the West Indies, and perfect specimens command enormous prices. The orange stick is known by its beautiful green bark, with fine white longitudinal markings, and the lemon by the symmetry of its proportions and both prominence and regularity of its knots.

Myrtle sticks possess also a value, since their appearance is so peculiar that their owner would seldom fail to recognize them. They are imported from Algeria. The rajah stick is an importation. It is the stem of a palm, and a species of calamus. It is grown in Borneo, and takes its name from the fact that the rajah will not allow any to go out of the country unless a heavy duty is paid. These canes, known as palm canes, are distinguished by an angular and more or less flat appearance. Their color is brownish, spotted, and they are quite straight, with neither knob nor curl. They are the petioles of leaf stalks of the date palm. Perhaps the most celebrated of the foreign canes are the Malacca, being the stems of the Calamus sceptonum, a slender climbing palm, and not growing obout Malacca, as the name would seem to indicate, but imported from Stak, on the opposite coast of Sumatra. Other foreign canes are of ebony, rosewood, partridge or hairwood, and cactus, which, when the pith is cut out, present a most novel appearance, hollow, and full of holes.

The manufacture of canes is by no means the simple process of cutting the sticks in the woods, peeling off the bark, whittling down the knots, sand-papering the rough surface and adding a touch of varnish, a curiously carved handle or head, and tipping the end with a ferrule. In the sandflats of New Jersey whole families support themselves by gathering nanneberry sticks, which they gather in the swamps straighten with an old vise, steam over an old kettle, and perhaps scrape down or whittle into size. These are packed in large bundles to New York City and sold to the cane factories. Many imported sticks, however, have to go through a process of straightening by mechanical means, which are a mystery to the uninitiated. They are buried in hot sand until they become pliable. In front of the heap of hot sand in which the sticks are plunged is a stout board from five to six feet long, fixed at an angle inclined to the workman, and having two or more notches cut in the edge. When the stick has become perfectly pliable, the workman places it on one of the notches, and, bending it in the opposite direction to which it is naturally bent, straightens it.

Thus sticks apparently crooked, bent, warped, and worthless are by this simple process straightened, but the most curious part of the work is observed in the formation of the crook or curl for the handles which are not naturally supplied with a hook or knob. The workman places one end of the cane firmly in the vise, and pours a continuous stream of fire from a gas pipe on the part which is to be bent. When sufficient heat has been applied, the cane is pulled slowly and gradually round until the hook is completely formed, and then secured with a string. An additional application of heat serves to bake and permanently fix the curl. The under part of the handle is frequently charred by the action of the gas, and this is rubbed down with sandpaper until the requisite degree of smoothness is attained. —*Scientific American.*

Why Some Mechanics Don't Get On.

WE were much interested the other day in drawing from one of the oldest practical mechanics of Cleveland the secret of his success.

Said he: "I have always made it a rule to do my work so well that it left a good impression on my employer." There is more in this than at first appears. Hard work is one thing; conscientious work is another. The hard worker may outwardly conform to all the requirements of the shop; he may always be in his place at the starting of the machinery; he may take short noonings, and he may be among the last to drop his tools at night, but after all he may utterly fail to get on in the world, and why? Let our experienced informant answer: "I know of a young man of just that kind. He works hard enough and wants to succeed, but somehow he can't. He came to me for counsel, and I found that he was slighting his work. That is, in his anxiety to turn off a large amount, he neglected the finish which always tells on good work. The consequence will be that, unless he makes a change, when times are dull he will be one of the first to be dropped by his employer." Superintendents and foremen notice these defects more closely than many are aware. The man who slides over his task, who lacks in thoroughness, who lets an unfinished piece of work leave his hands, is marked. In the unwritten law of the shop he is barred from promotion, while the conscientious workman is morally certain of advancement. Is the tendency of the day in the direction of a better finish to work? We think it is. As machinery is brought into competition the strife will be to secure superiority in cheapness, simplicity, and finish. Here it is that the thorough workman brings into play all the resources of his skill and honesty—his "mechanical moral sense," it has aptly been called. Here it is, too, that the slovenly, or careless, or hasty workman utterly fails. There are some forms of bad work that can be deftly covered up, but the compensations of life bring the inevitable result—failure to him who does not put his heart in the work, success to him who not only does his task, but does it well.—*Trade Review.*

Whitewashes.

THERE are several methods of making serviceable wash. One is made as follows: Three pecks of water lime, one peck of silver sand, and half a peck of salt. This is used for old, rough fences and outbuildings. The common whitewash is made by putting quicklime into a tight barrel, pouring on water to slack it, and adding water till it is of the consistency of cream. This is used for ordinary work. But a much better whitewash, which stands weather well, is made as follows:—

Put half a bushel of quicklime in a barrel and add boiling water until it is covered nearly six inches deep; cover the barrel to keep the steam in, and when the violent ebullition is over, add water enough to bring it to the consistency of cream, allowing four pounds of rice flour to each half bushel of lime, or the rice flour may be mixed with the water for slacking, mixing the flour carefully in cold water, before putting it in the hot water. Stir constantly in the hot water until thoroughly set, and then pour it all over the lime, as directed.

To improve the above, add two pounds of sulphate of zinc and one pound of salt. To change the color, add yellow ochre for cream tints, raw umber and lampblack for gray tints, and umber, red, and lampblack for fawn tints. The permanence of whitewash thus prepared is remarkable, and, when once tried, will be used to the exclusion of the ordinary mixture. —*The Pacific States Watchman.*

M. FAVOL, a French investigator, has found that the creosote treatment for the preservation of wood sometimes doubles the durability of oak timbers used in collieries, but has little influence on pine. He further says that oak prepared with ferrous sulphate lasts ten times as long as in its natural state. It should be immersed twenty-four hours in a solution of 200 grammes of ferrous sulphate.

THE cable system for street-car traffic seems to be making some headway in England and Scotland. At a Council meeting in Edinburgh, lately, permission was given to lay down a length for trial, the Council reserving the right to reject it, if deemed desirable, after an inspection of the Highgate, London, cable railway system in June next.

ACORNS from America are in demand in Europe, for the propagation of oak forests. A special agent for the forestry department recently shipped 300 bushels of red-oak acorns and 120 bushels of pignuts to England and Germany, where they are to be planted next spring.

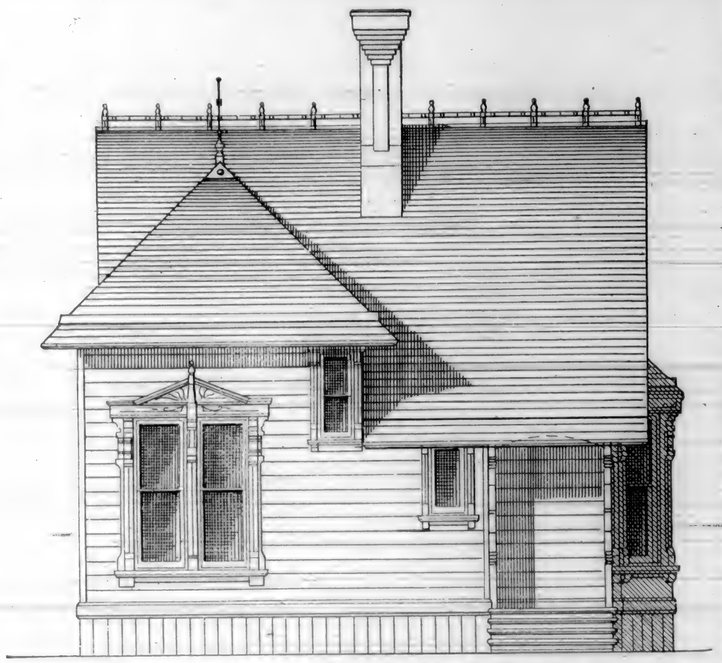


PLATE 6—A COUNTRY COTTAGE. FRONT VIEW.

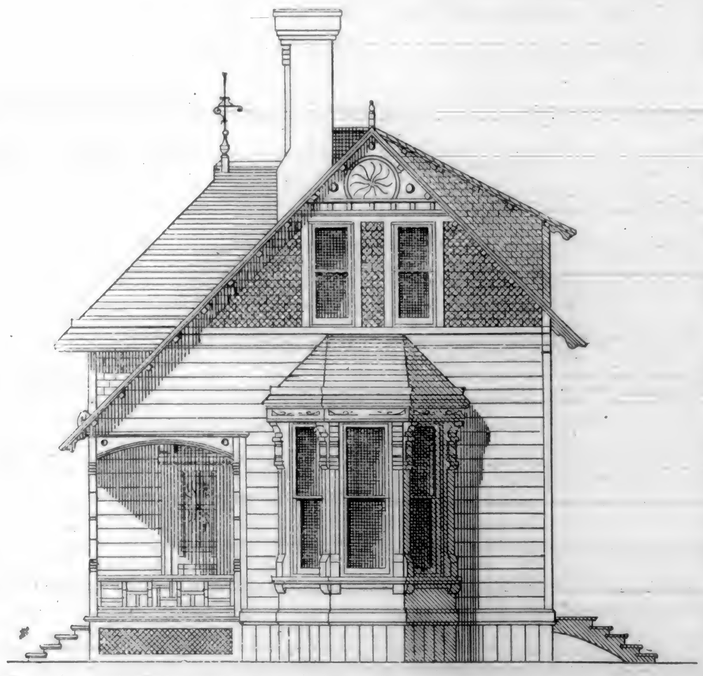


PLATE 7—A COUNTRY COTTAGE. SIDE VIEW.

Arbor Day.

THE people of this State should rise up and demand that one more holiday be added to the too few which we celebrate. And no more appropriate day could be named than to follow in the footsteps of some of the Eastern States, and name a day on which all could join together and have a merry time planting trees. We hope our next Legislature will take this matter in hand and establish a grand State holiday to be known as Arbor Day; and let old vie with the young in transforming our valleys into magnificent wooded districts. Should our wise Solons establish such a holiday, it is to be hoped that they will provide for the proper maintenance of the trees after they have been planted. This might be accomplished by offering premiums for a certain number of trees that present a healthy appearance after a certain period of growth. We sincerely hope that the journals on this coast will discuss this matter in full before our next Legislature meets.

Draughts or Slow Poison.

AFTER all that has been said and done about the so-called "ventilation" of our public rooms, the people who frequent them are still shut in, in nine and a half cases out of ten, to a choice between taking poison and getting a chill—with the facilities much greater for the former. The average assembly room is still typified by the "hot air receiver" in which Adirondack Murray was once lecturing. It was built in the regulation fashion, with close walls on two sides, pierced in four places with small openings into dead-air flues, called, by a fiction of the architect, "ventilators" but up or down which no current was ever known to pass. The ceiling was, of course, solid, and the only chance to let in fresh air to the thousand people who were trying to keep up their heart and brain action on an atmosphere composed of lung exhalations, burnt-up air, and unconsumed gas, was to let down the large windows in the end. Up and down went the rattling sash and rustling curtains, as the gaspers and freezers took turns at the windows. Finally, the lecturer stopped and said, with the coolness and humor that characterized him: "Friends you may fix the windows anyway to suit yourselves; only if I am to finish my lecture, I should like to have them stay fixed, one way or the other. For myself, if I am to have a choice between freezing to death or suffocating, I should prefer the former method as being cleaner. But, if the world stands for another year, and this dreadful hall with it, and you are to have another course of lectures, I would advise you to punch a hole through that roof," indicating the highly frescoed ceiling with his superb gesture.

The process hinted at in this rough suggestion has been followed in many of our pretentious halls and theaters. The builders have "punched a hole through the roof," in a more or less ingenious and artistic fashion; but, in thus providing an escape for the bad air, they have exposed a large percentage of the occupants of the room to direct or cross-currents of air every time a lobby door is opened or a window is raised. There is yet no science of ventilation; or, if there be, it has not been applied where it is most needed. Many fairly effective devices for taking the overheated air out of a room have been invented; but the rooms are rare into which any adequate supply of pure air is introduced. The furnace fiend in the cellar will belch his blighting breath into a room as fast as it can find a way out—and too often faster, as the baked brains and laboring lungs can testify. But a rational system of ventilation, based upon the law of demand and supply, and avoiding stagnation on one hand and draughts upon the other, has not yet been brought within the reach of the general public. People susceptible to the insidious effect of foul air, and who visit places of public amusement, know what a "theater headache" is. They have a reminiscence of the taste of the atmosphere in their mouth the next morning, though they may not know what it is. Of all places in the world, except sleeping or thinking rooms, where pure air is needed, a public dining-room is the oftenest neglected in this particular. Added to the heat of the furnace or the steam-pipes, is the smoke of the gas and the scent of the dishes, and sometimes the fumes of the kitchen. In our grand hotels, elegant and perfect in all their other appointments, there is often—we may say commonly—no way of reducing the temperature and freshening the air except by lowering a window—with what effect Mr. Fitz feelingly hinted in the humorous speech to which we alluded in the opening. It destroys half the enjoyment of a good dinner to introduce pure air in this fashion, merely as an *entre* in the elaborate *menu*. One does not want to carry away incipient pneumonia or an aggravated catarrh as the penalty for dining away from home.—*Ex.*

PRACTICAL CARPENTRY.

PRICE $1.00.

A guide to the correct working and laying out of all kinds of Carpenters and Joiners' work. Solutions of the various problems in Hip roofs, Gothic work, Centering, Splayed work, Joints, Hinging, Dovetailing, Mitering, Timber Splicing, Hoppers, Skylights, Raking mouldings, etc. This work should be in the hands of every mechanic. One of the features to which this book will undoubtedly owe its success, is the absence of those numerous formulas which serve only to confuse the ideas of so many workmen. Everything is written in a clear, concise, and practical manner, and its utility is brought within the grasp of those workmen who have not had the benefit of a school education. We will send the above work to any address upon receipt of $1.00.

IF the manufacture of glass is being tempered according to the building developments of the country, then the sash, door, and blind manufacturers can be said to have before them a prosperous demand. It is stated there are fifty new glass factories being built in the different States. To quite an extent glass means sash, and sash means doors and blinds.

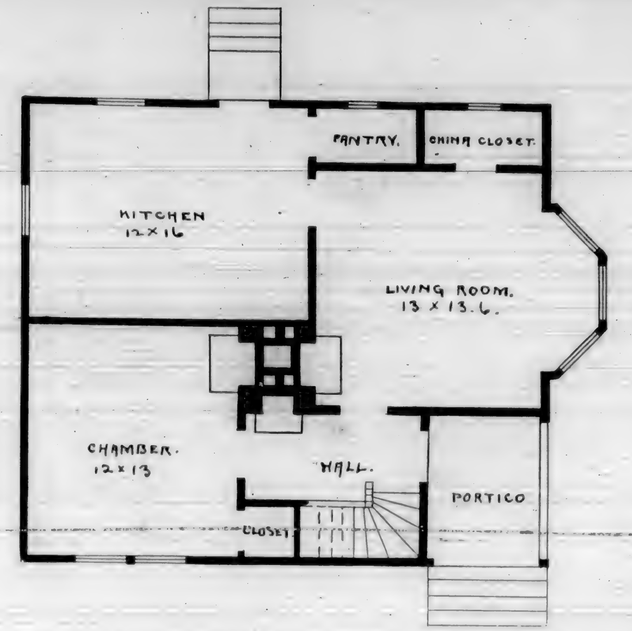


PLATE 8—A COUNTRY COTTAGE. FIRST FLOOR PLAN.

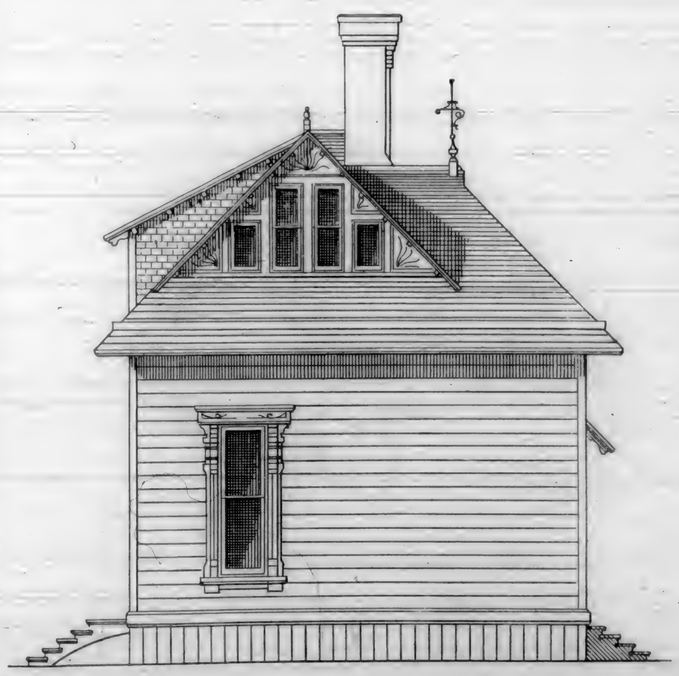


PLATE 9—A COUNTRY COTTAGE. SIDE VIEW.

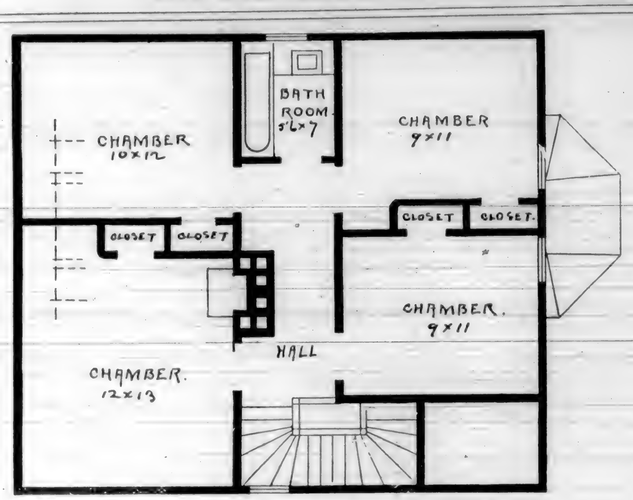


PLATE 10—A COUNTRY COTTAGE. SECOND FLOOR PLAN.

A Practical Answer to the Dr. Ayers' Theory.

THE following letter from one who is a prominent business gentleman, residing in one of the choicest elevated sections in the city, in a ten thousand dollar residence, is a conclusive contradiction of the fallacy recently promulgated before the Medical Society of California:—

"JUNE 3, 1883.

"MR. WOLFE: We are all down with malarial fever, and I am satisfied that the sewerage and plumbing of my house has much to do with it. Yesterday I noticed a terrible smell in the basement, coming from where the wastes connect with the sewer and hopper. The basement was closed, and, no water being run through the pipes during the day, the smell was intense, and as soon as I let the the water on, the smell went away. Whether the sewer is broken, or the joints in the sewers or plumbing pipes bad, I do not know, but we smell the sewer gas through the house and are all sick. I want you to examine where the fault lies, and have it remedied. My wife threatens to leave the house. The plumber has not done his work right, and we are alarmed for fear of the consequences. See whether the sewer trap is all right, and have large vent pipes put in, and make them run up above the shingles. I am afraid that the trap under the bath tub is not safe and it syphons out. I am greatly alarmed, for we have never had any such sickness before, and all the indications are that our present troubles come from the sewer gases. This is the opinion of our physician also. Please attend to the matter at once."

The foregoing is but one of hundreds of similar cases in San Francisco, and an exemplification of the folly of owners' purchasing houses built years ago, when sanitary science was in its infancy, and architects, owners and builders had not acquired the knowledge since obtained in reference to the importance of perfect sewer and plumbing work, nor learned to realize that the underground conduits with which all buildings are connected, contain terrible death-producing agencies. The residence in question was built some ten years ago, by one of the present popular architectural firms in San Francisco, who may have exercised the best judgment then enjoyed, but which now develops a degree of error illustrated by the foregoing. After the recent purchase by the present owner, he made, as he supposed, all necessary improvements to correct the existing evils, but failed in his attempt, and to obtain perfect immunity from the effects of sewer gases, will be required to expend considerable more money; but when that shall have been done, it will require time to remove the impressions produced by present family afflictions, and establish a feeling of confidence that loved ones are safely protected from the bad consequences which follow in all cases where sewer gases are allowed to work their way into dwellings. If sewer gases are not promotive of any "special type of disease," they are nevertheless a means by which thousands are daily prostrated on beds of sickness, and thousands consigned to that slumber from which nothing short of the Gabrielic trumpet will ever awaken.

PLEASE NOTICE.

The 75-cent edition of the Steel Square and its Uses is OUT OF PRINT. We cannot supply any more, as we have received notice from the publishers that their stock of that edition is completely exhausted. We have a number of the new and enlarged edition, which we will mail direct to any address upon receipt of

ONE DOLLAR.

This edition contains 30 more pages than the first one issued.

The Care of Fixtures.

THE most troublesome of all is the ordinary house sink, into which the bulk of the greasy water from dish-washing is emptied. Contained in the hot water, the grease is dumped into the sink and out at the drain. Being chilled, however, in its contact with the cold metal of the sink or drain, it is at once deposited about the strainer and proximate waste pipes, the greater portion being deposited on the inner surface of the traps, where it remains to decompose. Here something more than water is necessary, and when, as with the modern flat or tenement, the sink is made the receptacle of the suds on wash-days, the drain is kept moderately and sometimes perfectly clean by reason of the various washing-sodas now in use. Though the grease has been deposited by means of hot water, it is not safe to expect that hot water alone will remove it, since it was the chilling of the hot, greasy water that first deposited the refuse grease. There are special fixtures for catching this greasy deposit at various points along the drain, but the better way is to eradicate the objectionable and carry it off altogether.

Where the sink is used for kitchen purposes alone, and there are no weekly flushings from the wash-tub, it is necessary to take pains to remove the grease by special means, introducing into the dish-water some one of the sodas or ammonia. The tubs, whether in the laundry or bath-room, require moderate though timely attention. In the case of the laundry tubs, the deposit of soft mud, left from clothes washing, is partially deposited at the lowest portions of the tubs, or sticks to the corners or joints, and if, as is often the case with what are called stationary tubs, a quantity of water is left in and the lids shut down, decomposition soon sets in, and an odor far more offensive than the sewer gas is experienced on lifting the lid or stirring the water. The tubs have to be thoroughly washed and flushed before the odor is thoroughly removed.

The application of disinfectants is of no use; cleansing must be resorted to. So, too, with the bath-tub, a similar deposit is left from the water either at the bottom of the tub or in the drain, or more especially in the trap.

All this trouble from the tubs can be prevented by proper care and cleanliness after use. They should be thoroughly washed and flushed after each service.

With urinals another special method of cleanliness is necessary, for while there are no greasy deposits, such as already described, there is, owing to the very rapid decomposition that sets in, a special demand for immediate flushing after use, or they will shortly become most offensive. Constructed of a proper non-absorbent, non-porous and non-corrosive material, a liberal flushing immediately after use will be sufficient, unless contained in a close and warm room If the room is not properly ventilated, it is next to impossible, even with a most liberal flushing, to prevent an unpleasant as well as an unhealthy odor arising.

Exterior Painting.

THE BEST MATERIAL.

THE public are indebted to the architect and builder for accurate and becoming designs, and for good and careful construction of buildings, but not always for their methods in painting. Frequently their specifications for material and their methods of application are mistaken, and do not result in the best and most economical work. For instance a contract may require that the exterior of a house shall be painted in pure white lead and linseed oil. Undoubtedly pure white lead has superior covering properties, and with good linseed oil makes a handsome surface, but it is not by any means the most durable or cheapest coating available. A proportion of zinc white, depending upon the amount of coloring matter employed, mixed with the pure white lead, will make a much better paint. There are technical reasons upon which this assertion is based, and they will be appreciated by every one, though he may have no practical experience with paints. It will be readily seen that the adhesive properties of the paint consist in the vehicle with which it is mixed. If water were used the adhesion would continue only so long as the paint should retain its moisture and the dry powder would be easily rubbed off. The same result would follow if the pigment were mixed with oil, as soon as the vehicle were absorbed, disintegrated, or otherwise removed from the powdered lead. Now it is a fact that a paint consisting of pure lead and the best linseed oil will soon disintegrate, leaving the powdered lead free to be easily rubbed off. On the other hand, the oxide of zinc forms with oil a paint which when dry assumes the appearance of an impervious enamel. This comes from the nature of the pigment, by which a chemical combination is effected. The writer, therefore, after many tests, does not hesitate to recommend a mixture of zinc with lead for all exterior paints. We said the proportion of zinc should depend upon the colors with which the paint is to be mixed, for ochres, umbers, siennas, and Venetian red act in the same way as zinc, and are preventives of the chalking difficulty to which clear lead is subject. As to the proportion which is the most economical with the best results, the writer would recommend that for the upper coat, say of a three coat job, standard white lead will bear 25 to 35 per cent. of zinc. If any considerable proportion of the colors named were employed in the mixture the smaller percentage has, in the experience of the writer, worked best. Many painters use the zinc in the priming coat, but clear lead, from its great covering power, is regarded as preferable. The inexpert reader may ask, If zinc is so good why not use it clear? There are two technical objections. First—Zinc lacks body or covering properties, being much less opaque than lead. Second—Zinc clear makes a hard and brittle enamel, which is subject to what painters call cracking and chipping. No matter how employed as a paint, it must, for these reasons, be tempered. The prepared brands of zinc white are tempered in their manufacture to avoid these very objections.

Now as to errors in methods of applying paint. We once saw a contract for painting a railroad depot and passenger house, in which there were many elaborate and small architectural decorations, requiring to be picked in with several different colors. By the terms of the contract it was a three coat job, and it was required that the painter should "pick in" the colors in each coat. The colors were such that the picking in needed only to have been done on the last coat. As such painting requires great care and entails much labor, the consequence was that a large amount of labor was lost in the unnecessary work of two "pickings in." Besides, in spite of the care of the painter, the painting was rough and slovenly, much aggravated by the repeated work of matching lines and colors. We recollect also that the painter was greatly out of patience because the contractor would not listen to his suggestion that he could do the painting much better with a single coat of the "picked in" colors. Many architects are expert in the selection and arrangement of colors and tints on an exterior, but it ought not to be expected that they can have the practical knowledge of paints and material, and the best methods of application, which are requisite to avoid mistakes such as those above alluded to.—*N. C. Weiss, in Building.*

Strengthening a Foundation.

AN interesting way of strengthening a weak foundation was recently tried on a new building that suddenly commenced to settle. The excavation for the walls had been carried down until a mixture of coarse sand and gravel was found, which was deemed suitable. During a heavy rain water found entrance to the cellar, when the sinking resulted. The building was braced, the cellar drained, and then the inside wall of the foundation was uncovered down to a little below the bottom. A A-shaped piece of masonry having a height of about twice the width of the base was then built, the bond between it and the wall being carefully looked to.

After this had been finished upon the inside, it was repeated upon the outside. The base of each of these pieces was equal in width to that of the wall, so that the operation practically trebled the bearing surface of the foundation. It may be well to add that the water will not again be permitted to enter that cellar, as every passage way has been securely closed.—*Scientific American.*

Prescott's Truss Hanger.

THESE Hangers are particularly adapted for use upon barn, stable, depot, and storehouse doors, or in any place where elegance of finish is not required. A child is able to move a door hung with this Hanger. Dunham, Carrigan & Co., Agents.

Building Intelligence.

OWING to the immense lot of extra work caused by a complete change of type in our last issue, a few typographical errors crept in our columns. The buildings on cor. of McAllister and Filmore reported to cost $2,100 should have been $21,000. The alterations cor. Jessie and 18th streets, reported as $1,000 should have been $10,000.

SAN FRANCISCO.

Channel, nr. Sixth. Two-story frame, and one-story brick.
O.—A. Waldstein.
A.—Wolfe & Son.
C.—T. H. Day.
$10,000.

Channel, nr. Sixth. Factory.
O.—Coos Bay Stave and Lumber Co.
A.—Wolfe & Son.
$20,000.

Mission, east of Third. Four-story and basement brick.
O.—Warden & McClure.
A.—W. P. Moore.
C.—Richardson, brick work.
$40,000.

Golden Gate Avenue, cor. Fillmore. Five two-story frame flats, brick foundation, and alterations to adjoining buildings.
O.—Lewis Levy.
A.—Schmidt & Havens.
C.—W. Pluns.
$30,000.

Block, bounded by Market, Waller, Octavia and Haight. Eighteen two-story frame, brick foundation. Thirty-six flats.
O.—M. A. DeLavoaga.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$35,000.

Mission, x. Eleventh and Twelfth. Two three-story frame. Flats.
O.—Mr W. Menzel.
A.—Schmidt & Havens.
C.—J. N. & J. G. Day.
$11,500.

Bush, cor. Fillmore. Two two-story frame. Brick foundation.
O.—Mrs. E. G. Butler.
A.—Schmidt & Havens.
C.—Robinson & Gillespie.
$8,500.

Pine and Octavia. Five two-story, brick foundation.
O.—Clinton Jones
A.—Schmidt & Havens.
C.—R. Smilie.
$16,575.

Golden Gate Avenue, x Laguna & Buchanan. Four two-story frame.
O.—Buckley.
A.—T. S. Welsh.
C.—J. W. Smith.
$15,500.

O'Farrell, x Polk and Larkin. Two-story frame.
O.—Dr. W. A. Douglass.
A.—T. J. Welsh.
C.—John Blake.
$8,000.

Eddy, nr. Octavia. Three-story frame.
O.—W. Geist
A.—H. Geilfuss.
C.—Kincaid & Baldwin.
$8,000.

Jackson, nr. Davis. Two-story brick.
O.—Mrs. Wilson.
A.—P. J. O'Connor.
C.—B. Farrell.
$5,000.

Hill, cor. Guerrero. Two-story frame.
O.—Mrs. Pomeroy.
C.—T. Maxwell.
$6,000.

Dolores, cor. Liberty. Two-story frame.
O.—T. V. O'Brien.
A.—Swain & Cleveland.
C.—A. Flood.
$——

Hyde, nr. Ellis. Two-story and basement frame.
O.—Mrs. A. Touhill.
A.—G. A. Voelkel.
C.—J. H. McKay.
$6,000.

Guerrero, x Twentieth and Twenty-first. Two-story and basement frame.
O.—A. P. Van Duzen.
A.—H. C. Macy.
C.—G. R. Lang.
$6,500.

Scott, x Geary and O'Farrell. Two-story and basement frame.
O.—Mrs. Maesson.
A.—George E. Voelkel.
C.—W. Pluns.
$4,000.

Pacific, x Pierce and Steiner. Two-story and basement frame.
O.—C. Page.
A.—W. F. Smith.
C.—J. Geary.
$7,000.

Jackson, nr. Buchanan. Two-story and basement, frame.
O.—J. Gutte.
A.—Kenitzer & Raun.
C.—R. Brotherton.
$11,500.

Hyde, nr. Clay. Two-story and basement frame.
O.—W. F. Jones.
A.—Percy & Hamilton.
C.—A. Jackson.
$5,500.

Washington, cor. Larkin. Alterations.
O.—P. F. Fisher.
A.—H. D. Mitchell.
C.—R. McCann.
$4,000.

Branman Place, x Clay and Washington. Four-story brick.
O.—Chinese Co.
A.—W. H. Bayless.
C.—J. Smith.
$6,700.

Sixteenth and Dolores. Interior finish.
O.—St. Francis Church.
A.—Huerne & Everett.
C.—J. E. Massey.
$5,260.

Twenty-second, nr. Fair Oaks. Two-story frame.
O.—R. Blair.
A.—H. T. Bestor.
C.—J. McCann.
$6,000.

Franklin, cor. McAllister. Alterations to building. Three two-story frame.
O.—B. Windhaus.
A.—H. Geilfuss.
C.—B. Dryer.
$13,200.

McAllister, x. Franklin and Gough. Three two-story brick buildings. Two-story stable.
O.—H. Nieman.
A.—H. Geilfuss.
C.—F. Weineohl.
$12,400.

Sutter, x. Hyde and Larkin. Two-story frame.
O.—Schneider & Bartonnel.
A.—Mooser.
C.—F. Klatt.
$9,000.

Calvary Cemetery. Vault.
O.—Camere.
A.—Mooser.
C.—Paltenghi.
$4,000.

Stockton, nr. Market. Alterations.
O.—P. Dorcy.
A.—Curlett & Cuthbertson.
C.—J. McCann.
$2,000.

Sutter, x. Powell and Mason. Two-story frame.
O.—
A.—Pelton.
C.—F. W. Kern.
$5,000.

Ninth and Harrison. Three-story frame.
O.—M. Bohannan.
A.—H. D. Mitchell.
C.—R. McCann.
$10,500.

Francisco, cor. Dupont. Two-story frame.
O.—J. Blood.
C.—T. Mitchell.
$8,200.

Howard, nr. Fourth. Three-story frame.
O.—Dr. R. W. Murphy.
C.—Ingerson & Gore.
$7,500.

First, nr. Stevenson. Three-story and basement brick.
O.—Pacific Power Co.
A.—W. F. Smith.
C.—J. Cox.
$20,000.

Franklin, nr. Grove. One-story and basement frame.
O.—McAleer.
A.—Mooser.
C.—P. Laherty.
$1,600.

Folsom, nr. Twenty-fifth. Two-story frame.
O.—H. C. Somers.
C.—C. Smith.
$4,000.

Twenty-first, cor. Howard. Two two-story frame.
O.—P. Conolly.
A.—Mooser.
C.—C. Chisholm.
$12,000.

Twenty-first, nr. Folsom. Two-story frame.
O.—G. Raabe.
A.—Geilfuss.
C.—H. Doyle.
$4,500.

Octavia, cor. Page. Three two-story frame.
O.—J. Dunn.
C.—J. Dunn.
$8,500.

Sacramento, near Scott One-story and basement frame.
O.—J. Duncan.
C.—C. S. Waterbury.
$2,600.

Leavenworth, cor. O'Farrell. One-story frame.
O.—G. R. Monroe.
$1,000.

Market, nr. Fourth. One-story brick.
O.—H. G. Fiske.
A.—P. J. O'Connor.
C.—P. Treadwell.
$1,000.

Devisadero, near Sacramento. Additions.
O.—J. O. Van Bergen.
C.—J. P. Shepherd.
$2,000.

Bush, cor. Broderick. Repairs.
O.—F. Maxim.
A.—Curtis & Bennett.
C.—R. P. Sanches.
$2,000.

Howard, nr. Third. Three-story frame.
O.—W. Sharon.
C.—S. M. Hills.
$15,000.

Twenty-fourth, cor. Potrero Avenue. Alterations.
O. and B.—T. F. Mitchell.
$2,500.

Capp, nr. Nineteenth. Two-story frame.
O.—J. C. Lane.
C.—Klein & Moote.
$3,500.

Miss'on, nr. Nineteenth. Two-story frame.
O.—J. P. Burns.
A.—Geilfuss.
C.—P. J. Smith.
$2,500.

Eugenia, near Mission. One-story and basement frame.
O.—Healy.
C.—N. C. Post.
$1,300.

Fifteenth, nr. Sanches. Two-story frame.
O.—Mrs. McQuaid.
C.—R. Grant.
$2,200.

Haight, near Webster. Two-story frame.
O.—R. Sutherland.
C.—C. L. Jones.
$4,500.

Mission, near Second. Improvements.
O.—E. Boesch.
A.—Huerne & Everett.
C.—C. P. Moore.
$8,000.

Fourteenth, near Folsom. Repairs.
O.—Hibernia Bank.
A.—Huerne & Everett.
C.—F. Buckley.
$2,000.

Verona Place, nr. Union. Three story frame.
O.—M. Biggi.
A.—Bayless.
C.—G. Rocco.
$2,250.

Mission, near Second. Alterations.
O.—De Martini
A.—Bayless.
C.—J. McCarthy.
$2,300.

Post, corner Dupont. Fitting up stores.
O.—Schoenwasser & Co.
A.—H. C. Macy.
C.—Hatfield & Rae.
$1,300.

Broadway, x. Taylor and Mason. One-story and basement frame.
O.—R. K. Nuttall.
A.—Pissiz.
C.—L. Viand.
$1,600.

Ninth, x. Howard and Mission. Three-story frame.
O.—Borella.
A.—Mooser.
$7,000.

Sutter, x. Webster and Fillmore. Additions.
O.—M. Spiro.
C.—J. Treadwell.
$800.

Sutter, near Scott. Three two-story frame.
O.—G. Edwards.
Day's work.

Castro, and Seventeenth. One-story frame.
O.—M. J. Stanly.
$1,000.

Dehon, nr. Sixteenth. One-story frame.
O. & B.—J. Grace.
$1,000.

Dehon, nr. Sixteenth. One-story frame.
O.—Miss Hannebury.
C.—J. Conlin.
$900.

Dehon, x. Sixteenth and Seventeenth.
One-story frame.
O.—Mrs. E. Campbell.
C.—St. John.
$950.

Second Avenue, nr. Fifteenth. One-story frame.
O.—McMarthy.
$700.

Eighteenth, nr. Sanchez. One-story frame.
O. & B.—P. Broderick.
$900.

Douglass, nr. Eighteenth. One-story frame.
O.—G. Repetto.
$800.

Dun an, nr. Church. One-story frame.
O.—Mr. Hughes.
C.—J. Nelson.
$850.

Howard, x. Twenty-fifth and Twenty-sixth. One-story frame.
O.—J. Wagner.
C.—R. Doyle.
$1,700.

Folsom, near Twenty-second. One-story frame.
O.—G. Kidd.
$500.

Valencia, x. Twenty-first and Twenty-second. Additions.
O.—J. C. Gouldin.
$2,000.

Twenty-first, nr. Valencia. One-story frame.
O.—M. Plummer.
C.—J. Cunningham.
$1,500.

Valencia, x. Twenty-third and Twenty-fourth. One-story and basement frame.
O.—W. Tillman.
C.—Kincaid & Baldwin.
$2,800.

Harrison, nr. Twentieth. One-story frame.
O.—A. William.
C.—O. E. White.
$1,250.

Harrison, nr. Twentieth. One-story frame.
O.—S. Roth.
$1,300.

Treat Avenue, corner Twenty-first. Two-story frame.
O. & B.—J. Journey.
$1,750.

Mission and Fifth. Improvements.
O.—P. Donahue.
A.—T. J. Welsh.
C.—W. H. Milliken.
$8,750.

Calvary Cemetery. Brick vault.
O.—Mrs. J. Callaghan.
A.—T. J. Welsh.
C.—P. O'Sullivan.
$4,000.

Langton Street, x. Bryant and Brannan. Frame dwelling.
O.—Donigan.
A.—T. J. Welsh.
C.—Ingerson & Gore.
$2,000.

Powell, near Pacific. Repairs.
O.—McCord.
A.—T. J. Welsh.
C.—Higgins.
$300.

Haight, cor. Octavia. Six two-story frame.
O.—T. R. Bergen.
A.—Newsom & Gash.
C.—Knight & Littlefield.
$20,000 (about).

Capp and Twenty-third. Alterations.
O.—N. C. Parrish.
C.—R. Bergfeld.
$1,500.

Church and Twenty-eighth. Alterations.
O.—J. Wohlers.
C.—R. Bergfeld.

ALAMEDA.

Faskings Hotel. Alterations.
O.—Union Bank.
C.—A. C. Gilbert & Co.
$1,500.

Central Avenue, corner Willow. Two-story frame.
O.—Lunt.
C.—A. C. Gilbert & Co.
$6,000.

Regent Street, near Santa Clara Avenue. One-story and basement.
O.—Ceo. Carlisle.
A.—Schmidt & Havens.
C.—J. C. Jamieson.
$3,500.

Park Avenue, near San Jose Avenue. One-story frame.
O.—Mrs. Karras.
C.—Gilbert & Co.
$2,200.

Central Avenue, near Willow. Two-story frame.
O.—C. S. Peck.
C.—Gilbert & Co.
$6,000.

Central Avenue, near Willow. Two one-story frame.
O.—W. E. Sweet.
C.—A. C. Gilbert & Co.
$6,000.

Central Avenue, near Willow. Two-story frame.
O.—A. C. Gilbert.
C.—A. C. Gilbert & Co.
$6,000.

Central Avenue, corner Benton. One-story frame.
O.—Baxter.
C.—Wasson & Pattiani.
$2,600.

Central Avenue, near Willow. Two-story frame.
O.—C. C. Kinsey.
C.—Gilbert & Co.
$4,500.

Chestnut, near Encinal Avenue. One-story frame.
O.—G. L. Lewis.
C.—Gilbert & Co.
$1,500.

Pacific Avenue, x. Oak and Park. Two-story frame.
O.—Mrs. C. Stahl.
A.—W. Patton.
C.—W. Vogt.
$3,000.

OAKLAND.

William, x. Wood and Willow. One-story and basement frame.
O.—Mrs. J. Taylor.
C.—Graves & Wilcox.
$1,500.

Seventh, cor. Union. One-story and basement frame.
O.—J. Curtis.
C.—F. Crinion.
$1,500.

Market, cor. First. Two and one-half story frame.
O.—McIntyre, Abbey & Co.
Days' work.
$10,000.

Myrtle, x. First and Second. One-story frame.
O.—G. Gordon.
C.—M. Laursen.
$800.

Harrison, nr. Fourteenth. Improvements.
O.—A. C. Henry.
A.—Matthews & Son.
$1,500.

Franklin, x. Fourteenth and Fifteenth. Three one-story frame.
O.—C. Reed.
C.—Cameron & McDonald.
$6,000.

Bush and Tenth.
O.—G. H. Gray.
A.—Curlett & Cuthbertson.
Day's work.
$3,300.

Third, corner Henry. Two one-story frame.
O.—E. T. Batselder.
C.—Veitch & Knowles.
$1,500.

Market, nr. Seventh. Two-story frame.
O.—G. M. Fisher.
C.—Cameron & McDonald.
$2,500.

Ninth, x. Harrison and Ellis. Additions.
O.—J. Telfar.
$600.

Cook, nr. Fourteenth. Two-story and basement frame.
O.—A. W. Root.
C.—S. F. Morrill.
$9,000.

Harrison, near Fifteenth. Two-story frame.
O.—V. H. Metcalfe.
A.—Matthews & Son.
C.—W. A. Knowles.
$3,000.

Harrison, nr. Fourteenth. Two two-story frame.
O.—Dr. L. A. Birdsall.
C.—W. H. Weilbye.
$6,000.

Twenty-sixth x. Market and San Pablo. Additions.
O.—Mrs. McLaughlin.
C.—F. Smith.
$400.

SAN JOSE.

Alameda, cor. Cinnabar. One-story and basement.
O.—Fredericksburg Brewery.
A.—Theo. Lenzen.
C.—Jacob Lenzen.
$10,000.

Near Los Gatos. One-story frame.
O.—W. Wilkinson.
A.—Theo. Lenzen.
C.—G. E. McDoughall.
$2,500.

Third, near Santa Clara. One-story frame.
O.—Chas. Otter.
A.—Theo. Lenzen.
C.—D. M. Green.
$2,500.

Third, near Julia. Two-story frame.
O.—A. Schoenheit.
C.—T. Livingstone.
$5,500.

SAN RAFAEL.

One-story and basement brick.
O.—C. Grosfean.
A.—Hatherton.
C.—I. Marshall, mason.
J. Shaver, carpenter.
$5,000.

Two-story frame.
O.—H. Wilkins.
C.—J. Peterson.
$2,500.

2 one-story frame.
O.—G. Cheda.
A.—Southwick.
C.—O'Leary.
$2,000.

BERKELEY.

University Ave., near Fourth. One-story frame.
O.—Guadalupe Mining Co.
$4,000.

Third. One-story frame.
O.—Mendocino Lumber Co.
$600.

Second. Two-story frame.
O.—Heywood Bros.
C.—C. R. Lord.
$2,000.

Shattuck Ave. One-story frame.
Days' work.
$2,500.

MISCELLANEOUS.

Sacramento. Capitol Grounds. Industrial Building.
A.—Burrell.
C.—McKillican.
$78,868.

Lakeport. School Building.
C.—J. H. Lyon.
$5,890.

San Leandro. One-story frame.
O.—Colin M. Boyd.
C.—Gilbert & Co.
$2,500.

Riverside. Two-story frame.
O.—J. D. Clapp.
C.—Seymour & Stevens.
$2,000.

One-story frame.
O.—J. W. Bryant.
C.—A. W. Boggs.
$3,250.

One-story frame.
O.—Miss A. L. Brady.
C.—J. C. Woodward.
$1,500.

Napa. Near town. Two-story frame.
O.—Mr. Diedrich.
A.—Curtis & Bennett.
Days' work.

Menlo Park. Alterations and additions.
O.—C. Holbrook.
A.—H. C. Macy.
C.—J. MacBain.
$8,000.

Elmira. Cannon's Station, Two-story frame.
O.—T. Melbourne.
A.—W. C. Copeland.
Days' work.
$6,000.

Half Moon Bay. Catholic Church.
A.—T. J. Welsh.
C.—J. Fleming.
$6,000.

Walla Walla. Two-story frame.
O.—H. H. Hungate.
A.—Allen & Whittemore.
Days' work.
$12,000.

Hospital for Sisters of Charity.
A.—Allen & Whittemore.
C.—W. Glasford.
$18,500.

Additions to St. Mary's Academy.
A.—Allen & Whittemore.
C.—Henderson & Jones, masons.
W. Glasford, carpenter.
$8,500.

Two-story building.
A.—Allen & Whittemore.
C.—Same as above job.
$25,000.

Spokane Falls. Two-story and base brick.
A.—Allen & Whittemore.
$30,000.

Redwood City. Two-story brick.
O.—W. Wahl.
A.—G. Miller.
C.—P. Crowley.
$20,000.

MARKET REPORTS.

The price of lumber has again been advanced. Quotations below are taken from the new schedule.

	LUMBER—*Pine.*		
Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50 " "		23 50
"	51 to 60 " "		24 50
"	61 to 70 " "		26 50
"	71 to 80 " "		28 50
Refuse Rough			18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	33 50
" 4 " and under, and 1¼x4 and 1¼x6		"	40 00
Flooring and Stepping		"	40 00
Rough Clear for Flooring, $1 less than above rates.			
Second Quality Flooring and Stepping		per M feet	28 50
Ship Plank, Rough		"	28 50
" Planed 1 side		"	32 50
" " 2 sides		"	35 00
Deck Plank, Rough		"	33 50
" Dressed		"	37 50
Laths		per M	3 75
Wool Slate		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17 50
	Redwood.		
Rough Merchantable		per M feet	$22 50
" Refuse		"	18 50
Surface No. 1		"	40 00
" 1x6		"	37 50
No. 2		"	27 50
Rustic, No. 1, 1x8		"	37 50
" No. 1, 1x10		"	40 00
" No. 2,		"	35 00
" Under 10 feet		"	35 00
T. & G., 1¼x4 and 1¼x6		"	40 00
" 6 in. 12 ft. and over		"	37 50
" " 7 to 11 feet		"	32 50
" " under 7 feet		"	30 00
" " No. 2		"	30 00
T. & G., Beaded, 12 feet and over		"	40 00
" " 7 to 11 feet		"	32 50
" " under 7 feet		"	30 00
Half-inch Surface		"	32 50
Pickets, fancy		"	30 00
" Rough, Pointed		"	30 00
" " Square		"	17 50
Siding, ½ inch		per M	27 50
Shingles		"	2 50
Battens, ½ inch, lineal feet		"	1c
	NAILS.		
10 to 60 pennies, are quoted at			$3 90
8 " "			4 15
6 " "			4 40
5 and 4 " "			4 65
4 and 5 " brad-heads at			5 15
6 " "			5 40
8 " "			5 75

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Market St. West of Sixth St.

THE day is not far distant when Market Street, west of Sixth Street, will become "all alive" with building improvements. The feeling hitherto has been that the time had not arrived for the erection of substantial brick edifices beyond Sixth Street—that trade had not made a channel in that direction, and that money expended in the erection of buildings would be unremunerative, until trade and traffic forced their way beyond present limits on the line of that great thoroughfare. This has been a mistake on the part of property owners, and the wonder is that men of business intelligence, owning "city hall lots" and others in the neighborhood, have not been able to discover their error. The same state of feeling existed a few years ago, in reference to the portion of the same street between Third and Fourth Streets. When Bancroft & Co. first contemplated removal to their present location, they hesitated, fearing that they would be placing themselves beyond the limits of trade. But the sequel demonstrates the fact that they acted wisely, for instead of getting beyond business circles, their trade and custom followed them, and the movement had the effect of inducing others to locate in the same block, and, in a very short space of time, the entire business character of the neighborhood was changed; and to-day it stands unexcelled by any other block in the city of San Francisco. While the owners of the property in question have thus acted, many of those owning property on less promising business streets, have exercised a greater degree of business tact, in making improvements and *drawing trade* in their directions. On the lines of many of the "side" and "off" streets, store improvements have been made, which have rented at greater or lesser rentals, and if some sacrifice had to be endured for a time, there has been a daily gain in business permanency, with continued increase in the value and prospects of such property; for trade once attracted to any neighborhood generally continues, so long as dealers offer inducements to customs. Numerous cases might be cited in illustration of this view of the case, and we have no hesitancy in saying that if the owners of lots beyond Sixth, extending to Ninth Street, had, years ago, improved their property with a fine class of buildings, they would now all be occupied; and instead of "sand lots" and vacant premises, more valuable to the city and county as a source of tax revenue for the time being, than to their owners, a successful line of stores might be now flourishing, with a flow of business prosperity along the whole line. To have done this five years ago, the usual sacrifice of interest on the investment might have been experienced for a time, but in return for such loss, the property in question would have gained the advantage of an established business footing; whereas, as the matter now stands, a large sum has been added to the first cost of the property, in the way of years of interest and taxes, which must ever hereafter be included in the total cost, up to the time of improvement. And as far as such sacrifice is concerned, it will have to be submitted to, whenever improvements are made, for it seldom happens that trade is transferred with a rush to any new locality. It always requires time, except in the old established business centers. In this view of the case, the sooner the owners of the property in question move in the matter, the better for their own interests. The new Odd Fellows Hall, Market and Seventh Streets, will contain stores on first floor, which are likely to be occupied by enterprising firms, who, as pioneers, will establish that point as the nucleus of business enterprise. And we are well satisfied that if there is a general move made in buildings on the City Hall lots, a large amount of trade will be drawn that way, and, inside of two or three years, the whole neighborhood be alive with trade activities. If nothing in the way of improvements is done until the positive demands of business open the way, there will be a long wait, and a large additional sum in taxes and interest be added to present—total cost of the property in question. Meanwhile, owners of property on the streets opening into Market Street—O'Farrell, Eddy, Ellis, Stockton, Powell, and Mason Streets north, Mission, Sixth, Fifth Streets south, Larkin and Ninth Streets west, will continue to provide store and other building facilities, virtually encircling the locality in question, and securing trade which would long since have been drawn to and centered in the locality under notice, had there been, or were there at the present time, rows of store on Market Street, between Sixth and Ninth Streets.

The street car facilities will not for many years be better than they are at present; and with the exception of a new cross line, running north through Jones Street, as has been talked of, there seems to be no necessity in any direction for additional lines. Market, Valencia, Haight, and Folsom Street lines passing directly through and along the blocks named, with Ninth and Larkin Street lines at the western boundary, McAllister Street line at the north, Mission Street line within one block, and the Sixth and Taylor Street line on the east, with complete transit facilities from

all parts of the lower section of the city, and from Oakland, Alameda, and by way of the numerous lines concentrating at the ferry slips—it appears to us that if the owners of the property in question would take a broader view of the possibilities surrounding their investments, they would forthwith proceed with the erection of first-class buildings, and enter into a vigorous competition for the trade advantages which are now distributing and establishing themselves in so many inferior localities.

No Decision Yet—Lien Law.

A DECISION by the Supreme Court, construing and defining the legal force and effect of the present Lien Law of this State, has been anxiously looked for by thousands of interested parties for six months or more. A degree of uncertainty surrounds all building interests, owing to the unsettled features of the law as it stands recorded upon the statute books. The new dress in which the law is clothed by the new Constitution, creates an uncertainty in the minds of the legal fraternity, and the opinions advanced by lawyers are entirely speculative. Some holding that the law as written is effective, while others maintain that no law which contravenes,—practically nullifies the agreements and obligations of contracts,—can be enforced. The issue involved in the case now before the supreme tribunal of the State, covers the whole ground, and the decision when rendered will be one of the most important that has been considered and decided since the adoption of the new organic laws of the State; as it will establish the responsibilities of owners of buildings and construction improvements generally, and lay the foundation upon which contracts, bonds, etc., must be constructed, and settle the vexed question whether owners can be held for deficiency amounts beyond the sum of contract. Hitherto the decisions upon the same issues under the old Constitution, have all held that the terms and agreements of contracts were conclusive, and that owners could not be held for any deficit that might occur from any cause. What the decision will be in the case now pending cannot be known until the decision now so anxiously waited for and desired is made known.

The Garland Trap.

MUCH has been said and written in regard to the efficacy of traps in preventing sewer gas from permeating our dwellings. But the climax of perfection was not reached until the time of the introduction of the Garland Trap. In fact his name is being used as a house word by many of our citizens; for after performing their necessary ablutions, they point under the washstand and say, "Old Garland is there," meaning that a perfect sewer gas protector by that name prevents the effluvium of the noxious gas from coming into the room. Safety and simplicity are the essential characteristics of the Garland Sewer Gas Trap.

THE *S F Chronicle* of July 1st, in its article, "City Laws," "some figures concerning building operations for the past six months," etc., says: "The *most reliable* source as to the number of buildings now going to completion, is, perhaps the books of the Spring Valley Water Works"—which for the past six months gives 391 as the total of buildings with which the pipes of the company have been connected. Then follows "Another authority [meaning the CALIFORNIA ARCHITECT AND BUILDING NEWS] which claims to have taken much pains in compiling valuable statistics, gives the following figures:" this is followed by our semi-annual statement, showing the number, as reported in this journal, to be 424, or 33 more than the number given in Spring Valley's statements. It then adds, to qualify the discrepancy in the two totals, that the reports of this journal "include of course, many which are not supplied with Spring Valley water."

We refer to the article mentioned, because it is incorrect in some respects, and not editorially clever in others. *First*, it is not true that the "Spring Valley Water Works' books are the most reliable source," and the *Chronicle* so admits when it says the reports in this journal "includes many which are not supplied with water," which is a fact. A considerable number of buildings are reported by us, into which Spring Valley water never enters, and the books of that company cannot therefore ever be a "reliable source" in reference to the number of buildings erected in this city. The water company's books however serve to sustain the practically, unimpeachibility of the reports of this journal, and it would have been no more nor less than fair and friendly, had the *Chronicle* acknowledged this fact, which must have been clearly evident to the writer of the article referred to.

Secondly, it was not kind nor generous on the part of our contemporary to say "Another authority which claims to have taken much pains" etc., when it would have been just as easy to have mentioned the name of this journal, as that of the Spring Valley Water Works, particularly as the figures given, and the admission made by the *Chronicle* show that our statements were more nearly correct than the "reliable source" credited.

Again, our contemporary has too often availed itself of the information contained in our monthly reports of building intelligence to render the language—"another authority which *claims*" etc.—justifiable. We *claim* nothing that is not ours by right of actual fact, and as far as our reports of building operations are concerned they are so far recognized and admitted to be correct and reliable, as to be found from time to time copied in the columns of the *Chronicle*, *Call*, *Alta*, *Bulletin*, *Post*, and other journals generally with due credit, but not always, and one thing is certain, that if those reports were not, or did not appear to be reliable, we should have heard from some of the "live journals" named, who are too keen in their pursuit of accurate information, to allow themselves to be misled by doubtful statements from unreliable sources. The fact that our reports have included all that appears on the books of the Spring Valley Water Works, with thirty-three additional, certainly entitles us to preferred credit for correctness. But as we have heretofore stated in our yearly summaries, it is altogether likely that, with all the care exercised, we may miss some, as some owners very unwisely prosecute the erection of buildings without architectural supervision, and the fact of such erections are only ascertained by the system of personal canvass of the city made by our reporters each month. Admitting this to be so, and taking into account the possibilities in this connection, the result would increase the difference in totals, as mentioned in this article, to perhaps twice the figure named, still showing, however, the nearer accuracy of our reports.

Pay for It, If You Want to Read It.

WHILE we are reaping a pleasing reward for the time, labor, and money expended in the publication of this journal, there is room for a large increase in the number of subscribers. There should be not less than ten thousand in California and the Pacific States alone. It is the only journal published west of the Rocky Mountains, in the building, sanitary, plumbing, and other similar interests, and not a single owner of real estate, nor a carpenter, or mechanic of any class, but should subscribe. Each monthly issue contains information and matter worth more than a whole year's subscription, and the high standing reached places it among the very best of class journals published. The fact that its original matter is reproduced in scores of journals of all classes, attests the value of its monthly contents, and the innumerable complimentary notices received, adds testimony to the fact that it is a recognized, valuable journal; and, as such, it should receive universal support. Those who have noticed its progress must have discovered the advance made in its every department toward that excellence promised in its earlier numbers. It has required many thousands of dollars and an immense amount of hard labor and sacrifice to bring about present results, and we certainly feel that we have a claim upon those in whose interest it is published, for financial aid and support. The fact that hundreds obtain access to its columns through the kindness of those who pay for it, is by no means creditable to those who practice "sponging," rather than pay the small sum of two dollars per annum, and receive it honorably. The position of "dead head" is by no means a nice one, and we trust that all those who have relied upon seeing it in "somebody else' office," or borrow it from subscribers, and all others, will send in their names and subscription amounts. It is a costly publication and should be paid for by those who read it.

IT is sagaciously hinted that to determine the value of building stone a ramble among the tombs is wise. In far fewer years than most people imagine, monuments decay.

New York Street Architecture.

A. CURTIS BOND.

THE COMPOSITE.

A RECENT writer in the *Pall Mall Gazette* claimed that brick when used in building exteriors was a subterfuge, a substitute for something more substantial and more in consonance with the weight of a house. Whether there is any force in this argument, or, as is more probable, whether it is merely one of the idiosyncrasies of an individual, brick has certainly taken an undeniable hold of the New York taste. Brown stone for a time, and a considerable time at that, was "the thing," and brick was considered too awfully ordinary; but people seemed to have tired of the once expressionless fronts of our aristocratic dwellings and have turned to brick as a relief, until finally it has become a fashion—the aim of every man and thing, for when it becomes fashionable its reputation and its fortune are secured, temporarily at least.

In most instances this adoption of brick has led to the construction of buildings suited to that sort of material, and the Queen Anne style has naturally been much in favor, for in this, probably of all others, the brick shows its decorative qualities to the very best advantage.

Red brick is warm in appearance, an excellent offset to our variable (and, alas, too often invariable) weather; it is domestic, inviting, home like; a house looks more cheerful, more social, cosier in brick than in anything else qualified for use in the city: it gives one the impression that the people who live behind it are nice, quiet, hospitable folks (this impression is often an erroneous one, of course, but it creates a pleasant feeling for the moment), people that can be approached and talked to and invited over to the house to supper. While the great staring, blank stone wall gives a chilling sort of an idea as to those whom it harbors, throws out the suggestion that they are of the "set" and don't care particularly about increasing their circle; at any rate, have no desire to take you into it and then you shrug your shoulders and stroll out to the park and have a smoke, and your thoughts run in an uncomfortable channel, and you make up your mind that "the more you see of men the more you like dogs," or something of that character. This is my exaggerated opinion of brown stone, and I imagine others are beginning to entertain the same thought, for, as I have said, it is being displaced.

Instead of being a substitute, as is claimed by the writer whom I have just referred to, it seems to me that brick may more rationally be considered the fundamental building substance, the constructive element proper alike of the primitive and the modern house. As it is used and colored now, it may take on the appearance of terra cotta, and the fronts of some of our new flats, for example, are really unique in effect and frequently so in detail; the terra cotta panels and the apparently terra cotta ground word make the façade more than ordinarily showy, and, what is even better, permanent and lasting, for brick, among its other good qualities, possesses durability.

* * * * * *

In some places, antique cities and ancient villages one finds in wandering over Europe, they use tiles for the front of buildings; good, clear, shining tiles, tiles that are never dirty, for every shower washes them off and they look fresh and new as if they were just taken from the shop; no rust, no green deposit, no fading yellow, nothing to the end of time (for that particular building), but tiles, blue, yel-

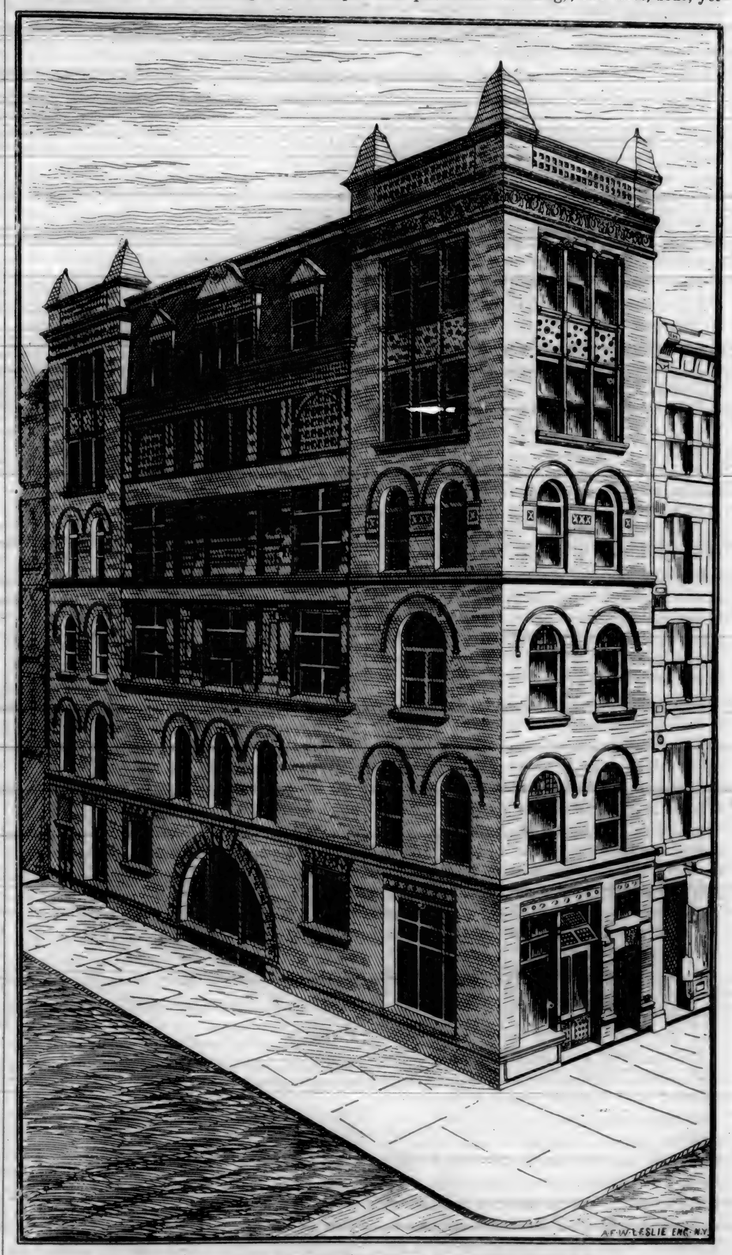


PLATE I.—NEW YORK STREET ARCHITECTURE.
Prepared for this Journal by A. Curtis Bond.

low, red, anything you please, first and last the same color, the same shade, the same tile. What a contrast these semi-civilized structures show to our streets! Painted bricks with the point scaling off, veneered brown stone and the veneer failing to adhere to its foundation, scagliola that looks moth eaten, stucco in a demoralized condition, and freestone with arabesques and scrolls worked upon it in mold. Why won't some courageous builder free himself from these horrible materials and try the effect of a tile front? It would require courage, perhaps, but I have an idea it would reward the attempt to introduce it, and the result, if adopted, would certainly be to vastly improve the appearance of our streets and detract somewhat from the chronic melancholy of our architectural countenances.

* * * * * *

As I urged the claims of brick and found in it all the apparent essential qualities of a constructive material, it would hardly do to desert it entirely in favor of tiles as my preceding paragraph would suggest; so I must own to a certain allegiance to glazed bricks whose history has had particular attractions for me ever since I saw the old market church in the city of Hanover, which is said to be the oldest example of glazed brick work in existence. It is said that prior to the fourteenth century the glazed brick was but little known, or at any rate was very little used; early in the fourteenth century, however, its employment became more general, and from that time to a comparatively recent day, it has been more or less an accessory in architecture. A number of spires built from glazed bricks are found through Germany, and one who has never seen the effect of these glistening, brilliant structures can hardly participate in my enthusiasm in advancing them.

"The durability of glazed bricks does not depend upon their color, but varies according to the composition of the glazing substance. Yet, as the composition of the glaze reacts upon the color, it has been noticed that the darker kinds are, as a rule, better preserved. In the composition of the glazing substance each producer varies the proportion of the component parts according to the quality of brick to which it is to be applied, and according to the method of burning which he employs." These words are quoted from the report of the Hanover Architects' Society.

I wish these few sentences of mine might be productive of some good, and tiles or glaze be adopted in the place of paint and stucco.

* * * * * *

The composite or eclectic, or whatever name the modern architect chooses to give it, has attained, and appears likely to retain, an unmistakable position among builders. Originally it gave the architect an opportunity for displaying his diversity of knowledge among the many differing and various styles that it was allowed, might be combined under this one general title; but as it has increased in popularity there has been given it a form somewhat distinctive to itself, and it may ultimately be ranked among the "orders."

The illustration accompanying our letter is an example of what may be termed New York Composite, and belonging to the most recent improvement of that character we can very safely accept it as embracing the latest and newest phases of the style. The building shown is of brick, with terra cotta trimmings, and the large square space on the side between the towers is painted a steel-blue, making a most peculiar and unusual, though by no means unpleasant, effect. The large windows in the upper part of the towers admit a fine light to two floors of architects' offices; the oval topped panels between the fifth story windows help to give variety to the general appearance, and in that way are most effective; the slabs between the windows of the third floor bear brass plates inscribed with the name of the building, the date of laying the corner-stone, and the names of the architects.

The building is known as "The Hartshorne," having been erected by Stewart Hartshorne, who has made himself more or less famous, locally, by the invention of a mechanical shade roller, that has probably brought about his ears more law suits and more litigation than almost any other one invention of any importance in the city. But it falls to the good fortune of some men to have a boom in this sort of free advertising that is no small element in their success. Those persons who are fond of tracing everything to its origin, tell us that the composite made up or composed of numerous other styles, was brought into being by the Romans when they were either originating or destroying everything on earth. They devised the form in order to show their dominion over all nations, most of these nations making use of one or the other of the component "orders," and thus being represented through its distinctive phase of architecture. The Romans heaped one above another, Tuscan, Doric, Ionic, Corinthian, until they completed a magnificent structure, and the composite though in some respects a nondescript, was, in others, the most beautiful of exteriors. Le Clerc writing of this style says: "It may with singular propriety be used wherever elegance and magnificence are to be united, but more especially in buildings designed to commemorate great and signal events, or to celebrate the corubine achievements of conquerors and legislators, inasmuch as the capitals or other ornaments may be composed of emblems and of allegorical representations."

Modern architects diverge widely from this model and have given us something more in consonance with the times.

AT a recent meeting of the Maryland State Board of Health, it was decided that hereafter sanitary conventions or meetings should be held at least once a year, under the auspices of the board, in different parts of the State, with a view to promote a general interest in sanitary science, the first meeting to be held in Baltimore on the fourth Tuesday in October, 1883.—*Sanitary Engineer.*

The Mechanics' Fair for 1883.

THE preparation now in progress by the managers gives assurance that the exhibition which will be opened in September next will equal if not surpass that of any preceding year. And we presume that the good judgment and business perception of all manufacturers, inventors, artists, farmers, merchants, producers and dealers in goods, wares, and merchandise of every class and kind, will lead them to see and appreciate the value and advantages of the opportunity thus offered to expose and popularize that which each may have for sale or public patronage; and this appreciation should stimulate a general emulation in display, and so render the exposition, as it deserves to be, a splendid success. And we hope that exhibitors will amend the rule heretofore practiced, and have their spaces filled and fully arranged upon the opening night. The neglects and tardiness which has heretofore prevailed, of quite a number holding back, and not completing their exhibits for several days after the opening, has materially lessened the interest of the public in visiting the fair during the first week. This should not be so, and as very many of our Eastern visitors are likely to remain among us until after the opening, we sincerely hope that the display upon the opening night will be essentially as grand in every particular as that of any other evening during the continuance of the fair.

San Francisco Chapter of Architects.

THE regular meeting of the Chapter will be held the first Friday in August, at which it is earnestly desired that every member shall be present, as the nomination of officers for the ensuing year will be the special business of the evening.

The beneficial influences of the Chapter upon the profession, in an individual and general sense, is an admitted fact, and this fact should stimulate to earnest effort on the part of every member, to assist in sustaining and increasing Chapter interests, and making it a power for good in the architectural profession. And the Chapter vacation season expiring with August 3d, it is hoped that every member will be present.

PRACTICAL CARPENTRY.

PRICE $1.00.

A guide to the correct working and laying out of all kinds of Carpenters and Joiners' work. Solutions of the various problems in Hip roofs, Gothic work, Centering, Splayed work, Joints, Hinging, Dovetailing, Mitering, Timber Splicing, Hoppers, Skylights, Raking mouldings, etc. This work should be in the hands of every mechanic. One of the features to which this book will undoubtedly owe its success, is the absence of those numerous formulas which serve only to confuse the ideas of so many workmen. Everything is written in a clear, concise, and practical manner, and its utility is brought within the grasp of those workmen who have not had the benefit of a school education. We will send the above work to any address upon receipt of $1.00.

Pacific Grove, Monterey, vs. Carmel River.

THE INTRODUCTION OF THE WATERS OF THE CARMEL RIVER THROUGH PACIFIC GROVE AND TO THE HOTEL DEL MONTE.

NESTLED at the foot of verdure-clad hills facing the beautiful bay of the same name, lies the quaint and ancient town of Monterey. Its old adobe ruins suggests to the pleasure-seeker, visions of scenes in the tales of the Alhambra. One is struck with awe as he mounts the deep-cut steps to the tower of the Old Mission church, and gazes on the work of those who lived more than a century ago. We linger but a moment to gaze on the ruins of the fast decaying Convent, and mentally wish that some philanthropist would enclose them for protection against the wear and waste of time, that future generations may look upon the work of the founders of this western country and note the progress of architecture from the rude adobe to the magnificent capitol of our State, and other more modern constructions.

Leaving the quiet, dreamy old town of Monterey, "where every person seems satisfied with himself, apparently believing the world is completed—living on in the dreamy self-satisfied consciousness that the spirit of progress is at an end," the pleasure-seeker presses onward to the beautiful Pacific Grove, passing numerous points and things of historic, and present interest,—among them the window in the old adobe at which Mrs. General Fremont sat while writing her descriptive letter of California; the first brick edifice erected in the State; the solitary and semi-sacred cross which marks the spot upon which the reverend pioneer fathers first planted their feet on the shore of the bay of Monterey, bearing the legend, "June 3rd, 1770"; the old fort with its one solitary gun keeping sentinel only over the dead silence of the crumbling bastions; the adobe in which the early Legislators first met in council to deliberate upon and frame the organic and legislative laws of the State; the little cove where the fishermen rest from their daily labors, and on to the beautifully wooded lane leading to the Grove where thousands yearly meet to enjoy the comforts of a delightful sea-shore resort; over and through which the pure ocean breezes spread themselves, while weary ones rest in the shade of a thousand trees, and countless songsters warble forth sweet music from the branches of the cypress, pine, fir, and other varieties.

There are but few prettier sights to be seen than the beautiful view presented in the approach to the Grove. The drive-way is grand, straight as an arrow, even the branches being trimmed that nothing may mar its symmetrical beauty, it presents a scene that at once engages the attention of even the phlegmatical observer. One can well say that nature is not at variance with art, nor art with nature, they both being servants of his Providence. Art is the perfection of nature, and in the beautiful drive before us, as we look upward and see the blue sky beyond the gently swaying trees, we say "tis very sweet to one who has been long in city pent to look into the fair and open face of heaven—to breathe a prayer full in the smile of the blue firmament." Thus it was with us, and arriving at the entrance of the retreat—"far from the gay cities and the haunts of men," we involuntarily paused at the sight before us. Lanes of fantastic cottages, gayly trimmed tents, romping, galloping children, nurses toddling the little ones in their arms,—surely we are but dreaming, or else our imagination is dwelling on an old oft-told fairy tale.

We rambled around the grounds, keeping always in view the object of our journey, and admiring the almost perfect sanitary regulations and conveniences of this beautiful resort. We say ALMOST because there has been but one thing lacking to make this place resemble that described in the opening chapters of the Book of Holy Writ, and that essential is a lack of sufficient quantity of pure water.

But master minds had long been engaged planning a remedy for the only defect that nature had imposed upon this quiet resort. Twenty miles away flows the beautiful Carmel River. For ages past, it has poured its limped waters into the bosom of the grand old ocean; but to-day, its currents have been brought under subjection, and in the future the Grove, Monterey, and del Monte will be supplied by its pure water. This river has long been noted for the almost chemically pure properties of its water. It is fed by numerous living springs and flows nearly its whole length over rocky ground. It is our pleasant task to describe how this water is brought to the Grove as pure as when it leaves the Carmel River.

The point selected by the engineer for the construction of the mighty dam that is to hold in its embrace the element without which all animal and vegetable life would cease, is about twenty-five miles from Monterey. To the uninitiated, a more uninviting place could hardly have been selected. Great credit is due to the intuitive ability of the * engineer, by which at a glance he could see how each and every obstacle was to be met and overcome. Engineering difficulties that would have discouraged any one with less energy and skill, were so studied and handled that the work in contemplation seemed to be directed as were the pyramids of old.

From the dam in the river to the reservoir near the Grove, the water is conveyed in iron pipes. The first six miles, eighteen-inch wrought iron pipes are used. In places the bluffs are so steep that holes are drilled in the solid rock, into which are placed heavy iron brackets, and upon these are placed the large pipe above mentioned. A covering has been securely fastened over the pipes to protect them from falling rocks.

At the end of the distance named the pipes are changed in size to fifteen-inch boiler iron. This is maintained for a few miles, when it is again changed to a twelve-inch cast iron pipe, three-fourths of an inch thick, and for the rest of the way the pipes are of this size and thickness. Much of the ground passed over is very rocky and full of clefts, as if some great force of nature had exerted itself to sectionize the ground by a system of deep cavities or gorges, many of which are bridged over; and in passing some of these clefts the pipe assumes the shape almost of the letter V. In such cases, at the bottom of each a cock is placed that the pipes in case of necessity may be cleaned of sediment, a cock is also placed at the apex, for the purpose of affording escape to pent up air.

That the cast iron pipe may be free as possible from danger, a trench about three feet deep is first dug in which the pipes are placed. After the latter has been tested the trench will be filled and the dirt thoroughly tamped. Trees near the route of the pipe line that show evidences of decay, have or soon will be cut down. A tree falling across the pipes will not be apt to break them on account of the depth they are placed in the ground. The more serious difficulty lies in the fact that the roots of a tree in falling may be under the pipe and thus lift it out of its bed, perhaps breaking one or more joints As far as human ingenuity can do so, this has been guarded against.

Our engraving shows the point where the pipe reaches the reservoir. This is situated about one-half a mile above the main entrance to the grove. Plate No. 2 shows the character of the work done before the reservoir was constructed. The ground was covered with trees, and it was no small task to cut them all down, grub out their roots, and clear the ground of rubbish. It is and has been the main purpose of those having this work in charge, to preserve the purity of the water, and in order to do this, every particle of vegetable matter, roots, etc., have been removed from the ground covered by the water within the reservoir. All the top soil has also been removed, and our engraving shows a body of men shoveling this top soil into a large pile to be moved to the outer edge of the dam.

It will also be noticed that a deep trench runs across the site of the dam. This idea and its fulfillment is one of the engineering triumphs of the master in charge. This trench is from twelve to sixteen feet in depth, and extends down to hard pan the whole length of the ground covered by the water when the reservoir is full. It is about six feet in width. This is to be filled with a solid wall of clay well tamped down. While excavating the pipe line, a large mass of clay was met with, and it almost seemed as if Providence intended it for the use to which it is applied. The clay is first puddled and then the ditch is filled with it, while hundreds of rammers are making it an impenetrable wall against the encroachment of the water. As this wall is gradually built up, the soft dirt on the inside is taken off and placed on the outer edge of the dam.

When finished the dam will be one hundred

* L. D. Norton, Esq.

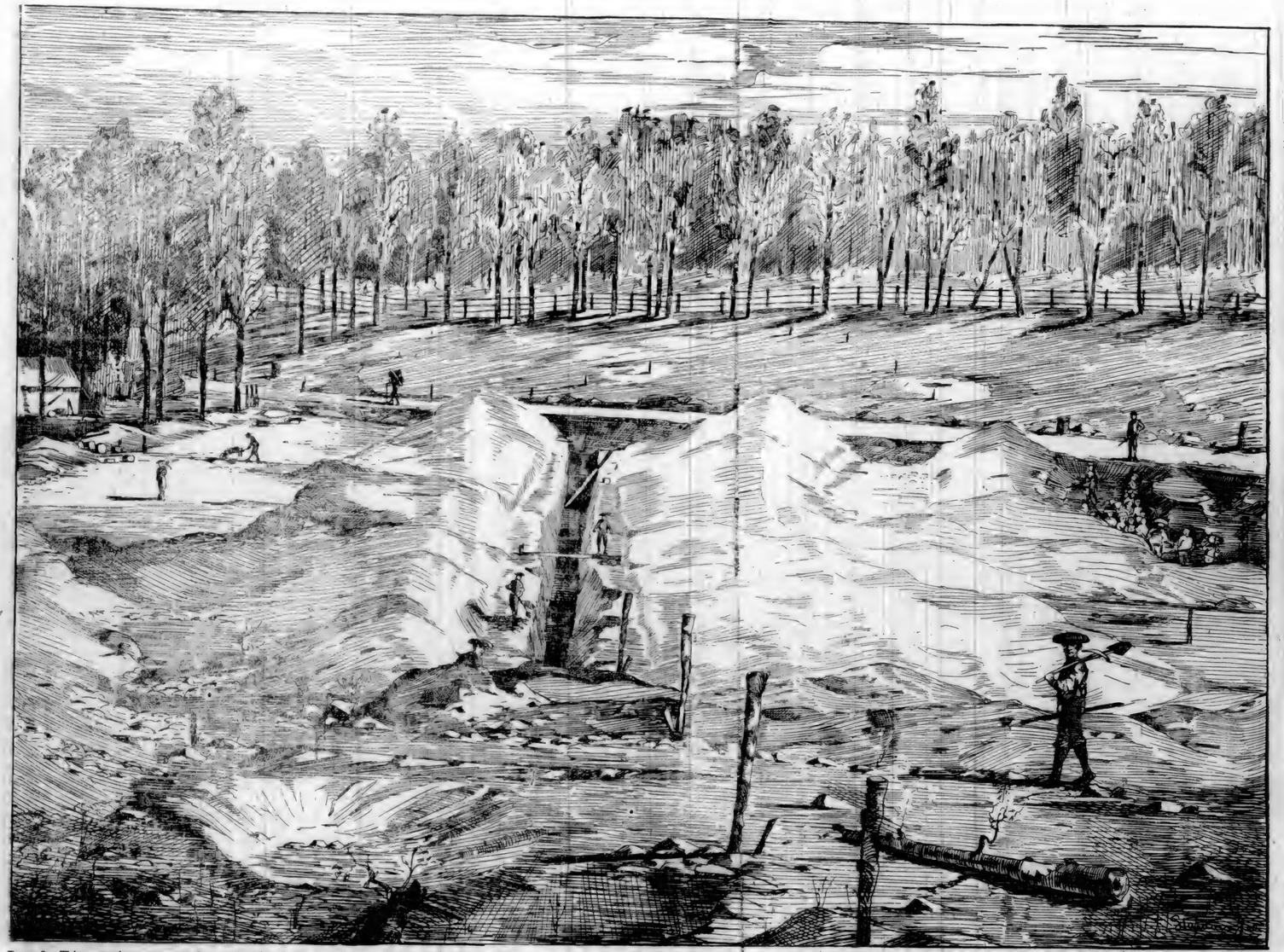


PLATE 2.—This engraving represents the construction of the new dam for the reservoir of the Pacific Grove water supply. The ditch shown is to run across the full length of the dam, and is to be filled with a solid wall of clay, as described on page 109.

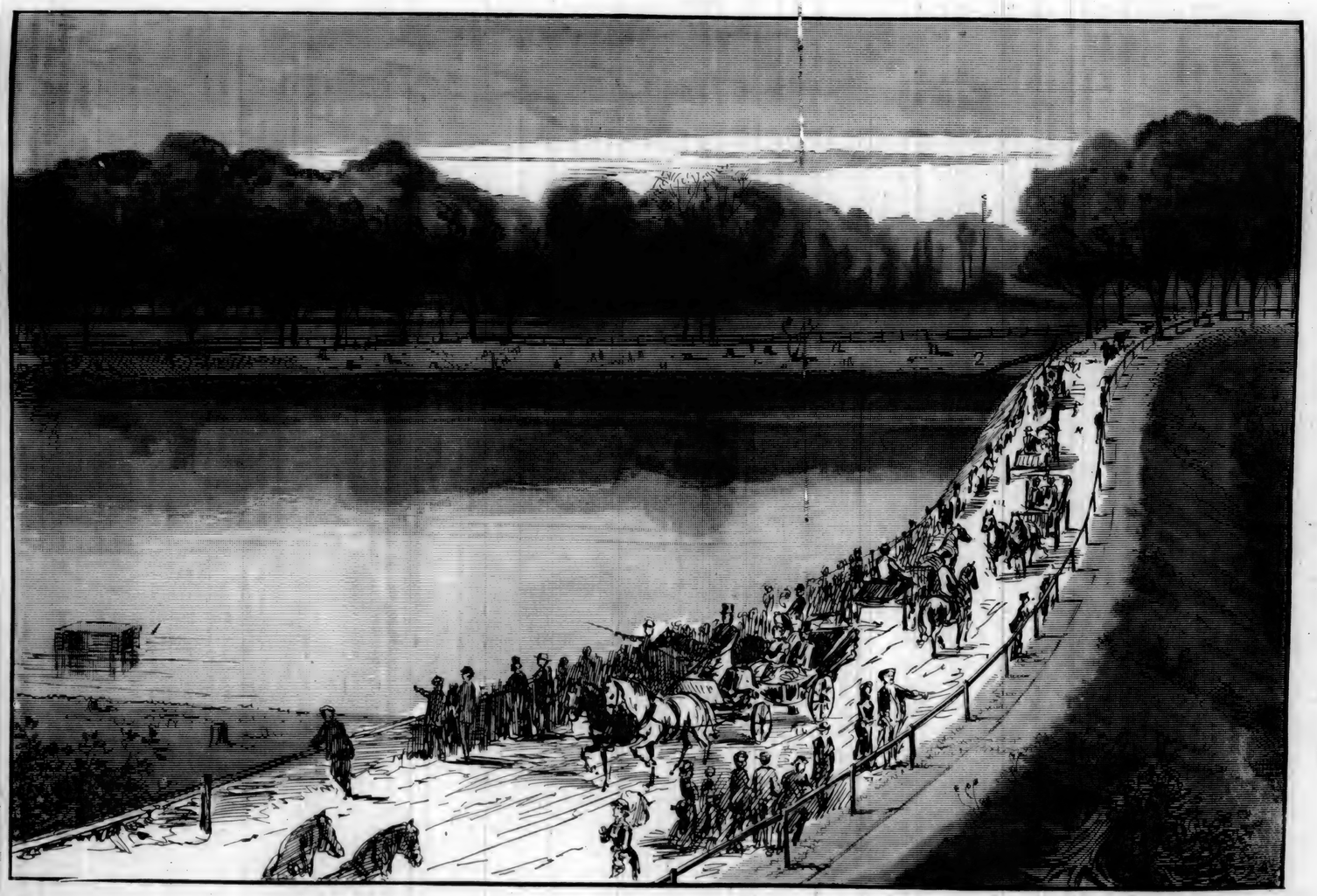


PLATE 3.—This engraving represents the dam when finished. It will be one of the prettiest drives of the many around and about Pacific Grove. See page 109.

and eighty feet wide on bottom, and thirty feet on top. Its height will be about thirty-five feet at the greatest point. The capacity of the reservoir will be about fifteen million gallons. The supply pipe will furnish one million three hundred thousand gallons daily, and should the supply pipe at any time be so damaged that it can not be used for a week or more, the water in the reservoir will be abundantly sufficient to supply all the country over which the pipes pass, for at least thirty days, and with reasonable use will last sixty days or more.

Much care has been exercised to prevent the formation of little shallow pools around the edge of the reservoir. Usually these are regular breeding places for mosquitoes and other insects. The whole outer edge of the ground encircled by the inclosed water will be sloped at an angle of about forty-five degrees, thus preventing the formation of stagnant water in shallow places.

From the reservoir the water is taken through a four-inch pipe over every portion of the Pacific Grove Retreat. It is the intention to change this size to a six-inch pipe whenever the demands of the grove require such a change.

From the description of the work now in process of completion, it will be seen that an abundance of pure water is guaranteed to those who seek the quiet precincts of the Grove for either health or pleasure. It will be greatly appreciated by those owning lots, as they can beautify their premises with flowers, trees, and shrubs, and have the great life-giving element at their very door. Another advantage greatly to be appreciated by those who love to drive over a fine road, will be, that the roads can be kept well watered. Tanks can be erected at a few different points, thus enabling sprinkling carts to keep the road in splendid condition between the Grove and Monterey.

We append a little sketch showing the present facilities for supplying the Hotel del Monte, which although it is but a small engine inclosed by a rude shed, is a source of much attraction to the many little ones who are amused at the click chuck music of the pump as it is worked by the engine; and the pleasure thus afforded to innocent prattlers, furnishes the subject of numerous childlike stories for mammas and papas.

Now that pure water is to be supplied in quantities abundant and sufficient for all purposes, to those who seek the pleasant retreats of Pacific Grove, Monterey and Del Monte—while the waters of the broad Pacific Ocean lash the craggy shores, and the far stretching, crystal sand beaches of the bay of Monterey, it is reasonably to be anticipated that the portion of Monterey County encompassed in this article will at once, or at a very early day, become the leading and principal resort in the State; not only of the resident population, but of the thousands who now, and the tens of thousands from all parts of our own and foreign countries, who will yearly visit this coast in search of the picturesque, instructive and pleasant things that so richly abound in all parts of California, and in the section of country under notice in a special manner. While grandeur of scenery and spots delightful for resting places during the summer months may be found in numerous other localities, we know of none which affords superior if equal advantages over the region under notice, with its land and ocean views, its splendid and numerous macadamized roads—unequalled by any other pleasure resort region—leading and winding through thickly studded wood, quiet groves and valleys; now exposing the smooth or ruffled bosom of broad ocean, now opening up extended views of hill and mountain scenery, and again closing in beautiful fertile glens and valleys, all combining to furnish food for the contemplative and appreciative mind with Nature's most perfect work in natural scenery.

Strength of Yellow Pine.

It is reported that a comparison of the relative strength of yellow and Norway pine was made at Dayton, O., with the following results: The specimens were dressed exactly one inch square, and these were broken in a testing machine by placing them on bearings, one foot apart, with the weight in the center. The southern pine had been air seasoned for two years and upwards, the Norway from a year to fifteen months. The weakest yellow pine broke at 736 pounds, the strongest at 1,102 pounds; average of eight specimens, 904 pounds. The weakest Norway broke at 501 pounds, the strongest at 790 pounds; average of ten specimens, 702 pounds, showing the yellow pine to be 28.7 per cent. stronger than Norway, and that a yellow pine sill 4x8 inches dimensions is equivalent to a Norway sill of 5½x8 inches, with the further advantage in favor of the yellow pine that it can be got much freer of knots and consequently stronger in comparison than these figures show, which are based on clear timber. Another test was made at a meeting of the Master Car Builder's Association, with the following results: Five pieces of each variety, one inch square and eleven inches between bearing points, were experimented upon, the pressure being applied in the center. The outcome showed strength of yellow pine at 500, 510, 500, 490, and 530 pounds breakage strain, or an average of 506; while Norway stood a strain of 620, 645, 730, 650, and 630 pounds, or an average of 635 pounds. These experiments do not appear to throw much light on the question of relative strength, and unless it can be attributed to the diference in seasoning, it is hard to find a satisfactory reason for such a discrepency—*Northwestern Lumberman.*

Wheeler's Patent Wood Filler.

This is by far the best article of its kind that has as yet been brought to our notice. One coat prevents any further absorption, hence the oil in subsequent coats of paint will stay with the pigments. It gives the wood a surface as smooth as ivory. We are pleased to announce that the Bridgeport Wood Co., manufacturers of the above Filler, have established an agency in this city, where any quantity can be had. Architects will do well to call for this Filler in their specifications.

It is said that from 95 to 98 per cent. of all the railroad locomotives in use in the British colonies were manufactured in the United States, and that all of the continental European countries have their roads equipped to a greater or less extent from the same source. Within the last ten years the exportation of railroad locomotives from the United States has aggregated $12,000,000 and the passenger coaches $40,000,000.

Sample Copies.

Hereafter we will forward no sample copies of this Journal unless the price, twenty cents for each number, accompanies the order.

Supplement No. 2.

Special Notice to Advertisers

We are now preparing our Mammoth Edition of

FIFTY THOUSAND COPIES

Of a Supplement of this Journal.

It will be 8 pages, each page 16x23 inches in size.

Pacific Coast Architecture.

Each page will be beautifully illustrated with designs exemplifying different classes of building in the styles of Architecture now prevalent on the Pacific Coast. Suburban and Country dwellings, City Residences, Cottages, with plans and explanations of the same,—in fact all kinds of buildings will be shown.

Mechanics' Department.

Special care will be taken to present to Mechanics all the new ideas in regard to framing buildings, rules by which all the various cuts in Carpentry are made, and items of information generally in regard to the Building Trade.

Distributing the Mammoth Edition.

Special arrangements are being made for the distribution of this Supplement. In order that a copy may reach all the *bona fide* residents of this State, we have divided it into several routes. First-class men have been engaged, selected especially for their ability to further the interests of the projectors of this enterprise.

To show how the distribution is to be made we will describe two of the routes. One man will leave this city in a buggy, taking a

Tour Around the Bay.

He will stop at every town and leave every resident, as far as practicable, a copy. Whenever convenient along the route, he will leave some amongst the farmers. By this means the towns of San Mateo, Redwood City, Menlo Park, Mayfield, Santa Clara, San Jose, Alviso, Newark, Centreville, Mission San Jose, Niles, Haywards, Eden, Alvarado, San Leandro, San Lorenzo, Alameda, and Oakland will be thoroughly supplied.

Another employee will proceed by rail to Modesto; after supplying that town, he will in succession stop at the towns of Ceres, Turlock, Merced, Athlone, Berenda, Madera, Borden, Fresno, and in fact every town as far south as Los Angeles. We will send by express the number we desire to have distributed in each town, so when our Agent arrives in that place he can proceed at once to deliver the number sent. In this way his time will be used to advantage.

Of course the main design is to

Increase the Circulation

of this Journal; and advertisers will please remember that all steps taken in this direction is so much to their advantage.

A Limited Space Only

will be given to advertisements. The columns will be about 3½ inches wide. A square will be the width of one column, by a depth of one inch.

A Uniform Rate

of $2.50 per square will be charged. No deduction for a space less than five squares. Special contracts made for larger spaces.

One Hundred and Six Reams

of paper, 480 sheets to the ream, of good paper have been secured, and we guarantee an actual edition of

Fifty Thousand Copies.

This is allowing 880 for wastage, but of course it will be much less than that number.

Oregon, Washington, Hawaiian Islands, and in fact this mammoth edition will be distributed all over the Pacific Coast and adjoining islands.

Particular Notice to our Eastern Advertisers.

We will not have time to carry on a lengthy correspondence in regard to the insertion of advertisements. The facts are just as we state. An edition of **50,000**. A uniform rate of **$2.50** per square. There will be no choice place as all pages will be equally interesting. The perfect system by which we distribute this Supplement will ensure the notice of your wares being seen by more than

One Hundred Thousand

residents on the Pacific Coast. The fact that this Supplement will be under the superintendence of the Business Manager of this Journal, is a sufficient guarantee that all the designs contemplated will be faithfully carried out.

Please Notify the Manager

of the California Architect and Building News immediately the space you will require. Eastern advertisers not personally known to us, must send either a post-office order for the amount of their ad, or else send us references to parties in this City.

Address **GEO. H. WOLFE,**

Business Manager California Architect,

240 Montgomery Street, San Francisco.

Solid and Hollow Iron Columns.

A confusion of ideas is sometimes found among practical men respecting the comparative strength of solid and hollow pillars. One hears it often said, for instance, that a hollow pillar is stronger than a solid one. Now this is, as one able authority has pointed out, not absolutely the case; it is perfectly true that comparing the strength of two pillars of the same height and diameter, one solid and the other hollow, that the latter has the advantage of being economically stronger. The fact is, the solid column is stronger than the hollow of the same external diameter; but the lesser area is more effective than the greater, because the central portions of the solid pillar are less useful in resisting the bending force than the metal in the circumference of the hollow pillar. But if the quantity of material in both the solid and hollow pillar of equal height is the same, the hollow pillar is by far the stronger. A simple geometrical construction will enable any one to understand this fact, by enabling us to proportion a hollow column of the same area as that of a solid one, by one of the diameters being given. It is shown, in fact, that hollow columns of the same area of metal as a solid one, may be made to any larger diameter, their strengths increasing proportionally till a limit is reached by the shell of the metal becoming too thin to insure a sound casting. Taking an example from Downing's work, a hollow pillar 9 inches in external diameter, having an internal diameter of 8.062 inches, and a thickness of 4-7 inches, or about one-half inch, is five and one-half times stronger than a solid pillar with the same quantity of metal. A thickness of one-half inch may be regarded as a practical limit in manufacture.—*Building News.*

Prevention of Fading in Shop Windows.—The Swiss *Gewerbe Blatt* recommends a remedy for an evil which drapers and many other shopkeepers have long experienced, namely, the fading or bleaching of many kinds of colored articles when exposed in the shop windows. The authority quoted says that this fading or bleaching is brought about only by the white rays of the sun's light, and, where it occurs, it shows that the glass is more or less perfectly colorless. It is found that if, instead of such colorless glass, the window panes consist of glass which is slightly yellow, the bleaching or fading process is prevented. Where the glass is colorless and cannot be replaced by slightly yellowish tinted glass, the desired effect may, it is said, be produced by simply giving the panes a coating of copal varnish.

New Catalogue.

We will mail a copy of our new catalogue of designs for Crestings, Fences, Finials, Posts, and wrought-iron work of every description, upon receipt of a letter from parties desiring them.

Bigelow, Sims & Morris,
Western Iron Works.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Eds. Architect:—In your really good article on the Pyramids, you failed to mention one very important fact, which is this:—It has been proven beyond a doubt that the Great Pyramid was covered from top to bottom — over the "steps" with *polished granite.* Now to say nothing of the difficulty of putting this on up to the apex, the question presents itself, "How did they get that, the crown, the key of the whole structure, in its place." This is a very difficult problem to solve. Of course I do not pretend that the above is an original question, but it may meet the eye of some one who has given the subject much study, and I for one would like to know the latest truths that the researches of science have made. Yours truly, J. B.

Cleaning Screws from Rust.—Rust can be removed from small screws, etc., that are too small for holding against an emery-wheel, by attrition. Take, say, one pound of screws, and place them in a box; a cigar-box will do. Put a small quantity of oil on them, and shake for another minute or so, and then sift the sawdust from the screws in a fine sieve, when the screws will be found to be as good as new.

Stained glass windows can now be made at home by attaching to the plain window, in artistic combinations, the clippings and waste from the bench of the glass-cutter. There is a little wheel sold for something less than a dollar which will cut the glass, and with this the amateur can shape the pieces to suit himself.

A decided revival in the demand for mahogany is reported in the English markets. The wood is increasing in favor generally, and is much desired in cabinet work. Mahogany furniture is largely in stock. Figured logs are less desired, but the wood of rich color is greatly sought after.

Imitation of ground glass can be easily produced by dissolving about two table-spoonfuls of Epsom salts in a pint of lager beer, and painting the glass with the mixture. When it is dry the glass will appear as if frosted, and the effect is very satisfactory.

"Modern House Carpenter's Companion." Price $1.00.

Chimneys.

AMONGST the lost arts we must, it is feared, include the art of building chimneys which will fulfill their proper function; and the smoke nuisance not only poisons the air we breathe, and undermines our health, but it defaces our architecture into the bargain.

It is very much to be suspected that the building of chimneys is left in a great measure to chance, or they would not be so bad as they are. The conditions which should be observed to secure success are well known and are easily obeyed. First the chimney-stack should discharge at as high a level as convenient so as to ensure that the outer column of cold air shall have a marked preponderance over the equal column of warmer and therefore lighter air in the flue. The modern custom is to cut off the chimney-stack as soon as it shows itself above the roof. The additional height is quickly made up by the substitution of a zinc tube, and shows that the original error lay in robbing the stack of its due altitude. Secondly, the area of the flue is almost always in excess of the requirements. The traditional 14 in. by 9 in. was, as has often been pointed out, determined by the fact that the climbing boys who swept the flues could not ascend safely in less space. But with the disuse of boys for this service the reason for the old dimension of the flue vanishes. The late Mr. Cubitt found, as the results of experiment, that a better size was 9x9 inches, and that this was enough for all ordinary purposes. For many years the writer has adopted this form of flue and his experience of its efficacy exactly agrees with Mr. Cubitt's.

Thirdly, the outer casing of chimney-stacks is generally too thin. A half brick is the usual allowance, not "of the best material and workmanship." Now, we know that this is no protection against cold and wet, and that if the upper part of the chimney is cooled the ascending current is checked in consequence. The writer never on any account employs less than nine inches in such a situation, and he is confident that nothing less should ever be allowed if the draught of the flues is to be satisfactory.

And fourthly, the fire is too often quite unprovided with air from the outside, so that the heavier column spoken of above is not brought to bear on the base of the lighter one in the flue, and a sluggish action at the best is the result. The builder who is anxious that his flues should "draw," should be careful to provide a copious supply of fresh air in the region of the fire, and this can be done without draught by a modification of the expedient which, though a very old one, is usually associated with t e name of Mr. Tobin.

With the above precautions it is not probable that any trouble will arise from smoky chimneys, but it must be owned that sometimes the evil is met with in spite of every precaution. The "best laid schemes o' mice and men gang aft agley," and the action of smoke from an open fire is now and then, to say the least, capricious, and often baffles all our best endeavors.

This is a difficulty which should be resolutely faced, and if some form of cowl is inevitable it is the architect's duty to take up its design. If there is one characteristic which more than any other distinguishes the builders of past time from their modern *confreres*, it is the frankness with which they accepted, and the skill with which they turned to artistic account, the necessities of their time one by one as they arose. Evasion and subterfuge were alike undreamed of in their philosophy. They set themselves without hesitation and without reserve to their task of rendering comely whatever was found to be necessary or useful. There is not a beauty in the old work but is the result of the judicious treatment of what was at first a difficulty, and features which we copy long after the original necessity to which we owe them has ceased to exist, survive simply as evidence of this special and peculiar gift of our ancestors. The faculty was so complete and universal that its exercise seems almost like the result of instinct, and thus to lose its merit as art.

Amongst the many instances of the directness and certainty with which the early builders developed to the utmost the artistic possibilities of every new problem as it presented itself, we may cite the domestic chimney itself. The hall *louvre* was always a picturesque feature, and we should regret its abandonment in favor of the fireplace, but for the various and picturesque forms which the architects devised for the chimney-stack which replaced it. If we trace the history of this feature from its first appearance as a single shaft with side piercings at its summit until its glorification under the Tudors, one cannot fail to be struck with the ingenuity, the perseverance, and the versatility of its designers.

Hitherto the modern architect,—in face of the enormous probability that as soon as his building leaves his hands it will be disfigured by some sort of smoke-extracting apparatus,—has been quite careless as to what shape such apparatus shall assume; and there is something almost comic in the *sang froid* with which, after taking infinite pains about the design and details of every other part of his work, he leaves to those who care nothing about it the task of crowning it with an array of cowls.

The conclusion at which we are compelled to arrive is that although by care we may very considerably diminish the necessity for cowls or some cognate contrivance, cases will arise in which they are indispensable, and therefore they should form the subject of the architect's attention. Here is a new field for the exercise of whatever skill in the art of design is left amongst us, and we would suggest the matter as a fit one for the Institute prizes. In making a serious attempt to devise a suitable form for a necessary adjunct of our buildings we should be following the steps of the architects of old who never shirked an opportunity of the kind. Whether our endeavor should be attended with the success which invariably waited upon the efforts of our predecessors it would perhaps be rash to predict,—but at any rate the attempt should be made.— *The Builder.*

High Buildings and Fires.

THE increasing tendency of land owners and builders in large cities to utilize the ground area as much as possible by erecting lofty buildings, requires some commensurate means to prevent fires and to stay their progress. Our best steam fire engines are wonderful improvements on the old time hand engines, and they can force an unbroken stream of water in round, solid column for a considerable distance from the nozzle, unless exposed to a high wind or the direct heat of a raging fire. But these adverse conditions often exist and turn the water column into diffused spray, or dissipate it into mist or vapor, when most of its effective force is lost.

Recent experiments, however, suggest that if the force of the engine could be exerted on a confined column of water rising vertically to the roof, sufficient power would remain in the impulse from the engine to deliver streams of solid water over the area of any ordinary city building. A steam fire engine was recently tested which threw water 156 feet horizontally from a one-inch nozzle attached to a 2½ inch hose running 2,700 feet on a level and 200 feet above the engine. In this instance a very large column of water was made to deliver a moderately small column at a great height above the engine; but by the employment of two or more engines on the same hose, by means of the two-way or the four-way butt, a result may be reached which will place the roofs of the highest buildings under the control of the firemen.

This can be effected by a fixed stand pipe attached to the building so as to be easily reached by the firemen from the street. This stand pipe is, in effect, a prolongation of the ordinary engine hose, and the nozzle, with a convenient length of handling hose, may be attached to the top of the pipe, or to an opening on any floor.—*Scientific American.*

BRASS work that is so dirty by smoke and heat as not to be cleaned with oxalic acid, should be th oroughly washed or scrubbed with soda, or potash water, or lye. Then dip in a mixture of equal parts of nitric acid, sulphuric acid and water; or, if it cannot be conveniently dipped, make a swab of a small piece of woolen cloth upon the end of a stick and rub the solution over the dirty or smoky parts; leave the acid on for a minute and then wash clean and polish.

Important to those Receiving this Journal.

Should this Journal be received by any subscriber who does not want it, or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

Paint for Floors.

A PAINT for floors, which economizes the use of oil colors and varnish, is described in the German technical press as having been composed by Herr Mareck. It is remarked that this paint can also be used on wood, stone, etc. For flooring, the following mixture has been found applicable: 2⅛ ounces of good, clear joiner's glue is soaked over night in cold water. It is dissolved, and then is added (being constantly stirred) to thickish milk or lime heated to boiling point, and prepared from one pound quicklime. Into boiling lime is poured (the stirring being continued) as much linseed oil as becomes united by means of saponification with the lime, and when the oil no longer mixes there is no more poured in.

If there happens to be too much oil added, it must be combined by the addition of some fresh lime paste. For the quantity of lime previously indicated, about half a pound of oil is required. After this white, thickish foundation paint has cooled, a color is added which is not affected by lime, and in case of need the paint is diluted with water, or by the addition of a mixture of lime water with some linseed oil. For yellowish-brown or brownish-red shades about a fourth part of the entire bulk is added of a brown solution obtained by boiling shellac and borax with water. This mixture is specially adapted for painting floors. The paint should be applied uniformly, and is described as covering the floor most effectually, and uniting with it in a durable manner. But it is remarked that it is not suitable for being used in cases where a room is in constant use, as under such circumstances it would probably have to be renewed in some places every three months. The most durable floor paint is said to be that composed of linseed oil varnish, which only requires to be renewed every six or twelve months. It penetrates into the wood and makes it water resisting; its properties being thus of a nature to compensate for its higher cost in proportion to other compositions used for a similar purpose. Its use is particularly recommended in schools and work rooms, as it lessens dust and facilitates the cleaning of the boards.—*The Builder.*

Scarfed Joint.

WHAT is meant by the term "scarfing," applied to wood or metal in making a joint? *Ans.*—It is often required to unite two pieces of metal or of wood, in such a manner that the joint shall not be thicker than the rest of the piece when joined. To make a secure joint, however, it is necessary that the ends of the pieces should lap somewhat, and to avoid the extra thickness, the edges that are to be joined are beveled off, or "scarfed," so that when the edges so beveled are laid together by overlapping, the two pieces have the same thickness. Such a joint is called a "scarfed" joint, or lap joint; and the operation is called "scarfing." The manufacture of lap-welded boiler tubes affords a good illustration of forming a scarfed joint with metal, both edges of the "skelp," or plate, that is to form the tube being beveled preparatory to passing it through the forming die. In carpentry it is not necessary that the edges of the pieces of wood to be joined should be beveled; but any method of joining together two pieces of timber, by bolting or nailing them together transversely, so that the two appear as one, is called "scarfing," and the joint is called a "scarf."— *Wood Worker and American Lumberman.*

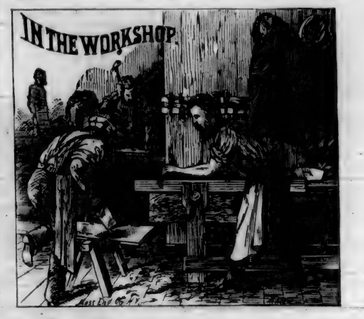
PITCH PINE.—Pitch pine is increasingly used all along the west coast of France, not only for parqueting, but in building. The American pitch pine flooring has been ascertained to have an advantage over that from the north of Europe—both costing nearly the same—which consists in its great durability and freedom from knots, giving it a much finer appearance. The French demand, it is expected, will grow large, while there is considerable consumption in Spain.

A WRITER says: Wood-workers are well known to be peculiarly liable to accident in the pursuit of their trade. Of course the keen edges and the swift-running machinery with which they have to deal, render their occupation a dangerous one, but I think it is safe to say that nine-tenths of the accidents can be fairly attributed to carelessness pure and simple. One proof of this is found in the fact that the larger part of the sufferers are not young and inexperienced hands, but those in whom familiarity has bred contempt.

SEVERAL kinds of hardwood lumber are gradually coming into use, which, a few years ago, were unnoticed. Beech is one of them. It is cheap and abundant, while the more popular hardwoods are becoming comparatively scarce and consequently high-priced. Beech has a fine grain, is quite durable, and is used in the manufacture of school and church furniture, chairs, and to a certain extent in furniture. The red variety has a handsome appearance, and can be made to imitate cherry.

THE *Art Amateur* for July contains an admirable and copiously illustrated article on "The Theory and Practice of Pen Drawing," and is alone worth the price of the number to the many who are interested in this humble but useful art. No one interested in art should fail to examine the July issue of this excellent magazine.

IN the Olympia District, W. T., a yoke of oxen for logging purposes costs as much as a span of horses —$350, and the demand exceeds the supply. Hay costs $30 a ton, chopped feed $35, and wages of men $68 to $100 a month.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade.

EDS. ARCHITECT: In your September issue, 1882, you illustrated the various scarfs or joints used in splicing timbers. You fail, however, to give one that can be used when the timber is only a little long and a short splice is required. The following cut which I send you will explain itself. It is much used in the East when the timber, in length, will not justify the use of the long joints shown in your article of the date mentioned.

You also say that "in every splice, no matter what the shape may be, there should be bolts through the joints securely fastening them together." In the accompanying illustration you will notice that a very strong splice can be made and no bolts whatever are needed. Yours, etc., E. B. R.
Portland.

We thank our correspondent for the above suggestions. We do not agree with him however, that the splice referred to is just as strong without a bolt. It is a very difficult one to make and have the parts fit perfectly, and unless a perfect fit was made, the joint would be a very poor one without being held together by bolts.

EDS. ARCHITECT: Please give me a rule by which I can find the number of studs required around the outside of a building, placed sixteen inches from center. S. R. T.

FIRST get the exact measurement of the outside of the building in feet. Take three-quarters of this amount and add one stud for each corner and angle, and one for each opening. Plates and gable studding are to be added extra. A rough and ready rule is to allow one stud for every foot of the outside measurement of the building.

"COTTAGES AND VILLAS." Price, $6.00.

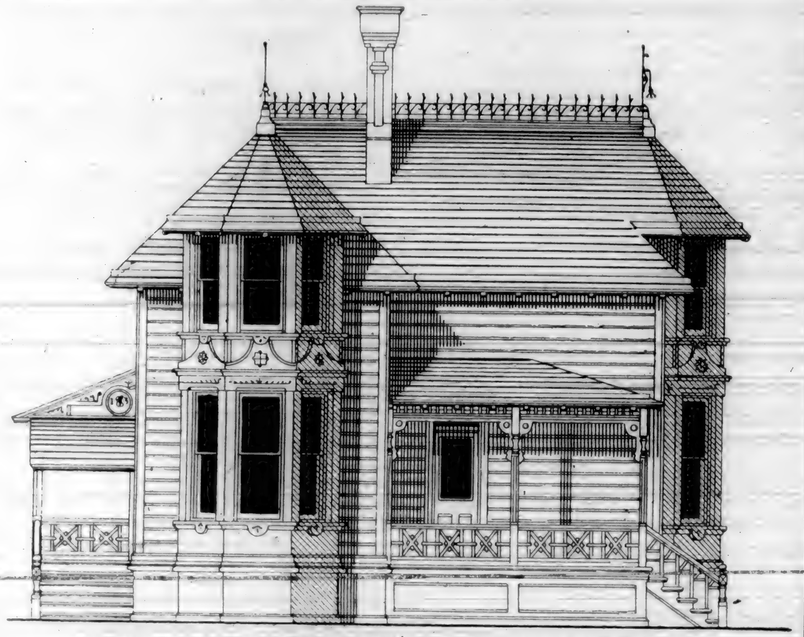


PLATE 4.—A SUBURBAN DWELLING COSTING ABOUT $3,000.

The Other Side.

[We admit the following communication to our columns for the single purpose—as far as its references and inferences go—of showing in what manner, and to what extent skilled and unskilled labor has been and is affected by the acts and successes of the railroad companies. We leave the vexed question of regulating freights and fares—direlict commissions, &c., to the tender!! mercies of the general press.]

STRANGE as the announcement may be to the average man, yet the fact remains that there are two sides to every question: the one idea, and one-sided creatures who foam over and fill the daily press with froth when discussing the railroad question in this State, seem to have forgotten, if in fact they ever knew this general proposition. Judging from their wild statements we are living under a tyranny worse than that of the Czar of all the Russias, —our State lying prostrate under its iron heel, and all enterprise heavily handicapped by its remorseless grasp, etc., etc., etc., *ad infinitum*—while strange again is this fact, that the men who raise this howl of anguish, and thousands who join in it, never pay one dollar for freight or passage over this terrible road, but feeding daily at this miserable mess of prejudice, ignorance, and brainless nonsense, they gradually come to believe that they are the most down-trodden people on the earth's surface, and raising their hands in holy horror they cry, Down with the magnates (*magnates* by the way is remarkably effective), and howl all the louder in hopes that the noise may become so obnoxious to the railroad people, that they may be induced to offer them a little coin to stop their miserable wail.

Now we wish to state a few facts and ask fair-minded men and women to give them their full weight in making up their minds on this important question. First—The large number of gentlemen employed by the great Railroad Corporation (hirelings, see daily press) include some of our most active and useful citizens, who take as much pride in the prosperity of this State as any portion of its inhabitants. And being as a rule well paid for the services they render, in return are faithful in the performance of their duties; at the same time obliging and courteous to those who transact business with the road, comparing most favorably in this respect with the working force of any Eastern corporation.

Second—The immense sums of money expended in this city and State, giving employment to thousands, encouraging home manufactories, and quietly but surely adding to the substantial prosperity of the Pacific Coast.

To call attention in detail to part of this constant outlay of money, we would cite the millions spent on the palaces on California Street Hill, the construction of which employed for several years hundreds of our best mechanics at the highest rate of wages, and whose beauty and splendor are the pride of every true citizen.

The very large expense incurred in building the California Street Cable Road, the efficient manner of its equipment and daily management; also the large amount of property enhanced in value by its construction.

The millions now being expended on the Market Street Cable system, sparing no expense to secure a roadway that shall last, run smoothly, and be a continual source of pleasure to those who patronize it. This first-class road with all its branches will be one of the chief features of our city, its equipment and management the very best, while property all along its far-reaching lines has advanced, and will still more advance in value, giving promise of the erection of hundreds of new buildings as soon as it is completed.

The million and over spent upon the mole and new depot on the Oakland side, which is unsurpassed by any ferry company in the United States, and giving security and convenience to the thousands who use it daily.

The extensive improvements at Benicia and Port Costa, including the construction of the mammoth ferry boat *Solano*, with the slips, warves, and landings, all of which involved a large outlay of money which also found its way into the hands of our best mechanics and laborers.

The purchase of seven thousand acres of land at Monterey, building the Hotel del Monte, laying out and beautifying the surrounding grounds, macadamizing twenty-five miles of roads through the most picturesque portion of the county, so that all the principal points of interest can be reached by tourists with pleasure and comfort; buying the great Los Laurrelles Rancho with its superior water privileges from the Carmel River, constructing substantial reservoirs and conveying the water some twenty miles in iron pipes twelve, fifteen, and eighteen inches in diameter, so as to afford an abundant supply of pure water for the Hotel del Monte, the surrounding country and the well-known summer resort by the sea, Pacific Grove. Enlarging the grove, erecting new buildings, and sparing no expense to make both places the most attractive resorts on the coast; advertising them in the most thorough manner throughout the Eastern States and Europe, so that the Hotel del Monte, with its many attractions is as well known as any similar resort in the world, bringing hundreds of wealthy and enterprising men to California, thereby calling attention to the resources of this State, where such golden opportunities await all who have either capital, brains or perseverance.

In the matter of advertising alone the railroad people have done more to make the advantages of this State known than anything that has been done for years.

The great faith, good judgment, and indomitable pluck that induced the managers of this corporation to project a line across the wilds of Arizona, New Mexico, and Texas, reaching to the Mississippi and New Orleans on the Gulf, spending millions of hard coin in an investment that was open for all the capital in the land to enter, but which lay dormant until the magic touch of our California railroad managers made it spring into life, thus making the far distant mines of silver, gold, copper and other minerals accessible to our people, and adding untold wealth to our Nation and State, making an outlet for the many products of this great commonwealth, and looking to direct communication with Europe at an early day. All this and much more being the result of the far seeing policy inaugurated by these terrible despots!!!

Thus in part only have we glanced at the great enterprises carried on so successfully during the past few years, and we leave it to all fair minded persons to consider if it is not time to give credit where it is due, and to stop this daily abuse of men who have shown such great ability to make money, and who have spent it lavishly for the improvement of the city and State where they reside.

Much more might be said, as the subject is far from being exhausted, but believing that the time is coming when the intelligent people of this State will refuse to be led any longer by a press that only cries "down with the railroad and its management," so that it can foist some favorite into power or fill its own pockets, we leave the subject, hoping that we may have said something that may hasten on the reign of justice and harmony.

Home Courtesies.

SINCE we presented the readers of this journal with its new dress, and in an enlarged form, we are more than pleased with the evidences of good-will shown to us by the editors of our California exchanges. And for the first time since we have published this journal we print a few kindly notices that have appeared in various papers, in regard to the evidences shown by us of increasing prosperity on our part. Many notices have appeared from time to time in papers published all over the Pacific Coast, but we have refrained heretofore from quoting them in our columns, and those found below are now given to show our Eastern readers the opinion entertained of us by our own co-workers in the journalistic vineyard.

THE *California Architect* has become one of the handsomest periodicals on the Pacific Coast in its new make-up, and is worthy of the support of every person connected with building operations in any manner whatever. We are pleased to see it giving such unmistakable signs of success.—*Commercial Herald.*

THE *California Architect and Building News* is decidedly the best publication of the kind in the West, and should be in the hands of every architect, contractor or carpenter in the country. Each number contains all the latest building news, and intelligent discussions of matters of interest to builders, besides from four to six pages of designs for buildings suitable for both city and country residences, together with ground plans and details. We have watched the progress of this excellent periodical and find that it is steadily increasing in interest and usefulness. The subscription price is but $2.00. The publication office is 240 Montgomery Street, San Francisco.—*Fresno Republican.*

THE June number of the *California Architect and Building News* is far ahead of any previous issue. It is printed upon better paper; contains some eight pages more matter; is more extensively illustrated than ever before; and in letter press is up to the highest standard of works of this class. The ARCHITECT, as it is familiarly known, is sound in all its departments. It is carefully and judiciously edited; always truthful, clear, and unbiased in its statements. Aside from its merit as an Architectual Journal, it is also emphatically the "mechanics own paper," and richly merits the standing it has attained.—*Alameda Encinal.*

WE have received the *California Architect and Building News* for June, and we feel that it is nothing more than justice that we should call attention to the merits of the publication, and recommend it, especially to all engaged in any of the building trades, or in the supply of building materials. The *Architect* is very neatly printed and the contents such as must be of interest and value to all who build, own, or live in houses, and that includes pretty much everybody with sense enough to go in when it rains.—*Hayes Valley Advertizer.*

THE *California Architect and Building News* for June comes to us with a new dress and enlarged form, an indication of its popularity and merited patronage. We wish it continued success.—*Petaluma Argus.*

EVERY carpenter and builder should subscribe for that excellent journal, the *California Architect and Building News.* The article on the pyramids in the June number was alone worth the price of subscription. The illustrations of plans for dwellings are excellent, and no carpenter can afford to miss the useful information given in each article.—*Cloverdale Sentinel.*

THE *California Architect and Building News* for June lies on our table. It has come out in a new dress and in an enlarged form. This monthly journal is becoming a very potent factor among our architects and those who intend to build. It is well conducted and filled with articles that are of great importance to all who are interested in the building progress of our city and State. The number before us is specially complete and interesting.—*Mission Local.*

THE *California Architect and Building News* for June is on our table. It is one of the best publications of its kind in the United States, and we are glad to learn that it is meeting with success. Every architect, carpenter, and builder should subscribe for it.—*Riverside Press.*

THE June number of that splendid publication, the *California Architect and Building News* has been received. Its monthly plans alone are worth more to builders than the price of subscription, while its sanitary suggestions are of value to every one.—*Watsonville Pajaronian.*

IT is with pleasure that we note the great evidences of thrift and prosperity possessed by the editors of the *California Architect and Building News*, as shown by their enlarging their journal, and at the same time donning a complete new dress. The June number is especially interesting. The article on the Pyramids should be read by every one; and there is not a mechanic in the State that should fail to subscribe, now that Part Two of the "Steel Square and its Uses" has been commenced. It is emphatically the representative of the building interests of this coast. We are especially pleased with the progress of this journal, as one of its editors for a number of years resided in this town, and we want to lay claim to our share of literary personages, whose minds have been partly trained in our beautiful village. Success and long continued prosperity to the *California Architect and Building News.*—*Healdsburg Flag.*

THE June number of the *California Architect and Building News* contains the most beautiful elevations and plans we have yet seen in that journal. This journal is improving in its engravings as well as its reading matter. No live mechanic or head of family should be without a copy.—*Santa Rosa Republican.*

THE *California Architect and Building News* is a monthly publication published by the S. F. Architectural Publishing Co. It is a useful publication to carpenters and builders generally, and contains well executed drawings of cottages and country residences, with plans of the different floors, besides a great deal of information to the architect, builder, and farmer. In its new dress and enlarged form it presents an appearance not excelled by any journal of its class in the United States.—*Mariposa Gazette.*

THE *California Architect and Building News* is getting to be a valuable and very interesting publication and is cordially recommended to our building trades. It has lately donned a new dress, and in typographical appearance and the ability displayed by the editors, it takes rank amongst the best of our scientific journals.—*St. Helena Star.*

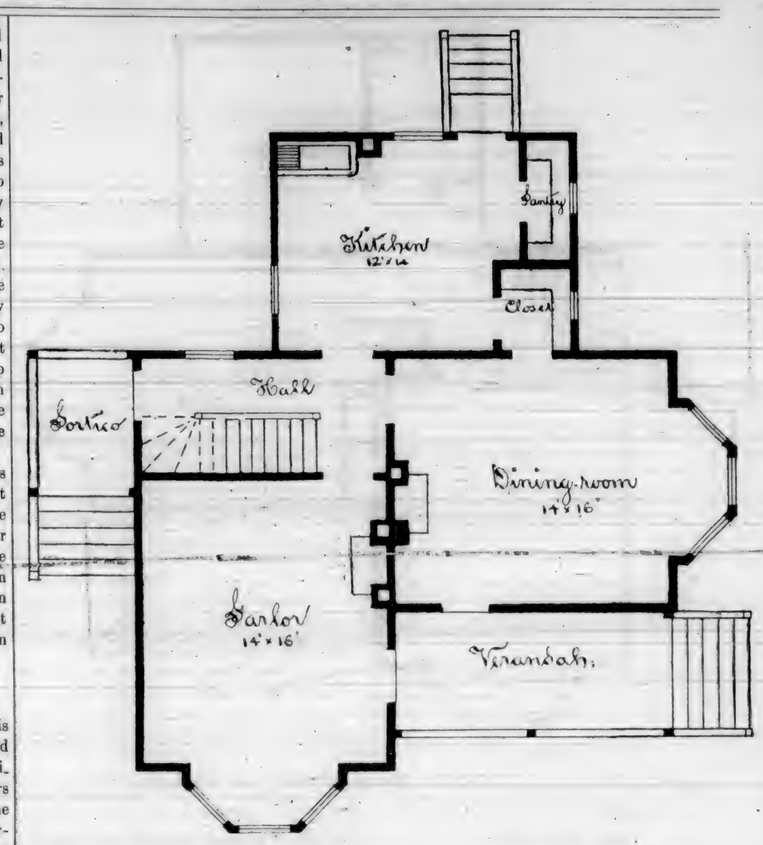


PLATE 5.—PLAN OF FIRST FLOOR, SUBURBAN DWELLING COSTING ABOUT $3,000.

Modern House Painting.

A NEW lot of this celebrated work has been received, which will be forwarded to any address upon receipt of the publisher's price, $5.00.

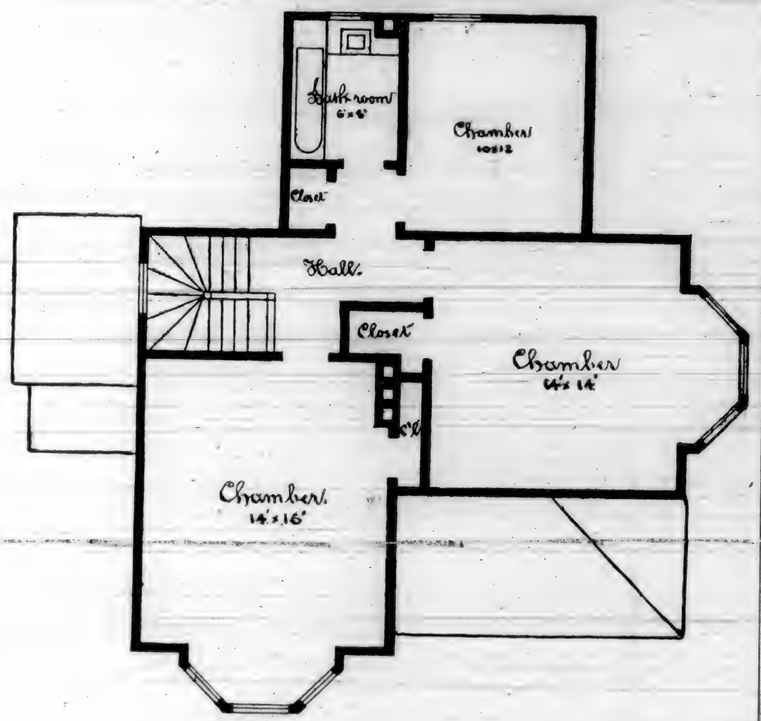


PLATE 6.—PLAN OF SECOND FLOOR, SUBURBAN DWELLING COSTING ABOUT $3,000.

Our Illustrations.

PLATE 1 represents a design for a new building in the latest style of New York Street architecture. It was prepared expressly for this journal and is the second of a series by A. Curtis Bond.

Plates 2 & 3 represent the construction of the dam and reservoir for the new water-works to supply the Pacific Grove, Monterey, and the Hotel del Monte. The engraving marked Plate 2 was prepared by our artist from sketches taken on the ground during the progress of the work, and is very realistic of the scene at the time the view was taken.

Plates 4, 5, 6, are the plans and elevation of a neat suburban residence, the cost of which will be in the neighborhood of $3,000.

SEWAGE PERILS.—Speaking of these, the *Popular Science News* has some very sensible remarks. It says: "The vast number of *traps, valves, automatic plays, bent tubes*, etc., used in houses have resulted from efforts among plumbers and inventors to meet the difficulties of the situation by the first method. It may be said that some degree of success has crowned the efforts of the mechanics to obviate sewage perils, but the success has been by no means what the gravity of the situation demands. At present there does not appear to be a single mechanical appliance known which effectually, under all circumstances, affords immunity from the return of deleterious gases and disease germs into dwellings." But it goes on to say that a Mr. Mallett, a well-known chemist, has invented a device called a *germacide*, "which most admirably meets an important end. This device is very simple, and consists in placing behind the lid of water-closets a black-walnut box, within which is a metallic case holding a mass of crystalline chloride of zinc. This zinc is open to a gentle flow of water, which gradually dissolves it, and it flows into the bowl constantly, night and day, sterilizing the water so that no living germs can pass." This looks very much as if it met and overcame the difficulty.

THE QUEEN ANNE STYLE OVERDONE.—The Queen Anne style of architecture, which soon after it came in vogue here was exaggerated and distorted by builders of cheap houses, is naturally passing out of fashion now that it has been overdone. One of the largest structures now building is in the Italian Renaissance style, and even the architects who introduced the Queen Anne are returning to severer schools.—*N. Y. Sun.*

"FOUNDATIONS." Price, $1.50.

Practical Manuals.

Handrailing and Stair-building. A Complete Set of Lines for Handrails by "Square-cut System," and Full Practical Instructions for making and fixing Geometrical Staircases. By FRANK O CRESWELL, of the Liverpool School of Science, Medallist for Geometry. With upwards of One Hundred Working Drawings. Cloth, $1.50.

Drawing for Carpenters and Joiners. With Elementary Lessons in Freehand and Object Drawing. Containing 250 Illustrations and Drawing Copies. Cloth, $1.75.

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Cutting Tools Worked by Hand and Machine. By R. H. SMITH, Professor of Mechanical Engineering, Sir Joseph Mason's College Birmingham. Price, $1.50.

These are a few of the new series of manuals published by Cassell. They are written in a plain, practical manner, and are profusely illustrated. We will send a copy of either or all of them upon receipt of the price.

Bending Wood.

THE primitive idea of wood bending was to conquer a stick when green and hold it in position, as illustrated in the making of bows. New applications of the underlying principle, and discoveries incident thereto, are constantly being made, and bending for all purposes is readily done by the aid of usually simple appliances and steaming processes.

Where it is desired to have the pieces stay in place, the heart is kept outward, the tendency of wood being to bend outward. But where a corner piece or other difficult stuff is being bent, the heart is kept inside, because admitting of more end pressure or upsetting without giving way or wrinkling. A bent piece increases in weight for its bulk according to the extent it is compressed, being much stiffer, also, than when in its natural and undisturbed state, which makes it especially desirable for carriage work. Tests that have been made with bent and sawed stuff under similar conditions have shown the former to be the stronger. By steaming wood its stiffness is increased, without reference to the bending, and it is also rendered brittle, which is sometimes enough of a characteristic to be detrimental to its quality. One kind of hickory is better for spokes or whiffletrees after it has been steamed, while another kind becomes very stiff when air-dried. Kiln-drying and steaming both cook the gum in resinous woods, and hence have a similar effect. Stiffness is the desirable quality in a spoke, felloe or whiffletree, and in hickory it is always increased by steaming. It is difficult to splinter or tear a piece of bent wood. Its fibres have become interwoven, and, without being particularly indicated on the outside, the interior becomes materially changed.

The steaming is usually done in boxes. Two or three hours is enough steaming for many ordinary purposes. Corner pieces require a whole day, and timber that is hard and tough should be steamed from 24 to 36 hours. For light panels 10 or 15 minute's steaming is sufficient, and most hard woods need only a half hour. A nice discrimination as to time is highly essential to success. By over-cooking timber the virtue can be made to depart from the toughest wood, rendering it punky and without elasticity. Live steam is not indispensable, exhaust steam being frequently used to advantage. Neither is a great quantity of steam required, partially condensed or damp steam being considered the best. A tight box with enough steam fed into it to make the wood sweltter and cook is sufficient. After being bent the twisted fibre sticks as stubbornly to its new course as it did to the directions of nature. Bending is chiefly done on wheels and forms. A strap is used in numerous cases, and is indispensable in such bending as shafting, to keep the wood from slivering.—*Northwestern Lumberman.*

Incombustible Paints.

WATER-GLASS is being extensively used in the production of a paint which in addition to its durability is also a protection against fire, and as a floor paint it is especially recommended.

The surface of the floor having been well cleaned, any crevices or cracks between the boards are next luted with a thick mixture of water-glass and pulverized chalk or gypsum; then, by means of a stiff brush, a coating of water-glass, of sirup like consistency, is spread over the floor, and to this succeeds a second coating of the same, mixed with the desired color—the latter a mineral color, as the alkalies of the water-glass commonly decompose vegetable colors. This coating having become dry, other layers of the water-glass are given until the floor acquires a fine lustrous appearance. In order to insure a polished brightness, the surface is ground off a little, oiled, and thoroughly dried. A number of patents have been granted for incombustible paints in this country, and among the foreigners who have experimented with different ingredients for accomplishing this end, MM. Vilde and Schambeck propose the following mixture for rendering wood-work incombustible:—

Pulverized glass	20
Pulverized porcelain	20
Pulverized stone	20
Calcined lime	10
Silicate of soda	30
	100

The solid elements must be reduced to as fine a state as possible and sifted, and then mixed intimately with the soluble glass, thus forming a glutinous mass which may be employed as it is for painting, or may be mixed with various colors.

The addition of the lime gives a certain unctuosity to the mass for painting, while the combining of this lime with a portion of the silicic acid of the soluble glass promotes the intimate mixture of the other substances.

Although the mixture given above is recommended as being the best, the proportions of the various elements may be changed according to circumstances, except that of the soluble glass, which must remain constant. Some of the substances may also be replaced by others; but it is advisable to retain the lime. Instead of silicate of soda, the soluble glass of potash may be employed, but the former is cheaper,

The paint is laid on with a brush, in the ordinary manner and as evenly as possible, on the surface to be protected. The first coat sets immediately, and the second may be applied from six to twelve hours afterward—two coats being sufficient. This composition may also be employed with advantage for protecting iron bridges, sleepers, etc., from oxidation.—*Scientific American.*

Australian Trees.

THE giant trees of California, which have been one of the wonders of the world ever since their discovery, some twenty-five or thirty years ago, are now found to be far surpassed by certain specimens of the eucalyptus found in the mountains of southeastern Australia. The highest tree at present standing in the groves of Mariposa County is three hundred and twenty-five feet high, and this is only the largest out of a small number of specimens of a tree found nowhere else, while the Australian forests contain many thousands of greater height than this, one of them, the tallest yet measured, being four hundred and seventy-one feet from the ground to the summit. The diameter at the base of this enormous plant is eighty-one feet, so that, if it should ever be cut down, a squadron of cavalry might go through its evolutions on the stump, in place of the modest quadrille which it has given so much pleasure to the Californians to dance upon the truncated fragment of one of their great sequoias. As in California, the largest of the Australian trees are no longer standing, and a prostrate trunk has been found which measured four hundred and thirty-five feet from the roots to the place where the upper portion had been broken off by the fall. The broken tip had disappeared, but as the diameter of the trunk at the point of fracture was three feet, it is estimated, with great probability, that this indicates an additional length, for the perfect tree, of at least seventy feet, making the whole height of the plant more than five hundred feet. Concerning the time required for developing from a very minute seed a tree which would overlook the Great Pyramid, no inquiry has been made, and as the evidence of the so-called annual rings is now known to be worthless for determining this point, we may never be able to form even an approximate estimate of the age of these giants, but the common eucalyptus has been observed to grow from seed to a height of sixty feet in ten years, and it is quite probable that a few centuries have sufficed to bring specimens planted in a favorable soil to their full development.—*American Architect and Building News.*

HAND SAWS

How to Select and How to File Them.

PRICE $1.00.

This work is intended more particularly for operative Carpenters, Joiners, Cabinet Makers, Carriage Builders, and wood-workers generally, amateurs or professionals.

It is a complete guide for Selecting, Using, and Filing all kinds of Hand Saws, Back Saws, Compass and Key Hole Saws, Hack and Butcher Saws; showing the Shapes, Forms, Angles, Pitches, and Sizes of saw Teeth suitable for all kinds of saws, and for all kinds of Wood, Bone, Ivory, and Metal; together with Hints and Suggestions on the choice of Files, Saw Sets, Filing Clamps, and other Matters pertaining to the Care and Management of all Classes of Hand and other Small Saws.

Illustrated by over Seventy-Five engravings. This work is edited by the author of the "Steel Square and its Uses," "Builder's Guide and Estimator's Price Book," "Practical Carpentry" etc. Being sole agents on the Pacific Coast for all the above mentioned works, we are prepared to furnish dealers and agents at publisher's prices. Single copies sent post-paid upon receipt of price.

Book Notices.

LIFE OF SIR WILLIAM E. LOGAN, K. T., LL.D., F. R. S., F. G. S. First Director of the Geological Survey of Canada. By BERNARD J. HARRINGTON, B. A., Ph. D. With steel portrait and numerous woodcuts. New York: John Wiley & Sons, 15 Astor Place. 1883. Price $2. 50. 432 pages, octavo.

The principle work of Sir William Logan's life was the Geological Survey of Canada. His ability, energy, and genial qualities gained for him the esteem and affection of many of the best and most eminent men of science. Canadians especially cannot afford to forget the name of one who labored so long and so earnestly to promote the interests of their country, but others too will be grateful to the author for the compilation, which sets forth the admirable character and work of the greatest geologist. The style of the book is excellent, the account is entertaining and pleasant reading throughout, and the make-up is all that could be desired. Most of the illustrations scattered throughout the volume are copies of pen-and-ink sketches from the note-books of Sir William Logan.

THE MATERIALS OF ENGINEERING, by R. H. THURSTON, A. M., C. E., published by Wiley & Sons, New York.

This standard work is issued in three parts. Part one has already been noticed. Part two, IRON AND STEEL, has just been received. The chapters on the properties of iron and steel, and the strength of the same, are the most comprehensive to be found in any work that has, as yet, been brought to our notice. The result of the numerous tests in regard to the strength of each metal, are given in a tabulated form, and will be found much more interesting than other works of a similar character. It is beautifully illustrated, and contains 675 pages. Price of Part two, $5.00.

Stairs.

THERE are a few people who do not "mind" running up and down two or three flights of stairs several times a day. They "get used to it" they say, but to the majority of people stairs are a positive labor and weariness without any sufficient compensation. If one could enter a fifth-story room with the same ease as he can enter the first and second story rooms, the most of us, other things being equal, would prefer a room of that altitude. The air is purer, the quiet deeper, and interruptions less frequent. In hotels and other large buildings, where there are elevators, there is comparatively slight difference in the charge for rooms of the same grade on different floors and with reason—a minute more or less in reaching one's room does not count. A flat in the upper floor of a four or five story building, containing an elevator, is often rented when the other floors are vacant, not only on account of its moderate price, but because it is high and quiet and isolated.

Of late years the minds of inventors have been turned toward the invention of an elevator which could be moved by some other power than steam, and patents have been applied for, but such has been the depression of all trade, and especially of the building interests, that there has been little encouragement for efforts in this direction. But it is certainly to be greatly desired that some cheap and facile method be devised for bringing all floors substantially to a common level, and abolishing the fatigue of climbing stairs and the evils that flow from it. This is very desirable in schools and colleges for women. There are more girls and young women disabled for life by climbing stairs while they are going to school than by any hard study they are guilty of. If their clothing was suspended from the shoulders, and not from the waist, the evil would be lessened, but even in that case it would not cease to be formidable. In many schools and colleges for girls, the pupils regularly several times a day, go up and down three or four flights of stairs to their rooms, up and down as many more to attendance in the laboratory, the art gallery, and the recitation rooms, until they are as much, if not more, exhausted by this labor as by all their other toils put together. There is certainly no objection to elevators in male colleges, but there is every reason why they should be in institutions for the other sex.

In our private houses the aim should be to have the work of the family as far as possible on one floor, and to abolish every step up and down that can in any way be dispensed with. Cellar kitchens are a nuisance and an abomination to be tolerated only in case of dire necessity. Sub-basements are a convenience if dining-room and kitchen can be on the same floor, and in our cities, where land is bought by the foot and the inch, they are a necessity. But in the country, where land is cheap, there is no economy in piling story upon story, and enforcing the continual running over flights of stairs by house-keepers and servants in their performance of the household. A great deal of labor can be saved, and is saved, by having our houses heated by steam, and by having water in and out on every floor; but these are luxuries not within the reach of the masses of country people, who can, however, because land is less valuable in the country than the city, so build as to dispense with them with slight inconvenience.—*The Builder and Wood-worker.*

A Main Chance.

THERE never was a time more opportune than the present for the general introduction of yellow pine lumber. The dealers who desire to push its sales have a splendid opportunity to do so. A doubt regarding the value of such lumber for building purposes does not find a place in the mind of any man who understands its durability, and the difference in cost between it and white pine. It is evident, however, that there is something in the way of its general use. When the two kinds of pine come in competition, nothing is more rational than to suppose that the public would buy the cheaper, providing it will answer every purpose of the dearer. The average man has an inherent desire to buy as cheaply as possible. One objection against the general use of yellow pine arises from the builder. He is not, voluntarily, going to make a contract for working a certain kind of wood, when he can handle another with more ease. This applies more particularly to inside finishing. For bridge timber, building dimension, and other grades which are not necessary to be worked to a smooth surface, he is less particular. White pine is easily sawed and planed, and the carpenter courts the ease with which it is done. For the same reason, somewhat intensified, the wood-worker gives hemlock a wide birth. He has no affinity for its slivers. He has a kind and natural regard for his hands and tools, and he is not willing to overcome this regard for the sake of cheapening a building a few dollars.

There has been a current belief in the Northern States that yellow pine will not hold paint satisfactorily. It has been thought that any exudation of pitch would stain the paint, and to a certain extent force it off. This idea, however, has been greatly magnified. In sections of the Southern States, where little besides yellow pine is used for building purposes, there is usually heard but little complaint. Occasionally, a builder will put a coat of alcohol over the outside work, which cuts any pitch there may be on the surface, but oftener no special process is employed.

There is still another objection to yellow pine for inside work, finished in the natural color, that has sometimes arisen, that is simply the result of taste. To the eyes of some the effect is too glaring. The ones who take this exception assert that they tire of it more quickly than of a more somber-colored wood. The color is too vivid. The effect at first sight is cheering, but it is short-lived. As we remarked, this is simply a matter of taste, and one that every man should decide for himself. Yellow pine does not stand alone in this respect, for exceptions are taken to the color of other woods. Walnut, for some, is too dark, and for others cherry is too red. If the brightness of yellow pine is a serious objection, it is one that time in part overcomes, for it will grow dark with age.

The opportunity that the yellow pine handlers have of pushing their lumber, arises from the feeling that exists between the yard dealers in white pine, and the manufacturers of it. The former are crying for cheaper lumber, and the latter are strenuously endeavoring to sustain prices. If there is a cheaper lumber than white pine that can now step in and satisfy the minds of the dealers as to price and satisfy them otherwise, its advent would be hailed with shouts.—*Northwestern Lumberman.*

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IN 39 VOLUMES, OCTAVO, WITH MAPS AND ILLUSTRATIONS.

Vols. I–V.—The Native Races of the Pacific States.
Vols. VI–VIII.—History of Central America.
Vols. IX–XIV.—History of Mexico.
Vols. XV, XVI.—History of the North Mexican States.
Vol. XVII.—History of New Mexico and Arizona.
Vols. XVIII–XXIV.—History of California.
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Vol. XXVI.—History of Utah.
Vols. XXVII, XXVIII.—History of the Northwest Coast.
Vols. XXIX, XXX.—History of Oregon.
Vol. XXXI.—History of Washington, Idaho, and Montana.
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Vol. XXXIII.—History of Alaska.
Vol. XXXIV.—California Pastoral.
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Vols. XXXVI, XXXVII.—Popular Tribunals.
Vol. XXXVIII.—Essays and Miscellany.
Vol. XXXIX.—Literary and Industries.

THE HISTORY OF THE PACIFIC STATES is the central figure of this literary undertaking, the *Native Races* being preliminary, and the works following the History supplementary thereto. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

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Our Prosperity.

WE return hearty thanks to one and all for the very many extremely flattering and favorable notices. Commendations and congratulations received—personal and editorial—in reference to the handsome improvements in the appearance, and in the illustrations and matter contained—more especially in the recent number of this journal. Without detraction from previous issues, its June number placed it upon equal footing with the best and most meritorious class journals published in the English language; and it has been so recognized. And while its managers have great reasons to feel proud of the success achieved, the people of the entire Pacific Coast—particularly those of San Francisco—have also reasonable ground for pleasure at seeing produced and established, without peradventure or question of failure, a publication in the building interests, alike creditable to its proprietors and the city in which it is issued.

But it should not be forgotten that the results obtained have been reached only by indomitable effort and perseverance, for in its infancy even those who wished it well feared and doubted its success. Kind expressions were not wanting, but the doleful accents of doubt were often coupled with the wish that it might succeed; and for a time its demise was a matter of monthly anticipation by many. But, as stated in its early numbers, when discouraging shadows hung about us, we entered not blindly into the undertaking, but had counted the cost and measured the strength of our arms, and to-day we enjoy the proud satisfaction of having risen above all contingencies, admired and approved by thousands, and the words of approval which now come to us from all quarters, have the clear ring of well-wishing and unqualified confidence.

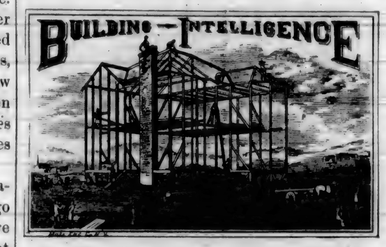
But, however gratifying and appreciable kind words may be, they are not available in the payment of the necessary cost and expense of publication, nor negotiable with grocers, butchers, bakers, clothiers and others who furnish the food and raiment, eaten and worn by those who perform the labors incident to the production of this journal monthly. Consequently, while our list of subscribers is daily increasing with pleasing rapidity, there is room for greater, and we urge our claim to universal support upon all classes of citizens, as not only those who plan and build, but those who own their residences, and those who occupy rented houses, are alike interested in the matter and subjects contained in its columns; and none should refuse or fail to lend the helping hand. San Francisco alone should give us ten thousand paying subscribers.

How Spools Are Made.

BEARING in mind an inquiry made of us some time since, we present the following interesting description of the *modus operandi* of making spools, as carried on in the extensive factory of the Searsport Spool and Block Manufacturing Company, in Searsport Village, Maine: This company own large tracts of land in northern Maine, from which the lumber for spool-making is cut, white birch being used exclusively. The wood is first sawed into pieces four feet in length, and of nine sizes, varying by sixteenths, from an inch to an inch and a half square. It is then dried as thoroughly as it can be out of doors. Inside the factory it first goes to the "rougher," where the strips are cut into cylinders of the length of a spool, and the hole bored, the turning and boring being performed at one operation, and the cutting off, with a small circular saw, at another, all on one machine. These little cylinders drop from the rougher into a barrel, from whence they are removed to the "rollers," or revolving slatted cylinders, in which the fine dirt and fuzz left by the saw and bits are removed. The pieces are then picked over by hand and all imperfect ones are sorted out to feed the ever hungry fires under the boiler.

The next process is a more thorough seasoning of the blocks in a loft, and then they go to the "reamer," where the center holes are made to the exact size required, which cannot be done by the rougher on account of the shrinking of the wood after leaving that machine. Until lately the reaming has been done by an ordinary reaming tool working in a lathe, the work being fed by hand, but a new machine has been recently put in, which will ream the spools as fast as two boys can feed them into the spouts. This reamer was made by the company's machinist, Mr. John F. Rogers, at the machine shop in the factory, from patterns made by him, he having seen a similar machine working in McGregor's factory in Lincoln, Me. The machine in use in the Searsport shop has some features which the builders claim are improvements over the original, which was imported from Scotland, it having lately been invented in that country and not yet patented in the United States. It consists of a short revolving shaft, with a reaming tool at each end, working endwise backward and forward about four inches. At each end spouts are arranged with feeding apparatus which forces the spools into the proper position to be bored, and then allows them to be dropped out into a barrel below. At each oscillation of the shaft two spools are reamed, one at each end, the machine turning out about 240 per minute.

The next machine is the "finisher," which is an attachment to an ordinary lathe, by which the spools are turned into shape at one operation, at the rate of from 1,000 to 1,500 per hour. There are eight cutting knives on this machine; one at each end, standing up perpendicular to the length of the spool, for trimming the end; one at each end, horizontally, for turning the outside of the flange; between these, two others, standing diagonally, for the inside of the flange; another, horizontally, for turning out the space between the two flanges; and a small circular chisel for cutting the finish on the top of the spool. The spools have now received their shape, and need only the finishing touches. These are given, first by the "polishers," which are the same as the rollers described above, the friction of the spools against each other giving them the required polish. After remaining in this from four to five hours, they are again sorted by hand, and all imperfect ones removed, after which they go to the "embosser," a sort of printing machine, which stamps the number of the thread and some ornamental devices upon the head of each spool. They are then packed in stout sacks, holding from thirteen to thirty-six gross each, according to the size of the spools.—*The Manufacturer and Builder.*



SAN FRANCISCO.

Ellis, cor. Mason. Four-story and basement brick.
O.—W. Sharon.
A. — Gaynor.
C.—Plummer & Anderson
$75,000.

Bush, cor. Steiner. Foundations Dominican Church.
A.—T. J. Welsh.
C.—McGowan & Butler.
$22,270.

Filbert, cor. Dupont. Italian R. C. Church.
A.—T. J. Welsh.
C.—J. L. Binet.
$16,000.

Fourth, cor. Clara. Remodeling.
O.— — Marron.
A.—T. J. Welsh.

Van Ness Avenue, cor. Willow. Two-story frame.
O.—A. Anspacher.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$15,000.

Sacramento, x Webster and Fillmore. Two-story frame.
O.—M. Rosenthal.
A.—Schmidt & Havens.
C.—Cook & Johnston.
$6,000.

Laurel Hill Cemetery. Brick and Iron vault.
O.— — Wilkie.
A.—Schmidt & Havens.
C.—O. E. Brady.
$4,000.

Geary, x Buchanan and Webster. Two-story frame.
O.—S. Solomon.
A.— — Marquis.
Days' work.
$8,000.

Haight, x Buchanan and Webster. One-story and basement frame.
O.—C. Edwards.
A.— — Marquis.
C.—D. Perry.
$3,500.

Fulton, x Scott and Devisadero. Four two-story frame.
O.—I. C. Moore.
A.—H. Geilfuss.
C.—F. Klatt.
$17,000.

Clementina, x First and Second. Three-story frame.
O.—H. Glimbel.
A.—H. Geilfuss.
C.—B. Dryer.
$9,500.

Bush, nr. Polk. Two-story and basement frame.
O.—E. Beyerle.
A.—W. Schrot.
Days' work.
$2,400.

Fifteenth, x Mission and Capp. Two-story and basement frame.
O.—C. Woerner.
A.—W. Schrot.
Days' work.
$4,000.

Sixth, x Mission and Howard. Three-story frame.
O.—M. Kallsky.
A.—McDougall & Son.
C.—Hutchinson & McMann
$10,000.

McAllister, nr. Gough. Alterations.
O.—H. Levy.
A.—McDougall & Son.
C.—Hatfield & McRae.
$1,500.

Ellis, x Buchanan and Laguna. Improvements.
O.—H. Fisher.
A.—McDougall & Son.
C.—H. Wellbye.
$2,500.

Fillmore, cor. McAllister. Two-story frame.
O.— — Heinricks.
A.—Schmidt & Havens.
C.—W. Pluns.
$20,000.

Fifteenth, x Guerrero and Valencia. Two-story frame.
O.—J. Rentchler.
A.—G. H. Miller.
C.—J. McCann.
$2,600.

Union, x Jones and Taylor. One-story frame.
O.—W. Herman.
A.—G. H. Miller.
C.— Krohn.
$2,900.

Valencia and Seventeenth. Two-story frame.
O.—F. Crowley.
A.—G. H. Miller.
$7,500.

Buchanan, nr. Golden Gate Ave. Two-story and basement.
O.—H. Leverson.
A.—McDougall & Son.
C.—R. Parker.
$3,500.

Haight, near. Buchanan. Three-story frame.
O.—G. W. Lawlor.
A.—J. T. Kidd.
C.—R. B. Hicks.
$8,700.

Van Ness Avenue, near Turk. Two-story and basement frame.
O.— — Gallagher.
A.—J. Marquis.
C.—Kincaid & Baldwin.
$7,000.

Clay, cor. Polk. Three-story frame.
O.—Prof. Wilkinson.
A.—Wright & Sanders.
C.—H. Lukes.
$10,000.

Post, nr. Buchanan. Three two-story frame.
O.—G. W. Hinkle.
$10,000.

Sutter, cor. Lyon. Two two-story frame.
Days' work.
$8,500.

Geary, cor. Pierce. Two-story and basement frame.
O.—Dr. J. W. Blake.
C.— — Randall.
$7,000.

Bush, x Hyde and Larkin. Additions.
O.—A. Grant.
A.—Kenitzer & Raun.
C.—Mahoney Bros.

Fillmore, cor. Pine. Five one-story frame.
O.—I. Harris.
A.—J. Gosling.
C.—J. H. McKay.
$4,500.

Sacramento, near Baker. One-story frame.
O.—M. H. Landers.
C.—C. Kerns.
$1,500.

Jackson, nr. Baker. One-story and basement frame.
O.—R. J. Mercer.
C.—F. Gauterau.
$2,250.

Fillmore, nr. Pacific. Two-story and basement frame.
O.—J. P. Shepard.
Days' work.
$6,000.

Washington, near Hyde. Three-story frame.
O.—Mrs. Dunnaney.
A.—W. O. Banks.
C.—J. Treadwell.
$8,000.

Waller, x Steiner and Fillmore. Two-story and basement frame.
O.—N. C. Taft.
A.— — Warren.
Days' work.
$2,500.

Sixth, cor. Howard. Additions.
O.—A. Wolf.
A.—W. C. Hoagland.
C.—R. McCann.
$8,000.

Ninth, nr. Mission. Three-story and basement frame.
O.— — Ziner.
C.— — Burns.
$5,600.

Fourteenth, cor. Shotwell. Four two-story frames.
O.—J. Gleason.
A.—Townsend & Co.
C.—C. Kelley.
$14,000.

Twentieth, cor. Shotwell. Two-story frame.
O.— — Rice.
A.—Curtis & Bennet.
C.— — Sanchez.
$4,000.

California Avenue. Two-story frame.
O.—E. J. Mize.
Days' work.
$2,000.

Howard, nr. Twenty-first. Additions.
O.—C. Mengels.
A.—H. Geilfuss.
C.—Conrad & Miller.
$5,500.

Valencia, x Twenty-third and Twenty-fourth. Two-story frame.
O.— — Davis.
C.—Kincaid & Baldwin.

Valencia Junction. One-story frame.
O.—Chamberlain & Sprague.
$1,600.

Church, cor. Twenty-ninth. One-story frame.
O.—R. Bergfeld.
$1,400.

Fair Oaks, cor. Twenty-fourth. Two two-story frames.
O.—Mrs. McDaniels.
A.—Huerne & Everett.
C.— — Hargitt.
$4,000.

Twenty-second, corner Guerrero. Two-story frame.
O.— — Clancy.
C.—R. M. Grant.
$3,000.

Hardie, nr. Sixteenth. One-story and basement frame.
O.—J. McIntyre.
C.—J. J. Welsh.
$800.

Seventeenth, x Church and Sanchez. One-story and basement frame.
O.—C. F. Dohm.
C.—H. Mayne.
$2,500.

Jones, near Washington. Two-story frame.
O.—Mrs. Overend.
C.—Hanna & Cornell.
$5,000.

Taylor, x Jackson and Pacific. Two-story frame.
O.—Mrs. S. C. Harding.
C.—A. R. Denke.
$4,000.

Hyde, x Broadway and Vallejo. Two-story frame.
O.—C. Harrigan.
A.—Townsend & Co.
Days' work.
$6,000.

Vallejo, nr. Mason. Three-story and basement frame.
O.—R. Da Meur.
C.—E. Castagnino.
$1,800.

Vallejo, x Mason and Powell. Two-story and basement frame.
O.—A. Kaufman.
A.—G. E. Voelkel.
C.—J. Doherty.
$4,000.

Twentieth, cor. Guerrero. Alterations.
O.—G. F. Turner.
A.—Newsom Bros.
C.—Moore Bros.
$3,000.

Waller, x Webster and Fillmore. Two-story frame.
O.—E. W. Strange.
A.—Newsom Bros.
C.—Moore Bros.
$3,250.

Clay, x Broderick and Devisadero. Two-story frame.
O.—George Chattin.
A.—Townsend & Co.
C.—Moore Bros.
$4,000.

Page, x Gough and Franklin. Bankhead and foundations.
O.—George Strasser.
A.—G. H. Miller.
C.—J. Garrity.
$1,000.

Jackson, No. 1424. Alterations.
O.—M. Kelly.
A.—Curlett & Cuthbertson.
C.— — Synon.
$1,000.

Valencia, cor. Fourteenth. Seven two-story frame.
O.—P. Ashe.
A.—Curlett & Cuthbertson.
C.—A. Flood.
$21,000.

LOS ANGELES.

Two-story brick.
O.—J. Bryson.
A.—Kysor & Morgan.
$14,500.

Two-story brick.
O.—J. Schumacher.
A.—Kysor & Morgan.
C.—J. Witte.
$22,000.

Two-story brick.
O.—L. Koeder.
A.—Kysor & Morgan
C.—Bell & Haskell.
$13,000.

First Baptist Church.
A.—Kysor & Morgan.
C.—W. O. Burr.
$19,000.

Two-story dwelling.
O.—Mrs. Scott.
A.—Kysor & Morgan.
C.—R. B. Young.
$5,300.

Two-story dwelling.
O.—Mrs. McDougall.
A.—Kysor & Morgan.
C.— — Hargitt.
$11,000.

WOODLAND.

Main, cor. Second. Two-story brick.
O.—Mrs. R. L. Beamer.
C.—Samuel Caldwell.
$10,000.

Main, nr. Second. Alterations.
O.—Mrs. R. L. Beamer.
Days' work.
$800.

Near Town. Two-story frame.
O.—S. P. Pond.
Days' work.
$1,600.

First, cor. Court. Additions and improvements.
O.—John M. Rhodes.
B.—Gilbert & Son.
Days' work.
$1,000.

Court, cor. Second. Two-story frame.
O.—Dr. L. Welges.
Days' work.
B.—George Smith.
$750.

Fourth, cor. Cross. Finishing off basement rooms.
O.—A. J. Gilbert.
B.—Gilbert & Son.
$500.

Second, One-story frame.
O.—John Freeman.
B.—W. H. Winne.
$1,600.

South Woodland. Additions and improvements.
O.—E. McGonnegal.
B.—Gilbert & Son.
Days' work.

Capay Canon. One-story frame.
O.—F. S. Freeman & Co.
C.—W. H. Winne.
$1,000.

Second, nr. Main. Alterations and improvements.
O.—Dr. A. Aiken.
B.—Gilbert & Son.
Days' work.
$500.

Capay Canon. One and one-half-story frame.
O.—F. S. Freeman & Co.
C.—W. H. Winne.
$2,500.

Main, cor. Second. Fitting up office.
O.—W. M. Coward.
—— W. Wilson.
Days' work.
$1,600.

Second, nr. Lincoln Ave. Improvements.
O.—M. H. Torrence.
C.—Gilbert & Son.
Days' work.

———— Additions and improvements.
O.—C. T. Bidwell.
C.—G. K. Glenn.

South Woodland. Two-story frame barn.
O.—W. B. Gibson.
Days' work.
$1,500.

Main. Inside finish.
O.—S. C. Gray.
Days' work.
$800.

College Avenue. One-story frame.
O.—Mrs. M. C. Briggs
C.—G. K. Glenn.
$2,500.

Main, nr. Fourth. Improvements.
O.—Clark & Culver.
——Gilbert & Son.
Days' Work.

Main, cor. Fifth. One-story frame.
B.—S. Caldwell.
$2,500.

East. One-story frame.
O.—Mr. Brunner.
B.—Mr. Jackson.
$1,000.

Court. Skating-rink.
O.—Dinsler & Fiske.
C.—Fern & Nickelson.
Days' work.
$1,800.

East Main. One and one-half-story frame.
C.—H. Davis & Co.
B.— A Stamp.
Days' work.
$2,200.

Eucalyptes Ave., Addition and improvements.
O.—S. Y. Dillon.
B.—Gilbert & Son.
Days' work.

East Woodland. One-story frame.
O.—Armstrong & Alde.
A.—A. Stamp.
Days' work.
$1,000.

Oak Avenue, cor. First. Additions.
O.—C. D. Beveleson.
C.—Gilbert & Son.
$1,000.

Court. Armory of Company F, First Artillery Regiment. Improvements.
O.—Armory Hall Association.
Days' work.
$1,800.

ALAMEDA.

Central Avenue, nr. Benton. Two-story and basement frame.
O.—Wasson & Pattiani.
B.—Wasson & Pattiani.
$5,000.

Foot of Webber. Two-story and basement frame.
O.—Mrs. J. Dwinelle.
A.—Townsend & Co.
C.—W. P. Clark.
$5,000.

Willow, x Railroad and Santa Clara aves. Two-story frame.
O.—I. Air.
C.—N. McComas.
$3,600.

Pacific Avenue, nr. Bay. One-story and basement frame.
O.—P. J. Cassin.
A.—T. J. Welsh.
Days' work.

OAKLAND.

Sixteenth, corner Filbert. Two-story and basement frame.
O.—S. T. Alexander.
A.—Clinton & Day.
C.—E. Child.
$18,000.

Webster, near Seventh. One-story frame.
O.—South Pacific Coast Railroad Co.
C.—B. McManus.
$1,700.

Eighteenth, x West and Market. One-story and basement frame.
O.— — Cayasso.
C.—Abbott Bros.
$1,600.

Eighteenth, near Market. One-story and basement frame.
O.—J McCully.
C.—A. Hughes.
$2,000.

Market, nr. Twenty-fourth. One-story frame.
O.—L. G. Lindgren.
B.—L. G. Lindgren.
$800.

Telegraph Avenue, cor. Twentieth. Two-story frame
O.—W. A. Griffith.
B.—W. A. Griffith.
$2,000.

Third, nr. Harrison. One-story frame.
O.—Dr. Simonton.
C.—D. Markel.
$1,100.

Twelfth, cor. Oak. Two-story frame.
O.— — Warner.
C.—Veitch & Knowles.
$2,000.

Ninth, x Madison and Jackson. Additions.
O.— —Gilman.
C.—Haskell & White.
$1,600.

SACRAMENTO.

J x Seventh and Eighth. One-story and basement brick.
O.—A. Coolot.
A.—N. D. Goodell.
C.—E. A. Boyer.
$2,000.

K, x Fifth and Sixth. Reconstruction.
O.—P. Newman.
A.—N. D. Goodell.
C.—Carle & Croly.
$2,000.

J, x Seventh and Eighth. Repairs to brick buil.
O.—T. McMorry.
A.—N. D. Goodell.
C.—Carle & Croly.
$5,000.

J, x Seventh and Eighth. Fitting up store.
O.—C. H. Gilman.
A.—N. D. Goodell.
C.—J. White.
$1,000.

One-story and basement brick.
O.—W. Kerth.
A.—N. D. Goodell.
C.—B. F. Bell.
$2,007.

SAN JOSE.

Alviso Road, near town. Two-story frame.
O.—J. H. Oyler.
A.—Theo. Lenzen.
C.—Thos. Livingstone.
$9,000.

Storey Road, near town. Two-story frame.
O.—A. H. Albers.
A.—Theo. Lenzen.
C.—E. A. Van Dolsem.
$6,000.

Seventh, x San Antonio and San Carlos.
O.—D. Hatman.
A.—Theo. Lenzen.
C.—W. S. Boyles.
$1,500.

STOCKTON.

One-story brick.
O.—Sperry & Co.
A.—Percy & Hamilton.
C.—W. Saunders.
$6,946.

Three-Story frame.
O.—W. P. Miller.
A.—Percy & Hamilton.
Days' work.
$12,000.

Two-Story brick.
O.—Sperry & Co.
A.—Percy & Hamilton.
$8,000.

MISCELLANEOUS.

Guerneville. Two-story frame.
O.—Odd Fellows.
C.—F. J. Ryus.
$2,250.

Florence. School House.
A.—Kysor & Morgan.
C.—W. Jeans.
$2,400.

Pomona. Two-story brick.
A.—Kysor & Morgan.
C.—J. C. Cord.

Berkeley. Two-story frame
O—Mrs. R. Clark.
C.—C. G. Beadell.
$1,000.

Livermore. Two-story frame.
O.—J. Johnson.
Days' work.
$3,000.

One-story frame.
O.—Wilkinson & Jones.
C.—C. W. Bradshaw.
$800.

One and one-half story frame.
O.—C. W. Bradshaw.
B.—C. W. Bradshaw.

Martinez. Two-story frame
O.—D. Bush.
A.—W. H. Wharff.
C.—Bulger Bros.
$5,000.

Riverside. Two-story frame. Presbyterian parsonage.
C.—A. W. Boggs.
$2,800.
Two-story frame.
C.—Porter & Davis.
$2,000
Two-story brick.
C.—A. W. Boggs.
$6,000.
Two-story frame.
C.—Porter & Davis.
$2,200.
One-story frame.
C.—Seymour & Stevens.
$1,200.
Two-story frame.
C.—A. W. Boggs.
$2,350.

MARKET REPORTS.

The price of lumber has again been advanced. Quotations below are taken from the new schedule.

LUMBER—*Pine.*

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough			18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	33 50
"	4 "	and under, and 1¼x4 and 1¼x6	40 00
Flooring and Stepping			40 00
Rough Clear for Flooring, $1 less than above rates.			
Second Quality Flooring and Stepping		per M feet	28 50
Ship Plank, Rough		"	28 50
"	Planed 1 side	"	32 50
"	" 2 sides	"	35 00
Deck Plank, Rough		"	33 50
"	Dressed	"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17 50
	Redwood.		
Rough Merchantable		per M feet	$22 50
"	Refuse	"	18 50
Surface No. 1		"	40 00
"	1x6	"	37 50
"	No. 2	"	27 50
Rustic, No. 1, 1x8		"	37 50
"	No. 1, 1x10	"	40 00
"	No. 2,	"	35 00
"	Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6		"	40 00
"	6 in. 12 ft. and over	"	37 50
"	" 7 to 11 feet	"	32 50
"	" under 7 feet	"	30 00
"	" No. 2	"	30 00
T. & G., Beaded, 12 feet and over		"	40 00
"	" 7 to 11 feet	"	32 50
"	" under 7 feet	"	30 00
Half-inch Surface		"	32 50
Pickets, fancy		"	30 00
"	Rough, Pointed	"	20 00
"	" Square	"	17 50
Siding, ½ inch		"	27 50
Shingles		per M	2 50
Battens, ½ inch, lineal feet		"	1c

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8	"	"	4 15
6	"	"	4 40
5 and 4	"	"	4 65
4 and 5	"	brad-heads at	5 15
6	"	"	5 40
8	"	"	5 75

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All Impediments to Building Improvements Removed.

THERE has hitherto—since 1880—been two matters of law which have discouraged many owners from improving their property by the erection of buildings: *First*, the Mechanics' Lien Law, as it appears on the statute book, and during the past three years generally accepted as the law governing the matter, made owners liable for all bills contracted in the erection of buildings, for labor, materials, etc., without regard to the sum of contract. This feature has been set aside by the recent decision of the Supreme Court, as elsewhere stated in this issue, and the declaration made by the court of last resort, that owners can be holden *only for the amount expressed in the contract*. Consequently the lien law is now as it should be, harmless against owners, beyond the sum of contract. *Second*, the ruling of the Supreme Court in the case of Zeile *vs.* Hood, as elsewhere herein stated, supported the doctrine that owners excavating for the purposes of building were obliged to sustain and underpin structures on the adjoining premises. The effect of this ruling was to discourage many from making improvements, they preferring to allow their property to remain unimproved rather than be forced to bear the expense of sustaining their neighbors' buildings. But the Supreme Court has, by a late decision, removed this obstacle, by virtually affirming that every owner of real estate shall have the right to excavate to the depth of fourteen feet below the curb level, with the simple restriction that proper written notice of intention to excavate shall be served upon adjoining property owners, who must, upon the service of such notice, take care of and underpin such buildings, etc., as may be affected by such excavations, at their own cost and expense.

Mechanics' Lien Law.

DECISION BY THE SUPREME COURT.

THE Supreme Court of this State, in a decision rendered in the case of Latson *vs.* Nelson, filed July 24, 1883, has defined and fixed the legal force and effect of the Mechanics' Lien Law of California, thereby setting at rest all questions as to the rights of owners, contractors, material men, and others, whose interests may in any manner, now or hereafter, be affected by the operation of the law.

The construction placed upon the Lien Law by the court of last resort fixes the fact that owners of real estate and others entering into contract obligations are bound by the conditions and agreements, and for the specific sum expressed in the contract entered into, but not for any sum greater than the contract amount, all other things being regular. The Legislature convened next following the adoption of the new Constitution, amended the Lien Law passed April 11, 1872, by striking out the illogical and absurd section which had been adopted with the passage of the law as a whole, which made all parties—architects, mechanics, material men, artisans, and even common laborers—performing labor, rendering services, or furnishing material for or in connection with the erection of buildings, etc., at the instance and request of the contractor, without the owner's assent or approval, "*the agent of the owner for the purposes of this act.*" A proposition so adverse to all principles of law and common rights, was, as a matter of course, doomed to repudiation whenever submitted to the judgment of an impartial, competent tribunal. Consequently, when the law of 1872 was appealed to the Supreme Court, the—everybody—an agent of the owner feature, was virtually stricken from the statute, leaving the rightful protection which the law provided, of liens against property and improvements for the full amount of contract and no more.

In place of the section stricken out, however, another was substituted by the Legislature of 1880, of similar import and character, and equally as inequitable, being no more nor less *in effect* than a re-enactment of the rejected section in a new wording, the material clause of the new section (1) reading as follows: "*This lien shall not be affected by the fact that no money is due or to become due on any contract made by the owner with any other party.*" Thus placing owners at the mercy of those to whom they might intrust their interests by contract, without any security whatever in or under the written agreements. True, owners by requiring bonds and securities *outside* of the contract—by drawing in and involving innocent parties as bondsmen—might, at the end of a lawsuit, save themselves by recovery upon the bond, less the costs, vexations, and annoyances ever attending suits at law. Upon this point the Supreme Court, in its late decision, remarks: "*It is said that the owner has full security in the right to require a bond of the contractor that no liens shall be created. So far as that is any argument, it may with equal force be said that the material man may require payment or security of the contractor before parting with his goods!*"

But while this decision settles the Lien Law question and places the responsibilities and securities just where they should rest, there are some who will insist that the Supreme Court has erred in its judgment and should be reversed.

As a matter of course, those whose interests are secured and protected by the decision will approve; while those who have hitherto felt themselves safe against the defaults of contractors, by enforcing their claims against owners without regard to contract considerations, will disapprove. This is a natural sequence, as the justice and equities of all laws, as a rule, are weighed and valued by individuals in the light of personal interests; consequently there will ever be uncertain diversities of opinion; for the law approved and advocated under one set of circumstances, will, by the same parties, be rejected and opposed at other times, because of reversal of issues. Every good man claims to be a law-abiding citizen, and is so in fact when there is no sacrifice required in occupying that position; but when law and individual interest come in conflict, no man living will yield personal interests to law, if by any means it is possible to secure those interests, even though all the laws upon the statute books of the land should be sacrificed.

This, however, is certain for the present: The Supreme Court has, by its late decision, ended all speculation and controversy in reference to the Lien Law, and those who desire to make improvements can do so without fear of being called upon to pay more than the contract price.

Epidemics—Sewerage South of Market Street.

We clip the following from the *Examiner:*

"Health officer Mears is of opinion that there are no grounds for fearing an immediate introduction of cholera, yellow fever, or small-pox into San Francisco, but thinks that the city should be placed in proper sanitary condition, especially as regards the sewerage south of Market Street."

All of which may be true. We have repeatedly referred to the condition of the sewerage south of Market Street, and urged the necessity of its improvement, not only as a safeguard against epidemics, but for the general health of the people residing and doing business south of Mission Street. But how is this to be done, with the general grade of the streets as they are, taking the line of Sixth Street as a guide, with the last five blocks in from the outlets of the sewer as base, a total distance of over 2,000 feet, without any fall whatever, the established grades being: Mission Street, thirty feet; Howard Street, ten feet; Folsom Street, five feet; Harrison Street, two feet, and Bryant, Brannan, Townsend, King, Berry, and Channel Streets at zero, the greater number of the blocks being 550 feet, beside the width of crossing streets. The only apparent remedy under the circumstances is the filling in and raising of the whole district so affected to a uniform grade from the higher point—Mission Street—and making a uniform grade of thirty feet from Mission Street to the mouth of the sewers, instead of twenty feet from Mission to Howard, five feet from Howard to Folsom, three feet from Folsom to Harrison, two feet from Harrison to Bryant, and a dead level of 2.000 feet and over from Bryant to the sewer outlet, the other corresponding streets being at the same disadvantage. To do this will now cost a considerable sum of money, which, however, would be more than compensated by the increased value of the property affected, as it is a certain thing that the property of the entire section would double in value were the filling-in done. At present, and for years past, a cloud has rested upon the whole district mentioned, and it has been in continued disfavor, owing to the state of facts recited. There is no good reason why the property south of Mission Street should not be very much more desirable than it is, the only drawback being its flatness and want of good sewerage, and consequent dampness generally; all of which can be remedied, and would have been twenty years ago had the order then passed by the city council been carried out, which order placed the grade of Folsom Street, at Sixth, seven feet higher than its present depression. But the importance and necessities for this change of grade was not so forcibly apparent then, although the cost at that time would not have been more than one-tenth what it would be at present, and the property owners in that section, failing to anticipate present conditions, they succeeded in nullifying the order, and property south of Market Street has been injured millions of dollars in depression of values and income.

If this filling-in was determined upon and put into practical execution now, even at its greater cost—owing to the number of buildings that would have to be raised, etc.—it would pay, as it would require the hills and banks of materials now occupying numerous valuable lots and whole blocks in various parts of the city, which remain from year to year ungraded because of the cost involved, grading being expensive work, owing to the great lack of convenient dumps. There is no other one project that would be more beneficial to the city of San Francisco than that suggested in this connection, as it would give employment to thousands of men and hundreds of teams, and add millions to the assessable value of property, both south of Market and that which would be increased in value by being graded off to furnish the filling-in material. Sacramento furnishes an example in the filling-in of the entire city ten feet more or less, by which the healthfulness and importance of the city was greatly improved; and there is no good reason why that part of San Francisco which might be made very desirable for both business and residence purposes should be held at its present low standard, owing to its shamefully insufficient sewerage. and the lack of enterprise on the part of those most interested to reclaim it, and make it what it is capable of being made.

Mr. Theo. A. Eisen has resumed the active practice of his profession as architect, and can be found at 218 Post Street, San Francisco.

Old Homes Made New. Price $1.50.

Sensible Letter from a Lumber Dealer.

Editor California Architect — *Dear Sir:* Much has been said from time to time by interested parties in reference to the "Mechanics' Lien Law," as to the protection it affords citizens and material men. A good deal of law and legislation has been had to try and make it what it was and is intended it should be, to wit, absolute protection. But all the brains, time, trouble, and expense heretofore bestowed upon it seems, under the late decision of the supreme authority of the State, to have gone for naught; and now, practically, the "lien law" is in the same condition it was before the adoption of the new constitution, which was at best a "trap and a snare," except as between principals. Now I think a great deal of trouble, anxiety, and not a little coin can be saved if the parties who first contribute to the "start" of a building, to wit, the lumber dealers, of which I am one, would refuse absolutely to furnish lumber to any party who they would not consider worthy of credit, independent of a possible security through the "lien law." This would have the effect of shutting off all those who now, and for many years have disgraced an honorable calling, the "contractor and builder," and reduce the number of "figurers" to those who have a respectable standing in the community and whose credit is beyond question, thus enabling them to obtain a fair price for their work, leaving them a legitimate profit, and in turn to pay a fair price to all those who in any way contribute material, brain, or muscle to the structure. In this way owners would get better work and better value for their money, because all sub-contractors would, without doubt, work with a better grace and feeling and at a lower price, knowing that their pay was absolutely safe, and removing that uncertainty that at present, to a great extent, exists; and I claim also that owners would reap many other benefits that I may point out at some future time. How many owners are there who heretofore have had to defend their property as against "liens," through no fault of their own, but through the incompetency if not the dishonesty and unreliability of their builder. And how many architects have been annoyed beyond description from the same cause. Hence I repeat that the whole fault lies with the lumber dealer; for if the contractor, or the party who sets himself up as such, could not get lumber he could not "start" his job, and would be forced to withdraw in favor of some more responsible person.

In my opinion all artisans and material men would be better off if there was no "li n law" at all, except as between principals, for, as I have hereinbefore stated, the present "lien law" is nothing more or less than a "trap and a snare" to catch unsuspecting victims.

Not desiring to impose upon your good nature by taking up too much of your valuable space in presenting my humble views, I will close. Yours respectfully,

A Lumber Dealer.

New York Street Architecture.

A. CURTIS BOND.

THE ROMANESQUE.

The Romanesque, corrupted from the Roman, has invaded all other styles and left them marked with its name and its peculiarities; those familiar to us to-day, the Byzantine, the Moresque, the Gothic, have all appropriated its suggestions and its patterns, until we have almost sunken the individuality of the Romanesque proper and transformed the title into an adjective descriptive of a place of the orders named.

In the early Christian styles the tendency of the Romanesque influence was toward creating tall towers, square capped and without any appreciable variation in measurement at the extreme top or bottom; in columns the greatest latitude was permitted, for not only were they frequently unlike in proportions, but the material and workmanship presented contrasts that cannot be said to have always been either picturesque or harmonious. The disposition was to have all things one-sided, unequal, illy-balanced, towering to an awkward height and then ending abruptly in a flat-looking cap.

In another instance of the Christianized Romanesque the form of the bath was adopted, a circular structure with a center dome, all of the building being embraced within the limits of the circular walls, no wings nor other projections being usual.

With the progress of events and the advance of architectural skill, the Byzantine came into existence and the Romanesque took another form as it entered into this new acquisition to the orders. The prominent features of this new form of buildings were heavy piers and spreading arches supporting a dome that rose over the center and had vaulted side spaces connecting with it. Columns were used more as ornamental and decorative features than as entering into the necessities of construction; cornices and capitals were discouraged, and in many instances they were almost entirely ignored. The church of St. Sophia at Constantinople is generally selected as being the most brilliant and authentic example of this style. It is certainly one of the most wonderful in point of extent and elaboration that has ever been constructed. It rises gradually from comparatively low arch-supported side structures, to the rotund roof of an inner row of vaults, and from these latter swells gracefully and magnificently into a dome that is nearly 200 feet above the pavement, and looks down upon an interior decoration and display of niches that made it, even in those extravagant times, an object of admiration and brilliant example for other humble but ambitious designs.

As the Byzantine made itself known and spread through Europe, its Romanesque ingredient became more and more evident, and in Armenia, for example, the Byzantine character was preserved only in the ornamentation; the shape, lines, peaked roof and towers, surmounted by a shapely slanting cap, were eminently Romanesque, uninfluenced by any other styles.

In Russia, on the other hand, there was made up such a conglomerate specie of architecture that almost every possible style was made a part, sharp roofs, pinnacle-like in their height and slender proportions, their outlines jagged with protruding ornaments and the apex crowned by a small ball. Towers rose in the same building, octagonal and having balconies at irregular intervals, and supporting an immense globe, shaped like a gigantic inverted bubble, with the stem pointing toward the sky and adorned with numberless chains and gilt ornaments that sparkle and glisten to the intense delight of the superstitious crowds thronging the plaza below, and who, between the shouts of long life for their Pope and father, the Czar, paid their devotions to the painting of their saints, protected beneath these hybrid roofs and pictured by the local artists in high-top boots and attired in the costumes that we can only associate with modern civilization. The domes are painted in brilliant colors, silvered, gilded, yellow, red, or white, green or blue, with bright stars sprinkled over all, and the colors laid on in stripes, squares, circles, as the architect felt was the more effective. Such an architecture as this, while it is unquestionably unique and peculiar, lacks the tasteful attrac-

Plate 1.—Dry Dock Savings Bank.

tions of other forms of the Romanesque, and becomes almost absurd in its mass of detail and useless accessories.

From the Byzantine to the Mahometan is but a step, but the difference is noticeable. We leave a style marked by fanaticism, an ornamentation burdened by symbols, lavish in its extent and religious in its character, oppressive with its reminiscences of assumed martyrdom, or with its monograms and trade marks of saintly individuals; and yet, withal, a style that is original and becomes with closer study interesting.

The Mahometan, on the contrary, aside from its occasional introduction of passages from the Koran—the letters of the language combining so well with the ornamentation as to appear as a part of it—with this exception, there was nothing to remind one of what is considered by many the serious affairs of life, and everything to create in the brain a lively imagination and an exaggerated sense of enjoyment.

The Mahometan Romanesque in Spain became the Moresque, whose gradual filiation through the requirements of the different countries to the restriction of street architecture in this city we showed the result of in our June number. In Turkey it displays a barren wall pierced by small windows, prompted

to this cloister-like aspect by jealous pashas and exuberant *odalisques;* in Egypt variety is given to the outward appearance by latticed bow windows clinging to the house side, and at which an occasional glimpse is had of a peeping face partly concealed by a veil, the female herself being rigidly guarded from the sight of the Caucasian race, though why it is difficult to understand, for the few samples of this particular kind of household appurtenances that I saw, in a recent visit to that country, had very few charms of features, and their corpulency was of that pronounced type vulgarly associated by us with those Cuicuinations recently ruled out of Germany by Bismarck. In Spain the forbidding exterior was replaced by one of great beauty.

It is perhaps unnecessary to follow the thread of the Romanesque through the various stages of its modern development. It would be an interesting study, though a lengthy one, and we may some day return to the subject with illustrations of the prominent peculiarities of each stage. It has found its way into Germany, Italy, France, and England; there is a Venetian Romanesque, an Italian, French, and Spanish, with minor branches such as the Provencal, Angiovine, Aquitanian, the Apulian, and the Pisan. The Oriental spirit is inherent in the Apulian form, and it is rich in sculptured animal figures; a Gothic tendency is found in French and Spanish.

By the time it reaches our country it becomes what we see it in our accompanying illustrations. Figure 1 is a representation of the Dry Dock Savings Bank and is as near an

PLATE 2.—DWELLING IN AMERICAN ROMANESQUE STYLE OF ARCHITECTURE.

approach to the true Romanesque as modern New York architects will tolerate. The building is of light stone with tile caps over the windows and doors; the entrance is richly sculptured, and the Gothic balcony has its roof supported by polished marble pillars. The sloping roofs are slate. The style is what is strictly known as the English Romanesque, the arches and balconies tending toward the German Byzantine; an application of the form very far from its original purpose

Figure 2 is a more modernized American Romanesque of really good lines and embracing English Gothic windows with Byzantine details. The building is of brick with light stone trimmings and gray slate roof. It stands at the corner of Fifty-seventh Street and Fifth Avenue, and is the residence of Mr. F. W. Stevens The exterior is so inviting in appearance that we have intruded upon the privacy that should protect one's home and reproduce from our New York contemporary, *The Decorator and Furnisher*, an excellent view of the parlor, in which the ceilings are heavily paneled and the walls are hung with tapestry. The mantel is a wonderful combination of embossed velvet, and the columns rising from it are of highly polished wood. With our reader's permission I will digress for a moment to show them the dining-room of this house, and my only excuse must be that it is one of the most noticeable and written about of any similar room in the city. The walls are decorated in Pompeian red and portieres of Japanese silks are suspended at the doors; stained glass windows representing the

PLATE 3.—INTERIOR VIEW OF THE PARLOR IN AMERICAN ROMÁNESQUE DWELLING.

(From the New York Correspondent of the CALIFORNIA ARCHITECT AND BUILDING NEWS.)

seasons, and others bearing the ever-hungry goddesses, Pomona and Ceres, are six in number; mottoes suggestive of the pleasures of the table are upon the walls, and they are so arranged as to enter into the ornamental figures and form a part of them. Light is provided at night by means of candles, thus avoiding the destructive qualities of gas. I might lengthen this brief description, but feeling that I have transgressed now beyond the scope of our paper, I must put a brake to my inclinations.

. . . . . .

As a matter of news I might call attention to the new building of the Mutual Life Insurance Company that is being put upon the ground formerly occupied by the old post-office, a miserable excuse for a Government office that will be familiar to our readers who were acquainted with New York ten years ago. The location is on Nassau Street, extending from Cedar to Liberty Streets. The old place served at various times during its career as church, riding school, dog pit, and post-office, ending its career as a broken-down auction room and a succession of delapidated private offices, mostly devoted to beer, billiards, and young lady type writers. The wretched structure was torn down, and as if to complete the diversity of its experiences several bodies were discovered amid its foundations. This is the site of the New Mutual Life Company's building, and the situation is in a measure worthy the labor they are putting upon it. Nassau Street is one of the busiest thoroughfares in the city and one of the narrowest streets in the country, shut in by large houses rising seven or eight or ten stories toward the sky. The Mutual can only hope to shine and be distinguished by piling story upon story until it towers above all others. And this is the idea. It is to be 190 feet tall, overloom everything about it, and hopes to fly from its lofty towers the signal flags of the weather bureau's survey, now monopolized by the Equitable Insurance Company by virtue of their extreme height, but their laurels seem now to be endangered and bid fair to rest upon other brows. The new building is up only one story and gives but little idea of its architectural character excepting that it will be substantial rather than ornamental and less decorative than massive. The material is granite, and already there is a profusion of polished columns that is really perplexing, and the round corners of the building, if carried up its entire extent, will give a finish that will be novel and agreeable.

Dio Lewis' Monthly.

A NEW aspirant for the favors of the public appears upon our desk under the above title. The author is so well known that we have no doubt but that he will gather in many of his admirers on his subscription list. Terms, $2.50 per year.

Wooden and Brick Buildings, 2 vols. Price $18.00.

Street, Store and Bank Fronts. Price $4.00

Labor Strikes.

DURING the past three months the "striking" spirit seems to have taken possession of the laboring classes in almost all lines of labor operations. The prosperities of the last three years, which have gladdened all hearts and furnished employment to all classes of skilled and unskilled labor throughout the country, has awakened and stimulated in those who plod along from year to year under the yoke of labor, enforced by necessities in the obtainment of daily bread, the determination to seek relief in fewer hours of labor, in increased compensation, and the right to regulate the methods, rules, and equities of labor, so as to relieve it of all unnecessary hardships, and secure to those obliged from force of circumstances to walk within its restricted limits, all the reliefs and comforts possible; all of which are but the natural results of a prosperous condition of affairs generally, in which the masses of mankind feel that they have common rights, and should enjoy proportionately the benefits flowing and maturing from such general prosperities.

There is in every right-minded man that lives, the desire and ambition to better his condition. This is one of the greatest incentives to human action, and the beacon light that encourages those who would otherwise settle down in the gloom of "nothing beyond." But some are more successful than others in this universal reaching after and grasping the gifts of fortune—some gathering in and securing millions, while the greater number accomplish but little more than the securement of daily bread; yet the *right* to possess and enjoy an equal share of this world's goods is co-equal in all, although the qualifications to this end are vastly disproportionate. Still, with the enlightenments of the present age, the daily plodding, toiling multitudes will not quietly submit to some of their own blood and race being enthroned upon altars of gold, and clothed in habiliments of luxury and wealth, while they remain dependent upon and bound down to the slavery of labor, requiring all the working hours of day and the full strength of manhood, yet yielding no more than a mere subsistence. Hence the numerous disquietudes and uprisings which vitalize into strikes, and which as a rule inflict as great injury as benefit; but the battles will be renewed from time to time, both the workers and employers utilizing the advantages of circumstances and conditions as they present and repeat themselves, under the ever-changing degrees of prosperity which surround all business activities upon land or sea.

The Inspector of Plumbing.

MR. JAMES E. SWEENEY, plumbing inspector appointed by the Board of Health under the plumbing law of this State, called at this office on the 4th inst. and expressed an earnest desire that the most cordial and friendly relationships may exist between himself, architects, owners, and contractors generally, with whom he may be brought in contact in the course of his official duties. He unquestionably enters upon his work with an honest purpose to carry out the provisions of the law creating his appointment, and being himself a thoroughly competent and practical plumber, as we and many others in the profession can testify, it is fair to anticipate that under his watchful care plumbing frauds will be matters of the past. But it will require resolute mechanical and executive abilities and energies on his part to hold in check and prevent the numberless "nigerisms" which have hitherto prevailed, until, with a certain class, good workmanship and honest dealings have become almost obsolete considerations, bringing upon the plumbing art reproaches and mistrust. But if the gentleman named will exercise qualifications as inspector in degree and force equal to his mechanical abilities there need be no fear as to the result.

THE rules and regulations require that drawings and sketches sufficient to represent correctly the run of sewers, and sections illustrating the arrangement of the soil and waste pipes, etc., through the building, are to be filed in the office of the Board of Health; and, if found not to be correct in any particular, Mr. Sweeney will promptly correspond with or interview the architect, and suggest the necessary changes.

THE matter of payment for this extra service will rest between the architect and owner, and may be made a direct and separate charge against the owner, or the expense thereof may be stated in the plumber's specifications, and the plumber be required to pay the cost thereof to the architect. If the latter course shall be pursued, the payment may be reached without calling the special attention of the owner to the matter. It is a common thing to include, "the plumber is to pay the cost and expense of making the water service connection," and to make the charge for the extra plans a like matter of specification will serve all purposes, insure the payment thereof to the architect, and do no injustice to the owner. And it becoming a fixed item under the law, owners cannot object to the method suggested, unless he prefers to pay the amount direct, in addition to the fee agreed upon.

The Chapter Improperly Reported.

THE *Bulletin*, in its report of the meeting of San Francisco Chapter, held the 3d inst., says: "The *law* relating to the inspector of plumbing was discussed, and it was apparent that it did not meet with approval of the majority." This statement is misleading and erroneous, as the fair inference to be drawn from the language used is that the *plumbing law* passed by the last Legislature of this State, which authorizes the appointment of an inspector of plumbing, was the subject matter of debate; while in fact said *law* cut but an incidental figure in the discussion, which ran exclusively upon the *rules and regulations* adopted by the Board of Health, which was freely discussed and criticised, all present agreeing that they were and are imperfect, inexplicit, and defective in several materially important respects. We should not notice this did it not misstate facts and misrepresent the views of members of the chapter. Whether such was the intent or not, it assumes the appearance of the *Bulletin* seeking to sustain and strengthen its repeatedly expressed opposition to the plumbing law, by making it appear that the architectural association of this city virtually indorsed our contemporary's views of the case—a something that has not been done, and will not be until experience shall demonstrate the impracticability and insufficiency of the law to regulate and correct the evils, for the correction of which the law was passed.

San Francisco Chapter, American Institute of Architects.

THE regular monthly meeting of the above chapter was held in the rooms of the Art Association on Friday evening, August 3, President John Wright presiding.

Minutes of preceding meeting were read and approved.

Mr. Pissis reported that his class was getting along finely. The regular place and time of meeting was Thursday evening, at the office of Wright & Sanders, between 8 and 9.

The several committees on incorporation of the chapter, room for the use of the class in carving, etc., reported progress and were continued.

A communication was read from the Rhode Island Chapter, A. I. A., informing this chapter that it was desirable that drawings, sketches, etc., should be received from the members of S. F. Chapter for exhibition at the National Convention of A. I. A.

The Secretary was instructed to notify the R. I. Chapter that the notice of time in which to prepare plans or sketches was too short to allow of members doing themselves justice.

N. L. Mayo was proposed for membership as student. The rules and regulations adopted by the Board of Health in regard to the new Plumbing Law were discussed. No action was taken.

Nominations of officers for ensuing term being in order, it was moved and seconded that the various officers now holding the different chairs be renominated. Amended so as to substitute H. C. Macy for Treasurer in place of the present incumbent, on account of the latter having removed his residence to Oakland. Also the Recording and Corresponding Secretary were united in one office, and G. H. Wolfe nominated for the dual place.

On motion, it was resolved that this chapter offer a premium of $30.00, in three prizes of $15.00, $10.00, and $5.00, for the best three designs for a seal for the use of this chapter, the competition to be confined strictly to the students in the profession.

CURLETT & CUTHBERTSON have removed their office to the Phelan Block, junction of Market and O'Farrell.

The Importance of Learning to Draw.

TRAINING in art is a means of education, of calling out faculties of the body and mind which would otherwise lie dormant, of opening sources of pleasure in an intelligent appreciation of works of art—people who do not understand art practically almost always admire bad things—and of giving, by means of the power of drawing, a more accurate perception of the forms of objects, and a capacity for representing and describing them in a manner far more direct and more universally intelligible than any written description can be. This practical value of drawing has been borne witness to by not a few employers of labor, who have given it as their experience that a workman who could draw and could properly understand a drawing was always more capable, more useful, and better able to carry out his instructions than one who could not. The practical value of drawing may be recognized, even apart from its operation on the understanding, in its power of promoting greater delicacy of manipulation in operations quite apart from that of drawing in itself. One of the best amateur artists of the day, as is well known, is an eminent surgeon who has declared that he first took up etching because it was a recreation which would have the effect of rendering his hand more delicate for his important professional work. One of the best remarks in regard to this result of training in drawing was given by a lady who was a candidate for a school board election, and was asked, somewhat indignantly, by one of her working-class constituents, what was the use of teaching drawing in the board schools to girls who were going into service, for instance; and why their education was not confined to things that would be useful to them in their future life? The reply given was that there was no more common complaint against female servants than about their clumsiness in handling fragile things, such as glass and china, and their continual breakage of such articles in consequence; and that a training like drawing would probably do more to render the hands more safe, careful, and sensitive to touch than any other influence that could be named. Of course, it might have been said in addition that a knowledge of drawing would give a domestic servant even greater advantages than that, in providing her with a more interesting and sensible occupation for her leisure time than reading "Penny Dreadfuls."

Probably the reform would be accelerated not a little if it were once fairly recognized that there is a practical value in the power of drawing for men who are in trade and commerce, and that it is not a mere accomplishment for ladies and gentlemen. In many schools the mistake is that drawing is only voluntary. Few school-boys are likely to do anything voluntarily in the way of work; and as drawing taught on the scientific method really is work, and not mere trifling with brush or pencil, it may be surmised that only a very strong turn for drawing on the part of the pupil, or the direct orders from home on the part of the parents, lead to the filling up of the drawing-class. Among university men of the present day, from which class most or all of the professors at our large schools are recruited, there still linger the remains of the old superstition, that drawing should be an "extra," somewhat like dancing; an elegant accomplishment, not to be put on a level with classics and history and other serious studies. The next generation of school-masters will probably know better themselves; to those of the present generation it may be urged that drawing is a most important element in mental and bodily training, and that up to a certain point—that is to say, as far as concerns the practical handling of the pencil and the power of copying an object when seen, and of drawing in correct perspective anything which it is desired to represent—so far as this, drawing can be almost as certainly taught generally as writing, and ought to be so, as a part of every man's education. The question of artistic feeling in the higher sense is a different one. It only exists at all in a portion, perhaps a minority, of boys; though a preliminary training in practical drawing might not infrequently bring out evidences of latent artistic taste, where it would never have shown itself or been suspected had not the capability for the expression of it first been imparted. The true solution of the problem for general schools would be a compulsory class, supplemented by a voluntary one. The elements of drawing, scientifically taught, should be as much a compulsory subject as grammar or writing; and when once this is established, we should not have the curious spectacle, which we have sometimes seen, of great publishing firms which would on no account publish bad and ungrammatically-written books, being quite willing, nevertheless, to publish books containing illustrations violating the first rudiments of the grammar of drawing and perspective, and seeing nothing to be ashamed of in this; and after the course of a few generations of compulsory teaching of drawing, people will read about the people who could not draw in the present day as we do now about barons and knights who could not write their own names. —*Art Interchange.*

The Mound Builders.

AT the annual meeting of the Boston Society of natural History, a highly interesting statement was made by Prof. F. W. Putnam, Curator of the Peabody Museum of Harvard University, concerning his recent explorations of certain mounds in the Ohio Valley. The subject was illustrated by drawings hung upon the wall, and by photographs. These explorations, in which he was assisted by Dr. C. L. Metz, of Madisonville, Ohio, were made last year, and were restricted to one particular mound field or tract upon the borders of the Little Miami River, in Madisonville, about twenty miles from Cincinnati. It is to be regarded as one of the felicities of the event—for the work and its results constitute an event in the full significance of the word—that, being situated so near to one of the great cities of the land, it has happened that no persons impelled by mere idle curiosity have hitherto dug into these mounds in a random way, and thus practically destroyed them in respect to their special value to the archæologist. The excavations now made were conducted on the most approved methods of science. Nothing worthy of notice has escaped observation and record, and every relic has been carefully preserved for scientic purposes. In the brief discussion which followed the Professor's statement, one of the members of the society declared the results thus reached to be the most important discovery yet made in American archæology. Several of these mounds were what are called "altar mounds," and in these the valuable and instructive relics were found. These, in number and variety, were sufficient in themselves, if none others had ever found, to give a very distinct—it might almost be said comprehensive—idea of the civilization of the social state of the ancient mound builders. Among other things found were articles of personal adornment, such as ear-rings of pearl and bracelets of metal. The precise advance of the art of working metals is thus disclosed. The metals had been wrought by hammering the ore. Molten work was beyond the skill, or rather the knowledge, of the artificer. The metals were iron, copper, silver, and gold. This is the first time gold has been found in the mounds. The gold, and in some instances the silver, was used for plating an inferior metal, being hammered thin and clinched at the edges. Most significant of all, perhaps, was a little statuette, which not only presented the human form in a shapely—it might almost be said artistic—contour, but showed also the ear-rings and the drapery of the waist which were fashionable in the American prehistoric times. Some of these relics must originally have come from the Florida coast, from Lake Superior and from the Rocky Mountains, indicating thus either extensive migration or intercommunication. The indications are that cremation of the dead was practiced by these natives, and that an altar mound is significant of some great sacrificial ceremony, and that these trinkets and relics, some of which pertained to the useful arts, represented an offering on the part of these people, equivalent, in comparison with our scale of values, to hundreds of thousands of dollars.—*The Mechanical News.*

THE greatest obstacle in the way of forming definite conclusions from experiments is the fact that, generally, more than one experiment is tried at the same time. Hundreds of experiments that count for nothing would have been valuable in advancing both general and specific knowledge, if between them and others with which they are compared some addition or alteration had not been made, the presumed influence upon the result leaving the latter problematical.—*American Machinist.*

Plasterer's Manual, enlarged. Price 75c.

☞Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

O. T. C.—A two (2) inch hole is bored in a green or unseasoned plank. When the plank becomes seasoned, will it affect the diameter of the hole, or will it still remain two inches?

Yes. The diameter of the hole will be less than two inches, and will be found to be somewhat elliptical in form, the contraction being greater across than on the lines parallel with the fiber of the wood.—*W. C. S., in the Artisan.*

Method of Obtaining Length of Rafters.

FOR some months past there has been quite a discussion of various plans for obtaining the length of rafters. Many of the methods presented are not desirable, for the want of accuracy. Some years ago the subject came up for discussion where I was at work, and I then prepared the following table, which is very simple and mathematically correct. Any mechanic can copy it on the back of a business card and tack it to the lid of his tool-chest, where it will always be handy for reference. The word "pitch" means such a fractional part of the width of the building. The further north you go the steeper the pitch, on account of the snow; also certain localities have pitches peculiar to that section of the country:

Pitch.	Square.	Rafter.	Brace.
1-6	4 and 12	0.527046	1.054092
5-24	5 and 12	0.541666⅔	1.083333
1-4	6 and 12	0.559017	1.118034
7-24	7 and 12	0.578852	1.157704
1-3	8 and 12	0.600925	1.201850
3-8	9 and 12	0.625	1.25
5-12	10 and 12	0.6508541	1.3017082
11-24	11 and 12	0.6782843	1.3565686
1-2	12 and 12	0.7071068	1.4142136

The first column indicates the pitch of the roof; the second gives the figures on the square that will cut the various pitches; the third gives the length of a rafter for a building one foot wide, and the fourth gives the length of braces for runs of the same proportion as the figures in the second column.

The manner of using the table is as follows: For any given pitch multiply the tabular number by the whole width of the building, and the product will be the length of the rafter in feet and decimals of a foot.

Example.—What is the length of a rafter of a building 18 feet wide at ⅓ pitch?

Solution.—0.600925x18=10.81665 feet, or 10 feet 9 13-16 inches.

Example.—What is the length of a brace having 40 x 48 inch run?

Solution.—40 x 48 inches is the same proportion as 10 x 12; hence, 1.3017082x48=62.482 inches, or 62½ inches, always using the longest run for multiplier.

Example.—What is the length of a brace having 35 x 35 inch run?

Solution.—1.4142136x35=47.4974 inches, or 49½ inches.—*S. R. K., in Carpentry and Building.*

Modern House Painting. Price $5.00.

A Handsome Illustrated Catalogue.

WE have received from the Robert Mitchell Furniture Company of Cincinnati a very elaborate illustrated catalogue, containing 307 pages, of parlor and chamber sets and house and office furniture and fixtures of endless variety and in every conceivable style and design. Expense has manifestly not been spared in producing the catalogue, and those desiring elegant things in the furniture manufacturing art will do well to consult its pages, as any and everything of the character necessary to the comforts of home life, and to furnish beautiful surroundings and equipments, will be found fully illustrated.

Lessons on Hand Railing. Price $5.00.

Workshop Virtues.

OBSERVATION is the first lesson the apprentice learns. When fresh from school he is introduced into the new world (the workshop), and he sees about him a number of men and of tools, and of the names of the latter, or their uses, he knows practically nothing. Machines, wheels and shafts, some in motion and others at rest, stare him in the face until he is somewhat bewildered and he is apt to exclaim, like the "heathen Chinee," who was viewing a marine engine for the first time, "Too muchee wheelee, make man thinkee too muchee." After a day or two this feeling of bewilderment fades away—use becomes second nature to him. Now is the time to improve himself and awaken his faculties, if he has the will. Let him observe the various machines and processes, try to understand why one machine runs at one speed and another at a different one, and why one process is dependent upon another—in fact, make use of his powers of observation, try to remember what he sees, and consider whether he can suggest an improvement. If he can make notes at home of an evening, so much the better; he will find the habit exceeding useful. By observation, errors may be detected in work about to be executed before the blunder is actually committed, thereby saving both time and money.

In some measure all workmen are obliged to be punctual in their going to and leaving work. The bell rings or the whistle blows at fixed hours, and the workmen must be governed by these signals; but over and above these fixed times, the habit of punctuality is a valuable one. Some factories are famous for being faithful in the fulfillment of their promises as regards time of delivery; they will work night and day to complete an order by the specified time. Others, again, are noted for their utter disregard of time.

Every foreman or manager knows how pleasant it is to deal with a workman ready at taking a new idea, or willing to try a new method of doing work. These are the men who distinguish themselves, and obtain better position than those who cannot move out of their rut of habit. So, also, a firm becomes noted for adapting itself and its resources to new trades or methods of doing work, while a firm which will not try an experiment will be pushed out in the cold in the struggle for existence. The man who knows the reason for what he does is a better man than he who only does a thing because he is told to do it a certain way. Every mechanic should understand, for example, why his drill should run faster for a small hole than for a large one, why one speed of tool is suitable for one metal and not for another.

If he is a smith, he should know why steel is worked at a lower heat than iron; what conduces to a sound weld, and why a piece of steel broken haphazard off a bar cannot be drawn to a sharp point without certain precautions. There are principles underlying every trade which is to the interest of the artisan to study, to ponder over, aye, and even to discover, for it is well known that there are principles yet undiscovered which the cultivator of the various workshop virtues may be lucky enough to fathom, with honor to himself and benefit to mankind at large.—*Mechanics.*

Stables, Fences, Out Buildings, etc. Price $2.50.

THE KIND OF NAILS.—At first the extra cost of steel nails was one and one-half cents per pound, or $1.50 per keg, but it has now been reduced to $1.00. The great advantage of the steel nails is that they can be driven into hard wood as easily as an iron nail will go into a pine board. Steel nails have been driven into a white oak knot without bending. Nothing else is now used in laying hardwood floors, as they require no boring, but are driven readily. For all kinds of finish they are especially adapted, and as so much hard finish is now employed, their use must be on the increase. They are also used largely by builders, and box-makers are increasing their demand for them. Box-makers have been using the better grades of iron nails, as they desire those that can be drawn and redriven.—*Northwestern Lumberman.*

School House and Church Architecture. Price $4.00.

Sample Copies.

Hereafter we will forward no sample copies of this Journal unless the price, twenty cents for each number, accompanies the order.

Warping of Drafting Boards.

I HAVE taken many valuable hints from *Carpentry and Building*, and I wish to contribute my mite to the general information presented. Those who have used drafting boards appreciate their liability to warp under various conditions of atmosphere. It is also pretty well known that almost fabulous prices are demanded for good drafting boards at the hands of dealers. I have discovered a method by which an ordinary drafting board can be constructed that will remain in good condition. I had some large detail drawings to make in California many years ago, and, being a carpenter, I made a board for the purpose in the quickest manner I could. I glued the joints, and, as battings suggested themselves, I employed them in its construction. The board measured about 40x80 inches in size. I dressed one side and cut three beveled-edged battings and fitted them to one-half the thickness of the board—in other words, I dovetailed them in such a manner as would allow them to slide and not interfere with the shrinkage of the board, and then went to work with my drawings. In a few days I was compelled to stop, as my board had warped three-quarters of an inch, taking the battings with it. I then grooved the under side one-half the thickness of the board at distances of two inches. The grooves run in the opposite direction to the battings, or with the grain of the board. When this was done I found that I had the most perfect drawing board I had ever used. I think others will find the suggestion advantageous.—*Palmetto, in Carpentry and Building.*

A Good Hint to Workmen.

THE old saying that "a man is taken by the coat that he wears," applies to journeymen plumbers. Show us a man that loses his self-pride as to his appearance, as a general rule he also becomes careless in the work he performs. On the other hand, a man that has a good appearing tool-bag, containing tools requisite and necessary to perform a good job of plumbing, also keeps himself clean and tidy, it is a sure indication that he can perform a good job of work. How often do we have the question put to us by our customers when ordering work done, "Will you send me that last man that done our work?" Why? "O, because he attends to his business; don't fool with the girls; goes about his work in a workmanlike manner, and don't mess and dirty the entire house up, and tear the woodwork of the whole house apart. If you can't send him I would prefer waiting a day or two until you can." Ain't this satisfactory proof to a boss? Yes; and these are the men that study their own interest as well as the bosses', and an ornament to any trade or profession.—*Plumber's Trade Journal.*

THE daily cut of the mills on Columbia River, Oregon, is 650,000 feet. About $1,000 worth of logs are daily floated out of John Day's River. The mills of Astoria and vicinity daily cut $150,000 worth of lumber.

A List of Registered Plumbers up to Date of This Issue.

IN accordance with the requirements of the new Plumbing Law, the following parties have been registered. It is imperative that every plumber, be he master or journeyman, shall have his name and standing registered at the office of the Inspector of Plumbing. The office is on O'Farrell Street, west of Dupont, in the same building and in connection with the Health Office. In our next issue we probably will be able to give nearly a complete list.

M stands for Master Plumber. They are required to file a bond for $500. J stands for Journeyman:—

Adams, John L., 9 Clara Street. J.
Ayers, Chas., 909 Larkin. J.
Byrne, Jas., 119 Welsh. J.
Berwick, David, 937 Mission. J.
Broad, J. F., 1222 Bush. J.
Cardiff, R. J., 319 Tehama. J.
Cusick, Jas. E., 937 Mission. J.
Connor, J. H., 528 Third. M.
Dixon, J. J., 1222 Bush. J.
Doyle, J. P., 214½ Sixth. J.
Doggett, B., 116½ Langton. J.
Duffy, G. F., 2096 Market. J.
Daniel, W. L., 234 Post. M.
Dunn, W. J., 37 Louisa. J.
Enright, Wm., 1115 Devisadero. M.
Ellis, T. P., 668 Mission. J.
Ford, Thos J., 404 McAllister. J.
Flood, Jos., 753 Harrison. J.
Fritz & Kean, 130 Geary. M.
Firmin, J. E., 240 O'Farrell. M.
Gray, W. J., 1 Webster. J.
Gray, J. T., 230 Sutter. M.
Holden, C. S., 824 Green. J.
Hammond, W. T., 1027 Sutter. J.
Heath, J. F., 236 Minna. J.
Hufschmidt, H. L., 637 Clay. M.
Hildebrand, C., 181 Sixteenth. M.
Hobro, W. D., 728 Washington. M.
Johnston, Pat. J., 2008 Larkin. J.
Kelly, Frank, 1208 Green. J.
Kearns, Thos., 1813 Jessie. J.
Kerrison, R. J., 1030 Alabama. J.
Linehan, Jas., 119 Powell. J
Lawton, J. J., 418 Fulton. J.
Layton, John, 25 Lily Ave. J.
Mitchell, M. J., 410 Waller. J.
Murray, John, 1 Hampton Place. J.
McFadden, J. J., 133 Langton. J.
McNally & Hawkins, 419 Montgomery. M.
McCormick, J. F., 313½ Sutter. M.
Milne, Geo., 1209 Golden Gate Ave. M.
Powers, E. J., 213 Prospect Place. J.
Pendergast, John, San Miguel. J.
Rice, R., 107 Geary. M.
Reilley, C. J., 214 Montgomery Ave. M.
Rohr, J., 222 Minna. J.
Snook, Edgar N., 726 California. J.
Wilson, W. F., 25 Stockton. M.
Waters, Chas., 30 O'Farrell. M.

It is imperative that all plumbers should be registered, as they are not allowed to work on buildings without a permit, and the sooner the matter is attended to the better, as permits will not be granted unless the parties are registered.

The above list includes all that are registered up to the time of our going to print.

Discoloration of Brick Walls.

WITHIN late years the great popularity of brick as a building material and the great increase in the number of brick edifices which have been erected have brought into prominence a matter which could not have escaped the notice of the most casual observer, namely, the disfigurement of brick walls from a coating of white powder resembling in appearance hoar frost or mildew.

These deposits are usually formed in rainy weather, and for a long time it has been a mooted question how this substance comes to be collected, what it is, and what can be done to remove it or prevent its formation. The rains of this spring seem to have been especially favorable to the forming of these deposits, and old buildings even, which hitherto have never been defaced by this substance, have this year given up their ruddy appearance for a paler and less attractive complexion. Dr. Joseph Leidy, President of the Academy of Natural Sciences, in speaking of this subject recently said:—

"The efflorescence is simply ordinary Epsom salts or sulphate of magnesia. The sulphurous acid, which results from the burning of coal, combines in the presence of moisture with the magnesia in the mortar or from the clay in the bricks. It was decided that it emanated from the former source. The sulphate of magnesia dissolves in the water, which runs over the bricks, and, evaporating, leaves the deposit. Some walls are covered with a black substance which seems at a distance to be smoke. This is a fungus, which flourishes in damp places, and is materially different from the white sulphate." Dr. Charles M. Cresson explains in a similar way the method by which the substance is deposited on the walls, but expresses the belief that it is sulphate of potash. Edwin F. Durang, the architect, said that sulphurous acid acting on the mortar decomposes it to such an extent that chimneys had often to be rebuilt on account of it. He thought the efflorescence was sulphate of lime.—*Scientific American.*

STRAW lumber has been very much exaggerated, though it may be reckoned considerable of an invention. An Eastern enthusiast recently stated to a newspaper interviewer that there were "scores of mills in the country where paper, straw, prairie grass, and other fibrous substances are converted into straw boards, which are sold all over the country as substitutes for wood." This may be taken either as deplorable ignorance, or an ingenious statement. There is but one factory at present where straw lumber is being manufactured so as to cut any figure. Paper boards—building paper—are made all over the country, and are used to some extent in place of wood, but they are only paper, pure and simple, and lay no claim to being a substitute for lumber, and are more a substitute for plastering.—*N. W. Lumberman.*

Public Buildings. Price $4.00.

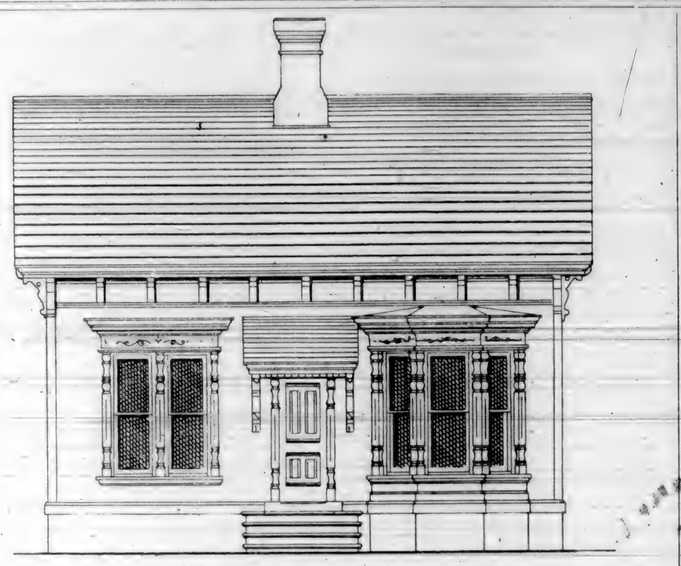

PLATE 4.—FRONT ELEVATION OF WORKINGMAN'S COTTAGE, COSTING $1,500.

The Board of Health and the Plumbing Law.

THE Plumbing Law, passed by the last Legislature of this State, went into practical effect on the 1st inst., under the rules and regulations adopted by the Board of Health of this city and county. Said law being the first enacted in California for the purpose of regulating and controlling the customs, methods, and execution of a special branch of mechanical works, it was to be hoped that those empowered to give it shape and vitality would have exercised all the care and practical, mechanical, and scientific intelligence necessary to its complete efficiency. And we regret that the rules and regulations adopted by the board in this case do not warrant us in stating that they are *fairly* perfect. It may be that to the learned gentlemen composing the board the whole matter contemplated by the statute was so plain and simple that they deemed it unnecessary to spend much time in framing a set of rules and regulations, and therefore paid no attention to the ambiguities, inexplicitness, and imperfectness of those adopted.

There are many reasons why this should not have been, and why an exceptionally perfect set of rules should have been provided: *First*. Plumbing laws exist in several of the Eastern States and are in practical operation, and the rules and regulations by which they have been rendered operative and efficient were available to the San Francisco board and might have been consulted. If this has been done, the result developed in the rules adopted by our Board of Health are not calculated to reflect any great amount of credit upon the rules in practice in Eastern cities.

Secondly and mainly. If, from imperfect rules and regulations, or any other cause, the plumbing law of this State shall prove a failure, it will discourage all future legislation upon matters looking to the relief or protection of other mechanical operations. In this view of the case, all branches of mechanism are interested in the success of the law under notice; for if an effective law cannot be passed regulating plumbing and sewer works, then it is doubtful whether Legislative protection can be thrown around any other of the mechanical arts.

We will not, however, enumerate further, nor refer in detail to the errors and deficiencies in the rules, knowing that the board, together with the gentlemen most in interest, the plumbers, are fully competent to discover and correct such mistakes as may have been made.

Artistic Homes. Price $3.50.

Coterminous Ownership—Rights to Excavate.

PRIOR to July, 1880, the city ordinance relative to and defining the rights of owners in the excavation of their lots for the purpose of building, was generally observed in practice. Said ordinance provides (sec. 5, chap. vi, order 1281, as amended May 16, 1876) that owners about to erect buildings, etc., shall have the right to excavate to a depth of fourteen (14) feet below the curb level, without incurring any risks or responsibilities in reference to adjoining property or structures, except to serve the proper written notices. This understanding of the matter was so general that adjoining owners seldom refused to take care of and underpin the structures upon their premises. But in the July, 1880, number of this journal, we published the decision of the Supreme Court in the case of Zeile *vs.* Hood, which virtually set aside the city ordinance, and by, as we think, an irrational and illogical construction of sec. 832, civil code, sustained the decision of the Fourth District Court, Judge Morrison then presiding, which decision imposed upon the party excavating (Hood) the responsibility and cost of under

PLATE 5.—SIDE ELEVATION OF WORKINGMAN'S COTTAGE.

PLATE 6.—FIRST FLOOR PLAN OF $1,500 COTTAGE.

pinning the adjoining owner's (Zeile's) building. The decision of the higher court becoming generally known through the columns of this journal, owners of improved property have since acted upon the defensive by refusing to be put to any expense in underpinning their buildings, and those making new improvements have been compelled to bear the cost of sustaining the adjoining property, or suspend building operations. But the present Supreme Court, in the case of Aston respondent, *vs.* Nolar, appellant, has reversed the decision in the case of Zeile *vs.* Hood, and virtually restores the city ordinance, which gives to all owners the rights and privileges hereinbefore stated. This result is in exact harmony with the views expressed by us at the time of presenting the Zeile and Hood case, in which we held that *"the vital point in issue had not been finally settled and determined"* by the decision then referred to; and so it has proven; for the section of the code quoted is without shadow of reference to the party excavating sustaining the structures erected upon the adjoining property. (For full report of the case of Zeile *vs.* Hood, see this journal of July, 1880).

In plain words the case now stands thus: Every owner of real estate has the right to excavate his premises to a depth of fourteen (14) feet below the curb level, without regard to adjoining structures, provided he shall first serve a written notice upon the owner or owners of the adjacent property, notifying him or them of the intention to, and extent of, the intended excavations. And the owners of adjoining property or buildings are required, under the decision of the Supreme Court, to take care of and underpin at their own cost and expense. Any doubt that may exist in the mind of any one can be set at rest by calling at the office of this journal, and examining the law and decisions bearing upon the case.

Swiss Gothic Cottage.

WE have received a supply of the above from Palliser, Palliser & Co. It is a large sheet on which are given elevation and plans of a Swiss Gothic Cottage. By an easy modification it can be built either as an eight or six room cottage. Full details are given. Price, postpaid, $2.50.

WHAT CAUSES THE TIMBER LINE?—A writer in the New York *Independent*, says: The cause of what is known as the timber line on high mountains continues to be discussed in scientific periodicals, and the attempt continued to connect the line in some degree with mean annual temperatures. The writer of this paragraph has had the matter in mind when on these high elevations, and the explanation seemed very simple. On all these high peaks there is a continuous, though in some cases slow, descent of the soil from the summit to the base of the hill. He has never seen a case, where there was soil enough to grow a tree, that trees were not growing. As the wash from rain or melting snow will be nearly uniform in a given range, there will be of necessity some uniformity in the timber line. On Mount Washington and other high places, little plots of dark vegetable earth can often be found far above the present timber line, the remains of trees which existed before the earth was washed away. What is called the timber line seldom shows graduated sizes, as a mere matter of temperature would call for. Generally the line is formed of very small trees, and immediately scrubby plants, from the absence of deep soil, begin.

THE California Redwood Company has been formed by English lumbermen, with a capital of $4,500,000. The object is to purchase redwood timber lands in California, and ship the product across the water.

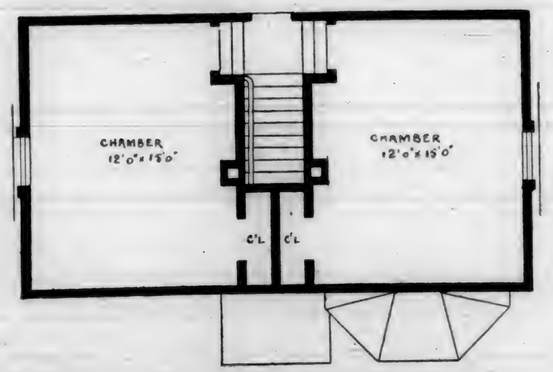

PLATE 7.—SECOND FLOOR PLAN OF $1,500 COTTAGE.

Exterior Stains.

[From the American Architect and Building News.]

STAINS for exterior use may be divided into two classes: first, those in which the coloring material is actually dissolved in the vehicle; and second, those which are colored with a very finely divided insoluble pigment, mixed with sufficient fixative to make it adhere firmly. Stains of the latter class are therefore merely very finely divided paints. The first class where applicable, is, in the writer's opinion, superior to the latter, as the grain of the wood in the clapboards or shingles is rather more distinctly and vividly brought out. On the other hand the number of colors is very limited which admit of this application. A few of the colors of this description which have been thoroughly tried by the writer may here be enumerated.

American Asphalt	Brown
Trinidad Asphalt	Brown
Resin Asphalt	Reddish Brown
Aloes Gum	Greenish Yellow
Yellow Gum	Light Yellow
Alizarine	Red
Annotto	Red
Eosin	Red
Dragon's-Blood	Red
Azo Yellow	Yellow
Amin Yellow	Yellow
Methyl Green	Green
Malachite Green	Green
Nigrosin	Blue Black

It is useless to extend this list farther, for the writer has tried almost all the known colors that can be brought into solution in oil. Unfortunately, of this list only the first six are upon careful trial sufficiently fast to be used for exteriors, and of these alizarine is too expensive at present to admit of use except for some special occasion where price is not considered. The remaining ones would many of them answer for interiors, but the combination of rain and sunlight disposes of them outside too easily. We are therefore limited to a very narrow range of colors of this character, and must turn to the second class of colors, viz., those consisting of insoluble pigments with a fixative to hold them on to the fiber of the wood. With these we can obtain almost any desired shade, and if properly ground pigments and suitable vehicles are used, effects can be obtained almost equal to the colors of the first class in respect to showing the grain of the wood. The writer has found the best pigments to be pure oxides of iron (exceedingly finely ground) for the reds, yellows, and browns; pure chromate of lead for lemon yellow; mixtures of these with black and blue pigments for greens and olives. The greatest care should be used in selection of pure and very fine pigments. For a vehicle the best seems to be a purified creosote oil, which practically renders the wood imperishable and is moreover comparatively inexpensive. Linseed oil may of course be used, but it has one difficulty which every one must remember who has seen a lot of old painted shingles taken down. Just behind the butt of the shingle or clapboard is seen a deeply corroded or decayed spot upon the under side, where the water has been held in between that shingle and the next by the paint, which forms a *cul-de-sac* in which the moisture collects and causes the decay; this is due to the "skin" formed by the drying of the linseed oil, and is not to be found if creosote oil be used in place of linseed. In conclusion the writer would say that he thinks the best way of treating either a clapboard or shingle is to dip about two-thirds of it in the stain, which should be kept well stirred. It should then be allowed to drain back into the pan or barrel by being put into a wooden trough tipping backward, and then should be thrown out on to the grass or clean ground to dry for three or four days. Many houses are built in which the shingles are stained and the clapboards painted. The result would be much finer if both were stained, for stain has the effect of making the whole side of a house look as if it were treated in detail, so great is the beauty and variety of the grain of the wood, while paint reduces the whole to a monotony in which the color *en masse* is the only effect. Any inquiries which the writer can answer will receive the attention of

Yours sincerely,

CHEMIST.

Builders Guide. Price $2.00.

The Practical Advantages of Trade Journals.

WHAT commerce does to stimulate the industries of the world, the trade journal does for the trade it represents. It would be difficult to name a trade of any importance which is not represented by its journal. The reason of this is clear enough to those who know how much absorbed good workmen are in their calling, and how anxious they are to know what is going on in their own immediate world—what improvements and developments are taking place; what is new, and what becoming obsolete. As the daily paper presents to the general public reports of notable events in the social, political, and commercial world, so the trade journal culls all facts bearing on the interests it represents, and furnishes them to its readers.

The importance of trade journals is indicated by the fact that they are wholly supported by the trades that each represents, and cannot be said, to any appreciable degree, to be read by the outside public. And this condition of things is quite natural, because every one takes the greatest interest in what most intimately concerns himself, and the journal of greatest value to the tradesman is that which has something instructive and encouraging to say about what he is doing, and about what others in the same trade are doing. Some shrewd observers of human nature maintain that the nature and quality of a person's reading, and the departments of a paper to which he turns with greatest eagerness, are sure indexes to his avocation.

Notwithstanding the cordial support given to trade journalism in this country, it may be said that it is not wholly understood or appreciated by those most interested. Much more could be made of it if its readers were only to consider themselves as contributors and correspondents. There is probably no member of a trade or profession who does not wish to know something or have some doubt removed. There are probably few, whether employers or employed, who have not discovered something in their special calling which, if known, would be of practical value to those of his own trade. Many of the best workmen hesitate to take up the pen to enlighten others, though they are willing to do so, and know that they have ideas which would be helpful to their fellows, simply because they cannot turn out their sentences in a style which they consider proper for a widely-read paper. This is largely due to false modesty, and perhaps through indulging in many a brilliant idea, and often a valuable invention or suggestion of real practical utility is buried in a man's bosom, and dies with him. It is the idea, and not the language which clothes it, that is important. It is the diamond, with its bright sparkle, and not the setting, however rich, that attracts the eye. So the tradesman who has developed anything new in thought or in actual experiment, is in duty bound to give currency to it for the benefit of his fellow workmen, where this can be done without too great pecuniary sacrifice. The gospel parable reproves him most severely who wrapped his talent in a napkin and buried it.

If all artisans and mechanics were to consider their own trade journals as the storehouse for their ideas, and a free exchange for all communications affecting their calling and interest, every journal of this class would grow in importance and general interest. It would be a means of improving their condition, enhancing their skill, stimulating original thought, awakening a more friendly feeling among mechanics, and possibly effecting a better understanding between employers and employed.—*British and Colonial Printer and Stationer.*

"First Class."

A LARGE share of the misunderstanding and consequent confusion and trouble in the world seems to come from the lack of an absolute standard of excellence. This is especially the case in matters connected with building. It is a never-ceasing source of amazement to tyros that the estimates, made by thoroughly good, responsible, and intelligent builders upon any given piece of work, for which plans and specifications have been prepared by equally intelligent and experienced architects, should vary so widely. It is by no means an uncommon thing for the estimates of different contractors to vary from ten to thirty per cent., and instances are not wanting where one builder has offered to do work for half the price proposed by another. But a short time ago estimates were made upon a dwelling house in this vicinity, the plans for which had been prepared by one of the best firms of architects in the country, and the lowest figures were $22,000, the highest $37,000. A still greater variation occurred in estimates for finishing certain departments of a public building whose history is familiar to many people, the highest being between $42,000 and $43,000, the lowest between $18,000 and $19,000; these estimates were based upon the same plans, the same specifications, and there is no reason to doubt that the men who made them understood the same thing. It certainly is difficult, even for professional skill, to account for these differences, yet it is a part of the experience of every one who has to do with building or with preparing plans for the same. To a large extent this is owing to the lack of thorough training, that is, to this want of an absolute standard of excellence.

"First-class" work does not mean the same thing to men who are differently educated, and, although the phrase is constantly occurring in the written description of work, it is indefinite in its practical application. To one who has had the advantage of a thorough training and practice upon the best kind of cotemporary work, it has a distinct meaning with reference to what he has already done; but to one who has had no such experience, and whose best work would seem to the other entirely unworthy and inexcusable in a given case, it means something entirely different; *i. e.*, although both read the same words, yet judged by the same standard one agrees to perform that which is many times greater in value than the other. Referring to the details of work it is impossible to estimate the value of the labor required to execute anything which depends upon the skill and intelligence of the workman. A spindle, revolving a fixed number of thousand times a minute, may be depended upon to turn out a fixed amount of yarn in a given time. It is not possible to measure the capacity of a workman in the same way. He may drive a nail with two blows or three; he may smooth a board or straighten a joint with five strokes of the plane or ten; he may cover a square yard of lath with plastering or of clapboards with paint in five minutes, or it may take him ten; and this variation carried out through all the details makes the difference between the $5,000 or the $10,000 of the aggregate estimate. Hence it follows that the greatest uncertainty usually appears in those structures or parts of a building in which manual labor is the chief item of cost, and the buildings in which this occurs are not alone those of elaborate and expensive workmanship, but those which deviate in their style and manner of construction from conventional and familiar modes. This latter fact accounts for another peculiarity that is often referred to as one of the unaccountable points in building; that is the difference between ready-made houses and those which are built from special plans. It is easy to duplicate the cheap, every-day styles of building—those with which every mechanic is familiar in every part, from the thickness of the cellar wall to the pattern of the scroll-sawed bracket—but a house of precisely the same size, precisely the same amount of material, and requiring actually the same amount of labor, will be found more difficult to estimate in proportion as it appears to contain more unknown quantities—not necessarily larger or more complex quantities, but they are unfamiliar, and neither contractor nor workman undertake them with as much confidence and expedition. The practical remedy, as far as it appears at present, for this unsatisfactory state of affairs,—for it is unsatisfactory, begetting distrust and disappointment continually,—is the more thorough training of workmen, the dissemination of such technical skill as will give to mechanics and builders not only better facility in doing work, but a more reliable standard of excellence,—in brief, technical, industrial education. It follows, without the need of saying it, that when contracts must be made the only safety lies in keeping clear of all but thoroughly competent and reliable contractors.—*The Builder.*

Village Builder. Price $10.00.

Rights of Owners of Buildings.

IN referring to the right of owners of buildings, we have not in view such covenants as they may make with tenants, and in which they are secured, but those which exist for compensation for damages inflicted at the instance of neighboring owners. The most unquestioned claim exists where the latter so carry out excavations as permanently to weaken foundations or cause subsidence of adjoining building, thus affecting the value or rentable value of the property, and possibly endangering its maintenance. We may state at the outset that owners of buildings in this country have fewer rights than those generally possessed by their class abroad. The laws in England and on the continent are singularly minute and exacting as to what constitutes special damage, and builders are proportionately embarrassed. In England, the erection of a building can be prevented, so far as it will obstruct the light or interfere with the view from the windows, should such windows have existed for the term of twenty years. These "ancient lights" are jealously protected by the courts, even though pertaining to premises old and dilapidated. Such a legal provision would never consort with our city improvements. On the other hand, as respects the effect of the erection of one building on another, the Supreme Court has held that no compensation can be obtained for indirect damage. It is not even clear that the damage occasioned to houses by the vibration caused by the running of trains on the elevated railways, constitutes a claim for compensation on the part of aggrieved parties, the cases in which they have taken action being yet unsettled among the appeals to higher courts. An instance of a clear case, allowing of compensation, is when the preparation of the foundations of a building causes damage to the neighboring property under different ownership, by subsidence, owing to excavations being carried too low down; or carrying these on beneath such property without proper underpinning, or neglect sufficiently to shore the side wall; or, furthermore, when by injudicious or overcharged blasts detriment of various natures result. But where a building is entirely removed, so as to take away the support which the adjoining building, owned by another party, has enjoyed, the question as to whether a suit for damages can be sustained becomes complicated, for a reason set forth by the *Building News* in treating of damage to buildings, English rulings on this point being followed.

"In theory, the law supposes, for the purpose of a claim, the owner of the servient house to have been acquainted with the fact that his own building was necessary for the support of the adjoining premises—a kind of knowledge that cannot always be brought home with any direct evidence."

This is evidently a point difficult to establish. Houses in streets have very often been built together (afterwards falling under different ownership), and each most probably requires to some extent the mutual support of another, and in such a case the owner of a house has a right to look for support to his neighbor, as the possessors have in law a presumed reservation and grant, even although the original owner parts with some of the houses. The frequent need for taking down internal cross-walls, which perform the office of struts, and for excavating to a greater depth for drains and other purposes than the foundation of adjoining premises, underpinning operations and the like, call for special consideration on the part of architects, that they do not weight builders with undue responsibilities. We can hardly take an extended walk in portions of New York where excavations are being made, or foundations laid, without meeting with instances of sheer recklessness. We must allow that house owners of New York, and it is true probably of those of other cities, are not very forward to assert their rights. They take quietly cracks, and possibly serious settlements, have their doors thrown out of square, and windows fixed without protest, though decisions at law have shown that the building owner is liable. If the latter excavates below a neighboring foundation, he is bound to underpin it, for the first to build and take up his lease is entitled to the support of the adjoining land.

Many buildings are erected depending on lateral pressure, and the law provides a remedy if such support is withdrawn. It is the business of the architect to find out the position of adjoining parties. A landlord owner is responsible for damages to adjoining parties in taking down buildings and walls, the neighboring building being entitled to the amount of support that previously existed, if this support be essential to solidity. There are a great many ways in which property may be interfered with, and the cases in which these have been made the subjects of lawsuits are widely

scattered. The circumstances cited, however, so greatly vary, that it would answer no purpose to specialize them. It may be remarked, generally, that owners of buildings have more rights than, as a general rule, they have chosen to avail themselves of; but this forbearance, viewed from a moral standpoint, should constitute an additional incentive to architects to avoid negligence, and to builders to make the necessary provision against the consequences likely to arise from want of precautionary works.—*Building.*

Our Mammoth Supplement.

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Wood Finish.

THE patented preparations known as wood fillers are prepared in different colors for the purpose of preparing the surface of wood previous to the varnishing. They fill up the pores of the wood, rendering the surface hard and smooth. For polishing mahogany, walnut, etc., the following is recommended: Dissolve beeswax by heat in spirits of turpentine until the mixture becomes viscid; then apply by a clean cloth, and rub thoroughly with a flannel or cloth. A common mode of polishing mahogany is by rubbing it first with linseed oil, and then holding trimmings or shavings of the same material against the work in the lathe. Glass paper followed by rubbing also gives a good luster. There are various means of toning or darkening woods for decorative effect. Logwood, lime, brown soft soap, dyed oil, sulphate of iron, nitrate of silver exposed to the sun's rays, carbonate of soda, bichromate and permanganate of potash, and other alkaline preparations are used for darkening the wood; the last three are specially recommended. The solution is applied by dissolving one ounce of the alkali in two gills of boiling water, diluted to the required tone. The surface is saturated with a sponge or flannel, and immediately dried with soft rags. The carbonate is used for dark woods. Oil tinged with rose madder may be applied to hard woods like birch, and a red oil is prepared from soaked alkanet root in linseed oil. The grain of yellow pine can be brought out by two or three coats of Japan much diluted with turpentine, and afterward oiled and rubbed. To give mahogany the appearance of age, lime water used before oiling is a good plan. In staining wood, the best and most transparent effect is obtained by repeated light coats of the same. For oak stain a strong solution of oxalic acid is employed; for mahogany, dilute nitrous acid. A primary coat or a coat of wood fillers is advantageous. For mahogany stains the following are given: Two oz. of dragon's blood dissolved in one quart of rectified spirits of wine, well shaken; or raw sienna in beer, with burnt sienna to give the required tone; for darker stains boil half a pound of madder and two oz. of logwood chips in one gallon of water, and brush the decoction while hot over the wood. When dry, paint with a solution of 2 oz. of potash in one quart of water. A solution of permanganate of potash forms a rapid and excellent brown stain.—*Mechanics.*

What Shall We Stand Upon?

A FEW years ago the architect, in writing specifications for his houses, had very little difficulty in describing the floors. Any good, smooth lumber that was well seasoned, would lie still, and which would admit of tacks being driven in and pulled out twice a year was all that was required. Now the description of the parquetries, borders, and inlays, the matching, the woods, the grain, the texture, the provision for rugs and hearths and registers, make the planning and description of the floors an important and sometimes a complicated affair. The demand for carpets still continues, but there is undoubtedly an increased use for floors that are intended to be used wholly or partly uncovered. This is partly owing to the caprice of fashion, which at present inclines towards rugs, and partly to a conviction that bare, clean floors are preferable on sanitary grounds. Of the woods that are most available for such floors probably none is used more than southern pine, and if this is of the best quality it is very satisfactory and not expensive. The poorer kinds are liable to splinter, which is a serious fault. Maple, birch, and cherry are admirable for this purpose on account of their fine, smooth, firm grain, and the readiness with which they take on a hard polished surface. Quartered white oak is irreproachable. It is needless to say that for a perfect floor—that is a smooth, hard, and unbroken surface—it is indispensable that the material should be perfectly seasoned and also that the narrower the separate pieces are the less it will be affected by atmospheric changes; the less liable will it be to develop cracks and wrinkles as it grows old. It is also very important that the lining floor to which it is nailed should be of well-seasoned and reliable stock. A poor foundation ruins whatever is laid upon it, and the finest hard wood floor in the world fastened to an unseasoned layer of coarse spruce or hemlock boards will no more keep in place permanently than a brick wall would stand upon a foundation of logs. Even if the lining floor is seasoned when laid it is liable, especially if the boards are wide, to be swollen by the damp weather in summer and shrunk by the steam heat in winter, and each board will carry the separate pieces of the finished floor lying upon it. It is a very common thing to see these wide cracks in the upper floor occurring at regular intervals and indicating the width of the boards below. When the upper floor consists of narrow widths running parallel to the lining, that is at right angles to the joists, the trouble arising from the shrinking and swelling of the under floor can be obviated by laying them diagonally. As it is so common to cover the central part of the floor with a rug of some sort there is no reason why this should be made ornamental; plain, narrow strips of any smooth hard wood being all that is required. Around the edges, where the floor is supposed to be seen, a more or less ornamental border is appropriate, but as a rule the less ornament the better, or rather the less elaborate. The manufactured fancy wood floors are, as a rule, too complicated to be agreeable. They suggest puzzles and a sort of intricate but inartistic mosaic that is, to say the least, misapplied in such a position and of such materials. Wood floors are sometimes made by sawing the blocks of wood in very short pieces and setting them endwise with the grain. Such must be laid with the utmost care, and, unless perfectly seasoned, show to the fullest extent the shrinkage. They are not liable to splinter and would be exceedingly durable, although for ordinary use in a dwelling house a well-finished wooden floor of any of the harder woods, especially covered with rugs, would probably stand the wear of fifteen or twenty generations without essential injury. There are many advantages in laying a border of finished wood around the outside of the room a quarter of an inch thicker than the center part, which is to be fitted with a carpet nailed down in the regular way; and this is likely to be preferred by those who find it inconvenient to use rugs without kicking up the corners, and who are unwilling to give up the familiar and well-established custom of regular carpets.

Among those who devote themselves to discovering sanitary faults in buildings the ordinary construction of floors comes in for a share of their disapproval. It is claimed that the cracks that are sure to appear sooner or later are constantly gathering dust and dirt from sweeping and washing, which falls between the joists, upon the lathing and plastering, and becomes a constantly increasing source of uncleanness and therefore of danger. Whoever has helped to tear down an old house or to cut holes in the floors of those that are of recent date, especially if rats and mice have inhabited the inner chambers, will not need to be told that there is an abundance of uncleanness concealed from sight. Much of this is due to the carelessness of builders who leave rubbish under the floors.—*The Builder.*

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How It Works in New York.

WHEN the plumbing law went into effect in this city and Brooklyn nearly two years ago, it was everywhere regarded as a most important departure in a novel direction in city administration. The law has now been in effect long enough to indicate its benefits. While it has not been possible to obtain exact statements of the particulars in which to-day plumbing has been improved over what it was three years ago, there is not the least doubt that a great improvement exists. It is now impossible to repeat the gross blunders which were common a few years ago. Plumbers, builders, and architects have all been forced to recognize what is essential to the planning of proper work, and it is probably true, as stated by the Health Department, that the law has gradually raised and is still raising the standard of workmanship in the great mass of houses of moderate cost.

Before this law the Health Department had practically no supervision of new work. As a result, in consequence of the fact that the great majority of houses were then, as now, built for speculation by unscrupulous men, serious sanitary defects were very common. Soil and waste pipes were not usually extended above the highest fixture; fixture traps were unventilated; joints were frequently made with putty or cement and very defective; water-closets were flushed directly from the mains; house drains were generally of earthenware, laid under the cellar floor, and often very defective; and many other practices, fraught with danger to the health of the occupants, were common.

The work of enforcing the law was at first attended with great difficulty; owners failed to submit plans and specifications, and builders failed to comply with them after they had been approved by the Board of Health. It was hard to change the prejudices of plumbers, and to make many of them see the necessity for the regulations of the Board of Health. For a time the character of the work continued nearly as bad as before the law, and it was not until the Board resorted to legal measures, and the builders began to see that the law was to be rigorously enforced, that the work showed much improvement. The successful suit of the Board in the case of the Weiher houses at Fourth Avenue and 120th Street did more perhaps to bring about a decided change for the better than any other. This was an unusually persistent and serious case of violation, in which the Board ordered the plumbing taken out and reconstructed and were sustained by the courts.

At last builders have come to see that it is for their interest to have their buildings plumbed well; they have found that it is difficult to sell or rent a building in which the plumbing had not been approved by the Board of Health. It is now a common thing for intending purchasers and money-lenders to go to the Health Department to inquire if the plumbing of the houses they think of buying or lending money on has been approved by the Board.

Notwithstanding the great improvement in the character of the work, the number and occasionally very serious nature of the violations show the necessity for constant vigilance. During the first half of this year violations were reported in 535 houses. This by no means represents all the actual violations, for in very many cases it is only necessary for the inspector to call the attention of the plumber to the fault to have it promptly removed. On the 9th inst. there were reported in progress of construction 2,243 buildings, of which 1,023 contained plumbing on that date. The seven inspectors visit all of the latter at least once a week to inspect the work done since their last visit, and keep watch of the remainder to learn when the plumbing begins.

In justice to the plumbers of this city, it should be said that the great majority of violations are by a few men (not more than ten or twelve), who are outcasts from the trade, not members of the Master Plumbers' Society, or if members not attendants at the meetings. To the co-operation of all respectable plumbers is the success of the law very largely due.—*The Sanitary Engineer.*

How Screws Are Threaded.

SCREW threads are "originated" in the lathe usually. All lathe turning, with regular—constant—feed of the turning tool, is screw cutting, or threading; the tool cuts a spiral around a revolving cylinder.

It is evident, therefore, that by increasing the speed of the feed relative to that of the revolving cylinder, and having the point of the cutter properly shaped, a screw thread would result, instead of a paring off of the entire surface of the cylinder. All important actuating or working screws, as those for feeding on machine tools, are formed in this way, and large numbers, also, of ordinary machine screws, which when once seated are expected to remain *in situ* until the machine or implement of which they form a part is worn out.

Wood screws, as screws for fastening wood to wood, metal to wood, etc., are threaded in a similar manner, the thread being cut from the solid by a single cutter removing the material between the threads.

Large numbers of screws are threaded by dies, which may be called hollow screws, or nuts with cutting edges. These, by rotating, form the feed as well as the cutting device for threading the smooth cylindrical rod or bar. Some of these dies are worked by hand, others by power, but in either case the cut, by the modern and improved dies, is clean, and the thread is formed from the solid. The old-fashioned dies were adjustable so as to be "set up," and could be made to cut several sizes of diameters. Much of their work was done by pressure, or squeezing, and a part of the thread was "raised" instead of being cut from the solid material. There are adjustable dies made now, but they are so formed as to do solid cutting.

There is another method of cutting threads direct from the solid, and that is by milling. It is the invention of the late Eli Horton, the chuck man of Windsor Locks, Conn. The machine is entirely automatic, the blank to be cut being rotated as in a lathe, and a rotary milling tool rotating against it at an angle adapted to the pitch of the thread desired. As the blank revolves slowly toward the cutter, the cutter revolving more rapidly forms the thread by being fed along over the blank as is the cutting tool in a lathe. The milling tool is so formed in cross section as to produce any shape of thread desired. This method is still in use by the successors of Mr. Horton to thread the steel screws of their chucks.

Threads on large cast iron screws are sometimes formed simply by being cast, and formerly there was much cheap small work of that sort in the market.

Threads may be raised by forging in dies, and some good work by this is produced. In both these cases, however, an after finish in the lathe is desirable.

For some peculiar purposes threads are formed by twisting a square or a flat bar, a common form of hand drill that has superseded the bow drill being a case in point. The stock of this drill is a bar, square in cross section, twisted, and which is rotated by sliding a loosely fitting nut rapidly back and forth over its length. A familiar instance of a screw thread of this description is the ordinary auger or bit, the cross section of which is a flattened parallelogram like a flat bar.

One peculiar method of forming screw threads remains to be mentioned. It is that of raising a thread by rolling between dies under pressure. There is a great deal of what is known as "bright wire goods" in the market, which are threaded. In many cases these threads are formed by simply rolling—one revolution, or a little more—the wire between two hardened steel plates that are corrugated spirally to form, when combined, a continuous thread. Sufficient pressure is applied during the rolling—which, however, is very rapid—to raise the metal enough from the annealed wire to make a thread. In this case the threaded portion is considerably larger than the stock or wire, at least half the depth of the thread on each side.

The threads in nuts are produced either by the "originating" method, cutting them in a lathe, by being tapped, or sometimes by being cast of soft metal, as brass, on a threaded core of hard metal, as iron or steel. But nuts are mostly threaded by tapping, running one, two, or three successive taps through them either by hand or in a power machine. Nuts of very thin material, as sheet brass for lamp tops, jar covers, etc., are formed simply by rolling between spirally corrugated rolls, a work analogous to "beading" on tin ware.—*Scientific American.*

Steel Square and its Uses. Price $1.00.

The Influence of Natural Forms on Architecture.

NATURE has not only been the parent of our constructive and decorative art, but has fixed the sites for our ancient cities and highways. She pointed out a commanding site for a fortress or castle to defend the surrounding district. Man has taken the most easy and accessible path from the valley to arrive at the elevation. In course of time dwellings were erected on the sides of those paths, which thus became the ancient highways. And again the spiritual advisers of our forefathers would look around on Nature for a spot suitable for devotion in some lovely valley or charming elevation, surrounded with all nature's bounties, and there erect our ancient building for devotion and education, and thus form another center. Also the majestic river or sheltered spot on our coast has pointed out a site for the dwellings of men suited for their labor and enterprise: thus another center. The more we study nature the more we see her influence. She is not contracted, but casts abroad her gifts for those who seek for them. Her great principles must stand for all ages. The way we clothe them is only the fashion of the hou , so let us respect the thoughts of others and have reverence for the works of our forefathers.

There is one of nature's laws that we are very careless about, the neglect of which is causing the destruction of our stone buildings. Nature forms the stone in beds; we reverse this and make the bed the exposed face. The weather acting upon this affects the face and its bed shell off. Nature speaks very loudly to us in the appearance of our buildings. I trust we will listen to her, give attention, and stay this destruction. There is a bright future in store. Our nation is having a higher art education, and our art-workers are a more cultured people. Rapid strides have been made during the last twenty-five years. Our street architecture is more varied in design, with honest construction and decorative tone. One of our greatest living authors and art thinkers has said (I refer to Mr. Ruskin), "Do honest work, let her principles be seen. If you wish for grace and form go to the grasses, watch the opening bud and developing flower. There is nothing in life, so there is nothing in lifelessness, that has not a les on for you to study." This is the source from which we realize pleasure in the works that have come down to us from what are called the Dark Ages. Would to Heaven we had some of their workers amongst us in this nineteenth century to stimulate us with their devotion and love for the art! It is with loving devotion that we discover her charms, examine her details, and understand her laws, thus bringing us into close sympathy with her; which, if we can realize and portray, is the secret of our art. It speaks to humanity, cheers her in desponding moments, and elevates the thoughts; no discordant sound is heard; all is beautiful and in harmony. If it influences us in our art it will help us in our con act with man to look with a smile of sympathy on his efforts, and not with a frown of discord. We all love sympathy; it cheers us in the anxious hours of toil, and leads us to lift our souls in gratitude to the loving Hand that gave us these glorious works and endowed us with reason to analyze them.

Whatever may be our differences of opinion as to construction or decoration, I think we all try to do our utmost, so that buildings intrusted to us will speak with joyous language to a passing world, and be of such stability that when England as a nation shall not be known, when her banner as mistress of the seas is given to another, her colonies have released themselves from her grasp, and England shall be known only as a name belonging to the past, her buildings of the nineteenth century will be standing, models of the admiration of the now infant empires, and cause them to love and honor the name of Britain. But long may she continue in power, and use it with wisdom for the benefit of the civilized and uncivilized world. W. GLOVER.

Do Away with Air Shafts.

IT was well enough, perhaps, for the examiner of buildings to testify at the Cambridge flat inquest that "the air shafts should have been constructed of brick, with iron shutters over the openings." It was well enough, perhaps, for the coroner's jury to recommend "that all air wells should be lined with brick or metal, thereby rendering them fire-proof." So long as air shafts are tolerated they could hardly recommend less. But why have air shafts at all? The builder of those very Cambridge flats has declared that he would never erect another tenement house excepting on a corner, because he would have to put air shafts in. Many another builder will say the same thing. It will take a little more ground and more brick to build a large tenement with narrow courts running into it, but such a building is sure to be better aired and lighted and safer from fire. To construct a brick air shaft, with iron shutters over the openings, is to largely deprive the shaft of its usefulness, and to suppose that those shutters can be left open ordinarily and closed in case of a fire is demanding too much of human nature in a time of excitement. Let the Legislature do away with air shafts altogether and require in the building law that courts shall be constructed in their stead. The Committee of Architects and Builders have learned by experience that air shafts are far more detrimental to safety than they are beneficial to health, and indeed it is questionable if they are at all beneficial to health in the long run. The committee say unreservedly that the law should insist upon courts opening directly to the air. Whatever else in the building law they may except to from their interested standpoint, we are bound to say that in this we agree with them.—*Ex.*

American House Carpenter. Price $5.00.
Cutting Tools. Price $2.00.
Grimshaw on Saws. Price $4.00.
Mechanics' Geometry. Price $5.00.

The Air of Houses.

THERE is much confusion in the minds of some people, says the *Building News* (London), with respect to the dryness or dampness of houses. An air-tight room is more or less damp, though people are generally apt to think it otherwise if there is no draught, and all the air is carefully shut out. As a general rule, we invariably find the most draughty house is the driest, as it will be generally found to be the healthiest, if not the most comfortable, in cold weather. But the air of a room, as that for an invalid, may become too dry; it may be overheated by a stove, which would become injurious to the patient. In certain cases vaporizers are now employed to give the air of the sick chamber its healthful proportion of moisture.

Mr. G. J. Symons, in a paper on meteorology, has remarked that the subject of the hygrometry of the sick room was unknown two generations ago. If, in addition to temperature, the quantity of moisture in a sick room were indicated by the hygrometer, a great deal more might be done for the invalid's comfort. It is just as easy to regulate the hygrometric condition of the sick room as its temperature, and, in many respiratory complaints, the former is even of greater importance than the latter. The hotter the air is the more water can it contain, and this condition does not appear to be apprehended by those who dwell in such rooms, or provide the means of heating and ventilating them.

Professor Tyndall found that the moisture in the air of an ordinary room absorbs fifty to seventy times as much of the radiant heat as the air does. Moisture is the regulator and conservator of the heat, and in due quantity acts like a blanket, by protecting us from a too sudden cooling or heating. The question is one, we think, worthy more attention by the sanitary builder than has been given to it. Complaints are loud against certain hot-air furnaces, as they overheat the air and render it unfit for breathing; they tend to scorch and dry the air, and to this extent they are unhealthy.

The Bulletin's Report Correct.

THE report of building improvements in San Francisco and elsewhere, appearing in the *Bulletin's* issue of July 20th, was correct, and could not have been otherwise, as the items given were taken from the columns of this journal. The withholding of proper credit in that connection is not to be wondered at, as our contemporary has a chronic ailment in that direction, and we can afford to assist it in providing matter for its readers by furnishing building intelligence for its columns.

Important to those Receiving this Journal.

Should this Journal be received by any subscriber who does not want it, or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

Locks and Keys.

THE inventive Chinese had almost constructed a Bramah lock, when Egypt herself was young, and the keys found in our tumuli and tombs show how much ingenuity was expended in the construction of these supposed safeguards in all ages. The rude savage was contented, in all probability, with a combination of knots, and, indeed, Captain Galton, in his "Art of Travel," laments the want of some form of knot which would, whilst holding tight the stores, show whether they had been tampered with or not,—thus asking for a Chubb's detector lock of sinew or string in the bush or the desert; but such a series of knots does exist, and possibly a native guide or attendant would fail to untie the famous knot which so puzzles ingenious monkeys. Alexander found it easier to cut than untie the famous Gordian knot, and many primitive locks in use, even in the British Isles, depend on a combination of string and wood, which suffice to keep out cattle if not burglars. It is to guard against the latter that modern ingenuity has been so freely expended, and it would appear really as if the latest Yale lock was only a modification of the well-known Egyptian model of some thousand years ago, and there are in existence examples of locks on the Egyptian model which have survived, and are found to answer their purpose even at the present time, and it has been suggested that with a slight modification this could be used with advantage to "lock" pictures on gallery walls, so that they could be removed in case of fire easily and rapidly. This lock was obviously invented to secure a bar of some size, and has since been used on a much smaller scale.

Some of the earliest and most perfect specimens of locks which have come down to us are padlocks and fetter-locks, some, apparently, only adapted to fasten the girdle of a lady, whilst others are ponderous enough for the heaviest chest. Examples of these are in every museum of importance. It is well known that Bramah believed his famous lock to be unpickable, because he could not pick it himself, and this has been the case with other inventors, though, perhaps, the triumph of Hobbes in 1851 in proving that the champion lock was pickable excited the most attention; but we shall not, in our desire for small keys, imitate the lock which required a species of sickle to open it, for this key has to be carried over the shoulder like the Egyptian keys which are mentioned in Isaiah and figured in the great temple of Karnac; it is in use at the present day. These sickleike keys could only be used to move a bolt on a large gate, and when, as in many modern instances, the bar was hung in an iron frame and suspended in the center by a chain, a smaller key was required to open it, and thus gave rise to those ring keys described by Tacitus, and which answered the purpose of a signet ring as well as a key. Many of the wards of these Roman keys are so much like the ordinary flat or French latch-key in common use a generation ago as to suggest a doubt as to their antiquity. The curious implements found in Anglo-Saxon graves, and which are supposed to be keys from their being fastened together by a ring and slung at the girdle, are, as a rule, but rude pieces of bronze without a pretense to the formation of a ward, and in this particular only do they resemble the keys of the Yale locks of to-day. They could only be used to raise the rudest form of latch.

Amongst the locks which seem to have been most popular, and which are indeed the most curious, are what are known as "puzzle locks." They are found in the shape of a bird, as in India. They are hidden in the interlaced bolt-and-belt ornamentation of an Elizabethan linen-chest, or in the form of a "letter-lock" and then they are independent of a key. The former depend on a secret spring moving the escutcheon; the latter, on a certain combination of words, which require to be remembered accurately by the person using the lock or it becomes useless to him. Some of the more modern letter-locks are very ingenious,—in fact, more ingenious than secure. A couple of centuries ago they were far more popular than they are now, and in the time of our grandfathers, and even later, these secret springs and hidden mechanism were freely used by the novelists of the Mrs. Radcliffe school. They are immortalized in Beaumont and Fletcher's play of the "Noble Gentleman," where we find,—

> "A cap case for your linen and your plate,
> With a strange lock that opens with AMEN."

It is a somewhat singular circumstance that the best of our modern safes have locks which closely follow the secret apparatus described by the Marquis of Worcester in his "Cen ury of Inventions." He describes a little key, not weighing more than a shilling, which shall be capable and strong enough to bolt and unbolt "round about a great chest, an hundred bolts, through fifty staples, two in each, with a direct contrary motion, and as many more from both sides and ends, and at the same time shall fasten it to the place beyond man's natural strength to take it away." He also describes a curious escutcheon, and it was for the invention of a "secret apparatus" of this kind that the Society of Arts awarded one of their first premiums to Mr. Marshall, shortly after the commencement of their transactions, in 1784.

That there were warded keys and locks from Roman times is indisputable, and they were excellently made by the early English metal-workers. No one suspected their weakness until a century ago, and then their unreliability was proved by the easiness with which they were picked by the simplest novice in house-breaking. In vain were back-springs invented, and French tumbler locks introduced. A simple piece of twisted steel sufficed to open them all. The pondrous wooden and iron contrivances which had been trusted as locks should be trusted if they are reliable, were found to be of little worth. The tumbler locks of Barron and of Bramah, patented as far back as 1778 and 1784 respectively, head a long list of inventors of many tumbler and wheel locks There have been locks with master keys invented, and changeable key-locks invented for doors of safes, and other receptacles for valuables. Many of the latter are nearly perfect specimens of simplicity and security, with keys which, if not so light as those mentioned by the Marquis of Worcester, are at least sufficiently portable to be carried in the waistcoat pocket. There are specimens of many of these ancient locks in South Kensington, and in the British Museum, with keys remarkable for beauty of design as well as workmanship, showing, if another instance were needed, how well beauty can be combined with utility.—*The Builder.*

Modern Carpenter's Companion. Price $1.25

"RIGHT-HANDEDNESS" extends very far along the animal series. Parrots hold their food by preference in the right foot, and, though we cannot speak positively, wasps, beetles, and spiders seem to use the right anterior foot most commonly.

Cottages and Villas. Price $6.00.
Practical Carpentry. Price $1.00.

BUILDING INTELLIGENCE.

MISCELLANEOUS.

Saratoga.—W. C. Hamilton is erecting a two-story frame for Farrington Bros.; cost, $6,000.

Riverside.—C. G. Whitter is erecting a three-story brick building; *A.*, J. C. Porter, *C.*, Seymour & Stevens, for carpenter work; Sheldon & Davis, masons; $13,000. A one-story school house is being erected by Seymour & Stevens; *A.*, A. W. Boggs; $4,875.

Cloverdale.—M. E. Church, 40x60, is being built.

Rutherford.—Mrs. McComb is having a two-story frame built. *C.*, J. C. Mixon.

St. Helena.—P. Elting is building two one-story frame; *C.*, J. C. Mixon, two story base and attic frame; *O.*, G. Beringer *A.*, Schropfer; days' work; $22,000.

Petaluma.—Dr. Saul is erecting a two-story frame.

Sauceli.to.—Additions to Yacht Club; *A.*, Laver; *C.*, O'Brien; $2,000.

Cordelia.—Two-story frame; *O.*, J. R. Morris.

Gridley.—Two-story brick; *O.*, H. Robinson; *A.*, J. C. White; *C.*, Walker Bros.; $6,500.

Yuba City.—Large frame building for cannery.

Sacramento.—Near town, R. J. Merkley is building a large hop-house; *C.*, Carle & Croly. Near Washington, Carle & Croly are erecting a large hop-house. The same contractors are also erecting a hop-house on their own place, near Patterson's Station. At R. R. Depot the building is being enlarged for a hotel. One-story frame, Fifteenth, corner N; *O.*, Ridgway & Lathrop; *A.*, A. A. Cook; *C.*, J. White; $2,365. Two-story frame, N, between Seventh and Eighth; *O.*, J. Roberts; *C.*, A. Johnson; $5,000. One-story frame, Eighteenth, corner O; *O.*, R. J. Merkeley; *C.*, Carle & Croly.

Lincoln.—Two-story frame; *O.*, H. Nader; *A.*, N. D. Goodell; *C.*, B. F. Bell.

Wheatland.—Seven-story brick for flour mill; *O.*, Starr & Co.; *A.*, Percy & Hamilton; *C.*, Butler; $200,000.

Merced.—Two-story frame; *O.*, Huffman; *A.*, W. G. Copeland; cost, $8,000.

Los Angeles.—Two-story brick; *O.*, L. G. Hammond; *A.*, Kysor & Morgan; *C.*, L. Andrew; $13,000. Two-story frame; *O.*, D. Stephen; *A.*, Keysor & Morgan; *C.*, J. McGilvray; $6,000.

Stockton.—Three-story and basement brick; *O.*, State of California; *A.*, Percy & Hamilton; *C*, Confer Bros.; $138,000.

San Rafael.—Barn and carriage-house; *O.*, A. Forbes; *A.*, — Hatherton; *C.*, — Shaver.

Moss Landing.—Barn and carriage-house; *O.*, — Butler; *A.*, Wright & Sanders; *C.*, — Jackson.

Davisville.—Yolo County. Methodist church parsonage. One-story frame. *A.*, Babson & Seadler (Sacramento); *B.*, W. H. Hamilton; $1,800.

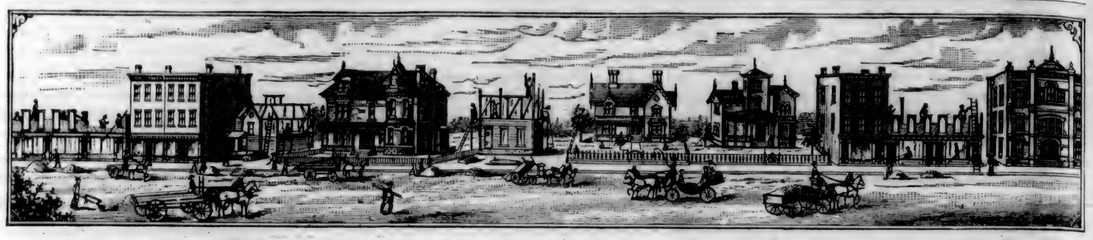
Cacheville.—Yolo County. One-story and basement. *O.*, J. Borach; *B.*, Mr. Marsh; $4,000.

Plainfield.—Yolo County. One-story frame. *O.*, John Winters; *B.*, Pool & Sears; $1,400.

Swingle's Station.—Yolo County. One-story frame. *O.*, J. K. Murry; *B.*, A. Stamp; $1,200.

Temescal.—One-story frame. *O.*, J. C. Ainsworth; *C.*, E. Child; $1,200

(*See next page.*)



BUILDING INTELLIGENCE.

SAN FRANCISCO.

Sutter, cor. Jones. Additions.
O.—Judge O. C. Pratt.
A.—Wolfe & Son.
C.—T. H Day.
$8,000.

Jessie, nr. Eighteenth. Two two-story frame.
O.—T. James.
A.—Wolfe & Son.
C.—T. Mitchell.
$2,900.

O'Farrell, nr. Van Ness ave. Four two-story frame.
O.— — McDermott.
A.—Newsom & Gash.
C.—T. J. O'Brien.
$16,000.

Fifth, x Bryant and Brannan. Two-story frame.
O.—Booler & Kreling.
Days' work.
$4,000.

Bartlett, near Twenty-first. One-story and basement frame.
O.—H. C. Patridge.
Days' work.
$4,000.

Tiffany Ave., cor. Twenty-eighth. Alterations.
O.—S. S. Seymour.
Days' work.
$5,000.

Broadway, x Buchanan and Webster. Two-story frame.
O.—Dr. R. B. Cole.
A.—Newsom Bros.
C.—J. Warren.
$15,000.

Folsom, corner Twenty-second. Additions.
O.—H. Hahn.
A.—F. Lueders.
C.—W. F. Muller.
$3,800.

Green, near Taylor. Three two-story frame.
O.—J. Racy.
C.— — Leagange.
$10,000.

Market, x Eighth and Ninth. One-story brick.
O.—Dr. Simpson.
Days' work.
$3,000.

Union, corner Pacific. Reconstructions.
O.— — Mixler.
C.—D. B Spangler.
$10,000.

Larkin, x Greenwich and Lombard. One-story frame.
O.— — Kayser.
A.—G. E. Voelkel.
C.—C. Fisher.
$2,000.

Gough, cor. Jackson. Additions.
O.—C. Lux.
A.—Kirby & Son.
C.—C. Ackerson.

Folsom, corner Main. One-story frame.
O.—McCormack Bros.
Days' work.
$2,500.

Clinton Park, nr. Market. One-story and basement frame.
O.—S. M. Thompson.
C.—J. R. Dalmas.
$1,800.

Guerrero, near Twenty-sixth. Two-story and basement frame.
O.—F. G. Edwards.
A.—J. Gosling.
C.—F. Crowley.

First Avenue, x Fifteenth and Sixteenth. One three-story and one two-story frame.
O.—D. Block.
A.—H. Geilfuss.
C.—A. G. Fitzpatrick.
$23,000.

Jackson, x Larkin and Polk. Two-story and basement frame.
O.—F. A. Miller.
C.—H. Mahn.
$4,500.

Powell, cor. Vallejo. Two-story frame.
O.— — Mowry.
Days' work.
$10,000.

Fifteenth, x Market and Guerrero. Two-story frame.
O.—J. Rautzlehr.
C.—J. McCann.

Fair Oaks, x Twenty-third and Twenty-fourth. Two-story frame.
O.—A. B. Asher.
C.—A. Klahn.
$3,000.

Twenty-eighth, x Dolores and Church. One-story frame.
O.—Mrs. J. Mullen.
C.—W. Grace.
$1 150.

Dolores, nr. Twenty-ninth. Two one-story frame.
O. and B.—Grace & Loftus
$2,200.

Church, nr. Clipper. Two-story frame.
O. and B.—R. Bergfeld.
$2,000.

Castro, x Nineteenth and Twentieth. Two-story frame
O.—Mrs. Banning.
A.—H. Geilfuss.
C.—J. Brownrig.
$3,200.

Haight, x Buchanan and Webster. Two-story frame.
O.— — Trezise.
C.—R. Cook.
$4,500.

Oak, x Buchanan and Laguna. Two-story and basement stable.
O.—H. Wempe.
A.—Schmidt & Havens.
C.— — Thornhill.
$3,500.

Golden Gate Avenue, cor. Broderick. One-story and basement frame.
O.—P. R. Schmidt.
A.—Schmidt & Havens.
C.—I. F. & J. G. Day.
$8,000.

Golden Gate Avenue, near Franklin. Three two-story frame.
O.—B. Curtaz.
A.—H. Geilfuss.
C.—J. H. Worden.
$15,000.

California, nr. Lyon. Alterations.
O.—Mr. Gutto.
C.—Cook & Johnston.
$2,000.

Bay, cor. Midway. Repairs
O.—Mrs. Brower.
A.— — Mooser.
C.— — Klatt.
$1,800.

Harriett, x Howard and Folsom. Two-story frame.
O.—J. F. Duane.
A.— — Bestor.
C.—P. Laherty.
$2,600.

Bush, nr. Pierce. One-story frame.
O. and B.—P. A. Cook
$500.

Pine, x Baker and Broderick. Seven two-story frame.
O. and B.—C. L. Hinkle.
$21,000.

Larkin, x Filbert and Greenwich. One-story frame,
O.—A. Rayer.
A.—G. E. Voelkel.
C.—C. Fisher.
$2,200.

Post, x Kearny and Dupont. Re-constructions.
O.— — Matthews.
A.—Kenitzer & Raun.
C.—E. Farrell.
$15,000.

Cedar Avenue, x Larkin and Polk. Two-story and basement frame.
O.—Mrs. Brady.
C.—H. McInnes.
$2,800.

Pine, cor. Scott. Four two-story frame.
O.— — Lichenstein.
A.—Schmidt & Havens.
C.— — Smilie.
$11,000.

Post, x Kearny and Dupont. Rebuilding Morton Block—four-story brick.
O.—E. Barron.
A.— — Gaynor.
C.—Mahoney Bros.

Jackson, x Larkin and Polk. Two-story frame.
O.—E. Rooney.
A.—Townsend & Co.
C.—J. Doherty.
$4,500.

Harrison, x Twenty-third and Twenty-fourth. Alterations.
O.—J. Doherty.
C.—T. Mitchell.
$1,500.

Twenty-first, x Mission and Bartlett. Two-story frame.
O.—Captain Ackley.
A.—T. J. Welsh.
C.—J. Doherty.
$4,000.

Baker, cor Clay. Five two-story and one one-story frame.
O.—G. W. Hinkle.
$19,000.

Greenwich, nr. Buchanan. One-story frame.
O.—Mrs. K. Cantrell.
Days' work.
$1,000.

Market, near East. One-story brick.
O.—L. Ford.
C.—A. B. Carr.
$1,500.

Fair Oaks, near Twenty-first. Two-story frame.
O.— — Cain.
C.—J. T. Ayer.

Hayes, x Laguna and Octavia. Additions.
O.—P. J. Corbett.
A.—T. J. Welsh.
C.—C. Quinn.
$4,000.

Oak, corner Franklin. Two-story frame.
O.—A. F. Benard.
A.—T. J. Welsh.
C.—R. Doyle.
$5,000.

Guerrero, x Seventeenth and Eighteenth. Repairs.
O.— — McGlinn.
A.—T. J. Welsh.
C.—J. W. Smith.
$1,000.

Bryant, x Second and Third. Frame dwelling.
O.—J. D. Sullivan.
A.—T. J. Welsh.
C.— — Laherty.
$2,400.

Howard, x Fifth and Sixth. Three-story dwelling and stable.
O.— — Sullivan.
A.—T. J. Welsh.
C.—George Hansbrough.
$10,000.

Eighth Avenue, nr. Point Lobos Road. One-story frame.
O.— — Conway.
A.—T. J. Welsh.
C.—J. J. Welsh.
$2,000.

Sutter, x Powell and Stockton. Two-story and basement brick.
O.—Dr. Bazal.
A.—A. Pissis.
C.— — Cate, mason.
$16,000.

Folsom, x Main and Beale. Three-story brick.
O.—Whittier, Fuller & Co.
A.—Percy & Hamilton.
C.—J. Cox.
$20,000.

Hyde, nr. Clay. Two-story and basement frame.
O.—W. S. Jones.
A.—Percy & Hamilton.
C.—A. Jackson.
$6,000.

Howard, corner Sixteenth. Two two-story frame.
O.—Mrs. Butterworth.
A.—H. D. Mitchell.
C.—J. B. Gonyeau.
$10,500.

Sixth, nr. Mission. Alterations.
O.—C. Wilford.
A.— — Schropfer.
C.—T. Maxwell.
$5,000.

Ritch, nr. Townsend. Three-story frame.
O.—D. Farnsworth.
A.—Daley & Pierce.
C.—J. W. Dawson.
$5,000.

Fulton, nr. Laguna. Alterations.
O.—F. Band.
A.—Daley & Pierce.
C.—Byron Bros.
$1,000.

California, corner Mason. Granite wall.
O.—J. G. Fair.
A.— — Gaynor.
C.—G. D. Nagle.
$50,000.

Golden Gate Park. Rebuilding conservatory.
A.—Newsom & Gash.
C.—S. M. Hills.
$12,000.

OAKLAND.

Alice, x Fourteenth and Durant. Two-story frame.
O.—E. Adams.
A.—C. Man.
C.—W. Dahl.
$10,000.

Magnolia, nr. Eighth. Two story and basement frame.
O.—T. Wade.
A.— — Newsom.
C.—W. S. Odle.
$6,000.

Eighth, cor. Linden. Two-story and basement frame.
O.—F. Renhling.
A.—C. Man.
C.—W. Dahl.
$8,000.

Durant, nr. Broadway. One story frame.
O.—Mrs. Cudworth.
C.—E. Whitcomb.
$1,100.

Adeline, cor. Central Ave. Additions.
O.—S. B. McKee.
A.—Clinton Day.
C.—E. Child.
$3,000.

Webster, nr. Piedmont. Two-story additions.
O.—G. W. Hume.
C.—E. Child.
$3,000.

Market, x Ninth and Tenth. Two-story and basement frame
O.— — Godfrey.
C.—Ingerson & Gore.
$7,000.

Tenth, nr. Magnolia. Two-story and basement frame.
O.—G. H. Strong.
C.—E. Child.
$5,000.

Union, x Eighth and Tenth. One-story frame.
O.— — Crowell.
C.—P. Crinnion.
$2,000.

Broadway, cor. Seventh. Three-story and basement brick.
O.—Charles Elsey.
A.—Mathews & Son.
C.—Burpbee & Judson.
$22,000.

Sixth, nr. Brush. One and one-half story frame.
O.— — Dingee.
C.—Turner & Reese.
$1,800.

Vernal Heights. Two-story frame.
O.—J. B. Earle.
C.—E. Child.
$4,000.

Vernal Heights. Two-story and basement.
O.—G. E. De Golia.
A.—Clinton Day.
C.—E. Child.
$4,500.

ALAMEDA.

Alameda Ave., x Chestnut and Willow. One-story frame.
O.—T. W. Reed.
C.—Wasson & Pattiani.
$1,800.

Park Avenue. One-story frame.
O.—E. F. Moblad.
C.—Wasson & Pattiani.
$1,500.

Santa Clara Avenue, nr. Grand. One-story and basement.
O.—S. Franks.
A.—Townsend & Co.
C.—A. Denke.
$3,100.

Central Ave., nr. Willow. Two-story frame.
O.— — Scott.
C.—Gilbert & Co.
$3,000.

Chapin, x Eagle and Buena Vista Ave. One story and basement frame.
O.— — Ford.
C.—A. Denke.
$1,800.

Alameda Ave., x Grand and Peru. One-story frame.
O.— — Anthony.
A.—Balsin & Seadler.
C.—Gilbert & Co.
$2,500.

BERKELEY.

Second, cor. Addison. One-story and basement frame.
O.—Wheeler Cannery
C.— — Overton.
$7,000.

Two-story Frame.
O.— — Brackett.
$4,000.

Blake Street. One and one-half story frame.
O.—Mrs. Williams.
C.— — Spencer.
$2,300.

Two One-story Frame.
O.— — Lingard.
C.—C. R. Lord.
$1,800.

Walnut, cor. Virginia. One-story frame.
O.— — Allen.
C.—A. H. Broad.
$1,600.

Blake Street. Two-story frame.
O.— — Lockyear.
C.—A. H. Broad.
$2,500.

University Ave. One-story frame.
O.— — Fischell.
C.— — Spencer.
$1,900.

M. E. Church. Repairs.
$600.

WOODLAND.

Third Street. Two-story frame.
O.—James Douglass.
A.—W. H. Carson.
B.—Gilbert & Son.
Days' work.
$10,000.

Main, nr. Elm. Eight one-story brick stores.
O.—Lowe & Hollingsworth
A.—W. H. Carson.
C.—Cra't & Winne.
$7,000.

College Avenue, nr. Pendegast. One-story frame.
O.—Mrs. Pendegast.
C.—Glenn & White.
$1,700.

East Woodland. Additions and improvements.
O.—D. Farnum.
B.—W. Myers.
$1,000.

Main, nr. East. One-story frame warehouse.
O.—Browning & Logan.
Days' work.
$5,000.

Main Street. One-story brick.
O.—E. G. Hoernlein.
A.—W. H. Carson.
B.—Gilbert & Son.
Days' work.
$2,000.

Cross Street. Improvements.
O.—Mr. Armstrong.
B.—Gilbert & Son.
Days' work.

Main Street. One-story frame.
O.—S. Huston.
B.—James Amesbury.
$1,000.

Court Street. One-story frame.
O.—Mr. Mosebocker.
B.—James Amesbury.
$1,400.

Third Street. One-story frame.
O.—Charles Gunnaw.
B.—James Amesbury.
$1,000.
(*See preceding page.*)

The California Architect and Building News.

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THE

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AND

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SPECIAL NOTICE TO SUBSCRIBERS.

It is our intention, in the future, to have all new subscriptions begin either with the January or July numbers. In order to have a uniform time with subscribers now on our books, credit will be given to those whose subscriptions fall due between this issue and the 1st of January, with the intervening months, so that by sending $2.00 NOW, you will receive a full receipt for 1884. All new subscribers will receive the balance of this year free.

S. F. Chapter American Institute of Architects.

THE Chapter met in annual session on the evening of the 7th inst., President John Wright presiding. The profession of the coast was well represented. The regular order of business was suspended for the purpose of receiving a delegation from the Plumbers' Association, who were present in the capacity of an authorized committee, to discuss before the Chapter the rules and regulations adopted by the Board of Health under the plumbing law of the State, which went into effect August 1st. A Committee of Conference from the Chapter was asked for, to meet a like committee from the Plumbers' Association, to take the whole subject-matter into consideration and prepare recommendations to present to the Board of Health, amendatory of the present rules, which in several particulars do not meet with general approval, and which may be made more practical, and lessen the cost of plumbing work. The range of discussion before the Chapter reached the many points of objection to the rules, and it is believed that a committee of architects and plumbers will be able to harmonize all discordances and provide rules which, if adopted by the Board of Health, will ensure the efficient working of the plumbing law as passed by the last legislature of California. After the withdrawal of the visiting plumbers the Chapter further considered the matter, and appointed a committee of three, consisting of James E. Wolfe, Wm. Curlett, and B. E. Henricksen.

Committee on Seal of the Chapter reported that the matter had been placed in the hands of the class-teachers established by this Chapter.

Reports were then read from those having charge of the classes, and the different officers.

The Secretary reported a total membership of forty-two. The Chapter was fully equipped with a fine set of books, by-laws, etc., and had money in its treasury, with not a single liability.

N. L. Mayo was appointed collector for the ensuing term.

Propositions were read from Masters Lee and Bugbee, each to become student members.

Election of officers being next in order, the following gentlemen were elected:—

President, John Wright.

Vice-President, William Curlett.

Secretary, George H. Wolfe.

Treasurer, H. C. Macy.

Executive Committee, Seth Babson, Thos. J. Welsh, Geo. H. Sanders.

Election of Trustees postponed until next regular meeting.

A vote of thanks was unanimously tendered to F. Marion Wells, Geo. H. Sanders and Albert Pissis, teachers of the various classes established by this Chapter, for their kind attention given to the pupils under their charge.

Adjourned.

Review of Building Operations.

THIRD QUARTER OF 1883—AN INCREASE OF NEARLY $2,000,000 OVER SAME TIME IN 1882.

BUILDING operations all over the coast still continue brisk, and from advices received, the coming winter will exceed in the number and value of new buildings erected, that of any similar period in the history of the State.

The following summary will convey a clear idea of the amount of work that has been done so far this year, and the good showing made in comparison with 1882.

During the first nine months of 1882 there were erected

582 BUILDINGS OF THE VALUE OF $2,655,726.

Same period of 1883 there were erected

635 BUILDINGS OF THE VALUE OF $4,579,878,

thus showing a gain of $1,924,152. We have included in the above the new building at present under way for one of our largest hardware dealers, which is not reported in our Building Intelligence, the contracts as yet not all being let.

The above is a remarkably good showing, when it is taken into consideration, that during the year there have been but three buildings erected costing over $100,000 each. Most of the buildings are private residences and flats, averaging about $7,000 each.

We do not agree with our contemporaries that the height of the building boom has been reached; that "flats" will soon be a drug on the market, etc. The general good times in every branch of business is taken advantage of by many of our good housewives, and they are moving from the "filled ground" quarters to where they can obtain plenty of sun and fresh air, with but a nominal increase of rent.

The cable roads are gradually but surely causing a return tide from the pleasant dwelling places across the bay; and when the Mission Line shall have carried out their contemplated QUICK PASSAGE SCHEME, thus giving the residents of the large valley beyond Thirtieth Street the means to go back and forth on quick time, to almost every part of the city, we have no doubt that the cheap lands in the valley named will soon be filled up with many of those who travel back and forth across the water, for the sake of saving a few dollars by cheaper rents.

New York Street Architecture.

BY A. CURTIS BOND.

THE RENAISSANCE.

THE house shown in our illustration is that of Charles Volkmar, at Tremont, this city. It is strictly French in its construction, its appearance, and its surroundings—Parisian thoroughly, and comfortable as it is attractive. The material is brick with an outer stucco, giving it a creamy surface. There is so little to describe, exteriorly, that I must leave it to my readers' perception to picture for themselves, from the representation here shown, the attractions of the spot and the inviting look of the dwelling. If a high concrete wall could be added in the imagination to the place, a wall extending around the four sides and inclosing about an acre of ground, with neat vegetable plots and flower-beds, and a goodly-sized furnace, it will give not only a first-rate idea of the residence, but likewise a capital notion of what a true French country house is—barring the furnace. Mr. Volkmar is an artist, and beyond that does a little pottery baking on his own account, so the furnace was put up by him for this purpose, and is considered quite a novelty in the way of a diversion by his neighbors, but I presume he often makes it a combination of business along with his play.

At the side of the building is a *porte cochese*, through which carriages may drive to an inclosed court yard in the center, just large enough to permit the vehicle turning. To the right of this court is a small reception room, which in a Parisian house would probably be used as the office for the concierge, or porter, and there is also the parlor and back of it the kitchen, while to the left is a billiard room and the stairs leading to the floor above. This enumeration of apartments appears to be that of an extensive house, but it must be remembered that they are all small, and the building itself not over forty feet square.

The entire house is heated by steam from a furnace in the cellar—a small furnace—and in the place of chimneys are ventilating ducts leading to the roof and opening into each room through a fancy ventilator. On the lower floor a gas burner in this ventilating tube or channel is kept burning, thus causing an upward flow of air, and carrying off the vitrated atmosphere of the apartments. This is an effective and an ingenious idea.

Upon the second floor is a large room originally intended, I presume, for another parlor, but converted to the use of a studio by Mr. Volkmar; opening from it is a small room called the library, and opening from its opposite side is the dining-room. The windows of this latter open upon a veranda or balcony, which has been very tastefully and deceptively fitted up with flowers to resemble, or rather personate, a tropical garden. It has been covered with glass, and by the clever arrangement of mirrors the appearance of quite an extensive flower garden is had from an ordinary five-feet piazza. A stair-case beginning at the door of the dining-room leads to the third floor, which is divided in the conventional manner into three bedrooms and a bathroom.

The decoration is very simple, consisting almost exclusively of wood in its natural condition, color, etc., carved sparingly. In truth the house is not an elaborate nor an expensive one, but has the peculiarities of the French dwelling transported to America. . . . One of the most noticeable of the new buildings put up in this city is that of the Manhattan Storage Company, occupying the entire block on Lexington Avenue from Forty-first to Forty-second Streets, and extending half way through to Fourth Avenue. It is a gigantic brick affair simulating a fortress, or more perhaps after the style of the old feudal castles we are accustomed to see in illustrations of medieval times; it is 150 feet tall, and the building proper has the appearance merely of massive walls, two of them being entirely without windows or doors or openings of any description, while the others have merely an entrance for teams and visitors, two heavily barred windows looking into an office and store room, and two other equally well protected at the third story looking into another store room. All the light necessary is obtained from a well or court in the center. The main rooms, of which there are four upon each floor, are each 50x200 feet, and divided into small apartments by iron railings extending from floor to ceiling, permitting a circulation of air—something very desirable—and at the same time keeping out borrowers and those seeking relics or odd bits.

The necessity for a storage house and a good one, has been burdening New Yorkers for a number of years. There is probably no city in the world that claims so large a proportion of restless residents as this very Empire Town. Every one takes a trip to Europe, occasionally at least; the prosperous business man secures state-rooms on the most expensive line, and his whole family go with him, while his anticipated leaving is announced in the papers of the evening previous; the more modest traveler, who has perhaps left the bank very suddenly that afternoon, carefully avoids notoriety, and his name first appears in the *Police News* a week after he sailed. Whether it is the legitimate excursionist who will safely and instructively visit every capital of the continent, or whether it be the gentleman who will extend his trip only to those countries with which we have no extradition treaty, the anticipation rests with one, and the delusion with the other, that each will return to these United States at some day, so the former stores his furniture and chattels, and the latter does also if he has time. Since the burning of Morrel's storage place, about a year ago, there has not been much feeling of security among those who have found it necessary to put their goods away, and this company has taken advantage of this uncertainty, and will probably become rich. . . .

Since A. T. Stewart's death there seems to have been a positive succession of the most inexcusable mistakes made in the conduct of the affairs connected with his estate. It may perhaps be considered as a just return for Stewart's entire disregard for every one else's interests that his business should have been absorbed by another, his property divided among a multitude of strangers, though all reputed to be nearer in relationship than their names would suggest, a relationship not generally recognized by the law nor sanctioned by the Nestors of society. The building occupying the block on Broadway between Chambers and Reade Streets was devoted at one time to Stewart's wholesale business, a business whose imports were said to be $30,000,000 annually, a business unrivaled for many years in the country, and which aside from its foreign trade embraced several mills, cotton, linen, carpet, etc., in our Eastern States. The retail department was further up town, another entire block filled with busy clerks and shopping women, a multitude of cashiers, an army corps of small boys to carry change. Cyrus Field commenced his career as one of these "cash boys;" the firm did its own banking; all checks were made upon itself. If clerks, and bookkeepers, and cashiers, and directors had to be provided with means for sudden European trips, Mr. Stewart thought it was only fair to give the first opportunity to his own assistants. This is about the only instance of consideration for others that he is known to have exhibited. The most of his time, aside from the immediate conduct of his affairs, was occupied in establishing retail stores in small summer resorts or country places, where his competition ruined local dealers and caused innumerable bankrupts. As I said, however, all his property has lost its association with his name, and the wholesale house to which I referred has changed even its appearance, the countenance it bore during its projector's life. It has been torn apart, and dug out, and built up again, and two new stories have been added with the very singular arrangement of having the new floors stop short of the corners, which have not been raised beyond their original height. The open spaces thus left at the corners are finished with an ordinary brown tin roof, of course two stories lower than the main roof, and are absolutely repellant in their contrast with the more or less white and yellow of the marble front and sides. I am assured by the architect that he has no intention of placing towers or belfries or any other architectural eccentricity at these barren points. The building, I might add, is now to be rented in offices.

There is a moral in Stewart's career somewhere if people would only look for it; the world won't smile at a man's memory whenever his name is mentioned unless there has been something powerful mean about his life.

* * * * * * * * *

There is another New York celebrity of whom we have no reason to be proud—no more reason, I was going to say, than of Stewart, though that would be rather a hard thrust at one or the other of them, I hardly know which could take the most exception—at any rate this second character is not a favorite with any "set." He is Edward S. Stokes, a man who committed a murder as cowardly and contemptible as any that has ever occurred in

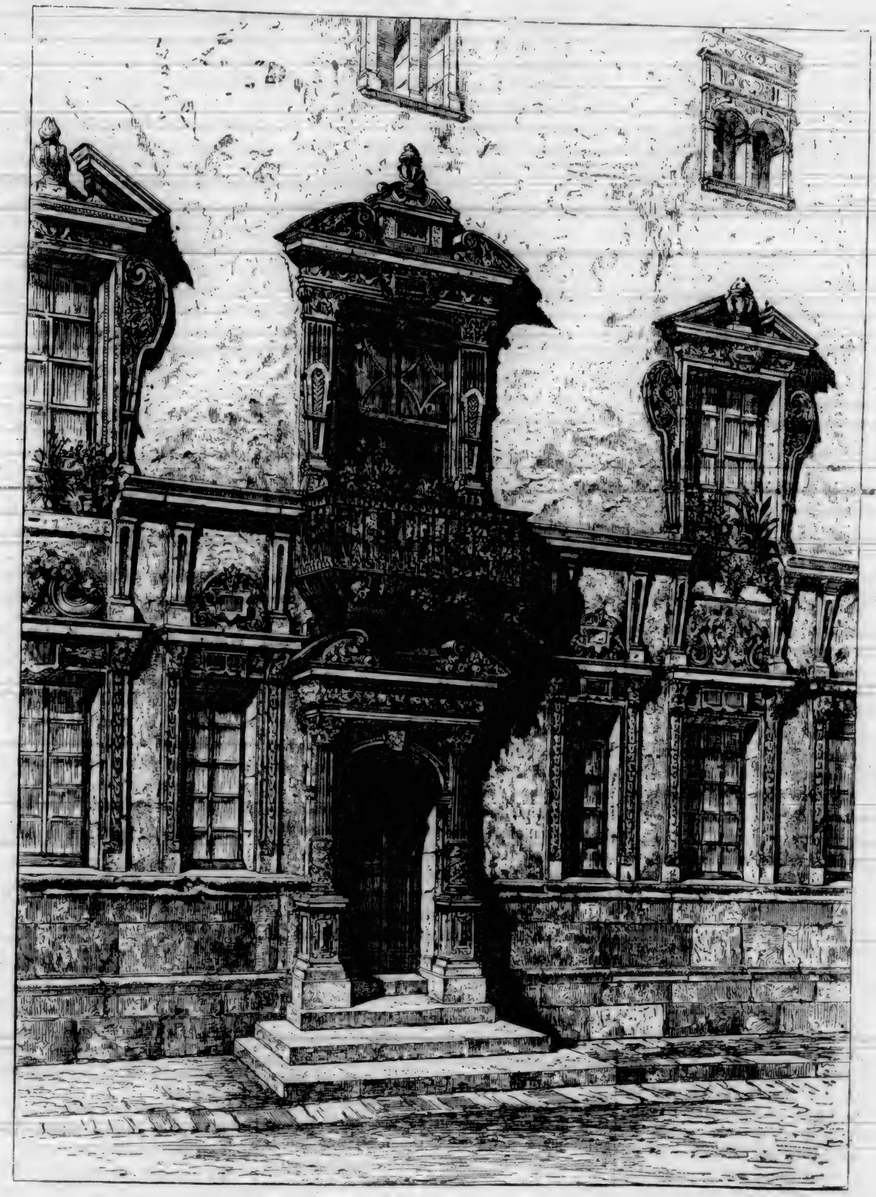


PLATE 1.—ILLUSTRATION OF THE "RENAISSANCE."

this city. Stokes, as you know, served his ridiculously inadequate sentence in Sing Sing, and instead of drowning himself soon as he could after being released, he went into the hotel business here, backed, it is said, by John W. Mackay, and he has made a palace from what at one time was almost a wreck. The Hoffman House was never one of the sanctified hostelries of our city, not even one of the pleasing to look upon, but under the influence of Mackay's cash and Stokes aesthetic taste it is now one of the most startlingly original resorts to be found. Its *clientele* is principally of a sporting tendency, devoted to the perfection and encouragement of the manly art or versed in the respective merits of individual oarsmen and trotters. Owing to this, probably, the place has made money; the bar-room particularly has been successful with its $10,050 picture of Bourgerean of "Nymhps and Satyr" (well caricatured in a recent *Puck*); its magnificent copy of the inimitable figure of "the Diver," the marble statuette of a female lightly clothed in a mosquito net suit, and her arms extended as in the preparation for a plunge; its "Dream of Faust" one of the most beautiful and most suggestive of modern paintings, —all these attractions have done their part in bringing a trade that has enabled Stokes to build an immense addition to his house. His addition is going up on Twenty-fifth Street, directly in the rear of the main building, facing on Broadway. It is a corrugated-looking affair, nine stories tall, and every other window across the front is in a bow, a series of continuous swells, just large enough to accommodate the window, extends from the ground to the roof, and the wall surface separating these elongated bows is merely sufficient to permit a narrow window being placed therein. The material is Milwaukee brick and terra cotta, and the general appearance is dignified and pretentious. I presume the style might be called a modernized Venetian.

Low Charges for Architectural Services.

WITHIN the past month considerable comment has been indulged in by certain parties because a member of the chapter of architects in this city has consented to render architectural services for less than the charges adopted by all architectural societies—namely, five per cent. on the cost of the whole work. This upon its face appears wrong and inconsistent, and unless relieved by the circumstances of the case, is so in fact. Five per cent. is a right and proper charge, and we regret that it cannot be made a universal rule, as its adoption and observance would do much toward elevating the profession to its proper standing. But there are unprincipled men practicing the profession, who find work mainly by underbidding—offering their services at nominal rates and depending upon the perquisites for fuller compensation. And every time that owners succeed in engaging architects at unremunerative prices they pay dearly in the long run for the false economy practiced.

The facts in the case referred to are these: The names of five architects were proposed before the Board controlling the improvements in contemplation, three of whom were members of the chapter. A vote was taken upon the names submitted, which resulted in the selection of one of the three chapter members. A committee was appointed by the Board to wait upon the selected architects to ascertain what compensation would be demanded. They were plainly told that five per cent. was the right and established price, a copy of the by-laws of the chapter was handed them, in which the scale of rates is printed. To this the reply was made that much lower rates had been offered by other parties before the Board, and that the Board would not consent to pay the five per cent. Knowing that one of the outside party, or firm, had done numerous mean things to secure work, althou h enjoying a large practice, the architects selected stated that they would not *again* permit themselves to be beaten, and would *reluctantly* abate the regular charge, rather than allow the work to pass into hands that cared nothing for professional rules, and who had in many *well-known cases* done extraordinary things to break existing engagements between owners and other architects, to obtain work which would not have been awarded to them except through persistent doggery and strained influences of various kinds.

Beside this, when the scale of charges was adopted by the S. F. chapter,—being the same as those adopted in all chapters and architectural societies throughout the Union, in England, France, Germany, and other European countries,—it was understood that when members of the chapter were placed at a disadvantage through the *unprofessional acts of outside parties*, they should have the right to exercise their own judgment in meeting the issue. This was done in the case in hand, and while the proper rates have been departed from, the price agreed upon is greater than was offered by others in the contest. So that while the chapter member may have technically sinned against the rule, the end has been attained of defeating others who *systematically* scruple at nothing sinful to obtain work.

We repeat, five per cent. is but a right and proper charge for faithful architectural services, and if all men engaged in the profession would adhere to this, owners would as willingly pay the amount, and think better of architects for demanding fair pay, than they do under the too commonly practiced system of a portion of the profession taking work at any price offered, and doing the best they can to "get even"—the latter course tending to degrade and demoralize the profession, and place owners subject to all the circumstances attendant upon conditions of trusts unremunerated. It is an old and true maxim that insufficient compensation stimulates a disregard of strict integrity in any capacity.

All new subscribers for 1884 will receive the balance of this year free.

Large Sticks of Timber.

HUNDREDS of visiting Knights Templar had an opportunity while in this city of seeing two of the largest pieces of timber that ever passed through the hands of the millmen. It was amusing to hear the remarks, and watch the various changes in the different countenances caused by a survey of probably the finest pieces of timber that were ever sawn. One piece is 144 feet long by 18 inches in size, and contains 3,456 feet of lumber. For over 100 feet there is no knot that a five-cent nickel will not cover, and in the whole piece of timber the largest knot can be covered by a half dollar. It is wonderful that a stick of timber of the size given should be so remarkably clear of knots. Its companion is of the same length, 16 inches square, and contains 2,352 feet. When it is taken into consideration that the tree from which the first mentioned piece of timber was taken was cut several feet above the ground, and that 150 feet from the cut made to fell the tree, it was of such a size as to enable the millman to saw the log so as to produce a piece of timber of the size given, one can imagine the size the butt must be, and partly comprehend the amount of labor required to handle such an immense stick.

It costs about one-half more to land on our wharves a stick of timber of the size mentioned than it does of ordinary lengths.

These pieces of timber were sawn at the Port Blakely Mills, Washington Territory, the owners being Renton, Holmes & Co., the well-known lumber merchants of this city.

A short time ago there was received in this city a stick of timber 104 feet long, 24 inches square, and almost free from knots. After its arrival here it was allowed to be on inspection for a short time, when it was taken to one of our mills and sawed into joists, as the purpose for which it was manufactured was given up and no use could be found at the time for a stick of timber of such large dimensions.

Now Is the Time to Advertise.

IN order to supply the demand for sample copies now constantly being made upon us, we will during the next four months issue ONE THOUSAND EXTRA COPIES EACH MONTH, of this Journal.

The supplement has been, so far, the means by which we have received over 500 orders for sample copies of our Journal, in most cases accompanied by twenty cents, the price per copy of our regular issue. This too when, as yet, not one-half of the supplement has been distributed.

Of the latter we printed, by actual count, 54,880 copies, and its distribution will be general all over the Pacific Coast.

We intend, in the near future, to issue Supplement No. 3, and will guarantee to print and distribute 100,000 copies.

ADVERTISERS WILL PLEASE TAKE NOTICE. The great extra demand for this journal insures your advertisement being seen by many thousands, who would otherwise, probably, never hear of the wares you seek to introduce amongst our people.

Papier Mache Floors.

A NEW style of floor decoration is now becoming desirable from its neatness and great durability. There is no liability of its becoming common from sameness of design, for the materials are of great variety, as is found in wall paper. The process for covering a papier mache floor is as follows: The floor being well nailed the holes and cracks may be filled up flush with Plaster Paris dissolved in thin glue water, leaving them even with the floor, by using a broad bladed knife. The cracks are sometimes filled with soaked papers mixed with paste to the consistency of putty and applied in the same manner. Any good flour paste will answer, and if a little alum is added will prevent the souring tendency of the paste. The floor is then sized with the paste and covered with any cheap paper, and if the flexibility is not considered sufficient, a second application is made, crossing at right angles the course of the first layer. The lower priced wall papers will do for this purpose. After this is thoroughly dry, the pattern of wall paper is cut and laid on in the same manner as upon walls. A wide dark border is then added next the base board, thus inclosing the whole in one pattern. If further decoration is desired, a center piece may be added, as also flower bouquets in the corners. When the paper is dry, a light thin coat of white glue is laid on very quickly, not allowing the brush to pass but once over the colors, for fear of disturbing them. A second coat of size is necessary to make it strong enough for the varnish. In making this size it is usually soaked in cold water for two or three hours and then heat it on the stove or add boiling water, stirring it well to insure a mixture. When the glue sized floor is dry, it is then ready for the varnish. One or more coats of turpentine furniture varnish is applied, or a coat of hard oil-finish varnish is spread over the entire floor, leaving it when dry with a bright glossy surface. The details of this process are to be followed with care, thus insuring a complete success and presenting when finished a durable and cheap papier mache carpet. This new floor covering is suited for small rooms, halls, stairs, and the kitchen even if kept well coated with varnish. This furnishes a floor perfectly water and air tight; it may be washed and scrubbed like other floor covering. To further protect these mache floors where much used an occasional coat of wax that is dissolved in turpentine should be applied either with a brush or rubber made of cloth. The wax leaves the floor smooth and wears glossy and is easily kept clean. J. E. W. C.

A SCOTCHMAN employed to build in London used steam cranes to hoist the bricks up to the required height; and as the English workmen refused to have anything to do with a job where steam supplanted men, workmen had to be brought from Edinburgh to finish the hotel.

All new subscribers for 1884 will receive the balance of this year free.

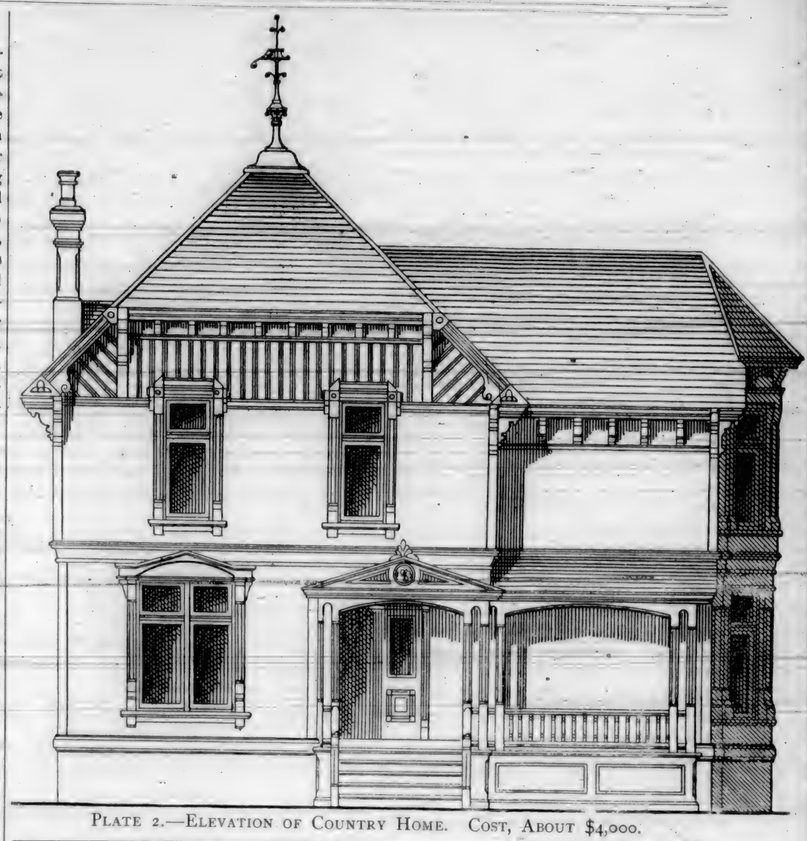


PLATE 2.—ELEVATION OF COUNTRY HOME. COST, ABOUT $4,000.

Concerning Sanitary Science.

"ONE of the marked changes of our time is the altered position of the physician in the community. The traditional duty of the doctor is to cure disease, and disease was supposed to be a sort of malignant entity which had got into the system and could be expelled only by the most energetic and heroic remedies. Physicians were said to belong to the medical profession, as the chief business of the doctor was to prescribe medicines, which were mostly drugs. And Voltaire wittily summarized the work of the physician as an attempt to work a miracle by reconciling intemperance and health. A half century has altered the whole scope of medical study. Sanitary science profoundly affects medical theories. And the upshot of it all is that the old faith in drugs and medicines of all kinds is fast dissolving. People are everywhere learning that sunlight, pure air, good food, a proper dress, regular habits, plenty of sleep,—in short, that right living is a million times better than all the medicines of the world.

The great physicians of our time are vastly more interested in sanitary science and hygiene than in therapeutics. They are studying anew the questions pertaining to life. They are investigating the conditions of perfect physical existence. They are giving lectures, and writing books on the great art of keeping well, of developing physical force, of building up a perfect body. The questions of drainage and ventilation, of the nutritive values of the different kinds of food, and the proper methods of cooking, of artificial exercise when it is necessary to resort to such expedients, the heating of houses, and the quantity and fashion of clothes that should be worn, are assuming an importance hitherto unknown. Everything that relates to the art of living, so as to avoid sickness and pain, and maintain the highest degree of power and enjoyment is invested with new importance. The physician is no longer 'a medicine man;' we send for him when ill, it is true, and value his curative services as highly as ever; but we would pay him a double fee to keep us well. He is a member of a health police, whose function it is to keep people from getting sick, and hold a disease at bay. And instead of killing a doctor when a patient dies, after the manner of the Emperor of China, the skill and proficiency of the physician of the future will be determined by his success in keeping his patients strong and well; and should they fall ill, he may be dismissed for a better one."—*Ex*

Important Facts in Regard to the Great Pyramid.

In our June number, 1883, we presented to our readers a diagram of the supposed manner in which the Great Pyramid was built, with an explanation of many important facts in regard to its history, and the wonderful results deduced from the measurement of its different parts.

Since that issue we have received many letters asking for explanations in regard to problems suggested by various thoughts of different readers. In order to answer such queries we present a few items in regard to the wonders of the Great Pyramid. Our readers will bear in mind that the thoughts contained in the succeeding paragraphs are but those culled from the works of those who have made the "Grand Mystery" a life study.

"*If the Great Pyramid is over* 4,000 *years old, how is it that the stones of which it is composed do not show the same signs of disintegration that are noticed in ruins of a much more modern date?*"

To answer this question we must first ask, What are the causes, natural or otherwise, that tend to decompose solid rocks? The most powerful elements are frost and rain. In parts of our own country we often have occasion to notice the mighty power of water that has been confined in clefts and seams of rocks, suddenly expanding by being frozen, and with mighty power rending rocks asunder, and at times tearing away the whole face of cliffs. In Egypt the climate is dry and sultry, and so slight is the pure decay which takes place in earthy matter that even crude or unbaked bricks, formed merely of Nile mud, have been known to last some 3,000 years; and stone blocks, of which Egypt has vast supplies and of excellent quality, have lasted longer still. So we see that frost, the greatest enemy perhaps of stone, is a minus quantity in the land of Egypt.

The Pyramid is situated in a desert of sand. How, then, can it be founded on a rock?

It *is* built on a rock, and one specially leveled for the purpose. The four corner-stones are let into the main rock, and the four sides of the building face exactly the four cardinal points of the compass.

In building such an immense pile of masonry, the chippings practically would amount to thousands of tons. No trace of these fragments is left. What became of them?

The Pyramid is built upon a rocky hill and much of the material used was excavated therefrom. Some writers speak of the Pyramid as being built upon two hills, the surface of which was artificially leveled. One-half of the northern section or hill has been shown to be of pyramid chips. This fact was proven by the action of nature's elements. In Egypt sudden torrents occur that sometimes make a mighty change in the face of nature. They caused channels to be cut in the vast piles of sand and chips, sometimes to the depth of sixty to seventy feet, exposing to view the chips that were trimmed off from the stones. Near the top of the heap are chips of black and white diorite, much the same as the statue of Shafre, in Boolak. No such material is seen in any tomb, or in the Pyramid itself, except near the entrance passage. Hence the inference of an undiscovered room in the Pyramid—the muniment room for the monument.

One important fact is interesting. Many of the ruins in Egypt are covered with hieroglyphics. *Why is it that we find no signs of any in or about the Great Pyramid?* This is a question that we would like to have answered by some of our scientific men.

The Great Pyramid is really a most gigantic proof that that eventful beginning of stone architecture, by the highest and best-built structure that has ever yet been erected, shows that Divine Inspiration must have energized its builders. The material of which the Great Pyramid is composed would build a wall one foot thick, five feet high, and over 3,000 miles long. It contains more than 80,000,000 cubic feet.

All new subscribers for 1884 will receive the balance of this year free.

Remarkable Invitation.

We have been favored with a copy of one of the most remarkable "invitations to architects" which has yet come under our notice, and take a certain satisfaction in giving it currency. The building to which the attention of the profession is directed is intended for the use of a cotton exchange, and the competitors are required to furnish plans, elevations, sections, diagrams of construction, full and accurate descriptions, and "full detailed bona-fide estimates" of the cost of construction of their designs. The circulars have no date, but unless our invitation was unduly belated we are forced to conclude that the competitors generally are expected to go through with the labors specified in about thirty days. This, as we need not tell those who know anything of office business, would involve very lively work on the part of an architect and his assistants, and one would suppose that a committee in such a hurry would expect to pay liberally for compliance with their wishes; so that it is with some surprise that we read a sentence near the end of the circular, announcing that "no premium is offered to competitors," and a careful search through the whole document fails to reveal any promise or suggestion whatever that those who accept this extraordinary invitation will be regarded or treated otherwise than as simple gudgeons, who do not know enough to see whether there is any bait on the hook before biting at it.

An experienced eye will be caught by another curious circumstance in the wording of the circular. In mentioning the details of the accommodation required in the building, the sizes of the rooms to be provided for are specified with a startling exactness. We read, for instance, that the basement "is to contain a restaurant of about thirty-nine by sixty-five feet, with a room which may be used for kitchen or office; an office which may be either adapted for banking or insurance business, of about twenty-six by sixty-six feet; an office of about twenty-six by thirty-nine feet," and so on; while the story above is parcelled out with similar minuteness. By applying to these peculiar features of the invitation that Socratic questioning which is so dear to the mind no longer subject to the illusions of youth, we may perhaps convey a useful lesson to some of our readers. "How does it happen," we should first ask, "that the desirable height, width and breadth of all the principal rooms in the building have fixed themselves with such exactness in the minds of the committee?" "Evidently," we will suppose Alcibiades to answer, "because the dimensions were measured from some plan." "But if the committee has a plan already made which it thinks well of, why does it send around to architects inviting them to 'compete' in sending more plans?" "Perhaps because it thinks it might be useful to collect the ideas of other people on the subject." "Judging from all the indications, what benefit seems likely to accrue to the innocent persons disposed to exhaust themselves in efforts to furnish these ideas?" We listen in vain for a reply. "What degree of intelligence, then is to be attributed to those persons, if any, not concerned in the drawings which have obviously been already prepared, who may respond to the committee's invitation?" We leave this question for our readers to answer.—*American Architect and Building News.*

Detail Cottage and Constructive Architecture. Price $10.00

The Position of Architects in South America.

A correspondent writes, from Buenos Ayres, that the professional emoluments of architects are by no means large in that part of the world, while their social position is not the same as in Europe. There is no restriction as to any one who has a mind to do so, calling himself an architect, and persons intending to build, after getting the skilled opinion, and even the designs of an architect, sometimes dispense with his services when they have secured his ideas, leaving him without remuneration. The Italian working masons are skillful in copying whatever is placed before them, and this fact is referred to as exercising an injurious effect upon the prospects of architects in South America.

Important to those Receiving this Journal.

Should this Journal be received by any subscriber who does not want it, or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

School House and Church Architecture. Price $4.00.

Extra Drawings Required by the Plumbing Law.

The rules and regulations adopted by the Board of Health require that plans for the plumbing and pipe work as proposed by architects engaged in the erection of buildings, shall be filed in the office of the Board. This hitherto unrequired regulation has met with some opposition from two causes. First, it imposes extra work upon architects, which all feel should be compensated, and raises the question as to who should pay the bill. The plans and specifications for buildings, as generally understood, do not include this extra work, and it is only fair that it should be paid for by some one; and there can be no other rational conclusion reached than that the party most benefited—the owner—should bear the expense. The intent of the plumbing law, and its practical effects, if strictly enforced, is to protect owners from the many frauds which have become almost universal in plumbing circles, the better classes of plumbers having been forced to avail themselves of many of the tricks practiced by the "tinkers," to enable them to aproximate the "scrubs" in prices. Consequently, perfect plumbing work was the exception, and owners failed to realize that in the intrustment of this important branch into the hands of incompetent men, because they proposed to do the work cheaply, was a very unwise, and, in the long run, a very expensive rule. And as the new law proposes to remedy the evils so long existing, owners should willingly consent to pay its small expense of preparing the extra drawings. The better and squarer way would be for architects to make, and owners to recognize, a separate charge for the extra drawings; but if this cannot be done, then we renew the proposition made in our last issue that the cost of the extra work be paid by the plumber—it being made an item in the plumbing specifications—in effect, the same as the plumber paying the Spring Valley's charges for water connection. The second objection comes from that class of architectural frauds who are ignorant of every finer point in plumbing science, and who could not, if they would, fix up a creditable set of plumbing specifications. Hence they prefer to be let alone and not required to expose their inefficiency and ignorance, preferring to enjoy undisturbed the rational logic by which they perpetuate their impositions, to wit: that those owners who engage them should be permitted, and by force of such engagements compelled to accept the character of work planned by them.

But as the new law is a good one—not perhaps as perfect and thorough as it might be—we hope to see it enforced rigidly, and trust that Mr. Sweeney, the inspector, will press its efficiency to the fullest extent. There should be no mincing of matters, but a determined and persistent effort on the part of the inspector to weed out all the bad things aimed at by the passage of the law.

Steel Square and Its Uses. Price $1.00.

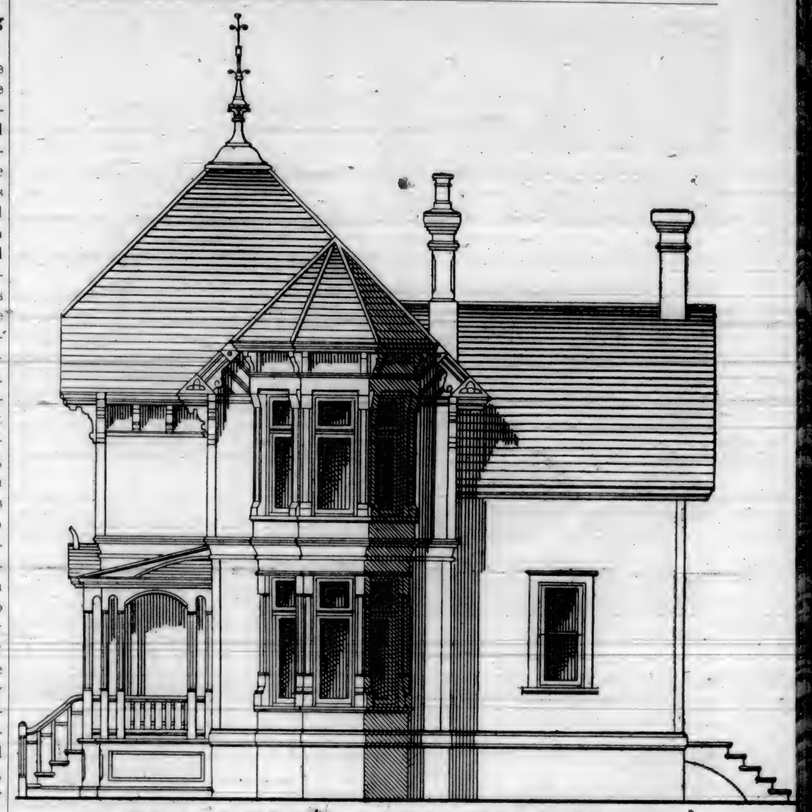


Plate 3.—Side Elevation of $4,000 Country Home.

Balance of the numbers of this year given free to all new subscribers for 1884.

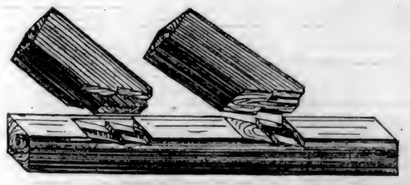
All old subscribers whose time expires between the months of July and January, upon remitting us $2.00, will be credited with the intervening months, so that their subscription may commence with January number.

Cost of Building Materials.

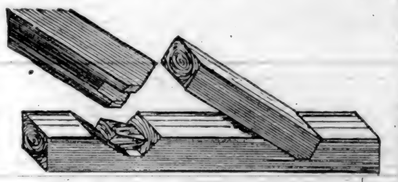
About the first inquiry made by persons contemplating building improvements, is in reference to the cost of materials; and nothing more effectually dampens the ardor of those wishing to build, than to find the material market inflated; and numerous contemplated improvements have from time to time been delayed for a greater or lesser period, or entirely abandonded, owing to the "high price of materials." Every advance in prices, whether in things purchased or in labor, operates as a scarecrow to timid owners, who grow pale at their own shadow when money is to be expended, or the sum of their bank account diminished; while others governed by correct business principles refuse to accede to demands bearing the impress of extortion. When prices exceed seemingly fair and legitimate rates, with no special cause for increase other than the self-evident disposition of the seller to augment existing fair and sufficient profit, extortion looms up in the mind's eye of the buyer, who, rather than submit to the extra tax levied, is apt to institute a wait until the "market regulates itself," and prices settle down to a reasonably fair standard. There are but few men unwilling to pay right value for things obtained, and equally few who are willing to submit to exactions not warranted by rational, business facts, other than avarice on the part of those controlling the manufacture, production, or sale of things desired. Hence the building of houses is to a large extend controlled by those who, when buildings are erected, reap the greater benefits and profits resulting from the construction operations. And material men and workmen would do well, when contemplating acts or purposes calculated to add to the cost of improvements, to consider whether it is the better policy to "kill the goose that lays the golden egg," or to feed the bird and continue it in good health and vigor, and await the regular deposits as they come.

☞Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

EDITORS ARCHITECT: Will you please give us, in your next issue, examples for framing oblique mortises. We understand that there are new methods being used, and wish to keep up with the times. E. & L., Mission St



The above cut represents two ways in which oblique mortises are framed. They are not new, as we used the same more than a score of years, and they must have been in use more than a score before our time.



This cut shows two methods often employed. Each different one has its own champion. We have yet to learn of anything new in regard to this kind of mortise.

List of Registered Plumbers.

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" William " " "
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Symmes, Frank J., 122 and 124 Sutter. M.
Stow, Vanderlymn, 122 and 124 Sutter. M.
Snook, Wm. S., 554 Clay. M.
Snook, F. W., " " M.
Snook, G. W., " " M.
Vance, Robert A., 12 1-2 Russ. M.
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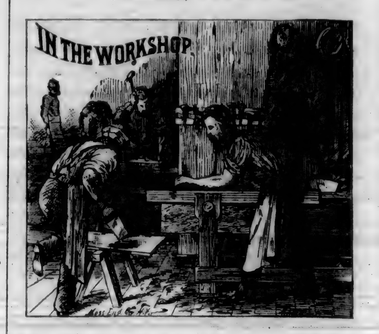
Ward, Peter, 712 Folsom. J.
Wagner, John G., 712 Folsom. J.
Welsh, J. D., cor. Taylor and Fillmore. M.

OF INTEREST TO BUSINESS FIRMS.—The Supreme Court of California has decided that a firm cannot obtain judgment till after a full publication of the notice of co-partnership by said firm.

All new subscribers for 1884 will receive the balance of this year free.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade.

[From "Steel Square and Geometrical Problems."]

To find the angle to mitre an equilateral triangle.—Set off 12 inches on the mitre-box; place the square on the points, with 6 inches on the tongue; mark from the blade for the cut required; and from the tongue for the cut to mitre a hexagon.

To find the angle to mitre a pentagon of five sides.—Place the square on the mitre-box, with 6¼ inches on the tongue and 12 on the blade; mark from the tongue for the cut required.

To find the angle to mitre a heptagon of seven sides.—Place the square on the mitre-box, with 5¾ on the tongue and 12 on the blade; mark from the tongue for the cut required.

To find the angle to mitre an octagon of eight sides.—Same as above, using 7⅛ to 18.

The above cuts are for use in a mitre-box, and should be kept in mind by every mechanic.

THERE are several preparations to keep glue from smelling, but the following directions if followed will be better than any patent arrangements. Cut a piece of zinc the size of the bottom of the vessel in which the glue is boiled, and let it remain in the pot. When you are through using the glue, take the pot out of the one holding the water, so as to let the glue cool off as quickly as possible. Heat it only when needed. Add a few drops of oil of cloves. The best way is to make enough to last two or three days, thus always having it fresh.

Lessons on Hand Railing. Price $5.00.

Stables, Fences, Out Buildings, etc. Price $2.50.

Sample Copies.

Hereafter we will forward no sample copies of this Journal unless the price, twenty cents for each number, accompanies the order.

A MAN breathes about eighteen times a minute, and uses 3,000 cubit feet of air per hour.

Railroads—Their Values.

THEIR INFLUENCE ON THE MECHANIC ARTS.

Do any object to railroads to-day? At first thought it would hardly seem possible that one living in this age, in this generation, in a country like ours, could honestly and seriously find objection to such a convenience and blessing. But there are people in the most enlightened and moral communities that will oppose any scheme whatever—the most labor-saving, the most ameliorating, the most philanthropic, the most beneficent, the most civilizing—no matter whether it brings with it comfort, peace, or joy, there are objections to it.

We have read of a man who had spent a large part of his life in prison, who, when the doors were opened and he was offered his liberty, objected to the condition of things outside. He was not *en rapport* with society or with nature; he needed adjusting; so he left the fresh air and sunshine, the birds and flowers, and went back to his dungeon.

People objected to coal when it was first dug from the earth. It was black; it was dirty; it was not the dry, clean wood of custom. So people objected to coal oil and to gas for similar reasons; they were not the tallow candles of their mothers. They objected to labor-saving machinery when first introduced, and organized riots to throw it out of the windows of factories. It interfered with hand work. The first steamboat excited opposition at once. "It would not go; it would certainly explode; it would doubtless sink." When the Representatives of Congress, who had been induced by months of pleading to vote for means to build a boat, took the first pleasure trip on the Schuylkill River in Fitch's little steamer, they moved at the speed of four miles an hour, and the people on the banks shouted "I told you so!" and the Knickerbockers on the Hudson, in Fulton's first boat, did likewise. That was eighty years ago.

And when the railroad was suggested the croakers were no less; they had not died. It required years of the most persistent effort and crowding to start these new things and make them popular—years of the most patient showing as with children, unwearied talking, unyielding push, push, push.

A Nashville editor once said that that city solicited Congress for aid to build a post-office and a Custom House. A quarter of a century passed before they got either, needful as those things are.

One hundred years ago Watt was dreaming and studying over his tea-kettle. He watched and saw the steam puff and lift the lid and shake the tiny vessel, and the evolution of the steam engine and locomotive began then and there.

Suppose these had not been born in that dream! We, to-day, would still be struggling with the forces of nature as men had been for ages—fighting with earth, and wind, and ocean, with hills and mountains, with deserts, swamps, and forests.

The first known railroad came into being in England in 1833, we think. It was not the road of to-day, by any means, but it was a beginning of the career of a great civilizer.

The first road in our country was a short one in New Jersey, if we mistake not. There was another in Massachusetts, and another in New York, all short, and not far apart in point of time. They were primitive specimens of work, doubtless, and the first cars were drawn by horses, we believe, at a speed not much greater than that of the common road.

The development in these fifty years has been wonderful, but it has been through struggle—stubborn fighting against obstacles without number; struggles with individuals and with combinations of men; with township, county, State, and the United States, in Congress; with poverty and wealth, with ignorance and intelligence, with greed and envy and the selfishness of the dog in the manger.

The sharp practice, the checkmating, the blocking of wheels, the whole conflict of opposition, has been in the face of our own interest—the people—undoubtedly, however honest may have been the objectors in it. It has delayed advance and checked development; but growth has gone on in spite of it. Some earnest soul brooded in secret over the problem until the railway shaped itself in his mind; the purpose was formed, and with bulldog tenacity he clung to his project until he saw a mile of railroad built. Now we have 115,000 miles of good road. The speed on that first road was moderate, but now only the telegraph and the lightning excel it.

Is opposition dead? Have men changed? Project a road to-day anywhere, in any direction, and of any length, across the village or across the continent, and see if human nature has lost all the animal in it. See if the bear and the lion, and the wolf and the lamb (and the pig) will lie down together, and if a little child may lead them? No! Human nature is to-day what it was fifty years ago,—what it was ages ago,—selfish, envious, greedy. It opposes what is not its own. But energy and enterprise thrive by opposition. When a strong soul appears on the stage of action, with a purpose nursed in resolution, courage, and fortitude, opposition only stimulates it; antagonism cannot crush it, cannot drown it, cannot stifle it. Of such spirit is the genius of the nineteenth century. Daring enterprise, tireless energy, unexampled fortitude, and heroic vigor characterize the great movements of this age, and

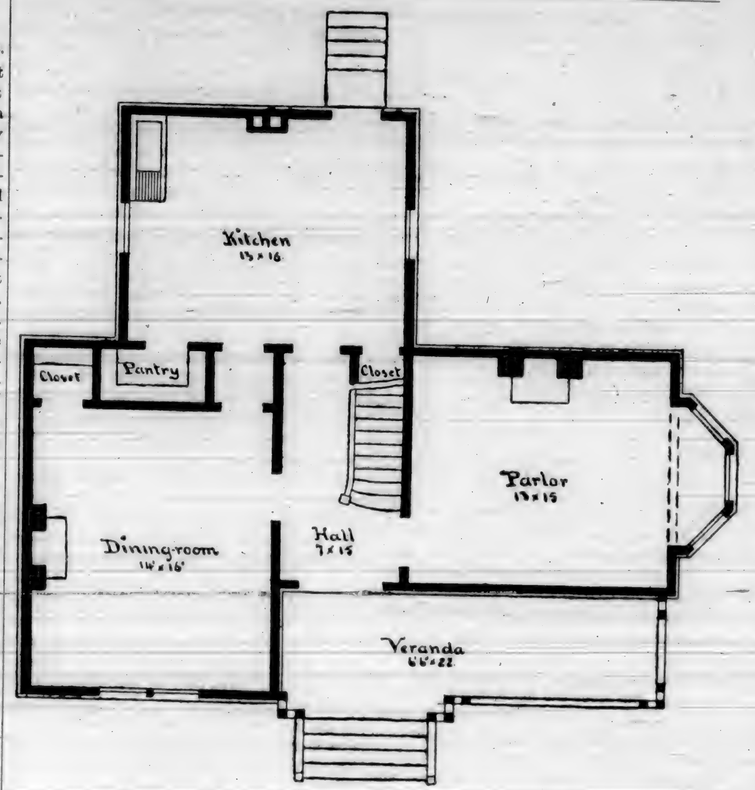


PLATE 4.—FIRST FLOOR PLAN OF $4,000 COUNTRY HOME.

one of the greatest enterprises marking it is the development of the railroad.

What has the railroad done? Beginning as a single short thread, it has grown into a web that covers the whole country east of the Mississippi. It has almost annihilated space and distance, and has brought far places together. It has united the Atlantic seaboard and the great inland valley, which rivers could never do.

It has been said "the highways of nations are the measures of their civilization." These highways may be the ocean, or the rivers, or the valleys, but they must exist in nature or be formed by man. If men are isolated and dwell apart there can be no society, no great Governments, no development of wealth, commerce, manufactures, mechanic's arts, fine arts, letters, or general culture.

Statistics in Europe and this country show that this development is almost in direct ratio to the growth of railroads. Before 1833, when the first railroad was built in England, the exports and imports of that kingdom were at low ebb. In thirty years the increase was £400,000,000, or about fivefold, and this can be shown to be the result of railroad extension.

In our country the development would have occupied ages if colonists had followed the river valleys only, as these are all in one general direction, the system of the sea board and of the Mississippi Valley tending from north to south. No water course cuts the country from east to west. But since the net work of roads has been laid all over the country, population has poured in, and the great commercial centers of Buffalo, Rochester, Cincinnati, Cleveland, Chicago, and St. Louis have been developed, and a hundred other large towns built up.

The 115,000 miles of railroad in the United States have cost about $5,000,000,000, equal to nearly one-tenth of the whole property value of the country, or one-fifth of the capital resulting from labor on the land. They give employment to over one and a half millions of persons, said to be about one-seventh of the whole male adult population. They pay out in wages and material about $500,000,000 yearly, that will help support a large number of families. They move 400,000,000 tons of freight, which will employ many poor men. This freight mainly belongs to laboring classes in common, and not to any privileged class, and therefore it interests those directly.

The relations of railroads to the public are so general, constant, and intimate that it hardly needs any illustration or emphasis. The progress of the whole country is due in a large measure to railroads. The increase of exports alone in the ten years from 1870 to 1880 was nearly $500,000,000, three-fourths of which was due to the great West and the Pacific Coast, and the products were carried East by railroad. Thus the railroad became an agent to establish the balance of trade, and really aided the Government to resume specie payment.

Individuals that dwell apart from their kind, shut out from social life, become peculiar and narrow in their views, habits, and customs; their development is abnormal; they are oddities. So colonists in isolated districts, with no great avenues of communication with outside life, do not become a strong, vigorous, enterprising people. They are not the leaders or powers in the world. Robust, earnest minds, alive with thought will not be shut in. They will make a way out if none exists. Intercourse with people expands the soul, and enlarges our whole nature in all directions. It harmonizes thought and feeling, rubs off the corners and peculiarities of character, and produces similarity in ideas, habits, and customs. New England with its Puritan thought and customs, New York with its Dutch habits, New Jersey and Pennsylvania with their Quaker habits, and Virginia and Maryland with their English adventurer's life needed assimilation—a commingling and a union of common thought, feeling, and interests.

Intercourse promotes peace and good-will better than treaties or the Peace Society; it is a better conqueror than war. If this web of iron roads had been spread over the country a half century earlier, it is believed that the civil war would never have occurred, for when people are moving from one end of a kingdom to the other with such facility as the railroad gives, they tend to become one in thought and feeling. So the North and the South can be united better by railways than by their rivers and valleys; the Atlantic shore with the Mississippi and the lakes, only by railroads, in such union as is now demanded. The great States of the new West, the new Northwest and the new Southwest must be banded together and linked to the older East. How, except by railways?

The eighteen hundred miles of road, completed fifteen years ago, perfected the line across the continent. Along that smooth line many of us have glided in comfort. But have we ever been sufficiently appreciative of the provision thus made by which we can so quickly and comfortably span the great spaces that lie between us and "Home, sweet home" in the far East? Have we ever sufficiently appreciated the thought and the labor that gave us this firm, smooth passage, and the lightning speed day and night, till the dear old spot was reached?

Riding on this peaceful journey, and resting, have we ever dwelt on this topic and tried to go over in detail the planning of this grand highway? In our dream have we also been with those few men in that obscure room, night upon night, week after week, and month after month? Have we heard the story from the beginning, and followed it through its stirring chapters, its lights and its shadows, its hopes and its fears, its promises and its despairing? It is an easy thing to ride and eat, read and sleep comfortably on that road of two thousand miles; but is it an easy thing for a few private business men, without fortune, to build it? Does it require any expenditure of thought and judgment? Is it thrown up on a sandy, level plain—a work that a few men can do in a few days?

Look out on the road as we travel. Moving out of these green California valleys, we begin to climb by easy, almost imperceptible grades, the low foot-hills. We pass over river and stream and the rise grows steeper and steeper. We creep on and up, until we are gliding along on the edge of dizzy cliffs, eight thousand feet above the sea level, and look down into gulfs seemingly fathomless—abysses of darkness. We have come up out of the plains of flowers on to the mountain heights of granite—the snow and the ice all around us. We plunge into the white drifts and our pride suffers and goes down—for, great as is the strength that drives us, we stick fast. We come out at length and go on down upon the cheerless desert. No greenness there—no beauty, no life—nothing but brown sand, whitened with alkali—utter desolation and barrenness everywhere.

All this in the beginning had to be thought of before a shovel was touched, a pick struck, or an axe lifted. One hundred thousand men had built the pyramids, true, but they were slaves, and bent the knee at the edict of the imperial autocrat of Egypt. "Is not this great Babylon that I have builded?" said another dictator. But here was no such power, no Croesus, no Oriental treasury; only four earnest, working men, in a plain room—all the surroundings of republican simplicity.

Newton worked patiently seventeen years on the problem of universal gravitation. This was their problem—to make a pathway across the continent, which would be like an artery bearing a living current from the life of the East to the life of the great West, which should carry and mingle the spirit and culture, the social, civil, and religious life of the East into the West, until there should be but one American life. It was a serious study, demanding much thought, time, and money. It might take seventeen years.

Columbus had grown haggard over such a problem. Looking over the ocean into the sunset, he caught glimpses of a pathway that common men could not see. By that light "that never was on land or sea," he had clear vision of a great highway, over which his soul longed to travel. He studied for years, wandering from court to court, to find means to "go west." This is but an extension of his "road to the Indies."

And how was it to be built, to be paid for? Men by the thousand to dig, to level, to blast rocks, to cut timber, to tear down hills, and fill up valleys, to bridge rivers and chasms, and tunnel mountains—this demanded patience and perseverance that are not common. As we enjoy the fruits are we not liable to be unconscious of the planting—the high purpose, the sagacity, the courage, the energy, the will that secured this comfort to us? Do we remember further that this scheme was thought out and matured in the dark days of the war, days of calamity, of poverty, bankruptcy of national credit, days of gloom, dismay, almost despair? In such a time the project was brought before Congress, and in the face of constant opposition, obstacles whose name was legion, difficulties almost appalling, the measure was carried, the bill passed, the means provided, and the road was built.

But the secret history of this work in its details, the expenditure of vital force—the brain and nerve power—the anxiety, hope deferred, waste of energy upon utterly indifferent and lifeless bodies of men elected to advance the interests of the State, waste of energy in other directions upon the greed and craft, envy and selfishness of other bodies of men, the heart-sinking at times, when it seemed as if all was gone, and the work must stop, this has not yet been written.

This great road makes an open way and rapid transit for California, Nevada, Utah, Colorado, and Kansas into Eastern markets, and Eastern social life. The second day after its opening, one hundred chests of new tea from China made such a passage into New York as had never before been dreamed of. The report of it in China seemed like a story from the Arabian Nights.

Do we older ones remember—what the rising generation does not,—the original style of travel—the prairie schooner, the emigrant train, and journeys of three to six months—then the letter-carrier on snow-shoes, and the pony express? Do we remember the wrecks of wagons that strewed the trail in the sand, the bones of animals, and the graves of mothers and children, and of men that started in strength, the tragedies acted by Donner Lake, and in Death's Valley and Mountain Meadow? That state of things—that style of travel—with all the attaching disasters, might still be our experience to-day had not the thought and energy been exercised and developed that produced such a road.

But what is of more importance to this journal is the question, How does the building of a railroad affect the industrial interests and the mechanic arts? This can be easily illustrated. A journalist once said: "No other enterprise, probably, could be started that would so widely affect the mechanical industries as the building of a great railroad. It has been estimated that it takes the labor of 20,000 men for one working day to build and equip one mile of railway." Suppose 2,000 miles of road is built; on that estimate it will give employment to 140,000 men for 300 working days. Their work is in wood and iron—for the skilled workman. It takes that number of men out of idleness and keeps them active. They and their families must have clothing, and that requires machines and active work. They must have food, and that again requires machines and work also. A road of that length makes a new demand on the foundries and rolling mills, for say 20,000 tons of new rails and for perhaps 300,000 tons of manufactured iron in other forms for locomotives, cars, ties, bridges; these make a demand on the machine shops and nail factories, and these must call on the miners.

Not very many years ago a convention of men in the iron business was called in Pennsylvania to consider the condition of their interests. At that meeting it was stated that nearly one-half the iron mills in the country were idle; that 300 furnaces were out of blast; that 500,000 men were out of work; and this state of things made a difference in the income of labor of $1,000,000 per day; that their prosperity and production depended on the activity of the railroad systems in the country almost wholly, for the railroad took one-half of their entire product.

One of the prominent journals in that State took up the discussion and said: "If we wish to relieve the condition of our iron interests, let the Legislature and Congress awake to a sense of duty and give a new impetus to the debate on the bill for a railroad through the undeveloped territories." The immediate result would be that all these industries would start afresh, for there would be demands for iron in every form, and the steam whistle would scream from every rolling-mill and foundry and machine shop in the State, and locomotive works and steel works, car-wheel and car building shops would be alive with earnest and active men.

About the same time a Galveston journal uttered an unconscious prophecy, when it said: "When such a highway shall be opened across the country, the mineral wealth of Arizona, New Mexico, Texas, and Old Mexico, almost wholly undeveloped, will seek water carriage at Galveston, and where one vessel enters now there will a dozen enter." "Our city will become a depot for all the coffee required in the great States in the West, and send away more cotton than either Mobile or New Orleans." But its prophetic eye did not see the California and Oregon wheat piled up on its wharves.

Such a great road starts all the lumber mills into operation as well as the iron mills. It uses a vast amount of lumber in all shapes, and these mills must do its bidding. Ties for tracks, lumber for stations, for depots, for bridges and trestle work, for tunnels, for workshops, for cars, for snow-sheds, is in demand, and every saw-mill and planing-mill and turning-mill is driven to its utmost capacity so long as the call is kept up.

In addition to the great stimulus that such a work gives directly, for its own uses, to the trade in iron, steel, and lumber, it opens new territory to emigration; individuals, families, colonies take possession of the land and turn it into grain farms and fruit farms, and tools of every description are demanded; the market for every implement used on a farm, in an orchard, in hydraulic mining, in quartz mining, in the great lumber-mills, and flour-mills, and all other industries is immensely enlarged and kept active. New inventions are demanded for new work, as the Little Giant in hydraulic mining, the diamond drill in quartz mining, the cable road, the devices for reducing gold, silver, and copper ores, for gathering great

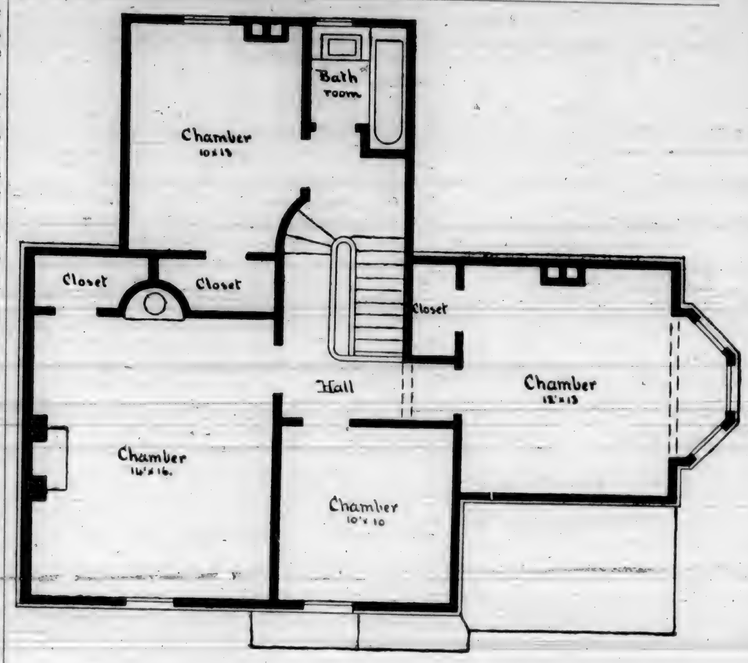


PLATE FOUR.—SECOND FLOOR PLAN OF $4,000 COUNTRY HOME.

crops, for drying fruit, for irrigation, for conducting water to mining districts, and many others, all show how the mechanic arts and industries are stimulated and developed when a new territory is opened for labor, and communication made easy and rapid. Look at these arts and industries as they languished on all this coast under Spanish rule. Then see what they are doing for all the States here now. What will they do for Mexico in the near future?

All new subscribers for 1884 will receive the balance of this year free.

The Lost Art in Color Making.

BY HENRY E. COLTON.

ONE of the most interesting lectures delivered by the great lecture orator, Wendell Phillips, and which is also reproduced in his published memoirs, was upon the lost arts. At the time of its delivery it was read and commented on by thousands. In that lecture, Mr. Phillips states "that the walls exhumed at Pompeii reveal colors richer than anything we can produce at the present day." Had Mr. Phillips contented himself with saying that they are superior to anything we are now producing for commercial purposes, his statement would have been one of undoubted truth, but it is an absurdity to assert that in the present enlightened state of chemical science throughout the world it is an impossibility to accomplish any result which has been done in the past time. The colors of the ancients were limited to a small number, while the shades with which we ornament our villas, and fresco our houses and public buildings are numbered by hundreds. The use of colors is an evidence of civilization, and the character of those colors an indication of the nature of the people who use them. The warm, sensuous Egyptians and Greeks ornamented their houses and their bodies with the glowing scarlets and purples, and the softer blue was with them the color of love and divinity. In comparison with the varied and brilliant shades produced by our own manufacturers, the colors of the ancients were inferior, but, when compared in point of durability, those of the Egyptians and Greeks have decidedly the advantage. Had Mr. Phillips stated this fact there could not have been a possibility of successful contradiction; at the same time it must be understood that those colors are not more durable than any our manufactures and chemists can make, but more durable in tint than any they *do* make.

The colors used by the ancients were not chemical; they were natural vegetable and mineral substances, or were made by fire processes. Their black was, for many years, made from the charcoal of vine twigs and wine lees. Appelle, a Greek, invented the process of making black from ivory clippings, and to this day no improvement has been made upon his invention. Their red was, for a long time, a very brilliant ochre from Palestine, and afterwards, the native cinnabar from Spain. Their blue was a carbonate of copper ground very fine. Their yellow was from two sources, the expressed juice of some plant, and an ochre. Their white was a preparation of lime. The painting of the ancient Egyptians does not deserve that name; it was simply skillful plastering. The color was mixed in the lime or cement of which the wall was to be made, or it was put on while the cement was still wet, so as to strike in. The tools used were a rough brush made of bamboo fiber, a pointed instrument and a spatula. With the pointed instrument the artist marked out the lines of the figures, and with the brush or spatula, his assistant put on the color. There are numerous pictures in the British Museum which exhibit these persons at work, and like everything else of that Egyptian day, they plainly indicate the heavy mechanical nature of the work. All their figures were stiff, without elegance in shape or grouping, and they knew nothing of mixing colors so as to produce varied shades. The Greeks derived their colors from the Egyptians, and improved on them. The age of Appelles marks an era in the history of ancient paints and painting. He not only discovered a richer black, but also introduced the mixing of colors for producing shades, and he also introduced an improvement in the mural or plastic system of painting whereby the tints were made brighter and more fresh-looking. And we may add that this very system of frescoing is constantly used at the present day, being considered by some a great secret. The basis of it consists in mixing the color with glue, water, and wax. Appelles also discovered and used a mixture of oil and gum in his painting, but did not give it fully to the public. Previous to his day painting had been merely a species of mural decoration incorporated into the wall and immovable, but with his improvements he introduced also a system of painting on wooden boards, which might be affixed to the walls, or used as paneling. He seems, too, not to have lacked appreciation, for upon discovering his purple, he first used it on a portrait in which he clothed the great Alexander in the royal color, who was so much pleased thereat that he paid the artist a sum equal in our money to $50,000 gold.

It is thus seen what were the colors of the ancients. The chief colors of the present day are, with one exception, all made by chemical processes in the wet way; ultramarine is the only one which the civilized nations make with a fire process. It is generally thought and believed that the Chinese make quicksilver vermillion by a fire process, and hence its much greater durability and richness of tint. In this simple difference of manufacture lies the secret of the opposite qualities of the ancient and modern colors. The latter are brilliant, but a few months of sun and rain and the luster is gone; the former may not be originally so brilliant, but hundreds of years do not dim its surface or change its tint. The president of the American Color Manufacturer's Association not long since said it would not pay to make colors by a fire process.

This simple statement is the key to the whole mystery of deterioration in modern color-making. The manufacturers, in the thirst to get rich or to make sales, have striven for the production of an article which could be made at cheap rates and show well while being sold, and have not cared or striven to achieve durability in material or tint. The public taste, instead of being elevated by the offer of something better, has been constantly debased by the inducement of cheapness. If, instead of striving to see how much base material a little true color would tint, the color manufacturers had been for these years past striving to produce durable colors at cheap rates, their profits would not have been materially decreased, as they would have kept from the business those who do not value reputation, but only work for present profit, and they would have sustained for their business the reputation it deserves from the high character of some of the men engaged in it. The public taste is slowly and surely demanding something more permanent than the gaudy to-day and pale to-morrow tints now sent forth from the shops. There is no lost art. Our chemists can make more perfect colors, and our painter artists can use them more skillfully than any of the ancient Egyptians, Greeks, or Romans.—*Nashville Artisan.*

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ONE of the most prolific causes of defilement and offensive odors in kitchen sinks and their outlets is the presence of decaying grease. This comes from the emptyings of kettles in which meat has been cooked, in the dish water, and in the soap. The grease lodges in every crevice, and catches at every obstruction. A remedy may be found in the use of the common alkalies instead of soap, aqua ammonia in washing clothes, and borax in washing lawns and laces, and washing soda in cleaning dishes. These alkalies prevent a solid soap from forming in the sink and its pipes, and neutralize all effects of decomposing fat.

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Drawer Making.

MOST articles of furniture being fitted with drawers, the method of making, fitting, etc., forms a very important branch of cabinet making. I shall, before describing the manner adopted, make a few remarks respecting the work into which they are fitted, and other essential particulars. Drawers are most frequently placed one above the other in carcasses, being supported and separated in front by partitions. These partitions play a very important part in the structure, and one to which sufficient attention is not usually given. I shall, for the sake of illustration, assume that we are making a cabinet about twenty inches or so wide. I need not enter into details, but will suppose that it is to be constructed with two or three drawers, placed over each other in front. The ends, having been planed over, both inside and out, should be squared up. For this purpose they must be fixed together. This is done by means of a small handscrew at the edges, or by nailing them in four places near each corner. All work intended to receive drawers should be squared up a little out of the square. It should be a trifle wider at the back than the front, and also a little higher. A very small amount will do; it must not, of course, show to any perceptible extent; about one-eighth inch is quite sufficient.

The tops and bottoms for your carcass should be of three-fourths inch pine; in larger work you may with advantage increase this thickness. You should get them out 1¼ inches longer than the inside measure your work is to be. This will allow three-fourths inch nearly each side for dovetailing into the ends. This thickness of wood will work about five-eighths inch, and you should have your partitions finish the same, to keep all the front in unison. The position of the drawers is now set out on the inside front edge of one end, and the other marked from this. You must first mark the top and bottom thickness, and then divide remaining space for your drawers, carefully marking the top and bottom of each partition edge. From these markings the ends are squared across, and grooved to a depth of one-fourth inch with an iron to correspond with the thickness of the edges. The partition edges should be of sound, seasoned pine, three-fourths inch thick, and 2½ inches wide.

In larger work it is advisable to use a little thicker and wider stuff. They must be got out two inches longer than your drawer fronts are to finish. Their front edges are slipped or faced with similar wood to what you are making the cabinet of, the slips and edges being toothed before gluing together. The back edges are plowed about one-half inch deep, with a three-sixteenths inch iron. The tops and bottoms having been dovetailed together, these partition edges should be tightly dovetailed in from the front edges and cramped up. The dovetails should be three-quarters the thickness of the ends long. In some cases, where the drawers stand back in work, it is impossible to put in the edges in this manner. They should then be tenoned in and cramped. You will require some runners; they should be of pine. Get them out the length the drawers are to be, and an inch, or rather more, wide. They are plowed on one edge with the same iron as used for the partition edges, and about the same depth. Take them to the requisite thickness—that of the carcass end grooves. Be very particular with this; they must fit well. The best way is to get a piece of wood and groove it similar to your ends.

Now, after taking the runners to a thickness, just try whether they will all draw tightly through it. You will be able to see where a shaving or two is wanted off. You must tenon them into the back edge of the partition rail. Now glue the mortise, knock them into the rail and into the carcass grooves. It is unnecessary to glue them; but it is better to put a screw through the runners at the back into the ends. The next thing is to get out some partitions. They should be of very dry, seasoned wood; pine will do very well. Their thickness should be about that of nine-cut stuff; the length a little more than that between the runners, allowing for the plow grooves each side and a little additional, say one-eighth inch, for working. For most purposes the width of a board, eleven inches, is sufficient; but if the carcass is very wide, it should be greater. These partitions are smoothed over, and the front and one edge squared, then chamfered, until they will fit the grooves in partition edges and runners pretty tightly. Now put the camfered side in the runner. Remember, the direction of the grain of the partition should be across, the same as in the partition edge in front; mark its length, square this across, and chamfer it the same as before. Then remove any glue that may be in the grooves of the partition edges and runners, where the tenons are, with a narrow chisel, run your partition in, and drive them home into the edges with one or two blows with a mallet.

Sometimes drawers are placed side by side, as in the top frame of a library table, which usually contains three, or the front of a dressing table with two. In both cases the method of construction is very similar. The top and bottom rails forming the partition edges will be in the library table, or anything similar, dovetailed into the ends from the top and bottom respectively. In the dressing table, which would be supported on legs, the top rail only would be dovetailed in, the bottom one being tenoned into the legs. The width of all these rails may be from three inches to four inches, and their thickness, assuming the jobs are made about four feet wide, should be seven-eighths inch finished. The other partitions separating the two or three drawers, the dividing partitions, will be tenoned into the top and bottom rails. They should be got out long enough for the tenons to come right through, the projecting ends being afterward cut off. Underneath and above each dividing partition a cross rail or rails should be tenoned into the front rails and dovetailed into the top and bottom of the back frame.

It is necessary to get out some pieces to act as guides, and glue them on the bottom cross rails up to the dividing partitions in front. They need not be very wide, three-fourths inch or one inch will do; their length that of the drawer sides, and their thickness the same as the dividing partitions. You should work them underneath, then glue, and set them square with the dividing partitions. This is best done by running a square along the front rails, and putting the girders up to its edge. In a dressing or toilet table there will be a space at each side, because the end framing will be mortised and tenoned into the legs. This space, the difference between the framing and the square at the top of the legs, must be filled up level. This will be all that is requisite; it is not necessary to use runners with partitions fitting into them, as in carcass work, because the difficulty we have to counteract there, that of the tendency of the ends to cast, does not here exist. Partitions may be used in a dressing table; they are useful for preventing the drawers getting so dirty; but they merely act as dust boards, and are not essential to the structure.

Drawers have occasionally to be fitted into work where they are placed at the back of it, and draw forward over another portion of it, like those in small cabinets, writing tables, and secretaries. They are in these cases usually much smaller than in those previously described. When in this position they should never be allowed to be level with that portion of the work they draw over. They must work on a bottom. This should be one-eighth inch, or rather more, thick and one-fourth inch wider than the drawers from back to front. It is fitted in and the ends mitered; now fit same thickness in at each end, and in the middle or wherever the drawer divisions are to be. All these should be about two inches wide, and put in in the same manner. To these partition girders are fitted as before described.

The foregoing examples include most cases in which drawers are met with, although they are sometimes, either for want of space, or because the work is of a miniature description, fitted in carcasses without partition edges. They often work on tongues. There is nothing special in the construction in this case. The ends should be set out and plowed for the tongues about three-eighths inch deep. These grooves should be well glass-papered before putting together.

In selecting wood for drawer making, care should be taken to select that which from its nature is most suitable. What is required is a straight, firm, durable wood, one whose surface will offer or present the least friction when in use. This is especially necessary for the sides. The best woods are oak, teak, and mahogany for large and medium-sized work; for smaller work sycamore and boxwood may be used. You will readily observe the different appearance and nature of either of these compared with a softer wood like pine, or one of a sticky or gummy nature like cedar.—*Building News.*

Enlarging the Dining Rooms.

In the good old times when the mistress and her daughters did all the housework there was not the necessity for a room consecrated to ornamental china and fancy cooking that is now felt in all well regulated and high toned families. Indeed, the clean, bright, open kitchen with its sanded or polished floor was a very comfortable and convenient place for the family to assemble, not only for their evening work and amusement, but for their daily bread. When the mistress retired from the kitchen and gave up its care and management to subordinates the change in that department is scarcely less than the modification of the style of living throughout the house. From being an inviting place it became an uncomfortable and confused workshop whose appearance and character were highly uncertain. Generally the modern dining-room is an apartment devoted to a special purpose. In families where the old fashion of doing her own work is kept up by the mistress it is practical to use this room even for a sitting-room, but if the business of clearing and setting the table is carried on by the ordinary kitchen servant it must be abandoned by the rest of the family so large a part of the time that it cannot well be made to serve anything else than its one legitimate purpose. In many houses, especially those that were built several years ago, there was a sort of compromise by making this room very small, barely large enough to contain the table and its row of chairs, consequently houses otherwise capacious are often found with a dining-room of altogether inadequate dimensions. In houses that are blessed with hospitable intentions this should be at least as large as any other single apartment in the house. How to get more room is a question more commonly asked in regard to the dining-room than of any other in the house, unless the front hall be excepted. Like the familiar advice concerning the resumption of specie payments it may be said that the best way to enlarge a dining-room is to enlarge it. If this cannot be done without encroaching upon other rooms of the house which are already small enough, then space must be taken from outside. As tables are arranged in a majority of cases the first demand is for more length. Many rooms which would be large enough if it were not for a projecting chimney breast or sideboard, are cramped by these articles so as to be practically of very small size. Hence if a recess can be made to contain the sideboard with space enough around it for the servant who waits upon the table to stand without encroaching upon the room itself, such an addition will add to the capacity of the room just as much as if the whole side were extended, and the saving of cost as well as the improved appearance will be very great. Of course this suggestion is only intended for houses and buildings which feel their limitation in this respect, and there is great satisfaction in treating a defect in such a way as to convert it into an actual advantage.—*The Builder*.

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Paper Hanging.

The art of putting on, or "hanging" paper is very simple and is easily learned; but to make tasteful choice of paper for various situations is not so easy, hence the following remarks, which may be of service to the workman or others on whom the selection of paper may devolve.

Walls to a room should be regarded only in the light of a framework to what the room contains, and should be decorated so as to bring into prominence, and not eclipse, the other parts of the chamber. Nothing destroys the effect of a room so much as a handsome but staring wall paper, or a wall so profusely ornamented as to strike upon the eye to the exclusion of the rest of the decorations, thus bringing forward what should be the background into the most conspicuous place. A modern drawing-room is always difficult to decorate artistically, because of the taste of its builders for heavy cornices, prominent mantelpieces, and rooms too lofty for their size; and as all these misnamed "embellishments" are too costly to remove by tenants, the only plan to pursue is to destroy their effect by exercising both taste and ingenuity. First, with regard to the ceiling, the ornamental plaster boss in its center should be removed and the ceiling tinted a color that harmonizes with the wall paper, as no harmonies can be hoped for when what produces them is surmounted with the glaring white of an ordinary ceiling. The tint used must be one that softens into the wall paper, not one that contrasts; thus, if the tone of the room is that of a soft gray-blue, the ceiling should be a clear flesh-pink; or should a gray-green picked out with black be the chosen color, then it should be colored a subdued lemon.

Some people cover their ceilings with a whole colored paper and border it with a stenciled pattern representing the thin garlands so familiar upon Queen Anne decorations; but this is a more troublesome plan than the simple coloring, which answers all the purpose. The walls, if they are lofty, require a high dado. These high dadoes give a look of comfort and "home" that is absent from the modern, high-pitched room papered with one uniform pattern. The dado is divided three feet to four feet from the ceiling, and the coloring of the lower portion must always be heavier than that used on the upper, or a top-heavy look will be given to the room. When many pictures are to be hung up, the lower part of the dado should be of a whole color, either a whole colored paper, or a painted wall, as pictures are only shown off upon such a background. Where a whole tint is used for the lower part of the dado, the upper portion should be decorated with a frieze paper of a good, bold pattern, but of subdued coloring and of tint that harmonizes with the lower. Thus, the color used about the frieze should be the same as that on the lower part, but of a lighter shade, intermixed with some other colors that form a harmonious link between the two shades. Contrasts must be carefully avoided, but pale pinks, blues, and ambers can be blended together above a subdued gray-blue ground. The two portions of the dado should be joined together with a light wooden (black or brown) railing, or with a line of paint.

The dado decoration can be altered by placing the pattern paper upon the lower part and leaving the upper part plain colored, with or without a stenciled pattern upon it. This will suit a room where not many pictures are required, or that is already rather dark. Some part of the wall should always be in plain color, as the eye requires rest; and no pattern, however subdued in hue, can give the relief to the mind that a bit of plain coloring affords; and this scarcity of ornament in one part of the room is amply repaid by the effect it gives to such parts as are bright and should be bright. The true theory of effect is to use but one or two bright colors in a room, and to surround them by soft and subdued tints that throw up and do not destroy their brilliancy; a number of bright colors placed together destroy each other, and leave no impression upon the mind but glare and vulgarity. Having settled upon your paper and ceiling, have the woodwork and cornice of the room painted either a shade lighter or darker than the walls, and shroud up the mantelpiece with curtains, etc., of satin sheeting embroidered with crewels, and instead of the usual looking-glass over the fireplace, have a mirror surrounded with brackets holding china, or have a black, wooden mantelpiece made with squares of looking glass set in. The background of your room being thus completed in a manner really to be a background, your furniture will look twice as well as if it were stared out of countenance by the walls; and one need hardly add that all your friends will delight in a room that throws up and brings out their dresses and faces, instead of killing them by its glaring tints.—*The Paper World*.

Gaswork Washings for the Sewers.

It has been discovered that the best disinfectant for sewer gases is the washings from gas works. This serves a double purpose—that of annulling the poisonous effect of the sewer gas and at the same time enabling persons having defective traps to detect it by the strong, pungent odor arising therefrom, while sewer gas alone, almost ordorless, permeates the building, carrying sickness and death with it. The washings from gas works, at least, will not clog or obstruct even the smallest of sewers, while their presence, as above stated, might save valuable life.

Detail Cottage Architecture. Price $10.00
Grimshaw on Saws. Price $4.00.
Mechanics' Geometry. Price $5.00.

The Egyptian Sphynx.

On the western bank of the Nile, and near the second largest pyramid, stands this famous object, which has from time immemorial so excited the awe and curiosity of the traveler. As long ago as the time of Herodotus, the first man who ever conceived the idea of writing a history, and who lived four or five hundred years before the time of Christ, this gigantic and mysterious human head was raised above the sand, looking upon the beholder with the same calm and serene expression, as if superior to the vexations of life, and to the mutations of time, as much a puzzle as it is in our own day. It was then hoary with age, though over two thousand years have since rolled away. First the Persians, under Cambyses, before Herodotus' time, invaded and devastated the country. Then the Greeks, under Alexander and the Ptolemys, his successors; then the Moslems, one of whom, as a hater of images, sought in vain to destroy it; and then many other lesser powers down to the Turks of the present day; all alike unaffected by any respect for the monuments of antiquity, and ignorant of their value as records of human progress and decay.

The deep mist and darkness of the middle Ages rolled over it for centuries, and still the Sphynx remains one of the wonders of the ancient world, mutilated, disfigured, neglected, and sometimes almost forgotten, but always serene, impressive, and awe-inspiring.

It is hewn from the salient angle of the rocky ledge on which stand the great pyramids; part of the cap, the back, and the fore-paws, when the rock was abraded, being supplied by masonry. The savants, under Napoleon, uncovered the back and shoulders, and obtained approximate measurements; but it was not until 1818 that the entire figure was displayed to its pedestal. The honor of this work is due to the Italian Caviglia. The loose sand, anciently restrained by artificial irrigation, and doubtless highly cultivated, but now continually shifting about in that rainless country with the slightest breath of air, was removed by the labor of from sixty to eighty persons for several days. No trace of these excavations, made at so much cost, now remains; the upper part of the figure alone being seen, rising as before about thirty or forty feet above the level of the soil. It faces eastward toward the Nile. At the rear is the pyramid of Shafra, while toward the north, in a corresponding position in reference to the pyramid, stands another rock, which, in the opinion of Lepsius, it may have been the intention of the builder to carve into another Sphynx, as a twin guardian of the approach to the sacred pile.

Caviglia's efforts laid bare a descent from the Nile for 135 feet succeeded by a flight of thirteen steps, after which was a platform and a second flight of thirty steps to the rocky pavement on which the figure rests. The body is that of a lion, with human head and shoulders. Though often spoken of as feminine in features, the broken fragments of a beard which have been found demonstrate the incorrectness of the assertion. Indeed among thousands of sphynxes found in Egypt, but one is known having a female head, though those of the Greeks are almost always male.

The posture is recumbent, with the forepaws stretched out in front a distance of fifty feet. The body is 143 feet long, and the height to the top of the head is 62 feet. Between the forepaws is a level space which was used as a temple or a place of sacrifice. Here were the remains of an altar with charred embers still preserved—the relics of a sacrifice offered, perhaps, to avert the tide of invasion that overwhelmed the worshipers. Several small sphynx-like figures stood near or under the chin. Under the chin is an immense granite tablet, fourteen feet high, seven broad, and two thick, covered with hieroglyphics relating to one Thothmes IV., and flanked by two other tablets of limestone. These formed part of the inclosure of the sacred area.

The traveler, Dr. Pococke, asserts that there are openings in the back and in the top of the head; but these could have been nothing but seams in the rock, or spaces left by dislodgment of parts of the masonry, as Lepsius, a most careful observer, who visited it in 1843, states that no opening to the interior whatever was to be seen, and that the mass of the statue obviously must have been hewn from the native rock.

The following striking passage as to its present appearance is from Denon:—

"Though its proportions are colossal, its outline is pure and graceful, and the expression mild, gracious, and tranquil. The character is African, but the mouth, the lips of which are thick, has a softness and delicacy of execution truly admirable. That it is an Egyptian head is plainly evident, notwithstanding the mutilation; but the type is fuller and broader than usual in Egyptian statues."—*Illustrated World*.

All new subscribers for 1884 will receive the balance of this year free.

Spearing for Timber.

A new industry has recently been developed in Ireland—a sort of timber prospecting never dreamed of by our American pine hunters. It is a well-known geological fact, says the *Northwestern Lumberman*, that immense tracts that are now bog lands in Ireland were once covered with forests of oak and pine, and that in cutting peat, immense trees of these varieties are found imbedded in the earth at depths of ten, twenty and thirty feet, in many cases whole groves being found standing just as they grew. To find out the location of these miniature subterranean forests is now the speculative work in which some industrious Irishmen are engaged. The timber, when brought to the surface, is found to be perfectly sound, and the oak, which is as black as ebony, is used extensively for ornaments of jewelry and fancy cabinet work, and sells at high prices. A recent visitor to the wild moor and mountain region of Donegal thus describes the way in which the seekers after buried forests operate: Two men, armed with steel rods about thirty feet long, traverse the bog, and by running their rods into the ground are able to ascertain where the trees are to be found. They work by what may be termed natural mathematics, and quickly determine the length of their prize, its approximate diameter, whether it is pine or oak, and is or is not a clumper—one of a company or clump. They fix on twenty or thirty feet square, and cross it with their searchers, say north and south, and then east and west, search it across each way, a stab to each foot or so, and in the course of a few minutes they know whether that area contains what they are looking for. The square lying next and next, and all near each other, are so searched, and the discoveries, if any, are marked for future action. The unproductive are also marked, to avoid future loss of labor.

RIDDELL'S WORKS.

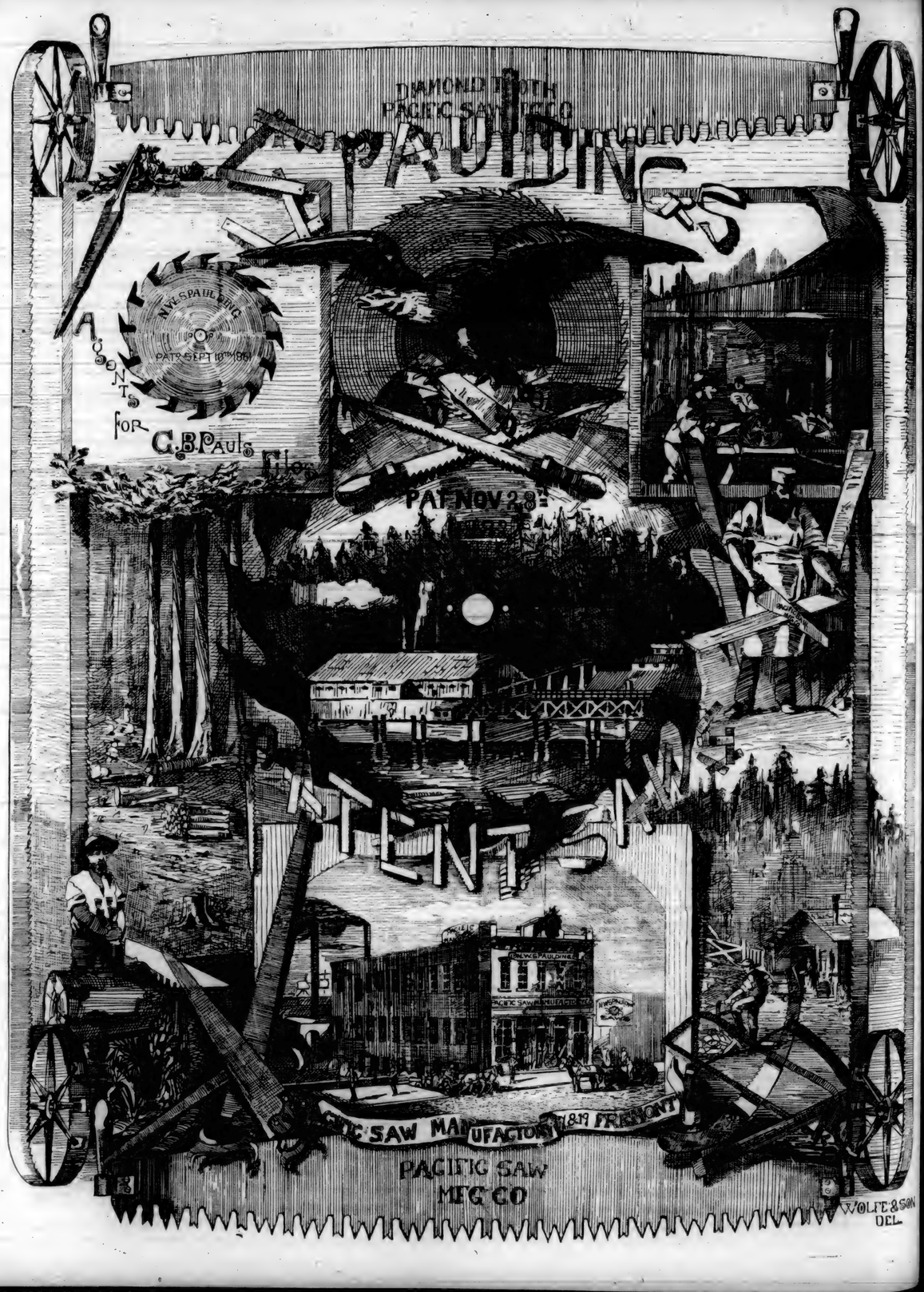
MECHANICS' GEOMETRY, OR SCIENCE OF FRAMING WITH THE AID OF CARD-BOARD MODELS—Should be in the possession of every mechanic on the Coast. Sent post-paid upon the receipt of $5.00.
THE ARTISAN—The mechanic's own book should be studied every spare moment. Price, $5.00.
CARPENTER AND JOINER MODERNIZED—Third edition, revised and corrected, containing new matter of interest to the carpenter, stair-builder, cabinetmaker, joiner, and mason. Price, $7.50.
NEW ELEMENTS OF HAND-RAILING—Contains forty-one pages, thirteen of which are now for the first time presented. Price, $7.00.
LESSONS ON HAND-RAILING FOR LEARNERS—Third edition. Price, $5.00.
Any of the above will be sent by mail, post-paid, upon receipt of price.

The Triennial Conclave Gathering.

It has come and gone since our last issue, and left no other than the most pleasing reflection. We can add not a word more to the many good things that have been said of us and to us as a people. Our Eastern friends came among us in uncertainty, not knowing whether we were a peculiar people, or a large-hearted, generous branch of the human family. It is safe to say that all questions upon these points have been fully settled—largely in favor of the latter proposition. The Knights of California and the Masonic fraternity generally have special reason to feel proud of the grand affair in its entirety, and the citizens of S. F. as a whole cannot but mingle in sentiment with their specially interested brethren. The occasion will never be forgotten by those who participated in or witnessed the many interesting displays, and in the future, the influence of what has been is sure to prove of very great benefit to our State. We return hearty greetings to the many noble Knights who called personally at the office of this journal.

Cottage Homes.

Comstock has sent us a neatly printed work with the above title. Being perfectly new, many new designs are found in it, representing the latest phase of New York architectural styles. Price, $5.00.



Pacific Saw Manufacturing Company.

NEARLY twenty years ago, N. W. Spaulding, James Patterson, and C. P. Sheffield conceived the idea of establishing upon this coast a MANUFACTORY for the purpose of making every kind of saws known to the trade. Beginning in a small way, at a place on Pine Street between Front and Battery, they succeeded at once in attracting attention by the excellent manner in which they turned out their work. The introduction about this time of Spaulding's improvement of inserted teeth attracted the attention of saw-men generally all over the United States, and the young firm was soon crowded with orders. Larger premises became a necessity, and the present quarters on Fremont Street were secured. Within the past few months a further extension has been added, in order to keep pace with the demand that has been increasing from year to year. East of the Rocky Mountains orders have been received for the saws of this company, and they are gradually, but surely, working their way into general use in all the main lumbering districts of the United States. A specialty of this company is the manufacture of the N. W. Spaulding Patent Circular Saw and Plate, with inserted adjustable teeth. This is an invention of incalculable value to the lumbermen and sawyers, as the plate of the ordinary saw, which is very expensive, becomes useless when the teeth are worn out. But this patent plate is so constructed that when the teeth are worn out they can be detached and new ones inserted, thus affording the advantages of a *new saw* at a nominal expense.

The cross-cut saws manufactured by this company are achieving a national reputation. They excel in the perfect manner in which they are ground, forming a true taper from the point of the tooth to the back of the saw. The excellent material used, and the improved method of tempering, enables these saws to carry their cutting-edge for a much longer time than most of the imported saws.

Saws of all sizes and descriptions are made by this company; circular-saws, seventy-two inches in diameter, milling-saws sixteen feet in length, the finest dentist and butcher-saws, pruning and hand-saws; in fact, every kind known to the trade.

Carpenters have discovered that the saws manufactured by this company are superior in temper to many others; and although the first cost is greater, this is made up in a short time by the saving of files and time necessary for putting them in order. Workmen have found out that saws easy to file are but trash. More attention is being paid by all of our saw manufacturers to having hand-saws of a harder temper than formerly given.

Our engraving represents many of the different kinds of saws made by this company. About fifty men are now employed under the immediate superintendence of the proprietors. No cheap work is allowed to leave the establishment, every saw being inspected by a member of the firm before it is placed in the market. Should at any time a saw with the name of this company stamped upon it be found to contain defects, it will be remedied without additional charge, or a new one be substituted.

This company has the most complete and ample facilities for the manufacture of saw mandrels, planing and curriers' knives, springs, etc., also for repairing in all its branches, re-tempering, strengthening, gumming, grinding, polishing, etc.

American House Carpenter. Price $5.00.

Hemacite Door Knobs.

ARTISTIC in design and finish, of material as durable as iron, with the assurance that once placed properly in position no ordinary wear and tear can in the least harm them, these KNOBS stand to-day almost without a rival. The beautiful designs and ornamentation of these knobs at once attract attention, and their low price is the death knell to the old-fashioned white knobs. They can be obtained from $6.00 to $24.00 per dozen pairs, depending altogether upon the amount of work on the kind you select. The PRINCIPLE of their construction is the same whether you get the lowest or the highest price quality. They are guaranteed to outlast any other knob now before the public. They can be obtained at almost any hardware store. Some of the highest priced are not kept in stock, but any one wishing to obtain them can select the pattern from any of those in the illustrated catalogue, issued by the company and it will take but a short time to get them direct from the factory. Information in regard to these knobs can be obtained from hardware dealers, the office of this Journal, or direct from the Dibblee Manufacturing Company, Trenton, New Jersey.

The Protection of Iron Against Rust.

IT is still an open question how best to protect iron against oxydation, commonly known as rust. He who would find an effective preservative would indeed be a benefactor, for by its means numerous noble structures, into which the tooth of time is now eating slowly but surely, would be preserved to posterity. It is well known that wherever air and damp come in contact with even the smoothest iron surface, rust soon makes its appearance. By its operation not only is there a constant waste going on, but the remaining iron is rendered brittle. A coating of less oxidizable metals, such as tin, later lead, and zinc, and quite recently nickel, has, therefore, been applied, and with some effect. Earthy glazes, such as are applied to pottery, have also been used for coating iron vessels for household purposes. But all these coatings of metals or glazes have been found in most cases either impracticable in application or too expensive. For extensive use, coatings consisting of oils mixed with metallic oxides, earths, etc., have thus come into use.

Now, it has been observed that iron does not rust in dry air, even in dry oxygen. Iron, also, frequently does not suffer when exposed, without being painted, to the open air—weather-cocks, fences, etc., having lasted for centuries. But in that case it has been found that they have been protected by the formation of a thin layer of peroxide of iron, which has acted as a safe covering against exterior influences. This experience led to the artificial production of a layer of magnetic oxide, superheated steam being used for the purpose. It is not to be supposed that such a treatment will find extended application; and a protective covering obtained in this way would only be effective in the case of iron in pure air, but not where it comes in repeated contact with water or carbonic acid. An interesting phenomenon has likewise been observed on railways. It has been found that iron sleepers and spikes rust very much if the line is not used for some time. It is assumed that iron bodies are more liable to rust in a state of rest than if they are exposed to vibration from time to time, in which case perhaps an electrical effect comes into play, which lessens the affinity of iron to oxygen.

In demolishing old buildings, there are often found iron cramps, blocks, etc., which, so far as they are surrounded by mortar, are completely free from rust, just as if they had only left the forge. A similar phenomenon has been met with by M. Vicat, a French engineer, when he had the anchor fastenings of several suspension bridges exposed which had been put down thirty years before. Where the iron in the masonry was surrounded by rich lime mortar, there was not a sign of the formation of rust, whilst the continuations of the anchors in hollow spaces were rusted to such a degree as to have lost two-thirds of their former dimensions. It has been frequently observed that iron does not oxidize in water if small quantities of caustic alkalies, or alkaline earths, are solved in it, in which case acids of whatever nature would be excluded. It appears that the above experiences have served as the basis for the rust-protective paints, invented by Herr A. Riegelmann, of Hanau (Bavaria). He adds to his paints caustic alkaline earths (barytes, strontian, etc.). By coating iron with them, it is said to be in the same state as the anchors of suspension bridges in lime mortar. Although simple coatings of such paints, owing to their slight thickness, cannot contain much alkaline matter, as is the case in walling in iron, alkaline effects will show themselves as long as they contain a certain percentage of it. But in any case those paints are free from active acids, which cannot be said of all our paints for iron. Should the paint be found in practice to possess the protective properties claimed for it, a step in advance would have been taken in the preservation of iron, and its greater application would be ensured.—*The Builder.*

Modern House Painting. Price $5.00.
Street, Store and Bank Fronts. Price $4.00
Plasterer's Manual, enlarged. Price 75c.

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Sutter, near Stockton. Repairs to Druid's Hall.
A.—Wolfe & Son.
$11,000.

Van Ness Avenue, cor. Washington. Three-story and basement frame.
O.—Porter Ashe.
A.—Curlett & Cuthbertson
C.—C. Ferris, mason.
About $100,000.

Bourbin, x Eddy and Ellis. One-story frame.
O.—C. Ferris.
A.—Curlett & Cuthbertson
Days' work.
$2,000.

Sacramento, x Webster and Buchanan. Two-story frame.
O.—Mrs. M. Davis.
A.—W. P. Moore.
C.—A. B. Greene.

Larkin, cor. Birch. Three-story frame.
O.—T. J. Crowley.
A.—B. E. Henriksen.
C.—A. G. Fitzpatrick.
$12,300.

Sacramento, x Devisadero and Broderick. Two-story frame.
O.—E. J. Stonehill.
A.—W. P. Moore.
C.—Conrad & Hill.

Jones, cor. Sutter. Three-story and basement frame.
O.—M. Hopkins.
A.—C. Geddes.
C.—I. H. Day.
$40,000.

Sacramento, cor. Broderick. Two-story frame.
O.—R. M. Howland.
A.—W. P. Moore.
C.—Conrad & Hall.

Jackson, x Van Ness Ave and Franklin. Two-story frame—B. B.
O.—J. M. Johnson.
A.—H. C. Macy.
C.—Mahoney Bros.
$17,000.

Washington, nr. Larkin. Two-story frame.
O.—C. Bender.
A.—C. F. Mau.
C.—B. Dryer.
$5,000.

Pine, x Kearny and Montgomery. Alterations.
O.—F. Lacoste.
A.—A. Pissis.
C.—J. V. Lawrence.
$2,500.

Washington, x Fillmore and Steiner. Two-story and basement frame.
O.—Mrs. E. Lohse.
A.—A. Pissis.
C.—T. J. O'Brien.
$6,200.

Howard, x Nineteenth and Twentieth. Two-story frame
O.—C. Mangels.
A.—H. Geilfuss.
C.—Conrad & Miller.
$14,500.

Sutter, near Octavia. Two-story frame.
O.— — Wilkins.
C.—W. H. Wharff.
$4,000.

Fourth, cor. Howard. Four-story frame.
O.—Mrs. C. H. Rogers.
A.—Townsend & Wyneken
Days' work.
$25,000.

Lyon, near Clay. Two one-story frame.
O. and B.—L. P. Rixford.
$5,200.

Lyon, nr. Bush. One-story frame.
O. and B.—C. Garcon.
$1,700.

Lyon, nr. Pine. One-story frame.
O.—M. Gilmore.
C.—D. F. McGraw.
$1,200.

Bush, nr. Baker. One-story frame.
O. and B.—P. Martin.
$1,700.

Sutter, x Powell and Mason Two-story frame.
O.—I. Tompkins.
A.—W. H. Bayless.
C.—R. P. Hurlbut.
$5,400.

Post, cor. Baker. Two-story basement frame.
O.—C. Buckley.
A.—T. J. Welsh.
C.—R. P. Hurlbut.
$5,300.

Eddy, corner Steiner. One-story frame.
O.—E. P. Liebrich.
C.—W. Plum.
$3,000.

Geary, x Buchanan and Webster. Six two-story frame.
O.—C. C. Butler.
A.—Schmidt & Havens.
C.—Robinson & Gillespie.
$30,000.

Webster, x Hayes and Fell. Two-story and basement frame.
O.—L. W. Palmer.
A.—J. Marquis.
C.—Gray & Stover.
$4,000.

Church, cor. Twenty-first. One-story frame.
O. and B.—T. C. Kleebauer
$1,600.

Guerrero, nr. Twenty-second. One-story frame.
O.—Charles Geddes.
C.—G. R. Lang.
$5,000.

O'Farrell, corner Leavenworth. Four-story frame.
O.—Mrs. R. C. Johnson.
A.—Townsend & Wyneken
C.—Treadwell & Co.
$8,000.

O'Farrell, nr. Octavia. Alterations.
O.—G. F. Pages.
A.—A. Pissis.
C.— — Walker.
$6,000.

Page, cor. Laguna. Two two-story and basement frame.
O.—Mr. Goewey.
A.—C. Geddes.
C.—T. H. Day.

Mission, cor. Twenty-fifth. Two-story frame.
O.—P. H. Burmeister.
A.—Newsom Bros.
C.—I. McKay.
$6,580.

Twenty-seventh, near Sanchez. Seven one-story frame.
O. and B.—J. M. Comerford.
$10,500.

Twenty-fifth, near York. Two-story frame.
O.—Dr. C. C. O'Donnell.
C.—S. P. Gunnier.
$5,000.

Willow, near Stevenson. Two-story frame.
O.—B. Bogne.
C.—J. Connell.
$1,700.

Mission, x Twenty-second and Twenty-third. Repairs.
$500.

Mission, nr. Twenty-fourth. Two-story frame.
O.—R. Ackton.
C.—P. J. Smith.
$2,700.

Mission, x Twenty-seventh and Twenty-eighth. Two-story frame.
O.—M. Fair.
A. T. J. Welsh.
C.—P. Hynes.
$2,300.

Duncan, nr. Sanchez. One-story frame.
O.—F. W. Bien.
A.— — Pelton.
C.—I. M. Comerford.
$1,500.

McLea Court, nr. Ninth. One-story frame.
O.—P. Vetter.
A.— — Henriksen.
C.—J. Kline.

Rondel Place, near Sixteenth. Additions.
$800.

Market, nr. Seventh. One-story brick.
O.—J. Platscheck.
A.—J. Gosling.
C.—J. Blake.
$8,500.

Mason, nr. Greenwich. Alterations.
O.—J. Everding.
A.— — Miller.
Days' work.

Commercial, nr. Battery. Two-story and basement brick.
O.—J. Appel & Co.
A.— — Miller.
Days' work.
$6,000.

Valencia, x Twenty-sixth and Twenty-seventh. Two-story frame.
O.—Mrs. E. O'Brien.
A.—R. Warren.
C.—R. M. Grant.
$4,100.

Front, No. 118. Additions.
O.—Rothschild & Ehrenfort.
A.—Schmidt & Havens.
C.—J. Furness.
$5,000.

Minna, x Tenth and Eleventh. Two-story frame.
O.—Mrs. W. Mengel.
A.—Schmidt & Havens.
C.—I. N. & J. G. Day.
$10,000.

Lily Avenue, nr. Laguna. Two-story frame.
O.—Wempe Bros.
A.—Schmidt & Havens.
Days' work.
$4,500.

Post x Stockton and Powell. Repairs.
O.—Verein Eintracht.
C.—B. Dryer.
$4,000.

SACRAMENTO.

Sixteenth, cor. N. Two-story additions.
O.—City of Sacramento.
A.—Babson & Seadler.
C.—E. A. Bowyer.
$3,500.

Tenth, cor. K. Two-story and basement brick.
O.—Sacramento Valley Grangers' Association.
A.—N. D. Goodell.
C.—Carle & Croly.
$16,500.

Second, x I and J. One-story and basement brick.
O.—Mrs. M. E. Gregory.
A.—N. D. Goodell.
C.—M. Madden.
$20,000.

Second, x I and J. One-story and basement brick.
O.—George Schroth.
A.—N. D. Goodell.
C.—P. A. Miller.
$2,750.

J, x **Seventh** and **Eighth**. Three-story and basement brick.
O.—C. Waterhouse.
A.—N. D. Goodell.
C.—Carle & Croly, carpenters and E. F. Woodward, mason.
$20,000.

O, x **Eighteen** and Nineteenth. Two-story and basement frame.
O.—S. Nevis.

WOODLAND.

Two-story farme.
O.—Methodist Church.
A.—S. White.
C.—Glenn & White.
$6,000.

Main. One-story brick addition.
O.—Mrs. A. M. Hall.
B.—Mr. Tyson.
$1,500.

Near Town. Two-story frame.
O.—R. A. Grant.
B.—Gilbert & Son.
Days' work.
$1,500.

MISCELLANEOUS.

Madison, Yolo Co.—One-story frame; *O.*, S. P. Stephens; *B.*, Stamp & Lovejoy; days' work; $3,000.

Putah Creek, Yolo Co.—Two-story frame; *O.*, G. Schmeiser; *B.*, Stamp & Lovejoy; days' work; $2,000.

Dixon.—Two-story brick; *O.*, F. F. Upham; *C.*, Pritchard & West; $3,217.

Ocean View.—One-story frame; *A.*, — Kidd; $1,500.

Oakland.—Myrtle x Fifth and Seventh; additions; *O.*, J. B. McDonald; $1,700. Tenth cor Magnolia; one-story frame; *O.*, — Jacobs; $2,500.

Lincoln.—Two-story frame; *O.*, H. Nader; *A.*, N. D. Goodell; *C.*, B. F. Bell; $3,600.

San Jose.—Two-story brick; *O.*, Mrs. C. Tantan; *A.*, Theo. Lenzen; *C.*, G. W. Lowey; $11,000.

Fresno.—Two-story brick; *O.*, Kutner & Goldstein; *A.*, Schmidt & Havens; *C.*, P. M. Behunin; $8,000.

San Diego.—One-story brick; *O.*, Bank of Southern California; *A.*, McDougall & Son; *C.*, W. H. Perry; $7,000.

Berkeley.—Two-story frame; *O.*, J. Squires; *C.*, — Embury; $2,000. One-story frame; *O.*, Stewart; $500.

San Leandro.—Two-story frame; *O.*, H. Smythe; *C.*, F. A. Brown; $8,000.

Alvarado.—Two-story frame; *O.*, A Kerr; *C.*, F. A. Brown; $4,000.

MARKET REPORTS.

The price of lumber has again been advanced. Quotations below are taken from the new schedule.

LUMBER—*Pine.*

Common Rough, up to 40 feet, per M feet		$22 50
" 41 to 50 " "		23 50
" 51 to 60 " "		24 50
" 61 to 70 " "		26 50
" 71 to 80 " "		28 50
Refuse Rough		18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over, "		33 50
" 4 " and under, and 1¼x4 and 1¼x6		
Flooring and Stepping		40 00
Rough Clear for Flooring, $1 less than above rates.		
Second Quality Flooring and Stepping	per M feet	28 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough	"	33 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17 50
Redwood.		
Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

NAILS.

10 to 60 pennies, are quoted at		$3 90
8 " "		4 15
6 " "		4 40
5 and 4 " "		4 65
4 and 5 " brad-heads at		5 15
6 " "		5 40
8 " "		5 75

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in Dewey & Co.'s Scientific Press Patent Agency, 252 Market St., S. F.

FOR WEEK ENDING AUGUST 28, 1883.

283,855.—Watch Holder—W. W. Blow, Oakland, Cal.
282,870.—Blackboard Rubber—John Dooner, S. F.
283,908.—Roof Scaffolding—A. B. Manley, San Jose.
283,909.—Flour Bin and Sifter—A. B. Manley, San Jose.
284,038.—Sawing Machine.—George McCoy, New Dungeness, W. T.
284,051.—Egg Boiler—W. P. & W. B. O'Brien, Jr., Santa Clara, Cal.
284,134.—Steam Boiler for Traction Engines—L. F. Lillard, Dixon, Cal.
284,067.—Diamond Drill Safety Machine—Ross & Grant, Virginia, Nev.
283,930.—Return Crate—Smith & Morton, S. F.
283,826.—Last—W. H. Snyder, S. F.
283,937.—Dump Wagon—George M. Wallace, Yuba City, Cal.
283,941.—Window Blind—Joseph Williams, San Jose.
284 157.—Metallic Railway Tie—J. W. Young, Fort Moroni, A. T.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise), at the lowest rates. All patent business for Pacific Coast inventors transacted with perfect security and in the shortest possible time.

N. C. WALTON,
Asphaltum and Asbestus Roofing,
219 MISSION STREET,
SAN FRANCISCO.....CAL.

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The California Architect and Building News.

VOLUME IV.
NUMBER 10.

SAN FRANCISCO, OCTOBER, 1883.

$2.00 per Annum, in Advance.
Single Copies, 20 Cents.

Future Prospects.

EVERY one interested in real estate and improved property very naturally desires to be correctly informed as to the building probabilities of the future. At the commencement of 1883, a large number of property owners expressed doubt as to the advisability of increasing the number of dwelling houses in S. F.,—contending as many did that the supply was then fully equal to the immediate and prospective demands; and that any considerable increase in the erection of buildings would necessarily create a surplus of rentable houses, and cause a decline in rents. While this may have proved true to some extent, as far as some of the inside property is concerned—which may not now be in as great demand as heretofore—at old rates, it has not proved true in the outside districts, where a very lively building enthusiasm has prevailed, and hundreds of new houses been erected during the past nine months, seemingly without increasing the surplus. And while there is at present a lull in building operations, as shown by our present monthly report, the general feeling is excellent, with well assured probabilities that fair activities will rule during the winter months. And from the many facts in our possession, we are warranted in predicting a very lively condition of things during the early spring months, not only in dwelling and tenement houses, but in substantial brick structures. The only thing likely to interfere with future activities will be increase in price of material beyond fair and reasonable rates of profit; and we regret that there is too much of a disposition among producers of building materials to crowd up prices, all that circumstances and the patience of consumers will bear. Reasonable, fair, and legitimate profits seem not to satisfy, so long as there is an opportunity to increase and pile on the weights without breaking the cords.

Good Times Continue.

OWING to the large number of buildings reported by us during the earlier months of the present year, we rather anticipated a falling off as the season advanced. Each succeeding month, as shown by our monthly reports of building intelligence, has been of the most gratifying character, neither month of the year showing any marked decrease in the number of buildings commenced, while at present writing the outlook is excellent. Architects generally in San Francisco are busy, and new work still coming in. The special feature of the case is that the large amount of building improvements has been confined mainly to tenement and residence structures, but few large operations being commenced during the year. There have been very few even moderately large brick edifices reported during the past seven months, and none that we know of to be commenced at a very early day.

But in this line we look for considerable movement next year. We know of several brick structures which are very sure to be commenced within the next six months, and unless the high cost of building materials shall prevent it, there will be large activities in brick buildings before the end of 1884.

The numerous large purchases of real estate by our monied men, the buying up of desirable pieces all along the line of Market, below Montgomery Street, indicate the purposes of the future. It is not at all probable that business firms have invested in real estate purchases for speculative purposes; and of personal knowledge we state that many now holding desirable building lots intend to "build in the spring," which means as soon as the spirit moves them, and we know from what we have heard from the parties themselves that their spirits are wide awake, and likely to impel forward movements at any moment. All classes of mechanics are busy, and work goes slow in many instances, because of the impossibility to obtain the execution of mill, stair, plastering, and other portions of the work promptly, the general complaint being, "can't get the mill work," etc. Although, as we have stated, there are but few brick buildings under way, the entire force of journeymen brick-layers have been fully employed in the putting in of brick foundations, and other brick work incidental to the erection of frame buildings. And should there be the anticipated increase in new brick buildings, there is certain to be a great scarcity of brick-layers, with possible increase in wages. In many sections of the State and coast, there has been absolute want of good mechanics, and the offer of increased wages has not in many cases been sufficient inducement to draw men away from the city and home life, good pay and steady work being preferred to exclusion in more quiet and lifeless places with four bits per diem advance in wages.

A PUGET SOUND paper states that 10,000,000 feet of logs have been cut from 160 acres of land in Pacific County, W. T., and that 4,000,000 feet is the average of that amount of timbered lands.

GERMAN steel rail makers assert that the Gilchrist-Thomas process cheapens their rails from 30 to 40 per cent.

S. F. Chapter American Institute of Architects.

THE Chapter met in regular session October 5th, the President, John Wright, presiding.

The minutes of previous meeting were read and approved.

A delegation from the Masons and Builders' Association of San Francisco being in waiting, the regular order of business was suspended, for the purpose of affording the delegation, consisting of Messrs. Richardson, Cox, and Leibert, an opportunity to explain the object of their visit. Mr. Richardson, in behalf of himself and colleagues, laid before the Chapter the following resolution adopted by the Masons and Builders' Association, requesting that the Chapter give the subject matter of the resolution such consideration as its importance may warrant:—

HALL OF MASONS AND BUILDERS' ASSO. OF S. F.
314 Montgomery Street,
October 5, 1883.

To San Francisco Chapter,—American Institute of Architects:—

GENTLEMEN: At a regular meeting of the Masons and Builders' Association of San Francisco, held October 1, 1883, it was resolved that on and after January 1, 1884, we respectfully request you to segregate all work appertaining to the mason work from other contracts exceeding three hundred dollars, labor and material included.

ROBERT MITCHELL, President.

After the withdrawal of the delegation, the resolution submitted for consideration was received, and a committee consisting of Messrs. Macy, Welsh and Gash, appointed to report thereon at the next regular meeting of the Chapter.

A partial report from the committee appointed at the August session of the Chapter, to take into consideration and report upon the plumbing rules and regulations adopted by the Board of Health, was received and read, and after considerable debate thereon the matter was re-referred to the committee for further consideration, with Mr. Laver substituted as a member of the committee in place of Mr. Curlett, who is absent from the State.

Wm. Lee and M. G. Bugbee were elected student members, and Messrs. John Hall, R. C. Ball and W. Copeland proposed as fellows.

The President then read his annual address, which was listened to with marked attention, and received with applause and a vote of thanks. Its publication in the CALIFORNIA ARCHITECT AND BUILDING NEWS was ordered by vote of the Chapter.

The annual report of the Treasurer for the year ending September 1st was submitted, showing that all indebtedness had been liquidated, leaving a balance of cash on hand for future purposes.

Messrs. Laver, Henricksen, and Gash were elected Trustees for the current year.

Adjourned.

CHAPTER PROCEEDINGS IMPROPERLY REPORTED.

M. G. (not Sumner) Bugbee, as reported by the *Morning Call*, was elected a student member.

The *Chronicle's* report was full of errors. The suggested amendments to the plumbing rules and regulations read before the Chapter, was by a single member of the Committee and not by the Committee as a whole, nor a majority thereof, which was re-referred, with no disposition on the part of the Chapter to urge their adoption upon the Board of Health. All that about reducing the cost of plumbing 15 per cent., depriving the Inspector of present powers—the reflections cast upon the Inspector—"not knowing his own mind from one week to another,"—"his actions depending largely upon who had the job in hand"—thus insinuating partiality and favoritism, etc., etc., are decidedly unfair and unjust misstatements. Mr. Sweeney, the Plumbing Inspector, as a mechanic is too well informed not to understand all the necessities involved in proper plumbing work by the plumbing rules and regulations, and too intelligent and upright as a man to be swerved from a consistent and uniform course of action by personal favoritism.

Architectural Quackery.

THE following from the Detroit *Journal* is so thoroughly in harmony with the views repeatedly expressed in this journal upon the same subject, that we copy in full, regretting to learn that the architectural profession in Detroit is cursed with the same class of incubuses that have done so much to lower the standard of competency in those claiming to practice the great science of architecture in California; by pandering to the avarice and caprices of owners who permit themselves to be humbugged into engagements with men of exceedingly limited acquirements as practicing architects, and no thoroughly educated and scientific knowledge of the profession, simply because they offer their trashy services at rates which propose a saving, but which in practical results are far more costly to deluded owners than would be the services of competent men at the highest rates of commission.

"It would seem that the ancients, more freely than the moderns, understood and appreciated the dignity and importance of the profession of the architect. By the Greeks, the name 'architect' was originated, denoting literally 'a master workman,' and clearly implying not only the designer of public and private buildings, but a man versed in all the details of their construction, and competent himself to direct the workmen as they wrought. And we know, from the ancient writers, that this was the practice of the celebrated architects of antiquity, the men who in Egypt, Babylonia, and Greece, reared those wonderful structures, the ruins of which have won the respect and admiration of preceding ages. By the Greeks the architect of the Parthenon was honored as an artist of merit and fame equal to that of Zeuxis, the painter, or Phidias, the sculptor.

"The present utilitarian age by no means estimates the profession of the architect at its true rank. This is due to a number of different causes, foremost among which is the fact that it is not protected by any of those restrictions which serve somewhat to elevate and maintain the ranks of the professions of law and medicine. It is notorious that even in those vocations scores of incompetent men are each year, in every State, let loose upon society to work no end of mischief by their allied ignorance and presumption. How much more then must this be the case with the profession of the architect, unprotected as it is by legal enactments and open to the entrance of all those classes who, because they may profess some knowledge of building or have obtained a smattering of the science of designing, have the impudence to deem themselves, and to hold themselves out to the world, as fully competent architects and designers.

"The true architect is a man possessing an innate love and appreciation of the true, the beautiful and the grand in form; a taste which has been purified and enriched by years of study and communing with the most perfect of earth's buildings; a skill, the result of long and thorough study and constant practice and a practicality of mind which enables him to adapt old and recognized forms of beauty to the want and convenience of modern times. Such architects are to be found in considerable numbers in Great Britain, France, and Germany, where they are first thoroughly instructed and drilled in the great technical schools which exist in those countries, such instruction being further supplemented by years of careful study under some experienced architect.

"But how stands the case in America? Here a young man with little education and often with a lamentable deficiency of natural or those other qualifications which should be possessed by any aspirant to so important a profession, enters the office of any practicing architect, and studies for a year or two the designing of ordinary buildings and the drawing of plans, with hardly any acquisition of knowledge of details, of the materials employed in building or the builder's art. At a time when he is just beginning to understand the rudiments of his profession and would commence to investigate thoroughly its various departments, he rushes into the business world, and in a glaring sign announces himself to the public as a competent 'Architect and Superintendent.' The next step with this bold adventurer is to toot or drum for business, and with unblushing effrontery he makes a thorough exploration of the town or city in which he may reside and interviews every unlucky individual who may by any probability be likely to erect a building within the next five years. The principal and often the only argument that he can urge in favor of his employment is the cheapness with which he will do the job, thus degrading the standard of an honorable profession, and tending to bring into equal contempt with the community the true architect and the charlatan.

"The result is what might naturally be expected, buildings constructed with total lack of taste and with no regard to the fitness of things; designs copied bodily from some cheap book of plates and adopted with a serene contempt for all actual surroundings; matters of detail and of construction turned over entirely to the mason and carpenter, who work their own sweet will upon the building. The frequent result is a structure alike devoid of beauty and of utility, an edifice which is likely to stand for a considerable number of years, a fitting monument alike to the incapacity, want of taste and lack of skill of architect, builders, and proprietor.

"Not unfrequently the most serious accidents occur through the incompetency and carelessness of these mushroom architects; but the cheapness with which their services can be secured seems to be, to the general public, an attraction which no amount of reason or common sense is able to prevail against, and the grossest blunders, with results that cannot afterwards be remedied, are constantly to be found in pretentious and showy houses in Detroit and other large cities, where new buildings are being erected with wondrous rapidity, and which should form permanent additions to the beauty and attractions of the localities.

"It is not surprising, after these considerations, to learn that of all the army of so-called architects there are not more than five genuine architects and artists in this large metropolis, and that a great proportion of the vast amount of building annually done in Detroit is of such a character that it must, by a competent man, be pronounced a sham and a humbug, soon to demand repairs and alterations, never to satisfy the owner or tenants, and possessing as its chief merit a somewhat speedy perishability.

"For such a serious state of things, about which there unfortunately cannot be any doubt, there certainly should be some remedy, and it would seem to lie in the double but kindred discretion of a more enlightened public opinion which should bestow patronage more wisely, and of legislative action which should throw around the profession restrictions which would tend to elevate it and free it as far as possible from charlatans and pretenders.

"Very great delay, loss and litigation are frequently occasioned by the failure of incompetent or careless architects to prepare full and detailed plans of the buildings which they are employed to design. Owners and builders should, in all cases, be furnished with one full copy each, as in that event the work can be carried on completely according to the plans of the architect, and the owner, in case of any litigation arising, has in his hands the plans, the very best evidence, in conjunction with the specifications, of the architect's full designs, and of measurement, cost, etc. The plans for the workman to follow can hardly be too full or too much in detail. Such thoroughness on the part of the architect is an invaluable benefit to both owner and builder."

BUILDING NOTES.

From Lathrop to Los Angeles.

A trip has recently been made by our agent through the southern part of our State. His primary duty was the distributing of a portion of our supplement in every town upon the route. Not only was this duty faithfully performed, but scores of new subscribers were secured, and a full record of building improvements was noted.

Modesto.—Mr. R. McHenry is having erected a two-story and basement brick. It is building by days' work, at a cost of $25,000. Numerous small buildings and improvements are under way.

Merced—Can boast of a new Episcopal church. *A.*, Isaacs & Francis; *C.*, E. R. Francis; cost, $800. Two-story and basement frame; *O.*, J. H. Upton; *A.*, C. Beasley; days' work; $4,500. Two-story brick; *O.*, M. F. Moran; *C.*, W. H. Ford; cost, $15,000. Several small buildings are in process of construction.

Athlone.—The Southern Pacific Railroad Company is having erected a warehouse, at a cost of $2,000.

Fresno—Has grandly arisen from the effects of fires that laid low nearly all the business section of the town. In addition to buildings previously reported, we note the following: Methodist-Episcopal church; *C.*, P. M. Behunin; $2,000. Two-story and basement brick; *O.*, W. E. Gilmore; *C.*, F. Banta; $4,000. Mr. Banta has the following buildings in his charge: Two-story brick for Mr. Shelly, $5,000; two-story brick for Statham & Co., $9,400, one-story and basement brick for Alcese & Co., $5,800; two-story and basement brick for H. C. Warner, $4,000; one-story brick for Mr. Ryan, $1,000.

Fowler's Station.—The Southern Pacific Railroad Company is erecting a two-story frame; cost, $8,000.

Tulare.—Two-story frame for L. D. Murphy; *C.*, G. W. Palmer; $5,000. One-story brick for B. W. Janchins, $5,000. Three-story brick for J. Asher; *C.*, Bonner & Young; $2,500. One-story frame; *O.*, F. M. Schultz; $1,000. Mr. J. F. Kessing is erecting four one-story frame, at a cost of $10,000. Badicalupi are having built four one-story brick; *C.*, G. W. Palmer, $12,000.

Los Angeles.—Our agent remarks that "in the *new* part of the town every other building is *new*." The record, in addition to those previously reported in this journal, proves that Los Angeles is the most progressive building center in the State, San Francisco being its only rival. We omit the streets, as the list is so lengthy. The following are under the superintendence of Kysor & Morgan, architects: Two-story brick for Joseph Mullally; *C.*, Keelan & Grant; $6,500. One-story frame for Major Wicks; *C.*, Beville & Co.; $4,500. Two-story brick for John Schumacher; *C.*, Willard & Phillips; $2,400. Two-story brick for L. J. Hammond; *C.*, C. Handerson; $15,500. Two-story brick for J. Bryson; *C.*, Beville & Co.; $17,000 Two-story brick for Dr. Widney; *C.*, J. D. Campbell; $11,500. Two-story brick for Dr. Griffin; *C.*, A. M. Mackray; $1,954. Building on San Franco Estate; *C.*, O. Bonchamp; $15,500. Baptist church; *C.*, W. O. Burr; $21,000. Catholic college; *C.*, M. Fitzgerald; $26,000. One-story frame for Mr. Kerckhoff; days' work; $4,000. Two-story frame for Mrs. Scott; *C.*, R. B. Young; $5,500. Two-story frame for Mrs. McDougall; *C.*, — Hargitt; $11,000. Two-story frame for S. C. Hubbell; $12,000. Two-story frame for J. E. Webber; *C.*, J. E. Wood; $6,000. Double frame building for Mrs. Gorman; *C.*, Thos. Golding; $7,000. One-story frame for J. W. Hinton; *C.*, H. Rhea; $4,000. Two-story frame for Mr. Ducommun; *C.*, A. Biles; $8,000. Two-story frame for J. Mead; $2,800. Two-story frame for — Hickox; $2,000. Two-story frame for Dr. Ch. A. H. de Sigoethy; $4,500. One-story frame for W. F. Marshall; $3,500. Two-story frame for H. Rorick; $3,500. Two-story frame for D. Steavens; $5,500.—B. J. Reeve, architect, reports the following: Two-story brick; *O.*, A. Valla; *C.*, J. E. Wood; $40,000. Two-story brick; *O.*, J. Barnard; *C.*, W. O. Burr; $36,000. Four-story frame; *O.*, Mrs. Bumiller; $30,000. St. Paul's church; *C.*, Skinner & Shaplin; $25,000. Presbyterian church; *C.*, J. E. Wood; $7,300. Two-story frame: *O.*, J. Sendouse; *C.*, G. E. Scammen; $6,800. Two-story frame; *O.*, W. H. Barclay; *C.*, G. E. Scammen. One-story frame; *O.*, J. A. Taylor; *C.*, C. Handerson; $4,200 Two-story frame; *O.*, R. & N. C. Wilson; $9,000. Alterations; *O.*, J. Lacy; *C.*, Golden & Beauchamp; $3,200. One-story frame; *O.*, J. C. Kays; *C.*, G. E. Scammen; $2,400. Two-story brick, alterations to the Bishop's residence; *C.*, J. E. Wood; $2,600.—The following are scattering: A livery stable is being converted into a theatre; *O.*, Perry Bros.; *C.*, A. S. Mackay; $6,000. One-story frame for Mr. Gongeon; *A.*, John Hall; $2,000. Two and one-half-story frame for Fred. Dohs; *C.*, Chislom & McCall; Mrs. Romnae is having built a one-story frame, S. Broomer drawing the plans and superintending the work; $1,000. One-story frame; *O.*, W. R. Hasson; *C.*, R. S. Cox; $2,000. Three one-story frame; *O.*, Ward & Wilkerson; $3,300. Two-story frame; *O.*, Mr. Sholl; *C.*, John Sholl; $3,500. One-story brick warehouse; *O.*, Kerchoff & Cuzner; days' work; $3,500. Three-story frame planing-mill; *O.*, Kerchoff & Cuzner; $6,000.

A POPLAR tree was lately cut near Moulton, Ala., that measured 58 feet in circumference at the butt, was 150 feet long, and was expected to turn out 100,000 shingles.

Book Notice.

LIFE OF SIR WILLIAM E. LOGAN, K. T., LL.D., F. S. R. F. G. S. First Director of the Geological Survey of Canada. By BERNARD J. HARRINGTON, B. A., Ph D. With steel portrait and numerous woodcuts, New York: John Wiley & Sons, 15 Astor Place. 1883. Price $2. 50. 432 pages, octavo.

NEW YORK STREET ARCHITECTURE.

The Renaissance.

BY A. CURTIS BOND.

OUR illustration shows a building in course of erection on Broadway, to be occupied by a firm of Japanese-goods importers, and which has progressed now only so far as the first floor. It is constructed of brick, the pilasters of granite, and having a granite edging to the circular spaces in the wall. These round windows give a novel appearance to it that is one of its peculiar features. The style is a very uncertain Renaissance, built up more from the imagination of the architect than from any following of a particular school.

* * * * * *

In this universal disposition to return to the manner of construction of preceding generations and adapt their styles to our present changed circumstances and surroundings, we must ask ourselves whether or not the result is to be as satisfactory as might be secured by the exercise of the inventive genius toward an entirely new conception. We must recognize the existence in the human mind of two distinctive faculties—the imitative and the inventive—and although it appears to have become the fashion to exercise the former rather to the exclusion of the latter, too much care cannot be taken that from imitative it does not becomes servile, and every succeeding effort show a deterioration and a decline from its predecessor. The spirit of the detail may be there, and the minutæ may be perfect; but there will be an air of constraint that will detract seriously from its effect. Take, on the other hand, the encouragement and exercise of the faculty for invention; it presents a new and attractive feature from the oldest materials, and it converts stereotyped shapes into most pleasing forms.

I know this is a very old plaint, but it is a very good one, and it is called to my mind by reading a lecture recently delivered in London upon the subject of architectural revivals. The lecturer took the ground that our modern imitation had become positively imitation only, and as such was to be condemned. The difference, in a few words, between good and bad architecture is this: If a man has no clear and distinct idea to express—has a vague and shadowy desire to say something rather like what his neighbor has said, or a slight improvement upon that sentiment—there is very little chance that he will be able to express anything worth hearing, or that will, if transmitted, convey any intelligible and lasting idea to a generation coming after him.

* * * * * *

The new Produce Exchange is almost completed, and it promises to be one of the attractive features of lower New York. It looks out upon Bowling Green, from Beaver and Stone Streets. It is an immense square building, five stories in height, and having at one corner a square clock-tower, rising about sixty feet above the roof of the building proper. The architect has chosen a sober and plain front, looking more substantial than decorative, and

giving the impression of solidity. There are dwarf portices at the entrances, composed of eight square granite columns, placed against the walls in groups of two, and directly in front of these a similar number of round granite columns, highly polished. These sixteen columns have a particularly massive appearance, while they neither encroach upon the pavement nor take from the depth of the building. But the most noticeable feature, and that which distinguishes the structure from everything else about it, is the principle upon which the windows are set in the wall—being constructed within great arches, or indentations, springing from the second floor, and looking like immense and elongated gun-holes in a fortress. These arches, as is also the body of the structure, are in brick, and the arrangement is such that, unless one be almost at the very edge of the arch, it is impossible to see the window within; at a short or a long distance the window is entirely lost to sight, and the stupendous dent only is seen, as if some great force had driven back the bricks and left its impress upon the façade. The effect is peculiar, and not unpleasant. Between these arches are medallions, bearing the coat-of-arms of the States and many of the cities of the country, New York alone being omitted. An inscription over the side entrance reads, "New York Produce Exchange," whereat the daily papers have made many uncomplimentary allusions and comments, claiming that it is for a fact the *New York* Exchange—but why label it so? Are the builders afraid some one will kidnap it at night and cart it off to a rival town, that they must needs put the name of the village owning it upon its stone, on the same principle that they paint a steamer's name upon its small boats? They all claim that *The* Produce Exchange is sufficient.

Figure 1.

There is a peculiar interior decoration that possibly deserves notice. It is a frieze of animal heads, extending about the large room—boar, cow, and bull alternate with pig, ram, and ewe, while at each corner an immense buffalo head projects some ways from the wall. The heads are made of terra cotta, and are realistic in every particular. The buffalo heads are the only ones that would not be taken for the natural object itself.

* * * * * *

I saw a staircase recently which I think might interest some of your readers, and so I made a sketch of it, and a very small plan of its construction and details. It is unnecessary for me to say that the style is distinctively French, and is such as is ordinarily encountered in the Parisian dwelling-house, but very seldom seen here, excepting in public buildings; and yet it is an economizer of space, while it is at the same moment exceedingly attractive in its effect. In this particular instance, however, the staircase is quite large and pretentious, as economy of space seemed to be no object.

The constructive material is iron, the string-board is of that metal, and in two parts, bound together by the baluster-bolt, as will be described further on; the back of the steps is of iron, the balusters and hand-rail of oiled oak. From the ground to the first floor there are twenty-two rises; from the first to the second, twenty-eight steps, and the same number from

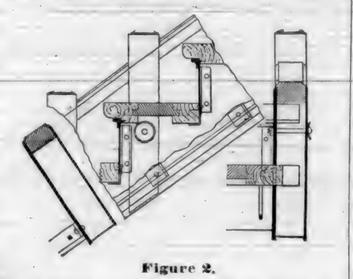


Figure 2.

the second to the third. Midway between the floors is a broader step, serving as a landing-place, or sort of lobby, at which is a window; or there might be a niche, if the window is not convenient. The lower step in this especial flight is five feet long, the following one is four feet and six inches, and so on until a quarter of the circle is reached (Figure 2), at which point the staircase has to take its normal width of four and one-quarter feet. The rises are paneled in oak and finished by a molding, as shown in Figures 3 and 4.

The string-boards being of iron, as I have said, are fastened together by a long bolt, which, beginning at the head of the baluster-post, extends through it and through two screw-holes in the iron plates, being held in place by the usual nut. The under part of the iron steps, that exposed to view, is plastered.

As will be noticed in the sketch (Fig. 1), the wall is wainscoted the entire length of the stairway, and at each floor is fixed a seat, for the relief of those whose errand may lie in the upper apartments.

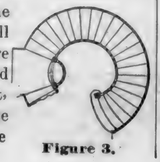


Figure 3.

The California Redwoods.

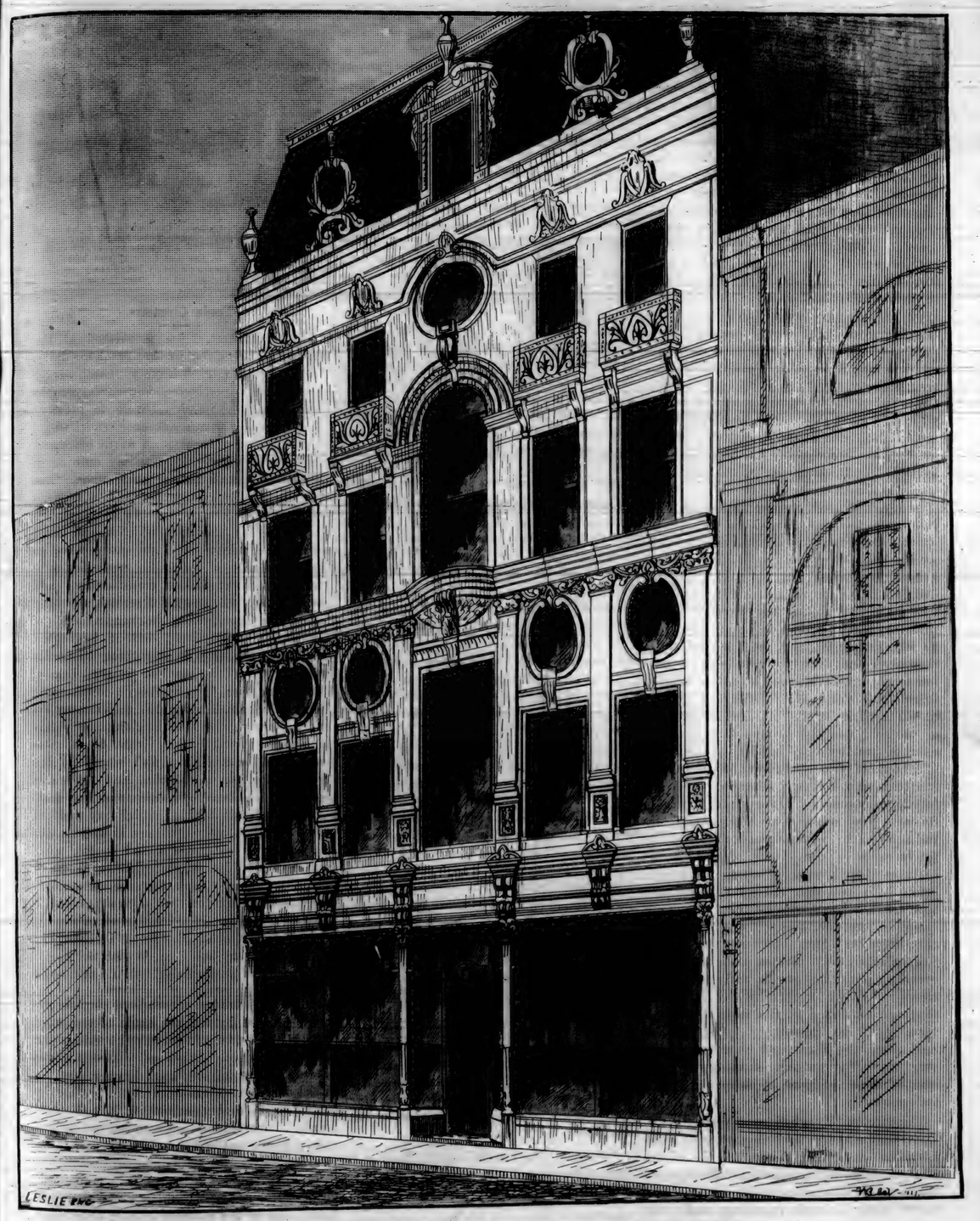
A CORRESPONDENT of the *Federal Australian* from San Francisco describes the cutting down of some of the great trees on the Pacific shore. He says:—

"It is a magnificent yet a painful sight to witness the operations in one of these redwood forests. You stand in the midst of vast trees, so close together that there is a dim religious light around you like that of a cathedral. This delusion is furthered by the apparent regularity with which many of these trees grow. You can look down a long aisle as if it were a groined arch of cathedral roof, and the only thing which undeceives you is, on looking up, far above your head, to see rifts of blue sky between the branches. But you are suddenly startled by a long cry of warning, which follows the rythmic chopping sound of the axe and the swish of the saw. It is the woodman, and his melancholy cry portends the fall of a mighty tree. There is a long and labored groaning sound; it is the tree breaking away from the friendly base which has held it, perhaps, for ages. Then there is a sharp "crack." The tree has snapped in twain. The mighty mass trembles slightly for a moment, then inclines in the direction toward which the practiced woodmen have designed it to fall. It topples—it falls. There is an awful crash—the falling tree is smiting the branches from a fellow tree which still stands upright, but not for long. There is a sound like a peal of thunder—the tree has struck the ground. The earth trembles for rods around, as if there were an earthquake; there is a cloud of dust, and all is over.

"The redwood is a most valuable kind of timber. It is very slow to burn, and if ignited is easily extinguished. It is very heavy and very dense in fiber, yet very easy to work, splitting with the most perfect accuracy, and yielding to the saw, the chisel, etc., with the utmost ease. When polished it makes a most handsome wood for interior fittings, and many of the finest houses in California are fitted with this wood in its polished state."

Mr. John Wright's Address.

WE direct special attention to the annual address of the President of S. F. Chapter of Architects, appearing in full in the present number of this journal, which contains many suggestions worthy of perusal and practical application. Students in the profession should feel specially interested, and show their appreciation of the efforts being made by Messrs. Wright, Saunders, Pissis, and other members of the Chapter, and by the Chapter as an organization, to provide courses of free instruction in the preliminary and advanced studies in architecture. Every gentleman practicing the profession upon this coast should unite with the Chapter, as by so doing each would derive a personal benefit from joining heartily in the Chapter work, and every student and draughtsman who will unite and co-operate with earnest purposes, will receive tenfold in return for all expended time and money.



A SKETCH IN THE RENAISSANCE STYLE OF ARCHITECTURE.

Want to Build Cheaply.

THE number of owners desiring to build cheaply, who do not start in with cheapness as a material factor, are the exception; the rule being to contemplate a building or buildings of certain size and character, and fixing the sum of intended expenditure from ten to fifty per cent. less than sufficient for the purpose. The very first thing sought to be impressed upon the mind of the architect is—that the outlay must not exceed a certain amount, although the improvement desired may reasonably be worth a much greater sum—if built in accordance with the prevailing demand for "good work," "first class," etc. If owners were more reasonable in their exactions, being willing to accept the only class of work possible under the restricted cost proposed, it would be all well enough; but the price is almost always fixed upon the basis of slop-shop, shoddy work, accompanied with—"*I want a good, substantial, well-built building*," and sometimes even a "first class structure." The inconsistency of the proposition amounts to ridiculousness. A customer who would approach a merchant or dealer in any class of goods, wares, or merchandise, and propose to buy salable articles in the regular way at less than cost of production, would receive but little if any attention, and perhaps the intimation that his custom was not desired. It is a very common thing for men who make ridiculously low offers for things that they would like to possess to be told to go where there is more need of iced water than overcoats. Yet it is equally as just and fair to ask a tailor to make a suit of clothes intrinsically worth $75 for $50, or a jeweler to sell a "first-class" time-piece at the value of the gold used in its manufacture, as to exact of architects and builders the erection of a house of a certain prescribed class and character, at a cost sufficient only for a far inferior construction. Owners have a right to fix the sum of outlay, but it is not fair for them to demand, in return, material and labor far in excess of such limits. And it is but little less than a business outrage for men to define both cost, size, and quality, and then reproach architects because they cannot accomplish impossibilities. If the instruction run: build me a house of certain size and accommodations for a certain amount, with no exactions as to the specific fittings, appointments and class of work, other than "the best that can be afforded for the stipulated sum," there would be consistency. But there is none when the limits and requirements diverge ten to fifty per cent.—a thing very common in the experience of competent architects generally.

The effect of this is bad, as it places architects who are honest and competent at a disadvantage, and greatly demoralizes the science of architecture in its technical and constructive features; and gives larger opportunities to the class of frauds operating under the name of architects, who are unworthy the name in any respectable sense, and who play upon owners' credulity with the deceit of cheapness, while, in fact, the latter is simply a sacrifice to misplaced confidence in men who do no more than others might do, if they would lower themselves to the same level of architectural botchery.

Bed-Rooms.

NO BED-ROOM should be sombre. Sanitary reasons underlie what seems to be merely a matter of preference. It is pretty well understood that dark wall-papers absorb not only light but infectious qualities in the atmosphere. On this score wall-paper is considered by the best medical authorities as objectionable, and rooms that have been repapered after having had in them contagious diseases, it has been found that years afterwards in removing the paper from the walls the germs have been sufficiently preserved to reproduce the infection. This, however, is a risk that is rarely run in private life. The papers that are now made for bed-rooms are so attractive that one may be well tempted to use them. What are known as the Morris designs—vines and flowers over surfaces broken by lattice-like bars—have been the suggestion for the greater number of the bed-room papers that are now produced. There is one advantage in these that is worth considering, and that is what is known as the repeat of the design is so dexterously concealed that in illness or nervousness they have not that element of torment that every one, who has had the misfortune of illness, can recall in the old-fashioned wall-papers.

Dados are not used in bed-rooms, but the frieze is of importance. Tinted walls are to be preferred even to artistic wall-papers. I have in mind a delicately tinted pink wall, with a deep frieze of wall-paper in luscious pink and cream roses on a gilt ground, with a small gilt molding between the field and frieze. Painted walls are cleaner, healthier, and every way to be preferred. Light tints are, of course, most desirable, and the woodwork, if painted, can carry out the same scheme. For example: The walls are of a faint pink; the frieze has a gilt molding, a deeper tinted pink band leading into the cove, which is faint pink and greenish-gray, separated by gilt lines; the ceiling is faint pink with a center ornamented in pink, gray, and gilt. The doors have their panels of pale pink with gilt molding; the sides and frames are greenish-gray.

This is simply a hasty sketch of one room. Deeper greenish-gray and red, olive and pink, turquoise or robin's-egg blue and greenish-gray, buff and scarlet are all tints that can be used together in the same way.— *Mary Gay Humphreys, in Decorator and Furnisher.*

THE price of logs in the neighborhood of Astoria, Oregon, has advanced from $5.00 to $6.00 a thousand.

All new subscribers for 1884 will receive the balance of this year free.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Trade Circulars.

AS AN architect, I am astonished at the number of trade circulars that reach me daily. Nearly every post brings a batch—large sheets, small sheets, books, show-cards, pamphlets, and samples; and if I were to preserve all I receive for future reference (and I would like to) I should require an extra office and clerk for arranging them, to say nothing of the wall-space to hang the cards upon. The result is that the waste-paper basket receives by far the larger portion. This, to me, appears to be a great waste of cash, and must come out of the profits. I am quite alive to the importance of being in possession of a knowledge of the various manufactures, and carefully scan all circulars I receive, and keep large piles for reference, the accumulation of nigh upon forty years; but it has often occurred to me that if something like order were adopted by the senders, in the sizes of their documents, they would be much more likely to be saved, and much easier for reference. Suppose, for instance, that all documents were issued foolscap size, a file of these would not be unsightly, and would fit the ordinary foolscap receptacles, and references would be facilitated by turning over leaves all the same size, instead of which my shelf of trade circulars, although kept as well as can be, is a complete muddle, and to find what you require is like searching for a needle in a bundle of hay. As an instance, this morning's post brought me two documents, one a book 6 inches by 3½ inches, and another a sheet 3 feet 3 inches by 2 feet 2 inches. The question is what am I to do with them—for they are both worth saving? H. M. (BUILDER.)

"DEAL."—Readers of technical journals are often puzzled by the use made of the word "deal" by nearly all foreign publications, and some home ones. As generally used it means simply a piece of soft wood lumber; but the strict definition of the word, as understood by the English timber merchant, is, soft wood timber, imported, and sawn to the section of 9 x3 inches, or 8x4 inches, or 10x4 inches. Similarly "planks" are 12x3 inches or 12x4 inches, and "battens" 7x2½ inches, or 7x3 inches, all irrespective of length, which varies considerably, and of the country or port they come from.

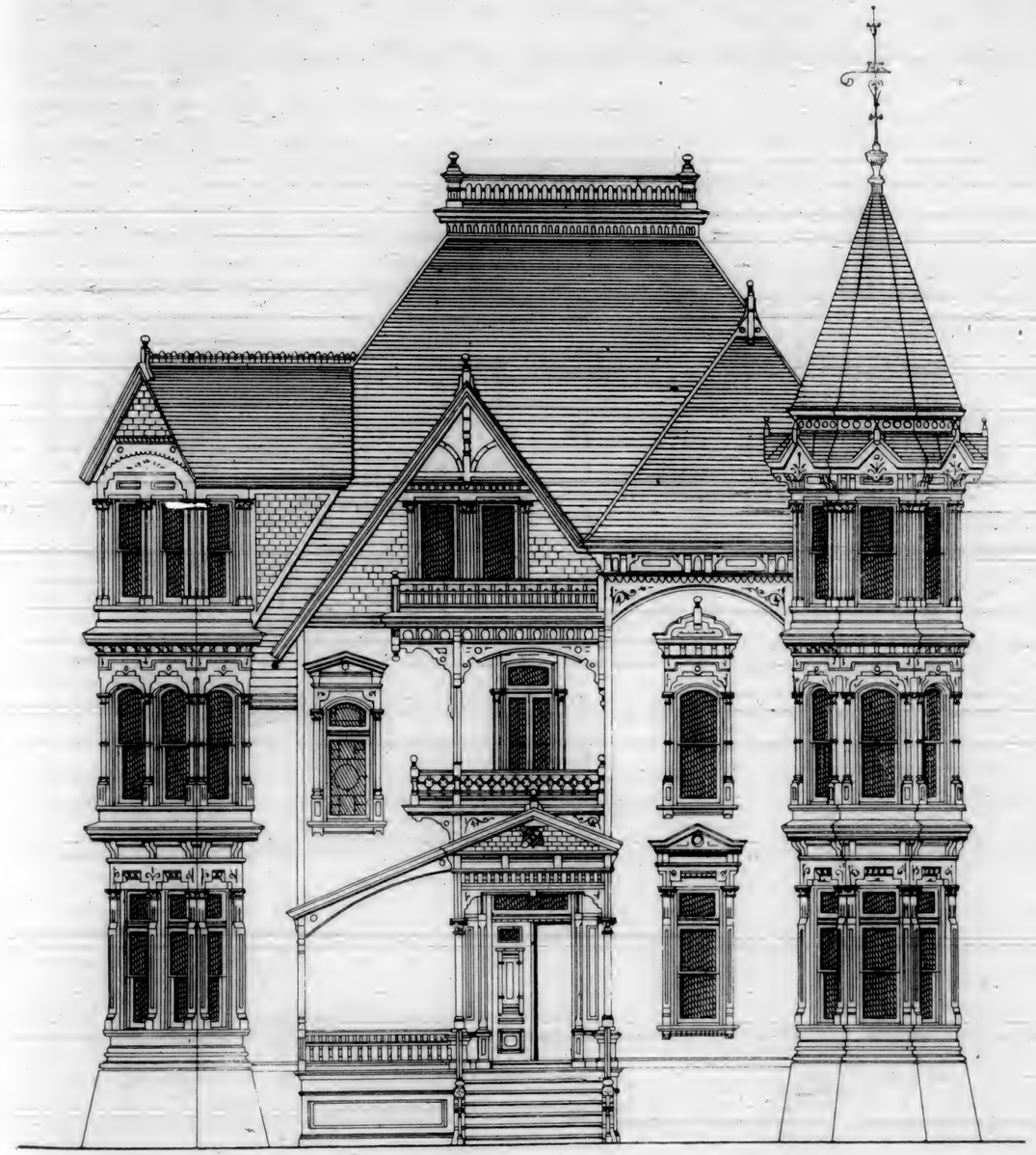


PLATE 2.—SUBURBAN RESIDENCE—COST FROM $12,000 TO $15,000.

We desire to have a uniform time for the commencement of all our subscriptions. In order to do this, we have credited those whose subscription commences in any month between July and January with the difference so their time will begin with the first month of the year. New subscribers will receive the remaining numbers of the year free of charge. All subscriptions must begin with either July or January.

American Institute of Architects.

A FULL report of the proceedings of the Institute, which commenced its seventeenth annual session at Providence (R. I.), on the 29th ult., has been forwarded to this journal, and we regret that lack of space precludes more than a brief mention of a few of the many prominent matters of interest brought forward during the several sittings. The following extracts will doubtless be read with interest by architects on the Pacific Coast:—

"The walls were hung with many fine specimens of architectural drawing, contributed by the members, one remarkable design being the outgrowth of a discussion held at the last annual meeting in Cincinnati, over the erection of a building in New York City for the Institute. The artist, with uncommon skill and nicety of finish, had combined all the architectural forms of ancient and modern schools in a massive and lofty structure, which commanded the admiration of all, in that it displayed a thorough and accurate knowledge of architectural science."

There is something pleasing to every intelligent architect in the above extract, as it touches the higher and finer chords of architectural thought and reflection, and presents suggestions far removed from the lesser order of things found in daily practice by architects in nearly all parts of the United States. There is so much of a demoralizing tendency practiced in the profession that incidents of the character quoted become refreshing to honorable men, who love the science of architecture as well for its intrinsic beauties and grandness, as for the profits flowing from its pursuit.—ED.

"The presiding officer of the Convention is Thos. U. Walter, LL.D., of Philadelphia, who ranks as the oldest member of the Institute by practice and years, and is a gentleman of dignified and imposing appearance. He commenced work at the drawing-board in 1829, furnished the plans for Girard College in 1833, and designed the wings and dome of the National Capitol in 1852, and for sixteen years was engaged in the perfection and completion of this master-piece of architectural art. Although advanced in years, he has a fine physique, and hale and hearty bearing, as the result of systematic exercise and daily application to his chosen art."

Would that one so worthy and able, and honorable in the profession, could live in the full enjoyment of all his physical and intellectual powers until the office-boys of the present day became gray-haired and old in following in his professional footsteps. The President's address contains much of stirring interest, closing as follows:—

"I take occasion to remark, in conclusion, that the unlimited freedom that characterizes the composition of architectural forms, at the present day, demands a far greater amount of study, and a higher degree of cultivation in the perception of the beautiful in art, than ever existed in the past.

"The simple and artistic forms of the Pagan world have yielded to the inspiration of a higher civilization. The fetters that held architectural forms to classic models for centuries have been broken, and the fact has become patent that progress is the life-blood of architecture.

"Mediæval art, glowing with the benign influences of Christianity, emancipated the processes of design from the trammels of formulated methods, and led to the subsequent development of the beautiful creations of the later Gothic school, which still claims our highest admiration, and our profoundest study.

"By tracing the mental processes by which the human mind has been led onward, from the first rude attempts of our race, to impress an artistic character on the art of building, up to the highest architectural developments of the present day, the student is prepared to abnegate all conventional trammels; and in view of the treasures of the past, laid at his feet by an exhaustive literature, he has acquired the habit of thinking for himself."

Reports of officers from numerous Chapters were received, all showing a healthful state of things generally, and an increasing interest in various sections of the country in Chapter work. New Chapters are being formed in many places not heretofore represented in the parent body. As a matter of local interest, we quote:—

"The San Francisco Chapter reported that it was progressing finely, having 41 members, with an average attendance during the year of 14; that it was clear of indebtedness, with a splendid set of books, etc.; and that it recommended that a regular time of holding the Convention should be adopted, so that the Chapter away off on the golden western shore might contribute to the body, that its 'good works may be seen of men.'"

It is with pride and pleasure that we refer to our home branch of the Institute, which in membership is about equal to, if not the largest, of any Chapter in the Union. And if the few worthy men in the profession who have thus far failed to unite with the Chapter would master their disinclinations and become Fellows, San Francisco Chapter would, beyond question, assume first position numerically.

A paper was read by Prof. G. Lanza, of the Institute of Technology, Boston, on "The Strength of Materials from Actual Tests;" also one by John A. Fox, F.A.I.A., of Boston, which "dealt in frequent and vigorous denunciations of 'architectural competitions.'" We will give its full text in our next issue.

ELECTION OF OFFICERS.

The Committee on Nominations presented the following list of officers, who were unanimously elected:—

President—T. U. Walker.
Treasurer—O. P. Hatfield.
Secretary—G. C. Mason, Jr.
Board of Trustees, ex officio—H. M. Congdon, A. J. Bloor, E. T. Littell, Napoleon Le Brun.
Committee on Publication—H. H. Holly, Charles Crapsey, T. M. Clark, J. McArthur, Jr., G. C. Mason, Jr.
Committee on Education—Prof. W. R. Ware, N. Clifford Ricker, Henry Van Brunt, Alfred Stone, Wm. A. Potter.
Secretary for Foreign Correspondence—T. M. Clark.

President Walter, in accepting the position, thanked the Convention for the honor. He was sorry that he had not made himself more useful, but the wide distances between the Chapters made it almost impossible to meet the members but once a year. Heretofore he had done the best he could to further the interests of the Institute, and hereafter he would continue to do the same. He would accept the office with many thanks. [Applause.]

Mr. T. M. Clark, of Boston, read a very ably-prepared paper, upon "The Architect as a Sanitarian," from which we take only the opening sentence:—

"Not long ago a plumber, in describing to me the difficulties under which he, in common with the better class of his brethren, labors in competing for the work which architects have to give them, said that he had just come from an office in which the proprietor had been expressing the opinion that 'this fuss about plumbing and drainage was all humbug;' that 'people used to live as long without it as we do now,' and that he 'didn't think there was anything in it.' Probably this individual is not the only one of his kind, and it is well worth considering whether the 'fuss' that some of us are in the habit of making about what we may call the organs of excretion in our buildings, is a proper and necessary part of our professional service to our clients, or merely the indulgence of a diseased appetite for novelty, to be gratified at our clients' expense. I trust there are not many among us who hold the latter view."

We should like to copy in full, but space will not permit in this issue.

Very many other matters of interest were presented, discussed, and enjoyed, and the Convention adjourned, with a recommendation that the Trustees, in whose hands the selection of places of meeting is reposed, select Albany, N. Y., for the next annual session of the Institute.

Paper Mill Directory.

WE have received from the publishers, C. W. Bryan & Co., a copy of the above directory. From it we find that there are 4,463 paper and pulp mills in the world, of which number 1,099, or nearly one-fourth, are in the United States. There are eight mills in this State, the largest of which are those of the California Paper Company. The only kinds manufactured here are news and wrapping paper. The work is very handy for those interested, and is sold at the low price of $1.00.

Modern Architectural Designs and Details.

WE have just received a large number of this work. We regard it as one of the best books issued for architects and contractors. Sent post-paid to any address, upon receipt of $10.00.

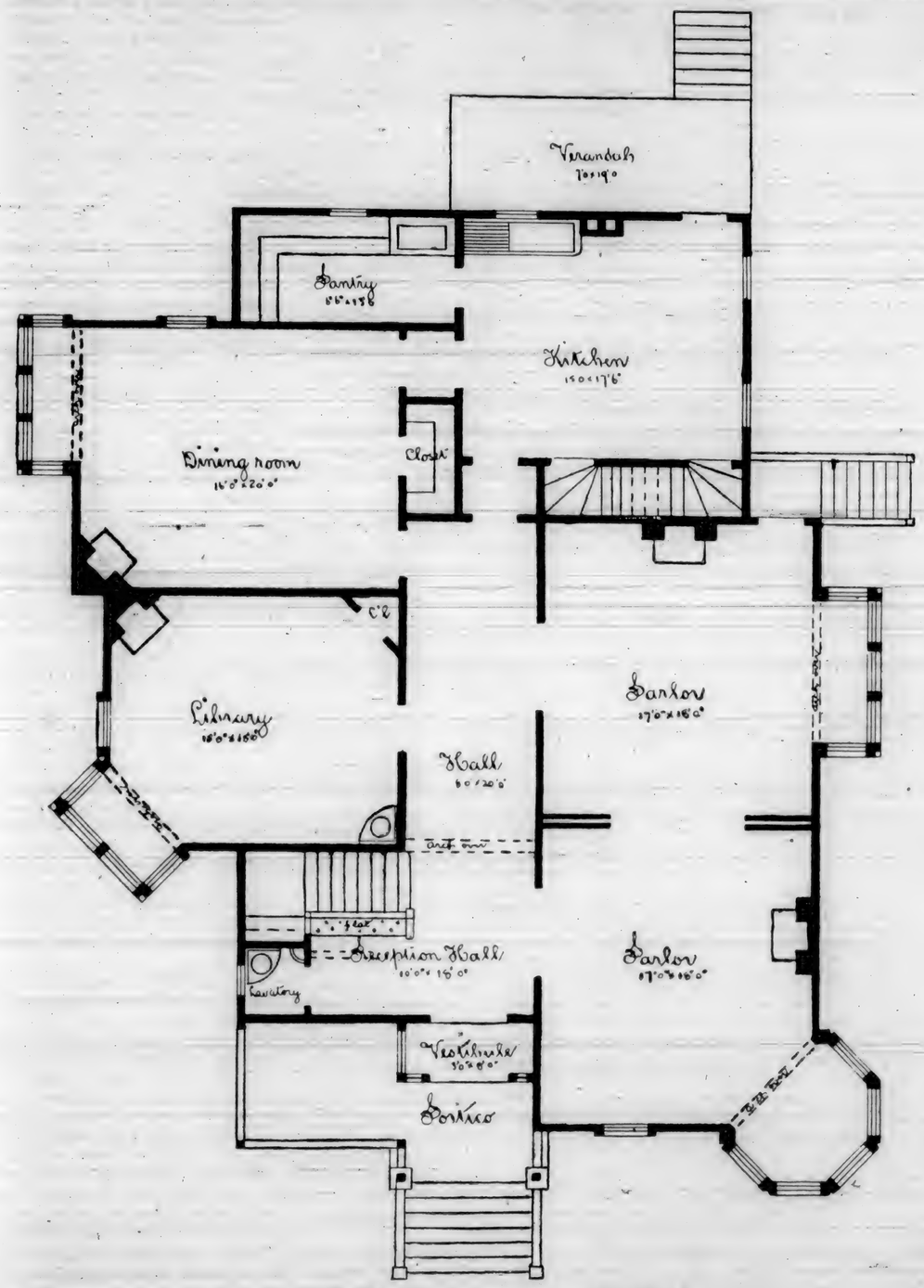


PLATE 3.—FIRST FLOOR PLAN OF SUBURBAN RESIDENCE.

The Annual Address

Delivered Before the San Francisco Chapter of the American Institute of Architects, by the President, John Wright, F. A. I. A.

FELLOWS AND ASSOCIATES:—Conforming to what appears to be an established rule, that the newly-elected President shall open the proceedings for the forthcoming year by delivering an address, it falls to my lot once more to invite your attention to a few remarks, suggested by the occasion which has called us together.

I heartily congratulate you on the recurrence of these opportunities for friendly intercourse and mutual help—opportunities, it would seem, which we ought to hail with peculiar satisfaction, inasmuch as they not only open the way to all that is desirable in the way of professional association for its own sake, but it enables us, by taking a general review of the past year's work, to forecast the future, and with renewed hope and fresh encouragement to press forward in the prosecution of the important objects which the Chapter proposes to accomplish. It also enables us to promote, as a Chapter, as far as in us lies, those general projects for the good of the Institute at large which are at the present time engaging its attention. I would, therefore, in the first place, ask you to follow me in a brief review of those matters of more immediate interest to ourselves which have occupied our attention hitherto, and which we hope to develop in greater fullness in the future.

As will be seen by the Secretary's report, the number of members, consisting of Fellows, Associates, and Draughtsmen, is 41; but while our monthly meetings have been regularly maintained, the attendance at the meetings has not always been satisfactory. This may be owing, however, to the era of business prosperity with which the past year opened, and which may have interfered with the Chapter's sessions to some extent.

Several papers, on subjects of considerable interest, have been read during the year; and were this feature developed as it might be, greatly increased interest in the meetings would doubtless ensue. In this connection, I would suggest that, by pre-arrangement, promises of papers on special subjects might be obtained from different members of the Chapter, to be read on certain fixed occasions, according to their convenience. Were the titles of these subjects published beforehand, they would probably attract a greater number to the meetings, and at the same time much useful information would be gathered, and still others incited to aid in the good work. The abundance of material, and the varied nature of the almost universal knowledge needed in the theory and practice of architecture, renders selection easy, so that each may have an entire department to himself, without the least fear of having his chosen domain invaded.

I will now revert to a subject which has occupied a considerable share of our time and attention during the past twelve months, namely:—

THE STUDENTS' CLASSES.

In alluding to this subject, I shall be compelled to refer you to the latter part of the address delivered by me before this Chapter a year ago, wherein three propositions were made, embodying a scheme for the gradual establishment of a sort of "Technical School of Architecture," the first of which was that free classes should be established for the articled pupils of the members of this Chapter; second, that a system of competitions amongst said students should be inaugurated; third, that a traveling studentship should be founded by the Chapter, and that a student should be selected by competition to receive the benefit of the studentship, at the end of three years. This scheme was, after due consideration, adopted as the basis of future operations, and the first proposition has been virtually put into effect.

Three classes have been established—one in practical architecture, one in free-hand drawing, and one in modeling, and have been in regular session for several months.

With the present Chapter year a mathematical class will be inaugurated, and as soon as proper arrangements can be made, a carving class will be put in operation—thus combining something practical with theoretical instruction, and so relieving the monotony of study by a delightful variation of real work.

It is also hoped that during the present year a proper course of reading may be laid out, and an effort made in the direction of a systematic series of competitions.

A class in construction is very much needed, and it is suggested that occasional Saturday afternoon visits be paid by the classes, under the direction of volunteer conductors, to some particular building in course of construction, or to some planing-mill or machine-shop, or to the rolling-mill or the glass-works, or wherever useful information may be gathered and practical ideas obtained, so as to supplement theory by an inspection and familiarity with the practical, on every possible occasion.

We do not hope to accomplish more than the above at the present time. Were our means greater, our progress would be faster. By the Treasurer's report, however, it may be seen that we are out of debt, and that we have a balance in his hands. Still, our progress must necessarily be slow. Time, as well as means, is necessary in the training of the young men, whose available leisure seems to be, even now, very much absorbed in their arduous though interesting studies.

The third and final proposition, embracing the founding of a traveling studentship, though still in abeyance, we hope to accomplish in due time. It has been suggested that the funds arising from life memberships should be devoted to this end.

It must not be forgotten, however, that there are many other important objects, which, to insure our success as a Chapter, must in due time receive our careful attention—the procurement, at an early day, of a suitable room for meetings, classes, etc.; the formation of a library; the collection of materials for an architectural museum—all matters of most essential necessity, if our school is really to progress and prosper.

It must be remembered that without progress prosperity is impossible. As soon as the tree ceases to grow, it begins to die; and so it will be with ourselves. But there is growth of more than one kind. Growth in numbers is not the most important kind of growth, although what will conduce to that end in a healthy way is worthy of the most careful consideration. Growth in associated effectiveness is a growth of a better kind, and still more indispensable; and growth in individual excellence is a matter of the very highest importance, since the perfection of the whole body depends on that of each member. And here let me say that we must not allow ourselves to be daunted by the greatness of the task before us, either as individuals or as a body.

One thing that we may feel assured of is that true earnestness in these, the most worthy objects to which it is possible we can devote ourselves, will unfailingly meet with its due reward, not only in the confidence of a public which never fails to ultimately distinguish the true and disinterested from the false and selfish effort, but in the ultimate countenance and co-operation of many of those who, while they have proved themselves most worthy members of our profession, still look askance at our efforts, as though they were unworthy of their regard. We must prove, however, by acts, not words, our unyielding determination to succeed, and ultimate success is a foregone conclusion.

It is true that there are many difficulties to overcome. In other countries, the work we are striving to accomplish is undertaken by the Government. Italy, Germany, and France support extensive and elaborate establishments, furnished with every necessary appliance and help. The school of fine arts in Paris is rightly estimated to be the best in the world, and had under its care last year 270 painters, 190 sculptors, and 570 architectural students, and is supported by an annual subsidy of $60,000.

Its museum contains the choicest examples of architecture and sculpture, constructive and decorative, from every quarter of the world, and in every known style, and is constantly increasing its collection. A course of study in this school is the recognized mode of training adopted by French architects. The student passes through an elaborate and systematic course of study, under competent professors. The French Government not only brings up he young architects in the way it thinks they ought to go, but when they commence life on their own account, it regulates them by a stringent set of rules, rigidly enforced.

In this country, however, the Government does not assume to foster its children with the paternal solicitude of older countries inured to

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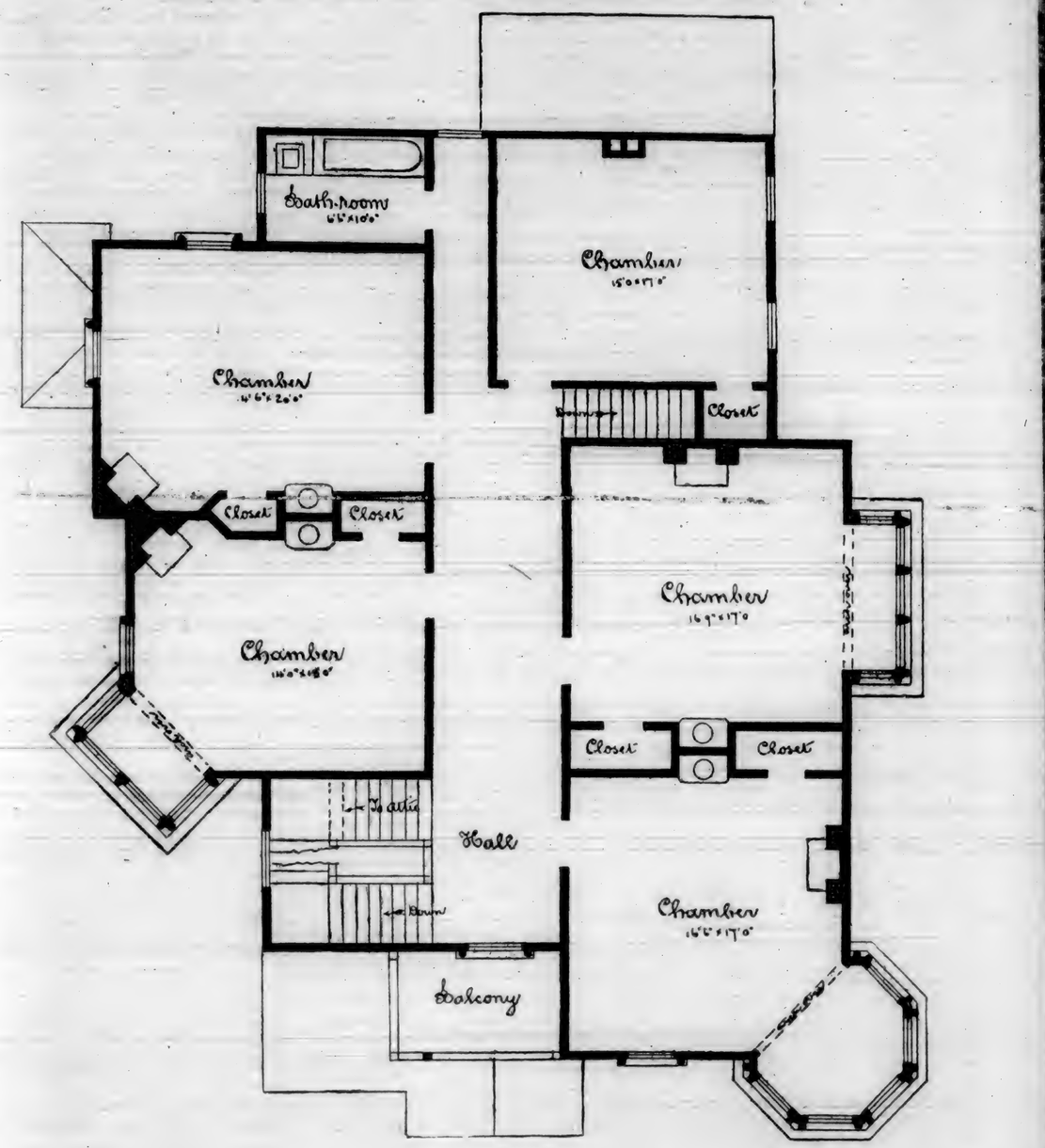

PLATE 4.—SECOND FLOOR PLAN OF SUBURBAN RESIDENCE.

We have just received a large number of Modern Architectural Designs and Details. This work should be in the possession of every Architect, Contractor, and Builder. Price—post paid—$10.00.

[*Continued from Page 168.*]

the usages of monarchial methods, but ever leaves them to pursue their own predilections in freedom. And there is no doubt much wisdom in the method, for though at the present time, as regards architecture, at least, there has hitherto reigned only the negation of order, the wonderful tendencies of free institutions to ultimately settle by a sort of natural selection into appropriate forms of order and of law, encourages us to hope that, through mutual co-operation and a broad and fraternal feeling pervading our Institute as a whole, and each Chapter in particular, some system may in time be evolved which shall regulate and control by force of sentiment, rather than of law, the principles and practice of all our members.

As regards the question of professional education in general, a factor of such great importance to our national progress in the practice of our art, a few words may not be out of place.

There are in this country at least three recognized schools in which architecture is taught by theoretical as well as practical methods. The Illinois University, Columbia College, in New York, and the Institute of Technology at Boston, all afford, in varying measure, courses of instruction in architecture in which, apparently, very complete systems of study are provided. It is needless to say that the humble and as yet very incomplete attempt this Chapter has inaugurated is not intended even as a substitute for such a course as is above alluded to.

It is merely such a course as we are enabled to carry out without expense to the pupils, and without compensation to the teachers, unless it be the satisfaction they feel at being enabled in some measure to supply, by a practical effort, some of the many disabilities of our isolated position. And now a few words to the students in the language of an English architect of eminence:—

"After our Creator's glory and our country's service, nothing so surely claims our greatest energies, and our whole capacity, as our chosen calling in life, not only as an effort to earn our daily bread, but because whatever so necessarily absorbs the greatest share of our time and strength, both of mind and body, should at least be done nobly and well."

It is excusable, perhaps, for those who are compelled to toil in an endless round of monotonous and uncongenial employment, to seek in amusement some relaxation from the tedium of their life, though even the meanest and most repellant of callings may be lightened by the magic influence of a hearty good-will, and rightly viewed may even be engaged in with satisfaction if not delight.

But to the architect who has not mistaken his vocation, what can be more delightful than the ever-varying, always-inspiring aspect of the glorious Queen of the Arts—Architecture.

"How she calls into equable play all the faculties of mind and body. At once sedentary and active, speculative and practical, artistic and business-like, the architect must combine the most opposite qualities, can make useful the most varied tastes, and can turn to profit the most comprehensive information; nor should we deem anything whatever in the whole domain of science and history foreign to or useless in his studies."

With a field before him far wider than the most exalted faculties, the most untiring energy, and the most prolonged life can fully improve, the architect may yet remember with satisfaction that to the untiring assaults of an unyielding determination to excel, there is nothing in the whole realm of knowledge, and of art, that is necessarily beyond the reach of his attainment.

One at a time the rounds of the ladder of life may be mounted, and the faithful climber, who always looks up, and never looks back but to gain encouragement to mount still higher, though he may never attain the pinnacle of his desires, will soon be surprised at the vast horizon which opens to his views. And he will, while glorying in the progress he has made, be ever ready to lend a helping hand to the brother on the round below, and can afford to regard with generous pleasure and admiration the progress of his fellow on the round above.

These and similar considerations furnish an incentive to the young architect to study and to labor with diligence and zeal; for although absolute perfection within even the narrow limits of one profession be unattainable to man below, at least the basis may be laid, and an advance made by the earnest worker towards, not only a useful life in this world in his chosen path, but for an eternity of development of perhaps undreamed-of faculties, of wisdom, and of goodness, in that realm of life beyond the natural, to which, in various ways, and wide-diverging forms of belief, we all look forward.

It now remains to close with a few brief remarks on the objects and interests of the American Institute of Architects, as recorded in the proceedings of the Sixteenth Annual Convention, held in Cincinnati, Ohio, October 25, 1882.

The chief subjects of interest there recorded were, first: a motion to enlarge the fellowship of the Institute. A recommendation to that end was made by the committee having the same in charge, and mailed to each member of the Institute, together with a series of consequent changes proposed to be made in the by-laws of the parent body. These changes are made with a view to throw all necessary safeguards around the admission of fit and competent persons, and appears to be carefully drawn, and conceived in a critical though liberal spirit.

The idea of an examination of candidates would seem to be relinquished as impracticable, and, indeed, under the free institutions and broad constitution of the United States such a plan is not likely to be more successful than in medicine, where the quack and the charlatan too frequently carry off the lion's share of patronage—at least, that of the ignorant and credulous.

The "voluntary examination" plan seems never as yet to have been brought to a successful issue. Were, however, the examinations made governmental and compulsory, as in law and education, the result might be different; but no private body could hope to command such an authority as to preclude the unauthorized practice of pretenders.

The most liberal course in this matter seems likely on the whole to attain the largest measure of success, the true guarantee to which will remain with each individual member after all.

The next question is germain to the last mentioned, and embraces the idea of a truly American Institute which embraces the dominion of Canada within its bounds. This seems worthy of the approval of all, and is of good augury for us too, for we have British Columbia to the north and Mexico to the south, both of which regions are in the line of great developments in the near future.

Another matter which has been touched upon is one with which we can surely sympathize. It is the idea that the Institute shall assist in the matter of traveling studentships. This is a step in the right direction, and will lead, we think, to the ultimate development of one of the most useful functions of the parent body.

Another and final question of interest is the ultimate erection of a home for the Institute.

At the convention of 1882 it was proposed that a general competition should be invited, requesting designs from architects throughout the country, with the suggestion that the development of a "national style" should be the object aimed at. Under the circumstances, the suggestion is worthy of careful consideration.

It would seem, however, that the earnest and honest effort of each of us to develop to his utmost the truest and purest principles within his knowledge, modified and controlled by the climatic peculiarities and physical surrounding of each portion of our wide-spreading land, whether tropic, temperate or arctic, mountain or plain, is the course most likely to result in a realization of what may justly claim to be called a truly American style.

PAINTED woodwork may be classed among the necessary evils of house decoration. No one in his sober senses will put paint on good woodwork if he can get an equal effect by the use of natural wood. But the costliness of all hardwood, and especially the expense of working it, renders the use of pine practicably inevitable.

A CORRESPONDENT writing from Pierre, Dakota, says that collections are made when the lumber is on the wagon. This is necessary for the safety of a dealer in a new country, as the people are strangers to each other, and no doubt many a dealer wishes the same custom was prevalent in older sections.—*Lumberman.*

Steel Square and Its Uses. Price $1.00.

The Foreman.

THE position of foreman of a shop or boss of a gang of workmen demands as its object the turning out of a fair amount of good work. Some fill one portion of this demand and others the other portion, but it is only the manager of men who fills both.

Employers are sometimes at fault in demanding from foremen the largest possible amount of work in a given time, always prodding and pushing, grumbling because a job occupied more time than they expected, and picking up every trifling interruption as a deliberate attempt at imposition. If a foreman is honorable and sensitive he will not bear this nagging, and so in shops ruled by such a proprietor changes of foremen are frequent. One such instance occurs to mind, just now, of a proprietor of a very thriving business, requiring the services of nearly a hundred good workmen besides apprentices, who had lost three foremen within two years either by resignation or dismissal. "Can you recommend a good foreman?" he inquired. "You have an excellent man for the place now in your shop," was answered, naming him. "Oh, he'll never do, he's one of the men himself. I don't want a man who is familiar with the workmen; I want a driver, and he ought to be a stranger." The position of foreman in that establishment is periodically vacant, and a stranger who can bring fair recommendations and has the qualifications of a "driver" can generally have assurances of a position, even if he has to wait a short time for his predecessor's shoes. And yet, this proprietor is in no usual sense "a hard man;" he simply has a wrong idea of the duty of a foreman. His ideal foreman is a mechanical blusterer who stirs up cyclones in the shop, produces an atmosphere of general uneasiness, and "makes the men hop round lively," as he once remarked. The workmen make trouble for every new foreman, and his "life is not a happy one."

There are, however, some foremen who are instructors rather than managers of men. Under their rule more time is spent in the details of work, in correcting errors, in "doing over," than should be required to complete the job. The scrap heap under their management grows to enormous proportions; every slight error in work and every slight mistake in apprehension of an order makes another accretion to the growing pile. Under such foremen the workmen never learn economy of time or of material.

A truly capacitated foreman is a possibility, and his portrait is drawn from no fancy sketch. In the establishment where he is a manager a strike has not occurred since it had an existence—twenty-five years. Probably there are many like him, and his portrait may stand for those of others.

Although he is generally as exact as the workmen to the "bell hour," there is no stir among them if he is late and no letting down of attention when he goes out. He assumes a part of every job and does it, wearing his honorable overalls like his men. He is not afraid of a loss of dignity or a relaxation of authority by addressing his men familiarly. He suffers no diminution of well-earned superiority in asking advice of some of his more experienced men. If one of his men "runs against a snag," he goes at once to his foreman, who either knows what to do, or has some proper and timely suggestion to make. He contrives to have his men interested in the work from incipiency to finish, and when one of them shows hearty interest in the work and turns out a good job, he is told of it in plain words that cheer his heart, instead of being rewarded with a grumpy "That'll do."—*Scientific American.*

The Mission Street Railroad, San Francisco, Cal., to Run Cars by Electricity.

THE Mission Street Railroad is about to experiment with electricity as a motive power on their road, and in the course of about a week a car will be run by the new power. Advantage has been taken of the discovery of Faure, the French scientist, with regard to the capacity of electricity for storage. To each car will be attached a dynamo machine, which is usually made use of in the generation of electricity. The machine consists of a cylinder which, being made to revolve rapidly in front of magnets, generates electricity, which is conducted off for use by wires. But the machine can also be used in another way, the process being reversed. If electricity is fed to the machine through the wires, the cylinder revolves. In the first instance, power is converted into electricity, and in the latter electricity is converted into power. The dynamo can thus be used by means of suitable attachments, to give motion to the wheels of a car, the electricity which is fed to it being kept in storage batteries, which occupy but a small space. These batteries are charged at the engine-house, where a steam engine is made to run a dynamo, which generates the electricity.

That cars can be moved by the means described there is little doubt.—*Electrical Review.*

A MECHANICAL writer says: "The best workmen I have ever known in machine shops are those who give a little attention after stopping time, just as a good groom takes the best care of his horse when it is the hardest worked, seeing that it is cared for before he gets his own supper. The result in the one case is that the horse is always fresh and ready for hard work, while the machine is always turning off a good quantity and a good quality of work."

Should this Journal be received by any subscriber who does not want it or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

School House and Church Architecture. Price $4.00.

The Present Place of the Plumber.

THE part which plumbers' work has to do in practical sanitation can hardly be overestimated, and yet to a considerable extent it may easily be overlooked. Indeed, it is mostly invisible, it is covered up in our walls, in our ceilings, or under our floors. Hardly anywhere is a pipe to be seen, the object being to keep as much out of sight as possible. Yet it is through these hidden pipes that both water and waste are carried through our houses; even into our sleeping rooms, where during our unconscious hours we are especially liable to be poisoned by noxious gases, and all these water pipes and waste pipes are unavoidably connected more or less closely with the drains, that we all know are vast reservoirs of noxious gases of decomposition, which, if not guarded against, will rise from beneath into our dwellings flooding every room with the breath of the plague. We have new-fangled names for apparatus, and elaborate statements regarding systems which are certainly calculated to mystify, and perhaps are sometimes designed to mislead, rather than to render clear the very simple fact that good material and good craftsmanship are alone needed to secure adequate water service within the house, and make such connections with the main drainage as to effectually prevent offensive smells and the escape of sewer gas into the house, which are the chief objects of the plumbers' art. Cheap work—so-called—really the dearest of all work, inferior craftsmanship and the semi-scientific theories of inferior or untrustworthy architects, self-elected sanitary engineers, and other persons who *think* things rather than *know* them, are, I am convinced, at the root of all that is now found defective in the plumbing as well as other bad arrangements in our houses.

It is common to denounce speculative—or as they are called—jerry builders; but, may I be allowed to suggest that, if there were no jerry public there would be no jerry builders? Simplicity of terms as well as of treatment will do more, I think, than anything else can to obtain that reform which the National Health Society and other sanitary associations are demanding in the interests of public health and comfort. These I know are but elementary truths, yet I venture to impress them in the strongest manner upon the attention of this assembly, because my experience tells me that it is from the violation of the first principles of soundness that the public suffer the evils they do from bad plumbers' work in their houses.—*Mr. Shaw to the National Health Society of England.*

PLEASE NOTICE.

The 75-cent edition of the Steel Square and its Uses is OUT OF PRINT. We cannot supply any more, as we have received notice from the publishers that their stock of that edition is completely exhausted. We have a number of the new and enlarged edition, which we will mail direct to any address upon receipt of

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Management of Burned Forests.

AT the Forestry Congress in St. Paul, a paper by B. E. Vernon was read on this subject. In the management of a burnt forest, the essayist showed it is necessary to study the influence of the fire on the soil and on the standing timber before deciding upon the treatment. The vitality of the timber left standing may be injured by the scorching flames. In hardwood forests where the reproduction is expected from the stocks, as in the coppice, the reproductive power is injured in proportion to the degree of heat developed by the fire. In pineries, where reproduction can only be expected from the seed, the young seedling falls the first victim to the merciless fire. When the fire kills its original growth or causes its speedy death, the conditions of forest growth are at once changed and those alternations of species occur which are the natural consequences of the change of their conditions. The essayist went on to show how, in the case of a destroyed pine forest, the light-seeded species first takes the place of the old growth. Gradually, however, acorns and nuts will be deposited in the shade of the new growth, and as the light-seeded trees die off, the more valuable trees get a chance to grow, and gradually occupy the lands. This new forest of hardwood trees if protected by fire will long occupy the ground, but the original pine forest will not appear again until the land, long enriched by an annual deposit of leaves, has been again stripped of its trees and mellowed by years of cultivation. The forest fire, then, which destroyed the original pine forest, also destroyed the capacity of the land to reproduce a similar crop of trees for a period which may be set down at from 50 to 100 years.

The essayist showed from this the importance of protecting the forests by dividing them into blocks, for instance, by means of avenues from two to six rods in width. Where the risk of fire is caused by the proximity of a railroad, safety belts along the endangered line are recommended. Where forests have been partially destroyed, various measures are recommended according to the character of the forest. Where the destruction of heavy timber is a total one, the wisest plan is the immediate replanting of the land. Dead trees should not be allowed to remain, as they form the very best opportunities for the development of injurious insects. In forests of deciduous trees, where the heat generally is not as intense as in pine woods, it may be a cheap plan to await a new growth from the stocks and carefully nurse the more valuable species, in time filling up the bare spaces by planting shade-enduring species. In this, as in every other problem of forestry, it is impossible to prescribe any definite rules that will cover all the requirements of particular cases. A thorough elementary knowledge of the conditions of forest growth alone will enable the forester to decide what methods to adopt for the restoration of lost growths and reparation of the damage inflicted by fires on the soil and the forest.—*Lumber World.*

Common Defects in the Sanitary Arrangement of Houses.

THE best plan in the examination of a house is to begin at the top of it, and so we will begin examining a house from the roof, proceeding downward, and in our way I will point out the different mistakes that are likely to be made in the sanitary arrangements in various parts of the house.

The first thing which we must consider is that we have to get rid of the water that falls on the roof. The water from the gutter in front of the house may be disposed of in one of several ways. It may be conducted by a pipe outside of the house down the front into the area; or it may be conducted by a gutter through the roof, or, perhaps, through one of the rooms in the upper story into a gutter, over the middle of the house, between two parts of the roof, and down the middle of the house by a pipe into the drain; or it may be conducted direct from the gutter by a pipe, not outside the house, but inside the house, passing down through one or two stories inside the rooms, perhaps through the best bed-room in front of the house, through the drawing-room, carefully hidden by some casing made to look like an ornament, through the dining-room and kitchen into the drain in the basement. Smells having been perceived in different parts of the rooms, especially in the bed-rooms, various sanitary arrangements may be improved, and even made as perfect as they can be, by a kind of amateur tinkering prevalent nowadays in sanitary matters; and yet this defect, which is so exceedingly serious, which is known to give rise to serious disease, is entirely overlooked—perhaps for years. The same is the case when the rain-water is carried in a gutter through the roof into a gutter between the two roofs in the middle of the house, and down by a rain-water pipe inside the house. In such cases similar disasters may occur.

But there is an additional danger from the fact that these inside gutters are in themselves most pernicious things. Soot and rotten leaves collect in them, and air blows through them into the house; and especially when these gutters are under the floors of bed-rooms, this foul air is often the cause of illnesses which occur in these rooms. Even gutters which are not themselves directly connected with the drains, and which are open at both ends, but in which decayed leaves and soot accumulate and give off foul air into the rooms, may be the cause of sore throats. I have known this to be the case in rain-water gutters, which have been carried inside the house, so that they might not form an unsightly feature outside, and which have passed through the bed-rooms under the windows in a kind of position in which a sink would be. These gutters have been open at both ends, and only 10 or 12 feet long; and yet in such a case I have known illness to occur in these very rooms, which I should never have suspected to be due to these gutters if I had not known in previous cases that illness had arisen from the passage of rain-water gutters through rooms.

The housemaid's sink is often placed in a small closet just under the stairs, without any window or any sort of ventilation whatever (and we know what kind of things are kept in the sink!), so that the housemaid's sink in such a position has not by any means a very savory odor. The housemaid's sink should under no circumstances be in such a position. It should be against an outside wall and have a window. As a rule, the material used for the sink itself is lead—wood lined with lead.

The waste-pipe of the housemaid's sink, as a rule, is connected directly with the trap of the nearest water-closet. There is a grating in the sink, and there is no trap in or under the sink, but the waste-pipe is connected with the trap of the nearest water-closet. This is a bad arrangement. A worse arrangement is for the waste-pipe to be connected with the soil-pipe of the water-closet, in which case some kind of trap is generally placed on the waste-pipe of the sink. This trap is frequently what is called a "bell" trap, and is placed in the sink. The disadvantage of the bell trap is, that when you take the top of it off, you take the bell with it. The bell is the arrangement which is supposed to form the trap, by the edges of it dipping in the water in the iron box; and you see at once, when the bell is removed the trap is removed, and the waste-pipe, wherever it goes, is left wide open, and, if connected with the soil-pipe of the water-closet, the foul air comes up into the house. Very frequently, also, the waste-pipe of the sink has underneath it what is called a D trap. A D trap is a trap which the water passing through it can never clean, so it retains foul water, and, therefore, even under sinks, such traps ought not to be allowed, on account of the foul matters which accumulate in them.

The waste-pipe of the housemaid's sink should not be connected with the water-closet or soil-pipe; neither with any pipe that goes directly into the drain. Its own pipe should not go directly to the drain, which is very frequently the case, but through the wall of the house into an open head or a gully outside. Very frequently the housemaid's sink is supplied with water, not from the cistern on the roof, but from the cistern not only supplying the nearest water-closet, *but actually inside the nearest water-closet*, in which case, no matter what valves you have, you are supplying your sink with water which is kept in a cistern inside the water-closet, and that is far worse than supplying a sink with water from a cistern which also supplies the water-closet, with a reasonably protecting valve.

Close to the housemaid's sink, and very frequently over it, is the feed cistern to the hot water apparatus, which has also an overflow pipe, and the same remarks refer to this overflow pipe, except that it is a thing much more liable to be overlooked, as to the overflow pipe of the drinking-water cistern.—*Prof. Corfield, in the Sanitary Plumber.*

Lessons on Hand Railing. Price $5.00.

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Importance of Roads.

We are not aware that any estimate has ever been made of the actual cost of the public roads of the United States, or that the expense of providing them has ever been attempted by any bureau of statistics, but we make the rough estimate that they have cost at least $700,000,000—probably much more—while unknown millions are annually expended in attempting to keep them in repair. If the money were only well applied, it would be an expenditure of great profit and economy, as everything which the farmer does off his own land is greatly affected by their condition. All his many loads of surplus farm products are drawn over them, and it makes some difference to him and to his horses whether those loads are conveyed easily over hard, smooth surfaces, or dragged through mud and against stones with severe labor to the team, fatigue to the driver, and wear and breakage to the wagon. Every week he and his family, more or less, go to the village for numberless errands, or to church on the Sabbath, and the good or bad condition of the roads seems to affect every fiber, pleasantly or unpleasantly, of their feeling or nervous sensations. On an average, there is at least twenty miles of traveling each week for the members of a single family. It would make a difference of five dollars a week, everything counted, whether this teaming and traveling is done over a nice, comfortable road, or through mud holes, sloughs, ruts, and unbridged streams, or against stones. Five dollars a week amounts to $250 a year, a snug little sum to tax the farmer with; and when this sum is multiplied by at least five million owners or drivers of horses, carriages, wagons, heavy teams, etc., the aggregate cost would be something over a billion dollars! Does any one say this is too large an estimate? Then proceed in detail and show in what particulars; but do not blindly and ignorantly say it is wrong without careful examination. Suppose, however, we admit that it is double the reality, is not the six hundred millions every year, expended directly or indirectly by our people, worthy of more attention on the part of patriots, statesmen, politicians, office seekers, public-spirited men, writers for newspapers, agricultural journalists, and in fact of every one who passes over a road?

So long as our public highways in most parts of the country are made and repaired with so little interest and so little thought, we must suffer an enormous loss. We would like to ask how many of our readers who drive or ride over the common roads, never see a loose stone, or a fixed stone, to strike, jolt, and batter every passing wheel, or who do not see hundreds of them which might be removed with the expenditure of a small portion of the road tax? How many never saw sods and muck scraped into the road bed, to form a highway or "turnpike," which would be excellent for corn and potatoes, but which when worked into a mass of mud, or cut into ruts a foot deep, constitute a strange object to be called a "road"? How many never saw along the roadsides, thrifty patches of thistles, burdocks, mulleins, John's wort, nettles, etc., etc., ready to seed all the neighbors' fields? Until we can find such happy persons in the majority, we hope more attention may be given to correcting these evils, although we would not lessen the praiseworthy attention which is now freely accorded to enterprises and interests of almost infinitely less importance, but good in their small way.

Ancient Tools.

A paper that was recently read before a scientific association in England, gives some interesting particulars about tools used by the artisans who worked on the ancient buildings of Egypt, and other moribund civilizations. The subject proved specially valuable in showing how skilled artisans performed their work 4,000 years ago. The great structures whose ruins are scattered all over North Africa and Asia Minor, demonstrate that great artisan and engineering skill must have been exercised in their construction, but when parties interested in mechanical manipulations tried to find out something about the ancient methods of doing work, they were always answered by vague platitudes about lost arts and stupendous mechanical powers which have passed into oblivion. A veil of mystery has always been found a convenient covering for a subject t at was not understood. The average literary traveler who helped to make up the tons of books that have been written about Oriental ruins, had not the penetration or the trained skill to reason from the character and marks on work what kind of a tool was employed in fashioning it.

A trained mechanic, Flanders Petrie, happened round Egypt lately, and his common sense observations and deductions have elucidated many of the mysteries that hung round the tools and methods of ancient workmen. From a careful collection of half-finished articles with the tool marks fresh upon them—and in that dry climate there seems to be no decay in a period of 4,000 years—he proves very conclusively that the hard diorite, basalt, and granite were cut with jewel-pointed tools used in the form of straight and circular saws, solid and tubular drills and graving tools, while the softer stones were picked and brought to true planes by face-plates.

That circular saws were used the proof is quite conclusive, for the recurring, cut circular marks are as distinctly seen on these imperishable stones as are the saw marks from a newly-cut pine plank. This proof of the existence of ancient circular saws is curious, for that form of saw is popularly believed to be of quite modern invention. That another device supposed to be of recent origin was in common use among Pharaoh's workmen is proved by the same authority. We have met several machinists who asserted that they made the first face-plate that ever was used in a machine shop, and we have read of several other parties who made the same claims, all within this century. Now this practical antiquary has gone to Egypt and reported that he found the ochre marks on stones made by face-plates that were used by these old-time workmen to bring the surfaces true.

As steel was not in use in these days the cutting points for tools must have been made of diamond or other hard amorphous stone set in a metallic base. The varied forms of specimens of work done show that the principal cutting tools used were long, straight saws, circular disc saws, solid drills, tubular drills, hand grainers, and lathe cutters, all of these being made on the principle of jewel points, while metallic picks, hammers, and chise s were applied where suitable. Many of the tools must have possessed intense rigidity and durability, for fragments of work were shown where the cutting was done very rapidly, one tool sinking into hard granite 1-10″ at each revolution. A curiosity in the manner of constructing tubular drills might be worthy of the attention of modern makers of mining machinery. The Egyptians not only set cutting jewels round the edge of the drill tube, as in modern crown drills, but they set them in the sides of the tube both inside and outside. By this means the hole was continually reamed larger by the tool, and the cone turned down smaller as the cutting proceeded, giving the means of withdrawing the tool more readily.

As indications on the work prove that great pressure must have been required to keep the tools cutting the deep grooves they made at every sweep, the inference is that tools which could stand the hard service they were subjected to must have been marvelously well made. Our modern tool-makers give employment to a high degree of mechanical skill, and extended metallurgical knowledge is requisite for the selection of material to make first-class tools. But when we reflect on the difficulties these ancient tool-makers had to surmount, in fastening and retaining stones as cutters on a base of bronze, we can appreciate the perfection their art reached. They probably followed methods of hardening copper alloys which are not known to us and are not discovered by modern metal workers, because the knowledge is not essential, but the real mystery of how clean cutting of hard substances was done in those times lay in the acquired skill of the tool-makers.—*American Machinist.*

Plate glass was discovered in an accidental way in 1688 by a man named Thevart. It is attributed to the breakage of a utensil containing some of the melted material, a portion of which flowed under a large flagstone, which, when subsequently removed, was found to cover a plate of glass. Thus was suggested the idea of casting glass in plates.

Grimshaw on Saws. Price $4.00.
Mechanics' Geometry. Price $5.00.
American House Carpenter. Price $5.00.
All new subscribers for 1884 will receive the balance of this year free.

The Mechanics' Fair.

For neatness of arrangement, and general good order, as shown by exhibitors generally, the Fair of 1883 compares favorably with the best that have been held. Those having goods to display are not satisfied that the old grooves should be used again, but with commendable zeal and interest have studied up new methods of interesting visitors; and the result is shown in the large number of orders given for many of the articles on exhibition. Upon entering the vast building, the fear of a conflagration is greatly modified by the display of

HARKNESS FIRE EXTINGUISHERS,

For which it is claimed that the number on exhibition is sufficient to check any fire that could possibly occur in the building. A peculiarity of the liquid used is that it will not injure the finest fabric. For this reason it is said that many ladies having expensive wardrobes have ordered these machines for private use.

ART GLASS WORKS.

A beautiful arbor, made from specimens of the artistic work of Mr. Mallon, at once arrests the attention of the observer. This is an industry that has been built up on this coast only by the exercise of an indomitable will, aided by a judgment and skill obtained only by years of study. We can commend the work of Mr. M. to those in need of anything in his line.

PACIFIC SAW WORKS.

This is, in our judgment, one of the most attractive features of the Fair. The arrangement of the hundreds of saws is truly artistic. Every kind of saw is represented, from those used by watch-makers to the mulays used by our mill-men. The energy displayed by the proprietors of these works is worthy of emulation by all of our local manufacturers, for it is to our manufactures we must ultimately look for an increase of population. We will send a fine engraving to all correspondents, representing the various saws manufactured by this Pioneer Company.

JUDSON NAIL WORKS.

This company is fortunate in having the prestige of success from the start. The superior quality of the nails made is already having the effect of diminishing the supply sent from the East. It is only a question of time when these works will be able to supply the entire Pacific Coast with all kinds of nails, spikes, etc.

IRON MANTELS—ARTISTIC TILES.

Montague & Co., as usual, are ahead of all competitors in the display of the above specialties. The mantels on exhibition are much admired for their beauty, as well as cheapness. They are made in imitation of ancient and modern marbles, and woods of all kinds, including laurel and black walnut, rosewood, etc. This firm also imports, direct from Stoke-upon-Trent, all kinds and patterns of encaustic, plain, art-painted, glazed, and majolica tiles.

BROWELL'S CHIMNEYS.

Mr. Browell is fortunate in having secured a place for the display of his chimneys where one cannot fail to see them. He presents a large variety of patent chimneys and ornamental tops. A peculiar feature of these is the easy manner in which they can be attached to a house, and the bands are so fixed that in case of the settling of the house no possible damage can be done to the chimney. Mr. B. also keeps on hand a full supply of sewer-pipe, of all sizes.

ORNAMENTAL NEWELL POSTS.

Mr. P. B. McKay makes a specialty of hardwood work, and displays a beautiful assortment of Newell posts, plain, fancy, and ornamental; also, baluster-rails, moldings, and all kinds of inside finish. Mr. McKay's long experience enables him to equal, if not surpass, any one in this same line of goods.

WEED & KINGWELL.

A beautiful display of bells, valves, lubricators, etc., is made by this firm. They have taken the lead in the manufacture of rich-toned bells, and orders are weekly received from all parts of the Pacific Slope. We understand that this firm is prepared to furnish chimes of bells for the use of churches. They also manufacture the celebrated Gordon valve, particularly adapted for outside garden hose and fire-plugs. Added to its superiority is the fact that it is much cheaper than the ordinary hose-bib.

RADIATORS AND FOLDING GATES.

Mr. Harvey has been the means of adding a new industry on this coast. His folding and extension gates are admired by all who stop to see the practical working of these safeguards against burglars. They can be fitted to a window in such a manner that in day-time they cannot be seen, and at night, when in position, they are an effectual safeguard against the opening of windows from the outside. They are also particularly applicable to store-fronts. Mr. H.'s radiators are in use all over this coast, and give general satisfaction.

HENRICKSEN'S SAFETY CLUTCH.

These clutches are now recognized as the best in use. It is impossible for the cage to fall, from the breaking of the cable, when this appliance is attached to the elevator. They are automatic in their action, and are simply the exponent of a natural law.

In our next issue we will notice several others of the more conspicuous exhibits.

Brick Mason—Separate Contracts.

The brick masons in San Francisco have perfected a society organization, mainly for the purpose of protecting themselves against losses by sub-contracting work. They neither propose nor contemplate anything in reference to prices or labor, leaving these to be regulated by demand and supply, but they request of owners and architects that all jobs of mason work—which generally includes grading and drain pipe work—which amount to more than $300, shall be let by separate contract to masons, irrespective of all other contracts. The movement is all the more worthy of consideration and favor because it emanates with the very best and most responsible of our master masons, who are actuated by no motive designed in effect to advance prices, or in any way abridge advantages to those contemplating the erection of buildings.

The principal argument used in support of the movement is the repeated failure of original contractors, and the great uncertainty of pay under the sub-contract rule. It is well known in building circles that very large amounts of money have from time to time been lost by sub-contractors through the defaults of those holding original contracts; and the present movement on the part of the master masons is to secure themselves against the uncertainties attending sub-contract work.

All new subscribers for 1884 will receive the balance of this year free.

Detail Cottage Architecture. Price $10.00

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents, in Dewey & Co.'s Scientific Press Patent Agency, 252 Market Street, S. F.]

For Week Ending September 25, 1883.

285,541.—Agricultural Boiler—S. N. Alford, Portland, Or.

285,462.—Reverberatory Furnace—J. H. Canavan, Globe, A. T.

285,463.—Plow—Jas. Clausen, San Luis Obispo, Cal.

285,465.—Lubricator—M. L. Conway, S. F.

285,740.—Fire Escape—E. C. Eyl, Jefferson City, M. T.

285,481.—Mold-board for Side-hill Plows—Paul Gregory, Davenport's Landing, Cal.

285,487.—Apparatus for Removing Sand Bars—J. H. Huffer, Jacksonville, Or.

285,753.—Nasal Inhaler and Invigorator—Jas. Keck, Portland, Or.

285,755.—Sample Exhibitor for Wall Papers—Jas. E. Kidd, Stockton, Cal.

285,757.—Slate Pencil Sharpener—W. P. Kirkland, S. F.

285,422.—Threshing and Clover-hulling Machine—A. W. Lockhart, Sacramento, Cal.

285,495.—Check Box—David Lubin, Sacramento, Cal.

285,499.—Station Indicator—Thos. Melrose, S. F.

285,508.—Amalgamating Ores and Sand Containing Gold—A. B. Paul, S. F.

285,514.—Cable Railway—Henry Root, S. F.

285,520.—Apparatus for Extinguishing Fires on Vessels—A. F. Spawn, Oakland, Cal.

285,700—Sand-guard for Railway—T. W. Stapleton, Portland, Or.

285,530.—Combined Cane and Fan—Wm. Verbeck, S. F.

285,720.—Header—Jos. H. Winn, S. F.

285,601.—Bevel Square—M. Farley, Portland, Or.

10,606.—Trade Mark—J. R. Williams, Stockton, Cal.

3,547.—Label—M. A. Scott, Livermore, Cal.

Note.—Copies of U. S. and F reign Patents furnished by Dewey & Co., in the hortest time possible (by telegraph or otherwise), at the lowest rates. All patent business for Pacific Coast inventors transacted with perfect security and in the shortest possible time.

BUILDING INTELLIGENCE.

Although our report is not as large as usual, it must not be inferred that there is a cessation of building interests. On the contrary, it is but seldom, at this season of the year, that so many buildings are seen in process of erection. One of the principal reasons for our slack report, is the absence of our regular news gatherers. During the past month they have been on a trip through the northern and southern sections of our State, and Oregon; and the good results achieved by them will be found in another part of this issue. The following list embraces all of the work in the different architects' offices, and a few others, the owners of which have dispensed with professional services:—

SAN FRANCISCO.

Contracts for Dunham & Carrigan's building, mentioned in our last report, have been awarded as follows:—
A.—Wright & Sanders.
C.—J. Hughes, brickwork; T. H. Day, carpenter.
$150,000.

Market, corner Fremont. Alterations.
O.— — Lachman.
A.—Wright & Sanders.
C.— — Haff.
$7,500.

Mission, x Sixteenth and Seventeenth. Two-story and basement frame.
O.—Dr. Wagner.
A.—Newsom Bros.
C.— — McKay.
$8,000.

Mission, x Nineteenth and Twentieth. Three-story frame.
O.—A. O. U. W.
A.—G. A. Bordwell.
C.—Gray & Stover.
$6,800.

Gough, x Fulton and McAllister. Two three-story frame.
O.—Robert Gordon.
A.—G. E. Voelkel.
C.—J. H. McKay.
$13,000.

Fulton, No. 414. Repairs.
O.—R. Gordon.
A.—G. E. Voelkel.
C.—Hutchinson & McLean
$1,060.

Jones, x Clay and Sacramento. Two-story frame.
O.—A. W. Foster.
A.—Curtis & Bennett.
C.—R. McCann.
$8,500.

Guerrero, x Twentieth and Liberty. Two two-story frame.
O.—G. E. Turner.
A.—Newsom Bros.
C.—Moore Bros.
$10,000.

Filbert, corner Buchanan. One-story frame.
O.—Mrs. J. Wright.
A.—Townsend & Wyneken
C.— — Orr.
$1,100.

Haight, near Scott. One-story frame.
O. and B.—P. Connor.
$2,200.

Point Lobos Road, near Ninth Avenue. One-story frame.
O.—G. Schmeiser.
A.—Newsom Bros.
C.—R. P. Traxler.
$2,200.

Union, nr. Hyde. Two-story frame.
O.—Mrs. White.
C.—B. F. Ellis.
$2,500.

Clipper, x Church and Sanchez. Two one-story frame.
O. and B.—R. Bergfeld.
$2,500.

Haight, x Baker and Broderick. Two-story frame.
O.—J. I. Blivins.
A.— — Pelton.
C.—W. P. Clark.
$3,500.

Hyde, corner Union. Two-story frame.
O.— — Powers.
C.— — Sinon.
$5,000.

Mission, near Twentieth. Repairs.
O.—J. C. Stubbs.
C.— — Nicoll.
$900.

California, x Gough and Octavia. Two-story and basement frame.
O.—Mr. Hyman.
A.—Schmidt & Havens.
C.—J. Furness.
$19,000.

Eddy, cor. St. Joseph Ave. Stable and alterations.
A.—McDougall & Son.
C.— — Mahon.

Geary, nr. Fillmore. Two-story frame.
O.—J. English.
A.—Daly & Pierce.
C.—W. Langstaff.
$5,500.

Geary, x Hyde and Larkin. Additions.
O.— — McKinnon.
A.—McDougall & Son.
C.—W. Langstaff.
$2,200.

Octavia, cor. Birch. Two two-story frame.
O.—Charles Christian.
A.—B. E. Henricksen.
C.—F. Klein.
$14,000.

Baker, x Clay and Sacramento. Two-story frame.
O.— — Miller.
A.—W. P. Moore.
C.— — McComish.
Days' work.

Ellis, x Fremont and Hyde. Alterations.
O.— — Strauss.
A.— — Mooser
C.— — Liernard.
$1,500.

Fulton, corner Scott. Two-story frame.
O.—Julius Newman.
A.— — Mooser.
C.— — Underwood.
$15,000.

Sutter, x Hyde and Larkin. Alterations.
O.—Mrs. M. Hicks.
A.— — Mooser.
C.— — Domas.
$1,000.

Waller, Two-story frame.
O. and B.—R. McCann.
A.— — Mitchell.
$3,000.

Pacific Ave., x Polk and Larkin. Two-story frame.
O.—George D. Bliss.
A.—T. J. Welsh.
C.—J. Blake.
$7,000.

Linden Ave., x Octavia and Laguna. One-story frame.
O.—D. J. Oliver.
A.—T. J. Welsh.
C.—P. Laherty.
$2,300.

Potrero. Two-story frame.
O.—Carroll Bros.
A.—T. J. Welsh.
C.—J. McGeary.
$4,500.

Lombard, x Taylor and Jones. Two-story frame.
O.—D. W. Tietzer.
A.— — Geilfuss.
C.—B. Dryer.
$5,000.

Lombard, x Taylor and Jones. Two-story frame.
O.—Ed. Rotger.
A.— — Geilfuss.
C.—B. Dryer.
$4,400.

Post, x Stockton and Powell. Additions.
O.—Verein Eintracht.
A.— — Geilfuss.
C.—W. Pluns.
$5,000.

WOODLAND.

One-story frame.
O.—C. Voight.
C.— — Jackson.
$1,200.

One-story frame.
O.—J. Borach.
B.—Glenn & White.
Days' work.
$800.

Improvements on hotel.
O.—L. Knight.

Two-story frame.
O.—Fred Market.
Days' work.
$1,000.

Near Town. Two-story frame.
O.—Mrs. Miller.
B.—S. Sibley.
Days' work.
$1,000.

Near Town. One-story frame.
O.—D. A. Jackson.
B.—Gilbert & Son.
Days' work.

Frame building.
O.—John Winters.
B.—Mr. W. Winne.
$2,300.

Additions.
O.—J. Roth.
Days' work.

BERKELEY.

One-story frame.
O.— — Brooks.
C.— — Embury.
$1,400.

Two-story frame.
O.— — Howells.
C.— — Lukes.
$3,500.

One-story frame.
O.— — Lingard.
C.— — Willard.
$1,000.

One and one-half-story frame
O.— — Slate.
C.— — Broad.
$2,000.

Congregational church
A.—Clinton Day.
$12,500.

Two-story frame.
O.— — Maxwell.
A.—C. Day.
C.— — Smilie.
$8,000.

MISCELLANEOUS.

Santa Rosa. Three-story brick; *O.*, County of Sonoma; *A.*, Curtis & Bennett; *C.*, Carle & Croly; $80,000.

San Rafael. Two-story frame; *O.*, Frank Zook; *A.*, Curtis & Bennett; *C.*, I. Shaver; $8,500. Two-story and attic frame; *O.*, L. Schloss; *A.*, Wright & Sanders; *C.*, J. Robertson; $25,000. Two-story frame; *O.*, Mrs. Butterworth; *A.*, W. D. Mitchell; *C.*, J. A. Jackson; $3,700.

San Jose. Julian, x Second and Third; two-story frame—B. B.; *O.*, A. Schoenheit; *A.*, Theo. Lenzen; *C.*, W. S. Boyles; $7,000. Fourth, cor. Williams; two-story frame; *O.*, Mrs. D. Murphy; *A.*, Theo. Lenzen; Days' work; $7,000.

MARKET REPORTS.

LUMBER—*Pine.*

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough		"	18 50
Common Rough, sized with planer—$2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	33 50
"	4 "	and under, and 1¼x4 and 1¼x6	
Flooring and Stepping			40 00
Rough Clear for Flooring, $1 less than above rates.			
Second Quality Flooring and Stepping		per M feet	28 50
Ship Plank, Rough		"	28 50
"	Planed 1 side	"	32 50
"	" 2 sides	"	35 00
Deck Plank, Rough		"	33 50
"	Dressed	"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

NAILS.

10 to 60 pennies, are quoted at		$3 90
8 "	"	4 15
6 "	"	4 40
5 and 4 "	"	4 65
4 and 5 "	brad-heads at	5 15
6 "	"	5 40
8 "	"	5 75

A very modern discovery has thrown new light upon one of the most remarkable legends of the Middle Ages. Most reading people now know something about the ptomaines, the intensely poisonous alkaloids which have recently been isolated from the corrupt juices of a decomposing body, and, although the first announcement of their discovery was received with incredulity, and almost derision, are now recognized as distinct substances, existing in several varieties. Further research has shown that the new alkaloids are capable of entering into combination with other substances, yielding stable compounds having new properties, and it is found that the ordinary white arsenic easily combines with many of them, to form volatile liquids of frightfully poisonous character. The singular coincidence between this discovery and the history of the sixteenth century lies in the fact that one of the many traditions respecting the *aqua Tophana* of the Italian poisoners, that deadly drug which destroyed life instantly, and without fear of detection, relates that it was prepared by sprinkling white arsenic upon pieces of pork, and collecting the liquids which drained from them, adding subsequently a vegetable infusion. The first part of the process is exactly the same as that now found to be the easiest mode of preparing the arsenical ptomaines, and it seems altogether probable that experience may have led the refined Italian poisoners, who, as the stories go, could destroy their victims by the perfume of a bouquet, to the secret concoction of the very substances which benificent science is now adding to the list of well-known, and perhaps medicinal drugs.—*The American Architect and Building News.*

N. C. WALTON,
Asphaltum and Asbestus Roofing,
219 MISSION STREET,
SAN FRANCISCO.....CAL.

The California Architect and Building News.

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

A square is 1 inch in length by width of the column.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested, we do not send receipts.

SPECIAL NOTICE TO SUBSCRIBERS.

It is our intention, in the future, to have all new subscriptions begin either with the January or July numbers. In order to have a uniform time with subscribers now on our books, credit will be given to those whose subscriptions fall due between this issue and the 1st of January, with the intervening months, so that by sending $2.00 NOW, you will receive a full receipt for 1884. All new subscribers will receive the balance of this year free.

Holding off for Lower Prices.

MANY owners are postponing the erection of contemplated improvements, having in view the idea that, owing to the advent of the winter season, the price of labor will be reduced; also, that materials of various kinds, from a cessation of building operations, will accumulate on the dealers' hands, and the latter will be only too glad to make a discount for cash.

We can assure all such, by positive information secured from lumber dealers, hardware, paint, glass, and other material men, that there is not the least chance of a fall in prices of the various materials necessary to erect and complete a building. In fact, everything tends to show that prices will be *stiff* from this onward, for some time to come.

We can positively say that lumber will not in the near future be any cheaper than it now is. During the past month it has been raised in price, and we have no doubt that as soon as the *dear public* gets used to this advance, another turn of the screw will be given, and a dollar or two be added to the already exorbitant price; and this in the face of the fact that some of the lumber dealers are complaining that their money is lying idle in the bank, and no one is willing to use it and pay a reasonable interest thereon.

The price of hardware is regulated by the Eastern market. We doubt though, even if a reduction be made in the manufacturing districts, that a corresponding price will be adopted here. The truth is that all over the State building operations were never in a more progressive state than at the present time. The demand for hardware has been such that no old stock of any kind is on the dealers' hands, and consequently there are no old patterns to work off at nominal prices and thus weaken the general market. There is not a firm of prominence in the city but takes pride in showing their customers complete new patterns in every branch of hardware.

The manufacture of paint on this coast has almost stopped shipments from the East, and as the proprietors of the manufactories are giving—in fact, always have done so—the best material at the lowest cost, no lessening of price in this commodity is to be apprehended.

The variations in the price of glass doors, windows, etc., are but very small, with the chances in favor of a raise.

Plumbing, and materials used in work in connection therewith, are as cheap now as they will be for some time to come. Under the operation of the new plumbing law, the price of plumbing has been materially advanced.

Owing to the great demand for skilled labor in every branch of mechanical work, no reduction in the price of a day's labor may be looked for. On the contrary, prices are apt to be advanced, and we have no hesitation in saying that carpenters, masons, plasterers, etc., will obtain higher wages next year than they have received during the one now about closing.

Bricks have advanced in price, and, with a strong combination holding all that can be manufactured, no decline need be looked for in this direction.

It will thus be seen that those who intend to build are more likely to have their work done cheaper at the present time than they can next year.

Another fact should be borne in mind. Each succeeding year witnesses a more general introduction of the old-fashioned moving day, and tenants prefer to move into a *new* house as long as it suits their wants. Owners consequently have none too much time in which to complete a building by the first of April.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an Architectural Journal that will take rank with any now printed. The charge is but small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

San Francisco Chapter, American Institute of Architects.

THE regular monthly meeting of the Chapter was held on November 2d. In the absence of the President, H. C. Macy occupied the chair.

The teachers in charge of the various classes instituted by the Chapter reported as follows:

During the month a class in mathematics was organized under the direction of J. Gash. The classes in modeling, perspective, and flat drawing were being better patronized, and the pupils showed much ambition to excel.

After discussion it was resolved that at least one member of a firm must belong to the Chapter to enable the students connected with the office to take advantage of the lessons given in the different classes.

J. E. Wolfe, of Committee on Plumbing, tendered his resignation, owing to a severe spell of sickness, which had rendered him unable to attend to the necessary duties. On motion, the resignation of the entire committee was accepted, and the President appointed the following Fellows to complete the work of

the Plumbing Committee—Messrs. Henriksen, Welsh, and Moore.

John Hall and W. Copeland were elected members as Fellows. The application of R. C. Ball was laid over till next meeting.

A communication was received from the Garland Trap Manufacturing Company, calling attention to the virtues of the traps as a sewer gas protector. A sample of the trap accompanied the communication. Placed on file.

Committee on procuring a seal for the use of the Chapter reported that they had concluded to adopt the seal used by the Association of Architects, formed some years ago.

The money premiums offered by the Chapter for the best design for seal, were to be awarded to the pupil presenting the best sketch in architectural drawing.

Trustees were authorized to procure a seal by the time of next meeting.

The following report was presented by the committee appointed to consider the proposal made by the Masons and Builders Association at the last meeting of this Chapter:—

To the San Francisco Chapter of the American Institute of Architects:—

GENTLEMEN: Your Committee appointed to consider the resolution presented to this Chapter in its October session, by the Master Masons, in reference to its segregation of all mason's work amounting to more than $300, have carefully considered the matter, and respectfully report in favor of said resolution. Respectfully submitted.

H. C. MACY,
THOS. J. WELSH,
J. GASH.

San Francisco, November 2, 1883.

The report caused considerable discussion. Objection was raised that the amount specified, $300, was too small for a separate contract. The report was finally laid on the table, with the understanding that it could be taken up at any time the Chapter may see fit.

Adjourned.

Church Building an Index to Prosperity.

ALMOST a true index to the prosperity of any State may be found in the number of its churches and schools, and we regard the establishment of the former in so many different places as a better criteron to judge by than the latter. In villages of only twenty or thirty houses, a school house is always to be found. In the majority of small communities, the school house is used as a church, exhibition room, etc. Every little entertainment is given in the village school house. When a portion of these little communities come together and resolve to build a church, or meeting-house, it is always an evidence of prosperity, for without good crops of fruit or cereals, the farmer would not be in a condition to spare a portion of his earnings for something that could be put off a little longer, and unless the village blacksmith, mechanic, and store-keepers were doing well, they could not spare money as long as the school house would do.

It is a notable fact that the founders of all the new towns south of Los Angeles—and there are dozens of them—will, in their prospectus, in large letters, proclaim the fact that the place is to be blessed with free schools and churches, the latter word generally in large type. And it seems to be a fact that the prosperity of any community depends greatly on the class that are generally found on one day of the week in their places in the country meeting-house. We do not remember of any time in the history of our State when so many small churches were in process of erection as at present. Even in some of our almost neglected mining towns, there have been enough *good folks* combine together to form a congregation, and take measures to erect a place of worship. This fact proves another thing, and that is, since the decadence of mining, the ground has been found admirably adapted to the raising of fruit, and the moment the farming element predominates, churches and schools are found a necessity.

The Master Masons' Resolution.

As heretofore announced the Master Brick Masons have banded together in an organization for mutual protection, and by resolution declared their intention to maintain the right of *original contracts* on all jobs of mason work costing more than $300. Said resolution was presented to the Chapter of Architects at its October session, and placed in the hands of a committee, who, at the meeting held on the 2d inst., reported favorably upon the petition. After a lengthy debate it was resolved to lay the subject matter on the table, etc., mainly upon the ground that by the Chapter favoring and indorsing the action of the masons, scores of other trades,—millmen, plumbers, painters, plasterers, tinsmiths, roofers, sewer-layers, graders, etc., etc.,—might, with equal propriety, set up similar claims and an indorsement of the Chapter, thus involving the Chapter in an almost endless series of contract issues.

The adoption of the resolution and the organization of the Masons' Society presupposes a reason for such action. This is found in the simple fact that sub-contractors in all the various branches of building operations have, during the past thirty years, been subjected to repeated and sometimes ruinous losses through the irresponsibility and defaults of original contractors. In a very large number of such cases the defaults have amounted to downright business salaries, while others have been the result of incompetent men undertaking work far below prices sufficient to enable the payment of actual costs. It is not therefore to be wondered at that the masons have made the move they have, and we trust that they will so thoroughly organize and co-operate as one man, that neither designing rogues nor men incapable of estimating true values of things to be done, will be able to cheat and defraud better men of their rights.

In behalf of the few worthy and responsible contractors (carpenters), it is scarcely necessary to say a word. They stand above reproach; and if buildings were never let to others than our first-class men there would have been no necessity for any masons' organization. The brick masons nor any other branch care an iota who they work for so long as payments are sure. But in view of the fact that uncertainty of pay in full surrounds a very large proportion of the building contracts let in San Francisco, there should be no surprise felt that sub-contractors should seek protection.

The Pacific States Historian.

HUBERT H. BANCROFT was born at Granville, Ohio, in 1832. His parents were from New England. At the age of sixteen Mr. Bancroft entered the bookstore, in Buffalo, of his brother-in-law, George H. Derby, who, in 1852, sent him to California with a stock of books and stationery. Mr. Derby died before the goods reached San Francisco; but true to the original purpose, Mr. Bancroft, in 1856, opened in a modest way the establishment which in less than thirty years was one of the largest of the kind in the world. Shortly after beginning business he began collecting material for a history of the Pacific States, by which term is signified the western half of North America, from Alaska to Panama, including all of Central America and Mexico. After gathering all that America would yield he several times visited Europe, always with marked success, until his collection numbered 35,000 volumes. Then he erected a brick building specially for his library on Valencia Street, San Francisco.

But long before this he began to write. He studied hard and wrote diligently. As preliminary to his historical series, in 1875 he published the "Native Races of the Pacific States," in five volumes, which was received with universal commendation throughout the world. The most eminent scholars of Europe and America were lavish in their praise of it. Then came the "History of the Pacific States," which is indeed a series of histories, altogether covering the entire coast, one twelfth of the earth's surface, and probably the greatest work of the kind ever undertaken by mortal man.

In all there are to be thirty-nine volumes. Volume XI. has just been printed. They are all uniform in size and binding. Any information in regard to the above can be had by addressing the office of this Journal.

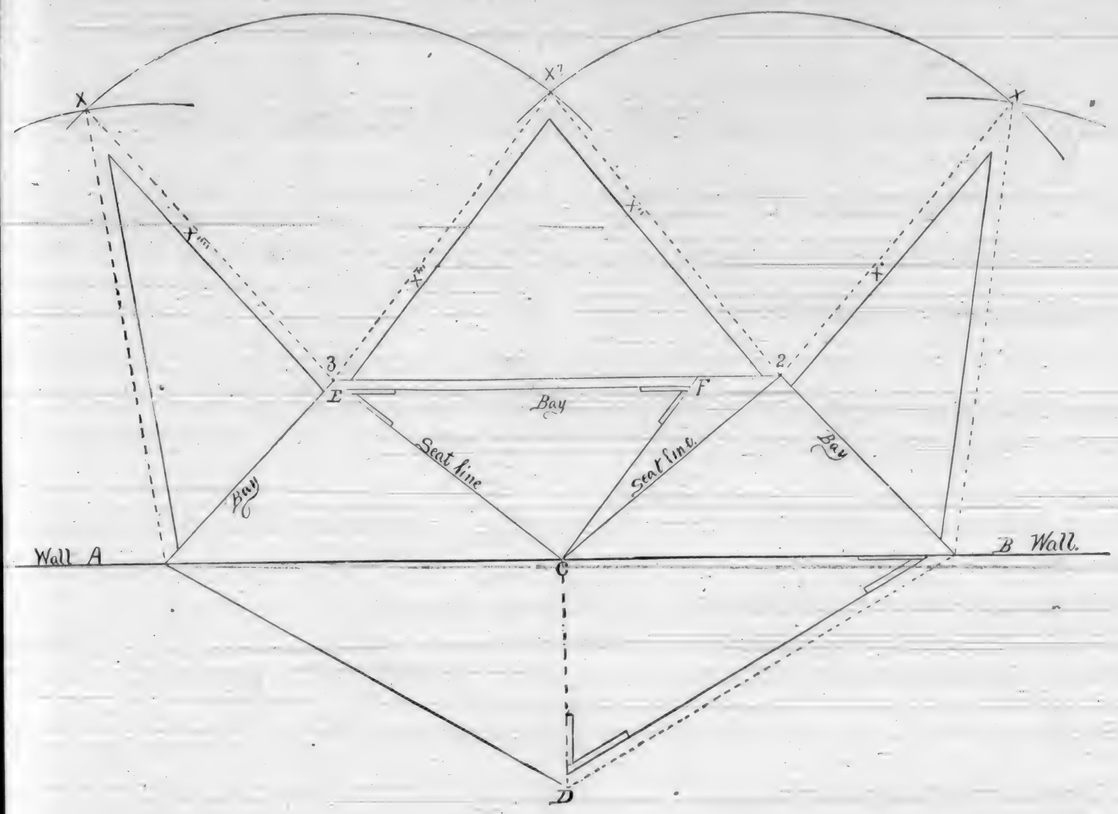
BUILDING SUPERINTENDENCE.

A Manual for Young Architects, Students, and others interested in Building Operations as carried on at the present day.

WE received a copy of the above work from the Publishers, J. R. Osgood & Co., too late for extended notice in this issue. From a hasty perusal, we conclude that young architects, as well as those persons not of the profession who are occasionally called upon to direct building operations, will be greatly benefited by a careful study of this work. Its author is T. M. Clark, well known to many of our readers.

We will send a copy of the above work to any address upon receipt of the price, $4.00.

"Vodge's Architect and Builder's Pocket Companion and Price Book Edition of 1883," revised and enlarged, $2.00.



A GRAPHIC DESCRIPTION, ILLUSTRATING THE METHOD OF STANDING THE CUTS OF THE HIPS OF BAY WINDOWS OVER GROUND PLAN IN POSITION. (SEE ABOVE DIAGRAM.)

A B is the wall line; A 3 2 B is the ground plan; C D is the elevation; C B, C 2, and C 3 are seat lines; square from C 3 seat line makes C F equal elevation; then F E is the length and cut that will correctly stand over seat line C E. Draw a line D to B, then take the distance D B in the compass, stand on the angle B, draw a curve as $\times$; now don't change distance you hold in your compass, but stand in angle A, draw another curve $\times$; now set the compass to the distance already found, namely, E F, and stand with compass on angle 2, draw a curve cutting right and left, as $\times$ $\times^7$; stand on angle 3 with same distance as from angle 2, and draw curve cutting $\times$ $\times^7$; draw lines as shown, A $\times$, $\times^{III}$ 3, 3 $\times^7$, $\times^7$ 2, 2 $\times$, $\times$ B; now commence to cut along the dotted lines as shown, and hinge from B to 2, and from 2 to 3, and from 3 to A, and from C to B; fold up and they will stand over ground plan in position. M. J. MARION.

We have dotted the lines as shown, to illustrate the value of models. Take a sharp knife and cut the paper along the dotted lines; fold up the parts separated and the practical working of the above problem will be at once apparent. We would advise our readers, however, to make the diagram on a piece of card board, following the explanation closely, thus saving the above for future reference.

Mr. M. J. Marion, the author of the above neat study, has decided to remain for awhile in this city. He has in his possession testimonials from some of the most celebrated architects, mechanical engineers, and surveyors in the United States His system of teaching lines is strictly original with himself. For the present he can be found at 631 Sacramento Street. Draughtsmen, students, builders, etc., would do well to engage his services.

Building.

WE have received a copy of the illustrated edition of *Building*. It contains nineteen selections from foreign architectural journals. The purpose of this edition is to give selections from leading papers of Europe. The editor naively remarks, "We have ordered every journal of value published in England or on the Continent." The best of the ideas culled from these will be given in *Building*. Terms, $5.00 per year. Orders received at this office.

Plaster and Plastering—How to Make and How to Use It.

A new work, and by far the best yet brought to our notice. It is a complete guide for the plasterer in the preparation and application of all kinds of plaster, stucco cement, lime, etc., with useful and practical information on the chemistry, qualities and uses of the various kinds of limes and cements, together with rules for measuring, computing and valuing plaster and stucco work.

Price, Postpaid, $1.00.

HYATT'S PATENT ILLUMINATING ROOF AND ROOF BASEMENT.

Three different kinds of Artificial Stone Illuminating Tiles, as well as that of Iron made by the Undersigned, under the Hyatt Patent, with Jackson's Patented Improvements.

Owners of property using any of these improvements, as well as the makers thereof, unless manufactured by the undersigned, will become liable for damages for infringements.

P. H. JACKSON,
Attorney for Mrs. E. A. Hyatt.

P. H. JACKSON & CO.,
No. 2 California Street and 231 First St., S. F.

Architecture of Country Houses.

BY A. CURTIS BOND.

In this letter I have shown a double country house with plans, and for the information of our architect friends, or those who would like to put the design into actual use, I propose to give the specifications. The building, as will be seen, is frame, and combines two dwellings under one roof, and has recently been put up in the suburbs of the city at a cost of $1,600.

The architect, Mr. A. F. W. Leslie, thus writes:—

The main house is 27 feet deep, and 48 feet front, with an extension 13x30 feet. Cellar 7 feet high. First story 9 feet 2 inches; all the measurements to be between timbers.

All frame timbers to be of first quality, and all as well seasoned as can be had. All timbers for joiners' work to be free from loose or black knots, and well seasoned.

SIZE AND KIND OF TIMBER.

Sills 2x8, posts 4x8, plates 2x6, first and second story joists 2x10. All joists supporting partition to be 3x4. Rafters 2x5.

EXTERIOR

To be first covered with hemlock or spruce, well nailed, laid over diagonally, then with sheath paper, then with first-quality pine beveled clap-boards not over six inches wide, and to lap not less than ¾ of an inch. Corner-board 1¼x4 inches, and 1⅛ inch, ¼ round in angle, well nailed. Water-table 1¼x6 inches, and beveled on top with lip. Window and door casing outside to be 1¼x4 inches, and according to scale drawing shown herewith. (See illustration.)

ROOFS.

First covered with good hemlock boards, then with sheathing-paper, and then with good blue slates, with chipped corner ridges to be covered with tin and well flashed around chimneys in good, workmanlike manner; valley to be well lined in workmanlike manner with charcoal tin. Gutters to be framed as per scale drawings, and lined with best charcoal tin and well soldered. Roof of piazza and bay window to be finished as main roof.

PIAZZA.

Build piazza as shown on plan. Rear platform at kitchen door to be supported by 5x5 inch chestnut posts, extending high enough to support a plain hand-rail finished with cross supports, made box-shaped, with beveled edges. Steps 1¼ inches, well-secured stringers 1¼ inches, risers ⅞ of an inch, all finished in a neat manner.

CASINGS.

All inside door and window casings to be ⅞x6 inches, with cove and berth; base to be 6 inches high. All to be finished with a neat moulding of any pattern.

DOORS.

All doors, except outside and sliding-doors, to be 1¼ inch thick, moulded on both sides, except closet doors, which shall be moulded on room side only. Front and sliding-doors to be 1⅜ inch thick, with raised mouldings. Front door to be hung with 4x4 inch bronze bolt. Sliding-door to be fitted with track and rollers. Suitable locks on all doors, with porcelain knobs, except front door, which must have bronze knob.

WINDOWS AND BLINDS.

All windows to be glazed with second-quality French glass, except cellar window, which must be American make. All windows to be hung by cord and weight, and good sash fastenings. Rolling slat blinds on all windows, with good trimmings. Cellar window to be hung with button and good hook.

STAIRS

To be as shown on plan, with a 7-inch Newel, 4-inch moulded rail, 1¼-inch baluster, all of walnut, neatly and strongly fitted up. Box stairs leading to cellar.

FENCE.

Build fence around entire lot as may be selected.

MANTELS.

Make neat wooden mantels in kitchen, dining-room, and chamber, to cost not less than $10.00 each. One slate or marble mantel in each parlor, to cost not less than $20.00 each, all set.

PLUMBING.

Iron sink, porcelain-lined, 18x30 inches, to be fitted up in kitchen where shown on plan, ceiled up and small door underneath; fitted with tin waste-pipe to connect with drain. Sink fitted with a pump with suction-pipe leading to the bottom of the cistern.

PAINTING.

All work usually painted should have two good coats of best white lead and oil, and of such color as may be selected.

MASONRY.

Masons to excavate for cellar, privy, and cistern, and earth deposition to grade. Foundation to be laid up of stone to within 6 inches of grade, balance 8 inches built wall, a good 10-inch footing cover to start with below cellar bottom. Chimney as shown on plan, carried up to roof with common brick, and topped out with good quality face brick, all to be well plastered from top to bottom.

PLASTERING.

All to be lathed with good spruce laths, then plastered with two good coats, well troweled, to make a good job. Parlor and dining-room and front hall to be hard-finished, and a neat cornice and center-piece in each parlor.

Build cistern and privy sink where directed, in a good, workmanlike manner.

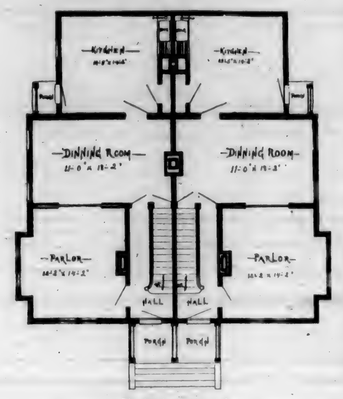
All necessary culture and all carpenter work described, to be done in a neat manner, and all defects rectified and left completed.

The materials all are to be of the best of their several kinds, and all work herein specified, to be done in the best and most workmanlike manner, and finished throughout.

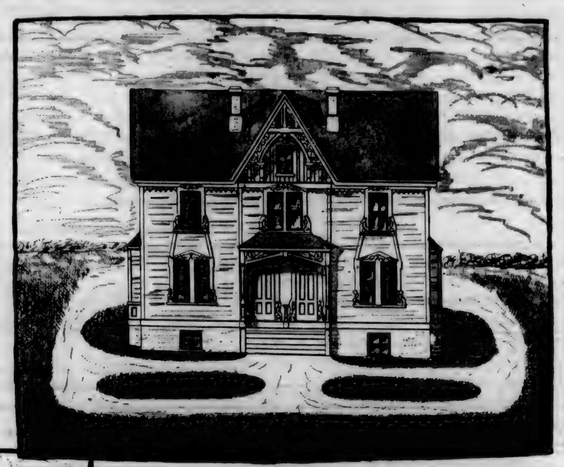
* * * * * * * * *

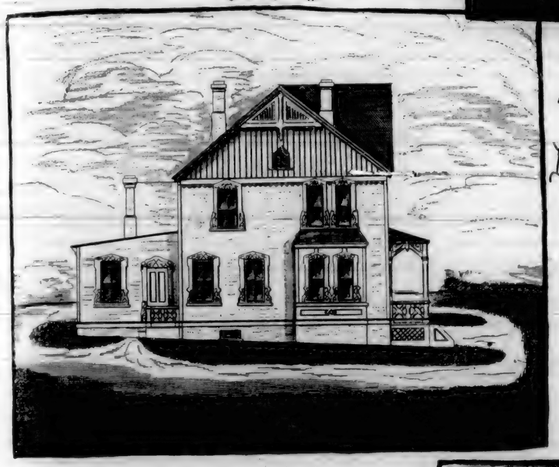
The common use here of shingles in house-building has led to other means of coloring than that of paint. Staining the exterior is often adopted, although the stain is, in itself, less durable than paint, for out of door work, although the action of the weather washes out the color in some degree, and has the effect of softening the tints and blending them harmoniously together. These softened and blended effects have a charm in the diversity of shades, while painting has a monotonous appearance. A more weathered look is given to the shingle work, which much enhances the picturesque effect. The best mode of applying the stain is by using turpentine or oil as a medium. The mixture of color and oil, says a writer, should be thinned with considerable turpentine, so that it will strike in the wood. The surface afterwards should receive two coats of oil. Or, the stain may be applied with turpentine, or by adding the oil in separate coats, to preserve the color. Vinegar is sometimes used as a vehicle, and with success. The aftercoats of oil are indispensable to a permanent application, and two coats of oil on the top of the stain should be used. Other modes of staining may be used. The natural color of the shingles is sometimes sufficient, and in this case they are often simply dipped into oil before fixing, or a little color may be added to the oil. The California redwood is a warm and agreeable material, needing only oiling to bring out the color or heighten the tone. Varnish is sometimes applied to the oiled shingles, but the gloss is objectionable, and the coloring is spoiled. The manner of laying the shingles has a great deal to do with the effect of the treatment, as the same stain may give different appearances according as they are laid in straight courses or otherwise. They are often laid so as to break up the surfaces as much as possible, in which case the tone of color will appear darker by the half shadows. Perhaps the most pleasing broken and varied effects are obtained by using ordinary rough-sawn shingles, which gives a shadowed surface, and the stain is unequally taken up by the wood. The colors employed for shingle work are numerous. The shingled or upper stories of a house may be stained a yellowish or orange color, and the dressings, or trimmings, as they are called, a dull shade of bluish green. The lower story may be of a dark reddish tone. In other instances the stain may be of light tints of Indian red or yellow, red and black, burnt sienna with burnt umber, old gold, obtained by using Indian yellow and blue black, brown madder and burnt sienna. More or less contrast can be had by using cool colors in the trimmings, such as blue gray, and warm colors on the surfaces; such as burnt umber, Indian red, sienna. Harmonies are obtained by making one color enter with all the others, or by making the trimmings agree with the body colors, although of lighter tone. In other cases the artist may choose a graded treatment, using different shades of the same color, contrasting with a complementary color. Thus, the body of the house may be in three shades of green, the deepest being placed on the ground story, and the lighter shades in the second and upper stories. A dulled red may be used for the trim-

(Continued on Page 182.)

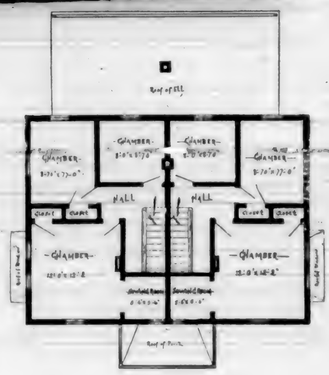


FIRST STORY PLAN



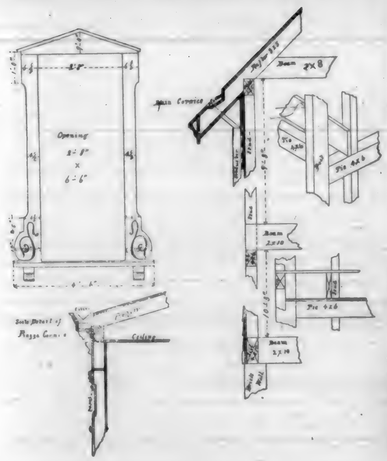


A DESIGN FOR A Double Dwelling HOUSE



A.F.W. LESLIE

SECOND FLOOR PLAN



FOR DESCRIPTION SEE PAGES 180 AND 182.

(*Concluded from Page 180.*)

mings. Shingle roofs are often painted a deep red of dull tone, but the coloring soon gets dark from weathering. Venetian red, burnt umber, and lamp-black make a good mixture for this purpose. One author observes, the darkened or dulled scales of color are to be preferred to pure tints. The last require to be produced by white, and are apt to be weak and sickly in expression. Somber coloring gives a character and dignity which light tints fail to produce. The powerful contrasts of complementary colors are generally less pleasing than a harmony of coloring, that is, where the normal colors are darkened or dulled by mixing with black or gray. According to such a treatment, the preservation of the same character is observed throughout the composition, and the hues and tones have a relation with each other. In other words, the most pleasing coloring for external purposes is that where the contrast produced is that of tone. Such a harmony never wearies, like that produced by crude complementary colors.

* * * * * * * *

It may interest my readers to learn of some protection to iron, in building, from rust. It seems that some French engineer observed that several chains embedded in mortar for a number of years were in no way affected by rust. It was in a bridge that he noticed this peculiarity; so he investigated and found that iron does not rust in water in which are dissolved small quantities of caustic alkalies, or alkaline earths, which neutralize every possible trace of acid. Following up this fact, paint has been made containing caustic alkaline earth. Although a thin coat of paint cannot contain so much alkali as a thick bed of mortar, the alkaline action will still have an effect so long as the coating has a certain consistence. Under any circumstances these new paints will be free from active acids. They are called Riegelman's paints, and have not yet, I believe, been brought to this country.

REMARKS ON THE ABOVE.

We have given the article just as received from our correspondent. Many of the materials specified would not be applicable to this section of the country. The cost mentioned is far below the price for which the building could be erected in this city. With specifications made in keeping with materials and work necessary to complete plan as usually called for in buildings of this kind, the cost would not be less than $3,700, and probably $4,000 would be nearer the true figure.

CHICAGO is the greatest lumber market in the world. The single item of sawed lumber received there in 1881 would lay an inch flooring fourteen feet wide round the earth at the equator. The amount of lumber manufactured in the three States of Michigan, Wisconsin, and Minnesota during 1881 would lay such a floor fifty feet wide.

All new subscribers for 1884 will receive the balance of this year free.

American House Carpenter. Price $5.00.

Chats With Clients.

"THE fact is, I want a house that is totally different from any other house that was ever built."

"Totally different?"

"Yes, absolutely unlike anything that ever was seen on the face of the earth."

"You are an extraordinary man, and have an extraordinary family, I suppose?"

"Well, no, I can't exactly say that, but I'm sick of this everlasting sameness, and I want something that will sort of make people open their eyes and wonder what kind of a fellow it is that lives in such a house. I tell you there's nothing like a little originality in the world."

"You want the house to suit your peculiar needs and circumstances?"

"That's it precisely. I want it to fit me just like a hat or a pair of boots. If I want a suit of clothes made I don't send another man to be measured, I go myself. Same thing with a house. If it don't fit me I can't live in it with any comfort. Now, you know I'm not exactly like anybody else; I'm not even a twin. Consequently my house ought to be—it ought to be—"

"*Totally* unlike anything else ever seen on the face of the earth."

"Perhaps that's putting it a little strong, but you know what I mean, at least you ought to. If you can't give me anything new, why then I don't see the need of having any plans."

"What do you say to a house of one room?"

"One room! That wouldn't answer at all. We must have about the usual number of rooms, of course."

"And of about the 'usual' size?"

"Yes."

"Not much chance for originality there."

"Can't you arrange them in some novel way?"

"Possibly. How would it suit you to set them all in a row, or around in a circle, or one above another—tower of Babel fashion—that would be novel in a dwelling-house."

"Altogether too much so. But I wasn't thinking so much about the inside; that of necessity must be similar to other house-keeping establishments."

"Oh, I understand, you wish to *appear* to be original; that's easier still. Build a high basement of white birch logs with the bark on, the first story of anthracite coal laid in red mortar, second of railroad ties painted blue, and shingle the roof with tin pans, use empty flour barrels for chimneys, get the top of an old 'one-horse shay' for a front porch, and hang all the window curtains on the outside."

"Oh, fie! you're making fun of me. I want something sensible and practical, but not exactly like the common run of cheap houses."

"Why didn't you say so! Originality, like the true poet, is born, not made; unless it springs from an honest expression of your needs and circumstances, and a simple endeavor to meet them in a downright rational fashion, it will be a sham. Arrange the rooms as you want them, taking into account the location and outside surroundings as well as the internal needs, but without any special anxiety concerning the exterior. Build the walls of the first story of good, honest, natural stones, which abound on your farm. Cover the second story, which will be of wood, with cypress shingles, oiled, but not painted, and the roof with red tiles. If the total result lacks novelty, you can console yourself with the reflection that commonplace obscurity is preferable to conspicuous deformity.

"The materials that I have mentioned are all easily obtained; they are unobjectionable in point of economy and durability; they are especially suitable for the rough and rugged location where the house will stand, and will surely look well unless you force the structure to make false pretenses for the sake of challenging the stupid wonder of your neighbors."

—*The Builder.*

Great Pyramid Hieroglyphics.

EDITORS ARCHITECT: In your September issue, the question is asked why the Great Pyramid should be entirely barren of hieroglyphics, in a country where every object of interest seems to be covered with them. From a careful study of the works of travelers and historians who have made this grand monument the subject for their most careful consideration, I find that originally it was beautifully cased and covered with hieroglyphics. According to the Hindoo records, it was "cased with colored marbles," which at least is probable, as fragments of marble and granite were found among the debris.

Herodotus states: "On the outside were inscribed in Egyptian characters the various sums of money expended in the progress of the work." In Wilkinson's Hand Book of Egypt we find that "it was covered with a smooth, inaccessible casing." Dean Stanley adds: "It also seems that these smooth outsides were covered with sculpture."

Dr. Shaw says: "It was incrusted all over with the finest granite marble."

The above opinions are confirmed by Abd-el-Lateef, who states that "the polished exterior stones were covered with writing, which, if copied upon paper, would fill more than ten thousand pages."

As a settlement of the dispute upon this subject, Col. Howard Vyse, in 1837 actually discovered two of the casing-stones *in situ:* and on the Pyramid of Chephren, near by, more than ten thousand square feet of the original casing may still be seen.

It is a historical fact that the casing-stones of the Great Pyramid were removed in A. D. 1166, by order of Sultan Saladin, to build his citadel at Cairo. Yours truly, G. F.

Should this Journal be received by any Subscriber who does not want it, or beyond the time they intend to pay for it, let them not fail to write us direct to stop it. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, we shall positively demand payment for the time it is sent.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas send us a sketch of them and we will make the cuts.

EDITOR ARCHITECT: Will you please give me information through the columns of your journal upon the following queries: What are the wages of carpenters in San Francisco? How long do jobs last? What chance would a stranger have in your city of getting steady employment? How long does your rainy season last, and its effect upon the time of mechanics? By answering the above you will greatly oblige not only myself, but several others, who desire to locate in San Francisco.

Yours respectfully, C. V. TOTHILL.
Chicago.

Wages depend altogether upon the skill and activity of the man. A stranger would perhaps have to be satisfied at first with $3.00 per day. This rate could be raised in a short time by carefully observing the *style* in which work is done, and noticing the different finishes used in various houses, and the manner in which they are *put on*. Even a first-class mechanic from the East would find it necessary to devote time and study to the business, as done in this city, in order to obtain the full rate of wages. Three to four dollars per day is the ruling price, foremen getting from 50 cents to $1.00 per day advance on these figures.

A stranger, if he be able, intelligent, and competent, would find but little trouble in securing work.

The length of a job depends somewhat upon the man with whom you get employment. Some contractors keep a gang of men in steady work nearly through the entire year. It takes from three to six months to erect and finish a building of average cost, say from $5,000 to $20,000.

Eastern mechanics have an erroneous idea in regard to our rainy season. It generally commences with a few showers in September. October passes, with a few rainy days. During the present season, up to the 1st of November, about 2 inches of rain have fallen. November may be said to be our Indian Summer, some of our most pleasant weather occurring between the 1st of Nov. and Christmas. From the latter part of December to April, it is wet, off and on, same as any other place, but very seldom more than three days at a time being rainy. Snow is seldom seen in San Francisco, and our winter season is about the same as in any other place of the same latitude where snow is not found at this time of the year. If you are lucky enough to get on a job that is just housed in before the rainy season gets fully started, the chances are that you will lose no more time than you would in any other State under similar conditions. There is almost a complete absence of snow, and with the thermometer seldom below 30° above zero, we think there are but few places which offer superior advantages to *first-class* workmen.

Items of Interest to Draughtsmen.

WARM water is better than cold for rubbing up Indian Ink.

WHEN it becomes necessary to trim a piece of rubber, it will be found that the knife will cut much more readily if dipped in water.

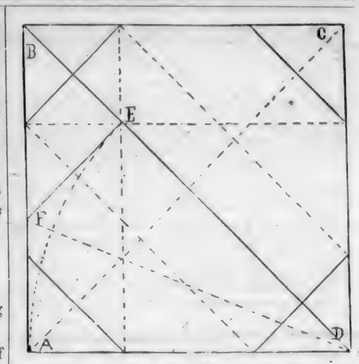
WHEN paste is used to fasten papers to a board, both sides of the paper should be dampened, as the paste takes longer to dry.

IN sharpening pencils, be sure the knife-blade has a good edge. Many a pencil has been half cut away on account of the blade being dull, on account of the undue pressure necessary.

STALE bread makes an excellent means of cleaning up a drawing. It will hardly remove pencil lines of any strength, but it clears up the surface beautifully. Avoid the crust, as it may dent and scratch the paper when rubbed upon it.

IN selecting a pen, care should be taken to see that the nibs are of the same length, and that they are of sufficient thickness. In some pens the metal is so thin that the nibs really cut into the paper, and another disadvantage is, that in using the very moderate amount of pressure necessary to keep the back nib against the ruler, the two surfaces of the metal become nearly in contact, and the line becomes uneven. A fine pen will not necessarily make fine lines; a pen of medium size, if in order, will work as finely, and the larger handle is more convenient to hold.

IT has been a mystery to some people why the dark wood so highly prized for furniture should be called "rosewood." Its color certainly does not look much like a rose, so we must look for some other reason. An exchange explains that when the tree is first cut, the fresh wood possesses a very strong, rose-like fragrance; hence the name. There are a half dozen or more kinds of rosewood trees. The varieties are also found in South America and in the East Indies and neighboring islands. Sometimes the trees grow so large that planks four feet broad and ten feet in length can be cut from them. These broad planks are principally used to make the tops of piano-fortes. When growing in the forest, the tree is remarkable for its beauty, but such is its value in manufacturing as an ornamental wood that some of the forests where it once grew abundantly now have scarcely a single specimen.



NEWARK, N. J., October 13, 1883.

EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS:—Fig. 1 exhibits the operation of finding the sides of an eight-sided polygon, and also the angle to mitre the sides.

To find the sides of an eight-sided polygon, draw the square A B C and D equilateral and equiangular; join D B. From the point D as a center, with D A as a radius, describe an arc, cutting D B in E. Then E B equals the side of the polygon, and E F D equals the angle to mitre the sides.

By the use of the square to mitre the sides, place the square with E D on the blade, and E B on the tongue; mark from the latter for the angle required.

By calculation—Let E D equal 18x18 inches, equal 324 plus 324 inches, equal 648 inches, square root of which is 25.4558 inches, minus 18 inches, equals 7.4558 inches, or 7 and 7-16ths inches equal E B.

By proportion—7.4558 inches : : 18 inches : 7.5 inches; 7.5 x 18 inches equal 135 inches; divided by 7.4558 inches equal 18.1067 inches, or 18 and 3-32d inches equal E D.

I am yours, L. D. GOULD.

Wheeler's Patent Wood Filler.

A NOTABLE progress has been made in the appearance of the different finishes used in a building, since the introduction of this celebrated preparation. By its use the pores of the wood are filled so that a beautiful smooth surface is obtained which could not be had without its use. Although it seems to have been originally designed more especially for hardwoods, it has been found by actual test to be adapted to the softer redwoods and fir, so generally used on this coast. For curly redwood it has no equal, as it brings out the *grain* of the wood better than any other article of its kind. It is also being extensively used by our piano and furniture manufacturers. It can be obtained from all the principal dealers in paints, etc., on the coast.

In-Doors and Out.

A NEW publication, devoted to sanitary and rural improvement, has made its appearance on our desk. Its items on Healthy Homes and Beautiful Surroundings are decidedly unique in their originality. The price has been fixed at 50 cents per year. The office is at 119 Pearl Street, New York.

Popular Fallacies in Regard to Ventilation.

By Dr. Chas. R. Dryer, of the Fort Wayne College of Medicine.

The first and great popular fallacy in regard to ventilation is that it needs no special attention. This is a more serious error among the well-to-do than among the poorer classes, inasmuch as the houses of the former are more nearly air-tight. With solid brick walls, double-sashed windows, weather-stripped doors, and a base-burning coal stove, the exclusion of pure air is carried to the utmost extent. This condition is happily somewhat relieved by the use of open coal grates. But how many fine houses does the physician enter without noticing the close, foul odor, and the stifling air which comes from over-heating and poor ventilation? In such rooms he finds nervous, headachy women, and pale, irritable children, suffering from colds the winter through. Such families need judicious instruction that respired air contains one of the most virulent poisons known, and that dry and overheated air is debilitating and irritating, leaving the mucous membrane sensitive, to be inflamed by every breath of the natural atmosphere.

The second popular fallacy is that the poison of respired air is carbonic acid.

This is an example of superstition at the "survival" in science of an idea long after it has been proved to be false. It is perpetuated in school text-books and popular treatises innumerable. Indeed, correctness of statement upon the subject is this rare exception; gross error the rule.

Carbonic acid gas is no more poisonous than water; animals immersed in it die just as they do if immersed in water, and for the same reason, viz., want of oxygen. Birds have been made to live in an atmosphere containing 35-40 per cent. of pure carbonic acid, and about an equal per cent. of oxygen. Yet when the carbonic acid of *respired air* rises to one per cent. that air is very dangerous poison. The solution of this puzzle is that respired air contains a very small proportion of poisonous organic matter, which is constantly exhaled from even the healthiest lungs. Its exact nature has not been determined. It is the source of the foul odor so characteristic of badly ventilated rooms. The air from the exit of pipes of a crowded hall darkens sulphuric acid, decolorizes potassium permanganate, and causes water, or a sponge saturated with it, to putrefy. This poisonous matter is produced in quantities proportionate to the amount of carbonic acid, hence the quantity of the latter is an indicator of the relative quantity of the power, and carbonic acid should never be allowed to accumulate in occupied rooms to the extent of seven-tenths of one per cent.

The third popular fallacy is that the most impure air accumulates near the floor of the room. This false idea has probably arisen from the fact that carbonic acid is more than half as heavy again as air, and can be poured from one dish to another like water. Although this is true when both gases are at the same temperature, a very little difference of temperature is sufficient to reverse these conditions. Respired air issues from the nostrils at a temperature of nearly 100° Fahrenheit, and is lighter than the outer air at 70° or 80°. Again, the temperature of the body is nearly 100°, usually much above that of the surrounding air. This is sufficient to create an upward current rising from the body of every person in the room, just as the heated air rises above a hot stove. If to these influences be added the more powerful action of a stove, register, or other heating apparatus, it will be understood how the impure air rises and accumulates very rapidly near the ceiling. This can easily be proved by experiment, such as placing candles at various heights. The upper one will burn much more dimly than the lower. At the same time the cooler air from the floor moves toward the stove to enter it, or to join the current rising from it.

The fourth popular fallacy is that the outlet for impure air is best placed at the top of the room, and the inlet for pure air at the bottom.

This may seem a contradiction to the third fallacy, but is not, for several reasons. An opening into a cold place at the top of the room is often not an outlet at all, but simply allows cold air to drop down into the room. If it be an outlet it is very wasteful of heat. The air of the room is heated at some expense, and then turned out of doors as soon as possible. If the inlet be near the floor, there will be a cold draught upon the feet of the occupants of the room, and although such an arrangement may ventilate, it will be attended with such disadvantages as to render it highly objectionable. Wherever possible, there should be an outlet near the floor into a heated flue, in which the upward draught is sufficient to constantly draw the cooler air off the floor. An open fire flue is the most efficient outlet that can be devised. Instead of that, a direct draught stove in which a door above the fire may be opened, answers the purpose admirably. The inlet may be for pure heated air through a register near the floor on the opposite side of the room from the outlet, or for pure cold air by an opening directed upward behind the stove, and above the heads of the occupants of the room. Thus all cold draughts will be avoided; the pure cold air will mingle immediately with the impure air near the ceiling, and the room will be equably and economically warmed and efficiently ventilated. June air may be had in January, and the children will be as merry and rosy as the street children, who have nothing but oxygen to make them merry.

THERE are churches and mosques in Palestine on the roofs of which you could stand from two to five thousand people.

All new subscribers for 1884 will receive the balance of this year free.

How to Cleanse the Waste Pipes.

ONE of the most frequent and trying annoyances of housekeeping, as many can testify, and which a writer in the Philadelphia *Ledger* freely asserts, is the obstruction to the free, quick outlet of the waste water of the wash-stand, the bath-tub, and the kitchen sink.

This is caused by a gradual accumulation of small bits of refuse material, paper, rags, meat, bones, or other offal, which check and finally entirely stop the outflow of the waste water, and then the plumber is called to remove the stoppage with his force pump.

Sometimes this is effective; at others the offending waste pipe is cut out and a new one put in its place at considerable cost.

But the plumber is not always near at hand or free to come at one's call, and the matter demands immediate attention. A simple, inexpensive method of clearing the pipe is as follows: Just before retiring at night pour into the pipe enough *liquid* potash lye of 36° strength to fill the "trap," as it is called, or ben' portion of the pipe just below the outlet. About a pint will suffice for a wash-stand, or a quart for a bath-tub or kitchen sink. *Be sure that no water runs into it till next morning.*

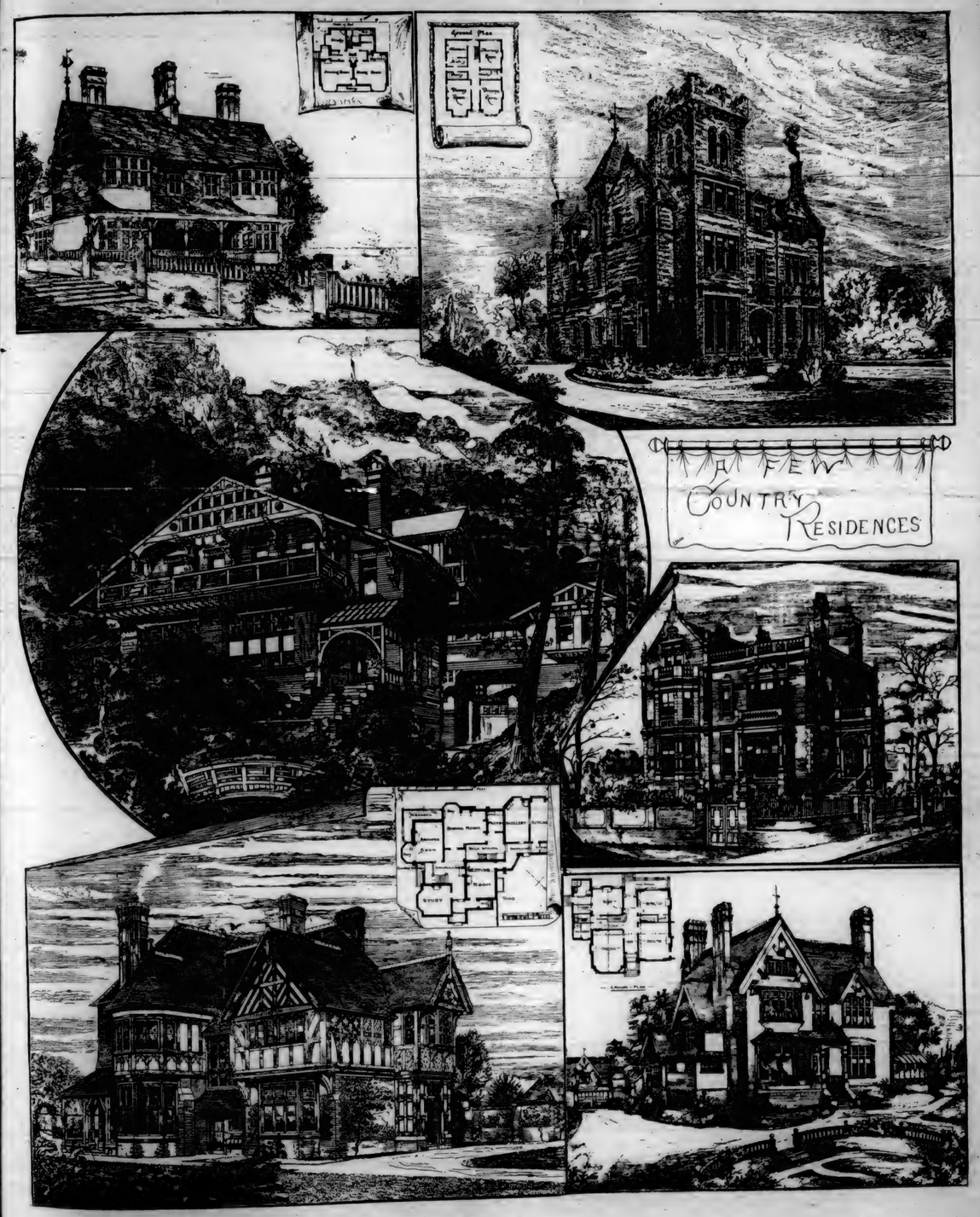
During the night the lye will convert all of the offal in the pipe into *soft soap*, and the first current of water in the morning will remove it entirely, and leave the pipe as clean as new. The writer has never had occasion, in over thirty years' experience, to make more than two applications of it in any one case.

A remarkable example of the value of this process was that of a large drain pipe which carried off the waste of an extensive country house, near Philadelphia, and ran under a beautiful lawn in its front. A gallon of the lye removed all obstruction in a single night, and saved the necessity of digging up the pipe and disfiguring the greensward of the lawn, as the plumber intended until advised of this process.

The so-called potash lye sold in small tin cans in the shops is not recommended for this purpose; it is quite commonly misnamed, and is called caustic *soda*, which makes a *hard* soap. The lye should be kept in heavy glass bottles or demijohns, covered with wicker work, and plainly labeled; always under lock when not in actual use. It does not act upon metals, and so does not corrode the pipes as do strong acids.

IN the whole world there are no known redwood forests outside of California. It is a significant fact, however, that one-fourth more finished lumber, suitable for interior housework, can be obtained from Humboldt timber than from timber grown in any other county in that State. Unlike many other kinds of trees, redwood stumps can be utilized to profitable advantage. For veneering purposes, slices from these stumps are said to be highly prized, and may probably in time prove almost invaluable.—*American Lumberman.*

American House Carpenter. Price $5.00.



New Zealand Insurance Company.

THE property upon which this building is to be erected was purchased last month from Sir Robert Burnett, of Aberdeen, Scotland, Newhall heirs, and Moses Rosenbaum, of this city, at a cost of $158,000. The frontage of the three properties thus concentrated measures 60 feet on California Street, viz., Nos. 310, 312, and 314, with depth of 124 feet and rear frontage to Halleck Street of 62 feet and 11 inches. As will be seen hereafter, this rear approach is a great advantage, when the purposes for which the building has been designed are explained. The whole area is to be covered by a massive six-story building of pressed and enameled brick, Oamaru, New Zealand free stone, and California granite. The elevations on California Street and Halleck Street are so arranged as to allow of a very large area of plateglass for the purpose of making the interior as light and comfortable as possible. This is the more easily obtainable from the fact that the property is on the sunny side of California Street. Light areas have been left in the plan of each story to brighten the rear portion of the offices on both fronts. The arrangement of offices on the ground floor is something novel for this city. On each side of a twelve-foot corridor there is a handsome office 22x60 feet, with vaults, complete for bank or insurance purposes. About the center of the building, dividing the front from the rear offices, is a space of, say 25 feet. This is utilized for stairway and double elevator on the right, and closets and sinks on the left. The elevators will be a novelty in architecture in this city, being constructed on the same principle as those in the Union Bank Building, New York. They will be on the compensating principle, as one goes up the other descends, thus obviating the frequent delay occasioned by having to wait on an upper story, with the mortification of knowing that the machine has to descend to the very basement, and then go to the top of the building again before you can reach the street. This corridor leads to the main office of the New Zealand Insurance Company, with floor area of 32x56 feet. The ceiling of this spacious room will be 34 feet in height, handsomely groined and arched. It will be lit by cathedral windows occupying the whole frontage of 62 11-12ths feet on Halleck Street, and so arranged as to give the greatest possible accommodation. The detail of this room will be finished in natural woods, and so designed as to make it, perhaps, the most perfect and beautiful insurance office in the United States. Within this room will be located the offices of the New Zealand Insurance Company, the agencies of the New Zealand Loan and Mercantile Agency Company, the New Zealand Stud and Pedigree Company, and the Correspondent of the Bank of New Zealand. It is not often that such a combination of foreign institutions is to be found together in one counting-house. The New Zealand Insurance Company sets an example that we hope will be shortly followed by other institutions of a similar character in anchoring itself in this substantial way to our city, thereby removing all excuse for a continuance of the otherwise reasonable complaint of the drain of local premiums by foreign Insurance Companies. The Manager of the New Zealand Insurance Company has furnished us with the following synopsis of its history:—

It was established in Auckland, New Zealand, in May, 1859, by a few leading men, with paid-up capital of $24,225. In 1862 its paid-up capital had increased to $75,000; in July, 1863, to $150,000; in July, 1864, to $225,000; in January, 1865, to $250,000; in 1871, to $375,000; in 1873, to $500,000, and to-day the paid-up capital stands at $1,000,000, and assets over $2,000,000, *with unlimited liability of share-holders.* When foreign capital represented by companies of this calibre comes to our shores, and identifies itself with our citizens, as the New Zealand Insurance Company has done, we cannot do better than take it into the family, and the more the companies invest with us the better we will like it. Had the investment been made by a company hailing from London, there would not be so much to be astonished about, because we can give them a much greater return than can be obtained in the United Kingdom, but it has remained for the progressive and youngest of Britain's daughters to come in by the Golden Gate, and put New Zealand money, which brings a higher rate of interest at home, into property in San Francisco. We hope this enterprising company will reap the reward it deserves in initiating this new departure, and that increased business and profit may accrue thereby. The design of this fine structure was furnished by Messrs. Wright & Sanders.

The following statement of the condition and affairs of the New Zealand Insurance Company of Auckland, in the British Colony, New Zealand, on the 30th day of November, A. D. 1882, and for the year ending on that day, was made to the Insurance Commissioner of the State of California, pursuant to the provisions of Sections 610 and 611 of the Political Code, condensed as per blank furnished by the Insurance Commissioner:—

CAPITAL	$5,000,000 00
Amount of capital stock paid up in cash	$1,000,000 00

UNLIMITED LIABILITY OF SHAREHOLDERS.

ASSETS.

Real Estate owned by Company	$480,216 00
Loans on bond and mortgage	820,704 00
Cash market value of all stocks and bonds owned by Company	639,700 00
Amount of loans secured by pledge of bonds, stocks, and other marketable securities as collateral	58,055 00
Cash in Company's office	2,068 00
Cash in Banks	25,108 00
Interest due and accrued on all stocks and loans	20,497 00
Premiums in due course of collection	7,105 00
Bills receivable, not matured, taken for fire and marine risks	10,537 00
Due by branches and agencies	34,368 00
Rents due and accrued	425 00
Total Assets	$2,098,768 00

LIABILITIES.

Losses in process of adjustment or in suspense, and appropriations for property tax	$112,645 00
Gross premiums on fire risks running one year or less, $455,006 00; re-insurance fifty per cent	227,503 00
Gross premiums on marine and inland navigation risk, $135,845 00; re-insurance one hundred per cent	135,845 00
Gross premiums on marine time risks, re-insurance fifty per cent	33,920 00
Sundry accounts owing	235 00
Deposits	11,000 00
Joint stock capital actually paid up	1,000,000 00
Surplus beyond capital and all other liabilities	577,620 00
Total Liabilities	$2,098,768 00

INCOME.

Net cash actually received for fire premiums	455,006 00
Net cash actually received for marine premiums	530,964 00
Received for interest and dividends on bonds, stocks, loans, and from all other sources	127,970 00
Total Income	$1,113,940 00

EXPENDITURES.

Net amount paid for fire losses (including appropriations for unpaid losses)	$ 274,940 00
Net amount paid for marine losses (including appropriations for unpaid losses	388,245 00
Dividends to stockholders	150,000 00
Paid for salaries, fees, and other charges for officers, clerks, etc	209,520 00
Paid for State, national, and local taxes	5,405 00
Fire and marine associations, insurance brigades, and S. corps	8,900 00
Total Expenditures	$1,037,010 00

LOSSES.

	Fire.	Marine.
Incurred during the year	$274,940 00	$388,245 00

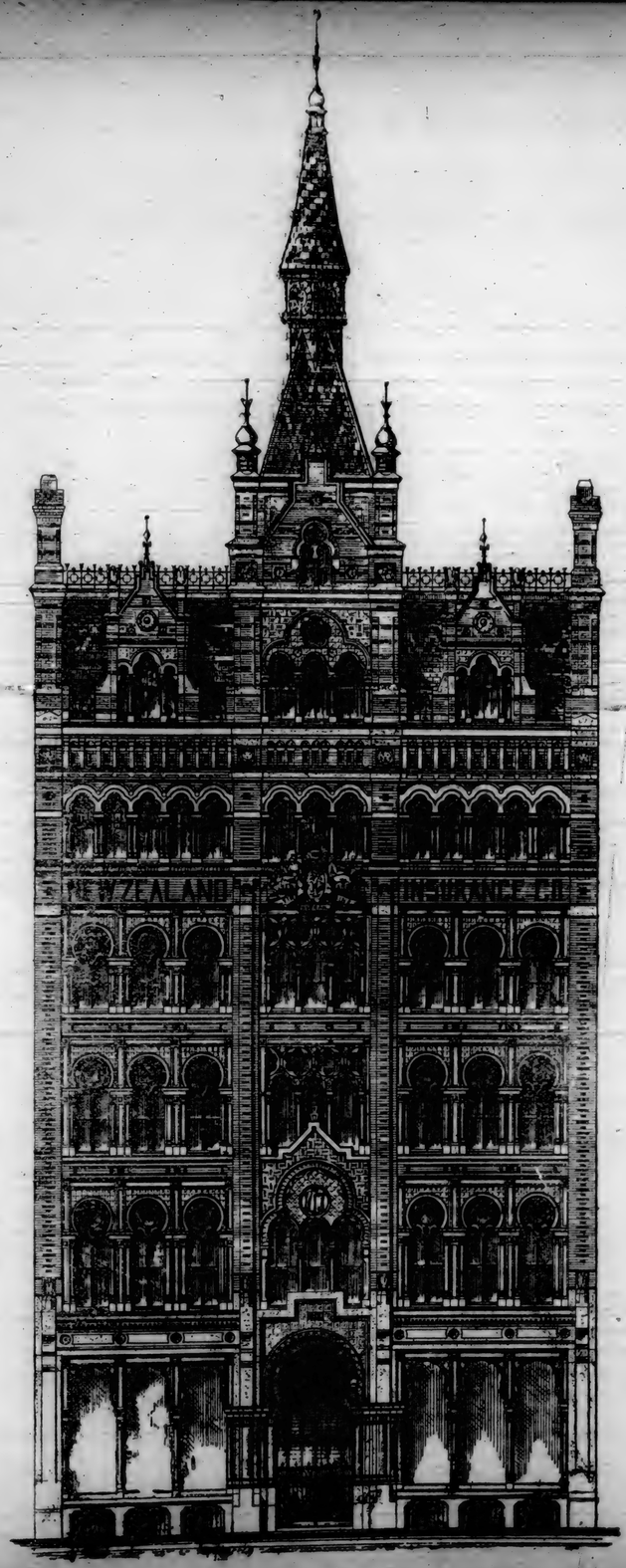
RISKS AND PREMIUMS.

	Fire Risks.	Premiums.
Net amt. in force November 30, 1882	$60,750,785	$439,851 00
Risks written in State of California	5,110,854	63,362 00
	Marine Risks.	Premiums.
Net amt. in force November 30, 1882	$14,456,730	$180,709 00
Risks written in State of California	2,134,516	26,847 00
Surplus for Policy Holders		**$1,577,620**
Premiums received from organization of Company to date		$10,891,174 00
Losses actually paid from organization of Company to date		6,649,770 00
Dividends (cash) declared		1,535,230 00
Amount deposited as security in Oregon		50,000 00

W. F. BROWN, Manager, 27 Stark St., Portland, Or.
HUGH CRAIG - - - - - - - - - Manager for Pacific Coast.
412 CALIFORNIA ST., SAN FRANCISCO, CAL.

George P. Pierce, General Manager,
AUCKLAND, NEW ZEALAND.

Wright & Sanders, Architects.



Improved Rapid Method of Copying Drawings, Manuscripts, Etc.

THE common method of copying drawings by contact with the blue process or sensitive silver paper, which requires an exposure to the sun of from fifteen minutes to half an hour, seems likely to be superseded to some extent by the introduction of improved gelatine bromide of silver paper.

Gelatine sensitive paper has been difficult to prepare, but by means of recent improvements the manufacturers are now able to furnish it in large sheets uniformly coated, so that its use in various branches of the arts promises to be extensive.

Architects, draughtsmen, engineers, and others who wish to make duplicate copies of their drawings are, by the usual processes, obliged to first make a tracing upon transparent linen cloth, so that the light may easily affect the sensitive paper. Much extra time is lost and expense incurred. By means of the gelatine sensitive paper any ordinary thick card-board drawing can be copied in a few seconds, either by diffused daylight or gas or lamp-light. The copy will be an exact reproduction of the original, showing the letters or figures non reversed.

If it is desired to make a copy in the daytime, any dark closet will answer, where all white light is excluded. The tools required are an ordinary photograph printing frame and a red lantern or lamp.

The sensitive gelatine paper is cut to the size required, and laid with the sensitive side upward upon the face of the drawing, and pressed thereon in the usual manner, by springs at the back of the frame, which is then carried to the window and exposed with the glass side outward from two to five seconds to the light, the exposure varying according to the thickness of the drawing. If gas or lamp-light is used at night, from twenty to thirty minutes exposure is sufficient.

The frame is returned to the dark closet; the exposed sheet is removed to a dark box, and other duplicates of the drawing can be made in the same way. It is thus possible to make from ten to twenty copies of one thick drawing in the same time that it usually takes to obtain one copy of a transparent tracing by the ordinary blue process.

The treatment of the exposed sheets is quite simple; all that is necessary is to provide from three to four large pans or a large sink divided into partitions. The development of the exposed sheets can be carried on at night or at any convenient time, but a red light only must be used. The paper is first passed through a dish or pan of water and then immersed in a solution, face upward, composed of eight parts of a saturated solution of oxalate of potash to one part of a saturated solution of sulphate of iron, enough to cover the face of the paper. Both chemicals are easily obtained at a druggist's. The latent image soon appears, and a beautiful copy of the drawing is obtained, black where the original was white, with clear white lines to represent the white lines of the drawing. With one solution from six to eight copies can be developed, one right after the other. After development the print is dipped in a dish of clear water for a minute, and finally immersed for three minutes in the final or fixing solution, composed of one part of hyposulphite of soda dissolved in six parts of water. It is then removed to a last dish of water, face downward, soaked for a few minutes, then hung up to dry; when dry it is ready for use. Instead of a drawing, manuscript can be placed in the printing frame and exposed as described. All the water marks or peculiarities of the grain of the paper will be faithfully reproduced. The advantages of this process are self-evident.

Intricate mechanical drawings can be so rapidly copied that working copies can be quickly delivered. By this process original manuscripts, certificates, and documents of every kind can be rapidly copied, every detail being brought out, the original paper serving as the negative, the copy being of the exact size as the original.—*Scientific American.*

Handsaws.

SEVERANCE of material was doubtless among the first difficulties which confronted mankind, and to meet this the primal saw, as being at once simple and effective, whether it was the jaw-bone of a snake, the back-bone of a fish, a jagged flint, or whatever else it may have been, was adopted, and furnished the idea for future development far in the long night before the dawn of history. The Greek story is that Talus found the jaw-bone of a snake, and, after discovering from it the properties of a saw, imitated it by notching a piece of metal, and was killed by his uncle through jealousy. Other myths run that Perdix used the back-bone of a fish as a saw, was changed into a partridge by the envious gods, and deified by his countrymen. But the Greeks were egregious wondermongers and liars, and the saw was in use before that people came into the eyes of the world. It was a common tool among the ancient Egyptians, and many specimens of their saws are yet preserved. Even among that people it had lost much of its primitive rudeness, and was made of bronze with teeth well ground or cut out, and was inserted in a handle like the modern case-knife, or bound to the same with thongs and operated with one hand. The teeth were pointed from the handle, and the cutting was done by a thrust movement, as in modern saws. The material to be sawed was placed upright and lashed to posts set in the ground. The Egyptians, as also the Phœnicians, used saws for cutting stone as well as wood, and the stones in the temple of Solomon were faced with saws. Samuel, 1033 B. C., mentions them casually. A two-handed saw has been found in the ruins of Nimroud, and many saws have been brought to light in Thebes.

In the stone age, saws were made of flakes of flint set into a back of wood, and secured by means of bitumen, and the early dwellers in Europe also notched shells. As late as 1768, Captain Cook found the South Sea Islanders using saws made of sharks' teeth lashed to a back piece by sinews. Saws made of obsidian were used in ancient Mexico, and specimens of these have been found buried under the deposits of sand and gravel in New Jersey, proving the existence of a prehistoric coast trade along the Atlantic, obsidian not being found nearer New Jersey than Mexico.

Saws of the bronze age have been discovered in considerable numbers, both in Germany and Denmark, but none have yet been found in England. These are made of plates cast very thin and then cut out.

Modern Oriental saws all have the teeth pointed toward the handle, and are operated by a drag movement. This manner of sawing and pointing the teeth seems to be most suitable to rapid sawing, but does not admit of as great accuracy as the thrust movement.

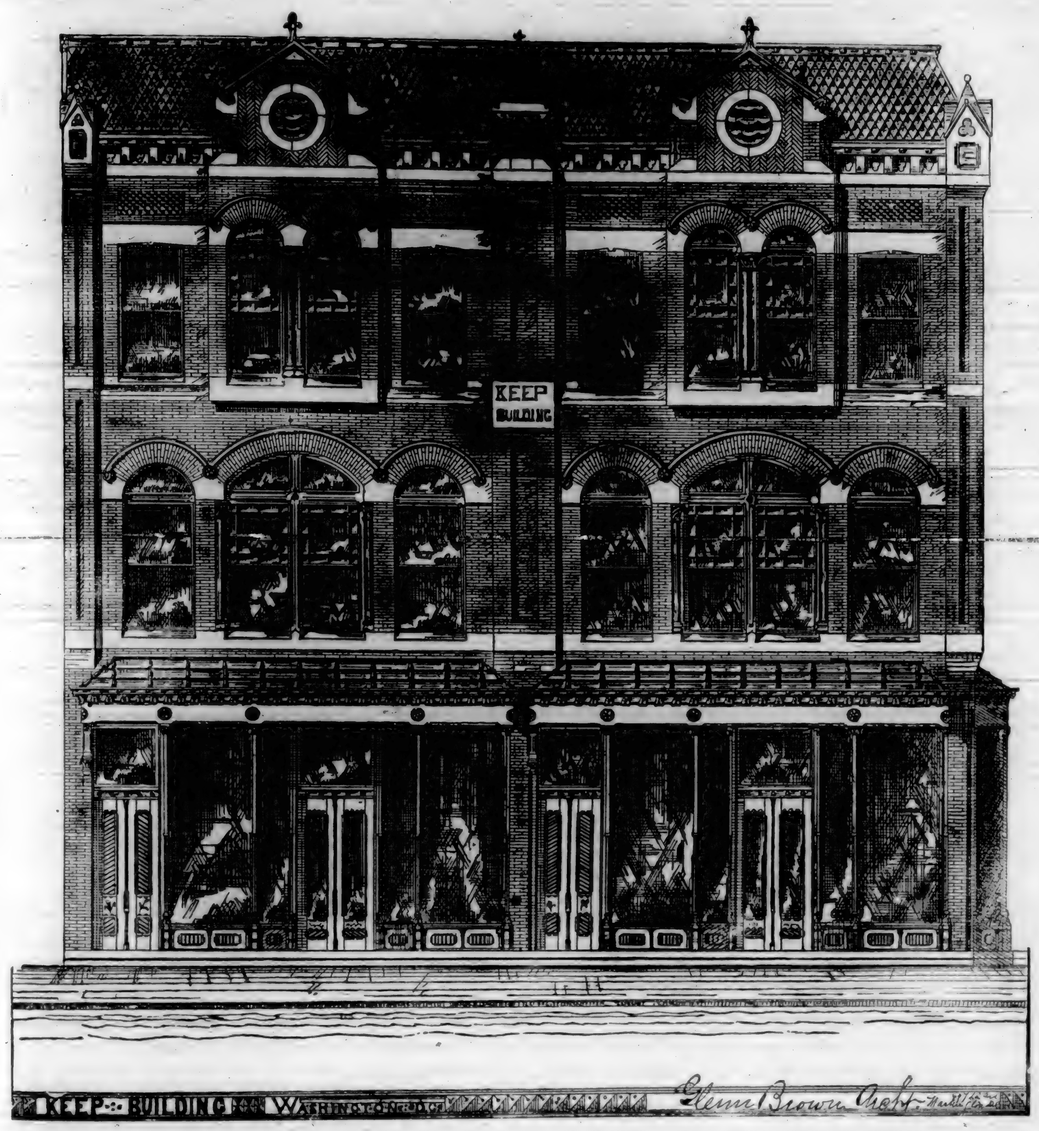
The Japanese saw is shaped like a butcher's cleaver, and has a flat handle which looks as if it might have been whittled out of an inch board, to which it is attached by wrapping tightly with fine split cane. The teeth are very narrow and long, and the sawyer stands on the plank to be sawed, and works with short, rapid, upward strokes.

The plates from which saws are made are rolled from ingots of steel carefully and uniformly tempered and varying in thickness according to the kind of saw to be made. After the blanks for the saws are stamped out, they are further tempered to the desired point by heating, and then immersed in oil for about five minutes. This oil is partially removed by sawdust, and the temper is then let down by reheating and slow cooling. The blank is then straightened by hammering, and the edge, upon which the teeth are to be cut, trimmed, after which the teeth are punched by a fly-press and then filed, tempered, oiled, and wiped, and heated till the oil blazes off. It is then hammered, ground, and glazed and grained with emery, the teeth set, and the blade properly stiffened by heating. Any discoloration is then removed by an acid, and the saw oiled. The correct spacing of the teeth is effected by means of either a double chisel or a file guide. Saws are made tapering from the tooth side to the back in order that they may not pinch or clog in the groove or kerf.

The French method is to roll the blade several times cold in order to make the grain close and the metal homogeneous. It is then heated in a furnace especially designed for the purpose, from which the air is excluded, and then bathed in colza oil in a dark chamber, and tempered by means of a machine in which the blade passes through cast-iron plates heated to a fixed temperature.—*Call Smith, in Industrial World.*

GASES from the furnaces in iron districts are very injurious to trees in the neighborhood. The sulphuric acid contained in the gases is absorbed by the leaves.

Mechanics' Geometry. Price $5.00.



DESIGN OF STORE FRONT, BY GLENN BROWN, ARCHITECT.

The Directors of the University of Southern California, at Los Angeles, California, desire to receive from Architects competition plans, with elevation, for the erection of a brick University Building, at a cost not exceeding $60,000. For particulars address undersigned Committee,

Los Angeles, California.

E. F. SPENCE,
R. M. WEDNEY,
A. M. HOUGH.

BUILDER AND WOOD WORKER.

We continue this year our friendly relations with this most excellent publication, and will send to any address one year's numbers of the "Builder and Wood Worker," in connection with the "California Architect and Building News," for $2.50. The influence of such journals as the above has had a marked tendency to elevate the thoughts of mechanics, so that now we find them exercising more head work in the performance of their labor. This is especially noticeable in country mechanics. We often receive letters inquiring for the best Eastern journal that gives the various new styles at present in vogue. We can unhesitatingly recommend the above.

Special and Sub-Contracts in Building Construction.

THE following remarks from the *Builder* will aptly apply to the professionals of this country:—

"However, as regards one point of recent correspondence—as to an architect's right to scrutinize sub-contracts made between a general and a subordinate contractor for any part of the work connected with a contract—much, of course, depends upon the circumstances and the standing of the contractor employed. Most architects claim the right to closely scrutinize everything done in connection with the erection and completion of the buildings they have designed, of whose requirements they are the best judges, and most experienced contractors do not appear to deny this. The commonly accepted version of a contractor's duties under his contract is that the work will be carried out by competent workmen, under the eyes of proper foremen, at daily wages, in his (the general contractor's) direct employ; and so far at least as London custom is concerned, we know that this is the ordinary practice of all leading contractors. Should an architect find any evasion of the conditions, or should he find that a sub-contract had been made with some subordinate contractor for any of the structural portions of the work, entirely foreign to him—in fact, objectionable, and not what he had a right to expect—it would be difficult to say that he had not a clear right to interfere and insist upon the conditions of the contract being fulfilled, which commonly would be covered by the clause that 'no part of the work shall be sub-let,' &c. Of course, when a contractor has the confidence of an experienced architect, he (the architect) would not have the least desire, nor, in fact, would he find it to his client's advantage to harass the contractor about matters of minor detail connected with his (the contractor's) methods of arranging his business in his own way, and especially when there should be no need for such interference; at the same time, it would look like taking a one-sided view of an architect's proper position—standing, as he does, between the contractor and the client, to see strict justice done to both—to say that he has no concern with sub-contracts entered into between a general and subordinate contractor, because there might occur circumstances when he would have much to do with such arrangements.

"Then as to whether the frequent insertion, in architect's specifications, of the names of special firms of merchants, manufacturers, and others from whom materials connected with the structural work must be obtained—such as the stone, bricks, slates, &c.,—is a modern and unnecessary innovation whenever it occurs, and a sign of undue partiality for certain firms not superior to others, when there exists a large field, so to speak, of firms quite as good, and fully capable of supplying the same class and quality of goods, whether the selection of the most suitable is not more properly a matter for the judgment of the contractor, who undertakes all the risks, and is held to be solely responsible, are questions upon which opinion is not altogether one way. The object, of course, is to obtain the fittest and the best, and certainly the old school of architects seemed to have no difficulty in meeting the case without any special predilections. The careful wording of their specifications was with them, as is now with such of them as remain, of far greater importance to the solidity of their buildings, and their general effect, when finished, than any sentimental preference for the goods of any particular firm of merchants or manufacturers. Of course, these remarks apply to the ordinary run of specifications. Before passing on, it may be mentioned that an authority has said, 'Ambiguity is the bane of modern specifications.' Touching again the question of special or separate contracts made between architect and specialists, or others, and the bearing upon the general contractor and clerk of works, it is necessary that both of them should be fully acquainted with all the details connected with such contracts—that is, as regards what is actually included; whether the builder's work and attendances, &c., have been provided for and included in the estimates, or the contrary. This necessary information on all points should not be given simply orally, as is too frequently the case, not even when directed by the tip of a fluent tongue, but should be fixed in writing. Many specialists give little if any specification describing clearly and in full detail, for the information of others, what they have included in their contracts, and not unfrequently are they their own interpreters of what they have or have not included, and especially does this occur in connection with what is called the 'builder's work'; the general contractor, knowing nothing, hesitates, or acts upon the word of the clerk of works, who may know as little, but, nevertheless, has to arrange and look forward. Any settled arrangement tending to the avoidance of cross charges, misunderstandings, confusion of accounts—and this is really what it comes to—should be welcome to all interests concerned. Here, as in the general work, we may not inaptly quote again, 'Ambiguity is the bane of modern specifications.'"

Five Per Cent. Gain vs. Ten Per Cent. Loss.

IT has been remarked by an able correspondent, writing upon the subject of sub-contracts, that, "It is a difficult matter to bring proof as to the amount of profit derivable from any branch of the building trade." To my mind, this is true, and it rather amusingly reminds one of the tortures described by the experienced in connection with the mystic word "prime-cost;" it is capable of an elastic interpretation according to circumstances, and many astute brains have been before now puzzled over it, and it has not unfrequently been found to contain within itself a considerable element of profit. It need not be said that the "prime cost," as understood by all leading architects and contractors, is that which represents the *net* cost of the labor and materials, &c., without any further additions whatever; it is then susceptible of taking its legitimate and fair profit.

A.

Much soreness has occurred before now by what may be called an anomalous practice, stated to be not so rare as it should be, viz., contractors of standing and repute being invited to tender for works in competition with others not of equal standing, and doing what may be termed a cheap class of work. The former, as is the custom, do not know the names of other competitors; in result, one of the latter usually gets the contract, and the former would not have wasted time and money in working up tenders, but they would have declined had they known beforehand with whom they were classed in competition. The public should understand that it is not with building affairs as with many of the other concerns of life; the apparent saving of 5 per cent. in a contract may, as it has in very many instances before now, prove a 10 per cent. loss.

B.

A Result of Co-operation.

WORKINGMEN managing a co-operative establishment, and performing their own labor, would undoubtedly experience seasons when they would be compelled to accept not only smaller dividends but lower wages, in order to have any dividends at all. Still it is well known that men when working for themselves will put up with privations, and hardships even, which they would not think of submitting to if imposed upon them by others. One of the indirect advantages of co-operative production will be the cultivation of economy, saving, and thrift, among the workingmen who engage in it. The interest in such an establishment would form a nucleus to which every honorable and ambitious workman would have a just pride in adding something every month.—*Western Manufacturer.*

A Curious Discovery.

ONE by one the scenes of the old Franciscan Fathers are being brought to light as excavations are made near the old mission. A singular discovery was made near the city of San Luis Obispo a few days since. The *Tribune* is authority for the statement that some workmen, in making excavations on the side of the San Luis Obispo Mountain, discovered an ancient smelting furnace, the remains of the arches and smelting pots, or crucibles, being quite abundant. The discovery, when taken in connection with the tradition that the old missions of the coast had an abundance of crude silver, is quite significant. The remains of such a furnace are known to exist in the mountains back of Santa Barbara and Ventura, and piles of slag attest the amount of work done there in former times.

Stables, Fences, Out Buildings, etc. Price $2.50.

All new subscribers for 1884 will receive the balance of this year free.

THE BENEFITS OF TREES.

Their Effect on Climate, Soil, and Mankind.

AN interesting paper on "Forestry" was read before the Geographical Society lately by C. A. Washburne. He began by speaking of the increase of the population of the world. Mr. Washburne took the opposite stand-point from Malthus, and said that we should not try to devise plans of preventing the increase of population, but to devise means to provide food for them. The world could be made to support seven times its present population, and that way is by increasing our forests. By planting our now barren hills with trees, it would leave them plenty of land in the valley to cultivate grain. It is an undeniable fact that where trees are in abundance the country is thrifty. Speaking of the devastation of timber lands, the speaker cited Arabia, Syria, Egypt, and the countries of the Old World. At one period in the world's history these places supported a vast population, beautiful cities, and wealthy kingdoms. Now there are no more barren places on the face of the earth than are the places that were once the pride of the world. The cause of this wonderful change, according to Mr. Washburne's ideas, was the destruction of the timber. History tells us that many of these countries were once fertile and productive, but as the population increased the forests were destroyed, and the cessation of rains has made them what they are now. California is coming to the same end in the course of time, if we do not profit by the experience of the ancients and save our forests, or, at least, not allow them to become annihilated. Taking the scientific stand-point of the effect of forests in their influence on the rain-fall, the speaker contended that as forests are removed so will the fall of rain decrease, and to substantiate his theory and the theory of scientific men, he cited the effect of cutting off the timber among the Appennines, and in Lombardy. Germany and England, on the other hand, are still thriving nations, and one great cause is that care is taken to preserve the fertility of the soil and keep up their forests. Old Spain again is the reverse. The country is desolate and its people thriftless on account of the lack of vegetation. The effect of planting trees in our own country, especially in California, is very noticeable. Many of our valleys and grain lands are very open, over which the winds sweep, drying up the soil and blighting the crops. In those places where the prudent farmer has planted long rows of trees, the violence of the wind is broken and the growing crops are saved. Where trees grow, rain, on which we all depend, will fall. The only exceptions to the rule of forests and rain going together are the pampas of South America and our great Western plains; but these exceptions, as explained by scientists, are due to the fact that the rain-bearing winds that blow over them are condensed by the trade winds. The farmers in Nebraska, Iowa, and Illinois, are fast exhausting the fertility of the soil, and if they continue to do so in less than two centuries these places will be as barren as the plains around Damascus are at the present day. The speaker then compared the difference in beauty and valuation of two farms, one on which no trees were planted, and another where trees grew in abundance.

The Price of Lumber.

A NEW combination has been formed among the lumber dealers, by which the *dear public are assured* that, in the near future, no danger need be apprehended that any discounts will be allowed below the schedule prices. It has been the custom heretofore to allow contractors 10 per cent. on the rates established by the Lumber Manufacturers' Association; but the managers of that institution have wisely (?) allowed that it would be best for the interests of owners to have them understand precisely the cost of lumber used in the construction of their houses and thus be sure that a portion of the extravagant prices (?) asked by contractors should find its way in the capacious pockets of the poor men who supply lumber.

And, in order that they can thus guard the interests of owners, each one of the poor men forming the association has deposited the sum of $10,000, which shall become forfeited in case lumber is sold for a less price than their law prescribes.

The *dear public* have been so faithfully served by the members forming the association that it is expected that they will readily acquiesce in the demands of the lumber dealers, and not allow the rich contractors to hoard as much wealth as they have done in the past.

Seriously, though, we will be pleased when the time comes that lumber will remain at a fair regular price for a year at a time, so that those who are calculating to commence extensive improvements in the future may be able to judge somewhere near the cost of building before commencing operations.

Every Architect Should Become Identified With the Chapter.

DURING the past month we have had several calls from draughtsmen, seeking information in regard to the classes established by the Chapter of Architects. Three of the applicants were connected with architectural firms in this city.

We would call the attention of architects not identified with the Chapter that it is for their interest to join at once; especially now, as it is the beginning of the year. The small outlay required will be more than gained by the knowledge the students and draughtsmen under your charge will gain under the leadership of the gentlemen who so generously give their time for the advancement of the younger members of the profession. The dues are but small—$6.00 per year.

The Chapter is one of the most flourishing in the United States, numbering forty-six members; it also has a goodly amount of cash in the treasury. Hand in your names at once for membership. Office of the Secretary may be found at room 11, 240 Montgomery Street.

THE *Manufacturer and Builder* gives a simple process for preparing the luminous paint now coming slowly into use. The ingredients of the mixture are simply sulphur and lime, the latter being obtained from oyster shells, which are to be washed with warm water, and calcined for half an hour, then allowed to cool, pulverized, and the white portions separated from the gray refuse. The white lime is then to be put in a crucible, in alternate layers with flour of sulphur, and the cover luted on with a mixture of clay and sand, moistened with beer. The crucible is exposed to a bright flame for an hour, and is then, after cooling, broken open, when the contents will be found of a mottled white and gray color. The gray portions are to be separated and thrown away, but the white part is to be finely ground and sifted through muslin, after which it may be mixed with varnish, oil, or size, and used like ordinary paint. It is essential that objects painted with this substance, which are intended to be luminous at night, should be exposed to sunshine or bright light during the day. If so treated, the paint will retain its qualities indefinitely.

A CAVITY in a grindstone may be repaired as follows: Take a piece of old grindstone, and pound it up quite fine, or procure some fine, sharp sand and sift out the coarsest, using only the fine; make this into a paste with one-third the bulk of hydraulic lime or cement and sufficient water-glass; undercut the cavity in the grindstone, or drill key-holes in it, and fill it with the cement as above made. It will harden very rapidly. Very good artificial stones may be made in this manner in a mould, to which considerable pressure can be applied.

A MACHINE for plastering walls has been invented. It consists of a receptacle for the mortar, the segments of a cylinder in form. It is provided with a hinged leaf or press plate that moves rapidly against the mortar, and as the receptacle is moved upward against the wall, the plaster presses out through a narrow-gauged opening at the bottom.

All new subscribers for 1884 will receive the balance of this year free.

THE CALIFORNIA ARCHITECT would like to know when dealers will be satisfied with a *fair profit* on lumber, and thus enable those of limited means to erect buildings, and keep within their means for so doing.

DENSE forests are increasing in Australia the climate is growing more moist, and even the great central desert may become habitable.

School House and Church Architecture. Price $4.00.

THIRTY per cent. of forest is considered the best proportion for the most beneficial effect on climate.

Detail Cottage and Constructive Architecture. Price $10.00.

AN active tool never grows rusty.

History of Glass.

In the year A. D. 676, "messengers were sent out," according to Bede, from Wearmouth, England, to Gaul, France, to fetch makers of glass (artificers), "who were at this time unknown in England, that they might glaze the windows of the church, with the cloisters and dining-rooms." Bede adds that "they taught the English nation their handicraft, which was well adapted for inclosing the lanterns of the church, and for the vessels required for various uses." About this time Archbishop Wilfred, of York, "filled with glass" the windows of the cathedral, previously "open to the weather," and "such glass," says one, "as permitted the sun to shine through;" from which it may be inferred that glass was made that was impenetrable to the sun's rays. It was recorded, in connection with this cathedral, that "great astonishment was excited, and superstitious agency suspected, when the moon and stars were seen through a material which excluded the inclemency of the weather." Still, the adoption of glass was slow; for in 1214 Robert de Lindeley, Abbot of Peterborough, employed glass "in beautifying thirty of the windows of his monastery, previously stuffed with straw, to keep out the wind and rain;" and for some generations later the domestic windows of England were not furnished with glass, but lattice. When glass windows were first introduced, they were not fixtures, but were regarded as movable chattels, and were so considered until about A. D. 1600.—*Sel.*

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of United States Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market Street, San Francisco.

FOR WEEK ENDING OCTOBER 23, 1883.

286,993.—FLOWER-POT HOLDER AND SHIELD—Wm. A. Birch, San Francisco.

287,094.—STATION INDICATOR—W. W. Campbell, San Francisco.

287,003.—NUT LOCK—F. H. Crawford, Redding, Cal.

287,256—ORE GRINDER AND AMALGAMATOR—Peter Eddy, Nevada City, Cal.

287,261.—BARBED WIRE FENCE—J. E. Evans, Spanish Fork, U. T.

287,374.—CAR TRUCK—Thomas J. Furbee, Bishop Creek, Cal.

287,118.—LAND MARKER—L. Gairaud, Santa Clara, Cal.

287,276.—SEWING MACHINE—Geo. Gowing, San Francisco.

287,377.—CABLE GRIP—A. Haman, San Francisco.

287,028.—INDICATOR PADLOCK—A. Jackson, San Francisco.

287,290.—INTEREST INDICATOR—H. E. Jenne, Ben Lomond, Cal.

287,307. CONVERTING MOTION—R. G. Moody, San Jose, Cal.

287,165.—BED LOUNGE—F. Rentschler, San Francisco.

287,166.—PHONOGRAPH—C. C. Reynolds, Prescott, A. T.

287,326.—DRILLING MACHINE—John Richards, San Francisco.

287,173.—ORE CONCENTRATOR—C. C. Rueger, San Francisco.

287,178.—CAISSON GATE—Geo. F. Schild, Vallejo, Cal.

287,198.—CRANK HANDLE FOR LIFTING-JACKS—J. M. Vance, Eureka, Cal.

287,202.—CAR AXLE—A. Walton, San Francisco.

10,658.—TRADE MARK—Franco-California Packing Company.

3,265.—LABEL—Pacific Vinegar Works, San Francisco.

NOTE.—Copies of United States and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.

How to Recut Old Files.

To the Editor of The American Artisan:—

PERHAPS some of your readers may not know how to dress their old files and make them useful a second time. As a general thing, tinners' files become filled with copper, etc., long before they are worn out. By the following process files may be recut two or three times:—

Dissolve 4 oz. saleratus in 1 qt. of water, and boil the files in it for half an hour, then remove, wash, and dry them. Have ready in a glass or stoneware vessel 1 qt. of rain-water, into which you have slowly added 4 oz. best sulphuric acid, keeping the proportions for any amount used. Immerse the files in this preparation for a short time, or until the files are cut out clean. Then remove, wash in clear water and dry quickly, and put on a little sweet oil to cover the surface, after which your files are ready for use.

The same liquid may be used at different times, if required, by keeping it in a bottle in a cool place. As it is poisonous, it would be better to label it and keep it away from children.—*C., in American Artisan.*

ARCHITECTS who practice in the large cities will be interested in the answer given by the law editor of *La Semaine des Constructeurs* to a correspondent who asks whether the usual commission can be collected, where old materials are used in building, upon the cost of the work as it would have been if all the materials were new. The reply to this important question is a very satisfactory one, at least for architects in France. It appears that judicial decisions have established the law there that for his services in the construction of a new building an architect is entitled, in summing up the cost upon which his commission is calculated, to reckon all materials, whether old or new, and whether furnished by the proprietor or not, as if new and furnished by the contractor; the courts holding that the work and responsibility of the professional man, and his proper compensation, are the same in both cases. Moreover, if, as often happens in cities, the demolition of structures already existing on the ground forms a necessary preliminary to the construction of a new building, and if the architect of the latter includes in his service the direction of the work of taking down and sorting the old materials, and the provisions for the protection of the public, he is entitled in France, by a decision of the Tribunal of the Seine, to collect commission upon the cost of these operations, in addition to his fees for work upon the new building.—*The American Architect and Building News.*

Masons and Builders' Exchange of San Francisco, Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

ROBERT MITCHELL, President, 807 Turk St.,	Box	26
J. WAGNER, 516 Kearny St.	"	2
CRAWFORD FERRIS, 1723 Eddy St.	"	20
JOS. SMITH, 2635½ Harrison St.	"	36
JOHN MCCARTHY, 2509 Folsom St.	"	7
WM. DUNBAR, 27 11th St.	"	14
GEO. RICHARDSON, 518 Ellis St.	"	39
C. R. WORRELL, 888 17th St.	"	5
J. G. LIEBERT, Treasurer, 330 Oak St.	"	32
JOHN HUGHES, 318 Fremont St.	"	21
J. J. O'CONNER, 648 Minna St.	"	19
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MATT. MCGOWAN, 614 Linden Ave.	"	18
JOHN CALVERT, 812 Hyde St.	"	40
THOMAS BUTLER, 593 Ash Ave	"	28
ROBERT HIGGINS, 1724 Jessie St.	"	13
JOHN DOWNS, 269 Minna St.	"	18
J. HAFF, 516 Kearny St.	"	6
G. D. NAGLE, 427 Montgomery St.	"	24
N. R. TUCKER, 1411 California St.	"	1
S. L. PLEACE, 634 Stevenson St.	"	18
O. E. BRADY, 822 Valencia St.	"	22
THOS. WHITE, 45 Minna St.	"	4
J. J. CROOKS, 1929 Sutter St.	"	9
JOHN COX, 608 Jones St.	"	16
J. F. RILEY, Secretary, 833 Howard St.	"	38
P. O. SULLIVAN, 543 Stevenson St.	"	35
BYRON BROS., 11 26th St.	"	34
JOHN BYRON, 19 Shotwell St.	"	27
M. FARRELL, 139½ 11th	"	52
CON. HOLMES, 726 Hayes St.	"	10
JOHN HANIVAN, 1705 Jessie St.	"	15
G. W. KNEEDLER, 1013 Vallejo St.	"	51
B. A. THOMPSON, Oakland	"	25
JOHN MCDERMOTT, 124 10th St.	"	33

PARTIES RENTING BOXES IN THE BUILDERS' EXCHANGE.

WARDEN & MCCLURE, Teamsters	Box	30
MCVICKER & ROACH, Stone-cutters	"	8
REMILLARD BRICK CO.	"	23
PAT. BRICK CO.	"	29
CHAS. WARREN, Grader	"	37
L. E. CLAWSON, Patent Chimneys	"	2
A. E. BUCKMAN, Grader	"	42
JAS. E. WHITTIER, Asphaltum	"	41
DAVIS & COWELL, Lime and Cement	"	43
KENNY & MCCUE, Graders	"	44

Portland—Continued Building Prosperity.

ONE would naturally suppose that the building boom of the "Star City of the North" would, at this season of the year, fall off to a mere nothingness. The climatic conditions of the weather are such that the rain descends in quantities sufficient to almost stop building operations. That such is not the fact is evident from the following list of improvements now in progress. Our agent has sent us only the more costly, as a full list, containing all the small jobs, would fill more space than we can spare.

Six-story and basement brick for the N. P. P. R. Co.; *A.*, McKim, Mead & White; *C.*, W. E. Holmes for the rough stone work; cost of present contract, $100,000.

Third, corner D. Nicholi Bros. are having built a three-story and basement brick; *A.*, J. Krumbein; *C.*, Merchant & Bridges for carpenter work, and M. Owens for brick work; $20,000.

Third, corner Jefferson. Two-story brick; *O.*, J. C. Carson; *A.*, J. Lo Romer; $9,000.

Taylor, corner West Park. Architect W. H. Williams is superintending the erection of a $10,000 two-story and basement frame for J. R. Foster; *C.*, Sedge & Jenkins.

Eighteenth, near C. Two-story and basement frame; *O.*, L. Sechtem; *A.*, J. Krumbein; *C.*, G. Gardner; $6,500.

First, corner Clay. S. Harkins is erecting for J. Shade a two-story frame; $5,500.

West Park, corner C. Two-story and basement frame; *O.*, S. Loewengardt; *C.*, E. Kling; $3,500.

Fourth, near College. Two-story frame; *O.*, J. C. Curran; *A.*, G. Marshall, Jr.; *C.*, J. C. Wilson; $2,800.

Eighth, corner B. Two-story frame; *O.*, J. Stewart; *C.*, J. Mahoney; $2,000.

Hall, near First. Two-story frame; *O.*, F. Homstrom; *A.*, W. J. Graham; *C.*, E. F. Staley; $1,500.

North Fifteenth, corner S. Two-story frame; *O.*, M. B. Cook; *C.*, A. M. Young; $2,500.

Fourth, corner L, East Portland. First National Bank is having built a two-story brick; *A.*, Neer & Lo Romer; *C.*, J. E. Mayo; $9,000.

New Tacoma. Four-story brick; *O.*, Tacoma Land Co.; *A.*, McKim, Mead & White; *C.*, F. W. Lewis; $80,000.

Building News in Los Angeles and Vicinity.

Wilmington. One-story frame; *O.*, Mrs. Alexander; *A.*, Mr. Hall; *C.*, Mr. Gougeon; $2,000.

Celis. One-story frame; *O.*, Wm. Wheeler; *C.*, Mr. Hargett; $1,500.

Olive. City Horse Car Co., stables and offices; *C.*, Mr. Hargett; $4,000.

Bath. Two one-story semi-detached cottages; *C.*, Mr. Gougeon; $3,500.

Main. Two-story and basement frame; *O.*, T. E. Rowan; *C.*, Mr. Gougeon; $7,500.

Main. Two-story brick; *O.*, Foster & Brown; *C.*, not let; $35,000.

Los Angeles. Two-story brick; *O.*, Mr. Brown; $10,000.

Two-story brick; *O.*, Mr. Brown; $8,000.

Los Angeles, between Second and Third. Two-story brick; *O.*, Foster & Brown; *C.*, not let; $50,000.

San Fernando. Three one-story frame; *O.*, Arnold & Straton; *C.*, Arnold & Straton; $1,000.

Spring. Two-story frame; *O.*, Mrs. F. E. Howe; *C.*, Arnold & Straton; $3,000.

Hill. One-story frame; *O.*, W. R. Hasson; *C.*, Arnold & Straton; $1,700.

Hill. Two-story frame; *O.*, Mr. McCoy; $2,000.

East Los Angeles. One and one-half story frame; *O.*, Mr. Mathews; $2,000.

East Los Angeles. One-story frame; *O.*, Mr. Mathews; $1,800.

The above are under the superintendence of J. Hall, architect.

Pearl. Two-story frame; *O.*, M. Childs; *A.*, Chas. W. Davis; *C.*, J. Kindleburger; $8,000.

Spring. Two-story brick; *O.*, Mrs. M. Jones; *A.*, Chas. W. Davis; *C.*, J. Harget; $30,000.

Commercial. Two-story brick; *O.*, J. Bosseranie; *A.*, Chas. W. Davis; *C.*, B. F. French; $12,000.

Second, corner Fort. Presbyterian Church; frame; *A.*, Chas. W. Davis; *C.*, J. Webster; $20,000.

Main. Three-story brick; *O.*, L. J. Rose; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $30,000.

New High. Three-story brick; *O.*, L. J. Rose; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $10,000.

Los Angeles. Two-story and basement brick; *O.*, Smith & Heffner; *A.*, Chas. W. Davis; *C.*, D. Penman; $10,000.

Los Angeles. Three-story and basement brick; *O.*, Rece & Wessings; *A.*, Chas W. Davis; *C.*, D. Penman; $20,000.

Los Angeles. Two-story brick; *O.*, Harper, Reynolds & Co.; *A.*, Chas. W. Davis; *C.*, D. Penman; $8,000.

First, between Fort and Main. Two-story and basement brick (stable); *O.*, John Foster, *A.*, Chas. W. Davis; *C.*, B. F. French; $20.000.

Main. Two-story frame; *O.*, T. H. Rowan; *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $5,500.

Main. Two-story frame; *O.*, W. Maxwell, *A.*, Chas. W. Davis; *C.*, W. H. Riggs; $7,000.

Fort. Two-story frame; *O.*, N. H. Moore; *A.*, Chas. W. Davis; *C.*, B. F. French; $4,000.

Pearl. Two-story frame; *O.*, Ex-Mayor Toberman; *A.*, Chas. W. Davis; $5,000.

Washington. One-story frame; *O.*, J. Dow; *A.*, Chas. W. Davis; *C.*, Mr. Pierce; $4,000.

New High. Two-story frame; *O.*, Mrs. Evarts; *A.*, Chas. W. Davis; *C.*, — Marsh; $8,000.

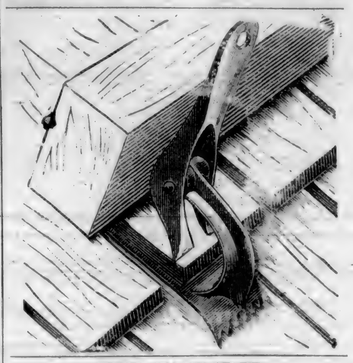
Anaheim, Drufus Block. Two-story brick; *O.*, Mr. Drufus; *A.*, Chas. W. Davis; *C*, S. Smith; $20,000.

Canada Canyon. One and one-half story frame; *O.*, A. W. Williams; *C.*, T. W. Cox & Farnell; $2,000.

Downey City. Two-story brick (Masonic Hall); *O.*, Franklin Bros.; $10,000.

San Bernardino. Two-story brick; *O.*, A. G. Burt; *A.*, Chas. W. Davis; *C.*, Ely Davis; $15,000.

KENNETT'S PATENT ROOF BRACKET.



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Leaky Roofs.

Saves Time, Material, and Money.

Simple, Reliable, Durable, and Cheap.

THE BEST IN THE WORLD.

This Bracket is used to instantly secure a Scaffold or Staging on a Shingle roof,

Without the Use of Nails or Screws.

It is made of best **Malleable Iron**, and cannot be broken.

The above illustration shows the Bracket partly under a shingle and a scantling, in position. By this construction it forms a clamp, and the more pressure there is against it the tighter it gets. The bracket is placed over a joint, so that it holds on to three shingles and makes it doubly secure, and obviates any possibility of slipping or of splitting shingles.

The scantling lies close to the roof, so that loose nails and shingles cannot pass down and off the roof. It engages with thick or thin shingles with the same readiness and security.

It is the

Safest Mode

IN THE WORLD

OF FASTENING A SCAFFOLD.

It Cannot Slip or Give Way.

For Shingling, Repairing, or Painting a Shingle Roof, or in case of a fire to go on a roof it has no equal. It requires but a few seconds to change from one place to another, requires no nails, splits no shingles in taking up your scaffold, as in the old way; and thereby

Saves Time, Labor, and Money,

—AND MAKES A—

Stronger and Safer Scaffold.

We Have Been Appointed

Sole Agents for the Pacific Coast

FOR THIS BRACKET.

Price, $4.00 per Dozen.

In order that every mechanic on the coast may possess these Brackets, we will send a pair, post-paid, to any address, upon receipt of **75 cents.** ADDRESS

G. H. WOLFE,

240 Montgomery St., San Francisco, Cal.

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Berry, cor. Sixth. Two-story frame.
O.—Mrs. Moran.
A.—Wolfe & Son.
C.—E. F. Ellis.
$3,000.

McAllister, near Octavia. Alterations.
O.—Mrs. Gross.
A.—Wolfe & Son.
C.—R. Parker.
$1,000.

Battery, nr. Bush. Repairs.
O.—— Levi.
A.—Wolfe & Son.

Sixteenth, cor. Nebraska. Additions.
O.—H. W. Newbauer.
A.—Wolfe & Son.
C.—R. Casey.

Golden Gate Ave., near Octavia. Two-story frame.
O.—A. Bruman.
A.—Newsom & Gash.
C.—J. Carbary.
$15,000.

Sacramento, nr. Fillmore. Two-story frame.
O.—J. W. Cherry.
A.—McDougall & Son.
C.—A. Jackson.
$6,000.

Natoma, nr. Seventh. Alterations.
O.—Mrs. Moran.
A.—McDougall & Son.
C.—Hutchinson & McLean
$2,800.

Twentieth, near Mission. Three two-story frame.
O.—Von Rhein & Co.
C.—P. Crowley.
$12,000.

Mission, near Twenty-fifth. Two story frame.
O.—J. Mulroney.
$2,500.

Sanchez, corner Twenty-seventh. One-story frame.
O. and B.—J. M. Comerford.
$1,500.

Folsom, nr. Twenty-fourth. Two-story frame.
O.—G. Ginocchio.
C.—S. G. Worden.
$6,500.

Prospect Ave., nr. Lizzie. One-story frame.
O. and B.—P. Rooney.
$700.

Mission, nr Twenty-ninth. Two-story and basement frame.
O.—Cerghimo & Debenedito.
A.—W. H. Bayless.
C.—Mills & Wells.
$8,000.

Sanchez, nr Twenty-ninth. One-story frame.
O.—Anderson & Co.
C.—J. Nelson.
$1,500.

Tenth, near Harrison. Alterations.
O.—E. McPhillips.
$1,000

Tenth, near Harrison. One-story frame.
O.—E. McPhillips.
$800.

Shotwell, near Fifteenth. Two-story and base. frame.
O.—J. Doherty.
C.—W Miller.
$8,000

Francisco, nr. Taylor. Reconstruction.
O.—J. Cuneo.
$10,000

North Point, near Larkin. Two-story frame.
O.—Mrs. M. Hildebrandt.
A.—Theo. A. Eisen.
C.—C. B. Mills.
$4,000.

Union, cor. Hyde. Two-story frame.
O.—J. Powers.
C.—W. Simon.
$4,500.

Broadway, near Jones. Two-story frame.
O.—F. Saywell.
$1,400

Pine, corner Leavenworth. Four-story frame—B. B.
O.—Mrs. J. G. Fair.
A.—J. G. Gaynor.
C.—J. A. Benham.
$100,000.

Bluxome, near Fifth. Two-story brick.
O.—Cahill & Mitchell.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$10,000.

Fair Oaks, x Twenty-third and Twenty-fourth. Two-story frame and stable.
O.—J. H. Boardman.
A.—J. T. Kidd.
C.—Knight & Littlefield.
$4,000.

Geary, nr. Buchanan. Three two-story frame.
O.—J. Goldstone.
A.—J. Gosling.
C.—D Perry.
$14,000.

Post, near Stockton. Rebuilding.
O.—Red Men's Hall.
A.—Curtis & Bennett.
C.—Terrill & Slaven.
$25,000.

Sixth, x Bryant and Brannan. Remodeling.
O.—J. P. Vandenbergh.
$1,700

Mission, x First and Second. Remodeling.
O.—J. Tompkinson.
C.—W. Newham.
$5,000.

Spear, near Folsom. Two-story frame.
O.—Hobbs, Wall & Co.
C.—C. W. Kinsman.
$9,000.

Folsom, corner Hampton Place. Three-story and basement frame.
O.—Judge S. C. Hastings.
C.—Bassett Bros.
$10,000.

Welsh, near Zoe. Two-story frame.
O.—Mrs. S. Pretorius.
C.—W. Pluns.
$2,000.

Kearny, cor Green. Three-story and basement frame.
O.—H. Kohler.
$7,000.

Greenwich, cor. Montgomery Ave. Remodeling.
O.—J. Alcese.
$4,500.

Devisadero, near Fulton. One-story frame.
O.—J. Warren.
A.—J. T. Kidd.
$1,500.

Waller, near Buchanan. Frame dwelling.
O.—— Wieland.
A.—H. D. Mitchell.
C.—J. J. Welsh.
$2,700.

Devisadero, nr California. One-story frame.
O.—W. Smith.
A.—H. D. Mitchell.
C.—J. Geary.
$3,000.

Fulton, near Van Ness Ave. Twelve flats
O.—T. Donahue.
A.—H. D. Mitchell.
C.—R. McCann.
$20,000.

Filbert, corner Webster. One-story frame.
O.—R. Malone.
C.—W. H. Wharff.
$1,700.

Capp, x Eighteenth and Nineteenth. One-story and basement frame.
O.—P. C. De Bois.
C.—W. H. Wharff.
$2,500.

Eddy, x Leavenworth and Hyde. Two two-story frame
O.—R. Dinsmore.
A.—Schmidt & Havens.
C.—I. N. & J. G. Day.
$15,000.

Geary, cor. Laguna. Three two-story frame.
O.—L. A. Levy.
A.—Schmidt & Havens.
C.—I. N. & J. G. Day.
$27,000.

1613 Post. Alterations.
O.—E. Hagnette.
A.—Schmidt & Havens.
C.—J Furness.
$1,800.

Turk, corner Devisadero. Two-story frame.
O.—A. Waugh.
A.—Schmidt & Havens.
C.—W. M. Fletcher.
$8,000.

Sansome, x Jackson and Pacific. Alterations.
O.—E. J. Le Breton.
A.—Schmidt & Havens.
C.—J. Mulcahy.
$2,800.

SACRAMENTO.

O, x Nineteenth and Twentieth. One-story frame.
O.—Chas. Arndt
C.—H. D. Vandercook.
$1,600.

Nineteenth, x O and P. Two-story frame.
O.—Mrs. M. E. Brown.
C.—H. D. Vandercook.
$1,600.

Twenty-third, x G and H. One-story frame.
O.—Mrs. Gilpey.
C.—H. D. Vandercook.
$700.

Ninth, corner P. One-story frame.
O.—Mrs. Childs.
C.—H. D. Vandercook.
$1,050.

W, cor Eleventh. Two-story frame.
O.—F. Newman.
C.—H. D. Vandercook.
$1,700.

H, cor Twentieth. Repairs.
O.—Mrs. Mulwin.
C.—H. D. Vandercook.
$3,500.

Twelfth, cor. I. Two-story and basement frame.
O.—Kareth & Nickolaus.
A.—Jas. Seadler.
Day's work.
$3,500.

N, x Twelfth and Thirteenth. Two-story frame.
O.—J. L. McCord.
A.—J. Seadler.
$6,000.

Thirteenth, cor. Q. One-story frame.
O.—Geo. Boyne.
C.—E. B. Wilson.
$1,800

Second, x Fourth and Fifth. One-story frame.
O.—R. Klenk.
C.—D. & D. Falconer.
$1,800.

One and one-half-story frame.
O.—G. W. Darling.
A.—W. H. Hamilton.
C.—D. & D. Falconer.
$2,500.

ALAMEDA.

Regent, nr. San Jose Ave. Two-story frame.
O.—R. T. Taber.
C.—Gilbert & Co.
$3,500.

St. Charles, near King Ave. Two-story frame.
O.—C. Bartlett.
C.—Gilbert & Co.

Central Ave, near Broadway. One-story frame.
O.—J. E. Baker.
C.—Gilbert & Co.
$3,000.

Alameda Ave, near Benton One-story frame.
O.—Mrs. N. J. Ashton.
C.—Gilbert & Co.
$2,200.

Webber. Two-story and basement frame.
O.—S. J. Look.
A.—Newsom & Gash.
C.—C. B. Green.
$3,500.

Walnut, nr. Railroad Ave. Two-story frame.
O.—J. Young.
$2,300.

Santa Clara Ave., near Willow. Two-story frame.
O.—G. F. Richardson.
C.—Wasson & Pattiani.
$3,500.

OAKLAND.

Sixth, near Harrison. Two-story and basement frame.
O.—H. Fiege.
C.—E. W. Mullein.
$3,000.

San Pablo Avenue., nr. Twentieth. Two-story frame
O.—J. Miller.
$2,500.

San Pablo Ave., near Twenty-sixth. Remodeling.
O.—H. Konecke.
C.—H. Marion.
$1,300.

Myrtle, near Fourteenth. One-story and basement frame.
O.—N. R. Johnson.
C.—C. S. Martin.
$2,500.

Kirkham, cor Fourteenth. Two-story frame.
O.—Contra Costa Laundry
$2,000.

Peralta Heights. Two-story frame.
O.—Chas. Newton.
A.—— Newsom.
C.—Wasson & Pattiani.
$4,000.

Eleventh Ave., cor Seventeenth. One-story frame.
O.—S. H. Wade.
A.—Matthews & Son.
C.—Knight & Littlefield.
$4,000.

MISCELLANEOUS.

National City. Sanitarium; O., — Potts; A., R. S. Cox; $15,000.

Martinez. One-story frame; O., Mrs. J. Fish; C., Bulger Bros.

Benicia. One-story frame; O., Chas. Durner; C., J. B. McKenzie; $1,200. One-story frame; O., W. A. Gurner; C., J. B. McKenzie; $2,000.

Wheatland. One-story frame; O., Baptist Society; A., A. A. Cook; C., Carl & Croly; $2,800.

Lincoln. Two-story frame; O., Gerber & Burdge; C., E. B. Wilson; $5,500.

Lodi. Contractor A. S. McDonald is erecting the following: Additions to brick building for Grangers' Union, $4,000; one-story frame for W. R. Ellis, $1,500; two-story frame for J. A. Fitzgerald, $2,600; two-story frame for C. R. Montgomery, $7,000; one-story frame for J. Dunbar, $1,800; two-story frame school house for $11,000.

Galt. Two-story frame; O., A. W. Wright; C., A. J. Blanchfield; $1,800. One-story frame; O., Mrs. Fowler; C., A. J. Blanchfield; $1,500.

Woodland. Two-story frame; O., B. Jackson; A., H. D. Mitchell; $10,000.

Livermore. Methodist Church; C., C. W. Bradshaw; $2,000.

San Jose. Contract has been let for the brick foundation of Chas. Lefranc's building, to be built on the north side of Santa Clara Street, west of Farmers' Union Building; two-story and brick base; A., Theo Lenzen; total cost of building $20,000. Six miles from town; two-story frame, B. B.; O., Mr. Cottle; A., Theo. Lenzen; C., E. A. Van Dolzen; $3,500.

Berkeley. Dwight Way; one and a half-story frame; O., Mr. Johnson; $1,800. Cor. Dwight Way and Shattuck Ave.; real estate office of J. L. Barker; frame; $800. Cor. Virginia and Louisa Streets; two-story frame; O., Clarke Brook; C. and A., G. A. Embury; $1,600. Cor. Louisa and Francisco Streets; two-story frame; O. and B., C. Moran; $1,800.

MARKET REPORTS.

LUMBER—*Pine*

Common Rough, up to 40 feet, per M feet		$22 50
"	41 to 50 " "	23 50
"	51 to 60 " "	24 50
"	61 to 70 " "	26 50
"	71 to 80 " "	28 50
Refuse Rough	"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over,	"	33 50
" 4 "	and under, and 1¼x4 and 1¼x6	40 00
Flooring and Stepping		
Rough Clear for Flooring, $1 less than above rates.		
Second Quality Flooring and Stepping	per M feet	28 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough	"	33 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" Square	"	17 50
Siding, ½ inch	"	27 50
"	"	30 00
Battens, ½ inch, lineal feet	per M	2 50
	"	1c

N. C. WALTON,
Asphaltum and Asbestus Roofing,
219 MISSION STREET,
SAN FRANCISCO.....CAL.

The California Architect and Building News.

VOLUME IV. NUMBER 12. | SAN FRANCISCO, DECEMBER, 1883. | $2.00 per Annum, in Advance. Single Copies, 20 Cents.

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Each Subsequent insertion	25 00

Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

A square is 1 of an inch in length by width of the column. When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested, we do not send receipts.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

Retrospect of 1883.

THE END OF A REMARKABLY BRISK BUILDING SEASON.

THE end of 1883 is nearly at hand, and we have the pleasure of giving the results of perhaps one of the busiest years in the building intersts ever experienced in this city. Since the beginning of the year there has not been at any time an over supply of good workmen. On the contrary, contractors have kept up a steady growl at being obliged to employ any help they could get. Masons have, for the most part of the time, been very scarce, and have commanded $5.50 a day. Good carpenters have been steadily employed, and even at the present time, almost in the middle of our winter season, mechanics are generally engaged.

The building of "flats" still continues, and the demand more than equals the supply. From present appearances, next year will exceed this in the number of this style of residences. Many are following the ideas of a prominent capitalist — making the internal arrangements convenient and neat, with but little attempt at ornamentation, the front elevation, however, having the appearance of a magnificent mansion. Thus even a mechanic, with all the uncertainties of bad health and lost time, can afford to live in a dwelling, the equal, in looks, of the more aristocratic business man.

We append a monthly statement of the building operations of this year:—

	Frame Build'gs.		Brick Build'gs.		Repairs and Alterations.	
	No.	Cost.	No.	Cost.	No.	Cost.
January	31	$293,80?	2	$105,000	8	$76,000
February	39	87,2 9	1	18,000	14	27,010
March	38	198,900	2	30,000	18	68,700
April	71	279,985	1	20,000	12	34,900
May	53	283,500	7	161,700	10	41,400
June	100	439,535	11	85,600	16	48,450
July	66	288,500	3	101,270	9	30,000
August	65	257,300	6	140,500	14	73,600
September	41	373,100	3	163,500	8	31,300
October	27	145,000	..	.....	8	21,600
November	43	396,500	1	10,000	12	56,600
December	42	172,150	5	152,700	16	69,875
Total	616	$3,215,649	42	$988,270	145	$579,435

By the above we see that the total number of building improvements of all kinds amounts to

803 Buildings of the value of $5,261,689.

For the sake of comparison we give the figures for the three preceding years:—

YEAR.	BUILDINGS.	VALUE.
1880	397	$1,754,435
1881	533	3,790,732
1882	785	3,896,212
1883	803	5,261,689

Most certainly this is a splendid showing. Several improvements under way are not counted in the above. The Flood mansion is only given credit for the amount spent in this city, no account being taken of contracts let to Eastern parties. The large improvements by the Union Foundry in South San Francisco, are not included. In fact we aim solely to give the number of buildings and the cost thereof, without including the cost of machinery, or the cost of filling in the tide lands, piling, etc., so necessary in some places before buildings can be erected, but which we do not think ought to be included in the estimate for buildings.

Building for 1884 promises to be remarkably brisk, and we think will exceed this year in number and value.

We tender our sincere thanks to those who have so nobly aided us in building this journal to its present standard. The future looks more than bright, and we promise many new improvements in our January issue.

We must congratulate carpenters all over the State in the possession of such good helpmates. This year we have received many letters containing money for first-class architectural and mechanical works, to be used for Christmas presents from the wife to the husband. We are pleased to see this, as it is through study that the mechanic gains the knowledge necessary to overcome the difficult problems daily presented in his daily avocation.

Wishing all our readers a full enjoyment of all those blessings usually experienced at this season of the year, and tendering our heartfelt thanks for their support, so generously given the past year, we close our labors for 1883, and with energy and hope for our watchword, we look forward to 1884, confident that we will excel our past efforts.

NEW METHOD OF PREPARING BLOCKS FOR ENGRAVERS.—At a recent meeting of the Chicago photographers, Mr. Shaw showed the members present his mode of preparing blocks for engravers. He claimed that it was very simple and easily worked. He commenced by breaking an egg, and pouring a little of the albumen on the block, and then thoroughly rubbing it in. It does not sink into the wood. His preparation, which is kept on the surface all the time, is as follows: gelatine, ten grains; albumen, one ounce; water, one-half ounce. Rub this well in with the palm of the hand or a brush—the hand preferred; after this preliminary coating put on a little photina preparation, which is also to be well rubbed in. In five minutes a print from a negative can be taken on this block in the sun, or by the electric light in about three minutes. The process gives good black tones, like those obtained in platinum prints.

S. F. Chapter, American Institute of Architects.

THE regular monthly meeting was held on Monday eve, Dec. 10th. T. J. Welsh occupied the chair.

Committee on Incorporation reported that all necessary measures had been taken to effect said result, and they were simply waiting for a seal to be furnished, in order to complete their work.

Committee on Ammendments to the Plumbing Law asked for further time, as it was their earnest desire to have the work well done.

Warren H. Williams was proposed for membership. Application referred to the usual committee.

Communications were received from the Sect of the American Institute of Architects, which after being read were placed on file.

A communication was received from the managers of the CALIFORNIA ARCHITECT AND BUILDING NEWS, stating that it was their intention to offer four prizes—one of $60.00, one of $50.00, one of $40.00, and a box of drawing instruments—for the best four designs for a country dwelling, to be published in said journal. The managers requested a committee be appointed by the Chapter to determine the relative value of the drawings submitted in the competition. The president appointed the following named Fellows as the committee: Messrs. Sanders, Pissis and Mitchell.

A short discussion ensued upon the stand to be taken by the Master Masons and Builders' Association on and after January 1, 1884. It was the opinion of a majority of the members that, although at first it might seem awkward to make separate contracts for amounts slightly in excess of the amount adopted by the Master Masons, yet, in a little while, harmonious feelings between all the trades may be secured by just and impartial action among those most interested.

(We do not see why the masons have not the perfect RIGHT to the same privileges as are enjoyed by the carpenter contractor. One has as just a claim as the other in being the contractor of the building. But few carpenter contractors would take a job having the master mason as a principal, and why not *vice versa?* In many cases the cost of the brick work exceeds the carpenter work, and we do not understand why the latter class should be recognized as the supreme head of the work as far as the contract goes, collect all the payments, and pay the amount due the mason, the latter being a second party. In case of a failure of the principal contractor it is always the sub-contractors who have to stand the loss. The principal draws the money, and in dividing it to meet all the requirements of a contract he oftentimes remembers his own pocket first. We hope this question will receive a discussion between the parties most interested, and we will with pleasure publish such views as may tend towards a harmonious settlement of the questions involved.—EDS.)

Trade Discounts to Architects.

FOR some time past it has been the custom of manufacturers and dealers to allow architects a plunm generally known as "*the trade discount.*" This is done when the articles are ordered directly by the architect, and the justification of the offer is made upon the fact that the discount is always at some one's service; the builder is not entitled to it, he merely places in the building articles ordered by the architect, consequently the only one to profit is he who gives the order. Another reason advanced for the offer is that an architect often has considerable trouble in examining the different inventions and manufactures of the same class, and no matter what his selection may be he is justly entitled to the "*trade discount,*" being the only one who has had any trouble in the matter.

The question has been asked us, Are architects justified in accepting the offers thus made? Also, What stand does the Institute of Architects take upon this subject?

"The Institute of Architects has from its foundation opposed the practice in toto as a point of honor, holding it to be manifestly inconvenient that the supervisor of building works should upon any pretence be allowed to involve himself in the supply of articles, the quality and price of which he is employed to check in the interest, the purchaser of his client. At the same time it is only fair to add that there are thoroughgoing men of business, as business goes, who still maintain the arguments first mentioned to be sound, and who fail to see why an invariable trade discount should be lost, or why an architect should spend his time upon the selection of cheap articles of taste without remuneration.

"To this, however, the principle adopted by the Institute would still seem to have an answer to give, namely, that whenever any special remuneration is due, it ought to be paid directly by the employer, who it may fairly be supposed, if he be one of those who prefer to take a tradesmanlike view of such matters, will be found ready to indorse his own opinions.

"The practice mentioned is one which we must expect to see developing itself more and more as the times change and the ways of business change with the times; but there are certain principles which ought never to be lost sight of in a profession like that of architectures, such as these: That whatever is done must be done openly and above board, and that no payment can honorably be received except for work done by the recipient. The necessity for acting under any circumstances in any sort of underhand way we wholly deny."

Black Walnut.

BLACK walnut can be grown from the nut, producing a butt fourteen inches in diameter in as many years from the seed, as far north as Massachusetts. No tree valuable for its timber in cabinet uses, unless the black birch be so considered, can attain to that useful growth in that period of time in our northern climate. Maples require twenty years before they become good timber trees; beeches and birches, fifteen years to attain to a diameter large enough to yield nine-inch boards; hickory should have a growth of thirty years; and cherry at least as much.

The cultivation of the black walnut might be made a source of profit, if only as an auxiliary to the ordinary farm products. It requires no particular care, makes an elegant tree even in its youth, and later offers an agreeable shade. The *Sewing Machine Journal* says:—

"One hundred acres of land, seeded to walnut trees, even if they reached maturity in fifteen years, would be more remunerative than many of the crops produced by fifteen of incessant toil. Besides, these trees might be planted and would thrive on spots which are really valueless for agricultural purposes, and while in the course of growth would serve as valuable aids to agriculture as wind-breaks and in other respects."

Our Exchanges.

WE have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

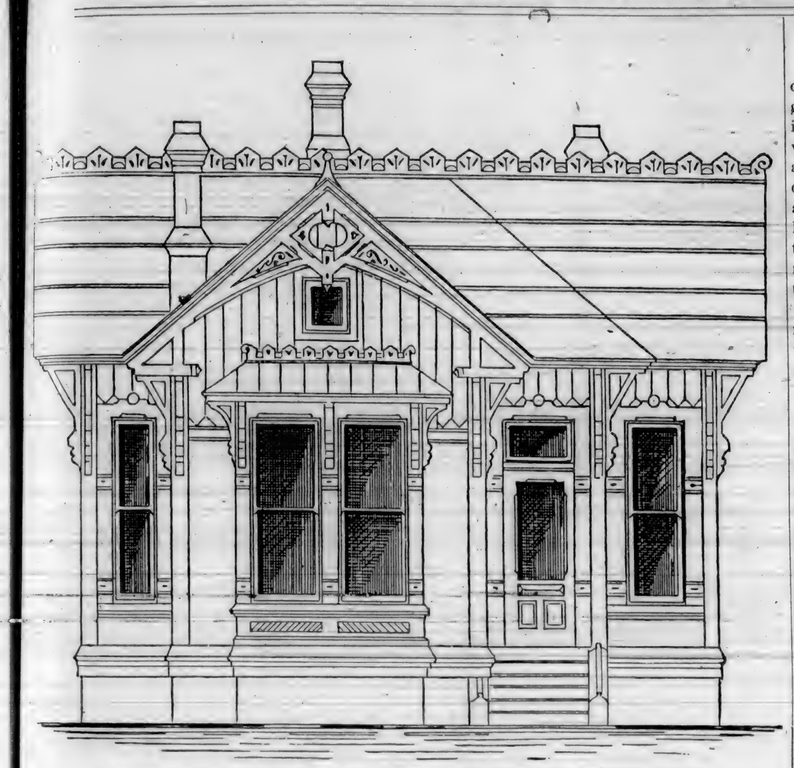
(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.
Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Carpentry and Building* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *American Inventor* ($1.00), $2.50 per annum.
With *Hall's Journal of Health* ($1.00), $2.50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

All communications intended for M. J. Marion may be left at the office of his journal. We have received quite an interesting communication from him, but too late for this issue.



FRONT ELEVATION OF COUNTRY HOME, COSTING ABOUT $2,800.

A Country or Suburban Home.

THE accompanying plans are intended, if carried out according to the designs shown, to give a very comfortable home for a small family. Its special features are well-lighted and ventilated rooms, closet room in abundance, and conveniences generally needed in this class of house. The w. c. is placed outside, and yet is easy of access. Bath room is well lighted, and the window is so placed that thorough ventilation is secured. If desired, the mullion shown in dining-room may be changed to a square bay window, similar to the parlor.

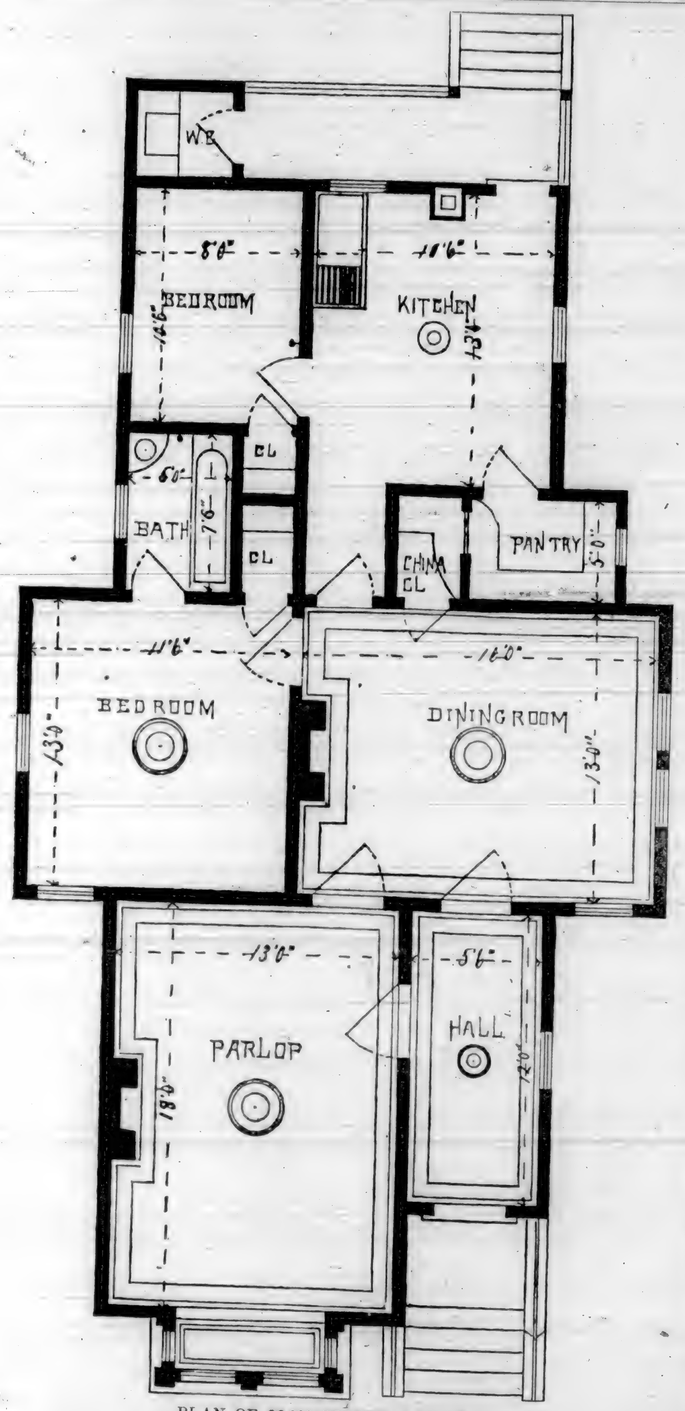
The plan carried out as shown, can be built for about $2,800. This figure may be greatly varied according to style of finishes used.

Cost of Buildings.

WE frequently receive letters containing queries in regard to the cost of buildings, the plans of which have been given from time to time in this journal. Prices vary at different seasons of the year, and those given in the description of plans are the prices for which the buildings could have been erected *at the time of the issue of the Journal containing the plan.* About twenty-five per cent. would have to be added on the estimates given in 1880, 1881, and part of 1882, to correspond with prices at the present time. By comparing price lists, and allowing the difference, a correct idea may be gained of the different values.

AN old but good idea, and one not generally known, is to line the jaws of the vise with sheet lead when clamping saws for filing. If not so lined, the saw will vibrate and probably strip the file.

SIDE ELEVATION OF COUNTRY HOME, COSTING ABOUT $2,800.



PLAN OF $2,800 COUNTRY HOME.

Beware of Creating False Impressions.

The sound of saw and hammer is heard on all sides, and every man that can handle tools is pressed into the service, to meet the grea' demand for new buildings.

The above *in italics* is the gist of numerous articles selected from various country papers that have found their way to our sanctum, and we have purposely placed the words in a prominent position so that parties interested will have their attention drawn thereto.

A country paper to be successful must pay strict attention to the affairs in its immediate neighborhood. It is taken by people living outside of its jurisdiction, that they may keep the run of the local affairs of the town in which it is situated. When the news contained therein is found to be always reliable, it often receives subscribers from sources seemingly at variance with the object of the paper. We propose to speak of a few things in one interest only—that connected with building improvements.

In making statements in regard to new buildings, alterations, or other improvements, be sure that the true facts are stated and in a way not to mislead. A worthy mechanic called at our office not long since, and asked our opinion in regard to locating in a certain town. He had in his hand a local paper of the last issue prior to his call. To read the statements made therein one would imagine there was an immense building boom being experienced. Mr. A was erecting a business block; Mr. B, a comfortable dwelling; C, D, E, and F were making large additions to their barns. Lumber was being hauled for several buildings soon to be started. In fact the sound of saw and hammer was heard on every side, and men could not be had to do the work.

While our visitor was reading, his listener was simply dumb from astonishment. But a few days before we had been through that same town. The business block of Mr. A was 28x40, one story high, rustic front, sides boarded with rough lumber placed endways and battened, divided into two stores, separated by a board partition. One store was intended for a saloon, and the other anything it would rent for.

Mr. B's comfortable dwelling was 12x24; simply a two-room house, boards on end and battened. The large additions to the barns were simply sheds to cover the wagons, etc.; the lumber for the new buildings was similar to that necessary for buildings of the above description.

No doubt to the editor of that paper the work in sight was enough to make him eloquent in praising the business activity of his town. But he should have looked a little deeper and taken into consideration the fact that others besides his own town people read his paper, many of whom were on the lookout to locate in places where a reasonable activity prevailed. Reading the local notices as given, a mechanic would be justified in visiting that locality for the purpose of inquiring into its claims as a business center and offering special inducements to the man who wieldeth the saw and hammer truly and well.

We could cite many instances where parties have been misled by the glowing accounts given by local editors, of immense improvements shortly to be commenced. It is not our purpose, however, to recapitulate. We would simply draw the attention of those who have charge of the local department of the various country journals, to have your statements so plain that there will not be the slightest chance of any one misunderstanding them. If possible give the *cost* of the improvements underway; for it is by this that the mechanic judges of the class of work being done. A business block costing probably a $1,000 would convey at once to his mind just the kind of a *block* that could be erected for that amount of money, and he most certainly would not spend even a four bit piece for fares to get a job on such a *block*.

Remember that mechanics visit the libraries, reading-rooms, etc., especially to get information in regard to building in process of erection all over the State. Since this journal has endeavored to give reports from so many sources, our offices, at times, have been thronged with men inquiring for the best places to locate. Our information is largely obtained from a perusal of our many exchanges. Not wishing to lead others astray, we are ourselves not desirous of being wronged through reading a too glowing account of building improvements.

The Employment of Better Mechanics the Result of High Prices of Materials.

It may seem an anomaly but it is a fact that during the reign of high prices of material the contractor invariably seeks the high priced mechanic, and his reason for so doing is found in the fact that first-class mechanics are less apt to make mistakes and thus the waste of material, so common amongst inexperienced men, is greatly lessened if not almost wholly overcome.

When lumber, for instance, is cheap, or even when it is at a moderately fair rate, the contractor seeks to get the most work done at the least expense. On large jobs, even laborers are substituted in passing lumber to and fro. Apprentices are set at work doing that which should belong to the experienced mechanic. A few feet of lumber don't amount to much, and so but little attention is paid to the blunders made.

When, however, lumber is four and one-half cents a foot for surfaced and the finer grades, it becomes necessary for the principal to look after his employees, as it does not take the cost of but a few boards spoiled in cutting to more than offset the difference in wages.

High prices of material are a death blow to *piece-workers*. It is a notorious fact that these have-to-be-endured men are without consciences in their waste of material. If a floor is to be laid, their motto is simply anyway to get it laid. Rustic is cut with but one idea in their mind, to get it *planted* on as quickly as possible.

The same remarks are applicable to the plasterers and brick-masons' trade. We have been in buildings where the mortar was almost as thick on the floor as it was on the walls. This fact at once shows the inexperienced workman. It is surprising to note the number of half bricks that are found around some buildings. We do not by any means advance the idea that half bricks are equal to whole ones, but we do say that a good workman would so place them in a wall that no one could tell that they were used.

We were much amused the other day at watching a greeny building a chimney. Half bricks were tossed into the lot adjoining only to be picked up by poor Pat to be carried up the second time. The excuse the master (?) chimney builder gave us for throwing away every half brick was that it made too many joints, the one on top of the other.

First-class workmen always have been and always will be the cheapest in the end. In order to obtain their proficiency they must need study, and therein lies the fault of the cheaper men, they have no time to study. A journal devoted to their interests never receives their subscription, as they can never find anything in it excepting what they already know. To all such we would say, if such be the fact, suppose you try a change. Your old way evidently has been a failure, or else you would be receiving better wages. No matter what part of the country you live in, subscribe for and support your home journal published in your interests. Study it well; practice the good advice given, and in a short time you will be able to command the wages justly due to those who study the science of the various mechanical trades.

Hanging Paper on Damp Walls.

The Germans are utilizing a discovery for hanging paper on damp walls. It consists of coating a lining paper on one side with a solution of shellac spirit, of somewhat greater consistency than the ordinary "French polish," and then hanging it with the side thus treated to the damp wall. The paper-hanging is then performed in the usual manner with paste. Any other resin that is equally soluble in spirits may be used in place of the shellac. According to the representations, this process is found equally effective in preventing the penetration of dampness.

Glycerine Glue.—A German chemist has discovered that the strength of glue is very greatly increased by the addition of one-fourth as much glycerine as glue.

Glycerine has many other uses, among which one of the least known is its property of removing pencil marks from paper in a very perfect manner. It may also be combined with starch and plaster of Paris, to form one of the most durable cements for various kinds of apparatus.

Cottages and Villas. Price $6.00.
Practical Carpentry. Price $1.00.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the California Architect and Building News.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Plans are to be for a house costing about $5,000. Front and side elevations to be shown, with plans, and a detailed estimate of cost.

All plans to be in the office of the California Architect BEFORE the 1st of May, 1884, in order that they may be presented to the S. F. Chapter American Institute of Architects at their regular meeting on May 2.

The Chapter appointed the following Fellows as a Committee to decide upon the merits of the respective designs submitted:—Messrs. G. H. Sanders, Albert Pissis, and H. D. Mitchell.

We make the above simply as an announcement of our intentions. Our January issue will contain full particulars in regard to the competition. We will be pleased to receive the names of those desiring to compete.

Address all communications in regard to the above to the Business Manager of this Journal, 240 Montgomery Street, S. F.

Country Architecture.

BY A. CURTIS BOND.

OUR illustration this month shows a sea-side cottage, erected during the past summer at Coney Island, one of the near-by bathing resorts of this city. The front we have shown is that facing the sea, the entrance being at the opposite side and looking upon the road. I would say that the small room opening upon the space beneath the bay-window and directly behind the post, as shown in the drawing, is used, in this particular house, as a dressing apartment, where the occupants of the house may prepare for the bath and run down to the surf, which is at the foot of the grounds, but a short distance away.

SPECIFICATIONS FOR SEA-SIDE COTTAGE.

MASON WORK.—Excavate for foundation three feet below present grade on water front, and one foot on road front, and twenty inches around walls for a stone footing course, also excavate for drain, etc., to connect with public drain; all sand and earth so excavated to be used for grading around house when finished.

Foundation to be built within six inches of grade, with good foundation stone, and center wall to be built up within ten inches of first floor to set floor beams on.

BRICK WORK.—All exterior work to be laid up with best quality face brick laid in red mortar. All inside brick work to be of good quality brick, well laid and neatly pointed. Chimneys where topped out above roof to be of face brick.

STONE WORK.—A neat sill of at least twelve inches to be put around entire house. Corners and trimmings of windows, as shown in sketch, and base and caps of chimneys to be of good quality. Sand or brown stone with neat sunken carving over windows as shown in sketch, column of bay window as shown, base and cap of column to be of above kind of stone, shaft of aberdeen granite, neatly polished to show grain between trimmer on first story; to be laid with rough stone neatly pointed with white mortar to show joints. Blue stone steps to first story under veranda.

PLASTERING AND LATHING.—Lath with good quality spruce laths well nailed—then plastered; good coat of mortar for brown coat, then a finishing coat; the first and second story to have hard finish; all the principal rooms on first and second story to have neat cornice, to be selected by the owner, also center as may be selected.

All mason work to be done in a workmanlike manner, and all material used to be of good quality as the market can supply.

TIMBER.—CARPENTER WORK. All floor beams to be 2x10 and to rest on brick wall at least four inches well bridged with good 2x3 spruce bridging, all studs to be 2x4, and all brick walls to be furred with good two-inch furring strips well nailed to joints of buctm.

DOORS AND WINDOWS.—Door and window frames to be made in the usual way of good seasoned one and one-fourth pine, windows to be hung with cord and pulley, and latest pattern of sash fasteners, windows to be glazed with French plate glass in four lights as shown on sketch; all main doors to be one and one-half inch thick with neat panels, except closets paneled on one side only, front door to be two inches thick with raised panels, all to be neatly trimmed with neat moulded pine trimmings.

STAIRS.—Stairs where shown in plan with circular railing. Newel post at foot of stairs of such design as owner may select, with neat moulded hand rail and baluster neatly trimmed. All to be of black walnut.

OUTSIDE TRIMMINGS.—Bay windows where shown, with neat balustradi on top with turned balustraden brackets on angle of corner, with panel at base and arch brackets resting on stone column, a neat balcony on gable over bay window with balcony, with cross braces for balusters and with neat brackets to support all. Gable ends to be finished as shown with open scroll work in angle of circular truss; all to finish with tipe neat brackets where shown on sketch for gable corners. Neat, galvanized, and gold tipped finals on all peak of roofs, of good neat style. Neat veranda on front with baluster around, and good stairs leading to grade.

WATER CLOSETS.—Where shown, set with bowl and trap with flush closet, the waste-pipe to connect with sewer.

PANTRY.—To be fitted up with shelves and drawers.

CLOSETS.—In chambers to have neat six-inch strips with hoses.

FIRE-PLACES, ETC.—Ranges set in kitchen with the necessary appliance for hot and cold water. Dining-room and parlor to have grates set in, with brass fittings, these two rooms to have marble or slate mantles as may be selected; all other rooms to have wooden mantles.

ROOFS.—French and slanting roofs to be covered with good quality blue slater, well nailed; French roof put on top to be covered with good quality charcoal tin, with ridges raised about ten inches apart, to regulate flow of water.

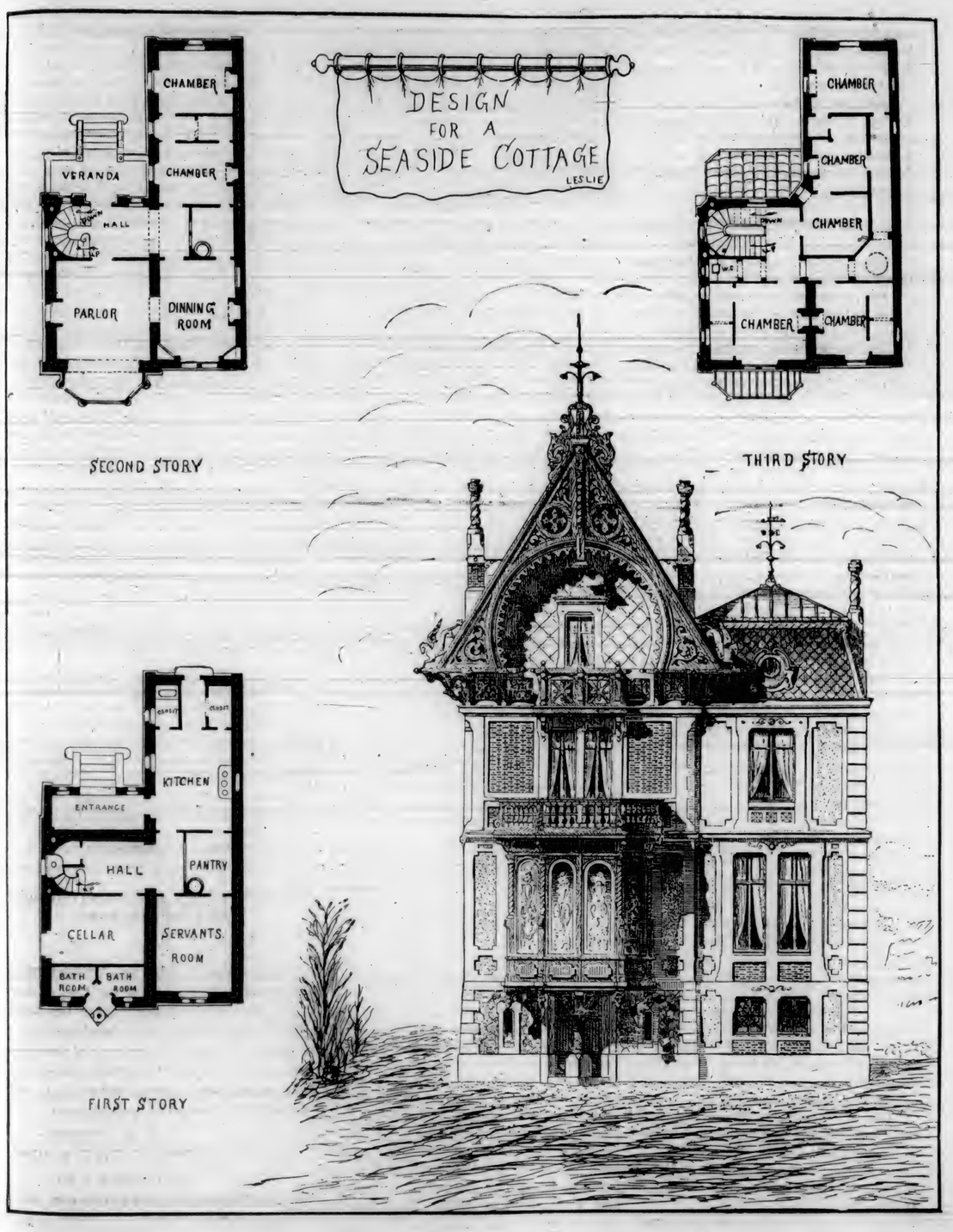
All the work to be done in a workmanlike manner and good material used.

I presume every one is more or less interested in protecting his house against lightning, and upon this assumption by the New York architects, there has been carried on recently a general discussion as to the best method of protecting country houses, or in fact any buildings liable to be struck, from the disastrous effect of a thunder storm. It had become an occurrence of too frequent regularity in and about the city, and it was considered wise to devise some means to avoid it. The foreign architects have had their say in the matter too, and the result of their conferences seemed to bring them back very near to the point from which they started. There is no doubt that an exposed position, or a building with a great deal of metal in its construction, offers an opportunity for the lightning that it seldom misses. One instance within my own knowledge shows this. It is that of a church built upon a high hill; was struck no less than five times in one year, and kept on being struck until a rod was put upon it, a precaution that at first was violently opposed by the minister, who had, it seems, an unaccountable sort of a conceit or lunacy that the holiness of the edifice would be a sufficient guarantee of its permanency.

We cannot consider this question upon the basis of how and where houses *should be* built, but how and where they *are* built. For one person who would avoid a picturesque site from the fear that it might prove attractive to lightning, ninety-nine would select the spot for its other advantages. And for one person whose design for a house would be controlled by electric considerations, there would be an incalculably larger number who would regard economy, fashion, convenience, custom or other motives as determining the style of architecture they would adopt.

Metal enters, more or less, into every house, and it must be observed that it is rather the extent of metallic surface than the bulk that attracts the electricity. An instance is given where a shaft entered a house, tore the gilding from the cornices, twisted the moulding rod, partially fused the wire of the bell pulls, and yet avoided the inmates, of which at the time there chanced to be a goodly company. Smoke has conducted lightning down the chimney, and thus out through the fire-place into the midst of the occupants.

The first point therefore to insure safety in a dwelling-house is to complete the metallic connection of all metallic surfaces of any extent, on or within the building, the necessary connection being not only with each other but with the earth. At the same time it is desirable to protect the salient points of the house, such as pinnacles, gable-ridges, and, above all, lofty chimneys with metallic points, somewhat elevated above the rest of the building and in perfect connection with the earth. Some parties claim that these points should be elevated ten feet, others say thirty feet, and others only five feet above the point to be protected. But I think the settlement of this difference rests entirely upon the theory which attends the use of the rod, if it is for the purpose of attracting the lightning and thus s oner terminating the electric storm, then possibly the higher rods may be preferable, but if the project is merely to protect the house if struck, and divert the current from the inflammable portions, then the ordinary s ort points are all that is necessary. The clouds are often quite near to the earth, in which event every foot of rod is valuable, but if the normal condition of things be taken and the clouds are 1,000 or more feet from us, it is doubtful whether a score of feet even would make any material difference. It has been a mooted point whether the metal rod should be connected directly with the building or if it were not better to insulate it. It is claimed that the insulated rod is rather an attractor of the flash, and thus a means merely of diminishing the ærial electricity, than a house protector. There is one thing certain that during an electric storm the metallic substances in the



house will become charged, and if no means are adopted to draw off this charge, the danger is considerable and it is not certain that this danger would be averted by an external rod isolated from the house.

Bearing in mind, then, as it is necessary to do, the manner in which all conductors, in connection with the earth, become charged in a thunder storm, I think there can be no doubt of the propriety of metallic connection throughout.

Amateur Architects.

"WHAT is another one of the disagreeable things which besets you?"

"The patron who comes into your office with a plan he has 'made all by hims lf' and wants you to follow it. You ask him if he made the drawing to a scale, and he admits that he has not, announcing at the same time that won't make any difference, as he knows just how much room he has got and has planned accordingly. Then you suggest that nothing can be told from his drawing as to how the building will look, and he, getting mad, tells you to go ahead and if it does not look all right it will be his fault." "That's fair enough if he takes the blame."

"He'll take the blame soon enough, but he kicks like a steer when, after we have made a drawing to a scale, he finds his plan a failure, and that we ask pay for humoring his fancy. Why it would just break you all up to see some of the amateur plans and designs I have in my office."

So saying the architect escorted the reporter to his office, and fixing him comfortably in an arm chair, placed before him a large portfolio filled with amateur efforts. They were very interesting, embracing all classes of architecture from the Gothic and Gothic-Normandi to the most unique combinations of Grecian and Græco contours. Talk about the Detroit high school building, it is a nonentity compared with most of these efforts. Scale! there was none; but efforts at harmony and originality were visible everywhere. One particularly striking effect was shown where a dwelling house, having thirty-two feet of frontage, was concealed behind a portico sixty-one feet (according to the width of the building as shown in the plan) high and forty-four feet deep. Another charmingly original idea was a house with a front door sixteen feet wide, and windows eight feet wide, and a two-story house at that. Another plan, the designer of which evidently wanted an observatory, showed a cottage with a tower 116 feet high, according to the scale to which the draughtsman unconsciously worked. And so on, were discrepancies without number, and all of them ludicrous beyond measure.

"Just fancy trying to do something with this," said the architect, laying a drawing in water colors in the reporter's lap.

The plan, evidently the work of a lady, gave, in perspective, views of two sides of a proposed dwelling house.

If it were possible to build according to the design there would be a house of cut stone, with a double arch at one corner resting on two stained glass windows, each twelve feet wide, while a very early English chimney would pass through the arches and windows to a point in the basement, through which a doorway had been cut. Finally, surmounting the heavy stone arches which rest on glass supports, would be a tower balcony eight feet high and twenty-four feet square.—*Press Interview.*

"LA SEMAINE DES CONSTRUCTEURS" gives its opinion in a recent number upon a question which will interest a great many people besides its own readers. A letter to the editor relates that the writer, a clerk in the office of his father, who is a mason and builder, was asked by a thrifty individual to make plans for a building which he thought of erecting The clerk made the plans and took them to the proprietor, who found them satisfactory, and desired that specifications should be drawn up, and the whole submitted for estimate to such contractors as the clerk might select. This was done, but on comparing the estimates it was found that the total estimate exceeded the limit of cost which the proprietor had contemplated; and the plans were modified to lessen the expense. The remodeled drawings had been made nearly satisfactory to the proprietor, and a final consultation was held between him and the designer, at the close of which he requested the latter to lend him tracings of the plans, in order that he might consider them a little further by himself. The clerk unsuspiciously did as requested, whereupon the proprietor had the drawings traced, and, sending back the originals with an insulting letter, proceeded to submit his stolen copies to another contractor for estimate, saying that the plan had been made by "one of his friends." The second contractor happened to be a relative of the clerk, and learning the circumstances, or recognizing the plan, took the liberty of putting the tracings in a place of safety, for restoration to the rightful owner.

THE inquiry which the clerk makes of the editor of *La Semaine* is, whether he can collect payment for his work on the plans and specifications, and, if so, at what rate? The reply is, it must be acknowledged, anything but encouraging to persons who desire to combine in themselves the functions of architect and contractor. In the editor's opinion, a proprietor who requests an architect to prepare plans for him implies in that request a promise to pay him the customary compensation for his trouble; and the architect, like the member of any other profession, has only to prove employment in his professional work to recover the usual remuneration. With a builder's clerk the case is very different. His business is not to make designs, but to help his employer in securing and executing contracts; and neither the proprietor nor other persons would ordinarily see, in the fact of his preparing plans and specifications for a building, anything more than an effort on the builder's part to make sure of a contract which he might lose in the chances of competition if an architect were employed in the usual way. That this would be the ordinary understanding in such a case, in default of any agreement or stipulation to the contrary, is shown, as the editor thinks, by the simple consideration that no one, if it were customary to pay architects' fees to builders' clerks for such work, would choose the inexpert and irresponsible service of the latter in preference to the educated taste and skill, and greater pecuniary responsibility of the professional man. The editor is further of opinion that the preparation of plans and specifications by a builder's subordinate not only do s not entitle the latter or his employer to compensation, but furnishes no ground for claiming a preference in the award of the contract; the understanding in such cases being, as he thinks, that the plans are made simply as an inducement to the proprietor to enter into the contract for their execution. They may accomplish their object, if the builder is fortunate, but if not, he is only entitled to his labor for his pains.—*The American Architect and Building News.*

A RELIABLE estimate lately made upon a certain quarter section of redwood timber in California was 32,000,000 feet. In comparing this with the pine lands of the Saginaw, Mich., district, it is stated that 2,000,000 feet was an extraordinary growth on the best of the land, when good forties were plenty, and 100,000 feet to an acre is called the biggest yield on record in the Saginaw region.

A NEW slate pencil sharpener introduced by a Chicago firm is merely a six-inch rule with V-shaped groove on two sides; they are thoroughly coated with the purest emery, and a hundred slate pencils may be reduced to powder by one of these little instruments before it is worn out. The price is so low that they can be given away as advertisements, the dealer's name being printed on them gratuitously if ordered in sufficient quantity.

PYATT'S PATENT ILLUMINATING ROOF AND ROOF BASEMENT.

Three different kinds of Artificial Stone Illuminating Tiles, as well as that of Iron made by the Undersigned, under the Hyatt Patent, with Jackson's Patent Improvements.

Owners of property using any of these improvements, as well as the makers thereof, unless manufactured by the undersigned, will be liable for damages for infringements.

P. H. JACKSON,
Attorney for Mrs. E. A. Hyatt,

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No. 2 California Street and 231 First St., S.

Two Dollars Per Annum.

WERE it reasonably possible to place the subscription price of this journal at a lower rate than two dollars per annum, we would cheerfully do so. But, in this city, we labor under many disadvantages not experienced by Eastern publishers, and which render it impossible to adopt a lower standard of subscription rates. The outlays to be encountered in this field of operations do not present themselves in other places, and it requires infinitely greater labor and expenditure to accomplish like results with those produced where all the surroundings and facilities are favorable and easy.

We think all our readers will notice the gradual improvement we have been making in regard to furnishing superior engravings. It has been our most earnest desire to introduce the improved process of photo-engraving, now so successfully worked in the East. In regard to the cuts made by our own process, the first representations of which will appear in our January issue, we would say that it has been the result of much study and perseverance, and we intend to so improve upon it that it will be unnecessary for any one to send drawings to the East for reproduction.

Every architect, draughtsman, student, and builder should possess a copy of this new work. Those parties not members of the profession, who are occasionally called upon to direct building operations, will be greatly benefited by a careful study of this work We will send a copy of the above, and one year's numbers of the CALIFORNIA ARCHITECT upon receipt of $5.00.

What Do You Think of It?

THE *American Cabinet Maker* notes a recent interesting legal decision. A cabinet maker in Michigan, in a written contract, agreed to make a walnut counter for one of his customers, but instead of using solid wood he took for the top and door panels, whitewood, and stained it to imitate walnut. The customer refused to take the counter, and in an action to recover the price which was to be paid, the plaintiff offered evidence to show that it was customary in the trade to make walnut counters with such materials. He also offered o prove some understanding with the defendant, outside of the contract, by which it was agreed that the counter was to be made in conformity with the order. In this case (Greenstine vs. Borchard) the Supreme Court of Michigan decided in favor of the defendant, saying that no evidence could be given outside the contract to contradict it, and that no custom could be proved that white wood stained top and door panels to a counter made a walnut counter.

The Art Amateur for December is a number of holiday size and excellence. It contains numerous working designs, fine illustrations of Derby porcelain; practical articles on decoration, needlework, and china-painting; correspondence, literary, and editorial notes. It is impossible to speak too highly of the varied excellence of this superb publication. Price, $4.00 per annum.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas send us a sketch of them and we will make the cuts.

Cut-off Saw for Lathers.

A CROSS-CUT saw is an indispensable tool to the lather for cutting lath in large quantities for short spaces, and for rigging up platforms to work on, and for cutting supplementary studs or strips where such are necessary. The saw should have rather coarse teeth and have plenty of set. Usually the lather thinks that almost any old, used-up saw is good enough for his purpose, and we find him struggling away with all his strength, cutting through a bundle of lath, when, if he had a saw that was worth anything—as a saw—he would perform his labors with about one-half the effort, and in one-third the time. It is all wrong to think of being able to work satisfactorily with inferior or imperfect tools. There is no economy in using tools of this kind, and any lather who fancies he is going to make or save anything by making use of an old buckled, mortar-stained saw, makes a terrible mistake. Get a good saw and keep it in good order, and it will pay you in two weeks.

WHITING is made by reducing pure white chalk to a fine powder. It is mixed with water and size and used for whitening ceilings and inside walls. It will not stand the weather.

MORTAR for the plasterers' use should be well made, and the following rules should be strictly complied with: 1. The lime should be thoroughly slaked, and brought to a paste or putty state. 2. It should remain in the mortar bed until it is perfectly cool, before mixing in the sand and hair. 3. Good mortar can be used with safety eight or ten days after it is made, but in no case should it be used before it is six days old.

[Some authorities say it is best to use mortar for plastering within three or four days after it is first made. They claim that in mortar which stands ten or more days before using, the lime loses a portion of its strength, and the mortar becomes deteriorated thereby. This to a certain extent is true; but, notwithstanding the loss of strength by the lime, and the consequent deterioration of the mortar, every observant plasterer knows that walls coated with mortar made two or three weeks previous to using, stand better than those coated with "green," or freshly-made mortar. Newly-made mortar, immediately applied, frequently causes the walls to chip, crack, and become mottled. Mortar well tempered and as well seasoned works better and cooler than hastily made new mortar, and invariably gives better satisfaction. Colonel Gilmore, quoting from Vicat, and apparently indorsing the statement, says: "It was supposed, for many years, that the longer lime was slacked before it was used the better mortar it would make. Recent experiments prove, however, that this is not the case with a mixture of fat lime and sand only. Better results are obtained with such mortars if the paste be mixed with the sand as soon as the slaked lime has become cold, and care should be taken to use no more water, in the process of extinction, than may be required to produce a thick pulp."—ED.]

The above extracts are from a new work just published, entitled PLASTER; HOW TO MAKE AND HOW TO USE IT. We will send a copy to any address upon receipt of $1.00.

A WRITER says: "The first boring-tool may be assumed to be an awl of some kind. Pliny states that Dedalus invented the gimlet in 1240 B. C. It was destitute of a screw point, but it may have had a hollow pod, and a cross-head forming a handle. Awls are shown in Egyptian tombs of 1706 and 1490 B. C. The screw point was added to the gimlet in course of time, and within our own recollection the twisted shank, which makes it self-discharging. The hint was taken from the auger proper, which may be called a magnified gimlet, now that their specific features have become so closely assimilated in form and function. The auger (*terebra*) was a Greek tool.

From the early descriptions the auger seems to have been considered a shipwright's tool. It formerly had a curved sharpened end, and a concavity to hold the chips; this was a pod auger. To this a lip was subsequently added for some kinds of boring, and in course of time the depression grew into a spiral, which allows the chips to escape while the boring proceeds, instead of withdrawing the tool as the pod becomes filled. The twisted auger is the American invention, and was made by Lil ey, of Mansfield, Conn., about the beginning of the present century, and afterward by Gurley, of the same place.

Augers may be classified as augers, annular augers, taper augers, augers with secondary bores, reamers, or countersinks, or having expansive cutters.

COMMUNICATIONS from all parts of the country are greatly desired, and will be highly appreciated. The fullest information possible will be cheerfully given to all parties seeking the same through this office.

N. C. WALTON,
Asphaltum and Asbestus Roofing,
219 MISSION STREET,
SAN FRANCISCO, ... CAL.

THE MEXICAN CALENDAR OR SOLAR STONE.

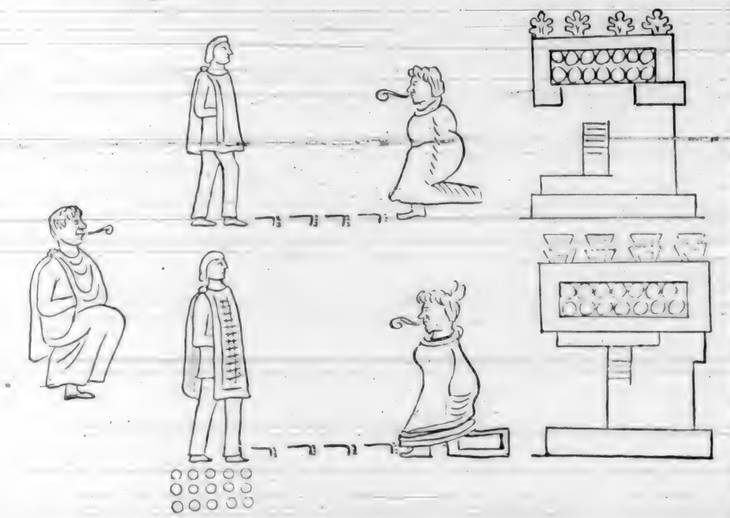
A Lecture Delivered Before the Academy of Sciences and the Geographical Society of the Pacific, on the Nights of the 19th and 27th of November, 1883.

BY EUSEBIUS J. MOLERA.

THE monument bearing the title of this lecture is, on account of the beauty of its design and its size, the greatest and most interesting of Mexican sculptures.

Many Mexican antiquarians have diligently endeavored to solve the mysteries pointed out by the hieroglyphics of this stone, but though a great deal of erudition and research has been shown, the history and meaning of it is yet an unsolved problem.

We shall see to-night that though the theories about the several pictures represented in the stone and their interpretations abound, they are supported only by very controvertible facts. In many instances, starting from a false supposition, the most elaborate conclusions regarding the state of knowledge of the Aztecs are derived. In other cases, after having propounded a pet theory, the facts are twisted by introducing or omitting portions of the hieroglyphics, committing what we might call petty archæological frauds.



The difficulties to decipher Mexican antiquities are, no doubt, very great. In the first place the Mexicans had no phonetic writing, as we use, all their records being kept by picture writing and by tradition. My meaning will be clearer by showing you one of such pictures. The picture here shown is taken from the Vienese collection. We see on the left a man in a stooping position; in the middle two more men standing, and on the right two men stooping. Before the mouths of the stooping men we see a few lines drawn, and under the standing ones fifteen dots or small circles. We also notice on the extreme right of the picture two rectangular figures; the whole of the picture meaning that a man is sending two young men fifteen years old to school, the stooping position indicating the act of bowing or saluting; the lines before the mouth the act of speaking; the lines below, between the middle figures and the left, somewhat similar to footprints, the act of motion, and the rectangular figures on the extreme right the sign *calli* or house, which, with the ornaments, represent school or temple. Finally the fifteen dots under the middle figures represent the age of them.

We can imagine by this sample how difficult it would be to find out *a priori* the meaning of such picture.

The difficulty is increased, inasmuch as though preserving the general characteristics of the delineation of an object, they changed it in all its details. Besides, the same object had different representations, according to the special function that it might perform. We have no truly Mexican chronology; though the history of the Mexican empire scarcely embraces two centuries, we have no fixed dates for any of their events, each writer changing them according to his theories and ideas.

The sources of our information are not authentic, as all the records prior to the conquest were destroyed. The several *codices* made by order of the Spanish Kings and Viceroys, though very valuable and made with all the pains possible, still were made by Indians, who had seen few events of their own history, and had to trust to their information and belief.

The first histories after the conquest were written mostly by priests, who, with their zeal to convert the Indians, exaggerated, no doubt, the atrocities of the aboriginal religion, and by endeavoring to attract the Indians to them exaggerated also the cruelties committed by the military.

It will be conceived, then, that many of the descriptions of the Mexican antiquities are only more or less reasonable theories.

Don Antonio de Leon y Gama, who was an eye-witness when the stone was unearthed, was the first to describe it. He has the merit of having given the first interpretation. He, however, erroneously supposed it to be a calendar, an astronomical instrument, and a sun-dial. Alexander Von Humboldt, Albert Gallatin, Brantz Mayer, and others, have followed Gama. Alfredo Chavero, on a suggestion from Fernando Ramirez, and after him Professor Valentini, have tried to identify this stone with one caused to be built by King Axayacatl. All these authors have made mistakes in their drawings of the stone, and on those mistakes have made most learned dissertations. Gama reverses the position of the sixth figure on the zone of the days of the month. Humboldt, who copied from him, shows a great deal of learning in explaining how this should be the case. Finally, Professor Valentini tells us that the mistake has been made in the tenth instead of the sixth. The zone following the next in Gama has too many elements and the two last zones are also mistaken, as well as in other parts of his drawing.

The writers following Gama have preserved Gama's mistakes and added others of their own.

Our fellow-townsman, Mr. H. H. Bancroft, with a degree of intrepidity worthy of a better cause, in the description of the stone in his "Native Races of the Pacific Coast," makes this bold assertion: "Gama, Gallatin, Humboldt, Dupaix, and *all* others who have copied from them, do not represent the characters on this stone as they really appear. By a photograph taken by M. Charnay, of which the cut on the next page is a copy, it will be seen that all the figures, days as well as parallelograms, are reversed on the representations given by the above-mentioned authors. That is, the engraver, when making his tracings, did *not* reverse the figures before drawing them in the stone, an error corrected in the following cut. Therefore, instead of running from right to left, the days really run from left to right."

This statement is at variance with the facts in every particular; in the first place a simple glance at a photograph shows that Mr. Bancroft's cut is wrong, not only by his figures being reversed from right to left, but the skull, for instance, is upside down; and in other parts is at fault. In fact it is a reproduction of the cuts of the authors he names with the additional mistake of reversing it.

Mr. Chavero reproduces Gama's mistake in reversing the skull.

He thinks that the number of days in the year are to be found on the dots close to the sign acatl around the stone, but, being in need of five dots representing the five nemonteni days, he cleverly introduces them in his picture, four on the right and one on the left of the two heads below, though in the stone there are only two on each side.

Professor Valentini's picture, accompanying his description of the calendar stone, contains also several mistakes. The representation of the sun's face is altogether erroneous. He puts a tentetl, or lip-stone, in the under lip, when in reality it is the protruding tongue as in the two heads below. The tongue itself he embellishes with many dots. In the forehead he introduces the name of the sun god Atonatiuh; he sees braided hair in skeins, where only the coarse hair of the Indians is represented, sunken eyes and lineaments of extreme old age where the lines of the god's mask are represented by the artist.

The sign acatl he transforms in tetlaxoni, besides other minor mistakes.

If we consider that in a single dot or small line many times our authors hang very important parts of their interpretations, it will be apparent the importance of giving, first of all, a faithful copy of the monument to be described, and will strike any one that no greater care has been taken in their representations.

The painting before you is a full size representation of the so-called "Mexican Calendar Stone," made by me from an enlarged photograph one-fourth of the full size, and drawings prepared by me in the city of Mexico from the stone itself. I believe it to be the

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only one ever made of that size, and no pains have been spared to make it true in all its details. The original and this copy are eleven feet nine inches in diameter, and the weight of the stone is about twenty-four tons.

I will now proceed to describe the stone, making you acquainted first with that by D. Antonio de Leon y Gama, which is as follows:—

"The Mexican Government, having ordered to level and pave the principal square in Mexico, while digging some of the trenches for the sewers, the stone known as the Mexican Calendar Stone was found very near the surface of the ground, eighty yards to the west of the second door of National Palace and thirty-seven north of the flower market, on the seventeenth day of December, 1790.

Two of the Cathedral Cannons, D. José Uribe and D. Juan Gamboa, commissioners for the building of the cathedral, asked permission to place it in one of the walls of one of the cathedral towers. The permission having been granted by the Viceroy, it was placed in the tower looking west, where it remains to this day.

The principal god worshiped by the Indians was the sun, not only when it shines in its handsomest radiance, but also during eclipses and at night. They represented it in human shape and built splendid temples to it, not only over the famous pyramid at Teotihuacan but in the interior of the principal temple at Mexico, named Quauhxicalco. In Mexico they made many celebrations during the year in its honor, which the King and the nobility attended. The King used to retire for four days into an apartment called Hueyquauhxicalco, or Quauhxicalco, and made penance by fasting and otherwise. During this celebration, which was one of the principal, they sacrificed many captives. This feast was named Netonatiuhqualo, or eclipsed sun, and literally the unfortunate eaten sun (as represented in the picture here shown).

They had many more celebrations, but the biggest was that in honor of its sign Nahui Ollin Tonatiuh, that is the sun in its four motions, accompanied with the via lactea, which they called Citlalinycue or Citlalcueye, which happened in the sixteenth week of thirteen days.

The statue before which the sacrifices were made on the day of Nahui Ollin is the same as the one represented at the center of the stone we are going to describe. It is a monument which contains many of the Mexican epochs, as it points out many of the Mexican celebrations; it was also a pattern which showed the various sun motions in its declination during 260 days of the lunar year, from the equinox to the day that arrived at the Tropic of Cancer and returned to the equinox; that is, the interval spent between the vernal equinox to the autumnal one. It also served as a sundial, by means of which the priests knew the hours they had to perform their ceremonies, by means of sticks or knomons, as we will see later. In this stone it was represented one-half of the yearly solar motion from Aries to Libra, and the diurnal motion from sunrise to sunset.

From what is left of the outer part of the stone, it must have been originally a rectangular parallelopiped. The principal face is square. The wrought part of the stone is not placed at the center of the stone, but a little to the right. The diameter of the circle of the wrought stone is about four yards, and the edge of it nearly coincides with the edge of the stone. It means that there was another stone, which, together with this, represented all the fasts of the Mexican nation.

In the discovery of this stone it is observed the same as it is found in the Roman literature in the six books of Ovide, which contain one-half of the year. The way in which this stone must have been placed is on a horizontal plane, vertically, looking south, with a direction east and west.

The edge of the stone has some ornament without any meaning and about one foot thick, but the figures on the face require an elaborate description, which we are going to give.

At the center of the stone there is seen the sun's picture as represented by the Indian artists. The eight principal beams are the ones represented with the letter R, four of which are over the places which mark the days by fives, and the other four are covered in part by the same divisions. The letter L shows the other eight beams which they also used to ornament the sun's picture, as can be seen in the picture called Tonalamatl. There are also around this circle of divisions little half-circles the same as those over the beams, and they mean the light that surrounds them. To the sun's face join the four squares A, B, C, D, which, together with circles E and F on the sides of the triangle, I on top, and the appendix H at the bottom, form the picture I B E C H D F A, by means of which they represented the sun's motion, and, adding the four numeral characters a, b, c, d, it represents the sign Nahui Ollin Tonatiuh. Inside of each of the four squares is represented one of the signs of the days also marked with the number 4. The one in the square A is the head of a tiger, which, together with the number 4, represents the day Nahui Ocelotle. In the square B is found the hieroglyphic air or wind dedicated to the god Quetsalcohuatl, which was painted at the door or entrance of its temple, and, together with number 4, represents the day Nahui Ehecatl. In the square C is shown with the same number 4 the day Nahui Quiahuitl, with which sign they represented the god Tlalloc, or god of the rain, and finally in the square D is found the hieroglyphic water, which, with the number 4, represents Nahui Atl. It follows that the sun is here represented under the sign and day of the second week of thirteen days of the Tonalamatl, to which corresponds the number 4 and symbol of the solar motion, that is, the day Nahui Ollin, and the signs of the other four squares to the days of the other week of thirteen days in which corresponds the number 4 in the same Tonalamatl, or second calendar. This picture had its origin with the ridiculous fables of the Mexicans about the sun, which they preserved in this picture of Nahui Ollin. According to a manuscript, by D. Fernando Alva Ixtlixuchitl, they believed that the sun had died four times, or that there were four suns which had ended in four ages, and that the fifth sun was the one now shining.

The first sun lasted 676 years, at the end of which, in a year called Acatl, when the sun was at the sign Nahui Ocelotl, men were destroyed from failure of crops, and they were killed and eaten by tigers, which were also finished together with the sun, the destruction lasting thirteen years. The second age ended with the second sun, supposed to be when it was on the sign Nahui Ehecatl, in which, by hurricanes, trees and houses were destroyed, carrying away men, some of whom were converted into monkeys. This destruction happened in the year ce Tecpatl, 364 from the first one on the day Nahui Ehecatl. In another year, named also ce Tecptl, 312 years being elapsed, the third destruction took place, when the sun was at the sign Nahui Quiahuitl, all men were destroyed by fire, and became birds. Finally the fourth destruction happened with the flood, in which all men perished under water, and were converted into fishes. This destruction, they say, was 52 years after the third, in the year called ce Calli, on the day Nahui Atl. The circular figures on either side contain a kind of paws, which refer to the inventors of the Tonatamatl, Cipactonal, and Oxomoco, which were painted in ugly shapes like eagles or owls

The angle I points out the first division of the twenty days of the month which are dedicated to the sun, or the beginning from where they must be counted, as the Indians always counted from right to left, the same as the Hebrews do, and the reverse of our custom.

No. 1 is the first symbol of the year, and is the sign Cipactli, which is represented differently in different calendars, but all agree in a fish with a kind of sword or bone at its nose. No. 2 is Ehecatl. It is the same figure as the one represented in square B, which is named Quebhzalcoatl. No. 3 is a house, Calli, which is also one of the four signs with which they represented the years of the side. No. 4 is a lizard, Cuetzpalin; No. 5 is a snake, Cohuatl; No. 6 is a skull, Miquiztli; No. 7, a head of a deer, Mazatl; No. 8, a rabbit's head, Tochtli, which is also a hieroglyphic of the year; No. 9, water, Atl, which is similar to square D; No. 10, a kind of dog, Itzcuintli; No. 11, a monkey's head, Ozomatli; No. 12, a bended grass, Malinalli; it is the shape of a god of the name Macuilmalinalli; No. 13, a reed, Acatl, which is also one of the signs of the year; No 14 is a tiger's head, Ocelotl, the same as square A; No. 15 is an eagle's head, named Quauhtli; No. 16, another bird's head, named Cozcaquauhtli; No. 17, the motion of the sun, Ollin Tonatiuh, the same as is seen at the center of the circle; No. 18 is Tecpatl or flint, one of the hieroglyphics of the year. No. 19 is Quiahuitl, rain, with the sign they represented Tlalloc, another of their gods, with the same shape as in square C. Finally, No. 20 represents a flower, Xochitl.

There are no numerals inside of these figures, but there are on the circle around them, where can be found 260 corresponding to the twenty weeks of thirteen days of the second calendar or moon's account.

The pointer, which rests on the signs Cipactli and Xoxitl, ends at the outer circle, pointing at the division T, in which there is the symbol Acatl, with thirteen dots, which means that the stone is constructed for the thirteenth year of the fifty-two, but not for the others, as they change on account of losing one day every four years.

The rest of the outer circle represents the milky way, which the Indians called Citlalinycue, a sign which they thought had influence on the sixteenth week of thirteen days of the Tonalamatl, in company with Ollin Tonatiuh, where it is seen similarly represented. The two heads on the lower part of the circle represent the knight of night, named Yohualteuhtli.

I do not know what are the figures around marked with the letter V, though I think they represent clouds. At both sides of the triangle I, are seen two figures marked with K and G. The one with letter G is a flint similar to the one with No. 18, and means the day ce Tecpatl, the beginning of the tenth week of thirteen days of the Tonalamatl, when they had a celebration in honor of the flint, which they called Textecpatl.

The figure M is Ome Ozomatli, or monkey's head. Here follows a very elaborate description of the stone as an astronomical instrument and sun-dial, based on a system of eight sticks or gnomons, which were placed in as many holes placed at equal distances from one another in the stone, around its outer circle. In the stone there are no holes deep enough to support a stick, much less eight of them, and still less equally distant. There has never been found in the ground or elsewhere, or has been any reference made in any author of another stone equal to this, therefore the

astronomical system founded by Gama, which was based on the supposition of the eight gnomons with the two stones, falls to pieces, as well as the glowing accounts of the high attainments of the Indians in practical astronomy.

It is not a calendar; it contains only the circle of the days of the month; but it does not contain the circle of the year nor the circles which they represented as the ones shown herewith.

Señor Alfredo Chavero, perpetual Secretary of the Geographical and Statistical Society in Mexico, is, after Gama, the one who has shown the greatest amount of erudition in describing the Calendar Stone. He has the merit of having proved, on a suggestion from Don Fernando Ramirez (one of the best Mexican antiquarians), the erroneous ideas of Gama and his followers, and that the so-called Calendar Stone was a quauhtxicalli, ded cated to the sun, and upon which war prisoners were slain, and erroneously, in my opinion, supposes to have been wrought under King Axayacatl.

In his Essai on the "Calendario Azteca" he quotes Father Duran, the historian, as follows:—

"The King Axayalacoatl was also busy in working the famous and large stone, very elaborated, where the figures of the months and years, days and weeks, were represented with such detail, worthy to be seen. Such stone many of us saw in the large square near the canal. His grace Alonzo de Montufar, Archbishop of Mexico, ordered the same to be buried on account of the great crimes committed on it, of deaths."

(His. de los Indios de la Nueva España, vol. 1, p. 272.)

Don F. Ramirez appends to this paragraph: "It seems that the stone alluded to is the one called 'Aztec Calendar,' and is now placed in one of the towers of the cathedral."

From the above Mr. Chavero reasons as follows:—

The so-called Calendar Stone is the one now in one of the towers of the cathedral in Mexico. That stone was placed there by order of two canons, as we have seen, being the one found near the canal on the principal square of Mexico on the seventeenth day of December, 1790. According to Duran's description, it is the same stone seen there by himself and others on that spot, and the one caused to be built by King Axayacoatl.

The whole fabric of the argument rests in the assertion of Father Duran that the stone he saw and the one wrought under King Axayacoatl are one and the same.

Mr. Chavero brings forth new quotations in support of his theory, but all from the same author, Duran.

In order to verify the statements of Duran, I have carefully read and compared the statements on the same subject of Sahagun, Clavigero, Critobal del Castillo Torquemada, Ixtlixuchitl, Tezozomoc, and the valuable Codex Ramirez. Though in nearly all these authors the building of the great Cu Teocali, or great temple of Mexico, as well as the stones caused to be elaborated under Kings Moctezuoma the First, and Axayacoatl, are minutely described, yet I have failed in finding the one corresponding with the so-called Mexican Calendar Stone.

In my investigations I have given great weight to the opinions of Mr. Chavero himself, and to those of his associates, Ramirez and Orozcoy Berra. From them I have learned that Duran took substantially all his history from the manuscript "Codice Ramirez." In fact, they say he copied literally in many instances. Chavero says: "I consider this Codex the purest fountain of the history of Mexico, and for that reason I have given it the name of 'Ramirez,' as an acknowledgment of gratitude to the one who preserved it." If the text of Acosta is compared with that of the Codex Ramirez it will be seen that the former copied the latter to the letter. Tezozomoc, though not, strictly speaking, a copyist, followed the same Codex.

These four chronicles, Ramirez, Duran, Acosta, and Tezozomoc, while in reality one and the same, are the only true fountains to write the history of the powerful empire founded by Tenoch and demolished by the last Moctecuzoma (Cronica Mex. by D. H. Alvarado Tezozomoc, precedidada del Codice Ramires, Mexico 1881).

We will now see what these authors say about the stone elaborated under King Axayacoatl.

In the Codes Ramirez fragment No. 1, page 130, the following occurs: "As soon as they arrived in Mexico after the victory, Tlacaellel said to Moctecuzoma to order a stone to the image of the sun, and to name it Quauhxicalli, which means eagle's vase; it was so ordered, so that, at the time of its dedication, the prisoners brought from Cohuaxtlahuacan might be sacrificed. This stone is the one now at the door of the principal church in Mexico, and they say they intend to make a baptismal fount out of it. In this stone the sun is represented in its upper part, and around it the battles that King Moctecuzoma won, viz: Tepeacac, Tochpan, Guaxteca, Cuetlaxtlan, and Cohuayxtlahuacan, all very nicely wrought with other stones, as they had no other instruments."

This stone does not correspond with ours, because though it had the sun's image in its upper part, it was in the shape of a vase, and had the battles above-named wrought around it. Another great stone was elaborated during the reign of Moctecuzoma Second.

Tezozomoc says on the same subject, in page 318, edition quoted above: "Few days after the victory of Cuetlaxtlan and Tochpan, Moctecuzoma decided that, inasmuch as they had so many people from the provinces of Cuetlaxtlan and Tochpan, they might increase and improve the house and temple of Huitzilopochtli, and right there the sacrifice of Huitzilopochtli might take place, by killing the Huestecan prisoners. These after having made the great Cu very high, they built steps to it, and in the middle they put the (tajon) block, where the slaves made in war had to be killed, to commemorate King Chimulpopoca, who had begun it. Cihuacoatl answered, it was well, and the block must not be made of wood, but of stone, with a hole in the middle to put therein the hearts of those who should die on it, after having Huitzilopochtli tasted the blood of them; and that stone should not be built by the Huestecans, but by those of Atzcaputzalco and Cuyuacan, excellent masons, working in the stone the wars of their countries when by you they were subjected to the Mexican Empire. After the stone, or millstone, was finished, they raised it up and placed it in the middle of the large room opposite the principal entrance and of Huitzilopochtli, which was made of stone, and was looking to said stone or wheel, and is the one now in the corner of a house of a son of one of the conquerors, and the sacrificial stone is to-day near the principal church in the city of Mexico." On p 338 we read: "The vase or bowl placed in the great Cu, he called all the vassals, so that they might see the sun's vase, called God Xiuchpilli Cuahhtleehuatl, which we shall try for the first time with the vanquished of Huaxaca." On p. 339: "When the ceremony was ended (the sacrifice of the slaves) one ascended on top of the big house which is the Huitzilopochtli Tlenamalactl, and carried fire in a brasier, and from there a green snake, called Xinheoatli, came down, carried in the arms, and was put in the trough of the hollow stone, called Cuauhxicalli, and there they placed the snake until it was burned and made ashes."

The next time the stones are mentioned is during the King Axayaca. This text is very interesting, as it is the starting point of Prof. Valentine's interpretation of the Aztec Calendar Stone:—

"King Axayaca said to Cihuacoatl a certain day: Father and mauter, I would like very much to repair the round stone which is now used as a brasier and slaughter-trough on top of the house of tetzahuitle Huitzilopochtli, or, if you prefer, to have another made of better workmanship and the one now there may be used in another temple. Cihuacoatl said it was well thought, and immediately caused the neighboring people to be called, viz, those of Atzcaputzalco, Tacuba, Cuyuacan Culhuacan, Cuitlahuac, Chalco, Mizquic, Tezcuco y Huatitlan. About 50,000 Indians gathered together with big ropes and rollers, and went to take a big bowlder at the foot of the great mountain of Cuyuacan. Once brought, they began to work it with flints, strong and sharp, putting the history of the gods, specially Huitzilopochtli; and before they had brought another stone from Ayotzinco, and as they brought it, it fell down on the bridge Xoloco, and never was found again; it may be Huitzilopochtli swallowed it, and thus they brought a bigger one from Cuyuacan. When finished and perfected, Axayaca said to Ilacaleltzin: My father I would like that the stone now on top of the Cu, having been made by my king and mauter Moetecuzoma, be not taken to any other place, but well set, may be placed below the great Cu opposite the house of Huitzilopochtli; and after, said Cihuacoatl: It is also necessary my masters and we, to bring one to build a trough of fine stone that will be used as Cuauhxicalli in the same style, for the blood of the butchered in sacrifice, as it is our present to the honor of our master Huitzilopochtli." P. 409. "They kneeled down before the brasier called Cuauhxicalli."

P. 411. "They came to celebrate the new brasier made Cuauhxicalli of the temple of Huitzilopochtli."

P. 412. "The feast of the butchering of people must be celebrated with great solemnity so that they may see the new temalacatl."

P. 415. "They took them (the prisoners) to the top where Huitzilopochtli was opposite the great temalacatl and the trough called Cuauhxicalli."

P. 416. "They took the heart to the hole of the brasier."

P. 417. "After the guests were gone, Cihuacoatl said: My son you have shown your honor and promise of the temalacatl stone and Cuauhxicalli, stone brasier."

"After finishing the square the walls and pictures of the gods, they hurried the work of the Cuauhxicalli vase, or stone brasier, and in it there was the picture of the sun. Afterward they called the Mexicans, and neighbors, and they raised the great stone or brasier to the top, though the temple was 160 estados high."

P. 516. Speaking of the sacrifice. "They took the hearts of the prisoners and put them into the hole of the stone, called Cuauhxicalli, which had a hole a yard around. This stone is now opposite the principal church" in Mexico.

From what we have read we see that the stones mentioned are:—

1. *Techatl*, which was a block (tajon); it was the common sacrificial stone.

2. *Temalactl*. This was the stone used in the gladiator's sacrifice. It is like a millstone in shape, and had a hole in the middle where the prisoner was tight.

3. *Cuauhxicalli*, from *cuauhtli*, eagle and

xicalli vase, cup. This is the one described so many times; had the sun's image on the top. It had a hollow vase or cup in the middle to receive the blood of the prisoner.

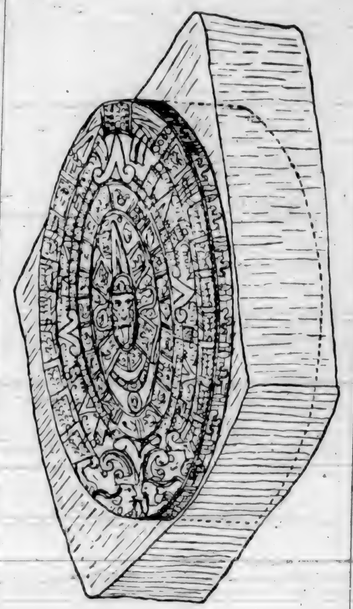
There was another kind of stone like this called:—

Teocuauhxicalli, from Teo, god, and cuauhxicalli. This, according to many authorities, was painted. There is one such stone buried yet in the plaza of the city of Mexico, a description of which was published by Brantz Mayer. Our stone does not correspond to any of the above, nor to any built during the reign of Axayaca, as supposed by Mr. Chavero. He says that our stone is a true cuauhxicalli, but it cannot be, as we have seen that cuauhxicalli are cylindrical in shape, and have a hollow in the middle to receive the blood, and our stone has none. The etymologic of the word says so: *Cuauhtli*, eagle; *xicalli*, vase, cup.

The only text supporting Chavero's theory is Duran, but Chavero himself says that Duran copied from the anonymous author of the "Codex Ramires," and we have seen that this author, as well as Tezozomoc, does not support Duran's statement. On the other hand, Duran's mistake is easily accounted for. He had read on the anonymous manuscript the description of the Cuauhxicalli, where the sun's picture was represented, and having seen in the stone called the Calendar also the sun represented, naturally enough thought it to be the same. But many other stones have been found with the sun represented in them, and as they correspond in other respects to the ones described to have been built during Axayacoatl, we may safely suppose that the one here painted is not Axayacoatl's Cuaxicalli, as supposed by Mr. Chavero. Thisantiquarian has written a very long and elaborated description, showing a degree of erudition hardly equaled by any other exponent of this remarkable monument, but all are theories, supported by few facts.

Prof. Philipe J. J. Valentini, Ph. D., following the ideas of Chavero, has also made a description of this stone. He misquotes Tezozomoc, and from the doctored text of that writer he builds his theory, which is no other than Chavero's. Some of the mistakes he makes in his drawing of the stone we have already shown. I will not detain you with his description, as he does not bring any important facts.

My idea about the so-called Calendar Stone is that it is an *unfinished* stone, similar to the one called the Sacrificial Stone. If you cast your eyes to the two perspective drawings here before you, you will see at a glance the similarity, the only difference being the size and ornamentation. Another reason in support of my theory is that, were not this the case, they most surely would not have carried four times as much stone as they needed, especially when we read of the great trouble in carrying them, which we may easily believe, from the mechanical means at their disposal. Then they intended to use all the stone they carried, and as they used only about nine inches, and it is nearly thirty-six inches thick in my opinion the stone, as intended, was as marked in dotted lines in the perspective drawing.



It may be said that in the sacrificial stone there is an excavation, but about that I will remark that, in the opinion of many, that hollow was made by Vandals, and not Indians; and, supposing it was made by the Indians, we can see it was not made until the stone was finished, and most probably not by the artist, as we see the lines crooked and cut in the figures in a very unsymmetrical way. Then, as our stone was not finished yet, of course they had not made the hollow and gutter. In the histories we find passages in support of my theory, though I don't wish to be understood that I intend to determine the time in which it was built. I will quote them to show that such a stone like the one we speak was built, or, rather, intended to be built, at the time of the last Moctecuzoma and was never finished.

The already-named anonymous author of the "Codex Ramirez" says, p. 77:—

"They say that Moctecuzoma being astonished with the many signs and wonders against his kingdom, decided to bring a very great stone to make sacrifice on it, to pacify the gods. Many people went to get it but it was impossible to move it, breaking all the ropes, etc." Here follows how the stone talked. And when they arrived to the channel at the entrance of this city, it fell down and was lost.

Tezozomoc says on the same subject, p. 662: "Moctecuzoma remembered that in his time he had not made any work to perpetuate his memory. He called Cihuacoatl that he might order to be made for the temple Huitzilopochtli a stone larger two (codos) and higher than that already there. Cihuacoatl called all the masons and stone cutters of the wards of Teopan, Movotlan, Atzacvatco and Cuepopan. He told them that the King ordered them to make a stone like the one on top of the Cu of Huitzilopochtli with the only difference that it should be made larger and taller, and all of you together must go to get it."

P. 665. "When they arrived to the great bridge of Xoloco and in the middle of the bridge, the stone said, 'here and no further,' and after that the bridge broke and many were killed."

Clavigero says, p. 231, London edition, 1787: "In 1509 the war against Xochitepec happened, that State having rebelled. In the year following, Montecuzoma, thinking the altar for the sacrifices too small, and unproportioned to the magnificence of the temple, caused a proper stone of excessive size to be polished and cut, and commanded it to be brought in due form to Mexico. A vast number of people went to drag it along, but in passing a wooden bridge at the entrance of the city it fell, drawing four men, amongst them the priest. The king and the people were a good deal disconcerted, but without giving up the undertaking, they drew the stone with prodigious labor and fatigue out of the water, and brought it to the temple, where it was consecrated with the sacrifice of all the prisoners that had been reserved for this great festival, which was one of the most solemn ever celebrated by the Mexicans."

Another argument has been brought to show that the stone was built under King Axayacatl's reign, and that is the hieroglyphic thirteen acatl on top of the stone corresponding to the year 1479, which, according to some authors, Axayacatl lived; but there are as many authors who state that King Axayacatl was dead and King Tizoczic, who ordered the Cu or great temple to be enlarged and a larger stone to be wrought, died before his projects were accomplished. Then this stone might be one of the unfinished stones of King Tizoczic.

But we have another date written on the sun-face, viz: 2. Acatl, and this date corresponds to the year 1507, which would correspond near enough considering the confused Mexican chronology, to the year in which Montecuzoma the Second ordered the great stone to be wrought. The other date, 13 acatl, would then be the thirteenth day of their first month, Atlacahualco, corresponding to our 10th of March, in which they celebrated the sacrifice of the fattened prisoners.

We see from this that two unfinished stones exist, according to the Mexican chronicles; that under Montecuzoma the Second the largest ever wrought was ordered to be in shape the same as the one on top of the Cu. Ours is the same in shape, excepting that it is not finished, and it is larger, and corresponds therefore to the one ordered by King Montecuzoma the Second.

I have endeavored to give, in a short space of time, a clear idea of the principal theories and interpretations of this monument. I have no doubt that many things have not been presented with the fullness that could have been, and for that I offer as an apology the difficulty of the subject and the limitations of a lecture.

San Francisco, November 19, 1883.

Some materialistic scientists are very fond of quoting the remark of Kant: "Give me matter, and I will explain the formation of a world;" but they omit his other words, "Give me matter only, and I cannot explain the formation of a caterpillar."

Wall supports for clothing: When you drive a nail into a wall, clothes-press, or closet, to hang things on, drive it through a spool up to the head. Select a spool with a hole large enough so that the nail will not split it.

Cracks in Buildings.

The numerous cracks that disfigure that part of plasterers' work which is lathed arise partially, as has been hinted, from the settlement, shrinkage, or contortion of the floor, partition, battening, or cradling, to which the laths are nailed; but sometimes split or damaged laths are used, and at others weak and crooked ones of unequal thickness, that ought to be rejected, are worked in with the rest, and these split and break when nailed overhead where the lathing carries the whole weight of the plaster. In many cases also the laths are much split in the process of lathing, and are often nailed too close together to allow the stuff to insinuate itself and curl behind the laths to form a good clench or key, which is one safeguard against cracked ceilings. Among several causes which contribute towards the impaired appearance of the tops of so many rooms may be mentioned joisting laid at too wide intervals, whereby the laths sag under their burden, and also the folly of fixing and lathing ceiling joists in double or framed floors before the other timbers have settled down and taken their bearings. Then, perhaps, when these dangers have been averted, a quartered partition, that has been wrongly allowed to rest upon the floor, begins to make its weight felt; or, it is found that, after the pricking up coat has been laid, the brandering or counterlathing has been forgotten. In common ceilings sometimes the filling in pieces under the trimmer-arch are too far apart, and often enough the floor is not sufficiently rigid or stiff, even when strutted and tightened with a tension rod, on account of the shrinkage of the joists, to preserve the ceiling formed on its under side from drooping out of the horizontal and cracking, nor from deflecting still more, and shaking and sounding almost like a drum when trampled upon; but of course, notwithstanding what has been said, there are instances of good and substantial floors settling a little without injury to equally good ceilings beneath them. Sometimes cracks owe their commencement to the absence of any key immediately under the joists, where the plaster could not be squeezed through to obtain a hold in consequence of the laths being nailed with too much overlap, it being preferable, nevertheless, to avoid overlaping altogether. There are, however, other conditions depending upon the quality of the plaster itself that have to be satisfied before a ceiling is to be exempt from cracking. The coarse stuff may be partly composed of mold that will cause it to shrink and crack, and the hair may be either deficient in quantity, too short, imperfectly beaten, and worked into the stuff, or it may be dirty or rotten. Even if the sand and hair be both of proper quality, the leak may not have been allowed sufficient time to slime thoroughly before the plaster was required, for workmen cannot be kept waiting, and the consequence is blistering, cracking, and the partial disintegration of the work by the lime blowing. Supposing, however, that the mixture is all that could be desired, that it is evenly spread, hangs together well, is properly scratched or keyed for the floated coat, which also is laid on satisfactorily, there remains the common danger of cracking the ceiling permanently by prematurely applying the setting coat, for unless the other coats are quite dry there will be unequal shrinkage, which must entail cracking. Where cement is used for internal work it is necessary to add a sufficiency of sand to prevent cracking, and to prevent the layers from splitting away from each other it is best to apply it in one coat of equal thickness, taking care to well hand-float the setting coat of neat cement over it before it is too dry, else the face will crack and peel off. Plaster of Paris when mixed with common plaster to make it set more rapidly requires much dexterity in its manipulation to prevent cracks appearing. It would be needless to point to the numerous cracks that are always to be observed somewhere or other about buildings that are externally wrapped up in cement or stucco, particularly near the cornice, parapet and blocking course, or where due care has not been observed in preventing the formation of fissures, in which water has lodged and produced havoc by freezing; and without occupying time by further allusion to the means by which cracking may be avoided in other branches of plasterers' work, it will be an appropriate conclusion to point to the necessity of employing screws with no parsimonious hand in securing enrichments, center-pieces, decorated cornices, and the like heavy kinds of ornamentation, which are sometimes placed profusely overhead, so that there may be as little chance as possible of the cracking proving dangerous as well as unsightly. It is true that the plasterer is hedged in with many troubles to insure a good ceiling, for after having escaped all the dangers briefly adverted to, the joiner by fixing a cupboard front on the chamber floor may crack the coving of the drawing-room cornice, or the gas-fitter in lifting a board to put in a syphon to the gasalier may similarly mar the beauty of the center flower, but this should only open his eyes to the necessity of erring on the side of coherence and strength. It is fortunate, indeed, that so few people are annually injured by falling ceilings, considering how many are cracked and to all appearance ready to fall, as well as the weight of plaster and the momentum it acquires in its descent. In many ill-built houses where the laths are crooked, the plaster, in order to get the ceiling tolerably level, is in some places more than an inch thick, and supposing that a small lump, about three feet super in extent, and which would weigh about twenty-five pounds, were to become detached, it would fall upon a person's head sitting underneath at a vertical distance of only five feet from the hole left in the ceiling with a force which would amount to no less than about 450 pounds.

Before a structure is fit for occupation there are yet other cracks contributed by the bell-hanger, gasfitter, paperhanger, painter, glazier, etc., that would make their appearance. As the nature of many of these will probably occur to the reader, and a detailed account perhaps weary by monotony, it will be sufficient to add that it is as mortifying to the grainer to see his *chef d' ouvre* disfigured by the door panel splitting as it is to the painter to notice the blisters arising from the body of paint he left on the eaves' corbels of unseasoned timber, to become cracked and knocked off in fixing the spouting. The paperhanger observes also that the cracks in the plastering carry his own work with them, and thus it appears that the ramification of responsibility among the trades already noticeable, as between the bricklayer and carpenter, carpenter and plasterer, etc., becomes at last intricate enough to render it exceedingly difficult to lay the fault of any crack at the right door, or, in other words, to establish with anything like certainty the cause of cracks in buildings.—*Building Times.*

Are Apprentices Free When They Are One-and-Twenty?—One of the articles of faith shared alike by generations of masters and apprentices has been that the latter, notwithstanding the length of the term they are bound by their parents or guardians, are legally free the moment they attain their majority. While there are doubtless masters who will be gleeful, there must be a still larger number of apprentices to whom the recent decision in the case of Richardson, Koolman, and Iager, *vs.* Harrison, will be a dreadful blow. As soon as he attained his majority, Master or Mr. Harrison, an apprentice to this well-known firm of electrotypers, chose to absent himself for a time, and on being called to account by his masters, pleaded that being of age, it in itself canceled his indentures. In happy language he further declared that "this trade does not satisfy the appetite of my desire." His masters sued the father for the sum of £120, being the estimated loss of the services of the son until the expiration of the indentures, and what is more, they got it. An application made on behalf of the defendant for a new trial was refused—with costs—by the assistant judge. The decision will affect tens of thousands of apprentices not only in this but in every other handicraft.—*London Printing Trades Journal.*

Chinese Composition.—The Chinese compositor has a merry time while working. One would imagine he was on a six-day go-as-you-please walking match instead of setting type. He cannot sit at the case as our printers do, but must constantly travel from one case to another, as the characters needed are so numerous and they cover so much space that it is impossible to keep them in anything like the room required for the ordinary case. In setting up a piece of copy, the Chinese printer will waltz up and down the room for a few moments, and then go down stairs for a line of lower case. Then he takes the elevator and goes up into the third story after some caps, and then out on the wood-shed after some astonishers. Intelligence in his case is not so much a requisite as being a good pedestrian.

India Ink.

A CHINAMAN named Chen-ki-souen has written a monograph on the famous Chinese ink, more commonly known here as India ink. We find the following interesting extracts, regarding its history and preparation, in the *Deutsche Industrie Zeitung*.

Many articles are found in the extensive literature of China written by their learned men about the paper, ink, and brushes that they use for writing, but unfortunately very little is said about the technology of their inks. It is quite otherwise in the recent book written by Chen-ki-souen, for he describes every stage of its preparation with great accuracy and in detail.

According to our Celestial author, a kind of pigment ink was discovered 2697 to 2597 B. C. It was employed for writing on silk with a bamboo rod. Afterward an ink was prepared from a certain stone (*encre de pierre*), which is still known in China as che-hei. It was not until 260 or 220 B. C. that they began to make an ink from soot or lampblack. The soot was obtained by burning gum lac and pine wood. This ink was made first in round balls and very soon supplanted the stone ink.

For a while the province of Kiang-si appears to have had a monopoly of ink making. Under the dynasty of Tang, in 618 to 905 A. D., there was a special office called an inspector, who had charge of its manufacture. He had to furnish the Chinese court with a certain quantity of this ink annually. Some of the factories seem to have been "royal Chinese" factories. The Emperor Hinan-Tsong (713 to 756 A. D.) founded two universities, to which he sent 336 balls of ink four times a year.

The most celebrated ink factory in China is that of Liting-kouei, who lived in the latter part of the reign of Tang, and is said to have made an excellent article. He made his ink in the shape of a sword or staff, or in round cakes. The test of its authenticity consisted in breaking up the rod and putting the pieces in water; if it remained intact at the end of a month, it was genuine Li-ting-kouei. Since the death of this celebrated man there seems to have been no perceptible advance made in the manufacture of India ink.

In the manufacture of lampblack nearly everything is used that will burn. Besides pine wood we may mention petroleum, oils obtained from different plants, perfumed rice flour, bark of the pomegranate tree, rhinoceros horn, pearls, musk, etc. Nor does fraud seem to have been entirely wanting. According to Chinese authorities, the principal thing is the proper preparation of the lampblack; the best smells like musk, and the addition of musk not only serves to give poor goods the resemblance of fine ones, but really makes it worse.

The binding agent plays the chief part next to the lampblack; ordinary glue and isinglass alone are now used. In old times glue made from the horns of the rhinoceros and of deer was employed.

Good Chinese ink improves with age, and should not be used for a few years after it is made. It is not easy to keep it as it must be protected from moisture. Some persons, in rubbing it up, make circular movements that soon ruin it. It is better to rub it in straight lines back and forth with the least possible pressure.

How Stumps Are Blasted Out.

A CORRESPONDENT of the *Ohio Farmer* gives his experience and some practical directions on this subject, as follows:—

"Last spring I sent to Indiana and hired a man to come and blast our stumps. I paid 42½ cents per pound for the powder, and 15 cents for each stump taken out—he to furnish caps and fuse. The stumps were mostly white and burr oak, from twenty to forty inches in diameter, and had been cut from six to twelve years. Sixty-seven of the worst were taken out at an expense of 68 cents per stump. There were only three or four failures in the whole lot. As they were blown into pieces, it was much less work to pile and burn them than when taken out in the ordinary way.

"I bought material and took out nearly 200 smaller stumps at an expense of about 20 cents each. It took me about ten or fifteen minutes to prepare a blast. I used a two-inch auger on a five-foot shaft for boring under the stump. A crow bar will do in soft ground; those who follow the business use a two and a half inch auger. The charge should be put as nearly under the center of the stump as possible.

"It is not very dangerous to use, as fire will not explode it. The cap is placed in the cartridge, and is connected by a fuse. You light the fuse, which in one or two minutes explodes the cap. The concussion of the cap, which is equal to 500 pounds, explodes the dynamite or Hercules powder. Eight or ten rods is a safe distance if you are facing the stump, or you can easily dodge chunks if any come toward you.

"It will not pay to use it very extensively on green stumps, as it will take from three to eight pounds per stump, and will not give very good satisfaction at that."

The Oil Stone and Its Uses.

TWENTY years ago the oil stone was found only on the joiner's bench, and possibly on that of the machinist, and its sole use was the sharpening of the edges of tools. To-day its use has extended beyond this province of edging tools to that of grinding, reducing, finishing; in fact, invading the limits of the grindstone, emery, rottenstone, tripoli, and reaching almost to rouge. This stone, which is a slate known in science as novaculite—from *novacula*, a razor—is cut and dressed in hundreds of varying forms for differing purposes. In any hardware or mechanic furnishing store it may be found in all manner of shapes under the name of "slips" adapted for sharpening tools of all forms. In dentists' supply stores it may be seen in twenty or more cylindrical and circular forms, and so minute as to be used at a rapid rate of revolution even between the teeth of dental-suffering humanity. Some of these cylinders, ovoids, cones, and edged wheels, are so minute that a pea looks large by their side; yet they are all veritable grindstones.

In the manufacture and finishing of the metals, the oil stone, or novaculite, plays an important part. Our recent exaction as to fits and measures can hardly be filled except by the use of this stone, and it is in demand for truing turned surfaces and planed areas of iron and brass, slowly grinding down the imperfections left by the finish file and the corundum wheel. Recently its powder has largely usurped the place in mechanics' valuation of flour of emery or emery of the higher grades. It is found that a finish "for fit" can be readily obtained by its use in much less time than that by the scraper; and that it does not leave embedded particles of quartz or corundum to keep up a perpetual wear. This material is not strictly an *oil* stone; it can be used with any vehicle, water, benzine, or kerosene oil; it is amenable to all of these. Perhaps its best use is with water, especially when the stone is of the harder sorts, as the Ouachita.—*Scientific American.*

Bent Wood.

A PIECE of timber that has been steamed, whether it is bent or not, has its stiffness increased. It is more brittle than it was before, and for some uses it will not do as well; and yet there is a quality of timber that the steaming process and the kiln-drying process affect very much the same; they both cook the gum in the timber and make it brittle and stiff. There is a grade or class of hickory that is benefited by being steamed or kiln-dried for use as spokes or whiffletrees. There is a kind of hickory that never becomes stiff by a natural process of drying, and one of the desirable qualities of a spoke, rim, or whiffletree is stiffness as well as strength: you take that hickory, and it is the very best we have, and steam it, and it is better suited for these purposes than it was before. It is difficult to tear apart a piece of bent wood; the fibers are interwoven one with the other, and when we come to split the stock open we find that its character is entirely changed.—*The Lumber World.*

IT is a matter of surprise to many that places and sections of country which are entirely unfit for agricultural purposes, are not utilized for tree culture. The black walnut for instance produces a butt fourteen inches in diameter in as many years; it requires no particular attention, makes an elegant tree and offers a desirable shade. No tree valuable for its timber in cabinet uses, will attain anything like the above dimensions in the same length of time; the only exception to this is the black birch.

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List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.]

FOR WEEK ENDING NOVEMBER 27, 1883.

289,060.—KEY SEAT CUTTING MACHINE—Geo. W. Bonds, S. F.

289,064.—EXTRACTING PRECIOUS METALS BY LEAD BATHS—Brown & Gates, S. F.

289,217.—GAME TABLE—George Calder, Mill Creek, U. T.

289,079.—PUMP—C. L. Fonts, S. F.

289,245.—DRAWER PULL—F. Frank, Suisun, Cal.

289,094.—SHINGLE SAWING MACHINE—O. C. Hanson, Eureka, Cal.

289,105.—BUILDING FRONT—P. H. Jackson, S. F.

289,107.—SEWER GATE—Samuel Johnson, S. F.

289,108.—SEWER GATE—Samuel Johnson, S. F.

289,268.—ANIMAL TRAP—George W. Jolly, Paraiso, Cal.

289,010.—CELL CASE FOR EGGS—Jos. Lyman, San Jose, Cal.

289,114.—TIRE TIGHTENER—H. B. May, Oregon City, O. n.

289,118.—HARROW, ROLLER, ETC.—J. D. McKinnon, Portland, Ogn.

289,295.—LAYING PAVEMENT—Wm. M. McLane, Los Angeles, Cal.

289,127.—CULTIVATOR—R. K. Nichols, Lower Lake, Cal.

289,128.—CAR BRAKE—Jas. O'Donnell, S. F.

289,134.—DIRT SCRAPER—Jas. Porteous, Fresno, Cal.

289,149.—METALLIC FENCE POST—D. B. Scott, Shingle Springs, Cal.

289,159.—ASH HOIST—John D. Spreckels, S. F.

289,040.—RAILWAY AND CATTLE WATER SUPPLY—C. B. Sykes, Calabasas, A. T.

289,194.—WATER HEATER—J. B. Webster, Los Angeles, Cal.

14,438.—DESIGN FOR BRACELET—R. H. Ahn, S. F.

14,442.—DESIGN FOR WIRE FENCE—G. Hunziker, Cloverdale, Cal.

14,444.—DESIGN FOR CAKE SOAP—Anthony Lucy, S. F.

3,713.—LABEL—N. W. Griswold, Alameda, Cal.

NOTE—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.

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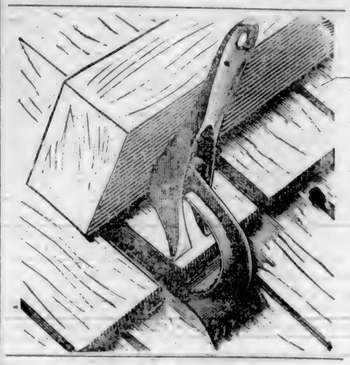

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A.—T. A. Eisen.
C.—T. Maxwell.
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C.—Terrill & Slaven.
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A.—H. C. Macy.
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A.—A. Laver.
C.—Neal & Grey.
$1,200.

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O.—A. Sutro.
A.—A. Laver.
C.— — Crichton.

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A.—A. Laver.
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$1,175.

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A.—A. Laver.
C.—For Connecticut brown stone, Mr. Spurr, of New York.

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A.—T. A. Eisen.
C.—T. Maxwell.
$3.000.

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O.—Hibernia Bank.
A.—Huerne & Everett.
C.—F. Buckley.
$1,000.

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O.—Koch & Apel.
A.—B. E. Henriksen.
C.—G. Krohn.
$7,500.

Folsom, corner Seventh. Two-story frame.
O.—E. Mercier.
A.—T. J. Welsh.
C.—H. Lehous.
$3,500.

Bryant, near Ninth. Two two-story frames.
O. and B.—J. H. Thom. Wohrden.
$5,000.

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O.—G. Edwards.
B.—J. Adams.
$5,000.

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O.—Monahan.
A.—T. J. Welsh.
C.—J. P. Mackeny.
$2,200.

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A—T. J Welsh.
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$8,000.

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A.—Schmidt & Havens.
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A.—Schmidt & Havens.
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A.—Schmidt & Havens.
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A.—Schmidt & Havens.
C.—T. Maxwell.
$4,000.

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O.—J. Whelan
C.—F. Hogan.
$1,800.

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A.—Percy & Hamilton.
C.—J. C. Gibson.
$35,000.

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$1,500.

Folsom, near Sixteenth. Additions.
O.—Enterprise Brewery.
C.—W. F. Hewe.
$3,500.

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$2,500.

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C.—Grace & Loftus.
$850.

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A.—L. Goodrich.
C.—W. S. Boyles.
$6,000.

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A.—L. Goodrich.
C.—M. D. Green.
$6,000.

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O.—School District.
A.—L. Goodrich.
C.—J. S. Selby.
$4,500.

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O.—J. N. Cora.
A.—A. Vincent.
C.—S. J. Mill Co.
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Market, near Santa Clara. Two-story brick.
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A.—A. Vincent.
C.—S. J. Mill Co.
$3,500.

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C.—J. Lenzen.
$2,000.

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A.—A. Vincent.
C.—C. Drew.
$2,800.

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O.—Karl Klein.
C.—J. Lenzen.
$1,700.

Fourth. One-story frame.
O.—M. Glubetuch.
C.—J. Lenzen.
$3,500.

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O.—Van de Castelle.
C.—J. Lenzen.
$3,200.

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O.—E. C. Singletary.
C.—J. Lenzen.
$18,000.

Market, cor. Bassett. Two-story frame.
O.—Mrs. Morrison.
C.—J. Lenzen.
$6,500.

OAKLAND.

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A.—C. F. Man.
C.—Parrish & Hughes.
$2,200.

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$1,800.

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A.—C. F. Man.
C.—Borden & Milwain.
$6,400.

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O.— —Campbell.
C.—J. E. Hanna.
$5,500.

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O.—Mitchell & Co.
$1,600.

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O. and B.—P. Svenson.
$5,500.

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$1,000.

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C.—M. R. Turner.
$1,800.

Twelfth, corner Chestnut. Two one-story frames.
O.—Mr. Crocker.
C.—M. R. Turner.
$3,600.

Seventh, near Chestnut. Two-story frame.
O.—P. Gibbons.
C.—J. Coveney.
$2,000.

Second, near Castro. One-story frame.
O.—J. P. Mill Co.
$1,000.

MISCELLANEOUS.

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Woodland One-story frame; O., J. D. Lauson; C., Wm. Carson; $2,500. One-story frame. O., H. P. Eakle; $1,500.

Cacheville. Two-story frame; O., Geo. Greene; C., G. K. Glenn; $2,500.

Fresno. Two-story frame; O., C. Hutchinson; A., H. T. Bestor; $3,000.

Brooklyn. Highland Park; two-story frame; O., W. J. Stuart; A., W. G. Copeland; C., — Brown; $3.000.

Petaluma. Two-story frame; O., Rodd & Kiel; A., T. J. Welsh; C., J. F. Cleary. $4,500.

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" 4 " and under, and 1¼x4 and 1¼x6				
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" Planed 1 side			"	32 50
" " 2 sides			"	35 00
Deck Plank, Rough			"	33 50
" Dressed			"	37 50
Laths			per M	3 75
Wool Slats			"	10 00
Shakes			"	12 00
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No. 2	"	27	50
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" No. 1, 1x10	"	40	00
" No. 2,	"	35	00
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" " under 7 feet	"	30	00
" " No. 2	"	30	00
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" " under 7 feet	"	30	00
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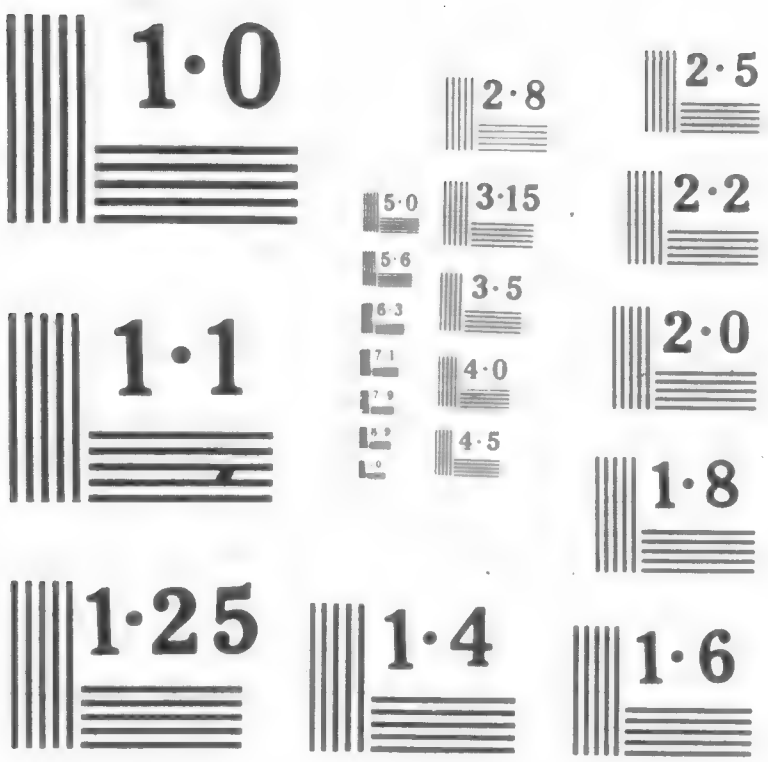

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VOLUMES 5 - 8

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AUTHOR

VOLUME V

DATE 1884

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The California Architect and Building News.

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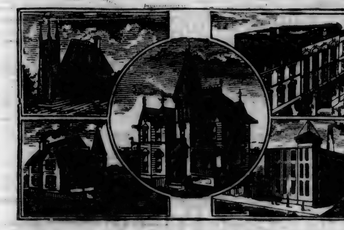
THE

California Architect



AND

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Our Fifth Volume.

WITH this issue we present the first number of Volume 5 of this journal. We are well pleased with the encouragement received during the year, and that the general public may know the extent of the good-will manifested towards us by those interested in the different branches of the building interests, we will say that, during the year just closed, we have added to our subscription list

EIGHT HUNDRED AND NINETY-THREE

new subscribers.

The mammoth supplement issued last September had much to do with this large increase. We distributed

FIFTY-TWO THOUSAND

Of that issue, and are more than pleased with the result. Such was the favor with which it was received, and the encouragement offered so large that we will, in the near future, print supplement No. 3, and will positively guarantee an issue of

ONE HUNDRED THOUSAND COPIES.

Eastern advertisers will do well to inquire of us in regard to space, as our past experience has proved that it is but little trouble to fill up all the room we can spare for advertisements, because those favoring us feel assured that the number of copies are printed that we promise.

Our Competition.

WE are well pleased at receiving so many letters from architects all over the country inquiring in regard to the COMPETITION announced in our last and present issue. For the benefit of many inquirers, we would say that it is not confined to the architects of this coast, but is open to all. The professional standing of the gentlemen composing the committee on the awarding of premiums is such that there can be no question upon the result of their decision being strictly just to the various competitors.

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

ROYAL INSTITUTE OF BRITISH ARCHITECTS LIBRARY

Business Prosperities.

BUT few if any year in the history of California as a State, has closed more satisfactorily, in a comprehensive sense, to the people of the State, than 1883; and seldom, if ever, have the prospects for the year to come presented brighter and more cheering indications for the future. In all directions, in all lines of trade and commerce, in all mechanical, manufacturing, and labor spheres and circles, there has been a large degree of substantial successes; and the dawn of 1884, and the indications for the year are full of encouragement that the current twelve months will yield their full quota of good things to all classes.

While there have been a few individual failures and non-successes in business, there are but very few of the entire inhabitants of the Pacific Coast who are not able at the present time to make a better financial showing than they could one year ago. Nor is this general prosperity confined to any particular class of individuals, but reaches, in respective degree, from the millionaires down through all gradations of business pursuits to the humblest toiler for daily bread. The thrifty and economical mechanics and workers, who, a few years ago, found it difficult to make all ends meet, have, during the past and preceding year, been able to secure comforts, and make considerable advance in the direction of better circumstances, and scarcity against the various adversities to health and fortune, which are possible to come to any one at any moment without warning. There is no better nor more reliable criterion for judgment as to a general state of prosperity among the people of any city or State than that furnished by the building activities. When architects are busy, building contractors full of work, prices of material high, the working forces of skilled and unskilled labor fully employed, it is safe to assert that "times are good" and "everybody doing well." This has been, and is now, the state of the case in California, and it is safe to urge the assertion as a fact, in prospect, that there will be a greater amount of money expended in building operations during the current year than there has been within the twelve months of either of the preceding ten years. The demand for moderate cost tenements, houses, and flats continues, and it matters not what additional number may be erected this year, they are likely to find ready tenants. There is but slight probability that building will be overdone, as the demand has kept full pace with the supply, and still remains unsatisfied.

A Wrong Statement Corrected.

"*San Francisco erected over 2,000 buildings last year, at an aggregate cost of* $11,000,000."

The above wild statement appeared in the local columns of the daily *Examiner*, January 6th. The information is entirely at variance with the facts as given in the columns of this journal, and there is no foundation whatever for the figures quoted. We have in our employ several whose sole duty it is to take cognizance of every new building erected. The values, as given in this journal, are approximately correct. In our December issue we gave the amount of work for 1883 as

803 BUILDINGS OF THE VALUE OF $5,261,689,

And this statement is as nearly correct as careful inquiry and conscientious attention can command. We notice the above merely that mechanics from abroad will not be deceived as to the amount of work in progress, and thus form wrong conclusions in regard to the value of building activities in progress in this city.

Testing Paints Ground in Oil.

A VERY simple test for determining the comparative value of any white paint ground in oil—namely, weigh out say 100 grains of each paint to be compared, add three drops of linseed oil to each, and spread them with a steel spatula on sheets of glass 6x12 inches as nearly as possible in the same manner. Place the samples thus prepared between yourself and the light, and you will have no difficulty in deciding which is most opaque. The sample which has obscured the light the most, or appears the darkest when held between yourself and the light, must have the greatest body or covering capacity.

THE *Architect*, of London, predicts an early revolution of taste in architecture, which, it thinks, may possibly result in a revival of Greek models. It notes decided symptoms of change in public feeling toward the recent craze for mediæval styles, and a decline in the popularity of "the very remarkable furniture fashion which has found its way into a certain ascendency in English architecture, under the name of 'Queen Anne'—more properly Low Dutch, and sometimes very low Dutch indeed." Lord Coleridge, since his return to England, has made public his opinion that the new Gothic law courts are "uncharacteristic, inappropriate and inconvenient," and, as the *Architect* slyly adds, the Lord Mayor has recently, at a Guildhall banquet, quoted Homer in the original, with a display of classic learning unusual in Lord Mayors. There are more substantial signs than these of the declining popularity of prevailing styles, and a growing regard for classic models; and this authority expects that the competitive designs for the new War Department buildings will include many examples based upon the Greek.

Bound volumes now ready. Price, $2.50 each.

San Francisco Chapter of Architects.

OWING to the regular evening for meeting following so closely the holiday season, the Chapter did not meet this month. It is expected that every member will be present at the next meeting. We are pleased to announce that the President has so far recovered from his indisposition as to be able to resume his usual business activities.

Our Exchanges.

WE have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.

Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Carpentry and Building* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *American Inventor* ($1.00), $2.50 per annum.
With *Hall's Journal of Health* ($1.00), $2.50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Wheeler's Patent Wood Filler.

WHEN this celebrated preparation was first introduced on this coast, it was recommended to give a perfect finish to hard wood. But by actual experience, it has been found to be equally applicable to redwood, and to the latter it gives a natural and perfect finish, such as is not obtained by the application of any other article. Its effect upon curly redwood is very fine. Such being its qualities, it should be used by every one who desires to have all the finishes of their houses present a smooth and natural finish. This FILLER can be obtained from the various dealers in paints, etc., throughout the city and State.

The "California Architect" is now in the Sixth Year of Publication.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Notice to Competitors.

All plans to be in the office of the CALIFORNIA ARCHITECT ON OR BEFORE the 1st of May, 1884.

All plans not accepted will be subject to the order of the owner, and will be returned upon receipt of the necessary postage.

We claim the right to reproduce in this journal all drawings of which honorable mention is made, and yet not entitled to a prize.

A *non de plume* to be used on all drawings; a letter to accompany the latter, addressed with the name used, containing also the real name and address of the contestant. This is done solely that the person's name and residence will not be known until the committee have made the awards.

A scale of ½ inch to the foot to be used.

Detailed estimate of cost to accompany the drawings. QUANTITY and PRICE of each material used to be given, so that allowance can be made for difference of price between the various sections of the East and this Coast.

Drawings are to show front, rear, and side elevations, with plans of the different floors.

The value of the house when finished to be ABOUT FIVE THOUSAND DOLLARS.

This competition is open to Architects in every portion of the United States.

Drawings to be made on card or bristol-board; to be line shaded; NO color but JET BLACK to be used.

All competitors will receive one year's subscription to this journal FREE, that they may see the various plans adopted.

The merits of the various designs will be decided by a committee appointed by the San Francisco Chapter of Architects.

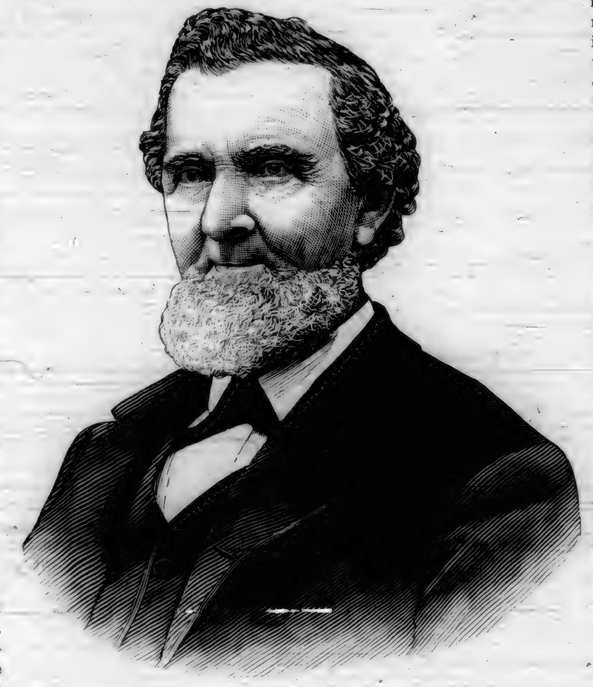
All inquiries in regard to the above will be answered by addressing a letter to the office of this journal, 240 Montgomery St., San Francisco.

WOLFE & SON, Editors and Publishers.

James E. Wolfe.

FOUNDER AND EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

HAVING completed arrangements which will enable us to produce monthly, two or more faithfully executed, life-like likenesses of the leading architects of the Pacific Coast, we commence our series in present issue with that of the founder, editor in chief, and joint proprietor and publisher of the CALIFORNIA ARCHITECT AND BUILDING NEWS. Our reasons for placing Mr. Wolfe first, is the fact that he was *first* to venture upon the unpromising task of establishing upon the Pacific Coast, a journal devoted to the Architectural, Construction, Sanitary and Kindred Sciences. His editorial work was commenced in 1879—the most discouraging, disastrous and unpropitious period within the history of the Pacific Coast, when all interests, public and private were crushed beneath the Hydra-Headed Monsters—Kearny-izm—Sand Lot-izm—New Constitution-izm etc., etc.,—when thousands of mechanics and others who had not thitherto known what privations and want were, were reduced to a state of actual destitution and suffering;—when the wheels of every clap of mechanical, commercial, manufacturing and other businesses turned slowly or not at all, and cheerful countenances were nowhere seen among the intelligent classes. It was during such times as these when this journal made its first appearance, and it required all the energy, determination, judgment and good management possible in one single individual, to overcome the surrounding difficulties, and bear the struggling waif safely through the terible period to more auspicious times. How well this has been done, aided since 1880 by the junior editor and business manager, the present standing and success of this journal fully attest.



JAMES E. WOLFE.

The subject of this notice arrived in San Francisco July 2, 1851, and therefore enjoys the many advantages of nearly thirty-three years personal experiences in the ups and downs, and exciting scenes of California life. During 1851, he devoted himself to architectural and constructive pursuits, but in 1852 was allured into a disastrous investment in a saw-mill enterprise, then located at the town of old Saucelito, Marin County, which swept away the accumulations,—the result of preceding financial successes. In 1855 he was attracted to the mines of California, and after several years spent in planning and constructing quartz mills in this State, and a sojourn of two years at Victoria, V. I., which was spent in architecture and constructive pursuits, he returned in 1861 to San Francisco since when he has devoted his entire time to the practice of the architectural profession, less part of 1863–64, when, with tens of thousands of others, he was drawn into the terrible vortex of the then *generally* unsuccessful mining enterprises which swept away fortunes—even mortgaged homesteads, jewelry and valuables of every kind, and impoverished perhaps one-half the entire population of this State.

Since 1861, Mr. Wolfe's architectural experiences have been extensive, and many fine edifices attest his qualifications as an architect. With a well preserved advanced age, his numerous friends will doubtless join in hoping that many additional years may be added to those already past, and that the columns of this journal may be made the more interesting by the product of his brain and pen. He is a member of the American Institute of Architects, and takes great interest in its proceedings. He is also one of the oldest practicing architects in the city. Mr. Wolfe was born in the city of Baltimore, Maryland, Nov. 6, 1820.

The Victory Is Ours.

WE have come up through five, and have entered upon our sixth year of publication work, including the quarterly of '79, and with each year have gained in every substantial particular; and as we have run along, we have endeavored to pick up and utilize the lessons and teachings of experience, being well satisfied that we are not yet too old to learn—to the end that we may be able to present to our patrons a journal of standard and increasing merit. This is, and will be, our aim and object, and we renew the pledge of former years, to continue our best efforts in making this—the only California journal of its kind—equal in every essential particular to the best of our Eastern or European contemporaries. We have secured a victory over the many things against which we have been required to contend, and are now well fortified to meet all reasonable probabilities of the future.

Our Advertising Rates.

THEY are published on first page of reading matter, and, unless for large ads, or small ones running a long time, we do not make any reductions. ON AND AFTER THIS ISSUE THE PRICE OF A FULL PAGE ADVERTISEMENT FOR ONE INSERTION WILL BE FORTY DOLLARS. For a longer period special prices will be given. Our large increase in circulation fully justifies us in this step. With improvements constantly being added, and with the aid of our next supplement, we expect and intend to gain at least ONE THOUSAND NEW SUBSCRIBERS this year. Material men will do well to consult us in regard to future contracts, as now is the time to make them, our busy season beginning in April.

A TOOL after it has been forged should be so hardened or tempered that it will never want to come to the fire again until it is so worn down that it requires reforging. This accomplishes two things: First, it saves the time lost in the second hardening; and in the second place, it avoids the damage always done to the cutting power by rehardening without forging.

A LARGE number of cases of diphtheria are reported in West Cleveland. It is supposed that the disease is caused by the stench from offal used as a fertilizer on a farm in that vicinity.

The Old House Altered.

BY A. CURTIS BOND.

With the accumulation of wealth and the assumption, whether understood or not, of the æsthetic and the *recherche*, the disposition is created to branch out and ignore to a considerable extent the humble, or at any rate unpretentious associations of our earlier life. In a degree this is not so strongly marked as it was a very few years ago, and many persons have discovered that the unpretentious may be made quite presentable, and fill the eye of the artist with pleasure, while retaining the delightful memories which do, or should, cling about the familiar objects of the past.

This tendency to tear down and build up again has been more universally shown in architecture, and especially the architecture of country houses, than in any other branch of art. So soon as the new heir acquired possession, he would renovate by removing entirely, and in place of the old-fashioned rambling, comfortable house, there arose a majestic affair of brick or stone or elaborately cut and painted wood. Thus, perhaps not from choice but from an erroneous idea that it is impossible to alter the old house so as to accommodate the new or the increased family, an expense is incurred, and a building is erected that may not possess any of the attractions of the old one. That this may be avoided in the majority of cases I will cite a short chapter in my own experience to show. I do not by any means claim that it is *always* better to re-make the present house in preference to having a new one. I only consider it frequently desirable, how frequently is a question that must be determined by the owner and his architect.

In my sketches I have shown the house as it was when it came into my possession, and as it probably had been ever since it was originally projected. The accommodations were not sufficient for a family of more than two, and in order to make it available for renting, a consideration of no little importance in our part of the country where no one is expected to live in one's own house, it was necessary to enlarge its capacity. Builders, friends of mine, advised me to clear away the property, tear down the cottage and begin all over again. The appearance of the thing was rather unpromising, I admit, and the suggestions of the builders were not entirely without their effect, for I felt very much disposed to do as they would have me. One day, however, I met another friend, an architect, a young man with all the fresh ideas of the nineteenth century about him, combined with a slight touch of the medieval, which latter trait, perhaps, prompted him to discourage my iconoclastic scheme of destruction and urged the renovation of the existing wreck. There were only four small rooms in the entire building, but the architect figured and planned so that he evolved six goodly sized apartments, and in addition a snug bath-room large enough for all the practical uses to which a bath-room is put (see sketch). As the cost of these alterations was certainly one-third what the building of a new house, even on the same unpretentious scale as this one, would be, it was decided to try the experiment. The success of the scheme may be measured by the accompanying illustration, where is shown the old and the new in excellent contrast; the renovated house is by no means elaborate or showy in its appearance, but it is very comfortable, has many pleasing features, rooms that are capable of easy and attractive furnishing and decorating. That the relative conditions of the two places may be judged it might be well to give a short description of both.

The old house had a short hall entered immediately from the front door; from this hall doors led into the dining-room on one side and the parlor on the opposite side; adjoining the parlor was a bed-room having a closet, and off of the dining-room was the kitchen, with a closet built box-fashion in one corner of it. the stairs leading to the attic were an eye-sore in every sense, clumsy, rickety and delapidated: they were boxed off of the dining-room making a very illy shaped room with seven corners; from the kitchen a door lead onto a plain board stoop of three or four steps. Marauding boys had appropriated the outside shutters and made the house a target for their mud balls, so that the paint was hardly discernable, and the weather had united with the boys to make awful havoc.

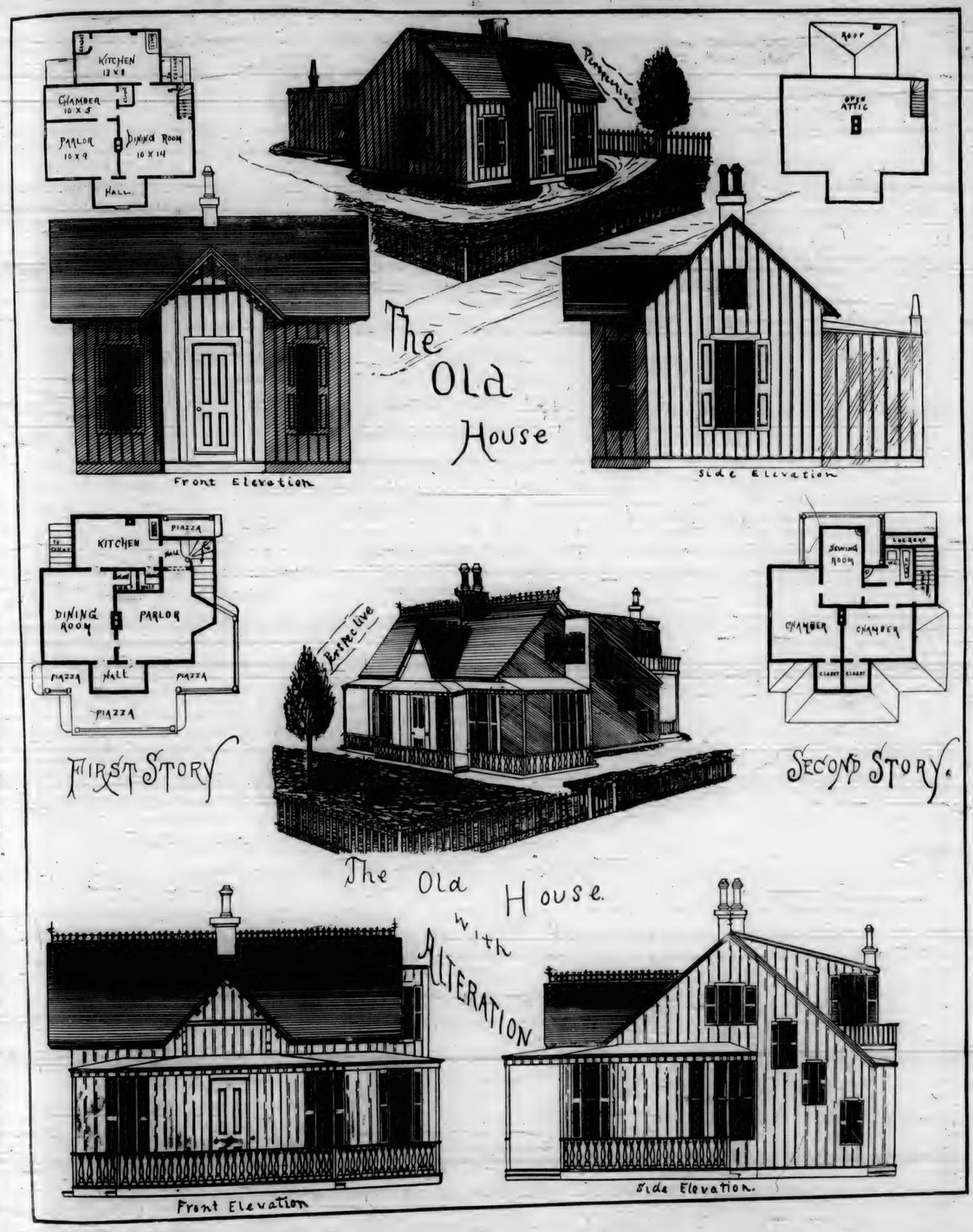
That was the condition of the building when the architect commenced on it. He began by removing the partition between the parlor and the bed-room directly behind it, making thus one large room which was transformed from the old parlor into a new dining-room. The door which led into the kitchen was left as it had been, and the closet that belonged to the bed-room was utilized for a dining-room pantry; in the rear partition of this pantry a small window or slide was cut, intended to pass through dishes to and from the kitchen. Another pantry similar to this one already built was put at the back of the first one and extended on a line with it into the old dining-room. This second pantry opened by a door into the kitchen, and through the slide or small window communicated with the original pantry, and so with the dining-room. The boxed-in stairs were then removed from the old dining-room and upon the outside of the house, at the side of this room, an extention was built extending to the rear of the house and then following it around until it stopped at the kitchen L. From this extension the stairs which were removed from the old dining-room, are contained and the old dining-room itself becomes square, as is shown. This extention is built out a little over four feet. These stairs from the floor above, turn with a landing and end in the further part of the extension, where is formed a small square hall, having a door at the very foot of the stairs opening onto a back porch, a door opposite the stairs leading into the kitchen and the other side of the square an arch is hung with a handsome *pertice* and discloses the parlor door. The newel post at the foot of the stairs is pretty and effective, and long, narrow windows, having the same rake as the stairs, extend up to the floor above. The end of the extension at the side here is finished out with a slant making a bay-window in the parlor; this bay appears from the interior to contain three windows while in reality there are but two; the third side being a glass door opening to a closet under the stairs. When circumstances seem to warrant, this closet can be converted into a stair leading down into what is now a cellar but which might be made, with very little expense, a basement.

The old closet in the kitchen was removed, the old door changed to a window having beneath it an entrance to the cellar, and a door cut at the rear of the room. Around the entire front and side having the new extension, has been put an attractive piazza, covered and with a balustrade.

The open attic was partitioned off as shown on the plan and an extension built over the kitchen making a nice sewing room with a balcony from the window. Over the extension built for the rear hall is located the bath-room and water-closet, being almost directly over the sink of the kitchen, bringing thus all the water arrangement of the building together and saving considerable in the matter of plumbing bill.

The ceilings and walls were cleaned and covered with white muslin to secure a smooth surface, upon which was laid a neat wall paper with a pretty all-over design, a suitable dado and frieze; the rough board floor was all cleaned off and the floor laid carefully with the following: The boards, being thoroughly cleaned and planed, had the holes and crevices filled with paper putty made by soaking newspaper in a paste made of wheat flour, water, and ground alum, thoroughly mixed. With this same paste then the entire floor was coated uniformly and smoothly, and upon it was laid a thickness of manilla paper, over which another layer of paste was placed and a second thickness of manilla paper put on. This was then allowed to dry perfectly, and finally a thinner layer of paste was applied, over which a layer of fine pattern wall paper was laid and pressed hard. This paper was then sized with a sizing composed of one-half pound of white glue and two quarts of hot water, and when thoroughly dry finished with hard oil and varnished. This gave a floor that was firm and hard and bid fair to be lasting.

In this manner was the old structure made over into a new place. It is neat, tasteful, and inviting, and it has well repaid the investment in the satisfaction given in looking at it. This same result can no doubt be attained by many houseowners, and I hope the experience may be of some value to a portion of my readers, but I would impress upon them that it is necessary in order to bring about this most satisfactory conclusion, to have the aid of an intelligent architect and a conscientious builder.



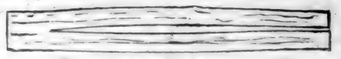
Something about Shrinkage.

THERE is but very little material that keeps the same size under all circumstances. Metals shrink and expand—some very much more than others—according to change of temperature.

I don't wish to treat of the shrinkage of metals in this article, but wholly upon the shrinkage of woods. Like metals different woods vary much in shrinkage. But all woods of the same variety will shrink in size, in proportion to the amount of water or sap contained in the wood. One variety of wood may contain four times the quantity of sap and still not shrink near as much as others. Lumber sawed from trees growing on a side, hill, or near the water, or on the south side of a grove, will shrink very irregularly. Some parts will shrink very much more than others, more particularly endways. The same is true with a tree that grows very much out of perpendicular. Suppose a tall tree was growing at an angle of 45°, the tree itself being perfectly straight, as soon as the tree was cut down, it would partially assume the shape of a rainbow.

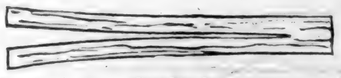
Nearly all lumber shrinks more or less endways. Some lumber will shrink on one side and expand on the other the moment it is sawed. This is very noticeable in sawing lumber from logs. For instance, the first board sawed from a log may be longer than the log, or *vice versa*, according to which side the sawing was commenced.

It is also very noticeable in ripping up lumber; sometimes, when the saw gets well into the board, it begins to *pinch* and has to be wedged, but after the saw gets nearly through the cut, begins to open as illustrated in cut No. 1.



CUT NO. 1.

Or it may open instead of pinch as shown in cut No. 2.

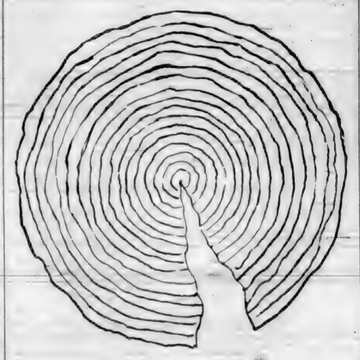


CUT NO. 2.

This is all done by shrinkage and expansion. In No. 1 the inside shrinks while the outside expands; and in No. 2 exactly the reverse. We will suppose that No. 1 and No. 2 each represents a board 12 or 14 ft. long, 1 inch thick and 12 inches wide. Now if a piece one inch wide is sawn out of the center of No. 1 the piece would be shorter than either side; and if the same had been done to No. 2 the piece would be longer. Straight edges can never be made of such lumber.

It is doubtful if there is any lumber known that shrinks as much endways as redwood. That wood shrinks on an average ¼ of an inch in 12 feet; but there are cases when it is four times that amount. When window-casings are nailed to green rustic, oftentimes the latter in shrinking will pull the frames open and let the sash out.

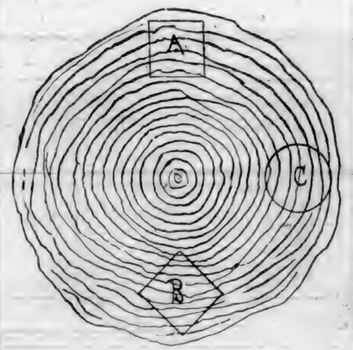
I wish to show now *why* lumber checks in seasoning. Nine-tenths of all the cracking or checking in seasoning lumber is caused entirely by LIGHT and not by HEAT. Lumber can be seasoned very rapidly by intense heat, without even a check, provided not one ray of light is allowed to reach the lumber during the process of seasoning. I also wish to show why a log will split while seasoning. For example, let me take a section of a green log of madrone, blue gum, or any other of that class of woods (which comprises at least one-half of the woods known); we will take a log 18 inches in diameter and saw off a section 6 inches long, and let it season (in the dark if you please).



CUT NO. 3.

Here we have it at cut No. 3, thoroughly seasoned and find it about the same diameter and circumference that it was before seasoning; we find that the depreciation in size lies in the V-shaped cleft; and this cleft is caused by the wood shrinking very much in circumference, and in diameter hardly perceptible, consequently the fiber must be torn asunder.

To illustrate this more fully we will take another section of the same log and cut three pieces out as shown in No. 4, two pieces being 4 inches square, and 1 piece round and 4 inches in diameter.



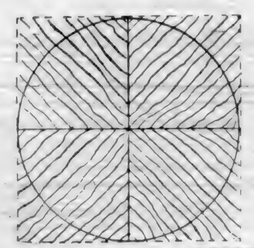
CUT NO. 4.

We find them as shown after seasoning to be in the shape as shown in cut No. 5.

CUT NO. 5.

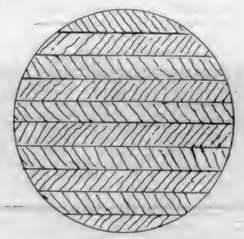
We find that A has shrunk in width at the top ¼ inch and at the bottom 5-16 inch, while from top to bottom it has only shrunk 1-32 inch. B we find has shrunk from right to left ⅜ inch, while from top to bottom it has only shrunk 1-16 inch, which leaves it in the shape of a diamond. C we find to be egg-shaped; the longest way has shrunk 1-32 inch, while the shortest has shrunk ¼ inch. "Well," says one, "what are we to do about this shrinkage, we can't help it, can we?" That is very true you can't stop the wood from shrinking, but you can help using that shrinkage in the wrong direction.

Suppose you have a solid cylinder to make, say 12-inch diameter and 3 feet long, to be and keep perfectly round. This cannot be made of one piece (even if you had it), neither can it be made of several pieces, unless glued up in the right manner, and with the right kind of lumber, or with lumber having the grain the right way, which should be at an angle of 45°. It makes no difference how many pieces are used, provided there is no less than four.



CUT NO. 6.

Cut 6 is a section glued up of 6-inch square timber.



CUT NO. 7.

Cut 7 is formed of 1¼-inch plank glued together with the grain running like either No. 6 or 7; once made it will always keep round; whereas if the timber is put together with the grain running as it did in the log, it will not make so good a job as if made of only one piece.

The reason that articles made of *pieces* glued together will not warp and twist as much as if made of one piece, is owing to the MIXING of the grains, which generally gets mixed more or less, but without any regard to it on the part of the workman.

Wood-workers, bear this in mind,—wood shrinks in circumference of the grain, but comparatively nothing in diameter.

Santa Clara. E. H. DAVIES.

How to Square a Circle.

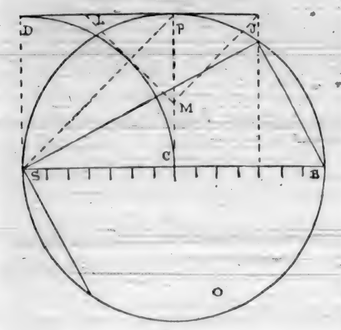


FIG. 1.

NEWARK, December 13, 1883.

EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS:

To square the circle is to find the circumference when the radius is given, and for effecting this it is necessary to know the ratio of the diameter to the circumference.

To find the circumference when the radius is given Geometrically:

FIG. 1.—Let C S equal the radius; from the points C and S as centers, describe the circle and arc C D; tangent to the arc and circle draw D P. Join S P; at right angles to S P draw L M tangent to the arc D C, and M J equal M L parallel to S P. Then D J equals one-fourth (¼) of the circumference of the circle, and S J equals the side of a square equal in area to the area of the circle.

To find the ratio of the diameter to the circumference:

Divide S B, the diameter, into fourteen equal parts, eleven of the parts equals D J or one-fourth of the circumference, multiplied by four equals forty-four divided by two equals twenty-two; fourteen divided by two equals seven; equal to seven twenty-seconds, the ratio required.

L. D. GOULD.

A Liniment for Rheumatism.

THE *Quarterly Therapeutic Review* says, mythyl salicylate (oil of wintergreen) mixed with an equal quantitiy of olive oil or linimentum saponis applied externally to inflamed joints affected by acute rheumatism, affords instant relief, and, having a pleasant odor, its use is very agreeable.

Bound volumes now ready. Price, $2.50 each.

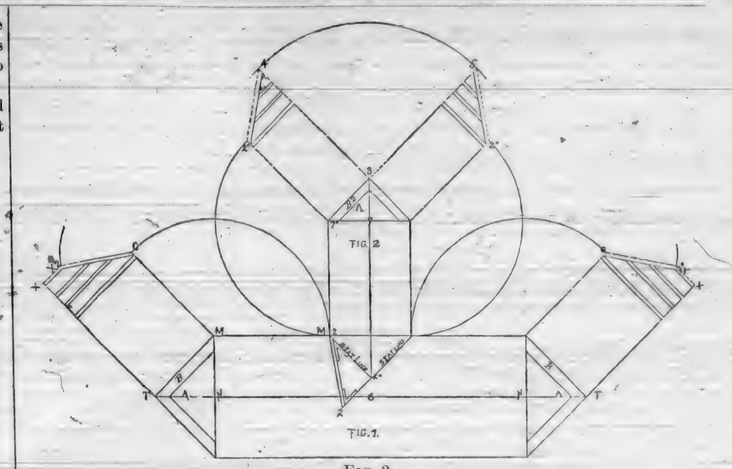


FIG. 2.

A Graphic Method Showing the Cuts and Timbers in Position, over Unequal Ground Plans and Unequal Pitches of Roofs.

A A A ARE elevations to their respective ground plans. B B B2 are the common rafters.

Square from the back of the common rafters B B B2 as shown and take the distance 6 N in the compass at Fig. 1, and stand on the point of gable at T and describe a circle at X X on both ends.

Now square down indefinitely from X T to X2 both ends. Set the compass to the distance M M. Stand at M; cut M C at both ends.

Set compass to the distance found at seat line, namely, 2 2 in the compass, and stand at C, cutting X2 that has already been indefinitely squared from X T at both ends, then C X2 and C X2 will be the valley rafter to stand correctly over seat line.

FIG. 2.—Make elevation and square out from back of common rafters. Set the compass to the distance 7.6ᵂ. Stand at 3 on the point of the gable, cutting 4 and 5, take the distance 7ᵂ 2 and describe circle, cutting 2ᵂ, then 2ᵂ 4 and 2ᵂ 5 are the correct lengths of valley rafters to stand in position over ground plan. Cut along the dotted lines. Hinge on the back of the common rafters at B B B2. Also hinge on the plate lines at N N and 7. Now fold up and you will have the covering of building with all the timbers and cuts in position. The bevels are shown on the ground plan.

The above and other cuts I have called the attention of the professional architects, engineers, and builders to, and have received their warmest indorsement, as being the most simple and ready way of illustrating constructive carpentry ever exhibited. M. J. MARION.

It is especially desired that all subscriptions begin with the month of January. Promptly forward amount of same, so that you will have a full volume at close of year.

How to Use a Hammer.

THE following floating paragraph appears to supply a long-felt want: Those who "never can drive a nail without splitting the board" may readily overcome this. Looking at a nail you will perceive that for some distance under the head the nail is broader than it is below; now a nail must always be driven so that this broad side is on a line with the grain, not at right angles to it; if at right angles, the wood is sure to split, as every blow with the hammer tears apart the fibers; whereas, if the nail be driven with broad side on a line parallel to fiber or grain of wood, the broader part wedges in lengthwise, and makes the nail hold strongly. To drive a nail well, however, needs practice. Never get a cheap iron hammer, such a one as you will see lying in a tray in front of a Cheap John hardware store, at 25 cents, having only an iron face; the striking surface soon becomes rounding, and one is as likely to crush a finger or mar the surface of the wood as to drive a nail home with such a hammer.—*Building.*

TO REMOVE INDIA-INK MARKS.—Blister the part with a cantharides plaster a little larger than the mark; then keep the place open with basilicon ointment for a week finally dress with simple ointment to heal it As the new skin grows, the tattoo will disappear.

A HOME-MADE FOUNTAIN PEN.—Take two ordinary steel pens of the same pattern and insert them in the common holder. The inner pen will be the writing pen. Between this and the outer pen will be held a supply of ink, when they are once dipped into the inkstand, that will last to write several pages of manuscript. It is not necessary that the points of the two pens should be very near together, but if the flow of ink is not rapid enough the points may be brought nearer by a bit of thread or a minute rubber band.

San Francisco Chapter of Architects—Its Aims and Its Objects.

MANY of the leading members of the architectural profession on this coast have long been solicitous in regard to a lack of a proper school and other facilities, through which students connected with the different offices could receive instruction in the principles of the art to which their time is devoted. To meet this want, and to secure a united and harmonious action and friendly feeling among the members of the profession, are two of the principal reasons for the formation of the San Francisco Chapter, American Institute of Architects.

With the system now in vogue, the pupil meets with a serious drawback from the first start in his career. As a general thing he is placed in an office and allowed to shift for himself. Beginning with *tracings*, and gradually working up to *details*, his mind receives the ideas alone of the one for whom he may be working, and they become, as it were, inculcated in his brain, so that in after years he but reproduces in a modified form, the designs of him under whom his apprenticeship has been served. His thoughts have been led in one continuous and perhaps monotonous channel, and he becomes incapable of exemplifying the two greatest lessons to be learned, *beauty* with *originality*.

The art of any undertaking being first its aim, and next its manner of accomplishment, it may be asked, By what means does the Chapter propose to better the conditions of the student, so that his mind may be free to receive thoughts calculated to do him most good?

In the first place, classes have been formed in the various departments incident to a thorough knowledge of architectural science, and competent and willing teachers have been found, who have made their work a labor of love. In perspective, flat drawing, modelling, carving, geometry, and other branches, thorough instruction is weekly given to rapidly growing classes, and this without a cent of cost to the student. Nobly have some of the first members of the profession given one night each week to this object, that the members of the classes may receive the true fundamental principles of their calling. This is what the Chapter has already done.

In the second place, it is the intention in the near future to place before the students a prize that will be eagerly competed for, and when obtained be held as a memento symbolizing devotion to art. To set apart a fund that shall be devoted to him who, in a certain period of time, shows the most marked improvement, enabling him to visit the Old World and study the works of the great masters. The question may be asked, Of what use is it to those that remain, that *one* should be selected to go abroad, and be enabled to perfect himself in the architectural profession, while those that studied equally as hard, are compelled to follow on for another period in the same beaten tracks?

We answer, Do not follow the "beaten tracks." We propose that the one who is fortunate enough to gain the name of the "traveling student" shall, before he starts on his journey, enter into an agreement by which his progress from time to time shall be communicated to the Chapter. He must, as occasion offers, forward sketches of different phases of architectural beauty, with which he may come in contact; these, with his correspondence, to be placed before the regular meetings of the Chapter. Thus, those that stay behind will have a new avenue of thought opened to them, and each successive competitor be enabled to stand higher in his examination than his predecessor. The Chapter reserves the right to watch over the conduct of the successful candidate, and while traveling, if he should stray from the right path, have the power to withdraw its patronage.

Mr. C. A. Adams, in his address before the Architectural Association of London, thus speaks of the benefits derived from the younger members of the profession joining a Chapter: "He joins the Architectural Association, and there finds an organized system at work, inducements for study, and if he enters his name on the lists, friendly rivalry and competition. If he has anything in him, he is sure to get on, and win his way without fear or favor, and in the struggle with his fellows, finds his level, and measures his strength with his antagonists in friendly encounter."

Are we aiming too high in our endeavors to excite the ambition of students connected with the Chapter? We think not. Already two prominent gentlemen have signified their intention of placing at the disposal of the Chapter, the sum of FIVE HUNDRED DOLLARS EACH, to enable us to carry out the idea mentioned, and we have no doubt others will be found equally as willing to assist. It remains for the Chapter, as well as the individual members thereof, to so exert their endeavors to promote a general good feeling among those connected with the profession, that the lovers of true art will gladly welcome the opportunity to subscribe to a fund for the general advancement of the young students."

(To be continued.)

How to make a rattail file that will cut faster and last much longer than any cut file ever made: Draw out a piece of steel to the size you want the file to be. Make it square and tapering to a point at one end; then twist it like any auger, but closer; heat it to a dull red, and chill it in water, dipping it straight down. Draw but little temper. You will be surprised to find how fast it will cut and how long it will last.—*Blacksmith and Wheelwright.*

THERE is a tooth pick factory near Harbor Springs, Mich., which annually consumes 20,000 cords of wood.

Subscribers will greatly oblige us by forwarding promptly the amount of their subscription.

The Uses of Turpentine and Benzine.

TURPENTINE spirits is derived from the turpentine extract of several species of pines. It is used in medicine. There are many liniments which owe all their virtue to this spirit. Benzine is a spirit distillation of petroleum and is used in the arts and manufactures. Turpentine as used by painters is called a thinner, to dilute oil paints for inside work, or it may be used alone as a vehicle for flat or dead colors. All paint mixed with turps dries quickly, and when oil is added the drying is slower, leaving a gloss proportioned to the quantity of oil used. The use of boiled oil darkens light paints by giving them a yellow shade on all interior work; for this class of paints, raw oil is used with turpentine, white japan, or sugar of lead. The effect of benzine turps in painting is too rapid drying, it being too volatile as a vehicle to hold the mixture in easy solution while spreading the pigment. Where benzine is used in painting it should be compounded lightly with oil paints, as this retards its action and allows the painter sufficient time to flow the color before it can set. Its use in oil paints is much less injurious; it causes the drying to be more rapid, and does not affect the gloss as much as turpentine spirits. In all outside exposures, when painting, this mineral turps should only be used as a dryer and lubricant of the oil paint in use. In such work, the presence of this dryer is of so short a duration that the paint soon sets and dries with an even gloss, whereas, when turpentine is used, being of a much stronger nature, it cuts more literally the filament of oil, and the consequent result is the impairment of the gloss finish. Then again when painting in the shade, oil paints are more difficult to spread than when the warm rays of sunlight are present to suffuse the work with its gentle heat. It is here a volatile lubricant is needed to do for the oil what the solar rays does on work, and benzine is the only turps that as yet the laboratory has evoked, that will do this without any disadvantage to work done in the shade. In cold, chilly weather, when the paint inclines to thicken from frost, a liberal use of benzine turps will enable the painter to spread the color with more freedom and yet not impair the general effect of the work. In varnishes of the lower grades, when manufactured with benzine, it plays a very important part, for the B varnish is made more serviceable to the artisan. In all lacquers its working is so rapid that the fluid color is laid instantly on metal goods without a blemish. Turpentine varnishes, if diluted much, lose the beauty of their gloss. Oil in this kind of varnish, when added by the workmen, leaves a sticky surface and is detrimental and is not safe to use. In housework the benzine furniture grade can be diluted with pure linseed oil in a fair proportion, and it will give an elastic coating of a high gloss of great endurance, equal to some foreign elastic brands.

J. W. C.

Augustus Laver.

To this gentleman does the San Francisco Chapter of Architects, in a great measure, owe its successful standing as one of the most prosperous in the United States. In the early part of 1881, he was elected President of the Pacific Coast Association of Architects; not content with a local organization from the outset, Mr. Laver labored earnestly to make the Association a branch of the American Institute. Being the only member of that body residing in this State, it was impossible to form a Chapter without new members were added to the parent institution, sufficient to form a branch in this city. It was by Mr. Laver's efforts and recommendation that six of our leading architects were enabled to join the American Institute, and thus form the nucleus for the present chapter.

Mr. Laver, wherever he has been, has always been identified with the leading societies in the locality in which he has resided. At present he is a Fellow of the American Institute of Architects, the Institute of Engineers of New York, the Institute of Engineers and Architects of Montreal, and for eighteen years a Fellow of the Royal Institute of British Architects, of which he has been made an Honorable Fellow, and corresponding member. A thorough, constant and enthusiastic student of all the details of his profession, his advancing years promise to bring only greater eminence and success in the art to which he has devoted the best energy and interests of his life.

AUGUSTUS LAVER.

Mr. Laver was born in Folkestone, England, on Sept. 20, 1834. Previous to his coming to the United States, he practiced his profession in London, principally in the service of the British Government. In 1857 he came to the United States and settled in Ottawa, Canada. There his professional ability soon gained him distinction, and shortly after his arrival (the Queen's decision making Ottawa the seat of government) he won the first place in an open competition, and was employed, with his then partners—Thomas Fuller and Mr. Stent—by the government to design and erect permanent legislative buildings. The corner stone of this structure was laid by the Prince of Wales on September 1, 1859. Many other buildings lay claim to his ability, principal among which was the remodeling of the Roman Catholic Cathedral of Montreal. After leaving the Canadian seat of government he again became professionally associated with Mr. Thomas Fuller, of New York. While associated with that gentleman, they conceived the plan, and carried into execution, the construction of the magnificent building known as the State Capitol at Albany. Over twenty millions of dollars were expended on this superb structure.

About this time the growing opportunities of the Pacific Coast attracted Mr. Laver's attention, and in the fall of 1870 he settled in San Francisco. The work which has brought him most prominently before the citizens of this coast, and the best evidence of his architectural ability, is the New City Hall of San Francisco. Mr. Laver entered the open architectural competition established at the projection of that work, gained the first position among the many competitors, and the buildings erected from his designs are rapidly approaching completion.

Mr. Laver's skill as a designer of country residences has shown itself in the palatial mansion erected by J. C. Flood, at Menlo Park. The O'Brien memorial monument also claims Mr. Laver as its author. He is also now engaged in preparing the plans for the large mansion shortly to be erected on Nob Hill for Mr. Flood.

Mr. Laver resides in one of the pleasantest parts of the city. His wife is a relative of the eminent English statesman,—Charles James Fox.

To the student seeking information, Mr. Laver finds a share of his always engaged time, to impart such knowledge as the applicant desires to gain. His professional standing and large connection with important public works have caused him to be intimately acquainted with scientific and literary men, both at home and abroad, and there are but few better able to give information on all subjects connected with the architectural professions.

During the past year, Mr. Laver has unfortunately been compelled to keep to his house in the evenings, the cool weather generally experienced having a tendency to aggravate a trouble connected with the bronchial tubes. Thus the Chapter has missed the benefit of his experience; but at all times he has been ready to meet the various committees of which at times he has been appointed a member, and none are more willing to give counsel upon all subjects that have a tendency to elevate the standing of the youthful members of the Chapter, or to give information that will lead to a more thorough organization among the older members.

Although many of Mr. Laver's buildings and mansions—since his residence in this city—have been of the more costly style and imposing appearance, it must not be inferred that these alone receive his attention. Many of the picturesque cottages that adorn our valleys and sanitarium resorts, are the result of his study; and in the quiet nooks of Marin and other counties, are found examples of suburban architecture, the designs of which were the result of the labors of the gentleman under consideration.

John Wright.

PRESIDENT OF THE S. F. CHAPTER.

No more positive proof of rapidly increasing refinement need be asked than that furnished by the increasing number of architectural constructions which are fast making this city the equal of any in the United States. For a long time men were too busy to think of these graceful adornments, but that period has gone by, and the architect's genius has full scope in designing stately mansions and edifices. The firm of which this gentleman is the senior member has done much to elevate the tastes of our people to a higher order of architecture, and many of our imposing public buildings are examples of the skill with which all the details of a structure may be handled.

Aside from his reputation as one of the master minds in the handling of architectural studies, John Wright has made himself respected by the draughtsmen all over the coast. His main idea seems to be the elevation of the student to the higher grades of the profession. To him is mainly due the formation of the classes now being so successfully conducted by the Chapter. He is nobly giving a portion of his really valuable time to laying the foundation of a plan by which the Chapter can successfully institute a TRAVELING STUDENTSHIP, for the benefit of one who shall prove himself to be the most studious, competent, and original scholar connected with the classes under the auspices of the Chapter.

Mr. Wright is a native of Scotland, and was born May 15, 1830, in the town of Killearn, Scotland. In him was born a natural love of the beautiful, and this feeling has been cultivated more and more as he has reached maturer years, until we see it exemplified in the structures over which he has exercised control.

In 1866 the present firm, of which Mr. Wright is a member was established in this city, and for many years it has remained in its present location. From the number of buildings erected by the firm in various parts of the city and State, its name is very well known by those owning property.

Mr. Wright has been intimately identified with the San Francisco Chapter of Architects. After its establishment, he was its first President, being elected to that position by a unanimous vote. Such had been his zeal for its welfare during his term of office, that, at its annual meeting, held in September, 1882, he was again elected President, which position he now holds.

The Toland Medical College, the Eagle Block, Dunham, Carrigan's fine building, the State Insane Asylum at Napa, Deaf, Dumb, and Blind Asylum at Berkeley, First Congregational, Calvary, St. John and other churches in this city, and many of our prominent dwellings lay claim to the architectural ability of which Mr. Wright is a member.

Mr. Wright is a man of powerful physique, and his resemblance to one of the nation's honored martyrs is very striking. He also possesses the largest and most complete architectural library of any one on the coast, and none are more truly happy than the subject of this sketch when placing the same at the disposal of those seeking information in the higher branches of the beautiful study of architecture.

JOHN WRIGHT.

Mr. G. H. Sanders is associated with Mr. Wright in business matters; that they may long live to continue their successful career is the wish of all with whom they have come in contact, socially as well as professionally. Mr. Wright is a member of the American Institute, and is a careful student of the various movements made by that body. Particularly noticing the measures instituted by the various chapters belonging to the parent institution, for the benefit of students and draughtsmen, he seeks to introduce those that are the most applicable to the younger members of the profession on this coast.

Practical Notes.—A Place to Leave Orders—Learning to Keep Tools in Order.

THE other day I dropped into a carpenter's shop to have a little job done, but found only the apprentice boy present. Making inquiries as to when the "boss" would be in, the boy without looking up from his work said, "Don't know." So I started off to find some other place where I could have my wants attended to.

Owners and managers of any kind of business where they are liable to have frequent calls from the public, ought to leave word when they expect to return to their usual place of business, and if no one can be left to answer such questions, a slate and pencil don't cost much and when put in a convenient place so that orders can be left, confer a favor on the customer and bring dollars and cents to the workman.

As I stood looking at the boy, he was trying to "jack off" the rough side of a two-inch plank, and despite his earnest efforts he did not make much headway. The foreman had given him an old wornout jack plane that had been thrown aside as not fit to use.

I don't agree with a great majority of master-workmen that any tool is good enough for an apprentice. In my judgment an apprentice should be provided with a good serviceable tool. Undoubtedly, not knowing just how to use it, he may soon get it out of order, but one of the first lessons he ought to receive should be how to put his tools in order.

I beg to ask any apprentice if he was ever shown how to grind a plane-iron by the foreman, and then how to put an edge on it by rubbing it on the oil-stone. I venture to say that not one apprentice in a thousand is so instructed. The fact is a boy is supposed to pick up how to do such things. If employers would pay a little attention to the instruction of their apprentices at the outset, it would pay them in the end because they would learn to do better work in much less time than they do now.

No workman can do a good job with dull tools, and one reason why there are so many "barn-joiners" is because no one has taken the trouble to teach them how to keep their tools in order.—*Rivet, in the Mechanical News.*

A GAS explosion took place in a hotel in Lincoln, Eng., recently, attended with great damage to the building. The explosion followed immediately upon a person going with a light into the cellar under the bar.

William Curlett.

VICE-PRESIDENT S. F. CHAPTER.

THE charm of a city depends in a great measure upon the number of mansions and edifices upon which the skilled architect has been allowed the full scope of his designing powers, thus enabling him to establish his claims as a true artist.

A sudden increase of wealth and culture among the inhabitants of any city, always creates a demand for buildings to suit their tastes, and to meet this demand many gentlemen of professional ability are attracted from older cities; and it is when these become stationary, and their names are known throughout the State, that the people recognize the fact that all such have been true lovers of art and have come to their place that they may be indentified with the true and beautiful in architectural science.

Mr. Curlett, the subject of this sketch, was among the first to unite in the movement which resulted in the formation of the Pacific Coast Association of Architects, with Mr. Augustus Laver as President, which association has since been merged into, and its members now in part constituting S. F. Chapter of Architects. In all the movements of Association and Chapter, Mr. C. has manifested a becoming degree of zeal and enthusiasm, and by words fitly spoken, and generous, cordial intercourse, placed himself among the most esteemed of the Chapter members; as an evidence of which, he was elected First Vice-President in 1882, and reelected to the same position in 1883. He is one of the number who advocate the more enlarged and far reaching purposes of the Chapter, in the establishment of a "studentship,"—a prize worthy the highest ambitions of the young men in the profession, and which from present indications is likely to be attended with permanent success; also the several other measures in contemplation by which the grand influence and benefits of the Chapter work will be made clearly manifest. Mr. Curlett was born at Warrenpoint, Ireland, on the 3d day of March 1845, and being in the full enjoyment of a vigo ous physical manhood, good intelligence, pleasing manners and fine social qualities, he has before him the promise and prospect of more than ordinary success in his profession. Being an earnest student and devotee of the sublime art—architecture—his conceptions as illustrated in buildings lately finished by him and those nearing completion, sustain his claims to a very enviable position among the architects practicing in San Francisco.

Mr. Curlett's career has been a very successful one. In 1876 he became associated with Mr. A. Laver in a professional capacity; among the most important works designed by that firm during their association was the country residence of J. C. Flood at Menlo Park. Their partnership was dissolved in 1880.

Upon the expiration of the time for which this partnership was formed, Mr. Curlett was on January 12, 1880 elected to the position of architect to the School Department of the City of San Francisco, which position he held for a double term. During that period, he designed many notable buildings for the department. The State Normal School at Los Angeles is indebted to the talent of Mr. Curlett, he having designed and superintended its construction.

Mr. Curlett is now located in the Phelan Building, a section of the city that will, in our judgment, soon he adorned with buildings of large dimensions and imposing appearance. It is not our purpose to make any unwarrantable statement in reference to any of the gentlemen, whose likenesses appear in the present, or may appear in subsequent issues of this journal. It would not be wise so to do, as such a course would simply compromise and lower the status we have in view, and place us at a disadvantage. Neither would such a course be acceptable to the gentlemen interested, as flattery and statements in excess of real facts, would be simply obnoxious to practical minded, intelligent men.

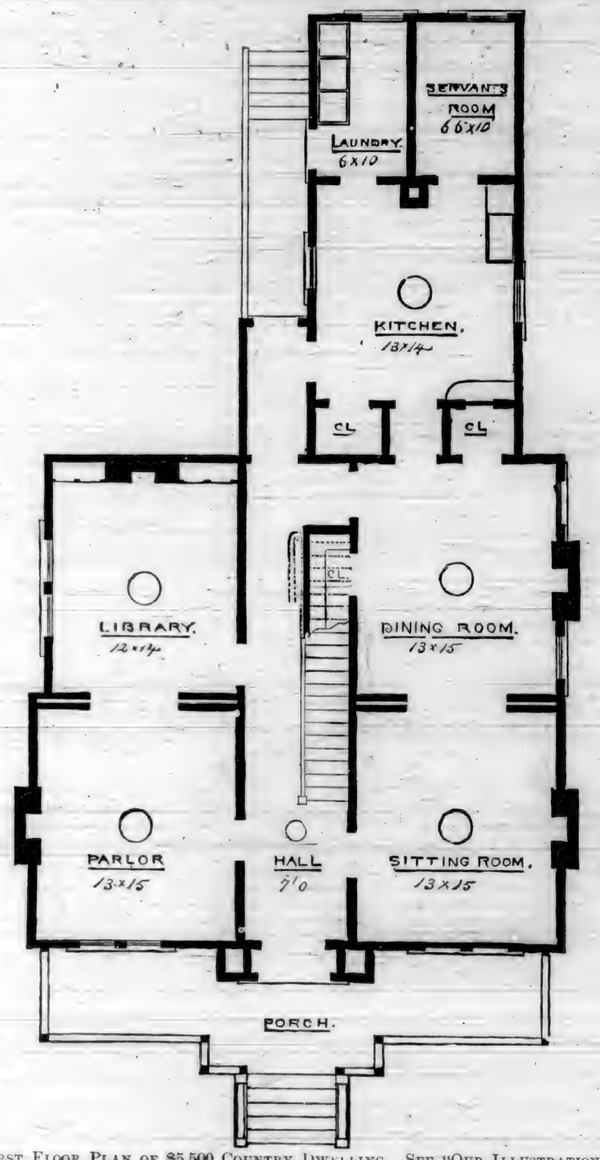
We have placed the officers of the Chapter first, as it is to their efforts, and the success attending them, that our draughtsmen and students must needs look for encouragement.

Mr. Curlett is a member of the American Institute of Architects and indorses fully all their efforts for the advancement of young members of the profession.

WILLIAM CURLETT.

Letter Gilding.

LETTERS written on vellum or paper are gilded in three ways. In the first a little size is mixed with the ink, and the letters are written as usual. When they are dry, a slight degree of stickiness is produced by breathing on them, upon which the gold-leaf is immediately applied, and by a little pressure may be made to adhere with sufficient firmness. In the second method, some white lead or chalk is ground up with strong size, and the letters are made with this by means of a brush; when the mixture is almost dry, the gold-leaf may be laid on and afterward burnished. The edges of the leaves of books are gilded, while in the binder's press, by first applying a composition formed of four parts of Armenian bole and one of sugar-candy, ground together to a proper consistency, and laying it on by a brush with the white of an egg. This coating, when nearly dry, is smoothed by the burnisher; it is then moistened, with clear water, and the gold-leaf applied and afterward burnished. In order to impress the gilt figures on the leather covers of books, the leather is first dusted over with very fine powdered resin or mastic, then the iron tool by which the figure is made is moderately heated and pressed down upon a piece of gold-leaf, which slightly adheres to it, being then immediately applied to the surface of the leather with a certain force; the tool at the same time makes an impression, and melts the mastic which lies between the heated iron and the leather. In consequence of this, the gold with which the face of the tool is covered is made to adhere to the leather, so that on removing the tool a gilded impression of it remains behind.—*Manufacturer and Builder.*



First Floor Plan of $5,500 Country Dwelling. See "Our Illustrations."

To Prevent Vermilion Darkening.

Pure vermilion will, in the course of a few months, if exposed to the sun and atmosphere, turn into a dirty brown color. Adulterated or mock vermilion will do the same, but far more rapidly. A remedy for this has long been sought. It is said that if flour sulphur is added to the paint whilst mixing, in the proportion of one-eighth, the vermilion will retain its brilliant color for a considerably longer period than without it.

Liquid Glue.—The *Muster Zeitung* recommends, in preference to the treatment of glue with nitric acid, the following: So-called gelatine is dissolved in the water bath in its own weight of strong vinegar, a quarter part of alcohol, and a very little alum. This glue remains liquid when cold, and is much used for cementing mother of pearl, horn, etc., upon wood or metal.

Bound volumes now ready. Price, $2.50 each.

INSTITUTE OF BRITISH ARC
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Our Illustrations.

In this issue we present an engraving of four of the prominent architects identified with the San Francisco Chapter. It is our intention to give a few each month, until we have secured a written history and likeness of those that labor so earnestly for the advancement of the study of architecture.

The design presented on page 13 is suitable for a country or suburban home. We present two arrangements—one with eleven rooms and bath, the other nine rooms and bath. In either case, the arrangement is very desirable for a country home. The difference in cost between the two plans will be about $500. As shown, this design, carried out in its entirety, will cost about $5,500.

The design on page 5 is from our regular correspondent; the explanation accompanying the same is very full, and will prove interesting reading.

On page 17 we present a sketch from our artist, John Wolf, of New York. We trust in the future to be able to give many sketches from this gentleman.

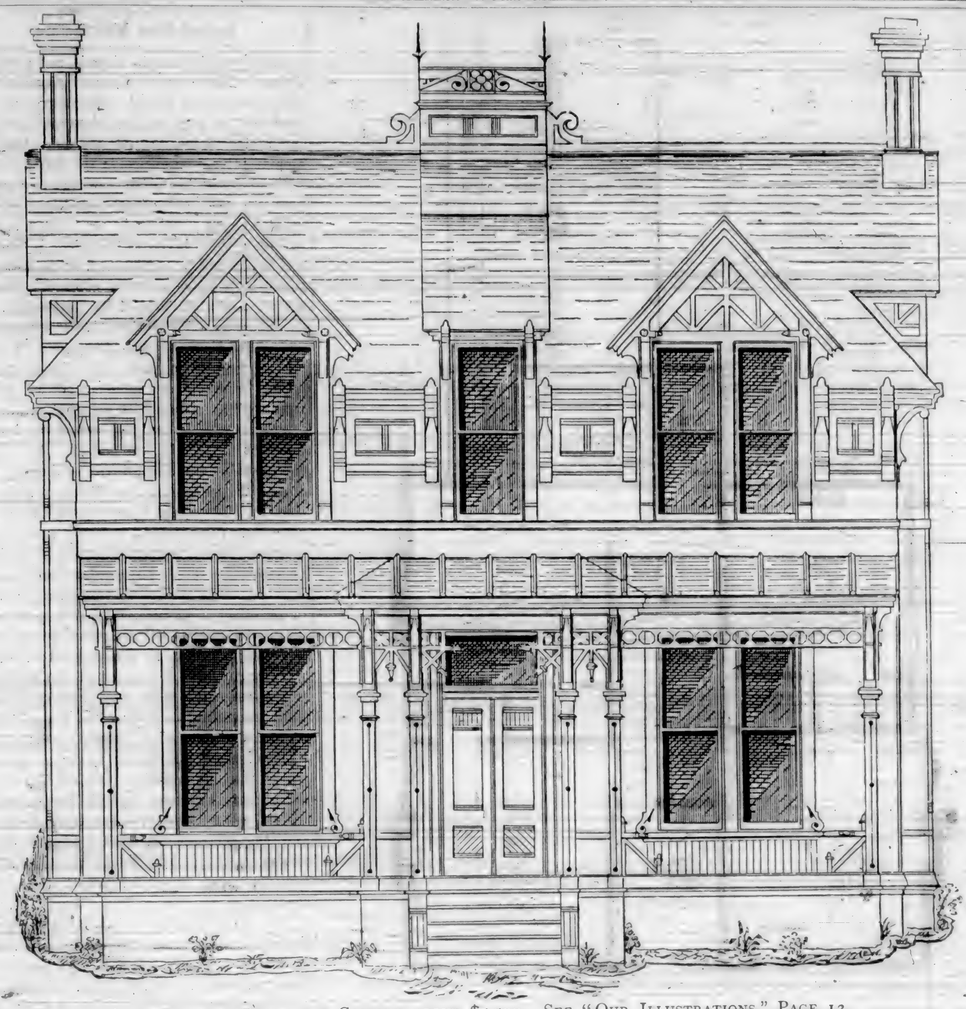
On page 18 will be found an original design for a cresting.

Drying Lumber.

Small quantities of timber may be quickly and thoroughly seasoned by steaming. The philosophy of this process—which, if properly performed, does not injure the strength or durability of the timber—is very simple. A very large percentage of the sap in all kinds of wood is water. This water, heated to boiling, expands sixteen hundred and fifty times. It follows that if wood be heated to 212°, the boiling point of water, the capillary cells can contain only one sixteen hundred and fiftieth as much water as at ordinary temperature, the expanded water escaping as steam. The proportion of moisture left in the wood is, after steaming, less than that demanded by its ordinary hygroscopic condition. At least it is found to be so for certain species of hickory and white ash, which increased in weight after being removed from the steamer and the surfaces had become dry.

The steaming should be done gradually—that is, time should be given for the wood to gradually rise in temperature, and so that the sap may escape gradually from the cells without rupturing them by its expansive force when converting them into steam. The steam should be generated in a suitable boiler and allowed to escape at two or three pounds pressure, which should be gradually reached in proportion to the size of the pieces which it is desired to season.—*The Lumber World.*

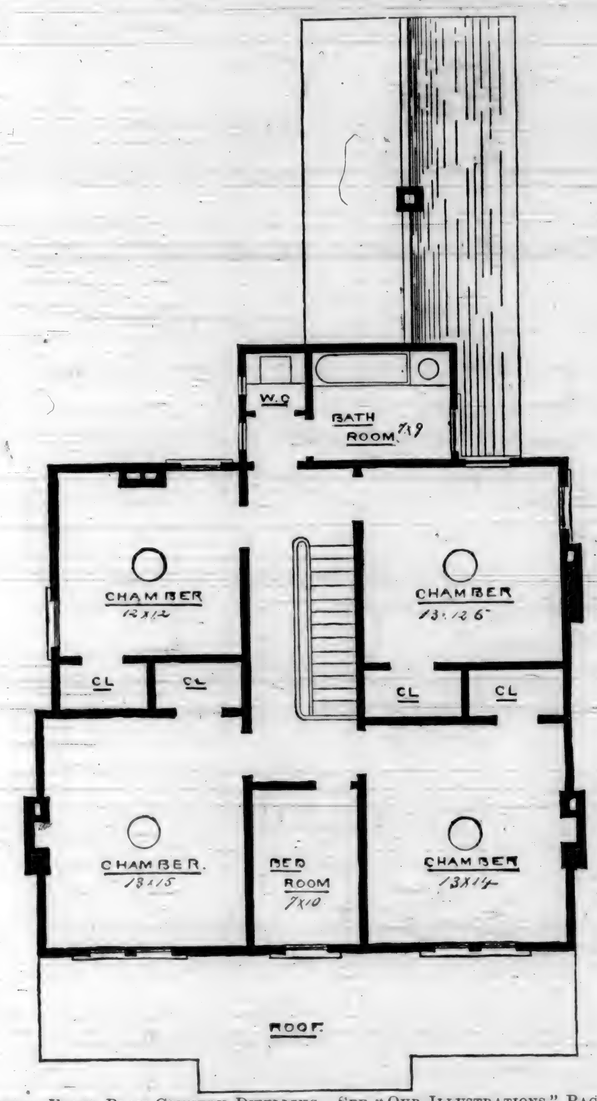
Every material man in the United States should at once subscribe to this journal. By so doing, you will obtain a list of parties making building improvements, and thus be enabled to send your circulars to those to whom it will be of the most benefit.



A Country Residence Costing about $5,500. See "Our Illustrations," Page 12.

Carpentry in Olden Times.

In early English times very little that resembles modern joinery existed, every part being rude and united in an artless manner. The first accurate and neat workmanship was in the stalls, pulpits, and screens of cathedrals and churches, and the furniture of the abbeys, but this was of the most simple kind. As time went on there was more neatness, soundness, and accuracy in work. When plain surfaces of considerable width and length were introduced, as in wainscoating, the surfaces were commonly formed of inch, or inch and a quarter boards, joined with glue, and a cross or feather tongue ploughed into each joint. When the boards were glued together and had become dry, tapering pieces of wood, called keys, were grooved in across the back with a dovetailed groove, the keys preserving the surface straight and also allowing it to shrink and expand with the changes of the weather. In fixing landings of stairs, tops of tables, etc., sometimes a wide board, or a piece consisting of several boards, was fixed by means of buttons *screwed* to the back, which turned into grooves in the framing, bearers, or joists, to which it was fixed. If any shrinking took place, the buttons slid in the grooves. In forming architraves, the simple method of ploughing and tonguing work together was followed, providing effectually against the greatest defect of timber work, its shrinkage. By this method, the bold mouldings of Gothic architecture were executed with a comparatively small amount of material. In laying floors, the tongue was ploughed into each joint. Ordinarily the boards were only tacked down the first year, and nailed down for good next year, allowing of correcting any tendency to rise, or the opening of joints. In most old structures the floor is laid with remarkable evenness and accuracy, the boards being soundly fixed to the joists. In oak floors the ends were forked together. In hanging doors, centres were often used instead of hinges. Of the various kinds of hinges, some were concealed, but most projected, the door folding back over projecting mouldings. In stairs the rise or tread of the steps is found to be very moderate. Winding stairs were seldom introduced, being chiefly rectangular, with ornamental railing and newels. In some staircases, two rows of steps of different level are met with double tread.—*Building.*



SECOND FLOOR PLAN COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

OIL ON WOODWORK.—Carefully conducted experiments have demonstrated the fact that seasoned wood, well saturated with oil when put together, will not shrink in the dryest weather. Wheels have been known to run many years, even to wearing out the tires. Very many dollars might be saved annually if this practice were adopted. Boiled linseed oil is the best for general use, although it is now known that crude petroleum, on even old wheels, is of great benefit.

Bound volumes now ready. Price, $2.50 each.

MAKING WALNUT STAIN.—One quart water 1½ oz. washing soda, 2½ oz. Vandyke brown, ¼ oz. bichromate of potash. Boil for ten minutes, and apply with a brush either hot or cold. Permanganate of potash dissolved in water gives also a good brown stain.—*Exchange.*

Cockroaches will not molest the binding of a book which has been varnished with a mixture of two parts copal varnish to one of turpentine.

Bound volumes now ready. Price, $2.50 each.

Stained-Glass Manufacture.

THE art of glass-staining is not a new industry. There are two descriptions of glass made use of, one called "pot-metal," which is produced by melting the glass and the coloring matter together, the pigment thus permeating the glass entirely; the other is called "flashed-glass," to produce which two melting pots are used, one of pot-metal, the other of colorless-glass. When in a proper state of fusion, a thick layer of the latter is laid out, and is covered by a thin film of the former, so that the surface only is colored. This description of glass is used for embossing. For the purpose of painting, both colored and white glass is used, and the pigments, generally of metallic oxides, finely powdered and mixed with oil of spike or other volatile medium, are laid on with a brush.

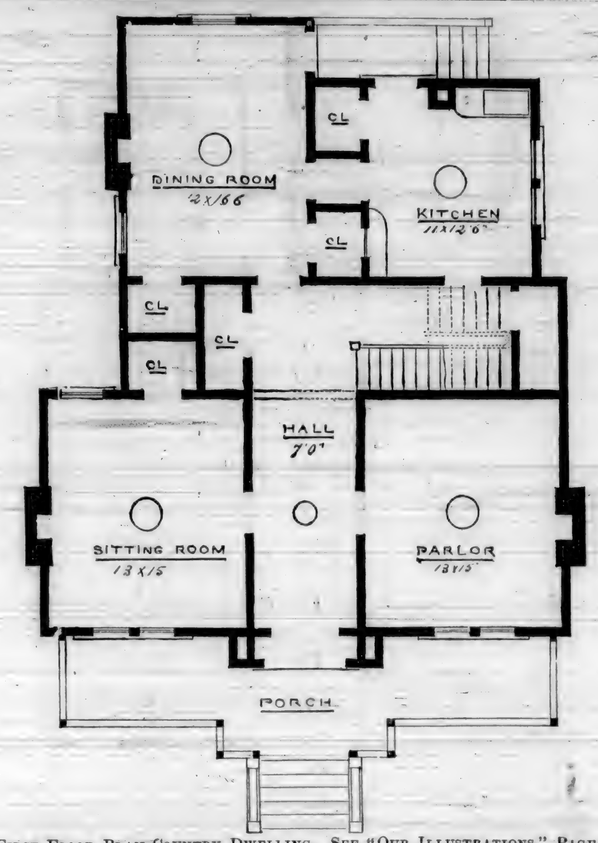
The art of glass-staining is practiced in four different ways, viz., the mosaic, the enamel, the mosaic-enamel, and the embossed. The mosaic is the ancient method, in which each color in the picture is represented by a separate piece of glass, and is fixed in its place by means of leaden frames, a mode which did not necessarily preclude any gradations of shading. The enamel is the application of pigments, as in painting a picture, by which process the nicest delicacy of shading can be produced, but what it gains in this respect it loses in transparency and brilliancy of tint, and hence is less esteemed than the pot-metal mosaic work; nevertheless pictures of a much higher artistic character can be produced; and, although less esteemed, it is more generally employed than the mosaic, indeed, it is now usual to combine the two methods in the mosaic-eminel, wherein the brilliant tints of the one, and the picturesque, although more opaque, effects of the other, produce together a more complete and beautiful result than either separate.

The colors employed in glass-staining are produced from various sources. Gold, in the state called purple cassius, or as a simple solution without tin, gives ruby, crimson, and purple. Iron, as a protoxide, a dull green; combined with alumina, flesh-tints; with chloride of silver, orange, and as a protoxide, a brownish red. Copper, as a sub-oxide, a rich ruby; and as a black oxide, a brilliant green. Uranium, a chrysoprase green and canary, slightly opalescent; cobalt, blues in every variety; carbon in the form of charcoal or soot, a common yellow; arsenia or arsenic acid, opaque white; magnesia, as an oxide, amethystone purple, and as a peroxide with cobalt, garnet red; silver, with alumina, a brilliant yellow; with others, as dictated by the experience of the workmen. The beautiful yellow of ancient glass could not, until recently, be produced by modern glass-workers.—*Building.*

This is the first month of the New Year, and is just the time to subscribe to a journal of the character of the "California Architect." Two dollars per year.

Egyptian Mechanical Methods.

PETRIE, who is the author of a treatise on ancient metrology, has lately turned his attention to ancient Egyptian processes. Though much labor has been bestowed on the literary remains of Egypt and the description of monuments, little attention has been given to finding out the tools and methods by which their results were reached. The first conclusion to which Mr. Petrie comes is that the stone cutting was performed by means of graving points far harder than the material to be cut. These points were bedded in a basis of bronze; and in boring, the cutting action was not by grinding with a powder, as in a lapidary's wheel, but by graving with a fixed point, as in a planing machine. From discovering spiral grooves in diorite and granite, at least one-hundredth of an inch in depth, the author supposes that an instrument was used of sufficient hardness to penetrate the material that far at a single turn. In this, however, he was corrected by Mr. Evans. The simplest tool used was a straight bronze saw set with jewels; but there is proof of one circular saw which must have been six and one-half inches in diameter. For hollowing the insides of stone objects, the inventive genius of the fourth dynasty exactly anticipated modern devices by adopting tubular drills varying from twenty-four-hundredths of an inch in diameter and two-hundredths of an inch in thickness to 18 inches in diameter. Other drills, not tubular, were used for small holes, one measuring one and two-tenths inches long and eight-hundredths of an inch in diameter. But this is surpassed by the Uaupes of South America, who drill holes in rock crystal by the rotation of a pointed leaf shoot of plantain, worked with sand and water. The writer of this note has seen, in Porto Rico, stone beads of the hardest material, 2 inches long, bored longitudinally with an orifice one-sixteenth of an inch in diameter. The Egyptians understood rotating both the tool and the work. For the finishing of vases, a hook tool must have been used; but the early Egyptians were familiar not only with lathes and jewel turning tools, but with mechanical tool rests, and sweeping regular arcs in cutting. In addition to the tools mentioned, are to be noticed those for dressing out drilled cores, stone hammering and smoothing, saws with curved blades, mallets, chisels, adzes, and bow drills. For marking and indicating the plane of the stone, red ocher paint was used in a variety of ways, well studied out by Mr. Petrie. Rock excavation, both for saving the stone and for the creation of vaults and chambers, was altogether an affair of drilling. Granite bowlders were utilized in the pyramids, but the best stones were taken from quarries. The method of handling these immense masses is not known. Mr. Petrie concludes with a sensible remark upon the oft alleged inhumanity of the pyramid and temple builders. To require a man every six years to serve upon the public works, during the season when he could do nothing else, would certainly not be a great hardship.—*Science, from Journ. Anthrop. Inst.*, xiii., 88.



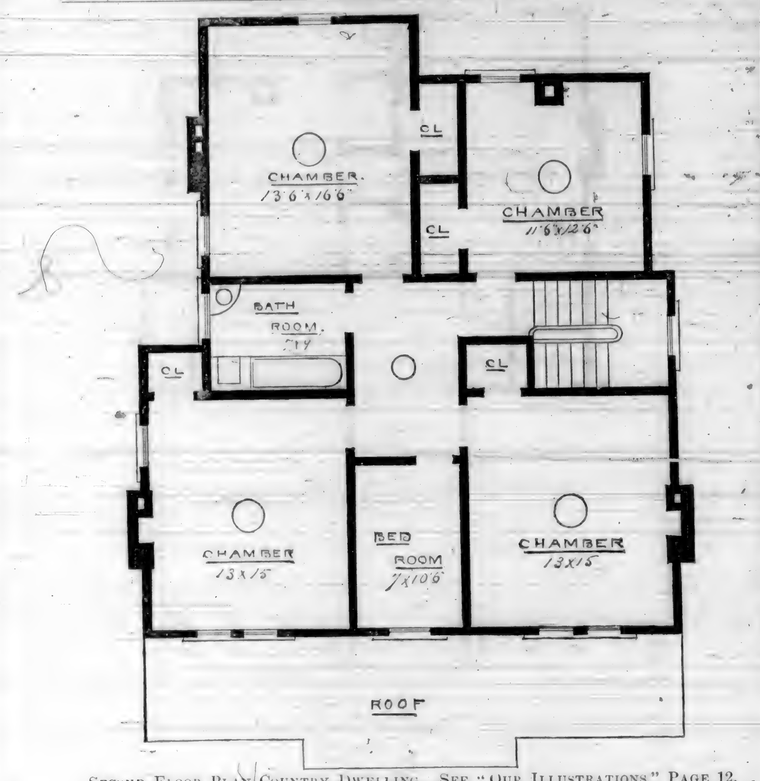
FIRST FLOOR PLAN COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

Varnishing of Wood Work.

THE number is yearly diminishing of those who believe that exterior causes exert no bad influence on varnishes, but there still remains too large a showing of those who blindly claim that, "if the varnish is all right, and the painter understands his trade thoroughly, there is no necessity of all this painstaking in the construction and heating of the finishing rooms." It would be as reasonable to claim that heat, cold, and moisture have no effect on the thermometer and barometer, as that oil, turpentine, and compounds, into which they largely enter, as proof against atmospheric changes. Turpentine will absorb moisture, and linseed oil is affected by both heat and cold, heat rendering it thinner, and varying degrees of cold causing it to thicken, until at length, at about zero, or a few degrees below zero, it congeals. As components of varnish those liquids are not quite so sensitive to heat, cold, and moisture as when in the simple state, yet are sufficiently susceptible to cause trouble and serious loss to the builder who fails to provide against their insidious workings. Those railway car painters who are compelled to finish their work in indifferently heated sheds, assert that it takes about double the quantity of varnish to do over the outside of a car, solely on account of the chilling of the varnish—in other words, the thickening of the oil contained in the varnish. The surface of the car, of course, contributes its share of cold, proving conclusively that the combined effects of the atmosphere and the chill on the surface of the car, are adverse to economy in the use of stock, to say nothing of the liability to enameling, minute cracking, and pitting, with the unprofitable and vexatious labor they entail.—*Ex.*

Promptness in renewal of subscriptions will enable us to still further increase the number of improvements necessary to make this journal fully equal to those printed in the older cities.

THE INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV



SECOND FLOOR PLAN COUNTRY DWELLING. SEE "OUR ILLUSTRATIONS," PAGE 12.

Painting Iron.

THE value of red lead as a preservative for iron has been generally accepted. Wrought iron requires a hard and elastic paint, which will hold itself together even if the scale beneath gives way. The following experiments, made under the auspices of the Dutch State railroads, may be instructive. Iron plates were prepared for painting as follows: Sixteen plates, pickled in acid (hydrochloric), then neutralized with lime (slaked), rinsed in hot water, and while warm rubbed with oil. The same number of plates were cleared of scale, so far as it could be removed by brushing and scraping. Four plates from each set were then painted alike—namely, four plates with coal tar and four plates with iron oxide A, another set with iron oxide B, and the remaining set with red lead. They were then exposed three years, and the results observed were as follows: The coal tar on the scrubbed plates was quite gone, that put on the pickled plates was inferior to the others. The iron oxide A on the scrubbed plates was inferior to the other two, while on the pickled plate it held well. The oxide B was found superior to that of A, but inferior to red lead, while the plates covered with red lead stood equally well on both prepared plates, and were superior to all others. From these results it is evident that pickling the iron removes all the black oxide, while scrubbing does not. It is also shown that the red lead unites with oil to form a hard, oxy-linseed oil acid soap, a harder soap than that given by any other combination. The red lead is shown by those experiments not to give way under the scaling; it is more adherent to the surface, more elastic and cohesive. On the Cincinnati Southern Railroad, experience extending over some years has shown that red lead has proved the most durable paint in the many miles of iron trestle and bridgework. It is found that the iron oxide is washed away by the rain and perishes in spots, although a valuable paint if frequently renewed. Red lead, on the other hand, is more expensive than iron oxide and is difficult to be obtained pure. It is adulterated with brickdust, colcothar, and other substances, and has lost its high repute.

Referring to white lead as a material for painting iron, one authority observes that "white lead should not, if possible, be used in priming iron, nor in any priming coat; moreover, it is a less desirable overcoat than iron oxide. The class of iron paints compounded of ores of natural iron rust, combined with clay or some other form of silica, are very useful, as they contain no water nor sulphuric acid. Magnetic oxide, or pure iron oxide, is an excellent protection for iron, says one writer; it is impossible to scrape it off. It is also of value in woodwork, and resists the action of salt water and sulphurous gases, so destructive to most paints. There is no doubt the great protective element in paint is the oil, and the conditions required for success are stated to be to prevent the drying part of the oil from becoming hard dry; the soft-keeping, non-drying acids must be kept from flying away in such a quantity as to reduce the oil to a brittle mass. In other words, the elastic qualities of the oil must be protected from the action of the oxygen.—*Scientific American.*

The Gimlet.

A MOST insidious dog—
"A great bore withal, and yet of no great calibre."

The gimlet is an offspring of the awl, and is of comparatively modern origin. Traces of the dual use of the latter as both gimlet and awl are discoverable in Egypt as early as the nineteenth centurybefore Christ, and no development of the gimlet as a separate tool was made by that people so far as is known. At the opening of the Greek era the gimlet was known to that people simply as an awl with an egg-shaped handle. With the Greeks it first took its place as a distinctive tool, and later became very common. Its first inventor is unknown, as is also the date of the invention. Pliny ascribes it to Dædalus; but whatever Pliny did not know he deemed it a point of personal and professional honor to make up, and little credit is to be given to this fable. The gimlet of the Greeks had the cross-head, or handle of the style now prevalent. It also had possibly a hollow pod, as the earliest specimens found are of that type, but it had no screw point and demanded a large expenditure of muscle, especially in boring hardwoods, where it was not very effective. Later a gimlet of square section, having sharp corners and tapering to a sharp point, was introduced and gave the hint for a form of auger now in use. In course of time the screw point was added, and the hollow-pod gimlet, with a point of this kind, was the only kind in use for many centuries. In England this was called a wimble. This form is still in use to some extent, and is effective where very shallow holes only are to be bored, but as it has to be removed whenever the pod becomes full of chips from boring, it causes a waste of time when deeper holes are desired. The twisted or spiral form of gimlet, which is self-discharging, is an American invention and only of very recent date. It has, however, superseded all other forms, and is now in common use. The field of the gimlet is becoming greatly narrowed, giving ground to the more rapid and convenient brace and bit.—*Call Smith, in Industrial World.*

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CHENONCEAUX: FRANCE.

THE above sketch is by our artist, Mr. John Wolf, of New York. We are making preparations by which we will shortly be enabled to present sketches from local artists, as well as those in Eastern cities.

Door Decoration.

THE door, which is so frequently a source of anxiety to the ornamentist and decorator, might be made the means of greatly enhancing the artistic completeness of a room. Much of the difficulty experienced in its treatment arises from the desire to disguise its functions. For this reason doors having their panels covered—I cannot say decorated—with wall-papers, &c., no matter how beautiful or costly, fail to please, and the palpable effort at disguise is not only bad but reprehensible, and whenever the position or purpose of a door is thus sought to be hidden, the result is a failure.

In modern-built houses the architects are devoting more care and thought to the design and proportion, and the cabinet-maker to the construction than hitherto, and it is now, fortunately, not uncommon to find doors so original, thoughtfully proportioned, and broken up into panels that they are in themselves perfect, and, as a piece of decorative work, charming. An attempt to still further decorate such doors as these would be unpardonable, and a piece of vanity on the part of the artist; but on the other hand, there are thousands of houses—many of a superior kind, if we take the rental as a criterion—the rooms of which are positively disfigured by doors out of all proportion to their position, many being too short and wide, too high and narrow, or in an intermediate state, which is more aggravating than either, effectually preventing a successful treatment of the room as a whole. Such doors form a stumbling-block and eyesore to many otherwise comprehensive schemes of decoration. The embellishment becoming a necessity, the difficulty is—what to do? It may be only necessary to decorate it slightly to harmonize it with the rest of the room, or it may require much more substantial and heavy treatment, both in ornament and color; the surroundings will, of necessity, determine this point. A most satisfactory and effective treatment is to be obtained by outlining the design in warm browns, allowing the figure of the wood to show through, but the door must be a new one, and capable of such treatment; if, on the contrary, as is far more likely, it be an old and badly painted door, then some such treatment as I have shown in my illustration would prove effective. The dimensions of the panels were taken from an existing door divided into four, those shown being the upper ones. This door being disproportionate, and the panels consequently so, it has been sought to make it appear wider by running the flower-spray behind the center stile into the other panel;* had the panels been too wide, a contrary treatment would have been followed. The desire to elongate panels may be realized by each having a separate design of some upward growth, and, if found necessary, marginal lines to still further help the illusion.

We might advantageously make our doors an object of interest by using them as an opportunity for displaying decorative ornaments. In such positions there is more latitude allowed, and a greater freedom to the artistic fancy; thus, representations of the figure, birds, animals, &c., are here permissible, all of which are out of place and unfit for the walls of our dwelling-rooms, owing to the necessary repetition becoming objectionable and devoid of beauty, and to the accessories hiding and mutilating their parts.

The subjects for such panels should bear the impress of having been designed to fit the place they occupy, and for no other purpose. There is plenty of scope for our selection, the panels of doors offering not only a valuable and legitimate means for the display of the wood-carver's art, but for porcelain-painting inlay, hand-painted or stencilled ornament, needlework, painted silk or tapestry, the latter being sometimes particularly pleasing and effective.—*Geo. C. Haite, in the Builder.*

*This may be accepted as a motive for the treatment referred to in special cases; but, in general, we object to running the design through from one panel to another, as contradicting the actual construction of the door, and making the panels appear as one piece overlaid by the stiles.—ED.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents in DEWEY & Co's. SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR WEEK ENDING DECEMBER 25, 1883.

290,727.—AUTOMATIC GAS REGULATOR—M. J. Amick, S. F.

290,746.—SAFETY FENDER FOR CARS—P. H. Cooney, S. F.

290,755.—LOGGING ENGINE—John Dolbeer S. F.

290,756.—LOGGING LOCOMOTIVE—John Dolbeer, S. F.

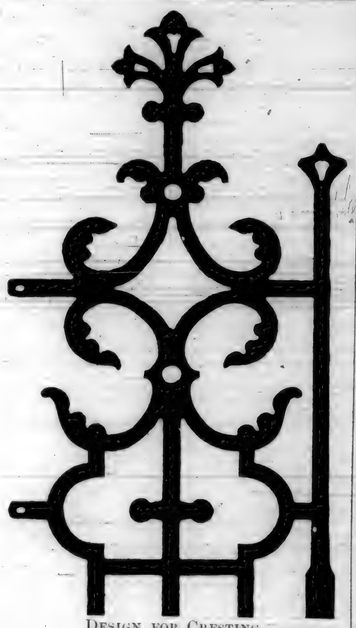
290,674.—AUTOMATIC BELT SHIFTER FOR ELEVATORS.—F. W. Fuller, S. F.

290,776.—PRIVY—F. B. Kendall, Turnwater, U. T.

290,794.—REFRIGERATING APPARATUS—C. C. Palmer, Oakland, Cal.

290,795.—REFRIGERATING APPARATUS—C. C. Palmer, Oakland, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.



DESIGN FOR CRESTING.

Copyrighted by WOLFE & SON, architects, January 15, 1884.

Evils of Letting Plumbing Contracts to Builders.

ONE great obstacle to securing plumbing work in accordance with modern standards in Cincinnati is the builder's influence. It is a community that still retains the pernicious custom of letting plumbing contracts to builders instead of having it done by days' work, or by a contract direct with the plumber. A good illustration of the result of this practice was recently brought to our attention. In a store on Walnut Street near Fourth, one of the most prominent locations in the city, we saw a builders' substitute for a properly constructed water-closet. In a closet inside the building was the usual privy seat, beneath which was a vault about six feet deep by four feet square. This was apparently cemented, and from this receptacle there was a drain, the entrance to which was closed by a plug, which plug could be removed when occasion demanded. The closet in which this privy was placed was in a one-story extension, on the roof of which was another privy house for the accommodation of the occupants of neighboring buildings, and this communicated with the same vault, the droppings from above passing behind a partition that ran from the seat to the ceiling of the lower closet. As the door from this lower closet opened directly into the store, the fragrance of the locality may be imagined. The lessees of the store did not enjoy stinks, and demanded that the landlord should provide a different arrangement. It should be stated that the builder had carried a rain-water leader through the side wall, in order that the accumulated filth might be diluted during rain-storms. The owner of the property, we learn, has since employed a plumber to provide suitable water-closet accommodations properly connected with the drain to the sewer, and there is no evidence that either the owner or the builder adopted this stench-generating device to save money, but simply because the former left the matter to the builder, who followed an ancient custom, assuming it to be good enough.

The mere fact that an owner is sufficiently indifferent to be willing to regard this important work as on a par with the other details of house construction, is conclusive evidence to the plumber that price is the main consideration, and if he satisfies the builder, who is his principal in the transaction, he has done his duty, though the builder's standard is rarely a high one. Errors or omissions in the specifications, a common occurrence, are not pointed out, since if a plumber is officious in this respect the builder is displeased, and in subsequent work avoids employing such a "particular man." "Carry out the specifications, and mind your own business," must be the motto if you work for builders.

Our experience has taught us that wherever this practice prevails, competition, cut-throat prices, and poor work are the rule.

In order to change this condition of things, a public sentiment must be created that will induce the owner to take a personal interest in the work, and make contracts only with the plumber; and to hasten this result the leading plumbers in a place should agree with each other to refuse to be sub-contractors, even if they make a temporary sacrifice. When owners learn that only second-rate men will serve as sub-contractors, they will quickly settle the question, with the result that they will be better served, the plumber's position properly appreciated, and his services more liberally paid for.—*The Sanitary Engineer*

WET BOOTS AND BAD COLDS.—Taking a chill after getting the feet wet is one of the most fruitful causes of disease. The wet months are now coming on, and how best to keep the feet dry must be of universal interest. In two ounces of unpurified castor oil, melt a quarter of an ounce of beeswax and two ounces of fresh mutton suet. When nearly cold, but before getting stiff, rub thoroughly with the hands all over the outside of the boots—soles as well—leaving a good coat on for the space of three days, after which all that can be removed may be scraped off. To be thoroughly effective the boots should be sponged the previous day with lukewarm water so as to entirely get rid of the blacking. The boots will of course not take a shine just after the operation, but they will be found to keep out the wet and to last a great deal longer than if not thus treated.

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Waste of Redwood in the Coast Range.

THE wastefulness of lumbering is one of the striking features of the scene. Only the largest trees are cut, those measuring less than two feet in diameter rarely being touched, and the ax is laid, not to the roots (though they are not thick and widely divergent, considering the height and weight they support), but some distance above, so that in very large specimens the massive stump, upon whose flat top you might build a comfortable house, stands twelve feet above the ground, and contains hundreds of feet of sound lumber which must be left to burn. Then many trees are broken by their fall so that large parts of them are useless; other parts may be knotty, or crooked, or inconvenient to drag out, and so only half of a great trunk will be utilized. Huge logs are consumed, also, in road-making and bridge-building in the hills, and dozens of small trees are crushed by the fall of their greater companions. Then, when a district is pretty well cleared of its best timber, fire is set in the brush and prostrate trunks. Feeding eagerly upon the resinous woods, half dried and broken, it gathers so much heat that the saplings are nearly killed, and the flaky, tinder-like bark of the larger trees is singed in a way which must greatly injure and often destroy them. Moreover, these fires, fanned by the gusty breezes, rushing in every afternoon from the ocean, often get beyond control, and sweeping through the oily tops and brittle trunks, spread blackened ruin over miles and miles of precious forest. *Precious*, however, it seems never to occur to the lumberman these forests are; yet he is probably no more wasteful and careless here than elsewhere, and finds his match for heedless extravagance in nearly every pursuit that deals in what nature furnished us at the outset in abundance, but replaces only very slowly, giving abundant leisure for our repentance. The spendthrift lumberman is bad enough, but no worse than the wasteful oysterman or buffalo-hunter, reckless of the future. It is, or ought to be, a matter of rejoicing to everybody that the forestry people, under Mr. Sargent's guidance, are paying especial attention to preserving as far as possible the magnificent forests of the Coast Range.

WHAT IS AN ACCOUNT BOOK QUIRE?—The word "quire," in account books, is a misnomer, and is used simply as a matter of convenience (probably a "trick of the trade"). As explained by manufacturers, a quire of paper is twenty-four sheets of good and bad or imperfect paper. They reject the bad, and still call the remainder a quire. It is difficult, however, to make the purchaser believe that any quire with the roughest of usage can be reduced to twelve or fifteen sheets and still be a quire of paper. The price per quire is the recognized governing quality, but many account book manufacturers appear to put more or less sheets to the quire as their conscience and the price will permit. Account books should be sold at per hundred pages, and then purchasers would know exactly what they had got for their money.

American Plumbers and Contract Work.*

IN speaking this evening on the abuses existing in the plumbing business, it will greatly help us to go back thirty-five years, when plumbing, compared with to-day, was in a crude state, and trace the history of the trade during that time down to the present day. The men engaged in the plumbing business thirty-five years ago in this city, came from the Eastern cities and Europe, and were strangers to the methods then in use here, there being no sewerage system,—wooden water pipes, with which it was difficult to connect, and other obstacles which have long ago disappeared. All these difficulties were overcome by the plumbers in those days, who were masters of their trade. By hard work, energy, and perseverance, they became successful financially, and were respected and honored in the community. The fact of their being plumbers proved no bar to their mingling with the best classes of their time; no odium was attached to them—no reflections cast upon them. The business was not only considered a useful and necessary one, but a most important branch of industry. They planned the work, furnished the material, and, having the confidence of the men who employed them, good work was always the result. There was no dickering about price—no fault-finding with charges made. The mechanic and owner did business together, in a business way; each having the confidence and respect of the other, they were naturally friends. These were the Garden of Eden days of plumbing in this city.

This tranquillity was too good to last, and in time an evil spirit made its appearance in the shape of the plan-makers and skin-builders. These men undertook to build elegant buildings at greatly reduced prices, and Mr. Goodfellow and Mr. Goldlover were both enticed into the net prepared for them. A plan was made, and Mr. Plan-maker called around to the shop of Mr. Good-Mechanic, and whispered into his ear: "I have planned an elegant residence for Mr. Goldlover. He has purchased land fronting a beautiful street. I want you to get the work. I know you have means, and have heard of your mechanical skill. Give me an estimate on the work; I will give you the preference, and Mr. Goldlover will employ you in the future to do all his work. Now figure very low, as I expect to get other figures on the job." Mr. Good-Mechanic listened with attentive ear and said: "Figure on a job, or figure on a plan? Why, my dear sir, I never figured on a job in my life. I know not how to figure on your plans. Your specifications read strangely to me; they are impractical. Yet, if I can gain your friendship, and that of Mr. Goldlover, I shall try and do the best I can." The apple is plucked, the fruit is eaten, and the unsuspecting good mechanic has committed a sin that has existed ever since.

What are the results of this rash act of our parent plumber? You all know the result of the contracting system then established. The war of hatred then began—one plumber cutting the throat of the other, one running down the fair name and reputation of the other, until the public heard of the quarrel, and they took up the cry and began calling the plumbers such beautiful names as "thieves" and "extortionists," and applied other epithets which would bring disgrace upon them. The funny press, the illiterate laborer, the wealthy Goldlover and friendly Goodfellow howled at the once prosperous Good-Mechanic, and he slipped down from the position he formerly enjoyed to that akin to the commonest laborer, which he has held ever since. Now, why should we endure this? Are we not as good as men engaged in other pursuits? What we must do is to recover from the impositions which are heaped upon us. In order to do this we must do away with the contract system, for the reason that it is unjust to us—do away with the skin-builder, who has in construction a number of houses, and the plan-maker, who lays out the work for us to follow, no matter how impractical. We have to compete with unskilled labor, as Mr. Skin-builder's object is only to have it last until he can sell the building. And we get all the blame from parties who were inveigled to buying a house which Mr. Skin-builder and Mr. Plan-maker never intended to be fit to live in. If the owner is willing to pay a good price, under the contract system the competition is the same, making no distinction between a good or a poor mechanic. It is a libel on the plumbers of this city and of the country at large to hold them responsible for the misdeeds committed by cheap owners and cheap builders. Then, again, under our license system, any man who can furnish a bondsman can get a license to carry on this very important branch of the mechanical trades. Neither his habits, his mechanical skill, nor his ability to perform any part of the plumbing is scrutinized. In the cities in the East, which have a settled foundation of business, like New York, Philadelphia, Washington, and Baltimore, the contract system has practically disappeared. Plumbers whose reputation is co-extensive with the boundaries of this great country, do all their work by the day, and furnish all the materials for jobs which run up to $50,000 and $70,000. While I was East I saw a job which amounted to $75,000, which was done by the day, and was told this was only one of many instances.

Knowing how unjust the system of taking work by contract is, is it not time, then, to do something to abolish it? Again, the question arises, Is there any money in contract jobs? Has experience shown that any one in the business has been able on contract work to hold his own? Here, gentlemen, is what experience teaches, and I believe by a close scrutiny of the figures I now give you will not find them to be very far from right. Take the case of a plumber who does $50,000 worth of contract work a year. This work is figured on the basis of 10 per cent. profit on the material and labor. The cost of running a business of this extent is as follows: A foreman, $1,200; rent, $800; book-keeper, $600; horses, wagons, and driver, $900; gas and water, $25.00; loss and insurance, $250; your own time, $1,200; making a total of $4,775, leaving a profit of $225. These are facts and figures which cannot be disputed. The ruinous system of competing for contract work has crippled every wealthy man in our trade, with one exception, and he was saved from financial ruin by going into an early grave. This being the case, it seems to me high time to let that class of work alone, and if we go about this in earnest, the change is effected. Then, again, how many of us do $50,000 worth of work per annum? Not many, I can assure you. A man who has worked faithfully and honestly at the plumbing business in this city for nearly a quarter of a century—a man you all know, a man who is strictly temperate in habits and keeps strict account of everything appertaining to his business—will make affidavit to the fact that he has lost in contract work $15,000 in three years. The money thus lost was the accumulation of former years' prosperity. Again, we work like slaves from early morning till late at night. Look at our faces during these hours—the thoughtful expression, the languid look. No smiling face is there to see.

These thoughts of mine, gentlemen, I desire you to take home to-night, reflect on them, seriously think of them, and ask yourselves, Shall I any longer be deluded into working and slaving for the benefit of an unthankful builder? Remedy these evils, then, by forming yourselves into a strong organization, and in a short time I predict that instead of receiving no remuneration for your services, you will be blessed by an abundance for the labor then performed.

* A paper read by Mr. J. J. Wade before the Chicago Master Plumbers' Association.

How to Measure the Contents of a Round Tank.

NEW YORK, November 21, 1883.

To the Editor of the Hydraulic and Sanitary Plumber:—

SIR: In the last issue of your paper you gave a simple rule for the measurement of a round tank, which, for all practical purposes, is perhaps near enough to be sufficiently correct for practice. It is not so, however, in a strictly mathematical sense, and this I will illustrate.

To find the contents of a copper boiler according to the rule given, we will suppose the height to be 5 feet and the diameter 14 inches.

One-half diameter = 7
One-half circumferance = 22
Height, 5 feet = 60

Multiply all these together, and the result will give 9,240 cubic inches. Dividing this by 231, the number of cubic inches in a United States gallon, we have 40 gallons as the contents of the tank. This rule is, as you say, simple, but it may be still more simplified by stating that an easy way of getting approximately the circumferance of the boiler is to multiply the diameter by three and one-seventh.

Friction of Water Pipes.

THE flowing of water through pipes of different diameters is affected to a great extent by the head or pressure—the relative smoothness—the curvatures and shortness or abruptness of the angles of the conduit. This is what is denominated friction, and is a very important consideration in the distribution of water, not alone in aqueducts but also in house supply for domestic purposes. It is with the latter we propose briefly to deal, in so far as it relates to proper sizes and the objects for which it is intended. In most cities of the Union there is a standard fitting for almost all kinds of houses, and this is determined by what is required for a reasonable demand consistently with the amount on hand for distribution. In New York the tap or fitting for this purpose is almost universally five-eighths of an inch in diameter, and is simply a brass cock driven in a hole tapped for the purpose, having a soldering coupling attached for the purpose of being united with the lead pipe. In years past it was the custom of plumbers to connect with this tap the same sized pipes, and as the head of water was greater and the amount and character of fixtures to be supplied not so numerous or exigent, no great complaint was made of insufficiency. In course of time, however, the growing demand for loftier buildings, and also the lessening pressure owing to increased consumption, produced much disatisfaction among our citizens. Efforts then commenced to be made to get, if possible, more water from the mains, and it is certainly curious to note the various devices by which the supply could be increased, while the size of the tap still remained unaltered. It was not uncommon to see, in some cases, a piece of four-inch heavy lead pipe, five or six feet long, put in close to the tap. This was to act as a reservoir to hold a certain amount of water, but no one understanding it could think it a very efficient means. The device of boring in two mains connected with the tap by branching in the coupling at the bend or bow of the pipe, was frequently adopted—one of the mains to be used in the lower part of the house and one for the upper, while in both of those cases the pipe remained the size of the tap. In a few rare cases, when driven to desperation, some house-holder had extra taps surreptitiously put in, so as to get a supply commensurate with these demands. Finally, the expedient of enlarging the size of the pipe from the tap occurred to plumbers, and it certainly was a revelation to many of them. The quantity became magically increased, and for many years afterward no complaint could be heard. It surprised many that so much more water could be obtained than in the old way; and yet the cause was quite simple, as by lessening the friction the volume of water was proportionally increased. We have been at the pains of making some short calculations to see why this should be so, and to what extent the flow is retarded or accelerated by friction on two well-known and commonly used sizes of pipes, one inch and five-eighths of an inch. If we take the length of a five-eighth pipe—which will contain one gallon of water—we find it will measure sixty-two feet nine inches in length. The same quantity of water in a one-inch pipe will require but twenty-four feet six inches. The interior surface of the five-eighth-inch pipe has an area of 1.618 square inches, or nearly 11¼ feet, while the surface of the one-inch has an area of 924 inches, or nearly 6½ feet. We see, therefore, that in these two sizes the friction is as 11¼ to 6½, or nearly one-half, and which, taking into account the superior rigidity of the larger pipe and its likelihood of having fewer bends in it, would deliver probably more than double the quantity of water. The larger sized one and a quarter, one and a half or two-inch would still more increase the effect desired proportionally. It is found by experience that a five-eighth pipe extended 3,000 feet horizontally under a head of 24 feet or 10 pounds pressure to the square inch will cease to deliver water at its extremity, thus showing that friction uses up the capacity of the water to flow any further. This would seem to be a strong argument against using the smaller sizes of pipes at a distance from the main. We have often thought that much of the difficulty of obtaining water at points remote from the mains could be overcome by using larger pipes, or not diminishing them at all. It might certainly add to the cost of plumbing a building, but where efficiency is a *sine qua non* something must be sacrificed to the main object—a regular and undiminished supply. Moreover, to equalize the distribution through a building instead of, as in the present fashion, decreasing the pipes at the extremities, at the rears or the upper stories, every floor or every fixture should have a separate stop-cock which could be closed, or throttled, as it were, to adjust the supply as equally as possible at every point, whether high or low, all through the building, and these should be carefully regulated to produce a uniform supply. I have an idea that the piping of a house on this plan would remove much of the dissatisfaction manifested by house-holders at the inequality of distribution of water, and at this particular time, when we are suffering so much from scarcity of this great necessity, could hardly fail of commanding the most unqualified approval.—*N. Y. P., in the Hydraulic and Sanitary Plumber.*

Street Car Starters.

A GREAT deal of ingenuity has been expended on the invention of street car starters. A man of humane tendencies watches the horses tugging and straining to get a car started, and he naturally thinks it would be a relief for the horses and a fortune to the inventor who could devise an appliance which would absorb the work done in stopping a car and give it out in starting. The more this philanthropist thinks of the car starter, the more convinced he becomes that he is in the way of preventing cruelty to horses, and of laying the foundation of his own fortune. It does not take long to plan a spring arrangement which can be wound up by the moving car which it tends to stop. Then he gets the device through the patent office, but in the meantime the discovery is made that a multitude of inventors have already been in this field. However, inventors are a hopeful race, and the man with the street car starter consoles himself with the reflection that his invention is a little better than anything previously developed in this line. If he prove very persistent and persevering, he manages, after much discouragement, to have his starter tried on a car. Somehow it does not give out all the power expected, so there must be something that needs adjustment, and the device is taken off for the purpose, but it is not put on again. Meanwhile, other men are seized of the same idea and a similar cycle is traversed.

The parties who bring out the car starters work on a mistaken notion. They know there is a good deal of power lost in stopping a car, and they think most of it can be preserved, which is a mistake. If the stopping appliance caught the car at its highest speed and destroyed the velocity within a foot or two, it might receive nearly the whole of the energy that was in the moving car. But this is not practicable. The device must stop the car by degrees, and in the space passed over a considerable percentage of the energy is dissipated by the wheels rubbing on the rough track, and the friction of the apparatus absorbs some power. When the losses are all summed up there is very little energy left in the spring to be available for starting the car. In places where cars run down steep grades where they require braking, there may be a possibility of absorbing energy enough to be useful in starting or even in helping the car up another hill; but for ordinary stops on a level no power can be preserved which will pay for the apparatus.—*American Machinist.*

Hemacite Door Knobs.

HEMACITE is the invention of Dr. W. H. Dibblee, of Trenton, New Jersey. Principal among the many uses to which it can be applied is the manufacture of door knobs. These knobs are equal, if not superior, to any made. They are moderate in cost though strong as iron. Four designs are used in the manufacture of their principal patterns — Eastlake, Saxon Shield, Japanese, and Star. Aside from their artistic appearance, they possess many other valuable features (which have made them popular with many of our architects, contractors, and builders), chief among which is the almost absolutely non-liability of getting out of order. A full line of these goods can be had in this city, and they are worthy of the attention of our architects before others are specified.

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Day's work.
$1,200.

Oak Avenue. Two-story brick.
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MISCELLANEOUS.

Stockton.—Vault. O., Mrs. F. Stewart; A., Curlett & Cuthbertson; C., G. Griffith; $8,000.

Loss of Trade Through Drunken Mechanics.

A REPORT comes from Glasgow, Scotland, which indicates that the Clyde ship building and machine trade are losing orders through a cause very discreditable to the workmen. When work is brisk in that district and wages high, a great many of the mechanics are in the habit of remaining out on drunken bouts for two or three days each week. Many of the very best hands indulge in this practice. It has become so serious as to interfere with the regularity of builders in finishing orders, and several cases have recently happened of work going to continental firms because those of the Clyde could not be relied upon to finish the contracts on time. The trade unions have done all they can to discourage the prevailing practice of periodical spreeing among members, but they do not seem to effect much good. The real trouble is that drunkenness receives too much apology in all quarters of the British Isles. There may be some improvement now, but we know that twenty years ago nearly all British machine shops had certain good workmen who might be depended upon to go on a drunk when their services were most needed. And in many cases the whole shop would be inconvenienced till they were pleased to come in. The fashion there was to tolerate this nuisance. The fashion in this country of discharging men who display greater attention to whisky than to their work is better for all concerned. Changing men on certain jobs may cause great inconvenience in a shop for a few weeks, but it is better to indure that than the continual annoyance of recurring periods of absence through dissipation. If the Clyde ship builders and engineers would adopt the American policy of dealing with drunkenness they would effect its cure after a time.—*American Machinist.*

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Second Quality Flooring and Stepping	per M feet	28 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough	"	35 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

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A LUMBER BONE YARD.

How High Rates Are Maintained.

"A LUMBER Bone Yard" may be a singular title for an article in a journal of the character of the CALIFORNIA ARCHITECT, and yet there is a world of meaning, not only to all of our readers, but also to all consumers of lumber, in the full explanation of the meaning of the term quoted, viz:—"A Lumber Bone Yard."

Many have wondered how, or by what means the lumber manufacturers have been enabled to fix a scale of prices, and at will, add to the rates whenever they thought the dear good public was not paying enough for material. When such a "squeeze" has been made, it was generally given out that workmen in the woods demanded higher wages; owners of tugs required so much more for their services; feed for the logging teams was scarce and so increased expense being necessary, lumber would have to be raised accordingly; and so on *ad libitum*, excuses were made for the increase of the schedule rates.

The public can readily understand the fact of the increase of prices, but it has not been made quite so plain to them how these rates have been so uniformly maintained, considering the fact that there are so many dealers in lumber in the City. The explanation is simple—THE EXISTENCE OF A "LUMBER BONE YARD" ENABLES THE MANUFACTURERS TO READILY ABSORB ALL THE SURPLUS LUMBER, AND THUS MAINTAIN HIGH RATES.

In the southern part of the city, very conveniently located for the purpose for which it is intended, is situated the "Bone Yard." It enjoys splendid water privileges, and vessels can unload the surplus lumber very handily. The yard at present is nearly full, and there are arrangements being made for a location for yard No. 2. How many of these will be needed in the future, time alone can tell.

There are twelve firms belonging to the Pine Manufacturer's Association, and these support and provide the necessary capital for the maintenance of the yard. This is done by an assessment of a certain sum upon every thousand feet of pine lumber manufactured. In case this should prove insufficient, an extra assessment is levied in order to raise any required amount.

The advantages to the manufacturers are many and great; the retailer can put his hands in his pocket, quietly look on, and save what he can. The *modus operandi* is about as follows: Several cargoes of lumber may arrive for which there is no demand. The small mills may send several hundred thousand feet at a time when the market is fully supplied. Should this be thrown upon the market a break would occur and down prices would tumble. This would not suit the *compact twelve*, and so the cargo is bought as a whole and transferred to the bone yard. The price paid by the association is seventy-five cents cash less than the cargo rates per thousand. All the pine lumber coming into the harbor for which almost immediate use cannot be found, is thus bought at seventy-five cents less per thousand than the cargo rates, and as this is always cash, the small mills prefer the price thus obtained to a vain endeavor of trying to break the market.

Lumber is now being piled up by the million feet, and at the time of the writing of this article, several vessels are waiting to be unloaded. Under much pressure, even rich as the manufacturers are, the strain made on their treasury by their efforts to control the market, would become too great if there was not a way in which it could be relieved. This is done by sending a ship load to the Sandwich Islands, Central America, or anywhere else for a market. The price such cargoes bring is not much of an object, as long as expenses all around are cleared. It is on the same principle as the farmer charging more for his produce in the orchard than he obtains for the same article in the city after paying the necessary expenses.

There is rather a comical side to the matter, however, and one that at times is taken advantage of by those that are regarded as shrewd. After a schooner has been tied to the landing and help ready to transfer the cargo to the yard, it is a very easy matter for a barge or scow to come alongside and load at *cargo rates* such lumber as may be required, this act being regarded as buying by the cargo. In this case *rates* are somewhat indefinite.

From the above explanation the *dear good public* will readily understand how it is that the manufacturers have such a laborious time in their endeavors to adopt a periodically gradual ascending scale of prices, one with which they, the public, will be satisfied and do their utmost to meet the different raises with cheerfulness and a prompt appeal to their bank account.

The old saying that capital will tell, is true in this case. We sincerely wish it were otherwise, as we hear of many buildings being delayed on account of the price of lumber. That material being high, with labor, hardware, etc., tending the same way, a stop is put to many improvements that would otherwise now be in progress.

Were, in our opinion, the proceedings of the

association just, we would be the last to enter a protest against any rule that should be made; knowing as we do, however, that there are members of the association who count their money by the hundreds of thousands lying idle in the bank, made from an exorbitant profit on an essential material of the growth of a city, we feel justified in uttering our protest against some of the methods used to maintain high rates. Fifteen per cent. off the prices now charged would leave an ample profit to the manufacturers, and would be a material benefit to those erecting buildings.

S. F. Chapter—American Institute of Architects.

THE regular monthly meeting was held at the usual place, on Friday evening, February 1, 1884.

An unusually large number of members were present. President John Wright in the Chair.

Committee on a seal for the use of the Chapter, reported that they did not deem it wise to place the design for seal in the hands of the students. They had engaged the services of F. Marion Wells, who was preparing a model; when finished, the committee would have the seal prepared from the model.

Committee on plumbing reported that they had met the members, composing the Board of Health, and that the latter favorably received the ideas advanced by the architects.

Mr. Pissis reported his class as getting along finely. He called the attention of the members to the prizes offered by the President and the Chapter four months ago. Mr. Pissis said his class would be ready to offer drawings in about one month.

Mr. Curlett suggested that book prizes be offered instead of money, and four prizes instead of three.

Mr. Macy suggested diploma prizes in place of books. But, on discussion, it was decided that the classes were not far enough advanced for diplomas.

After an animated discussion, it was decided that four book prizes be given to the students showing the most marked increase during the time they have been under the tuition of the class teachers. It was left to the latter to make the recommendations and select the prizes. Mr Wells was added to the committee. It was decided, if necessary, the committee could purchase books to the amount of $50.

After a lengthy debate, it was definitely settled that *no student or draughtsman can belong to the classes unless the architect for whom he works, is a member of the Chapter.*

Committee on incorporating reported that as soon as the seal was obtained, the Chapter would be incorporated.

Warren H. Williams was unanimously elected a member of the Chapter.

Proposition of L. Stone was received as a student member. Referred to Henriksen, Moore, and Macy.

A lengthy debate then followed in regard to the premiums offered by the "Pioneers" for their new building to be erected on Fourth Street. Mr. Macy had the honor to belong to the Pioneers, and from what he knew of the man to whom that Society would owe their new building, he did not think that if he were alive, such ridiculous offers of premiums would be made. The labor required for the production of the drawings was far in excess of value of the premiums.

Mr Henriksen claimed life-membership in the Pioneers, but he did not propose to enter the competition. He would do so, provided that the successful competitor be awarded the superintendency of the building, with $500, and $450 for second and third premiums, and plans returned to the latter two.

Mr. Pissis then offered the following resolutions:—

1. *Resolved*, That the members of the S. F. Chapter of the A. I. A. refuse to compete for the proposed new building of the Pioneer Association, unless the conditions for the competition are altered to the satisfaction of this Chapter.

2. *Resolved*, That a committee be appointed to confer with the committee of the Pioneer building, in relation to the competition and whose duty shall be to obtain more acceptable conditions.

3. *Resolved*, That a copy of these resolutions be forwarded to the committee advertising for competition plans, and that every member of this Chapter be notified of these resolutions.

4. *Resolved*, That the President be requested to call a special meeting within a week, which shall be devoted to the subject of architectural competitions in general, and to the present one in particular.

Discussion then ensued upon the objectionable features in the pamphlet containing the offer for premiums for plans of the Pioneers' building. The main points were as follows:

The committee reserved the right to reject any or all plans.

This very bad feature should be changed so that the three premiums offered would be given for the three best plans.

The committee desired the architects to name their own fees.

This feature opened the way to any incompetent architect, by giving them a chance to place their fees at one, two, or three per cent. Professional services have a standard value, and by common consent the world over, five per cent. is the regular fee of all first-class architects. Nothing less than this should be given.

The committee called for contractor's estimates to verify those made by the architect.

This feature was especially condemned, as no first-class contractor would prepare estimates for such a large building much short of $100. This the architect would have to pay; the committee from Pioneers, by rejecting any and all plans, would thus leave the architect minus all moneys paid for contractor's estimates, besides their own time and trouble.

The adoption of the first premium plan did not give the successful architect the right to superintend the building.

Thus after months of study and labor the successful competitor might have the pleasure (?) of seeing some one else superintend a design, the details of which he would be in entire ignorance. This fact debarred at once first-class architects from entering the competition.

The above were the principal objections raised, although many others were noted. The following resolution was then adopted.

Resolved, That it is the sense of the S. F. Chapter American Institute of Architects, that it is opposed to enter into any such arrangements as have been offered by the Building Committee of the Pioneers' Association.

Unanimously carried. A committee was then appointed to wait upon the Building Committee of the Pioneers, and endeavor to have the conditions of the competition changed in conformity with the proceedings of this meeting.

Mr. H. G. Knapp, an architect from New York, was invited to address the meeting. He alluded to the fact that he had entered many architectural competitions, and was fully conversant with the conditions imposed in Eastern competitions, but in all his experience he had never been called upon to present plans, under such ridiculous propositions as have been offered by the Pioneers' Association. He considered it an attempt to make architects cut their own throats by naming the amount of their fees.

It could be also styled architects *vs.* manual labor, as all estimates would have to be verified by a contractor. He most certainly would not enter the competition under such terms as were presented in the pamphlet.

The original resolutions were then put to a vote and unanimously adopted, and the following-named gentlemen appointed as the committee to wait upon the Pioneers: Messrs. Wright, Curlett, Macy and Pissis. The whole subject matter was left entirely in the hands of the committee.

"Chock Full of Days' Works."

THAT is an interesting and suggestive anecdote that is told of the young countryman who asked the hand of a young girl in marriage from her parents, and in response to the inquiry whether he had any property, replied that he had not, but that he was "chock full of days' works." These are the true source of wealth, and the surest basis of credit. The person who has health, energy, ability and honesty, who is full of "days' works," can generally be trusted. To such a person the extension of credit is a benefit which words cannot measure. The best help in the world is that which helps one to help himself—which puts in his hands the tools wherewith to carve the fortune of life; and this is oftenest done by the judicious granting of credit.—*American Artisan.*

A PROCESS FOR FROSTING GLASS.—To give glass this appearance, it is only necessary to coat it with the following composition: Sulphate of magnesia diluted in beer, with a little dextrine added.

George H. Wolfe.

SECRETARY S. F. CHAPTER OF ARCHITECTS.

WE publish in this issue the accompanying likeness of the Junior Editor and Business Manager of this Journal, not because of his being such, but as an officer—Secretary—of San Francisco Chapter of Architects, to which position he has been twice elected by the Chapter, in addition to his serving in the same capacity in the Pacific Coast Association of Architects during its existence.

Mr. Wolfe was born in the city of Baltimore, Md., December 29, 1843, and is therefore a little over forty years of age. He arrived in this city in the early part of May, 1852. Attending the public schools, he finished the scholastic course by graduating from the high school cotemporaneously with several of the gentlemen engaged at the present time in the practice of architecture on this coast.

Upon leaving the high school, he applied himself to the study of architecture in the office in which he is now junior partner, remaining there for some time, until smitten with the "mining fever," of '63, which at that time raged throughout the State as a great moral and financial pestilence, exciting and overpowering the better judgment of thousands who were then following avocations and pursuits which if adhered to, would in due time have yielded a pleasing if not bountiful harvest of profit and comfortable wealth. But the excitements and allurements of the times gaining the mastery, he wended his way "to the mountains," part of the time at Virginia City, and part in California, only to share the disastrous reverses which in 1864 carried down and crushed to poverty and want so many who were by the catastrophes of the times swamped and ruined. After this he applied himself to practical constructive pursuits, until the early part of 1880, at which time he returned to this city and became associated with, and soon after was admitted as full partner in the publication of this Journal, and as a member of the architectural firm of Wolfe & Son.

Those who know him personally will accept the fact that he is earnest, attentive and diligent in the department of the editorial and managerial work specially under his care, and in assisting in placing this Journal upon the pedestal of pre-eminent success, and achieving for this,—the pioneer architectural publication upon the Pacific Coast,—a reputation world wide for its correctness and fairness in the presentation of all matters connected with building interests and other relative matters and sciences.

GEORGE H. WOLFE.

The object of our series of likenesses is in no way intended to mitigate adversely to any member of the profession nor in Chapter fellowship, but to provide a practical means whereby the features of the Chapter members of the present period may be preserved and handed down to coming generations. This will be the case, as thousands of the yearly issues of this Journal have been bound and placed in private and public libraries, to remain as books of interest and reference; so that when we who are now occupying our time and energies in architectural pursuits shall have passed beyond present conditions, those who shall fill our places will have it in their power to look upon the picture countenances of those who were before them.

In addition to the Chapter members, we shall be pleased to re-produce the likenesses of other prominent and worthy gentlemen in the profession, feeling that "not to the Chapter and Chapter members alone belongs all the glory" of architectural worth and abilities, but that among those who have not indentified themselves in the Chapter work, there are worthy and excellent gentlemen whose likenesses are entitled upon professional considerations to rank with those who have assisted in founding and sustaining on organization which we believe is destined to accomplish a vast amount of good in a general sense—as far as the profession is concerned; and especially toward the student of the present time, in the promulgation of advanced thought, and the elevation of the profession to that high and honorable standing which its greatness and magnitude demand; and in perfecting and fulfilling the several excellent purposes contemplated by, and under the fostering care of the Chapter.

A Good Retort—Picture Architects.

ONE of our young architects, somewhat noted for his lack of harmony with members of the profession who have worked at the mechanical as well as the professional part of their calling, while conversing with a prominent citizen in regard to a building shortly to be erected, took particular pains to run down another architect who had worked his way upward, after first becoming conversant with the use of the saw and jack plane. "Why, sir," said our young man, "Mr. —— is nothing but a *carpenter* architect."

The answer came, short and decisive, "Better that, sir, than a *picture* architect."

The young man subsided and was not engaged, the "*mechanical*" architect receiving the preference.

Engravings made from Photogrphs. Address California Electric Engraving Co., 240 Montgomery St., Room 11.

Country Architecture.

BY A. CURTIS BOND.

THE illustration upon the opposite page shows the perspective and plan for a country cottage.

The general outline is sufficiently out of the ordinary to make it noticeable, a feature by no means to be ignored in country architecture. Painted in warm and striking colors, this building should be unusually striking and effective, but such a design requires more, I think, than a plain house, good judgment in laying on of exterior ornamentation and decoration.

The specifications for this building the architect suggests should be as follows:—

Plan.—To be as shown at length in the sketch.

Timber.—Sills, 4x10; posts, 4x8; interties, 4x6; plate, 4x6; first and second story floor joists, 2x10; third tier, 2x8. All joists supporting partitions to be 3x10; rafters, 3x5. All doors and window studs to be double, and above to be of good sound spruce timber.

Framing.—All frame to be well pinned together, and all partition, where possible, to rest on partition below and not on floor joist. All joist of ten-foot space to have one row of bridging.

Exterior.—To be first covered with mill worked, tongued and grooved hemlock boards, then with good quality of sheathing paper, over which lay pine clapboards, and where shown on perspective sketch, to have rounded shingles; all to be free from loose or black knots. Cornerboards 1¼x4 inches, watertable, 1¼x6.

Cornice.—To be formed where shown and to project not less than one foot eight inches.

Roof.—To be covered with hemlock boards, then with blue roofing slate with corners trimmed off (or shingles may be enployed at builders option). Ridge to be covered with zinc, valley of best brand tin, cutter formed at eaves with leader of sufficient size to carry all waters from roof to cistern.

Plumbing.—Fit up W. C., bath and stationary tubs, where shown on plan.

Painting.—All woodwork painted two coats of best white lead and linseed oil, of such color as may be selected.

Mason work.—Foundation nine feet high, cellar eight feet high and three and one-half feet above grades. Chimney where shown on plan and carried up above roof.

Specifications and drawings are intended to correspond so that any work shown on the drawing and not mentioned in the specifications, or *vice versa*, is to be executed the same as if it were particularly expressed.

. . . . . .

There has been considerable comment and no little diversity of opinion upon a design submitted for the building of the American Institute of Architects in this city. The suggestion has been made that the *facade* employ and present examples of all the preceding styles in architecture, or, as the architect says who submits the design: "In a building designed by occupancy by the American Institute of Architects, I consider that no *motif* could be more appropriate than an embodiment of a history of our art. I have therefore attempted to solve the problem of designing our historic *facade*, where every epoch in architectural history shall be represented by details from the best examples now obtainable, following each other in regular and orderly sequence. Thus, the first story represents the prehistoric period; in the second the Greek appears, followed by the Roman classic, closed in by the moresque arch. . . . Commencing with the Byzantine I have introduced the Romanesque, followed by the three periods of the Gothic. . . . Following the Gothic, which in the last period covers the whole width of the *facade*, typical of its universal acceptance by the building world, I have introduced sixteenth-century *renaissance* with modern *renaissance*, including Victorian Gothic, and the latest phase of all architectural design, Queen Anne. The gable is surmounted by Foley's statue of 'Caractacus challenging the World,' thus symbolizing the fact that whatever may be said of American skill and learning, there is nothing the matter with our ambition."

As may be surmised, this design presents a marvelous combination of all that is possible to gather from the permanent and refuse features of all manner and kinds of the worlds as architecture. The Indian rock-temples and the Stonehenge are patterns for the pre-historic periods, and then the tide of history aspires to the Temple of Dendero and Karnoc, the hall of Xerxes, the Erectheium at Athens, the Pantheon, St. Sophia, Canterbury Cathedral, Notre Dame, and so on down to Vanderbilt's new house in New York, all have been laid under contribution to complete a genuine *alla podrida* of brick and stone. Yet withal it is harmonious, this is the marvelous part of it, it demonstrates that an unlimited amount of appropriating may be indulged in without even the courtesy of changing the forms appropriated, and yet produce a presentable, even a handsome appearance. Of course this design may never be accepted, or even considered, it probably never will, yet it is an original idea, and one worthy not only of encouragement but of imitation in a certain way. There is no American style, there is not even a nineteenth century style, and our architects cannot do much better than devote some of their time and talents to bringing forth one. What can be shown in the year 2100 as the prevailing form of 1900? Nothing distinctive certainly, nothing but a rehash of the *renaissance*, or an occasional resuscitation of early English and Queen Anne. Why would it not be well to accept the hint thrown out by the architect who made the design I have referred to, and if we must adhere to the antique take a quantity of antiques and have at least the merit of new combinations and temerity in making them.

. . . . . .

An English architectural paper has devoted considerable space recently to a comparison between English and American architects, showing, it must be said, a particularly pleasant appreciation of the talents of the American. A letter from their New York correspondent very cleverly closed the case by saying that in this country the architect worked much harder than in England; he had no half-holiday at the end of the week, and must exercise his wit and ability to its full capacity if he would compete with others in his line. The correspondent also took occasion to revert to the very damaging custom prevailing in the old country of admitting students to the architects' offices and making use of their services, regardless of their adaptability for the profession or their ability to learn it, simply because the students' parents pay a stipulated sum to the architect *to tolerate* the learner. Here, on the contrary, the student is paid for any services he may render, and in consideration of such payment he must possess an adequate amount of intelligence and capacity. We have too much business to demand our attention to spare time to incompetent assistants. This is as it should be.

"THE fashion now is decidedly in the direction of wall lamps," says a London paper. "Some are of great beauty. Two of a set I have seen are opal-tinted glass and two rose-colored. The sconces in which they are fixed are fitted in frames of mirrors, with beveled edges. These, in their turn, are framed in brass, beautifully chased. These lamps are placed near the four corners of a pretty drawing-room, the opal-tinted and the red alternately. As the wall paper is a pattern of daisies in gold and pink on a ground of warm cream color, the effect is very good. Candles with pink shades are scattered about the room in pairs, and at a table in a corner a low reading lamp sheds a softened radiance upon books and writing materials."

MORE AFFECTATIONS NAILED.—"That's right young man, say 'gaz' just because you heard some one else say it. Don't look into a dictionary to find there is no such word in the English language. Just keep right on saying it and people will know that you fasten your scarf pin by note, but pronounce your words by ear. For the same reason, do not say vase, say vawz. Then, in speaking of yourself, pronounce the double s like z, to make yourself rhyme with your kind of gas."—*Burlington Hawkeye.*

CLINKERS may be loosened from fire-bricks by throwing in the fire box, when very hot, two or three quarts of oyster or clam shells, or a less quantity of salt, allowing the fire to go out; then cleave off the clinkers.

PAPER gas pipes are made. The fact that they will not freeze up will be sufficient to turn all plumbers against them.

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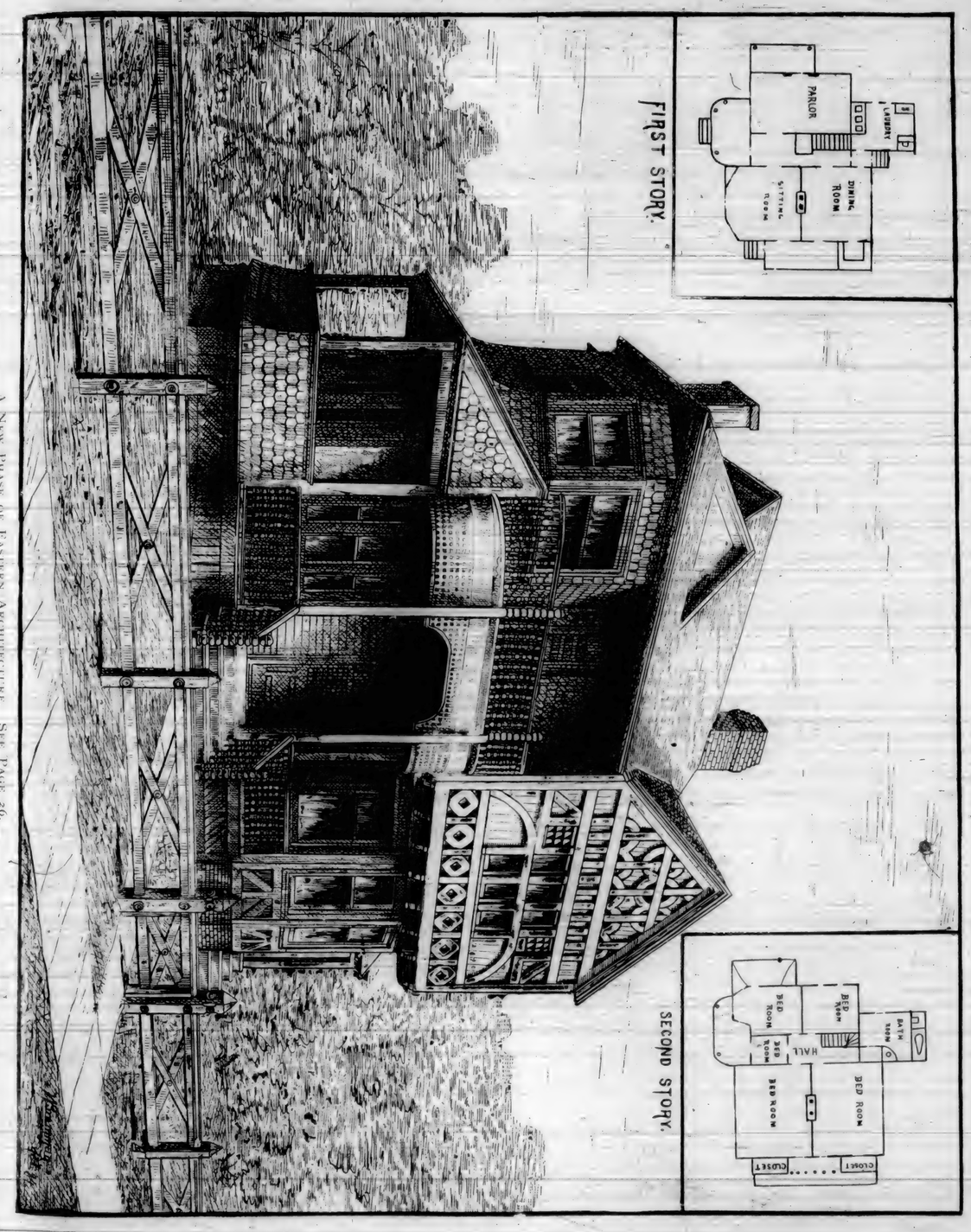
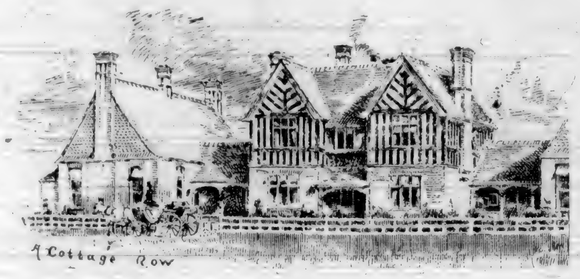


A NEW PHASE OF EASTERN ARCHITECTURE. See Page 26.



Illicit Commission.

OWING to protracted illness, we have not been able to notice in due season several matters of interest which have come to the surface within the past two months.—SENIOR ED.] Among these is an article which appeared in the London *Truth*, October 18, 1883, in which assertions are made and insinuations thrown out in reference to architects obtaining and receiving illicit commissions, which if true according to the writer's one-sided views of the case, would place the personals of the architectural profession in all civilized countries in no enviable light. The matter was taken in hand by the *Royal Institute of British Architects*, and a positive denial of the charges made, as far at least as the reputable and competent, and the larger proportion of the profession, are concerned.

Correspondence passed between the officers of the institute and the editor publishing the slanderous statements, with the result that the offending Journal, *unable* or *unwilling* to substantiate its charges, was placed in the position of a common villifier upon *speculative, presumptive, and unsustained by proof-assumptions* of a state of *possible* facts, applying and spreading the odium of moral irregularity over the garments of all alike, reserving no virtues for the larger proportion of truly honorable men in the profession, whose hands are unsoiled as to any unjust or dishonorable transactions as far as their cliants' interests are concerned. The controversy has been entered into and reviewed by some of our European and Eastern contemporaries, and several interesting articles, editorial and correspondent, have appeared, sustaining the proposition that while there may be, and doubtless are, men practicing the profession in all parts of the world who would feel but slight if any compunctions of concience at anything they might do within the law to fill their purses with coin, no matter how obtained. There are also a very large proportion, and we hope a large majority of architects against whom the *Truth*'s charges cannot be sustained.

The matter of "trade discounts" is given prominence in the article in question, and the effort made to make it appear that architects receive the financial advantages arising from this trade rule. But it seems to us that no man of respectable intelligence would, upon due reflection, assume any such theory. If the architect in any particular case occupied the position of purchasing agent for his cliant, then the opportunity *might* be utilized by him as such agent in the purchases made. But all such opportunities disappear when the purchasing is done by the contractor in his own interests. A specificatian may call for Brown's patent this, or Jones' patent that, etc., upon which there may be trade discounts. But every intelligent contractor understands the fact of such discount as well as the architect, and every contractor is sure to avail himself of the benefits arising therefrom, thus closing the door against the architect as far as receipts from such sources are concerned. As a rule, the intelligent classes of contractors are far better informed as to prices, trade discounts, etc., than architects can very well be. For a knowledge of market values, costs, and prices is one of the most important and necessary qualifications to successful contracting. And when men's interests are surrounded with doubts and uncertainties, as in the case of competitions, which often result in the low bidder being but a few dollars and sometimes only a few cents below the second, every advantage of trade discounts and all others are utilized to the fullest extent, and the owner, not the reputable architect, receives the benefit of such trade rule.

OWNERS AT FAULT, AND ARCHITECTS FOOLISH.

Whatever grounds there may be for charges and complaints against a *portion* of those *practicing* architecture in San Francisco, and to a certain extent by influence reaching every member of the profession, the fault is largely on the part of owners in seeking and often succeeding in breaking down the legitimate charges for architectural services; and architects who yield to the grinding down process, and undertake work for no more, and perhaps less than the *actual cost* of producing the plans, specifications, and details, assume one of two positions, *first*, of being absolute business simpletons, or, *secondly*, caring nothing for the understood pay to be received from the owner, relying upon the outside resources possible of manipulation, by and through which the owner is made to pay, *indirectly*, the full legitimate commission of five per cent., an perhaps much more. As long as owners will run to and accept the services of that low order of architectural pretenders who neither possess nor care anything about moral integrity or architectural qualifications, just so long will irregularities exist; and we heartily rejoice every time we hear, as we often do, of owners being badly used by those whose services they have accepted upon the basis of pretended cheapness.

Cheap architects, *cheap* doctors, *cheap* lawyers, and every other *cheap* thing is within the same category, intrinsically of little value, and cannot be made to fill the place of the better kind. And it is greatly to be regretted that the services of good, faithful and competent architects are under-estimated by so many owners, and that trustworthy and honest men in the profession are refused engagements simply because some one else, perhaps of infinitely inferior qualifications, is willing to render services at almost any rates of compensation that may be offered them.

Lincrusta-Walton.

A SPECIES of decorative material known as Lincrusta-Walton, an English production, is meeting with considerable favor where it has been introduced. The material is composed of linseed oil, pulverized cork, and other ingredients, mixed and pressed into carefully made moulds of various designs. It is said to be impervious to moisture, and if this be true, it will prove a valuable addition to decorative material. It is a pleasant substance to paint upon, and the artistic patterns into which it is stamped render the painter's work easy. It is put up like wall paper, with a strong paste made of glue and paste. The chief drawback to its use is its high price. This is, of course, very much less than wood carving, which it resembles in effect, would be; but as compared with wall paper and some of the other cheap means of decoration, it is considered expeusive. It bids fair, however, to find its way into some of the better grades of buildings, when its merits become fairly known. Perhaps its cost will be reduced in time, when the demand for it shall have become large enough to warrant its manufacture on a larger scale than is done at present. We are informed that furniture and picture frame manufacturers think of substituting Lincrusta for the carved wooden, or raised ornaments on their products, on account of its cheapness and clearness of outline.

ACCORDING to the best scientific authority on the interior finishing of dwelling-houses, wall-paper should not be manufactured, as has always been the case heretofore, in a manner to be perfectly air tight. The reason of this is that, hygienically considered, the walls of a house, like the materials of clothing, should be porous, having free intercourse with the open air. It is also believed that water proof paper such as has come into such extensive use causes increased dampness of the walls, the stoppage of all circulation of air necessarily preventing their drying—this prolonged dampness of the walls being unhealthy and productive also of other evils.

Henry C. Macy.

TREASURER OF SAN FRANCISCO CHAPTER.

PIONEERS of San Francisco include those who came to this city prior to the admission of California as a State into the Union, and the subject of this sketch is one of the rapidly decreasing numbers that are justly known by the term Pioneer.

Mr. Macy was born on Nantucket Island, on the 4th of August, 1821. Having a natural gift for the use of tools, he was early apprenticed to the carpenter's trade. His career as a contractor began in the city of Providence, Rhode Island. He left that place to establish a sash and blind factory for Mr. Davenport in New Bedford.

Shortly after this his native place was almost destroyed by fire, and he went home to devote his time to rebuilding the burnt district. About this time the gold fever in California broke out, and his attention was attracted towards the New El Dorado. The staid New England ways had no more attraction for many ambitious and energetic men, and so, in company with scores of others, Mr. Macy started by the way of Cape Horn to the Golden State. He arrived in San Francisco in the fall of '49, a memorable year in the history of this State.

For ten years Mr. Macy practiced his occupation as a master mechanic. We also find him at this time closely identifying himself with the Mercantile and Mechanic's Institute Library, and the facilities offered by these institutions were duly appreciated and taken advantage of by Mr. Macy, in preparing himself for the profession which he had chosen for his future course.

In 1860 he began his first work as a professional architect, and since then has attained a well-deserved rank in the profession. We say well deserved, because we think the title well earned. From 1849 to 1860 was a very stirring time in the history of California, and to become a professional architect, much time and study was required, and when a person passes through such busy times as were then experienced, giving up his evenings to study, he is honestly entitled to due credit.

Mr. Macy, in September, 1883, was elected for the second term as Treasurer of the Chapter. He is one of those who can nearly always be counted upon as being present at every meeting. His whole soul is in the idea of a general spirit of harmony among all the members of the architectural profession. He is also one of those who are truly earnest in encouraging the younger members to adopt a high standard for the future. The "traveling studentship," mentioned in our last issue, receives his warmest support.

During the past twenty years, several different architectural organizations have been started, but owing to the lukewarmness of many of the members, they gradually went out of existence. In all these different attempts to establish a society, Mr. Macy was very earnest in his endeavors to place them on

HENRY C. MACY.

a sound basis, but his efforts were not as successful as they should have been. After a silence of several years, the present movement was started, and we again find Mr. Macy ready and willing to devote part of his time and energy to the formation of a Chapter. This time he has seen the effort a successful one, owing to the general unanimity among those engaged in the profession, with this advantage, however, over former attempts: A successful architectural journal, devoted specially to the architectural and building interests of the Pacific Coast.

Mr. Macy's conversational powers are such as to render him a pleasing companion, and his extensive researches of ancient and modern historical and scientific works, enable him to deliver very entertaining addresses upon any subject connected with the profession.

Domestic Architecture.

OUT of our century of bareness in art we have at least gained this truth: that no art will at present flourish here which does not aim at the benefit of the million. Domestic architecture will, therefore, be our first general artistic success. For every fourth or fifth man promises himself, some day, the best house he can afford. And when he learns that architecture is not a costly superfluity, but the soul of his building, which moulds the brick or wood of its bodily form into beautiful, because truthful expression, our noble orders will begin to appear. To be American they must be inexpensive. For the theory of republicanism is, that the only worthy ends of earth —culture and refinement— are attainable without wealth. The mad haste to be rich, so characteristic of this time, springs largely from an awakening but still ignorant love of the beautiful, which imagines that its price is money. The remedy lies in the propagation of the gospel taste. That declares the first law of beauty to be honesty of intention. Thus a house which costs three thousand dollars may be as good art as one which costs thirty thousand dollars, if it will own its cheapness and derive its beauty from true proportions and harmony of hues. The moment it pretends to an effect which its cost forbids, it is remanded to the great limbo of the vulgar.

What is true of the house is true of its furniture. Cost has little relation to beauty, whose first element is honesty, grace of form, and richness of color following after. Thus a kitchen poker may be artistic, if made in the manner and of the material exactly adapted to its use, while a pink satin and gilded parlor chair is inartistic, because too fine to be sat upon.—*Builder and Wood Worker.*

THE best way to clean mirrors, the glass of pictures, etc., is to take a soft sponge, wash it well in clean water, and squeeze it as dry as possible; dip it in some spirits of wine, and rub over the glass, then have some powder blue tied up in a rag, dust it over your glass, and rub it lightly and quickly with a soft cloth; afterward finish with a silk handkerchief.

PLINY says that four-wheeled carriages were invented by the Phrygians.

The Trade Element in Professional Practice.

IT has been frequently and by no means inconsequently asked whether architecture is a profession. To such a query, when addressed to us, as it has been more than once, we have emphatically replied in the affirmative. At the same time we cannot help feeling that in the increasing development of the trade element in architectural practice there is much that is calculated to inspire a contrary belief. If we take the profession as a whole we shall find it made up of two distinct classes (1) those who reduce architecture to the dead level of a means of livelihood, and (2) those who live for, as well as by, their art.

To the first-named class belong all the attributes of the commercial speculator, with identically the same motives. Their success in life depends on their general capacity for business rather than upon any intimate acquaintance with the art of the profession into which they have inducted themselves. If, by any means, they can secure a fair modicum of clients, their course is tolerably easy. The accomplishment of the work devolves upon the clever assistants and competent foremen with whom the architect-tradesman is shrewd enough to surround himself. Now, it is this class of "architects" who have developed the trade element in the architectural profession to its present inordinate degree, and which we cannot but regard as damaging to the status of the profession and obstructive to its art. The close assimilation of the art of architecture with the business of building renders the introduction of this trade element comparatively easy, and all the more insidious in its growth. A knowledge of the latter by no means implies the ability to practice the former, yet how often does not this theory find actual exemplification?

In many ways well known to our Friends in Council, and also to our readers generally, does this trade element disclose itself; but its nursery is undoubtedly amongst the class of men who prostitute architecture to the mere pursuit of mercenary ends.

Wherein shall we find the remedy? Surely in a united and concentrated effort to raise the status of the profession beyond the reach of all future intruding "speculators." The character of a "profession" and its right to the dignity of such a title is determined by the qualifications of its individual constituents for the legitimate practice of that profession. In the professions of law and medicine there are practically no charlatans or quacks; in the architectural profession their name is legion. To rid our profession of these is a duty we owe no less to ourselves than to our art, and our hope lies rather in measures that shall prevent their future admission than in ousting those already established. It ought to be impossible for a brass plate to constitute a sufficient diploma for a man to set up as a qualified architect.

We have raised the standard of the Institute examinations, and we have done much in the establishment of educational classes in connection with our metropolitan and provincial associations. But what of the many practices which now obtain in the profession, and which not only merit censure, but deserve total abolition? The Institute has talked, and it has rebuked offenders, but what has it *done?* The offenders may sever their connection with the Institute, but they continue practicing all the same. In the law profession, if any member of it is found guilty of conduct unbecoming the status of a gentleman and of the profession, he is not only cut off from membership, but his profession knows him no more. A barrister, though he may remain briefless for the whole term of his natural life, is not permitted to solicit briefs; he has simply to wait. But an architect may advertise himself right and left (and does); he may "tout," and use every influence, direct and indirect; yet it is not deemed an undignified thing to do; and, trade-manlike, he reaps his reward. This practice itself must, as we urged long ago, have a material influence on the status of the profession, and there is no disguising the fact that it is one of those trade elements which tend to the lowering of such status, and incline school boards and other public bodies to find out, by advertisement, for *how little per cent.* an architect can be found to work.

Is it not time this trading spirit, so surely developing to the hurt of the profession at large, was checked, if not entirely stopped? The evil is widespread, and therefore the more dangerous. The question of a remedy for it is, we maintain, a personal one—personal as it concerns the welfare of our art, and personal as it affects the professional status of each individual who practices it. To put down those practices which are detrimental to the best interests of the profession requires not an individual outcry, or a single bright example, but a strong, united protest, and earnest, concerted action; it is for this we appeal. Then, in a profession purified of the abuses which have been allowed to creep in during these latter days, we may hope to see less of that trading spirit which now animates so large a section of our profession, and more of that spirit which has Art as the source of its inspiration. So shall we emulate the master-spirit which should be the mainspring of all our work, and of which Carlyle wrote: "Thou canst not hire him by thy guineas; nor by thy gibbets and law penalties restrain him. Thou canst not forward him; thou canst not hinder him. Thy penalties, thy poverties, neglects, contumelies. Behold, all these are good for him!"

ARCHITECT.

WE are told that Solomon's Temple at Jerusalem cost over seventy-seven millions of dollars complete. There were evidently Government contractors in those days.

GUN cotton is insoluble in water, being unaffected even by long soaking. Strong sulphuric acid dissolves it with some difficulty.

Bound volumes of 1883 now ready. Price $2.50.

Oils and Driers.

IT is very necessary that the painter should know something about the oil he uses, as well as the pigments. It is apparent to every one that has used linseed oil that, as it dries, it undergoes certain changes. One authority computes that on the average linseed oil paint or varnish takes about three months to dry. As the oil grows harder it protects itself against the air—that is to say, its surface prevents the air from getting at the oil underneath the surface. It assumes the character of a solid hard leather, which contracts in drying and pulls itself together; the effect of this pulling or contracting is to produce cracks. The contraction of oil in becoming hard, and its sudden contraction under cold, are the chief causes of the difficulty experienced in varnishing. Varnish and oil usually crack in a direction across the grain of the wood, the chief reason of which is that wood does not contract in its length, and therefore the varnish in contracting cracks. Mr. C. L. Conder, in his useful book on painters' materials, observes that "oil dried in the sunlight and exposed to the direct rays will not last nearly as long as oil in the shade. Painters assert that oil dried in the coldest weather lasts the longest; it is difficult to see why this should be so, unless on account of the small loss of not-drying oil. When the oil is dry, or hard, the loss of not-drying oil goes on very slowly." We must refer the reader to the work of Mr Conder for an examination of the causes of cracking; suffice it to observe that all painters are aware that too thick a coat or too many oil coats in one painting will cause cracking. Speaking of driers or "siccatives," which have an important bearing upon the subject, Muckley says that gum mastic, in the mediums used by English artists, has been a great injury to their pictures, and recommends copal varnish as the best drier. Others find the siccative of Harlem, made with gums, of value; but copal was largely used as a medium by the old masters. Driers harden the oil by turning it into soap; but this also may be destructive if the oil is made too hard.—*Building News.*

The "Columbus" Wrought Steel Kitchen.

THESE sinks are entirely new, being stamped from one plate of steel and superior to cast iron sinks in every particular, being lighter, stronger, and more durable.

Being made of *wrought steel* they will not break from heat, cold, or any cause whatever.

Prices range from $1.80 each for 16x24x6 size, to $4.00 for 20x40x6 size.

Richards & Snow, 406 and 408 Market St., are agents on this coast for these sinks.

THE temperature at which dry-rot of timber proceeds most rapidly is 80° F.

We cannot supply single numbers complete for the year 1881. A few bound volumes of that year can be had for $2.50 each.

Thomas J. Welsh.

THE subject of this sketch may be justly termed a Californian, for, although born in Australia in 1845, his advent on this coast occurred when he was but a child. The Junior Editor of this Journal can speak from personal knowledge of Mr. Welsh's career, as each attended the same school, and for many years their paths of study and duty lay in the same general direction.

During the whole course of study, through all the gradations from primary to high school, Mr. Welsh's career was marked by an earnest thoughtfulness coupled with an anxious desire to excel. His especial attention was given to geometry, history, and the natural sciences. The principles of the first study he early mastered, and the benefit therefrom can be seen in the ease with which to-day he masters the intricate problems so often met in the practice of his profession. His love for history led him to study the monuments of ancient Rome, Greece, Carthage, and Egypt, and the record of the architectural ability there displayed.

Passing from school life, we next find Mr. Welsh engaged in mastering the *practical* part of his chosen profession. Under the instruction and guidance of some of the master builders of the times, he early became proficient as a mechanic.

(We may be pardoned for making a little digression here. Many of the more prominent architects—both in the present and in the past—are, and were those who have thoroughly mastered the building trade while young. Most of the prominent architects now practicing their profession in this city, are those who have first become conversant, in a practical way, with the saw, jack plane, and trowel.)

His course of mechanical study being completed, Mr. Welsh next engaged in office duties. Under such instructors as Messrs. Farquharson, Kenitzer, and George Bordwell, he made rapid strides in the study of Architecture. In 1872 he commenced business for himself in his present location, and his success has been very flattering to himself as well as to his friends.

The earnestness in every study which marked Mr. Welsh's scholastic career, is still evidenced in the works of his later life. Many of our churches owe their architectural beauty to his thoughtful study and skill. Some of the finest monuments and memorial tablets now gracing Calvary and other cemeteries are the result of his ability. Many of our private dwellings—from the costly mansion to the humble abode of the mechanic—have been planned and erected under the same superintendence.

During the past year Mr. Welsh was elected Architect of the School Department of San Francisco, a position which he now holds. He is also President of the San Francisco Mutual Building and Loan Society, a member of the San Francisco Chapter, also a Fellow of the American Institute of Architects. In each of these, the duties involved upon him, whether as member or officer, are attended to with earnestness and a general endeavor to advance the interests of all concerned.

THOMAS J. WELSH.

During one term Mr. Welsh was Treasurer of the San Francisco Chapter. In all his dealings with the Chapter as a body, and the individual members thereof, Mr. Welsh has endeavored to carry out ideas of professional courtesy among his architectural brethren, and to sustain a dignity and harmony of action that should always characterize men in artistic callings.

METHYL alcohol, or wood naphtha, is an alcohol obtained as one of the products of the destructive distillation of wood.

The Demand for Skill.

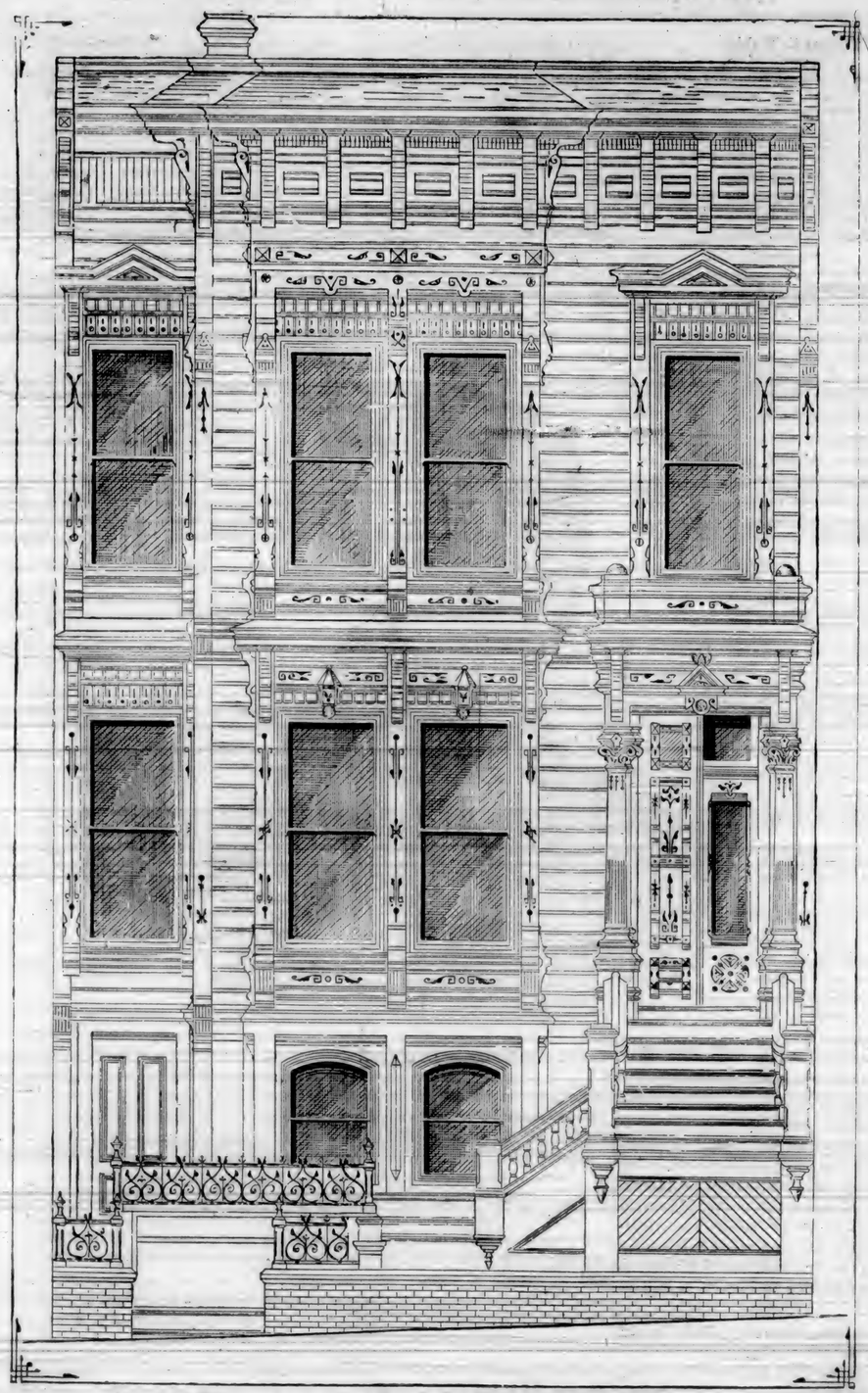
NOTWITHSTANDING the present slackness in business, there is a demand for skill in the mechanic arts now, as there usually is. The proprietor of a manufactory of machine tools recently supplemented a jeremiad on the dullness of the times by an inquiry for several first-class workmen. In explanation he said he had more than he needed of the qualities of "main strength and stupidity" in his establishment, but still had room for cultivated eyes and hands guided by judgment; in short, skilled workmen were in demand.

There is reason for this condition of affairs. The more nearly absolutely automatic machinery can be made, and the more exact hand tools and appliances can be made, the more exacting are the demands for personal skill and judgment. Machines are made, they do not grow, and they are made by the intelligent and skillful mechanic. They will not even keep in useful operation and continue in useful life except by constant care and the oversight of the skilled mechanic.

The time has passed when the idea of working materials was to hammer and bang them into shape somehow, with crude tools and cruder appliances. In the case of the metals especially, the workman uses good judgment with fine tools. No finer work is done and no more perfect results are obtained in any department of human production than in that of the working of metals, and to accomplish such results the most exact of tools must be wielded and guided by the most skillful hands and the most careful judgment.—*Scientific American.*

PAPERHANGER'S PASTE.—First heat water to boiling, then add flour, with constant stirring. To prevent the formation of lumps the flour may be passed through a sieve, so as to ensure it more equable distribution. Agitation is continued until the heat has rendered the mass of the desired consistency, and, after a few moments' further boiling, it is ready for use. In order to increase its strength, powdered resin in proportion of one-sixth to one-fourth of the weight of the flour is added. To prevent its souring, oil of cloves or a few drops of carbolic acid are added.

CARPETS are now being made from paper.



ELEVATION FOR CITY RESIDENCE COSTING ABOUT $7,500.

"Architectural Competitions in General and the Pioneers' Competative Plans in Particular."

A PAPER read before the San Francisco Chapter, A. I. A., on Saturday evening, Feb. 9, 1884, by Horace Greeley Knapp, late of New York.

Mr. President and fellow-members of the American Institute of Architects: With your kind fraternal courtesy I gladly avail myself of the present opportunity of submitting to your consideration a few thoughts and ideas on the subject which you have assembled this evening to discuss, namely, "Architectural competitions in general and the Pioneers' competitive plans in particular."

With a due regard to the limited time at your command for the business of the evening, I shall be very brief, touching only upon such points and features of the subject as are, I trust, especially suited to the occasion and as may be most worthy of your attention.

The subject of architectural competitions is unquestionably one of the most vital and formidable problems that is now presented to the architects of this country, and so long as a due appreciation of its importance and its true relations to the profession and the public is not established, so long will the master art have but a languid vitality and the domain of true architecture be usurped by the aberrations of incompetent tyros. Well-conducted competitions may possess certain apparent advantages to both architect and client, but these seeming advantages are so unreal or insignificant compared with the inevitable evils by which they are attended and offset, that many of our best architects, those whose lives and whole energies are devoted to advance the art and sustain the dignity of the profession, are beginning to hold aloof from all competitions as being baneful in their tendency and dishonorable in their requirements. *All* architectual competitions are thus deprived of some of the best skill and talent in the profession, and *many*, by the peculiar conditions imposed, engage only the worst. In the latter event, which under the present system will soon become the rule rather than the exception, the client and the public are forced to accept the most worthless productions, and respectable architecture is judged by this miserable criterion. And herein lies the chief source of the discouraging impediments to architectural progress in the United States. The demand for superior work must arise with the public. The tendency of unrestricted competitions is to corrupt and vitiate public taste and bring the noblest of all professions into contempt. There is no profession in which the highest degree of thorough proficiency and skill is attained by such assiduous toil and study, and there is no other profession that is subjected to such beggarly humiliations. Since arriving in San Francisco, I have received from a well-known physician in New York, a letter, which, together with my reply, may be of interest. The doctor writes as follows:

"MR. H. G. KNAPP—*My Dear Sir:* I wish to procure and consider plans for a suburban residence, which I intend to build in the 23d Ward, this spring. If you wish to submit one of your designs in competition with other architects, I shall be glad to send you full particulars.

Truly yours, etc."

To this I sent the following reply:

DR. ——, *Dear Sir:* In reply to your favor of the 18th ultimo, I would say that I must decline your kind offer. By way of reciprocating your generous intentions, I beg to advise you that I am suffering with a severe cold, and have concluded to have it cured sometime between this and spring. Should you wish to tender your services in competition with several other physicians, I shall be pleased to receive and examine your prescriptions. Etc. To save time I will state that the terms and conditions of the competition are as follows: The dimensions of the cold, upon which you are to exercise your best skill, are very great, and must be determined accurately by the competing physicians. It was perhaps contracted by exposure to climatic changes, but this you are to ascertain by careful diagnosis and a detailed analysis of all matter bearing upon the subject. Your conclusions, in the form of a voluminous treatise on the subject, in the preparation of which you shall have expended at least two weeks labor, must accompany your prescriptions. The prescriptions will be submitted to the examination of a drug clerk, who will be required to vouch for their wholesomeness and efficacy. Physicians will also tender proposals naming the amount for which they will cure the said cold in case their views and suggestions meet the patient's approval and their nostrums are favorably reported by the drug clerk. The patient reserves the right to reject any and all medical services after the same shall have been rendered.

Very truly yours, etc."

Now, to the professional physician, the foregoing proposition could only be regarded as a ludicrous joke. Yet this is a fair example of much of the condescending patronage with which the *architect* is favored, and so long as these indignities are tolerated and encouraged by the profession, the public will have little desire and feeling for the art, and little respect for its practitioners. When professional practice has been reduced to a mad scramble after the naked bone which is generally offered as a competition prize, architects lose all self-respect, and entirely forget the courtesies that are due to their professional brethren.

When we consider the lavish waste of labor involved in architectural competitions, and which falls entirely upon the profession, we are amazed at its magnitude, and we might well seek to destroy this parasite that has so effectually sapped our practice of its virtue and vitality. A recent competition in New York brought in over two hundred designs, not one of which met the given requirements as fully and intelligently as might have been done by any skillful architect who could command the advantages of constant verbal intercourse with his client, and who was not hampered and hedged in by the unwise restrictions of the circular of instructions.

About four years ago Mr. Thomas Porter, a Fellow of the Royal Institute of British Architects gave to the Institute some very interesting statistics of the number and enormous cost of competitions in England. After careful analysis of all the competitions advertised for two and a half years, he found that the average annual cost of competitive drawings was $125,000, and this enormous sum only represented, not the actual value of the drawings, but the mere cost of preparing them, making no allowance for the time and labor of the architects themselves, who submitted them.

If this is the situation in England, where the profession commands prerogatives and a general respect, which is denied it here, we need not wonder that with this vast and perpetual waste of energy and substance, American architects are prone to employ unprofessional expedients to recompense their losses, and that building committees are frequently captured by *ad captandam* artifice.

Competitions must be accepted, however, as a necessary evil, the fruits of which fall alike to the architect and the client, and the question with us is not, How can they be abolished? but, How can they be properly regulated? There is, to my mind, but one practicable method, and that is the general adoption by the leading architects of the United States of a carefully considered schedule of terms. This has already been done by the St. Louis architects, and resolutions affecting members engaging in competitions were passed by the Institute in 1878.

Without attempting to suggest the regulations in detail by which architects should be governed in open competitions, I will briefly offer the following hints for a general schedule of terms.

The amount of the premiums should, in the aggregate, be equal to the amount to which an architect would be entitled for such work were there no competition.

The author of the first premiated design to be employed to take charge of the work at the rate of compensation established by the American Institute of Architects.

The designs to be submitted to a jury, one member of which shall be an architect of acknowledged ability who is not directly or indirectly interested in the competition.

All the designs, excepting the one adopted, to be returned to their respective authors.

A definite date to be fixed for final judgment on the designs submitted, and the decision to be announced and the rejected designs returned on that day.

Regarding the Pioneers competitive designs, I am perhaps not so well qualified to express an opinion as yourselves, being a comparative stranger in San Francisco. I am impressed with the feeling, however, that the committee, in fixing their terms and conditions, have been governed by local precedent, and their best judgment based on the existing public estimate of matters architectural. They have, at least, made some little gracious concessions, having, in their amended circular, eliminated two very objectionable paragraphs.

Personally, I would say that, having entered this new and inviting field in response to the demands of my wife's health, I must confess the temptation to embrace any just and honorable opportunity for establishing my practice in so pleasant and promising a clime. I shall therefore await the result of your deliberations with interest.

Lumber Receipts in 1883.

THE Secretary of the California Lumber Exchange has furnished us with the following statement of the amount of lumber, etc., received in this city during the past year. It will prove interesting in comparison with other cities.

Redwood, rough, ft.	52,296,987	
Redwood, rough, clear	7,675,922	
Redwood, dressed	41,570,386	
Redwood, dressed, ½-inch	142,169	
Redwood, siding, ¼-inch	196,176	
Redwood, battens, ½-inch	237,003	
Redwood, pickets, rough	1,603,527	
Redwood, pickets, dressed	554,983	
		105,274,133
Pine, rough	131,204,003	
Pine, dressed	14,893,844	
		145,097,847
Spruce, rough	21,510,513	
Spruce, dressed	563,824	
		22,074,337
Cedar, rough		3,092,561
Hardwood		233,611
Total		276,772,489
SUNDRIES.		
Shingles		134,360,300
Laths		33,599,500
Shakes		9,114,325
Ship Knees		1,437
Piles, lineal feet		1,736,776
Redwood Posts		793,118
Railroad Ties, rift		1,557,879
Broom Handles		373,600
Wood Slats		151,000
Spanish Cedar Logs		1,423
Laurel Logs, ft.		14,500
Primavera Logs		896
Spars, lineal ft.		5,967
Poles, lineal ft.		240

Special Meeting San Francisco Chapter.

A SPECIAL meeting of the San Francisco Chapter was held on Saturday evening, February 9th, to consider "Architectural Competitions in General and the Pioneers in Particular."

A large attendance was present. The President, John Wright, in the Chair.

The committee appointed at the last regular meeting to wait on the Building Committee of the Pioneers, reported as follows:—

SAN FRANCISCO, February 4, 1884.

THE San Francisco Chapter of the American Institute of Architects respectfully submit the following modifications to the Building Committee of the Pioneer's Hall Association in their circular addressed to architects, inviting them to compete for the proposed new building of the said association:—

1. That the drawings shall all be of a uniform scale of one-eighth inch per foot, and shall consist of a plan of each story, including basement, a roof plan, two sections, and two elevations. No colored drawings or perspectives to be considered. The plans and sections be colored to indicate the style of construction.

2. That the value of the premiums shall be increased on account of the great amount of work necessary to make complete plans. The increase in the value of the premiums will benefit the society inasmuch as it will insure a larger number and a better class of competitors.

3. That the premiums be paid in all cases, and be considered as a reward for the most meritorious design, and be not deducted from the amount of commission.

4. That the clause relating to a guarantee by contractors of the architect's estimate be stricken out.

5. Considering that the plans chosen will be the ones which will best answer the requirements of the society, and that the matter relating to the architect's commission would be only of a secondary consideration compared with the merit of the design, we desire that the clause implying a degrading underbidding from professional men be stricken out.

[Signed.] JOHN WRIGHT,
ALBERT PISSIS,
Com. Mittee.

The report was received and committee discharged. An interesting paper was read by H. G. Knapp, which was ordered printed in full in the official organ. (It will be found in another column.)

Mr. Pissis offered the following:—

Resolved, That the Chapter disapprove of the present competition, as the terms are unjust and the premiums insufficient.

After a long debate the resolution was unanimously carried.

The following resolution was presented:—

Resolved, That in future no competition shall be entered into by any member of this Chapter, unless the terms are in accordance with rules to be made by a committee, and these rules be approved by the Chapter, said committee to be appointed at next meeting.

Amended so that the committee shall consist of five Fellows, whose duty it will be to take into consideration the whole subject matter, and also to take cognizance of the above resolution, the committee to be appointed by the President.

Messrs. Pissis, Chairman; J. E. Wolfe, Curlett, Macy, and Gash were appointed to act as such committee.

Adjourned.

Some of the Objectionable Features Contained in the Circular to Architects for Plans, Specifications, and Estimates for Pioneer Building.

THE first part of the pamphlet contains a description of a building to cost about $150,000; all modern conveniences generally found in buildings of like cost, are to be placed in the one under consideration.

. . . . . .

"The committee will receive, examine, and consider all plans, specifications, and estimates so presented to them, and will select therefrom—subject to the modifications hereinafter named—the three which, in their judgment, seem nearest to meeting their requirements, returning all the others to the respective architects submitting them. The three so selected will be carefully considered and passed upon by the committee. For the plans, specifications, and estimates which most nearly meet the committee's requirements, they will pay the sum of $500. For the next in order considered from the same standpoint, they will pay $300, and for the next $150, retaining all three as the property of the society.

"*The committe reserve to themselves the right to reject any and all plans.*

"It is distinctly understood that the committee incur no responsibility, either for themselves or the society, for any plans, specifications, and estimates other than the three to be selected as hereinbefore set forth, all the others being at the disposal of the parties submitting them, without any cost whatever to the committee or the Society of California Pioneers.

"It is further understood that all estimates furnished by architects shall be indorsed by some well-known contractor or contractors, with the proviso that such contractor or contractors are willing to contract for the erection and completion of such building for the amount named in such estimates.

"*Architects competing will advise the committee when their plans are submitted what their professional charges will be in case their plans are adopted by the committee, and approved by the Board of Directors.* The plans for which the first premium of $500 is to be paid, if adopted by the committee, and approved by the Board of Directors as those from which the building will be constructed, will be subject to the condition that the premium will be considered part of the architect's professional charges, and will be deducted therefrom in final settlement."

LEBANON, Pa., Jan. 23, 1884.

GENTLEMEN:—In your issue for January, you publish a copyrighted design for a cresting. Wherein does the patent exist? An answer will greatly oblige a subscriber.

Yours, etc.,
HARVEY T. HAUER.

In the simple fact that it is *new and original in its design*. Neither fruits, flowers, leaves, nor any other thing produced by the laws of growth in nature, can be copyrighted *as such*, but in special combination, expressing or delineating *originality of conception* in the thing produced, even by the use and application of things and forms in nature not in themselves entitled to protection under the law in such cases made and provided,—the parties producing can claim exclusive right and find protection from infringement by copyright.

To the San Francisco Chapter.

I AM an old and decrepit pioneer. I also belong to the Independent Order of Odd Fellows. I do not feel as well and as hearty as I did thirty years ago. I might describe my symptoms and the causes which broke down my constitution, but I would rather not; respect my silence.

Three of our most eminent physicians have examined me thoroughly, and their opinions as to the manner of curing my numerous infirmities vary.

I take this occasion to thank them sincerely, and I earnestly hope they understand that, as I have not as yet adopted the modes of treatment which they advised, they shall not send me any bills for medical services.

Through their courtesy I know that I am suffering from a severe attack of the gout, and that my kidneys are badly affected.

Alas! alas! how I regret the follies of my youth; but it is useless to weep. Let us endeavor to recover our health.

Some treatments are long and tedious. Perhaps some physician may have discovered some new remedy which will exactly suit my case.

Let us open a competition. I have been advised to do so.

The terms under which I invite competitive medical consultation and prescriptions are as follows:—

1. I must be restored to perfect health.

2. The treatment must be short, pleasant, and convenient to follow.

3. The maximum cost of doctor's fees and medicine must not exceed fifteen dollars. I will receive, examine, and consider all prescriptions and suggestions, subject to modifications hereinafter named. The three manners of treatment which in my judgment best suit my dilapidated condition, will be selected and passed upon. For the prescription I prefer, I will pay the sum of fifty cents. For the next in order considered from the same standpoint, I will pay thirty cents, and for the next, fifteen cents, retaining all three as my property with the right to use them if I see fit. I reserve myself the right to reject any or all prescriptions.

It is distinctly understood that I will incur no responsibility either for myself or for my family, for any written consultation or prescriptions other than the three selected as hereinbefore set forth, all the others being at the disposal of the parties submitting them, without any cost whatever to myself or my family.

It is further understood that all estimates as to the cost of medicines shall be indorsed by some well-known druggist or druggists, with the proviso that such druggist or druggists are willing to contract for the furnishing of such medicines as are prescribed, for the amount of the estimated cost.

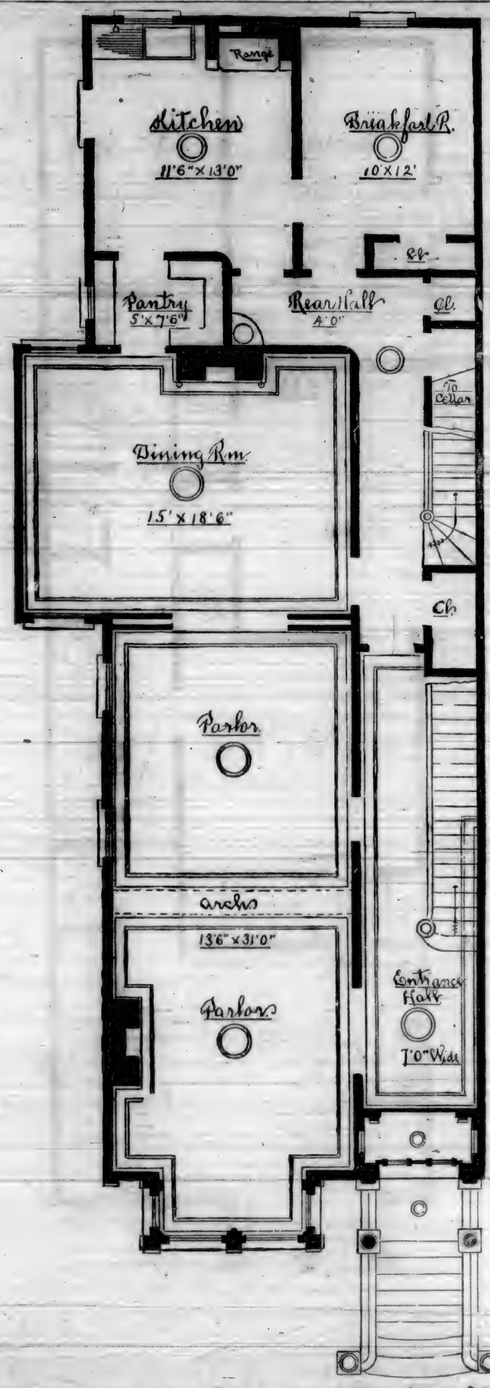
Physicians competing will advise me as to what their professional charges will be in case their prescription and mode of treatment are accepted by me and approved by my family.

The consultation for which the first payment of fifty cents is to be paid, if adopted by me and approved by my family as the one by which I am to be treated, will be subject to the condition that the premium of fifty cents will be considered as part of the physician's professional charges, and will be deducted therefrom in final settlement.

All written consultations, prescriptions, and suggestions must be sent to me on or before March 25, 1884.

AGED PIONEER AND ODD FELLOW.

"Lumberman's Hand Book." Price, $2.00.



FIRST FLOOR PLAN CITY RESIDENCE, COSTING ABOUT $7,500.

Competition Plans for Pioneer Building.

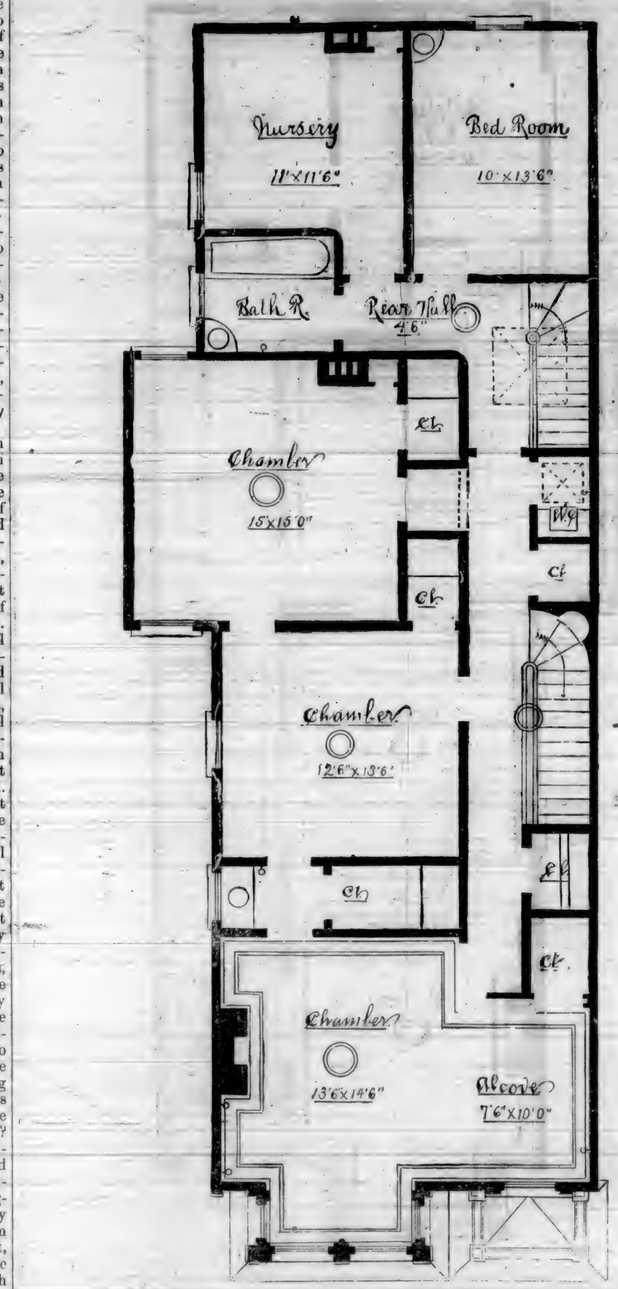
THE Society of California "Pioneers," having determined to proceed with the erection of a building on their splendid gift property on Fourth Street, have appointed a committee of five gentlemen, well known in San Francisco as to their business qualifications and intelligence in matters generally, within the circle of their experiences and information, to procure plans. But unfortunately for themselves and architects generally, as a committee, they have developed either a total incompetency for the duties placed upon them, and a lack of correct understanding as to the rights of architects, and the value of architectural services, or an indifference and disregard of every principle of right, justice, and fairness toward an honorable profession, which, upon the high order of merit due to the honorable and competent of its members, deserves far better recognition.

The fact that gross wrongs have been imposed upon architects in other cases, and architects have meanly allowed themselves to be badly used, by submitting to iniquitous exactions upon delusive, uncertain, and frequently fraudulent pretenses, is at least not a *generous* basis for men of just and fair minds and honest and equitable purposes to act. This *cornering* system of competitions, shutting the door against all good and competent men, or compelling them to compete upon a non-paying basis to any except the *one man* who secures its first premium and superintendence, is in no sense or respect right or just. In the present case, the sum of $950 is offered as premiums for *three* preferred sets of plans, specifications, estimates, etc., much less than the value of a *single set*, as measured by all architectural societies and Chapters the civilized world over. Yet should twenty architects be silly enough to engage in the contest, the collective aggregate cost *in coin*, allowing that the delineation work is all done by skillful and competent, paid draughtsmen, will not be less than $6,000, to say nothing of the time, skill, judgment, etc., of the principal, the time occupied in writing specifications, preparing estimates, etc., and the expense of office rent, paper and other things, all of which considered by honest and equitable valuation would reach a total sum of fully $10,000—for all of which the *grand total*(!) of $950 to *three* of the twenty is the *ultimatum*, leaving the loss of the remaining $9,050 as a sweet morsel for the seventeen rejected simpletons to feast up.

The first "circular" issued by the committee contained "terms and conditions" which were so manifestly wrong in every sense that the Chapter of Architects assembled February 1st, gave emphatic expression to the general feeling of disapprobation entertained by every honorable and intelligent member of the profession upon the Pacific Coast. We say this knowingly and understandingly. The Chapter, at said session, appointed a Conference Committee to meet the five gentlemen representing the Pioneer Society, but before an interview was reached between the committees, a second, modified form of circular had been issued, removing some and retaining other of the objectionable conditions. The omissions in the amended documents are: *first*, the claim which requires that architects should back up their estimates of cost by the indorsements of some competent and responsible contractor who would be willing to complete the building at the stipulated cost. This proposition simply and more fully exposes, at least, the *thoughtlessness* of the committee, for had each estimate been so accompanied, that accompaniment would have possessed an intrinsic cost value of $100 each, or a total of $2,000, which, if paid for by the architects, would

have increased the amount of loss to the defeated seventeen, of $1,700, which added to the $9.050 would have raised the amount of actual loss to $10.750. Or, if not paid for, the loss of the $1,700 would have fallen upon contractors. The second omission made is in vacating the charge of first premium amount against and deducting the same from the "architects' professional charges" at settlement. Also, that of requiring architects to bid for the job by stating the percentage rates each would require for his services, less than the established rates. The committee, however, retain in the amended circular that *exceedingly obnoxious, unreasonable, and inequitable condition* of "reserve the right to reject any or all plans." But the bad features of the issue are so numerous and vexatious that it would consume more than the entire pages of our issue to notice them in detail. The 1882 volume of this Journal contains six articles upon the subject of competitions, which would improve the understanding of the committee amazingly. The $950, nor any part thereof, as premium, is a certainty, as the "reserve" is fatal to *certainty* if put in practice.

The Society has had the matter of plans in hand for several years, and plans have been made and submitted. This fact argues the folly of all others to compete against those who have so long had the ear and confidence of the society, and who have so much greater and better information to act upon than is contained in the circular. Whatever loss in time, labor, and money to others, that loss is promoted by the acts and inducements held out by the committee, for the special benefit of themselves and the society they represent. Taken as a whole, with very few and small exceptions, statements and assurances pledging that "the competition will be honestly and honorably conducted," "that the awards will be determined upon fair and equitable grounds, without preference or favor to any," is all well in poetry, but fearfully deceiving and misleading in fact; for as an underlying, well proven fact, such competitions are a something that does not occur ten, if five times in a hundred. This is a strong statement, but we make it boldly because we know the fact, and are able to conclusively verify the same whenever necessary, by a line of testimony which cannot fail to carry conclusive conviction to every unprejudiced mind, although the *legal* proof might be lacking in some cases. As another feature of unpardonable injustice and wrong, is that of indiscriminate competition, which is likely to set to work one-half or more of the competing parties, who upon merit, qualifications, and reputation, would be discarded by the committee, if their names were seriously proposed in the premises, as architects of the building. Is it then a proper course for honorable men to pursue to inveigle others into expense and loss, who possess not a single chance, not one in one thousand of securing the first award, however meritorious their plans might be? Is it a right and sufficient excuse to urge a lack of knowledge as to such parties? To seek to excuse the wrong by pleading non-intent? If the committee had known and desired to do the right thing toward all competitors, they would have selected five recognized, competent, skillful, and trustworthy architects, confining the competition to them exclusively, and giving to each and all right, reasonable, and sufficient competition for the services required. We close this article with a notice of the fact that the generous donor of the property and funds involved in this case, in the contemplation of building improvements during his lifetime, relied upon his own judgment as to the qualifications and integrity of architects, and engaged singly those who he was willing to trust, without huxtering the market to secure competitive plans at heavy cost and loss to others, and no special benefit to any; for under any circumstances only one man as an architect profits by the erection of a building. A following of the example of the generous dead would have saved the committee the expense and annoyances attending their "circular to architects."



SECOND FLOOR PLAN CITY RESIDENCE, COSTING ABOUT $7,500.

The San Francisco Chapter of Architects—Its Aims and Its Objects.

NUMBER TWO.

THE formation of the Pacific Coast Association of Architects was not the result of a sudden impulse. Months before the call was made for its organization, a few earnest workers were canvassing the field, making inquiries here and there for the purpose of ascertaining how many of the architects would be willing to lend their aid to a permanent association.

When the call was made for a general meeting, the largest number of architects ever assembled together in this city at one time met in a room at the Mechanics' Institute. Mr. A. Laver was chosen President. Twenty-nine signed the roll—a splendid beginning surely; and to the credit of the original twenty-nine, nearly every one has continued up to date through Association and Chapter, in full membership.

The first six months was rather up-hill work, being of necessity rather prosy in its character. By-laws that would stand the criticism, and yet receive the commendation of their professional brethren in the East, had to be framed and adopted. This work fell into the hands of those well qualified to perform that duty, and the code presented gave general satisfaction.

Not satisfied with a local organization, as an "Association," steps were taken to form a Chapter of the American Institute. The President being the only member of that body on this coast, it was through his efforts that six prominent architects became members of the Parent Institution, and thus formed the basis for a Chapter on this Coast.

Since its organization San Francisco Chapter has progressed finely in the accomplishment of the aims and objects for which it was started, and to-day it is one of the largest in the United States. Its meetings have been fairly attended, averaging about twenty; a full record of its proceedings is given in the columns of this Journal. Below will be found a full list of the officers and members of the Chapter in good standing.

JOHN WRIGHT, *President.*
WM. CURLETT, *Vice-President.*
GEO. H. WOLFE, *Secretary.*
H. C. MACY, *Treasurer.*

A. LAVER,	T. J. WELSH,
B. E. HENRIKSEN,	H. C. MACY,
J. B. WHITTEMORE,	W. MOOSER,
J. M. CURTIS,	A. SCHROPFER,
J. GASH,	SETH BABSON,
W. KIRK, Oakland,	J. E. WOLFE,
T. A. EISEN,	P. HUERNE,
H. D. MITCHELL,	G. H. SANDERS,
C. C. MCDOUGALL,	B. MCDOUGALL,
W. P. MOORE,	J. MARQUIS,
THEO. LENZEN, San Jose,	O. EVERETT,
	O. MORGAN, Los Angeles.
J. D. CEBRIAN,	A. PISSIS,
C. V. PIERCE,	W. H. Kirk, Oakland,
W. G. MATTHEWS, Oakland,	L. GOODRICH, San Jose,
JOS. GOSLING,	E. J. MOLERA,
W. JORDAN,	N. MAYO,
W. LEE,	M. G. BUGBEE,
J. Hall,	W. G. COPELAND,

WARREN H. WILLIAMS, Portland.

MANY portable mills have been set up in the woods of Maine for the purpose of working up the timber blown down by the winds last season. An unusual number of trees were thus prostrated.

Bound volumes of 1883 now ready. Price $2.50.

A CHEAP clock may be made to appear very attractive in this way—take two cigar boxes, cut a hole in one just the size of the face of the clock, and tack it securely endwise on the top of the other box, which, of course, is in its natural horizontal position. Cover them both with garnet plush or velvet, glued smoothly to the wood, and fasten the clock with strong wire inside the upper box, to show only the face, as if in a frame. Screw four brass knobs under the lower box as feet for it to rest on, and make a little railing around it of a miniature brass chain upheld by gilt-headed millinery pins. The top of the upper box should be finished in the same manner. The effect is excellent.

SAVE the tea leaves for a few days, then steep them in a tin pail or pan for half an hour; strain through a sieve and use the tea for all varnished paints. It requires very little elbow polish, as the tea acts as a strong detergent, cleansing the paint from all impurities, and making it equal to new. It cleans windows, and sashes, and oil cloths—indeed, any varnished surface is improved by its application. It washes window panes and mirrors much better than water, and is excellent for cleaning black walnut and looking-glass frames. It will not do to wash unvarnished paints with it.

THERE is nothing so tends to shorten the lives of old people, and to injure their health, as the practice of sitting up late, particularly winter evenings. This is especially the case where the e is a grown-up daughter in the family. This sanitary item is published at the request of several young men.

WREN, the architect of St. Paul's, designed more than forty public buildings in London.

Promptly forward your subscription for 1884.

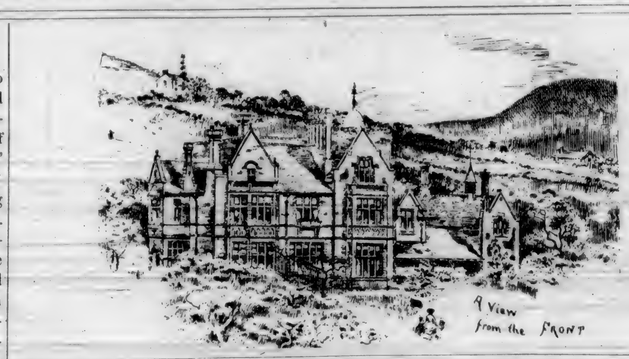
Repeal of the Duty on Imported Lumber.

"SAN FRANCISCO lumbermen are opposed to the repeal of the lumber duty. What would materially benefit the Eastern States would injure them. This is a practical illustration of the difficulty in the way of tariff reform." —*Evening Post.*

It is perfectly natural that this feeling should exist in the lumber combination monopoly of San Francisco, and among its members individually; for if the barriers were removed so as to open a ready market, and encourage the manufacture of lumber within the domain of her Majesty's possessions adjacent to the waters of Puget Sounds, the unreasonably high prices from time to time and at the present exacted for all classes of lumber material in California, could not be maintained; for it is not at all probable that the present California and Puget Sound lumber kings would be able to control the prices of lumber manufacture on the British side of the lines. Hence it is bread and butter, or rather bags of gold to the combination to have the tariff duties on imported lumber continued, and if need be increased. No better proof need be desired that the controlling—the manufacturing portion of the monopoly conclave—are massing great wealth rapidly, at the expense of the general public, than the fact that the boast is freely indulged in by representations of the lumber trade, of their firms having accumulated hundreds of thousands of dollars, since the revival of business in 1880, and the *increase of prices* of lumber materials.

While we wish no ill to the American manufacturers and dealers, there are reasons why —personally—we should like to see the doors opened, which would permit the importation of British Columbia lumber into California upon fair and reasonable terms. We do not advocate the abandonment of all tariff restrictions, but such modifications as would secure right, proper, and healthful competitions,—such as would pay a fair,—even liberal return for the money invested, and sufficient to cover all contingent risks; and at the same time give to owners of real estate equal protection from the payment of very much more than fair, just, and reasonable prices for lumber.

Again, we should like to see a supply of British manufactured lumber in the markets of California, because their standards of measurement are full and honest, in contrast with the abominable, unpardonable, and not intrinsically honest American standard. By the American scale of inches, when one buys and pays for dressed lumber of any kind, as one inch thick, he receives that which is one-eighth less in thickness; and if he pays for lumber two inches thick, he receives that which is one-eighth of the whole thickness less; and the same applies to all the kinds and thickness of lumber as a rule; and if objection is raised to the measurement, the reply is always ready, "The discrepancy is the result of planing,"



and the purchaser is expected to accept the apology, as compensation for the lumber paid for but not received. If the wastage of planing is legitimately on the purchaser, he is cheated in the transaction in this; it is claimed and is a fact, that one-eighth of an inch is the necessary wastage in planing inch boards, nor does it require any more in planing lumber two inches thick; yet in the latter case a quarter of an inch is gouged out of the purchaser, and honest men—as honesty goes now-a-days—consider the transaction all right; right only because a rule, not so in fact. But if this nipping of twelve and a half per cent was all that the purchaser suffered, it would be less condemnable, but beside this he is charged the market rates of difference between the same lumber dressed and undressed, thus adding a double tax—first in the loss in thickness, and again in the direct charges for dressing. A long article might be written, illustrating the fact that in scarcely anything in the building line, particularly of American manufacture, are the sizes, measurements, weights, etc., what they purport to be.

But as we understand matters, and, as far as our personal experiences go, English law compels, in the manufacture of lumber, that, whether dressed or undressed, all thicknesses and sizes shall be up to the full standard; that when sold for one, two, or any other number of inches, it shall be so by actual measurement. And so it should be, whether of American or British manufactures.

Some years ago there was a lot of flooring shipped to San Francisco from the adjacent colony, and while it could be had, it was eagerly sought after on account of its full measurement, which compared with our Puget Sound article of seven-eighths, and sometimes scant at that, the superiority of the imported material was fully comprehended and duly appreciated by its being greatly preferred, because better in fact for all practical purposes, and better certainly as far as business morals are concerned.

THE finest glue size is made from the waste of parchment skins.

Promptly forward your subscription for 1884.

Carelessness in Sending Money.

WE cannot impress too strongly upon our Eastern and country subscribers the necessity of exercising care in sending money for subscription. During the past month, three registered letters have been sent to us in which nothing of value was found. Upon writing to the parties, in each case, it turned out that the fault lay with the parties sending the letters. Be sure and send money by postal order, or registered letter. We would sooner bear the expense of either than the annoyance caused by a miscarriage of a letter. In latter case there is always a doubt raised on either side as to the sending and receiving of money. In order to leave no room for a mistake in the future, WE WILL OURSELVES BEAR THE EXPENSE OF EITHER A POSTAL ORDER OR REGISTERED LETTER.

California Electric Engraving Company.

THIS company is now fully prepared to make engravings from photographs. Those contained in last and present issue, are the work of this Co. They are prepared especially for presses running at a high rate of speed. Can also prepare very finely executed engravings suitable for the better class of printing. This company notifies its patrons that it does not accept any cheap work. Only that of first-class character executed. All communication should be addressed to the office of this Journal, 240 Montgomery St., San Francisco.

IRON door and shutters are not the safest in case of large fires; the difficulty consists in their warping when red hot, and in that condition bursting from locks and hinges. The most approved doors are double one-inch boards, well nailed across each other diagonally, and their sides are covered with tin-plates. The hinges must reach all the way across the doors and be well fastened. The size of such a door must be two inches larger in every direction than the opening which it is intended to close. Doors constructed on such principles have been known to withstand a fire which would have destroyed the best of iron doors. Tin is preferable to galvanized iron for a covering, because it can be nailed down closely to the wood and thus dose not warp in case of fire.

Removing Spots from Gilt Frames.

GILT frames are liable to become spotted and look bad, while it is, as a rule, difficult to remove the spots. Rubbing does not answer, for the stain sticks tighter than the gilding itself, and washing is liable to loosen the gilt if put on with gum or dextrine.

The *Papier Zeitung* recommends the following method of renovating gilt frames. It consists in applying with a camel's hair pencil a gum solution to which has been added gold bronze having the color of the frame. Before mixing with the gum water the bronze must be washed with water until it runs off perfectly clear. If one application does not suffice it may be repeated until the spot entirely disappears, but of course one coat must be dry before the next is applied.

Spots treated in this way look very well at first, but it will not last, for it is not able to resist the moisture in the air unless it is specially prepared. For this purpose an ordinary bristle brush is rubbed with a piece of yellow wax until it is somewhat sticky, then it is passed very lightly over the spot several times as when dusting it. This gives it a very thin coat of wax that hardens in two or three days; in the meantime it must be protected against dust.

Ancient Roadways.

WHETHER in ancient times better roads and pavements were built than at present, or whether only the best ones remain, is uncertain, but it is certain that some of the remains of such structures found in Rome, for instance, evince engineering skill and perfection of work in a high degree. These were laid out carefully, excavated to solid ground, or in swampy places made solid by piles. Then the lowest course was of small-sized, broken stones, none less than three or four inches in diameter; over these was a course, nine inches thick, of rubble or broken stones cemented with lime, well rammed; over this a course, six inches thick, of broken bricks and pottery, also cemented with lime; upon this was laid the *pavimentum*, or pavement, composed of slabs of the hardest stone, joined and fitted together as closely as possible. This was costly—the Appian Way, about 130 miles in length, having almost exhausted the Roman treasury—but it was as enduring as nature's own work. In Peru and Central America similar remains, 1,500 to 2,000 miles long, were found by the Spaniards, which, as Prescott says, were built of heavy flags of freestone, and in some parts, at least, covered with a bituminous cement, which time has made harder than the stone itself. The roads of modern times lack most of the elements of durability which these possessed, and consequently wear out in a very few years.—*Scientific American.*

To cut the largest square from a given circular sheet, multiply the diameter by 7.071, which will give the length of one side of the square.

Our Exchanges.

WE have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS.
Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Carpentry and Building* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With Special Edition of *Building* ($5.00). $5.75 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *American Inventor* ($1.00), $2.50 per annum.
With *Hall's Journal of Health* ($1.00), $2 50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Tin in California.

AN article in the *Mining Review*, by E. N. Robinson, C. E., states that the mine of Cajalco, in the Temiscal Range, California, has assayed 13·1 per cent. from the ore, of a purity of 0 98. This mine is believed by Cornish miners who have examined it to be a true and permanent vein, probably increasing in richness as it increases in depth.

Expansion of Portland Cement.

SOME interesting experiments on this subject have been made by Mr. Bradlee, a Boston architect. Three glass bottles were filled with cement and closely sealed. One burst in two days, one in eight days, and one in ten days, proving beyond dispute the expansive power of the cement.

THOUGH oxygen is heavier than nitrogen, and therefore ought to fall to a lower level than that gas in the atmosphere, no difference has ever been found to exist in the relative proportions of the two.

The "California Architect" is now in the Sixth Year of Publication.

Competition Designs!

ONE HUNDRED AND FIFTY DOLLARS

Cash Premiums!

FOURTH PRIZE,

Box of Drawing Instruments.

In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
4th, Box of Drawing Instruments.

Notice to Competitors.

All plans to be in the office of the CALIFORNIA ARCHITECT ON OR BEFORE the 1st of May, 1884.

All plans not accepted will be subject to the order of the owner, and will be returned upon receipt of the necessary postage.

We claim the right to reproduce in this journal all drawings of which honorable mention is made, and yet not entitled to a prize.

A *non de plume* to be used on all drawings; a letter to accompany the latter, addressed with the name used, containing also the real name and address of the contestant. This is done solely that the person's name and residence w ll not be known until the committee have made the awards

A scale of ¼ inch to the foot to be used.

Detailed estimate of cost to accompany the drawings. QUANTITY and PRICE of each material used to be given, so that allowance can be made for difference of price between the various sections of the East and this Coast.

Drawings are to show front, rear, and side elevations, with plans of the different floors.

The value of the house when finished to be ABOUT FIVE THOUSAND DOLLARS.

This competition is open to Architects in every portion of the United States.

Drawings to be made on card or bristol-board; to be line shaded; NO color but JET BLACK to be used.

All competitors will receive one year's subscription to this journal FREE, that they may see the various plans adopted

The merits of the various designs will be decided by a committee appointed by the San Francisco Chapter of Architects.

All inquiries in regard to the above will be answered by addressing a letter to the office of this journal, 240 Montgomery St., San Francisco.

WOLFE & SON, Editors and Publishers.

Staining Wood.

SIR: The art of ebonizing soft woods, and of curing the toothache, are very much alike! Every one to whom one speaks seems to cherish a pet receipt of his own, and all are declared infallible. My own unfortunate experience, however, is that whereas there are a hundred different ways of successfully staining wood black, very few things indeed exist, save patience, that are really good for the faceache!

Here are nine ordinary receipts for ebonizing, any of which the reader may find more or less useful:—

1. One gallon of vinegar, one-half pound of green copperas, one-quarter pound of China blue, two ounces of nut-galls, two pounds of extract of logwood. Boil over a slow fire, then add a pint of iron rust. Wash the wood with this.

2. First sponge the wood with a solution of chlorhydrate of aniline in water, to which a little copper chloride has been added. When dry, repeat with a solution of potassium, bichromate. Do this two or three times.

3. Boil in four quarts of water one pound of logwood, add a couple of handfuls of walnut shells (or pods). Boil again, and take out the refuse, add a pint of vinegar, and apply boiling. Afterwards dissolve one ounce of green copperas in a quart of boiling water, and apply hot.

4. Boil one-half pound of chip logwood in two quarts of water, add one ounce of pearlash, and apply hot. Now, boil one-half pound of logwood in a couple of quarts of water, as before, and add one-half ounce of verdigris, and one-half ounce of copperas, strain and put in one-half pound of rusty steel filings. With this go over the work a second time.

5. Into a quart of boiling water put one and one-half ounces of copperas and two ounces of logwood chips. Lay on hot. When dry, wet the surface again, with a solution formed of two ounces of steel filings dissolved in half a pint of vinegar.

6. Wash the wood with a concentrated aqueous solution of acetate of iron of fourteen degrees Baume. Repeat this until a deep b ack is produced.

7. Brush with a strong decoction of logwood chips several times, then give it a coat of vinegar in which rusty nails have been laid.

8. Make a solution of sulphate of iron, by dissolving two ounces of sulphate in a pint of hot water. Paint the wood repeatedly with this. When dry, apply a hot decoction of logwood and gall-nuts two or three times. When this has dried also, clean with a wet sponge before polishing.

9. Infuse gall-nuts in vinegar in which rusty nails or steel filings have soaked, and paint the wood with this.

Of course, when the work has become dry again, sandpaper down the grain, and get a smooth face, and as work to be ebonized must be quite free from holes, oil and fill in any of these with powdered drop black mixed in a filler. Then give all a coat of quick-drying varnish, and rub down with finely pulverized pumice-stone and linseed oil until a good surface is acquired.

You may get a good, wholesome varnish for ebonized work by dissolving black wax in spirits of wine.—*Harry Hems, in English Builder.*

The Making of Bits.

THERE are fourteen bit factories in the United States, eleven of which are in Connecticut. The visitor to one of these factories will first enter the forging room on the ground, where a busy and curious spectacle is presented. His sense of hearing at once becomes useless, as the clatter and clang of a multiplicity of heavy running machinery makes conversation impossible except for a man with strong lung power. From the ceiling are suspended long rows of heavy shafting filled with driving pulleys from six inches to as many feet in diameter. Instead of a floor the visitor walks on clay packed as hard and smooth as cement, and on which are carelessly thrown, in heaps, tons and tons of red hot bits. Long bars of cold steel are placed between strong shears, which cut them into appropriate lengths as easily and quickly as a lady would cut a piece of string with her scissors. Here a line of sturdy men stand beside glowing forges in which these bars of steel are placed until they are heated to a white heat, when they are immediately put under trip hammers, which, striking hundreds of blows in a minute, hammer the bars flat on one end, round in the center, and square on the other end. The bit has now started into existence, and is called in this form a "plate." It is next passed to the crimpers, who again heat it to whiteness and run it though machines which twist the flat end into a "pod," or spital of beautiful regularity. The "swedgers" seize it now, and again under the influence of the blow-pipe the steel is soon red-hot, when one blow from a powerful drop fashions the square end into a shank properly beveled for the bit brace; again it is heated and passed under another drop, which stamps on its shank a figure telling the size of the hole it will bore when finished. Once more it endures the fiery ordeal, and, glowing red, passes through the heading presses, which, with a hug and a squeeze, crush two inches of the twisted end into a mass in which you faintly discern the point spurs and cutting edges of the future bit. It is next carried into the annealing room, where, with thousands of others, it is buried beneath heaps of charcoal and thoroughly baked until the steel is well softened or annealed. Next it is pickled for several hours in vats containing a strong so ution of sulphuric acid, which eats off all the scale left by the many previous heatings in the forges.

The bit now passes into the machine room, where the rasping machine cuts out all the superfluous stock in the head, forming rude cutting edges. The milling machine cuts the point smoothly to the correct bevel, ready for the screw to be made upon it. The leveling machine smooths the bottom of the blades, the facing-back machine cuts the edges of the blades straight, the screw-cutting machine forms the threads on the point, and the sizing machine cuts the boring end to the exact diameter required.

Passing into another department, where are seen long rows of skilled mechanics seated upon high stools, each man having in front of him a heap of bits and a lot of files of various sizes and forms, known as "square," "round," "flat," "half round," "humpback," "ground off," and "feather edge," and each of these is used in turn to form and smooth the various parts and cutting surfaces of the bit. The squeaking of a hundred files of almost as many sizes and shapes fills the air with shrill notes, and sets your teeth on edge.

Pausing a moment to watch a couple of men who, seated in front of tiny forges, are heating the bits to a cherry red color and then dipping them into dishes of oil and water, you learn that they are tempering them to the proper degree of hardness for cutting.

In the "polishing room" are seen men with faces blackened by charcoal dust and emery, standing in long rows, while a sheet of fire plays from the hands of each, lighting up their blackened features and making them look like veritable demons. Each man holds in his hand a bit and presses it upon the polishing wheel, which makes many thousand revolutions in a minute, causing by its friction a great sheet of sparks to fly out in front of the operator. You behold the many different processes of finishing as the bits pass on from one workman to another down the row, until at last they look as bright as burnished silver.

In the packing room many men are sharpening the finished bits, and a few inspectors are examining them with magnifying glasses to see if they can detect any scratches that have been left by the polishers. Here, also, the bits are sorted into first-class and second quality, stamped with the manufacturer's name and trade-mark, wrapped in strips of paper, and packed in pasteboard boxes. The variety of sizes and forms run from dowel bits, hardly an inch long, up to car bits, more than two feet in length, and from the little bit cutting a hole but three-sixteenth of an inch in diameter to the great six-inch auger, which requires two strong men to turn it.—*The Wood Worker.*

IN England thin shavings of veneers of different kinds of wood are coming into use for book covers. The woods now mostly in use are our American black walnut, lime, oak, holly, etc., but all woods may be used. After being placed upon the wood the veneers can be either rubbed down with oil or French polished.

Bound volumes of 1883 now ready. Price $2.50.

Hiding Furniture.

IN the days when it was customary to make wall paper pictorially descriptive of Chinese architecture and landscape, to use bulbous furniture, to place mirrors and pictures in tame oval frames, and to balance a lace curtain hung over one-half of a window with an opaque red curtain over the other half, it was also customary to put dresses upon chairs, sofas, ottomans, and nearly everything else that would submit to such treatment. Chintz ulsters concealed the materials, and even the form of chairs; the carpet was hidden by rolls of crash, the piano legs were in pantalettes, the picture frames and chandeliers were swathed in netting, and the very curtain tassels were swathed in bags of tarlatan. Things naturally had a cheap and cloudy look in a room thus furnished, and *noli me tangere* seeemed embroidered into every sheet, and bag, and cover. There might be something under all this dusty and faded coating and carpeting that was worth seeing, but you were not in a position to swear to it, or to attest the veracity of the Pinaforic axiom, "Things are seldom what they seem." This practice of hiding furniture from view is not entirely defunct, though it is earnestly hoped that it will soon be, for one of the primary essentials of modern decoration is openness and honesty. Veneers and shams are out of date, and upholstery and hangings are made to do service, instead of being concealed beneath common-looking clothes. Better to re-bind a book when its cover is worn than never permit it to be handled. Better to have a chair upholstered anew than to keep what beauty it has from sight. In some houses furniture coverings are never taken off. When "company" is present they are retained lest the furniture be soiled, and when there is no company there is no need of displaying the treasures of the establishment. Thus reasoned the Arkansas farmer, when asked why he did not mend his leaky roof: "'Cause I don't want to go up there and work in the rain," he replied.

"But why don't you mend it in dry weather?"

"'Cause then it don't leak."

Concealment is but a form of sham. Better the simplicity of a cottage than that invisible but presumptive splendor, where the visitor is impressed with an idea that the people of the house have come into possession of costlier things than they dare to use, or that they are influenced by a petty spirit of economy that should suggest furnishing and decorating on a lower scale of cost and beauty.—*The Decorator and Furnisher.*

The Importance of the Mechanic.

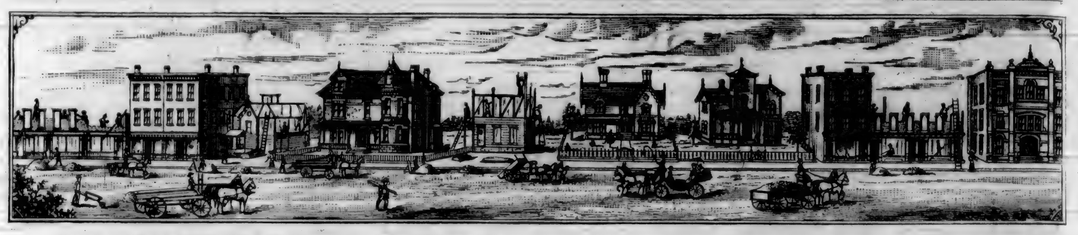
EACH ensuing day makes more prominent the fact that we have come upon the time when the mechanic is master. We have crowded professions and ill-filled trades. A chance to fill the position of sub-assistant clerk in a wholesale house is eagerly grasped at by a hundred applicants, though the wages received be scarcely more than a "chance to learn the business." Let a master workman try to obtain an apprentice at three times the salary offered the clerk, and his applicants will be poor alike in quantity and quality. A skilled workman in any trade need never want for hire; he is eagerly sought after by a hundred employers; he is independent of the condition of the market; the skill and cunning of his hand and eye are too valuable to lose, and must be paid whether the products are slowly or rapidly consumed. If business ceases, the master hand is eagerly seized by some rival house, which knows and values the product of his skill. He who would crush down the obstacles to success in our own days must have, as well as the wit to see the crevice, the strength to deal the blow. This is an age of the steam engine, and it is the engineer, not the conductor, who is master.

How Cesspools Have Been Utilized.

CESSPOOLS in a house do not fulfill the condition of immediate removal. They serve for the retention of excremental and other matters. In a porous soil it endangers the purity of the wells. The Indian cities afford numerous examples of sub-soil pollution. The Delhi ulcer was traced to the pollution of the wells from the contaminated sub-soil; and the soil in many cities and villages is loaded with nitre and salt, the chemical results of animal and vegetable refuse left to decay for many generations, from the presence of which the well-water is impure. There are many factories of saltpetre in India whose supplies are derived from this source; and during the great French wars, when England blockaded all the seaports of Europe, the first Napoleon obtained saltpetre for gunpowder from the cesspits in Paris.—*From Captain Galton's Address on House-Drainage at Chatham.*

PAINT spots may be removed from any kind of clothing by saturating with equal parts of turpentine and spirits of ammonia.

We thank those of our subscribers who have so promptly forwarded their subscriptions. But there are many who have not as yet sent us the amount necessary to continue their names on our books. By promptly forwarding us $2.00 you will greatly aid us in our desires to make still further improvements in this Journal.



BUILDING INTELLIGENCE.

SAN FRANCISCO.

Battery, near Bush. Additions to brick building.
O.—
A.—Wolfe & Son.
C.—T. H. Day.
$11,000.

Clay x Van Ness and Franklin. Two-story frame.
O.—Max Isaacl.
A.—Wolfe & Son.
C.— — Wickersham.
$7,000.

O'Farrell, near Stockton. Five-story brick and stone.
O.—M. De Young.
A.—W. Patten.
C.—McGowan & Butler. brick work.
$160,000.

Tyler, corner Polk. Remodeling.
O.—Central Presbyterian Church.
A.—J. Marquis.
C.—W. B. Ellis.
$15,000.

Larkin, corner McAllister. Finishing interior of City Hall.
A.—Curtis & Bennett.
C.—J. K. Delmas.
$12,700.

Fillmore, corner Pacific. Two-story frame.
O.—J. P. Treanor.
A.—Percy & Hamilton.
C.—Gray & Stover.
$8,000.

Stevenson, near Third. Three story and basement brick.
O.—Mrs. Nuttall.
A.—A. Pissis.
C.—J. Geary.
$7,700.

Buchanan, cor. McAllister. Two two-story frames.
O.—F. Junker.
A.—W. H. Bayless.
C.—J. Owens.
$4,550.

Devisadero, near Geary. Four two-story frames.
O.—C. Ahlborn.
A.—H. Geilfuss.
C.—Chrisman & Neal.
$10,000.

Market, near Third. Repairs.
O.—Blythe estate.
C.—P. M. Quackenbush.
$1,000.

Lapidge, near Eighteenth. Two-story frame.
O.—T. Redington.
C.—C. Kinsman.
$1,900.

Lapidge, near Eighteenth. One-story and basement frame.
O.—J. Nichol.
Day's work.
$2,000.

Valencia, nr. Ridley. Five one-story frames.
O.—R. Tobin.
C.—F. Buckley.
$2,500.

Valencia, near Sixteenth. Additions.
O.—Eastman & Co.
Day's work.
$1,500.

Seventeenth, nr. Church. Two-story frame.
O.—B. Burns.
C.—D. Spangler.
$3,600.

Diamond, nr. Seventeenth. Two-story frame.
O.—M. Martin.
Day's work.
$2,000.

Sanches, nr. Market. One-story frame.
O.— —.
C.—J. W. Smith.
$1,000.

Seventeenth, cor. Castro. One-story frame.
O.—Mr. Holmenn.
C.—B. Dryer.
$1,600.

Sixteenth, near Sanches. One-story frame.
O.—T. Dorland.
C.—T. Darcy.
$1,000.

Fifteenth, corner Church. One-story frame.
O.—Mr. McKenna.
C.— —McGinnis.
$2,000.

Natoma, near Seventh. Two-story frame.
O.—E. Barrett.
A.—T. J. Welsh.
C.—P. Laherty.
$3,000.

Eddy, near Mason Alterations.
O.—W. H. Porter.
A.—Curtis & Bennett.
B.—E. Farrell.
Day's work.

Harrison, near Twenty-second. One-story frame.
O.—H. A. Herringer.
Day's work.
$2,800.

Twenty-third, near Alabama. One-story frame.
O.—D. Sexton.
Day's work.
$2,000.

Twenty-fifth, cor. Bryant. Two-story frame.
O.—Mr. Kahn.
A.—B. E. Henrikeen
C.— —Weber.
$5,000.

Folsom, cor. Twenty-fourth. One-story and basement frame.
O.—H. Mangles.
C.—L. Fen.
$2,000.

Mission, nr. Twenty-sixth. Two-story frame.
O.—Mr. Smith.
C.—J. Day.
$4.000.

Church, nr. Clipper. One-story and basement frame.
O and B.—R. Bergfield.
$1,800.

Hill, nr. Twenty-first. Two-story frame.
O.—F. Guestro.
Day's work.
$3,200.

San Jose Avenue, cor. Elizabeth. One-story frame.
O.—E. Waldeck.
A.—Townsend & Wyneken
C.—R. Herbert.
$2,000.

Twenty-second, nr. Valencia. Two-story and basement frame.
O.—Mr. Higgins.
C.—M. Walsh.
$3,500.

Harrison, nr. Fifth. Two-story frame.
O.—C. M. Smith.
A.—I. A. Eisen.
C.—J. McCann.
$2,500.

Montgomery, nr. Sutter. Three-story and basement brick.
O.—E. D. Keyes.
A.—C. Geddes.
C.—McCarthy & Grant.
$12,000.

Turk, near Van Ness. Two-story and basement frame.
O.—G. Page.
A.—A. Schropfer.
C.—W. Plans.
$6.600.

Bryant, nr. Second. Three-story frame.
O.—Mr. Mahoney.
A.—T. J. Welsh.
C.—Ingersen & Gore.
$5,600.

Jackson, near Webster. Two-story frame.
O.—J. J. Smith.
A.—T. J. Welsh.
C.—P. Laherty.
$6,500.

SACRAMENTO.

I, x Fourteenth and Fifteenth. Two-story and basement frame.
O.—W. M. Seddons.
A.—N. D. Goodell.
C.—Carle & Croly.
$5,650.

MISCELLANEOUS.

Berkeley—Two-story frame on Dana St. O., Mr. Jones; C. — McGraw; $2,000. Two-story frame on Durant Avenue. O., J. L. Baker; $3,000. Two-story frame for Town Hall. C., C. R. Lord; $2,300. Two-story frame on Dwight Way. O., Mr. Fish; C., A. Broad; $6,000. One-story frame. O., Mr. Lukes; $1,200.

Dixon—Odd Fellows Hall. C., Meek & Co.; $10,500.

San Rafael—Two-story frame. O., Wm. J. Dixon; C., William Barr; $4.000. Two-story frame. O. and B., William Parr; $5,000.

Oakland—Fifth and Chester. Two one-story frames; O., James Dolan; $1,400. Sixth Avenue, corner Fifteenth. Two-story frame; O., Mr. Farrier; $3,500. Additions to Contra Costa Laundry; $2,000. Eighteenth, corner Linden. One-story frame; O., J. F. Nordhausen; C., — Denke; $4,500.

N, x Third and Fourth. One-story and basement frame.
O.—S. W. Butler.
A.—N. D. Goodell.
C.—M. Madden.
$1,400.

K, x Ninth and Tenth. Alterations to brick building.
O.—H. Eldred.
A.—N. D. Goodell.
C.—A. W. Eskridge.
Day's work.
$4,000.

Sixth, x I and J. Alterations Congregational Church.
A.—N. D. Goodell.
C.—Carle & Croly.
$529.

SAN JOSE.

Fifth and Julian. Two-story brick.
O.—S. J. Fruit Packing Co.
A.—J. O. McKee.
C.—Mellwain & Kinney.
$10,000.

On the Alameda. Two-story frame.
O.—J. H. Pierce.
A.—J. O. McKee.
C.—J. D. Stewart.
$6,000.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents in DEWEY & Co's. SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

For week ending January 29, 1884.

292,531.—Fire escape ladder—A. J. Bartlett, Elk Flat, Ogn.

292,624.—Pilot or Guard for Cable R. R. cars—W. U. Bohm, S. F.

292,543.—Quartz Crusher—Dandurand & Lafrance, Virginia, Nev.

292,629.—Can Holder and Funnel—W. M. Doty, Biggs Station, Cal.

292,740.—Spring Vehicle—P. Englehart, Modesto, Cal.

292,552.—Ornamentation of Frame Mouldings—P. E. Francke, S. F.

292,480.—Two-wheeled Vehicle—H. P. Garland, San Quentin, Cal.

292,555.—Excavator and Leveler—B. M. Hague, Wild Flower, Cal.

292,556.—Bed Lounge—A. Hansen, S. F.

10,440.—Indicator Padlock—A. Jackson, S. F. (reissued).

292,574.—Hinge—W. Patterson, S. F.

10,443.—Can Opener—Frank Sharp, Los Angeles, (reissued).

292,666.—Lifting Jack—B. F. Mansfield, Centerville, Ogn.

PROPOSALS FOR THE CONSTRUCTION
OF THE
New Odd Fellows' Hall.

SEALED BIDS WILL BE RECEIVED AT THE OFFICE OF The Odd Fellows' Hall Association of San Francisco, Room No. 1, Odd Fellows' Hall, No 325 Montgomery street, San Francisco, up to and until 12 o'clock M., of

FEBRUARY TWENTY-SEVENTH, 1884,

For the erection of the New Odd Fellows' Hall, on the lot on the southwest corner of Market and Seventh streets. Bids to be received for the separate trades, as follows:

No. 1—Brickwork.
No. 2—Carpenters' and Joiners' Work.
No. 3—Granite and Freestone Work.
No. 4—Cast Iron Work.
No. 5—Wrought Iron Work.
No. 6—Tin and Slaters Work.
No. 7—Plumbers' and Gasfitters' Work.
No. 8—Plasterers' Work.
No. 9—Painters' and Glaziers' Work.

The plans and Specifications of said building can be seen at the office of Messrs. Wright & Saunders, No. 418 California street, and will there be open to public inspection after the date hereof.

The successful bidders will be required to furnish bonds, satisfactory to the Board of Directors, for the faithful completion of the work in accordance with the plans and specifications. The Board of Directors reserve the right to reject any or all bids.

C. T. FIDWELL, Secretary
of the above-named Association.

San Francisco, January 26, 1884.

MARKET REPORTS.

LUMBER—*Pine*

Common Rough, up to 40 feet, per M feet		$22 50
" 41 to 50 " "		23 50
" 51 to 60 " "		24 50
" 61 to 70 " "		26 50
" 71 to 80 " "		28 50
Refuse Rough		18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.		
No. 1 Flooring, 6 inches and over, "		33 50
" " and under, and 1¼x4 and 1¼x6		
Flooring and Stepping		40 00
Rough Clear for Flooring, $1 less than above rates.		
Second Quality Flooring and Stepping	per M feet	28 50
Ship Plank, Rough	"	28 50
" Planed 1 side	"	32 50
" " 2 sides	"	35 00
Deck Plank, Rough	"	33 50
" Dressed	"	37 50
Laths	per M	3 75
Wool Slats	"	10 00
Shakes	"	12 00
Redwood Posts	per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2,	"	35 00
" Under 10 feet	"	36 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" " 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 50
Battens, ½ inch, lineal feet	"	1c

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The California Architect and Building News.

VOLUME V.
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Each subsequent insertion according to agreement.

A square is seven-eighths of an inch in length by width of column.

Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

OUR COMPETITION PLANS.

Notice to Competitors.

All competitors are notified to have their plans at the office of this journal on or before the first day of May, 1884.

The meeting of the San Francisco Chapter of Architects will be held on Friday evening, May 2d, and it is necessary that all plans should be laid before the committee at that meeting.

Parties living outside this city will please take notice that plans should be sent so as to reach this office not later than above date.

Our Building Interests.

REVIEW OF THE FIRST QUARTER OF 1884.

THE first quarter of this year, ending March 10th, having now closed, a review of the *facts* of the past, and the *probabilities* of the future may be intelligently indulged in. With the close of 1883, and the advent of its successor, the feeling and sentiment was universally in favor of great things in the general prosperity of the State, and particularly in the building business for 1884. But as January advanced with scarcely a shower of rain to keep up and strengthen the hopes inspired by and founded upon the prevailing solid financial and business conditions generally, the shadow of doubt gathered around many, and—"the country is ruined for want of rains," was heard almost everywhere. But a kind Providence, in due and acceptable time, washed away all the thousand evils that had seemingly been gathering, and by copious showers, during the latter part of January and in February, watered the face of the earth throughout our fair State so generally and bountifully that, with the advent of the second month of the quarter, the spirit of rejoicing returned, and all hearts were made glad; and March, with its transcendently lovely weather—unsurpassed by Italian skies and breezes, finds the people of the entire Pacific Coast in a most happy and hopeful frame of mind, not one seeming to fear but that a season of unprecedented prosperity is before us, and that none who may live in health until the year closes will have reason to complain that the good angel that distributes the bounties of successes has passed any by, without bestowing the rewards due to each, according to his diligence in business, and prudent use and manipulation of the opportunities that will have been within his reach. But what of the three months past? They have been excellently prolific in building activities—season considered—as far as actual operations are concerned. But there is more than this to the credit of the first quarter. It has been the seeding time in fields architectural, in which the germ of many of the activities of succeeding months have been planted. At present the tide of business is at its ebb, with still smooth water. Soon the flow will be inward and upward, and ere long the rushing of the tide will call into active service every man and lad within the boundaries of our State, willing to labor, and that, too, at remunerative rates of wages. We are confident of more; there is not sufficient labor force in California to supply the demand that is sure to come, and unless an increase of competent labor shall incline or be induced to come this way, there will be a repetition of what has several times occurred within the past three years—that of signs nailed up on buildings under way, "Carpenters wanted," "Brick layers wanted," etc., and the further resort, under pressures, of bosses offering four bits or one dollar per day advance to draw help from other parties. The future! Just what we have above outlined. There are at the present moment plans matured and preparing for brick structures, which alone will consume all usual supplies for bricks, lumber, and other materials, and give employment to every mechanic willing to work; besides which there are to be hundreds of dwelling houses and private residences erected, all of which combined are bound to lick up all the material and labor that can be introduced into San Francisco.

A NOTABLE SHOWING.

Contrary to the reports given in some of our local journals, the present quarter shows a remarkable degree of activity. In spite of the rainy weather experienced, it will be noticed that but two months in the year 1883 exceeded the present month in the number of new buildings and improvements started.

SUMMARY.

January, 1884,	30 frame buildings, value,		$176,600
	1 Brick building,	"	5,400
	14 Alterations	"	44,115
February, "	36 Frame	"	112,650
	3 Brick	"	179,700
	5 Alterations	"	37,200
March, "	98 Frame	"	291,150
	3 Brick	"	128,500
	8 Alterations	"	39,000
Total			$1,014,315
To which should be added, for repairs, alterations, extras, etc., 5 per cent.			50,715
			$1,065,030

Making a grand total for first quarter of 1884

198 Buildings, of Value of $1,065,030.

This is the most remarkable showing ever given for a similar period in the history of the city.

For the same period in 1883, we find

153 BUILDINGS OF VALUE OF $904,489.

When it is taken into consideration that the weather has been such since the beginning

of the year that hardly one-half of the time could be utilized for building operations, the above synopsis is very favorable, and is a criterion to judge of the future.

THE BRICK DEMAND.

From present indications, the coming season will be one of unusual activity in the erection of brick buildings. There is a superabundance of capital in search of profitable investments, and since the rush for railroading, mining, and stock operations has, in a great measure subsided, this by no means new field, that of building, affords the greatest attraction, holding out, as it does, the assurance of a fair return on the investment, and almost absolute security. The substantial appearance and increased security against fire, of brick compared to wooden structures, will tend to increase the demand for brick and other clay products that enter into their construction. Terra cotta is coming into a more extended use, and as it is claimed for it, absolutely fire proof and indestructible by time and weather, we apprehend it will not be long before all the ornaments and trimmings on the outside of brick buildings will be made of that material.

Our brick manufacturers are even at the present time very busy, and many have their whole year's product already engaged. Pressed bricks from San Jose are now coming into prominence. We would suggest to the manufacturer, that it should be his endeavor to manufacture his brick as nearly as possible of the size of the rough brick generally used in buildings, on account of keeping the courses as nearly even as possible, where pressed brick are used on the face of a building and rough brick for backing.

BUILDING ACTIVITY GENERAL.

From every portion of the State we hear of increased activity in building circles. The immense amount of money necessary to repair damages to the bridges, railroads, etc., in the southern part of our State, will cause great activities in the localities affected.

In this city, a review of last year's summary will show that an unusual large number of small buildings was erected by the laboring class of our population, and with the bright prospects now appearing, we think the number will be largely augmented this year.

AN imitation of and substitute for mahogany, useful in fine manufactures, is due to French ingenuity. The first operation is to plane the surface of any species of close-grained wood until it is perfectly smooth, and it is then rubbed with diluted nitrous acid, which prepares it for the materials subsequently to be applied. These consist of one and a half ounces of dragon's blood, dissolved in a pint of spirits of wine, and one-third of that quantity of carbonate of soda, mixed together and filtered, the liquid in this state being rubbed, or rather laid upon the wood with a soft brush. This process is repeated with very little alteration, and, in a short interval, the wood possesses all the appearance of mahogany.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting was held in the rooms of the Art Association, on Friday evening, March 7th. President John Wright in the Chair.

The minutes of the preceding meeting were corrected so that the report of the committee appointed to wait upon the Pioneers should read as follows:—

The Pioneers were willing, through their committee, to adopt the suggestions advanced by the Architects, with the exception of the one relating to the value of the premiums. This they had no right to alter.

A committee—Messrs. Wilson, Gray, and Kean—from the Master Plumbers' Association, being in waiting, they were accorded a hearing. The Chairman of the Committee, Wilson, asked the Chapter to consider the following propositions: That all members of the Chapter be requested to include all sewer work—iron-stone pipe included—in the plumbers' specifications. It was claimed that defective sewer work very frequently occurs in sewerages, producing offensive results, for which plumbers receive censurse; and that in some cases it has become necessary for plumbers to tear out the whole of the work done to obtain proper drainage, all of which, it was claimed, might be avoided, if the whole of the pipe work of buildings, sewers included, was placed in the hands of the plumber, who would then become the responsible party for the sanitary conditions of buildings. The committee also urged that the segregation of the plumbing work, and its letting by separate contract be made the rule.

The committee then withdrew, and the regular order of business was proceeded with.

The committee appointed to secure a seal for the Chapter reported that it would be done in a few days. Extra time had been taken in order to present a seal that would have artistic merit in its design.

Committee in regard to competition, and the rules governing the same, requested further time.

L. Stone was elected a student member. Propositions received from C. I. Havens as a fellow, and L. M. Turten as a student member. Referred to Messrs. Curlett, Pissis, and Henriksen.

A motion was made that a committee be appointed to prepare a blank indenture and articles of agreement between architects and pupils, and their parents or guardians, so that all architects could use the same form in regard to articled students. The said form to contain specifically the rates paid to the students during their apprenticeship.

The motion was unanimously adopted, and Messrs. Curlett, Sanders, and Pissis appointed as such committee.

Resignation of Joseph Gosling received and accepted.

The subject introduced by the Master Plumbers' committee was then taken up, and received a thorough and general discussion from all the members present.

It was not deemed advisable that plumbers should undertake to do work properly belonging to the mason. Cement or iron-stone pipes had to be laid by one familiar with the use of the trowel. In many cases a brick sewer was laid from the main to the edge of the sidewalk, and, in this case, it would be taking from one trade in order to swell the amount of contract of another.

The report of the Plumbers' committee was also deemed a reflection upon the architect. The latter always required a sewer to be left open until inspected, and the plumbers, by claiming that sewer pipes were not graded to correspond with their work, deflection of pipes being such that joints were sometimes broken, ends of the pipes not filled properly with cement, thereby causing in a short time offensive smells to permeate through the ground, etc, etc., placed themselves in a position as a superior in judgment to those whose duty it was to superintend every portion of the building.

It was the sense of the Chapter that the sewer work rightfully belonged TO, and should be done BY the mason.

A motion was made and unanimously carried, that hereafter all trade organizations or associations desiring to make any complaints or state any grievances, must do so in writing, the same to be handed to the Secretary before the regular meeting of the Chapter.

A short discussion then ensued upon some of the provisions of the fire ordinance. No action taken in regard thereto.

Motion made and carried that hereafter all members who are in arrears one year's dues, after receiving notice from the Secretary to pay the same, and failing to do so, shall have their names stricken from the roll until all such arrearages are paid.

Adjourned.

The office of the Secretary of the Chapter is located at 240 Montgomery St., Room 11, San Francisco.

Master Masons.

SINCE their organization upon the basis of being entitled to *original contracts with owners* in all sums exceeding $300, they have managed their interests intelligently, standing by the rule adopted, and the rule working no hardship. In our own case we have managed in this way: When the amount of mason's work has exceeded the limit in the erection of frame buildings, where the mason work has been scarcely sufficient to justify segregation, viz., to have the carpenter draw an order upon the owner for the sum of mason's estimate, say $325 or any other amount, made payable out of the respective payments as written in the carpenter's contracts, and the owner upon this order entering into a separate agreement to pay the mason, all of which can be accomplished with but little tax upon the time of any *good natured* architect or any one else.

We certainly favor the position assumed by the master masons, for the reason that if the combining of all branches in one contract is an advantage to *one man or firm*, the contractor, that advantage is secured at some sacrifice to sub-contractors' interests, who are under such circumstances placed at the greater disadvantage of more unequal competition and sometimes questionable manipulators, in the handling of bids, while bidding in the usual way, as first contractors, offers greater security as to fairness and equality of competition, as it but seldom happens that either owners or architects seek or permit bids from, or are willing to let work to doubtful parties, and it is a matter of no little interest and importance to architects to have all work fall into the hands of competent men.

Besides all these considerations, the effect of raising the mason's trade from sub to original contractors, will be decidedly good and manifest upon the masons as a class, as it will remove every feeling of subserviency and awaken and inspire the better and more manly feelings. The fact needs no argument in support; men as a rule are influenced in every way by the circumstances surrounding them. However great and good, however intelligent and masterly a man may be, these qualifications and attainments may be improved and enlarged by surrounding conditions and influences. And so in mechanical life. All that tend to lift up and develop the better qualities are the points to be desired.

Shyster Architects.

WE know of no more appropriate term to apply to that class of individuals who infest, and by their dishonorable and unprincipled acts disgrace the Architectural Profession, than that of shyster as defined by Webster's unabridged.

A CASE IN POINT.—A firm of architects in this city was introduced to an owner who contemplated the erection of a building to cost about or rising $4,000. Satisfactory arrangements were at once made, and the order given to prepare the preliminary sketches, the purchase of one of two lots in view depending upon suitableness of plans to lot. Consequently accurate plans in full were prepared, and the lot purchased accordingly. After the purchase, information of the fact was communicated to a firm of two, who reached this terrestrial state of existence through the same parental channels, by a member of the real estate firm selling the lot. As in all such cases the soliciting member at his earliest convenience hastened in search of the purchaser, and by his usual misstatements of "we can build houses cheaper than anybody else, especially architect number one," and his misrepresentations of others, endeavored to secure an engagement, after being told by the purchaser that architect one had been engaged. Several other turns were afterwards made to humbug the owner of the lot, and take the job away from the parties whose plans had been accepted and approved before the **MIS-delineator of Eastlake** knew that the owners in question lived. But to "make a long story short," we give the final, the more disgraceful and morally and professionally dishonest part of the transaction.

The plans adopted were estimated upon, and, the result exceeding the limits, the specifications were modified, and the price reduced by a second competition of eight competent contractors to $4,434, which proved acceptable to the owners; but a delay in commencing construction occurred by reason of title searching and money matters. It seems to have occurred to the marauders upon other people's rights, that the opportunity was open for another "dirty piece of work," and so the owner was again sought, and the *lie* repeated that "we can build you a house cheaper than number one," while in fact their knowledge of the building science and of proper construction, if no better was possessed by, would reflect no credit upon the intelligence and mechanical smartness of any apprentice boy of three years' service at building trade. And further said he to the owner—the words may differ but the sense is *exactly* the same—"We are going into the business and need the influence of your building. Mr. ——, number one, is about the oldest architect in the city and don't need your work. If, therefore, you will dismiss number one and pay them $90.00, we will build your house at a cost of $3,800, and charge you but 2½ per cent., out of which we will return or pay the $90.00." The quick discernment of the owner in a moment detected the concealed roguery that was intended, and repudiated the proposition. That rascality was intended is beyond question, for with $3,800 as the cost, 2½ per cent. would return in percentage just $95.00, from which deduct the $90.00 to be paid to number one, and the grand balance of $5.00 for plans, the specifications, superintendence, and commissions to real estate agent would remain. It is unnecessary to add more, as the unmentioned facts are so clearly transparent that any intelligent owner must readily comprehend them. That there are possibilities of improvement in the practice as architects, is altogether likely, but we question whether the science will ever reach a level at which $5.00 will be considered a fair compensation for architectural services and outside commissions on buildings costing $3,800, with the slightest tincture of professional integrity and honesty attached. What we have said is from personal knowledge, being one of the interested parties.

Bancroft's Histories.

ELEVEN volumes of this work have been completed. Interest grows with each succeeding issue, as the times and incidents approach within the memory of many now living. No student can afford to be without this set of works. It will comprise thirty-nine volumes. Prices can be obtained at the office of this journal.

Separate Contracts.

THE plumbers appeared by committee before the Chapter of Architects at its last session, asking among other things that the segregation of the plumbing work of buildings be made the rule. This request should have been qualified by saying that several of the architects in San Francisco have for years pursued just that course, and credit should have been given to those who have for so long a time practised the segregation plan.

As interest dictates, arguments run pro and con among original and sub contractors; so that architects and owners must judge and act for themselves. It would involve great trouble and distraction if *all* the branches were to set up the same claim, and refuse to submit to sub contracts.

The principal contract should carry all except the more prominent branches, if not all. The plumbing and painting may consistently be segregated in moderate cost houses, and in better residences the plastering also may be separated. In brick buildings three separate contracts are feasible, to wit, mason, carrying the grading, sewerages, etc., the iron-worker, and carpenter, the latter comprehending all not included in the mason's and iron-worker's branches. The plastering and cement work also is frequently of such magnitude as to justify segregation. But in all such matters if each architect and owner will act just as he sees fit, and let matters be arranged as they may, there will always be found those who will be willing to accept sub contracts, situations and conditions.

Obscuring Glass.

THERE are many ways of accomplishing this, some of the plans making the glass permanently frosted, others only temporarily so. For permanence, take a flat piece of marble, dip it into glass-cutters' sharp sand, moistened with water; rub over the glass, dipping frequently in sand and water. If the frosting is required very fine, finish off with emery and water. As a temporary frosting for windows, mix together a strong, *hot* solution of Epsom salts and a clear solution of gum arabic; apply warm. Or use a strong solution of sulphate of soda, warm; and when cool, wash with gum water. Or dab the glass with a lump of glaziers' putty, carefully and uniformly, until the surface is equally covered. This is an excellent imitation of ground glass, and is not disturbed by rain or damp.

Sensible Building.

THE Egyptians of to-day commence the building of a house by tracing an outline plan on the ground with plaster, and a very sensible way it is, too. No danger that the front steps will over-reach on the sidewalk, nor the rain from the roof slop over upon the neighbors, because the plan is too big for the lot.

Science of Carpentry, $5.00.

New York Notes.

BY A. CURTIS BOND.

I CANNOT refrain opening my letter this month with a reference to the intolerable weather we have had to endure for the past four weeks. It has indeed been unprecedented in New York experience, and singularly enough, instead of wasting its strength as the weeks have gone past, the storm has positively seemed to increase in violence and wickedness, until to-night its fury appears to be fully developed into a tornado of the most cyclonic proportions and of sufficient force to blow down a row of three unfinished houses in the upper part of the city. Whether the comparative ease with which these buildings were destroyed, or rather thrown to the ground, reflects upon the character of modern building, I will not undertake to say, but it is merely a repetition of what has occurred heretofore in some of our principal streets. Not long ago four dwellings, quite pretentious in their size and appearance, and completed above the third floor, succumbed to a "Nor'easter," and were scattered pretty well over the best part of a block.

Naturally, during this stormy spell, outside work upon all sorts of edifices has been at a standstill, and no practical advance has been made in any of the many buildings which are about beginning, or are just beyond the beginning stages.

Since I last referred to our city architecture there has been very much going on in the way of building, and some of the most prominent houses have been put up. Mr. Charles L. Tiffany, the head of the well-known jewelry firm, has a magnificent and most extensive affair at Seventy-second Street and Madison Avenue. It is evidently in the Venetian style, being perfectly plain and extremely massive. A dark slate-colored stone forms the lower part of the building, and extends up to the third story, beyond which brick is used. In the place of a front stoop, an arched passage or gateway admits one to an open interior court, from which rise stairs to the different flats. The object of the enormous structure is to contain or provide accommodations for the entire Tiffany family, and it looks large enough to do it.

H. G. Marquand, who is known in New York as a director in almost every one of the large corporations, railroads, etc., that center at this place, has just completed a marvelous structure of stone at Sixty-eighth Street and Madison Avenue, and, it is said, is having it decorated at an expenditure of over $100,000.

Mr. Villard had not quite finished his houses when his failure occurred. They are gorgeous buildings, three in number, occupying an entire block, and combining all sorts of accessories, such as a swimming bath, concert room, and a variety of other unusual features.

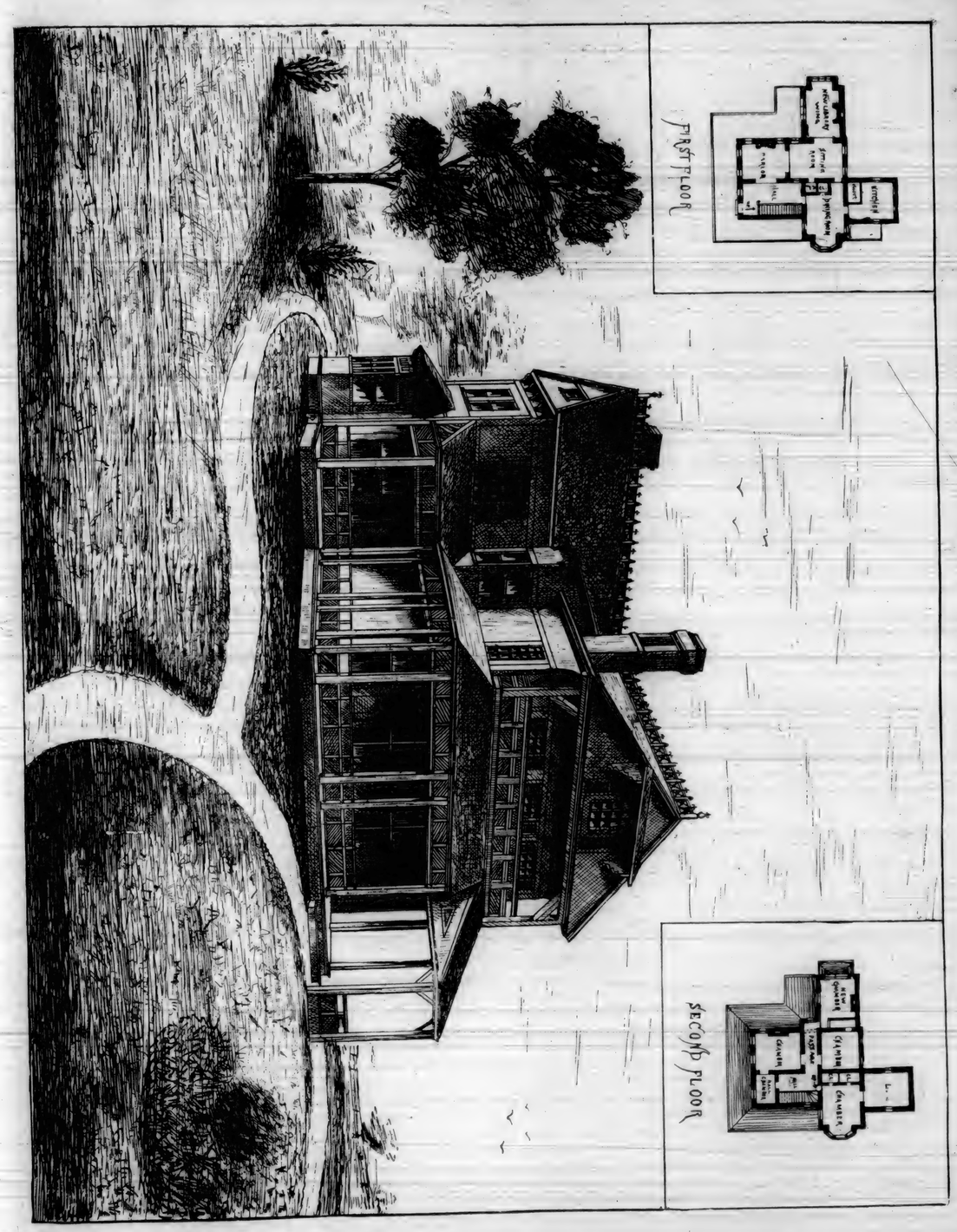
There is a house built some years ago, and still a sight among our local curiosities, known as the Ward House, standing on Forty-seventh Street, a few feet from Fifth Avenue, the fashionable quarter of the metropolis. It is a low and long building somewhat after the principle of the English country halls or palaces, has a very extensive park around it (ground worth $10,000 to $30,000 per lot of 25x100 feet), with trees and fountains, and within the walls of the building itself is a theater, a swimming bath, a raquet court, and a multitude of other "queer" things.

There has been much attention given the subject of the protection of buildings from lightning. The approach of the season when the danger from this form of accident is the most threatening, has no doubt brought the matter more directly to the notice of our architects, and, singularly enough, a difference of opinion has arisen upon the very last point, it would seem to the non-scientific, that could possibly be raised, and that is the direction in which lightning strikes, whether downward from the clouds, or, having descended to the earth, it strikes the building from below and travels upward again. The downward course has the majority of adherents certainly, though those advocating the upward tendency are numerous and persistent, and fortify their position with such reasonable argument as to be, in a measure, conclusive. The result of the discussion thus far has been to establish the necessity of four qualities in the rod, (1) size, (2) continuity, (3) earth contact, (4) pointed summit. The first requires that sufficient capacity should be assured for the accommodation of the electric fluid; the second, that continuity should be absolutely perfect, joints avoided as far as possible, and when unavoidable that they should be well soldered; the third and probably most important is that the rod should terminate in a mass of metal and be implanted in earth permanently damp; and fourth, that the summit of the rod should be a point, short and thick; too sharp a point is readily fused, while one that is too blunt has not sufficient conductive power.

I don't know but that I have dwelt rather more upon this subject of lightning than may be thought necessary, although it is one so fruitful of mischief and full of destructive elements as to make it of interest, I should think, to every architect.

A rather singular case with an unusual (for this country, at any rate) termination is reported from Belgium, where the architects of a large building brought a suit in copyright against the proprietors of a local paper for publishing without their permission an engraving of the building designed and built by the architects in question. The paper claimed that inasmuch as the building was completed, stood upon a public street, and was freely open to the public for inspection, it became, in a question, public property, and therefore they were entitled, or at least excusable, in reproducing it. The judge thought otherwise, however, and compelled the paper to print an apology and pay the costs of the action. I would not undertake to question the justice of this decision, for I do not feel qualified to do so, but I fear if the law prevailed here, it might be taken advantage of to such an extent as to put illustrations of this character almost under a ban.

A very decided movement has been made to improve the condition of the tenement houses of this city. Attention was publicly called to their absolute unfitness as dwellings, by Pro. Felix Adler, the young liberal preacher, who went out from Judaism and established an independent and entirely unsectarian organization for rational preaching and good works among the poorer classes. His weekly discourses are attended by many of the prominent and intellectual people among us, Jew and Gentile alike, and among his other excellent endeavors, this latest one of reform in tenement existence is certainly worthy of all the support it is receiving. He has finally persuaded our lethargic city government to take hold of the matter, and it begins to look as though the miserable rookeries and sinks that have been a disgrace ever since this island was called New Amsterdam are about to be cleaned out and renovated. A law was passed not long ago, making it necessary that the plans of all proposed buildings be submitted to the Board of Health, and that Board would determine as to the sanitary prospects of the building, its air, ventilation, cleanliness, its strength, safety, etc. So the more recent buildings combine most of the modern improvements, and objectionable features are not permitted to intrude. The difficulty is with those tenements which have been made from previously private dwellings or warehouses. Lacking the conveniences for the accommodation of masses, they have degenerated into pestilential spots, from which originate seven-eighths of the violence and crime to which we are subjected. In contending with this, Professor Adler has had, and the Board of Health will have, not only the opposition of the owners of the property who naturally are opposed to any compulsory expenditure of capital, but actually the opposition of the tenants who have, as a rule, become so accustomed to the degradation and filth of their surroundings as to object to any change for their seeming improvement. The depth to which the worst element of New York's population has sunken, is almost beyond belief to one who has had no opportunity of visiting their living-places. Four families living in one room is by no means an uncommon incident, and it can be readily understood that the atmosphere in these buildings is almost overpowering. Public baths have been established, hoping to encourage these people in cleanliness, but the effort has been fruitless; the baths are patronized, but not by this class; shop girls and the great family of working men and boys throng the baths, together with newsboys and bootblacks. The criminal mass is not found there, however; the stagnant, dirty, those who waste their time in these miserable tenements, smoking, gambling, murdering, never take the trouble to remove their clothes; certainly, they would scarcely attempt to bathe. So it is necessary, if any-



COTTAGE DESIGN.—NEW YORK ARCHITECTURE.

FRONT ELEVATION OF A COUNTRY DWELLING, COSTING ABOUT $2,500.

thing is to be done to better this condition of affairs, to do it forcibly, and this is now being attempted. The disposition to visit these low places has become very marked, and parties of ladies and gentlemen are made up to take a tour of the "dives" and under-ground resorts of the lower wards. The recent expeditions of the Prince of Wales through the slums of London have served to popularize this sort of entertainment in England, although the residents of the localities in question are said to resent the intrusion with considerable warmth, increased, no doubt, by the fact that the ladies of the parties wear heavy cloaks to conceal their fine dresses and jewelry. This divertisement is now known as "slumming."

. . . . . .

The cottage I show this month is designed for an inexpensive affair, though combining many excellent features. The exterior arrangement of piazzas and shade is well arranged for summer use, the small balcony from the second story being adapted to pleasant afternoons and protection from the sun. In studying the plans, shown at the upper corners of the plate, it will be seen that each room has one or more windows, insuring thus perfect light and ventilation. The plans show the wing that may or may not be attached to the house proper. The rooms in this wing have been designated as "New Chamber," "New Library."

Estimating Quantities of Paint.

IN a former paper we attempted to offer some suggestions on the measurement of surfaces; our attention may now properly be given to the consideration of some of the causes of variation in estimating quantities, some of which seem to be entirely lost sight of, and others are only partially understood.

Nature of Surfaces.—On all wooden buildings there are places more or less numerous which cannot be reached with a brush, so that the paint applied can be spread with the same care than it can on the more exposed portions. The edges of the siding, the joints and cracks between boards, the almost inaccessible portions of brackets, scrolls, latticework, and other ornamental parts, absorb a much greater quantity of paint than an indifferent or inexperienced person could easily guess, and unless some allowance is made for them, there is quite likely to be disappointment. Old buildings which have been allowed to stand many years without painting usually have a rough and peculiarly absorbent surface, caused by the swelling, shrinking, and decay common to wood unprotected by paint. This will apply even more forcibly to buildings which have never been painted. On new buildings, also, there is a great difference between the quality and finish of lumber, which the painter would do well to note—some being extremely shaky and porous, and perhaps poorly planed, while others present an entirely satisfactory surface. Brick buildings present some quite noticeable variations, both in the material of which they are made and in the quality of the mason work. Some brick have a hard, smooth surface; others are soft and porous. The hard brick are much more durable, and of course require less paint to cover them.

The same general hints will apply to interior surfaces. Allowance must be made for the finish of walls which are to be painted. The rough walls now preferred by many on account of their durability, require a great deal of paint and sometimes a coat of glue size between the first and second coats of paint, to give them anything like a fine appearance. On interior woodwork, elaborate architectural features, in the shape of mouldings, panels, cornice, continuously projecting and receding, with very little really flat surface, much more time and material are required to suitably finish them than plainer work.

Mismeasurement.—Without a proper basis for calculating quantity, it is impossible to be accurate. If some portion of a building has been carelessly omitted from an estimate, if a blunder has been committed, if proper allowance has not been made for trimmings and surfaces, it will be impossible to secure an accurate estimate. It will be well to add ten per cent. to the quantity determined upon on the basis of measurement to cover contingencies. It is better to have a little paint left after a job is done than to run short.

Climate.—The state of the weather affects the covering qualities of paint, on account of the susceptibility of oil to cold and heat; hence more paint will be required to cover a given surface in cold than in warm weather.

Manual Skill.—Besides the difference in surfaces and conditions, there is quite as marked a difference in the skill of workmen. A strong, active man who handles the brush in a masterly way, making telling strokes without waste in laps, will make paint go further and do better work than a weak or an indolent man or boy. The idea that men who are equally proficient at the dinner table are in all other places, is not a correct one to be guided by in selecting workmen. Skill is nowhere more valuable, and in few places more economical, than among painters.

Paint.—The quality of paint determines in a measure its covering power. That which is made of pure linseed oil, properly mixed, and of the right consistency, possesses the greatest covering power as well as the best preservative qualities, and it is to paint of this kind, as distinguished from cheap alkali paints, that our remarks are designed to apply. If these hints are duly considered in estimating quantities, we think that the apparent inconsistencies of the claims made for the quality and covering capacity of good paint will not seriously puzzle unprejudiced minds. Every man ought to know that it will take more paint to cover a rough surface than a smooth one, as well as that it will take more strength to draw a heavy load up a hill than on level ground. —*The Painter.*

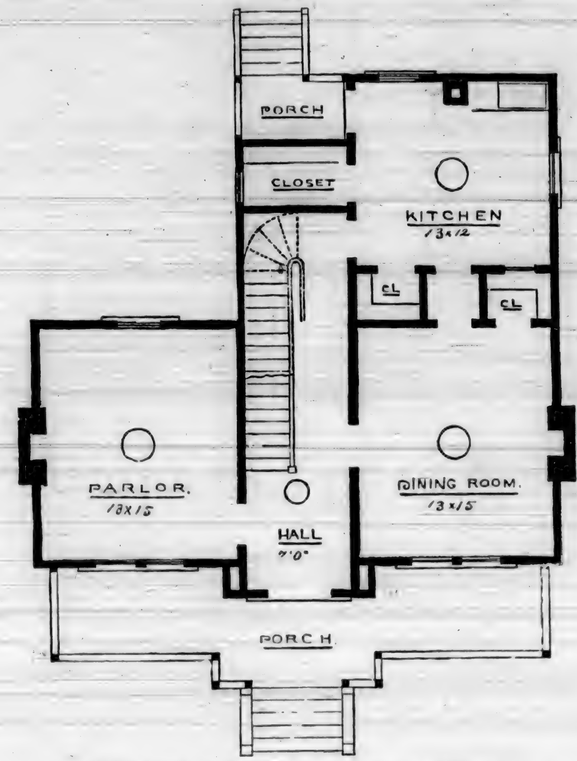
Painters' Measurements.

WE have taken considerable pains to look into the matter of measurement of surfaces to be painted. In addition to our own knowledge, we have inquired of practical painters accustomed to estimate on work, concerning their methods of calculation, and we have failed to find any uniform scale or rule by which to measure surfaces. Nearly all master painters have a basis of calculation, but the accuracy of their estimates depends so much upon personal judgment as to the nature and extent of variations, that their methods would be useless to persons of less accurate judgment. Besides, the methods vary according to the nature of the work and the training of the painter. No two would measure in the same way, perhaps; yet they might reach precisely the same results. Although it is true that very much depends upon the painter's judgment, we shall try to give a few hints which will be found in some cases entirely trustworthy, and in all helpful.

One way of measuring is to get the number of square feet in the sides and ends of a building as if they were flat surfaces, give a rough guess as to the dimensions of trimmings, etc., and let it go at that. This plan may work well for a good guesser, but for general use it does not prove very satisfactory. Another way on wooden buildings is to measure the length and exposed surface of one strip of siding, count the siding, and multiply the dimensions of one by the whole number on the side or end of a building, and the product will be surface measure; trimmings, etc., are measured separately. This is a better way, but its accuracy depends upon a pretty thorough acquaintance with compound numbers, as dimensions must be reduced to inches, then back to feet or yards, according to the basis of calculation.

Common siding are put on by the carpenter with one board overlapping another, and the lapping edge of the board is raised from perpendicular, so that it presents a diagonal instead of a flat surface, and there is also the exposed edge of the board, about half an inch, which should be included in the estimate. Suppose, now, that the exposed portion of a board of siding is four inches, the usual width, and the edge half an inch, it will give the side of a building just twelve and one-half per cent. more surface than it would possess if it were perfectly flat. Hence twelve and one-half per cent. added to the dimensions obtained by multiplying height and length together, will give the actual surface measure of common siding.

In drop siding, which are frequently used, there is an exposed edge of about half an inch, and about one-fourth inch more surface on the moulded edge than there would be if it were flat, making a total gain over flat surface of three-fourths of an inch on each piece of siding, or eighteen and three-fourths per cent. Hence eighteen and three-fourths per cent. should be added to the dimensions in square feet of the side of a building to get the actual surface measurement for drop siding.



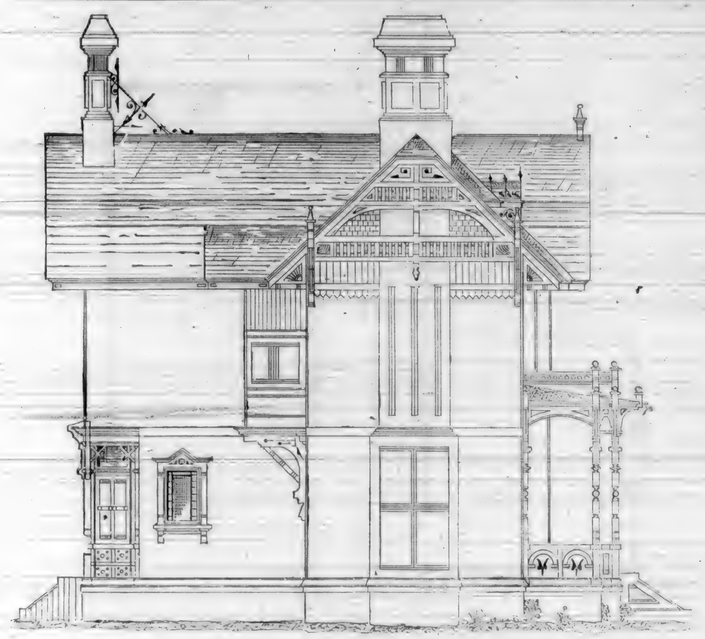
FIRST STORY PLAN OF $2,500 COUNTRY DWELLING.

In measuring the gable ends of ordinary buildings, the dimensions should be one-half less than actual square measure. For instance, the end of a building is twenty feet wide, and it is ten feet from the level of the frame plates to the point of the roof, multiply the width, twenty feet, by one-half the height, five feet, and we have one hundred square feet, total surface of gable end. This rule will not apply to buildings with very steep roofs, nor to cottage structures with a number of small gables.

Measurement of sides of buildings solid without deducting openings, like doors and windows, would probably average well as a basis for determining the quantity of paint required. Windows vary in size, and some frames and casings are elaborate in design, while others are quite plain. For good-sized windows, with very plain frames, about one-third less than solid would be a safe calculation; while for others, with heavily moulded caps and wide casings, with perhaps narrow openings, a solid surface estimate might fall a little short. These variations must be duly considered and calculated for by the painter. Cornice and trimmings should be measured separately. If there are panels with beads and other projecting and receding features, brackets, etc., carefully measure one of each, count the number on the building and multiply by the dimensions of one, and the product will be the total dimensions. Open brackets on cornices and scroll and lattice work on verandas, should be measured solid, as the edges fully make up for open spaces. The utter lack of uniformity in house trimmings compels more or less reliance upon the judgment of the painter in measuring them. We can suggest no rule for measuring which can be used with satisfactory results in all cases. What would be admirably suited to one building would be wholly unadapted to another, simply because the architectural features are unlike. Here there is no alternative but to exercise judgment in considering these important features.

In calculating the quantity of paint required upon the basis of surface measurement, from twelve and one-half to forty per cent. should be allowed for trimmings, etc., according to their size and shape. For plain work from fifteen to twenty per cent. will be found a fair average. This depends, however, upon the number of windows, style of frames, etc. We do not announce this as a positive rule.

On Queen Anne structures, which are



SIDE ELEVATION OF $2,500 COUNTRY DWELLING.

painted with two or three body colors, and are burdened with numerous and elaborate trimmings, calculation must be made of the portions of the buildings to which the different body colors are to be applied, either by divisions of total measurement, or by separate measurements, and the trimmings considered separately.—*The Painter.*

The Art of Picture Hanging.

How to hang pictures so as to prevent their killing each other or being killed by their surroundings has ever been a difficult matter. In a collection it is impossible that all the pictures should be hung in a row nearest the natural range of light. Yet even having this manifest advantage, killing is frequently effected by adjacent contrasts of color. It is related of Turner that he did not consider his labors over when he had sent his pictures to the exhibition; he would wait until the hanging committee had done its work, and then on varnishing day would by a few magical touches so alter the tone of his work that all the neighboring canvases looked like foils carefully arranged to set off this one particular picture in the whole room. "He had been here and fired off a gun," said Constable on one occasion, when he found that the introduction, at the last moment, of a bit of scarlet into a gray sea-piece of Turner's had completely absorbed the color of his own picture.

For home decoration great care is required in the hanging as in the purchase of pictures. In selection the purchaser must be guided first by the size of the room. What appears mellow and harmonious in the great gallery will seem full of harsh outlines and discordant blotches of color when hung in the modest parlor where proper focal distance cannot be obtained. The size of the room and the color of the room must not violently contrast with the color of the picture. For instance, if a painting rich in reds and yellows of a tropical sunset is hung in a room lacking in bright color, its reds and yellows will glare with terrible fury; and a picture which is subdued in tone will have all its depth of color absorbed, leaving it gray and chalky, if placed in a position with warm surroundings. Even if picture and room are in complimentary tints, there is an art in hanging so that the painting may appear at its best. Generally this effect is produced when it is hung against the wall on a line nearest the natural range of eye. A second picture placed above this line may be tilted also, that the light of day should fall on the same angle as the pictured lights. That is, if the light in the picture appears to come from the right-hand side, the real light should likewise come from the right-hand side. Attention to these details may appear trifling to one who knows nothing and cares little for art, but the care extended will be amply repaid to them in the restful effect gained, while to the cultured, even mediocre pictures may be made to bear a charm that will make their possession a joy forever.—*Cincinnati Building Review.*

The Pavement of Workshops.

DR. KOCHLIN-SCHWARTZ notes the existence among certain workmen on the ground floors of factories, of a distressing though not painful œdema of the legs, which seems to be dependent in no way upon gout or rheumatism. The disease has only existed since the wooden flooring formerly in use was removed, although now the workmen have shorter hours and live under vastly superior hygienic conditions. The workmen themselves attribute this swelling of the feet and legs to the nature of the pavement. They dread especially asphalt, then cement, next comes stone flagging, and finally bricks, which they prefer to any of the others. It does not seem to be a simple question of standing upon a cold floor, since the brick pavements are as cold as the cement or the asphalt. If there be really any relation here of cause and effect, the evident lesson would be that wooden floors should always be preferred to the more modern style of pavements.

PUBLICATIONS RECEIVED.

Hints on Drainage and Sewerage of Dwellings, by William Paul Gerhard. It has been the author's aim in this new work to give an account of the usual condition in which plumbing work, done years ago—and some done quite recently—may be found, and also to give suggestions on the proper manner of doing the work. Beautifully illustrated, and should be in the hands of every one who desires a thorough knowledge of sanitary matters in connection with their dwellings. **Price $2.50.**

Cummings' Architectural Details. A few copies of this publication on hand. **Price $6.00.**

Modern House Painting. A new edition of this popular work just received. It is much superior to its predecessor. **Price $5.00.**

Plummer's Carpenter's Guide, being a handbook for workmen, also a manual of reference for contractors, builders, etc. **Price $1.00.**

Practical Carpentry (new). Price $1.00.

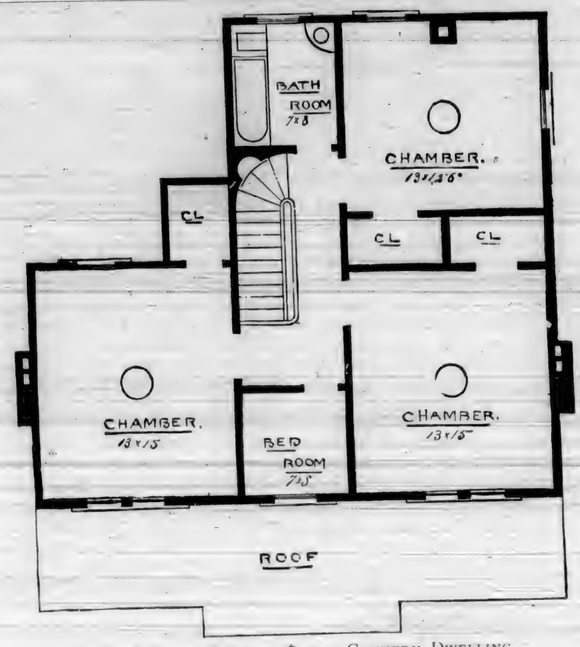
Artistic Coloring on Exteriors.

THE profession of house painting is gradually assuming its proper position in art, but it moves very slowly. This is especially true of that branch of it which pertains to exterior painting. Many painters pay little or no attention to the combinations of color they use on such work, but leave the selection entirely to customers, a course which has many objections. Few of these customers are practical painters, and hence are incompetent to select the colors required to make their buildings look symmetrical and artistic. The painter should get a customer's idea of what he wants and then use his knowledge and judgment in making the proper combination. If a customer thinks some color is not correct which may be proper, pleasantly prove to him it propriety, and he will be satisfied and places confidence in the painter's ability and judgment. But if painters persist in yielding every point, through fear of giving offense, they can hardly expect to win the confidence and esteem due to competent workmen. I do not mean that the painter should be dogmatic, or that he should attempt to inforce radical or impracticable views of coloring upon those who may seek his advice; but that his knowledge of the business he follows should be so thorough that

any suggestion he may offer will be entirely consistent with true standards of excellence.

I have seen many houses painted with good combinations of color, which looked poorly on account of the surroundings. The painters employed not having sufficient range of vision to take in the surroundings, the buildings were painted without due consideration of them. This is a common defect. I have also seen houses placed very close to each other, without the accompaniment of lawn or shrubbery, all painted about the same, which is in bad taste. Supposing these houses were painted with a very good combination of colors, the taste displayed is still defective; for a variety of good combinations, one helping the other, would be much better, give better satisfaction to the occupants, and please the passers-by. But supposing the occupants of this row should all decide upon having their houses painted the same color—say, for instance, an olive color—it is quite an easy matter to have them allow of a shade of difference in the color used, provided it is called olive. Now, make one house a little more of the yellow than another, the next a little greener, and another with a brown cast, and by so doing, some of the buildings appearing cool, others warm, and so placed that one is complementary to the other, a very much better effect is obtained than would be the case if all were painted exactly alike. Even in business blocks it is preferable to paint with different combinations of color, as one color helps another, and the peculiar color of a store becomes identified in the public eye with the business and the location. Let a painter but hint at the advantage of this style of coloring as a means of advertising, and see how readily he will be allowed to have his own way.

Another class of houses which has been sadly neglected as to artistic painting is farm-houses. They are generally painted, if at all, simply with a view to the preservation of the wood without respect to artistic appearance. If there is any one place more beautiful than another in this world, it is a well-cultivated farming district dotted with artistically painted farm-houses. The farmer not being an artist, this part of the beautifying process devolves upon the painter, and for humanity's sake, as well as the advancement of his business, he ought to do his best, as there are few men who like to show off their houses, especially if they are beautiful, better than the farmer. There are combinations of color which may be used with good taste on houses in a crowded city, which would be absurd on a farm-house. In painting such a house the sky should be taken into consideration as well as the other surroundings. Houses on the north and east sides of the road or under the cool aspect of the sky, should be painted a warmer hue than those on the south or west sides or under the warm aspect. A house which has elevated land for a background, should be painted a warmer hue than one which has the sky for a background. If olive colors are used, they should be light and of a warm cast. The light, bright, cheerful colors are preferable, as they are in strong, pleasing contrast with nature, which surrounds them on all sides.



SECOND STORY PLAN OF $2,500 COUNTRY DWELLING.

In cities and towns we find many wooden houses situated beside brick buildings, and sometimes between two such buildings. In such cases it is proper to paint the house so situated with a cool color, like olive, bluish gray or any other cool shade that will contrast well with the warm color of the brick house next to it. Where there is a row of dwelling houses to be painted, it is a good plan to paint them in different colors, alternating warm and cold. For instance, paint one red, another olive, another citrine, another of a bluish color, and so on until all have been painted, so as to make a good combination of the completed job. If painted in this way they will look well collectively, and each house will be made to look well by contrast, provided all are arranged as they should be.

There are a few artists among house painters, but the majority of them seem to know very little about the harmony and contrast of color, and what they do know they have learned intuitively from working among colors, not by hard study and experiment. No painter, no matter how good his taste may be for color, can make perfect combinations without making a life study of the subject. In years gone by the study of color has been sadly neglected, especially by those men who are most benefited by it. But the present seems to be making up for lost time. Nearly every scientist and mechanic who knows anything about color is studying and writing for the benefit of others, and the painter of to-day who does not study and read all he can find written on the subject of color, will in a few years find himself far behind the majority of the men working in the house painting business.—*The Painter.*

How Shot Are Made.

A SHOT-TOWER is an immense brick structure, 150 feet high, resembling a light-house more than anything else. Visitors are conducted up a spiral staircase inside, to the top, where a fine view is obtained for miles about, but the view down the inside is not so pleasant. The opening where the shot descends becomes narrower and narrower, until nothing is seen at the bottom but darkness. At the top of the tower are the furnaces for smelting. From these lead is poured into pans, set in the tower, with perforated sheet iron bottoms. The melted lead comes through these holes and enlarges on the other side, forming into globules before it falls down to the well beneath, holding several feet of water. The large shot drop the whole height of the tower to the bottom, but the smaller sizes only about half as far. One peculiar thing is, that small shot generally expand in falling, and the larger sizes contract. Very great care is necessary in mixing the metal, as it would run through the holes and drop in strings if not of the proper proportions, and no shot could be made at all.—*The Manufacturer and Builder.*

Band Saws.

We have recently received from M. Dugoujon Aine, of Paris, a very useful article, giving "Directions for the proper way of using and sharpening band saws." We print it below, for the benefit of our readers, together with the illustrations, which will enable the reader better to understand the directions:—

Considering the many difficulties that have arisen in the use of band saws, "arising for the most part from an imperfect knowledge of how to treat them, we think it not out of place to give a few instructions on this point, the observance of which we judge indispensable to obtain satisfactory results in working. The first thing required of band saws is that they should not break. Band saws, as a rule, do not break because they are too hard, or of inferior quality, or too strong or too weak; but they break because the tooth is an unsuitable one. It is important to make use of such teeth only as from their form will best adapt themselves to the action of rolling and unrolling from one pulley to the other. It is found that it is only every other tooth that breaks, and especially when they are like those shown in Fig. 1.

Fig. 1.

This is accounted for by the fact that the teeth, when set, produce upon the pulleys the same effect as a chain does when running edgeways on a pulley; that is, instead of adapting itself to the pulley and forming a regular curve, it forms a number of short, straight lines as shown in Fig. 2. Each one of

Fig. 2.

these straight lengths out of the regular curve is sufficient to cause a break.

We have said that all sharp angles prevent the proper running of the saw round the pulley, and that the only teeth that are not likely to break are those with the bottom or angle well rounded. It is a very easy matter to make teeth suitable for all kinds of wood and yet fulfil these conditions, as, for instance the tooth shown in Fig. 3. This tooth, when

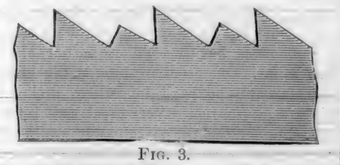


Fig. 3.

properly sharpened, no matter what the size of tooth or space between them, will fulfil the required conditions, whereas 90 out of 100 sawyers will sharpen as in Fig. 4. In this

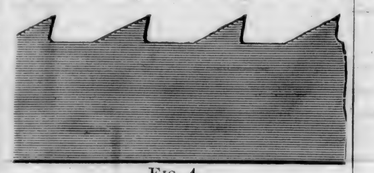


Fig. 4.

case, by the routine of the workmen, the sharp angles are reintroduced, as also the consequent liability to break. But on the contrary, by keeping up the form of tooth shown in Fig. 3, the saw, when heated, will easily stretch without breaking, as the edges present no sharp angles; besides which, the saw adapts itself more easily to the pulley on account of the wide space between the teeth, and so, again, is rendered less liable to break.

As an example to show how easily anything having a sharp angular cut in it will break, you have only to take an ordinary square made of iron, brass, or steel, and pull it in opposite directions by its two extremities, and you will always find it break at the angle, as in figure 5. The same effect is produced on a band saw; it runs downwards, and, the wood being held firm, offers a resistance in the opposite direction; thus the tooth is pulled in the same manner as the square, and, like it, will break at the angle.

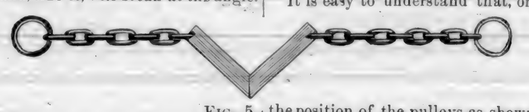


Fig. 5.

In order to keep up the shape of the teeth to Fig. 3, the best way is to grind the bottom of the wide spaces with an emery wheel, equalizing them with a smooth file, and to sharpen the points with a file. Or a diamond-shaped file may be used, as in figure 6. By either of these two methods the use of band saws may be rendered much less difficult and troublesome. Numbers of persons use band saws without having any idea as to the conditions required of the machine to insure proper working, so we will just note them down:—

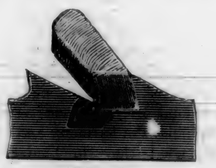


Fig. 6.

1. The diameter of the pulleys should be as large as possible, being however in proportion to the work to be done. 2. The two pulleys and the two guides should be kept perfectly parallel one with the other. 3. The two axles of the pulleys, on the contrary, should be a little wider apart at the front of the machine than at the back, as shown in Fig. 7. 4. In order to run well and easy the back of the saw should always be close up to the flange of

Fig. 7.

the pulley. On this account, and in order to pass smoothly through the guide, it is very important that the saw should be well dressed at the back, but not straight, for a well-made saw is slightly hollow on the back (see Fig. 8).

It is easy to understand that, on account of the position of the pulleys as shown above, the saws should have a corresponding curve. Saws made in the manner indicated, and maintained in the same state, make the work very much easier; the saw wants less stretching and gives a better result, and consequently requires less power for a greater amount of work. By

Fig. 8.

taking care always to use saws sharpened by good workmen and to keep them well sharpened, it will be found that, instead of increasing expense, a great saving may be made, caused by the consequent avoidance of breaks and by the better work and greater amount produced.

One of the most important points in a band saw is a good joint. The following is the best way of making it. First file slightly the two ends to be joined, in order to take off any grease or other foreign matter that may be upon them, but without making them any thinner. Then lay one end over the other as in Fig. 9 and 10, and keep them in their places with two bits of iron wire. Then tie on very fine brass wire, which sprinkle over with borax, after it is bound. Then melt the brass by means of a special forge for the purpose, or with brazing tongs, or with gas

by means of a blow-pipe. But in this last case it would be necessary to have special bellows *ad hoc*, which is not always an easy matter for every one to establish. Brazing tongs will suffice for saws up to 1¼ in., but as a forge is required to heat the tongs, it would be better to use a forge with a double blast, so arranged as to soften only just as much as is necessary for brazing the joint. When the brass is melted, let the saw cool without putting it into water, then tap the brazed part lightly with a hammer, to loosen and shake off the borax; and, lastly, reduce the joint to the same thickness as the rest of the saw, either with a file or an emery wheel.

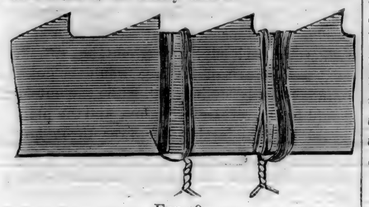


Fig. 9.

M. Dugoujon, in conclusion, states that he has patented a special grinding machine for finishing these joints. By means of this machine the joints can be made much better

and in much less time than with a file, and the expense of the emery wheels is incomparably less than that of files. This same machine with a thinner emery wheel is very useful for gulleting circular saws and for sharpening band saws.—*Timber Trades Journal.*

Removing Spots from Gilt Frames.

Gilt frames are liable to become spotted and look bad, while it is, as a rule, difficult to remove the spots. Rubbing does not answer, for the stain sticks tighter than the gilding itself, and washing is liable to loosen the gilt if put on with gum or dextrine.

The *Papier Zeitung* recommends the following method of renovating gilt frames. It consists in applying with a camel's hair pencil a gum solution to which has been added gold bronze having the color of the frame. Before mixing with the gum water the bronze must be washed with water until it runs off perfectly clear. If one application does not suffice it may be repeated until the spot entirely disappears, but of course one coat must be dry before the next is applied.

Spots treated in this way look very well at first, but it will not last, for it is not able to resist the moisture in the air unless it is specially prepared. For this purpose an ordinary bristle brush is rubbed with a piece of yellow wax until it is somewhat sticky, then it is passed very lightly over the spot several times as when dusting it. This gives it a very thin coat of wax that hardens in two or three days; in the meantime it must be protected against dust.

New Publications Received.

"Hints on Household Tastes." By Chas. L. Eastlake.

A new edition of a popular work by an author that is known in nearly every civilized portion of our globe. We quote from the author's preface the following:—

"Fifty years ago an architect would have considered it beneath his dignity to give attention to the details of cabinet work, upholstery, and decorative painting. But I believe there are many now, especially among the younger members of the profession, who would readily accept such commissions if they were adequately remunerative, and that they might become so is evident from the fact that the furniture of a new house frequently costs as much, if not more, than the house itself. *And when clients lead the way we may be sure that manufacturers will seek assistance from the same source.* Price, $3.00, post paid.

"Album of Mantels, in Wood, Stone, Slate, and Brick."

This new work contains sixty large plates, containing designs for mantels of every description in wood, stone, slate and brick. The author is C. C. Buck, architect. We will mail a copy of this work to any address upon receipt of $5.00.

"Drainage and Sewerage of Dwellings." By Wm. Paul Gerhard.

In this work the author shows the difference between the way plumbing work is done now and that of years ago. All the improved systems of sewerage are clearly illustrated and explained. The advantages and defects of different traps for wash-basins, sewers, water-closets, etc., are treated in an intelligent manner. The book should be in the hands of every one who desires a thorough knowledge of the sanitation of dwellings. Price, $2.50.

"The Air We Breathe and Ventilation."

This book is the second number of the Mott series. The aspirating system of ventilation has been presented to the exclusion of other systems which have been proposed, for the reason that the writer considers the principle on which that system is founded to be correct. Price, $1.50.

"History of Architecture in all Countries from the Earliest Times to the Present Day." By Jas. Furguson.

This work is one that should be in the possession of every architect. Especially should students and draughtsmen secure a copy. Being a reprint of the London edition the price has been materially reduced. Two large volumes, containing over 1,200 pages, beautifully illustrated. Price, complete, $15.00.

"Building Superintendence."

This new work is of invaluable assistance to the architect and builder. It is written by a gentleman long connected with the architectural profession, and is eminently practical in its character. We will send a copy to any address upon receipt of $4.00.

"Buck's Designs in Architecture."

This new work contains over seventy pages of designs for country dwellings, together with plans and estimates of cost—the latter according to New York prices. Allowing for the difference in price of material, a fair estimate may be made for which the design selected could be built on this coast. Price, 50 cents.

"Peck Bros. Illustrated Catalogue and Price List."

This is the finest catalogue we have yet received in the way of presenting a complete list of all the articles used by the plumber and gasfitter. It also contains all the new designs in brass goods, and a very complete representation in the line of copper, iron, and earthen ware, water-closets, traps, etc., etc. It contains about 600 pages, beautifully and artistically illustrated, with the price of each article in all the different sizes. It is issued by Peck Bros. and Co., of New York, R. W. Snow being the general agent on this coast.

Our Exchanges.

We have made arrangements with the editors of the following journals, by which we are enabled to offer quite a reduction to any one subscribing for any one of them in connection with this journal.

(The figures in parenthesis denote the price of the journals alone.)

California Architect and Building News.
Terms, $2.00 per annum.
With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Brick, Tile, and Metal Review* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With Special Edition of *Building* ($5.00). $5.75 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

Theophrastus, a Greek writer who flourished in the fourth century before the Christian era, in a work entitled the "Book on Stones," describes an earthly substance which would kindle and burn, and which was used by smiths. There can be no doubt that he refers to coal, and that this is the earliest passage in which that substance is expressed or mentioned.

A man's labor, well applied, is always amply sufficient to provide him during his life with all things needful to him, and not only with those, but with many pleasant objects of luxury, and yet, further, to procure him large intervals of healthy rest and serviceable leisure.

Steel Sinks.

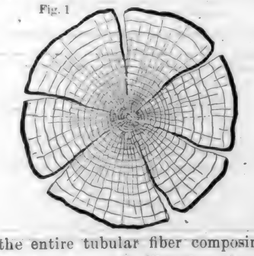
Examine the advertisement on page 8 of this issue in regard to these valuable adjuncts to the conveniences of the kitchen.

How Lumber Shrinks.

A STORY is told by the "Arkansaw Traveler," about the manner in which lumber was "hauled" across the mountains down in his country. "Why!" said he, "they saw it green, leave it in the sun, and off it starts. I have seen a board turn three summersaults in less than a minute, and get to the other side of the mountain before sunset." "What," asked a by-stander, "would be the result if it was attacked in its wild career by a shower of rain, would it come back?" Here was a poser, but the traveler was equal to the occasion and replied: "No, it would turn on the other side and continue its course."

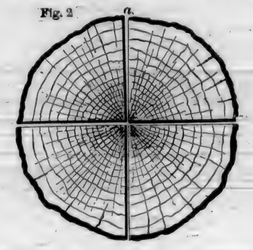
The subject of the contraction of lumber is an interesting one to wood-workers, and the doors and shutters in many of our mushroom cities are said to come off the hinges in retaliation of the persistent disobedience of the natural law of shrinkage. An examination of the end of an oak or beech tree will show the arrangement of its structure. It consists of a mass of longitudinal fibrous tubes, arranged in irregular circles, that are bound together by means of radial strings or shoots, which have been variously named; they are the "silver grains" of the carpenter, or the "medullary rays" of the botanist, and are in reality the same as end wood, and have to be considered as such, just as much as the longitudinal woody fiber, in order to understand its action. From this it will be seen that the lateral contraction or collapsing of the longitudinal, porous, or tubular part of the structure cannot take place without first crushing the medullary rays, hence the effect of the shrinking finds relief by splitting in another direction, namely in radial lines from the center, parallel with the medullary rays, thereby enabling the tree to maintain its full diameter, as shown in Fig. 1.

Fig. 1



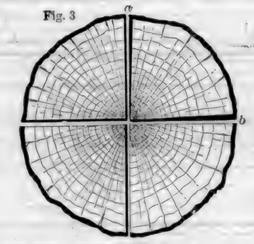
If the entire tubular fiber composing the tree were to contract bodily, then the medullary rays would of necessity have to be crushed in the radial direction to enable it to take place, and the timber would thus be as much injured in proportion as would be the case in crushing the wood in the longitudinal direction. If such an oak or beech tree is cut into four quarters, by passing the saw twice through the center at right angles, before the contracting and splitting have commenced, the lines $a\,c$, and $c\,b$, in Fig. 2 would be of the same

Fig. 2



length, and at right angles to each other, or, in the technical language of the workshop, they would be square, but, after being stored in a dry place, say for a year, it would then be seen that a great change had taken place both in the form and in some of the dimensions; the lines $c\,a$, $c\,b$ would be the same length as before, but it would have contracted from a to b very considerably, and the two lines $c\,a$ and $c\,b$ would not be at right angles to

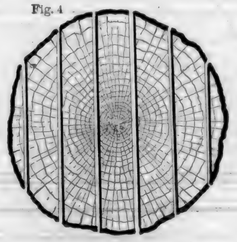
Fig. 3



each other by the portion here shown in Fig. 3. The medullary rays are thus brought closer by the collapsing of the vertical fiber.

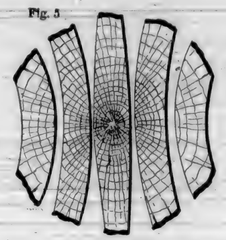
But supposing that six parallel saw cuts are passed through the tree so as to form it into seven planks, as shown in Fig. 4, let us see

Fig. 4



what would be the behavior of the several planks. Take the center plank first. After due seasoning and contracting, it would then be found that the middle of the board would still retain the original thickness, from the resistance of the medullary rays, while it would be gradually reduced in thickness toward the edges for want of support, and the entire breadth of the plank would be the same as it was at first, for the foregoing reasons, and as shown in Fig. 5. Then taking the planks at

Fig. 5



each side of the center, by the same law their change and behavior would be quite different; they would still retain their original thickness at the center, but would be a little reduced on each edge throughout, but the side next to the heart of the tree would be pulled round or partly cylindrical, while the outside would be the reverse, or hollow, and the plank would be considerably narrower throughout its entire length, more especially on the face of the hollow side, all due to the want of support. Selecting the next two planks, they would be found to have lost none of their thickness at the center, and very little of their thickness at the edges, but very much of their breadth as planks, and would be curved round on the heart side, and made hollow on the outside.

Supposing some of these planks to be cut up into squares when in the green state, the shape that these squares would assume, after a period of seasoning, would entirely depend on the part of the tree to which they belonged; the greatest alteration would be parallel with the medullary rays. Thus if the square was near the outside the effect would be as shown in Fig. 6, namely, to contract in the direction

Fig. 6

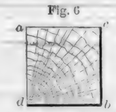
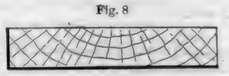


Fig. 7

from a to b, and after a year or two it would be thus, as seen in Fig. 7, the distance between c and a being nearly the same as they were before; but the other two are brought by the amount of their contraction closer together. By understanding this natural law, it is comparatively easy to know the future behavior of a board or plank by carefully examining the end of the wood, in order to ascertain the part of the log from which it has been cut, as the angle of the ring growths and the medullary rays will show as in Fig. 8.

Fig. 8



A plank that has it will evidently show to have been cut from the outside, and for many years it will gradually shrink all to the breadth. While the next plank, shown in Fig. 9, clearly points close to the center or heart of

Fig. 9

the tree, where it will not shrink to the breadth, but to the varying thickness with the full dimensions in the middle, but tapering to the edges, and the planks on the right and left will give a mean, but with the center sides curved round, and the outside still more hollow. These remarks apply more especially to the stronger exogenous woods, such as beech, oak, and the stronger firs. The softer woods, such as yellow pine, are governed by the same law, but in virtue of their softness another law comes into force, which to some degree affects their behavior, as the contracting power of the tubular wood has sufficient strength to crush the softer medullary rays to some extent, and hence the primary law is so far modified. But even with the softer woods, such as are commonly used in the construction of houses, if the law is carefully obeyed, the greater part of the shrinking, which we are all too familiar with, would be obviated, as the following anecdote will serve to show: It was resolved to build four houses, all of the best class, but one of the four to be pre-eminently good, as the future residence of the proprietor. The timber was purchased for the entire lot, and the best portions were selected for house No. 1, but by one who did not know the law, and to make certain of success this portion of the wood had an extra twelve months' seasoning after it was cut up. The remainder of the wood was then handed over to a contractor for the other three houses, who had an intelligent young foreman, who knew the structure of wood, as well as how to obey the law, and who, therefore, had the wood for the three houses cut up in accordance therewith. The fourth house was built the following year by another man; but long before ten years had passed, to the great surprise and annoyance of the proprietor, it was found that his extra good house had gone in the usual manner, while the other three houses were without a shrinkage from top to bottom.

A similar want of correct knowledge of the natural figure and properties of the structure of wood, such as the oak, is constantly shown by the imperfect painting to resemble that wood, as exhibited on doors and shutters of many houses. If we cannot afford to have genuine wainscot doors, as in France and other countries, but yet desire to have an imitation, it should surely be worth the trouble to have a block cut from the quarter of an oak tree, and to have each of its six sides planed and polished, in order to make plain their several features. The house painter would then see what nature really is, and thus save us from the ridicule of other nations, when we mix up "silver grains" and all the other natural features on one side of a board or panel. This is a subject that should interest all wood-workers and builders, and a great deal of attention should be given to the structure of the various woods. It is almost as necessary for a wood-worker to understand the anatomy of his tree, so to speak, as a surgeon to understand human anatomy before he commences to operate. The importance of the subject is therefore obvious.—*The Lumber World.*

*. We are indebted to the editor of the *Lumber World*, published in Buffalo, New York, for this article, as well as the cuts illustrating the same. It is with pleasure that we acknowledge the professional courtesy extended. Trade Journals in every portion of the country, are increasing in influence, and the one from which we produce the above should be found in every Mechanic's possession. The knowledge gained will far over-balance the small amount of money required for a year's subscription.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co's. SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR WEEK ENDING FEBRUARY 5, 1884.

292,987.—SELF SHIPPING BELT PULLEY—H. P. Christie, S. F.

292,992.—ALARM SIGNAL FOR HOT JOURNALS—Cornelius & Turner, Turner, Oregon.

292,900.—VEHICLE GEAR—W. A. Dawson, Stony Point, Cal.

292,910.—CAR COUPLING—J. M. Harper, Colfax, W. T.

292,932.—STEP LADDER—E. Markwick, Pinkney, Cal.

293,069.—HYPOTENUSE CALCULATOR—Daniel Patten, Calistoga, Cal.

293,087.—HORSE POWER—A. Robinson, Benicia, Cal.

293,093.—SCARF RETAINER—J. Sandilands, S. F.

293,104.—SPADING MACHINE—D. F. Spangler, Santa Ana, Cal.

293,130.—SAW—Geo. W. Wills, Portland, Oregon.

293,208.—GRASS COLLECTOR FOR LAWN MOWERS—J. H. Wyms, Oakland, Cal.

FOR WEEK ENDING FEBRUARY 19, 1884.

293,931.—TABLE FOR MANUFACTURE OF CANDY—C A Alisky, Portland, Oregon.

293,841.—FRUIT PITTING MACHINE—Chas. Alison, S. F.

293,932.—DREDGER—H. B. Angell, S. F.

293,627.—FIRE ESCAPE—S. D. Butler, Marshfield, Oregon.

293,853.—PORTABLE RAILWAY—John Dolbeer, S. F.

293,955.—WOOD PRESERVING COMPOUND—H. C. Dorr, S. F.

293,899.—CAR COUPLING—John Martin, Knights Ferry, Cal.

293,667.—SURVEYORS' TRANSIT—Thomas L. Nixon, New Tacoma, W. T.

293,984.—ADJUSTABLE WRENCH—A. B. Smith, S. F.

293,832.—REFRIGERATING CAR AND APPARATUS FOR SHIPPING MEAT—H. S. Widman, S. F.

3,291.—LABEL—Wells & Church, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific Coast Inventors transacted with perfect security and in the shortest possible time.

Brick Fronts.

THE overwhelming desire for a "neat job" has done mischief in brick work. A pressed brick wall is a monotonous thing when brick is used alone. It shows only mechanical precision and exactness, and these qualities become very tiresome when they are exhibited for their own sake and not as means to an end. A slight unevenness in texture and in color helps the look of a wall, and it is the aim of the maker of pressed brick and of the builder to avoid the slightest unevenness. The best-looking brick walls, except in the perverted eyes of bricklayers, are those in which the unevenness appears, that is to say, those which are built, not of pressed bricks, but of common bricks, chosen for color.—*New York Record.*

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In order to promote a general desire to excel among Architects and Draughtsmen in the preparation of drawings for this Journal we have concluded to offer the following premiums for the best 4 designs of a Country Dwelling, the successful plans to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS.

1st, a Cash Prize of $60.00
2d, " " 50.00
3d, " " 40.00
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Notice to Competitors.

All plans to be in the office of the CALIFORNIA ARCHITECT ON OR BEFORE the 1st of May, 1884.

All plans not accepted will be subject to the order of the owner, and will be returned upon receipt of the necessary postage.

We claim the right to reproduce in this journal all drawings of which honorable mention is made, and yet not entitled to a prize.

A *non de plume* to be used on all drawings; a letter to accompany the latter, addressed with the name used, containing also the real name and address of the contestant. This is done solely that the person's name and residence will not be known until the committee have made the awards.

A scale of ½ inch to the foot to be used.

Detailed estimate of cost to accompany the drawings. QUANTITY and PRICE of each material used to be given, so that allowance can be made for difference of price between the various sections of the East and this Coast.

Drawings are to show front, rear, and side elevations, with plans of the different floors.

The value of the house when finished to be ABOUT FIVE THOUSAND DOLLARS.

This competition is open to Architects in every portion of the United States.

Drawings to be made on card or bristol-board; to be line shaded; NO color but JET BLACK to be used.

All competitors will receive one year's subscription to this journal FREE, that they may see the various plans adopted.

The merits of the various designs will be decided by a committee appointed by the San Francisco Chapter of Architects.

All inquiries in regard to the above will be answered by addressing a letter to the office of this journal, 240 Montgomery St., San Francisco.

WOLFE & SON, Editors and Publishers.

Harold D. Mitchell.

THIS gentleman may be justly termed a California educated architect; for, although the principles of the art were first studied in England, it was in this city that he applied them to the practical workings of the profession.

Mr. Mitchell was born in the town of Manchester, England, on the seventh day of April 1854. He early developed a taste for art, and, after passing through a collegiate course, he entered the ROYAL INSTITUTE OF ART in his native city. In this school his ideas and conceptions were moulded in a form in keeping with the high standard adopted by the Faculty.

His aspirations leading him to secure a more extended knowledge of architecture, as practised in different parts of this world, in 1870 he embarked for San Francisco. Shortly after his arrival in this city, he secured an engagement in the offices of Messrs. Wright & Sanders, and for eight years remained with that firm.

Having a strong desire to build up a business on his own account, in 1878 he severed his connection with the firm in which he had so long been engaged, and commenced business on his own account. His personal popularity, aided by a well-earned skill as a designer, enabled him at once to start a lucrative practice, and his success was commensurate with his ability.

Mr. Mitchell has designed many prominent buildings, among which are St. Luke's Church, Court House at Merced, the warehouse of Falkner, Bell & Co., the large buildings used by the Central Gaslight Co., etc.

HAROLD D. MITCHELL.

Mr. Mitchell's business has greatly increased since the beginning of the year, and he has been compelled to seek larger quarters. His offices are now in the Safe Deposit Building, and are fitted up in artistic style. He is a member of the San Francisco Chapter of Architects.

Window Ventilation.

NO TIME could be better than the present for beginning the practice of house ventilation by the window, which is still, in the majority of houses, the readiest and the safest means of obtaining a regular and constant supply of fresh air. The practice, begun in warm weather, may be carried on with proper care through autumn and winter. The constantly accumulating impurities derived from breath, from perspiration, from excreta of other kinds collected in sleeping-rooms, from the use of gas or lamplight, and too often, even now, from suction of sewerage gas from waste pipes by the heat of house fires, etc., render it as necessary for health as for comfort that these should have free egress, and that they should be substituted by the pure outer air. Fresh air from without may very easily be had without draught, and without risk of cold even to delicate persons if a few simple rules be observed. The cold air of winter, of course, enters with greater force and in greater proportional volume than the more equal summer air into a warm room. The aperture of ingress must be correspondingly diminished. Air from a window is preferable to that from an open inner door, no matter how roomy the house, from its more reliable purity. If the window be the inlet, the fire, fire-place, or it may be the door of a room in summer acting as an outlet, it may be opened from the top, the extent being regulated according to the outer temperature. There is then a direct inward current at the upper part, which follows the roof of the room, thus mingling with any heated waste products which require to be removed, and an interrupted current at the middle, the previous line of junction of the upper and lower sashes; both are broken and diffused by the blinds or curtains. Venetians for this purpose should be turned upward. A window should never be made to ventilate by opening it from below, unless the open lower space be filled up in some way and ventilation be carried on at the middle where the sashes join—otherwise draughts are unavoidable. The ventilating pane is a hardly less simple and equally efficient and safe method with either of the others. Window ventilation is especially useful in bedrooms, and its efficiency or otherwise cannot fail to affect the vital powers of the occupant, who, in his slumbers, must trust to other energies than his own for the removal of those impurities and morbific germs which his every breath multiplies around him.

Removing Spots From Gilt Frames.

GILT frames are liable to become spotted and look bad, while it is, as a rule, difficult to remove the spots. Rubbing does not answer, for the stain sticks tighter than the gilding itself, and washing is liable to loosen the gilt if put on with gum or dextrine.

The *Papier Zeitung* recommends the following method of renovating gilt frames: It consists in applying with a camel's-hair pencil a gum solution, to which has been added gold bronze having the color of the frame. Before mixing with the gum water the bronze must be washed with water until it runs off perfectly clear. If one application does not suffice, it may be repeated until the spot entirely disappears, but of course one coat must be dry before the next is applied.

Spots treated in this way look very well at first, but it will not last, for it is not able to resist the moisture in the air, unless it is specially prepared. For this purpose an ordinary bristle brush is rubbed with a piece of yellow wax until it is somewhat sticky, then it is passed very lightly over the spot several times as when dusting it. This gives it a very thin coat of wax that hardens in two or three days; in the meantime it must be protected against dust.

THE largest saw-mill at Port Blakely, W. T., was put to a test of its capacity one day a week or two ago. The whole cut of the day was 283,000 feet, the largest previous day's work being 224,000 feet.

A. A. Cook.

AS STATED in previous issues, it is not our intention to present a likeness of merely those who belong to the Chapter. We propose to give the history of all those on the Pacific Coast that are recognized as members of the architectural profession. Many have written to us, expressing their good-will to our Chapter, and regretting that distance prevented them from attending Chapter meetings. To all such we would say, You can help, no matter how great the distance, by your pecuniary assistance, as well as forwarding papers to be read, submitting sketches, etc., and the Chapter will gladly welcome those to membership whose character is of a high standing, and whose architectural ability is recognized by his fellow-brethren.

A. A. Cook, the subject of this sketch, is a resident of the city of Sacramento. He was born in Chenango County, New York, on the 20th day of April, 1832. In May of the same year, his parents moved to Albany, in which place he received his first lessons in the practical workings of the carpenters trade. In 1848 he was apprenticed to the carpenters and joiners trade.

It may be interesting to our young mechanics of to-day to know the value of apprentices' wages forty years ago. The first year Mr. Cook received $50.00, the second year $75.00, and the third year $100. In those days, however, a three-years' apprenticeship, if the student was faithful, enabled him, at the expiration of the time, to readily assume the duties of an "old hand."

We find the result, in the present case, of the value gained by the appropriation of every minute of time during youthful days. In winter months, a prominent architect gave Mr. Cook instruction in practical geometry and architectural drawing, and, also, thorough his influence, enabled Mr. Cook to gain access to libraries containing works on architecture and carpentry. In those days books treating on those subjects were very rare. The works thus obtained were faithfully studied, and their principles fixed in his mind.

He also showed an aptitude for the art and science of hand railing, and such was his proficiency that, while still under twenty years of age, we find him giving instructions to a class of young mechanics.

In 1851 Mr. Cook moved to Kalamazoo, Mich. For nine years he was one of the prominent builders of that place; every spare moment was given to the study of the profession which he had selected for his future business. After visiting several places, we find him located in Council Bluffs. In this town he began strictly the architectural profession, and several prominent buildings were designed by him, including the largest hotel, at that time, west of Chicago.

His health failing about this time, and, hearing of the great salubrity of the climate in California, he started for this coast, and arrived in Sacramento in 1869. The benefits derived from the change soon proved that the journey was a wise one, and, in a short time, Mr. Cook was fully restored to a robust state of health.

A. A. COOK.

Although residing in Sacramento, Mr. Cook's practice extends over a great portion of the northern part of the State. Nevada also can show many buildings erected under his superintendence.

Mr. Cook possesses one of the finest and most complete architectural libraries to be found in any private office on this coast. He is always ready and willing to give instruction to the younger members of the profession, and students can always be found in his office, learning the principles of the science of architecture.

EXPERIMENTS have shown that a person speaking in the open air can be heard about equally well at a distance of 100 feet in front, 75 feet on each side, and 30 feet behind.

The Lumber Trade—Order Your Lumber.

DEALERS report "trade entirely satisfactory." But verbal statements in this connection are not necessary. The inaudible voice of hundreds of buildings in progress of erection, and the excavations being made in all parts of the city, proclaim the fact that materials are in demand in large quantities, and that those who manufacture and sell those suitable for building purposes, must be enjoying a corresponding degree of business activity. We say yet to those contemplating the erection of buildings requiring more than ordinary sizes and lengths of timbers, to pass in their orders as soon as practically possible, as extra dimensioned timbers cannot, as a rule, be found in our lumber yards in stock; consequently, as all such extra lumber will have to be cut to order, time may be saved by ordering early, as delays frequently occur in the transportation from mill to wharf—the winds and weather being very material factors in that connection. We have sometimes had orders filled within three weeks, under most fortuitous conditions, and in other cases, and, as a rule, from four to ten weeks. If a wharf at the mill should break down, as sometimes they do, and mix up ordered and stock lots of lumber, or if the vessel happens to meet a "stress of weather," or is beached, or runs on a reef, or bar, etc., more or less time is lost, and sometimes considerably *more*. Hence it is wise to order early, and order all that will be wanted, for if "everything is left to the last moment," it places matters in such a shape as to make them unpleasant; for when an order is sent from this city by a lumber dealer, he can do no more than say: "Hurry up," "expedite," etc., while the *doing* part is in other hands, and often the man at this end is helpless to remedy delays, at which excited and perhaps angered owners, architects, and contractors complain, and sometimes say naughty words.

Beautiful Finishes.

HARDWOOD finishes are the most lasting and beautiful that can be applied to a building. In California, the great expense attending their use debars many people from placing the same in their homes. Redwood, when properly prepared, and covered with Wheeler's Patent Wood Filler, cannot be told from the genuine hardwoods, except by an expert. This preparation should be used by every one who desires a lasting and beautiful finish.

Brooks As Sewers.

WHEN a natural watercourse traverses a town, and its banks become built upon, the easiest way of getting rid of filth and house wastes is to throw them into the stream. Every man's instinctive impulse is to get rid of what annoys him, and not to mind how his neighbor will be affected. After a while, when the watercourse becomes sufficiently nasty, the people come to a realizing sense of what they have brought upon themselves, and then they try to devise a remedy. In this they begin usually at the wrong end. They look on the stream as creating the nuisance, and don't consider that it is their abuse of the stream that is the source of the trouble. So they go to work and cover the stream up, and call it a sewer. What is the result? Simply that the stench of the foul matter in the old channel is bottled up somewhat, to be vented through every manhole, every inlet, and every house drain, and probably do more real injury than when the rotting filth was exposed to the air and the sun, and diffused its aroma through the whole atmosphere.

The channel of a small natural stream through a town or village should never be converted into a sewer for house wastes. This will strike a good many people as an odd doctrine. The functions of a natural stream and of a sewer are so diverse that one cannot be made to do duty for the other.

A natural watercourse serves for the drainage of the land all along its course. Its banks cannot be made water-tight without obstructing the natural progress of the water in the soil and backing it up and retaining it where it ought not to be retained. A sewer, on the other hand, is intended to carry off foul matters which must be gotten rid of as quickly as possible, and the channel for conveying them must be absolutely impervious, so that nothing can soak through it to the soil. As the level of the water in the soil rises and falls with the season and the amount of rain, an open-jointed or pervious channel would sometimes admit water from the soil and sometimes permit fluids flowing in the channel above the level of the ground water to flow out, and thus pollute the soil and the air in the soil.

Again, a natural stream draining a considerable territory is subject to great variations in its volume. A channel to carry its extreme discharge in floods must be many times larger than can ever be necessary for the carriage of the greatest amount of sewerage that can be brought to it. A large channel is not suited to the rapid removal of a small flow of filthy fluids, and, moreover, costs a great deal more than a sewer of the proper size. Even if the large channel for a fluctuating stream is built through a village, the sewerage from the houses should not be turned into it, unless the minimum volume of the natural flow in the driest seasons is large enough to keep the channel thoroughly scoured. There are a good many small towns which have for years gotten along without sewers, and have arched over natural watercourses, running through them, but are now impelled by the "sanitary revival" to construct sewers for removing household wastes. The first impulse is to utilize the covered streams to save the expense of constructing a few hundred feet of sewer. They should be very careful how they proceed. It is better to spend a little more money and be safe than to economize in the first cost and spend ten times the saving in doctors' fees and undertakers' bills.—*Sanitary Engineer.*

Educating Plumbers.

TRULY this is an age of progress, and in more ways than one. Take, for example, the question of education. Not very many years ago even good, skilled artisans could not make out a time-sheet and give a correct return of work done and materials used, but had to dictate to a clerk or other responsible person. This did not matter where men were working in communities, as in those cases there was always some one in charge to keep a proper record; but where they were working singly, it may seem far-fetched to say, but it really amounted to one man doing the work, and another had to keep an account of what was done; yet these men, perhaps, were first-class mechanics as far as workmanship goes. But the present generation have advanced considerably in this matter, thanks to the interest taken and the schools established, and now there are very few men who have not a fair knowledge of the three R's—that is, reading, 'riting, and 'rithmetic. Now, with this knowledge, the average working-man has grown to be more intelligent, it is true, but it is an open question if he is a better tradesman; and, as a proof of this, do we not continually refer to what was done ages ago as works of art, and also of construction, and hold up for admiration the work of our forefathers? But for all that the working-man is still the working-man; it is still the muscle that is required to do that which machinery fails to accomplish, so that in reality he is a piece of machinery. He has brains, it is true, but they only work in certain grooves in which they have always traveled. Ask a plumber why he warms the piece of lead that he may be working upon; he will answer, "*To soften it, to be sure, and make it easier to work;*" but ask him why heat softens the lead, and how many could answer? Again, ask him why he greases the prepared ends of a pipe before making a joint, and he will answer, "*To make the solder stick;*" there are exceptions, of course, but from the average tradesman no better answer would be given.

This age has always been referred to as one of progress, and one of the innovations of the age is "technical education." About this there is a diversity of opinion; some look upon it as an actual necessity, while others think it of no use or advantage. In using the term "technical education," it is meant in this case in the popular sense, in which a practical trade and all its cognate science subjects are taught together.

Germany, France, and Switzerland have for some years past taught various sciences in the same schools and concurrent with the ordinary education of youth, but it must be remembered that those countries depend mostly upon the productions of their industrial classes, so that "the more highly they are educated, the better for the country." But England, having such enormous natural resources, has not made the same progress in technical education as the countries mentioned, but the want of it has been felt, and efforts are now being made to make this movement more popular.—*James Mullens, in Sanitary Engineer.*

Care of Patterns.

ONE of the largest expenses of the producers of cast metal articles from toys to machinery is that of patterns. These must be made of the finest stock and by the most skilled workmen. All patterns are made originally of wood, which in the case of light articles are exchanged for duplicates in metal at once, just as the wood block for engraving is exchanged for the stereotype or the electrotype. But large patterns, as for beds for lathes, planers, and other heavy machines, and many other articles, must necessarily be of wood in permanence. How to keep these patterns in good condition when not in constant use has been a puzzle to many, but moisture proof as well as fire proof buildings have filled that demand. A greater annoyance and anxiety is caused by the difficulty of classification and arrangement, so that any particular pattern may be found at once. Where the patterns are limited to a certain stock of reproduced machines, it is easy enough to arrange the patterns in suits each part of a completed machine to be kept in one compartment. But where the demands on a foundry are of a miscellaneous character, it is impossible to keep a referable list with ordinary classification.

A shrewd manufacturer has overcome this difficulty by adopting the alphabetical order of the dictionary, a name being given to each pattern and piece when made, and entered upon a kept dictionary in the office, another, a duplicate, being kept in the pattern house. Illustrations might be given to show how the thing works, but this is not necessary. It is sufficient to say that under a single letter, G, there are no less than 200 entries, but all so distinct and discriminated that no difficulty is found in locating them in their alphabetical departments, or in charging them to each handler, as pattern room, foundry, or designing (draughting) room. By the addition of numerals to the alphabetical plan it is easily seen that any number of convenient subdivisions may be made.—*Scientific American.*

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WESTERN IRON WORKS, 123 and 125 Beale St.	" 67
J. BROWELL, Patent Chimneys	" 71
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Brick Wall Disfigurement.

THE extensive use of red bricks which has been made of late years for houses and public building has caused a good deal of attention to be directed to a curious disfigurement to which such structures are liable, in the form of a kind of white mould which is apt to creep over their surfaces. The best of buildings are quite as subject to this detraction from their appearance as the worst, the new Technical College at South Kensington, for instance, being just now covered in places with this objectionable kind of eruption, which is not very generally understood, and for which no remedy has yet been found, we believe, except time. An American paper publishes one or two scientific opinions on the matter, one being that of Dr. Leidy, president of the Academy of Natural Sciences. According to this authority, the white efflorescence is simply ordinary Epsom salts, or sulphate of magnesia, and the production of it on brick surfaces must be regarded as evidence of the presence of sulphurous acid in the air, the result of coal-burning. There is magnesia in the mortar with which the walls are built, and there is sulphurous acid in the air, and in the presence of moisture a chemical combination takes place, the result being sulphate of magnesia. This dissolves in the rain and runs down over the bricks, and evaporation leaves the white deposit. Another chemist agrees that this is the way in which the efflorescence is produced, but thinks that it is potash with which the sulphurous acid combines, and that the white is sulphate of potash, while another authority considers it to be sulphate of lime. All agree, however, that it is the sulphurous acid in the air which causes this disfigurement, and this is really the important aspect of the matter. If this is the effect of atmospheric impurity on brick buildings, it seems reasonable to suppose that it must be somewhat serious in its influence on human lungs.—*Building Times.*

Some of Ruskin's Maxims.

WORK is only done well when it is done with a will; and no man has a thoroughly sound will unless he knows he is doing what he should, and is in his place.

It may be proved with much certainty that God intends no man to live in this world without working; but it seems to me no less evident that he intends every man to be happy in his work.

It is no man's business whether he has genius or not; work he must, whatever he is, but quietly and steadily; and the natural and enforced results of such work will be always the things that God meant him to do, and will be his best.

No book is worth anything which is not worth *much;* nor is it serviceable until it has been read, and re-read, and loved, and loved again, and marked, so that you can refer to the passages you want in it, as a soldier can seize the weapon he needs in an armory.

Building Operations in Yolo County.

ALREADY the sound of the saw and hammer is beginning to be heard—and right merrily, too—in many of the interior counties. Messrs. Gilbert & Son, one of the principal contracting firms of Woodland, have kindly forwarded us a complete list of building operations in their neighborhood. No notice is taken of improvements less in value than $1,000. The number of these would fill the entire pages of this Journal. We intend—from time to time—to give full reports from the principal sections of the State.

Woodland and Vicinity—Main and College Avenue. Additions to three-story brick. O., W. M. Coward; A., W. H. Hamilton; C., W. H. Curson; cost $4,500. Third Street and Oak Avenue. One-story frame. O., G. Lambert; B., Glenn & White; cost $1,200. Main Street. One-story frame. O. and B., G. K. Glenn; cost $2,650. Elm Street. One-story frame. O., H. Shuluck; B., Glenn & White; cost $1,100. Main Street, Odd Fellow's Hall, alterations and improvements. C., G. W. Myrick; cost $1,500. Sprague Avenue. One-story frame. O. and B., Mr. Irwin; cost $2,200. South Fifth. Three-story frame. O., J. T. Wallin; B., Gilbert & Son; cost $3,500. North Street. One-story frame. O. and B., Mr. Anderson; cost $1,300. College Avenue. One-story frame. O., John Jacobs; B., Porter & Sponge; $1,500. College Avenue. One-story frame. O. and B., Broderick Bros; cost $2,800.

West Woodland—One-story frame. O., M. Antone; B., A. Pool; cost $1,200. Third Street. One-story frame. O. and B., M. Wilson; cost $1,000.

East Woodland—One-story frame. O., Armstrong & Akre; cost (days work) $1,100. Second Street. One-story frame. O., Dr. A. Aken; B., J. A. Blake; cost $1,200.

Capay Valley—Two-story frame. O., A. Winters; C., W. H. Winne; cost $3,500. Capay Valley House and stable. O. and B., E. Thomas; cost $1,100.

Davisville—Two-story frame hotel. O., J. T. Lillard; days work, $4,000. Clayton Avenue. One-story frame. O., G. Harris; C., Pool & Sears; cost $1,000.

PRACTICAL CARPENTRY.

PRICE $1.00.

A guide to the correct working and laying out of all kinds of Carpenters' and Joiners' work. Solutions of the various problems in Hip roofs, Gothic work, Centering, Splayed work, Joints, Hinging, Dovetailing, Mitering, Timber Splicing, Hoppers, Skylights, Raking mouldings, etc. This work should be in the hands of every mechanic. One of the features to which this book will undoubtedly owe its success, is the absence of those numerous formulas which serve only to confuse the ideas of so many workmen. Everything is written in a clear, concise, and practical manner, and its utility is brought within the grasp of those workmen who have not had the benefit of a school education. We will send the above work to any address upon receipt of $1.00.

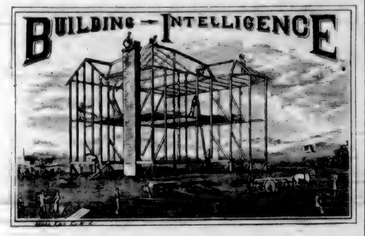
NEW EXCHANGES.

Wood and Iron. A new journal, devoted to those interests represented by its name. Its typographical appearance is very fine, and it promises in its editorial department to equal many of its competitors that are now old in the field of journalistic enterprise. Published by S. L. Everett. **$2.00 per year.**

The Painter. An illustrated monthly devoted to painting and decorating, now in its third year. Typographically, *The Painter* is unusually neat and tasteful. It should be in the hands of every painter. Published at Cleveland, Ohio. **$1.00 per year.**

Every architect in the State should insert his professional card in our columns, and thereby prove that he is endeavoring to assist in building up an architectural journal that will take rank with any printed. The charge is small. We want the influence your names will give, and we promise to spare no efforts in making the "California Architect" fully represent the views of a majority of the Profession on this Coast.

BUILDING — INTELLIGENCE



SAN FRANCISCO.

California, near Larkin. Two-story frame.
O.—W. Coe.
A.—Wolfe & Son.
C.— — Klatt.
$4,500.

Sutter, near Stockton. Additions.
O.—C. A. O. D.
A.—Wolfe & Son.
C.—Hatfield & McRae.
$1,000.

Church, near Twenty-first. Two-story frame.
O. and B.—C. Kleebauer.
$3,000.

Church, near Twenty-second. One-story frame.
O.—T. Shields.
C.—J. P. Shephard.
$2,500.

Twenty-first, near Chattanooga. One-story frame.
O. and B.—F. Buckley.
$1,600.

Hoff Avenue, near Seventeenth. Six French flats.
O. and B.—W. Fletcher.
$10,000.

Mission, near Ninth. Two-story and base frame.
O.—Swedish Evangelical Lutheran Church.
A.—B. E. Henriksen.
Day's work.
$10,000.

Battery, near Pacific. Two-story and basement brick
O.—J. Musto.
A.—W. H. Bayless.
C.—G. Richardson, B. W.
$25,000.

Twentieth, near Noe. Two-story frame.
O. J. Scheerer.
Day's work.
$7,000.

Second Avenue, near Sixteenth. Two-story and basement frame.
O.—Mr. S. Kelley.
C.—W. F. Muller.
$3,400.

Michigan, cor. Sierra. One-story frame.
O.—Toomay & Farrell.
Day's work.
$1,000.

Sixteenth Avenue, near Railroad Avenue. One-story frame.
O.—F. Bonerberg.
Day's work.
$1,000.

Eleventh Avenue, nr P. Four-story frame.
O.—A. W. Norton & Co.
Day's work.
$4,000.

California Avenue, cor Twenty-ninth. One-story frame.
O.—J. Cosgrove.
C.—J. McKeague.
$700.

Guerrero, near Duncan. Two-story frame.
O. and B.—L. Kofoed.
$3,000.

Mission, near Twentieth. One-story frame.
O.—El Capitan Skating Co.
Day's work.
$1,500.

Clinton Park, nr. Dolores. One-story and basement frame.
O.—Mrs. A. Crabb.
C.—F. A. Kern.
$2,500.

Castro, cor. Henry. Two-story frame.
O.—Mr. White.
C.—D. Spangler.
$2,000.

Pacific, cor. Webster. Two-story and basement frame.
O.—C. Roemer.
A.—A. C. Lutgens.
C.—Gray & Stover.
$4,700.

Larkin, cor. Pacific. Three two-story frames.
O.—H. Grimm.
A.—J. T. Kidd.
C.—W. Plum.
$11,500.

California, nr Devisadero. Two-story frame.
O.—W. H. Birch.
A.—S. and J. C. Newsom.
$3,500.

Prospect Avenue, near Webster. Two-story frame.
O.—W. Walker.
A—S. an d J. C. Newsom.
C.—Moore Bros.
$5,000.

Steiner, cor. Sutter. Two-story frame.
O.—J. McMillan.
A.—S. and J. C. Newsom.
C.—J. McKay.
$4,500.

Post, corner Octavia. Two-story and basement.
O.—J. T. Polheim.
A.—B. E. Henriksen.
$12,000.

Oak, near Van Ness. Two two-story frames.
O.—Mr. Merkelbach.
A.—W. H. Bayless.
C.—Patterson & Smith.
$6,150.

Turk, near Franklin. Two-story frame.
O.—J. Wise.
A.—H. Geilfuss.
C.—F. Weinoehl.
$5,000.

Buchanan, cor. Eddy. Four flats.
O.—A. Lndwig.
A.—H. Geilfuss.
C.—B. Dryer.
$10,000.

Fillmore, near McAllister. Two flats.
O.—C. Reimers.
A.—H. Geilfuss.
C.—F. Klatt.
$5,000.

Devisadero, near Geary. Four flats.
O.—C. Ahlborn.
A.—H. Geilfuss.
C.—Christman & Neal.
$10,000.

Everett, near Fourth. Improvements.
O.—F. Hagemann.
A.—H. Geilfuss.
C.—Conrad & Miller.
$3,000.

Folsom, near Fifth. Two-story frame and stable.
O.—J. Buck.
A.—H. Geilfuss.
C.—H. Meyn.
$5,000.

O'Farrell, cor. Buchanan. Six two-story frames.
O.—H. Rothehild.
A.—Schmidt & Havens.
C.—I N. and J. G. Day.
$18,500.

Golden Gate Avenue, near Broderick. Two-story frame.
O.—R. S. Alexander.
A.—Schmidt & Havens.
C.—C. Chisholm.
$4,500.

Polk, cor. Fulton. Three two-story frames.
O.—K. Meussdorffer.
A.—Schmidt & Havens.
C.—T. C. Ridell.
$18,000.

Mission, near Main. Three-story frame.
O.—F. C. Peters.
A.—Schmidt & Havens.
C.—Mahoney Bros.
$11,000.

Grove, near Van Ness. Two three-story frames.
O.—F. Siefke.
A.—Schmidt & Havens.
C.—R. Smilie.
$11,000.

Eddy, near Franklin. Two-story frame.
O.—N. Goldtree.
A.—Schmidt & Havens.
C.—C. Quinn.
$7,500.

Scott, near Haight. One-story frame.
O.—H. Kennan.
A.—John J. Clark.
Day's work.
$1,900.

Broadway, near Laguna. Two two-story frames.
O.—Elizabeth Nelson.
A.—W. P. Moore.
C.—W. Langstaff.
$7,500.

Turk, cor. Leavenworth. twenty-eight stores and tenements.
O.—W. E. Dean.
A.—W. P. Moore.
C.—C. B. Green.
$3,500.

Olive Avenue, cor. Ellis. Alterations.
O.—T. Donahue.
A.—H. D. Mitchell
Day's work.
$2,000.

Waller, near Buchanan. Alterations.
O. and B.—R. McCann.
A.—H. D. Mitchell.
$3,5000.

Montgomery, near Jackson. Alterations.
O.—H. Pierce.
C.—A. Flood.
$7,000.

Tenth, near Mission. Three-story frame
O.—P. Scanlon.
A.—T. J. Welsh.
C.—J. Blake.
$12,000.

Valencia, near Eighteenth. Stores and flats.
O.—M. Maguire.
A.—T. J. Welsh.
C.—Rebman & Cummings.
$8,000.

Golden Gate Avenue, near Franklin. Three-story flats.
O.—T. Delany.
A.—T. J. Welsh.
C.—B. Dryer.
$6,700.

Steiner, cor. Sutter. Additions.
O.—R. Sbarboro.
A.—T. J. Welsh.
C.—R. Doyle.
$3,500.

Sanchez, near Seventeenth. One-story frame.
O.—B. Flood.
A.—T. J. Welsh.
C.—T. Darcy.
$1,800.

Brannan, near Third. Improvements.
O.—Lusk & Co.
$15,000.

Clinton Park. Two-story frame.
O.— — Spaulding.
$3,200.

East, near Market. Frame Building.
O.—T. D. Riley.
$2,500.

Twenty-first, near Clement. Frame dwelling.
O.— — Patten.
$2,000.

First, near Market. Five-story brick.
O.— — Huntington, Hopkins & Co.
A.—A. Laver,
Mason—Geo. D. Nagle.
Carp.—P. Crichton.
$100,000.

Market, near Seventh. Improvements. Brick.
O.—Gladding, McBean & Co.
Day's work
$3,500.

Mission, near Eleventh. Additions.
O.— — Fredericks.
$1,000.

SACRAMENTO.

Second, x I and J. One-story and basement brick.
O.—Green & Trainor.
A.—N. D Goodell.
C.—Carle & Croly.
$10,000.

Seventh, x H and I. One-story and basement frame.
O.—N. D. Goodell.
A.—N. D. Goodell.
C.—Carle & Croly.
$4,500.

Fifth, x J and K. Additions.
O.—Jos. Guth.
A.—N. D. Goodell.
C.—M. Madden.
$3,400.

Ninth, x P and Q. Ice house.
O.—F. C. Knauer.
A.—N. D. Goodell.
C.—J. P. McGinnis.
$2,400.

K, Nos. 209 and 219. Additions.
O.—W. Land.
A.—A. A. Cook.
Day's work.
$1,000.

Nineteenth, cor. L. One-story building.
O.—acramento City.
A.—A. A. Cook.
C.—W. H. Sutherland.
$1,750.

K, No. 318. Additions.
O.—J. W. Wilson.
A.—A. A. Cook.
C.—Hook & Son.
$700.

Eighth, x E and F. One-story and basement frame.
O.—P. Davis.
C.—D. and D. Falconer.
$2,500.

Fourteenth, cor. H. Two-story and basement frame.
O.—A. A. Van Voorhies.
A.—J. Seadler.
C.—D. and D. Falconer.
$14,190.

MISCELLANEOUS.

San Jose—Third, near Empire. One-story cottage. O., F. S. Montgomery; A., Theo. Lenzen; C., W. B. Mitchell; $1,400. Market, cor. Colfax. One-story cottage. O., L. Rothermel; A., Theo. Lenzen; C., Thos. Clark; $4,000.

San Rafael—Depot for S. F. & N. P. R. R. O., P. Donahue; A., Theo. Lenzen; day's work; $15,000.

Santa Rosa—One-story brick. O., G. E. Grosse; C., T. J. Ludwig; $3,500.

Hemacite Knobs.

THE Gordon Hardware Co. have now a large assortment of these knobs on hand. For interior work they are superior in design to any knobs in the market. They are fully guaranteed for strength and durability. Those wishing an illustrated catalogue can secure one by addressing the above firm, or the manufacturers, the Dibblee Manufacturing Co., Trenton, N. J.

PROPOSALS FOR THE CONSTRUCTION
OF THE
New Odd Fellows' Hall.

SEALED BIDS WILL BE RECEIVED AT THE OFFICE OF The Odd Fellows' Hall Association of San Francisco, Room No. 1, Odd Fellows' Hall, No. 325 Montgomery street, San Francisco, up to and until 12 o'clock M., of

FEBRUARY TWENTY-SEVENTH, 1884,

For the erection of the New Odd Fellows' Hall, on the lot on the southwest corner of Market and Seventh streets. Bids to be received for the separate trades, as follows:

No. 1—Brickwork.
No. 2—Carpenters' and Joiners' Work.
No. 3—Granite and Freestone Work.
No. 4—Cast Iron Work.
No. 5—Wrought Iron Work.
No. 6—Tin and Platers' Work.
No. 7—Plumbers' and Gasfitters' Work.
No. 8—Plasterers' Work.
No. 9—Painters' and Glaziers' Work.

The plans and Specifications of said building can be seen at the office of Messrs. Wright & Sanders, No. 418 California street, and will there be open to public inspection after the date hereof.

The successful bidders will be required to furnish bonds, satisfactory to the Board of Directors, for the faithful completion of the work in accordance with the plans and specifications. The Board of Directors reserve the right to reject any or all bids.

C. T. PIDWELL, Secretary
of the above-named Association.

San Francisco, January 25, 1884.

MARKET REPORTS.

LUMBER—*Pine.*

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough			18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	33 50
" 4 " and under, and 1¼x4 and 1¼x6			
Flooring and Stepping			40 00
Rough Clear for Flooring, $1 less than above rates.			
Second Quality Flooring and Stepping		per M feet	28 50
Ship Plank, Rough		"	28 50
" " Planed 1 side		"	32 50
" " 2 sides		"	35 00
Deck Plank, Rough		"	33 50
" Dressed		"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 15
Battens, ½ inch, lineal feet	"	1c

NAILS.

10 d to 60 d		$3.25
8 d cut ore Extra per keg (over standard)		.25
6 d " " " " "		.50
4 d and 5 d " " " "		.75
3 d " " " "		1.50
10 d to 20 d Brad, h'd' " "		1.50
8 d " " " "		1.50
6 d " " " "		1.50
4 d and 5 d " " " "		1.75

THE brickmakers of this country last year consumed three million cords of wood, the product of fifty thousand acres of average timber land. A large part of this immense expense could have been saved, with a proportionate increase in the profits, by the use of improved methods in firing.

The California Architect and Building News.

VOLUME V.
NUMBER 4.

SAN FRANCISCO, APRIL, 1884.

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Full Page, inside, one insertion, $40.00.
Each subsequent insertion according to agreement.

A square is seven-eighths of an inch in length by width of column.

Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

OUR COMPETITION PLANS.

This will be the last notice sent to those desiring to compete for the prizes offered by the Proprietors of this Journal.

All designs and plans must be at this office on or before May 1, 1884.

Those received by that date will be presented before the Committee of the S. F. Chapter at the regular monthly meeting on May 2d. Each and every contestant will be notified of the decision of the Committee as soon as possible after the awards are made.

Particular notice is given to those residing out of this State to send their plans so as to reach this office by the time specified.

Building Improvements.

THE GENERAL OUTLOOK IN THE STATE.

THE indications point strongly to extensive building operations in all sections of the State.

One of the surest signs of a most prosperous and busy season is the

ACTIVE DEMAND FOR DRAUGHTSMEN:

That has lately sprung up from different sections of the country. From the extreme southern portion of our State telegrams have been received by us for first-class draughtsmen. After diligent inquiry, we have failed to find good men who were willing to accept the situations, although from $80.00 to $100 per month was offered, and steady work guaranteed.

The effect of the late storms has been the circulation of an immense amount of money through the southern section of the State. It is calculated that over one million of dollars will be expended in repairing damages. This large sum and that received from the assured large crop, will cause very extensive operations in building and mechanical lines.

Los Angeles leads all the counties in the number and value of buildings erected, followed very closely, however, by Alameda County. In the former county, numerous towns are springing into existence, offering superior inducements to young men to migrate into neighborhoods where muscle combined with head work, properly exercised, will lay the foundation of a prosperous future.

Fresno and Tulare have been asleep for a while, but when harvest time comes along no doubt they will regain their former business prosperity.

The counties bordering on the bay are all sharing a large degree of prosperity, and, from present indications, large improvements will be carried out during the year.

Sonoma, Napa, and Marin,—thanks to an energetic race of inhabitants, stand very prominent in the list of go-ahead counties More work is now being talked of than there are mechanics numerous enough to meet the labor demands.

The counties north of Sacramento are awakening from their sleep, caused by a partial failure of crops last season, and each and every one will be heard from when the time of the saw and the hammer begins.

IN THIS CITY

Never were indications for a grand building season more pronounced than they are at the present time. Up to the 10th of April buildings and improvements of the value of

OVER TWO MILLION DOLLARS

Have been commenced. This is greater than the entire amount for the whole year of 1880.

We sincerely hope that the prospective activities will not be checked by increase in the prices of building materials, or excessive demands by mechanics for high wages. It is far better and wiser that the prices of material and rates of wages should be steady and reasonable, and a fair degree of business continuous, rather than a rush for short periods, followed by dullness and inactivity during a considerable portion of the year.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held on Friday eve, April 4, 1884. President John Wright presided. Committee appointed to procure a Seal for the Chapter, reported that they had attended to their duties, and now had the pleasure of presenting the Seal to the Chapter. A short recess taken to allow the members to inspect the same.

Upon motion it was resolved that the *design* of the Seal be accepted. This motion was carried, with the understanding that the committee have two weeks further time, in order that improvements could be made by the engraver in portions of the dies.

The committee were also requested to place the Seal in the hands of the committee on incorporating the Chapter, by the time agreed upon, so that at the next regular meeting the incorporation of the Chapter may be a settled fact.

The collector appointed by the Chapter, on motion, was allowed 10 per cent. on all collections.

Committee on preparing articles of indenture for students was granted further time.

The committee upon the applications of members proposed at previous meeting was allowed till next regular meeting to make their report.

Proposition for membership was received from J. J. Clark, and referred to Messrs. Sanders, Wolfe, Jr., and Pissis.

Committee on the different classes report favorable progress by pupils. Adjourned.

Be Sure That Your Figurations Are Correct

THAT which is of first importance to contractors and those estimating the cost and value of material and labor required in the erection of buildings, etc., is correct figuring. Every mistaken figure below true value is a direct loss in the amount represented by the figures in error. Hence the importance of men understanding how to figure, the value of figures, and the most perfect method of using them. Sometimes errors result from absolute or imperfect knowledge of the science of figures and figurations; sometimes from failure to comprehend the extent and magnitude of the thing estimated upon; sometimes a spirit of recklessness and disregard of the involvments, a don't-careativeness as to the results, a chance-taking disposition and frame of mind, which, if it happens to settle down upon a safe conclusion, does so from sheer "it happened so;" and some are thoughtless, desiring and aiming to be right, but, from lack of mental energies and fixedness of thought, fail to take in and deliberate upon all the matters of cost, and so fail to be near right.

It seldom happens that where ten more or less competent contractors estimate upon a building or works of any kind, that very great incompetency and lack of mechanical intelligence and right understanding, or something less creditable, are not illustrated, in perhaps five out of ten being inconsistently high; perhaps three, more or less, below a correct amount, and one or two at a sum fairly and reasonably remunerative. It is no strange matter to find from ten to one hundred per cent. difference in ten bids. Sometimes the estimates will run together, except it may be the very low man or two who have failed to add in all the items of cost. But the more general rule is great differences in amounts.

The effect of all this is injurious to contractors, as intelligent owners do not generally take in the situation and recognize results from the contractors standpoints, but reasonably set it down to questionable intent or want of proper knowledge. We say reasonably, for when ten or five men, recognized, practical contractors, submit estimates running from the low man, say at $4,500, and the high man, $7,500, or, as in one case in our office, the low man being less than $40,000, and the high man, $60,000, argues decidedly unfavorably to those who make such discrepancies; yet it is not always the case that the low man is loser by his undertaking; sometimes he is, and many hundreds of thousands of dollars have been lost to material, men, and others, from this cause, but we have good, faithful men who have run through years of contracting without failure, and have something to show for their labors, who have worked almost continuously upon contracts taken as the lowest bidder.

Every foot or pound of material, and every hour of labor, according to quality and kind, possesses a standard value, furnishing, to those using them, all the requisite elements to correct conclusions; so that when more than reasonable differences occur, the presumption is sustained that there has has been a lack of good judgment, or a superabundance of carelessness, or ignorance indulged in.

For, with the defined basis of calculation, such as exists in the market, and purchasable value of materials, and the well-understood cost of labor to quantity of materials required, there is but a small right margin for variations in total costs, when handled by intelligent and competent parties.

Eastern Comments On Our Bone Yard Article.

THE *American Lumberman*, in commenting favorably upon our "Bone Yard" article which appeared in the February number of this journal, remarks: "At this distance it is hard to judge correctly of the condition of the lumber trade in San Francisco; but it does seem that with a tariff of only $2.00 per 1,000 feet on lumber, the manufacturers on the Canadian side of Puget Sound, ought to be able to sell lumber at a profit, if the scale of prices fixed by the Association are as outrageously high as stated by the ARCHITECT."

True—"distance" does render it difficult for parties who have never visited, nor been able to inform themselves by personal observations as to the lumber market of San Francisco, and the manufacture of lumber at Puget Sound, to rightly understand the peculiarities of the situation. And when inside facts are revealed by publications, as in the matter in question, they appear so different in character from the more usual and better regulated markets of the country, that even those engaged in little business in other cities and places cannot readily comprehend the actual facts as they exist.

As to the suggestion of our cotemporary, in reference to the tariff of "only $2.00," it is correct, provided there could be any assurance to British Puget Sound manufacturers, that present prices, and the prices ruling for the past two years, could be maintained.

But the fact that American manufacturers hold the key to the lumber market of this coast, and have it in their power to control and regulate the prices under a united and firm combination, it would be consummate folly for any one to risk the uncertainties; for just as soon as a competitive supply of imported lumber should be placed on the market, our wide awake combination men would tumble the prices to ruinous rates—unless they could house the competition—and the imported material would have to be sold at a loss.

This fact is so well understood that men with capital, seeking investment, give the matter no serious consideration, because the field is too treacherous. We can at any moment control $1,000,000 for investment in lumber mill operations on the British side of Puget Sound, if there were any reasonably fair show of a steady market for lumber at present prices for even five years.

But the chances are all the other way. It was only in 1877-78, that the very men who now hold control of the market by combination, were in merciless competition among themselves, and the same lumber, Oregon pine, that is now retailing at $22.50, sold retail then at and for less than $12.00 per thousand feet; at which price, however, there was but bare salvation from ruin generally, while a few were crippled, and some compelled to surrender under the then too severe pressure. But when prices recovered to $14.00, $15.00, $16.00 a feeling of safety pervaded the lumber market, and manufacturers and dealers felt that they had reached safe ground.

Under this state of facts our contemporary may easily see the difficulties of competition by lumber taxed with a tariff of only $2.00, for the general building of the coast, being altogether of wood, the amount of lumber required to supply demands is large, and the American manufacturer could comfortably afford to sell at a profit of $2.00 per thousand until British competitors tired of selling at actual cost of production with $2.00 tariff added.

Pioneer Hall Competition.

NAMES OF CONTESTANTS.

Below will be found a correct list of the names of the Architec's presenting plans for the proposed Pioneer Building. We withhold comments until after the award shall have been made.

PERCY & HAMILTON,
WRIGHT & SANDERS,
MCDOUGAL & SON,
A. LAVER,
HOFFMANN & O'CONNOR,
W. PATTON,
LEUDERS & WILSON,
E. A. HATHERTON,
W. SCHROF,
T. D. NEWSON.

SHARP-CORNERED DRAWING TOOLS.—A sensible correspondent of the *American Machinist* very justly complains that "manufacturers of drawing instruments make them so full of little sharp corners, and interior angles," and suggests that they be made "of round or oval cross sections, with no places where dirt can collect." The trouble is that makers of drawing tools very seldom, if ever, have any practical experience in the use of such instruments, and are unknown to those who have.—*Mining and Scientific Press.*

GILDED FRAMES.—To restore gilding to picture frames, etc., remove all the dust with a soft brush, and wash the gilding in warm water, in which an onion has been boiled; dry quickly with soft rags.

Compiled Items of Interest for Mechanics.

THE weight of a crowd of men closely packed is estimated at 84 lbs. per superficial foot.

Street, Store and Bank Fronts $4.00

IT is thought by many that a girder—say 12x16—will bear more weight if it is ripped through the middle, making two pieces 6x16, and these two be reversed and bolted together again. This is an erroneous conclusion. The only advantage gained is, that, by the process given, an opportunity is presented to examine the center of the timber, which, in large pieces, is often in a state of decay; also, it gives the timber a better opportunity to become seasoned, and thus less liable to rot.

Cottages and Villas $6.00

TIMBER when wet has only about half the strength of the same timber when perfectly seasoned.

Builder's Guide $2.00

DOUBLE tenons are often used in Joinery, but should be avoided in Carpentry, as they weaken the timber into which they are framed; both tenons seldom bear equally, so that a greater strain is thrown upon one of them than it is intended to support.

Modern Perspective $6.00

EVERY mechanic should be able to cut and frame all timbers, rafters, etc., upon trusses on the ground. Many, however, have not studied the rules of Carpentry sufficiently to be able so to do. To such we would say that it will greatly benefit you to secure a copy of "Mechanic's Geometry, or The Science of Framing by the Aid of Card Board Models." This eminently practical work—if properly studied, and the principles put into practical use, will enable a mechanic to frame any portion of a building with ease and exactness. But few copies can now be had of this work, as the edition is exhausted. Sent to any address upon receipt of $5.00.

Wooden and Brick Buildings $18.00

EDITORS ARCHITECT: In a bill of lumber, lately received, I find the item—72 pieces 2x6 for *Raglins*. Please inform me of the meaning of the term *Raglins*.

LUMBER DEALER.

Your customer is evidently a newcomer. *Raglins* is a term used in England for ceiling joist.

The Artisan $5.00

ONE of the most practical works for the mechanic to have in his possession is "The Science of Carpentry Made Easy." A copy will be forwarded to any address upon receipt of $5.00.

Universal Assistant $2.50

A SCHOOL-TEACHER asks for a simple method of preventing reverberations in a school-room. Instead of the ordinary smooth plaster finish for the walls and ceilings, have the same rough finished. Curtains may be used for the windows instead of blinds. Large maps hung around the room, aside from being ornamental, are very useful as anti-reverberators.

Church Architecture $4.00

IN many journals different measurements are given in *meters*. Mechanics can easily compute the same in *feet* by allowing 39⅜ inches to a *meter*.

Plaster, how to make it $1.00

FIVE pounds of nails are required for 1,000 shingles, when laid 4 inches to the weather.

Buck's Practical Designs 50c

BOUND volumes of this Journal are becoming scarce, and those that desire the same should immediately forward $2.50, for which a copy will be sent to any address.

Practical Carpentry $1.00

WOOD screws vary in size from one-sixteenth to three-eighths of an inch in diameter, and in length from one-fourth to three and a half inches, including twenty-three numbers, as follows:—

Length.	Number.	Length.	Number.
¼	0 to 2	1⅛	9 to 18
⅜	2 " 7	1¼	10 " 20
½	2 " 9	2	11 " 20
⅝	3 " 10	2¼	11 " 20
¾	4 " 12	2½	14 " 20
⅞	6 " 12	2¾	16 " 20
1	7 " 14	3	15 " 20
1¼	8 " 16	3½	18 " 22

Number 11 is about three-sixteenths, and Number 14 about one-fourth of an inch in diameter, and are sizes in very common use.

IT requires 123 sheets of tin 10x14 to cover one square, and 59 sheets 14x20 to cover same space.

Cummings' Architectural Details $6.00

A HANDY thing to have on a farm is a measuring cord with which to measure off acres. To make one, procure sixty-seven feet of strong rope, one inch round, make a loop or fasten a ring or bar at each end, and make these exactly sixty-five feet apart. This is four rods. Then tie a piece of red rag in the center. One acre of ground will be a piece four of the cords (chains) long, and two and one-half wide, equal to sixteen by ten rods, making one hundred and sixty square rods to the acre. The advantage of the ring or loop is that one person can measure alone by driving a stake in the ground to hold the rope while he stretches it out. The rope should be soaked in tar and dried, which will prevent its shrinking when wet.

Steel Square and its Uses $1.00

Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

There are to be thirty-nine octavo volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper, neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

	Per Volume.
Bound in Extra, English Cloth, neat and attractive style	$4.50
Bound in fine leather, Library Style	5.50
Bound in half calf, half Russia or half Morocco	8.00
Bound in Russia Leather or Tree Calf	10.00

Any information in regard to the above will be given by addressing the office of this Journal.

New York Letter.

BY A. CURTIS BOND.

It is a difficult task to undertake the study of American architecture, difficult, because it leads to no satisfactory result. Here, architectural art, like every other matter that is regarded from a business view, is developed under a strictly speculative influence, and "time" is accepted as one of the appreciative qualities. Human activity is a powerful factor in the appreciation of human works.

Nor does this unfortunate artistic condition appear to be easily remedied, or even susceptible of future correction, for the rapidity of our life, and, consequently, of the execution of our designs, makes it impossible, even for the coldest and most analytic talent from foreign countries, to resist the tendencies of our climate, and avoid cultivating the same disposition himself. This second atmosphere of our country at first stifles the new-comer, and he pities the disposition to "rush things," but as he meets others more, and finds that he is falling behind in the race, he bestirs himself, and, before he becomes conscious of the influence, he is measuring time in his labors, and falls into the true American scheme, of making a *melange* of everything and allowing it to take the place of a creation.

Yet this failing of our architectural art must not be accepted as a general condemnation, for we admit all the very best examples of foreign work with this indiscriminate adaptation and a Greek, Moresque, and Persian form may be found as next door neighbors in our streets and squares. It serves to enliven and diversify the city, and furnishes subjects for visiting foreigners to return to their homes and write about, and against. New York may be accepted as the type of American cities, I presume, yet there is a greater variety of architecture here than elsewhere over the continent. The peculiarity of which I have spoken is shown here in a marked degree.

This disposition, however, to utilize all the old styles, and combine oddities into one building, has had another good effect in giving us very many peculiar and decided original structures, picturesque in the extreme and interesting to study.

One building recently put up has the heads of the architect, the builder, the owner, and a variety of other persons interested, more or less, in its completion, arranged at various points, on the gable, from the tops of the windows, at the end of the waste pipes, from the roof, and in several other places equally inappropriate, and equally conspicuous. Another building imitates the Bastile, and is reduced to the humble purposes of a storage house. A new residence is an excellent reproduction of a baronial castle, on a small scale, with a moat, portcullis, and watch-tower, sentry box, and all. Another still, the house of a prominent physician, is a rambling, low, Queen Anne structure, full of odd and queer corners, a marvelous quantity of stained glass, and a multitude of picturesque chimneys.

One of the growing men of our Eastern States, one who is so young, and so well known as to warrant the belief that he will make himself more widely felt, as he increases in age and in experience, is Mayor Seth Low, of Brooklyn, just re-elected to another term of office, and at the same time reached his thirtieth birthday.

Mr. Low has a great deal of originality, and has shown it in the house that he has put up, or rather reconstructed from a small and dilapidated cottage. The style of the building is the Queen Anne, of red brick, with terra cotta trimmings, a color and combination that is rather marked, amid the surroundings of substantial brown stone. The stoop is of large, manufactured stone slabs, and on either side grass plots laid out, in goodly sized squares, and unprotected save by a simple sub-base of stone. The pillars and roof of the entrance are of a dark green, carved wood, and the vestibule of variegated marble, and the door of light, polished oak. A bay window on the side (the house is upon a corner), has for ornament an enormous square waste pipe, leading from the roof and which branches off into two at the roof of the bay window, coming down then upon either side to the ground. This pipe is a capital imitation of terra cotta, and is probably the first really successful attempt to make such a thing as this decorative.

An oddity, in every sense of the word, is being put up at Coney Island. Ever since Barnum brought Jumbo to the country, that interesting animal has been counterfeited in every conceivable manner, and the designation for the stupendous of every sort was the word Jumbo. Finally this craze has extended to building, and now they are putting up, at Coney Island, a restaurant, dancing hall, and the usual accompaniments, to be contained in a structure shaped like an elephant, the legs to be spiral stairs, the head a music room, and the body to be divided into the restaurant and the ball room. The height of the animal is to be eighty feet, and the length, one hundred and twenty-five. If this scheme is enlarged upon, and the white elephant which is expected from Europe daily, should be found worthy of a similar monument, and when it extends to other animals in the show, it may entirely change the architectural aspect of our watering-places, and they may put on the appearance of monstrous out-door menageries, gatherings of the creatures that populated the world before the flood.

* * * * * * *

The illustration that I have chosen this month is that of a country house, of a conglomerate style, somewhat on the principle of those I have criticised. It is neat and attractive in appearance, and designed for an economical and substantial-looking place. The arrangement of the rooms will commend itself, I think, to the architect and to the private party; it shows the kitchen department kept apart from the living rooms and entirely distinct in its situation and exclusiveness.

A Substitute for Wire Screens.

Every house-wife and servant fully understands by practical experience, the desirableness of a means by which kitchens, dining and other rooms may be ventilated, particularly during the summer months and warm days of the year, without being "tormented" by the presence of flies, mosquitoes, etc. This has usually been accomplished by means of wire screens on frames, or at the heads of the upper sash. A very simple and seemingly practical device, which does away with the metallic wire cloth, may be seen at W. Little's place of business, No. 128 Geary Street.

They can be applied to any window at small cost, and should command the special attention of families residing in districts where the heat of summer becomes oppressive, and to all who desire freedom from the presence of those winged intruders who never fail to swarm the apartments appointed for cooking and eating purposes.

The New Odd Fellows' Hall.

At the southwest corner of Market and 7th Streets, work has been commenced upon the foundations of a structure, the erection of which is destined to have a marked effect upon the values of surrounding property.

It has been a mooted question in regard to the building under consideration, upon the advisability of erecting an edifice of such magnitude, so far from the present location of the Order which it represents. Careful study has been given to the subject, and, wisely we think, the decision has been rendered in favor of the location adopted.

Property in the immediate neighborhood is mostly owned by men capable of making substantial improvements, and now that work has been commenced in earnest, it may be expected that, in the near future, other improvements will be commenced, and that the vicinity of the City Hall will shortly become a prosperous business center.

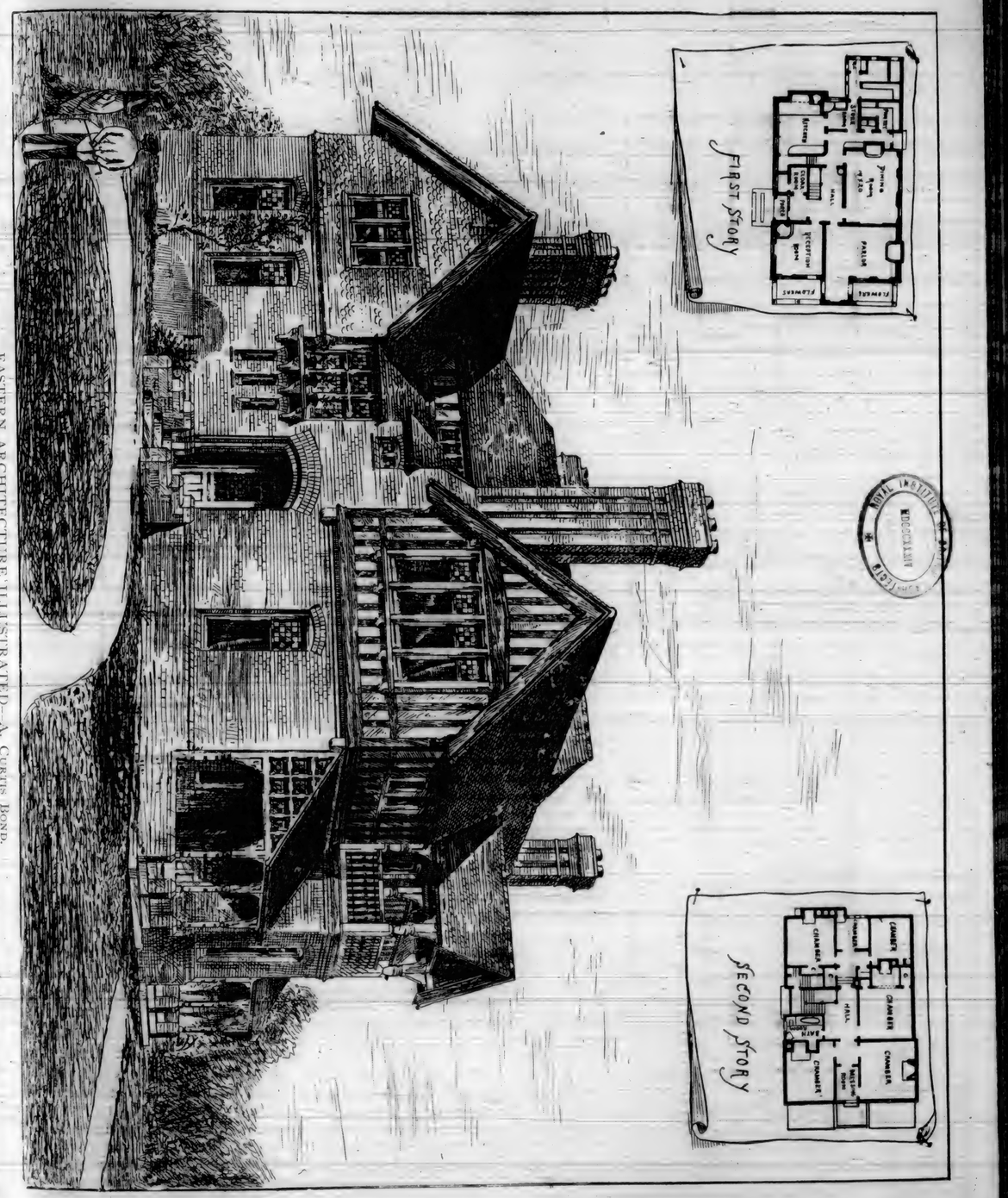
We hope to see property owners adopt designs in keeping with the character of the new I. O. O. F. building, and that contemplated by Murphy, Grant & Co., a short distance below the above site.

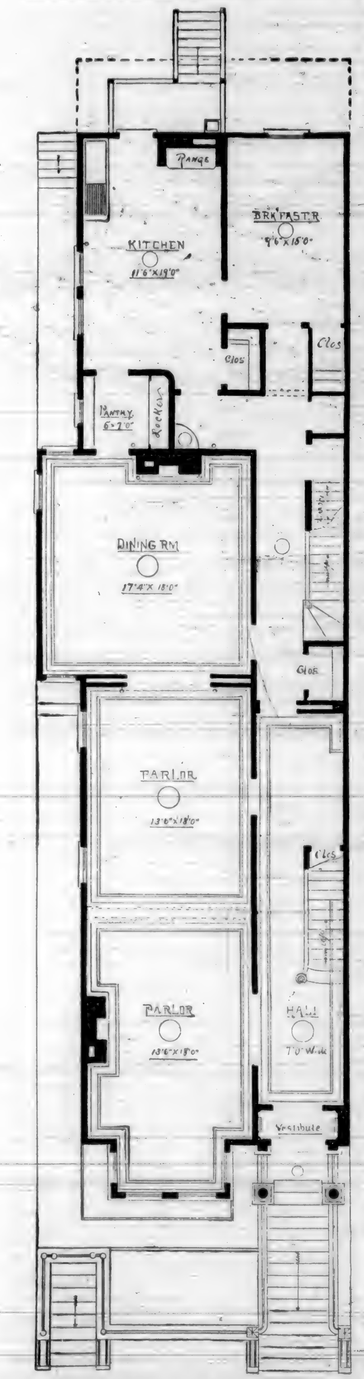
We hope to be able in the future to present full illustrations of the building. The Architects are Messrs. Wright & Sanders. The various contracts were awarded as follows:—

Brick work,	J. G. Liebert,
Carpenter,	Ed. Farrell,
Cast Iron,	R. Llewellyn,
Wrought Iron,	Phœnix Iron Works,
Roofing,	Cronin & Dunbar,
Plumbing,	Geo. Milne,
Plastering,	A. C. Corbett,
Painting,	E. M. Gallagher,
Granite,	Geo. Griffith,
Cement,	Davis & Cowell.

The estimated cost of the structure complete will be in the neighborhood of $300,000.

Steel Square and Its Uses, $1.00.





FIRST FLOOR PLAN OF $10,000 RESIDENCE.

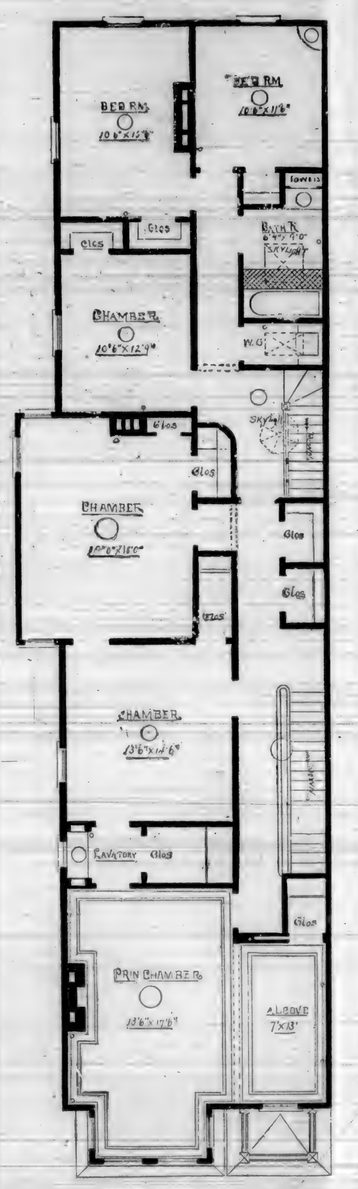
Custom Versus Specifications.

THERE can be nothing more provoking to a competent and upright architect, than, upon visiting buildings and works intrusted to him, to find portions of the work done in direct violation of the requirements of his specifications, and when attention is directed to the error, to be answered, "It is customary to do it so," "It is according to custom," etc. We have often regretted that we did not possess the muscle of a champion slogger, so that we might be able to thump consistency into such men, or throw them out of or clear over the building. It is nothing less than a deliberate insult to an architect to set aside the papers prepared by him, papers which, if the work of a competent man, are the result of careful thought and deliberation, expressing exactly what is wanted in kind and quality, and the mixture of impertinence and disrespect which will embolden parties to such a course is next to unbearable.

Who, we ask, is the leader in architectural fashions in house building? Who is the recognized man who issues this fiat of custom, and bids all to yield to his notions as to how this or that shall be? From whence comes "custom," "customary," "usual way," etc.? We denounce in emphatic terms all such absurdities, either upon the part of contractors, mill men, material men, or others, as far as intelligent architects, who understand and express in their specifications what they want—are concerned. It may serve a purpose among that class of architectural frauds, in San Francisco, who know nothing rightly about building houses; but it is an imposition upon decent men in the profession, to subject them to the necessity of even repudiating things done "according to custom," not in conformity with specifications. We know that there are architectural dudes, dunces, and shysters practicing the profession on this coast, and that they may be played with by any shrewd mechanic or contractor; but that fact does not justify attempts in the same direction upon men worthy the name of architects.

Personally, and for a majority of the gentlemen in the profession, we say to all parties performing contracts under our superintendence, we acknowledge no right in any one to change one iota from the requirements of our plans and specifications, and those who chance the substitution of "custom" for the plain language of plans and specifications, do so at the risk of rejection of the substitution, and the strict enforcements of the written requirements of the documents.

DID it ever occur to you how useful your thumb is? If it never has, supposing you tie it up a little while and see how helpless your fingers will be alone. We often say when anybody is particularly clumsy, that his fingers are all thumbs. This is simply slander on the hardest-worked and most useful of our five fingers.



SECOND FLOOR PLAN OF $10,000 RESIDENCE.

THE influence of Japan is beginning to be felt very considerably in architecture. Some things in Japanese architecture we shall, of course, probably never introduce—the heavy roof, for instance—but for verandas of country houses, for screens and for interior decorations, Japanese art and architecture is rapidly coming into use.

Unintelligent Estimating.

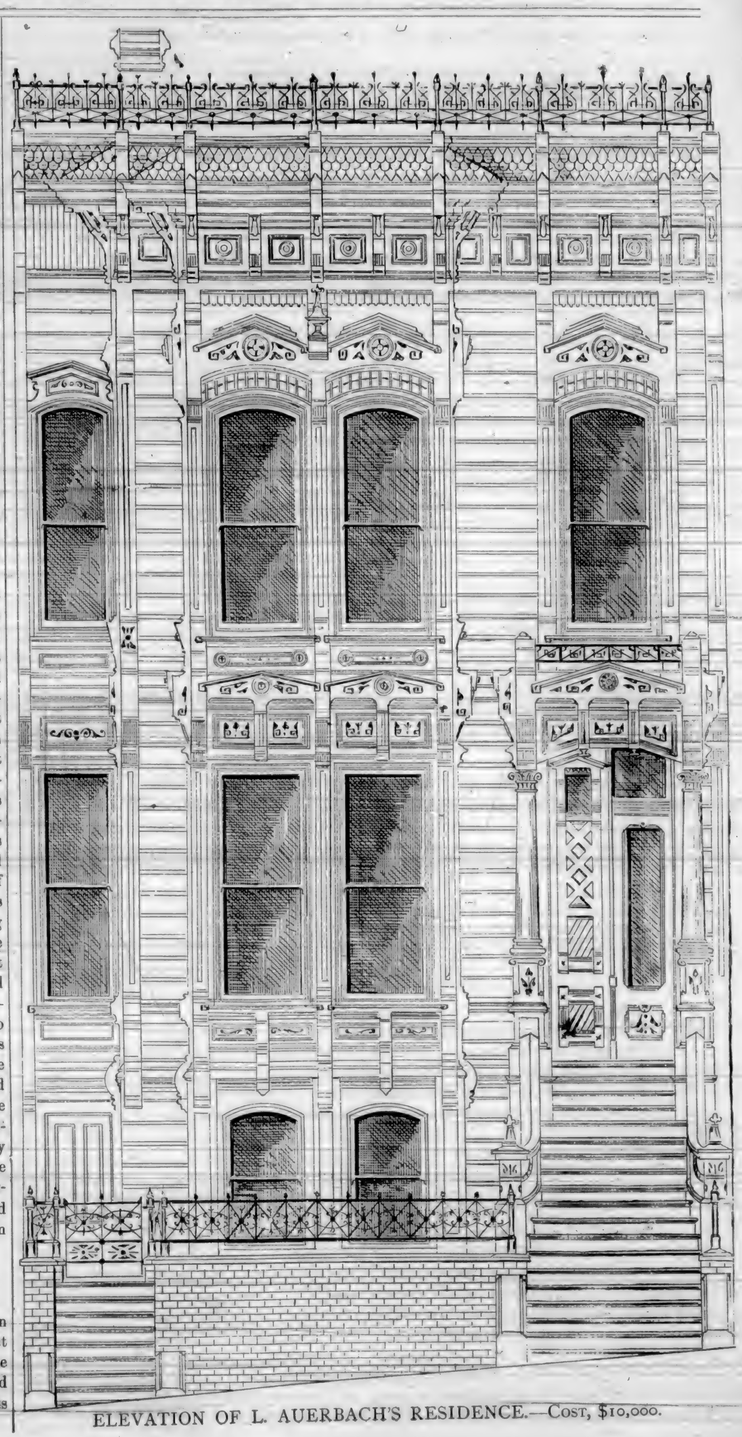
THE many absurd errors made manifest by the unreasonable difference, more generally prevailing in connection with estimates submitted for the erection of buildings, and the execution of mechanical works generally, is greatly to be regretted, for the reason that it lessens the confidence of owners in the competency and qualifications of contractors to intelligently determine the value of buildings or work offered for estimates.

It is not to be expected that each man should arrive at precisely the same conclusion as to costs, for the balances are not equal in all minds, and reasonable differences are legitimate. But when the discrepancies run from ten, twenty, fifty, and sometimes one hundred per cent or more, the fact becomes plain that absolute incompetency, unpardonable carelessness, excessive avarice, or an unintelligent understanding of what is contemplated, has controlled some of the parties figuring; and it is altogether proper for those offering work for estimates, to form adverse opinions as to the qualifications of contractors, when results as indicated are submitted for their consideration.

Nor is it always possible for architects to disabuse the minds of clients, that some of those who have estimated have not contemplated unfair and excessive advantages, and sought to secure more than legitimate gains and profits upon the operation proposed, which, followed to a logical conclusion, suggests, if it does not fully prove, that there are men even among "honest mechanics," who would not scruple to obtain other people's money without fair compensation—all of which tends to injure the reputation of those who manipulate figures in estimating, and devote their lives and energies as "master mechanics." All of these irregularities grow out of a lack of proper education and understanding of things generally, and a demoralized sentiment among contractors, who, as a class, figure and operate as each may deem best, using good and honest intent and correct judgment, or well-studied devices and unscrupulous means to secure—and in the management of work falling into their hands, as the case may be. All of this places at a disadvantage, if it does not make cheats and tricksters of good men, who would prefer fair and upright dealings, but are driven by surrounding circumstances and conditions to accept and practice the methods by which unscrupulous men make money, or be satisfied with the pittances which too generally follow in the path of those who stand upon the higher ground of strict integrity in all their transactions.

Garland's Trap.

PERHAPS the best recommendation that can be given to this Trap is to mention the fact that all the traps throughout the Lick House were removed to give place to the Garland Trap. This action speaks volumes for its merits.



ELEVATION OF L. AUERBACH'S RESIDENCE.—COST, $10,000.

The Competitive Pioneer Building Plans.

IN response to the invitation of the Building Committee, ten sets of plans, representing ten architectural firms, or combination of firms, have been submitted and placed on exhibition in the rooms of the society.

We do not propose at the present time to express an opinion as to the merits of the three or four better conceptions, but we do propose to say that the exhibit as a whole is not as creditable to the architectural talent of San Francisco as we should like to have seen, either in design or mechanical execution. With the more meritorious removed, the showing is poor, not coming within the limits of being worthy of serious attention.

The general result is in exact accord with the views expressed in this Journal in relation to the competition; and we are not, but should have been greatly suprised, had there been under the circumstances, and under the conditions proposed by the committee, a single set of plans and specifications submitted so *conspicuously meritorious*, as a whole, as to secure general and specific acknowledgment of superiority. As it is, there is great diversity of opinion upon the merits of the three or four sets of plans named as likely to receive favorable consideration, the others on exhibition being considered as "from poor to middling," and so on down to productions which should cause the blush of shame to mantle the cheeks of their authors, and would have that effect if all modesty and self-respect was not stultified by a superabundance of architectural libertinism or presumption.

The actual cash cost of the ten plans on exhibition will average not less than $350 each, or a total of $3 500. The greatest return possible under the conditions will be $950; so that the committee will ever hereafter enjoy the reflection that, by their management of the matter, seven silly men are out of pocket about—and perhaps more than $2,550. We do not pretend to say that the committee intentionally and designedly caused this result, but, whether of design or unintelligent management, the result is not changed, and seven men are none the less losers by the transaction, while the eighth and ninth, or those receiving the second and third prizes, will also be losers in the amount of $300, which added, will increase the total cash loss to nine men to $2,850.

Besides this, as has been stated in former issues, it is possible, and it sometimes so happens, that the plans receiving the first premium are second or third in actual merit, and, not unfrequently, the third *man* more than the merits of the third best plans, receives first premium. This course is excused upon the grounds of greater qualifications in the person of the third party as superintending architect. But that fact does not purify the act which draws men into competition upon the supposition and assurance that results will be determined solely upon the ground of merit in the plans presented, to the exclusion of all personal preferences and considerations. If plans are invited from parties without discrimination, then discrimination should not be admitted in determining issues as to plans, and when this is departed from, injustice intervenes.

We have no reasons to suppose that there is the slightest probability of such a course of action in the present case, but the possibility nevertheless exists.

Desirable Business Localities.

THE future of property on the line of Market and California Streets, and within the triangle formed by the streets named, is established beyond all peradventure. But the frontage on these and the intervening streets being far short of sufficient to supply the demands for choice business building sites, many who were compelled, or from choice desired to erect brick structures sufficient to meet the requirements of increased and increasing business, have been forced to seek out other streets and localities to find suitable purchasable property. Consequently the side streets, particularly those running southeasterly from Market Street, and lying northeasterly from First Street, and between Market and Mission Streets, have been the first to find favor with purchasers; and a number of substantial brick edifices have been erected on lots heretofore encumbered by old, worn-out frame, or dilapitated brick constructions; and it is a mere matter of time when the mills, shops, factories, and shanties of various character, at present occupying lots within the limits mentioned, will give place to permanent business structures.

FIRST STREET PROPERTY,

Between Market and Mission, which for so many years has remained at a stand-still, is now attracting attention; and with the removal of Union Foundry, which is likely to occur at an early day, there will be a general clearing away of the many old, worn rookeries, to make room for fine business buildings.

North from Market Street, judging from very suggestive indications, property on the line of

DAVIS STREET,

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The Competitive Pioneer Building Plans.

In response to the invitation of the Building Committee, ten sets of plans, representing ten architectural firms, or combination of firms, have been submitted and placed on exhibition in the rooms of the society.

We do not propose at the present time to express an opinion as to the merits of the three or four better conceptions, but we do propose to say that the exhibit as a whole is not as creditable to the architectural talent of San Francisco as we should like to have seen, either in design or mechanical execution. With the more meritorious removed, the showing is poor, not coming within the limits of being worthy of serious attention.

The general result is in exact accord with the views expressed in this Journal in relation to the competition; and we are not, but should have been greatly suprised, had there been under the circumstances, and under the conditions proposed by the committee, a single set of plans and specifications submitted so *conspicuously meritorious*, as a whole, as to secure general and specific acknowledgment of superiority. As it is, there is great diversity of opinion upon the merits of the three or four sets of plans named as likely to receive favorable consideration, the others on exhibition being considered as "from poor to middling," and so on down to productions which should cause the blush of shame to mantle the cheeks of their authors, and would have that effect if all modesty and self-respect was not stultified by a superabundance of architectural libertinism or presumption.

The actual cash cost of the ten plans on exhibition will average not less than $350 each, or a total of $3.500. The greatest return possible under the conditions will be $950; so that the committee will ever hereafter enjoy the reflection that, by their management of the matter, seven silly men are out of pocket about—and perhaps more than $2.550. We do not pretend to say that the committee intentionally and designedly caused this result, but, whether of design or unintelligent management, the result is not changed, and seven men are none the less losers by the transaction, while the eighth and ninth, or those receiving the second and third prizes, will also be losers in the amount of $300, which added, will increase the total cash loss to nine men to $2.850.

Besides this, as has been stated in former issues, it is possible, and it sometimes so happens, that the plans receiving the first premium are second or third in actual merit, and, not unfrequently, the third *man* more than the merits of the third best plans, receives first premium. This course is excused upon the grounds of greater qualifications in the person of the third party as superintending architect. But that fact does not purify the act which draws men into competition upon the supposition and assurance that results will be determined solely upon the ground of merit in the plans presented, to the exclusion of all personal preferences and considerations. If plans are invited from parties without discrimination, then discrimination should not be admitted in determining issues as to plans, and when this is departed from, injustice intervenes.

We have no reasons to suppose that there is the slightest probability of such a course of action in the present case, but the possibility nevertheless exists.

Desirable Business Localities.

The future of property on the line of Market and California Streets, and within the triangle formed by the streets named, is established beyond all peradventure. But the frontage on these and the intervening streets being far short of sufficient to supply the demands for choice business building sites, many who were compelled, or from choice desired to erect brick structures sufficient to meet the requirements of increased and increasing business, have been forced to seek out other streets and localities to find suitable purchasable property. Consequently the side streets, particularly those running southeasterly from Market Street, and lying northeasterly from First Street, and between Market and Mission Streets, have been the first to find favor with purchasers; and a number of substantial brick edifices have been erected on lots heretofore encumbered by old, worn-out frame, or dilapitated brick constructions; and it is a mere matter of time when the mills, shops, factories, and shanties of various character, at present occupying lots within the limits mentioned, will give place to permanent business structures.

FIRST STREET PROPERTY,

Between Market and Mission, which for so many years has remained at a stand-still, is now attracting attention; and with the removal of Union Foundry, which is likely to occur at an early day, there will be a general clearing away of the many old, worn rookeries, to make room for fine business buildings.

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Peculiar Wood Working.

THE auger is intended primarily for making holes in wood, yet the only cutting or boring portion is the chisel lip on its lower end: and if the implement could be kept at its work and guided in its course, the gimlet screw at its point and the spiral above its cutting portion might be dispensed with, as the screw merely pulls the cutter into the work and the spiral guides the auger and elevates the chips. So the auger, deprived of these portions, becomes a rotary cutter by which straight or curved recesses of a definite width may be cut. Mortises for tenons are made with such an implement, and it is used also for many other similar purposes.

An adaptation of the circular saw is more peculiar than this. It is the cutting of a wide kerf with a thin saw; thus a saw of one-fourth of an inch thickness, or "set," cuts a score, or slot, of three-quarters of an inch or more. In appearance the saw is anything but mechanical, and at first thought the method is "sloppy" and foolish. But the result of the work is good. The effect is produced by placing a circular saw on an arbor somewhat smaller than the hole through the saw, and canting the saw to an angle by means of convex faced glands or flanges. When rotated the saw's periphery has a "wabbling" motion, so that twice in its revolution the saw cuts out of its true kerf on either side. It will be seen that if the quarter-inch saw is set one-quarter of an inch out of truth on its side, it will cut one-quarter of an inch on each side, making, with the primary thickness of the saw itself, a cutting width of three-quarters of an inch. This apparently crude method produces very satisfactory results. It might be supposed that such eccentricity of movement from side to side would leave very coarse score mark on each side of the cut, but the velocity of the saw's rotation compared with the feed insures perfectly clean work. The advantages of this method are that the power required to cut a wide kerf with a narrow saw by gradations is much less than to cut the full kerf at once with full wide cutters, and that while a saw can be of diameter large enough to cut through a wide or thick piece of lumber, there is a much lower limit to the economical and effective projection of chisel cutters from a head. One of the largest manufactories of agricultural and domestic machinery and implements in the country has used circular saws in this manner for years.

SCISSORS have become the subject of a new patent. We thought this was impossible. Some one has attached a third blade, to be used exclusively for ripping.

MILDEW may be removed by dipping the stained parts into butter-milk, and putting them into the sun.

MOTH-INFESTED articles should be saturated in naphtha or benzine. It injures nothing, and kills the destroyer.

Ventilated Bedclothes.

CONSIDERING that most of us pass one-third of our lives in bed, it is manifestly of considerable importance to see that the conditions under which we exist for eight hours out of every twenty-four are, as far as we can make them, healthy. It must be obvious that it cannot be conducive to health to accumulate the exhalations from our bodies, and adopt such measures as may insure our taking them again into our lungs. That which is thrown off, either in the breath or by prespiration, sensible or insensible, must clearly be excrementitious, and therefore ought to be allowed to pass away. We should not breathe air or vapor which is laden with the debris of the body, though that body be our own. Another point of moment is that we should not allow our strength to be weakened by excessive heat and action of the skin during a third of our time.

It is, therefore, with great pleasure we find that an attempt has been made to ventilate quilts. We do not quite understand the process which has just been patented, but it is said to consist in a system of perforations which are filled in with some substance that allows the vapor to escape. We are informed that the artifice, whatever it be, is entirely successful. Something of the sort is beyond doubt much needed. It is well to lie warm at night, so far as the more important parts of the body are concerned; but it is most undesirable to be too warm, and, above all, "stuffy," while we sleep.—*The Manufacturer and Builder.*

Bricks.

THE best method of developing the art of building in brick has occupied the attention of architects and engineers in Switzerland for some years, and with this view it has been determined to attempt to fix a certain standard size of brick, and a report was presented to the Swiss Society of Architects and Engineers, in which the dimensions recommended were 9.84 inches by 4.72 by 2.36 inches. As, however, these dimensions were not agreed to by all sections of the society, a special federal commission was appointed in December, 1882, to inquire into the subject. A report was presented to the General Assembly of Cantonal delegates at Berne by M. Favod. With regard to the question of price, of course, if the manufacturer sells his bricks by the thousand, without reference to size, the smaller they are the better for him. The contractor, too, is apt to prefer small bricks, because with them he uses more mortar, which costs him less; but, on the other hand, he requires more bricks per cubic yard (the number of bricks of different sizes in a cube meter of work are given), and there is more labor in setting them, so that what he gains in one way he loses in another.

In regard to the quantity of mortar, Dr. Boehme's experiments at Berlin in 1875 proved that no more mortar than was actually necessary to keep the course horizontal and effect the cohesion of the bricks (for which purpose joints of 0.4 inch thick are ample) should be used. as whether the mortar becomes more or less hard than the bricks, the result is in either case to reduce the strength of the work.

Experiments made with blocks of twenty sound bricks, one set of blocks cemented with various kinds of mortar and cement (the joints 0.4 inch thick), another set consisting of bricks laid dry, and surrounded with cement simply to keep them together, gave, as mean resistances to compression: For the first set, 1,618 lbs. per square inch to cause splitting, 1,934 lbs. for the destruction of the bricks; and for the second set, 2,202 lbs. per square inch to cause splitting, and 2,291 lbs. per square inch for destruction, showing that the dry bricks gave a mean resistance of one-third more than those set with mortar before splitting, and one-fifth more before destruction.

The author, therefore, concludes that to secure the greatest strength, thick bricks, with a minimum of mortar, should be used. The author suggests that the price of bricks per thousand should vary, according to the number required per cubic meter of work, so that the manufacturer may be paid according to the size of the bricks. Finally, he recommends that the standard brick should have the dimensions 9.84 inches by 4.72 inches by 2.56 inches.—*Cincinnati Building Review.*

Hints in Fret Sawing.

A PRACTICAL fret-sawyer gives the following useful hints to amateur workmen: In cutting a pattern of any kind make it a rule to leave the outside until the last, especially where there are any single leaves or flowers at the sides or corners. Never allow the saw to become very hot, or a breakage is pretty sure to be the result. Notice before commencing work whether there are any knots in the wood, and if so mark the spot with a pencil on your pattern, and work very cautiously when you come across it. Stop working directly you see your saw edging away from or into the pattern, and make a fresh start in another place. When you have finished sawing out your bracket or whatever it may be, remove your pattern by moistening it with a little cold water, and while the wood is still damp fasten it on to your table with small nails pushed into the corners of the pattern. When thoroughly dry the bracket must be well sandpapered, firstly with a coarse, then with fine, and thirdly with oiled fine sandpaper. Rub in plaster of Paris with oil, dry twenty-four hours, then polish or varnish.—*Art Amateur.*

WOODEN PAVEMENTS IN BERLIN.—It has been noted as a curious fact by some observant person, that while wooden pavements have proved such miserable failures in almost every American city, they have proved very successful in Berlin. There should be some reason for this, and our engineers should have sufficient curiosity to findout what the reason is.

The Pyramids of Teotihuacan.

BY E. J. MOLERA.

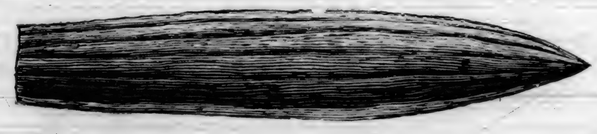
Two years ago I had the opportunity of visiting the famous pyramids of Teotihuacan. I had the good fortune of making the trip with Mr. Ziehl, a German Mexican, member of the Mexican Geographical Society, a fine Mexican philologist, one of the few who had visited the pyramids and knows a great deal about them, having formed part of the Mexican Commission sent to Teotihuacan to explore the monuments there.

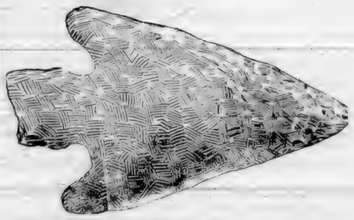
Early in the morning we started on the Vera Cruz train, which is there as our overland. On board we had a body of 200 soldiers to guard the train, a luxury the United States could not afford with her little army.

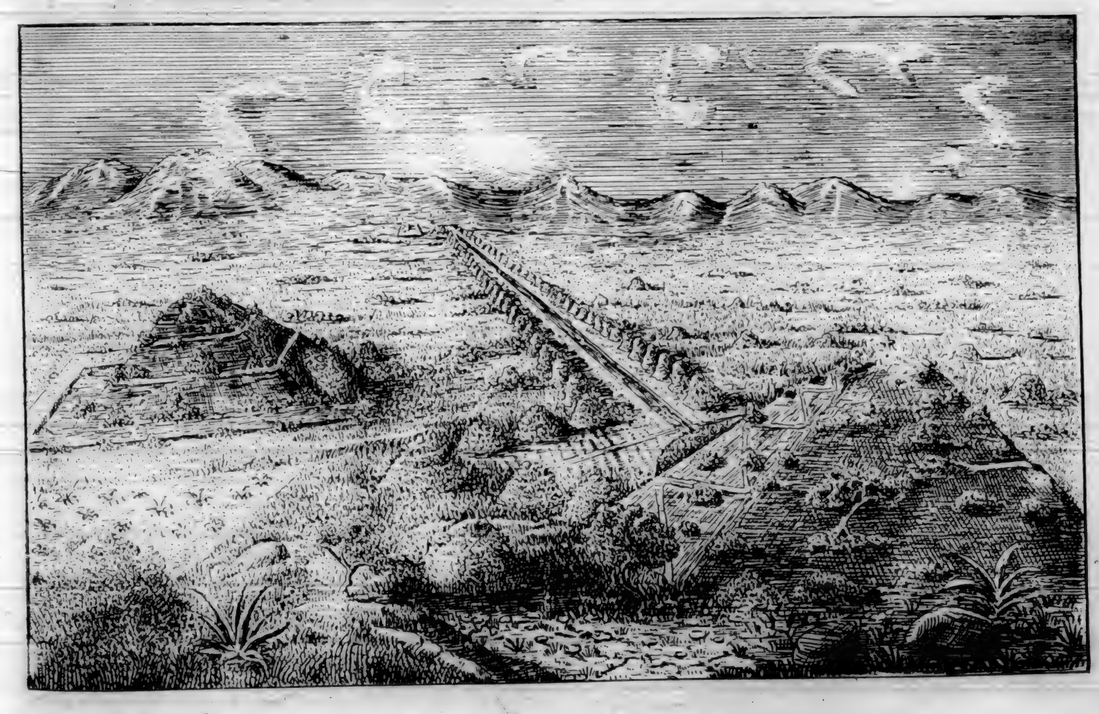
The sun was spreading his golden rays over the silvered tops of the Popocatepetl and Iztaccihuatl, flooding with light the beautiful and romantic valley of Mexico. Moving along with the train, the imagination cannot keep pace with the numerous recollections that history brings to the mind by the sight of the monuments spread before the eyes of the traveler.

We see, at our starting "Coapan," "Tlatelolco," and "Saint James Tecpan," where the heroic Cuauhtemoc, the last emperor of the Aztecs, was taken prisoner while endeavoring to run away with his family in a canoe. He is said to have told Cortez to kill him, as he could no further defend his country. Near that very spot are the ruins of the palace of the Aztec governor sent by the Mexican Crown to the city of Tlatelolco. A moment after we are at the Guadalupe Causeway, built by the Franciscan monks, at the head of which presided Fray Joan, of Torquemada, the Mexican Titus Livius. At the end of that causeway we find Guadalupe, where the treaty between the United States and Mexico was signed in 1848. There is the temple, where the Indian virgin is worshiped. A mast of a ship can be seen carried all the way from Vera Cruz by sailors who believed themselves to have been saved by that virgin from shipwreck. At our right we see Lake Texcoco, covered formerly with acalis, as to-day is Chalco, with chinampas, or floating gardens. Only a few minutes more and we pass Ehecatepec where the patriot Morelos was shot in 1815. After a little while we stop at the station of Teotihuacan to go by stage to the town of the same name. From that point we walk for a mile through a thicket of cactus, organs, perus, etc., and arrive at a deep gulch, which we cross, and find ourselves in a troglodytic field. Numerous openings show the entrances of subterranean caverns. I entered some of them, but did not find the end of many; they probably intercommunicate with one another, and go to great distances. Here begins the Indian sacred ground; at every step we find obsidian points, which are there still called by the Aztec name of *itztli*. A short walk places us before the great pyramids.

They are situated at twenty-eight miles from the Capital of Mexico, to the northeast,







and not the northwest, as Mendoza says. They are two in number, though lesser tumuli, or earth mounds, abound around and in the vicinity of them. Torquemada asserts that, in his time, there were no less than 2,000, which probably were only a part of the ones built originally.

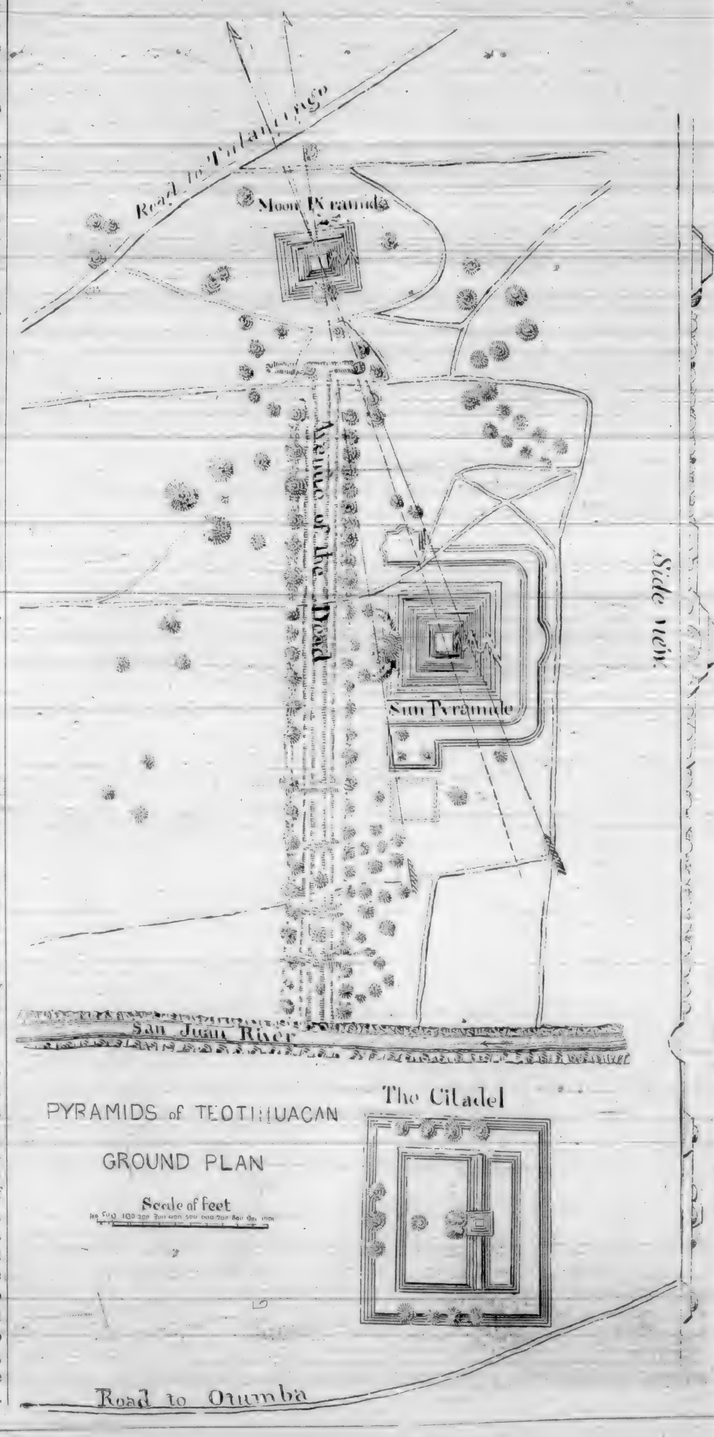
At the northern extremity heads the *Mezetli Itzacual*, or Pyramid of the Moon. The observer placed on its summit and looking southward sees close to its base a square about five hundred feet on each side, formed of tumuli, or mounds, which the Mexicans call *tlalles* or *cocillos*. Starting from that square, there is an avenue several miles long and about two hundred feet wide, with a line of earth mounds, or *tumuli*, on either side. These are very well defined for a distance of nearly a mile, where they cross the San Juan River. This avenue was called by the Mexicans *Micoatl*, or the "Avenue of the Dead." The earth mounds are elevated from the level of the avenue, and along it, on either side, run wide sidewalks, in the shape of steps. Midway between the Pyramid of the Moon and the San Juan River, or at a distance of 2,600 feet from the Pyramid of the Moon, stands *Tonatiuh Itzacual*, or Sun Pyramid. At the other side of the San Juan River, a large, walled square, called the Citadel, with a pyramid near its center, forms the third prominent structure of this remarkable group of prehistoric monuments.

The geographical positions of these monuments, as determined by the scientific commission of Pachuca, are as follows:—

Moon Pyramid, Lat., 19°, 41', 52.80"; Long., 6h., 35m., 18.32 sec., Greenwich time. Sun Pryamid, Lat., 19°, 41', 26.74"; Lon., 6h., 35m., 18.32 sec., Greenwich time. Citadel Pyramid, Lat., 19°, 40', 51.57"; Long., 6h., 35m., 18.96 sec., Greenwich time.

The sides of these pyramids do not follow the direction of the cardinal points, as stated by Brasseur de Bourbourg, and others, and as the Egyptian pyramids do. The Moon Pyramid follows just now the magnetic points, but that is only an accidental circumstance. The sides of the Pyramid of the Sun, as well as the Citadel, follow intermediate points of the compass.

There is, however, this remarkable circumstance in the situation of the pyramids, that the line joining the centers of both, follows within two degrees a true north and south line. The little decrepancy may be accounted for by the supposition that they were aligned by some star near the pole at the time of their construction, probably Alpha Draconis, but not Polaris, as, erroneously, Almaraz says. Taking in consideration that the pyramid builders nearly always placed the sides of the pyramids in parallel lines, I am inclined to think that the diagonals of the quadrilateral forming the bases of the pyramid, point to two prominent points in the Valley of Mexico, which can be determined as soon as accurate surveys of the pyramids and valley are made.



PYRAMID OF THE MOON.

This is the smaller of the two. The base is a rectangular quadrilateral, 511 feet long on the sides running east and west, and 426 those running north and south, the elevation from the base is 138 feet. The dimensions given by Clavijero, viz., 88 by 86 perches, or 1,492 by 1,319 feet, are three times too large. It covers a surface larger than the Superior, and nearly as great as the Great Pyramid of Egypt, or twice as large as our Union Square.

This pyramid, as well as that of the Sun, was formerly divided in four stages, or bodies, separated by a walk around three of its sides. One of these divisions is plainly visible yet, at a height of about seventy feet from the ground. The side without walks or steps is at the east, and there is at present the zigzag road to ascend them. But, according to Clavijero, there were formerly steps at the sides in the same fashion as those of the *teocalis* and the great Cu in the city of Mexico.

The manner of building these pyramids is by layers parallel to the sides, and not horizontally as we would build them; the material is a kind of McAdam composition. First is a layer of boulders and mud about thirty inches thick, the boulders being about ten inches on each side. On top of this there is another layer, six inches thick, of mud mortar, and finally a finishing coat of lime. These layers are repeated over again through the whole mass, as far as it has been uncovered. It is possible that when properly examined some variations may be found.

PYRAMID OF THE SUN.

This is the larger of the two, with a rectangular base 735 feet east and west, 761 feet north and south. Its height is 203 feet. It covers an area as large as the Cheops, or Splendid Pyramid, in Egypt, and larger than our largest square, Alamo, or Lafayette Park. Around this pyramid there is a very large wall, 131 feet wide and 20 feet high. This wall is discontinued at the west side. The faces are not vertical, but inclined, or in talus.

THE CITADEL.

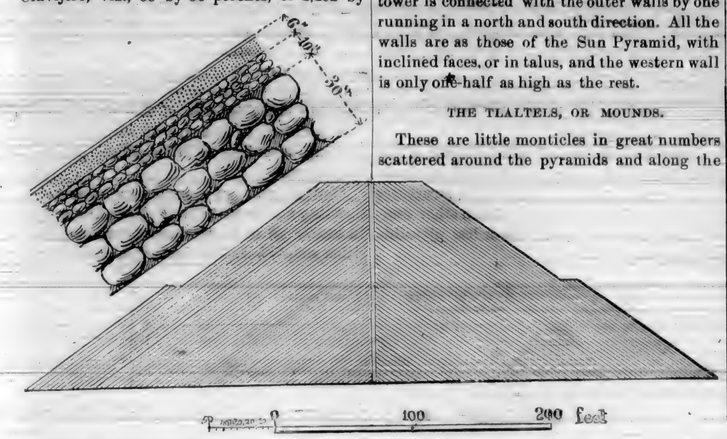
As the name indicates, this is an inclosure in the shape of a fortification. Four walls 1,000 feet long, each side, 260 feet wide, and 33 feet high, inclose a pyramid in the shape of the tower, common in old fortifications. The tower is connected with the outer walls by one running in a north and south direction. All the walls are as those of the Sun Pyramid, with inclined faces, or in talus, and the western wall is only one-half as high as the rest.

THE TLALTELS, OR MOUNDS.

These are little monticles in great numbers scattered around the pyramids and along the avenues of the dead, in groups, sometimes forming regular geometrical figures. Their outer form is a half spheroid, but they cover structures nowhere met with in similar monuments.

Each monticle covers a building, home, temple, mausoleum, or whatever it may be. Though connected with one another, they are isolated in their greater part. With a circular or poligonal plant they have only one side connected with the adjoining buildings. The floors and walls are admirable, though made of dry mud; they are covered with a composition of lime and metallic oxide, that would shame our best cements, Roman, Portland or Rosendale. The hard finish of those walls is made of a stucco not to be compared with our plaster. After a lapse of centuries (no one knows how many) they are so bright and shining that it gives pleasure to behold them. The floors are without cracks, without using Schillinger's patent.

Some of these *tumuli* have been broken open for treasures, building materials, or archeological objects, more for the former than latter. In all of them have been found vases and objects of art. In some, beautiful ornaments of silver, gold and stones.



Megalithic structures were so abundant that they can be seen used for house building, roads and bridges in the country around. I saw many in the neighboring town of San Juan of Teotihuacan, which would honor any museum in the world. And yet the Mexican Government suffers them to be destroyed, and loses not only objects of intrinsic value, but the key to unlock many of the secrets of the Ethnography of this continent. There is not in any one spot on this continent as much material together as in Teotihuacan. It would be worth the while of any society of wealthy American to send a scientific commission there. In one day I gathered more than 2,000 penates, and as many obsidian arrow points and knives. I acquired two large idols and several vases, which, however, I lost in Acapulco by being ignorant of the Mexican law of Treasuretrove.

In the avenue of the dead, opposite the Pyramid of the Moon, lies, abandoned and exposed to the dilapidations of the weather and vandals, a monolithic statue which may be *Mextli*, the one alluded to by the early Mexican historians, said to have been on top of the Pyramid of the Moon. It is eleven and one-half feet in height, and five and one-half feet on each side. It must weigh no less than 18 tons. These monuments are supposed to be the most ancient built by the hand of man in this continent. Who were the builders is not known. Betancourt says it was the Mexicans, but all other authors say that the Mexicans, when they arrived at the valley of Mexico, found these pyramids already built. Father Siguenza says it was the Olmecas, but that race has left no remains of their architecture, or records, upon which an opinion can be formed. Clavijero and Torquemada think they were built by the Toltecas, by whom the pyramid of Cholula is supposed to have been built. Sahagun says it was the Totonacos who built them. Mendoza, from geological consideration, ascribes to these pyramids a greater antiquity than any of the above-named race attained, and infers that they were built by a prehistoric race. No matter which race built them, they occupy, in the history, tradition, and legends of all of them, a most prominent place. The ground where they are placed was the Holy Land and the Mecca combined. The name Teotihuacan implies it.

The early writers translate it "*The city of the gods.*" Mendoza translates *Teotl*, God; *otli*, road; *huan* and *can*, close to; or "a place, close to the holy road." My friend Agustin Ziehl, translates, *Teotia*, to worship; *huan*, plural termination; *can*, as before; the whole, "Oratory, or place of worship."

In that spot the Indian tradition says the gods assembled after the world was created to metamorphize two of them into the *sun* and *moon*, and, according to some of the traditions, the pyramids were built at that time by the gods. When the Toltecs were tyrannized by their kings, they went in peregrination to Teotihuacan to propitiate the gods, who, however, destroyed them.

These traditions, ridiculous as they are, show the veneration which all the Indian races had for their pyramids.

The object in view of the builders of the pyramids is also surrounded by darkness, and only by a minute study of the structures themselves and a comparison with other similar ones, may we form more or less plausible conjectures.

Half a century ago, Champollion's discoveries gave the key to classify and understand the wonderful monuments of Egypt. The deciphering of the cuneiform character has thrown light to arrange and establish the dates of the temples and palaces of Nineveh and Babylon. All the Greek and Roman structures have been surveyed, illustrated, classified, and described minutely. The Dagobes and rock-cut temples of India have been brought to the reach of tradition and history, and have shown that those of Burmah, Cambodia, or China were not so remote that their origin could not be traced. Only the monuments of America still defy the endeavors of Americans to wrest from them the secrets of their history.

The builders of the pyramids were utterly illiterate, and have left no written record of their erection, nor are there any legible inscriptions on the stones, found on or around them, which offer any hints to the inquirer. They are in this respect similar to the old world monuments known as Barrows Cairns Giant's beds, Bazinas howes, Tumps, Lowe, etc.

And, as Ferguson says, "Till antiquaries are agreed whether the dolmens are monuments of the dead or altars for sacrificing men, whether the circles are temples or tombs or observatories, whether the mounds are tombs or law courts, it seems impossible, without arguing every point, to say anything that will be generally accepted."

If we cannot hope for the exact determination of the time of building the pyramids, or the race that originated them, however, we can find striking resemblances to similar structures in both continents.

We find in the old continent the everybody's-known pyramids of Egypt, with a great resemblance to our own. Their size is not very different; the areas covered by the two largest ones, in both hemispheres, are nearly the same, whereas the smaller Mexican pyramid is, in areal size, between the Great and Superior in Egypt. It has been stated by nearly every writer on the subject, that the American pyramids, like the Egyptian ones, were oriented by the cardinal points; but it is not so. On the contrary, it is a distinguishing characteristic of the structures on this continent, to be nearly all with their sides running according to intermediate points of the compass.

Another point of resemblance consists in that they are associated with funereal remains. In nearly all such structures human remains, either simply buried, or incased in cists or urns, are to be found. It has been made a subject of many studies, and the origin of many theories, the possible use to which the Egyptian pyramids could be put for astronomical purposes. The pyramids we are considering have no apparent device by means of which they might be made serviceable for that purpose. We might say, borrowing a botanical expression, that the pyramids in the valley of the Nile, and those in the valley of Anahuac, are of the same *genus* but of different *species*.

The geographical distribution is also remarkably similar in both continents. Starting from the north, we find them in England and Scotland, especially in hilly countries; in *tumuli*, *dolmens*, *avenues*, *circles*, and the fanciful Dracontia of Dr. Stukeley, attaining the greatest dimensions at Averbury and Stonehenge. In Ireland, we find similiar structures all over that country, under the names of cairns, which are specially described in the accounts of the battle circles of Moytura.

The tumuli, dolmens, and other monuments of the like, are very numerous both in Scandinavia and North Germany. To the Danes the credit is due of the first attempts to a systematic classification. We find them also in France and all the countries bordering the Mediterranean Sea. In Algiers and Tripoli they are numerous, and some in Algiers resemble those of Teotihuacan in the connection of the tumuli by rows of stone. The islands of the Mediterranean afford also many samples of these monuments, sometimes of great beauty and splendor. They extend themselves to Palestine, India, and the Siberian steppes. In Europe, as well as in Asia, they attain the largest dimensions and the most beautiful forms in a zone not far from the tropic of Cancer.

If now we come to this side of the Atlantic, we find them at the south of the shores of the Great Lakes, and spreading themselves easterly as far as the western boundary of the State of New Jersey, and westerly as far as Oregon and even Vancouver Island. The finest specimens of these structures are to be found along the great rivers Missouri, Mississippi and Ohio, generally on their borders and on alluvial soil. The Marietta works and Pyramids, on the banks of the Muskingum River, as described by Squier and Davis, have many points of resemblance to the Pyramids of Teotihuacan.

Going northward they change their form from the spherical to the pyramidal, and improve both in size and shape, attaining the best form at a zone not far from the tropics, thus resembling in their geographical distribution the monuments of the old world. Another feature is that, in proportion as we go northward, what the mounds lose in importance, the inclosure gains in extension, so that, in the old continent, the latter are either absent or of little importance, in Egypt or India, attaining an extension of several miles in the northern countries.

The same occurs in America. The walls, that in Teotihuacan measure scarcely a few thousand feet, reach, in Ohio, several miles, and assume all kinds of shapes. It seems as if the mound builders had started from near the tropics, where they held undisputed sway, and, going northward, had to protect their buildings with fortifications and other works, from the aggression of hostile tribes. The similarity of these structures raise, naturally, the question whether their builders were from the same race in both continents; and, if so, whether they emigrated from the Old Continent to the New, or *vice versa*?

Among the penates, or little figures, I found in Teotihuacan, there are all the types of mankind. The resemblance cannot be accidental, as they are found with even the same ornaments used by the respective type races. It seems as if people of all the races, known to us, had inhabited the Valley of *Anahuac*, or that the races which inhabited that valley were acquainted with all the races, and had perpetuated them in their statues. But, then, the same resemblance is found in the flora and fauna of both countries, and we are forced to conclude that either similar conditions of land, position, and climate will produce the same organisms, with similar tendencies, or that the earth, in her cosmogonical and geological life, has, by means of her changes of rotation, upheavals and depressions, uncovered, and immerged successively all her surface, and gradually shifted the organized world from one place into another.

In the utter impossibility of determining the history of these monuments, the Danish antiquarians have classified them in three classes:—

Those belonging to the remotest age, in which no metals of any kind were known to man; and they have called them as belonging to the "Stone Age." The Stone Age they suppose to come down to about 2,000 years B. C. The monument in which, besides the stone relics, copper, gold and brass are found, they place as belonging to another age, called the "Bronze Age," which comes down to our own era, in which time, iron, they suppose, began to be used.

This classification is obviously incomplete, inasmuch as most probably before they used bronze, man used gold, copper, and tin, which is found in many instances pure, in a native state. Besides, a great period of transition must have elapsed between two successive ages. In our country they have been classified according to the probable purpose for which they were built. That of Squier, Davis, and Lapham, is as follows:—

1. Inclosures for defense.
2. Sacred and miscellaneous inclosures.
3. Mounds of sacrifice.
4. Mounds of sepulture.
5. Temple mounds.
6. Animal mounds.

The Pyramids of Teotihuacan would be classified by Danish antiquarians as belonging to the Bronze Age, as different tools and ornaments have been found within them, though never iron has been found. According to the American classification, they belong to all the several denominations, excepting the last one.

They were inclosures for defense, as shown by the walls, excavations, and strategical position they occupy. Besides being placed in the highest part of the valley of Mexico, they were walled on the pregnable sides. Dr. Manfred, a member of the Mexican Geological Society and one of those sent by that society to explore those monuments, thinks that the well or shaft found in the interior of the Pyramid of the Moon is the entrance to a gallery going to the Pyramid of the Sun. He states to have seen similar structures in New Zealand, and in the Pampas of Sacramento, in South America, which the natives call Pahs. Each pyramid, or mound, has a central well, which gives entrance to galleries going to long distances. When the natives are attacked he says they defend the mounds to the last, but, if overpowered, they dissappear through the wells, and make their escape to long distances. He thinks that a proper exploration would show that both pyramids are connected by a gallery.

Close to the citadel I found large heaps of obsidian arrow points, and on the neighboring river many boulders of the same material of which the arrow points are made. I presume there they had their arsenal. They were "sacred inclosures" inasmuch as, according

to tradition, the Mexicans assembled around them to propitiate their gods.

The Mexicans sacrificed prisoners, both to the sun, *Tonatiuh*, and to the moon, *Meztli*, consequently the pyramids must have been used as "Mounds of Sacrifice."

That they were Mounds of Sepulture is implied by the *Micoatl*, or Avenue of the Dead, and attested by the cists or urns and funereal objects found in the *Tlatles*, or Tumuli.

Finally they were "Temple Mounds" dedicated to *Tonatiuh* and *Meztli*.

What a horizon is surveyed by a traveler on top of the Meztlizacoalli! At his feet the sacred Valley of Teotihuacan, one of the most elevated in Mexico, fertile, and perpetually green, surrounded by hills, like an amphitheatre. The silvery heads of Popocatapetl and Iztaccihuatl penetrating high in the sky on one side, and the snow-capped Toluca in the opposite, all full with traditions. Close by the town of San Juan, the only one that tradition mentions from prehistoric times. There is where the wise men of Anahuac assembled together to organize their wonderful calendar. There the learned and pious Huemac wrote the Teoamoxlit or American Bible; there, in remote ages, took effect the symbolic, mythological metamorphosis.

Of all that splendor and glorious achievements, what remains? In the words of Rioja:

"Sad relics, sad and vain,
Of those invincible men
Who held the region then."

[Lecture delivered by E. J. Molera, before the Geographical Society of the Pacific.]

Notes about Saws.

THE Germans use at the present day among their furniture makers, carpenters and joiners, thirteen different varieties of saws, each one of which has its own peculiar size of the teeth, as well as a different relation of the teeth to each other. How important the thin saw blade is, not only as a means to save power, but also as a means to save wood, can be seen from the following: A log of walnut, four meters long, and one meter diameter, cut into twenty pieces by the new horizontal saw frame, saves thirty millimeters of wood when compared with the cutting of the old fashioned vertical saws. This is equal to a profit of $9.00 to $12.00. For Germany, where annually 100,000 cubic meters of this wood is used in the various industries, this would represent a saving of $37,500 to $50,000.

The greatest enemies of saws are the particles and pieces of iron found in woods; these are often driven in some form into young trees and succeeding growth covers them up entirely. A curious collection of such ingrown iron particles was recently exhibited in Germany. It had been obtained from America, Prussia, Germany, Spain and other countries, and exhibited the queerest forms of wood formation covering particles of iron of various shapes and sizes, whose presence was revealed only by the breaking of the teeth of the saw, and which without the cutting would have remained invisible to the human eyes.—*The Lumber World.*

Save Your Chisel Handles.

ALL carpenters know how soon the butt end of chisels split, when daily exposed to the blow of a mallet or hammer. A remedy suggested by a Brooklyn man consists simply in sawing or cutting off the round end of the handle so as to make it flat, and attaching by a few small nails on the top of it two round disks of sole leather, so that the end becomes similar to the heel of a boot. Two thicknesses of leather will prevent all further splitting, and if, in the course of time, they expand or overlap the wood of the handle, they are simply trimmed off all around.

IT is well known that the round form is the best for chimneys in workshops. It facilitates the escape of smoke and gives less hold for the wind, besides requiring less material for construction. Round chimneys are, however, difficult to build, and in some places the want of workmen able to make the round kind has compelled the adoption of square or octagonal forms. To obviate this a European firm makes bricks in the shape of wedges, and corresponding with the radius the chimney is to have.

WHITE paint that has become discolored may be nicely cleaned by using a little whitening in the water for washing.

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" Dressed	"	37 50
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Shakes	"	12 00
Redwood Posts	per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
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Surface No. 1	"	40 00
" 1x6	"	37 50
" No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼x4 and 1¼x6	"	40 00
" 6 in. 13 ft. and over	"	37 50
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6 d " " " "	1.50
4 d and 5 d " " " "	1.75

THE most universally recognized rule for determining the height of a room is the sum of half the width and the square root of the length. The adoption of this rule results in bringing the angle formed by the ceiling and wall just within the angle of vision of a person standing in the center of the room, without raising the eyes; but of course the rule can only be strictly observed in one room on each floor, unless a double tier of joists is set above the smaller rooms, or unless it is possible to have the floors of rooms in the same story on different levels, either course involving difficulty and expense.

TO CLEAN red brick floors rub them with a brick of the same color, moistened with a little warm milk and water, and wipe dry with a soft cloth.

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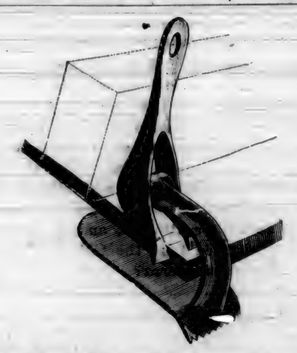

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S. L. PLEACE, 634 Stevenson St	" 11
O. E. BRADY, 822 Valencia St	" 22
THOS. WHITE, 45 Minna St	" 4
J. J. CROOKS, 1929 Sutter St	" 9
JOHN COX, 608 Jones St	" 16
J. F. RILEY, Secretary, 813 Howard St	" 38
P. O. SULLIVAN, 543 Stevenson St	" 35
BYRON BROS., 11 26th St	" 34
JOHN BYRON, 19 Shotwell St	" 27
M. FARRELL, 139½ 11th	" 52
W. E. Stevens	Box 46
CON. HOLMES, 726 Hayes St	" 10
JOHN H. HANAVAN, 1711 Jessie St	" 15
G. W. KNEEDLER, 1013 Vallejo St	" 51
B. A. THOMPSON, Oakland	" 25
JOHN MCDERMOTT, 124 10th St	" 33
D. J. O'BRIEN, 323 Dupont St	" 31
S. N. ROBERTS, 54 3d St	" 56
G. T. WATERSON, 638 Market St	" 64
C. SCHOENMAKER, 323½ Chestnut St	" 62
CHAS. CATE & SON	" 58
R. RINGROSE, 2618 Sacramento St	" 75
J. BENDER	" 73
PATTISON & OAKLEY	" 54
DAVID PIERCE	" 66
J. B. SANFORD	" 50
JOHN MAGUIRE	" 74

PARTIES RENTING BOXES IN THE BUILDERS' EXCHANGE.

WARDEN & MCCLURE, Teamsters	Box 30
MCVICKER & ROACH, Stone-cutters	" 8
REMILLARD BRICK CO	" 23
PAT. BRICK CO	" 29
CHAS. WARREN, Grader	" 37
A. E. BUCKMAN, Grader	" 42
JAS. E. WHITTIER, Asphaltum	" 41
DAVIS & COWELL, Lime and Cement	" 43
KENNY & MCCUE, Graders	" 44
H. & J. RALSTON, Oakland Iron-men	" 78
JOHN KELSO, Grader	" 76
R. LLEWELLYN, Columbia Foundry	" 77
T. W. PETERSON & CO., Brickmen	" 68
WESTERN IRON WORKS, 123 and 125 Beale St.	" 67
J. BROWELL, Patent Chimneys	" 71
R. TIERNAN, Lime and Cement	" 65
CALVIN, NUTTING & SON	" 49
O'CONNELL & LEWIS	" 72

Thanks.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS is the most practical and sensible Journal printed on the Pacific Slope. It has literary merits that make it agreeable reading, and its practical articles, designs, and illustrations are pertinent to its purposes and must be extremely useful to the architects and builders of all sections of the far West. Messrs. Jas. E. and Geo. H. Wolfe, have displayed considerable judgment and remarkable vigor in working their paper to its present high position.—*Decorator and Furnisher of New York.*

Shavings and Saw-dust.

A NEW work by J. Kane, of Rochester, New York. It treats especially of the designing, construction, care and operation of wood-working machinery. The work is especially valuable from the fact that the observations given are those of a practical machinist and one who presents his views instructively and entertainingly. Every wood-worker should possess a copy of this work. Sent post paid upon receipt of $1.50.

Malleable Iron Castings and Fences.

PARTICULAR attention is called to the new and artistic designs of malleable iron castings and fences now being successfully introduced into this market by the Phœnix Iron Works. See page ii of this issue.

Steel Sinks.

EVERY new building should have their kitchen furnished with one of these new sinks. Old wooden sinks should be removed to make place for these neat and cleanly appurtenances. See page ix.

Venetian Blinds.

D. S. BROWN & Co. have been appointed sole agents for these beautiful adjuncts to windows. Architects are especially invited to examine the merits of these blinds. See page xii.

Gas Machines.

THE Royal Gas Machine, through their explanations on page iii of this issue, calls particular attention to the merits of their improved Gas Machine. Send for circulars.

Wood-Working Machinery.

ADDRESS a letter to Goodell and Waters, Philadelphia, for information in regard to all the latest improvements in wood-working machinery.

"YOU have asked to see me?" said an employer to his clerk. "Yes, sir." "What is wanted?" "I wish to make a claim, which I doubt not your sense of justice will accept." "Very well, what is it?" "I do the same work as Z, and I am paid five dollars a month less than he. Is that fair?" "No; you are perfectly right. I will at once reduce Z's salary five dollars!"

New Books Just Received.

Street, Store and Bank Fronts	$ 4.00
Wooden and Brick Buildings, 2 vols.	18.00
Public Buildings	4.00
School House and Church Architecture	4.00
Cottages and Villas	6.00
Practical Carpentry	1.00
Lessons on Hand Railing	5.00
Stables, Fences, Out-Buildings etc.	2.50
Plasterer's Manual, enlarged	.75
Artistic Homes	3.50
Modern House Painting	5.00
Old Homes Made New	1.50
Foundations (New Edition)	2.00
Complete Details	2.00
Modern Perspective	6.00
American House Carpenter	5.00
Cutting Tools	2.00
Grimshaw on Saws	4.00
Steel Square and its Uses	1.00
Mechanics' Geometry	5.00
Artisan	5.00
Detail Cottage Architecture	10.00
Village Builder	10.00
Builders' Guide	2.00
Album of Mantels	8.00
History of Architecture	15.00
Building Superintendence	4.00
Buck's Architectural Designs	.50
American Cottage Homes	3.00
Village and Country Homes	5.00
Science of Carpentry	5.00
Universal Assistant	2.50
Plaster, How to Make it	1.00
Shavings and Saw-dust	1.50
Architectural Drawing	2.50
Lumberman's Hand-Book	2.00
Modern House Painting	5.00
Practical Geometry	1.00
Modern Architectural Designs	10.00
Practical Perspective	6.00
Architects' Companion	2.50
Model Homes	1.00
Hand Railing and Stair Casing	1.50
Drawing for Carpenters	1.75
" " Bricklayers	1.50
" " Cabinet Makers	1.50
" " Stone Masons	1.50
Building Construction	1.25
Linear Drawing	1.25
Cutting Tools	1.50
Cumming's Details	6.00
Stair Builders' Guide	3.00
Drawing and Shading	1.25
Carpenters' Manual	.50
Steel Square Problems	1.00
Work Shop Companion	.35
Bound Volume California Architect	2.50
Specifications	.50
Barn Plans	1.50
Solution Pyramid Problem	1.50
Standard Scroll Book	2.00
Swiss Cottage	2.50

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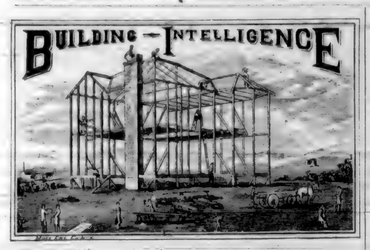

We do not answer ANONYMOUS communications. Contractors are not regarded as architects, simply because they do, at times, make plans for buildings.

Friend, Architector, Constant Reader, old subscriber and others, by sending us their proper names, will receive letters in answer to their questions

SAN FRANCISCO.

Market, cor. Seventh. Four-story brick.
O.—Odd Fellows Hall Association.
A.—Wright & Sanders.
C.—Carpenter work—E. Farrell.
C.—Brick work—J. Liebert.
$253,000.

Broadway, near Battery. Four-story brick.
O.—California Cracker Co.
A.—Wright & Sanders.
C.—Carpenter work—T. Moffatt.
C. Brick work, J. Liebert.
$28,000.

Devisadero, near California. Four two-story and basement frames.
O.—J. Winterburn.
A. McDougall & Son.
C.—J. McKay.
$18,000.

Devisadero, cor. Pine. One-story frame.
O. and B.—G. Hinkle.
$2,000.

Pine, cor. Broderick. Two-story and basement frame.
O.—Mrs. A. Seannell.
B. T. P. Kelly.
$3,500.

Devisadero, near Sutter. Two-story frame.
O.—G. Kerrison.
C.—A. Jackson.
$4,000.

Scott, cor. Bush. Two two-story frames.
O.—G. Edwards.
B. H. Rowe.
$5,500.

Steiner, near California. Two-story and basement frame.
O. and B.—J. P. Shepherd.
$7,000.

California, near Webster. Two-story and basement frame.
O.—C. Hermann.
A.—Kenitzer & Raun.
C.—W. Pluns.
$7,000.

Pine, cor Webster. Two-story frame.
O.—P. R. Berges.
A.—B. E. Henriksen.
C.—R. Smilie.
$8,300.

Sixteenth, near Church. One-story frame.
O.—C. W. Mohr.
A.—B. E. Henriksen.
C.—J. Klein.
$3,000.

Webster, near Eddy. Two-story frame.
O.—B. Bates.
A.—S. & J. C. Newsom.
C.—W. P. Clark.
$4,000.

Sacramento, near Kearny. Alterations.
O.—Cigar Association.
C.—I. V. Lawrence.
$700.

Guerrero, cor. Ridley. Two-story frame.
O.—J. Dobbelaar.
A.—W. C. Hoagland.
C.—P. G. Sommerset.
$4,000.

Broderick, near California. Two-story frame.
O.—Mr. White.
A.—W. P. Moore.
C.—L. D. Frichette.

Post, near Dupont. Alterations.
O.—L. Strauss.
A.—J. P. Gaynor.
C.—R. McCann.
$8,000.

O'Farrell, near Buchanan. Two-story and basement frame.
O.—J. Lacher.
A.—G. E. Voelkel.
C.—J. H. McKay.
$7,500.

Fillmore, cor. Washington. Two-story and basement frame.
O.—J. Ortmann.
A.—G. E. Voelkel.
Day's work.
$8,500.

Sacramento, near Hyde. Alterations.
O.—H. Watters.
A.—G. E. Voelkel.
C.—J. H. Thom Wohrden
$1,000.

Golden Gate Avenue, near Van Ness. Two-story frame.
O.—K. Strauss.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$10,000.

Third, near Harrison. Three-story frame.
O.—Mrs. N. Levy.
A.—Schmidt & Havens.
C.—Bassett Bros.
$7,500.

Clinton Park—One-story frame.
O.—Mr. Rusenhein.
A.—Schmidt & Havens.
C.—Leonard & Co.
$2,500.

Sutter, near Leavenworth. Two-story and basement frame.
O.—I. Eisenberg.
A.—Schmidt & Havens.
C.—J. H. McKay.
$8,500.

Market, near Sixth. Additions.
O.—Mr. Jones.
A.—Newsom & Gash.
Day's work.
$8,000.

Pine, cor Webster. Two-story frame.
O.—P. R. Berges.
A.—B. E. Henriksen.
C.—R. Smilie.
$5,000.

Sixteenth, near Church. One-story frame.
O.—C. W. Mohr.
A.—B. E. Henriksen.
C.—J. Klein.
$3,000.

Webster, near Eddy. Two-story frame.
O.—B. Bates.
A.—S. & J. C. Newsom.
C.—W. P. Clark.
$4,000.

Sacramento, near Kearny. Alterations.
O.—Cigar Association.
C.—I. V. Lawrence.
$700.

Guerrero, cor. Ridley. Two-story frame.
O.—J. Dobbelaar.
A.—W. C. Hoagland.
C.—P. G. Sommerset.
$4,000.

Broderick, near California. Two-story frame.
O.—Mr. White.
A.—W. P. Moore.
C.—L. D. Frichette.

Post, near Dupont. Alterations.
O.—L. Strauss.
A.—J. P. Gaynor.
C.—R. McCann.
$8,000.

Hyde, near Sutter. Two-story frame.
O.—M. Blake.
A.—J. Marquis.
C.—Gray & Stover.
$7,000.

First, near Howard. Three-story and basement frame.
O.—J. Quick.
A.—J. Marquis.
C.—J. O'Brien.
$8,000.

Clay, cor. Leavenworth. Eight three-story frames.
O.—C. Spaulding.
A. J. Marquis.
C.—Cummings & Rebman
$33,000.

Devisadero, cor. Pacific Avenue. Two-story brick and frame.
O.—Dr. McLean.
A. Curlett & Cuthbertson.
Total cost, $55,000.

California, near Franklin. Additions.
O.—J. Carolan
A.—Curlett & Cuthbertson.
C.—J. Wilcox.
$6,000.

O'Farrell, near Dupont. Alterations.
O.—Plagemann & Bernhard.
C.—G. Seiss.
$8,000.

Oak, near Grove. Three two-story frames.
O.—R. Ewing.
C.—J. S. Mackay.
$8,500.

Haight, near Broderick. Two-story frame.
O.—Mrs. Wakeman.
A.—Townsend & Wyneken.
C.—Treadwell & Thompson.
$6,000.

Devisadero, cor. Waller. Three two-story frames.
O. and B.—C. Hinkle.
$15,000.

Block, bounded by Haight, Waller, Scott, and Devisadero. Seventeen two-story frames.
O. and B.—J. Hinkle.
$68,000

Laguna, cor Olive Avenue. Two-story frame.
O.—L. Zeiss.
A.—W. Schrof.
C.—H. Weiss.
$2,080.

Ellis, near Powell. Alterations.
O.—W. J. Turner.
A.—H. D. Mitchell.
C.—J. Geary.
$5,000.

Natoma, near Seventh. Three-story frame.
O.—M. Doyle.
A.—W. Mooser.
C.—P. Laherty.
$5,000.

Golden Gate Avenue, near Devisadero. Three-story frame.
O.—J. Neuman.
A.—W. Mooser.
C.—J. H. McKay.
$12,000.

Ellis, near Franklin. Alterations.
O. T. Donahtie.
C.—M. Murphy.
$1,000.

Webster, near O'Farrell. Alterations.
O. and B.—M. Magrane.
$4,000.

Fulton, near Buchanan. One-story frame.
O.—T. Roy.
C.—A. N. Allspaugh.
$600.

Pierce, near O'Farrell. Two-story frame.
O.—Carvill Manufacturing Co.
Day's work.
$2,500.

Fillmore, near Fulton. Two-story and basement frame.
O.—J. Bauman.
A.—W. G. Copeland.
C.—Ingerson & Gore.
$8,275.

McAllister, near Polk. Alterations.
O.—R. Crockett.
C.—T. M. Quackenbush.
$700.

McAllister, near Seventh. One-story brick.
O.—J. K. Prior.
Day's work.
$16,000.

Fulton, cor. Webster. Additions.
O.—National Brewing Co.
C.—W. Huwe.
$2,000.

Webster, near Grove. Two-story frame.
O.—J. Ling.
C.—W. Grant.
$2,500.

Nebraska, near Yolo. One-story frame.
O.—J. McClellan.
C.—T. Mitchell.
$1,100.

McAllister, near Franklin. Three-story frame.
O.—Mrs. Kemme.
A.—T. J. Welsh.
C.—J. Furness.
$7,000.

Silver, near Fourth. Three-story frame.
O.—Mrs. Hanbert.
A.—T. J. Welsh.
C.—M. Lynch.
$7,000.

Guerrero, near Twenty-Third. Two two-story frames.
O.—Depretre.
A.—W. Mooser.
C.—Binet.
$7,000.

Fifteenth, cor. Market. Two-story frame.
O.—Judge Wendell.
C.—Commary & Beardslee.
$9,000.

Boardman Place, near Brannan. One-story frame.
O.—W. Black.
C.—Thompson & Treadwell.
$1,300.

Tenth, near Harrison. Two two-story frames.
O.—M. Conniff.
A.—T. A. Eisen.
O.—T. J. Hamilton.
$8,000.

Twenty-third, cor. Dolores. Two two-story frames.
O.—J. Clancey.
C.—D. Spangler.
$4,000.

Jessie, near Eighteenth. Alterations.
O.—S Sullivan.
C.—J. Doherty.
$1,900.

Second Avenue, near Fifteenth. Three two-story frames.
O. and B.—G. Edwards.
$6,500.

Page, near Gough. Two three-story frames.
O.—Mrs. Strasser.
A.—G. H. Miller.
C.—J. T. Grant.
$8,000.

Tenth, cor. Minna. Five two-story frames.
O.—T. J. Bergin.
A.—J. R. Martinaughe.
C.—J. Mulcahy.
$22,000.

Shotwell, near Twenty-second. Alterations.
O.—A. W. Jackson.
A.—G. A. Bordwell.
Day's work.
$1,600.

California, near Montgomery. Alterations.
O.—Produce Exchange.
A.—T. A. Eisen.
C.—Maxwell & Stevens.
$4,000.

Brannan, cor. Sanford. Four-story frame.
O.—T. J. Parsons.
A.—T. A. Eisen.
C.—T. Day.
$15,000.

Grove, near Franklin. Two-story and basement frame.
O.—H. H. Besby.
A.—T. A. Eisen.
C.—C. Mills.
$4,000.

Golden Gate Avenue, cor. Taylor. Alterations.
O.—W. A. Scollay.
C.—Leonard, Bamber & Co.
$1,500.

O'Farrell, near Dupont. Alterations.
O.—
C.—S. M. Hills.
$3,000.

Market, near Fifth. Alterations.
O.—R. C. Church.
A.—W. Patton.
C.—J. H. Cory.
$4,000.

Battery, cor. Clay. Alterations.
O.—
A.—Percy & Hamilton.
C.—J. Cox.

Market, near Jones. Alterations.
O.—C. T. Forrest.
C.—G. Richardson.

Washington, cor. Van Ness Avenue. Three-story and basement frame.
O.—L. F. Merrill.
A.—Cleveland & Swain.
Carpenters.—Treadwell & Thompson.
W. E. Stevens—Mason.
$60,000.

MISCELLANEOUS.

Santa Cruz—Three-story frame. O., A. P. Swanton; C., Chas. Kaye; $8,000. Three-story frame. O., Jos. Capelli; C., W. A. Liddell; $2,000. Two-story frame. O., C. W. Davis; C., C. W. Davis; $2,500. Two-story frame.—O., — Shorb, C., D. Moulton; $2,500. Neptune Bath House. O., Captain Miller; C., C. Kaye; $10,000. Two-story building. O., Farmer's Union Corporation; C., John Morrow; $10,000.

Livermore—One-story frame building. O., L. H. Cutler; C., C. W. Bradshaw; $1,500. One and one-half story frame. O., Wm. Budworth; C., J. F. Meyers; $2,000. Additions to S. Levy's building. C., Weymouth Bros; $600. One-story frame. O., Ampacher Bros.; C., Weymouth Bros.; $1,000. One and one-half-story frame. O., Z. D. Cheney; C., C. W. Bradshaw; $2,500.

St. Helena—Two-story frame. O., J. Greer; A., A. Schropfer; C.,—Wilkens; $5,500. Two-story and basement frame. O., J. Thomas; A., A. Schropfer; C., M. Bale; $7,000.

Petaluma—Two-story frame school house. A., Curlett & Cuthbertson; $5,000.

Oakland—Twenty-second cor. Adeline. One-story frame. O., M. Krischner; C., A. Denke; $4,000. San Pablo Avenue. One-story frame. O., W. F. Coon; A., S. & J. C. Newsom; C.,—Herbst; $2,700. Filbert, near Fourteenth. One-story frame. O., J. C. Newsom; A., S. & J. C. Newsom; C., Pierce & Smith; $2,300. Nineteenth, cor. Castro. Four one-story frames. O., E. L. G. Steele; A. Wolfe & Son; C., Veitch & Knowles; $4,500.

Suisun—Two one-story frames. O., C. P. Reeves; A., S. & J. C. Newsom; day's work; $4,000.

Alameda—Webster, near Pacific Avenue. One-story frame. O., C. Miller; C., J. Langren; $1,300. McPherson, near Central Avenue. One-story frame. O. and B., J. F. Heitman; $500. Santa Clara Avenue, cor. Pern. Two two-story frames. O., J. Quinchard; B., Wasson & Pattiant; $9,000. McPherson, near Railroad Avenue. One-story frame; O., Mr. Gewer; C., A. Denke; $2,200. Union, cor. Railroad Avenue. Additions. O., Mr. Ray; C., A. Denke; $1,400. Eagle Avenue, cor. Lafayette. One-story frame. O., Mrs. Haully; C., A. Denke; $1,200. Santa Clara Avenue, near Webster. One-story frame. O., C. Baisley; C., V. M. Frodden; $2,000. San Antonio Avenue, near Willow. One-story frame. O., J. C. Jamison; day's work; $1,000.

Woodland—One-story frame. O., E. S. Farnum; C., H. F. Myres; $1,175. One-story frame. O., B. Baker; C., A. Pool; $1,200. Two-story frame. O. and B., S. Caldwell; $8,800. Two one-story frames. O. and B., C. G. White; $2,000. Two-story brick. O., J. Q. Adams; carpenter, W. Wilson; brick work, C. C. Scott; $7,582. Two-story frame. O., H. Troup; C., C. Reardon; $2,000. Two-story frame. O., R. Huston; C., J. Caldwell; $2,000. Additions. O., B. A. Hudson; C., C. S. Caldwell; $1,600. Additions. O., R. Clark; C., C. D. Myres; $1,340. Additions. O., G. D. Fiske; C., W. H. Winne; $1,165. Tank House. C., W. H. Winne; $1,700.

During the quarter ending March 5th, twenty-five buildings have been erected in Woodland and vicinity, costing about $55,000.

Suisun—Additions. O., Odd Fellows Association; A., G. A. Bordwell; $6,000.

Patent Applied for—Cheap Burglar Alarm.

DRIVE a headless nail into the casing over a door, and, after closing the door, hang a tin pan on the nail when you go to bed. That is to say, Do all this if you are naturally timid and want a cheap burglar alarm that will work every time.

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The California Architect and Building News.

VOLUME V. NUMBER 5. SAN FRANCISCO, MAY, 1884. $2.00 per Annum, in Advance. Single Copies, 20 Cents.

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A square is seven-eighths of an inch in length by width of column.
Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.
NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.
When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Result of our Competition.

IN our January issue of this year, the proprietors of this Journal offered four premiums, amounting to $175, for the four best plans for a country dwelling to cost about $5,000. It was stipulated in the offer made, that all plans were to be in this office on or before the first day of May.

With the result as far as the number of plans is concerned, we are well pleased; much interest was taken by both Architects and Draughtsmen in various sections of the country, and the plans presented, as a whole, are meritorious in design, neat and skillful in execution, and are decidedly original in conception, the only fault being that, as a rule, the estimates are too low for the designs presented, without a single exception.

The committee from the S. F. Chapter of Architects—Messrs. Sanders, Pissis & Mitchell—met in our office early Saturday (May 10) evening, for the purpose of examining the plans presented. Each one was carefully considered, and the defects and beauties of each plan were noted. From the number of plans, much time was taken and it was midnight when they adjourned. They will meet again this week, when the award will be made.

Plans presented by the following parties, are the ones selected from which the successful four will be drawn:—

Garrick.
As You Like It.
P. Nutt.
Oriole.
Tease Quare.
Alaska.
Hoosier.
T. L. W. K.
O. K.

The proper names and addresses of the parties entitled to receive the premiums, will be given in our next issue. Notification, however, will be sent by mail as soon as the award is made. The committee will not be informed of either name or address until their report is prepared. Drafts for the amounts offered will be sent to the successful competitors as soon as the decision is announced.

The Pioneer Hall.

RESULT OF THE COMPETITION.

The building committee of the Pioneer Society, after receiving the report of an expert upon the merits of the various plans presented, selected those presented by

Wright & Sanders,
Percy & Hamilton,
W. Patton,

as the three best, and awarded to each equal premiums of $500, the first-named securing the honor of furnishing the plans, and superintending the erection of the building.

Much dissatisfaction is felt at the result given. Had the building committee selected *three* experts, the feeling among the unsuccessful ones would not have been so bitter; but, in the case in point, when so much time and money had been expended in preparing plans, it is justly held that the decision should not have been left to *one* man, as too much power was thereby placed for such an important decision.

The whole arrangement, from its inception, has turned out similar to previous competitions held in this city. This Journal pointed out plainly the many absurd requirements of the rules governing the one in question, and we were much surprised at the number of first-class architects who almost knowingly wasted their time and money in preparing plans. We hope the architects of this city have received a lesson from the way the Pioneer Hall competition has been conducted.

High Price of Bricks.

PROPOSED REMEDY.

A HEALTHY state of building operations in any large city is always sure to be the means of local combinations among material men, the effect of which is to raise the prices of nearly everything connected with the building trades, and oftentimes to a point that compels owners to stop contemplated improvements; San Francisco is no exception to this general rule. No matter how great a depression may have existed, as soon as the least ray of light breaks in upon the general gloom, the material men combine, and, as a result, prices are gradually raised until they become so great that operations in the respective branches of trade are almost stopped; then prices are lowered until another demand is created, when the same process is repeated as before. And this battledore and shuttlecock game is played over and over again to the infinite disgust of those who desire to see materials and wages at a price satisfactory to both producers and consumers.

In several issues of this Journal, we have shown that the prices of lumber are and have been much higher than a fair, legitimate profit will warrant. And now when property owners are willing to invest money in substantial improvements, expecting for a while but a small income from their outlay, the price of brick is held at a figure totally inconsistent with the cost of production.

The lowest price for which good, hard-burned brick can be purchased at the present time is eleven dollars per thousand, the only concession granted being one per cent. discount for cash. In addition to this price, from 50 cents to $1.50 per thousand is charged for hauling, depending altogether upon the distance. At the price given there is a clear profit of at least three dollars per thousand. In a small building where only a few thousands are necessary for foundations and chimneys, the cost is not much increased; but on the new Odd Fellows' Hall, where nearly four millions are required, the case assumes a totally different aspect.

This state of affairs has received careful study from those most interested, and more than one project is on foot, to counteract the designs of those holding the brick supply in their tight grasp. Among other things, the advisability has been considered of the Master Masons themselves combining and starting a manufactory of their own, thus in a great measure making them independent of the syndicate now controlling the market.

We can see no good reason for a project of this kind not being a successful one. Unity of action and strict obedience to a well digested set of rules will enable the leading masons to form a company that, with judicious management, can so regulate the supply of brick and the price thereof that owners can make preparations a long way ahead for building, feeling sure that they can make calculations on the cost of improvements and thus determine if the same will return a profitable income.

There can be no question but that some arrangement will be made before next year's building season will commence, to regulate the price of bricks, and still leave a fair profit to the manufacturer. We understand that one of the largest consumers of brick in the city has taken hold of the problem, and if his intentions are carried out as stated to us, the price will be materially lower in the near future.

In this connection, we would suggest that the matter of masons' wages become an important one. Patterning after the example of the manufacturers, whenever labor is in demand up jumps the wages to as high a standard as the owners will bear, and when work is scarce on account of the great cost of materials and labor, the price gradually drops. One of the great questions to be considered is, Can a standard of wages and prices of materials be adopted, so that owners can calculate in the future the cost of any desired improvement.

Building Without Plans.

THE carpenter or contractor who is emphatic in his assurances that plans and specifications are not necessary may be likened to a druggist who should propose to furnish the medicines for a serious case of illness without the doctor's prescription; or to an opponent in a case at law, who should make the absurd proposition that he and his lawyer could settle the question without the aid of a judge and counsel on the other side. The relations of the owner and contractor must always necessarily resemble a case at law. The contractor's knowledge of the business is his counsel, the architect is the owner's counsel, and the plans and specifications are the judges. The best way to keep out of a real case at law is to provide this silent little court to settle every question.

The Increasing Prospects of this Journal.

WE once more renew expressions of gratitude for the handsome patronage extended to this journal, both in subscriptions and advertisements. It has by far exceeded the highest expectations of its founders, and if earnest efforts will accomplish it, the future will be no less a triumph than the past has been.

It is pleasant to listen to the very many complimentary expressions volunteered by patrons—personally strangers to us—known only by the feelings of friendship brought about through the influence of what has appeared from time to time in this journal.

It also greatly pleases to have a large number of our advertising patrons tell of the returns received, and the business advantages derived from advertising in our columns. We shall not "blow our own horn" in this regard, but refer those who have not, to those who have continued their advertising in this journal. Judicious advertising always yields a fair return for the money spent.

The Painters' Strike.

THE maximum rates of wages paid to journeymen painters up to the present time, has been $3.00 per diem. Recently, however, the spirit of dissatisfaction has manifested itself among the daily toilers with the brush and paint-pot, resulting in the demand for $3.50 per day, which being not acceeded to by the bosses, a strike has resulted.

Up to present writing, just prior to going to press, no general concession has been made by the master painters, although some have been compelled to comply with the demand for an advance, for the purpose of completing work under way, within the limits of contract time, and to avoid liquidated damages. A few of the employers, for reasons of their own, have yeilded, and in time there may be a general concession.

The opposition to the advance, on the part of the employers, is not based so much upon the financial feature, for in all cases of contracts taken after the advance becomes the rule, the difference can be provided for in the estimates for new work. But it is a well-known fact in painting circles, and among mechanics generally in other branches, and to architects, that adulterations of paint materials is a common practice with a certain class of master painters, who take work at prices that pure stock cannot be afforded, using various compounds composed of ingredients containing no elements of white lead and oil, and by this and other unfair means, deprive men who do honest work and use proper materials and are unwilling to degrade the painting art, from anything like a fair show in the field of contracting. And the better men realize the disadvantage at which they are placed, for the frauds can better afford, with the use of their abominable pastes and slushes costing but little to prepare, to pay $3.50, than competent and worthy men can afford $3.00, using the pure articles.

The hitch is mainly upon this ground; the better class of bosses feeling that there should be something done in the way of exposures of things existing and practiced daily in the painting business, to equalize matters, so that the public may be able to understand matters fully, and know who are *painters* in the right and true signification of the term, and who the men that roll up their sleeves and manipulate with their hands and arms, stuff that they call paint, but which contains not one-twentieth part of pure paint stock, which they palm off upon, and deceive owners with, while those who will not descend to such perversion of the mechanical art, have less to do than they should have, and suffer financially by being crowded out in so many cases, by reason of owners, for the sake of an *apparent* saving in first cost, accepting the "slush heavers" at a low figure, rather than paying a fair advance over fraud prices, to good and reliable men for good work.

For Architects.

ARCHITECTS who practice in the large cities will be interested in the answer given by the law editor of *La Semaine des Constructeurs* to a correspondent who asks whether the usual commission can be collected, where old materials are used in building, upon the cost of the work as it would have been if all the materials were new. The reply to this important question is a very satisfactory one, at least for architects in France. It appears the judicial decisions have established the law there that for his services in the construction of a new building an architect is entitled, in summing up the cost upon which his commission is calculated, to reckon all materials, whether old or new, and whether furnished by the proprietor or not, as if new and furnished by the contractor, the courts holding that the work and responsibility of the professional man, and his proper compensation, are the same in both cases. Moreover, if, as often happens in cities, the demolition of structures already existing on the ground forms a necessary preliminary to the construction of a new building, and if the architect of the latter includes in his service the direction of the work of taking down and sorting the old materials, and the provisions for the protection of the public, he is entitled in France, by a decision of the Tribunal of the Seine, to collect commission upon the cost of these operations, in addition to his fees for work upon the new building.

Compiled Items of Interest for Mechanics.

Finishing Saws.

A LATE improvement consists in tempering and straightening the saws at one operation. This is done by heating the saws to the proper degree, and then pressing them with a sudden and powerful stroke between two surfaces of cold iron. A drop-press is employed for the purpose. The mechanism is quite simple and inexpensive. Its use is said to effect an important economy in the manufacture of nearly all kinds of saws and improve their quality.

Street, Store and Bank Fronts, $4.00

IN filling up cracks and breaks in walls, painters experience a great annoyance from the rapidity with which the ordinary plaster of Paris and water "sets." A remedy will be found in using vinegar instead of water. Mix the same as if water was used, and the result will be very much like putty, and will remain plastic for about a half an hour, finally becoming perfectly hard.

Cottages and Villas $6.00

GLYCERINE GLUE.—A German chemist has discovered that the strength of glue is very greatly increased by the addition of one-fourth as much glycerine as glue. Glycerine has many other uses, among which one of the least known is its property of removing pencil marks from paper in a very perfect manner. It may also be combined with starch and plaster of Paris, to form one of the most durable cements for various kinds of apparatus.

Builder's Guide $2.00

GRECIAN mythology tells us that the inventor of the saw once found the jawbone of a snake, and used it to cut through a piece of wood, then imitated it by jagging an iron plate, and thus made a saw.

Modern Perspective $6.00

IT is reported that the carpenters and sawyers of Paris have made the singular proposal that a tax shall be put upon all machines used by their employers, according to the work they perform.

Wooden and Brick Buildings ... $18.00

INDIAN ink running. If it is for drawing plans you may prevent it running by adding a little sugar to the the Indian ink.

How to Make Cisterns.

CISTERNS, as a general rule, should be made as deep as possible, for the sake of coolness and economy, because it is easier to arch over a cistern twenty feet deep and twelve feet in diameter, than one twelve feet deep and seventeen feet in diameter, and these would be of equal capacity. The following table of the contents of the various sized cisterns may be of interest in this connection: For each ten inches in depth the following diameters will give the contents named: 8 feet, 313 gallons; 9 feet, 396 gallons; 10 feet, 489 gallons; 11 feet, 592 gallons; 12 feet, 705 gallons; 14 feet, 959 gallons. Double these diameters will give four times as much capacity.

Church Architecture $4.00

CREASES in drawing paper or in engravings may be removed by laying the paper face downward upon a sheet of smooth, unsized white paper, covering it with another sheet of the same, slightly damped, and then iron with a warm flat-iron.

Practical Carpentry $1.00

ONE of the most important features in an interior arrangement is the actual and relative height and width of doors and windows. The question is whether the apparent proportions of apartments cannot be greatly modified by the treatment of the necessary openings. A window in the center of one side of a room gives more light than if at one side of the center, but it has the effect of shortening the length of that side. The same is true of doors in similar positions. The higher a window is the more light it will give, but the lower the room will appear. In doors, nothing is gained by increasing the height beyond a proportion to the width that shall prevent a stunted appearance. Their relative height to that of the windows is a nice question of balance, that can be best determined by experience.

Universal Assistant $2.50

VARNISH and paint can be removed by a solution of caustic soda. The operation may have to be repeated several times, depending upon the thickness of the materials to be removed.

COAL Oil is soluble in Ether, Naptha, Chloroform, etc. Stains in carpets made by the oil, with proper manipulation, can readily be removed by either of the above reagents. Care should be taken not to have a light around while making the experiment.

Buck's Practical Designs 50c

LIQUID GLUE.—4 ounces hard glue, 16 ounces acetic acid; dissolve by soaking and heating. Spaulding's glue is supposed to be ordinary glue dissolved in good, strong vinegar. Another way is to add a little pyroligneous acid to a thick solution of glue and water.

Cummings' Architectural Details $6.00

THE apprentice system is finding strong advocates, not only among employers, but among intelligent workmen and trade-unionists, who have heretofore opposed the system. Skill always pays, always is in demand, and always commands better compensation than where it is lacking.

Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

There are to be thirty-nine octavo volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper, neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

	PER VOLUME.
Bound in Extra, English Cloth, neat and attractive style	$4.50
Bound in fine leather, Library Style	5.50
Bound in half calf, half Russia or half Morocco	8.00
Bound in Russia Leather or Tree Calf	10.00

Any information in regard to the above will be given by addressing the office of this journal.

Old English Homesteads.

BY A CURTIS BOND.

THE structural stability of old English dwellings and the massiveness of their material, has preserved a vast number of them dating centuries back. In the superior class of residences there is ample provision for indoor comfort, whilst the prevailing disposition was to put wood to its best account in turning and carving, and to hide the nakedness of walls by paintings, which, if gaudy, were at least suggestive.

It is noticeable that in houses of any pretentions the ornament was such as to give it a distinctive and appropriate character. The room of Mary, Queen of Scots, at Hardwich House, Derbyshire, has panels of inlaid woods representing profiles of the Cæsars. The state-room walls are divided in half the upper portion, having landscapes and figures on a white ground, tapestry covering the lower portion.

An early poet tells of a room on the walls of which appeared,

"Old portraitures
Of horsemen, hawkes and hounds,
And hart all full of wounds."

The designs were often only outlined or roughly filled in, but the scenic effect would be heightened by the light being admitted through narrow, casemented windows, and never too abundant.

The bedsteads, not infrequently placed on an elevated platform, were of so solid a character as to well merit the designation in wills and other documents, as "beds of tymbre." That of Henry VIII., now to be seen in Hampton Court, is described in an old inventory as having "postes and head curiously wrought." Old oaken chests, oddly carved, were invariable accompaniments of dining-room and sitting-room furniture.

Ends and backs of benches for the dining-table, massive and richly carved, were prominent features of the decorative *ensemble* and the extent to which ceiling decoration was carried, contrasts strongly with the prevailing plainness which succeeded, but the sunken panels, with carved borders, were in keeping with the walls of the room when of wood, and which, in paneling and coloring, were singularly ornamented.

Domed, scenic, oval, masonry recesses were frequently planned by architects to hold the side-board, and thus prevent them from obtrusively occupying the floor space. An immense amount of carving was often lavished on staircases, which, with their ample breadth, were always rendered a prominent feature, the effect being aided by the practice, from the time that glass came into general use, of lighting them from above. In old drawings of manors, with surrounding grounds, the garden pavilions in stone or brick, and composition or wood, on which much care and cost were lavished, form conspicuous features and are suggestive of a departure in architecture with ourselves in this line. The pediments of many of these wooden temples, in rustic or classic form, were adorned with figures of satyrs, the graces, griffins, dragons, etc., in short, all descriptions of vagaries, not to be too critically scanned, serving to gratify the sight, the sport of fancy breaking away from the conventional styles of more permanent erections.

Evoluting from the early house of the past generations of Englishmen to the present business house of New York City, is a progression by no means so violent in its change as would appear at first sight, for the constructive qualities of both are worthy of especial notice in their stability. The architect of the modern building has discovered that permanency in his structure is an element essential to their appreciation and necessary for his own reputation. In fact, singular as it may appear, more attention is given in New York to the construction and substantiality of business buildings than of residences. Dwellings, where possibly a dozen different families are congregated, on fashionable flats, renting from $2,000 to $6,000 each apartment per year, are made in a flimsy and precarious way when compared with the magnificent stone buildings constantly being put up in the lower part of the city. The protection of human life, in a word, is a secondary consideration to the safety of books and office furniture.

Early in May a large number of firms will remove their offices to a new building (referred to some months ago), on Nassau Street, between Cedar and Liberty, occupying the cite of the old post-office. Masons are busy laying the stone in the main hall, and plasterers are putting the finishing touches to the walls. Every day witnesses new crowds gathering on the corner of the streets thereabouts to study the ornamental features, which are so plentifully shown.

The building of the Mutual Life Insurance Company is destined to be an architectural attraction for the prescribed ten days, which is the duration of wonder in this country, and by the end of that time, no doubt, another edifice will have been started with novelties shown in its construction and ornamentation that will detract attention from the present. That, in its turn, will be eclipsed by other efforts, and so it will go on, as Dean Swift says, "*ad infinitum*."

The portico of the Mutual Building is two stories in height. The first story consists of large piers of granite, the alternate blocks polished and fluted. These are planked by two very handsomely polished Quincy granite columns. The frieze contains a panel upon which the title of the company is set in polished granite letters. The ceiling of this story of the portico is paneled with richly moulded squares, three in number, which inclose foliated rosettes, elaborately carved, all in strict conformity with the style of the building, which is Italian Renaissance. The capitals of the polished columns are of white Italian marble, decorated with handsomely modeled cap-work. The second story is of Indiana limestone. The piers, unlike those of the first story, are paneled, and enriched with elaborate carvings. Next to these piers are granite columns smaller than those below, and supporting an arch with a vaulted paneled ceiling.

The capitals of the flanking piers contain heads typical of Europe, Asia, Africa, and America. Europe is represented by the head of a Caucasian, Asia by the head of a Chinaman, Africa by a negro, and America by the everlasting Indian. They were modeled in Rome.

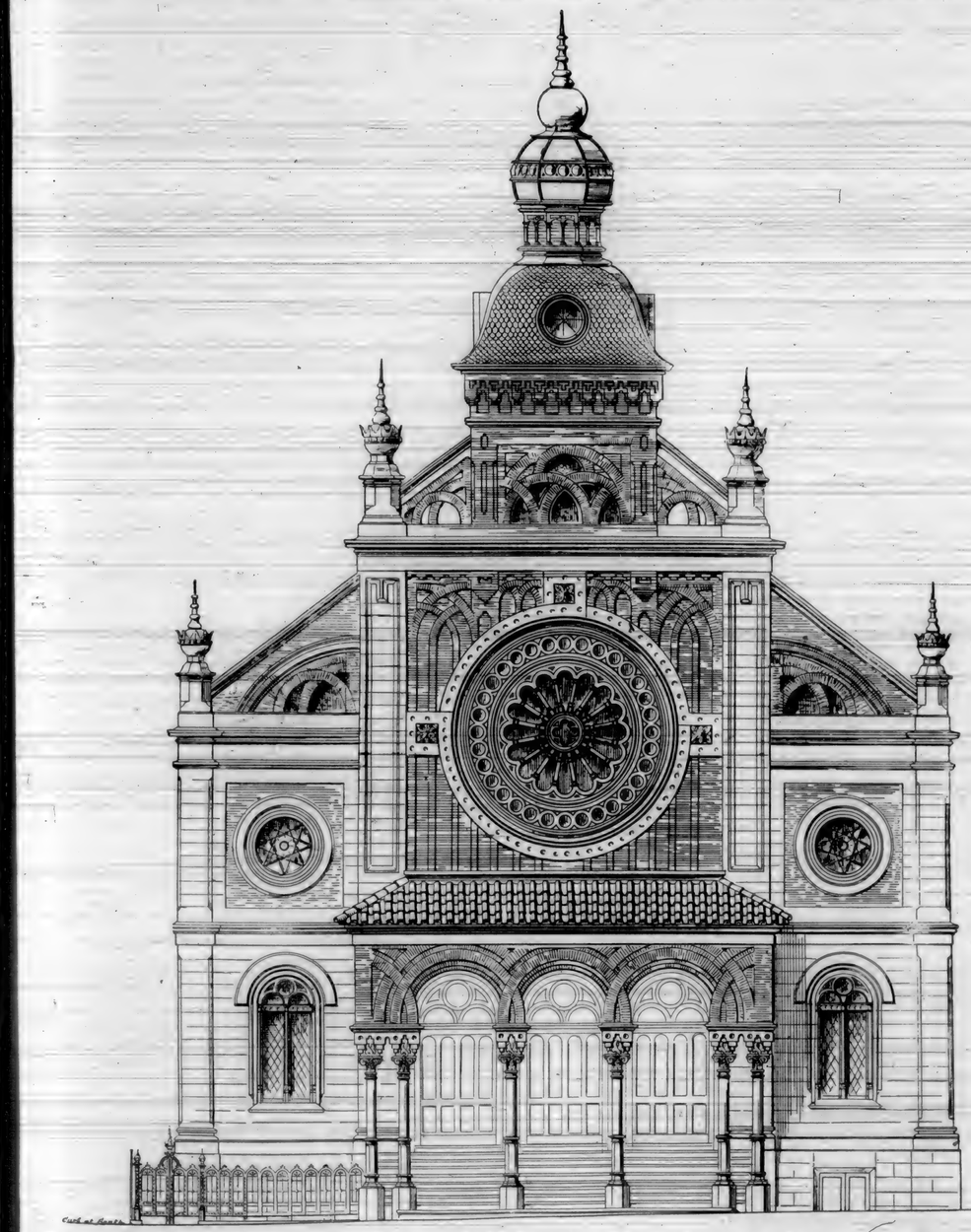
The whole building is so harmonious in its proportions that the size of the portico is really lost sight of, and is beyond what an ordinary observer would imagine. Its length is over 64 feet, and its breadth over 26 feet. The building is 185 feet in length on Nassau Street, 111 feet on Cedar Street, and 115 on Liberty. It is about 150 feet in height, divided between eight stories.

Wood carving has become, like stained glass, such an essential in architecture that it may now be considered legitimately as one of the phases of the art.

Carvings abound which show the limits and monotony of the art rather than the varieties of which it is susceptible. For pervading expression, all details must be brought into subordination to a governing purpose. It is this manifestation and not mere manipulative skill that gives carving its true value. At the same time technical methods must be used to the utmost, and especial care taken in transitions of form:—transitions which are often rough and rude to a fault, though displaying a certain kind of ingenuity.

There may be inequality in a carving and yet without blemish, as, for instance, when the objects in bold relief are highly finished, and the details somewhat sketchily worked out, but this sketchy aspect must be executed so skillfully as not to bear the appearance of slovenliness. Chopped-up execution and scattered details are to be avoided. The whole art does not consist in mere representation of objects in relief, but there is necessitated a certain unity of design which will be greatly aided by giving to each part its proper scale. As illustrating this latter point comes the following scathing English critique on a carved panel: "It represented a piece of French carving, and is a fearful and wonderful piece of art. It contains a rose which might be a cabbage; close by is a snail with a horse on his back; near the snail is a squirrel much too small, and a butterfly much too large, and, resting one foot on the roof of the snail-shell, sucking honey from a kind of fuchia, is a bird of such strange aspect that we have no choice but to conclude that at length we are privileged to behold a portrait of the eccentric chuck itself."

It cannot be too often urged that time and skill must be employed on the composition as well as on the execution, and that but a portion of the praise due to good, artistic carving is to be accorded to the manual labor. Carving may be indulged in as an amusement, but



FRONT-ELEVATION.

Scale: ¼ of an inch to the foot. Synagogue of the Beni Jeshurun, Madison Av.

let the aim be to embody in the work some feature of excellence. Of various devices by which special effects may be secured, may be instanced the emphasizing, by a number of small holes, the central portion of a leaf between the two projecting lines which represent the mid-rib, and the delineation or intersecting stems by making some more depressed than others. Some carvers show a tendency to substitute angular for rounded forms, thus directing the eye rather to sharp outlines than to broad surfaces, and to unduly multiplying parts which must be rendered proportionately minute. To please in minor details wood carving should exhibit a swift touch and an easy lightness in the rendering of the details.

Excellence in wood carving does not necessarily lie in the presentation of objects in the boldest possible relief. When the art was carried to its highest perfection in France, in the reign of Henry II., there was extreme simplicity of treatment, and the finest contrasts of light and shadow were obtained without high relief.

The obstructions to travel, and the annoyance of having the sidewalk occupied with the dirt and boards, essential accompaniments to the reconstruction of a building, has been such a cause of complaint in our city where existing buildings are constantly undergoing repairs, that means have now been adopted to avoid this sort of confusion. A bank recently erected in Wall Street found it desirable to absorb into itself the entire sidewalk in its frontage; and, to accommodate the traveling hundreds who daily pass that way, a wooden structure was put up forming a second sidewalk, elevated some five feet above the natural one. Pedestrians were asked to climb a few steps to reach this made walk, and the workmen wheeled the mortar and carried their material beneath. Over the wooden walk was a substantial roof to protect passers from an accidental brick that might possibly find its way from the upper stories.

Another excellent arrangement was recently seen on Twenty-third Street, where the owner of a corner building was adding three stories to its height. An enormous wooden funnel was constructed from the first floor to the roof, running up the side of the building at its extreme rear. At the first story the funnel turned abruptly at an angle and continued out over the sidewalk to the gutter, where it terminated in a pair of steps. The height of this arm or angle from the ground was sufficient to permit people in the street passing beneath it. An elevator ran up the funnel, carrying to the roof all the materials necessary for the construction going on. By this means the street was kept clear, and the occupants of the house were saved the dust from the walk and the unsightliness of dirty heaps about the doors.

Architecture has of late received much attention from the magazines. *The Century*, not long ago, had an article upon the architectural league of this city, and has followed that up with articles bearing more directly upon particular buildings. This month *Harper's* has the first of a series upon recent buildings in America—or rather in the United States, beginning with business houses, and presumedly intending to follow it up with residences, etc.

In this connection the prevailing craze might be referred to, that has taken possession of society ladies, which is to become authoresses, and those who have the "vital spark," are making efforts to fan it into a particularly lively flame. Several have succeeded and this paper to which I have referred, in *Harper's*, is one of that sort, being written by Mrs. Schuyler Van Rensaellaer. If this craze will last long enough to accomplish any good to the young ladies, it will be a most commendable fashion.

* * * * * * *

The illustration I sent this month is a departure fron the strictly country architecture which I have made it a point to furnish for the past few months. I am induced to illustrate this synagogue for the reason that it is the very latest building put up in the city, and is destined to be very prominent from the rich congregation that is to worship in it.

The style is the Moresque and the Architect is Mr. R. Guastavino.

Improvements in Men and Machines.

It would be a curious study to ascertain how far the improvement in machines and in tools had kept pace with that in the skilled mechanic. One thing is certain, at the beginning of the inquiry, that a skilled mechanic is of just as much value to-day as ever. How much he has improved is a question for scientific examination rather than one for absolute statement. It would be a queer assertion that the men of fifty years ago were inferior to those of the present. All the facts of the past, as well as those of the present, show that our present mechanics are no more mechanics than those of half a century ago All the great improvements in hand tools and machine tools for the last fifty years have come from the individual efforts of men who had done their work before the present advent of machine and automatic tools. These men—these workmen and inventors—made possibilities out of suggestions, and realities out of imaginings. To them belong the realities of the present machine shop.

It would seem from this that it is not the tools and the appliances that make the workmen, but the workmen who make the tools. There are just as good mechanics to-day, with all our mechanical appliances for good work, as there were when every job required a new arrangement of tools for work. In fact, the improvement in machines presupposes the capacity of the machine makers.

And yet, these improvements have their influence on the workman; the better the tool, the more exactive the workman. There are gray-headed, almost superannuated, workmen in our shops who have voluntarily discarded all their old time notions to take up with some "new fangled trick" that has been proved to be an advance toward perfection. Every improvement in tools—induced and perfected by mechanics—tends to advance in the true mechanical improvement of the workman.—*Scientific American.*

Tin Casing to Retard Flames.

The principal cause of the rapid spreading of flames, in modern buildings, is found in the fact that the elevator shafts furnish such perfect flues for making a strong draught. When, added to this, these openings through the floors of a building, from top to bottom, are incased with wood, alone forms the partition walls separating such a flue from the different stories, it will be readily seen that we have a surprisingly perfect arrangement for the quick spreading of a conflagration from cellar to roof. A cheap and easily obtainable means for partial protection from this danger, in buildings where the most improved construction has not been followed, would be to line the elevator shaft and the connecting doors and casing, as well as the car, with tin. This would not, of course, make these openings proof against the action of a fire which has been some time in progress, where the accumulated heat would be like that of a furnace, but it would interpose a measure of protection which would effectually check a fire in its initial stages, and prevent the sudden flashing into a blaze, through this channel, of all the floors at a time of a great store or warehouse. This is a precaution which may be taken with so little trouble and expense that it is worth the consideration of every owner or occupant of a building where the elevator shaft is of the old style of combustible construction.

The Lost Rivers of Idaho.

One of the most singular features in the scenery of the Territory of Idaho is the occurrence of dark, rocky chasms, into which large streams and creeks suddenly disappear and are never more seen. These fissures are old lava channels produced by the outside of the molten mass cooling and forming a tube, which, on the fiery stream becoming exhausted, has been left empty, while the roof of the lava duct, having at some point fallen in, presents there the opening into which the river plunges and is lost. At one place along the banks of the Snake, one of these rivers reappears, gushing from a cleft high up in the basaltic walls, where it leaps, a cataract, into the torrent below.

Where this stream has its origin, or at what point it is swallowed up, is utterly unknown, though it is believed that its sources are a long way up in the north country. Besides becoming the channels of living streams, these lava conduits are frequently found impacted with ice masses which never entirely melt.

A Brick Tenement House.

San Francisco can justly be termed blessed in not having within its limits a brick tenement house; but as we have received repeated inquiries for a house of this description, that could be erected in the "fire limits" and not conflict with the "fire ordinances," we present the accompanying elevation and plans of a building suitable to those who desire to live in "flats" and yet reside in the business portion of the city. They were prepared expressly for this Journal by W. Claude Frederick, Architect.

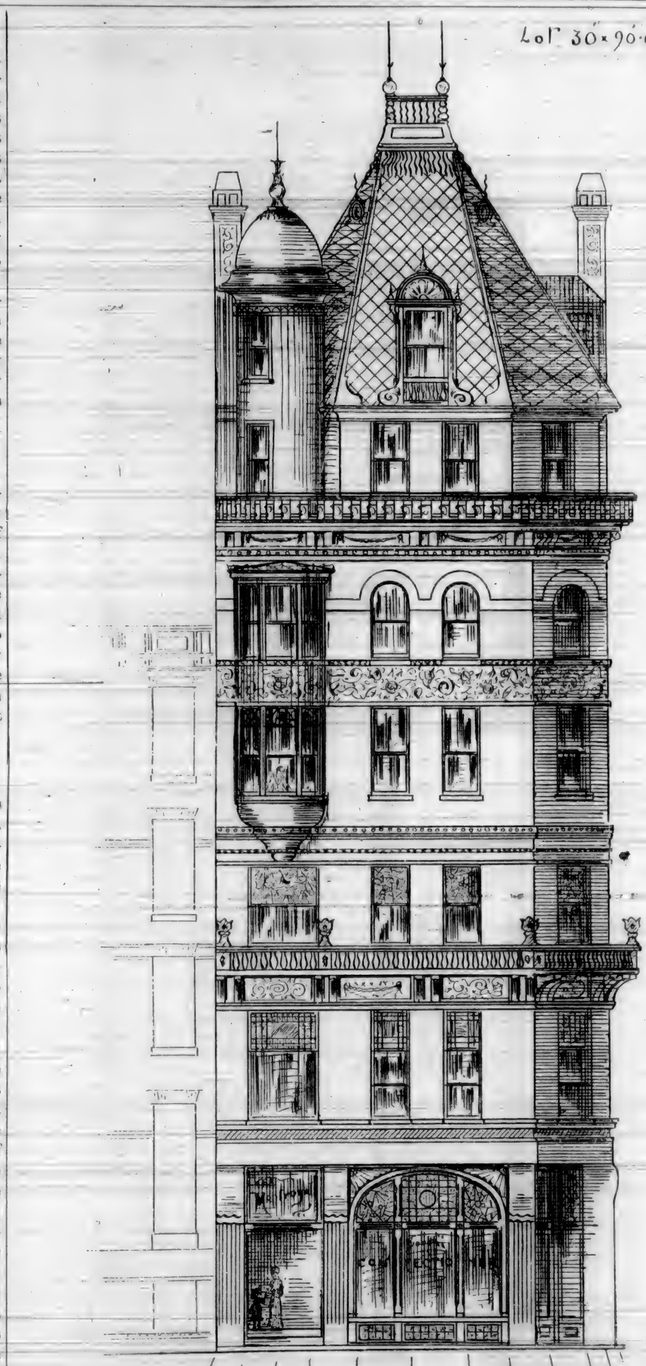
The elevation, though striking and presenting many features not usually found in San Francisco architecture, is not an expensive one; the arrangement of the rooms is clearly shown by the engravings and will well repay a careful study. Each floor above the first is a duplicate of that presented on page 87.

To Prevent Scratching Matches on Paint.

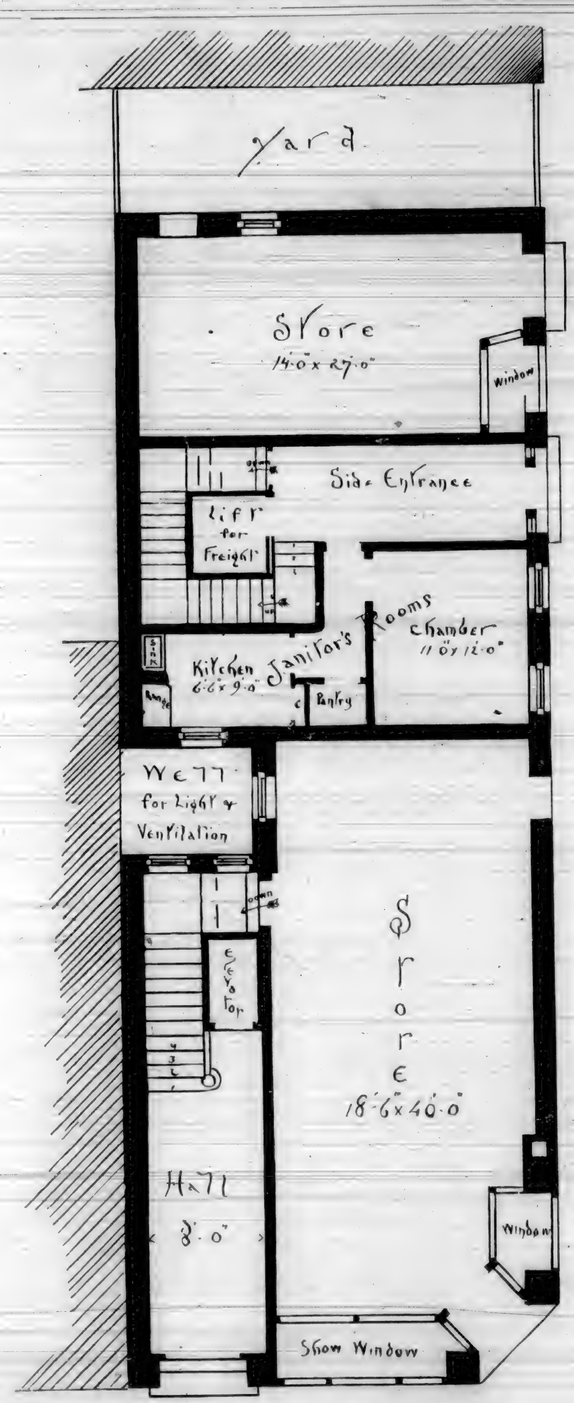
A correspondent, in Florida, of *New Remedies*, speaking of the defacement of paint by the inadvertent or heedless scratching of matches, says that he has observed that when one mark has been made, others follow rapidly. To effectually prevent this, rub the spot with flannel saturated with any liquid vaseline. "After that, people may try to strike their matches there as much as they like, they will neither get a light nor injure the paint," and, most singular, the petroleum causes the existing mark to disappear, at least when it occurs on dark paint.

How Carpet Tacks are Made.

The iron is received from the rolling mills in sheets from 3 in. to 12 in. wide, and from 3 ft. to 9ft. in length, the thickness varying, according to the kind of work into which it is to be made, from ¼th to 1-32nd of an inch. These sheets are all cut in about 30 in. pieces and, by immersion in acid, cleaned of the hard outside flinty scale. They are then chopped into strips of a width corresponding to the length of the nail or tack required. Supposing the tack to be cut is an 8-oz. carpet tack, the strip of the iron, as chopped and ready for the machine, would be about 11-16ths of an inch wide and 30 in. long. This piece is placed firmly in the feeding apparatus, and by this arrangement carried between the knives of the machine. At each revolution of the balance-wheel the knives cut off a small piece from the end of this plate. The piece cut off is pointed at one end, and square for forming the head at the other. It is then carried between two dies by the action of the knives, and these dies, coming together, form the body of the tack under the head. Enough of the iron projects beyond the face of the dies to form the head, and while held firmly by them, a lever strikes this projecting piece into a round head. This, as we have said before, is all done during one revolution of the wheel, and the knives, as soon as the tack drops from the machine, are ready to cut off another piece.



Elevation of Brick Tenement House.—W. Claude Frederick, Architect.



First Floor Plan of Brick Tenement House.

Architectural Competitions.

THE subject of competitive plan making, which, in nearly all cases, means obtaining men's services without an equivalent, is being very freely ventilated and discussed in all journals and publications issued in architectural interests, throughout America, England and other countries, with ninety-nine per cent. of all that has more recently appeared in print, strongly condemnatory and in opposition to the methods practiced, under the delusive and misleading pretext of competition, by which State, county, and municipal governments, corporate institutions, associations, and sometimes private individuals obtain and secure the results of the labor, skill and coin of architects without compensation.

The many wrongs inflicted upon the profession as a whole, and upon its more worthy and competent members individually, through the *modus operandi* of competitions, have grown to such magnitude, and become so unmistakably the means through which gross injustice in nearly all cases is practiced, that the feeling and sentiment among the more intelligent and honorable in the profession is decidedly and emphatically opposed to the disreputable method of competitions as practiced—particularly during the past decade.

Some, and by far too many of the "Set up's" have been shrewdly-managed affairs, so disguised by finely-worded conditions and pretenses as to deceive and mislead silly men in the profession, into an expenditure of effort, time, labor and expense, while, in fact, the chances of success have been ninety-five per cent. in favor of some certain party enjoying the decidedly large prestige of being the *party preferred* by those managing affairs.

In England, a movement is on foot under the auspices of the Royal Ins itute of British Architects, the object of which is to obtain the signatures of *all practitioners* of creditable repute, pledging themselves not to participate in any competition not subject to the arbitrament of disinterested professionals, recognized as qualified to adjudge the intrinsic merits of the plans submitted, and enjoying a good reputation as to moral integrity.

We are right glad to learn that the architects of England have taken so decided a stand in the matter, and only regret that the profession in our own country is so overrun with pretenders and men of mediocre professional abilities that it would be folly exemplified to express the hope that a reform in professional practices, as far as competitions are concerned, is among the reasonably near probabilities.

But this the respectable architects in California can do, especially members of the chapter,—refuse to participate in any competition, not conditioned exactly as provided in the constitution and by-laws of the organization, and such other regulations as may at any time be adopted by the local or parent chapter.

Bound Volumes California Architect, $2.50

Modifying the Proportions of a Room.

TO MAKE a room appear higher, the plane surface of the ceiling should be decreased by the mouldings of the cornice, by panels, or, in the absence of these, by bands of color performing the same office. A vertical system of line should be adopted in mural decoration, and the mantel should be lower.

To make a room appear lower, exactly the opposite treatment should be adopted; that is, to increase the plane ceiling, adopt a horizontal system of mural decoration, with a dado and a high mantel.

To make a room appear wider, is accomplished, to a certain extent, by making it appear lower; but where this is undesirable, or where it is insufficient, the effect can be reached by adopting a mural decoration on a graduated scale of form, decreasing upward, so that two or more patterns at the top similar to those at the foot are found to occupy the same space as one at the foot, and this effect can be much increased by a gradation of color upward from dark to light.

To make a room appear narrower is accomplished, to a certain extent, by making it appear higher; but where this is undesirable or insufficient, the effect can be obtained by adopting a strongly-drawn large pattern in strong color for mural decoration.

To make a room appear longer is to an extent accomplished by making it appear lower and narrower; but where these are undesirable or insufficient, the effect may be obtained by decreasing the scale and strength of color of the mural decoration adopted at the ends.

To make a room appear shorter is accomplished, to an extent, by making it appear wider and higher; but the effect can be achieved by increasing the scale and strength of color of the mural decoration adopted at the ends.

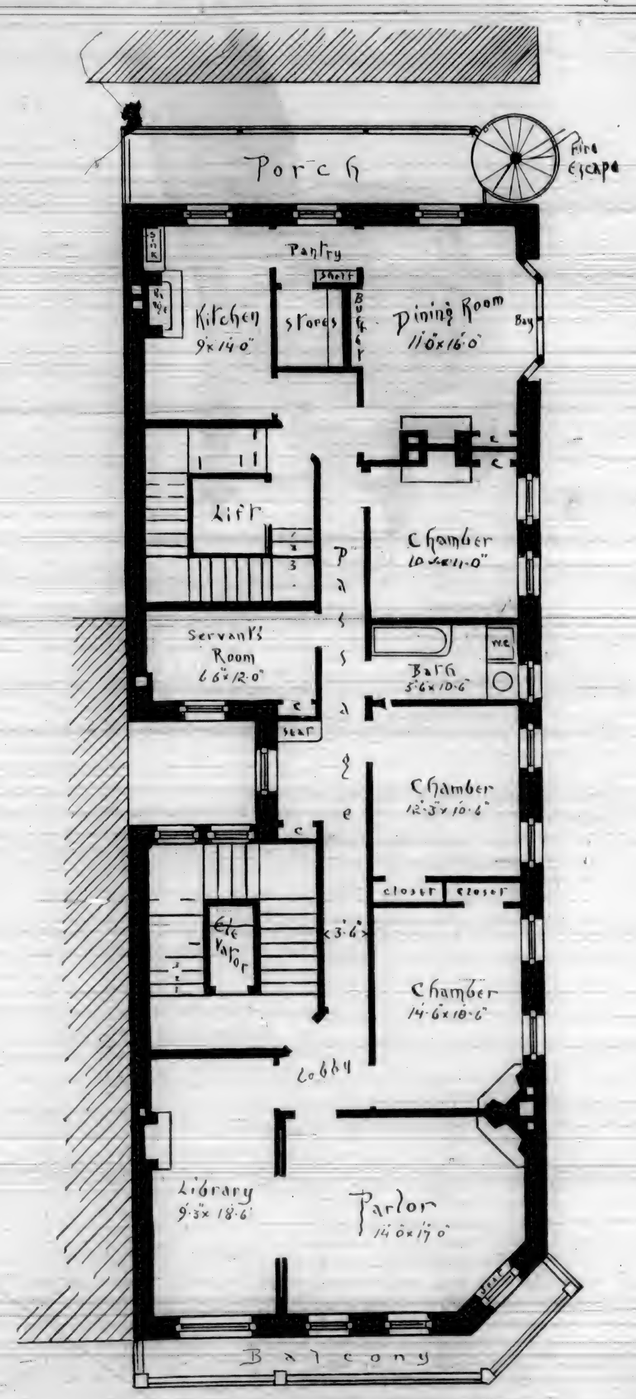
Any of these effects can be modified or increased by the treatment of the floor surface, whether by carpets, rugs, painted boards, or by parquet flooring, lines running across a room, or rugs laid down at intervals, having the effect of shortening, and consequently to an extent of heightening and widening a room. Lines running in the length increase this dimension, and to an extent reduce the height and width. A polished floor increases the apparent height of an apartment by reflecting all vertical lines and prolonging them.

"HISTORY OF ARCHITECTURE in all Countries from the Earliest Times to the Present Day." By Jas. Furguson.

This work is one that should be in the possession of every architect. Especially should students and draughtsmen secure a copy. Being a reprint of the London edition, the price has been materially reduced. Two large volumes, containing over 1,200 pages, beautifully illustrated. Price, complete, $15.00.

"BUILDING SUPERINTENDENCE."

This new work is of invaluable assistance to the architect and builder. It is written by a gentleman long connected with the architectural profession, and is eminently practical in its character. We will send a copy to any address upon receipt of $4.00.



Second Story Plan of Brick Tenement House.

DESIGN FOR CHAIR.

The Pyramids.

WHY the pryamids were built is a question which has puzzled antiquarians and savants for centuries. The theory of John Taylor was that the pyramids were erected by kings who had conquered and were detested by the Egyptians, and that while the tradition of injustice in making them labor on such stupendous piles lingered on through after history, the purpose and meaning of the kings and their architects had been forgotten. Taylor believed that the Great Pyramid was designed to record in its proportions and its interior features, certain important truths of religion and science, which were not for the people then living, but for men who were to come 4,000 years or so after. And this view has been accepted by Prof. Piazzi Smith, Astronomer Royal, of Scotland, whose writings have attracted a great deal of deserved attention.

But R. A. Proctor, the most popular living writer on scientific subjects, combats this theory with a great deal of learning and plausibility, in a work on "The Great Pyramid," published by R. Worthington. He maintains that the structure was essentially astronomical and astrological—the two were then virtually one—and that no explanation which does not take this element into the account can explain facts. There are many pyramids, and each belongs to a separate king; we are forced to believe that there was some special relation between the pyramid and its builder, seeing that each king wanted a pyramid of his own. The theory that they were tombs receives only a partial support, and would not account for the most important features discovered in their peculiar architecture.

Without exception, the pyramids are built on special astronomical principles. Their square bases are built so as to have two sides lying north and south. "One can imagine no reason why a tomb should have such a position," writes Mr. Proctor; and he says: "It is not easy to understand why any building at all, except an astronomical observatory, should have such a position." And he elaborates an ingenious theory which fits remarkably well as it goes, why these wonderful structures were built as we find them.

Each king had his pyramid, and each had his horoscope cast. A succeeding king could not use the pyramid of his predecessor; it was closed up and abandoned and a new observatory begun. But no explanation yet made has rendered it at all clear to the practical modern mind why the ancient kings exhausted their subjects with the labors that were necessary to the raising of these massive mountains of stone and brick. Mr. Proctor admits that there are difficulties in the astrological theory, but they arise from our inability to understand how men ever had such fullness of faith in astrology as to devote enormous sums and many years of labor to the pursuit of astrological researches. Besides the essay on the "Great Pyramid," this volume contains short papers on the origin of the week, Saturn, and the Sabbath of the Jews, astronomy, and the Jewish festivals. The volume is rich in ingenious materials and scientific information.—

STAINED GLASS WINDOWS.

MESSRS. G. W. CLARK & CO., 645 and 647 Market Street, have on exhibition the most beautiful and artistic designs that have as yet been shown to our people, for stained glass windows. They have secured the agency of the La Farge Decorative Art Company, and are fully prepared to furnish *stained glass work* of every description and in a great variety of designs. Messrs. Clark & Co., are also agents for *Linerusta Walton*, the most beautiful material yet invented for decorative purposes.

A French Class.

Under the Auspices of the S. F. Chapter.

DURING the past month, a class in French has been organized, principally intended for Architects and students connected with the Chapter. Any one, however, can join. The terms have been placed especially low for the purpose of inducing many of the younger members of the profession, and those interested in art, to join the class.

The class will be under the direction of Madame Pietro Mezzari, a lady well known in artistic circles. The class meets every Friday evening. Parties wishing to join will please send their names and address to this office.

Books and Special Notices.

GOODELL & WATERS, of Philadelphia, have sent us their Illustrated Catalogue of Wood Working Machinery. It contains numerous engravings of every kind of machinery used for wood working purposes. We would advise those desiring to purchase anything in their line to address a note to the above firm.

THOS. KANE & CO., of Chicago, have forwarded to us a specimen sample of their wood carpeting, which we will be pleased to show to callers.

FOUNDATIONS AND "FOUNDATION WALLS" for all classes of buildings, pile driving, building stones and bricks, pier and wall construction, mortars, limes, cements, concretes, stucco, etc. Practical explanation of the various methods of building foundation walls for all kinds of buildings. Revised and enlarged edition. A copy of this work will be sent free of postage to any part of the world upon receipt of the Publisher's price, $2.00.

WE have received two new works by Wm. Paul Gerhard, entitled "Sanitary Drainage of Tenement Houses," and "House Drainage." This writer is well known as one of the most experienced, and best qualified of the sanitary experts of the present age. A copy of these works should be in the possession of every house owner, and their contents thoroughly studied.

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

[From the official list of U. S. Patents in DEWEY & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 252 Market st., S. F.

FOR WEEK ENDING APRIL 29, 1884.

297,657.—CULTIVATOR—Daniel Archer, Madison, Cal.

297,910.—TRACK CLEARER—Ephraim B. Bishop, San Francisco, Cal.

297,664.—MITER BOX—William L. Bovyer, San Francisco, Cal.

297,668.—TOBACCO SWEATER—George Brownstein, San Francisco, Cal.

297,594.—STRAW CARRIER FOR THRESHING MACHINES—Maximilian J. Grssner, San Francisco, Cal.

297,796.—CARTRIDGE IMPLEMENT—Henry T. Hazard, Los Angeles, Cal.

297,698.—SAW SWAGE—Simon Kinney, San Francisco, Cal.

297,699.—PIN FOR ELECTRIC INSULATORS—John M. Klein, San Francisco, Cal.

297,714.—VEHICLE—Jacob Price, San Leandro, Cal.

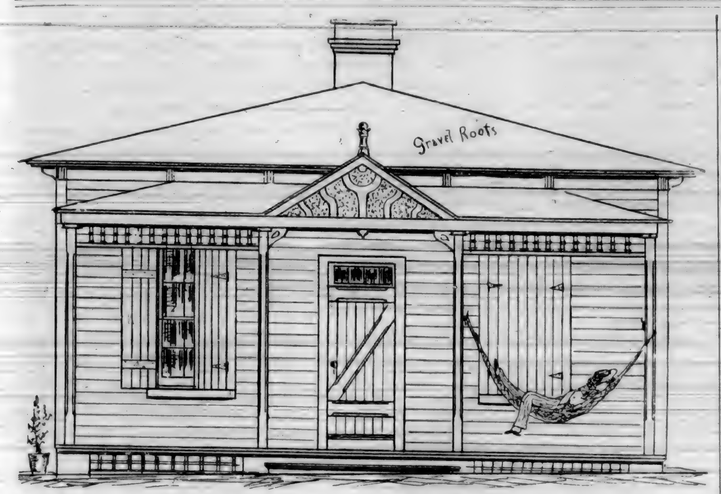
297,857.—FIRE ESCAPE—George Sinfield, Portland, Oregon.

297,647.—SUBMARINE VESSEL—Josiah H. L. Tuck, San Francisco, Cal.

297,648.—MARINE TORPEDO—Josiah H. L. Tuck, San Francisco, Cal.

297,734.—WHIFFLETREE—James Whitcomb, San Jose, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise), at the lowest rates. All patent business for Pacific coast inventors transacted with perfect security and in the shortest possible time.



DESIGN FOR A SUMMER RESORT COTTAGE.

A Summer Resort Cottage.

THE accompanying illustrations represent a design for a comfortably arranged cottage to be built at a seaside or summer resort. Economy, with ample accommodations, are the main features. All the partitions are made of inch boards. The front is covered with rustic, which may be extended around the building, depending altogether upon the amount of money one wishes to expend. The rooms are very convenient and large enough for the purposes intended. The dining hall, with its cheerful fireplace, may also be used for a general meeting room in the evening.

The plan is admirably adapted for places like Pacific Grove and was prepared especially for the consideration of parties desiring to locate in that beautiful place.

We are indebted for the plans to W. Claude Frederick, Architect.

Album of Mantels.

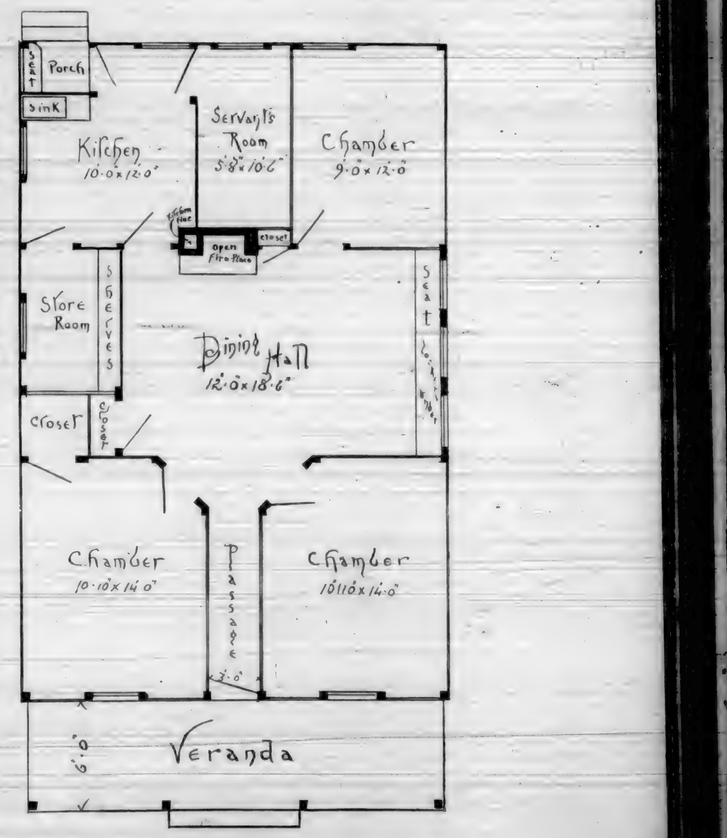
A NEW work, containing designs for every description of mantels. Price, $8.00.

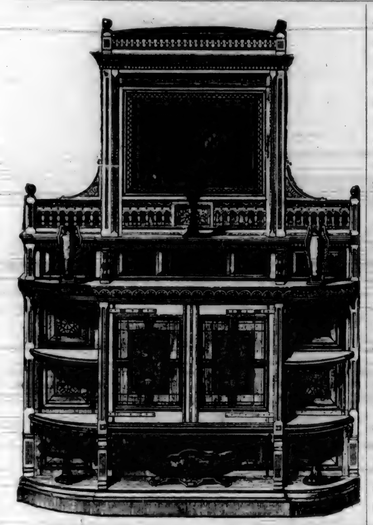
Work—for a Home.

THERE are two important steps to be taken by every young man who has to depend upon his own exertions for a living. The first is to master some occupation which he can rely upon in after life for a livelihood. The three or four years spent in learning a trade are to most young men years of privation, during which they are compelled to exercise the most rigid economy. The lessons taught during these years, if properly applied, will render the next step—the procurement of a home—comparatively easy of accomplishment. A wage worker, in the possession of a good trade and a comfortable house to live in, is on the highway to competency.

The greatest obstacle to the steady advancement and prosperity of the mechanic is the constant drain which the landlord makes upon his income. It is plain, therefore, that the first step toward independence is for the mechanic to own his own house. If he has to pay out in rents every ten years as much money as would secure for him a comfortable home, there is but a slim chance of his ever accumulating much money. Once a wage worker becomes his own landlord, he can save a sum annually at least equal to what his rent would be, and this continued for a period of years must result in a competency if a judicious use is made of the money. It may not be possible for all mechanics to obtain homes of their own, but thousands who continue to be renters all their lives could do so if they would only make an effort. It requires some degree of self-denial to accomplish the result, but once obtained it removes the chief obstacle to those steady accumulations which are the foundations of all fortunes, great and small.

Detail Cottage and Constructive Architecture, Price $10.00.





HANDSOME DESIGN FOR A CABINET.

Unhealthy.

[Special Eastern Correspondence of the CALIFORNIA ARCHITECT.]

IN a series of articles prepared from actual laboratory stata, we shall strive to show plainly, first, the wanton ignorance in the home; second, the superfluity of physicians and their gross inefficiency; and, lastly, the comparatively few occupants of graves who were not murderers or suicides, perhaps both. In making these tests, and in the preparation and presentation of resulting facts, we have only consulted what the spectroscope, microscope, chemistry, and physical laws have revealed, having no desire to array ourself in an antagonistic manner with any trade or profession in life. To the contrary, we take this manner of inviting the co-operation of all; in order that, when completed, it may be truly said of them, 'tis finished, and wiser are we.

Late in the autumn of 1883, one of the most beautiful and enterprising cities on the Ohio River found itself in the embrace of an epidemic, the nature of which baffled all available medical talent. Expert architects and engineers were unable to agree concerning its cause, but unanimously urged a rigorous cleaning up and thorough fumigation of all the infected wards which comprised the most popular and aristocratic in the city, but all of no avail. The disease spread, carrying death before it, until scarcely a house in the entire square but wept over the vacant chair. To be sure the physicians all theorized, nevertheless they failed to arrest its progress.

When the epidemic had begun to subside, the municipal authorities seemed to have awakened from their lethargy and set about investigating, manifesting a willingness to assist, financially, all who reached results that appeared reasonable. Of course chemists were on hand in numbers with their appliances for examining liquids, gases and solids as a means of reaching some conclusion. The water supply furnished from a rapidly running stream by the Holly system was found good and pure in the ordinary acceptation of the term, but a close inquiry revealed the fact that localities the most afflicted with the epidemic—a sort of low form of typhus fever—were supplied largely from private sources. These being analyzed, unmistakable evidences of uric acid and dumb bell crystals were found, though the wells were well kept, free from filth, and far removed from all apparent opportunities for contamination, still this extraneous matter was present and necessarily had an origin somewhere.

Before proceeding farther, it will be best to describe the situation of the place. The city is situated on a very high point, built substantially, mostly of brick and stone. In or near the center is the Court House and public park, occupying an entire square, which is surrounded by a beautiful and high iron fence, between which and the street is a stone pavement, it being, as it were, fenced in with heavy railing, to which the farmers, traders, hucksters, etc., fastened and fed their teams, which at the time of our first visit, was lined closely all the way round with a medley of teams. The gutter, substantially laid with granite and cement, made perfect drainage for all liquids deposited, while once or twice per week the jailor and the prisoners scraped all solids, etc., and washed them down the gutter, which conducted them to the river, below the filter from which the city's water supply is obtained. Apparently, here was a perfect system of drainage, for where the surface drain or gutter entered the river, the stream contained high banks and run in the form of a current, the city occupying the inner or concave side. We have been thus explicit in our description that all may appreciate fully the situation to be discussed further on.

In the spring preceding the outbreak of the epidemic, the county had given the contract for erecting a bridge across the river at the lower end of town, and the city awarded the contractor the privilege of making coffer-dams for laying pier foundations, but to make the expense of hauling stone, iron and all heavy material less, this contractor made a dam from the inner shore, nearly three-fourths across the stream. On the top of this was a roadway or pike.

By tracing carefully, by the aid of microscopic chemistry, we found that the dam had furnished a different current for the river, and all along the right bank the water was stationary above where the gutter from the square had a termination. A large factory had been erected on a low, marshy tract adjacent, and procured its water supply from shallow driven wells. This tended to drain off the stagnant water, when this backwater from the river found ample space to accommodate the slightest raise.

From this low section the water gradually seeped and eventually found its way into the wells, the water from which poisoned scores. Thus we found direct communication well established between the Augean Stables at the square of the Court House to the wells of the citizens.

J. I. E.

(To be Continued.)

Painting

PAINTING is one of the many things that an architect is expected by his client to be thoroughly posted on, and certainly for his own comfort he should be. Yet how many architects are there who understand the matter? It is easy enough to specify "two-coat" or "three-coat" work, and to remember what parts of the building it is best to have treated in one way or the o her; and to superintend the painting, so far as to make sure that wood is primed only when thoroughly dry; that it is properly rubbed down and filled is also comparatively easy, but to superintend the mixing of the paints, to be able to detect and condemn inferior and adulterated oils, to be sure that the lead is not mainly barytes, to be able to take the paddle yourself, and by a real knowledge of the properties of pigments to mix a tint that you desire to obtain, to know what of the many brands of "ready-made" paint it is allowable to use,—these are attainments that the architect rarely has. Yet he should have them. He should know what varnishes will crawl and crack, and what will stand; he should know about stains, about wax and oil polishes, metallic paints, shellac, and the infinite variety of pigments. And we believe that some day he will find it well for him to know these things with a scientific if not a practical knowledge, and not leave them as now entirely to the honesty and intelligence of the painter's foreman, just as now he knows more about plumbing than the architect of ten years ago ever dreamed of knowing.—*Am. Architect and Builder.*

SAWDUST, as an ingredient of mortar for house plastering, is commanding considerable attention in certain directions. It is used in place of sand. It is claimed that such mortar is more porous than the ordinary kind, consequently the face of a wall composed of it is warmer; that it is a non-conductor of sound and dampness; that it overcomes the echo in churches and halls. In the manufacture of the mortar a glutinous substance is used, which sticks it firmly to the wall.—*The Lumberman.*

SACK'S AUTOMATIC SELF-DISCHARGING WATER CLOSET.

WE would call particular attention to this New Water Closet, now being introduced in this city by Mr. Wm. E. Stevens. Its merits are fully set forth in his statement and card on Page IX, to which we will refer those interested. It is the *only self-discharging* closet now in the market, and its simplicity and non-liability to get out of repair, warrant its general adoption by every architect, property owner, plumber, etc. They can be seen in successful operation at Mr. Steven's place of business, Market cor. Larkin.

Steel Square and its Uses.... ..... **$1.00**

John M. Curtis.

GENERALLY those who are most successful in this world are the ones that, being left alone in the very early stages of life, with no parents to watch and guide their course, yet struggle manfully along, and develop the talents given to them by the Great Architect above.

Mr Curtis was left an orphan when very young, and his guardianship was assumed by Wm. T. Coleman, of this city; to this gentleman does he owe much of his success as a builder, and, later, as an architect. The principles instilled by Mr. Coleman into Mr. Curtis' mind, were those that taught the man to be independent and to take care of one's self by persevering industry and thus earning success.

Early manifesting an inclination to handling carpenter's tools, Mr. C. was apprenticed with Messrs. Burt & Son, of St. Louis, at that time one of the prominent contracting firms of that city. Upon the completion of his articled time, he entered the office of Mitchell & Brady, architects, in the same place, and remained over five years in their employ.

California presenting unusual inducements to men of energy, Mr. Curtis started for San Francisco; shortly after his arrival, he was employed by E. J. Baldwin as assistant architect of his magnificent hotel and theater, remaining in that capacity until the entire building was finished.

Feeling that a more extended *practical* knowledge of carpentry was necessary in order to thoroughly master all the intricacies of his future profession, Mr. Curtis again entered the lists of contractors in this city. Several fine dwellings were built under his direction, some of which were under the immediate superintendence of the senior editor of this journal.

JOHN M. CURTIS.

After an extensive experience in the building line, we find Mr. Curtis again resuming his practice as a professional architect. Among his first clients, was his former guardian, whose offices he designed, and which are among the nicest fitted up in the State. All the principal street decorations used during the Triennial Conclave, were d signed and erected under the supervision of Mr. Curtis.

Business increasing, Mr. Curtis associated himself with A. A. Bennett, and located his offices in the German Bank Building, 528 California Street. These gentlemen have now under construction the Sonoma County Court House, at Santa Rosa, the Humboldt County Court House, at Eureka, the University of Southern California, at Los Angeles, and several private dwellings.

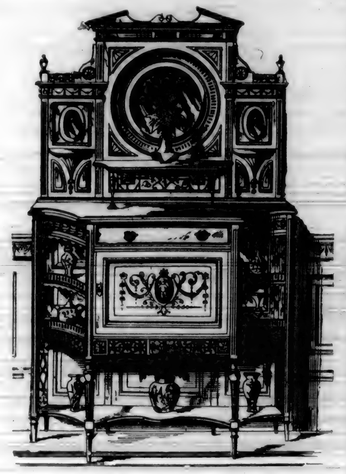
Mr. Curtis is also, at present, supervising architect of the new City Hall. He is a member of the S. F. Chapter American Institute of Architects and is prominently identified with several Fraternal Associations.

The Liability of Contractors.

A RECENT decision of the Supreme Court of Nebraska is of special interest to builders. S sued B for $492.60, the balance due him for building a two-story brick house, and B made a counter claim for defective material thrown out and money expended in repairing the unskillful work of S. The contract price was $2,535, and the plaintiff paid $2,042.40; the counter claim was $1,985, for which the defendant got judgment. The defense to the counter claim was a most novel one, viz.: that the defendant had "no experience in laying foundations, as the defendants knew." The case, Sherman *vs.* Bates, was carried to the Supreme Court, where the judgment was affirmed. Judge Maxwell, in the opinion, said: "A party entering into a contract to construct a building thereby agrees that all parts of the structure shall be put up according to the agreement. As a defense to inferior workmanship, he cannot say: 'I am not a mason, or carpenter, or tinsmith; therefore I am not liable for defects caused by unskillful or careless workmen.' The question is not one of skill on the part of the contractor, but of compliance with the contract." If a contractor agrees to erect a building in a certain manner, he must comply with the agreement, and no plea of a lack of skill, of himself or any of his workmen or sub-contractors, will constitute a defense for a failure to comply with the contract.—*Building.*

Gas Leakages.

AN indicator of gas leakages has been constructed by Mons. C. V. Jhan, and is described in the *Revue Industrielle*. The apparatus consists of a vessel of porous earthenware, such as the porous cell of a galvanic battery, set upside down, and closed by a perforated India rubber stopper. Through the hole in the stopper, the inside of the vessel is connected with a pressure gauge containing a little colored water. The vessel can be exposed to the air of an apartment where a leak of gas is suspected; or a sample of the air may be contained in a bell glass inverted over the porous cell. The diffusion of gas through the earthenware raises the level of the water in the pressure gauge; and when the latter is properly graduated and proportioned to the capacity of the cell, exact and delicate indications may be obtained in a simple manner. This species of diffusiometer is so sensitive that when an Argand burner is gradually turned down until it is extinguished, the instrument, if held above the burner, will show a considerable rise of the water in four or five seconds. If held over an ordinary burner, turned on just sufficiently to be ignited, the liquid rises very rapidly. When the instrument is graduated in millimeters, a volume of one-half per cent. of gas in a room may be distinguished by it. An example is afforded by a case of sickness, which, in the opinion of the medical attendant, was due to gas poisoning. Some doubt arose on the point, because gas was not laid on to the house. The diffusiometer was brought into requisition, and showed the presence of gas, the source of which was afterward found in a broken main three meters distant from the house. A modification of the same instrument is made, whereby the sensitive portion is adapted for permanent exposure in any place difficult of access—such as the ceiling of a theater or public building, where gas might be expected to collect, the indicating portion being fixed anywhere within view.



NEW DESIGN FOR CABINET.

The Reliability of Ready Mixed Paints.

THE question of the reliability or durability of ready mixed paints continues to be one of the most interesting and perplexing ones connected with the trade. Shall the oft-repeated statement, "Ready prepared paints are not to be depended upon with that degree of certainty which good work demands," be taken as an accepted truth, not admi ting discussion, or, on the other hand, shall the decision be reached that there are honest, ready-prepared colors, and that the question of the responsibility of the manufacturer sh uld determine where they be purchased?

The value or durabici y of a color depends upon the vehicles used in mixing the paints, and when, through downright dishonesty, or the demands of a too strong competition, artificial pigments are used, an unreliable product is the result, and the prejudice existing among so large a class of painters against the use of ready-mixed paints is strenthened. When this is so strong that it is almost impossible to induce painters to make use of ready-mixed paints at all, surely it must be conceded that there are some good reasons back of this prejudice.

One old painter says: "I have always and still entertain prejudice against the mass of ready-mixed colors and paints turned out by grinders and manufacturers. My objections are that we cannot safely rely upon their quality or even the honesty with which they are compounded—so many different substances are called by the same name. We find ochres, for instance, in the market, which have little, if any, of the natural pigments in them; many of them are artificial products. The same with umbers, carmines, vermilion, in fact, with nearly all our colors and pigments that it will pay to imitate."

A strong argument many painters bring forward in favor of mixing their paints is that these imitations and frauds can more readily be detected in the crude materials than in the prepared paint or color. While this is true, it is also the fact that the painter who mixes and grinds his own colors can very easily be, and very frequently is, imposed upon by adulterations, artificial pigments, etc.

It is an admitted fact among the best class of painters that where the skill and honesty of the large manufacturer can be relied upon, the latter can better secure uniformity of quality and color. Experts in the mixing and application of paints—men thoroughly understanding the chemical relations of the colors being handled and with a large amount of material to select from—must certainly be able to secure a more uniform result, both as to quality and tone of color, than the ordinary painter in his shop, with few facilities for the work on hand, and a limited stock from which to select.

Again, a greater degree of durability can be obtained by the large manufacturer who is at the same time honest in his manipulations. The permanence of colors in secondary or mixed paints depends primarily in the chemical relations of the colors and pigments employed. These secondary or mixed colors are produced by various combinations, and the rule is to use the least number of colors possible to secure the desired tint. Where the greatest skill is displayed in these chemical manipulations, and where there is the widest choice of material, naturally seem to be the place where the greatest durability in the mixed paint could be secured.

Then there is the question of economy. Granted the honesty of the large manufacturer, with his superior facilities, advantages for purchasing the crude material, etc., is it not reasonable that the cost of manufacture should be much lower than where the opposite is the case? The large manufacturer buys his own materials and thus becomes responsible for their quality, while the painter mixes and combines materials purchased by another party, and the quality of which material he is ignorant of, except so far as a careful examination and his own chemical knowledge go to inform him.

The whole question seems to us to resolve itself down to this: Those who purchase only standard ready-mixed paints manufactured by well-known and responsible concerns, will get honest goods, and those who pursue the opposite course will get the adulterated and fraudulent goods. While there are unprincipled manufacturers, it is not really a difficult matter to find the reliable and honest ones. A good reputation for honestly-compounded paints and colors is built upon a solid foundation, and is not recklessly hazarded by the fortunate possessor. Even the severest competition of his dishonest rivals who undersell him, and promise just as good or better goods than he manufactures, will not drive him into the compounding of adulterated goods.—*The Painter.*

The Trade in Modern Antiquities.

ONE of the chief delights of Continental travel, as every person of experience will admit, is the unlimited opportunities it affords for buying antiquities. The statuary, the coins, and pictures that may be purchased in Italy are a source of never failing interest to English travelers and of never failing profit to Italian dealers. Andalusia, again, is a huge curiosity shop. Being once upon a time in Seville, we came across a retired British grocer, or tailor, or something of that kind, who had just purchased a "Madonna and Child"—unhappily, unsigned—which he had picked up for a few pounds in a dingy back street. He was going to send it to the Exhibition of Old Masters, and, if he ever did so, he probably found that it was worth only a pound or thirty shillings at the outside. It is the same, indeed, throughout Spain.

The altar cloths, the broken fans, the inlaid tables and cabinets, as resplendent as anything in the convent of the Cartuffe at Granada, the wonderful chairs and the still more extraordinary scraps of ancient lace, upon which all who have ever traveled in Spain have spent much money—these abound from Malaga to Irun, and naturally one is inclined to speculate a little on the odd circumstance that the supply is more abundant than ever, although the demand is fairly brisk.

Tangiers is, we should say, a hotbed of modern antiquities, and even Mr. Chamberlain bought some of them when he was over there a year or so ago. He ought to have known something about this class of goods, being a Birmingham man, but the childlike faith of the president of the Board of Trade in all things ancient is notorious. America, oddly enough, has taken to this business of manufacturing the antique Dutch cabinets, that, with bronze panels, dingy and marked with the cracks of fictitious centuries, are turned out every day from Chicago furniture stores, and for some purposes they are quite as useful as if they had indeed belonged to some departed burgher in the dead cities of the Zuyder-Zee.

New York experts in this sort of forgery make a specialty of Queen Anne chairs and tables, and the imitation is so perfect as to deceive all but those who have studied such things minutely in Europe. The explorer of furniture stores may come upon magnificent specimens of English Gothic chamber pieces, or ancient-looking Chippendale and Sheraton chairs, which might have belonged to Queen Elizabeth but for the fact that they did not.

It must be puzzling at first to discover in New York shops stamped leather chairs of the time of Louis Treize, plentifully ornamented with brass nails, whose heads are fully an inch in diameter, and the citizens of that enterprising city are invited to become the happy possessors of as many of these treasures as they like on ridiculously low terms. If, however, the explorer is inquisitive, and the furniture venders are in a tolerably can-

did mood, the visitor may be conducted into some back yard where these gems of high art are produced.

A Queen Anne's chair, just made, can, for instance, be supplied with worm holes by the simple process of tilting it bottom-side up and firing a charge of pigeon shot into the bottom and front of the seat.

Old armor, too, is a good line in this business, the drawings required for the purpose being made from the collection in the Grand Opera House, in Paris. It is said that Birmingham knows something about this branch of the trade, and that helmets, shields, casques, breastplates, and complete suits of mail are regularly manufactured for the gratification of credulous oil speculators and retired pill manufacturers. If a man starts a lot of ancestors he likes to have dummies of them in his hall rigged in their medieval iron-mongery. If Birmingham did not gratify him, Germany would.

It is astonishing how many tons of antiquites are annually sold along the Rhine, and it is even asserted that in Castle Colburg, where Martin Luther threw his inkstand at the devil—and unhappily missed him—the original splash was cut up and sold long ago; but that as the timber is massive, the place is carefully re-inked every night for the purpose of sale the next day. We cannot say how much truth or falsehood there may be in this particular story. There might have been some excitement in seeing the original transaction if both the distinguished parties to it were present. There can be none in gazing on a patch of ink. The trade in modern antiquities, however, is a curious reality, as real as the sale of old clothes or tombstones. It is a fact calculated to weaken one's faith in life.—*Ex.*

Color.

TO THE house painter who is ruled largely by the restrictions of a customer as to choice of colors and quality of material, and, it may be, by prevailing customs of decoration also, the study of color does not seem a great necessity. To put paint of some sort where it will prevent decay has been his chief duty; what the color was, or what the effect it would produce, seemed less important.

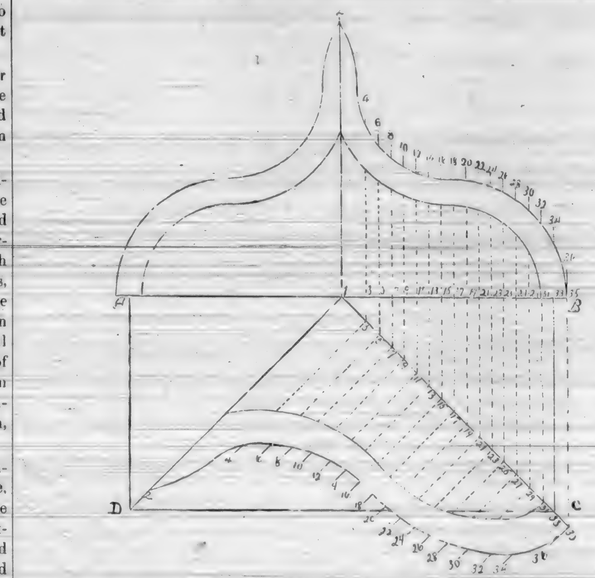
In the calling of the painter, aside from its conventionalities and bread-earning purposes, there is an ample field for his genius, if he have it, or for any talent he may possess. Between black, the one extreme of color, and white, its other extreme, there is a long stretch of varied and beautiful landscape, which can be made more beautiful by careful cultivation, or uglier by neglect and distortion. In order to its proper cultivation, the painter must acquaint himself with the qualities of color, the variations to which it is susceptible, its expressive power, and its proper relationships by harmony and contrast.

That color can speak to the artistic eye is a fact well known. That it too often tells a tale of the ill treatment to which it has been subjected quite as pitiful, and probably more truthful, than the street beggar, is also true, and that under skillful manipulation it reveals its power, unequaled to charm and to instruct, is beyond question.

What variations lie between black and white, and what the proper relations of these variations are, nature teaches; for they all are found in the golden glory of the sunset, in the somberness and majesty of the storm, in the endless variety and beauty of vegetation, in the grey, purple and brown of rock, hill and mountain, and in the soft tint of untainted water. Watch the play of light in nature's work, drink copiously at this unfailing source of knowledge, and lessons in the use of color may be learned which will greatly improve present tastes with regard to decoration.

The expressiveness, the sympathy, the contrasting beauty which can be got out of color for house decoration, should be drawn out by the painter and applied so that none of our buildings would be ugly in appearance, or inharmonious with surroundings. Study and persevering practice will accomplish this, and it will prove a source of intellectual and pecuniary profit to those who become masters of the art.—*The Painter.*

GAS FITTERS' CEMENT.—Melt together four and one-half parts of resin (by weight), one part beeswax, then stir in three parts of Venetian Red, and pour into moulds made of oiled paper, or cold iron moulds.



RULE APPLYING TO THE CURVED RIBS OF BAY WINDOWS.

Explanation of Above Diagram.

A B C D shows ground plan. A B 2 elevation of common rafter. 1 C to be the seat line of hip. Square from seat line C 1 out to D; space the curve 2 B into as many parts of parts, the more, the more accurate. Let fall from the numbers on the curved line perpendicular to the numbers on the seat line C 1. Square from the numbers on seat line 1 C commence and transfer from seat line 1 B in their respective places, to corresponding places on seat line of hip 1 C by those transfers. Points are found to trace curve theory. Cut and stand up as shown. Of all the cuts that are a source of annoyance to carpenters, the above is one that to many is most difficult of mastering.

The rule applies to the curved ribs of bay windows, also to roofs that curve both ways. Ribs for arbors also apply to roof of octagonal ground plans. M. J. MARION.

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Stained Floors.

THE popularity of stained floors goes on increasing. Nowhere are they more appreciated than in sleeping-rooms, where sweetness and freshness are the main considerations. Just what is the best stain is a difficult question to decide. A writer in the London *Queen* is of opinion that permanganate of potash is the best. It is much used in the navy, and is very satisfactory in sitting-rooms and sleeping-rooms. As most people know, permanganate of potash not only stains, but purifies and disinfects the rooms which are stained. The mode of procedure is this; Procure a good quality of permanganate of potash; dissolve about an ounce and a half of the crystals in a gallon of boiling water—this will make quite a dark stain—use a stick to stir up the mixture; then with a painter's flat brush lay on the stain, working the way of the grain of the wood quickly and boldly. A small brush is useful for corners and crevices, and a pair of heavy gloves should be worn while at work, as the permanganate stains very considerably. Salts of lemon or the lemon juice will, however, quickly remove the stains from the hands. When dry the staining can be repeated if the color is not dark enough, and then when perfectly dry the floor should be rubbed dry with an old duster, and linseed oil should be rubbed on freely with a piece of flannel, always applying it with the grain of the wood. Two or three layers of the oil are an improvement, and firmly set the stain. The floor is then ready to be polished with beeswax and turpentine. To prepare this, spread or cut up the wax into small pieces; put it in a gallipot, and pour sufficient spirits of turpentine over it to just cover it; set the pot in the oven or on the stove until the wax is thoroughly melted, then set it aside to get cold, when it should be of the consistency of pomatum. Put on the wax—not too much of it—with a piece of flannel, and polish with a polishing brush or a big silk duster. This mode of treating floors is quite the best and most wholesome for bedrooms, which should be stained all over, under the beds and everywhere. They can be kept very clean and bright by a daily rubbing with the duster and a weekly application of beeswax and turpentine. Turpentine is cleansing, and floors so treated do not require the weekly scrubbing which is so objectionable in cold and wet weather. Some people object that these floors require so much labor; but after they are once well polished, the labor is not more than scrubbing floors and washing oilcloths, and they take away two-thirds of the terrors of house cleaning. Those who like the more common varnished floors should stain the floors as above, but instead of the linseed oil a coat of size should be laid on. This can be obtained at the paint shops, and should be dissolved in boiling water to the consistency of thin gum, and then laid on with the brush evenly and with the grain. When the size is perfectly dry and hard it can be varnished with one or two coats of copal or egg-shell flat varnish. These floors require to be dusted daily and to have a little linseed oil rubbed in occasionally. These require less care than a waxed floor, but when they get shabby they are not so easily renovated. A flannel bag in which the broom can be encased is the best floor duster and one most easily managed. - *Sel.*

The Manufacture of Glue.

GLUE is an inspissated jelly, made of the parings of hides and horns of any kind, the pelts obtained from furriers, the hoofs and ears of horses, oxen, calves, sheep, etc. These are first digested in lime water, to cleanse them from greace or dirt; they are then steeped in clean water with frequent stirring, afterwards laid in a heap and the water pressed out. They are then boiled in a large cauldron with clean water, skimming off the dirt as it rises, and further cleansed by putting in, after the whole is dissolved, a little melted alum or finely powdered lime. The skimming is continued for some time, after which the mass is strained through baskets, and suffered to settle, that the remaining impurities may subside. It is then poured into the kettle again, and further evaporated by boiling and skimming till it becomes of a clear darkish brown color. When it is thought to be strong enough, it is poured into frames or moulds about six feet long, one broad and two deep, where it gradually hardens as it cools, and is cut out when cold into square cakes. Each of these is placed in a wooden box opened in three divisions to the back: in this the glue, while yet soft, is cut into three slices by an instrument like a bow, with a brass wire for a string. The slices are then taken out into the open air and dried upon a kind of coarse network, fastened in movable sheds four feet square, which are placed in rows in the glue maker's field. When perfectly dry and hard it is fit for sale. That is thought the best glue which swells considerably without melting by three or four days' immersion in cold water, and recovers its former dimensions and properties by drying. Glue that has got frost or that looks thick and black, should be melted over again.

To know good from bad glue, the purchaser should hold it between his eye and the light, and if it appears of a strong, dark color, and free from cloudy or dark spots, the article is good.

To this account may be added some experiments on a glue made from the raspings and trimmings of ivory, the refuse pieces and shavings of the button mould makers, and other pieces of hard bone that cannot be turned to account in entire manufacture. Six pounds of button mould shavings were put into a copper boiler with twenty-four quarts of cold water, and first let soak for two hours. The fire was then kindled and the liquor slowly brought to boiling, and kept at this heat for nine hours. After standing a night, fourteen quarts of clear gelatinous liquor were drawn off by a syphon, and two quarts more were obtained by pressing the residue. This was duly evaporated without addition, and when of the proper consistence was allowed to subside for half an hour, when it became firm enough to cut into cakes, which being hung up for a fortnight in a barn, yielded fifteen ounces of solid glue, or rather less than a sixth of the weight of the bone shavings originally used. A similar experiment made with ivory turnings yielded nearly the same proportion of glue. The jelly from these clean white bones is at first very transparent, and with but little color, and when concentrated by evaporation it always deepens in color, but if well made still remains transparent. A piece of this glue put into cold water swelled, as happens with common good glue, and in twenty-four hours had absorbed fifteen times its weight of water, but without dissolving, and by again drying in the air it returned to its original bulk and weight. It appears that at Paris there are three sorts of glue commonly sold. The best is imported from England, and is of a deep red; the next in value is the Flemish, which is whitish and transparent, and the most ordinary glue of the country is black and opaque.

In using glue, the carpenters first break it and cover it with cold water, and let it stand for about twenty-four hours, by which, as already mentioned, it swells to many times its original bulk after which the soaked pieces are melted, without more water, over a slow fire and kept simmering for about a quarter of an hour, with frequent stirring, and are then cooled. It is now a firm jelly, of such a consistence as very readily to be cut by any instrument, but too stiff to be tremulous. When wanted to be used, it is merely warmed, which renders it sufficiently fluid to be spread over the surface of the wood with a brush Wood joined by glue requires from one to three days to be perfectly cemented, which is known by the hardness of the portion that remains on the outside of the joining; and the force of cohesion of the best glue is such that boards as thick as any commonly used in furniture carpentering will quite as readily give way to violence in any other part of the substance as at the joining. Glued boards will not set in a freezing temperature, the stiffening being owing to the evaporation of the superfluous water of the glue, which is prevented by great cold.

A variety of gelatinous cements of less firmness than common glue and known by the general term of *size*, are made for the use of paperhangers, gilders, bookbinders, house painters in distemper, and many other trades, by boiling down in water the clippings of parchment glove leather, fish skin, and many other kinds of skin and animal membrane. These are used either alone or mixed with vegetable tenacious substances, such as flour paste, gum arabic and tragacanth, and the like. The preparations of these jellies is very simple, the substance used (parchment shreds, for example) being merely dissolved in water by boiling, strained and evaporated to a due consistence. Eel skins and the skins of other fishes make a cement which is much valued for its transparency and tenacity.—*Furniture Gazette.*

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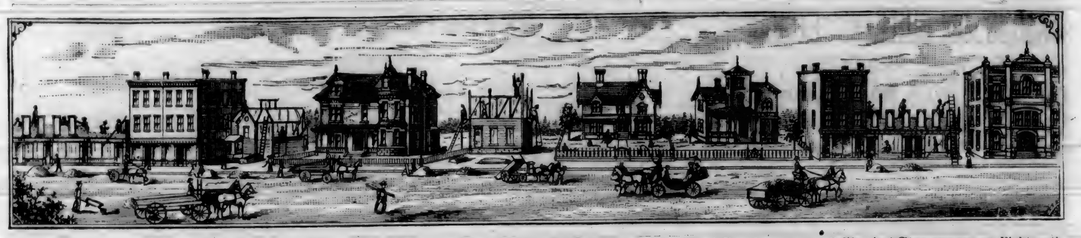

We do not answer ANONYMOUS communications.
Contractors are not regarded as architects, simply because they do, at times, make plans for buildings.
Friend, Architector, Constant Reader, old subscriber and others, by sending us their proper names, will receive letters in answer to their questions

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Natoma, nr Tenth. Two-story and basement frame.
O.—Mrs. Flannigan.
A.—J. J. Clark.
C.—P. J. Brennan.
$4,000.

Minna, nr. Fifteenth. Additions.
O.—M. Matthews.
C.—J. Lowling.
$1,000.

Capp, nr. Eighteenth. Two-story frame
O.—J. Cullen.
A.—M. J. Welsh.
C.—J. Doherty.
$3,700.

Capp, nr. Twenty-Sixth. Two-story frame.
O.—J. D. Sullivan.
A. N. J. Welsh.
C.—R. Smilie.
$3,500.

Howard, cor. Twenty-first. Two-story and basement frame.
O.—J. D. Spreckels.
A. C. Geddes.
C.—G. R. Lang.
$70,000.

Twenty-fourth, nr. Chattanooga. Two-story frame.
O.—J. Craig.
Day's work.
$600.

Twenty-fifth, nr. Noe. One-story and basement frame.
C.—L. Grace.
$1,700.

Church, nr. Twenty-fifth. Alterations.
O.—P. O'Keefe.
Day's work.
$1,200.

Liberty, nr. Guerrero. Two-story frame.
O.—Mr. Chris.
C.—J. H. Thom-Wohrden.
$3,000.

Dehon, nr. Seventeenth. One-story frame.
O. and B.—J. McPhee.
$1,000.

Hardy, nr. Seventeenth. Two-story and basement frame.
O. and B.—T. McLoughlin.
$2,500.

Devisadero, nr. California. Two-story frame.
O.—Paul Bunker.
C.—W. H. Wharff.
$4,600.

Washington, nr. Broderick. One-story frame.
O.—B. F. Brisac.
C.—W. H. Wharff.
$1,650.

Broadway, nr. Van Ness. Alterations.
O.—E. W. Burr.
C.—W. H. Wharff.
$2,500.

Hardy, bet. Sixteenth and Seventeenth. Two-story frame.
O.—D. D. Casey.
C.—J. McCann.
$2,000.

Adam, nr. San Bruno Road. One-story frame.
O. and B.—A. F. Krager.
$3,000.

Folsom, cor. Twenty-fifth. Two-story frame.
O.—H. Summers.
C.—C. G. Smith.
$3,500.

Twenty-sixth, cor. Capp. One-story frame.
O.—J. H. Pohliker.
C. R. Parker.
$700.

Mission, nr. Virginia Avenue. Two-story frame.
O.—J. A. Goldman.
A.—H. Geilfuss.
C.—B. Dryer.
$5,500.

Esmeralda Avenue, cor. Lundy Lane. One-story frame.
O.—W. W. Elliott.
C.—R. P. Hurlbut.
$1,600.

Mission, cor. Thirtieth. One-story frame.
O.—P. Riley.
C.—T. G. Somerset.
$1,000.

Delhon, nr. Sixteenth. Two two-story frames.
O.—C. J. Hornung.
C.—T. Fennell.
$4,000.

Fillmore, nr. Sacramento. Two two-story frames.
O.—W. E. Stevens.
C.—W. M. Fletcher.
$10,000.

Haight, nr. Fillmore. Two story frame.
O.—C. H. Ackerson.
Day's work.

Haight, cor. Fillmore. Two-story frame.
O.—T. Bornheimer.
C.—T. Sullivan.
$3,500.

Waller, nr. Fillmore. Two two-story frames.
O.—J. D. Ehrhardt.
C.—G. Krohn.
$6,500.

Grove, nr. Franklin. Two-story frame.
O.—P. Quinlan.
C.—C. Lads.
$4,500.

McAllister, cor. Franklin. Additions.
O.—Mr. Ulrick.
Day's work.
$600.

Buchanan, nr. Golden Gate ave. Two-story frame.
O.—A. & J. Klein.
A.—Kreitzer & Raun.
C.—J. Owens.
$3,500.

California, cor. Sansome. Alterations and additions.
O.—Fireman's Fund Insurance Co.
A.—Percy & Hamilton.
C.—Hall & Cox.
$24,000.

Pacific Avenue, nr. Pierce. Two-story frame.
O.—C. E. Heise.
A.—Percy & Hamilton.
C.—A. Jackson.
$7,800.

Pacific Avenue, nr. Fillmore. Two-story frame.
O.—A. Y. Trask.
A.—Percy & Hamilton.
C.—Gray & Stover.
$5,200.

McAllister, cor Fillmore. Three two-story frames.
O.—Mr. Horan.
A.—Newsom & Gash.
C.—Plummer & Anderson.
$12,000.

Sanchez, nr. Seventeenth. One-story frame.
O.—E. Flood.
A.—T. J. Welsh.
C.—T. Darcy.
$2,000.

Sanchez, nr. Market. Two-story frame.
O.—M. W. Kain.
Day's work.
$1,500.

Sanchez, nr. Market. One-story and basement frame.
O.—J. H. Braunstedt.
A.—B. E. Henriksen.
C.—J. Klein.
$2,000.

Lida Place, nr. Sixteenth. Two-story frame.
O.—A. P. Hodgdon.
Day's work.
$1,200.

Oak, nr. Gough. Two-story and basement frame.
O.—C. H. Cordes.
A.—H. Hochholzer.
C.—W. Pluns.
$4,500.

Oak, cor. Gough. Additions.
O.—W. Donovan.
A.—Townsend & Wyneken.
C.—J. Dutton.
$3,000.

Page, nr. Market. One-story frame.
O.—Mrs. M. Fusileer.
A.—T. J. Welsh.
C.—J. J. Welsh.
$1,800.

Haight, nr. Steiner. Two-story frame.
O.—Mr. Durot.
C.—R. Cook.
$6,000.

Haight, nr. Devisadero. Alterations.
O.—W. Heney.
C.—T. L. Tilden.
$2,000.

Park Hill Avenue, nr. Park Road. One-story and basement frame.
O.—H. Evans.
A.—J. C. Pelton.
C.—A. Klahn.
$4,000.

Steiner, nr. Washington. Two-story frame.
A.—W. C. Hoagland.
C.—T. G. Somerset.
$5,000.

California, nr. Scott. Two two-story frames.
O.—W. H. Birch.
A.—S. & J. C. Newsom.
C.—Moore Bros.
$12,000.

Haight, nr. Steiner. Two two-story frames.
O.—Leon De Nola.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
$5,000.

Commercial, nr. Kearny. Alterations.
O.—V. Larroch.
A.—Wright & Sanders.
C.—R. Ewing.
$10,000.

Battery, cor. Halleck. Alterations.
O.—J. Wormser.
A.—Wright & Sanders.
C.—T. Moffatt.
$9,000.

Geary, nr. Dupont. Alterations.
O.—N. Luning.
A.—Wright & Sanders.
C.—Robinson & Gillespie.
$6,000.

Turk, cor. Taylor. Three-story and basement frame.
O.—J. McDonough.
A.—W. P. Moore.
C.—Carpenter work, W. Fletcher; brick work, J. Hughes.
$50,000.

Gough, cor. Pacific. Alterations.
O.—Mrs. M. Hurley.
A.—W. P. Moore.
C.— Laugstaff.
$4,000.

Bush, nr. Taylor. Two-story and basement frame.
O.—T. Christopher.
A.—W. P. Moore.
C.—W. A. Saunders.
$3,500.

Front, cor. Washington. Three-story and brick basement.
O.—J. T. Doyle.
A. H. C. Macy.
C.—J. Cockran.
$23,000.

Market, nr. Page. Alterations.
O.—Mrs. E. Sullivan.
A.—J. Marquis.
C.—W. Fletcher.
$6,000.

Haight, nr. Pierce. Two-story frame.
O.—Miss N. Casey.
A.—Townsend & Wyneken.
C.—Treadwell & Thompson.
$4,660.

Greenwich, nr. Jones. Alterations.
O.—R. Maurish.
A.—G. E. Voelkel.
C.—B. A. Thompson.
$1,000.

O'Farrell, cor. Powell. Additions.
O.—M. Freres.
A.—B. E. Henriksen.
C.—W. Kreger.

Post, nr. Buchanan. Three-story frame.
O.—A. Steiner.
A.—B. E. Henriksen.
$6,000.

Sacramento, cor. Broderick. Two-story frame.
O.—W. Fonda.
A.—McDougall & Son.
C.—J. H. McKay.
$4,000.

O'Farrell, nr. Taylor. Two two-story and two three-story frames.
O.—Mrs. R. B. Kellogg.
A.—McDougall & Son.
C.—A. Jackson.
$22,000.

Folsom, nr. Sixth. Alterations.
O.—C. Schultz.
A.—H. D. Mitchell.
Day's work.
$2,500.

Larkin, nr. Turk. Three-story frame.
O.—P. Heitzberg.
A.—T. A. Eisen.
C.—C. Mills.
$4,200.

Steiner, nr. Haight. Two-story frame and stable.
O.—L. Muller.
A.—H. Geilfuss.
C.—W. Pluns.
$7,000.

Valencia, nr. Twenty-first. Three two-story frames.
O.—H. Ostersen.
A.—H. Geilfuss.
C.—Conrad & Miller.
$13,000.

Steiner, nr. California. One-story frame.
O.—D. Schoenfeld.
A.—H. Geilfuss.
C.—F. Weinoehl.
$3,000.

Steiner, nr. Eddy. Two-story frame.
O.—J. Krueckel.
A.—H. Geilfuss.
C.—J. Fuchs.
$5,000.

Lyon, cor. Sutter. Two-story frame.
O.—R. Wallman.
A.—H. Geilfuss.
C.—H. Main.
$8,750.

Scott, nr. Post. Two-story frame.
O.—G. Burgin.
A.—H. Geilfuss.
C.—Conrad & Miller.
$6,300.

Buchanan, nr. Post. Two-story frame.
O.—W. Hess, Jr.
A.—H. Geilfuss.
C.—Conrad & Miller.
$4,800.

Fulton, cor. Fillmore. Four two-story frames.
O.—E. Hanson.
A.—H. Geilfuss.
C.—W. Pluns.
$21,000.

Pine, nr. Broderick. Two-story frame.
O.—J. Pope.
A.—S & J. C. Newsom.
C.—Moore Bros.
$5,000.

Devisadero, cor. Geary. Two-story frame.
O.—M. Kibbe.
A.—T. J. Welsh.
C.—A. Jackson.
$10,000.

Seventeenth, nr. Capp. Two-story frame.
O.—C. Johnston.
A.—T. J. Welsh.
C.—J. W. Smith.
$4,500.

Stevenson, nr. Eighteenth. Two-story frame.
O.—M. Norton.
A.—T. J. Welsh.
C.—P. Laherty.
$2,700.

Turk, cor. Seymour. Two-story frame.
O.—Mrs. Morrison.
A.—T. J. Welsh.
O.—J. W. Smith.
$4,800.

Mission, cor. Spear. Additions
O.—J. Springer & Co.
Day's work.
$8,000.

Sutter, cor. Franklin. Additions.
O.—Mrs. L. Breeze.
A.—Schmidt & Havens.
C.—Mahoney Bros.
$10,000.

Washington, nr. Gough. Two-story and basement frame.
O.—F. Tillmann.
A.—Schmidt & Havens.
C.—C. Chisholm.
$15,000.

Buchanan, nr. Post. Two-story frame.
O.—R. P. Merillion.
A.—Schmidt & Havens.
C.—T. Maxwell.
$5,000.

O'Farrell, No. 310. Alterations.
O.—Independent German Congregationalist.
A.—Schmidt & Havens.
C.—H. J. Meyn.
$1,500.

Metcalfe Place. Three two-story frames.
O.—G. Metcalfe.
A.—Schmidt & Havens.
C.—Commary & Beardslee.
$10,000.

MISCELLANEOUS.

Sacramento — I bet. Eighth and Ninth. Two-story and basement frame. O., Henry Burnham; A., N. D. Goodell; C., J. White; $4,700. Third, cor. K. Alterations. O., Newton Booth; A., N. D. Goodell. C., Carle & Croly; $1,800.

San Jose—Two-story frame. O., Henry Lears; A., J. O. McKee; C., M. D. Green; $4,710. Two-story frame. O., S. P. Sanders; A., J. O. McKee; C., W. S. Boyles; $3,547. One-story frame. O., J. B. Lewis; A., J. O. McKee; C., E. A. Van Dalsen; $1,700.

San Luis Obispo—Three-story frame. O., S. L. O. Hotel Co.; A., — Smith; C., Veitch & Knowles; $75,000.

Woodland—Lola. One-story frame. O., J. L. Faulkner; C., Glenn & White; $1,000. College Avenue. Two-story frame. O., J. F. Garret; C., S. Caldwell; $4,400. Main. Two-story brick post-office. O., W. M. Coward; A., Carson & Greene; C., W. H. Curson; $4,850. Fourth. Alterations. O., J. Wright; C., D. Myres; $1,100. North. Two-story frame. O., Mr. Masbacker; C., G. Smith; $2,200. Elm. One-story frame. O., J. O. Maxwill; C., W. H. Curson; $1,250.

Modesto — Three-story and basement brick. O., Dr. Tynan; A., W. G. Copeland; C., brick work, Mr. Doyle; $80,000.

Stockton—Two-story and basement frame. O., C. Belding; A., W. G. Copeland; day's work; $12,000.

Berkeley—One and one-half story frame. O., S. C. Clark; C., I. A. Boynton. $1,400. One and one-half story frame. O. and B., J. A. Boynton; $750. Additions. O., J. Ferrin; C., C. Kerns; $500. One and one-half story frame. O., Mrs. M. C. Cummings; C., Berkeley V. I. Association; $4,000. One and one-half story frame. O. and B., J. A. Embury; $1,750.

Mission, San Jose—One-story frame. O., Prof. Hillgard. C., I. A. Boynton; $1,000.

St. Helena—Two-story frame. O., R. Schmidt; A., A. C. Lutgene; C., Patterson & Smith; $4,000.

Los Gatos—Alterations. O., A. Malpas; A., S. & J. C. Newsom; C., — Townsend; $4,500.

Alameda—One and one-half story frame. O., J. Barton; A., S. & J. C. Newsom; C., C. Kendell; $3,750.

Oakland—Market, cor. Thirteenth. Christian Church. A., S. & J. C. Newsom; C., Marion & Morton; $6,000.

San Mateo—Two-story frame and stable; O., Capt. Payson; A., Wright & Sanders; C., Burpee & Judson. $20,000.

The California Architect and Building News.

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When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Semi-Annual Review of Building Operations in San Francisco.

A MORE THAN FAVORABLE SHOWING.

DURING the first six months of 1884 up to the 10th of the present month, more buildings and of greater value have been erected than for any similar period since records of the same have been kept. The showing given is the more remarkable from the fact that many of our real estate agents considered the large number of flats which were erected last year would be ample to meet the demand for a while, and that only occasionally similar structures would be erected during, at least, the first six months of the present year.

In a labored article in the *Chronicle* on building operations, we find that "it is now thought the number of new buildings to go up this season will hardly equal that of 1883." The writer evidently did not know the true state of facts. We have reported each month the number of contracts actually signed, and even a casual observer could not help but notice that the number of buildings was considerably larger than that of last year. The true value of such a statement is best shown by the following résumé:—

In the first six months of 1882, there were reported in this Journal, of building improvements—brick, frame, and alterations—

281 Buildings of the value of $1,238,910;

Same time in 1883,
424 Buildings of the value of $2,464,898;

For the first six months of 1884,
521 Buildings of the value of $3,188,670.

IT WILL THUS BE SEEN THAT NEARLY 100 MORE BUILDINGS HAVE BEEN ERECTED, OR ARE IN PROCESS OF ERECTION, MORE THAN FOR ANY SIMILAR PERIOD OF WHICH WE HAVE ANY RECORD; BEING A COMPLETE REFUTATION OF THE "CHRONICLE'S" STATEMENT.

There are several improvements under way not counted in the above estimate. It is our rule not to give building items until the contracts are signed, and for this reason we do not include the Murphy building, corner Jones and Market; grading has been commenced and estimates are now being received. Probably nearly half a million will be spent on this property.

Work has also been in progress for some time on the "Fair" property on Nob Hill, but we have as yet made no allowance for same in our estimate. The old Metropolitan Market Building is now being torn down to make room for a fine brick structure; as the contract is not yet signed, we do not report the same. Many others might be quoted to prove that the building boom is much greater than our figures show, but we do not anticipate events in order to swell the record. We have given, each month, a faithful record of the number of buildings actually in process of erection, and one that can be relied upon as substantially correct

We can see no good reason to apprehend a falling off in the number of new buildings to be erected in the remaining months of the year. The indications at present are, that they will exceed in number and value those of the same period in 1883.

Every kind of labor can, at present, secure remunerative employment. First-class carpenters are scarce. Masons are in good demand, a thorough mechanic being but seldom out of employment. When carpenters are busy, lathers, plasterers, plumbers, painters, etc., must necessarily, have plenty of work.

Our article in last issue on "High Price of Brick," attracted much attention, and we received a gentle chiding (?) from some of the prominent manufacturers in regard to the same. We do not think brick will be held at so stiff figures after the middle of July.

The inclination among the Lumber Manufacturers is to shade off on the prices in schedule. In fact, some of the shades are quite heavy. Prices favor the buyers, especially when large quantities are furnished. We are pleased to see this good work commenced. Twenty dollars per thousand is the most that rough lumber ought to command in this city.

From the number and character of buildings now in course of erection, one can readily form a true idea of the prosperity and growth of our city. More than anything else that has contributed to this result, is the steady decrease of the mining excitement, and the sooner the "Big Board" is dissolved, the better it will be for our real estate and building interests.

San Francisco Chapter, American Institute of Architects.

THE regular monthly meeting of the Chapter was held on June 6th, H. C. Macy presided. It being the desire of the members present to attend the meeting in honor of the Presidential nominees, the routine business was dispensed with. Several communications were laid over until next meeting. J. J. Clark as Fellow, and L. M. Turton as Student, were elected members of the Chapter. Proposi-

tions for membership were received from A. A. Bennett and Emil John.

A long and earnest discussion then ensued upon the advisability of allowing one member of an architectural firm to belong to the Chapter when the other member or members do not desire to join. No definite conclusion was reached.

Committee on Indentures presented a report which was laid over till next meeting. The secretary was authorized to have printed a number of copies of the by-laws, immediately upon receiving the articles of Incorporation of the Chapter, and to combine the latter with the by-laws.

The meeting adjourned to Friday evening July 11th, as the regular night comes on the 4th, said day being a national holiday.

Division Fences.—The "Call" in Error.

A CORRESPONDENT asks, through the question column of the *Morning Call*, whether the respective owners of lots are obligated to bear equal proportions of cost of fences built upon the division line.

The *Call*, which in matters with which it is familiar generally returns correct answers to its querists, is correct in saying, "If two persons own adjoining lots, and one wishes to fence around his lot, he cannot compel the other to share the expense of the division fence between the two lots," but it is greatly in error in stating, "But afterward, if the owner of the second lot desires to fence in his property, he *must* pay half cost of the division fence if it is used as the only fence between the two lots." There is no legal rule or law justifying the use of the word "MUST pay." Morally, it would be only fair and just for the second owner to pay half cost of the division fence, but if he does not see fit to do so, the one who built the fence can have no financial redress in the cost thereof. He may by law prevent the second party from using such fence for the purpose of attaching clothes lines, sheds, or other constructions, or in any manner making use thereof, by nailing or securing to it. But the second man may enjoy the use of such fence for all the purposes of inclosure simply, without paying a farthing toward the cost of erection.

The Ordinances Regulating the Construction of Buildings in San Francisco.

THE "orders" defining the Fire Limits and regulating the construction of both brick and frame buildings in San Francisco, has been printed and bound in convenient form, containing 114 pages. The copy before us is the latest upon the subject matter regulated, having been passed by a vote of eleven to one in the board of supervisors, February 27, and approved by his honor, Mayor Bartlett, March 3, 1884.

The objects in view with those originating the various orders as passed, were evidently to define and enforce the practice of safe and secure methods of construction, with fire risks and dangers as the basis of judgment, and the conclusions reached. The necessity for a perfect and equitable code of ordinances to regulate and prevent the many abuses that have been so commonly and generally practiced in San Francisco, is admitted by all intelligent architects and builders; for the violations and disregard of the correct science of construction and mechanical principles in the erection of buildings in California, are very numerous; and it is not a matter of surprise that those to whose special care the fire interests of the city are confided, should be alive to the importance and necessity of buildings being so constructed as to insure, first, the greater security against the occurrence of fire, and the best means and facilities in controlling conflagrations when they do occur; secondly, to diminish the risks and dangers always more or less possible to firemen during active service, and thirdly, the most practical and safest means of escape to occupants of burning buildings; all of which is proper and wise, where *common rights and privileges* are not unnecessarily proscribed and restrained. But it is possible, and a thing that has often been done by law-making powers, to go beyond limits at which they should stop; for there is the possibility in law and ordinance making, as in all the other affairs of life, of attempting, comprehending, and seeking to cover and do too much, thereby making legal enactments, passed presumably for the protection and bettering of matters and interests legislated upon, onerous and oppressive, and therefore unjust.

How nearly the exactly right and fair has been reached in the passage of the "fire limit orders," or how handsomely the overstepping of legitimate and proper bounds has been avoided, is a question undoubtedly affirmed and claimed by the framers of the "orders," while architects, contractors and owners very generally disapprove and oppose many of the provisions and regulations of the book of orders and submit thereto with no special manifestation of good grace.

The dissatisfaction that exists arises largely from the fact that there are many really competent architects and builders in San Francisco, who claim to, and do understand and know as perfectly, exactly and comprehensively the numerous requirements involved in building constructions, as do the law-making powers, whose knowledge of building matters and principles is almost exclusively second-handed, and devoid of any more than incidental personal experiences as to architectural or building sciences. And when such men are confronted in the exercise of their professional and mechanical practices, by legal orders and ordinances which in many of their details are considered as unnecessarily restrictive, faulty, and not of recognized consistency and practical utility, it is the most natural thing imaginable that a rebellious feeling should exist.

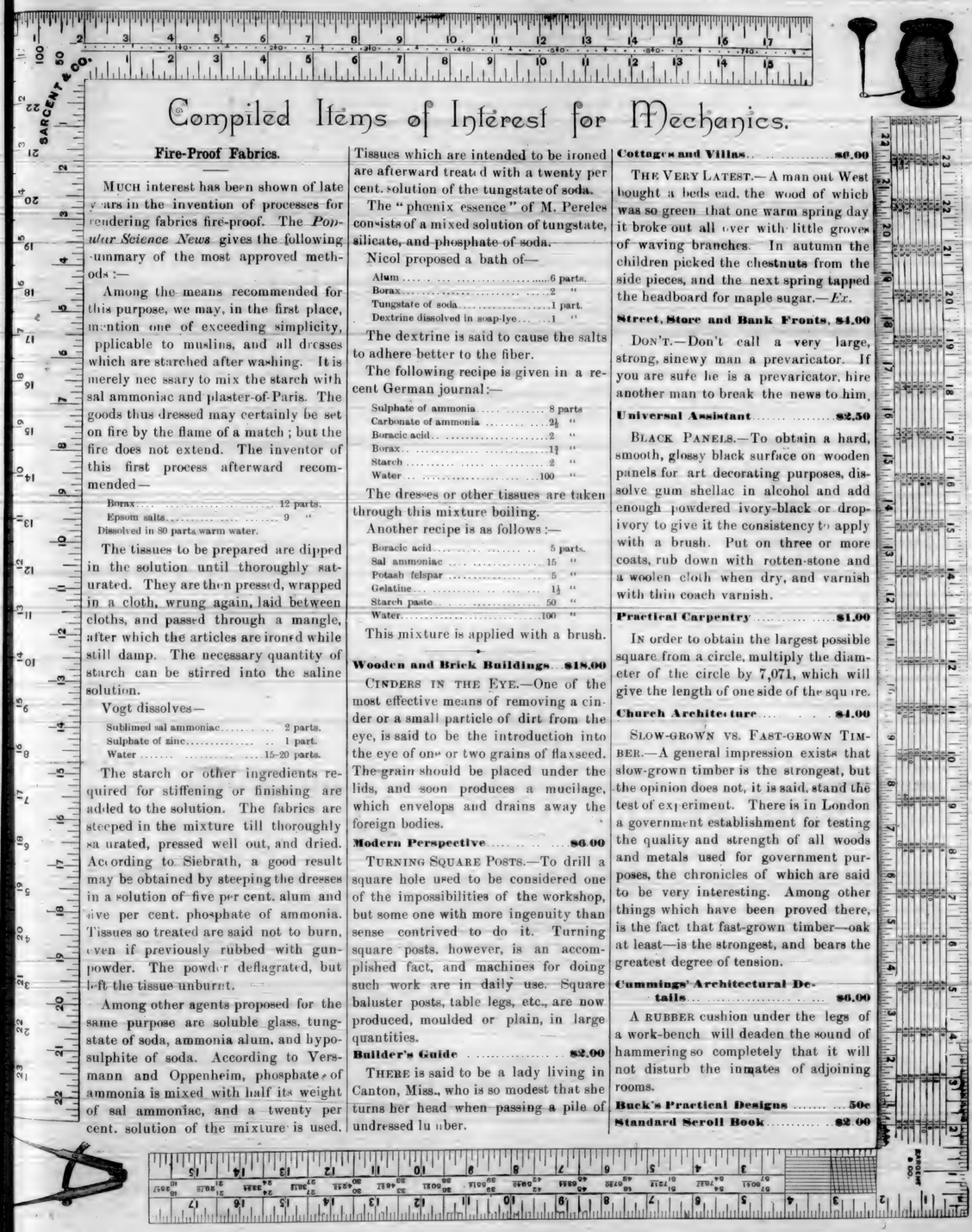
Reference is made to the subject under notice, simply because the feeling is so general, and so freely expressed by architects and others, in reference to many of the provisions of the "orders," which, in the main, are good, sound and proper; and if purged of the objectionable features, would meet the hearty approval of all competent and worthy architects and builders, as both the professional and mechanical departments of building science are infested with men whose attempts at designing and construction require laws and orders to force them to even half consistent practices, and who would be much nearer their proper spheres of operation with the reins of a mule team or a pick and shovel in hand.

Buildings.

SECTION 48 of the "Fire Limit Order," as passed by the Board of Supervisors, provides that all doors of ingress and egress, to and from halls and buildings used for public assemblages, *shall open both ways—inwardly and outwardly—and in no case inwardly only.*

The section not defining explicitly the class of buildings contemplated, and included in and by the intent and meaning of the order, beyond the general expression, "*all buildings . . . used for public assemblages,*" the fraternal organizations people claimed that the order was not intended to reach and include halls and buildings devoted to secret society purposes, and the late decision of Judge Ferral in the appeal case of District Engineer Kennard vs. John Goldman—the defendant having been arrested for misdemeanor, and tried in the Police Court for non-compliance with the order requiring entrance doors to halls to open outward—sustains the theory that lodge room buildings are not public halls, and therefore not subject to the provisions of the "Fire Limit Order!"

A QUESTION is raised by *La Semaine des Constructeurs* which is of some importance in this country as well as in Europe. One of its correspondents in speaking of the items which should be included in the cost of a party-wall, for the purpose of determining the amount that should be paid by a person wishing to use it to support an adjoining building, remarks that, according to the decision of the courts, the owner of the wall is not entitled to include the architect's commission of five per cent. as a part of the cost of the wall, half of which the adjoining owner is bound to pay in return for the privilege of using it. This seems to the correspondent, as well as to the editor of *La Semaine*, rather unreasonable, and the latter even goes so far as to say that where the party-walls had been constructed without the intervention of an architect, the owner should still be entitled to add the usual architect's commission, as compensation for the trouble which he had been at in making contracts and supervising the work. As five per cent. on the value of half an ordinary city party-wall would be from fifty to a hundred dollars, or even more, it ought to be worth some one's while to settle the question definitely. Although we have heard the point discussed here, we have never seen the architects percentage specified as an item in the account of the cost of a party-wall. If any one of our readers knows of local customs or precedents favoring a different practice, we should be very glad to be informed of them.—*American Architect and Building News.*



Compiled Items of Interest for Mechanics.

Fire-Proof Fabrics.

MUCH interest has been shown of late years in the invention of processes for rendering fabrics fire-proof. The *Popular Science News* gives the following summary of the most approved methods:—

Among the means recommended for this purpose, we may, in the first place, mention one of exceeding simplicity, applicable to muslins, and all dresses which are starched after washing. It is merely necessary to mix the starch with sal ammoniac and plaster-of-Paris. The goods thus dressed may certainly be set on fire by the flame of a match; but the fire does not extend. The inventor of this first process afterward recommended—

Borax	12 parts.
Epsom salts	9 "

Dissolved in 80 parts warm water.

The tissues to be prepared are dipped in the solution until thoroughly saturated. They are then pressed, wrapped in a cloth, wrung again, laid between cloths, and passed through a mangle, after which the articles are ironed while still damp. The necessary quantity of starch can be stirred into the saline solution.

Vogt dissolves—

Sublimed sal ammoniac	2 parts.
Sulphate of zinc	1 part.
Water	15–20 parts.

The starch or other ingredients required for stiffening or finishing are added to the solution. The fabrics are steeped in the mixture till thoroughly saturated, pressed well out, and dried. According to Siebrath, a good result may be obtained by steeping the dresses in a solution of five per cent. alum and five per cent. phosphate of ammonia. Tissues so treated are said not to burn, even if previously rubbed with gunpowder. The powder deflagrated, but left the tissue unburnt.

Among other agents proposed for the same purpose are soluble glass, tungstate of soda, ammonia alum, and hyposulphite of soda. According to Versmann and Oppenheim, phosphate of ammonia is mixed with half its weight of sal ammoniac, and a twenty per cent. solution of the mixture is used. Tissues which are intended to be ironed are afterward treated with a twenty per cent. solution of the tungstate of soda.

The "phœnix essence" of M. Pereles consists of a mixed solution of tungstate, silicate, and phosphate of soda.

Nicol proposed a bath of—

Alum	6 parts.
Borax	2 "
Tungstate of soda	1 part.
Dextrine dissolved in soap-lye	1 "

The dextrine is said to cause the salts to adhere better to the fiber.

The following recipe is given in a recent German journal:—

Sulphate of ammonia	8 parts
Carbonate of ammonia	2½ "
Boracic acid	2 "
Borax	1¼ "
Starch	2 "
Water	100 "

The dresses or other tissues are taken through this mixture boiling.

Another recipe is as follows:—

Boracic acid	5 parts.
Sal ammoniac	15 "
Potash felspar	5 "
Gelatine	1½ "
Starch paste	50 "
Water	100 "

This mixture is applied with a brush.

Wooden and Brick Buildings.....$18.00

CINDERS IN THE EYE.—One of the most effective means of removing a cinder or a small particle of dirt from the eye, is said to be the introduction into the eye of one or two grains of flaxseed. The grain should be placed under the lids, and soon produces a mucilage, which envelops and drains away the foreign bodies.

Modern Perspective.....$6.00

TURNING SQUARE POSTS.—To drill a square hole used to be considered one of the impossibilities of the workshop, but some one with more ingenuity than sense contrived to do it. Turning square posts, however, is an accomplished fact, and machines for doing such work are in daily use. Square baluster posts, table legs, etc., are now produced, moulded or plain, in large quantities.

Builder's Guide.....$2.00

THERE is said to be a lady living in Canton, Miss., who is so modest that she turns her head when passing a pile of undressed lumber.

Cottages and Villas.....$6.00

THE VERY LATEST.—A man out West bought a beds'ead, the wood of which was so green that one warm spring day it broke out all over with little groves of waving branches. In autumn the children picked the chestnuts from the side pieces, and the next spring tapped the headboard for maple sugar.—*Ex.*

Street, Store and Bank Fronts, $4.00

DON'T.—Don't call a very large, strong, sinewy man a prevaricator. If you are sure he is a prevaricator, hire another man to break the news to him.

Universal Assistant.....$2.50

BLACK PANELS.—To obtain a hard, smooth, glossy black surface on wooden panels for art decorating purposes, dissolve gum shellac in alcohol and add enough powdered ivory-black or drop-ivory to give it the consistency to apply with a brush. Put on three or more coats, rub down with rotten-stone and a woolen cloth when dry, and varnish with thin coach varnish.

Practical Carpentry.....$1.00

IN order to obtain the largest possible square from a circle, multiply the diameter of the circle by 7,071, which will give the length of one side of the square.

Church Architecture.....$4.00

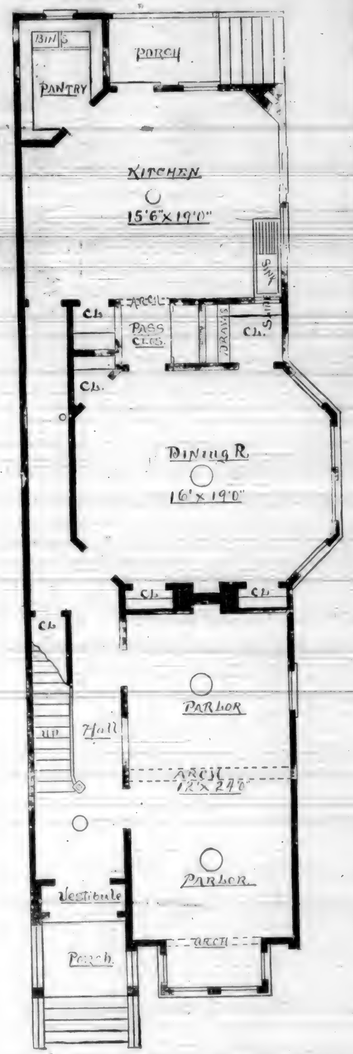
SLOW-GROWN VS. FAST-GROWN TIMBER.—A general impression exists that slow-grown timber is the strongest, but the opinion does not, it is said, stand the test of experiment. There is in London a government establishment for testing the quality and strength of all woods and metals used for government purposes, the chronicles of which are said to be very interesting. Among other things which have been proved there, is the fact that fast-grown timber—oak at least—is the strongest, and bears the greatest degree of tension.

Cummings' Architectural Details.....$6.00

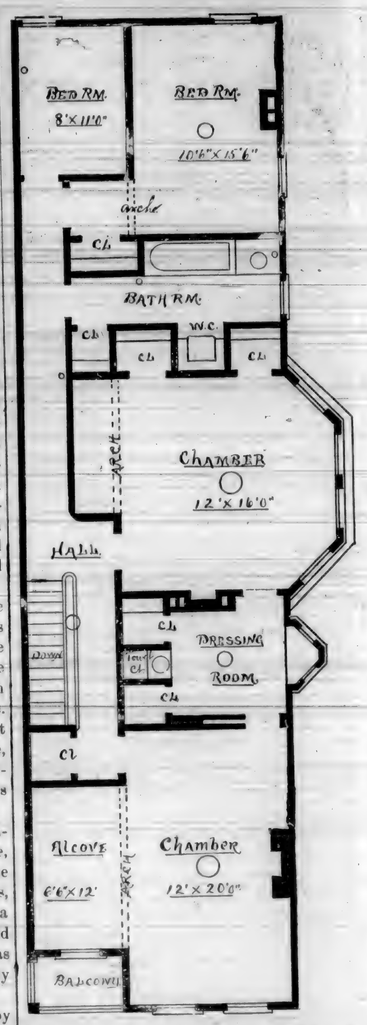
A RUBBER cushion under the legs of a work-bench will deaden the sound of hammering so completely that it will not disturb the inmates of adjoining rooms.

Buck's Practical Designs.....50c

Standard Scroll Book.....$2.00



FIRST FLOOR PLAN OF $5,500 DWELLING.



SECOND FLOOR PLAN OF $5,500 DWELLING.

Our First Competition—Result.

AFTER a thorough and impartial investigation of the numerous plans presented by applicants, for the various awards offered by the proprietors of this Journal, the Committee have awarded the Premiums as follows:—

FIRST PRIZE; "AS YOU LIKE IT."—Author, Junius H. Morse, 10 Pemberton Square, Boston, Mass.

SECOND PRIZE; "GARRICK."—Author, John C. Wolf, 57 Broadway, New York.

THIRD PRIZE; "ORIOLE."—Author, W. Claude Frederick, 65 West Fayette St., Baltimore, Md.

FOURTH PRIZE; "Hoosier."—Author, J. W. Hammond, Frankfort, Ind.

HONORABLE MENTION; "TEASE QUARE."—Author, Oliver C. Smith, S W. cor. 6th and Vine Sts., Cincinnati, Ohio.

We publicly extend our thanks to the Committee, Messrs. Sanders, Pissis, and Mitchell, for their earnest efforts in arriving at the result. It was a task of more than unusual difficulty to decide upon the merits of the various plans. That their decision was just is evinced by the fact that not a single premium was awarded to competitors on this coast. Hence, no partiality was shown in making the awards.

After receiving the plans from the Committee, we carefully studied the various designs, and are satisfied that good judgment was exercised in declaring the result, as stated. We could not help but notice a general fault with all the designs. There is not a single one that can be built for anything like $5,000 in this city, and, strange to say, the plans presented by competitors residing in California, were as far out of the way in this regard as those from the East. We also noticed carefully the estimates, and found that, although they were all near the required amount, still there were many items much too low, and many omitted altogether.

In one estimate the price of brick laid in the wall was given at $12.50 per thousand. This figure is so much at variance with the price in this city, viz. $20.00, per thousand, that we are at a loss to conceive the conditions which would naturally give rise to such a difference.

In another case, the labor was placed at $1,350. This seems incredible in a $5,000 house, but not hardly more so than is given in another estimate for work where the same is placed at $430.

We very much regret that one of the contestants should have gone to the Committee, and, without the advice or sanction of the Editors of this Journal, withdrawn his plans, simply b cause he thought he could not get a premium, and therefore concluded he would withdraw the same before the result was announced. Being a new-comer, we generously overlook the affair.

We sincerely regret the apathy shown by architects and draughtsmen residing on the Pacific Coast, in regard to presenting plans for this competition. The premiums—$60, $50, and $40—for the first three prizes were certainly worth striving for, and when, in addition to the money, the publicity given to the successful authors of the various designs is taken into consideration, we are surprised that more energy was not exercised by our California brethren in striving to secure at least *one* of the prizes.

As a whole we are well pleased with the result. There were more plans received than we had hoped for when our offer was made. Those receiving premiums, and those of whom honorable mention is made will appear in successive numbers of this Journal, the first of which will be in our July issue.

It is our intention to shortly issue a prospectus for our SECOND competition. This will be for a country dwelling to cost not over $3,500. To avoid such discrepancies in estimates as were contained in the *first*, we will specify distinctly the prices to be used for lumber, brick, etc. Parties desiring to compete will please send us their address as soon as convenient. This second competition is OPEN TO ALL.

All our competitions will be under the control of a committee appointed by the S. F. Chapter A. I. A., thus ensuring absolute fairness in the awarding of premiums.

Modern Carpenter's Companion..... 1.25
Modern House Painting..... 5.00

CITY OR SUBURBAN DWELLING, COSTING ABOUT $5,500.

The Journeymen Painters' Movement.

At the time of going to press with the April number of this Journal, the issue between the master and journeymen painters remained unadjusted, with the indications strongly in favor of the workmen. Since then the anticipated concession has been made by the masters, and the journeymen are joyous over their success in securing the advance in wages demanded.

As was stated in a former issue, the resistance on the part of employers was influenced by a virtually *criminal* wrong existing with so many of those who assume the position of masters, whose regular business practice has been, and is, to swindle and rob owners through contract engagements, and honest bosses by the use of all manner of stuff manipulated into a solution made to resemble, to the unpracticed eye and credulous owners, the appearance of paint. And in *fact* a paint—for the term paint is defined by Webster's unabridged as, "*To cover or smear over with coloring matter.*" Consequently any mixture that can be applied with a brush, and which gives color, comes under the name of paint, the ingredients used not being defined or expressed by the term. But when the painting of a building is let, either upon the basis of a specification or upon a verbal understanding, the universal presumption is that white lead and pure linseed oil shall constitute the pigments of the color used, and honest painters so understand the matter and govern themselves accordingly in fixing a value for the work to be done; while the "professors" of the adulteration art, destitute of all mechanical pride and principles, resort to the use of base mixtures, fifty to ninety per cent of which cannot be found nor purchased of any reputable house manufacturing or dealing in white lead, pure oils and genuine paint stock.

Consequently the honest men who do use the proper materials, and are faithful to their employers, stand no equal chance when the "professors" are allowed to compete. It is not reasonable to suppose that those who use genuine paint stock, costing, say ten cents per pound more or less, have any comparative standing with those who use slush, costing three to five cents per pound. And it is this unequal grievance that seemed to compel the master painters to resist an advance, while the "professors," knowing their advantages, could, with financial safety, acceed to the demand for increased wages on the part of journeymen.

The terms *"swindle and rob"* have been used in this article; are they warranted? Emphatically, yes. Robberies and swindles are of unlimited kind and varying degrees, and those who, through contract opportunities, obtain money from owners in payment for material used and work performed, differing from, inferior to, and of far less value than that covenanted and agreed to be used, are nothing less than a special class of swindlers and cheats. Yet the class of owners who let their work to such men, simply upon the ground that the parties offer to do the work at a very low price, without any regard to the standing or reputation of the persons engaged, merit all the bad usage received; while that fact does not lessen nor justify the rascalities of those who abuse and degrade a mechanical pursuit, about and around which clusters so many grand and sublime facts in history, in the arts and sciences, and in the grandeurs of the universe, with its mountains, fields and valleys made beautiful by the Artist of eternity, in the millions of tints, hues and colors spread out over all of earth's surface, each shade being in and of itself pure and unadulterated, proclaiming to the world their origin through the perfect and pure laws of natural growth, as established by Him who organized the perfect system of truth and love, brought forth by each return of seasons, and who added to the sun's golden rays, the soft moonbeams of night, and completed the beauties of the firmament by changing clouds of unspeakable grandeur and the colors and tints of arching rainbows.

But we leave the subject in hand for the present, to be further considered and treated when we shall have gathered and added to our practical knowledge of the matter other information in detail, sustaining and confirming all that has been outlined in this article.

To this end we ask the assistance of all reliable users of pure paint material, whether masters or journeymen, assuring them that authenticated facts alone, without the use of name, will be used in this connection.

The Strength of Wood.—It may seem strange, says the *Midland Industrial Gazette*, that a board one inch in thickness, of any solid wood, requires less force to tear asunder than one of the same thickness composed of a number of layers of wood, the resistance being augmented by crossing the grain. For instance, five samples of lumber, as represented in the following, were carefully adjusted and subjected to tension with these results:—

Walnut, solid	87.4	pounds	to tear	asunder.
Gum, "	98.7	"	"	"
Poplar, "	71.13	"	"	"
Cherry, "	84.07	"	"	"
Ash, "	69.91	"	"	"

One-fifth of an inch of each sample was now placed together, grain all running in one direction, when, after being glued and thoroughly dried, it required a strain of a trifle over 100 pounds to tear apart, and the strangest feature of all was it separated with the wood that showed the greatest resistance when tested solid, hence though the resistance is increased in all, the weaker woods show the greater. Again, the grain was crossed with each layer alternately when the resistance was still further increased 28.5 pounds, and when crossed diagonally we found a better result still, it being about 80 pounds greater than required to split or tear asunder the original wood.

Practical Perspective, $6.00.

Practical Carpentry, $1.00.

Nails.

A large dealer in builder's hardware said recently that the demand for clinch or clout nails and for chisel pointed wire nails had largely increased within a year, as compared with that for the ordinary cut nails, and that flooring nails with the wedged-shaped heads were also used in place of the nails with the flat upset heads. His reasons were that better work resulted from the better nails, and there was far less waste. For the coarsest purposes the less first cost of the ordinary cut nails with the flat head induced builders to continue their use; but he believed the improved form and better material of the tough wire and clinch nails would, in time, drive out the inferior material and defective form. The principal advantage of the wedge-shaped head, as in floor nails, is that the head never breaks off in driving, as it is only a gradual enlargement of the body of the nail, instead of an upset across the nail. But the chisel point of the wire nail is its especial merit, as it cuts a clean passage through the fibers of the wood for the following of the body of the nail, instead of "stunting" and mutilating the fibers, as the blunt-pointed nails do.

The common cut nails will not usually clinch, even when the clinch is turned in the direction of the grain of the wood; but they may be considerably toughened by heating to a red, and gradual cooling. A hardware establishment was burned a few years ago, and among the stores were nearly a hundred kegs of cut nails of various sizes. The remains from the fire were sold to another dealer, and as soon as the value of the burned nails became known he could sell no others until they were gone.

The Little Shop.

It is time that notice should be taken of the work done, as well as of the place taken, by our small shops. The "big concerns" do not monopolize all the skill and mechanical capability in the country. They may profess to do the best work and produce the best results, because they are furnished with the best tools, but they do not monopolize all the mechanical skill, nor collect all the best workmen Many of the best manipulators, and a very large proportion of the most exact mechanics, are in the little shops, content, may be, to be the foremen, when in a big shop they would be only first-class workmen. The small shop men are valuable in any shop where mechanics, rather than operatives, are required, because they are generally "men at a pinch," "expediency men," and generally excellent workmen.

The proprietor of a large manufacturing establishment, building fine tools of a particular character, claims that his best men come from small shops, where make-shifts and contrivances are the rule. "Such men," he says, "can make the shop hum" by their methods.

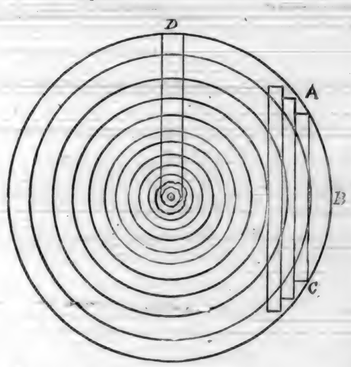
It is very convenient to have a shop full of adapted tools, but it is also convenient to have in the shop graduates from "the little shop," who can contrive, as well as tend, a machine. —*Scientific American.*

A Few General Designs for Country Dwellings.

Strength of Wood.

It is a fact well known to builders that the same varieties of wood will bear different weights, when placed in different positions as regards the running of the grain. Again, it has been repeatedly demonstrated that, at certain angles, timber will sustain greater weight than at others. There are certain well defined laws governing this that will be explained further on. To introduce properly a subject of this kind, it is expedient that we define more clearly the changes which wood undergoes from the time the tree is felled until the wood rots. All lumbermen have noticed that wood contracts less in diameter than in circumference. This disposition of inequality will explain why whole timber generally contracts in drying. In consequence of this irregular contraction, a board may be cut from a tree that, by any means known, cannot be made to retain its original shape, especially if subjected to alternate dryness and moisture constantly, as with exposed lumber in this climate.

If we take a log of any timber when cut clean, it will show up something like the following, though the rings will not of necessity present the regularity as represented in Fig. 1, still this plan will illustrate our meaning.



If we cut a couple of boards in different directions relative to their transverse septa, so that the septa crosses the middle of one board at right angles, while on the other they lie nearly parallel, then place these in a warm room under similar circumstances, we will find the board which has been formed by cutting across the transverse septa, as at *a*, Fig. 1, soon changes its form very perceptibly, the one side becoming concave and the other convex, and in seasoning it will contract nearly 14 per cent. in width. The board taken out at *d*, where the septa is nearly parallel with the surface of the board, will retain, with slight variations, the form it assumed on leaving the saw, and will not contract to exceed one-fifth as much as the other in width, but nearly equal the contraction in thickness.

In the softer, gummy and resinous woods, the difference is still greater than in the hard woods. It follows, then, from these experiments, that there is great advantage to be derived by a proper attention in cutting out boards for panels, etc. It will be found that panels cut in such a manner that the septa are nearly parallel to their faces, will appear of a finer and more even grain, requiring less labor to dress, make smooth, and give a good finish if not painted, or to take less oil if painted and grained. To be sure, this making all the boards with the septa in this relative position as regards the surface, is impracticable, inasmuch as the heart of the tree would have to be discarded. To overcome this seeming obstacle is not difficult by any means. When a board seasons, it always becomes concave on the surface nearer the outside of the tree, and *vice versa;* or, in other words, to use a common phrase, the concentric rings seem to be straightening out, hence the board will be hollow where the ring would indicate, simply because the rings of the wood, when cut across, are relieved from tension, and in their endeavor to expand themselves, cause the hollow on the outside and the ridge on the opposite side. So, if the board be ripped down the center and the stuff turned inside out, the wood is reversed, and one contraction counterbalances the other, and the board seasons even, and in this way the most perfect glue joints can be made; and for the manufacture of fine goods, such as furniture and the like, more especially in oil finishes, the effect of this change is indeed beautiful.

There is another kind of contraction in wood while being dried, of great inconvenience and trouble to builders. This is a tendency of some woods to curve in the direction of length. Often this disposition manifests itself after the timbers are framed and in position, causing a repetition of labor, or leaving a crooked job as an enduring monument of poor or slighted work. We often find walls and ceilings out of true, and blame the architect or builder, when the real fault, if such it may be called, is with the elements and physical forces over which man has little or no control. In the long style of framing, for instance, it has often been observed how difficult it is to prevent the stile of a door, hung with centers, from curving, so as to rub against the jamb. To overcome this is not difficult, if we will stop and consider that the interior layers of wood, being older, are more solid and compact than the exterior layers of the same tree; consequently in drying, the latter contract more in length than the former. This unevenness or irregularity of contraction, causes the wood to curve in the direction of the length, and may be avoided by cutting the parts of each piece so that they shall be as nearly the same age as possible. But inasmuch as this would necessitate considerable waste of lumber, it can be overcome by taking pains to always turn the stuff so that the heart of the wood will be outward. Then in framing a door the heart of the wood should always go against the jamb, the sap against the panels.

Architects' Companion, $2.50.
History of Architecture, $15.00.

Growing Black Walnut Trees.

Black walnut can be grown from the nut, producing a butt fourteen inches in diameter in as many years from the seed, as far north as Massachusetts. No tree valuable for its timber in cabinet uses, unless the black birch be so considered, can attain to that useful growth in that period of time in our northern climate. Maples require twenty years before they become good timber trees; beeches and birches, fifteen years to attain to a diameter large enough to yield nine-inch boards; hickory should have a growth of thirty years, and cherry at least as much.

The cultivation of the black walnut might be made a source of profit, if only as an auxiliary to the ordinary farm products. It requires no particular care, makes as elegant tree, even in its youth, and later offers an agreeable shade.

One hundred acres of land, seeded to walnut trees, if they even reach maturity in fifteen years, would be more remunerative than many of the crops produced by fifteen of incessant toil. Besides, these trees might be planted and would thrive on spots which are really valueless for agricultural purposes, and while in the course of growth would serve as valuable aids to agriculture as wind-breaks, and in other respects.

A Watch Made to Be Pounded.

When a visitor to the office of the American Bank Note Company sat down to talk to Mr. Lee, that gentleman put a piece of white paper under a stamp, pounded on it, and laid the paper aside. When the visitor rose to go away, Mr. Lee put the paper under the stamp again and pounded it once more. "You talked eight minutes," said he; "that wasn't bad." He showed the paper to the caller, who saw upon it two printed clock dials. One showed the hands at four minutes to 4 o'clock, the other showed them at four minutes past 4 o'clock. "We keep that stamp," he said, "so that you sha'n't go away and say you came here at 11 o'clock in the morning, or that you had to wait an hour and a half, or make any other misstatements which can be guarded against."

"No," he added, a moment later; "that stamp is the latest wrinkle in office furniture. It is an ordinary stamp with a clock attachment. The hour hand is simply a raised point upon a movable circle. The minute hand is an arrow on another revolving circle. The usual inked tape passes over these indicators and the outer circle of hour figures. Beside the clock face is a cylinder with several faces, each bearing a word—one is 'approved,' another is 'wired,' another is 'answered,' others are 'delivered,' 'Lee,' 'received.' Thus a business man is able, whenever he sends away a letter, telegram, or package, receives an order, or transacts any business whatever, to record the precise moment at which the thing was done. It costs $20.00. I did not invent it. I bought it."—*N. Y. Sun.*

A. A. Bennett.

Mr. A. A. Bennett, to whom this brief biographical sketch refers, was among the earlier arrivals to our golden shores, and a description of his coming will be found full of interest. He, together with thirteen other pioneer spirits from Alabama, banded together and styled themselves "The Montgomery Company," consisting of Mr. Bennett, Dr. A. Gindrott, J. H. Paul, J. H. Skates, J. Yarbrough, S. Cole, P. Bibb, H. Smith, J. B. Davison, E. Lynn, Col. D. M. Boyd, George Albright, Mr. Klock, and Mr. Lindsey, a Baptist clergyman from Mobile, sailed from New Orleans in the steamer *Galveston*, early in 1849, and when in the Carribean Sea, on Washington's birthday, February 22d, she broke her piston-rod and was obliged to rely solely on the limited quantity of canvas she spread to carry her into port, so the Captain made for British Honduras, arriving there safely. Here, part of the passengers, Mr. Bennett among them, chartered the British brig *Thetus*, which conveyed them to Chagres, the steamer being afterwards towed to New York. The company went up the Chagres River in small boats to Gorgonia, and from there Mr. Bennett tramped to Panama in one day, carrying his rifle on his back and hiring natives to carry his baggage. On their arrival at Panama, they found the people panic-stricken from dread of cholera, which was then epidemic there. After remaining there two months the company embarked, with 365 passengers, on the old ship *Alexander Von Humboldt;* were 102 days reaching the Golden Gate, stopping a short time, for supplies, at Acapulco. At last the old ship, after being tossed by wind and wave, landed her human cargo at San Francisco, the landing taking place on the 30th of August, 1849, the boats touching ground where the old Montgomery Block Building now stands, at the corner of Montgomery and Washington Streets. Although very short of rations and almost losing hope of ever reaching the golden land, it was not destined that she should go astray, as she bore many a name on her list of passengers that was to be felt in moulding the history of that wonderful State—yet unborn—California.

A. A. Bennett.

Aside from the subject of this sketch, there was Dr. Morse, whose name and services are dear to every Odd Fellow both here and in Europe; James Anthony, of the Sacramento *Union;* Jonathan Kittredge, and Capt. John Clark, whose name has long been familiar to land-owners and students of Spanish archives. All of these have passed to their long rest, but there are yet among the living many more who have been prominent in civil or commercial circles, none more so, perhaps, than C. P. Huntington, to whom we owe our railroad system and whose fame is known throughout the civilized world. In commercial circles we find the name of Isaac E. Davis, of Davis & Cowell, James Irvine, B. A. Hendricksen, A. M. and L. M. Starr, and James E. Gordon, of the Gordon Hardware Co., the latter gentleman being Secretary of the Humboldt Association, composed of the surviving passengers of the old ship above referred to.

Having been closely identified with the growth and architectural advancement of our State, this brief biographical sketch of his life will be interesting to the readers of our Journal. Born in Schoharie County, New York, July 26, 1825, of parents whose lineage is traced back to the earlier settlers of New York, he has those sterling qualities that lead to giving exact justice to all, and a steadiness of purpose that no obstacle can daunt or throw aside. Both parents were Quakers in their religious faith and practice.

His father, Dr. Joseph Bennett, wished him to study his profession, but from boyhood he evinced a strong desire to become an architect, and as a primary study in that direction, engaged himself at the early age of sixteen to his brother William, at Stamford, to work as a carpenter and joiner in Delaware County, remaining there two years. From there he returned to his native town, and, under the tutelage of his brother-in-law, Orson Phelps, commenced the study of architecture and carpentry, remaining with him nearly three years. In 1846 he went south, to Montgomery, Alabama, and was there engaged in building the State Capitol. In 1848 he designed and built the Orion Academy, at Orion, Alabama, the Grand Master of Alabama coming from Mobile to assist in laying the corner-stone, the edifice being one of the most imposing structures of its day. From Alabama he came, as before mentioned, to California, arriving here August, 1849, and at once engaged in architecture, contracting and building. In the spring of 1850 he removed to Sacramento, where he remained until he again took up his residence in San Francisco in December, 1876, where he has resided ever since.

In Sacramento he constructed some of the finest buildings of the capital city, among the number being the Odd Fellows Temple, Golden Eagle Hotel, Arcade, County Hospital, and other places of note. He was the State Architect under the administration of Governors Haight and Irwin, at which time he was engaged on the State Capitol, Governor's mansion, prison and work-shops at San Quentin, and also revised and completed the branch State prison, at Folsom. Among the prominent buildings of which he was architect, are the Mechanics' Art College, at Berkeley; the Court Houses of Yolo, Stanislaus, Merced, Tulare, and Kern Counties.

In February, 1883, he associated himself with J. M. Curtis, present Architect of the new City Hall, since which time the firm plans have been adopted for the Court Houses at Santa Rosa, Sonoma County, now in course of construction, at a cost of $80,000, and one at Eureka, Humboldt County, to cost $100,000; also the building of Red Men's Hall, in this city.

Paint Adulterations.

We have repeatedly been asked to give the form of adulterations used in paint mixtures. This we cannot do, as there are by far too many already familiar with the nefarious art, and we do not propose to give information which will either help them by additional points, or which will tend to lead into erring paths those who have not as yet been able to master a knowledge of how to injure themselves and their trade by the use of illegitimate material. Better to keep the standard as pure as possible.

The Frieze.

BY R. H. PRATT.

THE frieze is, undoubtedly, the part of the wall decoration best adapted to ornamentation; it bears the same relation to the wall that a cornice does to a house, or a capital to a column. A frieze should give dignity to the room, and should, therefore, be sufficiently wide to admit of ornament that will not seem cramped or insignificant when seen from the floor. Some friezes look well when a few feet from and on a level with the eye, but when placed at the top of a wall of very ordinary height, their design is lost and the result disappointing. The relative proportion of wall and frieze is a matter of taste; the tendency seems, however, to be toward having them too narrow rather than too wide. It is often said that unless narrow borders are used, the ceiling will be made to appear low. It should be known that a too narrow border or frieze will have the same objectional effect.

Most often the apparent lowering of the ceiling is caused, not by the width of the frieze, but by its color or design being inappropriate to the paper below, or to the furnishing or use of the apartment.

Correct proportion is very important in decoration, and experience has taught that, provided the design and colors be suitable, a wall of 9 feet in height should have a frieze of about 8 or 9 inches in width; if the wall be 10 feet 6 inches or 11 feet, the frieze should be 15 or 18 inches wide. These proportions will be pleasing if the colors are appropriate in the papers and in the friezes. Sometimes there are friezes made that match the wall papers, having the same design and colors; this plan is of rather questionable propriety. The most satisfactory are to be found where the paper and frieze do not match so exactly in color, the frieze being much richer and more pronounced than the paper, and at the same time, there should be the proper harmony or feeling between them.

The mistake is often made of using paper and frieze together that have not the slightest relation to each other; for instance, sometimes a frieze of conventional design above a wall paper whose pattern is naturalistic or flowered or *vice versa*, or some other incongruous arrangement that is anything but decorative.

Where the paper is dark, it is better to have the ground of the frieze lighter than the paper and the colors brighter; in fact, it is very doubtful whether dark colors should ever be used in friezes; it seems proper to use dark and heavy colors for dados, but it seems most appropriate to use light colors or gold for frieze backgrounds.

When the walls are over 10 feet in height, the effect can be much improved by using a narrow band of plain colored paper immediately below the lower edge of the frieze, and let this band be separated from the wall paper below by the picture moulding or other narrow wooden moulding having not much projection. This band of plain paper should be of a tone that is in harmony with the general effect of the paper and frieze, and of about the same intensity of tint as the wall paper.

In most rooms the windows are of such height that their casings project beyond the lower edge of a wide frieze; in cases of this kind when the effect is unsightly, there are two methods of overcoming the difficulty. One plan is to have a narrow shelf placed over each window, either resting on the casing or a little above it, if the space be sufficient; upon this shelf small plaques or vases may be displayed, thus distracting the attention from the frieze, or the curtain pole or valance may be placed nearer the ceiling, and if the window casing show below the pole it may be covered by a valance.

Like other paper hangings, the tendency in many friezes is toward over-crowding, and too much elaboration, which is apt to render them ineffective and feeble. Friezes whose ornament is vertical, or if floral appears to grow toward the ceiling, are well adapted to rooms whose ceilings are not very lofty, for the reason that all ornament or decoration having an upward tendency, adds to the apparent height. Such friezes should be so arranged that the upper part nearest the ceiling should be more open and less crowded than the lower edge.

Avoid growing or vertical friezes whose upper margin or finish is heavy; the upper edge should be like a sky or atmosphere. If, however, the pattern of the frieze be of the scroll or running vine description, the finish on the top and bottom may be equal in width. This kind of frieze is best for large and lofty rooms.

As the frieze has generally as much to do with the appearance of the room as the paper, great care should be used in selecting; recollect that the frieze is not exposed to so bright a light as the wall paper, and, consequently, should be brighter in its color; the ground may be of gold, or of a lighter tint than that of the wall paper. When the paper on the wall is very light and delicate, and it is impossible to have lighter colors in the frieze, let it be on the same ground, but with more pronounced colors, but do not let the colors of your frieze be so prominent as to kill the effect of your wall paper. Do not have the difference so great as to be unpleasant, nor so nearly alike that it is difficult to determine when the frieze begins; it appears as though the paper extended to the cornice or ceiling. If gold be used in the frieze, it is best as a ground and not as a figure. A gold frieze may be used above a paper that is without gold with good effect.—*The Decorator and Furnisher.*

REMOVAL.

Notice the removal of Dunham, Carrigan & Co. to their new quarters, 17 and 19 Beale, and 18, 20, 22 and 24 Main Street. They carry the largest stock of Builders' Hardware of any Firm in the City.

Why Work is Scamped.

THERE are said to be tricks in all trades, and the rule apparently holds good in the house-painter's craft. He has, it appears, two ways of complying with a contract. If the owner of a house personally employs him to put on so many coats of oil and lead color, he will carry out the order exactly without stinting materials; but if the owner entrusts an agent with the business, the house-painter knows that his intermediary will expect a handsome commission, and this must be obtained at the expense of some other person. If the painter pays it out of his own pocket, all his profit will vanish; were he to put the matter to the owner, an *expose* would be certain, with the result that no more business would ever come from that agent. In this dilemma the sorely-driven painter saves himself by doing his work in the cheapest possible way, without giving heed to the terms of the specification. At all events, this was the confession frankly made to us the other day by one of the craft. The man stated specifically that if an owner ordered two coats of oil and lead color to be put on a house, he would faithfully comply; but if the commission came through an agent, one coat of size and one coat of oil and lead would be made to serve the purpose. The agent, of course, would not say anything for fear of having his black mail cut down.

Paste for Paper-Hanging.

BEAT up four pounds of good, white, wheaten flour in cold water—enough to form a stiff batter—sifting the flour first, and beat it well to take out all the lumps. Then add about two ounces of well-powdered alum. Have a quantity of boiling water ready at hand, take it boiling from the fire and pour it gently and quickly over the batter, stirring it rapidly at the same time; and when it is observed to swell and lose the white color of the flour, it is ready for use. The quantities here indicated should make about three-fourths of a pail of solid paste. It is recommended not to use it while hot, as when cool it adheres better and goes further.

A little cold water poured over the top of the mass will prevent the formation of a skin from the drying out of the paste. When about to use, a small additional quantity of cold water should be added, so that the paste will spread easily and quickly under the brush. In warm weather this paste must be used quickly, as it cannot be kept for many days without fermenting and souring, when it becomes thin, watery, and useless. If it be desired to avoid this, the addition of a few drops of carbolic acid to the mass when it is prepared will enable it to be kept almost indefinitely.

STEEL SINKS.

Send to Richards & Snow, 406, 408 Market Street, for a circular containing a full description of these necessary adjuncts to a cleanly kitchen.

A NEW AND VALUABLE BOOK.

"How to Build, Furnish and Decorate."

THIS is the title of a book recently published by a co-operative building plan association, of New York, and which deserves more than a passing notice from the hands of those who appreciate the need of a higher order of architecture, and greater harmony in the furnishing and decoration of a home. It contains the astonishing number of one hundred and twenty-six different plans for buildings, the majority of which are for cheap but tasteful dwellings, such as cottages, villas, and the like, of all conceivable styles of architecture and construction. Many of the views are shown in perspective, enabling one to see just how the building will look. The series of plans occupy only one-half the book. There are about forty pages devoted to furniture and decoration, liberally and handsomely illustrated, following which are over a hundred other designs, embracing barns and other outbuildings, dairy houses, cheese factories, piggeries, aviaries, corn-cribs, poultry sheds and houses, ice houses, summer houses, with a great variety of rustic designs for arbors, lawn baskets, vases, etc.

Landscape gardening is also touched upon, plans being furnished for laying out garden and fruit grounds, making artificial rock-work for fountains, and the construction of hot-beds and green-houses. How to build a cistern is fully described and illustrated. In short, it is probably the most comprehensive work of the kind that has been issued in this country, and its publication must have involved an enormous sum of money.

A supplement to the latest edition contains full and complete blank forms for the most approved form of specification to be used in building, together with blank forms of contract and builder's bond. In connection with the latter, is a blank form for a "bill of quantities," which provides for everything that can enter into the construction of a building, and is divided into "Mason's Estimate," "Carpenter's Work," including materials, "Slater's Work," "Tinner's Work," "Plumber's Work," "Painting," and "Miscellaneous Expenses."

The price of this remarkable Work is only $5.00, and it would be cheap at three times the figure. The publishers of this paper are agents for its sale, and will send it to any address in the United States on receipt of the price.

To Render India-Ink Waterproof.

AS THE ink is prepared with a certain proportion of gelatine, the addition of a little bichromate of potassa, followed by exposure to sunlight, has been recommended for rendering the ink so insoluble in water, that it will not run or spread when water colors are used for shading the sides of the lines.

Cottages and Villas	**$ 6.00**
Plasterer's Manual, enlarged	**.75**
Modern Perspective	**6.00**

PATENTS AND INVENTIONS.

List of U. S. Patents for Pacific Coast Inventors.

From the official list of U. S. Patents in DEWEY & Co's SCIENTIFIC PRESS PATENT AGENCY, 252 Market St., S. F.

FOR WEEK ENDING MAY 27, 1884.

299,098.—FAN BLOWER—F. C. Anderton, S. F.

299,330.—PILOT OR WHEEL GUARD—Bennett & Fitch, S. F.

299,331.—WELL PIPE CUTTER—A. W. Benson, San Bernardino, Cal.

299,195.—PLOW—J. A. Bilz, Pleasanton, Cal.

299,208.—LAYING AND SECURING RAILS IN ROAD BEDS OF RAILWAYS.—J. Denechaud, Sr, S. F.

299,211.—DRY SEPARATOR—H. Earhart, Santa Maria, Cal.

299,368.—SEWING MACHINE.—Fisher & Hart, S. F.

299,470.—SELF ADJUSTING PULLEY—W. A. Grondahl, Portland, Or.

299,383.—TAILORS MEASURING DEVICE—J. S. Hand, S. F.

299,226.—DRY CLOSET—T. W. Jackson, S. F.

299,234.—SAFETY GUARD FOR CARS—F. P. H. Loftis, S. F.

299,409.—AMALGAMATING PAN—Geo. H. Malter, S. F.

299,237.—FARM GATE—Chas. W. Mann, Haywards, Cal.

299,238.—WAGON TONGUE SUPPORT—W. P. Martin, Chico, Cal.

299,259.—AMALGAMATOR—Edward Pike, Salt Lake City, U. T.

299,496.—METAL BORING AND SLOTTING MACHINE—J. Richards, S. F.

299,271.—BUCKLE AND RING—Jas. B. Sayre, Sacramento, Cal,

299,186.—WATER JACKET FOR ROTARY PUMPS—A. W. Von Schmidt, S. F.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise,) at the lowest rates. All patent business for Pacific coast inventors transacted with perfect security and in the shortest possible time.

Apprentices' Column.

In reply to a request made last month, by an apprentice, regarding the finding of bevels and cuts for hoppers and lay-back seats, the following is submitted. It is old, but correct and simple. Let Fig. 1 represent a box or hopper whose sides splay; or it may form a bread-tray, or the back and two ends of a wagon or sleigh seat, if we take off one side and cut it off

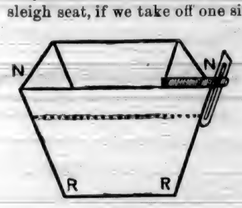


Fig. 1.

Fig. 2

at the dotted line, where a seat would be required. The lines *N R* show the bevel or splay of the box. Take this bevel and transfer it to the end of one piece of the stuff you intend using, as shown at *P*, Fig. 2. Then take the distance *S O*, on the marking gauge, and run a line on the board from *O* to *K*, Fig. 3. Now make the line *A B* the same bevel as the hopper, or, the bevel as now set, may be applied with the stock resting on the edge *R*; then the blade will represent the line *A B*. Square up from *M*, cutting *A R* at *P*, then square over

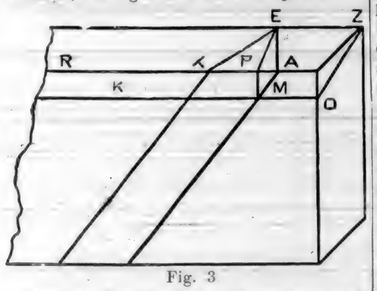


Fig. 3

on the edge the line *P E*. Then connect *A E*, which will be the angle required for a butt-joint, the inside corner being the longest. If it is required to miter the joint, set off the thickness of the stuff as measured at *Z O*, from *A* to *X*, then the line *X E* will be the bevel sought.—*The Builder and Woodworker.*

A Preacher on Hot Boxes.

We heard a preacher in a fashionable uptown church, last Sunday, expounding the advantages to mankind of keeping the Sabbath. As an illustration of how all nature, inanimate as well as animate, required cessation from labor, he said: "Even in traveling with railroad trains, we find that stops have to be made at certain distances to let the axle-boxes get time to cool. The labor of running makes these boxes get hot, and, if their necessity for rest was ignored, they would get red-hot and burn up the train. But the train-men understand the case, and the train is stopped for a time, and, while passengers go out and refresh themselves, the boxes are getting refreshed by rest. They cool down in a few minutes, and then the train can proceed in safety."—*American Machinist.*

Competitive Contracts.

The old saying that "competition is the life of trade," like many old sayings, is a very one-sided expression of truth. It frequently degrades, and sometimes destroys, legitimate trade, instead of promoting it. It implies more or less directly a considerable amount of dishonesty or incompetence lying around, otherwise there would be no occasion for it. Undoubtedly these troublesome defects abound in human nature, and we cannot safely ignore them, but that all our business management should be based upon these sandy foundations is most unfortunate. Competitive examination, tests, and endeavor in many directions, are indispensable, but there are certain points and considerations that should be kept faithfully in view, or competition is but another name for boasting and deceit.

The first essential in an honorable competition, one in which an honorable man would be willing to take part, is that the thing to be done should be clearly understood, not merely by the participants, but by those to whom the results are to be submitted for decision. To ask estimates upon work, the real quality and value of which is not clearly and uniformly understood, is simply absurd. It is random guessing at an unknown quantity. The practice of issuing a general invitation for estimates in open competition is, in most cases, a pernicious one, if not actually dishonorable. By way of safeguard it is customary in such cases to reserve the right to "reject any and all bids." This means, in plain English, that those who are to decide the letting of the contract will not be held as under any obligations to the competitors on account of the amounts presented, and the lowest bidder has no advantage unless his reputation for skill and honesty renders it advisable to give him the contract. As it usually happens that the most reliable builders do not present the lowest figures, the work for which such competitive estimates are made is usually given to the contractor to whom, taking all things into account, those having the matter in charge prefer to intrust it. This comes back very nearly to the same ground that would have been taken if the same contractor had been asked, without further ado, to name the lowest price at which he would be willing to undertake the work.

To ask a man to estimate upon a contract when it is determined beforehand that, by reason of his incompetence or lack of integrity, the work will not be assigned to him, is surely an insult to him and to the other competitors. Yet this appears to be done, and not infrequently, with the sinister purpose of reducing the estimates of those who are esteemed reliable. Especially does the feeling prevail that in all public works everybody should have an opportunity to make proposals, as though public works were a sort of bonanza in which all should have a share. Of course this is nonsense; the right management of public matters being precisely the same as that which a wise, just and far-seeing business man would apply in the conduct of his own.

While there is much that is disheartening to good builders in the usual way of managing contract work, a well-earned reputation for integrity and ability gives far better chances than the smartness that tries to secure an "inside" track by questionable means and the pretense of doing cheap work, which, in the end, is sure to prove the most expensive.—*The Builder.*

Painting is no Expense.

It must be admitted that the Germans, the world over, are celebrated for their industrious habits, thrift and general economy, and they have a maxim that "painting is no expense." This theory, regarded in a comprehensive view, is undoubtedly correct. An occasional coat of paint on the outside of buildings greatly prolongs their durability, and upon a metallic surface prevents corrosion. It is a matter of doubt, however, whether board fences, on account of being exposed on both sides to the wind, and rain and sun, remain in a sound condition longer by receiving an occasional coat of paint. We have seen them not protected by any substance, standing after an existence of fifty years; and in one instance, the board fence—behind which a company of riflemen sought protection when it suddenly fired upon the Hessions engaged in burying the dead, after the close of the battle of Germantown, in the graveyard attached to the present Concord school house, this fence, which was on the ground of the late Peter Keyser, maintained its position, though very thin, with bullet holes worn to four times their original dimensions, seventy-two years after the battle, never having had, we learned, any paint upon it, as in fact, it was of rough cedar boards. How much longer it stood we are not informed.

Frame houses and barns are often painted dark colors, which are preferable to white in this latitude, as they have a tendency to absorb caloric and render the structures warmer than they would be if daubed with a light or white shade. The whitewashing of walls, fences and buildings produces a tone of neatness, but after a heavy rain or two the original faultless color is decidedly marred. Paint is more durable in its nature, and when applied to either buildings or farming utensils well repays the expense, and when they are refreshed by an occasional retouching of paint, it is a very decided benefit in appearance and wear, and we commend, therefore, with confidence, the advantages of painting, agreeing with the Germans that "it is no expense."—*Ex*

MALLEABLE IRON CRESTINGS AND FENCES.

The Phœnix Iron Works of this City are agents for the celebrated Malleable Iron Crestings and Fences. The designs are perfectly original and are very beautiful. Send for circular.

Modern Architectural Designs. $10.00.

A Formula for Calculating Architects' Charges.

That the present five-per-cent rule is inadequate is, I think, evident. The problem is to find a rule which is more flexible, and, therefore, more easily adhered to and more just.

Other things being equal, the value of an architect's services should vary in some direct ratio with the amount of work in the building. Whether this consists of more elaborate decoration, or of more difficult construction, the comparative amount of work in buildings, apart from their size, is more or less closely determined by their cost per cubic foot.

Our first element, then, is this cost, denoted by *R*.

Experiment shows that to determine the ratio we may take the square root of the cost per cubic foot, as follows :—

Cost per cubic foot.	Square root.	Corresponding Building.
10 cents.	3.1 per cent.	Cottage.
15 "	3.9 "	Country House.
25 "	5. "	Apartment House.
35 "	5.9 "	Town House.
50 "	7.1 "	Public Building.

The column headed "corresponding building" is intended to give a very rough idea only of the class of building that costs about so much.

Putting *C* for the architect's charge, the formula now stands :—

$$C = \sqrt{R}.$$

There is another important factor, however, which must not be lost sight of. The larger the building the less it is worth to do the architectural work. That this is naturally and properly so is obvious. So that besides the direct ratio spoken of we have an inverse ratio with the size of the building.

Experimenting as before—the whole thing is purely empirical—we find that the cube root of the cubic contents of a building gives a proper proportion in which to reduce the charge with the size.

Cubic feet.	Cube root.	Inverse Proportional per cent.
50,000	36	5.4
100,000	46	4.2
500,000	80	2.5
1,000,000	100	2.

Introducing this factor of size into the formula, denoting it by *S*, we have :—

$$C = A\frac{\sqrt{R}.}{\sqrt[3]{S}.}$$

As a constant which must be arbitrarily determined, perhaps 50 is a fair value for it:—

$$C = \frac{\sqrt[50]{R}.}{\sqrt[3]{S}.}$$

That is, fifty times the square root of the cost per cubic foot in cents divided by the cube root of the cubic contents will give the proper architect's charge for full service—*C* being obtained as a percentage on the cost as at present.

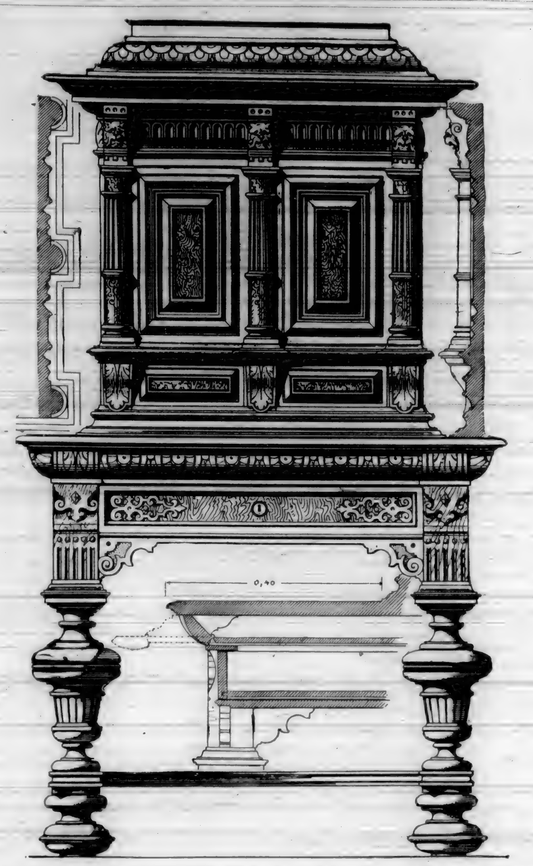
EXAMPLES.

I. Country house, 40 x 30 x 40 = 48,000 cubic feet ; cost, $8,000 = 16.7 cents per cubic foot.

$$C = 50\frac{\sqrt{16.7}}{\sqrt[3]{48000}} = 50\frac{4.08}{36} = 5.66 \text{ per cent.}$$

II. Country house, 40 x 60 x 40 = 96,000 cubic feet ; cost, $16,000 = 16.7 cents per cubic foot.

$$C = 50\frac{\sqrt{16.7}}{\sqrt[3]{96000}} = 50\frac{4.08}{46} = 4.43 \text{ per cent.}$$



III. Country house, 40 x 30 x 40 = 48,000 cubic feet ; cost, $16,000 = 33.4 cents per cubic foot.

$$C = 50\frac{\sqrt{33.4}}{\sqrt[3]{48000}} = 50\frac{5.78}{36} = 8 \text{ per cent.}$$

IV. Town house, 25 x 70 x 60 = 105,000 cubic feet ; cost, $35,000 = 33,3 cents per cubic foot.

$$C = 50\frac{\sqrt{33.3}}{\sqrt[3]{105000}} = 50\frac{5.77}{48} = 6 \text{ per cent.}$$

V. Public Building, 100 x 100 x 100 = 1,000,000 cubic feet ; cost, $500,000 = 50 cents per cubic foot.

$$C = 50\frac{\sqrt{50}}{\sqrt[3]{1000000}} = 50\frac{7.1}{100} = 3.5 \text{ per cent.}$$

John Beverly Robinson.

N. B.—The cost per foot is intended to include all interior decorations that the architect has anything to do with, the separate ten per cent. on such work being abolished.

—*American Architect and Building News.*

Architectural Drawing, $2.50.
Science of Carpentry, $5.00.
Detail Cottage Architecture, $10.00.
Builders' Guide, $2.00.
Drawing and Shading, $1.25.

Many plunger-closets now in use, the *American Architect* remarks, are so constructed as to discharge suddenly into the soil-pipe at each use as much as four and one-half gallons of water. Under certain simple conditions, often met with in practice, such a discharge, even with the soil-pipe properly ventilated at head and foot, will produce an exceedingly powerful draught on the traps of fixture below. It will siphon out a 3½-in. pot-trap in thirteen discharges, or a 4-in. pot-trap in sixteen discharges. It will destroy the seal of a 1½ in. S trap, 1½ inches deep, and having a vent opening at the crown ¾ of an inch in diameter, in seven discharges. If a rubber tube, 9 feet long and three-fourths of an inch inside diameter, is attached to the vent opening, a single discharge will completely empty the trap. An S trap with a 1¼-in. vent opening, to which is attached 16 feet of new 1¼-in. (inside measure) lead pipe, will lose its seal under this test in four discharges.

American House Carpenter, $5.00.
Modern Perspective, $6.00.
Mechanic's Geometry, $5.00.

External Architectural Decoration.

BY A. C. BOND.

THE art public has always had a voice in architectural matters. The influences operating to bring about a change from accepted styles, and the decorations bound up with these, are especially active in periods of transition, finally exerting their force in securing a general concurrence in some special order of development. The new taste created must be gratified, and architects, catching the spirit of the day, move with it. A study of the early architectural works in the clay plains of northern Italy led to the introduction of the *Renaisance* style, with its converging tendencies, and free appropriation of classic forms, with reference to picturesque effect.

We have had a succession of styles—Greek, Roman, Gothic, Louis XIV., Louis XVI., Elizabethan and Queen Anne. The latter two, which largely drew from classic models, often incongruously applied, and with a mannerism of their own, seemed to prepare the way for the *Renaissance*, which, without excluding classic orders, bears evidence of long continuance. Beyond any other style it lends itself to ornament.

Concerning ourselves, with the characteristic features of business structures, we first turn to porticos. As inlets to a building, they are of prime importance. A portico which appears as a mere attachment to a structure, not fairly incorporated with it either as to material, styles or mouldings, is very unsatisfying; still more so if it appropriates rich decorative features of which the *façade* is devoid. We naturally look for imposing porticos of great area and height, and with *façades* richly dressed. They are at once becoming and consistent, but instances exist in which, though exteriorly mostly of the structures they adorn, the value of their decorative features is reduced by arch or lintel, not to speak of pediments, reaching far above the ceiling of a hall, possibly enclosing the windows of a principal apartment; they excite expectations of loftiness in the vestibule which are not realized, deceiving the eye as to inner construction, and to this extent are veritable shams. There is no architectural beauty in want of consistency or in announced inappropriateness. As well-considered porticos we may point to the Welles building, above the Bowling Green, the Williamsburgh City Insurance Co., the United Banks, the Boreel, and Iron and Coal Exchange buildings. The imposing appearance of the majestic portico of the Mutual Life, on the site of the old Post-office, on Nassau Street, and which is of two stories, is due in part to its vast proportions and classic design, and for the rest, to contrast of material and surface, as between polished blocks of granite, hewn granite, and rough stones. Large pieces of granite, with alternate blocks polished and fluted, and two polished granite columns with capitals of modeled leaf-work in Italian marble, support a frieze; the ceiling of this first story of the portico being paneled with richly moulded squares enclosing foliated rosettes. The piers of the second story are of limestone, contrasting well with the granite of the first story, and these are paneled and enriched with elaborate carvings; with these piers are ranged two granite columns, that support an arch with a vaulted paneled ceiling. The capitals of the flanking piers contain heads symbolic of Europe, Asia, Africa, and America.

Our architects, on the whole, use skillfully the freedom afforded by the *Renaissance* style in the treatment of the capitals of columns and pilasters. With greater variety we are getting more expression. In leaf designs they prefer a few stems boldly outlined, a few leaves with serrated edges, and projection of the bell to heighten the effect of the deeply cut moulding, free from unmeaning details.

It has at last been discovered that some of the commonest species of forms are not to be surpassed for elegance and refinement of form. A favorite ornamentation to shafts are bases of foliage, where the effect is obtained by mere contrast of convex and hollow leaves, and these are repeated in many instances on the cornices. There is a vast difference between the mere crowding of leaves on stone, and a style which preserves their most beautiful characteristics. Overwrought decoration is destructive of grandeur. Much is made of boldly projecting stems and concave lobes that yet preserve the form of the leaf.

Scroll work, leaf and foliage in bas-relief on panels, entablatures and friezes, do not alone content our architectural designers, who vary their ornamentation with allegorical monsters, grotesque and flattened visages and heads of animals, entangling also birds in foliage, and suffering reptiles to creep among the leaves of capitals. A monstrous griffin, projected from the angles of what is known in financial circles as "The Fortress," guards the Broadway entrance of Wall Street. All these are, whatever the taste involved, at least welcome variations from monotonous renderings of more generally accepted forms. Included in *façade* mouldings, are medallion heads of individuals in some way identified with the building or its trade purposes; and corporate bodies, raising new structures, are availing themselves of the decoration afforded by corporate seals. Again, artistically designed monograms, in terra cotta or stone carvings, are coming into extensive use to enrich archivalts, architraves, entablatures, or door panels. These monograms are set frequently in floriated tracery, or on a geometric ground with which they unite in mazy, flowing lines, or the lettering is caught up in the tails of foliage or scroll work, or only half revealed.

External expression should be the apt exponent of the purposes of a structure. External as well as internal effect has been considered in all great developments of art. The Washington building, at the foot of Broadway, is typical of the large composite structures that are being erected, of brick, stone, iron, and terra cotta. Lofty pilasters, with projected leaf capitals, rise from above basement story to frieze in reposeful dignity, bearing carved mouldings, in terra cotta, in line with the principal longitudinal bands of terra cotta enrichments that mark off leading divisions of stories. These carvings, running under the tiers of windows, serve directly to ornament them and to emphasize the well-designed chamfers. whilst arches, in recessed brick, surmount them above the line of the capitals. The semi-circular windows, that, resting on corbels, project at the two southern extremities of the structure, are picturesque in the highest degree. The main entrance is a massive iron gate, composed of bars twisted into curved forms, with tapering extremities and apparently forge wrought. What a contrast does such a building offer to the old-style business house, with dingy and coarse brick front, or stone veneered *façade*, stereotyped form of Grecian porch, with windows that were merely apertures, or had only fillets, cap moulds, and possibly keystone panels—the building surmounted with an unpretentious cornice, and a parapet obscured roof.

The Morse building is a prominent example of the capabilities of brick work itself on ornamentation. The simple means by which decorative effects are brought out, whether in the disposition of the bricks or contrast of the simple colors, black and red, is a source of pleasure and gives character to the carefully elaborated design. Any terra cotta decoration is of the least obtrusive character, and has to be searched out. The dressings present, at every point, novel decorative features.

In the building of the National and Manhattan Bank, of New York, the contrast of surface as between the polished granite pilasters of the *façade* and the chiseled surface of oolitic stones, besides pleasing in itself, brings the pilasters out in fuller relief. This is one of

the most costly, as well as one of the most ornate, of recent erections, and compels admiration for the converging tendency of the design, the eye being carried up to the loftily-placed range of pilasters above the main cornice, repeating, in closer rank and in miniature, the forms of those below, and crowned by a pediment.

Occasionally we meet with an excess of ornament in a *façade*, in the form of panels, architrave, string-courses and heads of windows—an excess interfering with that repose which is so essential a condition for gratification. The *façade* of the Park Bank is one mass of ornamentation, unbalanced by sufficient wall space; the upper portion of Union Building is confusing and repelling, ignoring the main constructive lines, being hid by pretentious mouldings. Ornamentation, at the best, is but a subordinate feature.

The arrangement of decorated wall spaces is a great point is securing a good *façade*, such as will present enrichments to best advantage. In certain late erections may be seen two upper intermediate stories, almost wholly bare of mouldings, in order to heighten the effect of entablatures, cornices, capitals, and other ornamentations above and below. In a number of elaborated *façades*, the pilasters space off the height of two stories, which make leading deviations through a springing arch, ordinarily moulded between pilasters or piers, thus crowning the groups of windows enclosed.

In the Lincoln Safe Deposit building, the first story of stone is comparatively plain, whilst the second, containing the offices, has particularly rich mouldings. A mezzonine story answers the effect of a balcony, such as is seen in an Italian structure. From the balcony, the stories above the arches are more elaborate than the lower ones. Not only are longitudinal bands of enrichment made to differ, but a different form is frequently given to the separate tiers of windows, with excellent results.

With the loftier buildings now erected, the old dictum, that the ornament of a *façade* should increase with its assent, loses its force; for elaborate ornaments to be fully effective, must be seen. The terra cotta entablature of the Produce Exchange, with its floriated enrichments, distributed between the spans of the arches of the principal tiers of windows, including the arms of States, would have been a confused medley if elevated toward the principal frieze.

It might be well if architects, who indulge their proclivities for tower-like elevations, sometimes as in the case of Temple Court, crowning thereby pointed roofs, would bethink themselves of enlivening the sky-line with gilded weather-cocks, which have always a life-like aspect, and would appropriately constitute an aerial vanishing point. Chaucer, mindful of their appropriateness, wrote:—

"The towers hie full playsante shal ye finde,
With fanes fresh tuned turning with every winde."

WHAT IS DUE THE ARCHITECT.—*Building*, of New York, has in its May number an article on the relations of architects to the owner of property to be improved. The article upholds the right of the architects to just compensation for all services rendered, and deprecates placing him on the same plane as the contractor or material man. It says: "The true view of the relation that should exist between the architect, owner, contractor and the men who furnish material, can be set forth in a few words. An architect is the agent of the owner—his confidential agent. It is his duty to stand between the owner and the contractors and the material men. In every natural contest with the builder (a contest that is inevitable while human nature remains as it is), the architect should naturally be found on the side of the owner, whose interests he is engaged to protect. Owners should reflect that if they go to architects who work for low commissions, they do not save anything in the end. The chances are that heavy discounts, which should accrue to them, go to help swell the low commission, in addition to which the contractor very likely has levied a commission on the work that he pays to the architect. What a contractor pays an architect, aside from the *morale* of the latter's receiving it, is bad for the owner because it must come from the work itself."

THE DOOMED CHESTNUT.—A Scientific authority claims that the chestnut tree, which is disappearing so rapidly, has a fixed period of evolution. This tree, like all others of the spongy inferior fibre, cannot flourish before the close-fibred trees, such as the oak. In ancient times a rank, quick growth covered the earth, which yielded, as the ages went, to the stouter trees. Thus it is the chestnut is doomed in the operation of the same law.

Wheeler's Patent Wood Filler.

WE notice in recently issued copies of specifications prepared by various architects, that the above Filler is called for in the proper place, thus assuring the general public that it has become a standard preparation. We can indorse this Filler as one of the very best yet brought to our notice. It is kept by every dealer in paints and oils throughout the Pacific Coast.

Nineteenth Industrial Exhibition of the Mechanics' Institute.

WE have received the preliminary announcement of the Fair to be held under the auspices of the above named institution. From the circular received we glean the following facts:—

The Fair will be held in the building owned by the Institute on the block bounded by Hayes, Grove, Larkin and Polk.

It will open August 5th, and close September 6th. Premiums of Gold, Silver and Bronze Medals, as well as cash, will be offered as set forth in the Premium List.

Seven thousand five hundred feet of additional space will be added to the main floor for the display of machinery. It is intended to make this department one of the distinctive attractions.

A grand fountain and cascade of original design thirty feet in height, will be erected in the center of the main nave.

Art galleries are to be remodeled and improved in regard to natural light, and it is intended that the display of home and foreign artists will far exceed anything ever before seen in this city.

Each afternoon and evening a grand instrumental concert will be given by the best musical talent on the coast.

Ample steam and water-power will be furnished free.

It will be seen from the above that the managers are determined to do all in their power to make the present Fair the most successful that has, as yet, been held by the Institute.

We would especially call the attention of manufacturers, inventors, artists, farmers, merchants, producers and dealers in goods, wares and merchandise of every description, to the advantages offered by this opportunity to display their various articles, so that they will be seen by a larger number of people than they could possibly be by any other arrangement.

To all exhibitors we would say, HAVE YOUR SPACES FILLED AND FULLY ARRANGED ON THE OPENING NIGHT. Any information will be cheerfully given by the Secretary, J. H. Culver, 31 Post Street, S. F.

"Manual for Furniture Men."

A NEW WORK.

THIS book contains hints and practical information for cabinet makers, upholsterers, and furniture men generally. Also a description of all kinds of furnishing with full directions therefor; varnishes, polishes, stains for woods, dyes for woods, gilding for silvering, receipts for the factory, lacquers, pictures, engravings, etc.

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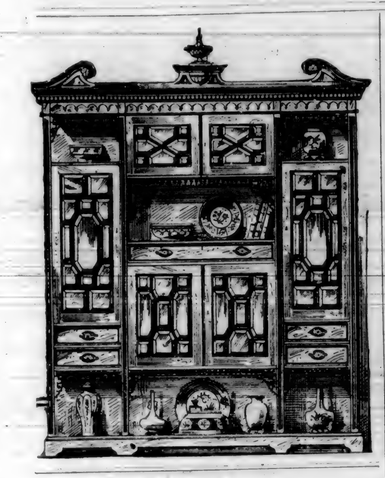

Building Contract.

S sued B for $492.60, the balance due him for building a two-story brick house, and B made a counter claim for defective material thrown out, and money expended in repairing the unskillful work of S. The contract price was $2,535, and the plaintiff had been paid $2,042.40; the counter claim was $1,985, which the defendant got a judgment for. The defense to the counter claim was a most novel one: That the plaintiff had "no experience in laying foundations, as the defendant knew." The case - Sherman *vs.* Bates—was carried to the Supreme Court of Nebraska, where the judgment was affirmed. Judge Maxwell, in the opinion, said: "A party entering into a contract to construct a building thereby agrees that all parts of the structure shall be put up according to the agreement. As a defense to inferior workmanship he cannot say, 'I am not a mason, or a carpenter, or a tinsmith; therefore I am not liable for defects caused by unskillful or careless workmen.' The question is not one of skill on the part of the contractor, but of compliance with the contract. If a contractor agreed to erect a building in a certain manner, he must comply with the agreement, and no plea of a lack of skill of himself or any of his workmen or sub-contractors will constitute a defense for a failure to comply with the contract."

BUILDING SUPERINTENDENCE.

A NEW WORK AT A NEW PRICE.

This work has been quoted in our columns at $4.00. The price should have been $3.00. All the books kept on hand by us are marked at Publishers Prices. Those who have paid us $4.00 for a copy of this new work can have the extra $1.00 returned by sending us their address. A copy will be sent to any address upon receipt of THREE DOLLARS.

Drawing for Carpenters, $1.75.

Building Superintendence, $4.00.

How to Boil Linseed Oil.

THE *Carriage Monthly* gives the following directions, which may be of service to some of our readers: First, be sure that you have the pure linseed oil. There is much sold as such manufactured out of peanuts. The test is simple. Nut oil has a sharp, acid taste, smells just like sour peanuts, is darker and thicker than the other oil, has a clinging tendency when rubbed on the finger, dries with a gloss even in priming coats, and is very much given to gumming up when sanded. Pure linseed oil has a bright amber color, runs freely, sparkles when flowing from the can, tastes smooth and mild, and has the smell of a flaxseed poultice. When you are satisfied that you have the genuine oil, and wish to boil it thoroughly, first take, say, about ½ pound of red lead and the same quantity of sugar of lead; put into 5 gallons of the oil, and place over a slow fire, so as to boil evenly. Do not let your fire get either too hot or too low; keep an even temperature if possible; coke or charcoal is preferable to either hard or soft stonecoal. Avoid a wood fire, as, after the oil gets to boiling heat, a sudden flame shooting up might ignite the entire lot. Let it boil seven hours full; the red lead and sugar of lead will then become dark brown. Stir all the time while boiling slowly, and only one way; do not change the direction of the stroke or you will burn the oil, just as you would starch. After you have taken it from the fire, cover it up and let it stand to cool off, say, over night. The sediment will settle; pour out the oil and strain; your oil is boiled, and a better article you could not have, as all the fatty substances are destroyed. This is the English method, used in all the carriage factories in the United Kingdom.

Sawdust in Plastering.

TWO WESTERN inventors have recently obtained patents for the use of sawdust, instead of sand, in plastering compositions, and this, it is conceived, may be a matter of considerable importance to the owners of sawmills in the principal lumbering towns. One of the patents is for the use of nearly equal parts of plaster-of-Paris, or cement, and sawdust, with the ordinary amount of plastering hair and water; the other calls for the use of about 4½ pounds each of slaked lime and sawdust to one pound of plaster-of-Paris, a quarter of a pound of glue, and a sixteenth of a pound of glycerine, with plasterer's hair. Whether or not either of these described plasters would be cheaper than those made in the ordinary way, they would certainly be lighter, and it is believed that they would better adhere to the walls, and not be so liable to chip, scale, and crack. Sifted sawdust has before been used to some extent, by experienced workmen, for mixing with mortar for plastering external walls, exposed to the alternate action of water and frost, as a preventive of scaling. Certainly the experiment of introducing sawdust in place of sand in mortar is worth trying, for in many places, sharp sand, suitable for the purpose, is difficult to obtain.

Superiority of Country Workmen.

THE *Scientific American* calls attention in a recent number to the superiority of the workmen trained in small machine shops and factories over those bred in larger establishments, where the division of labor, and limitation of the responsibility of individuals, prevent the development of that self-reliance and ingenuity in overcoming difficulties which those compelled to make the most of imperfect tools and to turn their hands to a variety of work, are constantly obliged to exercise. For this reason, the mechanic who has learned his trade in a shop where only two or three men were employed is generally very welcome in the larger ones. Although the costly machine-tools of the great establishments are new to him, and some time may pass before he learns to use them properly, he generally succeeds at last in understanding them far more thoroughly than those who have not been accustomed, by the invention of homely makeshifts, and contrivances for using common tools in unusual ways, to acquaint themselves with the properties and capabilities of the parts which they find combined in a new form. Most architects have probably had occasion to make the same remark in regard to builders' men. The man from the small shop, particularly in the country, is commonly quick, ingenious and reliable. He may in some instances be less skillful with his tools than the city workman, who is not obliged, like him, to turn to other employment during a large part of the year; but he more than makes up for that in his better mental development, which enables him to enter into the ideas of the architect, and to seize opportunities for advancing or improving the work, which his plodding brother from the great shops would not see or care for.

Burning Sewer Gas.

THE Chicago *Tribune* contains an account of what it considers to be a novel method of disposing of sewer gas—namely, the burning it in the furnace of the steam-boilers of a factory. The reporter states that he saw the natural sewer gas burn at the end of the pipe connected with the sewer for nearly ten minutes without a flicker. The Chicago Gas Company, which has pipes in that vicinity, had better have them examined.

This method of disposing of offensive gases from sewers is one that has been many times suggested and in a few cases tried. In exceptional cases it may serve to dispose of a local nuisance, but it is not generally applicable, as is well known to all who are acquainted with the experiments made in London on this subject by competent engineers.

Where there is a leaky gas-pipe in the vicinity of a sewer, the air of that sewer may contain combustible elements, but in this case there is usually an explosive mixture formed; and this is the true explanation of the majority of the explosions which are said to be due to sewer gas.—*The Sanitary Engineer.*

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BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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MECHANICS should remember that it is for their interest to forward items of general interest to the publishers of this Journal as, by so doing, they reap much benefit from an interchange of ideas. If engravings are necessary to explain your ideas, send a rough sketch of the same and we will put them in a presentable form.

New Books Just Received.

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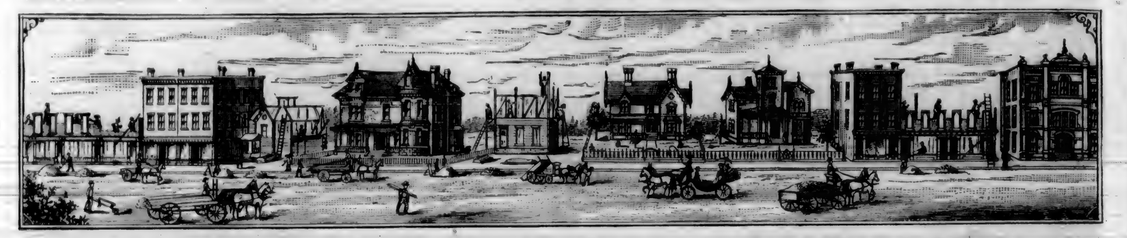

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Market, nr. Main. Five-story and base brick.
O.—J. Levi.
A.—Wolfe & Son.
C.—Brick, W. E. Stevens. Carp.—Moore Bros.
$60,000.

Van Ness, nr. O'Farrell. Alterations.
O.—— Levi.
A.—Wolfe & Son.
C.—I. H. Day.
$1,000.

Market, nr. Franklin. Two story frame.
O.—J. Boland.
A.—T. J. Welsh.
C.—R. Doyle.
$2,600.

Valencia, nr. Sixteenth. Alterations.
O.—Railroad brewery.
Day's work.
$6,000.

Lapidge, nr. Twentieth. Two-story frame.
O. F. Klein.
Day's work.
$2,600.

Valencia, cor. Twenty-fourth. Two-story frame.
O.—Mr. Schmitz.
A. J. T. Kidd.
C. J. M. Commerford.
$4,000.

Mission, nr. Thirtieth. Two-story frame.
O. G. B. Ulma.
C. T. J. Smith.
$8,000.

Mission, nr. Thirty-first. One-story frame.
O. F. Kelteren.
C. —— Wise.
$1,350.

Mission, nr. Twenty-eighth. Additions.
O.—Mrs. Kiernan
C.—McKewen.
$1,100.

Dolores, nr. Twenty-ninth. Two-story frame.
O.—M. Goertzhain.
A.—W. O. Banks.
C.—— Chisholm.
$4,000.

Market, nr. Guerrero. Two-story frame.
O. J. Coller.
A.—Newsom & Gash.
C.—J. McCann.
$2,000.

Haight, nr. Laguna. Two-story and basement frame.
O.—C. B. Stone.
A.—— Smith.
C.—R. P. Sanchez.
$9,500.

Market, nr. Valencia. Two-story frame.
O. Market Street Cable R. R. Co.
Day's work.
$7,500.

Laguna, cor. Ivy Avenue. Two-story frame.
O.—Market Street Cable R. R. Co.
Day's work.
$3,000.

Ninth, nr. Harrison. Alterations.
O.—P. Hefferman
C.—R. Cook.
$2,000.

Folsom, nr. Tenth. Two-story frame.
O.—J. B. Cole.
A.—Baldwin & Griffin.
$2,000.

Vallejo, nr. Leavenworth. Additions.
O.—R. Roy.
A.—Huerne & Everett.
C.—J. B. Gonyeau.
$1,800.

Hayes, nr. Buchanan. Two-story frame.
O. Mr. Keegan.
A.—B. J. Clinch.
C. J. J. Dunn.
$4,000.

McAllister, nr. Laguna. Two-story and basement frame.
O. H. Wagner.
A.—Kenitzor & Raun.
C.—E. Farrell.
$6,000.

Church, cor. Twenty-eighth. Additions.
O. G. Rolando.
A. M. J. Welsh.
C.—J. Binet.
$4,000.

Harrison, cor. Serpentine Avenue. One-story frame.
O. S. McBowen.
Day's work.
$1,500.

Twenty-third, cor. Shotwell. Additions.
O.—Marx Bros.
A.—M. J. Welsh.
C.—M. Weber.
$4,500.

Nineteenth, nr. Valencia. Two-story frame.
O.—W. R. Stephens.
A.—Emil John.
C.—F. W. Kern.
$2,500.

York, nr. Twenty-fifth. One-story frame.
O.—Mr. Dreshfield.
C.—Leonard Bamber & Co.
$1,400.

Mission Avenue, nr. Seventeenth. Two-story frame.
O.—Mrs. Magilton
C.—C. E. Dunshee.
$8,500.

Sherman, near Nineteenth. One-story frame.
O.—W. H. Darcy.
C.—C. E. Dunshee.
$1,000.

Guerrero, nr. Sixteenth. Two two-story frames.
O.—D. Perry.
A.—Curlett & Cuthbertson.
Day's work.
$7,000.

Haight, nr. Steiner. Two-story frame.
O.—Mrs. Holliday.
A.—M. J. Welsh.
C.—Summers & Barrett.
$7,000.

Pine, nr. Devisadero. Two two-story frames.
O.—A. Reusche.
A.—Schmidt & Havens.
C.—W. Pluns.
$10,500.

O'Farrell, No. 215. Additions.
O.—H. Proff.
A.—Schmidt & Havens.
C.—B. Dryer.
$3,000.

Howard, nr. Third. Three-story frame and brick basement.
O.—Mrs. A. Gerlach.
A.—Schmidt & Havens.
C.—— Sanders.
$8,500.

Golden Gate Avenue, nr. Fillmore. Two-story frame.
O.—I. Lightner.
A.—Schmidt & Havens.
C.—P. Maxwell.
$8,000.

Market, nr. Fell. Alterations.
O.—J. Scheerer.
Day's work.
$7,000.

O'Farrell, nr. Hyde. Two-story frame.
O.—Mrs. A. Vidaver.
A.—H. C. Macy.
C.—J. Doherty.
$6,000.

Steiner, cor. Geary. Two-story frame.
O.—Mr Johnston.
A.—H. D. Mitchell.
C.— Geary.
$5,000.

Fillmore, cor. Broadway. Alterations.
O.—— Sanderson.
A.—H. D. Mitchell.
$1,000.

Pine, cor. Taylor. Alterations.
O. Capt. Lees.
A.—H. D. Mitchell.
Day's work.
$1,500.

St. Julien Avenue, nr. Seventeenth. Alterations.
O.—Capt. Smith.
A.—G. H. Miller.
C.—J. Y. Grant.
$1,800.

Devisadero, nr. Geary. Two two-story frames.
O.—C. Buckley.
A.—T. S. Welsh.
C.—Cummings & Rebman.
$12,000.

Broadway, nr. Mason. Three two-story frames.
O.—M. D. Sweeney.
A.—T. J. Welsh.
C.—J. Binet.
$12,000.

Stevenson, nr. Eighteenth. One-story frame.
O.—H. Henderson.
A.—T. J. Welsh.
C.—D. B. Spangler.
$1,800.

Hayes, nr. Market. Alterations.
O.—J. Scheerer.
Day's work.
$1,000.

Golden Gate Avenue, nr. Jones. One-story frame.
O.—Mr. Taylor.
C.—A. C. Hussey
$2,000.

Eddy, nr. Hyde. Alterations.
O.—D. Hunter
A.—H. T. Bestor.
Day's work.
$3,000.

Fulton, nr. Stanyan. One-story frame.
O.—M. Wohlke.
A.—H. T. Bestor.
Day's work.
$3,000.

Golden Gate Avenue, nr. Webster. Alterations.
O.—J. G. Doane.
Day's work.
$1,500.

California, nr. Webster. Alterations.
O.—Mrs. Rathburn.
C.—Leonard & —— Haskell.
$1,000.

Geary, nr. Larkin. Additions.
O.—Dr. C. B. Currier.
A.—S. & J. C. Newsom.
C.—Chrisman & Neal.
$4,500.

Post, nr. Gough. Mansard roof.
O.—A. Roos.
A.—Schmidt & Havens.
C.—J. Wilcox.
$4,500.

Steiner, nr. Ellis. Two-story frame.
O.—P. Johnson.
C. J. Geary.
$5,000.

Gough, nr. Geary. Two-story frame.
O.—Mr. Schweitzer.
C.—J. McInnis.
$2,500.

Steiner, nr. Geary. Two-story frame.
O.—J. C. Fredericks.
A.—Curlett & Cuthbertson.
C.—J. H. Thom Wohrden.
$6,000.

Haight, nr. Devisadero. Two-story frame.
O.—Dr. Fitzgibbons.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
$4,250.

Washington, cor. Washington Alley. Three-story frame.
O.—P. Salom.
A.—S. & J. C. Newsom.
C.—J. Cox.
$10,000.

Geary, cor. Webster. Seven two-story frames.
O.—L. Hannsiv.
A.—G. E. Voelkel.
C.—R. McCann.
$30,000.

Mission, nr. Sixteenth. Three-story and basement brick.
O.—W. Hobart.
A.—C. Geddes.
C.—R. Smilie.
$15,500.

Mission, nr. Sixteenth. Two two-story frames, brick basement.
O.—W. Hobart.
A.—C. Geddes.
C.—G. R. Lang.
$11,000.

Larkin, cor. Eddy. Two-story and basement frame.
O.—Thomas Magee.
A.—C. Geddes.
C.—G. Lang.
$7,000.

McAllister, nr. Van Ness. Two two-story frames.
O.—F. Kronenberg.
A.—H. Geilfuss.
C.—S. Fuchs.
$12,500.

Fell, nr. Van Ness. Two-story frame, brick basement, and stable.
O.—N. Fuchs.
A.—H. Geilfuss.
C.—H. Main.
$6 800.

Mission, nr. Fifth. Three-story frame and brick basement.
O.—H. Henningsen.
A.—H. Geilfuss.
C.—B. Dryer.
$14,000.

Franklin, nr. Jackson. Two-story frame.
O.—J. G. Walker.
A.—Curlett & Cuthbert son.
C.—D. Perry.
$10,000.

Perry Street, bet. Third and Fourth. Twenty-five two-story frames.
O.—Judge S. C. Hastings.
A.—J. J. Clark.
C.—F. Crowley.
$80,400.

Additions to Magdalen Asylum.
O.—Sisters of Mercy.
A.—J. J. Clark.
C.—Mason, J. F. Riley. Carp.—J. W. Smith.
$18,000.

South San Francisco.
Infants' Shelter and Chapel.
O. Sisters of Mercy.
A.—J. J. Clark.
C.—Mason, P. O. Sullivan.
Carp. Mahoney Bros.
$31,000.

Ninth, nr. Stevenson. Two two-story frames.
O.—Larkin & Flaherty.
A.—McDougall & Son.
C.—R. Doyle.
$7,000.

Howard, nr. Sixteenth. Two-story frame.
O.—F. M. Ronge.
A.—W. Schrof.
C.—H. Weiss.
$5,300.

Bush, nr. Mason. Two-story and basement frame.
O.—J. Aurrecoechea.
A.—A. Pissis.
C.—W. Langstaff.
$9,000.

MISCELLANEOUS.

Livermore—Frame building. O., W. Jordan; C., J. F. Myers; $2,500. Two-story frame. O., E. C. Newell; $5,000.

Woodland—Main Street Alterations. O. and B., G. W. Myrick; $1,400. South Woodland. One-story frame. O., Wm. Gibson. Day's work; $1,750. North First Street. One-story frame. O., Mrs. Hollingsworth; C., Glenn & White; $2,200. Second Street. Woodland Opera House. Three-story, brick and iron. A., T. J. Welsh; C., brick work, D. S. Scott; C., wood, W. H. Curson & Co.; $28,000. Second Street. One-story frame. O., J. Freeman; C., W. H. Winnie; $1,500. Two-story frame. O., Hoppin Brothers; C., W. H. Winnie; $1,000.

Madison—Two-story frame. O., J. E. Dearing; C., C. Reardon; $3,500.

Oakland—Jefferson nr. Fourteenth. Two-story frame. O., W. Blötte; A., W. P. Moore; C., W. G. Reese; $2,500. Sixteenth, cor. Grove. Two-story frame. O., D. Alvin; A., W. Kirk; C., Nolan & Govnay; $3,000. Castro cor. Nineteenth. One-story frame. O., M. Heney; $1,500. Brush, cor. Nineteenth. One-story frame. O., C. W. Blackman; day's work; $1,800. Market, nr. Sixteenth. Two-story frame. O., J. S. Bearden; C., Knight & Littlefield; $2,500. Fifteenth, nr. Market. Alterations. O., D. Coakley; C., Markell & Griffith; $1,500. Filbert, nr. Sixteenth. Two cottages. O., Capt. Wrinkleman; A., C. Mau; C., W. Dahl; $3,000. Chestnut, nr. Fourteenth. One-story frame. O., F. Kelugel; A., W. Kirk; C., W. Brophy; $1,800 Magnolia, nr. Tenth. Two one-story frames. O., G M. Fisher; C., Knight & Littlefield; $4,400. Thirteenth, cor. West. One-story frame. O., A. Bassett; A., C. Mau; C., W. Dahl; $2,500. Tenth, nr. Franklin. Two-story frame. O., W. Collins; A., C. Mau; C., R. Smilie; $3,000. Thirteenth, cor. Clay. Two two-story frames. O., Dr. Tisdale; A., C. Mau; C., Ingerson & Gore; $15,000. Union, nr. Fourteenth. Two-story frame; O., Mrs. Davidson; A., S. and J. C. Newsom; $9,500. Repairs to public schools. A., S. and J. C. Newsom; $7,000.

San Mateo—Two-story frame. O., Isabel Jordan; A., W. G. Copeland; C., R. Wisnon; $3,000.

San Jose—Two-story brick building on north side Santa Clara St., nr. San Pedro. O., John W. Lyndon, of Los Gatos; A., Theo. Lenzen; C., Kenny & Leddy for brick work and E. A. Van Dolsen for carpenter work; $23,060. The building heretofore reported for Chas. Lefranc has been enlarged to a three-story and basement brick; A., Theo. Lenzen; cost complete, $34,000. NW cor. San Fernando and Third. Two-story brick. O., Joseph Balloli; A., Theo. Lenzen; C., brick work, L. C. W. Otto; $8,000. Additions. O., Mrs. Krakenburg; A., Theo. Lenzen; C., C Curdts; $1,000.

Alameda—Alameda Avenue, cor. Oak. Alterations. O., J. Maistaney; A., C. Mau; C., —Foster; $3,000. Two-story frame. O., F. Otis; A., Wright & Sanders; C., —Martin; $6,000.

Watsonville—Country home. O., G. R. Ford; A., Townsend Wynekin; C., C. Mills; $3,000.

Centerville—Two-story frame. O., C. A. Plummer; A., S. and J. C. Newsom; C., F. A. Larrabee; $5,000.

Stockton—Two-story frame. O., W. Sweat; A. S. and J. C. Newsom; day's work; $3,500.

Eureka—Two-story and basement frame. O. W. Carson; A., S. and J. C. Newsom. Day's work; $25,000.

Oakland—Railroad Avenue, cor. Peralta. Two-story frame. O., E. Flynn; A., T. J. Welsh; C., M. Berger; $3,000.

Woodland—Two-story Opera House. O., Woodland Opera House Association; A., T. J. Welsh; $25,000.

Alameda—Railroad Avenue. Two-story frame. O., C. Montgomery; A., Schmidt & Havens; C., T. Adams; $10,000.

Polk, nr. Greenwich. Two-story and basement frame.
O.—M. Shea.
A.—F. Shea.
Day's work.
$4,000.

Geary, nr. Octavia. Two-story and basement frame.
O.—M. Prag.
A.—J. Marquis.
C.—Cummings & Rebman.
$8,000.

Leavenworth, nr. Pacific. Two-story frame.
O.—L. Janovich.
A.—Townsend & Wyneken.
C.—J. Doherty.
$3,000.

Clay, bet. Polk and Larkin. Two-story frame.
O.—J. B. Stoupe.
A. and B.—W. H. Wharff.
$6,300.

The California Architect and Building News.

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

A Fine Showing for June.

JUNE is generally regarded as a quiet month in building activities, but from the summary of our building intelligence, the month just past has been an exceptionally active one in regard to the number and value of contracts let. We find during the month

EIGHTY-SEVEN BUILDINGS OF THE VALUE OF $663,909,

Have been commenced. This amount does not include several upon which work has been started, the most notable exception being the Murphy Building on corner of Market and Jones Streets. As only a portion of the contracts have been let, we refrain from quoting the same until we can give definite cost. From present appearances, the value of building improvements for 1884, will exceed any year of which records have been kept.

Our Illustrations.

THE fine four-page engraving presents an accurate illustration of the New Odd Fellows' Hall. Its cost will be about $300,000. Wright & Sanders, architects.

The elevation and plans for a country residence recommend themselves to those who want a neat, but yet attractive, country residence.

In our next issue we will present the first of our competition plans, the plates of which were not ready for this issue.

San Francisco Chapter, American Institute of Architects.

THE regular meeting of the Chapter was held on Friday evening, July 11th. President John Wright in the Chair.

The following amendment to the By-laws was proposed: In Article XI, Sec. 1, the word "three" be changed so as to read "five," the object being to have five Trustees instead of three.

(This change is necessary on account of the State Law requiring the number of Trustees in an incorporated body to be not less than five. ED.)

Mr. A. A. Bennett was unanimously elected a member as a Fellow.

F. Marion Wells was proposed as an honorary member of the Chapter. Referred to Messrs. Pissis, Curlett & Whittemore as a committee to report at next meeting.

Various bills were ordered to be paid.

Adjourned.

SPECIAL NOTICE TO MEMBERS OF THE CHAPTER.

At the next regular meeting of the Chapter, to be held on Friday evening, August 1,

NOMINATION OF OFFICERS

For the ensuing year will be in order. It is earnestly hoped that all members will so regulate their affairs, that they can be present at the August meeting.

Carmel Mission Church.

THE attention of our readers is directed to the *Editorial Correspondence* — as given below—in which will be found a statement concerning the *virtual destruction* of a very large proportion of the *primitive ideas* of architecture and construction as practiced by the Pilgrim Fathers to the Pacific Coast, in the erection in the valley of Carmelo, near the shores of the bay bearing that name, of the church edifice, which, in its primitive periods, stood alone in that vast wilderness—at that time scarcely known even to the best informed of civilized people, where the untutored and semi-savage tribes of Indians and herdsmen alone entered its portals as devotees—until by the events of time and nature, those who there first chanted the praises of the Most High, and their successors in the order of their existence, together with the humble worshipers who assembled within the sacred walls of the old sanctuary, have passed away, and the sacred edifice itself yielded to the waste and wear of the elements, until its ruins only remained as a relic of what was once the temple of worship.

The many interesting facts surrounding the history of this old mission churches and the devoted men who laid its foundations, and whose earthly remains lie entombed within its walls, has made it one of very extended and general interest; and anything that may be done, which in any unnecessary manner is calculated to mar or destroy the original, will be looked upon with sorrow and regret by all those who venerate the monuments of history.

Editorial Correspondence.

SAN JOSE, Cal., July 8, 1884.

DURING our fourteen days' ramble through parts of Monterey, Santa Cruz, and Santa Clara Counties, we have met with nothing of more than ordinary interest.

AT HOTEL DEL MONTE, our stay was pleasant, and the usual conditions of comfort, elegance and high prices prevailed. There was a goodly number of guests present, but nothing approximating a crowded condition of things during the month of June, although a large increase is anticipated for July.

AT THE TOWN OF MONTEREY, the spirit of non-progression, apathy, and lack of enterprise,

which for so many years has held that place at a stand-still, was clearly manifest on every hand, and seems to satisfy the people of that ancient burgh. Nothing of a "public-spirited" nature is to be seen, calculated to improve general conditions or make the place inviting to strangers, nor of a character to induce investment by outsiders who might be willing to enter, invest, and occupy almost anywhere, where appearances indicate a disposition on the part of the earlier settlers, to make the most of the place itself, and the regions around and about the place of their settlement.

In the matter of building improvements, but little is to be seen. Two one-story stone erections on the principal throughfare is all that we noticed within the town proper, and nothing in the way of constructions was discernable anywhere in the adjacencies. In our survey of the surroundings, we summed up the probabilities to be, that twenty mechanics—all classes included—carpenters, masons, painters, plasterers, etc., would be a sufficient force for all the mechanical requirements in the building line the year through. It is singular how permanently and effectually, even business men may lose sight of their best interests, and permit advantages to flit by unimproved, or wither under the influence of inaction. Yet it is a thing of common occurrence, and Monterey is a striking illustration; while at the same time this one thing is certain, that in the hands of active, enterprising men, Monterey might be made a beautiful, thriving, and prosperous place, and the number of its inhabitants increased five-fold.

Since penning the above, we have sought further information in reference to the causes which produce the state of things existing in immediate proximity to the spot where to-day stands the white cross, on which is inscribed "June 3, 1770," commemorative of the landing of the pioneer missionaries on the shores of Monterey Bay, more than one hundred and fourteen years ago, and find it to be the same that has, in times gone by, so disastrously affected and hindered the prosperity of almost every town and city in the State of California, to wit: Spanish or Mexican Grants, and imperfect titles, and ownership of valuable pieces and blocks, by one or more, and in some cases, by whole families of indolent, stupid, ignorant Mexicans, who do not, and cannot be made to understand that their retirement from ownership would be a public benefit and a blessing to Monterey.

At Pacific Grove Retreat we spent four pleasant, quiet days. The quiet of this—capable of being made—beautiful retreat, is most enjoyable, shutting out, as it does, all the noise, bustle, and turmoil of busy life; but the religious restrictions and restraints enforced are calculated to greatly lessen the number of visitors, and restrict patronage to those only of very moral, or decidedly reverential turn of mind Very wisely, the sale of spirituous liquors, gambling, and all immoral practices are prohibited, but with these, all other means of harmless, social amusements are proscribed such as a properly conducted billiard room, in which mothers and children, as well as fathers and brothers, might engage in the pastime of innocent amusement with the balls and cue—and many other means of enjoyment, which, if permitted and introduced, would greatly multiply the pleasures of visitors, without violation of any reasonably high standard of morals, and approaching sufficiently near to a religious state for all practical purposes.

The closing down of the gates upon all business affairs on Sundays would be consistent with the general character of the place, were it absolute and complete. But its partial enforcement, closing the butcher shop, grocery store, etc., and beaching or tying up of boats, yachts, etc., and shutting off all manner of worldly pleasures, other than as each for himself may improvise, while the business office of the concern is kept open, coaches and teams owned by the management run all Sabbath day for the conveyance of visitors to and from the cars and grove, and in and out, to and from town, for the pleasure of guests, and other things done, yielding profit and pay, at least suggests a degree of inconsistency, which is not removed by the claim that "these things are necessary."

Within the past two years there have been some improvements made, noticeably the restaurant which is well conducted, clean and well lighted and ventilated, although the innovation upon common custom in city life, of dinner at noon, and supper the evening meal, with but a plain, moderate bill of fare throughout, instead of luncheon at noon, followed by dinner at evening, is an arrangement subject to the likes and dislikes of patrons, to please all of whom would be an impossibility.

The thousand and one great possibilities within the surroundings of Pacific Grove, will some day, when the present management shall have ceased, and the interest passed to the control of others of broader and more practical and progressive views, become one of the most desirable sea-side resorts upon the shores of the Pacific Ocean.

Carmel Mission Church. This old historical, by many, venerated, relic of the first works of the devoted men who landed upon the shores of Carmelo Bay, more than a century ago, is passing through changes at the hands of a gang of mechanics, but little less than sacrilegious. The judgment displayed in the restoration of the building is exceedingly bad in many particulars, especially and most condemnably so in the new roof, which obliterates all vestiges and semblance of the original, and substitutes a very steep pitched, pointed modern style of roof, as seen in Catholic, Episcopalian, and other Gothic chapels of the present day; and so in contrast with the style and character of the primitive roof and building, as to change the feeling of awe and veneration which pervaded the minds of those who visited the sacred edifice, to that of disappointment and displeasure at the mongrel attempt to resuscitate and restore the relics of past ages, by the use of the latest inventions of the present day. The sharpening of the pitch of the new roof necessarily raised the apex some eight feet or more above the old, thus giving the front a pointed, modernized air, altogether at variance with the antiquity of the edifice, and so far changing general effect, both in outside and inside appearances, that no one who has formed their ideas from photographic views, nor those who have heretofore visited the sacred place in its primitive ruins, would recognize it as Carmel Mission Church, as far as the roof exterior and interior is concerned. Other obliterations of original features are being unwisely and unpardonably practiced, and the alterations generally shaped to conform much more to present notions of things, than to retain that which was of greater interest—the features incorporated and established by the fathers who laid the foundation, and completed the edifice long before present generations had an existence.

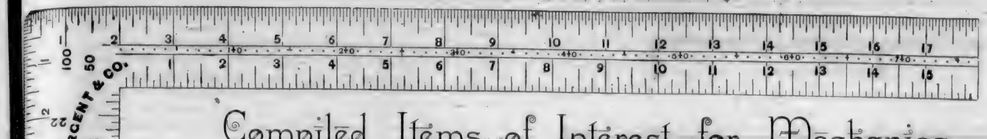
The work being done is of a very cheap and inexpensive character, the total cost of which should not reach $10,000, as far as the restoration work is concerned; and whatever greater amount of money is raised in answer to the efforts being made by citizens to collect funds, its appropriation must extend to other purposes than that of reconstructing the old Carmel Mission Church.

Santa Cruz, to us, one of the garden spots of California, with its splendid sea beach, its magnificent drives over well-graded roads, through scenery of surpassing grandeur, its far-stretching landscapes of valleys, hills, and mountains, together with its numerous other tributary features of interest, is a place where one may dwell for a season at least, in contentment and pleasure.

The whole aspect of affairs present the appearance of general prosperity. A fair degree of building activity exists, in the erection of dwellings and business places. The style of architecture adopted is neat, without any pretentions to great elaboration. From information gathered from various intelligent sources, we are warranted in saying that Santa Cruz and its surrounding country assumes an enviable position among the most favored places outside of San Francisco.

At San Jose, which we reached on the 4th inst., all was life and excitement, with signs of prosperity on every hand, both in and out of town. For notwithstanding the damaging late rains of the season, the losses in hay, cherries, and other things supposed to be badly injured, appear to be so far compensated by gains and advantages in other regards that orchardists and farmers feel confident that the results of the season's ingatherings and returns will be satisfactory.

In building operations, a moderate degree of activities prevail. During the earlier part of the present season, a comparatively large number of buildings were commenced, which gave employment to all classes of mechanics, but with the approach of harvest time, which necessarily attracted the interest and means of both farmers and merchants, the building improvements have received less attention, and a moderate condition of things is likely to continue until the field, orchard, and vineyard interests are in and cared for.



Compiled Items of Interest for Mechanics.

How to Imitate French Walnut.

Mix and coat up the work to be grained the same as for black walnut, using Chromo yellow for coloring. When the background is perfectly dry, take a tablespoonful of lamp-black, mix this in a dish that is free from grease, using beer to mix it with; mix so it is as thick as molasses; saturate a small piece of sponge with this; also mix some dry burnt senna in another dish the same, and saturate another piece of sponge with it; also saturate a larger piece of sponge with beer alone; squeeze this out as dry as you can with your hands; now, give the work a coat of Vandyke brown, mixed with beer; while this is wet, take your beer sponge and dab it over the work until it appears dappled; now, take your lamp-black sponge, and in places make little knots or burls, also the same with your red sponge; do not get too much of the red and black on, as it will make the work appear dauby; now, with your badger hair blender, blend the work softly until dry, blending one way across the panel; when dry go over the work with oil and Japan dryer; while this is green you can throw in it the little veins that are found in the natural wood, by using the black walnut graining color and a flat brush; when dry, varnish.

Changeable Signs.

Make a wooden sign in the usual manner, and have a projecting moulding around it that projects one inch out from the face of the sign; now cut thin grooves into the moulding, one inch apart, allowing each cut to reach to the surface of the sign; in each of these grooves insert strips of tin, one inch wide, and long enough to reach across the sign board; when so arranged take out the strips of tin, and place them edge to edge on a level surface; paint any desired words on their united surface; when dry reverse them and paint other words on the other side; now finish your lettering as usual on the sign board; now put the thin strips in correct order in the grooves; this will complete a sign that will read three different ways.

Paints for School Blackboards.

Common glue, four oz., flour of emery, three oz., and lampblack enough to give an inky color to the preparation. Dissolve the glue in ¾ of a quart of warm water; put in the lamp-black and emery; stir until there are no lumps; then apply to the board with a woolen rag, smoothly rolled; three coats are sufficient.

The Painter's Foreman.

The above three articles are from a new work just issued, entitled the "Painter's Foreman." It is the only work published that explains fully and clearly the different secrets of the painting art. Price, $2,00.

A consignment of this work is now on the way, and we will be able to furnish any one desiring the same at regular publisher's price, viz.: $2.00.

Cummings' Architectural Details **$6.00**

Varnishing Marble Paper on Ceiling.—Before commencing to varnish a paper you must give the same one or two coats of weak size, made from glue, being careful to touch every part, or it will show greasy. When dry it is ready for varnish. If a white paper, the glue must be clear, or it will tint the paper. All paper will not varnish.

Cottages and Villas **$6.00**

Painting on Zinc.—This is facilitated by employing a mordant of one quart of chloride of copper, one of nitrate of copper, and one of sal ammoniac, dissolved in sixty-four parts of water. To this mixture add one part of commercial hydrochloric acid. This is brushed over the zinc and dries a dull gray color in twelve to twenty-four hours; paint adhering perfectly to the surface thus formed.

Church Architecture **$4.00**

Timber can be toughened in seasoning by thoroughly impregnating the same with creosote or coal tar.

Street, Store and Bank Fronts, $4.00
Universal Assistant **$2.50**
Practical Carpentry **$1.00**

Sponges can be bleached to a very pure white by immersing them, after being thoroughly cleaned of sand and dirt, in a solution of one part of permanganate of potash in 100 parts of water, then washing them in water, squeezing them dry, and afterward steeping them fifteen minutes in a solution made by dissolving eight ounces of hyposulphite of sodium and one ounce oxalic acid in a gallon of water. On being washed clean they will be found to be white.

Wooden and Brick Buildings ... **$18.00**
Modern Perspective **$6.00**

Bancroft's Histories.

This magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

There are to be thirty-nine octavo volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

	Per Volume.
Bound in Extra, English Cloth, neat and attractive style	$4 50
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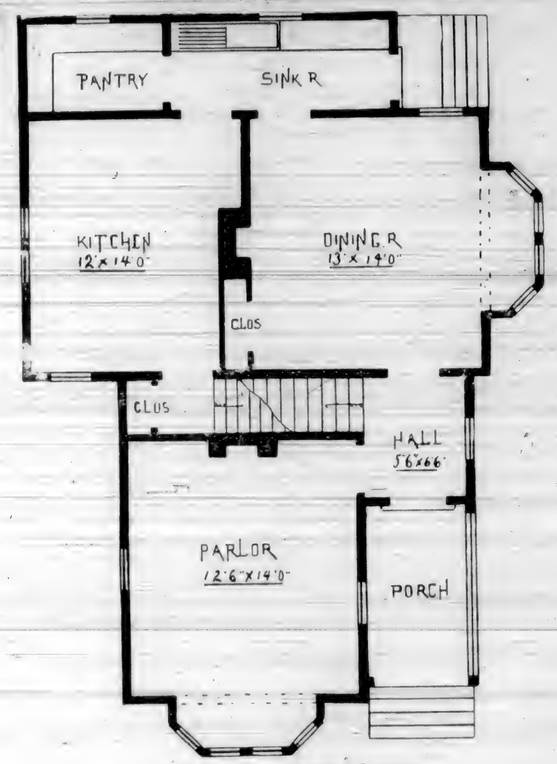
Bound in half calf, half Russia, or half Morocco	8 00
Bound in Russia Leather or Tree Calf	10 00

Any information in regard to the above will be given by addressing the office of this Journal.

Builder's Guide **$2.00**

Mechanics should remember that it is for their interest to forward items of general interest to the publishers of this Journal, as, by so doing, they reap much benefit from an interchange of ideas. If engravings are necessary to explain your ideas, send a rough sketch of the same and we will put them in a presentable form.



First Story Plan of Country Residence.

Wood Pulp.

It seems that this monopoly has had sufficient rest, and the subject should be discussed at greater length, as in our last article we merely gave a few hints concerning the transformation of wood into paper. Since then, however, we have made an extended visit—a professional one—to one of the largest concerns of this kind in the world, and, though not feeling disposed to mention names, for fear of the article being termed a write up, we will mention what we saw, and view the process from a technical stand-point.

First of all, the wood is cleverly deprived of its epidermis—here we detected a waste which is to be utilized in the future—and, though poplar is the principal timber used, we can find considerable bass-wood and a few sticks of soft maple in nearly every pile. The operation of transforming wood into paper can, with propriety, be divided into three processes, the first of which is purely a mechanical one of making the wood fine. Some mills do this by means of cutters acting on the principle of a planer, but the larger establishments are supplied with grinders which operate across the grain of the stick, reducing it to a pulpy like mass. This is much the better process, though the old way of chipping has many champions. After the wood is reduced to the required degree of fineness, the chips, or pulp, is put in the digesters, which consists of upright boilers, from six to ten feet in height, according to the depth of the first story of the building in which the operation is carried on. Under these large boilers, or "digesters," are the furnaces, while above and behind them are situated the alkali vessels, made of iron, which contains strong caustic soda. Each of these alkali tanks is supplied with the proper fixtures for regulating the flow of the liquor, in which the wood is subsequently boiled, or "digested."

When one of these digesters is ready for its charge, the top is removed, the faucet in the alkali pipe opened, allowing the alkali to flow in the digester and become thoroughly mixed with the wood as it is being put in. When the digester is filled in this manner, the faucet is turned to stop the flow of alkali, the top of the digester is replaced and firmly fastened by stirrups. Fire being applied, the entire mass is soon boiling vigorously, but the steam pressure is allowed to reach 100 pounds only. In this manner the wood is reduced to a pulp as soft as the finest jelly, every observable trace of its original appearance having disappeared. When this process has been carried to sufficient length, the contents are blown off into strong iron tanks with a capacity of withstanding with safety the pressure of the digester's steam. Then the pulp cars, which are simply large vats, receive the mass. These are supplied with perforated bottoms, and mounted on wheels, each car having a capacity equalling that of the tank adjoining. The surplus liquor is strained off into receiving tanks, and the pulp is treated to clear water, which is allowed to flow through it until all traces of the soda are removed. Every particle of soda is reclaimed and re-used in another batch. These pulp cars or tanks are now run out on turn-tables, from which they are taken to the tanks to be thoroughly mixed with clear water, which is done in a properly constructed mixing box. From here it is run into pulp dressers, where every bit of undigested wood is separated from the rest by fitters. From the dressers it comes in the form of large sheets, and is immediately torn up and thrown into the bleaching engines, where, through the action of chlorine—in one factory made from the smoke—it is freed from every particle of coloring matter, and left creamy white.

At another establishment, nearly all these conveyances are dispensed with, the mass being pumped through pipe lines from one place to another as needed, one factory transporting in this way from one building to another, some of which are ower three miles from the rest.

At this stage the process is virtually complete. From the bleaching engine the pulp is run into the drainers—large reservoirs in the basement, where all traces of chlorine are washed out. Thrown out with these, the pulp is once more mixed up with clear water, and after passing thrugh a second set of pulp-dressers is run through an eighty-four-inch cylinder machine, and over nineteen driers, which convert it into a strong, thin sheet, resembling blotting paper, except the surface is harder and smoother. From the driers it is wound on a long reel, and from the latter it passes between knives that divide it longitudinally into three strips, each of which is wound on a cylinder into a roll of about 118 pounds weight. This roll is now done up in heavy wrapping paper, and in this manner is shipped to the dealers or consumers. Some of our larger dailies buy direct from the factory, one mill in northern New York being kept running constantly to supply the editions of the *Times* of the American metropolis.

As this industry grew in importance, competition sprung up, and, of course, the cost of making the paper had to be reduced, and the process of reclaiming the chemicals was investigated, and now is a very interesting operation, as also the making of caustic soda.

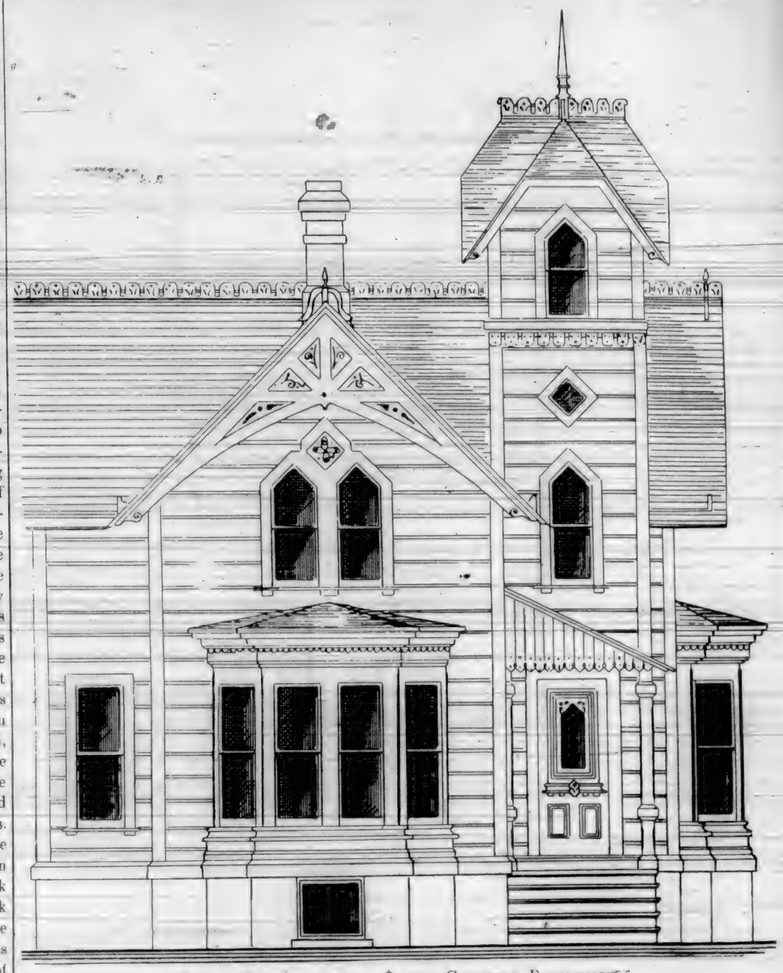
When the pulp has been reduced in the digesters and drawn off into the pulp cars, as before stated, the liquor is drained off, and clear water allowed to perculate all through the mass, thoroughly washing out all traces of soda. This liquor that drains off is the original caustic soda mixed with coloring matters and other elements in small proportions, boiled out of the wood. The after washings are also impregnated with the same elements, but weaker. All this matter is pumped into the evaporating rooms, in which are four furnaces, fitted up with a large evaporating pan, so adjusted that the flames pass near them on their way to the chimney. The hot gases are still further utilized before escaping by passing over another set of pans higher up. The liquor is pumped into these upper pans first, where some of the water is evaporated. It is then allowed to run into the furnace pans where the balance of the water is evaporated and the remaining vegetable fiber burned out. There is now left nothing but the black soda ashes, which is now dumped on the ground to dry.

In the alkali house are tanks, into which are put water, the black ash, and a small portion of lime and white ash. Steam is applied, and the mixture thoroughly boiled until converted into caustic soda, which is simply the hydrate of soda, or, in other words, soda held in solution by water. It is now run off into vats, and left standing twelve hours, or long enough to clarify. A residium sinks to the bottom, which consists of lime and the coloring matter of the black ash. The clear liquor is drawn off, and is ready for re-use in the digesters. The precipitate is thrown into other vats, and water run into it to absorb any remaining soda, a process now repeated many more times than previously.

The Art of Graining.

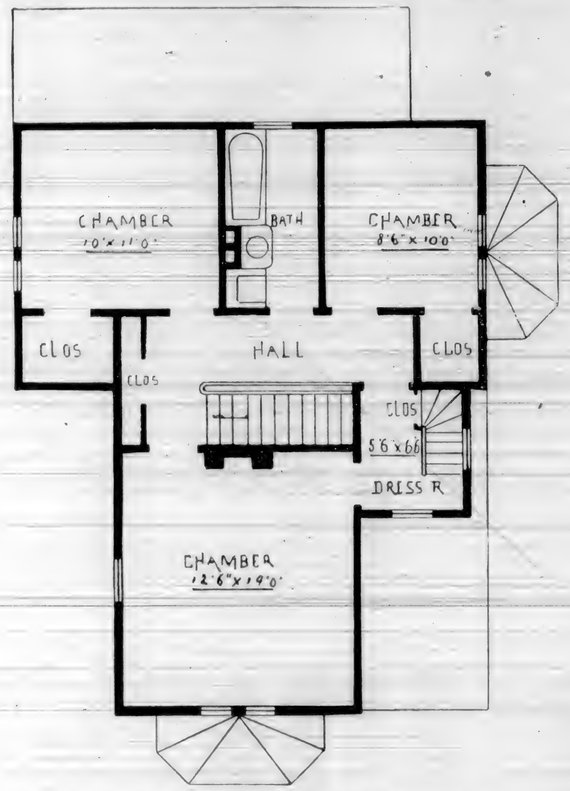
The imitation of wood is now, more than ever, a very important study, as in nature, so we find it in art, there are many diversities in effects. There is great beauty in the natural woods, when selected for any given work, but their cost being large, forbids the general use in dwelling houses. In art we have every opportunity for variations, and this can be done without very great outlay of money to procure them. The embellishment given in first-class graining to new dwellings, is far more cheerful than we find in native woods. The reason it is so, is because the woods generally selected are too strait in the grain, and do not offer much variety to please the taste. And then when old work is to be renewed, a different style of woods may be substituted for the old, and thus add new work, cheerful to the observer, for all are pleased with a change. So we find it in our private and public buildings, in all household furniture. It is not long since the latter was made of lighter shade of woods, but now we live in the *black-walnut-age*, for the taste for dark woods has become the "ne plus ultra," and nothing can please but walnut woods of every shade. On the Pacific Coast there has been a little variety thrown in by the use of laurel panels, veneers here and there of this beautiful wood, and has in a measure softened the general effect of the mournful aspect. For the coming student painters, there is an art study of the various woods and their proper imitation. There is in walnut wood many characteristics of its own, and these are the studies which must fit the student for his profession. He must note the sap growth of the wood in its sweeps and curves, along with the knots and their shades. The heart growth for specialties should be carefully studied, as their true representation is one of the best effects in the art. In oak likewise there is a great diversity of the work of delineation in the heart growth, from the nucleus or knots to the spreading wavelets, as they reach out to panel ends or the length of rails to stiles. The roots and branches claim a large share of the student's time. The former are now more generally used in panel decoration, for they offer an endless variety in design of every fantastic shape. They are whirling pools of color scattered amid rocks and foam in lights and shadow in a perfect sinuous sea of mottled masses. The branches of either walnut or oak are very pretty in form, showing curving feather-like lights, with sweeping outward, over-grain in fine lines blended in the same direction, which enriches the work on the dark back-ground of color. The oak lights form a fine study, for there is a beauty in the scattered forms, irregular in size but in marshaled ranks, forming hollow squares, platoons or files still all marching on. The stave lights, when champered on panel, offer fine effect, making light and effective graining. Then the heart growth shows the pores or checks of oak and walnut. In the oak the checks are stippled in after the heart work is done, while the pores in walnut are laid in distemper flogging, and when the oil work is done over it, the stipple shows itself plainly in the heart-growth flashes of light, where the walnut pores are so commonly seen. These are some of the studies which fit the learner to do artistic work, for he must know all the characteristics of a wood, before he is competent to undertake a job of work. Should the pupil find an opportunity to learn of a practical grainer the rudiments of the art, he will save much time and secure these aids to further perfect himself in this beautiful art. In learning the modes of others, he must not forget that nature is the *style* he must copy and aim to represent it in all its technicalities. Some grainers have a style of their own, copied partly from others with ingenious additions of their imperfect studies, which serves only to make show work. Graining, when done for the trade, is none of this class, imitation not being the rule, but rather color in marketable shape. To grain in imitation of any given wood, skill and labor of long experience are required to properly represent them. *Time-work* is more proper for the best execution of good graining, and for that reason all work of this nature should be done by the day. In order to encourage the study of the art, I propose to treat the subject in a practical way in a future article, in which the rudiments and color mixing, will be discussed.

J. E. W. C.



Front Elevation of a $3,750 Country Residence.

An improvement has been affected in wooden block flooring. The common manner of laying the block flooring often results in disappointment, because the blocks soon become loose. The improvement consists in the blocks being keyed to a cement flooring, firmly fastening them, and the cement obviates both dampness and dry rot.



SECOND STORY PLAN OF COUNTRY RESIDENCE.

Building Skyward.

A BILL introduced in the Assembly by Mr. Howe provides that no dwelling-house hereafter to be erected in this city, shall be more than 70 feet high, if the street or avenue on which it stands is not more than 60 feet wide, and that the height shall not exceed 80 feet on any street or avenue of greater width.

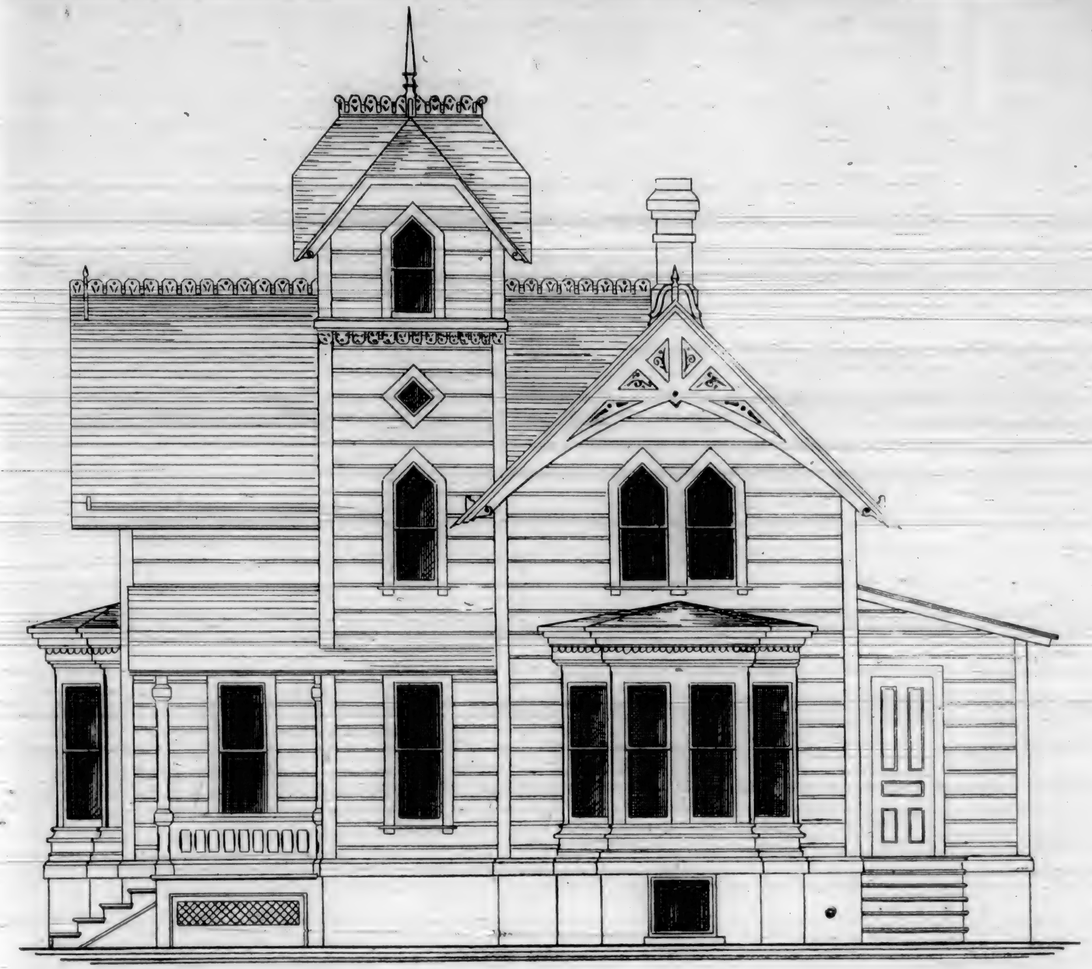
The lofty apartment houses and office buildings in which millions of dollars have been invested on this island within a few years are among the curiosities of New York. The city can grow freely in only one direction. For this reason building sites below Central Park, in the building district and along Broadway and the central avenues, have become so costly that those who own them have been led to build skyward in order to secure the greatest possible rent from every square foot of ground. They have not been restricted by laws like those which have been enacted in cities of the Old World, but the day will come when such laws will be needed here to insure the protection of life and the preservation of health. The natural limits of expansion have thus far tended to give builders more freedom than is allowed in cities that can grow outward in all directions from a center. If Berlin were growing from one end of a long and narrow island toward the other, the authorities of that city might have postponed the adoption of a regulation forbidding the erection of houses more than 79 feet high. If Paris could expand in only one direction, the height of its buildings might not be limited to 65 feet, with exceptions in certain cases. Admitting, however, that freedom in this respect is more desirable here than in those cities, it is, nevertheless, true that the time has come for the enforcement in New York of some law like that proposed by Mr. Howe. The subject is receiving attention in Chicago, where the erection of a few lofty buildings has led an association of citizens to ask for the enactment of an ordinance providing that all buildings more than 90 feet high shall be made throughout of incombustible material.

The builders of our most lofty structures—apartment houses and down-town office buildings—have in most cases been led by a consideration of their own best interests to make them fire-proof. A law that would prohibit the erection of such buildings as half a dozen that might be named, recently constructed below the City Hall, could not be defended by many arguments, nor could the erection of lofty fire-proof apartment houses, like those that now attract sight-seers near the lower end of the Park, be reasonably forbidden upon the sole ground that fire in them might endanger life and surrounding property. The buildings which we have in mind seem to be practically fire-proof, but the erection of buildings eight, ten, twelve, and even fourteen stories high that are not fire-proof should be forbidden by a rigid law. If a builder desires to increase his profits by erecting sky parlors, he should be at least, compelled to make his sky parlors safe.

On the ground of health, however, it is urged that the erection of all lofty buildings—even those that are fire-proof—should be forbidden in a crowded city. This objection may not be potent with reference to office buildings, but with reference to apartment houses it demands serious consideration. Nearly all of the great up-town flat houses now stand apart from each other. Where two or more of them are grouped the lower floors are almost sunless, and in the course of time the multiplication of these houses will convert the lower stories into gloomy caverns which the sun's rays cannot reach. They will keep the surface of the streets in almost perpetual shadow, and deprive the unfortunate occupants of adjoining small houses of sunlight, which is so powerful an agent for the preservation of health.—*New York Times.*

To Saw Rough Timber.

ALL tough timber, when the logs are being sawed into lumber of any kind, whether scantling, boards, or planks, will spring badly when a log is sawed in the usual manner, by commencing on one side and working toward the other. In order to avoid this it is only necessary to saw off a slab or plank, alternately from each side, finishing in the middle of the log. We will suppose, for example, that a log of tough timber is to be sawed into scantling, of a uniform size. Let the sawing be done by working from one side of the log toward the other, and the ends of the scantling will all be of the desired size, while at the middle some of them will measure one inch broader than at the ends. After the log has been spotted, saw off a slab from one side; then move the log over and cut a similar slab from the opposite side. Let calculations be made by measuring before the second is cut off, so that there will be just so many cuts, no more and no less, allowing for the kerf of every cut. If the log is to be cut into three-inch scantling, for example, saw a three-inch plank from each side, until there is a piece six and a quarter inches thick left at the middle. The kerf of the saw will remove about one-fourth of an inch. When a timber log is sawed in this way, the cuts will be of a uniform thickness from end to end. Now turn the log down and saw the cuts the other way in the same manner, and the scantling will not only be strait, but of a uniform size from one end to the other, if the saw be started correctly.—*Sel.*



SIDE ELEVATION OF $3,750 COUNTRY RESIDENCE

Running Locomotives.

"LOTS of chaps think it would be fun to run an engine," said the driver, as he stuck his head, a flaming torch and a long-necked oil can in under his machine, "but if the most of 'em would try it they wouldn't like it quite so well. 'Taint everybody can run a locomotive either, though I s'pose it's like running a daily newspaper, which I've heard tell everybody can do. Now, a nervous man has no business in a cab; no more has a careless one or a stupid cuss. To run an engine a man must feel his responsibility, and keep his head level. I don't believe half the people know what it is to run an engine. Now, there's the machine; that is the first thing, and it has to be in good order, and stay so. A locomotive has to stand wear and tear and weather that'd knock a stationary engine into smithereens. And no matter what emergency rises—freezing of pipes or starting of flues, a loosening of packing or heating of journals—we've got to know just what to do, and do it right quick, too. Then when we'er running there's the time-cards, and pretty often a new one. And the train orders—they are life and death and reputation to us, and to read 'em correct and to live up to 'em gives us no end of anxiety. Bet I've read a train order over a dozen times an hour—I am always so afraid of making a mistake or forgetting. You know the consequence of even a little mistake sometimes.

"Then there's signals to watch, the conductor's go'ng overhead, steam to keep up, time to make, whistle-posts and crossings to look out for, bad spots in the road to be careful on, and along with all this, there's the track ahead of ye which your eyes mustn't leave for more'n five seconds. There's the brakes, too—one is always worrying about them. I don't s'pose everybody knows, either, that we have to be mighty careful when we come to the top of a grade. You see in going up she labors hard, and so as soon as she begins to descend she makes a rush, and there's the danger of breaking your train when the rear cars are still dragging on the up grade. This danger is especially great on freights, but no good engineer fails to shut off some of his steam when his engine reaches the summit. It isn't every fool that can run a locomotive."—*Sel.*

Science of Carpentry Made Easy.

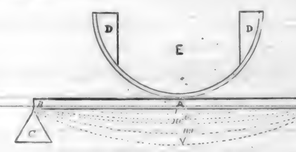
A WORK that should be in the possession of every mechanic, as its pages are full of practical, instructive matter pertaining to carpentry, bridge building, etc. Price, $5.00.

Native California Woods.

[A series of articles written expressly for this Journal, in which special attention will be given to the principal characteristics of Redwood].

THE editors of this paper have requested us to tell all that can be demonstrated regarding the woods found in the Golden State, especially as regards that which is indigenous to the Pacific Slope. In view of this they forward samples of the redwood, for physical as well as chemical investigation, both or either of which, to tell all that is demonstrable by the aid of these two sciences alone, would require a volume the size of this page and many, many leaves; but we will endeavor, commensurate with succinctness, to dwell in as brief manner as possible on the technical minutiæ, making all, or the majority, of the tests for the purpose of giving accurate information regarding the timber from the standpoint of the architect and builder.

First, its elasticity. For this test the basis is made for a stick precisely one foot square, and thirty feet between the rests, as shown in Fig. 1.



a—timber; *b b*—points 30 feet apart; *c c*—rests; *d d*—appliance to balance without weight; *E*—weights or applied pressure susceptible of being weighed; *I, II, III, IIII*, and *V*, are represented by the timber when subjected to pressure at *E*'s space; *ffff*—arcs.

With this crude drawing, we will place 1,210.239 pounds pressure, and find the stick has reached the first line, or *V*, from which it readily springs back to its original position; but if another ounce or gram weight be added, its plance is forever destroyed; hence this 1,210 pounds and a fraction represent its actual elasticity, something remarkable when we take into consideration the natural brittle texture of the wood. Now, by adding 400.7520 pounds more pressure, the timber bends down to the line marked *IIII*, and when again freed rebounds back to *V*, but would not if another atom of pressure was applied; hence its second tension strength is represented by a trifle over four hundred pounds.

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Every mecha[illegible] man, etc., shou[illegible] Architect and [illegible] per annum.

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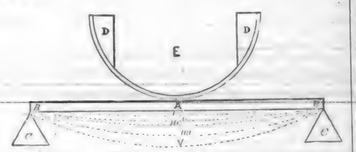
Native California Woods.

[A series of articles written expressly for this Journal, in which special attention will be given to the principal characteristics of Redwood].

THE editors of this paper have requested us to tell all that can be demonstrated regarding the woods found in the Golden State, especially as regards that which is indigenous to the Pacific Slope. In view of this they forward samples of the redwood, for physical as well as chemical investigation, both or either of which, to tell all that is demonstrable by the aid of these two sciences alone, would require a volume the size of this page and many, many leaves; but we will endeavor, commensurate with succinctness, to dwell in as brief manner as possible on the technical minutiæ, making all, or the majority, of the tests for the purpose of giving accurate information regarding the timber from the standpoint of the architect and builder.

First, its elasticity. For this test the basis is made for a stick precisely one foot square, and thirty feet between the rests, as shown in Fig. 1.



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One of the main attractions of the building will be its magnificent public hall, to occupy the rear of the building towards the Stevenson Street front. The main floor will be 84x63 feet, stage 34x48 feet, four and one half feet from floor; height of ceiling 42 feet. In addition to the Market and Seventh Street entrances there will be rear exits on Stevenson Street, so in case of a fire or panic the hall can be emptied in a very short space of time.

The largest lodge room, 40x60 feet, will be situated over the Seventh Street entrance. The other lodge rooms vary in size, the smallest however being 32½x52 feet.

On account of the unusual character of the soil, more than ordinary attention is paid to the foundations. The best hard brick and Portland cement are used. The footings are eight feet wide, and up to the first floor the walls will be three feet thick. The first and second story walls will be two feet, and the third and fourth stories twenty one inches in thickness.

As shown, the first story front will be iron; above that pressed brick with stone trimmings. The roof will be of slate.

Steel girders will be used throughout the building, wherever it is necessary to use the same. They cost about the same as iron, excelling the latter however in strength, besides being more easily handled on account of the weight being considerably less than iron girders of equal strength.

The tower shown rises to a height of 165 feet from the sidewalk. The main cornice being eighty feet from same place.

It is the intention to have the building as near fire-proof as possible. The elevator shaft will be constructed of brick and be surrounded by a stone stairway extending to the roof.

The cost of the building when finished will be in the neighborhood of $300,000.

Every mechanic, property owner, material man, etc., should subscribe for the California Architect and Building News. Terms, $2.00 per annum.

Owing to the great increase in our circulation, causing great demand for advertising space, we have to announce an increase in the rates established January 1, 1884. We are continually receiving letters from parties, in regard to advantages secured by an advertisement in this Journal. Our rates are now $50.00 per page for single insertion. Proportional rates accordingly.

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THE NEW ODD FELLOWS HALL OF SAN FRANCISCO. Wright & Sanders, Architects.

MDCCCLXXIV.

Interior Decoration of Business Structures.

A. C. BOND.

THE decoration of business structures necessarily posseses in many points its own special characteristics. Where carried out on an imposing scale, as in the principal apartments of banks, insurance, and commercial corporations and exchanges, it is rendered characteristically distinct from that of private residences by the more pronounced and more varied interior, constructive, and ornamental features of the building itself, multiplying forms and contributing lights and shades in carved and moulded work that allows of the most varied effects in color. Pillars and pilasters, paneled ceilings, even iron girders and brick arches—these latter presenting the combination of straight and curvilinear forms, projecting galleries, recessed apertures and stairways, loftiness and extent of area, contribute important aid to decorative effects. Richness of decoration in these offices is recognized as consistent with the commercial wealth and importance of the companies, and as indeed only doing justice to buildings, the façades, vestibules, and corridors of which command adornment corresponding to their palatial appearance within. There are private offices that, under favoring architectural conditions, but on a far lesser scale, may be said to vie with these, especially in instances where the firms are also owners of the buildings, and so have not only the pick of offices, but are assured of permanency. The constant change of tenancies, the fact that the commercial mind is not exacting as respects features of decoration, has restricted the freedom given to architects of professional decorators in this line. Yet the effect of growing taste is resulting in the introduction of more ornamental features in offices than have hitherto prevailed; light, soft tints are taking the place of glaring whiteness in walls and ceilings; wood panelings, almost essential as an accessory to decoration, is carried out through whole suites of offices; friezes and ceiling borders in oil colors, distemper, or fresco, contribute their aid, and marquetry on a moderate scale, is being carried out.

Tenants, position, and means more than ever, especially in the new and gigantic class of business buildings that have arisen, countenance well designed architectural woodwork, in which screens make such a conspicuous figure. The taste for the elegantly furnished private mansion extends to the office which it is felt should be in keeping with commanding and frequently highly decorated approaches. The decoration of offices is encouraged by the opportunities offered for distinctive individual taste, and may be said to possess a certain commercial value. That architects are seeking closer relations with decorators is an encouraging sign. It is interesting to note how closely convenience allies itself to decorative art in the internal planning of office fixtures. The offices of the new building of Mutual Life impress one with the richness of the mouldings that form the deep frieze and also the surface of the beams that divide the ceiling. Between the spandrels of the arches appear emblematic figures, always welcome in decoration where appropriate. The saffron-colored pillars, of gigantic size, ranged longitudinally along the center of the room and crowned with gilded Corinthian columns, these flanked by pilasters of similar design and material constitute imposing objects. The pillars and pilasters, together with the pillars dividing the corridor from the rooms beyond in conjunction with the mahogany balustrades of the gallery, surmounted by a handsome brass rail, afford, together with the mahogany furnishing, fine contrasting effects in color with the white mouldings, which are susceptible of much greater effect were they tinted. In comparing this interior with the equally ambitious one of the Equitable, we note the advantage of abundance of light in the former. The offices of a well-known commercial firm in Broad Street may be referred to for their rich and judicious ornamentation. Nothing can be finer in its way than the constructive appearance of a cedar wood screen, paneled in its upper portion with ground glass, each panel having a fire gilt brass gate. It is finished with a high cornice of brass, the post panels at each extremity having figures in the same metal. The several departments are enclosed on three sides with open woven screens of brass, offering a most lightsome appearance, practically avoiding the "cutting up" so often destructive of the scenic effect of well decorated offices. The office of Henry Clews & Co., in Broad Street, may be cited for its display of carefully elaborated ornamental details. The constructive forms and carvings of the counters and screens are in renaissance style, executed in San Domingo mahogany and cherry, the screens having a capping of finely designed brass work, the supports ornamented with mediæval figures. The principal portions of the screens are in small panels. For brilliancy in the display of color in wall and ceiling, brightened by contrast with lofty paneling of the wall to half its height in walnut, the main office in the Williamsburgh City Insurance Building is conspicuous. The antæ or small pilasters above the paneled dado are enriched with gilt and color in harmony with the moulded work. The darkness of the paneling beneath justifies the glow, in diversified tints, of the upper surface to prevent a gloom settling on the interior. The ground of the bronzed mouldings, as well as the surface of the ceiling, is of light olive. Even the front of the walnut counter consisting of two tiers of boldly carved walnut wood, deeply recessed, has central tiles to each upper compartment in blue figured designs on a white ground, and again by the tessellated floor.

It is well known that architects, as a body, do not favor strongly pronounced colors for wall decoration but incline to mild neutral tints, and even to fading hues in stencilled designs; for all this there are numerous decided successes in bringing brilliant but soft tones of cheery aspect, into accord with architectural woodwork. It is to be remembered that a room is viewed under very different conditions from an oil painting. No atmospheric effects have to be compassed. Wall and ceiling continually catch the eye, and they should be rendered at least attractive. An important aid to the use of bright positive colors is found in the use of gold, often, indeed, brought in as an afterthought. It has the virtue of rendering certain hues more retiring, and by attracting attention through reflection of the light which other surfaces absorb, allows of the introduction of stronger tints than would otherwise be permissible.

In some conspicuous instances the vestibule is made an important accessory to the decoration of the interior. In that of the Mills Building, a central stairway, with huge metal lic lamp stands upheld by griffins, leads to an intermediate landing, along the front of which the balustrade is continued; pillars and arches further partitioning the space, and beyond a bright effect is produced by an iron curvilinear roof with a sparkling galaxy of small beveled glass insertions. With the surrounding paneling in rich hardwood and mural enrichments, the *coup d'œil* is admirable. The entrance to the inner court, on each side of the doorway, is separated by arches and pillars. Dados of variegated marbles, polished slate of cloudy hue, are being very freely used for bases of wainscoting or as dados for vestibules and passage ways. The basement vestibule of the United Bank Building has not only its walls of marble, but the same material coats the iron girders, the only contrast to its pure hue being the buff bricks of the fireproof arches.

The opportunity for scenic display in the open court of large business structures has been turned to excellent account by architects and decorators The upward view presents successive tiers of galleries, the front tops of the landings formed into enriched cornices, the light ironwork of the balustrade portions in colors and often picked out with gold, the rails of polished mahogany, the variegated marble bases to paneled woodwork, or the polished surfaces of dados in rich woods of the walls facing on the galleries, the soft, subdued tints of their upper surfaces, the trimmings and mouldings of office doors with panels of embossed ground glass, the iron and glass roof, with curvilinear sides, the glass in colors or inserted in small, round, or angular cut forms, having as a counterpart the decorated tile flooring, of the landings, and the area beneath presents a *coup d'œil* that conveys impressions not hitherto realized in interior architecture, to which the apparent aerial lightness of the whole largely contributes.

Stained glass, so ornamental when judiciously disposed, finds its use within rather than in the outside windows of business structures, particularly in the small apertures of screens. Reference has already been made to its employment in the roofing of open courts. A most striking application of stained glass to ceilings is in the "call room" of the Produce Exchange. The light falling on this ceiling of leaded panels of glass, is softened and diffused by having first to pass through a pitched roof of thick rolled glass.

The increased extent to which metal is applied to interior decorative purposes is very noticeable, particularly iron and brass. Pillars are no longer of plain, rounded, or square shafts; used in balustrades, it is made a prominent ornamentation. Brass is coming into more general use for guard rails and cappings as well as in builder's hardware, its brightness affording good contrasts; also for standards and suspended chandeliers of light design, and in antique style befitting the forms of decoration proper to the renaissance order.

WOODS FOR OFFICE DECORATION.

The number of hardwoods available for architectural woodwork is a decided advantage for the artistic designer. Honduras mahogany and cherry take the lead. Our own native oak, stained to resemble mahogany, is largely used, and white ash stained has come into request for offices. The woods in general use for best finish are cherry, mahogany, maple, oak, rosewood, satinwood, sandalwood, chestnut, cedar, ash, walnut, ebony, white mahogany, and oak. Some of our decorators use largely white oak stained to imitate Honduras mahogany. Cherry has got into high favor of late years, recommended not only by its grain and color but the large surfaces that can be obtained. Some choice foreign woods are imported to be used for inlaying, as, amaranth, amzboyna, and telira wood. For ebonizing, the woods most in request are: pear, holly, beech, chestnut, sycamore, and plane. For enlaying, the woods used are: box, palm, bird's-eye maple, sandal and satinwood, beech and holly.

About Bricks.

AN average day's work for a bricklayer is 1,500 bricks on outside and inside walls; on facings and angles, and finishing around wood or stone work, not more than half of this number can be laid. To find the number of bricks in a wall, first determine the number of square feet of surface, and then multiply by 7 for a 4-inch wall, by 14 for an 8-inch wall, by 21 for a 12-inch wall, and by 28 for a 16-inch wall. For staining bricks red, melt one ounce of glue in one gallon of water; add a piece of alum the size of an egg, then one-half pound of Venetian red and one pound of Spanish brown. Try the color on the bricks before using, and change to light or dark with the red or brown, using a yellow mineral for buff. For coloring black, heat asphaltum to a fluid state, and moderately heat true surface bricks and dip them. Or, make a hot mixture of linseed oil and asphalt, heat the bricks and dip them. Tar and asphalt are also used for the same purpose. It is important that the bricks be sufficiently hot, and be held in the mixture to absorb the color to the depth of one-sixteenth of an inch.

Why Can't any Man Put up a Stove?

IN your last issue my attention was called to an article in which the above question was asked. Is it possible that there are men who will admit that they cannot put up a stove as good as any one? Now, this is certainly strange. Why, it is one of the easiest things in the world, save that of running a newspaper. Anybody can do it.

The only objection to the business is, that it is inclined to produce profanity. I actually have seen ministers tackle a stove for the sole purpose of giving vent to their wrath, simply because a mule had kicked them, or that contributions were light the day before. And in order to make a protracted effort they commence by undertaking to insert a 6-inch joint of pipe into the small end of a 5-inch joint.

My opinion is that every man who intends to live a pious life should employ a tinner to put up his stove. Not but what he could do it just as well himself, but his future prospects would be brighter, and he would stand a much better chance of entering the realms above, where all is peace and happiness (the future home of the tinner and plumber, and other saints of less note).

It is an undisputed fact that ninety-nine fools out of a hundred, who have not mechanical ingenuity enough to lift a latch on a gate, think they can set up a stove. And because two large ends, or two small ends of the pipe will not go together, they abuse the tinner who made it, or the fraternity in general.

I have been at the business a long time, and have worked in a number of the States, from east to west, and never had any great trouble in fitting pipe. I think the size is very uniform, under the circumstances, as a great variety of weights of iron is used, and even the same number of iron varies in thickness. If all weights are cut over the same pattern, the heavy iron will undoubtedly make the pipe a little larger, and *vice versa*. Where a crimping machine is used in ordinary pipe, one-eighth of an inch smaller at the small end, is plenty, while one-fourth inch is necessary where pipe is drawn in with mallet.

Again, where pipe is seamed, it is impossible to have every joint just the same, although the joints do not vary enough to bother a tinner in putting them together. If the people of this country would have mechanics do their work in proper shape, they would be much better off, at least, in the opinion of

JOSHKINS THE TINKER.

—*Tinner and House Furnisher.*

THE Boston *Watchman* says that within the last nine years nearly 800 churches have been burned in America, mostly through defective heating apparatus.

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Hanging Doors.

WHERE no architect's services are rendered in connection with a building, the doors are generally hung according to the sweet will of the carpenter, but there are two ways to hang a door, one, so as to expose the room, and another so as to screen its contents and those who may happen to be there when the door is open. The first way may be very good for public rooms, but, in regard to bed rooms, the doors must swing so that, when partly open, they will shield the apartment from view. Architects themselves are often bothered in this connection with the views of the owners. Closet doors should be hung so that the closet may receive light from the nearest windows. Doors are sometimes made to swing out on stair landings or halls, and who has not seen two doors so placed that they strike each other when opened. It is hardly necessary to add that these methods should not be adopted.

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Overwork.

A LARGE amount of sentimental rot gets into print about men killing themselves by overwork. In nine out of ten cases of this kind, the true cause of death will be found to be something besides overwork. We all know professional and business men who work harder than they ought, and yet by taking good care of themselves in the way of diet, exercise, etc., manage to enjoy good health and wear a cheerful, hearty look. Those who die from "overwork" generally use liquors and tobacco without moderation, keep late hours, and indulge in hazardous speculations outside of their legitimate business. Late hours, liquor and tobacco engender weak nerves and upset the functions of the body, while anxiety over speculative schemes acts upon the brain. With these evil agencies working against a man, some slight exposure brings on an attack of illness, and the whole body being weakened, gives way in a very short time. The sudden illness and speedy demise baffle medical skill, the stricken family and shocked friends are told that overwork was the cause of death, and the press deplores the tendency of our civilization to kill people by overwork, when the real cause of nine-tenths of these deaths is as outlined above.—*The Manufacturer and Builder.*

To remove iron taste from new kettles, boil a handful of hay in them, and repeat the process if necessary. Hay water is a great sweetener of tin, wooden and iron ware. In Irish dairies everything used for milk is scalded with hay water.

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IRREGULAR PAGINATION

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stumps, and all uncleanness. This back yard iniquity is an evil under the sun as old, at least, as the Valley of Hinnon, behind Jerusalem. Perhaps the architects and builders began it by treating the rear of the house as if it had no rights that white folks were bound to respect; and assuming that since it is to be seen by no one but the owner and his family, it may be as bald, bare, uninteresting and poverty stricken in appearance as possible. Indeed, the more bald, disjointed and penurious the back side, the more gorgeous and extravagant may be the front. We find, now and then, an isolated dwelling occupying such a position that the need of a pleasant appear-

[illegible] bottle, indigo and saffron, is not unsightly among green trees and above green turf. What then,—a treeless, turfless corner, crouching behind a high board fence, where empty barrels and boxes, old hen coops, coal sifters, last year's bean poles, broken wheelbarrows, worn-out perambulators, can be stored? These things are only valuable for kindling wood, and belong in the basement, the fuel room or the barn. Is it a place to empty the wash tub, and throw the tea and coffee grounds? The sewer is the place for that. If the street has no sewer or drain, the people who control it are heathen, civically speaking, and those who live on it might as well live in the Feejee Islands, so far as certain essential means of grace are concerned; for any street in a city or village, crowded with residences and without sewer and aqueduct, is a barbarous street, not fit for the abode of civilized human beings. Its general influence upon society at large is towards heathenism. Streets in villages or cities may properly be called "crowded" with residences unless the lot belonging to each house is of sufficient size to contain a well and a cesspool at least 200 feet apart, and from every other well and cesspool, with enough arable land to consume all the sewage of the house and barn, and to supply the fruit and vegetables for the family, hay and grass enough for the cow and horse. With only less magnificent distances than these between neighbors, wholesome living is not possible without the aid of aqueducts and sewers, and of scavengers as patient and skillful as those employed by Nature herself. Is it a place to which the sweepings of floors may be consigned? These should be sent up into the sky by way of the kitchen stove and the kitchen chimney. Or for the crumbs that fall from rich men's tables, still more from the tables of poor men? These ask but a simple covered bucket to become not merely inoffensive, but a source of profit. The same is true of ashes that fall from grates.

There is in fact no earthly excuse for the conventional back yard. Beyond a doubt it is an expensive luxury, costing those who indulge in it more actual labor—not to mention discomfort, disorder and disease—than would be required to keep the entire circuit of the house beautiful and clean.

But their chief ugliness,—the reason why I give them so conspicuous a place in our out-of-door surroundings,—is the impossibility of escaping from them, whatever we may do, upon our own premises. Whether we like it or not we must, in sheer self-defense, be our brothers' keepers. Owing for a lodge in some vast wilderness will not answer, we must own it, and live in it, or we can have no assurance that our nearest neighbor will not build his stable, plant his onions, empty his drains and feed his chickens under our dining-room windows.

We may polish up the handle of our own front door, keep our own little patch of lawn and the narrow borders along the sidewalk across our twenty-five feet of frontage in perfect order, but if the next lot happens to be a sand bank or a mud hole waiting for a purchaser to improve it, and, in the present condition of the real estate market, likely to wait till we leave our earthly tabernacles, how miserably ineffectual are the results of our own labor. Not wholly lost—indeed, nothing good is ever lost—but enormously discounted,—marred, as a strain of music is marred by the harsh, discordant note out of time and out of tune.—*The Builder.*

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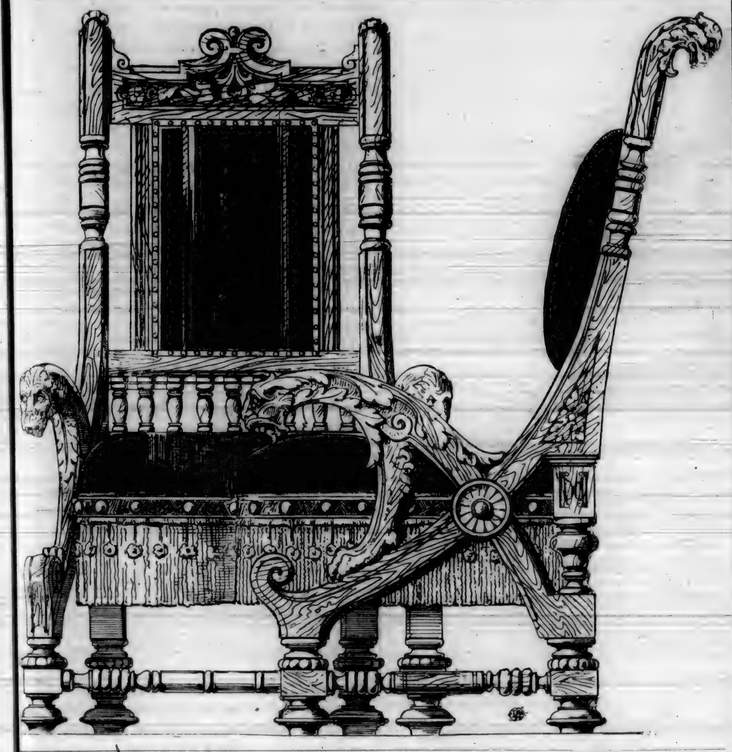

Back Yards.

[From a lecture by E. C. Gardner.]

NATURE does not ask her visitors to shut their eyes and stop their ears until they stand before her front door. From whichever side we approach she is always gracious and cordial. We put on a bold front of paint, varnish, plate glass, marble steps, gilded bird cages, scarlet geraniums, peg-top evergreens standing on their heads, and rectangular patches of shaven lawn; while our back yards, supposed to be hidden from the public gaze, are full of dead men's bones, empty fruit cans, broken bottles, old board fences, sink drains, waste paper, worn-out overshoes, cabbage stumps, and all uncleanness. This back yard iniquity is an evil under the sun as old, at least, as the Valley of Hinnon, behind Jerusalem. Perhaps the architects and builders began it by treating the rear of the house as if it had no rights that white folks were bound to respect; and assuming that since it is to be seen by no one but the owner and his family, it may be as bald, bare, uninteresting and poverty stricken in appearance as possible. Indeed, the more bald, disjointed and penurious the back side, the more gorgeous and extravagant may be the front. We find, now and then, an isolated dwelling occupying such a position that the need of a pleasant appearance from all points of the compass has evidently been admitted. But, as a matter of fact, houses that are entirely surrounded by others, whatever their relative position may be, are the very ones that have no right to the abomination of desolation known as a back yard.

There is no more groundless delusion than this: that such a skeleton closet is a necessary attachment to a well-organized household. Is it a garden to walk in, in the cool of the day? This needs no concealment other than simple shrubbery, and vine-covered arbors will supply. A croquet ground? This surely is not to be hidden. A "clothes yard?" The weekly display of white linen, with occasional gleams of scarlet, indigo and saffron, is not unsightly among green trees and above green turf. What then,—a treeless, turfless corner, crouching behind a high board fence, where empty barrels and boxes, old hen coops, coal sifters, last year's bean poles, broken wheelbarrows, worn-out perambulators, can be stored? These things are only valuable for kindling wood, and belong in the basement, the fuel room or the barn. Is it a place to empty the wash tub, and throw the tea and coffee grounds? The sewer is the place for that. If the street has no sewer or drain, the people who control it are heathen, civically speaking, and those who live on it might as well live in the Feejee Islands, so far as certain essential means of grace are concerned; for any street in a city or village, crowded with residences and without sewer and aqueduct, is a barbarous street, not fit for the abode of civilized human beings. Its general influence upon society at large is towards heathenism. Streets in villages or cities may properly be called "crowded" with residences unless the lot belonging to each house is of sufficient size to contain a well and a cesspool at least 200 feet apart, and from every other well and cesspool, with enough arable land to consume all the sewage of the house and barn, and to supply the fruit and vegetables for the family, hay and grass enough for the cow and horse. With only less magnificent distances than these between neighbors, wholesome living is not possible without the aid of aqueducts and sewers, and of scavengers as patient and skillful as those employed by Nature herself. Is it a place to which the sweepings of floors may be consigned? These should be sent up into the sky by way of the kitchen stove and the kitchen chimney. Or for the crumbs that fall from rich men's tables, still more from the tables of poor men? These ask but a simple covered bucket to become not merely inoffensive, but a source of profit. The same is true of ashes that fall from grates.

There is in fact no earthly excuse for the conventional back yard. Beyond a doubt it is an expensive luxury, costing those who indulge in it more actual labor—not to mention discomfort, disorder and disease—than would be required to keep the entire circuit of the house beautiful and clean.

But their chief ugliness,—the reason why I give them so conspicuous a place in our out-of-door surroundings,—is the impossibility of escaping from them, whatever we may do, upon our own premises. Whether we like it or not we must, in sheer self-defense, be our brothers' keepers. Owing for a lodge in some vast wilderness will not answer, we must own it, and live in it, or we can have no assurance that our nearest neighbor will not build his stable, plant his onions, empty his drains and feed his chickens under our dining-room windows.

We may polish up the handle of our own front door, keep our own little patch of lawn and the narrow borders along the sidewalk across our twenty-five feet of frontage in perfect order, but if the next lot happens to be a sand bank or a mud hole waiting for a purchaser to improve it, and, in the present condition of the real estate market, likely to wait till we leave our earthly tabernacles, how miserably ineffectual are the results of our own labor. Not wholly lost—indeed, nothing good is ever lost—but enormously discounted,—marred, as a strain of music is marred by the harsh, discordant note out of time and out of tune.—*The Builder.*

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Hot Water Circulation.

HEAT is diffused through water in a very different manner to what it is through solid substances. When the heat is applied to the bottom of a boiler or other vessel containing water, the first effect is to expand the nearest layer of water to the fire. The first, by reason of its heat, makes this layer of water specifically lighter than the colder water which may be by the sides, and especially that above, and these layers being lighter than the cold above, it allows the colder water to descend, when the hot water naturally rises or floats upon the molecules of the colder or denser water which surrounds the hot; then the cold water from above, by reason of its extra density, immediately sinks to the bottom of the boiler, when it again becomes heated and again lighter in its turn. These succeeding fresh layers of heated water will continually carry the heat from the bottom of the boiler to the highest point of the circulating-tank, which heat, if the pipes and tanks be not too large, is finally and gradually diffused through the whole of the water within such pipes and tanks.

It would appear (from the preceding facts) plain that the colder the water the heavier it will be, while the lighter and warmer particles will rise to the surface; but even in this there is a limit, which can only go down to 40° F., and from this point down to 32° F., when the molecules of water undergo a very remarkable change. Between the above degrees there is no contraction or expansion; therefore it, bulk for bulk, does not become heavier or lighter; but we are surprised to find its bulk increase when the degree of heat is below 32° F., when it crystallizes into ice, and this expansion goes on in strict accordance to each degree of cold below the 32°; hence the reason why leaden and other pipes burst in times of frost. Of course my readers have seen ice floating on the surface of water, which will prove the above assertions in the most conclusive manner.

From the above it is plain that the circulation of hot water is brought about owing to the difference in the weight of the water at different points, caused simply by the expansion and contraction of the water itself; therefore, if the source of heat be permanent, the particles are rapidly brought into action, and the particles in a vertical tube soon become heated, and by their expansion must exert a pressure on all parts of the pipes, the branches included. Now this, together with the levity of the water in the boiler, establishes a current, when the cold water from the coils, branches, etc., commences to flow in the direction of the boiler, and thus supplying the heavy or colder water continually, which, of course, takes the place of the lighter particles, known as hot water. To find the force with which the colder water runs toward the boiler, you must know the specific gravities of the water in the flow and return pipes, the flow being the ascending and the return the descending; the difference between them will be the motive power or the effective pressure. You can arrive at this point by ascertaining the temperature of the water in the return-pipe and boiler, or flow-pipe. If the difference in heat is only a few degrees, of course the difference in the speed of circulation of the water will be accordingly; say it is only 4° or 5°, which is very small, but quite sufficient in a well-arranged system to maintain constant circulation. Let us assume that we have 8° of heat in our boiler, the return-pipe is standing at 180° and the flow to be 188°. Let the top of the flow-pipe be, say 18° above the top of return; the difference in weight will be about ⅛ ounce on the square inch, and this will be the amount of motive power obtained for the circulation, no matter what may be the length of pipes attached to the apparatus; and should there be, say 50 yards of 4-inch pipes, which will contain 80 gallons of water, with a 15-gallon boiler, you will then have 95 gallons, or 950 pounds weight, kept in continual motion by the 8° of heat, or ⅛ ounce pressure. Of course the size of pipes will make a wide difference in the motive power, which increases with the size of the pipes; thus, in a 4-inch pipe you will get four times as much as in a 2-inch, and so on; but, as the resistance increases equally with the power, the actual working effect is precisely the same in all sized pipes.

Again, the motive power can be increased by allowing the water to cool down before it gets back to the boiler, either by increasing the height of the flow and return pipes, or by doubling the difference of the temperature between flow and return; or, of course, an extra power can be obtained by doubling the difference of the temperature between the return and flow pipes, when the same increase of power is obtained as by the doubling of the vertical heights; or by trebling the vertical height of the flow and return pipes, the same effect is produced as by trebling the difference in the temperature of the water.

A difference in the motive power is also made by diminishing the diameter of the pipe in such a manner that a longer amount of surface will be exposed, and in proportion to the amount of water within, this, of course, allows more cooling surface, and consequently the return-pipes can give off more heat in a given time, thus making the return-water denser, and consequently quicker in action. Of course, when you do this you have more friction, which will be readily understood from the following:—

It is certain that the sides of the pipes greatly retard the flow of water; therefore a considerable deduction must be made, in some cases to the enormous extent of 80 per cent. In small pipes there is a greater amount of friction than in larger ones, owing to the relative amount of surfaces; besides this, small pipes cool quicker than larger ones, and thus the velocity is increased, as also is the friction, so that, supposing that we have a 4-inch pipe, the amount of friction is, say one; in a 2-inch pipe there is twice as much, and in a 1-inch four times as much as in a 4-inch; and you should also know that by increasing the velocity, so in proportion will be the friction, nearly as the square of the velocity. It should also be known that in all hot-water apparatus the speed of circulation varies according to circumstances; therefore it is difficult to calculate. One thing is certain—that the velocity in all hot water is quickest in their centers.—*Sel.*

AN architectural novelty in New York City is the duplex apartment house. Its peculiarity consists in having twice as many stories in front, so far as the arrangments of the different flats is concerned, as it has at the back. This device gives very high ceilings for the parlors and dining-rooms, and economizes space by means of low ones for the kitchen and sleeping-rooms.

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N. D. Goodell.

SACRAMENTO'S PIONEER ARCHITECT.

MR. GOODELL was born on the eighteenth day of April, 1814, in the little town of Belchertown, Mass.; was brought up on a farm as a farmer till he was 19 years old, at which time he went to an adjoining town (Amherst) to learn the carpenter and joiner's trade with a Mr. Howland, where he served for one year, for $35.00 and board. After the expiration of his time he went to Springfield, where he worked another year for a contractor by the name of Wright, after which he went into business for himself in Belchertown, his native place, and met with fair success, erecting some of the best buildings in the place, one of which being the town hall. About this time Mr. Goodell took unto himself a wife. Soon after he was married he built for himself one of the finest residences in the town, after which he had many calls not only in town, but from the adjoining towns to erect buildings and draw plans, more particularly from Ware Village. At this time it became necessary not only to work, but to study the *art* of building; consequently he purchased a number of architectural works and drawing instruments, and by working daytime at his trade, and studying architecture and draughting every evening, he was soon enabled to make his own drawings, also those for other parties who needed them. He had a number of calls from Ware Village; in fact he had so many from that place, he finally moved there, where he built many of the best residences in the place. Before he had been there two years, the agent of the largest cotton manufacturing establishments in that part of the State came to Mr. Goodell to inquire his price by the year to be the general manager, architect and superintendent of all their buildings, which would consist of two or three new factories, and one or two hundred new houses, etc.; the bargain was soon made, and the young man remained with the company about five years. At this time the California gold fever broke out, when Mr. Goodell made up his mind to go to California. He formed a company of twelve young men and had the honor of being elected their president. They left New York on the 29th of March, 1849, in the brig *Everet* for Panama, arriving at that place on the 14th of April, where they stayed nearly a month; finally they secured passage on a small brig by the name of *Copiapo* for San Francisco, Cal., where they arrived on the 14th of August, 1849. They went ashore and landed at the foot of Jackson on Montgomery Street. At that time there was scarcely a house in San Francisco, except a few adobes. The next day the party went up the river in a little schooner to Sacramento, and they camped in that place under large trees between the river and where the railroad depot now stands (the ground at that point at that time was some twenty feet lower than at present, 1884). There was not a single wooden building in the town at that time, there being no lumber to build with; the consequence was the people set up poles or sticks and tacked any kind of cloth to them. As usual with all the first comers to this coast, Mr. Goodell had the "gold fever," and we find him for a while prospecting around Mormon Island, Hangtown and other places, without, however, meeting with much success. He finally made up his mind to return to Sacramento and work at his old trade of carpentering, arriving in Sacramento March 29, 1850. There he found business lively, buildings going up in all directions, consequently he had no difficulty in finding carpenter work to do at sixteen dollars a day. No one wanted an architect (as such) in those days; every one built cheaply as possible. Those were the flush times of California. Thus Mr. Goodell worked along from year to year in the building line and was very successful in that business; but at last an opportunity came (in 1861 or '62), when he could practice at his former profession of architecture. Mr. H. Wachhorst, desiring to erect a building and finish the interior for a jewelry store, selected Mr. Goodell as his architect. Upon the completion of the building, such was the satisfaction given by Mr. Goodell's design, that numerous orders were given to him to prepare plans for buildings, the first being James Carrolan (10 and H.) then John Carroll, Frank Ebner, Theodore Millican, General Redington, Albert Gallatin and Charles Scudder, all of which gave instructions for plans of houses, prices varying from $14,000 to $40,000; then plans were prepared for the grammar school building, Sixteenth and J Streets, which cost $60,000. Mr. Goodell was also the architect of the Sacramento County Hospital, one of the finest hospitals in the State; his plan was adopted as being the best of ten, which the supervisors had to select from. Under the direction and superintendence of Mr. Goodell, the pioneer architect of Sacramento, some two hundred of the best dwellings in the city of Sacramento, besides hundreds of smaller and cheaper ones, have been built. In the last year he has been the architect of four of the best stores and business places in the city, viz.: Waterhouse & Lester's Warehouse, J Street between Seventh and Eighth, the Grangers' hall at Tenth and K Streets, Mrs. M. E. Gregory's building on Second Street between I and J, at a cost of $20,000 each; also Green & Trainor's Warehouse on Second Street between I and J, at a cost of $12,000, besides some thirty other buildings of different kinds.

N. D. GOODELL.

Lime in Bricks.

MANY bricks become spoiled when they are made from clay which contains lime in such quantity, that, after burning, the lime becomes hydrated sooner or later, and thus renders the brick useless. This may be prevented by placing the bricks, as soon as they are removed from the oven, when they are still warm, in a hole or tank, piled on each other, and throwing water over them, so as to cover them entirely with water. A few hours afterwards, when bubbles no longer come to the surface, the bricks can be taken out of the water. By this operation the slaking of the lime, which takes place in bricks not thus treated, by the slow absorption of the humidity of the air is entirely prevented, as the lime is greatly modified by the said operation.—*Clay.*

The Upper Story.

"LET him that is on the house top not come down," and let him that is groping in the dampness and the gloom of basements, back alleys, narrow, shaded streets and courts, dismal second story fronts that look out upon the blank, brown stone walls across the way, the more dreary rear parlors that overhang the back yards of the adjoining streets, or, dreariest of all, the small rooms that cluster around the air shaft;—let him climb or be carried to the vantage ground of the roof. If he lives in a crowded city, if it is summer time, and if he is wise he will stay there as long as his engagements will permit.

The marked tendency to build skyward in our large cities is easily accounted for by the extremely high value of floor room, whether it is twenty feet under ground or one hundred feet above the surface, but the throwing away of the uppermost floor of all, and in many cases the most delightful of all, is one of the peculiar extravagances of modern civilization for which no rational excuse can be given.

The actual cost of preparing a roof that should serve its purpose as a roof perfectly, and at the same time be permanently available as a floor, would be trifling as compared to its value in places where the close crowding of buildings implies great value to horizontal space. There are a variety of uses that could be made of such an open plateau, its chief value in cold climates being, of course, in the summer, but then it would be invaluable both in the residence and in the business portions of large cities. The hanging gardens of Babylon were not a circumstance to what the roofs of New York might be made if they were treated with the skill and economy that ought to characterize a center of modern civilization. Not that it would be expedient to make them actual gardens for fruit, flowers and trees of all sizes, but they could be made very beautiful, and far more pleasant and comfortable out-of-door resorts than the small, close yards and enclosed areas upon the ground. It would not be necessary that such roofs should be made of iron and masonry. A wooden structure properly protected by asphaltum would be secure from decay even if covered by a sufficient depth of soil to sustain a substantial turf—provided that were desirable. Still further advantage and wider opportunities could be secured by the co-operation of adjacent owners. Even in the country where ground room is of little value the advantage of the upper level would almost justify the architectural deformity of a flat roof, provided it were supplied with all the modern conveniences, so guarded that the children could not fall off if they tried, and timid people need not be afraid of jumping overboard. A place where the boys could "camp out" on warm summer nights, and where a hammock swung beneath an awning would be the breeziest and coolest of lounging places. The hot, slippery, rattling, shining, tin roof and the impassable gravel commonly found on flat roofs give no intimation of the pleasant possibilities of the situation. If the "deck" of "French roofed" houses were devoted to such purposes of use and enjoyment there would be a reasonable apology for the usual ugliness. The climbing of stairs would keep the invalid and the indolent from improving these elevated privileges, but where elevators are in use there is no excuse for the desertion of the house top. —*The Builder.*

For Painters.

EXPERIENCE shows that the work in the paint shop is much better handled by working the men in teams as much as possible. It pushes the work along faster, with better results than when the workman is left to himself with his own individual piece of work.

Care must be taken in selecting men for teams, that there must be harmony with each other and a mutual desire to see the work go through right. The selection of partners should never be left to the men themselves, or put-up jobs may be the result, sooner or later. It is quite necessary that one man on each team should be a pusher; this method will bring out to full play the working force of each. If the right men are thus brought together, there will be a willingness on the part of each to draw the others' attention to any fault in the work, and work when finished will be more free from defects. The best workmen never fail to see something that if seen sooner might have been made better.—*Painters Journal.*

Sunlit Rooms.

NO ARTICLES of furniture should be put in a room that will not stand sunlight, for every room in a dwelling should have the windows so arranged that some time during the day a flood of sunlight will force itself into the apartment. The importance of admitting the light of the sun freely to all parts of our dwellings *cannot* be too highly estimated. Indeed, perfect health is nearly as much dependent on pure sunlight as it is on pure air. Sunlight should never be excluded except when so bright as to be uncomfortable to the eyes. And daily walks should be taken in bright sunshine. A sun-bath is of more importance in preserving a healthful condition of the body than is generally understood. A sun-bath costs nothing, and that is a misfortune, for people are deluded with the idea that only those things which cost money can be good or useful. But remember that pure water, fresh air, and sunlit homes kept free from dampness, will secure you from many heavy bills of doctors, and I give you health and vigor which no money can procure. It is a well-established fact that the people who live much in the sun are usually stronger and more healthy than those whose occupation deprive them of sunlight. And certainly there is nothing strange in the result, since the same law applies with equal force to nearly every animate thing in nature. It is quite easy to arrange an isolated dwelling so that every room may be filled with sunlight some time in the day, and it is possible that many town houses could be so built as to admit more light than they now receive. —*Carpentry and Building.*

New Stone Saw.

A NEW sort of saw for cutting stone is described in *La Semaine des Constructeurs*, which seems to have advantages over those commonly in use, and is easily and cheaply made and operated. In place of the ordinary long steel blades, supplied with sand to enable them to grind their way into the stone, the new machine presents only a slender endless cord, composed of three steel wires twisted together, which is stretched over pulleys in such a way as to bring the lower portion horizontally over the stone to be cut. The frame carrying the pulleys is movable, so that the cord can be brought into contact with the stone, or lifted away from it, at pleasure, and the whole is kept in rapid motion, while water falling in drops from a reservoir above serves to moisten the stone. The three wires which form the saw differ from the ordinary kind in being square in section, and by twisting into a cord they are so turned as to present a succession of oblique cutting edges, which act, when set in motion, in nearly the same way as so many small chisels, while the rapidity with which the blows follow each other probably adds to the effect.

Utilizing Ashes.

A PATENT has lately been granted for the use of ashes in making mortar. It has been found that the fine portion of domestic ashes is capable of being converted with a small proportion of lime, into a mortar having, when a month old, a tensile strength of from four to five times that of common sand and lime mortar, or about 80 pounds per square inch. Sand-mortar a month old has a tensile strength of 20 pounds. Ashes and lime, mixed as beton, gives a tensile strength of 140 pounds and a crushing strength of over 1100 pounds per square inch. It will thus be seen that, by utilizing the ashes for mortar, a large part of the expense of removal could be saved, together with the whole cost of procuring sand for the purpose, and, at the same time, a very superior article of mortar be produced. In consequence of the small quantity of lime required (10 per cent.), it would be necessary to mix the mortar by machinery at a mill and deliver it ready for use. This practice prevails to a great extent in European cities on account of the superiority of milled over hand-made mortar. Ash-mortar has the additional advantages of resisting the action of water as soon as it has set (in from two to three days), and also the combined action of fire and water, the quantity of lime being so small and the chemical union with the ash so complete that the application of heat does not produce free oxide of lime, as in the case of sand-mortar, and consequently does not swell when water is applied to the heated mortar. The ash-mortar forms when set, a silicate of lime and alumina, and hardens uniformly throughout, like cement; while sand-mortar, when set, is but an imperfect carbonate of lime, the sand furnishing the nucleus around which the carbonate forms.—*Carpenter and Builder.*

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Kitchen Cesspools are Dangerous Nuisances.

A CESSPOOL is in old English a "sosspool"—that is, a "soakpool"—a place into which liquid slops and offscourings may be run, and from which, as usually constructed, it is hoped that the liquid portion will soak or drain away, thus sparing the proprietor the trouble of emptying it. The term is most generally applied, at present, to receptacles or cisterns constructed underground in the vicinity of the house, to receive the kitchen-slops and sink wastes, as distinguished from privy-vaults or receptacles intended only, or chiefly, for the reception of excreta, but it is also used by some writers as including the latter, and, as a matter of fact, a large number of cesspools receive both kinds of waste. The cesspools to which we especially refer at present are those into which excreta are not allowed to enter, but which are devoted chiefly, if not exclusively, to the reception of kitchen-waste. From time to time inquiries are received by *The Sanitary Engineer* which indicate that the writers suppose that the only dangers in house-drainage are connected with the disposal of excreta, with privy-vaults or water-closet wastes; and that if these are properly arranged the sink-slops need little attention. This is a mistaken opinion, and it is time that people learned to recognize it as such. No doubt it is true that water-closet waste is more dangerous to health than kitchen-slops; it is more likely to contain specific contagia, and is more offensive, but considered merely as furnishing material in which may be developed dangerous organisms, as decaying organic matter or filth, there is not so much difference between these two forms of waste products after all, nor is a cesspool less offensive than a privy-vault. Neither of them are satisfactory appendages to a house, but where their employment becomes a necessity the same precautions as to location, construction, etc., should be applied to one as to the other. The essential points are to prevent leakage by making them water-tight, to provide a free outlet for the gases which will be generated in them, and to locate this outlet at such a height that there shall be no danger that the gases escaping from it shall blow into the house. Such cesspools should be small, and emptied regularly and frequently.

The most unwise disposition which can be made of a cesspool is to connect the upper part of it with a sewer. When a street is sewered, the cesspools on that street should be cleaned out and filled up with fresh, clean earth and the house-drainage be connected directly with the sewer. To retain the cesspool under such circumstances is to insure that all the house-waste shall be in a putrefying condition before it enters the sewer, and hence make it impossible to keep the air in the sewer inoffensive—*The Sanitary Engineer.*

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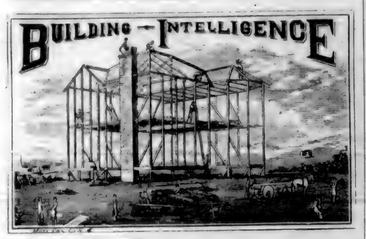

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Rustic, No. 1, 1x8 "	37 50
" No. 1, 1x10 "	40 00
" No. 2 "	35 00
" Under 10 feet "	35 00
T. & G., 1¼x4 and 1¼x6 "	40 00
" 6 in. 12 ft. and over "	37 50
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
" " No. 2 "	30 00
T. & G., Beaded, 12 feet and over "	40 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
Half-inch Surface "	32 50
Pickets, fancy "	30 00
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	27 50
Shingles per M	2 15
Battens, ⅝ inch, lineal feet "	1c

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6 d " " " " "	.50
4 d and 5 d " " " "	.75
3 d	1.50
10 d to 20 d Brad, h'd' "	1.50
8 d " " " "	1.50
6 d " " " "	1.50
4 d and 5 d " " " "	1.75

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A Healthful State of Building Activities.

NOTWITHSTANDING the slight falling off in the number and value of contracts for buildings reported this month, over the preceding months of the year, they are larger in number and amount than for the corresponding months of 1883, thus showing that the tide of substantial prosperity is still on the flow in San Francisco. Our list of improvements, as given in *Building Intelligence*, embraces in number

83 BUILDINGS OF THE VALUE OF $635,411.

The movements in real estate, as reported in the daily journals, that sales are light, would indicate a falling off in property interests. But when the high prices asked for real estate, the almost boom in building during the past three years, the damaging rains late in the season, the disturbance in financial circles by failures, shrinkages of values, etc., are considered, the present looks well, and the future encouraging.

The considerable decline in cost of lumber, bricks, nails, and other building materials, should, and we believe will, stimulate to enlarge activities during the remaining months of the year.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting was held on Friday evening, August 1, 1884.

President John Wright in the chair. F. Marion Wells was unanimously elected an honorary member of the Chapter.

A lengthy communication, signed by nearly all the members of the craft residing in San Francisco, was received from the Metal Roofers. In it, they called attention to the fact that metal roofing is a distinctive branch of trade, and should not be done in shops in which the proprietor conducts the various industries of plumbing, gas fitting and tinning, combined with metal roofing. The petition represented that the parties referred to do not have enough work at any one branch of business, and so have to keep on men who can do a little at anything, and from necessity they must be inferior workmen. The remedy proposed in the document, is to recognize metal roofing as a distinct branch of the trade, and to allow only metal roofers to figure on their branch of work.

Communications were also received from the Master Plumbers and Painters' Association, calling the attention of the Chapter to a clause in their by-laws, by which their members are prohibited from doing work for other than owners when the amount exceeds $100 in value.

Also communication received from J. Browell in reference to patent chimneys. All the above were ordered placed on file.

The amendment to the by-laws was unanimously adopted, by which the number of Trustees was increased from three to five.

The following preamble and resolution was offered by J. E. Wolfe, who explained that its intent was to set at rest any doubts that may be entertained upon the subject.

WHEREAS, Some diversity of views and opinions are entertained by members of this Chapter in reference to the eligibility to membership of one member of a firm of architects, unless the other member of said firm seek membership, therefore be it

RESOLVED, as the sense of this Chapter, that individual members of co-partnership firms of architects, upon election to membership in this Chapter shall be entitled to affiliation without regard to the wishes or action of the other member or members of said firm in the same direction.

After a short debate, the resolution was unanimously adopted.

Nomination of officers for the ensuing term being in order, the following named gentlemen were proposed.

President: Augustus Laver, William Curlett.

Vice-President: T. J. Welsh, A. Pissis, and H. C. Macy.

Secretary: B. E Henriksen, G. H. Wolfe.

Treasurer: J. M. Curtis.

Trustees: J. E. Wolfe, A. A. Bennett, B. E. Henriksen, W. Curlett, W. G. Matthews, G. H. Sanders, T. J. Welsh, A. Laver.

The resignation of W. G. Copeland was read and accepted.

The following resolution was offered:—

That a committee of five be appointed to take into consideration the Fire Ordinances of San Francisco, and report at next meeting.

A long debate ensued, which was participated in by nearly every member present. The subject was dropped until a report was received from the Committee.

The president appointed the following named gentlemen to act as such committee: Messrs. J. E. Wolfe, J. M. Curtis, Wm. Curlett, T. J. Welsh, B. E. Henriksen. Meeting adjourned.

IMPORTANT NOTICE.

The next meeting of the Chapter will be held on Friday evening, September 5, 1884. It is earnestly hoped that every member will be present, as business of more than usual importance will be brought before the meeting.

The Fire Ordinances of the City of San Francisco.

MUNICIPAL laws and regulations should in themselves be as nearly perfect, fair, and equitable as human intelligence, experience, and judgment can make them; and being so, should be cheerfully accepted and followed by those whose interests are covered or affected by them; and in all cases of violation, their enforcement should be positive, equal, and without favor or partiality in any direction, or to any person or persons whomsoever. But neither of these propositions apply in the case of the present and more recently passed code of fire ordinances in San Francisco. Although in their provisions they are very similar, and in some respects the same, as those of Chicago and other Eastern cities, they do not provide a code of regulations so nearly right and applicable for San Francisco as to meet with a reasonable degree of favor from those who are required to be governed by them; and the fact that *very many* of their requirements are so far unnecessary and impracticable that they are *never* observed by architects, nor sought to be enforced by the authorities—while in some regards, the limits and restrictions are unreasonable, unnecessary, and disproportionate, and the privileges enjoyed by some, more than is permitted to other owners and architects, naturally give rise to loud complainings, and suggest at least the wisdom and necessity of revision.

In view of the facts hinted at, the San Francisco Chapter of Architects have appointed a committee of five, consisting of James E. Wolfe, J. M. Curtis, Wm. Curlett, T. J. Welsh, and B. E. Henriksen to consider the ordinances as affecting and relating to the erection and safety of buildings, and report thereon to the Chapter, the object of which is simply to review and discuss all matters in issue and interest, and submit to the proper authorities, for their consideration and action, such recommendations as may be finally agreed upon and advised by the Chapter.

The Chapter and its committee recognize the fact that the present code of fire ordinances is the result of much perplexing attention, study, and personal, mental, and physical labors; and no reflection is deserved by those originating and recommending the present laws, as whatever defects there may be have been innocently incorporated.

In behalf of the Committee and Chapter, we are authorized to state that *all architects*, whether members of the Chapter or not, are earnestly requested to forward to either member of the committee, such pertinent points of information, facts, and suggestions as will aid the committee in perfecting their work. And as the object of the Chapter in the appointment of the committee is to secure the best possible results, *all members of the profession*, together with the fire wardens and representatives of the Board of Underwriters, will be invited to take part in the final action upon the report of the committee.

Not Degenerating—Times Have Changed.

EDITOR *Building Trade Journal:* "Ransom," in his communication in your last issue, asks the question, "Is carpenter work degenerating?" and then to some extent answers it himself, but fails to state the cause for the facts he alleges. He also objects to "the saw and hatchet brigade who lack the knowledge of good mechanics." The truth is that in the present day it is quicker and cheaper to get mill work in a city of any considerable size than to make the same work by hand as in old times. No carpenter in a city now thinks of lugging about a two or three hundred pound chest of tools, consisting only of moulding, sash, and match planes, as many in the country did in former years, in addition to the ordinary chest of tools which came into everyday use. Nowadays fine office and store fixtures and much other work comes from the mill in such shape that a couple of ordinarily clever workmen with only a shoulder box full of tools between them will put it up more rapidly and fully as well as did the thoroughly trained carpenters of old times after making the fixtures by hand. The proportionate number of carpenters who are "good wherever you put them," is decreasing from this and the fact that when a man finds himself particularly fast and good at any particular branch of the business, he follows that in preference to any other and finds it more profitable to do so. A saw and hatchet brigade with very little experience and a natural aptitude for handling these useful articles can lay as much flooring in a day as the same number of skilled carpenters who have served an apprenticeship of years, and if the skilled workmen have grown gray in the service they will probably find the others outworking them. A builder who pays a skilled workman $3.00 a day for such work cannot compete with another who gets as much or more work from each man and employs men who know nothing but this at $2.25 to $2.75 per day. It is true that in this case the last-mentioned builder must keep a few skillful men to do the finer work, but in a city where the buildings are mostly brick or stone, the work on them, such as laying joists and flooring, is hardly deserving of the name of carpenter work. The builders do not want to remedy, as "Ransom" expresses it, "this great trouble," nor have they any object in keeping one or two apprentices about their shops when at any time they want them an advertisement will bring them a hundred men. When the supply of carpenters so greatly exceeds the demand that the wages of good workmen are actually less than those of hod carriers, I cannot see the advantages of apprenticing a boy to the trade. It seems to me that "Ransom's" idea is that, for the advantage of builders, apprentices should work for years to acquire the necessary skill, accumulate several hundred dollars' worth of tools and then hunt for work a considerable part of the time without finding it. Many of the things they learned during their apprenticeship, within five years, would be entirely useless, from the fact that improved machinery would do better and cheaper work than they could. Builders and carpenters know this, and the carpenters who have apprentices, too often have to put them to making ironing boards and shining boxes during dull seasons. What is more necessary than more apprentices, is that men claiming to be skilled workmen spend less time in talking of how twenty years ago they worked for three months getting out the sash for Col. Jones' house in Bungtown, "all made by hand, sir," and apply their leisure to learning to use advantageously tools and appliances unknown when Col. Jones' house was put up in Bungtown.

H. G. C.

DON'T DELAY REPAIRS.—We once worked in a shop where a specialty was made of builders' finish, brackets, mouldings, fancy finish, etc. About eight hands were employed in the room we worked in. The machinery consisted of railroad combination, band and jig saws, panel and buzz planer, a boring machine and a two-spindle moulder. The two planers and the jig saw had loose pulleys which were so badly worn as to necessitate throwing off the belts from the main shaft to the counter every time each machine was used. In that shop each man took an order from the order book, got out his stock, and finished the job, using whichever machines were needed. When it was necessary to use the panel planer we had to climb up on the jig saw table and throw on the belt; when the buzz was needed, the planer must be used to stand on, in order to get at the requisite belt. If the planer was running it must bestopped, thus delaying the man who was running it. One day after getting thoroughly disgusted we "went for" the boss and asked him if he was going to have those pulleys bushed this year. He said he was going to "just as soon as he got time," but he let them run in this way for two whole months. One day we noted the number of times we had to throw on and off those belts. We used the planer 15 times, the buzz 10 and the jig saw 16 times, making 41 times in all. It took about a minute to put on, and another one to throw off a belt, thus taking in all 82 minutes in one day. There were eight of us who had to do the same thing, so it took 656 minutes or about 11 hours to handle those belts—more than one man's time every day. Running this way for 9 weeks would amount at the rate of 40 cents per hour to $212, and our boss could not find time to have the pulleys fixed. We showed the figures to him one day. He scratched his head, took them into the office, and ten minutes afterwards came out, shut down the shop instantly and sent those counters and pulleys to the machine shop. A loose pulley that rattles has not been seen nor heard in that shop since. You may go into every shop in the land and six out of ten will have one or more of these "hand shippers" in operation. How is it in your shop? If the coat fits put it on.—*Cabinetmaker.*

California Redwood; Will it "Shrink," "Warp," and "Crack"?

REDWOOD being a lumber product special to this State, it is gratifying to read favorable notices in Eastern and foreign journals as to its good qualities, when such notices are fairly, if not strictly within the range of exact facts; but when they go beyond this, and state more than is warranted by the actualities of the case, they become misleading and creative of wrong notions and conclusions, and in the long run work an injury not compensated by any temporary good effect produced by overstatements calculated to stimulate a demand on the part of manufacturers in distant places for a wood of the very superior and exceptional character ascribed to the redwoods of the Pacific Coast.

We refer to this matter, owing to the fact that the following statement has been freely circulated in the journals of this country and of Europe, to wit: . . . "*The fact that redwood neither* WARPS, SHRINKS, *nor* CRACKS, *should lead the attention of furniture manufacturers to practically examine into its merits, and if found satisfactory, the distinct branch of business referred to would receive a valuable addition from the forests of California.*"

The foregoing is only qualified correct. If redwood in real fact possesses all the qualities accredited to it by our contemporaries, it would certainly be entitled to most favorable consideration, for, as yet, there has never been a wood found entirely free from the defect of shrinkage, nor can that quality be claimed for the redwood of California, in an absolute degree.

As the result of thirty-three years' practical, personal experience in the use of redwood in connection with house and other constructions, and close observation and practical experiment in furniture and many other things calculated to develop the specialties of redwood, we give the following, which may be relied upon as correct for all practical purposes.

It should be first stated that like all other woods, the product of all trees of the same specie is not of equal grain and quality, the great bulk of redwood being from *good* to *excellent*, with occasional trees yielding brash, hard, springy boards and cuts. Consequently much of that used for general purposes, in the way of scantling, posts, fence boards, for the erection of wood bulk heads, etc., is devoid of all the credits expressed in the extract under notice.

As to "shrinkage," there is a quality of redwood, which, when *properly seasoned*—water seasoning being decidedly advantageous—and thoroughly dried after such seasoning, will equal, if not excel any other lumber known, in the matter of non-shrinkage, while the redwood lumber *generally* used in house construction will shrink, both in width and length. It is a very common thing to see the butt joints in rustic and wall boarding on frame buildings, the sheathing on inside walls, ceilings, etc., shrink open before the completion of the structure, in boards of twelve, fourteen and sixteen feet lengths, all the way from small open joints up to one quarter, and in some cases half an inch. So that all *unqualified* statements made that redwood lumber will not shrink are erroneous. But at the same time we wish it understood that picked redwood lumber, properly treated, has no superiors in a shrinkage point of view.

Will it "crack"? That depends upon the quality, the condition of the lumber, and the position in which it is placed. It being a rather soft, light material, it is far more liable to fracture lengthwise than the generally known lumber used for building purposes in this and other States. But its liability to "crack" is not such as to lessen its value as a building material, both for outside and inside finishes.

As to its "warping," with the exception of a specially hard, brash kind, pieces of which are to be found in almost all promiscuous lots, it is specially free from this defect; and when nailed in place, as on fences, etc., it "stays where it is put."

As a "finishing" lumber, its use has been and is almost universal in California, both for inside and outside work, as it is the cheapest in cost, and more easily worked than any other, and answers all the usual purpose for architraves, wainscoting, and trims and finishes generally, and for door panels; but owing to its greater brittleness, seldom used for the stiles and rails of doors. In the better class of buildings, "hard" and more expensive woods are sometimes used, but seldom to the entire exclusion of redwood.

As a "furniture" material, it has its special qualities. Root and snarly redwood veneers, and some of the wavy, curly pieces will bear comparison for beauty with most of the highest cost hard woods. Much of the very handsome and costly furniture manufactured in this State, have some of the parts of selected California redwood. There is perhaps no wood on earth that will hold glue better. In the manufacture of veneered and other glued joint work, it is recognized as incomparable for its tenacity for holding. It is susceptible of any degree of high polish, and owing to its porous character receives and holds paints well. But while it is good for numerous *tender* uses, it is a poor material for floors and other purposes, where subjected to friction or hard wear and tear.

A NEW process for drying lumber is just now attracting attention. It is said to be the most effectual and economical method ever practised. No kiln is necessary, although where a shop has one it can be utilized to advantage. The process has the great advantage of keeping the surface of the lumber moist during the drying; this holds the pores open, obviates all tendency to cracking and leaves the albumen free to perform its natural functions. In ordinary kiln drying the albumen is injured or destroyed, and the surface dries first, thus sealing the juice inside, to escape eventually through cracks caused by the uneven expansion of the wood. The statements in circulation as to the remarkable cheapness, simplicity and thoroughness of of this new method seem to merit the attention of every builder and wood worker, for it is described as being equally well adapted to large and small shops. Some readers may perhaps be surprised to learn that the process consists in surrounding the wood to be dried with common salt; but those who are acquainted with the peculiar power for extracting moisture which salt possesses will not be at all astonished at this novel and ingenious utilization of this power.

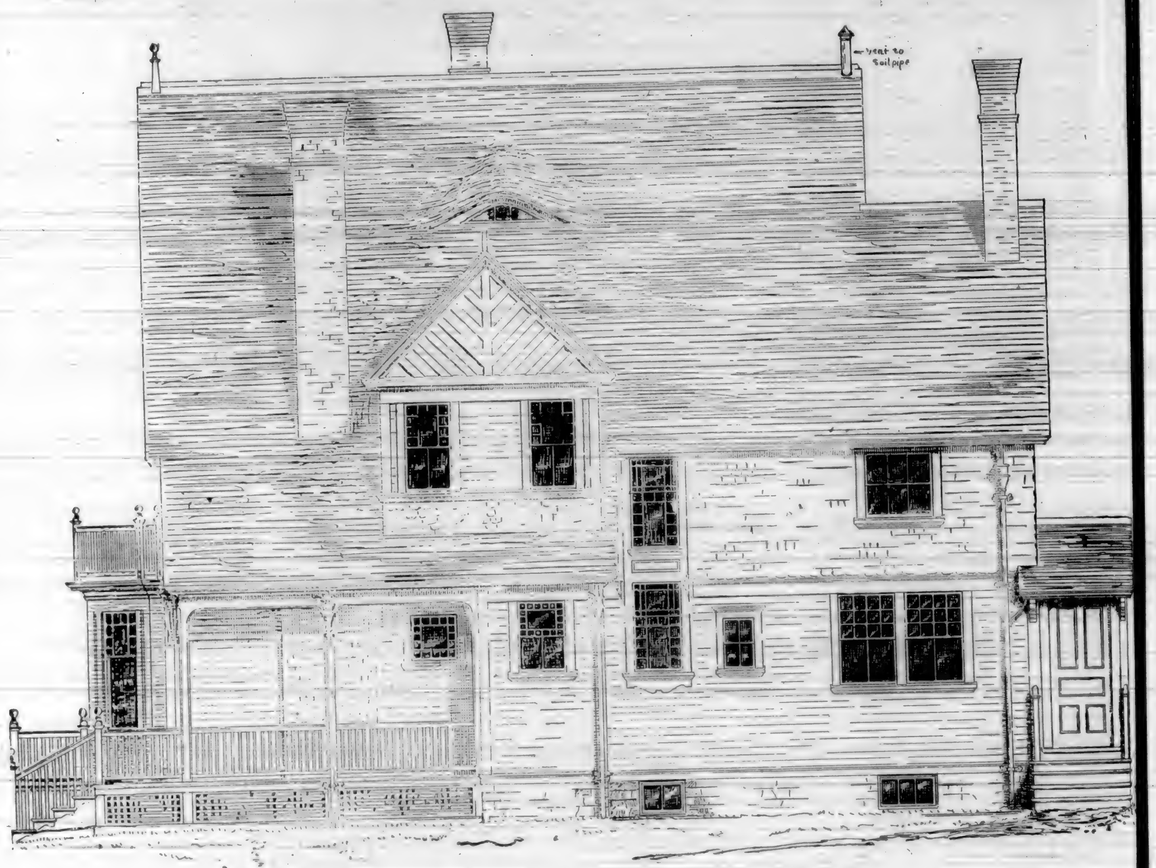
Hand and Machine-made Putty.

How the two kinds are made, and the difference between them, is related by an old painter to the ubiquitous reporter of an American contemporary as follows:—

The best is made of raw linseed oil and whiting, the latter being simply chalk, ground in a mill like flour. It comes out with a fine flint grit in it. Before making putty of it, a few old-fashioned men who believe in making the best of everything, wash the grit out. The fine flour is then dried. If it is not dried perfectly, it takes up more oil than is desirable or profitable. From 500 to 600 pounds—about 15 per cent. by weight of raw oil to 85 per cent. of whiting—are put in a chaser and thoroughly mixed. The chaser is an annular trough, ten feet in diameter. From a vertical shaft in the center two arms extend, on the ends of which are heavy iron wheels that rest in the trough. When the shaft revolves, the wheels chase each other around the trough. When mixed, it is packed in bladders for convenience in handling. The adulteration of putty is effected by mixing marble dust with whiting. It costs about a quarter of a cent a pound, and whiting costs twice that. Paraffine oils, at from 10d. to 1s. a gallon, are used instead of linseed oil at 1s. 6d. The marble dust makes the putty gritty, and the cheap oil makes it sticky. Cheap putty is decidedly cheap. Putty in bulk, wholesale, is worth 8s. 6d. a hundred pounds. The other window glass cements run from 4s. 6d. to 4s. 9d. They are dear at that. They take longer to put on and longer to dry. Putty is neither imported nor exported. A lot was brought over a long time ago, but that was when oil was very high. The whiting comes from England.

A superior article of putty is made, however, by the further addition of white lead in oil, Japan varnish, and a small quantity of turpentine, which makes a hard cement that does not shrink, and when dry can be rubbed down with pumice stone or dusted with sand paper, so smoothly will it cut. Even in the common sorts of putty it is well to use some white lead if a hard putty is desired.

Every mechanic, property owner, material man, etc., should subscribe for the California Architect and Building News. Terms, $[illegible] per annum.



SIDE ELEVATION OF $5,000 COUNTRY DWELLING.—FIRST PREMIUM DESIGN.

Our Competitive Designs.

NUMBER ONE.

THE accompanying design and plans on this and other pages of this issue, are those to which was awarded the first premium by this Journal, in the late competition for plans of a country dwelling to cost about $5,000. The author is Junius H. Morse, of Boston.

The style of architecture presented is essentially different from that generally adopted on this coast. We leave it to our readers to form and express their opinions in regard to the adaptability of the elevations shown, to meet the requirements of different localities.

The plans show very careful study on the part of the author, and credit is due him for the thorough and artistic arrangement of the rooms and the detailing of so many conveniences. In the latter item, the plans excel any which have come under our notice.

It will be noticed that an alternate plan is shown on page 142. By comparing it with plan on page 143 it will be seen that though presenting the same general arrangement, it is of more practical utility, inasmuch as *direct* communication is established between the dining and sitting-rooms, thus obviating the necessity of entering the dining-room by the way of the main hall.

The plans are so plain, that we do not deem an extended notice necessary. The following specifications by the author will sufficiently explain his ideas:—

BOSTON, April 12, 1884.

A memorandum of the kind of materials to be used, and quality of work to be performed in building and completing a country house after plans furnished by "As you like it."

EXCAVATION.

Excavate the cellar four feet deep under whole of the house, the dirt removed to be used in grading around the house. Stack the loam in a separate pile. Excavate for all drains and cesspool.

FOUNDATION.

Cellar wall eight feet (8) high to be built of sound, large, field or ledge stone, well bonded and laid in one-half (½) cement mortar. Face wall on the inside and outside above grade, the joints to be neatly struck on the outside. Furnish footing stones for all piers and chimneys, and build a dry drain around the outside of wall.

BRICKWORK.

Build chimneys of good, hard, burned brick selected for exposed parts, all to be laid in one-half cement mortar; tops to be colored with Venetian red. Flues 8x12in. Use Philadelphia face brick for fire-places; glazed tile hearths in first story, unglazed tile hearths in second story.

FRAME.

Regular braced frame of clear sound seasoned spruce, sills 6x7in.; studs, 2x4in.; posts, 4x6in.; girt, 4x6in.; plate, 4x4in.; girders, 6x8in.; first and second story floor joists, 2x10in.; third story floor joists, 2x9in.; all set, 16in. on centres; rafters 2x8in.; set 20in. on centres.

FRONT ELEVATION OF $5,000 COUNTRY DWELLING.—FIRST PREMIUM DESIGN.

BOARDING.

Use sound seasoned hemlock boards for roof, walls, and under floors. Pine tarred sheathing paper to be put under all shingles, clapboards, and between all floors.

OUTSIDE FINISH.

Outside finish to be first quality seasoned pine. Roof and wall shingles best cedar, sawed fancy cut where shown. Clapboards clear sound spruce, laid four inches to weather. Pine gutters. Zinc conductors with fancy heads. Use lead and zinc flashings around chimneys and exposed places.

GLASS.

Windows glazed with first quality double thick German glass, single thick for all small lights, bevelled French plate for front door. The upper sash of staircase window to be leaded, stained glass.

WINDOW FRAMES AND SASH.

Pine sash stained, 1¾in. thick; 2in. pine sills hard pine pulley stiles, galvanized iron pulleys, iron weights hung with hemp cord. Blinds first quality half roll.

TOP FLOORS.

Hard pine for kitchen, pantry, china closet, and piazza floors. Halls, vestibule, and dining-room, oak borders with spruce centers. Bath-room, cherry. The parlor, sitting-room, chambers, and closets, spruce; all floors to be hand planed after being laid, and no board to be over four inches wide.

MANTELS.

$125 allowed for four mantels and six shelves.

INSIDE FINISH.

The first story bases 8in. high moulded, architraves reeded 4½in. with back band, turned corner blocks, plinth. Second story 7in., base 4in., moulded architrave with plinth. Second story 7in. base., 4in. moulded architrave with plinth and turned corner blocks. Third story and kitchen 6in. chamfered base, plain 4in. architraves with corner blocks. The parlor, sitting-room, and two principal chambers in pine, one coat shellac, two coats lead and oil selected colors. The hall and dining-room in oak. All other rooms in white wood two coats shellac rubbed down in oil. Hall dado 3ft. 6in. high, dining-room dado 3ft. 0in. high, raised panels with flush mouldings.

DOORS.

Outside doors pine 2in. thick. First story five panels 1¾in. thick, whitewood veneered to match the finish of rooms they stand in. Second and third story 1⅜in., five panels; all to be hung on lifting butts.

PLASTER.

Best two coat work on spruce laths, cork floated in hall and vestibule to be painted. A small plaster cornice in parlor, two centres.

PAPERING.

Allow $150 for wall papers and papering.

PAINTING.

Roof shingles two coats lead and oil Indian red, creosote stain for second story shingles warm sepia. First story clapboards three coats of lead and oil, Pompeian red. Trimmings dark bronze olive green, three coats. The painter to glaze all the windows, finish all hard wood, and do all the interior painting.

FURNACE.

The sum of $150 is allowed for a furnace.

HARDWARE.

The contractor to furnish all locks, knobs, butts, screws, nails, hinges, sash fasts, pulls, snaps, hooks and catches; furnish the iron brace for front chimney.

BELLS AND TUBES.

Bell from front door to kitchen, one on side door; foot bell from dining room to kitchen. A speaking tube from second story hall to kitchen.

STAIRS.

Front stairs pine risers and treads, oak rail 6in., newel post 4½in., angle posts 1½in., balusters fancy turned. Attic and back stairs pine.

PLUMBING.

One bath-tub, seat, and bowl in bath-room, one sink, boiler, and two set tubs in kitchen, a water-closet in cellar; a first-class job in all respects, done according to the Boston building laws.

MISCELLANEOUS.

Build coal bins, pipe for gas, put shelves, drawers, and hook strips where directed by owner.

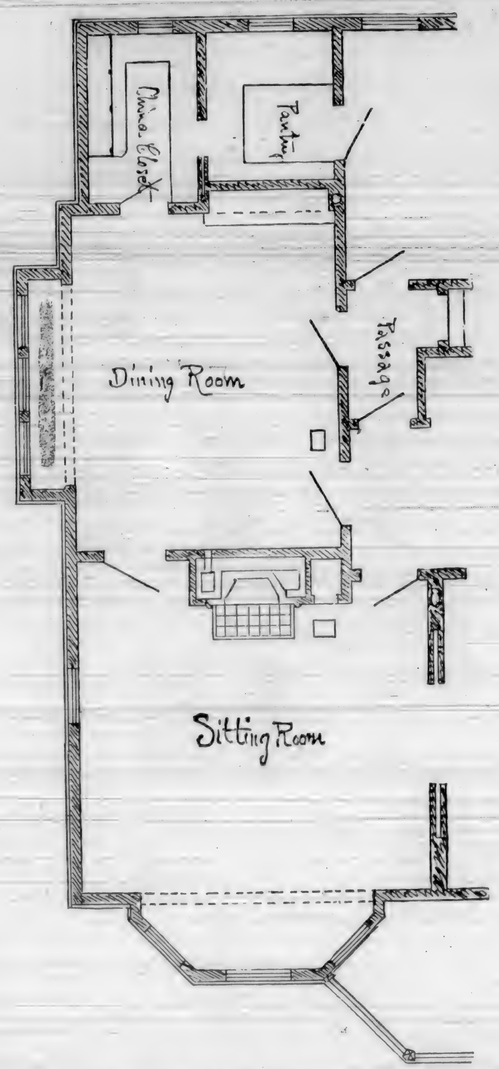
GENERAL CLAUSE.

The work is to be done in a thorough and workmanlike manner, and all breakages and marring of work to be made good by the contractor.

In the accompanying estimate it must be borne in mind, that prices given are those at present ruling in the city of Boston, and are not, by any means, to be taken as those for which the same work could be done on this coast. A decidedly much higher estimate must be allowed for the plan as presented, should any one see fit to adopt the same and erect on this coast a building in conformity to the plans.

It was our intention to prepare a California estimate, so our Eastern subscribers could compare the cost of work and material on the two extreme ends of our country. We found the task rather difficult, without completely changing the looks of the front. The principal difficulty lies in the fact, that here, in houses of the cost given, the stories are seldom, if ever, less in height than 12 feet for first story, and 11 for second; these proportions would be exceeded in houses in which rooms are as large as those shown. By reference to the front elevation, it will be seen that the height of stories is but 8 and 9 feet. It is obvious that an increase of those measurements to those used here, would materially effect the appearance of the outside, as windows, doors, etc., would all have to be larger than shown.

It will be noticed that the price of rough lumber in estimate, is much lower than that ruling here, while that of finish lumber is higher. Brick work, plastering, plumbing, painting, and mantels, are all considerably lower than the amount for which said work could be done in this city. A careful study of the estimate will enable one to contrast the difference.



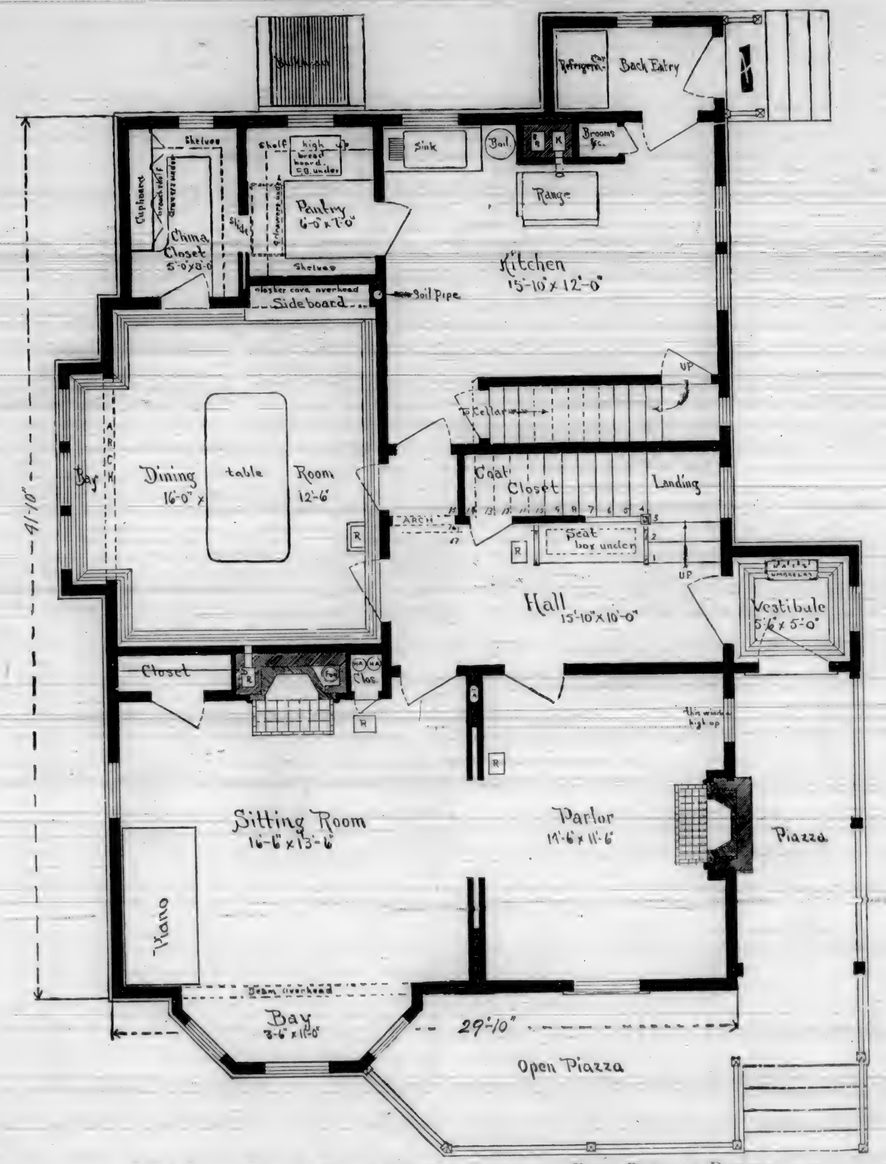
ALTERNATIVE DESIGN SHOWING DIRECT COMMUNICATION BETWEEN SITTING ROOM AND DINING ROOM.

ESTIMATE OF QUANTITIES AND PRICES RULING AT BOSTON, MASS.

MASON WORK.

250 cu. yds. of excavation @ 25 cents	$ 62 50
*84 perch of stone wall @ $4.25	357 00
13½ M. brick laid including mortar @ $16	216 00
4 fire-places and hearths @ $25.00	100 00
1200 sq. yds. of plastering, laths included @ 25 cents	300 00
140 sq. yds. of concrete @ 50 cents	70 00
Total	$1,105 50

*Perch 16½x1½x1—24¾ cu. ft.



FIRST STORY PLAN OF $5,000 COUNTRY DWELLING.—FIRST PREMIUM DESIGN.

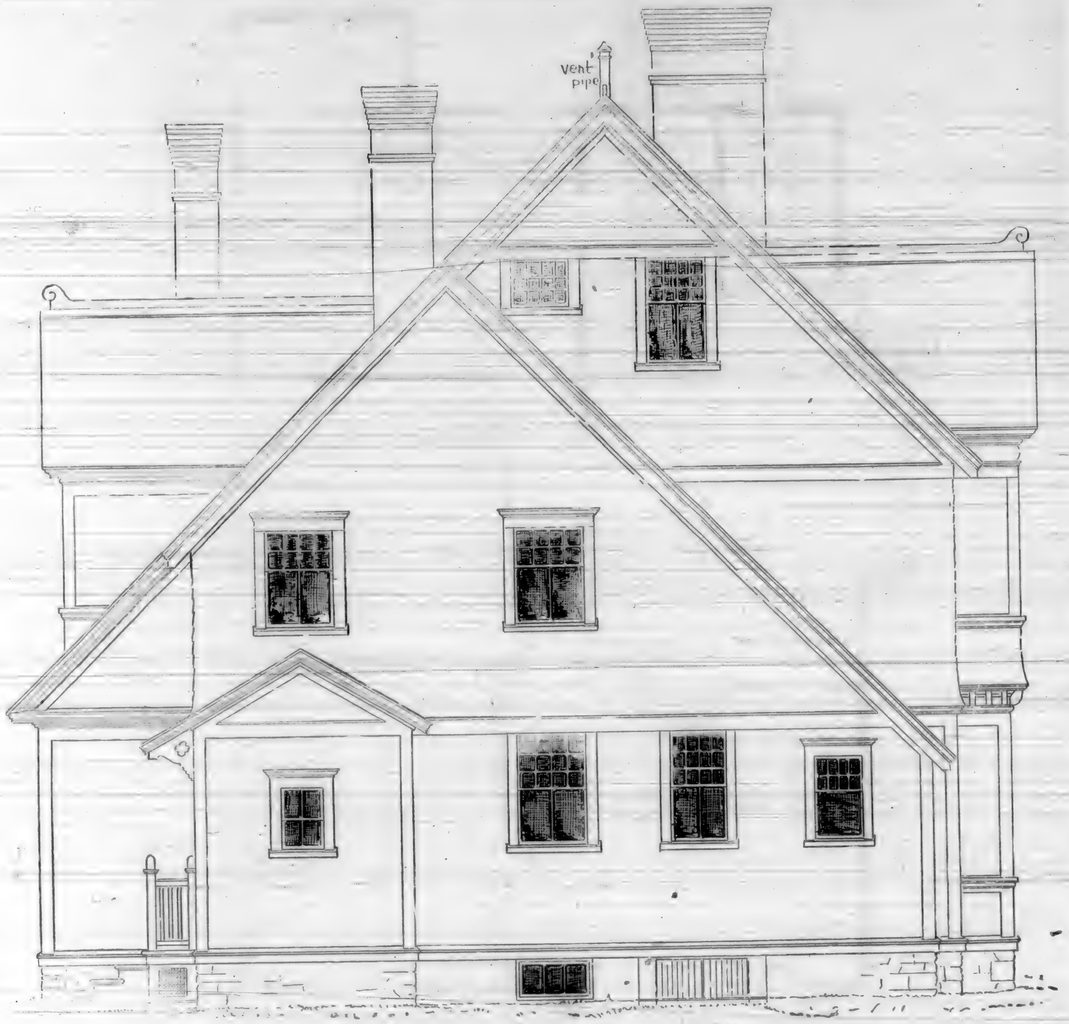
CARPENTER WORK.

12,000 ft. of spruce framing timber @ $16 per M	$192 00
3,000 ft. of furring and partition stock @ $16 per M	48 00
9,500 ft. of hemlock roof and floor boards @ $12 00	114 00
30,000 ft. of sawed cedar shingles, wall and roof, @ 4.50	135 00
1,200 ft. of spruce clapboards @ $30 per M.	36 00
Sheathing paper	50 00
2,500 ft. of pine outside finish @ $60 per M.	150 00
80 ft of wood gutter @ 12 cents	9 60
3,180 ft. of spruce floor boards @ $25 per M.	79 50
700 ft. of hard pine rift sawed @ $50 per M	35 00
500 ft. of pine inside finish @ $60 per M.	30 00
1,500 ft. of whitewood inside finish @ $60 per M.	90 00
100 ft. of panelled dado @ $1 per running ft.	100 00
70 ft of zinc conductor @ 15 cents	10 50
Windows complete	300 00
Doors and frames complete	290 00
Hardware and nails	250 00
Stairs, rail-posts and balusters complete	225 00
Plumbing complete (an actual estimate)	325 00
Painting complete	300 00
Mantels and shelves	125 00
Papering	150 00
Furnace set ready for use, pipes, etc.	150 00
Carpenters' labor	825 00
Total	4,019 60
Mason work	$1,105 50
Total	$5,125 10

Architects' commission not included.

Respectfully submitted,

"AS YOU LIKE IT."

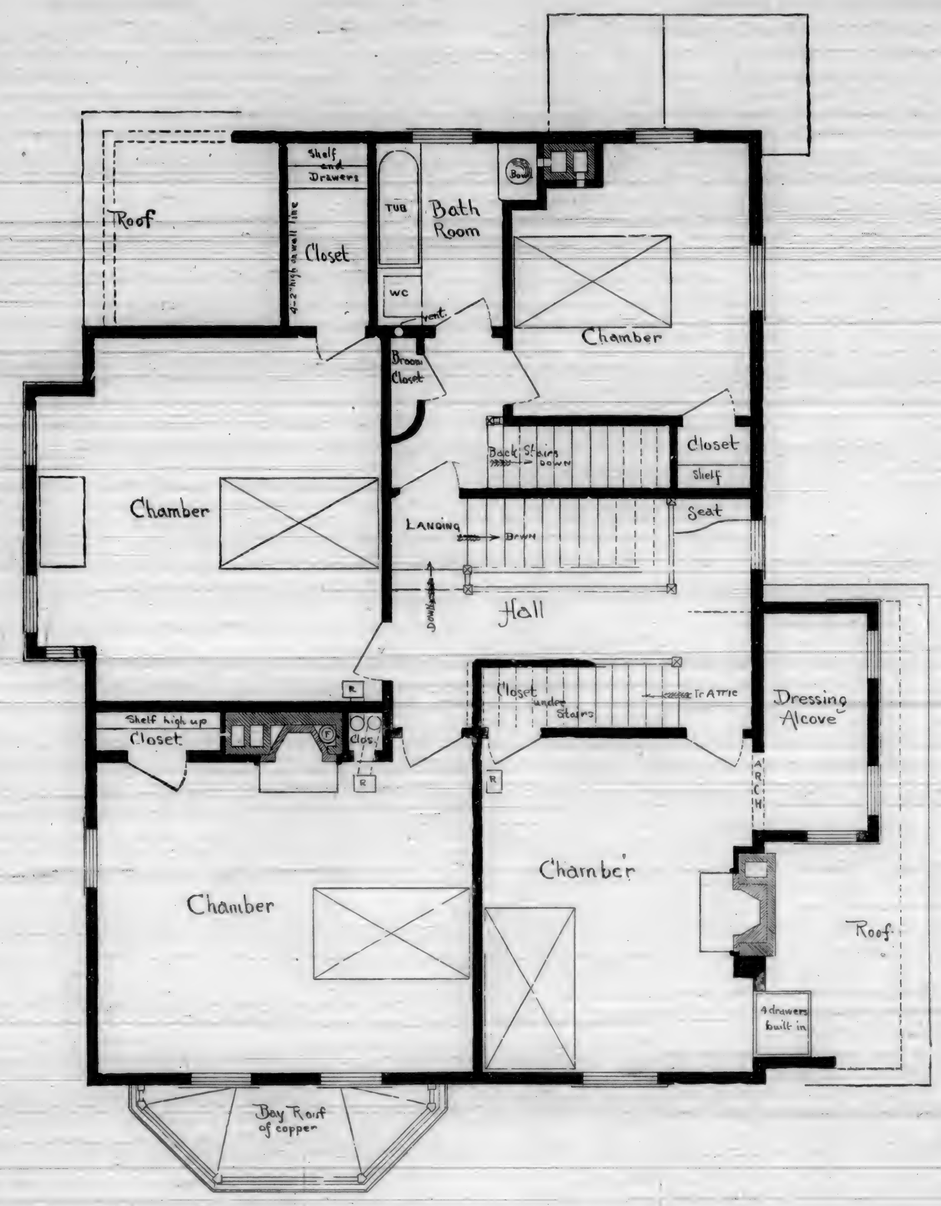


REAR ELEVATION OF $5,000 COUNTRY DWELLING.—FIRST PREMIUM DESIGN.

Mechanics should remember that it is for their interest to forward items of general interest to the publishers of this Journal as, by so doing, they reap much benefit from an interchange of ideas. If engravings are necessary to explain your ideas, send a rough sketch of the same and we will put them in a presentable form.

AN ORIGINAL RAT TRAP.—This trap consists of a sheet iron pipe with a sort of rim on both ends and a strong two-bushel sack tied firmly around one end. Every hole is stopped in the corn-crib but one, which opens into a feed box on the other side of the partition. Then the pipe is placed in the feed-box and fitted, the open end firmly over the hole, allowing the sack to hang over the edge of the box into the manger. The trap prepared, the door of the crib is left open and the rats permitted to have their own way for an hour or so. Then the door is shut and a noise made to frighten the rats. Having but one means of escape they rush into the pipe and down into the sack, where they are easily caught.

Owing to the great increase in our circulation, causing great demand for advertising space, we have to announce an increase in the rates established January 1, 1884. We are continually receiving letters from parties, in regard to advantages secured by an advertisement in this Journal. Our rates are now $50.00 PER PAGE FOR SINGLE INSERTION. Proportional rates accordingly for smaller spaces.



SECOND STORY PLAN OF $5,000 COUNTRY DWELLING.—FIRST PREMIUM DESIGN.

A New Work. How to Build, Furnish and Decorate. Price $5.00. Send to This Office.

Our Sewerage System and the Cholera.

As USUAL in all cases of alarm or anticipated approach of contagious disease or possible epidemic, the sewerage of San Francisco looms up as a formidable agency of evil, in view of the cholera scare at present so general in many parts of the world; so much so that from the health department comes the warning that something should at once be done by the city government to cleanse and purify those underground conduits, which at all times contain and emit the germs of disease. And in view of the terrible character of the special agency of death, which has recently appeared in parts of the Old World, and is reported to have crossed the Atlantic, and shown itself in the metropolis of the United States, it is but natural that not only the head of our health department, but every citizen of this commonwealth should scrutinize closely as to the more probable channels of approach and danger to San Francisco.

And as it always has been, so it is now—the sewerage of the city is about the first in mind, because it is well understood to be about the worst in the world, all things considered; for there never was a city located anywhere on the earth's surface where the natural contour of the surface of the land was more favorable to perfect drainage, than the original limits of the city inside of the filled-in districts. And had good and wise judgment, and skillful experience, and intelligent civil engineering been practiced in establishing the grades of the streets, and consequently the grades of the sewers, they would to-day be a source of pride, as perfect for all the purposes for which they are intended, rather than as they now are, a source of dread and alarm, causing uneasiness and fear among the people,—a something that should by all means be specially guarded against at times like the present, when the feeling of perfect safety from all local causes of infection should be universal in the community. For it is a conceded fact that fright and fear has much to do with the spread of epidemics.

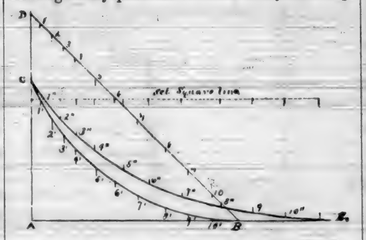
But the frequent reference to the sewerage of the city by the health officials has become rather monotonous, inasmuch as it fails to produce the proper action corrective of the evil. The naming and pointing out, or the strong denunciation of a bad thing, however often or forcibly repeated, amounts to nothing, unless productive of proper action; and so long as the magnitude of the sewer pest in San Francisco is overlooked, and those whose duty it is to correct and perfect the same, take no proper interest or action in the matter, health officials may sound the alarm until doom's day, while the cholera or any other malignant disease may enter the gates of the city and carry off their victims with impunity.

A floor-area of ten square feet to each occupant of a sleeping apartment is necessary to an adequate supply of air for eight or nine hours of slumber.

SAN JOSE, May 30, 1884.

To the Editor of the CALIFORNIA ARCHITECT:—

Mr. M. J. Marion has given to your readers the true theoretical way of finding a curved hip or diagonal rafter; allow me to present a way I have thumbed out for myself, it often coming in my practice to have to lay off a hip.



Let A B be the seat line of the rafter and C B the elevation of the same. Draw D B at the same angle to A B that the seat line of your hip rafter will bear to the seat line of your square rafter, cutting the perpendicular A C produced in D. Now tick off ordinates 1' 1'' 2.2'', etc. parallel to A D, cutting D B and C B in 1'. 1'' 2'. 2'' 3. 3', etc. Now take a set square or straight edge with a square end and lay the long edge on the line D B with the square corner at D, mark off the ticks 1, 2, 3, etc. on the edge of set square (as per square enclosed), clamp down a straight edge on A D and slide your marked square on it as shown; with the edge of the set square passing through 1' mark off the position of the tick 1'' on the set square at 1''. Continue this at 2'' 3'' to F. Spring a batten through the spots 1'' 2'', etc., so obtained, and draw your hip rafter. This though seemingly complicated, once understood will enable one to draw such a rafter in one third the time, and what is also important one third the space occupied by Mr. Marion's method. ONLY A CARPENTER.

Personal.

TO THE host of kind friends who have so cordially and heartily—by word and pen—extended to us wishes of joy, good health and long life, we return our sincere thanks, pledging that, should like happy conditions at any time in the future, surround any of them, our hand, voice and pen will be utilized to return honestly expressed salutations and greetings, with the wish that those who follow our example may be alike successful with ourselves in selecting an antidote for the loneliness of single unblessedness.

IN regard to the durability of the different woods, the most odoriferous kinds are generally esteemed the most durable; also the woods of a close and compact texture are generally more durable than those that are open and porous; but there are exceptions, as the wood of the evergreen oak is more compact than that of the common oak, but not nearly so durable.

Make your own Gas.

OWNERS of country stores and dwellings should use every precaution against fire, as the non-proximity of fire engines and scarcity of water oftentimes causes a small fire to develop into a disastrous conflagration. Since the first introduction of coal oil as a means of illumination, various contrivances have been placed in the market by which gas could be manufactured from that substance. For more than twenty years improvements have been made in gas machines, until there has been developed one that is as near perfection as scientific study and investigation can produce.

These machines are guaranteed absolutely safe in their operation, simple in construction, not liable to get out of order, and require no skill to manage. They require less attention than a common kerosene lamp. *No fire is used in the process of manufacturing gas by these machines.* Cost of gas will be less than one dollar per thousand feet.

The tank, containing the gasoline, is buried in the ground and is delivered in permanent pipes and fixtures to the proper distributing points. Consequently no danger or trouble is engendered by frequent removals of the fluid. Full particulars in regard to these machines will be given by addressing A. F. Nye & Co., 609 Market Street, San Francisco, who are the sole agents for the best machine manufactured.

Modern High Explosives.

IN presenting this work to the public, the author has endeavored to acquaint the engineer, the contractor, and the chemist, with the composition of the substances they are now so largely using, with their peculiar characteristics and their adaptation for certain results; or in a word to familiarize them with the high explosives. Extra business engagements have prevented us giving time for a thorough examination of the contents of this work, but from a cursory view it is written in a style at once attractive to those for whom it is intended. Our library is always open to those who desire to examine the latest works, and we will take pleasure in showing the above to those who call.

THE day is past when people are contented with mere box-like houses, and every one tries to make his home as attractive to the view as possible. A small amount of ornamentation, properly applied, will not add to the cost of a building, while it greatly relieves the monotony of appearance by breaking the surface into light and shadow, and will always speak more in favor of the fine taste and feeling of the owner than an overloaded ornamentation. Keep this in mind: simple, well-proportioned forms do more to beautify than a confused mass of adornments poorly distributed.—*The Builder and Wood-Worker.*

Subscribe for the California Architect and Building News.

Prosper Huerne.

MR. PROSPER HUERNE, whose likeness is here given, was born at Pontgouin, near Chartres, France, November 26, 1820, and obtained an education as civil engineer in the Government school of *Arts et Metiers* at Chalons.

He early commenced his professional career by constructing a section of the Orleans Railroad, together with the necessary depots, and later, after having been admitted as *Ingenieur Conducteur* in the *Corps des Ponts et Chaussées*, he erected, as assistant chief engineer, the great bridge over the River Loire, for the Central Railroad. At the time of the great inundation of the Loire in 1846, he distinguished himself for his bravery by saving the lives of a great many persons, at the imminent risk of his own. For this service the French Government awarded him a medal of honor.

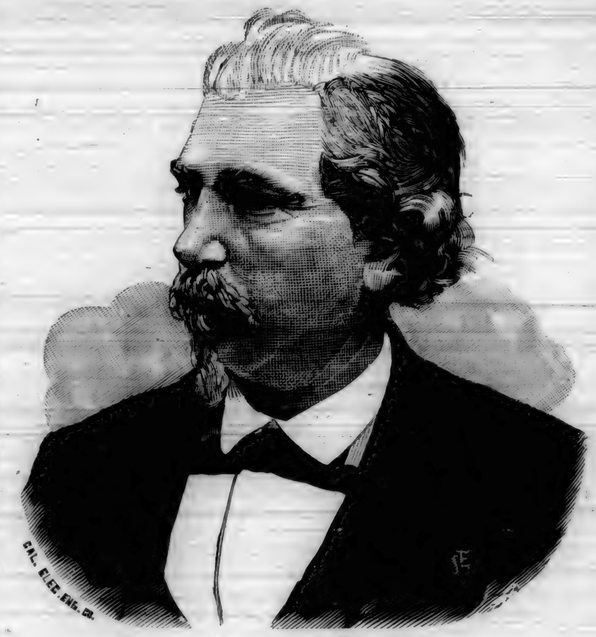
Believing that this country offered a more promising field for advancement than his native country, he decided to start for California, and landed at San Francisco the 17th of June, 1850.

His career here has been a busy and useful one. He designed and constructed the North Point Docks in 1854, and three years later built the French Hospital on Bryant Street. The Market Street Railroad, the first railroad in the city (running to the Mission Dolores), was equipped and run under his directions, he being the chief engineer and assistant superintendent. In 1866 he presented, in competition, a project for the San Francisco Harbor Sea Wall, and of the thirty-three designs submitted, his was ranked second.

The first sugar refinery erected by Claus Spreckels on Eighth Street, the new church at the Mission Dolores, destined to replace the adobe structure built by the early missionaries, and numberless business edifices and private residences in this city, and churches and colleges all over the coast, attest that his ability as an architect is not inferior to his skill as an engineer.

In the latter capacity he has long been of service to the French Government, keeping her informed, through her consuls here, on many details of our local progress and improvement. Under this head he has described in detail the organization of our admirable fire department, by special request written lengthy reports on the harbors of San Francisco and San Diego, and on frequent occasions brought to the notice of foreign engineers the system of cable railroads, as perfected here, furnishing plans and illustrations of this and of other interesting achievements for publication in the various French scientific periodicals.

He has (in connection with Slaven Bros.), devoted his energies to sharing in the execution of the great enterprise of his celebrated countryman, Ferdinand de Lesseps. As architect, he erected the large storehouses and many of the buildings necessary for the accommodation of the great number of engineers and employés now laboring on the Isthmus of Panama. As engineer, he is now occupied in connection with a powerful New York company in carrying out a contract with the *Compagnie Universelle du Canal Interocean-*



PROSPER HUERNE.

ique, to dredge the Atlantic side of the above canal.

He is a member of the San Francisco Chapter of the American Institute of Architects, the California Academy of Sciences, the Exempt Fire Company, the Territorial Pioneers, and other prominent societies. One other item in connection with Mr. Huerne's career is of especial interest, viz., he is the living pioneer architect of San Francisco.

Ignorance in the Use of Stoves.

STOVES are among the commonest and most useful things in the world, and yet a family will use an ordinary cooking range during its natural life-time and never know its flue construction. Stove manufacturers and dealers will bear us out in saying the greatest difficulty they have to contend with in the introduction of stoves is the ignorance of the people who use them. This is illustrated by a recent incident in the experience of a Pittsburg house which was told us a few days since. One of their standard ranges was placed in the house of a physician, and the complaint came that it was impossible to bake with it or heat water by the water-back. A representative of the house went to investigate the matter and says he didn't do a thing to the range but build a fire in it. When he started the fire in it, and baked potatoes in twenty minutes, the doctor's people became convinced that the range would bake if given a chance. It took longer to heat a thirty-gallon tank of water but it was accomplished in a reasonable time. There was nothing the matter with the range, nor even with the chimney.

The trouble was that the people had been trying to force the range to consume coal instead of to do its duty in baking. The stove man remarked to the physician that when he gave his patients physic he did not give them too much. The range would work all right if treated in the same way. Give it coal in even homeopathic doses and it would accomplish the result desired. People are coming slowly to learn that a stove can be made to do efficient service with a small amount of fuel. This is especially true in the use of hard coal. Stove dealers can benefit their trade and do a favor to customers by becoming thoroughly familiar with the working of the stoves they sell, and explaining their construction and instructing their patrons how to use them properly. By so doing stoves and ranges will be made to give better satisfaction, and there will be less complaints.—*Tinner and House Furnisher.*

Cottages—Another New Work.

THIS new work contains twenty-four plates of medium and low cost houses, by different architects, together with descriptive letter-press, giving practical suggestions for cottage building, to which is added a chapter on the water supply, sewerage, drainage and other sanitary questions relating to country houses. The work is the best one that has, as yet, been presented before the public for the price quoted. Price, post-paid to any part of the country, $1.00. Send orders to this office.

Characteristics of Japanese Art.

A. CURTIS BOND.

THE principles of art necessarily lead to characteristic differences of development among nations. In a nation like Japan, so long excluded from the world, we find art working within certain formal and antique bounds, and this notwithstanding the marvelous variety given to productions and the facility of execution of the artists, who in realizing any given standard appear to trust little to chance, and achieving success with marvelous precision, apparently unburdened in thought with the details that go to make up the result.

Traditional and hereditary causes have manifestly endowed them with a love of art, which is put to good account in a thousand forms. Though we can never become their copyists, and occupying as we do higher ground in many leading spheres of art, there is much that is suggestive in the method and style of their work as to modes of artistic treatment which may be incorporated both in art designs and execution.

Decorative art in Japan owes much to the circumstance, that those engaged in it have been close students of nature. Ever on the alert for new and strange features, they proceed at once to give effect to these impressions, the hand closely following the head. The Japanese carver in wood has but to get the right conception, and he will work it out without a pattern, not failing, if it be a figure, to give to it individual expression, however crude it may otherwise be.

Take a Japanese two-leaved folding screen. Powerful contrasting effec s will be sought not in each separate tableau but between one and the other. This contrast is most effective in animal and human forms, and this in the attitudes they assume; indications of dominant but different instincts and feelings.

The glory of the lion may be said to be its strength, but who but a Japanese artist would have conceived the idea of combining the indication of such strength on the exterior of a bronze vase, with fear and impotent rage. The lion with front paws on a fallen tree trunk sees a winged dragon circled by dark thunder clouds in the air and appears to be exerting all his power to draw back from the fearful object on which his eyes are riveted, and yet to fail in the effort, as though enchained by some superior influence.

Quite in accordance with this spirit of contrast is the adorning the rounded edge of an elevated bronze dish with flying birds whose bodies protrude straight from the rim at given distances, their gills alone being attached to the plate.

An artistic surprise has, mentally considered, all the effect of a strong contrast, and the Japanese artist abounds with surprises; thus isolated human eyes will be seen peering out from different artistic objects, just where they would not be looked for, a practice for which, as also for the abounding circles in Japanese work, a symbolic purpose has been vainly sought; the fact being that the brightness of the eyes makes capital contrasts and assures some fun. The truth is that the vagaries of Japanese art require less to be analyzed than enjoyed, more especially with a design unique in itself.

The practical character of the Japanese mind leads to a combination of the *utile* with the artistic. Witness in bronze vases the employment of elephants' heads as decorations whilst their curled trunks serve as handles.

The Japanese lacquered wall-paper in colors or blended with gilding and silvering, shows in the deadened but attractive deep toned hues, and in the silvered rendering of floral subjects, or involved and flowing styles, a serious appreciation of mural artistic requirements and deep study to meet it. The designs are rich without tawdriness, and command admiration, both for the hues—many of which are wholly Eastern, the dyes apparently being vegetable dyes—and the admirable harmonious balancing of parts. If flowers are introduced, they are large and widely dispersed and no apparent continuity in the pattern is rudely broken in by furniture. An English lecturer has satirized their wall-paper as designed for the purpose of setting off their own figures, but no higher praise could well be accorded. These papers, which are beginning to be freely imported, abound with suggestions of treatment, especially in the relation of hues. Much of the decoration wears the appearance of being worked in leather, the dark brown surface being worked in small reticulated forms in intermediate spaces, contributing also its own shade to the colored design, which its hue thus aids in carrying out and strengthening.

In ornamenting objects the Japanese artist aims to avoid an exact repetition or counterpart of lines, or if he finds them, does all he can by means of decoration to destroy the direct effect of an exact division or repetition of any portion. He shuns an equality of parts or rather the appearance of equality of parts. Justice with him is not even handed, weighing with the steel yard instead of scales.

Division or repetition of parts, considered among western nations as the acme of ornamental as of architectural art, is recognized mainly by them in bronze constructions bearing as its center some deity or hero. The Japanese dislike diametrical division, preferring, for instance, to divide an oblong surface. Diaper patterns have not sufficient variety for them, and are too regular to cover surfaces.

Their delight in ornamenting surfaces is to follow the precedent of nature which never repeats herself in spangling the skies with stars or the earth with daises. Right angles, as a rule, are the horror of the Japanese artists. A square, which by the way, he cannot find in nature, offends his eye. He will carry up supports to the very edge of a box, round it off at the corner rather than endure it. To avoid it a tray will be shriveled up at its edges like an autumn leaf, or its raised sides will assume a scroll-like form.

It has been pointedly observed "that abhorring geometrical regularity of design, instead of planting his big bird in the center of a plate, like a tavern sign, the Japanese flings him down haphazard, straggling from the rim into the middle, but always with a pleasing and novel effect," qualities of conspicuous value in decoration.

The Japanese never produce a picture of the pictorial order that will stand any other test than the picturesque; relative position of objects is left to do the work of linear perspective; their use of light and shade is somewhat akin to that of *chiaro-oscuro*. Most of their carvings of the human face are typical, a droll sort of leer pervading all with Egyptian uniformity.

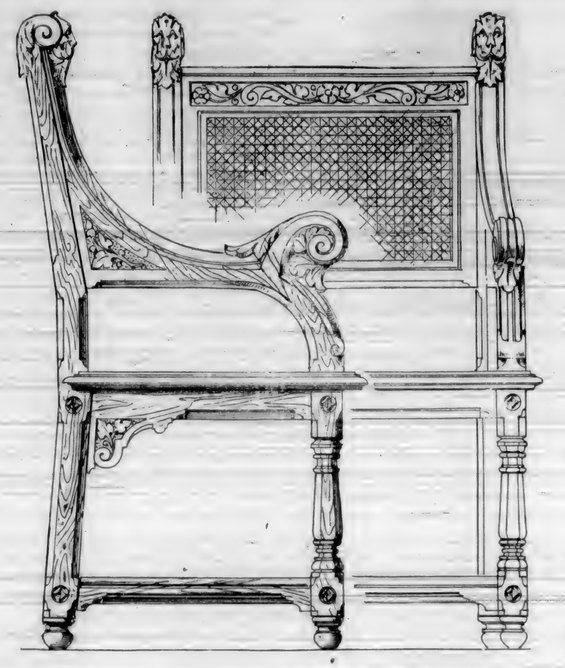
In the production of bronze works of art, both in design and workmanship, the Japanese show a marvelous excellence, epitomizing every form of grace suitable to it. Though much of the bronze work is grotesque there is a unity in the designs that may be studied with advantage.

One pleasing feature of Japanese art, which might be copied for dado and cabinet panels, is painting on dark colored wood, the veins of which are brought out in relief, like clouds in different strata, other portions being cut away with the exception of such parts as form a portion of the design. The bold treatment of the background gives force to the painting which is thrown forward, whilst the hue of the wood virtually serves as a surrounding shade.

The selection of teak, as the favorite wood for Japanese furniture work, is due to its extreme hardness as well as its rich ebony hue, the former quality allowing of minute and enduring carving, as in delicate piercing of apertures, or delineation of objects. It favors also the Japanese tendency to minimise material to the utmost, and affords a good contrast to *metallic* handles, light inlaid woods, or mother-of-pearl, not to mention silver.

Their sculptured, carved and modeled work shows a veritable passion for relief. Even their painted lacquer boxes are raised, and salient peculiarities of nature are faithfully depicted in every case, if only in the miniature carving of the interior of an egg shell, containing figures that must have been sculptured through the open chinks. We must give credit to the success of Japanese art on native subjects, particularly where there is action in social or animal life. In real works of art, the lower portion of the creation are finely rendered, particularly birds in flight. Like early artists of other nations, the Japanese make their point of sight very high, all figures being as if looked down upon. Japanese artists excel in the inexhaustible variety and deliciously eccentric beauty of their designs. Adroit and intelligent, they are forever originating new designs in form and color. It is an error to suppose that in their figures on porcelains, bronzes, textiles, wood, and paper they are always intent on representing grotesque traits. On the contrary, their paintings, castings, and carvings are replete with a serious spirit, with charming figures, costumes elegant and splendid, interiors rich and in good taste, whilst in their painted and embroidered stuffs and in their inlaid furniture, flowers, and other ornaments, are rendered without profusion, and with a marvelous regard to tasteful display; they never make the absurd pretension of deceiving the eye, but subordinate the ornament to the article, color where introduced assisting form by giving prominence to such parts as it is desirable to accent, and subordination to others which it is desirable to subdue.

In the present rehabilitation of ancient styles, treated freely with reference to artistic development from former conventional bounds, Japanese art may be regarded as exercising a wholesome suggestive influence—less in the way of actual novelty than in special modes of treatment.



THERE are several reasons upon which to base the strong hope for the future of the American mechanic. The multiplication, with the consequent cheapening, of technical journals, is one. Thousands of carpenters, and cabinet workers who a few years ago were content to do little if any reading, are now subscribers to one or more publications devoted to their line of work. That the exchange of ideas as thus brought about has greatly broadened the horizon of their work, goes without saying. The workman who reads must necessarily become a better workman for it. Again, the increasing disposition of practical men to write out their observations is a hopeful sign. The mechanic who trains himself to observe, note, and submit to writing his experience cannot help becoming more exact and intelligent in his work. Other important factors at work are the formation of mutual benefit societies among workmen, the establishment of reading rooms and libraries, the inauguration of lyceums and the increasing value with which the mechanic regards his right to vote—all pointing unmistakably to his rapid elevation to wider influence, greater usefulness, and an independence never before enjoyed by the class to which the intelligent mechanic belongs.—*The Builder and Wood-Worker.*

Furniture Woods.

ONE of the most flourishing, profitable and important branches of American industry is the manufacture of furniture. Not only do our factories supply the needs of 53,000,000 people, but scarcely a ship sails from our ports without carrying among her cargo specimens of this class of manufacture.

The American made furniture is preferred in many foreign countries for several reasons. The taste of the American artisan is refined and elegant, and the work he turns out is light and symmetrical, as well as strong and durable. While the English, French and German manufacturers still cling to their antiquated fashions and old methods, the Americans are constantly inventing new styles or improving on the old, and are thus in this branch of industry, as well as in many others also, far ahead of their transatlantic rivals.

Notwithstanding the excessive, and in many cases prohibitive, import duties that obtain in the majority of Latin-American countries, furniture of American manufacture is gradually becoming more and more fashionable. In Colombia, for instance, where the protective system is carried to exaggeration, cane bottom chairs, invoiced at $12 00 per dozen, pay $72.00 per dozen import duty. But while this high tariff has entirely prohibited the introduction of European-made furniture, each Atlas and Lombard steamer that sails from the ports of the Atlantic seaboard carries no inconsiderable quantity of this American line of goods, particularly parlor and bedroom sets, to South America.

But while this branch of American industry is so flourishing and so profitable, a feeling of uneasiness has begun to develop itself among our manufacturers. The domestic supply of hard wood is being gradually exhausted, and the price of raw material is becoming costly in proportion. The problem that agitates the manufacturing circles is "From whence shall we draw our future supply of furniture wood?" Their attention is daily becoming more intently fixed upon the tropical forests of Spanish America, and some of them have already taken steps to acquire possession of the timber lands that are most accessible to our ports.

The principal of the tropical furniture woods are cedar, rosewood and mahogany, for they are the best known and the commonest in use. But here again, another obstacle presents itself to the manufacturer. These woods have been utilized for furniture making for the past 250 years and the most accessible forests in tropical America have become almost denuded of marketable trees.

Such is emphatically the case with the timber lands of Santo Domingo, Jamaica, and the other West Indian Islands, and with those of Colombia, Venezuela, Mexico, and British Honduras also, while only Guatemala, Spanish Honduras, and Nicaragua possess supplies which, under the present circumstances, may be considered as fairly accessible.

Yet Mexico, Colombia, Venezuela, and British Honduras possess vast tracts of land covered with valuable furniture-wood forests, but which are at a long distance from the coast and from the river banks. The question that has already been agitated, how can these forests be rendered accessible? is answered by the demand of these localities for railroads. This subject has attracted the serious attention of European and American capitalists, who have already begun the construction, in several localities, of narrow-gauge railroads from the forest lands to the coast.

Thus the flourishing condition of the furniture traffic and the scarcity of the raw material has given birth to a railroad movement in the tropics that will eventually lead to the development of the vast agricultural, mineral and forest resources of Latin-America.—*Sel.*

Paper Hanging.

THE art of putting on or "hanging" paper, says an exchange, is very simple and is easily learned; but to make tasteful choice of paper for various situations is not so easy; hence the following remarks, which may be of service to the workman or others on whom the selection of paper may devolve:—

Walls to a room should be regarded only in the light of a framework to what the room coptains, and should be decorated so as to bring into prominence, and not eclipse, the other parts of the chamber. Nothing destroys the effect of a room so much as a handsome but staring wall paper, or a wall so profusely ornamented as to strike upon the eye to the exclusion of the rest of the decorations, thus bringing forward what should be the background into the most conspicuous place. A modern drawing-room is always difficult to decorate artistically, because of the taste of its builders for heavy cornices, prominent mantel-pieces and rooms too lofty for their size; and as all these mis-named "embellishments" are too costly to remove by tenants, the only plan to pursue is to destroy their effect by exercising both taste and ingenuity. First with regard to the ceiling; the ornamental plaster boss in its center should be removed and the ceiling tinted a color that harmonizes with the wall paper, as no harmonies can be hoped for when what produces them is surmounted with the glaring white of an ordinary ceiling. The tint used must be one that softens into the wall paper, not one that contrasts: thus, if the tone of the room is that of a soft gray-blue, the ceiling should be a clear flesh-pink; or should a grayish-green picked out with black be the chosen color, then it should be colored a subdued lemon.

Some people cover their ceilings with whole colored paper, and border it with a stenciled pattern representing the thin garlands so familiar upon Queen Anne decorations, but this is a more troublesome plan than the simple coloring, which answers all the purpose. The walls, if they are lofty, require a high dado. These high dados give a look of comfort and "home" that is absent from the modern, high-pitched room papered with one uniform pattern. The dado is divided three to four feet from the ceiling, and the coloring of the lower portion must always be heavier than that used on the upper, or a top-heavy look will be given to the room. When many pictures are to be hung up, the lower part of the dado should be of a whole color—either a whole colored paper or a painted wall—as pictures are only shown off upon such a background. Where a whole tint is used for the lower part of the dado, the upper portion should be decorated with a frieze paper of a good, bold pattern, but of subdued coloring and of tint that harmonizes with the lower. Thus, the color used about the frieze should be the same as that on the lower part, but of a lighter shade, intermixed with some other colors that form a harmonious link between the two shades. Contrasts must be carefully avoided, but pale pinks, blues and ambers can be blended together above a subdued gray-blue ground. The two portions of the dado should be joined together with a light wooden (black or brown) railing, or with a line of paint. The dado decoration can be altered by placing the pattern paper upon the lower part and leaving the upper part plain colored, with or without a stenciled pattern upon it. This will suit a room where not many pictures are required, or that is already rather dark. Some part of the wall should always be in plain color, as the eye requires rest, and no pattern, however subdued in hue, can give the relief to the mind that a bit of plain coloring affords, and this scarcity of ornament in one part of the room is amply repaid by the effect it gives to such parts as are bright and require to be bright. The true theory of effect is to use but one or two bright colors in a room, and to surround them by soft and subdued tints that throw up and do not destroy their brilliancy; a number of bright colors placed together destroy each other, and leave no impression upon the mind but glare and vulgarity. Having settled upon your paper and ceiling, have the woodwork and cornice of the room painted either a shade lighter or darker than the walls, and shroud up the mantel-piece with curtains, etc., of satin sheeting embroidered with crewels, and instead of the usual looking-glass over the fireplace, have a mirror surrounded with brackets holding china, or have a black, wooden mantel-piece made with squares of looking-glass set in. The background of your room being thus completed in a manner really to be a background, your furniture will look twice as well as if it were stared out of countenance by the walls; and one need hardly add that all your friends will delight in a room that throws up and brings out their dresses and faces, instead of killing them by its glaring tints.

Iron Shutters.

CORNICE manufacturers and others are frequently called upon to build iron shutters, and almost every shop has its own peculiar patterns or its own method of construction applicable to articles of this kind. The use of iron shutters is very general, especially in large cities and upon manufacturing establishments. They are to a certain extent not only tolerated, but strongly recommended, by the insurance companies, and yet there are objections to them which are so weighty that a careful consideration of the subject would seem to warrant a substitution of some other material or the abolishment of shutters altogether. One of the daily papers, in discussing this question a short time since, asserted that experience has proven iron shutters to be among the worst obstacles that firemen have to contend with in striving to enter burning buildings. The time taken to batter them open is for the advantage of the flames, and when the firemen get enough of the shutters open to permit water to be thrown into the building, they find that a fire that was of little account when first discovered has acquired almost resistless energy. From this it argues that it is practically certain that a fire originating in a building whose windows are sealed with iron shutters will destroy the building. It asserts that the idea that iron shutters keep fire out is also a fallacy, and then proceeds to state that flames on the outside of a building will frequently heat iron shutters red-hot. It also asserts that shutters cannot be made so tight that small sparks may not pass them, and instances the fact that merchandise of the value of $2,000,000 was destroyed in Brooklyn some time since, by a fire started by sparks from a fire-engine that was at work in front of the building, the sparks having passed through crevices at the hinges of the shutter.

While the naked statements presented by the journal above quoted are perhaps incontrovertible, it still remains that there is much in favor of the iron shutter, and many reasons may be given for believing a building to be better protected with iron shutters than without any shutters at all. Some of the objections raised apply particularly to shutters made of a single thickness of iron, which are likely to warp whenever subjected to a considerable degree of heat. It is hardly necessary for us to argue in this connection against shutters constructed in this manner, or in favor of those made of two thicknesses of iron, preferably corrugated, with an air chamber between them. Our readers will know that a shutter embodying this principle, properly made, is not likely to give trouble on account of warping. The fact that shutters are locked from the inside in such a way as to make it difficult for firemen to enter the building in order to fight the flames is certainly wrong, and the intelligent care of property should suggest some plan by which the shutters could be opened from the outside in case of necessity. The fact that sparks are sometimes drawn into buildings through crevices in the shutters, it seems to us, argues more than would at first be supposed. The true province of the shutters is to protect the building from fire, yet their presence induces carelessness upon the part of employers and others in caring for the building in other respects. Sparks would hardly be drawn through the crevices of iron shutters if the windows inside the shutters were properly closed. It would seem that if proper precautions were taken to keep windows shut, thus closing the building as carefully as though no shutters were in use, and relying upon the latter simply as a fire protection, it would overcome this class of objections to which the paper above mentioned alludes.

MORE than three-fourths of the cedar used in cedar pencils is shipped from Florida.

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To Keep Down House Insects.

OF course scrupulous cleanliness will dispose of most of them. Keep the yard free from decaying vegetables, refuse from the kitchen and the drain of the sink, and sweeten the out-buildings with lime, and flies will mostly emigrate to promising quarters. The few stragglers which remain can be nearly excluded by frames covered with millinet placed in the windows when open. These will also keep out the vexatious mosquito. Myriads of these latter insects are often bred in swamp spots adjoining the dwelling. Proper drainage will route them at head quarters. The rain-water cistern is also prolific in mosquitoes: place a few lively minnows or other brook fish there, and they will fatten on the larvæ of the tormenting insect—thus the biter will be bitten.

The flea delights in the dust and litter of the wood-house and the wagon-shed. Remove all this, sprinkle fresh lime in its place, add whitewash to the beams and boards, and the fleas will soon vanish. Take up all the carpets, beat them thoroughly with a slender rod, and scatter pepper around the sides of the room where the edges of the carpet are to be laid. Then, once a fortnight, whip the outside breadths upon the floor with a light switch and the remaining moths will be beaten out.

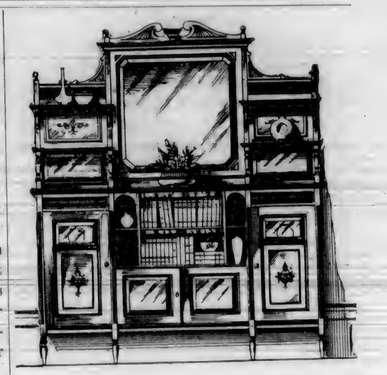
The chinch, or bed-bug, can be routed by first washing all parts of the bedstead with cold water, and then, with a brush, applying corrosive sublimate dissolved in spirits, of an amalgam of lard and quicksilver rubbed together. Or ask your druggist for six cents worth of unguentum; mix it with lamp oil, and apply it with a brush to all joints and crevices, when the bugs will sleep, and allow you to do the same.

Carpet Beating.

WE have no wish to decry this periodic purification, but merely to point out rules for its better conduct and efficiency. The usual process in households which cannot afford to have it carried out by special agency is first to take up the carpets and sweep the walls and ceilings, and then to wash the floors. While the latter are drying, work must be found for the idle hands, and they cannot be better employed than in beating the carpets in the court-yard or back garden, a work attended with a horrid din and clouds of dust. It will not be unavailing, we know, to complain of the noise—no appeal in this direction will gain a moment's sympathy; but we hope more attention will be paid to the other nuisance. When we reflect on the nature of the dust thus raised, we are surprised that sane persons allow to be thus stirred up under their noses all the nauseous accumulations of dining-room, bed-room, and stair carpets, to say nothing of door mats, etc., into a fine dust, and which, thus dispersed, finds its way again into our houses in a form most readily accessible to our respiratory organs. Indeed, it is fortunate if the dust thus roused is only nauseous and not effective, since the desquamated cuticle of scarlet fever, the scabs of small-pox, the dried sputa of consumptive or whooping-cough patients, living parasites, and hairs from mangy cats and dogs may thus invade our rooms. Carpet-beating, we are aware, is forbidden in public thoroughfares; but it should, in any form, be prohibited within a reasonable distance of dwelling-houses; and for those who cannot afford to pay the small sum required to have their carpets and mats properly cleaned, the authorities should set aside some open space, to which, on stated days and at certain hours, persons might bring their carpets and have them beaten, without causing annoyance or danger to themselves or neighbors.—*Lancet*.

Why Chimneys Smoke.

AS A matter of fact they never do,—it is the wood that smokes. We make this statement not by way of facetiousness, but to bring the discussion to a strictly scientific basis. Since the new birth of the open wood fire, the old question of how to coax the smoke to go straight up the chimney flue, at all times and under all circumstances, has come again to the front; and the old controversy as to the relative magnitude of two stupendous but familar domestic evils is liable to be revived. It is not our purpose to give here and now all the infallible rules by which one of these—and doubtless the minor—can be cured, or better still, prevented, but simply to refer to one of the common reasons why smoke from a fire on the hearth falls out into the room occasionally, if not constantly, instead of going up to the skies where it belongs. Having stated that chimneys never smoke, it may be well to observe that they never "draw" either. Whatever goes up chimney—from Thomas Hood's chimney sweep to the steam from the kettle nose—is poked up from behind. Of course this amounts to the same thing practically as being drawn up, but it is well to remember that the same pushing force will just as readily lift air, shavings, ashes, steam or anything else that comes in its way as smoke. The point, therefore, is to so arrange the throat of the chimney that the smoke shall be caught first, and, like proud Korah's troop, be swallowed up before it has a chance to spill over into the room and before something else can be crowded into its place. Left to its own devices it would fall out of the fire-place and run over the floor like water. As the air in the room happens to be usually cooler and, therefore, heavier than that in the fire-place, it forces the latter upwards and the smoke with it. Now the tendency of the smoke, as soon as it is lifted against the back wall of the fire-place, is to fall forward, and this tendency is favored by the curving back against which it ascends. There is no objection to this curve which seems to keep the smoke within bounds, and it doubtless radiates more heat than if it stood erect, but the one point which should be insisted upon,



is that the face of this curve along which the smoke rises should strike, if it were continued (which it is not, being cut off by the broad throat of the flue), several inches above the lintel at the top of the fire-place opening. The smoke is then fairly caught in the ascending current of warm air and carried up and away.

A smoking fire-place may often be cured without any change of flue or chimney by simply bringing down the top either with a row of bricks or tiles, or by a piece of metal fitted in between the jambs. And this cure is effected not because the fire-place was originally too large or too shallow to "draw," but because the proper provision had not been made for entrapping the smoke and turning it into the rising stream of warm air.—*The Builder*.

THERE are many sound truths that deserve careful consideration which are every day overlooked by those who should treat them otherwise. Here is one clipped from the columns of a contemporary, which advertisers should take to heart: The success of trade papers so far has proved conclusively that the leading and most enterprising establishments have been convinced of their value as an advertising medium. The day is not far distant when all manufacturers, of whatever class, will recognize the fact that the journal published directly in their interest is one for them to advertise in. The principal reason for this is that a journal of this kind has only one class of readers, and they are the very ones the advertiser wants to reach. In a trade paper, then, he only pays for just what he receives. How many advertisers think of this? A *trade* paper with only 2,000 circulation is a much cheaper and better advertising medium for the manufacturer than a *newspaper* with ten times the circulation, at the same price per inch. We never look for a manufacturer's advertisement in a daily or a weekly newspaper, but if we want anything in any particular line of goods we look in the paper representing that line for the advertisements of the leading manufacturers. This is sound common sense in a nutshell.

Wells.

THE old way of digging a well and stoning it up so as to leave it about three feet in diameter, is, an Eastern contemporary remarks, a very good one if the water is to be drawn up with buckets; but if only with a pump, it is a very poor way; for if, as is the usual custom, the well be covered at the top, it leaves a very large space for dead air, which often becomes so bad that it affects the quality of the water, and also makes it unsafe to enter the well. When a well thus stoned has only a pump in it, the covering should be under water, or very near it; but if it is known that only a pump is to be used, the expense of stoning may be saved, and the water kept in a much better condition. This is done by digging the well in a dry time, and when dug as low as possible, a cement pipe, some two feet in diameter and two or three feet long, is sunk at the bottom, and worked down as low as possible by digging out the inside. The pipe should be covered with a flat stone, through the middle of which a two-inch hole has been drilled; directly over this hole stand up drain pipe, then begin to fill in the hole. When filled as high as the top of the first piece of drain pipe, put on another, being careful to have it straight with the other and the line perpendicular; continue filling and adding drain pipe until it is as high as the surrounding ground; or if the pump is not to stand directly over the well, then when it is filled within four feet of the surface put in the pump pipe and lead it off in trench to where the pump is to stand. When it is found that the pipe is all right, finish filling the well, leaving some durable mark that the position of the well may be known. A well of this kind is reliable and permanent, requiring no repair, the water is cool and free from impurities that open wells are subject to; no insects or animals can find their way into it, and the cost is not more than one-half that of a well that is stoned. If dug, as it should be, when the springs are low, a constant supply of water that is as pure as the underground springs, is secure. As the well is always full, there is no chance for bad air to injure the water, and, in fact, but little danger of pollution from surrounding cesspools compared to that of open wells.

VALUE OF TRIFLES.—A London builder was offered bricks one-eight of an inch below the regular thickness. "What matters an eight of an inch in a brick?" said the merchant. "It matters *three thousand* more bricks for my job," was the reply. In an establishment employing fifty hands a loss of one minute each time of ringing the bell means fifteen hours in a week; this shows the value of trifles.—*Laxton's Builder's Price Book.*

THE object of setting saws is to less n friction. The reason of greater power being requisite for cross cutting than for ripping is that the former is not parallel to the grain. In filing, the edges are, of course, beveled opposite ways. The sharp beveled edge will be outward on the side to which the tooth is bent.

Restoring the Fire-Place Chimney.

ONE of the most common laments concerning the houses built fifteen or twenty years ago and more, says the *Builder*, is caused by the want of that feature which is now felt to be so indispensable: a place for an open fire. Hundreds of old-fashioned chimneys whose foundations filled all the central portion of the cellar, leaving hardly more than a quadrangular tunnel under the house, were torn down and the space they occupied was converted into halls, passages, stairways or closets, a single slender shaft doing duty as a smoke flue for a half dozen or more air tight stoves.

Repentance speedily followed this destruction of the cherished abiding place of the household gods, but how to bring forth works meet for repentance, that is, to restore the chimney and the fire-place, has always been a troublesome problem.

It need not be. Like many other apparently serious difficulties, the obstacles in the way of constructing new chimneys and open fireplaces in any house old or new are apt to be more apparent than real. A chimney is a self-supporting member of the family, starting from the ground and running straight up through the roof; it asks no favor or privileges except a few square feet of room on each floor less than a common table requires, hardly more than an ordinary chair. Instead of diminishing the security of the building, if properly made, it will make it more substantial. There is no law requiring a chimney or a fireplace to be squarely in the center of a house, directly between two windows, or precisely in the middle of one side of a room. The fireplace may be cornerwise or one-sided, within the house or outside of the main walls, provided it rests on *terra firma* and rises well above the roof.

HEALTHY, spacious workshops always pay, and it is pleasing to note that manufacturers are beginning to recognize this fact and act upon it. The old-fogy notion that anything is good enough for the hewers of wood and the beaters of iron, that comfort and convenience are antagonistic, is being fast relegated to the shades. Manufacturers are learning that a good building rightly planned both adds to convenience and economizes space and time, and that the best work is obtained when the arrangements for the comfort and health of the workmen are most perfect. The rents paid for manufacturing premises, as a rule, are high enough to entitle the manufacturer to better accommodations, and the securing of such is a matter of justice and substantial benefit to employes. Honest artistic work is possible only when conditions are favorable; filthy, dimly lighted and badly ventilated shops or factories are not usually considered very favorable conditions.—*The Builder and Wood-Worker.*

PAPER is now used in Germany instead of wood in the manufacture of lead pencils.

Defective Castings.

IT is stated in the English papers that an examination of the broken girders of the fallen railway bridge at Denmark Hill showed that one of them was "honey-combed with air bubbles;" and it is assumed that, as this girder gave way, the extra weight thus thrown upon the others caused the accident. It is almost unnecessary to say, a correspondent in *Iron* says, that the so-called "air bubbles" are really hydrogen cells, and that the only explanation that has been (and probably ever will be) afforded of the source of this hydrogen is that, if not exclusively, it is mainly derived from the moisture of the atmospheric blast, which becomes decomposed on coming in contact with molten iron or steel, its hydrogen being thereupon absorbed by the metal. This occurs not only in the steel converter, but also in the blast furnace and in the remelting cupola. As a consequence, both steel and iron castings are unreliable, and a constant source of danger wherever their soundness is essential to safety; and they are accordingly unfitted for a number of important purposes for which forged metal, at a far higher cost, is considered necessary.

I do not propose, adds Mr. Fryer, to refer to any of the various methods and expedients which have been devised, and which are sometimes employed to cure the evil. It will, however, seem remarkable that no attempt has yet been made to get rid of the defect itself by eliminating the moisture from the blast, and thus removing the cause. One practical trial in that direction would go further to solve the whole question than all the theories that have been advanced, and all the laboratory experiments that have been tried since Dr. Muller's famous discovery of the real nature of the so-called "air bubbles" or "blowholes."

Sneezing and Shivering.

NATURE'S provision against the consequence of a "chill," and for the prevention of a "cold" are sneezing and shivering. A violent fit of sneezing often saves a chilled body the consequences of the nerve depression or "shock" to which it has been subjected, and this shock may in its first impression be very limited in its area: for example, the small extent covered by a draught of cold air rushing thorugh the crevice of a door or window. The nerve centres are aroused from their "collapse" by the commotion or explosive influence of the sneeze. If sneezing fails nature will try a shiver, which acts mechanically in this way. If this fails, the effects are likely to be very serious and bad consequences may ensue. The cold is slight when sneezing suffices to recover the nervous system quickly from its depression; and grave when even strong shivering fails to do so. In case of chill, with threatened cold, sneezing may be produced by a pinch of snuff of any kind. This is how some of the vaunted "cures" of snuff are brought about. Brisk exercise may also ward off the attack.—*Lancet.*

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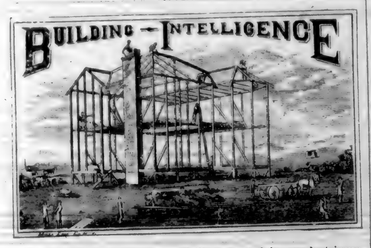

The building on Clay near Polk, reported in our last issue A. Curlett & Haskell, should have been A.—Curlett & Cuthbertson; C.—Leonard & Haskell. The building on Nineteenth near Mission, reported A.—T. J. Welsh, should have been A.—M. J. Welsh.

SAN FRANCISCO.

Market, cor. Jones. Five-story and basement brick.
O.—Murphy, Grant & Co.
A.—Kenitzer & Raun.
C.—Mahoney Bros., carpenters.
R. Mitchell, mason.
Estimated cost, $300,000.

Twenty-second, near Valencia. Two two-story frames.
O.—M. Walsh.
A.—M. J. Welsh.
Day's work.
$6,700.

Eddy, nr. Mason. Alterations.
O.—J. Luchsinger.
A.—H. Geilfuss.
C.—Conrad & Miller.
$2,000.

Harrison, near Twenty-fourth. Additions
O.—P. Slevin.
A.—M. J. Welsh.
C.—J. Walker.
$2,000.

Twenty-third, nr. Valencia. One-story frame.
O.— — McCarthy.
A.—M. J. Welsh.
C.—C. E. Dunshee.
$2,300.

Sherridan, nr. Tenth. Two-story frame.
O.—M. Smith.
A.—M. J. Welsh.
C.—P. Laherty.
$1,200.

Capp, cor. Twenty-sixth. One-story and basement frame.
O.—H. Godin.
Day's work
$2,500.

Mission, nr. Twenty-sixth. Additions
O.—T. Argenci.
A.—W. Mooser.
C.—I. L. Fuss.
$2,600.

Shotwell, cor. Twenty-first. Two two-story frames.
O.—A. A. Hobe.
B.—W. F. Muller.
$5,000.

Mission, nr. Twentieth. Additions. One-story frame.
O.—Gray & Baldwin.
Day's work.
$2,000.

Francisco, cor. Leavenworth. One story and basement frame.
O.—W. P. Harold.
A.—W. H. Wharff.
C.—Leonard & Haskell.
$8,000.

Stockton, cor. Union. Two three-story frames.
O.—V. Menesini.
A.—F. Carto.
C.—A. Pietro.
$14,500.

Stockton, nr. Lombard. Alterations.
O.—C. W. Alvey.
C.—G. Knuff.
$2,600.

Chestnut, near Mason. Additions.
O.—B. Goetz.
A.—H. Geilfuss.
C.—J. C. Claussen.
$6,500.

Larkin, nr. Greenwich. One-story and basement frame.
O.—R. C. Mattison.
C.—J. W. Dawson.
$1,600.

Lombard, nr. Larkin. One-story frame.
O.—H Bailey.
Day's work.
$1,000.

Vallejo, cor. Jones. Two-story frame.
O.—J. Walsh
C.—A. N. Nelson.
$2,400.

Vallejo nr. Larkin. Two-story frame.
O.—J. H. Bremer.
A.—Schmidt & Havens.
C.— — Winter.
$2,100.

Greenwich, cor. Fillmore Two-story frame.
O.—Mr. Dahl.
C.—J. Geary.
$2,500.

Bush, nr. Polk. Two two-story frames.
O.—P. G. Taylor.
A.—W. Mooser.
Day's work.
$10,000.

Day, cor. Church. One-story chapel.
O.—Advent congregation.
C.—A. Klahn.
$1,500.

Sanchez, nr. Twenty-fifth. One-story frame
O.—G. Edwards.
C.—N. W. Stecker & Son.
$1,000

Fair Oaks, nr. Twenty-third. Two-story frame.
O.—Mrs. J. Duff
A.—H. Geilfuss.
C.—T. Maxwell.
$4,500.

Guerrero, nr. Nineteenth. One story and basement frame
O.—W. Paulsen.
C.—G. Reisenmuller.
$2,000.

Church, nr. Nineteenth One-story frame
O.—H. Hewelke.
C.—R. Bergfeld.
$1,800.

Dorland, nr. Guerrero. Two-story frame.
O.—G. F. Gordon
C.—D. B. Spangler.
$8,000.

Hardy, nr. Seventeenth. One-story and basement frame.
O. and B.—T. Darcy.
$1,200.

Hardy, nr. Sixteenth. One-story frame.
O. and B.—Mr. Darcy.
$1,000.

Sacramento, nr. Polk. Two-story frame.
A.—Curlett & Cuthbertson.
C.—Leonard & Haskell.
$6,000.

Grove, nr. Broderick. Two-story and basement frame.
O.—A. Young.
A.—W. P. Moore.
C.—Leonard & Haskell.
$7,000.

Mission, nr. Eighteenth. Two two-story frames.
O.—J. F. Flathmann.
A.—H. Geilfuss.
C.—H. Mayn.
$8,000.

Howard, cor. Fifteenth. Additions.
O.—H. Hedger.
A.—W. P. Moore.
C.—D. F. McGraw.
$1,400.

Mission, nr. Thirteenth. One-story and basement frame.
O.—L. Hilmer.
C.—L. D. Frichette.
$3,500.

Twelfth, nr. Howard. Two-story frame and stable.
O.—A. Zihn.
Day's work.
$3,800.

Howard, nr. Twelfth. Three-story frame.
O.—F. Ratto.
A.—W. Mooser.
Day's work.
$7,500.

Market, nr. Eighth. Alterations.
O.—H. M. Bruns.
Day's work.
$6,000.

Bartlett, nr. Twenty-second. One-story and basement frame.
O.—D. Kell.
A.—A. Schropfer.
C.—W. Plugs.

Bartlett, cor. Twenty-second. Alterations.
O.—Mrs. Johnson.
A.—C. Geddes.
C.—G. R. Lang.
$2,500.

California Avenue, near Powell Avenue. Two-story frame.
O.—J. Dolan.
C.—L. D. Frichette.
$1,300.

Powell Avenue, nr. Mission. Two-story frame.
O.—M. Barry.
A.—W. P. Moore.
C.—L. D. Frichette.
$2,200.

Jackson, cor. Broadway. One-story frame.
O.—W. T. Baggett.
C.—N. M Comas.
$2,800.

Sacramento, nr. Broderick. One-story frame.
O.—W. Wilson
Day's work.
$1,000

Broderick, near Sacramento. Two-story frame.
O.—G. Beals.
A.—W. P. Moore
C.—C. B. Greene.
$5,000.

Devisadero, near Pine. Two two-story frames.
O.—G. O. Carlisle.
C.—N. G. Goodwick.
$5,500.

Mason, nr. Filbert. Three two-story frames.
O.—W. J. Sterns.
A.—F. Hilert.
C.—A. M. Nelson.
$8,000.

Pine, cor. Baker. Alterations.
O. and B.—J. McKay.
$4,000.

Bush, cor. Steiner. Two-story frame
O.—Mrs C. J. Loeven.
A.—J. T. Kidd.
C.—J. I. Grant.
$5,800.

McAllister, cor. Webster. Two-story frame.
O.—J. E. Alex.
A.—G. H. Miller.
C.—Patterson & Smith.
$4,000.

Mason, nr. Clay. Alterations.
O.—F. Eckenroth.
A.—G. H. Miller.
C.— — Nelson
$1,800.

Devisadero, cor. Hayes. Two-story frame and stable.
O.—J. Cooney.
A.—Townsend & Wyneken.
C.—S. Post.
$6,800.

San Jose Avenue, cor. Twenty-fifth. Two-story frame.
O.—R. Grey.
A.—C. Day.
C.—H. S. Grey.
$5,300.

First, cor. Bryant. Grotto Chapel St. Mary's Hospital.
O.—Sisters of Mercy.
A.—J. J. Clark.
C.—A. Flood.

Mission, nr. Twenty-sixth. Two-story frame.
O.—P. Connell.
A.—J. J. Clark.
C.—T. J. O'Brien.
$4,000.

Haight, nr. Buchanan. Two-story and basement frame.
O.—G. Waterson.
A.—J. Marquis.
C.—Gray & Stover.
$6000.

Sutter, cor. Buchanan. Two two-story frames.
O.—C. Jones.
A.—J. H. Littlefield.
C.—Hatfield & McRae.
$7,500.

Geary, cor. Stockton. One-story brick.
O.—Blaine Invincibles.
A.—G. H. Miller.
C.—W. E Stevens.
$8,000.

Mission, nr.—New Montgomery. Three-story and basement brick.
O.—F. Hufschmidt.
A.—H. Geilfuss.
C.—B. Dryer, carpenter. J. McCarthy, mason.
$20,000.

Fillmore, cor. Fulton. Two two-story frames.
O.—J. Rapp.
A.—H Geilfuss.
C.—W. Pluns.
$9,500.

Grove, nr. Franklin. Three-story frame.
O.—B. Bucholz.
A.—H. Geilfuss.
C.—F. Klatt.
$7,000.

Eddy, nr. Broderick. One-story frame.
O.—O. Grundel.
A.—A. C. Lutgens.
C.—W. Proll.
$1,500.

Sixth, cor. Harrison. Three-story and basement frame.
O.—J. H. Holjes.
A.—A. C. Lutgens.
Day's work.
$12,000.

Bush, cor. Jones. Three-story frame.
O.—S. G. Murphy.
A.—S. and J. C. Newsom.
C.—R. P. Traxler.
$12,000.

Baker, cor. Sutter. One-story frame.
O. C. Miles
A.—J. T. Kidd
Day's work.
$3,000.

Union, nr. Jones. Two two-story frames.
O.—F. Katz.
A.—B. E. Henriksen.
C.—W. Sinon.
$4,000.

Larkin, nr. Eddy. Two-story frame.
O.—M. F Angel.
A. B. E. Henriksen.
C.—U. Lienard.
$3,500.

Haight, cor. Steiner. Two-story frame.
O.—T. McMorry.
A.—T. J. Welsh.
C.—W. Fletcher.
$12,000.

Castro, near Nineteenth. Two-story frame and stable.
O.—M. Blues.
A.—R. E. Henriksen.
Day's work.
$3,000.

Geary, nr. Gough. Two-story and basement frame.
O.—F. Hofeling.
A.—Schmidt & Havens.
C.—W. Pluns.
$9,000.

Hyde, nr. Sutter. Two-story frame.
O.—P. Flatow.
A.—Schmidt & Havens.
C.—F. Klatt.
$7,500.

Beale, nr. Howard. Three-story and basement brick.
O.—J. Weichhart.
A.—Schmidt & Havens.
C.—F. T. French.
$8,500.

Bush, nr. Octavia. Two story and basement frame.
O.—M. Clayburg.
A.—Schmidt & Havens.
C.—C. Quinn.
$12,000.

Oak, cor. Gough. Two-story frame.
O.—J. Williams.
A.—H. D. Mitchell.
C.—J. Geary.
$6,000.

Golden Gate Avenue, cor. Pierce. Two-story frame.
O.—W. Hume.
A.—H. D. Mitchell
Day's work.
$10,000.

Folsom, nr. Twenty-first. Three two-story frames.
O.—C. Nelson.
A.—G. Bordwell.
C.—J. Dawson.
$8,500.

Jones, cor. Sutter. One-story frame.
O.—J. B. Keys.
A.—G. Bordwell.
C.—C. Mason.
$6,500.

San Jose—Market cor. San Fernando. Additions. O., R. C. Church; A., B. J. Clinch; C., J. Glenson; $10,000.

Walnut Creek—One-story chapel. O., R. C. Church; A., B. J. Clinch; C., T. O'Donnell; $2,000.

Santa Clara—Additions to college. A., B. J. Clinch; C., T. Starr; $1,900.

Oakland—Eighteenth, cor. Linden; two-story frame. O., H. Hopkins; A., C. Day; C., Ingerson & Gore; $5,500.

Napa City—Two-story and basement frame. O., Mrs. Yant; A., Curtiss & Bennett; C., Grey & Stover; $10,000.

Vacaville—One-story frame. O., Mr. Chinn; A., Curtiss & Bennett; C., Moore Bros.; $5,000.

Woodland—Corner of First and Court. Improvements Woodland Steam Flour-mill. O., B. F. Harnish; Millwright, B F Harnish; $12,000. East Ave. One-story frame. O., I. Fisher; C., A. Stamp; $1,150. Two-story frame. O., Samuel Lawson; C., Pool & Sears; $2,850. North. One-story frame. O., A. Armstrong; C., W. H. Winnie; $1,500. Corner Main and College Ave. Alterations. O., F. Lindsay; C., Glen & White; $1,150. Corner Main and Second. Alterations. O., J. H. Ringat; C., Gilbet & Sam; $1,225. Lincoln Ave. Alterations. O., Prof. A. M. Elston; C., Jos. Caldwall; $1,625. Elm. Two-story brick. O., T. P. Magee; B., Irwin & Leeland; day's work; $2,000.

Davisville—Two-story frame. O., Hoxt Bros.; C., W. H. Winnie; $2,000.

Martinez—Two-story frame. O., S. G. Mead; A., W. H. Wharf; C., Bolger Bros.; $4,000.

Berkeley—Shattuck Ave.; two-story frame. O., J. L. Barker; A., W. G. Copeland; C., day's work; $3,200.

San Rafael—Two-story frame; O., J. Buyrnie; A., C. Geddes; C., Ingerson & Gore; $7,600.

Livermore—One-story frame. O., A Wegener; A., A. C. Lutgens; day's work; $5,000.

Alameda—Alameda Ave. One-story frame. A., S. and J. C. Newsom; C., J. Clark; $6,000.

Eureka—Fourth. Two-story frame. O., D. H. Boyd; A., S. and J. C. Newsom; C., J. Simpson; $2,500. Third. Five two-and-story frames. O., S. Acheson; A., S. and J. C. Newsom; C., Butterfield Bros.; $3,500. Ninth, cor. F. Additions. O., N. Young; A., S. and J. C. Newsom; C., J. Simpson; $2,300. E. One-story frame. O., W. Pratt; A., S. and J. C. Newsom; C., J. Simpson; $3,500. Pratt Tract. One-story frame. O., J. St. Clair; A., S. and J. C. Newsom; $1,900.

Stockton Cemetery Mausoleum—O., L. M. Hickman; A., W. P. Moore; C., W. Mathews.

MARKET REPORTS.

LUMBER—*Pine*

Common Rough, up to 40 feet, per M feet	$22 50
" " 41 to 50 " "	23 50
" " 51 to 60 " "	24 50
" " 61 to 70 " "	26 50
" " 71 to 80 " "	28 50
" "	18 50
Refuse Rough	
Common Rough, sized with planer $2 additional on above rates, per M feet.	
No. 1 Flooring, 6 inches and over, "	33 50
" 4 " and under, and 1¼x4 and 1¼x6	40 00
Flooring and Stepping	
Rough Clear for Flooring, $1 less than above rates.	
Second Quality Flooring and Stepping per M feet	28 50
Ship Plank, Rough "	28 50
" Planed 1 side "	32 50
" " 2 sides "	35 00
Deck Plank, Rough "	33 50
" Dressed "	37 50
Laths per M	3 75
Wool Slats "	10 00
Shakes "	12 00
Redwood Posts per piece	17 50

Redwood.

Rough Merchantable per M feet	$22 50
" Refuse "	18 50
Surface No. 1 "	40 00
" 1x6 "	37 50
No. 2 "	27 50
Rustic, No. 1, 1x8 "	37 50
" No. 1, 1x10 "	40 00
" No. 2 "	35 00
" Under 10 feet "	35 00
T. & G., 1¼x4 and 1¼x6 "	40 00
" 6 in. 12 ft. and over "	37 50
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
" " No. 2 "	30 00
T. & G., Beaded, 12 feet and over "	40 00
" " 7 to 11 feet "	32 50
" " under 7 feet "	30 00
Half-inch Surface "	32 50
Pickets, fancy "	30 00
" Rough, Pointed "	20 00
" " Square "	17 50
Siding, ½ inch "	27 50
Shingles per M	2 15
Battens, ½ inch, lineal feet "	1c

The California Architect and Building News.

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AND
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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

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Advertisements inserted for three months or less ar payable in advance; payable quarterly when inserted fo a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Review of Building Operations.

THIRD QUARTER.

DURING the past quarter there has been a general complaint amongst real estate dealers of a stagnation in business. While the records will prove this statement, the same state of affairs, very happily, does not exist in the building trades. The past quarter has been a very active one, and the number and value of buildings exceed those of any previous record for the same length of time.

The report for the month, published on the last page of reading matter in this issue, is well worth study. Leaving out the Pioneers' Building, we find there have been commenced over 100 improvements, of the value of about half a million dollars an average of $5,000 each.

Another feature of special mention should be noticed. *A larger percentage of buildings in the course of construction are under the* SUPERVISION OF PROFESSIONAL ARCHITECTS, *Than in any list we have published for some time.* From this we deduce that owners have become tired of the "shoddy" work they get from adopting *carpenters'* plans, which are tendered them free of charge, if the one presenting the plan has the honor of erecting the building. The custom of giving plans for nothing is one that should be frowned down by every intelligent owner of real estate, as they are sure to suffer in the end from badly designed and imperfectly constructed buildings.

For the sake of comparison, we present the record for the first nine months of the past three years:—

FIRST NINE MONTHS OF 1882.

582 Buildings, of the value of.....$2,655,726

SAME TIME IN 1883.

635 Buildings, of the value of.....$4,579,878

SAME TIME IN 1884.

796 Buildings, of the value of.....$5,160,334

This summary proves that the city has had an actual and steady growth for the past three years. Although since January, 1882, there have been reported in this Journal 2,382 new buildings and improvements, there are comparatively very few buildings to rent; and most of the latter are the old-fashioned basement houses, in which the dining-room and kitchen are on the lower floor, thus compelling the roomers on the top floor to travel up and down two flights of stairs at meal-time and as occasion requires. Since the introduction of elevators, the mass of the people have grown tired of running up and down stairs, and this is one of the principal reasons why "*flats*" rent so readily, as all the conveniences are found on one floor.

NOW IS THE TIME TO BUILD.

During the past month there has been a total collapse of the lumber market. Prices have fallen from fifteen to twenty-five per cent. Eighteen dollars per M. is the ruling price, and in large lots a discount is obtainable from that figure. The principal cause for the break is the absence of a foreign demand In the February issue of this journal, we gave a full history of the "Lumber Bone Yard." We showed that the lumber combination was in a large measure supported by the foreign demand. If a cargo from the mills arrived in the city for which there was but little demand, it was sent to the "Bone Yard" to be reshipped to foreign ports at any obtainable price, as occasion demanded. When orders for foreign ports were brisk, all was well, but when these ceased, it became too heavy a burden for the combination to carry.

Over fourteen million feet of lumber are now piled up in the "Yard." This must be got rid of before the time comes next year for another lumber squeeze on the dear public. Many of the mills have shut down, and others are working on three-quarter time.

Hardware is also very cheap, nails selling as low as $2.80 per keg. Other things are in proportion. From a careful study of the field, we would advise those who can, to lay in a stock of lumber and nails. It is the design of the manufacturers to curtail stock on hand as much as possible, and as they are diminished by future demands, prices will correspondingly stiffen, and in a few months will resume the old standard.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting was held on September 5th at the usual place. It being also the annual meeting, a fair representation of the architects of the city were present.

Propositions for membership as Fellows were received from H. Geilfuss and R. H. Daley. Secretary's report was received, and ~~after a short debate was ordered spread in full~~ upon the minutes.

[*An article will be found in another column upon the Secretary's report. It was objected to on the ground that it contained the Treasurer's report, as well as the Secretary's. The Chapter by a UNANIMOUS vote, adopted the report as read.*—ED.]

The committee appointed to consider the feasibility of amendments to the Fire Ordinances of San Francisco, reported as follows:—

SAN FRANCISCO, Sept. 5, 1884.

TO THE OFFICERS AND MEMBERS OF THE SAN FRANCISCO CHAPTER OF ARCHITECTS—*Brother Fellows and Members:* Your committee appointed at the August Session of the Chapter to consider and prepare revisionary recommendations and amendments to the Fire Ordinances of the city and county of San Francisco, beg leave to report progress only as we find the task somewhat complicated and difficult, owing to the distribution of the subject matter in interest through various sections of the Book of Ordinances as printed, which can only be intelligently reached and analyzed by careful review and application.

It is not proposed to touch any of the ordinances relating otherwise than to building and other mechanical constructions usually within the scope of architectural limits. Your committee has taken the necessary measures to procure copies of the Fire Ordinances of Eastern cities, and will report the result of their deliberations to the Chapter as soon as possible for us to obtain the desired information, and perfect such report in the fullness demanded by the importance of the subject matter under consideration. Respectfully submitted

JAMES E. WOLFE,
B. E. HENRIKSEN,
THOS. J. WELSH,
WM. CURLETT,
JOHN M. CURTIS,
} *Committee.*

Further time was granted to the committee. Election of officers for the ensuing term being in order, the following gentlemen were chosen to serve:—

PRESIDENT, Augustus Laver.
VICE-PRESIDENT, Albert Pissis.
SECRETARY, B. E. Henriksen.
TREASURER, J. M. Curtis.
TRUSTEES: J. E. Wolfe, W. Curlett, H. G. Matthews, G. H. Sanders, T. J. Welsh.

A vote of thanks was tendered the retiring officers.

The teachers of the various classes reported that the students had made creditable progress. G. H. Sanders gave notice that he would be prepared at the next meeting with a paper to read.

The Architects' Meeting and the Daily Papers' Reports.

IT frequently occurs that the proceedings of the Chapter of Architects are not reported correctly in the daily papers. The *Chronicle*, in noticing the proceedings of the annual session, held the 5th instant, saw fit to head its item with the insinuative slur, "Inharmonious Architects," which was not and is not true. The proceedings were entirely harmonious throughout, provided *free and gentlemanly discussion* upon matters of importance is to be considered not a violation of the rules of harmony. The objection made by the retiring Treasurer to the Secretary's annual report was simply and wholly upon the grounds that the Secretary had received and disbursed the receipts from dues and other sources, for room rent, stationery, printing, seal, and other current expenses, as had been the custom between all preceding Treasurers and the Secretary, since the first formation of the Pacific Coast Association of architects about four years ago, without the formality of paying the moneys received to the Treasurer and drawing warrants, as provided by the by-laws. This led to a discussion, which was more or less joined in by the members present, and was concluded by the unanimous acceptance of the Secretary's report, and its being ordered spread in full upon the minutes.

Mr. Macy, the retiring Treasurer, actuated by the best of motives, and with the simple desire to have the affairs of the Chapter conducted *technically* as well as *executively* correct, raised the objection upon the grounds that it contained a full report of all moneys received and disbursed, vouchers for expenditures, and balance on hand—he claiming that all this should have passed through his hands.

The *Examiner* stated, in its report, that the Committee on Fire Ordinances made no report—fact, said Committee made their report, occupying a full page of legal cap, signed by all the members of the Committee, which will be found in full on page 156 of this issue.

How to Lay Drain Pipe.

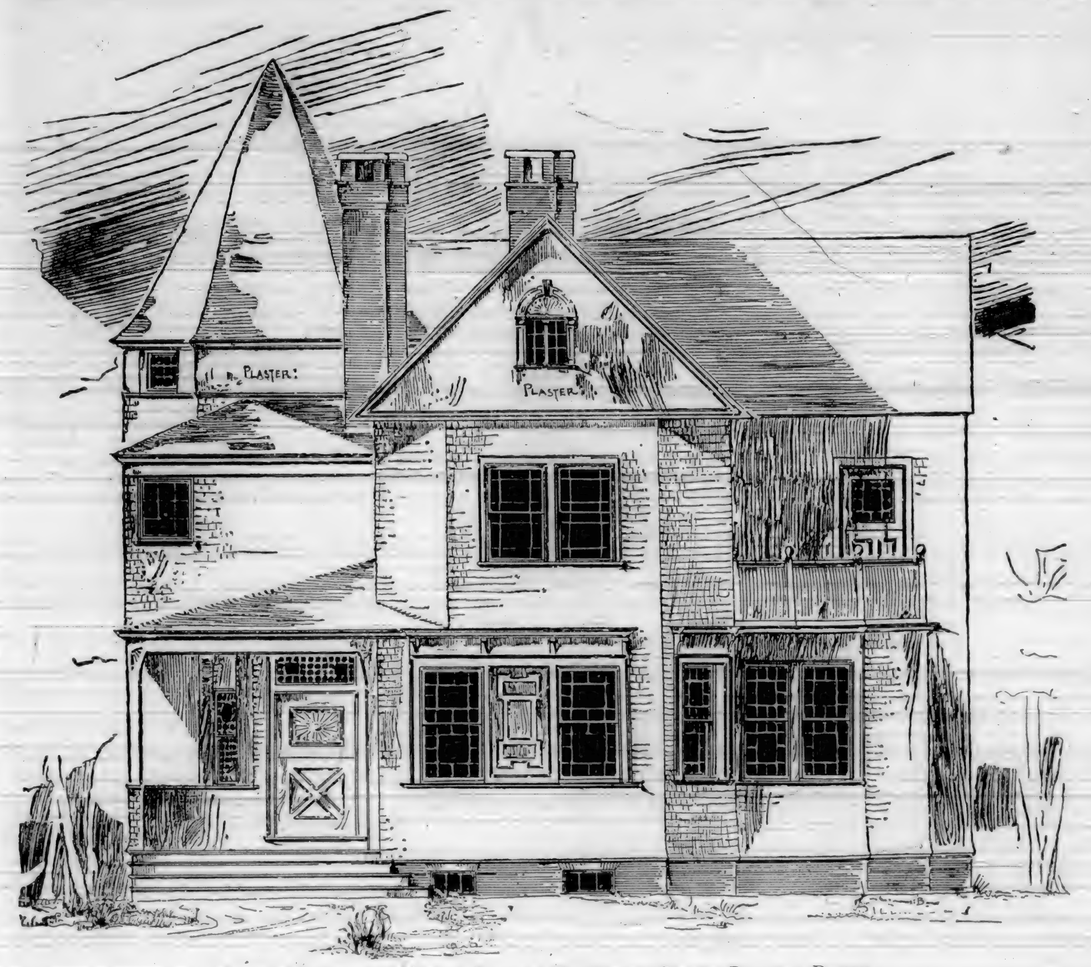
PIPE laying of a peculiar sort is supposed to be in order about Convention time, but the methods in use for laying drain pipe must be at all times a subject of interest to the plumber. The Lowell *Times* in a recent communication from a Mr. Stables, presents that gentleman's methods in the following manner: "As a rule this kind of work (laying drain pipe) is intrusted to the very poorest of mechanics, if indeed they are mechanics at all, and that, too, without the supervision of a person in the least familiar with the requirements of the business. The drain is sometimes put in before the cellar is built, and very often before the sills are put on, whereas it should be one of the last things on the job, and should be put in in connection with the plumbing, not by the plumber necessarily, but at the same time that his work is being done. My reasons for delaying this are that all open inlets are liable to get filled up with dust and chips that are always strewn about a new building, which in future may become the innocent means of trouble, and that changes are liable to be made which will necessitate a different arrangement of the drain, and also that it is impossible to test a drain under pressure till the plumbing is securely connected. Speaking of testing drains, in my opinion every drain should be tested under a pressure of at least five feet head of water. The method which I employ to accomplish this is to dig the trench twenty inches or two feet wide, so that the pipe layer can have room enough to properly do his work. I then start the drain at a regular grade with an inclination adapted to the lay of the land, and at a convenient point near the outlet I put a brass slide-gate by which the drain can be closed perfectly tight in the same way that the water is shut off in our water mains. I then lay the pipe with Portland cement, using care to clean all joints and the inside, and to carefully fill the socket around the full circle, rubbing it down hard with a small trowel when it begins to set. I follow on in this way throughout the whole system, taking in conductors, soil-pipes, fresh air inlet and whatever other connections are called for, and when completed, leaving the entire trench open, I allow it to stand for two or three days for the cementing to get hard. I then close the gate and fill the entire system up to the lowest inlet, and if I find any leaks, I open the gate, let the water out, and re-cement the leaky joints. I then close the gate, repeat the first operation, and if tight, I open the gate and fill the trench, and call the job finished. In cases where people do not wish to go to the expense of a gate, I have taken a T-branch and bedded a piece of double thick glass, cut to fit in the socket, into the socket of the main pipe, in putty, and then laid the system in the same manner as described. I then fill the drain with water, and when satisfied it is tight, I reach into the T and break the glass with a hammer, and clean out the pieces after the water has gone; but this can never be used a second time for flushing the drain. Leaving out all sanitary considerations, this test will pay the property owner through the more mechanical advantage gained. It will retain the liquids which are required to float away the solids. If the liquids leak out at every joint the solids will accumulate, and finally stop the drain. Leaky drains will sometimes become stopped, but the stoppage will not be discovered for months, as the liquids are escaping out of the half cemented joints and fouling the earth and foundation walls until the stench becomes so unendurable that people ask to have their drains looked over, ignorant of the fact that they are entirely stopped and that not one drop of the sewerage is reaching its intended outlet."

Make Your Own Gas.

OWNERS of country stores and dwellings should use every precaution against fire, as the non-proximity of fire engines and scarcity of water oftentimes cause a small fire to develop into a disastrous conflagration. Since the first introduction of coal oil as a means of illumination, various contrivances have been placed in the market by which gas could be manufactured from that substance. For more than twenty years improvements have been made in gas machines, until there has been developed one that is as near perfection as scientific study and investigation can produce.

These machines are guaranteed absolutely safe in their operation, simple in construction, not liable to get out of order, and require no skill to manage. They require less attention than a common kerosene lamp. *No fire is used in the process of manufacturing gas by these machines.* Cost of gas will be less than one dollar per thousand feet.

The tank, containing the gasoline, is buried in the ground and is delivered in permanent pipes and fixtures to the proper distributing points. Consequently no danger or trouble is engendered by frequent removals of the fluid. Full particulars in regard to these machines will be given by addressing A. F. Nye & Co., 609 Market Street, San Francisco, who are the sole agents for the best machine manufactured.



FRONT ELEVATION OF $5,000 COUNTRY DWELLING.—SECOND PREMIUM DESIGN.

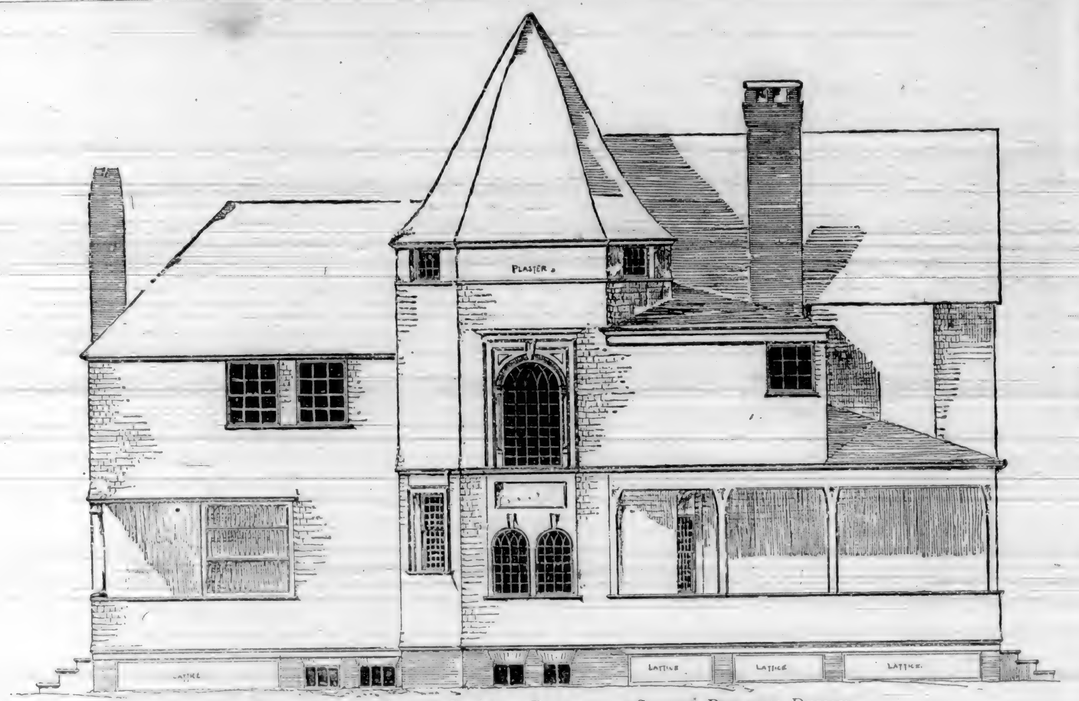
Our Competition Designs.—Second Premium Plans.

IN this issue we present the various elevations and plans of the gentlemen receiving the second premium in the late competition held under the management of the editors of this Journal. Under the *nom de plume* of "Garrick," Mr. John C. Wolf, of 57 Broadway, New York, is the party to whom the credit is due for presenting plans in so creditable a manner as to win the second premium.

The same fault is noticeable in this set as in those receiving the first premium, viz. *stories too low to suit California ideas.* The rooms shown are all of good size for the purposes intended for each, and in this section nothing less than twelve and eleven feet in height, respectively for the two main floors, would be considered by either owner or architect. Our "glorious climate" may have something to do with the apparent necessity of high ceilings; custom also being a prominent factor in this respect; the fact remains, however, that, on this coast, people will have high ceilings. The first floor plan is very well arranged, the greatest fault being the lack of sufficient closet room. In this, as well as every plan received in the competition, long narrow halls are done away with; in their place, we find a large, comfortable hall-way, well lighted, and with ample means for heating. The arrangement of the water-closet is, at least, a novel one in regard to position. It will be found preferable to have a door direct from the kitchen to the back porch, avoiding the necessity of the cook having to pass through the pantry.

On the second floor, the position and convenience of bath-room will attract attention. Keeping the water-closet separate from, and yet in immediate proximity to the bath-room, is a very commendable arrangement. The interior lobby or central hall, is, at least, a novel feature, its advisability would, in a measure, have to be determined by those erecting the house. More fire-places are shown than are necessary for this part of the country. The back stairs are a little crowded, but there is plenty of room for enlargement. Ample bed room is afforded in the attic for servants and the older children. Closet room is also abundantly provided. The basement contains sufficient room for all the purposes for which that portion of the house is intended.

The house is certainly picturesque in its outside appearance. We have not seen any-



SIDE ELEVATION OF $5,000 COUNTRY DWELLING.—SECOND PREMIUM DESIGN.

thing resembling it in this State. The elevations of the front, sides and rear being given, will enable any one to clearly understand how the house will look when finished.

ESTIMATED COST.

Below in full will be found the cost of the various parts of the work, as computed by the architect. It is greatly under the cost of the same design, if erected on this coast. The amount quoted for plumbing is greatly underestimated. Here we would not be satisfied unless each of the principal chambers contained a wash bowl. Multiply the figures given for plumbing by six, and the amount would be the average cost here of plumbing for a house of the size shown.

A great disparity occurs also in painting, the figure given would *at least* have to be multiplied by TEN, to obtain an estimate for which the work could be considered in this city. The price of lead and oil is very near the same as in the East, and we fail to comprehend wherein such a difference can occur. We give the estimate as prepared for publication and each one can study the differences in prices as they find time so to do.

California Architect—$5,000 House Competition—Submitted by "Garrick."

Estimate of Quantities and Prices of Materials in, or Vicinity of, New York City.

THE following prices are given, including the labor of putting in place, also, in their respective requisitions: the price includes the necessary mortar, nails, glueing, wedging, etc.:—

MASONRY.

Excavations, 290 cu. yds. @ 28c. per cu. yd.	$ 81 20
Stone work, Foundations, 202 cu. ft. @ 12c. per cu. ft.	24 24
Flagging, 6' sq. ft. @ 70c. per sq. ft.	42 00
Window sills, 11 @ 80c. a piece	8 80
Pier plates, 13 @ 50c. a piece	6 50
Chimney caps, 2 @ $4.00 a piece	8 00
Brick work, for walls and piers, 4,870 @ $18.00 per thousand	88 66
Brick work for chimneys, 1,060 @ $18.00 per thousand	19 08
Brick work for fire-place facings (pressed brick), 6 @ $19.00 a piece	114 00
Tiling for fire-places, 4 @ $22.00	88 00
Plastering (includes lathing). Outside (rough sand-finish), 14 sq. yds. @ 32c.	4 48
Inside (hard finish), ceilings and under side of stairs, 360 sq. yds. @ 35c.	126 00
Inside (hard finish), sides, 1,062 sq. yds. @ 35c.	371 70
Masons	$982 66

CARPENTRY.

Scantling, sills and girders, 6"x8," 241 ft. @ 40c. per thousand ft.	96 40
Plates and enterties, 4"x6," 454 ft. @ 40c. per thousand ft.	181 60
Studs, 3"x4"x12'-0," 620 sticks @ 24c. a piece	148 80
Sleepers, 6" diam., hewn on one side, 190 ft. @ 3½c. per ft	6 65
Floor beams, 2"x10"x16'-0," 72 sticks @ 40c. a piece	28 80
Rafters, 2"x8"x16'-0," 164 sticks @ 40c. a piece	65 60
Rafters, 2"x6"x12'-0," 22 sticks @ 35c. a piece	7 70
Furring strips, 1½"x3"x12'-0," 120 sticks @ 12c. a piece	14 40
Sheathing on roofs, 2,320 sq. ft. @ 5c. per sq. ft.	116 00
Sheathing on sides, 2,996 sq. ft. @ 5c. per sq. ft.	149 80
Shingles on roof (5" to weather), 2,210 @ $8.00 per thousand	17 68
Shingles on sides (4½" to weather), 2,990 @ $8.00 per thousand	18 32
Moulded and turned (exterior work). Water table, 163 ft. @ 25c. per ft.	40 75
Belt course, 28 ft. @ 30c. per ft.	8 40
Cornice, 251 ft. @ 38c. per ft.	95 38
Window sills and baluster rails, 140 ft. @ 22c. per ft.	30 80
Architraves on first story, 6 @ $5.00 a piece	30 00
Piazza approach steps, 2 @ together	9 00
" posts, square and cantilivers @ $8.00 a piece	40 00
Piazza post, round with cap and base	10 00
Piazza screen, 60 spindles @ 20c. a piece; one frame @ $5.00	17 00
Piazza sheathing of ceiling and sides, 620 sq. ft. @ 20c. per sq. ft.	124 40
30 windows, box frames, blinds, sash and architraves @ $12.00 a piece	360 00
16 windows for attic and cellar @ $3.00, swing on pivots	48 00
1 window, elliptical	6 00
1 " staircase	35 00
Carpentry	$1,716 08

JOINERY.

Doors, 3 outside doors with glass panels and trim @ $8.00 a piece	24 00
Doors, 1 outside split door	25 00
Doors, 27 4-panel doors @ $10.00 a piece (including trim and hardware)	270 00
Floors, 1,280 sq. ft., 9" wide @ 6c. per sq. ft.	76 80
Floors, 1,564 sq. ft., 3½" wide @ 10c. per sq. ft.	156 40
Baseboard, 432 feet, 8" high @ 25c. per ft.	113 00
Wainscot, 120 sq. ft., for bath-room and water-closets @ 25c. per sq. ft.	30 00
Jobbing, fittings for water-closets, laundry tubs, kitchen sink, coal bins, cold air box, etc.	30 00
Staircase, servants, 23 risers @ 20c., 21 treads @ 28c. 7 newels @ 4c., 42 balusters @ 20c., 14 feet of rail @ 17c., total	24 20
Staircase, main, 32 risers @ 30c., 21 treads @ 40c., 4 rounded treads @ $1.00, 16 newels @ $1.75, 153 balusters @ 60c., 5 landings @ $3.00, 51 feet of rail @ 40c., total	177 20
Allow for bed-room mantels, 5 @ $15.00 a piece	75 00
Allow for parlor finish with mantel	100 00
" dining-room finish with mantel and side-board	150 00
Allow for first story hall finish with mantel and vestibule	100 00
Allow for second story hall finish with mantel	75 00
Allow for fitting shelves and doors to medicine closet	8 00
Allow for fitting shelves and hooks in other closets	12 00
Allow for shelves and glass doors in cupboard in butler's pantry	10 00
Interior finish, total	$1,456 60

TINNING.

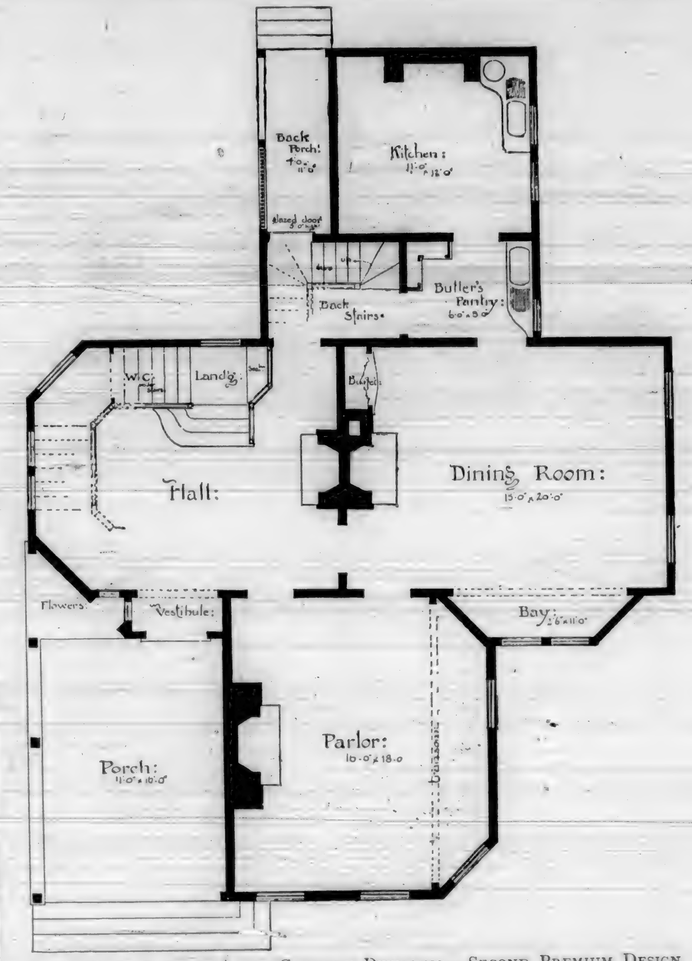
Flashings, 630 sq. ft., all painted and laid @ 10c. per sq. ft.	63 00
Gutter, 140 feet of 5" gutter @ 4c. ft.	5 60
" hooks, 30 ornamental @ 20c. a piece	6 00
Leaders, 90 ft. of 4" leader pipe @ 5c. per ft.	4 50
Leader straps, 12 ornamental @ 40c.	4 80
Tinning, total	$83 90
Heating furnace (including register faces and pipes)	220 00
Range in kitchen with hot water back and connections	50 00
Heating, total	$270 00

PLUMBING.

Bath tub, 1 copper bath tub with plug and connections	10 00
Water-closets, 3, traps and safes @ $22.00	66 00
Wash bowls, 1, cocks, plug and marble top and back	7 00
Laundry tubs, 3, linings and connections, with cocks and plugs	3 00
Sinks, 2, kitchen and pantry, with strainers and cocks	8 00
Boiler, 1, galvanized iron, with gal. stand and connections	18 00
Soldering and leading	10 00
Plumbing, total	$122 00

PAINTING.

One cask of stain for shingles, 10 gallons @ $1.50 gal.	15 00
1,020 sq. ft. of 3-coat painting (exterior) @ 3c. sq. ft.	30 60
Interior painting included in above allowances.	
Painting, total	$45 60



FIRST STORY PLAN OF $5,000 COUNTRY DWELLING.—SECOND PREMIUM DESIGN.

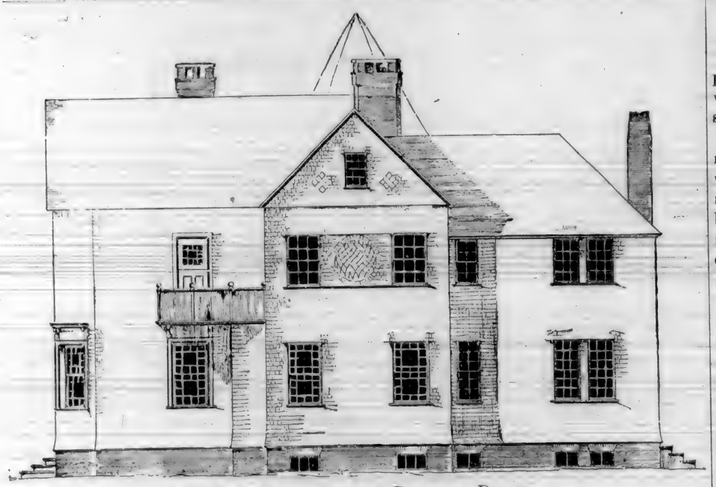
TOTALS.

Masonry	982 66
Carpentry	1,716 08
Joinery	1,456 60
Tinning	83 90
Heating	270 00
Plumbing	122 00
Painting	45 60
Grand total	$4,676 84
Mechanics'	4,676 84
Architect's fee, 8 per cent	374 08
Entire cost of building	$5,050 92

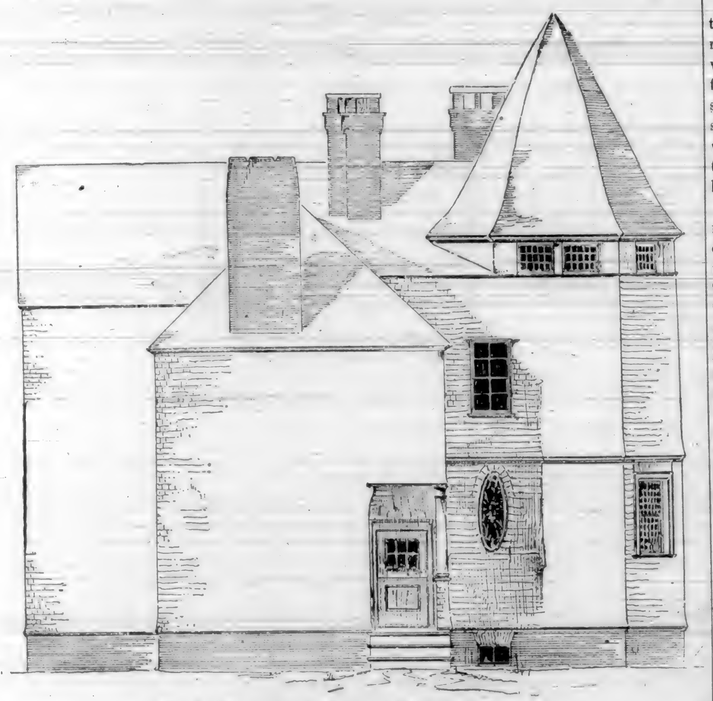
Artistic Homes. $3.50
Modern House Painting. $5.00.
Steel Square and Its Uses. $1.00.

THE WAY IT HAS ALWAYS BEEN.—The constant clash between capital and labor is thus epitomized in the *American Miller:* "To get much for little is the real quintessence of happiness. Much for little has been the cry of Jew and Gentile for thousands of years, and to get much for little, men sacrifice their fortunes, their lives, and their sacred honor. On the one side, to get much money for little work, and on the other side, to get much work for little money, makes most of the troubles between employer and employed. It has been so in the past, and will be so in the future, until the end of time, all legislation to the contrary notwithstanding."

Complete Details. $2.00.
Universal Assistant. $2.50.
Cutting Tools. 2.00.



SIDE ELEVATION.—SECOND PREMIUM DESIGN.



REAR ELEVATION.—SECOND PREMIUM DESIGN.

THE coming question is, how to divide the profits fairly between capital and labor, and give each their proper share. Unfortunately labor cannot share losses. If $50,000 is made one year, labor steps in for its share. If the same is lost next year, capital must sustain the loss, as labor spent what it made the previous year and cannot refund what it has not got. When labor gets forehanded enough to make a fair deal on losses as well as profits, does not labor then become a capitalist? Or, how much must a man be worth before he can be known as a capitalist? Where is the dividing line?—*Ex.*

Lunch or Dinner—Which Is Best for the Mechanic at Noon-Time?

OPINIONS differ in regard to the subject, and perhaps a few thoughts as expressed by various mechanics, may prove interesting to some readers.

Advocates of a hot dinner at the regular noon hour claim that it is much preferable, when possible, to sit at a table where the meals are served hot; that the walk from the building to the hotel or restaurant, is in many cases a needful change of exercise, especially when one has been working steadily at the bench; also, the mind receives rest by the different sights encountered, enabling the workman to put aside cares and trials for a while, so that upon his return his mind as well as body will be fresh to encounter any perplexities that may be met. Stress is laid upon the fact that the lunch men, especially when the day has been warm, and underclothes soaked with perspiration, are liable to colds or chills, from sitting around a whole hour in a tool house, or on the shady side of the building. Many other arguments are used, but the foregoing are the principal.

On the other hand, the lunch men claim that, in order to get a hot meal, one must be ready to instantly drop tools the minute the whistle blows, or upon the call of time by the foreman, in order that not a minute be lost, so that the "hot meal may be got at" in the shortest possible time. Rush, must be the word—to the meal, eating the same, and back to the building—all to be done inside of one hour.

The lunch men also claim that hot coffee is not the only stimulant necessary for the dinner men, and that *the other hot* is one of the principal reasons for a walk to dinner. The claim in regard to brain rest is all bosh. The latter named portion of the anatomy receives much more rest by an intelligent discussion for half an hour on the quickest method to find the length and bevel of any brace, rafter, etc. After a warm morning's work, the workman is exceedingly particular to pick out a nice warm spot, free from draft, where lunch can be eaten without danger of catching cold. Twenty-five minutes is an ample space of time in which to satisfy nature's cravings, leaving full thirty minutes for rest.

Each side advances good arguments in favor of their respective views. We are promised several communications upon the subject, and will publish those that are the most suitable. We will be pleased to hear from any of our mechanical friends in regard to lunch or dinner at the noon hour.

Every mechanic should at once send us $2.00 for one year's subscription to this Journal. We are earnestly laboring for your welfare, and advancement in the art of building correctly. Not only do we present in each issue all the latest developments in the science of carpentry as practiced on this coast, but we also give you the cullings of the principal Eastern journals. Back supplied. Bound volumes $2.50 each.

Every Architect on the Pacific Slope Should Become Identified with the S. F. Chapter American Institute of Architects.

A WONDROUS change has come over the architects of this city since the Chapter has become an assured success. It is now over three years since the architects resolved that it was for their general interest to encourage social intercourse with each other, and to hold meetings at which interchanges of ideas could be considered. At first it was a hard undertaking for the active originators of the Chapter to convince many of their brethren that it would be to their advantage to become identified with the Chapter. The impression seemed to prevail that it was for the best interests of architects to keep the knowledge gained by individual study to one's self. Plans were not allowed to be seen, elevations hidden from sight, for fear that the ideas shown would be copied. A careful concealment of intended improvements was practiced, so that a rival would not hear of the same and endeavor to convince the owner that a change of professional help would inure to his benefit.

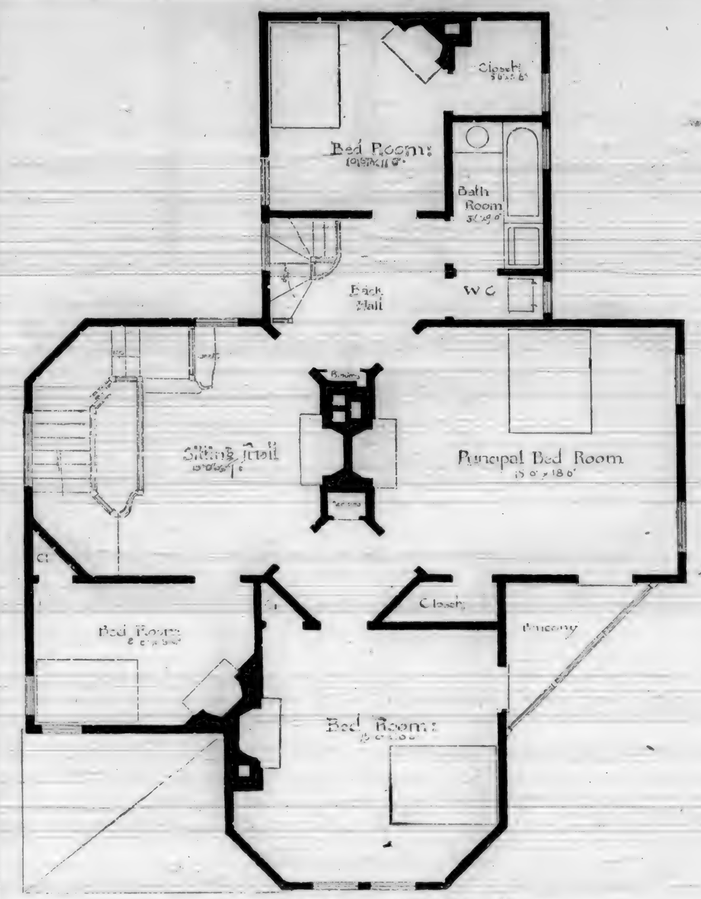
Very different now is the feeling among the Chapter members. They vie with each other in extending courtesies. Friendly visits are occasionally made, greatly to the benefit of each party. Vexed questions are considered at these visits, and the visitor retires convinced that the architects are now in the right path to make their profession an honorable one among all classes of the community.

We earnestly call the attention of our country brethren to the necessity of becoming identified with the Chapter. The benefits from so doing will more than compensate for the small outlay required. For the information of those intending to join, we quote the fees and dues necessary to become members.

Membership is divided into four classes: Fellows, Associates, Draughtsmen, and Students.

	Initiation Fee.	Dues Per Year.
Fellows	$6.00	$6.00
Associates	4.00	4.00
Draughtsmen	3.00	3.00
Students,	2.00	2.00

A copy of the by-laws, and any information in reference thereto, will be furnished by sending address, etc., by mail, or personal application to the Secretary, B. E. Henriksen, at his office, 218 Post Street, San Francisco.

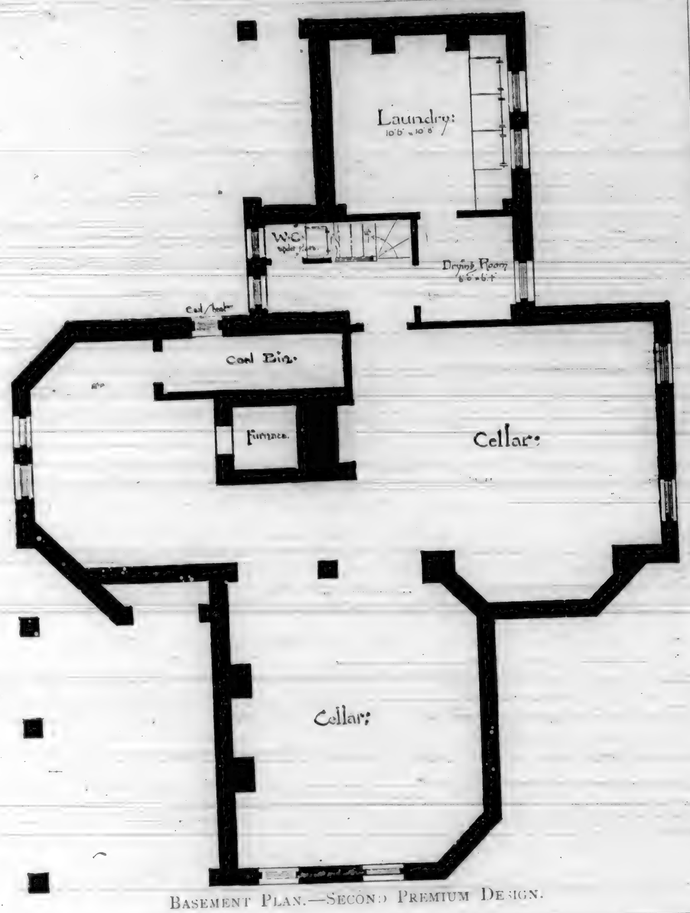


SECOND STORY PLAN.—SECOND PREMIUM DESIGN.

Joinery.

THIS important branch of carpentry was comparatively unknown in the early days of mechanical arts—the first dawn of the existence appearing in the construction of thrones, pulpits, and screens used in churches and cathedrals. The work was evidently performed by the carvers of the period, as this less artistic portion bore signs of carelessness, such as an artist would likely bestow upon what was altogether mechanical. When, however, carving assumed more classical pretensions, and joinery became necessary to the furtherance or perfecting of special modeling, then it was developed into a special department, and carried to a degree of excellence scarcely found among joiners of the present day. It is to the influence of this new study that the world is indebted for the light window sash, paneled doors, wainscoting, handsome mosaic floorings and a host of other interior decorations now so common. The inventive genius found scope in the improved practice of the science to produce machinery which not only assists the expert's joiners, but enables them to perfect work hitherto but partially well executed. There is still much room for improvement and invention. Wood shrinkage must be overcome, or so counteracted as to render the joiner's labors durable. The tools used by joiners are endless in variety, and need to be of great accuracy, so that the most perfect lines of the truth-telling rule may be adjusted with a precision barring detection. The work is necessarily tedious, and at times irksome, therefore of the number of mechanics who attempt the acquirement of the trade, but a small number reach the summit of excellence. —*Ex.*

OCCASIONALLY we hear complaints of putty that shows through the paint that covers it, in stains that even several coats of good paint will not remove. We have taken pains to look into the cause, and find the trouble due to the use of cheap oils as substitutes for linseed oil in making the putty. Painters who are troubled with stains of this kind will do well to learn whose make of putty they have used, and to forever afterwards avoid it. Some cheap putties are made with a portion of fine marble dust mixed with it, as a cheapening process, as marble dust is cheaper than whiting. Some glaziers prefer it, as it works smoother than the regular article and takes hold well, but in most respects it is a quite inferior article. The old-fashioned putty has never been improved upon much, and is a pretty good thing to stick to.—*The Painter.*



BASEMENT PLAN.—SECOND PREMIUM DESIGN.

Practical Workmen.

NO MAN can be said to be a practical workman unless he thoroughly understands the theory as well as the practice of his employment. Some men are content in the simple accomplishment of results without endeavoring to study the why's and wherefore's which lead to their production. Some workers accept without investigation the formulas of their trade, and do not aspire to a knowledge of the principles upon which these formulas rest. They may be very good artisans in their way; they may, so far as their immediate tasks are concerned, be excellent workmen, but it is needless to say that they are not composed of the material which makes the great, the rising, and progressive spirits of the age. —*The Wood-Worker.*

WE would like to place your name on our subscription book, if you are not already a subscriber.

THE following is given as the weight of hardwoods per foot, board measure. Some allowance must be made in the weight of fresh cut, as the same wood differs some in weight when green in different localities:—

Name of wood.	Green. lbs. to 1 ft.	Dry. lbs. to 1 ft.
Ash	4½	3¾
Apple	5	4
Beech	5	4½
Birch	4½	3¾
Basswood	3½	2½
Chestnut	4	3
Cherry	4½	3 1-5
Cypress	4	3
Cedar	4	3
Elm	4	3
Hickory	5	4½
Holly	5¼	4½
Lignumvitæ	9	8¼
Maple	5	4½
Mahogany	5½	4½
Oak	5	4½
Poplar	3½	2½
Rosewood	8	6¾
Walnut	4½	3 1-5

—*Miss. Valley Lumberman.*

Adulterated Oils.

LIKE all other trades and professions, that of the painter has met with many a serious drawback by the materials he uses being adulterated. At the present time, linseed oil seems to have undergone a great metamorphosis, inasmuch as out of thirteen samples, procured from all parts of the country, none were found without traces of adulteration, and in some instances there were more deleterious matters than linseed oil. Artisans use these oils, fail to make a good job, and receive all the blame, while those who have profited by the adulterations go free. It is not the dealers or even the manufacturers who make these adulterations, for they are more anxious than any one to send out pure oils, as they have a reputation at stake, to maintain which is utterly impossible if their goods are found to be tampered with. One sample of adulterated oil, drawn from a lot ready for export, was found to contain cotton-seed oil, resin oil, a sulphuretted oil and fish oil, and exhibited the property of dichroism, showing a yellowish-red tint by transmission and a blue by reflection. Distillation would separate nearly all the resin oil, the residue in the retort lost its phenomenon of dichroism. The presence of resin may be proven by boiling for a few minutes with an excess of alcohol at 90°, decanting and treating with natural acetate of lead, the result, if a curdy precipitate, shows the unmistakable evidences of lead. If the oil is now subjected to the action of the vapors of nitric acid, and set aside, a semi-solid reddish-brown mass will probably be deposited; then to detect the presence of any animal or fish oil, pass a current of chlorine gas through the sample for nearly an hour, when, if present, a reddish-brown color passing into violet will then turn a blue-black. With all these indications there need not be the least doubt as to the nature of the adulterant.

Another article of great importance is white or oxide of lead, and perhaps in a long catalogue of paints there are none adulterated to the same extent. To retain its weight heavy materials are used, and the color retained by the use of alkalies. The easiest way of determining the adulterants of this article is to extract the lead by means of a flux; this will seize upon the minerals other than lead, the increase weight of which shows the adulteration, while the lead is secured as a bright button, the careful weighing of which will tell the per cent. of this element; thus we have two very simple tests, either of which is correct, and the results obtained are beyond all question.

As before stated, it is not generally in the legitimate channels of trade in these goods that we find adulterations, but almost invariably a class of unprincipled jobbers, not known or even recognized in trade, dare not meet fair and honest competition in market, who employ the requisite skill to concoct adulterated articles of all kinds. It may be stated as a fact that when we find parties selling goods very much below all competitors, these goods are not pure, for the margins of all goods have been cut down to the smallest possible point commensurate with expenses, and no sane person does business for honor to lose money.—*Johan Frederic Elsom, in the Painter.*

School Department Matters.

TO SAY that the management of our public school interests is disgraceful, would scarcely express the state of things that have been and are in the hands of the present Board of Education. It would be as well or better for the educational interests of the city of San Francisco, if the present Board would change places with an equal number of fairly advanced—not necessarily high school scholars. If the boys should lack the wisdom which the experiences of manhood *should* bring, they would at least practice sufficient self-respect individually and collectively to avoid the numerous word encounters that have, during the term of office of the present Board, disgraced that body. If the same number of lads in either of the grammar or high schools should behave and act toward each other and their superiors as badly and as undignifiedly as the members of the Board have acted, they would be severely dealt with, and perhaps "tunned out of school," as violators of right rules, and as bad examples to good pupils.

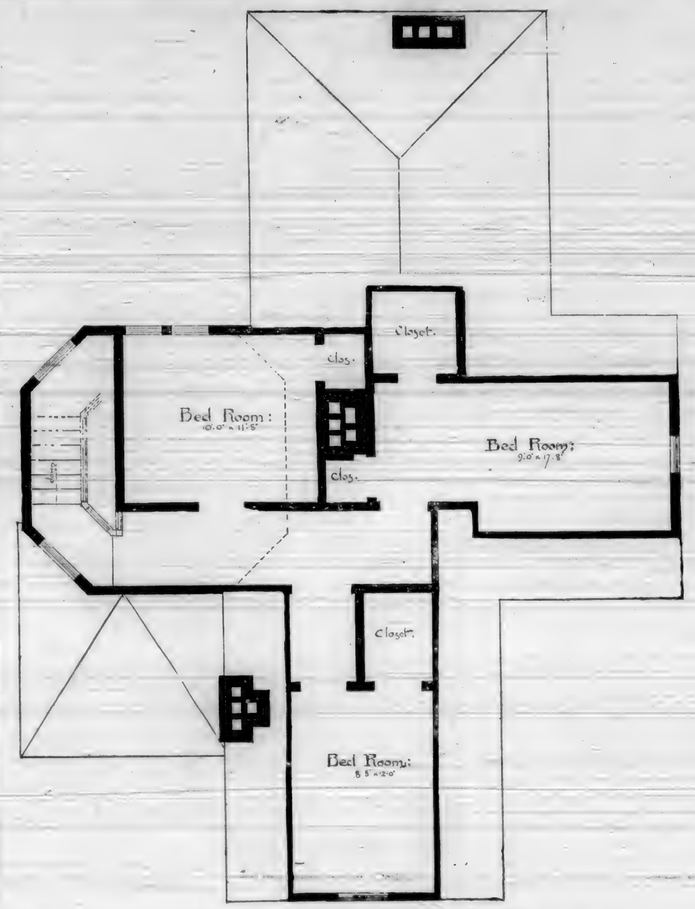
It is a great pity that the members of the Board cannot see themselves as every intelligent citizen sees them, and with shame-facedness vacate the positions held by them. But unfortunately in this land of ours, men in official position, not blessed by nature with sensitive mind and a reasonably high and refined order of intellect, reject and poise themselves above public sentiment, and act as wise and good men would not dare to act. But nothing that might be said or written is likely to produce a change in some of the members of the present Board, and the interests of the school department will have to suffer on, until by lapse of time the present manipulators of the school interests of our city shall settle back into their individual retirement, with no ray of prospect of ever again being intrusted with like public responsibilities.

In the matter of honest management, the facts made public, and others not yet fully exposed, in addition to secret manipulations which may never see the light, draw around at least some of the present Board a suspicion of the darkest dye. There are none conversant with the affairs of the department, who question the existence of great irregularities in numerous ways, and the use of the situation for personal and party advantages. It does seem that, unless the twenty-four hands of the twelve composing the present Board, have been more or less, or in some way dipped in some of the various contaminated streams flowing through the department, an exposé should be made, which would reveal more fully the hidden and unpublished workings, and open to clearer view the parties who are using a great public trust for personal and political gains and profits. The carpenter shop revelations, the lumber, plumbing, painting and numerous other transactions, manipulated and practiced under the disguise and at the cost and expense of the school department, should arouse every good citizen to a correct understanding of the necessity of electing as school directors not simply men of fair repute as citizens, but men of unquestionable and fully demonstrated purity and firmness against all political deviltry.

The methods of filching from the school funds and depriving school teachers and pupils of their rights under the school laws of the State, are not the result of clean hands and honest hearts. The marks and foot-prints of dishonesty and corruption are so transparent, and the machinations of those more guilty so outrageous, that it would be more an act of mercy than a miracle, if Almighty God should send an avenging angel with whips and scourges to drive out from the temple of education in San Francisco, as was done eighteen hundred years ago in Jerusalem, the rascals and evil-doers who perverted the sacred places to base purposes.

The daring affrontery and the deliberate coolness of the operators within the school department circle, if but one-half of what appears on the surface be true, may well surprise intelligent and honest people. But it is a well-understood fact, that in all cases of irregularities in human affairs, coolness and boldness are prerequisites to success. This is the testimony of "Black Bart," and all others of his kind, who preferred the dangers of a highwayman's life to the less manly and more ignoble pursuit of securing and dispensing to auxiliaries public funds through official position. The one demands and calls into exercise courage and the staking of one's life upon the issue, while the other is simply a toning down and modification of a like principle, involving neither personal courage, risk nor danger, so long as the perpetrators can conceal, gloss over, and manage to keep themselves just beyond the reach of criminal law.

The "higher law," which in the earlier history of San Francisco dealt with bad men as their conduct deserved, is a terrible resort to contemplate; but party corruptions and official depravity, continued and perpetrated with a too great boldness, may yet suggest measures not provided in the statute books of the State of California.



ATTIC PLAN.—SECOND PREMIUM DESIGN.

Authorize Firemen to Apply the Ax.

THE telegraph and telephone are necessities. Wires are necessities. The reliable and cheap transmission of messages is a necessity. Fire extinguishing machines are necessities. Corporations are necessities, and so are streets and high buildings. These different necessities collide. A big fire disjoints them all and they are confounded with confusion. Each conflicting interest then claims precedence and pre-eminence. Is there not some almost natural law that should determine which of these interests must bow down?

What is the most universally natural thing sought to be accomplished in the case of a great fire, which may involve life as well as property? Why, it is to subdue the fire as quickly as possible. That consideration is then held paramount to all others. If it is right to let such an impulse govern when a fire is on hand, the same idea should be the controlling one when there is no fire and when the only object is to so regulate the surroundings of property as that it may be saved when the flames break out.

The public necessity for telephone and telegraph should be pushed to the background before fire comes, so as to give extinguishing machinery a free chance to save property. A convenient passage of wires should be the secondary consideration.

We believe in the heroic remedy which has been devised but not really practiced in Chicago. Order the wires out of the way, and, if they are not withdrawn, remove them, and clear the streets of such hindrances of access to buildings by firemen. Let the wires be barred from any aerial passage across or along streets. Let the companies carry their wires underground or in a glass tubing along the sides of blocks or in any way they choose except through the air as now.

The cost to the public would be immense at first. The public would have to pay high for uncertain and unreliable service. After a while, however, that would all adjust itself and competition would operate to lower rates again. The companies would find ways to get their wires underground and make them work well there. And until they are most violently compelled to they will not find those ways nor abandon their aerial routes.

Meantime the public would save in another direction. The people's property would be saved from the flames to an extent which would more than make recompense for the higher rates which would be charged for m ssages. The value of the property which has been destroyed in St. Louis directly on account of firemen being impeded by telegraph wires, would many times pay for the cost of putting all the wires underground. This is an assertion that is impracticable to be proven by specific instances and figures, but every careful observer of our fires knows that the probabilities are strongly favorable to the assertion.

There is a possible remedy which seems to us easy of application, although it would perhaps lead to some rather dramatic scenes. Assume that an ordinance should be passed in St. Louis directing that after a stated reasonable time it should be the duty of firemen in service at fires to tear down and remove all wires and telegraph posts which impeded them in the extinguishment of fires. It would be safe to warrant that in a very short time the firemen would worry the companies into finding underground routes for their wires. There ought to be such a law rather than one protecting the wires. In a large city there is always a vast danger of a fire growing to enormous proportions, if quick access to it be prevented. After it had grown nothing would be too sacred to tear away in order to stop it. Why, then, should the wires be sacred at the start of a fire?

The direct fight against wires is inevitable. The longer it is postponed the more desperate it will be. It is sure to be a violent fight, if successful. The quicker it comes, the better. The more violent it is, the more speedily it will end. Authorize the firemen to cut, and down will go the wires forever. Courts will sustain the necessity of getting at fire to extinguish it.—*Western Insurance Review.*

Fire, Flues, and Chimneys.

PROPERTY augmenting millions of dollars annually, is destroyed by "defective flues" as the cause, and the fiery elements as the agency of destruction. Yet these often repeated and multiplied warnings have but a limited effect in the matter of flue construction.

As a general thing, owners do not, practically, care anything about how the flues in their houses are built, leaving the whole matter with their architect or builder, without remark or comment. This is well, provided they shall have secured the services of a competent and careful man of plans, who *will attend to it*, and see that the flues are properly built and plastered inside. But if he is neglectful, and trusts wholly to the "chimney builder," and that individual happens to be not a competent and careful brick-layer beyond and in addition to building chimneys, defective flues are very certain to result. There is a class of would-be brick masons who claim special qualifications in the erection of chimneys, mainly because they are incompetent to take their places in line with good men in wall work. In a limited number of cases, such men learn fairly the art of flue construction, but as a rule their mechanical incompetency is notorious, and if they happen to build a safe and good flue, it is more the result of it happened-so, or from abstract routine, than from good judgment, careful work, or a right knowledge of how the good result came about.

The danger from the cause under notice is far greater than is generally understood. Thousands of flues to-day which have not thus far caused conflagrations, are nevertheless in the exact necessary condition to serve that purpose at any moment when slight circumstances arise; they are comparatively "sleeping fires," ready and liable to break forth in flame at any moment, from exceedingly slight causes; and the unseen and unrealized, "barely-escaped-from fire" cases in all communities, are very large, and the sense of safety indulged in in a large proportion of dwelling-houses is more fancied than real.

The Science of Drying.

THE science of drying is in itself exceedingly simple, but to those who are entirely unacquainted with it, it is very mysterious, for the reason that the medium for carrying off the water, being air, is not visible. Water and other substances which can be seen are much more readily understood.

All the science there is about drying, is that the air absorbs the moisture as a sponge absorbs water. In winter, when the out-door air is dry, as it usually is (the frost condensing the moisture in the air), it will, if heated up to, say 150 degrees, take in or absorb moisture much more rapidly than in summer, when the out-door air has from 50 to 80 per cent. of its capacity for absorbing moisture already loaded; precisely the same as a sponge, when dry, absorbs water in large quantities and more rapidly than when it is wet. Heated air absorbs moisture in proportion to the increase of temperature, its capacity for carrying large quantities of water being increased by the heat. A cubic foot of air at 32 degrees will carry off only two grains of water, while at 160 degrees it will carry off 60 grains—hence the necessity of heating the air, which should be as dry as possible, and made to move rapidly, so as to wipe off the moisture from the surface of the lumber or other fibrous material as soon as it reaches the surface, as it works its way out from the center of the body being dried.

All moist, green or wet substances requiring to be dried, should be treated in precisely the same manner, whether it be lumber, brick, wool, cotton, corn or other grain. The process of drying all these is the same, viz., the rapid circulation of heated air. *The Wood-Worker.*

NEW PUBLICATIONS.

Day's Collacon. An Encyclopædia of Prose Quotations, consisting of Beautiful Thoughts, Choice Extracts, and Sayings of the most eminent writers of all nations, from the earliest ages to the present time, together with a comprehensive biographical dictionary of Authors, 40,000 quotations, 8,000 authors, 2,000 topics, 125 beautiful portraits in steel and wood. Day's Collacon is an encyclopædia of prose quotations, and one of the amplest dimensions. The number of authors whose works are quoted in the collection is said to be eight thousand, comprising the chief names in ancient and modern literature. The quotations are ranged under two thousand classified headings, and amount to some forty thousand. As to the quality of these grains of wisdom there is probably not one which has not a profound value for some order of mind and some mood of feeling; at the same time, it must be acknowledged, there are whole pages that certain fastidious students and advanced spirits will pass over as commonplace. This is inevitable from the vast plan of the work and the limitless progression of intellectual development. The compiler has manifestly not undertaken to suit the needs of any particular person or class, but he has made an immense gathering of waifs from the ocean of literature, and he invites every one to come and take what he fancies or needs. The materials are indexed so as to make reference easy and direct. The author's names, with biographical notes, are given in the appendix, making in themselves a quite convenient dictionary of literary biography. An attractive feature of the volume is the series of portraits which are scattered through it, numbering, large and small, a hundred and twenty-five. The price of this work has been placed at $12.00. A copy is in our office, and we will take orders for the same.

P. J. Barber.

WE present in this issue an engraving of an architect whose skill has done much towards beautifying the section of country in which he is located.

Mr. Barber was born in Nelson, Portage County, Ohio, in 1830. He was by nature a mechanic, as was his father and his older brothers, three of whom were master builders; and from them his mind was early inclined to that branch of mechanics which has resulted in such developments of his genius as unfavorable circumstances would permit.

In the spring of 1847 he was apprenticed to a cabinet-maker, where he gave entire satisfaction, attending the academy three months during each winter. But relief was sought from the monotony of country cabinet shops, by engaging upon the best of work in the city of Cleveland, Ohio; and after finishing his apprenticeship he resolved to strike for something more exalted, and at once commenced the rudimentary studies of building and architecture.

For the period he worked as a journeyman carpenter and joiner, and down to the present time, his knowledge of cabinet work has been of daily practical use to him; and he has had no regrets that, while acquiring the use of tools, he at the same time gained a thorough knowledge of the highest order of wood working.

Possessed of an enterprising disposition, Mr. Barber was not contented with merely listening to the stories of fabulous wealth that could be obtained in the then new El Dorado on the Pacific Slope, and so we find him on his way to California, by the old Isthmus route, arriving in San Francisco on the 22d of May, 1852, after a voyage of one hundred and eleven days.

P. J. BARBER.

Old Californians may remember the barque *Clarissa Andrews;* it was on that "floating coffin," as she was appropriately named by Prof. J. W. Pike, one of the unfortunate passengers, that Mr. Barber made the voyage from Panama to this port, accomplishing the same in sixty-five days. Upon his arrival in San Francisco, he again turned his attention to his trade, first as a journeyman, but soon assuming the role of contractor and builder, in which he was reasonably successful.

In early times, in San Francisco, his offdays and evenings were mostly spent in the libraries and in the society of architects. Many will remember the lamented "Reuben Clark," then in the zenith of his fame, and engaged in the plans of that proud monument of his genius, the State Capitol Building at Sacramento. Mr. Barber profited much in having the confidence and friendship of that learned man—his wise counsels and lessons in architecture, the principles of which he then became more familiar with, have been a source from which he has drawn on countless occasions during his practice.

Thus we see that Mr. Barber's career has been a gradually progressive one. Having mastered the principles of architecture, he assumed the practice of his profession in this city previous to 1869, when, for the health of his family, he determined to take up his residence in that beautiful city by the sea, Santa Barbara, where he has followed architecture as a profession until this time, and has planned and had charge of nearly all of the important buildings that have been erected in that city, amongst which may be mentioned the County Court House, the College, the Arlington Hotel, the Presbyterian, Congregational, and other churches, several school buildings, the theater, Cook's Block, First National Bank, and others. He has been nearly three years engaged as architect upon a large classic dwelling (Italian), and it is still incomplete, the owner of which expects it will stand when all others now built in this country will have crumbled to the ground.

Mr. Barber still feels that San Francisco should be his home, so far as business is concerned; and it is there he points with pride for the best buildings (for their uses) in the United States, not only for the enduring character of the work, but for symmetry, proportions, and their elegant and appropriate decorations.

It was with many regrets that he was obliged to leave the city of his adoption, and the many endeared friends and associations of early times; and nothing now affords him more pleasure than meeting with his old brother carpenters and the pioneer architects of San Francisco. The latch-string of his door will always be found on the outside, so all of his old friends, professional brothers, though strangers, should feel that they will be welcomed by him at his home in Santa Barbara.

$160,000 Flue.

SINCE the last issue of this Journal, a single fire, consuming a splendid $160,000 residence in Alameda Co., is said to have resulted from a defective flue. The architect in the case was and is a most capable man, but he likely trusted the erection of the chimneys and flues to the "mason," or "chimney builder" as the case may be. Who is to blame? That depends altogether upon where, under the circumstances of the case, the responsibility rested. If the owner interfered and reserved, assumed, and exercised certain dictation and direction, then to that extent *he* is responsible for the resultants. But if absolute and unrestricted control and jurisdiction was given to the architect, the only excuse or relief possible for him is, that he trusted that part of the work to a "reliable man," and did not personally inspect, at least not more than casually so, the execution of the chimney work. Result and loss to the owner is all the same nevertheless.

Cottages. A new work that recommends itself on account of the number and variety of plans presented. Price, $1.00.

Buck's Designs. For its size, one of the best books that has been presented to the public. Price, 50 cents.

The Late Fair.

SOME of the exhibitors in the late Fair, just closed, deserve special mention for the excellent display made.

PACIFIC SAW WORKS.—We think the Directors of the Fair should issue a diamond medal to be given to the firm making the best display. If such had been the case this year, the *Pacific Saw Works* would probably have been the one to receive the medal. In the artistic arrangement of saws, and the great variety shown, the company is deserving of special mention. Every variety of saw, from the mammoth seventy-two inch circular to the finest dentist's instrument, was exhibited by the company. This is strictly a home industry, and should be fostered by every mill-man and mechanic.

COOS BAY LUMBER AND STAVE COMPANY.—Although comparatively a new company, the exhibit presented would compare favorably with those in the older cities. Every variety of bucket, tub, and barrel is made, and the work and material is of the best quality.

CALIFORNIA ARTIFICIAL STONE COMPANY.—In another place we refer at full length to the meritorious exhibit made by this company.

HARVEY'S RADIATORS.—Every size of these noted heaters was shown, and the inventor was on hand to fully explain their working.

WEED & KINGWELL.—A beautiful exhibit truly, and one that proves that the manufacturing interests of San Francisco will be the means yet of making this the second city of the Union. Every description of brass work, and every shape and size of bells are made at this establishment.

G. W. CLARK & CO.—Artistic house decorations are now receiving the most careful attention of architects. The exhibit of this firm was a beautiful one, and drew around it many owners calculating to build. We noticed several of the latter in consultation with various architects, discussing the various styles of wall decoration. Stained glass is also a specialty of this firm.

JOHN MALLON.—The pioneer in artistic stained glass work was on hand with a novel and unique arrangement of stained glass in every conceivable form and pattern.

OSBORN & ALEXANDER presented a variegated assortment of every description of carpenters' and mechanics' tools. This house has fairly won the reputation of the leading supply house for fine tools.

BROWELL'S CHIMNEYS.—Mr. Browell had the advantage of compelling most every one who visited the Fair to gaze at his exhibit. Every variety of patent chimneys and tops, sewer pipes, etc., was shown.

MONTAGUE & CO.—Marbleized mantles, art tiles, ranges, grates, architectural decorations, etc., were exhibited in profusion by this firm. The new quarters on Market Street are well worthy of a visit by those desiring the latest patterns in above mentioned articles.

E. G. DENNISTON, of the San Francisco Plating Works, proved by his display that this city can furnish as good work in his line as any of the older cities. Every description of table ware is plated at this establishment.

FRANK P. LATSON presented a fine collection of bronze hardware.

BURR'S HOPPERS.—All the various styles were shown, and received much attention from those interested.

GRANOLITHIC PAVING COMPANY.—A notice of this new company appears in another column.

Good Bricks and Brick-work.

THERE are certain criteria of good bricks, which, being infallible and readily applied, constitute the best practical tests as to the quality of these valuable materials. In the first place, good bricks are always heavy—always solid and compact, ringing with a clear, sharp sound, when struck together, and well and truly formed with nice, sharp edges. Neither will they absorb much water. If you have to choose between two bricks of equal or nearly equal weight, immerse them in water after weighing them dry. Twenty-four hours after take them out, and reject the one which has acquired most weight, and therefore imbibed most water. Over-burnt bricks may be heavy, but they are also cracked and distorted in form by undue heat, and may be readily distinguished from the better sort by their general appearance. Bad bricks, on the contrary, are light, will not ring at all when struck together, are ill-shaped, hollow on one side and round on the other, readily abrade on the edges, suck up water like a sponge, and indeed are sometimes so soft that a strong thumb may force off the edges, such as they are.

Good brick-work is laid truly and accurately to a level, every joint answers truly to the line, and every part of the face coincides with the plumb. All the beds and joints are well filled with mortar until it is fairly pressed out in the faces; all deficiencies are carefully pointed up as the work proceeds, and the whole well flushed in course by course. The mortar is well mixed, lime and sand thoroughly blended, and the sand, if handled alone, is found to be clean and sharp to the touch, feeling thoroughly gritty, and free from all slimy, greasy, and tenacious qualities. The joints are never to exceed three-eighths of an inch and should never exceed one-quarter of an inch in thickness, and the vertical lines must be truly plumb over each other in such courses as intended, according to the kind of bond employed. The work is also carried up uniformly level throughout, and no difference permitted even for a temporary purpose, under any circumstances whatever. By these means only can unequal settlements be prevented. Contraction of bulk or settlement we know must occur from the combination of materials in an expanded condition, as mortars and cements are, when in a plastic form; and therefore all walls must sink or settle down as the mortar becomes dry, but it is essential, to prevent dislocation, that this settlement be uniform throughout, and this can only be secured by adopting the precautions prescribed above. For the same purpose the back and interior of the work must be brought up, laid, and finished as completely as the front, and no gaps or crevices left for subsequent patching. One other rule has to be observed, and we reserve it to the last, and separate, and emphatic statement, to show our estimate of its importance, in order to produce good brick-work, which is this—that the mortar should be as thick as it may be, or as nearly approaching the solid form as is consistent with the degree of plasticity essential for its proper distribution and penetrating into the joints, while the brick should be thoroughly wetted on the surface. By these means the adhesion between them is rendered the more perfect, and the subsequent amount of shrinking and settlement is reduced to a minimum. The watery mortar, on the contrary, suffers extreme contraction, while the essential properties of the lime are actually dissipated, and when the wall becomes thoroughly dried, if ever it does, little remains in the way of cement but the sand compounded with it.—*The Northwestern Improvement Record.*

MARKET REPORTS.

LUMBER—*Pine.*

Common Rough, up to 40 feet, per M feet			$22 50
"	41 to 50	" "	23 50
"	51 to 60	" "	24 50
"	61 to 70	" "	26 50
"	71 to 80	" "	28 50
Refuse Rough		"	18 50
Common Rough, sized with planer $2 additional on above rates, per M feet.			
No. 1 Flooring, 6 inches and over,		"	33 50
" " 4 "	and under, and 1¼ x4 and 1¼ x6		40 00
Flooring and Stepping			
Rough Clear for Flooring, $1 less than above rates.			
Second Quality Flooring and Stepping		per M feet	25 50
Ship Plank, Rough		"	28 50
" Planed 1 side		"	32 50
" " 2 sides		"	35 00
Deck Plank, Rough		"	33 50
" Dressed		"	37 50
Laths		per M	3 75
Wool Slats		"	10 00
Shakes		"	12 00
Redwood Posts		per piece	17 50

Redwood.

Rough Merchantable	per M feet	$22 50
" Refuse	"	18 50
Surface No. 1	"	40 00
" 1x6	"	37 50
No. 2	"	27 50
Rustic, No. 1, 1x8	"	37 50
" No. 1, 1x10	"	40 00
" No. 2	"	35 00
" Under 10 feet	"	35 00
T. & G., 1¼ x4 and 1¼ x6	"	40 00
" 6 in. 12 ft. and over	"	37 50
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
" " No. 2	"	30 00
T. & G., Beaded, 12 feet and over	"	40 00
" " 7 to 11 feet	"	32 50
" " under 7 feet	"	30 00
Half-inch Surface	"	32 50
Pickets, fancy	"	30 00
" Rough, Pointed	"	20 00
" " Square	"	17 50
Siding, ½ inch	"	27 50
Shingles	per M	2 15
Battens, ½ inch, lineal feet	"	1c

NAILS.

10 d to 60 d		$3.25
8 d cut ore Extra per keg (over standard)		.25
6 d " " " "		.50
4 d and 5 d " " " "		.75
3 d		1.50
10 d to 20 d Brad, h'd'	" "	1.50
8 d " " "		1.50
6 d " " "		1.50
4 d and 5 d " " "		1.75

Discounts from 15 to 20 per cent. on above quotations.

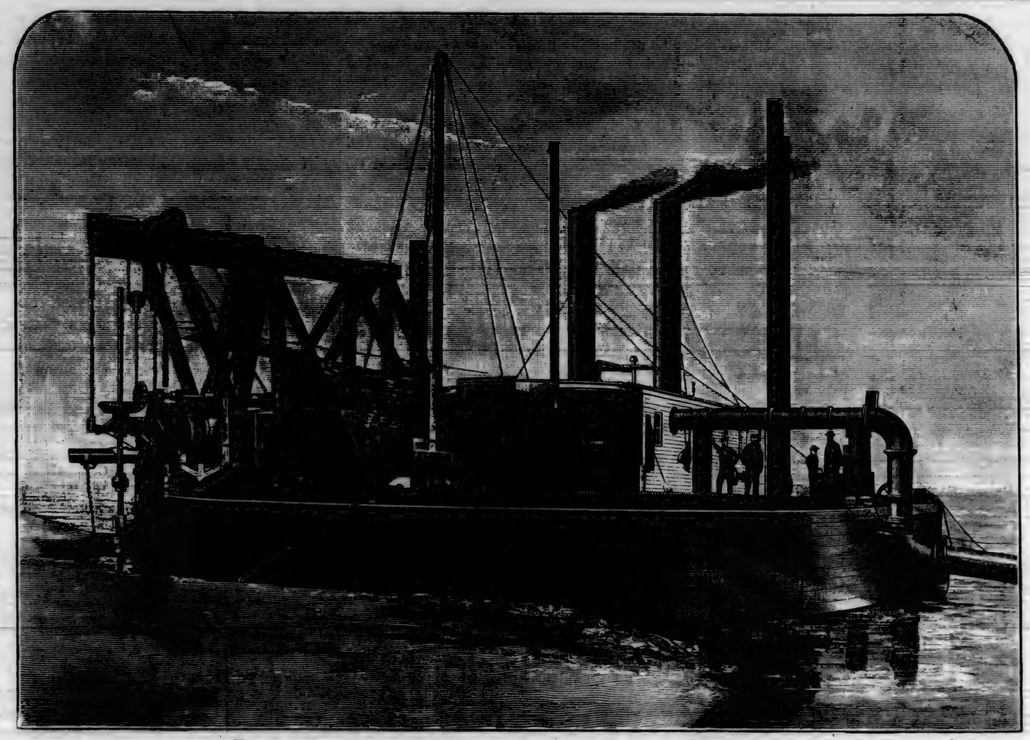


FIG. 1.—DREDGING APPARATUS AT OAKLAND HARBOR, CALIFORNIA.

Dredging at Oakland, Cal.

A PART of the extensive harbor improvements in progress at Oakland, near San Francisco, consist in the excavation of a tidal basin to improve the scour, at or near the harbor entrance. The material removed by the dredging operations is deposited in adjoining salt marshes, and retained there by means of embankments constructed along the shore line, so that a considerable area will be reclaimed. Fig. 2 shows the floating discharge pipe that carries away the mud. The dredging machines employed are, says *Engineering*, on the same principle as those used at the Grand Amsterdam Canal Works, that is to say, they belong to the type in which the material to be raised is first reduced by suitable machinery to a condition of mud, and then pumped to the surface, and delivered by means of a pipe line.

Fig. 1 illustrates the general form of the dredging machinery used at Oakland Harbor. The submerged and mixing part of the arrangement consists of a horizontal wheel with plowshares attached around the lower face. By means of steam power on the boat, rotation is given to this wheel, which is inclosed in a casing, so that water can enter only on the under side. On the top of this casing is fixed the rising main, twenty inches in diameter, of a centrifugal pump, six feet in diameter, placed on the boat. The delivery main of this

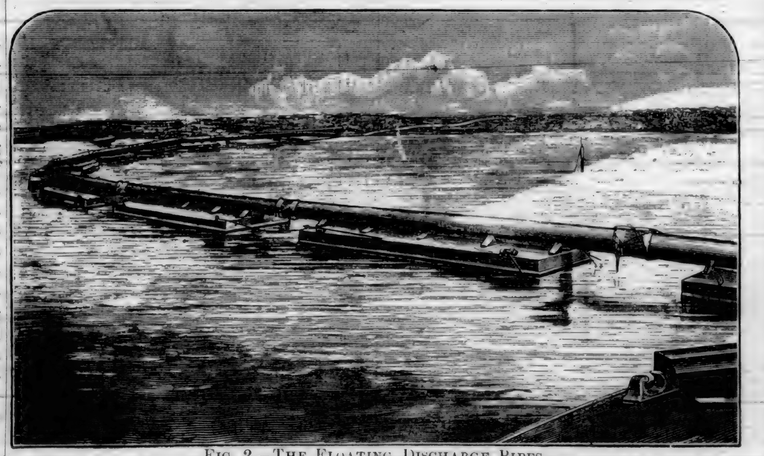


FIG. 2.—THE FLOATING DISCHARGE PIPES.

pump, also twenty inches in diameter, is extended from the vessel by a line of wrought iron pipe, with ball and socket joints and rubber connections; it is supported in position to the marsh where the mud is delivered. By this arrangement, which is shown clearly in the engravings, the material excavated, after being mixed, passes directly through the pump and delivery mains, and only comes to rest when it is discharged. As much as forty per cent. of solid matter can be carried in this way, but fifteen per cent. is found by experience to be the most convenient amount, one obvious advantage resulting from this dilution being that the solid material is more widely and uniformly distributed over the area to be reclaimed.

The pump is driven by a pair of engines having cylinders sixteen inches in diameter and twenty-inch stroke, and two other engines with cylinders twelve inches in diameter and twelve-inch stroke, drive the cutting and mixing gear, the winches, hoists, etc. Steam of ninety pounds to ninety-five pounds pressure is supplied by two one hundred horse-power boilers. The greatest length of delivery pipes employed has been 2,850 feet, and through this length 41,000 cubic yards of mud were delivered in 190 hours. During a period of eight months one of these machines raised and deposited 250,000 cubic yards, or an average of 30,000 yards per month. In one month of this period there were moved over 60,000 yards, through a distance of 1,100 feet. The total expense per day of ten hours of one of these machines, including interest, depreciation, and insurance, amounts to 100 dollars or about 20*l.*, and in connection with the work there are other expenses, as follows:—

1. The construction and maintenance of levees or embankments for confining the freshly dredged material. 2. The services of nine or ten men to guide the flow and distribution of the material as it is delivered. The cost of previous dredging operations on the Pacific Coast by ordinary appliances has averaged twenty-four cents, or one shilling per yard, while the maximum expense per yard, with the system we now describe, is a maximum of six cents, falling in some cases to five cents per yard. The Oakland Harbor dredging operations are under the control of Col. G. H. Mendell, of the United States Corps of Army Engineers.—*Scientific American.*

"Won't Finish up Other Men's Jobs."

THERE is both a good and a bad "rule" and "combination" in practice among mechanics in this city, in the matter of refusal to complete, or finish up work commenced by others under contract. The rule is correct and warrantable when intelligent and good business reasons exist for the delay or stoppage of the work, because of default in payments, or other equally just and substantial reasons. To "stand in together" and protect one another under such circumstances, is but just and right to the respective crafts generally, and the mechanic who would step in and virtually aid and assist defaulting or dishonest owners or contractors, by completing unfinished work not paid for, nor secured in doubtful cases, is not honorable, and should receive the *positive* disapproval of his craft, and of mechanics generally.

But the law of "just discrimination" should be evoked and practiced in all such cases, and the bars of mutual protection removed, when the default and wrong is altogether on the part of the craftsman. Every man has rights which should be respected, whether he be master or vassal, employer or employed; and it is injustice of the grossest kind for one who has it in his power, to exercise a mastery over another, simply because he can do so with impunity. It is cowardice that defies resistance from the helpless, and exultation over those who have been so unfortunate as to have committed the error of intrusting with innocent and right intent, work into unworthy hands, is diminutive.

The point and practice we are aiming at is this. It sometimes happens that original and sub-contracts are let to men who afterward develop characteristics, as individuals and mechanics, which should forever debar them from association and competition with qualified and good men. Such there are in all branches of mechanism, and it is unfortunate that the possibilities are not easy of access, by which they may be known and read of all men, other than that of severe experiences on the part of those who happen unwittingly to exercise mistaken confidence in them. But under the convention of mutual agreement among mechanics, the unfortunate employer of such parties, whether as owner or contractor, is powerless to shake off the mechanical incubus, as the "rule" forbids that any other should extend the relief of finishing up the work unreasonably long delayed or badly done by the first employed—no matter what the circumstances of the case may be, short of death itself. This is unjust in the extreme, and should be remedied; the better men should be equally prompt to redress wrongs practiced by their fellows, as they are to protect mutual interests.

A case in point: A well-known, practical stair-builder of acknowledged good qualifications, and comparative if not superlative large experience, entered into contract for the stair work in an $8,000 residence, which was being built by contract under a forfeiture of five dollars per day for over time. As soon as the architect was advised who the "stair man" was, he warned the building contractor that there would be trouble in getting the stair work completed in time, and it so happened. The stair work was delayed, and weeks rolled by, yet no stair man to be seen. The architect complained, and the contractor urged and re-urged almost daily, but still—*rails*, newels, and balusters not forthcoming. The house was painted, grained, and varnished as far as it could be, and still the stair work not in. The contractor endeavored to employ other stair builders, but the imperative *rule* of non-interference was the only answer received. Full-progress payment had been made, and the balance was secure, and yet no man could be found to complete the work, and, directly and indirectly, full six weeks passed beyond the time for completion of the building, because the stair-builder was neglectful, and no other would complete the stair work for love or money. And with sorrow we say it, that the derelict party spent at drinking, and was besottedly under the influence of whisky a much greater period of time than it would have required one man to have done all the stair work in question. Still the "rule" protected this abuse of the owner's and contractor's rights, and the man who loves his cups more than he does the faithful pursuit of an honorable trade, received his pay in full, because not bound by written contract to suffer liquidated damages for his default. The fully one and one-half months—forty-five days over time—could have been demanded and retained by the owner, from the contract sum, but it was not nor any part thereof, and he therefore suffered the loss of hotel bills for the period named, to a greater sum than the forfeit amount.

We claim that in any and all such and similar cases of failure on the part of first-contracting parties to perform the work undertaken, in a reasonably prompt and proper manner, the rule should be that any other party may, without violation of any principle of right, complete the unfinished work. Many like aggravating cases might be related, but this one is sufficient to illustrate the bad working aspect of a rule which certainly needs amendment in common practice.

Deceitful Builders.

THERE is seemingly no business carried on in the world where there is more fraud and dishonesty than in the building trades. All builders and contractors are not dishonest, but the number who are is legion. The chief aim of many of them seems to be to ascertain some plan for bringing in a bill for extras, or for evading the true intent of the contract by furnishing a different and poorer material than that stipulated in the specifications. It is a very difficult thing for a "green hand" at building to make a contract with a builder which will hold water. There is such a chance for ambiguity, and for concealments and omissions. Then, half of the parties do not know what is necessary to be done to insure a good building, and the honest carpenter is the last man to inform them. Go into court, and there will be seen case after case arising out of the attempt of some smart builder to palm off sham in the place of good work. There seems to be no way of avoiding this trouble unless one goes to a skilled and honest architect and places the matter wholly in his charge. Even then disputes and litigations frequently arise.

There is room for a radical reformation in the building trades. The cause of much of the dishonesty in these trades arises from the unscrupulous competition which there prevails. Bidders offer to take jobs at a loss, hoping to make up by scrimping and by obtaining payment for a liberal amount of "extras." It is difficult to point out a remedy for this evil. If one can find a builder who is known to be honest, it would be better to patronize him, even if his bid is a trifle higher than that of his competitors. Underbidding is the bane of the building trades. Cheap contracts usually mean cheap and deceitful work, and unsatisfactory results all around. It is pretty safe, too that no builder calculates to lose money on a job, and many of the gentlemen of the craft will get out from under a too low bid by means which will not bear the light of day.

All contractors for erecting buildings, as we have said, are not thus dishonest. Some, even, will go on to the end and faithfully perform their engagements when they know they will lose by so doing. Such men should be rewarded by good patronage, but unfortunately they do not always grow rich. The doctrine of the "survival of the fittest," we are sorry to say, does not always prove true in their case.—*Industrial World.*

Practical Graining.

THE subject of graining in imitation of oak, walnut, and other woods is a very interesting study for amateur painters. There is much to learn and it requires a steady perseverance to acquire even a superficial knowledge of the art. To those who wish to learn to grain, and have a taste for the work, a few suggestions may not be out of place here, for a little practice. In the first place it is necessary to know something of the ground-work or base for the different kinds of work; and it is useful for all to experiment with different shades to establish the tone that is necessary to produce a proper imitation of the various woods to be grained. For oak, the ground color is made of white lead, tinted with crome yellow and a little red, or yellow ochre alone; a light shade for light oak and a deeper one for dark oak. For walnut, various colors are used, white lead, yellow, a little amber, the yellow strong enough to keep it bright in tone and yet dark. Another color tinted with India red and yellow ocher in shade like sole-leather. This color gives a warm ground color and gives a pleasant effect to graining done over it. For mahogony, the color should be of a bright copper in tone, using Venetian red to tint with. A light straw color is used for laurel and a still lighter one for maple or ash. All these various colored grounds are put on in flat color, the paint having but little oil and more of turpentine, and when dry, sand-paper smooth and the ground-work is ready for the graining color. It is now in order to get the prepared colors at the paint stores, if they cannot befound, take burnt amber in oil, Sienna in oil red and some burnt Sienna, and mix them in two-thirds oil and one of turpentine. If the job of work to be done is small a very little of these colors is necessary, and put only a small quantity of the burnt Sienna in, and be sure and see that the color put into the oil and turpentine is only sufficient to color it lightly. It is customary to try a little on some part of the work to see that it is not too dark, for light oak requires but a very little color for general work.

The tools required for oak graining are a set of steel combs, one of rubber, and a sash tool, with a flat paint brush, some clean rags or cotton flannel. The rubber comb may be three or four inches long, 12 inches wide with one-half inch thick, the long edge to be notched with a knife into one-fourth inch teeth, and it is ready for use. Now everything is in order to commence graining, and as it is supposed to be the first effort, the panels of a door may be laid in with color or rubbed in, putting on only sufficient color to cover it evenly, and when set, having previously selected the style of work you wish to do, cover the thumb nail with the rag and wipe away.

The growth or sap is the work of the thumb nail, with a slight pressure of the ball sideways to give the sweeps, and the nail regulates the form and its contractions. After the wiping the growth, the comb is used to give it grain and complete the work of the panel. The lower panels may be champered to give variety, showing the oak lights in contrast to the heart growth. The latter can be retouched when dry with the checks or pores and shaded where knots or centers occur.

Growth or Heart.

Oak Lights or Panel.

When the graining is done it should look like the samples above. For styles, plain grain for the outside, the center ones a little sweep of the rubber to strengthen the combing, following the same curvature with the steel comb. The center rail, when the growth is in full on the panels above, may show a little heart work on its lower part, but if the panels are done in oak lights, the center rail should have a full heart growth wiped out clean, leaving only enough color at each sap length for shade. The lower rail is done with the rubber comb in a slight wave across its length and toned with a fine steel comb. The outer styles are sometimes touched with the rubber opposite the panels, in contrast with the oak lights of that part of the door. The shading is done with the same color, on the center of the heart growth and on the upper side of the curve of the rubber combing. The first is laid in a V shape at the point above and below the center. The color can be laid on with a small brush, and if you have a blender, you can soften the outer verges. The shade on the coarse rubber grain is laid on its full breath and softened with cloth or a blender, always on the center of curve in flashes not over an inch in width. In giving you this description of the work, you may gain the *ideal*, but the *real* is gained only by practice and observation which in fact is the great instructor. A tool for dappling out the oak lights, is made of bone in shape like the case-knife blade made sharp enough to take out the color. In use when dappling, the bone is wiped off after each application. In a future number we will give some practical hints on graining in walnut, mahogany, maple, ash, pitch pine, and so with color mixing for the various grounds for the imitation of these woods.

J. E. W. C.

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"Queen Anne" Style in Building.

A WRITER in the *American* thus fitly characterizes this so-called class of architecture:

"I have never been able to find any one who could lucidly define the new style, or formulate the principles that govern its designers. But no one will deny that there is a new influence at work in modern architecture, even if they cannot analyze it. The fact is that modern work defies classification, simply because its distinguishing characteristic is eclecticism. The selection of incongruous material from the older styles, and the attempt to weld them into homogeneity, are not likely to conserve the sterling principles of good design. Queen Anne has little significance as a name. Popular considerations have more to do with it than anything else. Among the better class of architects the name is held in derision as the work of those who ape foreign fashions Architecture is something more than a matter of fashion.

"The new movement, however, has a well-defined influence which has nothing to do with the appropriateness of its name. Its real significance is to be found not in its definite features as a style, but as showing how completely modern work has broken away from the spirit of the past and the principles of good design that formerly acted as a restraining influence. Up to a comparatively recent period architects have worked in, or under, the influence of schools of architecture; that is to say, certain styles were followed and developed at one time, and in which most architects made their designs. In France can be seen to-day an instance of a school of architecture deominated by the vigorous central influence of the *Ecole des Beaux-Arts*. With us, however, architects seek to be distinguished by the individuality of their word. The road to success lies through the tempting fields of eclecticism. In old times every man worked after his own method, but he kept the great principles of the style always in sight. There was to a certain extent a standard that might be appealed to, and by which the work could be judged. A controlling unity and fitness were acknowledged, but this did not prevent original conceptions. It was simply the restraint of law and order. As far as modern architecture has any tendency at all, I think thoughtful people must admit that it does not move in the direction above pointed out.

"There are few architects, even among our older men, who have not had their work affected by the fashionable demands of the day This is especially noticeable in the designs for country houses. It is admitted that the new style has been rather unproductive of sterling results in the more important secular and ecclesiastical work. Here its failure is striking. Logical principles are here lost sight of, and the rage for 'something new' has resulted in a radical chaos. The conservative reaction has not fully set in. Perhaps when it does something good may result."

Drawing and Shading. $1.25.

The Lick Free Baths.

AFTER a lapse of almost a decade, since the late James Lick bequeathed, and placed in charge of a board of trustees, the sum of $150-000 to be expended in providing free bathing for the masses, the time for action, judging from the report of the trustees, that "no legitimate obstacle exists to the erection of the baths," seems to have arrived. This admission places the board in front, to receive commendation and praise for prompt and wise action, or censure and reproaches for tardiness, delays, and mistakes as the case may be. They can no longer lie at ease within the casement of unsettled or unavailable means, as they have thrown open the doors and exposed the true condition of affairs within, and placed themselves in the position of exclusively responsible parties for all the unnecessary slowness and mistaken management of the future.

They may also rest assured, that however well they may direct and manage affairs there will be tongues and pens to express and write out, and journals to print and circulate statements which may or may not contain a single *whole sentence of exact truth*. For this they should be prepared, but not in that spirit of stoical indifference which too often characterize men under similar circumstances, in defying and disregarding the well meant suggestions and honestly expressed opinions and advice of others, whose interest and rights, and good judgment in the matter controlled, may be equal with those who by circumstance may be placed in a position of trust which would be better filled, and the interests and purposes confided better served by others of more enlarged and liberal views.

There are multitudes of things to be considered, and a large amount of excellent, practical judgment will be required. Chief and paramount to all others, is that of location. Individually we say, let it be as central as possible; as near the new City Hall as practical; as conveniently accessible by the greater number of street railroads as can be, without special favor to any.

SALT WATER BATHS.

This they should be by all means, as salt water in abundance can be introduced at any point within the city limits, at much less cost, lifting apparatus, conducting pipe, etc., considered, than an equal supply of Spring Valley water would cost. This matter of water supply is a very material one, as it must be in abundance to insure cleanliness and healthfulness. The supply must be furnished by Spring Valley, be pumped from artesian wells, drawn from the waters of the bay and brought into the city, or the baths must be located near or at some possible beach, a long, and to the poor, expensive distance from reasonably convenient accessibility to the great majority of those who will use the baths.

But as the whole matter is in the hands of men who are not lacking in intelligence and business experience, although they may never have built nor run a public bathing establishment, and may be novices in the details of such an institution, yet it is to be hoped that they will exercise as nearly faultless judgment as is possible, and consummate the completion of a bathing establishment which will be creditable to themselves every way, and fully respect the wishes, and do honor to the memory of the generous dead.

Tall Chimneys Are Dangerous.

IT is surprising that the powers that be, who supervise, and to a certain extent dictate under the law, how certain things shall be done in house construction, permit those tall, risky, and unsightly chimney tops which are to be seen protruding through the roof of so many of the "fantastic style" of buildings in San Francisco. That they are dangerous to life and limb needs no more than ordinary common sense to determine. There are many striking examples in various parts of the city, of tall, slender, disproportionate, heavy topped chimneys, which should be taken down to a reasonable height in brick, above which should the eratic designer wish to "pile on the agony," a metal top will serve all the purposes of his wildest fancies with greater safety. These high tops are dangerous affairs, particularly when not provided with flue linings of heavy iron. They are not safe even during ordinary "gusty" or "squally" winds, much less so during the winds which accompany severe storms, and most assuredly they are menaces to human life in times of earthquakes, from which California is by no means safe, even if the shaking forces which have so often stirred up things on this coast, and in this city, have taken a trip around the world, by way of the Eastern States, London, etc.

We may be answered by the guardians of safety, that there is no special ordinance limiting the height of chimney tops, and therefore the matter is beyond the control of the fire wardens. This may serve as an escape-from-responsibility argument, but it is not consistent. The same unwritten law of "safety" which is applied in other matters not ordinanced upon, may reasonably, with the same impunity, and with more reason and justice, be applied in cases of this kind, where men, without regard to consequences, pile up a ton or more of bricks above all support, likely to be toppled down upon the heads of people at any moment by the forces which have, and may at any moment, startle and affright the inhabitants of San Francisco. If a tumbling-down of these monstrosities—for such many of them are, without beauty or consistency—should do no greater damage than crack the skulls of those who caused them to be erected, there would be no loss of valuable human life—none that the architectural profession could not dispense with to advantage—and the entailment of reconstruction upon owners, who allow, and perhaps on account of their extreme oddness and peculiarities admire them, would be well deserved.

Stair Builders' Guide. $3.00.

Planking Yards, etc.

MR. EDITOR: In the general building specification, it is usually provided that yards and passage-ways at the rear and sides of buildings shall be planked with redwood planks, spiked to a certain size sleeper, spaced as may be directed. And now comes the part to which I refer in this article, and that is, that the redwood sleepers must be solidly bedded in the sand. Now is it not an outrage on the pocket of owners, to allow the sleepers carrying his yard planking to lay solidly bedded in sand, and to be covered on the top with the yard planking, and so allow those sleepers to receive the whole amount of decaying properties, through the dampness that naturally will collect under the planking, and permit them to rot in prematureness, as there is no way provided for ventilation, and not a particle of air circulation can be had, because every in and outlet is closed up, first, by the solid bedding under and on the sides of the sleepers, and, second, by the planking on top. Now I would suggest a mode of yard planking which is of long standing among practical men,—that redwood sleepers be lain to rest on rammed ground, distant between sleepers two feet; to be planked with one and one-half-inch rough redwood boards, spiked strong and secure to the sleepers; no earth, rubbish, or other materials whatever to be allowed between the sides of the sleepers, from the extend of under side of planks to under side of sleepers. You will observe that this will create a space between the sleepers, planking, and ground for a constant current of air to pass, and to dry the moisture collected, which, if the soil would be allowed to remain in the space where the air circulates now, it would hold the dampness and foster the rot of the timber.

M. P. SCHETZEL.

A MAN who is a thorough master of a trade carries his capital in his head. He is independent, and should be self-reliant, as his services will always be in requisition. Unless, perchance, he has drifted into some portion of the world where trade and manufactures are in a state of decadence. It may be an excellent thing to endow a youth with a splendid education, but often we find such young men failures in a business way. But there is no excuse for a first-class mechanic or engineer ever being found in such an unfortunate plight. The man possessing a good scientific or mechanical education who cannot make his way successfully through life must be composed of very poor material.—*The Builder and Wood-worker.*

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The office of W. S. Somervell, the manager, is at 422 Montgomery Street.

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THE California Artificial Stone Paving Company also won a silver medal for their display of paving flags, several of which have proved to the satisfaction of everybody the durability of this material by standing the wear and tear of time and constant usage for periods ranging from eight to ten years on our most populous thoroughfares. This company's stonework is by far more serviceable than granite, for, while there is a difference in the hardness of different blocks of granite and one will wear out more rapidly than another, this stone is perfectly uniform in that respect, and no one block can be found which shows any greater wear than another, so that pavements laid eight or ten years ago are as unworn to-day as when they were first put down. Another great advantage is that these blocks, while perfectly smooth, are never slippery, which is a matter of no small importance in a city having as many steep grades as San Francisco. The office of the company is at 404 Montgomery Street, and is under the efficient management of J. Goodman.

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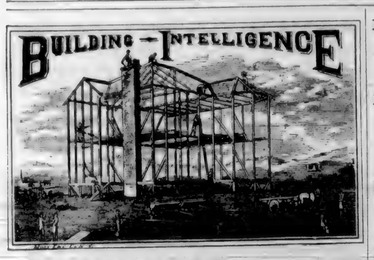

SAN FRANCISCO.

Fourth, nr. Market. Four-story brick.
O.—Pioneer Society.
A.—Wright & Sanders.
C.—Mason, G. D. Nagle; Carpenter, T. H. Day.
$170,000.

Berry, nr. Fourth. Frame stores.
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A.—Curlett & Cuthbertson.
C.—P. Crichton.
$2,000.

Washington, bet. Van Ness and Polk. Two-story frame.
A.—Curlett & Cuthbertson.
C.—Leonard & Haskell.
$9,000.

Harrison. Frame school house.
O.—City of San Francisco.
A.—T. J. Welsh.
C.—F. J. Owens.
$23,876.

Howard, bet. Twenty-fourth and Twenty-fifth. One-story frame.
O.—J. Meagher.
A.—M. J. Welsh.
C.—J. Blake.
$3,500.

Chattanooga, bet. Twenty-first and Twenty-second. One-story frame.
O.—Mrs. Baker.
C.—M. J. Welsh.
A.—Doyle & Grace.
$1,500

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O.—City of San Francisco.
A.—T. J. Welsh.
C.—Moore Bros.
$16,700.

Silver, nr. Second. Two-story frame.
O.— — Miller.
A.—W. P. Moore.
C.—A. Jackson.
$2,000.

Silver, nr. Third. Additions.
O.—M. Lindsey.
A.—F. Hillert.
C.—J. McCann.

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O.—J. J. Flemming.
A.—M. J. Welsh.
C.—D. B. Spangler.
$2,500.

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O.—Mrs. Keenan.
A.—M. J. Welsh.
C.—Barrett & Summers.
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O.—W. D. Hensley.
A.—Schmidt & Havens.
C.—J. Klein.
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O.—W. Dizney.
Day's work.
$1,000.

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O.—M. Davis
A.—H. C. Macy.
C.—J. Dougherty.
$7,500.

Van Ness Avenue, nr. Grove. Two-story and basement frame.
O.—S. Jacobs.
A.—Schmidt & Havens.
C.—L. H. Hayden.
$10,000.

Fillmore, nr. Fulton. One-story frame.
O.—W. Y. Swayne.
Day's work.
$2,300.

Fillmore, nr. McAllister. Two-story frame.
O.—Mr. Johnson.
C.—D. B. Spangler.
$4,000.

Turk, cor. Jones. Three-story and basement frame.
O.—Dr. Healy.
A.—H. T. Bestor.
C.—G. W. Hansbrough.
$15,000.

Polk, nr. Fulton. Three-story frame.
O.—Mrs. Dallas.
A.—Townsend & Wyneken.
C.—Plummer & Anderson.
$7,500.

Golden Gate Avenue, cor. Fillmore. Four two-story frames.
O.—S. Kalisky.
A.—Schmidt & Havens.
C.—F. Klatt.
$15,000.

Golden Gate Avenue, nr. Laguna. Three two-story frames.
O.—J. A. Russell.
A.—E. A. Hatherton.
C.—J. S. Tibbals.
$20,000.

Ellis, nr. Hyde. Additions.
O.—J. F. Murch.
C.—J. Hamilton.
$3,000.

Sutter, nr. Webster. Two two-story frames.
O.—Mrs. Siegel.
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$10,000.

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O. and B.—G. W. Hinkel.
$40,000

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Day's work.
$2,000.

Sutter, nr. Laguna. Two-story and basement frame
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C.—Patterson & Smith.
$8,000.

Fifteenth, cor. Noe. Two two-story frames.
O.—L. Zeh.
A.—J. T. Kidd.
C.—A. Jackson.
$7,300.

Howard, nr. Fifth. Two three-story frames.
O.—Carroll Bros.
A.—Townsend & Wyneken.
Day's work.
$12,000.

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O.—H. Champion.
A.—Townsend & Wyneken.
C.—J. Neal.
$2,600.

Geary, nr. Jones. Alterations.
O.—D. Hayes.
A.—Townsend & Wyneken.
C.—J. Martin.
$3,000.

Yolo, cor. Potrero. One-story frame.
O.—Mrs. Connelly.
A.—Townsend & Wyneken.
C.—J. Owens.
$780.

Army, cor. Church. Two-story frame.
O.—M. J. Connelly.
C.—J. M. Comerford.
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Duncan, nr. Sanchez. One-story frame.
O. and B.—J. M. Comerford.
$2,000.

Guerrero, corner Duncan. Two-story frame.
O.—T. Farley.
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O.—C. Offer.
C.—J. H. thom Wohrden.
$1,200.

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O.—J. H. Russell.
A.—E. A. Hatherton.
C.—F. W. Kern.
$3,000.

California, nr. Larkin. Two-story frame.
O.—J. Goldberg.
A.—Schmidt & Havens.
C.—F. W. Kern.
$7,000.

Bush, nr. Lyon. Two-story frame.
O.—W. B. Ward.
A.— — Smith.
C.—F. W. Kern.
$2,500.

Mason, nr. Clay. Additions.
O.—J. H. Russell.
A.—E. A. Hatherton.
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$800.

Eddy, cor. Mason. Alterations.
O.—Arnold & Simmons.
A.—J. P. O'Connor.
C.—J. Myher.
$1,000.

Natoma, nr. Tenth. Additions.
O.—J. Kane.
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C.—L. Wagner.
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Fourteenth, nr. Folsom. Two two-story frames.
O.—J. O'Neil.
A.—Townsend & Wyneken.
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Day, nr. Church. Two-story frame.
O.—J. Riley.
C.—R. S. Doyle.
$1,800.

Day, nr. Church. One-story frame.
O.—W. H. Thomas.
Day's work.
$1,200.

Sanchez, near Twenty-ninth. One-story frame.
O.—M. Melynn.
Day's work.
$1,000.

Duncan, corner Sanchez. One-story frame.
O. and B.—J. M. Comerford.
$2,000.

San Jose Avenue, cor. Duncan. Two-story frame.
O. and B.—J. M. Comerford.
$8,500.

Fourteenth, nr. Valencia. Two-story frame.
O. and B.—J. M. Comerford.
$2,500.

Guerrero, nr. Fourteenth. One-story frame.
O.—Mrs. Flemming.
A.—M. J. Welsh.
C.—D. B. Spangler.
$2,500.

Grove, nr. Fillmore. Two-story frame.
O.—H. Fromberg
C.—T. J. Hamilton.
$10,000.

Turk, nr. Jones. Two-story frame.
O.—R. Dinsmore.
C.—T. Day.
$6,000.

Sutter, nr. Polk. Three-story and basement frame.
O.—M. Grossman.
C.—D. Jordan.
$6,000.

Ellis, cor. Jones. Two-story frame.
O.—W. Woods.
A.—W. C. Hoagland.
C.—R. P. Hurlbut.
$6,500.

Eddy, cor. Mason. Panorama Building; brick and iron.
O.—E. Davids.
A.—A. Pissis.

Clay, nr. Taylor. Additions.
O.—P. Meyer.
A.—B. E. Henriksen.
C.—Wheeler & Burdick.
$2,500.

Webster, nr. California. Two-story frame.
O.—A. H. Everett.
A.—Huerne & Everett.
C.—W. B. Kreger.
$4,000.

Guerrero, nr. Sixteenth. Two-story frame.
O.—G. H. Wubben.
Day's work.
$1,200.

Oak, nr. Franklin. Two-story frame.
O.—F. A. Will.
A.—W. P. Moore.
C.—D. B. Spangler.

Stockton, nr. Broadway. Additions.
O.—A. St. J. Bowie.
A.—W. P. Moore.
C.—A. Jackson.

Treat Avenue, nr. Twenty-first. Alterations.
O.—Mr. Fredericks
A.—H. Geilfuss.
Day's work.
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Bryant, cor. Third. Two-story and basement frame.
O.—A. Kurtz.
A.—H. Geilfuss.
C.—W. Pluns.
$7,000.

Polk, nr. Jackson. Alterations.
O.—T. Dellwig.
A.—H. Geilfuss.
C.—H. Meyn.
$750.

Seventh, nr. Folsom. Alterations.
O.—H. Wempe.
A.—H. Geilfuss.
C.—Commary & Beardslee.
$2,500.

Jackson, nr. Larkin. Alterations.
O.—G. Barrington.
Day's work.
$700.

Greenwich, nr. Laguna. One-story frame.
O.—Mrs. Schneider.
C.— C. Fisher.
$1,500.

Clay, nr. Buchanan. Alterations.
O.—M. Farrell.
C.—T. G. Somerset.
$1,000.

Scott, nr. Bush. Two-story frame.
O.—G. Edwards.
C.—W. Barrow.
$3,500.

Bush, nr. Baker. One-story frame.
O.—P. Martin.
Day's work.
$2,000.

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Day's work.
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California, bet. Baker and Lyon. Two two-story frames.
O.—J. Goldberg.
A.—J. C. Pelton.
C.—F. W. Kern.
$8,000.

California, nr. Lyon. Two-story frame.
O.—J. M. Bonacina.
A.—G. H. Miller.
C.—F. W. Kern
$3,500.

Broderick, nr. Post. One-story frame.
O.—A. H. Martin
A.—Schmidt & Havens.
C.—J. C. Gibson.
$2,500.

Turk, No. 721. Alterations.
O.—M. O'Dea.
A.—Schmidt & Havens.
C.—W. Little.
$1,200.

Cedar Avenue, nr. Larkin. Two two-story frames.
O.—H. Zacharias.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$4,000.

Noe, nr. Sixteenth. One-story frame.
O.—D. Reardon.
A.—Schmidt & Havens.
C.—Hannigan & Flaherty
$2,000.

McAllister, corner Lyon. Alterations.
O.—T. Ashworth.
A.—T. J. Welsh.
Day's work.
$12,000.

Hawthorne, nr. Folsom. Three-story frame.
O.—M. Kilday.
A.—T. J. Welsh.
C.—M. Lynch.
$7,000.

Valencia, nr. Nineteenth. Two-story frame.
O.—M. Martin.
A.—T. J. Welsh.
C.—M. Lynch.
$6,000.

Montgomery, nr. Pine. Alterations.
O.—W. M. Lynch.
C.—S. S. Emery.
$6,000.

MISCELLANEOUS.

Mission San José.—Two-story frame. O., Ehrman & Lebrecht; A., Wolfe & Son; C., Veitch & Knowles; $3,500. One-story frame. O., Sunderer; A., Wolfe & Son; $2,500.

Oakland—Henry, nr. Seventh. Two one-story frames. O., Bruning Bros.; A., T. D. Newsom; C., E. Mellier; $3,500. Seventh Ave., cor. Fifteenth. One-story frame. O., M. Weber; A., T. D. Newsom; C., M. Berger; $3,000. Eighteenth, cor. Eleventh Ave. One-story frame; O., Mr. Griffin; A., T. D. Newsom; day's work; $2,000. Twelfth, cor. Chestnut. Additions. O., Mr. Campbell; C., W. H. Wielbye; $3,000. Linden, nr. Eighteenth. Two-story frame. O., J. W. Nelson; A., T. D. Newsom; C., Berger & Co.; $2,500. Grove, nr. Seventeenth. Two-story frame. O., E. H. Kittredge; A., C. Geddes; C., Knight & Littlefield; $8,000. Tenth, cor. West. Two-story frame. O., Mrs. E. Farran; A., S. & J. C. Newsom; C., H. Marion; $4,500. Mountain View Cemetery; Mausoleum. O., W. Walkerley; A., W. P. Moore; C., Degan & Orford. One-story frame. O., L. Hufschmidt; A., H. Geilfuss; day's work; $1,800.

Alameda—Lafayette, cor. Pacific Ave. Two-story frame. O., C. Bradford; A., Townsend & Wyneken; C., Rousch & Mellier; $3,200. Park, nr. Pacific Ave. One-story frame. O., A. W. Morganstern; A., H. Geilfuss; C., G. A. Bensman; $4,000.

Saucelito—Two-story frame. O., Mr. Foster; A., Newsom & Gash; C., Ingerson & Gore; $2,500.

Napa—Two-story brick. O., Mr. Borreas; A., J. Marquis; day's work; $7,000.

Petaluma—One-story chapel. O., Presbyterian Congregation; A., W. Schrof; day's work; $4,000.

Danville—Two-story frame. O., A. J. Young; A., C. Geddes; C., G. R. Lang; $5,000.

West Oakland—Union, nr. Ninth; Presbyterian Church; A., C. Geddes; C., G. A. Embury; $4,700.

Los Angeles—Evergreen Cemetery Mausoleum. O., Mrs. R. E. Rose; A., W. P. Moore; C., Degan & Orford.

Woodland—Court. Two cottages. O., Sam. Barnes; C., B. F. Myres; $3,000 Main. Extension. O., Edgar Dopkins; B., H. Myres; $1,150. Main. Additions. One-story brick. O., M. H. Howell; C., C. Scott; $1,400. Lola. One-story frame. O. and B., S. Clevenger; $1,500.

West Woodland—One-story frame. O., B. A. Chapel. C., J. Caldwell; $1,500. One-story frame. O., Capt. Johnson; C., H. Leland; $1,000. First, cor. Court. Additions and improvements. Woodland Steam Flour-mill. O., B. F. Harnish & Co. Mill work, B. F. Harnish; $23,000.

Winters—Two-story and basement brick. O. Levi Morris; C., F. Ward; $7,000. One-story frame. O., H. Finley; day's work; $1,500.

Capay Canon—One-story frame. O., P. G. Everett; B. Stamp & Myrick; $1,000.

Dunnigan, Yolo Co.—Improvements. O., Mrs. Ira Dopkins; day's work; $1,400.

Orland—Church. O., Rev. M. Wallrath; A., John J. Clark; $4,250.

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Building Prosperities.

To a certain extent, the low prices obtainable for lumber and hardware have stimulated owners to improve their property. There can be but one real cause, however, for the steady movement in building improvements, and that is, *a thorough confidence by our business men in the future of San Francisco, and a gradual advancement of her manufacturing interests.*

Last year, at this time, there was a general good feeling on the part of most of the population, on account of work being plenty, crops abundant, and times generally very good. This year there has been a universal complaint of hard times and scarcity of money among our business men, and yet we find that in our October issue, 1883, there were reported but **thirty-five buildings of value of $166,600**, while in our building intelligence for the corresponding period of the present year, we find **ninety-five of the value of $441,850**. The difference in the two amounts is sufficient to keep quite a large number of men at work.

Mechanics are in fair demand in city, with but a limited call for the same in country. We notice an increasing disposition on the part of contractors and others to offer lower wages, and, when possible, to demand ten hours for a day's work.

The price of bricks is still kept up. Masons' wages remain the same. Lath are very scarce, and command full prices. Hardware, abundant and cheap. Contractors are figuring very low, and the margin left for themselves is entirely too small for the risks incurred. Stock of lumber on hand in our yards is being reduced. Present prices of that material cannot longer be sustained, as it is actually being sold at a loss. Some remedy will soon be found for this difficulty, and then the price will be set at a figure to reimburse those now sustaining losses.

On the whole, as far as the city is concerned, an active winter's season is assured to all branches of the building trades.

Excavating for Cellars—Coterminous Rights.

WHEN the decision of the Superior Court of this State was rendered in the case of Aston, Respondent, vs. Nolan, Appellant, it was, at first glance, accepted and presumed to be a final and conclusive determination of the rights of coterminous owners in the matter of excavating for cellars, and supporting and underpinning adjacent structures. The decision clearly indicates that every owner of land has the right to enjoy the use of his property, in excavating to a proper depth—the depth being established by city ordinance at fourteen feet—for purposes of construction, imposing no other duty upon the one making the excavation than the exercise of proper care and caution in the prosecution of the work, and the service of proper notice upon the coterminous owner, thus placing the responsibility and cost of underpinning just where it should be, upon the owners of structures on lots adjoining such excavations. This is the plain letter, spirit, and intent of the decision—is right and proper as a legal proposition, and altogether just and correct in point of equity; and had not the learned judge gone beyond the facts of the case in review, and given expression to an opinion upon a point not in issue, the question of coterminous owners' rights would have been clear and well defined; for the language of the reviewing, and of each of the concurring judges, is sufficiently plain not to admit of misconception, that owners have a right to excavate their lots for the purpose of construction, subject to proper notification, care, etc., except so far as Judge McKinstry's volunteer opinion may intervene, which reads: "It may be added, if the building has stood for a period of five years (in this State), before the excavation, the person who erected it has acquired a specia of easement in his neighbor's land—a right to the support of his buildings as well as soil. No such question as this last is presented in the case before us."

This volunteer, outside opinion, not decision—for, as the learned Judge says, there was no such question before the Court—gives to owners of old shanties, dilapidated structures, and valueless buildings of whatever sort, a decided and special advantage over those who are so unfortunate as not to have on their lot constructions whose history extends back five years or more.

Why five, or any other number of years should give to one owner of adjacent property more than to another, "easements," or "prescriptive rights" in the property of others, is by no means transparent to those who are blessed with no more than ordinary, fair business common sense, and judgments unwarped by legal logic and training. Nor is it by any means clear to the same class of minds, why any one, at any time, or under any circumstances, should gain or acquire rights, or control of positive, conditional, contingent, easemental, or any other character in or over the property of another, short of paying the coin for the same, or giving other valuable considerations.

This fact everybody understands, that innumerable issues are, from time to time, determined *according to law*, which, in point of justice and fair equity, have assumed the char-

acter of positive outrages, so much so that the law-making powers have been, and from time to time will be called upon to change, modify, or entirely annul preceding enactments, which have been found to work hardships and injustice. All laws are presumed to be constructed upon the basis of equity and justice, but so long as they are of human origin, just so long will they be subject to human imperfections. Of this, however, for the present, owners and architects may rest assured, that in making excavations for cellars or other purposes, the party excavating is required, under the extra judicial edict of the Supreme Court in the case mentioned, to sustain and underpin all old, worthless, or other constructions on adjacent property, which has stood for five years or more; and by the decision proper, all adjacent owners whose improvements have not been in existence five years, are required to sustain and underpin their buildings.

No Cause for Owners or Builders to Rejoice When Lumber is Sold Below the Cost of Production.

ALTHOUGH the present price of lumber may be a boon to those building in the city, it is anything but agreeable to the wage workers in the lumbering districts. The rate at which lumber can be purchased, simply means a shutting down of the mills, or a decreased rate of wages; and as it is a well-known fact that a lumber mill deteriorates much more rapidly when idle than when it is in active operation, it follows that *low wages* will be the rule during the winter operations in the lumber regions, as the mills must be run part of the time in order to save the machinery from rusting, etc.

As explained in a previous article, over-production has been the cause of the break in the market; or, rather, to be a little more particular, non-consumption of the manufactured article, principally caused by the absence of a foreign demand, the latter item being the reason for the large quantity of lumber stored in the "Lumber Bone Yard."

It may be well to inquire what would be a fair rate for lumber, and yet leave a proper margin in first hands to cover extraordinary expenses. The price on the late schedule was $22.50 per M. for rough. During the past week, we have heard of sales as low as $13.00; while the former price is too high, the latter is decidedly too low. For although the latter may be of temporary benefit to those now building, or those able to lay in large stocks for speculation, in the end it will be found to work disadvantageously all around. There is, however, a fair profit all around at $18.00 per M., and all over that price is but adding to the coffers of those who now have more money than they will ever need for the reasonable purposes of life.

It is almost impossible to name a price at which lumber can be sold the year around. The wage workers are in a measure responsible for this; the filling of unusual large orders, necessitates additional help; and when the latter observe that there really is lots of work ahead, they consider it a good time to *strike*, and so demand increased wages. The manufacturers, of course, add enough to the price to cover this increased expense, and thus the market becomes a battledore and shuttlecock.

This can only be remedied when men can be found who are willing to work by the year for a stated sum per month, taking the dull and brisk season into full consideration. Take a year's work under the present system; a common hand around a mill will get eight months' steady work at $40.00 and board. Two months he will not obtain over $30.00, and two months idle; during the latter period he will have to pay his board out of his previous earnings, say $16.00 per month. So $340 would be the full sum of his earnings. Suppose the same man should say to the owner, I will agree to stay one year for $30.00 per month and board, and no lost time. He would have at the end of the year $360, or $20.00 more than by holding out for higher wages and temporary work.

We are not advocating by any means the rate mentioned; we use the figures given simply for comparison, to show that steady work is much preferable to occasional jobs. We are well aware that when lumber is selling at a high rate, it is not the wage workers that receive the benefit. True, they receive a slight advance, but nothing commensurate to the profit enjoyed by the manufacturers themselves.

Not only is it a sign of bad times in the lumber regions when the price is "way down," but the same thing is evident in every other trade, when the price of any particular commodity is below its normal condition. At present prices of hardware, the profits are so small that of necessity the manufacturers do not produce any more than is actually required, thus only calling into use a fraction of the great army of wage workers in that line. The same may be said of every other calling. Over-production or under-consumption of any line of goods leads to the same result. It is evident, therefore, that extreme low prices of any commodity, result in the end to the disadvantage of those who really require the most help.

San Francisco Chapter American Institute of Architects.

THE meeting of the Chapter was held on Oct. 3d. It being the first meeting since the election of officers, more than usual interest was taken by the members, and, as a consequence, a larger number were present than at any meeting since the installation of officers the preceding year. The President, A. Laver, occupied the chair.

The usual routine business was proceeded with. Proposition received from J. Laver as a student member. H. Geilfuss was elected a member as Fellow.

The President then read his acceptance of the office to which he had been elected. It was as follows:—

FELLOWS, ASSOCIATES, AND MEMBERS OF THE S. F. CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS: It is no ordinary meeting of the S. F. Chapter of Architects which I have now the honor of addressing; and with better health, trust that you will find me less remiss in my duties to the Chapter in the future than in the past.

You have placed me in the highest position, and to be connected with this meeting is not only to me a great honor, but also a great responsibility in one respect especially. I feel that the Association might have done well to have chosen another President. I cannot but congratulate you on the able administration of affairs by the past President and the other officers of the Chapter. Under their *regimé* our Association has prospered and largely increased in numbers—the benefit growing out of the various schools of art and design for the advancement of the student, which have been established by them, should not be underestimated, in view of the great interests which cannot be withheld from the great future of San Francisco—the vast harbor with its defensible entrance which we possess, in which all the navies of the world can ride in safety, and toward which commerce seems to be gravitating, will make this city the equal in wealth and population to any city of the world. This, however, will perhaps not be for many centuries; knowing these probabilities, is it not well to lay the foundation for the architecture of the city worthy of its founders, and bring up our students in art to be equal to the great architectural future of San Francisco. Fellows and Members, it gives me pleasure to accept the position of President of the Chapter. I trust in your cordial support, and hope you will overlook my possible shortcomings. It is my fervent desire that good counsels, together with harmony and good feeling, will at all times prevail.

I now thank you warmly for the high compliment you have conferred on me by placing me in the chair. AUGUSTUS LAVER.

The committee in regard to the revision of the Fire Ordinances reported that they had received copies of the Ordinances of several different Eastern cities. During the coming week several more were expected. Upon receipt of these, the committee would be in a position to make comparisons with the older cities. Further time was allowed the committee to report.

Mr. G. H. Sanders then read an instructive paper on "Urban Improvements." It was ordered printed in full in the CALIFORNIA ARCHITECT. (It will be found on another page.) Adjourned.

Ingenious Idea.

IT is told of a man living away down in the Nutmeg State, that he wanted to put a water pipe through a drain several feet below the surface of the ground, without digging up the drain. To accomplish it, he tied a string to a cat's leg, thrust her into one end of the drain, and giving a terrific "scat," the feline quickly appeared at the other end; the pipe was drawn through the drain by means of the string, thus saving considerable expense.

Balance of the numbers of this year given free to all new subscribers for 1885

FRONT ELEVATION OF $5,000 COUNTRY DWELLING.—3D PREMIUM DESIGN.

Our Third Prize Plan.

IN this issue we present the third of the series of prize plans. The author is W. Claude Frederick, 65 West Fayette St., Baltimore, Md.

The arrangement of the rooms is most certainly a novel one. The entrance hall is unusually large. It seems to have been the idea of the designer, to convert the larger portion of the first floor into one grand promenade, as he has omitted doors between the hall and the principal rooms connected therewith. We doubt the expediency of an open doorway in the dining-room, exposing those at the table to the gaze of all who may enter the front door. In California, even with its mild climate, fires would of necessity have to be kept in the fire-places most of the time, in order for the occupants to feel comfortable.

The conveniences attached to the kitchen are neatly arranged, the principal objection being the small size of that room.

The arrangement of the second floor is much more in keeping with our ideas on this coast. Abundance of closet room is especially noticeable. There is, however, an utter lack of stationery wash-bowls. One only is provided in the bath-room. It is almost inconceivable to us on this coast, that a house of this size should be unprovided with those most necessary appendages. It most certainly would cause a great deal of labor for a servant to carry all the refuse water down to the yard, as she must needs do, no hopper being shown in either story.

In the basement are located the laundry, vegetable cellar, wine cellar, fuel room, and furnace. In the attic are three servant's rooms, trunk room, and a billiard room.

We regret that the various estimates for the different work connected with the design, have been misplaced. The amount as furnished us by the architect is $4,889. To this should be added 5 per cent. for architect's fees, making total cost $5,114. We are assured by the designer that the house can be built as per plans, for the sum mentioned, in the vicinity of Baltimore.

A LITTLE chloride of lime dissolved in warm water left in a lamp or a can which has held kerosene will deodorize it very soon.

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SIDE ELEVATION OF $5,000 COUNTRY DWELLING.—3D PREMIUM DESIGN.

The Way That Houses Are Ordered and Planned.

WHEN a woman goes to a dry goods store to order the materials for a dress, she has usually something like a definite idea of the kind, color, quality, and quantity of the stuff and trimmings needed; but whether a man, or a married couple, or a woman give the order for a house, one and all have usually but a very undefined notion of the size or number of the rooms, of the quality and quantity of the materials, or of "trimmings," external or internal, that they require. All these things are left to the interpretation of the architect, if he is called upon, but, if not, to that of the builder, who, for the occasion, is compelled to do an architect's work. Under these circumstances it is no marvel that the plans have to pass through three or four editions, to the great dissatisfaction of both architect and client; for though it is doubtless the province of the architect to provide for all the needs of the plan and for the details of construction and ornament, it is yet impossible that he can make the size and arrangement of the rooms to suit, unless the client has definite ideas upon the matter, and is capable of explaining them. Few persons have clear conceptions of size. How large a room 16 feet by 12 is they have no idea. When the length and width are measured off for them upon the floor of a large office, they think the dimensions awfully small, and make them 20 by 15. This does very well on paper, but when the estimates come in, there is wailing and gnashing of teeth, and the design has to be submitted to the process often called "boiling down."

A design for a house is usually made something in this wise: A man suddenly makes up his mind that he will have a house built. He has waited until the last moment for his decision, and rushes to the knight of the T-square with the request that he will at once get out the plans and specifications for a house to cost so many thousand dollars. Perhaps he wants it like So-and-So's house, and, occasionally, he has a wish for a bay window to one of the parlors, or for two communicating bedrooms. He wants to see the drawings in a day or two, and to commence work in two weeks or less. The architect—who is generally, in these progressive and mechanical days, neither an artist in general nor a student of architecture in particular, but simply a man with considerable tact, and knowledge of men, and with an extensive aquaintance among moneyed men and speculators on the one hand and among practical builders and artisans on the other—has been through the operation so often that he has become case-hardened, and simply orders one of his assistants, probably the youngest, to make a copy, with variations, of a plan that has been used before. This is done, the sketch is submitted, alterations are made, and finally all is ready. The architect puts as little thought and labor into it as possible. In matters of construction, sewerage, ventilation, etc., he follows the exact routine to which he is accustomed, and in ornament and finish he sticks to his own stock patterns to save time. Except in a few points of arrangement, which are evolved in consultation with the client, the house is as like a hundred others turned out by the same firm as though it were made by a machine. Some architects do better than this—think, plan, design, try to perfect sanitation, construction, ventilation, ornament, etc.; but such architects remain poor. They are voted slow and behind the age, get no work to do, and are usually considered fools for their pains. The same general truth holds good for houses and architects, medical practice and doctors, congressmen and government, namely, the general public that needs houses, medicine, and government, must itself know more about house building, physiology, and social science before it can expect to be served by better architects, better doctors, or a better set of law-makers.—*Sel.*

Fire in Hay Lofts.

THE *Scientific American* makes a suggestion as to the cause of the frequent burning of barns, which deserves the attention of architects. As an illustration of its theory it relates a story of a workman who, while helping to get in some hay which had been gathered in cocks and protected with caps the night before, remarked that the hay was warm. Another man suggested that it might be hot enough to light a match, and the first, to satisfy himself, dropped an unlighted match into a rick near by. In five minutes the rick was in a blaze. If hay stacked in an open meadow will set fire to a match, the *Scientific American* thinks that when packed in masses in a close loft it may heat so much as to kindle the more combustible particles, and burn itself, with the building containing it. Any one can satisfy himself of the effect of fermentation in raising the temperature of leaves or other vegetable substances by looking at a thermometer plunged in a fresh hot-bed, or by thrusting his hand into a heap of moist leaves, or fresh-cut grass, or even tan bark. In the former case he will often see the mercury far above one hundred degrees Fahrenheit, while the hand will sometimes detect a heat in the interior of the mass which it cannot bear without some discomfort. The larger the mass, and the more closely it is packed, the higher will be the heat, and where the air is prevented from circulating, the constant addition of heat may bring it to the point of charring the woody particles. Once at this stage, the sudden admission of air would probably set the charred material into a blaze. The best way of avoiding this danger is to provide thorough ventilation for hay-lofts. With free access of air, not only is the fermentation of the imperfectly cured hay checked, and a part of it thus saved from spoiling, but the heat is carried away before it becomes intense enough to do harm.

A HINT FOR TAX DODGERS.—In Mianus, Conn., there is a house built twenty-five years ago by a man named Van Nostrand, who has lived in it all these years without removing the scaffolding that was used in its erection. Only part of the rooms are finished, and it is said that the house was left in that condition to escape the payment of taxes.

TO WRITE upon terra cotta tablets, dip the clay tablet into milk with a few drops of acid added, and then dry. When this is done, you can write upon it as easily as upon paper.

Balance of the numbers of this year given free to all new subscribers for 1885.

FLATS,
Their Disadvantages and Conveniences.

MANY have been surprised at the large number of "flats" erected in this city during the past three years. At first the impression seemed to be among those whose business it was to study the wants of the people and provide accordingly, that the "flat" system of building was an erroneous one, and in a short time would be relegated to the obscurity of the past; they did not comprehend that in this system there would be found a solution of a difficulty, the solving of which has occupied the attention of American housekeepers for years. The one great question has been, how best to combine the comforts of a home, and all the privacy and freedom thereby implied, with the smallest degree of expense, and the least household cares.

That this question has been answered satisfactorily, is proven by the large number of flats already erected, and in process of construction. We propose, however, to present a few of the drawbacks, as well as the advantages of the system under consideration.

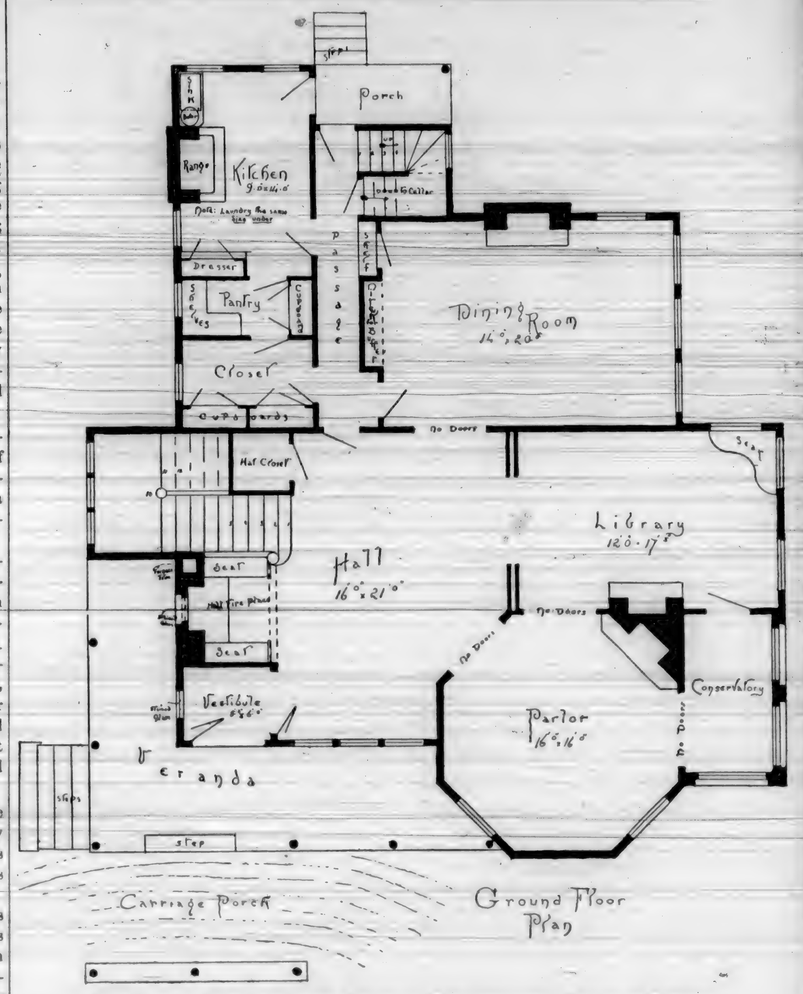
In the first place, there is always the impression—if you are a person of sensitive feeling—that you will annoy the people down stairs; and this impression is greatly heightened if you are lucky enough to possess several children. California children are proverbially healthy, and when they romp and play, no thought is given as to that which is over their head, or under their feet beneath; and so the delicate (?) tramping of the little feet may cause folks down-stairs to wish flats had never been thought of.

Again, it may be that you yourselves are quiet and the tenants above are the noisy ones. If so, you have a chance to see how it is for yourself, and endeavor to keep as quiet as possible for the comfort of those below.

Many complain that the servants in flats are too handy and just in the way; one does not, you know, feel free when a servant is in the next room, and liable to overhear your conversation. To this objection we will say right here, that the class of buildings referred to, are not for people able to keep servants. They are intended as a home for families, and, as a rule, but little provision is made for a room for any one outside of the family; a *spare* room is not to be thought of.

One of the most serious objections is the lack of yard room. This is especially felt when one is blessed with children. Probably much more confusion is caused by the noise from play in the yard than from any other cause. Generally the yards are covered with tongue and grooved flooring. Where there are three of these over each other, the lower tenants suffer at times more than their share from the noise.

Much of the inconvenience from this cause can be overcome by adopting a similar plan to that used inside, viz., *deafening*. The timbers supporting the different yards should be heavier to allow of the extra weight necessary for deafening to be used.



FIRST STORY PLAN OF $5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

Another great advantage of flats is the inducement offered to young people by the knowledge of cheap rents, to get married. The first thought of every newly married couple should be to own a home. While saving their earnings for this object, nothing is more conducive to a general understanding of the ways of this world, than to keep house; by this means they learn to be frugal and to purchase only what they *need*, and not that which they may *desire*. Flats, from the cheap rent for which they can be had, give every young couple a chance to start immediately in their own cosy home.

Flats also give to many a chance to gratify their taste for *show*. Landlords have taken this freak of tenants into consideration. The outside appearance of the house is made very ornamental; the interior, with the exception possibly of the parlor, is left with very plain finishes; using the latter reduces the cost of the building and thus cheaper rents are secured.

Taking all the disadvantages and conveniences into consideration, we think that the system referred to is one that meets the approbation of a majority of those whose means are not sufficient to have a house all to themselves.

IN putting up your screen doors and windows be very particular to have a little hole in one corner so that the flies can go outdoors when they get tired of being inside.

Balance of the numbers of this year given free to all new subscribers for 1885.

SIDE ELEVATION OF $5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

Various and Sundry Conundrums.

To the Editor of the Builder: One of our Chinese students, after visiting a young ladies' seminary in New England, expressed his opinion of the institution by the remark, "Too much plenty girls." My sister house-keepers may not believe it, but I have too much plenty of another good thing—to wit, closets. To tell the truth, I don't so much object to the closets themselves as to the doors. What can I do with all the doors? A. B.

Richfield, Conn.

A very good way to manage obtrusive closet doors is to take them off and send them to the auction room or give them to the poor, substituting portieres. These will not give so much protection against burglars, moths, dust, inquisitive servants, and other troublesome insects as a good, stout door, well padlocked; but if you have several closets, one or two can doubtless be treated in this way to hold those things which are least valuable or tempting. Another can be disposed of by fitting the lower part with drawers, the face of the drawers forming a neat finish, with open shelves above for books or bottles. When two closets for one room stand adjacent to each other, it is sometimes practicable to make a small lobby between the two, with a door opening to the closet at either side, thus keeping the two separate closets, but having but one direct opening into the chamber.

Sliding doors are usually convenient for closets, because, as few, it is greatly to be feared, make a practice of entering their closets and shutting the door, there is not the ordinary objection to them in closing after passing through, and they are not half so troublesome or dangerous as the ordinary swinging sort.

Dear Sir: How can we manage the outside blinds on our wide, *very wide*, windows? The blinds sag when they are open so they will scarcely shut. The fastenings are so far around outside that I am in fear of breaking my neck when I try to reach them, and if a gust of wind happens to catch them, it would take a sailor to bring them into place. We *must* have outside blinds, and we *can't* give up the wide windows. MRS. E. K.

Manchester, N. H.

So far as crawling out the window to reach the fastenings is concerned, this is unnecessary, for there are fastenings that can be operated close by the hinge, and even inside the house, without opening the window at all. Of course they will sag, all things earthly sag unless well supported, and wide blinds should have something firm to rest upon, to keep them in a strong, upright position, both when open and shut.

The sail they carry is inevitable, and in a country of furious winds there is no protection against disaster from this cause but caution. There are outside rolling shutters, which would not be exposed to this peril, but they may have other serious defects, and are always expensive. We have seen outside blinds contrived to slide sidewise on a slender track, and this arrangement obviates the essential difficulties referred to. They can neither sag nor slam, and can be reached without leaning around the corner of the window sill to a dangerous extent. Of course, the tracks and guards will show, but that is not an unpardonable sin in a thing which is really useful.

WE are in a quandary about the front door. The houses in our village are "all in a row" along the one street that runs east and west. We live on the north side, consequently the house faces south; the lot is not very wide, and we hate to give up any part of the south side for a front door and hall. What can we do?

South Windham. H. M. G.

Whatever else you do, don't give up the sunny south side to the formal entrance hall—always uncomfortable and rarely used. Either make the front entrance at one side, leaving the whole of the south front for rooms for daily use, or else make a hall in one corner large enough to be used as a sitting-room. There is no law requiring your main entrance to face the sidewalk squarely except the law of fashion, and the more frequently and courageously you break this law, the greater will be your reward. Whether the entrance shall be on the east or the west side, the sitting-room hall in the southwest or the southeast corner, will depend, of course, upon the approaches and surroundings.

OUR chamber has three large windows, which is all right, *only* they are so placed that if there happens to be a breeze and the windows are open, the bed is directly in a draft. Perhaps this doesn't concern building, but I think if the house had been properly planned in the first place, it might have been avoided. Can anything be done to remedy the evil and still leave us the open windows? A. R.

Lowell.

Doubtless it is a question of house-keeping rather than house-building; still, as the fault is ascribed to the house, it is not amiss to ask for suggestions. People have been known to turn their beds around during the summer months, so that the high head-boards would turn aside the currents of air; but we think the simplest, prettiest plan is to have one or two light folding screens, say five feet high and five or six wide when fully open, that can easily be placed where they will do the most good—that is, where they will intercept the

"Blasts of evening air
That take our health away;"

And, what is more agreeable to some of us, ward off the too bright rays of the early morning sun when we desire a little more folding of the hands to sleep.

OUR dining-room would be quite satisfactory if it were not for a very ugly notch which is taken out of it by the back stairs. We want precisely the space they occupy for a sideboard. Without seeing the house, can you suggest any way of disposing of them?

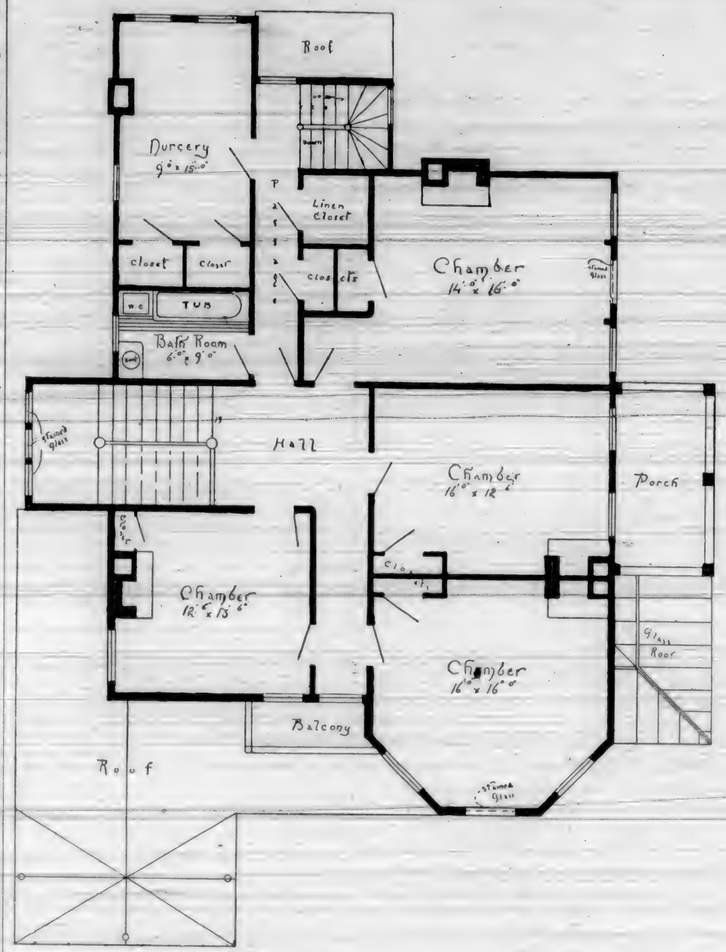
Lennox. M. C. D.

No we can't, and should not attempt any reply whatever, but for the opportunity afforded of saying in a general way that housekeepers, as a class, suffer untold martyrdom by means of their back stairs. They (the stairs, not the housekeepers) are very apt to be, as evidently in the present case, just where they ought not to be, and just what they ought not to be—steep, dark, narrow, crooked, dangerous, and, withal, used continually, both by the servants and the mistress. In some cases it would be wise to destroy them, root and branch, compelling the household to use the revered front stairs, which are, presumably at least, safe. Another expedient, not often adopted but nearly always practicable, is to make an addition outside the main walls, in cold blood, boldly, in defiance of Mrs. Grundy and all the builders, that shall contain a good, strong, easy, and well lighted staircase—that, and nothing more. This will not only be found more convenient, but very likely more economical than the making over or readjusting a flight entirely within the house.—*The Builder.*

The Enriched Grained Varieties of Redwood.

IT was not until many millions of feet of the more richly grained redwood of California had been recklessly and thoughtlessly consumed for general purposes, that special attention was attracted to the fact that a considerable percentage of redwood lumber possessed characteristics of great beauty and inherent qualities as to shrinkage and in other particulars, which entitle it to favorable consideration among the ornamental wood of the United States, for manufacturing and house finishing purpo e During the earlier periods, and until more recent years, the rich, curly "bird's eye," and other peculiarly marked species were cut for "rough lumber." The softer, straight grained kinds being so much more "easy to work," less liable to shrink endwise, and not so liable to split in nailing, became the favorite material for building and other purposes for which redwood was used, to the exclusion of the waivy and peculiarly grained varieties from the list of first-class redwood. Consequently, trees, or logs indicating the very features, which of late has given prominence to California redwood, were cut into plank, scantling, and dimension lumber, where size and strength were specially required; and millions of feet of choice grained wood have been split into railroad ties, and cut up for firewood, and otherwise destroyed, which, if to-day was available in board lumber, and on the market, would command a largely advanced price over and above present merchantable, first-class redwood.

The redwood forests of California have yielded some most beautiful specimens of tree growth, which, for richness and peculiarity of grain, is excelled only by the finest of costly hard wood. The peculiarity of shrinkage endwise is, perhaps, special to this wood, but does not extend beyond thorough seasoning, which perfects itself much more rapidly than in California sugar, or Eastern States pine. The value of the one discarded kind of redwood for manufacturing and finishing purposes has greatly increased during the past few years, and the present demand is greater than the supply of the "handsome variety," even for home consumption. Consequently, manufacturers of redwood lumber are paying attention to this fact, and will in the future regard with special interest such trees as will produce the rich grained article.



SECOND STORY PLAN OF $5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

Something for Nothing.

THE desire to get something for nothing seems to be inborn in human nature. In general, people count themselves fortunate if they get an entirely satisfactory equivalent for an expenditure of time, labor, or money. Few, however, are averse to receiving benefits without rendering an equivalent. Newspaper publishers long since discovered this tendency of human nature, and are reminded of it often enough to keep it from passing out of memory. These gentle reminders seldom come in requests for gratuitous space in the regular advertising columns, although such instances are not unknown. The editorial columns are good enough for people who are willing to accept gratuitous advertising. This class of people always have something which they feel sure the public and ourselves must be interested in, and as a matter of news, you know, etc. Now, no persons in the world are so eager to get hold of news, something good, which they can appropriately use, as newspaper men. None have so keen an appreciation of what "the public" will be interested in as they. But there is a very wide margin between what would interest the party concerned and what would command the attention of the public, which has no personal interest in the matter. The obligation of the newspaper publisher is honestly discharged when he has given a certain amount of space in his advertising columns in return for a stipulated consideration. But, as a matter of fact, publishers are exceedingly liberal in their notices, reports, news items, etc., which call the attention of readers to persons or products. These notices, while they are of value to the business of the persons or firms mentioned, are gratuitously published because they are of interest to the public, and are a part of the history or record of the progress of trade. No class of business men in the world render so much service to business interests without asking or expecting direct return as newspaper publishers. Such being the fact, it is not strange that they should sometimes feel that good nature is trespassed upon when people who rarely or never do legitimate advertising go too far in their efforts to secure something for nothing.—*Amer. Artisan.*

Steel Square and Its Uses. $1.00.

Urban Architecture.

BY G. H SANDERS.*

SAN FRANCISCO, whether viewed from a distance, or seen from within, cannot be called, by even its most ardent admirer, an attractive city. Covering the lower ground and creeping over the hill-tops like a lichenous growth, it presents to the eye of the observer no single feature of beauty or of grace; nothing to excite the imagination or please the taste. Surrounded on all sides by lovely stretches of flashing blue water, the undulating lines of still bluer mountains, and overspread by the canopy of our glorious blue sky—beauty everywhere, by night and by day—the city itself presents to the disappointed spectator the barren desolation of a dry, verdureless waste! A closer inspection only adds to the dissatisfaction of the beholder. The general condition of the roads and sidewalks and other necessary evidences of a prosperous community may be truly said to be indescribable! While the city is not wanting in many structures of real architectural merit, they are so handicapped and disgraced by their immediate surroundings as to leave upon the mind only a general impression of dilapidation and disrepair!

Not a single street in the city can be said to afford to the pedestrian a continuously agreeable walk. Scarcely a street in the city possesses a paving of one uniform material of approved quality. Stone blocks moldering, tarred brick, cobbles, rotten planks, ill-conditioned macadam, or the picturesquely varied surface of Mother Earth in her roughest aspect, succeed each other in bewildering succession, and dispute possession of the streets, even down into the very midst of our busiest business centers. One of the causes for this state of things is doubtless found in the fact that no block in the city can be improved without the consent of the majority of the property owners, accompanied with a deposit of the estimated cost—a necessary and useful arrangement in some respects, truly, and an admirable provision for the protection of unwary citizens against the wiles of the knavish contractors of a few years ago; but one, nevertheless, which seems to work a serious discredit to the appearance of our city.

But one of the principal reasons for the desolate aspect of our streets intimated above, is the conspicuous absence of trees. Wheresoever they are planted and *allowed to grow*, they lend a grace, even to dilapidation, while they never fail to afford a beautiful and necessary foil to the most perfect architecture.

And here I wish to interpose a vigorous protest against the *gardener* fiend, who goes about with shears and saw, leaving bald deformity and relentless destruction in his wake! The finest and most promising trees go down before him, and the small modicum of umbrageous beauty we possess is either converted into some form of unnatural monstrosity, or is subjected to such mutilation as, alas! too often results in total destruction to arboreal life. Times and seasons never come amiss to the gardener fiend, and the more trees he destroys the better chance for him to sell others to replace them; and to aid him in his nefarious schemes he raises the nearly always false alarm of *dampness!* Go to the beautiful because leafy towns of Oakland, Alameda, San Jose, Santa Rosa, or Sacramento, and ask the inhabitants thereof if the lovely and verdant sentinels, which, in double ranks, guard each shady street and wave high in air their graceful, leafy plumes—ask, I say, if *they* find *dampness* a consequence of which to complain? Give me tall trees, branching trees, with abundant foliage, and plenty of them, and hail, all hail! to the noble and beautiful blue gum, to whose fresh, verdant leaves no speck of dust ever adheres, and from whose fragrant foliage exhales the very breath of health and sanitation!

What would this world be without the blessings of vegetation? Neither better nor worse than the hideous barrenness of lunar desolation! And yet the average man, in his blindness and folly, never ceases to make havoc of the perennial bounty of prolific nature. But even while she showers her abundant gifts upon her ungrateful children, they fell her forests year by year to gratify their boundless rapacity and selfishness, never even planting a sapling to replace the centuried monarchs, which they so ruthlessly destroy!

The average farmer only regards the trees on his land as something to burn, and, heedless of consequences, cuts down the finest of them all, to satisfy a passing need! The average townsman is also an enemy to trees, and avoids them whenever he can. The man of intelligence alone regards trees as they really are,—agents of mercy in the hand of God, and endeavors to renew, by planting, the verdure destroyed by his ignorant neighbor. The benefit of trees in the streets of a town, and especially of San Francisco, should not need to be explained. We are every summer swept by comparatively cold trade winds from the west. Every tree planted acts as a wind guard, and serves to modify the blast in its passage across the peninsula.

Rows of trees planted in our streets would greatly temper the harshness of our climate, and would render the town a much more agreeable place of residence, especially to people in delicate health, outside of any considerations of beauty.

But attention has been drawn to the general condition of San Francisco only to furnish a reason for the observations which follow. It seems wholly unnecessary to enlarge on the themes above briefly touched, which one would suppose must be so apparent to those who allow themselves to be interested in such matters, as to sound somewhat trite.

Nor must it be supposed that the city possesses no natural beauty whatever, for even while I write, on the upper levels of California Street Hill, over-looking the city, the fog has swept across the lower portions, revealing only the larger buildings, and the City Hall, the Synagogue, Trinity, St. Ignatius and other churches, and the great hotels lift their domes, towers, spires, and roofs, through its soft and swathing mantle, and the rising sun gilds them with a glory of soft, matutinal beauty which must be seen to be appreciated, while the Mission Hills beyond, with their lovely waving lines of delicately shaded gray, with the blue mountains of San Mateo County towering beyond, all together present to the admiring gaze as pleasing a picture of quiet beauty as any often seen.

And here I would add a word concerning towers. These appendages to buildings, ancient or modern, notwithstanding their often apparent inutility, never fail to lend a grace and dignity to a structure, or group of structures, to which they may be attached, unattainable without their aid,—a lofty line leading upwards; a tapering spire reaching heavenward; a square, bold mass rising abruptly against the sky; a graceful pinnacle, whose delicate outline is a perpetual protest against the coarseness and ruggedness of every day life—all, all, are types, of things mental, intellectual, and even spiritual, which in their silent way may act upon the soul, and do their humble, patient, but, nevertheless, noble work of elevating, refining, and spiritualizing to some extent, more or less, the base materialism to which we are all inclined. And by purifying the perception, and educating the taste for the pure, the sublime, and the beautiful, may in some measure prepare the popular mind for the reception of some things that are not popular, namely, the *true*, the *noble*, and the *good*.

To return to our subject. All that San Francisco, that any city needs to become beautiful, not only as seen from the hill-tops, or at a distance, but even in every nook and corner of it, is *supervision*—and improvement. Supervision by people of taste, observation, and experience on the artistic side of practical, every-day life. Such men as *architects* are or ought to be. Who so well fitted as they (constantly engaged as they are in the construction, improvement, and adornment of buildings), to see and suggest the æsthetic needs, necessities, and possibilities of the various localities in which they reside.

Some years ago, in a New England village, it matters not which, there lived a man who saw—well, first of all he only *began* to see—certain disagreeable and descreditable things in the neighborhood in which he lived.

The village was an ordinary village,—white-painted clapboard houses, with green shutters, here and there a "brick." In the principal street there was some sort of attempt at paving; in places, fragments of sidewalks stretching away into the borders of the town, and ending in foot-paths beside dusty roads in summer, and muddy roads in winter. Irregular dilapidated fences inclosed ill-kept front yards or gardens, lined by treeless, desolate streets, or perhaps having a chance tree here and there apparently by accident. Each householder plodding on in his own fashion, altogether regardless of his own or his neighbors' surroundings.

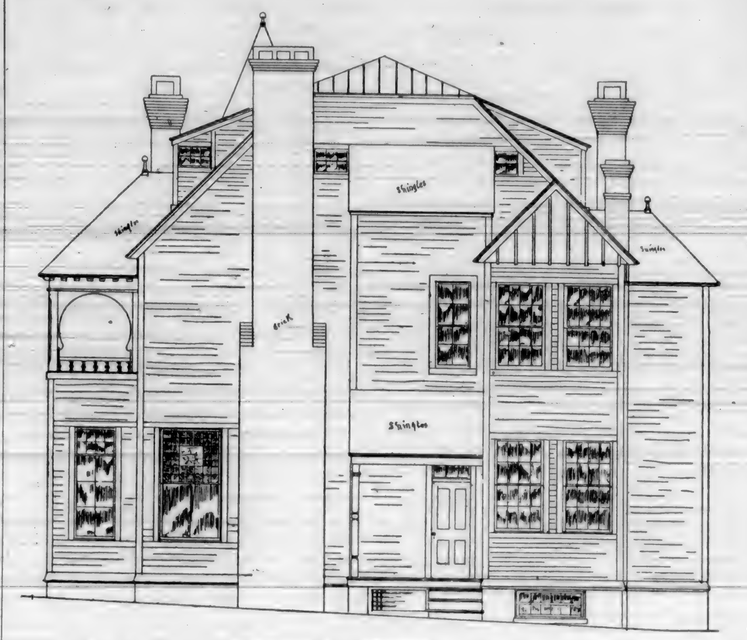
These matters began to interest him, and he felt convinced that by some sort of concerted action a better state of things could be brought about. He gathered together some of the most intelligent of his neighbors, and after meeting with the usual amount of opposition, persuaded a few of them to join him in effecting a few improvements in their own immediate neighborhood. Their street was nicely paved; sidewalks were put in order; front yards improved; fences repaired, and houses painted some other color than white. Trees were planted, and gardens laid out; and they were surprised to find that their property had sensibly appreciated in value. That settled the question with the opposition. The dollar was eloquent, if the man was not, and improvement spread. Trees grew, roses blossomed, beauty began to be developed out of ugliness, and passing travelers began to say, "What a pretty village." Soon dwellers from the neighboring city began to look in, and one or two came to make a summer resort of the place; then others came; better houses began to be built; trade improved; and still improvement went on. The original "improvers" became a permanent society, called a "Village Improvement Society," which found an echo in other dilapidated villages. All sorts of expedients began to be adopted to make country towns and villages more attractive to city dwellers, so that at the present time there are few places in New England, in the neighborhood of large cities at least, which have not felt the impulse of improvement. But it may be asked, What has that to do with San Francisco? It may be answered that what is possible in a village, is equally possible in a large city, and with still greater possible results. The difficulties may also be greater, but one thing is certain, improvement pays, and that is an argument, appealing as it does to the innate selfish interests of the average American home, which seldom fails to attract his attention. The next question in order is, of course, What do you want us to do? I answer, in the first place, Simply to convert the San Francisco Chapter of the American Institute of Architects into a Committee of the Whole on "Local Improvements," and to let each member of the Chapter consider himself appointed as a standing Committee of Investigation and Suggestion, whose duty it will be to report at any meeting of the Chapter on all the various and sundry needs, necessities and possibilities of his own particular neighborhood. In the second place, to endeavor on every available occasion, to interest his neighbors by every available means in joining in the "Improvement Mania." On fit occasions the whole Chapter might interest itself in drawing the attention of the citizens of some particular locality to the desirability of effecting some special object—such as the planting of a street for instance, the improvement of some one of the many unimproved squares in the city, the uniform pavement of some leading street, the placing of a fountain or a "toilet Kiosque" in some public place.

It is a noticeable fact that San Francisco possesses as yet not one public lattrine! Where is there a city of like size in which such a state of things can be found to prevail, in any really civilized country? As to fountains, there should be one in every park and in every prominent place in the city, especially in the neighborhood of the principal saloons. Local societies of property owners together with such members of the Chapter as happened to reside in the vicinity, would be very desirable and doubtless possible in certain quarters.

Some adequate efforts might be made towards converting Van Ness Avenue into a "Boulevard" with park lots, and grass-margined sidewalks. It would soon become one of the most attractive features of the town, and would be a good beginning. It is said to have been the original intention in regard to that thoroughfare.

All that is needed is to get the popular ear, capture the popular eye, and arouse popular attention in the interest of the popular pocket, and the thing is done! For I hold that any improvement in the appearance or convenience of a neighborhood will at once be found to affect the commercial pulse, the pulse which controls the golden current, which circulates like life-blood throughout the popular body, and is at once an indication and a test of the state of the public health not only in a sanitary point of view, but mentally and intellectually as well; for prosperity as surely follows, mental and moral advancement as does health follow sanitation; and both in their way form respectively a basis for the better life, which is the real strength, not only of individuals, but of communities and nations.

* Paper read before the San Francisco Chapter of Architects, October 5, 1884.



REAR ELEVATION OF $5,000 COUNTRY DWELLING.—3d PREMIUM DESIGN.

Painting Shingled Roofs.

MORE shingle roofs are painted now than ever before in the history of building in this country. It is mostly seen in cities and suburban towns, although in the country it is by no means rare. Considerable inquiry has led to the conclusion that many have their roofs painted to add to their appearance, which in many cases it certainly does, while others labor under the impression that the paint acts as a preservative to the shingles. The latter are probably right, provided the paint is renewed as often as it needs to be. If the roof is allowed to remain with the paint partly worn off, the shingles will retain more moisture, and consequently decay sooner then they would were they not painted at all. On the score of durability, little can be gained in cost by painting. A good shingle roof unpainted will last a great many years, and the expense of painting it a few times would replace it. One painter, who had painted the roof of his own house, when questioned by a representative of the *Lumberman*, used good logic from his stand-point. He thought that painting a roof would add somewhat to its length of life. "You see," he said, "that I have painted mine. I do for myself what I desire to do for others. If I did not, the influence would be bad."

American Architects.

THE American Institute of Architects will be convened in annual convention on the 24th inst., and continue in session three days.

The aims, objects, and purposes of the institute should enlist the earnest, thoughtful interest of every intelligent and worthy member of the profession in the United States. It should be recognized and treated as the great "*camp-fire*" of the profession, around which all should gather—if not in person—in fraternal thought and reflection, at least once a year. As the "*parent organization*," it has exerted a very beneficial influence in numerous cities and towns, in the organization of local chapters, and the bringing together in fraternal fellowship and intercourse, thousands with interests co-equal and alike, who otherwise might have remained estranged in sympathies for all time; and it is to be regretted that there are and always will be some—and some very excellent and competent men in the number—who prefer professional bachelorhood—a pre-eminent selfishness—rather than a liberal and generous, personal, and intellectual intercourse with others as worthy in all respects as themselves.

To such, there is a standing rebuke in the fact that the parent body has had and holds in its list of membership, many of the brightest lights of the profession—men to whom every intelligent architect in the United States is indebted to a greater or less extent, for the very information and knowledge which enables them to handle with greater perfection the numerous intricate principles and problems involved in the practice of correct architecture.

At the time when the institute was first founded—1852—almost co-existent with California as a State, the architecture of the country was still in the tight laces of ancient ideas, but very few attempting in their conceptions to depart from the teachings and examples of Angelo, Wren, and others of those whose names and memories will continue coeternal with the grand architectural monuments upon which their names are inscribed. But with the coming together, in 1852, of men of common sympathies and interests, and the development of more enlarged views and fraternal sentiments, there was a nucleus formed, which has since opened out into a broader field of thought, and led to innumerable results—in conception and execution—differing widely from those of former ages, yet practical; serving all present purposes well; in harmony with the advancements of the period; suiting and serving existing conditions better, and more pleasing to the tastes and fancies of present generations, who construct and build, not to meet the views of their successors in life, but for their own present pleasure or profit.

The history of the institute from its inception until the present, is interesting and worthy the sincere attention of every well-wisher of the profession. As before stated, the date of its inception was 1852, but as the result of our country's trying times, when bloody strife, instead of the peaceful pursuit of architecture, prevailed, its meetings were discontinued and its archives consigned to temporary obscurity, until in 1864, when the return of peace had so far removed the gloom of the past, that the members of the institute renewed active operations, and have since continued, each year enlarging and increasing its influence, and pointing to the time when interest in its welfare will be universal, with all good and true men of the profession.

From an address delivered before the institute (Mr. Gilman), we quote: "It is to the position taken by the institute, and to the wise, beneficent measures inaugurated and urged on the general community by our own body, that I look mainly for the future improved position of the profession, and for the gradual education of the public taste in all that relates to our complicated and fascinating art. I may say now, what I have never lost an opportunity of saying, both in private and public life, that I consider it a great privilege—the greatest privilege in fact that can belong to the professional architect—to become a member of this body, and thus be permitted to aid, individually, as well as collectively, in the great work that we have to do."

Although S. F. Chapter was first organized as the "Pacific Coast Association of Architects," as such its success and permanency was doubted, inasmuch as several attempts of similar character had not long survived their organization. With Mr. Augustus Laver as the first—and at that time the only "Fellow" of the institute in San Francisco—a knowledge of its high character, and of the great benefits likely to flow from union with the central head, led to an earnest desire by all the members, that the "Association" should resolve itself into a "Chapter," which was duly accomplished; since when its growth in interest and permanency has been steady and continuous, and is now well established. And if all the reputable brethren of the profession would, with unity of high purpose, and the earnestness of which they are capable, join heart and hand in setting in motion and perfecting all that a united body of well-meaning, honorable architects may and—if they will—can accomplish, S. F. Chapter would equal the best and most prosperous, as it is now in membership, one of the most numerous Chapters in the United States.

St. Peter's and Angelo.

"To POPE Julius, the world is indebted for that wonder of architecture, St. Peter's Church, at Rome. The vanity of Julius had prompted him to order Michael Angelo to give him a design for his tomb, which the great artist made upon so grand a scale that the choir of old St. Peter's Church could not contain it. 'Well, then,' replied the pope, 'enlarge the choir.' 'Ay, holy father, but we must then build a new church, to keep up due proportions between the different parts of the edifice.' 'That we will do,' replied the pope; and immediately gave orders for the sale of indulgences to carry on the erection of the noble fabric.

"Some of the figures intended for the pope's Mausoleum, the famous figure of Moses sitting in St. Pietro da Vincuti at Rome, and two or three of the slaves at the Hotel de Richelieu in Paris, are preserved. The original design of the tomb is engraved in Vasari; it has much of stately gothic grandeur in it, and was to have been decorated with thirty-two whole length figures of prophets and apostles."

"Eastern" Specifications.

WE have before us copies of printed specifications published in Chicago, intended by the author to meet all of the specification requirements for buildings costing from $500 to $10,000. However well adapted they may be for the purposes for which they are intended in Eastern cities, they are in many respects inapplicable to the architectural and constructive arts as practiced upon this coast. To fit them to the building customs of California, they would require considerable corrections, the materials named in numerous cases being altogether different from those known and used on this coast for like purposes, and the general idea of construction differing considerably. Reference is made, not to the intrinsic merits of the documents, but more especially to the fact that the architectural and constructive practices established upon this coast are largely in contrast with those of other cities,—to a great extent special and original, and the greater part of the lumber material particularly. Being Pacific Coast production, it is a very difficult matter for any one to arrange specifications suited to materials special to Eastern markets, and to professional and mechanical customs prevailing, and differing greatly from those in common practice in California.

Eastern Architecture.

WE present on page 185 a new phase of Dwelling Architecture now being introduced in Chicago. As shown, the front is intended to be of pressed brick, with brown stone trimmings, and large carved panel of terra cotta on second story. The porch is of wood with iron railings. The roof is of red slate, and the mansard of black slate, both thus making a strong contrast. The finish of the house throughout is first-class.

This design is well adapted to this coast, and is in striking contrast to the bay window system of this city.

We are indebted for the illustration to the kindness of the editors of the **Inland Architect and Builder*. The engraving presened so many new features that we desired the pleasure of placing the same before our readers. The editor of the journal mentioned forwarded the plate to this office, for which thanks are hereby tendered.

Balance of the numbers of this year given free to all new subscribers for 1885.

*Published at Chicago, Ill.—$1.75 per year.

W. H. Williams.

THE father of Warner Haywood Williams, the late Stephen H. Williams, was well and favorably known in this city as an architect and gentleman of most scrupulous integrity and uprightness of character, both in and out of the profession. Commencing the practice of the profession in the early days of California, his experiences ran with the numerous changes and exciting scenes which characterized the City's history, up to the day of his death.

The son having the advantage of a thorough training under and with so excellent a father and thoroughly competent architect, entered upon his professional life's work well qualified by example and precept to attain an honorable reputation, and work out for himself a name and fame in the practice of his profession and in domestic spheres, which will bring respect and honor to him in life, and when time's work shall have ended, surround his memory with remembrances worthy of imitation by those now most dear to him, and those who may hereafter fill the place now so creditably occupied by him.

Mr. Williams was born in the city of New York, on the 9th day of February, 1844. Attracted by the glowing accounts of the new El Dorado, his father, leaving his family behind him, set sail for California, and arrived here in June, 1850. In July, 1852, the family rejoined the parent, arriving on the 13th of August. After a few years' study in our public schools, Mr. Williams entered his father's office, on January 2, 1860. He continued there first as an apprentice, and afterwards as a partner, until Sept. 6, 1872.

W. H. WILLIAMS.

Salt Lake City at that time presented to young, energetic men an unusually favorable opening. Mr. Williams concluded to try his chances there, and in the middle of September, 1872, arrived in that city. He remained until January 16, 1873, when, finding business very slack, he concluded to leave Salt Lake, and try his fortunes in Oregon. He arrived in Portland, January 23, 1873, and immediately opened an office for the practice of his profession.

Mr. Williams has worthily won the esteem of the business men of Portland and vicinity. Some of the largest and finest buildings have been erected under his careful supervision. He is also an active worker in various secret orders, and was one of the delegates to the Conclave recently held in this city. He is an active member of San Francisco Chapter of Architects.

Professional Perils and Perplexities.

IT is a common superstition among those who contemplate building that the employment of an architect, though it may lead to a better appearance of the proposed building and possibly to some other æsthetic and practical advantages, will surely result in a much greater outlay than was originally intended,—that all following of professional advice will lead to an empty treasury or new assessments and appropriations.

With honest architects—and it is a waste of argument to discuss dishonest people of any sort—the opposite result should be obtained, and doubtless would be, if the instructions given by many clients were not so absurdly unreasonable, loose, and contradictory. Nothing is more common than for the size and number of the rooms to be marked down, the height of the stories, the kind of material and the quality of work desired, and then, the incidental instruction added, that the whole is to cost five thousand dollars, or two, or ten, as the case may be.

One might as well go into a tailor's establishment and order a certain number of garments of a certain size and style, made of specified goods, and trimmed in such a way as he directs, and then himself fix the price for which they are to be furnished.

It is by no means an uncommon experience for an architect, honestly aiming to carry out as nearly as possible the instructions received both as to quality and cost, to find, when the contractors' estimates are brought in, that his ambitious client is enraged or discouraged because his five gallons of requirement cannot be put into his half-peck measure of appropriation. He, therefore, flatly refuses to pay for what has been done, on the ground that, through the fault of the architect, he cannot use the plans.

If building houses were an exact science, if it were easy or even possible to say how much it would cost to build any given thing, there would be some ground for this excuse; or if the instructions concerning the amount to be expended were as emphatically set forth and maintained as is the necessity for introducing certain points in the construction of the building,—an extra window or door, two feet more in width for the hall and three feet more in length for the dining-room, hardwood finish, a stained glass window on the stair landing, oak floors and open fires, a few finished rooms in the attic, a deep cellar and absolutely perfect plumbing,—all these and many more necessities arise during the discussion of plans, and the architect, unwisely, perhaps, but very naturally, infers that, as nothing more is said about keeping within the appropriation, it is preferred to exceed it if necessary rather than forego these advantages. In fact, in most cases, it would be wise if he did, for unless a man must cover the whole cost of his house with a mortgage—in which case he has no call to build at all—it is usually the best policy to carry out a satisfactory plan thoroughly rather than spoil it forever by too rigorous economy.

In the majority of cases, when contractors' estimates exceed the desired outlay, it is not primarily or chiefly the fault of the architect. And it should always be borne in mind that a contractor's estimate is not a safe guide as to the actual cost.

But in case it is plainly owing to the carelessness, the ignorance, or faulty judgment of the architect that the necessary cost of carrying out the plans exceeds what the owner is able or willing to spend, what should then be done? Clearly, as it appears to us, the architect should make such modifications in them as would make it possible to bring their execution within the appropriation. Having done this, or signified his willingness to do so, the man who refuses to pay him for his plans is unquestionably unjust.—*The Builder*.

Another Competition Fraud.

THE Board of Directors of the Victoria (B. C.) Theater Company have placed before architects, through the medium of the press, a proposition to present plans in a public competition for a theater; also, additional brick buildings to cover a space of 36x120. Total area to be covered with buildings, 96x120.

The printed notice is plain in regard to the structure. The theater is to be of brick, and contain parquette and dress stalls, first gallery or dress circle, and second gallery. In addition to the theater, a three-story building, for hotel purposes, is to be erected. The cost of the whole work, complete, is put down at the moderate sum of $35,000. This sum is to include everything, with seating, lighting, and ventilation for theater, and completion of brick buildings, stores, rooms, etc.

"The architect whose design may be adopted, will be paid the usual commission *if the work is carried out under his supervision;* otherwise the sum of $250 will be paid *as bonus without superintendence,* as ordered by the Directors."

We have received from "Observer" a communication in regard to the above mentioned building. The gentleman with the *nom de plume* given stands high in a professional capacity, and his thoughts are entitled to consideration.

BAIT FOR ARCHITECTS.

VICTORIA, B. C., September 30, 1884.

TO THE EDITOR OF THE CALIFORNIA ARCHITECT—*Dear Sir:* Knowing your views, and that of the San Francisco Chapter with regard to architectural competitions, I inclose you a copy of the advertisement which, in their liberality (?) or ignorance, the Directors o the new theater here have issued. The amount offered as bonus and the terms proposed, among other things asking for specifications and estimates, are refreshing in their liberality—a little over a fourth of what ($875) any architect could claim for preparing plans and specifications alone *on an order*. The Directors offer a little over the fourth for the *chance of being paid*, competing with perhaps twelve or fifteen others! It is evidently the object of the Directors to get plans and specifications to build from and save half the commission.

Several plans of some merit have already been received from local and foreign architects, who got private information before plans were advertised for. Therefore a choice was not wanting to the Directors, and makes their conduct the more strange. I think I may safely say that no local architect will now send in plans. Very truly yours, OBSERVER.

We notice the same objection in the notice alluded to above that appears in the statements contained in the advertisements or circulars giving particulars of various competitions that have taken place on this coast, viz.:—

The sum stated in the advertisement will be paid to the architect whose plans are accepted, but the directors claim the privilege of electing their own architect to superintend the building, even if the superintendent never presented a plan.

That this is unjust is apparent to all right-minded people; $250 will not pay the labor of the draughtsmen employed to work up the architect's plans; and then to be debarred from superintending his own plan—if it be accepted—is an outrage to all professional architects.

We are assured by competent authority that the amount named as the limit for cost of building is totally inadequate to the ideas entertained by the Directors.

A Word to Publishers of Architectural Works.

THERE seems to be a growing tendency among publishers to issue works containing Architectural Designs. Descriptions of buildings are given and an estimate for which they can be erected. This is all well, but care should be taken not to mislead people who buy the books, in regard to the COST of the buildings. A page should be devoted to a table containing the rate of wages, prices of lumber per M., bricks per thousand laid, plastering per yard, painting per square, and all the rest of the items necessary to complete the building. Great care should be exercised in this particular, and all the amounts given be such that absolute dependence may be placed upon them. Of course, this table would contain the amounts for which the building could be erected at the place of publication of the book. If this were done, it would be an easy matter for one in California to estimate the difference in cost it would require to erect and complete a building of any desired plan. We have heard of many complaints from parties to whom we have furnished books; they followed the plans, the cost of which was given at, say $1,500; and, after spending $2,000, found that their house was not fully equal to the plan they followed.

We think if publishers would follow the suggestion mentioned, it would remove one great objection to the purchase of books by parties residing in different localities to the place of publication.

New Styles of Hardware.

WE call particular attention of those interested to the new advertisement on back page of cover. Huntington, Hopkins & Co. is one of the most substantial firms on the coast, and carries a stock unsurpassed by none. They invite owners and builders to call and examine the new styles of *bronze* hardware. These they keep in great variety. Every variety of mechanics' tools known to the trade, from the smallest gimlet to the finest iron planes, will be found in this establishment. They are also agents for many of the prominent patented inventions which have gained sush popularity on this coast. Carpenters in the country who desire a first-class "kit" of tools, should address a note *first* to this firm, as their immense stock will enable them to fill any order. Prices of everything in the hardware line in conformity with the quality of goods sold.

Smoky Chimneys.

FROM a paper read by Mr. J. P. Seddon before the health conference in London last month, the following abstract is made: Chimneys smoke from five causes: 1. Because air is not supplied to houses systematically, like water, but is, rather, excluded. 2. Because fire-places are illy-constructed, being drawn over from the openings of the fire-place to the flues in such a manner as to provide large vacant spaces above the grates, which contain cold, stagnant air, in contact with which the smoke becomes chilled and is prevented from being drawn into the flues. 3. Because flues are usually made too large. They should seldom be more than nine inches square. 4. Because no provision is made for down-draughts of air to expend themselves before reaching the fire-place. 5. Because architectural guards are not constructed at tops of chimneys against wind. Mr. Seddon depreciates the use of cowls.

Hanging a Grindstone.

TO HANG a grindstone on its axle to keep it from wabbling from side to side requires great skill. The hole should be at least three-eighths or one-half inch larger than the axle, and both axle and hole square; then make double wedges for each of the four sides of the square, all alike and thin enough, so that one wedge from each side will reach clear through the hole. Drive the wedges from each side. If the hole through the stone is true, the wedges will tighten the stone true; if the hole is not at right angles to the plane of the stone, it must be made so, or the wedge correspondingly must be altered in the taper to meet the irregularity in the hole.

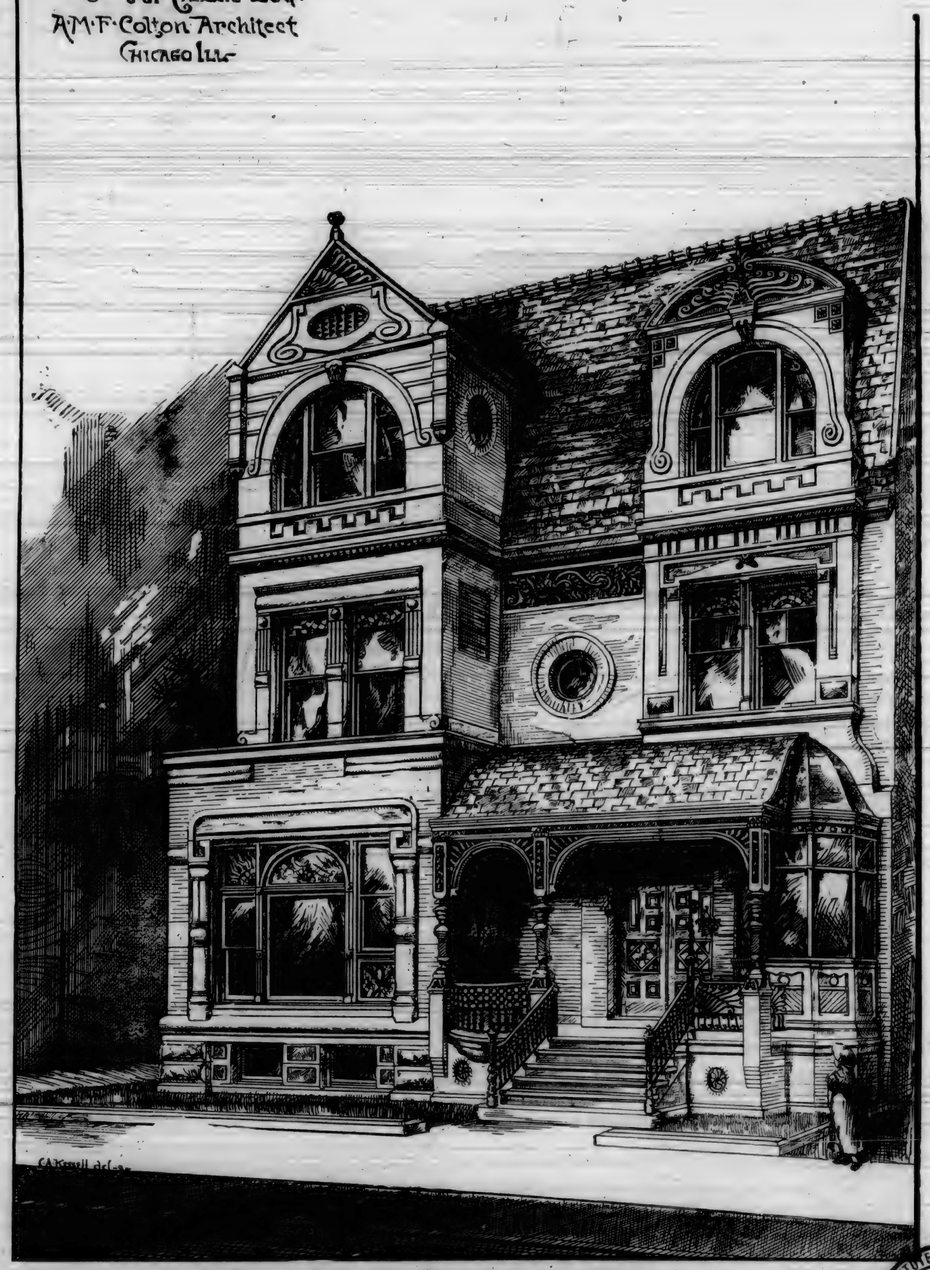
Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

There are to be thirty-nine octavo volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper, neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

	PER VOLUME.
Bound in Extra, English Cloth, neat and attractive style	$4 50
Bound in fine leather, Library Style	5 50
Bound in half calf, half Russia, or half Morocco	8 00
Bound in Russia Leather or Tree Calf	10 00

Any information in regard to the above will be given by addressing the office of this Journal.



A NEW PHASE OF DWELLING ARCHITECTURE. (SEE PAGE 182.)

INSTITUTE OF BRITISH ARCHITECTS MDCCCLXIV

Sources of Ornamentation.

A. C. BOND.*

NATURE is to be considered merely the germ of ornamental art; art must develop nature's suggestions, combine her forms and, besides pleasing the eye, subserve a purpose. Forms and colors seen in nature excite admiration of a very different kind from that involved in the artistic rendering. This rendering must please the eye, gratify the taste, and exhibit fitness for its special intention. The art of the past, that aggregation of experiences derived from the application of the suggestive hints of nature, is simply a means of study to the ornamentist, an aid to the mastery of principles and rules. The range and variety of illustrations to be found in nature represent every principle on which beauty depends; its study supplies a fertility of resource, even as regards construction, as well as the harmonious arrangement of parts, the ornamentation of those parts, and as to the degree of prominence which decoration should assume. But it is in decoration setting forth the special qualities of the artistic mind, conforming what is material to a designed purpose, expressing the perception and feeling of beauty and truth in the designer, that its great interest lies.

In designing, the decorator has to take into account two kinds of expression, the one definite and certain, the other conventional and capricious, the former dependent on natural principles, the latter upon association. The force of association was illustrated when, in France, archaic severity in ornament, at a period when republicanism had triumphed, was regarded as "the thing," and decoration assumed a funereal aspect. In projecting ornamental designs, as in realizing their effect, mental impressions have to be taken into account in artistic rendering. Thus, in form, angular expresses strength and durability; the curvilinear, softness, delicacy, and fragility.

Definite forms may be classed as the rectilinear and rectangular, the rectilinear but oblique angled, curvilinear forms without contrary flexures, curvilinear forms with geometrical contrary flexure, and curvilinear forms with contrary natural flexure. The discovery of the means by which expression is given to them involves an extensive process of comparison. Often their conjunction has merely the significance that attaches to playfulness and delicacy.

The adoption of ornamental treatment suitable to a material, has a decisive influence on design, as in gold in sheet—beaten, raised in lobes, fluted to give strength and shadow; in wire—in coiled, spiral, and numberless curved forms. Stone has its natural expression in masses, chamfers, etc. This condition does not exclude one material taking designs proper to another. Foliage should perform no office other than ornamental, such as adding richness and variety, filling out forms, and covering junctions, as in metal work. Hence the impropriety of supporting a canopy on the innate stability of a floral boss.

The Persians, in seeking to produce masses of brilliant and variegated color without offensive gaudiness, betook themselves to mosaics for the adornment of their walls and the exterior of their mosques, showing magnificent incrustations glistening a vitreous glaze. The radiant hues being natural, the colors and tints of real stone could not offend the sight; there was a certain sobriety even in the splendor of surface. Beautifully veined and naturally tinted woods have a charm independent of the design into which they enter, whilst the design, taking them into account, is also enhanced in its effects.

The character of material used for decorative purposes necessarily affects the essential features of ornament. Lustrous or dead surfaces, hues, or intrinsic qualities are themselves constantly suggestive of new devices and effects. Mechanical operations and chemistry, brought to the preparation of materials, wonderfully augment the resources of the ornamentist. Both the art and science are illustrated in enamels, which, having for their base hard, resistive substances that are ground to an impalpable powder, and blended with cohesive elements, are rendered plastic and absorptive of color, finally being fired, so placing an essentially perishable colored design beyond the reach of change.

There are mysterious properties in colors that serve the purpose of the ornamentist, and suggest various departures in design that result in excellent effects without apparent rule. The eye, for instance, possesses the power to supply the complementary color of the hue on which it rests. A celebrated French painter remarked that every bed of violets was surrounded with a halo of purple. Again, whatever the laws that regulate color—and theories and deductions on this point differ—their æsthetic value or influence on the sentiments must be taken into account for satisfactory treatment.

A reed, a flower, a broken stem, what significance may not attach to them when elevated to decoration, as the reed in the flutings of Corinthian columns, the flower in moulded form or beaten metal as a symbol or emblem, like the lotus of Egypt, the broken stem setting off curvilinear lines in a capital or in the mouldings of a cornice, a band or frieze on a vase, or on a panel in simulated carelessness of rendering.

To what are we to ascribe the simply perfect use of color by the Orientals? Whether they use the brightest or most subdued tones, it makes no difference, the patterns are harmonious and gratifying. They value the color only as it assists the purpose of design. As all pleasing effects obtained in decorative art are referable to the conjoined or separate expression of the laws of harmony and contrast, it would seem as though by some latent principle of mind, or passive reception of the subtle teachings of nature, they had unconsciously acquired their marvelous aptitude to treat color not only appropriately but so as to secure the best results. It is the same with their faience, their enamels, their silk stuffs, and their tapestry and embroideries, executed with surprising manual rapidity, and often without a formal pattern, and not merely in color. Whether by instinct or tradition, they have a marvelous appreciation of true form and proportion.

A man, aided by a child, constructs a gigantic jar as we build a house, and with no other instrument than the hands and a spatula, an amphora of extreme height, and presenting beautiful curves, is produced. On the borders of the Nile, females with their children make alkarazas so elegant in form as not to need the aid of color to command admiration. With Orientals, the sense of the beautiful shows itself in all things.

Flat ornament is the most natural and obvious means of decorating solid surfaces, and this in conventional form. The source of this appropriateness is to be found to resent, so to speak, the moulding or carving of natural forms as something simply imitative, and, therefore, with all the labor and ingenuity exercised, of no high order of art, and therefore not conforming to an imposing position.

In many branches of art the designs are drawn direct from nature. The designers of textile fabrics may be seen with a group of flowers, freshly gathered from a garden, in small vases before them, arranged so as to present some novel or pleasing effects, which are transferred, in modified form, to their patterns. The same colors or precisely the same forms, may not be reproduced, but the flowers and the portion of the pattern dealt with.

Sometimes the flowers that serve as models for decorative metal work are pressed between boards, so as to present an aspect, to some extent conventionalized, for treatment in bas relief. This method of securing the originals of patterns has for ages been adopted in the East, and serves to account for some of the really exquisite transformations that we witness.

Many forms of the ornamental class are not naturally supplied. Such is the Greek fret series of squares, one within another, interior lines being brought up at intervals, thus getting rid of the mere square. Arabic decoration, though very ornamental at first sight, was in reality based on extremely simple combinations.

It is a curious fact that some of the choicest patterns, apparently of Eastern origin, of the Eastern carpets, have been reproduced from the paintings of old Flemish masters—Van Eyck, Memling, and others, and the Florentine artists, such as Ghirlandago and Montegna. So also with partieres and table covers. Some of these painters simply give divisions of color and main outline of the patterns, and in place of angles substitute curves; others, like Hans Holbein, delineate even the very stitches.

In a design of varied character the desirability of introducing a few points of resemblance between the forms, thus establishing certain affinities, provides a contribution to decoration. The securing appropriateness in the ornamentation is another requirement that has its influence in fashioning ornament. The ox heads and festooned garlands carved on the friezes of Roman temples, had a practical value as betokening sacrifice, whilst in other public buildings they would only have been stupid and vulgar.

Consonance or agreement with the general design is a prime element of good ornament, and it is just because this consonance is not found in ornamentation of a different purpose that the ornamentist finds so much in bygone art that cannot be utilized. The introduction of an opposing tone in colors to impart unity of effect, is a leading element in color design. The upholsterer who brings together two colors—say yellow curtains with green covered chairs—will wisely repeat the green in the curtain in a narrow strip the same as the chairs. Contrast usually involving alternation, some of the most beautiful effects of form are obtained through their connection. To the contrast of form and color decoration owes some of its happiest inspirations. A further source of beauty in ornament is derived from the prevalence of one quality in color, or of a given size of form over another.

It is noticeable that all that is lovely in landscape is produced by contrast of tone, not color—by the bright green of young shoots against the dark, somber green of the older wood; by the gay, light larch against the dark, green fir, and these against the deep, blue sky as a background. The present advance of decorative art is largely due to more attention to contrasts, and to their more skillful manipulation.

The circumstance that the mind never draws the line too close between use and ornament, has led in articles of vertu in the precious metals to the blending of both in structural forms, and with little conventionalism as regards ornament. An instance occurs to us in a silver standard consisting of a stalk with leaves of the aloe plicatalis regularly folded within the other in alternate directions. The richness of the material justifies the labor and ingenuity expended on elegance of forms. Similarly, on vases of precious metal nature, leaf, foliage, flowers, and stems may be imitated as closely as one pleases in relief, or as undercut work, if only care be taken that it shall fill up a defined and bordered space.

In the arabesque style of foliage and tracery there is a mild freedom which pleases the fancy, partly because no actual natural forms are portrayed, whilst yet they are suggested in the flowing outlines, in the lightness with which the ground is touched and yet transformed in effect, and the way in which the sight is lured to traverse over the whole surface. But as a means of decoration, arabesque is to be used charily; it has indeed the charm of repetition, but where uniformity is equal, the beauty of forms is in proportion to their variety. The harmony established is by analogy of size, color, and form, but affinities may be carried too far. The true law of harmony is conformation and diver ence.

The collected experience of artisans of the past constitutes a leading source of ornament. Carvings and mosaics, figured tissues, stained glass, metal work, even paintings and architectural treatment of decoration, supply a fund of artistic instruction, not for reproduction, but suggestive of new combinations.

The course of ornament, renewing at intervals of time features of previous periods, with new characteristics superadded, has its counterpart in seeds transplanted to new soils and climes, the change resulting in developments that in some respects are wholly new.

* Written especially for this Journal.

Saw Milling in th California Redwood Districts.

ALTHOUGH there may be minor differences, a brief description of the methods employed in logging here will apply to the business generally. The roughness of the ground and size of the timber necessitates an entirely different system from that pursued in the East. Jack-screws take the place of cant-hooks and peaveys, and, instead of a single team, eight or ten oxen with block and fall, or a steam engine is required to move the larger logs. First come the choppers, or rather sawyers, as most of the timber is sawed down now, and it requires much skill and experience to fell these giants without breaking and destroying much valuable lumber. Following these are the barkers with axes and long steel bars to remove the bark. Then fires are set which burn most of the bark, limbs and brush, and if the tree has been broken or split in falling the devouring flames soon find every defect. In due time the sawyers, swampers, jack-screwers and road-builders put in an appearance and perform their respective parts of the work. One man handles a cross-cut saw eight to ten feet in length, and if the applicant for this position does not possess unlimited hope and the muscle of a Sullivan he never gets through the first 10-foot cut. If the logs are up on the side hill, or in some of the side gulches—nearly all redwood grows on rough ground—two men with jack-screws roll and slide them down to where they can be reached by the long, slow-moving 10-ox teams, which take them to the landing on stream or railroad. Where the ground is steep a number of logs are attached to each other by the use of dogs, or steel hooks, driven deep into the logs near the end and connected with chains, and in some places, bridle chains are necessary to retard their progress down the hills. If once the logs get to running their speed is increased by being bumped and pushed by the logs behind until there is danger of running over and ruining the whole team. Such cases require great skill on the part of the driver, but if he understands his business and has sufficient time in which to deliver himself of a volley of oaths, as only a "bull-puncher" can, the oxen are warned of the danger and are seldom caught.

On more level ground the roads are made by imbedding "skids"—logs from 12 to 15 inches in diameter—about half their depth in the ground at right angles with the road, about six feet apart, and the logs are hauled lengthwise across these skids. This would seem as hard work as hauling a cat by the tail, but not so. The friction is removed to quite an extent by the use of oil or grease on the skids and usually 1,000 feet is taken for each yoke of oxen in the team, and in some cases much more. Logs exceeding six feet in diameter are usually split into two, three, or four parts by the use of powder or wedges. This facilitates handling them both in the woods and at the mills, but often at a sacrifice of much fine lumber. As a means of getting the logs to the mills, railroads are taking the place of natural water ways. The size and weight of these logs, the rapidity of the mountain streams, and the uncertainty of floods sufficient for driving purposes, are strong arguments in favor of railroads, and there is no doubt of their superiority over the old way. At first sight an Eastern man accustomed to handling small, light logs, is impressed with the idea that everything moves too slowly here and that little is accomplished, but when we realize that many of these logs are from 50 to 100 inches in diameter, and that the green butts are so heavy that they will sink in the water like a stone, we conclude that these loggers understand their business, and have adopted the best methods.

In the mill there is a mulay, double and single rotary, edgers, butting saws, two planers, which give a capacity of about 50,000 feet per day. The clear lumber passes directly from the saws to the planers, and is dressed green. While it is probable that many of the modern inventions in mill machinery could not be successfully applied in this timber, there is no doubt but the mills here generally can and will be much improved. The few gangs which have been tried are thrown out as impracticable, and steam feed, improved set blocks, live rolls, gang edgers and butters, etc., are the exception rather than the rule. That active competition which has compelled the manufacturers in the Northwest to adopt all new labor-saving appliances would no doubt have a beneficial effect here in reducing the cost of manufacturing, and in due time they will come.—*Northwestern Lumberman.*

Garland Trap.

THIS excellent preventive against sewer gas entering houses, has achieved a reputation in California ahead of all competitors. Some of our largest hotels have lately substituted the Garland for those previously in use, and the result is more than satisfactory to the occupants. Full particulars in regard to the cost, etc., of these traps, can be ascertained by either writing or visiting the manufactory in Oakland.

Modern House Painting. $ 5.00

ONE of the English papers points out that every gas-meter in a large building is a source of additional danger in case of a big fire. In large public buildings, apartment houses, and tenements, there is generally a separate meter for each suite of rooms. The lead pipes are melted by the fire, sometimes even by the heated air before the flames reach them, and then the inflammable gas does its share towards spreading the conflagration. Says the journal referred to: "The gas poured into burning buildings through such openings doubtless helps materially to account for the surprising suddenness with which many great buildings have been swept by the flames, and in all cases the outflow of gas must seriously counteract, if it does not altogether thwart, the efforts of the fireman."

Ventilation of Sewers.

THE ventilation of sewers by gratings over the manholes may not always be satisfactory. The commissioners of sewers of London have entertained the notion "that in all instances where new houses are being erected, the commissioners of sewers place themselves in communication with the building or other owner, and treat with him or them for the construction of proper ventilating-shafts in the chimney-breasts of party or other walls, for the purpose of ventilating the sewers, carrying the ventilating-shafts well above all adjoining roofs." The ventilation of sewers by uninterrupted communication from the sewers through the house-drain and soil-pipe of each house, has long been urged in America, but this suggestion may be a new one to our architects and builders.

An Ingenious Device for Taking Down a Chimney.

AN ingenious arrangement for facilitating taking down an old chimney was designed and put into use at the Middlesborough Iron Works.

The chimney had to be taken down from the top and the bricks lowered inside, as it was situated in a crowded locality and it was desired to lower them with as little damage as possible, as they were to be used again for building purposes, and would have been broken by throwing them down on the inside, and lowering by ordinary mechanical means was too tedious, and, in the present instance, impracticable. The following device was adopted, which would allow them to fall by their own gravity, and at the same time be cushioned sufficiently to break their fall and prevent damage. In order to do this an air-tight iron box was placed at the bottom of the chimney; this box was fitted with an air-tight door mounted on hinges and closing on an India rubber face, against which it was tightened by a wedge.

A wooden spout, the edges caulked with white lead, making it air-tight, was then fixed on to the top of the box and carried up the chimney. The inside measure of this spout was slightly larger than a brick, so that the air would cushion it sufficiently to break the fall and prevent damage. The air-tight box was opened by an air-tight door, which, when full, was opened by a workman at the bottom, and the bricks removed. This device was simple, ingenious, and proved quite effective.—*The Building Trade Journal.*

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NEW BOOKS.

Leffel's House Plans.—Contains elevations, plans, and descriptions of houses costing from $500 to $3,000, at New York prices of labor and materials. The size of the book is 8x11 inches, printed on good paper, and neatly bound. Cost, $2.50. Copies can be had at this office.

To those desiring to build, but whose means are somewhat limited, this book will be found of special interest. The plans are all of modern design, and embrace conveniences in keeping with the amount specified. One objection to the elevations is the low height of the stories. In California, much greater height is given to the ceilings than our friends of the East desire. Many of the plans would be found impracticable if stories were made 12 and 11 feet high, without the area was enlarged on account of stair room, etc. On the whole, however, it is one of the best works we have received at the price quoted.

History of Architecture.—By Ferguson. We have received a supply of this justly celebrated work. It should be in the possession of every architect. Draughtsmen especially will find it very entertaining and instructive reading. Two large volumes. Price, $15.00.

What Dulls Varnish.

IT may be said in general terms that all influences that tend to retard drying will also impair the lustre of the work, and that the large majority of flatting is caused by chilling the varnish while only partially dry. Hence, in all cases of flatting or deadening, the painter is forced to the conclusion that the trouble is entirely the result of his own oversight or neglect, and not by any means due to the quality of the varnish.

The loss of lustre of the varnish soon after it is applied is almost invariably caused by the varnish being exposed to too severe action of the atmosphere before it is thoroughly hard. This may be caused by a badly protected shop, which allows cold air to pour in through every seam, and to thus retard the drying of freshly varnished jobs; or the painter thoughtlessly runs a fresh carriage out into a cold repository soon after the varnish has "set," and it undergoes thorough chilling while partially soft. Coal gas in the varnish room, coming often from the stove, and frequently from the smith shop under the varnishing department, is likely to cause varnish to deaden at any time.

Many painters do not realize how comprehensive the term "drying" is. Finishing varnish continues to harden and dry for many months after spreading, and it follows that when a finished job is judged to be able to take care of itself a few hours after the varnish is dust dry, any neglect of it, based on that conclusion, will usually be followed by disastrous results. The colder the season and the slower drying the finishing varnish used, the longer should be the time allowed a nice job to thoroughly dry before exposing to the elements (from three to five days, according to circumstances).—*The Painter.*

How to Make a Bed.

WE are inclined to think that few people really know how to make a bed properly, or they are too much in a hurry to put things to rights in a chamber to be thorough. A writer in a Philadelphia paper ventures the following practical remarks on the subject:—

"Let every bed-maker, as soon as all the covers are spread, turn down the upper sheet and all above it, leaving a generous margin below the bolster. Some people, you know, pull all the covers straight up to the top and lay the bolster upon them, so that when bed-time comes they must be arranged at the head. Boys don't like this way, and perhaps some other folks don't either. It is the custom to pile two big, square pillows on the top of the bolster, and then put on two pillow-shams, and then, sometimes, or perhaps before the pillow-shams, a sheet-sham. This is setting a trap for the unwary. Only a remarkably careful woman is equal to the task of getting off all the 'finery' properly. Why not almost, if not altogether, abolish shams of all kinds? Why not honestly take off the big, square pillows and supply every bed with a comfortable bolster to take the place of pillows? If you like adornment, embroider or decorate the slips and sheets themselves without any make-believe. Silk, lace, and the like seem out of place on a bed, which should suggest repose. Imagine a big boy with boots on flinging himself into the midst of a fairy creation of pink satin and torchon! Let beds be what they look like, and let them look like what they are—real resting-places."

Unoccupied Houses.

THERE are, always have been, and ever will be croakers,—wise (?) men who presume to grasp and comprehend more of the future than any of their neighbors, and who are ever ready to proclaim their extreme wisdom and foresight in all matters, interests, and affairs, from the most insignificant and local, to the grandest of national magnitude. Many such, prophetically inspired individuals in San Francisco, have, from time to time, during the past two years—lifting the vail of the future—discovered that too many houses were being erected in this city; that the supply was far in advance of demand; that the continuation of building activities would result in a large array of "houses to rent," without people to occupy them. Every unoccupied building is urged as confirmatory evidence of the theory advanced, and two or three empty dwellings in an *occasional* block, is held as proof positive of the early tumbling of all tenement property in rentals. This sort of prognostigation has been going on, and is prevalent at the present time; and the comparatively few houses labeled "*to let*," pointed at as ominous of pending disaster.

But what are the facts? The "*To Let*" sign business as practiced by real estate men and house renters, is ludicrous and extravagant. If but a single house is empty in a whole block, the "To RENT" show bills, printed in large black letters, on cloth or paper, from 8x12, to 14x20 inches, are pasted on every available part, so that on the front of a two-story house with bay windows, it is common to see a poster on each of the three or four window openings at main story, as many more at the second story, others on any single window opening that there may be, and at the front entrance—more generally on both sides of a sign board so placed as to protrude beyond the line of the street fence, to catch the eye of any one, up or down the street, a thousand feet away. It is a common thing to see from eight to twelve of these "*to let*" signs on an ordinary two-story house, and the number is increased when there is a basement or other stories additional. Consequently, upon approaching a block where but one house is labeled to rent, the array of "*to let*" signs in sight is sufficient for the renting of a half dozen, and where two or more occur in he same block—particularly if adjoining each other—the appearances are decidedly demoralizing, and well calculated to mislead the judgment of those who form conclusions from general appearances, without examining minutely into the true state of the case.

Should a person spend half an hour riding over one of our street-car routes, along which, within the twenty or thirty blocks passed, there should be ten houses to rent, he will have seen from *seventy-five to one hundred* of those showy signs; and the impression created becomes fixed that there are a great many unrented houses, while, as a fact, the number is comparatively small, notwithstanding the large addition of new buildings erected during the past two years, with no present indications that the near future, if years to come, will witness any material abatement in building activities.

The more important inquiry, however, is not so much the number, as the class and description of buildings which fail to find ready occupants. Those who have given any special attention to the matter, will have noticed that the idle houses are generally those built several or many years ago—less convenient than the more modern planned, and far less complete in their appointments and finishes. And of the number, basement houses are by far the more numerous, thus demonstrating the fact that people prefer to live above, rather than one or more feet below the surface of the ground, and that the day has passed in which tenants find pleasure in running up and down the extra flights of stairs necessary in basement story tenements. It is and will be so, that those who are compelled to pay rent, will seek the best they can find for their money, and owners of houses unsuited to the neighborhood, inconvenient in arrangements, well worn, and in need of repairs, painting, whitening, etc., need not wonder that rent-payers vacate, when, for the same or less rental, nicer and more convenient homes can be had.

Terra Cotta vs. Stone Trimmings.

THE manufacturers of terra cotta are putting forth commendable effort to induce the use of these productions, for trimmings and ornamentations in the fronts of brick buildings. In some of the Eastern cities, the new idea of clay manipulated into various forms and shapes, as a substitute for cut stone, has been adopted in very many cases. There are several illustrations of the work in this city, notably, Gladding & McBean's building, No 1358 Market Street; also DeYoung's building on Farrell Street. The same has been adopted for the front of the Pioneer Hall, on Fourth Street, and in other cases. Its more general use will depend upon the judicious and harmonious use of it in its introduction by architects, and the degree of favor accorded by owners. Architects and producers may kill off the possible success of new things possessing merit, by forcing them, and making them particularly conspicuous in advance of an appreciating sentiment among owners of property. By the use of terra cotta, elaborate ornamentations may be had at moderate cost, where numerous new patterns or moulds are not required in the same job, or patterns already made will answer the purpose, the patterns and moulds being the more expensive part of the work. Several very handsome specimens may be seen in the office of this journal.

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A.—R. Warren.
C.—Buckley & Bergman.
$2,450.

Suttter, nr. Scott. Two-story frame.
O.—P. A. Cook.
A.—W. H. Wharff.
C.—Cummings & Rebman.
$8,500.

Bush, bet. Steiner and Fillmore. Two-story frame.
O.—Jacob Walcom.
A.—R. Warren.
C.—R. Parker.
$4,500.

Broderick, nr. Turk. Two-story frame.
O.—O. F. Von Rhein & Co.
A.—G. A. Bordwell.
C.—R. H. Mowbray.
$3,300.

Mission, nr. Seventeenth. Additions.
O.—G. S. Ball.
A.—Percy & Hamilton.
C.—J. B. Gonyeau.
$4,840.

Twenty-first, near Fair Oaks. Two-story frame.
O.—E. G. Denniston.
A.—Percy & Hamilton.
C.—J. B. Gonyeau.
$7,500.

Pacific Avenue, corner Pierce. Two-story and basement frame.
O.—R. H. Pease, Jr.
A.—C. Day.
C.—R. P. Hurlbut.
$14,000.

Post, nr. Laguna. Two-story frame.
O.—H. H. Herzfelder.
A.—Newsom & Gash.
C.—L. Wagner.
$4,750.

Mission, nr. Tenth. Four two-story frames.
O.—S. M. McElroy.
A.—H. D. Mitchell.
C.—J. Blake.
$16,000.

Oak, nr. Laguna. Two-story frame.
O.—P. Swift.
C.—D. F. McGraw.
$5,000.

Howard, near Fifteenth. One-story frame.
O.—W. C. Thompson.
C.—A. Zibn.
$1,700.

Ninth, nr. Mission. Alterations.
O.—Miss Kavanaugh.
C.—I. W. Roussel.
$800.

Clay, nr. Hyde. Two-story frame.
O.—— Moffatt.
A.—Schmidt & Havens.
C.—Commary & Beardslee.
$6,300.

Seventh, cor. Jessie. Alterations.
O.—J. Nunan.
A.—R. Warren.
C.—T. Sullivan.
$4,200.

Market, corner Valencia. Two-story frame (in rear).
O.—Market Street Cable R. R. Co.
Day's work.
$6,000.

Howard, nr. Seventeenth. Two-story frame.
O.—W. C. Graves.
A.—G. A. Bordwell.
C.—R. P. Sanches.
$5,000.

Howard, nr. Twentieth. Additions.
O.—S. Crim.
C.—R. P. Sanches.
$1,200.

San Jose Avenue, nr. Twenty-fourth. Two two-story frames and stable.
O.—O. F. Von Rhein.
A.—G. A. Bordwell.
C.—R. P. Sanches.
$8,200.

Twenty-first, near Harrison. One-story frame.
O.—P. McKeon.
$900.

Hayes, nr. Laguna. Two-story frame.
O.—M. Wigman.
C.—P. Laherty.
$4,500.

Fillmore, near McAllister. One-story and basement frame.
O.—Mrs. Albrecht.
A.—J. C. Pelton.
C.—A. Klahn.
$7,500.

Harrison, nr. Twenty-first. Additions.
O.—H. E. Smith.
A.—M. J. Welsh.
C.—P. Loughlin.
$1,200.

Bryant Avenue, corner Butte. Two-story brick.
O.—T. Hopkins.
C.—P. Fitzsimmons.
$15,000

Howard, near Twenty-fourth. Additions.
O.—W. Bloomer.
Day's work.
$3,000.

Mission, nr. Army. One-story frame.
O.—H. McDermott.
A.—J. T. Kidd.
C.—I. L. Foss.
$3,000.

Mission, nr. Twenty-ninth. Four two-story frames.
O.—R. Tiffany.
C.—Bamber & Webb.

Third, nr. Bryant. Two-story frame.
O.—— Wickersham.
C.—Bassatt Bros. & Co.
$4,000.

Essex, nr. Folsom. Two-story frame.
O.—H. H. Luse.
Day's work.
$6,000.

Greenwich, nr. Kearny. Additions.
O.—Mrs. P. R. Smith.
Day's work.
$1,000.

Larkin, nr. Geary. Alterations.
O.—J. Green.
A.—F. Leuders.
C.—F. Weinoehl.
$12,000.

Sixth, cor. Bluxome. One-story frame.
O.—W. Noack.
Day's work.
$1,000.

King, nr. Fifth. One-story brick.
O.—P. Donahue.
A.—W. Patton.
C.—J. Hughes.
$27,000.

Howard, nr. Tenth. Two-story frame.
O.—W. Deeney.
Day's work.
$2,500.

Twelfth, nr. Harrison. One-story frame.
O.—J. Schmidt.
A.—Townsend & Wyneken.
C.—C. A. Anderson.
$1,500.

Twelfth, near Harrison. Two-story frame.
O.—C. Kern.
C.—F. Weinoehl.
$3,000.

Twelfth, near Harrison. One-story frame.
O.—J. Owlen.
A.—Townsend & Wyneken.
C.—C. A. Anderson.
$1,500.

Howard, nr. Tenth. Two-story frame.
O.—J. S. Dyer.
A.—G. A. Miller.
G.—J. Dyer.
$4,000.

Eddy, cor. Mason. Alterations.
O.—J. K. Prior.
Day's work.
$18,000.

Birch, nr. Larkin. Three-story frame.
O.—T. J. Crowley.
A.—B. E. Henriksen.
C.—A. G. Fitzpatrick.
$4,500.

Bush, cor. Broderick. Additions.
O. and B.—H. Petit.
$1,500.

Union, near Leavenworth. Two two-story frames.
O.—F. Katz.
A.—B. E. Henriksen.
C.—W. Sinon.
$8,400.

Sacramento, nr. Steiner. Two-story frame.
A.—Huerne & Everett.
C.—W. B. Kreger.
$4,400.

Green, cor. Webster. Two-story frame.
O.—W. A. Barkley.
A.—J. Marquis.
C.—J. Owens.
$4,500.

Devisadero, nr. Fell. Two two-story frames.
O.—J. Rosenthal.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
$9,500.

California, nr. Franklin. Two-story frame.
O.—Mr. Talbot
A.—Wright & Sanders.
C.—— Colter.
$20,000

Geary, nr. Jones. Two-story frame.
O.—Mrs. E. Woodhead.
A.—Townsend & Wyneken.
C.—P. Flaherty.
$4,500.

Washington, nr. Fillmore. Two-story frame.
O.—F. A. Alderson.
A.—J. C. Pelton.
C.—A. Klahn
$3,000.

California, cor. Franklin. Three-story frame.
O.—M. Heller.
A.—Kenitzer & Raun.
C.—E. Farrell.
$23,000.

Geary, near Leavenworth. Three-story frame.
O.—J. Hammond.
A.—Townsend & Wyneken.
Day's work.
$10,000.

Powell, nr. Union. Additions.
O.—C. Boum.
A.—Townsend & Wyneken.
C.—Treadwell & Townsend.
$1,000.

Howard, nr. Fourteenth. Alterations.
O.—L. Krouse.
A.—Townsend & Wyneken.
C.—P. Lynch.
$1,020.

Fourteenth, nr. Guerrero. One-story frame.
O.—Mr. Columbat.
A.—Townsend & Wyneken.
C.—B. Bradley.
$2,500.

Valencia, near Quinn. Three-story frame.
O.—L. E. Wyneken.
A.—Townsend & Wyneken.
C.—J. Geary.
$4,000.

Eddy, nr. Larkin. Three two-story frames.
O.—L. Kutner.
A.—Curlett & Cuthbertson.
C.—P. Crichton.
$12,000.

Geary, cor. Polk. Three-story frame.
O.—Dr. H. Gibbons, Jr.
A.—J. Gosling.
C.—Moore Bros.
$12,000.

Post, nr. Leavenworth. Two-story frame.
O.—Mrs. B. Schoenwasser.
A.—H. C. Maoy.
C.—Anderson Bros.
$7,500.

Twenty-first, nr. Valencia. Additions.
O.—Miss Flower.
A.—R. Warren.
C.—F. Bergman.
$2,500.

Church, nr. Twenty-eighth. One-story frame.
O.—J. McGrath.
Day's work.
$1,000.

Ferry-Landing. Slips.
O.—City of S. F.
C.—T. H. Day.
$1,340.

Duncan, nr. Sanchez. One-story frame.
O. and B.—W. Fannill.
$1,500.

Sanchez, corner Twenty-ninth. Additions.
O.—Anderson & Co.
Day's work.
$1,500.

Twenty-second, corner Chattanooga. Alterations.
O.—Mrs. Fogarty.
Day's work.
$3,000.

Fifteenth, near Guerrero. One-story frame.
O. and B.—A. McDonald.
$1,000.

Geary, near Leavenworth. Additions.
O.—J. Donnelley.
C.—G. Boles.
$1,500.

Scott, near Sutter. Two-story frame.
O. and B.—Mr. Wear.
$6,000.

Pine, nr. Broderick. Additions.
B.—F. Crary.
C.—F. Koettger.
$1,500.

Sacramento, nr. Devisadero. Additions.
O.—J. Kelley.
C.—S. T. Green.
$1,500.

Franklin, corner Austin Two-story frame
O.—Mrs. E. Newman.
A.—J. Clark.
C.—J. M. Owens.
$4,100.

Larkin, nr. O'Farrell. One-story frame.
O.—N. P. Wyne.
A.—J. J. Clark.
C.—S. Mills.
$1,700.

Magdalen Asylum. Alterations.
O.—Sisters of Mercy.
A.—J. J. Clark.
$1,000.

St. Mary's Hospital. Remodeling school house.
O.—Sisters of Mercy.
A.—J. J. Clark.
C.—A. Flood.
$1,130.

Webster, cor. Fillmore. Alterations.
O.—National Brewery
A.—H. Geilfuss.
C.—W. Huwe.
$6,000.

Mission, nr. Eleventh. Improvements.
O.—Jackson Brewery.
A.—H. Geilfuss.
C.—J. W. Newbert.
$12,000.

Laguna, cor. Linden ave. Three-story frame.
O.—C. Seipel.
A.—H. Geilfuss.
C.—H. thom Wohrden.
$7,000.

Golden Gate Avenue, nr. Baker. Two-story frame.
O.—R. Neubert.
A.—H. Geilfuss.
C.—H. thom Wohrden.
$4,000.

Ridley, nr. Valencia. Two-story frame.
O.—W. Becker.
A.—H. Geilfuss.
C.—Conrad & Miller.
$4,500.

Bush, cor. Scott. Two-story frame, brick basement.
O.—J. G. Maas.
A.—H. Geilfuss.
C.—Conrad & Miller.
$7,000.

San Bruno Road, nr. Twenty-eighth. Additions.
O.—H. Melde.
A.—H. Geilfuss.
C.—Conrad & Miller.
$650.

Clay, No. 1411. Alterations.
O.—S. Moffatt.
A.—Schmidt & Havens.
C.—Commary & Beardslee.
$2,000.

California, nr. Laguna. Two-story and basement frame.
O.—A. Michalitzchi.
A.—Schmidt & Havens.
C.—Commary & Beardslee.
$8,500.

Oak, nr. Baker. One-story frame.
O.—J. T. Carroll.
A.—T. J. Welsh.
Day's work.
$3,000.

Tenth, cor. Howard. Repairs.
O.—— Scanlon.
A.—T. J. Welsh.
C.—J. Blake.
$2,000.

Bryant, nr. Second. Three-story frame.
O.—C. Hauchmeister.
A.—T. J. Welsh.
C.—M. Lynch.
$7,000.

Eighth, cor. Clementina. One-story frame.
O.—P. Kyrie.
A.—T. J. Welsh.
C.—J. M Owens.
$1,800.

MISCELLANEOUS.

Napa—Alterations. O., Mrs. Heron; A., W. H. Wharff; day's work; $2,500.

Sacramento—Northwest cor. Eighth and J. Additions and second story to building. O., John Q. Brown; A., N. D. Goodell; C., White & Hostrawser; $6,500. G, bet. Eighth and Ninth. One-story and basement frame. O., Bernard Shiels; A., N. D. Goodell; C., B. H. Coyell; $1,450. J, bet. Eighth and Ninth and Ninth, bet. J and K. Reconstructing of brick building. O., Martin Kestler; A., N. D. Goodell; C., Carle & Croly; $2,600. Three miles east of Elk Grove, Sacramento Co., Cal. Two-story frame dwelling with brick basement. O., Dr. James Caples; A., N. D. Goodell; C., B. F. Bell; $4,350. O, bet. Twelfth and Thirteenth. Rebuilding. One-story frame and basement. O., Thomas Kenney; A., N. D. Goodell; C., B. F. Bell; $1,350. J, nr. Sixth. Two-story brick. O., C. P. Nathan; A., J. Seadler; C., Carle & Croly; $3,000.

Woodland—One-story frame. O., Mrs. A. M. Jackson; C., W. H. Winnie; $1,500. Second. One-story frame. O., T. M. Prior; A., W. H. Carson; $3,100. Two-story frame. O., S. Childs; A., W. H. Carson; C., Glenn & White; $3,100. Wescott. One-story frame. O., H. T. Barnes; day's work; $1,200. First. One-story frame. O., O. Troop; C., Stamp & Myrick; $1,500. Main. Woodland Winery; Improvements and machinery. O., Clark & Culver; C., Gilbert & Son; $7,100. Main. Convent. Addition to first contract. C., brick work, C. C. Scott; C., wood work, S. Caldwill; $5,050. East Oak Avenue. Extension and improvements. O., M. A. Lee; day's work; $1,000. Improvements and extensions. O., Thomas Langenour; C., Glenn & White; $1,340.

Davisville—One-story frame; O., Hext Bros.; C., W. H. Winnie; $1,310. One-story frame. O., J. E. Hardy; day's work; $2,150.

San Jose—Second, cor. Reed. Two-story frame and brick basement. O., M. P. O'Connor; A., Theo. Lenzen; C., carpenter, Thos. Livingstone; mason, L. C. W. Otto; $30,000. Los Gatos Road nr. town. Two-story frame and brick basement. O., T. Burgess; A., Theo. Lenzen; day's work; $8,000.

Vacaville—Two-story brick. O., Ulatis School District; A., A. A. Cook; C., J. B. McKenzie; $11,800.

San Mateo—Two-story brick. O., San Mateo Library Association; A., Percy & Hamilton; C., J. Cox; $10,500.

Oakland—Webster, nr. Twentieth. Two-story frame. O., Convent Sacred Heart; A., B. J. Clinch; C., J. Binet; $3,100. Broadway cor. Prospect Ave. School house. O., City of Oakland; A., S. and J. C. Newsom; C., C. R. Lord; $7,000. One-story frame. O., J. J. Meehan; A., T. J. Welsh; C., J. Glenan; $1,500.

Alameda—Central Ave., nr. Willow. Three one-story frames. O., Mr. Wilson; A., S. and J. C. Newsom; C., W. Clark; $6,500.

Petaluma—Four one-story bricks. O., I. G. Wickersham; A., T. J. Welsh; $8,000.

San Rafael—Two-story frame. O., J. Sheehy; A., T. J Welsh; C., —— Robertson; $10,000.

MARKET REPORTS.

Lumber.

PINE lumber may be quoted at almost any price from $14.00 to $20.00 for rough, and $22.00 to $35.00 for surfaced.

The price of redwood is better maintained, although large concessions may be had on schedule prices ruling a few months ago.

Nails

Are selling at $2,90 rate for 10s.

Parquet FLOORS
All Styles of ¾ in. thick, tongue and grooved
Wood Floors in the European styles. Also
WOOD CARPET
or Ornamental Wood Floors, 5-16 inch thick for rooms of all kinds, in new and old houses. We make a specialty of these goods for Floors, Wainscoting, Walls and Ceiling, both Plain and Ornamental. We have the largest variety, largest stock on hand, and the largest factory in the U. S., as well as a large saw mill and factory in a first-class timber country, devoted exclusively to this business, and defy competition in price or quality of goods. Send stamp for book of designs and prices, and the size of your rooms for diagram & estimates
JOHN W. BOUGHTON, 1118 Market St. Phila. Pa

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less ar payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

Progress of Building Operations.

AT no time in the history of this city have there been as many buildings under process of erection at this season of the year, as is shown by our reports in another column. In looking over our files, we find nearly double as many now under way, as is recorded for any similar period of any previous year.

This is certainly a most gratifying exhibit, and proves that our prosperity is of the most substantial character. One of the influences that has greatly helped the grand total of building improvements, is the assistance that has been extended to people of limited means, through the aid of BUILDING AND LOAN ASSOCIATIONS. More than 100 houses have been built through the instrumentality of these societies, and we confidently expect in the future to record many more transactions of this character, than is shown by past records.

During the past month there have been started in this city

101 BUILDINGS OF THE VALUE OF $418,266.

This is most certainly a large and gratifying statement to make for November. While it is naturally to be expected that this ratio cannot be kept up for the next three months, still from the number of jobs now in architect's offices, we can confidently predict a large list for next month, and 1884 will be the banner year for the number of building improvements recorded.

San Francisco Chapter, American Institute of Architects.

THE regular monthly meeting was held on the 7th inst., Vice-President, A. Pissis, occupying the chair.

Mr. R. H. Daley was elected a member as Fellow, and C. J. Laver as Student Member.

The committee appointed to make awards to the pupils of the various classes, reported as follows: To the S. F. Chapter, A. I. A:—

GENTLEMEN: We have carefully examined the work of the pupils under our charge during the last year, and cheerfully recommend the prizes to be distributed as follows:—

First prize in free-hand drawing, Max. G. Bugbee, of the office of Wright & Sanders.

First prize in architecture, Louis Stone, of the office of Curlett & Cuthbertson.

First prize in mathematics, Robert Freese, of the office of Newsom & Gash.

We also recommend special prizes for their general proficiency, and for remarkable progress in the several branches, to Wm. Lee, office of Wright & Sanders, and E. A. Williams, office of Curlett & Cuthbertson.

Respectfully submitted,
ALBERT PISSIS.
J. GASH.
G. H. SANDERS.

The report was unanimously adopted. Action in regard to the award of the premiums was deferred until next meeting, in order that those securing the premiums would have the chance at that time to exhibit their sketches, etc.

(The sum of $50.00 was appropriated by the Chapter to purchase suitable books for those receiving the awards as recommended by the committee.)

A matter which is likely to become one of great interest to both parents and youths, and which may also become an important one in the history of the Chapter, was introduced and discussed favorably, looking to the establishment of a school or some method or system by which school boys, during leisure hours out of school, may have an opportunity to practically demonstrate their mechanical genius, each according to his inclination as to specialty preferred; carpentry, carving, modeling, in metal devices, machinery, or any other of the mechanical arts.

A committee of five was appointed to take the subject-matter under consideration, and to confer with the Directors of the Mechanics' Institute as to the advisability of co-operation, consisting of Messrs. H. C. Macy, J. J. Clark, G. H. Sanders, Wm. Curlett, and James E. Wolfe.

A member present made some inquiry in reference to the "Restoration" of Carmel Mission Church, Monterey County, which led to statements from some of those present who had visited the old church prior to, and since its alteration from what it was in its ruins, to what it has been made, during the present year; and from the information presented, a feeling of deep regret on the part of the members of the Chapter was expressed, that better judgment had not been exercised, and the old structure preserved by faithful restoration, to pass down to future generations, as one of the monuments of California antiquity.

The two articles appearing in this issue—"A New Idea for Boys," and "Restoration! *vs.* Ruins of Carmel Mission Church," more fully present the subject-matters discussed before the Chapter.

OCTOBER, NOVEMBER, and DECEMBER numbers of this year will be given free to all new subscribers for 1885.

Master Mason's Association.

THE aversion to combinations regulating special interests, and presumably fixing and regulating prices to the disadvantage of purchasers of materials, or the employment of labor, is universal with all classes of owners; consequently, whenever any one class of mechanics or building operatives organize as a body, —it matters not how reasonable, right, and proper their action may be—how well sustained by honorable and just principles of self-protection—the suspicion of monopoly and extortion attaches; and those seeking to embark in building ventures, as a rule, scan the condition of the material and labor market, before entering into any definite, progressive arrangements. This is all natural, as no human being, not even the individual participants in the most reckless and soulless extortion ring, is willing to be extorted.

With this as a common rule of practice, among the first inquiries instituted by owners is, "Are there no 'corners' in material or labor?" "Is demand and supply in all directions easy and equal?" And among others the master mason's organization is quoted as suggestive of a "corner" in connection with the mason's work of both brick and frame buildings. This speculative inquiry has been answered in former numbers of this Journal, but as the question continues to be repeated daily, and some people seem anxious to have it believed that the brick masons of this city have combined in society organization for the special cause of advancing the cost of the mason's work, we again repeat, as a fact, that the prime motive, aim, and purpose of the personals of the society, was and is, safety and protection from the uncertainties of the sub-contract system, by which, through the ignorance of values of work and material, or the dishonesty on the part of many original contractors, large amounts have, from time to time, been lost by sub-contractors in all the various branches, and largely so by master brick layers. And while the frequency of failures by original contractors is much less than in former years, there is still a certain degree of risk in sub-contracting, which is sought to be obviated by the master masons demanding their rights as original contractors for all specialties in their line. There is no rule among them regulating prices—that being left with each member of the association to determine according to his own judgment. Nor does the existence of the society preclude those who have not become members from participating in all offered competitions; consequently, owners have the option to confine figuring to society limits, or they may go outside of these, and seek the advantages to be found in those who prefer to take all chances, and catch jobs as best they can.

WHAT has become of the straw lumber which, three or four years ago, we were told would revolutionize the lumber business?

Dwindling Away of Old Customs.

AMERICANS are noted the world over for their ingenious methods and contrivances in adopting machinery sufficient to perform much of the heavy work required in and about buildings; and it is in ill accord with the present plentitude of building novelties for builders and contractors to increase their risks by pertinaciously clinging to a clumsy and inferior kind of scaffolding, and to bungling means for raising materials, instead of adopting contrivances of a scientific and safer character.

Crowds of hodmen continue to excite the pity of the multitude who chance to witness their toilsome climbing, encumbered with the shouldered hod. Apart from the waste of strength involved by a man lifting his own weight with a load of fully one-fourth of that amount in addition thereto, there is no little danger in a fagged, drowsy, or partly tipsy laborer ascending a lofty, upright ladder with a hod seemingly well devised to shoot out a brick or two from its open end. Passers by and workmen on the job are further imperiled when the hodman steps off the ladder on to an already overloaded, slender scaffold, especially when he happens to be quickly followed by a mate making strenuous efforts to poise on his head a badly balanced mortar board.

It is only in country jobs that one sees the almost primeval method of hodmen carrying brick and mortar to the different parts of the building. In the large cities various contrivances have taken the place of manual labor. At first, a block and fall rigged to an overhanging pole were used, by which the various materials were raised to the required place. This innovation, however, at once displeased the hodmen, for with quick perception they saw that the idea, if improved upon, would be the means of displacing a large number of men. In this city, decided steps were taken by them to discountenance the use of any devise that would tend to substitute manual labor on buildings.

Some of the objections at that time used by the laborers to the new system seem rather amusing to mechanics in the later days. It was claimed that contractors would use the rope until it was completely worn out and thus the men below would always be at the risk of receiving damages from a rope breaking and the consequent fall of the board. The dust from the brick and mortar would continually be deposited in the strands of the rope and the friction caused by its rapid transit through the block would soon wear the rope out, and aside from the danger mentioned, be a continual expense to the contractor. That the assumption was a false one is shown by subsequent events.

The change from the old way to the new has been a gradual one. It is rarely now that a hodman is seen on our city jobs. The wheelbarrow has taken the place of the hod, and the inclined plane instead of the ladder. Steam power has superseded manual labor, and has to a large extent minimized the danger of accidents.

An inventor called at our office not long since, and showed us working plans of a design through which much of the labor on a building could be dispensed with. It consisted of a long pole firmly secured at the bottom to a carriage, the latter having small wheels to enable one to easily move the pole in any direction. Peculiar sliding extension arms were rigged to the pole, by which it was intended that the load of brick or mortar could be raised to any desired height, and be delivered to any part of a staging within a radius of twenty-five feet, or even if necessary to a much greater distance. We keep our promise to the inventor by simply stating his proposition without giving the details of construction of his "labor revolutionizer."

Put away the old and take on the new is now the motto of mechanics and contractors. Especial study is given to new ways of performing work quickly, and he commands the greatest respect amongst his fellows, who, by dint of hard study and application, can do, with but apparently a slight effort, the most work in the least time, through the methods employed by the knowledge gained in applying the principles gained by such study.

Kitchen Sinks.

AN erroneous idea prevails in the minds of many, that kitchen sinks in daily use requires oft repeated painting in order to prevent them from rusting. It is not necessary to paint them at all. The grease in the dish-water will keep the iron from rusting. All that is necessary is to keep the sink clean. No paint that we know of will stick to a kitchen sink for any length of time.

WOOD may acquire an oak, walnut or cherry tree color by staining it with ordinary tincture of iodine diluted with spirit until the exact shade is obtained. White shellac must be added to the iodined solution if the stain is to be made permanent, or the wood after the stain is applied may be French polished. The iodine may be laid on with a rag or a brush.

IF stove polish is mixed with very strong soap suds, the lustre appears immediately; consequently there is less dust to breathe and blacken.

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TEN THOUSAND

Paying subscribers on our books.

FRONT ELEVATION OF $5,000 COUNTRY DWELLING.—4th PREMIUM DESIGN.

Our Fourth Premium Plan.

ON this and succeeding pages, will be found the full plans and elevations of the design to which was awarded the fourth premium in the competition held under the auspices of the editors of this Journal. Under the *nom de plume* of "Hoosier," credit for the design belongs to J. W. Hammond, Frankfort, Indiana.

The general character of the elevation is more in keeping with architecture as exemplified on this coast, than any of its predecessors. The arrangements of the rooms are shown very specifically by our engravings.

COST OF THE DESIGN SHOWN.

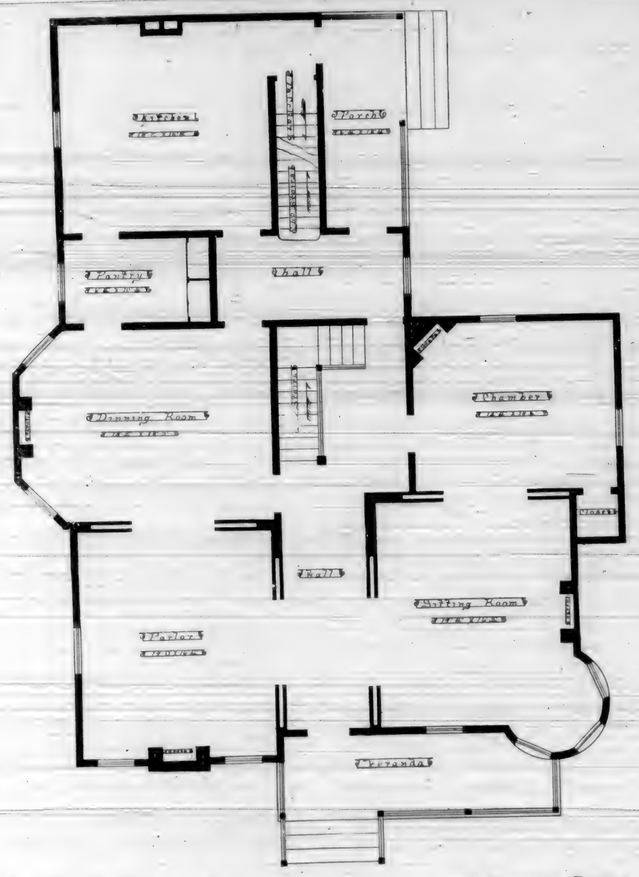
We want our readers to particularly bear in mind that the estimates given for the various competition designs are those for which the houses can be erected at the place where the designs were prepared. None of the premium designs thus far shown, can be built in this city or State for anything like the sum mentioned for each. In the present case the total amount would have to be nearly doubled in order to erect the building as per plans shown.

We give below a full estimate as furnished us by the architect. He assures us that it has been carefully scrutinized by one of the principal contractors of Frankfort, and that reliance can be placed upon the figures given as being correct.

ARCHITECT'S ESTIMATE.

Estimate of material and labor required in the erection and completion of the plan submitted by "Hoosier" (J. W. Hammond).

155 yds. excavating @ 25 cents per yard	$ 38 75
2,800 ft. stone foundation @ 15 cents per ft	420 00
140 ft. cut stone @ 40 cents per ft	59 00
35,340 brick @ $9.00 per M	318 00
1,940 yds. plastering @ 25 cents per yd	485 00
166 yds. concrete and cementing @ 25 cents per yd	41 50



First Floor Plan of $5,000 Country Dwelling.—4th Premium Design.

15,188 ft. timber @ $17.00 per M.	$258 19
4, 448 ft. sheathing boards @ 20.00 per M.	88 96
5,550 ft. clapboarding @ 22.50	111 00
20,000 shingles @ $4.00 per M.	80 00
2,500 ft. sheeting @ $17.50	43 75
220 ft. belt, etc. @ 10 cents	22 00
Cornice	120 00
Tin work	100 00
4,171 ft. flooring (inside) @ $30.00 per M.	125 13
586 " " (outside) @ $35 " "	20 51
Stairs complete	150 00
Veranda	125 00
33 windows (box) @ $12.00 each	396 00
12 " (attic) $5.00 each	60 00
10 " (cellar) $5.00 each	50 00
42 doors complete $12 each	504 00
4 grates and mantles	160 00
Hardware	100 00
Plumbing	200 00
Gas piping	40 00
Painting	400 00
Carpenter work (not included in above)	500 00
	$4,893 79
Architect fees (complete) 5 per cent.	244 68
Total cost	$5,138 47

In making an estimate for California, there are several items in the above that must be materially changed. The price given for brick work should be doubled. Add twenty per cent. to the amount set down for plastering. Cornice and stair work are very low. Grates and mantles for the price given, would be too common to suit our ideas. Hardware is much too low. Price for plumbing would have to be multiplied by at least 3, in order to secure a job satisfactory to our "plumbing inspector," Other items are low in comparison with those for which the same work could be performed in this city.

We find the same fault in this plan that we mentioned in our remarks in those already presented in the competition series, viz., a total lack of wash-basins in the bed rooms, one only being shown in the bath-room. No water closet is shown, a fact totally inconsistent with the general character and size of the house.

We make the above remarks simply to call the attention of our readers on this coast to the lack of those things that we regard as "essentials;" the cost given being so much lower than the building will cost here, that no one will be led astray by adopting a plan for a $5,000 house, when we know that $8,000 will be required to finish the same satisfactorily to residents of the Pacific slope.

Night Work in Lumber Mills.

One of the principal causes of the glut in our lumber market is the greed for gain by our manufacturers; not content with running the mills under their control from 6 A. M. to 6 P. M. they seek to further enlarge their bank account by keeping them running the balance of the twenty-four hours. This is especially noticeable when large contracts have been secured, to carry out which, an extra number of men have been engaged. When the latter have been placed at their respective stations, it is policy in the company hiring them, to keep the men at least a month in their position. And just here is where the trouble commences. One mill running the full day, causes other mills to be run the same time, and, as a natural consequence, in a short time, a vast amount of lumber is manufactured, for which no present use can be found. A slight decline in the building line is met by a similar result in the price of lumber, and thus, those intending to build cannot, with certainty, lay their plans for any length of time ahead, owing to their inability to determine the price of the material most required for their purposes.

Our Exchanges.

We have made arrangements with the Editors of the following Journals, by which we are enabled to offer quite a reduction to those subscribing for any one of them in connection with this Journal.

(The figures in parenthesis denote the price of the journals alone.)

California Architect and Building News
Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.

With *Builder and Wood Worker* ($1.00), $2.50 per annum.

With *Inland Architect and Builder* ($1.75), $3.25 per annum.

With *American Artisan* ($1.00), $2.50 per annum.

With *Building* ($1.00), $2.50 per annum.

With *North Western Lumberman* ($4.00), $5.00 per annum.

With *Scientific American* ($3.20), $4.50 per annum.

With *Leffels' Mechanical News* ($1.00), $2.50 per annum.

With *Decorator and Furnisher* ($4.00), $5.00 per annum.

With *American Machinist* ($2.50), $4.00 per annum.

With *The Wood Worker* ($1.00), $2.50 per annum.

With *The Builder* ($2.00), $3.50 per annum.

With *Hall's Journal of Health* ($1.00), $2.50 per annum.

With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

Side Elevation $5,000 Country Dwelling.—4th Premium Design.

"ALL carpenters know how soon the butt ends of chisel handles split, when daily exposed to the blow of a mallet or hammer. A remedy suggested by a Brooklyn man, consists of simply sawing or cutting off of the round end of the handle so as to make it flat, and attaching, by a few small nails on the top of it, two round disks of sole leather, so that the end becomes similar to a boot heel. The two thicknesses of leather will prevent all further splitting, and if, in the course of time, they expand and overlap the wood of the handle, they are simply trimmed off all round."

The foregoing item has been going the rounds of the press for nearly a year, yet no one seems to have noticed its absurdity. Chisels used by carpenters are of three kinds: Firmer chisels, paring chisels and mortising chisels. Firmer chisels are the ones most generally in use and are employed for trimming off stuff, removing superfluous wood and sometimes making mortises in thin and soft wood, though this latter purpose is not what they are made for. The handles on firmer chisels *should* always be slightly rounded on the butt end, and in all cases the handle should be turned and have a ferrule on the end next the chisel. These handles are not to be pounded by a mallet; they may be tapped *lightly*, and the rounded end of the handle is sufficient protection to prevent splitting if this rule is kept in view. To use this class of chisels as mortising chisels, argues one of two things: Either that the user does not know his business, or that he does not possess the proper tools to perform the work he is at. Paring chisels should have flattened handles with the corners worked off, which would make a section of them like an elongated octagon, with four long and four short sides. A paring chisel is much larger than a firmer and is made thin and of a superior quality of steel. The handle should be something larger than the handle of a firmer, and on no account whatever should a mallet be used on it. The paring chisel is used for the finest kind of work and is guided in its movements altogether by the hand. The mortising chisel is a heavier-made chisel, and has generally, though not always, a socket on one end to receive the handle.

Mortising chisels are the only ones on which a mallet is intended to be used, and the butt end of the handle is protected with a heavy iron ferrule. These handles are turned in a lathe and the point entering the socket and the end receiving the ferrule, are fitted nicely to the places they are to occupy.

The idea of a carpenter or joiner using a hammer on the wooden handles of his chisels is something absurd; only a botch would be caught at so unworkmanlike a trick. Putting leather on the tops of handles to prevent them from splitting has been used by carpenters, cabinet makers and shoemakers for several centuries; by the two former on their bradawls, and the latter on their "pegging" and "sprig" awls. The cushioning quality of the leather requires a heavier blow for a given effect than when the awls are used without the leather.—*The Builder and Wood-Worker.*

To make plaster set quickly mix it with water into which a little sulphate of potash has been dissolved. To make plaster set slowly mix it with fine slacked lime. The time of setting may be regulated after a few trials by changing the relative proportions.

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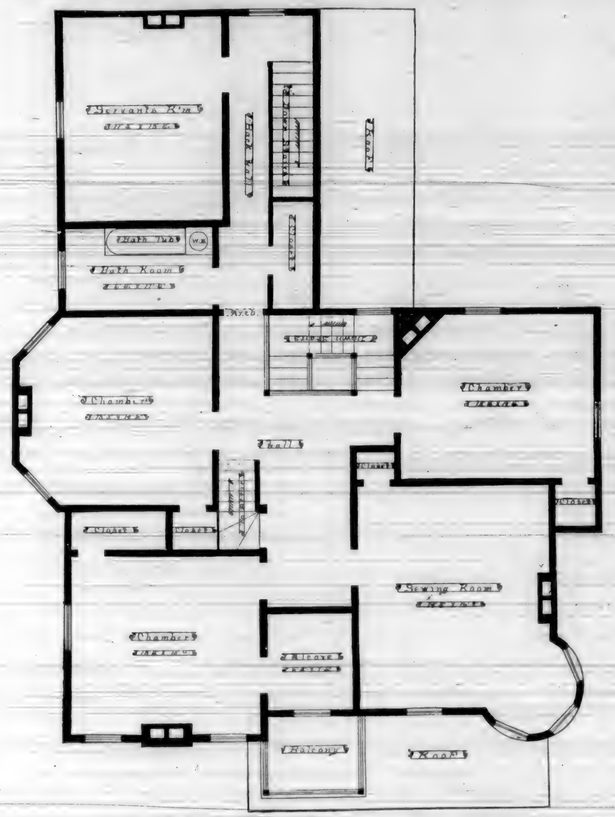


SECOND FLOOR PLAN OF $5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

The Locomotive of To-Day.

THE locomotive of to-day is a giant by the side of the production of 1851. The New York Central express engine is a very Anak. Its weight is 84,000 pounds, or nearly two and a half times heavier than its above mentioned prototype. The cylinders are eighteen inches by twenty-four. The average man's head is far below the top of the driving wheels, which are seventy-five inches in diameter. In 1854 a New York express passenger locomotive traveled 25,000 miles in a year; last year the average mileage per engine stood between 70,000 and 80,000 miles. A locomotive for express passenger service costs, taking the experience of the past few years, from $3,500 to $10,000 to build. In comparing the locomotives of to-day and a quarter of a century ago, you will notice that while the weight of the whole machine has increased greatly, certain of the dimensions have not altered much. This is because we are limited in various ways in constructing a locomotive. We cannot make the body of the engine over a certain width, because of the gauge of the track; not over a certain height, because we must keep the center of gravity at about the same position; not over a certain length, because of the wheel centers. So the locomotive must always remain nearly the same in form. It is to increased capacity of boilers that we must look for increase of power. At present an express locomotive boiler is of eighty-horse power, that is, if it were a stationary engine that would be its capacity. But when the locomotive is drawing a train of cars at five miles an hour the boiler supplies the strength of 375 horses, and at forty-five miles an hour the power expended is equal to that of from 700 to 800 horses. That's a curious fact, isn't it?—*Exchange.*

WHEN filing hand-saws there are two objects to be kept in view, namely, cutting off the fiber of the wood, and removing it as fast as it is severed. If the teeth be filed too fleaming, they will cut faster than they will remove the saw-dust. On the contrary, if the faces near the points be not dressed fleaming enough, the saw will *tear* out the kerf in a rough manner, rather than *cut* its way through the timber.

The Window of the Ark.

WE were much impressed, at a meeting held a few weeks ago, at various suggestions made in regard to the description of the ark as given in Genesis. The size of that immense structure was settled as being 450 feet long, 75 feet wide and 45 feet high, and was divided into three stories. (Does it not seem strange that our best vessels to-day are modeled in the same proportions as the first great vessel made under the direction of the Almighty?)

In this great leviathan, two of a kind of every living creature were gathered together. The discussion was rather warm on the subject of *how many kinds* there were at that time, and the point was not settled satisfactorily.

The main point, however, was in regard to the *window* of the ark. It was shown that the ark was built on the ground, and as the waters gradually rose, it was lifted from its foundation in a perfect natural way. Of course with the immense weight inside at least one-half of the structure was submerged. Necessarily the animals in the hold or bottom story, lived in absolute darkness. Now how did they get the fresh air which was absolutely necessary for their preservation?

There was but one window in the ark, in size, "in a cubit." A cubit is eighteen inches, so the window was eighteen inches square. We are aware that there is a dispute in regard to the size of the cubit; the size given, however, is that in use by the Hebrews. No matter whether it was smaller or larger than the size given, the other measurements would increase or diminish according to the size given to the cubit.

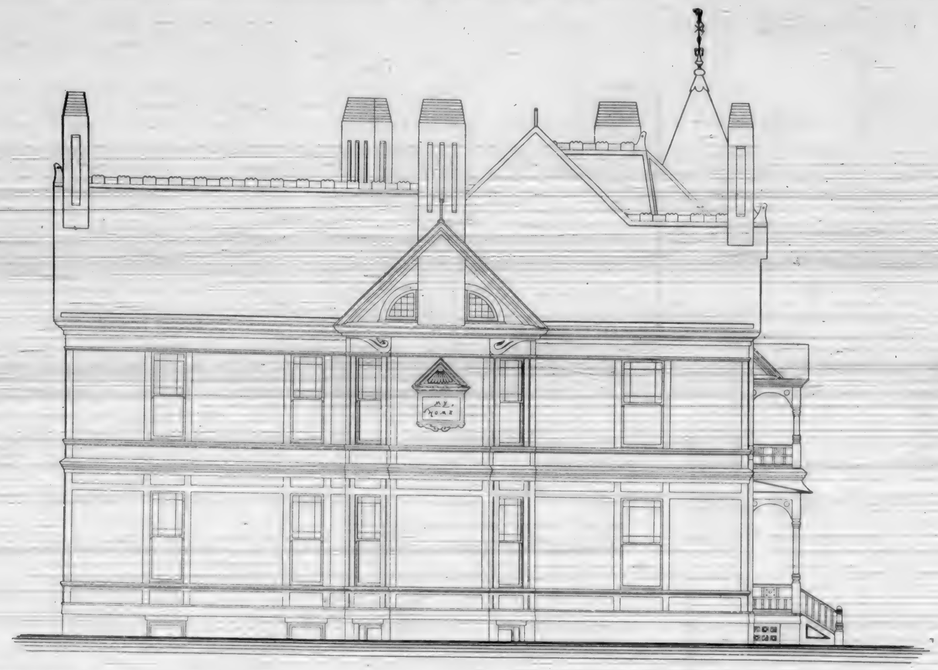
"Think of one window about eighteen inches square in the roof or near the top of this huge ship, and that remaining closed for 100 days after the flood began. The door was also closed. Moreover the vessel was pitched within and without. It follows that the entire ark was without ventilation. How, according to natural laws, could this multitude of living creatures endure such confinement without ventilation for a day, let alone 100 days, as mentioned?"

Some contended that the eaves of the roof projected over the vessel quite a distance and that under the eaves was an open space that extended around the vessel, giving room for ventilation. Evidently a false assumption, for the space would have afforded egress for numerous small birds, etc.

The window of the ark, and the means by which the latter was ventilated, we will leave to the tender mercies of the scientist, and the cool reasoning of theologians.

SLATE is simply a clay deposit under water, but it is a great resistant of water, and is almost fire-proof—much more so than marble or granite.

"Builders' Guide and Estimators' Price Book." A new edition just received. Will send a copy to any address upon receipt of $2.00.



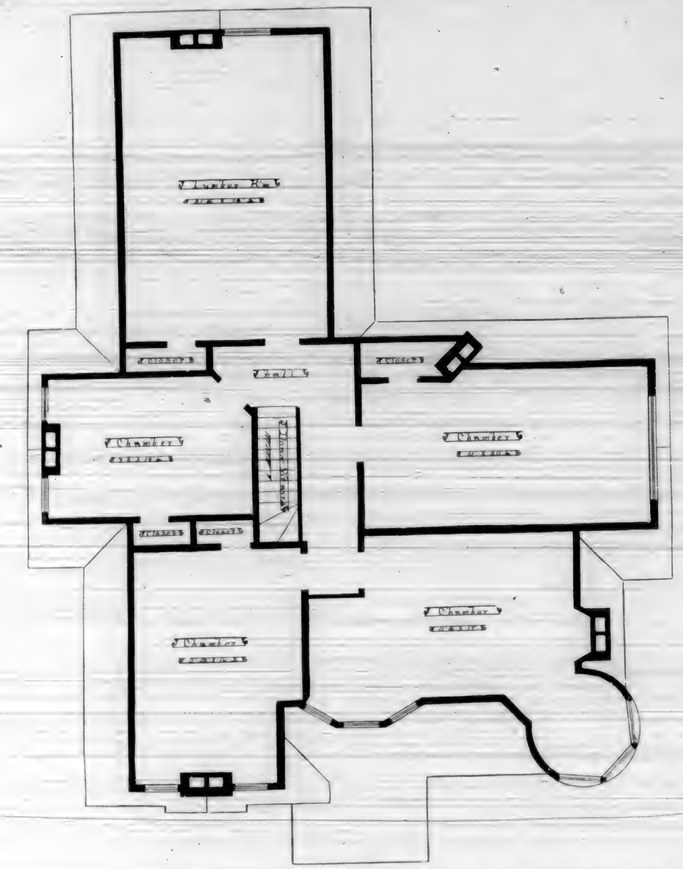
SIDE ELEVATION OF $5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Separating the Branches.

THE rule prevails to a certain extent (and is sought to be made general), in San Francisco, in the erection of buildings, other than the shoddily built, inexpensive class, to separate the various branches of mechanism. There are very many "good and sufficient reasons" why this should be done, and fair and honorable considerations why but few, if any, segregations should be made. There are, and for many years have been, but few instances in which some few of the architects have not practiced the separation of the plumbing, plastering, painting and decorating work, in all ordinary, good, and better buildings. This has been considered a necessity, to avoid the sub-contracting of the branches to incompetent parties, who come not, even if they desired to execute faithful and good work.

But for the purposes of protection against the risks and financial uncertainties attending sub-contracting, and as a matter of right as master mechanics, all the more prominent branches have sought and are seeking to secure to themselves recognition as original contractors. Without, at the present time, presenting any argument *pro* or *con*, we suggest a few thoughts for the reflection of those who are striving to secure a concession from architects and owners, in the separation as asked for. To encourage and justify such a course on the part of architects, the spirit of kindly co-operation, good will and harmonious intercourse should be made the first principle of action. It is one of the most reasonable and natural things imaginable for men in positions enabling them to control matters to guard against every cause of unpleasantness and annoyance; and if by the segregation of the branches, disagreements, contentions and disputes arise between parties operating, about trivial matters, each pulling his own way, drawing lines over which he will not pass, nor allow others to pass; claiming points, and clamoring for rights, easements, and privileges not consistent with a liberal and unselfish disposition, thereby rendering it necessary for the architect to exercise his persuasive or authoritative perogative or authority,—a request to make general a rule of action liable to the results suggested would be extremely unreasonable. Consequently, the possession and practice of the right spirit, the spirit of mutual interest, integrity and co-operation, promptness of action, ready acceptance of all legitimate responsibilities, is a first necessity in those seeking to make general a rule by which every man shall be considered and recognized as a *master* in his special line of mechanism; and when this principle of action prevails, and architects become assured that the letting of the branches separately will not impose upon them additional trouble and annoyances, requiring of them patience equal to that of him who refused to "Curse God an die," then the realization of the result sought will be more likely of accomplishment in its universality.

PAINTING TIN ROOFS.—Tin on a house-top should be well painted once in four years. For roofs light, cool colors are preferable because they reflect the warm rays of light, and thereby lessen the expansion and contraction of the metal and the shrinking of the boards underneath, and so lessen the liability of the tin to crack in the seams. The temperature of attic rooms in summer will be materially lower if the roof be painted with a light rather than with a dark color. The writer has learned from long experience that the finest French ochre is the most economical pigment that can be used for that purpose. If, as is sometimes the case in country houses, where the roof is a conspicuous object in the architecture of the building, a dark color be indispensable, the use of pure Venetian red darkened with lamp-black, is recommended as the most durable and economical. If, by some process the oil used in roof-painting could be prevented from becoming hard and brittle, it would be a great gain. The poorest oil-paint, however, is better than neglect; and the best economy consists in keeping tin entirely and thoroughly protected from the corroding influence of dampness. Old paint, which has become "fatty" from exposure to the atmosphere, is better than new for roof painting. Not a drop of turpentine should be used for such work.



ATTIC PLAN OF $5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Restoration! vs. Ruins of Carmel Mission Church.

AT the regular meeting of San Francisco Chapter, the 7th inst., the "Restoration!" of Carmel Mission Church, Monterey County, furnished a theme of discussion, during which statements were made by members of the Chapter present, who had visited the once universally revered, sacred relic of California antiquity, in the completeness of its ruins, and its solemnly grand desolation under the wear and waste of time; bowing with awe within its once consecrated, but for many years unroofed and broken walls, with reverential feelings akin to that of standing in the spirit presence of the revered and self-sacrificing Padre, who founded the mission, laid the foundations of the church, and dedicated the structure to the service of Almighty God; and whose dust of mortality lies buried beneath where worshipers once knelt in solemn acts of devotion; and, also, since then—since its *transmogrification* into what it is at present—as much unlike the original as possible—*desecrated*—NOT *restored*. Its *high, steep, Gothic, redwood shingled roof*, and its modernized inside finish, wiping out and obliterating all semblance to the original, stone-arched, tiled roof, placed on it by the pioneer Padres of a century ago; the covering up and concealment from view, by plasterers' mortar or cement, the interior stone-work of the walls, which pleasingly illustrated the great care, regularity, and mechanical exactness with which the work was at first done, and many other departures from originality, simply reverses the order of things—the "restoration" being no less than the almost complete *ruin* of the once venerated *ruins*, thus exemplifying the entire unfitness of Father Casanova as the managing man, which position he seems to have occupied in the *modernizing* of the ancient edifice. If the reverend superintendent of the work understood the correct meaning of the term restoration, his practical demonstration of that knowledge has certainly produced a something as little like the original as can well be conceived, short of entire destruction, so far as his judgment and ideas of things have been reduced to practical execution.

The original *façade* of the edifice remains but little altered, as far as bell and stair towers, main entrance, and its peculiar Gothic gable window is concerned, but not so with the front wall itself; the sharp-pointed, Gothic gable rising many feet—perhaps near ten—above its original terminal, so mars and changes general effect that all preconceived ideas of the structure, whether derived from photographs or personal observation, are at fault.

A Lesson in Shop Management.

THE costly results of putting off till to-morrow that which not only can but ought to be done to-day are nowhere more surely felt than in a workshop. The number of failures in business which could be traced to this single cause no statistician will ever be able to compute. How in one instance the evil was pointed out and its consequences checked, is related by the *Cabinetmaker* as follows: We once worked in a shop where a specialty was made of builders' finish, brackets, mouldings, fancy finish, etc. About eight hands were employed in the room we worked in. The machinery consisted of railroad combinations, band and jig saws, panel and buzz planer, a boring machine, and a two-spindle moulder. The two planers and the jig saw had loose pulleys which were so badly worn as to necessitate throwing off the belts from the main shaft to the counter every time each machine was used. In that shop each man took an order from the order book, got out his stock, and finished the job, using whichever machines were needed. When it was necessary to use the panel planer, we had to climb up on the jig saw table and throw on the belt; when the buzz was needed, the planer must be used to stand on, in order to get at the requisite belt. If the planer was running, it must be stopped, thus delaying the man who was running it. One day after getting thoroughly disgusted, we "went for" the boss and asked him if he was going to have those pulleys bushed this year. He said he was going to "just as soon as he got time," but he let them run in this way for two whole months. One day we noted the number of times we had to throw on and off those belts. We used the planer fifteen times, the buzz ten, and the jig saw sixteen times, making forty-one times. It took about a minute to put on, and another one to throw off a belt, thus taking in all eighty-two minutes in one day. There were eight of us who had to do the same thing, so it took 656 minutes, or about eleven hours, to handle those belts—more than one man's time every day. Running this way for nine weeks would amount, at the rate of forty cents per hour, to $212, and our boss could not find time to have the pulleys fixed. We showed the figures to him one day. He scratched his head, took them into the office, and ten minutes afterwards came out, shut down the shop instantly, and sent those counters and pulleys to the machine shop. A loose pulley that rattles has not been seen or heard in that shop since. You may go into every shop in the land and six out of ten will have one or more of these "hand shippers" in operation. How is it in your shop? If the coat fits, put it on.

The Prompt Return of Plans.

AMONG the many office annoyances to which architects are subjected, that of bidders neglecting to return plans and specifications promptly at the time appointed for their return, is one of the most provoking,—alike to the architect, and the party who by appointment is the next in order to receive and use them. Each party figuring is entitled to the full period of his allotment of time and no more; and the one who by arrangement precedes the other, is in all fairness toward his fellow competitor, and the office which permits him to figure, in duty bound to observe his time privilege, and avoid encroachment upon the time and rights of the "next man," by the prompt return of plans and specifications at the understood or specially appointed hour. In all well regulated offices where business is conducted by rule and system, each bidder is allowed one or more days, according to the magnitude of the work to be figured upon, in which to complete his use of the papers; and when more time is taken by any one of those figuring, than the days or hours appointed to him, he takes—by encroachment upon his successor's time and rights—that which he is not entitled to, and does an unfair thing; for the time of the next bidder in the order of appointment is his own; and his predecessor in figuring is in honor and duty bound to so act his part that the other shall not be subjected to loss of time, nor to any other inconvenience through failure of the first to exercise due diligence in carrying out the understanding which usually in such cases exists. There can be no consistent excuse or palliation in such cases, short of *absolute impossibilities;* and the bidder who is careless and thoughtless in this respect, justifies suspicion on the part of the architect, that the same spirit of carelessness, and lack of promptness may develop, should the not particular one be the successful bidder.

Sometimes plans are delayed and held back for the purpose of shutting out multiplicity of bidders, and lessening competition. This may work in some cases, when circumstances preclude extension of time, but ordinarily such acts simply provoke, and result in the number of parties invited to figure being largely increased, or, as has been the case in some instances, an entire change in procedure, excluding entirely those so manipulating matters.

To the architect it is unfair; involving him in disappointments, and rendering explanations necessary to explain to his client the reason why the number of bids at the hour set for opening is less than had been requested, arranged, and fixed upon; thus rendering it possible for the owner to suspicion complicity somewhere, a result not beyond the bounds of reason when irregularities of the slightest character appear, particularly in cases of "first transactions," and with owners of quick discernment and perceptive minds, qualified by business experiences to take in and apply seeming, if not actual departures from strictly correct and business-like procedures.

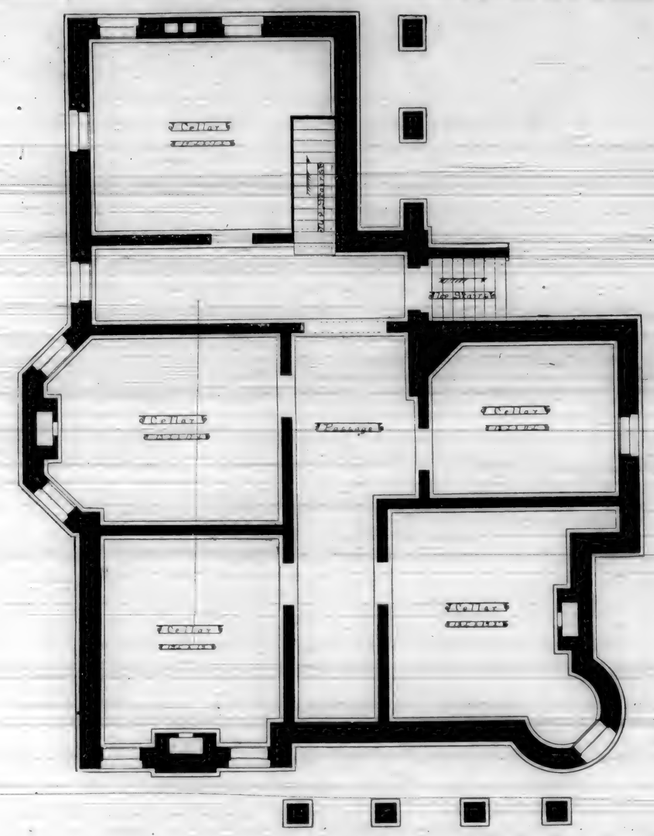
REAR ELEVATION OF $5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

For these and many other reasons, architects have good cause of complaint against such contractors as are negligent in the matter under notice, and all such will do well by correcting their business error in this regard. Promptness in all things, it matters not how trivial, is a good rule to observe, and is one that has characterized the lives of successful men generally.

High Buildings on a New Plan.

A NEW YORK architect has devised a new plan for erecting the high buildings which are coming so much into vogue in large cities. The design is quite novel. The plan is to first erect an iron frame and cover it with a roof as soon as practicable. The walls, of whatever material, may be built at the same time the structure of iron is being built. As the erection of the iron structure will proceed faster than the enclosure, there will be no cause of delay to steady progression while the structure is being built; the interior arrangements, as fire-places, vaults, archings for ceilings and lining for exterior walls, may be put in and ready for plastering by the time the exterior parts are finished. As the iron structure would soon be roofed the work could be carried on independently of the weather. Derricks could be placed on the roof for finishing the enclosure, and thus do away with unwieldy ones against the sides. The unusually broad piers now seen in buildings could be done away with, thus giving more space for windows on the lower floors, a thing greatly desired. The walls are to be supported by brackets, so that, if desired, any part of the exterior can be removed and repaired. The iron floor girders with the iron floor beams fastened to their sides, are attached to the outer posts at both ends, which will increase the bearing strength nearly one-half. A building built on this principle will combine elegance with security. A building of this description would be fire-proof as far as practicable for the best building constructed. Although they may be proof against catching fire from neighboring buildings, yet, when they are so filled with furniture and other combustibles liable to get on fire, would furnish smoke enough which might prove as fatal to many as flames have been in other cases.—*The Builder.*

Every property owner should subscribe for the "CALIFORNIA ARCHITECT AND BUILDING NEWS." It is the only Journal on the Pacific Coast published strictly to advance your interests. Only $2.00 per annum. OCTOBER, NOVEMBER, and DECEMBER numbers of this year will be given free to all new subscribers for 1885.



CELLAR PLAN OF $5,000 COUNTRY DWELLING.—4TH PREMIUM DESIGN.

Terra Cotta in Architecture.

ONE of the most marked improvements connected with the building trade in this country during the past decade, is the use of terra cotta, for purposes of architectural decoration. Ten years ago a majority of those engaged in our building trade did not know of its existence, so accustomed were they to simple brick work, painted wood, or decoration in galvanized or cast iron. Fortunately this aspect has changed, and changed for the better in more ways than one. Architects and builders now realize that in terra cotta they have a material at once beautiful, imperishable, and far less costly than a poor quality of stone, when worked into architectural detail. It is also a material that will enable them to utilize and harmonize local materials which, for obvious reasons, are often required to perform a large part in building operations. Terra cotta being composed of clay, is, by the action of fire, changed to a hard and brilliant substance; and by the judicious selection and manipulation of the clays fitted for terra cotta, work of any desired tint and color may be obtained.

It is generally conceded now that the wearing qualities of terra cotta are vastly superior to those of stone of any sort, and builders and those interested in building operations, will serve their best interests by looking into its merits.

The cuts on the opposite pages will serve to show some of the various designs which can be obtained in terra cotta. Any conceivable pattern can be made, thus insuring architects that their conceptions can be carried out in the minutest detail. Architects, as a general rule, can give the fullest information in regard to this beautiful material. Those living far off can only become acquainted with the grand improvements of the city through the agency of trade journals. Owners and others can obtain full particulars of cost, etc., of every description of terra cotta work, by addressing Gladding, McBean & Co., 1358 Market Street, San Francisco.

WHEN a saw has cracked near the teeth, to prevent its continuing, drill a small hole at the end of the crack. This is said to be effectual.

Burning of Barns.

IT is noticeable that a larger number of the burnings of barns is mentioned by the periodical press in the summer than at any other time. Some of the fires are undoubtedly caused by lightning, the moist vapor from the uncured hay making a favorable conductor for the electric fluid. But there are barn fires which cannot be attributed to lightning, to lighting of matches, to light from lanterns, nor to the invasions of careless tramps. It may be that the spontaneous combustion of hay is as possible as the spontaneous firing of cotton waste. All fibrous material, when moist, and compressed, and defended from the cooling influences of the outward air, is subjected to a heating similar to that of fermentation; and in some instances the degree of heat is sufficient to cause actual, visible combustion. In the case of recently "cured" hay this danger is as great as, in similar circumstances, other materials may be. Frequently the grass is cut in the early morning, while wet with dew; is turned twice during the day, and gathered and packed in the "mow" or the "bay" before nightfall, with perhaps a sparse sprinkling of salt. Such a compressed mass of fibrous, moist matter will heat. How far the heat will go toward generating a combustion may be inferred from a foolish trick which the writer witnessed several years ago. A large meadow of hay had been cut, cured, and cocked, previous to removal. A shower threatening, the cocks were covered with caps of canvas and left for the night. While getting the hay in, the next day, one of the workmen dropped an unlighted match from his pocket into a cock of hay, and in a few minutes it was ablaze. It afterward was ascertained that he had spoken of the warmth of the hay as he lifted it on his fork, when a companion remarked that it might be hot enough to light a match, on which he put a match into a rick, and before they had passed on five minutes the rick was on fire.

Everybody conversant with farm life, where hay is a permanent and important crop, knows that for weeks after getting in the hay the barn is warm when the doors are opened in the morning. There is an amount of heat that is absolutely unpleasant when the thermometer outside registers 60°, but which is quite welcome with the outside temperature at 40°. This barn heat is undoubtedly from the moist hay, compacted and inclosed. The cure for the possible danger of possible spontaneous barn burning would seem to be the thorough curing—drying—of the hay before it is housed. We dry all our herbs and some of our vegetables without injuring their peculiar and individual qualities. There is no reason why hay or other fodder material stored in large masses should not be rendered equally innoxious to the influences of heat by thorough drying.—*Scientific American.*

"NO, SIR," said a practical American, "no bric-a-brac on the mantel for me! It's a nuisance. Where's a man to put his feet?"

Architectural Terra Cotta.

DESIGNS FROM THE MANUFACTORY OF GLADDING, McBEAN & CO.,
LINCOLN, PLACER CO., CAL.

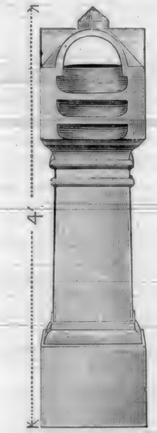
San Francisco Office, 1358 and 1360 Market Street.

No. 328.

No. 340.

No. 333.

The First Brick Building with TERRA COTTA Trimmings, erected in San Francisco.



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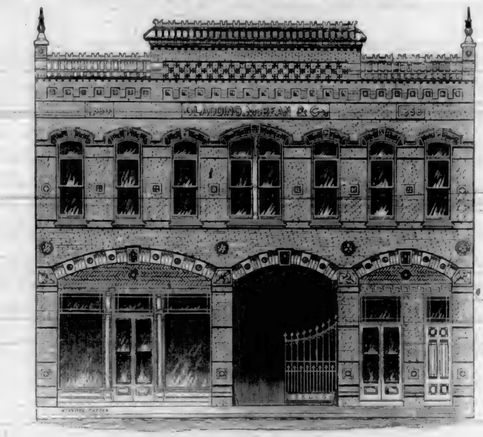
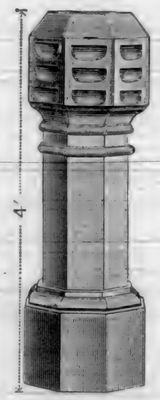

San Francisco Office of Gladding, McBean & Co.



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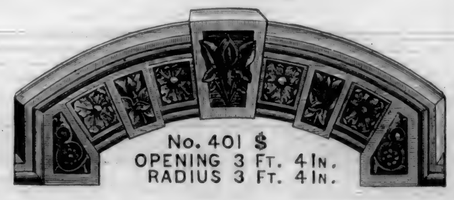
No. 430. 2 FT. 9 IN. HIGH. 7 IN. PROJECTION. $ _ PER FOOT.



Designs and Estimates Furnished on Application.

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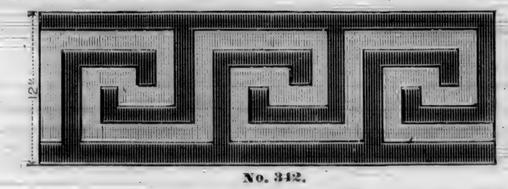

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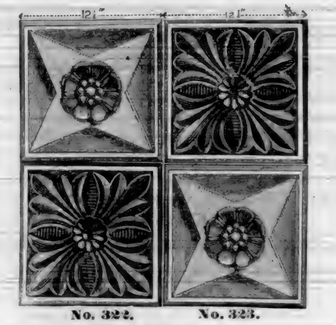

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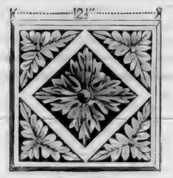

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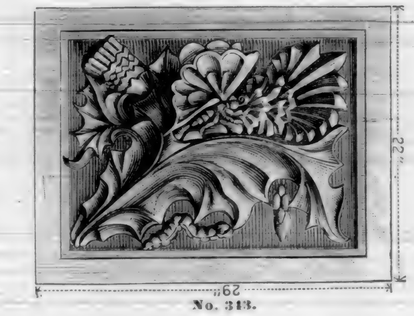

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Designs and Estimates Furnished on Application.

Practical Graining.

In walnut graining there are many tones given to the finish through the ground-work to meet the various shades found in walnut woods. The red is the most pleasant, and for which a dark copper color ground is used. There is a slight negative to this, in a light reddish purple, made by adding Prussian blue to the previous ground. This tint is seen in some walnut and can be imitated with good effect by stippling with lighter color (water or oil). The color selected for a ground having been placed upon the work to be grained when dry, rub smooth with sand paper, and the work will be ready for stippling. The term stippling means to pounce with a brush endwise, or to flog and whip lengthwise with a flat painter's duster, or a badger hair blender. For distemper or water color use burnt umber for light stippling, and for dark add some vandyke brown. These colors are found in material stores put up in glass bottles. Mix the distemper colors in beer or vinegar to give it adhesiveness. With an ordinary paint brush put on the color over the work, only so much at a time that you can flog it before it dries.

The work when done, should show an even grain of stippling of the color, and uniform in its tone. When this distemper color is dry, it is ready for the oil colors. The amber in oil, thinned with a little turps and oil and with a drop of Japan to set the color; spread this color over your work with sufficient thickness to give a good walnut shade and only so much as you can grain before the setting color gets hard. In graining a door, the panels are done in walnut root, branches or heart growth. The mode prevailing now is to do the panel work in walnut root, the rails in sap growth, with plain wood grain for the styles. The root is worked in short whirling masses of dark color, waving round curling burls, or as seen in French root veneers like rivulets running over and around rocks in a tortuous course, with foam and splurges swaying its way in never ending struggle. It is a difficult wood to imitate, but as every effort to produce it makes a passable imitation it is allowed to pass, while future improvement in succeeding efforts will give more satisfactory results.

To grain in mahogany it is necessary to have a ground of venetian red, tempered with a little white lead. I think this beautiful wood is best imitated in water colors. Provide yourself with the burnt sienna in distemper, and proceed as in walnut to stipple the work, and when dry give it a light coat of varnish. It is now ready to receive the over-graining. For branches of this wood, you need a small piece of flat sponge; cut on one side teeth-like points of one-fourth to one-half inch apart, a stiff business card, a camel or badger blender. For panel branch put on the color, a very dark shade in the middle and light on the sides. Then wet the sponge slightly and commence to form the branch by taking out the lights by an upward movement of the sponge, holding the point toward the center, starting with point lightly, then heavy, forming a semi-circle, then draw the sponge down with a waving motion to the sides of panel edge. Having done one side of the panel, follow up the opposite side in the same manner. Then take the card, holding it edgewise, press it on the dark parts under the point the sponge has made; open sharp lights right and left from the center to give flashes from which the former lights spring. Follow with the blender and soften the work in an upward course until the harsh lines are all blended softly together. When dry take a bristle top grainer and fill with color so that you can draw it over the work from bottom to top across the panel. The bristles should not be too wet but just enough to make the lines even in the half circle movement from side to side. Blend quickly and give the lines an upward trend, while the dropping ends are joined by the blender to the sides in one whole mass.

The other parts of door where no grain is needed, can be put in waving light and dark lines blended so as to show the transition of light and shadow. The lower and upper rails can be done by laying the blender flat on the work and draw softly across, in waves and blend to finish. The twists and curls of the mahogany when too light add more color to give the necessary effect to the work; keep the blender dry by wiping and drying. Maple and ash woods require lighter grounds; white tinted with yellow serve as a ground for either of these woods. They look well in oil or water. The maple color raw sienna, add a little umber for ash. They are formed in their curls with the over-grainer and blender; the bird's eye is imparted by grouping the finger tips together and tapping the work here and there between the waving lines of the top grainer, after which blend softly to trend the eyes to grain one direction, more in line of the various curves. The following are samples of sap growth of the pine and the Hungarian ash

and French walnut burl work. The pitch-pine requires a light ground similar to oak, and grained as in oak and oil, using raw sienna, and burnt in nearly equal parts. Wipe out the lights as described in a former number of the CALIFORNIA ARCHITECT. The graining is something of the style of oak only a little sharper in the points of the heart growth. The southern pine of Florida has deep lines, and in tone the color is deep in burnt terra de sienna. In graining, the learner should consult the natural woods, to learn from nature her own forms, and imbue the mind with all their varieties, and thus be better prepared to imitate them.

J. E. W. C.

Concrete vs. Brick Floors.

THE designer of a certain warehouse in Germany, unable to find definite data of the resistance of such floors, resolved to make trials for his own information, and incidentally for that of his professional brethren. The warehouse was of immense size, covering nearly an acre of ground, and was intended for the storage, among other things, of heavy pieces of metal, the handling of which often involved considerable shocks to the floors. The whole building was fire-proof, part of the flooring being of brick arches in cement, between iron beams, and part of concrete slabs supported in the same way. Five trial floor arches were built, each 44 inches in span, of which the first consisted of concrete, made with one part Portland cement to five parts of gravel, while the second was of hard bricks in Portland cement mixed with three parts of sand, and was covered with a coat of asphalt three-quarters of an inch thick; the third was of softer brick, in mortar containing one-half as much lime as cement, and four parts sand; the fourth was of the same brick, in equal parts of lime and cement, and five parts sand; and the fifth was of the same brick, in cement alone, mixed with four parts sand. These last floors were finished with a coat of cement, three-quarters of an inch thick or more.

Fifty-four days after their completion, each floor was loaded with pig iron to the amount of 200 pounds to the square foot. This weight had no effect, and two days later the concrete arch was tested by letting fall upon it an iron ball of 60 pounds weight. This, dropped from a height of five feet, did no harm, and another ball, of 135 pounds weight, was let fall from the same height. The first blow produced no effect, but by dropping the ball repeatedly on the same spot a crack was started at the fourth blow, and the eighth broke a hole entirely through the floor, the opening being 4 inches in diameter at the top and 24 inches at the under side.

Thirty days later the same test was applied to another part of the floor, and a hole of the same size and shape was broken through at the ninth blow of the ball. The thickness of the concrete in the middle of the span was 4 inches. Trials were made of the brick floors in the same way. The first, of hard brick in strong cement mortar, stood forty-eight blows of the heavy ball before it was pierced; the second, of softer brick, with lime added to the mortar, gave way at the tenth blow; the third, at the seventh blow; and the last, of soft brick in sandy cement mortar, without lime, at the tenth. In all these cases the hole broken through was much larger at the intrados than at the extrados. A new floor was then built of soft brick, in mortar made with two parts lime to three of cement and ten of sand, and covered with a layer of concrete, of equal parts of cement and sand, 2 inches thick. After this had set, the floor required seventy-one blows of the 135 pound weight to break it through. This protective effect of the thick layer of concrete over bricks is very curious, but aside from this, the result of the tests was decidedly in favor of the brick arching.—*Selected.*

[Written expressly for this JOURNAL.]

Soil as It Relates to Health.

BY GLENN BROWN, ARCHITECT, A. A. I. A.

IMPORTANCE OF THE SUBJECT.

AS OUR houses and homes rest upon, or have their foundations beneath and surrounded by the soil, it becomes important for us to know the dangers, if any, which may lurk therein. Hippocrates treated on the importance of pure air, pure water, and a pure *soil*, more than two thousand years ago. He considered the air the most, and the soil the least important of the three. Dr. Pettenkofer thinks their relative importance should be reversed. He concludes from recent observations and experiments, that the soil or ground has, when in a bad condition, greater evil effects than either air or water. He says that malarial and intermittent fevers originate in the soil, is already accepted. I think cholera, plague, typhus and yellow fever's source must be sought in the soil.*

The evils which lurk in the soil are the ground, air, and water, or more properly speaking the injurious germs conveyed by the movements of, or retained in the ground, air, and water.

DAMPNESS AND GROUND WATER.

The soil may be moist, or the interstices between the particles of earth filled with water and air, or the water may stand in the vacant spaces to the exclusion of air. All filth, vegetable or animal matter that may soak or be in such soil, will undergo purification or oxidation but slowly, as the free circulation of air is cut off by the water.

The Romans were evidently aware of the importance of subsoil drainage.

The archæologist De Tucci called attention to some underground channels in the Roman hills called "*cuniculli*." These channels were examined by Tomassi Crudelli, and found to be exclusively for the purpose of draining the hills. He states in his recent work on the subject, that the ancient Romans suffered much less from fevers than those did who lived in Rome after the drains were destroyed by the invading barbarians, and less than the Romans of the present day suffer.

The above mentioned drains were not described by ancient authors, probably because of their common, every-day use.

By investigation in damp and marshy districts, and in districts either naturally or artificially drained, such physicians as Drs. Buchanan, Haviland, Seaton, and Fenton, of England, came to the conclusion that dampness in the soil is an important cause of pneumonia, phthisis, and like diseases.†

Dr. Bowditch, of Boston, concludes from written statements of resident physicians in 183 towns, that dampness of soil in any township or locality is intimately connected with the prevalence of consumption in that township or locality.* Dr. Josiah Parkes, of England, in his excellent work on "Practical Hygiene," and Dr. J. H. Ford, of Philadelphia, in his article on "Soil and Water" in Buck's Hygiene, enumerate many instances which tend to prove the important relations between the soil and our health. They conclude that, beside the diseases mentioned, a damp or saturated soil predisposes to rheumatism, catarrh, and neuralgia.

Mr. E. F. Bailey-Denton says: "Wide agricultural districts containing isolated dwellings have been so much benefited by drainage that diseases which in former times constantly prevailed have now ceased to exist."†

Water lowers the temperature; this in itself has sometimes an injurious effect. Water can only escape from a water logged soil by evaporation from the surface. The amount of heat, or power lost, in evaporating water from a wet soil, is appreciated by but a few. The experiments of Rankine and Josiah Parkes show that thirty inches of rain yearly falling on an acre of land, would take more than 18,590 pounds daily evaporation to exhaust it.‡ To obtain the same results with an ordinary steam boiler, would take 2,400 weight of coal. For every grain of water evaporated, heat is required sufficient to raise 960 grains 1° Fahr.

The experiments of Prof. Schublet, at Tubingen, also proves the effect of ground water on the temperature of the surrounding soil and air.

"Drainage contributes to the dryness of the soil, and improves its temperature, not only by diminishing evaporation and increasing the hygroscopic powers of the soil, but by increasing the power to absorb the heat."—*Ford.*

The influence of temperature upon the causation of disease is undoubted. Ground water often forms conduits and becomes receptacles for excreta from cess-pools and sewers, and decayed matter from made ground or cemeteries.

In cases of this kind the interstices between the particles of soil become charged with excrement or decayed matter, and the ground air filled with germs. To quote Mr. Simon's words, the earth would be "excrement sodden, and the air excrement reeking."

THE GROUND AIR.

The character, movements, and effects of ground air have been only recently, and in a limited degree, investigated.

Its importance has been shown by the experiments of Profs. Renk and Pettenkofer, with the aid of Ricknagel's differential manometer. Professor Renk found that there was a current of air from the ground into the house for the greater part of the year. This current was found to carry dust, or small particles of matter, organic, mineral, or otherwise, of which the earth was composed. Other observers have shown, according to Pettenkofer, that this ground air carries germs susceptible of development in suitable solutions.

The effect which the wind has upon the ground air is clearly shown by the following experiment of Pettenkofer.

He takes a long glass tube closed at the bottom and fills it with gravel. Into the axis of this tube he inserts another smaller tube, open at both ends and reaching nearly to the bottom of the large tube. The second tube is attached by a piece of rubber tubing to a glass. V-shaped or trapped tube, which is partially filled with water. (See Fig. 1.) "If a person blow, as represented in the figure, on the surface of the gravel, the liquid in the V-shaped tube will be seen to alter its position, the level side next to the person who is blowing, becoming lowered, and the other proportionately elevated. The depression of the fluid is caused by the air blown through the gravel, because it ascends from the bottom of the

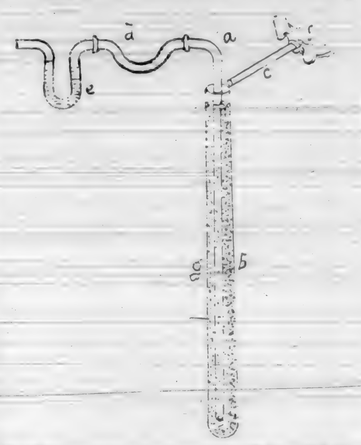

FIG. 1. Pettenkofer's Experiment, (a) small tube, (b) large tube filled with gravel, (c) tube with party f blowing through it, (d) rubber tube, (e) bent or V tube with water in it.

gravel through the small tube, passes through the india rubber tube, and thus reaches the water."

If a candle is placed at the mouth of the V-shaped tube, the water having been removed, the flame of the candle will be pressed aside by the current of air. From the experiment it can be easily understood how the ground air is continually moving by the action of the winds on the surface of the ground, or by the state of the atmosphere.

Artificial heat creates a vacuum and draws or sucks the air into the house unless it is properly protected. In this way air may be brought from some distance through the ground into the house, and impurities which exist near or beneath the house, may be easily conveyed into the house by this means.

(To be Continued.)

WHAT will clean zinc and make it look bright? *A.*—Whiting or refined chalk in water; finish dry.

*An address by Dr. Maxvon Pettenkofer, Popular Science Monthly, Vol. XX.

†Ninth Report of Medical Officer of Privy Council, London, 1866.

*Massachusetts Board of Health Report.

†Handbook of House Sanitation, E. F. Bailey-Denton, London, 1882.

‡Journal of the Royal Agricultural Society of England, Vol. V.

A New Idea for Boys.

BY ALLAN FORMAN.

THERE is hardly a boy who does not enjoy working with tools, and "building things," as the expression is. Of course there are some boys who are naturally ingenious and handy in various kinds of mechanical work, and there are others who do not even know how to drive a nail—an operation by no means so simple as it seems—yet they all want to learn.

Occasionally a boy will have the good fortune to find favor in the eyes of some obliging carpenter who is willing to allow him the use of the shop bench and perhaps even some of the tools. But this is always the clever boy who obtains these privileges. The clumsy boy must go on driving his nails sideways, and cutting his fingers with his chisels, until he becomes disgusted with mechanical work.

There have been several schools for mechanics established in different parts of the country, but none quite on the principle of the Gramercy Park Tool-house Association, which will begin operations in New York this autumn. This is really an association of boys in the form of a stock company, governed by mutual agreement, as any similar organization, and joined together for the purpose of maintaining a well-stocked tool-house, and providing suitable instruction in the use of tools.

Carpenter's tools of the best quality and most approved patterns will be provided from the fund, and the boys will not only be taught how to use them, but, what is even more important, how to keep them in order. While the pupils will be allowed to follow their own choice in the kind of work they do, they will be advised by the superintendent, and the products of their industry and genius are to be disposed of at auction at the end of each term, for the benefit of some charitable institution.

The shares in the association are, of course, really paid for by the parents of the boys, but the theory of self-government is carried out as if they were the *bona fide* owners of the stock. This principle of self-government in itself is an excellent thing, for it teaches the idea of individual submission to laws, which are perhaps distasteful, for the public good.

As to the main object of the association, the idea cannot be too highly commended. There is nothing which is so useful to a man in after-years as some knowledge of mechanics, which can be easily acquired in boyhood. How many a man envies his neighbor his ability to tinker a broken lock, or to arrange without apparent trouble those thousand and one little conveniences that a "handy" man enjoys making for the benefit of his household!

The use of tools teaches a boy any number of other things which are useful to him all through life. He learns much of the great principles which underlie the science of mechanics. It teaches him to be accurate in his measurements, to be careful and neat in his work, and it fosters a taste for the higher mechanical pursuits; and—an argument which always appeals strongly to parents—it gives the boy a place where he is enjoying himself, yet at the same time he is learning something which will be of advantage to him in future.

But the Tool Association is not confined to carpentry alone. Moulding and casting in plaster and clay, elementary chemistry, geology, and microscopic investigations, will form a part of the interesting work they have laid out for the coming season. The tool-house and laboratory are thoroughly stocked with tools and instruments. Practical mechanics have been engaged to overlook the work of the boys, and the whole will be under the direction of Mr. G. Von Taube, the originator of the scheme, who will advise with the young stockholders, and see that the rules are carried out.

A boy who could not pass many happy hours in the association's pleasant work-room must be hard to suit. The only pity is that such schools are not started in all the large cities. There can be no doubt that they would become popular.

Brass for House Interiors.

BRASS, from its composition, can only be used in the interior of buildings, and should not be exposed to damp. Its natural pale yellow color is very agreeable, and is due to the presence of zinc. It is not highly malleable, but may be cast and treated like bronze, or by a process of annealing rolled into thin rods and sheets, and worked up in the same way as iron. It is difficult to give a decided preference to either method, though they are so totally opposed in principle and practice. The present tendency is in favor of wrought brass, welded, beaten, pierced, hammered and riveted as in iron; for this exhibits the individual skill of the handicraftsman, and possesses a sentimental value that cast work, which can be produced *ad libitum*, cannot possess. The designs should be more severe and precise than if intended for forged iron, and more pierced and embossed work should be introduced. It should be sparingly used, and the redundancy of polished brass in some of the newest restaurants in London, though affecting to be the quiet and unpretending style painted by Hogarth, is vulgar. The works in ormolu, of Luis XV., and Louis XVI., which are of cast and chased brass gilded, are too beautiful to afford any scope for adverse criticism, but objects designed to be cast in brass should either be of great delicacy or great simplicity. Though the arts for working in at least what are called base metals are not yet in the position their importance in the past and in the present entitles them to, the future is full of hope, and we may trust that a time is at hand when men of exceptional power, though engaged in what have been regarded as the humblest industries in which art can enter, will be able to impress the seal of their genius on their work, and hand their names down to posterity.—*Builder and Wood-Worker.*

Make Your Own Gas.

OWNERS of country stores and dwellings should use every precaution against fire, as the non-proximity of fire engines and scarcity of water oftentimes cause a small fire to develop into a disastrous conflagration. Since the first introduction of coal oil as a means of illumination, various contrivances have been placed in the market, by which gas could be manufactured from that substance. For more than twenty years improvements have been made in gas machines, until there has been developed one that is as near perfection as scientific study and investigation can produce.

These machines are guaranteed absolutely safe in their operation, simple in construction, not liable to get out of order, and require no skill to manage. They require less attention than a common kerosene lamp. *No fire is used in the process of manufacturing gas by these machines.* Cost of gas will be less than one dollar per thousand feet.

The tank, containing the gasoline, is buried in the ground and is delivered in permanent pipes and fixtures to the proper distributing points. Consequently, no danger or trouble is engendered by frequent removals of the fluid. Full particulars in regard to these machines will be given by addressing A. F. Nye & Co., 609 Market Street, San Francisco, who are the sole agents for the best machine manufactured.

Queen Anne Hodge-Podge.

Architect—Well, I declare that is a pretty fair house plan for an amateur, only you have left no space for stairways and closets. Did you make it yourself?

Prospective Builder—Yes, but the only thing that puzzles me is to know what style of cottage it is. It is not Gothic, nor Italian, nor—

"No, it is absolutely nothing. As to style, it is simply a meaningless hodge-podge, to be frank with you."

"Well, what shall I call it, have you no name for hodge-podges?"

"Oh! yes. We call 'em Queen Annes."

A RECIPE for acid compound that will restore worn or blunt files to utility. Clean the files by brushing them clean of dirt and grease as well as any foreign metal sticking in the teeth; then dip in a strong alkali for a few minutes to remove all traces of grease from the bottom of the teeth; rinse in clean water, then dip a solution of 1 part nitric acid, 3 parts sulphuric acid, to 7 parts water. Time 5 seconds to 5 minutes, according to cut and wear. Rinse in warm lime water, dry, and oil slightly. Finally brush with powdered charcoal to take off excess of oil and give them the peculiar look of new files.

POWDERED glass for making glass paper, filtering varnishes, and other purposes, may be made by heating a piece of glass red hot and plunging it into cold water; it will immediately break into powder. This must be sifted and dried.

Angelo's High-Spiritedness and Separation from the Pope.

POPE JULIUS II. commissioned Michael Angelo to erect a mausoleum. When he showed it to the pope his holiness inquired the cost of such a splendid piece of work. Michael answered that it would amount to a hundred thousand crowns; and the pope liberally gave him to expend twice that sum. The mausoleum was commenced. Pope Julius was so delighted with it that he had a covered way from his palace erected, that he might visit the artist at his work *incognito*. This was too great a favor not to excite the envy of a court. Ill words and unkind slanders were spoken of Michael. They reached the ears of the pope, as it was intended, and he visited Buonarroti no more. Michael came to the vatican, which had been at all times open to him; but it was not so now. A groom of the chamber stopped his entrance.

"Do you know to whom you speak?" asked the indignant architect.

"Perfectly well," said the man, "and I only do my duty in obeying the orders my master has given me."

"Then tell the pope," replied Michael, "if he wants me he may come and seek me elsewhere himself."

The insulted artist returned immediately to his house, ordered his servants to sell his furniture, and follow him to Florence; and left Rome that very night. Great was the pope's consternation. But it was too late; he had already passed the boundary of the pope's jurisdiction, and force was of no avail. The couriers reached Florence and delivered the pope's letter. Michael's answer was this: "I have been expelled from the antichamber of your holiness without meriting disgrace; therefore I have left Rome to preserve my reputation. I will not return as your holiness commands. If I have been deemed worthless one day, how can I be valued the next, except by a caprice alike discreditable to the one who shows it, and the one to whom it is shown.

Julius next wrote to the Government of Florence, using the conciliatory words: "We know the humor of men like Michael Angelo. If he will return, we promise that none shall offend him or interfere with him, and he shall be reinstated in our apostolic grace." But Michael was inflexible. Again and again the pope wrote, and still this proud and high-spirited man refused to heed him. At last the chief magistrate of Florence became alarmed. He sent for the artist, and said, "You have treated the pope as the king of France himself would not have dared. We cannot bring him to war against the State on your account; therefore you must obey his will." The magistrate promised also, if Michael feared for his personal safety, to send him as embassador to Rome, in which case his person would be inviolable. At last Michael relented, and met the pope at Bologna. Julius glanced at him with displeasure, and did not for some time deign to speak. At last he said, "Instead of your coming to us, you seem to have expected that we should wait upon you." Michael answered with a slight apology for his conduct, which, however, was so haughtily expressed, that the prelate who had introduced him, thought it necessary to observe, "One must needs make allowance for such men, who are ignorant of everything except art."

"Wise and generous too," was the pope's indignant reply to this speech. He turned to the prelate: "Foolish man, it is thou who hast vilified Michael Angelo; I have not. He is a man of genius, and thou an ignorant fellow. Depart from my sight this moment." And the contemner of art was forcibly driven from the room.

WHILE the inspirations of the study and practice of the science of architecture should, and in its purity, nobleness, and truthfulness is calculated to, ennoble and elevate the minds, and purify the acts and life principles of those who in these latter days profess to fill the places, as students, disciples, and representatives of the art sublime, the grand master spirits of past periods, who conceived, delineated, and reared those grand structures which have withstood the ravages of time, the elements, and physical forces and conditions through ages, reaching back through decades of centuries, and which may continue to stand until

"The cloud-capt towers, the gorgeous palaces,
The solemn temples—the great globe itself;—
Yea, all which it inherits shall dissolve,"

Yet in these modern times, the elementary and fundamental principles of true architectural science,—*order, harmony, truth*, and *purity*,—are not universal rules controlling and regulating the hearts, practices, and purposes of *all* those who have found or forced their way into architectural paths.

The profession, high and honorable as it is in character and teachings, is encumbered with much of the smallness and sordidness which finds place in avaricious, ignoble, and unmanly minds, with whom professional dignity and fair dealings, are but subserviants and incidents to be utilized in pretenses, for the consummation of unjust and concealed designs.

This manifestation of human weakness or positive baseness is more or less distributed all over Christendom, with more prominent outcroppings in some places than in others. And while in San Francisco there are many in the profession who would disdain to do an unprofessional act, there are also many whose career and practice is unsanctified by a single impulse, or principle inspired, controlled, or regulated by any high or exalted sense of right or honor toward others. Extreme selfishness, one of the very meanest dispositions of the human mind, that which, more than any other, perverts and demoralizes the finer impulses of the heart, and holds in subjection and crushes out from the acts and deeds of common life every tendency toward "doing to others as ye would that others should do unto you," is the impelling force—the pre-eminent rule of action, which blinds the eyes and stultifies the senses against seeing or recognizing wrong or dishonor in any act or deed which hold out the promise of gain and advantage, be the injustice to others, or the baseness of the act what it may.

It is painful to the better men of the profession that this should be, and is true; yet true it is. And so long as men of inferior qualifications—men who possess no practical or professional abilities in any reasonably fair degree, their success being altogether the result of brazen cheeks and tongues, never so well in time as when ringing out false pretenses for themselves and as false insinuations in regard to others, "the latchets of whose shoes they are not worthy to unloose"—meet with favor, and are accepted by owners as—as what? Men of ability, worthy of confidence and trust? No; these are but presumptive considerations, entertained only, if at all, as among the possible things; while the controlling and influencing factor is found in the impossible-to-be-honest prices at which "professional" services are offered; which, followed up by the shrewd manipulation of words and expressions—sometimes cunningly devised, and at other times so bunglingly presented that any one of fair intelligence, not blinded by the *delusion* of *cheapness*, would be able to discern and penetrate the deception.

It is not an agreeable performance of duty to make these assertions, but it is far less pleasant to be forced almost daily to become acquainted with facts justifying all and more than the language used expresses; relieved only by the other fact that the profession in its purity of principle, purposes and honest practices is beautiful and to be admired, and that there are many worthy architects in all cities who prefer the enjoyment of profits honestly acquired to the accumulation of greater wealth by means not in harmony with the rules of strict integrity.

Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

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Public Laundries and Baths.

THE establishment of public laundries and baths for the accommodation of the poor is an important means of promoting the public health, and, therefore, deserved to be encouraged, if not supported by the local Government. The housing of the poor is not the serious question here that it is in most European cities. Comfortable homes are provided in great numbers, which have the necessary conveniences for cleanliness and domestic work, but they are not within the reach of large numbers of the population, who have to content themselves with accommodations of the most inferior kind. One or two rooms must suffice for a family. The washing of clothes, cooking, and all other domestic work is performed in the apartments used for living and sleeping. Under these circumstances, home comforts are banished, and health—the main dependence—is jeopardized. For such people, the public laundry and bath would be a great boon. The disagreeable operations of washing and drying clothes could be transferred from the dwelling and sleeping apartments to an establishment fitted up with every convenience to facilitate the work, to which the wife could have access a certain number of hours, upon the payment of a small fee. The moral effect of extending such a privilege to the poor would be very great.

The public bath system admits of a still wider field of application. Wherever a swimming-bath has been established, its extensive patronage proves the need of such accommodations. Swimming-baths should be established not only as promoters of cleanliness, but as excellent means of healthy exercise. It would be well if these aids to health could be continued the entire year, but when this is impracticable they should be substituted by private baths, which should be placed within the reach of the poor by charging only a small fee. The Badeanstalt, established this summer in Cologne, one of the most complete and largest on the continent of Europe, is an illustration in point. It contains a workman's swimming-bath, the charge for a bath being not over three cents. The supply of water is continuous. Men following dirty employment are compelled to perform a preliminary ablution with soap.

The public baths in Germany are probably more elaborate and complete than anywhere else. In all the principal towns these conveniences have been opened or are in course of erection. The same may be said of England. Public baths are now being built in Dublin at a cost of $25,000. France is not behind her neighbors in providing for the wants of the people in this respect. Swimming-baths are found in towns, large and small, standing on the banks of a river, and their use is in some cases gratuitous, while in others a small charge is made. In our cities the same liberal provision has been made for the wants of the people. It is not needed in the case of persons in comfortable circumstances, as they can afford to have and do have private bath-rooms in their homes. But the poor suffer in their health from being deprived of the advantages of the bath, and for them provision should be liberally made.

The cost of the erection of these establishments need not be great, and that of their maintenance would be trifling compared with the benefits bestowed. The obligation of the municipality to incur such an expense is derived from the duty to use every reasonable means for the promotion of the health of the people. What has already been done in this matter has been very successful, and encourages renewed efforts to extend the system to its widest and most useful application.

What Constitutes Good Mortar.

MACHINISTS and engineers often have occasion to use mortar, and will value the appended information: Good mortar is a solid silicate of lime, that is, the lime unites with silica or sand to form a silicate of lime. In ancient days those who had some conception of the way the two things united superinended their mixing; but now-a-days anybody is supposed to know how to make mortar, while nobody knows much about it. Dry lime and dry sand laid together or mixed and kept dry for a thousand years would not unite to form silicate of lime any more than acetic acid and carbonate of soda dry in a bottle would effervesce. To make silicate of lime just as good as was made by the Romans, all that is necessary is to proceed intelligently. Procure good caustic, *i. e.*, fresh-burned lime, and if you find it all powder, *i. e.*, air-slaked, don't use it; use only clear lumps. Slake this (if possible in a covered vessel), using only enough water to cause the lime to form a powder. To this while hot add clean sand, not dirt and loam called sand, but sand—and with the sand add enough water to form a paste. Then let it lie where it will not become dry by evaporation—in a cellar, so much the better, for as soon as you have mixed the sand and lime as above, they begin to react one on the other, and if not stopped by being deprived of moisture will go on reacting until silicate of lime (as hard as any silicate of lime ever was) is formed. But if you take this so-called mortar as soon as made and lay bricks with it, unless the bricks are thoroughly wet, you stop the formation of silicate of lime and might as well lay your bricks in mud. Lime and sand, after being mixed, might lie two years with advantage, and for certain uses, such as boiler setting, or where the whole structure of brick and mortar is to be dried, the mortar ought to be mixed for one year before use, and two would be better; but for house building, if the bricks are so wetted as not to rob the mortar of its moisture as soon as used, mortar that has been mixed a month will form good solid silicate of lime among the bricks it is laid with in ten years, and will be still harder in a hundred years. The practice of mixing mortar in the streets and using it at once is as foolish as it is ignorant, and would be no improvement. Silicate of lime is made only by the slow action of caustic lime and sand, one on the other—under the influence of moisture. Dry they will never unite, and mixing mortar as now mixed and using it at once, so as to dry it out and stop the formation that the mixing induced, is wrong.—*The Builder and Wood-Worker.*

In the Style of Queen Anne.

LET me offer a few reflections on the mania for Queen Anne houses that is now rife, and which I venture to pronounce a failure, and which, with more certainty, will be decreed a failure a generation hence. The thing is all wrong and on wrong principles. The Queen Anne architects indulged in no such ridiculous, fantastic freaks as we see now exhibited, and simply because such was entirely opposed to the nature and character of brick. Brick is a simple, honest, plain material, with a good color and hard, smooth surface—that is all. Whatever style can display these qualities best is the Queen Anne style and no other. The result of the modern caprices will be seen ten or twelve years hence, when certainly decay will have disintegrated or destroyed the whole, or when the owner's heart will have sickened of the frequent repairs and restorations. The old Queen Anne houses produced effect by the beautiful color and surface, the bricks being laid almost touching, with the thinnest wash of mortar between. The result is that no rain or damp ever gets between. The modern system of building is opposed to this, thick layers of mortar being interposed with the certain result that all the elaborate gables, etc., soon begin to separate. Bricks put together in elaborate forms have no strength, no more than stones laid on earth, but displayed in surface it becomes as firm and smooth as a billiard-table. Even *mouldings* should be raised in the faintest degree, and the less they are the richer the effect. There is an old house out at Clapton, a "seminary for young ladies," that for design, simplicity, and pure brickwork, mixed with stone and design of outline, puts to shame all the brick phantasmata that are now covering the city. Looking at the pretentious masses that cover the new settlement of Cadogan Square or line the Embankment, one does not feel at all drawn back to the days of Queen Anne. There is a coarse, raw treatment in their embroidery, to which the brick lends itself but reluctantly. The material is too rude for such fine work. There is another fad in house adornment, which, it may be said, has run its course. This was the daubing over houses "liver-red," green, blue, etc. These efforts looked daring enough at first, but presently, as the dirt accumulated, they turned all kinds of horrid tints, and the house looked dirtier and shabbier than ever. —*Tinsley's Magazine.*

OCTOBER, NOVEMBER, and DECEMBER numbers of this year will be given free to all new subscribers for 1885.

Strength and Wear of Building Materials.

THE question of the rapid crumbling and disintegration of mineral building materials, is one that architects and builders throughout the entire country should be interested in.

A sample of material may respond favorably to all the known tests to determine its strength and elasticity, and still show evidence of short life when placed in the walls or foundations of a building. Especially is this true as regards stone. To begin with, when we estimate the value of any variety of stone for any specific purpose, we must keep in mind the circumstances and conditions around and under which it is to rest, and do service:—

1st. In the average climate of America it will have to bear in the direct rays of a July sun, a heat of 120° Fahrenheit on the outside, while inside it may not be more than 70° Fahrenheit.

2d. In winter it may be exposed to an exterior temperature of 20° Fahrenheit below zero, and an interior heat of 70° Fahrenheit above zero, or 90° of difference; and though mathematics are of no aid in enabling us to determine and point out that fine point where these opposite forces of contraction and expansion meet, that we may partially provide for it in the upward and downward pressure, it amounts to the most gigantic force known, which has an effect in destroying the molecular cohesion of the particles constituting the stone. It must give to one side or the other under the enormous force applied on that side, and reversed on the other, besides the great pressure to which it is constantly subjected by the stone above, and the resistance afforded by every stone from the very foundation until it is reached.

3d. The great majority of building-stones show upon analysis traces of calcium, terrous oxides, etc. The larger number of buildings constructed of stone are located in cities and towns where coal is used for fuel, the fumes of which coming in contact with an atmosphere already impregnated with other elements, form those acids and gases, which uniting with the elements of the stone cause disastrous results.

It is no wonder, then, that immense walls, apparently compact and homogeneous, open in cracks, split off in layers, and burst in pieces.

4th. A stone newly taken from the quarry loses in weight by exposure by the evaporation of its natural moisture; this leaves all these minute interstices or pores invitingly open to rains and atmospheric moisture; hence when the frosts of our nothern winters come, it is no wonder so many walls are out of line, and unsafe without repairing or renewal. This force of frost during the past winter, even in the South, puts to shame the power of a Corliss engine or hydraulic press.

The dilapidation produced by alternate freezing and thawing; the changes from protracted droughts to incessant moisture; from excessive heat to cold; the difference of temperature at the same moment between the opposite sides of the same block, the tendency to split off, and the lamination of unequal densities, and many more, are all grave obstructions to the use of building stone in this climate that would sink into comparative insignificance in other countries.

That many buildings become unsafe, and innocent persons get the blame, there is not the least doubt. A magnificent structure falls with a crash, the builder is berated, the architect censured, when if the truth was known, in many instances the silent, subtle influences mentioned above had been at work, and no one was to blame.

Before proceeding farther with our discussion, we will consider the condition of material under pressure, and subjected to tension.

If we take a piece of wood, and carefully estimate the force required to tear it asunder, we will notice that lengthwise of the grain requires the greatest force. If we subject it to pressure across the grain, for every degree we bend it we find this resistance increased 11.617 per cent. (an average of thirteen varieties of wood tested), increasing in direct ratio until sufficiently bent to displace its molecules, when, of course, its strength decreases rapidly. Timbers, then, subjected to a certain tension in a building will outwear those not subjected to it. Again, a timber bearing a certain number of tons of weight for a certain length of time, will bear a much heavier weight without being unsafe, than if the timber having lain idle, as it were, should afterwards be loaded. This increase of strength is quite striking, as may be proved by the following experiment:—

Three pieces of some brittle wood, carefully made of equal size, are placed side by side, with the ends resting on some firm base, and on one is placed 100 grams, and on another 500 grams, and they are then left for a week or more in a warm, dry situation. The one bearing the greatest weight will have bent the most, and will bear more added weight than the more lightly loaded piece, while the same weight placed on number three will break it. This proves conclusively that a certain weight placed on a timber, renders it capable of bearing one still greater subsequently. A timber with all it will bear without displacement, will actualy bear more additional weight subsequently, and keep on increasing in both its wrenching and tensile strength than if it be laden one-half as heavily at the outset.

Viewed with the microscope we find that the instant wood is bent out of the true the fibres become closer at the bend or angle. Now if the pressure is continued just far enough to bring these in actual contact without force sufficient to mar or bruise them, they adapt themselves to the situation, and are absolutely *glued together* by the gummy substances liberated by the cells ruptured in the bending.

Furthermore, timbers subjected to pressure will decay less rapidly than when not. A stick of lancewood bent double, and the ends made secure, and the same exposed to the influences of decomposition will show the effects much sooner in those portions not bent, than where the sharp angle appears; moreover, a stick actually broken in bending will not rot so soon at the break as at some distance from it, and fungous growths rarely appear at the point of bending as soon as elsewhere.

At first sight it would appear that, subjected to constant pressure, wood would undergo the same change as iron, but experience has demonstrated the contrary. In some of the ancient ruins of Europe we notice this fact: that those portions which apparently sustained the greatest pressure, such as roof-trusses, gables, etc., were in a much better state of preservation than the joists which were merely supports for nailing, etc. All who have visited "Duckey Hall" in Lincolnshire, will recall, perhaps, in the east wing of those massive ruins, some bits of curved cornice apparently in an excellent state of preservation, while all around has long shown evidence of advanced decay. For a long time it was supposed that this round coping was of metal, but when a few years ago this wing or tower blew down it was found to be a species of deal, which had been forcibly bent and secured while green,—probably, at the time of the building of this castle, little if anything was known of steaming,—and when these boards were released from the pressure to which they had been submitted for centuries, they began to take their original or straight form; of course, but partially; nevertheless, the ends sprang apart nearly an inch when liberated, showing conclusively, that with all the influences which had been at work destroying the adjacent woodwork, these boards subjected to this pressure had not lost their power of attempting to return to their original shape.—*J. F. E., in The American Architect.*

Drilling Holes in Glass.

FOR drilling holes in glass, a common steel drill, well made and well tempered, is the best tool. The steel should be forged at a low temperature, so as to be sure not to burn it, and then tempered as hard as possible in a bath of salt water that has been well boiled. Such a drill will go through glass very rapidly if kept well moistened with turpentine in which some camphor has been dissolved. Diluted sulphuric acid is equally good, if not better. It is stated that, at Berlin, glass castings for pump-barrels, etc., are drilled, planed and bored, like iron ones, and in the same lathes and machines, by the aid of sulphuric acid. A little practice with these different plans will enable the operator to cut and work glass as easily as brass or iron.

DRYING WOOD IN SAND.—An Eastern contemporary says that small pieces of wood, such as are used by joiners and furniture makers, can be readily and effectually dried by being placed in dry sand, and then heated to 100 degrees. By this process the sand acts in the manner of an absorber of the moisture, as well as a diffuser of the heat, and the effect is uniform and complete.

"ENGINEER full; boiler empty;" is the way Western paper accounts for an accident.

More Conumdrums.

WE have an invalid in our family, who needs of all things, through the summer months' the free air of heaven. She cannot even climb the stairs to and from her own room in the second story.—Can you tell me if it would look badly to have an upper room, detached from the main building, open on all sides, but connected with the house by a bridge or something of the sort? Hanging balconies are very well as far as they go, but I want to get further away from the house, so that we can look out in all directions. I have never seen anything of the kind, but should think it might be done. Yours truly, ——.

To the main question, whether such an elevated external attachment to an invalid's chamber would look bad, we can only say it would depend. We can imagine situations where a magnified marten box standing on posts, a few feet, more or less, from the house, would be an entirely agreeable-looking affair. Probably in most cases it would be best to make some use of the first story as well as of the second, although, if it happened to be where the ground below was needed for a walk, a drive, a flower-bed, or some such purpose, there could be no objection to its standing upon its four bare legs, like any other independent quadruped. Probably the most satisfactory plan for it would be upon one of the southerly corners of the house, say the northeast corner of the balcony, or whatever you call it, contiguous to the southwest corner of the main house, like two black squares on a chess board. This would not seriously interfere with the outlooks from the main windows.

While you are about it why not make the connecting link a draw-bridge, so that your invalid, after taking possession of the premises, could pitch her pill boxes overboard and snap her fingers at the doctor?

Do they make rooms without sills to the doors? Ours are a great nuisance.

The raised sills, or thresholds, whatever they may be called, meaning the piece of wood laid on the top of the floor underneath doors, may be, and often are, very properly omitted. You are quite right in thinking the high barrier between adjoining rooms a great nuisance. Of course you cannot allow a door to fit as closely to the floor or carpet as it may to the top of the raised threshold, it would not swing freely and when hung upon hinges at one side a door will sag after a time if not supported when shut. The latter fault can be guarded against by fixing a small rest of metal, or hard wood, near the jamb opposite the hinges, which would be no more unsightly than the other door trimmings, and the crack underneath is not a serious defect, unless you are very much afraid of spiders. Sliding doors are usually best hung at the top, avoiding the track on the floor; and thresholds, if used, should not exceed half an inch in thickness.

Would it be practicable to have one side of my sitting-room entirely of glass and so constructed that it could open out in summer like a roof? In that case could I have an outside stone floor level with the floor inside?

The chief objections to building a house on the flap or awning principle, that is, with the entire broad side of one or more rooms hinged at the top, and so made that it could be raised into a position nearly horizontal, would be the expense of the machinery required to move it easily, and the extra labor of building the movable sides in such shape that they would be satisfactory as outside walls when closed, and as roofs when open. Of course it is possible; all things are possible to those who have ingenuity and money. A floor for the outside part, that is, for what would be under this broad side when it was raised up, ought to be of something besides wood, for the sake of durability. Bricks, tiles, or some kind of concrete would answer as well as stone.

We live in the country, away from the region of paved walks. What kind of a walk can I make (not too expensive) all around the house, so we can get a little exercise in the open air without wet feet?

The cheapest, and, on the whole, the most satisfactory walk for the country during the seasons of dew, mud, rain, and snow, is a stout pair of overshoes. A walk of this kind can be taken up and laid down where it will do the most good, with the utmost speed and facility. It can be kept clean and dry with very little trouble, and is not expensive. Those who are accustomed to use it enjoy a freedom of movement and an immunity from the perils of locomotion that are unknown to pedestrians whose comfort depends on the condition of the sidewalks.

To speak seriously, it is amazing that country and village people pay so little regard to the walks in the streets and about their houses. We suppose our correspondent has in mind what might be called a terrace or promenade immediately around the house, a sort of "ghost's walk," from which the snow could easily be swept, and from which the water would run off quickly. A concrete or asphalt paving, like that used for sidewalks, would be the cleanest and most appropriate material for such a purpose, and probably the cheapest.—*The Builder.*

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OF SAN FRANCISCO,
Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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WESTERN IRON WORKS, 123 and 125 Beale St.	" 67
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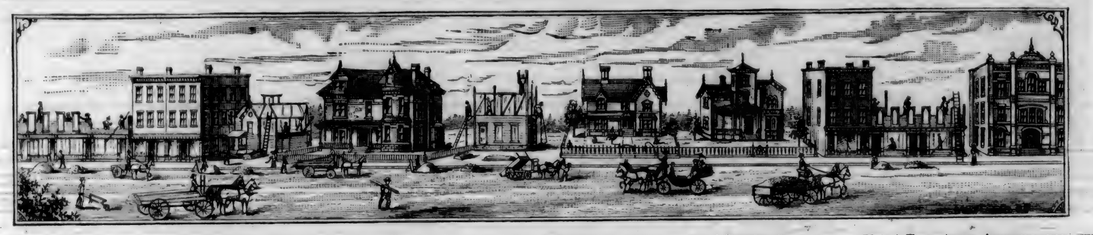

BUILDING INTELLIGENCE.

SAN FRANCISCO.

Clara Avenue, nr. Seventeenth. Two-story frame.
O.—J. Esse.
Day's wor .
$2,000.

Hancock, nr. Noe. Additions.
O.—H. Winterbotom.
Day's work.
$1,200.

Hardy, nr. Sixteenth. One-story frame.
O.—T. Darcy.
Day's work.
$1,200.

Sixteenth, nr. Sanchez. One story frame.
O.—Mr. Ast.
C.—J. H. Bartlett.
$1,000.

Market, nr. Church. One-story frame.
O.—G. Smith.
C.—Moore Bros.
$1,000.

Waller, cor. Fillmore. Alterations and additions.
O.—W. Stapelreldt.
C.—G. Krohn.
$4,700.

Fillmore, ni. Haight. Two-story frame.
O. M. J. Crowley.
A.—A. Barnet.
C.—P. McCann
$4,250.

Waller, near Devisadero. Four one-story frames.
O. and B.—J. Hinkle.
$8,800.

Fell, nr. Steiner. Alterations.
O.—J. J. More.
Day's work.
$2,000.

Fell, cor. Webster. Three-story and basement frame.
O. and B.—J. Powning.
$25,000.

Fell, cor. Laguna. Two-story frame.
O.—R. Dickson.
C.—J. Stuart MacKay.
$6,500.

Twenty sixth, nr. Capp. Repairs.
O.—T. Clifford.
A.—M. J. Welsh.
C.—C. E. Dunshee.
$500.

Eugen a, nr. Mission. Alterations.
O.—J. Gaherty.
A.—M. J. Welsh.
C.—N. McComas.
$600.

Guerrero, nr. Eighteenth. two-story frame.
O.—Mrs. A. Hart.
A.—M. J. Welsh.
C.—J. Blake.
$5,000.

California Avenue, nr. Mission. One story frame.
O.—P. Murray.
A.—M. J. Welsh.
C.—Grace & Doyle.
$600

Shotwell, nr. Twenty-first. Two-story frame.
O.—S. Smith.
A.—M. J. Welsh.
Day's work.
$6,000.

Twenty ninth, nr. Sanchez. One story frame.
O.—F. Nelson.
C.—J. Nelson.
$1,000

Buchanan, nr. Post. One-story and basement frame.
C.—N. P. Langland.
$3,000.

Twenty eighth, near Guerrero. Three one-story frames.
O.—Mr. Cleavesahl.
C.—J. A. Ehmann.
$4,000.

San Jose Avenue, near Duncan. Two-story frame.
O.—Mrs. A. Johnson.
C.—H. L. Koefoed.
$2,000.

Twenty-eighth, near Church. One-story frame.
O.—Mr. Bennett.
C.—J. M. Comerford.
$1,200.

Diamond, nr. Twentieth. One-story frame.
O.—Mr. Helmas.
A.—Townsend & Wyneken.
Day's work.
$2,000.

Pacific, nr. Sansome. Two-story frame.
O.—A. Chicizala.
C.—G. Rocca.
$3,000.

Shotwell, near Fifteenth. One-story frame.
O.—Mrs. Dowlan.
Day's work.
$1,600.

Howard, corner Twenty-second. Ten two-story frames.
O.—M. Landers.
A.—J. H. Littlefield.
C.—Treadwell & Thompson.
$40,000.

Sutter, nr. Buchanan. Two two-story frames.
O.—C. Jones.
A.—J. H. Littlefield.
C.—Hatfield & McRae.
$7,500.

Pacific Avenue, near Gough. Two two-story frames.
O.—Mrs. M. G. Perkins.
A.—J. T. Kidd.
C.—R. B. Hicks.
$11,500.

Ninth, nr. Minna. Additions.
O.—J. W. Keough.
A.—M. J. Welsh.
C.—A. J. Beecher.
$2,100.

Stevenson, nr. Nineteenth. Additions.
O.—M. Bievis.
C.—J. H. thom Wohrden.
$1,800.

Nineteenth, nr. Stevenson. One-story frame.
O.—W. F. Fuller.
A.—W. H. Bayless.
C.—W. Langstaff.
$2,500.

Nineteenth, nr. Stevenson. One story frame.
O.—Mr. Gould.
A.—W. H. Bayless.
C.—W. Langstaff.
$2,500.

Twentieth, nr. Valencia. Two-story frame.
O.—J. A. Spanner.
Day's work.
$3,200.

Page, nr. Octavia. Two-story frame.
O.—J. McLoughlin.
A.—J. J. Clark.
C.—J. Carbery.
$4,000.

Fifth, cor. Shipley. Alterations.
O.—Hibernia Bank.
A.—Huenne & Everett.
C.—F. Buckley.
$2,700.

Market, opposite Seventh. Three-story brick.
O.—A. Kohler.
A.—J. Gosling.
C.—J. W. Duncan.
$14,000.

Howard, nr. Seventeenth. Alterations.
O.—H. Horstmann
A.—H. Gellluss.
C.—H. Meyn.
$1,000.

Pacific Avenue, near Steiner. One-story frame.
O.—L. Holtz.
A.—H. Gellhass.
C.—H. Meyn.
$2,500.

Howard, nr. Fourth. Two-story frame.
O.—E. M. & F. H. Jones.
Day's work.
$9,000.

Jackson, nr. Davis. Three-story brick.
O.—Mrs. Kirbey.
A.—J. Marquis.
C.—Hatfield & McRae.
$10,000.

California, nr. Buchanan. Two-story frame.
O.—Dr. Bowie.
A.—W. P. Moore.
C.—A. Jackson.

Castro, corner Fifteenth. Two-story frame.
O.—G. Krutmeyer.
A.—Townsend & Wyneken.
C.—T. Somerset.
$6,000.

Filbert, nr. Mason. Alterations.
O.—Mrs. M. Boland.
A.—Townsend & Wyneken.
C.—Brown & Bridget.
$700.

Filbert, nr. Mason. Two-story frame.
O.—Miss Patterson.
A.—Townsend & Wyneken.
C.—Rines.
$1,500.

Howard, near Fifteenth. Alterations.
O.—Mr. Crance.
A.—Townsend & Wyneken.
C.—J. Lynch.
$1,200.

Bryant, nr. Eighth. Alterations.
O.—O. Casey.
Day's work.
$900.

Oak, cor. Webster. Two-story frame.
O.—J. Carroll.
A.—J. J. Clark.
C.—J. Adams.
$7,000.

Geary, nr. Gough. Alterations
O.—C. Offer.
A.—G. E. Voelkel.
C.—J. H. thom Wohrden.
$1,400.

Harrison, nr. Eighteenth. Two-story frame.
O.—I. Hoeggins.
A.—G. E. Voelkel.
C.—W. Pluns.
$7,500.

Buchanan, nr. California. Two-story frame.
O.—F. G. Atherton.
A.—C. Day.
C.—Ingerson & Gore.
$5,000.

Eddy, nr. Larkin. Three two-story frames.
O.—H. T. Crane.
A.—McDougall & Son.
C.—Terrill.
$20,000.

Fulton, nr. Fillmore. Two two-story frames.
O.—S. H. Brodie.
A.—McDougall & Son.
C.—Leonard & Haskell.
$12,000.

Golden Gate Avenue, cor. Webster. Six two-story frames.
O.—S. H. Brodie.
A.—McDougall & Son.
C.—Leonard & Haskell.
$41,000.

Polk, nr. Grove. Two-story frame.
O.—Mrs. D. Lydon.
A.—T. J. Welsh.
C.—Anderson Bros.
$6,000.

Golden Gate Avenue, near Webster. Two-story frame.
O.—J. A. Zollver.
A.—Schmidt & Havens.
C.—Gray & Stover.
$5,500.

Washington, nr. Devisadero. Two-story frame.
O.—Mrs. C. J. Henning.
A.—Schmidt & Havens.
C.—R. P. Traxler.
$3,500.

Grove, nr. Buchanan. Two two-story frames.
O.—G. W. Young.
A.—Schmidt & Havens.
C.—J. A. Hayden.
$11,000.

Howard, cor. Tenth. Two two-story frames.
O.—Mr. Golder.
A.—Schmidt & Havens.
C.—J. A. Hayden.
$7,500.

Dupont, near Broadway. Two-story frame.
O.—Mrs. Riordon.
A.—Curtis & Bennett.
C.—A. Jackson.
$2,000.

Point Lobos Avenue. One-story frame.
O.—M. Baloun.
A.—S. and J. C. Newsom.
C.—J. Dougherty.
$3,000.

Leavenworth, nr. Geary. Alterations.
O.—R. Roemer.
A.—A. C. Lutgens.
C.—J. H. McInnes.
$600.

Sutter, nr. Broderick. Two-story frame.
O.—J. C. Mayers.
A.—T. J. Welsh.
C.—J. Drury.
$3,500.

Jones, nr. Broadway. Two-story frame.
O.—Mr. Foley.
A.—T. J. Welsh.
C.—A. M. Nelson.
$2,700.

Fell, nr. Octavia. Two-story frame.
O.—Judge Cooney.
A.—T. J. Welsh.
C.—P. J. Owens.
$7,000.

Gough, nr. Grove. Alterations.
O.—T. Adams.
A.—T. J. Welsh.
C.—J. W. Smith.
$2,000.

Welsh, cor. Zoe. One-story frame.
O.—Mr. Riley.
A.—T. J. Welsh.
C.—R. Doyle.
$1,400.

Valencia, cor. Eighteenth. Two-story frame.
O.—W. McGreevy.
A.—T. J. Welsh.
C.—J. Blake.
$7,000.

Devisadero, corner Pine. Two-story frame.
O.—Adam .
A.—J. C. Pelton.
C.—S. M. Hills.

Steiner, nr. California. Additions.
O.—Mr. McKewen.
C.—W. Burke.
$1,500

Polk, nr. Bush. Two-story and basement frame.
O. and B.—J. Gale.
$8,000.

Austin, No. 106. Alterations.
O.—M. Davis.
A.—Wolfe & Son.
C.— — Crisman.
$1,000.

Cemetery Avenue, near Bush. One-story frame.
O.—Mr. Matthews.
C.—Hatfield & McRae.
$2,500.

Bush, nr. Baker. One-story and basement frame.
O. and B.—D. F. McGraw.
$2,500.

California, nr. Baker. Two two-story frames.
O.—Mr. Zackerison.
C.—W. F. Muller.
$6,000.

Devisadero, near Sutter. Additions.
O.—S. P. Quint.
Day's work.
$2,000.

MISCELLANEOUS.

Oakland—Highland Park. One-story frame. O., E. C. Servene; C., Veitch & Knowles; $2,000. Two-story frame. O., M. Goldberg; A., C. Mau; C., B. Smilie; $15,000. Two-story frame. O., Dr. Heinimann; A., C. Mau; C., W. Dahl; $4,500. Two-story frame. O., Mr. McGillery; A., C. Mau; C., — Winne; $4,000. Frederick, nr. Telegraph ave. One-story and basement frame. O., F. Belger; A., C. Mau; day's work; $3,500. Fourth, nr. Broadway. One-story frame O., W. Sagehorn; A., C. Mau; C., A. Herms; $2,000. Sixth, nr. Jefferson. Two-story frame. O., H. Gallager; A., T. D. Newsom; C., J. Coveny; $4,000. Oakland Gas Works. Electric Building. C., Veitch & Knowles; $2,500. Market, nr. Seventh. One-story frame. O., — Porter; A., S. and J. C. Newsom; $2,600.

East Oakland—One-story frame. O., G. Fisher; A., T. D. Newsom; C., — Hatcher; $2,800. Sixth ave., cor. Eleventh. Additions. O., Mr. King; A., S. and J. C. Newsom; day's work: $4,000. Sixth ave., cor. Fourteenth Two-story frame. C., J. Evans; A., S. and J. C. Newsom; day's work; $5,000.

Alameda—One-story frame. O., Mr. Andrews; A., S. and J. C. Newsom; $2,200.

Sacramento—Ventilating and plumbing Capitol Building. A., Curtis & Bennett; C., Muir & Smith; $9,000.

Berkeley—Two one-story frames. O., Mrs. Bossee; C., Veitch & Knowles; $3,000. Two-story frame. O., H. McAvoy; A., T. D. Newsom; C., Higgins & Son; $2,500.

San Jose—Stockton Ave. Two-story frame. O., E. C. Smith; A., J. O. McKee; C., A. J. McIlwain; $4,000. Fifth, One-story frame. O., L. F. Curtis; A., J. O. McKee; C., R. Summers; $2,000.

Woodland—Lincoln Ave. Two-story frame. O., J. O. Maxwell; A. and C., W. H. Carson; $3,000.—Second. One-story frame. O., S. Willet; C., Glenn & White; $1,500. Second. One-story frame. O., John Mohler; day's work; $1,500. South Fifth. One-story frame. O., Wm. M. Lee; C., Gilbert & Son; $1,200. South Fifth Street. One-story frame. O., B. R. Clay; C., S. Audlum; $1,100. Main. One-story brick addition. O., Lowe & Hollingsworth; C., D. S. Scott; $1,658. One-story frame. O., Jason Watkins; C., A. Stamp; $1,000.

Yolo—Addition and improvements. O., Hoppin Bros.; C., W. H. Winnie; $1,000.

Madison—Two-story frame. O., Ed. Lawson; C., R. B. Nisson; $2,500. Two-story frame. O., E. R. Howard; C., R. B. Nisson; $3,000.

Black's Station—Dwelling, carriage house, and barns. O., Charles E. Byrns; day's work; $5,550.

BLUM, EPPSTEIN & MARSH.
MANUFACTURERS OF
Inlaid Wood Flooring
WOODEN MANTLES,
Hard Wood Interiors.
Office and Parlors 126 Kearny St., 2nd Floor,
FACTORY 209–227 FELL ST.,
SAN FRANCISCO, - - CAL.

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Advertisements inserted for three months or less are payable in advance; payable quarterly when inserted for a longer period.

When money is sent for subscriptions, the receipt of a copy of this journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

RETROSPECT FOR 1884.

The Most Successful Building Period on Record—An Average of 94 New Buildings Per Month.

TRULY the year now in its last days may be said to have been the mechanics' harvest. At no time during the twelve months was there a lack of work for *good* workmen in any branch of the mechanical trades. Masons have been especially busy, owing to the number of large buildings that have been erected, or are now in process of construction. But even the great number of skilled men on the new brick edifices now adorning our principal streets, is not equal to the small army required to substitute

BRICK FOR WOODEN FOUNDATIONS,

And for the necessary building of chimneys, bulkheads, nogging, etc., in the frame structures.

The substitution of brick for wooden foundations, in many of the buildings erected by the "*Real Estate Associates*," has now come to be a necessity. The old wooden mudsills are sadly rotting away, proving that redwood is not imperishable. This is particularly noticeable in the Mission, several of the buildings erected by the above-named Association having lately had brick substituted for wood. Several more will soon undergo the same process. Owners now are wisely concluding to stand the extra expense of brick when they first build, and not wait till wood is completely rotted out before they make the change.

CARPENTERS.

Although there has been an unusual demand for carpenters in the city, still there has been a bountiful supply of men, *such as they are*. The skilled mechanics have all been busy, and have put in nearly full time.

Owing to the lack of country work, we have been blessed (?) with an army of "piece-workers," who have generally, for the greater part of the year, sought odd jobs around the country. These men have found it hard to obtain employment, as a few days' trial generally lets them out; and even when a job is obtained, the rustic and flooring are soon placed in position, and then they must give way to *mechanics*.

WORK IN THE COUNTRY

Has been very light and scattering, owing to the generally low prices received by the farmers for their material. In 1882

NUMEROUS FIRES IN COUNTRY TOWNS

Gave the opportunity to hundreds of men to secure rebuilding contracts. The year just ending has been remarkably free from large conflagrations, and we do not call to mind a single town that has suffered enough, in this regard, to cause a hegira among the wood-workers.

WAGES FIRM.

All through the year wages remained firm, and steadier remunerative prices have been secured by mechanics than for any similar period, even the army of piece-workers not being able to reduce the wages of the regular hands.

LATHERS AND PLASTERERS.

Artisans in the above line have been very busy during the entire year—in fact, so much so that at times work has been delayed on account of a scarcity of help.

SUMMARY.

We present below a summary of building operations for the year. More than usual interest attaches to the same, as it is by considerable, the largest showing for any year of which we have a record.

	Frame Buildings.		Brick Buildings.		Repairs and Alterations.		Total No. of B'ld'gs for Mo.	Total Cost for Month.
	No.	Cost.	No.	Cost.	No.	Cost.		
January	30	$176,600	1	$ 5,400	14	$ 44,115	45	$226,115
February	36	112,650	3	179,700	5	37,200	44	329,550
March	98	291,150	3	128,500	8	39,000	109	458,650
April	100	535,655	3	297,000	18	69,900	121	902,555
May	79	449,660			19	105,800	98	555,460
June	92	433,700	1	60,000	19	68,200	112	561,900
July	69	340,200	4	253,545	14	40,164	87	633,909
August	75	321,500	4	336,500	11	34,800	90	692,800
September	83	366,456	2	210,000	19	50,100	104	626,556
October	69	340,890	2	42,000	25	77,360	96	460,250
November	81	365,197	2	24,000	20	29,100	103	418,297
December	93	379,543			25	58,222	118	437,765
Total	905	4,112,201	25	1,536,645	197	553,961	1,127	6,302,807

It will be noticed that building in the latter half of the year is much greater than similar periods in any previous record.

The statement for December is a remarkable one, as it shows there have been commenced of improvements,

118 BUILDINGS OF THE VALUE OF $437,765.

For the sake of comparison we give the figures for each year from 1880.

YEAR.	BUILDINGS.	VALUE.
1880	397	$1,754,435
1881	533	3,790,732
1882	785	3,896,212
1883	803	5,261,689
1884	1127	6,302,807

We have given no credit in the above for money expended on the Flood mansion. The material for that building is being obtained in the East, and, of course, its value being paid *there*, cannot find a place in our estimates. We enter our protest against the expenditure of money East for material, the equal, if not superior article, being obtainable on this coast; especially do we regret, when we consider that the money for which the building is being erected was made from the working people of this coast, and they should have, at least, the chance to recover, by steady work, the money thrown away by assessments paid, to find its way by roundabout methods into the millionaire's pocket. In more than one instance have our Nob Hillites sent thousands of dollars East for work and materials which could have been duplicated on this coast, both in design and workmanship, and just for the simple reason that it would seem higher-toned to say this or that came from Berlin, Paris, or Kamschatka.

NOT A BUILDING BOOM,

In the general acceptation of that phrase, should the transactions of this year be classed. A reasonably busy activity has continued throughout the entire year, and in not a single instance have

ARCHITECTS BEEN CROWDED

With orders for work. True, most of those engaged in that profession have had a reasonable amount of work, but it has been obtained so gradually and steadily that at no time, without a single exception, have architects delayed their clients on account of rush of orders.

DRAUGHTSMEN.

There have lately come to this city quite a number of young men who are desirous of obtaining employment as draughtsmen. Their qualifications consist of about the following: Ability to trace drawings if not too difficult; can give directions to the head of the office how things ought to be done; able to copy specifications if the hard words are explained to them, and sundry other difficult acquirements. To all such we would say, California is not the place for your genius to show its brightness; keep away, for our people are not able to appreciate your talents.

FAITHFUL, CAPABLE MEN

Are the only kind wanted here, and if a few were to arrive of the calibre to meet the requirements of our architects, no doubt they would obtain steady employment.

THANKS.

We sincerely tender our thanks to all those who have so kindly assisted us in the past year, furnishing us information in regard to matters of interest to our readers.

A Success with Which We Are Pleased.

With this, the closing number of the sixth volume of this Journal, it is fitting and proper that we should again express our sincere acknowledgments of the manifold favors and encouragements received, and return heartfelt thanks to our friends and patrons for the liberal support extended in both subscription and advertising patronage, and to our numerous contemporaries who have manifested toward this Journal such marked appreciation of our efforts to make it worthy the high esteem in which it is held among the hundreds of publications of like class, import, and character.

It cannot be otherwise than acknowledged that its columns have not been made to subserve, in the slightest degree, the personal, professional interests of its proprietors. They have in no instance availed themselves of the privileges entirely under their control, of using its columns for their special benefit, but have freely, and with honest intent and pleasure, and without reserve, published from time to time, facts and statements of interest to others which, if made in reference to themselves, might have justified the charge of seeking to further ends and purposes not entirely in harmony with honorable and unselfish journalism. And as in the past, so in the future, its columns will be free from all selfish interests, beyond the legitimate profits of its publication, and the proud satisfaction of having it recognized as among the very best journals of its kind published in the United States. That it has reached this pleasing attitude in journalism, is fully demonstrated by the fact that our exchange list now numbers over one hundred and fifty, among which are all the well known and most influential publications of the country, and others from London and other parts of the world.

In looking back to the time when alone, and under tremendous disadvantages and discouragements, the senior editor embarked in the undertaking, its existence seems almost chimerical. It is questionable whether, under like circumstances, he or any other living man would undertake to repeat the venture. Without one single encouraging condition, with all—all mechanical, financial, commercial, and other interests prostrated, the terrible gloom that spread over the entire State through the heartless and reckless political agitations of the period prevailing in its severest form, a majority of the working classes scarcely able to procure the humblest necessaries of life, all combined to render the attempt almost a fete of daring, and nothing short of indomitable perseverance and obstinate fighting against untoward circumstances, gave it birth and vitality. But the worst has long since been past, and we have our sweet satisfaction in the grand result which we enjoy at this hour in seeing it advance to its present prosperous condition, and recognized in so many ways and from so many sources as an indispensable publication upon the Pacific Coast. In all this, since the earlier days of its existence, the junior editor has performed his part, and in all possible ways, to the very best of his ability and judgment, has allowed no opportunities of improvement to pass which could be secured by earnest effort and attention.

Tracing up from the commencement to the present time, a very marked difference is noticeable in the issues of 1879 and 1880, and those of the volume ending with the present number. We hope that the numbers of the seventh and all succeeding volumes will exhibit as marked a difference in the upward direction; at any rate, unceasing efforts will be made with strong hopes of success, and if our friends generally, and our brethren of the architectural profession could only be induced to *put into practice* some of the *hundreds of promises made to us*, to furnish pertinent and interesting articles upon some of the thousands of topics at their command, in architectural, constructive, sanatory, mechanical, inventive, and kindred sciences, they would thereby greatly benefit themselves and others, as well as assist in furnishing our readers with the rich fruits of many minds,—subjects analyzed and dressed up in form, theory and fact, according to views entertained, some of which may prove to be of inestimable value in ways at present not fully comprehended. Those who "cast bread upon the waters" are often made glad by its appearance "after many days."

San Francisco Chapter, American Institute of Architects.

The regular monthly meeting of the Chapter was held Friday evening, Dec. 5th. President A. Laver in the chair.

The committee on incorporating the Chapter reported progress. The articles have been filed, and but a few minor details are to be taken to have the Chapter in working order as an incorporated body.

Emil John was proposed for membership as an Associate. Referred to Messrs. Sanders, Pissis, and Moore.

The President, assisted by Mr. Gash, then presented prizes to the pupils to whom they were awarded, as follows:—

Max. G. Bugbee received a fine box of drawing instruments as first prize in free hand drawing.

Louis Stone received Ferguson's History of Architecture as first prize in architecture.

Robt. G. Frise received a similar prize to last mentioned as first prize in mathematics.

Wm. Lee and E. A. Williams each received a copy of Rosengarten's Hand Book of Architectural Styles, as special prizes for general proficiency and progress in the several branches.

A letter was received by Mr. Laver from the Royal Institute of British Architects, requesting the Chapter to indorse their movement in regard to holding an exhibition of American Arts and Sciences, to be held in London in 1886. The following committee were appointed to take action upon the same: Messrs. Laver, Gash, and Wright.

The teachers of the various classes were tendered a vote of thanks for their faithful services during the past year to the pupils under their charge.

OUR ILLUSTRATIONS.

A Comfortable $5,000 Country Home—The New Panorama Building—Rustic Cottages.

On pages 213, 214, 215 we present the elevation and plans of a comfortable country residence, costing about $5,000.

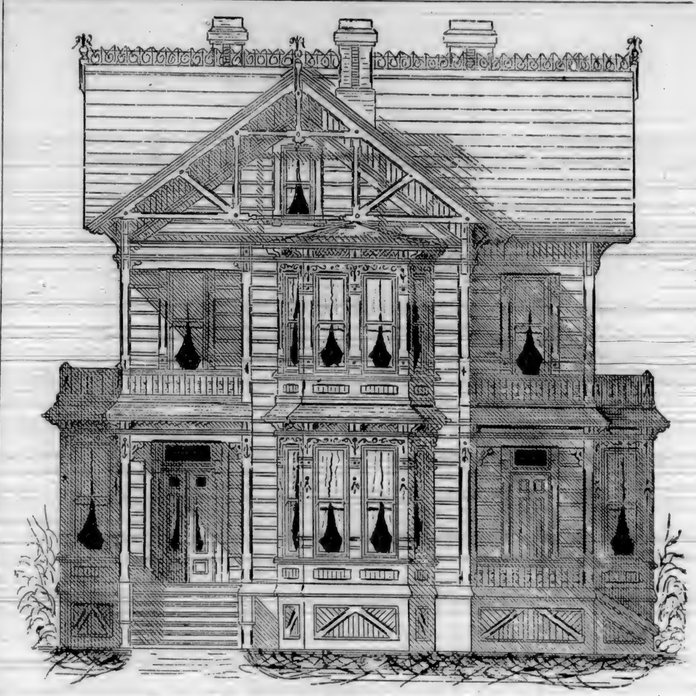
It will be noticed that every room on the first floor is accessible from the hall. This is an especial feature in country houses. The front hall can easily be converted into a waiting room by having curtains hung in the archway at the foot of the stairs. As a very general rule, Californians do not prefer the hall to be made into a reception room.

The sitting and dining-rooms are convenient and with the aid of the sliding doors can be practically made into one large room. The former is connected with the back porch by the door shown, and is thus easily accessible to members of the family without going through the main hall. Abundance of closet room is provided.

The second story plan will recommend itself for the comforts shown. Attention is called to the excellent arrangement of the water-closet, being easily accessible both from bath-room and hall.

The design shown on page 217, is that of the new Panorama Building, lately erected in this city, A. Pissis being the architect.

The other designs shown are for rustic cottages for a suburban town.



FRONT ELEVATION OF $5,000 COUNTRY DWELLING.

Our Exchanges.

We have made arrangements with the Editors of the following Journals, by which we are enabled to offer quite a reduction to those subscribing for any one of them in connection with this Journal.

(The figures in parenthesis denote the price of the journals alone.)

CALIFORNIA ARCHITECT AND BUILDING NEWS
Terms, $2.00 per annum.

With *American Architect* ($6.00), $7.00 per annum.
With *Builder and Wood Worker* ($1.00), $2.50 per annum.
With *Inland Architect and Builder* ($1.75), $3.25 per annum.
With *American Artisan* ($1.00), $2.50 per annum.
With *Building* ($1.00), $2.50 per annum.
With *North Western Lumberman* ($4.00), $5.00 per annum.
With *Scientific American* ($3.20), $4.50 per annum.
With *Leffels' Mechanical News* ($1.00), $2.50 per annum.
With *Decorator and Furnisher* ($4.00), $5.00 per annum.
With *American Machinist* ($2.50), $4.00 per annum.
With *The Wood Worker* ($1.00), $2.50 per annum.
With *The Builder* ($2.00), $3.50 per annum.
With *Hall's Journal of Health* ($1.00), $2.50 per annum.
With *Cincinnati Building Review* ($1.00), $2.50 per annum.

We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

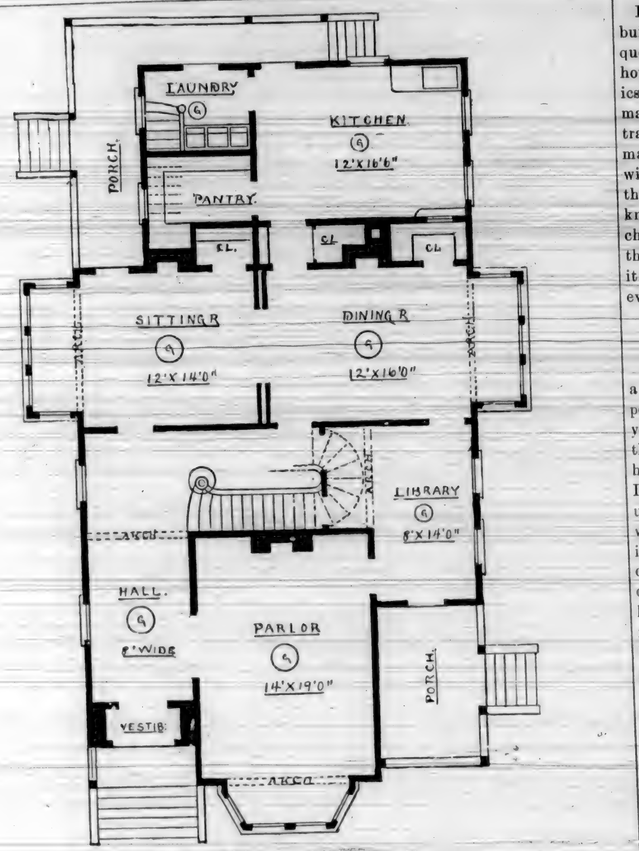
Chapter Incorporation.

Since our last issue, San Francisco Chapter of the American Institute of Architects has been duly incorporated under the statute of California, in such cases made and provided, with James E. Wolfe, Wm. Curlett, W. J. Mathews, G. H. Sanders, and T. J. Welsh as the incorporating trustees. The incorporation is to exist for fifty years, a period which suggests the thought, Will any of the present, practicing members of the Chapter, or any of the practicing members of the profession, now in San Francisco, not in membership, be upon this mortal stage of action at the expiration of the Chapter period? Some of the younger students and apprentice members, in all reasonable probability, will be, and it will certainly be a source of pleasure to those advanced to the silvery age of whitened locks—some of whom, in all human probability, will be called to pass from earthly scenes and pursuits, to the realities, whatever they may be, beyond the reach of human conception, ere even one of the five decades of incorporation shall have expired—to see the young men in the profession fostering, by their earnest interest and devotion, the institution now fixed, by the present active membership, upon a foundation which provides for its continued prosperity, with reasonable assurance that at the end of fifty years it will have grown in interest, and developed into an organization of great usefulness and influence, doing honor to the memory of those who founded it, and those who may hereafter sustain and enlarge its sphere of usefulness. Its growth, prosperity, and permanency is a matter which demands and justifies the personal interest of every well-wisher of the profession, and we hope the day will soon come when the name of not a single worthy and honorable member of the profession shall be missed from its roll.

Hammer or Nail—Query.

"Which gets the harder lick—a hammer or nail—when the nail is struck with a hammer?" Both alike, except, unfortunately, your finger should happen to share with the nail in its part of the "lick."

Steel Square and its Uses. Price, $1.00.



FIRST STORY PLAN OF $5,00 COUNTRY DWELLING.

The Mechanic's Christmas.

SURELY the Christmas now near at hand should be hailed with pleasure by all of our mechanics. The year now almost ended has been one of unusual activity, and those who have been frugal in their habits should have enough on hand to make glad the hearts of the little ones.

Wages have been kept up to the full standard for all desirable help throughout the year, and the immediate future is full of promise. Even with the work now in progress a goodly portion of our laboring population can command steady remunerative wages for a larger part of the time.

We wish one and all of those whose labor has done so much to beautify the city, a hearty and merry Christmas, and many a happy New Year.

A Bar of Square Wrought Iron, Supported at each end, and a load placed in the center, will bear much more weight when placed flat than hen placed on one corner. The difference is about as six to five.

Mechanics' Liens.

A BILL for a new mechanics' lien law was drawn up lately by representatives of the various trade unions assembled at the State Bureau of Labor Statistics. It modifies the existing law in this, that it gives laborers a prior claim over material men, where both have filed liens. As the matter now stands, liens on buildings are ranked as follows: First, all persons other than the original contractors and sub-contractors; second, the sub-contractors, and third, the original contractors. The first class consists of mechanics, material men, artisans, architects, and laborers of every class. It is now proposed to eliminate from this class the material men and subordinate their claim to that of the mechanic, artisan, and laborer. The proposition commends itself to justice and appears to be in conformity with sound principles of equity, for it is obvious that the furnisher of bricks and lumber and iron and glass and mortar can better stand a loss than the laborer, whose food depends on his daily earnings.

In actual practice, as all persons who have built houses will testify, the lien law more frequently causes hardship to the man who has a house built than to the builders and mechanics. It is quite a common occurrence for a man who has had a house built by a contractor to find his house liened by some workman whom the contractor has failed to settle with, and this after the owner has fully paid the contractor. In Chicago and Kansas City knavish contractors have made a practice of cheating their men, collecting full pay from the house-owner, and then leaving him to fight it out with the mechanics. No remedy for the evil was ever discovered.—*Chronicle.*

Decrease of Lumber Imports.

DURING the past sixty days there has been a less quantity of lumber shipped to this port than for any similar period in over two years. This is accounted for by the desire of the lumber merchants here to reduce stock on hand. As will be seen by our Building Intelligence, there are more buildings now under way than for any December month of which we have a record. The local demand is unusually large, and if the opening months of 1885 show the same activity in building circles as at present, by March the stock on hand will be so greatly reduced that the millmen will endeavor to convince the public that lumber is scarce, and thus pave the way to a general rise.

We are pleased to learn that several South American orders of large amounts have been received for lumber. The mills furnishing these orders will have the lumber shipped directly therefrom, so the "big yard across the bridge" will not be made any smaller by the orders received.

Some time ago it was proposed to frame a law by which it would be unlawful for a railroad company to increase their rates after having once made a reduction. The same principle ought to be applied to lumber, so that our capitalists and builders could calculate ahead of time, the price for which they could erect buildings, or make other improvements.

Modern Architectural Designs and Details. Price, $10.00.

SPECIAL OFFER.

BOUND VOLUMES OF THIS JOURNAL

TO NEW SUBSCRIBERS FOR 1885.

Upon receipt of $3.25 we will send a bound volume of this Journal of either 1880, 1881, or 1882 and the full year's numbers of 1885.

We have had an extra number bound of the years mentioned, and make this offer to increase our subscription list. We are bound to increase our list, so that the end of the year 1885 will witness not less than

TEN THOUSAND

Paying subscribers on our books.

Work and Wages.

THE naming of a day early in the spring of 1886 for a convention of representatives of all the labor organizations in the country, whereat steps shall be taken to make the legal working-day in every part of the country no more and no less than eight hours, makes it very desirable to expose the fallacy of the "eight-hour movement." As we have never seen it put in a more simple and understandable form than has lately been employed by the Boston *Herald*, we reproduce its arguments at length:—

WILTON, Me., September 29, 1884.

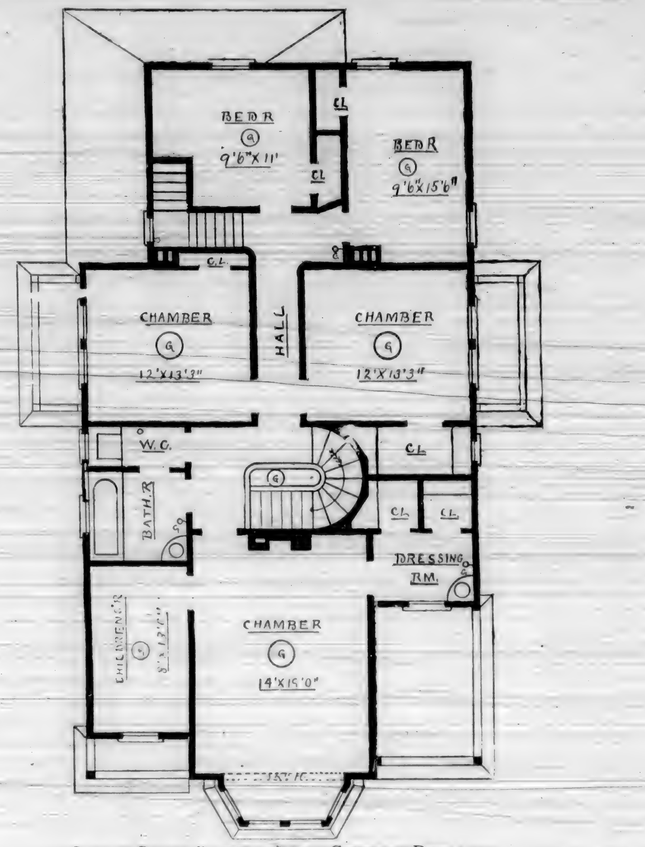
TO THE EDITOR OF THE HERALD.—In conversation recently with a gentleman from New York, a contractor and builder, and an ardent disciple of B. F. Butler, he advocated the passage of a law making eight hours constitute a day's work. He urged that its adoption would be immediately followed by a rise in wages, because it would create a demand for twenty per cent. more labor.

Now, I am confident this reasoning is incorrect, but I am unable to demonstrate its fallacy to my entire satisfaction, so I appeal to you to set me right.

If it will not trespass too largely upon your time and space, an answer through the columns of the *Herald* will greatly oblige, F. A. R.

The fallacy conveyed in the above assumption is a common one, and runs through all legislation in this country on industrial subjects. Thus, if the assumption were correct that a rigidly applied eight-hour law would be immediately followed by a rise in wages, on account of the demand for twenty per cent. more labor, then if work were restricted to two hours per day, there would be a still greater increase in wages on account of the demand for eighty per cent. more labor, that is to say, the less time a laborer worked, the more money he would receive, and hence, with two hours' toil out of the twenty-four, he would make very much more money than he now does by the steady strain of ten hours per day.

This is a delightful theory, and for the good of humanity it is a great pity that in its practical execution certain obstacles are met with which seriously militate against its efficacy. If it were possible of application, the entire problem of procuring for human beings in this world a happy and contented existence would be at once solved. With plenty of time for study and recreation, even the commonest workingman could be both a student and gentleman of leisure, while the scale of pay would be so high as to place every one far beyond the possibility of want. But, as we have said above, there are one or two slight obstacles in the way. If under an eight-hour law but four-fifths, or under a two-hour law but one-fifth, of the wealth is produced that is now the result of ten hours' labor, then necessarily there would be only four-fifths, or one-fifth, of the amount to divide among the workers and the capitalists. As a man cannot by taking thought add one cubit to his stature, so the people of a country cannot by legislation produce any more wealth than their daily work enables them to produce. Wages are paid from the wealth which labor produces, and if this production is restricted, then there must of necessity be a corresponding shrinkage in the rate of wages paid. If men could turn out as much in eight hours as they can in ten, then the rate of wages might be the same in either case; but not unless the results of work corresponded. To give a broad example: According to the census of 1880, there was produced that year in the United States wealth approximately amounting to $7,500,000,000. Of this, fully $6,500,000,000 worth of wealth, or $130 per individual, was used up during the year in supporting the life of the community, leaving a margin of saved or reserved wealth of not quite $1,000,000,000. Now, if the work of the entire community had been cut down twenty per cent. in amount, we should have produced in the year $1,500,000,000 less of wealth. If we had continued our consumption at the same rate, not only should we have laid nothing aside, but we should have begun the year 1881, $500,000,000 worse off in wealth than we were when we began the previous year. On the other hand, if the united work of the community had produced wealth to the amount of $15,000,000,000, then there would have been very much more to divide among all classes of the community. The consumption of wealth would have been much greater, and yet the surplus revenue left over could have been considerably larger than it was. In short, where there is a large production, there is of necessity large wages, where, where there is small production, the wages are correspondingly low. So long as time remains an element in production, the longer that a man works, everything else being equal, the greater will be the amount of wealth he will produce, and the larger the amount of wages that can be paid him. In order that there be no mistake, we would add that it frequently happens that a man can produce more wealth by the work of ten hours than by the work of twelve, fourteen, or sixteen hours per day, for the reason that the strain upon his physical and mental powers by continued application makes it impossible for him to perform careful and effective service during these long periods of time.



SECOND STORY PLAN OF $5,000 COUNTRY DWELLING.

House Plans—a new work. Price, $2.50.

Panorama Building.

THERE has lately been erected in this city, a building that is different in construction from any that has as yet been built. Our engraving presents a very correct view of the Panorama Building.

It occupies the 50 Vara lot on the southwest corner of Mason and Eddy Streets. The building is in shape a polygon of sixteen sides, and is 126 feet in diameter. The outside walls are fifty feet in height, the apex of the roof being seventy-six feet. The building is strongly put together, and is admirably adapted for its intended purposes.

The entrance is broad, with rooms each side for ladies' parlors, etc. After passing the portals, two corridors are seen. One of these is intended for an entrance-way and the other for exit. These corridors are darkened so that a person entering from the street will gradually lose the effect of the outside light and be prepared for the different rays from the interior.

At the end of the corridors are winding stairs, four feet six inches wide. These lead to a platform in center of building. This platform is thirty-five feet in diameter and is capable of holding about 400 people.

From the platform, a grand view of the panorama may be seen. The picture extends clear around the whole building and is in size 48 by 380 feet. The first painting to be placed on exhibition will be the "Battle of Waterloo," the work of Joseph Bertram and L. Sargent.

The arrangement of the shades to regulate the lighting of the interior, is a novel one and much credit is due to its originator. The architect of the structure is Mr. A. Pissis.

To Our "Mechanic" Patrons.

WE have been favored in the past with numerous most excellent and well-written articles from the pens of patrons who toil for their daily bread—mechanics whose thoughts are largely the result of practical, daily experience—the hours of study with such being but few, and those more generally after the physical, forces have been subjected to the strain of a more or less "hard day's work." So excellent have some of these articles been that they have been copied into numerous other journals and thereby given publicity throughout the length and breadth of our country; and beyond this, European journals have also copied, so that those, in many cases, who have given an hour or two to placing their thoughts and conceptions in shape for the columns of this Journal, have furnished matter read by hundreds of thousands of their fellow-men; and although they may never meet with merited, personal responses and acknowledgments, they nevertheless have done good work, which, if not otherwise compensated, may meet its reward in that grand hour when "every man shall receive according to the works done in the body." Prominent among these is "J. E. W. C.," whose articles have been well received, and largely copied. Mechanics of California are not hundreds of you allowing the golden opportunities at your disposal to pass unimproved, in not availing yourselves of the facilities presented through this journal to develop the mental, intellectual, and practical powers of mind and thought, which in so many are allowed to remain dormant through passive indifference and neglect, thus depriving yourselves of the benefits which never fail to follow in those who seek to improve themselves and their fellow-men by revealing and making known every best thought which earnest reflection, meditation, and free expression brings.

We have again and again proffered space in the columns of this Journal to all of every class, mechanics as well as architects, engineers, inventors, assigners, scientists, producers of material and devices, and all others, and our proffer has been accepted by many, but we again ask that many more may join the number, so that our seventh volume may be honored with numerous well-written articles, pertinent and expressive of new ideas, or of old in new dress. The *abilities* are not lacking; it is the absence of *will and purpose*, and in some, a selfishness which belittles and dishonors; a fear to "give away" that which, concealed, is of but little value, but which sown broadcast may carry joy to thousands. Individual human thought and knowledge are limited to the years of human life, if held in bondage until the hour of death, with which all thinking ends, and that which has been in our power to make useful to others, passes away with us, unless we fructify and enrich the soil of our existence, by scattering broadcast the seed of thought which God and nature has caused to form in us—for what purpose? to rot and perish in ourselves? No, but that we may plant them in other minds to grow and bring forth other seed, and harvests of rich, ripe fruit. Brethren, reflect and act accordingly. The columns of this journal are open for you, and we invite you to come with the best you can give, and if any have good thoughts and ideas, and feel to lack the word clothing necessary to make them presentable, come, and we will help you dress them up in the best style possible, according to our abilities so to do.

Brass in House Furnishing.

WHILST brass has at all times been employed for artistic purposes, it has been subject in this respect to the laws of fashion, being resorted to at one period more than another. From the mediæval age it has been continually patronized, however, for ecclesiastical furniture and its accessories, as in altar frontals, pedestals of fonts, and symbolic devices. The present tendency of decorative art toward rich and attractive colors, in material and in surface tints, and the freedom imparted to design, owing to the breaking up of former set styles, with the prevailing taste for the most cheerful possible aspect to interiors, and an improving standard of elegance and refinement, have led to a greater prominence than formerly was given in the use of brass furniture.

In cabinet work, builders' hardware and the ornaments that pertain to a well-furnished room, this metal has a well-defined sphere of employment. Considerable originality, with much good taste, is shown in the designs of the brass furniture brought out. Resort to fire-gilt gilding prevents all liability to tarnish, and this gilding, through the variation in hues that can be imparted to the surface, multiplies artistic effects, whether used separately or in combination. The surface of brass takes satin finish, dead lustre, brown bronze, and oxydized silver. Tiles and enamels in delicately tinted designs associate admirably with brass in furniture and general decorative work, so also dark woods. A quality decidedly favoring brass is that its beauty is enhanced by artificial light.

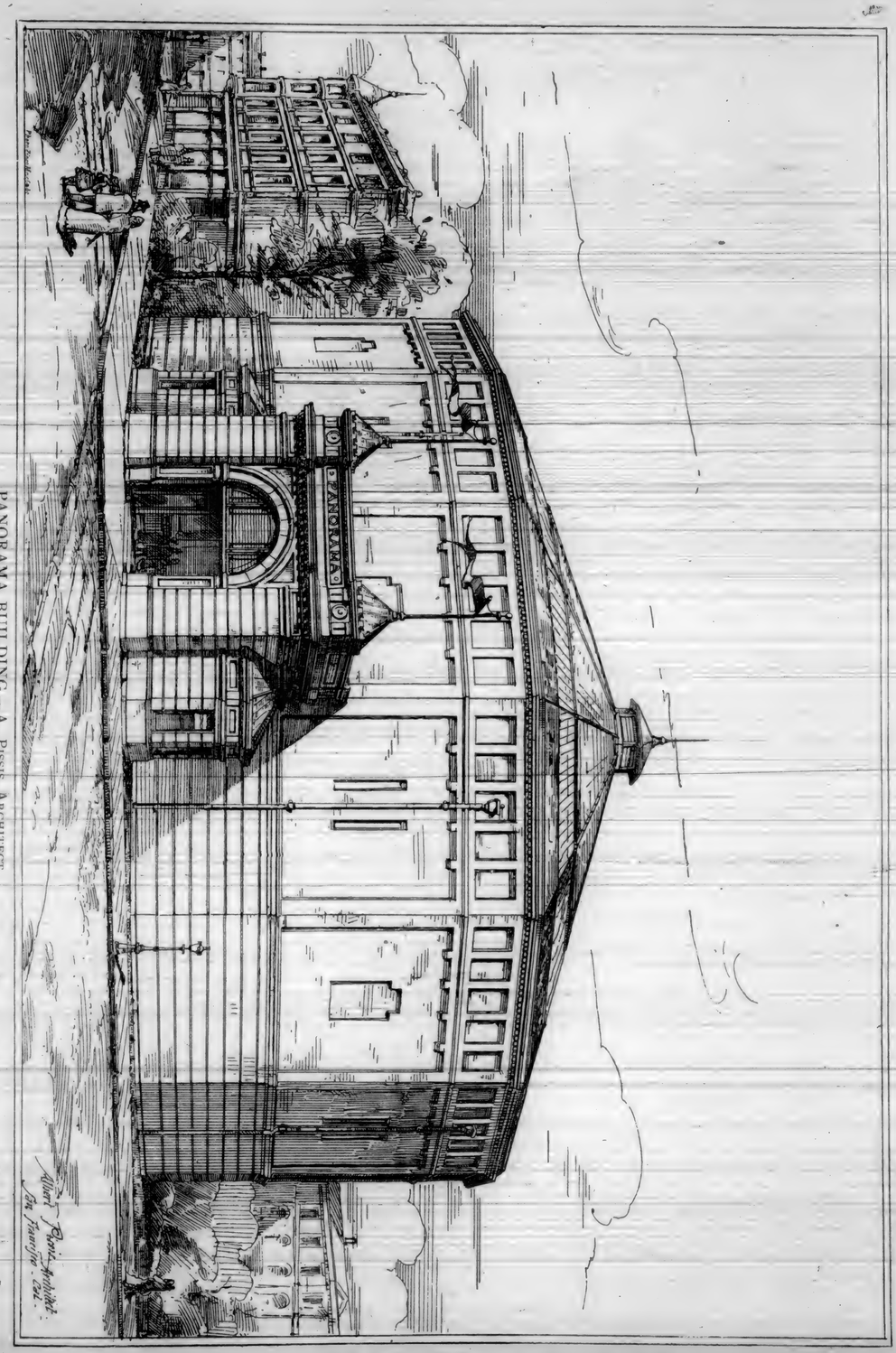
There is no question that in dealing with this metal, American art exhibits higher taste in furniture than in the greater proportion of that turned out in England. As a rule it is simple, and, if apparently less ornate, is more satisfactory. The elaborate ornament at low cost in the abounding English work is due to the employment of sheet metal stamped in imitation of wrought work, the moulds ensuring often an undesirable amount of uniformity.

The pieces of stamped in sheet metal, entirely composing an article, are riveted together. Stamped is used for picture frames, but is always wanting in the ancient wrought work for this purpose. It suits well such articles as coal and fire-wood boxes, of which some fine old examples are to be met, also for fire and stove screens. Owing to the thinness of stamped metal it is unsuitable for fenders; in fenders preference should be given to perforated designs of naturalistic formes conventionalized, or to mounted bars with standards.

Some admirable brass fire-gilt mantels, broad and lofty, and constituting imposing mural decorations, are finding their place in the city mansions. Other metal than brass, particularly hammered copper and oxydized silver, are frequently introduced in these for contrast and giving depth to the designs with other scenic effects, whilst painted tiles in brass panels, in diapered and other forms, line the several recesses.

Steel is well combined with brass both in fenders and fire and dog irons. One use to which raised brass work is well applied is for lining the backs of open fire-places, the design being commonly small diapered forms with central figures, or tiles sunk in panels. The rough filing of the surface off so as to give it a surface of rough and irregular sparkling grains for a coating, set off with burnished edges or terminals, was a favorite mode of decoration under the first French empire, particularly for chandeliers of the corona style, in the way of massive pendants.—*Decorator and Furnisher.*

Universal Assistant and Complete Mechanic. Price, $3.00.



PANORAMA BUILDING.—A. PISSIS, ARCHITECT.

DESIGN FOR A RUSTIC COUNTRY DWELLING.

Wages and Material.

FOR the convenience of many of our readers, we give the price of some of the building materials used, and labor in connection therewith:—

Rough Lumber	$18 00 per M.
Surfaced Lumber	33 00 " "
Lath	3 50 " "
Shingles	2 50 " "
Nails	2 75 " keg.
Hardware	Cheap.
Lime	1 50 per bbl.
Cement	$2 25 to 4 50 " "
Plastering	28 " yd.
LABOR.	
Carpenters	$3 50 per day.
Masons	5 00 " "
Cabinet Makers	3 50 " "
Hod Carriers	3 00 " "
Laborers	2 00 " "
Plumbers (and help)	6 00 " "

Glass, mantles, roofing, etc., can be had at low rates.

We print the above in answer to several questions received.

Architect's services are placed by the laws of the Chapter at $15.00 per day.

Draughtsmen command from $1.00 to $5.00 per day according to ability.

CAN you explain how it is that although water expands in freezing, a piece of wet board when frozen is smaller than at any other time? That it is so I have proved repeatedly, although I have heard the fact disputed. *A.*—The expansion of water ceases at the moment of congelation. Ice contracts by cold more than wood.

The Wall as an Architectural Feature.

PROFESSOR ROGER SMITH gave an interesting introductory lecture on this subject to the architectural students at University College, on Friday, the 3d inst., of which the following remarks formed a portion:—

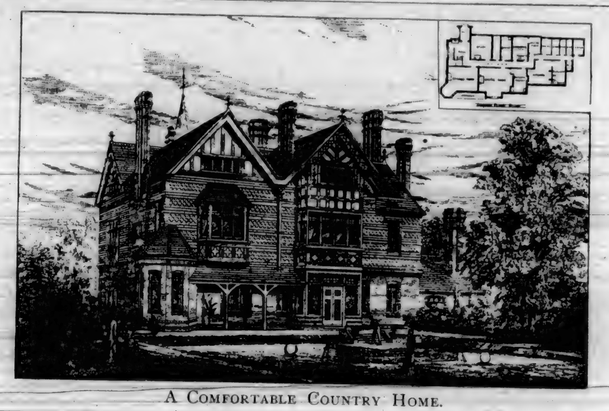
The preparation for building a wall is, as every one knows, to find or make a foundation. A bad foundation is literally, as well as in a figure of speech, at the bottom of most of the failures that occur in walls. When a good foundation is secured, the success of the wall is rendered possible. What is a good foundation? The best is one that is perfectly immovable and incompressible, such as rock. The house built upon a rock is the one safe to stand. Next to this, and only one degree less good, is the foundation which may yield or compress slightly under a load, but will do so with perfect uniformity. Soft, irregular, shifting foundations and those exposed to the action of water, frost, and air, are among the most notoriously bad ones. The ordinary London foundation is clay, in some cases mixed with loam or sand. In building on it great care is necessary; the foundation must be carried so far below the surface that frost will not penetrate to it. To secure this in the London climate you should go 4 feet deep, and even more.

The surface round the building should also be protected so as to prevent the percolation of water. The weights of the different parts of the wall should be as nearly uniform as possible, and they should not be extreme. Four tons per foot superficial is quite enough. It has become a practice of late years to form a kind of artificial rock of concrete upon the foundations of earth or clay, composed of small stones and lime or cement. This concrete, which hardens into an incompressible slab, admirably spreads and distributes the weight, and is of great use in preventing disaster. In the case of very bad foundations enormous quantities of concrete are often employed, and with success. The base of the wall, like the concrete, is below the level of the ground. It is, to some extent, a modern improvement, or, at least, it hangs on to the modern notion of building thin walls. In the Middle Ages, when walls were immensely thick, it was not very often customary to build them with spreading footings; now it is usual, and a most useful custom it is. Walls in London are required by law to be twice as wide at the bottom of the footings as they are themselves. Of all the properties a wall can possess I think stability is the most noteworthy. Of old this was sought in great thickness. The Romans first showed that constructive skill would enable men to build walls thinner than had been customary, and yet stable. Our modern walls are vastly thinner than those of the Romans; but then there are few modern buildings for which we expect, or could desire, a durability like that of ancient Roman work. Good materials, good putting together, and strong cement, with some amount of protection from weather, are what we must rely upon for the preservation of our walls. Homogeneousness, or the use of materials all of one sort, would seem at first sight to be essential to the construction of a good wall; and yet, though many ancient walls like those of Munich, and, I believe, those of Athens, were practically homogeneous, the walls cleverly put together by the Romans of three or four different sorts of materials have proved, some of them, to be all but indestructible.

Uprightness is essential to stability, and to look safe a wall must be obviously upright, though a tapering form, like the pylon of an Egyptian temple, also looks strong, and really is so. Length was the ancient way of giving importance and dignity to walls; height is the comparatively modern way. In the early ages of the world, and in the ruder stages of the development of modern nations, it is extent that is relied upon where an effect is to be produced. The greatest of the temples of Egypt, for example, the temple of Ramse, with its dependencies, extended over about 2,000 feet, or more than the third of a mile. The rude stone avenues of prehistoric origin to be met with at the spot of the same name in Brittany, extend over about a mile and a third of country; and, as another example of a different kind, I may recall to you the Roman wall which stretched right across the north of England. As the power of building, and skill in the production of architectural effect increased in any nation, height was more sought after than extent; but it was, with a few exceptions, reserved for Christian and modern architecture to attempt with success buildings in which height is the main feature.

Straight lines and right angles seem to have been almost the only rule in very ancient work, such as the Egyptian and the Assyrian. The Greeks first introduced curved walls in their theaters. The Romans continued and extended their use, and introduced polygonal shapes, all of which have obtained ever since. Colored materials are to be met with at all periods of the world's history; but as their use always has reference to the architectural effect of the wall, we will postpone them to the second part of the lecture. Having now looked a little at our wall, let us try to look into it as far as we can, and perhaps an architect can look further into a stone wall than some other people, notwithstanding the old proverb. What, then, are walls made of? You may lay it down as a general rule that a wall must be made of something that lies ready to hand. In many cases the fact that the material of which some small or ornate object is to be made comes from far is a point in its favor. We prefer Italian marbles to Devonshire, or to the serpentine of Cornwall, not because they are always more beautiful (for they are not), but because they are Italian. But for wall building so much and such heavy stuff is wanted that it never does to bring it far. Accordingly, in localities where nothing else is to be had, walls are built of earth. In Devonshire, for example, cottages, barns, and the walls of gardens and orchards are commonly of earth, and they are warm, solid, and, if well taken care of, durable; but moisture must not be allowed to get into the heart of them, or they will soon crumble. Next to earth is a material not, so far as I am aware, known in England, but once in use in the East, sun-dried bricks. Vitruvius says that the walls of Babylon were built with sun-dried bricks laid in bitumen; and it is supposed that they were largely used in Assyria and Babylonia, and that some of the shapeless mounds which now mark the site of ancient structures consist of a mass of what was once sun-dried bricks.

Next, of course, we should come to brick, the material only too familiar to the London eye, and the refuge of builders throughout the world and of every age who, like the London builder, were not so fortunate as to have stone within reach. In Egypt and many parts of Italy there are remains of brickwork of great antiquity, and in Lombardy, North Germany, France, Belgium, and our own country, brick has been extensively used, and is in use at the present day. Bricks were not always of the sizes and shapes we are familiar with. The Romans made them flat, more like our tiles, and in many European countries they have been used considerably smaller. The size is a good deal influenced by the weight. An English brick can be held and managed by an artisan with one hand. If it were much larger or much heavier it would take two hands, or even two men, as were probably employed on the Roman bricks. The most refined kind of brick is called terra cotta. It is



A COMFORTABLE COUNTRY HOME.

of the nature of brick, but bears the same kind of relation to it that marble does to stone or silver to pewter.

Terra cotta is, in theory at any rate, the most appropriate ornamental substance to employ with brickwork, and though there are some practical difficulties in the way of using it, when these are overcome it is an admirable material. The best and most desirable material for wall building is, however, s one. Every sort of stone that is in the least degree deserving the name of stone has b en made use of for the purpose of wall building,—from flints, which are some of them as inconvenient in shape for the mason's use as potatoes would be, up to the hardest granite, the finest and truest freestone from our many excellent limestone and sandstone quarries, or the beautiful and precious marbles of Greece and Italy. There are stone walls in Greece and in the Etruscan plain, which have come down to us from remote antiquity, made of large polygonal stones unwrought or but slightly wrought—and coarsely fitted together without mortar. There are others in Egypt of the finest polished granite with joints so close and true that the edge of a sheet of paper cannot be got between the blocks; but as remarkable in its way as these specimens of consummate handicraft is the construction of the Roman walls which were often made of small stones, such as we make macadamized roads of, set in a tenacious mortar which has hardened till it is as strong as the stone itself, and steadied at intervals by the introduction of a bond-course of flat bricks or large stones. With this mode of construction, which could be carried out anywhere, the Romans built vast works, the ruins of which remain all over Europe.

There is quite as much to learn about stone as about brick; in fact, a great deal more, as for example, how to select stone, for, owing to the ease with which many sorts of stone are acted upon by the weather, there are many precautions to be taken in the selection or use of material. I will just name the three cardinal ones, which are these: First, select for use stone from a quarry, and from a bed in that quarry which experience has shown to be durable. Secondly, let that stone lie in the building in the same way as it lay in the quarry, or, as masons would say, bedwise. Thirdly and lastly, take such precautions as will insure that no moisture gets into the inside of your wall, or into the heart of the stones that compose it. The materials I have named all of them require to be held together by some sort of cement if the wall is to be durable and weather-tight. Lime is at the bottom of all the cements in general use, and its faculty of hardening after being calcined and slaked, and, as it hardens, of adhering to the surface of the stones or bricks with which it is in contact, is invaluable. Mortar is made of quicklime and sand. Cements and hydraulic limes are compounds (natural or artificial) of lime and other substances, chiefly alumina, which enables it to set harder, and under water, and more rapidly than in its unmixed state. I need hardly point out that where the heart of a wall is of many rough stones laid with much mortar (a substance more or less impressible), while the face is formed of few well-dressed and square stones laid with little mortar, there must be great risk of the two parts of the wall behaving differently the one from the other when weight comes upon it.

This happened in much of the work of the builders during the eleventh and twelfth centuries in England,—the period of the Norman style. Professor Willis has gone so far as to say that if a Norman tower has not fallen, that circumstance throws great doubts upon its being Norman. Certainly an immense number of them have fallen, and as an example of failure, happily anticipated before there was a fall, I may remind you of Peterborough, where the core of the Normon piers carrying the great central tower has crumbled, and the piers have arched, and have been taken down within the past year. Different from the practice of building composite walls is another which I will only just mention, that of building hollow walls as a protection against damp. We have by no means exhausted the list of materials for walls if only

your patience will hold out. A modern material which I will just name, but not dwell on, is concrete, excellent if well looked after, dangerous otherwise; cheap if used in large quantities, and where there are few features or irregularities, but far from cheap in small or intricate buildings; very strong, very durable, and sometimes valuable where nature yields few materials for walls of another sort. Timber has been used time out of mind for the walls of houses, and even churches and dignified buildings, in the spots where it is plentiful. There is evidence that timber buildings were in use in Assyria, Egypt, and Lycia, from the curious fact that ancient remains of stone or marble are actually cut into shapes that imitate timber; indeed, the whole system of architectural treatment in use in Greece is a kind of petrification of timber construction. The countries of Europe where timber buildings are now mostly to be met with are Sweden, Norway, Russia, and Switzerland. They are in many ways excellent.

A timber wall is by no means a bad protection against weather; but it is liable to catch fire, and so is quite unfit for use in cities. Many railway stations in England, however, are built of timber, and any one of these will serve to illustrate a cheap way of building timber walls. In Sweden, whole logs, halved at the angles, are used, and a wall far more solid, durable, and weather-tight can be obtained. The same method is followed in Russia, and you may see a good specimen at the Health Exhibition in the Russian house at the back of the dairies. Timber framing filled in with plastering or with brick-work in the spaces, called usually half-timbered work, is an excellent material for walls if done with the solidity and liberal use of strong timbers that was common in England in the sixteenth and seventeenth centuries. In Lancashire and Cheshire, in Worcestershire and Gloucester, in Kent and Surrey, and in other parts of England you may find many fair half-timbered walls, and even here and there one still lingers in London or the outskirts.

We have in these later days taken to build our walls of glass, as at Sydenham, and of corrugated iron, as in many temporary rooms and churches, and each has its uses. The newest material for wall construction in England (though not, I believe, new in China and Japan) is paper. At the Health Exhibition a very serviceable little cottage walled and roofed with paper may be found. It is known as the Willesden Cottage, and I think I may say from some little experience of it that its walls are by no means the worst within which I have been sheltered in my life-time. We will now leave the construction of walls and turn to their treatment as an important factor in architecture. A wall, as we look at it, ought to have three parts: Its base, which, though below ground, ought to be represented by some description of plinth or base-moulding; its body; and its top, which may be a coping to throw off water, or may be the over-hanging eaves of the roof which it carries. These, then, are infinitely varied, but they are generally all to be seen in any wall that is architecturally satisfactory to the eye. The different ways of dealing with a wall as an architectural feature may perhaps be grouped as follows:—

1. Emphasizing construction.
2. Masking construction.
3. Varying the outline or plan of the wall.
4. Enriching the surface of the wall.
5. Color.

Of the method of emphasizing construction, which is our first division, a very ancient and obvious one is to use large stones. This was a favorite plan with the Egyptians, and the Greeks, especially in archaic times. Great stones were used in the Pelasgic walls, large remains of which still exist in Greece and in the Etruscan plain in Italy. These stones were usually polygonal, very carefully fitted together, built up without mortar, and they impress the spectator very much by the appearance of savage strength which they present. Stones of very large size occur in Greece and in Egypt, and in Syria stones remarkable for their dimensions and for the way in which their outline is marked round with a broad, round mark.

Another mode of emphasizing construction, which the Jews seem to have taken a pride in, is the employment of large corner-stones. When a wall is built of small or loose materials, it is not easy to make the corner strong; in fact, in parts of England the towers, which would otherwise be square, are round, because there is little else but flint to build with, and with flints you cannot make a square corner. It is usual, on account of this tendency to weakness, to fortify the corner by building it of larger stones or better than others; and the Jews seem to have attached some semi-superstitious importance to the top stone at the corner of a building—perhaps a more really appropriate place for a famous stone than our foundation-stone, which rarely, if ever, is part of the foundation. These stones at the corners come up again in Roman work, and still more frequently in the styles derived from Roman. The famous long and short stones at the corners of Saxon buildings, the well-marked quoins of Gothic ones of all ages, and the carefully-wrought, rusticated, and raised quoins of Renaissance buildings, all go upon the principle of marking construction. In simple and homely structures, built of materials with a fine surface on good color, any method of marking the structure of a wall is successful.

In Cumberland and Westmoreland, where many varieties of stone, rich in color, are met with, the walls of humble churches, or even cottages, are sometimes quite a sight to see and admire, from their beautiful and varied tints, especially if a method of walling be adopted which allows the natural cleavage of the stone to be seen without any tooling. Another and an opposite mode of emphasizing treatment, if not construction, consists in exaggerating the squaring and dressing given to stone, and bringing it to a surface of the utmost smoothness. In the later part of the Gothic period, and in much of the Renaissance architecture which followed it, the whole surface is rubbed, and no trace of the tool is left. The same completeness of workmanship was also to be met with in Greece and in Egypt, and wherever we encounter it the spectator seems to be made sensible of the immense pains and care that have been lavished by the builders upon their wall; and to a less extent the same effect is produced by the selection of materials with a fine texture of surface and a good color, like choice bricks. A wall consists of stones and joints, and one way of marking the construction is to make the joints more conspicuous than they naturally would be. We have seen that in ancient Jewish masonry a drift or breadth of finely-tooled work surrounds the margin of the stone. In some Greek work we meet with a severe square sinking at the joint, and in Roman work with a more strongly-marked channel. There are many other ways of emphasizing construction to which I have not time specifically to allude, but may say generally that any treatment of a wall which makes its materials or its construction evident almost invariably adds a natural and, so to speak, a spontaneous grace to buildings.

WE have heard a good deal about the origin of "Queen Anne," but it has been reserved for the *Athenæum*, in a review in its last issue of Mr. R. P. Pullan's "Studies in Architectural Style," to invent a new and completely original history of the birth of that remarkable phase of art.

"The fact is," says our contemporary, "that as with the Dutch builders of the originals of the so-called 'Queen Anne' types, our architects desired to catch the favor of people whose awakening taste had only taught them to hate the formality of current fashion in design, and, owing to the ignorance and incapacity of the workmen at their command, they were compelled to be satisfied with coarse mouldings and vulgar modes of ornamentation. With the old Dutch builders (one ought not to call them architects whose utmost merit was sincerity) the results of their circumstances were closely analogous to our own. When the Dutch nation had achieved its freedom, the ecclesiastical arts, which had previously been welcomed in secular service (and had fructified in the town halls of Damme, Ypres, Brussels, and less admirably, Louvain), were not tolerated by a race which in the white heat of persecution had become a victorious people. The Dutch nation would have nothing to do with the art of their enemies. When the ar against the hated German and Spaniard was over, skilled craftsmen, with their long-inherited facility and just artistic technique, were simple nowhere. Peace following brought abundant wealth and the never-failing desire to build. The crude skill of incompetent workmen had to be appealed to. The result was that inorganic, blundering, and pretentious style which our popular architects have agreed to call 'Queen Anne.'"

Seth Babson.

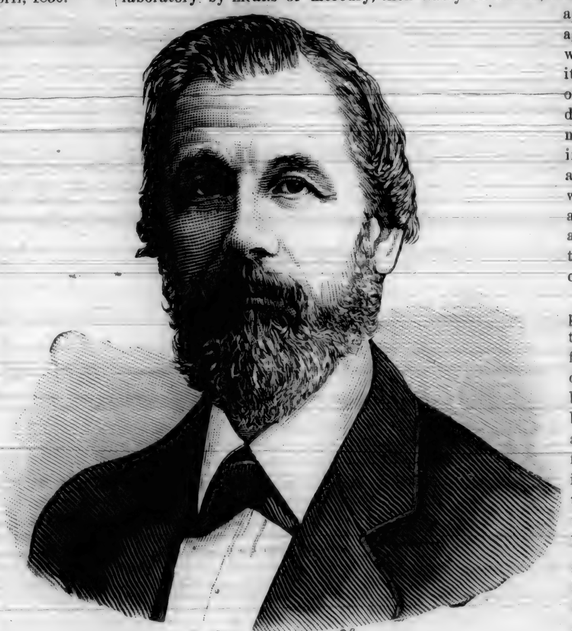
THE subject of this sketch is a native of the State of Maine. Shortly after his birth his parents moved to Newburyport, in Massachusetts. At a very early age he developed a passion for mechanical employment, which, at a later date, developed into a taste for architecture. With his father's assistance (who was a prominent builder), and other professional and practical teachers, Mr. Babson acquired a familiarity with the rudiments of architecture, and at the early age of eighteen, designed and erected several dwellings, and a business block, without assistance from his teachers.

In 1849 he sailed for California, arriving in San Francisco on the 6th of April, 1850.

Shortly after his arrival he went to Sacramento, in which place he remained until 1874. During this period he followed the practice of his profession as an Architect. Many of the finest buildings at Sacramento were designed by Mr. Babson, principal among which were the residences of Charles Crocker, Gov. Stanford, Judge Crocker's Art Gallery and Library, and the Sacramento Savings Bank.

In the latter part of 1874, Mr. Babson changed his residence to San Francisco, where he still remains in the business.

Mr. Babson is an active member of the San Francisco Chapter of Architects.



SETH BABSON.

Timber and Tools

IT is a fact well known to mill-men that it is not always the harder woods, in the ordinary acceptation of the term, that are the most wearing to the saws. Many practical persons marvel at this and wonder to themselves why a piece of timber showing small crushing tension and other strengths, requires more power to work into lumber, and at the same time wears out the saws and cutting tools faster than other varieties of timber, the strength of which, in most respects, is greater. A log of black walnut and one of burr oak of the same size worked into the same sized stuff will show widely different results on both saws and machinery. If we attempt to rive or split these logs, the walnut will work much easier than the oak, and so far as the various strengths are concerned, the oak is superior by far; but when cut into by tools of any description, the walnut will present much greater resistance than the oak, and the same is true as regards many other varieties of hard and soft timber.

If we take a longitudinal section of these comparatively soft timbers which are so hard on the cutting edges, we will find the minute pores or interstices filled with minute glistening particles or crystals, and, subjected to chemical analysis, we will find them composed of silica, one of the very hardest minerals known, while with the hard, easy-working woods, they will be found nearly or quite absent by both the microscope and analysis. These little particles, so finely divided as to be insusceptible of ordinary touch, are really a better grit than ordinary sand, and are the means of cutting off the fine edge of cutting tools, as saw teeth, plane irons, and the like.

Two plane irons, made of a fine quality of steel, as near alike as it was possible for a skilled mechanic to make them, were each hardened in our laboratory by means of mercury, then finely sharpened, so that the edges of each presented precisely the same appearance beneath the magnifier. These were each inserted in an ordinary plane, and one placed on oak, the other on a piece of walnut, both pieces of wood having been previously dressed. At the rate of one hundred pounds pressure, each iron was crowded forward four inches. On the oak stick, the pressure from the rear indicated 809.5 pounds, while with the walnut the indicator showed a pressure of over one thousand pounds. The irons were both now withdrawn, and first placed beneath the microscope; the one used on the oak presented a general upset appearance, the edge of the iron showing a slight tendency to turn downward, there being sufficient heat generated by the friction to partially draw the temper along the minute edge, which, however, would not extend back sufficient to materially affect the wearing and cutting properties of the iron if in constant use.

The iron used on the piece of walnut showed a scratched, notched appearance all along the minute edge, and by the aid of the most accurate means of measurement at hand, these notches were all of the same depth, but different distances apart, proving conclusively that the particles of grit or crystals which caused them, by being harder than the best mercury-hardened steel, were all of the same size and evenly distributed, as far as regards depth of deposit in the grain of the wood. The small spaces of the iron edge between these notches, or scratches, were found nearly as the entire edge appeared originally, showing again that the cellular tissue of walnut, outside its mineral deposits, was really softer than that of oaks, hence, were it not for these deposits, the timber would cut much easier. Of course, if the iron had been drawn back, and again shoved through, the notches would have been more apparent and general, increasing each time, and distance showed until the entire cutting edge had been of itself cut off.

Consulting the laws governing plant or vegetable growth, we are told that all food before becoming fit for assimilation must be reduced to its gaseous state. If this be so, the question arises, How, or by what methods of plant-growth and assimilation, is it possible for silica to appear in its original crystalline state among the tissues of the growing or matured tree? while it is universally known that this variety of wood grows only where this mineral is abundant in some of its modified forms. This, however, is not of great interest to manufacturers, just how it gets there, but that it is present is shown conclusively. To get rid of it, even were it possible, would destroy the beauty and general characteristics of walnut, and to overcome its action on tools, rapid motion and softer iron is the best, safest, and most efficacious method.—*Lumber Trade Journal.*

What is known as French polish is made in a great variety of ways; but the simplest consists of one and a half pounds of shellac, dissolved in one gallon of spirits of wine without heat. Copal sandarac mastic and gum Arabic, are frequently used in making French polish, partly with the view of making the varnish of a lighter color, and partly to please the fancy of the polisher; the proportions of the different gums are varied almost infinitely, but with little advantage.

[Written expressly for this JOURNAL by J. F. ELSOM.]

A SERIES OF ARTICLES ON STRENGTH AND QUALITY OF REDWOOD.

Comparison with Other Woods.

FOR some unaccountable reason our articles on this and kindred topics have gone astray, but we suppose that a profession overworked as the postal authorities have been during the past few months, in distributing such mail matter as would best promote secular interests, have had but little time, and still less disposition, to keep the run of matter which, to them, is of much minor importance. If, however, the average architect may appear a trifle unprepossessing with his apron and business suit when compared to white-handed, well-dressed postmaster, and his dude-like corps of laquays and assistants, nevertheless the architect generally has an intellect sufficiently well balanced to know when he gets what he buys, and is not prone to mingle to any great extent with politicians, at least it is beneath the honor and dignity of a good artisan to become a professional politician, and away up beyond the most presuming aspirations of the professional politician to ever occupy any elevated position among the architects of America. We know that it may be inconsistent with the apparent object of an article with this caption to even speak of politics. Craving pardon then, for this digression, we will proceed to our business. Suffice it to say, that the late presidential contest showed conclusively that much timber used for political purposes in the contest just past, was found rotten to the core, though all the external evidences indicated, when the chips be an to fly, that the timbers of the platforms and scaffoldings were sound, and at the best, indulgent reader, none of it would comparatively, or rather metaphorically speaking, withstand without internal fracture the torsion, crushing, and other important strengths that characterize the redwood of California, about which we now write by means of laboratory data obtained from actual results of tests made for the benefit of our investigating friends.

The strengths of this peculiar and interesting timber are many and varied, and though architects and builders are wont to consider all materials, the strength of which, as compared with such timber as oak, hickory, and the like, has a strong tendency to prejudice for or against, they should bear in mind that not only the compactness but the cellular constructions and molecular cohesion of the particles constituting the wood, exert a powerful influence in furnishing resistance to other pressures. Again, the chemical constituent of wood of various kinds, indigenous to North America and the British possessions, is by no means of secondary importance in determining the value of various timbers for industrial purposes, hence portions of a structure made entirely of one kind of wood, even from the same tree, will be found to show evidences of disintegration, decomposition, and decay much sooner than some other portions. These seeming paradoxes are by no means difficult of explanation when we take into consideration *all* the known features which characterize a given variety of timber. In the spirit of sentiments like, we will add in conclusion that where we subject a given piece of wood to chemical inorganic analysis, we have represented all the constituent elements of the soil in which the tree grew, and its organic elements show conclusively the influences of atmosphere, sun, and rain, to which the external portions were subjected during the various stages of its growth.

In order, then, to place ourself in a position to be understood by all, we made, and are making the tests of other woods than the "red" of California, and by glancing at the results in the following table a comparative estimate of value can be placed upon all timber, insofar as relates to weight, tension, crushing, transverse, torsion, elasticity, and their resistance It will be understood that samples for making these tests were selected at random from the expositions, care being taken to secure like sections, and subjecting them all to the same laboratory influences previous to making the tests.

	Weight Lbs.	Tension	Crushing	Transverse.	Torsion.	Elasticity
Acacia	47	16,000	———	140	———	152,000
Apple	50	19,000	———	———	———	———
Ash	45	16,000	9,000	150	120	1,500,000
Beech	50	16,000	8,000	120	110	1,400,000
Birch	50	15,000	5,000	130	———	1,500,000
Box	60	18,000	10,000	130	125	———
Cedar	55	11,000	6,000	100	100	———
Elm	37	13,000	10,000	75	———	700,000
Fir	38	12,000	6,000	80	75	2,000,000
Larch	60	9,000	10,000	100	80	100,000
Lancewood	60	23,000	———	150	120	———
Locust	60	20,000	———	160	150	———
Lignumvitae	75	12,000	10,000	250	150	———
Mahogany	60	16,000	8,000	160	220	———
Maple	50	10,000	———	———	220	———
Oak	50	17,000	10,000	150	180	1,500,000
Pine	40	10,000	8,000	100	65	1,750,000
Redwood	40	12,000	5,998	80	76	2,000,000
Spruce	30	17,000	6,000	120	———	1,600,000
Teak	45	15,000	12,000	180	150	2,400,000
Walnut, white	42	8,000	7,000	100	200	———
Walnut, black	40	8,000	8,000	150	130	———

Ordinarily speaking, the foregoing table might be considered as having been carried too much in detail, but if the reader, interested in the qualities of timber, proposes to follow us through, it will be found necessary, quite often, to refer back to this table, as we will not have reason to note figures hereafter. The reader will merely use for future reference.

California redwood, though these tests of various strengths do not strictly correspond with the figures published heretofore, for reasons that different sectional grain was explored as will be explained further on, presents an intermediate resistance to these pressures, and it will be noticed that in some respects it is the superior of oak.

In order to stand a direct pressure from above, a timber must have a compact structure, or what is termed a close grain, else, with this fibrous cellular tissue, is liberally interspersed the air cells, hence by coming together the harder particles or grain being so widely separate, wear and bruise each other; but should we place the timber on what is termed the edge, and then submit the pressure, we find this resistance increased proportionate to the nature of the elements found in these grains. Hence the increase varies in different woods. In the California redwood it amounts to over seventeen and two-thirds per cent., and when a single grain is isolated and subjected to pressure by crushing, the resistance is greater than any wood grain in the entire list, for, as subsequent tests proved, these are composed nearly entirely of gums, resins, etc., put together in such a manner as to furnish great resistance to pressure, in fact four complete sets of appliances were broken before it would crush, and then the indicator pointed to 11.9215 pounds crushing strength to the square foot.

On the strength of this hypothesis, it is reasonable to suppose that when two pieces of this variety of wood or timber are united at the proper angle, it would stand a much greater pressure than many, in fact, most of the hard woods.

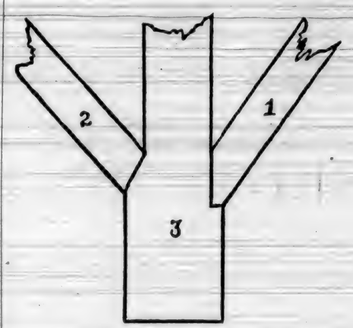


FIG.—No. 1.

It follows, then, that if we use redwood for post and braces, that No. 2, will stand a much greater pressure than No. 1 inasmuch as with the former the grain of the wood came together in such a manner that the entire weight to which subjected will fall on the grain of the timber, comparing the post at the proper angle to withstand an immense amount of pressure direct, whereas with the latter the grains would actually come in contact only at the base, which at the shoulder represents but the merest fraction of the grain surface of the mitre, hence is the only place where an obstacle to direct pressure is met. In any event, we consider No. 1 as being the poorest manner of joint imaginable, but with hard, close-grained woods it might under certain circumstances be admissible. We are not, however, to discuss the merits of joining in this letter, hence will the pertinency of this conclusion to the architects themselves. Assuming that the two joints *were* both right and proper, otherwise No. 2 is about five and one-half times stronger than is No. 1 when both are made of the wood of which we treat.

For bridge building and other purposes where struts, plates, and collar-beams are used, we have obtained the best of results as to the strength of this wood, as compared with all varieties tested. For instance, as will be seen by the accompanying illustration, Fig. 2, there is a splendid opportunity to bring these grains together at the proper angle to ensure great strength; for it will be seen by again referring to the table that all the tests of strength to which the timbers are subjected in this cut, California redwood stands high, and if the logs were properly sawed, that the grains exposed would each run in the same direction, the collar-beam from wood so sawn that the grains would stand on edge, and the angle of the ends of the straining bar where it comes in contact with strut, such that the crushing strength of the latter would form a perfect triangle, in other words, that two hypothenuse basis would be apparent to one perpendicular by all measurements. We venture the assertion that a bridge constructed of this kind of timber would stand if put together in accordance with the foregoing instructions as to manner of joining; would bear as much pressure as if made of any other of the same size and weight, with a very few exceptions.

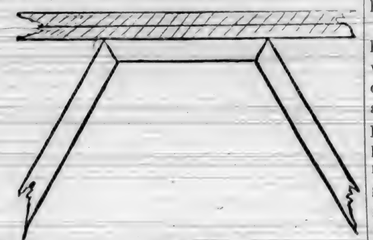


FIG. 2.

By following this line of thought still farther, it is easy to see that the uses of this timber are, to a certain extent, unlimited, inasmuch as it has been shown that under certain conditions its strength can be perceptibly increased. If however, this timber is used on straight lines, the tests show it to be deficient in strength, especially is this true if lain so that the grain recedes horizontal. A piece standing on end shows a fair crushing strength, but is not large; but, all things considered, the very best use so far as we have determined at present to which this wood can be put, when strength is a matter of primary importance, is by means of angles.

In conclusion, California redwood possesses some striking characteristics in the matter of keeping, when exposed. We have no means of knowing by observation anything definite in relation to its lasting properties; proper, nevertheless, analysis of the wood thus far has shown an exceptionally large per cent. of the elements of perservation, such as creosote, gums, resins and the like. So important a feature as this in wood as abundant as we learn this is along the coast, that we have deemed it best to continue the chemical analysis still further, giving actual results, and suggesting the best means of securing the same with profit, as the demand for some of them seems to be unlimited even in California, hence at another time we will beg the indulgence of our readers, while we discuss this feature which is apropos to these articles, especially as we have to make the chemical analysis.

Mantels and Grates.

AN open fire is the soul of the room; it gives it vitality, life; it draws the household around it in pleasant, cosy chat. As the body without the soul is dead, so the room without the fire is dead also. Setting aside for the moment the mere utility of the open fire as a means of ventilation and purification, let us remember that it has its spiritual, its poetical, its æsthetic side, which is welcome to all men. As the soul is beautiful when shining out from a beautiful face, so a fire is more beautiful shining out from beautiful surroundings, and the grate and the mantel become important features in the room. Marble mantels have their beauty and appropriateness in certain places, as, for instance, in vast halls, where grand architectural effect is desirable; but, to our taste, not in a home, not in quiet domestic architecture, not in the family room where the household gathers in the ordinary daily life.

Wood mantels have all the qualities that household use and beauty demand. What a wide range they offer in color, so that all taste can be suited and all styles of decoration find a harmony! We may choose the delicate purity of whitewood, or the golden glow o pine, the fine red of cherry, or purple amaranth, or the rich grains of oak and ash, or the glow and splendor of mahogany, or the dusky gleam of black walnut, or the fine soft finish of birch, or we can bring into our service unnumbered foreign woods to make beautiful the fire-place, and set a fitting frame around our beloved fire.

And just here let one thing, and a very important one, be said: If you put wood into the fire it will burn! Many of our designers of wood mantels forget this, and their florid efforts blister and burn, to the despair and vexation of the careful housekeeper. The mantel shelf on its under side becomes a mass of blisters; the columned or bracketed sides char and blacken, and the open fire, that should give only pleasure is regarded with anxiety, lest it should have in it the terrors of a conflagration. Now all this can be easily avoided. Keep your woodwork within the line of safety. This line of safety is easily determined. We give the result of long years of experience in mantel and grate setting, of a scientific, thoughtful man, and if this rule be followed, it will result in entire safety to the most delicate wood mantel so far as burning is concerned. The rule is as follows: From the front line of your fire draw a line at an angle of about fifteen degrees, and keep all your woodwork behind that line. This is for the sides. For the top draw from the top of the fire-place opening a line at the same angle, fifteen degrees for a foot above the opening, and then change the angle to thirty-five degrees, and keep the mantelshelf and all the top woodwork behind this line, and you will have no more charred and blistered wood, no matter how hot the fire.

In wood mantels every taste may be gratified, the field for design is infinite. The Gothic, the Renaissance, the Colonial, the Queen Anne offer themselves in all their thousand modifications and combinations to suit modern convenience. A half century ago all our houses had wood mantels; it is no new fashion. The colonial mantels were all brought from England, as in fact were all the materials for the house. Many of these houses may still be seen in Salem, in Marblehead, in Plymouth, and in many other old towns of New England. A friend thus describes to us some old mantels which would be the delight of art-lovers of today: "Wooden mantels are no new things. There were plenty before marble was thought of, and were of elaborate patterns. Some fifteen years ago I was present at the demolition of an old house in Maryland, built when Anne was queen of England. It contained two mantels of English oak, one at either end of the large parlor, with enormous fire-places, the mantels covering the entire end of the room with cabinets, and shelves, and cosy nooks, and corners without stint. The pilasters at the lower parts were worn away by the attrition of several generations of shovels, tongs, and pokers which had leaned against them, but otherwise the mantels were in perfect preservation, with joints as good as new. They had a multitude of small, deeply-moulded panels, the product of Anne's time, and the wood was nearly as hard as iron.

"The facings were of large black brick, and no trace of fire was visible in any part of the woodwork, although it had been in use 160 years. The artisans of those times put their lives into a piece of work with far more persistency than is done now-a-days. It must have taken a workman an entire year to make one of these mantels, unassisted by modern machinery." In those days the chimney stack was in the center of the house, often a vast structure in itself, a tower around which the house was built. The fire-places were vast caverns; a tall man could walk into them without bending his head, and they were twelve feet or more in width. It was an old saying that there was space enough for an ox-cart and a yoke of oxen to be driven up the chimney. In some of the old colonial houses still standing in Marblehead and Salem, Mass., there are wood mantels covering the whole side of the room, with delicate mouldings worked in the solid wood, not glued on in the fashion of to-day, the panels enriched with carving of flowers and foliage in the very best style of the art.

To-day comfort has banished the vast cavernous fire-places, but the open fire is just as cheerful as of old, in its more modest surrounding. A half century ago there was a raid made on the old-fashioned wood mantels, and, with all their quaint carving and delicate mouldings and panelwork, they were swept out for kindling wood, and everybody set up in his house the black and gold Egyptian marble mantel. But the reaction has come with an increased civilization, and wood re-asserts itself. Wood mantels, tile facings, and tile hearths are now the fashion, and a beautiful fashion it is. Long may it last.—*Sel.*

Written expressly for the CALIFORNIA ARCHITECT.

Soil as It Relates to Health.

BY GLENN BROWN, ARCHITECT, A. A. I. A.

FILTH IN THE SOIL.

IMPURITIES in the soil are both natural and artificial. Organic matter as found in the soil originates from decayed animal matter, and decayed plants which fall and are mixed with and covered in the soil by the hand of time. According to Lyell, Marsh, and other geologists the remains of animal matter are found in great quantities in different parts of the world.

The ground may become saturated with filth from the leaching cess-pool, so common in some communities, or from leaking sewers. The ground may be filled with decayed matter from cemeteries. In either of the above cases the ground would be fruitful in deleterious matter, which not only might, but most probably would be conveyed into the house, if near the source of contamination, by either the ground water or the ground air. Made ground or soil which is filled in to bring it up to some established grade, is common in most of our cities. When composed of clean sand or gravel there is nothing hurtful in the made ground itself. When these valleys or low places are filled with rags, sticks, leaves, boots, shoes, dead dogs, cats, rats, chickens, and other animal and vegetable refuse matter, then they become dangerous to health. The organic matter will undergo decay, and particles of this putrescent matter will be carried by the ground air directly into our houses.

THE SOILS FILTERING CAPACITY.

The question of how far the soil and the different ingredients forming the earth filter or remove impurities from the ground water and air, is an important one. How far deleterious matter will travel before it is eliminated from the water and air is a most important question.

The National Board of Health, before it was rendered useless by the legislation of a thoughtless Congress, investigated this subject among other important topics connected with the health of the people. This investigation was carried on by Raphael Pumpelly, assisted by Geo. A. Smith. The report of this investigation was published in the thirteenth supplement of the National Board of Health Bulletin. In the following lines I will give a short review of the subject. An illustration of one of these experiments is shown in Fig. 2 at head of next column.

This filter consisted of a column ten centimeters high of sand resting on a copper gauze saucer. The sand was 30° to 50°, and 100° fine, *i. e.*, screened through meshes of the corresponding number per inch. In the bottom of this bent tube was some beef infusion, or some other easily putrescible fluid. Air was made to pass through this tube slowly by aspiration. All the filters tried in this way stood the test, the infusion remaining intact.

The next experiment shows the filtering effect of the soil on polluted water. The columns of sand used in this case were twenty-two and one hundred feet long, of mixed grain 18° to 100° fine. (See Fig. 3.)

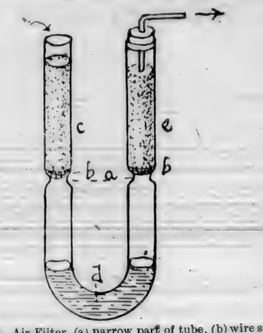


FIG. 2. Air Filter, (a) narrow part of tube, (b) wire saucers, (c, e) sand through which air passes, (d) beef infusion; arrows show direction of air.

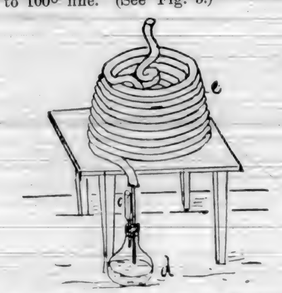


FIG. 3. Water Filter, (c) coil of lead pipe filled with sand, (d) flask with beef infusion, (e) ventilator with asbestos filter.

"To obtain sterilized columns of such lengths the sand was intensely heated and poured into lead pipe which was then coiled. (Fig. 3.) It was then placed in a furnace and heated to within 250° and 300° C., and then the lower end attached to a flask containing the infusion." The flask was ventilated through a tube protected by a sterilized asbestos filter. The whole was then allowed to rest for several weeks, to be sure that the infusion had been properly sterilized. The pipe was then very slowly filled with tap water. The first water that passed through both the twenty-two and one hundred feet pipe or columns carried infection with it.

The inference drawn is that soil is an excellent filter for impure or infected air that may pass through it, but a very poor filter for infected water that may percolate through the soil. The experimenters say: "From these results it appears very clearly that sand interposes absolutely no barrier between wells and the bacterial infection from cess-pools, cemeteries, etc., lying even at great distances in the lower wet stratum of sand. And it appears probable that a dry gravel, or possibly a dry, very coarse sand interposes no barrier to the free entrance into houses built upon them, of these organisms which swarm in the ground-air around leaching cess-pools, leaky drains (sewers), etc., or in the filthy made ground of cities. . . . If the drift of leaching be towards the cellar, very wet seasons may extend the polluted moisture to the cellar walls, whence after evaporation the germs will pass into the atmospheric circulation of the house."

Another series of experiments were made to ascertain the effect of air which either remained stationary or passed in a current over the surface of polluted water. In other words will ground air take infectious germs from the surface of polluted water and carry these germs into the house?

Fig. 4 shows an apparatus by which filtered air (asbestos filter) is made to pass, by aspiration, along the surface of the infected fluid, and then through the pure infusion at the rate of 3½ litres per day. In three flasks after six months the infusion was found intact.

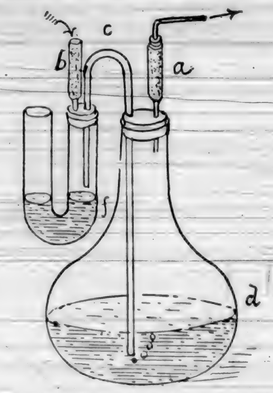


FIG. 4. Air passing over polluted water, (a and b) sterilized filters, (c) tube connecting infected fluid chamber with sterilized infusion, (d) beef infusion, (f) infected fluid; arrows show direction of current.

To try the effect of bursting bubbles on the surface of the water, transferring germs in this manner to the air, other experiments were made. In these experiments "although the formation of bubbles, gentler than in much natural fermentation, the infusion in all three flasks became infected in a few days."

Professor Pumpelly says in conclusion: "At a normal summer temperature *no germs* were given off from the decomposing liquids *whenever their surfaces remained unbroken*, even though in some of the experiments the air was continuously conducted over them in a slow current. When the surfaces of the liquid were broken, however, by the bursting of bubbles, germs were invariably given off and sterilized infusions infected, no matter how slowly the aspiration was conducted."

To avoid the evils described, our building site must be selected with reference to the character of the soil, and of natural and artificial drainage.

Made ground is usually bad, while gravelly and sandy soils are the most healthful. If the soil is damp, or wet, it must be drained artificially. Cess-pools, cemeteries, and other local objects that might contaminate the ground air or water, must be avoided or removed if possible.

The cellar bottom, and the walls of the building to the surface of the ground, should be coated with some such impervious material as asphalt, to keep out the dampness and ground air.

There are many good and many worthless methods adopted for protecting buildings from dampness. A discussion of such details in foundation construction does not properly belong to this article, but the author refers any one interested to his series of articles on Healthy Foundations, which have appeared during the current year in the *Sanitary Engineer* of New York.

These articles discuss, in detail, drainage and foundation construction where it relates to health.

Whims in Building.

NOTHING adds so much to the cost of building as indulgence in whims. To set out deliberately to do a "queer," "fanciful," or, as it is sometimes called, "original" thing in building is always to incur unnecessary expense. If we look through the books that contain pictures of the architecture of all ages and nations, we shall find that, without an exception, in the times all men of taste are agreed in calling the good times, the modes of building have been sensible, founded on the needs of the case, and that whatever may seem fanciful—the whole of what we call picturesque—when its charm has proved enduring, is the result of what we may call, in every case, "accepting the situation." Nothing has been done in such instances for the sake of being picturesque. Good building, good ornament, never poses. In building, as a rule, every departure from the rectangular form is an added expense. One of the things impressed on the mind of a young man who goes into an architect's office to study the profession is that, if cost is to be considered, which it sometimes is, and sometimes is not, all excrescences and projections must be avoided. A rectangular house is the cheapest. Bay windows, porches, octagonal or circular, external ends to rooms,—all these things cost money, and it is by multiplying these features that the expenses of building are often made so great as to deter people from undertaking it, for the things seem so small in themselves, it is not suspected what drains they are on the purse. If a good reason cannot be given for any so-called ornamental feature in a house, if it cannot be shown that something worth while is to be gained by making it, we may be reasonably sure that it is a fancy which will cost, as the country people say, more than it comes to. And in the greater number of cases, nothing, even in looks, is gained by indulging the fancy.—*The Studio.*

Transfer paper is made by rubbing thin, strong tissue paper with a composition consisting of two ounces of tallow, one-half ounce of powdered black lead, one-fourth pint of linseed oil, and sufficient lamp-black to make it of the consistency of cream. These should be melted together and rubbed on the paper while hot. When dry, it will be fit for use.

A Retrospective Summary of the Building Interest of the City of Woodland and Vicinity for 1884.

Marked Example of Steady and Onward Progress—One New Building for Every Third Day for the Entire Year.

Editors of the California Architect and Building News:—Those who have watched the progress and advancement of Woodland for the last decade will see, by the following statement, that the year just closing contains the record of the most substantial improvement and growth since its foundation. The fact of a steady increase of new buildings throughout the entire year is conclusive evidence that the city is unmistakably advancing in permanent population, and is a sure index of a healthy and substantial growth. The increase in new buildings has been principally in dwelling-houses, and while some of the *unpretentious home-made* are not dazzling with an elaborate finish and pronounced complete, having

"No costly ornaments to beguile,
Nor clumsy carvings clog the pile,"

Nevertheless a large majority of all are *fine appearing*, good-proportioned, well-planned and substantially erected structures. Forty-eight from the aggregate number of buildings and improvements have employed the service of professional architects and draughtsmen.

Public buildings are: New school-house, opera house, and convent; to these three add the amount expended for the steam flour mill, and the total for the four amounts to over $100,000. January and May were the two slack months—12 buildings, costing $33,100; April and September the most active (as to cost)—25 buildings, costing $75,415; December the banner month for number—29 buildings. The average number per month, 11; average amount per month, $29.966.20; average cost of each building, $2,703.72. The following is a monthly statement:—

	WOODLAND.						YOLO COUNTY.			
1884.	Frame Buildings.		Brick B'ld'gs		Addn's & Improv'ts.		Frame Buildings.		Brick Build'gs	
	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.	No.	Cost.
Jan	2	$ 11,200	1	$ 2,800	1	$ 1,000	2	$ 4,500 00		
Feb.	7	10,850			1	4,500	3	4,650 00		
Mar.	7	12,400					3	5,000 00		
Apr.	7	11,935			3	4,115	1	2,000 00	1	$7,582
May	4	8,350	1	4,850	1	1,100				
June	3	5,450	1	23,000	1	1,400	2	4,500 00		
July	4	26,051			1	1,700	2	6,524 75		
Aug.	4	6,500	1	2,000	4	16,000			1	2,600
Sept	5	6,500			3	18,590	4	10,975 00		
Oct.	5	10,400			4	3,490	2	3,460 00		
Nov.	6	9,900			1	1,658	5	12,050 00		
Dec.	21	21,410			4	5,800	4	5,600 00		
Tot'l	75	$141,446	4	$37,450	24	$64,353	28	$59,259 75	2	$10,182

Total number Woodland, 103; cost, $243,249; total number county, 30; cost, $69,441-75.

By the above we see the total number of buildings and improvements number 133, costing	$312,690 75
Add to the above sum fifteen per cent. for buildings less than one thousand dollars, and all moderate improvements and outbuildings, barns and carriage houses, etc	46,903 61
Final aggregate	$359,594 36
Total for 1883, 84 buildings, value	$204,519 00
Amount in excess of last year	$155,075 36

A large percentage of the buildings has been expressly intended as permanent homes of those who built and own them, and the immediate occupation is sufficient evidence that no speculative boom has been the moving agency. Therefore we have no occasion to anticipate any disastrous reaction in the future, but work and hope for still better and brighter prospects with the coming of 1885, and may it be a happy and fruitful season to you and the readers of the CALIFORNIA ARCHITECT. Accept our sincere thanks for past kindness and courtesy shown during the year; for the prompt and correct manner in which you have transmitted to the public, through your valuable columns, our monthly statement of building interest, etc.

Respectfully yours, GILBERT & SON.

Woodland, December 4, 1884.

Lining for Chimneys—Browell's Patent.

THERE has lately been patented by a resident of this city an invention that bids fair to make a material change in the construction of chimneys. "It relates to the lining or protection for the interior of flues or chimneys; and it consists of a coat of black-lead, either applied separately or mixed, so as to produce a smooth surface within the flues or chimneys.

"In the construction of chimneys or flues which may be made of brick, paper, terra-cotta, metal, or other material, the interior surfaces are sufficiently rough to arrest particles of unconsumed carbon and leave deposits of soot, which, with some kinds of coal, speedily fill up the flues or chimneys so as to nearly for quite prevent its operation. In order to prevent this, I form a coating for the interior surface of the flue or chimney, which consists of black-lead or plumbago. This material may be applied in various ways. In some cases it may be mixed with water, either fresh or salt, or with other substances, and then applied with a brush or trowel and made smooth. In some cases, as in the building of brick chimneys, it may be mixed with the mortar or cement with which the chimney is lined, and then troweled down so as to produce a smooth surface. If glazed pottery should be used for chimneys, they would split or break when subjected to heat; but by the application of plumbago to the interior before baking a smooth surface will be produced which will not crack. By thus lining chimneys or flues a better draft is produced, the surface will be of such character that particles of soot will not so readily adhere, and where the chimney is constructed of paper or similar substances it acts as a protection against heat."

Jerry Browell is the patentee. He will be pleased to explain the principles of his invention to all who may please to call. We will, from time to time, refer to chimneys erected under the above patent, that those interested may see in actual practice the principles set forth by the claimant.

Builders' Guide and Estimators' Price Book. Price, $2.00.

Architect's Services.

BUILDING gives an account of a recent case, decided in the Supreme Court of New York, in which an architect, who had been employed to prepare plans and specifications for a certain building which was never carried into execution, was obliged to sue for his pay. His bill was two and one-half per cent. for the plans and specifications, and two hundred dollars additional for making measurements and surveys, and for consultations. The defendant seems to have been a prey to the common delusion that if an owner concludes not to carry out the plans made for him, the architect who made them should not expect any pay, and, to judge from the account, urged this as a reason for not settling the bill; but he, or his lawyer, discovering that this plea would not count for much in court, took refuge in a different claim, and represented that the plans were not working drawings, but simply preliminary sketches, and as such should only be valued at one per cent. on the proposed cost, instead of two and a half. Ten out of the twelve jurors are said to have agreed with the architect in his valuation of his work, but the other two objected, and a verdict was at last rendered awarding him five hundred dollars. The cost of the building was to have been twenty thousand dollars, so that this was two hundred dollars less than the amount of the claim. Why the charge should have been cut down we cannot see; and we assure our readers that it is very unusual for a jury to make such deductions from an architect's charges, based on the ordinary schedule. The case, however still serves to illustrate the maxim to which we so often call the attention of the younger members of the profession,—that every man who, at the request of another, does with reasonable skill and care any professional work, is entitled to be paid for it, and can collect his pay by legal means. It is useless for the employer to argue that "he only asked for sketches," and that "it is usual for architects to make sketches without charge, in the hope that they may bring them employment," or that "architect's sketches are always understood to be subject to approval," or that "architects make no charge, if their designs are not carried out," and so on. The fact is that an architect's work is never presumed to be done subject to the condition that it is not to be paid for unless the person for whom it is done happens to fancy it. If an architect is so foolish as to agree in unmistakable language to such terms, he is at liberty to do so; but, unless he is shown to have done so, all courts will hold that he expected to be paid, and that the one who employed him is bound to pay him, whether he likes what is done for him or not. If a man, for instance, wants the privilege of choosing from a number of sketches for a certain building, he can have it by paying a number of architects what they ask for making such sketches; but there is no law or custom by which he can obtain them for nothing, unless those who are to make them expressly agree beforehand to make no charge for them. We are anxious to insist upon these points, as we know something of the experiences of young architects, and are certain that many thousands of dollars are now fairly and honorably due to the more modest members of the profession, which they are kept out of solely on such pretexts as these. Until we can have here some such protective organization as that now just established among the French architects, it would be, perhaps, impolitic to counsel all our readers who may be in such case to fly to the law for redress; but we will, at least, advise them for the future to let no timidity or bashfulness prevent them from giving their clients to understand that under all circumstances their labor is to be paid for. If they wish to enter into competition, there is nothing to prevent them from doing so; but it should be explicitly understood that in such cases they give valuable services at a reduced price in return for a fair chance of securing an important commission. We need not say here what constitutes "a fair chance" in competition; it is sufficient to point out that if fair conditions are required by competitors, the law, which cannot conceive that a professional man in his right mind should give his services without expecting to be paid, will see that they are complied with.

Fight Your Own Battle.

THE question of wages for the laboring man and the advantages he may derive from a trade union, was uppermost in our mind one day last week as we were passing a large work-shop in this city just as the employees quit work for the day. "Hello, boys, how many hours do you work per day, and what do you get for a day's work?" was our salutation, which was followed by a hearty handshake, such as a mechanic only can give. In a few moments there were two or three dozen greasy, dirty, but intelligent workmen around us, all willing to chat a few minutes. The question of wages came up, and every one seemed perfectly satisfied. Their wages and hours of work are regulated by the union. We talked with one man who said he had worked at his trade twenty-seven years. "Then you are a boss mechanic?" we said. "No, I am a blacksmith's assistant," he said. "Well, you must have had a poor boss if you have worked faithfully for twenty-seven years and have never risen higher than a laborer," we said. He was a quiet man, an intelligent looking fellow, and in answer he said: "I have had the same boss for thirteen years, but I never set in to learn the trade; I have just worked for wages!" He was getting $1.35 per day and paying monthly dues to a laborers' union "to protect the laborer in his wages." We learned afterward that the man on the other side of the anvil had only been working at the trade six years, and was getting $4.00 per day. He set in to learn the trade, and he don't need anybody to protect him in his wages. He can get a job anywhere.—*Southern Lumberman.*

The Strongest Part of a Tree.

IT might be supposed, says a contemporary that as every layer from the pith to the bark is in a different stage of perfection, the innermost or earliest being the most matured, would be the strongest, but experience teaches us that this is only true up to a certain period of growth; the greatest strength and toughness lies nearer the more recently formed heartwood, or part nearest the sap-wood. For this reason it becomes a matter of great importance in selecting timber for special purposes, requiring great strength or toughness, to have as little sap-wood as possible and as little pitch. That is to say, cut as near to the sap-wood as the timber will allow, for it should be observed that a tree does not cease growing when it comes to maturity. As long as it is alive it continues to increase in bulk by the addition of the annual layer, but when maturity is once passed, each succeeding year produces a certain degree of deterioration. This decay appears in various stages, and generally exhibits in the first instance, either a white or yellowish color at the butt or root end of the stem. If white, the decay is very slight and does not appear more than a few feet up, but if a yellowish red in color, it is not unfrequently of a most serious character; again, if the affected parts have assumed a decidedly red tinge, the tree is said to be foxy, and scarcely fit for any purpose, as the decay will pervade a great portion of it.

A more advanced stage is that which may be described as a drying up or wasting away of the wood surrounding the pith. It forms a hollow, first at the butt, and then spreads upward, gradually increasing in size as the trees get older, while the defect may eventually reach even into the branches. Trees are most valuable as yielding the largest amount of good timber just prior to their reaching maturity, which is indicated by the topmost branches and branchlets becoming stunted. If, therefore, we wish to select a healthy tree for felling, we must seek one with an abundance of young shoots, and the topmost branches of which look strong, pointed, and vigorous, this being the most certain evidence that it has not passed maturity. When there is evidence of permanent decay in a tree, the best thing to do is to cut it down and convert such parts of it as will answer the purpose into lumber, and the balance into firewood.

A "Jerry" builder having obtained a plot of ground succeeded in getting a lot of building materials on credit; with these he ran up several rickety houses. A gentleman residing in the neighborhood passing with a friend remarked: "Why, what a number of houses that builder has run up, and he is already putting the lights in." "Ah, yes," said his friend, "he does not seem to have had much difficulty with the lights; the job will be to get livers in them."

Detail Cottage and Constructive Architecture. Price, $10.00.

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M. B. Richardson wishes to announce to his former Patrons and Architects of this City and County, that he has Gone out of the PLASTERING BUSINESS. And will hereafter follow the Business of Brick Laying, Etc., a Business more Congenial to his Nature. See Advertisement on Page V of this issue.

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Howard, bet. Tenth and Eleventh. Two-story frame.
A.—T. J. Welsh.
B.—John Blake.
$5,000.

Howard, near Twenty-fourth. Two-story frame.
O.— — Morrison.
A.—G. A. Bordwell.
C.—H. Munster.
$3,500.

Twenty-third, nr. Shotwell. Alterations.
O.— — Kruse.
A.—M. J. Welsh.
C.—L. J. Fenn.
$2,500.

Buchanan, nr. Fell. One-story frame.
O.—J. M. Sonnichsen.
A.—H. T. Bestor.
C.—R. Parker.
$2,000.

Nineteenth, bet. Jessie and Stevenson. Two-story frame.
O.—G. E. Beach.
A.—Schmidt & Havens.
C.—T. Klatt.
$4,500.

S. E. Cor. Sacramento and Steiner. Three one-story frames.
O.—Mrs. G. Better.
A.—Schmidt & Havens.
C.—Wm. M. Fletcher.
$5,600.

Silver, bet. Second and Third. Two-story frame.
O.—D. Cashman.
A.—Schmidt & Havens.
C.—Bergman & Buckley.
$3,500.

Post, S.E. cor. Leavenworth. Alterations.
O.—H. Schmiedell.
A.—Schmidt & Havens.
C.—C. Chisholm.
$5,000.

Scott, nr. Ellis. Two-story frame.
O.—M. Kingston.
A.—W. H. Bayless.
$1,500.

Bush, bet. Sansome and Montgomery. Additions.
O.—Mercantile Library.
A.—Swain & Cleveland.
$4,000

Keep Out the Cold.

CRACKS in floors, around the mould board, or other parts of a room, may be neatly and permanently filled by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water, and a tablespoon of alum, thoroughly boiled and mixed. The mixture will be about as thick as putty, and may be forced into the cracks with a case knife. It will harden like papier-mache.

$200,000 *in presents given away.* Send us five cents postage, and by mail you will get *free* a package of goods of large value, that will start you in work that will at once bring you in money faster than anything else in America. All about the $200,000 in presents with each box. Agents wanted everywhere, of either sex, of all ages, for all the time, or spare time only, to work for us at their own homes. Fortunes for all workers absolutely assured. Don't delay. H. HALLETT & Co., Portland, Maine.

A PRIZE. Send six cents for postage, and receive free, a costly box of goods which will help you to more money right away than anything else in this world. All, of either sex, succeed from first hour. The broad road to fortune opens before the workers, absolutely sure. At once address TRUE & Co., Augusta, Maine.

BLUM, EPPSTEIN & MARSH.

MANUFACTUREES OF

Inlaid Wood Flooring

WOODEN MANTLES,

Hard Wood Interiors.

Office and Parlors 126 Kearny St., 2nd Floor,

FACTORY 209-227 FELL ST.,

SAN FRANCISCO, - - CAL.

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW

AUTHOR

VOLUME VI

DATE 1885

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The California Architect and Building News.

VOLUME VI.
NUMBER 1.

SAN FRANCISCO, JANUARY, 1885.

$2.00 per Annum, in Advance
Single Copies, 20 Cents.

Is the Business Outlook Well Sustained?

THIS is a question that has been repeatedly asked us during the past month, and to it we would simply answer

WHY NOT?

Many seem to think that the building interests of this city were greatly overdone during the year just closed, and that 1885 will fall behind its predecessor in the number of new buildings erected. We can at present conceive of no cause why this should be so, and the principal reason for this conclusion lies in the fact that

CAPITALISTS ARE SEEKING INVESTMENTS

In desirable property, not simply as a speculation, but for purposes of improvement.

CAPITAL WILL NOT LIE IDLE,

And if paying investments on our principal thoroughfares cannot be found, then outside property must come in for its share of recognition. By outside property, we do not mean strictly, land on the outskirts of town; we include all the immense section of the city lying outside of what is generally regarded as our business quarter. And it is on this property that a great change will be made in the next twelve months. The section now occupied by our foundries and lumber yards, has become too valuable to be continued for their present use and purposes, and the space must give way to new interests.

THE BOUNTIFUL SHOWERS

Of the past four weeks have given an unusual impetus to farming operations, and from numerous valleys is heard the call for more help. We are well pleased to hear that our pastoral population is crying out against the "one crop" system that has been so prevalent in this State since its formation, and in the future we expect to see a much more diversified system of farming.

Taken altogether we see no reason why the building as well as the industrial interests of this coast should not fully equal in activity the year just passed away.

Building in the City.

A CAREFUL study of our building intelligence reported this month will serve to prove our assertion in regard to a continuance of building operations. Since our last statement, more than one-half of the days have been such as to stop operations almost completely on account of rain, and yet we find more buildings and of greater value started than for any similar period of which we have a record.

The following table will show the number and value of improvements started since our last issue:—

	NO.	VALUE.
Frame buildings	62	$247,320
Brick "	2	314,000
Alterations	9	41,265
Total	73	$602,585

In regard to our quotations, we would again call attention to the fact that we print on the fifteenth of each month, and consequently our advices in regard to improvements extend from the fifteenth of one month to a corresponding date in the following. It is important that this fact should be borne in mind.

Market Reports.

IT is impossible, with the exception of a few items, to quote definite prices for materials used in building.

BRICK are firm in price. Pressed are worth from $55.00 to $60.00. Hard burnt, $11.00. Softer grades, $7.50 to $9.00, according to quality. We do not apprehend a reduction in the near future.

LUMBER may be quoted at $14.00 to $18.00 for rough and $25.00 to $35.00 for surfaced. The market, although weak at present, has an upward tendency. No fear, however, need be felt that the exorbitant prices of last year will be realized during 1885.

HARDWARE.—A general upward tendency is being experienced in the different branches of the hardware trade. As a rule, prices have been TOO low; for, although a few on this coast have been benefited by the extremely low rates quoted, still thousands in the manufacturing districts have been thrown out of employment on account of the general depression. We regard it as one of the anomalies of the season that, in spite of unprecedently low prices, there has not been an extra demand on account thereof, and our country merchants have not signified their intention as yet to take advantage of the low prices now ruling, although there is a positive upward tendency to the market.

LIME, LATH, CEMENT, ETC., remain about the same. All the lath coming into San Francisco are substantially under the control of two firms. This will account somewhat for their steady price.

Our New Heading.

WE point with pride to the new design we present as our title on cover. Many other improvements will follow, as we are determined that this Journal shall equal any now printed, both in artistic beauty and the merit of the articles presented.

The Prompt Payment of Subscription to This Journal is Requested of those who

HAVE NOT PAID UP.

We acknowledge the promptness with which a large proportion of our patrons have responded by the payment of subscription amount. Those who have not, will do a right and proper act, and will greatly oblige by availing themselves of the earliest possible opportunity to call at the captain's office and settle—or by postal order, or otherwise, relieve themselves of the burden that must rest upon the mind and conscience of every intelligent reader who understands and realizes the amount of labor and cost involved in producing a Journal of this character.

ALL WHO HAVE NOT PAID, OWE $2.00 for 1885, and delinquents who have forgotten their obligations for 1884, will but do an act of justice to pay up promptly all arrearages, and the amount due in advance for the current year.

Our Sixth Volume.

WITH this issue we begin our sixth volume. Our *seventh* volume would be more correct, as this Journal was published during 1879. We do not give credit to the latter named year, as we then used for our title, "THE ARCHITECTURAL REVIEW." In January, 1880, we adopted the broader and more significant title, "CALIFORNIA ARCHITECT AND BUILDING REVIEW," changing, after a few months, "REVIEW" for "NEWS," and commenced to number our Journal from the date of the adoption of the title now in use.

We sincerely thank our friends for the kind patronage bestowed during the past six years, and promise, on our part, to put forth renewed exertions to make this Journal worthy of the support it has received.

California Designs.

HAVING finished the series of competition designs, we will commence again in our next with sketches of California architectur .

Readers of the "CALIFORNIA ARCHITECT" will confer a favor upon the publishers, and derive material benefit themselves, by mentioning this paper when opening correspondence with advertisers. Drop us a postal card when you have written to an advertiser, give us his name, and then we will put you in the way of getting the benefit. Don't forget this.

Questions Concerning Chimneys.

THE following questions respecting the construction and operations of chimneys, with the answers thereto, are taken from the *American Architect*:—

Questions.—1. Do gases resulting from combustion contract or expand when rising?

2. Should the flue of a high steam chimney be of the same area throughout, or gradually increase, or gradually diminish as it approaches the top?

3. Would it be advisable in any case to suddenly flare or contract the top of such a flue?

4. Would the same treatment apply to the small chimney of a house?

5. Is it preferable, as regards draught, to carry the flue of a house chimney vertically to the roof, or to give it an oblique, undulating course?

6. What is the proper area of flue for an open fire-place, 3 feet 6 inches wide, and 2 feet 6 inches high?

7. If a 12-inch circular flue would allow sufficient area for a given amount of smoke, is there any objection to making the flue 12 inches square, and has the latter arrangement any merits aside from economy of construction?

8. Is an 8x8 inch flue large enough for an ordinary coal grate?

Answers.—1. Gases generated in a confined space expand on emerging from it, but contract again subsequently as they lose heat.

2. In theory, the flue of a steam chimney should be cylindrical, and of the same area throughout. In practice, however, it is now not unusual to increase the area slightly with the height, at the rate of perhaps one additional inch of diameter for every twenty-five feet rise above the base, and the effect is thought to be good.

3. If such a flue were of sufficient capacity throughout, it is very doubtful whether any advantage could be gained by flaring at the top, although, if the flue were originally too small, a little improvement in the draught might possibly be gained in that way. In many cases, a cowl is placed over the top of the chimney, which, of course, contracts the outlet nor does it, without material disadvantage.

4. The same principles apply to small as to large chimneys.

5. For draught it is almost best, unless the flue is large, to carry it up as nearly vertically as possible. If the chimney is exposed to down draughts from higher buildings or hills in the neighborhood, or if it is too large for its work, change of course may help to check downward currents, and such deviations from the vertical line help to prevent the fall of soot in summer from the chimney into the room.

6. An open fire-place three and one-half feet wide, and two and one-half feet high should have a flue 12 inches by 24 inches, or 16 by 16 inches, if possible, although a flue 12 inches by 16 inches might do, if carried up nearly straight.

7. There would be no objection to using a 12 by 12-inch square flue instead of a circular one 12 inches in diameter. The circular will, however, be rather the better of the two, as being less liable to down draughts.

8. An 8 by 8-inch flue is too small for a soft-coal grate, except, perhaps, one of the miniature English ones. For hard coal or coke it may be made to do, if the chimney is high, and the flue straight; but 8 inches by 12 inches would be much better.

How to Make Wood Present a Fine, Smooth Finish.

IN going through some of our better class of houses, it is often noticeable the different degrees of smoothness and finish in various parts of the painted and varnished work. For instance, the architraves and other finish of the parlors, dining-rooms and principal bedrooms, will, if the hand be gently rubbed over the same, present a surface smooth as ivory, while that of the smaller rooms will feel a little rough, although presenting a polished surface. The difference between the two, admitting that the same amount of hand-smoothing and sand-papering have been applied to the finish all over the house, lies in the fact that in the principal rooms, the wood was first filled with *Wheeler's Patent Wood Filler*, consequently all the pores of the wood were filled, and thus a perfectly smooth surface was obtained. We are pleased to say that this *Filler* can be obtained at nearly every paint store on the coast, so that no reason exists why all the wood work of your house should not present a perfectly smooth, polished surface.

Back Saws.

BACK Saws are getting out of use simply because they cannot be kept straight. After a back saw has been used a little, it is very common to see its owner, on taking it to use, "hit it a whack on the middle of the back" to get it straight. This oftentimes does about as much good to the saw as the "meat cutter" does to his knife when he draws it across his steel. Both cases are done more through habit than the real good of the thing.

There is a way, however, to fix a back saw so it will always keep straight. The way to fix the saw is this: first, take the handle off and shove the blade into the back so that the back will cover the saw at both ends not less than three-eighths inches; then drill a hole through the back at one end and in the middle also. Put a rivet in the middle hole, then tilt the back so that the other end will go onto the saw one-sixteenth inch further, drill a hole then and put in another rivet; then force the saw into the back at the other end until another rivet can be put in; then put the handle on and the saw is done, and will take seven times as much pressure to get it out as straight as before. It costs twenty-five cents to fix a saw in this manner. E. H. DAVIES.

Santa Clara.

Editors "California Architect:" Kindly explain to me the difference between a "Fish Joint" and a "Scarf Joint." T. M. K.

Ans.—When the beams abut end to end, and are connected by pieces of wood or iron placed on each side and firmly bolted to the timbers, the joint is called a *fish* joint. In a scarf joint the pieces overlap each other, and are bolted together. The form of lap depends upon the kind of strain to which the beam is to be subjected.

Wash Bowls.

WE have received several communications from those presenting plans in the late competition given under the auspices of the editors of this Journal, in regard to the remarks made by us upon the *lack of wash-bowls* in any of the bedrooms. We have been assured that it is not customary in country dwellings to specify wash-bowls, where the amount is placed at *about* $5,000, for which sum the building must be completed.

We can assure our competing friends that there was no intention on our part to unjustly criticize any one presenting plans. Our remarks were altogether made from a California standpoint, and we only recorded such suggestions as would naturally present themselves to our subscribers on this coast, knowing that their views would coincide with our own, in regard to the lack of a *necessity*, as far as the people are concerned on this side of the Sierras.

Queen Anne Architecture.

A RECENT writer offers a few reflections on the caprices developed by the mania for Queen Anne houses. He says: The thing is all wrong and on wrong principles. The Queen Anne architects indulged in no such freaks as we see now exhibited, and simply because such was entirely opposed to the nature and character of brick. Brick is a simple, honest, plain material, with a good color, and hard, smooth surface—that is all. Whatever style can display these qualities best is the Queen Anne style and no other. The result of the modern caprices will be seen ten or twenty years hence, when certainly decay will have disintegrated or destroyed the whole, or when the owner's heart will have sickened of the frequent repairs and restorations. The old Queen Anne houses produced effect by the beautiful color and surface, the bricks being laid almost touching, the thinnest wash of mortar between. The result is that no damp ever gets between. The modern system of building is opposed to this, thick layers of mortar being interposed, with the certain result that all the elaborate gables, etc., soon begin to separate. Bricks put together in elaborate forms have no strength, no more than stones laid on earth, but displayed in surface become as firm and smooth as a billiard table. Even mouldings should be raised in the faintest degree, and the less they are the richer the effect.

Our Illustrations.

IN our last four issues we have presented the plans of those to whom were awarded the premiums given by the Proprietors of this Journal for the best display of genius in designing a house for a country dwelling costing *about* $5,000.

We have emphasized "*about*," for the reason that not a single plan presented could be built in *this section* for the sum specified. This fact was taken into consideration by the committee appointed to determine the merits of the various designs, and the question of *cost* was left entirely out of their calculation, the *merits* of the various plans being the criterion upon which their decision was made. This was only just to all parties—ourselves included—and we have presented the plans according to the merit bestowed upon the same.

In our initial number of the new year we reproduce the plans and elevations of "Tease Quare." Under this *nom de plume* credit belongs for the same to Oliver C. Smith, Cincinnati, Ohio.

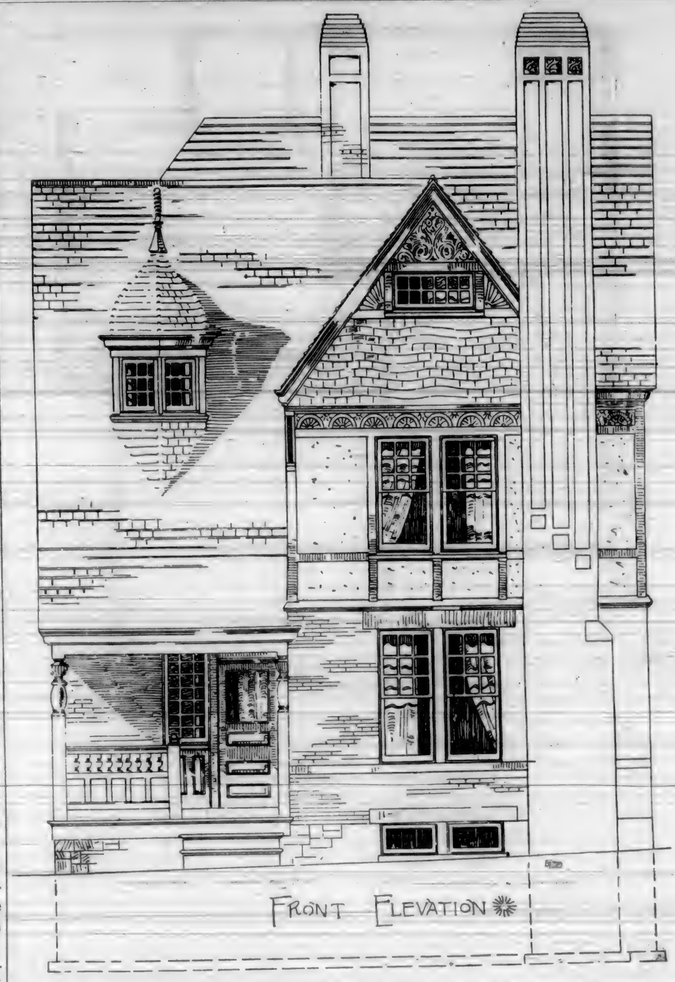
The elevations are somewhat different in character from the style generally adopted on this coast, although, in certain sections, the picturesque appearance of the exterior would no doubt form a pleasing contrast to other buildings in its neighborhood.

The architect evidently has endeavored to follow one of the ideas of the profession, namely, compactness. The entrance hall is spacious, and from the same access can be had to every room on the first floor. The parlor is large; arrangements of the kitchen and dining-room are convenient. Fault can be found with the cellar entrance opening directly into the latter room.

The arrangements of the second floor, attic, and basement are very distinctly shown by our engravings.

We give in full the estimate of cost and bill of quantities, as furnished to us by the designer. It will be noticed that many of the items are much below the cost of the same in this city.

We also notice in this plan a lack of wash-bowls in any of the chambers; this fact we noticed in our remarks on the various other plans presented. We have been assured, however, that it is not customary to specify wash-bowls in bedrooms, where the amount is limited to that shown in the estimate presented; that is to say, in the sections of country in which were designed the various plans presented in the first architectural competition held under the auspices of the Editors of this Journal.

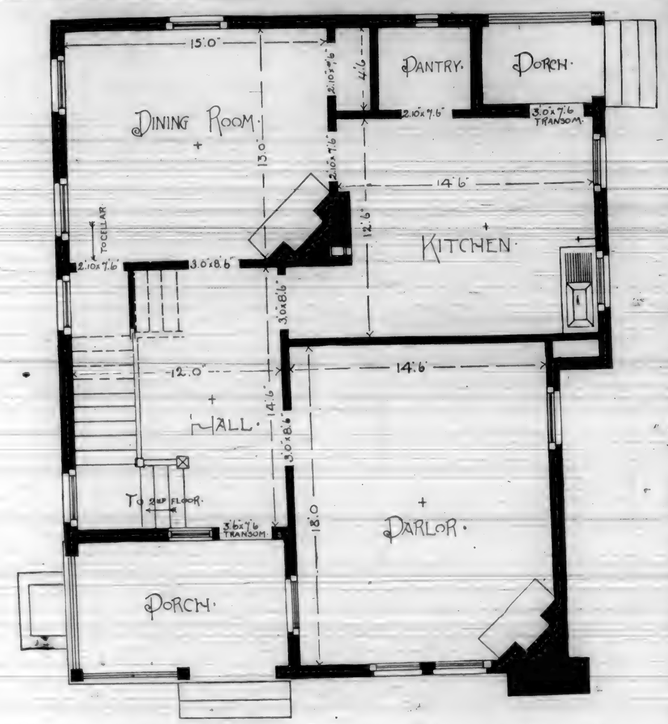


FRONT ELEVATION OF "TEASE QUARE'S" PLAN FOR A $5,500 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

BILL OF QUANTITIES.

"California Architect" $5,000 house competition; submitted by "Tease Quare."

Excavation, 250 cu. yds @ 30c	$75 00
Masonry, 70 perch @ $3.40	250 00
Brickwork, 23,000 (common) @ $12.75	293 25
" 11,000 (pressed) @ $42.50	467 50
Joists, 60 2x12, 16' 0" @ $16.00	32 00
" 50 2x12, 14' 0" @ $16.00	20 00
" 30 2x10, 16' 0" @ $16.00	13 00
" 25 2x10, 14' 0" @ $16.00	9 20
Studs, 60 2x4, 22' 0" @ $20.00	18 00
" 100 2x4, 10' 0" @ $16.00	11 25
Rafters, 50 2x6, 18' 0" @ $16.00	14 50
" 20 2x6, 14' 0" @ $16.00	4 50
Flooring, 6,840 feet @ $32.50	222 30
Shingles, 25,000 @ $5.00 per M	125 00
Exterior plaster, 116 yds, @ 50c	58 00
Interior " 2,820 yds, @ 25c	705 00
Box frames, 20 @ $9.00	180 00
Carpet strips, 50 feet lineal, @ 3c	1 50
Doors without transoms, 15 @ $9.00	135 00
" with " 5 @ $11.00	55 00
Cellar windows, 11 at $3.00	33 00
Base Mould, 1,200 feet lin., @ 9c	108 00
Finish (window and doors), 755 feet lin., @ 10c	75 00
Sheathing, 2,000 @ $18.50	37 00
Stairs	200 00
Cellar Stairs	30 00
Gutter linings and tin deck, 2 sqs., @ $7.00	14 00
Cast iron sink	6 00
Pump	10 00
Cistern	50 00
Iron work	20 00
Mill work	500 00
Freestone	40 00
Gas fitting	25 00
Glass and painting	300 00
Mantels	125 00
Hardware	150 00
Inside Shutters	150 00
Plumbing	175 00
Outside finish, 2,000 feet linear, @ $40.00	80 00
Labor	550 00
	$5.368 00
Architect's commission, 5 per cent	268 40
Total	$5,636 40



FIRST STORY OF "TEASE QUARE'S" PLAN FOR A $5,500 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

To Imitate Furniture Wood.

AFTER the color has been applied to the panel, take a large dusting brush of the kind used by painters, and, working the reverse way of your color, lightly pass over the surface with the tips or ends so as to blend together, as it were, the light and the dark. Quickness of manipulation is essential to obtain the desired effect while the color is wet, for it dries or "sets" very quickly. Use judgment in passing over the work, so as to vary the "beating" by turning your hand according to the various directions the veins have taken when first laid on.

Next take a piece of wash leather, damped and folded, to form a round, elongated edge, and proceed to wipe out all the light parts lying between the heavy color; then with another piece of leather fastened onto the end of a stick, and brought to a point like a pencil, proceed to cut out all the finer lines. If you find that your color sets while working, you must dab it on the surface—not rub it, else you will probably wipe off all the color. As soon as the panel is dry, you can, by the means of a flat fitch, proceed to put in all veins (or "worms" as they are sometimes called) which cross the grain, by using a little burnt umber diluted with beer to the necessary tint. If you want the work to have dark shades on its surface, then you must work in a little Vandyke brown. These dark shades and veins can be formed with a camel's hair or sable pencil, and blended together with the badger.

Passing on next to mahogany, we shall see by examining a piece of Honduras wood that it is much easier to imitate mahogany than oak. When the ground color is thoroughly dry, smooth and level the surface so that the brush marks shall be hardly discernible. Attention to this point will materially contribute to secure a good imitation. After this, proceed as before to remove with a damp wash leather all grease and dust. You will be able to judge whether the surface be free from grease or not, since no moisture will be absorbed by such spots, but they will appear dry and shining. If necessary, you may use soap and water. Some grainers will even rub the surface over with whiting and water, which has a good effect. Having prepared some Vandyke brown ground and mixed in beer, proceed to thinly spread it over the work, and while the color is quite wet freely dab a piece of sponge over it to gain the effect of light and dark shades, at the same time drawing the sponge a little. With your "softener" proceed next to blend the edges of the dark into the light shades, so that the eye may not perceive any broken lines or edges, and toward the finish use the softener (or badger) in the direction of the grain, or rather in the direction in which the dark veins of the mahogany are intended to run. When the work is dry, get a tint of Vandyke brown ready, and with a tool filled with a little color from the lightest of the dark veins or shades, using a drier brush to obtain the effect of a kind of over grain. These veins ought to run in the direction of the light above and below it. A little practice will soon familiarize you with this process. To gain a nice rolled mottle, as it were, a light dab of color must be given just under the lightest portion, so as to render it solid and opaque. Next blend all well together, which can be done, in the first instance, by means of the dusting brush before mentioned, while the badger may be employed for the finishing touches.—*Manufacturer and Builder.*

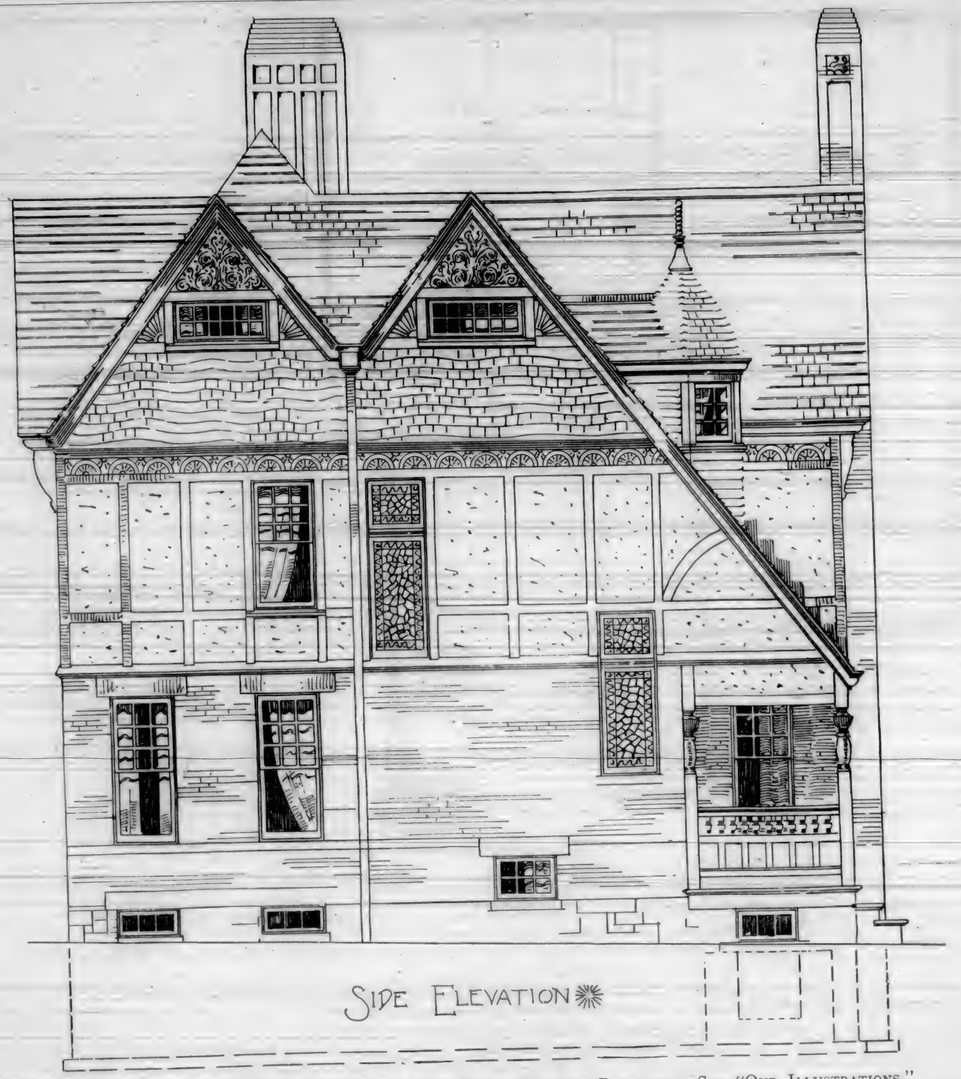
Chimneys.

A SOUNDLY built chimney vibrates, or swings from side to side, as a whole, under sudden and violent shocks of wind, and is in reality safer when it does so than when it stands in sullen and unmoved resistance. The vibration indicates that the several constituent parts of the structure are firmly compacted into one coherent, continuous, and, as it were, homogeneous mass, which can sway from side to side like a steel rod or spring, without any tendency to dissolve its continuity and break asunder at some intermediate point.

The absence of vibration, on the other hand, means that there is not this integrity of coherence, and that there are, so to speak, fissures of substantial continuity in the structure, at which disruptive strain is unavoidably developed. Sudden shocks of wind bursting upon lofty columns of brickwork in such circumstances tend to break them across at the joints where the interruption of continuity occurs. The movements of vibration are there absorbed, and converted into the less desirable condition of molecular strain.—*Scientific American.*

New Way to Lay Slate Roofs.

A NEW kind of slate roofing has come into favor. Each slate is laid in a peculiar kind of cement, consisting of liquid coal tar thickened with a cement, or, better still, a quantity of ground slate, slacked lime and linseed oil, the proportions varying according to the requirements of the case. This substance is heated until liquid, poured on a shed roof and the slates embedded in it with their whole face exposed. When of just the right thickness, the compound adheres with extreme tenacity to the slate, and cannot be detached without violence. The cost of a roof of this kind is said to be less than one of tin, and, on account of the greater surface exposed, is considerably cheaper than ordinary slate roofs.—*Ex.*



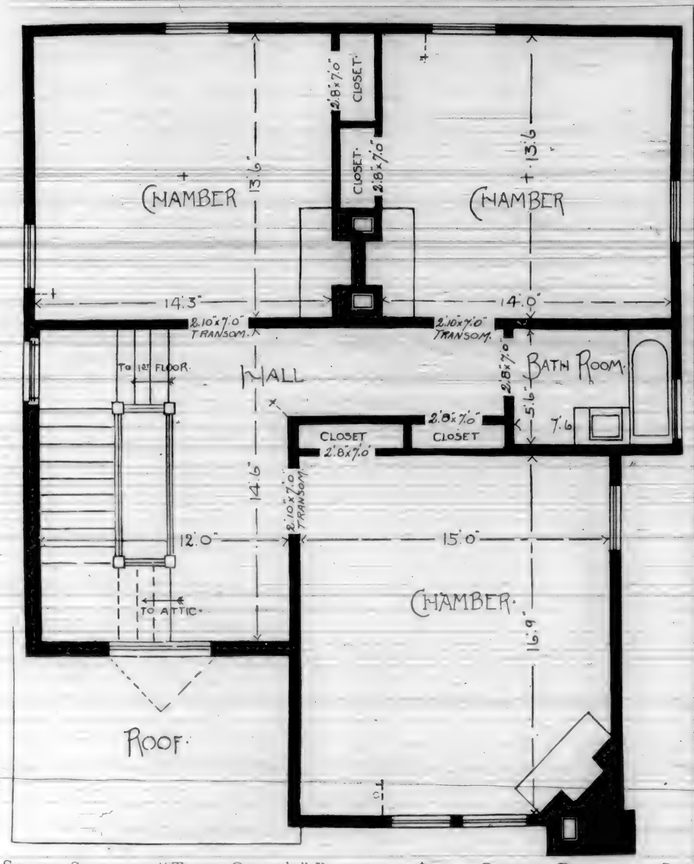
SIDE ELEVATION OF "TEASE QUARE'S" PLAN FOR A $5,500 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

*Mechanic, Take This Home; Read To-night.

FOR a long time past we have had the pleasure of addressing ourself particularly to the mechanics in the shops, but inasmuch as we shall not appear before them again this year, we propose to go with you and remain awhile in the sanctity of Home. The year we have traveled through together is nearly gone, and will soon be numbered with its predecessors. Many of us have reason to be merry and glad, others are borne down with grief, and with hearts bleeding and torn enter sorrowfully the glad new year by the side of the merry and gay. For once let us bury our sorrows in the graves of the past; and, dear friends, let us dig the grave deep and wide, pile it wide and high with the beautiful soil, and strive to heal the wounded heart in forgetfulness. We know how hard it is, for one year ago we placed beneath the clods of the valley an only beloved daughter, and when the waves of memory backward roll, the heart and mind will dwell on the vacant chair. But let us all forget what has been; let the little dead slumber silently, and we all will look forward to the future, and center our hopes and aspirations on those who are with us yet.

We have no high-sounding platitudes, no brilliant rhetoric bespeaking the dawn of better times, no political harangue that the party in power will make the rich poorer and the poor richer. Those who have been disappointed in their choice seek consolation in

*This article should have appeared in our December issue.



SECOND STORY OF "TEASE QUARE'S" PLAN FOR A $5,500 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

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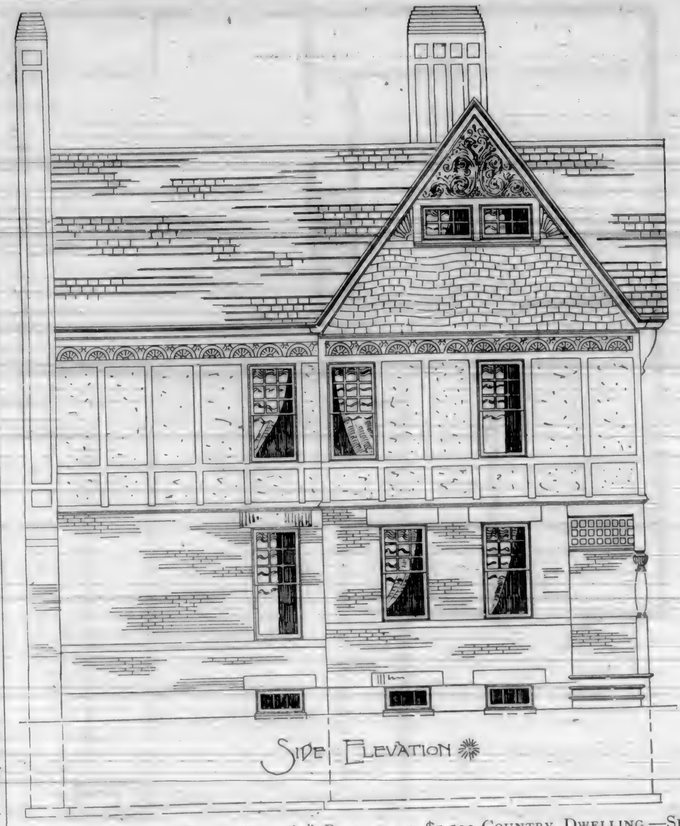

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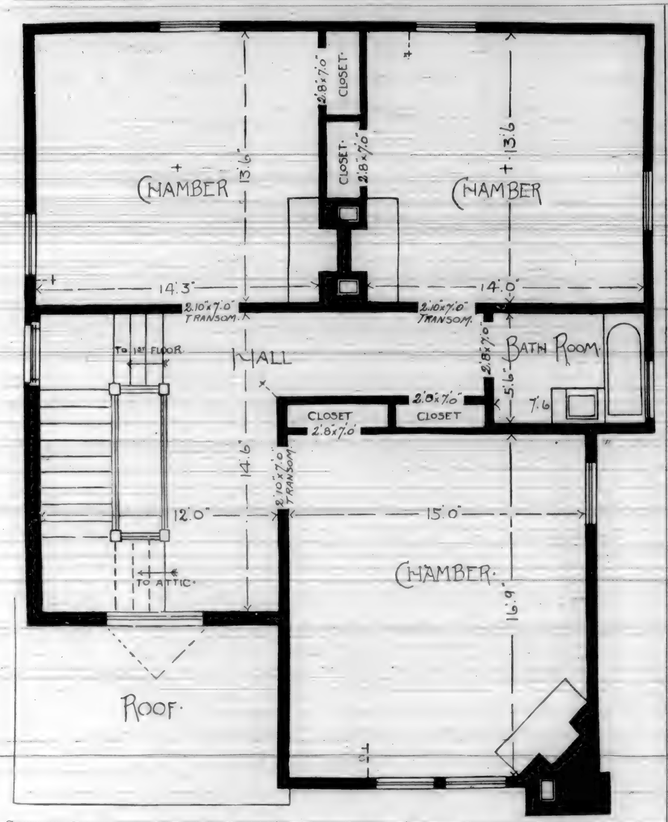

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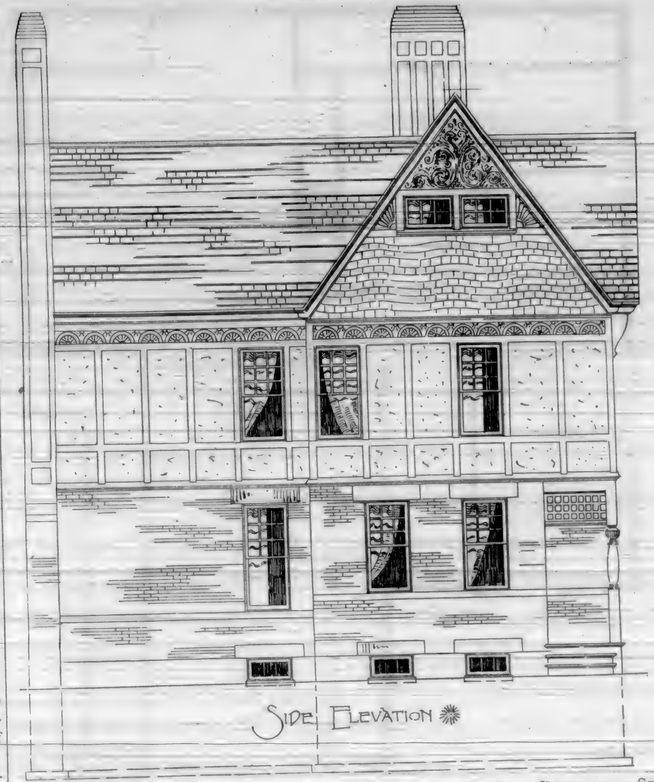

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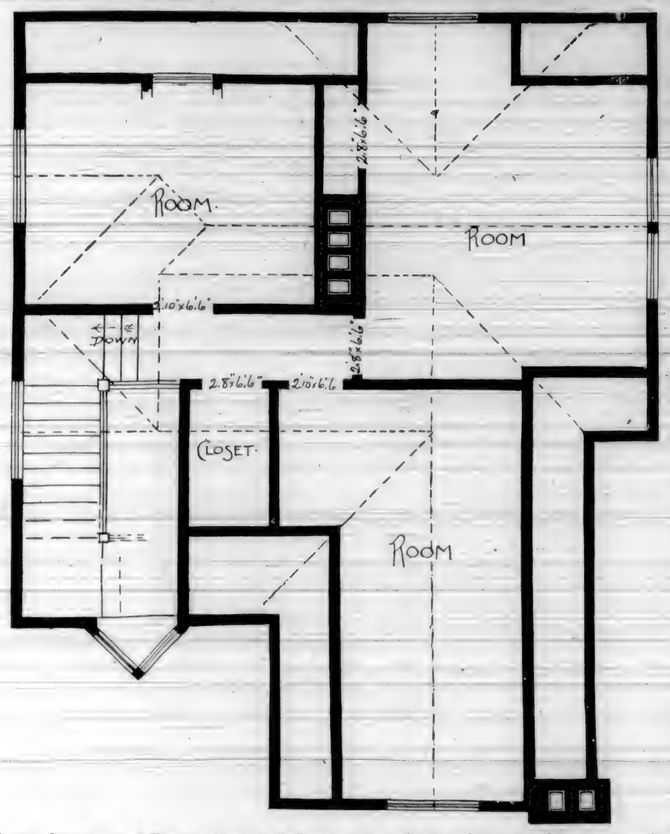

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The Planning of Houses.

A HOUSE, to be well planned, should be useful and convenient for carrying out domestic arrangements in the simplest and easiest way. The necessity of the architect making this his first consideration is very obvious. A thing to be of the highest value must be useful, and nothing more so than the houses we live in. A house should be arranged so as to suit or even improve the habits of the people who live in it. It should also be a healthy house, otherwise it sadly fails in that which a habitation ought to be. In the matter of convenience and completeness, it should be self-contained, both in and out. This should be striven for in designing houses of all classes, but especially those of the lower. To have one room entering from another is bad planning, and should be avoided. In cases of sickness or privacy it is very objectionable.

If a house is contrived, to begin with, so that it is deficient in that which provides for ample light, ample ventilation, and good drainage, it gradually becomes a diseased house, which nothing will cure, and I cannot impress too strongly the need of designing houses which will prevent as far as possible that share in the death rate of our city which unhealthy houses lead to. There can be no doubt that a house that has been subjected to the escape of bad air, the soaking of the basement by leak-drains passing under the building, has the living germs of disease about it, and I cannot state this view too forcibly, as in my opinion there are many such houses in our city, which throws a heavy responsibility on those who had to do with their imperfection in this respect. Drawings of drainage, showing accurate line as well as the course of bends and level, should be as carefully done as any detail of the building.

Besides having the rooms self-contained, the staircase or lobbies should be wide, airy, and well lighted. They are the lungs of the house or building. A narrow, dark, badly ventilated staircase is fruitful of disease, and so is the lobby. At the present moment I see tenements of houses being erected which are sadly defective in this way; by whom planned I know not, but they or the authorities who permit their erection have much to answer for. It is difficult to understand how the authorities can allow tenements of houses to be erected having narrow, dark staircases, water-closets in the center of the building, lighted from the staircases, and with attempted ventilation by a pipe to the roof, which is more likely to supply air to the heated house than draw the vitiated air from it, besides the danger of allowing the air of one house to pass into another, and so propagate disease if such should exist in the building.

Healthy and unhealthy houses, individually or in groups and districts, are perfectly well known to medical men, and it is matter for consideration whether these should not in some unmistakable way be specially distinguished. The effect of this would probably be to bring those who own such houses to see it to be their interest to make them properly habitable.

In the selection of houses a cheap rent is often a great inducement, even to those who can afford to pay on a higher scale; but if this is done to the neglect of sanitary arrangements, it becomes foolish economy, as much more may have to be paid for doctors' bills than would have to be expended for better accommodation, apart from the suffering from ill health and its consequences.

In the choosing of houses we are not so concerned for those who have the means, and ought to have the knowledge, to enable them to select a healthy residence. The class we are sorry for are those who, from limited means or circumstances, cannot pick and choose, but must take what is offered to them, whether healthy or no; and I would point to the need of all proprietors having their houses certified as to their healthiness. If the legislature provide for the safety of sailors in seaworthy ships and the protection of miners in dangerous mines, action in the direction I have indicated is not less but even more urgently needed.—*J. Gowans, in Carpenter and Builder.*

Useful and Practical Hints for the Artisan and Mechanic.

WOOD may acquire an oak, walnut or cherry tree color by staining it with ordinary tincture of iodine diluted with spirit until the exact shade is obtained. White shellac must be added to the iodined solution if the stain is to be made permanent, or the wood after the stain is applied may be French polished. The iodine may be laid on with a rag or a brush.

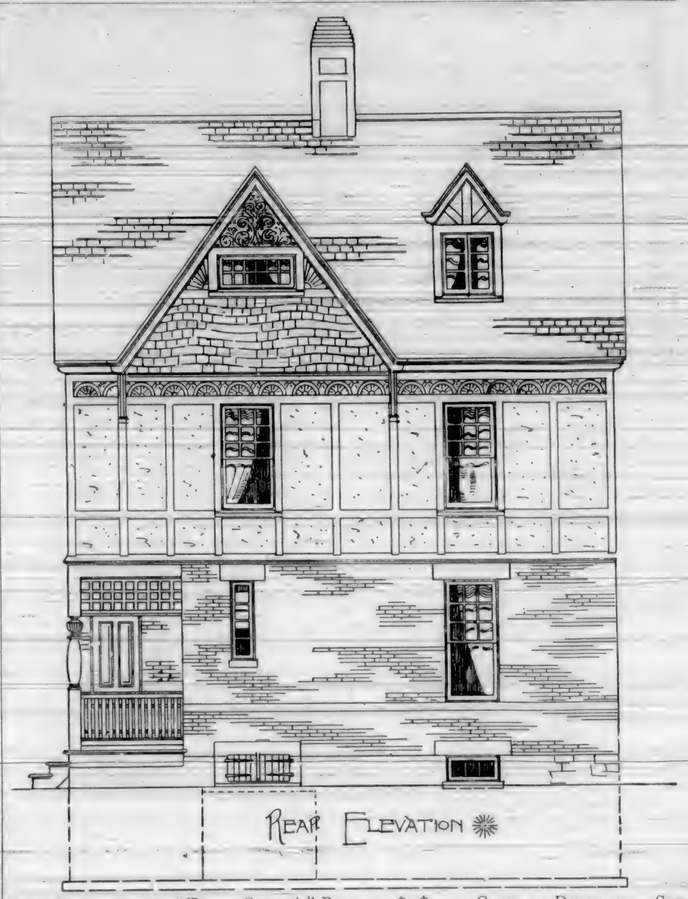
The Largest Room.

THE largest room in the world, under one roof and unbroken by pillars, is at St. Petersburg. It is 620 feet long by 150 in breadth. By daylight it is used for military displays, and a battalion can completely manœuver in it. Twenty thousand wax tapers are required to light it. The roof of this structure is a single arch of iron, and it exhibits remarkable engineering skill in the architect.

Building "Boom" in the United States.

SPECULATION in the United States has considerably diminished during the past twelve months, and the same remark applies to the construction of railroads. The chief feature now of domestic interest is the building "boom," which has spread throughout all the great cities. Yet, with the exception of Baltimore, the movement is not a speculative one. The great bulk of the buildings raised are in connection with the working classes, and many of them have been raised by workmen themselves. It is stated that in Boston, Chicago, Philadelphia, and nearly all the northern cities, there is a marked tendency towards the erection of small houses in the suburbs or outlying districts. In Chicago money is freely lent for building purposes at 5 per cent. In New York, Boston, Philadelphia, Chicago, St. Louis, Cincinnati, and New Orleans $114,000,000, have been invested in the erection of houses during the past year, representing about 18,090 houses, or an increase in the population of the above cities during the year of 130,000. The New York houses have been large and expensive buildings, flats, etc., as a workingman cannot there enjoy the luxury of a house of his own. But this is exceptional. The amount of building going on in New Orleans has been phenomenally large, much of this being due to the Exposition. There has been improvement generally in the number of dwellings, indicating an increase of population; and also a marked tendency in the direction of handsome dwellings, manifesting a good style in architecture.

La Semaine des Constructeurs gives an account of a competition, which recalls so strongly the history of many similar affairs here that we commend it to the attention of our less experienced readers. It seems that the town of Aubervilliers wanted a schoolhouse, or rather a group of school buildings, after the French fashion, to cost about eighty thousand dollars; and it was decided to obtain several plans, by the process of competition. A letter was therefore sent by the mayor to several architects, inviting each to furnish a design, and informing him that no payment would be made for the competitive plans, but that the author of one adopted would be employed to direct the work, and would receive the usual commission of five per cent. on the cost. Three architects accepted this invitation, and sent designs. Two weeks before the time set for receiving the plans an election was held, and a new mayor was chosen. This official, on being inducted into office, found the plans waiting for him, and, apparently desiring to emulate his predecessor before it was too late, engaged a local architect, named Pochet, to make a design for the building. M. Pochet seems not to have been much better versed in the science than in the etiquette of his profession, and his first attempt was so unsuccessful that he was directed to make another, which, two months after the other plans had been sent in, was placed with them as a competing design. Nothing in the way of municipal building can be carried on by local authority in France without Government sanction, and the mayor having been somewhat urgently addressed by two of the competitors, at last sent a request to the prefect of the Seine to have an expert appointed, who should report upon the merits of the four plans. The prefect appointed M. Trélat, one of the most distinguished among French architects, who, a few weeks later, presented a report, placing at the head of the list one of the designs first sent in, and advising its adoption by the town. Last in order he placed the project of M. Pochet, which he criticized sharply. The result of the judgment seems to have disappointed the mayor, who had certainly afforded M. Pochet every reasonable facility for winning success, and he delayed for two weeks to communicate with the town council. When this was at last assembled, a discussion took place with closed doors, and after one or two adjournments, it was announced that a vote had been passed to reject all the plans. The grounds for this decision have not been made public, but at the last accounts steps had been taken for inviting new competitive designs. Whether the architects of the neighborhood will offer any more, or what the town will do if no plans are received, remains to be seen.



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A German paper says that a roof can be made fire proof by covering it with a mixture of lime, salt and wood ashes, adding a little lampblack to give a dark color. This not only guards against fire, it is claimed, but also, in a measure, prevents decay. The materials are certainly inexpensive, and, it seems to us, reasonably efficacious.

New Books.

"ARCHITECTS' AND BUILDERS' POCKET BOOK." By Frank Eugene Kidder. Published by John Wiley & Sons, New York.

The principal aim of the author of this most certainly excellent work, is to give to architects and builders a *reference* book, which shall be to them a compendium of practical facts, rules, and tables, presented in a form as convenient for application as possible. The principal subjects that are treated in its columns relate to the strength and stability of foundations, walls, buttresses, piers, arches, posts, ties, beams, girders, trusses, floors, roofs, etc.; in addition to the above, is contained a great amount of condensed information and statistics and tables relating to carpentry, masonry, drainage, painting, plumbing, plastering, roofing, weights of materials, etc., etc. The whole is illustrated with over 400 original engravings.

A casual examination convinces us that the above is the best book yet presented to the classes it is designed to benefit. It was received too late for an extended notice in this issue.

"ARCHITECTS' AND STAIR BUILDERS' TABLES OF TREADS AND RISERS." By John A. Hamilton, architect. Published by W. T. Comstock.

A handy little work designed to save the time of busy men, and also for a text-book for the younger men, to whom the stairs are always a point needing strict attention to avoid mistakes. Price, 50 cents.

"STAIR-BUILDING MADE EASY." By F. T. Hodg-on. Price, $1.00.

This book contains a full and clear description of the art of building the bodies, carriages, and cases for all kinds of stairs and steps, together with illustrations showing the manner of laying out stairs, forming treads and risers, building cylinders, preparing strings, with instructions for making carriages for common, platform, dog-legged, and winding stairs. Numerous designs are also given for all kinds of newels, balusters, brackets, hand rails; etc., etc.

This work is principally designed for those who find it necessary to commence at the beginning and learn first how to build a stair of the humblest sort, until, by gradual acquirement, they are enabled to erect and complete stairs of a better description. The work is well written in the style peculiar to the author.

"ART AND SCIENCE OF STAIR-BUILDING." By R. T. Gould. Price, $1.00.

The object of the author of this work has been to reduce the art and science of stair-building to the shortest and most simple system of lines which will reach the end desired. The book contains thirty-six plates, descriptive of every portion of the work connected with stair-building. The author is well known, having written several other works in regard to the same subject.

"ARCHITECTURAL PERSPECTIVE," for beginners, containing eleven plates of practical examples, considered with reference to a student in an architect's office. By F. A. Wright, architect. Price, $3.50.

In preparing this work, the author has evidently kept in mind that large class of draughtsmen who are obliged to be self taught. Most of the works on the subject of perspective are either inadequate or too complex, if considered with reference to the actual needs of an architect's office. It is all very well to discuss vanishing points, visual rays, etc., but what the student in an office wants is the solution of the practical problems of making a perspective of a house. This book is of special assistance to draughtsmen who have but little time to give to perspective, and the start they may gain through its aid may be the means of causing them to study and learn more. The author has succeeded admirably in presenting his subject so that the student need not be confused.

Polishing Wood with Charcoal.

THIS method of polishing wood is described in a Paris journal. All the world now knows of those articles of furniture of a beautiful dead black color, with sharp, clear cut edges, and a smooth surface, the wood of which seems to have the density of ebony. Viewing them side by side with furniture rendered black by paint and varnish, the difference is so sensible that the considerable margin of price separating the two kinds explains itself. The operations are much longer and much more minute in this mode of charcoal polishing, which respects every detail of carving, while paint and varnish would clog up the holes, and widen the ridges. In the first process, they employ only carefully selected woods, of a close and compact grain; they cover them with a coat of camphor dissolved in water, and almost immediately afterward with another coat, composed chiefly of sulphate of iron and nutgall. The two compositions, in blending, penetrate the wood, and give it an indelible tinge, and at the same time render it impervious to the attacks of insects.

When these two coats are sufficiently dry, they rub the surface of the wood at first with a very hard brush of couch grass (chiendent), and then with charcoal of substances as light and friable as possible; because if a single hard grain remain in the charcoal, this alone would scratch the surface, which they wish, on the contrary, to render perfectly smooth, The flat parts are rubbed with natural stick charcoal; the indented portions and crevices, with charcoal powder. Alternately with the charcoal, the workman also rubs his piece of furniture with flannel soaked in linseed oil and the essence of turpentine. These pouncings, repeated several times, cause the charcoal powder and the oil to penetrate into the wood, giving the article of furniture a beautiful color, and also a perfect polish which has none of the flaws of ordinary varnish.

What Constitutes Good Mortar.

MACHINISTS and engineers often have occasion to use mortar, and will value the appended information: Good mortar is a solid silicate of lime, that is, the lime unites with the silica or sand to form a silicate of lime. In ancient days those who had some conception of the way the two things united superintended their mixing; but nowadays anybody is supposed to know how to make mortar, while nobody knows much about it. Dry lime and dry sand laid together or mixed and kept dry for a thousand years would not unite to form silicate of lime any more than acetic acid and carbonate of soda dry in a bottle would effervesce. To make silicate of lime just as good as was made by the Romans, all that is necessary is to proceed intelligently: Procure good caustic, *i. e.*, fresh-burned lime, and if you find it all powder, *i. e.*, air slaked, don't use it; use only clear lumps. Slake this (if possible in a covered vessel), using only enough water to cause the lime to form a powder. To this while hot add clean sand—not dirt and loam called sand, but sand—and with the sand add enough water to form a paste. Then let it lie where it will not become dry by evaporation, if in a cellar so much the better; for as soon as you have mixed the sand and lime as above, they begin to react one on the other, and if not stopped by being deprived of moisture will go on reacting until silicate of lime (as hard as any silicate of lime ever was) is formed.

But if you take this so-called mortar as soon as made, and lay bricks with it, unless the bricks are thoroughly wet, you stop the formation of silicate of lime, and might as well lay your bricks in mud. Lime and sand, after being mixed, might lie two years with advantage, and for certain uses, such as boiler setting, or where the whole structure of brick and mortar ought to be mixed for one year before use, and two would be better; but for house building, if the bricks are so wetted as not to rob the mortar of its moisture as soon as used, mortar that has been mixed a month will form good solid silicate of lime among the bricks it is laid with in ten years. The practice of mixing mortar in the streets and using it at once is as foolish as it is ignorant, and would be no improvement. Silicate of lime is made only by the slow action of caustic lime and sand, one on the other—under the influence of moisture. Dry, they never will unite, and mixing mortar as now mixed and using it at once, so as to dry it out and stop the formation that the mixing induced, is wrong.—*Sel.*

The fact that two adjoining proprietors verbally agreed upon, and for a long space of time mutually acquiesced in, a boundary line between their respective premises, will not prevent them, or their grantees, from subsequently disputing the correctness of the same, unless it further appears that at the time of such agreement the boundary line was doubtful, uncertain, or in dispute.

The Origin of Sewer Gas.

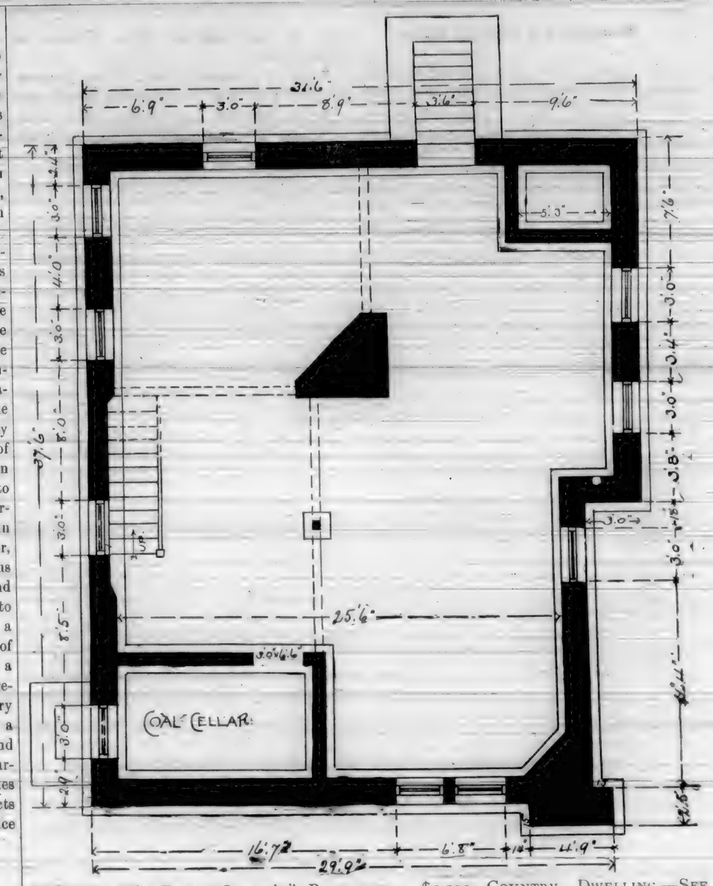
THE idea commonly obtains that sewer gas is a product of the decomposition of excrementatious matter, and that, therefore, the absence of a water-closet within doors disposes of the possibility of its admission to the dwelling. In consequence, the safeguards against its entrance, which are considered essential in the plumbing arrangements of a water-closet, are apt to be omitted in those which pertain to the bath-room or the kitchen sink.

This supposition rests, however, upon a two-fold error. In the first place, sewer gas is generated only in small quantity within house-pipes which are connected with a sewerage system. It is develop'd in far greater degree in the main sewer and returns along the course of every separate house-pipe which is unguarded by traps, water-seals and due ventilation. House plumbing arrangements, on the other hand, connected with a cess-pool, may become a conduit for the upward passage of sewer-gas of local origin. The introduction of excreta to the cess-pool is not necessary to its development therein. The amount of organic matter removed from the human skin and disposed of by means of the bath-water, is alone sufficient to originate the gaseous products of decomposition. The animal and vegetable substance which finds its way into the waste-water ordinarily deposited in a kitchen sink, is likewise a fruitful source of foul gases, which are competent to infect a dwelling-house unless properly excluded therefrom. It is essential, therefore, that every precaution be taken in the arrangement of a waste-pipe whencesoever it originates and wheresoever it goes. The householder is surrounded upon every side by invisible agencies of disease, and eternal vigilance, as respects these avenues of their approach, is the price of health.—*Cincinnati Building Review.*

The Results of Machinery.

NO CARPENTER in a city now thinks of lugging about a 300 pound chest of tools, consisting only of moulding, sash and match planes, as many in the country did in former years, in addition to the ordinary chest of tools which came into every-day use. Nowadays fine office and store fixtures, and much other work, come from the mill in such shape that a couple of ordinary clever workmen, with only a shoulder box full of tools between them, will put it up more rapidly than the thoroughly trained carpenters of old times after making the fixtures by hand. The proportionate number of good carpenters is decreasing from this, and the fact is that when a man finds himself good at any particular branch of the business, he follows it in preference to any other, and finds it more profitable to do so.—*The Carpenter.*

Article headed "Mantels and Grates" in our last issue, should have been credited to *Inland Architect and Builder*. A blunder not intentional on our part.



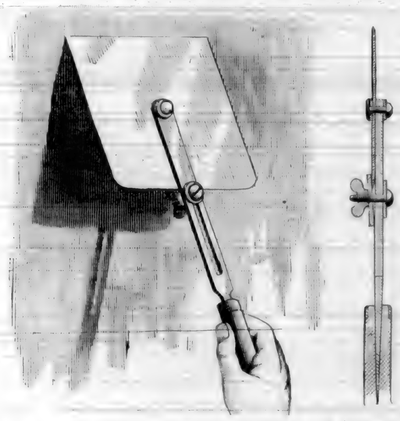
BASEMENT OF "TEASE QUARE'S" PLAN FOR A $5,500 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

In no field of commerce is the rule of "cheap" prices, "cheap goods" so generally true as in the purchasing of building material; and because of this, property that should remain substantial and unimpaired for many years rapidly depreciates because the owner at the start sought to cheapen his building by giving a low price and expecting to obtain good work and good material. The owner has probably been educated to this by first buying his lot.

He finds that real estate in a certain neighborhood is of a certain supposed value, that value being the price paid in the more recent purchases, and if he succeeds in obtaining his ground for a less figure he has made a good bargain, and his ground is worth just as much as though he had paid a larger sum. He goes to his architect and tries to secure "cheap" professional services. Such can be had, but he has now entered a field where values are unchangeable. It is impossible to get good services cheap, but he does not know it, or willfully closes his eyes to the fact, and the result is the business man who would not dream of submitting an important law case to a "cheap" lawyer, or trusting himself in the hands of a "cheap" physician, will consider the less he pays his architect the better off he is. He insists upon "cheap" contracts, and perhaps the contractors, after figuring upon the lowest "living" basis, are requested to re-figure, and the result is a lot of contracts let for less than cost, and a building that is "skimped" in every place it is possible, and in the end the owner receives a building that in a few years will be practically worthless. It seems to us that architects can do much to regulate all this by educating the building public. They should deal with none but reliable contractors, and feel perfectly free to give a contract to the most capable builder, instead of the lowest bidder, where the circumstances warrant it. This is a professional question that should receive the early attention of architects.—*Inland Architect.*

Whitening and Scraping Walls.

THE modern mode of whitening or kalsomining hard finished walls is such that in frequent repetitions of the work, with various inequalities in the mixtures, it soon becomes surcharged. This is one of the causes of scaling, bunching in sponge-like masses, leaving the work uneven and unsatisfactory. Plastering, when thus loaded, should be at once removed by sponging or scraping, leaving it, when so done, clean and ready for a renewal of the whitening process. Many whiteners, instead of removing the superfluous mass, resort to subterfuge, and besmear the walls with vile mixtures to tide over to a more convenient season, or leaving the blotched, overcharged walls for the *next*, to whom it may concern to rectify. The one apology frequently made for this neglect of the work is inadequate compensation, that the price of work is so reduced that it don't pay. This latter remark is too true in this case, for it does pay to finish up a job in a workmanlike manner. It is true the prices have declined, but no more so than in other mechanical lines, and yet good work still pays the hard-working whitener. There is great complaint made of the laborious work to scrape and cleanse whitened walls, and the principal reason is that too many of them employ poor tools to do this work, and therefore it is more arduous. To render this part of the work less irksome, a new patented scraper has been introduced which will lessen the labor by its mechanical adaptation to this class of work. I refer to the Patent Reversible Scraper just come into use; by it the workman has in hand a good sharp tool, four sided, having two sharp and two square edges, with one of them rounded on the corners. With this tool he can do more work, and can do that work better with less expenditure of labor. One of the advantages of this reversible scraper is that when one side is dulled it can be turned and another side can be brought forward to push on the work. Good tools are compensating, and those who use them will feel proud that such an implement has been invented to lighten labor.



When the plastering has been properly scraped or washed, the exposed defects are mended, and then rewhitening them with good materials the plastering will come out bright and clear like new walls. Work done in this style will command a better price, and will ensure the mechanic with many walls for his superior work. J. E. W. C.

One day a Parisian, whose wits constituted his sole capital, saw an eligible plot of building land at the corner of two streets, and reflected that the man who built a house there would be a lucky fellow. Some twenty yards further away he noticed another eligible plot of building land covered with building materials. On inquiry he discovered that the corner plot belonged to a Breton nobleman, who had had losses on the Bourse, and was living economically in Bretagne to recuperate. The plot with the building materials on it had belonged to a celebrated doctor who died a couple of years ago, and about whose will an action has been pending for the last eighteen months before the courts of Auvergne. Our swindler, sure of not being disturbed for some time, at once went to a young architect, and got him to make the plans for a fine mansion at the corner. After having approved of the plans, he authorized the architect to make an agreement with a contractor and to use the materials on the other plot, which he said was also his. The work went merrily on, and the sharper brought a few old ladies, to whom he had sold shares in gold and silver mines in improbable regions, to admire it. At the sight of such splendid security they did not hesitate to advance him all the funds he asked for. Everything has an end here below.

One day the Breton nobleman came to Paris and went to look at the land that want of means compelled him to leave unproductive. He was of course delighted at the agreeable surprise that met his gaze, and inquired of the builder who was the unknown benefactor to whom he owed it. The builder referred him to the architect, who referred him to the pseudo-owner, but the latter had not been home for many days. He was, in fact, in Mazas Prison on account of some imprudent act he had committed in the neighborhood of the Bank of France. His affair, as the French say, was clear; nor did he attempt to deny it. Only during his trial he was seized with a fit of irrepressible laughter. On the Judge reprimanding him, and asking him what he saw in the matter to make him laugh, he apologized, and said that he could not help laughing when he thought of the intricate maze of actions-at-law his building freak would cause. The series is indeed a long one, and has already begun. The contractor sues the architect, the architect the Breton nobleman, who maintains that whatever is on and under his land belongs to him; the Auvergnate heirs also sue the Breton for the materials, and the old ladies sue everybody else, pleading that the land, building, and the materials belong to them as security for the money advanced. Such is the substance of a story told by the Parisian correspondent of the *Manchester Evening News*.

Carrying Coals to Newcastle.

THE following remarks taken from one of our leading mechanical journals, aptly illustrate the folly of sending East for material, a better duplicate of which can be found on this coast.

"The famous Flood mansion, in San Francisco, is being finished, in part, at least, with cut brown-stone The stone is all cut, dressed and marked in the quarry in Connecticut, and when reaching the structure is placed in position at once as originally calculated, without redressing or fitting. A San Francisco paper a short time since mentioned the arrival of a ship, 150 days from New York, with 350 packages of cut brown-stone for this building. This would seem very much like carrying building material around the globe, or at least a distance nearly equal to the circuit. Such a shipment, it is hardly necessary to remark, is somewhat unusual."

A foreign contemporary says: "Nothing adds so much to the cost of building as indulgence in whims. To set out deliberately to do a 'queer,' 'fanciful,' or, as it is sometimes called, 'original' thing in building is always to incur unnecessary expense. If we look through the books that contain pictures of the architecture of all ages and nations, we shall find that, without an exception, in the times all men of taste are agreed in calling the good times, the modes of building have been sensible, founded on the needs of the case, and that whatever may seem fanciful—the whole of what we call picturesque—when its charm has proved enduring, is the result of what we may call, in every case, 'accepting the situation.' Nothing has been done in such instances for the sake of being picturesque. Good building, good ornament never poses. In building, as a rule, every departure from the rectangular form is an added expense. One of the things impressed on the mind of a young man who goes into an architect's office to study the profession is, that if cost is to be considered, which it sometimes is, and sometimes is not, all excrescences and projections must be avoided. A rectangular house is the cheapest. Bay windows, porches, octagonal or circular, external ends to rooms—all these things cost money, and it is by multiplying these features that the expenses of building are often made so great as to deter people from undertaking it, for the things seem so small in themselves, it is not suspected what drains they are on the purse. If a good reason cannot be given for any so-called ornamental feature in a house, if it cannot be shown that something worth while is to be gained by making it, we may be reasonably sure that it is a fancy which will cost, as the country people say, more than it comes to. And in the greater number of cases, nothing, even in looks, is gained by indulging the fancy."

The Way Out.

EXPERIENCE keeps a dear school, not altogether because her rates of tuition are so high, but because her pupils, meaning average and aggregate humanity, stubbornly refuse to learn and remember disagreeable and uninteresting lessons. She has taught us over and over again, charging a tremendous price for the instruction, that it is dangerous and wicked to entice a great number of people into a large hall or church by the promise of amusement, instruction, entertainment or salvation, and then, when the curtain falls and the lights are turned off, dismissing them suddenly and all at once, leaving them to find their way out as best they may. We have found that, even with no more powerful incentive to haste than the wholesome desire to get into the fresh outer air as soon as the performance is concluded, there is great discomfort attending the exit and not a little danger to those who are feeble of breath or limb; yet we go on building public halls with most sublime disregard of these familiar facts, apparently oblivious of former experience and of the warnings that are constantly occurring. For a short time after the periodical theater panic, or the crematory exercises, there is a popular interest in the subject which goes so far as to cause a few extra cautious people to forego for a season the prospect of an evening's amusement rather than suffer the anxiety attendant upon entering the tempting trap, and a few others to give only half their attention to the entertainment, the other half being on the alert for signals of calamity. In a few weeks, or months at most, even these cautionary symptoms disappear and the crowd pours in without a thought of the facilities for getting out.

We visited recently a model public hall. The exterior of the building bears conspicuous, unmistakable evidence of the rare skill and artistic ability of the designer. It is the embodiment of originality, dignity and grace. There was evidently an ample appropriation for carrying out the architect's conception, and certainly there were no restrictions as to space; there are acres of land to spare. The main hall will hold comfortably six or eight hundred people, possibly a crowd of a thousand. It is in the second story of the building, perhaps sixteen or twenty feet from the ground. The way into it—but that is of no consequence, people go in slowly by twos and threes, singly or in small squads; the way *out* of it, which is, of course, the same thing, is through a single stairway that winds down inside a small octagon tower in one corner of the building, a stairway barely wide enough for two level-headed and average-sized people to go down abreast; three would choke it. This is one of the most recent and beautiful of public buildings.

In another New England town we recall a huge, pretentious block, the third story of which is occupied by a large hall fitted for lectures, musical and dramatic entertainments. The hall has a gallery, but the main floor is

DESIGN FOR RUSTIC COUNTRY DWELLING.

thirty feet from the ground, that is, up two long flights of stairs, one long and straight, without rest or landing from top to bottom, the other doubled and twisted into three or four short runs. These stairs also occupy a tower at one corner of the building, a tower which, as regards height, would have been a fair beginning for the tower of Babel. There are four double doors five or six feet wide that open from the main hall into short corridors leading to the top of the stairs, one of these corridors being just three feet wide at the point nearest its outlet, and where it receives the stream from the gallery. The other corridor is somewhat wider, but is diversified by a post nearly two feet square standing about twice its diameter from the brink of the main descent. This is the only large hall in the town in which it stands, a town noted for the wealth, intelligence and public spirit of its inhabitants. This is not, however, owned by the public, though built for public use. It is "modern," and is reckoned one of the local "ornaments."

Once more, a city hall that holds three thousand people and is often filled to its utmost capacity; the way into that monstrous hall is up a winding stair, or rather two stairs, for it has two flights that are familiar to the enlightened public, and they wind to that degree that, in coming out, the entire audience must wheel by platoons - very small platoons—six times in descending the first twenty feet or thereabouts. Those who happen to be next the turning post on the way down, usually emerge—if they emerge at all—sadder and thinner than they went in. This evolutionary descent of the three thousand doesn't bring them to the street level. There is an outside flight of stone steps not unlike a section from the rugged slope of one of the great pyramids. It is a toilsome way, either up or down, and the gross labor performed by a full sized audience at each lecture or concert would take a congregation of respectable size—four or five hundred—to the top of Bunker Hill monument. But the American public is patient and long-suffering to the last degree in matters of personal ease and safety. We do not know that there has ever been a fatal accident in either of these buildings that can be attributed to their tedious and dangerous approaches. Perhaps there never will be. They are not mentioned as conspicuously dangerous examples, but are taken at random and are probably above the average as regards safety and convenience of access and exit. – *The Builder*.

A case has just been reported at Glasgow which shows convincingly enough how disease is spread and how danger may beset us, no matter what precautionary measures we may take. Time was when the careful wife had the family linen washed and got up under her own immediate supervision, and when drying-places abounded within reach. But we have changed all that. The drying-places have in the main disappeared, and the wife of even a very small clerk has become too genteel to have the washing done at home. We now give it all out, at some expense, it is true, but with less trouble to ourselves. And so the laundry has been called into existence, and laundries of every kind have been made profitable by the gentility of the masses, combined with the disappearance of open spaces. But there is no pleasure without pain. Our gentility is purchased at a great risk, for careful and cleanly as we may be, we are under the "genteel" system put on an equality of risk with perhaps hundreds of families who are not over careful and cleanly. This has been illustrated in the Glasgow case referred to. A woman sent infected articles to a laundry, but before much mischief was done the iniquity of the proceeding smote her conscience, and she confessed her wrong-doing. But how many are equally guilty, and how few repentant sinners are found amongst them! The risks we daily run outside our own personal supervison are indeed great – but then we are nothing if not genteel!

There is not so much risk in buying lumber now as there is in selling it to men who will pay for it when they get a good ready.

Modern House Painting.

In the early history of this country, houses were built with a view to the comfort and convenience of their owners, regardless of the appearance of their exteriors and of the most simple forms of interior arrangement, the prime object, and in most cases the sole object, being shelter; the usual form being box-like in shape, with right angle partitions running across from side to side, and from front to rear, forming rooms of the same general shape as the outside walls; entrance by the front doors, placed one in a long narrow hall, barely wide enough to admit of passage between the long, straight stairway and the wall separating the hall from the parlor. The size, shape and general nature of such an apartment—usually very dimly lighted—permitted of little in the way of decoration, either with pictures, hangings or furniture. Even at the present a large proportion of semi-modern houses are constructed with similar entrances, bare and cheerless, and which, rather than being considered as part of the habitation, are looked upon as mere passage ways to the living apartments. Of late years, however, a great change has been made in the character of home entrances. In modern houses we find a grateful absence of the tunnel-like hallways, and in their stead find ourselves ushered into cosy reception rooms, pleasantly lighted and heated by open fires and arranged in form to admit of ornament and decoration. The stairway, that is the sole occupant of the old style hallway, finds itself tucked away in a convenient place, where, with ornamental woodwork, tasteful trimmings and modified shape, it plays an important part in the adornment of what is no longer a hallway but an apartment. During the last eight or ten years great improvement has been made in the architecture of homes, and what has been given us in the line of improvements by those who make a study of the planning and construction of houses, has led people into studying the work of others in forming plans for their own homes. The effect of good ideas and improved methods of building is particularly noticeable in the numerous alterations and modifications of old houses, by which they are made to conform to modern tastes. People who contemplate building make a business of studying good examples and of educating themselves in matters of convenience and beauty as applied to the building and decoration of homes; thus an interest is awakened, new and unthought of ideas are put into shape, the fixed peculiarities and hobbies, of which all have more or less, are eliminated or toned down and modified by comparisons with the study of others (commonly the refreshing study, if entered into for the purpose of learning), which leads to the outlining of plans that go to the architect in so comprehensive a shape as to require little modification, and the owner finds his study quite to his taste, with the stamp of more or less individuality, as was expected and intended; while the fact that the owners are, to an extent, the creators of the structure lends an added charm to its beauty and the enjoyment of it. The prevailing style of building is of the Swiss cottage, Queen Anne or Colonial order of architecture, all of which offer a wide range of forms and permit of an endless variety of both exterior and interior decoration. In this order of construction there is an endless field of study for the painter and decorator, for, while any scheme in which harmonies are preserved will look well upon them, there are within the lines of harmonies such a multitude of schemes and combinations that a keen sense of fitness and no little artistic taste is necessary to determine which among the many possible schemes is best adapted to each particular subject. In fact, although good examples of modern artistic painting are numerous, there are few, if any, that are beyond criticism. Mistakes are not of infrequent occurrence, many of which are distinctly attributable to bad judgment in balancing. Take, for instance, an example in our mind of a first story in Venetian red, with a second story in an olive, with dark olive brown trimmings. The writer has seen this combination, and though decidedly bad, it is no worse than numerous others met with upon houses that offer superior advantages for good and effective coloring. In the example referred to, the colors are all good for the purpose, but the scheme, although well divided, is thrown wholly out of balance by the disposition of the colors. The red being lightest is made to support a heavier color, the effect of which is a dwarfed and flat appearance. The same colors transposed, will, with a little assistance, form a pleasing and correct combination if handled as follows:—

The dark olive brown of the trimmings should be made the body of first story, leave the olive on the second story, and use the red for trimmings, with the addition of a little yellow and a small quantity of blue. The use of the dark color for the lower body gives the idea of strength and support. The lighter color above seems to lift and brighten up the structure, while the warm colors of the whole trimming complete the harmonious combination. This combination will answer very well on a plain, ordinary house, but where the house is furnished with a number of bay windows, gables, porches and balconies, and an artistic effect is desired, it will require a special treatment with several more colors and shades of color.

Cottage houses, of which there are a great many being built at present, are of great benefit to the exterior decorator. These houses, being built of greater variety than other styles, allow of more varied styles of painting and a greater number of combinations of color. Many of these houses are built with the upper story projecting over the lower, and with numerous gables, bay windows, balconies, etc. When it is desirable to paint one of these houses with one color only, it is well to make at least four shades of it, the darker shade for the first or ground story, the next shade lighter for the second story, the next for all gables which are separated from the second story by ornamental bands, balconies or anything making a complete separation; body of all bay windows and all projections from the main building, the lightest shade to be used for trimmings. A very good combination for this style of house, if the second story is built with shingles, is to paint the first story and all of the trimmings a dark olive green, the gables a good citrine color, or what painters generally call yellow olive; for the shingle-work of second story use a red stain for the purpose of giving it the appearance of being covered with tiles; treat the roof in the same manner. Painters have found it quite difficult to make shingles retain the color produced by the stain. This trouble can be avoided to a considerable extent by the use of wax after the stain has become dry and before the shingles begin to turn dark. For a simple combination this is as good as any for this style of house, but where it is desirable to make more display of colors use three colors beside the stain for shingles.

In the original colonial style of houses the first story was built of either brick or stone, the second story and roof of tiles, and all the windows, doors and outside woodwork left the natural color, without paint; but the colonial order of houses of the present are built of other material, and it being desirable to keep them always fresh and new looking, it becomes necessary to use paint. The modernized colonial house is built with first story of either brick or stone, the balance of the house being wood.

In painting the woodwork, paint the body of the second story and roof with a red color in imitation of tiles; paint the balance of the woodwork, such as cornices, doors, windows, balconies and what other woodwork there may be, a light oak color. Where it is desirable to give more variety to the structure, use an olive green color on blinds, doors and around all ornamental work inside of frames, such as carving in gables, panels, etc. The frame should be in oak color.—*Painter.*

We wish no ill to the carpenter trade, but is not the storm-door and weather-strip business carried too far nowadays? In nine cases in ten the people in apartments protected by them are worse instead of the better on account of them. Few houses are properly ventilated. A great number have no provision whatever for ventilation. All the fresh, pure air the inmates get comes in through doors and windows. When windows are "caulked" or protected with weather-strips, and storm-doors shut out air, where is an adequate amount of pure air to keep the inmates in perfect health to find entrance? There are, doubtless, conditions in some houses which make storm-doors desirable for protection to health, but in general the more pure air people get the better. The most of them do not get enough.—*American Artisan.*

About Screws.

The screw is not, says a writer in the *Sewing Machine News*, of modern origin, although it was not known to the ancient Egyptians. The helix of the Greeks was the first thing known to be made in the form of a spiral, and was by them used in moving large, heavy bodies, and must have been constructed similarly to our jack screws. It was invented by Archimedes, at Syracuse, about 250 years before the Christian era. He also used a similar device for the purpose of raising water. (This last invention has been used by the Egyptians since the Christian era.) History gives us no account of how Archimedes formed his spirals.

Another inventor and philosopher, who lived in the fourth century, tells how he made screws.

He used a template in the form of a right angle triangle made from thin brass, which he wound around a cylinder, the edge of which he used as a guide to form the threads, after which the brass was removed. Of course this could not be done on very fine screws.

Besson, a Frenchman, in 1569, invented a lathe for cutting screws by the aid of a guide screw; and Hindly, an Englishman, improved it for use in watch making in 1740.

Ramsden, in 1776, invented a machine called a dividing engine, with which he made screws of a good quality.

Mandslay paid great attention to the manufacture of screws and invented several machines for the purpose—but finally settled down to the stationary knife, or cutter, and revolving rod. The rod revolved as in our modern lathes, and the cutting tool was fastened to a sliding plate, which was moved by a guide screw. This screw was made to revolve by belts and pulleys similar to some old lathes now in use. By changing the pulleys a different speed was given to the guide screw and the screw was cut finer or coarser as might be required.

From this sprung the gears now in use. Mandslay at first made the guide screws of different sizes and changed them instead of the pulleys, but this did not prove a success, as screws could be cut only the same thread as the guide screw used.

To Mandslay more than any one else is Holtzapffel indebted for points in his lathe, which was in its day the best in use, and is still very much used. Holtzapffel wrote a treatise on the lathe in three volumes, which is still an authority. His lathe is used not only for the purpose of cutting screws, but for all kinds of fancy turning. There is or was, not long since, one of them in this city.

The finest screw thread used in watches is 250 to the inch. These are made by automatic machines, and without the aid of a magnifying glass no thread can be seen at all. It takes over a hundred thousand of these to weigh a pound.

We cannot recount the thousands of different uses to which screws are put, but it may be of interest to know that the watch which you carry in your pocket, if it has a compensating balance, has 44 screws, 22 of which are in the balance wheel; and if you have one of the best watches these 22 screws are made of gold.

In the modern screw machine, different sizes of dyes are used. Knight, in his Mechanical Dictionary, describes them as being stocked in a circular head and such a one is selected, and presented to the plank as may be of the size desired. It has also a rest with a transversely sliding tool post whereby the screw may be cut off or dressed.

Automatic screw machines are now in use in all large factories. A company in Hartford, Conn., holds the principal patents on this kind of machinery.

There are various kinds of stocks and dies used for cutting screws, but as they are only used for special purposes or on a small scale, they require no particular mention. Their origin is unknown.

A Thief Killed By Electricity.

On a recent feast day at Cotopaxi, Mexico, the leader of a band of thieves in that section concocted a scheme for a large haul of plunder by extinguishing the electric light in the cathedral. He used a small wire, which in his ignorance he threw over the exposed wires of the electric light, and the current passing through his body killed him instantly. His confederates were appalled at the sudden death of their leader and fled, escaping capture.

Tenants May Vacate Unsanitary Houses.

A case has recently been decided in New York, justifying the right of a tenant to vacate a house and refuse to pay rent on the ground of unsanitary conditions. The case was: "In a suit for rent claimed to be due from a tenant of a suite of rooms in an apartment house, it appeared that the tenant's wife and servants were taken sick by inhaling a malarial or poisonous gas in the apartments occupied by them; that this unhealthy condition of the apartments was owing to a defective condition of the general plumbing work of the house, of which the landlord was notified by orders from the Board of Health, requiring him to have changes made in the plumbing work, and which unhealthy condition could have been removed if he had complied with these orders; that the defendant waited for two weeks, and finding that nothing was done on the part of the landlord, left under the apprehension that he was imperiling the health of himself and family by remaining." The case was appealed to a higher court and confirmed. It is to be hoped the practice will become general.

Whenever one person does work or service for another with his consent, and there is no agreement as to compensation, the law implies a contract to pay what the same is reasonably worth; but when the circumstances of the case clearly repel the idea that the work or services were done with the expectation of payment being either made or received, no such contract will be implied.

French Walnut.

The finest and most costly of the veneer woods is French walnut—a wood that does not come from France, but from Persia and Asia Minor. The tree is crooked and dwarfed, and is solely valuable for the burls that can be obtained from it. These are large, tough excrescences growing upon the trunk. In these the grain is twisted into the most singular and complicated figures. The intricacy of these figures, combined with their symmetry, is one of the elements that determine the values of the burl. Color and soundness are other elements of value, which vary very widely. Burls worth from $500 to $1,000 are not rare, and at the Paris Exposition for 1878, one burl weighing 2,200 pounds was sold for $5,000, or upwards of $2.00 a pound.

Windows are no longer placed in regular rows, with a mathematical precision, to which convenience and beauty must be sacrificed. The need or fancy of the builder of a new house is a sufficient excuse now for a window, and greater variety in size and shape than ever is shown in the house recently built. Square, rectangular, circular, and quarter-circle windows may be run on one house front; fashion having, happily, joined hands with convenience and fitness in this matter. Stained glass, in every variety of color and combination, is coming into general use. First-floor windows are usually large, but are so divided by sashes that the glaring effect of a great unbroken sheet of plate glass is avoided. Circular and arched tops are in high favor, the curved upper sashes being filled with colored glass. A favorite window of this description has a large, clear central sash with a transom and narrow side sashes, which are filled with jeweled mosaic glass. Beside the usual curtain, the lower half of the narrow side division has often a full sash curtain of Madras lace or silk gauze. The stained-glass work offers opportunities for admirable color effects. Floral and geometrical forms are better than any attempt at picture work, and mosaic effects are far more satisfactory than painting. Turquoise blue is very successfully used in contrast and combination with stronger colorings, and a window with side sashes filled with olive glass, shading from the deeper tones at the bottom up to a pale greenish amber, is very satisfactory. Where economy is necessary, a border of small panes of clear colored glass around the large middle sash is inexpensive and good in effect if the colors are well chosen and arranged.—*The Builder and Wood-Worker.*

At $15 per thousand mill run, 1,000,000 feet of lumber is worth $15,000; at $12 it takes 1,250,000 feet to bring that sum. Is it better for the manufacturers to so conduct their business that they will get the higher price, and leave the 250,000 feet in the tree, or crowd the markets and get the minimum price? Every manufacturer ought to quickly answer such a question.—*Northwestern Lumberman.*

Shingle Roofs.

THE form of roof known as a shingle roof is of the greatest antiquity. When it originated or by whom invented history fails to tell us. It is probably one of those things of natural growth which never had a definite beginning, but came up by gradual steps of improvement from a very primitive form to its present shape. Reasoning by analogy, it may have originated in an attempt to imitate the feathers of birds, which shed water in a most remarkable manner. Its prototype is also found in the arrangement of leaves on certain trees. It may have been preceded by the thatch and some forms of bark roofs, and those have come into use as an improvement on a still more primitive type. Shingle roofs may be described as pioneers in roof construction. When timber is abundant, a shingle roof is one of the cheapest that can be constructed. Its lack of durability in a comparative sense, and its frequent destruction by fire, make it less desirable than other materials; accordingly, as lumber becomes scarce, as house owners become wealthier, and as buildings improve in character, shingle roofs give way before material better adapted to stand the test of time employed in the newer sections of the country than in the older, and the use of shingles upon roofs is to a certain extent an indication of the class of buildings that are being erected. As pine timber becomes scarcer, and as prices for shingles gradually advance, their use is likely to be more and more restricted until it is possible that in this country, as in England, the time may come when their employment will be the exception. A shingle may be described as a flat, wedge-shaped piece of timber of varying dimensions. Shingles are made in length from 12 inches as a minimum up to 24 inches, and in a few cases still larger. In width they vary from 3 inches, which is about the smallest that can be used advantageously, up to the widest possible that can be readily obtained from the tree out of which they are cut. The thickness at the butt varies from $\frac{3}{8}$ inch to nearly $\frac{3}{4}$ inch with the different lengths. The points are from 1-16 inch to $\frac{1}{8}$ inch in thickness. The most common sizes employed are 16 and 18 inch. In some portions of the Eastern States 18 inch is the standard, while in the vicinity of Chicago and throughout the West 16 inch is the standard. In a commercial sense, a shingle is a piece 4 inches wide, and in speaking of 1,000 shingles we mean the equivalent of 1,000 pieces of whatever length, 4 inches wide.—*Carpentry.*

Fading of Water Colors.

THERE is a great deal of nonsense written and uttered about the fading of water-colors when hung in the sunlight. Experience has shown that they will not fade at all if they are under glass. If you lay a water-color under the direct rays of the sun, without any protection, it will fade. So will anything with color in it, except an oil picture. But no pictures are hung in the direct rays of the sun. The oblique rays, striking the glass, are harmless. As a matter of fact, a water-color properly mounted and tightly framed is less subject to changes than a picture in oil, whose surface is exposed to atmospheric influences and to dust and smoke, and whose back is bare to the influence of the moisture of the wall against which it hangs—an influence which is often quite pernicious.—*Art Amateur.*

The Form of Chimneys.

THE question is often asked which shape of chimney of equal dimensions has the best draught, the round or square form. Other things being equal the round will furnish the best. The principal object in erecting a chimney or stack is to place the apex sufficiently high above the surrounding objects to secure a natural current of air. With a square surface this is obstructed to a limited exent Furthermore, the best atmosphere in its ascent meets with more obstruction for making that circular upward motion so essential to good draught. But with the round exterior this motion is not obstructed, but is rather accelerated, and when the top is reached the hot air within is carried off with much greater rapidity than with the square exterior, hence, of two chimneys, one round and the other square, of equal dimensions in every respect, the former will be found to draw much better. Again, though it cost more to build the round one it is cheaper in the end, inasmuch as they resist the action of the wind less, and are not so liable to damage by cyclones or high winds. To be sure the round chimney is not quite so easy to arrange the flues after being built, but it must be borne in mind that one great drawback to many stacks is too many flues. It is much better to have one principal flue and connect the others with *this* than to make so many holes in the *main stack*, every hole making less draught.

The Dibble Manufacturing Co., of Trenton, N. J., have recently added four large hydraulic presses to their plant, with full outfit of fitting and finishing machinery to match. Their hemacite knobs are being used in steadily increasing quantity and are steadily increasing in favor. They are easily the best door handle for all interior doors, strong, handsome, durable, and pleasant to the hand, and moderate in cost. Never have they put out such well made and handsomely finished goods as now. Their processes have been greatly improved by the last six years' experience. Their works have run steadily day and night for the last three years. Many architects and their clients have asked them to make a plain, smooth finish hemacite knob, and such a knob they will presently offer, of handsome gothic shape, bronze mount, and head not distinguishable from finely finished ebony.

Write for illustrated list (free) to the company, or to Gordon Hardware Co., San Francisco, Los Angeles, Cal., or Seattle, W. T.

Unburnt Brick.

MUCH as many may dispute the fact, it is nevertheless true that unburnt brick form a much drier wall than burnt brick, inasmuch as they are not so absorbent of wet or damp. To make these, any ordinary clay will answer. If dry when obtained, it must be first moistened and thoroughly worked by the feet of cattle, or pounded by hand. Cut some straw into pieces about six inches in length; after being duly mixed with the straw the clay is ready to be made into bricks. A mould of any size may be made; this mould should have a bottom, but not air-tight, in order to prevent the brick from sticking in the mould. The clay is put into this mould and the brick formed much in the same way as ordinary brick. Should the clay be very tenacious, a little sand sprinkled into the mould will enable the brick to leave it freely. The bricks are placed on level ground to dry, turning them on their edges on the second day; thereafter left in piles, protected from the rain, for ten or twelve days. —*The Clay Worker.*

Sewing Machines and Slates.

SOME time since an Eastern sewing machine company received an inquiry from a Western house as to whether they could make a machine to sew through wood. The result of this correspondence was the sale to the parties of six or eight wax thread machines to be used solely in binding the edges of slates, such as are commonly used in school. Worsted binding is first passed to the edges of the frame, and then stitched on with the leather sewing machine. The object is to save the noise which naturally results from fifty or more slate frames clattering on the school desks at once. —*Sewing Machine Journal.*

How to Determine the Number of Wood Screws.

MANY times people have been at a loss to determine the number of a screw which they want for a certain piece of work, although they know the exact size by measure. Perhaps the following rule is not *exactly* correct, but it will be found near enough for most practical work: One-fourth inch in diameter is No. 15, and each 1-16 of an inch either way is five numbers; consequently, a screw measuring 5-16 would be No. 20, and 3-16 would be No. 10, and all other sizes in the same proportion. E. H. DAVIES.

Moulding Sand.

A LARGE proportion of the moulding sand consumed in the foundries of the United States is dug out of the hills of Albany County, N. Y. It is said that everything in fusible metal, from a Krupp gun to a heel plate for a lady's shoe, has been cast in Albany sand. Quantities of it have been exported as ballast. The annual shipment of sand (obtained thereabouts) from Albany is estimated at 75,000 to 100,000 tons, the price paid for it, delivered on board the cars or boats, being about $1.25 per ton.—*The Manufacturer and Builder.*

Our Exchanges.

WE have made arrangements with the Editors of the following Journals, by which we are enabled to offer quite a reduction to those subscribing for any one of them in connection with this Journal.

(The figures in parenthesis denote the price of the journals alone.)

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We will add to the above list from time to time, as our arrangements are perfected with the publishers. We are prepared to furnish any journal printed at the shortest possible notice.

The habit of "swearing off" at the beginning of the year is a time-honored one. The retail dealer should "swear" that he will look close to his credit; that he will keep his stock well assorted; that he will keep his yard in good order. The manufacturer should "swear" that he will go slow all along the line—in the woods, and in the mill; that he will keep well insured; that he will bear in mind every day that pine stumpage is not so plentiful in the Northwest that it should be disposed of for a song. The wholesale dealer is between two fires; he must do the best he can, therefore it will not avail him much if he swear at all. —*Northwestern Lumberman.*

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Upon receipt of $3.25 we will send a bound volume of this Journal of either 1880, 1881, or 1882 and the full year's numbers of 1885.

We have had an extra number bound of the years mentioned, and make this offer to increase our subscription list. We are bound to increase our list, so that the end of the year 1885 will witness not less than

TEN THOUSAND

Paying subscribers on our books.

Office hours are more necessary to be observed than almost any other rule among architects. The architect who, perhaps, has a partner or a capable head clerk can be indifferent to the hours when he may be found in his office, but he who has a small practice and no efficient man to take his place, while absent, should have stated hours when he is sure to be "at home" to the calls of clients and contractors. "It is rather discouraging," as a discomfited would-be client remarked of a well known architect the other day, "to call on an architect and find him 'out,' and have a young draughtsman peer from the obscurity of a high collar and a draughting board and say, 'Don't know' to an inquiry regarding the time when his principal can be seen." An architect must be popular, indeed, who will be likely to have a client call many times with such discouraging results.—*Inland Architect.*

The art of pottery in China is be as old as 2500 B.C. In Japan, hard porcelain dates from 27 B. C.; translucent porcelain was made about 672 A. D.; but between 1211 and 1221, Ko'osiro, a Japanese potter, went to China to improve his process. There are eighteen celebrated potteries in Japan; and in modern times, the pieces exported come chiefly from Imalia, in the province of Hizen. In 1644 the Dutch exported 44,943 pieces from Japan. At the beginning of the sixteenth century the porcelain of China began to be extensively imported into Europe, and various unsuccessful attempts were made to discover the secret of its manufacture, but without success, both as to the material and the process. The Persians indeed, are said to have produced translucent pottery about the fifteenth century A. D.

So there are no hod carriers in Germany, for the simple reason that a hod is as unknown there as an Irishman is, each brick must pass from hand to hand again. The higher up the brick layers are the more men are required to toss the bricks. Two men to a story is about the average, with enough more to lead from the front of the building to the place where the bricks are needed. One may sometimes see three men on the ground, eight on the front of the building, and five on the top, making sixteen men through whose hands each brick passed before it reached its place of destination. Such a sight makes one wonder every time why in the world hods, horse power, or steam engines were not used.

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Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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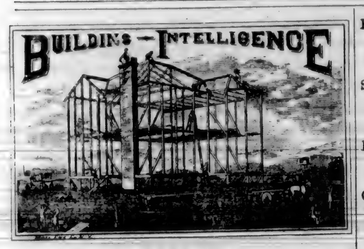

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$1,800.

California, cor. Lyon. One-story frame.
O.—C. Mau.
C.—Mr. Burns.
$2,000.

Sutter, cor. Scott. Two-story frame.
O. and B—J. C. Weir.
$5,000.

Sutter, nr. Scott. Two one-story frames.
O. and B.—J. C. Weir.
$5,000.

Powell Avenue, near Thirtieth. One-story frame.
O. and B.—Wm. Burns.
Day's work.
$1,500.

Duncan, nr. Church. Two-story frame.
O.—A. Brandt.
C.—L. D. Frichette.
$1,650.

Church, nr. Valley. One-story frame.
O. and B.—R. Berfeld.
$2,000.

Dolores, nr. Valley. Two-story frame.
O. and B.—R. Berfeld.
$3,000.

Twenty-third, near Dolores. Two-story frame.
O.—E. M. Howe.
C.—W. Kerns.
$7,000.

Twenty-fifth, cor. Valencia. One-story frame.
O.—L. Riely.
A.—M J. Welsh.
C.—J. M. Commerford.
$1,200.

Twenty-eighth, near Guerrero. Two-story frame.
O. and B.—J. M. Commerford.
$2,600.

Hayes, nr. Octavio. Two-story frame.
O.—J. E. McGrath.
A.—Mr. Warren.
C.—Mr. Parker.
$4,000.

Eighteenth, nr. Howard. Two-story frame.
O.—O. D. Baldwin.
C.—A. H. Plummer.
$3,500.

York, nr. Twenty-second. Alterations.
O.—E. Woods.
A.—M. J. Welsh.
Day's work.
$1,100.

Broderick, corner Sacramento. Two-story frame.
O.—C. H. Rewitt.
A.—G. A. Bordwell.
C.—B. F. Ellis.
$9,000.

Fell, nr. Webster. Two-story frame.
O. and B.—J. Lennon.
$3,500.

Devisadero, nr. Washington. Two-story frame.
O.—Mrs. Kate Folger.
A.—J. H. Littlefield.
C.—Hatfield & McRae.
$3,500.

Sutter, corner Buchanan. Two two-story frames.
O.—C. Jones.
A.—J. H. Littlefield.
C.—Hatfield & McRae.
$7,500.

Buchanan, near Sutter. Two-story frame.
O.—H. A. Cummings.
A.—J. H. Littlefield.
C.—R. Smiley.
$5,200.

Broadway, near Larkin. Alterations.
O.—Mrs. Sharp.
A.—W. C. Copeland.
C.—S. T. French.
$8,000.

Fifteenth Avenue, near San Bruno Road. Two-story frame.
O.—Anton Krieg.
C.—J. Esse.
$2,500.

Fifteenth Avenue, cor. San Bruno Road. One-story frame.
O.—Mr. Siedell.
C.—Thos. Mitchell.
$1,500.

Harrison, nr. Tenth. Two-story frame.
O.—J. McDermott.
Day's work.
$4,000.

St. Joseph Avenue, cor. Eddy. Two-story frame.
O.—Mr. Spotteswoode.
A.—B. J. Clinch.
C.—Mr. Egan.
$4,000.

Clementina, near First. Alterations.
C.—Mrs. Henery.
A.—Townsend & Wyneken.
C.—Mr. Grant.
$1,200.

Green, nr. Octavia. Two-story frame.
O. and B.—W. H. Wharff
$5,000.

Shotwell, nr. Eighteenth. Two-story frame.
O. and B.—Mr. Shaw.
$4,000.

MISCELLANEOUS.

Sacramento—Improvements and raising of two-story and basement frame, residence N. E. corner Ninth and I Streets. O., Frank X. Ebner; A., N. D. Goodell; C., P. A. Miller; $2,000. Two one-story and basement frames, on L Street, between Sixteenth and Seventeenth Streets. O., Mrs. Mary La France; A., N. D. Goodell; C., Julien Daigneau; $3,000. Alterations to residence on I Street, between Fourteenth and Fifteenth Streets. O., Chas. Robin; A., N. D. Goodell; C., Carle & Croly; $1,000. Improvements, etc., Second and J Streets. O., Dr. Harkness; A., N. D. Goodell; day's work; $1,500. Two-story and basement brick building on I Street, between Sixth and Seventh Streets. O., James T. Day; A., N. D. Goodell; C., Carle & Croly; $8,000. Fitting up a saloon on J Street, between Sixth and Seventh Streets. A., N. D. Goodell; C., Julien Daigneau; $1,200.

San Jose—San Bernardo Street, between First and Second. Two-story brick. O., E. Auzerais; A., Theo. Lenzen; C., G. E. McDougall, carpenter; C., Kenny & Leddy, masons; $9,000. Third corner of Reed. Two-story frame. O., M. P. O'Connor; A., Theo. Lenzen; C., P. R. Wells; $8,000.

Woodland—First Street. One-story frame. O. and B., C. C. Keedy; $1,040. Fourth Street. Two frame buildings. O., Frank Knox; C., Wm. Gammel; $1,600. Court Street. One-story frame. O., Otto Hoernlien; C., James Amsbury; $1,160. College Avenue. Frame addition and improvements O., F. Hogboom; day's work; $1,000. Cross Street, cor. Fourth. Improvements. O. and B., A. J. Gilbert; $1,200.

Cacheville—Two brick buildings, improved. O., Jas. Santo; day's work; $2,000. One-story frame. O., Mrs. Bemmerly; day's work; $1,400.

Madison—One-story frame. O., John Olliver; C., C. Reardon; $1,200. One-story frame. O. and B., George Tandy; $1,000. Two-story frame. O., George Scott; C., O. S. Payne; $1,800.

Tehama City—One-story frame. O., Bishop Manogue; A., B. J. Clinch; C., A. J. Bryan; $2,800.

Pinole—One-story frame. O., Rev. Father Cummings; A., B. J. Clinch; C., Thos. Donnell; $2,000.

San Lorenzo—Additions. O., Rohde & Co.; A., A. J. Leitgens; C., A. Ubhoff; $1,000.

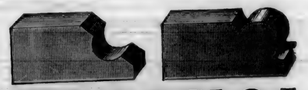
Ukiah—One-story frame. O., Mr. Marks; A., W. G. Copeland; day's work; $4,000.

East Oakland—Additions. O., C. H. King; A., S. and J. C. Newsom; day's work; $6,000. Peralta Heights. Two one-story frames. O., Mr. Merrill; A., S. and J. C. Newsom; day's work; $5,500. Two-story frame. O., J. J. Riely; A., S. and J. C. Newsom; C., C. R. Lord; $500.

Oakland—Alice, cor. Fourteenth. Two-story frame. O., Mr. Griffin; A., S. and J. C. Newsom; C., Mr. Fisher; $6,000. Alice, nr. Fourteenth. One-story frame. O., Mr. Fisher; A., S. and J. C. Newsom; day's work; $3,000. Near Mills' Seminary. One story frame. O., Mr. Greenwood; A., S. and J. C. Newsom; C., J. Bourety; $1,200. One-story and basement frame. A., N. D. Goodell; C., John White; $3,000.

Niles Station—One-story frame. O., Geo. Carter; A., John J. Clark; day's work.

Subscriptions for 1885, now due. Send money to this office, either in one-cent stamps or by Postal Order.



BRICKS!

THE HYDRAULIC

PRESS BRICK CO.

ST LOUIS, MO.

Make a Specialty of Ornamental & Plain

Red Front Pressed Brick,

Manufacturing Annually over

TEN MILLIONS.

They guarantee that the quality, finish and Color, are unsurpassed, if not unequalled by any other bricks made in the United States.

BLUM, EPPSTEIN & MARSH.

MANUFACTURERS OF

Inlaid Wood Flooring

WOODEN MANTELS,

Hard Wood Interiors.

Office and Parlors 126 Kearny St., 2nd Floor,

FACTORY 209-227 FELL ST.,

SAN FRANCISCO, - - CAL.

The California Architect and Building News.

VOLUME VI. NUMBER 2. | SAN FRANCISCO, FEBRUARY, 1885. | $2.00 per Annum, in Advance. Single Copies, 20 Cents.

BUSINESS PROSPERITY.

Large List of Building Improvements.

A CAREFUL study of the items in our Building Intelligence will prove the two following facts:—

That there were more brick buildings started during the month than for any similar period of last year.

That more than double the number of frame buildings, at more than double the cost, were erected, or are in process of erection, than for a similar period last year.

This is an extraordinary statement to make, when we take into consideration the large number of buildings reported last year. We find, during the month from the 10th of January to the 10th of February, there were started, in new improvements,

121 Buildings of the Value of $660,397.

Another important fact can also be noticed. A goodly portion of the number of buildings reported are erected by people who intend to

LIVE IN THE SAME,

And are not for purposes of renting. This fact seems peculiar when we take into consideration the cry of hard times, with which we have been greeted for more than a year past, and proves that many people have done far better, financially, than they have been given credit for.

IN THE COUNTRY.

We also notice a gradual increase in the number of improvements that are contemplated in the country. A more hopeful feeling seems to pervade amongst our country and suburban residents, and we may look for a much larger demand for the various articles needed for building purposes.

Mechanics' Institute School of Drawing.

THE Directors of the Mechanics' Institute have decided to establish a free school, where those who so desire may take lessons in drawing, both architectural and mechanical. A full account of the same will appear in our next, as the action of the Directors was taken too late for more than a passing notice in this issue.

Readers of the "CALIFORNIA ARCHITECT" will confer a favor upon the publishers, and derive material benefit themselves, by mentioning this paper when opening correspondence with advertisers. Drop us a postal card when you have written to an advertiser, give us his name, and then we will put you in the way of getting the benefit. Don't forget this.

Coterminous Excavations.

THE construction placed by the Supreme Court of this State, in the case of Aston *vs.* Nolan, upon the law relation to the "rights of coterminous owners," leaves the question in such shape, with an "if" added, that hardships have been experienced by very many who have undertaken building improvements since the rendition of the decision, owing to the unwillingness of caviling parties to submit cheerfully to any law or ruling of courts, which does not in very plain terms remove all doubt and question as to meaning, application, and finalities.

This vexatious question has occupied a prominence before the courts, and among owners of property for many years, and large amounts of money have unnecessarily been expended and *wasted* in legal contests, and moneys paid to avoid litigations, because the sections of the code upon which the question hinges are so constructed that it may be swung more ways than one, and whether this way or that, the appearance of consistent reversal seems to remain.

The latest ruling of the present court of last resort reverses the interpretation of the *code* as enunciated by the same tribunal, in the case of Hood *vs.* Zile, which imposed upon those excavating for building purposes, responsibilities which do not exist under the present ruling; and if the decision was free from doubtful meanings, the case would be clear enough for all practical purposes. But the wording—"Each coterminous owner shall be entitled to the lateral support his land receives from the land of the other," is an undefined something that evolves an uncertainty, as far as the *land* is concerned. The decision in reference to sustaining and underpinning buildings in such case, is fairly clear and well defined, except for the mean little "IF" which the learned judge preparing the opinion saw fit to drag into the case, in the following language: "*It may be added, IF the building has stood for a period of five years (in this State), before the excavation, the person who erected it has acquired a specia of easement in his neighbor's land—a right to the support of his building as well as soil. No such question as this last is presented in the case now before us.*" This interpolation of an outside matter, which did not belong to the case before the court, has worked a hardship, unjustly, because while not of the case, yet made part thereof, furnishing a new groundwork for contests and law suits, and the basis of refusal to those not willing to assume expenses and responsibilities which should in all justice rest upon them.

However much in harmony with ancient law, and legal logic and theories, the absurdity and unjustness of the "five year" proposition is so manifest that it is not to be wondered at that people generally express surprise that such a doctrine should find recognition at the hands of an intelligent tribunal in the year 1884; particularly in the case named, as its recognition in a certain sense nullifies the force and contradicts the decision in its main issue; and farther, the "five year" doctrine is discriminating and unfair, in this, that it protects the owners of old, delapidated, and rickety structures from the costs and expenses which the same rule of law imposes upon parties who happen to own structures not more than five years old, thus affording protection to a certain class of buildings, hundreds of which in San Francisco are a disgrace to the neighborhoods where located, while better, more valuable, better tax-paying property is excluded from an equal right to protection. The injustice in such cases is often aggravated by the fact that the cost and expense to the progressive man making new improvements, of holding up and underpinning some of the *more than five year old* structures, amounts to more than the whole concern would bring, exclusive of the land, if offered at private or public sale.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held in the rooms of the Art Association on Friday evening, February 6th. Vice-President Albert Pissis occupied the Chair. The committee appointed to prepare articles of indenture for students, requested further time, as it was their intention to be very accurate in the form of indenture presented for approval.

The committee appointed to consider the feasibility of establishing technical schools made the following report: They had a lengthy interview with Mr. Cornwall, the President of the Mechanics' Institute, and that gentleman stated that the institute had already taken the matter under consideration. It was one of the principal aims of the Society to cultivate our young in the mechanical arts and sciences. Room for the purpose could be had in the pavilion, and, no doubt, if the Chapter thought best to establish classes under its own supervision, the institute would provide space and light free of charge. Mr. Cornwall promised to meet a delegation from the Chapter at any time, and after hearing any propositions that may be advanced, to lay the same before the Board of Directors for consideration.

The opinion was also expressed that some of our wealthy citizens would gladly donate money for the maintenance of technical schools.

Emil John was unanimously elected an associate member. The following letter is self-explanatory, and, after being read, was ordered spread in full upon the minutes.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

[INCORPORATED IN THE SEVENTH YEAR OF WILLIAM IV.]

9 CONDUIT STREET, HANOVER SQUARE, LONDON, W., January 13, 1885.

My Dear Sir: I am much obliged to you for your letter of the tenth ultimo, and also for the copy you inclosed of a letter addressed by you and two other gentlemen to the Secretary, San Francisco Chapter of the American Institute of Architects, both having reference to the American Exhibition, to be held in London in 1886. For the moment, I am unable to do more than state that British Architects are certain to give a very hearty welcome to any colleagues from the United States, and that the President of this Institute is one of the Council of welcome formed for the purpose of formally receiving Americans who may visit this country during the period that the exhibition remains open. When the time comes, it will be possible to go into the details of the matter, and then probably architects on both sides of the Atlantic will be able to communicate with each other with more definite aims than can be done at present.

I am, dear sir, yours very truly,

WILLIAM H. WHITE.

Augustus Laver, Esq., Stock Exchange, San Francisco, U. S. A.

The following resolution was adopted:—

Resolved, That the Vice-President and Secretary be empowered to forward to the Union League Club of New York, a resolution expressing the approval of the San Francisco Chapter, American Institute of Architects, in regard to the repeal of duties on works of art.

Mr. Gash gave notice that at the next meeting of the Chapter he would read a paper on the Geometrical Square and its application to architecture.

Our Yearly Reminder to Subscribers.

IT has always been our custom, after the December issue of each year, to prepare a complete list of all subscribers who are in arrears, and forward to them, by mail, a statement of account. The same course is pursued after our January number has been printed, and to every subscriber is sent a bill for $2.00, the amount for subscription to this Journal for one year.

We are pleased to state that in all but a few of the answers received, the subscription has been renewed. Some, however, have demanded to know by what *right* we send this Journal after the time has expired for which it was ordered.

We do not claim it as a *right* to keep on sending this Journal after expiration of time for which it was ordered. We simply follow the custom of other Journals of the class to which this belongs.

One of the employees of the Post-office Department, in referring to the subject under consideration, remarked that the Government itself recognized the right of a subscriber to notify an editor to discontinue sending his publication; for the purpose of such notification, and in order that publishers may receive the same, printed Government forms were prepared, by which it was made imperative for all postmasters to notify publishers if their journals or papers were not taken from the office, and stating reasons, if known, for their non-delivery.

A subscriber receiving any paper after the expiration of the time for which it was ordered, has simply to say to the postmaster, "I do not want that any longer." The editor then will receive one of the *forms*, with the proper blank filled out as—"refused"—the name would be scratched off the editor's list, and account balanced.

Should, however, any party after subscribing to a journal, receive the same longer than the time for which he subscribed, he is held responsible for the same as long as he takes it out of the post-office. We endeavor to send to every name on our books a true statement of account on or about the 20th of each January. We are but human, and it may be that, in the thousands of accounts sent, a few errors may occur. Should this happen, or should a subscriber receive this Journal after his subscription has expired, we will only be too happy in correcting the mistake, or with a thank you for the help you have extended, and a wish that you will soon renew, will cross your name from our books.

Our *yearly reminders* are not intended as a *dun*; they are simply *statements of accounts*, and we trust that all of our subscribers will recognize our right to send such statements, and promptly forward us the amount due.

Amending Defects in Our Sanitary Law.

SENATOR WHITNEY, of Alameda County, has introduced a Bill in the Legislature, the object of which is to remedy certain defects that are found to exist in the law as passed by the last Legislature, granting to Boards of Health power to regulate the plumbing and drainage of buildings. The law as originally passed has been in force during the past eighteen months, and has given satisfactory results to owners, architects, and tenants.

It seems, however, that the law as it now stands is only applicable to this City, and the object of Senator Whitney's Bill is to have the same apply to all cities in California, so that the inhabitants of Sacramento, Stockton, Oakland, Los Angeles, etc., may derive the good benefits of a carefully prepared sanitary law, as well as the citizens of San Francisco.

We sincerely hope the Bill will pass in the shape offered by the senator. When it is taken into consideration that the parties who drafted the orignal Bill were not lawyers, or even persons versed in the simple rudiments of law, but simply plumbers, the necessity for its amendment is not so much a cause of surprise, as the fact that it has stood the fire of criticism so well for eighteen months, and even in the amendment but few words are changed, the principal of which is to substitute the word *county* for *city*, thus making the application of the law general in its results.

In other and older communities, the work of preparing sanitary laws is not left to the artisans in that line, but is taken in hand by physicians, professional men and philanthropists, who, by reason of their circumstances, can devote more time to matters so closely connected with the health of the community.

Our Redwood Exports.

GRADUALLY the attention of wood-workers in every part of the civilized globe, is being drawn to the excellent qualities of California Redwood for various kinds of finishes. We think that Chicago has the honor of being the first on the Eastern city list, in which Redwood was used. The straight grain and the more than ordinary widths of the lumber, led to its adoption in the manufacture of coffins a use to which it is peculiarly suitable on account of its lasting properties when placed under ground.

In January, 1883, the first cargo of lumber from this port to Europe was shipped on the *Helene*. Her cargo consisted of 232,000 feet, valued at $7,800. In November of the same year another vessel was cleared with lumber of value of $8,400. In 1884, seven ships left for Europe loaded with California's choicest lumber.

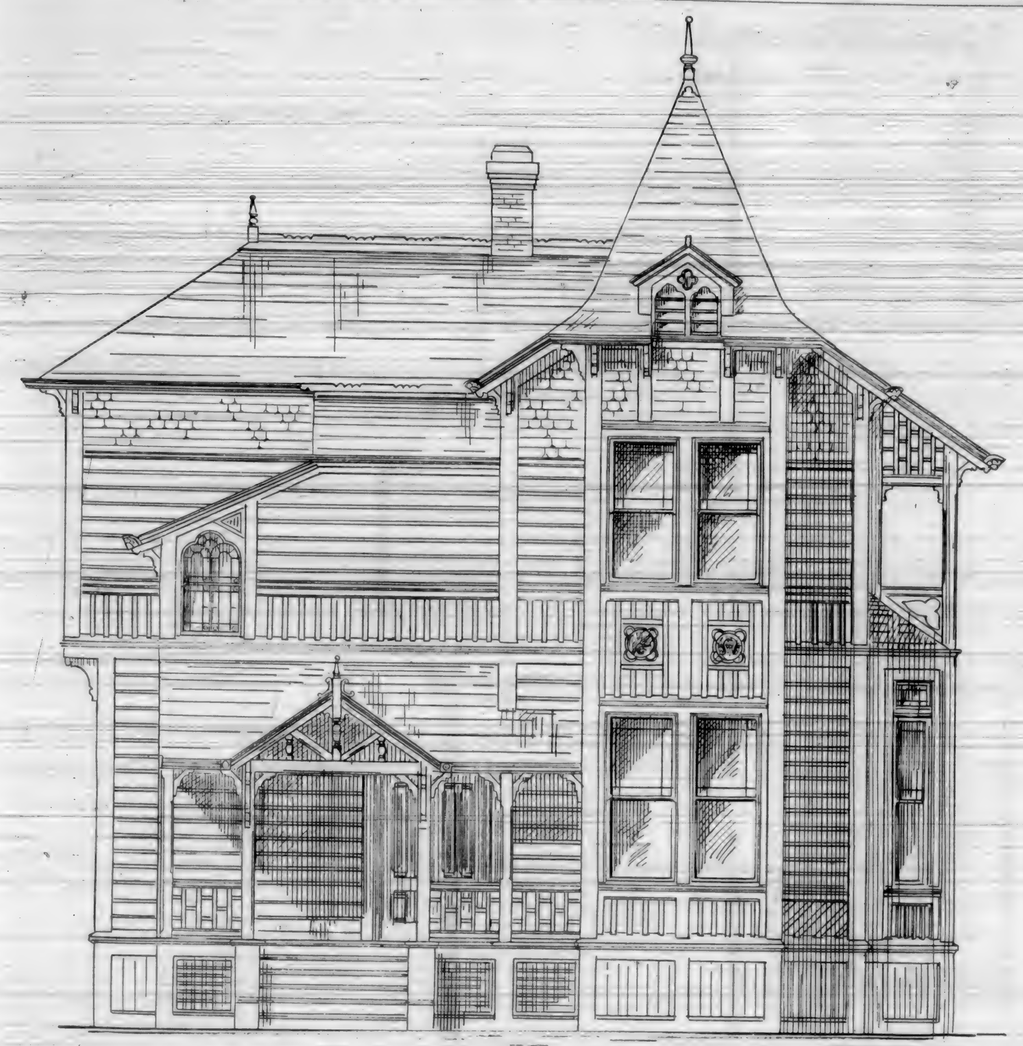
Below will be found a tabulated statement, which will show the growth of this industry:—

Shipped.	M Feet.	Value.	Per M.
January 23, 1883	232	$ 7,800	$33 62
November 30, 1883	418	8,400	20 07
January 15, 1884	919	18,400	20 05
February 23, 1884	417	13,000	31 11
May 19, 1884	272	5,400	20 00
June 13, 1884	492	14,400	29 18
July 31, 1884	724	21,100	29 14
September 26, 1884	935	22,700	24 27
October 22, 1884	682	19,900	29 18

The high cost per M for the first ship load sent is due to the fact that extra pains were taken in the selection of a prime quality of redwood. In addition to the lumber, the ship's hold carried 1,000 redwood ties and 140,000 shingles of the same material.

So far this year, on February 2, 1885, but one vessel has been cleared for Europe, the cargo consisting of 712,000 feet; value, $17,800. We may reasonably expect future shipments to increase in number and value, as the merits of Redwood become more fully known. A list will be kept, which will be given from time to time, in order that cognizance may be kept of this growing source of wealth to this coast.

Lessons in Carpentry by the Aid of the Slide Rule. The design of this work is to furnish a cheap and simple explanation of the SLIDE RULE. The simple combinations of which this instrument is capable actually contain more practical knowledge than can be found in huge volumes. Practical examples are given of the workings of this instrument, by which the mechanical student can readily understand the vast variety of its combinations, and be capable of finding length of rafters, braces, etc., in much less time than by the use of the steel square. **Price, Three Dollars.**



FRONT ELEVATION OF $5,000 COUNTRY DWELLING.—SEE "OUR ILLUSTRATIONS."

Our Illustrations.

THE illustrations in this number represent the plans and elevation of a $5,000 country dwelling. Credit for the same belongs to Max G. Bugbee, one of our rising California draughtsmen.

It was the design of the author to show a plain exterior, and yet have sufficient architectural display to make the house present a pleasing and comfortable appearance. All of the various elevations are shown, so that almost any adult can readily comprehend the looks of the building when completed.

Our engravings illustrating the plans of the different floors are very plain, and will bear careful study.

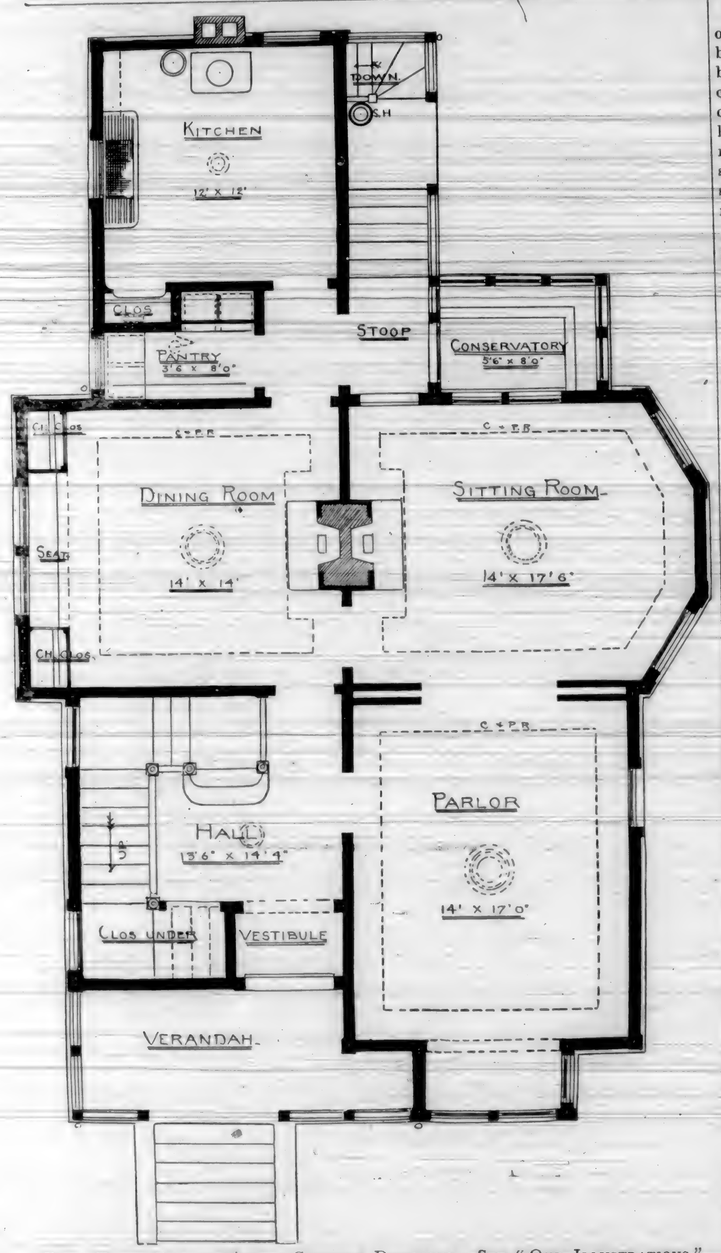
The estimate of cost has been carefully prepared, and at present price of materials will fall short of the amount quoted.

ESTIMATED COST OF DESIGN FOR FRAME DWELLING SUBMITTED BY MAX G. BUGBEE.

Labor	$1,025 00
Plumbing and gas-fitting	500 00
Mill work	1,500 00
Plasterers' work (2,375 yds.), 220 ft. cornice,	654 50
Painting and glazing	305 00
Hardware, tinning, etc	$162 50
Bricklayers' work and sewer	200 00
Stairs, inside and outside	165 00
Shingling (24,000 plain, 4,000 cut)	146 00
Rough lumber (11,625 ft.)	261 75
Rustic battens, etc. (4,136 ft.)	165 45
Flooring (2,850 ft.)	99 75
Total	$5,184 95

Test of Glue.

APPLY your tongue to a piece of glue; if it tastes salty or acid, reject it at once. The same operation will also bring out any bad smell the glue may have.



First Floor Plan of $5,000 Country Dwelling.—See "Our Illustrations."

Make Contracts for Lumber.

We would advise those who intend to build sometime in the near future, but whose means will hardly let them do so at present, to make a contract with one of the firms who are selling lumber much below the cost of production, for any certain amount of lumber to be delivered on or about a specified time, at the prices now ruling in the lumber market.

We know this has been done by more than one firm. No surer way of making money can be thought of than by securing a lot of lumber at the ridiculously low figures for which it can be had at present. First quality lumber commands $13.00 per M, and we know of one lot for which only $12.25 was paid. At this rate, it will pay any one to stack a few thousand feet away, as we can assure you, in a short time a much higher figure will be demanded.

Make a contract for lumber *now*, for the principal cause of its low price will soon be removed, and you will then regret when it is too late.

BACK SAWS.

How One Little Word Can Change the Whole Meaning of a Sentence.

In our last issue we presented an interesting article from E. H. Davies, of Santa Clara, entitled, "Back Saws." The type made one sentence read as follows: "And will take seven times as much pressure to get it out *as* straight as before."

The first *as* should be *of;* so the sentence would read, "*get it out of straight as before.*" Only a word of two letters, and yet notice the difference in the meaning of the sentence.

The Gelatine Edition

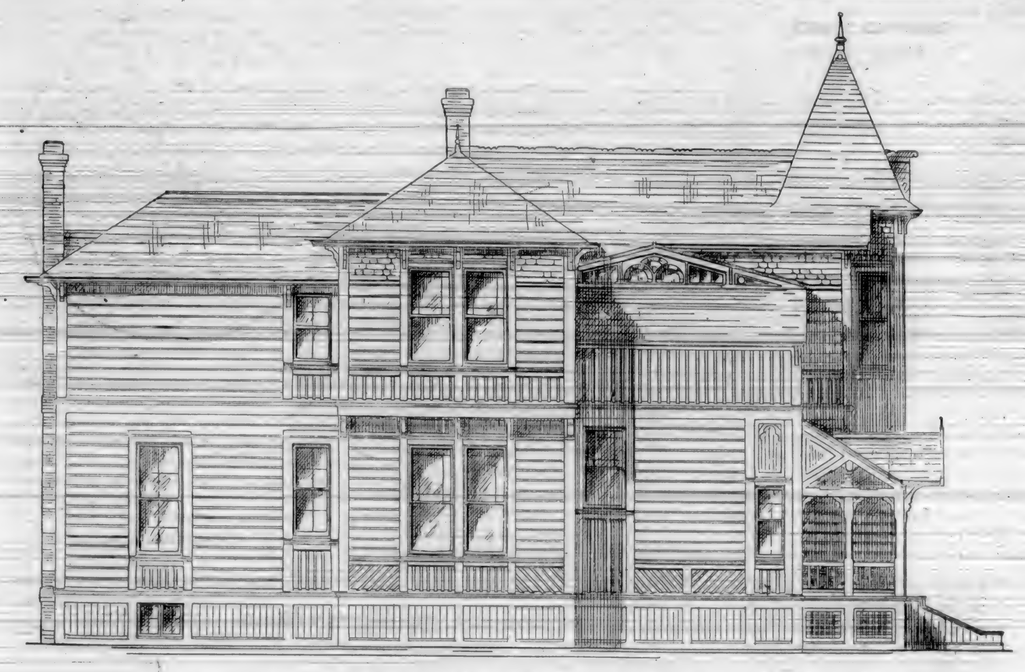
Of the *American Architecture* is a splendid number. It represents a perspective sketch of the State Capitol, at Hartford, Connecticut, and, as far as the engraving is concerned, it is the best and most artistic illustration of a building that we have as yet seen in print. Every architect and student in the United States should not only deem it a privilege, but a *duty*, to encourage publishers by subscribing for such journals as the one mentioned.

Low Price of Building Materials.

For some time past lumber has been selling in this city much below the cost of production. Large lots have been sold as low as $12.25 per M for rough, and $21 for surfaced. During the past week, however, the price has been advanced to $14, and it is only a question of little more time for the market to regain figures somewhat near to those of the schedule that existed before the "break."

Bricks have been held very steady for a long time past, but the combination has been broken, and prices have declined from $1.50 to $2.00 per M. Good hard-burnt brick can now be had for $9.00 per M.

Hardware.—The prices of all kinds of hardware have been advanced from 10 to 15 per cent. since the beginning of the year. Even at this advance, the prices are very low. In fact, all kinds of building materials, and labor as well, are at too low a figure for beneficial employment to a large proportion of our wage workers. To those contemplating building, no more favorable opportunity than the present will occur for some time to build cheaply.



Side Elevation of $5,000 Country Dwelling.—See "Our Illustrations."

Reproduction of Redwood.

A short time ago, the following p agraph appeared in the columns of one of our local journals.

"*The redwood tree, as is known, will not reproduce itself, or rather, to speak more correctly, it grows so slowly that its growth is not appreciable. Hence, in time, all the California redwood will be exhausted.*"

The writer of the above has evidently traveled but very little among the redwoods, and knows but few of the characteristics of the timber which he seeks to disparage. The truth is that there are no known lumber trees that reproduce themselves in so prolific a manner and so quickly as the species under consideration. In our travels, we have repeatedly seen young shoots from three to twelve inches in diameter growing from stumps of trees that have been felled; it is evident, therefore, that time is the only thing necessary for a duplication of the original growth in a devastated forest. These young shoots will sometimes, though rarely, number as many as a dozen from a single large stump.

Again, even when a section has suffered from fire, in a short time, in numerous places, these young shoots will be noticed growing from the parent stump. Knowing the above to be a fact, is it not about time that our Legislature took pains to enact laws for the preservation of the young trees, and not allow, as is too often the case, the young timber to be cut for posts, etc., merely because it saves some indolent people a little labor in obtaining "just the size they want" for their purpose?

The Iron Workers' Strike.

Since the publication of our January number, a material issue between the proprietors and workmen of the boiler making and iron working establishments in this city has culminated in a general strike, the workmen refusing to accept or compromise the exaction of the proprietors for a reduction of fifteen per cent. in the rates of wages.

The reduction is based upon and claimed as a necessity to the activities of trade, to offset the pressure of Eastern competition, where wages, coal, and the raw materials are much cheaper than in San Francisco, and sufficient to overcome the extra cost of freightage and charges.

This is met by the workmen upon general as well as specific principles, not to accept a break in present rates of pay, as doing so would fix a precedent to other lines of manufactures to demand like reductions, and so effect a general break down in the rates of wages all along the line.

That Eastern competition has always existed, and is no greater now than heretofore, and furnishes no new or sufficient argument in favor of the reduction.

That the living expenses of workmen in San Francisco are greater than in most of the Eastern cities, and require better compensation to produce equal results and comforts with and to those who work for less pay in places where house rent and the necessaries of life are less costly than in San Francisco.

That the competition complained of is stimulated by the lack of larger plants and greater working and manufacturing facilities in the several establishments.

Several attempts at compromise have been made, but at present writing the outlook presents a determined resistance on the part of the workmen, without any certain indication as to final results. Competition is said to be the life of trade, but when carried to the extent of depressing the laboring classes, and drawing from the facilities of life comforts, it becomes a hardship, and it is but natural that the pinched should squeal and refuse to submit. Cutting wages as a means of whittling competition down to a profitless edge, is certainly not a pleasant edging to men who have families to support, and facts favor the assertion that competition, too severely forced, benefits those who purchase at *less than fair prices* at a sacrifice to those who produce. And if producers see fit to cut each other, they should spare those who perform the labor of producing.

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[Written especially for this Journal.]

REDWOOD TIMBER.

Its "Staying" Properties.

As we look at the decomposing particles of material in the building, there is behind all these effects a cause by and through which the timber responds to the decomposing influences of the atmosphere with which it is brought in contact, while other and contingent portions, often of the same timber, but generally different sticks cut from the same tree, seem to be impervious to these influences.

Years ago, architects (the reason for which they had no explanation) would strive to reconcile the seeming paradox by placing the timbers in certain relative positions in the building as compared to the tree before being cut. We often wondered at the reason for this, and though these men constantly exposed themselves to ridicule and sarcasm, nevertheless, if let alone, they invariably succeeded in overcoming the gravest of objections relative to the use of certain woods notorious in that country as quick to decay, *in spots*. If we examine carefully, by means of the microscope, a vertical section of redwood, for instance, we shall find on the micron the form represented in Fig. 1.

Fig. 1.

The parallel lines running lengthwise represent the grains as seen with the naked eye, the small spots the resinous matter peculiar to the family of plants of which this timber is a member, while the irregular lines running in every direction, and when a general longitudinal direction never crossing the grains of a perfect tree, thoroughly ramifying and permeating every particle of the cellular matter, seems to be the transit ducts for conveying this resinous fluid all through the interstices of California redwood. This, so far as could be demonstrated by means of a dry sample of wood, seems to obey the general law of crystallization, and gradually settles into these cavities, as the sap winds its way upward. As another proof that this condition of things is common, as we approach what may be termed the upward portion of the tree, these crystals gradually become smaller, and when the topmost branches are reached they cease to assume this form, seemingly present only in solution or sap, notwithstanding the fact the twigs and leaves contain them but in a different form, showing that the solution, as it may be called with the utmost propriety, slowly deposits this sediment in the interstices on its way *upward*, and, when the utmost limit has been reached, becoming a vapor, leaving, *not depositing*, the remaining portions of this resinous matter, hence the diverging form of crystal as it appears magnified.

A very interesting and important phenomenon is manifest in the protuberances and excrescences often seen in these celebrated trees of California, but owing to the lack of sufficient samples we will not discuss these at this time, holding for the subject-matter of another letter. It will be seen as the right-hand side of the cut is approached, though the grains appear but slightly thicker, the lines and spots become less marked; it follows, then, that as the tree grows older, and the rings larger, they do not absorb this matter in the same proportion. To the contrary, so far as we were able to judge from chemical analysis, the ring seven years from the heart contained as much of this resinous matter as a ring twenty or more years nearer the bark, where the tree was at least three times larger. This elicits a botanical consideration of plant growth, not of vital interest to the majority of our readers. Suffice it to say that the conclusions deducable from what has already been proven, each year the flow of the fluid containing this matter ceases, the entire energy being directed to the formation as well as maintenance of the ring being formed each succeeding year.

It would follow, therefore, that, so far as the life or staying properties of redwood are concerned, the nearer we approach the bark the less value the timber in this respect, for, while on the one hand the cells are greater in number and more closely huddled together, the outer edge contains fewer cells, farther apart, larger, and not so evenly distributed. Again, nearer the pith or heart, as stated before, these cells are filled with one of the best and efficient elements to repel moisture known; while further out they are merely coated, not filled; hence the moisture is invited to enter, and being subjected to the vagaries of a changeable climate, together with the acid-impregnated atmosphere of cities, it is soon absorbed or set free, and the timber rots. To this end

"We'll deem it not folly
Nor esteem them weak"

Who persist in placing the inner side of timbers to the greatest influences that tend to decompose.

By examining Fig. 2, taken from a thin vertical section of the same kind of timber, it

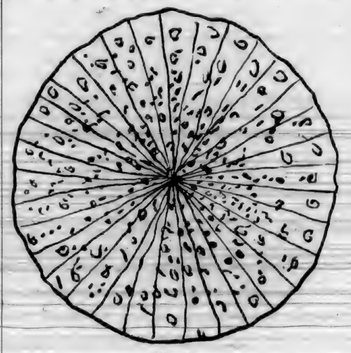

Fig. 2.

will be seen that the cells decrease in number and increase in size as we approach the outer edge. This sample was but a single ring, and, by means of an ordinary compound instrument, it is very easy to determine the inner from the outer side of a stick, merely by the size and number of these resin cells.

Supplementary to what has already been said, the question of strain or tension of this interesting wood should be discussed from the physical features as illustrated with the microscope. Chemistry can do nothing to show this, while physical appliances and mechanism are too apt to consider these considerations as beneath the dignity and unworthy the consideration of that mighty science.

If it was desired to bend or otherwise distort any substance by means of mechanical forces, we would naturally place the molecular portion at the radius; for instance, if a bar of iron was firmly attached to one of lead, bending toward the latter would displace fewer molecules than the former, but the reverse way would furnish the greater resistance. Theoretically, then, California redwood will bend easier toward the bark, but would respond with less force than toward the heart; hence, if strength is the primary motive, the timbers should always be placed in such position that the inside will meet the resistance. If we wish spring, quick reaction, and flexibility, the reverse side should be exposed. Now let those who have practically demonstrated this theory, for such it is, say whether this is a pertinent conclusion or not. In any event, so far as the staying or lasting properties of this timber are concerned, we are positive that these conclusions are conclusive, but it should constantly be borne in mind that, in some instances, we might say many, all these properties we have tried to illustrate are brought into requisition, it being difficult to tell which are of the most importance in this event. By careful mathematical calculations, it will be found that in very many instances when we bring into requisition one of them, the other one next in importance will only be contingent, and in some instances the strength and property required of a piece of timber, presenting the varied characteristics

Side Elevation of $5,000 Country Dwelling.—See "Our Illustrations."

of the material in question, may be so figured that instead of detracting from one by bringing into requisition the other, each may be augmented by allowing the other its due consideration and importance, as regards what is required of it in the architectural mathematics.

"First Class."

There is no term of words used in connection with house construction more hackneyed, profligated, or meaningless, than "first class;" no two words design to express a fact, which are more frequently misapplied, or where they so seldom express real intent, purpose, or quality.

"First class," when properly, honestly, and intelligently applied, comprehend and express more than can be expressed by any other two words in the English language, in the same connections, and are therefore pre-eminent as expressing goodness, merit, excellence, and superiority; but the mechanical, commercial, mercantile, and other prevailing business libertinisms of the day, debauch and abuse the term, and apply it when and wherever its use will best serve purposes of deception; hence it is utilized by the frauds of the world under every guise, and is made the watch-word and cry of those whose success can be accomplished only through and by deceptions. It is safe to assume and fix as a fact, that those who are ever prating their personal or business "first-class" isms, require watching, particularly in building connections.

There is no need of men who produce first-class work commending that which commends itself. "First-class" workmanship and materials carry in themselves conclusive evidence as to character and quality. It is the second to tenth rate demagogues, who understand nothing of the honest, practical meaning of the term, who are the more free in its misuse and misapplication, for purposes and with intent to deceive; and it is unfortunate that owners and purchasers so generally permit themselves to be beguiled by this designing class of individuals, who feed and fatten by the practice of studied deceptions, asserting merit and reputation where none exist.

Our Slide-Chimney Thimble Device Patented.

Some fifteen years ago, the Senior Editor of this Journal perfected a slide thimble device for chimneys, which was and is more perfectly fire-proof than any other, and which saves and prevents all cracking of the plastering around the "stove pipe holes." We have used them in our practice ever since, with entire satisfaction, and with benefit to clients. Far less meritorious devices have been patented, and this deserved the protection of Uncle Sam's patent laws, but we did not apply; and as we did not avail ourselves of that advantage, we notice in a last year's number of the *American Inventor*, that one E. S. Sweetser, of Wakefield, Massachusetts, has done so in our stead. The principle of the two devices are exactly the same, and the shape and form alike, varying only as between the round and square ends of the slides and slide plates. And every word that is said in the journal mentioned recommendatory of the device, has been expressed by us scores of times in reference to our own, and is true. If the patented thimble is an original invention with Mr. Sweetser, there is in it a most remarkable coincident of thought and conception between the Massachusetts man and the Editor of this Journal.

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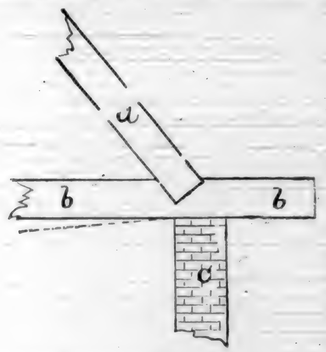
[Written especially for this Journal.]

Strength of Timber.

It is a fact well known to all architects that the more kinds of material we put into a structure the more we multiply differences of expansion and contraction, and in some cases that have had our attention called to, the structure has been found sadly out of line, and its general appearance deteriorated by the difference in contractility of materials and even kinds of one material of which composed. Suppose, for instance, we construct a building eleven stories high, the walls of brick, wooden girders and partitions; we place joists across, these are green; we have eleven floors laid upon this green timber. The studding for each story is placed on a firm foundation in the basement, directly over the top of which the partition timbers of the adjacent story are put, followed by another and another until the roof or rafters are reached, when the timbers or studding for the last story are the principal, and often the only support. If we allow the usual per cent. for shrinkage by seasoning, is it unreasonable to suppose that, with this, eleven feet in width of joists will so shrink that the roof will, by its own gravity, fall nearly one foot? Then is it not equally pertinent to conclude that the base of the rafters resting on opposite walls alone will tend to crowd out until the apex finds solidity on the studs of the center and thereby rendered unsightly and possibly unsafe? In explanation of this theory let us suppose the following cut: c to represent the brick wall; b,



the cross-beam, and a, the rafter. The timber b, is supposed to run entirely across the structure, and a, meeting its companion at the apex, stands as it were while together; separated, each will fall. To guard against settling and the like, supports, by means of cross sections or collar beams, are brought into requisition, while these in turn are supported by the studding in the interior of the building. Now at the angle this rafter is placed in, if b should shrink the merest fraction of an inch, the joint ceases to be perfect, and the shoulder bears none of the weight of the superstructure, the same being all transferred to the base of the rafter; and while the cross-section is made of timber supposed to be of the same degree of dryness, the entire weight is thrown on the wall a certain distance from the center.

We will now go to the story below, where we find this timber, b, resting on the partition studding; this, being seasoned the same, it shrinks; b, having the pressure from above, follows the shrinking, and rapidly assumes the shape and position indicated by the dotted line. It will be seen by this that the wall receives the pressure in an oblique manner, and is subjected to a force that will eventually crowd it out of line, as a result in a few years at farthest. We have a building the walls of which are none of them square, not a door or window will open and shut, the plastering and all other interior decorations will rapidly deteriorate in beauty, while in accordance with the force of gravity, all will soon be a mass of semi-ruins. As we have proven, we hope to the satisfaction of our readers, timber invariably shrinks toward the center; hence if mill-owners and operators in filling orders for large stuff would see that their timbers were gotten out so as to lie on edge when in position, and architects see that they were placed in position as ordered, the shrinkage would only tend to make the joints stronger and the floors more solid. These are little things of themselves, but in the aggregate assume great importance, and more especially to those who pay the little bills or suffer the inconvenience of occupying buildings all askew.

The Arch.

The earliest trace in antiquarian researches has assisted us in detecting the first bridge, and to show that it was a tree which had fallen from one bank to the other of some mountain torrent. The method of communication thus supplied by accident, men would soon learn to obtain for themselves by the rude resources of art, and ere long the opposite banks of rivers would become connected by means of timbers or flag-stones supported upon piers.

The application of this notion of a bridge seems to have constituted the whole art of bridge making up to a comparatively recent period. It is, however, altogether inadequate to the passage of deep or rapid currents, and fatal to navigation. We accordingly find the Egyptians, although they swarmed along the banks of the Nile, never built for themselves a permanent bridge across that river.

The Tigris and the Euphrates, on whose banks dwelt that enterprising nation of remote antiquity, the Chaldeans, was bridgeless. And even in the age of Pericles there was no stone bridge over the river Cephissus at Athens.

Necessity is said to be the mother of invention, but there are certain matters which she has been exceedingly slow in coming to. The birth of the discoverer of the arch is a memorable example. Of Europeans, the first who appear to have made the discovery were the Etruscans; the earliest existing specimens of the arch in Europe are to be found among the ruins of the Etruscan tower of Volaterra.

To the Chinese the secret of the arch appears to have been known from time immemorial. In fact it is difficult to fix upon any useful contrivance which is not at present in some degree known to that singular people. They certainly used the arch long before the idea was conceived in Europe. It covers the gateway in their great wall; they availed themselves of it in the construction of monuments to their illustrious dead, and in the formation of their bridges; and we are told that there were stone bridges in China three or four miles long, and arches 600 feet in span.

From the Etruscans the secret of the arch passed to the Romans, and it was soon employed in the construction of bridges over the Tiber. Of these, several remain; they are, however, but awkward specimens of the art of bridge building. Their narrow arches were supported upon high, unsightly piers, which formed a serious obstruction to the current. The Romans have, nevertheless, left us, in other parts of their dominions, bridges of extraordinary strength and beauty. Of these, that of Alcantara is perhaps the most remarkable; its roadway is about 150 feet above the level of the stream which it crosses, and its arches are 100 feet in span. It was built by Trajan, in whose reign was also erected a bridge over the Danube, of which many incredible things are told by Dion Cassius, of which no hing is to be seen but now and then the foundation of a pier. He built it that he might conquer the Dacians; his successor destroyed it, that he might restrain their incursions into the empire.

In those troublesome times which succeeded the fall of the Roman Empire no bridges were built. Rivers were for the most part passed by fords or ferries; these frequently became subjects of contention between neighboring barons, or were taken possession of by outlaws, and travelers in availing themselves of an insecure method of transfer were subject to the certainty of being heavily taxed, and the chance of being plundered.

It was about the commencement of the twelfth century that one Benezet, a cowherd, appeared in the Cathedral of Avignon and announced to the multitude a special mission from Heaven for the erection of a bridge over the Rhone at that city. By efforts little less than miraculous this singular enthusiast contrived in the course of a few years to erect a bridge, which, whether considered in reference to its enormous dimensions, or to the local difficulties to be overcome in its construction, claims to be ranked amongst the most remarkable monuments that have been erected by the skill and ingenuity of man. Unfortunately a flood of the Rhone carried it away. The labors of Benezet did not, however, altogether disappear with this bridge; he obtained a place among the saints of the Roman Calendar, and became the founder of a religious order called the Brethren of the Bridge, by whom some of the finest bridges in Europe were erected. Of these that of St. Esprit, on the Rhine, is nearly a mile in length; and that called La Vieille Bronde, over the Allier, is a single semicircular arch of 180 feet in span, and until the erection of the Chester bridge, which is 200 feet in span, was the largest arch in Europe. Of the same date was the old London bridge, the work of Peter of Colechurch, which would, however, greatly suffer by comparison with the labors of the Brethren of the Bridge.

From this period up to the present, the art of bridge building has continually progressed, and most of the European rivers are now spanned by arches with which the labors of former ages will bear no comparison, either as respects the boldness and grandeur of design or the perfection of their detail.

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Rear Elevation of $5,000 Country Dwelling.—See "Our Illustrations."

Damp Houses.

The common bricks produced by most of the dry-clay machines absorb much more water than do those made by machines which thoroughly temper the clay. There is too much ignorance displayed in regard to the material produced by this line of inventions, and which enters so largely into the construction of buildings, and this lack of knowledge is often shown by those who ought to know better. In the desire to get up a showy house, "something that will take, you know," mistakes are too often made, which are usually paid for by the loss of health and sometimes by the sacrifice of the lives of those who inhabit them. Is it difficult to call to mind houses that people call "unlucky places," in which an unusual number of persons die? These "unlucky places" are for the most part nothing more or less than damp houses, resulting usually from the employment of porous bricks in the construction of the walls.—*Charles T. Davis, in American Architect.*

When you are filing a saw and the file gets gummed up don't try to work with it so, or throw it one side and get a new one. If you have no card to clean the file, take a piece of pine wood three-fourths inch square by three or four inches long. Rest one end of the file upon the bench; with the little stick strike the file nearly edgewise with a square corner of the stick, following the slant of the teeth. This will clean a file nicely and without causing half the wear that a card would. A little practice would enable you to clean a file in half the time it would take you to hunt up a card-cleaner.

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Getting up Stairs.

"If there is anything I like to see in a house," said Mrs. Domibus, "it is a handsome pair of stairs. We don't expect ours to be gorgeous or magnificent, but I want everybody who comes into the house to throw up both hands in admiration and exclaim, 'how lovely!' when they see the stairs. You see they are the first piece of furniture to be seen, and if they are all right it is no matter how plain the rest of the house is."

"You wish the stairs to be in the front hall, then, do you?"

"Why, of course! what else is the front hall for? Where else could they be? and what would the chambers be good for without a front pair of stairs?"

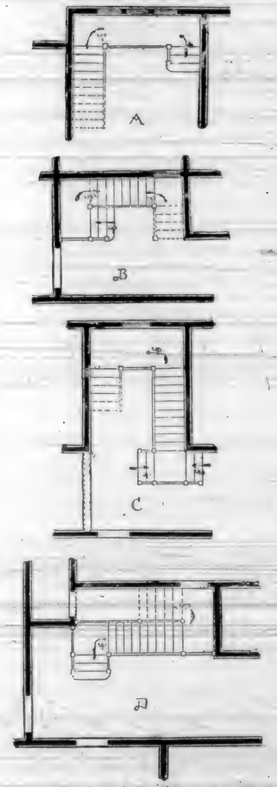
"Do you like a straight run?"

"I don't know what a 'straight' run is, but if you mean stairs without any turns or landings, I don't. How many kinds of crooked runs are there?"

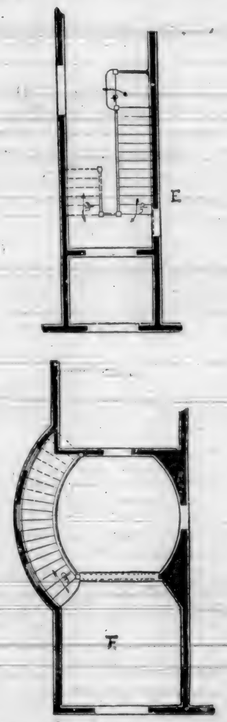
"Hundreds of them."

"Will you show me a few?"

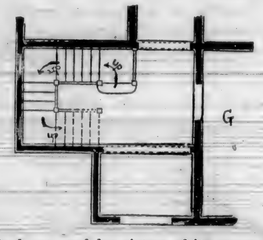
"Certainly. 'A' is a staircase that could



only be used with good effect in a large central hall or reception room. You go up three or four steps to a long, level platform, reaching quite across one side of the apartment, at the other end of which platform, you turn to the left again and complete the ascent. There are windows on this long landing, and it will serve various useful and ornamental purposes. In 'B' the stairs occupy a sort of recess or alcove at one side of the common entrance hall or passage way. You have a few steps to the first full landing, then several more to the half landing near the top, from which another short run carries you to the second floor. 'C' looks two ways for Sunday at the start. From whichever way you approach the stairs you can reach the first landing without turning a corner. The second landing is high enough for a door underneath it, and, if it happens to stand next an outside wall, for a window above it. 'D' is still more aggressive as regards room. The foot of the stairs is thrust forward into the wide hall and after turning once to the right on your way to the broad second landing, which is also high enough for a door underneath and a window overhead, you right about face sharply to the left for the



rest of the upward march. 'E' is the conventional, long, narrow hall with staircase clinging to one side of it. This is a variation from the familiar individuals of the class, inasmuch as it starts with a square landing at the bottom, runs up towards the front door instead of from it, and turns on itself by means of a landing near the top that spans the hall and makes an apparent division between the vestibule or the front end of hall and the interior portion. 'F' you might call a straight



crooked run, and by virtue of its many doublings it makes a comfortable sort of staircase in a limited space."

"Well, now, which of these will look the best?"

"That will depend mainly upon how they are treated by the architect who designs the details."

"And which will be most suitable for our house?"

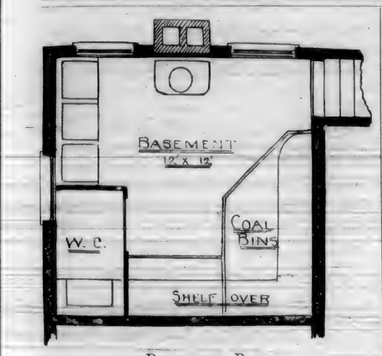
"That will depend entirely upon the plan, for, please remember, the stairs must be made for the house, not the house for the stairs."—*Builder.*

Wood Carving.

The hand carving of wood for house finish and interior decoration is becoming a distinct and permanent branch of industry. Much of this work has been done by amateurs as a pastime, but it has lately developed, to a considerable extent, into a "trade," industrially speaking. For fine furniture the carving of wood has for a long time had a place, but there appears to be a prospect that to the joiner's shop and work will be added those of the carver as a means of finishing interiors. Foreign workmen, at present, comprise the larger part of the workers in this industry, but the attention of our native workers has been directed to it, with the result of bringing it into general notice.

The idea that artistic hand work should be confined only to rare and costly material is hardly consistent with the demands of taste.

In the woods there is scarcely one that will not be beautified by hand carving. So common a wood as white pine is susceptible of producing very fine effects even when the wood is left in its natural condition. When first worked, it is a creamy white well calculated to show the shadows of relief; and exposure to the air soon deepens its tint. A thin varnish of shellac will tone its whiteness without producing a shiny surface. White wood is also a wood well adapted to carving, and the yellow birch is even finer. To these light colored woods may be added the three varieties of maple and also beech. The darker woods admit of bolder work—greater relief—and when united with the lighter colored woods make a fine combination. Carved white wood as a cornice for a room, the figures only slightly



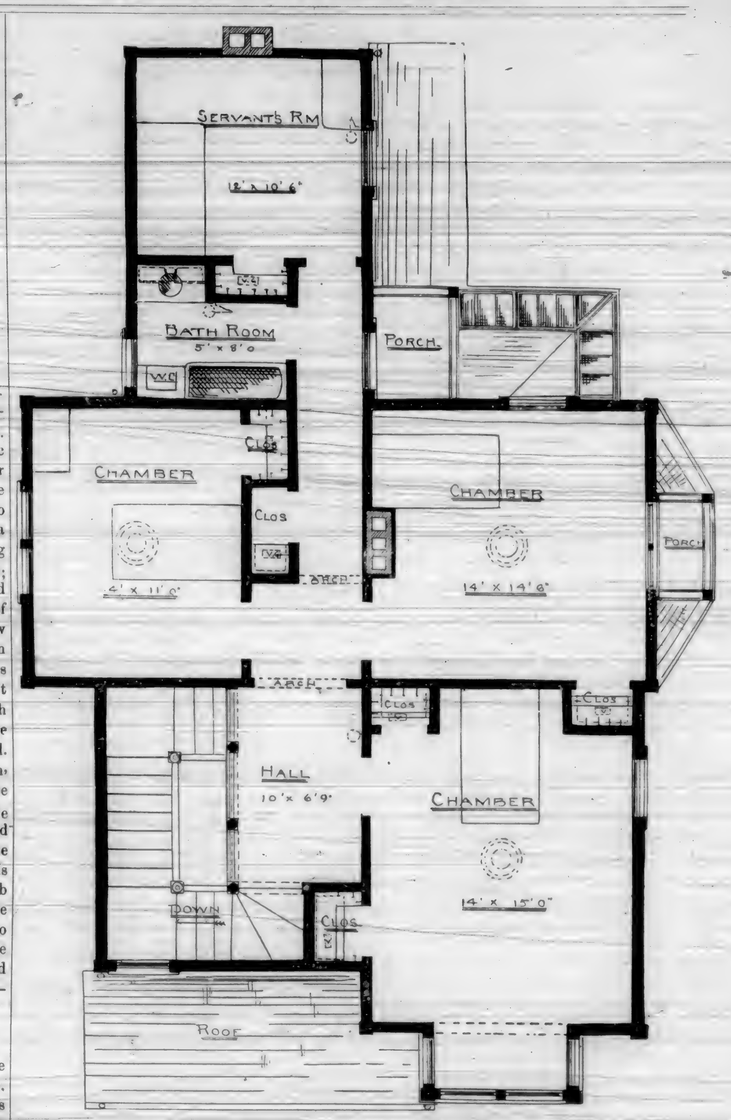
Basement Plan.

cut in, with cherry for the projecting moulding, produces an elegant effect in a parlor. The only finish is a thin varnish of shellac dissolved in alcohol, no touch of sandpaper being allowed to subdue the sharp cuts of the carving tool. There is scarcely any limit to the possibilities of wood under the hands of a skillful carver; straight lines and sweeping curves are not alone among its capabilities; it may be fretted, diapered, dentaled, and stippled, and cut into fine cross-hatcheling, if the workman has good tools and knows how to use them. As this is written, there lies on the desk a piece of butternut wood six inches long and about one inch diameter, that is cut into a triple spiral, of about three turns, each spiral being round and about the size of a rye straw. This shows the capabilities of wood.

Wood carving is a pleasant occupation, combining the attraction of taste with the pleasure of work. In many instances the carver is his own designer; it is better so, and the business is incompletely learned where the carver cannot originate, or at least design, his own work. The designs for an elaborate job are usually two, a plan and a profile. The profile is drawn in differently colored lines to indicate the relative depth or projection of the parts. The business offers an attractive field for workers who are artistically inclined.—*Scientific American.*

Where Grindstones Come From.

The grindstone makers of Nova Scotia live principally on the shore of the Bay of Fundy, and when the tide has receded and the reefs are left bare, they go down on the reefs with their tools, and blast out the rocks in as large pieces as may be. They then cut large holes in opposite corners of stones, smallest at the top, and put in "Louis bolts" with chains attached. These chains are set up on bars so that as soon as the tide rises enough to cover the rocks, a large boat called a "joggin" boat is floated over the rock, and the two chains brought up on each side of the boat are fastened to a stout pole which lies across the boat and projects over the sides a foot or two. The tide rapidly rising straightens the chains and lifts the rock from its bed, and the boat with its heavy burden—sometimes ten tons—is floated toward the shore, and when the tide attains its full height and the boat is as near the shore as is practicable, the stone is cut away by a few vigorous strokes of the axe on the middle of the pole, and the liberated boat jumps nearly out of the water. As soon as the tide recedes far enough to lay the rock bare, the men go to work with their tools and work them off into the shape we see them here in our large factories, and the smaller pieces are roughly "scabbled" off into the semblance of a small grindstone and then taken to the building, where they are turned in lathes by steam power and assume the finished appearance of the grindstones we see any day about us.—*Sel.*



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The plan of this work is very comprehensive in its character. Numerous designs are given illustrating the Eastlake, Elizabethan, and Queen Anne styles of architecture. Complete plans of each, together with full and comprehensive details, are produced in a manner that will gratify the tastes of any architect or property owner. Price, $10.00.

A Few Hints about Sound Castings and Factors of Safety.

So MANY disturbing elements intervene between the conception of a design in cast iron and the completion of the work in the building, that we all have to allow what we call a factor of safety (aptly characterized by the late Alexander L. Holly, C. E., as a factor of ignorance), to cover these contingencies, varying from three or one-third the breaking strain in very simple cases where the quality of the castings can be depended upon, to five or even ten where the design is more intricate or the liability to shrinkage strains, hidden defects in the castings, rough bearing surfaces or uncertain variations of the load are possible. Much can be done by designers of cast-iron work to reduce this factor of safety, and consequently the weight and cost of castings, by giving serious consideration to the many processes and changes of condition through which their designs pass on the road to the building.

Foundrymen exercise great ingenuity in producing any design in iron that may be presented to them; still it is possible to design things that are totally impracticable in cast iron, in which case the designer would probably be asked to modify his drawing; but when it is possible to carry out a design without change, it is the almost universal practice to do so without comment and without recollection of the fact that the resulting castings may have very serious shrinkage strains or other defects, which would reduce the strength far below what the designer expected. For instance, a column, say sixteen feet long, eight inches in diameter, three-quarter inch metal, is sometimes designed with a heavy projecting base moulding near the bottom, say twelve or fourteen inches in diameter, giving three inches or more thickness to the metal at that point, also having an extension of the shaft to pass down through a shell plinth or pedestal, while at the top there is a shell cap and then a shelf, say twelve by twenty-four inches, for girders, made, possibly, two and one-half or three inches thick, to insure strength without the use of brackets or ribs.

This, like all other architectural work, will be moulded in "green sand," which is moulding sand slightly dampened with water and rammed solidly around the wood pattern, forming a mould strong enough to withstand the wash and pressure of molten iron running into the mould. When we consider that iron weighs four hundred and fifty pounds per cubic foot, while water weighs only sixty-two and one-half, an idea may be formed of the strength of mould necessary to stand the wash and pressure, which, in a mould three feet high from the bottom of the casting to the top of the gate where the iron is poured in, is 1,440 pounds per square foot, nearly three-quarters of a ton on each square foot of surface; consequently the sand must be firm.

Now, realize that the pattern for this sixteen-foot column is made sixteen feet two inches long, to allow for shrinkage; also, remember that when this shrinkage occurs, something has got to give. The shaft of your column being only three-quarters of an inch thick, will solidify and commence to shrink, while the metal in your heavy base moulding and the shelf at the top is still fluid, and a little metal will run out into the body of the column as it draws away in cooling, leaving a little vacancy or depression in the upper part of the shelf or base. Presently these heavy parts will become about the consistency of cheese, but the shaft of the column keeps on cooling and getting shorter. Now the situation becomes serious. The soft metal in the base and shaft is not solid enough to allow the column to draw them bodily through the sand mould, so they stay where they are and the column shrinks away, stretching out more of the soft metal after it, making a weak place or leaving a nice little crack to be filled up with putty before the column is painted, and in an extreme case pulling away so much that the head will drop off when the column is hoisted out of the mould. Then the foundryman looks wisely at the column and says: "Now I will fix you," and puts a fillet around below the shelf, or a bracket, which will cool quickly and help pull, chipping out the bracket when the column is cold.

In case all these fail, he just lays in some cold pieces of pig iron before closing the mould, and they cool the heavy places off rapidly, and everything is lovely. This last makes the soundest job in the lot, as they all melt down together; still there is liable to be dirt on the surface and shrinkage strains that would not be there if the designer had made his metal in the shelf only one and one-quarter or one and one-half times as thick as the shaft, put in some strengthening ribs or brackets, and had also made his whole base shell, except a small bead or fillet, thereby justifying a smaller factor of safety and allowing all parts to cool at the same time. Mullion columns are often designed with a heavy square face cored out, which stands in front of the wood frames, while a thin web runs back between the sash weight boxes. This is an exceedingly hard shape to cast without shrinkage strains. The cored part in front only radiates heat from one side (the core being quickly heated through), while the webbed back runs away off towards the remote parts of the mould, giving off heat on both sides, and the extreme back edge radiates in all directions but one, thereby cooling much faster than the front part, so that when the back has attained its length for normal temperature the front is still red hot and much longer. When the front cools there results a strain, which gives this column all it can do to hang together until it gets into the building, without doing its full share of work after getting there. Moral: A good liberal factor of safety, or a nice large rib of metal, round or square, on the back of the web to keep it from cooling too fast.

The privilege of modifying the thickness of parts of castings to avoid shrinkage strains is one that a designer can safely give a foundryman, for it is always cheaper to make castings right than wrong to commence with. Still, any foundryman can call to mind numerous instances in which he has received serious rebuffs when he has volunteered advice which he considered good, to designers who did not care to hear it, consequently they are often backward about volunteering their opinions.

Unequal cooling and consequent crookedness of shell pilaster faces, frieze plates and light ornamental work is usually corrected by the foundryman without asking the designer's permission, as it is utterly impossible to get light work straight without providing for equal and uniform cooling. But in the manufacture of thicker pieces and parts intended to sustain loads of any kind, the foundryman never makes changes or asks permission to change, if he can possibly execute the work as per drawings received.

Generally speaking, a more intimate association between designers and executors of cast iron would result in a great saving of metal and a reduction of the factors of safety. Imperfect and unsound castings, owing to carelessness in the manufacturing, are much more rare than is generally supposed. Cold shuts from pouring the metal too cold; honey combs, dirt and scabs from soft or unclean moulds are quite rare, and never dangerous in the work of reputable foundries. Many more bad castings are made through an honest endeavor to carry out a design which is not positively the best thing possible for the place than from carelessness in the execution of the work.

Among the most noticeable indications of shrinkage strains in finished castings is crookedness. One side will be shorter, thereby giving the whole piece a crook, or in the case of wide plates they sometimes appear with the center perfectly straight and both edges "loose," or apparently too long for the center. The same may be said of the thin back ribs sometimes put on mullion columns. This comes from the apparently long parts cooling first, so that when the heavier parts cool afterwards the light parts are left too long for their places while the loss of strength incident to these causes is usually provided for by the enormous factors of safety used. Still, if designers would examine their castings carefully, they would soon be able to design forms not liable to these defects, and reduce their factors of safety accordingly.

Any foundryman will be only too glad to show designers of cast iron work, through his shops, and will be able to point out many important conditions affecting the success and quality of castings, which our space will not permit us to mention. We feel confident that as architects and designers of cast iron take a closer interest in the numerous processes of the foundry they will appreciate the fitness of and use cast iron more frequently.—*C. W. Trowbridge.*

Oliver Everett.

MANY of our readers will remember Oliver Everett, the Boston publisher, who did such an extensive business as a publisher in the early part of this century; the subject of this sketch is his grandson, and was born in Roxbury, Mass., on the first day of February, 1860.

In 1874, Mr. Everett moved to this city; here he became a member of the Lincoln School, graduating two years later, and immediately joined the High School.

Soon after his course of study was completed, he entered the office of Prosper Huerne as a student, remaining in that capacity for eight years. In 1883 he became a member of the firm of Huerne & Everett.

Mr. Everett may be said to be a Californian, for, although not born here, his education was acquired, and his architectural knowledge and experience gained in this city. He takes much interest in the meetings of the S. F. Chapter of Architects, and is one of its earnest members.

OLIVER EVERETT.

When to Advertise.

TO REAP in harvest-time you must first sow in spring, and the man who advertises only when times are good, does not receive half the benefit he would if he had invested in advertising six months previous to the influx of brisk times. If an advertisement is not heard from in six months, do not run away with the idea that the money paid for advertising is lost. If the medium is good, and the goods you offer are such as the people want, you will most assuredly get a good return for your money. If you advertise spasmodically, now here, and now there, you will get but poor return, but, if you get the proper medium—and this healthy and strong—your returns will be fully in keeping with your expenditure, and eminently satisfactory.

In "dull times" advertisements are scanned over more frequently than in the rush of a busy season. It is in "dull times" that nine out of every ten business changes are made, or plans matured for the coming season. In "dull times," too, it will be found that men are more readily impressed with the advantages which any new and lauded scheme may possess, because it is in pleasing contrast with their present unsatisfactory condition. The manufacturer who advertises largely through the "dull times" when his travelers are laid off, will find he has planted a crop at the right season, and his travelers, when they go forth for orders, will reap a rich harvest.

Nothing helps the traveler so much in getting orders as the fact that his goods have been well advertised in advance of his coming.

We say, advertise *all* the time; but if you must drop off, you had better do so in the busy season, for then your customers are buying from you constantly, and will know that you are alive and in the business; but if you pull in your advertisements when little or no business is being done, your customers are liable to believe that you are dead. At any rate, they will believe that you are not as much to the front as those who advertise their existence and desire to do business, and it is no secret that customers in all trades prefer dealing with a *live concern* rather than a dead one.

"Aciding" Files.

FOR the past two or three years there has been going on in New York and vicinity, and perhaps in other large places, a regular practice of buying old files—that is, files which have been worn out—and taking them to be, so to speak, rejuvenated. The process of doing this is to dip them in a very strong acid, which, while cleaning the file quite thoroughly, also eats away on the dull tooth to such an extent as to make it feel to the touch comparatively sharp. For serviceable work the file is practically useless; and we presume a number of our readers will be able to recall the time when a fair lot of files of a well-known brand was offered to them at a ridiculously low figure, and which they bought, thinking they had purchased a mine of wealth, and a few days after would have given just about as much as they paid for the files for a chance to meet the man who sold the goods.

We learn, on investigation, that the worn-out files in the shops of some of the large consumers are purchased by junk dealers, they paying 6½ cents a pound for the old files, which is just 5¾ cents more a pound than steel manufacturers will allow for the same files to be used as scrap and again worked into steel. To some of the large consumers of files it has been a subject of comment that such prices should be paid for this scrap, but when we consider the point that the junk dealers get at least a cent a pound more for them, we can readily see where the profit comes in to the junk dealer. As regards the parties buying at that price, they treat them to an acid bath, with perhaps a current of electricity sent through the acid to give it double strength, thereby producing a file which, though very black in appearance, appears to have a good tooth, and if it can be sold to the ordinary machinist or consumer, the venture pays pretty well. The party selling the files thinks he has made a handsome profit, and the consumer thinks he has got a bargain. As a rule, he is never called upon a second time, as the seller of the files would hardly consider it safe.—*American Machinist.*

Repairing Leaky Roofs in Rainy Weather.

CRACKS in the tin on a roof, or holes made by persons walking on the same, whose boots may have projecting nails in the heels, can be temporarily stopped by inserting over the broken place a piece of putty, upon which is placed a brick or some other weight. This is a simple and efficacious way to stop a leak during a heavy rain.

Another way is to cover the puncture with a cement made by thoroughly incorporating fine clean sand with white lead. Openings are easily filled with this mixture. Small openings require less sand than large ones.

Bound Volumes of 1884 Now Ready. Price, Post-paid, $2.50.

Hand Saws.

It is amusing to look over the saws belonging to a gang of carpenters. There is the big saw used by the little man, the little saw and big man; the good saw, the poor saw and the "horrid" saw. Some of them are enough to make a man feel tired just to look at them. One chap has a nicely filed saw, the teeth well shaped, a regular distance apart, and with just set enough to clear itself. Ask that chap why he files the teeth in just that shape and he will answer you that his "father learned him to." That is about all the reason he can give. Not one man in ten can tell why he shows partiality to a certain shape of tooth for certain work. The same man, when he buys a saw, is stuck again. He looks the saw all over, rubs his fingers over it, squints along the teeth, looks very wise, and asks to see another saw. When he chooses one, he cannot tell why he took that particular saw, or give any good reason for his choice.

When we buy a saw, we like a half dozen to choose from. Don't take a saw unless the back is ground thin. A polished saw is the best; it does not rust as quick, and it runs easier when the lumber is inclined to bind. Take a saw by the handle and see if it hangs well. It should not feel "top-heavy," that is, the point feeling out of balance with the rest of the saw. See that the handle fits your hand; if it does not, you never will like that saw, and will swap it off at a pawn shop for an old thing half worn out. See if the saw blade has a good bluish tint. If it looks like cast-iron, you had better leave it for somebody else. Hold it up by the handle and tap it with your knuckle; a good saw will give out a peculiar ring which poor steel never possesses. Hold firmly by the handle and switch it quickly from side to side and the blade will give out that "crackling" sound which once heard will always be recognized as belonging to a good saw. Don't take a thick saw. The thinner a blade having the requisite stiffness, the better the saw. Avoid by all means a flabby or limber blade; they are not worth carrying home, except to lend. Let the "borrowing chap" take it once and he never will ask you for another tool. Now hold the saw nearly level with your eye towards the light, and see if it is "wavy." If it is—drop it. Granddaddy's rule in choosing a saw was to "stick the point of the blade through the handle;" if it "came out straight," it was a good saw. Try this test if you wish; if the saw stands the test, all right, but you may spoil an otherwise good blade. This is an unreasonable test; a saw was never intended to double up like a hoop snake.

A high tempered saw is the best. This is why the blue tint is preferable instead of the cast-iron complexion. We pick for a hard saw every time. Manufacturers would make them harder if they dared to. Hard saw blades stay sharp longer than soft ones, and of course they are harder to file. Most of the boys won't buy a hard blade; they don't know how to set them without breaking out the teeth, so they say a hard blade is "no good" and swap it off. Half the carpenters set a saw at the bottom of the teeth; they set out the whole tooth, and we have seen the bend extending into the blade. This plays the mischief. If the saw is not very soft the tooth breaks out. If it does not break out, it strains the blade and makes it liable to break. Set only the points of teeth. For high tempered saws, the spring set is good, but we believe the "hammer set" is the only perfect set known. Morrills' "perfect" set is the set for the craft but when we set a saw for a delicate cut, let the saw be either hand, band or circular, we go to a little anvil with a corner beveled off; have a little cone to lay the saw upon, and fasten by a thumb nut when in the right position. You can now revolve the saw upon the cone, and set each tooth with a little hammer as in turn they pass over the beveled corner. This cone business of course applies only to circular saws; half the time we do not use the cone, but it is a "good thing for strangers." Strike a very light blow upon the end of the tooth; strike at an angle of sixty degrees with the saw, and always toward the center of the saw. We file the saw before setting; other methods require filing last, as setting dulls them. Strike just hard enough to upset the tooth slightly. In very hard saws, this is what prevents them from breaking. The tooth changing form ever so slightly, relieves itself from the severe strain caused by binding over the short corner of the anvil, and it "takes a set," as it were, at the same time, which prevents it from springing back a particle. When the teeth spring back as in case of spring set, their truth is greatly impaired. For a six-inch circular saw, having teeth three-eighths of an inch deep, we should not let them project over the corner of the anvil more than one-fourteenth of an inch.

Hand saws are no exception to the same rule, and work much better when the set is all in ends of the teeth. Sometimes we hear a man say that the set all works out of his saw. Just tell him to put the set where it belongs—in ends of the teeth, and it will stay where he puts it. Don't set a saw too much. It is waste of time, saw, and lumber. When you see a chap cutting up lumber with a saw, cutting a kerf one-eighth of an inch wide, you had better set him to work learning to file and set a saw. A sharp saw with ground back needs very little set. Eight out of ten users of saws can't file them. There is no other tool used by wood-workers which has such a fuss made over it in regard to being kept in order. Lots of men can put a saw in the clamps, rub a flat file over ends of the teeth, and then file them up sharp; but there their knowledge ends; they follow the shape of the teeth. If a tooth is bad shape it keeps that shape, only it gets "more so." The teeth get big on one side and small on the other. For a space they are huddled, then the next two inches seem to have lost a tooth. One side will be filed much more fleaming than the other side. No matter what saw it is, circular and band saws are not excepted, and all have to stand the same racket. Good files are few and so are good workmen. It is with a saw as it is with everything else; to be a good filer you must exercise care, and much care too. Good filers seem to take to it naturally. They don't know when they learned to file a saw; it seems as if they always knew how. Watch them closely and you will see that they are just as careful with the file as they are at the bench. They have their pet shape for the teeth of different saws, and they keep them that shape. They never "just touch up" a saw by going over it in a hurry and dubbing off the points of the teeth; when they file a saw, it is filed right. When they get a tooth to a point, they stop; they don't give another stroke with the file and take the point off, or round over the end of the tooth. When they get done, the saw is straight. Sight across points of the teeth and you can see them all. Now lay the saw flat upon a smooth board, take an oil stone and draw it the whole length of the saw upon the sides of the teeth; this will take off the feather-edge or burr from each tooth, and it then makes the saw cut nice and smooth. Be sure to rub the stone toward the handle; if rubbed the other way it is apt to bend the burr over without removing it.

It is impossible to convey without illustrations the exact shape for saw teeth. That there is a "best shape" everybody allows, but also all claim it as theirs. For cross-cutting file to an angle of sixty degrees "fleaming," and vary angle of back of the teeth with the hardness of the wood it is destined to cut. For very hard dry wood file back of tooth square across. For live or green lumber fleam back of the tooth just like the front. The teeth may also have a little pitch forward or be a little "hooking" for soft wood. Rip or splitting saws are not usually filed hooking enough. Many people file front of tooth perpendicular, the back at thirty degrees; hook the tooth five, or even ten, degrees more, and it will do much better work. File back of teeth square but fleam fronts a little. Where the same saw must be used for both hard and soft ripping, file front fleaming and back square. A compass saw is always a much abused article. Who ever saw one, unless just out of the shop, but what was badly bent, or else bent "clean in two"? Just take a compass saw and change the teeth all over. Make them hook toward the handle instead of toward the point. Set the saw nicely, file square back, and slightly fleaming front, and that saw won't bend up double the first time you try to saw with it. The Japanese seem to know a thing or two about saws and they make all theirs to cut when drawing towards them. Don't ever try to work with a dull saw. Just get into a barber's chair, let him shave one side of your face with a nice sharp razor, then let him open an oyster or two with it, and shave the other side—you will know all about sharp and dull razors and can apply the same knowledge to saws with perfect satisfaction. Take a hand saw that has been filed seventeen times without jointing, it goes jumping and rattling through the cut, gouging here and slipping there, till you wish the devil had it, yet a circular saw gets used in the same way, all the cutting done by three or four teeth, causing it to buckle, rattle in the cut, and, perhaps, catch, fly to pieces, and kill somebody. The learned coroner's jury will render a verdict of "death caused by disintegration of the steel composing the saw," and that will end the matter.—*Lumber World.*

Sending Logs down Nevada Mountains.

A chute is laid from the river's brink, up the steep mountain to the railroad, and while we are telling it, the monster logs are rushing, thundering, flying, leaping down the declivity. They come with the speed of a thunderbolt, and somewhat of its roar. A track of fire and smoke follow them—fire struck by their friction with the chute logs. They descend the seventeen hundred feet of the chute in fourteen seconds. In doing so, they drop seven hundred feet perpendicularly. They strike the deep water with a report that can be heard a mile distant. Logs fired from a cannon could scarcely have a greater velocity than they have at the foot of the chute. The average velocity is over one hundred feet a second throughout the entire distance, and at the instant they leap from the mouth their speed must be fully two hundred feet per second. A sugar-pine log sometimes weighs ten tons! What a missile! How the water is dashed into the air! Like a grand plume of diamonds and rainbows, the feathery spray is hurled to the height of a hundred feet. It forms the grandest fountain ever beheld. How the waters foam, and seethe, and dash against the shore! One log having spent its force by its mad plunge into the deep waters, has floated so as to be at right angles with the path of the descending monsters. The mouth of the chute is, perhaps, fifteen feet above the surface of the water. A huge log, hurled from the chute, cleaves the air and alights on the floating log. You know how a bullet glances, but can you imagine a saw-log glancing? The end strikes with a heavy shock, but glides quickly past for a short distance; then a crash like the reverberation of artillery, the falling log springs, vertically, into the air, and with a curve like a rocket falls into the water, a long distance from the log it struck.

Amyl Nitrite in Opium Poisoning.

According to *L'Union Medicale*, a patient who had taken two ounces of laudanum, who was in a comatose condition, with pulse beating only six times per minute, and upon whom belladonna and other remedies had produced no effect, was aroused by inhalations of amyl nitrite, and finally recovered.

Who Made the First Barrel.

Few inventions have had a wider or more varied usefulness than the barrel; few give such promise of perpetuity. Unique in principle, simple, yet singularly perfect in plan and structure, the barrel is a little less than a stroke of genius. Who set up the first one? Who first conceived the happy thought of making a vessel tight and strong out of strips of wood bound together with hoops? And when did he live?

No history of inventions; none of the encyclopedias in our great libraries; no historian of human progress, so far as we know, gives any information on the subject, unless we accept the Roman author, Pliny, who mistakenly attributes the invention to the Gauls who inhabited the banks of the Po. We say mistakenly, since there is the best of good reason for believing that the barrel was in use long before the Gauls took possession of their Italian home, perhaps long before the Gauls existed as a people.

The monuments of Egypt furnish proof of the early use of hooped vessels, though no date is given for their invention. In one of the inscriptions copied by Wilkinson may be seen two slaves emptying grain from a wooden vessel made with hoops, while a scribe keeps tally, and a sweeper stands by with a broom to sweep up the scattered kernels. Close by, an unfortunate is undergoing punishment by bastinado, for short measure, perhaps, or, as Mr. Wilkinson suggests, for petty theft. The measure is barrel shaped, and precisely like the *kayl* of modern Egypt. It would hold, apparently, about a peck. Unfortunately, the age of this inscription is not indicated. Measures of the sort would seem to have been in common use very early in Egypt, though not for the storing of liquids, for which purpose skin and earthen vessels were employed.

At first thought, Egypt would be the last place to look for the invention of hooped vessels, its arid climate making it specially unsuited for their employment. Possibly, however, that may have been the compelling cause of their invention.

Throughout the East, the bamboo is largely used for making hollow vessels, a section of the stem through a node securing a solid bottom, and one between the nodes an open mouth for a natural tub or bucket. In well wooded regions, nothing would be more natural than the employment of hollow tree trunks for the same purpose, or sections of tree stems, hollowed out by fire or otherwise. In drying, such vessels would split and spoil, and it would require no great genius to repair them by means of withes or wooden bands, the primitive form of the hoop.

If the users of such natural barrels should migrate to a region where timber was scarcer, economy of lumber would be likely to suggest the building of barrels from pieces artificially split; in short, the use of staves, by means of which the primitive cooper would be able to make several barrels out of a block that would suffice but for a single dug-out.

But this is speculation merely. It is enough to know for a certainty that the cooper's art, like the potter's, is one of extreme antiquity. We had no suspicion of its venerableness when we began to trace its history in response to the inquiry, Who made the first barrel?—*Scientific American.*

Truing a Grindstone.

Lay a flat iron bar across the grindstone frame as close to the stone as possible without touching. Take a piece of three-fourth gas pipe two or three feet long, and hold it about 45°, with the end resting upon the iron plate. Roll the pipe slowly across and against the face of the stone, holding the pipe firmly to its place, so that the stone will bite upon the end of the pipe. The pipe will wear away, as well as the stone; rolling it will keep the end even.

Salfeld School of Architecture.

Mr. David Salfeld has opened a school for the benefit of architectural students, at No. 700½ McAllister Street. Apprentices and those wishing to obtain a knowledge of architectural principles should consult Mr. Salfeld. Mondays and Thursdays are the days upon which the class meets. Full particulars given by calling at the above address.

Architectural Iron Work Manual.

We have received from C. W. Strobridge one of the most complete and finely illustrated manuals, descriptive of Architectural Iron Work, that has as yet appeared on our desk. The first fifty pages are illustrated with designs for columns, pilasters, etc. Following are tables of strength and deflection of I beams, and text relating to the use of angles and T's as struts. Most of the tables in this work are entirely new. These manuals are intended for free distribution to parties interested in any way in building, and a copy will be forwarded to any address by writing to C. W. Strobridge, Room 408, First National Bank, Chicago, Ill., and mentioning the name of this Journal.

The habit of "swearing off" at the beginning of the year is a time-honored one. The retail dealer should "swear" that he will look close to his credit; that he will keep his stock well assorted; that he will keep his yard in good order. The manufacturer should "swear" that he will go slow all along the line—in the woods, and in the mill; that he will keep well insured; that he will bear in mind every day that pine stumpage is not so plentiful in the Northwest that it should be disposed of for a song. The wholesale dealer is between two fires; he must do the best he can, therefore it will not avail him much if he swear at all.—*Northwestern Lumberman.*

Purchasing and Using a Grindstone.

A CORRESPONDENT of the *American Machinist* writes: "When you find a stone that looks about right, take a mallet or block of wood and strike upon it in several places. If there are any cracks and shakes in that stone, you can 'hear them.' Turn the stone over and examine the other side. With a cold chisel and hammer chip off a thin scale. It should break between your fingers, and almost crumble when rubbed rather hard. If it is hard and flinty, or has any trace of slate or soapstone qualities, give it the 'mitten.' The stone should be almost soft enough to enable you to pare it with the cold chisel, graver fashion.

"When you have got a stone to suit, have the sides turned off for flanges. All stones used to be wedged true upon a square shaft. It was a barbarous, unscientific practice. Dry pine wedges driven in tight, then wet thoroughly, the stone run too fast, is entitled to burst.

"Before you wet the new stone, put a dog on the end of the shaft, water on the stone, and a 'cub' on the dog. Let him turn the stone, and increase the speed until the water begins to fly off. It will commence to fly first at the point where gravity begins to assist centrifugal force, right where the stone begins to ravel *down* from a point level with the shaft. Count the revolutions, figure up the speed, and put on a pulley to make the stone run about this speed. A little faster will not do any harm; the stone soon wears, and the speed of the surface decreases. When the stone gets worn two or three inches, put on a smaller pulley. Keep changing until the stone is eighteen inches in diameter. Then turn a groove in the center of its face three inches deep. Fit a lot of dry pine wedges into this groove. Don't drive them too tight, or you may break off a big chunk of the stone. Now take the stone off and lay it down in the water, or where the pine wedges will get wet. Next we k you can go there and get two nice eighteen by four inch grindstones, just the thing for up-stairs, where you do the light work.

"Don't put a nasty water trough under your grindstone. It only serves to catch dirt, mud, and any tool you may happen to drop. Put a long shaft in your stone. Have the pulley three feet at least from the stone, and a bearing close to it. Cover this box with a piece of leather, and you can keep grit out of it. Put the other bearing close up to the stone on the other side. No use to oil this box. Might as well oil a water-wheel step. Make the bearing of bronze, and rig a one-fourth inch water pipe to discharge a stream upon it. Centrifugal force carries the water to face of the stone, just where you want it. The bearing is always lubricated, and the stone clean and ready for work. It will work, too. Use it well and it will be the best tool in the shop, except its formidable rival, the solid emery wheel."

Bound Volumes of 1884 Now Ready. Price, Post-paid, $2.50.

Stirrups for Supporting Centers.

MR. CHARLES ACKERSON has applied for a patent for a newly invented stirrup for supporting side-walk and similar centers of arches. By its use all studding and timbering is completely dispensed with, thus saving cost of the stirrups on a single job. Much time is also gained, as it takes but a few minutes to place them in position. Mr. Ackerson proposes to sell the stirrups at a cost of twenty cents each, or will rent the same for use at seven and one-half cents each. In the latter case, the time allowed is that occupied by actual use in the building for which they are rented. By referring to the large ad. elsewhere in this issue, a cut and full description of these stirrups will be seen, and any explanation in regard to the same may be obtained from the manufacturers, whose names will be found at the bottom of the ad.

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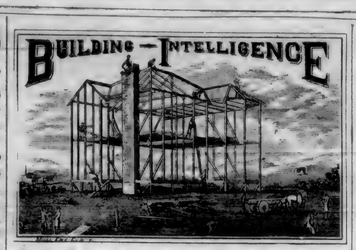

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Watsonville—Two-story brick for Masonic Hall. O., Charles Ford; A., J. Lenzen & Son; C., D. H. Kelsey; $25,000.

Napa—Three-story frame. O., Mrs. Hogan; A., J. Marquis; Day's work; $12,000.

Alameda—Encinal Avenue, bet. Peru and Benton. One-story frame. O., Chas. Adler; A., Schmidt & Havens; C. V. W. Frodden; $4,500 Two-story frame. O., D. McLaren; A., McDougall & Son; C., Geo. A. Beneman; $3,200.

San Rafael—Two-story frame; O., H. Lagon; A., T. J. Welsh; C., Kill & Hobson; $7,000.

Livermore Valley—Two one-story frames. O., Chauche & Rosquenaz; A., Huerne & Everett; C., W. B. Kreger; $7,175.

Modern Perspective. A perfectly new work. Should be studied by those who seek to excel. It is intended for the architect as well as the draughtsman. Price, $6.00.

Steel Square and Its Uses. Enlarged Edition. This work is just from the press, and those wanting copies should at once order them. It is a great improvement on the author's former work, containing much that is new to mechanics—some of the problems presented never having before appeared in print.

We are agents on this coast for this celebrated work, and will mail a copy to any address upon receipt of $1.00.

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AN UNPRECEDENTED SHOWING.

Quarterly Review of Building Operations.—An Average of Nearly 100 Buildings per Month.

THERE are two classes of operators who have as yet failed to be convinced that we have, or are now passing through, a dull season,—those who buy and sell real estate, and those who perform labor and furnish materials for improvements on the same. Indeed, the latter class have had no cause for complaint for the past three years. The reason for this state of facts will be evident to those who make a study of the

BUILDING INTELLIGENCE

As published monthly in the columns of this Journal. The number and value of the improvements recorded for the first three months of the present year, exceeds by

OVER ONE MILLION DOLLARS

The record of any similar period that has come under our notice. This statement becomes the more noticeable when we consider that the first three months of the year are generally regarded as dull months, owing partly to our rainy season occurring in that period.

LOW PRICE OF BUILDING MATERIALS

Has undoubtedly been the cause of much of this activity; but we must look deeper beneath the surface if we wish to get at the true reason. A careful analysis of our building reports will show that the number of individual owners is on the increase, and this is owing, more than anything else, to the

LOW RATE OF INTEREST ALLOWED BY THE SAVINGS BANKS.

People of limited means have found that a more profitable investment awaits those who build houses for rent, and so we see numerous small houses being erected by this class.

It will be noticed that in a portion of the buildings quoted the name of an architect does not appear. This must not be construed to mean that no plans were drawn for the same. On the contrary, in many instances plans were prepared by an architect, but the owner superintended the erection of the buildings.

The following tabulated statement will show the result of three months' activity in the building interests.

FIRST QUARTER OF 1885.

	Frame.		Brick.		Alterations.		Total.	
Jan.	62	$247,320	2	$314,000	9	$41,265	73	$602,585
Feb.	103	492,500	6	131,725	12	36,172	121	660,397
Mar.	79	318,232	5	467,565	10	20,482	94	806,279
Total.	244	$1,058,052	13	$912,290	31	$97,919	288	$2,069,261

A total of 288 buildings of the value of $2,069,261.

For the same time in 1884 there were recorded 198 buildings of the value of $1,014,315.

As yet there is no decrease in architects' offices for orders of plans, etc., and we may reasonably expect that the balance of the year will witness an increased activity. Plans for several large buildings are now under consideration, principal among which is the Donahue Building on First Street, and two fine buildings on Market Street, after the pattern of the Levi Block.

RAISE IN THE PRICE OF BUILDING MATERIALS.

During the past month the price of lumber has been raised to $14.00 for rough, and $30.00 for surfaced. This we regard as too low; for while it may benefit a few in the large cities, it is hard on those working in the woods.

Hardware has still an upward tendency. Nails that a short time ago were sold as low as $2.45 per keg, are now worth $3.25. Locks and fine hardware have advanced 20 per cent. In fact, prices are firm for everything connected with building operations.

Scarcity of Draughtsmen.

THERE is, at present, an absolute dearth of first-class draughtsmen. We have "tracers and copyists" in abundance, but detail draughtsmen are scarce. We keep a list of disengaged draughtsmen, and, by forwarding your name to this office, the best means will be adopted to hear of situations. No charge for registration.

A Badly Used Owner.

WE clip the following from the S. F. *Chronicle* of 3d inst: "We are in receipt of a communication from a gentleman who is putting up houses in this city and who writes to complain that he is constantly being swindled by collusion between his contractor and his architect. He specifies that he contracted for a brick foundation which was to contain 8,000 bricks, but by running up the outside wall only one brick in thickness and filling in the center with sand, the contractor managed to put up the foundation with only 3,000 bricks. He contracted for flues from each fireplace and stove-hole, but the contractor only gave him one flue to four fireplaces. He contracted for A-1 first-class rustic work and got the commonest kind of sapped wood. His original plan contemplated a front elevation, with elaborate ornamental work, but after the building had begun the architect altered his plan without notice to the owner and the contractor gave him a plain front without any pretense at ornamentation. Altogether, he seems to have been an ill-used man.

"At Chicago and Kansas City when they want to describe a champion scoundrel, they say he is as great a rascal as a building contractor. The expression has become proverbial. We presume it is much the same here. There are, doubtless, honest men in the business, but there are a good many who only escape the penitentiary by superior knowledge of the law. The remedy for victims would

seem to be, find out the honest few and employ them only. It ought not to be very difficult to pick them out."

That the foregoing is false in part, is self-evident upon the face of the statement; if founded on fact, the results complained of were well deserved by the owner, as it seems that he was not a novice in house-building, and his former experiences should have qualified him to select an architect worthy of trust and confidence. The brick story, using three-eighths brick and five-eighths sand, is a farce. Eight thousand bricks would lay but a small extent of foundation wall at best. If it was provided that the walls should be thirteen inches, the width of three bricks, there would be the *extreme possibility* of facing up with brick on the two sides, and filling the center with sand, which, if practiced as an entirety in the full extent of the wall—a something that could not very well be done—the displacement of brick by the use of sand would amount to but *one*-third of the whole; but as the footing courses were likely extended full thickness, and the top covered with brick to hide the sand, about the worst that could be done would be one-fourth per cent. sand, instead of two-thirds per cent. Hence the silliness of the yarn.

But it is common in foundations of 8,000 brick in extent, to make the walls but nine inches. the width of two, or length of one brick, in which case a chamber for the deposit of any amount of sand would not exist. And the whole story in this particular would be a shallow brained misstatement. In either case, the brick matter is a high colored story.

If the architect did as is represented, the fact is clearly shown that he is, or should be, classed among the *architectural shysters* that disgrace the profession. Certain it is that no reputable architect would be guilty of any such nefarious work, and our contemporary is at fault in not ascertaining the names of the guilty parties, and publishing them in full; a course that this Journal would and will yet pursue, if the names are made known to us, and anything like the published statement shown up as facts. This is a duty we owe to the profession as a whole, and to its honorable members individually. It is also greatly at fault in giving publicity to an indiscriminate statement, calculated to impress upon the minds of the uninformed that architects, as a class, as well as contractors, are dishonest and tricky; all of which is grossly wrong, as there are many architects in this city, and contractors too, whose moral and business rectitude will stand the test of comparison with an equal number in any other profession, with no fear of shrinkage should the comparison be carried into the sanctum sanctorium of some newspaper publication.

If an owner, "the first time he builds," happens to be beguiled into a *scalper's* office, he is rather to be pitied than blamed, provided he has not drifted there in hunting up one of those precious frauds, a "cheap architect;" one willing to give his services (!) at any price that may be offered, relying upon after possibilities to "get even on the owner;" whether by substituting sand for brick, or any other villainous device practiced by those who are alike destitute of a proper knowledge of architectural science, and all principles of integrity and honor. And the fact, if fact it be, that "an owner" has been as badly used as the article under notice states, is not a sufficient reason why the whole profession of architects and contractors should be slurred and slandered.

OUR ILLUSTRATIONS.

A warehouse designed in San Francisco, to be erected in Baltimore, Md.; Wright & Sanders, Architects.

A California home; D. Salfeld, Architect.

On page 39 will be found the elevation of a five-story brick building, to be erected in Baltimore, Md., for A. B. McCreery. Both the owner and Messrs. Wright & Sanders, the architects, are inhabitants of this city, and it most certainly speaks volumes for our architectural talent, when an owner gives an order for plans for a building to be erected in a city of such prominence as Baltimore.

On page 41–47 are the plans, elevations, and details of a dwelling representing some of the latest phases of architecture as exemplified by a California architect. Credit for the same belongs to Mr. D. Salfeld, of the firm of Salfeld & John, architects. The happy combination of wood and brick as presented in the elevation, forms a pleasing contrast to the "rustic" fronts, so common in every portion of this slope. If good judgment is exercised in the selection of colors with which the woodwork is painted, and if judicious care is exercised in the planting of trees and shrubs around the house, a very pretty and comfortable home can be had by the adoption of the plan as shown.

By referring to the details, it will be noticed that the architect has shown the ends of the rafters with moulded projections worked on the timber itself, thus combining economy with beauty and solidity. All the different parts of the framed woodwork are to be morticed and tennoned together, except the intersection of the collar beams with the rafters. These are nailed as shown in engraving; the construction of the exterior is well shown in the various details.

The first floor plan possesses a few features not usually shown in country dwellings. The combination of the hall with the living and dining room by means of the sliding doors, and the direct communication between the parlor and dining room, makes the plan an attractive one, especially to those who are fond of much company. The toilet shown in entrance hall, the arrangement of the kitchen and pantries, the easy access to all the rooms from the rear hall, are features worth studying.

The rooms in the second story are amply provided with closets, windows and the other necessaries needed to make a comfortable home.

COST.

In the estimate of cost, the following prices of labor and materials are given, so that by comparing the same with the prices of corresponding items in various parts of the country a definite idea may be gained of the cost of the design shown; it must be borne in mind that prices are given as they rule at the time of the issue of this month's Journal; these of course are subject to various fluctuations.

Rough lumber (pine)	$14.00 per M
Flooring (pine)	$25.00 " "
Stepping (pine)	$35.00 " "
Rough lumber (redwood)	$16.00 " "
Surfaced (redwood)	$30.00 " "
Rustic (redwood)	$30.00 " "
Shingles	$2.00 " "
Laths	$3.75 " "
Brick	$9.00 " "
Lime	$1.50 per bbl.
Cement	$3.75 " "
Carpenters	$3.50 per day
Plumbers (with helper)	$6.00 " "
Plasterers	$3.50 " "
Masons	$4.00 " "
Laborers	$2.00 " "
Lathers	$3.50 " "
Painters	$3.50 " "
White lead	6½ cts. per lb.
Boiled oil	70 " " gal.
Plastering	28 " " yd.

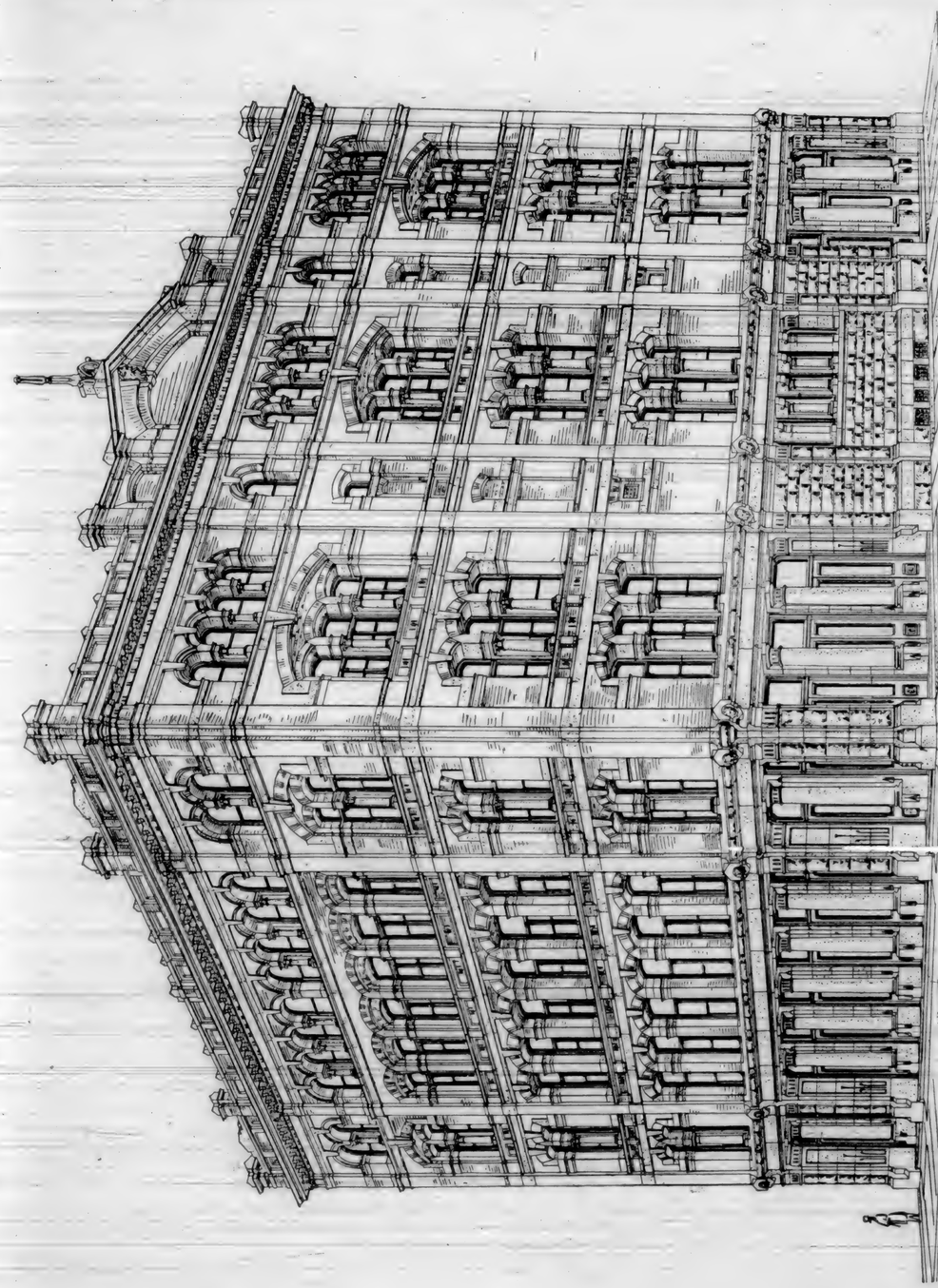
The above includes about all items necessary to arrive at a definite conclusion in regard to the cost; $7,000 will be required to finish the dwelling as per plans shown; that is, according to rates as published above.

There Should Be Work for All.

A GENERAL reduction in the hours of labor throughout the country would give constant employment to all, whereas, at present, hundreds of thousands are compelled to walk the streets or tramp through the country in the vain pursuit of work. Monopoly is frank enough to say that too much has been produced, and that it must unload before the wheels of productive machinery are again set in motion. When it answers the purpose of capital as at present to reduce the hours, how readily workingmen accept the situation. Wages for a season would be a trifle under that paid for more hours, but the compensating demand for labor would soon bring the pay up to the standard of present rates.

Very little intellectual improvement will take place among our working people while all their vital energies are exhausted by the continuous strain which over long hours of routine toil exact.

Science of Carpentry $5 00
Builders' Guide 2 00
Model Homes 1 00
Steel Square and Uses 1 00



DESIGN OF WAREHOUSE FOR A. B. MCCREERY. TO BE ERECTED IN BALTIMORE. DESIGNED BY WRIGHT & SANDERS, SAN FRANCISCO.

"Fire Limit Ordinance" vs. "Building Laws."

As at present manipulated, fire ordinances and the building laws of San Francisco are mixed up as one, with the board of fire wardens, the chief engineer of the fire department, his aids and deputies, and others within the fire department circle, as the sole exponents and executors of said laws and ordinances.

While there is a co-relationship between the practical results of the architectural and building sciences, and the study and knowledge of security from the destructive element, - fire; safety to those who so often imperil their lives combatting the fury of devouring flames, there is a difference between the two so vast and emphatic that the laws and ordinances regulating and defining limits and procedures, should be distinct and separate to each, and respectively,—placed under the control of men qualified by education, contacts and experiences, to understand, manage, and determine all issues and necessities in each department respectively.

The standard of intelligence and experience that perfects a thorough knowledge of things "combustible," "inflammable," "explosive," etc., and qualifies for all the duties and understandings necessary to, and involved in connection with a well regulated fire department, as a rule, and generally, is entitled to but little consideration in architectural and building matters. There is but incidental assimilation of thought and study, and when mixed up under one control and dictation, discordancies are inevitable. Hence the necessity of

A "BOARD OF PUBLIC WORKS"

Composed of intelligent, competent and qualified men, capable of understanding and determining not only all principles of strength and safety in the construction of buildings, but all other matters of sanitary and other material import, which should be under legal control and regulation. As now regulated, the conglomerate fire and building ordinances contain many provisions which should be illuminated, for the reasons that they are unnecessary and more than reasonably restrictive; many of them are "dead letters" seldom observed, yet ever at command when for reasons their enforcement may serve purposes.

We do not mean by this article to impune the motives, or question the integrity of those managing matters as now regulated, but to call attention to the error which manifestedly exists in the combination of laws and ordinances as they are at present. A "board of public works," we hold, is a necessity in this city, and should exist, with full jurisdiction over all questions and matters involving the building interests. In very many of our Eastern cities, such boards perform the duties suggested, to great public advantage, and without conflict or disagreement with the fire department regulations,—the two managing their affairs separately, yet in harmony, as far as the interests of either are concerned; and so it should be in San Francisco.

Shoddily Built Houses.

They are numerous in San Francisco, mainly because they suit a large number of owners who prefer them to well and properly built houses, not upon the score of shoddiness, but because they are "cheap"—*cheap* as to *first cost*, quality being an unconsidered factor in the matter. It is simply strange how so many otherwise intelligent men and women can be persuaded to accept the bad, as good, inferior as excellent and satisfactory, upon the catch penny idea of cheapness. Almost every owner, in making first statements to an architect, premises by saying that they want a house "well built, strong, and with all modern improvements," and in a majority of cases, if the man of plans states the actual facts of cost for the house outlined, the owner is discouraged, and withdraws to seek another who will promise more at less cost.

In this way a class of disreputable men have met encouragement, and make pretense to architectural skill, while, in fact, mere *shoddyists* in both architectural and constructive senses. Yet people like this degeneracy in house construction so well that thousands have mere shells for houses, with so many manifest defects that the pleasures of ownership are greatly compromised, and sometimes rendered so unpleasant and unbearable that escape is sought by *"this property for sale,"*—reasons not mentioned.

Pressure per Square Inch.—Bricks intended for substantial buildings should stand a pressure of not less than 6,000 pounds per square inch. For public buildings, where the brick will necessarily have to bear a great weight, they should stand a pressure of not less than 7,000 pounds per square inch. Government contracts are often awarded to parties manufacturing brick that withstand a pressure of from 8,000 to 10,000 pounds per square inch.

Most people think an iron mast is cast and solid, and wonder why its weight doesn't pull it up by the roots, or punch a hole in the bottom and slide through. This shows how easy it is to be mistaken, says an exchange. An iron mast is really lighter than a wooden one. A 60 foot stick of spruce or yellow pine, 2 feet in diameter at the base, weighs far more than the shell forming the modern iron steamship masts. These masts for the *Atlanta* will be fine specimens of their kind. The mainmast is 2 feet in diameter at the base, tapering to 17 inches at the top, at which point the funnel will be fashioned square, making a marked distinction from foreign-made masts-heads, which are left round. The mainmast is 68 feet 4½ inches in length, and the foremast 2 inches shorter. The method of construction is peculiar. Three T shaped rods of steel, the length of the masts to be made, are affixed, base outward in circular wooden frames, and around the skeleton thus formed the ready shaped plates are riveted in place. The plates are 12 feet in length and about ⅜ of an inch in thickness.

Building Improvements in Woodland.

Woodland, March 4, 1885.

To the editor of the "San Francisco Architect and Building News:" The following is a synopsis of the building and improvements of Woodland and vicinity for the first three months of 1885, ending with March 4th. So far the building interest has exceeded our expectations, and surpassed in amount of capital any previous quarter.

In connection with the steady demand for new buildings and extremely low price of lumber and builder's hardware, many have been induced to start in and take advantage of the favorable times, and we can safely say that business is good.

Carpenters and joiners are hurried, brick layers and plasterers are rushed, painters and paper-hangers are busy, while material men are perfectly happy, and the consumer reaps the benefit. Under such circumstances who should object.

The number of buildings and improvements of all classes is:—

CITY.

	COST.
13 Frame Buildings	$18,800
4 Brick Buildings	38,400
11 Improvements and Alterations	14,800
Total number, 28 buildings; total cost	$72 000

COUNTY.

	COST.
9 Frame Buildings	$12,400
5 Brick Buildings	10,100
2 Stone	8,000
Total number, 16 buildings; total cost	$30,500
Final aggregate, city and county, 44 buildings	$102,500
" " for 1884, 27 buildings	56,050
Increase over corresponding three months of 1884	$46,450

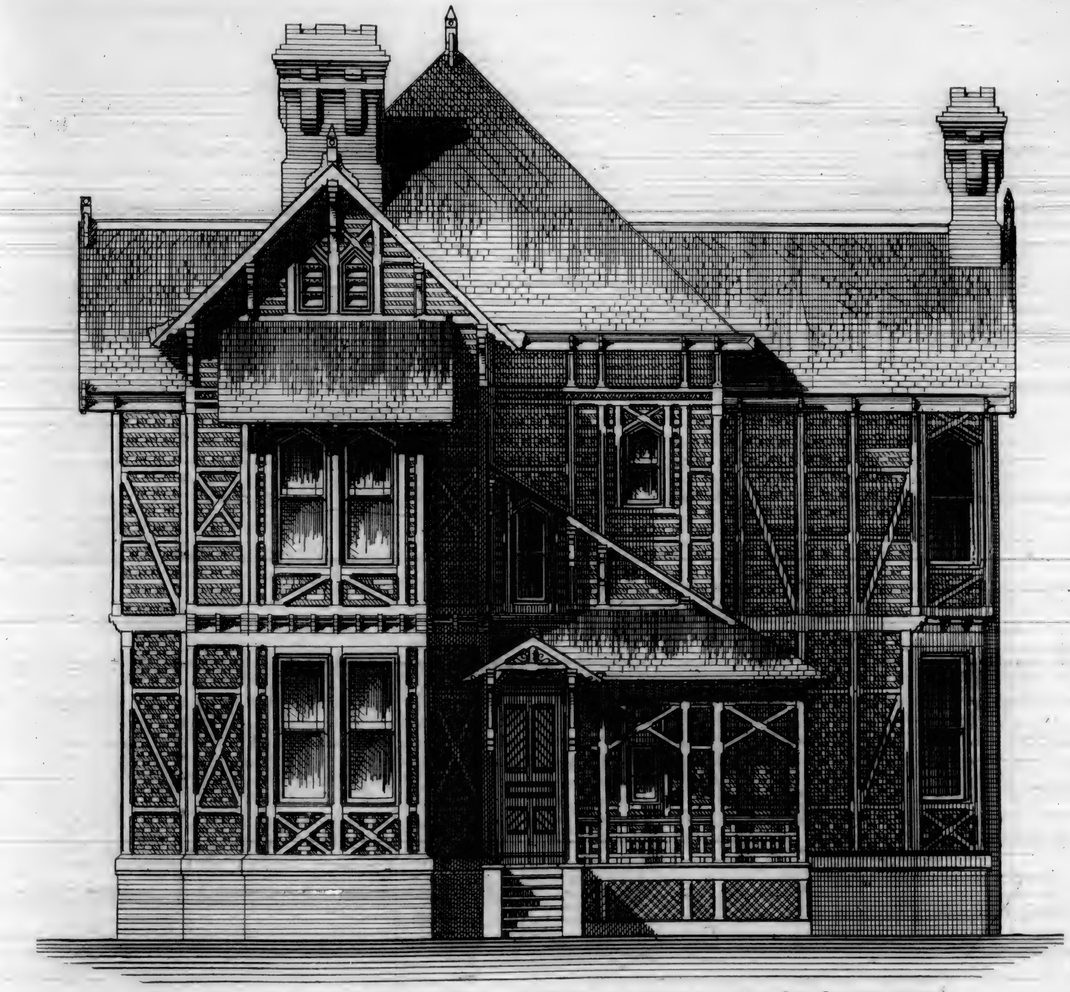
It is gratifying to note that the class of buildings about completed and those under construction, so far this year, are of a better grade than heretofore, and a larger number have employed the services of architects and draughtsmen; last year the average was about one to three and one-half, this year it is one to two and one-half. This is evidence of a higher standard of excellence being adopted by our building community. Let us give more earnest thought to the architectural planning and improvement of our buildings and homes, and surely whatever effort we make in tasteful ornamentation will be an advantage to ourselves and impart a useful example for others to emulate, and as we journey through life let us leave pleasing land-marks by the wayside.

Accept our thanks for past favors and courtesies. Respectfully yours, G. and S.

Garland Traps.

These traps are constantly asserting their superiority over all others now in use. The great evil of "back water," is absolutely overcome by the simple action of the indestructible glass ball valve; this is the only trap with a valve of this description. Address, 1901 Broadway, Oakland, for circulars, and notice the adv. in this Journal.

Bound Volumes of this Journal Now Ready. Price Post-paid, $2.50.



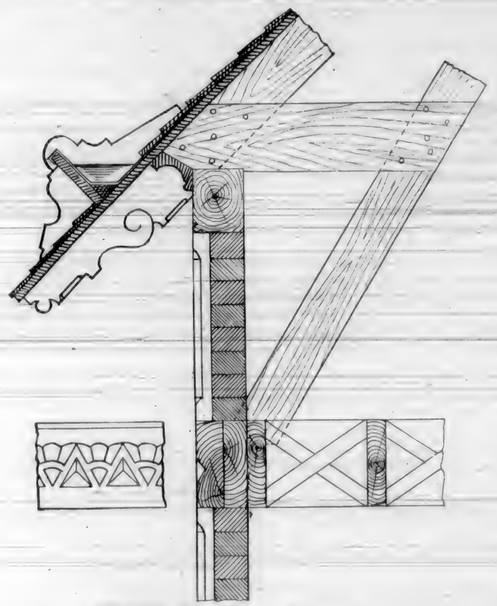
Front Elevation of a California Home.—D. Salfeld, Architect. (See Our Illustrations.)

Wasted Heat

It is a common notion among dwellers in cold climates that, in order to keep warm, we have only to make our houses air-tight, without regard to the texture of the materials of which the walls are composed. We read of the poor Esquimaux in their snow-walled huts, and shed tears enough over their pitiful condition to go far toward turning their frozen habitations into pools of salt water. But our sympathy in that direction is wasted. Walls of snow lined with white bear skins, or even with greasy blankets, are a stronger barrier against cold than plate glass windows, however they may be fortified with putty and rubber weather strips, that is, in very cold weather. Or to speak with more scientific accuracy, they will prevent the escape of heat far more effectually, which is the main point; it is not the entrance of cold against which we are to guard, but the exit of the heat. If, instead of glass, we were to use thick cakes of ice in our windows, they might not be quite so transparent, but they would be just as warm as frost-covered glass, and decidedly warmer than the glass when the wind blows and the weather is extremely cold. Woolen blankets would be vastly better than either, and common cotton cloth is almost as good, as every builder knows who has tried the experiment of keeping a house warm for plastering in cold weather before the windows are put in.

Everybody knows, too, that double windows make a house warmer, but all are not aware that this is not because they prevent the cold air from blowing in around the sashes, but because the confined stratum of air between the two thicknesses of glass prevents the heat from passing out of doors through the glass, as it would do freely if there were but one thickness, or if the two were in actual contact. It is not always remembered either, that for this purpose a curtain of any sort, even of paper, fitting closely against the window opening will have, when closed, a similar effect.

One thing more while we are upon this subject. Exchanging the warm atmosphere of our houses for the cold, out-door air, through



SECTION OF MAIN EAVES

the cracks around the windows and the invisible or unnoticed cracks and pores in the walls, is not altogether a poor exchange, for the air that we get is of far better quality than that which we lose, if of inferior temperature. But the heat that goes through the window panes is absolutely wasted, leaving the air which has parted with it to fall to the floor, keeping all its impurities still in the room.—*The Builder.*

English Law on Boundaries of Property.

MUCH has been said during the session of our late Legislature, in regard to the boundaries of property. English Law has been referred to in many instances, and in order that our readers may properly understand some of the laws referred to, we present a few that may be of interest:—

"In the absence of plans, figures, or rebutting circumstances, where a fence or hedge and a ditch are conjoined, the landowner on whose side either of the former stands, claims the latter; the theory being that excavated soil was cast on the digger's land as groundwork for his barrier, which thus with the ditch forms the boundary, and the limit being the outer bank from the fence or hedge. Property in a fence or hedge between ditches or without ditch may be joint, or rest on acts of ownership of long standing, as executing repairs, especially on demand.

"Posts and rails of paling are presumed to stand wholly on the owner's land, with pales outward and nails driven *home*.

"Joint proprietors of fences, etc., are not necessarily under obligation one toward another to preserve them, any more than a sole proprietor is similarly bound toward the adjoining owner or the public; but in both cases prudent precautions must be taken to obviate injury to others, as by scouring ditches, inclosing holes next to public roads, preventing cattle straying, etc. Generally, the tenant (who must also usually preserve boundaries), not the landlord, is liable to actions in such cases. The time a fence has existed is one element in considering liability to repair it; and twenty years is the least period.

"Where a stream flows between properties, the presumptive boundary is the central line of water, use of which is shared between opposite owners, neither being entitled to injuriously affect the other or proprietors above or below by obstructing, diverting, diminishing, or polluting it.

"In the case of houses or grounds separated by walls used by both owners and built at joint expense, half on the land of each, and also where it is unknown at whose cost or on whose land such walls were erected, they are practically common to the parties, and either may exercise acts of ownership in building, etc., so that one does not prejudice the other. If a man builds on another's ground, the latter must set up his right within a reasonable period from cognizance of the trespass.

"At common law, a man has a right of natural support of soil, so that an adjoining owner must not by excavating cause it to fall. If a house has been erected above twenty years, there is usually a special easement of support from adjoining land or houses (as from party structures), the proprietor of which is liable for injury by settlement, etc., caused by him. In other cases general right to support or to notice to take precautions should be proved. Where a row of houses is built by one owner and sold to different parties, there is by implication right to joint support."

A CARD.

A Book called "Industry of California" represents me in its pages as one of the Architects of the State Capitol at Sacramento.

Permit me to say through the "California Architect, that credit for the design of the building mentioned properly belongs to Reuben Clark (now deceased) assisted by Mr. Kenitzer.

I was, however, associated with the latter named gentleman during the construction of the dome and many other important parts of the building, until near its completion.

Neither did I in any way have anything to do with the Baldwin Hotel.

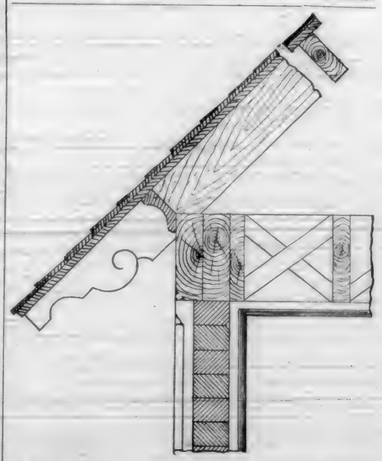
Respectfully,
A. A. Bennett, Architect,
431 California Street.

San Francisco, March 10, 1885.

(This correction was published in the "*Examiner*" of September 13, 1884.)

How Bricks Are Handled in Germany.

THERE are no hod-carriers in Germany. Bricks are passed from hand to hand. The higher up the bricklayers are, the more men are required to toss the bricks Two men to a story is about the average, with enough more to lead from the front of the building to the place where the bricks are needed. One may sometimes see three men on the ground, eight on the front of the building, and five on the top, making sixteen men through whose hands each brick passed before it reached its place of destination.



SECTION OF BAYWINDOW EAVES

Written especially for this Journal.]

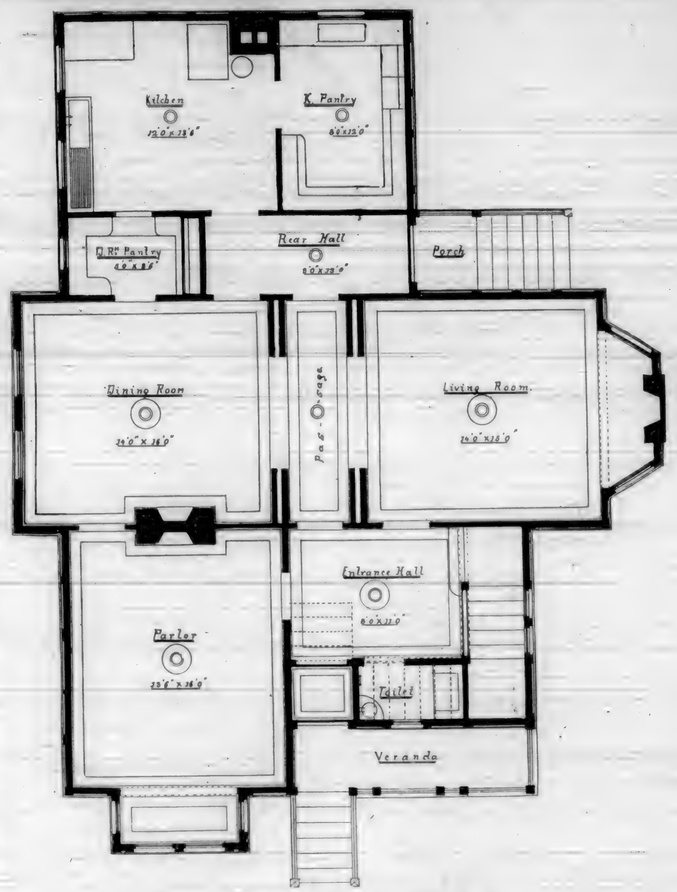
Nature's Lines of Beauty.

PEOPLE whom we have had the pleasure to meet during our occasional visits abroad, have repeatedly expressed their wonderment at the architectural lines of beauty displayed among the ruins of temples, pyramids, and the like, so often seen in Egypt and elsewhere, mentally asking why America, in her massive structures, fails to produce counterparts in this respect alone. Though we, as a nation, are experts in ornamentation and finish, still, when a large structure is completed here and admirers examine, there seems to be something lacking to give it that well proportioned look so characteristic of those preserved temples abroad.

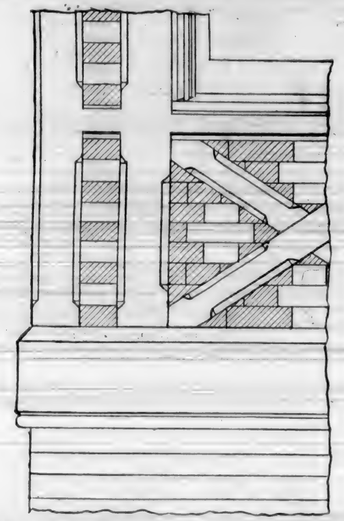
This something, though perhaps indefinable, is something nevertheless, and should we call into requisition the best architect he would be at a loss to define it; the geometrician, however, would state in an instant that in carrying out his plans, the architect had deviated from a rule that governs all things terrestrial, namely, that of the circle, this planet itself being circular in form, and nearly every one of its natural productions partake, to a greater or less degree. Any deviation from it in the arts is, technically speaking, to distort nature. The objective of the eye itself makes everything assume the rounded edge, and these sharp corners and obtuse angles are inconsistencies not to be received by this organ without recoil. All have noticed how an oval cornice, to relieve the junctures of a perpendicular and horizontal surface, mellows the sharpness and enhances the appearance of the space surrounding. A little round corner is the cosiest one of the room, and right angles make them cheerless and cold. In furniture, all æsthetic minds love the graceful curve; in painting every touch of the artist is to mellow the dark corner and round the angles. Even in the human form divine, how square features do mar our ideas of beauty and loveliness; though we educate the sense of sight to admire these lines of beauty and graceful curves, we blunt this the same by placing obtuse and triangles in the field of vision. Everything is built on the square, excepting, perhaps, the formation of character, while the organs of sight are constructed particularly with a view of comprehending circles and curves.

If we examine any of these ancient temples and palaces, we will find them all constructed in accordance with the shape prescribed by nature. The floors and ceilings, walls and copings, the exterior and interior, show the unmistakable signs of circles and curves. Should we care to prove the correctness of this, place the eye on a level with the water of an inland lake or pond, and the center will be found the highest part; do the same with the floor of one of those old-time structures abroad and the same results are apparent, viz., the middle is the highest in proportion to the size of the room, and even the most retired, narrow courts, secluded sanctuaries, and secret closets are all constructed in the same accord. Go out and view the horizon; above, a beautiful, regular dome will appear; do the same with one of their temples, and the center is a dome however small or flat, still circular in form, highest in the center; hence the massive appearance of those rooms, which, were the order of things reversed, would appear smaller in proportion to the size of the circle described. This rule is apparent everywhere in the construction of those buildings. A study of this system of architecture demonstrates many of the characteristics and perfections of a strange people who have left no clue to their origin or supposed destiny, but left these relics of grandeur that will live for all time.

Careful measurements and computation of these rooms and the arcs represented in all their architecture illustrates freely that their knowledge of the earth's shape was the same and equal to ours of this important age; and further, that their knowledge of and ability to incorporate natural appearances with architectural effects, was even superior to ours. It may be that their knowledge of optics and optical effects surpassed ours, but in any event they obeyed nature in their artistic achievements, with results that American artisans need not feel at all humbled to copy; and if they could all see the two effects in a building, they would do so without an invitation. Place a piece of canvas on the ceiling of any room; allow it to bag in the center but an inch; now note carefully how the room appears, its size and general fitness now change; and elevate the center of the canvas and again note the general character of the room, and, notwithstanding the fact that a circle has not been made, only a distorted semblance, no one who will take the trouble to perform the foregoing experiment would be willing to admit that his eye could be improved upon to this extent. Every inch of circle seems to make a foot in the height of the room, and the same rule



FIRST FLOOR PLAN OF A CALIFORNIA HOME.



Outside Elevation of Base & Windowsill.

holds true regarding the walls and corners, and the illusion increases in proportion to the perfectness and size of the circle.

Again, whether this people were aware of it or not, they made one of the best applications of the law governing stability known, for by their system of construction the building is braced from every point, no stress being imposed directly on any single point, but from the very foundation up every stone was made to sustain some portion of the weight of the entire structure, even to the ornamental work of the walls and crevices of the interior.

Placard Benisons.

We sometimes see at the doorstep of some house the word "Welcome" imbedded in the rock or on a foot-mat. It is pleasant to be so cordially and promptly invited within, but we must divide this gushing hospitality with the merest wayfarer, the peddler, and the tramp. If it were thrown down just once and for us only, what a different train of thought it would suggest! But a hospitality so broad overleaps itself and loses its subtle and most cherished fragrance, for the truth is, neither love, friendship, nor religion can be profited by tricks or by rude publicity. Their graces and benedictions, their benisons and benefits, come with silence and secrecy.

Bancroft's Histories.

This magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface. There are to be thirty-nine volumes, with maps and illustrations, fifteen of which are now ready. They will be well printed on good paper, neatly and substantially bound, uniform in style, and will average over 700 pages each. Three or four new volumes per annum will appear until the entire series is completed. Subscribers will not be obliged to take the work unless it corresponds with the description in every particular.

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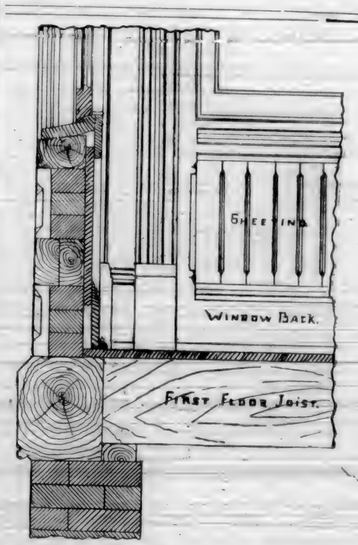
Concrete Walks.

An engineer tells how to make a cement or concrete walk requiring no great skill in preparing materials. These are water, lime, and gravel or ashes, or both. The gravel and ashes are put in a heap and wetted. One barrel of the waterlime is mixed with sharp, clean sand, dry, being shoveled over back and forth several times to get a thorough mixture. A portion is then mixed with water into a thin, soft mortar, and five parts of the wet gravel or ashes are well mixed with it, so that every fragment is coated with the combining mortar. This is important for obvious reasons. The concrete is spread on the graded walk and beaten down with a rammer until the moisture gathers on the surface; some of the dry sand or cement is then scattered over the surface to absorb the moisture, and the surface is smoothed over with a plank rubber having a sloping handle to work it back and forth. In a few days this is hard, and it becomes harder with time. By making divisions of thin strips of wood or tarred paper the cement may be laid down in blocks, squares, or diamond-shaped, and for extra good walks the blocks may be colored by mixing the finishing coat with brown or gray, or other colors, alternately.

The Safest Part of a Car.

It was well said by the conductor, who, when asked what was the safest part of a car, replied, "That part which happens to be in the shop at the time of the accident." It is a popular superstition that the center of the car is not only the safest part, but is also much the easiest riding. One of the greatest trials of a Pullman conductor's life is the fact that about every passenger asks for a lower center berth the first thing, and is frequently indignant because it cannot be had. If the center of a car rides any easier than the end, then our cars, built as solid and as strong as they are, spring up and down in the middle precisely as does a buckboard. If they do not, why should it ride any easier? As for safety, if you are in the rear of the last car on the train, and another train runs into the rear, you are liable to get hurt. In all other accidents you can conjure up as liable to occur, it is the safest. If a head collision, there is nothing back of you to add force to the blow. If the car leaves the track and collides with a bridge or any obstruction on a side track, it will not be in your end. If the train is thrown down an embankment there is nothing to land on top of you. Then, this location is the most pleasant. From it you can watch all the movements of your fellow passengers, often a good way of passing the hours of a long and tedious journey. If your eye happens to catch a particularly fine view, you can, by turning in your seat, or stepping to the door, take it all in. If there is a safest part of a train, it is in the last seat in the last car.



Section of Base & Windowsill.

Pacific Coast Nail Trade.

Somebody has asked, "What has become of all the pins?" With equal propriety it might be asked what becomes of all the nails. A nail is often a handy thing to have round the house, but it is not so handy to find one if there be any boys about the house. A good housewife says a boy's pocket is the best place to look for nails. It is not certain whether nails attract boys or boys attract nails. The two objects are sure to come together and remain fast friends until a hammer can be found, and then there is an eternal separation, but the nail is found to be just as fast a friend as ever. Less than a century ago, all nails were hand made. Now there are 80 nail factories in the United States running over 6,000 machines, with a capacity, if all were steadily employed, of over 12,000,000 kegs per annum. The largest amount produced that we can recall was 6,147,000 kegs of 100 lbs. each in 1882

Nails are made in some 17 States of the Union. Among the latest States to enter upon this industry are Wisconsin and California. The latter entered upon nail making in January, 1883, with 50 machines.

Up to within the past two years, all the nails used on this coast were imported from the East. The imports at San Francisco, in round numbers, for the past twenty-two years, have been as follows:—

1863, kegs	95,000	1874, kegs	215,700
1864	94,400	1875	232,100
1865	70,300	1876	181,900
1866	103,100	1877	218,000
1867	190,800	1878	223,000
1868	158,200	1879	162,000
1869	176,600	1880	192,500
1870	103,900	1881	259,300
1871	150,200	1882	200,700
1872	225,000	1883	178,200
1873	129,000	1884	101,700
Total, 22 years			3,651,300

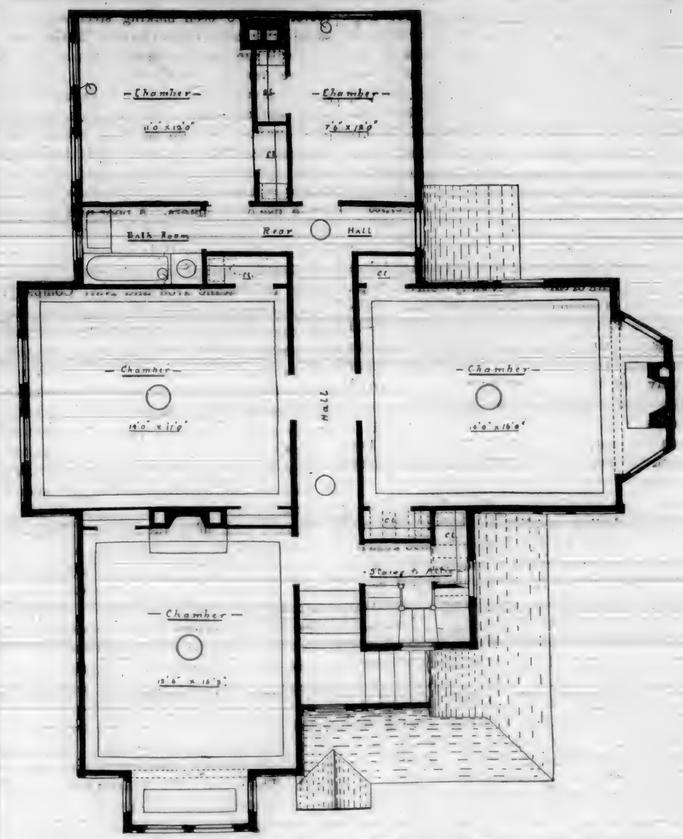
Dividing this period into two equal parts, we find the imports for each to have been as follows:—

1863 to 1873, kegs	1,490,500
1874 to 1884	2,161,800
Totals	3,651,300

The imports for the last eleven years show an increase of 45 per cent. over the first eleven years. The real increase has been larger, because some of the principal cities in the interior, which formerly drew all their supplies of this character from San Francisco, have been importing considerable quantities direct from the East in the last few years. These consignments are dropped off the cars at Sacramento, Marysville, Stockton, San Jose and Los Angeles, and of course no longer figure in the imports at San Francisco. While there was only 101,700 kegs Eastern nails landed at San Francisco in 1884, the total supplies which reached California from the East in that year are estimated at 134,000 kegs, showing that over 30,000 kegs were dropped off at terminal points in the interior.

Prices, brands and means of transportation have undergone great changes during the above period. In the early days of San Francisco nails were very valuable, and many sharp corners were made to the profit of the holding interest. The year 1865 was also a speculative one in this branch of trade. In January, 1865, prices were from $4.50 to $4.75. In February, the outside rate was put up to $5.50, but immediately afterwards, under fresh arrivals, rates went down to $4.37½ to $4.50. These were the lowest figures that year. In April, $5.50 was paid and in May, $5.75. From June to October, the market rated at $6.00 to $6.50. In November the price was advanced to $6.75 and in December to $7.00. In January, 1866, the New York currency price was $8.00, and the freight by sail out was $1.50 in currency. This made the price equal here to $7.00 per keg in gold. Some lots were sold at about that time at $7.25 from ship, while jobbers were generally asking $9.00@$10. These are the highest figures we can recall in the past quarter of a century. From $4.50 in 1869, prices rose to $5.50 in 1870 and $6.00 in 1871. Since the last named year rates have never been as high as $6.00, with the exception of 1880, though they have frequently reached $5.00 and upwards. In 1878 they fell as low as $2.75, which, up to that time, was said to be the lowest figure reached. That was a very unsatisfactory year to importers, who failed to realize cost and freight on some of the lots sold. In 1879, there were sales as low as $2.00 but the price advanced to $5.00 before the end of the year. Prices were also low in 1883, the average being $2.40 to $3.40. They sold as low as $2.75 in 1884.

The favorite Eastern brands have been Boonton, Oxford, Old Colony and Fall River. In 1876 other brands came upon the market. Notably among these were some consignments from the Riverside Iron Works at Wheeling, West Virginia. This factory sent us 20,000 kegs that year, which sold at $3.20 to $3.50. Some of these were said to be peculiarly adapted to Pacific Coast woods. In 1881 some more new brands were received from Pennsylvania and Ohio factories. Reduced overland freights were the inducement at that time. Prior to 1870, all our nails came by sailing ships. Nearly every ship leaving New York or Boston for this port would have consignments of this character, seldom less than 1,000



Second Floor Plan of a California Home.

kegs, and sometimes as much as 7,000 kegs. Soon afterwards, the reduction in freight by the Panama steamers, brought about by the opening of through rail connection with New York, made it possible to ship these goods by way of Panama. Since 1874, the railroad has also been availed of to bring consignments. The imports for that year reached San Francisco by the following means of transportation:

Per ship, kegs	153,900
Per steamer	57,700
Per railroad	4,100
Total	215,700

The steamers and the cars have since taken the great bulk of this freight away from the ships. It is a common occurrence of late years for the Panama steamers to bring us 3,000 kegs on a single trip. But there are only two steamers per month. Freight trains arrive daily from the East, both by the Northern and Southern routes, and scarcely a train comes into the borders of California without some consignments of this kind. At least this has been the case up to the opening of the year 1885.

The estimated consumption of San Francisco, including supplies sent inland, has varied from 85,000 kegs in 1865 to 259,000 kegs in 1883. These figures show a monthly consumption varying from 7,500 kegs to 21,600 kegs. Our dealers have been accustomed to carrying a stock of 6,000 to 60,000 kegs. Now that supplies are obtainable at our doors, the hardware men allow the manufacturers to carry the burden of stock. It will probably be a long time before we cut entirely loose from Eastern supplies of this nature, though we are informed that the local factory has sufficient capacity to meet all the demands of the coast. This factory is located at Oakland, and was erected in the closing months of 1882. It is supplied with the latest improved machinery. The building is two stories high, and the machines are placed in the second story, the nails dropping through apertures in the floor to reservoirs on the first floor.

A rolling-mill is attached to the works, so that the iron is prepared and all the operations completed at the same point. The factory has a fine water frontage, and the first cargo of 500 tons iron came alongside the company's wharf in January, 1883. There is also rail connection direct from the factory with all parts of the country. The factory has encountered the usual obstacles incident to the introduction of manufacturing enterprises in this State. There have been two or three strikes among the workmen concerning wages. But everything is now running smoothly. The factory made about 100,000 kegs in 1883, and 129,332 kegs in 1884. At the close of 1884, the factory held a stock of 21,561 kegs. The managers expect to make 200,000 kegs in 1885, and claim that the factory has a capacity for 300,000 kegs. Despite this outlook from the local factory standpoint, it is probable that at least 100,000 kegs will be received here from the East this year.

Within the past two years some of the factories have been making steel nails and tacks with more or less success, but whether steel will run out iron in this line of manufactures remains to be seen. It is to be regretted that some of the iron nails sold in this market in the past year have been of very poor quality. We do not know where they were made, but have seen them bend and break rather than enter the wood in which they were being driven by those accustomed to the use of hammers. A poor nail is about the most provoking thing in existence, and there is no excuse for their manufacture. We have heard no complaint concerning the product of the Pacific Iron and Nail Company, and it is fair to presume that the poor nails have come from abroad. We understand that the local factory at Oakland has recently added a line of French wire nail machines, and is now prepared to turn out all kinds and sizes of this description. The demand for wire nails has become quite prominent in the last three years, and we are glad that they are now made here. They are largely used by sash, door, furniture and organ manufacturers, picture frame makers, car builders, and house and office furnishers. They are quite stiff, and can be driven into hard wood without the use of a brad awl. They number more to the pound, and are therefore considered cheaper than other sorts.

The Pacific Iron and Nail Company undertakes to make every nail known to commerce. The list is altogether too long to print in this connection, and prices vary with the size and description. The enterprising gentlemen who started this industry on our shores deserve well of their fellow citizens, and it is a pleasure to know that their efforts have been appreciated. The wonder now is that a nail factory was not started here ten years earlier. It meets a long-felt want of this city and coast.

Cherish a Slow Man.

If you have got a "slow man" in your shop, then cherish him. He is a treasure. We don't include lazy men or time killers; bounce them at once.

A genuine "slow man" will do more work than two "lightning dodgers." To one unacquainted with him the slow man seems to be principally engaged in getting ready to do his work, but just about the time you think he has "got ready," the job is done.

He never does a job wrong, or makes a false move. He *thinks*. He plans a blow before he strikes. You never knew him to make a bull of a job and then have to work eight hours to get rid of the mistake. When he makes a mark, he knows it is in the right place, and he takes his time to work to his marks, and has confidence that his work will come together.

Watch the slow man and the lightning chap. They are both at work making patterns for a clamp box. The slow man selects a piece of nice timber, takes it out of wind and squares it up. He is sure he has got plenty of stock. He picks each part from the drawing, cuts a paper pattern of each and blocks out each piece. He will finish up two or three and have the glue drying while he is making core prints and rounding corners.

The lightning chap has found a chunk of wood under the bench which he *thinks* will be "big enough." He measures the patterns, makes a few marks on his blocks, and begins to cut it out. How he makes the chips fly! He cuts and chisels, and then stops to measure. One end of the block is worked down to shape of the box and then he finds it is coming out ⅜ inch short, and a piece must be glued on. While he is waiting for the glue to "set," the slow man gets all ready to glue on the last core print. It takes quite a number too, as the bolt holes are all cored out; it makes a better job than if the holes had been drawn in green sand.

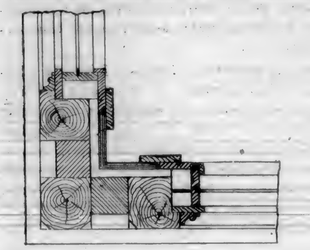
The slow man rounded each piece before he glued them together. He don't have to work into bad corners with his sandpaper, and he is all ready for the first coat of black before the fast man has got his work all blocked out.

Everything is done when the slow man lets go of it. He don't have to look all over his work nine times to see if the splits and jambs are all worked out. When the first coat of black is dry he runs in one or two wax corners and fills up a worm hole, puts on two more coats of black, sandpapers a little, and the job is well done.

As he takes the pattern down to the foundry, he carries the shellac to the "lightning" man, who is just gluing on a corner which he knocked off as he was cutting it down in a "hurry."—*J. F. Hobart, in Wood-Worker.*

A Clergyman on Shavings.

Rev. Dr. Paxton, in a lecture before the Mechanics' and Tradesmen's Union, a few evenings ago, stated in a few words a good many truisms. Shavings, the lecturer said, were not of American invention, like whittling, but were as ancient as the working of metals by Tubal Cain. They are the necessary waste of every work. There is a certain loss from every gain; there is no building without its rubbish heap to remove, which requires almost as many carts as to bring the building material. The fewest substances in nature are found pure. Construction is based upon destruction. Every joy presupposes a sorrow. The door posts of progress are sprinkled with the blood of its martyrs, and along the way are scattered like millstones the bodies of those who have fallen in the path. We cannot get something for nothing; for every tit there is a tat. The wrecks of rich men's sons to be seen everywhere show that it is as hard to keep as it is to get. Without toil there is no substance; hence the recklessness with which estates are squandered, without any regard for the toils and hardships that had to be undergone to procure them. It may be likened to the sacrifice of human life at the battle of Bunker Hill, through which the salvation of our country was procured.—*Scientific American.*



Plan of Corner of Baywindow

Oil Stones.

Keep your oil-stones clean. Many users of oil-stones keep them full of oil all the time, all covered with dirt and gudgeon-grease, and when they want to use them, must scrape a place with a chip before they can make the tool "take hold." Wipe the stone clean after using. Do it every time, too, not once in a while. Get in the habit of it, and it will come natural.

Don't let a stone get gummed up. If you have been guilty of keeping such a one, just take a new deal and "try out" your stone. Put it in a kettle with water and potash—some soapine will do first-rate (and soapine should be kept on the sink of every shop in the land)—and set it over a fire, or stick a steam pipe into it. Boil for an hour or two, then soak and wash well in clean water. You will then be able to see what your oil-stone looks like, and it will "take hold" like a new broom.

Some men place their oil-stones in the sun and let the oil try out. But the potash is the best; it "kills" the grease on the spot.

An oil-stone needs "truing up" very often. I remember, when a boy, of truing a stone. Our worthy father set us at the job of rubbing the stone on a board covered with sand. How slow it did cut! It generally took two or three hours to do the job. Every three or four "rubs" I would have to examine to see if it was "most done;" and then before I got to work again, Tim Blodget would come along and try to argue me into "goin' fishing," and then how I hated that oil-stone.

Don't let a stone get too "hollowing." Use long strokes in rubbing a tool upon it. If it gets a little worn in the center, take it to the grindstone or a big emery wheel. Hold it against the *side* of the wheel; not on the face. It will take but a very few minutes to grind the oil-stone true and smooth.

I never yet saw a loafer hang around a shop half an hour without getting out his jack-knife and "going for it" upon the middle of an oil-stone. If I have a knife to sharpen, I do it near the *end* of the stone. The ends don't wear down; it is the middle that gets most of the work. Some journey-men put a wire across the middle of their oil-stones. They have to work each side of it, but the loafers have to, too.

If you break a stone, don't throw it away. If thick, or nearly new, boil the grease out of it, and *glue* it together with common glue. It will hold if you get all the grease boiled out before you put on the glue. If the stone has become worn pretty thin, you had better grind it down into slips. It will make some nice ones of the very best quality.

Don't put the stone into a block of wood. It makes a nasty thing to keep clean; go to the hardware store and buy a nice oil-stone holder. You can put it on in two minutes, and take it off in "no time," and wipe the stone clean as often as you wish.

A hard, glossy oil-stone is not worth buying. A stone which looks like a piece of marble is good for nothing. A stone with a sand-stone complexion is too soft, and will work bad. The "muddy" stone is another to be avoided. Somewhere I have seen a receipt as follows: "Draw your thumb nail along the stone; the faster it cuts away the nail the better the stone." It looks reasonable, but I have never tried it.

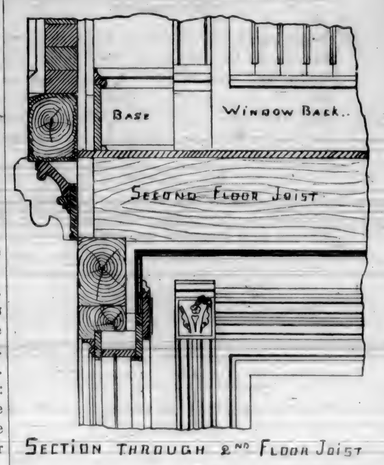
Petrified wood makes the best oil-stone. I have a Scotch stone which cuts very fast, yet will set an edge to "cut a hair." Some years ago a firm started to manufacture "silex" stones for oil and water, both hand and power. The "silex" stone was ground fine, mixed with some secret "uniting compound," and moulded under hydraulic pressure. The stones thus produced were pretty good, but were apt to "glaze," and then neither oil nor water seemed to have any effect in removing it. Whether or not they are made now, I do not know.

There is a knack in using oil-stones well. Don't rock your hand and make six or eight bevels on the work, or else make a curve in place of a flat "bevel." Keep your wits upon the top of the tool, and see that it travels as fast as the bottom edge does. The tendency, when pushing from you, is to lower the top of the tool, but a little attention to this point will enable a man to do a job right, and get a better edge in the very shortest time.—*American Machinist.*

Measuring the Height of a Tree.

There is a very simple way of measuring the height of a tree, which can be practiced by any one on a sunny day or in bright moonlight. All the apparatus that is necessary is a straight stick, of any length. Draw a circle with a radius (half the diameter) of a little less than the length of the stick. This will be done by holding one end of the stick, say two inches from its end, and moving the other end around, making the circle with a knife or a chip. Then place the stick in the ground exactly in the center of the circle, perfectly upright, and press it down until the height of the stick is exactly the same as the radius of the circle.

When the end of the shadow of the stick exactly touches the circle, then also the shadow of the tree will be exactly in length



Section through 2nd Floor Joist

the same measurement as its height. Of course, in such a case, the sun will be at an exact angle of forty-five degrees.

Measurements of this character can be best effected in the summer, when the sun is powerful, and has reached to a good height in the heavens, and when the trees are clothed with living green, so as to cast a dense shadow.

To many to whom this idea may not have occurred, it might be made annually a matter of interest thus on warm summer days to take the height of prominent trees, and so to compare growth from year to year.—*Hall's Journal of Health.*

A chicken with a clipped wing made several ineffectual attempts to fly over a fence. An Irishman, who witnessed the efforts of the "chick," laughingly exclaimed: "Begorra, she has a defective flew."

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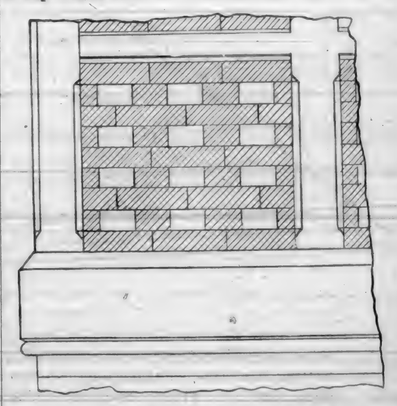

Elevation of Brickwork First Floor

Brick-making.

WE hear a great deal said of late about perfect brick. We mean by this brick with sharp and well defined edges and corners. Not only this, but they must be straight, so that when two are placed together in a wall the edges come close together the entire length of the brick.

In common building, brick defects are not so often noticed, but in front or ornamental brick it is absolutely necessary, in order to make a good job, that the brick be straight, the same thickness at each end, and of uniform size. The reasons are many why brick so often come short of these requirements.

First, as to machine-made brick. Almost all machines that deliver the clay in a continuous stream, with wires or other means of cutting the clay into proper lengths, make crooked brick.

One reason is that the wire in cutting the clay drags the end of the brick, or if cutting the length way of the brick pulls the sides down.

Another reason is, the clay is not of a uniform density in the brick, the machine often delivering more clay to one or other of the sides or edges, thus causing the brick, if not crooked when made, to dry crooked.

The mud machines that make each brick in a separate mould-box often feed one side or end of the mould heavier than the other, and again the brick are often dumped in emptying them out of the moulds and hence dry crooked, and I assure you they get no straighter in burning.

The same difficulties are often encountered in hand-made brick.

The clay is often pressed unevenly into the mould, and in striking it is drawn to one end, and in off-bearing the brick are dumped.

These difficulties need only to be mentioned to suggest a remedy.

First. The machine builder must build his machines so that they will make brick of uniform density throughout. This applies to dry press machines equally as well as to the mud machines.

Second. The brick must be properly delivered from the machine and properly placed on the floor for drying.

But brick machines and hand-moulding are not to be charged with all the crooked brick made.

A brick may be ever so well made, and unless dried properly, it will be crooked and ill-shaped.

The manner of drying brick of course depends largely upon the clay, but there are a few thoughts that equally apply to all clays.

Those who use drying floors have noticed, no doubt, that the brick draw up at the ends. This often comes from too fast drying, and often from the floor being too dry when the brick are placed upon it. We find that by wetting our floors before placing the brick on them they dry without warping. Where the brick are dried in the sun, if the clay is at all dense, they are apt to warp, especially if the ground is moist. As a general rule, the ground should have one day's sun between each day's drying.

In making press brick the drying is very important.

The mud must be of a uniform moisture when the brick are moulded, and the brick must be uniformly dry when pressed. If not they will be of different sizes.

In order that they be straight, each brick must be uniformly dry when pressed and set in the kiln.

If one end be dryer than the other, or if the corners be dry, the brick will not come from the press straight. There being more rebound in the moist portion than in the dry, when the brick is taken from the press, the moist portions swell, leaving the brick of uneven size.

This can be overcome by hacking the brick before pressed into large piles and covering them with wet cloths. In this way the moisture becomes equally distributed through the entire hack, and they become moist.

After they are pressed they should be placed on a moist floor, yet warm enough to dry in hacks of from five to eight high.

The bottom brick should always be perfectly level. They should remain in these hacks until dry enough to handle without damaging them, then taken down and rubbed with the hand and hacked on edge eight or ten high. We are aware that press brick makers have many ways of handling brick, but we have found the above to be the best and surest way to have them dry straight.

If they are straight and thoroughly dry when they are set, they will come out of the kiln in good shape.—*W. A. Eudaly, in Clay Worker.*

An Amateur Carpenter.

BILL NYE, in the Denver *Opinion*, relates his experience as an amateur carpenter, as follows:—

In my opinion every professional man should keep a chest of carpenter's tools in his barn or shop, and busy himself at odd hours with them in constructing the varied articles that are always needed about the house. There is a great deal of pleasure in feeling your own independence of other trades, and most especially of the carpenter. Every now and then your wife will want a bracket put up in some corner or other, and with your new, bright saw, and glittering hammer you can put one up upon which she can hang a cast-iron horse-blanket or lambrequin, with inflexible water-lilies sewed in it.

I made a very handsome bracket last week, and I was naturally proud of it. In fastening it together, if I hadn't inadvertently nailed it to the barn floor, I guess I could have used it very well, but in tearing it loose from the barn, so that the two could be used separately, I ruined a bracket that was intended to serve as the base, as it were, of a lambrequin which cost $9.00, aside from the time expended on it.

During the month of March I built an ice-chest for this summer. It was not handsome, but it was roomy, and would be very nice for the season of 1884, I thought. It worked pretty well through March and April, but as the weather begins to warm up that ice-chest is about the warmest place around the house. There is actually a glow of heat around that ice-chest that I don't notice elsewhere. I've shown it to several personal friends. They seem to think it is not built tightly enough for an ice-chest. My brother looked at it yesterday, and said that his idea of an ice-chest was that it ought to be tight enough at least to hold the larger chunks of ice, so that they would not escape through the pores of the ice-box. He said he never built one, but that it stood to reason that a refrigerator like that ought to be constructed so that it would keep the cows out. You don't want a refrigerator that the cattle can get through the cracks of and eat up your strawberries on ice, he says.

A neighbor of mine who once built a hen resort of laths, and now wears a thick thumb-nail that looks like a Brazil nut as a memento of that pullet corral, says my ice-chest is all right enough, only that it is not suited to this climate. He thinks that along Behring's Strait, during the holidays, my ice-chest would work like a charm. And even here, he thought, if I could keep the fever out of my chest, there would be less pain.

I have made several other little articles of *vertu* this spring, to the construction of which I have contributed a good deal of time and two finger nails. I have also sawed into my leg several times. The leg, of course, will get well, but the pantaloons will not. Parties wishing to meet me in my studio during the morning hour will turn into the alley between Eighth and Ninth Streets, enter the third stable door on the left, pass around my Gothic horse, and give the countersign and three kicks on the door in an ordinary tone of voice.

An auger which bores a square hole is now in common use in Cleveland, where a joint stock company is being organized for the purpose of manufacturing them for the market. The *Herald* of that city thus describes it: "Its end, instead of having a screw or bit, has a cam motion which oscillates a cutter mounted on a steel rocking knife which cuts on both sides. In order to prevent the splitting of the wood the ends of the cutter are provided with small semi-circular-shaped saws which help in cutting out perfectly square corners. It is estimated that this new process will save the labor of three men who work with chisels, as one man can conveniently cut a two-inch mortise in the same length of time that he can bore a round hole."

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A Plain Talk with the Boys.

"ANYTHING that is worth doing at all is worth doing well." Never allow this to escape your memory. Be punctual at your work in the morning; try to be on hand fifteen minutes before the regular time; assist in cleaning up the shop; get out what material is wanted by the journeyman you are helping, and have it in readiness to start with him promptly on his arrival. While in the shop, keep everything looking clean and tidy; have a place for everything, and keep each thing in its place. If you want a tool of any kind, do not have to rummage through half a dozen drawers to find it. Keep the man's tools you are with in a building close together; watch his motions closely and you will be able to know nearly every time what tool he wants next, without his asking for it; do not wait to be told to put on your solder-pot after the man is ready for it; have it ready for him when he is ready; he will appreciate that you are trying to assist him, and paying strict attention to your work more than if you should wait for him to tell you everything.

Never leave a fire you have been using anywhere about an unoccupied building when you quit work at night; see everything safe before you leave. Don't annoy the cook in the kitchen by insisting on heating your metal on the stove or range; she has her cooking and baking to attend to, and the progress of her work is just as important to her as yours is to you. Take your pot outside and build a fire in the street, if you can do no better; by doing so you will often save a great deal of trouble and annoyance. In going to and from your work, and always when on the street, "brace up;" don't go along in the everlasting hang-dog, slouchy kind of way, as if you were afraid of getting somewhere two minutes before time. It looks more like business if you "pull out" like a man,—as though you had to make a train and were afraid of being late. I have seen boys on the street with tools on their shoulder, a pipe or stump of a cigar in the mouth, ambling along as though they were very tired, or afraid of getting to the shop five minutes before quitting time, for fear they might be started on another job. I am sure that if their employers could have seen them they would have much rather the boys would spend their time, if they had any to spend, in the shop. It is just such movements and actions as I have described that attract the attention of employers and customers and make them dislike you. Do your work quickly, neatly, and quietly; move briskly to and from your work, and you will gain friends in the shop and out, and gain the confidence of your employer, who is not slow in noticing any little defects or faults, if you have any, and whose interest it is to advance you as rapidly as possible, if he sees by your actions and work that you are trying to advance yourself. This may seem all very funny to you, but it is plain talk, and I think most of you know what I have stated to be facts, and facts are said to be very stubborn things, and it is best we should know how stubborn they are.

You must not think that all these little things are not noticed by the people you have to deal with every day. They are; and the success or failure of your future life depends very largely upon your present conduct and actions. Ever remember that politeness and a pleasant answer cost nothing at any time—have them always ready—and that neatness in dress and personal appearance, quick, lively movements and a watchful eye to business are the qualities that win.—*The Sanitary News.*

Mortar.

IT is commonly supposed that anybody is competent to make mortar, while, judging from the results attained, nobody seems to know much about it. Good mortar is a solid silicate of lime—that is, the lime unites with the silica or sand, thus forming a silicate of lime. In ancient days those who had some conception of the way these two materials united, superintended their mixing, and the result was mortar, specimens of which have come down to us, and which are far superior to those that we are commonly using. Dry lime and dry sand laid together, or mixed and kept dry for 1,000 years, would not unite to form a silicate of lime any more than acetic acid and carbonate of soda dry in a bottle would effervesce. To make silicate of lime just as good as was made by the Romans, all that is necessary is to proceed intelligently: procure good caustic—*i. e.*, fresh-burned lime—and if you find it all powder, *i. e.*, air-slaked, don't use it; use only clear lumps. Slake this, using only enough water to cause the lime to form a powder. To this, while hot, add clean sand, not dirt and loam called sand, but sand; and with the sand add enough water to from a paste. Then let it lie where it will not become dry by evaporation—in a cellar, so much the better, for as soon as you have mixed the sand and lime as above, they begin to react one on the other, and if not stopped by being deprived of moisture will go on reacting until silicate of lime (as hard as any silicate of lime ever was) is formed. But if you take this so-called mortar as soon as made and lay bricks with it, unless the bricks are thoroughly wet you stop the formation of silicate of lime, and might as well lay your bricks in mud. Lime and sand, after being mixed, might lie two years with advantage, and for certain uses, such as boiler setting, or where the whole structure of brick and mortar is to be dried, the mortar ought to be mixed for one year before use, and two would be better; but for house building, if the bricks are so wetted as not to rob the mortar of its moisture as soon as used, mortar that has been mixed a month will form good, solid silicate of lime among the bricks it is laid with in ten years, and will be still harder in one hundred years. The practice of mixing mortar in the streets and using it at once is as foolish as it is ignorant, and would be no improvement.—*The Mechanic.*

Painted Floors.

THAT carpeted floors are harborers of disease is a question which, to those who have been placed in position to fully investigate, has but one side; and since some of our leading journals have called to mind long arrays of unquestionable authorities proving that carpets, however clean and free of dust apparently, give off at every step or movement infinitesimal germs of lung irrants, the people seem to have indorsed the theory, and in many a fine house carpets have given place to Eastern rugs, which, occupying a central position, leave a fine opportunity for the painter to display his taste in decorating the intervening space between the rug and wainscoting. It will, however, place the work and imperfections of the carpenter more prominently before the people, inasmuch as the floor, being constantly exposed, must be made smoother and of better lumber than often finds its way into the floors of our houses, for when the floors were entirely covered with carpets, damp, unseasoned lumber or timber, or the same affected with dry rot, could be used, and the occupants be little the wiser for the deception; but now the floors must be of good lumber and nicely fitted, else the painter, whose work supersedes that of the carpet-layer, will not accept the floor as the carpenter left it, for his work, being on top, he will be held responsible for its appearance forever afterward.

If this change in fashion brings about this revolution in floor-making, the change will have another argument in its favor; for others, as well as we, have seen damp, unseasoned lumber put in floors, which in turn were laid upon the joists of the same or even worse quality, and then a carpet covered over all. The poor inmates were thus compelled to breathe the moisture of seasoning lumber after it was filtered through a carpet, which tended to render it still more unhealthy, and hence we are of the opinion that carpets are responsible for much less disease than charged with; nevertheless, we are decidedly in favor of the rug system of covering floors, for the reason that it is much more economical, it is hygienically and otherwise a very wise plan, besides the facility of often removing and thoroughly shaking the rugs, without employing a lot of workmen to take up, and beat and put down again. It looks as though carpets, like the Chinese of the Pacific slope, "must go."—*The Manufacturer and Builder.*

AN exchange says: House building is a trade of itself, and a very complicated one, too, requiring not only a large experience and good credit, but also the possession of a discriminating judgment to pass upon the relations existing between demand and supply, the condition of the labor and material market, and the falsely excited or unduly depressed style of reality in particular localities.

Shingle Roofs.

THE form of roof known as a shingle roof is one of the greatest antiquity. When it originated or by whom invented history fails to tell us. It is probably one of those things of natural growth which never had a definite beginning, but came up by gradual steps of improvement from a very primitive form to its present shape. Reasoning by analogy, it may have originated in an attempt to imitate the feathers of birds, which shed water in a most remarkable manner. Its prototype is also found in the arrangement of leaves on certain trees. It may have been preceded by the thatch and some forms of bark roofs, and those have come into use as an improvement on a still more primitive type. Shingle roofs may be described as pioneers in roof construction. When timber is abundant a shingle roof is one of the cheapest that can be constructed. Its lack of durability in a comparative sense, and its frequent destruction by fire, make it less desirable than other materials; accordingly, as lumber becomes scarce, as house owners become wealthier, and as buildings improve in character, shingle roofs give way before material better adapted to stand the test of time employed in the newer sections of the country than in the older, and the use of shingles upon roofs is to a certain extent an indication of the class of buildings that are being erected. As pine timber becomes scarcer, and as prices for shingles gradually advance, their use in this country is likely to be more and more restricted until it is possible that in this country, as in England, the time may come when their employment will be the exception.—*Carpentry and Building.*

Boxwood and the Demand.

IT seems that the rapidly increasing use of roller skates has a marked effect on the price of boxwood, especially on the kinds most in favor for rollers. A dealer in hardwood recently gave a reporter of the *Sun* some interesting points in reference to the trade. If the facts accord with his statements, there are likely scores of enterprising dealers out of all patience with themselves for their failure to institute a corner in the stuff when the opportunity was at hand. "The roller skating mania has completely exhausted the market of a certain size of boxwood. Less than eighteen months ago I could sell a ton of three-inch boxwood for $38.00, and it would be a first-grade in every respect, and admirably suited for turning small work. The demand then was steady, and the principal consumers of the wood were rule makers, tool manufacturers, and turners who supplied the market with boys' tops, pool-pins, and toys of various sorts.

"The sudden and remarkable growth of the roller skating pastime has created a constantly increasing demand for a certain size of wood, and now it is impossible to purchase a ton of suitable wood for skate wheels for $120. Rollers are made in several sizes, ranging from 1⅝ to 2⅛ inches in diameter, and only the natural growth of boxwood approximating these sizes is fit for use. Large wood is too costly, and is less firm in resisting the tremendous strain of a skater's weight upon an axle only 7-32 of an inch in diameter. The boxwood grows in Persia and Turkey, and heretofore the crop has been handled in England. It is a wood of very slow growth, and in its native country stringent timber laws restrict the depletion of the growing trees. At the present rate of consumption, the world will be practically exhausted of its boxwood in less than twelve months unless some equally cheap and durable substitute is found to take its place."

Referring to substitutes, he said that rubber, celluloid, rawhide, vulcanized fibres, and compressed paper have been tried for making rollers, but for one reason or another have proved unsatisfactory; some have proved too soft, while others, like the pure celluloid wheels, have been found too expensive for the trade, and the necessary metal bushings have proved objectionable, because the grit and dust from the floor and the shoes of the skaters, wearing between two metal surfaces, have rapidly cut away the axles of the skate. Rollers with anti-friction bushings, consisting of a number of small steel plugs freely revolving around the axles, have been tried with some composition wheels with success, but they are very expensive, and on this account cannot come into general use. Other woods have been used, such as dogwood, apple, pepperidge, laurel, and lignumvitæ, but have for the most part been rejected. The lignumvitæ alone is hard enough, but it will not stand the strain of the small axle. Metal wheels having a surface of rubber are made, but nothing has yet been found which in all respects is as good as boxwood.—*The Mechanical News.*

Don't Botch a Job.

DON'T botch a job just for the sake of getting it done quick. You cannot do an hour-and-a-half job in sixty minutes and do it right. Some bosses think it is possible and are always trying it. Just take things easy and make your brains save your hands. Take time to get ready before you begin and you will get done before you know it. We do not mean for you to stand around talking about a job. Some men will talk about it longer than it takes to do the whole job. If you are intending to glue up a lot of pieces of board, it pays to look up your hand screws before the glue is put on. A man who gets the screws ready by opening them just the right distance and trying them to see if they work all right, will get done a good deal quicker than the one who gets his glue on, rubs the joint together and finds he lacks two screws. While he is running around to each machine in the shop, looking for hand-screws, the glue gets cold and the joint will not come up. He must wash the joint in hot water, wipe it all clean and then begin over again. If this man had begun right, he could have glued up two joints while he was doing this one. It is a common trick of hand-screws to get lost. They stray away and get covered up under lumber, shavings and fire-wood. Nobody ever took a hand-screw from its place, but it will be found just where you never think of looking for it. You may be sure of finding one or two at every machine in the shop, but you can't find the man who put them there. It is about like the story of the bull which jumped aboard a boat and chewed off the hay rope. The question was, "Did the bull steal the boat, or the boat carry off the bull?" The hand-screws have been carried off or they have run and hid.

If you have got a lot of good hand-screws, take good care of them. Do not leave them screwed up tight any longer than you can help. If you put them on a job during a dry day and a rain comes on, it is all you can do to start those screws, and they are strained unnecessarily. Oil your screws with a good fixed oil and then rub them full of plumbago or black lead. Just try it once; it makes them work nice and the weather does not affect them as much.

One of the most aggravating things that can happen is to have the doors opened while you are gluing. You get nicely at work, the glue just right, the stock well warmed, and begin to set up the joints. Just then the outside doors fly open and a team backs up with 1,000 feet of lumber, or the elevator well is opened and 10,000 cubic feet of cold air come up to see how you are getting along. If you intend to do much gluing, just build a room for that alone. Keep it at a temperature of 90 or 100 degrees and you can make good glue joints. There is one example that seems rather paradoxical in regard to gluing in the cold. In heading mills where barrel heads are made, the heads are pieced up with a coarse circular saw, rubbed together and set one side without clamping. All this is done in a temperature ranging anywhere from 15 degrees below to 60 above zero. Very few heads come apart at the joint, although they are all run through a pony planer and the paring-in machine.—*Exchange.*

THE *Builder and Woodworker* says that "among the unfortunate things of our times is the fact that in all branches of industry, as a rule, the workman has only an ordinary degree of skill. He plies his labor as the routine of his work compels, forgetful of the fact that the man of efficiency is marked, and when changes occur he is the one who is retained or advanced as the exigencies of the times demand. As our industries progress, new fields are opened, and the skilled workman is prepared for the emergencies of the hour that bring him a more remunerative labor. There is no need to question possibilities with reference to labor, for certainly its opportunities are without limit. Let every workman master his trade thoroughly and well, for the reward of so doing is not only in self-aggrandizement but in the strength of character that separates manhood from puerility."

Skin-Plumbing and the Architect.

IN discussing the question of plumbers' profits, my sole aim is to agitate the question to the end that good plumbing will be the rule,—not, as now, unfortunately, the very rare exception. Our societies throughout the country are doing a grand work in educating the master plumber to a just appreciation of the importance of his profession, and his responsibility for the health of his patrons; but, in order that we may have good plumbing, the architects' and health department's assistance is of the first importance; without their aid, the profession will ever remain what it is, —a fat, lucrative, healthy (for himself) business for that conscienceless thick-skinned humbug, the skin-plumber,—a fit subject for the sneers and jibes of every alleged joker and would-be smart Aleck. I have never—and I say it with deep regret—been in any society, large or small, where the name of plumber happened to be mentioned but that some one felt called upon to relate his or her experience with the plumber, and how he or she had been treated by that worthy object of their admiration. After very nearly twenty years' knowledge of, and acquaintance with, my fellow craftsmen, I am sorry to say that our bad name is not entirely undeserved. No doubt that deserving object of our consideration, the skin-plumber, sees nothing in all this but a joke; he is quite satisfied indeed to allow jokes or any remarks to pass at his expense, provided, however, there is prospect of an opportunity to retaliate in his own peculiar way; he will double the dose the next time. Give them something real to talk about, to sharpen their wits on; he don't believe in having folks trying to bother their brains about some imaginary wrong-doing of the poor, persecuted plumber. Oh, no! he'll see to it when his turn comes that the joker pays the piper.

Well, how far can the architects help along this good work,—ridding the plumbing business of that "snake in the grass," the skin-plumber? In this way only,—that any master plumber, unknown to them, seeking to figure in their offices, must show good and sufficient proof of ability and honesty in work already performed, from the owners of such work, who have had five year's trial of said work. If the plumber is a beginner, then he must show from his former employer that he is incapable of doing a skin-job, that he has a just pride in his profession; in a word, that he is an honest man. Architects are all interested in, and desirous of having, good plumbing work done. There is no architect who would knowingly employ or give countenance to a skin-plumber who desired to estimate in his office. Why then not insist on having proof, the only proof that counts for anything in regard to plumbing? During the construction of a job of plumbing, or the "roughing in," very few architects can judge intelligently or pronounce conscientiously on a suspicious looking job. It has to be seen with a plumber's eye, if the skin-plumber's practices are to be prevented during construction. A good thorough job is always surrounded by evidences of its completeness; it requires no expert to judge of its merits. But the skin-job, that's the sticker for the architect, to avoid which their only remedy is, select the plumber whose estimate bears evidence of his intention to live up to the specifications, and whose record is proof of his ability and honesty. The average superintendent, or owner, might just as well be superintending a surgical operation, with a view to directing it in all its nice details, as a plumbing job; he knows as much about one as the other. There is a similarity in the comparison, and a very deceiving one. Both the plumbing job and surgical operation may appear all right on the surface, but away down that little something remains undone, which, to the uneducated, botch-plumber, or unskilled physician matters little. But the plumbing doesn't work; the wound doesn't heal; both jobs have to be done again at greater expense and exceedingly more suffering than in the first instance. Then, I say, let the plumber give proof, as the doctor is required to, of skillful and honest practices, or let his practice be so very limited, for the want of something to do, that it will not be necessary for those who are tempted by his only means of getting work (low figures) to be deceived in him. He will then be like the shyster of any profession,—he can be known at a distance.

As I consider that the health department has most to answer for, for bad plumbing, I will leave consideration of its account to a future letter.—*Martin Moylan, in Sanitary News.*

If the reports that are current on terra cotta lumber are true, it seems almost a mystery that it is not manufactured on a more extensive scale. We are told that saw-dust mixed with common clay, pressed and baked, gives the desired product, which admits of nearly all the uses to which true lumber may be put, besides being fire-proof. Would saw-dust, now too often looked upon as a nuisance, not form an important item in the market if it could be utilized in this way? Or is lumber so plentiful yet that we can ignore the utilization of the waste incident to its manufacture? When statistics tell us that the northwestern lumber region alone produced during the past year the tremendous quantity of about 2,534,3 0,000 feet of lumber, 1,059,000,000 shingles, and about 630,100,000 lath, we may well pause and ask how long the supply will be able to meet the constantly increasing demands.

The utilization of the waste products has always been one of the most important sources of income to any industry, and the near future may demonstrate conclusively that lumbering will no longer be an exception to this rule, that attention must be paid to the enormous waste in its production, and that some means will have to be devised to either prevent or utilize it. Gas making from saw-dust awaits further development, terra cotta lumber may serve in this connection a two-fold purpose, and many other inventions will be made as soon as the necessity for such a thing is felt throughout the country. Perhaps lumber is too cheap at present in its original cost, but it will not be like that forever; as the most available portions of woods are cut down, the more inaccessible parts will necessitate larger expenses to bring them to market, and the question of "waste" will assume prominence in proportion to this increased cost, and saw-dust may yet prove one of the most important items of profit to the lumber industry in a similar way as the "gas liquor" of gas works, which the manufacturers did not know how to dispose of thirty years ago, now pays them larger profits than any of their other products. —*The Lumber World.*

Never stand at the foot of a sick bed and survey the patient. All figures loom large to fevered eyes, and by the side of the bed are only partially seen, and do not annoy with the sense of too much presence. Do not open the door very slowly, for then the attention is strained, speculating as to who the next comer can possibly be after all this preparation and with such cautious approach. Low but clear tones, quiet but sure movements, and rapid, rather than slow, are a great relief to any patient who is blessed with a practical nurse. Whispering is torture. Silence is best until you can discuss matters in another room; but if you speak, speak out, and make no mysteries about anything. In severe illness the nurse must watch her patient steadily, but not seem to be looking. In convalescence it frequently soothes the invalid to have the nurse seated at the window, apparently looking out. This frees the faculties from the tension that the sense of being watched usually gives.—*Hall's Journal of Health.*

Choosing Hand Saws.

STIFF blades are made of better material than thick ones, and are less liable to "buckle" or "twist," and are not so apt to break. They require less set, will stand an edge longer, and are not so tiresome to work. They should be hung in plain beech handles with rivets flush or countersunk. The blade should be of a dark color and have a clear bell-like ring when struck with the ball of the finger. Blades of a light iron-gray color are not so good. Never take a saw that jars or trembles in the handle. The first point is to grasp it by the handle and see that it *hangs* right, and that the handle fits the hand properly. Then try the blade by springing it and see that it bends regular and even from point to butt. See that it has a good crowning breast. Hold it at a distance and get a proper light to strike on the blade and you will see if there is any imperfections in grinding or hammering.

THERE should be less pride felt in peculiarity of employment and more in excellence of achievement.

Piece Work.

As a rule the man who is employed at piece-work, excepting in those trades where, from the nature of the work, it is habitual and general, is more spasmodic and less regular in his work than the day worker; he frequently runs himself aground, and then he uses stimulants to assist him in keeping up the speed. He can often take an hour or a day, and by dint of driving will contrive to make it up, at least in part, during the rest of the week. This kind of work is not a fair test of a man's abilities; what is wanted is a fair average day's work, taking one day with another all through the year. Piece-work, as a rule, will not give this. If an engine-driver lingered on some part of his journey and then forced his engine at high pressure over the other part, he would be regarded as a dangerous and reckless fellow, to whose care the lives of passengers should not be intrusted. Regularity is required, as well as speed, in all trades and occupations, for the moral in the fable of the tortoise and the hare is as applicable in the case of labor as it is in every other department of life.

Again, when the price of a certain job is fixed on the piece-work principle, the employer usually takes the quickest workman for his sample and test, and calculates the price accordingly; by this means he tries to fix a maximum price for the worker, the less expert workman falling below that price in proportion to his lack of power to compete with the strongest. This seems fair enough on the face of it, but it is not so fair as it seems, for the strong man will *tax* his strength to earn as much as he can, while the weaker will *overtax* his in order to compete and to enable him to earn anything like decent average wages.

It is the old tale, after all, of the employer's trying to fix a maximum wage, and the workmen trying to fix a minimum; if employers are justified in seeking the one, the workmen are equally justified in trying to enforce the other. Moreover, by means of piece-work, employers are often able to cause wages to fluctuate—with a tendency ever downwards; for if a man earns a few shillings over the current wages of the district, the conclusion usually is that the price paid is too high and must be reduced, hence an effort is perpetually being made to lower the wages. Again, each man is more isolated, and as a consequence weaker, and therefore more likely to be compelled to accept the reduction because he is detached from his fellows. This is the secret of some employers' love for piece-work, and of their desire to enforce it whenever practicable; and this is precisely the reason why the workmen strive to restrict it, as far as possible, within the narrowest limits. The mode of fixing the price is one great obstacle to its universal adoption; another is its inapplicability to many of the industries of the country.

Another evil in connection with piece-work is the tendency to "scamp" the work; the chief interest a man has in his work is to get it done, and receive the wages; beyond that his interest is *nil*. This is the reason why all the best work is done by the day, skill being more requisite than speed—the man has time to finish his job in all those small details which make true workmanship, and distinguish a real work of art from the ordinary productions of the workshop. It is useless to talk about a man's pride in his work; he will take as much pride in it as he can afford, neither more or less; if art workmanship be required, it must be paid for; time is often the equivalent of skill; if the former be denied, the latter cannot be effectively exercised.—*Carpenter.*

Paint for Protecting Roofs.

THERE are frequent inquiries about the use of coal tar paints for roofs, and all over the West parties are patrolling the villages with their stink-pots of coal tar, and swabbing every roof they can gain access to. I have had twenty years' experience in the use of coal tar mixed with ground slate, iron ore, mineral paints, and the so-called asbestos—all about alike—and I know what I am talking about. They are unfit to use on wood or tin. They will cause wood shingles to crack and curl, and tin to corrode. A gentleman of utmost reliability has just told me that two new shingle roofs were last fall covered with a preparation of coal tar, petroleum and ground slate, and they are ruined—the shingles have curled up, and the owners are preparing to new-roof the buildings.

To make a desirable cheap roof paint, take four pounds yellow ochre, one venetian red, and add a little white lead and a very little lamp-black—the last two ingredients to improve the color simply—and mix with raw linseed oil. The lamp-black should first be mixed or ground in a little oil so as to mix smoothly with the rest. This will make a durable paint, costing less than seventy cents a gallon at the present price of oil, and can also be put on with a good whitewash brush, or a wide flat brush costing about seventy-five or eighty-five cents.

However valuable coal tar may be for some uses, it is not fit to be used on shingles, or ood exposed to the sun or weather.—*Charles Betts.*

THE AILANTUS.—Many complaints have been made of the overpowering and offensive odor of the flowers of the ailantus trees planted in the streets of Paris and other large cities. According to M. E. André, it is only the flowers of the male trees which exhale this unpleasant scent, and he recommends that none but female trees should be for the future planted in public or other places where the peculiar odor of the males might be offensive. This would seem an important point for Americans and others who plant the ailantus largely as a street tree.—*Woods and Forests.*

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O.—Mr. Gascow.
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O.—Mr. Farthon.
A.—W. Mooser.
C.—Mr. McKay.
$6,500.

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A.—W. Mooser.
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A.—Wright & Sanders.
C.—Frank Barker.
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O.—August Hildebrand.
A.—H. Geilfuss.
C.—Henry Thom Wohrden.
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O.—Mr. May.
A.—H. Geilfuss.
C.—M. Grant.
$4,200.

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O.—R. Brennan.
A.—T. J. Welsh.
C.—J. Blake.
$7,500.

Morrel Place, nr. Broadway. Two-story flats.
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A.—T. J. Welsh.
C.— — Nelson.
$1,700.

Fourteenth, nr. Guerrero. Two-story.
O.—Mr. McCarthy.
A.—T. J. Welsh.
C.— McElroy.
$2,100.

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O.—P. Creagan.
A.—T. J. Welsh.
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$6,000.

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A.—Wm. Schrof.
C.—R. Morton.
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O.—Hohn & Saxtorph.
A.—Wm. Schrof.
C.—Day's work.
$11,500.

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A.—Percy & Hamilton.
C.—Mason, — Cox; carpenter, — Fletcher.
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A.—Percy & Hamilton.
C.—Mason, — Cox; carpenter, — Fletcher.
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O.—L. Duterit.
A.—Huerne & Everett.
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A.—H. D. Mitchell.
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$10,000.

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A.—T. J. Welsh.
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A.— — Raun.
C.—Butler & McGowan.
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A.—B. E. Henriksen.
C.—W. Kreyer.
$12,300.

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A.—Schmidt & Havens.
C.—P. Crichton.
$12,000.

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A.—Schmidt & Havens.
C.—I. N. & J. G. Day.
$4,500.

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O.— — Schumacher.
Day's work.
$6,000.

Clay. Two-story frame.
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A.— — Cleland.
C.— — Prodgers.
$5,000.

Folsom, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O.— — Potter.
Day's work.
$3,500.

Stevenson, bet. Eighteenth and Nineteenth. Additions.
O.—P. Boyhen.
A.—M. J. Welsh.
C.—A. A. Newbert.
$1,500.

Guerrero, bet. Nineteenth and Twentieth. Two-story frame.
O.—Thos. Neary.
A.—M. J. Welsh.
C.—Buckley & Bergman.
$3,500.

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O.—W. W. Stow.
A.—Schmidt & Havens.
$10,000.

Page, bet. Pierce and Scott. Two-story frame.
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A.—M. J. Welsh.
C.—W. Fitzpatrick.
$3,300.

Jessie, bet. Eighteenth and Nineteenth. Two-story frame.
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A.—M. J. Welsh.
C.—Doyle & Grace.
$3,000.

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A.—R. R. Warren.
C.—Hatfield & McRea.
$3,800.

Geary, bet. Jones & Taylor. Three-story frame, brick basement.
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A.—R. R. Warren.
C.—Batemen Bros.
$6,000.

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O.—E. Sharkey.
A.—R. R. Warren.
Day's work.
$3,500.

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Capay—Frame Church; day's work; $1,500.
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Niles—Building for California Nursery Co. A., Lensen & Son; C., S. W. Easterday; $3,150.

MISCELLANEOUS.

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St. Helena—Two-story brick. O., Odd Fellows Hall; A., A. Schroffer; C., G. Kennedy; $16,000. Two-story basement. O., R. H. Sprott; A., A. Schroffer; $5,000.

San Jose, Stockton Avenue. One-story frame. O., J. Bergstrom; A., J. O. McKee; C., J. C. Clinton; $1,700. Third, cor. Julian. Two-story frame. O., J. Rinaldo; A., J. O. McKee; C., Vincent & Drew; $5,000. Two-story frame. O., J. Stock; A., Lenzen & Son; C., E. A. Van Dalsen; $9,000. Two-story frame. O., J. Tulley; A., Lenzen & Son; C., J. M. Martin; $2,362. Two-story stable; O., C. W. Breyfogle; A., Lenzen & Son; day's work; $1,500. Two-story frame school-house (Hester School District). A., Lenzen & Son; C., H. C. Skow; $11,088. Improvements at Fair Grounds. A., Lenzen & Son; $1,600.

Woodland, Main Street. Two-story iron and brick; five stores and hall. O., T. M. Prior; C., Iron, Woodland Foundry; brick, D. R. Scott; wood, Glen & White; tin and plumbing, P. W. Burns; $25,000. Main. Two-story brick. O., J. J. McIntyre; A., T. J. Welsh, C., S. Caldwell; $6,000. Two-story brick; O., G. C. St. Louis; A., T. J. Welsh; C., Henderson & Co.; $6,000. One-story frame improvement. O., Capt. W. H. Wood; C., Gilbert & Son; $1,500. College Ave. One story frame. O., Thomas Armstrong; C., A. Blake; $1,000. First. Two-story brick improvement. O., A. D. Porter; C., Glen & White; $1,200. Second. One-story frame. O. and B., S. Caldwell; $2,000. Fourth. One-story frame improvement. O., Mrs. E. R. Moses; C., D. F. Myers; $1,000. Fifth. Two-story frame. O., A. and B., W. E. Perreau; $4,000. North. One-story frame. O., M. Autzen; $1,000. One-story frame improvement. O., Da. Grigsbey; C., J. Caldwell; $1,000. First. One-story frame. O., Robert Moore; C., Stamp & Myrick; $1,200. College Ave. One-story frame. O., W. L. Manor; C., Poole & Sears; $1,000. One-story frame. O., W. D. Holcomb; A., T. J. Welch; C., W. H. Winne, $2,000. East Ave. One-story frame. O., A. Merit; $1,300.

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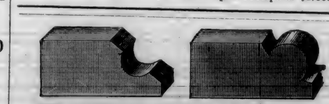
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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.
NO OTHERS RECEIVED.

Monthly Summary of Building Improvements.

A larger number of buildings have been erected during the past month than for any other similar period on record.

We hear of dullness in every branch of business excepting those that are directly connected with the building interest. The glorious showers since the first of the month have caused even the merchants to put on a more happy look, while the mechanics' faces fairly beam at the prospects ahead.

We have made many inquiries in regard to the *real cause* of the building boom, but confess we are not satisfied with the answers received. Many attempt to explain that it is owing to the low price of building materials—not a satisfactory answer as we can prove. The price of lumber is, at the time of writing, $15.00 per thousand for rough, and $30.00 for surfaced.

In the flush times of the lumber pool, the prices were on the list $21.00 and $40.00. Now forty thousand feet of lumber will be sufficient for quite a large size dwelling. Allowing half of that amount for rough, and the balance for surfaced lumber, it would only make a difference of

THREE HUNDRED AND TWENTY DOLLARS

In first cost of lumber on a house worth probably $10,000. Most assuredly not enough to cause an owner to erect a building, merely to save difference in lumber between cheap rates and pool rates.

Again, hardware is now fully 20 per cent. higher than it was one year ago. Plastering is worth 2 cents a yard more now; with the exception of bricks, there is no article—wages included—that is not as high, and in many cases much more costly than they were in the closing months of 1884.

If it was the low price of building materials alone that keeps up the boom, every one would have used their greatest endeavors to build when the price of lumber was actually below the cost of manufacture, viz., $12.00 per thousand; the erection of buildings would have proceeded very briskly for a month or two, and then come to a sudden cessation. But

MONTH AFTER MONTH

There has been an average of four new buildings started for every working day in the month; and this average has been maintained for *seven consecutive months.*

Again, it has been stated that the low rate of interest allowed by the savings bank has induced many to put their savings into real estate and improvements thereon. A careful inquiry at the banks does not show this to be the case during the past month. The number of depositors still is on the increase, while the amount drawn is not in excess of the average.

We think the true cause of the boom lies in the fact that there is a

STEADY GROWTH IN THE POPULATION

Of this city. Manufactories have largely increased in number for the past few years, and have been the means of largely increasing the number of steady inhabitants. The cable lines are exerting a beneficial influence in keeping residents on this side of the bay. Our "glorious climate" attracts numbers from the East, who come for a spell, and then are so pleased at our resources, that they invest in our real estate as offering superior inducements for large profits. The main growth of the city is in the neighborhood of the Park

AND AT THE MISSION.

There are less vacant houses to rent at the Mission than in any other section. There is a beautiful valley facing the Industrial School that needs but one thing to make it the most thickly settled part of the city, and that is

CABLE CAR ACCOMMODATIONS.

From Twenty-sixth Street out to the county line, the distance should be traveled by means of a cable line. The speed from Twenty-sixth could be made much greater than from that point to the ferry. Cars should also be run from 5 o'clock in the morning, to enable workmen of every occupation to be at their work on time. Again, the price of tickets should be reduced to

SIX FOR TWENTY-FIVE CENTS.

If the above suggestions were carried into effect, we think that hundreds now going across the bay on account of cheap rents would locate on this side, and save much of the time now consumed in a trip by rail and boat of five miles and over.

SUMMARY.

During the month ending the tenth of April, there have been commenced in this city the very large number of

178 BUILDINGS, OF THE VALUE OF $1,221,045,

By far the greatest in number and value ever recorded for one month. To summarize:—

158	frame buildings—value	$718,095
2	brick " "	451,500
18	additions	51,450
178		$1,221,045

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held in its rooms on Friday evening, April 3d. In the absence of the President, H. C. Macy occupied the chair.

The following report was received from the committee on classes:—

To the San Francisco Chapter of the American Institute of Architects:—

GENTLEMEN: Your committee, the teachers

of the architecture classes of the San Francisco Chapter, beg leave to submit the following report:—

They regret to say that, from unavoidable causes, two of the three classes which have been in progress for the current year have been suspended for the present, and it is thought unadvisable to resume them until some more satisfactory arrangements can be made in regard to them than is at present possible. The class in drawing is still maintained, and will be until further notice. The attendance on the classes has not been as satisfactory for the present year as could have been wished. Those who do attend, however, are tolerably regular and very diligent in their work; all are making commendable progress and are acquiring greater accuracy and better knowledge of their work.

To secure success in these classes it is thought that much would be gained by having a room properly appointed and furnished, in which the students could feel at home, and which could have the various conveniences not possible in a private office, such as, for drawing, good lighting, abundant space, and a good supply of models, copies, etc.

For the mathematical class, blackboards, proper apparatus for calculating strains, testing model girders, model bricks, and other model building appliances.

For the architectural class (practical), such plates, paints, drawings, and models as may best serve the important interests to which this class is devoted.

For all, proper periodicals and publications, which, being provided for the students, might engage their attention and broaden their ideas on matters of unusual interest connected with the profession.

The above are the views of only one member of the committee, the others not having reported. Respectfully submitted,

G. H. SANDERS.

The above is also endorsed by John Gash.

Report accepted, and ordered to be spread in full on the minutes.

A voluminous report was received from the Parent Chapter in regard to the supervising Architect of the State Capitol at Washington. A committee of three was appointed to thoroughly investigate the subject and report at the next meeting. The president appointed as such committee, Fellows John Gash, T. A. Eisen, and R. H. Daley.

The Committee on Indentures presented a full report, including two different forms of articles of indenture for apprentices. Report received and action thereon postponed until next meeting.

Mr. Gash read an interesting paper upon the subject, "THE SQUARE AS A FACTOR IN ARCHITECTURE AND GEOMETRY." Thanks of the Chapter were tendered to Mr. Gash for his able effort, and the paper was ordered printed in full in the CALIFORNIA ARCHITECT AND BUILDING NEWS. [It will be found in another column of this issue.—EDS.]

Men That Are North Winds or Western Gales with a Notification to All to Lie Low.

"HERE, there, don't you give but four blows to send that 8-penny nail home;" and then, without stopping to see whether the confused workman gives one or a dozen blows to drive the next nail to its head, the RUSHING (?) FOREMAN stumbles over a bunch of shingles in his hurry to tell another man—"Better file your saw sharper so you won't be all day cutting that *jice*."

Another workman who has just finished a 3-inch mortise through a very tough pine knot, and whose perspiring brow proves that he has been hard at work, happens to be met while, for a few seconds, he is wiping off the perspiration, with—"You going to stand there all day doing nothing;" and before the astonished workman knows who has spoken, the RUSHING FOREMAN has disappeard around the corner of the building.

Foremen of this character are extremely obnoxious to workmen. Beginners or apprentices are made so nervous that, for some little time after the suddenly spoken words, they are unable to do anything, and, in many cases, it takes half a day for them to regain their equilibrium. Old stagers, however, are worthy of attention by a looker-on after the visit of a cyclone foreman. We have carefully examined the different phases of character as presented in our various phrenological journals but we have failed to observe one that adequately expresses the mingled contempt, hate, go-to-the-devil look, that overspreads the countenance of the true mechanic. The plans of the latter are entirely upset by the unwarranted remarks of the foreman. But the greatest evil befalls the apprentice, for he is led to believe that a great noise and show of work is all that is necessary to please the boss; and so nails, in rustic or flooring, are sent home with three blows, utterly regardless that the head of the hammer makes many indentions in the wood, which, before painting, must be smoothed off, thus giving treble work, simply that the term *rusher* may be applied to their names.

Another great trouble with the kind of foreman under consideration, is his inability to give explicit directions just how he wants to have work finished. His mind is so intent on having all the work going on at a locomotive gait, that he turns from the boss of the framers before he has explained his wants, to tell the roofers what he wants done in their line; and then with a hop, skip, and jump, he is up in the second story trying to show the workmen there how partitions are to be set; then while gently mopping his forehead with his shirt sleeve, he prides himself upon his ability to give distinct orders, if necessary, to twenty different men in as many minutes.

The rushing foreman also inculcates another bad habit among the workmen. While he is around, the men feel strung up like a newly wound clock, but when he is away, a natural relaxation follows, and a positive don't-care-if-I-don't-work feeling is experienced, that, in a short time, becomes a habit, and, necessarily, leads spectators to exclaim, "That gang of men needs watching."

A few such foremen as we have described may be found in this city. They command no respect from the men under them, and, as a rule, they do not get as much work done as a man who is less noisy and demonstrative in the method used to have every workman know just what is to be done and the time necessary to perform the same.

Cause of the Depreciation in Our Lumber Market.

IT is a source of no little inquiry among our people as to what has demoralized the lumber trade during the past six months. As is well known, there existed for some time previous to the late break in prices, a combination among manufacturers to regulate prices by limiting the supply. The California market will consume annually 150,000,000 feet of redwood lumber. To supply this demand each manufacturer was allowed a certain quota, to be shipped to San Francisco, all the redwood lumber arriving in that port being, to all intents and purposes, sold through the agents of the combination. Last fall it was found that at least 20 per cent. more than the market would take would be produced the coming year, and it was proposed to reduce the quota allowed each manufacturer 20 per cent., and thus hold the market at the figure which had prevailed for two years past, giving the mill men good profits and enabling them to employ a larger number of laborers at good wages, thus making business lively in all the lumber regions. Several of the Mendocino lumber manufacturers refused to accede to the 20 per cent. reduction of their quota, and sold their lumber under the combination price, and thus the market was broken. Others in the association said, "Well, it is now every man for himself;" and the price has been gradually getting lower and lower, until now redwood lumber is being sold in San Francisco at less than the cost of manufacture and transportation. It is claimed that this state of affairs can be but temporary, and matters will sooner or later come back to a legitimate business basis—with some manufacturers many thousands of dollars out of pocket. The best informed manufacturers of lumber tell us the demand is quite up to the average, and if it had not been for the circumstances above related, the lumber trade would now be as good as it has been at any time within the last three years. There is a slight dullness at present in the foreign demand for what is known as large, rough, clear, suitable for export. This latter is a branch of the redwood lumber trade, which is supplied almost exclusively by Humboldt County, and renders her manufacturers independent of the home market to a considerable extent. Our lumber dealers feel the effect of the temporary depression in the California market, but take a hopeful view as to a readjustment of prices and better times.

MODERN FLATS.—ELEVATION OF A DESIGN COSTING $4,500.

Strength of Materials.

IT is possible, indeed it is probable, that man in the pre-historic ages was endowed with a superior and peculiar mathematical faculty, enabling him, without figures or geometric formula, to estimate cause and effect better than we. Again, the power required to elevate these gigantic stones to position in their temples seems at first glance to leave all our system of craner and other hoisting appliances far in the rear in point of power and efficacy, but when we take into consideration the facts proved by modern geological research, that the sites where these massive models of antique architecture are found, show unmistakable evidences of being once occupied by hills, the problem is not so difficult of solution, inasmuch as there are many reasons for concluding that before the foundations were laid, a lofty hill was selected, hollowed out, and the entire edifice, with i s massive lintels and domes, was erected on the inside; thus the heavy and light substances were elevated by means of the hill's incline, taken to the top, and from there placed in position, and when the structure was completed, the hill was raised, and the building appeared as represented to-day in the crumbling mass of ruins found throughout Egypt and Asia Minor.

Again, architects who have had the good fortune to visit these places have wondered at and admired their arches, placed in position at a time when levels, squares and equilibriums were supposed to be unknown, and the laws of frictional contact and pressure unheard of. At the present time their investigations are conducted with the greatest difficulty, notwithstanding the fact that the most eminent mathematicians of the age have striven to render the solution easier by introducing certain pre-supposed conditions; thus, in the published treatise on nearly all their architectural theories, from the standpoint of the mathematician, the structures of arches and curves are regarded as consistng of *courses of stones* resting on the abutments, and carrying a load which is supposed to press only in the direction of their imaginary lines. Then, again, cohesion and friction are often entirely ignored in the calculation of pressure and strength of the materials used; in short, many investigations are conducted upon the supposition that the materials could slide freely upon each other.

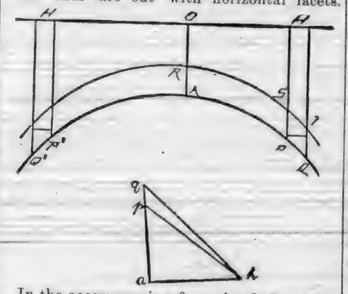
It has been proven, to the satisfaction of the more advanced school of architecture, that if the line of pressure of one stone against another, for instance, cross their mutual surface perpendicularly, there is no tendency to slide; hence if this known knowledge of physical conditions be observed throughout the entire structure, complete stability and permanence of position must ensue, inasmuch as the entire friction and consistency of the cement contributes to this attainment.

In the light obtainable from this, it is plain to be seen that if, in any case, this line of pressure should cross the mutual surface obliquely, the tendency to slide by this pressure must be counteracted by the cohesion of the particles constituting the materials used, and by so doing the actual firmness of the structure would be impaired.

Now if an investigation is conducted on the supposition that the cohesion of particles is to be ignored, then we are led to the best possible construction. The best authorities on this matter do not recognize the pertinency of the conclusion based on the hypothesis that the superincumbent load presses only downwards in accordance with the course prescribed by this lien alluded to in the foregoing. In order to place such a supposition in accordance with the facts of the case of arches, the inner ends of the arch-stones would have to be dressed with horizontal facets for the purpose of receiving and transmitting the downward pressure. But if, as is usually the case, the inner surface be oblique, they cannot transmit a vertical pressure unless in accordance with the law of cohesion, besides which this hypothesis of only downward pressure on the arch-stones is at variance with the fundamental principles of stability; hence in a thorough investigation, this hypothesis must be ignored, and the oblique pressure on the inner ends must be taken into account and the force recognized.

In view of the fact that the depth of these arches is small as compared to the dimensions of the structure as completed, and since the lien of the pressure transmitted from one to another must always be *within* that depth, it is reasonable to suppose that, for the purpose of analyzing the strain, that they form an exceedingly thin course, and that their joints are everywhere normal as regards the divergence from the square. Eventually, however, this depth must be carefully considered and the importance recognized in our calculations.

As the most comprehensive manner to obtain a clear view of our argument, we will examine the following sketch, first assuming that the superincumbent load presses only downward on the arch-stones, or that their inner ends are cut with horizontal facets.



In the accompanying figure let Q' P' A P Q represent such an arch placed equally on the two sides of the crown A, then the entire weight of the structure included between the vertical lines P' H' and P H must be held up or supported at P' and P, so that the downward pressure at the point P must be the entire weight of the structure imposed over A P. This pressure downward is accompanied by a tendency to separate the supporting points P' and P; thus, as this tendency is horizontal, its intensity cannot be changed by the load acting only downward, and must remain the same throughout the structure, whereas the actual pressure at p must be found by combining this stable or fixed horizontal thrust with the downward pressure equal to the weight of the bridge from A to P. In view of this if we draw a h horizontally to represent this constant thrust, and a p upwards to represent the weight of this portion of the arch, the line p h must, in accordance with the law governing the composition of pressures, indicate both in direction and in intensity the actual strain at the point P; this pressure must be perpendicular to the *joint* of the stones, and therefore must be parallel to the straight line drawn to touch the arch at P.

By virtue of the foregoing, if the form of the inside of the arch, or the *intrados*, be prescribed, it is easy to discover and estimate the power of the law of the pressure and its various parts; thus we may find the strain at the point Q by simply applying there a tangent to the curve, and to draw h q parallel to the same; h q represents the oblique strain at Q; a q represents the entire weight from the crown A to Q, and therefore p q is proportional to the weight imposed upon the portion P Q of the arch.

So long as the structures are confined to small dimensions, it is not necessary to incorporate such nicety and technical mathematical calculations in our calculations, inasmuch as in adaptation of the parts the friction of the surfaces, and the cohesion of the mortar are sufficient to compensate for any impropriety of arrangement. The great aim and object of Americans at the present time seem to be very large and massive structures. In eligible, desirable locations, ground surface is scarce and dear, and unlike some of the larger European cities, our workers will not, at least do not, labor below ground; the air and space above to infinity belong to the purchaser of the plat, hence we are building high and massive structures—not too high or too massive by any means—but to avoid these mysterious and fatal catastrophes that occasionally shock the entire country, attention must be paid to these minor and minute technicalities suggested in the foregoing.

The strength and intensity of these various strains must needs be carefully considered. The strength from all attainable standpoints of the materials used are within the reach of all, and before the Architects of America can hope for a full realization of their rising hopes and anticipations to acknowledge no superiors in older countries, or among prehistoric ages, they must master these laws governing strengths, pressures, and strains in all phases; then, and not till then, ages yet unborn will wonder and admire the achievements of the Architects of this, the nineteenth century, the boasted era of civilization and a high order of faculty development.

Our Illustrations.

THE elevation and plans of a modern flat, costing $4,500, will be found on pages 57, 59 and 61. The plans are sufficiently plain to give any one a thorough idea of the arrangements of rooms, etc. Sizes are distinctly marked, as well as the various accommodations usually found in houses of the character shown.

Business Changes.

THERE have been quite a number of changes in the location of Architects during the past few weeks, the principal of which are the following:—

Albert Pissis & W. P. Moore have formed a partnership. Their office is located at 217 Sansome.

Bennett & Curtis have dissolved partnership, the latter retaining the old offices at 528 California; Mr Bennett may be found at 431 California.

H. D. Mitchell has moved to 126 Kearny, corner of Sutter.

Newsom & Gash have dissolved partnership. Each retains an office in the same building where they have been so long together.

T. D. Newsom, of Oakland, has formed a partnership with his brother, John J. Newsom, and they may be found at 431 California.

W. Mooser has moved to 334 Kearny, near Pine.

Swain & Cleveland have dissolved partnership. Each retains an office in St. Ann's Building.

The Building—Labor Market in San Francisco.

BRICK MASONS.

THE demand for journeymen brick-layers is, and has been such for months past, as to absorb the entire supply of good hands, on brick buildings and the better class of work. Every knight of the trowel worthy the name, is employed, with well-assured prospects of continuance the season through. The outside, second-rate men, both as contractors and journeymen, are also generally employed on light foundations, chimney work, etc.

CARPENTERS.

Notwithstanding the large number of buildings under way, the supply of journeymen carpenters is easy, some not being able to find more than temporary employment. This is owing to the great influx of men from other parts of the country, attracted hither by the reports of a "building boom" in San Francisco. The entire resident class of good workmen, and many of more recent coming among us, are steadily employed, with fair prospects for months to come; but with the probability that there will be some letting up in building activities before the close of the year,—a prognostigation based upon the fact that the number of buildings erected in the recent past, has been greater than the increase in population, and the demand for houses,—consequently the "To Let" signs, which are becoming numerous, will be apt to check the ardor of some who would otherwise build as an investment, or for personal or speculative purposes.

PLASTERERS.

As a matter of course, these also, as a class, are full of work, and frequently difficulties are encountered in this branch of house building, not so much on account of insufficiency in number, as in the moral status and habits of the workmen, many of whom love the overflowing mug—of beer—more than they do the development of muscle, through the masterly use of the trowel.

The Lathers, a distinctive branch of the plastering work, very often cause delay, by demands for higher pay, or deliberate refusal to do anything for one or several days consecutively, as the result of "pure cussedness," a disregard for their own, their employers', or the owners' interest.

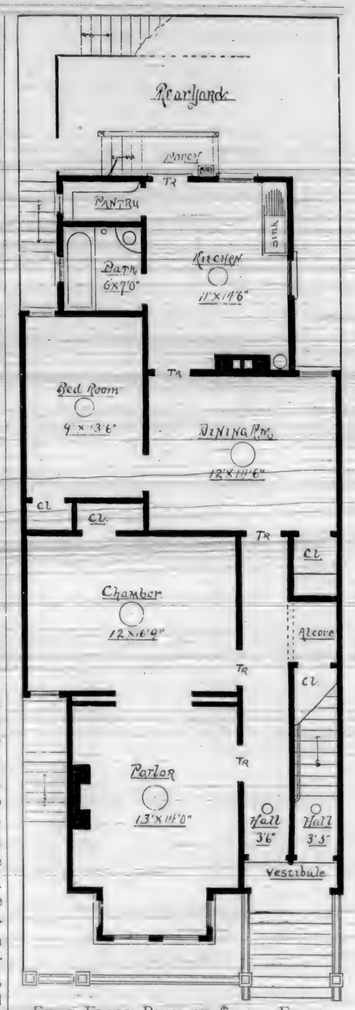
GENERALLY.

With existing lively times, all—painters, plumbers, and all others engaged in building pursuits—are correspondingly busy, and will so continue until the "letting up" times come, with this as a future result, that the best men mechanically and *morally*, will be continued, and those less skillful as workmen, or otherwise faulty, will have to meet the discomforts and misfortunes of non-employment.

Death-Dealing Dish-Cloths.

"I HAD some neighbors once—clever, good sort of folks. One fall four of them were sick at one time with typhoid fever. The doctor ordered the vinegar barrels whitewashed, and threw about forty cents' worth of carbolic acid into the swill-pail and departed. I went into the kitchen to make gruel. I needed a dish-cloth, and looked about and found several, and such 'rags'! I burned them all and called the daughter of the house to get me a dish-cloth. She looked around on the tables. 'Why,' she said, 'there were about a dozen here this morning;' and she looked in the wood-box and on the mantle-piece, and felt in the dark corner of the cupboard. 'Well,' I said, 'I saw some old, black, rotten rags lying around, and I burned them, for there is death in such dish-cloths as these, and you must never use such again.'

"I took 'turns' at nursing that family for four weeks, and I believe those dirty dish-cloths were the cause of all that hard work. Therefore I say to every housekeeper, keep your dish-cloth clean. You may wear your dresses without ironing, your sun-bonnets without elastics, but you must keep your dish-cloths clean. You may only comb your hair on Sundays; you may not wear a collar unless you go from home; but you must wash your dish-cloth. You may only sweep the floor when the 'sign gets right;' the windows don't need washing; you can look out at the door; that spider-web on the front porch don't hurt anything; but as you love your lives, wash out your dish-cloth. Let the foxtails get ripe in the garden (the seed is a foot deep any way); let the holes in the heels of your husband's stockings go undarned; let the children's shoes go two Sundays without blacking; let two hens sit four weeks on one wooden egg; but do wash your dish-cloths. Eat without a table-cloth; wash your faces and let them dry; do without a curtain for your windows and cake for your tea, but, for heaven's sake, keep your dish-cloths clean." ONE WHO KNOWS.



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She Wanted a Bracket.

TO BEGIN with she had two vases and a clock. There was no room for them on the bureau, and the table was full. So it happened she wanted a shelf whereon the vases and the clock could be disposed. There was just the place for a shelf between the windows. She measured the space and gave the carpenter an order for a board twelve inches wide, four feet long, and three-fourths of an inch thick. The carpenter offered to put it up with nice iron brackets costing fifty cents a pair, but she said him nay. Such cast iron horrors were inartistic. She would have it all of wood. Had she not a scroll saw? Was she not mistress of hammer and screw-driver? She would make her own bracket for sweet economy's dear sake and her own delight.

Straightway she drew upon paper a design for a sweet thing in brackets. Procuring a piece of clear pine, half inch stuff, she cut out the design upon it with her scroll saw. It was, indeed, a lovely bracket, and she at once made another, polished and sand-papered the pair, and gave them a coat of shellac just for color's sake. She then put a screw through each into the wall and laid the shelf upon them. This is the result: Fig. 1.

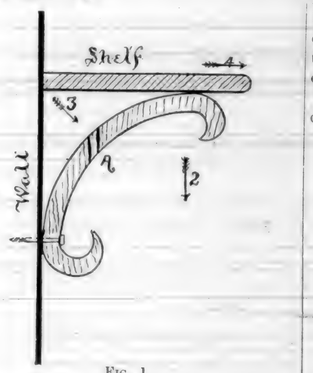

FIG. 1.

The bracket showed a sense of beauty without knowledge. Common sense suggested the placing of the screw at the point shown, near the end of the bracket. Experiment proved that the whole thing was unlovely and inartistic because not founded on the nature of things. The bracket had the beauty of form in a certain bookish way. It was just like the things in the drawing books. It had, also, the inherent beauty of color, because the natural color of the wood had been preserved, yet these things were of no value because the bracket was useless.

She laid the shelf on the brackets, and it at once tipped up, having no support next the wall. She thought this could be remedied by placing a strip of wood under the shelf against the wall. This worked very well, though it did not look quite right. Then she piled a quantity of books on the shelf to see if its factor of safety was within the probable weight of the clock and vases. Both brackets broke off at the point A, and the whole thing was ruined.

At once she went out-of-doors, found a good tree, and sat down to consider the branches thereof. And this is the sum of her consideration: If any one had laid a beam of wood from the main stem of the tree to the branch, say for the purpose of making a support for a swing or for a ladder to gather the fruit, the branch would be essentially a bracket. The beam, like the shelf, would be a lever with the fulcrum at one end. The branch would resist the downward thrust of the lever at the point where it was most needed. So would the bracket—with this difference—the branch resists the thrust in line of its greatest strength or along the grain; the bracket met the thrust in the direction of its weakest point, across the grain. It was also another lever tending to transform the thrust into a transverse strain.

Referring to the bracket, she saw in her mind's eye three strains. First, the tendency of the upper part of the bracket to move outward in the direction of arrow 1. Then there was the thrust downward, arrow 2, due to the weight of the shelf, and lastly there were the two combined that made the breaking strain, shown by arrow 3, in the diagram. Moreover the carved ends of the bracket did not in any way help to support the shelf; they were liable to be broken off, and consequently were inartistic and valueless.

The result of her considerations was a new design for a bracket. Fig. 2.

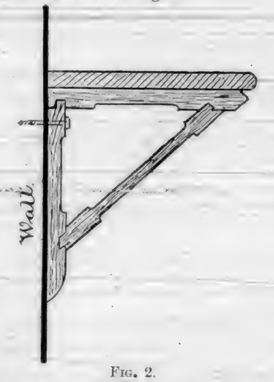

FIG. 2.

At first it appeared painfully stiff and plain. However it worked, so to speak; it could hold up the shelf with ten times the load that would ever be put upon it. Its factor of safety was as ten is to one. Besides this there was only one screw in the wall, and placed where it would be out of sight.

The bracket was composed of three parts, and each, like the branch of the tree, cut out in the line of its greatest strength, or along the grain. The first, or wall piece, was placed upright and had a tenon at the top and a mortise in front near the bottom. This was held to the wall by one screw placed near the top. Why? For two reasons. The tendency of the bracket is to fall under the weight of its load. There is also the tendency to fall outward, because the shelf acts as a lever. If the screw had been put at the lower end of the stick, it would form a pivot on which the bracket would tend to fall outward. By placing the screw at the top it resisted both the downward thrust and the tendency to fall outward.

These things refreshed her mind. It seemed as if she were dealing with the everlasting verities of constructive art. The two remaining members of the bracket had equally important parts to play. The horizontal piece at the top supported the shelf, and, being anchored to the wall-piece by the mortise and tenon, it served as a stay to prevent the bracket from falling outward. It was a tie and resisted the pull of the shelf outward. It was also mortised to the end of the third member, that served to transfer the weight of the end of the shelf to the wall-piece. In this last member the duty is to resist a thrust and to support the shelf by transferring its weight to the wall. This member was also mortised into the wall-piece.

The brackets were a success. Severe in their outline, they still had undeniable beauty. With her knife she cut away the edges in places and made incised ornaments here and there. This took away the square-edge appearance of the work and added a measure of ornament—not much, to be sure, because the whole thing was merely a bracket. It suggested the tree form, the stem and branch. It was fitted to its work and performed it well, because properly designed.

Straightway she placed the vases and the clock on the shelf, and some books and a lamp and other things, and even the baby, when, one day, the nurse upset the bath-tub. Baby sat there for five minutes in mingled comfort and safety, and the bracket did not show signs of distress. Then she considered the thing in a deeper sense.

The bracket was strong, simple, and well designed, and, as a result, artistic. It was truthful, and did not pretend to be what it was not. It might have been turned in a lathe or covered with ornaments, and so long as it preserved the underlying ideas expressed in its present simple form, it would be correct. The moment it departed from these principles it would be inartistic, however ornate, or whatever its material.—*Charles Barnard, in Decorator and Furnisher.*

Safest Way to Use Whisky.

PROCURE any certain quantity of whisky. Into a wide-mouth demijohn, place a quantity of glue; pour the whisky into the demijohn, and put the vessel away for about five days; See that the cork fits tightly. After the expiration of the above time, you will have a superior article of liquid glue, with which broken furniture, etc., can be mended.

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Mechanics in Education.

SEEING and feeling are two senses which are more important in aiding to a knowledge of our surroundings than any others, and yet their education is generally neglected until the possessor begins to learn something of mechanics. By mechanics in this connection is intended any attempt to contrive, put together, manufacture or change by manipulation, so that a woman who contrives and fashions a dress out of the unformed and plain material, may be a mechanic. The use of mechanical tools cannot be begun too early in life, whether the pupil is to be a practical mechanic or to follow some other calling—there are few vocations that do not demand for success some practical knowledge of mechanics. "The whittling Yankees" possibly owe much of their undisputed position as inventors and good mechanics to the habit of using a pocket knife. A very prominent inventor and superior mechanic recently remarked that the bent of his taste as a mechanic was undoubtedly given by his schoolmaster, who was a carpenter and joiner, and who worked at his trade in summer and taught the district school in winter. If a boy did not possess a foot rule he made one for him from a shingle or constructed an inch scale. The foot rule and a pocket knife he considered necessary to a schoolboy's outfit, and he encouraged his pupils to estimate dimensions by the eye and then verify them by measurement. Wind mills and water wheels were parts of the pedagogue's training, and the click-clack of one or the other could be heard all about the school-house and on the borders of the brook in an adjoining field. Vanes cut from pine boards, toy ships, bird houses, bows and arrows, pudding sticks, and most of the toys used by boys forty years ago were made by the schoolmaster's boys under his direction. To-day, beside the prolific inventor named, there are one superintendent of a railroad company, one bridge builder, one superintendent of a large manufactory, and two Architects to be counted from memory, who probably received their bent for mechanics from the carpenter schoolmaster.

All these lead lives of usefulness—they are producers, adding to the wealth and comfort of the country and the people; and nothing in their observation education makes them less valuable as members of society. One of the most distinguished orators was a blacksmith, and many men who are noted for their eminence in literature, divinity, law, medicine, and as educators, have had a mechanical training.—*Builder and Wood-Worker.*

Otis Elevators.

SPECIAL attention is called to this elevator now being successfully introduced into general use in this State. The cardinal principle of this elevator is different from that of any other in use, combining strength with simplicity, and more than the usual safeguards against accidents. They are manufactured by John Hammond, 42 Beale Street. Descriptive circulars sent on application.

Not from the Center of the Street.

PREVIOUS to October 1, 1884, it had been the custom with the gas companies to charge consumers for the cost of the service pipe, connecting the mains with the meter, counting the number of feet of such service pipe from the middle of the street. This rule we regard as just and equitable.

Since the above date, however, the companies—now consolidated, to all intents and purposes, into one—have agreed to charge for the actual number of feet of pipe laid, and the rate is made to cover cost of pipe, and an agreed upon cost of labor per foot of pipe laid.

This rule works a hardship upon property owners whose possessions lie on the side farthest away from the main. Take a street 60 feet wide; owners on one side have to pay for 18 feet, and those on the unlucky opposite, 42 feet. At 30 cents a foot, for 1¼ inch pipe, the figures will be $5.40 and $12.60. On wide streets, like Market and Van Ness Avenue, the disparity becomes even more marked.

The gas company claims that the rule now in force is more just to owners, because in the middle-of-the-street rule, they charged a much higher rate than they do under the present system. We do not know by what process of reasoning they arrive at this conclusion, but we do know that there is not a gas fitter in town but who would consider that he had struck a bonanza of the largest proportions if he could get numerous jobs where he could charge 30 cents a foot for 1¼ inch pipe, with as little trouble and expense as the connection of the mains with a meter.

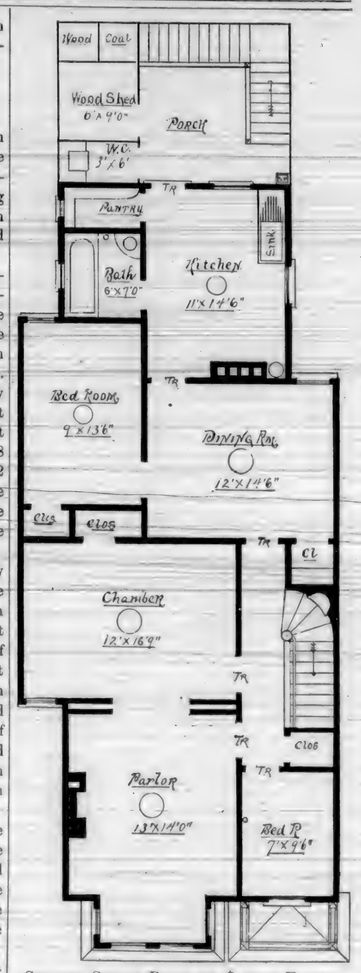
A just rule for the company to observe would be for them to furnish free to the edge of the sidewalk, the pipe and work connected therewith, and then let the owners of the property connect at that point, applying the same stringent test for its security that the law compels to the work inside the house.

When it is taken into consideration, the income derived by the gas company from the consumers of its manufacture, we consider that it should be their aim to reduce the first cost of connection with the mains to a minimum figure. If this policy were carried out, there would be less fault-finding, especially from those who own property on the opposite side of the street from the mains.

Putty.

DON'T you know that if a fire-place fails to draw, it is because your masons filled up the flue; that if the house settles, it's because you failed to use good cement in the foundations; and not because the Architect designed them too small? Don't you know that if sulphate of lime or magnesia blooms out on the face of pressed bricks, it's because your masons failed to do something or other—I don't know just what? And as for the rest of you, take the putty out of your own cracks and own up like men. Don't you plumbers know that scarlet fever and diphtheria were unknown till you and the doctors formed an alliance with the undertakers? Whether your carpenters confess it or not, we Architects know that the only way to keep wood-work from shrinking all to pieces is to catch and kiln-dry the carpenter—poor shrinking thing.

Of course you all do this mischief. Where would we Architects be if you didn't? Why, Architects would have their clients coming into their offices and holding them responsible for defects in their buildings, and then whom would the distressed Architect kick? Thus we discover another use for your putty—to support in the framework of your misdeeds the transparent purity of the flawless Architect.—*Architect John W. Root.*



SECOND STORY PLAN OF $4,500 FLATS.

THE SQUARE AS A FACTOR IN ARCHITECTURE AND GEOMETRY.

Paper Read before the San Francisco Chapter, A. I. A., by John Gash.

MR. PRESIDENT AND GENTLEMEN: I have taken for my papers to read before you this evening, the "Square as a Factor in Architecture and Geometry." That the square with the triangle and circle, form, as it were, the basis from which almost all other geometrical figures are formed, we are all of us aware, nor is it to be wondered at that the circle and triangle should form the basis from which the early architects should draw their outlines and figures as nature set the example, the earth, the sun, with the trees of the forest, all having the circle for their bases. The starry firmament have the triangle, but nowhere do we find the square except in the human form, where a man's arms, extended from tip to tip of his fingers, are equal to his height. The birds have taken the circle for the universal form of their houses, and the bee has adopted the hexagon. To man, then, alone, do we look for the square in his designs for buildings. Why it should be remains so far to the world a mystery.

While the ruthless hand of time has destroyed all chains of past ages to show that mankind in different countries had a sort of affiliation with one another, nothing is left to establish this fact but architecture. How happy should those feel who do their part to continue that chain that was first forged by Tubal Cain, and ever since continued to the present day, despite war, famine, pestilence, and the ever-changing destinies of nation—to you, my brothers, is this handed down. I trust you will pass it along, so that when you are laid in the silent dust, and perchance no mention made of your name, the architects of future generations may look with pride at those who lived in the nineteenth century. History fails to tell us that Greece, Rome, Egypt, Persia, India, China, Babylon, Mexico, the Aztec nation, England, Italy, Peru, were all at some remote period known to one another. The architecture of those countries alone establishes the fact, and the most particular part of that which each of the above countries have adopted, is the square. I will briefly refer to a few of the buildings to be found in those countries which I refer to, that have taken it for a basis. The Jewish people of Palestine, and the Druids of England, have given us the square and circle as the basis of their architecture in the buildings erected to their form of worship, the temple of Jerusalem erected by King Solomon, and the house of the forest of Lebanon by the former, and the stone henge by the latter.

Beginning with Greece we find that, as a rule, her temples were built in the form of a double square, the length being equal to twice the breadth.

The temple of Juno, erected at Samos about 540 B. C., the Temple of Jupitor at Selinus, the Temple of Jupiter Olympus in Sicily, and the Parthenon of Athens are each and all built on the principle of the double square.

Leaving Greece and entering her rival sister, Rome, we find her religious and public buildings partaking of the quadrangular shape, nor is this to be wondered at, as many of them were erected under Grecian Architects, who found Rome a more remunerative field for their labor, more especially after Greece became a Roman province, about 145 years before the Christian era.

The square is most noticeably used in the Roman pantheon, its entire height being equal to its width, and, though being circular in plan in the details of the interior, the *square* is very much used, more especially in the paneling of its vaulted ceiling. In the Temple of Peace, also the Temple of Concord, the Roman Forum, the Temple of Jupitor Stator, the Palace of Diocleccan, at Spalatro, all have the square for a basis, and somewhat singular in the Temple of the Sibyl at Tivoli, which is of circular form, with, perhaps, the best example of the Corinthian columns to be found in any Roman temple of its time. The opening for doors and windows are two squares, their height being twice their width, a system adopted long afterward by the immortal Angelo, but somewhat slightly discarded in the nineteenth century. The Temple of Balbac, erected by the worshipers of the sun, being, perhaps, one of the most stupendous pieces of architecture ever erected to the "god of the day," assembled within its walls to hail that majestic circular orb, as he rose in his majesty above the eastern horizon, adopted the square for the outline of the shrine in which they should hail his first appearance and gaze on him as he traversed the vaulted canopy of heaven. Why this should be can only be conjectured because of the close relation that exists between that circular orb and the square.

The first traveler who describes this temple with accuracy is Maundrell, in his journey from Alepo to Jerusalem in 1697. The principal building, the temple, is of a rectangular form, being 3,600 feet long by 350 wide, with a portico 200 feet long by 100 wide, being *two* squares in length to one in breadth.

Perhaps, before referring to the architecture of Greece and Rome, I should have referred to that of Egypt, as this country, which may justly claim to be the *parent* of geometry, the fundamental principles of architecture, uniformity of plan characterizing all their work, never deviated from the right line and square. Their pyramids became the history of an age long past, telling of those wonderful structures referred to by Herodotus, Strabo, Plutarch and others. From these we learn that the great pyramids of Chrops were 800 feet square, running to a height of some 852 feet.

It would, indeed, be doing an injustice to attempt to give you any description of those pyramids in these papers, as that would make a complete subject in itself, which, I trust, some of you may read papers on at some future meeting. But my object was to show how the square was used as a factor in early architecture, and how, especially so, in the pyramids—nor was it less so in her temples, as we may see in those near Thebes, Carnac, and Luxor. The tomb of Osymandy, as we find, according to Diodorus, was a peristyleum 400 feet square, supported by animals 16 cubits high, each in one stone. As Egypt was, without a doubt, the parent of geometry, and the square, a natural outgrowth of the circle, in fact a reasonable consequence resulting from inclosing the circle by four lines, as well as *three*, the outgrowth of the triangle, which was held as a sacred figure by the Egyptians, it may reasonably be supposed that it would be adopted as a basis for their temples and tombs, and hence may be adopted by people who may have emigrated to other parts. Hence, we find in Persia, more especially in Persipolus, the same style and details in architecture as is to be found in Egypt. In the city of Ispahan, when visited by Chardin, in 1666, he describes their houses as being built with large square courts, surrounded with rooms of various dimensions, the sides of the area being planted with flowers and refreshed with fountains similar to the buildings to be found in Mexico at the present day.

Traveling into India we find history lost in trying to discover whence she derived her architecture; until within a late period it was supposed it was from Egypt. Sir William Jones, whose opinion seems to have been that the Indian temples and edifices are not of the highest antiquity, says that they prove an early antiquity, between India and Africa; that the structures of the early temples were pyramidal and partook of the form of a square, may be seen at Duogur and near Tanpore. There is also a pagoda of great antiquity near Posto Novo, on the Carromandel Coast, having within it a square court with a temple and pescina, to which is given the name of the Stream of Eternal Joy. There is also a temple of extraordinary size on the small Island of Scringham; it is composed of seven square inclosures, one within the other, the walls of which are 25 feet high and 4 feet thick. These inclosures are 350 feet distant from one another, making the outer walls nearly four miles in length, when we trace the square in general design of those Indian temples, whose antiquity history fails to describe. Leaving India we pass into China, whose history is buried as deep as that of India or Egypt. We find her architecture has certain features that make, as it were, a connection between her and those other countries I refer to, perhaps the most noticeable being the square.

The imitation of the tent is the true origin of their building, so that, from the accounts of travelers, a Chinese city looks like a large permanent encampment, as well in respect to its roof as its extent.

Yet while these are mostly of a circular form, the palaces and temples are built quadrangular, like the palace at Pekin, measuring

3,600 feet from east to west, by 3,000 feet from north to south. There is the pagoda, or Temple Ho-nany, measuring 590 feet long by 250 wide, and having with it buildings at its angles 30 feet square, and three pavilions 33 feet square; but perhaps the Great Wall of China is one of its most remarkable monuments, having towers on it at intervals of 200 paces measuring 40 feet square at the base, diminishing to 30 feet square at the top.

Leaving the Orient, feeling satisfied that the square, as a factor, was most usually adopted as the basis of their architectural monuments, we would take a passing glance at an equally ancient country, whose buildings are as great a mystery as those of Asia or Africa. While Prescott, in his history of Mexico, tries to describe its people, yet the antiquity of its architecture is lost in the sands of time, and its fundamental principles can only be traced in the use of the square in the general plan of its temples.

The edifices erected by the first inhabitants of Mexico for religious purposes were solid masses of earth of a pyramidal shape partly faced with stone. The great Pyramid of Cholula, the largest and most sacred temple in Mexico, appears at a distance like a natural conical hill wooded and crowned with a small church. Humboldt compares it to a square whose base is four times that of the place Vendome, in Paris, covered with brick to a height of twice that of the Louvre, the length of each side of its square base being 1,423 feet, and the height 177 feet.

In the northern part of Vera Cruz is found a pyramid of great antiquity measuring 80 feet square at the base, and nearly 60 feet high. The Tombs of Mitla are three edifices placed symmetrically in a very romantic situation. The number of separate buildings was originally five, and they were disposed with great regularity, having within them a court measuring 150 feet square. In Sonora, in the Gulf of California, on the banks of the Rio Gila, are some remarkable ruins known by the name of the Casa Grande, showing the remains of an ancient Aztec city, having many distinctive Egyptian architectural features, being quadrangular, with their sides facing the four cardinal points. From these we must conclude that the people had no means of modeling their ideas through study of the existing monuments of other nations, nor of preserving any traces of the style of building practiced by the race from which they originated.

It must be reasonably supposed that the vicinity of the continents of Asia and America is such that the arts and improvements must have been carried from one continent to the other. Having shown from a cursorary glance through the countries which I have above referred to, how the square formed a sort of connecting link in the several temples and monuments erected by each, though widely separated by time and distance, I will now occupy your time a little while in showing how it became a factor after the dawn of the Christian era in Europe. The cross, the emblem of Christianity, being taken as a basis for temples of worship erected to the founder of the Christian dispensation, buildings were erected after the style of the Latin and Greek cross, the former being six squares, the sides of a cube, giving one for the sanctuary, one for each transept, and three for the body or nave of the church, the Greek cross being five squares, one for each arm and one for the body of the building, both of these forming the basis of the several European cathedrals of the thirteenth, fourteenth, and fifteenth centuries, being lengthened in the nave more especially, as in the Cathedrals of Worms, the Church of Santa Maria Del Fiora vi Florence and several others.

Perhaps the best specimen of a church after the Greek cross is the church of St. Geneviere, in Paris, or, as it has since been called, the Pantheon, erected by Louis XV. But in all these the square has been uniformly followed by their Architects, not only in the general plan, but in their interior details, in their doors and windows, most conspicuously the quarter-foil, which, with the trefoil, was a characteristic feature of the early English style in church architecture, as also in the domestic architecture of Louis XIV. of France.

I have thus far shown you what a factor the square has been in architecture to form as if a continuous link in the great chain of our profession from the remotest period; while the work of the historian, the theologian, the scientist, has been lost in the sands of time, to the Architect alone has it been given the talisman that tells how past ages and nations must have intermingled with each other before the railroad, the telegraph, or telephone were even thought of.

In geometry it has of itself stood equally as conspicuous and alone as in architecture, never affiliating with its sister figures, the circle and triangle, save that, in the case of the circle, it condescends to admit of its four sides becoming a tangent to the circle when inscribed within it, and touching the circumference at its four angles when circumscribed round it. No nearer has any mathematician thus far been able to show what relationship one has to the other in point of area, though both may have the same diameter. The squaring of the circle has been an unsolved problem thus far, nor was any relationship in point of area found between itself and the triangle until Pythagoras found that a square described on its diagonal (which cut into two triangles) was equal to the sum of the square described on its other two sides.

It admits of being subdivided in itself without the aid of any other figure in geometry, and even then cuts up some funny pranks that were equally as mysterious as itself; thus, for instance, cutting a side into two equal parts the square of the whole line is four times the square of its half; cutting it into two uneven parts, the square of the whole line is equal to the sum of the square of the two parts and double the products of the parts. Again, dividing the side of a square into two uneven parts, the difference between the square of the two parts is equal to the product of the sum and difference of the parts. Thus you see the square is a mystery in itself; perhaps this is more especially the reason why man is said to act on the square with his fellow-man, being separate from all other beings or figures, and a mystery with himself; however this may be to us, as a Chapter of Architects, it has been transmitted, with its sides equal and angles true. Trusting we may so transmit it to future generations in our works and lives, I thank you for the attention you have given me on the square.

An experienced foreman, who has an eye for philosophy, says that tools apparently partake of the temper of those who use them. A short-grained man has nicked bits; the impetuous man, broken ones; the lazy man, dull ones; the careless man, badly dressed ones; the man with one idea, one dress for all kinds of work; the soft man can rarely keep the edge of a tool from turning, while the good-natured and even-tempered man has the best tools in the shop, and is pestered continually by ill-tempered workmen who come to borrow from him whenever they have a particular piece of work to do. It is quite interesting to note the similarity in the temper of workmen and their tools.

C. H. M. asks why a person will take cold quicker lying down on a bed than if sitting up—yet when they get into or go to bed, they are warmer than while sitting up.

Answer—If you are correct in your statement, it is probably because more vital energy is put forth by people who are not lying down, and in bed one is generally protected by additional clothing.

A Band saw for cutting marble is described in *Le Genie Civil*, which certainly merits mention. Every one knows that the saws ordinarily used for cutting marble or hard stone, which consist of plain steel blades, fed with sand, lose much of their efficiency by the filling of the cut with a paste of finely ground sand and stone, so there is a certain advantage in working with a vertical saw which does not accumulate pulverized stone beneath it. The difficulty in employing a toothed saw-blade lies, however, in the rapid wearing of the teeth, by which the blade is soon reduced to a smooth ribbon of steel. To prevent this, the new saw is provided with an accessory in the shape of a grooved wheel of hardened steel, which is set at right angles with the saw-blade, and engages with the teeth of the saw. This grooved wh el is made to press so firmly against the blade as to notch it, thereby reviving the teeth as fast as they are worn down. The teeth are of course rather rudely formed, and are left with a large "burr," but this seems to help the cutting action, by making more room for the blade in the cut. In practice this saw is operated at a very high velocity; and although we have no statement of its efficiency, it seems quite possible that it will be useful.

The New Mechanics' Lien Law, Approved March 18, 1885.

THE new law in regard to the enforcement of mechanics' liens, having received the signature of the Governor, is now in operation. It should be carefully read by every owner, Architect, and contractor, as its provisions are essentially different from the law as it formerly stood upon the statutes. We give the law in full as we receive it direct from the authorities at Sacramento:—

CHAPTER CLII.

An Act to amend sections eleven hundred and eighty-three, eleven hundred and eighty-four, eleven hundred and ninety-one, eleven hundred and ninety-four, and eleven hundred and ninety-five of an Act of the Legislature of the State of California entitled "An Act to establish a Code of Civil Procedure," approved March 11, 1872, and to add four new sections thereto, to be known, numbered, and designated as sections twelve hundred, twelve hundred and one twelve hundred and two, and twelve hundred and three, all relating to liens of mechanics and others upon real property, and to carry out the mandate of section fifteen of article twenty, of the Constitution.

[Approved March 18, 1885.]

The People of the State of California, represented in Senate and Assembly, do enact as follows.

SECTION 1. Section one thousand one hundred and eighty-three of the Code of Civil Procedure is hereby amended so as to read as follows:—

1183. Mechanics, material men, contractors, sub-contractors, artisans, Architects, machinists, builders, miners, and all persons and laborers of every class, performing labor upon or furnishing materials to be used in the construction, alteration, or repair, either in whole or in part, of any building, wharf, bridge, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure, shall have a lien upon the property upon which they have bestowed labor or furnished materials, for the value of such labor done, and materials furnished, whether at the instance of the owner, or of any other person acting by his authority, or under him, as contractor or otherwise; and any person who performs labor in any mining claim or claims, has a lien upon the same, and the works owned and used by the owners for reducing the ores from such mining claim or claims, for the work or labor done, or materials furnished by each respectively, whether done or furnished at the instance of the owner of the building, or other improvement, or his agent; and every contractor, sub-contractor, Architect, builder, or other person having charge of any mining, or of the construction, alteration, or repair, either in whole or in part, of any building or other improvement as aforesaid, shall be held to be the agent of the owner, for purposes of this chapter. In case of a contract for the work, between the owner and his contractor, the lien shall extend to the entire contract price, and such contract shall operate as a lien in favor of all persons, except the contractor, to the extent of the whole contract price; and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and shall, before the work is commenced, be filed in the office of the County Recorder of the county, or city and county, where the property is situated, who shall receive one dollar for such filing, otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

SEC. 2. Section one thousand one hundred and eighty-four of the Code of Civil Procedure is hereby amended so as to read as follows:—

1184. No part of the contract price shall, by the terms of any such contract, be made payable, nor shall the same, or any part thereof, be paid in advance of the commencement of the work; but the contract price shall, by the terms of the contract, be made payable in installments, at specified times, after the commencement of the work, or on the completion of specified portions of the work, or on the completion of the whole work; *provided*, that at least twenty-five per cent. of the whole contract price shall be made payable at least thirty-five days after the final completion of the work and contract. No payment made prior to the time when the same is due under the terms and conditions of the contract, shall be valid for the purpose of defeating, diminishing, or discharging any lien in favor of any person, except the contractor, but as to such liens, such payment shall be deemed as if not made, and shall be applicable to such liens, notwithstanding the contractor to whom it was paid may thereafter abandon his contract, or be or become indebted to the owner in any amount, for damages or otherwise, for non-performance of his contract or otherwise. As to all liens, except that of the contractor, the whole contract price shall be payable in money, and shall not be diminished by any prior or subsequent indebtedness, offset, or counter-claim in favor of the owner and against the contractor; no alteration of any such contract shall effect any lien acquired under the provisions of this chapter. All such contract and alterations thereof as do not conform substantially to the provisions of this section, shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case the labor done and materials furnished by all persons, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof. Any of the persons mentioned in section eleven hundred and eighty-three, except the contractor, may, at any time, give to the owner a written notice that they have performed labor or furnished materials, or both, to the contractor, or other person acting by authority of the owner, or that they have agreed to do so, stating in general terms the kind of labor and materials, and the name of the person to or for whom the same was done or furnished, or both, and the amount in value as near as may be, of that already done or furnished, or both, and of the whole agreed to be done or furnished, or both. Such notice may be given by delivering the same to the owner personally, or by leaving it at his residence or place of business, with some person in charge; or by delivering it to his architects, or by leaving it at their residence or place of business, with some person in charge; or by posting it in a conspicuous place upon the mining claim, building, wharf, bridge, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure. No such notice shall be invalid by reason of any defect of form; *provided*, it is sufficient to inform the owner of the substantial matters herein provided for. Upon such notice being given, it shall be the duty of the owner to and he shall withhold from his contractor, or from any other person acting under such owner, and to whom by said notice the said labor or materials, or both, have been furnished or agreed to be furnished, all money due or that may become due to such contractor, or other person, or sufficient of such money to answer such claim and any lien that may be filed therefor, for record, under this chapter, including costs and counsel fees provided for in this chapter, until such notice is by writing withdrawn; and all money paid thereafter by the owner to the contractor, or such other person, while such notice is in force, shall, for the purposes of all leins of all persons, except that of the contractor, be deemed a payment prior to the time the same was due within the meaning of and subject to the provisions of this section.

SEC. 3. Section one thousand one hundred and ninety-one of the Code of Civil Procedure is hereby amended so as to read as follows:—

1191. Any person who, at the request of the owner of any lot in any incorporated city or town, grades, fills in, or otherwise improves the same, or the street or sidewalk in front of or adjoining the same, has a lien upon such lot for his work done and materials furnished.

SEC. 4. Section eleven hundred and ninety-four of the Code of Civil Procedure is hereby amended to read as follows:—

1194. In every case in which different liens are asserted against any property, the Court in the judgment must declare the rank of each lien, or class of liens, which shall be in the following order, viz.:—

1. All persons performing manual labor in, on, or about the same.
2. Persons furnishing materials.
3. Sub-contractors.
4. Original contractors.

And the proceeds of the sale of the property must be applied to each lien or class of liens in the order of its rank; and whenever, in the sale of the property subject to the lien, there is a deficiency of proceeds, judgment may be docketed for the deficiency in like manner and with like effect as in actions for the foreclosure of mortgages.

SEC. 5. Section one thousand one hundred and ninety-five of the Code of Civil Procedure is hereby amended so as to read as follows:—

1195. Any number of persons claiming liens may join in the same action, and when separate actions are commenced, the Court may consolidate them. The Court must also allow, as a part of the costs, the money paid for filing and recording the lien, and reasonable attorney's fees in the Superior and Supreme Courts, such costs and attorney's fees to be allowed to each lien claimant whose lien is established, whether he be plaintiff or defendant, or whether they all join in one action or separate actions are consolidated.

SEC. 6. Another section is added to the Code of Civil Procedure, numbered one thousand two hundred, and reads as follows:—

1200. In case the contractor shall fail to perform his contract in full, or shall abandon the same before completion, the portion of the contract price applicable to the liens of other persons than the contractor, shall be fixed as follows: From the value of the work and materials already done and furnished at the time of such failure or abandonment, including materials then actually delivered or on the ground, which shall thereupon belong to the owner, estimated as near as may be by the standard of the whole contract price, shall be deducted the payments then due and actually paid, according to the terms of the contract and the provisions of sections one thousand one hundred and eighty-three, and one thousand one hundred and eighty-four, and the remainder shall be deemed the portion of the contract price applicable to such liens.

SEC. 7. Another section is added to the Code of Civil Procedure, numbered one thousand two hundred and one, and reads as follows:—

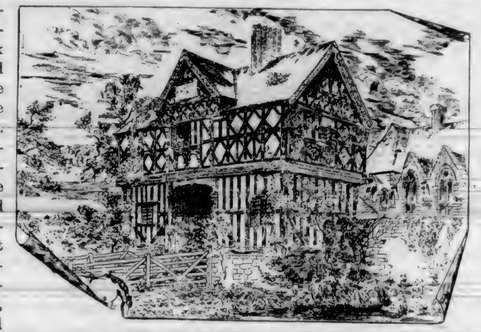
1201. It shall not be competent for the owner and contractor, or either of them, by any term of their contract, or otherwise, to waive, affect, or impair the claims and liens of other persons, whether with or without notice, except by their written consent, and any term of the contract to that effect shall be null and void.

SEC. 8. Another section is added to the Code of Civil Procedure, numbered one thousand two hundred and two, and reads as follows:—

1202. Any person who shall wilfully give a false notice of his claim to the owner under the provisions of section one thousand one hundred and eighty-four, shall forfeit his lien. Any person who shall wilfully include in his claim filed under section one thousand one hundred and eighty-seven, work or materials not performed upon or furnished for the property described in the claim, shall forfeit his lien. If the owner and his contractor shall directly or indirectly conspire to, or agree that, the written contract filed shall appear to show the contract price to be less than it really is, and it shall accordingly so show, then such contract shall be wholly void, and no recovery shall be had thereon by either party thereto, and in such case the labor done and materials furnished by all persons, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

SEC. 9. Another section is added to the Code of Civil Procedure, numbered one thousand two hundred and three, and reads as follows:—

1203. Any bond which may be given by the contractor to the owner, for the faithful performance of his contract, shall be filed, with the contract, in the Recorder's office, or be void; and whatever may be its terms, shall inure to any person who performs labor for, or furnishes materials to, the contractor; and any such person shall have an action to recover upon said bond against the principal and sureties, or any or either of them, for the value of such labor and materials, not to exceed the amount of the bond; but such action shall not affect his liens, nor any action to foreclose it, except that there shall be but one satisfaction of his claim, with costs and counsel fees. Nothing in this section contained shall affect or impair the rights of the owner under the bond. Nor shall any alteration in the contract, or deviation in the work or in the payments, release the sureties on said bond from their liability, except to the owner.



NOTICE.

We have printed the above Lien Law on fine card-board suitable for hanging in offices. We will mail a copy to any address upon receipt of fifty cents.

Wood Turning.

IT seems like a very simple matter to come the free-hand act in paring down a piece of work in the turning lathe and bringing it up to a shining finish, if the careless manner in which the tools are held and the rate the cuttings fly, are anything to go by. The workman seizes a piece of stock, places it between centers while the lathe is still in motion, and the work starts off almost in its very central line of rotation, stirring up quite a breeze from the four corners of the square piece of stock, and just clears the rest from which the tools are to operate. The gouge sets in first and pares down toward the center, setting back each stroke for the length of chip, till the work is roughed out, when, with a few sweeps, the surface is left smooth and cylindrical. The parting tool reaches the lowest place in each hollow of any bead that is to be made to make room for the clearage of the cutting, and the gouge once more passes right and left from the brink of each bead, with a few delicate sweeps in the hollows, and the work is ready for the next piece, unless it is to be smoothed up with sandpaper held on the work while it is backed up with shavings to keep the hand from burning. This is where a business is made of the free-hand tool in wood turning, and there is no solid rest to work from. The tools rest as much on the work as on the bed of the lathe, and the stock is not torn to pieces by scraping with a chisel. There is a principle for every mishap that is to be found in any part of the process; if the gouge is being drawn forward with a lot of clearance beneath the cutting edge while the tool rests on the opposite side, an increasing spiral convoluted pitch may be attained contrary to expectations, though the principles of this action are as definite as the principles of falling bodies. If the squaring up is to be done with a chisel, where the bevel is on one side, there is every condition that is needed to strike out for parts unknown as soon as the cut leaves the extreme point in the cutting edge. Turning, like any other work, where we must cut across the grain, must have some means for the chips to leave, or they will cling to thrash on the rest, or to break into the finish of the work. It requires but a small effort to hold a tool in turning when it is held properly, but it will need the assistance of a tool post if the cutting edge is running in another direction, if a shearing cut is what is wanted. It will be well for those more acquainted in other departments to resort to scraping when in need of a mallet or a few handles for tools.—*Ex.*

Pine logs, taking the good, bad and indifferent together, will weigh on an average 8,000 pounds per thousand feet.

Questions and Answers for the Consideration of Students in Sanitary Science.

1. WHAT is the object of a trap?—To prevent sewer-gas from entering a house.

2. How is it effected?—By a water-seal, made by confining water in the bend of the trap.

3. Is this an effectual remedy?—Alone, no; because pressure will sometimes force air through the water.

4. Will the water in a trap absorb gas and emit it again?—Yes.

5. How is this difficulty overcome?—By leaving the end of soil-pipe open and making it easier for gas to ascend than to go through water.

6. Where should the open end of a pipe be situated, and how is the pipe usually terminated?—At the highest point of building, and finished with a bend.

7. What is the object of a trap where the soil-pipe enters the house?—To prevent, if possible, the entrance of sewer-gas to the house.

8. Is there any other theory on this point?—Yes: gas should not be confined to the sewers, but allowed to escape through numerous outlets.

9. What is the theory of the New York City Board of Health in regard to this?—That sewers should not contain gas, but as usually built they do.

10. What causes a pressure from the sewers on the main trap?—Difference in temperature between sewer and house, snow on openings and manholes, and tides blocking outlets and manholes.

11. Can the difference in temperature between the air in a sewer and in a soil-pipe unseal a trap?—Probably not.

12. Will open fires cause a suction on soil-pipes, and why?—Yes; they draw air from wherever there is the least resistance.

13. What is the best form of a trap at the outlet of a soil-pipe, and of what material should it be?—A running trap, with a manhole to clean it out.

14. Does a large body of water in a trap afford greater resistance to pressure from the sewer?—No.

15. What constitutes the resistance to pressure in a trap?—The depth of water-seal, not the amount of water in trap.

16. How deep should the water-seal be in a running trap?—About two inches.

17. What is meant by depth of water-seal?—The depth of curve or bend.

18. Is there any objection to a deep trap?—If too deep, matter will not be drawn out, but will remain and dissolve.

19. Why is a flap-valve not a good seal for a soil or waste pipe?—Matter lodging in pipe prevents its closing.

20. Why is the momentum of a column of water not likely to carry the water through a running-trap, and leave the trap unsealed?—Some of the water will usually run back, and the velocity is not sufficient to produce a vacuum.

21. What is the effect of a column of water passing through a pipe and completely filling it?—It causes a vacuum.

22. Why will a vacuum suck the air out of pipes?—Because the falling water drives the air before it, and by so doing causes a vacuum as it passes the branches and draws water out of traps.

23. What is the pressure of the atmosphere on a vacuum?—The greatest possible pressure is 15 lbs. on square inch.

24. How is this suction prevented?—By leaving top of soil-pipe open, so the air will follow the water.

25. Can a vacuum be created in a pipe when it is only partly filled with water?—To a certain small extent; generally, no.

26. What is the object of extending a pipe from the outer air to the soil-pipe just inside the trap?—To allow a current of air to pass through the pipe.

27. What difference does it make where this pipe enters a soil-pipe, so long as it is inside the point where the trap is placed?—It should enter near the trap, or the portion of drain between it and trap will form a dead-end.

28. What is the proper size of this ventilating-pipe?—Four inches.

29. Why does the air enter by this pipe, and pass out at the top of the soil-pipe?—The air in pipe being usually warmer than the air outside, causes an upward current.

30. Why does warm air ascend?—It is lighter than cold air.

31. Can a rush of water through the soil-pipe affect this ventilating-pipe, and should any precaution be taken in regard to it?—It should be placed as far as possible from basement windows, but if properly aired it should be free from gas.

32. Is it a good plan to ventilate a soil-pipe in a flue, and why not?—No; because when there is no fire there is often a down draught.

33. Would two traps where the soil-pipe enters the house be useful?—No; they would form an air-lock.

34. What is an air-lock?—Space in pipe where air is confined between two traps.

35. How does it affect the passage of water?—The confined air is like a cushion, and retards or stops the flow of water.

36. What is the objection to the use of a brick or stone box with a division-wall, known as a mason's trap, as a trap for a main soil-pipe?—It makes a small cesspool.

37. If a soil-pipe empties into a stream, or on the surface of the ground, and has no connection with a sewer or cesspool, is a trap useful?—Yes, if vented in the usual manner, because sewer-gas is generated in the pipe, and if the pipe is long it is better to trap it where it enters the house.

38. If a pipe empties into tide-water, what precaution should be taken to guard against air being forced through the trap by the pressure of the tides?—A line of vent-pipe between outlet and trap above the tide-level.

39. What is meant by the "dead end" of a soil-pipe?—An unventilated end.

40. Why are such ends dangerous?—Sewer-gas forms or collects in them.

41. How would you connect the leaders of a house with the soil-pipe?—By a deep-seal trap, so as to retard the evaporation of the water.

42. How would you connect area and yard drains with soil-pipes?—By suitable traps with house-drain, and always on the inside or house side of trap.

43. When traps are emptied of water to guard against freezing, in an unoccupied house or apartment, what precautions can be taken to shut out sewer-gas?—The traps can be filled with kerosene.

44. Is there any contrivance by which a soil-pipe can be regularly flushed?—Yes; by an automatic flush-tank.

Modern Æsthetic Houses.

"WE have from time to time called attention to the 'Crazy Style' of Architecture adopted by a few of our younger 'would be' architects. One of the principle '*ingredients*' of this style, is to cover the buildings, when finished, with a bountiful supply of paint, using more colors by far than the tailor who designed Joseph's coat, as described in the 'Good Book.' We quote the following remarks from that most excellent authority, *The Painter*, in regard to the style in question:"—

The existing craze for highly-colored houses, consisting almost entirely of chimneys and roof, will probably soon die out. There are symptoms that the public is becoming wearied of red tiling and dormers, and that inmates of "cottages," with every bedroom partly in the roof, and every sitting-room so low that a man standing on tip-toe can almost touch the ceiling, are sighing for lofty parlors and airy bedrooms. In those modern monstrosities which are considered old English because they do not fulfill the requirements of English speaking people of the present day, it is considered a beauty to be ugly. That bilateral symmetry, which is one of the greatest elements of beauty in art and nature, is sacrificed, not to necessity, nor yet to gain some grand effect, but in sheer wantonness. If a hall, by any accident, came in the center of a front, the entrance is placed to one side to produce an out-of-center effect. Mantels are thrown near the corner of a room, and the two sides made unlike, producing an effect like that of a motley clown.

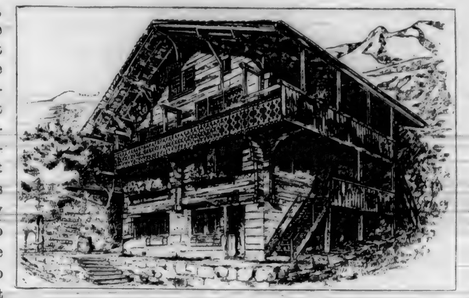
Not even the two halves of a door must be alike, a square panel on one half is balanced by an oblong one on the other. Strange little recesses, capital hiding places for vermin, abound. Glass is cheap, so the windows are cut up into paltry little panes, in base imitation of the times when woodwork was cheaper than glass. Walls are low and roofs are high, but there is no cheapness in the substitution of roofs for walls, for the bedrooms contained in the sloping surface have to be made square by furring, which reduces their size and renders it necessary, in order to reach the fantastic dormer window, to penetrate a deep recess like that which defended a woman's features in the days of the old poke bonnet. With all this there is a ridiculous tendency to divert materials to some purpose for which their fitness is not demonstrated. Shingles and roof tiles, used upon roofs from time immemorial, have crawled down upon the walls. The upper story and all the dormers are covered with them. Fond and foolish persons purchase houses so built. The perversion of shingles has gone further. The walls of rooms are not seldom lined with them, giving a sort of rustic summer-house effect. The straining after novelty or oddity, with total disregard of beauty, is evident in the color that is lavished upon the outside of houses. Red, yellow, chocolate, orange, everything that is loud is in fashion; and the entire exterior is so gay that a Virginia creeper or a Wisteria would be bold, indeed, if it dare set leaf or tendril there. If the upper stories are not of red or buff shingles or tiles, they are parted up into uncouth panels of yellow and brown, while cables and dormers are adorned, not with tasteful and picturesque designs, but with monotonous sunburs's and flaming fans done in loud tints.

It is easy to be odd, easy to be more odd than the oddest thing yet done. Why not at once reverse everything? As the shingles go inside, cover the outside with three-coat plaster, finished in colors; pave the parlors with North River flagstone, stretch the carpets on the porch floors, put the parlors in the roof, with an outside staircase to reach them; place the kitchen next to the front entrance, the bedrooms in the basement, and the furnace, servants' rooms, store-rooms, closets and bath-rooms on the first floor. All this is possible, and the oddity of the arrangement should recommend it to would-be æsthetes.

We find the following plain remarks in a new journal entitled the *Building Budget*, upon a subject that is of much interest to the architectural profession. We have noticed many items in our various exchanges in regard to the same matter, indicating that the custom in the Eastern cities has become a general one. Various remedies have been proposed, but it remains for our new Journal to propose a remedy somewhat bolder than those heretofore suggested.

COMMISSIONS TO ARCHITECTS.

"From time to time, through the columns of architectural journals, there have appeared indignant protests from architects against the dishonorable offers made to them by enterprising, but not over-conscientious, manufacturers and dealers of building material to accept commissions for the consideration of introducing and using their wares. It is but charitable to say that many firms are ignorant of anything dishonorable, since it is a common act of trade to pay commissions to the middle-man.



"But it is not infrequent, even in these days, after there has been so much said against the practice, to hear of some firm who will tender the architect a consideration, or at least suggest it, as an inducement to make use of his material. The honorable architect rejects it and treasures up in his heart a warm and healthy grudge against the man who has considered him vulnerable to a bribe. The dealer who offers it, not viewing the act upon the same moral level, imagines that the cold repulse given his offer betokens the fact that he did not bid high enough, and that some rival firm had raised him out of the sale.

"So long as there is trade and commerce there will be discounts and a sliding scale of prices gauged to the amount of the demand and the source the demand proceeds from. That architects should be able to control discounts is but just and right, but only to the benefit of their clients. If these firms, who are so ready to induce sales by the offers of questionable commissions, would change their tactics so far as to publicly state that sales made through an architect would receive a discount of a certain percentage, a client would understand that his architect's influence extended to that point that he, individually, was not able to reach in the items of cost; and, the quality and finish of goods being equal, the architect could congratulate himself that he was instrumental in producing work for an amount that none but those of his profession could control, while the material man, who has discounts to make could do so through the *proper* channel and to the legitimate party to receive it.

"In one of George Eliot's letters, as recently published, we find the following: 'When one sees a house stuck on the side of a great hill, and, still more, a number of houses, looking like a few barnacles, clustered on the side of a great rock, we begin to think of the strong family likeness between ourselves and all other building, burrowing, house-appropriating, and shell-secreting animals. The difference between a man with his house and a mollusk with its shell, lies in the number of steps or phenomena interposed between the fact of individual existence and the completion of the building.'

"Had George Eliot looked over the more aristocratic portion of our city she might have found another very marked difference, and that is in the veracity of the two. Whatever the mollusk's house pretends to be, it is; whatever our houses pretend to be, they are not. Too many of our most imposing edifices are conceived and brought forth in a mingled sentiment of affectation and pride. Marble fronts of pasteboard thickness, granite stoops and wooden columns, the massive stones, but mineral veneer, and the ornamentation, zinc-moulded shams, roughened with glue and sand, outward and visible signs of an inward and spiritual desire to seem, not to be. You see before you a palatial residence, its front an artistically-conceived design of a modern treatment of architecture, but unfortunately it stands by an alley, and exposes its side, brick, brick—good enough in its place, but as much in keeping as would be repairing a seal-skin sacque with coffee-bagging; while worse to come, penurious pride does not even stop here, but makes the back of the mansion of the severest plainness, of the poorest materials, and an utter shame to the ambitious display of the front."

Sub-contracts.

WE are now, and always have been, opposed to the system by which the several portions of a building are let by the original contractor to a person denominated a sub-contractor. Of course, the only object is, that the former, by this means, is enabled, perhaps, to make a little more money than if he did the work under his personal supervision. But while we are thus opposed to the system referred to, we are in favor of having a law passed by which a sub-contractor can get his money for the work done. We know of no better way by which owners can be protected than by the passage of a bill requiring sub-contractors and others, to notify owners of terms of contract under which they are working, and to report any delinquency on part of contractor to pay for work. Failure to so report should be made a misdemeanor, with certain prescribed penalties. If this course is pursued, the worry and annoyance caused by sub-contractors failing to receive their just dues, would become a thing of the past.

Question—"EDITORS CALIFORNIA ARCHITECT: Which do you consider the best works for an apprentice to obtain the greatest amount of information from in regard to the Science of Carpentry?"

Answer—There are several "*best*" works: "Science of Carpentry Made Easy;" "Tredgold's Carpentry;" "American House Carpenter," by Hatfield; "Practical Carpentry," by Hodgson; "Gould's Carpentry;" and the Bound Volumes of this Journal. In any of the above a student will find fully explained the principles of the Science of Carpentry.

The White Incrustation on Brick Walls.

It has been the source of much comment among those who watch the progress of our building interests, that more care is not exercised in the selection of clay with which pressed bricks are made. It is supposed by many that the fault is in the bricks. The following item from the *Manufacturer and Builder*, will be of interest to all concerned in the erection of brick buildings:—

"The disfigurement of brick walls in many Eastern cities with a white incrustation is most pronounced in the spring months, when the bricks become thoroughly saturated with moisture from continued rains. Two causes have been assigned to account for this circumstance:—

"(1) The existence of silicate, or other salt of magnesia, in the brick clay, and which is converted into sulphate of magnesia in the process of burning in the kilns by the sulphurous vapors from the coal; and, (2) the employment of lime containing magnesia for the mortar used in the walls, which, by the absorption of the sulphurous vapors derived from the burning of coal, becomes converted into sulphate of magnesia, and, being dissolved by the rain, penetrates the substance of the more or less porous bricks, efflorescing ultimately upon the surface.

The second of these causes is, undoubtedly, the principal one involved in the appearance of this unsightly incrustation. Brick-clay contains, as a rule, so trifling a percentage of magnesia that the supply of sulphate that it would form would soon be exhausted, and if it were not supplied from some other source, the incrustation would soon disappear. This other source, unfortunately, is present, and is found in the magnesian lime used in the mortar.

"Mr. Henry Pemberton, who was the first, we believe, to clearly point out the true cause of this phenomenon, at the same time called attention to the fact that the authorities generally are greatly in error in their statements respecting the quality of magnesian limes for mortar. Nearly all the text-books affirm that the presence of magnesia is injurious; that even 10 per cent. of it in the lime causes it to become lean (slow and difficult to slack); and that 25 or 30 per cent. makes it quite useless. These statements he shows conclusively to be misleading, and that such lime will slack readily. The behavior of the mortar made from such lime is very different from that made from pure lime.

"The lime used in and about Philadelphia, where the disfigurement of the walls is more pronounced, probably, than in any other city, contains, on an average, 57 per cent. of lime and 37 per cent. of magnesia, or nearly the relative amounts required for equal equivalents (or to form dolomite).

"This cement, Mr. Pemberton notes, contains 37 per cent., or nearly half of its weight, of a substance which is readily attacked, dissolved and formed into a soluble salt. In other words, every 100 pounds of such lime contains enough magnesia to form 230 pounds of Epsom salts—a crystallized sulphate of magnesia. It is not surprising, therefore, that such a cement, when brought into contact with the necessary quantity of sulphuric acid, should be disintegrated, washed out, and destroyed.

"That the universal use of coal in our large cities and towns for domestic and manufacturing purposes will, and does, furnish sulphuric acid in enormously greater quantity than is required to effect this destruction of the mortar, is well known to chemists. Mr. Pemberton gives a striking illustration of this fact. In the manufacture of carbonic acid on the large scale for the chemical industries, it is usually obtained by the combustion of coal, and purification by washings. To wash the gases resulting in twenty-four hours from the combustion in said time of 6,000 pounds of coal, 40 gallons of water per minute are sprayed into a tower through which the hot gases are passed. This water escapes from the tower at a temperature of 110° F., and consequently contains but little carbonic acid, yet it permanently and powerfully reddens litmus paper, and is perceptibly acid to the taste. As this process goes on continually, day and night, it appears that the sulphurous gases produced from the combustion of 3 tons of coal are sufficient in quantity to render distinctly acid 480,000 pounds of water. When it is considered, now, that the coal consumption of a great city will figure up to several thousand tons daily, it is not hard to understand that the quantity of sulphurous gases evolved therefrom will be vastly greater than is necessary to account for the phenomenon here under consideration.

"Mr. Pemberton sums up the evils resulting from the use of magnesian lime for mortar very concisely in the following terms, which are not in the least exaggerated: 'Unsightly and disfiguring as this white efflorescence may be, it is, to the owner of the building, the index to a more serious evil, namely, the disintegration of the mortar uniting the bricks, causing the destruction or fall of the chimneys and the washing out of the joints, particularly in the back walls or gable ends of houses, where the bricks are irregular in size and the said joints are consequently thicker. The cavities and open joints thus produced facilitate the destruction, until the retained moisture penetrates the wall and compels the owner to refill or repoint the joints at a heavy cost—the whole proceeding probably to be repeated after a few years.'

"These evils may be entirely obviated by the use of a lime free from magnesia. There is no dearth of such lime, but in many cases the prejudices of the workmen prevent its use; and in bringing this curious fact to light, Mr. Pemberton has, undoubtedly, placed his finger on the real difficulty, which will have to be overcome before the evils he so clearly elucidates can be done away with. This prejudice of the workmen he finds to be easily accounted for by the great difference in the behavior of mortars made from magnesian lime and from pure lime. Magnesian lime, he points out, in contradiction to most European authorities, forms, when slacked, a gelatinous, fatty mass, absorbing much water, and permitting a large amount of sand to be mixed with it. The bricklayer, when using it, spreads out the mortar on the surface of the brickwork already laid, as far as he can reach without removing his feet from their position. He then places the bricks in line upon this bed of mortar, placing, as he does so, a little mortar on the end of each brick as laid, until, perhaps seven or eight or more, are in place, then points up the brick with the trowel on the face of the work. With *pure lime* mortar this plan will not do. The mortar, when laid on the brickwork, becomes soon so firm—being less gelatinous, or *pasty*, than the magnesian—that two or three bricks only can be laid before it *sets*, or becomes so dry as not to make a proper bond with the new brick and those already laid. Consequently the bricklayer, accustomed to the magnesian lime, promptly and persistently rejects the pure lime as worthless, since he cannot execute the work expected of him in a given time, nor, probably, if used by him, would the bricks be securely and properly bedded.

"Mr. Pemberton proved, by personal experience, that this was so strong a local habit with the Philadelphia bricklayers that they rejected as unfit for use a mortar made of pure lime which he had brought to Philadelphia from the interior of the State of Pennsylvania especially with the view of doing away with the incrustation nuisance and its attendant evils. On the other hand, in other localities, as in Pittsburgh, the only lime available for building purposes is a nearly pure lime (containing at most from 5 to 6 per cent. of magnesia); and the bricklayers throughout all that section of the State, being accustomed to it, and knowing no other, use it with entire satisfaction. No incrustation on the walls occurs there, notwithstanding the enormous consumption of coal in the city and its vicinity.

"In view of the serious evils growing out of the use of magnesian limes—which have been very clearly pointed out in this article—and which are now well known and admitted, the abandonment of the use of this material would seem to be very desirable. How to overcome the prejudice of the workmen in its favor is the only difficulty in the way, but this appears to be a very serious one."

Furniture Polish.

The subjoined simple preparation is said to be desirable for cleaning and polishing old furniture. Over a moderate fire put a perfectly clean vessel. Into this drop two ounces of white or yellow wax. When melted, add four ounces of pure turpentine, then stir until cool, when it is ready for use. The mixture brings out the original color of the wood, adding a luster equal to that of varnish.

BOUND VOLUME OF THIS JOURNAL, $2.50.

The Chapter Should Have a Home of Its Own.

In a report received at the last meeting of the San Francisco Chapter, A. I. A., it was intimated that the best way to advance and cause an interest to be felt in the Chapter, particularly so by apprentices and draughtsmen in the various offices, was by the furnishing of a suitable room which would be recognized by parties interested, as a home.

This idea is a worthy one, and should be immediately carried out by the Chapter. A room should at once be secured and properly furnished. All the different journals and periodicals referring to architecture, carpentry, modeling, decorating, etc., should be kept on file. A room should be conveniently near in which a work bench could be placed, in order that *practical* lessons may be demonstrated in the various callings.

We understand that a prominent capitalist of this city, has offered to give a room free of charge for the purposes indicated. If so, the Chapter should at once take measures to secure the same and have it properly fitted up, so that all connected with the profession, and visiting brethren from the East, while in the city, can feel that there is one place where they will be at home, and find all those little comforts so necessary to the welfare of all true lovers of the architectural profession.

Building Contracts.

When a building must be speedily completed, it is generally easier to attain that object by putting the whole contract into the hands of one man. Two contractors, responsible only to the owner, and jealous or indifferent in regard to each other's interests, always charge each other with the responsibility for the delays which usually occur under such circumstances, and the owner finds it difficult, if not impossible, either to enforce his contract as to time of completion, or to collect indemnity for the delay without doing injustice. Where, however, the time is not restricted to the shortest possible space, most Architects will agree that the best results are obtained by making at least four separate agreements, the cellar-work and grading forming the subject of one; the carpenter-work, including painting and glazing, of a second; the brickwork and plastering, of a third; and the plumbing, of the fourth. It is often desirable to make a fifth agreement for the painting and glazing, but if the carpenter is trustworthy, there is generally some advantage in allowing these to be included in his contract.

By the system of separate contracts better work is usually to be obtained in each branch, and, considering its quality, at a cheaper rate; although speculative builders have ways of making sub-contracts at prices that seem incredibly low to those who are not familiar with the difference between the good and the "jerry" style of work. The best mechanics always prefer to treat directly with the owner; they are, in this way, sure of their pay, and can, therefore, afford to work at a lower rate, while the owner saves the percentage of profits which the principal contractor feels himself entitled to charge upon the tenders made to him by his sub-contractors. Whatever mode is adopted, too much care cannot be taken to have the plans and specifications as full and explicit as possible. If these are what they should be, a building so simple as a dwelling-house can be, and generally is, when the owner knows his own mind in regard to the kind of house he wishes, and takes the trouble to see that the plans express it, carried out to completion without any "extras" whatever, generally, to the great surprise of the proprietor, who is sure to be informed by volunteer counselors, before he begins operation, that his extra bill will inevitably be "at least as large as the contract price;" that he "ought to restrict the Architect to half the sum he intends to spend," and so on.

We make separate contracts for the cellar-work, the carpentry, the brickwork and plastering, and the plumbing, and have also selected a good furnace, and arranged with the makers to put in the requisite pipes and registers in the best manner, when the proper time comes, under a guaranty that the apparatus shall heat a given number of rooms to a temperature of 70° when the thermometer stands at 0°, without taking air from the cellar or any other part of the house, and without regard to the direction of the wind.

Occasionally, the heating apparatus is included in the principal contract, but this is most unwise. As with plumbing, the work to be done is so difficult for any one but an expert to understand or criticise; and the difference between good and inferior work is so great in value, even more than it cos s, that it should never be made the intention of any man to get it done as cheaply as possible.—*From Clark's Building Correspondence.*

Thousand of Building Lots Sold and Purchased.

During the preceding year, 1884, and thus far in '85 the number of building lots offered for sale in San Francisco, and the number purchased by parties for immediate or near future improvement purposes, has been very large. In every part of the City, "*This Lot for Sale*" meets the eye, and those desiring to buy, are afforded splendid opportunities to make satisfactory selections as to sites and localities, and to purchase privately from owners or agents. But in addition to this, since January of present year, hundred of building lots have been offered and sold (or are advertised to be sold) at public auction, and such public sales have been well attended by purchasers "meaning business;" and the prices obtained under the influence of the seductive statements of the artful man of the hammer, have in many cases been excessively high. The prices at which "*sold*" has sometimes been cried, has either been "dunning" fictions, or extravagant exaggeration of values on the part of purchasers, in either case, however, serving to inflate and influence to some exent, at least, the minds of succeeding buyers. So that the result of the sales in several instances has been a great surprise to cooler-headed people, who, being willing to buy at fair and reasonable, are not willing to pay fancy prices on already "high market" rates.

The fact that so much property is offered for sale—that a large number of outside blocks have been subdivded into 40 to 50 building lots, and sold at auction—very clearly establishes the fact that the prices now being obtained are entirely satisfactory to owners, who prefer to sell "on the top of the market" rather than risk the chances of a "further rise," which should not be possible, as real estate generally has already reached too high a figure. Even the outlying blocks, miles away from the center of business, which have been cut up into building lots and sold at auction, have brought unreasonably high prices, which assertion is sustained as a fact, by the other fact that the titles to forty or fifty lots sold in one block are scarcely perfected, before one or more other blocks are fixed up for sale, with all the cheap preliminaries of white-washed fences and trees, a flag pole floating a big flag, and such other devices as will add superficial attractions, and tune purchaser's minds up to the highest pitch of appreciation. All of which is well enough on the part of those selling, as there is no rule of law or moral ethics which forbids the practice of any legitimate means on the part of those offering to sell, to "show their goods to best advantage."

But it is a matter of surprise that so many buyers are so easily influenced, and are so anxious to "grab up" lots and pieces offered at auction, at the excessive prices which have been obtained in many cases,—prices from 25 to 200 per cent. greater than the same properties would have sold for two years ago. Advances in the values of realties are all right and proper, as showing growth and prosperity to the city, but there is a limit even in this, going beyond which reaches into the instabilities of inflation, and which, when pricked by reactions, renders the fall of him who climbs the highest, and strikes the most, the more severe.

A Badly-Used Owner.

COMMENTS UPON OUR MARCH ARTICLE.

Our article entitled "A Badly-Used Owner," in the March issue of this Journal, caused considerable comment among our Eastern brethren. The absurdity of the quantity of brick saved was so apparent, that wonder was expressed how any paper that claims to be reliable, could have published such statements. The *Building Trade Journal* has the following sensible remarks on the subject:—

"A correspondent of a San Francisco paper complains that he has been swindled grievously in the erection of a row of buildings. By his contract with his builder, a brick foundation was to be laid containing 8,000 brick, but by a liberal use of sand filling, so cheap in San Francisco, 5,000 brick were saved to the contractor. It was found that the other work was all done on the same dishonest principle. Now what is the reason? The very clear one is, the owner wanted a good house built for too

little money, and accepted the services of the lowest bidder, without any regard to his reputation or responsibility. The margin of profit for the builder was represented by the amount of sand filling and skin work, and he probably took care that he was well paid for his work. The trouble in such cases is that the quality of the work is not discovered until too late for a demand for restriction. The only remedy, as we have before argued, is to pay a reasonable price for reasonably good work, and take into consideration the previous record of the builder. The reputation of the whole building trade is greatly injured by cases such as this that occasionally come to light, and builders who will stoop to such work for the sake of a small profit should be black-listed for the public benefit and the good of worthy contractors. Beware of bids that have stamped on their face the seal of dishonesty, hidden under a cheap estimate that necessitates a quality of work not honestly in accord with specifications.

Darkening Oak.

TO RENDER new oak wainscoating and oak furniture dark, and give it an antique appearance, we have it from good authority that ammonia is the cleanest, best and cheapest material that can be used. The liquid stains commonly used are apt to raise the grain of the wood, make it rough, and it is with difficulty evenly applied, whereas in the use of ammonia it is simply the fumes that color the wood, and do it so completely that it is difficult to tell whether the wood is really new or old.

A correspondent in the *English Mechanic*, gives the following process of treatment, which he considers the best, after trying the various other processes used by builders and cabinetmakers to darken woods: "Oak is fumigated by liquid ammonia, strength 880°, which may be bought at any wholesale chemist's at 5s. a gallon. The wood should be placed in a *dark* and *air-tight* room (in a big packing case, if you like!), and half a pint or so of ammonia poured into a soup plate, and placed upon the *ground* in the center of the compartment. This done, shut the entrance, and secure any cracks, if any, by pasted slips of paper. Remember that the ammonia does not touch the oak, but the gas that comes from it acts in a wondrous manner upon the tannic acid in that wood, and browns it so deeply that a shaving or two may actually be taken off without removing the color. The depth of shade will entirely depend upon the quantity of ammonia used and the time the wood is exposed. Try an odd bit first experimentally, and then use your own judgment."
—*Scientific American.*

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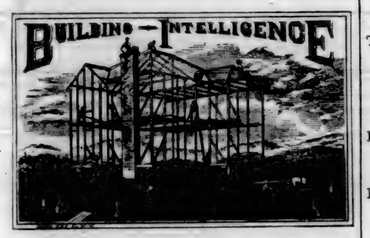

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C.— — Hussey.
$2,475.

Bush, cor. Fillmore. Two-story frame.
O.—H. Diederich.
A.—G. H. Miller.
C.—J. Rebman.
$8,000.

Mission, nr. Twenty-sixth. Two-story frame.
O.—F. Feustel.
A.—G. H. Miller.
C.—L. Frichette.
$4,000.

Broadway, nr. Mason. Alterations.
O.— — Sweeney.
A.—T. J. Welsh.
C.—J. L. Binet.
$3,600.

Pacific, cor. Polk and Van Ness. Two-story stable.
O.—Porter Ashe.
A.—Curlett & Cuthbertson.
C.—D. Perry.
$3,000.

Tyler, corner Webster and Fillmore. Two two-story frames.
O.—L. C. Coleman.
A.—Curlett & Cuthbertson.
C.—I. P. Kincaid.
$7,000.

Laguna, corner Filbert. Two-story frame.
O.—Mr. Bateman.
C.— — Brotherton.
$1,800.

Laguna, cor. Green. Two-story frame.
O.—Wm. Lenfester.
A.—Kenitzer & Raun.
C.—E. Farrell.
$6,000.

Scott, near Washington. Two-story frame.
O.—C. Ewing.
A.—Curlett & Cuthbertson.
C.—I. N. Day & Co.
$8,000.

Union, near Jones. Two-story frame.
O.—F. Katz.
A.— — Henricksen.
C.—W. Sinon.
$4,000.

Fourteenth Ave., cor. N. One-story frame.
O.—James O'Din.
C.—Patrick Bardin.
$425.

Railroad Ave., nr. Sixteenth Ave. Improvements.
O.—J. Hauser.
Day's work.
$300.

Scott, nr. Geary. Two-story frame.
O.—F. Bruns.
A.—J. M. Curtis.
Day's work.
$15,000.

Valencia, near Eighteenth. Two-story frame.
O.—M. Fitzgibbons.
A.— — Hoagland.
C.—S. G. Worden.
$4,500.

Lombard, near Buchanan. Two-story frame.
O. and B.—Henry Wegener.
$1,500.

Jackson, nr. Steiner. Two-story frame.
O.—Mrs. J. Newgass.
A.—S. & J. C. Newsom.
C.— — McKay.
$5,000.

Mason, nr. Chestnut. Additions.
O.—J. Burke.
$1,000.

Jackson, bet. Fillmore and Steiner. Two-story frame.
O.—J. J. Valentine.
A.—S. & J. C. Newsom.
C.—Knight & Littlefield.
$20,000.

Fillmore, nr. Pacific. Two-story frame.
O.—P. H Felsenthal.
A.—W. F. Smith.
C.—F. W. Kern.
$8,000.

O'Farrell, nr. Fillmore. Seven two-story frames.
O.—Main & Winchester
A.—Chas Geddes.
C.—J. T. Grant.
$16,000.

California, near Steiner. Two-story frame.
O.—W J. Gray.
A.—Schmidt & Havens.
C.—J. D. McMurray.
$4,000

Union, nr. Steiner. Two two-story frame.
O. and B.— — Ardarme.
$3,000.

Pierce, nr. California. Two-story frame.
O. and B.—Thos. Randall.
$5,000.

Union, cor. Leavenworth. Alterations.
O.— — Medan.
A.—Chas. Mann.
C.—J. P. Hanson.
$2,000.

Filbert, nr. Taylor. Three story frame.
O.—H. Haltmier.
C.—A. H. Taylor.
$7,500.

Filbert, cor. Gough. One one-story frame; one two story frame.
O.— — Krince.
C.—J. Esse.
$10,000.

Green, bet. Leavenworth and Jones. Two-story frame.
O.—G. D Phillips.
A.—S. & J. C. Newsom.
$3,500.

Clay, bet. Polk and Van Ness. Three-story frame.
O.—J. Gobleigh.
A.—S. & J. C. Newsom.
C.—J. McKee.
$6,000.

Golden Gate Ave., bet. Polk and Van Ness. Two two-story.
O.—N. M. Robinson.
A.—J. J. and T. D. Newsom.
C.—John McCann.
$13,000.

Eddy, cor. Broderick. Two-story frame.
O.—Albert Myer.
C.—F. Roettger.
$4,000.

Seventeenth, cor. Eureka. Three two-story frames.
O.—Chas. Solari.
A.—Elsen and Pierce.
C.—D. Perry.
$6,500.

Ninth, nr. Market. Two-story frame.
O.—Geo. A. Ware.
A.—J. J. Clark.
C.—C. Chisholm
$2,500.

Twenty-first, cor. Treat ave. Two-story frame.
O.—Pat. Bannan.
A.—J. J. Clark.
$4,500.

Seventeenth. Frame dwelling.
O.—Thos. Manger.
A.—J. J. Clark.
$2,000.

Octavia, bet. Geary and Post. Two-story frame.
O.—Dr. J. B. McLennen.
A.—J. J. Clark.
C.—J. B. Gonyean.
$4,000.

Twenty-Second, corner Mission. Additions.
O.—P. G. Somp.
A.—J. & T. D. Newsom.
C.— — Plummer.
$2,300.

Union, cor. Octavia. Two-story frame.
O.—Capt. W. N. Shelley.
A.—and B.—W. H. Wharff.
$4,500.

Verona, nr. Third. Two-story frame.
O. and B.—J. Flood.
$2,000.

Oak, nr. Franklin. Two-story frame.
O. and B.—J. F. Gomez.
$3,000.

Haight, nr. Scott. Additions.
O.— — Brown.
C.— — Spangler.
$800.

Pierce, cor. Page. One one-story; one two-story frame.
O.— — Glien.
A— Geilfuss.
C.—Wm. Pluns.
$8,500.

Haight, nr. Scott. Two story frame.
O.—D. Hochstein.
A.—Keinitzer & Raun.
C.—Wm. Pluns.
$8,000.

Haight, nr. Scott. Four two-story frames.
O.—T. Dolan.
A.—F. Shay.
Day's work.
$11,500.

Devisadero, nr. Haight. Two-story frame.
O.—Mrs. Green.
A.— — Gash.
C.—O. Cummings.
$6,000.

Haight, near Devisadero. One-story frame.
O.—J. Greenlep.
$1,000.

Devisadero, near Turk. Three-story frame.
O.—J. Donovan.
A.—Schmidt & Havens.
C.—Studley & Co.
$2,600.

Mission, cor. First. Four-story and basement brick.
O.—P. Donahue.
A.—Wm. Patton.
C.—J. Hughes.
$360,000.

McAllister, near Jones. Six two-story frames.
O.— — Harris.
A.—S. Babson.
C.—Treadwell & Thompson.
$35,000.

California, near Laguna. Two-story frame.
O.—J. B. Crockett.
A.—Clinton Day.
C.— — Chisholm.
$11,000.

Willow Ave., cor. Laguna. Four two-story frames.
O.—I. Townsend.
A.—W. Schrof.
Day's work.
$12,000.

Market, nr. Fell. Five two-story frames.
O.—J. M. Driscoll.
A.—H. D. Mitchell.
C.—J. Geary.
$20,000.

Laurel Ave., bet. Buchanan and Webster. Two-story frame.
A.— — Bestor.
C.—Wilson & Batcheldor.
$2,500.

Broadway, near Pierce. Two-story frame.
O.— — Cunningham.
A.—Clinton Day.
C.— — Flood.
$12,000.

Twenty-first, nr. Church. Two-story frame.
O.—Mrs. S. P. Gunnison.
A.—G. A. Bordwell.
C.— —Gray & Stover.
$5,000.

Haight, bet. Pierce and Steiner. Two-story frame.
O.—Miss Nicoll.
A.—J. Marquis.
C.—J. M. Owens.
$5,500.

Fifth, bet. Folsom and Harrison. Three-story frame.
A.— — Bestor.
C.— — Hanson.
$12,000.

McLea Court, off Ninth. One-story frame.
O.—Dr. McLea.
A.— — Bestor.
C.— — Chisholm.
$2,000.

Second Ave, nr. Sixteenth. Improvements.
O.— — Hall.
Day's work.
$900.

Guerrero, nr. Nineteenth. Two two-story.
O.—F. Crowley.
A.—G. H. Miller.
C.—W. Foote.
$6,000.

Guerrero, nr. Eighteenth. Two-story.
O.—D. Doward.
A.—J. Clark.
C.—J. Adams.
$2,700.

Ford, bet. Sanchez and Noe. One-story and basement.
O.— — Mangel.
A.—J. Clark.
Day's work.

Hancock, bet. Sanchez and Noe. Two-story.
O. and B.—R. Ferry.
$1,000.

Sanchez, nr. Nineteenth. Two-story.
O.—G. W. Chipping.
C.— — Duffey.
$3,000.

Fifteenth, nr. Noe. One-story frame.
O. and B.—J. Nelson.
$800.

Haight, nr. Laguna. Two-story frame.
O.—W. A. Renwick.
A.—J. Gash.
C.— — Cummings.
$7,000.

Lyon, bet. Turk and Tyler. Two one-story frames.
O. and B.—R. Bergfeld.
$4,000.

Stevenson, bet. Twentieth and Twenty-first. Two-story.
O.—C. Schwart.
C.—Day's work.
$2,500.

San Jose Ave, nr. Twenty-fifth. Two-story.
O.—J. M Comerford.
A.— — Kidd.
$3,000.

Cheanry, cor. Thirtieth. One and one-half story frame.
O. and B.—H. Schrader.
$1,000.

Mission, cor. Army Ave. One-story.
O.—C. S. Healey.
Day's work.
$2,500.

Twenty-third, cor. Alabama. Two-story frame.
O.—J. Ribbey.
A.—T. Mitchell.
C.—Sandy & McKenny.
$3,000.

Mission, bet. Eighteenth and Nineteenth. Improvements.
O.—C. Geddes.
Day's work.
$1,500.

Shotwell, nr. Eighteenth. Two-story.
O.—H. Bammann.
A.—Wm. Schrof.
C.—Cormach & Evans.
$3,000.

Haight, nr. Baker. One-story frame.
O. and B.—J. Greely.
$1,500.

Oak, near Laguna. Two-story.
O.—Mrs. Powley.
C.— — Dutton.
$4,000.

Oak, nr. Octavia. Two-story frame.
O.—Mrs. Shram.
A.— — Townsend.
C.—P. F. Lynch.
$3,600.

Devisadero, bet. Tyler and Turk. One-story and basement.
O.—J. J. Dunivan.
A.—Schmidt & Havens.
C.— — Studley.
$3,000.

Hayes, nr. Franklin. Two-story.
O. and B.—Wm. Robinson.
$5,500.

Third, nr. Bryant. Three-story frame.
O.—J. Moran.
A.—T. J. Welsh.
C.—P. Laherty.
$6,500.

Jackson, bet. Hyde and Larkin. Two-story frame.
O.—J. J. Wall
A.—T. J. Welsh.
C.—J. Doherty.
$5,500.

Natoma, bet. Fourteenth and Fifteenth. Two-story frame.
O.—O'Brien.
A.—T. J. Welsh.
C.—Haskell & Webb.
$2,250.

Battery. Two-story frame.
O.—B. Witt.
A.—T. J. Welsh.
C.—J. Rebman.
$2,600.

Shotwell, bet. Fourteenth and Fifteenth. Two-story frame.
O.—T. A. Brown.
A.—T. J. Welsh.
C.—Haskell & Webb.
$3,000.

Polk, bet. O'Farrell and Ellis. Two-story frame.
O.—A. Schlessinger.
A.—Schmidt & Havens.
C.— — Wagner.
$6,500.

Treat Ave., bet. Twenty-fourth and Twenty-fifth. One-story frame.
O. Wm. Klein.
A.—Schmidt & Havens.
C.—R. P. Traxler.
$2,100.

Harrison, bet. Tenth and Eleventh. Two-story frame.
O.—Mrs. Margaret Foley.
A.—Schmidt & Havens.
C.—E. Dunshee.
$4,500.

Leavenworth, bet. Pine and California. Two three-story frame.
O.—L. Hentrich.
A.—Schmidt & Havens.
C.—R. P. Traxler.
$6,500.

Golden Gate Ave., nr. Fillmore. Two-story frame.
O.—L. C. Coleman.
A.—Curlett & Cuthbertson.
C.— — Kincaid.
$7,000.

Third Ave., near Point Lobos Avenue. One-story frame.
O. and B.—Edward Lenard.
$700.

Fifth Ave., nr. Point Lobos Ave. One-story frame.
O.—P. Ward.
C.—J. Bamber.
$1,000.

Fifth Ave., nr. Point Lobos Ave. One-story frame.
O.—J. Jennings.
C.—J. Bamber.
$1,000.

Point Lobos, nr. Fourth Ave. Two-story frame.
O.—J. H. Richards.
C.—J. Bamber.
$2,500.

Eleventh Ave., nr. Point Lobos Avenue. One-story frame.
O.—Mr. Turner.
C.—S. M. Hill.
$1,500.

Twenty-sixth, nr. Capp. One-story frame.
O.—J. B. Griffith.
C.—S. M. Hill.
$1,750.

Devisadero, nr. Geary. One-story frame.
O.—Mr. Foley.
C.—Peterson & Smith.
$1,800.

Post, near Octavia. Additions.
O.—K. Moffat.
C.—S. M. Hill.
$1,500.

Ellis, bet. Hyde and Larkin. One-story frame.
O.—Wm. Hess.
A.— — Littlefield.
C.— — Kincaid.
$—.

Valencia, nr. Eighteenth. Additions.
O.—H. Kuhn.
A.— — Henriksen.
C.—Wm. Pluns.
$2,400.

Eleventh Ave., nr. Point Lobos Avenue. One-story frame.
O. and B.—Henery Eade.
$1,500.

Post, nr. Devisadero. Two-story frame.
O. and B.—S. J. Taylor.
$3,200.

McAllister, cor. Pierce. Three-story frame.
O.—Mrs. Levy.
A.—Schmidt & Havens.
C.—Commary & Beardslee.
$14,000.

Devisadero, near Sutter. One-story frame.
O.—C. H. Dobson.
C.—A Jackson.
$2,000.

Devisadero, near Sutter. One-story frame
O.—A. Kopankiewlec.
A.—H. Geiltuss.
C.—Owen Bros.
$3,500.

Sutter, cor. Scott. Two-story frame.
O.—Wm. Fromheim.
A.—J. C. Felton.
C.— — Wickersham.
$5,000.

Post, between Pierce and Scott. Two-story frame.
O. and B.—J. C. Weir.
$4,000.

Scott, nr. Post. One-story frame.
O.—C. Watts.
C.— — Gibson.
$2,800.

Sutter, nr. Webster. Two-story frame.
O. Thos. Brown.
A.—Townsend & Wyneken.
C.—A. H. Plummer.
$4,000.

Bush, cor. Gough. Additions.
O.—E. J. Ruggles.
A.—W. F. Smith.
C.—R. P. Sanches.
$3,500.

Treat Ave., bet. Twenty-first and Twenty-second. One-story frame.
O.—T. C. Butterworth.
A.—W. F. Smith.
C.—R. P. Sanches.
$2,000.

Octavia, nr. Geary. Additions.
O.—Dr. McClennon.
A.—J. J. Clark.
C.—J. Gourjeau.
$4,000.

Ellis, bet. Leavenworth and Hyde. Two-story frame.
O.—R. H. Lloyd.
A.—Kreitzer & Raun.
C.—Conrad & Miller.
$16,000.

Geary, bet. Hyde and Leavenworth. Two-story frame.
O. and B.—John Hammond.
$3,000.

Fifth Ave., nr. Point Lobos Ave. One-story frame.
O.—Jas. Casey.
C.—J. Bamber.
$1,000.

Fifth Ave., nr. Point Lobos Ave. Two-story frame.
O.—J. Norgrove.
C.—J. Bamber.
$2,550.

MISCELLANEOUS.

Fresno—Baptist Church. C., A. Jackson & J. W. Smith; $6,000.

Petaluma—One-story frame. O., J. F. Fairbanks; A.; Curlett & Cuthbertson; $3,000.

Sonoma—Additions to Union Hotel. O., A. Wissel; A., A. C. Lutgens; C., J. B. Small; $4,700.

Calistoga—Two-story frame. O., H. S. Dexter; A., Clinton Day; C., — Flood; $6,000. Two-story frame stable. O., Mrs. A. Furness; A., Schmidt & Havens; C., Commary & Beardslee; $2,500.

Oakland—Filbert, bet. Sixth and Seventh. One-story frame. O., W. F. Rouse; A., J. J. and T. D. Newsom; C., — Wyne; $3,000. Two-story house with stable. A., Clinton Day; C., Burpbee & Judson; $16,000. Peralta Heights. One-story frame. O., Norma Kelsey; A., S. & J. C. Newsom; C., — Merrill; $4,000. Two-story frame. O., J. H. W. Riley; A., S. and J. C. Newsom; C., Wasson & Pattianni; $7,000.

Daggett Siskiyou County—Frame dwelling. O., Dr. Jul. Koebig; A., G. E. Voelkel, day's work; $8,000.

Alameda—One-story frame. O., J. H. Miller; C., S. M. Hill; $1,750.

Saucelito—One-story frame. O., J. M. Crowley; C., S. M. Hill; $1,750. Two-story frame. O., J. Thomas; C., S. M. Hill; $1,250. Two-story frame. O., N. Sease; C., S. M. Hill; $1,250.

Fair Oaks—Frame house with stable. O., I. D. Atherton; A., Clinton Day; C., Ingerson & Gore; $3,500. Alterations. O., A. Hecht; A., H. C. Macy; C., S. M. Hill; $850.

Woodland—First, cor. Cross ave. Three-story frame Villa. O., A. W. and H. C. Gable; A. and C., Gilbert & Son; $16,500. Second. One-story frame. O., Frank Turner; C., J. Caldwell; $1,500. Fourth. One-story frame. O. and C., Sidney Steinburg; $2,000. Fourth. One-story frame. O., Mrs. Winchel; C., Glenn & White; $1,800. Two-story frame. O., Hugh Cave; C., G. W. Henderson; $2,100. Two-story frame. O., H. P. Merrit; C., G. W. Billings; $1,200. Pendegast Avenue. One story frame. O., Samuel Haines; C., D. F. Myers; $1,600. Elm. One-story frame. O., Thomas McMurry; C., Pool & Sears; $1,200. College ave. Foundry and machine shop. O., Marshale Diggs, building and machinery; $4,500.

Winters—Railroad, cor. Grant ave. O., M. Harriman; Day's work; $2,000. Two-story frame. O., G. N. Seaman; C., Richey & Ward; $1,200.

Knight's Landing—Two-story frame. O., Barney Roseberry; day's work; $4,500.

Martinez—Knights of Pythias Hall. A., Byron Brown; C., Ludden & Marsh; $2,500. Two-story frame. O., — Perry; C., T. Carter; $2,000. Two-story frame. O., — Lazzell; $8,000.

San Jose—Additions. O., — Crites; C., Moore Bros.; $1,500 Alameda Road, cor. Cinnabar. Brick building. O., Fredericksburg Brewing Co.; A., Theo Lenzen; C., Kenny & Leddy; $7,500. Lenzen ave. Additions. O., W. P. Hennessy; A., Theo. Lenzen; C., R. Sunimers; $1,5 0. Third. Additions to San Jose Turn Verein Building; A., Theo. Lenzen; C., G. E. McDougall; $1,800. Second. Barn. O., W. A. Parkhurst; A., Theo. Lenzen; $1,900. Near town. Two-story frame. O., A. Malores; A., Theo. Lenzen; $9,000.

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

Summer Building Operations in City and Country—Review for the Past Month.

WE have taken particular pains during the past month to inquire among the owners of different buildings in various parts of the city, their views in relation to the pr sent building boom and the

LIKELIHOOD OF ITS CONTINUANCE.

Simmered down, the answers from a majority of those interviewed would read about thus: In spite of the cry of dull times, more money is in circulation than for any similar period in many years. Many well-to-do people have erected comfortable dwellings for their own use, and this fact has been the agency by which large numbers of mechanics have been kept at steady work; the latter, in turn, have been able to save money and put the same in a little home, and so money has been continually changing hands and always doing that good which manifests itself in the beautifying and adornment of our streets.

Another interesting fact is noticeable: Many have borrowed money with which to build two-story flats. Living in one and renting the other, an income is derived by which more than the interest is regularly met, and, after a few years' determined and energetic action, with the practice of strict economy, a home is secured which amply repays for the struggle incurred in obtaining the same.

MORTGAGES NOT ALWAYS A SIGN OF RETROGRESSION.

The day has gone by when a mortgage is considered a sign of financial embarrassment. At the present low rate of interest obtainable in most of our savings banks, it is, in our mind, a sign of excellent business judgment upon the part of owners to procure money by this means and erect buildings upon what would otherwise be stagnant property. This matter of

LOW RATES OF INTEREST

Is doing as much, if not more, than nearly all the other ideas advanced put together towards making this city the second in importance on this continent. By the means referred too, large manufactories can be built, and numerous enterprises can be put into operation. It should be the boast of California, that we do not import a single pound of nails, nor a gallon of oil, nor a keg of paint. The shores of our bay should be lined with manufactories turning out vast quantities of glass, hardware, cement, plaster, carpets, furniture, ironwork, both plain and ornamental—in fact, we ought not to import anything that can be possibly made with profit on this coast. The lower the rates of interest, the greater number of these enterprises can be started, and this of course means the addition of thousands of operatives to our population, and the circulation of an immense amount of money.

WILL THE BOOM LAST?

At present we can perceive of no sign indicating any sudden relaxation in the number of building operations. Work has been commenced on Market Street below Drumm. The old buildings are in process of demolition, and fine brick edifices will take their place. Further out, grading has been commenced for a fine four-story building. The number of applicants for plans in the various Architects' offices, seems to be, if anything, on the increase. Owners, however, are exercising a greater amount of caution as to the limit placed on the sum necessary for any contemplated improvement. This is such as to cause misgivings in the minds of the Architect as to the practicability of conforming to their client's ideas.

IN THE CITY

A reference to our Building Intelligence will show the following facts: During the month from the 10th of April to the 10th of May, there have been started in this city—

109	frame buildings, value	$519,556
2	brick " "	11,405
16	alterations "	46,882
127		$577,843

Making a grand total for the amount of

127 Buildings of the Value of $577,843.

IN THE COUNTRY.

There is now more work—in the aggregate—being performed throughout the State, in the building line, than at any period during 1884. The following places and localities may be considered as having their share: PORT COSTA, with its immense docks, warehouses, and near by the Selby Smelting Works. MARTINEZ is livelier than she has been for some time. OAKLAND and her sister ALAMEDA are displaying more activity than at any similar period for years. SACRAMENTO is looking up. YOLO COUNTY, as a whole, presents a more than average record. LOS ANGELES is quiet, but still a goodly number of buildings are in process of erection. FRESNO and vicinity is keeping pace with the section further south. SAN DIEGO, the city of *magnificent guesses*, has awakened from its lethargy and actually several houses and improvements have been started. In fact, from every section is beginning to be heard the sound of mechanies' tools, as they are wielded by men who cheerfully look forward to a prosperous season.

LUMBER.

In spite of the new schedule, this material can be had at rates favoring the buyer. Prices may be again raised, but if an owner will take the money in his pocket and travel personally among our dealers, he will soon find out that the amount placed on the cards representing the price of lumber, is anything but that for which lumber can be obtained.

Building Associations.

THE influenc eof these organizations is being felt more and more as people better understand their workings. In all of them, the demand for money is greater than the supply. The "Mission Building Association" is growing at a rate that will soon place it at the head of those in this city. It is fortunate in having for its President Mr. Hutchinson, of Sather & Co., bankers. The premium has gradually advanced from 10 per cent. up to 14, and it is not probable that, in the near future, it will be less than the latter figure. We will endeavor soon to give a full history of the workings of these associations.

A New "Castle Hall."

THE Knights of Pythias in San Francisco have taken the initiative toward securing a permanent abiding place,—a "Castle Hall,"—for the order, where the chivalric brotherhood in this city may assemble in weekly fraternal intercourse; and brethren of the order from all sections of this State and the Pacific Coast, and those from beyond the great mountain chain which divides and sectionizes our great country into East and West, and brother knights from foreign countries, may gather and receive fraternal greetings under the order's own vine and fig-tree, with its proud banner floating above its portals, and the great spirit of pure chivalric brotherhood permeating its inner chambers.

A fine lot, 77.6"x137.6" has been secured, located along the northern line of McAllister Street, about opposite the Hall of Records. While the enterprise will be known as the Knights of Pythias Hall, and will be built for the special purposes and uses of the order, its ownership will not be in the order, as such, but in an incorporated stock organization, known as the "*Knights of Pythias Hall Association*," with a stock capital of 100,000 shares, at $10 per share.

The lodges in San Francisco have already made handsome *first* subscriptions to the enterprise, amounting to nearly $20,000 within the time required to search the title papers. It is expected that every lodge of the order within the jurisdiction of the grand lodges of California and Oregon, will become shareholders; and the individual subscriptions already in, and the excellent feeling expressed among the membership generally, assures us that the personal subscriptions to the enterprise will be large, and that soon the forty odd thousand dollars required for the purchase of the lot will be raised, and a sufficient surplus as a building fund to enable the early commencement of the edifice.

The brilliant success achieved by the order during its few years of existence, its growing popularity and great increase in membership, render it both feasible and necessary that the order should enjoy the advantages and benefits of its own Castle Hall, built for, and dedicated to, the benevolent and fraternal objects of the order, and the perpetuity of the sacred principles which called it into existence, and which in less than twenty years has caused it to grow from the small nucleus organized in the City of Washington, D. C., for purposes of the purest and most sacred character, to an order more or less numerous in every State in the Union, with 117 lodges, and a membership of 9,066 in California, and in the United States nearly two thousand lodges, and 135,000 true and valiant knights, with a present high and honorable standing among the oldest and best fraternal organizations of the age, and a future full of hope and promise.

Science of Carpentry..... **$5.00**

The Buddensick Infamy.

IT is both possible and probable that through the legal technicalities the recognition of doctored testimony, direct perjury, and shrewd legal management, so fearfully admitted and practiced in American courts of justice, the man Buddenseik, if brought to trial, will escape deserved and adequate, if not all punishment for his willful accessoryship before the fact, in the destruction of human life occasioned by the fall of the death traps provided by him in the city of New York, in the shape of houses for human inhabitants. It is unnecessary for us to repeat the story of the fall of the building shams constructed by this man, and the sad results that followed. These have been heralded by the press of the country, and are known to any one who reads the daily papers or class journals; and no disinterested person within the boundaries of the United States questions the culpability and guiltiness of the author of the calamity. except in the degree of punishment that should follow the crime,—for crime it is, whether of negligence or the more probable total disregard of consequence,—or that which is still worse, the ungodly and inhuman spirit of avarice which sets at defiance all laws and ordinances provided to control and regulate the acts of such men, many of whom, if not so bold and daring, are to be found in all parts of the country, San Francisco not excepted. The practical lessons presented in this case are the present more important points worthy of notice.

It is an unfortunate affair for New York, as it involves the reputation of a considerable portion of the real estate improvements in that city, not known to be constructed by reliable contractors under the superintendence of competent and reputable architects. The tendencies are to the depreciation of property, not beyond the possibility of doubt as to character of construction. However limited the Buddenseik class of buildings may be in fact, the happening reveals and fixes *upon the metropolis of* New York the unenviable reputation of a city containing numerous dangerously constructed buildings, and many who might otherwise be inclined to invest in New York improved real estate, will be deterred from doing so through fear of a repetition of trembling walls, fire, and sudden calamitous destruction of life.

The affair is also unfortunate in that it furnishes capital and argument, and gives color to the more or less common notion largely prevailing among the people of other countries, that almost everything American partakes of is shoddyishness and frailty. But while the adverse features of the case are numerous, the occurrence will prove beneficial in the future in this,—that without its warning the man Buddenseik, and perhaps many others of like selfish purposes, would have continued to erect buildings of similar dangerous character, and instead of a single block or row, there would have been, in time, hundreds of fraud structures, each liable to tumble at any moment, killing large numbers of innocent persons.

The good effect of this sad warning has aroused the New York officials having building matters under their control, from the slumber of unpardonable neglect; and for a time at least it may be expected that at least safe, if not eminently substantial, buildings will be the rule. Nor will the influence of the cruel happening be confined to New York. Building commissions, boards of public works, and others appointed and empowered to look after such villainous building manipulators as the man Buddenseik, in other cities, will exercise greater vigilance in the performance of their duties, and it is safe to presume that for years to come the building frauds will be held in check, and but few buildings permitted which will not pass mechanical constructive examination.

Men Who Own Their Homes.

AN artisan who is working industriously to pay for his little garden and home, has a well-defined purpose in life, and when that purpose is attained he becomes the happiest of men. It is laudable ambition to own one's own habitation, in which case a man's house becomes his castle. Rent-paying dulls the edge of effort, and helps to make a man a sort of drone in life's busy hive. Energy and industry will soon earn and pay for a home. The more a man accomplishes the more he may.

The active tool never grows rusty. You will always find those men who are the most forehanded and most forward to do good or to improve the times and the city, always busy. Who start our railroads, our machine-shops, our manufactories, and our new school-houses and churches? Men of industry and enterprise—men who own their homes that they have earned by their own efforts. As long as they live they keep at work, doing something to benefit themselves and others. We go for activity—in body, in mind, in everything. Let the gold grow not dim, nor the thoughts become stale. Keep all things in motion.

New Books.

WATER CLOSETS.—A historical, mechanical, and sanitary treatise, by Glenn Brown, architect.

This new work gives a complete history of progress of inventions in water-closet from a period beginning several hundreds of years before the Christian era, down to the present time. All the late patented closets are fully illustrated and their merits and demerits faithfully portrayed. The sections on tank and supply valves are full of new and interesting ideas. For sale at this office. Price, $1.00.

A query found in the "Mechanical Engineer" deserves to be pasted in the office of every establishment that has an elevator. It is simply: How long is it since you examined the wire rope connections on your elevator? It will not do to suppose things are safe. Inspection reveals that which was hidden, and it is startling to see what we have relied upon sometime.

"INSOLVENT.—*Frederick Cobb, an architect and builder, has filed a petition in insolvency in the Superior Court. His assets are nominal, and liabilities* $3,600."

There are not five in one hundred of Mr. Cobb's class, who are not frauds in more ways than one. Many become *builders*, because they "cannot find steady work" as journeymen; yet the fact is, beyond dispute, that good, competent workmen, unless objectionable through irregular habits, physical ailments or otherwise, are seldom idle even for a day, except of their own choice; and seven out of ten who quit the ranks of wage earners to become master builders, do so from a knowledge of the fact of their inferiority as mechanics, or if not *wholly* from this conviction, the adjunct of great self-conceit in their executive abilities, and the phantoms of great imaginary results sure to flow from the exercise of their latent geniuses, the prospects of placing themselves in positions to control and manipulate the interests of owners, and similar incentives, allure them to venture where even men of honest purposes and good mechanical qualifications have *more generally* failed to make more than bread-and-butter successes. Consequently the field of building operations in California has yielded any number of *tares* of the Cobb kind.

If such men would attempt to reach no farther than the narrow limits to which they may have a shadow of claim, mechanics, the fraudism would be less conspicuous, and they would only be numbered with the thousands of those who have from time to time so tarnished the good name and reputation of "contractors," "builders," etc., that those only who have by years of good, square and upright demonstrations of integrity and competency, gained the reward of honorable recognition. But the assumption of "architect" by such men, is simply adding insult to injury, as not one in a thousand of them has the slightest knowledge of the professional science assumed, and what they do in that direction is more frequently the result of points gained from plans pilfered in some way, ideas obtained from books, or the work of boys and employees in architects' offices.

The failure of Gilbert & Co., of Oakland, is another of like cases as that under notice. They too were "architects and builders," furnishing plans, specifications and contracts, through which assumption they drew into their net many innocent owners, who were misguided by the pretensions—not the integrity or competency of the parties. They had their short day as "architects and builders," with an ending that developed more than intelligent, honest men would consider creditable. We were called upon by one of their victims to help him in his hour of trial, his home being unfinished and more money having been paid than was due, but the papers were of a character which left the unlucky owner at the mercy of those into whose hands he had placed himself, with no remedy at law, and his interests entirely contingent upon the conditions and circumstances of the case. The contract read, "To build a house in San Francisco for A. B." (neither location nor street being mentioned), "according to plans No. 86," etc., for the sum of———. The fact was clear, that the contract was either the result of consummate un-intelligence on the part of the party or parties who wrote it, or a well-concocted purpose to clutch the owner and hold him in a helpless attitude, with no possible redress, and compel him to accept whatever might be given him in the shape of a house.

While any punishment received, is well deserved by owners who will be parties to such transactions for the sake of getting a "cheap house," it is to be regretted that mechanical, architectural and building operations cannot be so protected by law or public sentiment, that such impositions, wrongs and false pretentions would not be possible, or their perpetrators severely punished.

Mend Your Files.

ONCE in a while a file will get broken, even with the best of care; but, with the knocking about they are subject to, it is a mystery how any of them come out whole. Tell the boys to bring a file to you the very minute they break it. Have a little bottle of muriate of zinc (zinc dissolved in muriatic acid), and wet the break with it immediately; then heat a soldering iron and tin the ends of the file. Heat the file pretty warm—not enough to start the temper, but rather too hot to hold in the hand. When well tinned and hot, press the two pieces firmly together, squeeze out nearly all the solder, and let the file cool. Trim off the joint, and, if well done, the file will break in another place next time. It will not pay to solder a file unless it is nearly new. Let it lay a day or two, or, in damp weather, even an hour or two, and you never can mend it so it will stay. Take it the minute it snaps, and you can do what they used to stick a 'prentice on, viz., mend a file.

THE SHARPENING OF TOOLS.—Instead of oil, which thickens and smears the stone, a mixture of glycerine and spirit is recommended. The proportions of the composition vary according to the class of tool to be sharpened. One with a relatively large surface is best sharpened with a clear fluid, three parts of glycerine being mixed with one part of spirit. A graver having a small cutting surface only requires a small pressure on the stone, and in such cases the glycerine should be mixed with only two or three drops of spirit.

The old idea that slow grown timber was stronger than that grown quickly is disproved by recent tests in England, so far, at least, as oak is concerned. Second-growth hickory is usually more valued for handles of axes, hammers, etc., and the annual rings show it to be of swifter growth than the first stock.

Shoddy New York Buildings.

THE details are at hand of the manner in which some buildings in New York City have been constructed. The late disastrous collapse of a row of brick houses, has been the means of exposing the methods by which certain contractors have made fortunes—through and with the aid of public officials. If the latter charge is proven, they, as well as the architect and contractor, should be subjected to the workings of that ancient Persian law which provided that any architect who put up a building that from any cause should afterwards fall down, should be buried alive under the ruins of the fallen structure.

We also notice that the Persians had a way of enforcing this law with great regularity, and that they jammed the sod down tight and quick about the unfortunate builder. The result was a very substantial style of architecture, which, in many places, is still in existence, although more than a score of centuries have rolled away since the foundations of some of their structures were laid.

The best proposition we can advance to our New York friends, is to frame a law with provisions in the same according to the above. The result would be a total cessation of the erection of careless, and we may say criminal, buildings. We fancy, however, that such a law would meet with much opposition from those who adopt the *Buddensick* standard of building as a rule.

The Chapter of Architects.

FOR the first time in a number of months there was not a quorum present at its meeting of the first ult. This should not have been, and its members deserve reproof for neglect. The Chapter is on a good, sound financial and incorporated basis, and should command the support of every reputable architect on the coast. That it can be made a useful, influential and prosperous institution, commanding the respect and confidence of the profession and the public, is beyond doubt; and the only reason why it is not so, is because the architects of San Francisco fail to utilize the opportunity to bring about the result. It is but a small sacrifice for each to make, to devote one evening in each month to fraternal interchanges of views and ideas, and the consideration of matters alike interesting and profitable to all.

In the Eastern States, the Chapter interests are kept up, and much good is being accomplished, and the parent Chapter enjoys a national reputation, while in London the British society is a power in the land, and its published proceedings are worthy the reading and attention of every intelligent architect, at home and abroad. It only requires earnest effort on the part of well-meaning men, firmly banded together, to accomplish results gratifying and beneficial to themselves and others. It is to be hoped that every member of the Chapter will be on hand at its next monthly meeting. Let none be absent.

CALIFORNIA RUSTIC.

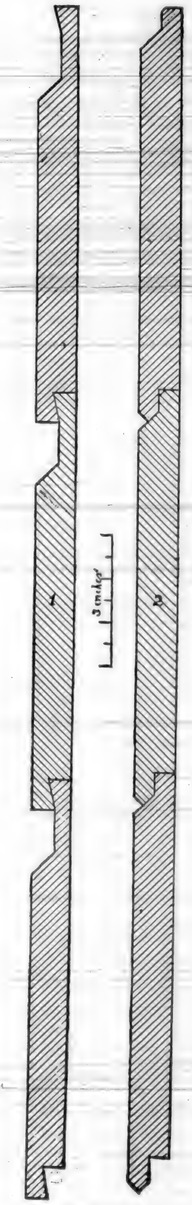


ILLUSTRATION
OF
CALIFORNIA RUSTIC

SAN FRANCISCO is largely what may be termed a "wooden city." The statistics of last year show that out of 930 buildings erected in that time, but twenty-five were brick; this, however, is not a fair comparison, as the number of frame houses erected was unusually large for that period. A fair estimate would place the ratio of about one to twenty-five. Keeping this fact in view, it is not strange that the ingenuity of our architects is taxed to its utmost in studying new shapes for the material to be used on the outside of buildings. In the earlier times, "clapboarding" was used quite extensively, but now it is rarely seen. Tongue and grooved stuff was also used, but its liability to shrink caused its use to be discontinued except in rare instances.

Previous to 1864, rustic was made of ⅞ lumber, thirteen inches wide, and, owing to imperfect machinery, was necessarily costly, the average price being about five dollars more per thousand than T. and G. surfaced redwood. The lumber had to be passed twice through the machine, the first operation being the reduction of the lumber to a uniform width and thickness. We think that it was in the year mentioned that, acting upon a suggestion made by G. B. Knowles, Mr. C. W. Thomas invented a machine by which the two operations were combined into one, and thus, by reducing the time consumed in manufacturing the rustic, materially lessened the price of the same. The mill owned by Thomas was situated on north side of California, between Davis and Drumm. It has long since been a thing of the past, and its place occupied by wholesale stores.

As mentioned before, rustic when first used was made thirteen inches wide; but this width was found to be too great, and was soon after cut down to ten inches, which is now regarded as the standard. In our illustrations, No. 3 represents the kind in most general use, and is called channell rustic. No. 2 is an other form that is much used, and is known as the V rustic. When the latter is used, it should be thoroughly seasoned and not over eight inches wide. The other patterns shown are in general use with the exception of Nos. 1 and 8. The former has one objection that will prevent its adoption. The natural shrinkage of the lumber will cause a "bump," just where one layer laps on the other. The upper edge of one piece being covered by the lap of that above, will not shrink as much as that on the outside, and so the outside will naturally, in being shortened by shrinkage, be forced out from a direct line on the face. In many kinds of lumber, this contraction would be strong enough to split the board, or at least as before mentioned cause a "bump." A still greater objection could be urged against No. 8. If used, it should be worked out of lumber not less than 1⅛ inches thick. This design was suggested by one of our first contractors, who evidently has been a deep student of the results of *capillary attraction*.

No. 7 is a design that is lately coming into prominence. It is very neat and when made from dry lumber, and care taken to have the mill work smoothly done, it gives an extra finish to the exterior of a house. With the lower lip cut off it is also a superior design for a base board, a three or three and half inch lip light moulding making it present a fine appearance.

Nos. 5 and 6 differ from No. 2 only in the width, and the size of the V joint.

There are still other kinds than those we have shown. A few years ago, it was fashionable to have the rustic blocked out to represent stone, but like all imitations it soon tired the eye, and is now but seldom seen.

The primitive style of thirteen-inch rustic is now but seldom seen, but for the benefit of curiosity seekers, we will refer them to an old house on Sutter Street not far from Mason, where

ILLUSTRATION
OF
CALIFORNIA RUSTIC.

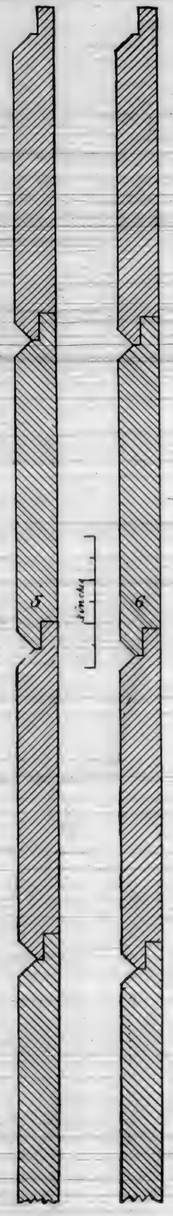


ILLUSTRATION
OF
CALIFORNIA RUSTIC.

specimens of the *first* ideas may be seen. We may add par parenthesis—that although at first from three to five dollars per thousand was charged extra for rustic, the same *liberal* tactics were applied then that are now so successfully practiced. A small bill of rustic alone would be charged the extra price, but for the sake of selling a *bill* of lumber, it would be placed at the same rate as Tongue and Groove. A difference of opinions exists in regard to which variety is best for a building,—hard or soft rustic. By far the greater portion that comes to this market is of the latter kind; it is generally preferred on account of the ease with which it can be sawed, and for the few blows of a hammer necessary to drive a nail home. But there are some of the *long heads* of the lumber fraternity who claim that *hard* rustic is much the best, when care is taken to have the same thoroughly seasoned, and due caution is exercised in the careful driving of the nails.

Never buy second quality rustic. It is more expensive in the end than No. 1. A pile of second quality rustic is made up from probably the run of several mills at scores of different times, consequently the width varies considerably, and is the source of much annoyance even to those using it on a barn. Hard pieces, crooked grain pieces, short pieces, sappy pieces, etc., are all thrown together into the second quality pile. The keen judgment of a first-class mechanic will enable him to quickly notice these different specimens; but the average mechanic consumes more time "assorting out" than would pay the difference in cost of gilt edge rustic.

In 1865 the price varied from $40.00 to $42.50 per thousand. In September, 1879, the price dropped to $20.00, which is the lowest, we think, for which it was ever sold. At present it is about $30.00.

There are buildings standing to-day upon which three different widths of rustic were used. Why the architect should specify one width for first story, a less width for second story, and still less for the third story, is one of those problems that can be answered only by the professional in charge.

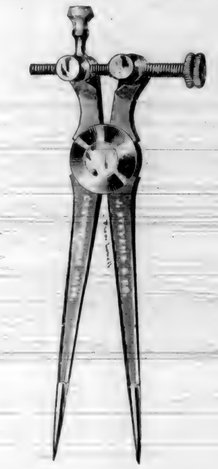
San Francisco owes much of its greatness to redwood rustic. In case of fires, its more than ordinary non-combustible quality has been the means of preventing serious conflagrations. When the wood is heated, the pores of the wood naturally open; and when water is thrown on the same, the wood soaks up the water and is thus rendered less liable to combustion. Thus feeling partly protected from fire, our worthy citizens pile on the exterior finishes, and to-day San Francisco stands forth as the finest built and showiest wooden city of the world. Another safeguard pertaining to rustic, lies in the fact that it is devoid of pitch and other substances of an inflammable character. This is a peculiar feature of all redwood.

Rustic should be V stacked upon the ground immediately upon the commencement of a building; the joints and laps should be primed before being used. A strip of tin placed behind every butt joint is a safeguard against leaks from open joints caused by shrinkage, for redwood *shrinks endways*, and if the material is not extra dry, a disfiguring crevice will appear at every butt joint.

The lumber fraternity generally consider rustic a profitless article to deal in, the thinness of the channel section rendering it very liable to splits and breaks from piling, stacking, or other causes, and the least defect condemns the same from being placed in the *gilt edge* pile.

Other facts in connection with the material under consideration will be given in a future number, as several of our prominent dealers and mill workers have promised us important data in regard to *California Rustic*.

ILLUSTRATION
OF
CALIFORNIA RUSTIC.



Reliable Dividers.

THE above cut represents the new style of "Reliable Dividers" as manufactured by J. Stevens & Co., Chicopee Falls, Mass. They are forged from heavy stock and operated with a right and left hand-screw, thereby removing all back lash, and making, as its name indicates, a *reliable* instrument. A sample of the above can be seen at this office. We can recommend these dividers for superior finish and the hardness of the points. Any hardware dealer will furnish you with one of these instruments, or we will furnish those living remote from cities with any number upon receipt of the price—$2.50 each for the 5-inch size.

Hanging a Grindstone.

TO HANG a grindstone on its axle to keep it from wobbling from side to side, requires great skill. The hole should be at least 3/8 inch or 1/2 inch larger than the axle, and both axle and hole square; then make double wedges for each of the four sides of the square, all alike and thin enough so that one wedge from each side will reach clear through the hole. Drive the wedges from each side. If the hole through the stone is true, the wedges will tighten the stone true; if the hole is not at right angle to the plane of the stone, it must be made so, or the wedge corresponding must be altered in the taper to meet the irregularity in the hole.

Concerning the above method of hanging a grindstone, a correspondent of one of our contemporaries writes as follows: "The method described has been in use as long as the grindstone itself, but it is not the way to do it today. Wedging the center of a stone, is a great help to burst it, and when the speed is excessive, the wedging strain is an important factor in the life of the stone and the safety of those around it. The best and easiest way, and the scientific way, to hang a grindstone is by a nut and collars, almost like a circular saw, and exactly like an emery-wheel. If the hole in a grindstone is 6 or 7 inches square (as usually made) fill up with a piece of green timber. If live timber is not available, soak a piece of wood over night in water; then it will not swell when wet and exert a destructive pressure on the stone. Take a pair of big dividers or a trammel, and find the center of the stone. Do this upon each side of the stone, and bore the hole from both sides. Bore a little larger than the shaft, or burn out the hole if your auger is not quite large enough. See that the stone is decently true upon its sides where the collars bear. If not so either chip the stone or mount it temporarily and turn the sides true. Now put it on the shaft and screw up. True the face of the stone, as it is not probable that you will get it to run exactly true. You now have a grindstone that will not come loose by getting dry every time it stands without water a day or two, and is not apt to split open when first wet. When that stone gets worn down to 18 or 20 inches in diameter, it pays to split it, and make two narrow stones, provided it was 6 or 7 inches thick originally. To split a stone, turn a groove 3/8 or 1/2 inch wide, and as deep as convenient—2 inches will do, but 3 is better—in the center of the face. A piece of 1/4 or 3/8 inch gas-pipe is the tool to use for turning the groove. Drive the groove full of dry pine wedges. Have them fit as well as possible. Do not drive too hard, or you may break out a piece and spoil the stone. After the wedges are all fitted, lay the stone in water or keep it wet, and it will split in two at its leisure."

The Credit System.

WE think too much cannot be said about the exercise of great care in the matter of giving credit. It is a most unpleasant duty to be obliged to inform any one that credit can only be given for a limited amount or on only short time, or that it can't be given at all; but it is none the less, in many cases, a duty, and is a duty we all owe, not only to ourselves but also to those toward whom we are called upon to perform it. It is a duty every man owes to himself to see that neither his money nor his merchandise is put out into hands where there is an uncertainty about its return, especially where the payment of his own bills depends upon that return. Undue extension of credit has caused the ruination of more men than has the limitation of it; and so we say, it is often a duty a dealer owes to a customer to keep him from getting too much in debt. The same principle applies to the time given a man on his account, because, being called upon himself to pay his bills promptly at a certain time, he must see to it that his own customers keep their own accounts up, and therein is where the retail dealer too often makes his mistake —*he don't collect his bills*. We have said to many people who have traded with us: "What makes it so difficult for you to make your payments when they become due?" It is true you haven't a large capital, but you get thirty days' credit here, and that should allow you to get around comfortably?" The answer has been, "My customers don't pay me." "Are you getting a lot of bad accounts?" "Oh, no, my accounts are all good." "Why don't you make them pay?" "I don't like to ask them for money because they would get mad and not trade with me." Now a man with a limited capital and a credit to sustain, which must be done if he is to buy his goods cheap, had better, in our opinion, get that class of men mad if he can't get his money without doing so (though we think he can if he goes to work in the right manner) and let some man sell them who has plenty of capital to pay his bills and accommodate people too. Don't let your customers run up large accounts with you; it is better for them that they shouldn't, and it is better for you.

A fashionable clock-maker told me in course of conversation yesterday, that, in spite of the large supply of small-priced clocks now on the market, there was still the usual demand for the large and expensive imitation "grandfather's clock," which look as if they had been handed down in the family for many generations. It is a fact that no fugitive from justice is more anxious to conceal his antecedents than many of our so-called society families are. They ride in their carriages, flaunt their wealth and hold their heads high, and yet you could confuse them by asking them what business their grandfather's, or even father's, had been. Such people buy "grandfather's clocks," old china, and such articles, and place them in conspicuous places in their residences in order to impress visitors with the antiquity of their family.—*Ex.*

When a paint brush is stiff and hard through drying with paint on it, put some turpentine in a shallow dish and set on fire. Let it burn for a minute until hot, then smother the flame and work the pencil in the fingers, dipping it frequently into hot spirits. Rinse all paint brushes, pencils, etc., in turpentine, grease with a mixture of sweet oil and tallow, to prevent them from drying hard, and put them away in a close box.

A new process for drying lumber is attracting attention. It consists in surrounding the wood with common salt. In ordinary kiln-drying the albumen is killed or destroyed, and the surface dies out first, thus sealing the juices inside to escape eventually through cracks caused by the uneven expansion of the wood. The new process is said to be better in this respect.

Steam pipes, at the temperature of steam, will not ignite wood, but superheated steam will; low water in the boilers will superheat the steam in the pipes.

Our Illustrations.

PLATE 1 represents the elevation of a very convenient and attractive city residence, plates 2 and 4 being the plans of first and second stories. The design is especially adapted to a 25-foot lot and is arranged so that abundance of light can be had in every room. Care has been taken to mark the sizes of the rooms, the names of the various apartments, closets and conveniences, so that any one at all conversant with a plan can readily understand everything in connection with our engravings. Cornices are shown in the parlor, dining-room, hall, and principal bedrooms. As shown, the plan can be carried out for about $8,000.

Plates 3, 5 and 6, are designs for sideboards. They are all of a handsome design and yet of moderate price. Plate 7 is a design for a parlor chair.

Iron Straps in Carpentry.

T. YOUNG, in the *Architect*, states that when it is necessary to employ iron straps for strengthening a joint, considerable attention is necessary that they may be placed properly. The first thing to be determined is the direction of the strain. We must then resolve this strain into a strain parallel to each piece, and another perpendicular to it. Then the strap, which is to be made fast to any of the pieces, must be so fixed that it shall resist in the direction parallel to the piece. Frequently this cannot be done, but we must come as near to it as we can. In such cases we must suppose that the assemblage yields a little to the pressures which act on it. We must examine what change of shape a small yielding would produce. We must now see how this would effect the iron strap which we have already supposed attached to the joint in some manner which we thought suitable. This setting will, perhaps, draw the pieces away from it, leaving it loose and unserviceable. This frequently happens to the plates which are put to secure the obtuse angle of butting timbers, when these bolts are at some distance from the angles, especially when these plates are laid on the inside of the angles. Or it may cause it to compress the pieces harder than before, in which case it is answering our intention. But it may be producing cross strains, which may break them, or it may be crippling them. The strap which we observe most generally ill placed, is that which connects the foot of the rafter with the beam. It only binds down the rafter, but does not act against its horizontal thrust. It should be placed further back on the beam, with a bolt through it, which will allow it to turn round. It should embrace the rafter almost horizontally near the foot, and should be notched square with the back of the rafter.

Walk the streets with your eyes open. Your daily stroll will never fail to have some ideas for you if you will only meet them half way.

PLATE 1.—SEE "OUR ILLUSTRATIONS"

Blind Nailing.

SINCE nailless flooring has become prominent in all first-class work, the form of matching has been improved by giving the tongue and groove a new arrangement that shall be more consistent with the strength of the joint

Fig. 1.

and accessibility in driving nails. Besides, a nailless floor should be self-sustaining and nailed directly to the floor-joist without the necessity of an underfloor, or rough packing of any kind, and be left air-tight, dust-proof, and preventing in this manner drafts and the penetration of foul gases. The first attempt to keep

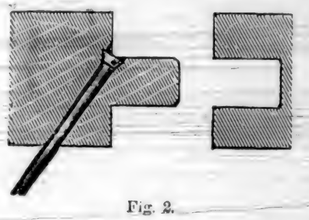


Fig. 2.

the heads of the nails out of sight was to simply toe them in from one edge; as shown on square edge work in Fig. 1, which effectually hides all traces of the nails, which of course must be well set in out of the way of the next board; but, as there were no means of securing only one edge, the flooring was likely to warp and leave

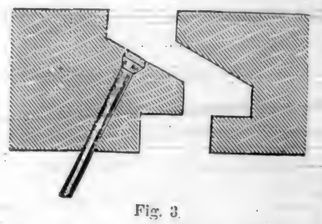


Fig. 3

an uneven floor. As soon as the matching of boards by the tonguing of one edge and grooving the other was employed to strengthen the joint, the shoulder was found sufficient to hold the floor by blind nailing, as shown in figure 2; the shoulder fitting completely over the tongue effectually hides the nails.

The Putney improvement, in the form of matching, not only strengthens the tongue and diminishes the tendency to rise and warp at the shoulder of the groove, but allows any

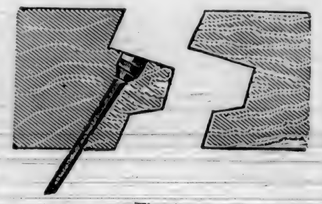


Fig. 4.

practical man sufficient room to drive the floor nails, which may be better understood by referring to Fig. 3. The nails are driven nearly at right angles with the surface of the tongue and far enough from the roots to make room for the hammer. The joint is easily forced together, and makes a union that is nearly seamless, unless they have been tongued and grooved in a saw-mill where the flooring is actually "rattled" out of on the happy-go-

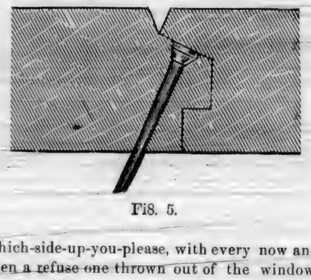


Fig. 5.

which-side-up-you-please, with every now and then a refuse one thrown out of the window. Good work requires care and attention, with machinery that will remain where you leave it. The form shown in Fig. 4 may work with better results where nail-grip is desired. Fig. 5 has been offered for filling purposes or where stock is likely to split. Flooring can be fastened by nailing through one shoulder of the groove instead of the tongue, and Fig. 6 is

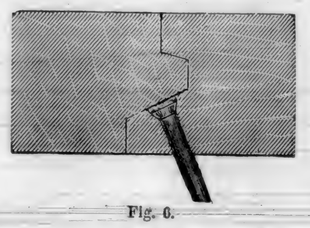


Fig. 6.

given as the most improved form of matching for this purpose. The laying requires but very little skill, and can easily be taken up and relaid without damage, an advantage that must be appreciated in temporary work. The advantages to be derived in nailless flooring where one of these substantial forms are used, must be such as to bring the whole system into extensive use.—*Boston Journal.*

Lecture to Plumbing Apprentices.

THE subject of the fifth lecture to apprentices of the Baltimore Master Plumbers' Association, which was delivered by Mr. John Trainor, March 19th, was: "The present condition of the business in Baltimore, and some of the every-day requirements of a good journeyman and helper."

"In recent years," he said, "I have seen, as others have, 'unskilled and untrained' ride rough-shod into the business, humbugging the people, and injuring the business of those who have made it the study of their lives, until the business, a few years ago, was about as unskilled, or a very great number of those engaged in it were unskilled, and consequently it became very unprofitable for those who do understand the business and had a proper regard for customers' rights and their own reputation. The beginning of a new era in the plumbing business is near, and it is again to take its place among the high mechanical arts. Hence those who expect to command first-class wages must understand the business in detail.

"Great care should be taken in arranging service-pipes, that they may be easily examined or repaired when necessary. Their sizes should be in proportion to what they are expected to supply. Dead ends in water-mains should be avoided, if possible, as they invariably collect considerable dirt, called sediment, for want of means of flushing. Air-chambers are of no value in any other position than perfectly upright, and continuations of pipes below the spigots, and over sinks and other fixtures, where the supply comes from above, never ought to be made, for they are of no value, but collect sediment, and cannot be drained out when necessary. Hydrants and street-washers should not be connected with iron-pipe; if that kind of pipe is used, then there ought to be a couple of feet of lead pipe next to the fixture to prevent the hydrant or street-washer from breaking off when raised by the frost in winter. The size and location of soil, waste, and ventilating pipes is a very important matter for consideration. None of them should be located on the outside of a building if it is possible to have them on the inside, and in no case should ventilation-pipes be on the outside, for in cold and damp weather they are of no use where they are so exposed. The size of soil and waste pipes should be gauged as nearly as possible to answer the services required of them, for, if too large, they are never flushed properly, more particularly on horizontal lines. Dead ends in soil and waste pipes should always be avoided.

"Learn the mechanical part of your business when you are an apprentice, and in after years you can keep step with the march of improvements in your business. Cultivate your hands to work in conjunction with each other. Prepare yourselves to pass such examinations as may be necessary under the 'License Law,' for if you fail in that you will have to go out of the business. So take time by the forelock, and be equipped when your time comes."—*The Sanitary Engineer.*

Various Strengths.

AN important question among architects and wood-workers often presents itself, when two substances or materials are placed in position in a manner that each will be subjected to certain strains, as to the combined strength of both. When an iron rod is placed with a joist, the natural supposition is that the strength of the double will be equal to the united strength of both the wood and iron, which does not always prove correct unless they are firmly attached, which it is impossible to do without weakening one or both; but if such appliances could be brought to bear without thus weakening, of course the combined strength, at normal temperature, would be equal to the square of the combined strength, another impossibility, inasmuch as the difference of contraction and expansion of wood and iron is such that there would be hardly a day in the year when they would both represent their original degree of elasticity and strength.

Take the following results, obtained from laboratory results, of the tensile strength of various materials, and we will find that no two of them placed together will represent the combined strength as represented. The table is based on the number of pounds' pressure required to tear asunder one square inch of each of the following substances:—

Copper,	wrought	34,000
"	cast	19,000
"	wire	61,200
Gold,	cast	20,000
Iron,	"	27,000
"	wire	103,000
"	best bar	72,000
"	medium bar	60,000
"	inferior "	30,000
Lead		800
Platinum wire		53,000
Silver, cast		40,000
Steel		120,000
Tin, block		5,000
Zinc		3,500
Brass		42,000
Ash wood		16,000
Beech "		11,500
Birch "		15,000
Box "		20,000
Cedar "		11,400
Chestnut wood		10,500
Cypress "		6,000
Elm "		13,400
Fir, strong		12,000
" American		8,800
Redwood, Cal.		10,120
Lignum Vita		11,800
Locust		20,500
Mahogany		21,000
Maple		10,500
Oak, white		11,500
Oak, seasoned		13,600
Pine, pitch		12,000
Poplar		7,000
Sycamore		13,000
Walnut		7,800
Willow		13,000

There are many substances in the foregoing not used by wood-workers, but more that are, and the table, taken as a whole, will be found correct, and handy for future reference.

Goods on Approval.

THE practice of sending out various kinds of goods on "sale and return" has attained somewhat considerable proportions in certain branches of the trade. It is severely condemned in many quarters as being wrong in both theory and practice, whilst also being held to be merely a cloak to veil the retailing of the manufacturers who adopt the plan. It is further denounced as being an innovation which invades the domain of the retailer, inasmuch as the tradesman who agrees to so vend the products of a manufacturer sinks his individuality to a great extent, and merges his ordinary profits into that which is really a commission paid to him on the sales he makes. Other objections are also made, prominent amongst them being the charge of encouraging reckless trading; that the system enables a man who may not be worth $5.00, and be void of experience, to make as good a show as the man with $5,000 capital, and well up in his business; and that it raises sundry questions of liability which are not easy of settlement. On the other hand, it is contended that practice promotes sales which might not be made otherwise, seeing that it virtually enables a manufacturer to establish branch show-rooms in different towns without being at the expense of rent, rates, and attendance, besides giving the public an opportunity of selecting from a large stock of goods, which is frequently renewed, and therefore always kept up to the latest ideas. It is also said to benefit manufacturers by "tying" tradesmen to them, and so excluding their competitors.

"Skin Plumbing" originated in the twelfth century, when the tilers attempted to do the plumber's work. The carpenters tried it in the thirteenth century, and it grew to be so bad that legislation was necessary to stop it. In the fifteenth century, 1490, the medical profession turned their attention to bad plumber's work in the attempt to prevent some of the diseases caused by it. In 1690, further checks in the shape of legislation were applied, but to-day when the skin plumber flourisheth like a green bay tree, nothing is done.

A HINT REGARDING TIMBER.—It is a well established fact that timber when seasoning springs toward the sap, and that to secure the best results, all timber should be so placed that the bearing strain will operate against the heart side. In cutting rockers, the heart side should be up; door pillars, with the heart toward the outside; spring bars, with the heart up; axel beds, with the heart down; shafts and poles, with the heart up. This may occasion loss in cutting planks, but it secures a good job.

Rats have a great aversion to the odor of the chloride of lime, and, when mixed with water and poured into the holes through which the rats pass, they usually vacate their haunts. This mixture is harmless, does not kill the rats, but drives them away—sometimes.

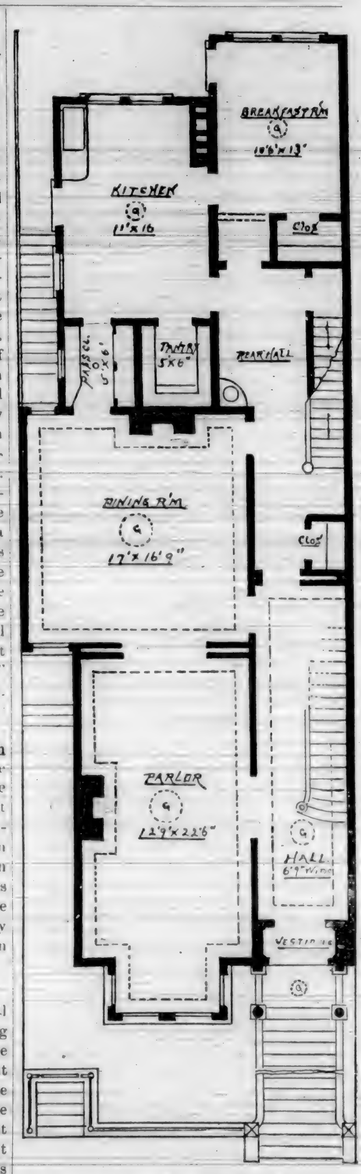


PLATE 2.—SEE "OUR ILLUSTRATIONS."

ARCHITECTS' DIRECTORY.—This work contains a list of Architects practicing their profession, in all the cities of the United States. While there are many blunders, the work, in the main, will be found to be as reliable as any similar publication. For sale at this office. Price, $2.00.

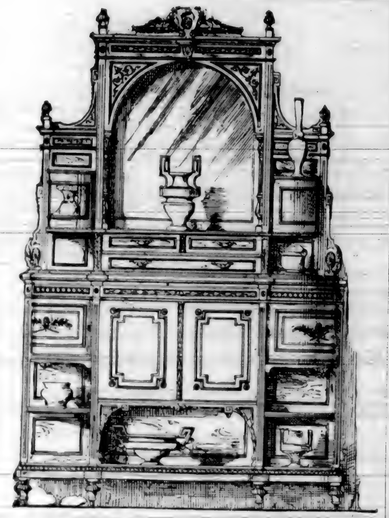


PLATE 3.—SEE "OUR ILLUSTRATIONS."

Common Sense Plumbing.

I SEE so much, or many, unnecessary requirements in architects' specifications, largely brought about by a half understanding, that I am impelled to enter a protest. Plumbers, too, who are ignorant of the actual principles involved, are as likely now to overdo, as they were formerly to leave undone. They get ideas, but lack application. Siphonage does not take place under all situations, therefore it is not necessary always to provide for it. Many pipes put in for ventilation never have a circulation. Traps are often placed where detrimental. I could cite instances, many of them, where the most ridiculous arrangements are called for, which the plumber has to fulfill, knowing it is just so much worse than wasted. You may not consider the protest worth attention, but if you could see and know what our daily experience is you might think as we do.

The writer has had many years' experience in the plumbing business, employs many men, sometimes makes specifications, but more often carries out others, some of which are good, explicit in requirements and evidently founded on fair knowledge of the business; others are faulty, full of loop holes, indefinite and inconsistent. Some are made up as you would make a mince pie, having lots of good features, but terribly mixed. It seems to be thought that if one only gets the traps, the vents, and all the "latest" sanitary features in somewhere, they will "count" and "show up". But who can tell what the actual benefit is, or whether it all is a benefit? The owner looks at the "roughing in," sees that the joints look nice, asks where the ventilation pipes are (he has read about ventilation), is pointed to several that start from some pipe and end in the same pipe, a little distance apart, and several more that go out of the roof with ———'s patent ejector. The net-work of pipes he does not comprehend, nor never after tries to. His house is cut in pieces to get the "system" in, but he contents himself with the fact that the price paid and the amount of ventilation done will forever "bar out" the innumerable diseases due to sewer-gas, which he has read so much about, and of which so many, except plumbers, die. I believe in good plumbing and good fixtures. There are some essentials, as regards vents and ventilation (the two terms are often used as one and the same but differ materially); but the point is this, are we not running to extremes in providing against every "theoretical result" that may appear in print, without giving it a study? Experience and observation often prove the fallacy of much that is advocated. It is not the design now to point out the errors committed in overdoing. The locality, the system of sewerage, the character of buildings, should be considered. Many things, applicable to New York, Boston, and other seacoast cities having tides, would not apply to interior cities. The plumbing of the South will differ from that of the North in many respects. Simplicity should be aimed at. A multitude of pipes, in every conceivable situation, generally inaccessible, may be, in time, a greater source of danger than the lack of some considered desirable, though not essential. Finally, there is a mean between extremes that is nearer the right. Let that be sought, in order that the owner be not unnecessarily taxed, and that he may realize that conveniences can be had without excessive cost. In the "long run," the plumber will be benefited by the greater demand from those that now fear it to be an expensive luxury. Do not be misled by sketches of arrangement seemingly so simple on paper, but practicably inapplicable in actual construction. Let there be a common-sense reason in construction.—*Warren C. Weatherly, in Sanitary News.*

Queen Anne Cottages.

THE reign of good Queen Anne is not likely to be held in high estimation much longer, if the architecture and fittings associated with her name are carried to extremes that begin to threaten. The good lady was rather modest in her tastes and likings—so modest, indeed, that she would not allow her mint masters to stamp her bust upon the coins of the realm until they had duly shielded it with drapery. Indeed, her scruples approached to prudery. What would she have thought, then, of such a bravery of red paint, gilding, tiling, spindle-work and gilt ginger-bread as those who take her name in vain, affix to "Queen Anne" houses and cottages to-day? If modest and sincere, nothing is prettier or more home-like than a Queen Anne cottage with its red roof and clustered chimneys peeping above a screen of shade trees, or a patch, or orchard.

In rustic surroundings it has that aspect of stability, peace, order and content that mark the cottages of England. It is picturesque in its broken lines, its porches, balconies, bays, gables and dormers, and if painted in quiet dark green and dark red, it is a grateful feature in the landscape. It is a great improvement on the "balloon frame" house of wood, and the geometrical structure of brick—artistically worthless structures. But what are we to think of a Queen Anne cottage painted a "howling" vermillion and a staring chrome yellow?

What taste is shown in a Queen Anne house that is shingled on one side from roof to basement with never a window or a peep hole, though the blind side of the house would, if it had eyes, look into a pretty garden? What do his neighbors think of the Teutonic gentleman who, after having rising suns carved on the wooden triglyph above his porches, is having those suns covered with gold foil and causing them to shoot forth rays of violet crimson? Yet these things are to be seen within an hour's walk of each other. There is too much straining after effect in it all; too much of the advertising chromo wrought into building material.

A few hours before this writing, I passed a city house in a dull row of yellow brick shops that had been Queen Annefied by sundry wooden addenda, and that was being painted a strong turquoise blue in two shades. The color combination would not have been unpleasant had the house stood by itself, but when it was backed and faced and flanked by dingy, graceless houses of red, white and yellow brick, and when it is stated that it stood in a crowded, dirty street, it may be surmised that its appearance in such a place was grossly incongruous.

Our city streets lack home-like houses, but the way to distinguish the homes from the shops is not to paint them like tea stores. They should rather give token of quietness and retirement. The English have the advantage of us in that respect. Their old houses look like homes, even though they crowd one another in a narrow street and overhang the sidewalk by a projecting second story. The domestic purpose of these houses is as plainly indicated as if it were advertised. We have good house building enough if architects and builders and decorators will only take pattern from it.

In Long Branch, Flatbush, and Richmond Hill—to mention the environs of New York alone—are handsome residences in Queen Anne style, well considered and picturesque from every point of view, strikingly beautiful in groups, and when surrounded and offset by lawns and trees and gardens, and in New England the style is being advantageously applied to churches, town libraries, public halls and schools. The style has too many good points to come into disfavor, but exaggeration fosters prejudice against it and may result in working it harm. It is when one sees an intrinsically, meritorious thing marred by poor workmanship and undiscipline taste that he deplores the lack of artistic training by those mechanics whose province is truly a branch of applied art, and regrets that no closer union exists between the designer and the workman.—*Decorator and Furnisher.*

Improvements in Window Sash.

OUR readers are measurably familiar with a number of important improvements in the construction of a window sash and in the mode of hanging and adjusting them which have been introduced in this country during the past twenty-five years or more. One of our English exchanges, commenting on an exhibition of building appliances recently held in England, discusses this subject, and, although the improvements referred to are for the most part such as have originated outside of this country, the description cannot fail to be interesting to our readers generally. The account is as follows:—

Since the days of Queen Anne, when the sash window seems to have largely superseded the old English casement of the Tudors, people have been contented with the ordinary mode of opening sashes by weights and pulleys, and up to the present day the larger number of residences are fitted up upon precisely the same model as that adopted during the Georgian period. Little or no improvement has been made in the details of the wooden sill, the "meeting" rails and the construction of the pulley stiles, the forms of which still retain their early peculiarities; and it is only in houses built after improved methods that we find any attempt made to alter these forms or to improve the method of handling the sash. Visitors to the Health Exhibition will have noticed several improved systems in going through certain departments of the exhibition, which are unheeded by the great throng of sight-seers, as mechanical appliances of little interest to them. Some of these improvements are attempts to get over the difficulty of cleaning the outside of the sash. In small windows the difficulty is not great, as one's arm can reach to the upper panes; but in large windows, such as those fitted in town houses of any size, there is not only difficulty, but danger, in the attempt to clean the outside.

Several patents have been taken out for improvements in sash-hanging, many of which have fallen through from apathy on the part of architects and builders in availing themselves of improvements; the consequence is that nine-tenths of our houses have windows of the old type. Some way of removing the inside beads and disconnecting the sash from the pulley-cords, so as to let the sash fall inward, has been the chief effort with many inventors, though the difficulty of the upper sash remained, and the problem presented itself of making the parting bead between the two sashes movable, to supersede it altogether, or to press it back so as to allow the upper sash to be taken out. There are different methods that have been patented for effecting the object, which are pretty well known to our readers. One of the methods devised consists of being able to convert the vertical sliding motion into a swinging action by movable metal tongues, the sashes being turned round upon centers in the pulley stiles by certain alterations in the construction of the stiles—a plan adopted with much ingenuity in the new patent "anti-accident" window of Mr. R. Adams, whose "National Standard" window is well known to architects and builders. Another plan for effecting the same object is to hinge the beads, and to give a casement or door motion to the sliding sashes when it is necessary to clean them. These are called "double-action sashes and frames," and a working model of one may be seen at the Health Exhibition (exhibit of W. J. Penny).

The advantages of either of these methods is that the sashes can be opened or thrown up so as to allow a large piece of furniture to enter or be removed from a room, or for making an exit in case of fire. Another plan that was introduced some time ago was to make the sash frame movable by hinging the whole window on one side—a mode of opening which had the merit of simplicity, though more cumbrous and open to the objection of its being rather an unsafe fixture. Other complicated plans consist of removing the weights through "pocket pieces" specially prepared, and detaching the lines from the sash by other means—patented fittings being used. Such plans could rarely be brought into operation by other than skilled hands, and generally only a joiner could remove the sashes. The sash window has other faults which the skill of inventors has been called upon to remedy. The sashes, if not properly made and fitted and of seasoned stuff, shrink and let in rain and dust and noise. These are evils which many who live in new houses have to endure, greatly to their own discomfort and to the trial of their temper. What can be more unpleasant than a rattling window, or one which admits the draft? The names of patent sash fastener are almost legion, many exceedingly complicated contrivances which no one can understand, and others so cumbrous as to disfigure the window to which they are attached.

We know several very excellent fasteners—such as Adams' "adjustable and secure sash fasteners," and Cope's patent fastener—but the greater number of these appliances are sadly out of proportion to their work, or are complex and difficult in operation. A model at the exhibition shows a window (Tucker's) constructed with water-tight sashes and frames which exclude drafts, dust and rain. In this instance india-rubber cushions are fixed at the top and bottom and at the meeting rails, which fit into corresponding hollows on the head, sill and rail, while the parting beads are screwed to the stiles and have a side tongue which fits into grooves at the sides of sashes. The plan is effectual if the wearing parts are durable, but we have some suspicion of the endurance of india-rubber in positions exposed to alternations of temperature, wet and cold. Other improvements have been made with the object of allowing the sashes to be partially opened for ventilation; among these may be mentioned Adams' patent sash bolt, by which the sash can be fixed at any distance, and the patent ventilating bar—a capital addition to the ordinary window. There is a model also of a sash made with a false head or casing at the top, by which the upper sash can be raised to allow a space for ventilating at the meeting rails. Mr. Bedborough, architect, patented a plan for effecting the same object, but in a more desirable manner, by making the top sash so much in excess of height of the lower one that it could be lowered at the rail without draft. Several "improved" windows are

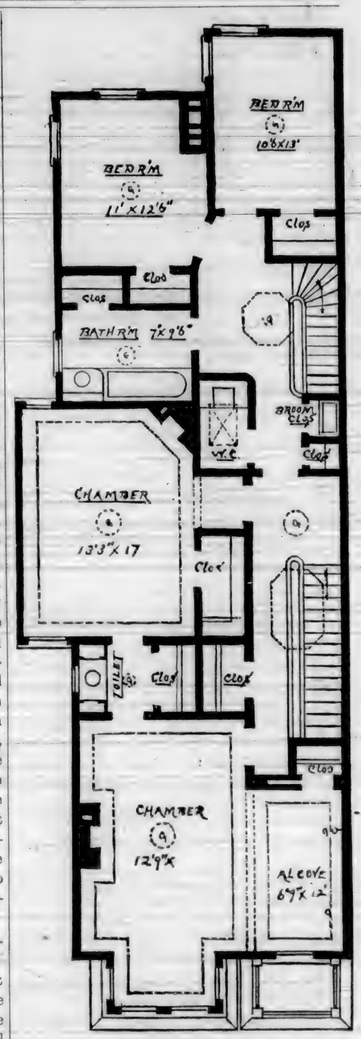


PLATE 4.—SEE "OUR ILLUSTRATIONS."

constructed so that the sashes are made to balance one another, the opening of the bottom sash lowering the upper one; but the plan is not unobjectionable. The objection to weights, which are very liable to become detached from broken cords, is certainly one calling for removal by some better mode of hanging than we at present adopt. Generally the mechanism of the sash window seems to be a subject of sufficient importance to induce a committee of experts to report upon the matter. The trade might be invited to co-operate with architects, or, perhaps better, a prize might be offered for some improved mode of securing safety, ease of movement, cleaning facilities, ventilation and weather-tight qualities in our conventional window.

The Perils of Underpinning.

UNDER this title we recorded recently the result of an action to recover damage in compensation for injuries received through negligence on the part of defendant. The circumstances were as follows: The defendant in the action employed the plaintiff, a bricklayer, to do certain work on defendant's premises, who personally superintended the work. He was to underpin a wall with Portland cement. The wall was underpinned nine feet, but as this was not considered sufficient, the defendant gave orders to underpin another eighteen inches, which was excavated to the whole length of the wall. While the plaintiff was engaged in the operation of pinning up, the wall came down, breaking his legs, and necessitating his confinement in a hospital for fifteen weeks. It is almost needless to say the jury found a verdict for the plaintiff, assessing damages at £100. There was an obvious case here of negligence. The wall having been underpinned nine feet, an extra eighteen inches was ordered, and the navvies had actually excavated the entire length of wall to the required depth. Two lessons are to be drawn from the occurrence. Mechanically, the risk of undermining a wall, or taking away its support even on one side, is great, and incurs serious danger, notwithstanding which we find bricklayers ready to risk their lives upon the most foolish assumption. They often think an old wall will bear any amount of cutting about, and that it is self-supporting. Not long ago we examined a party-wall which had been excavated along its whole length on one side below the footings. What occurred may be easily imagined. The lessee of the adjoining house suffered much in consequence. The walls throughout the house were seriously cracked, and the settlements threw all the sash-frames and cupboard doors near the side wall out of square, so that they could not be opened or closed. The staircase walls showed large fractures, the steps of stone were cracked, and the sills of windows, and the papering and plastering were also fractured and torn. The whole wall, which was a heavy one, had sunk, owing to the lateral resistance of the soil below the footings having been removed. There was a natural compression of the ground below the wall, which might have ended disastrously if the cross-walls and connections had not been contributing to the support. The operation of underpinning is one of those which frequency has rendered careless. It is a common thing to find a considerable removal of wall before the pinning up is commenced, a proceeding which is thought to expedite the work. Nothing can be more dangerous to, nor more reckless of, the lives of those employed in the operation. The very term "underpinning" expresses a piece-meal process, the removal of only a small portion at a time, and the part pinned up in cement and hard materials. A wholesale excavation beneath an old wall is simply taking away its support and hastening its fall. We see besides a variety of operations carried on adjoining a wall of very unstable character, such as digging trenches for foundations and draining, without the slightest care being exercised by shoring the structure. In walls of doubtful composition, or full of old insertions and settlements due to bad foundation, the utmost caution ought to be used, by strutting the wall and inserting "needles" under shaky parts of the structure. On clayey and peaty soils the drainage of water has often a very prejudicial effect, by causing the foundation to yield.

As most of our readers are aware, in common law a neighbor has a right of natural support of the soil, so that if an adjoining owner, by underpinning, causes it to fall he is liable for damages. There is a special easement of support from adjoining land acquired after a certain period of time (twenty years). The case of "Rigby *vs.* Bennett" is instructive as showing the liability of a building owner to underpin his neighbor's wall before going below it. The plaintiff bought some land in Whitechapel on a building lease, subject to approval of plans. After obtaining consent, he commenced building. An adjoining lot was subsequently purchased by the defendant on like terms, and he proceeded to build an end wall, and commenced to excavate below the plaintiff's foundations, calling upon him to take steps to underpin or otherwise secure his building. The plaintiff refused, and obtained an injunction restraining the defendant from further excavating without underpinning plaintiff's walls. It was arranged that the underpinning should be done so as not to delay time, and the cost of it await the trial. The Vice-Chancellor decided in favor of the plaintiff, and the defendant had to pay cost of underpinning. The defendant appealed against the decision, but the court dismissed the appeal with costs, it being held that the first to build and take up his lease was entitled to support of the adjoining land, and if the defendant wished to go down lower, he must first underpin his neighbor's wall. The same thing would have happened if the wall had been a party-wall, unless the plaintiff derived any benefit from it, in which case he would have had to pay his proportion of the cost.

Walls are sometimes found to overhang from insufficient foundations, and the greatest care is required in underpinning. An important case of this kind was heard some time ago (December, 1878) before the Master of the Rolls ("Duke of Westminster *vs.* Tattershall"). The plaintiff sought to restrain the defendant, who had erected a massive building of great height, from overhanging the plaintiff's land, and claimed damages for the injury. The wall in question abutted close to the plaintiff's land, part of the brick footings and concrete of the wall being within the limit of the same; in fact, the foundations were alleged to be upon the stratum of peat above the London clay, instead of being carried down to it. An irregular subsidence took place; the wall had cracked, and the external wall overhung the plaintiff's land ten inches, so that he could not proceed with his building. On the defendant's side it was contended that the wall would not have further encroached had the plaintiff properly shored up the building after having dug certain trenches. Certain strengthening works were rendered necessary, for which the defendant made a counter-claim. Here was a building resting on a bed of peat, which, as it was affected by moisture, caused cracks to appear. How to deal with a building so situated is not an easy matter. It was alleged by one of the witnesses called that the piles driven for the new foundations shook the concrete under the building and caused the cracking. We merely instance the case to show the extreme carefulness necessary in preparing foundations for new buildings next to structures of doubtful stability. After the piles were driven, the earth was excavated, and concrete filled in, the piles being wedged up tightly—the only right course that could have been pursued. But excavating trenches near or below walls of shaky condition, especially when the footings rest upon peat, is not a plan that can be defended, nor is underpinning in brick practicable where great weight has to be borne. It has been said by a good authority that it is not possible to underpin ninety tons by bricks, as they would crush. In such an instance the only substantial means of securing stability is to use Portland cement concrete for the underpinning, and to take every care to secure the wall from cracking or collapsing, by shoring.—*Building News.*

The subjoined simple preparation will be found desirable for cleaning and polishing old furniture. Over a moderate fire put a perfectly clean vessel. Into this drop two ounces of white or yellow wax. When melted, add four ounces of pure turpentine, then stir until cool, when it is ready for use. The mixture brings out the original color of the wood, adding a luster equal to that of varnish. By rubbing with a piece of fine cork, it may, when it fades, be renewed.

Real Estate Market.

THE activity in real estate is less than it has been in the recent past. That it should be so, is both natural and reasonable, nor is there any discouragement in the fact. During the past six months there have been a very large number of building, and some business lots sold, and all of them at high prices—prices which could be obtained only upon an excited market. But buyers have been numerous, and almost every piece of property that has been sold, has been at prices *satisfactory to owners*. There is still a large number of buyers seeking investment for both improvement and speculative purposes, but the top of the market being reached in the latter, at least for the present, there is but little inducement to those having spare coin, to tie it up in investments which are not likely to advance beyond present set values, for some time to come; and those desiring pieces for homestead improvements, hesitate to pay the prices demanded for choice lots, which in scarce a single instance are not high, and generally extravagant; while for rental improvements, the inducements are not strong. The only break in the real estate market, is from high to moderate prices.

The tone is good and sound, and properly will continue to find ready purchasers at fair and right values. There have been lots sold within the last six months, at prices which could not be duplicated to-day, for the sole reason that they were bought under the influence of excitement, and sold high, and it will require time to bring actual value up to the prices paid. Our real estate auction houses have been places of joy and rejoicing for the man of the hammer, for real estate owners, and sometimes to purchasers; and the outlook is still excellent, but not at advanced rates, except in special property. The thousands of lots sold during the past year, must necessarily have largely filled the demand, and the "go slower" period must follow. A calculation based upon the sale of real estate in San Francisco during the past year, supposing it all to have been bought for improvement purposes, would indicate a population for this city, by the end of ten years, of 750,000, a number far greater than can reasonably be expected.

FALLING OFF IN BUILDING.

Our first quarterly report for 1885 showed a state of affairs in building activities, far in advance of any preceding year, for the same period. The great rush that has prevailed, has been largely influenced by the low price of lumber and building materials; by this, more than by an actual demand for more buildings, for either tenement or business purposes. Hundreds of houses and flats have been erected under these circumstances, until the "to let" signs have become numerous on almost every street in the city. Consequently it is to be expected that fewer buildings will be erected during the remaining months of the year, than has ruled since January first, although our report in present issue shows a continuation of brisk activities. If the same ratio of building was kept up, as has prevailed so far this year, there would at the end of ten years be homes for one million of inhabitants. It cannot therefore be otherwise than a little letting up in the future,—for a time at least.

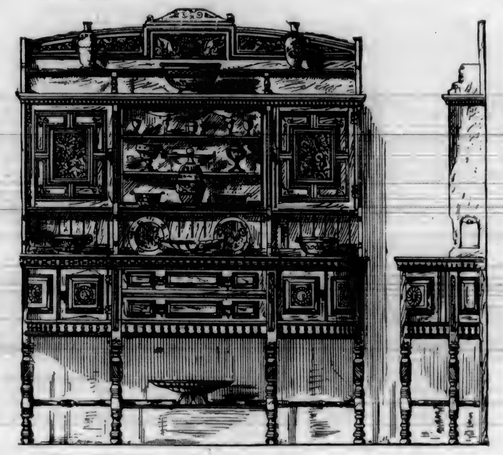


PLATE 5.—SEE "OUR ILLUSTRATIONS."

Fiber in Nails.

UNLESS cut nails are made from better material than is used generally now, their place in the market will be usurped by nails made from fibrous material. Wire nails are very favorably regarded, and are used in preference to cut nails on account of their superior tenacity, notwithstanding superior cost. The iron for cut nails, after being rolled, is slitted or cut lengthwise to a width adapted to the length of the nail to be cut. The length of the nail so cut is directly across the fiber which the iron has acquired by rolling, and, of course, shows it weakest where it should be the strongest. The ordinary cut nails will not drive into seasoned hard wood without "crippling," even under direct blows, and when the blow of the hammer is slightly to one side, they snap like clay pipe stems—they have no tenacity. The weakness of these nails is shown by the fact that it is almost impossible to straighten one that has been drawn from the wood, and then drive it again; in many or most instances the nail will break in drawing.

On the contrary, the wire nails may be crooked into corkscrews, and then be straightened and be redriven. They are not only tough, but they are stiff, and will penetrate hard wood where the cut nail would break sharply off or hopelessly crook beyond restraightening. In every respect the fibrous nail is better than the cro-scut nail. If it could be afforded at the same or an approximate price it would take the place of the ordinary cut nail.—*Scientific American.*

One of the greatest evils of the present day is the unfitness of the average workman for anything but mere routine work. Such a thing as a knowledge of the general details of a craft or trade, is almost unknown. The workman, from boyhood up, has become so accustomed to the pursuit of one idea, one branch of the trade, that he strives only for mediocre excellence in that one branch, and has no ambition beyond that of acquiring a sufficient knowledge of the particular line of business in which he is engaged to insure him the maintenance of his situation. The average workman, if he has the intelligence, has not the ambition to perceive that the skilled and careful man, familiar with all the details of the business, is the one who is most likely to retain the good-will of his employer, and fails to perceive that when the hard times come, the man with the limited knowledge of his business is the first to be dropped from the pay-roll, while his more competent brother, when work fails in one branch of the business, can be profitably put at work in another. Every man should thoroughly master all the details of his business, and some day, he cannot tell how soon, the opportunity will come for him to better his condition and take advantage of those acquirements which have come to him in the days of his apprenticeship. —*The Cincinnati Furniture World.*

Among the artisans, carpenters take the lead in numbers, having increased from 150,000 in 1850 to 373,000 in 1880. A reduction in the rate of increase is noticeable in late years, due to the manufacture by machinery of doors, sashes, etc., work which was formerly done by the job.

PLATE 6.—SEE "OUR ILLUSTRATIONS."

The Workman and His Tools.

WHY is it that the mechanic can work with greater ease and to better advantage with his own than with another's tools, even though the latter may be in size and shape identical with his own? Is it a matter of nerve or mind that makes the difference? That workmen do prefer their own tools and can work better with them is a well ascertained fact. The student even prefers his own books, and can use them to better purpose than other volumes, even if the latter come from the same printer and are enclosed in a similar binding. Not unfrequently we find an old mechanic clinging to an antiquated tool, because he likes it better and finds it handier for him than a new and improved one. If asked why he prefers it, he will say that he has become accustomed to its use and does not care to change. He will sometimes use a lathe tool having a peculiar angle, preferring it to any other, because he has learned to work with it, and has no trouble in using it, while to employ one with another angle would necessitate a change in position, and perhaps a re-training of the muscles of the hand and arm in order to do his work with satisfaction. The workman can always wield his own hammer with more effect than any other, and the same rule prevails with the use of all tools that are frequently employed by him. He clings to his friends, the old tools, with a tenacity surprising to those who are not familiar with the intimacy which, we may be allowed to say, grows up between him and them.

When one becomes habituated to the use of an instrument, he manipulates it with something like automatic precision. His hand knows just when to take it up. It, in a sense, becomes fitted to the hand, and there is something in the trained touch akin to the skill displayed by the musician in striking the keys of the piano. This action is half physical, half mental. It begets a sensitiveness that comes from long practice and skillful handling. Every curve or angle of an instrument touched by the hand leaves a mental impression. So sensitive is the mind to this observation that the mechanic instinctively knows when there has been a change produced in the shape of a tool during his absence. The hand will detect the defect before the eye. Thus, if a small chip be cut from the handle of the hammer the workman will discover the change immediately upon taking it in his hand. The nerves of the hand communicate the fact to the brain even before the eye has picked up the imformation. The weight of the tool is as important to the workman as its shape. If he is asked to use a lighter or heavier hammer than the one he is accustomed to work with, he will find more or less difficulty at first in wielding it. Even a sligh difference in weight will be immediately perceptible to him, and often prove a severe annoyance until he becomes accustomed to the change.

Perhaps all mechanics do not become so sensitive to the use of tools as those we have alluded to. All have not the delicate touch. All pianists are not delicate players, and a few are so insensible as to play without that spirit and understanding which marks the true artist. The good mechanic loves his tools, and feels that regard for them that the student entertains for his books. Indeed, they are his helpers—assistants in his daily toils. That he should prefer them to new ones is not strange. They enable him to do his best work. It is an unfeeling workman who can throw away an old tool without a sigh of regret.

NAILS IN A POUND.—It is said there are ten more nails in a pound of 8-penny iron nails than there are in a pound of 8-penny steel nails. If this is true there would be 1,000 more nails in a keg of 8-penny iron nails than there would be in a keg of steel nails. The count is said to have been made at Wheeling.

"There's tricks in all trades but ours." Speaking of walnut logs, the New York correspondent of the *Northwestern Lumberman* says: "Some of the logs get extensively doctored before they arrive here. I saw a lot in the railroad yard the other day that the shipper probably intended for good logs, and, to cover up some of the defects, doctoring had been done; but it is really time wasted, as the keen eye of the buyer will carefully scan every inch of the surface. In the end of one log a hole had been filled by driving in charred bark and cutting it off smooth, evidently expecting that the paint would so conceal it that the defect would not be noticed by the measurer. One log had a hole in one end at the heart three or four inches in diameter and this was carefully plugged with a round piece of poplar with the heart in the center. This had been smoothly cut off even with the end of the log, and the paint did hide the defect pretty well."

Bancroft's Works, Vol. XIII.

HISTORY OF MEXICO 1824 TO 1861.

THE 16th Vol. of the series of "Bancroft's Works" is now being delivered to subscribers. The original plan of the series has deviated from that first given, so that although the above is given as Vol. XIII it is really the 16th that has been delivered.

The present volume contains a very full and graphic description of the history of Mexico from 1824 to 1861. During that period occurred the war between Mexico and the United States. The various causes which led to that unfortunate episode, the result of the various battles, the advantages gained by the U. S., are described such as can only be portrayed by Bancroft. The author does not believe that the war was a just one, and takes the ground that it was precipitated by President Polk's action in ordering troops beyond the limits of the United States and into Mexican Territory.

There is quite a difference in the accounts of the various battles, as given in this work and those found in other histories. In our opinion the account before us is a just and equitable one, this deduction being made from a careful consideration and study of the various statements by different authors, supplemented by conversations with parties who were actively engaged in the Mexican war.

This strikes us as a fair inference further, because in his preceding volumes Mr. Bancroft has established a most enviable reputation for impartiality and loyalty to the truth. Besides, it will not be doubted that the data from which he writes the history of Mexico is as nearly complete as possible; in fact, the most reliable and comprehensive in existence

Bancroft's Histories.

THIS magnificent work embraces a complete history of the Pacific States. The territory covered is the western half of North America, from Panama to Alaska, including all of Central America and Mexico, and is equivalent in area to one-twelfth of the earth's surface.

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The Enterprising Hardware Dealer.

THE hardware trade of a town is largely what the dealers make it. To a certain extent they create the demand for the goods they sell. Their method of buying presupposes this fact. Otherwise dealers would consult their customers before making selections. True, many articles are bought with a view to anticipate the wants of the purchaser, but there is a large share of the stock which the dealers buy on their own judgment, and with a view of inducing the trade to concur in their choice. Thus, in the matter of stoves, they select such styles, kinds and make, as they deem either the best or the most easily sold, relying upon their ability to make their patrons purchase the same on their recommendation. There are merchants whose power of persuasion is greater than others, and whose voice in controlling the choice of articles by their patrons is very potential. Such dealers are an authority in their several lines. To reach this position it is necessary that one have a thorough knowledge of the business, and full information relative to the comparative merits of various articles coming into competition. The dealer would make a poor show in attempting to sell a new lock at a higher price than charged for those ordinarily kept in stock who could not explain to the purchaser wherein the new lock was superior to the old. Some feign a knowledge in such matters that they do not possess, but they are likely to come to grief, as such shallow pretenses are sooner or later discovered.

The merchant often is called upon to introduce an entirely new thing. Here he certainly is an innovator, and must rely upon his powers of persuasion in bringing it into use. The mistake which many merchants make is in thinking that it is better to follow their trade than lead it. This conservatism might have done in early days, when competition was not rife, but it is no longer safe to follow this course for fear that some enterprising competitor will step to the front and carry off the business. New things are very taking. They often find purchasers on account of their novelty. It is a good reputation for a store to have it generally said that in it are kept all of the new articles in its line. Customers find this out much more rapidly than many suppose. If a merchant once gains a reputation for enterprise, it becomes a part of his capital. He can do much toward cultivating a correct public taste. But he cannot sell silver-plated butts or other ornamental hardware unless he keeps them. He cannot induce his customers to have faith in such articles unless he himself has faith in them. It is not always easy to sell new things to the first customer, but after a while, when the trade has been sufficiently cultivated, the trouble ceases and the goods sell themselves.

It is not such a difficult task after all,—that of guiding and directing the course of the tastes in one's trade. A few timely words, a fair stock in hand to show, a few sales for reference, and the ice is broken. Why so many dread to introduce new articles is the doubt and uncertainty about their being favorably received at first. Yet not a few merchants have confidence enough in themselves to assert that they can sell anything, which, so far as they are concerned, is probably the truth, for a good salesman who has sufficient hope and assurance can sell almost anything he undertakes to dispose of.

The hardware merchant should take pleasure in being the cause of introducing new and improved articles to his trade. If by his means the homes of his patrons are beautified and made more secure, the toils of the housewife lessened, or the comforts of the home increased, the labors of the farm made lighter, and turned into more useful and economical channels, certainly his endeavors have borne good fruit. When a man can be a public benefactor and still make money by so being, it should require little pressure to induce him to become one. To be enabled to educate the public taste is a matter of no small importance. The quiet and unobtrusive work of the merchant is no less beneficial—often far more so than that of a noisy orator. The dealer too often forgets that he is something more than a mere merchant—he is a part of the community; he is an important factor in the civilization that surrounds him; he can be useful to his neighbors and those who dwell within the circle of his usefulness. He should remember that there is something higher than the mere matter of money making. In the conduct of his business, he should strive not alone to amass riches, but to be serviceable to his friends—to the community about him. Having this in mind he becomes a useful member of society, an aid in the elevation of the taste and comfort of his fellow-men. Dealers imbued with such a spirit would seek to introduce the best and most serviceable articles—would strive to culivate a better taste among their followers—would endeavor to give not only value received for every dollar dropping into their tills, but the *best* value received which they could give. A trade built up in such a spirit would be profitable alike to seller and purchaser.—*Industrial World.*

PLATE 7.—SEE "OUR ILLUSTRATIONS."

THE May number of the *Decorator and Furnisher* is one of the most attractive and complete that this beautiful magazine has ever issued.

A magnificent new cover, designed and drawn by Sarony, is the first noticeable improvement. In addition to the usual full quantity of articles and illustrations for the aid of those interested in house decoration and furnishing, either in the trades or as amateurs, there is a magnificently illustrated article upon the 7th Regiment Armory, giving six rich half-page views of the most noticeable rooms, and an interesting description. There are seven pages of original and useful designs for ladies' work with full explanatory text. A full page colored plate for ceiling decoration, and an elegant supplement entitled, "*The Spirit of Night*," by Napoleon Sarony, printed upon heavy plate paper, are presented to every purchaser of this May number. Among the many other articles and designs are several upon Decoration Day, Ceiling Decoration Academy Exhibition, Novelties in Styles, etc., etc.

Published at 30 E. Fourteenth Street, New York City.

SEWER GAS A CAUSE OF MEASLES AND PNEUMONIA.—Attention is called by the *Sanitary World* to an extraordinary outbreak of measles among the children of a public institution, caused by sewer gas. The medical officer states that in the early part of October the drainage became choked, and the sewers had to be opened. During the progress of the work the house became filled with sewer gas, and for some hours the evil was almost intolerable. Thirty-one days afterward an outbreak of measles and pneumonia took place, the whole of the children, twenty-five in number, being almost simultaneously affected. There were four deaths, and the cases were of a severe type, with high fever. While lecturing on healthy houses to the students of the Woman's Medical College this season, the subject of sewer gas came up for some remarks, when one of the students, whose husband is a physician, remarked that she had two children. The bedroom in which they slept had the ordinary wash-bowl, with faucet for hot and cold water. The children coughed considerably during the night, and suffered with sore throats most of the time. The husband, suspecting that sewer gas might possibly enter the room from the water pipes during the night, had them closed. The result was, the coughing ceased at once, and the children have not been troubled with it since.

False Tenders.

THE question of tenders is daily becoming a matter for most serious attention. A glance at the published offers made every week, where there is often a disparity of half, sometimes of three-fourths, between the amounts of the highest and lowest tenders, show that there is something radically wrong. Either the one tender is too high or the other is too low. No mistake can have been made in the estimates, for the same specification has served on a basis for both; beside there is the fact that these low tenders are not occasional, but so common that many plumbing firms of long standing, skill and respectability, are now refraining from taking part in public competition altogether, convinced that their exertions are useless. Tenders made by such firms with the utmost care, and with the alloyance of only the smallest margin for profit, are beaten by others which offer at less than half the amount. Either the former do not know their business—in which they have grown gray—or these tenders are made below cost price, and with no intention of fulfilling the terms of the specifications.

Though that may seem strange, yet there are firms who put in low tenders for the "mere love of business"—to get the name of doing certain work, perhaps—and who faithfully discharge the terms of their engagements. But these firms are extremely few. The bulk of the low tenders are made by firms who cannot possibly do the work indicated at the price they tender for it, always understanding the employment of the best of skill, workmanship and material in its execution. This is what is looked for from them by the customer; but as they have no special sources of cheap labor and material which the respectable firms aforementioned have not, they can no more respond to the common sense stipulations of the specifications than do any other impossible deed. The way the specifications are attempted to be carried out is by the employment of inferior technical oversight, or of even none at all, of low-class material, and of unskilled workmanship. Work thus executed, in the end costs far more than the sum represented by the difference between the highest and lowest tenders, and is a fruitful source of the bad building and unsanitary work which abounds around us, not to speak of the discouragement to honest labor which results therefrom.

Remedies for this state of things which affect only the quality of the workmanship, do very little in mitigation of the evil; what is really wanted is a remedy vastly more far-reaching. It is to be found in simply obtaining the services of some competent arbiter between customer and tradesmen. Such a man is in general the architect and if his estimate of the cost of the work were made the universal basis or test—instead of the exceptional one, as now—of valuation of contract work, there would be an end at once to the evils of the present system, both as toward the trade and the public. The architect's estimate would be a guide—not necessary infallible—to the public as to the approximate cost of the work sought to be executed, done in a workmanlike manner and with sound materials, in accordance with the intentions of the customer. Tenders much below that would be recognized as being impossible of execution in the sense intended by him. On the other hand, an opposite check, on exaggerated tenders, which the competition system is considered to afford, but which in many cases it does not, would be provided.

The competition system is a good one, but it is capable of abuse at its two extremes. With the checks we have suggested honest trading would be fostered, and the indiscriminating public protected, while bad workmanship and dishonest trading would be discouraged.—*The Builder and Wood-Worker.*

Merit starving in a garret is very pathetic and romantic, but merit battling with the world for recognition is manly and admirable, and deserves all the credit its hearty self-reliance is certain to win for it in the end.

Beautiful surroundings inspire pleasure insensibly. The author can write, the artist can paint better in a comfortable studio than in a bare garret. The beatification of life is a duty every man owes to himself, and the readiest way to beautify life is to live it in an atmosphere of refinement and intellectual enjoyment. The mind has an appetite as well as the body, and it must be fed as regularly through the eye as the stomach is supplied through the mouth.

MASONS' AND BUILDERS' EXCHANGE
OF SAN FRANCISCO
Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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BENDER, JACOB, 1009 Clay St..... " 73
BECK, J., 10 Eleventh St..... " 12
CAIN, R. K., 213 Page St..... " 61
CALVERT, JOHN, 812 Hyde St..... "
COX, JOHN, 608 Jones St..... " 16
CLAWSON, L. E., 129 Oak St..... " 2
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MCGUIRE, JOHN, 212 Grove St..... " 74
MULCAHY, JAS, 612 Larkin St..... " 33
NAGLE, GEO. D., 427 Montgomery St..... " 24
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O'BRIEN, D. J., 323 Dupont St..... " 31
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RILEY, J. F., 166 Perry St..... " 38
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WORRELL, C. R., 888 17th St..... " 5
WATERSON, G. T., 638 Market St..... " 64
YOUNG, LEWIS..... " 49

BOX RENTERS—IRON MEN.

RALSTON, H. & J., Iron-men & Housesmiths, Box 78
LEWELLYN, R., Columbia Foundry..... " 77
WESTERN IRON WORKS..... " 69

STONE.

SCHALICKE, F. W., Patent Stone .....Box 75
SOMERVELL, W. S., Granolithic Paving Co.. " 55
PETERSON, H. M., Sand and Gravel..... " 63
RICHARDSON, M. B. Concrete..... " 1

BRICK.

ROBERTS & DAVIS, Sacramento Brick.....Box 36
REMILLARD BRICK CO..... " 23
PATENT BRICK CO..... " 29
PETERSON, T. W. & Co., San Jose, Brick Co.. " 68

PATENT CHIMNEYS.

STEVENS, W. E., Patent Chimney.....Box 46
BROWELL, J., Patent Chimneys..... " 71
CLAWSON, L. E., Patent Chimneys..... " 2

MISCELLANEOUS.

DAVIS & COWELL, Lime and Cement.....Box 43
WHITTIER, JAS. E., Asphaltum..... " 41
MCCLURE, P. L., Grader and Waterman... " 30
SIBLEY, L. B., Teamster..... " 40
WARREN, CHAS., Grader..... " 37
BUCKMAN, A. E., Grader..... " 42
KELSO, JOHN, Grader..... " 76
ENGLISH W. D. & CO., Graders..... " 70
BUTTERWORTH, T. C., Glazier..... " 48
HARNEY & SON, Street Contractors..... " 54

Wrong Statement Corrected.

A bill recently passed by the California assembly gives to any young man under twenty-six years of age, who learns a trade by serving an apprenticeship for three years, and is a moral young man, $250 out of the State treasury.

The above article we fine in a late number of the *Building*. The statement contained therein is decidedly erroneous. The bill, although introduced, was, to use a senator's phrase, "ridiculed into a side pocket," and never had the remotest chance of becoming a law.

BUSINESS NOTES.

Wood Filler.—This celebrated preparation—"WHITTIER'S PATENT WOOD FILLER"—is justly earning a reputation for its superior qualities in rendering red and other soft woods capable of receiving a high degree of finish. It is also applicable to hard woods, and is about the only article that gives a durable, economical, natural and perfect finish. Pamphlets giving information in regard to this preparation, may be obtained by addressing the Bridgeport Wood Finishing Co., 40 Bleeker Street, New York City.

Mechanics' Tools.—Osborn & Alexander are the accredited agents for all new designs and inventions in the line of Mechanics' Tools. Send for circulars to 622 Market Street.

Elevators.—Write to John Hammond, 42 Beale Street, agent for the Otis ELEVATOR, and you will receive circulars giving full description of the best elevator now in use.

Window Glass.—F. H. Rosenbaum & Co., 567 Market Street, are the agents for all the best brands of window glass. They also make a specialty of looking glasses, and will furnish any size and quality to order.

Builders' Hardware.—Dunham, Carrigan & Co. have the largest assortment of any firm on this coast. Their assortment of locks is superb. Call on or write to them for information.

Wood Mantels.—Call FIRST on the Boller Mfg. Co. warerooms, corner of Turk and Taylor. We say FIRST, because after inspecting their stock there will be no necessity of inquiring any further.

Pan Closets.—Jos. Budde, 126 First Street, manufactures the best Pan Closets. Write to him for particulars.

Paints and Oils.—Par excellence is the brand on every keg of paint and barrel of oil that is furnished by the well tried and proven firm of Sullivan & Ravelen. The latter gentleman was formerly the manager of the first lead company started on this coast, and his thorough knowledge of the qualities and materials necessary to produce a superior article of paint, makes him peculiarly fit to be at the head of the GERMANIA LEAD CO. Try the Germania Lead, and you will always give a second order for the same brand.

Where owners' names are left blank, it is so done in many instances by special request.

The building, reported in our last issue, on Jackson Street between Fillmore and Steiner, should have been credited as follows:

Oakland—20th Street and 13th Avenue; O., J. Valentine, $20,000.

The change will be noticed in our semi-annual report.

Hayes, corner Buchanan. Two-story frame. O.—Simpson Memorial Med. Church. A.—J. Maquis. C.—J. A. Leonard. $30,000.

Franklin, near Turk. Six two story frames. O and B.—J. R. Mitchell $25,000.

Eighteenth, nr. Guerrero. Two-story frame. O.—F. J. O. Wilke. A.—Kenitzer & Raun. C.—Conrad & Miller. $15,000.

Scott, between Waller and Haight. Eight two-story frames. O and B.—J. Hinkle. $30,000.

Bush, between Larkin and Hyde. Two-story frame. O.—Rev. Dr. Noble. C.—S. T. Green. $5,000.

Bush, near Hyde. Three-story frame. O.—A. Paturel. A.—G. E. Voelkel. C.—J. McKay. $10,000.

Clay, near Lyon. One-story frame. O.—M. s. J. Murphy. C.—Patterson & Smith. $1,500.

Capp, nr. Seventeenth. Alterations. O.—J. Doran. C.—William McKaon. $2,000.

Capp, corner Seventeenth. Two-story frame. O.—J. Laughmane. A.—M. J. Welsh. C.—Cormack & Elam. $4,000.

Devisadero, nr. Washington. Two-story frame. O.—W. H. McAllester. A.—J. C. Pelton. C.—R. Smiley. $4,500.

Eddy, near Scott. Alterations. O.—J. Gampl. C.—J. Maguire. $1,500.

Ellis, nr. Scott. One-story frame. O. and B.—A. Ross. $1,000.

Eddy, near Taylor. Alterations. O. A.—Plasis & Moore. C.—Wm. Langstaff. $3,500.

Fillmore, nr. Fulton. Two-story frame. O.—D. Roemer. A.—G. H. Miller. C.—F. W. Kerns. $4,000.

Geary, corner Scott. Two-story frame. O.—F. Bruns. A.—J. M. Curtis. C.—F. Bruns. $7,000.

Hyde, bet. Sutter and Post. Alterations. O.—J. Gabriel. C.—C. Hartman. $3,500.

Haight, near Pierce. One-story frame. O.—E. M. Jones. C.—H. W. Darrow. $3,000.

Howard, nr. Sixth. Two-story frame. O.—Mme. Encoyand. A.—B. E. Henricksen. C.—Moore Bros. $7,000.

Howard, nr. Tenth. One-story frame. O.—J. Mier. C.—Ozias D'Anis. $3,000.

Ivy Ave., corner Webster. Two-story frame. O.—J. W. Hamilton. C.—Haskell & Webb. $3,000.

Jackson, bet. Broderick and Baker. Three one-story frames. O. and B.—W. F. Lewis. $3,500.

Jackson, bet. Baker and Lyon. Two-story frame. O. and B.—P. Murphy. $700.

Jackson, north side, nr. Hyde. Alterations. O.—J. Wall. A.—T. J. Welsh. C.—B. R. Baukins. $1,000.

Jackson, south side, near Leavenworth. Alterations. O.—P. Harris. C.—B. R. Baukins. $750.

Sutter, Baker and Broderick. Three one-story frames. O.—C. Buckley. A.—T. J. Welsh. C.—F. & F. J. Owens. $17,000.

Mission, nr. Seventeenth. Skating Rink. O.—S. Shear. C.—W. M. Fletcher. $6,500.

McAllester, near Larkin. Two-story frame. O.—W. Lang. C.—William Pluns. $5,000.

Pine, nr. Van Ness. Three-story frame. O.—G. F. Casey. A.—Schmidt & Havens. C.—F. W. Kern. $4,000.

Pacific, nr. Larkin. Two-story frame. O.—J. C. Moore. C.—Weber & Roth. $3,000.

Pierce, near Page. One-story frame. O.—J. Hinken. A.—M. P. Schetzel. C.—William Pluns. $2,500.

Page, near Baker. Two-story frame. O.—Mrs. M. White. C.—Wm. White. $3,500.

Rauch, nr. Howard. Two-story frame. O.—J. Murphy. A.—M. J. Welsh. C.—H. Scholten. $2,000.

Shotwell, cor. Nineteenth. Two-story frame. O.—Keyston Bros. C.—Barrett & Walker. $3,000.

Treat Avenue, nr. Twenty-sixth. One-story frame. O.—C. Stephens; days' work. $3,000.

Twenty-fourth, nr. Alabama. Three two-story frames. O.—E. McGinness. A.—M. J. Welsh. C.—F. R. Daly $5,000.

Fifth, near Folsom. Three-story frame. O.—H. Swett. A.—H. T. Bestor. C.—S. C. Hanson. $12,000.

Fillmore and Fulton. One-story and basement frame. O.—O. Romer. A.—G. H. Miller. C.—F. W. Kern. $4,000.

Twenty-second, nr. Alabama. One-story frame. O.—P. Dudeo. A.—M. J. Welsh. C.—Thos. Mitchell. $2,500.

Twenty-first, cor. Treat ave. Two-story frame. O.—P. Bannan. A.—J. Clark. C.—W. A. Sheffield. $5,000.

Union, nr. Polk. One-story frame. O.—W. O. Bradley. C.—Geo. R. Bowles. $1,000.

Vallejo, near Stockton. Two-story frame. O.—H. Mathews. C.—S. Baldwin. $2,400.

Vallejo, nr. Octavia. Two-story frame. O.—E. A. Rix. A.—S. & J. C. Newsom. C.—D. B. Spangler. $6,000.

Washington, near Devisadero. Two-story frame. O. and B.—F. Gauterau. $4,000.

Ridley, corner Guerrero. Two-story frame. O. and B.—J. Sullivan. $5,000.

Bush, nr. Laguna. Alterations. O.—L. Harsch. A.—B. E. Henriksen. C.—Patterson & Smith. $1,200.

Baker, near Sacramento. One-story frame. O.—J. Sullivan. C.—Wm. Pluns. $2,300.

Pine, near Polk. Two-story frame. O.—G. L. Smith. A.—Percy & Hamilton. C.—Terrill & Slaven. $7,995.

Sacramento, nr. Franklin. Two-story frame. O.—Mrs. K. Backus. A.—S. & J. C. Newsom. C.—D. B. Spangler. $4,000.

Octavia and Linden Ave. Additions. O.—John Herbor. A.—G. H. Miller. C.—W. Huwe. $3,900.

Howard and Eleventh. One-story frame. O.—J. Meyer. A.—G. H. Miller. $3,500.

Seventeenth, nr. Castro. Two-story frame. O.—E. H. Doyle. A.—T. J. Welsh. C.—M. W. Kane. $6,500.

Jackson, near Hyde. Repairs. O.—J. Wall. A.—T. J. Welsh. C.—B. R. Baukins. $3,300.

Post, nr. Jones. Addition. O.—J. O'Brien. A.—T. J. Welsh. C.—J. W. Smith. $3,300.

Dolores, cor. Seventeenth. Two-story brick. O.—C. Duveinck. A.—T. J. Welsh. C.—J. Blake. $7,200.

Pine, Dupont and Stockton. Two-story brick. O.—P. Cuneo. A.—J. C. Pelton. C.—D. J. O'Brien. $3,700.

Fulton, nr. Octavia. Three-story frame. O.—Chas. Christen. A.—B. E. Henriksen. C.—J. Klein. $6,700.

Broadway, corner Powell. Two two-story frames. O.—Dr. Alex. Buck. A.—B. E. Henriksen. C.—Patterson & Smith. $10,500.

Tenth, near Folsom. One-story frame. O.—Union Soap Co. C.—Thos. Morris. $1,200.

Folsom, nr. Twelfth. Two-story frame. O.—M. Lahaney. A.—M. J. Welsh. C.—C. A. Anderson. $3,500.

Isis, bet. Twelfth and Thirteenth. One-story frame. O. and B.—H. A. Walter. $1,000.

Harrison, nr. Thirteenth. Two-story frame O. and B.—H. C. Leu. $2,000.

Valencia, bet. Herman and Ridley. Three-story frame. O.—G. H. Bew. A.—G. H. Hardwell. C.—R. P. Hurlbut. $6,000.

Ridley, near Market. Two-story frame. O.—W. Fredericka. A.—Schmidt & Havens. C.—C. Quinn. $5,000.

Sacramento, near Franklin. Two-story frame. O.—Miss K. Backus. A.—S. & J. C. Newsom. C.—D. B. Spangler. $7,000.

Mission, nr. Willow. Two-story frame. O.—J. Driscol. A.—M. J. Welsh. C.—H. Summers. $4,000.

Ford, near Seventeenth. One-story frame. O.—J. H. Carah. A.—J. J. Clark. $2,170.

Baker, nr. Pine. Two one-story frame. O.—F. Schutze. A.—H. Gielfuss. C.—Wm. Pluns. $3,600.

Fair Oaks, corner Twenty-fifth. Two-story frame. O.—Jas. W. Simpson. A.—J. T. Kidd. C.—C. Mason. $3,500.

Lyon, nr. California. One-story frame. O.—P. Connelly. C.—D. F. McGraw. $3,000.

Valencia, near Twenty-sixth. One-story frame. O.—Mrs. D. Hannegan. C.—J. Kelly. $1,400.

Valencia, near Twenty-fourth. Two-story frame. O. and B.—Thos. Randall. $3,500.

Valencia, near Twenty-third. Two-story frame. O.—H. H. Castle. A.—Townsend & Wyneken. C.—R. Parker. $4,000.

Minna, cor. Eighth. Alterations. O.—O. Ryan. A.—I. J. Clark. C.—T. Fox. $2,000.

Market, bet. Fourteenth and Fifteenth. Two-story frame. O.—W. Hoyt. C.—E. A. Doolittle. $2,500.

Sixteenth, near Market. Two-story frame. O. and B.—M. Irwin. $4,000.

Sixteenth, near Market. One-story frame. O. and B.—J. Irwin. $800.

Sixteenth, near Castro. One-story frame. O.—J. Duffy. C.—W. Walsh. $1,600.

Market, corner Noe. One-story frame. O.—Market Street Med. Epis. Church. C.—Odell & Fowler. $1,700.

Twenty-seventh, near Church. One-story frame. O.—Mrs. H. Miesner. A.—Townsend & Wyneken. C.—I. Sellanger. $2,000.

Jessie, nr. Seventh. Alterations. O.—Mrs. Wm. Burrows. A.—Townsend & Wyneken. C.—C. Brown. $1,500.

Fillmore, nr. Haight. Two-story frame. O.—J. Cooney. A.—Townsend & Wyneken. C.—T. McElroy. $4,500.

Oak, bet. Laguna and Buchanan. Two-story frame. O.—Mrs. H. Mohrmann. A.—John J. Clark. C.—Charles Quinn. $9,000.

Dupont, near Sacramento. Alterations. O.—W. G. Dobson. A.—W. Mooser. C.—C. F. Clawson; brick F. Dunphy. $7,500.

California, nr. Buchanan. Two-story frame. O.—Miss R. Bowie. A.—Pisels & Moore. C.—A. Jackson. $7,000.

Ellis, between Hyde and Larkin. Two-story frame. Basement. O.—George Hass. A.—J. H. Litchfield. C.—Haskell & Webb; mason, D. Pierce. $3,500.

Clementina, bet. Fourth and Fifth. Two-story frame.
O.—B. Barry.
A.—J. J. Clark.
C.—A. Nelson.
$3,000.

Washington, near Stockton. One-story frame.
O.—Jos. Tape et al.
A.—W. H. Wharff.
$2,100.

Florida, near Mariposa. One-story frame.
O.—Vernon Campbell.
A.—J. J. Clark.
C.—J. R. Wilcox.
$2,800.

Jackson, bet. Fillmore and Steiner. Two two-story frames.
O.—Baum & Goldstone.
A.—H. C. Macy.
C.—Geo. Lang.
$11,000.

Pine, bet. Webster and Buchanan. Alterations.
O.—Jas. O'Leary.
A.—Geo. A. Bordwell.
Day's work.
$1,000.

Ellis, bet. Franklin and Gough. Two-story frame.
O.—J. G. Hasshagen.
A.—Schmidt & Havens.
C.—F. W. Kern.
$6,000.

Leavenworth, bet. California and Sacramento. Two three-story frames.
O.—B. Heutrich.
A.—Schmidt & Havens.
C.—R. P. Taylor.
$7,000.

Turk, bet. Larkin and Polk. Alterations.
O.—M. A. de Laveaga.
A.—Schmidt & Havens.
C.—P. Crichton
$4,000.

Pine, bet. Van Ness Ave. and Franklin. Three-story frame.
O.—John Casey.
A.—Schmidt & Havens.
C.—F. W. Kern.
$4,000.

Ridley, bet. Guerrero and Dolores. Two-story frame.
O.—W. A. Fredericks.
A.—Schmidt & Havens.
C.—Chas. Quinn.
$5,000.

Howard, bet. Twenty-fourth and Twenty-fifth. One-story frame.
O.—H. H. Mayhew.
A.—Schmidt & Havens.
C.—Bergman & Buckley.
$3,750.

McAllister, northwest cor. Pierce. Four two-story frames.
O.—S. Anspacher.
A.—Schmidt & Havens.
C.—T. C. Riddell.
$35,000.

Clay, bet. Hyde and Leavenworth. One-story frame.
O.—Frank Grinciel.
A.—Schmidt & Havens.
C.—C. A. Anderson.
$2,500.

Ellis, nr. Franklin. Two-story frame.
O.—W. W. Dick.
A.—McDougall & Son.
C.—A. Jackson.
$6,000.

Thirtieth, nr. San Jose Road. Two one-story frames.
O.—Mrs. J. Wohlers.
A.—Huerne & Everett.
C.—L. D. Frichette.
$2,400.

Powell, cor. Bush. Three-story frame.
O.—Mrs. C. Himmelmann.
A.—H. Geilfuss.
C.—P. Dryer.
$15,000.

Baker, cor. Pine. One-story frame.
O.—E. Reinhold.
A. H. Geilfuss.
C.—Wm. Pluns.
$4,090.

Washington, nr. Sansome Alterations.
O.—R. Jordan.
A.—H. Geilfuss.
C. Conrad & Miller.
$5,000.

Leavenworth, nr. Turk. Three-story frame.
O.—L. Kobelin.
A.—Schield & John.
C.—Munster & Ames.
$7,000.

Washington, near Sacramento. Two-story frame.
O.—W. E. Stevens
Days' work.
$3,000.

MISCELLANEOUS.

Martinez—Two-story and attic frame. O., B. Fernandez; A., B. J. Clinch; C., Bulger Bros.; $15,000.

Merced—Two-story brick. O. and B., Meany & Packer; $8,000. One-story brick. O., P. Reilley; C., Meany & Packer; $2,500.

Vallejo—Three-story frame addition with brick foundation. O., Good Templars' Home for Orphans; A., A. A. Cook; C., Carle & Croly; $3,000.

Milpitas—Two-story frame. O., T. J. Sinnott; A., Jacob Lenzen & Son; C., J. S. Selby; $2,299.

Berkeley.—Three-story frame. O., J. Ballard; A., Curlett & Cuthbertson; C., J. Wilcox; $20,000.

Woodland—Main Street. Two-story brick. O., Frank Knox; C., B. F. Myers; $5,500. Elm. One-story frame. O., E. J. Pfeiffer; C., Glenn & White; $2,000. College Avenue. Two-story frame. O., Wm. L. Manour; C., Pool & Sears; $1,200. Third and Cross. One-story frame. O. and B., W. Hayden; $1,000. Improvements on Court House. Day's work; $1,000. Two-story frame carriage-house and stable. O., W. Childs; C., J. W. Henderson; $1,000. Main. One-story brick improvement Craft House. Day's work; $1,000.

Davisville—Two-story frame carriage-house and stable. O., Hext Brothers; C., W. H. Winne; $1,500. Two-story frame extension. O., Hext Brothers; C., W. H. Winne; $1,100. (Willow Slough District) school-house. Day's work; $1,200. Black Station. Two-story frame addition. O., D. N. Heurshey; C., G. W. Cooper; $1,200.

Yolo—Two-story frame. O., L. Knight; C., J. Caldwell; $3,500.

Petaluma—Two-story frame. O., G. R. Williams; A., S. & J. C. Newsom; $4,000.

Eureka—Additions. O., Wm. Carson; A., S. & J. C. Newsom; $50,000.

San Jose—Santa Clara, corner Santa Teresa. Two-story frame. O., M. Kenny; A., Lanzen & Son; C., —Mellwain; $4,700. Cinnabar, near the Alameda. Frame stables. O., Fredericksburg Brewery; A., Lenzen & Son; C., D. Green; $1,700. Two-story brick building. O., J. Plau; A., Lenzen & Son; C., Drew & Vincent; $6,500. I. O. O. F. building, three-story brick. A., Lenzen & Son; C., W. H. Kelsey; $3,100. One-story frame. O., C. A. Hunt; C., R. Summers; $1,909. Four one-story frames. O., F. Shilling; C., F. Davis; $3,150. Two-story frame. O., G. M. Bowman; A., S. & J. C. Newsom; C., A. I. McIlrain; $10,000. Santa Clara Street near Orchard. Two-story brick. O., John Plau; A., Jacob Lenzen & Son; C., Drew & Vincent; $6,000. Corner 3d and Santa Clara Streets. Three story brick. O., I. O. O. F. Hall; A., Jacob Lenzen & Son; C., D. H. Kelsey; $29,450.

Hollister—One-story frame. O., C. J. Cox; A., Lenzen & Son; C., J. Dorn; $2,000.

Fair Oaks—Additions. O., A. B. Hecht; A., H. C. Macy; day's work; $3,000.

Courtland—Two-story frame. O., Wm. Runyon; A., W. G. Copeland; days' work; $6,000.

Napa City—Two-story frame. O., Capt. Pinkham; A., J. Marquis; C., Corlett & Sons.

Sacramento—I and Twenty-fourth Streets. One-story and basement frame. O., Chas. B. Strong; A., N. D. Goodell; C., N. Harvie; $2,200. J Street, bet. Eighth and Ninth. Improvements and new front. O., A. Coolot; A., N. D. Goodell; C., Carle & Croly; $1,000. Front, bet. Second and R. Brick warehouse, one-story and basement. O., Drew & Clunie; A., N. D. Goodell; C., brickwork, E. F. Woodward; carpenter, Dean & Bohn and C. Ruggles; about $10,000. K, bet. Eighth and Ninth. Theater. O., Thomas J. Clunie; A., N. D. Goodell; C., E. A. Boyer; $16,000. D, between Eleventh and Twelfth. Improvements and additions. O., P. E. Platt; A., N. D. Goodell; C., N. Harvie; $1,600. L, bet. Eleventh and Twelfth. Two-story and basement dwelling. O., Jas. Bithell; A., N. D. Goodell; C., B. F. Bell; $6,200. Improvements to a two-story brick building on 3d and K Streets. O., P. Scheid; A., A. A. Cook; days' work.

Dixon.—Near town. Two-story and basement dwelling. O., James Porter; A. N. D. Goodell; C., B. F. Bell; $6,800. Near town. Tank-house and wind-mill. O., James Porter; A., N. D. Goodell; C., Carle & Croly; $1,400.

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Sanitary Engineer,

No. 316 Sutter St., Bet. Dupont and Stockton, S. F.

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Damascene or Berlin

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CARPENTERS'

—AND—

MACHINISTS'

TOOLS.

D. N. and C. A. HAWLEY, 501 to 507 Market St.

The California Architect and Building News.

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Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest.

NO OTHERS RECEIVED.

A Splendid Semi-Annual Showing of Building Activities and Investments in S. F.

THE break in building operations, anticipated and prophesied by many, has not as yet put in an appearance in any tangible form, as our report for the current month not only shows no falling off, but an increase over the preceding month of May, and largely in excess of the same month of 1884, while the present summary for six months of the current year

SHOWS A GAIN OF

$1,267,889

OVER THE FIRST SIX MONTHS OF 1884,

AS FOLLOWS:

First quarterly report of 1885, ending with our March issue, 288 building engagements, value	$2,069,261
Reported in April issue, 178, value	1,221,045
" " May " 127, "	577,843
" " June (present mo.), 148, val.	588,410
Total, 6 months, 1885	$4,456,559
" " " 1884	3,188,670
In favor of 1885	$1,267,889

No better indication of the real financial condition of the inhabitants of San Francisco can be had than the figures and facts above given. The great majority of building movements have been, and are, prosecuted upon the solid basis of cash in the hands of owners. The amount of borrowed capital is comparatively light, showing that an era of general prosperity has existed among the "common people," from the well-to-do and more favorably circumstanced down to those who toil with the hod, hoe, and shovel, hundreds of whom have provided themselves with comfortable homes, and many accumulate enough to invest in improvements for renting.

But it would not be reasonable to expect an uninterrupted continuation of this great increase, augmenting more than

TWO AND ONE-HALF MILLIONS PER ANNUM,

And no discouragement should be experienced by any one should there be a considerable letting up during the remaining months of 1885. But as all prophesyings and prognostications upon this subject have failed, the man who can tell just what will be in the future, and when the building interest will subside to a condition of comparative or positive dullness, must possess greater wisdom and penetration of judgment than the knowing ones who have from time to time predicted that the march of improvement was being forced and must halt. But with all this grand increase in the number of buildings erected in San Francisco, the "to let" signs do not appear to multiply, nor are rents affected thereby so as to make it unprofitable to owners to build; and so long as people can improve their lands so as to yield returns greater than bank interests—often nearly twice as great—there is no danger of the building interests paralyzing.

Building Interest in Woodland and Yolo Co.

TO THE EDITOR OF THE "CALIFORNIA ARCHITECT AND BUILDING NEWS:" Three more months, with all its cares and anxieties, have passed since we turned in an account of the building progress of our city and Yolo County, and you will see by the following that we have at least held our own and kept the building interest alive, and now return a fair showing of the number of houses and improvements erected and those in course of construction, lending assurance that we are enjoying a liberal amount of prosperity. Still we would refrain from overestimating in our midday prosperity, and let the figures pass at par value, simply remarking that the second quarter of 1885, in number of buildings and values, is ahead of any before reported since 1880.

The grade of work and buildings erected embodies a fair degree of actual solidity, promising long endurance, with sufficient architectural refinement to figure substantially in the make-up of our city, with houses not constructed for the present, but for time, which seems to say, "Let not the form of shallow mockery become a part of this solid house."

The number employing architectural service is more in proportion than at any previous time, and the structures, as a whole, are more costly, with several worthy of special mention. The Gable Brothers' villa and John M. Briggs' residence on First Street are two, the aggregate cost of which will undoubtedly exceed $40,000.

The following is the number of buildings and improvements of all classes for the past three months:—

CITY OF WOODLAND.

26 Frame buildings, costing	$77,800
1 Brick building, "	5,500
6 Improvements, "	7,000
33 Buildings and improvements; total for city	$90,300

YOLO COUNTY.

8 Frame buildings, costing	$16,000
1 Brick building, "	12,000
2 Improvements, "	2,300
11 Buildings and improvements; total for county	30,300
44 Buildings and improvements city and county, final aggregate	$120,600
Final aggregate for corresponding three months of 1884 (25 buildings)	79,782
Increase in number of buildings, 19; in value	40,818

Should this meet favor with you, we may try again, although we distrust our competency to furnish such suitable material for your valuable columns as will be of sufficient importance to interest your many readers. Accept our thanks for past courtesies and favors. Respectfully yours,

GILBERT & SON.

June 4, 1885.

To Polish Zinc.

TAKE one part of muriatic acid to two parts of water, scour the zinc well with this mixture and fine sand, then dry carefully and give a thin coating of oil.

Carpenter—Building Contractors' Organization.

THE master carpenters in San Francisco—at least a majority of the leading and more responsible of their number—have formed an organization, and adopted rules and regulations which will to a considerable extent, if enforced, change some of the practices hitherto prevailing in connection with the erection of buildings. The movement is based upon the experiences of the past, without any harshness of expression, or seeming disposition to antagonize either owners or architects. They simply state in their own behalf, what they will and will not do; to wit, they claim the right to exercise exclusive control over all matters for which they, under the contract, are responsible; to purchase all materials of any nature and kind, necessary to the fulfillment of, and the use of which is included in their contract obligations; that owners who segregate and reserve to themselves the right to furnish mantels, glass, and other things, must be responsible for the safety of the same, and make good, at their own expense, all breakages and damage that may occur thereto; that the purchase of lumber and other constructive material is a privilege which the contractor should enjoy, together with such financial advantages as are to be derived from skillful management, judicious purchases, good credit, or ready cash.

OWNERS HAVE PROVOKED IT.

The general rule adopted for years in this State in letting contracts for buildings of any importance, has been to let each principal mechanical branch separately, and purchase a considerable portion of the materials. If this had been confined within reasonable and legitimate bounds, the present move of the carpenters would not have been thought of. But some owners, and many of them the wealthy, millionaire class, imagining financial savings by segregations and purchase of materials, have gone beyond all reason, and reached for every dollar possible of being saved, until master contractors have justly felt themselves deprived and cut off from many of the rights and proper advantages which should accrue to them, as legitimate compensations for the special skill and abilities necessary in the prosecution of works for which they are obligated, and the seen and unseen responsibilities which must and does always attach in the honest carrying out of constructive works. This spirit of going for every dollar in sight by owners

IS INDUCIVE OF IRREGULARITIES.

As in all other, so in the building business, there are regular and right profits, and legitimate and reasonable advantages, to which no right minded owner should object. When the erection of buildings is submitted to competition among a number of good, responsible, and competent men, whether as a whole or by segregations, the owner should be content with the competitive advantages secured, and leave those which are further possible to the lowest bidder, to his benefit, as a business right, without seeking further advantages, by cutting off every chance on the part of the contractor to secure more than the closely figured result of actual, personal, or hired labor; and making the master mechanic a mere contingent, full of responsibilities, but curtailed of the legitimate financial results which should be reached, in compensation for skillful management, careful purchases, and the risks involved in every building operation.

A CITY AND STATE BUILT OF WOOD MATERIALS.

Owing to the fact that the early buildings and constructions in San Francisco, and California generally, were almost exclusively of wood materials, the carpenter contractors naturally became, and were recognized as the right and proper parties to control and manage building matters generally; and as a rule, for many years, contracts, as a whole, were let to them, and they in turn sub-let the various branches to whom they pleased. But unfortunately for the craft, thousands of unscrupulous fellows who never spent an hour in servitude to acquire a knowledge of the business, nor possessed the first degree of mechanical competency, crept into the business, and aped the *master*, while in fact but mechanical *ninnies*. San Francisco has been at times "full" of this class, and thousands of villainous things have been done by them, and hundreds of thousands of dollars lost to subcontractors, material men, and others, through the misdoings of this renegade class. Consequently, organizations have from time to time been formed by the various classes of mechanics, and owners have made purchases to protect themselves against the uncertainties of this condition of things, and segregation and original contracts with owners have been demanded by nearly all the principal trades. Even the roofers, stair builders, and lesser operators, from feelings of uncertainty, have clamored for separate contracts, to save them from the clutches of those who have disgraced and injured the reputation of carpenter contractors, and reduced it to a most humiliating level. But the unreliable class has largely disappeared, and the better men are, by the movement noticed, seeking to rebuild and restore the broken down places, and elevate the science of building construction to its honorable place in the business world of San Francisco.

The restrictions and curtailments which have been practiced, were not aimed at, but to a very great extent affected the good and reliable men; as a general rule or law governing in such cases, unless made direct and personal in character, could not otherwise, than to some extent at least, attach to all within the same circle.

The movement calling forth this article has in it the argument of personal vindication and honor; that of men vindicating their rights, and asking honorable recognition as competent and qualified parties to assume all the responsibilities involved in the prosecution of their avocation, seeking no more than all other good business men demand,—the right to manage and control all matters which involve them in responsibilities.

This new departure, however, will naturally disturb and dam up some of the business rivulets that have hitherto flowed through the fields of building operations. Dealers in building materials have appreciated the safety assured to them, by selling directly to owners, as security against trading with men of uncertain responsibility, realizing the fact, that many who operate as building contractors are not financially reliable, however honest in principle and purpose they may be; that *honesty*—a priceless possession in itself—is worthless, as against bills and notes due and payable, unless there is a coin backing to sustain the moral feature. Consequently it will become necessary for owners who recognize the rights claimed by the contractors, to be very careful in letting contracts so as to avoid mechanics' liens, and material men will be required to exercise the strictest scrutiny into the responsibility of those to whom they sell material otherwise than for cash on delivery. But as there are a sufficient number of competent and financially, as well as mechanically, qualified contractors to encompass the whole business, there is no good reason why the interests to both owners and material men may not be made secure.

The Amended Lien Law.

FROM first reading of the amendments to the Mechanics' Lien Law, passed by the last Legislature of this State, we supposed that they were the concoctions and emanations of some undeveloped "country member's" brain, who had no proper knowledge of the mechanical trades, nor had ever read intelligently any lien law or law book of any kind; and that the members of the honorable body approving the same, were still suffering from the *fatigues* of the previous night, at the time of passage of the bill. But when informed by good authority that a S. F. attorney of considerable repute as a lawyer generally, and in lien law matters particularly, had been paid by interested parties to prepare some practical amendments, consistent with the principles of common law, we had no more to say. Our faith in the infallibility of the legal profession as a whole, not *one* excepted, was terribly shaken, and we settle down in the belief that it is even possible for a clever, intelligent lawyer to do a silly thing.

The law as amended is made cumbersome and inconvenient, and, in material respects, illegal and therefore void, and so the Supreme Court will decide whenever certain parts are submitted to that tribunal. But in the mean time, thousands of parties operating in building construction will be subjected to provoking annoyances, while the interests of but few, if any, will be made more secure. Their author must have known that in parts, at least, the amendments, as passed, where illogical and illegal, and that they would and will not stand the test of review by the court of last resort. It is to be regretted that the amendments as now recorded on the statute books of the State were passed, as they simply complicate matters and multiply difficulties, affording special security to those only who may gain points under them until they are nullified by appeal to the Supreme Court.

S. F. Chapter as a Live Institution.

IT is pleasing to notice the spirit and interest manifested at the Chapter meeting, held on the 5th inst. The attendance was most gratifying, and the proceedings of such character as to justify the hopes so often expressed in this Journal, that it is only a matter of time when the Chapter will become an influential and eminently useful organization. As a result of its existence, the architects of this city and State are better known to, and understood by each other, than would have been the case in the next ensuing quarter of a century, or has been prior to its organization, since the founding of the State.

The prediction of failure so freely prognosticated at its inception, having so signally proved an error of judgment, if not a *mis-desire* on the part of those who refused, and still refuse to co-operate, should satisfy all that there are at least some in the profession who have added works to faith, and that the seed sown years ago, in a not too fertile soil, is still healthy and putting forth buds with the promise of rich, ripe fruit in the future. Brethren of the profession—those who have—work on; the labor so employed will yield its return; and to those who have not joined the effort to be good to themselves and their brethren, we say in all kindness, lay aside your prejudices, personal or otherwise, and atone to yourselves for what you have lost, by earnest co-operation in the future. It must by this time be apparent to any reasonable minded man that the organization of the Chapter was not for individual purposes, nor from personal incentives. Its work has been general and for the good of all. Its influence has helped even those who have withheld a helping hand, and the profession to-day stands in better light before our clients than it would have done had the Chapter not existed. The kindly interchanges of views, the familiar intercourses between members of the Chapter, and its purifying and rectifying influences, have relieved the profession to a large extent from that cold indifference and jealousy which, prior to its organization, overhung and beclouded the relationship between men who should never have entertained an unkind sentiment toward each other.

Much is promised for the next meeting, and it is hoped that a grand rally of the members will be realized, and that some of the few good men who have not, will send in their application for membership, and be present in person.

Cabinet work of a finer description requires a more than ordinarily lustrous polish. The following is recommended for delicate work: Of linseed oil, half a pint, and the same quantity of old ale, the white of an egg, one ounce of spirits of wine, and one ounce of spirits of salts. It should be well shaken before being used, and a little should be applied to a soft linen pad and lightly rubbed off with an old silk handkerchief. If kept in a bottle well corked, this polish will keep any length of time.

Compressive Strength of Brickwork.

THE subsidence and failure of lofty chimneys erected for manufacturing purposes might profitably suggest the importance of collecting data relating to the greatest direct pressure which shafts of masonry and brickwork can actually sustain with safety. The effect of the wind is a point that should not be overlooked in the construction of chimneys, although undue pressure is also caused by settlement, expansion by heat, &c. The *Building News*, of London, in considering the subject, gives some interesting figures relating to high chimneys in different manufacturing centers, and to the pressures exerted by them. Thus, for example, it mentions a chimney at Edinburgh, 341 feet high, and resting on a hard clay shale. It is 40 feet square at its base, and, according to one authority, exerts a pressure amounting to 2½ tons per square foot. The brick shaft above the stone pedestal exercises a pressure at the base of 8 tons per square foot, while the strength of ordinary brick has been estimated at from 20 to 30 tons per square foot. As a further instance our contemporary cites a chimney at Birmingham which is 312 feet high, the pressure on the base being 6 tons per square foot, and on the foundation below the footings, 1½ tons per square foot. Another chimney, 145 feet high, exerts at the base a pressure of 8½ tons per square foot of the hexagonal base. A glass-house cone, 75 feet high, had 4 tons per foot on the piers between the arches, which is thought as much as should be allowed where the brickwork is exposed to great heat. The great chimney of St. Rollox, near Glasgow, is 455 feet high, and is 41 feet in diameter at the base, diminishing to 13 feet at the summit.

So long as the pressure is not greater than one-twelfth of the ultimate resistance of the material, there need be little anxiety felt; but accidental causes, such as wind, leaning from a yielding foundation and settlement may bring the pressure on some portion of the beds to within a limit at which the structure would not be safe. Inferior bricks are often used in construction of this kind, and when these are used in the foundations or base, the margin of safety becomes considerably diminished. In the oversetting tendency of wind on a high pile of brickwork, the pressure is suddenly shifted to one side, the leeward, and if the resultant approaches the outer face of the work, the pressure may be so increased as to cause a bulging or crushing at the joints, such as was observed in the chimney at Bradford, England.

A mixture which is said to be a cure for undue perspiration of the hands, is made of a quarter of an ounce of powdered alum, the white of one egg, and enough bran to make a thick paste. After washing the hands, apply this; let it remain on the hands two or three minutes, and then wipe off with a dry, soft towel. Lukewarm water is better than hot or cold, if the skin is tender, or inclined to chap.

Slate.

THE advantages possessed by slate as a roofing material are, (1) its comparative cheapness, (2) fire-proof quality, (3) cleanliness, (4) appearance.

First, its cheapness is apparent upon inspection of these comparative figures, as obtained from a recent publication, which, however, are subject to slight variation:—

Slate per sq. (10 ft. sq. or 100 sq. ft.)				$4.50 to $5.00
Boards	"	"	"	2.00
Tin	"	"	"	5.60 to $6.50
Shingles	"	"	"	4.00
Corrugated iron	"	"	"	6.00

Exposure to the weather effects these materials very differently. Slate remains firm and water-proof indefinitely (at least sixty or seventy-five years and longer); boards are efficient eight years, tin nearly twenty, shingles twelve, and iron lasts about twenty years, making a yearly cost per square of 7½ cents for slate, 32½ for tin, 25 for boards, 33⅓ for shingles, and 30 for iron. To secure the correct service for the periods named, these substances, with the single exception of slate, must be painted at intervals of four or five years, entailing additional expense.

In communities where cistern water is used, there is no possible doubt of the supreme advantage slate offers as a surface over which rain water should flow. Its cleanliness and freedom from disintegrated particles of poisonous paint and vegetable growth incident to other materials, especially wood, clearly establish the fact. It is practically fire-proof, and presents a beautiful appearance in its place.

A square of slate is a quantity sufficient to cover a space ten feet by ten or 100 square feet. The number of slates required in each size for such square is

28x14	83	16x12	185
26x14	89	16x10	222
24x16	86	16x 9	247
24x14	98	16x 8	277
24x12	115	14x14	188
22x14	109	14x12	219
22x12	127	14x10	262
22x11	138	14x 9	291
20x14	122	14x 8	328
20x12	142	14x 7	375
20x11	155	12x12	267
20x10	170	12x10	320
18x12	160	12x 9	355
18x11	175	12x 8	400
18x10	192	12x 7	458
18x9	214	12x 6	533

The weight per square varies from 550 to 650 pounds, but is generally quoted at six hundred pounds for No. 1 slate.

Slate is largely used as a material for mantels, hearths, tiles, steps, sills, lintels, coping, flagging, and other structural articles. Grave boxes made of this material to hold the casket or coffin in place of wooden cases are growing in favor in the United States.

To remove varnish without injuring paint Brush on spirits of ammonia or hartshorn, which soon softens the oil, allowing of its being rubbed off easily.

Sewers, Gases and Sewerages.

[Written for this Journal by F. Hillert, Architect and Mechanical Engineer.]

PHYSICAL and chemical laws governing the creation and motion of gases from animal and vegetable matter applicable to sanitary

PLUMBING WORK.

Gases are either permanent or vaporous; the first cannot be converted to a fluid condition, while the latter may, by the negative action of heat, or by pressure, be reduced to a fluid state; both are expanded by heat, and the density is in the reverse ratio to its volume; by reason of the mobility of their molecules, must be enclosed or surrounded.

The organic combinations of animal or vegetable matter of the waste are composed of the chemical elements of carbon, besides oxygen, nitrogen, sulphur, phosphorus, etc., in such a manner that one or more of these elements in the organic bodies are missing.

The animal and vegetable matter to be carried off by waste and sewer pipes is first deodorized and dissolved by the water, and in solution conveyed away to fulfill its work in the laboratory of nature, or may be, and is in some places converted, by chemical process, to fertilizers of considerable value. The parts not readily dissolved are rotted or decomposed slowly, at a temperature between the boiling point and the freezing point of water, creating from the component chemical elements of the residue, carbureted gases, and some of the lowest (microscopical) animal and vegetable organizations, which frequently form the germs of contagious diseases and epidemics. The gases created therefrom, either pure, diffused, or mixed, are:

1. Carbonic acid gas ($C O_2$), which is a colorless gas of a pungent, sour taste, suffocating, and of 1,524 density, atmospheric air taken at a unit, one volume of water will absorb 1.06 of this gas to saturation, and by its density will gravitate and descend in soil and waste pipe through the lighter atmospheric air similar to water. A pipe filled with this gas will, by its density, have a small inside pressure in excess over the outside atmospheric air pressure.

2. Hydrogen gas (H) is colorless, odorless, and a permanent gas of 0.0692 density, combustible, burns, and unites to water, when brought in contact in the presence of atmospheric air with a burning body, creating a high heat with a non-shining light. One volume of water absorbs only 0.156 of gas; is raised by its density by natural current, through the air in a $\frac{40}{30}$ (respectively) feet long upright pipe with $\frac{15.24}{41.14}$ (respectively) feet velocity per second, and conveys away per minute $\frac{60.78}{51.50}$ (respectively) cubic feet of gas, or $\frac{0.34}{0.32}$ (respectively) lbs. through a two-inch pipe usually used in our plumbing work. A vacuum will be filled by the atmospheric air at a rate of 1,275 feet velocity per second.

3. Hydrocarbureted gas ($C H_4$) occurs in mines as fire-damp; is colorless, odorless, and a permanent gas, suffocating and of 0.55 density, burns with a bluish flame; one volume of water absorbs 0.037 of gas; it ascends by its density in a $\frac{40}{30}$ feet high pipe, with $\frac{33.52}{29.01}$ feet velocity, and a two-inch pipe will discharge through air $\frac{42.23}{36.55}$ cubic feet, or $\frac{1.75}{1.60}$ lbs. of gas per minute.

4. The heavy hydrocarbureted gas ($C_2 H_4$) (oilfiant) is colorless and of a light smell, suffocating, and of 0.94 density, combustible, and burns with a bright flame; one volume of water absorbs 0.155 volume of gas, and ascends by its density in a $\frac{40}{30}$ feet high pipe with $\frac{11.85}{10.59}$ feet velocity, and a two-inch pipe will discharge $\frac{11.85}{10.59}$ cubic feet, or $\frac{1.06}{0.98}$ lbs. of gas per minute.

5. Hydrosulphuriatic gas ($H_2 S$) is colorless, and of a strong smell of rotten eggs and is of a poisonous action on the organization, and when ignited with a burning body burns with a bluish flame; is of 1.19 density; one volume of water absorbs from 2 to 3 volumes of gas. Its presence is detected by its smell, and by coloring silver and white lead, when brought in contact, brown or black, being heavier than air, will descend.

6. Ammonia ($H_3 N_2$). Hydrogen and nitrogen will unite, when becoming free by decomposition of organic substances containing nitrogen; it is colorless, of a peculiar smell, of 0.59 density; it has a highly absorbing quality, one volume of water absorbs 670. volumes of gas, and will ascend in a $\frac{40}{30}$ feet high pipe with $\frac{31.94}{27.87}$ feet per second, and a two-inch pipe will discharge $\frac{40.20}{34.80}$ cubic feet, or $\frac{1.80}{1.30}$ lbs. per minute, and other gases and vapors of bad odor having solid matter, and matter of parasitic and fungal organization microscopically suspended, and for the present purpose of investigation, conveying them from the place of creation by natural current, may be classified as having the same physical and mechanical properties.

If the gases created do not readily escape, but intermix (having no chemical affinity), that two or more of them will fill the same space, increasing the density of them in this space; assuming this mixture having a density of 0.60 than the same will pass through a $\frac{40}{30}$ feet high two-inch pipe with $\frac{31.62}{26.50}$ feet velocity per second, discharging $\frac{57124}{48102}$ cubic feet, or $\frac{2751.95}{2313.21}$ lbs. per twenty-four hours, namely, $\frac{2741.95}{2318.21}$ lbs. of solid matter, or waste, converted to gas, will be discharged in this form through a $\frac{40}{30}$ feet upright two-inch pipe which is of sufficient capacity to ventilate and clear one hundred houses. It is not correct, and is injurious to have the ventilation pipes excessively large.

The amount of discharge may be artificially increased, by passing heat in the form of hot air, steam, or by a gas jet into the ventilation or sewer pipes, and it is a gross error to prohibit this by law.

Since the current of gases inclosed by pipe, increases with the height of the same, the sewer, waste, and ventilation pipes, and rain water conductors should run uninterrupted continuously from the main sewer-pipe of the street up to above the house-roof. The different discharges from sinks, etc., must be trapped, to shut off any air from the inside of the house to the pipe, then the flow of the gas created in the trap will be taken and drawn up by the existing uprising current. It is an error to intercept this current by the insertion of a slop-hopper, which, by the consequent decrease of the current of gas, the saturation of the water-seal by sewer gas, the decay of matter in the slop-hopper, hastened by standing on low ground, exposed to the sun's rays, is a source of danger to the people occupying the premises.

The manner of ventilating the sewer-trap in front of the house through the sidewalk is of a very doubtful utility, as the elements for producing a natural ventilating current are missing. The gas, if any, should be conducted to above the house-roof, and not on the street in the wake of men.

For the capacity of the sewer-pipe, and the material the same is made of, be it noted that a six-inch pipe, smooth inside, fifty feet long, laid with a ten-inch pitch, will convey nearly three thousand gallons of water per minute, with 3.39 feet velocity per second, and with a ten-foot perpendicular extension, ten thousand one hundred and twenty gallons per minute, with 22.49 feet velocity per second. A four-inch pipe, under the same circumstances, will convey four hundred and fifty-eight gallons with 2.95 feet velocity, and respectively one thousand four hundred and ninety-six gallons with 9.57 feet velocity, large enough to drain a dwelling-house of ordinary capacity, provided that there is a usual amount of water used for slushing, and the sewer not wantonly misused. Clay pipe is indestructible in water, acids, fatty and oily substances, and has been used as pottery for ages past for cooking purposes.

Tar, pitch, asphaltum, and its kindred substances are the natural or artificial products of dry distillation of coal or wood, of a hydrocarboniferous composition; they are insoluble in water and in non-concentrated acids, but easily soluble in lye, spirits of wine, ætheric and fatty oils; but since in every household alkalies and fatty oils are extensively used, the inside coating of the iron pipes used for sewer-pipes will be dissolved, and the iron of the pipe exposed to oxidation and rapid destruction, entailing new expenses and trouble to our house-owners.

From the above, it can be no trouble by an educated and paid Board of Health, with the aid of the exact sciences on chemistry and mechanics, and some scientific experimenting on the subject-matter, to formulate a plumbing law, wherein, according to the amount of waste decomposed and to be conveyed away, the size of pipe to be graded and the most suitable material for it selected, that with good workmanship an effective, suitable and economical house-drain can be constructed, when house-owner and mechanic, comprehending the problem and its utility, will cheerfully assist and aid in the execution of the law, when they can see that the same is intelligently made for their benefit, and not in an arbitrary interest of the supplying material men for a market of their ware. The owners submit and avoid legal expenses, as by process of law no better details can be obtained.

Sunny Rooms Make Sunny Lives.

LET us take the airiest, choicest, and sunniest room in the house for our living room—the workshop where brain and body are built up and renewed; and there let us have a bay-window, no matter how plain in structure, through which the good twin angels—sunlight and pure air—can freely enter. This window shall be the poem of the house. It shall give freedom and scope to the sunsets, the tender green and changing tints of spring, the glow of summer, the pomp of autumn, the white of winter, storm and sunshine, glimmer and gloom—all these we can enjoy as we sit in our sheltered room, as the changing years roll on. Dark rooms bring depression of spirits, imparting a sense of confinement, of isolation, of powerlessness, which is chilling to energy and vigor; but in light is good cheer. Even with a gloomy house, where walls and furniture are dingy brown, you have but to take down the dingy curtains, open wide the window, hang brackets on either side, set flower pots on the brackets, and ivy in the pots, and let the warm air stream freely in.

The best paints for preserving iron exposed to the weather are prepared from the pulverized oxides of iron, such as yellow and red iron ochres, or brown hematite iron-ores finely ground, and simply mixed with linseed oil and a drier. White lead applied directly, requires incessant renewal, and, indeed, probably exerts a corrosive effect. It may, however, be applied over the more durable colors where appearance requires it. Red led is said to be very durable when pure. When the size of the exposed iron admits of it, its freedom from rusting may be promoted to a large extent by first heating it thoroughly, and then dipping it into, or washing it with linseed oil, which will then penetrate into the interior of the iron. For tinned iron exposed to the weather on roofs, rain-pipes, etc., Spanish brown is a very durable color. The tin is frequently found perfectly bright and protected where the color has been used, after an exposure of forty or fifty years. White paint washes off in a few years by the action of rain.

The following announcement appears in the last issue of our esteemed contemporary, the *American Architect:*—

"In view of the embarrassment in which the founders and late publishers of this journal find themselves temporarily involved, it may be well to forestall even the slightest agitation on the part of our subscribers or advertisers by saying plainly that the misfortune alluded to affects this journal only through the sympathies of its editors. So far as business relations go, the journal, under the same editorial management as always, will continue to fulfill all its obligations to subscriber and advertiser."

We congratulate the *Architect*, and join with its friends in best wishes for its continued prosperity.

Evolution of the Elevator.

I DO not know, nor does the Encyclopædia afford me any information, when the contrivance called an "elevator" or "lift" was first introduced into public use. I think, however, that it is of very recent origin, except possibly for hoisting freight, etc., when some lifting apparatus has, of course, always been necessary. But the passenger elevator certainly does not go back over half a score of years. It seems rather curious, therefore, to find in the "Greville Memoirs," in the account of a visit to Genoa, made by the author in 1830, the following note: "Called on Mme. Durazzo, and went with her and her niece, Mme. Ferrai, to the king's palace, formerly a Durazzo palace, like the others, a fine house, full of painting and gilding, and with a terrace of black and white marble commanding a view of the sea. The first picture is a Paul Veronese of a Magdalen with our Saviour. The king and queen sleep together, and on each side of the royal bed there is an assortment of ivory palms, crucifixes, boxes for holy water and other spiritual guards for their souls. For the convenience of their bodies he has had a machine made like a car, which is drawn up by a chain from the bottom to the top of the house; it holds about six people, who can be at pleasure elevated to any story, and at each landing place there is a contrivance to let them in and out." Certainly this was the precursor of the modern elevator, for it possesses all its essential features—much more so than the passenger car used in the torture-chamber of the Inquisition in the sixteenth century, which took in passengers, hoisted them up, and then had a bad habit of letting them out through the bottom and landing them on sharp spikes without consulting them as to when or where they desired to make a landing.—*Germantown Telegraph.*

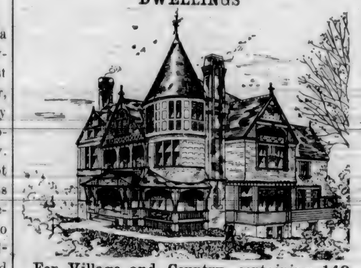
A Treatise on the Use of Belting for the Transmission of Power. By John H. Cooper.

IT has been the aim of the author, in this book, to collect, in the simplest manner, the opinions of practical and theoretical men. It also contains more *original* matter than any other book printed on the same subject. It is written in the plainest language, and is as easy to understand as any work of a technical character. In order to lessen labor, the author has introduced original abbreviations, such as, R p m for *revolutions per minute*, F p m for *feet per minute*, etc., the letters thus indicating the words. The difference between adhesion and friction is also clearly set forth. The chapter on *Use of Belting* is replete with a large array of facts and figures consistent with accuracy and in harmony with best use. It also supplies many helps in the shape of experimental data and practical working of belts.

The above work is for sale in this office and will be forwarded to any address upon receipt of the publisher's price, $3.50.

Village and Country Homes..... **$5.00**

DWELLINGS



For Village and Country, containing 149 illustrations.

The author of this work has followed an original plan in regard to its arrangement. Beginning with an "Asbury" cottage of three rooms, costing $700, he follows by gradual gradations with plans showing an increasing cost, until we find at the last end a seventy-five room "Orient," a duplicate of which will cost $20,000. Some of the names selected for the various styles of architecture shown are rather unique, such as "Stepping Stones," "Walking Ford," "Montclair," "Bayswater," "Islip," "Blackrock," "Mamaroneck," "Lillie Lake," etc.

The author has followed a plan suggested by this Journal some years ago in its article, "*Notice to Publishers*"—a full list of all the articles connected with the building, given with the cost thereof at time of publication, any fluctuations in the price of materials or labor, can readily be applied to costs as given in book, and a true estimate thus can be found.

The book is finely printed and can be seen at this office. Price, $3.00.

"Grimshaw on Saws."

FROM the publishers, Thos. W. Hartley & Co., 420 Franklin Street, Philadelphia, we have received a copy of the work entitled "Grimshaw on Saws."

We have examined the book critically, and are satisfied that the author has done himself much credit in its production. He has drawn liberally upon numerous and widely spread sources of information, intelligently classifying the different varieties of saw-teeth and blades, and going thoroughly into the details of saw manufacture, from the making of steel to the final finish.

The author has taken much pains to impartially select examples of the various manufactures of those who make saws a specialty. We notice that the *N. W. Spaulding inserted teeth* and the productions of the *Pacific Saw Manufacturing Co.*, of this city, receive liberal notice and are well illustrated.

The chapters on files and the setting of saws are very interesting, and every carpenter and mill-man would be greatly benefited by a careful study of these sections.

The work is beautifully printed on heavy book paper. THE PRICE IS $4.00, upon receipt of which a copy will be sent to any address.

Where the Architect and Plumber Meet

First in the architect's office, when the specifications for the work are open for bids. Many architects, when they are left to their own volition, will only permit a certain few plumbers, in whom they feel confidence, to bid on their work. This is perfectly natural, and, while it gives rise to the charge of favoritism, should not be entirely condemned. An architect of the better class can be trusted in his selection of workmen to figure on jobs, while a shyster architect would prefer a skin-plumber any way.

When the work is figured on, and the contract is awarded, the plumber should be careful in his suggestions of changes in the plans. There are some architects who will listen to suggestions of that kind, and if they are valuable, and do not increase the cost, might adopt them. But in the majority of cases, the architect having designed the plumbing-fixtures as they are drawn, any suggested change from the plans will be looked upon with suspicion. Hence, the plumber having bid on the specifications as they existed, it is better for him to follow the specifications to the letter.

The architect usually notifies the plumber when the building is ready for roughing in. There is not so much work to be done behind the plastered walls nowadays as formerly, owing to the desire to have all pipes, so far as possible, in a position where they may be examined easily. The few iron waste and ventilation-pipes, which run between partitions, must all be put in before lathing is completed.

In doing the gas-piping, if it is provided for in the same contract with the plumbing, there should be much care. Cheap gas-fitting is an abomination. In rooms arranged en suite, with a center light in the ceiling of each, the gas-fitter should never notch the beams in the middle, and endeavor to run one straight line of pipe over all the centers. Beams should never be notched more than two feet from the bearing, and the center lights should be supplied by branches run from a pipe so placed.

Gas-pipes should be so laid as to give a continuous fall toward the meter, otherwise, the condensations from the gas will choke the pipe. The gas-fitter should take great care to place center lights exactly where designed, if not, when the ceiling is decorated, it will be very annoying to the owner to find the light out of center. The height of bracket-light outlets should be four feet and ten inches from the under floor, and this height should not be changed to save cutting the pipe. In halls, and in first-story rooms, the height is usually five feet and seven inches. Mirror lights should have outlets eight feet from the floor.

When the outlets are placed at proper height, care should be taken that the nipples are of correct length, and that they will permit the bracket-fixture, when placed, to bear at right angles to the wall. In order to secure this accurately, a pipe of sufficient length may be screwed on each nipple, as soon as set, and carefully made level and plumb, by testing with a carpenter's square. All deviations found should be corrected, before testing by a mercury gauge, so that any leaks caused by such correction will be discovered. Bends, tees, etc., for gas-pipe under two inches in diameter, are made of malleable iron, and it is wise to use these as they will stand a little bending, and that is often the easiest way to bring pipes into place. The nipples projecting from the pipe to receive the fixture, should be the proper length, so as to extend beyond the plastered wall not more than one and one-fourth inches, nor less than three-fourths of an inch. The gas-fitter commonly uses miscellaneous scrap-pipe for nipples, but he should endeavor to make them the proper length.

These are points in which all architects are, or ought to be, educated, and will be the foundation for criticising the man who has the contract if they are improperly done.

The architect, or his superintendent, after the whole gas-fitting service is in place, will probably examine the entire system to see that the irresponsible journeyman has not used split or defective pipe, closed with putty or red lead. It would be well for the master plumber to do this himself. The caps are then screwed on, and the tightness of the work tested by a mercury gauge. A manometer is placed at one outlet, and air is pumped into the pipes until the pressure in the system approximates the pressure of the gas supply. The mercury should remain at one height in the gauge over one night. If it does that, the work may be relied upon. If the gas-fitter does this work himself, very well; if not, the architect will probably require him to do it.

After the plastering is completed, the architect should notify the plumber that he may go on with his work. He should inquire as to the use of all stock which the plumber may bring to the building. The cast-iron pipe for the soil-pipe should be especially examined, and it should conform to the specifications as to weight. Manufactures have been covering pipe with a coating of asphaltum, and it is now generally used, but some believe that the asphaltum simply fills up sand holes and renders it difficult to detect doubtful pipe. Each length of pipe should be examined thoroughly for defects, thickness, strength of hub, etc., and all doubtful pieces promptly rejected. If possible, each length should be subjected to the oil-test, previously described in the *Sanitary News*. The requirements for joints in soil-pipe are so few and simple that only the most careful architects will permit any joint other than the oakum and calked lead to be made. The plumber, himself, should be especially cautious concerning the making of soil-pipe joints, because they, more than any other part, are indexes to the general character of the work. The architect will never allow the plumber to secure iron pipe by wires, but will insist on iron straps and hooks. No joints should be made before the pipe occupies the position in which it is to remain.

The architect will be especially careful concerning the weight and size of lead pipe used. When the end of the coil is cut off, the act of sawing increases the apparent thickness of the pipe, and it is difficult to judge of the weight and thickness of it. It is not generally considered safe to use pipe (except for a very light pressure), of a less thickness than three-sixteenths of an inch. Waste and vent pipes may be one-eighth of an inch. The plumber should refrain from using honey-combed or corroded pipe, and that which is of unequal thickness.

When brass tubing is used, the cold water supply-pipes should be tin-lined. Sometimes it is wise to use plain brass pipe for the hot-water supply, and lead for the cold, as the brass pipe is not so injuriously affected by changes in temperature as is lead pipe. Brass pipe should not be confined rigidly in long lines, as it will soon break the joints if it is. It is customary to put a coat of shellac on exposed brass plumbing work, and often the plumber will leave that for the painter, who will refuse to do it.

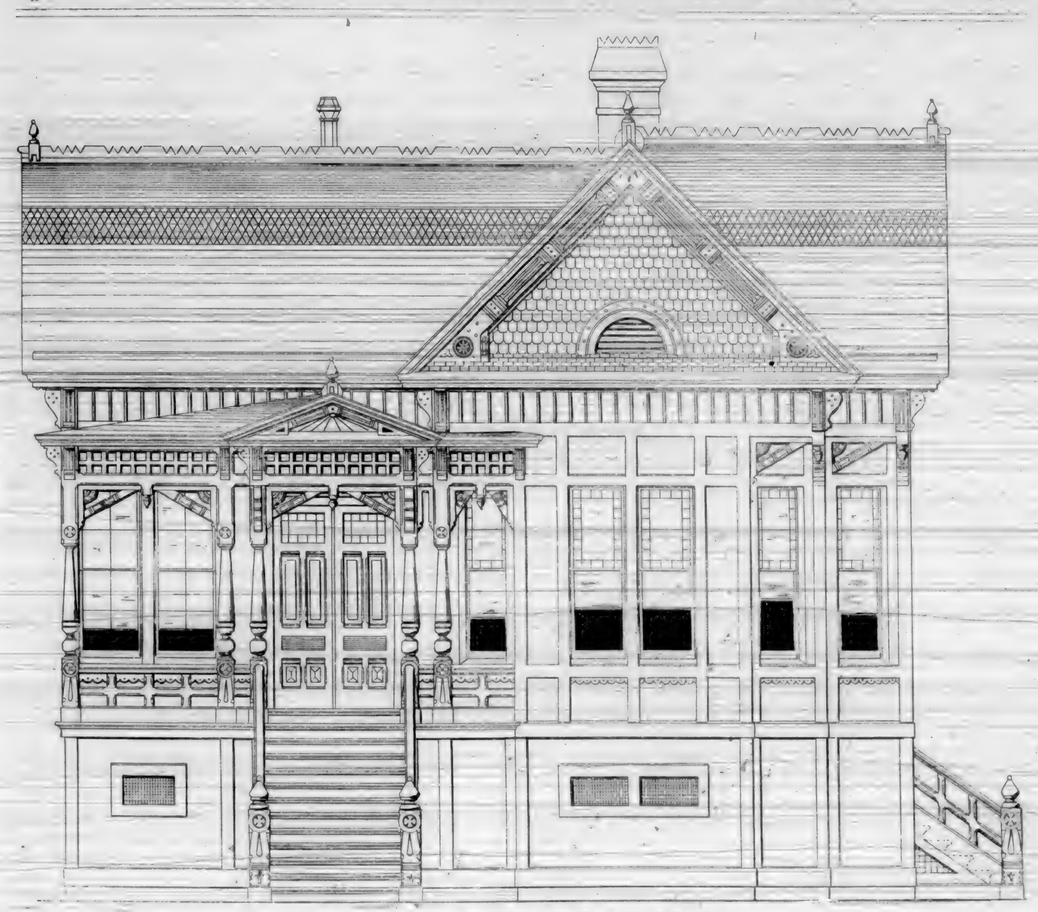
If a superior piece of work is done, and zinc casings are required to carry off condensations, leaks, etc., the architect will see that the casings are well-made, correctly applied, and have a proper fall to a safe outlet.

The course which the pipes take very often proclaims the skillful mechanic. If the several pipes used to connect up a bath-room, for instance, go coursing under and over each other in hopeless confusion, the man who arranged them so may be set down as a botch. A good workman will follow straight lines, so far as possible, and will separate the hot-water pipe from the cold-water pipe far enough so that heat will not be lost from one to the other. The house service pipe should not lead so close to the furnace or range as to warm the water when standing. All pipes will be laid with a continuous fall toward some faucet by which all the water may be drained off.

It is generally the duty of the carpenter to place boards against walls or ceiling where pipes are to run. The plumber should see that these are adequately fastened. When pipes are attached to these boards vertically, they should be fastened every four feet; when on the underside of a ceiling, about once in two feet, and, when lying on a horizontal surface, about once in eight feet. Metal tacks prevent vertical pipes from creeping downward by contraction and expansion. Brass bands are used by good plumbers to secure horizontal runs of pipe. Architects judge of the general character of a man's work by his attention to details, sometimes rightly concluding that if the slightest portions of the work are performed neatly, the more important parts are not neglected.

It is frequently true, too frequently indeed, that the specifications for the plumbing are not at all distinct or definite. In such cases, it must be understood that the plumber will do the work as cheaply as he can. The superintendent, or architect, will know just how good work he may expect, gauging the work by the compensation. In such cases, it is manifestly better to have a smaller amount of work and that well done, than to have the work scamped, and spread over all the house. By an attention to detail, and by avoiding captious authority, the architect may save the plumber money and reputation for careful work.

Whether a plumber should follow out a specification he knows to be bad or unnecessary, will depend on his acquaintance with the architect. At any rate, all questions of difference should be settled without bringing in the owner, who would know nothing as to the propriety of the work, and judge by prejudice simply.—*The Sanitary News.*



FRONT ELEVATION OF SUBURBAN COTTAGE.—PLATE 1.

Ambergris is a valuable and costly adjunct of the perfumer's art. It is believed to be caused by a disease of the liver in the spermaceti whale, in the intestines of which it is chiefly found, although it is cast up by the sea in Oriental climes, and is gathered along the shores of Coromandel, Madagascar, and Japan. It is an aromatic, gray substance, and as much as 150 pounds of it have been taken from one whale. A lump of ambergris of that size is worth to the whaler about $3,000. It is worth about as much as $15 an ounce in New York It is of incalculable benefit to the perfumer, as it gives homogeneity to the fragrance of combined extracts and oils in a remarkable manner, and strongly develops the delicate and evanescent odors of volatile oils.

Among the city ordinances which seem to meet with very little observance, is that relating to unnecessary obstructions of the sidewalk, where buildings are being erected or altered. The respectable contractors are not to blame in the matter, still less so are the subcontractors. In making bids every effort is, of course, made to get the figures down to the lowest notch, and as the unscrupulous man, he who is always ready to evade the law, or, at least, to observe it as little as possible, knows how little regard he needs pay to the class of ordinances referred to, he makes his calculations without any reference to the expense of complying with them, and thus gains a great advantage over his more scrupulous brother. Were it once fully understood that the law in this matter would be energetically and impartially enforced as to all alike, this element of cost would appear in all calculations: the just and the unjust would be put on the same level, and the public convenience would not suffer as it does now.—*Building Trade Journal.*

The Temple of Baalbec.

REV. HENRY M. FIELD, D. D., after his return from an extended tour through Eastern countries, has published a book on India and the Holy Land which is both instructive and entertaining. Doctor Field, in a letter to the *Evangelist*, of which he is the editor, thus describes the ruins that mark the place where the grandest of ancient cities is believed to have existed:—

The ruins of the ancient city of Baalbec, situated on the plain forty-three miles northwest of Damascus, are the wonder of modern architects.

Everything is colossal. The area is larger than that of the temple at Jerusalem. We may begin with the walls, which are half a mile around, and of such height and depth as are rarely attained in the most tremendous fortress. Where from within I climbed to the top, it made me giddy to look over the perilous edge to the depth below; and when from without the walls I looked up at them, they rose high in the air. Some of the stones seem as if they had been reared in place, not by Titans, but by the gods. There are nine stones 30 feet long and 10 feet thick, which are larger than the foundation stones of the temple at Jerusalem, dating from the time of Solomon, or any blocks in the Great Pyramid.

But even these are pygmies compared with the three giants of the western wall, 62 feet, 63½ feet, and 64 feet long. These are said to be the largest stones ever used in any construction. They weigh hundreds of tons, and instead of being merely hewn out of a quarry which might have been on the site, and left to lie where they were before, they have been lifted 19 feet from the ground, and there embedded in the wall. Never was there such cyclopean architecture. How such masses could have been moved is a problem with modern engineers.

Sir Charles Wilson, whom I met in Jerusalem, is at this moment in Baalbec. Standing in the grounds of the temple, he tells me that in the British Museum there is an ancient tablet which reveals the way such stones were moved. The mechanics were very simple; rollers were put under them, and they were drawn up inclined planes by sheer human muscle—the united strength of great numbers of men. In the rude design on the tablet the whole scene is pictured to the eye.

There are battalions of men, hundreds to a single roller, with the taskmasters standing over them, lash in hand, which was freely applied to make them pull together, and the king sitting on high to give the signal for this putting forth of human strength *en masse* as if an army were moving to battle. A battle it was in the waste of human life it caused. These temples of Baalbec must have been a whole generation in building, and have consumed the population of a province and the wealth of an empire.

The Walnut.

A WRITER in the *Garden* (London) wonders why this tree is comparatively but little planted, a singular fact when the beauty and value of its wood are taken into account. For gunstocks and much of our finer sorts of furniture, walnut timber is invaluable. Walnut trees, moreover, are free growing on almost all kinds of soil, and the crops of nuts which they produce would pay at least the rent of the land on which they grow, while freeholds might be purchased with trees of four score years of age. Walnuts in a landscape, also, are trees of mark, their magnificent heads of fine foliage in parks or paddocks rendering them especially adapted for such situations. They associate well with oak, beech, elm, sweet and horse chestnut, as well as with various other trees, and they do not rob the land more than their companions do. Their smooth, glossy leaves are washed clean by every shower, and the foliage is not so thick as to throw the rain off the grass or to keep air currents from circulating freely among the branches. There are, therefore, no trees either in park or pasture under which herbage grows better than it does under walnuts. Besides, walnuts come into leaf late, make their growth quickly, and lose their foliage nearly all at once after the first autumn frost. Thus a chance is given to take the leaves out of the way, so as not to injure the grass, while the shining dark young wood, with the grayish mature limbs, are left full in view. As to any tree that will grow more quickly into a size to be useful, I do not know where to look for it. I have seen old walnut trees that measured from 60 feet to 90 feet high; diameter of branches from 60 feet to 96 feet; and of bole or trunk from 3 feet to 5 feet diameter; and no doubt larger trees are elsewhere to be found.

"The American Architect."

FOR several years the *American Architect and Building News* has been published by the firm of Osgood & Co., of Boston. Business depressions have caused this firm to suspend. We are happy to announce, however, that the failure does not affect the publication of the above journal, and we are assured that its future prospects and growth will in no wise be retarded. To its friends on this coast, we can assure that it will be found at the proper time and will continue an uninterrupted publication. The editorial management continues in the hands of those who have so ably been the means of exalting it to the position of the leading Architectural Journal of America. We have received many favors at the hands of the managers, and publicly desire to express our appreciation of the same.

It isn't always the noisy, blustering, rushing foreman who gets the most work out of men or machines. His mind may be so taken by his ideas of "rushing business" that there is no time for cool calculation.

Errors Will Creep In.

OCCASIONAL complaints are made that our building intelligence reports contain errors. It would be a feat of extraordinary journalism, should we be able to complete each monthly statement, under the peculiar circumstances surrounding, without a single error. It is very often the case that the desired information is obtained by strategy, not willingly given by those in interest, and obstacles are interposed to prevent the obtainment of facts, for various reasons. Sometimes the architect is unapproachable, and will not "expose his business," thus leaving us to gain as best we may the information that might be correctly furnished at the simple cost of sacrificing a little individual self-importance and personal conceit, which can only inconvenience, but never prevent the obtainment of facts and figures. Sometimes contractors and owners misrepresent cases by hypothetical statements for purposes, and sometimes positive refusals to answer any questions are emphasized. When the fact is considered that the building reports for this journal involve interviews with from one to two hundred persons monthly, who are at liberty to make such statements and answers as they please, and the other fact that a *few* men are to be found who consider it a "good joke" to falsify and mislead, the greater wonder is that the reports are so nearly correct as they are, which, in the main, does not affect the grand totals, as over and under statements are perhaps about equal.

CREDITING THE WRONG ARCHITECT.

A complaint comes from San Jose that this was done in the May issue. If so, it was unintentional on our part, and an error in the report received from the capital city of the beautiful valley of Santa Clara. Naturally, information from places outside of San Francisco must come through correspondents, and we earnestly request that our kind friends use the greatest possible care to avoid error, particularly where two parties of the same name are practicing the profession in the same localities. As far as this journal is concerned, we repudiate the idea of possibility of an act of the kind being done intentionally.

THE ADDRESS OF OWNERS.

It has repeatedly been requested and urged that in connection with the months' report of building intelligence the *address* of owners should also be given. This would be a convenience to many for certain purposes, but it is sometimes with difficulty that the *names* alone are obtained, and in some cases are positively refused, and if the address were added, the difficulties in making up our reports would be greatly augmented, as owners generally prefer the least possible publicity being given to their private affairs. So that while we would be pleased to gratify every reasonable request of our patrons, it would be unwise to pursue a course for that purpose which would antagonize the feelings of many of our professional brethren and their clients.

SIDE ELEVATION OF SUBURBAN COTTAGE.—PLATE 2.

Brick in Ancient Rome.

THOUGH an ancient Roman boasted that he had found Rome brick and left it marble, the former has generally superseded both marble and all other kinds of stone, and even here in the heart of the iron industry complaint is made that owing to our sulphurous atmosphere it costs more to keep iron painted and free from oxidation than it is worth, and there are more brick than iron fronts in our heavy warehouses.

The Greeks, though celebrated for their work in marble, understood the value of brick, and did not allow them to be used until seasoned for five years, and their quality certified to by a magistrate.

The Romans were skilled in their manufacture, and the bricks in the baths of Titus and Caracalla have withstood the "tooth of time" better than the stones of the Coliseum. They introduced the manufacture into England, and left specimens of a deep red color well burnt, and at this date better than those made by English workmen in the reign of Elizabeth.

The Dutch made better bricks in the mediæval ages than the English, and specimens of Holland brick are still found in some of the old Dutch houses of New York.

In Asia the industry seems to have been followed to a time beyond, perhaps, the stone age, and the Chinese give the face of their brick the texture of porcelain.

The ancient Peruvians made bricks so well that a scientific Spaniard thought there must have been some secret in their composition, which had been lost prior to Spanish occupation.—*Brick and Tile Review.*

Chicago Crumbling Away.

CHICAGO'S public buildings, of whose magnificence its citizens have been so proud, and which it was thought would be "things of beauty and joys forever," are in a fair way to tumble out of sight in a hurry. To-day another one of the great cornices of the new Court House, which is barely finished, fell, knocking off half a dozen projecting ornaments on its way down and making a wreck at the sidewalk. This makes about twenty immense blocks of stone, weighing from 500 to 2,000 pounds, which have fallen off this huge edifice within two months. Each has barely missed crushing a number of citizens out of existence, and now that side of the street is avoided like a dead line. It is amusing to see a man or a couple start leisurely up that way, and then, suddenly remembering, glance at the building, and dash across the street as if life depended on it. Architects pronounce the whole of the imposing pile unsafe and declare it will be but a short time when it will all fall to pieces. The stone of which the building is constructed is of a very poor kind, and not at all suited to Chicago's alternate freezing and thawing. The post-office, too, is in the same condition. It has been condemned a dozen times as a most dangerous structure, and not more than a glance is needed at the great cracks an inch or more wide which traverse its broad sides hither and yon to believe any statement that may be made against it. As Mayor Harrison remarked, the Jail appears to be about the only building that can be relied on.—*Cleveland Leader.*

CONCERNING PICTURES.

A String of Paragraphs Gleaned from Various Sources.

PICTURES are undoubtedly among the most satisfactory of house attractions. They never wear or change in fashion. They are an ever-present pleasure, and to one accustomed to good ones, a home looks drear, indeed, without them. And "if things of beauty," we have the poet's authority for pronouncing them "joys forever."

The beauties of coloring in a well executed picture, the lights and shades, seem to be inherent to the sketch, for the same charm exists should the picture be a hundred years old, or only one.

Concerning the employment of pictures, let there be few, if only they are good, rather than many without excellence. Walls had better be bare than covered with worthless pictures. Some excellent work of young artists can be had for reasonable prices, if the work of men of great reputation cannot be afforded, and the purchase of such will encourage a very deserving and promising class.

The choice and position of pictures should be subjects of careful study. The former, perhaps, depends largely on one's means, but there are certain rules which must be applied to the latter in order to obtain the best effects. Care should be exercised in arranging a number of pictures having frames of different colors, to have them harmonize and look well. If there be taste or judgment, let it be exercised here; if money is spent to gratify a desire for something artistic and beautiful, be sure to get full value for it.

More attention should be paid to frames than is usually done. Frequently the intention of the artist is utterly defeated by an incongruous frame. A long chapter might be written upon this branch of the subject.

Pictures should be hung from a moulding extending along the wall directly under the ceiling; or, if there be a wide frieze, the moulding may serve as a separator between it and the dado, by means of hooks and wire picture cord, so that they will be on a level with the eyes of a person of ordinary height; but most houses do not have this moulding, and in a brick or plaster wall the driving of nails is a work of some difficulty. If you manage to hit the "studding," you are all right, except it happen that the "studding" is a foot or two out of the way—when you are all wrong.

Plain wood frames are the rule in the framing of small etchings. A very pretty frame for this purpose is made of polished white pine, with a bead line through it. All frames for etchings should be light in color.

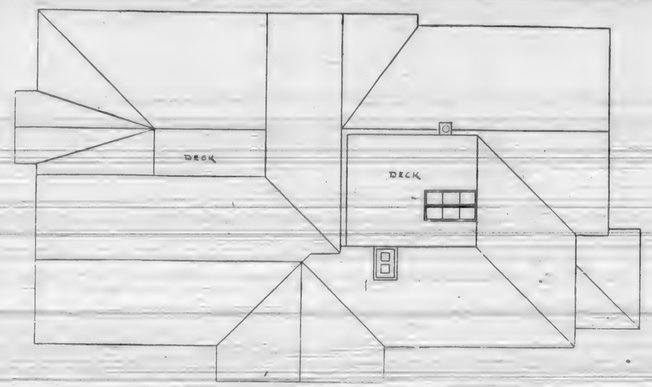
The largest photographs in the world are on exhibition at the New Orleans Exposition. They are views of the public buildings of Washington, taken by order of the Government, and are seven feet long and five feet wide.

Smoke pictures are a popular artistic fancy. They are made by smoking a piece of glazed card-board over a candle, wiping the half tones out of the sooty surface with a brush, which leaves a gray ground, and taking out the high lights with a pointed bit of wood.

In chromos America ranks first; the specimens we receive from Boston principally are conceded to be superior in finish to any in the world. In steel engravings American artists also do good work; but in pictures generally we have to rely on the Old World, for there are to be found the great masterpieces of which copies are sent all over the world.

When a person considers the numbers of pictures in an average dwelling, and the fact that new ones are being bought frequently and old ones retouched, the business will be seen to be of very great proportions.—*St. Louis Furniture Magazine.*

In France and Spain ordinary brick-dust made from hard-burned, finely pulverized bricks, and mixed with common lime, is universally used as a substitute for hydraulic cement. It is in some respects even superior to the best Rosendale hydraulic cement for culverts, drains, tanks or cisterns, and even for roofing purposes. It is regularly known in those countries as an article of commerce, and is sold in barrels by dealers at the same price as cement. A block of this substance one inch thick, without sand, after immersion in water for four months, bore, without crushing or splitting, a pressure of 1,500 pounds per square inch. The mixture of a small quantity of brick-dust to ordinary mortar will, it has been said, prevent disintegration.



ROOF PLAN OF SUBURBAN COTTAGE.—PLATE 3.

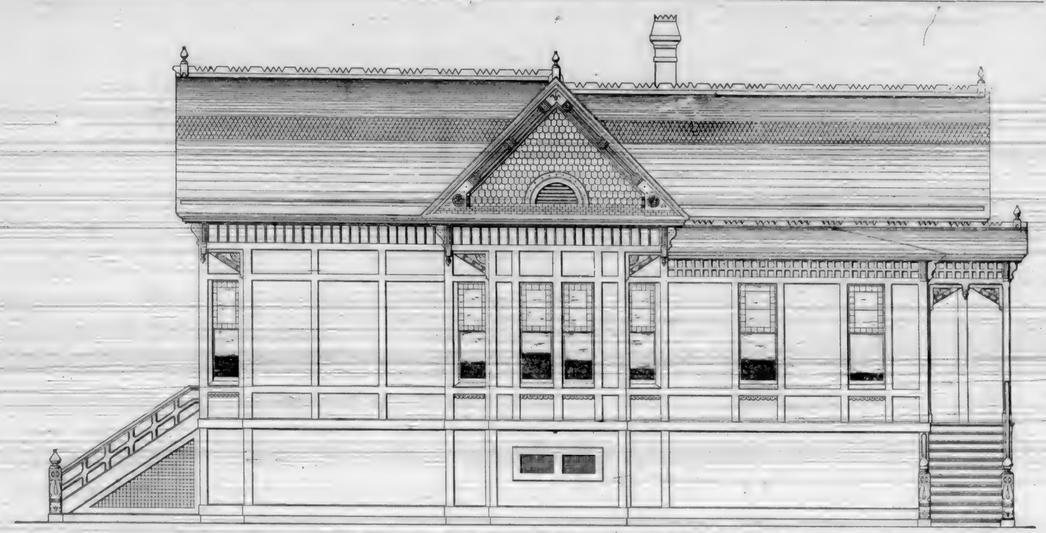
Buying a Lot from a Swindler—Need of Search of Titles.

AN unfortunate farmer named Hamberg, from Santa Clara County, last month, gave his small farm there, worth $2,500, and $1,000 in cash, for a lot 50x90 feet in size, on N. E. side Sixth Street, commencing 75 feet southeast of Bryant. At the price he was paying ($3,500) the lot would have been very cheap, as it is really worth $6,000. The buyer, with a verdancy that even Mr. Verdant Green would have been ashamed of, did not search the title to the Sixth Street property. After the transaction was closed and the Peter Funk deed went of record, Hamberg was rudely woke up by the true owner of the lot appearing. The latter was greatly scared, for he feared that the bogus deed would in some way deprive him of the title to his property. He was scared, while the defrauded farmer was full of indignation. The latter's own folly in not searching the title made the swindle possible. This transaction leads us to remark to buyers, that they should never, under *any* circumstances whatever, neglect to search the title, no matter who they are buying from, or how short a time previously the title had been searched. The title may be quite clear to-day and very much mixed to-morrow. The savings banks act upon that belief, for they never pay out a loan until they have first recorded the mortgage, and run the search down to the moment when the mortgage is recorded.

While the band saw has been steadily making its way into the mills that cut hard woods, the pine manufacturers have looked askance at it, doubtful if it could successfully compete with the log-devouring circular. However, some of the more progressive or more venturesome mill owners in the pine districts are giving the band mills a trial, and their efficiency will soon be settled. One of the latest to adopt the band saw is Radford Bros. & Co., of Ohkosh, Wis., who have just completed a double mill of the Hoffman make. This firm is best known as manufacturers of sash, doors, and blinds, but has always run a saw-mill in connection with its other business. The circular mill will continue to run, but the logs will be sorted, the better ones going to the band mill. A member of the firm, when asked if he did not feel a little anxious about the result of the experiment, said that he was perfectly confident of its success. They had thoroughly investigated the matter before placing the contract, and expected the mill to run straight ahead without trouble. He expected each saw to cut 25,000 feet a day, and their combined cut of 50,000 feet would be equal to that of a very respectable single circular mill. The mill was an expensive one to build, but he calculated that the saving over the circular, and the better grade of lumber turned out, would amount to $150 a day, when working in such logs as they would feed to it. This was allowing liberally for every contingency. The question of its success will soon be settled, and if this firm proves the efficiency, there will be others in eastern Wisconsin that will quickly profit by this experiment.

There is a science, after all, in so simple a matter as driving a nail. A correspondent writes that he recently witnessed the experiment of driving nails into timber that had been hard seasoned and well dried. The first nails, after passing through an ordinary board, went into the timber about an inch and then doubled up under the hammer. The tips of the rest of the nails were dipped into lard, and the driving was accomplished without any difficulty. The remedy is not a new one, but it is simple enough to be recommended for trial.

"There was a man once on a time who thought him wondrous wise; he swore by all the fabled gods he'd never advertise. But his goods were advertised ere long, and thereby hangs a tale; the 'ad' was set in nonpareil, and headed 'Sheriff's Sale.'"



SIDE ELEVATION OF SUBURBAN COTTAGE.—PLATE 4.

Plumbing Work.

TO OBTAIN and secure system of drainage and plumbing in a building, to secure to a house immunity at all times from sewer gas, and to prevent any subsequent annoyances incident to bad arrangement and careless workmanship in water pipes and plumbing appliances, it is necessary to observe the following points:—

First, to have the system of fixtures, supply and waste pipes well planned and arranged in accordance with the best rules; next, to have the work itself constructed in a thoroughly able and efficient manner by competent mechanics and under proper superintendence; and finally, after the work is all completed and put to use, to have it managed with intelligence, properly taken care of, and examined from time to time as to its continued soundness and freedom from defects. Hence, the subject naturally divides itself into the following sections, viz.:—

A. Principles, governing the planning and location of plumbing work in dwellings.
B. Rules, regarding the proper construction of the work, in particular as to
   (1) Materials;
   (2) Workmanship;
   (3) General arrangement;
   (4) Tests and general condition.
C. Suggestions as to the management and proper care of plumbing apparatus.

It is well known that much of the success of a system of house drainage and plumbing, to say nothing of the convenient and compact grouping of fixtures and the thereby reduced cost of the work, depends upon a judicious planning and arrangement by the architect or persons designing the plans of the building.

The general requirements mentioned under B should form a part—the principal part—of every plumbing specification. In order to adapt such a general specification to any particular building or dwelling house under consideration, it would only be necessary to add to the general requirements a detailed enumeration of all plumbing fixtures, including tank, boiler, cisterns and taps of all kind required in the building; a detailed description of all special apparatus wanted, including fixtures, traps, etc.; and a minute description of the material and of the course of all hot and cold water supply pipes, soil drain, waste and vent pipes, with reference to floor plans and sections of the buildings, which must always accompany a plumbing specification, and must show clearly the proposed system of drainage and water supply.

The suggestions named under C refer especially to householders and servants. It has become a recognized fact that a properly constructed drainage of a house must be intelligently used, and needs constant care and attention on the part of the householder to keep it in good order. Especially is this true of the vast number of houses occupied only during a part of the year, such as summer residences, seaside and mountain cottages, etc. It also refers to city houses, many of which are closed and vacated during the hot summer months. How to leave plumbing work in such houses during winter and during summer, without incurring the risk of finding on return that the pipes and traps have been frozen and burst, or that the rooms, walls, carpets and furniture are saturated with sewer air, is a question to which a certain amount of attention might with advantage be paid by every householder.—*Wm. Paul Gerhard, in Plumbers' Trade Journal.*

The Nail of the Future.

IRON cut nails are fast going out of fashion. Steel cut nails are driving them out. Wire nails are coming into use with great rapidity, and the designing of machinery for making them is taxing the inventive ability of many good mechanics. It is the opinion of some who have carefully studied the mechanical and metallurgical progress, that steel wire nails are destined to come into common use in the near future. Old Bessemer rails will come upon the market in large quantities before many months have passed, because they are wearing out faster than was thought possible in the earlier days of steel tracks. Mr. Masters has shown that they can be melted in an ordinary cupola and moulded into good castings, but it is believed that they can be utilized with more profit by drawing them into wire. Old steel rails can be readily worked into wire of good quality, suitable for nails. A mill has been erected in Syracuse for making wire from old rails, but it has not yet gone into operation. How fast steel wire nails will come into use depends largely upon how fast old steel rails are thrown upon the market.

An exchange proposes that street railways that charge five-cent fares should sell twelve tickets for fifty cents, or twenty-five for a dollar, assuming that people would ride oftener and take shorter rides by reason of the reduction. This is undoubtedly true. A person will ride three times at five-cent fares, when he would only ride twice at six cents, the result being a gain of three cents to the road. There is also another gain in the length of the ride, the two six-cent rides probably covering a longer distance than the three five-cent rides. In such case the road is a double gainer.

House-Building vs. Home-Building.

TALKING a plan for a small house with a client a short time ago, I objected to its having no inside cellar-stairs, to which he responded, "Oh, well, that don't matter; it is only a cheap house to rent." I used to respect that man, but now I look upon him much as I would if he had said, "Oh, well, that don't matter; poor people have no rights." And that man is the type of a great many men who build houses to rent. It is no wonder that the people who have lived in these houses "built to rent" are becoming building-association members by the thousand, and putting by something every week in the hope of some day building homes of their own—houses *built to live in*, and not "to rent."

A badly-arranged house is a constant source of annoyance to those who live in it. Nor is this the worst that may come of a house being built without all possible regard to the wants of its inmates. Serious injury to the health, especially in the case of the wife and mother who does her own work, is liable to result from such carelessness or ignorance; as, for instance, my client's idea of having the only cellarway an out-of-door one. Suppose the good woman of the house, or any one she may have to assist her, in the midst of some heating kitchen-work, is obliged to go to the cellar for some necessary article; she must go out of the hot kitchen into the weather, no matter how cold or damp it may be, get what she requires from the cellar, and in case of it being something requiring both hands to carry, she must make another trip to shut the heavy cellar door. The consequences may be only a disagreeable cold, or they may be unto'd misery and even death, destroying the happiness of the family entirely.

My client said that he had never looked at it in that way, and wanted to have at least three pairs of inside cellar-stairs to make sure of avoiding such direful calamities as I had pictured. I restrained his enthusiasm, however, and we compromised on one interior and one exterior cellar entrance.

A lady was showing me through her new house a few weeks since, not merely the parlor and front part of the house, but the whole establishment—kitchen, pantry, and all; and she said, "Why, sir, you can't imagine how much less work housekeeping is here than in our old house; and my husband can tell you that I have grown ever so much better-natured than I used to be, and it is all owing to the charmingly convenient arrangement of our new house."

"Yes, indeed," said the husband; "the remnant of my auburn locks will last much longer here than if we had stayed in the other house."

"Yes, and so will my china," rejoined his wife; "for it was being broken at a terrific rate in that dark, narrow china-closet."

"Your kitchen is smaller than the old one," I observed.

"Yes, and it is a great improvement; just that many less steps to take and that much less room to keep clean. This kitchen is fourteen feet square, and I wouldn't wish it larger."

I think that most housekeepers will agree with the lady on this subject.

It is not the purpose of this paper to give an exhaustive treatise on home-building, but I think we may condense into a few lines some general advice to prospective nest-builders that will be more readily comprehended and advantageously acted upon, than a whole volume of confusing science by men who have forgotten how to build anything less than law-courts, admiralty buildings, etc.

The first step is for the husband and wife to spend an evening talking the subject over, and make up their minds what the reasonable requirements of the family will be. They must decide how many rooms they ought to have; and it will be well for them to form as much of an idea as they can of what they want their house to be. The next step should invariably be to go to an architect—not any architect who may happen to live around the corner, and possibly advertise "plans and specifications while you wait;" but a good architect, one whose work bespeaks him a reliable and competent man in his profession. Such a man will not charge you more than two and a half per cent. on the cost of your house for making complete drawings and specifications for a house that will be satisfactory to you when finished. In addition to preparing drawings and specifications, your architect will draw up contracts for the work, and attend to the "bidding" and the signing of the contracts by the successful bidders, in legal form. You may depend upon it that the two and a half per cent. paid to a good architect is as well and economically spent as if it went directly into lumber and shingles for the new house. No matter how plain your house is to be, have it drawn by an architect, and don't think that it is too small to bother a *good* architect with.

When you have had the first talk with the man you have chosen to help you make your house a home, and an understanding of the requirement of the case has been arrived at, let him make a sketch for you which will serve as a basis for a final discussion. Now it is time for the question, "How much will such a house built in a good and substantial manner cost?" This the architect should be able to answer with approximate accuracy. If the price is a little more than you feel that you can afford to put into your house, an investigation of the sketches will probably suggest several opportunities of cutting down its cost without materially interfering with its arrangement or convenience. Let such cutting come off such features of the house as partake most of the character of luxuries—things which you would like to have, but can get along comfortably without. If the cost of the sort of house you ought to have is so much beyond your means that such a reducing process as I have described will not bring it within an amount that you feel you can consistently spend, the wisest way is to pay the architect a fee for the sketches, and lay them away till Dame Economy has increased your hoard sufficiently to allow you to go to the architect again and have him make the drawings, etc., for a house which you will find a constant source of contentment and satisfaction. As a rule, this is much better than building a house that is within your means, but not adequate to your needs, or, still worse, encumbering yourself with a heavy debt. So much for home-building in general.

SANITARY SELF-RIGHTEOUSNESS.—This caption may seem a trifle ambiguous, but it properly characterizes the feeling many people have when they read and talk of the terrible unsanitary condition of their neighbor's premises. In small towns it takes the familiar form of a guarantee that "our water comes from the best well in town," or "our house is well ventilated," because there may be transoms over the sleeping-room doors. It is always present in the confidence people have that their house is not a house to cause sickness and death. It is a never-failing resource in times of epidemics. It results in exposure to contagious diseases because some member of the family had once been exposed and was not attacked, consequently the disease was not "catching," or there was some occult influence, probably hereditary and providential, which protected this particular family. What poor, superstitious, unreasoning, go-it-blind creatures the larger proportion of the world is composed of! The majority are not even ready to act on the belief that cause is, and must be, followed by effect. Sanitary self-righteousness interferes with the administration of health laws by the health officials. It invariably makes the persons troubled with it think that health officers are a meddling, officious set, prone to disturbing innocent people for purely vindictive reasons, with no sincere knowledge of sanitary matters, and no desire to learn. All such people cast a wet blanket on sanitary progress. Sanitary self-righteousness interferes with sanitary progress on the part of the public, which is always only too ready to believe ill of a reform or a reformer. The self-righteous sanitarians frown on all but their own methods of work, and with their followers form a serious drawback to the proud advance sanitation is making in this country. —*Sanitary News, Chicago.*

The lumber for 48,000 clothes pins costs $3.00 and the clothes pins are worth $386.50. Four kinds of saws, a revolving polishing cylinder of iron, and a kiln, are requisite for their manufacture, and the poor creature who makes them has only 50 per cent. profit when he sells them for one cent.

"Science of Carpentry Made Easy." A new lot of this justly celebrated work, just received, will be sent post-paid to any address upon receipt of five dollars.

FLOOR PLAN OF SUBURBAN COTTAGE.—PLATE 5.

A Theory of the Redwoods.

THEORIES and explanations in regard to the question, why redwood should only be indigenous to a limited portion of the Pacific Coast, have been promulgated and answered ever since redwood lumber became an article of general consumption. We have endeavored from time to time, in the columns of this journal, to present interesting facts in regard to the production, manufacture, and uses of redwood lumber. Mr. Belleisle, a gentleman connected with the Southern Pacific Railroad, has made a study of the question propounded above, and it is with pleasure that we give his opinions in regard to the apparently stinted manner which Providence seems to have blessed this world with trees of the redwood species.

"One of the matters over which I have pondered for many long years," said he, "is the cause of the difference between the trees in the three districts comprised within the redwood belt—Santa Cruz, Mendocino, and Humboldt. I have a theory of my own, which I think is both original and correct. You are aware, of course, that, so far as is generally accepted, the belt I have mentioned practically contains all the timber redwood of the State. Occasionally, however, are to be found a few scattering trees along the coast ranges. Upon the latter fact I base one portion of my theory. To carry it out, we must go back almost into the mystic dreamland of ages and ages ago. My firm belief is that in times primeval the whole of the Coast Range and the mountains, as far away down south as they stretch, were covered with gigantic redwoods and other forest trees, recalling Longfellow's opening lines in his poem of 'Hiawatha.' I believe that very ancient buildings, if they could be unearthed, would substantiate this. How they were destroyed, who but the Omniscient knows? Scarcely to any immense extent by man, unless the mortals who used them have passed away, leaving no greater trace behind them than the grand old trees themselves. If the trees died a natural death, beaten and buffeted by the over-warring elements, and finally succumbing to old age, gout in the roots, rheumatism in the branches, neuralgia in the heart, and a feeble brain, what marvelous

"CLIMATIC AND PHYSICAL CHANGES

"Must they not have witnessed, but caused. To their death or destruction—presuming this portion of my theory is correct—may we not attribute to a very marked degree many of our sterile plains, deserts, and barren mountains down south? Forests destroyed prevent the moisture and the fertile leaf-mold requisite for agriculture. The absence of traces of these trees—except occasionally, as I have said—may be attributed to the tender shoots being dried out and poisoned, as it were for lack of protecting cover. Gradually, too, the ground would become too arid for even the support of the roots and stumps, and they, in the course of ages, would disappear.

"Now, then, the next step will be to Monterey. You have seen those grand old cypresses between Monterey and Carmel Mission, festooned with their garlands of trailing moss; with their gnarled and contorted trunks golden green with lycopodiums and a thousand and one species of mosses; silvery gray with many hued lichens and other parasites, and with the poisonous mistletoe pendant from their branches—all sapping away the life-blood from these venerable and gloomy-hued patriarchs. They have lived for thousands upon thousands of years, but are now fighting a fearful battle for bare existence. They are like a brave warrior in the agonies of death, and praying only for a brief respite to settle his worldly affairs and make his peace with God. They are doomed—although they may exist for centuries—for the pitiless elements are waging an irresistible war against them. They appear to have a stronger vitality than the redwood, for they have outlasted them, as comparatively few are to be found here, while the other trees are of much younger and more rapid growth, and of a different character.

"Now we cross the bay to Santa Cruz, with out discussing what geological changes may have happened in the eras of the past. Here we find that, although still somewhat protected by the Monterey forest belt, the redwoods are getting

"READY FOR THEIR FINAL FIGHT

"With nature's forces. We leave man and his invasion into their domains out of the question. Do you see how closely the grain and fiber cling together, as if the tree shuddered and shivered, as a man does in a chilling, icy-cold wind, which contracts closer every nerve in his body? As with the man, so with the tree—both feel the advance of decay and death. Mendocino comes next, more vigorous in youth than Santa Cruz, and consequently slightly more open in fiber, but already beginning to feel the threatened attack. Last comes Humboldt, younger and lustier, and of more rapid growth, fostered by the greater moisture and better protective influences. Consequently the wood is softer and more readily worked for many purposes than the harder of the southern woods. Another portion of my theory, and resulting from what I have said, is that the redwoods have, as it were crept up from the south, slowly driven from there to a more congenial climate. As to the manner in which this grand army of evergreen leviathans marched into our State, this must be left to be discovered by wiser heads than ours, although the student of forestry can find many similar examples among forest trees. We must be thankful that we live in our age, when they are with us to enrich the grand resources of our State, and in our gratitude we should treat them as kindly as we can—utilize them, but not willfully and wastefully destroy them. Hitherto it has been the practice to waste the butts and stumps, and hundreds of serviceable logs are lying idly on the ground; but erelong it will be found that they will all become very valuable, and perchance the most valuable.

"BEFORE MANY YEARS HAVE PASSED

"Away there will be no more blasting, by dynamite, of roots to make a potato patch, for it will be found that half a dozen such roots are worth more than an acre of potatoes. No; Economy in redwood will soon necessarily be the order of the day. The demand for it in this State, to say nothing of the rapidly increasing demand for it outside, will enforce a careful use of it. We do not yet know to how many uses this invaluable wood can be put. There scarcely seems to be any restriction upon its availability and adaptability to modern demands. Each day brings forth some newly discovered merits. The latest, and perhaps, one of the most important discoveries is its use as an ornamental wood for paneling purposes. It takes a very high polish, or can be polished to any extent desired. It is most durable, and not liable to split or warp, and has a grain of most beautiful texture and beauty, of varying and innumerable design."

Durability of White Lead.

WHY is it that white lead does not wear as well as it used to? is a question that is frequently asked by painters and consumers. They also add: We used to be able to obtain an article that would wear for years, while now its durability is much less. The important reason for this is found in the difference between the methods of manufacture employed now and a few years ago. Formerly, white lead was corroded by immersing it in vinegar aciduated with acetic acid, which is only concentrated vinegar. The process required about eight weeks before the carbonate was ready for use. This process, however, was found too costly, and the production was too limited to supply the demands. Then, too, a process requiring so long a time would compel corroders to invest a large capital from which they could realize no returns for a long period. They could not afford to produce lead in this manner at a cost sufficiently low to meet the demand for a low-priced article. Accordingly their ingenuity was taxed to invent some method whereby the carbonate could be produced much quicker and at a much less price. Thus they adopted the present process whereby the lead is now corroded by means of a stronger acid in a month, or even in a few days. The result is that the pure article is much less durable when applied to buildings. Speed in the manufacture of some articles, it is true does not sacrifice quality, while in others the greater celerity in manufacture the less durable the products. Not only is this seen in the production of lead, but another branch of manufacture where it is especially noticeable is that of leather. Formerly it required fifteen months to thoroughly tan a hide. Now the process has been shortened and a month and a half at the longest witnesses the completion of the work. As in the case of white lead, the result is lack of durability, and people constantly complain that leather soon cracks out and lacks its original durability.—*P., in the Painter.*

Risen from the Bench.

NOT from the Judicial Bench only, but also from the Joiners' Bench, have arisen some of the noblest of men; thus proving that where the hard-toiling mechanic rightly and perseveringly applies his talents he may rise, not only to influence, but frequently to affluence.

Inigo Jones, the celebrated architect, who was patronized by the nobility and crowned heads, not only of England, but of other countries, commenced life as a common carpenter.

Braham, the celebrated engineer, who conferred so great a boon upon his country and the world by the invention of the "Hydraulic Press," was apprenticed as a carpenter.

Dr. John Hunter, who by the common consent of all his successors, is regarded as the greatest man who ever practiced surgery; he who left behind him one of the greatest monuments of skill of which Great Britain can boast—the Hunterian Museum—was the son of a Scotch farmer, and until nearly twenty years of age worked as a carpenter with Mr. Buchanan, of Glasgow. Though rough in his manners, and very deficient in his education, he rose by his indomitable perseverance to the highest pinnacle of fame.

Henry Peto, Esq., the original proprietor of the extensive square of buildings known as Furnival's Inn, in Holborn, London, started life as a carpenter.

John Harrison, born at Foulby, near Pontefract, the inventor of the "Compound Pendulum" and the "Time Keeper" for ascertaining the longitude (for which invaluable invention he received £20,000 from the Government), was the son of a working carpenter.

Opic, so well known as the late president of the Royal Academy, was the son of a carpenter.

Haydn, the celebrated composer, was the son of a wheelwright.

George Harvey, Fellow of the Royal Society, the celebrated mathematician and president of the Plymouth Athenæum, started life as a carpenter.

Sir John Hawkins, an eminent London magistrate, whose remains are interred in Westminster Abbey, was originally a carpenter.

Dr. Samuel Lee, the celebrated professor of Hebrew at the University of Cambridge, was, at the age of twelve, apprenticed as a carpenter. This eminent and accomplished scholar received his education in the Charity School of Longnor, near Shewsbury.

Thomas Cubitt, who designed and built Queen Victoria's residence, Osborne House, in the Isle of Wight, was once a working carpenter.

Tredgold, one of the ablest engineers of which England can boast, the author of the popular work on the Steam Engine, was apprenticed to a common carpenter in his native village of Braudon near Durham. For five years he worked as a journeyman carpenter in Scotland. His biographer says: "During his leisure hours he diligently studied chemistry, geology, and mathematics, which was the secret of his extraordinary success in after life."

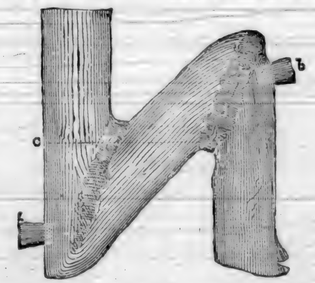
Sir S. M. Peto, Bart., was not ashamed to own that he once worked at the bench as a carpenter.

Alderman Cubitt, one of the greatest builders of the present age, worked at the bench as a carpenter.

These illustrations of eminent Englishmen who have started from the carpenters' bench might be largely increased by the examples of our own countrymen whose industry and perseverance have enabled them to overcome obstacles and to rise to distinction. Good use of leisure hours is a stepping-stone to success. —*Illustrated Christian Weekly.*

A Primitive Trap.

THE illustration given below is a correct representation of a hand-made trap which Mr. James Kelly, of this city, found in a public building at Paris, Texas. The plumbing of this building was recently overhauled by the Kelly Bros. and modern appliances substituted. The building had been supplied with water-closets, sinks, etc., and the usual amount of pipes, which discharged into a wooden, under-ground drain, which, in turn, emptied into a ravine, or other out-of-the-way place. The trap shown below was the only one in the entire building, and this was under a sink in a drug store on the first floor. It was made of straight pieces of lead pipe, clumsily soldered together at the joints, thus making sharp angles, and not curves. The dip at the left upper angle was not sufficient to reach the water line (shown at c), consequently it was of no use in



preventing the return of gasses. At a and b rubber corks were inserted in holes, the use for which was made necessary in removing solid substances which found their way into the trap from the drug store sink. This native specimen may be seen at this office. The job was probably done by a tinsmith or hardware dealer, and undoubtedly satisfied the demand for a "trap."—*Sanitary News.*

A good employer will make his controlling f ree felt without saying anything about it. To boast of power is to lose the greater part of it.

Velvet papers are among the most difficult material to handle which the paper-hanger is called upon to use. It is difficult at all times and sometimes impossible, to apply them to the walls without showing the seams. In some instances the paper, after being on for a while, will shrink and part at the seams, showing the white wall underneath through the opening thus made. In order to avoid such a result, the paper-hanger should see that the wall he is to cover is as smooth as possible. The paper should be trimmed with a knife and straight-edge. This method is necessary, because it is impossible to "butt" two edges of paper together properly which are not perfectly straight. A little dry color should be provided as near to the shade of the predominating color of the paper used as possible, and applied to the white edge of the paper after it has been trimmed, and before removing it from the paste-board. This will obscure the white edge, which is apt to show a little occasionally, even under the most skillful manipulation, on account of the edges not coming down to an exact level with each other. The position of the seams should be ascertained before any paper is put upon the wall, and a stripe about an inch wide made with the same color that is used on the edge of the paper, so that the seam will come in the center of it. If this color is carefully used in the places recommended, there will be no difficulty about white showing through the seams.

T. B. PETERSON & BROTHERS, Philadelphia have issued a new work entitled, "SNOB PAPERS," by Adair Welcker, Deputy Superintendent of Public Instruction, Sacramento, California. The scene is laid in San Francisco, Oakland, and the surrounding country, and the hero, a bluff old "Forty-Niner," has grown rich at the mines. He comes to San Francisco to mingle with the snobs and see life, and the shrewd sayings delivered in peculiar style, are of the most convulsing type, being one whirl of ludicrous adventures, which are quite exciting and sensational, while the action never ceases. Hosts of droll characters are introduced, among them several remarkably lively young ladies and some ladies of uncertain age who are untiring fishers in the matrimonial sea, while the local snobs and dudes are mercilessly ridiculed. "SNOB PAPERS" will be published in one large duodecimo volume of 500 pages, at the exceedingly low price of seventy-five cents a copy in paper cover, or $1.25 bound in morocco cloth, and copies will be sent to any one at once on receipt of price.

AN IMPORTANT INSURANCE DECISION.—Judge Holmes, of the Supreme Court of Massachusetts, rules that in case of fire "the insured is not bound to give a detailed statement of his loss; that the insurance companies must ascertain the amount as they can, and pay, or else they must stand suit. The plaintiff's right to sue is not dependent on having sent to the insurance companies a detailed statement of the loss which he has suffered."

The Embryo Architect.

THE profession of architecture is yearly increasing in public estimation, and the fallacy of the idea that the carpenter and the mason are the only parties required in building is becoming more clearly shown. We find that the appreciation of this art is in direct proportion to the increase in wealth, intelligence, and refinement, and many persons seem desirous of enabling their children to embark in the profession, which they consider one not only of good social status, but which has often proved to be one of emolument also. But the great mistake too often occurs of putting a boy into the profession who has no natural aptitude for such study. The first thing to be considered is whether or not a youth shows that predisposition which is an infallible sign of dormant aptitude. One who shows a natural fondness for the effort of delineating and originating things from his own meager resources, no matter how poor the first results may be—with a taste for reading and study, good practical sense, and no inclination to idle when he should be at work—needs only a good general education and the opportunity to become a first-class architect. After entering upon active duties, the architect has comparatively little time left for reading, and it is important that he be prepared beforehand with a good stock of literary information. The beginner, after having decided to enter upon architectural studies, will have to depend for future success almost entirely upon himself. The office of his principal will not be found to be a school such as he has been used to. All the architect can do is to allow his pupil a negative advantage—although it results as a positive one—in picking up bits of information from the daily business transacted in the office. The learner must keep his eyes and ears open, and not lapse into a listless state, expecting the information will be driven into him. He must improve his time in reading works connected with the history and practice of modern and mediæval architecture, never dodge a difficulty in executing a plan, and make comparisons of buildings of every kind with the drawings prepared for them. In short, he must rely upon his own resources. A teacher can hardly do more than to guide him to the right road and give his encouragement.

The great difficulty with American youth is the almost insane desire to arrive at desired results with but a single effort. The first short lesson in architecture should be that "Rome was not built in a day," and that it takes time to accomplish things. Many young men enter an architect's office with a vague notion that to design a fine building is only to make a few marks on drawing-paper, and that only a few months will be required to master the secret of just how to draw them. But the unexpected fact gradually dawns that architecture, after all, is something that people have to study, and very diligently, too. Many get discouraged at the maze of detail that is continually opening before them with no promise of end, and give up the study in despair, even after they have traveled a good portion of the road to ultimate success.—*Building Trade Journal.*

Architectural Journals.

AT the last session of the American Institute of Architects, O. P. Hatfield and Henry M. Congdon were appointed a special committee to report upon the Architectural Journals published in the United States.

The following report upon the CALIFORNIA ARCHITECT AND BUILDING NEWS was published in a pamphlet issued by the committee:

"In San Francisco, California, the 'California Architect and Building News' is a monthly publication, conducted with great energy and ability, and now issuing its fifth volume. Its illustrations of California buildings are liberally given, and it adds a series of portraits of the leading architects of the Pacific Coast. It reports the proceedings of the S. F. Chapter of the American Institute of Architects quite fully, and gives biographies of its prominent members."

The committee also adds that they "congratulate the Institute and the profession on the number of excellent serials that are now issued in this country in the interests of architecture and its kindred arts."

In concluding its report the committee earnestly draws the attention of every one connected with the profession to the following:—

"Every architect should feel it to be his duty to contribute promptly and steadily by literary work, drawings and subscriptions, to the support and maintenance of architectural serials."

Architects of the Pacific Slope.

IT should be your pride to say that you have furnished designs or written articles for publication in the CALIFORNIA ARCHITECT. We will be pleased to receive the same, and give full credit to contributing patrons. Drawings should be on card-board, line shaded, and extra care taken to use PERFECTLY BLACK INK. Any questions in regard to the above will be answered by addressing the editors, 240 Montgomery Street.

Old whitewashed walls are a difficult surface to make paper adhere to properly. In treating such a wall, the loose whitewash should be scraped off and a strong coat of glue size applied to the wall. After this has become dry, the paper may be put on. But this is not all. The paste used on the paper should also be specially prepared. Pure wheat-flour paste should be used, and to every pailful of it, thinned to the proper consistency, use about one pound of common sugar thoroughly mixed with the paste. Occasionally paper-hangers will have difficulty with this kind of work, but if they observe these hints, not forgetting the sugar, difficulties will be of rare occurrence.

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OF SAN FRANCISCO
Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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BUILDING INTELLIGENCE.

By reason of oversight the following buildings were incorrectly credited last month. The credit belongs to Theo. Lenzen, Architect, San Jose.

San Jose.—S. E. corner Santa Clara and San Teresa. Two-story frame. O., M. Kenny; A., Theodore Lenzen; C., A. J. McIlvain; $4,700. Cinnabar, near Alameda. Frame stable. O., Fredricksburg Brewing Co.; A., Theodore Lenzen; C., M. D. Green; $1,700.

Willow, corner Laguna. Three two-story frames. O. and B.—J. Thompson. $11,000.

Gough, corner Ellis. Two-story frame. O.—W. Easton. A.—W. F. Smith. C.—J. Robertson. $10,000.

Golden Gate Ave., nr. Polk. Two two-story frames. O.—J. Robinson. A.—John Newsom. C.—J. McCann. $16,000.

Laguna, corner O'Farrell. Alterations. O. and B.—Jos. Gasling. Days' work. $2,500.

Ellis, nr. Van Ness Ave. Two-story frame. O.—S. W. Dick. A.—McDougal & Son. C.—A. Jackson. $6,500.

Union, cor. Pierce. One one-story frame. O.—H. Bartels. C.—F. Schibel. $2,500.

Greenwich, nr. Pierce. Two-story frame. O.—H. Klincks. C.—O. H. Walker. $1,800.

Pixley, bet. Fillmore and Steiner. One-story frame. O.—F. Heusell. C.—Cupp & Green. $2,500.

Union, cor. Gough. Two-story frame. O.—S. Tallman. C.—J. Taylor. $3,000.

McAllister, northeast cor. Laguna. Three-story frame and alterations. O.—Julius Schulken. A.—Schmidt & Havens. C.—Jas. A. Hayden. $10,000.

Howard, east side, bet. Twentieth and Twenty-first. Two-story frame. O.—J. F. English. A.—Schmidt & Havens. C.—F. W. Kern. $2,500.

Clay, southeast corner Hyde. Two-story frame. O.—Jas. Musto. A.—Schmidt & Havens. $15,000.

Oak, near Steiner. Two-story frame. O.—J. H. Humphrey. Days' work. $3,000.

Page, near Devisadero. Two-story frame. O. and B.—H. L. Plummer. $3,500.

McAllister, near Pierce. Four two-story frames. A.—Schmidt & Havens.

Fillmore, nr. McAllister. Two one-story frames. O.—Mrs. L. Albrecht. A.—J. C. Pelton. C.—F. W. Kern. $4,500.

Fillmore, bet. Bush and Sutter. Additions. O.—M. Herman. A.—S. & J. C. Newsom. C.—D. B. Spangler. $1,000.

Channel, nr. Byrant Ave. One-story frame. O.—L. Davis. C.—G. A. Stevens. $2,000.

M., bet. Eleventh and Twelfth Ave. Five one-story frames. O. and B.—J. Hanlon. $5,000.

Harrison, near Twenty-fourth. Alterations. O.—P. Dumont. C.—J. Lagrange. $700.

Treat Ave, nr. Twentieth. Alterations. O.—Dr. Cowen. A.—J. Marquis. C.—W. M. Kincaid. $1,000.

Columbia, bet. Twenty-fourth and Twenty-fifth. Two-story frame. O.—L. Hackett. A.—M. J. Welch. C.—L. F. Hubley. $2,500.

Twelfth, nr. Folsom. Repairs. O.—Stevens. C.—T. Moffat. $4,000.

Nebraska, nr. Nevada. Additions. O. and B.—G. Dillman. $800.

Nebraska, nr. Humboldt. One-story frame. O. and B.—C. Hanson. $2,000.

Market, corner Fell. Two-story frame. O.—Mrs. J. Driscoll. A.—H. D. Mitchell. C.—James Geary. $12,000.

Washington Ave., nr. Mission. Two-story frame. O.—W. Celner. A.—A. C. Lutgens. C.—H. Thom Worden. $3,000.

Willow, nr. Valencia. Alterations. O. and B.—P. Inaud. $1,000.

Baker, nr. Pine. Two one-story frames. O.—E. Rienhold and F. Schultz. A.—H. Gielfuss. C.—Wm. Pluns. $4,000.

Elgin Park, cor. Ridley. Two-story frame. O.—Mrs. M. Murphy. A.—J. C. Pelton. C.—J. McCann. $3,500.

Fell, nr. Market. Two-story frame. O.—Mrs. J. Driscoll. A.—H. D. Mitchell. C.—Jas. Geary. $8,000.

Bush, nr. Buchanan. Two-story frame. O.—I Frank. C.—H. Meyn. $4,500.

Grove, nr. Broderick. One-story frame. O. and B.—R. Lund. $1,000.

Golden Gate Ave., nr. Fillmore. One-story frame. O.—H. Worth. A.—McDougal & Son. C.—D. F. McGraw. $3,500.

Golden Gate Ave. Two-story frame. O. and B.—S. Harris. A.—C. Day. C.—J. B. Gouyeau. $5,000.

Seventeenth, bet. Noe and Sanchez. Additions. O.—O. D. Baldwin. Days' work. $1,500.

Ford, nr. Noe. One-story frame. O. and B.—T. Darcy. $1,600.

Castro, bet. Seventeenth and Eighteenth. Two-story frame. O.—L. Koford. Days' work. $2,700.

Bush, nr. Buchanan. Five two-story frames. O.—C. H. Stanyan. C.—J. Drury. $17,000.

Pierce, bet. Sutter and Post. One-story frame. O.—C. D. Salfield. A.—Salfield & John. C.—F. W. Kern. $4,000.

Sutter, bet. Baker and Lyon. Two-story frame. O.—F. Marks. C.—F. Wienell. $3,000.

Dehon, bet. Sixteenth and Seventeenth. One-story frame. O.—H. H. Murphy. C.—J. A. Dyer. $2,000.

Sanchez, nr. Seventeenth. One-story frame. O.—C. P. Williams. C.—I. P. Kincaid. $500.

Ford, nr. Sanchez. One-story frame. O. and B.—E. Mandonnet. $1,000.

Sanchez, nr. Nineteenth. Two-story frame. O. and B.—S. Foster. $3,000.

Seventeenth, nr. Mission. Additions. O.—Capt. H. G. Burns. C.—C. E. Dunshee. $2,000.

Ford, nr. Sanchez. One-story frame. O.—H. J. Carah. A.—J. J. Clark. Days' work. $1,500.

Harrison, near Twenty-Third. Two-story frame. O.—J. Hogan. A.—M. J. Welch. C.—Bigelow & Son. $1,400.

Harrison, bet. Eighteenth and Nineteenth. Repairs. O.—P. Gannon. A.—M. J. Welch. C.—McCormack & Elam. $1,600.

Market, bet. Ninth and Tenth. Three-story frame. O.—Geo. D. Nagle. A.—John J. & T. D. Newsome. Days' work. $15,000.

Sacramento, bet. Franklin and Van Ness Ave. Three two-story frames. O.—R. Gonzales. A.—J. Marquis. C.—L. Wagner. $15,000.

Post, bet. Leavenworth and Hyde. Additions. O.—Chas. Gibbs. A.—J. Marquis. C.—L. Wagner. $4,000.

Market, cor. Sixteenth. One-story frame. O.—Trinity M. E. Church. A.—J. Gash. Days' work. 2,000.

Haight, bet. Octavia and Laguna. Two-story frame. O.—L. C. Lefavar. A.—John J. & T. D. Newsome. C.—A. H. Plummer. $4,500.

South Park, cor. Center Place. Two-story frame. O.—S. B. Vreeland. A.—Percy & Hamilton. C.—Grey & Stover. $4,500.

Hayes, nr. Gough. Six two-story frames. O.—Mrs. Kasts. A.—Salfield & John. C.—H. Meyn. $14,000.

Fourth, cor. Harrison. Alterations. O.—F. E. Hessedaal. A.—Geo. E. Voelkel. C.—G. Knopfe. $500.

Bush, nr. Hyde. Three-story frame. O.—Mrs. A. Paturel. A.—Geo. E. Voelkel. C.—G. Knopfe. $5,000.

Market, cor. Golden Gate Ave. Additions. O.—W. E. Dean. A.—E. R. Swain. C.—Geo. Richardson. $30,000.

Bryant, nr. Third. Two-story frame. O.—J. Monyhan. A.—John J. Clark. $3,000.

Fillmore, cor. Oak. Two-story frame. O.—F. T. McCauliffe. A.—John J. Clark. C.—John Adams. $6,000.

Baker, bet. Sutter and Bush. Two-story frame. O.—D. J. Sullivan. A.—T. J. Welch. C.—S. D. Mathews. $2,000.

Turk, south side, nr. Franklin. Two-story frame. O.—John J. Vollmee. A.—S. & J. C. Newsom. C.—W. Tryon. $5,000.

Union, south side, near Mason. Two-story frame. O.—P. Barbeiri. A.—S. & J. C. Newsom. C.—C. W. Tryon. $5,000.

Octavia, west side, near Green. Two-story frame. O.—C. Lacy. A.—S. & J. C. Newsom. C.—R. W. Murry. $4,000.

Harrison, bet. Third and Fourth. Two two-story frames. O.—F. E. Hessedaal. A.—Geo. E. Voelkel. C.—G. Knopfe. $4,500.

Fourth, nr. Harrison. Two two-story frames. O.—F. E. Hessedaal. A.—Geo. E. Voelkel. C.—G. Knopfe. $5,000.

Van Ness Ave., cor. Fulton. Five two-story frames. O.—C. G. Hooker. A.—Percy & Hamilton. C.—Grey & Stover. $28,000.

Bush, bet. Octavia and Laguna. Two-story frame. O.—J. F. Eklund. A.—T. J. Welch. C.—S. T. Green. $6,000.

Kipling, bet. Eleventh and Twelfth. Two-story frame. O.—J. E. Tosney. A.—T. J. Welch. C.—J. W. Smith. $2,500.

Fourth, bet. Folsom and Harrison. One-story frame. O.—C. Maginnis. A.—T. J. Welch. C.—F. Bohnenberg. $1,400.

Polk, nr. Jackson. Alterations. O.—M. H. Gallnoy. A.—T. J. Welch. C.—Bateman Bros. $2,000.

Bath, nr. Kentucky. Alterations. O.—H. Day. A.—T. J. Welch. C.—T. Conners. $510.

Leavenworth, bet. Turk and Tyler. Three-story frame. O.—L. Koehelin. A.—Salfield & John. C.—Müster & Ames. $7,500.

Greenwich, southeast cor. Pierce. Four one-story frames. O.—Aug. Harenberg. A.—B. E. Henricksen. C.—G. Walker. $5,200.

Bush, bet. Stockton and Powell. Four-story frame. O.—J. Ritch. A.—Townsend & Wyneken. C.—Wm. McFletcher. $20,000.

Valencia, bet. Twenty-third and Twenty-fourth. Seven one-story frames. C.—Mrs. S. Dredge. A.—Townsend & Wyneken. $7,000.

Bartlett, bet. Twenty-first and Twenty-second. One-story frame. A.—W. G. Copeland. C.—Geo. McRae. $2,400.

Seventeenth, nr. Mission. Alterations. O.—Col. Burns. A.—H. D. Mitchell. C.—D. B. Spangler. $1,500.

Howard, bet. First and Second. Alterations. O.—M. Becker. A.—B. E. Henricksen. C.—Y. Hanavan. $1,500.

Park Ave., opp. City Hall. One-story brick. O.—F. Happenberger. A.—F. H. Hillert. Days' work. $2,000.

Fair Oaks, cor. Eighteenth. Two-story frame. O.—M. T. W. Lewis. A.—Townsend & Wyneken. C.—Littlefield & Chapman. $4,500.

Larkin, northeast cor. Olive Ave. Three two-story frames. O.—Chris. Hacke. A.—H. Gielfuss. C.—Wm. Pluns. $9,000.

Ellis, nr. Powell. Three-story frame. O.—Wm. E. Turner. A.—H. D. Mitchell. C.—R. McCann. $12,000.

Bush, nr. Steiner. Three-story brick. O.—Dominican Fathers. A.—T. J. Welch. Masons.—McGowan & Butler. Carpenters.—Mahoney Bros. $70,000.

Pine, bet. Baker and Lyon. Two-story frame. O.—Mrs. M. Gordan. C.—C. Christy. $6,000.

Washington, nr. Scott. Two-story frame.
O.—A. C. Corbett.
A.—Curlett & Cuthbertson.
C.—E. Crichton.
$8,000.

Baker, nr. Sacramento. One-story frame.
O.—J. Sullivan.
C.—Wm. Plunn.
$2,500.

Webster, nr. California. One-story frame.
O.—W. H. Vencient.
A.—Percy & Hamilton.
C.—A. C. Hussey.
$3,000.

Seventeenth, cor. Castro. Two-story frame.
O.—E. H. Doyle.
A.—T. J. Welch.
C.—T. E. Kane.
$5,000.

Sanchez, bet. Sixteenth and Seventeenth. Two-story frame.
O.—H. Kessing.
C.—Mulford & Croemer.
$3,500.

Webster, nr. Haight. Additions.
O.—C. Fowler.
C.—Moore Bros.
$1,400.

Jackson, bet. Steiner and Pierce. Two-story frame.
O.—Hamm & Goldstone.
A.—H. C. Macy.
C.—G. R. Lang.
$11,000.

Church, nr. Herman. Two-story frame.
O. and B.—C. Bartells.
$1,500.

Waller, nr. Webster. Two one-story frames.
O.—Aug. Koehler.
A.—Saifield & John.
C.—E. Wienold.
$3,500.

Seventh, nr. Bryant. Additions.
O.—M. Betzald.
A.—H. Gielfuss.
C.—H. Meyn.
$2,000.

Pacific, cor. Hyde. Two-story frame.
O.—A. Downey.
C.—M. Cornell.
$3,000.

Guerrero, bet. Twentieth and Twenty-first. Repairs.
O.—J. Mooney.
A.—M. J. Welch.
C.—J. Mooney.
$2,000.

Chenery, nr. Thirtieth. One-story frame.
O.—J. Shaugnessey.
Days' work.
$1,500.

Dolores, cor. Cumberland. One-story frame.
O. and B.—J. F. Kessing.
$1,000.

Filbert, bet. Hyde and Lavenworth. Two-story frame.
O. Mrs. A. Ward.
A.—M. J. Welch.
C.—M. Lynch.
$3,000.

Thirtieth, near Sanchez. One-story frame.
O. and B.—J. Patterson.
$1,500.

Dolores, nr. Thirty-first. One-story frame
O.—J. P. Poole.
Days' work.
$4,000.

Clipper, nr. Sanchez. Two one-story frames.
O. and B.—F. C. Kleebauer.
$2,200.

M, nr. San Jose Ave. One-story frame.
O.—D. Sullivan.
C.—J. Sullivan.
$1,400.

East Oakland—Cor. Fifteenth Ave. and Sixteenth. One-story frame. O., Roman Catholic Church; A., B. J. Clinch; C., Geo. A. Embury; $16,000.

Pleasanton—Alameda County. Two-story frame. O., Geo. Johnstone; A., John J. Clark; days' work; $4,500.

Oakland—Three-story brick. O., J. C. & E. Coleman; A., John J. & T. D. Newsome; C., W. Hall, carpenter, Geo. D. Nagle, brick, Bigelow & Little, iron; $43,000. Webster, nr. Twenty first. Two-story brick. O., Convent Sacred Name; A., B. J. Clinch; C., J. L. Binet; $16,000.

Berkeley—Spruce, nr. Rose. One-story frame. O., Mrs. D. Garrick; A., B. J. Clinch; C., A. Kachieschang; $1,900.

Alvarado—Alameda County. One-story frame. O., E. H. Dyer; A., S. & J. C. Newsom; C., W. Embery; $2,500.

Batavia—Solano County. Two-story frame. O., Geo. Coulter; A., S. & J. C. Newsom; days' work; $4,000.

Benicia—Solano County. Two-story frame. O., T. C. Crooks; A., Salfield & John; $10,000.

San Jose—First St. Two-story brick. O., Chas. Doerr; A., J. Lenzen & Son; C., Balten & Co.; $3,750. High School. Three-story frame; additions A., J. Lenzen & Son; C., F. Davis; $800. Meridian Road. Two-story frame. O., C. A. Pitkin; A., Theodore Lenzen; C., E. A. Van Dalsen; $4,850. Third, bet. St. Johns and St. James. Two-story frame. O., J. W. Blaner; A., Theodore Lenzen; C., P. R. Wells; $4,300. Park Ave., bet. Market and Orchard. One-story frame. O., B. Myers; A., Theodore Lenzen; C., A. J. McIlvain; $3,500.

Woodland—First Street. Two-story and basement. O., John M. Briggs; A. and C., Richie & Ward; $17,000. First. One-story frame. O., Warren Powers; A., W. H. Carson; C., Amesbury & Davis; $1,500. First. One-story frame. O., Wm. Caward; C., W. Hunt; $1 500. First. Two-story frame improvement. O., Wm. Caward; C., W. Gammell; $1,250. One-story frame. O., Peter Lawson; C., J. Amesbury; $1,6 0. Cross Ave. One-story frame. O. and B., W. Hoyden; $1,000. Two-story frame improvement. O., Benj. Peart; C., W. H. Winne; $1,650. Two-story frame. O., Mrs. B. Miller; A., Victor Hoffman; C., William Towlson; $3,500. Elm. One-story frame. O., Mrs. Ward; A., J. Caldwell; C., Amesbury & Davis; $1,500. One-story frame. O. and B., John Ruport; $1,000 One-story frame. O., C. B. Church; C., A. Lake, $1,200. College Ave. Two-story frame improvement. O., J. P. Grafton; C., G. W. Myrick; $1,000 Two-story frame. O., Emma H. Briggs; days' work; $2,500. Elm. One-story frame. O., G. W. Evans; C., John Mitten; $1,800. Sixth, cor. Court. One-story frame; O., J. J. Hannan; A., A. J. Newson; $2,000. Main. Pacific Hotel. O., Chris. Seiber. Improvements. C., Amesbury & Davis; $1,050. Two-story frame. O., George Pierce; C., W. H. Winne; $5,000.

Black Station—Two-story frame. O., Fred. Henrich; C., George Cornkike; $2,100.

Orleans Hill—Two-story brick winery. O., Arpad Haraszthy & Co.; C., Mr. Mullanny; $12,000.

Santa Clara—Near town. Two-story frame. O., J. B. J. Postal; A., J. O. McKae; C., R. Summery; $6,575.

Los Gatos—Cottage. O., B. L. Bartlett; A., J. O. McKee; C., F. Lobdell; $2,460.

MISCELLANEOUS.

East Berkeley—One-story frame. O., G. Wilson; A., M. J. Welch; C., J. Spencer; $1,000.

Napa City—One-story frame. O., M. Preece; A., J. Marquis; C., J. Stevens; $3,500. Two-story frame. O., Chas. Knapp A., J. Marquis; days' work; $3,000

Martinez—Contra Costa County. Three-story frame. O., B. Fernandez; A., B. J. Clinch; C., Bulger Bros.; $14,000.

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The California Architect and Building News.

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Present, Past, and Future.

Of the past we have written, as month by month its facts have revealed and developed themselves and furnished material for notice or comment. The record up to the present time has been exceedingly brilliant, as far as the extent of building improvements are concerned, and the expenditures made in the erection of structures for business, resident, and tenement purposes. While hundreds of acres of building lots have been utilized for the erection of either homesteads ranging from moderate cost to almost palatial residences, and houses and flats of greater or less cost and pretention, very many splendid and costly structures designed for commercial and general business, or special purposes, have been erected,—all of which has been a subject-matter of surprise and comment; for while this great prosperity has been enjoyed to the great delight and profit of those who have furnished and sold, and those who have handled and worked up the large amount of materials required for the purposes, there has been a continuous complaining among all classes of producers and trades people, from the "heavy operators," down to the tape and needle vendor, that "times are dull." Still—without entering into the why and wherefore—the building interests have maintained great activity, as has been shown by the monthly reports appearing in this Journal, and especially by the semi-annual report given in the June number.

But how about the future? Can this state of things be continued, and, if so, for how long a time? That there has been more buildings erected than seemed to be necessary to supply demand for rented houses, is plainly evident from the large number of "to let" signs exposed on the fronts of buildings, new and old. And the question arises, whether it is reasonable to anticipate a continuance of improvements, equal to that which has been during the past three years? If it is, and future facts demonstrate such anticipations to have been well founded, then indeed is there a most grand future in store for the metropolis of the Pacific Coast. This one material fact, however, still exists, that a great many who have not as yet done so, are seeking for building lots in desirable localities, with the intention of improving the same with comfortable residences, varying from $7,000 to $20,000.

A Russian traveler predicts that Thibet will prove to be a second California, as during a recent visit there, he found the natives gold-washing in the crudest way, but with the richest results.

Building Report for July, 1885.

The returns, from all sources, of building engagements, for the month ending with present issue of this Journal, shows that, as compared with the June report, there has been a decline in activities, aggregating as follows:—

June, 1885, 148 building engagements, amounting to $588,410
July, 1885, 99 building engagements, amounting to 412,050
July less than June $176,360

The July report in 1884 was eighty-seven engagements, of the value of $663,909, showing that, while July of present year returns ninety-nine building engagements, as against eighty-seven in 1884, the expenditures are $251,859 less. While the foregoing facts indicate a breathing spell in building circles, it is confined to the speculative operators—those who rush up buildings to sell, glutting the market with a certain class of *cheaply* constructed houses, which are sold as "first-class"—the *first-class* being a taking term with those incapable of judging quality beyond the general, outward appearances of things, and others who have improved their lots because "lumber is cheap," until the great rush that has been going on has more than provided for all reasonable necessities, and furnished a supply greater than the demand. But with a temporary suspension in the "boom in building" that has been going on during the past three years and longer, there is no indication of a decline in the more-to-be-desired class of buildings, *i. e.*, private residences costing from $5,000 to $20,000. Good lots in desirable localities are being sought for by scores of business men, who, although among the number who have been crying "dull times," are prepared with the cash to buy lots and erect private residences for themselves and families. Altogether, matters in this connection still have a healthy appearance, and we do not fear any set-back greater than to cool down the ardor of the rushers who have driven matters just a little too far.

Dr. John H. Rauch, Secretary of the Illinois State Board of Health, says that returns of the house-to-house inspection and sanitary survey continue to be received by the Board, and a wonderful improvement is noticeable between the time of making the first inspection and the second. An examination of the tabular statement shows that an immense amount of cleaning up, abatement of nuisances, and general sanitary work is being done throughout the State, and should be continued while the favorable weather lasts.

Not "One-Sided Nor Prejudiced."

THE *Building Trade Journal* in its issue of June 15th, in quoting and noticing our article—"*Insolvent*"—in our May number, page 75, says: "Although there are incompetents in every trade and profession, the ratio given above, as applying to builders, indicates a rather *one-sided and prejudiced* view of the matter."

The sentence last above italicized, is, to us, severely objectionable, for it is not in us nor of us to be actuated or influenced by motives or feelings so ignoble and unworthy to common manhood, and much more so to one who occupies the chair editorial of a class journal. There was neither malice nor prejudice in the cases reported by us; neither of the parties were known to us personally, nor had we knowledge of their existence as men, until their financial status became matters of general information through the daily press and otherwise. Consequently, there is no shadow of grounds for our St. Louis contemporary presuming that personal feelings entered into the case.

And more than this, the facts of the Gilbert & Co. case were mildly stated, nor near one-half the story told, as has been clearly demonstrated by subsequent developments,—investigation showing that the concern was guilty of *absolute* recklessness, but little if any less in character than preconceived and preconcerted rascality; or, if not this, then executive incompetency and personal ignorance of values, and lack of ordinary good judgment and common-sense were largely in the ascendancy. Contract upon contract was undertaken by them at ruinous figures, and the loss upon one afforded no admonition of care in the next,—each successive and subsequent move augmenting their financial difficulties, until, overwhelmed by accumulated burdens, they were compelled to succumb, and terrible in its way was the fall thereof; as numerous confiding creditors and clients were made to suffer to the tune of nearly one hundred cents on the dollar, and the houses turned out by them were of the worst "skin" kind; thus adding mechanical to financial dishonesty. Yet our kind-hearted brother editor indulges the suspicion that we, with these facts before us, may have been "one-sided and prejudiced." This we presume to be prompted by his great natural innocence and kindness of heart, and his lack of experience in the "ways of the world," as found in the history of the building business in California.

It is no more pleasant to us than to him, to speak or write disparagingly of any one, and we are as ready and willing as any one to sympathize with misfortune, nor wish we ill even to our meanest enemy; for "vengeance is mine, saith the Lord," and far be it from us to seek to anticipate the divine will, by the interposition of personal prejudice or petty spite toward any one. But while most generously disposed, and ready to help our fellow-man, as journalists in the interests of architecture and building sciences, it becomes an incumbent duty to expose transactions and customs which bring discredit and reproach upon either, and financial disaster and loss to those who furnish the materials and labor accompanying such results.

Again, our good brother did not read us understandingly, or he would not have placed us in a false light in his columns. Our ratio did not apply to mechanics generally, but to that *special class* of "frauds" which have so largely abounded in California. We said: "There are not five in one hundred of *the — class* who are not frauds in more ways than one," and it is true. It may be that in St. Louis and other cities such cases are the exception, but on this coast they have been numerous; and the outcry among the good and competent of all classes of mechanics has been for a quarter of a century against the demoralizing and injurious effects of the class in question; who—however honest in intent and purposes, and however deserving of sympathy they may be, in business practices, are consummate asses and swindlers, taking work sometimes at but little better figures than the actual cost of materials, settling with creditors at all rates of percentages, from 10 cents on the dollar and upward; and as it has been in a large number of cases, where the owners have been compelled to finish up their buildings on account of contract, the balance of contract sum has proved insufficient to complete the work, leaving creditors no *pro rata* whatever.

We hope hereafter that contemporaries in the older States, before impugning our motives in the relation of cases occurring in California, that they inform themselves more perfectly as to the state of facts, and fix judgment upon those, rather than rejecting statements coming to them from authentic sources, simply because they seem extraordinary and improbable, viewed in the light of experiences in cities and States where such irregularities seldom if ever occur.

It is well and charitable to "*hope* that ambition and real enterprise have more to do with the desire to climb upward, than a combination of incompetency and egotism;" it is well to so *hope*, but such hopes rest upon a poor foundation, when placed in men whose ambition and enterprise terminate in discredit and dishonor to themselves, and financial loss to others. Ambition and enterprise sustained by good judgment and sound business sense has given to the world a multitude of splendid results, but millions of ambitious and enterprising *frauds* have lived only to do mischief; and it is to this latter "class" we referred in our previous article. There are, from time to time, failures in the business world, and some of a character which stamps the parties as business ignoramuses or out and out rogues; in either case creditors are made to suffer loss, and the reputation of many innocent persons prejudiced.

If the two cases mentioned by us were the only ones of the kind on record in these parts, they would have passed unnoticed; but such is not the case; hundreds have done the same thing and some of them many times over, and hundreds of facts are well known, going to prove not only incompetency and egotism, but that which is worse,—deliberately concocted rascalities.

But, with all this, we wish it fully understood that there are at the head and front of the building business in California, sterling good men—mechanics of education and service, honest in nature, heart, and soul, and as competent as men can be made. Of these, good words only can be said. And as time rolls on, there are others, who, being mechanics in an acceptable sense, seek to emulate and equal those whom they have served, and by a judicious, cautious, and careful course, work their way into the fold of good and competent contractors; but the "frauds" of whom we have written, are those who attempt more than they are capable to accomplish, look sensibly at no end from the beginning, care but little for consequences, and through their incompetency and egotism, strongly tinctured with premeditated dishonesty, they make failure of about all they undertake.

Our contemporary further says: "Were the general argument good, there is no visible reason why it should not also apply to painters, plumbers," etc. The general argument is correct, and does most fittingly apply to the "*fraud*" *class* of painters and plumbers in this State,—to painters who, to exemplify and amplify their "*ambition and real enterprise*," compound all manner of base ingredients—soap, plaster paris, benzine, water, and other ingredients possessing no quality of genuine lead and oil paint, nor reputable compounds—and swearing by high heaven that there is not a particle of adulteration in the mixture, and with premeditated and deliberate purpose, by strong assertions of honesty and fraudism of the most brazen character, cheat good and worthy men out of opportunities to perform honest work, and swindle owners without mercy or compunction of conscience; and to plumbers who, incompetent to make a decent "wiped joint," who understand not the first principle of sanitary plumbing, and are refused more than temporary employment as semi menials in any first-class plumbing establishment,—even these, by scores, ape mastership, full of enterprise and ambition; but not that honorable and worthy enterprise and ambition which inspires men of noble purposes to step forth from the ranks of wage earners, fortified by mechanical mastery over the intricacies of the branches to which they have devoted their years of apprenticeship and earlier manhood, to assume the attitude of men ambitious to win like honorable name and position with those who have established themselves as competent and reliable masters of the art pursued.

To the latter our hand and columns are ever open and *free*, and we commend *honorable* ambition and enterprise on the part of any one who, by industry, application, and diligent effort, has won the laurels of competent mechanics, but have no word too severe to use in reprobation of the "*fraud class*," to whom our first article referred, whose ambitions and enterprise is of that debased character that entails dishonor, and reflects discredit upon building and mechanical pursuits.

Master Plumbers' Convention.

A FULL report of the meeting of master plumbers, held at St. Louis the week ending June 27th, appears in some of our Eastern exchanges, from which we gather that the meeting was largely attended, with delegates from Alton, Ill.; Birmingham, Ala.; Baltimore, Md. (12); Boston, Mass.; Brooklyn, N. Y.; Chicago, Ill. (16); Cincinnati, O; Columbus, O.; Cedar Rapids, Ia.; Denver, Col.; Des Moines, Ia.; Hampden Co., Mass; Hudson Co., N. Y.; Kansas City, Mo.; Kansas State; Louisville, Ky.; Muscatine, Ia.; Milwaukee, Wis.; Minneapolis, Minn.; Memphis, Tenn.; Madison, Wis.; New York City (24); Omaha, Neb.; Providence, R. I.; Philadelphia (17); Pittsburg, Pa.; St. Louis, Mo. (13); St. Paul, Minn.; Washington, D. C.; Wheeling, Va. The proceedings appear to have been in every way satisfactory. "It was unanimously resolved to indorse the action of the vice-president in his course taken against the firms who had issued certain documents to the public." The following was passed:—

"*Resolved*, That it is the plain duty of this association to maintain and enforce the integrity of the Baltimore resolution, and that all members of the craft, in self-defense, be requested to withdraw further patronage from dissenting manufacturers, and stand by those who stand by us."

"Your committee recognize that an extremely important element in the sanitary future of all large cities, is a judicious and efficient building law, designating the relative duties and responsibilities of architects, plumbers, and boards of health; and especially to place the legal requirements of plumbers up to the highest standard of sanitary science. We desire the aid and co-operation of local associations in having such laws enacted by the State Legislatures as will clearly define, as above, the duties and responsibilities of each, and for the enforcement of a rigid inspection of all plumbing work. We deem that this is admitted when we plead for law in order to render advanced knowledge available. Our plea is neither ignoble, selfish, nor narrow, as with our success, communities are benefited, as it means healthy dwellings alike for both the rich and poor."

SAN FRANCISCO NOT REPRESENTED.

Why is it that the craft in San Francisco was not represented by some one or more of the most excellent and competent gentlemen, qualified to represent and reflect credit upon the Pacific States, especially San Francisco, by their presence at the Convention? We regret that this fine opportunity has been allowed to pass, to extend the warm hand of California to the members of the plumbing art from Eastern, Western, Northern and Southern States. Unfortunately, neither the representative architects nor mechanics of San Francisco seem to manifest that interest which by all means should exist, of placing themselves side by side with the progressive advancing people of the East. The Chapter of Architects in this city should at once elect some one of their number to be present at the next general gathering of the parent institute, and we earnestly urge that the plumbers take the matter in hand, and at once nominate one or more delegates to be at the next general assembly of their brethren in 1886. Do not let us remain forever exiled from our fellows abroad, and confirm the belief that California is a way off, forsaken land; good in grain, fruits, wine, and vivacious fleas, but not much as far as architecture, plumbing, and the mechanical sciences are concerned. In some respects, California leads; but so long as her talents are shut up under the bushel of unconcern, it cannot be expected that strangers will come among us, and drag out that which should be made manifest by our own will and acts.

Honesty a Beautiful Thing.

BEAUTIFUL in theory, but more beautiful in practice, both generally and in mechanical pursuits; but how about its application in these days of progression and advancement, as a governing and controlling principle among men, in shaping their intercourse and dealings with each other? Everybody appreciates, approves, and *in words* glorifies the theory, teachings, and poetry of true honesty, and loudly commend and applaud the acts of the few who demonstrated the possibility of human kind, at least sometimes rising to that purer life which commends itself as worthy of admiration; but how many are there who make it a rule of life, and exemplify it in even a reasonably, spotless degree—the inner principle considered? The outward rule of being honest as honesty goes, doing nothing not within the law and customs of the times, and the exercise of that higher degree of integrity which places self-interests in jeopardy, when they or the sacred principle of right in the sight of God are at stake, are very different considerations. How many in high and honorable professions, in trades, vocations, and callings of endless names and kinds; how many who from sacred platforms and altars, proclaim peace on earth and good will to man, and make the sanctuary of holiness grand by the sound of words gilded with the accents of eloquence, who are in all things, both of words and acts, pure from the defilement of dishonesty, beyond the words they utter before listening throngs of men and women, and within the limits where they must stand to avoid exposure of human weakness in some form.

It may appear sweeping to thus question, but who that has seen the world, met the sometimes bitter experiences encountered in active business pursuits, and has read, and understands human nature in its more common forms and characters, as developed at the present day, that is not compelled to say, O *honesty*, in thy *purity* thou art *beautiful*, but where, oh where, art thou to be found, and why are thy followers so few?

California Not Reported.

IN many of our Eastern contemporaries, we find the building activities of cities beyond the limits of the city and State of publication, extensively and regularly reported; but rarely, so far as San Francisco and California are concerned, although this Journal, with its full monthly report of Building Intelligence, is regularly received, and other matter from its columns frequently copied and accredited.

This fact would seem to argue that the building interests of this coast were of immaterial consequence east of the Sierras, or that it is best to leave us severely alone, to enjoy the rich fruits of our splendid prosperities, unnoticed. Be this as it may, it is a fact that during the infant days of this Journal's existence, the advance statements forwarded from this office to New York were received with "thanks," and were always duly published; but so soon as this *special correspondence* ceased, San Francisco and California were dropped, and no longer appeared among the notices of cities and States worthy of being reported as prosperous in building improvements.

THREE TERRIBLE CALAMITIES.—The heartless Buddensiek led off with the first, in Brooklyn came the second, while the third was reserved for Jersey City, each inflicting calamity, loss, bodily injury, and death itself. While condemnation too severe cannot be measured out to men, who, from mechanical and moral baseness, become the agents through which such occurrences transpire. The Jersey man is entitled to some small degree of pity and sympathy, inasmuch as by the work of his own hands, three of his family were the victims of his wrong doings; the greater pity being, that he, instead of the innocent ones who looked up to him, was not buried beneath the ruins of his own creation.

LABOR STRIKES.—They have been numerous within the past twelve months, in various parts of the country, but, as a rule, the "strikers" have won—the employers generally yielding, receding, or compromising. The argument, in this State, of facts rather favors the conclusion that the present and future business and trade prospects are good, and that production must go on. Were it otherwise, and appearances seemingly justifying a continuance of the conflict on the part of employers, it is not likely that they would have vacated their demands for reductions, or submitted, as they have in some cases, to increase of wages. It may therefore be fairly argued that the conditions and prospects generally are in no wise discouraging.

Crazy Quilt Architecture.

THE following from the pen of Bill Nye, in the Chatanooga *Times*, contains more truth than fiction, and is well worth reading:—

"It may be premature, perhaps, but I desire to suggest to any one who may be contemplating the erection of a summer residence for me, as a slight testimonial of his high regard for my sterling worth and symmetrical escutcheon—a testimonial more suggestive of earnest admiration and warm personal friendship than of great intrinsic value, etc.—that I hope he will not construct it on the modern plan of mental hallucination and morbid delirium tremens peculiar to recent architecture.

"Of course a man ought not to look a gift house in the gable end, but if my friends don't know me any better than to build me a summer house and throw in odd windows that nobody else wanted, and then daub it up with colors they have bought at auction and applied to the house after dark with a shotgun, I think that it is time that we had a better understanding.

"Such a structure does not come within either of the three classes of renaissance. It is neither Florentine, Roman, nor Venetian. Any man can originate such a style of architecture if he will drink the right kind of whisky long enough, and then describe his feelings to an amanuensis. Imagine the sensation that one of these modern, sawed-off cottages would create a hundred years from now, if it should survive. But that is impossible. The only cheering feature of the whole matter is that these creatures of a disordered imagination must soon pass away, and the bright sunlight of hard horse sense, shine in through the shattered dormers and gables of gnawed off architecture of the average summer resort. A friend of mine, a few days ago, showed me his new house with much pride. He asked me what I thought of it. I told him I liked it first rate. Then I went home and wept all night. It was my first falsehood.

"The house taken as a whole looked to me like a skating-rink that had started out to make money, and then suddenly changed its mind, and resolved to become a tannery. Then ten feet higher it had lost all self-respect and blossomed into a full-blown drunk and disorderly surrounded by the smoke-stack of a foundry, and with the bright future of thirty days ahead with the chaingang. That's the way it looked to me.

"The roofs were made of little odds and ends of misfit rafters and distorted shingles that somebody had purchased at sheriff's sale, and the rooms and stairs were giddy in the extreme. I went in and rambled around among the cross-eyed staircases and other nightmares till reason tottered on her throne. Then I came out and stood on the architectural wart called the side porch, to get fresh air. This porch was painted a dull red, and it had wooden rosettes at the corners that looked like a bran new carbuncle on the nose of a social wreck. Farther up on the demoralized lumber pile I saw now and then places where the workman's mind had wandered and he had nailed on his clapboards wrong side up and then painted them with the paris green that he had intended to use on something else. It was an odd looking structure, indeed. If my friend got all the material for nothing from people who had fragments of paint and lumber left over after they failed, and then if the workmen constructed it nights for mental relaxation and intellectual repose, without charge, of course the scheme was a financial success, but architecturally the house is a gross violation of the statutes in such cases made and provided, and against the peace and dignity of the State.

"There is a look of extreme poverty about the structure which a man might struggle for years to acquire and then fail. No one could look upon it without feeling a heart-ache for the man who built that house, and probably struggled on year after year, building a little of it at a time as he could steal the lumber, getting a new workman each year, building a knob here and a protuberance there, putting in a three-cornered window at one point and a yellow tile or a wad of broken glass and other debris at another, patiently filling in around the ranch with any old rubbish that other people had got through with, and painting it as he went along, taking what was left in the bottom of the pot after his neighbors had painted their bobsleds or their tree boxes—little favors thankfully received—and then surmounting the whole pile with a potpourri of roof, a grand farewell incumbus of bumps and hollows for the rain to wander through and seek out the different cells where the lunatics live who inhabit it.

"I did tell my friend of one thing that I thought would improve the looks of his house. He asked me eagerly what it could be. I said it would take a man of great courage to do it for him. He said he *didn't care* for that. He would do it himself. If it only needed one thing, he would never rest until he had it, whatever that might be. Then I told him that if he had a friend—one that he could trust—who would steal in there some night while the family were away, and scratch a match on the leg of his breeches, or on the breeches of any other gentleman who happened to be present, and hold it where it would ignite the alleged house, and then remain there to see that the fire department did not meddle with it, he would confer a great favor on one who would cheerfully retaliate in kind at call."

"The Plan Lunatic," supposed to have died out from sheer exhaustion, revived and appeared again in the columns of the *Evening Bulletin*, June 18th. The indications are that semi-dementia has become chronic. Peculiar people and cranks of various types have lived in all ages, and it seems that the architecture profession in California must have some of the kind.

Building Materials.

THE price of materials is an important factor in stimulating or depressing building enterprises. The period of unprecedented building activities which has prevailed in San Francisco during the recent past in particular, has been largely due to the fact of extremely low prices in lumber, which at times has been sold at no profit, if anything above cost of manufacture. Hundreds of houses have been erected within the past twelve months because lumber dealers have been extremely kind-hearted and generous in dealing out materials at but little or no profit; and the slight advance made on the prices of twelve months ago should not be wondered at—the surprise being, rather, that so intelligent a set of business men should have permitted so great a depression below fair and compensating rates.

We have never favored the lumber combinations which placed the products of the forest at prices where the cost of production and profits have averaged more than equal in favor of the latter, nor can we conceive any rational and good reason why a commodity so generally and largely in demand should be sold without profit, or so near production cost that dealers barely saved themselves from actual loss. There should be a rule of *common equity* between producer and consumer, the one never seeking to obtain exorbitant and extortionate values, nor the other refusing to pay a fair and right advance over cost on their purchases.

But so long as lumber manufactures and dealers, having full contro' of matters in their own hands, cause fluctuations in rates, they must expect that consumers will take advantage of the inducements offered, and glut themselves with supplies on a low market, and leave sellers to enjoy all the glory of advanced rates, to find customers among those who must of necessity purchase; while a system of steady prices, at fair remuneration to producers, would create a steady demand all the year round.

A demoralized condition of things in prices of material, for the time being, stimulates some to build who otherwise might not do so "just now;" but there are only a few of these who would permit their lands to remain unimproved for any great length of time, with an existing demand for more houses, and the chances of fair rental returns on investments.

However, if dealers and producers deem it a good and wise policy, and profitable to break the market occasionally, they may depend upon consumers availing themselves of the advantages presented.

Man has a various nature, which requires a variety of occupation and discipline for its growth. Study, meditation, society, and relaxation should be mixed up with his physical toils. He has intellect, heart, imagination, taste, as well as bones and muscles; and he is grievously wronged when compelled exclusively to drudgery for bodily subsistence.

Royal Institute of British Architects.

THE report of proceedings for 1884–85 has been received, from which we quote: "The secretary announces a large number of donations and purchases to the library." "Every newly elected Metropolitan Fellow and Associate is required to make donation in coin, or furnish an original paper." A pamphlet from M. Charles Lucas, of Paris, has been received by the library, describing his visit to the Conference of Architects held in London last year; together with a critical review of the last two published volumes of transactions 1882–83, and 1883–84, and other matter relating to architecture in England, all of which were regarded as highly and sincerely complimentary to the Institute. The Institute is, beyond question, one of honorable reputation and high influence, yet the report continues: "Professor Kerr, *Fellow*, in accordance with former notice, submitted proposals for higher operations by the Institute, and suggesting four standing committees on Art, Science, Literature, and Practice." He also read papers prepared by him, reviewing the subject-matter of his suggestions, using in part the following language:—

In the stately language of our Charter of Incorporation, there is assigned to us a primary duty;—"*the advancement of Civil Architecture, as an art esteemed and encouraged in all enlightened nations;* everything short of this supreme purpose is but the inconsiderable commonplace of daily maintenance, the narrow things of the house." "The academical work of the Institute may be thus qualified: (1) *Architectural Art*, the province of taste; (2) *Architectural Science*, the natural philosophy of building; (3) *Architectural Literature*, past and present, and (4) *Architectural Practice*." *A gold medal* was presented to Dr. Schliemann, who had traveled from Athens to receive it. An appropriate presentation speech was made by the president, in which the passage occurs, "The Medal which I have the honor of presenting to you this evening, is the highest distinction in the power of the Royal Institute of British Architects to bestow. It is given by our patron, the Queen, but Her Majesty intrusts to us the task, somewhat a difficult one, of deciding, subject to the Queen's final approval on the most worthy to receive it." The presentation was followed by an appreciative reply from the recipient. Other Medal presentations were made to distinguished gentlemen.

The report of proceedings throughout, exhibit an advanced condition of affairs in the Architectural profession of England, with still higher aspirations and purposes for the future. And while we regret that the fraternity of Architects in the United States have not been able to organize an Institute of like excellence, we congratulate our British brethren upon their success, hoping that they may attain to the highest possibilities, and reach an eminence in the advancements of the age, coequal with the magnitude and grandeur of the profession so dear to every high-minded and honorable member of the Architectural profession.

Compensation for Bids.

OF late there has been much discussion among reliable and responsible contractors as to a system of remuneration for time consumed in figuring on work. It is claimed by some that a great deal of time is lost in figuring on buildings the erection of which is only in the mind of the schemer. It is proposed that the leading contractors form an association and decide upon means of securing pay for figure labor as it is claimed that the contractors have as much right to emolument for their paper work as the architect. They claim it takes time, study, and brains to qualify a person for such work, and why not receive a recompense therefor. Several ideas have been advanced on the subject among them one "that all figures on buildings to cost above a set amount be paid for only to the unsuccessful competitors, the successful one having his remuneration included in the contract awarded him." The writer claims that by such a course architects would be more careful in selecting bidders of acknowledged ability and responsibility and irresponsible men could not send in bids for the paltry amount paid for the work as it would require a bond with every bid. This would be a fair way it seems, and as the owner from the mere fact of his asking for bids, expects to be benefited thereby, it is no more than fair that he should pay for such benefit. Discussion upon this subject through these columns is invited.—*Northwestern Architect and Improvement Record.*

Can We Build Cheaply Now?

THIS question is asked a thousand times every day, be the conditions what they may. "*Cheap*" is the first and all-absorbing idea with three-fourths of those who contemplate building, not that they really want "cheap" constructions, for "*cheap*," *i. e.*, low cost buildings, are poor investments. The import of the question means and implies more than this,—whether good, substantial houses can be erected at about, or for a little less than actual cost of the materials and labor employed in their construction. A proposition of the kind is certainly unreasonable, yet the *delusion of its possibilities* influences many owners, who disregard every other consideration, and fail to realize the equities that should exist between owners, and those who build for them. At present, however, there is nothing used in connection with house building that is not sufficiently low to satisfy any reasonable person, and induce all who desire to, to proceed with their improvements. Lumber is far below the prices ruling one year ago, although a little advanced on the rates of the recent past. Bricks are much less than the prices at which they have been held during the past three or four years, while the great influx of carpenters to this city has made the supply vastly greater than the demand, with the consequent result of wages, less than has ruled since 1880. The cost of hardware, cements, and building materials generally is moderate—much less than in recent, former years; and with the vigorous competitions that rule among the building classes, those who desire to improve their real estate, may feel assured that they will run no risk in commencing operations under the present state of things.

Improvements for Plumbers.

THERE now seems to be some prospect for the master plumbers of the country gaining a point they have long been striving for,—that of making plumbing a separate and independent part of a general contract in the construction of buildings. The question was presented to the Architectural Association of Minnesota by the master plumbers of St. Paul and Minneapolis at one of its meetings last winter, upon which favorable action was taken, and now we see the same course is being pursued by the associations of other States and by the different chapters of the American Institute of Architects. Surely these requests are reasonable and if universally adopted, as they should be, they would eventually be the means of getting rid of the skin plumber. In the present state of affairs it is simply impossible to procure a decent job of plumbing. The general contractor lets the work to whom he chooses, and generally the lowest bidder gets it, no matter what his reputation or standing, or how his work on previous contracts was performed. If there is an opportunity for the contractor to get ahead a few dollars, anything goes. The honorable and creditable plumbers who render full value for money received, and will not undertake to do work at prices where they cannot afford to employ good help, are hampered at every turn by these "skins" who are always as ready to put in a water-closet or set up a hot water tank as to patch a boiler, mend a key, or sell a piece of sheet iron. They are men that can do anything, in their mind, but really nothing as it should be. Is it reasonable to suppose that a job of plumbing can be done as it should be, for $500, when five or six first-class men say it will cost $900 or $1,000? No one can expect that the work will be properly done under such circumstances, and when sickness or death of occupants leads to the discovery of the defects, the plumber is cursed far and wide—for they are all common botches to the one who has suffered. Such tremendous cutting in prices means inferior work and there is nothing else to it. The sooner the old system is abolished of letting contracts to men who know nothing about the work that is to be performed, and care less, the sooner these dishonest practices in plumbing will cease.—*Northwestern Architect and Improvement Record.*

Clay Pipes and Ornamentals.

THE "iron stone" "vitrified" clay pipe, at present so universally in use for sewer purposes, is beyond question the most lasting and practical of all devices in that connection, as it can be moulded into any desired shape or form, suitable for any application, and in duration is without limit or number of years, centuries proving insufficient to mark the impress of decay, when not subjected to special destructive agencies, not found in connection with sewers.

Clay ornamentations and utilities, doubtless cruder in design than those of the present day, are of antiquity far back of the founding of many of the civilized nations of the world; said to be as old in China as 2599 B. C. "The invention of pottery dates from the most remote period, and its application is almost universal—objects of pottery being in use amongst races semi-barbarous. The art of moulding or fashioning vessels of moist clay, and subsequently drying them in the sun, is so obvious that it is not above the intelligence of the suden savage" to give it form and shape, even sometimes that of supposed deities, before which to do homage after their heathen idea of worship. History furnishes a multitude of interesting facts in regard to the manipulations of clay through past centuries, but our object is not to repeat the earlier and evolving facts, but those relating to the manufacture and uses of the

CLAY ORNAMENTATIONS OF THE PRESENT.

There has been a vast amount of skill and handy workmanship developed in the production of ornaments for building and endless other purposes: and the recent past and present taste and demand are for the application of the rich and sometimes beautiful specimens wrought out in clay, many of which are as regular and clear cut as though of softer material, shaped by the keen edge of the carver's chisel. It is also a pleasing fact to know that California produces some most excellent qualities of the crude material, and that the California manufacturers are equal to those of the older States, and are furnishing everything desired, which can be made of clay. The fronts of many buildings, enriched by clay, or terra cotta devices, are to be seen in San Francisco and other cities, and the disposition seems to be to make the use of this material more general. It is well adapted in every practical sense, where elaborations are desired, and the cost and expense is much less than stone, which serves no better purpose.

The Artisan, or Practical Methods That May Be Applied to Works of Building and Other Constructions. New edition of 1885. Among the practical ideas in this work will be found the utility of the right angle, and its application in s living many useful problems. By means of a right angle the exact circumference of a circle is determined at once. It also shows a simple and correct method for the measurement of boards, floors and other surfaces. It is applied to lines of any length, and divides them into equal parts. It gives the cuts and lengths of rafters, bracss, and other timbers in framing. There can be no doubt as to the value of a right angle and its utility in this connection. It is clearly illustrated in the *framing square*, a tool which solves nearly every problem in practical geometry. **Price, Five Dollars.**

Afraid of Plumbing Work.

THE necessity of perfect work in this branch of mechanism is universally admitted; and when thinking, intelligent people begin the work of preparation for building, among the first thoughts suggested is good plumbing work. With many, there is a sort of "holy horror" connected with placing even the best improved sanitary plumbing fixtures within the walls of the building contemplated, and some are so firm in their resolves upon this point that no advice or persuasion from architects or others is sufficient to change the determination; nor is it always a mere notion with such persons; those who have had the deep sorrows of sickness, and perhaps death itself among their loved ones, enforced upon them, with well-authenticated proofs that the agency thereof has been defective plumbing work, have sufficient reason to fear and tremble at the sight of that which bears the name of the evil genius that is believed to have done its deadly work; and palliations, theories, persuasions, and arguments fail to remove the dread and fear caused by former experiences. When the mind becomes impressed and impregnated with a conclusion against any one thing, it is difficult to dissipate the impress made, and that which produced the result must forever bear a repugnance, and appear in the light of a treacherous, dangerous enemy.

That such sentiments and aversions should exist is not to be wondered at, but it is a well-known and well-established fact that there is no feature of house construction which so directly connects home-life with the dreaded and to be feared consequences ever and always attending defective plumbing work, and the inlet of sewer vapors to apartments occupied by human kind, especially to rooms where people sleep, in which free and perfect ventilation does not exist. The stealthy midnight robber may carry off precious jewels and valued treasures which may be recovered or replaced in time, but when priceless lives and human health is seized upon by inhalations as gentle, if not so sweet in perfume and action as the sweet zephyrs of spring, yet fatal in consequences, the occasion for fear and caution is at hand; and he who disregards all this, betrays a folly most unwise. The direct application of these thoughts is twofold,—that owners should be exceedingly careful in selecting an architect who, in *real fact*, enjoys a thoroughly practical as well as theoretical understanding of the sciences of the plumbing art, independent of, and equal to the best of practical plumbers; and secondly, not to intrust so important and essential a matter to any living being not beyond all doubt and question fully competent in all respects, practically, and trustworthy, and honest with all; for it may be that a man may *know enough* to enable him to do all that is right, good, and proper, but a deficiency in moral or mechanical *integrity* may outweigh the good, and practically make him a more dangerous man to trust than one of less knowledge and more earnest and careful interest and purpose.

The Best Sash Pulley Made.

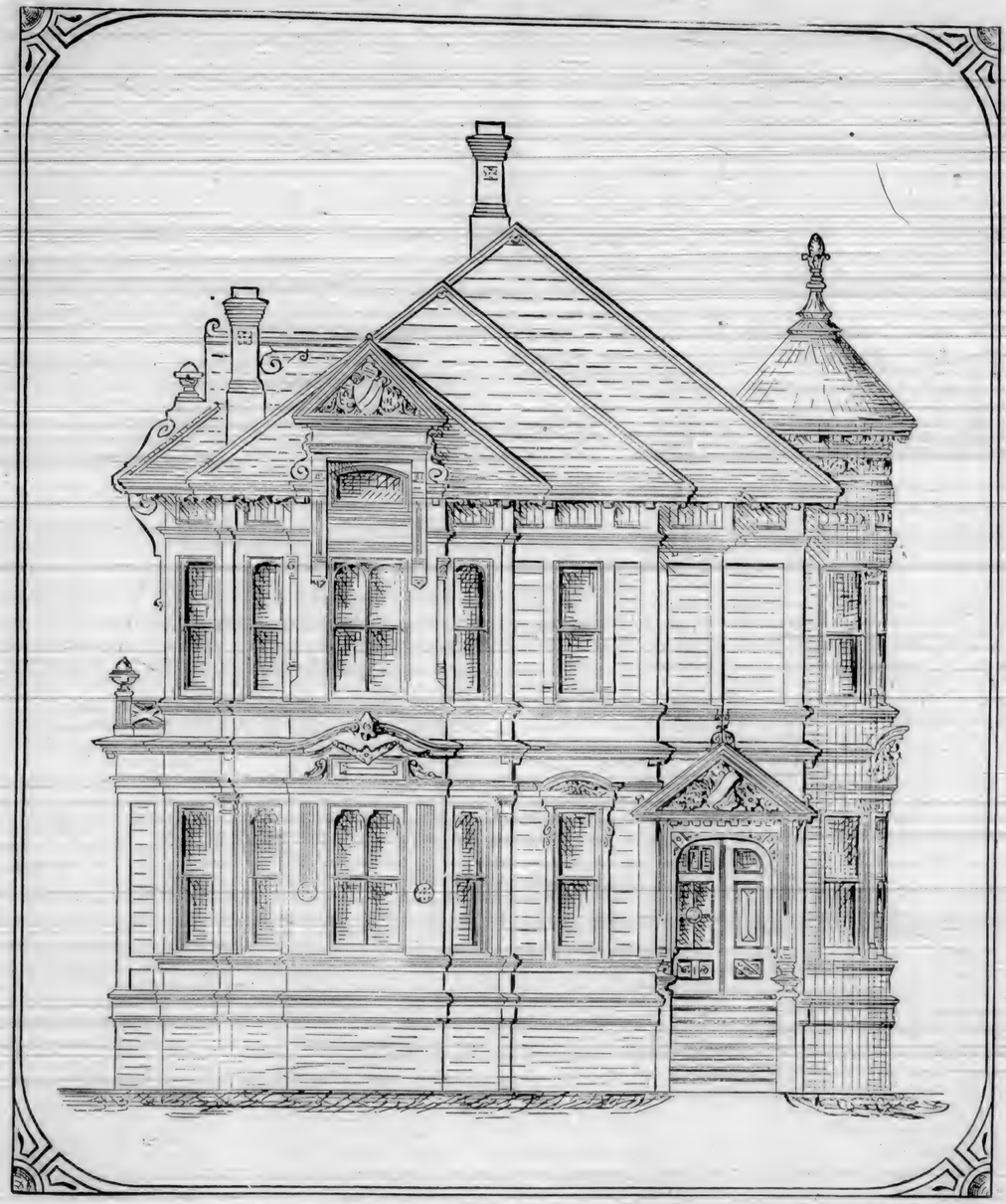
WE have received from C. Sidney Norris & Co., Baltimore, a sample board of sash pulleys, which are the best we have seen, ranging from some very handsome, bronze face plates, down to ordinary iron for general use in the cheaper class houses, but all of the same general construction, which differs from the pulleys in common use, and are much more serviceable.

The motion of the wheels is smooth and noiseless, and the manner of seating the lower end of the shell in the wood, with but one screw in the face plate, gives them great strength. One of the devices contains double pulleys in each shell, to provide for two "chains" or cords in cases of sash with extra heavy plate glass, so that one of the chains breaking, the remaining one would hold the weight of the sash, and prevent a fall damaging too expensive glass; and at the same time, the chains plying over two separate pulleys, make them run easily. They are well worthy the attention of architects and owners; to be seen at the office of this Journal.

MORTAR.—Mortar for sewer works in all cases should be capable of setting in water. Portland cement and lias limes make good hydraulic mortar. The proportions of cement, or of lime to sand, should not exceed two and a half of clean, sharp sand to one by measure of ground Portland cement or lias lime. If clean furnace ashes or slag are available, there may be two of sand and one-half of ashes or slag, the whole to be mixed in a revolving pan, each pan-full to have twenty minutes' grinding. When mortar is used with bricks, the beds and joints should be spread thick and full over the entire area of both bed and joint, leaving, when pressed into place, a bed and joint never less than one-eighth of an inch in thickness of mortar. In four cubic yards of completed brickwork there should not be less than one cubic yard of mortar incorporated. In making mortar or concrete, it will be of the utmost importance to use clean materials and to preserve them clean. The water used for wetting bricks and for mixing concrete and mortar must be free from silt. Concrete and mortar should also be used on clean surfaces.—*Sir R. Rawlinson, C. E.*

Eastlake Paint, said to be a great improvement even upon the best lead and oil compounds, guaranteed not to contain gum, rosin, benzine, or turpentine, but to be made of pure lead, zinc, and oil only, with a chemical solution that renders the paint hard and glossy when spread, alike resisting the action of fogs and heat, and free from the oxidation or chalking so commonly the case in California. It is manufactured by the Eastlake Paint Co., San Jose.

If this paint possesses the qualities claimed for it—we know nothing to the contrary—it certainly will be to owners' interest to use it,—first, for its excellence, and secondly, because manufactured in California.



ELEVATION OF COUNTRY DWELLING.—PLATE I.

Tenants Benefited.

As soon as people acquire wealth and are able to reside in dwellings of their own choosing, they immediately develop a surprising interest in "dwellings for the poor," and the sanitary papers, as well as the daily press, are made to do duty in describing the unsanitary conditions in which such a large proportion of the population live. Heretofore, the poor have been benefited, silently, by all the philanthropy which has been bestowed upon them by sympathetic societies. Up to the present time there has been no one so rash as to defend the conditions which are so threatening to the continued low death-rate of our various countries, Scotland in particular.

The enterprise of a London illustrated journal has led it to send an article to depict the mode of life of the crofters in Scotland. The pictures and accompanying letter-press represent the dwellings of the crofters to be of the most primitive construction, being little better than rude huts, having no light or ventilation save through an aperture at the top, through which the smoke escapes. The evils which must advert the dwellers in these huts is graphically described. To this attack, strange as it may seem, there arises a defender. A Highlander, born and reared in one of these 'bothies" writes to the London *Times* that, to the peculiar construction of his boyhood's home, he owes the strong frame and unimpaired health which he enjoys to-day. He states that the ventilation is ample and sufficient, and, furthermore, that the breathing of the smoke from the peat fires, habitually found in the "bothies," renders the system very insusceptible to consumption. This latter statement is supported by the testimony of a prominent physician of Manchester. He states that there is a remarkable immunity from consumption among the Highland people, and he ascribes it largely to the inhalation of peat-smoke, which, he says, contains many ingredients of an antiseptic character, such as tannin, tar, and creosote.

Roman Tenement Houses.—The Romans had to contend with the evils of enormous tenement houses two thousand years ago. Gibbon mentions that Augustus and Nero repeatedly enacted that the height of dwellings within the walls of Rome should not exceed seventy feet from the ground. The space within the Roman walls was necessarily circumscribed. Much of this was occupied by the rich patricians and senators, with their palaces and gardens, so that the body of the Roman people were crowded into high tenements, and the different floors and apartments were divided among several families of plebeians, who suffered consequently in health and comfort. Juvenal, recognizing the unfortunate condition of the poor in this respect, advised them to leave the city and seek homes in the small towns.—*Exchange.*

Treads and Risers..... $ .50

AROUND THE HOUSE.

The Exciting Rage for Æsthetic Jimcracks, And What There Is to Gratify It.

The collection of æsthetic ornaments of bric-a-brac, etc., is, with many, a question of arithmetic. The question is mainly one of ability to buy and a space to display; the intrinsic worth of many of the specimens is slight, and it must be owned that the taste exhibited is abnormal.

Bric-a-brac ornaments, to deserve a conspicuous place in a room, should possess one or more of these attributes of excellence:—

1. Historical, representing an interesting phase of art in an earlier period.

2. Artistic, being in their design and execution conformable to the standards of artistic truth and beauty.

3. Social, calling to mind an earlier phase of social life and custom.

4. Personal, association with noted persons, or personal friends and relatives.

Any of these give value to such ornaments and justify their use to a certain extent. But they should be few in number and should be judiciously chosen and tastefully arranged.

Among new devices for mantel piece ornaments is a light-house wrought in copper and carefully elaborated in details, which carries two disks on the lantern, one showing the time, the other the days of the month and the moon's changes. Another idea is the mounting of a gold cage and bird over a clock, the bird flapping its wings through a hidden connection with works on the striking of the hours.

Movable Japanese screens have a wooden stand, carved, with two large fancy-colored paper fans fixed out at the top, folding up and pointing downward at the sides. These move up by means of a spring, meet in the middle, and form a large circle.

A clever conceit is a card-receiver of hammered copper in the shape of a large grape leap. Ornaments of lizards, beetles, and queer-looking bugs are used.

A very clever plaque is of royal copper metal, with lapped edges and hammered. The center shows a Hungarian scene in gold and silver effects.

A drawing-room mirror, made in the shape of a fan and mounted in bronze or silver, is a very pleasing novelty.

The new metal, royal copper, is now being made up into all kinds of artistic metal goods.

Scorpions, snakes, and lizards are the latest French rage in metal goods ornamentations.

Parties when asked what they would charge to furnish corn enough to cover a checker board, placing one kernal on the first block, two on the next, four on the next, and so on, have answered from $5.00 to $10.00. Local mathematicians have figured it up and find that it would take 8,680,760,438,824¾ bushels, estimating it at 200,000 kernals to a bushel, which at sixty cents per bushel amounts to $5,208,402,203,294.85.—*Ithaca Journal.*

Decorative Art in Gotham.

In the new dining-room of Cornelius Vanderbilt's house some remarkable triumphs of the decorator's art are to be seen. There is a reproduction of Gobelin tapestry, which cost Mr. Vanderbilt $30,000. A portiere which is to hang at the dining-room door is literally a *cloth of gold*. It measures six feet by four, and hangs upon an oaken bar with rings of gold. To prove that it is a cloth of gold it is only necessary to state that Tiffany & Co., the jewelers, under the direction of an artist, spun from pure gold a thread which composes this hanging, at a cost of $20,000. Miss Tillinghast, whose work of design and embroidery is at the head of that particular art in this country, and possibly in the world, undertook, with her assistants, the embellishment, with the needle, of this cloth of gold. The picture represents certain scenes of the Æneid. If the hours spent upon it were reckoned by the eight-hours-a-day system, four years and a half would be the result shown of the time consumed.

Rapid Bridge Building.

A bridge of concrete, thirty-three feet in span, and carrying a roadway thirteen feet wide, and capable of supporting safely a load of two hundred tons, was recently built in Switzerland in a single day, under the direction of Professor Tetmaier, of Zurich. According to *Le Génie Civil*, the bridge was a single arch, of segmental profile, rising six feet and a half from springing to crown, and twenty inches thick at the crown, and forty at the springing, with abutments ten feet thick. The concrete used for the arch was composed of one part cement, mixed dry with two parts sand, and the whole then mixed with four parts of gravel, and water enough to cause a light sweating as the concrete set. For the abutments, three parts of sand and seven of gravel were used to one of cement. All the materials were made ready beforehand, and at six o'clock in the morning the construction of the abutments was begun. As soon as these were brought to the proper height, the center was set in place and the arch turned, and tympanum walls built up on each face of the arch, to the level of the roadway. Gravel was then filled in over the arch, between the tympanum walls, to the roadway level, and the bridge was pronounced finished, the whole work having been completed in twelve hours, at a cost of six hundred and four dollars, including the expense of an iron railing on each side. It would have been foolish to permit vehicles to pass over the bridge at once, and two months were allowed for the hardening of the concrete, after which a heavy traffic immediately began, without any apparent injury to the construction.

A chicken with a clipped wing made several ineffectual attempts to fly over a fence. An Irishman, who witnessed the efforts of the "chick," laughingly exclaimed, "Begorra, she has a defective flew."

A model architectural competition seems to have been that lately concluded in Leipsic, Germany, for the governmental judiciary buildings or law courts. From an interesting account in the Leipsic *Illustrirte Zeitung* we gather the following: The size of the building is approximately 100 by 130 meters, or about 325 by 422 feet. The programme was complicated and difficult, including session chambers for six or seven different courts, a large assembly hall, rotunda and stairway, reception rooms, consulting rooms, offices, etc., for a great number of chiefs and subordinates in each department, and finally a library to hold 150,000 volumes, with administration rooms, etc. The general conditions of the competition were unusually simple and fair, imposing the least possible restriction upon participants. They prescribed the number and size of drawings for each design and required a descriptive memoir with approximate estimate of cost. The limit of cost was not fixed but was left, very wisely we think, discretionary with the architects themselves. The committee of award consisted of six architects and five members of the judiciary. There was one prize of 8,000 marks, about $2,000 of our money, two of 4,000 marks each, and two of 2,000 marks each, the premiated designs to belong to the Government. The time allowed to competitors was nearly five months, another judicious feature! One hundred and nineteen designs were received, each embracing not less than ten sheets—nearly twelve hundred drawings in all. All were exhibited for two weeks in the winter garden hall of the Leipsic Crystal Palace, and attracted much public attention, as was natural in so important a competition, and with such a cultured community. —*Inland Architect and Builder.*

First Floor Plan of Country Dwelling.—Plate 2.

Corrugated Iron.

This is a material largely used for various purposes, and is well adapted, among other things, for roofing. We notice that the *Cincinnati Corrugating Company*, for which C. J. Tallon, 123 California Street, is agent, have received the "*Gold Medal of the First Class*," for corrugated iron for building purposes, at the World's Industrial and Cotton Centennial Exposition at New Orleans."

Corrugated iron is often used in the construction of certain classes of buildings, and is admirably adapted for barns, grain warehouses, and other buildings erected on farms and in places remote from fire engine protection; also in the construction of light way walls, to make them comply with the requirements of fire ordinances, where brick is not feasible or possible. The lightness of walls constructed of this iron is also a recommendation, as it affords protection against fire, without bulk or great weight.

The signs "+" and "—," it is said, were first used by Christopher Rudolph about 1524. The sign "=" was first employed by Robert Recorde in 1557." "Because," said he, "noe 2 thynges can be moare equalle."

Ancient Reservoirs.

The reservoirs of the ancients were not inferior to those of the present time. The expertness of the ancient engineers is attested by the remains extant; they certainly are not buried in the waters of the Lethe. The Pools of Solomon still continue to furnish water to Jerusalem. They are three in number. The upper is 160 feet above the middle one, the latter 248 feet above the lower. The first was supplied by pipes from springs, and, when full, emptied into the second, and that into the lower one. The water was used for irrigating Solomon's gardens and supplying his temple. The lower pool held about 31,442,425 gallons, the middle about 12,289,912, and the upper one contained 13,778,772—a grand total of 58 511,109 gallons, or nearly six times as much as the Kansas City reservoir, which is estimated at 10,000,000 gallons. These pools were solid rock and masonry, lined with cement, and had steps leading to the bottom. One historian says that Nebuchadnezzar, wishing to brick the bottom of the Euphrates, which flowed through the center of Babylon, caused a reservoir forty miles square to be dug, so as to allow his masons a dry river-bed. Another historian writes that Nitocris, a daughter of Nebuchadnezzar, is said to have dug a reservoir 420 stadia in circumference, lined with stone, for the waters of the Euphrates, in order that the river-bed at Babylon should be dry, so that she could build piers for a bridge. A stadium being 625 feet, it would make this circumference 49 miles. These two reservoirs may be the same, and this shows what discrepancies there are among writers.—*Building and Engineering Times.*

An Architect's Suit Decided.

In the Second District Court, Judge Henry has filed a written opinion in the case of Charles D. Marvin against Dr. Clarence W. Butler and wife. The case was tried in March last. The facts were, that the defendants employed the plaintiff, a New York architect, to prepare plans and specifications for a dwelling-house, to be erected on Fullerton avenue, Montclair. After the plans and specifications were drawn and the contractor's bids submitted, the defendants refused to accept the plans and thereupon the architect demanded the usual commission for his services, on which, being refused, he brought suit. The defence, interposed by the defendants was two-fold; first, that the plans called for a building which if erected, would project beyond the defendant's lot a few inches; second, that the lowest bid of any contractor exceeded the stated amount the defendants wished to spend on the building. In reply, the plaintiff proved that the measurements of the lot were furnished by Dr. Butler, and therefore the error had been occasioned by the defendant's mistake, and that the changes in the original plans, made at the request of the defendants, had occasioned the increased cost. Judge Henry, after hearing A. E. Van Giesen for the defendants, and E. A. Rayner for the plaintiff, in a lengthy opinion reviewing both the law and the facts, holds that the plaintiff is entitled to recover a reasonable compensation for his services in preparing the plans, etc, and gave judgment in his favor.—*Building.*

Disinfectants.

It is often asked what is the best disinfectant for a cesspool? Two pounds of copperas, or sulphate of iron, dissolved in a pail of water, will greatly assist in purifying a privy or cesspool. A pound of nitrate of lead dissolved in the same way is excellent for sinks, drains, or vaults. Chloride of lime is also effectual, or a layer of charcoal dust will prevent offensive odors arising from any decomposing substance. The quantity of these substances will depend upon the amount of filth to be deodorized, and the length of time during which they will be effectual will depend upon local conditions.

The Japanese Hand-saws cut on the pull stroke; so no matter how hard the wood or dull the saw, they will not bend or buckle. It is rather more difficult to saw to line with such saws than with ours, but they have their advantages. Take one of our key-hole or compass saws, cutting on the push or shove stroke—what an aggravating, limber thing it is. Now point the teeth the other way, and you will have a tool that will keep stiff no matter how many knots it encounters or how dull it gets. In other words, the pull stroke of 3,000 years ago is the best for such thin, narrow blades.

Stair Building Made Easy **$1.00**

New Law in Tax Titles—No More Extortion.

One very important amendment was made by the last Legislature in relation to the issuing of deeds on a sale of property for delinquent taxes:—

"It is now provided that the purchaser of property sold for delinquent taxes, or his assignee, must, thirty days previous to the expiration of the time for the redemption, or thirty days before he applies for a deed, serve upon the owner of the property purchased, or upon the person occupying the property if said property *is* occupied, a written notice, stating that said property, or a portion thereof, has been sold for delinquent taxes; giving written notice of the date of sale, the amount of property sold, the amount for which it was sold, the amount then due, and the time when the right of redemption will expire, or when the purchaser will apply for a deed. The new amendments provide that the owner of the property shall have the right of redemption indefinitely *until such notice shall have been given* and said deed applied for, upon the payment of fees, percentage, penalties, and costs required by law. If the property sold is unoccupied, it is then provided that a similar notice shall be posted in a conspicuous place upon the property, at least thirty days before the expiration of the time for redemption, that is, thirty days before the purchaser applies for a deed. It is further provided that the Tax Collector shall not issue a deed to the tax-title purchaser until such purchaser shall have filed an affidavit with the Tax Collector showing that the notice required to be given has been in fact given as required. This affidavit must be filed and preserved by the Tax Collector as other papers are kept in his office. These new amendments will prevent tax-title extortion. Heretofore, when the time of redemption ran out—in one year from date of tax sale - some tax-title buyers asked $250 for a tax title that cost them $15 to $25. Many owners' property was sold for taxes because of their ignorance that the taxes were delinquent. The tax-title buyers will now be compelled to give delinquents notice before they can get tax deeds."

To Make Watch Hands Red.—Mix to a paste, over a lamp, one ounce of carmine, one ounce chloride of silver, and a half ounce tinners' japan. Put some of the paste on the hands, and lay them face upwards on a sheet of copper, holding it over a spirit lamp until the desired color appears on them.

Onyx.—Onyx is deservedly a favorite for table tops. Its semi-translucency, with dappled shades from saffron to white, delicate tinge of green and grain formed of wavy lines render it peculiarly attractive.

All varnishes crack from the surface, and paint cracks from the bottom. The presence of ammonia in the atmosphere is the greatest enemy to varnish, as it weakens the cohesion between the oil and gum.

The Safety of Cast-Iron Columns.

The safety of cast-iron columns in case of fire, as compared with columns of wrought iron, or pillars of stone, brick, or cement concrete, has been the subject of investigation by Professor Bauschinger, of Munich. It will be remembered that the Berlin police authorities, in consequence of unfavorable experiences with cast-iron columns in recent fires at Berlin, issued regulations forbidding the use of such supports in the construction of dwelling houses, but permitting the employment of columns of wrought iron and clinkers in cement mortar. Cast-iron columns may only be employed if they are surrounded with immovable mantels of wrought iron separated from them by an air space. Professor Bauschinger heated cast and wrought-iron columns weighted with burdens usually imposed in structures first to 300°, next to 600°, and finally to red heat, and suddenly cooling them afterwards by a jet of cold water, as applied in extinguishing fires. The experiments demonstrated that cast-iron columns, although they were bent by red heat, and showed transverse cracks when water was applied, supported the weight imposed upon them, whilst wrought-iron columns were bent before arriving at a state of red heat, and were so much distorted by the application of water that a straightening was out of the question. In reality they would have collapsed under the weight they had to support. Professor Bauschinger concludes from his experiments that cast-iron columns, notwithstanding cracks and bends, would continue to support the weights imposed upon them, whilst wrought-iron columns would not. In examining pillars of stone, brick, and cement concrete, the latter proved to be the best. Concrete pillars withstood the action of fire for from one to three hours; those of ordinary brick, as well as those of clinkers set in cement mortar, displayed great resistance; whilst natural stone—granite, limestone, and sandstone—were not fire-proof.—*Illustrated Carpenter and Builder.*

The oftener carpets are shaken, the longer thy wear. The dirt that collects under them grinds out the threads. Do not sweep carpets oftener than is necessary. A broom wears them very much. When a carpet is faded, strong salt and water will often restore the brightness of the color.

George H. Fuller, manufacturer of and dealer in all kinds of office, school, church, and lodge furniture, and fine cabinet work, has removed from New Montgomery Street to 638 and 640 Mission Street. Those desiring things in his line, may rely upon square and honorable dealings and good work, whether under personal arrangements or by orders from sections outside of San Francisco.

To remove varnish without injuring paint. Brush on spirts of ammonia or hartshorn, which soon softens the oil, allowing of its being rubbed off easily.

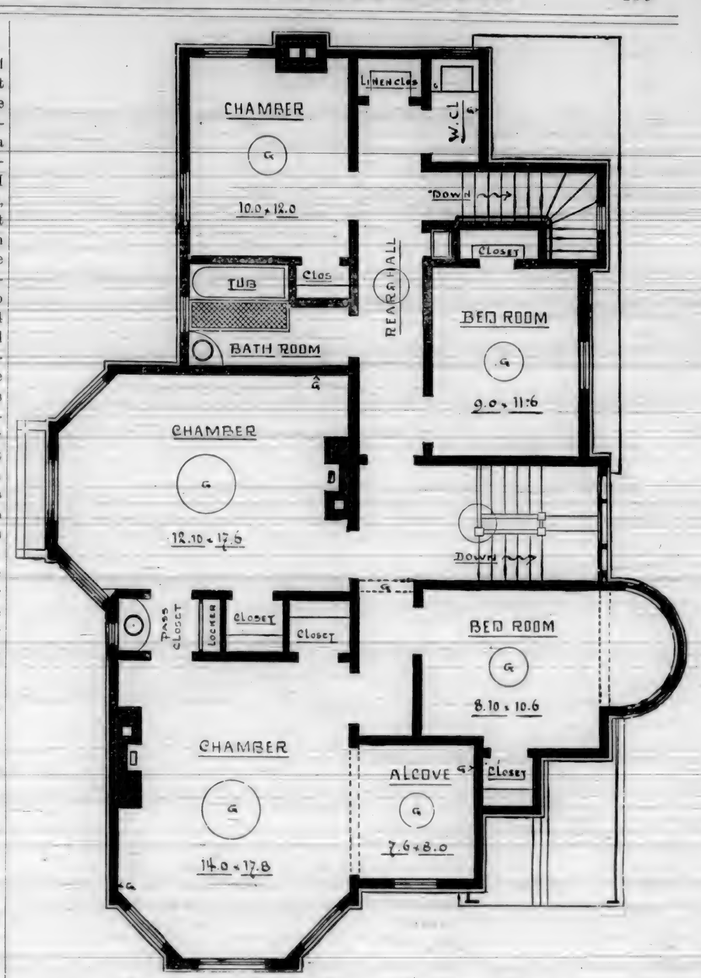
Going Up-Stairs.

Many persons complain of the fatigue of mounting long flights of steps, and feel that they are failing before their time. There need be no anxiety on this score. Going upstairs is simply performing so much work in a given time. Mr. G. Farmer, who has investigated this subject, says: "Just for curiosity I sent my assistant, who weighed 152 pounds, to climb the stairs at the Forty-second Street Station, to note the time in seconds which was required to climb them leisurely. He counted the stairs, 36, and it took him 34 seconds to climb them. The rise of each step was 8 inches; total rise, 8x36=288 inches=24 feet. Now, his weight, 152 pounds, multiplied by the total rise, 288 inches=43,786 inch-pounds = 3,648 foot-pounds of work done in 34 seconds. Now, one horse-power does 550 foot-pounds in one second, and in 34 seconds will do 34 × 550=18,750 foot-pounds; now divide 3,648 by 18,750, and we get 195, almost 1-5th of a horse power, which this young man exerted while he was climbing these stairs leisurely. He said he usually went up two steps at a time when in haste. Now let us compare this work with that done ordinarily while walking on level ground. His average step when walking rapidly would be not far from 26 inches, and the distance from the ground to the thigh-joint would be not far from 33 inches; thus at every step he lifts his center of gravity $2\frac{5}{8}$ inches—all, or nearly all, his weight above the knees will be raised $2\frac{5}{8}$ inches at every step. Assume that 130 pounds would be lifted $2\frac{5}{8}$ inches at every step, this would equal 341 inch-pounds per step. Now, divide 43,776 by 341, and we get 128.4 steps, which multiplied by 26 inches, gives us 3,338.4 inches=278 1-5 feet as the distance he would have to travel in 34 seconds to do work equivalent to climbing those stairs.

$$\text{"This is } \frac{287.2 \times 3\,600}{34 \times 5.280} = 5.58 \text{ miles per hour,}$$

which I think is an under estimate. How few invalids—ay, how few tired persons could maintain this pace even for half a minute without great fatigue!"—*Exchange.*

Hereafter the highest building in New York must not exceed an altitude of eighty feet. The law does not, however, prohibit the erection of giant office buildings or great business structures. This may be well, as the convenience of business may require the concentration of offices on a small area, but we feel that the law is an excellent one as applied to the residential portions of the city. With our elevated roads and the probable progress that will be made in rapid transit, there is no occasion for the immense apartment houses that have been built in the last few years. Should the city's population continue to increase as it has done, spread it out over the 23d and 24th wards and lower Westchester, and better and healthier homes will be provided for the people, and it will be far more equitable as regards the rights of adjacent owners.—*Building.*



Second Floor Plan of Country Dwelling.—Plate 3.

Next to a good house nothing is more desirable than a good side-walk, but the one is not always accompanied by the other, and hence the incongruity. A bad side-walk is not altogether the result of individual negligence, since the municipal authorities are supposed to have jurisdiction over them, but at the same time property owners should not consider themselves freed from all responsibility. It is no uncommon thing in any large city, to see a house and grounds magnificently appointed and well kept, while the approaches are in a state of extreme dilapidation.

Why are so many houses, especially farm houses, in the United States painted white? A neat white house surrounded by green trees and shrubbery, is often a very pleasing object in the landscape, but a grim rectangular structure, standing unrelieved as many houses do, receives a glaring addition to its ugliness by the coat of white paint which covers it. Neutral colors are rarely offensive, and easily obtained. Only conservative inclinations cause the present style, and in this matter good taste should not be influenced by bad example.

A metal that expands in cooling is made of lead, nine parts; antimony, two parts; bismuth, one part. This alloy can be advantageously used to fill small holes and defects in iron castings.

Art and Science of Stair Building..... **$1.00**
Architectural Perspective..... ... **3.50**
Leffells' House Plans..... **2.50**

How Mosaic Work Is Made.

ONE of the few industries of Rome is the manufacture of mosaic, the largest establishment being under the control of the church, and employed almost entirely in the adornment of the churches and religious establishments. The process of making a picture in mosaic is very slow, and requires the highest order of skill. To begin with, mosaic is made of glass, and its value consists in being indestructible. The workmen in great pictures, have to have something over twenty-six thousand shades of colored glass to produce the tints requisite, as in a mosaic every color is necessary, the same as in oil painting. To make a picture the process is this: A plate of metal of required size is surrounded by a raised margin an inch in height. A plastic cement of powdered stone, lime, and linseed oil is spread over the bottom of the plate, and that covered with plaster of paris to the level of the rim. Upon this the picture to be made is very carefully drawn, and the mechanic's work begins. He takes a piece of glass of the exact tint necessary, and fits it to its place, grinding it to get the shape. Then he goes on one piece at a time, till the picture is finished; then the face is ground down to a smoothness, and the picture set in its place. Some of the greatest pictures of ancient and modern times are in mosaic, the tints, with all the delicate shades, being as carefully reproduced as in oil, and the effect being even greater. The ceilings of many of the great churches are entirely of mosaic as well as many of the altar pieces and other decorations. As they are entirely indestructible, and never lose their color, they are very much prized. A picture in mosaic costs, but then it is eternal, barring fire and earthquakes. All over Rome there are small shops devoted to the manufacture of mosaic table tops, box covers, etc., the workman toiling all his life on one subject. The man who begins on St. Peters on table tops, or the Coliseum, never does any other subject, and he becomes so skillful in this one subject that he is enabled to make them not only well but cheap. He has only the tints to manage that enter into the one picture, and he places them mechanically and very rapidly.

Plumbers' Association.

THERE are some excellent provisions in the code which govern the Philadelphia Master Plumbers' Association, and new associations cannot do better than to follow it closely in the preparation of their constitution and by-laws, and established associations might take some hints for revision from it. The sanitary committee, which consists of ten members, has entire charge of all sanitary matters pertaining to the trade. They are given power to form themselves into a sanitary plumbers' club. This is the origin of the club, which has already been referred to in these columns. The object is mutual benefit and the discussion of improvements in sanitary plumbing. This committee has power to add to its number, from members of the association, and to invite well-known sanitary experts to attend its meetings. One of the objects of the association was to establish a plumbers' trade school. For this purpose, a trade school committee was provided, consisting of twelve members, who were given power to elect their own officers, and conduct the affairs of the school, subject to the approval of the board of directors. The good results of the trade schools are already being felt. The plumbers elsewhere should not fall behind in this important matter.—*Sanitary News.*

Improved Tenements in New York.

IN New York, a company has been incorporated with a capital stock of $150,000, divided into shares of $25 each, for the purpose of building tenement houses of a superior quality. The president of the company is Mr. Joseph M. Drexel, and Mr. Oswald Ottendorfer is vice-president. The plan, which is one that has been tried successfully in France, is to provide tenements which shall be healthful, and otherwise desirable, at the same prices as are now charged for the miserable quarters, in which so many are compelled to live—$8 to $14 a month. The company expects to get a net income of at least 7 per cent. on the investment, and 4 per cent. will be set apart to pay dividends on the shares, the remainder being accumulated as a reserve fund to protect the shareholders; for the benefit of the tenant, who will be credited with interest in proportion to the rent paid by them. These credits the tenant can apply to the payment of rent whenever, "by illness, age, lack of employment, or other good cause, he shall be unable to provide for himself or family." Any tenant can become a shareholder, and the plan is no doubt a good one and deserves the attention of capitalists in all our large cities. A large part of the shares have been taken, and a building site has been selected.

Brick Wall Discoloration.

A CORRESPONDENT in the *American Architect*, in answer to a writer who took the view that the discoloration of brick walls was caused by bricks being burned with coal, says that the whiteness appears equally on bricks burned with wood, and where, in the manufacture, no coal dust is used, and that from time immemorial bricks have thus appeared white. "They were so seen in Boston a century before coal was used, or much known as a fuel by its inhabitants. I assume that, even now, the use of coal dust in the manufacture of bricks is simply local, and an exception to the rule, and in most country places it probably never will be used; yet in special examples of bricks made thus the whiteness appears all the same." He further adds that soda in one of its forms is the cause, and that simple water dissolves it; and that "linseed oil as a coating is an excellent treatment but the best success has been attained where dilute muriatic acid has cleansed the pores in the bricks, and thus permitted the oil to further penetrate.' Speaking of kerosene oil, he said: "This material penetrates the brick to a depth of about a half-inch, where they are of an average hardness, and dissolves the soda, but the oil, lacking the body that linseed oil has, affords much less protection, from the atmosphere, and has proved to be of only temporary value."—*Brick Tile and Metal Review.*

Whims in Building.

NOTHING adds so much, says the *Studio*, to the cost of building as the indulgence in whims. To set out deliberately to do a "queer," "fanciful," or, as it is sometimes called, "original" thing in building, is always to incur unnecessary expense. If we look through the books that contain pictures of the architecture of all ages and nations, we shall find that, without an exception, in the times all men of taste are agreed in calling the good times, the modes of building have been sensible, founded on the needs of the case, and that whatever may seem fanciful—the whole of what we call picturesque - when its charms have proved enduring, is the result of what we may call, in every case, "accepting the situation." Nothing has been done in such instances for the sake of being picturesque. Good building, good ornament, never poses.

In building, as a rule, every departure from the rectangular form is an added expense. One of the things impressed on the mind of a young man who goes into an architect's office to study the profession is that, if cost is to be considered, which it sometimes is and sometimes is not, all excrescences and projections must be avoided. A rectangular house is the cheapest. Bay windows, porches, octagonal or circular external ends to rooms—all these things cost money; and it is by multiplying these features that the expenses of building are often made so great as to deter people from undertaking it, for the things seem so small in themselves, it is not suspected what drains they are on the purse. If a good reason cannot be given for any so-called ornamental feature in a house, if it cannot be shown that something worth while is to be gained by making it, we may be reasonably sure that it is a fancy which will cost, as the country people say, more than it comes to. And, in the greater number of cases, nothing, even in looks, is gained by indulging the fancy.—*Brick Tile and Metal Review.*

A very complete filling for open cracks in floors may be made by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water, and a tablespoonful of alum, thoroughly boiled and mixed: Make the final mixture about as thick as putty, and it will harden like paiper-mache. This mixture may be used for moulds for various purposes.

Correspondence Special.

BALTIMORE, June 20th.

THE architects in this city are enjoying a harvest of prosperity. Buildings are going up in all directions, many of which are elegant and costly. The style of architecture used is imposing and handsome, without excessive elaboration. I am not a competent critic or would give full description; suffice it to say that there is much work going on, and largely of the better kind.

Knowing you to be a Baltimorean, I thought a line or two of this kind might be acceptable, as coming from the place of your birth—your old home, The changes in the general aspect of the city, its extension in all directions beyond the limits which defined its extent thirty years ago, are wonderful. Truly, progression and advancement is plainly developed in the monumental city. The play-grounds, parks, commons, and barren places of former years have disappeared, and are now covered with houses of all kinds, and still the spread is going on,—all of which bespeaks work for mechanics.

ROBERT.

NEW ORLEANS.

Arrived here all right. Find work very slack. Very little building going on. Journeymen carpenters are working for $9.00 per week and less, and glad to get work at any price. The mechanics of San Francisco should be happy, as I have not found wages so high anywhere, to say nothing of the loss of time on account of the winter and inclement weather. Men who work for so small wages are, however, able to support their families, and, seemingly, live comfortably. Yours truly,

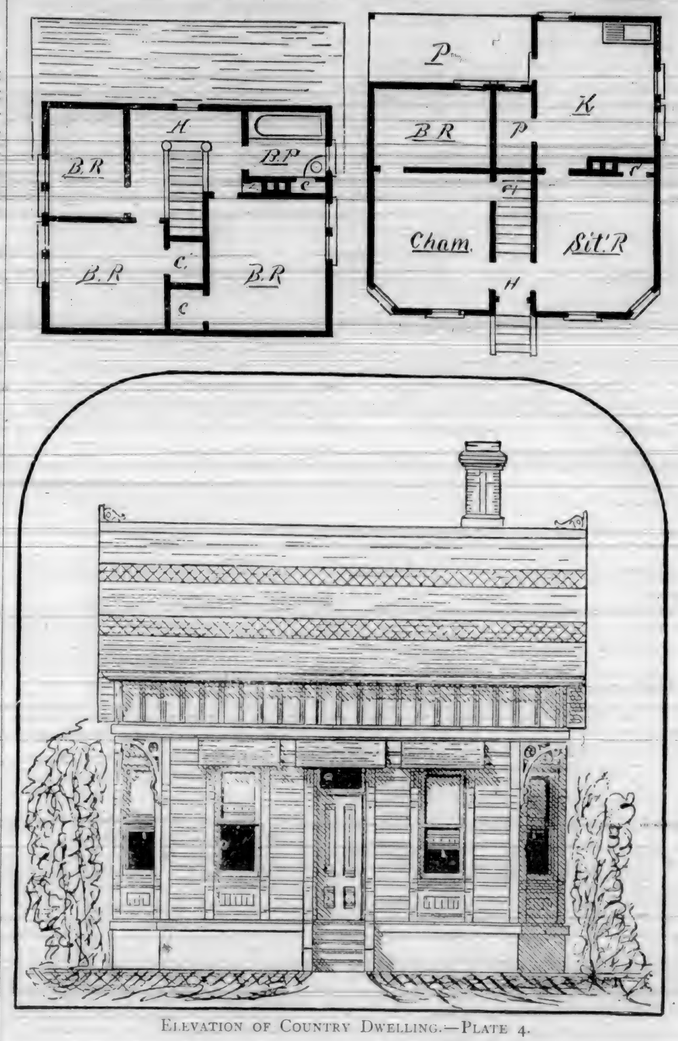
J. F. D.

SAUCELITO, Cal.

MR. EDITOR: Enjoying the luxury of a week's sojourn at this place, permit me to say a word in its behalf. Nearly all the while that I have been here, the weather has been fine, and generally beautiful. There is a stream of life constantly flowing through this berg, and over the railroad to San Rafael, and intermediate places, upon the arrival of each ferry boat. I am surprised at the number of people who live on these hill-sides; the pleasant weather making it manifest by the number of neatly and bewitchingly tidy dressed ladies to be seen in the pathways, and among the trees; this said—enough; for the stearner sex are never far away, where beauty and innocence is found in such happy forms and characters.

The place is improving, several fine homes being in course of erection or in contemplation. One most handsomely and romantically situated upon the brow of the hill, just above the ferry landing, owned by Mr. W. G. Barrett, is very noticeable, and attracts much attention. The view from all parts of the structure is fine, and from the attic story, unsurpassed, commanding a view of the entire bay, and the long range of hills and valleys up to Mount Tamalpais; and southerly, the northern section of San Francisco from Telegraph Hill to Fort Point. With such a home retreat, an owner may well pray for Sundays and holidays to haste around and tarry long, for if rest and comfort cannot be taken there, then nowhere.

I hear of several projecting building improvements in this locality, and, in time, I think that hundreds will wend their way homeward to this place, and perhaps in still later times, cable roads or some other device will be provided to make access up the steep hill-sides easy.



ELEVATION OF COUNTRY DWELLING.—PLATE 4.

California as a manufacturing State now ranks as the 25th. There are 1,000 establishments using power. They use 205 water-wheels, of 4,850 horse-power; 990 boilers, 179 engines, with a power of 28,071 horses, making total steam and water-power in horse-powers, 32,921.

NO MORE SKY HIGH BUILDINGS.—Enterprising and speculative owners are now confined by law to a height of eighty feet as the limit of altitude to be applied in the erection of buildings in New York. No more fifteen story traps.

Reflected Sound in Buildings.

VARIOUS instances are given of the mixture of direct and reflected sounds. In the gallery of the Bourse at Paris the confused vociferation of the multitude below is mentioned by Professor Tyndall, who says, You see all the motions of their lips as well as of their hands and arms; you know they are speaking, but you hear them not. Their voices mix with their echoes into a chaos of noise. It is well known that an audience and furniture both materially deaden the echo. Thus the same authority refers to a lecture delivered in the Senate House of Cambridge, where his voice was not heard at a distant part of the hall. "The assembled audience, however, so broke up and quenched the sonorous waves, that the echoes were practically absent, and my voice was plainly heard in all parts of the Senate House." In St. Alban's Cathedral, the tick of a watch can, it is said, be heard from one end to the other. In Gloucester Cathedral, a gallery of an octagonal form conveys a whisper 75 feet across the nave. The whispering-gallery of St. Paul's is a well-known instance of echoes. The well at Carisbrook Castle in the Isle of Wight, which is 210 feet deep and 12 feet wide, lined with smooth plaster, is a wonderful conveyer of sound; a pin dropped into the well can be distinctly heard. Sound is not only reflected, but is refracted like light, and may be condensed; it can be diffracted or bent round obstacles. Echoes are reflected waves. Echoes may be prevented by cutting off the angles of the room with drapery, by wires stretched across the room to break the waves of sound, and, in fact, by any device which will interrupt the reflection of the sound waves. The method of demonstrating the reflection of sound is by the use of two parabolic reflectors placed opposite each other with their centers in a line; a sounding body is placed in the focus of one of the reflectors, and the sound waves striking the nearest reflector are thrown by reflection to the farthest reflector, and is then concentrated to its own focus, so that an ear placed in this second focus distinctly hears the sound made at the initial point. A vertical wall without break behind the sound and not far removed from its source, resembles a reflector, and is sufficient to cause an echo. Either a recess or a gallery may tend to break this reflection. Unfortunately treatises on sound seldom enter into the question of the means to be taken to remedy echo or promote the transmission of sound in buildings. In large assemblies the principle of the isacoustic curve, one of equal seeing and hearing, appears to give the best results in the arrangement of the seats of the auditors.—*Building News.*

Hand Saws and the Art of Saw Filing. This book gives full information for putting in order all kinds of saws, from a carpenter's panel saw to a steam saw-mill. Illustrated profusely. Price, $1.00.

Building Superintendence. A new work and one that should be in the hands of every architect, contractor, and student. Price, $3.00

Practical Carpentry. As its name indicates, this work presents practical answers to those questions that so frequently vex the mechanic. Price, $1.00.

Competition for Plans for Public Works.

IN quite a number of towns which need water-supply and sewerage the authorities are trying to shift the responsibility of providing a feasible and proper scheme from their own shoulders to those of engineers and contractors, by calling for plans as well as proposals for construction of works, to be submitted in competition. In some cases a moderate sum is named as the prize to be competed for, and in others the franchise of a company is set up as the reward. This method of obtaining plans is not likely to result in benefit to the public. In the first place, civil engineers of experience in water-works or sewerage designing and construction are not likely to enter into such competitions. Their time is valuable to them, and they cannot afford, nor are they willing, to squander their time in investigating and reporting upon projects on the mere chance of getting a small remuneration, although they might be glad to do the work required with an assurance of the compensation. The bidders in such a case are apt to be either inexperienced young men seeking to get their names before the public, or mere speculative engineers who are working with owners of patent methods. As for giving out contracts for works either of water-supply or sewerage, conditioned only on the execution of a trial test when the works are completed, it is an exceedingly risky and unbusinesslike proceeding. No man or firm can be trusted to do thorough work in these lines without constant supervision and inspection by an expert. It will invariably be found cheaper in the end, for those intending to construct such public works, to secure first a plan and specifications from an experienced civil engineer, and then have the work built under inspection from beginning to end.—*Sanitary Engineer.*

Law in Relation to Newspapers.

1. SUBSCRIBERS who do not give express notice to the contrary are considered as wishing to continue their subscriptions.

2. If the subscribers order the discontinuance of their periodicals, the publishers may continue to send them until all arrears are paid.

3. If subscribers neglect to or refuse to take their periodicals from the office to which they have been directed, they are held responsible till they have settled their bill and ordered their paper discontinued.

4. If subscribers move to other places without informing the publisher, and the papers are sent to the former direction, they are held responsible.

5. The courts have decided that refusing to take periodicals from the office, or removing and leaving them uncalled for, is *prima facie* evidence of intentional fraud.

6. Any person who receives a newspaper and makes use of it, whether he has subscribed for it or not, is held in law a subscriber.

7. The postmaster who neglects to give the legal notice of the neglect of a person to take from the office the newspapers addressed to him, is liable to the publisher for the subscription price.

Forest Fires.

IF forest fires keep on destroying the woodlands all through the summer at the same rate as they have done during the past month, there is every indication that the loss incurred in this manner by the national resources will throw every other form of fire losses into the shade. The average citizen takes but little interest in the quantity of buildings and manufacturing establishments that are consumed monthly by fire; this is partly due to indifference, and partly to the knowledge that *his* property is insured; but the interest he takes in forest fires is practically *nil*. Indeed, what does he care whether thousands and thousands of acres of woods are burned? That does not concern him; it is none of his loss. But when an agitation is instituted against the lumbermen to prevent their cutting the trees—ah—that is something entirely different; *that* subject is to him about as clear as stove-blacking, but of course he understands it all, and joins heartily in the wholesale condemnation of these horrid lumbermen who want to rob us of our fine forests. As woods are not insured against fires, there is no collection of statistics to show the annual losses, but if they could be obtained we are fully convinced that the total aggregate would be enormous. What are we going to do about it? Let things go as they have gone, without even an attempt to offer some form of check? We have laws, and fortunately they are enforced, to guard against incendiaries, but our forests are considered universal property, and if by accident or carelessness somebody starts a fire, why, they are only trees, such man thinks, and there is no harm done. How many acres of woodlands are burned up during the dry season ignited by sparks from locomotives? How often is a forest fire started because some mighty hunter did not think it worth his while to put his foot on a piece of burning gun wadding? There are dozens and dozens of conditions where a large conflagration could have been prevented by even a very small amount of care, but nobody takes an interest in it. And where is the law that so effectually protects our other property? Why not have it apply to forests as well? They represent money. It seems that a constant agitation of this subject is necessary to insure the amount of attention that must, as a matter of course, precede the institution of any active measures to prevent the constant waste of our forest resources by destructive fires.

Strangers naturally turn to the advertising columns of a newspaper, as they would to a business directory, to ascertain the commercial standing of the place in point of the number and kinds of interests represented, and they turn to the advertisements in a trade paper to see who is wide awake.

The Great Forests of Puget Sound.

IN Western Washington, between the Cascade Range on the east and the Coast or Olympic Range on the west, and between the 47th and 49th degrees of north latitude, is a thickly timbered belt of fir, cedar, alder, maple and other woods. Of these, fir probably represents three-fourths. In the midst of this wealth of forest, nature has placed a broad, deep arm of the Pacific Ocean—Puget Sound—with which it is connected by the Strait of Fuca. Thus not only has nature provided the timber, but the water-way also by which it is possible for the merchant marine of the world to come and obtain their lumber supplies, much of which, some time in the future, must be furnished from these forests. Already the lumber trade with Australia, Central and South America, China, and the islands of the Pacific, amounts to fully 75,000,000 feet a year, and employs a fleet of about 15 vessels every month.

Puget Sound is 200 miles in length, and has a littoral of 1,800 miles. This irregular shore line forms innumerable harbors, splendidly adapted for the erection of saw-mills and other wood-working factories, and also for the establishment of ship-yards. Along this whole shore line, and from thence on both sides as far as the eye reaches, nothing can be seen but the vast and magnificent wealth of timber, save here and there where man has established a mill port, a town, or an occasional farm. In the timber belt of Western Washington there are 20,000,000 acres covered with timber, most of which is included within the limits named—an area nearly equal to the combined areas of the States of Connecticut, Massachusetts, Vermont, and New Hampshire. This timber belt will average 25,000 feet of lumber to the acre, or a total of 500,000,000,000 feet of lumber. Hence the saw-mills of Puget Sound, with their present capacity of 500,000,000 feet a year, would take 1,000 years to cut it down. The fir trees frequently attain the height of 250 feet, and planks of lumber are sometimes turned out of these mills 100 feet long.

Creosote Wood Stains.

SAMUEL CHABOT, Jr., No. 70 Kilby Street, Boston, is directing the attention of the trade to creosote wood stains which he is manufacturing. These stains take their name from one of their most important ingredients, namely, cresole or creosote, a well-known preservative of vegetable tissues. It is claimed that this substance unites with the albuminous or sappy part of the wood, which is the first to decay, and forms with it a compound which resists all changes from water or the variations of climate. It also protects the wood against the ravages of insects, notably the white ant of the South. These stains are manufactured in a great variety of colors suitable for exterior use, and their effect upon the shingled villas and cottages now so much in vogue is picturesque in the extreme. The manufacturer claims for them several important advantages over oil and chemical paints. First is the fact that they are from one-half to one-fifth as expensive as paint. The effect of paint is to form an air-tight screen over all cracks between clap-boards and shingles, sealing them tightly, thus confining moisture under them and sometimes hastening the decay of the wood. It is urged, on the other hand, that creosote stains form no screen, and permit the ready evaporation of any moisture which may come between the pieces. The manufacturer also directs attention to the superiority of stains over paint from an artistic standpoint. He also calls attention to the fact that, stains being in the wood and not on its surface, the color is not liable to discoloration by cracks or peeling off. The stains also have the advantage of bringing out with beautiful effect the natural grain of the wood. The cheapness of these stains, the manufacturer states, combined with their great preserving quality, recommends them for priming wood before painting. Painting can be readily applied over the stains after they have been allowed to dry.

Master Carpenters.

AN article appearing in the June number of this Journal, in reference to the movements of the master carpenters in San Francisco, has attracted considerable notice and comment from Eastern journals. The following from a St. Louis contemporary, who, doubtless, appreciates the facts given in the article referred to, without the courtesy of acknowledgment, publishes the following:—

"The master carpenters of San Francisco have joined together and formed an association, for the better protection of what they honestly believe to be their rights. They consider the practice, prevalent among owners, of buying building material without calling the contractors into the transaction, to be a violation of the spirit of their contract, wherein it is, or should be, understood that the benefits of all discounts on material rightfully belongs to those who have the responsibility of putting it together. A tailor or shoemaker would be greatly astonished by the request of his customer to exercise the privilege of buying the material for a pair of pants or boots, but when lumber, brick, or glass presents such a profitable field for speculation, the love of the owner for the mighty dollar is too strong to allow of technicalities in principle to stand in the way of his saving it. In case of risks or accidents the contractor is generally found to be the under dog in the matter, and is soundly berated if the specifications are not complied with. The "Baltimore Resolutions" of the plumbers is a model of protection to the interests of the master mechanic, and they are all gradually recognizing the fact that a resolution of some kind will soon become necessary to keep them in fresh bread and butter. The master carpenters of St. Louis could kick each other awake to many abuses they are subject to, and follow the example of their brethren in San Francisco in resolving what shall be, instead of quietly talking of what should be."

Health Officer Wight of Detroit, Mich., is making war on the ice-dealers who cut ice below the city, where it is claimed the water is contaminated by the sewerage. He has asked the Common Council to enact an ordinance to prohibit the sale of ice cut below Belle Isle, an island in the Detroit River above the city. The aldermen and councilmen have made the tour of the inlets and bays up and down the river where ice is cut in the winter season, obtained samples of the water for analysis, and propose to co-operate with the health officer if it can be found that his position is tenable. The question has brought up a discussion between the doctors as to whether the water is filled with bacteria, one faction claiming it is not, while the other takes the opposite ground. The ice-dealers, who see a possibility of their winter harvest-ground being cut off, are taking a prominent part in the agitation. Health Officer Wight has also been doing good work in the way of fumigating the sewers, having burned 1,090 pounds of brimstone for this purpose.

Always Pay and Save Money.

THE publisher of the *East Oregonian* had a subscriber who repudiated $1.56, claimed to be due for the paper. The delinquent was saucy and the newspaper men got upon their mettle and sued the aforesaid delinquent. The case was fought by nine lawyers for the defense and two for the prosecution. The plaintiffs got a verdict for the amount claimed, and the defendant had to foot a cost bill amounting to $74, besides the fees of nine lawyers. The moral of this case is that those indebted to newspapers for subscription will find it more economical to call and settle than to attempt repudiation.—*Ex.*

THE DECORATOR AND FURNISHER, published in New York, is a most excellent journal, always full of interesting matter and illustrations. Its June number is specially interesting, containing a description of a Long Island home, with illustration views, an exhaustive and pleasantly written description of modern iron work, with general examples, reference to the art work of the Society of Associated Artists, and some admirable designs for ladies' home work, crazy quilts, plaques, etc.; also practical designs for easels, bedsteads, dressing cases, wardrobes, picture frames, sideboards, etc., and much of interest of artistic and literary value. Those desiring can order same through this office.

The reel of wire rope for the St. Louis, Cable Road is said to be the largest in the world. It weighs 89,510 pounds, and was shipped from Trenton, N. J., on a car weighing 35,000 pounds on sixteen wheels.

INFLUENCE OF DECAYING WOOD ON HEALTH.

It is generally admitted that the vicinity of large quantities of decaying wood is dangerous to health, but the evidence as to this is scanty, and by no means definite, nor have we anything but more or less probable theories as to how disease is produced in this way. Yellow fever, typhoid fever, and various forms of malarial fever have been attributed to his cause—not that rotting wood is supposed to be alone sufficient to produce them, but that their specific causes seem to flourish and increase when introduced where it is present in large quantities.

It is a fact that, in a number of instances, the prevalence of yellow fever in epidemic form has been connected with the presence of decaying timber in or beneath piers and wharves, or of masses of rotting shavings, chips, sawdust, etc. This was the case in Providence, Baltimore, New York City, and Norfolk, and the presence of rotten timbers or planking in yellow-fever ships has been noted so often that by many it is thought to be something more than a mere coincidence.

Collections of damp and decaying sawdust have been in a number of instances charged with the production of malarial disease, and in some of the Northwestern States, and especially in Michigan, the evils from this cause have been the subject of discussion by sanitary officials.

Decaying wood pavements or sidewalks have been suspected of causing malarial affections in Memphis, in Washington, and elsewhere, although the relation between cause and effect does not seem to have been clearly established.

We do know, however, that green wood contains a very considerable amount of albuminoid matter, which affords food to microorganisms which decompose it, producing phenomena of putrefaction and giving rise to more or less offensive odors.

Professor Brewer, of New Haven, has reported the results of a number of experiments on the results of soaking green wood of various kinds in cold water, and thus removing the albuminoid matters. That green lumber contains something which greatly favors its decay, and which may be removed by long-continued soaking in water, was well known many years ago, and gave rise to the process of water-seasoning, in which the planks were sunk in large bodies of water and kept immersed for from six months to a year, when they were raised, piled in the air, and thoroughly dried. Flooring lumber thus treated is little liable to decay, for the simple reason that it contains little or nothing that is fit for the food of the micro-organisms and fungi that cause decay. The albuminoid material which may be thus extracted from wood appears to support the life of various micro-organisms which, so far as we know, are not directly or indirectly injurious to health. We can only infer that it will also support the life of other organisms which may be injurious—the germs of specific disease—and conclude that it is sufficiently probable that this is the case, to warrant the giving special attention to this subject in investigations as to the causes of the local prevalence of certain diseases.—*Sanitary Engineer.*

Trees and Rainfall.

In the official report of the geological survey of Wisconsin is an account of the determinations made by Dr. J. M. Anders, of the amount of water pumped from the earth by trees. He finds that the average exhalation from soft thin-leaved plants in clear weather amounts to about one and a quarter ounces troy, per day of twelve hours, for every square foot of surface. Hence a moderate sized elm raises, and throws off seven and three quarters tons of water per day. In the report the facts are applied to what is going on in America, where certain inland fertile districts are becoming converted into deserts by wholesale clearings, and in other places, such as the plains of Colorado, where five or six years of irrigation and planting have already produced a measurable increase of rainfall. It is maintained that the deserts of Syria and Africa are the results of cutting down trees, and that original luxuriance may be restored by skillful replanting.—*Chicago Times.*

On a recent trial a cedar log twenty feet long was taken to a California match factory, and in exactly twenty minutes was sawed, split, glued, dipped in sulphur, labelled and the matches boxed ready for shipment. [The above is a good story to tell, but if the "log" was more than a few inches square measurement, and twenty feet long, no such feat was ever performed. For the purpose of an item, a piece of 2x6, twenty feet long, might have been called a "log."—Ed.]

"EASTLAKE."

Indestructible Gloss Paint.

Easy-working, durable, economical. Especially adapted to the climate of California. This article is a welcome improvement on the pigments employed in modern house painting, and takes precedence of the lead, oil, and turpentine composition at present in use by the paint trade. It is particularly valuable to painters and property owners, who, by securing the SEALED CANS OF EASTLAKE PAINT, have thereby a guarantee that they are having a genuine article, free from adulteration, guaranteed not to contain gum, rosin, benzine, or turpentine, but a compound made of pure lead, zinc, and oil only, with a chemical solution THAT RENDERS THE PAINT, WHEN SPREAD, HARD AND GLOSSY, alike resisting the action of fog and heat, without oxidizing or chalking, as is so frequently the case in California.

In White and all shades, Sample Color Cards and Price List of which will be furnished on application to Eastlake Paint Co., Oil and Color Grinders, No. 199 South First Street, San Jose, Cal.

MASONS' AND BUILDERS' EXCHANGE
OF SAN FRANCISCO
Room 11, 314 Montgomery St.

Below will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

Brady, O. E., President, 822 Valencia St. . Box 22
Butler, Thomas, 593 Ash Ave. . " 28
Bowers. T. N. Oakland, 804 Castro St. . " 49
Bender, Jacob, 1009 Clay St. . " 73
Beck, J., 10 Eleventh St. . " 12
Cain, R. K., 213 Page St. . " 61
Calvert, John, 812 Hyde St. . "
Cox, John, 608 Jones St. . " 16
Clawson, L. E., 129 Oak St . " 2
Dunbar, Wm., 27 Eleventh St. . " 14
Downs, John, 269 Minna St. . " 18
Dunphy, Ed., 1006 Bryant St. . " 34
Ferris, Crawford, 9 Bourbon St. . " 20
Glynn, Jas , 432 Clementina St. . " 57
Hanavan, John H., 1711 Jessie St. . " 15
Hock, T., 422 Golden Gate Ave. . " 60
Haff, J., 516 Kearny St. . " 6
Higgins, Robert, 1724 Jessie St. . " 13
Hughes, John, 310 Seventeenth St. . " 21
Jordan, D., 911 Webster St. . " 59
Kneedler, G. W., 1013 Vallejo St . " 51
Kincaid, J. E., 2219 Pacific Ave. . " 45
Liebert, J. G., Treasurer, 330 Oak St. . " 32
Loane, F. M., 1512 Golden Gate Ave. . " 38
Mitchell, Robert, 807 Turk St . " 26
McCarthy, John, 2509 Folsom St. . " 7
McGowan, Matt., 614 Linden Ave. . " 17
McDermott, John, 124 10th St. . " 33
McGuire, John, 212 Grove St . " 74
Mulcahy, Jas., 612 Larkin St. . " 33
Nagle, Geo. D., 427 Montgomery St. . " 24
O'Connor, J. J., 648 Minna St. . " 19
O'Brien, D. J., 323 Dupont St. . " 31
O'Sullivan, P., 432 9th St. . " 35
Richardson, M. B., 624 Shotwell St. . " 39
Riley, J. F., 166 Perry St . " 1
Roberts, S. N., 54 3d St. . " 38
Stevens, W. E., cor. Larkin and Market Sts. " 55
Schoenmaker, C., 323½ Chestnut St. . " 46
Wagner, J., Potrero Ave. bet. 22d & 23d Sts " 62
Worrell, C. R., 888 17th St. . " 3
Waterson, G. T., 638 Market St. . " 5
Young, Lewis . " 64
" 49

BOX RENTERS—IRON MEN.

Ralston, H. & J., Iron-men & Housesmiths. Box 78
Lewellyn, R., Columbia Foundry. " 77
Western Iron Works. " 69

STONE.

Schalicke, F. W., Patent Stone .Box 75
Somervell, W. S., Granolithic Paving Co . " 55
Peterson, H. M., Sand and Gravel. " 63
Richardson, M. B. Concrete. " 1

BRICK.

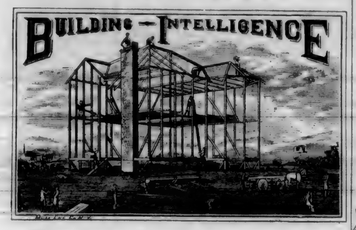
Roberts & Davis, Sacramento Brick . .Box 36
Remillard Brick Co. " 23
Patent Brick Co. " 29
Peterson, T. W. & Co., San Jose, Brick Co.. " 68

PATENT CHIMNEYS.

Stevens, W. E., Patent Chimney .Box 46
Browell, J., Patent Chimneys. " 71
Clawson, L. E., Patent Chimneys " 2

MISCELLANEOUS.

Davis & Cowell, Lime and Cement .Box 43
Whittier, Jas. E., Asphaltum " 41
McClure, P. L., Grader and Waterman " 30
Sibley, L. B., Teamster " 40
Warren, Chas., Grader " 37
Buckman, A. E., Grader " 42
Kelso, John, Grader " 76
English W. D. & Co., Graders " 70
Butterworth, T. C., Glazier " 48
Harney & Son, Street Contractors " 54



Where owners' names are left blank, it is so done in most instances by special request.

The alterations reported in our last issue as going on, on the corner of Market and Golden Gate Avenue, should have read Market and Turk.

B

Beaver, nr. Castro. One story frame.
O.—C. N. Johnson.
C.—H. P. Holland.
$1,600.

Broderick, near Jackson. One-story frame.
O. and B.—W. T. Lewis.
$2,500.

Bush, bet. Powell and Stockton. Four-story frame. O's.—Capt. J. C. Dolliver and Wm. & Geo. Livingston.
A.—W. H. Wharff.
C.—C. E. Dunshee.
$17,000.

Bush, bet. Franklin and Gough. Two-story frame.
O.—Mrs E. Archerger.
A.—H. Gielfuss.
C.—J. Klein.
$5,500.

Bartlett, bet. Twenty-first and Twenty-second. One-story frame.
O.—A. H. Rhyner.
A.—H. Gielfuss.
C.—Conrad & Miller.
$8,300.

Broadway, cor. Montgomery. Four-story frame.
O.—Mrs. J. Ruddock.
A.—T. J. Welsh.
C.—J. Hayden.
$13,000.

Brannan, nr. Fourth. Two-story brick.
O.—S. Lachman.
A.—Wright & Sanders.
C.—J. Haff.
$70,000.

C

Castro, nr. Seventeenth. One-story frame.
O.—H. L. Pleace.
Day's work.
$1,600.

Chestnut, cor. Stockton. Alterations.
O.—Home of Inebriates.
A.—H. T. Beston.
C.—J. Densmore.
$8,500.

Clay, nr. Yerba Buena. Alterations.
O.—Geo. W. Haight.
A.—R. Swain.
C.—Robinson & Gillespee.
$800.

Calvary Cemetery. Offices.
O.—P. W Riordan.
A.—T. J. Welsh.
C.—J. W. Smith.
$700.

California, bet. Gough and Octavia. Alterations.
O.—M. H. De Young.
A.—Curlett & Cuthbertson.
C.—P. Crichton.
$30,000.

D

Dolores, nr. Twenty-second. Three-story frame
O. and B.—T. R. McLeod.
$8,000.

E

Ellis, bet. Hyde and Larkin. Two story frame stable.
O.—Geo. Hass.
A —J. H. Littlefield.
C.—Haskell & Webb.
$1,200.

Ellis, cor. Buchanan. Three-story frame.
O.—Son Bros.
A.—Schmidt & Havens.
$9,000.

Eddy, nr. Mason. Alterations.
O.—Mrs. A. Moll.
A.—W. Mooser.
C.—S. T. French.
$4,000.

Eddy, bet. Laguna and Octavia. Alterations.
O.—P. W. Riordan.
A.—T. J. Welsh.
C.—Mahoney Bros.
$700.

F

Florida, nr. Twenty-fourth. One-story frame.
O.—T. J. Healy.
C.—P. J. Laughlin.
$800.

Franklin, nr. Grove. Alterations.
O.—F. McAlier.
C.—Doyle & Son.
$700.

Fulton, bet. Buchanan and Laguna. Two-story frame.
O.—National Brewery Co.
A.—H. Gielfuss.
C.—Wm. Pluns.
$6,000

Fillmore, nr. Haight. Two-story frame.
O.—G. F. Schmidt.
A.—H. Gielfuss.
C.—Commary & Beardslee.
$4,500.

Folsom, nr. Seventh. Two-story frame.
O.—Mrs. Butler.
A.—Curlett & Cuthbertson.
C.—D. Perry.
$5,000.

G

Guerrero, nr. M. One-story frame.
O.—Congregational Church.
A.—T. J. Welsh.
C.—W. Nickol.
$8,000.

Gough, nr. Clay. Two-story frame.
O.—M. Manson.
Day's work.
$4,000.

Greenwich, nr. Powell. Two-story frame.
O.—J. F. Brien.
A.—Huerne & Everett.
C.—W. B. Kreger.
$3,400.

Grove, nr. Van Ness Ave. Two-story frame.
O.—M. Nolan.
A.—Townsend & Wyneken.
C.—J. McCann.
$4,500.

Gough, cor. Clay. Two-story frame.
O.—M. P. Jones.
A.—W. F. Smith.
C.—R. H. Mowbray.
$6,000.

Geary, cor. Hyde. Three-story frame.
O.—Jas. Musto.
A.—Schmidt & Havens.
C.—Anderson Bros.
$15,000.

H

Hickory Ave., nr. Octavia. One-story frame.
O.—J. Riley.
A.—R. Warren.
C.—Moore Bros.
$1,500.

Hunter's Point. Two-story frame.
O.—E. Stiener.
C.—H. Bohnenberg.
$2,000.

Haight, nr. Scott. Two-story frame.
O.—H. Matheson.
C.—C. B. Kimbell.
$3,000.

Haight, nr. Scott. One-story frame.
O.—Seymore Johnson.
C.—C. Chisholm.
$3,000.

Hyde, nr. Sacramento. Alterations.
O.—S. L. Stanley.
A.—Schmidt & Havens.
C.—R. Mitchell.
$2,000.

J

Jackson, near Webster. Two-story frame.
O.—E. Reel.
A.—W. Schrof.
C.—F. Klatt.
$3,750.

K

Kissling, nr. Twelfth. Two-story frame.
O.—
A.—T. J. Welch.
C.—J W. Smith.
$3,000.

L

Leavenworth, nr. Sutter. Alterations.
O.—C. Morrill.
A.—H. T. Bestor.
C.—C. L. Tilden.
$3,000.

M

Mission, nr. Lafayette. Two story frame.
O.—J. Wallman
A.—Kenitzer & Raun.
C.—C. M. Mason.
$8,000.

Market, bet. Larkin and Polk. Three-story frame.
O.—P. Plover.
A.—Townsend & Wyneken; day's work.
$12,000.

Mission, nr. Twenty-first. Alterations.
O.—H. Rose.
C.—W. F. Muller.
$2,200.

Market, nr. Fourteenth. Two-story frame.
O.—Chas. Burbank.
C.—E. A. Doolittle.
$7,000.

Market, nr. Drumm. Four-story brick.
O.—
A.—Clinton Day.
C.—Geo. Richardson.

N

Natoma, bet. First and Second. Alterations.
O.—Jas. Tomkins n.
C.—J. Newham.
$1,800.

Nineteenth, nr. Dolores. Six two-story frames.
O.—Mme. Gensoul.
A.—Huerne & Everett.
C.—W. B Kreger.
$3,400.

Ninth, bet. Howard and Folsom. Three-story frame.
O.—H. Wenzel.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$6,500.

Noe, bet. Fifteenth and Sixteenth. Two-story frame.
O.—Mrs. J. Coleman.
A.—T. J. Welsh.
C.—Jas. Brickley.
$3,200.

O

O'Farrell, near Powell. Three-story frame.
O.—F. Tromer.
A.—H. D. Mitchell.
C.—R. McCann.
$8,000.

O'Farrell, nr. Buchanan. Two two-story frames.
O.—J. Brownstone.
A.—B. E. Henriksen.
C.—J. Rebman.
$6,200.

P

710 Post. Alterations.
O.—J. N. Killip.
A.—Schmidt & Havens.
C.—T. W. Kern.
$4,500.

Point Lobos Ave., bet. Fourth and Fifth Aves. One-story frame.
O.—Chas. H. Ford.
A.—J. H. Littlefield.
C.—Haskell & Webb.
$2,300.

Pacific, nr. Hyde. Alterations.
O.—M. Pettersen.
A.—John T. Kind.
C.—John Kelly.
$1,300.

S

Sixth, nr. Folsom. Alterations.
O.—S. Hanlon.
Day's work.
$1,000.

Sixteenth Ave., corner Railroad Ave. Two-story frame.
O.—J. Barry.
Day's work.
$1,000.

Sacramento, bet. Lyon and Baker. One-story frame.
O.—Geo. Michels.
C.—Wm. Pluns.
$3,000.

Steiner, nr. Haight. Alterations.
O.—
A.—B. E. Henriksen.
C.—T. Klein.
$2,000.

Seventh, near Cleaveland. One-story frame.
O.—J. Maginnes.
A.—T. J. Welsh.
C.—H. Bohnenberg.
$1,400.

Shotwell, nr Twenty-fifth. Two-story frame.
O.—S. & P. Laherty.
$3,300.

Sutter, cor. Pierce. One-story frame.
O.—Wm. H. Birch.
A.—S. & C. Newsom.
C.—Wm. H. Wickersham.
$5,000.

T

Tenth, nr. Harrison. Three two-story frames.
O.—J. McKlearney.
A.—M. J. Welsh.
C.—Doyle & Son.
$8,000.

Twenty-fifth, nr. Church. One-story frame.
O.—J. McCarty.
A.—M. J. Welsh.
C.—Doolittle & Fetreau.
$1,000.

Taylor, cor. Post. Three-story frame.
O.—E. & R. Adcock.
A.—Geo. E. Voelkel.
C.—G. Knopf.
$8,000.

Twenty-first, nr. Jessie. Alterations.
O.—J. L. Boone.
A.—Wolfe & Son.
C.—W. H. Wickersham.
$1,000.

Twelfth, nr. Mission. Alteration.
O.—C. S. Laumiester.
C.—A. Zihn.
$3,000.

Twelfth, nr. Folsom. Six two-story frames.
O.—E. P. White.
A.—M. J. Welsh.
C.—J. Blake.
$20,000.

Twenty-first, nr. Bartlett. Two-story frame.
O.—Geo. Rowe.
C.—H. Meyn.
$5,000.

Twenty-fourth, near Florida. Alterations.
O.—P. J. Haggerty.
C.—Cook Bros.
$1,200.

Twenty-sixth, cor. Valencia. Two-story frame.
O.—C. Crowley.
A.—M. J. Welsh.
C.—W. H. Barrett.
$4,000.

V

Valencia, near Twenty-third. Seven one-story frames.
O.—R. T. Knox.
A.—Townsend & Wyneken.
C.—Treadwell & Thompson.
$9,000.

Van Ness Ave., cor. Ivy Ave. Alterations.
O.—Mme. Sorbier.
C.—T. Hamilton.
$1,000.

Valencia, nr. Nineteenth. Two-story frame.
O.—J. Mack.
A.—H. Gielfuss.
C.—T. Klatt.
$6,000.

Valencia, bet. Twenty-first and Twenty-second. Additions.
O.—Mrs E. D. Johnson.
A.—Geo. A. Bordwell.
C.—S. G. Worden.
$1,600.

Van Ness, bet. Pacific and Broadway. Alterations.
O.—J. Birmingham.
A. T. J. Welsh.
C.—J. L. Binet.
$800

W

Washington, bet. Leavenworth and Hyde. Two two-story frames.
O.—Geo. L. Reynolds.
A.—W. G. Copeland.
C.—S. M. Hill.
$5,000.

Washington Ave., nr. Mission. Two-story frame.
O.—C Porello.
A.—A. J. Lutgens.
C.—H. Thom Worden.
$3,000.

Y

Yerba Buena, nr. Clay. Three two-story frames.
O.—G. W. Haight.
A.—R. Swain.
C.—Robinson Gillespee.
$3,800.

MISCELLANEOUS.

Sonoma Two-story frame. O., Robt. Hall; A., Geo. A. Bordwell; C., J. Schup; $5,000.

Millbrae One-story dairy barn. O., D. O. Mills; A., Percy & Hamilton; C., B. F. Ellis; $8,000.

San Jose San Fernando, near Delmas Ave. One-story frame. O., P. A. Aguirre; A., Jacob Lenzen & Son; $2,125. First Street. O., C. T. Ryland; A., Jacob Lenzen & Son; $1,600. Sixth Street, near William. One-story frame. O., Mrs. M. Berne; $1,016. Julian Street, bet. Third and Fourth. Alterations and one-story frame. O., M. J. Ashmore; A., Jacob Lenzen & Son; $3,000. Third Street, bet. San James and Julien. Two-story frame. O., Dr. J. S. Potts; A., Theodore Lenzen; C., P. R. Wells; $8,000.

Oakland—Cor. Fourteenth Street and Broadway. Two-story frame. O., Jas. Moffitt; A., H. D. Mitchell; C., H. Welby; $5,000. Two-story frame. O., H. Wadsworth; A., Clinton Day; C., Ingerson & Gore; $13,000.

Woodland Two-story frame. O., George Pierce; C., J. Caldwell. One-story frame. O., J. J. Hannan; C., Glenn & White. Elm Street. One-story frame. O. and B., Oscar Marsten; $1,500. College Avenue. One-story frame. O., T. J. Goin; C., Glenn & White; $1,000. One-story frame. O., John Griggs; C., Pool & Sears; $1,500. One-story frame; O., Edward Gallop; C., W. H Naylor; $1,400. Cross Avenue. Two-story frame. O., John Campbell; C., S. Steinburg; $1,500. South Avenue. One-story frame. O. and B., G. McDonnald; $1,200. Two-story frame warehouse. O. and B., W. J. Horton; $2,000. Two-story frame. O., Lovedell Brothers; C., Fred White; $2,000. Two-story frame. O., C. E. Greene; A., A. Cooke; C., Carle & Cridy; $19,000 Main Street. Two-story frame. O., M. Campbell; A., W. H. Carsson; C., W. H. Carson & Sponge; $8,000.

Capay Two-story brick. O., J. W. Aldrich; C., D. S. Scott; $3,000. One-story frame. O., M. Hubbard; C., John Sponge; $1,000.

Cacheville—One-story frame. O., John Connell; C., G. W. Cooper; $1,000.

Winters—Craig Avenue. One-story frame. O., A. M. Craig; day's work; $1,000. Main Street. Two-story brick. Odd Fellows' Hall. C., Ward & Rubie; $7,000.

Los Angeles—Two-story building. O., Messrs. Maxwell & Moore; A., Curlett & Cuthbertson; days' work; $28,000.

Martinez—One-story frame church. C., Ludden & Marsh; $4,500. Two-story frame. O., A. J. Perry; C., J. Carter; $2,100. One-story frame. O., W. B. Davis; C., E. De Rain; $600. One-story frame. O., P. Hansberg; C., E. De Rain; $500. Four one-story frames. O., S. Hluhm & Co.; $2,000. One-story frame. O., A. Morgan; C., Ludden & Marsh; $1,800.

West Berkeley—Two-story frame. O., Wm. Schrof; A., Wm. Schrof; C., C. Lord; $1,300.

Eureka—Two-story frame. O., S. Acheson; A., S. & J. C. Newsom; C., Butterfield Bros.; $6,000.

Healdsburg—Three-story brick. O., City and County; A., S. & J. C. Newsom; C., E. Hall; $15,000.

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GEO. D. GREEN, Dr., Civil Engineer of Dep't of Docks, New York;
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The California Architect and Building News.

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Building Report for August, 1885.

As shown by the itemized statement elsewhere given, the number of building, alteration, and repair engag ments reported since last issue is as follows:—

August, 1885,	83,	with total cost of $347,600
July,	99	" " " " 412,050

These figures show a shortage in August as against July, of $64,450. But the July report included a single brick warehouse costing $70,000 for specially private purposes, located outside of the more active business center, and although a factor in the total of building operations within the city, it may consistently be excepted from the general list, which would place August, 1885, $5,550 ahead of July. Again, the report for August, 1884, made the amount of building investments for that month 83, at a total cost of $635,411, a difference of $287,811 in favor of August, 1884; but in that amount was included the Murphy Building, at $300,000. Consequently if the cost of this *one* building is deducted from the total of $635,411, the balance in favor of August, 1885, will be $14,189. All of which goes to show that the general building prosperities, outside of special large jobs, continue unabated.

Notice to Correspondents, Subscribers, and Patrons of this Journal.

A Change Having Occurred in its Management, Geo. H. Wolfe Retiring,

All Parties in Business Relations, Correspondent, Financial, and Otherwise,

will please hereafter address

Editor California Architect and Building News,
240 Montgomery St., S. F.,

Or, for convenience sake, use only—CALIFORNIA ARCHITECT, 240 Montgomery Street, S. F., as that alone will ensure prompt delivery.

The oldest paper in the world, the Pekin *Gazette*, has lately taken a new lease of life. The venerable journal, alone almost in a changeless land, has changed its form. Established in the year 911, the Pekin *Gazette* has been published regularly since 1351. Under the new arrangement three editions are published: the first, the *King-Paou*, printed upon yellow paper, constitutes the official gazette of the Middle Kingdom; the second, the *Hsing-Paou* (commercial journal), also printed upon yellow sheets, contains information interesting to the trading community; while the third, the *Titani-Paou* (provincial gazette), printed upon red paper, consists of extracts from the other two editions. The total circulation of the three is 15,000 copies. The editorship is confided to a committee of six members of the Academy of Han Lin.

The Future in Building Operations in San Francisco.

The deep interest and concern felt in the building prospects of the future, are clearly manifest in the earnestness with which inquiry is made by owners, material men, and building mechanics generally, for the purpose of finding facts, theories, and arguments upon which to base conclusions as to the probabilities, and settle and solve the material question of degree of future decline or prosperity in building activities. There has been so prolonged a period of "good times" that a foreboding comes to many that, in the natural order of things, there must be a letting up;—a resting time to permit the equalization of demand and supply.

Owners are anxious for light upon the subject, many being willing, and having the means to improve, yet fearing that "the thing has been overdone;" and material men are eager to learn, so as to be able to judge correctly the facts most likely of realization in the disposal of materials, so as to regulate supplies, and avoid the involvments of overproduction: and mechanics most naturally are anxious, as upon the quantity and permanency of employment depends, with them, the daily support and comforts of themselves and loved ones.

To all this there can be no reliable answer or assurance given. It is not within the reach of human wisdom to reveal the hidden mysteries of the future, nor to foretell the things that are to come to pass. But it is within the province of human speculation and judgment to determine the probabilities, and from the advantages of practical experiences and familiarity with the facts of the past, and a fair understanding of the present, to arrive at conclusions most likely to be realized.

The song of the "croakers" is, "Too many houses, too much building, and erelong there will be a tumble so mighty, and a fall so terrible, that thousands will be crushed beneath the great avalanche that is sure to come." But this sort of music has been sung so long, and by voices so cranky and unmelodious, that the strains have become discordant and inharmonious: and while these dull sounds have been echoing, the more sensible, enterprising, and progressive people have gone on—built and rented, and are reaping the golden harvest that renting to good-paying tenants yields.

An abatement in the great rush of building which placed the investments of the first six months of 1885, $1,267,889 ahead of any like period in San Francisco's history, so far as shown by any authentic record, was to be expected, and should be received as one of the

natural and reasonable outcomes of a *too universal eagerness* among lot owners to take advantage of the low price of materials, and avail themselves of the many inducements to improve vacant lots. There is a proper limit for everything, and when the boundaries are overstepped, the fields of excesses are reached, and those who enter therein must necessarily become discouraged, as nothing fictitious in life affords permanent satisfaction, particularly when it reaches the pocket and purse. It is mainly in this direction that the shrinkage manifests itself, and not in the erection of buildings for homestead purposes, there being a large number of the latter at present in contemplation; and it is not only fair to presume, but a fact certain to be realized, that many fine residences will be commenced before the end of 1885.

Consequently there is good encouragement for those interested in building operations, with scarce a doubt that good mechanics in all the branches of house building will find continued employment, which also means fair trade and transaction for dealers in all kinds of building materials. And with the fact in view that there is but slight decline in rent rates, and this only in houses built years ago, and lacking in many respects the better and more modern improvements in house fittings, particularly in sanitary appointments, there is no occasion for owners to fear that houses conveniently arranged, and built to suit the popular demand, will suffer long for want of satisfactory occupants.

Angelo and the Cardinal.

UNDER the papacy of Julius III., the faction of Michael Angelo's rival, San Gallo, gave him some trouble respecting the building of St. Peter's, and went so far as to prevail on the pope to appoint a committee to examine the fabric.

Julius told him that a particular part of the church was dark. "Who told you that, holy father?" replied the artist. "I did," said Cardinal Marcello.

"Your eminence should consider, then," said Michael Angelo, "that besides the window there is at present, I intend to have three more in the ceiling of the church." "You did not tell me so," replied the cardinal. "No indeed I did not, sir," answered the artist; "I am not obliged to do it and I would never consent to be obliged to tell your eminence, or any person whomsoever, anything concerning it. Your business is to see that money is plenty at Rome; that there are no thieves there; to let me alone; and to permit me to go on with my plan as I please."

"Ah my little man, good-morning," pleasantly remarked an old gentleman as he stopped and patted a Hewes Street little boy on the head, "have you any brothers and sisters?" "Yes, sir; got four, but I'm the only one that 'mounts to anything," replied the urchin.

Cumming's Details..... $6.00

St. Peter's, at Rome, is situated on the ancient site of the circus and garden of Nero, where that tyrant massacred numbers of Christian martyrs. Tradition says that the bodies of these martyrs were buried by their faithful friends in a grotto near the circus, and that among those who were thus buried here was the crucified apostle, St. Peter.

In 306, Constantine founded a church over the reputed grave of the holy apostle. This edifice remained eleven centuries, when Pope Nicholas V., in 1450, demolished it, and laid the foundation for the present St. Peter's. At the death of this pope, the structure had been elevated only four or five feet above the pavement. The work was suspended, or made but little progress, till the time of Julius II., who, in 1503, employed the celebrated Bramante to carry on this great undertaking.

This architect formed the original plan of the cupola, and caused four stupendous pillars or piers, two hundred and nine feet in circumference, to be raised to support it. The patron and the architect both died and left it in this state.

Leo X. employed architects to carry on the work, among whom was the celebrated painter Raphael d' Urbino, who strengthened the basis of the pillars, which he deemed too weak to support the stupendous cupola.

Various other architects were employed by the pontiffs who succeeded Leo, until, at last, Paul III. committed the edifice to the incomparable genius of Michael Angelo Buonarroti, who designed the dome and cupola as they now stand. He wished to make the front like the pantheon, but death removed him from his labors, and the sublime idea was abandoned. Michael Angelo "left it an unfinished monument of his proud, towering, gigantic powers; and his awful genius" seemed to watch over his successors for a long time.

Many other artists were employed upon this stupendous edifice, until it was finished, under Paul V., by Carlo Maderno. Three centuries and a half this church was being built; and, in 1694, the cost was estimated to have been eleven million pounds sterling, or about forty-nine million eight hundred and forty thousand dollars.

This edifice contains the best specimens of designs of the ablest architects who flourished during a period in which the revived classic style was carried to the highest perfection which it reached in Italy. The extreme length of St. Peter's is seven hundred and twenty feet; breadth, five hundred and ten feet; height, from pavement to the top of the cross upon the cupola, five hundred feet.

Laborers are not anywhere a unit on reform measures. In Austria they are protesting against the reduction of the hours of labor from fourteen and twelve to eleven; to the law forbidding women and children from performing the severer parts of work, and they object to a Sunday holiday. If so, such slavery to toil should all the more be checked by Government interference.

Los Angeles.

Its Building Interests.—The accompanying facts and figures, while specially interesting to the firm of Kysor & Morgan, architects, also possess common interest to the inhabitants of that section of country generally, and correlatively, to the people of the entire State of California.

The firm above named reports that during the years 1883-84, the buildings planned and superintended by them aggregated a total cost of $1,687,000.

Buildings Just Completed.—The Sisters of Charity Hospital, $80,000; residence, Jasper Harrel, $34,000; Davies-Henderson Lumber Company's Building, $15,000; Roder Block, $9,000.

Under Way.—Residence, H. D. Barrows, $5,500; Gilmore building, Fred Gilmore, $8,500; res., H. C. Witmer, $7,500; res., R. Mercer, $2,000; res., Niles Pease, $4,000; cottage, Mrs. Eberly, $1,500; res., A. Clark, $4,500; addition to Capitol Mills Warehouse, $17,000; winery and distillery, B. Dryfus, Anaheim, $35,000.

Prospective Work.—Brick building, J. Bryson, $45,000 to $60,000; E. Germain, $30,000; one of $75,000; one of $22,000; residence, J. B. Lankershim, $15,000, with $7,000 added for outside improvements, stable, etc.; res., Dr. W. F. Edgar, 44x82 ft.; res., J. L. Sheward, $8,000; improvements to res., O. W. Childes, $8,000 to $10,000; res., John Brewer, $2,000; res., H. L. Drew, $10,000.

This is a very splendid business showing for a single firm of architects in a city somewhat remote from the great through line of travel and the center of commercial intercourse. If to this is added the amount of building values controlled by the several other resident architects at Los Angeles, and those handled by architects from San Francisco, the aggregate would be large, and serve to establish the fact that the county of orange groves and vineyards has and is enjoying a full share of the general prosperity which has been experienced throughout the State of California since 1880.

No better evidence of advancement and prosperity can be found in any city or section of country, than the erection of large numbers of substantial dwelling-places, from the unpretentious cottage sheltering the toiling workers and their loved ones, to more magnificent residences—perchance mansion-like in proportions and appointments, where wealth brings luxury and ease, if not the more-to-be desired and sweeter comforts which make life joyous and happy among those whose great treasure is contentment. All these proclaim growth and advancement, for men of mind and purpose build not as hermits,—alone in solitude, estranged, shut out from fellow-kind, lost to all aims, ambitions, emotions, and endearments worthy of noble manhood.

But private residences speak of more; they are not found clustered in barren wastes, nor sandy deserts, but in localities and places where

active business centers, and men by trade, commerce, mechanical, agricultural, viniculturual or other pursuits, gain riches and become more or less wealthy, and of necessity stores, business constructions, public buildings and edifices of greater or less extent and character must exist, to accommodate the ever moving and ceaseless demands of trade and traffic, all tending in the one direction, to enrich and make happy the thousands who mingle in the general interest.

In addition to all this, Los Angeles has gained an enviable and almost world-wide reputation for its salubrity of climate, fertility of soil, luxuriousness of orange groves, vineyards, orchard and field productions, and is destined to assume a rank of great importance among the cities of California. If the rapid advance made within the past three or four years continues, with no relaxing of energy and enterprise on the part of the inhabitants and interested parties, the next ensuing decade will record a growth and prosperity for Los Angeles of very great proportions. How great, as compared with the other cities of California outside of San Francisco, we shall not attempt to predict, leaving that to be developed by the evolutions of time and circumstances, and the efforts, energies, and enterprises of the people of the respective places. Nature has furnished the groundwork of greatness; it therefore remains with those who possess and occupy the land, to utilize and improve the special advantages and opportunities so abundantly strewn around them.

Los Angeles—Continued.

THE reports from which we gather the items herewith accompanying are lengthy, giving, in detail, the sizes, style, and general description of the buildings mentioned. This it would be impossible for us to do without sacrifice of other matter of more general interest. Consequently we simply state the prominent facts—owner, architects, and cost. As described, some at least of the edifices named are or are to be very nice affairs, and would be creditable to any street in San Francisco, if erected in this city.

Messrs. Boring & Haas, architects, report in course of construction a thirty-five room addition to Long Beach Hotel, at a cost of $10,000; also cottages for Long Beach Co., $7,000.

MOTT MARKET BUILDING, 62x128, cost not stated.

THE UNIVERSITY OF SOUTHERN CALIFORNIA, on which work was stopped for want of funds, is about to move on again toward completion, money in part having been raised for that purpose.

MOTT & SPENCE BUILDING, brick structure with stone facings, $24,000.

COTTAGE for Mr. D. E. Thompson, $3,000.

A SCHOOL BUILDING for Prof. D. W. Hanna's college, $2,000.

Among the buildings to be erected by the same firm is a $30,000 sanitarium; a residence for Mr. L. Stuart, $7,000; a residence for Mrs. M. A. Hoadley, $6,000; residence, F. Morrison, a wealthy ranchman, 75x50 feet, cost not stated.

All of which, together with other improvements noticed, show a very considerable degree of building activities in and around the city of Los Angeles. We are pleased to learn that our professional brethren in the localities named are "so busy," and hope that the shadows of their professional success may never grow less.

San Diego—Good Showing.

A COPY of the San Diego *Union*, of June 17th, containing a nearly two-column statement of building improvements in that city, was duly received but accidentally mislaid; and being favorably disposed toward the most southern metropolis of the State, through the courtesy of Mr. J. A. Kooken, a second copy was obtained, from which we gather the fact that the number of buildings erected in the recent past, now under way, and positively to be built, together with a few alterations and repair jobs, number about eighty-five, with a total expenditure of nearly $289,000, including in the number some very nice residences, in cost ranging from $2,500 to $15,000.

Although San Diego is the tip of the south wing of the State of California, the foregoing facts and figures show a pleasing degree of prosperity, which, while not so large in volume as other places nearer the great central business mart of the State, it should be, all things considered, decidedly gratifying to the people of that section. A community of people enjoying all that can be desired in salubrity and healthfulness of climate, fertility and fruitfulness of soil, beauty of harbor, and almost every natural, local advantage for life, health, and comfort, must in time reap the rich harvest that ever flows in such channels. To bring about more brilliant results quickly, will require indomitable energy, persistent effort, and a determination upon the part of all concerned, particularly the "leading men,"—those who direct and control public sentiment, and lay out the work necessary to be done. The common and general interests of San Diego, perhaps, require the presence and co-operation of one or more specially qualified men, with grasp of intellect, foresight, judgment, and every other quality of mind and heart necessary to handle and solve all present problems as to the future best good of San Deigo, and give vitality to movements that will for the present modify, and finally overcome the disadvantages which have thus far held the destinies of the place in check.

The people of San Diego, and of every city, town, village, and hamlet, and of the whole country, should ever remember that the entire nation was at a time shrouded in gloom, no one being found "sufficient" to break the bands of almost universal despair, until the immortal hero for whom the nation yet mourns rose *equal to the occasion*, and rolled back the deluge that threatened to engulf the nation's life and liberties. So in communities, with the right man in the right place, laying siege to all obstacles, victory is sure to follow.

DULL TIMES EAST.—Nearly every one of our Eastern exchanges makes reference to the "prevailing dull times," some predicting a continuance and increase of the stringencies, while others take a more cheerful view of the situation, and claim that encouraging signs of business revivals are apparent, generally. In support of this, statements are made that certain manufacturing establishments are enlarging and preparing for full capacity operations, and that the near future will witness a return of brisk times. It is to be hoped that the better condition of things will be realized, and that the tens of thousands of wage earners who have been out of employment will soon return to their places and find steady and constant work.

In California, there has been no such labor panic as is and has been reported to exist in the Eastern States. And had not the dullness in other sections of the country "driven" thousands of workers to this coast, the supply of labor here would at no time have exceeded the demand; and, even with this influx added, the good and competent men have, generally, found steady employment, the idle ones being mainly of the class first laid off, when pressing necessities for their services do not exist,—to all of which the fact may be added that the cutting of wages on this coast has been less than elsewhere, and the pay maintained, averaging greater than in any other well settled section of the country. But it may be further added, by way of caution, that mechanics who come hither must expect to take their chances in finding employment, as all labor avenues are full—some to overflowing.

Sub-Letting Plumbing Work.

The feeling continues to grow against the practice so fatal in its consequences, of master plumbers sub-letting contracts to irresponsible parties. The Minnesota Architectural Association last winter took strong ground upon this important subject, and the associations of other States, as well as several chapters of the American Architects' Institute, have since taken the matter up and added their protests. The "skin" plumber, or, more properly speaking, his employer, is responsible for much of the sickness and death so prevalent in all cities. "Cheap and nasty" may do for the contractor, but it is financial ruin if not death to the property-owner. In time, perhaps, the botch plumber, the botch bricklayer, and the botches of all other trades will be relegated to their proper places, and then will come the era of prosperity for good, honest, conscientious mechanics.

Prices of Building Materials.

THE condition of the material market having much to do with building activities, and the question being continually asked by those contemplating improvements, in general terms we reply, All kinds of materials are low. Lumber is being sold at exceedingly seductive rates, and bricks are much below former prices, while all other lines of materials are in sympathy with the "dull times" so frequently quoted, and the demand for cheapness.

The cry of "dull times" in California is an anomaly; for while the talk runs in that direction, there are but few who are not doing well, and thousands have money to invest in projects assuring fair returns.

BUILDING LABOR.

The supply of workers in all the branches is fully up to the demand, and in some the supply is in excess; consequently the rates of wages at present are considerably below those ruling two years ago. So that those who wait for more favorable advantages, will need to pray for a return of the Dennis-Kearney period, when workers were glad to find employment at any price, and but few ventured to break the sod on their real estate, for building purposes.

EMPTY HOUSES.

The return of absentees from the Springs, summer vacations, etc., is manifesting itself by the decrease noticeable in the number of "to let" signs on houses to rent; and it is fair to presume that by the end of the summer months, and the return of those who have been off on tours of travel or pleasure, but few empty houses will be found in San Francisco, and these will be the less desirable, old fashioned, "too large," poorly arranged, and undesirable places. The fact is not sufficiently considered in this connection, by those who argue that there "are a great many empty houses;" that the old time, out-of-date buildings are apt to go begging for occupants, while acceptable buildings on the same lots would find ready tenants. Under the general conditions of the times, renters are not willing to occupy houses built many years ago, which are so much inferior in so many respects to those of later construction containing so many more conveniences and modern improvements. Still, in the general count of unoccupied buildings, the merest shanty, with from one to ten "to let" signs posted on its portals, front, and fences, swells the aggregate as much as though displayed on a first-class tenement. This class of houses is somewhat analogous to spavined horses—not in demand; nobody wants them unless they can be had very cheap. Take away all this kind, and there would not be a sufficiency of houses to rent in San Francisco to supply the demand.

A Cubic Inch of Gold.

ONE cubic inch of gold is worth $210; one cubic foot, $312,380, and one cubic yard, $9,796,762 (counting the ounce at $18).—*Jeweler's Circular.*

Sidewalks.

IN all large cities—as a rule—other than San Francisco, the sidewalks are laid of material more durable than wood—brick, natural or "patent" stone, asphaltum, and other similar materials, consequently a reference to sidewalks laid of wood would seem strange to those of our readers who have never seen anything of this sort on the public streets. Nevertheless it is a fact that many scores of miles of wood sidewalk are still in use in San Francisco, although on nearly all the principal business thoroughfares they have been replaced—mainly by the "patent" or artificial stone pavement, and in the residence portions of the city, the same process of substitution is rapidly going on. In nine-ten out of every twenty cases of good class, new buildings, whether erected for personal use or renting, stone sidewalks are adopted.

The reasons why this is done are several,—appearance—"looks"—perhaps, being the first, for they do most certainly add greatly to general effect, and give tone and character to the improvement. Besides this, owners understand the fact that while the stone sidewalk is more expensive in first cost, the additional outlay over wood is fully compensated by increased durability, to say nothing of the greater satisfaction and comfort enjoyed. But the most essential feature and quality of impermeable sidewalks, is sanitation. Any sidewalk material that absorbs and holds moisture should be rejected and condemned from sanitary considerations; and in this particular, there is nothing worse than wood, not even the exposed ground and gravel; for the moisture taken in and stored beneath the planking is detained from contact with the pure atmosphere and the process of rapid evaporation, and remains to decompose, and be drawn out by exhilation by the forces operating under the natural laws of sunbeams, and the warmer free air above, in a vitiated condition; while the impermeable pathways resist absorbtion, and retain on their surface or quickly shed all fluids and liquids until they are disposed of by the forces acting upon them, without deterioration or prejudice to healthful conditions.

Pressed wood the best. But so long as wood sidewalks are permitted they should in all cases be laid of dressed or surfaced lumber, for the reason that, in the surfacing process, the lumber passes under a certain degree of pressure, which compresses the wood greatly, besides the solidifying effect of the planer, and the fact is well understood that all kinds of wood and fibrous materials are made more solid, tougher, and consequently more durable, by and according to the degree of pressure to which they are subjected.

Dressed sidewalks the cheaper. The cost of surfacing should not be considered, as those that are so treated last and wear much longer and better, to say nothing of the greater satisfaction afforded in their use; and the smoother surfaces shed the water more readily with less absorbtion, thereby removing, to some extent, the objectionable features of wood sidewalks.

Contracts as a Whole, or Segregated.

AN abuse which of late years has grown into troublesome proportions is that of letting building contracts in the lump to some one person or firm, who are held responsible for the completion of the work in all particulars according to specifications. The contractor sub-lets the various portions of the work to others, each making a specialty of some particular portion thereof, and each responsible to the general contractor. First comes the excavator, then the stone-mason, then the iron founder, then the stone-cutter, then the carpenter, then the bricklayer, then the roofer, then the plasterer, then the glazier, and finally the painter. The pay of each depends upon the thoroughness of the work performed by those who precede him. For instance, the painter having completed his work—an event for which all the others have patiently waited—it is discovered that the mason, the bricklayer, the carpenter, or some one else has either skimped, jerried, or otherwise shirked the details of his part of the contract, whereupon the owner, the architect, and the original contractor confer in regard to the matter. Such conference may continue for a day or for a month, and end in the acceptance of the job or disagreement; but all the time the subcontractors who did their work well are compelled to wait for their pay, and in many instances their workmen also are put off, thereby entailing suffering upon their families. The system is all wrong, and the sooner it is reformed the better. Let the owner award the separate contracts himself, and settle with each contractor upon completion of his portion of the work. Then, if a hitch occurs, the innocent will not have to suffer for the guilty. Let exact justice be done to all, without favoritism or unnecessary delay. These hints are thrown out because the frequent and bitter complaints we hear from all sub-contractors and journeymen, and we hope that those in a position to rectify the evil will lose no time in taking proper action.—*Western Architect and Builder.*

Experienced lumbermen have always held that timber cut in the spring was not durable for building purposes. Recent scientific investigations sustain this belief. It is shown that the richer the wood is in phosphoric acid and potassium, the more likely it is to rot and mould; wood cut in the spring contains eight times as much of the former and five times as much of the latter as when cut in the winter.

"**What a wonderful thing the electric light** is!" "Yes, it is wonderful. I expect after a while it will be used to make the crops grow, instead of the sun." "There are some crops now that thrive by electric light." "Nonsense." "No nonsense about it. There are lots of young men who sow most of their wild oats by the electric light."

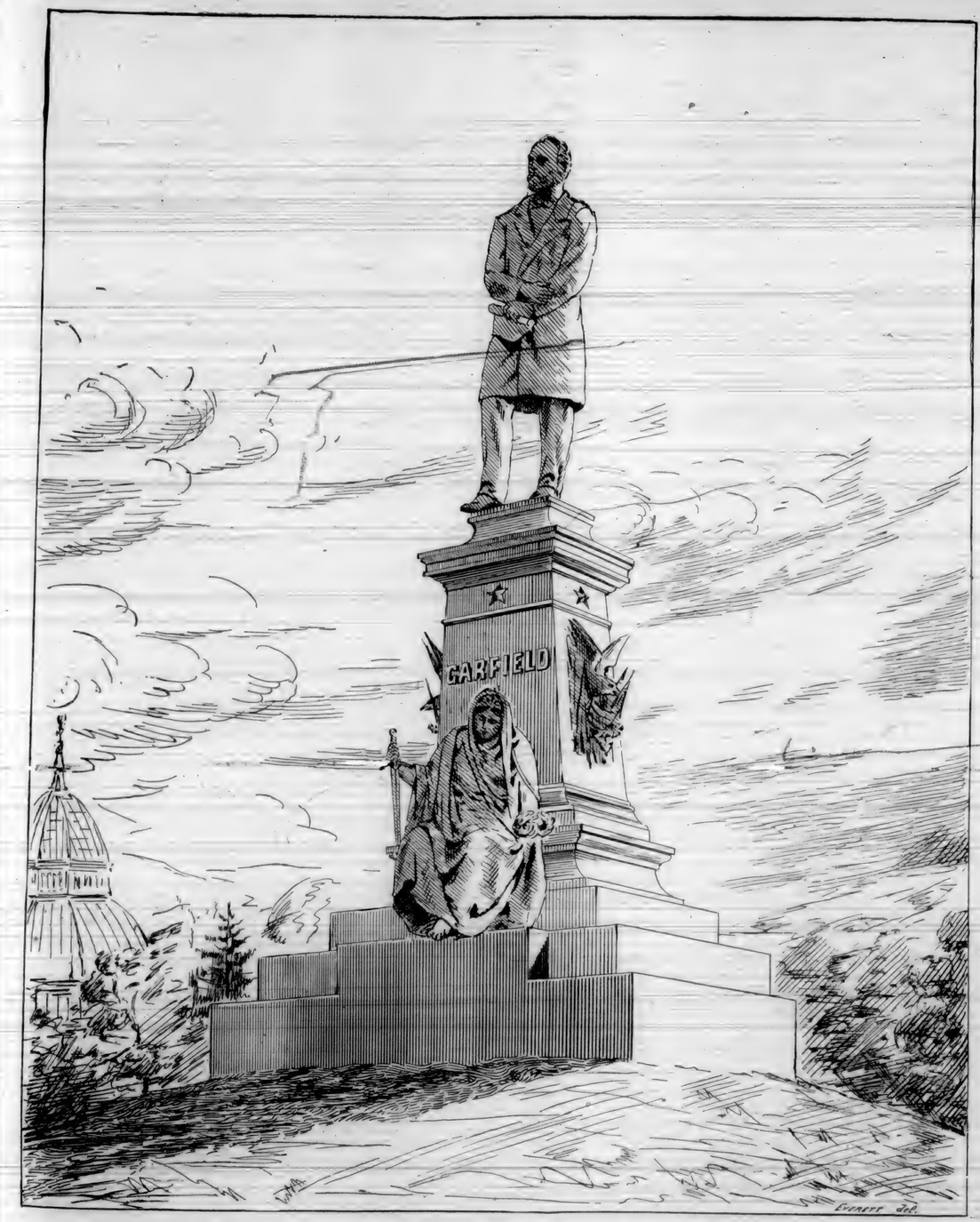

PLATE I.—THE GARFIELD MONUMENT.

Plumbers' Movement.

THE essence of the plumbers' movements, which has, perhaps, attracted more attention for the past two years than any other effort to advance the interests of sanitary science, is well stated by President Allison, of the national association, in a recent interview. He says: "Our objects are simply to inspire and elevate the plumber and the public into a realizing sense of their duties with reference to correct sanitation, and, in order to accomplish them, we require education for both and legislation. The work is necessarily slow. Our difficulties were first to interest the plumbers as a class, and to convince them that, being held responsible by the public for all sanitary evils of bad plumbing (although the fault might lie with architects, builders, and owners), they should make themselves acquainted with sanitary science and capable of shouldering the responsibility. Ignorance, custom, and necessity are the elements we have had to overcome, but we are succeeding, and begin to show signs of a defined purpose and combined unity of action. First, we have sought to smooth away the angularities arising from unworthy competition among ourselves and to arrange the relations between plumbers and manufacturers on a system more just and permanent. This last was covered by what are known as the Baltimore resolutions, which the National Plumbers' Association has confirmed and all but two or three of the manufacturers have assented to. The resolutions requested manufacturers to discontinue the practice of selling material to consumers, whereby injustice to the plumber and increasing confusion were wrought. The architects and doctors have accepted the situation and will co-operate with any reasonable measures to advance the sanitary welfare of cities. The parties who alone are responsible for the plumbing work should also have the planning of it. Correct sanitation includes the construction of boards of health, which, in many cities, seem constituted with the express view to their inefficiency. All of these things require judicious building and sanitary laws defining a standard of ability for the master plumbers. It is upon these points physicians and architects are with us, and we are growing more sanguine of success every year. The meeting at St. Louis, in the number, intelligence, and earnestness of its members, is proof positive, and the reception of our fellow-craftsmen, assisted by the municipal and distinguished servants, backed by the unequivocal and lavish favor of the press, amounted to an ovation. It shows how deep an interest will be taken in any movement to secure public health by improved sanitary regulations when the object and its methods come to be realized more generally. The tone and spirit of the discussions, the learning and earnestness of the essays read, and the high character and superior intelligence displayed by the representatives from all parts of the Union, would do credit to any body of men.—*Sanitary News.*

Death of Mr. Joseph Gosling.

SINCE the last issue of this journal, Mr. Gosling, a well-known practicing architect in San Francisco, has passed away. He was among the early arrivals in this State, and a member of the "Pioneers' Association." During the Virginia City excitement he left San Francisco to join in the general rush of fortune-seekers in that section of country, prior to which he occupied his time as master builder in this city; but finding an opportunity at Virginia City to practice the profession of architect, he did so, and in time returned to San Francisco—twenty years ago, more or less—where he remained and enjoyed a fair degree of professional practice.

San Francisco Chapter.

THE regular meeting of the chapter was held August 7th, President Laver occupying the chair. A goodly representation of the membership were present, all of whom manifested a deep interest in the chapter work. Reports from the various committees were received and acted upon; discussions upon that relating to apprenticeship indentures occupying the greater part of the evening, and after a free and kindly expression of views by all present, the report was referred back to the committee for the purpose of legal advice, and to harmonize the various suggestions made.

Owing to the time occupied in other matters, discussion on the "Lien Law" was deferred until the next meeting of the chapter. The by-laws requiring the nomination of officers to be made in August of each year, either by open nomination, or through a nominating committee, a committee of five, consisting of Messrs. Gash, Macy, Whittemore, Sanders, and Eisen, was appointed, to report at a special meeting to be held Friday evening, 21st inst., to which time the chapter adjourned.

Mechanics' Fair.

THE arrangements that are being made by the management indicate that the coming exposition will be one of more than usual interest. This is to be expected, as the gentlemen in charge have had years of experience and should be in every way qualified to develop many new and specially interesting features—those which go far to win public approval, and make the exhibition a decided success, not only financially but in instruction and profit to the tens of thousands of visitors, old and young, who day and night will throng its broad aisles for pleasure, or to gain the knowledge imparted by the many displays that will be made in beautiful and useful things, and the numerous mechanical contrivances and devices, and the exhibition of art, sculpture, and science in the many forms presented.

LIKE SUNBEAMS.—If you have something to say, as a general rule, boil it down. Words are like sunbeams, the more they are condensed, the deeper they burn.

Our Illustrations.

PLATE 1.—A correct and truthful representation of the Garfield Monument erected in the City Park, San Francisco, sketched from real life by Mr. Oliver Everett, of the architectural firm of Huerne & Everett.

The design has received adverse criticism generally, as being faulty in many of its details, and very far from pleasing in general effect. The poise of the central figure is not good, with the fore part of the right foot projecting over the edge of the cap-stone, and the hands compressing the stomach, suggestive of pain within, rather than a natural and free attitude. The pedestal itself, while fair in proportions, is not striking in any of its features, while the much-too-large female figure resting at its base is, to the common observer, cumbersome, and more an eye-sore than a thing of beauty and appropriateness. The shields at the sides are also objectionable, being more conspicuous than graceful.

It would be more pleasing to express all praise and admiration, but the facts do not justify it. And the original designer being a young San Franciscan, it is to be regretted that he has not won greater and fairer laurels. Still the seeds of promise are to be seen, and, hereafter, Mr. Happensberger may prove himself a foe to be feared in future competitions.

Figure 1, Plate 2.—Original plans of a two-story residence, situated on twenty-first Street, between Mission and Valencia, owned by Mr. John L. Boone, as it appeared before alteration; built by the Real Estate Associates.

Figure 2, Plate 2.—Front elevation of the same after alteration, with corner bay window and tower on new section.

Plates 3 and 4.—Main and second stories after alteration. The tower is to be reached by means of a comfortable ladder piercing the ceiling of the bath-room, thence along a passage way to the front of the building.

Is Our Wood Supply Failing?

AT the recent meeting of the Society of Engineers at Deer Park, Md., a valuable paper was read on the "Preservation of Forests." The paper presented a large number of statistics, collected from various sources, to show the necessity of exercising economy in the use of forest products and the possibility of a wood famine. The writer concluded that the supply of white pine in the United States is certain to be exhausted before the end of this century, and probably in Canada also. Of Southern pine, at the present rate of consumption, there is stated to be 150 years' supply of spruce and hemlock. East of the Mississippi there is probably twenty-five years' supply of hard woods. The supply of black walnut and ash is being rapidly exhausted. The supplies of other kinds of wood are, however, so abundant that a famine cannot be predicted. In reference to tree-planting, the writer stated that when intelligently undertaken in regions where timber is scarce a fair return is made on the investment.—*Exchange.*

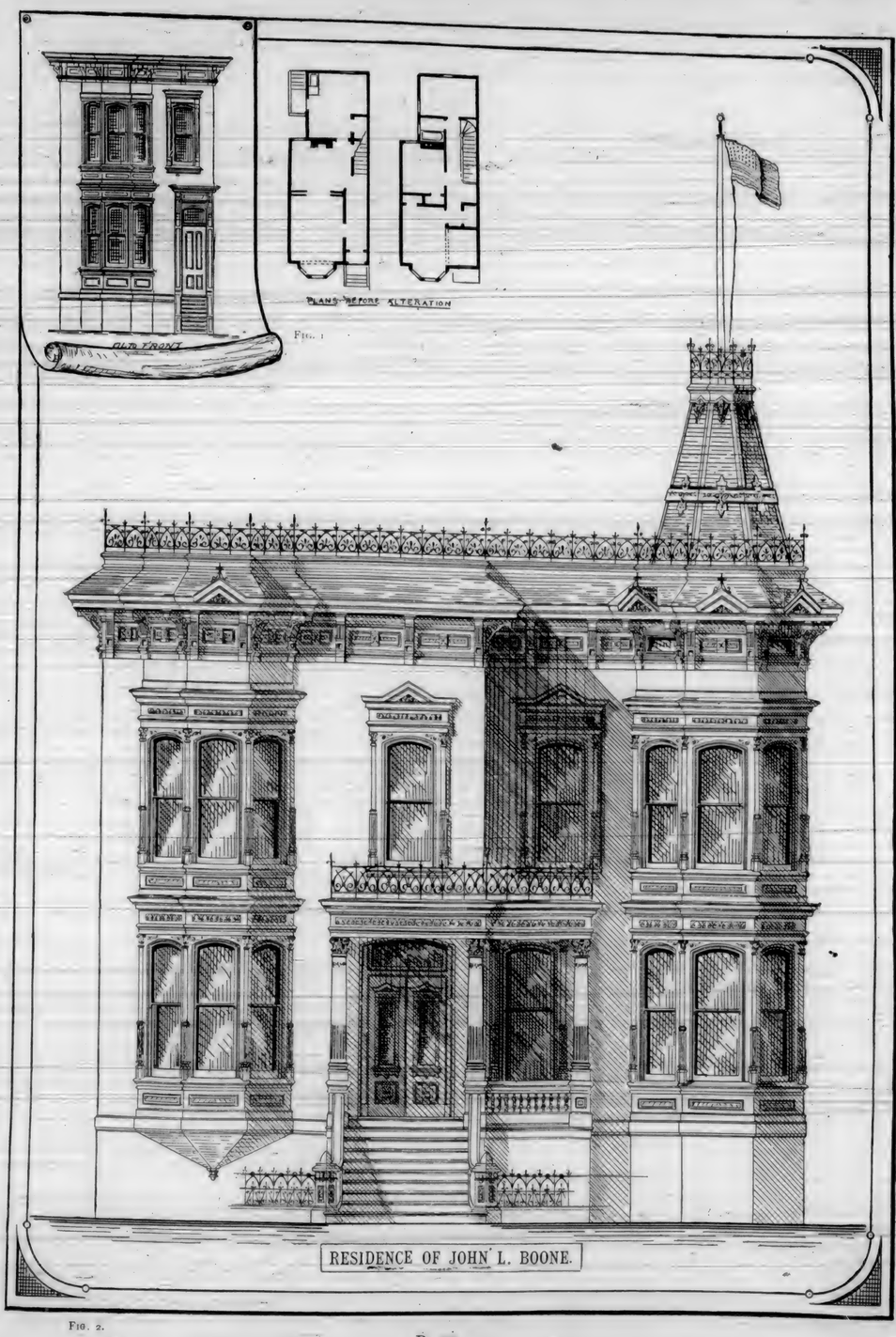

FIG. 1.

FIG. 2.

PLATE 2.

The Country's Progress.

THE following statistics show the growth of the country since the year 1860:—

Twenty-five years ago we were 30,000,000 of people; now we are over 50,000,000.

Then we had 141 cities and towns of over 8,000 inhabitants, now we have 286 of such cities and towns. Then the total population of our cities was 5,000,000; now it is about 12,000,000.

Our coal mines then produced 14,000,000 tons, now 85,000,000 tons, or six times as much.

The iron product amounted to 900,000 tons of ore; to-day it foots up over 8,000,000 tons a year, almost a nine-fold increase.

In 1860 our metal industries employed about 53,000 hands, consumed $100,000,000 worth of material, and turned out about $180,000,000 in annual products.

To-day these same industries employ 300,000 hands, consume $380,000,000 of material, and their annual product amounts to $660,000,000 a year.

In 1860 the wood industries employed 130,000 persons; to-day they employ 340,000, while the value of their annual product has trebled.

The woolen industry employed 60,000 persons then, and now employs 160,000, while our home mills, which produced goods of the value of $80,000,000 in 1860, now turn out an annual product worth $270,000,000.

Finally there is cotton. In 1860 we imported 227,000,000 yards of cotton goods; in 1881 we only imported 70,000,000 yards.

In the meantime the number of hands employed in American cotton mills has increased to 200,000, and we export over 150,000,000 yards of cotton goods a year, instead of importing 227,000,000 yards as we used to do.

The silk industry employed 5,000 persons, now it employs about 35,000, seven times as many.

We import no more silk goods now than we did in 1860, but our own mills, which produced goods of the value of $6,000,000 then, now turn out a product of over $40,000,000 yearly.

In 1860, 12,000 persons were employed in American pottery and stoneware works; to-day about 36,000 are employed in this industry.

The chemical industry, which employed 6,000 persons then, now employs 30,000.

In the meantime we have nearly five times as many miles of railways, and double the number of farms, and yielding more than double the number of bushels of cereals.

In the production of sheep we had 22,000,000 of them in 1860, to-day we have over 40,000,000 of them; and whereas we then produced in this country 60,000,000 pounds of wool, now we produce 240,000,000 pounds.

Finally, the total of our exports has doubled. In 1860 it stood at $400,000,000, and now it stands at about $900,000,000.—*Philadelphia Commercial List.*

The City of London.

THIS city was anciently founded on the north side of the river, and down to a time comparatively recent the south bank was not thickly inhabited. As soon as people began to extend beyond the city walls, the phenomena so common in great cities showed itself, and the wealthy moved westward, leaving the poor to extend eastward. Various causes have led to a prodigious increase in the extent of London, and it is now difficult to assign limits to what is almost more a compact province than an extended city. Places that formerly were remote suburban villages have been completely swallowed up, and many outlying districts that are situated outside the metropolitan boundary are really connected with the heart of London by unbroken lines of streets and houses. You may now go from Holloway on the north to Penge on the south, or from Stratford on the east to Putney on the west, without passing an unoccupied field.

It will be easily understood that even the refuse from so large a city constitutes a great difficulty. Much land is now occupied by houses which was once so far out of the way that it was used as a deposit for ashes, dust, and garbage.

London streets, even important ones, are, generally speaking, narrow, and the houses low. In some of the newer districts wide streets have been laid out, and the exigencies of traffic are constantly causing old thoroughfares to be widened and straightened at enormous expense. In many of the oldest parts of London, however, tortuous lanes and narrow alleys, and blind streets abound, and the houses have little or no land in the shape of fore-court or back-yard attached. London enjoys a compensation for her narrow thoroughfares in the number of fine open spaces. The parks have been well called the lungs of London; and, in addition to them, the many squares and the wide channel of the Thames provide a sensible and welcome relief from the crowded and compact mass of dwelling houses.—*Sanitary News.*

Work on the Capitol tower at Albany has made good progress this summer. It has risen thirteen feet, and before cold weather it will reach the point where the cone begins. The first curve of stone for the western staircase has been laid. The electric wires are being carried through all the furnished portions of the edifice, and the legislative rooms are being carpeted anew.

The ten finest buildings in this country, according to the majority vote given in the Boston *American Architect*, are Trinity Church, Boston; the Capitol at Washington; W. K. Vanderbilt's house, Trinity Church, and the Jefferson Market Court House, New York; the City Hall, Hartford; City Hall and State Capitol, Albany; Sever Hall, Cambridge, Mass.; and Town Hall, North Easton, Mass.

The Building Acts in London.

THERE have been building acts in London ever since the period of the great fire, mainly directed to diminishing the risk of another general conflagration. Of the acts now in force, which are numerous, the most important are the metropolis local management act, and the metropolitan building act, with sundry amending acts. The former of these contains, speaking broadly, the regulations as to drains and streets, the latter those affecting buildings. The central authority for drainage, etc., within the ancient and comparatively small limits of the city proper is the city commissioners of sewers, a branch of the corporation. That for the rest of the metropolis proper is the metropolitan board of works—having affiliated to it a series of local boards, each consisting of a group of parishes or a single parish. Beyond the boundaries to which these acts apply there extends a large inhabited zone, forming, so to speak, a third division. Drainage is under the direction of surveyors, who are the salaried officers of the various boards. The building act is administered by a large number of district surveyors, who are architects in practice, and each intrusted with the supervision of the buildings in one locality.

The building act, besides attempting to secure a minimun of strength and solidity in walls, and requiring many precautions against the risk of fire, contains some sanitary regulations of considerable importance and value, though the management act is the one mainly directed to sanitation.—*Sanitary News.*

Evidences are abundant and conclusive in regard to the lasting properties of cypress wood. Hence it is gradually creeping into use more and more each year. Already it is being used in many houses in New York City in finishing, with calls for more. Five million shingles is the estimated amount of consumption in the New York market, with an increasing demand. At least 3,000,000 feet of the wood will be required to supply the market in railroad ties. It is exported to some extent to various ports. Railroad ties have been sent to Cuba, France, and England. Lumber has been sent abroad, but in no great quantities.

The employment of cast-iron columns as main supports has been greatly restricted at Berlin by a regulation issued from the architect's department of the police authorities of that city. The order has been issued in consequence of a discovery made last winter at a fire, when it was found that the cast-iron columns had been cracked by the effect of the cold water playing on them while hot. The authorities now insist that where partition walls rest upon cast-iron columns, the latter are to be covered with plaster or bricked in, with an air space between the bricks and the column.

People who advertise only once in three months forget that most folks cannot remember anything longer than about thirty days.

A Nation's Hero Gone to Rest.

NOTHING that we could possibly indite, would add a single iota to the universal homage paid to the memory of the illustrious dead. It has been the lot of but few men to reach an eminence so high and grand, and secure a love and admiration so devout and universal, as did the honored one who at his death and burial aroused the profound and heartfelt sympathies and sorrow of fifty millions of his own people, and in which millions in other lands united—feeling that a truly great, brave, and good man had passed away.

But while he no longer in person mingles in the active scenes of life, he lives in the memory of present generations, and will live in history through all future ages, as one of the noblest and best of his race; and his examples will pass down through coming periods as a guiding star to millions yet unborn. Truly may it be said, though dead, he yet speaketh.

As in life his influence was powerful, in death it was mighty, serving more than any other one event could do, in breaking down sectional asperities and sentiments, restoring the waste places in our national brotherhood, and uniting the people of our common country in sympathies and purposes never, we trust, to be again interrupted.

National Academy of Designs.

IT is proposed to admit a limited number of leading American architects to the National Academy of Design—a step long since adopted by the British Royal Academy and the French Institute. Several architects are already active members. On this head the *American Architect*, referring to this subject, says: "It is much to be desired that architects and other artists should be brought more together in this country, and every movement *for bringing* about more intimate relations will be warmly promoted by those who best understand the advantages to be gained in this way. . . . It is true that the simple election of a man as a national academician would not imbue him with artistic feeling, nor secure to him always the co-operation of his brother academicians in his work, but it would do something to interest him in other artists and them in him, while the admission of architectural drawings to the annual exhibitions would do still more; and . . . the mutual acquaintance of persons of tastes so similar could not fail to be in some way pleasant and serviceable to all."—*Ex.*

The manufacture of steel nails has made rapid progress since 1883, in which year this industry may be said to have had its beginning. During the last year there were 393,482 kegs of steel nails manufactured, the production of the three leading nail-making States being as follows: West Virginia, 204,336 kegs; Ohio, 130,636 kegs, and Pennsylvania, 29,224 kegs. In 1883 this country produced only 18,224 kegs of steel nails.—*Mining Herald and Colliery Engineer.*

PLATE 3.

APPROACHING EARTHQUAKES.—The earthquake shocks which were felt recently over a wide area in Yorkshire remind us that an authority on the subject of these phenomena, M. Delaunay, of Paris, is of opinion that next year will see the recurrence of upheavals of the earth's crust in an intensified form. M. Delaunay is a prophet of evil, but unfortunately all his prophecies have hitherto come true. His specialty is earthquakes, and he predicts them only too surely. In 1877 he announced that the year would not conclude without violent disturbances of the earth, and as a matter of fact, two frightful catastrophes on the coasts of South America followed. In 1883 M. Delaunay again pointed to approaching earthquakes, and soon after the volcanic eruptions in the Indian Archipelago occurred, by which thousands of human beings lost their lives, and hundreds of square miles of terra firma were engulfed by the sea. Towards the end of last year M. Delaunay once more raised his warning voice, and the earthquakes in Spain proved how well founded were his warnings. Quite recently he has prophesied very severe volcanic disturbances for 1886. Having acquired a well-merited notoriety in foretelling earthquakes, some weight ought to be attached to M. Delaunay's utterances. He affirms that next year these natural phenomena will be of a very intense character, and that they will show themselves either when the earth is under the direct influence of a planet of the first rank, such as Jupiter, or under that of a group of asteroids, or at a time when the sun and moon are nearest to our planet at the same time.—*Iron.*

Be Thorough.

ONE of the mistakes that young people make oftener than any other, is that of not being thorough, of thinking that it is no matter how a piece of work is done as long as it can be made to serve the purpose. An article in an exchange gives several examples to show how thorough work pays.

It was Carlyle who said, "Genius is an immense capacity for taking trouble," and George Eliot gives us the same thought in other words: "Genius is at first little more than a great capacity for receiving discipline." The most successful have always been the most painstaking. A prominent judge, living near Cincinnati, wishing to have a rough fence built, sent for a carpenter, and said to him:—

"I want this rence mended to keep out the cattle. There are some unplaned boards; use them. It is out of sight from the house, so you need not take time to make it a neat job. I will pay you only a dollar and a half."

However, afterward, the judge, coming to look at the work, found that the boards were planed, and the fence finished with exceeding neatness. Supposing the young man had done it in order to make a costly job of it, he said angrily: "I told you this fence was to be covered with vines. I do not care how it looks."

"I do," said the carpenter.

"How much do you charge?" asked the judge.

"A dollar and a half," said the man, shouldering his tools.

"Why did you spend all that labor on the job, if not for money?"

"For the job, sir."

"Nobody would have seen the poor work on it."

"But I would have known it was there. No; I'll take only the dollar and a half." And he took it and went away.

Ten years afterward the judge had a contract to give for the building of certain magnificent public buildings. There were many applicants among master-builders, but one face attracted his attention. It was the man who had built the fence.

"I knew," said the judge, afterward telling the story, "we should have only good, genuine work from him. I gave him the contract, and it made a rich man of him."

The Hon. Josiah Quincy was at one time conversing with Daniel Webster upon the importance of doing even the smallest thing thoroughly and well, when the great man related an incident concerning a petty insurance case which was brought to him while a young lawyer in Portsmouth. The fee promised was only twenty dollars. Yet, to do his clients full justice, Webster found he must journey to Boston and consult the law library. This involved an expense about the amount of his fee, but after hesitating a little he decided to go to Boston and consult the authorities, let the cost be what it might. He gained the case. Years after this, Webster was passing through the city of New York. An important insurance case was tried that day, and one of the counsel had been suddenly prostrated by illness. Money was no object, and Webster was asked to name his terms and conduct the case.

"It is preposterous," said he, "to expect me to prepare a legal argument at a few hours' notice."

But when they insisted that he should look at the papers, he consented. It was his old twenty-dollar case over again, and having a remarkable memory, he had all the authorities in his mind, and won the suit. The court knew he had had no time for preparation, and were astonished at the skill with which he handled the case.

"So you see," said Webster, as he concluded, "I was handsomely paid both in fame and money, for that journey to Boston;" and the moral is that good work is rewarded in the end, though, to be sure, one's own self-approval should be enough.

Thoroughness implies attention to details, neatness, and method. A young man who was shrewd and exacting, but whose business habits were careless and unmethodical, succeeded by hard work and economy in establishing a prosperous business, but failed and went into bankruptcy at the early age of thirty-five, because of his carelessness in omitting to put a note for a large amount in his bills payable.—*Western Rural.*

THE GREAT PYRAMID.—Mr. J. B. Bailey writes to the *St. James Gazette* as follows, with reference to the desirability of exploring the great pyramid: "Now that Great Britain is dominant at Cairo, would it not be a good plan to clear away the sand and rubbish from the base of the great pyramid right down to its rocky foundation and try to discover those vast corridors, halls, and temples containing priceless curiosities and treasures with which tradition in all ages has credited the great pyramid? The wonderful building, of such exquisite workmanship, was erected many years before any of the other pyramids, which are only humble imitations, built by another nation, and also for other purposes; for neither King Cheops nor anybody else was ever interred beneath this mighty mass of stone. The smaller pyramids also exhibit neither the nicety of proportion nor the exactness of measurement, both of which characterize the first pyramid. From internal evidence it seems to have been built about the year 2170 B. C., a short time before the birth of Abraham, more than four thousand years ago. This—one of the seven wonders of the world in the days of ancient Greece—is the only one of them all still in existence. The base of this building covers more than thirteen square acres of ground. Its four sides face exactly north, south, east, and west. It is situated in the geographical center of the land surface of the globe. It was originally 485 feet high, and each of its sides measures 762 feet. It is computed to contain 5,000,000 tons of hewn stone, beautifully fitted together with a mere film of cement. And these immense blocks of stone must have been brought from quarries five hundred miles distant from the site of the building. The present well-known king and queen chambers, with the various passages, might also be thoroughly examined by means of electric or lime lights. The astronomer royal of Scotland, some years since, closely and laboriously examined all that is at present known of the interior of this enormous building. He states that measurements in the chambers, etc., show the exact length of the cubit of the Bible—namely, 25 inches. This cubit was used in the building of Noah's ark, Solomon's Temple, etc. He also maintains that the pyramid shows the distance of the sun from the earth to be 91,840,000 miles.

FIRE-PROOF DOORS.—The most efficient fire-proof doors are of wood covered with tinned iron. The door is made of two thicknesses of tongued and grooved boards, crossing each other diagonally and thoroughly nailed together. The sheets of tin are bent over at the edges, forming locked joints as in a tinned roof; it is important that the edges as well as the sides of the door be covered, as its resistance to heat lies in the fact that the fire cannot burn the wood thus protected against exposure to the air, nor can it warp it, as is the case with an iron fire-door subjected to slight heat. If a fire-proof door is hung on hinges, special care must be taken to insure their security by fastening them to the door by means of bolts rather than screws, and connecting them to the wall in an equally secure manner. The latches should be selected with a view to durability, as such a heavy door is apt to be destructive of weak latches. Where the position of the doorway permits sliding doors, it is preferable to have them on tracks, care being taken that cleats be placed on the floor each side of the doorway, so as to secure the door at its lower corners when shut.

In the Boston Storage Warehouse, United States, there are a large number of such doors in the fire-walls, arranged to close an electric circuit when they are all shut, and the fact is recorded on the paper dial of the watchman's clock at certain intervals. Fire-proof doors are frequently arranged to close in advance of a fire by means of the yielding of an alloy fusible at 160° Fahr. The track upon which such a door is hung inclines about one foot in eight feet, and the door is kept from closing by means of a round stick about one inch in diameter, which reaches from one edge of the door to the opposite side of the door-frame. At the middle the stick is cut in two diagonally, and a ferrule, made of two pieces of thin copper soldered together longitudinally with the fusible alloy, covers the joint in the stick. When this ferrule is exposed to a temperature of 160° Fahr., its yielding causes the ferrule to split open, and the stick separates into pieces and allows the door to shut. In order

that the stick shall not fall in the way of the door, and that the door may be shut at any time, the stick is connected to the top of the door-frame by small chains near to each end. This simple device was designed by Mr. Lewis T. Downes, president of the What Cheer Mutual Insurance Company. Another method of utilizing this fusible alloy to close fire-proof doors and shutters, is by means of a wire extending around the room, and containing in various places links made of two pieces of brass soldered together. When the solder melts and allows the two pieces of brass to separate, the wire allows the shutter or door to close. Mr. Frederick Grinnell has improved the ordinary link by cutting a slot in one of the pieces of brass, and laying a short bit of wire therein, when they are being soldered together; the solder flowing around this wire presents a resistance in three planes, in place of the ordinary joint, which may be imperfect and lies in a single plane, concealed by the sheet brass so as to prevent inspection. Formerly solid links of fusible alloy were used, but the metal has so little resilience that it is apt to gradually lengthen, and finally break at some inopportune time.—*Engineering.*

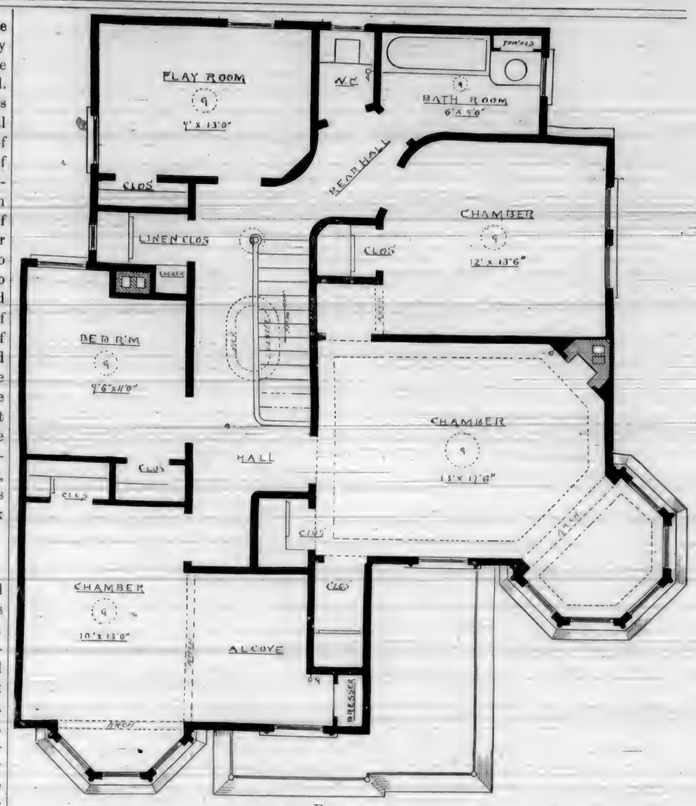

PLATE 4.

Preservation of Building Stones.

DR. R. OGDEN DOREMUS, in a paper read before the American Institute of Architects last autumn, said that a result of porosity in building stones is that buildings, after absorbing water, effloresce, or become covered with a coating of salts, especially brick buildings laid in mortar made from sea sand. This means the decomposition of the material, besides a disagreeable appearance. In Philadelphia, after a rain, the houses are generally thus whitened. This efflorescence cannot be prevented by ordinary paint nor oil. Another dangerous result of porosity is that buildings absorb malaria. Hospitals thus become poisoned with a poison so deadly that he remarked he would sooner give his child the most deadly poison in the laboratory, and trust to the antidote, than expose him to such contagion. He mentioned many well-known buildings that were crumbling away, such as Girard College, the College of New York, Trinity Church, New York. He had dined with Gorringe soon after the obelisk was set up in Central Park, and the subject of the weathering of the obelisk was suggested. Gorringe said that it had stood 4,000 years, and would stand 4,000 years more. But, in fact, the obelisk is crumbling away. He showed several vials full of clippings collected at the foot of it also specimens of stone found peeled off from inside the new Capitol at Albany.

A simple remedy was suggested, and one which has been extensively applied in St. Louis and to some extent in New York, namely, an application of paraffine mixed with a little creosote. The building is heated by a small furnace, and where there is ornamental work a blowpipe is sometimes required to heat depressions. The paraffine is then applied in a melted condition, and sinks in about a quarter of an inch, giving a beautiful and indestructible glossy finish, and rendering the material absolutely waterproof and air-tight. In reply to a question about fire, he said that a fire would only drive it in a little. It costs on an average about fifty cents a yard, and never needs to be applied a second time, as no chemical agent in the air or in the rain affects it at all. Even caustic potash does not unite with it. If the application is made to marble that has been weatherbeaten, the marble should first be cleaned with steel brushes. Marble thus cleaned, however, unless treated with paraffine, soon becomes covered with a yellow stain. Some of the buildings in New York which have been treated with paraffine are St. Mark's Memorial Church; houses 124–6 South Fifth Avenue; Huyler's, corner Eighteenth Street and Irving Place; and a house No. 18 East Fifty-fifth Street, in a brownstone row. Every house in the row except this has its doorsteps "with verdure clad," and the growth of such mosses is destructive to the building material. The paraffine method is confidently commended by Dr. Doremus as the very best ever used.—*Builder.*

TOUGHENING TIMBER.—This is a new process by which it is claimed that whitewood can be made so tough as to require a cold-chisel to split it. This result is reached by steaming the timber and submitting it to end pressure, technically "upsetting" it, thus compressing the cells and fibers into one compact mass. It is the opinion of those who have experimented with the process that wood can be compressed 75 per cent, and that some timber which is now considered unfit for use in such work as carriage building could be made valuable by this means; and more especially since the rapid consumption of our best ash and hickory will sooner or later render some substitute necessary.

A Minneapolis artist, who has been "doing" Alaska, says that all the members of his party, and there were seventy-five of them, agreed that the Greek Church at Sitka is the finest church in America. It is built on the plan of a Greek cross, and the interior is a mass of gold and silver, of a magnificence of which a writer says he can give no idea. The walls are hung with pictures of royalty and the priesthood, sent by a Russian princess, who took this temple under her patronage.

MILL WORK ABUSED IN HANDLING.—This is a thing of common occurrence in the handling and transporting of finishes, doors, blinds, etc. Sometimes damage is done in passing the work out of the mill; such as spauling the arrises and bruising the faces and edges. But the chief source of injury occurs in the loading and unloading, many of the teamsters being of the "baggage-smasher" type, practicing but little consideration for the thing handled, so that it gets on and off the wagon, and the hauling is paid for. Frequently, by the time the mill work, doors and finishes, reaches a building, there are a great many marks, scratches, indentations, and defacements, which often cause trouble and annoyance alike to builder and architect; the former disliking to use the damaged work, which sometimes is of a character that smoothing up and sand-papering will not remedy; but as it is not always the case that the party damaging the work can be found, to fix the responsibility, as "nobody" is always the guilty party, and the contractor, rather than to discard the damaged work, and at extra expense and cost obtain perfect materials, very naturally seeks to use the imperfect, even at some sacrifice of perfect workmanship in the finishes; unless the defects are too glaringly bad, this is a natural result when dollars and cents, and a scrupulous nicety about small things, are the two opposing factors; the former is looked upon and guarded with a more jealous eye, and obtains the benefit of every doubt. If all this can be without noticeable irregularities, and results not discreditable to the architect, nobody is specially harmed; but often such defects are "fixed up" in such a shape that the architect is expected to pass them, at the sacrifice of his own judgment and ambition in the production of perfect workmanship. Ugly issues often spring from the causes outlined, by reason of the architect objecting to defects caused more through carelessness than design, yet of such character as to mar the completeness and perfectness of the workmanship involved; and although the defects may be of no great magnitude in themselves, simply a scratch or a bruise, the effect produced to the technical and practical eye of the architect competent to appreciate the niceties of perfect workmanship, is disagreeable and repulsive, and fully justifies complaint, and a refusal to accept such work.

A SMALL GREASE SPOT OR STAIN

On the dress suit of either a lady or gentleman is a *small matter* in and of itself, still no *tidy* person would willingly appear in public, or in social intercourse, until that *little* thing was removed; because "*it spoils the look of the dress.*" And so in ten thousand other things, "looks"—appearances—produce effects, and judgment more generally follows and is shaped by the impressions made upon the visual organs. If this is so in matters generally, why not in reference to the finishes in buildings, which are continuously in view, either seen or handled every hour of the day, forming one of the permanent surroundings of the home circle. In this view of the case, an architect cannot be "too particular" and exacting, as upon him rests every responsibility as to the harmonies and niceties which are calculated to make the abode of his client as nearly perfect as possible, all things considered.

TEAMSTERS MOST AT FAULT.

They are often unpardonably careless, dragging and tossing finished work as though it were of but little more importance than a dry goods box or an empty barrel. It is common to see the face casings of window and door panels laid on the iron bound edges of the sides of wagons, and otherwise crossing each other with no attempt at protection from chafing, and thus rode for blocks or miles over rough streets and roadways, with the friction at every step of the horses grinding away the fibers of the wood at the points of contact; so that by the time the place of destiny is reached, the things transported are in parts not fit for use. Not only the same thing occurs with panel doors, but they are often pushed and dragged on and off the load, when laid flatwise, with ungainly indentations made by the ends of the stiles digging into the horizontal parts. All this is bad, should not be, and could easily be avoided by a little care, and with cushions on the sides of the wagons to prevent the friction caused by the iron and wood coming in contact.

Hints on the Care of Tools.

THE following hints on the best means of keeping tools in good condition, which we take from the *Building and Engineering Times*, of London, cannot fail to be useful.

Wooden Parts.—The wooden parts of tools, such as the stocks of planes and handles of chisels, are often made to have a nice appearance by French polishing; but this adds nothing to their durability. A much better plan is to let them soak in linseed oil for a week, and rub them with a cloth for a few minutes every day for a week or two. This produces a beautiful surface, and at the same time exerts a solidifying and preservative action on the wood.

Iron Parts.—Rust preventives.—The following recipes are recommended for preventing rust on iron and steel surfaces:—

1. Caoutchouc oil is said to have proved efficient in preventing rust, and to have been adopted by the German army. It only requires to be spread with a piece of flannel in a very thin layer over the metallic surface, and allowed to dry up. Such a coating will afford security against all atmospheric influences, and will not show any cracks under the microscope after a year's standing. To remove it, the article has simply to be treated with caoutchouc oil again, and washed after 12 to 24 hours.

2. A solution of India rubber in benzine has been used for years as a coating for steel, iron, and lead, and has been found a simple means of keeping them from oxidizing. It can be easily applied with a brush, and is easily rubbed off. It should be made about the consistency of cream.

3. All steel articles can be perfectly preserved from rust by putting a lump of freshly-burnt lime in the drawer or case in which they are kept. If the things are to be moved (as a gun in its case, for instance), put the lime in a muslin bag. This is especially valuable for specimens of iron when fractured, for in a moderately dry place the lime will not want any renewing for many years, as it is capable of absorbing a large quantity of moisture. Articles in use should be placed in a box nearly filled with thoroughly pulverized slaked lime. Before using them, rub well with a woolen cloth.

4. The following mixture forms an excellent brown coating for protecting iron and steel from rust: Dissolve two parts crystallized iron chloride, two antimony chloride, and one tannin, in four water, and apply with a sponge or rag, and let dry. Then another coat of the paint is applied, and again another, if necessary, until the color becomes as dark as desired. When dry it is washed with water, allowed to dry again, and the surface polished with boiled linseed oil. The antimony chloride must be as nearly neutral as possible.

5. To keep tools from rusting, take ½ ounce camphor, dissolve in 1 pound melted lard; take off the scum and mix in as much fine black lead (graphite) as will give it an iron color. Clean the tools and smear with this mixture. After 24 hours rub clean with a soft linen cloth. The tools will keep clean for months under ordinary circumstances.

6. Put 1 quart fresh slaked lime, ½ pound washing soda, ½ pound soft soap in a bucket; and sufficient water to cover the articles; put in the tools as soon as possible after use, and wipe them up next morning, or let them remain until wanted.

7. Soft soap, with half its weight of pearl-ash, 1 ounce of mixture in about 1 gallon boiling water, is in every-day use in most engineers' shops in the drip-cans used for turning long articles bright in wrought-iron and steel. The work, though constantly moist, does not rust, and bright nuts are immersed in it for days till wanted, and retain their polish.

8. Melt slowly together 6 ounces or 8 ounces lard to 1 ounce resin, stirring till cool; when it is semi-fluid, it is ready for use. If too thick, it may be further let down by coal oil or benzine. Rubbed on bright surfaces ever so thinly it preserves the polish effectually, and may be readily rubbed off.

9. To protect metals from oxidation—polished iron or steel, for instance—the requisite is to exclude air and moisture from the actual metallic surface; wherefore, polished tools are usually kept in wrappings of oil cloth and brown paper; and, thus protected, they will preserve a spotless face for an unlimited time. When these metals come to be of necessity exposed, in being converted to use, it is necessary to protect them by means of some permanent dressing; and boiled linseed oil, which forms a lasting film of covering as it dries on, is one of the best preservatives, if not the best. But in order to give it body, it should be thickened by the addition of some pigment, and the very best—because the most congenial—of pigments is the ground oxide of the same metal—or, in plain words, rusted iron reduced to an impalpable powder, for the dressing of iron or steel—which thus forms the pigment or red oxide paint.

10. Slake a piece of quick lime with just water enough to cause it to crumble, in a covered pot, and while hot add tallow to it and work into a paste and use this to cover over bright work; it can be easily wiped off.

11. Olmstead's varnish is made by melting 2 ounces resin in 1 pound fresh sweet lard, melting the resin first and then adding the lard and mixing thoroughly. This is applied to the metal, which should be warm if possible, and perfectly cleaned; it is afterwards rubbed off. This has been well proved and tested for many years, and is particularly well suited for planished and Russia iron surfaces, which a slight rust is apt to injure very seriously.

Rust Removers.—1. Cover the metal with sweet oil well rubbed in, and allow to stand for 48 hours; smear with oil applied freely with a feather or piece of cotton wool, after rubbing the steel. Then rub with unslaked lime reduced to as fine a powder as possible.

2. Immerse the article to be cleaned for a few minutes, until all the dirt and rust is taken off, in a strong solution of potassium cyanide, say about ½ ounce in a wine-glassful of water, take it out and clean it with a toothbrush with some paste composed of potassium cyanide, Castile soap, whiting and water, mixed into a paste of about the consistency of thick cream.

What Mr. Spurgeon said about advertising in one of his recent lectures: "Advertise, for the life of business is printers' ink." He probably, at the time, had in mind the fact that advertising is the staff of life in trade, just as bread is the staff of human life. For if a man wants his name and business to be known, he must keep them before the people. He must let them know where he is, what he is, and what he is doing. What! you doubt if advertising in trade journals does this so effectually as other methods you might mention? Where do you look to find the names of the most successful men you are acquainted with in trade? In the trade papers? Of course. Is your name beside theirs? A commercial man who gets through life persistently ignoring the value of advertising might have his brains exchanged for the stump of a crossing-sweeper's broom, and get along quite as well. Why, when people see a man advertise they know at once he is a business man, and his advertising proclaims that he is not above business, but anxious to do business.

The new building law for the city of New York, which has just been published, proves to be in many respects better and more convenient than that which it supersedes; and although we are rather disappointed to find that some of the improvements which might have been adopted have not been, the statute, on the whole, marks a decided advance in the official regulation of construction in this country. Among its other merits, the text of the new law embodies many regulations and decisions of the Inspector, which have hitherto formed, so to speak, a part of the common law in regard to building operations, but, not appearing in the official edition of the statute, were only to be learned by architects at the expense of a good deal of trouble and annoyance; and these, particularly the younger ones, will be glad to have at least the greater part of what they are expected to know presented to them in shape for use. One of the principal points of difference between the new and the old law relates to the thickness of brick walls; stone walls, by the way, being entirely ignored in both laws. According to the former statute, no authority could be obtained for building any brick walls less than twelve inches in thickness. The powers of the law seem to have assumed that no New Yorker, however poor, would condescend to live in anything less imposing than a four-story house; and they oblige the builder of a house ten feet high to make all the walls exactly as thick as if it were fifty-five feet high. This provision, by unreasonably increasing the cost of small dwellings, has undoubtedly tended strongly to drive the poorer people of the city into the tenement-houses, which form the reproach of New York; and the new law, very wisely, as we think, modifies the rule so far as to allow houses not more than twenty feet wide, and thirty feet high, to be built with eight-inch walls above the basement, and so that blocks of houses twelve and one-half feet wide, and not over fifty feet high may be built with every alternate party-wall eight inches thick. There is no question that an eight-inch wall, which is, in proportion to its mass, the strongest wall which can be built with bricks, possesses ample strength, if properly built, for carrying the floors and roof of a dwelling house of such modest dimensions; and although the brick-makers may regret the change, hundreds of independent and home-loving workingmen will welcome it as bestowing upon them the long-desired privilege of building and owning houses on terms as favorable as those which their brethren in Philadelphia and other cities enjoy.—*American Architect and Building News.*

The strongest wood in the United States according to Prof. Sargent, is that of the nutmeg hickory of the Arkansas region, and the weakest the West Indian birch (*bur seva*). The most elastic is the tamarack, the white or shellbark hickory standing far below it. The least elastic and the lowest in specific gravity is the wood of the *Ficus aurea*. The highest specific gravity, upon which in general depends value as fuel, is attained by the blue-wood of Texas, *Condalia obovata*.

TIMBER IN WASHINGTON TERRITORY.—Some idea of the great wealth of the timbered lands in the western part of Washington Territory may be gleaned from the following report which we take from the Portland, Oregon, *Journal of Commerce*:—

All that portion of Washington Territory lying between the Cascade Range on the east, Coast or Olympic Range on the west, and between the 47th and 49th degrees of north latitude, is a thickly timbered belt of fir, cedar, alder, maple, and other woods. Of these fir probably represents three-fourths. In the midst of this wealth of forest, nature has placed a broad, deep arm of the Pacific Ocean—Puget Sound—with which it is connected by the Strait of Fuca. Thus not only has nature provided the timber, but the water-way also, by which it is possible for the merchant marine of the world to come and obtain their lumber supplies, much of which sometime in the future must be furnished from these forests. Already the lumber trade with Australia, Central and South America, China, and the islands of the Pacific amounts to fully 75,000,000 feet a year, and employs a fleet of about fifteen vessels every month.

Puget Sound is 200 miles long, and has a shore line of 1,800 miles. This irregular shore line forms innumerable harbors splendidly adapted for the erection of saw-mills and other wood-working factories, and also for the establishment of ship yards. Along this whole shore line, and from thence on both sides as far as the eye reaches, nothing can be seen but the vast and magnificent wealth of timber, save here and there where man has established a mill port, a town, or an occasional farm.

In the timber belt of western Washington there are 20,000,000 acres covered with timber, most of which is included within the limits named—an area nearly equal to the combined areas of the states of Connecticut, Massachusetts, Vermont, and New Hampshire. This timber belt will average 25,000 feet of lumber to the acre, or a total of 500,000,000,000 feet of lumber. Hence the saw-mills of Puget Sound, with their present capacity of 500,000,000 feet per year, would take 1,000 years to cut it down. The fir trees frequently attain the height of 250 feet, and planks of lumber are sometimes turned out of these mills 100 feet in length.

There are now erected in this district, as near as we can ascertain, 24 mills, the aggregate value of which is $5,320,000, with a daily cut of 1,300,000 feet.

In addition to the foregoing statement of the wealth of the mill corporations, very many of them also own sailing vessels and steamers, which are engaged in carrying lumber from the various mill ports to San Francisco and foreign ports. Many of these corporations have agencies in San Francisco, where they own properties in the shape of lumber yards.—*American Engineer.*

The Architects of California.

THE profession upon this coast is numerically large, and in the number there are many most excellent, competent, and honorable gentlemen, as also some who have assumed the practice of the profession without the possession of those essential, architectural, mechanical, and moral qualifications, so necessary to the proper administration of the responsibilities and duties devolving upon qualified architects. But this coast is not an exception in this regard, nor are the lesser class peculiar to the present age. The records of an hundred years ago, and through all periods since then, the complaint of learned and qualified architects in the United States and England, has been the presence, in the profession, of men of exceedingly mediocre attainments, with no higher ambition or aim than the sordid purpose of making money, without any scruples or regard as to the deceit and falsehood that are and must necessarily be practiced by those who have no true merit to recommend them, and who are compelled to rely upon a glib tongue, and wordy commendations of themselves, to entrap unsuspecting clients.

But the purpose of this article is not to dwell upon this class of pretenders, but to suggest a few thoughts to the leading and honorable members of the profession, with whom must emanate, and by whom must be carried into practical execution, the measure necessary to protect the honor and elevate the standard of architectural practices on this coast.

The nucleus for reformatory operations exists in the chapter of architects, which has already accomplished a greater work and influence for good than is accredited by those who have not yielded their personal and apparently selfish notions to a magnanimous acceptance of the possible benefits so manifestly plain, in a united, manly, and earnest commingling as brethren of a highly honorable profession. It may be that some who are not, are the equals of others who are Fellows of the chapter, and who recognize no necessity to become members, feeling confident in their own abilities to conduct their affairs satisfactorily and remuneratively without any assistance. This may be so, but the possessor of great resources is the man who can best afford to be generous. Those who are gifted and learned lose nothing by dispensing to others that which has come to them in abundance. No one lessens his store of knowledge by making others wiser, nor are his individual advantages diminished by an unfolding of facts and principles of life and business calculated to improve and benefit others; and the presumption is fair that, when men who might render assistance in a good cause refuse to do so for reasons not sustained by liberal and generous conclusions, there is a weak point somewhere in their own make-up which might be improved.

But, aside from all this, the architectural profession should be inspired by the high purposes which influence the members of the legal, medical, and other professions to form in society relationships for mutual benefit in the advancement of the respective sciences, and for the protection of their best welfare; to develop methods of improvement among themselves, and scrupulously guard against encroachments and practices of demoralizing character. There is not a true member of the architectural profession who may not accomplish good for himself by aiding in a work of this kind, by mingling with others in advanced movements, and assisting in organizing and maturing measures calculated to better conditions.

It is pleasing to note the good fellowship and kindly professional sentiment which seems to exist among, and permeate the intercourse of architects in many of the States of the Union. The reports of proceedings in numerous cases forcibly illustrate the fact that men with like aims in life's pursuits can lift themselves above all personal bias and prejudices, and all belittling views, and rise to a higher sphere of action, co-operating with one common purpose for mutual interest. Thus it should be, and the more rapid approach to highest possible attainments in architectural science will be the more completely and perfectly accomplished, when this kindly and enlarged feeling and sentiment becomes comparatively universal. It should be so in California, and we need it more from the fact of isolation, and the limited opportunities to gather strength by contact with the advantages enjoyed by architects operating at or in close proximity to the great centers of magnificent structures, and who within a few hours' ride at most, are enabled to pass from city, through country districts, towns and villages, to other cities, gathering new information, ideas, and food for thought and application, and receiving, through the eye and senses, practical suggestions from the thousands of architectural demonstrations presenting themselves at every point. Not so in Californi . The opportunities are less and circumscribed by local bound; which fact should incite to united and earnest effort in at least seeking to work out the best possible good for the profession as a whole, and in establishing rules and regulations calculated to inspire honorable ambitions and practices, and restraining and correcting, or stamping with disfavor, all individual irregularities, in whatever form they may be found.

A Correspondent of the London "Field" says: If one wants a carriage or implement photographed so as to make a working copy to scale, all that is necessary is, when the photo is being taken, that a clear and distinct three-foot rule be placed on the carriage; this is photographed along with the carriage, and, no matter what the size of the print or negative, will always be a true scale. It enlarges and diminishes in exactly the same proportion as the carriage.

An Architect's Responsibility.

THIS is a matter about which there are various erroneous notions afloat among the very parties who ought to understand just what responsibility can be properly and justly laid on the shoulders of architects. Probably the most erroneous ideas are those concerning the cost of the work. It is a popular belief that an architect's estimate of the cost of any proposed work is always exceeded by the actual cost, and there is a strong disposition to hold him accountable for this increased cost. It is our opinion, however, that a careful examination of the majority of such cases will show that the extra cost is chargeable to specific demands of the client, based upon the conception that somehow or other he is going to get more for his money than others get; or else from not comprehending the fact that a requirement, which in itself may be inexpensive, often carries in its train extra expenses that foot up to a large total. The client is not, of course, always to blame. We are aware that there is a large class of architects who, for fear of discouraging their clients in the beginning, systematically make all sorts of encouraging responses to inquiries regarding the cost, and doing everything to get a building enterprise embarked for the sake of the fee involved. In considering the responsibility of such architects as these, it must be borne in mind that there are few who descend to false representations in order to gain work, to whom mistakes and blunders can carry any adequate punishment by means of condemnation of their work. After they have secured the work, and it has been executed and paid for, what do they care for any questions of responsibility that may arise? They will find other clients, and their practice may not suffer. They are often successful men, and it is because some of them are frequently taken as typical of the whole race of architects that popular impressions arise that are the reverse of flattering to the profession as a whole.

Let us take such a case as the following: A man makes up his mind to an expenditure of $10,000, and goes to his architect with his wants really based on that amount, but telling him that the most he can spend is $8,500. The architect is one of the class we have been considering, and very likely thinks of nothing but producing fine sketches that will catch his client's eye. This he succeeds in doing perfectly, for he is a clever architect when not limited much as to cost. At the last moment, and perhaps because the client himself feels some doubts, the architect is told of the real amount that can be expended, but he is strongly cautioned that this amount cannot under any circumstances be exceeded. The lowest bid comes in about $11,500, but the client is so in love with the design on which he has set his heart, that he finally decides to go on with it. After the work is under way, various matters crop out that had not been appreciated before, and some things seen only in dim perspective begin to loom up in a very expensive manner. Of course, the client knew that the heating and mantels were not included, but he was not prepared for sundry other necessities, and he objected to be continually obliged to increase his scale of expenditure throughout. Hence, when he found that the actual cost of the house was $15,000, he, in his own mind, laid the blame on his architect. In such a case as this the popular judgment is right. The architect is to blame. It is his duty to forewarn his client in the beginning clearly in regard to cost, and if he does not do so, his responsibility is direct. Further than this, if an architect makes misleading statements in order to induce his client to build, we do not see but what he could be held responsible at an action for damages, although it might not be easy to secure the proof unless it was documentary. We do not mean that an architect is bound to state the exact cost. This he cannot do; for even skillful contractors will differ as much as $2,000 on $12,000 worth of work. But an architect is certainly in a better position to know the cost than his client; and if his client is evidently expecting too much for his money, it is an architect's duty to inform him of the facts—*i. e.*, that the *probabilities* are that the cost will exceed the amount appropriated. A little plain speaking on this point at the beginning would relieve an architect of the responsibility for the increased expenditure in case there should be any.

In most cases, however, we think the responsibility for the cost is justly laid at the client's door, the facts being somewhat as follows: The prospective house owner, if he is unacquainted with the building business, fails to realize that when he goes to his architect and says, "I do not wish to spend over $10,000 under any circumstances whatever," he ought to stop right there if he wishes to hold any one but himself responsible for not exceeding this limit. Suppose the client, after saying as much as this and outlining his general needs as to rooms and peculiarities of living, site, etc., should trust rigidly to the architect for everything else—let the architect determine how much or how little hard wood shall be used, and the scale of the finish throughout. At the same time, let it be understood that the architect is to be held accountable for the result. Is it not a reasonable supposition that the cost would rarely be exceeded? Of course, a sensible architect in such a case would not bind himself down to an exact limit of cost, but if it was understood that his reputation depended upon his success in getting a good thing for the money, we think that the result would in most cases be creditable to architects as estimators. Nowadays there is too much designing without reference to cost. There is far more merit in solving a difficult problem—to build well on a minimum allowance—than to design cleverly, artistically, but, unfortunately, with a total disregard of cost. Any one can design a fairly good thing for $20,000 we will say; but if the limit was $15,000, where is the merit? We are aware, however, that clients do not leave details to their architects. The more usual course for the client is, after the sketches are made, based we will say on $10,000, to casually mention first one thing and then another, until, by the time the working drawings are completed, a complete category of increased demands not originally contemplated in the sketches, if such a thing were possible, would be astonishing. It is in this way that honestly-estimated sketches lead to increased outlays; and even if an architect is able to point these out to his client, or even if the client has been warned that he is expecting too much, the result is that the architect has to shoulder the blame.—*Building.*

Nuisances Not Due to Plumbing Work.

TWO INSTANCES came to our notice a few days ago which are very good illustrations of the fact which has been often proved, that shortcomings in the household economy are responsible for many complaints of sewer-gas. In the first instance, such complaints were made to a plumber about a house in the best quarter of Jersey City. When he visited it, he was satisfied at once that the odor was not due, as the people in the house supposed, to defects in the plumbing. He suspected dead rats. After a good deal of difficulty, the decaying body of one rat was found between the floor and ceiling; but the odors continued, and it required a week or two of tearing up of floors to get out all the carcasses, some half-dozen, in various stages of decay. But even this did not entirely free the house from the bad smells, and then search was made through the cellar. On a shelf was found a chicken-coop and the filth which would accumulate around such, and when this was removed and the cellar aired, the bad odors disappeared. Yet the family were persuaded at first that their plumbing was bad, and the plumber's reputation would have suffered had he not insisted on a thorough search for the cause of the smells.

In the second case a lady, who prided herself on careful housekeeping and neatness, sent for a plumber in some alarm because bad smells were pervading her house. The plumber informed her at once that it was swill-barrel and not plumbing-work. This was denied; the lady was sure her servants were too well trained to keep a foul garbage-barrel about, but the plumber insisted on looking for the cause, and soon discovered in the rear cellar a barrel with decaying vegetables, which had evidently not been emptied for some time, and had a very "loud" smell. This discovery satisfied the lady. The barrel was removed, the cellar aired, and no more sewer-gas was heard of.

These two cases carry their own moral, now that hot weather is here, and there are many more like them.

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Graphite Roofing Paint.

AS FEW of our readers are thoroughly familiar with the nature and properties of graphite, a few general remarks will not be inappropriate before referring to it as a material for roofing paints. Graphite is one of the multitudinous forms in which carbon is found in nearly a pure state. The substance is variously known as graphite, plumbago, and black lead, the last two of which, however, convey the erroneous impression that it is in some way associated with the metal lead. It occurs in nature in different forms, varying from graphite nearly chemically pure to rocks and clays containing a small percentage of the mineral. Its most common use is for pencil leads, for which purpose it is mixed with varying proportions of clay to give the desired hardness. The two most extensive uses to which it is put is in the manufacture of crucibles and similar refractory articles and stove polish. Its peculiar properties are such as to make it an excellent material for roofing paints. Although this use of it has been known for some years, its manufacture is principally confined to one firm, the Joseph Dixon Crucible Company, Jersey City, N. J., who, besides, manufacture graphite for various other purposes.

The method of preparing it for roofing paints, as carried on by the above company, is very simple, and consists essentially in pulverizing the rock containing the graphite, and removing the silica by a leaching process until the remaining compound is suitable for paint. The process is stopped when the product analysis about 70 per cent. graphite and 30 per cent. silica, which proportions are thought to give the best results in roofing paints. This product is next finely ground in boiled linseed oil, in which form as a thick pigment it is put upon the market. The paint when used is thinned with boiled linseed oil until it has the desired consistency, and applied with a brush in the usual manner. Apart from the question of cost, and the fact that, owing to its lesser weight, a pound will cover a larger surface than a similar weight of heavy, mineral paint, graphite has many properties that are said to make it especially valuable as a roofing paint. The spreading properties of graphite are shown in the large surface a small quantity of the pure mineral will cover when rubbed. In virtue of this peculiarity the graphite paint is said to adhere more closely to the metal painted and to fill every small interstice, giving a smooth and perfect surface. Furthermore, the mineral is unaffected by heat or atmospheric changes and resists all corroding influences. The silica is added to give body and hardness to the mixture, and, as it is also unaffected by moisture and heat, it does not lower the quality of the paint. This paint has been used on roofs, bridges, smoke-stacks, etc., and is said to have given excellent satisfaction in all cases.—*Metal Worker.*

PROPOSED DRAINAGE REGULATIONS.—The following excellent regulations have been proposed for the city of Glasgow, Scotland: 1. The positions and sizes of all drains, pipes, cesspools, or traps, and all soil and rain-water pipes and conductors shall be shown distinctly upon the plans submitted, and the weights per foot of the lead or iron soil-pipes, conductors and cesspools be marked on the plans in figures. 2. Forty-eight hours' notice must be given to the Master of Works, at his office, previous to commencing the laying of any drains. The party giving the notice will receive a card of permission to open the street, which card will be held as proof of the notice having been given. 3. All connection between drains and the public sewer will be made by workmen of the statute labor department, and shall be paid for by the proprietor. 4. Every drain-pipe must have a uniform fall of not less than one inch to every lineal yard, and every pipe must be thoroughly packed and resting entirely on the solid earth. When the Master of Works deems it advisible, he shall require concrete foundations to be put under and around the drain-pipes. 5. The joints must be well cemented and all cement projecting on the inside must be removed. 6. Sufficient traps and ventilation must be provided for and fixed to the satisfaction of the Master of Works. 7. Before covering, all pipes must be inspected by the Master or his representative, and no junction connecting drain-pipes and plumber-work to be covered up until examined and passed by him. 8. The Master of Works to have the power to use the smoke-test on all drains and plumber-work before the building is occupied, and at any other time he may consider necessary, all expenses connected with the test to be paid by the owner of the property. 9. No dwelling shall be occupied until the Master of Works has given a certificate that the drains and cesspools, with traps, have been properly constructed, and the house otherwise fit for occupation. 10. Proprietors and contractors will give every assistance to the Master of Works, for the purpose of performing the necessary inspection.—*American Architect and Building News.*

No place more than San Francisco needs an intelligent, qualified "Master of Works," so named in the article above quoted, with powers to control all irregularities and violations of correct sanitary science and building construction, as defined and established by a commission or board of competent architects and civil and sanitary engineers. The villainous character of seven-tenths of the sewer work done in this city is simply fearful. Not three in ten, if three in twenty, of every foot laid prior to the enforcement of the Plumbing Law, being put in as it should be when intrusted to "sewer layers" upon their own knowledge and honor; nor is the evil fully remedied under the existing law, as the greater portion of the sewer work is still done by those who seldom, if ever, did a good job unless watched at every foot of pipe laid; and men who do well only when they are compelled to, will do badly whenever the opportunity is left to them.

Decay of Iron.

A PHENOMENON has been observed in the Callowhill-Street bridge in Philadelphia, which is of great interest to architects and engineers, although the tax-payers of Philadelphia probably take no satisfaction in it. A few days ago men were sent to repaint the girders of the bridge, and began, as a preliminary process, to scrape off the rust. The attention of the foreman was soon attracted by the unusual size and weight of the scales of rust which fell upon the railroad below, and, on picking some of them up, found that they were solid masses, from one-quarter to three-eighths of an inch in thickness. It is needless to say that plate-iron girders which had lost their substance by rust to such an extent as this would have little strength remaining, and the vibration of the bridge under the movement of a horse-car or loaded cart, which was so great as to compel the painters sitting on their swinging stage to cling to the ropes or the braces of the bridge to avoid being shaken off, indicated still further the necessity for an immediate inspection of the whole structure. The first examination was an informal one, made by persons living in the neighborhood, who found not only that some of the iron-work had been nearly eaten through by rust, but that the whole bridge, which is built on a steep rising grade, had moved down hill so far as to tear out the top courses of stone of the upper abutments, and to buckle the struts of the intermediate supports; while the movements of the roadway frame-work had cracked the asphalt over them, and forced out the paving-blocks between the horse-railway tracks. The bridge includes one span of three hundred and forty feet, and as there can be no trifling with girders of this length, extensive repairs will probably be necessary. The structure was only completed in 1875, so that ten years of neglect have sufficed to bring it nearly to destruction, and those who have to design important iron roofs or bridges will do well to notice by this example how short is the life of such works if not properly cared for. In the case of the Callowhill-Street bridge, the corrosion was probably hastened by the action of the smoke from the locomotives which passed under it; but there are hundreds of bridges exposed to the same action, and the iron roofs of railway stations and manufactories are often subjected to similar or more dangerous influences.

THE LARGEST APPLE TREE.—The largest apple tree in the country is said to be in the door-yard of Delos Hotchkiss, Cheshire, Conn. Its circumference is thirteen feet and eight inches. The girth of the largest limb is six feet and eight inches. It has eight branches; five bear one year and three the next; 110 bushels have been gathered in one year from the five branches. It is over 140 years old.

Indestructible Paint.

THE Paraffine Paint Company are offering a line of paint compound which is claimed to possess superior qualities, even over the best white lead and oil. It is recommended for a large range of purposes, with extraordinary preservative qualities, and as the best resistant of fire known; also, that it will not chip or peel off, is easily applied, and guaranteed to last twice as long as any other paint. It is strongly endorsed by many of the prominent manufacturing, mechanical, mill, railroad, and other establishments in California.

Commenting on the difference in wages received by plumbers in London and Chicago, a plumbing paper published in London states its belief that the English plumber, by emigrating to the States, will better himself and probably make it better for those whom he leaves behind, by removing his competition from the labor market in England. The reason why this view is held is because wages are so much higher here than in London, and because the plumber here is supposed to have a status in society, that is, expressing it as does the English paper, "they hold a very different position in the States from what they hold at home." As for the latter suggestion, a man's social position in the States does not so much depend upon his occupation, so long as it may be an honest one, as it does upon the character and attainments of the man himself. If he is intelligent and respectable enough to bear the burdens and perform the duties of society, he will receive as much as he is entitled to. He is not hampered by the ridiculous notions of aristocracy, as in England.

As to the question of wages, it is held that the purchasing power of money is greater in London than in the States, but the difference is not equal to the difference in wages. It has been estimated that a man may live one-third cheaper in London than here, but he certainly receives more than one-third higher wages here. The fact seems to be that, in England, the plumber is put upon the same footing as other lines of labor and paid accordingly, while here his labor is recognized as skilled and he is paid accordingly. There is another thing which must be recognized by the intending immigrant plumber. That is, that his trade as learned in England differs materially from the plumber's trade as practiced in the States, and an English plumber just arrived from his native country could hardly hope to receive equal pay with American journeymen.—*Sanitary News.*

One of the simplest and readiest ways of loosening a rusted screw is to apply heat to the head of the screw. A small bar or rod of iron, flat at the end, if reddened in the fire and applied for two or three minutes to the head of a rusty screw, will, as soon as it heats the screw, render its withdrawal as easy with the screw-driver as if it were only a recently inserted screw.

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The minister last Sunday morning had preached a very long, parched sermon on the creation of man, and one little girl in the congregation was utterly worn out. After the services, she said to her mother: "Mamma, were we all made of dust?" "Certainly, my child." "The preacher, too?" "Of course. Why do you think he was not made like the rest of us?" "Oh, because he is so dry, mamma, I don't see how the Creator could make him stick together."

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$3,600.

Lombard, bet. Mason and Powell. Two-story frame.
O.—W. Ranbinger.
A.—Geo. H. Miller.
C.—Thom Worden.
$3,600.

M

Minna, bet. Eighth and Ninth. Two-story frame.
O.—T. Anglim.
C.—P. F. Lynch.
$2,500.

McAllister, bet. Broderick and Baker. Two-story frame.
O. and B.—Fr. Metzger.
$3,000.

McAllister, nr. Broderick. Two-story frame.
O.—J. Owens.
A.—Schmidt & Havens.
C.—J. Owens.
$3,000.

McAllister, bet. Octavia and Laguna. Two-story frame.
O.—P. Burns.
A.—T. J. Welsh.
C.—Cupps & Green.
$4,000.

Montgomery Ave., near Jackson. Improvements.
O.—J. S. Levy.
A.—B. E. Henriksen.
C.—P. H. Jackson & Co.
$800.

Mission Road. Two one-story frames and barn.
O.—C. Stagg.
A.—T. J. Welsh.
C.—Stecker & Son.
$4,000.

Mason, corner Dikeman Place. Three-story frame.
O.—J. O'Conner.
C.—M. Walsh.
$9,500.

N

Nineteenth, nr. Guerrero. Three two-story frames.
O.—Mme. Gensoul.
A.—Huerne & Everett.
C.—W. B. Kreger.
$6,000.

Nineteenth, nr. Guerrero. Additions.
O.—Mrs. M. O'Connor.
C.—J. McCarty.
$600.

Noe, nr. Eighteenth. One-story frame.
O.—Mrs. A. Luscombe.
C.—J. Bartlett.
$2,500

Noe, nr. Sixteenth and Market. Two-story frame.
O.—Mrs. M. Colman.
A.—T. J. Welch.
C.—J. Brickley.
$4,000.

P

Pacific, nr. Gough. Two-story frame.
O.—J. S. Webster.
A.—F. Bernard.
C.—F. W. Kern.
$8,500

Pine, nr. Steiner. Two-story frame.
A.—J. O. Pelton.
C.—J. H. McKay.
$3,500.

Pacific, nr. Sansome. Three-story frame.
O.—A. Chichizola.
C.—H. J. Wies.
$4,000.

Pine, bet. Buchanan and Webster. Finishing.
O.—W. Forner.
A.—Geo. H. Burdwell.
C.—J. B. Coggswell.
$2,500.

S

Silver Ave., nr. San Bruno road. One-story frame.
O.—Jas S. Bailey.
C.—F. Bohnenberg.
$1,500.

Sutter, bet. Lyon & Baker. One-story frame.
O.—P. Owens.
C.—C. Cristy.
$2,000.

Sacramento, bet. Lyon and Baker. Alterations.
O.—California Woman's Hospital.
A.—Wright & Sanders.
C.—J. C. Burpee.
$15,000.

San Jose Ave., cor. Day. One-story frame.
O. and B.—J. Gillogley.
$1,800.

Sixteenth, near Market. Two-story frame.
O. and B.—B. Y. Ayer.
$8,500.

Sixteenth, cor. De Hon. Two-story frame.
O.—Wm. Martin
C.—B. C. Bell.
$2,700.

Sacramento, nr. Scott. Two-story frame.
O.—Mrs. M. M. Mathews.
C.—S. Hatfield.
$2,800.

Sacramento, cor. Broderick. Two-story frame.
O.—B. G. Eldridge.
A.—J. C. Pelton.
C.—W. H. Wickersham.
$8,800.

Stockton, cor. Washington. Four-story brick.
O.—W. H. Howard.
A.—Percy & Hamilton.
Days' work.
$25,000.

Stevenson, near Twenty-first. Two-story frame.
O.—T. H. Moore.
A.—J. T. Kidd.
C.—J. M. Comerford.
$2,000.

Sacramento, nr. Davis. Four-story brick.
O.—Deming Bros.
C.—Geo. Richardson.
$25,000.

T

Twenty-fourth, nr. Sanchez. One-story frame.
O.—J. M. Comerford.
A.—J. T. Kidd.
C.—J. M. Comerford.
$2,500.

Twenty-first, bet. Church and Sanchez. One-story frame.
O.—Capt. Nicholson.
A.—Schmidt & Havens.
C.—E. W. Rea.
$2,600

Tehama, bet. Fifth and Sixth. Alterations.
O.—Mrs. A. Boyle.
A.—Wolfe & Son.
C.—T. J. Hamilton.
$700.

Twenty-eighth, corner Church. Additions St. Paul's Church.
O.—L. Breslin.
A.—T. J. Welsh.
C.—Owens Bros.
$5,000.

Twenty-first, nr. Jessie. Alterations and additions.
O.—John L. Boone.
A.—Wolfe & Son.
Day's work.
$3,500.

Twenty-first, nr. Valencia. Alterations.
O.—Mrs. S. Pettit.
C.—F. Buckley.
$1,400.

Treat Ave, bet. Twenty-fourth and Twenty-fifth St. Two one-story frames.
O.—P. Angline.
C.—P. F. Lynch.
$2,500.

U

Union, cor. Buchanan. One-story frame.
O. J. Gundlach.
C.—Gustave Krone.
$1,800.

Union, near Hyde. Two-story frame.
O.—Wm. Sloane.
C.—Wm. Sinon.
$3,000.

V

Valley, nr. Sanchez. One-story frame.
O. and B.—J. M. Comerford.
$1,200.

W

Washington, bet. Leavenworth and Hyde. Two-story frame.
O.—D. L. Harbach.
A.—W. G. Copland.
C.—W. F. Fitzpatrick.
$4,500.

Waverly Place, corner Pine. Alterations.
O.—Colombo & Co.
C.—Kilenger & Cate.
$2,000.

Webster, bet. Fulton and Grove. Two-story frame.
O.—W. Koch.
A.—H. D. Mitchell.
C.—Jas. Geary.
$6,000.

Santa Clara—Alterations. O., Old Mission Church; A., B. J. Clinch; C., Jas. Binet; $4,400.

San Jose—One-story frame. O., Sisters Notre Dame; A., B. J. Clinch; C., Clarck & Hatton; $2,500. Improvements. O., Jesuit Fathers; A., B. J. Clinch; C., Forderer & Boyle; $4,000. Eighth Street—One-story frame. O., Miss J. Kennedy; A., Jacob Lenzen & Son; C., Robt. Smineers; $1,325. Park Avenue—One-story frame. O., M. Lenzen; A., Jacob Lenzen & Son; C., H. C. Stow; $1,350. Near town. Two-story frame. O., E. A. Van Dalsen; A., T. Lenzen; C., A. Pitkin; $4,850. Third Street bet. St. Johns and St. James. O., J. W. Blaner; A., I. Lenzen; C., P. R. Wells; $4,300. Park Avenue, nr. Market. O., B. Myers; A., I. Lenzen; C., A. J. McIlwain; $3,500.

San Rafael—Two-story frame. O., Mrs. E. Kennedy; A., B. J. Clinch; C., J. McElroy; $4,400.

Berkeley—One-story frame. O., Mrs. D. Corrick; A., B. J. Clinch; C., A. Kochsischwang; $2,000. Two one-story frames. O., W. A. Fredericks; A., Schmidt & Havens; C., J. Parker; $4,000.

Milpitas—Tanks and tank frames. O., Alms House; A., Jacob Lenzen & Son; C., E. A. Van Dolsen; $2,000.

Evergreen—Wine Vaults. O., Wm. Burns; A., Jacob Lenzen & Son; C., J. Carter; $1,000.

Dixon—One-story frame. O., James Porter; A., N. D. Goodell; C., Covell & Landrum; $1,500.

Sacramento—H Street, bet. Eleventh and Twelfth. Alterations. O., James Farris; A., N. D. Goodell; C., Siller Bros.; $1,500. P Street, bet. Ninth and Tenth. Two-story frame school, ten class-rooms. O., City of Sacramento; A., N. D. Goodell; C., Thos. McCaffrey; $15,000.

San Mateo—Two-story frame. O., A. Hayward; A., Percy & Hamilton; day's work; $90,000.

Oakland—Center Street, cor. Eighth. Two-story frame. O., C. O. Brigham; A., Geo A. Bordwell; C., F. W. Kern; $3,500. Center Street, cor. Eighth. Alterations. O., J. C. Happe; A., Geo. A. Bordwell; C., F. W. Kern; $6,500

Contra Costa—Two-story frame. O., Mrs. J. Gallagher; A., J. Marquis; day's work; $4,000.

Temescal—Alterations. O., Jas. Eva; A., J. Marquis; day's work; $1,000.

Menlo Park—One-story frame. O., Episcopal Church; A., J. Marquis; day's work; $1,000.

Woodland—Two-story frame. O., Milton Enyard; C., W. H. Winne; $3,600. Walnut Street. One-story frame. O., Warren Hord; A., W. H. Carson; C., Glenn & White; $3,000. Sixth Street. One-story frame. Woodland Winery Association; capital for buildings and outfitting, $15,000. Main Street. Improvements on Woodland Planing Mill. O. and B., S. Caldwell; $1,000. Main Street. Two-story frame. Improvements. O., F. W. Brendel; C., Gammel & Boots; $1,000. North Street. One-story frame. O., M. Zirker; $1,000. Elm Street. Two-story frame mill. O. and B., Glenn & White; $4,500. North Street. One-story frame. O. & B., John Danniels; A., Gilbert & Son; $1,000.

Capay—One-story frame. O., P. Everett; day's work; $1,800.

Madison—One-story frame. O., M. Farlen; C., Amesbury & Davis; $1,000.

Yolo—One-story frame. O., Henry Kast; C., G. W. Cooper; $1,200.

Winters—One-story frame. O., W. J. Cannedy; $1,000.

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The California Architect and Building News.

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Our Building Reports.

OWING to unexpected interruptions in the management of this Journal, occurring in June last, which were not anticipated nor the contingency to any extent provided for, very naturally imposed temporary difficulty, which has required a little time and some effort to rectify and arrange; and, perhaps, some practically immaterial inaccuracies in figures in connection with the building reports have occurred. But these being now all overcome, from this issue and onward, the reports in this Journal may be relied upon as more nearly correct than can be found through any other source. Our annual report and summary will be prepared with every possible care, so as to show the transactions for the year as nearly perfect as unequaled facilities and earnest attention can make them.

Architects, contractors, builders, owners, and others will confer a great favor by furnishing the editor of this Journal with information upon points of error of any character, in whatever connection found, as we desire to have every item and every statement appearing in the columns of this Journal, scrupulously correct and reliable.

SUMMARY FOR SEPTEMBER.

118	New Frame Buildings	$509,050
8	" Brick "	73,550
43	" Alterations	163,590
169	buildings	$746,100

These figures show a considerable increase in building activities over the preceding month. A careful review for the twelve months may develop some inaccuracies, and if so, the necessary corrections will be made.

NOTICE.—*The name of this Journal having been used by parties not in any manner connected with this office, to obtain building intelligence and information intended for its columns, architects, contractors and others will hereafter please assure themselves before furnishing same, that the party canvassing is properly authorized to represent us. Authorized canvassers will be supplied with sufficient evidence upon this point.*

When stained glass windows are used in private houses, it should be remembered that the effect of the colored glass upon the light coming through it is to give to it its own tint, and should this chance to fall upon furniture, carpet, or wall, whose color, may be, is affected unpleasantly by that of the window, the result would be perpetually disagreeable. In churches, cathedrals, or public buildings, where colored windows are introduced, it will be noticed that their surroundings are plain, generally the stone or marble of the building.

The Present Building Outlook.

THERE is a singular anomaly in the present aspect of building activities. The general expressions in commercial and business circles is, "Times are exceedingly dull;" "business is poor;" "aren't clearing expenses," etc., yet the erection of buildings goes on as lively as might be expected under the most prosperous and active condition of general trade and commerce, with but little, if any apparent increase in the number of buildings to let. One year ago or more, it was generally regarded and stated that "building was being overdone," and that an early grand collapse was inevitable in this connection; still a monthly addition has been made since then, of about one hundred houses, representing well-nigh two hundred new places of abode, or homes for families, many of the contracts reported representing "flats" of two and three stories, and single buildings sometimes containing six or more family apartments. Still the number of unoccupied houses and tenements has increased but little, if any, and architects and builders continue to be busy, with but little signs of abatement.

Much new work is now in course of preparation in the offices of the architects, and a good fall business is assured. The low cost of material has and has had much to do with this state of things; but in addition to this the "common people,"—small traders, mechanics, laborers, and wage earners,—have, as a rule, accumulated and saved money sufficient to enable them to secure lots and improve them, and wisely, very many of them are pursuing the safer course of investing in real estate, rather than jeopardizing their earnings by investments in stocks and uncertain securities.

Notice to Correspondents, Subscribers, and Patrons of this Journal.

A CHANGE HAVING OCCURRED IN ITS MANAGEMENT, GEO. H. WOLFE RETIRING,

All Parties in Business Relations, Correspondent, Financial, and Otherwise,

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—OR—
Editor California Architect and Building News,
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Discussion on the Mechanics' Lien Law.

THE subject of discussion before San Francisco Chapter of Architects at its special meeting held the 14th inst., was the Mechanics' Lien Law of the State of California.

Mr. T. A. Eisen led the discussion, in a review of the several sections of the law as amended at the last session of the Legislature of this State, pointing out its many defects, inconsistencies and illegalities, and showing up its inharmonies with well-known principles of common law, the law of contracts, and the decisions of the Supreme Court of California. Also exposing the private interests sought to be favored, on the part of those who at their own cost and expense employed a well-known "limb of the law" to concoct the amendments as passed, knowing that after passage the cruel thing could not be again amended until the next session of the law making body, and that during that period at least, some personal benefits might be derived, through the cumbersome and in some respects obscure working of the law as it stands, by which advantages may be taken of technicalities, and owners, rather than pay the cost of appeal to the supreme court, may be made to pay monies for which they could not be holden, under a fair and equitable statute, in keeping with the constructions and ethics of law as heretofore announced by the court of last resort, on former appeals. The views expressed by Mr. Eisen were indorsed by all the members present, and for the purpose of more fully considering the subject, its further discussion was continued, to be taken up at subsequent meetings of the chapter.

There cannot be any question as to the palpable illegality of some of the provisions. That compelling the *filing* of contracts with the county recorder is a violation of personal right, which will be set aside whenever that question is submitted for final decision. A contract is private property, an agreement between the parties of the first and second part, and it cannot be removed and held from the possession of the rightful owner by any process of law. Its *recording* might possibly be required, but it would be just as reasonable to say that no deed of trust, transfer, conveyance, etc., should be valid, unless *filed*—stowed away in the safe keeping of the officer of records. And the gentleman who framed that section not only doubted "*whether it would stick*," but knew that it was an extravagant stretch of legal tactics that would not be sustained when passed upon by the proper tribunal. But aside from this view of the section referred to, it is a most unnecessary provision, serving no good purpose—is impractical, because never availed of—and is troublesome and expensive.

The preposterousness of the proposition is shown by its practical application: for instance, an owner residing in San Francisco determines to erect a building costing over $1,000, in any county of the State, it may be the most distant from this center, and there being no planing mills, dealers in building materials, nor competent mechanics in that locality, as a matter of necessity all materials would be forwarded from San Francisco or some other place distant from the improvement contemplated; and the contractor as well must, and naturally would in such cases, be found in this city. So that every party in interest would be in San Francisco. But the law demands that before any work is commenced, or any material furnished, the contract must be *filed* with the county recorder of the county *in which the work is to be executed;* and unless so filed before commencement, the contract to become void, and all parties then to have recourse on the owner under the rule of day's work.

Consequently, if a building or other construction is contracted to be built in Sierra County, and the owner does not send the contract beyond his reach for filing in the county recorder's office, of the county named, his contract rights cease. And further, all parties furnishing material, etc., if they desire to examine the original contract which is the pretext upon which the obnoxious amendment is based, must go or send hundreds of miles from the place of his business to see the document, which in all reason should be in the owner's or his agent's possession, and a copy in the possession of the contractor. The concoction is an overreach which fails both in fairness and justice, and is useless to those perpetrating it, except so far as the "little joker" may in some cases prove the winning card, over the right and left bowers of right and justice; and it is questionable whether, while the arrangement holds, and subjects thousands of owners, architects, and contractors to the annoyances and expense of filing contracts, a single one of those who have been instrumental in imposing the hardship, or others in their line, will ever avail themselves of the protection proposed by the amendment.

The delay of thirty-five days after the completion of the building or works for the payment of the twenty-five per cent of contract money held for that period, is another foolish and oppressive provision. The argument that responsible contractors can afford to wait, is fallacious, for experience proves that the penniless scrubs can secure credit from material men which places them practically upon equal footing with the best. Consequently the good and bad can go on just the same, whether the monies of the contract are paid at completion or at any other deferred period; and the objectionable amendment or any other of like character fails to effect the purpose contemplated. But somebody must under the law be all the same kept out of monies due them for thirty-five days. As long as business facilities and favors are extended to the impecunious class of contractors, by material men, planing mills, etc., there will be a way found by them to practically nullify all enactments of character and intent such as that under review.

Science in Architecture.

[Written for this Journal by F. Hillert, architect and mechanical engineer.]

SCIENCE is the interpretation and knowledge of the laws of nature, and the forces governing the same. Man is commanded to investigate and use them for his moral and intellectual welfare, his health and material benefit.

Science has no nationality, but is the collective and aggregate accumulation of the intellectual work of men, both of the past and the present. Its information is extensive, and is found applied in all occupations of men—probably unknown to him—its singular laws governing not one but all of them. The study of the sciences and their investigations cannot be too much recommended.

SCIENCE ON HEAT AS APPLIED IN DOMESTIC ARCHITECTURE.

Heat is a power used for domestic purposes, for mechanical and industrial work. Heat produces work, and work can be converted to heat. Heat must be attached to a medium, and by the abstraction of the same therefrom, work is accomplished.

Heating is the judicious transmitting of heat to fluids or solid bodies; to the air for domestic warming purposes, to the changing of fluids to steam and vapors, to be used at the place of creation for the desired work, or to be conveyed hence to a more convenient place for the abstraction of its work. The necessary heat, therefore, is to be first created by the combustion—a chemical process of uniting the chemical elements of the fuel with oxide—developing heat and light—of fuel on or in a fire-place arranged to collect the heat created, and to admit the atmospheric air required therefor, and the product therefrom, as fire gases by natural or artificial current or draft to be conveyed off, so as not to become obnoxious to men and its surroundings.

The fuel used for home and industrial purposes is in general the wood fiber—a carboniferous hydrate—a combination of carbon with hydrogen and oxygen (H_2O) in the same proportion as in water.

Carbon and hydrogen are the heat-producing elements, oxygen and nitrogen the heat-absorbing elements. The first, therefore, gives the real value to the fuel.

Combustibility of fuel is the greater and smaller capacity by which the same can be ignited and made to continue to burn, requiring therefor a certain high temperature, and is dependent on the condition and composition of the same; fuel being porous and containing a large quantity of hydrogen, has a larger combustibility than fuel, being dense and containing a smaller amount of hydrogen.

The heat developed by the perfect combustion of fuel—the changing of the carbon and the hydrogen contained in it to carbonic acid (CO_2) or water (H_2O)—can be measured in a double relation: by the quantity of heat developed and the degree of temperature (intensity) produced.

Since for heat there is no certain measure

we must be satisfied to give the relative quantity of the same, that is, how much more—quantity—heat is developed from the one fuel than from the other. If the comparative values of heat are referred to the unit of volume, we obtain the specific effect of heat, but when referred to the unit of weight we obtain the absolute heat, or caloric. Both valuations are dependent on the composition of the fuel, the specific heat of the fire gases created by combustion, the outer condition of fuel, its degree of moisture, and the quantity of ashes left as residue.

The heat felt by the sense of feeling and measured by thermometer, does not give the same as quantity.

By actual measurement it has been found by perfect oxidation that

1 unit of weight of carbon heats 8,080 weights of water.

1 unit of weight of hydrogen, 34,462 weights of water.

From 0° (centidegree) to 1°; the comparative figures thus obtained we call "caloric," or units of heat. In the same way the effects of heat are obtained for

Carbon changed to acid of carbon	8,080 cal.
Carbon changed to oxide of carbon	2,474 "
Carbonic acid to acid of carbon	2,413 "
Fire-damp	13,063 "
Petroleum (raw), our future fuel, and now extensively used in Russia on the Black Sea and its tributary rivers for navigation purposes	11,773 "
Wood, air dry	3,600 "
Peat (loose) existing in the tule lands	3,000 "
" pressed	4,300 "
Coal (mineral)	6,000—8,000 "

To give an estimate, how much measurable heat is bound or lost and named "caloric," mix 1lb of ice with 1lb of water of 75° temperature, we obtain 2 lbs of water of 0° temperature, 75° of temperature having been consumed by melting of 1 lb of ice.

For hydrogen and its combinations in the fuel, the values given above do not give the exact effect of heat, a portion of the same developed by combustion is lost and used for the evaporation of the water produced; but in consideration that water (H_2O) is composed of 1 atom of hydrogen and 16 atoms (8 molecules) of oxygen, making 9 units of water, and that in CH_2 and C_2H_4 are contained respectively ¼ and 1-7 of hydrogen—and, further, 600 units of heat are required to change and evaporate 1 unit of water—we obtain the corrected effect of heat, namely:

For hydrogen	34,462— 9.600 = 29,062 cal.
For fire-damp	13,063—9·4.600 = 11,713 "
For olefiant	11,358—3·7.600 = 11,087 "

And in round numbers for future application:

Oxide of carbon	CO	2,400 cal.
Hydrogen gas	H	29,062 "
Fire damp	CH_2	11,710 "
Olefiant	C_2H_4	11,090 "
Butelyn	C_4H_8	10,840 "

The results for carbon are obtained from the solid carbon of the charcoal. The combustion of a denser constituted carbon furnishes smaller results: Coal from gas retorts, 8 017 cal.; coal from sugar, 8,040 cal.; natural graphite, 7,844 cal.; graphite from furnaces, 7,785 cal.; diamant, 7,770 cal.

The absolute effect of heat can be calculated by the amount of water evaporated, namely: One unit of weight of water changed to steam of 150° temperature require 652 caloric, hence:

1 unit of solid carbon, giving $\frac{8080}{652} = 12.4$ units of steam.

1 unit of hydrogen, giving $\frac{34462}{652} = 52.9$ " "

Chemistry is the science of exact quantities, and uses at her experiments, scales and weights, and when the component elements of the various fuels are known, quantitatively, the effect of heat of the fuel can be calculated from the effects of the components, namely:

Air-dry wood is composed of 0.39 C + O, 40 H_2O, 0.015 ashes and 0.195 water. The effect of heat can be calculated with the assistance of the formula for the effect of heat: 8,000 C + 29,060 H - 680 H_2O - 600 W. In serting the quantitative values of the elements we obtain the effect of heat: 8.000. 0.39 + 29 060. O - 680. 0.40 - 600. 0.195=2,731 cal.

FUEL.	C	H	H_2O chemical water.	Hygroscopical water.	Ashes.	Effect of 1 lb. Heat.
Air-dry wood	.39	..	0. 40	0.195	0.015	2,731
Air-dry peat	.35	0. 01	0. 29	0. 25	0. 10	2,743
Bituminous coal	.50	0.015	0.205	0. 20	0. 08	4,146
Mineral coal	.8	0. 04	0. 09	0. 13	0. 04	7,488
Charcoal	.8	1. 0	0. 03	0. 16	0. 05	7,034
Coke	.8	1.005	0.015	0. 15	0. 06	7,005

The effect of heat from gaseous fuel, which is more economical, and a better combustion can be obtained—can be found with more certainty—when the component elements are known.

One unit of this gaseous fuel contains: H units of hydrogen, CH_2 of fire-damp, C_2H_4 olefiant, C_4H_8 Butelyn, CO oxide of carbon, CO_2 acid of carbon, N nitrogen. Formulating a formula as above, the effect of heat will be: 29.060 H + 11,170. CH_2 + 11,090 C_2H_4 + 10,840. C_4H_4 + 2,400 CO. And for the different gases:

	H	CH_2	C_2H_4	C_4H_8	CO	CO_2	N	Effect of Heat
Of illuminating gas	0.05	0 54	0 10	0 08	0.15	....	0.08	11,113
Furnace gas from coal	0.01	0.04	0.02	....	0 22	0.05	0.50	1,509
Furnace gas fm charcl.	....	0 01	....	....	0 30	0.00	0.63	887
Furnace gas from coke	....	....	....	....	0 35	0.01	0.64	840
Generat'r g's from w-od	0.01	....	....	....	0.34	0.12	0.53	1,107
Generat'r g's from peat	0.01	....	....	....	0. 22	0.14	0.63	819
Generat'r g's fm charcol	....	....	....	....	0 34	0.01	0.65	816
Generat'r g's from coke	....	....	....	....	0.34	0.01	0.65	816

Since the combustion of fuel is the chemical process of oxidation, taking the oxygen, therefore, from the abundant surrounding atmospheric air, which is a mechanical mixture, or diffusion of 77 parts of nitrogen and 23 parts of oxygen gas; and when the amount of atmospheric air required to burn 1 unit of fuel is $\frac{100}{23}$ times larger than the amount of oxygen consumed, and when the amount of the latter can be calculated from the known composition of the fuel, the atomical weight of carbon being 12, of hydrogen 1, of oxygen 16; when, further—1 unit of carbon and 1 unit of hydrogen is used for their change to acid of carbon and to water respectively $\frac{32}{12} = \frac{8}{3}$ and $\frac{8}{1}$ parts of oxide, than for 1 unit of fuel composed of C units of carbon, H units of free hydrogen, H_2O of chemical water, W units of hygroscopical water, and A units of ashes, we obtain the amount of atmospheric air required by $L = \frac{100}{23}(\frac{8}{3}C + 8H)$.

To obtain the amount and composition of the fire gases created from the burning of one unit of solid fuel, such as carbonic acid = Ac; units of water Aq; units of nitrogen and A units of ashes we form the formulas:—

$$Ac = \tfrac{11}{3} C; \; Aq = 9H + H_2O + W, \text{ and}$$
$$N = L + 1 - A - Ac - Aq.,$$

And for one unit of gaseous fuel, containing, besides nitrogen, H units of hydrogen, CH_2 units of fire-damp, C_2H_4 units of olefiant, C_4H_8 units of Butelyn, CO units of oxide of carbon, and CO_2 units of acid of carbon:—

$$L = \tfrac{100}{23}[8H + 4CH_2 + \tfrac{24}{7}(C_2H_4 + C_4H_8) + \tfrac{4}{7}CO.]$$

$$Ac = \tfrac{11}{4}\cdot CH_2 + \tfrac{22}{7}(C_2H_4 + C_4H_8) + \tfrac{11}{7}CO + CO_2.$$

$$Aq = 9H + \tfrac{9}{4}\cdot CH_2 + \tfrac{9}{7}(C_2H_4 + C_4H_8).$$

$$N \; L + 1 - Ac - Aq.$$

The atmospheric air required to burn up one unit of solid fuel is generally larger than L and equal up to 2 L and over, and can be set = m L, than will be the quantity of weight of the fire gases created from 1 unit of solid fuel fire gas = (m — 1) L + Ac + Aq + N.

If the mixture of the surplus of air, carbonic acid, nitrogen, and vapors (the moist containing in it) is of such a small quantity as not to bear any considerable effect on the state of condition of the fire gases. To investigate the action and condition of them in the fire channels and the smoke stacks, the density *d* and the specific heat *c* of the gas mixture must be known.

The density *d* of the mixture can be calculated from the density of its compounds; when

(m — 1) L units of surplus air = density = 1.
Ac = carbonic acid = 1.529.
Aq = vapors = 0.623.
N = nitrogen = 0.971.

Then the fire gas mixture will have a density of

$$d = \frac{G}{(m-1)L + \frac{Ac}{1.529} + \frac{Aq}{0.623} + \frac{N}{0.971}}$$

The specific heat of the fire gases could as easily be computed from the specific heat of the compounds, if the same, for instance for carbonic acid and vapors, for the different high temperatures would be constant, for they with sufficient correctness for all practical purposes would be set equal to 0.24.

$$c = \frac{0.24\,(G - Aq) + 0.48\,Aq}{G} = 0.24\,(1 + \frac{Aq}{G})$$

With the assistance of the above given formulas and the previous components of the different fuels given, the quantities of air necessary for a perfect combustion of one unit of solid fuel, the quantities and conditions of the fire gases can be computed, and are given in the next following table.

Mineral coal composed of 0.80 C, 0.04 H., 0.09 H_2O, 0.03 W., 0.04 A.

The amount of air required is:—

$L = \frac{100}{23} \cdot (\frac{8}{3} C + 8 H) = \frac{100}{23} \cdot (\frac{8}{3} \times 0.80 + 8\ 0.04) = 10.67.$

Carbonic acid gas = $Ac = \frac{11}{3} C = \frac{11}{3}\ 0.80 = 2.93.$

Vapors = $Aq = 9\ H + H_2O + W = 9 \times 0.04 + 0.09 + 0.03 = 0.48.$

Nitrogen = $N = L + 1 - A - Ac - Aq = 10.67 + 1 - 2.93 - 0.48 = 11.67 - 3.45 = 8.22.$

The density of the mixture is:—

$$d = \frac{G}{(m-1)\,L + \frac{Ac}{1.529} + \frac{Aq}{0.623} + \frac{N}{0.971}} = \frac{22}{(2-1)\,10.67 + \frac{2.93}{1.529} + \frac{0.48}{0.623} + \frac{8.22}{0.971}} = 1.022$$

The weight of the gas is: for m = 2.

$G = (m-1)\,L + Ac + Aq + N = 10.67 + 2.93 + 0.48 + 8.22 = 22.30.$

And the specific heat is:—

$$c = 0.24\,(1 + \frac{Aq}{G}) = 0.24\,(1 + \frac{0.48}{22.30}) = 0.245.$$

NAME OF FUEL.	Air required.	Air obtained.	Aq, AQ	Nitrogen	m = 1. G.	m = 1. d.	m = 1. c.	m = 2. G.	m = 2. d.	m = 2. c.
Wood	4.52	1.43	0.60	3.48	5.50	1.003	0.266	10.02	1.002	0.254
Peat	4.41	1.28	0.63	3.40	5.31	0.993	0.268	9.72	0.996	0.256
Bituminous Coal	6.32	1.83	0.54	4.87	7.24	1.023	0.258	13.56	1.012	0.250
Mineral Coal	10.67	2.93	0.48	8.22	11.63	1.043	0.250	22.30	1.012	0.245
Charcoal	10.20	3.12	0.18	7.85	11.15	1.071	0.244	21.35	1.036	0.242
Coke	10.26	3.19	0.11	7.90	11.20	1.077	0.242	21.46	1.039	0.241

Quantities of air required for the perfect combustion of 1 unit of gaseous fuel, the quantities and conditions of the fire gases:—

GAS MIXTURE.	L.	Ac.	Ag.	N.	G.	d.	c.
Illuminating gas	14.19	2.29	1.90	11.00	15.19	0.957	0.270
Furnace gas from coal	1.39	0.67	0.21	2.01	2.89	1.016	0.258
Furnace gas from charcl	0.92	0.56	0.02	1.34	1.92	1.080	0.247
Furnace gas from coke	0.87	0.56	....	1 31	1.87	0.09	.242
Generator gas from wood	0.19	0.65	0 09	1 45	2.19	1.062	0 259
Generator gas from peat	0.89	0.49	0.09	1.31	1.89	1.042	0.250
Generator gas f'm char'l	0.84	0.54	....	1.30	1.84	1.087	0.241
Generator gas from coke	0.84	0.54	....	1.30	1.84	1.08	0.240

The temperature of the fire gases, or the intensity of the heat, could be readily calculated from the kind of fuel and the proportionate quantity of air used, if the combustion would be perfect, or, pro unit of the fuel used, the quantity of heat created could be applied for the increase of temperature of the fire gases, but such is not the case; then, a portion of the fuel falls into the ash-pit unconsumed, the loss of heat by heating of the fuel freshly given up, which is of a low temperature, by the loss of heat consumed for the evaporation of the hydroscopic water, and for heating of the cold air entering through the fire door into the fire-place; the existing heat becomes insufficient for the perfect combustion—the union of the carbon with hydrogen. The carbon, divided into small particles, enveloped by the vapors of the hygroscopic water, escapes and forms the black smoke after every new filling up of the fire grating with fuel; after the period of black smoke follows one of a lighter smoke, containing a smaller amount of solid carbon (sod), but considerable quantities of imperfectly burned gases, oxide of carbon, hydrocarbonic combination and hydrogen, occasioned by the insufficient air, or the imperfect mixture of the same with the distilled combustible gases. Further: from the heat produced, a portion of it is lost by radiation into the ash-pit and the surroundings of the fire-place. (The open fires and the fire-place used for warming the rooms of our houses are the most imperfect arrangement for combustion, as we only utilize the radiating heat from the fire-place and the back wall of the same.) We take the agreeability at the expense of the wasted fuel and it being fashionable. The ranges used for cooking do the same, only by radiation from the fire-place. A great saving of fuel may be and is had from the use of the continuous brick and lime kiln, etc.

T_5, the quantity of heat, in consideration of the losses and the imperfect combustion, of 1 unit of fuel developed for use = Y K; Y should be named the degree of effect of the fire, and S Y, K the amount of radiation against the direct and indirect heating surfaces, then is the temperature:

$$\frac{(1-5)\ Y\ K}{(m\ L + 1)\ c}$$

Assailable for the increase of the temperature of the products of combustion of 1 unit of fuel, wherein m L + 1 is the weight of the product and m L the weight of atmospheric air used, and c the specific heat of the same, and 5 is the proportion of the heat radiated towards the heated surface to the heat usefully developed. If we set m = 1, y = 1, s = 0, we find the highest possible temperature of the following named fuels (practically not obtainable) to be:

	degs.		degs.
Air-dry wood	1,860	Furnace gas from coal	2,032
Air-dry peat	1,892	" " from charcoal	1,801
Bituminous coal	2,211	" " from coke	1,872
Coal	2,565	Generator gas of wood	2,022
Charcoal	2,574	" " " of peat	1,726
Coke	2,593	" " " of charcoal	1,848
Illuminating gas	2,466	" " " of coke	1,848

For, technically, the most important fuel, the coal, we set the specific heat of the product of combustion = 0.25, and with K = 7,483 we obtain the temperature:

$$t = \frac{29{,}932\ (1-s)\ y}{10.67\ m + 1} = \begin{cases} 1{,}760\ (1-s)\ y, \text{ for m} = 1.5 \\ 1{,}340\ (1-s)\ y, \text{ for m} = 2 \end{cases}$$

To the temperature existing in the fire, room must be added for the temperature of the air admitted, and with gaseous fuel the temperature of the same, which is considerable.

The melting points of some of the different metals are from 1,000–2,500 degrees, and for their reduction require a high temperature, only to be obtained by the perfect combustion of the available fuel.

(To be continued.)

A New Sash-Lock Device.

DURING the past decade, sash-lock devices almost innumerable have been invented, patented, and placed on the market, some of them displaying a good degree of inventive and mechanical genius, and standing well in favor among architects and owners. The latest invention is

THE IVES' PATENT SASH-LOCK,

A device differing materially from all others, operating by cam combination, without any spring, and therefore not liable to get out of order. They are manufactured by Hobert B. Ives, New Haven, Conn., and on sale in this market by Huntington, Hopkins & Co., sole agents for the Pacific Coast. The cut shows

the peculiar shape of the lock. There are two motions of the handle, the first locking the sash, which leaves the handle at right angle with the meeting rail, and the second, by a cam movement, drawing the sash tightly together, and placing the handle parallel with the face of the sash. Until something still better is invented, they are likely to assume pre-eminence, and be the lock of the future. They are made of bronze nickel and all the lesser grades of metal, and at prices placing them in full competition with the best of makes.

There is a science, after all, in so simple a matter as driving a nail. A correspondent writes that he recently witnessed the experiment of driving nails into timber that had been hard seasoned and well dried. The first nails, after passing through an ordinary board, went into the timber about an inch and then doubled up under the hammer. The tips of the rest of the nails were dipped into lard, and the driving was accomplished without any difficulty. The remedy is not a new one, but it is simple enough to be recommended for trial.

S. F. Chapter of Architects.

A SPECIAL meeting of the chapter was held August 21, Vice-president Pissis presiding; the committee appointed at the previous regular meeting to nominate officers for the ensuing year, submitted their report, which was approved by vote of the Chapter. Other nominations were then added, after which the discussion of the Mechanics' Lien Law of the State of California was opened by T. A. Eisen, followed by expressions of disfavor from all present. (A partial review of the subject matter will be found in another column.)

The regular annual meeting was held Sept. 4, with a large attendance, Vice-president Pissis again presiding. The minutes of previous regular monthly, and the special meetings having been read, amended and approved, the report of the committee on apprenticeship indentures was presented, read and adopted, and 250 copies ordered printed for the use of the members of the Chapter. The trustees, committees on classes, investigating committees, etc., made their reports. Mr. W. A. Boring, of Los Angeles, was elected unanimously as a fellow of the Chapter. Other Chapter business being disposed of, and the election of officers for the ensuing year being next in order, the names of candidates for the respective offices were read by the secretary, and the balloting commenced with the following result: President, Wm. Curlett; Vice-president, T. A. Eisen; Secretary, B. E. Henricksen; Treasurer, Seth Babson; Trustees, Augustus Laver, G. H. Sanders, Thos. J. Welsh, J. B. Whittemore, and J. J. Clark.

The report of the retiring, and the installation of the newly elected officers will form the features of interest at the October meeting. The harmony and good feeling that characterized the proceedings, rendered the occasion pleasant.

The committee appointed some months ago, to review and report upon the "Fire Ordinances" of city and county of San Francisco, in which are also mixed up what should be distinctly and separately known as the "Building Laws"—not being prepared to report, the subject matter was commented upon by several of those present, expressing the opinion that the present fire ordinances might be materially changed and amended for the better, removing many of the objectionable features, both in the ordinances themselves, and the manner and character of interpretation and enforcement.

The lead covering of the dome of St. Peter's at Rome has lately been successfully renewed. The work has occupied twelve years, and has cost £8,000. Lead was imported from Spain for this special purpose, and was mixed with the old lead in the proportion of one part of the latter to two of the former. The total weight of the new covering is about 350 tons, and it is calculated that if laid in sheets, one-fifth of an inch in thickness, it would cover a space of above 70,000 square feet.

Profits and Losses on Building Contracts.

MOST people imagine that the profits from house building in California are large, and that contractors as a rule have made and are making "young fortunes" from their contracting successes; that they are a "well-to-do" class, with comfortable bank accounts to their credit, and ample cash on hand or at command. This to a limited extent is true, but in the main, a great error; yet a conclusion of this character is justified and reasonable, judged by the very large amount of money passing through their hands. Millions of dollars are yearly handled by them, and if a fair, right, and equitable percentage of profits were realized on all transactions, with but occasional loss to a few, the result would justify the presumption that those who build homes and structures for others, were also building and constructing the foundations for, if not the superstructures complete, of competency when age and whitened locks betray the period when active toils and labors should be laid aside for that rest and repose which should come to those who have spent the years of their earlier manhood in hard contests and business conflicts; and the heads and hands long pressed by the many cares, inflictions, and responsibilities which must be encountered during life's devotion to figuring, planning, calculating, managing, and close application to the innumerable demands upon the best energies of mind, intellect and body; should be freed from the necessities of continuing the struggle until the cords of life are stranded and the once active frame laid within the casket.

But the facts of the case do not sustain this presumption as a whole. Some few, and very few of the many thousands who have devoted themselves to house construction under contracts awarded in competition, have done fairly well, maintaining a good reputation for skill, competency, and prudent management, and consequent financial promptness. But the great majority, perhaps seven-tenths or more of the entire number, have gone on from year to year exhausting their time and energies, and the strength and vigor of their manhood, with no better profits to themselves than the mere subsistence gleaned from the monies handled—hundreds of them being compelled, through bad calculations and mismanagement, to defraud creditors by pro ratio settlements, or inflicting still greater wrong by absconding to parts unknown, carrying with them all within possible reach, leaving those who have trusted them to reap the full measure of absolute and total loss of all balances.

The proofs in this connection are numerous; and if the shortages, abscondings, and clean profits were footed up, and a truthful balance arrived at, it would be found that the sum of losses by material men, sub-contractors, and workmen, from and by reason of the blundering incompetency, ignorance, carelessness, and often premeditated wrecklessness and dishonesties of a very large number of men denominating themselves, and aping competency as contractors, would far exceed all the profits derived by those who have done well and paid their way, with something to show as the result of true efficiency, careful management, and business integrity.

HOW ARE THESE LOSSES PROVIDED FOR?

The question naturally intervenes, if all this be true, how do material men and other losers compensate and equalize these losses? The answer is simple and plain. *First*, the shortages, if the party paying short is actuated by any degree of honesty in the settlement, leaves him a pitiable, penniless object, with nothing but discredit if not absolute dishonor in his disastrous undertaking; a practical business fool, having agreed and undertaken to do an impossible thing, *i. e.*, fixing a false value upon a something to be done, and agreeing to do it for a less sum than actual cost, thus exhausting himself—time, means, and energies—and, without their consent, prospectively involving other parties in the results of his personal stupidity, and himself a bankrupt or a rogue. *Secondly*, as a matter of course, material men and others, knowing these facts, must of necessity compensate these losses, by increase of prices to good paying, honest parties. It cannot be otherwise; for if the right, fair, and reasonable profits on merchandise, and crude or manufactured materials is twenty per cent, with no margin for excesses, the twenty per cent must and will be preserved when possible. And with the fact in view that in the natural order of things losses to an average amount of five to ten per cent are sure to occur, the contingencies must be and are provided for by increase charges all around, sufficient to make the average result what it should be. So that while the advance is charged to all, the excesses paid barely compensate for the shortages, and leave the seller whole with his legitimate profits. But those who cause this state of things—the tenth rate contracting frauds—are left penniless; unless by scheming tricks and absolute, practical dishonest purpose and design, they pocket monies rightfully belonging to others, under the dishonorable pretext that they are entitled to pay for their services, let who may suffer. And the disposition manifested in a majority of these cases is a don't-care-ativeness as to who is hurt, with no sense of shame for the state of things existing. The base consolation that "plenty of others have done the same thing," seems to satisfy, and wipe out all consideration of any wrong having been done.

An English lockmaker has constructed a key which he says is capable of opening 22,600 patent lever locks, all of which differ in their wards or combinations. As described, the key weighs three ounces, is nickel plated, and is said to be the result of three years' labor on the part of the inventor in making drawings of different wards and combinations.

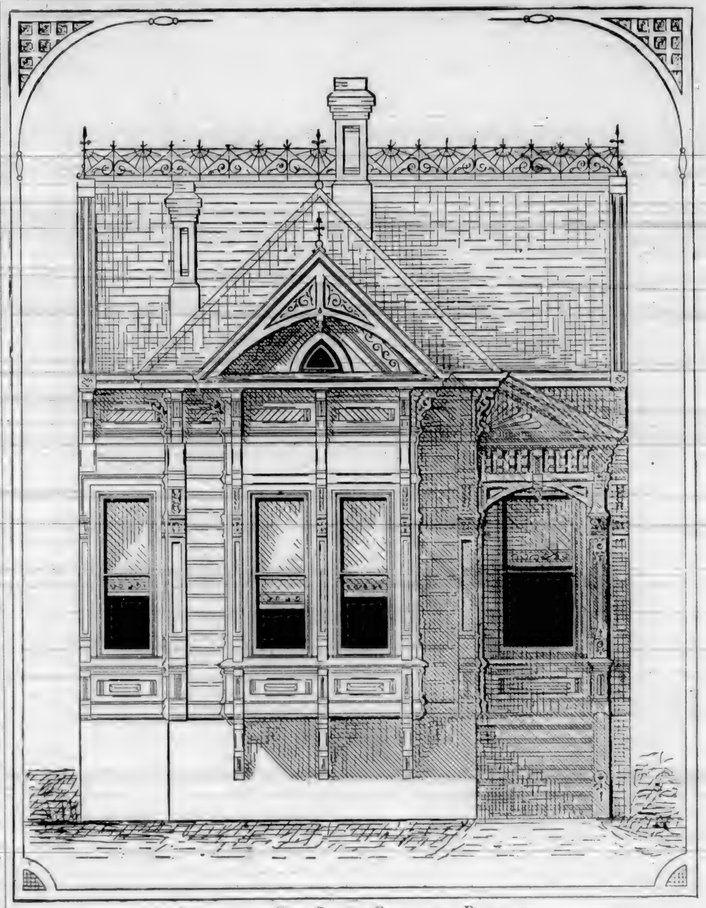
White Lead and Its Substitutes.

THERE has been much written about this leaden subject, and as the metal is of large production, its consumption is increasing in volume, we may venture a few logical suggestions about its manipulation by the corroders of white lead. In speaking of lead when acted upon chemically, we must speak of the acids as formed and the acetates in many of its compounds. The old Dutch process is now admitted to be the best method of corroding pure metallic lead, namely: After the lead has been corroded in the form of thin sheets laid over pots containing acetic acid, the carbonated portion of these sheets is separated and ground in a bath of water to free it from acetic acid, and if so done the white lead will be found in the form of a compound of hydrate and carbonate, as one to two as named; and when ground in about twelve per cent of linseed oil, to the proper grade of fineness, it is then run into packages and branded as the pure white lead of commerce. Now, if the foregoing process is not carefully done the result will be too much acetate of lead combined with the carbonate for a free, limpid, working lead. In such cases the lead is found to be lumpy, or drying solidly *en masse*, if kept in store for any lengthy period. The acetate, or sugar of lead, is a good dryer, and for that reason should be all taken out, so that the carbonate and hydrate will form a smooth, soft paste of lead.

The "stencil" mark of *pure white lead* is a misnomer, as there is no lead in packages but what bears the mark of pure lead. No person can tell whether the lead is pure without the maker's name is attached to certify to the contents. As there are large quantities of these fictitious brands (*no name*) sold in our markets, the buyers should beware of pure white lead that has only a *brand* to recommend it. The intentional impurities of white lead are very numerous. The Kremnitz White, or Flake White, are among the purest found in any market. In Europe there is the Venice, which is composed half and half, one part sulphate baryta and one of white lead. Then there is the Hamburg White, which has only one-third pure white lead, and the remainder is made up of sulphate of baryta. The Dutch White is only its inferior by having only one-fourth white lead and three-fourths, by weight, of sulphate of baryta. What is this baryta? It is only one of the simple earths, called by Bergman *terra ponderosa*, or heavy spar. The mineral is reduced by a chemical process to a heavy white powder, not very opaque in body, and hence its employment in adulterating white leads which have great body or covering qualities. What has been said of those foreign brands is largely improved upon in the United States, for they beat the Dutch so bad that there is scarcely left a trace of white lead in some of the fancy brands which read "25 lbs. Pure White Lead."

The competition between manufacturers is so great, with large trade influences, that *vast* quantities of inferior brands of white lead are sold at so low a rate that the better brands of pure white lead, which sell for a slight advance in price, are limited in sale to the better class of painters. This is the true state of the case. While we have lead mines all over the Western States by the thousand, capable of producing millions of tons of pure ore, our American white lead manufacturers import cargoes of baryta and make up fraudulent brands of *pure* white lead and continue to impose upon a long-suffering public for the almighty dollar. One of the consequences of this system of manufacture has led to the birth and growth of a twin evil to the trade, and that is the making of ready-mixed paints, canned goods in all colors of dope, hermetically sealed in tin, good in any climate. In most cases these infallible mixtures are free from pure lead, being adulterated with the heavy-weighted baryta, not to improve their color or purity, but to give bulk and weight and less in quality. There are hundreds of factories in the United States that have their own peculiar mixtures, all warranted to be superior to any other, in having fine color and a durable gloss that will outwear any other brand of mixed paint. Thus it will be seen, that to afford capital an opportunity to make its investments profitable the *substitutes* must have their day. But the trade, house, sign and carriage painters, must educate the young apprentice to know what pure white lead will do, and the technical uses of pure pigments of every grade, and thus protect the trade from these abuses.

J. E. W. C.



ELEVATION ONE-STORY COTTAGE.—PLATE 1.

Builders' Guide	$ 2.00
Album of Mantels	8.00
History of Architecture	15.00
Building Superintendence	3.00
American Cottage Homes	3.00
Village and Country Homes	5.00

Architectural Competitions.

IF there is anything connected with the practice of architecture more fruitful of corruption and scandal than competitions we have yet to discover it. A recent sensation is reported from El Paso, Texas, where there was a competition a year ago for a Court House and jail, to which twenty-five architects, so-called, responded. One came in person all the way from Chicago only to see the prize captured by a San Antonio rival. After the usual difficulties with competition, drawings, making changes, supplying omissions, etc., the work was let somewhat informally for the sum of $135,000. The jail was finished last March, and the Court House was ostensibly progressing properly when a disagreement with a subcontractor led to charges before the grand jury and to a series of ineffectual attempts to secure an investigation, which has compromised the standing of a judge and other county officials, and produced great excitement among the taxpayers. Indignation meetings have been held, funds subscribed to force an inquiry, and the commissioners who had repeatedly evaded the charges were compelled to give them a hearing.—*The Inland Architect and Builder.*

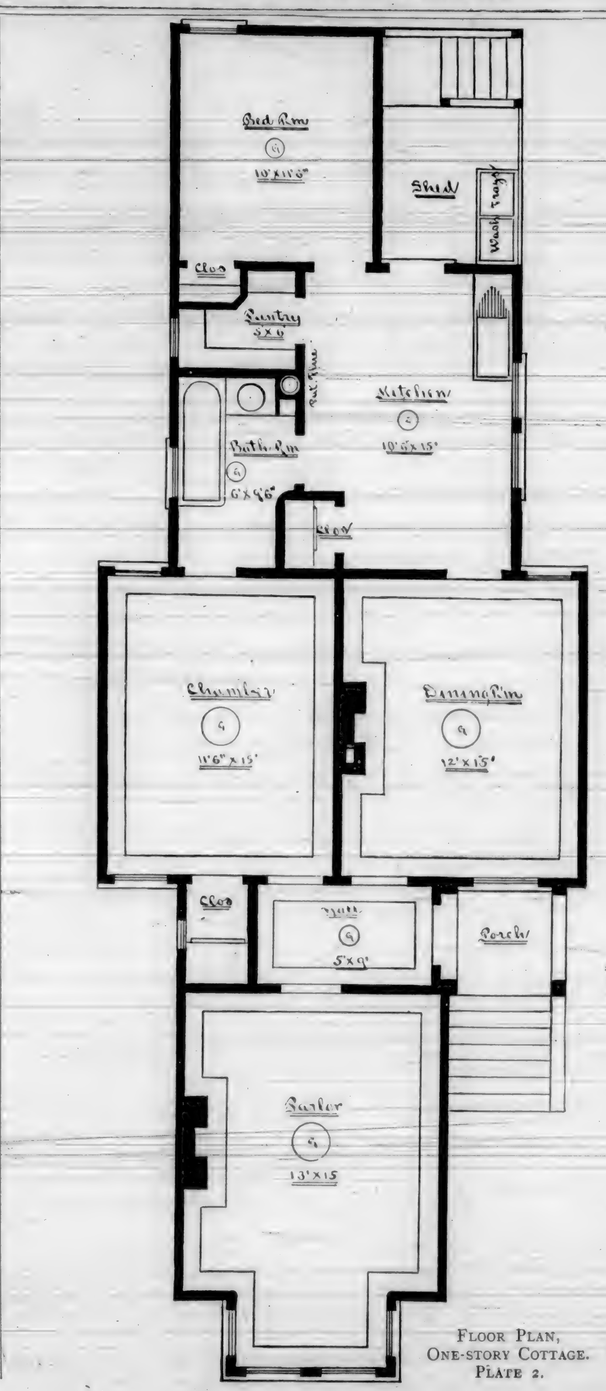
Our Illustrations.

CUTS Nos. 3 and 4, a moderate cost cottage for country, with a total of nine rooms, bathroom, halls, closets, pantries, etc., as shown by the plans. It can be built for about $3,500, according to the economies practiced.

Cuts Nos. 1 and 2, elevation and plan of one-story cottage with five rooms, bathroom, closets etc., can be built at a cost of $2,000 and upward. The space above ceiling of main story will permit the making of four loft rooms, by placing suitable windows in the respective gables.

Queer Origin of Words.

THE word "pamphlet" is derived from the name of a Greek authoress, Pamphylia, who compiled a history of the world into 35 little books. "Punch and Judy" is a contraction from Pontius and Judas. It is a relic of an old "miracle play," in which the actors were Pontius Pilate and Judas Iscariot. "Bigot" is from Visigotha, in which the fierce and intolerant Arianism of the Visigoth conquerors of Spain is handed down to infamy. "Humbug" is from Hamburg; "a piece of Hamburg news" was in Germany a proverbial expression of false political rumors. "Gauze" derives its name from Gaza, where it was first made. "Tabby cat" is all unconscious that her name is derived from Atab, a famous street in Bagdad, inhabited by the manufacturers of silken stuffs called atabi or taffety, the wavy markings of the watered silks resembling pussy's coat. "Old Scratch" is the demon Skratti, who still survives in the superstitions of northern Europe. "Old Nick" is none other than Niker, the dangerous water demon of Scandinavian legend. The lemon takes its name from the city of Lima.



FLOOR PLAN, ONE-STORY COTTAGE. PLATE 2.

Knights of Pythias in San Francisco—Their Prospective New Castle Hall.

A PUBLIC meeting of the members of the order was held in B. B. Hall, Eddy Street, August 31, for the purpose of enlisting a more general interest on the part of the members in the movement now on foot to raise, by sale of capital stock of the Hall Association, the necessary funds to begin at an early day the erection of a

NEW CASTLE HALL,

Large and commodious, and in every way suited to the wants and necessities of the order, not only as providing lodge rooms for the valiant knights in San Francisco, but a grand head quarters—a home where the membership universal on this coast, personally and collectively, may repair and enjoy all the benefits and advantages to be derived from fraternal intercourse and fellowship.

The lot is an eligible one, fronting 77 feet along the northerly side of McAllister Street, opposite the Hall of Records, by a depth of 137 feet 6 inches. It has increased in value a hundred per cent during the past few years, and the property in time will rank among the most valuable in the city, off from the great main streets, which will forever command and hold pre-eminence.

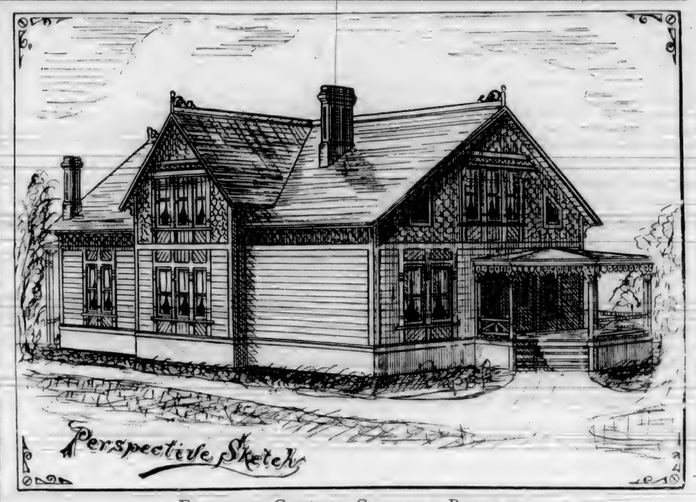
An incorporate Hall Association has been organized, composed of intelligent, capable, and honorable members of the order, who are working hard to set in practical operation, measures calculated to consummate the desired end. The capital stock of the Association is fixed at $100.000, divided into ten thousand shares of the par value of $10 each. The lodges in San Francisco have already taken well on to $20,000 worth of the stock, which sum will be materially increased from the same sources as necessity requires. The enterprise is one that should not and will not be allowed to fail of success, as it presents many inducements to both lodges, as such, and individual members personally, to become shareholders.

AS AN ORDER MOVEMENT,

With a view to securing and owning meeting-rooms for its lodges and associating therewith in the shape of a grand assembly hall, library, chess room, drill room, and all the modern conveniences and comforts known in connection with buildings of this character, it commends itself to most favorable consideration; and,

AS A BUSINESS PROPOSITION,

It is an investment that should meet a hearty response from every member of the order, as its incomes and profits are assured from its inception, by rental from lodges under Pythian jurisdiction, in addition to large prospective receipts from its grand assembly hall, from organizations other than Knights of Pythias, and other incomes that have crowned the successes of other orders less numerous in membership, who have secured to themselves buildings of their own.



ELEVATION COUNTRY COTTAGE.—PLATE 3.

An interesting review of prospective cost and income was given by P. C., T. F. Bachelder, who was followed by G. C., Geo. B. Katzenstein, P. G. C., John H. Harney and W. H. Bodfish, and by P. C., A. K. Stevens, James Patterson, F. H. Farrar, Dr. N. J. Bird, and others. The assemblage was not numerically as great as was hoped for, but this was made up by the hearty enthusiasm and interest manifested by those present, and the individual subscriptions to the capital stock.

The importance of the matter being more than local, it is expected that every lodge of the order within the jurisdiction, and every member who can afford it, will aid the enterprise by becoming shareholders.

Building Report—Woodland, Yolo County.

DURING the past three months, mechanics generally have been well employed, and material dealers fairly busy, the only drawback experience being a scarcity of coin, as three-fourths of the building business is conducted here on a cash basis. The prosperities have been such that no one should feel discouraged should there be less work done during the remaining months of the year. Still there are a number of first-class buildings and improvements on the prospective state, for early commencement, and good reasons to anticipate a good ending and showing for 1885.

The list of building improvements of all classes for the third quarter of the year is as follows:—

CITY OF WOODLAND.

35 Frame buildings, value	$102,000
3 Alterations and repairs, value	3,000
38 buildings	$105,000

YOLO COUNTY.

16 Frame buildings, value	$30,875
4 Brick buildings, value	25,000
20 buildings	$55,875
A total for the third quarter of 1885, of	$160,875
Corresponding periods in 1884, 29 buildings and improvements of the value of	97,400
Gain for 1885 over 1884 of	$63,475

In the preparation and prosecution of the figuring, the services of architects are fully up to, if not greater than any previous time, thus demonstrating the fact that our people intend to build wisely and well, observing true and correct taste and principles. Many of the cities and towns in this State are noted for the good judgment, refinement, and æsthetic taste displayed by owners, architecturally and otherwise, in the improvement of their property—a most commendable ambition, which should be practiced in all cases. Good judgment should never be influenced by bad examples, nor inconsistencies and incongruities accepted and duplicated, because other have so far erred as to practice abominations in the name of architectural science. Architecture is susceptible of almost endless treatment and variation, and any community of people may beautify their surroundings, by the exercise of good judgment, and the adoption of styles in buildings calculated to incite and inspire sentiments of admiration. In this view of the case, all artisans and mechanics should be careful in the style and character of the work presented by them for public criticism, so that it may reflect credit and prove worthy of imitation by others. GILBERT & SON.

Woodland, Sept. 5, 1885.

Plaster, How to Make It **$1.00**
Shavings and Saw-dust **1.50**
Lumberman's Hand-Book **2.00**
Practical Geometry **1.00**
Architects' Companion **2.50**

Crowded Out—Exchanges—Future Enlargement.

THE quantity of original matter appearing in present issue, has crowded out a number of valuable articles from the columns of several of our highly-esteemed, and ably edited and conducted exchanges. To meet this condition of things, and provide for the utilization of the vast volume of interesting matter received monthly, through the piles of Eastern and foreign contemporaries, arrangements are being perfected by which this journal,

IN JANUARY, 1886, WILL BE GREATLY ENLARGED AND IMPROVED,

Giving much greater space for both reading matter and advertisements. A number of able and intelligent, scientific and mechanical writers and correspondents will be added to its staff editorial, and nothing that personal devotion and means can accomplish, will be left undone, to place it still higher in public esteem and confidence, and render it a journal of still greater reputation and merit. To this end, we ask the hearty co-operation of every present patron and subscriber, in assisting to

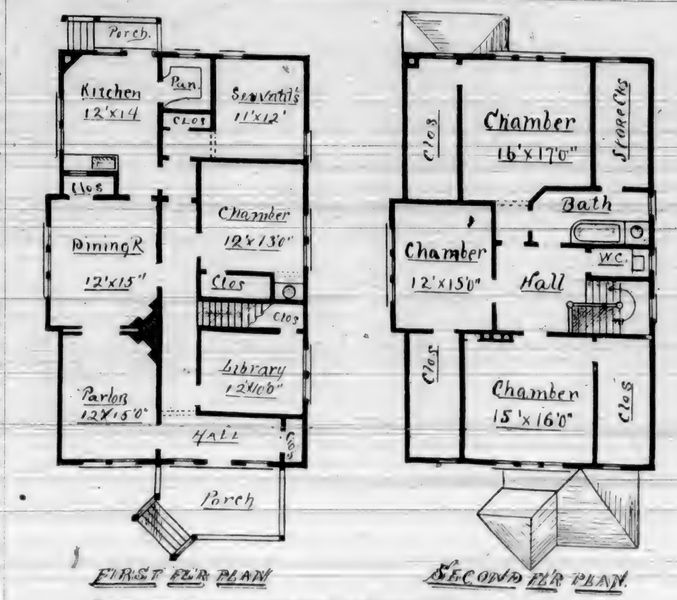
INCREASE ITS SUBSCRIPTION LIST.

Every new, and renewed subscription gives encouragement; encouragement stimulates ambition; ambition, effort; and well-directed, intelligent effort never fails of accomplishing the end and purpose aimed at.

THE BLACK DIAMOND.—The first number of the first volume of a new monthly journal, bearing the above title, is before us, edited by T. I. Jervis and H. A. Bischoff, with C. W. Collins as manager. It is published in Chicago. Very neat, clear, and readable in typographical execution, and its columns well filled with matter interesting to the general reader, as well as to those specially interested in the coal interests, to which it is particularly devoted. We bid it good speed and prosperity, and welcome it to our already plethoric exchange list, and hope the number of its subscribers on the Pacific Coast may be large. Our hand, brothers, hoping that while the base of the interest you represent is black, smutty, and not to be handled with white kid gloves, your success may ever be bright and cheerful, and never smoky, even though you may have to replenish the fires of your ambition with earnest effort.

A verdict has recently been given by an English jury, which is of considerable interest. The tenant of a house in Croydon brought an action against his landlord for damages resulting from the death of his wife, from diseases caused, he claimed, by defects in the drainage and plumbing. The lady had possessed an income of $5,000 a year, which "died with her," and for this substantial loss the husband asked compensation.

He showed that he had rented the house on representations of the landlord that it was in perfect sanitary condition, and that its plumbing and drainage had been done under the supervision of the Croydon Local Authority, But the state of the house was bad, sewer-gas escaped from the joints of the soil-pipe and from a broken trap, and a drain in the rear of the house was stopped. Before the death of the wife, the cook, the gardener, and the step-son of the plaintiff were ill. The landlord showed that he had reason to believe at the time that his representations about the condition of the house were true, as the local authority of Croydon had inspected the house, which was a new one, and had not found fault with any arrangements. But the jury, nevertheless, found for the plaintiff, awarding him $10,000 for the damages sustained in the loss of his wife, and $1,140 additional for expenses which he had incurred by reason of the insanitary arrangements.



FIRST AND SECOND FLOOR PLAN OF COUNTRY COTTAGE.—PLATE 4.

In a circular issued by the Board of Health of Bridgeport, Conn., the following directions about diet and cleanliness in cholera seasons are given: "As regards special precautions against cholera, great care should be used in the matter of food and drink. Wholesome meats and vegetables, and ripe fruits, may be used freely; in fact the free use of acids in fruit or otherwise is supposed to act as a preventive. But under no circumstances should any decayed or stale vegetables, unripe fruit, or tainted meat be allowed to be sold or used. The liability of water in the wells to become polluted by the contents of sewers and vaults, even if placed at a distance from them, should forbid the use of well-water for drinking purposes in all thickly settled places. Indeed, during a time of threatened cholera no water should be drank until it has first been boiled to destroy germs. It may afterwards be cooled by placing in contact with ice, but not by the addition of ice. Milk should be boiled before using for the same reason. The use of cathartic medicines should be entirely avoided except under the advice of a physician."—*Sanitary Engineer.*

In no part of economy are we divorced from wire. It is our slave, and an ever-present master. Sleeping, we repose on wire mattresses. Eating, we see food which has passed through sieves, and which is sheltered from insect appetite by wire covers. Calling, we pull wires to ring curled wire gongs. Traveling, we are conveyed by cable or electric railways, hoisted by elevators hung on wires and hurried over wire bridges. We announce our coming by telegraph or telephone wires, and we tread our way by night through streets lighted by means of electric cables. Across our fields are strung thousands of miles of barbed wire. Our clocks are set by wires, our watches run by wires, our books are stitched by wires, our pictures hung by wires, and our politics managed by wires. Forty years ago there was not a telegraph office in existence. To-day they number over 60,000. Ten years ago the telephone was not in existence. To-day there are 330,000 in use in the United States alone.—*Electrical Review.*

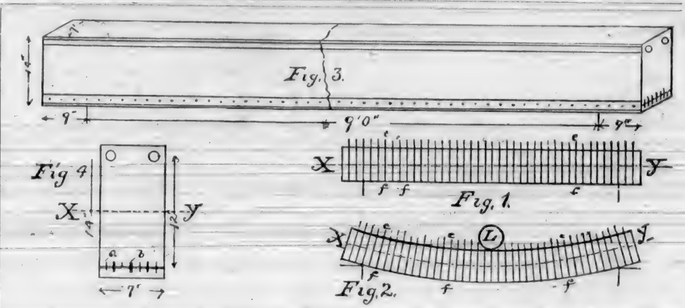
Model Homes **1.00**
Hand Railing and Stair Casing **1.50**
Drawing for Carpenters **1.75**

Concrete.

AN interesting experiment was made on the 31st of August in the presence of several architects and scientific gentlemen at the Industrial Iron Works, No. 233 Beale Street, by Mr. P. H. Jackson, to demonstrate the strength of a Portland cement-concrete beam combined with iron of a kind invented by Mr. Thaddeus Hyatt and largely experimented on in London, in 1876. One of the objects of the invention is that they may be used in part as beams or girders to support sidewalks, floors of buildings, as well as walls, etc. The advantage claimed by the construction is that the sidewalk, floor, or wall aids in its own support, in furnishing all the compressive resistance requisite in the part usual above the neutral axis of a beam. The concrete-combined-with-iron part of the beam is cemented to the bottom part of the wall or sidewalk to be sustained, and is required to furnish only the tensile strength, or that part of a beam below the neutral axis.

These concrete beams or girders are straight and are made of Portland cement and gravel, and with a small quantity of iron or steel bars built on the bottom of the concrete body, sufficient to resist the tensile strain due to the load, the sidewalk or wall to be supported to which it is cemented, furnishing the remaining part of the beam or girder above the neutral axis in resisting compressive force. These bars may be of any shape with their surfaces roughened, corrugated, serrated, or other than a regular surface to hold on to the surrounding cement and prevent its slipping or sliding when under strain. Trials have proved that smooth bars with their ends fastened pulled through. These bars may be either singly or in combination; the latter are threaded to each other by ¼-inch round rods, the width of the beam, passing through their centers, which stiffens the structure in its width. Also the concrete beam may be separately employed in resisting compression as well as tension, performing the entire function common to all beams. One of this kind was the subject of the trial. In this case the iron or steel ties furnish the tensile strength to that part of the Portland cement-concrete which is comparatively very weak in resisting tension below the neutral axis, to balance the strong compressive-resisting property of this material above the neutral axis. In General Gilmore's work on the strength of artificial stone he found by experiment that a mixture of 1 volume of Portland cement to 2 volumes of sand the ratio of the crushing to the tensile strength will generally be found between the limits of 14 to 1 and 19 to 1. With cement 1 and sand 4 it reaches as high as 25 to 1 and 29 to 1. With cement 1 and sand 5, as high as 35 to 1.

An explanation of the forces exerted on a single b am is as follows: When a straight beam or girder is subjected to a bending stress, it becomes more or less curved, by virtue of which the lower part is lengthened and the



upper part shortened in proportion to the depth of the beam and the difference in length between the radii of the curves. Were the beam made of horizontal layers the effect of the stress would be to cause these to slide one upon the other, but the beam being solid, the particles are held together by their own cohesion, the shearing strains being thus opposed by the cohesive force. The primary strains in the beam on the lines of compression and extension being upon curved lines, the disturbed particles must of necessity tend to arrange themselves in harmony with the radial lines of circles, all below the neutral axis seeking extension and all above compression. An illustration referring to figure 1 represents the side view of a straight beam or structure to be subjected to transverse strain when loaded and resting on end supports, the line $x\ y$ representing the neutral axis when loaded, being the dividing line between where the compression force ceases and the tensile strain begins, the greatest force and strain being at the extremes from the neutral axis. The imaginary vertical lines are at right angles with the bottom of the beam. The distance from any two of the lines at the top from e to e is the same as from f to f at the bottom. The length of the beam at top and bottom is equal.

Figure 2 represents figure 1 subjected to severe bending stress curved by the load L, which has caused great deflection. The vertical imaginary lines e, f in figure 1 have become radial lines in figure 2, radiating from a center to the curve of the bottom of the beam. The distance from f to f at the bottom of the beam in figure 2 is greater than in figure 1, the thrust force causing the disturbed particles to extend the greatest at the bottom, and gradually diminishing up to the neutral axis where it ceases, and from there the compressive force begins and gradually increases till the top surface is reached, which is the greatest, and the distance from e to e has shortened, the neutral axis line $x\ y$, being the original length of the beam, providing the two opposite forces have been equal in resistance. It is evident that when the beam is loaded and the imaginary lines e, f are held in their vertical position and not become radial lines, there can be no deflection of the beam, and its integrity remains intact. Mr. Hyatt, knowing the great compressive-resisting strength of Portland cement, and the great disparity in its comparative feeble tensile resistance, united iron or steel in such a way as to bind them to the weak part of the concrete body, in resisting separation along the bottom of the beam or structure, so as to furnish all the tensile strength needed below the neutral axis to balance the great compressive resistance above the neutral axis. The beam in question tested at the Industrial Iron Works, had iron longitudinal bars connected together by small cross rods and in the manner that the places of juncture would be at equal distances as represented by the vertical lines at $f\ f$, as in figure 1, which in this instance was 3 inches centers as shown by the dots at the bottom of figure 3. These cross rods were ½-inch diameter as shown in figure 4, representing them passing through the 7 vertical bars, thereby holding the concrete to the beam every 3 inches in the manner of the vertical line at $f\ f$, figure 1.

Referring to figure 3 is a longitudinal view of the beam tested. Figure 4 is a cross section, 7 inches wide, 14 inches deep, 10 feet 6 inches long. Distance between supports, 9 feet, $x\ y$ representing the neutral axes. At ½ inch up from the bottom was built in 3 of ¼x1 inch and 4 ⅛x1 inch wrought bars, extending the length of the beam, and at every 3 inches ¼ inch round iron rods extended through these 7 bars, some as shown in cross section figure 4 and longitudinally as in figure 3. The total weight of the wrought iron was but 46½ pounds; this resisted the tensile strains until the beam was broken. The area of cross sections of these wrought iron ties to resist the tensile strain of the beam, after deducting the holes for the ¼ inch rods, is less than a bar of wrought iron 1 inch square, or the bottom flange of a wrought iron beam 8 inches wide by ½ inch thick.

Without due consideration, Mr. Jackson informs me, larger pieces of cast iron, as shown in figure 3 near its top, were used than the necessity of the case required to make up in compressive resistance what the beam above the neutral axis might be deficient in, hence are larger than required. These were 2 of ¾-inch diameter cast iron rope mouldings built in near the top, weighed 36 pounds; the compressive resistance of cast iron is 93,000 pounds per square inch. The beam was five months old.

The load was of pig iron, piled uniformly over the length of the beam, ending in a line over the inside of the supports.

When 20,695 lbs. had been laid on		deflection 1-16 in.
15½ tons	30,989 lbs	3-32 "
	33,589 "	⅛ "
	35,703 "	
18 "	36,045 "	¼ "
19 "	38,113 "	9-32 "
20 "	40,056 "	⅜ "
21 "	42,062 "	½ "
22 "	44,077 "	9-16 "
	45,678 "	21-32 "
23 "	46,115 "	23-32 "
	47,018 "	¾ "
24 "	47,996 "	13-16 "
24½ "	49,001 "	⅞ "
25 "	50,054 "	15-16 "
26 "	52,062 "	1⅛ "
	52,692 "	1 3-16 "
26 8-10 "	53,654 "	brake by separation.

The pig iron was closely piled, and was 7 feet 6 inches above the beam.

The broken beam is now in front of 231 First Street. The gentlemen present exhibited great interest in the great strength of the construction, and when it is considered that this construction is called upon to act a part of half a beam, when supporting brick or cement work, the part to be supported acting in one-half of its own support, the invention may prove of great value.

The great strength of this beam, being but 7 inches wide, and considering the compressive resistance of the cast iron acting relatively to the wrought bars below, makes the distance in height but 12 inches. (See figure 3.) Therefore, computing the strength of this compared to a wrought-iron beam, of an area of bottom flange equally the area of all the ties in the concrete beam, we have as the breaking distributed load: —

$$\frac{1 \text{ in. area of bottom} \times 12 \times 160}{9 \times 12} = 17\tfrac{8}{10} \text{ gross tons.}$$

Or $19\frac{9}{10}$ net tons. Excess of this concrete combined with iron beam over a wrought iron beam computed by the formula is 7 tons, or above one-third. This may be attributed to the solidity of the Hyatt beam compared to the web of a wrought iron beam, which is subject to lateral deflection, also from the punched rivet holes weakening the iron, and from what other causes is a subject for consideration.

Symmetry of line came in place of the extravagant contours which had prevailed, resulting in an inspiring transformation, the influence of which has been felt in all succeeding times. Even now, with the many combinations of styles in this most fruitful period of art, the Louis XVI. style receives in furniture, architectural woodwork and mural decoration very full recognition. There is an abundance of detail in present styles of ornamentation, more probably than at any former period, but there are abundant evidences that so far as simplicity of general aspect can be combined with rich and graceful elegance, designers, guided in part by advanced public tastes, will not be found wanting.—*Exchange.*

The Architect.

OF all professional men the architect should have the broadest and deepest knowledge—that is if we are to judge by the standards of the past.

Pythius, in his commentaries, the oldest work on architecture that we have any record of, says "that an architect should have that perfect knowledge of each art and science which is not even acquired by the professors of any one in particular."

Vitruvius tells us that an architect "should be a good writer, a skillful draughtsman, versed in geometry and optics, expert at figures, acquainted with history, informed on the principles of natural and moral philosophy, somewhat of a musician, not ignorant of the sciences both of law and physic," etc.

The great Hindu authority, "The Maushyalaya Chandica," gives it as a law that "an architect should be conversant *in all* sciences; ever attentive to his avocation; of an unblemished character."

One thing is true, that all those who intend to follow architecture as a profession should pass through some solid and rational system of instruction—drawing, geometry, motives, materials, and the machinal skill necessary to use them; "a philosophical study of the history of architecture in its relation to various phases of civilization," the causes of its development or decline, etc. The moral side should also be taught—more particularly the personal responsibility of the architect. Unless something of this kind is done we cannot hope to have able and skillful architects.—*Art and Decoration.*

IN Chicago, the cry of the people for open spaces and parks has not become so intensified as it is in London, or even in New York. Yet there is pending an action in the city council which threatens to hasten the time when this cry will be bitter enough. The lake-front park is a magnificent open space, directly facing the lake in what will soon be the busiest section of the city. An effort is being made to secure the opening of streets in this park, and an ordinance is ordered drawn up for the purpose. This is but the entering wedge which it is expected will secure this valuable land for commercial purposes. It is a great mistake. The commercial interests of Chicago should be made to pay something for the hygienic influence which the preservation of this park will exert in the future.—*The Sanitary News.*

The ancient city Smyrna, now called Ismir, the only city on the western coast of Asia Minor, which has prospered, commercially, from the time of its foundation by Alexander the Great to the present, has always been defective in sewerage. Through an oversight of its architect, no provision was made for sewers, and the effects were so pronounced fifteen hundred years ago that Strabo speaks of them in his writings. The city has always been the seat of pestilence and plague.

Present Taste in Decoration.

THE general abandonment of wainscoting is all in favor of a more effective display of furniture. The beautifully patterned styles of wall paper now supplied ordinarily in subdued tones and neutral tints, with no one color unduly predominating, make, when judiciously chosen, a more effective background than one partly of wood and partly of paper. This and the fact that wainscoting is a sort of walling up, has driven it out.

The selection of the tone and pattern of paper may be properly made with reference to the intended hue and tone of the furniture and of the carpet. No arbitrary rules can be laid down in this matter. A general harmony, however, is quite consistent with strong contrasts, only these contrasts demand greater art to manage than closely analagous colors. In carpets, for instance, we now see admirable patterns in which a light field is traversed by bright and dark bands; so also in upholstery textile coverings of chairs, sofas, lounges, and fauteuils. The truth is that improved taste has set in against tameness; more inspiriting effects than mere neutral colors themselves will yield are looked for. Hence the abundance of gilded and colored metal ornaments in all sorts of quaint forms, which it is now the fashion to introduce, brilliant coloring extends even to lamp-shades, in some of which mosaic colored glass is introduced; in others, opalescent hues.—*Art and Decoration.*

The competition for the new Chamber of Commerce in Cincinnati, which has just been decided, presents several points of interest. Its general character, the high reputation of the architects invited to compete, the universal excellence of the designs submitted, and the final decision of the committee, all mark it as a great advance on methods formerly in vogue in competitions for public work. In issuing their invitations, the real estate committee of the Chamber of Commerce, composed of gentlemen of unimpeachable integrity and standing, selected six representative architects, whom they offered to pay about what sketches necessary for a fair presentation of designs for the building would cost. The original circular from the committee reserved for them the rights, first to retain as their property all plans presented, and second, to pay the successful architect $2,000, and employ another man to make working drawings and complete the building. These two clauses the committee, in response to strong representations from Mr. Richardson, and Burnham & Root, finally modified, specially agreeing to return all plans except the one premiated, to use no features peculiar to any one of these designs, and virtually conceding that the architect presenting the accepted design should be chosen to finish the drawings and superintend the building.—*The Inland Architect and Builder.*

Practical Perspective.....$ 6.00
Modern Architectural Designs..... 10.00

Abominations of the Back Yard.

MANY back yards are abominations to the eye and nose. One finds in them all sorts of litter and refuse from oyster cans to old boots. Here the slops of the kitchen are poured to increase the odors which ought to warn every thoughtful person of the malarial influence breeding there, to break out eventually in fevers or diphtheria. If any member of the family dies from one of these diseases, his death is probably lamented as a "mysterious dispensation of Providence;" but the minister would say if he were to visit the back yard, that death was caused solely by a violation of hygienic laws. A very strong argument against a dirty back yard, is the spirit of deception which it is apt to foster in the young members of the family, for it is a constant deceit to present a clean and attractive front yard to the gaze of the passers, while the back yard is not fit to be seen. Children should be taught to be clean for the sake of cleanliness, and not because outsiders are likely to criticise them. The best plan is to have a hogshead or large box fitted up in one corner of the yard, and make it a rule to throw into this old cans, boots, broken dishes, and all such rubbish, and when there is a great accumulation, to bury or burn it. Do not allow anything to be thrown about. Have drains made to convey all slops entirely from the house. Make good walks, and let the ground have a fine covering of grass, not weeds. Put up strong supports for the clothes line. Keep the fence in repair, and plant currant bushes near it. Set vines about the refuse barrel, and train them over it until it is hidden. If you have a receptacle for ashes, let it be something which can be shut up, not a row of old barrels to offend the eye, and give out a cloud of ashes every time the wind blows. Make it a rule to have the back yard at all times as clean as the front one.—*Eben E. Rexford, in American Agriculturist.*

Solar Heat.

THE light's intensity at the sun's surface is 190,000 times that of a candle flame, 5,309 times that of metal in a Bessemer converter, 146 times that of a calcium light, or three-fourths times that of an electric arc. The temperature, according to Rosette, is about 18,000 degrees Fahrenheit. The mechanical equivalent of the solar radiation, continuously acting, is nearly 10,000 horse power per square foot of solar surface.

The tallest chimney in the world is that of the Towneley Works at Port Dundas, near Glasgow, Scotland, which is built of brick and stone, and is 454 feet in height. It is circular in form. The highest stone chimney is octagonal in form, and stands 381 feet in the air, and is located in Halifax, England. In Rouen, France, there is an iron chimney 279 feet high, which was riveted together and afterwards lifted into place with a crane.

Large quantities of timber are now creosoted, in a special manner, for railroad purposes, the effect being to increase the tenacity of the wood for holding spikes, &c., as well as its density, and its ability to resist mechanical wear. This is done by means of an apparatus consisting of a boiler-plate cylinder, of a size adapted to the timber; this cylinder is of a strength sufficient to resist 300 pounds pressure per square inch, and has a track extending for its whole length along the bottom, the cylinder's ends being closed by strong iron doors, air and water tight. When the timber has been run into the cylinder and the doors closed, steam at about 100 pounds pressure is injected into the cylinder, the supply continuing as required by the nature and dryness of the wood; the steam is then shut off, and vacuum pumps are worked as long as any liquids or vapors are obtained, the hot preserving liquid being now run to the cylinder from the reservoir until full. The force pumps are again operated until the interior pressure is some 100 pounds per inch, and kept thus until sufficient preservative fluid is forced into the pores of the wood; the force pumps are now shut off and the creosote oil or other liquid contained in the cylinder is discharged into a suitable cistern, after which the doors at the ends of the cylinder are opened, and the car carrying the timber or ties run out.—*Wood-Worker.*

"Talking about funny things," said a big, bronzed, bearded man in the reading-room of an up-town hotel the other night, "the funniest thing I ever heard of happened in my sawmill out in Michigan. We used a heavy upright saw for sawing heavy timber. One day not long ago the men had all gone to dinner, leaving the saw, which ran by water power, going at full speed. While we were away a big black bear came into the mill and went nosing around. The saw caught his fur and twitched him a little. Bruin didn't like this for a cent, so he turned around and fetched the saw a lick with his paw. Result: a badly cut paw. A blow with the other paw followed, and it was also cut. The bear was by this time aroused to a perfect fury, and, rushing at the saw, caught it in his grasp and gave it a tremendous hug. It was his last hug, and we lived on bear steaks for a week. When we came up from dinner there was half a bear on each side of the saw, which was going ahead as nicely as though it had never seen a bear. This is a fact, so help me, Bob," and the big lumberman bit off a fresh chew of tobacco.—*N. Y. Tribune.*

It is reported that Boston will soon have an opportunity to see the practical workings of the electric railway system on one of her streets. A line is being laid on Huntington Avenue in connection with the Metropolitan street-car line. If it works satisfactorily there, after a thorough test, it will probably be adopted on some one or more of the roads in Boston.

Disintegration of Building Stone.

THE sandstone commercially known as free-stone, which is extensively used for building purposes in American cities, is subject to disintegration from the action of the sulphurous acid produced by the consumption of coal and from frost. There is much difference in the ability of various quarries to withstand these destructive influences. The outer surfaces of some buildings in New York and Philadelphia have been, by the advice of an eminent chemist, treated with a mixture of paraffine and carbolic acid with apparently good results. The flat surfaces are warmed by means of a stove like a plumber's stove, but with a flat side, and the paraffine when applied in a melted condition penetrates the stone readily, it is said in some instances to the depth of 1½ inches. Mouldings and carved work are heated by means of a blast flame from India-rubber bags of illuminating gas. Another process has been suggested, but the preliminary results do not appear to be of a satisfactory nature on account of its tendency to crack. In this process the mixture used is an artificial stone and consists of three parts glass sand, three parts broken marble, two parts anhydrous clay, and two parts freshly slaked lime still warm. After a coat of the above has been applied wash it with water the following day. The central portion and wings of the Capitol Building at Washington were originally built of freestone, which disintegrated so rapidly as to threaten the permanence of the structure, and the whole was protected by several coats of white paint. The wings afterwards added to the above, and now used for the House of Representatives and Senate Chamber, are built of white marble, which conforms in color to the central portion of the building, so that the whole building appears to be made of marble.—*Mechanical News.*

The "Sanitary News" has often urged the sanitary examination of school buildings during vacation. To give force to its own opinion it now desires to quote the words of Mr. William Paul Gerhard, an eminent sanitary engineer. In a recent article on school and college sanitation, he says: "The annual vacation term would seem to be a particularly fit time to undertake a sanitary inspection of the school-buildings, of their interior construction, sanitary arrangements, and of their immediate surroundings." He calls attention to the absolute necessity of such a periodical inspection, by qualified persons, and the correction of such structural and sanitary defects as may be discovered. While the water supply, drainage, and ventilation should be examined into, it is necessary to demonstrate the entire absence of dampness, and to examine the methods of lighting the class rooms, of heating the building, the means of egrees in case of fire, the arrangement of seats and desks, and finally into the plumbing appliances.

Treads and Risers..... $ .50

Architects Get Their Fees by Sueing.

ANOTHER architect in England has had to sue his client to get his poor pay with the usual result. In this case, which is known as Taylor & Locke *vs.* Greene & Son, the plaintiffs, composing a firm of architects, brought suit to recover $2,250, the balance due them for services in preparing plans and drawings, with other professional work, for the rebuilding of a certain business structure. The defendants in resisting this claim, brought forward the usual tale of woe, to the effect that among other things, the architects had not sufficiently considered or warned them about the claims of neighboring owners in regard to light and air, and that through this neglect disputes had arisen between the defendants and their neighbors, involving the former in expenses amounting to $18,000, which, as they claimed, the architects ought to pay. The reply of the architects to this was simply that they had been engaged to do the work of architects, under the instructions of the defendants, and that they had done this, and nothing more. Although the trial lasted seven days, and a great deal of evidence was brought forward, the jury seems to have retained through the whole the view of the matter that juries generally take, and promptly returned a verdict for the plaintiffs for $1,900 and costs. So far as we can judge from the brief but clear account which we find in the *Builder*, this seems to have been one of those cases where a man, having engaged a young or over-amiable architect to do a certain piece of professional work, imagines that he has a claim upon his time and services to any extent, and for any purpose, and keeps him trotting about, investigating, negotiating, and inquiring in regard to matters which do not come at all within an architect's province, however convenient it may be for the architect's employer to have him busy himself about them without charge; and after getting all the work out of him that he can, avails himself of all the disappointments that he may have experienced in the results of the errands which he has persuaded the architect to do for him to cut down the pay due him for his legitimate services. There are plenty of such men in the world, and plenty of architects who suffer from them, but the number of the latter would be smaller, if the younger members of the profession fully understood how little respect a court accords to any pretext whatever for depriving a man of any part of the money which he has earned by reasonably skillful and faithful services in his own vocation.—*American Architect and Building News.*

Durability of White Lead.

WHY is it that white lead does not wear as well as it used to? is a question that is frequently asked by painters and consumers. They also add: We used to be able to obtain an article that would wear for years, while now its durability is much less. The important reason for this is found in the difference between the methods of manufacture employed now and a few years ago. Formerly, white lead was corroded by immersing it in vinegar acidulated with acetic acid, which is only concentrated vinegar. The process required about eight weeks before the carbonate was ready for use. This process, however, was found too costly, and the production was too limited to supply the demands. Then, too, a process requiring so long a time would compel corroders to invest a large capital from which they could realize no returns for a long period. They could not afford to produce lead in this manner at a cost sufficiently low to meet the demand for a low-priced article. Accordingly their ingenuity was taxed to invent some method whereby the carbonate could be produced much quicker and at a much less price. Thus they adopted the present process whereby the lead is now corroded by means of a stronger acid in a month, or even in a few days. The result is that the pure article is much less durable when applied to buildings. Speed in the manufacture of some articles, it is true, does not sacrifice quality, while in others the greater celerity in manufacture the less durable the products. Not only is this seen in the production of lead, but another branch of manufacture where it is especially noticeable is that of leather. Formerly it required fifteen months to thoroughly tan a hide. Now the process has been shortened and a month and a half at the longest witnesses the completion of the work. As in the case of white lead, the result is lack of durability, and people constantly complain that leather soon cracks out and lacks its original durability.—*P., in the Painter.*

Painting Ironwork.

THE point of prime importance, says the *Painters' Magazine*, is the actual condition of the surface when ready to receive the first coat. Upon this point rests the success or non-success of subsequent applications, for if not in proper condition no paint will prove permanently preservative. Now the best state is that where there has been formed upon the surface of the iron a film of black oxide which has been, while hot, thoroughly permeated by and incorporated with a resinous or tarry covering. This covering insures perfect success, and its thickness may be increased from time to time by additional coats of paint. If, however, a layer of hydrated oxide (ordinary rust) be once allowed to form, the successive coats of paint will fall off, their separation from the iron being merely a question of time. During the time, also, the rust has been spreading under the paint. An instance of this may be seen after outdoor riveted work has been in place for some time. Usually all the riveting is done before the final painting is begun, each rivet-head, in the meantime, being exposed to a damp atmosphere; the paint begins to peel off the rivet-heads long before it leaves the adjacent plates, and, when this occurs, nothing but thorough scraping will give the paint a chance to adhere again. So slight are the differences of manipulation which determine whether a given piece of work shall or shall not rust away, that they may all be found in the different methods of manufacture pursued now and formerly.

Taking the case of a piece of ornamental ironwork, which in so many instances has come down to us in unimpaired beauty and condition, it would now, probably, be forged in detail in one part of a factory, drilled, filed and fitted in another, and when completely finished, be painted in three coats of best oil paint. Formerly the smith who forged the work punched the necessary holes at the same time, fitted his various pieces together as he went on, completing each piece as he proceeded, doing all the work with his hammer, and, to quote an old book of directions to good smiths, brushing his work over with linseed oil and suspending it for some time over a strongly smoking wood fire. This will give at once a sort of elastic enamel coat, perfectly adherent and calculated to preserve the iron to the utmost. Of course ironwork to-day is not made to undergo any such preparatory process, and the consequence is that we find it very difficult to produce good results in painting on iron surfaces. But it is pretty well established that the very best finish coat for iron is found in red lead, upon which any desired shade of lead paint may be placed with the best possible results.

EXCAVATIONS AT OLYMPIA.—The excavations at Olympia are to be recommenced immediately under the auspices of the Archæological Society of Athens. On these excavations the German Government has expended so far a million marks, £20,000 more than is generally supposed, the sums voted by the Reichstag and granted by the Emperor having been supplemented at a later date by a large bequest from an unknown quarter in Berlin. It is declared by those best qualified to judge, that two-thirds of the site of Olympia still remain to be excavated. The Germans themselves, however, seem to be glad to have done with the work, as they have cleared out the principal parts where the richest harvest of *trouvailles* was expected, while nationally they have derived very little profit from the undertaking. They think they made a great mistake in stipulating only for duplicates of what they found, as of course no important objects existed in duplicate. They fancy that nothing of any great artistic value can now be found in the vast area of the Stadium or in the other outlying structures; but the Greek society has determined to clear away the vast mass of superincumbent earth, and to bring back the whole site to the original level, so that the lines of ancient Olympia may be clearly discerned. The local museum, the gift of a patriotic Greek gentleman, is a large building now roofed over, and is being plastered. In a few months it will be ready for the reception of the statues and bronzes already found.—*Athenæum.*

A Grand Monument.

NO ONE laughs now at the Washington monument. The day of its being a subject for ridicule is over forever. It is the wonder of Washington, and its beauty the admiration of both Americans and foreigners. It rises from the banks of the Potomac, a great, white marble shaft, piercing the clouds and backed against the blue of the sky. It is the grandest obelisk the world has ever seen, and in the eons of the future, should the nations of to-day pass away, leaving no more records of their progress than the mighty ones of the Egyptian past, it will surpass the pyramids in the wonder of its construction. It is higher than the third pyramid. It is taller than St. Paul's Cathedral. To-day the cathedral of Cologne—512 feet high—is the tallest work in the world; next comes the great pyramid, 483 feet high; then the Strasburg Cathedral, 473 feet; then the second pyramid, 453; then St. Peter's, 430; St. Steven's at Vienna, 443; and St. Paul's at London, 384. The monument is 555 feet high, forty-three feet higher than the Cathedral at Cologne. It will be far different, however, from the needle-like shafts of the great European cathedral, each of its sides at the top being thirty-five feet in width, and the whole massive tower seems a solid growth of natural rock, rising from the earth and reaching to the sky. The width at the base of each of its four sides is fifty-five feet, the monument gradually tapering for over five hundred feet, until it becomes a pyramid, each side of which is thirty-five feet.

Our indefatigable American cousins are constantly finding out something new and useful, or making improvements on past inventions, thought to be already at their best. The latest thing is an improvement in acoustics, by means of wood. We learn that a telephone has just been brought to this country from America which is based upon entirely new principles, being absolutely independent of electricity, so that batteries, coils, and cells are quite dispensed with. This obviously greatly simplifies the working of the instrument, and in the "mechanical telephone," which was subjected to a severe test on Saturday last, simplicity and distinctness are claimed as its chief characteristics. The instrument consists of a diaphragm, or sounding-board, made of strips of willow-wood, which has been found by experiment to possess a remarkable sensitiveness to sound vibrations. These strips of wood are closely woven together and varnished. In the center of the diaphragm a small disk of metal is placed, from which the wire proceeds to any point desired up to two miles. In Saturday's trials the instrument freely answered to all demands upon it, the ticking of a watch, musical sounds, whispering, etc., being heard with great distinctness.—*Timber Trades Journal, London.*

Cumming's Details $6.00
Cutting Tools 1.50

THE Brooklyn *Real Estate Review*, in discussing the question of low bids and poor work, makes the excellent suggestion that the contractor should be awarded the work whose cost estimate comes the nearest to the average of all the bidders. The center of difference between competitors would seem to be the proper point on which to weigh the probability of poor work on the one hand against unreasonable charge on the other, and would be the most removed from the danger of either. An average price would certainly induce a belief that a living profit could be made on an average quality of work, which is all that can be expected in a competition for trade. The complaint has always been that the work is generally below the average in quality, while the price asked really pays for nothing better.

The simplest principles of reasoning would seem to teach that results not in accord with the causes that produce them should not be expected, and if bad work follows as a regular sequence of poor pay, there is nothing so very astonishing in the fact.

The remedy suggested above lies with the contractors themselves, and is the only alternative that presents itself. If they would agree with each other, and give the public to understand, that no competition would be entered into unless on this basis of award, the now much abused system of letting by inviting competition would be productive of some good, at least, to all concerned. Every contractor would be compelled to hold up his end by doing a grade of work for which he was justly paid, or go out of business, and the old excuse to his conscience and customer that the work was "good enough for the money," would have no validity or foundation in truth.

It is difficult to convince some business men that it pays to advertise. They have tried it, they say, and it did not pay them. These men expect too much; they place an advertisement in a journal for two or three insertions and if they do not get orders enough from its insertion to pay them a profit on its cost, they arrive at the conclusion that it has not paid them. They do not take into account the indirect benefits that they may derive without being able to trace them to their source. The principle of advertising is to keep your name before the trade, and to call attention from time to time to the new goods that you have for sale. The liberal advertiser is always a live business man; customers know this, and naturally go where they think the most exertion is being made to sell goods.—*Furniture Worker.*

The natural gas vein which was struck some time ago at Gardenville, near Buffalo, N. Y., while boring for salt, continues to attract attention. The gas is said to be of good quality and shoots up to a height of about fifteen feet. There is talk of forming a company to utilize the well by laying pipes to Buffalo, a distance of about twelve miles.

The Pine Lumber Supply.

HOW LONG will this wonderful work among the pines continue? The stock of pine yet standing in Michigan can produce 40,000,000,000 feet of lumber if cut for the purpose. In eight years, therefore, at the last average production of the State, the pine will have been used up. But such predictions have been made for years past. In 1867, the standing pine of Michigan was estimated to be 52,416,000,000 feet, and it was predicted that it would all be gone in seventeen years. But since then the Saginaw Valley alone has produced about 12,000,000,000 feet, and will continue to cut in the neighborhood of 1,000,000,000 feet a year for eight or ten years to come. As pine grows scarcer, it will make more lumber than when it was plenty.

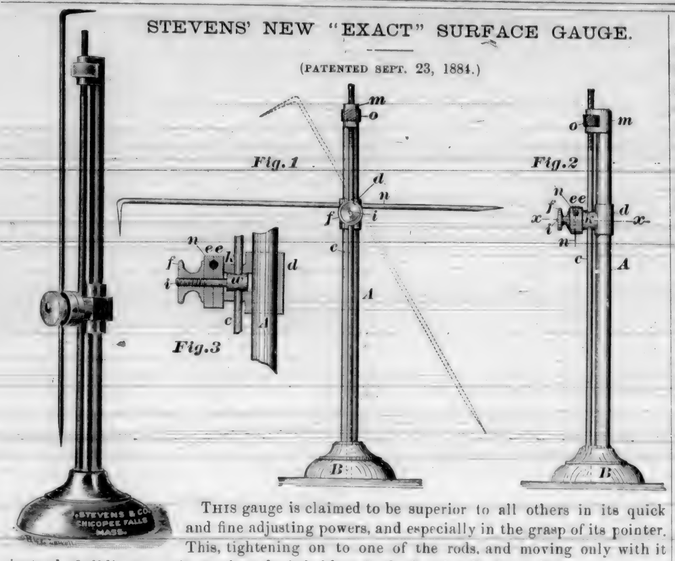
But, in predicting the end of pine lumber, a person must take into account the lumber which is yet standing in Wisconsin, Minnesota, Canada, and the South. And it will be many years before it even grows scarce, when we estimate the whole. Yet an end must come to the forests that the white race found in this country. Doubtless pine forests of the second growth will be raised for future use, but the present magnificent forests will disappear. It has been estimated that the demand for lumber in this country from 1880 to 1890 would require 210,000,000,000 feet, and one can readily see that at that rate the stock must soon be gone.—*Chicago Current.*

The large Royal Theater at Munich, Germany, is now lighted by electricity, the lights used being more than 1,400 Edison incandescent lamps, each of sixteen candle power. The auditory is lighted by a central chandelier containing 140 lamps, which took the place of a luster with 240 gas-jets. The different galleries are, moreover, illuminated by 84 lamps, equally distributed in front of the boxes. The stage is fitted up with 610 incandescent lights, while 566 more lamps are placed in the dressing-rooms, offices, storage-rooms, etc. The current is furnished by six large Edison dynamos, located in an engine-house, placed about 400 feet away from the theater, and underground wires are used for the transmission of the current. In order to avoid the annoyance to the eyes of the glaring light, all audience lights, as well as those in the halls and reception rooms, are encased in glass bulbs, the glass of which is rendered opaque by applying to it a caustic solution. The latter arrangement is much to be commended, and forms an important step forward in the successful practice of lighting buildings by electricity.

The City Council of Litchfield, Ill., Aug. 21, granted L. C. Van Vleck the exclusive right of supplying the city with natural gas for twenty-five years. Natural gas has been found just outside the city limits in large quantities at a depth of about 507 feet, and it is proposed to utilize this in lighting the city. The work of laying the mains is to be commenced at once.

STEVENS' NEW "EXACT" SURFACE GAUGE.

(PATENTED SEPT. 23, 1884.)



THIS gauge is claimed to be superior to all others in its quick and fine adjusting powers, and especially in the grasp of its pointer. This, tightening on to one of the rods, and moving only with it instead of sliding upon it as others do, is held perfectly firm in all of its adjustments.

In this tool the post *A* is rigidly fastened to the base *B* in the usual manner. At the top of the post is the nut guide *m*, for nut *O*. The adjusting rod *c* is guided at the top in a hole through *m*, and at the bottom in a hole in the base *B*. By means of the nut *O* the rod and attached parts can be adjusted vertically.

The support *d* is made with a branch *k*, through which the rod *c* passes. This branch is recessed to receive the cylindrical head *w*, of clamp screw *i*. The rod *c* passes through head *w* and branch *k*.

The pointer *n* is held between two clamps, *e*, *e*, as clearly represented. This permits of turning the pointer and clamps on the screw *i*, and of binding the whole by means of nut *f*.

It will be understood that the mechanism carrying the pointer can, when the nut *f* is loosed, be readily moved up or down the post, that when the nut *f* is tightened, it clamps this mechanism to the rod *c*, but that by turning nut *O*, the pointer can be adjusted a short distance up or down to bring it to the exact position required, after it is otherwise securely clamped.

The advantages of providing for this adjustment will be apparent to those accustomed to use such tools.

By having a hole drilled in the base, it is also adapted to a depth gauge and various other purposes.

SMALL SIZE.

The basis is of cast iron, round, and turned true with the upright spindle. The total height is eight inches, and will scratch eight inches sideways and thirteen inches high. The cast steel needle is pointed at each end, one of which ends is bent to a right angle. All parts are polished and accurately fitted.

LARGE SIZE.

Same, only weight is two pounds, and arm will scratch ten and a half inches sideways, and eighteen inches high.

These points, together with its simplicity, as shown by the cut, make it a most desirable tool for practical mechanics.

These surface gauges are made by J. Stevens & Co., the well-known manufacturers of fine machinists' tools, Chicopee Falls, Mass. They are for sale by

DUNHAM, CARRIGAN & CO.,

Nos. 17 and 19 Beale Street, and Nos. 18, 20, 22, 24 Main Street, who carry not only a full line of these gauges, but also a complete stock of fine machinists' tools, and light, dark, and antique bronze hardware. Orders also taken for gold, silver, nickel, and enameled work in all colors.

"PRACTICAL ESTIMATOR."—A neat little book of 96 pages, published by David Williams, New York, is full of instructions, tables, and suggestions for the use of contractors and all parties figuring on buildings and constructive works. While its contents may not be in every particular adapted to this section of country, owing to the differences in methods and materials as between this and the Eastern States, they, and the blanks referred to in this connection, will be found most excellent safeguards against the omission and oversight of items of cost. A very large proportion of the ruinously low bids submitted in competitions that end in pro ratio settlements, are the result of careless figuring, the neglect to include costs and expenses which are sure to occur. The book and blanks under notice are excellent reminders of every detail in figuring, and should be in the hands of every contractor.

"The 'Handy Estimate Blanks' have been prepared with an idea of furnishing to contractors and builders a convenient form upon which to make estimates and record the cost of the work which they execute. Two general divisions of work are recognized, namely, 'Masonry' and 'Carpentry.' Under each of these heads subdivisions are indicated, which include all the parts of the work required to complete any ordinary structure. In the column rulings there is a space for 'Estimated Quantities,' one for 'Prices,' and then a space for extensions, entitled 'Estimated Cost.' Outside of these rulings there is another set of columns, entitled 'Actual Quantities,' 'Actual Price,' and 'Actual Cost.' This arrangement affords a convenient system of comparison between estimated cost and actual cost, not only upon an entire job, but also upon any particular portion of a contract. The arrangement is such that each individual part of a building may be figured independently of all the others as to cost and allowances and profits, or all may be taken together and a single entry made for the allowances and profits. Materials are figured independently of the labor required to put them in place, the latter being separately listed in each division. In addition to the items listed as composing a building, a number of blank spaces are provided, both under the head of 'Masonry' and 'Carpentry,' for listing such items as the special character of a given contract might make necessary, or which the practice of a given neighborhood might require."

"Practical Estimator," and the "Handy Estimate Blanks," together with a line of practical publications on architectural, constructive, and mechanical subjects, for sale at the office of this journal, at publishers' prices. All orders from parts distant from San Francisco will be forwarded upon receipt of postal order, cheque, greenback or coin.

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Palliser, Palliser & Co. Useful details. Specimen copy of

STEAM ENGINE CATECHISM, 1885,

By Robert Grimshaw, President James Watt's Association, received. A handy little work of 149 pages, on matters suggested by its title—engines, and steam in its ten thousand applications as a motive power. It will be found useful to young engineers, interesting to older heads, and convenient for examination boards.

It seems probable that the German engineers, using the record of others with the care and thoroughness characteristic of their race, have succeeded to an unusual degree in securing the benefits usually sought in the introduction of sewerage systems, but one is hardly prepared for such surprising results as those which M. Durand-Claye describes. According to him, the recent health statistics of the city show that in the portions not yet connected with the sewers there has been within a given time, we suppose a year, one case of typhoid fever to nine and three-tenths houses, and one death from the disease in every forty-third house; while in the sewered districts there was in the same time only one case of the fever to forty-nine and three-tenths houses, and one death from it to one hundred and thirty-seven and five-tenths houses. It must be remembered that Berlin is above all others a city of great apartment-houses, the average number of persons to a house being fifty-eight, so that these figures do not in either case show an extraordinary mortality from typhoid fever, but it is remarkable that the simple connection of the buildings with the sewers, without any change in the character of the drinking-water used in them should at once diminish by four-fifths the liability of their inhabitants to the disease. In fact, as the interior portions of the city, which are at once the most crowded and the least wholesome, have been the first to be provided with sewers, while the houses in the suburban circle, where the system is not yet complete, would naturally have fewer occupants, and those of a cleaner and better nourished class, it seems quite possible that a comparison of the numbers of individuals attacked, instead of that of houses, would show a still greater difference in healthfulness between the sewered and unsewered districts.—*American Architect and Building News.*

MASONS' AND BUILDERS' EXCHANGE
OF SAN FRANCISCO
Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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STEVENS, W. E., cor. Larkin and Market Sts. " 46
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WESTERN IRON WORKS..... " 69

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BRICK.

ROBERTS & DAVIS, Sacramento Brick.....Box 36
REMILLARD BRICK CO..... " 23
PATENT BRICK CO..... " 29
PETERSON, T. W. & Co., San Jose, Brick Co.. " 68

PATENT CHIMNEYS.

STEVENS, W. E., Patent Chimney.....Box 46
BROWELL, J., Patent Chimneys..... " 71
CLAWSON, L. E., Patent Chimneys..... " 2

MISCELLANEOUS.

DAVIS & COWELL, Lime and Cement.....Box 43
WHITTIER, JAS. E., Asphaltum..... " 41
MCCLURE, P. L., Grader and Waterman... " 30
SIBLEY, L. B., Teamster..... " 40
WARREN, CHAS., Grader..... " 37
BUCKMAN, A. E., Grader..... " 42
KELSO, JOHN, Grader..... " 76
ENGLISH W. D. & CO., Graders ..... " 70
BUTTERWORTH, T. C., Glazier..... " 48
HARNEY & SON, Street Contractors..... " 54

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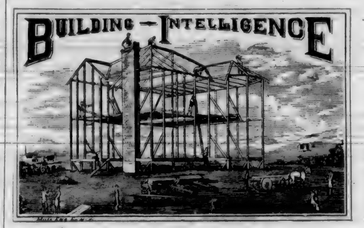

Where owners' names are left blank, it is so done in most instances by special request.

A

Army, bet. Church and Sanchez. One-story frame.
O.—P. Meyer.
C.—T. Sullivan.
$2,000.

B

Bryant, cor. Juniper. Two-story frame.
O. and B.—Thos. Loughran.
Day's work.
$2,500.

Brannan, bet. Third and Fourth. Repairs.
O.—A. Lusk & Co.
Day's work.
$2 000.

Buchanan, east side, bet. Turk and Golden Gate ave. Two-story frame.
O.—Henry Ecks.
A.—Salfield & John.
C.—E. & F. J. Owens.
$5,500.

Bryant, north side, bet. Fourth and Fifth. Three-story frame.
O.—C. W. Weston.
C—R. W. E. Porter.
$11,000.

Bryant, nr. Gilbert. Two-story frame.
O.—Baker & Kirk.
A.—H. D. Mitchell.
C.—J. J. O'Brien.
$8,500

Beale, west side, bet. Folsom and Harrison. Alterations.
O.—A. M. Newhalls & Son.
C.—C. L. Parent.
$2,000.

Broderick, nr. Fell. One-story frame.
O. & A.—B. E. Henrickson.
Day's work.
$2,750.

C

Chestnut, west of Powell. Alterations.
O.—John Dunn.
Day's work.
$1,500.

California, near Octavia. Alterations.
O.—Col. J. H. Dickinson.
C.—S. M. Hills.
$3,500.

California, 2310 nr. Webster. Alterations
O.—T Whitely.
C.—D. Pierce.
$800.

Clay, bet. Steiner and Pierce. Alterations.
O.—C. Rahskopff.
C.—J. T. Grant.
$2,000.

Clipper, east of Sanchez. One-story frame.
O. and B.—F. C. Kleebaur.
$2,200.

Clipper, west of Church. One-story frame.
O. and B.—F. C. Kleebaur.
$2,200.

Clipper, east of Sanchez. One two-story frame.
O. and B.—F. C. Kleebaur.
$2,200.

Collinwood, bet. Eighteenth and Nineteenth. One-story frame.
O.—J. Killpack.
C.—J. W. Baldwin.
$1,000

California, nr. Buchanan. Two-story and Mansard roof.
O.—W. Vale.
A.—Pissis & Moore.
C.—C. D. Killum.
$10,000.

Castro, west side, near Eighteenth. One-story frame.
O. & B.—W. J. Brownrigg.
$500.

Clinton Park, south side, near Dolores. Three-story frame.
O.—J. Williams.
C.—J. Gass.
$4,000.

Church, west side, between Twenty-third and Twenty-fourth. One-story frame.
O.—N. C. Thompson.
C.—J. Robertson.
$1,000.

Clementina, south side, bet. Fourth and Fifth. Three-story frame.
O.—Mrs. C. Koester.
A.—G. E. Voelkel.
C.—J. Knopp.
$10,000.

Columbia, bet. Twenty-third and Twenty-fourth. Two-story frame.
O.—St. Peter's Catholic Church.
A.—B. J. Clinch.
C.—J. L. Binet.
$24,000.

California, bet. Stockton and Powell. Three-story frame.
O.—Cephas Turner.
A.—J. H. Littlefield.
C.—S. Hatfield.
$7,000.

D

Dupont, bet. Filbert and Union. Three-story frame.
O.—M. Perrissio.
A.—Wm. Moosier.
C.—J. Rocca.
$8,400.

Devisadero, corner Oak. Three-story frame.
A.—McDougal & Son.
C.—J. A. Leonard.
$15,000.

Devisadero, nr. Oak. Two-story frame.
A.—McDougal & Son.
C.—J. A. Leonard.
$8,000.

Duncan, corner Dolores. One-story frame.
O.—F. Donahue.
C.—M. Loftus.
$1,000.

Douglass, bet. Eighteenth and Nineteenth. Two-story frame.
O.—J. Alex. Campbell.
A.—J. J. Clark.
C.—W. H. James.
$3,000.

E

Eddy, cor. Buchanan. Alterations.
O.—F. Atzeroth.
Day's work.
$2,000.

Eleventh, nr. Folsom. One-story brick.
O.—M. V. Stevens.
Day's work.
$1,500.

Eighteenth and Sanchez. One-story frame.
O.—T. A. C. Dolan.
C.—W. Morrisy.
$1,200

Eleventh Ave., near Point Lobos ave. Two-story frame.
O.—Mrs. Graham.
A.—Townsend & Wyneken.
C.—Joseph Neal.
$3,500.

Eighteenth, southwest cor. Collinwood. Additions.
O.—Mrs. F. Steidingousky.
C.—J. W. Baldwin.
$1,200.

Eighteenth, northeast cor. Collinwood. Alterations.
O.—J. Graham.
C.—J. W. Baldwin.
$800.

Eddy, nr. Mason. Four-story frame.
O.—C. H. Twombly.
C.—Cameron & McDonald.
$12,000.

F

Filbert, nr. Webster. One and one-half-story frame.
O.—R. Maloney.
A.—W. H. Wharff.
C.—Walker & Perry.
$2,000.

Filbert, bet. Kearny and Dupont. Three-story frame.
O.—A. Vaccaro.
A.—Wm. Moosier.
C.—W. F. Fitzpatrick.
$8,000

Fifteenth Ave, south side nr. St. Johns st. One-story frames.
O.—J. Baker.
C.—F. Bohnenberg.
$1,800.

Fern Ave, bet. Franklin, and Gough. One-story frame.
Day's work.
$600.

Fifth, east side, bet. Harrison and Bryant. One-story frame.
O.—E. F. Northam.
Day's work.
$500.

Filbert, bet. Larkin and Polk. Two-story frame.
O.—P. Mathews.
A.—W. H. Wharff.
C.—A. N. Nelson.
$1,400.

Filbert, bet. Fillmore and Webster. Two-story frame.
O.—R. Malone.
A.—W. H. Wharff.
C.—G. Walker.
$1,300.

Ford, north side, near Noe. One-story frame.
O.—J. Simpson.
C.—A. Walker.
$1,650.

Ford, south side, near Noe. One-story frame.
O. & B.—T. Darcy.
$1,500.

Ford, north side, bet. Noe and Sanchez. One-story frame.
O.—F. Codley.
C.—Wiltse & Ackerman.
$1,500.

Fourth Ave., nr. Point Lobos ave. One-story frame.
O.—Mrs. Thomas.
C.—J. Collins.
$1,100.

Ferrie, west side, nr. Point Lobos ave. One-story frame.
O. & B.—F. Griffin.
$1,500.

Ferrie, east side, nr. Point Lobos ave. One-story frame.
O.—Mrs. M. Welch.
A.—T. J. Welch.
C.—J. J. Welch.
$2,500.

Ferrie, west side, nr. Point Lobos ave. One-story frame.
O.—Richard O'Connell.
Day's work.
$900.

Fell No. 428. Alterations.
O.—G. Berges.
C.—Hubley & Perkins.
$1,000.

Folsom, north side, bet. Tenth and Eleventh. Two-story frame.
O.—Wm. Bryan.
A.—H. T. Bestor.
C.—C. H. Ackerson.
$9,500.

Fulton, cor. Scott. Two-story frame.
O.—A. W. Wilson.
A.—J. M. Curtiss.
C.—J. W. Messenger.
$12,000.

Fillmore, east side, bet. California and Sacramento. Four two-story frames.
O.—M. S. Grinbaum.
A.—Schmidt & Havens.
C.—J. A. Hayden.
$13,000.

First, northeast cor. Jessie. Four-story brick.
O.—Michels & Watt
A.—Percy & Hamilton.
C.—J. McCarthy, brick work; J. C. Gibson, carpenter.
$42,000.

Fell, nr. Baker. One-story frame.
O. & A.—B. E. Henrickson.
Day's work.
$8,000.

Fillmore, nr. Sutter. Two-story frame.
O.—B. Bates.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$5,000.

G

Geary, southwest corner Gough. Three-story brick.
O.—Roman Catholic Technical school.
C.—Ringnose & Farrell, brick; T. H. Day, carpenter.
$22,000.

Golden Gate Ave., near Lyon. Two two-story frames.
O.—R. H. Hall.
A.—S. & J. C. Newsom.
C.—Cupps & Green.
$3,000.

Green, cor. Octavia. Alterations.
O.—G. H. Rogers.
A.—S. & J. C. Newsom.
Day's work.
$2,000.

Grove, nr. Buchanan. Alterations.
O.—F. Bencott.
C.—W. Huwe.
$500.

Grove, bet. Webster and Fillmore. Two-story frame.
O.—A. W. Morgan.
A.—Pissis & Moore.
C.—A. Jackson.
$8,500.

Gough, west side, bet. California. Two-story and attic frame.
O.—C. Mullen.
A.—Schmidt & Havens.
$13,000.

H

Haight, near Buchanan. One two-story frame.
O.—P. Noon.
C.—S. H. Shanks.
$3,300.

Harrison, nr. Eighth. Two-story frame flats.
O.—O. Casey.
A.—J. J. Clark.
C.—J. Sweeney.
$3,000

Harrison, west side, nr. Fourteenth. Additions.
O.—D. Leddy.
Day's work.
$2,000.

Hill, No. 18. Additions.
O.—L. Imhaus.
C.—J. W. Baldwin.
$1,200.

Harrison, bet. Thirteenth and Fourteenth. Two-story frame.
O.—Mrs. B. Fitzpatrick.
A.—J. J. Clark.
C.—J. Lonnon.
$2,000.

Holly Park Ave., cor. Richland. One-story frame.
O. & B.—J. J. Welch.
A.—T. J. Welch.
$1,000.

Howard, No. 2710. Additions
O.—Capt. J. Hernning.
C.—J. W. Baldwin.
$900.

Hayes, south side, nr. Laguna. Two one-story frames.
O.—S. Barker.
C.—J. W. Hannigan.
$2,300.

Haight, north side, bet. Scott and Devisadero. Two two-story frames.
O.—T. R. Church.
A.—Schmidt & Havens
C.—J. Bamber.
$5,000.

Hayes, near Baker. One story frame.
O.—E. J. Imhaus.
A. B. E. Henrickson.
C.—J. Rebman.
$2,750.

Howard, bet. Fourteenth and Fifteenth. One-story frame.
O.—Geo. Silvui.
A.—T. J. Welch.
C.—J. J. Dunn.
$2,250.

I

Isis, bet. Eleventh and Twelfth. One-story frame.
O.—J. Foley.
C.—C. Anderson.
$1,200.

J

Jessie, between Third and Fourth. Two-story brick.
O.—California Electric Light Co.
A.—Percy & Hamilton.
C.—J. McCarthy, brick work; M. Fletcher, carpenter.
$10,000.

Jones, bet. Green and Vallejo. Repairs.
O.—J. Cuvert.
A.—T. J. Welch.
C.—J. O'Connor.
$500.

Jackson, cor. Taylor. Additions.
O.—P. Moore.
A.—T. J. Welch.
C.—A. W. Nelson.
$2,500.

Jessie, bet. Second and New Montgomery. Alterations.
O.—J. W. Davis.
C.—J. A. Bender.
$500.

Jackson, bet. Buchanan and Webster. Alterations.
O.—A. C. Chisholm.
C.—R. Cook.
$1,000.

K

Kearny, northwest corner Sutter. Alterations.
O.—Title estate.
A.—Geo. E. Voelkel.
Day's work.
$2,000.

L

Laguna, bet. Post and Geary. Three-story frame.
O.—Mrs. H. Gosling.
A.—J. J. Clark.
$7,000.

Lombard, bet. Jones and Leavenworth. Two-story frame.
O.—Thomas Groves.
C.—Wassen & Pattiani.
$2,250.

Lyon, nr. Sacramento. One-story frame.
O.—Miss Sullivan.
C.—W. Pluns.
$2,000.

Liberty, above Guerrero. Two-story frame.
O.—Mrs. Lincock.
C.—J. A. Britton.
$3,000.

M

Minna, bet. Fourth and Fifth. Two two-story frame.
O.—Dr. Wm. Hammond.
A.—G. P. Ashton.
C.—E. & F. J. Owen.
$4,800.

Mission, bet. Fourth and Fifth. Alterations and additions.
O.—Dr. Wm. Hammond.
A.—Geo. P. Ashton.
C.—Terrill & Slaven.
$3,750.

Minna, bet. Fourth and Fifth. Three-story frame.
O.—P. Reynolds.
A.—Geo. P. Ashton.
C.—A. Campbell.
$3,500.

McAllister, bet. Gough and Octavia. Two-story frame.
O.—Jas. McNally.
A.—Salfield & John.
C.—H. Munster.
$3,500.

McAllister, near Gough. Alterations.
O.—Besagno & J. Morizio.
C.—J. Bamber.
$500.

Middle, bet. California and Pine. Alterations.
O.—Mrs. L. T. Allen.
C.—R. Cook.
$2,000.

N

Ninth Ave, nr. Point Lobos ave. Two-story frame.
O.—Thos. Farrell.
C.—Geo. De Hoff.
$2,200.

Natoma, bet. Tenth and Eleventh. Additions and alterations.
O.—D. Doherty.
C.—Hubley & Perkins.
$1,000.

Nineteenth, bet Stevenson and Jessie. Three-story frame.
O.—J. J. Smith.
A.—M. J. Welch.
C—Cormack & Elam.
$3,500.

O

Oak, nr. Webster. Two-story frame.
O.—H. Wemape.
A.—J. J. Clark.
C.—A. H. Plummer.
$5,000.

Olive Ave., west of Polk. Four-story frame.
O.—Fr. A. C. Stoddard.
A.—Elsen & Pierce.
C.—Wm. Langstaff.
$2,800.

P

Potrero Ave., nr. Twenty-seventh. Alterations Magdalen Asylum.
O.—Sisters of Mercy.
A.—J. J. Clark.
Day's work.

Park Ave., bet. Harrison and Bryant and Fifth and Sixth. Alterations.
O. & B.—M. A. Grane.
$1,800.

Post, bet. Powell and Mason. Four-story brick.
O.—W. S. Hobart.
A.—C. Geddes.
C.—W. E. Stevens, mason; T. H. Day, carpenter.
$53,000.

Page, north side, nr. Laguna. Two-story frame.
O.—Mrs. C. S. M. Plums.
A.—J. H. Littlefield.
C.—S. Hatfield.
$6,500.

Polk, No. 710. Additions and alterations.
O.—M. A. de Saveaga.
A.—Schmidt & Havens.
C.—P. Creighton.
$4,000.

Pine, cor. Octavia. Alterations.
O.—Thos. Denigan.
A.—Geo. P. Ashton.
Day's work.
$2,000.

Pine, south side, near Devisadero. Two-story frame.
O.—Mrs. A. Kelly.
A.—Geo. H. Miller.
Day's work.
$3,500.

Page, corner Devisadero. Three two-story frames.
O. and B.—C. Hinkle.
$14,000.

Pacific, north side, near Stockton. Three-story brick.
O.—E. B. Clark.
A.—Geo. H. Miller.
C.—Joel Docking.
$18,000.

Pacific, nr. Larkin. Alterations.
O.—J. Cat ir.
A.—J. T. Kidd.
Day's work.
$900.

Pine, south side, nr. Octavia. Alterations and additions.
O.—Mrs. A. C. Harker.
C.—Brown & Rogers.
$2,000.

Pine, bet. Fillmore and Webster. Alterations.
O.—Mrs. Maxwell.
C.—R. Cook.
$2,500.

Polk, bet. Ellis and O'Farrell. Three-story frame.
O.—Wm. John.
A.—Salfield & John.
C.—B. Dryer.
$9,000.

Pine, west of Van Ness. Alterations.
O.—Mrs. J. Slocum.
C.—W. Little.
$800.

Pine, nr. Hyde. Alterations.
O.—Allyn & Waltte.
A.—H. C. Macy.
C.—J. Doherty.
$4,900.

Pine, nr. Polk. Alterations
O.—Chicago Brewery Co.
Day's work.
$1,500.

Post, nr. Devisadero. Two-story frame.
O.—Mrs. Butler.
C.—J. McGinnis.
$5,500.

Powell, east side, south of Green. Alterations.
O.—M. Piche.
Day's work.
$800.

Pine, cor. Fillmore. Additions.
O.—I. Harris
A.—McDougal & Son.
C.—Martin & Maguire.
$2,500.

Polk, bet. Green and Union. Two-story frame.
O.—George L. Bradley.
A.—S. & J. C. Newsom.
C.—Moore Bros.
$5,000.

R

Richland, cor. South ave. One-story frame.
O.—Mrs. Gorman.
A.—T. J. Welch.
C.—J. J. Welch.
$600.

S

Shotwell, east side, near Twenty-third. One-story frame.
O. & B.—T. J. King.
$1,600.

Silver Ave., cor. Fifteenth Alterations Orphan Asylum.
O.—Sisters of Charity.
A.—J. J. Clark.
Day's work.

Silver, nr. Third. Two-story frame.
O.—M. McCoy.
A.—T. J. Welch.
C.—Smith & Knopf.
$4,000.

Sacramento, northeast cor. Van Ness. Two-story frame.
O.—D. N. Walter.
A.—Schmidt & Havens.
C.—Commary & Beardsley.
$3,000.

Stevenson, bet First and Second. Four-story brick and basement.
O.—Campbell & Stoddard.
A.—Pissis & Moor.
C.—Riley & Loane, brick-work; Jas. Geary, carpenter.
$10,000.

Second, bet. Brannan and Bryant. Two-story frame.
O.—G. Kolnke.
A.—Pissis & Moor.
C.—R. Bruce.
$3,000.

Scott, bet. Sutter and Post. Two two-story frames.
O. & B.—J. C. Wier.
$12,000.

Scott, cor Clay. Eight two-story frames.
O.—G. & W. Hinkle.
Day's work.
$36,000.

Sutter, west of Polk. Alterations.
O.—Isidore Eisenberg.
A.—Elsen & Pierce.
C.—D. Jordan.
$2,400.

Sixth, cor. Market. Alterations.
O.—W. Faber.
C.—J. Bamber.
$800.

Sutter, bet. Pierce and Scott. Three two-story frames.
O.—P. Tischer.
A.—Kemitzer & Raun.
C.—V. Miller.
$12,000.

T

Twenty-first, bet. Noe and Sanchez. One-story frame.
O.—Mrs. Redmond.
C.—T. Cles & Son.
$800.

Twenty-eighth, corner Church. Alterations
O.—Mrs. Delia Kelly.
C.—James Meyer.
$1,000

Treat Ave., nr. Harrison, bet. Twentieth and Fourteenth. One-story frame.
O.—Mrs. McMahon.
C.—James Lennon.
$1,100

Twenty-fourth, nr. Shotwell. One-story frame
O.—O. E. Brady.
C.—F. Bergman.
$800.

Twenty-second, cor. Valencia. Two-story frame.
O.—D. M. Rhumphe.
A.—McDougal & Son.
C.—J. H. McKay.
$4,200.

Thirtieth, bet. Church and Sanchez. Two-story frame.
O.—Mrs. M. Metall.
Day's work.
$1,600.

Tenth, bet Harrison and Bryant. Two-story frame.
O.—P. Noonan.
Day's work.
$1,200.

Twenty-third, cor. Howard. One-story frame.
O.—R. M. Sanders.
A.—S. & J. C. Newsom.
C.—R. M. Murry.
$3,000.

Twenty-third, south side, nr. Howard. One-story frame.
O.—Andy McLean.
C.—J. D. Rodgers.
$2,000

U

Union, west of Front. Repairs
O.—A. Hinrichs.
Day's work.
$1,000.

Union, bet. Powell and Mason. Two-story frame.
O.—A. Vanzino.
A.—V. Hoffmann.
C.—C. W. Tryon.
$4,000.

V

Valencia nr. Twenty-third. One-story frame.
O.—C. Houston.
C.—Wm. Barrett.
$1,800.

Van Ness, cor. Washington. Two-story basement frame
O.—C. Hollbrook.
A.—H. C. Macy.
C.—Jas. M. Kelly.
$30,000.

W

Whitney, south side, nr. Randall. One story frame.
O.—J. Austin.
$1,000.

Whitney, north side, nr. Randall. Two-story frame.
O.—Capt. W. Patterson.
Day's work.
$700.

Washington, nr. Larkin. One-story and basement frame.
O.—C. Bender.
A.—W. Mosser.
C.—W. H. Wharff.
$3,000.

Washington, northeast cor. Gough. Alterations.
O.—John Parrott.
A.—Edward R. Swain.
C.—Mahoney Bros.
$2,500.

Waller, bet. Golden Gate ave. and McAllister. One-story frame.
O.—G. H. Dreyer.
A.—Geo. A. Bordwell.
$1,000.

Washington, bet. Fillmore and Steiner. Alterations.
O.—J. J. Wells.
C.—R. Currie.
$2,000.

Waverly Place, near Washington. Three-story brick.
O.—John Apel & Hugh Jarman.
A.—B. E. Henrikson.
C.—G. Kohn.
$9,000.

Y

York, near Twenty-fifth. One and one-half story frame.
O.—Dr. C. C. O'Donnell.
C.—S. P. Grummer.
$2,000.

Stockton—Improvements and alterations. O., State of California; A., Percy & Hamilton; $15,000.

Oakland—Eighteenth, cor. Adeline. Two-story frame. O., S. L. Sutter; A., Geo. A. Bordwell; C., F. W. Kern; $3,500. Filbert, nr. Fourteenth Street. One-story frame. O., G. Babcock; A., S. & J. C. Newsom; day's work; $5,000.

Merced—Two-story brick. O., Mr. Galliona; A., A. Mannoni; C., Meany & Peck; $8,440. One-story brick. O., Mrs. Frane s; A., A. Mannon; C.,— Renfro, brick work, Fallar & DeWitt, carpenters; $2,400. One-story brick. O., John Baker; C., Meany & Peck, brick work, Fallar & DeWitt, carpenters; $3,000.

Pleasanton, Alameda Co.—Two-story frame. O., Geo. Dowton; A., J. J. Clark; C., W. Willbye; $4,000.

San Jose—Northwest cor. Santa Clara and Santa Teresa. Two-story frame. O., M. Kennev; A., Theodore Lenzen; C., A. J. McIlvain; $4,700. Market Street, bet. Santa Clara and San John's. Three-story brick. O., A. Vatnoue; A., Theodore Lenzen; C., A. J. McIlvain; $19,000. Northeast cor. santa Teresa and San Augustin Streets. Two two-story frames. O., A. Vatnoue; A., Theodore Lenzen; C., R. Summers; $6,600. Northeast cor. Santa Teresa and San Augustin Streets. Additions to a two-story frame tank and tank-house. O., A. Vatnoue; A., Theodore Lenzen; C., Fuller & Lashbrooks; $1,600. Third Street. Two-story frame. O., San Jose Turn Verein; A., Theodore Lenzen; C., A. J. McIlvain; $14,000. Southeast cor. Santa Clara and First Streets. Additions and alterations. O., Safe Deposit; A., Theodore Lenzen; C., E. McLaughlin, contractor of vaults, safes and locks; J. Enright, cast-iron work; Field & Lee & Co., marble; $33,000. Julian Street. One-story frame. O., M. J. Ashmore; A., J. Lenzen & Son; C., A. B. Hamilton; $2,294. Vine Street, near Park ave. One-story frame. O., L. C. W. Otto; A., J. Lenzen & Son; C., H. C. Stow; $1,800. Park Ave., near Pine Street. One-story frame. O., J. Ward; A., J. Lenzen & Son; C., Robt. Summers; $3,000.

Berrisa—Wine cellar. O., John Anzerias; A., Theodore Lenzen; C., G. E. McDougall; $2,000.

Soda Springs, Napa—Additions. O., J. P. Jackson; A., S. & J. C. Newsom, day's work; $10,000.

Woodland—Two-story frame. O., W. W. McCollough; C., W. H. Winne; $4,000. One-story frame. O., John G. Winters; C., Jack Lealand; $1,000. Two-story frame dwelling. O., Emma H. Briggs; day's work; $2, 00. One-story frame building and improvements. O., Woodland Waterworks; C., Glenn & White; $1,000. Two-story frame house and machinery. O., Jackson Brothers; C., Gilbert & Son; $6,500. Lincoln Ave. Two-story frame. O., F. M. Brown; C., J. Caldwell; $3,000. Walnut Street. One-story frame. O., H. M. Bord; C., Glenn & White; A., W. H. Carson; $3,000. Fourth Street. One-story frame. O., James Harlan; C., B. Myers; $1,500. Sixth Street. One-story frame. O. & B., J. R. Hudson; $1,200. North street. One-story frame. O. & B., Charles Anderson; $1,000. East Ave. One-story frame carriage house. O., W. W. Campbell; day's work; $1,000. Oak Ave. One-story frame. B., John West; C., S. Odlum; $1,000. Two-story frame. O., J. A. Clifford; day's work; $4,600. Main Street. Two-story frame. O., Beard Brothers; A., Gilbert & Son; C., Amesbury & Davis; $4,000. North Street. Two-story frame planing mill and machinery. O., Hester, Turner & Baker; C., Joseph Caldwell; $4,500. Two-story frame. O., Eli Hayes; day's work; $1,000. Main Street. Two one-story frame cottages. O. & B., J. S. Donnelly; $1,000. One-story frame carriage-house. O., E. H. Briggs; day's work; $1,500. Third Street. One-story frame extension. O., Charles Gummo; C., Glenn & White; $1,000.

Yolo Winery—Addition and machinery. $5,000.

Orleans Hill—Four-story brick addition on building and machinery. O., Arpad, Haraszthy & Co.; A. & C., S. C. Buzzell; $8,000.

Madison—Frame winery and machinery. O., Cal. Lenoir; day's work; $8,000. Two-story frame. O., A. Dole; C., R. B. Nisson; $2,500.

Knight's Landing—One-story frame. O., John W. Simmons; C., Z. Sommers; $1,000. One-story frame. O. D. N. Hershey; C., Gruning Brothers; $2,000. Two-story frame. O., J. W. Snowball; C., Sommers & Ibes; $3,000. One-story frame. O., J. W. Snowball; C., A. Ibes; $1,100. One-story frame. O., E. Pearl; C., Z. Sommers; $1,000.

Capay—Two-story brick. O., John Nixon; C., C. C. Scott; $7,000. One-story frame school-house. C., R. B. Nisson $1,175.

Winters—Two-story frame. O., Dwight Hemenway; C., A. N. Babcock; $2,500.

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The California Architect and Building News.

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Building Report and Summary.

Our building intelligence report for the month, ending the 10th inst., shows a most encouraging and satisfactory condition of things in building circles. The number of contracts let during the thirty days since last report, is large—particularly considering the lateness of the season; for there are some who entertain the notion that it will not do to commence at the verge of the rainy period, although in fact it makes but little difference at what time in the year work is commenced in California. There may be some temporary disadvantage in the material "getting wet," but this is fully made up by the benefits to the lumber from the wetting. All building and finishing lumber used in California is improved by wetting. And if every foot of it before using was subjected to a water seasoning, it would benefit it greatly. But while some intend to "wait until after the rains," a sufficient number have commenced operations at once, to make the following showing:—

4	brick engagements, value	$100,200
112	frames "	411,339
40	alterations, additions, etc.	71,375
156		$582,914

This shows a falling off as compared with the preceding month, as follows:—

Sept.—Total engagements,	169,	value,	$746,100
Oct.— " "	156,	"	582,914
	13		$163,186

Notice.—*The name of this Journal having been used by parties not in any manner connected with this office, to obtain building intelligence and information intended for its columns, architects, contractors, and others will hereafter please assure themselves before furnishing same, that the party canvassing is properly authorized to represent us. Authorized canvassers will be supplied with sufficient evidence upon this point.*

We Will Donate in Cash $150

To any person, club, society, or association, that secures *two hundred* cash subscribers for this Journal.

House painting in Paris is a very extensive business, as a periodical renovation of the houses is rendered imperative by law, no one being allowed to disfigure a neighborhood by presenting stained and disfigured walls. The houses being of soft cream-colored sandstone, many of the finer structures, instead of being painted, are redressed by the stone-cutter and come out from the process looking bright and new.

ITS SEVENTH VOLUME,

Commencing with January, 1886.

Arrangements Looking to the General and Material

Enlargement and Improvement

OF THE

California Architect and Building News,

Are in active progress and preparation, and it is hoped, commencing with the January number next ensuing, that its numerous patrons will have good and sufficient cause to approve the result of our earnest and determined efforts

Returning *thanks* for past favors and encouragements but inadequately expresses the deeper sentiment of gratitude within, and no future effort will be wanting to express the sincerity of our appreciation of kindness and support received, and to render this Journal worthy of

CONTINUED AND GREATLY INCREASED PATRONAGE.

To enable the carrying to a successful issue of the purposes now being matured and perfected.

3,000 ADDITIONAL SUBSCRIBERS

Are wanted in San Francisco, and a corresponding increase throughout the

PACIFIC STATES AND ADJACENT TERRITORIES.

British Columbia, Australia, the Hawaiian Islands, and the States east of the Sierras, have liberally extended a helping hand, but we want a large increase in all directions, not simply from pecuniary considerations, but to enable the publication of a journal in San Francisco representing all Pacific Coast architectural, building, and mechanical interests, which shall possess intrinsic merit equal to any class journal published upon this continent.

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Geo. H. Wolfe having no interest in, or connection with, this Journal,

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—OR—
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A Destructive Fire.

THE conflagration occurring the early part of last week, which entirely destroyed the fine four-story edifice occupied by H. S. Crocker & Co., and owned by Chas. Crocker, the railroad magnate, was one of the most destructive in this city within a decade. The building, which was one of the handsomest business buildings in San Francisco, was completely gutted. All the floors above the cellar, and all girders, posts, and supports were consumed, or fell to the cellar, leaving nothing but the walls standing. The excellent construction of the edifice is sustained by the fact that, although the heat was fearful, and all the floors giving way and tumbling, the front wall, perforated by numerous door and window apertures, remained standing, and apparently but slightly affected by the raging flames. There was nothing saved. All within—a magnificent stock of stationery, and the largest on the Pacific Coast—together with an immense lithographic department, and all its machinery and appliances, and the manufacturing department of the largest jewelry house on the coast, were all consumed. And to all this is to be added the horrid fact that two daring firemen were caught by the *debris* falling from above, and were roasted to death in sight of their comrades, who could render no assistance.

The Building Boom Unbroken.

THE continuance of building activities has been to many, and continues to be a matter of surprise. Months ago the feeling gained ground, and was very generally entertained, that there must be a let-up—a cessation in building operations. But the decline has not as yet manifested itself, and there are no present appearances of a falling off in the near future. Architects' offices generally are "full of work," and as far as the future can be judged from the stand-point of the present, there will be a large building trade during the remaining months of 1885, with considerable work in course of preparation for commencing "after the rains."

This flood of building prosperity has not settled in any particular locality or section, but has spread itself over the entire city; for "go where you will," piles of building materials meet the sight, and the sound of busy mechanic's tools greet the ear. And yet withal, rental rates are well maintained, and the number of empty houses seems not to increase, although each month the average of new places of abode—single tenements, flats, etc.,—amount to not less than one hundred and fifty, and perhaps nearer two hundred.

This Journal Sent Free of Cost

TO ANY one forwarding to this office the names of *four* others, beside their own, and the amount of *four* annual subscriptions,—$8.00.

Water Closets	**$1 00**
Building Superintendence	**3 00**

San Francisco Chapter of Architects.

THE regular monthly and annual meeting of the Chapter was held October 2, with a good attendance of members. Mr. Macy acted as president *pro tem.*

The minutes of the previous meeting were read and approved. The Committee on Apprentice Indentures reported; the report was accepted and the committee discharged. The Committee on Incorporation reported progress.

Seth Babson, treasurer elect for the ensuing year, tendered his resignation as such, owing to residency "across the bay," and inability to attend the meetings regularly. Received and filed.

The annual reports of the retiring president, A. Laver; secretary, B. E. Henrickson, and treasurer, J. M. Curtis, were received, and ordered spread upon the minutes.

The newly-elected president, William Curlett, read an interesting paper, which was ordered spread upon the minutes, and to be published in the CALIFORNIA ARCHITECT AND BUILDING NEWS. It will be found in full in this issue.

A discussion arose in reference to the plumbing law, which resulted in the appointment of a committee, consisting of Messrs. Macy, Henrickson and Curtis to consider the subject and report at next meeting.

Messrs. Macy, Pissis & Curtis were nominated to fill the office of treasurer, made vacant by the resignation of the treasurer elect, Babson.

A resolution was adopted that the president, at each meeting of the Chapter, appoint a member to lead in the discussion of some subject of interest to the profession. In harmony with the resolution, the president appointed James E. Wolfe to open the series of discussions, at the November meeting, which will be held the first Friday in November next.

No further business requiring attention, the Chapter adjourned.

An Ancient Sanitary Ordinance.

THE burgh records of Glasgow, Scotland, for the year 1574, show a complete and excellent set of regulations "for awaye haldyng and preservation of this gud toun" from the pest or plague. In these regulations occurred the following item concerning the reporting of cases of sickness to the proper officers, termed "searchers:"—

"It is statute and ordanit, that gif ony persone or persones indwellaris in this toun, happins fra this tyme furth to fall sick, that the maister of the hous incontinent cum to the visitors and sercharis of the gait, or any of thame, and shew the samyn, that thai may be sichtit; and gif ony persones happinis to deceis in ony house within this toun, that the maister of the hous sall cum to the visitouris adpoyntit for sichting thairof or thai be wyndit under the pane of banishment."

Another provision in the regulations read to this effect:—

"Ordanis the schule-hous wynd and all the wennallis to be simpliciter condampnit and stekit up."

Address of Mr. Wm. Curlett, before S. F. Chapter of Architects, Oct. 2, 1885.

GENTLEMEN: Permit me to thank you for the honor you have conferred upon me by electing me President of this association, and if, as I hope, I shall succeed in filling its responsible duties to your satisfaction and the advancement of our professional interests, but more particularly the advancement of the younger members of the Institute, I shall attribute it to your cordial support, which I feel assured will at all times be afforded me, so that, by your co-operation, every meeting may serve to bind us more closely together, for we know that without union in all matters it is useless to hope for success.

I cannot conceal from myself, however, that there are many Fellows whose claims to this honor are far in excess of my own, when I reflect that many of our members are eminent architects, and have practiced in this city for more than a quarter of a century, and that many of those older practitioners have been active members and colleagues together in the pioneer association, which, unfortunately, existed but for a limited period—however, it must be gratifying to those members, even at this late date, to view the result of their laudable efforts to form and maintain an Architectural Association on this coast, for the present association is but an offspring of the former, which, I feel sure, is now beyond the possibility of failure.

In reviewing the progress that has been made by the present association since its affiliation with the American Institute, I congratulate the Chapter on the substantial advancement made during that time, in the acquisition of members as well as the general improvement and development of the possibilities of our art.

I also congratulate you individually on the earnest and studious manner with which you have at all times sought to cultivate professional relationship and further the promotion of mutual intercourse and the advancement of professional knowledge, which is essentially necessary to the advancement and development of the principles of architecture; for we must remember that knowledge is accumulative, and that we all know more now than we did even one year ago; that each one of us has some new idea to impart—moving, as we are, onward in the pursuit of our calling—for every year education makes strides, and we can only maintain our position in the world by showing that we are worthy to do so. To neglect all efforts at culture and the scientific side of our work is simply suicidal.

It should therefore be the desire of every member to make this institute attain its object and realize its noble ideal. To this end he should at all times endeavor to lend the full force of his ability and influence, so far as his time will permit.

I will venture to say that I am but expressing the sentiments of the individual members of not only this, but any Chapter or association

of architects throughout the length and breadth of this country, that their monthly meetings should be something more than merely assembling for the purpose of reading the minutes of the previous meeting and transacting the usual, or routine business, such as hearing reports and appointing committees.

Now, then, I will suggest that our meetings be turned to some account, and that our time be spent so that it may redound with not only credit to ourselves, but of interest to the public. To properly accomplish this end, I should recommend that we improvise some system whereby at each meeting we elect one of our number to prepare a paper on some subject of his own choice, to be read at the following meeting. Would it be too much to ask of each of our Fellows, or associates, as they join our ranks, the contribution of an essay, or paper, on some subject connected with architecture or its practice, of which he has made a particular study?

The arguments and debates naturally arising from the reading of such papers cannot fail to be of lasting benefit to us, as I can assure you that for whatever time we devote to the study of the most simple, as well as the most complex subject, we will each in return obtain some new and interesting information that otherwise would have been passed unnoticed. Suppose we begin at the bottom, and take up the subject of foundations. What a field for discussion this first and most important part of our building construction affords us, and particularly in a city like this, where so many of our heavy and expensive structures have been erected on the most dangerous and deceptive mud banks, which, I regret to say, in some cases have already shown conspicuous signs of miscalculations? This, I claim, is something that requires our most careful attention; otherwise, but a short time will elapse before the engineer will add this portion of our vocation to his already large practice, for, indeed, he has already encroached on a class of building, such as railroad depots and manufacturing warehouses, all of which formerly came under the province of the architect, and which, undoubtedly, was a most lucrative part of his profession. Such men are generally called civil engineers, but whether this is a civil act towards us I will leave you, gentlemen, to be the judges.

Then, for instance, the topic which is agitating the minds of the public at present, the importance of which has been so ably set forth by the *Chronicle*, that of drainage and house sanitation, what an endless subject for study! One of the first inquiries of almost every one now who takes a house, or contemplates building, is about the plumbing and drainage. Considering that the health of a family depends largely on the perfection of this branch of our work, the importance of this subject cannot be disputed; and unless an architect can advise and carry out sanitary work in the most scientific manner, his reputation must assuredly suffer. Should an architect neglect this branch of his profession, we may look for an increasing number of specialists; for have not the interior decorator and manufacturer appropriated another slice of our commissions? What we must convince the public of is that we are, as a body, necessary to their health and comfort, and that they lose in the long run by going to outsiders, whose only recommendation is that they do the work cheaper. This I consider entirely wrong, for the architect should not only design the house, its interior fittings and furniture, but he should also supervise and direct all interior decorations. If he is not the person most competent for this work, he should, before he is entitled to be recognized as an architect, or to be intrusted with such matters, be thoroughly conversant with all styles, so that he may give to his client sound and valuable advice.

It is true that a greater change and general improvement in interior decorations have taken place in this city during the past five years than have occurred since the discovery of gold.

We cannot disguise the fact that the architect of to-day must make his work apparent. He should, therefore, not be satisfied merely to act as a draughtsman, simply designing the skeleton of our dwellings for the decorator and manufacturers to step in and complete, but he must also prove to his client that he has both the intellect and culture to carry out any work that may be intrusted to his care, whether it requires a good knowledge of construction or a well-trained artistic taste.

It would seem, however, that the mission of the modern architect reminds a person of what is happening in the bee world just now, where, by the aid of an ingenious patent, ready-made cells are stamped out in wax of the correct shape and size, and when placed in the patent hive, the bee forthwith completes the cells and fills them in with honey. And I regret to say that it is seldom that the American people have to thank the architect for the poetry of their homes. However, it must be admitted that the profession is a learned one, for we all have read with deep interest of the attainments and achievements of the eminent architects both of the Old and New World; for what we know of Wren, Inigo Jones, and the Chambers, the architect was conversant with every branch of the work included in the structure.

It has often occurred to me that one of the most pleasant provinces of an architect should be to turn the necessary articles of daily use into works of art. And it must be conceded that year after year there is a growing tendency to make simplicity in design the guide towards beauty, as well as towards convenience and stability, instead of an adherence to some conventional type of design and decoration, or a straining effort after originality.

Speaking of originality in design, suggests to me that we have in this city a great amount of the so-called work, which I do not think reflects very highly on its authors. I think the more perfect the young architect's educational training has been, the more conservative he will be in his work, and is thus less liable to foist on the public this hodge-podge of incongruities, which their authors and their innocent clients are pleased to consider as architecturally correct. However, we have a right to be hopeful for the future, as I think we have passed a period in this city of what was termed "California style," which produced so many mere houses, for we are fast growing away from the thralldom of the aggressive and persistent stereotyped front, covered with meretricious ornamentation. Does it not seem a useless waste of skill and labor to put so much detail and elaboration on a piece of carved work which is often placed so far from the naked eye as to baffle all attempts to fathom its character or design. I believe all architectural features in which carving is introduced, ought to be looked at and drawn in the exact place for which they are intended. A great advantage will be gained by the young architect who will devote some of his time to learning to model, for I believe all carving, whether for the interior or exterior of our public or private buildings, should first be modeled, if not by the architect himself, under his immediate direction. By this system we may hope to obtain some harmony throughout the work, which is essential to good effect.

To the younger members of the Institute, who naturally will, sooner or later, take the place of their older brethren, and who I cannot doubt will be no unworthy successors, I recommend that a close intercourse be cultivated throughout the Chapter; for you will find that an addition of minds well trained in the profession, broadens its influence on the public taste, and enlarges its sphere of knowledge. You will also find that the building community is imbued with clearer conceptions of the science on what our art depends for its stability, than in the early mining days. The more time you devote to study, the more you will find that it is a profession that to attain success in, taxes the best efforts that you can put forward. It is true that industry alone will not make a great artist, architect, or sculptor. But we all know that if there is one thing more certain than another in art, it is that all great men have been industrious. You will find that the pursuit of references must needs open up studies which will be of lasting benefit to you, little dreamed of at the time, and which will prevent your being drawn into the downward current which sets strongly in the direction of business as against art, for we must admit that the commercial spirit of the country has too little sympathy with the artist.

One thing more I would have you remember, and that is, to ascend the ladder of fame you must be persistent in work, so that when the golden opportunity presents itself you may be well prepared to move onward and upward. Remember that in all professions thousands are blockading the bottom, or first round of the ladder, while but few make the ascent to that position where competition is seldom known. Although our members are steadily

on the increase, there are yet a few highly qualified men in this city whom we would gladly welcome into our midst as members of this Chapter.

Before closing this short address, I should remind you that the parent Chapter holds its annual meeting on the twenty-first and twenty-second of this month in Nashville, Tenn., and in conformance with the established rules, a report of our past year's transactions is to be transmitted to that body. And I would now offer a suggestion, that we should be represented each year by one at least of our number, with a view of persuading the Chapter to hold its annual Convention in this city at some early date.

I think it is in order here to say that we are largely indebted to the reporters for their attention at our meetings, and their readiness to impart to the public our deliberations. We are also particularly indebted to the editor and proprietor of the CALIFORNIA ARCHITECT AND BUILDING NEWS for the large space he has set aside for the record of our meetings. And now, in conclusion, with heartfelt desire for the advancement and further development of the Pacific Coast Chapter of Architects, I again thank you. WILLIAM CURLETT.

California's Tribute to the Honored Dead.

IT is a well-assured fact that the people of California will erect a monument to the memory of the immortal Grant, and that it will be one worthy of the Golden State. The movements thus far developed place the matter beyond reasonable doubt as to its finality. The recent meeting, presided over by the Hon. Senator Stanford, will create wide-spread confidence and give tone and character to the movement, and there is every good reason to believe that the gentlemen whose names are prominently connected with the several committees will so shape future operations, and guard the various avenues surrounding and leading to the grand consummation, that nothing will occur in judgment or action that will not be above all suspicion of personal interest, prejudice, favoritism, or ulterior motives not of the purest and most worthy character, and universally acceptable and satisfactory.

THE DESIGN.

The most difficult part of the whole work will be the obtainment and selection of a suitable design, one that will meet the highest expectation of the greater number, and be worthy of the approximately perfect type of manhood, whose memory it is designed to perpetuate. There are greater possibilities of error in this connection than in any other, and it will require of those with whom the responsibility may rest, the exercise of

GOOD JUDGMENT, PRACTICAL KNOWLEDGE, AND FIRM AND HONEST PURPOSES AND DETERMINATIONS

To avoid serious mistakes as to the design. Every one who conceives and produces a design will naturally hold that his own is the better, and universal experience proves that men more skilled in manipulating, working, things, than in the art and science of designing, have succeeded over true merit.

We shall again refer to this matter. At present, appearances are all favorable to earnest and vigorous action.

Cost of Buildings East of San Francisco.

VERY many of the exchanges received at this office monthly, contain plan and designs for buildings—more generally those of medium and the lesser grade classes, suitable for persons of moderate means and wage-earners—in connection with which the cost of construction is also stated.

It *may be* possible in some parts of the grand universe of God, bounded by the domains of the United States, to do as much for the money as is sometimes stated, but we know not where—all labor and materials being paid for.

One thing is most certain and sure, no plan yet published in plan book or periodical can be built in California for the sum affixed as the cost value of construction, not by 25 to 100 per cent added. As a rule, gross deception prevails in this connection, and we risk the assertion that there never has been anywhere a strict conformity to the plans published, within the limits of cost stated by the author This is a pretty broad assertion to make, but it is based upon the experiences of nearly fifty years in almost constant contact with building matters, and upon the ground that all the materials used cost a right and reasonable commerical market value, special and extraordinary advantages excepted.

The effect of this is bad, in that it leads owners to expect more than can be realized, and when told by an honest and intelligent architect that their visions of cheapness cannot be attained, disappointment follows, and hardships created for architects, as they must necessarily explain and show causes and facts, why the thing cannot be done, which, however reasonable and true in themselves, are not always convincing and clear to the party whose mind may have been influenced and pre-disposed to an impossible conclusion.

It is very well known and understood that the price of both material and labor varies in different sections of the country, and the same *exact results* would scarcely be possible in any two localities; consequently figures of cost representing and fitting one, would apply to no other section, beyond the same conditions and surroundings Yet plans are sent in all directions, with the same figures of cost for all without discrimination or modification. But the broader proposition stated is that the prices as a rule are placed too low—less than can be reached anywhere, and very much below the cost of construction on the Pacific Coast.

Dwellings for Village and Country Homes $3 00
Furgason's History of Architecture. Two volumes 15 00

The Mechanics' Fair—1885—Ended.

THE twentieth exposition under the auspices of the Mechanics' Institute, ended a most successful career of thirty odd days, on the 26th of September. It was a pleasant place of resort, and tens of thousands of visitors of all ages availed themselves of the opportunity of enjoying sights and scenes which can be found clustered only at exhibitions of this character.

Some of the preceding annual displays may have been more crowded with exhibits, particularly in heavy and noisy machinery; but it is questionable whether any have been more enjoyable or instructive to the multitudes who have, through its opportunities, sought information and pleasure from real life in the varied forms presented. Persons uninterested in any particular thing, whose faculties of appreciation are normal and obtuse, might spend a day or evening "at the fair" or anywhere else without profit or improvement. But the eye and mind awake and alive to see and learn from the evolutions and developments of the age, as demonstrated in the innumerable shapes and forms to be seen during the fair, could not be otherwise than benefited and instructed.

The moral aspect of the fair was excellent. While the streams of life and smiling faces flowed full, and cheerful and happy greetings abounded, there were no events of rudeness or indecorous conduct transcending the bounds of the strictest proprieties, and many were the regrets expressed upon the closing evening that the managers had not extended the time at least two weeks longer.

The fruit, vine, wine, wool, silk, mineral, and other great resources of the State were well represented, as were also the industrial, mechanical, commercial, and other arts and sciences. It would be impossible for us to mention in detail each particular object or thing of interest. Some of the exhibits, as a matter of course, attracted more general attention, and at all times crowds were gathered around them. Of this class, the exhibit of

NATIVE CALIFORNIA AND OTHER HARD AND FANCY WOODS,

By Thomas Hatch, covering a very large space, and including a great variety of tree growth, and some extremely singularly marked specimens, representing in native laurel, black walnut, and redwood, perfect representations of the faces and forms of men, bears, fish, birds, and other animal life. There were also splendid specimens of California maple, sycamore, oak, etc., as well as representative woods from Mexico and the islands of the Pacific. This display secured a *gold medal.*

THE DISPLAY OF STAINED, GROUND, AND BENT GLASS,

By John Mallon, was complimented by the presentation of a gold medal, and also for cut and embossed glass, a silver medal. As usual with displays by Mr. Mallon, it was good.

THE S. F. EMBOSSED GLASS WORKS,

W. H. Warren, proprietor, 997 Market Street, made a liberal and handsome display of colored, ornamental, and enriched sheet glass, varying in suitableness and beauty from the gorgeous cathedral and church window, down through the various lesser designs, to the street-car lights. The display attracted much attention, and was awarded a bronze medal.

CALIFORNIA ONYX,

Mantel, and pedestals, etc., exhibited by J. and F Kesseler, silver medal. This display was very attractive, the material being unequaled by any other variety of the marble species for beauty of color and tint.

WEED & KINGWELL

Made a fine display of brass goods and devices of their own manufacture, and were awarded a gold medal for best assortment of brass works, and silver medals for best assortment of bells, and best display of plumbers' goods.

WILL FINCK

Received grand silver medal for best display of cutlery. This firm manufactures not only handsome, but excellently good articles.

HARVEY'S HOT WATER RADIATORS

Were among the notable exhibits, and enlisted the interest of thousands during the fair. This being the age of evolutions, the Doctor has improved the time within the past twelve months, and evolved several new devices as attachments to his original system of heating, and now claims to have the most perfect and practical hot water heater in use, for heating both public and private buildings. A silver medal was awarded. Place of business, 23 Stevenson Street.

PATENT CHIMNEYS.

Mr. Browell made a good, practical display of this desirable and almost indispensable adjunct in house building, by means of which fires can be enjoyed in every room in a building, with perfect immunity from the dangers of conflagration. Mr. Browell has spent many years of his life upon this device, and in renewed approval the Committee on Awards presented Mr. B. a silver medal.

BURR FOLDING BED CO.,

603 Market Street, under the Grand Hotel, exhibited a variety of styles of sideboards, bureaus, library cases, desks, etc., which, by a motion or two, and in less time than is required to write one line of this notice, can be transformed into full-fledged spring beds, and as speedily folded back again into desks, sideboards, etc., leaving no trace of the sleeper's couch. They are ingenious, and supply a handy bed and bedstead convenience in the parlor or dining-room, if you please, disguised under the perfect appearance of any desired piece of furniture. Bronze medal.

PACIFIC ROLLING MILLS

Received a gold medal for best display of steel castings, forgings, etc. There are great possibilities in the future for this pioneer establishment in its line, and it is to be hoped that its management will not only succeed in capturing gold and silver medals at every competitive exposition, but that they will also succeed in meeting every want on this coast, in things within the range of their manufacture, so as to render it possible for wrought iron workers in San Francisco always to compete successfully with Eastern firms.

HAWLEY BROS. HARDWARE CO.

Were active competitors, and carried off several silver and bronze medals, for best general display of agricultural implements, cultivators, corn shellers, tree diggers, etc., etc.

OSBORN & ALEXANDER,

Bronze medal for best display of bicycles and tricycles. This firm of hardware dealers are energetic, and permit no opportunity to pass unimproved, in variety and kinds of goods and merchandise best calculated to suit the wants of the general public.

THE BOLLER FURNITURE CO.,

Which but recently sustained a very heavy loss by the destructive conflagration on Fourth Street, received a silver medal for best bed-room furniture. Included in their line of manufacture are wood mantels, of which they have many very fine designs, and the class of workmanship is good.

HUETER BROS. & CO.,

Silver medal for best display of varnishes, gums, etc. It is always pleasing to notice California manufactures and productions succeeding in fair contests over imported competitors.

E. G. DENNISTON,

Silver medal, best display of plated wares and works. As the result of close and diligent attention to business, not only in *making trade*, but in *producing good work*, Mr. D has accomplished a decided business success, and with life prolonged there is a large future before him.

J. T. TITUS

Received silver medal for the best flushing and sewer trap. This device has passed through many trying tests, and has proven itself a success in all cases.

THE GRANOLITHIC PAVING CO.

Had on exhibition samples of the stone manufactured by them, in the form of heavy steps, urns, etc., beside which were specimen pieces of the window sills, ashlers, and other facings and parts intended for use in the Donohoe building. For many purposes this manufactured stone has taken the place of the natural, and in time is likely to be appointed to every service requiring strength and durability. Demonstrations are at present being made, in which concrete, the components of "patent stone," is taking the place of wrought iron beams. A silver medal was awarded to this company.

COTTON HOSE,

"Rubber-lined—always reliable, and the strongest and most durable made," was exhibited by W. T. Y. Schenck, 36 California Street, and the gentlemen appointed to determine relative merits, so far gave precedent to the exhibits of Mr. Schenck, as to award a diploma.

THOS. DAY & CO.

Displayed a fine line of gas fixtures, etc.

CALIFORNIA WIRE WORKS.

As usual, an extensive exhibit of wire works, in almost every form, and for endless purposes; gold medal.

P. & B. PAINT,

Exhibits extensive and varied. The management is indefatigable in pressing the merits of the paint material upon the attention of those requiring paint of its kind, and so far favorably impressed the Award Committee as to receive a silver medal.

MR. DAVID KERR

Received deserved recognition for his exhibit of a splendidly built, practical truck, which seems ponderous and powerful enough to transport the whole exhibits of the fair in half a dozen loads, yet so neat and perfect, that with a good team of horses, and some cushioned seats, the entire Board of Managers of the fair, with David thrown in, might take a pleasant ride through Golden Gate Park and on to the "cliff" with comfort. This splendid piece of mechanism received a gold medal. To same manufacturer was awarded a silver medal for best four-spring two-seated wagon, and also truck axle, California make.

THE ONLY SPECIALTY IN THE ELEVATOR LINE

Was the *personals* representing the elevator interests. Mr. John Hammond, agent for the Otis Bro. elevator, representing the New York firm. Mr. Wm. Milliken, the genius of the Ram elevator; Mr. Hinckle, of the Hinckle device; Mr. Wm. C. Burch, Mr. Jardine, Mr. B. E. Henriksen, and other elevator builders and clutchmen, being nightly found among the lively throng of visitors.

BAKER & HAMILTON

Also received gold medals for display of agricultural implements.

John Bergstrom & Co., gold medal, best pipe organ, California make.

S. & G. Gump, gold medal, picture frames, pedestals, mantels, etc.

We have been able to notice but few of the successful exhibitors, as to do so in full would occupy nearly one half the pages of this issue. The management certainly deserves great credit for the completeness of arrangements, and the general good taste and judgment displayed throughout.

Should there be any error in the foregoing report, we will gladly correct the same in the succeeding issue.

The days of machinery, remarks a contemporary, have been for the poor man days of home-making and home-making comforts, as no other days ever were. If machinery has given the rich man luxuries, it has given the poor man the necessaries and comforts of habitation, and clothing, and travel, such as he never had before. The printing press, especially, is the poor man's servant and benefactor, scattering abroad our intellectual wealth, raising all to an intellectual level, and binding all into one whole.

Staining of Woods for Decorative Purposes.

A. CURTIS BOND.

THE art of laying various ground shades of color on wood, with or without veins and figures, or vein patterns, and known as staining, adds very materially to the resources of decoration, as enabling white and other soft woods easily worked to present the appearance of rich and costly woods, or the exquisite tints of woods not growing in a sufficient quantity or of a size to be utilized in cabinet or architectural wood-work, especially in the way of veneering.

Staining also admits of altering at any time the wood-work of an apartment so as to bring it into accord, or cause it better to contrast with wall-paper and various mural adornments, or with furniture. One description of staining is applied to merely heightening the color of choice woods. The stains are ordinarily put on with a hog's bristle brush, followed by a badger hair softener, but flannels and sponges are often used in their place. For veining or ingraining, badger sash tools and sable pencils come into play.

Where woods of different hue of the same kind are brought together, as in restoring antique furniture, graining is resorted to in order to match the newly inserted pieces with the ancient. Thus to match light with dark-hued mahogany, the former is washed with soap lees or with quicklime dissolved in water. Aqueous decoctions of logwood, dyed oil, aquafortis, sulphate of iron, nitrate of silver, bichromate of potash, and other preparations of an acidulous and alkaline nature are classified in this connection as "darkeners."

Pleasing, yellow hues are supplied by aqueous decoctions of barberry root; rich, mild reds, by only decoctions of alkanet root, and alcoholic solutions of dragon's blood; a reddening tincture, by rectified naptha, in which cam-wood dust has been steeped. The color of birch is heightened by sponging it with oil, slightly tinted with rose madder or Venetian red. Discolored ebony is revived by a strong decoction of gall nuts. Inferior rosewood will apparently be advanced in grade by applying the liquid obtained from boiling a pound of oak bark and the same quantity of walnut shells and peels. Honduras mahogany loses its pallid and dull hue by being first coated with spirits of hartshorn, and then with red oil. Raw oil and turpentine have the effect of increasing the attractiveness by adding to the beauty of many woods. American ash is made to resemble oak by drawing veins on it with a white stain, coating these with thin varnish, and darkening the remaining ground; or the veins are scratched fancifully after the varnish is laid on with a rag saturated in the ordinary preparation of French polish. A decoction of Brazil woods supplies the rich hue of rosewood, and the veins may be made by a camel's hair brush dipped in a liquid prepared by boiling logwood chips, sulphate of iron, and steel filings in equally proportioned quantities of vinegar and water. Three distinct coats of this preparation will give white wood the appearance of ebony. Showy elmwood may be delicately darkened so as to pass for Italian walnut. In short, the modifications are as various as the tints obtainable from simple and compound colors, the result being influenced by chemical and mechanical skill brought to bear on woods of different quality.

For a fine crimson, boil one pound of good Brazil dust in three quarts of water for an hour; strain and add half an ounce of cochineal, boil gently for half an hour. If more of a scarlet tint is desired, boil half an ounce of saffron in a quart of water for half an hour, and pass over the work previous to the red stain.

For purple, boil a pound of good chip logwood in three quarts of water for an hour; then add four ounces of pearlash and two ounces of indigo pounded.

For fine blue, add four ounces of indigo to a pound of sulphuric acid.

For a fine green, put four ounces of the best verdigris pounded fine, half an ounce of sap green, and half an ounce of indigo in three pints of the strongest distilled vinegar.

Note that for a bright yellow, the wood need not be stained, as a small piece of aloes put into the varnish will have all the desired effect.

For red, archil will produce a good stain, when used cold, but it is improved in color, if after one or two coats have been applied and suffered to get almost dry, it is brushed over with a hot solution of pearlash in water.

To improve the color of any stain, apply a mixture composed of one ounce of nitric acid, half a tea-spoonful of muriatic acid, a quarter of an ounce of grain tin, and two ounces of rain-water, kept in a well-corked bottle two days before using.

A black stain may thus be made: Boil one-half pound of chip logwood in two quarts of water; add one ounce of pearlash, and apply hot with a brush. Then boil one-half pound of logwood in two quarts of water as before, and add one-half ounce of verdigris and one-half ounce of copperas; strain off and put in one-half pound of rusty filings; with this go over your work again.

The Queen of Roumania is said to be an architect as well as a painter, musician, and poet. A new palace has been erected in the mountains, for which the designs were prepared by the king and queen. Her Majesty's music room is suggestive of a church. The windows are filled with glass, on which scenes from the works of the Roumanian poet Alexandri are painted; the seats are like stalls in a choir, and to aid in the illusion, strict silence has to be observed by all who have the privilege of being present at the performances.

All New Subscribers

PAYING or forwarding $2.00, will be entitled to the present and all succeeding numbers for 1885, and the whole of 1886.

A small item, page 156 in the September number of this Journal, has called forth the following letter, which is self-speaking:—

BALTIMORE, Sept. 24, 1885.

Dear Sir:—Allow me to call your attention to a slight mistake in your September number of the CALIFORNIA ARCHITECT, in which you mention a new "electric railway on Huntington Avenue, Boston." It is Baltimore, not Boston, that deserves the credit. The Union Street railway here has been experimenting with the Daft electric motors for their suburban road, out Huntington Avenue to several towns in the suburbs, for the past year, and have had the inventor here for weeks at a time trying different ways, and about two months ago finally succeeded in gettting everything complete. They now have five motors running trains back and forth over the road, which is about six miles long. The trains go at the average speed of thirty miles per hour, including stops, and the ascents of the grades, several of which are six hundred feet to the mile. Both the cars and the avenue are lit by electric lights.

Owing to the great danger of the center electric rail, it has been boarded up, leaving a narrow groove in which the wheel runs. Before this was done there were a great many accidents to persons and horses stepping on the rail at the crossings and receiving a charge of electricity. Although it works very satisfactorily where it is, there is no telling how it would answer in the crowded city streets, and there is small probability of its being used inside of the city limits for some time to come.

I hope you will make the inclosed correction for the *honor of old Baltimore*.

Respectfully, W. CLAUDE FREDERIC,
Architect.

Shoe Lumber.

A CORRESPONDENT of the Chicago *Times* says that one may see, in passing the shops of Tokio, cords of sandal-wood cut into small blocks. This, one learns, is nothing short of shoe timber. These cords of wood will speedily be converted into shoes of various sizes, at prices ranging all the way from four to twenty cents. One feels quite exalted in a pair of twenty cent shoes. The wood is called Kiri, and is very light. The clogs are still further lightened by hollowing out the center. So, in point of fact, there is little truth in calling the shoes heavy, although they appear so to the inexperienced observer. It must be admitted, though, that they are unreasonably clumsy. Sometimes the shoes worn by the ladies are laquered, and are fastened by a velvet band passing from either side over the lower part of the instep, and between the first and second toes. With this same kind of wood are made bureaus, provided with strong iron handles, and the whole box is adjustable in horizontal sections, one piled above another. Owing to lightness of the wood these boxes may be filled with clothing and carried off on the shoulders of the coolie in case of fires, which so often vex the people of Tokio.—*The Furniture Worker.*

"Hades and sheol" may all be well enough for ordinary occasions, but when a man is putting up stove pipes nothing takes the place of the good old unrevised version.

Architects as Sanitarians.

OUR enterprising contemporary, the *Inland Architect*, has started a crusade, of a very heroic character, against sanitary architecture, plumbing, engineering, and, withal, sanitary literature. It professes to regard the application of sanitary science to practical house-building as a species of modern craze. It denies every important advantage which has, supposably, been derived from the practice of hygienic principles in construction. It urges a return to the insanitary simplicity of an earlier day with its open sewers, untrapped drains, and unventilated soil-pipes.

It is matter for congratulation that this old-fashioned journal is powerless to turn back the hands very far upon the dial of progress, but it is to be regretted that it should seek to use any measure of its influence in so mischievous a cause. In support of its position it adduces, however, several noticeable arguments.

The intricacy and cost of sanitary apparatus; the impossibility of its being obtained by the average householder; the inability of the ordinarily educated architect or plumber to comprehend sanitary details; and the failure of the whole system to lessen the prevalence of zymotic disease—these are the principle pleas which it sets forth. We say that these are noticeable points, not because they are, by any means, answerable, but because they are suggestive of certain obstacles which sanitary scientists have to meet. Simplicity of apparatus is a desideratum, but it is one which it is not impossible, at the present time, to obtain. There is an undue tendency toward excessive elaboration, in some directions, but it is anything but an essential feature of sanitary work. It requires nothing but competent selection to secure simple and manageable apparatus at a moderate cost. Perfect appliances must necessarily cost more than imperfect ones, but the advantages they involve are an actual compensation for the additional outlay.

As to the architects and plumbers, it is a libel to pronounce them incompetent sanitarians as a class. Undoubtedly there are many in both guilds whose education, obtained from the pre-sanitary school, is defective, but progress in any direction would be impossible were the age to wait for the declining generation to be educated up to its advance steps. Men there are, of every time, who are sufficiently progressive to keep abreast of current improvements, but there must always be laggards in the race. It is the business of the architect and the plumber of the present day to be sanitarians, and they are rapidly becoming such. The sanitary engineer may have a future before him in his own separate line, but, at present, he simply fills in the gap between the new school of architects and the old.

Respecting the failure of sanitary science, as applied to the dwelling, to reduce the frequency of zymotic diseases, we can only say that our esteemed contemporary is evidently unfamiliar with the statistics of the very recent insanitary yesterday and the more enlightened sanitary to-day. Year by year, these diseases are yielding to improved household conditions. More and more distinctly are they traceable to the lack of sanitary conveniences. The annual death rate, from these causes, is steadily decreasing. And because certain robust individuals withstand the influence of unhygienic surroundings, and still live on, are we to credit sewer-gas and its accompaniments with a protective power?

The sanitary movement may be, at times, ill-directed, but it has attained an impetus which will carry it successfully forward, and we would kindly caution our journalistic neighbor that "it is hard to kick against the pricks."—*Northwestern Architect and Improvement Record.*

PLATE I.—FRONT ELEVATION OF ONE-STORY AND BASEMENT COTTAGE.

TO REMOVE DRY ROT.—A Russian professor has been experimenting, says the *Architect* on the best way to remove dry rot. He says that a thorough draught will destroy the parasite within twenty-four hours. If the action of draught be assisted by that of sunlight, a few hours will often suffice to put a stop to further damage. A concentrated solution of common salt is very efficacious, and the stronger it is used the more rapid its action. The action of a concentrated solution of cuprie sulphate (blue stone, blue vitriol) is still more energetic and complete than that of common salt. Crude carbolic acid is rapid in its action and cheap, but inconvenient to use. But he considers that the best, cheapest, and most convenient material to employ is the tar obtained when birchwood is distilled for acetic acid; the under surfaces of the flooring are painted with the tar.

Early Plastering and Plasterers.

THE use of plaster, or "plaister," as it was formerly called, is of early date, even in the British Islands, in connection with domestic architecture. Long before lime plaster came into general use, a tenacious clay or sticky and unctuous earth was employed when procurable, and, in its absence, whatever clay, or mixture of mud and earth, produced the most binding material. The rudest and coarsest forms of daubing or plastering in the British Isles were those structures erected of wattles and daubed over with clay to keep out the cold. These kind of domestic buildings were common in Ireland in the time of Henry II. From necessity or in conformity to the fashion of that country, the English monarch erected, according to Roger Hovenden, a royal palace with "uncommon elegance" of smoothed wattles in 1172, and in such buildings his majesty, with the kings and princes of Ireland, solemnized the festival of Christmas. The Devonshire "cob," a class of building not yet extinct, is a fair illustration of the ancient fashion of daubing or plastering practiced in this country for long centuries. In the thirteenth and fourteenth centuries in this country the plasterers proper and the daubers formed two distinct classes of building workmen, and their wages, like the wages of other operatives, were subject to certain regulations summer and winter. The daubers were simply the layers-on of a mixture of straw and mud to a framework of timber. The plasterers in London in the 24 Edward III. (1350), were bound to take no more for their working-day between the feast of Easter and St. Michael than 6d., without victuals or drink, and for the remainder of the year 5d. Upon feast days, when they did not work, they took nothing. The masons and carpenters received similar pay. As a curious contrast with rights claimed by building workmen in the present day, those of the fourteenth century were allowed nothing for making or mending their tools. We know what fierce disputes took place within the last quarter of a century on the question of "grinding money," and how it was at last acceded to by the employers that a workman about being paid off was allowed a certain time for grinding or sharpening his tools, with a view of being prepared for his next job. The dauber or inferior plasterer of the fourteenth century received only 5d. per day from Easter to St. Michael's Day, and 4d. for the rest of the year. The daubers had laborers to attend them as well as the tilers, and these laborers received only 3½d. for one part of the year and 3d. for the other.

At an earlier period in the preceding reign, in the 10 Edward II. (1317), we have an interesting agreement concerning the plastering of the hall of John de Bretagne, Earl of Richmond. From an earlier document the residence mentioned would appear to have been situated in the locality of Ivy Lane or Warwick Lane, near St. Paul's. Thus runs the agreement of the master-plasterer of the fourteenth century:—Know all men that I, Adam le Plasterer, citizen of London, am held bound to Sir John de Bretagne, Earl of Richmond, to find plaster of Paris, at my own proper charges, good and sufficient, without default, proper for the hall of the said earl, and also that I will competently, at my own proper charges, plaster and complete the said hall, and will repair the walls of the same with the said plaster, well and befittingly within and without, as also the tewels [the louvres or flues] to the summit, in such manner as befits the repair of the hall aforesaid; and this I will do for 24 pounds sterling, which my lord the said earl has paid to me beforehand. Faithfully to perform the which work within eight weeks from the day of the Holy Trinity next ensuing, I do bind myself and all my goods, movable and immovable, namely, my lands, houses, and tenements within the City of London being, to distress in part of any bailiff of our lord the king," etc. Plaster of Paris appears to have been used in England long before this period, but whether its use preceded the Norman migration, and how long, we cannot say. Native gypsum could supply a fair material in the absence of the imported article, and there are several beds of it in different parts of the kingdom. We have further mention of the plasterer or dauber and his wages in an account of moneys expended by a trustee on the repairs of a house in the parish of St. Michael Cornhill, in the 33 Edward III. (1359), viz.:—"For 12 cartloads of lom [loam], 4s.; for 9 sacks of lime, 18d.; for 3 cart oads of sand, 12d.; for one workman's wages for daubing, 9 days at 7d. per day, 5s. 3d.; for his man the same day at 5d. per day, 3s. 9d." Again, in an account of expenses incurred by the representatives of the city attending the Parliament in the 13 Richard II. (1389), the plasterers, or daubers, put in an appearance. "For timber and carpentry, tilers and daubers, in preparing the house for their lodgings, as well as the chambers as the hall, buttery, kitchen, and stables for horses; and for making stoles and fourmes, [stools and formes] throughout, and for carting out the rubbish, such house being quite ruinous; as also for payment made to the good man of the house for said lodging, £6 9s."

The antiquity of fresco-painting, even its older forms, shows that the services of the plasterer were in requisition at a very early date in Rome, Athens, Egypt, and other places. In the mediæval period fresco-painting, in connection with our ecclesiastical and other edifices, was pretty general over the three kingdoms. In the fifteenth century the windows of cloisters in England, as well as France, were not only filled with scriptural stories, in series, in stained glass, but the walls were sometimes painted in fresco. The walls of our mediæval castles, as far as the state chambers were concerned, were covered with wainscot, painted in fresco upon the panels, where not otherwise hung with tapestry. The church-warden renovators of our ecclesiastical buildings in the seventeenth and eighteenth centuries destroyed, by their white-washing processes, many fine specimens of wall-painting and fresco-work. In some instances, careful manipulation on the part of artists and architects has succeeded, says the *Brick and Tile Gazette*, in saving the fresco-painting, but in many cases the thin coat of plaster forming the ground of the painting unfortunately came off with the coat of outside white-wash. An older system of plastering, known as pargeting, or pergeting, was once very general. The term, as it is known in the present day, only applies to coarse plastering inside chimney flues, and between joists of floors. Formerly pargeting was understood in several senses: sometimes it was plain plastering, but generally it was used in connection with ornamental work, including mouldings, figures, foliage, and various other enrichments, sunk and raised. The Elizabethan half-timber houses exhibited on their exteriors ornamental pargeting betimes. In different towns throughout the kingdom houses formerly of the date to which we are referring displayed small figures, and canopies surmounting them, executed in plaster work. The plasterer may put in a claim for much good work in the past as well as an alliance with distinguished artists. The plasterer in the case of fresco-painting had always to be in readiness to render the wall with a coat of coarse stucco formed of lime and sand, which was finished over with a finer material to produce the requisite surface for the artist. Though the ancients were ignorant of the use of oils and varnishes, the fresco-painter, from the very nature of his work, had to evidence marvelous dexterity and skill, rapidity of execution, and a truly educated eye, all these being essential in the efficient performance of his labor. His subordinate, the plasterer, no doubt felt an inward pleasure, at least, that he prepared a good ground or basis for the successful work that resulted.

Of the class of plaster work known as stucco proper, there are several excellent examples in England and Ireland, generally attributed to Italian artists, several of whom were encouraged to settle in these kingdoms by members of our native nobility and some others interested in architecture.

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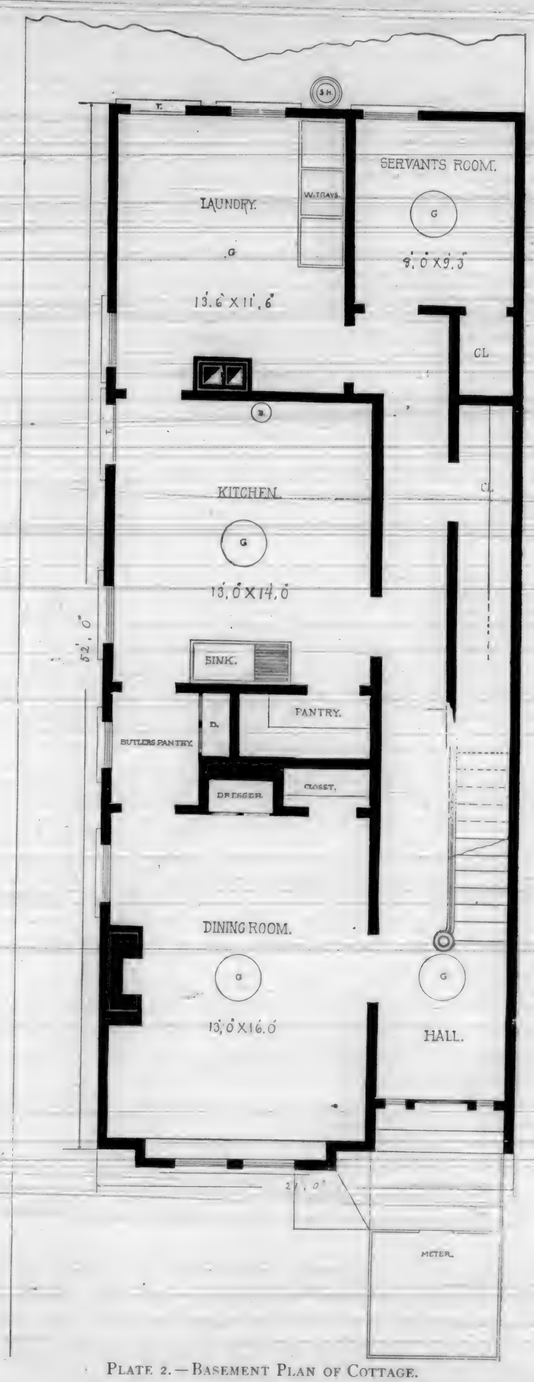

PLATE 2.—BASEMENT PLAN OF COTTAGE.

Early Plastering and Plasterers.

THE use of plaster, or "plaister," as it was formerly called, is of early date, even in the British Islands, in connection with domestic architecture. Long before lime plaster came into general use, a tenacious clay or sticky and unctuous earth was employed when procurable, and, in its absence, whatever clay, or mixture of mud and earth, produced the most binding material. The rudest and coarsest forms of daubing or plastering in the British Isles were those structures erected of wattles and daubed over with clay to keep out the cold. These kind of domestic buildings were common in Ireland in the time of Henry II. From necessity or in conformity to the fashion of that country, the English monarch erected, according to Roger Hovenden, a royal palace with "uncommon elegance" of smoothed wattles in 1172, and in such buildings his majesty, with the kings and princes of Ireland, solemnized the festival of Christmas. The Devonshire "cob," a class of building not yet extinct, is a fair illustration of the ancient fashion of daubing or plastering practiced in this country for long centuries. In the thirteenth and fourteenth centuries in this country the plasterers proper and the daubers formed two distinct classes of building workmen, and their wages, like the wages of other operatives, were subject to certain regulations summer and winter. The daubers were simply the layers-on of a mixture of straw and mud to a framework of timber. The plasterers in London in the 24 Edward III. (1350), were bound to take no more for their working-day between the feast of Easter and St. Michael than 6d., without victuals or drink, and for the remainder of the year 5d. Upon feast days, when they did not work, they took nothing. The masons and carpenters received similar pay. As a curious contrast with rights claimed by building workmen in the present day, those of the fourteenth century were allowed nothing for making or mending their tools. We know what fierce disputes took place within the last quarter of a century on the question of "grinding money," and how it was at last acceded to by the employers that a workman about being paid off was allowed a certain time for grinding or sharpening his tools, with a view of being prepared for his next job. The dauber or inferior plasterer of the fourteenth century received only 5d. per day from Easter to St. Michael's Day, and 4d. for the rest of the year. The daubers had laborers to attend them as well as the tilers, and these laborers received only 3½d. for one part of the year and 3d. for the other.

At an earlier period in the preceding reign, in the 10 Edward II. (1317), we have an interesting agreement concerning the plastering of the hall of John de Bretagne, Earl of Richmond. From an earlier document the residence mentioned would appear to have been situated in the locality of Ivy Lane or Warwick Lane, near St. Paul's. Thus runs the agreement of the master-plasterer of the fourteenth century:—Know all men that I, Adam le Plasterer, citizen of London, am held bound to Sir John de Bretagne, Earl of Richmond, to find plaster of Paris, at my own proper charges, good and sufficient, without default, proper for the hall of the said earl, and also that I will competently, at my own proper charges, plaster and complete the said hall, and will repair the walls of the same with the said plaster, well and befittingly within and without, as also the tewels [the louvres or flues] to the summit, in such manner as befits the repair of the hall aforesaid; and this I will do for 24 pounds sterling, which my lord the said earl has paid to me beforehand. Faithfully to perform the which work within eight weeks from the day of the Holy Trinity next ensuing, I do bind myself and all my goods, movable and immovable, namely, my lands, houses, and tenements within the City of London being, to distress in part of any bailiff of our lord the king," etc. Plaster of Paris appears to have been used in England long before this period, but whether its use preceded the Norman migration, and how long, we cannot say. Native gypsum could supply a fair material in the absence of the imported article, and there are several beds of it in different parts of the kingdom. We have further mention of the plasterer or dauber and his wages in an account of moneys expended by a trustee on the repairs of a house in the parish of St. Michael Cornhill, in the 33 Edward III. (1359), viz.:—"For 12 cartloads of lom [loam], 4s.; for 9 sacks of lime, 18d.; for 3 cart oads of sand, 12d.; for one workman's wages for daubing, 9 days at 7d. per day, 5s. 3d.; for his man the same day at 5d. per day, 3s. 9d." Again, in an account of expenses incurred by the representatives of the city attending the Parliament in the 13 Richard II. (1389), the plasterers, or daubers, put in an appearance. "For timber and carpentry, tilers and daubers, in preparing the house for their lodgings, as well as the chambers as the hall, buttery, kitchen, and stables for horses; and for making stoles and fourmes [stools and formes] throughout, and for carting out the rubbish, such house being quite ruinous; as also for payment made to the good man of the house for said lodging, £6 9s."

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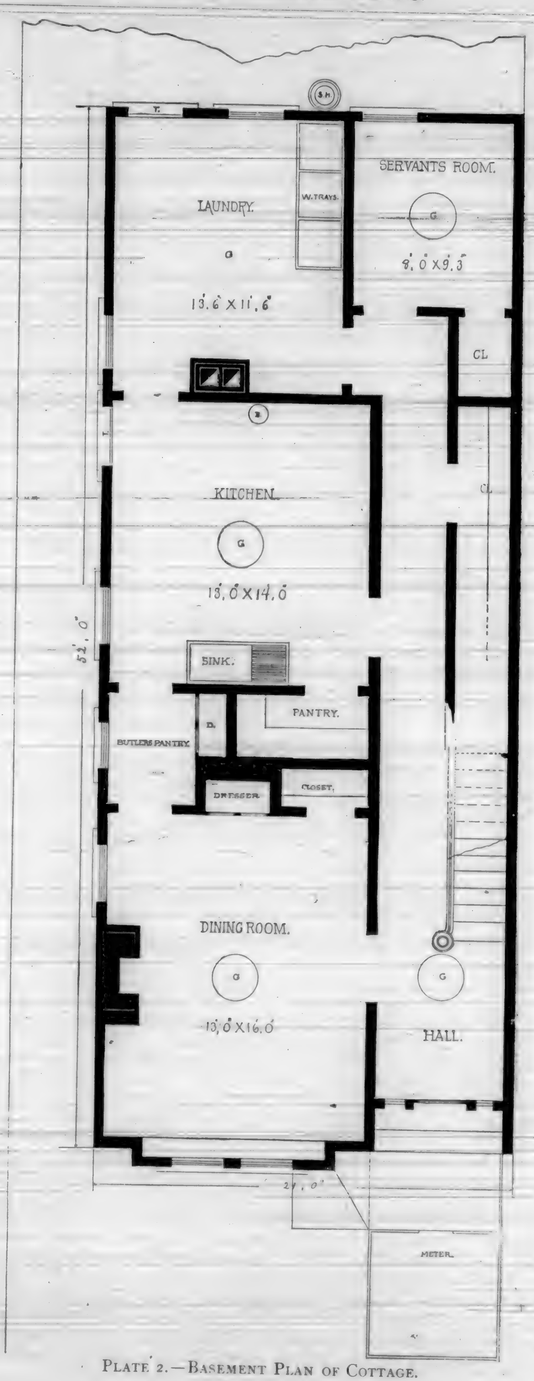


PLATE 2.—BASEMENT PLAN OF COTTAGE.

The Chinese Infliction.

It is not very difficult to understand why the people of the Eastern States are slow to accept the situation,—the living facts of every-day life on the Pacific Coast. There has been testimony sufficient adduced, and facts innumerable clearly proven, to convince any one who is not *unwilling to be convinced*, that the presence of the Chinese race in considerable number in any civilized community or county, is bad in every sense of the word—practically ruinous in ten thousand ways; and if not effectually and permanently restricted, will lead to results of the most damaging character, as far as the political, moral, and general interests of the country are concerned. If, step by step, and year after year, they increase in numbers, and the people of the United States tolerate their presence, and permit them to work into all the trades and avenues of manufacture and labor, and yield to them the rights and privileges of the people of the "most favored nations," the next that will follow will be enfranchisement and political rights It may require time to bring this about, perhaps a half century, but we have seen evolutions and results even as great, which within fifty years have brought about changes of the most gigantic character. Let the thoughtful mind run back over the ten past decades, and gather up, and put together all the facts and results of that period of time, and then dare to face the possibilities of the next half century, by an assertion that any stupendous change and overturning is impossible.

The Chinese are by no means "fools." They are the opposite of that,—cunning, artful, selfish, perfidious, untruthful whenever a lie will serve a purpose,—without a single moral sentiment that will not yield to the slightest temptation, and consequently a corrupt and dangerous element in both a political and moral sense to tamper with; and if permitted to gain a sustained and sustaining foot-hold—a position that will render them secure against the influences which are now so loudly demanding restriction, and contending against their encroachments upon and into the rights of the laboring, manufacturing, trading, commercial, and other interests of the country, the babes and infants of the present day will be compelled to encounter a condition of things which, if thrown suddenly upon the present men and women of the United States, would cause a rebellion of stupendous character, and cause a slaughter greater than has ever been in the world's history. The *men* of to-day could not be restrained or controlled, if the attempt was made to force them at once to accept a state of things such as the Chinese incubus is bound to bring upon their children, perhaps within a generation, if with impunity, as in the past, they are permitted to continue their aggressive methods, growing stronger and more potent and powerful with the years as they pass, encroaching upon, endangering, and undermining the life prospects, hopes, and comforts of millions of our own people, who seek to live as free men should live, in the enjoyment of this free and good land of liberty, where the laborer is worthy of his hire; and none should be forced to bow the knee to oppressive conditions, nor wear the yoke of perpetual servitude, as the result of competition with beings who know not, nor care for, any of the higher, more ennobling, and purer sentiments which actuate men and women of pure minds and holy purposes.

During the past thirty-five years, the rank seed of Chineeism has been planted, first upon the soil of California, where it has taken deep root and gained sturdy growth, with wide-spreading branches, and root tendrils shooting in all directions. They laugh at the clever ease with which they beat the laws of the land, and defy the legislative and judicial powers of the Government, swearing away and nugafying the enactments designed to fit their cases, and which, for all practical purposes, is perfectly clear and conclusive, except for the false swearing of the creatures themselves, and a word technicality which should be set aside as immaterial to the intents and purposes contemplated by the law-making power of a free and enlightened Government

Says a correspondent of the Philadelphia *Record*, writing from England: "The English are the best builders, I should say, in the world; they seem to like building; where we have a fence they have a wall; where we have a wooden jetty they have a stone pier; where we have a wooden sidewalk they have a granite pavement; we are in a hurry about everything, content with makeshifts; the English are never in a hurry, and they hate makeshifts. I reckon we lick the English in inventing things, saving labor, and in steamboats; and, except that I admire the little gardens to the humblest homes in England, I think Philadelphia can match the old country for homes; but, as I said before, solid is the word I should write down to describe England."

A Door That Cost $28,000.

One of the finest works of art in Washington is the bronze door of the capitol, which fills the doorway leading from the portico into the rotunda. It was modeled in Rome in 1858 by Randolph Rodgers, and cast in bronze at Munich in 1860 by F. Von Miller, at a total cost of $28,000. The valves of the door stand in a superbly enriched casing, also of bronze, and fold back into suitably fitted jams. In height it is nineteen feet, and nine feet wide, weighing 20,000 pounds. In 1862 this door stood in the south doorway of the old hall of representatives. In 1871 it was removed to its present situation, which is more appropriate, as it is now the front door of the capitol, and can be easily examined by strangers. Each wing of the door has four large panels, and eight smaller ones. The events portrayed in the larger panels constitute in *alto relievo* the principal events in the life of Columbus and the discovery of America, while in the sixteen smaller ones are beautiful statuettes of his patrons and eminent contemporaries. On the key of the arch is an excellent head of Columbus. In the casing are four typical statuettes, representing Asia, Africa, Europe, and America, while between the panels is a series of heads representing the historians of the life and voyages of Columbus and his followers, among them Washington Irving and W. H. Prescott.—*The Builder*.

Black Walnut Worth One Dozen Farms.

"If the original forests of the States of Indiana and Ohio were standing to-day," says a lumber buyer, "their valuation would be many times greater than are the farms which they were sacrificed to improve. In making their farms the settlers in those States destroyed millions and millions of dollars' worth of black walnut. Miles and miles of fence are laid with black walnut rails. One old farmer says that only thirty years ago he began making his farm, and that he had worked eight years in clearing it of the walnut timber, eight acres of which he burnt up. After thirty years of cultivation the farm is worth $8,000. If it had its walnut timber back it would be worth more than $100,000." The *Gazette* has several times referred to the tremendous destruction of timber which has been wrought by the hands of the farmers of the country, but regrets will not bring back the valuable stuff which has been reduced to ashes upon myriads of logging heaps. It is a case of cannot eat your cake and keep it. We cannot have improved farms and valuable timber tracts upon the same land.—*Lumberman's Gazette*.

September opened with a brisk trade in all the leading branches of manufactured goods, and the outlook is promising for the best fall business we have had for several years. Compared with the opening of September last year, there is a marked change. Then there was a halting, weak tone, and stocks of most wares were largely in excess of the demand; factories and workshops were stopping in all directions, and large numbers of people were out of employment in all the manufacturing towns. Now buyers are operating with confidence, prices of goods are advancing, and stocks have disappeared. In many instances the factories are behind their orders and some idle machinery has been started up. Fewer people in the manufacturing towns are idle for want of employment, and in some towns everybody that wants work can get it. The despondent tone has given way to a cheerful, hopeful spirit, and all are now confident that good times are coming. A glance at our reports will show that there is a solid foundation of facts for these statements.—*Brick, Tile, and Metal Review*.

Treads and Risers	$ .50
Stair Building Made Easy	1.00
Art and Science of Stair Building	1.00
Architectural Perspective	3.50

The Annual Architectural Gatherings.

The American Institute of Architects will meet in annual session, October 21, 1885, at Nashville, Tenn. It is to be regretted that California and the Pacific States and Territories—particularly San Francisco—fail to furnish a single representative in that body, although the place of meeting has been made to some extent central, and so as to accommodate distances and equalize conveniences.

True, there are but a few of the many scores of architects practicing on this coast, entitled to a seat and active voting participation in the proceedings of the parent body; but it is very certain that any intelligent representative member of the profession being present, would be well received and entertained. The brethren East would gladly extend courtesies, and make the visit of parties representing this side of the continent exceedingly pleasant.

San Francisco Chapter should take this matter in hand, and at an early day arrange for a representation at the session of 1886. This extreme western branch of the profession has remained sufficiently long encased in its isolation. For many years the bar to commingling with the eastern sections of the country, was to a certain extent enforced by difficulty of transit and communication; but this has long since been removed, and the present facilities, conveniences, and speed of travel, render a trip East a matter of small moment. And if the Chapter should delegate representatives, it would be entitled to all the benefits arising therefrom, and at the same time strengthen the position of the party of parties representing

THE WESTERN ASSOCIATION OF ARCHITECTS.

This body also holds its session, October 18 at St. Louis. Great interest is manifest, and it is to be expected that a spirited and interested time will be enjoyed. Invitations have been extended to architects in California, and an earnest desire expressed to see a representation from this coast. The two conventions assembling about the same time—one on the 18th and the other on the 21st of the same month—will afford the opportunity to the delegates from each to mingle in the pleasures and profits of both, an opportunity that might have been made profitable to the profession in California had this city been present by representation.

Special Book Notices.

Cooper on the Use of Belting for the Transmission of Power, contains a large amount of practical and valuable information, with numerous illustrations. Its subject matter is treated intelligently, and with a clearness of comprehension that renders it a truly valuable book. Its matter covers 300 pages, 6x9, with ten pages of index additional. Thos. W. Hartley & Co., Phil., publishers' agents.

Grimshaw on Saws, with Supplement, by Robert Grimshaw. A book of 279 pages, neat and clear in typographical execution, and full of facts and figures in relation to saws. The number and variety of its illustrations add greatly to its interest. It contains a large amount of valuable information. Thos. W. Hartley & Son, publishers' agents.

A Manual of Industrial Drawings for Carpenters and Other Wood-workers, by W. F. Decker, instructor in drawings in the University of Minnesota. Published by W. F. Comstock, N. Y. Price, $2.00. *Sent by mail free of postage to any part of the world.* To be had at the office of this Journal at publishers' price. An excellent, practical book.

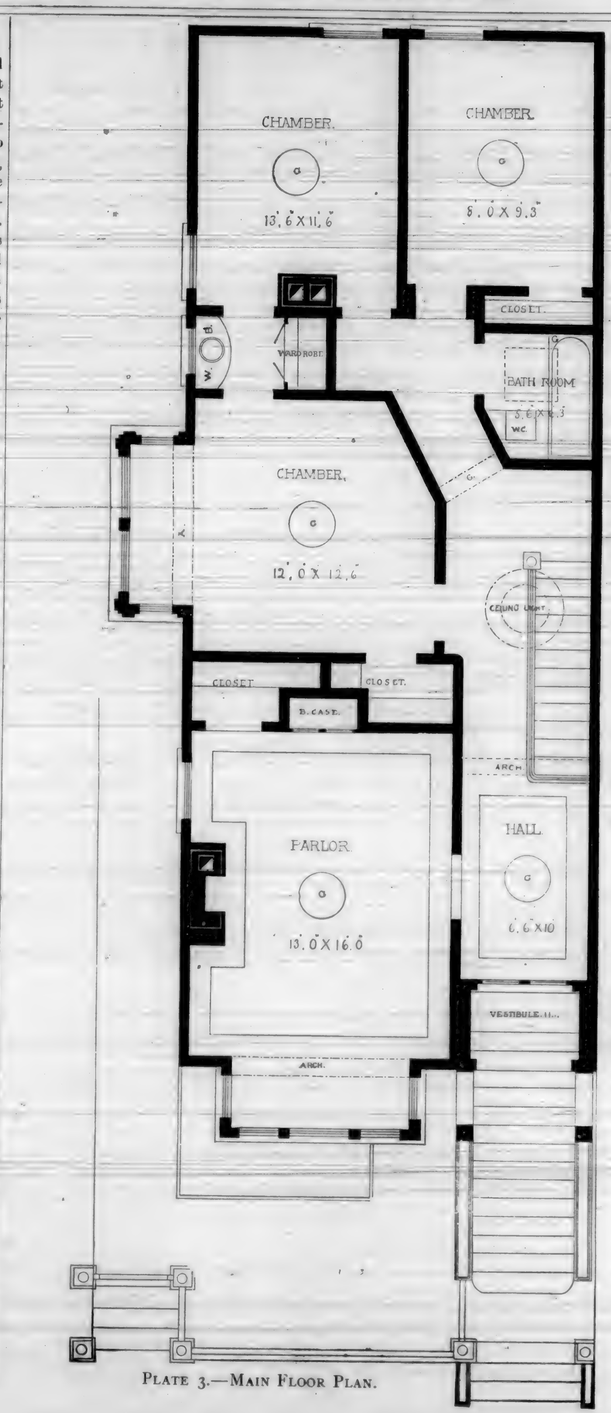


PLATE 3.—MAIN FLOOR PLAN.

Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

(Continued.)

TWO BODIES, M and N, each of a different temperature, are in contact with each other, the one M, the warmer, will transmit or pass heat to N, the colder, through the surface of contact, to be absorbed by N. If N is cut up in equal small slices parallel to F, the surface of contact, and in each of the slices exist a uniform temperature, but differing from each succeeding one, then the slices will the more apart, with a better conduitivity of heat of the material. A motion of heat from M, the hotter body, through F towards N, will occur.

If the surface of a hot body emits or radiates heat to the surrounding colder medium, such emission is depending on the condition of the surface of the body.

By the emission or giving over of heat to a body, such may be done, by radiation or by conduitivity (contact with the surrounding medium). Is named with:—

r, the heat given over by radiation per hour, and □ meter (10.76 59. feet).

V_1, the heat given by conduitivity per hour, and □ meter.

T is the temperature of the surrounding medium.

t is the overplus of temperature of the emitting surface over the temperature of the medium.

k = a coefficient, depending on the condition of the surface of the body.

k_1 = a coefficient, depending on the shape and extension of the surface.

a = a constant = 1.0077.

b = constant = 1.233.

Then is:—

v = heat transmitted by radiation =

$$124.72k \times a^T(a^t - 1).$$

v_1 = heat transmitted by conduitivity = $0.552\ k_1\ t^6$, and the whole heat transmitted.

$V = v + v_1 = 124.72ka^T(a^t - 1 + 0.552k_1\ t^6.$

Values of k for the coefficient of radiation:—

Polished silver	0.13	Glass	2.91
Silvered paper	0.42	Pulverized chalk	3.32
Polished brass	0.258	Saw-dust	3.53
Gilded paper	0.23	Powdered coal	3.42
Copper	0.16	Fine sand	3.62
Zinc	0.24	Coat of oil paint	3.71
Tin	0.215	Paper	3.77
Polished black sheet-iron	0.45	Lamp-black	4.01
Leaded sheet-iron	0.65	Building stone	3.60
Common sheet-iron	2.77	Gypsum	3.60
Roasted sheet-iron	3.36	Wood	3.60
New raw iron	3.17	Woolen stuff	3.68
Roosted "	3.36	Calico	3.65
		Silk stuff	3.71
		Water	5.31
		Oil	7.24

k_1 is depending on the form and extension, and is:—

For a sphere of the radius r, $k_1 = 1{,}778 + \frac{0.13}{r}$

For a sphere, $k_1 = 1.778 + \frac{0.13}{r}$ of radius r = r.

For a horizontal round cylinder of radius r,

$$k_1 = 2.058 + \frac{0.0382}{r}$$

For a vertical cylinder of radius r and the height h,

$$k_1 = \left\{0.726 + \frac{0.0845}{\sqrt{r}}\right\} \times \left\{2.43 + \frac{0.8758}{\sqrt{h}}\right\}$$

From the following table the values of v and v_1 for the different overpluses of temperature (t) can be computed, where by T is taken = 15°.

T = 0	10	20	30	40	50	60	70	80	90	100 deg.
0.89	0.96	1.04	1.12	1.21	1.31	1.41	1.52	1.65	1.78	1.92

then the following figures in the table must be multiplied with

Overplus of temperature (t), degrees.	Transmission by Radiation.	Transmission by Conduitivity.	Overplus of temperature (t), degrees.	Transmission by Radiation.	Transmission by Conduitivity.
10	11.2k	9.4k$_1$	40	269.5k	244.3k$_1$
20	23.2k	22.2k$_1$	50	302.1k	266.1k$_1$
30	36.1k	36.6k$_1$	160	339.0k	288.1k$_1$
40	50.1k	52.2k$_1$	170	277.4k	210.5k$_1$
50	65.3k	68.6k$_1$	180	418.5k	333.2k$_1$
60	81.7k	86.0k$_1$	190	463.2k	356.1k$_1$
70	99.3k	104.0k$_1$	200	411.2k	379.4k$_1$
80	118.5k	122.6k$_1$	210	563.1k	402.9k$_1$
90	138.7k	141.7k$_1$	220	619.0k	426.7k$_1$
100	161.3k	161.5k$_1$	230	679.5k	450.7k$_1$
110	185.3k	181.5k$_1$			
120	211.3k	202.1k$_1$	240	744.8k	475.0k$_1$
130	239.3k	223.1k$_1$	250	848.7k	498.6k$_1$

For the transmission of heat, those cases are most important where two parallel equal distanced surfaces are surrounded and in contact by mediums of a different temperature, where the overplus of heat of the one medium transmits heat to the other through the separating body. The transmitted quantity of heat M must be equal to the heat transmitted to the medium facing the colder surface.

If we name

e, the thickness of the transmitting body, the distance between the absorbing and emitting surface.

t, the temperature of the heat-emitting medium = to the heat-absorbing surface.

t', the temperature of the heat-emitting surface.

t'', the temperature of the heat-receiving medium.

C, a coefficient, depending on the capacity of the body to conduct heat,

Then is:

$$M = \frac{C(t - t')}{e} \text{ wherein}$$

$$C = \frac{e\ (k + k_1)\ (t' - t'')}{t - t'}$$

Table for the values of C of the different bodies pro 1 honer 1 sq. meter = 10.76 ft. 59 e = 1 meter, 3.28 ft. $(t - t') = 1°$

Gold	77.	Cork	0.143
Platinum	75.	Caoutchouc	0.170
Silver	74.	Guttapercha	0.173
Copper	69.	Starch paste	0.425
Iron	28.	Glass	0.75–0.88
Zinc	28.	Quartz sand	0.27
Tin	22.	Broken brick coarse	0.139
Lead	14.	Broken brick fine	0.165
Gr'phite fr'm gas retorts	4.96	Dry washed chalk	0.086
Fine-grain marble	3.48	Dry washed chalk, pressed	0.103
White coarse marble	2.78	Flour from potatoes	0.098
Fine-grain limestone	1.70–2.08	Wood ashes	0.060
Common mixed gypsum	0.331	Saw-dust	0.065
Gypsum mixed with alum	0.63	Charcoal powder	0.079
Burnt clay	0.51–0.63	Coke "	0.160
Pine cross-grain parallel fiber	0 093	Iron filing	0.158
" fiber	0.170	Cotton	0.040
Walnut cross-g. parallel fiber	0.103	Carded wool	0.044
" fiber	0.174	Elderdown	0.039
Oak cross-grain	0 211	Linen	0.043–0.052
		White writing paper	0.043
		Gray printing paper	0.034

A body, composed of many layers of thicknesses, e, e', e'', and the conducting capacity C, C', C'', will have

$$M = \frac{t - t'}{\frac{e}{C} + \frac{e'}{C'} + \frac{e''}{C''}}$$

A scrutiny of the radiating and conducting capacity of the different bodies, as solid or in a pulverized state, shows a large difference, the movements of the heat being retarded by the air between the small particles.

A conservatory of 1 sq. meter surface of glass, the outside temperature being 20°, the required inside temperature being 40, the whole heat emitted by radiation and conduitivity is

$Q = v + v_1$; $v = 23.2 \times 2.91 \times 1.04 = 70.21$.
$v_1 = 22.2.\ 0.88 \times 1.04 \times 20^{\circ} = 40.62$.
$Q = v + v_1 = 110\ 83$ caloric per hour and square meter, or 10.76 square feet.

HEATING AND VENTILATION.

The quantity of heat acquired pro unit of time (one hour) to warm a room is depending on the capacity of transmitting heat, viz., on the kind and thickness of the surrounding wall inclosing the room (walls, windows, doors, floor, and ceiling), and the difference between the temperature wanted in the room and the temperature existing outside of the inclosing wall.

For the most important instances for practical application, the needed amount of transmitting heat can be calculated by the following rules. The terms therein given are:—

M = to the number of units for heat (caloric) which for every hour every square meter = 10.76 sq. feet through a body with parallel sides (wall, plate) are transmitted.

C, the coefficient of the conducting capacity of the material.

k, a coefficient depending on the condition of the surface.

k', a coefficient depending on the form and extension of the body; the sum of $k + k_1 = Q$.

T, the temperature in centidegrees desired in the room to be warmed.

t, the temperature the transmitting body is exposed to on the outside.

e, e', e'', the thickness of the parallel stratas the transmitting body is made off, measured from the heat-receiving strata to the heat-distributing surface of each strata.

1. Transmission of heat through the walls or doors of a room, when all the walls are not exposed to the outside air.

$$M = \frac{C, Q\ (T - t)}{2\ C + Q\ e}$$

2. Transmission of heat through single windows, not all of them being exposed to the outside air.

$$M = \frac{Q\ (T - t)}{2}$$

3. Transmission of heat through plain glass walls, all of them being exposed to the outside air.

$$M = \frac{Q\ k_1\ (T - t)}{Q + k_1}$$

4. Transmission of heat through double sash windows of a room, not all the walls containing them are exposed to the outside air.

$$M = \frac{Q\ (T - t)}{2 + 1}$$

5. Transmission of heat through the ceiling of a room—

$$M = \frac{Q\ (T - t)}{2 + Q\left(\frac{1}{Q} + \frac{e}{C} + \frac{e'}{C'} + \frac{e''}{C''} \cdot \cdot\right)}$$

By inserting the values before given for the radiating or conducting coefficients, and for a difference of temperature $(T - t) = 1$, we obtain by these formulas the following figures:—

For. 1; a, for a brick wall.

Thickness of Wall. m, or feet.	Transmission Value. M.
0.125 (5")	1.80 cal.
0.25 (10")	1.20 cal.
0.38 (15")	1.04 cal.
0.51 (20")	0.86 cal.
0.64 (25½")	0.73 cal.
0.77 (30⅜")	0.63 cal.
0.91 (35⅞")	0.55 cal.
1.04 (41")	0.49 cal.

B, for wood in doors.

Material.	Height of Door.	Thickness of Door. 0.040m (1⅝")	0.050 (2")
Pine	3m (9'10)	2.55 cal.	2.50 cal.
Oak	3m (9'10)	2.72 cal.	2.49 cal.

Ad 2, for single windows.

Height of Windows.	Transmission.
2m(6'6")	2.56 cal.
3m(9'10")	2.52 cal.
4m(13'1")	2.50 cal.
5m(16'4")	2.49 cal.

Ad 3, for glass walls.

Height Glass Walls.	Transmission.
2m(6'6")	1.54 cal.
3m(9'10")	1.49 cal.
4m(13'1")	1.47 cal.
5m(16'4")	1.45 cal.

Ad 4, for double sash windows.

Height of Windows.	Transmission.
2m(6'6")	1.70 cal.
3m(9'10")	1.68 cal.
4m(13'1")	1.66 cal.
5m(16'4")	1.65 cal.

Ad 5, for ceiling.

For a ceiling of 0.3m (11.81") thickness we find the value of transmission 0 5 cal.

The above formulas and the values calculated, with their assistance, must practically be applied with some allowance and consideration, since the conditions under which those formulas were made can't exist in reality. For example, the transmission is considerably influenced by the position of the transmitting body towards the quater of heavens, through rain, wind, state of moisture of the atmosphere, the air, sunshine, by the special quantities of the material and the quality of work executed, etc. The given formulas are only guilty for a state of continuation and uninterrupted use, which in reality is seldom the case. For a room seldom heated and only used for a short period, the calculation for a heating apparatus for the heat needed hourly, the question in the firs place is, not as much the transmission of heat as the absorbtion of the same by the walls (churches, halls, etc.), to be considered.

To have, under the common conditions, a support for the approximate calculation of the losses of heat, it will be well to increase the values obtained by the formulas; for room facing north and east, by 10 per cent, and multiply all values of M with respectively:

1.1 when the heating is carried on uninterrupted.

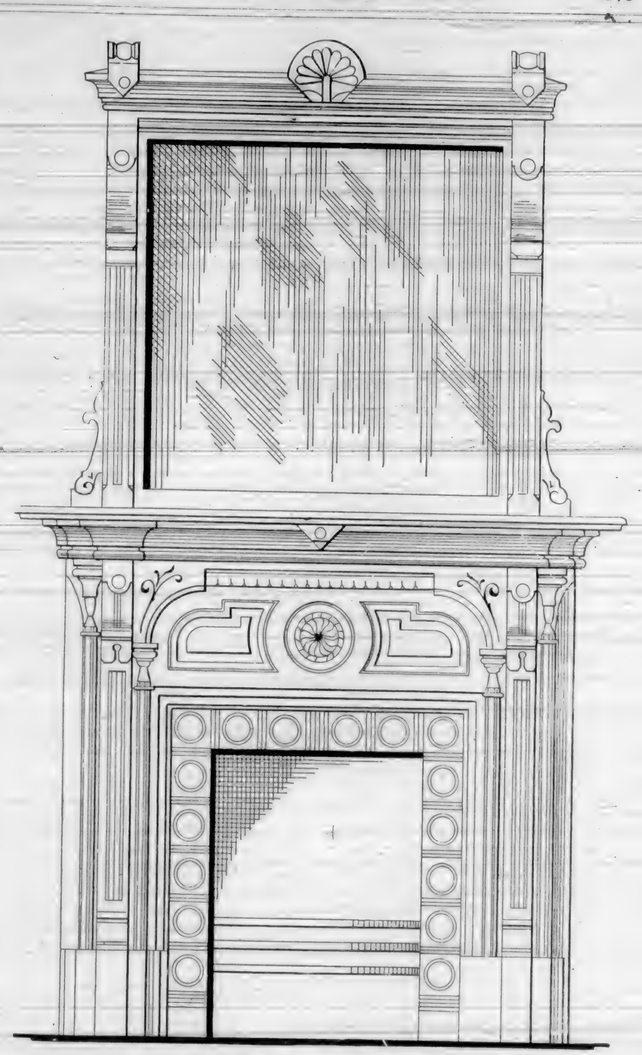
1.2 when the heating is carried on during daytime, and the building having no sheltered position.

1.3–1.4 when the heating is carried on during daytime, and the building having a much exposed position.

1.8–2.00 when the room is only periodically heated.

From the above calculated amount of heat can, when the room is occupied by a certain number of persons stopping in it constantly, or for a longer time, that quantity of heat be deducted created by them, and for which we can allow 130 cal. of heat for a grown person per hour, and 70 cal. for a child.

Suitable temperatures T for room to be heated, are:—



DESIGN FOR LOW CAST MANTEL.

For heating rooms, halls, theaters, etc.	16°–18° cal.
Living rooms	18°–20° "
Bedrooms	15°–16° "
Stair corridors	12°–15° "
Hot-houses { warm	20°–24° "
Hot-houses { cold	10°–14° "
Hospitals	20°–22° "
Prisons	16°–18° "
Workshops	10°–12° "

For t, the temperature of the outside atmospheric air, we have to consider the climatic condition of the country, since the heating arrangement must fulfill its functions with safety under all conditions.

FUEL.

Of the three kinds of fuel, the solid, fluid, and the gaseous, the solid is by far the most in use, inasmuch as late attempts to introduce the gaseous were, so far, not successful.

As stated before, and in connection with the application to be repeated, hydrogen and carbon are the heat-producing elements of the fuel, which, by perfect combination or oxidation, taking the required oxygen from the air, are reduced to water and carbonic acid, but by imperfect combustion, under considerable loss of heat, are reduced to oxide of carbon, oleifiant, and water; both instances leaving ashes as residue from the incombustible inorganic substances of the fuel.

The Master Painters.

THE regular monthly meeting of the master painters was held on the 6th inst., Mr. E. M. Gallager occupying the chair. The aims and objects of this organization are to protect mutual interests, and remedy existing evils in the painting art; and, as far as possible, purge it of the influences which have rendered it next to impossible for thoroughly competent and trustworthy men to secure work at prices sufficient to enable them to pay for the stock used and the labor employed.

There is no question but that there are some terrible frauds in the painting business, who manage to manipulate compounds bearing but the semblance of genuine lead and oil paint, and who "play it on owners" to a disgraceful extent. The report of proceedings states: "It has been one of the crying evils, for many years, that property owners have sought in vain for protection against the use of vile materials. Hundreds of private dwellings in this city are to-day blistered and cracked from the use of inferior stock—notably one on Nob Hill, which is in a wretched condition, and is being overhauled."

This outcry against the "slop shop workers" is all very well and right, as against the *bastard* painters, but owners are also to blame—inasmuch as they, as a rule, are willing that every fellow who calls himself a painter, although in very fact the merest dauber, should compete with competent men; and they—possessing neither the integrity nor the ability to do good work, figuring below all reasonable and right values in eight out of ten cases - so far underbid the good men (often to the extent of fifty to one hundred per cent), that the amount seemingly saved to the owner dazes his better judgment, and he submits to the chances, both as to materials and workmanship.

This mistaken course on the part of owners is damaging alike to themselves and qualified mechanics; to themselves in that they pay money for a worse than worthless something—a something that has neither merit nor value, and which, when used, becomes a continuous annoyance and vexation. For when a man realizes that he is the martyr of a bad job of painting, it is impossible for him to reconcile himself to the fact, excuse it, and be satisfied with it. It haunts him ever, and he cannot forget one of two things: either, "What a fool I was to give the job to that man;" or, "That rascally painter swindled me badly," neither of which propositions are pleasant reflections.

If owners would exercise better judgment, and a little more liberality, they would secure better work. But unfortunately, as a rule, when the contrast is presented of $675 or $962, as against $1,075 or $1,680 respectively, the difference has a powerful effect and influences in determining issues, and qualifying preconceived purposes and resolutions not to contract with nor employ any but first-class painters.

The objects of the organization are, however, to be commended, in that it is seeking to correct a great wrong and evil existing in the painting business, and to stimulate integrity and correct dealings in the use of materials and otherwise, and inspire ambitions among its members to learn and know what is best to do, and how to do it, and to exercise that knowledge rightly, honestly, and faithfully in every transaction.

It is to be hoped that the better men will consolidate determinations and efforts, and work unitedly as against the manipulations of slush and fraudulent compounds, by the use of which they gain an advantage in figuring over men who have "learned the trade," and who are unwilling to disgrace themselves and the pursuit of their choosing by resorting to any of the numerous dishonest and un-mechanical devices by and through which the "cheap" operators obtain a large proportion of the contract work let in San Francisco.

Figures in Wood by Compression.

A NEW process has been invented by which designs in wood, having all the appearance of genuine carving, and being if anything of a finer finish, are produced by compression, and can be sold at a nominal price. The process consists in paring hard-wood shavings as thin as wafers, which are then placed in a chemical solution. When in a properly pliable condition, the mass is introduced into moulds made from steel plates, and pressure is applied, which forces the wood pulp in every line of the mould. When it becomes dry, it is removed from the mould, and has exactly the appearance of a wood carving, with the grain of the wood as perfect as though it had never been reduced to a pliant condition. The process is a German invention, and large numbers of different designs are now being manufactured in Berlin. These are in form of heads, figures of men, women, birds and animals, flowers, picture and mirror frames, clock frames, cabinets and cabinet decorations, album covers, etc. Beautiful designs are framed in brass, bronze, and plush, and make exquisite plaques and parlor ornaments. The designs can be used in every form of decoration for which wood carving is suitable.—*Furniture Worker.*

When the architects and builders of churches learn that ventilation does not consist in a draught of cold air, and that something more is necessary in a crowded building than an open door or window, one very great danger to health will be removed. This subject of ventilation has received much practical attention of late, in which the churches seem to have been largely left out of the account. An open door, or window, in such a building usually means a current of cold air, which must inevitably blow directly on the necks and shoulders of many people, at least one-half of whom will either take cold or suffer twinges of rheumatism or neuralgia in consequence. Very few people, even in robust health, can sit in a draught without uncomfortable consequences, and delicate people more frequently "tempt Providence," as the saying goes, by sitting in a church where some zealous lover of fresh air throws open a door or lowers the upper sash of a window without a thought of the consequences, than they would by staying at home. The writer attended a church last Sunday where study and expense had not been spared in the interior decoration. The olives and blues, brightened with a touch of gold on wall and vaulted ceiling, were soft and restful to the eye. The seats were comfortable, the organ and choir satisfactory. But when the air grew heavy, and people moved about uneasily to keep themselves from drowsiness, one looked in vain for some adequate means for supplying freshness and life to the tainted air. At last, somebody opened a door at the back of the church, and there was no lack of fresh air, only it struck the heads and shoulders of every one in its path and effectually distracted attention from the sermon. People moved more uneasily than before, and no one had a monopoly of stinging neuralgic pains in back and shoulders for the rest of the day. If this were an exceptional case it would be of comparatively little importance, but it is so common a thing that it demands attention and remedy. If it is wrong to place one's self voluntarily in a position where health and, often, life are in danger, it is manifestly far more reprehensible to construct a church building, where people will go and ought to go, without proper thought or knowledge of this important matter. Clergymen will find their work very greatly advanced, and some of the stumbling blocks of coldness and indifference speedily removed, when pure air is properly and constantly furnished to their hearers without danger to health and comfort.—*Sanitary News.*

The London Tower.

IN the future, it would seem, the Tower is to be, even more than in the past, one of "the sights o' London." It is to be divested entirely of its utilitarian character. The rifles in the Armory are to remain, but the whole of the large store of arms is to be removed to the central depot at Weedon. This, we are told, is in fulfillment of a desire that the Prince Consort had very much at heart—a desire that the Tower should be preserved wholly and simply as a building remarkable for its architecture and for its historical associations. In accordance with this view, the barrack and hospital stores were removed in 1869, and the accoutrements a few years after. The workmen, of course, went also, and now the building will be deserted, so far as permanent tenants are concerned, by all save the small garrison which has always been maintained there. The arrangement will probably meet with general approval. It is, perhaps, as well to separate in this case the practical and the sentimental elements. The maintenance of the useful functions of the Tower means, of necessity, wear and tear, to which it is, no doubt, desirable that the building should no longer be subjected. There is very much to be said for keeping such famous old places as the Tower in as perfect a state of preservation as possible. We can find plenty of localities for the storage of arms, but we cannot adequately repair any damage which may be done to our ancient historical landmarks. We can "restore" them in one sense, but not in another.—*London Globe.*

The Russian Admiralty has ordered that twelve gunboats shall be immediately provided with furnaces for burning mineral oil instead of coal. The substitution of petroleum for coal for steam-ships is progressing rapidly. Already there are upward of three hundred steamers burning this liquid fuel, and their number is being added to almost daily. This is a matter that must even now affect the coal trade in an appreciable degree. It is reported that the owners of an important line of steamers from England to Australia are likely to adopt oil furnaces shortly. The space occupied by the oil for a given effect is scarcely more than half that required for coal, an advantage of great importance in long voyages The oil can be taken in, too, in much less time than coal. Hitherto no accident has occurred with this fuel.

A sudden rise in the Snohomish River, W. T., lately, broke the Pilchuck boom and let loose 1,500,000 feet of logs. The whole lot went out to sea. About 1,000,000 feet were saved and turned into Ebey Slough, 100,000 feet going out on ebb-tide and drifting into Port Susan Bay. Through the breaking of other booms it was thought that not less than 2,000,000 feet of logs went out to sea, about three-fourths of which were saved.

Cumming's Details	$6.00
Cutting Tools	1.50

Sewerage—Berlin.

SOME idea of the effect which the inauguration of a system of sewerage has upon the sickness-rate of typhoid fever may be gained by studying the results already attained in Berlin. Durand-Claye has recently published a description of the new system, in which he touches upon its effects upon the health statistics. It may be stated that the system has been put in so far, in the most crowded sections of the city, leaving the more open suburban portions of the town still unimproved in this regard. It may also be stated that Berlin is eminently a city of apartments and tenements. The average number of people living in one house in Berlin is fifty-eight In the suburbs, of course, the number is much less than that. The number of cases of typhoid fever in a stated time, in that part of the city where the sewerage is not yet put in, was one to each nine and three-tenths houses, while in the sewered portion in the same time, there was but one case to each forty-nine and three-tenths houses. The deaths from the disease bear out the conclusions derived from the sickness reports. In the unsewered portions of the city the deaths were one to each forty-three houses, while in the sewered portion the deaths were one to each one hundred and thirty-seven and five-tenths houses.—*Sanitary News.*

The fire waste in this country for the past few years is something fearful to contemplate. Probably few persons stop to consider what this amounts to in the aggregate, and few, comparatively, are aware that over $100,000,000 worth of property is sacrificed to the fire fiend every year in this country. This is equivalent to the annihilation of so much in actual values, which are taken, directly or indirectly, from the pockets of the people, either in premiums to the insurance companies, or in taxes to support fire departments. And the worst feature of it all is that the greater portion of this loss is wholly preventable. The poor character of buildings, carelessness on the part of owners or occupants, or want of adequate protection, are among the causes which lead to many of the disastrous conflagrations. In Philadelphia the underwriters have determined upon the selection of approved experts who are to visit properties and require improvements, and make re-examinations every six months.—*The Indicator.*

It is stated that the work on the new State House at Austin, Texas, will progress rapidly after Jan. 1. The foundations and basement are now completed, and a new railroad fourteen miles long has just been built to connect the site of the capital with the quarries from which the granite to be used hereafter in the construction of the building is to be procured. Contracts for iron and other building material have not yet been closed.

Builders' Guide	$ 2.00
Album of Mantels	8.00

Taxes and Manufacturers.

THE prodigal waste of money raised by taxation in large towns and cities frequently has a depressing effect on manufactures. In many cities there appears to be a regular increase in tax rates, which is likely to stop no one knows where. Such a state of affairs prevents the location of manufacturers, for the sufficient reason that they cannot compete, under the load of taxes imposed, with those more favorably situated in this respect. This is something never considered so fully as it should be; it is a strong plea for honesty and business principles in the expenditure of money raised by taxation. Nothing places a town or city in better condition to meet necessary taxation than the presence of large manufactories, distributing money to a large number of workmen.

In some of our Northern and Eastern cities the tax rate is three per cent, and increasing year by year. It cannot be expected that manufacturers will be anxious to establish themselves where they will be burdened, or overwhelmed, with such a load; on the contrary, those already there will be likely to consider the propriety of moving elsewhere in self-defense. Other towns and cities, alive to the advantages, offer to abate taxes altogether for a term of years; with honest and business-like methods of officials, we do not believe there would be any need of resorting to this last-named expedient, the justice of which is, to say the least, questionable. Manufacturers do not object to bearing their share of public burdens, but they do object to taxation about equal to profits they would be satisfied with. In such times as we have been passing through, this burdensome taxation is, in many instances, where business has been done at little or no profit, unbearable. We commend this view of the case to the law-makers. In too many instances they seem to lose sight of the fact that, when they succeed in driving away manufacturing, they will not find it easy to raise even the money required for the honest administration of affairs.—*American Machinist*

Old Files That Look New.

ACCORDING to the *Sun*, the Kearney & Foote Company, one of the largest manufacturers of files in the country, have lately received complaints of worthless goods bearing their trademarks. Recently one of their agents learned that a Jersey City dealer had had an offer of a large lot of files at remarkably low figures. The would-be seller represented that he had secured a supply of files at a sale of unclaimed express packages. An arrangement was effected which secured the presence of a detective, when two men called at the dealers and effected a sale.

Receipted bills showed that the sellers had purchased large quantities of scrap files from the Singer Manufacturing Company. An acid process gave the worn-out files a new appearance. A trial showed they would hardly cut lead, the acid having ruined their temper.

MASONS' AND BUILDERS' EXCHANGE
OF SAN FRANCISCO

Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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CALVERT, JOHN, 812 Hyde St.... " 2
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WESTERN IRON WORKS.... " 69

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MISCELLANEOUS.

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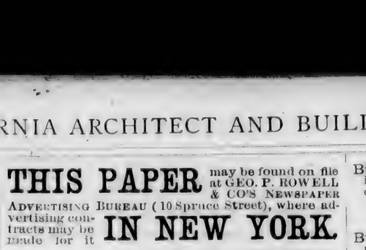

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A

Ashbury, bet. Waller and Frederick. Two-story frame.
O.—C. A. Hooper.
A.—Percy & Hamilton.
$10,000.

B

Brannan, No. 270, nr. Second. Alterations.
O.—Thos. Campbell.
C.—W. Pluns.
$1,500.

Broadway, bet. Goughand Octavia. Two-story frame.
O.—W. W. Wiggins.
A.—W. F. Smith.
C.—J. Dunn.
$3,800.

Brown Place, bet. Hyde and Larkin, McAllister St. north. Three two-story frames.
O.—H. Diamond.
A.—C. Devlin.
C.—Bateman Bros.
$5,800.

Bush, south side, bet. Devisadero and Broderick. Additions.
O.—H. McLaughlin.
C.—F. Roettger.
$1,100.

Buchanan, bet. California and Pine. Two two-story frames.
O.—C. Wrede.
A.—C. Devlin.
C.—B. Dryer.
$6,700.

Bush, nr. Mason, south side. Two two-story frames.
O.—J. Heller.
A.—F. Lueders.
C.—J. Blake.
$8,500.

Bryant, nr. Fourth, north side. Repairs.
O.—S. Armstrong.
C.—C. Crisman.
$1,200.

Buchanan, west side, bet. Turk and Tyler. Two-story frame.
O.—J. Baumeister.
A.—Salfield & John.
C.—F. Lynch.
$6,000.

C

Chesley, nr. Bryant. Alterations.
O.—Thos. O'Day.
Day's work.
$1,000.

Chattanooga, bet. Twenty-second and Twenty-third. Two-story fr me.
O.—J. Barry.
A.—M. J. Welch.
C.—Moore Bros.
$2,000.

Central Ave., east side, nr. Bush. Two-story frame.
O.—C. McKenzie.
Day's work.
$1,500.

Central Ave., east side, nr. California. Two-story frame.
O.—Mrs. A. H. Plunkett.
C.—F. Guttero.
$3,250.

California, nr. Van Ness Avenue. Additions.
O.—Dr. W. F. McNutt.
Day's work.
$1,500.

Clay, bet. Mason and Taylor. Additions and alterations.
O.—G. W. Haight.
A.—R. Swain.
C.—R. Gillespec.
$5,000.

Collinswood, bet. Nineteenth and Twentieth. One-story frame.
O.—W. Such.
C.—G. M. Salsbury.
$1,000.

Clay, bet. Van Ness and Franklin. Three one-story frames.
O.—P. Gorrevan.
A.—T. J. Welch.
C.—Bateman Bros.
$8,500.

D

Dupont, east side, nr. Filbert. Additions.
O.—L. Cavagniaro.
C.—W. Hannagan.
$4,000.

Douglass, cor. Eighteenth. Two-story frame.
O.—A. Lyons.
C.—G. Wakefield.
$2,000.

Douglass, east side, bet. Sixteenth and Seventeenth. One-story frame.
O. and B.—J. McCann.
Day's work.
$1,600.

E

Ellis, No. 123, bet. Powell and Mason. Addition.
O.—Capt. Turner.
A.—H. D. Mitchell.
C.—R. McCann.
$1,300.

Elgin Park Ave., bet. Ridley and Hermann. Two two-story frames.
O.—J. Witt.
A.—H. Geilfuss.
C.—Haskell & Webb.
$7,000.

Eddy, south side, bet. Mason and Taylor. Additions.
O.—G. Braham.
A.—C. Devlin.
C.—T. Morris.
$3,200.

Eighteenth, bet. Collinswood and Diamond. One-story frame.
O.—Jas. Graneville.
C.—O. D'Anis.
$600.

Eighteenth, north side, nr. Merritt. One story frame.
O.—A. F. Newton.
Day's work.
$600.

Eddy, cor. Scott. Two two-story frames.
O.—H. Dorscher.
A.—R. Warren.
C.—H. J. Weiss.
$5,000.

Eddy, south side, bet. Laguna and Buchanan. Two-story frame.
O.—G. Baraty.
A.—Huerne & Everett.
C.—F. Crowley.
$6,800.

Eighth, bet. Howard and Folsom. Addition.
O.—P. T. Flynn.
Day's work.
$800.

Eighteenth, cor. Church. One-story frame.
O. and B.—J. P. Courter.
$3,000.

F

Folsom, bet. Twelfth and Thirteenth. Two-story frame.
O.—John Jones.
C.—J. Sanderson.
$2,200.

Folsom, bet. Eighteenth and Nineteenth. Additions to tannery.
O.—Patrick & Co.
Day's work.
$1,650.

Ford, north side, nr. Sanchez. One-story frame
O.—Mrs E. Mitchell.
C.—E. M. Hunter.
$1,300.

Fell, nr. Devisadero. One-story frame.
O.—M. Carrick.
A.—R. Warren.
Day's work.
$1,800.

Folsom, nr. Second. Two-story frame.
O.—Fulton Iron Works.
Day's work.
$1,000.

Fillmore, between Post and Geary. Two-story frame.
O.—H. Levy.
A.—McDougall & Son.
C.—J. A. Leonard.
$5,500.

Fair Oak, between Twenty-third and Twenty-fourth. One-story frame.
O.—H. Childs.
A.—C. Geddes.
C.—R. B. Hicks.
$3,000.

G

Gregory, near Second Three-story frame.
O.—P. Riley.
Day's work.
$3,400.

Guerrero, bet. Nineteenth and Twentieth. Two-story frame.
O.—Thos. Neary.
A.—M. J. Welch.
Day's work.
$3,000.

Golden Gate Ave., northeast cor. Scott. Additions.
O.—J. Thierbach.
C.—H. Meyn.
$3,500.

Golden Gate Ave., bet. Scott and Devisadero. Additions.
O.—W. Erwin.
C.—F. Roettger.
$1,000.

Gough, No. 1315, between Geary and Post. Alterations.
O.—F. Doble.
C.—D. Resmore.
$550.

Geary, bet. Franklin and Gough. Two-story frame.
O.—Mr. Franklin.
A.—W. Mooser.
C.—A. Jackson.
$11,000.

Geary, nr. Gough. Alterations.
O.—B. L. Levy.
Day's work.
$1,000.

Green, north side, bet. Buchanan and Webster. Two-story frame.
O.—Mrs. M. Nelson.
A.—J. Gash.
C.—J. Owens.
$2,400.

Greenwich, north side, bet. Scott and Pierce. One-story frame.
O.—C. Bowers.
Day's work.
$1,800.

H

Howard, near Eleventh. Two-story frame.
O.—W. Deaney.
Day's work.
$1,500.

Hampshire, bet. Twenty-first and Twenty-second. One-story frame.
O.—P. Lamb.
A.—M. J. Welch.
C.—W. Schatfield.
$1,300.

Haight, cor. Buchanan. Additions.
O.—J. Nightingale.
C.—R. McCann.
$4,000.

Haight, bet. Webster and Fillmore. One-story and basement.
O.—H. Wiersbitzky.
A.—M. P. Schetzel.
C.—W. J. Peters.
$2,000.

Hill, nr. Valencia. Two-story frame.
O.—J. F. Taylor.
A.—G. H. Miller.
C.—J. W. Hansbrough.
$5,300.

Hattie, east side, bet. Seventeenth and Eighteenth. One-story frame.
O. and B.—A. D'sher.
Day's work.
$800.

Howard, between Fifth and Sixth. Repairs.
O.—M. J. Crowley.
A.—T. J. Welch.
C.—E. & F. J. Owens.
$700.

Hardie, nr. Sixteenth. Two-story frame.
O.—W. Pullen.
C.—C. Gunyan.
$3,500.

Harrison, near Twelfth. Two-story frame.
O.—Mrs. Kerchival.
A.—G. A. Brodwell.
C.—Gray & Stover.
$5,000.

J

Jones, No. 1217, bet. Clay and Sacramento. Additions.
O.—C. Crow.
C.—C. Gunyon.
$1,500.

Jackson, near Fillmore. Two-story frame.
O.—G. Bowers.
A.—Percy & Hamilton.
C.—Gray & Stover.
$,000.

Jackson, north side, bet. Gough and Octavia. Two-story frame.
O.—J. Leo Lilienthal.
A.—Kenuitzer & Raun.
C.—Mahoney Bros.
$18,000.

L

Locust Ave., south side, bet. McAllister and Taylor. Three two-story frames.
O.—T. Hook.
A.—Kennitzer & Raun.
C.—W. Pluns.
$4,000.

Larkin, nr. Turk. Three-story frame and brick basement.
O.—P. Connolly.
A.—A. Laver.
C.—Farrell & Ringrose, brickwork; J. H. McKay, carpenter.
$75,000.

Lombard, cor. Van Ness Ave. One-story frame.
O.—J. McGowan.
C.—P. J. McQuary.
$1,600.

Larkin, west side, bet. Lombard and Chestnut. One-story frame.
O.—W. E. Toby.
C.—J. Anderson.
$750.

Lombard, south side, bet. Jones and Leavenworth. One-story frame.
O.—Otto Thies.
C.—H. Inwood.
$1,500.

Lombard, south side, bet. Stockton and Powell. Additions.
O.—R. Mayers.
A.—W. Mooser.
C.—J. C. Brown.
$1,200.

Lyon, bet. Tyler and Turk. One-story frame.
O.—P. O'Keefe.
C.—G. M. Salsbury.
$1,000.

Larkin, cor. Turk. Three-story frame.
O.—G. G. Burnett.
A.—J. E. Wolfe.
C.—H. A. Sheldon.
$12,345.

Larkin, nr. Turk. Three-story frame.
O.—Dr. P. H. Flood.
A.—J. E. Wolfe.
C.—J. J. Funn.
$7,294.

M

McAllister, bet. Fillmore and Steiner. Two-story frame.
O.—J. R. Williams.
A.—J. Marquis.
C.—J. R. Batchelder.
$3,000.

McAllister, No. 1214, bet. Fillmore and Steiner. Alterations.
O.—C. S. Capp.
A.—C. Geddes.
C.—A. C. Hussey.
$2,400.

McAllister, north side, bet. Laguna and Buchanan. Two two-story frames.
O.—T. Hook.
A.—Kennitzer & Raun.
C.—W. Pluns.
$6,000.

Mission, cor. Eleventh. Three-story frame.
O.—R. Doolan.
A.—T. J. Welch.
C.—H. McCann.
$4,600.

Mason, east side, between Greenwich and Lombard. Four-story frame.
O.—L. Lacari.
A.—Hoffmann & Knapp.
Day's work.
$12,000.

Merritt, nr. Rose. One-story frame.
O.—A. F. Newton.
C.—J. Errickson.
$600.

Mission Ave., bet. Seventeenth and Eighteenth, and Valencia and Guerrero. Two-story frame.
O.—J. Calderwell.
A.—E. H. Daley.
C.—J. McCann.
$3,000.

Mission, nr. Ninth. Two-story frame.
O. Mrs. S. Stevens.
C.—Gray & Stover.
$6,500.

Mission, near Eighteenth. Two two-story frames.
O.—O. G. Moore.
C.—J. Geary.
$7,500.

N

Noe, north side, nr. Eighteenth. Two-story frame.
O. and B.—W. Hunter.
Day's work.
$2,000.

Nineteenth, nr. Church One-story frame.
O.—J. Stapelton.
Day's work.
$1,500.

O

Octavia, northwest cor. Fell. Two two-story frames.
O.—P. J. Gallagher.
A.—E. Warren.
C.—R. Doyle & Son.
$7,500.

Oak, bet. Franklin and Gough. Alterations.
A.—Salfield & John.
C.—J. Kline.
$1,900.

Oak, cor. Webster. Alterations.
O.—Jas Adams.
A.—J. Clark.
Day's work.
$3,000.

Ocean View. Addition to church.
O.—J. A. Cooper.
A.—T. J. Welch.
C.—A. Younker.
$600.

P

Powell Ave., nr. Valencia. Alterations.
O.—Mrs. A. Collins.
C.—O. Nordberd.

Post, bet. Devisadero and Broderick. Two-story frame.
O.—B. F. Norris.
Day's work.

Post, bet. Lyon and Central avenue. One-story frame.
O.—M. Ellwood.
Day's work.
$1,500.

Polk, cor. McAllister. Additions.
O.—J. Henley.
Day's work.
$800.

Pacific Place, bet. Stockton and Dupont. Additions and alterations.
O.—Ah Jim.
C.—J. V. Lawrence.
$2,500.

Pierce, nr. Union. Two-story frame.
O. and A.—W. Mooser.
C.—G. McKay.
$7,100.

R

Rose, near Corbert Road. Alterations.
O.—J. Wyatt.
Day's work.
$750.

Rush, between Folsom and Howard. Two-story frame.
O.—P. Denner.
A.—Salfield & John.
C.—B. Dryer.
$7,500.

S

Seventh, between Brannan and Bryant. Alterations.
O.—Thos. Dormely.
Day's work.
$2,500.

Shotwell, bet. Twenty-fifth and Twenty-sixth. Two two-story frames.
O.—J. Scheerer.
Day's work.
$7,000.

Seventeenth, north side, near Church. Two-story frame.
O.—Mrs. M. Marcheni.
A.—W. Mooser.
C.—Owens Bros.
$3,600.

Sixteenth, nr. Castro. Two-story frame.
O.—W. A. Leighton.
A.—Townsend & Wyneken.
C.—E. A. Doolittle.
$2,300.

Seventeenth, nr. Market. One-story frame.
O. and B.—J. Conlan.
Day's work.
$1,000.

Seventeenth, north side, nr. Hattie. One-story frame.
O. and B.—C. Schere.
Day's work.
$900.

Scott, east side, nr. Haight. One-story brick.
O.—F. Hertel.
C.—Geo. Turner.
$1,200.

Scott, west side, bet. Eddy and Turk. Two-story frame.
O.—J. Dowling.
Day's work.
$4,000.

Seventeenth, cor. Dolores. Two one-story frames.
O.—M. O. Colson.
C.—G. M. Salsbury.
$2,000.

Stockton Place, between Dupont and Stockton, Post and Sutter. Additions.
O.—Dr. A. M. Loryea.
C.—J. E. Williams.
$800.

Silver, northeast corner Fourth. Repairs.
O.—Mrs. M. Donley.
C.—J. Wilson.
$600.

Silver, south side, between Third and Fourth. Repairs.
O.—J. McDennon.
C.—J. Wilson.
$1,500.

Sixteenth, near Church. One-story frame.
A.—Salfield & John.
C.—J. Kline.
$2,200.

Second, near Folsom. Alterations.
O.—Chas. Montgomery.
A.—J. J. Clark.
C.—J. G. Adams.
$5,000.

Seventeenth, bet. Valencia and Mission. Two-story frame.
O.—C. L. Crummer.
A.—J. J. Clark.
C.—J. F. Logan.
$7,000.

Shotwell, bet. Twenty-first and Twenty-second. Alterations.
O.—F. M. Baumgarten.
A.—C. Geddes.
C.—R. B. Hicks.
$3,000.

Sutter, near Polk. Two-story and mansard roof.
O.—Dr. J. Simpson.
A.—J. M. Curtis.
C.—F. Crowley.
O. E. Brady, brick work.
$12,500.

Sacramento, bet. Hyde and Larkin. Two-story frame.
O.—Gen. W. H. Dimond.
A.—W. F. Smith.
C.—Gray & Stover.
$6,500.

T

Treat Ave., bet. Thirteenth and Fourteenth. Two-story frame.
O. and B.—E. Anderson.
Day's work.
$3,500.

Treat Ave., bet. Twenty-first and Twenty-second. Three one-story frames.
O. and B.—H. Geilfuss.
Day's work.
$6,000.

Treat Ave., north side, between Twenty-fourth and Twenty-fifth. Alterations.
O.—Mrs. M. Beck.
C.—Thos. Mitchell.
$1,300.

Treat Ave., north side, between Twenty-fifth and Twenty-sixth. Two-story brick.
O. and B.—J. McCarthy.
A.—H. Geilfuss.
Day's work.
$5,000.

Twenty-fifth, cor. Noe. Alterations.
O.—W. Axtwood.
C.—M. Jennett.
$1,200.

Thirtieth, north side, bet. Sanchez and Church. One-story frame.
O.—C. Nelson.
$1,200.

Thirtieth, south side, near Sanchez. One-story frame.
O.—J. Muldowney.
Day's work.
$1,200.

Thirtieth, south side, cor. Warren. Additions.
O.—C. DePue.
Day's work.
$1,200.

Thirtieth, south side, nr. Warren. Additions
O. and B.—W. Holland.
Day's work.
$750.

Twenty-eighth, between Church and Sanchez. One-story frame.
O. and B.—F. C. Kleebaur.
Day's work.
$2,200.

Twenty-third, cor. Fair Oak. One-story and basement.
O.—A. McNab.
C.—F. W. Kern.
$2,500.

Taylor, southeast cor. Jackson. Alterations.
O.—W. W. Morrow.
A.—T. J. Welch.
C.—J. Nelson.
$2,700.

Twenty-fourth, cor. Columbia. Two-story schoolhouse
O.—St. Peter's Parish.
A.—E. J. Clinch.
C.—R. Doyle & Son.
$3,200.

Turk, cor. Steiner. Three-story frame.
O.—M. Trespaille.
A.—Townsend & Wyneken.
C.—L. Sclander.
$7,000.

Twenty-first, near Valencia. One-story frame.
O. and B.—J. O'Neil.
A.—Townsend & Wyneken.
$1,700.

Thirteenth, bet. Howard and Mission. Three two-story frames.
O.—W. Ede.
A.—R. H. Daley.
C.—Terrill & Shaven.
$7,000.

Turk, north side, nr. Van Ness Avenue. Two-story frame.
O.—S. P. Robbins.
A.—J. M. Curtis.
C.—C. F. Ruppel.
$6,500.

Turk, south side, nr. Van Ness Avenue. Two-story frame.
O.—Jas. Whardensy.
A.—Townsend & Wyneken.
C.—H. B. Hosmer.
$3,800.

Tehama, bet. Eighth and Ninth. Additions.
O.—J. Murdoch.
C.—W. Wadsworth.
$850.

Twenty-first, south side, bet. Guerrero and Valencia. Three two-story frames.
O.—S. W. Fuller.
A.—Pissis & Moore.
C.—W. Langstaff.
$11,000.

Third, cor. Townsend. Hay barn.
O.—Jas. Adams.
A.—J. J. Clark.
Day's work.
$5,000.

Tenth, bet. Folsom and Harrison. Alterations.
O.—C. Petersen & Co.
A.—Geo. E. Voelkel.
C.—F. W. Kern.
$1,600.

Townsend, between Second and Third. Two-story frame.
O.—J. Coakley.
A.—Townsend & Wyneken.
C.—W. Dunshee.
$2,700.

U

Union, north side, bet. Larkin and Polk. Two-story frame.
O.—S. A. White.
C.—E. W. Lewis
$2,500.

Union, cor. Battery. Seven-story brick.
O.—American Sugar Refinery Co.
C.—C. Schoenmaker.
$80,000.

V

Vallejo, north side, bet. Laguna and Buchanan Two-story frame.
O.—W. G. Leslie.
C.—Treadwell & Thompson.
$3,500.

Van Ness Ave, nr. Clay. Two-story frame.
O.—Mrs. Coffin.
A.—John J. Clark.
C.—D. O'Brien.
$3,000.

W

Waverly Place, nr. Clay. Four-story brick
O.—J. Campbell.
A.—C. Geddes.
C.—R. McCann and W. Dunbar.
$14,000.

Woodland—Main Street. One-story brick addition. O. L. Dietz; C., Walsh & Evans; $1,500. First Street. One story frame. O., Mr. Gordon; C., W. H. Naylor; $1,000 First Street. One-story frame. O., Woodland Bank; C., W. H. Winne; $1,000. Fourth Street. One-story frame. O., J. Harlan; A., Gilbert & Son; C., B. Myres; $2,200 Third Street. One-story frame. O., R. H. Beamer; C., W. Gammel, $1,200. Walnut Street. One-story frame. O. and B., Chas. Reardon; $1,000. Court Street. One-story frame. O. and B., J. L. Patterson; $1,200. North Street. One-story frame. O., Fred Luck; day's work; $1,000. North Street. One-story frame. O. and B., Jas. Deedes; $1,000. Cross Ave. One-story frame. O. and B., A. Blake; $2,500. Second Street. One-story frame. O., M. Bartelena; C., W. M. Lee; $1,000. One-story frame and engine. O., B. Peart; $4,000. Two-story frame. O., E. H. Briggs; C., Glenn & White; $2,500. North Street. One-story frame. O., Byron Ball; C., Caldwell & Scott; $2,600.

Madison—Two-story frame. O., G. Metzgar; C., R. B. Nisson; $2,700. Two-story frame. C., Mrs. Louisa Campbell; C., Reardon & Scott; $2,000. Two-story frame. O., E. Archer; C., Reardon & Scott; $1,800.

Knight's Landing—One-story frame. O., D. Hamilton; C., Gruning Bros.; $2,000. One-story frame. O., H. Provost; C., Z. Somers; $1,200. One-story frame. O. and B., Gruning Bros.; $1,000. One-story frame. O., O. F. Long; day's work; $1,200.

Winters—One-story frame. O., J. A. Johnson; Day's work; $1,500. Two-story frame. O., J. Newsom; C., Ritchie & Ward; $1,500. Main Street. Two-story store. O., A. Haynes; C., J. Baldwin; $2,500. Bridge Street. Two-story frame. O., W. J. Cannedy; C., J. Baldwin; $3,000. Abbey Street. Two-story frame. O., J. Finley; C., Ritchie & Ward; $2,500. Abbey Street. Two-story frame. O., W. J. Cannedy; C., Ritchie & Ward; $4,000.

San Jose—Park Ave. Additions. O., W. Delmaesto; A., Theodore Lenzen; day's work; $2,500. Santa Teresa, cor. San Agustin. Two-story frame. O., A. Vatmone; A., Theodore Lenzen; C., R. Summers; $3,000. Near Berryessa. Wine cellar. O., John Augerais; A., Theodore Lenzen; C., G. A. McDougall; $2,000. Fifth Street, opp. Washington One-story frame. A., Jacob Lenzen & Son; C., H. C. Skow; $2,655. One-story cottage, on the "Alameda." O., D. J. Spencer; A., Jacob Lenzen & Son; C., Frank Davis; $9,806. One-story cottage. O., Mr. Gora; A., S. & J. C. Newsom; $2,500. San Carlos Street. One-story frame, O., G. Nelson, Jr.; A., Theodore Lenzen; C., M. D. Green; $1,800.

Sacramento—Eighteenth Street, bet. I and J. Two-story frame. O., E. C. Atkinson; A., A. A. Cook; C., Ruggles & Wendt; $2,500. Third Street, bet. I and J. Two-story frame. O., D. Mason; A., A. A. Cook, C., Dean & Bohn; $5,699.

Red Bluff—Cor. Main and Walnut Streets. Two-story brick. O., Cone & Kimball; A., A. A. Cook; C., Swain & Hudson; $32,040.

Piedmont—O., Mrs. C. A. Kohler; A., S. & J. C. Newsom; C., W. P. Wettenose; $8,000.

Daggett—Residence. O., A. H. Koebig; A., Geo. E. Voelkel; day's work; $5,000. Residence. O., Judge Perkins; A., Geo. E. Voelkel; $4,000.

Santa Cruz—Brick church. O., Catholic Church parish; A., T. J. Welch; $25,000.

San Rafael—School-house. O., San Rafael County; A., Curlett & Cuthbertson; C., D. Perry, carpenter; C. Ferris, stone work; $2,000.

Alameda—Santa Clara Ave., corner Verdy Street. Three two-story frames. O., J. Hesse; A., Geo. E. Voelkel; day's work; $6,000. Newton, cor. Santa Clara Ave. Three two-story frames. O., F. L. Perkins; C., E. W. Lewis; $10,000.

West Berkeley—One-story frame. O., F. Schrader, A., Wm. Schrot; C., C. Litt; $1,500.

East Oakland—Two one-story frames. O., J. Slattery; A., J. J. & T. D. Newsom; C., W. Herin; $3,600. Eleventh Street. Two one-story frames. O., W. Richardson; A., J. J. & T. D. Newsom; C., C. Wilkins; $3,000. Twelfth, cor. Ninth Ave. One story frame. O., E. Tichener; A., J. J. and T. D. Newsom; C., H. Brown; $2,000.

Oakland—Washington, near Seventh. O., S. Hancock; A., J. Marquis; day's work; $30,000.

Nevada City—One and one-half story frame. O., Mrs. Cross; A., S. & J. C. Newsom; $3,500.

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Building Report.

THE current month, ending the 10th inst., shows a marked decline in the number of new building engagements, and a diminished sum of costs. This is not to be wondered at, for the two prominent reasons: *First*, the "wet season" is upon us, and, as has been the case in all preceding years, serves as a damper in checking building activities. *Secondly*, the "*boom in building*" has been such that a continuance at the high pressure reached during the season could not be kept up under any natural, reasonable state of things. It would require increase in population of large proportion to sustain the activities of preceding months. Still the showing is good for the season.

NOTE.—The reports appearing in this Journal are as near the SOLID and RELIABLE facts as care in collecting, and truthfulness in stating, can make them. If we were to pick up every side-walk or other small job of $150 or $350, and report them from three to five times the amount of actual cost, and republish items of building news reported three or four months previous, it would alike swell the apparent number of improvements and outlays in buildings. But our object is to confine ourselves to the strict order and condition of facts as they exist, deeming it a wrong to bolster up, or make appear, that which does not appear in fact. The future of the great city of San Francisco is sufficiently well assured to need no fictitious additions to the actualities that exist.

The number of buildings for the current month, ending November 10:—

85 new frames, total cost	$286 550
19 additions and alterations	41 150
3 brick structures	38,000
107 engagements. Total cost	$365,700

Although this is a greatly diminished showing as compared with preceding months of current year, it is not so reviewed with the same month's report in 1884, which gave the total number of buildings at 101, and the total cost at $418,226.

(See Building Intelligence for itemized report.)

Compressed Timber.

A NEW process for toughening timber is announced, by which it is claimed that whitewood can be made so tough as to require a cold-chisel to split it. This result is reached by steaming the timber and submitting it to end pressure, technically "upsetting" it, thus compressing the cells and fibers into one compact mass. It is the opinion of those who have experimented with the process that wood can be compressed 75 per cent, and that some timber which is now considered unfit for use in such work as carriage building could be made valuable by this means; and more especially since the rapid consumption of our best ash and hickory will sooner or later render some substitute necessary.

Oakland Report.

FROM this on, a carefully prepared report of building intelligence in Oakland, Alameda, and Berkeley will appear in each issue. To do this with accuracy, it will be necessary for the architects, owners, contractors, and others interested, to render us the little assistance required in furnishing figures and facts. It is to be regretted that architects of surly, vinegary disposition sometimes act as meanly as men can possibly act, just to gratify some morbid disposition of mind or stomach, refusing to give decent if any reply to questions which, if answered, would hurt no one, and be of interest to many. If an owner has a house built he cannot hide the fact, and should not wish to if the transaction is legitimate; and an architect can have no intelligent and proper excuse for withholding the facts in his charge, in so far as they apply to outward appearances—the improvement of real estate. The secrets of his profession and the private interests of his client should be respected; but outside of these—the erection of buildings in their very nature and surroundings, become matters of public interest.

Our gleanings for the present issue show:—

Oakland, 22 frame buildings	$61,200	
" 2 alterations	4 700	—$65,900
E. Oakland, 18 frame build'gs,	$43,700	
" 2 alterations	10.500	— 54,200
Alameda, 7 frame buildings	$18,500	
Berkeley, 4 " "	7,400	
N. Berkeley, Berryman tract 2 frame buildings	5,400	— 31,300
Total reported from the Oakland side of the bay		$151,400

(See Building Intelligence for itemized report.)

The work of sinking artesian wells in this valley is going on at a lively rate. There are now about forty in the valley, some of which are classed among the best on the continent. Two good augers are kept busy, each employing a force of hands. It is estimated that the average depth of these wells is about 150 feet. Their water is pure, deliciously cool and invigorating.—*San Jacinto Register.*

Don't Fail to Write.

SHOULD this paper be received by any subscriber who does not want it, *or beyond the time he intends to pay for it*, let him not fail to write us *direct* to stop it. A postal card (costing him one cent only) will suffice. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, or some irresponsible party requested to stop it, we shall positively demand payment for the time it is sent.

Postal Grievances.

THE discriminations in the postal law of the United States, operating against monthly, bi and tri weeklies, and quarterly journals and publications, and in favor of weekly issues, has long been a source of just and merited complaint. The arguments used in support of this inequality of privileges are not sound nor good, and partake largely of special legislation; as well as an arbitrary ruling by the law-making body as to the status of the publications of the day; for if it were a *fact* that weeklies contain the bulk of all valuable information published, then they, more than any others, should be patronized.

But even were this true, still the discrimination would be unjust, in that it helps and protects one class or denomination of producers, as against others producing exactly the same thing in texture, bulk, and general character, the *time* of production alone being the difference. If the benefits of this special protection accrued to the consumer,—the hundreds of thousands who read the various publications,—there would be greater plausibility in the sophistical argument used; but such is not the case, particularly at the present time, as no publisher would allow the circulation of his publication to suffer on the score of postal charges for delivery, whether requiring one cent per pound, with three to ten copies to each pound, as in the case of weeklies, or one or two cents postage each, as imposed upon all journals other than weeklies. The feeble protests of this journal against so transparant a wrong, began with its earliest issues, and we are glad that other journals, especially the *Art Age*, N. Y., are now moving in the matter, and demanding a fair and equal distribution of rights and privileges in the use of the mail facilities of the United States.

Snows East—Strawberries in California.

COLD weather, frosts, and snows have been reported from various sections of the continent east of the Sierras, in the month of October, making overcoats and warm clothing a necessity to personal comforts. But as these are of common occurrence, even that early in the season, there is nothing special in that state of things,—they being regularly repeated with each returning autumn season, and, therefore, a something to be looked for and expected. But they are strongly in contrast compared with conditions existing upon the Pacific Slope. Although November is upon us, there has not been so much as a nipping frost to harm, much less to destroy, anything that grows. Garden-grown strawberries are in fair supply in our markets; grapes of every variety and species are abundant; pears, apples, some peaches still, and almost every kind of summer vegetables and garden products crowd the stalls, shops, and places where such things are sold. The "rainy-season" period has arrived, and it is likely and hoped that the genial and copious showers will fall upon the earth, until it shall have drank up or absorbed enough to supply moisture during and through the "dry season," to everything that grows; there may also be some few "cold snaps" of short duration, between now and April next, but none of that bitter kind—none that will sink the mercury within less than 30° *above* zero, and when so low as that, it will be severe for California.

Soon, with the falling of the early rains, verdure will everywhere begin to grow, and long before Christmas times come around, the hills and valleys of the Pacific Coast, over thousands of square miles, will be covered with beautiful grass; while in many parts east of the great divide, the frozen earth, with its mantles of snow, and the piercing cold winds, will hold back all growth, until stern winter shall have spent its fury, and the zephyrs of spring bid all nature arise and prepare for the harvest time.

Anti-Chinese Demonstration.

A MASS-MEETING of the people, mainly the working classes, but also considerably of the representative men of San Francisco, was held in Union Hall, on Saturday evening, October 31, 1885. The number present and astir on the occasion was not less than ten thousand, with fully two hundred and fifty thousand others in the city in full sympathy with the movement. While the proceedings were of the most orderly and quiet character there was an intensity of earnestness and interest manifested upon every countenance, but little if any less than that which animated the patriots and soldiers who rushed to the fierce battle fields in defense of the flag of our common country. For this too was a demonstration against an enemy of the worst kind; an insidious and relentless foe, in certain regards much more to be dreaded than the bold and daring men of the South, most of whom, believing their cause to be just, braved the risks and dangers of the battle field and the perils and results of bloody war. But the enemies against whom battle is now waged have entered our cities and garrisoned themselves in our very midst, and so surrounded themselves with the strong bulworks of manufacturing, mechanical, trade, commercial, financial, and other defenses, that unless outgeneraled or circumvented; or by wise, strong, decisive and effectual legislation thwarted, they will complete and make general their monopoly of all the smaller and at present less important branches of industry, precursory to the grand swoop that in due time will be made upon every vital interest of the country. Demonstrations such as that referred to in this article, are both justifiable, and an urgent necessity, not only in San Francisco, but in every part of the United States where white men are required to toil for bread: for it is but a matter of time when, if not effectually checked, Chinese will force themselves into every State, city, town, and hamlet over which the stars and stripes float, with the danger possible that the flag of our Union will be insulted, and that of the hideous dragon raised above it.

A Style in Decadence.

ONE of the strongest claims made in behalf of Queen Anne domestic architecture, which has come to mean anything that throws aside all the rules of symmetry, is that it gives more variety and character to city houses than was possessed by houses of the old style, that stood along the streets like regiments of drilled soldiers. Speaking upon this point a Pittsburgh exchange asserts that it may be questioned whether a hundred houses of the same type, but with a few variations of an extra gable or an overhanging porch, show more individuality than the uniformity of the mansards of a few years ago, or of the Gothic cottages of the last generation. In fact, the most thoroughly characteristic houses that exist in this country today are those of the early part of the century. There may not have been much æsthetic character in the solid, prim, Grecian mansions, of which we still have one or two noted types in our suburbs, but it was a solid and enduring character. Between the rank of some of these old mansions and some of the last vagaries of the architectural craze there is just about the same difference as between the strong individuality of Adams, Webster, and the men of that generation and those of the present day who spend their days in *dilletante* studies of art, or the worshiping of blue china. There are some specimens of the Neo-Renaissance architecture produced in the present era of construction that will always preserve their quaint beauty, but it will not be many years before the spawn of cheap monstrosities that now goes under the name of Queen Anne, will be seen to be as inartistic a conventionalism as any of its predecessors.—*Carpentry and Building.*

The general tone of Eastern journals is against the continuance of Queen Anne as a style of domestic architecture. The Eastern profligacies in peculiar deformities in house building, as compared with the idea of the science of architecture developing strength, symmetry, proportions, durability, etc., has been great. But if the minds that guide the pens that write words of disfavor toward that which they see and know at home, would but journey westward, and tarry a day or two in San Francisco, they would see enough frightful, tortuous, barbarous, hideous transgressions of true architectural skill to set them mad with rage, or make them laugh until aching sides would demand restoratives, or the services of a medical man.

QUEEN ANNE AND EASTLAKE.

The old lady has been tortured some, but poor Eastlake, how he is to be pitied, having been made the scape-goat for ten thousand sins, monstrosities and abuses of taste and architectural decencies, committed by a class of aspirants who would never have been known as practical architects, except by producing all manner of funny things—things outside of all architectural rules and teachings, and calling them "Eastlake." There are hundreds of tons of lumber material cut in fantastic shape and stuck up on the fronts and parts of buildings which, if the avenging angel of architecture should be permitted to pass over San Francisco, would be torn from present lodgments and consigned to the fiery furnace. The cruel sin has been and is, in men incompetent to distinguish between neat and tasty improvements in, and wild, glaring departures from all right rules in architecture, and the impudence with which they concoct impracticable mutilations, and then seek to shield themselves behind the poor man Eastlake, who never wrote a line on architecture with a view of even suggesting a new order or style in house building. And the wrong is still further augmented by the fact that the more pronounced the deformity, and the more unskillful and inexcusable the feature or construction, the more and louder it is called Eastlake, simply throwing enough of Queen's skirts in to relieve the innocent Eastlake a little sometimes.

SOME CLEVER EXAMPLES.

While all this is true, there are some very clever and pretty examples of the "new style,"—a mixture of consistent ideas, carefully handled by some of the better informed and educated architects,—which display good taste and judgment, and give variety and change, and do their authors credit.

Sanitary Cause of Action.

A NOVEL and important case affecting house property owners has just been determined in the Court of Queen's Bench. According to the evidence adduced, a married lady died last year from the effects of blood-poisoning, induced by the sewer gas which escaped into her house at Croydon from a broken pipe. The lady had an income of £1,000 a year, which "died with her," and her husband brought an action against the owner of the house to recover compensation for the loss he had sustained. It was shown that the owner had made "false and fraudulent" representations as to the healthy condition of the house, and the jury awarded the plaintiff £2,228. The judge also ordered the agreement for letting the house to be rescinded. It is said that the fact of the owner being an architect prejudiced the jury somewhat. The sanitary inspector of the district had passed upon the work. This, with an ordinary owner, must have been sufficient defense, but the jury were evidently of opinion that an architect's duty comprised a rigid inspection of every joint in the soil and waste pipes.

Dallas, Texas, claims to be the most striking example of growth in the Southern States. In 1872–73 it was only a clump of unpretentious warehouses and shanties on the Trinity; now it is solidly built over an area extending back two miles from the river, and has a population of over 35,000.

According to a new law in Berlin, which went into effect the 1st of January last, no house can be built higher than the width of the street on which it faces. If such a law existed in Boston some streets would present nothing but a double row of meek and lowly basements.

Magnificent Timber Region.

FEW people have any good idea of the vast timber resources of Tuolumne County, California. Lying on the southern boundary, along the Mariposa line, on the upper waters of the south and middle forks of the Tuolumne River, is one of the finest bodies of timber in the world. Here, for sixty miles, is an unbroken forest of sugar pine, yellow pine, red and white fir and spruce. The trees are enormous in size, and rise to magnificent heights, while the growth is so dense as to plunge the depths of the forests into a perpetual gloom. The trees average from five feet to ten feet in diameter, and their freedom from limbs and knots greatly enhances their value for lumbering purposes. Nothing extraordinary to find pine and fir trees ten and twelve feet in diameter, straight as an arrow, rising to a height of 150 or 200 feet. This body of timber is easy of access, and only requires to be tapped by a railroad to be turned into a vast source of wealth. As yet most of it is the property of the Government. Much of it, however, has been surveyed, and is now in the market. About two years since some parties projected a railroad through this region and prepared to take 50,000 acres of the timber, but apparently the scheme has fallen through. Theirs was not a legitimate enterprise, as their object was only to get the project under way, and then make a big deal with Eastern capitalists. Now the giant trees stand nodding an invitation to the railroad and the saw-mill. Whenever these two agencies make their advent into this immense forest, old Tuolumne will spring into renewed life and prosperity. The field lies fallow waiting for the coming of enterprise and capital.—*Exchange.*

Those who have recently visited the Albert Palace will have noticed the preparations in the Nave for a further novelty. This, we understand, is to be a *gaum*, or village, to practically illustrate the arts and sports, and varied amusements of *gaum* life in India. For this purpose about fifty skilled artisans and entertainers are now on their way to this country. They will practically show us, in workshops as much like their own as skill and experience can make them, the modes in which they carry on their interesting and important industries. There will be wood carvers, metal workers, mat makers, shawl weavers, carpet weavers, rug makers, and workers in many other handicrafts for which India has long been famous, and for many of which she has attained an undisputed pre-eminence; "Nautch Girls" will dance to the weird strains of the native music; "Snake Charmers" will exhibit their marvelous powers over the beautiful but dangerous reptiles of their native jungles; and conjurers, whose skill in "deceiving the eye and bewildering the sense" has long been the wonder of visitors to the far East, will produce, at the Albert Palace, those marvelous feats which have made them famous throughout the world. No doubt many thousands will be anxious to "see how it's done," These interesting visitors will arrive towards the end of the present month.—*Sanitary World, London.*

Mineral Products of the United States.

THE second report on "The Mineral Resources of the United States," by Albert Williams, Jr., Chief of the Division of Mining Statistics and Technology, United States Geological Survey, is now in press, and will be issued shortly. This report is for the calendar years 1883 and 1884, and contains detailed statistics for these periods, and also for preceding years, together with much descriptive and technical matter. The following items relating to building materials are taken from this valuable report:—

Building Stone.—It is estimated that the value of the building stone quarried in 1884 was $19,000,000, as against $20,000,000 in 1883; the decline being due partly to dullness of trade, and partly to the increased use of other structural materials.

Brick and Tile.—The output was about the same as in 1883, but as manufacturers cut down expenses still further, meeting a lower market, the total value is estimated at $30,000,000 against $34,000,000 in 1883.

Lime.—There were 37,000,000 barrels (of 200 pounds) made in 1884, the average value per barrel at the kilns being not over 50 cents, or $18,500,000. The production was about 5,000,000 barrels greater than in 1883, but owing to the fall in price the total value was about $700,000 less.

Cement.—About 100,000 barrels (of 400 pounds) of artificial Portland cement were made, or 10,000 barrels more than in 1883; the total value, at $2.10 per barrel, being $210,000. The production of cement from natural cement rock, was 3,900,000 barrels (of 300 pounds), or 200,000 barrels less than in 1883, worth, at 90 cents per barrel, $3,510,000. The total production of all kinds of cement was about 4,000,000 barrels, valued at $3,720,000.

Marls.—In New Jersey about 875,000 tons, worth $483,500 at the pits, were dug in 1884. In addition small quantities were produced for local use in some of the Southern States. The production is declining, owing to competition with fertilizers made from phosphate rock, etc.

Gypsum.—In the Atlantic States from Maine to Virginia, 65,000 long tons of land plaster and 60,000 tons of stucco, total, 125,000 tons, were made in 1884, of which nearly all was from Nova Scotia gypsum. The statistics from Michigan have not been reported, but the production did not vary greatly from that in 1883, in which year it was 60,082 short tons of land plaster, and 159,100 barrels (of 300 pounds) of stucco. In Ohio 4,217 short tons of land plaster and 20,307 barrels of stucco were produced. There was also a small production in other parts of the country; but the total amount of domestic gypsum used is not known."—*Exchange.*

Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

(Continued.)

ACCORDING to the deportment of the fuel, we have to mention its "combustibility," the temperature required for the beginning of a self-acting oxidation, or the kindling temperature, which is very variable, and is never below 500° C.; its "inflammability" being in proportion to the amount of hydrogen contained in it, its effect or the aggregated quantity of heat, either "absolute," measured according to the weight, or "specific," measured according to the volume, using for a scale the "unit of heat" or caloric, and its "pyrometric" effect or heat, or the temperature of the fire by the perfect combustion, and which is the quotient of the absolute heat expressed in units, and the product of the weights, and the specific heat of the fire gases created, and, lastly, the quantity of air required.

THE FIRE HEARTH IN GENERAL.

Each fire must be so constituted that, by the burning of the fuel, the highest absolute and specific heat possible is obtained; therefore it becomes necessary for the burning to be perfect—all combustible parts are in reality burned; it not only depends on the admission of a sufficient amount of air, but this admission must be so regulated that on intense mixing of the same with the combustible, distilled gases occur; a want of air produces a lower grade of oxidation of the burning parts (hydrogen escapes unconsumed, and the carbonic acid already formed, and in contact with the glowing fuel, is reduced to oxide of carbon); a surplus of air not used is hurtful, by being heated—reducing the temperature in the fireplace. The second condition of a fire hearth is a complete use of the heat produced for heating purposes; and third, the arrangement must be so constructed that, with the admission of air, the discharge of the same, bereft of its oxygen and mixed with the fire gases, is done and conveyed off out of harm's way of men; and in conformity with this consideration, the construction of the fire-place with grating surface, the heating room, ash pit, and the smoke stack must be arranged.

THE FIRE HEARTH, GRATING, AND ASH PIT.

The size of these depends on the amount of fuel to be consumed, the method of heating, and the kind and condition of the fuel. The arrangement must be convenient for working and giving up of the fuel.

The grating surface, which divides the fireplace in the heating room and ash pit, serves to admit and regulate the flow of the atmospheric air; the total grating surface is divided into the free—containing the openings between the grate bars for the passage of the air—and the covered. The proportion between the two—free and covered—varies with the kind of fuel; the size of the total must be ample to take the quantity of fuel to be consumed pro unit of time, which must have a certain height on the grating, and the openings sufficiently large to admit the needed quantity of air.

TABLE FOR AN APPROXIMATE PROPORTION OF THE GRATING:

Kind of Fuel.	100 k g. 204 lb. of fuel pro hour. Total Grating qm. and sq. ft.		Fire Space. cbm. & cu feet.		Ratio of the fire to the total grating.
Coal.	1.4 / 15.06	1.6 sq. m. / 17.21 sq. ft.	0.25 cbm / 8.82 c. ft.	20 cbm / 9.64 c. ft.	1.4 to 1.3
Hardwood & bitum. coal. .	1.2 / 12.91	1.4 / 15.06	0.43 / 14.34	0.50 / 17.60	1-5 to 1-3
Soft wood & peat.	1 / 10.76	1.3 / 13.98	0.65 / 22.89	0.75 / 26.40	1-6 to 1-5
Charcoal and coke.	1.6 / 17.21	1.8 / 19.36	0.53 / 18.66	0.62 / 21.82	1-4 to 1-3

For a high temperature to be obtained in the fire-place, the sides must be lined with a non-conducting material.

The ash pit under the grating, to receive the ashes; the air channel for the passage of air to the fuel must not be low to admit sufficient air, and by a high accumulation of ashes in the pit will heat and burn the grate bars.

THE HEATING ROOM,

In which the action of the created heat is to be made useful, must have a sufficient section, that the fire gases do not obtain too large a velocity, and therefore deliver the produced heat imperfectly. The best and most advantageous cross-section is equal to the free grating surface.

THE SMOKE STACK.

The draft to be produced by the smoke stack is intended, not only to take and convey away the obnoxious and hurtful fire gases after doing the work of heating, but also to furnish the sufficient amount of atmospheric air for a perfect combustion and reduction of the fuel, and must be strong enough to overcome in the same time all the resistances on the hearth—passing of air through the pieces of fuel—and in the flues.

The column of fire gas standing in the smoke stack has, by reason of its high temperature, a smaller density than the atmospheric air, which, resting on top—the mouth—of the chimney, and the pressure at the foot or at the hearth, is larger by a column of air of the same height as the rarified gas column in the smoke stack; the rarified fire gases will raise, and the colder air under the hearth will fill the vacuum formed by the ascending gas, that the excess of pressure between the air and gas column—both of the same height—will furnish dates for formulating an equation to calculate the velocity of the draft in the smoke stack, namely:—

"A family uses for a fire-place one sack of coal, or 100 pounds, weekly, of 8 hours, daily burning, and for each hour 1.3 lbs, creating thereby $\frac{40.14 \text{ for } m=2}{20.93 \text{ for } m=1}$ fire gas of $\frac{1.022}{1.040}$ density requiring $\frac{38.40}{19.20}$ lbs of atmospheric air. But since 1 cu. ft. of air weighs 0.08 lbs, then one cubic foot of fire gas will weigh 0.081, furnishing $\left(\frac{495}{252}\right)$ cubic feet of fire gas hourly of $\frac{1.022}{1.040}$ density."

Assuming that the fire gases in the smoke stack have at least a temperature of 300 degrees, the rarified gas changes its density to 0.65, and its volume to $\frac{777}{403}$ cubic feet per hour, or $\frac{12.95}{6.72}$ cubic feet per second, to be discharged through the mouth of the chimney.

To calculate the velocity of the ascending fire-gas current, the common formula for the discharge of water under pressure can be applied by substituting for the water column of 1 atmospheric pressure, or 33.82 feet air column of the same weight. Air being 770 lighter than water the air column will have a height of 26,041 feet.

$$\text{Velocity} = 8.02\sqrt{(26041+40)-(26040+0.65.40)} = 8.02\sqrt{14} = 30.07 \text{ ft. per second}$$

(wherein the gas column is 40 feet high), requiring an area for $\frac{m=2}{m=1}$ at the top of the chimney of $\frac{0.42}{0.22}$ sq. feet.

The air required for $\frac{m=2}{m=1}$ per second is $\frac{7.92}{4.00}$ cubic feet, which must pass through the free grating.

The velocity of the draft in the chimney only increases with the square root of the chimney. Any fuel, of which the chemical compounds are known, can be utilized as such, and the fire hearth, etc., arranged for a perfect combustion.

Some time since, citizens in the neighborhood of the California Street Railroad Depot litigated with the company, to abate the nuisance created by soot and coal dust thrown on them from the chimney, caused by imperfect combustion. By an order of Court the chimney was extended about fifty feet, and the mouth reduced to more than one-half of its area, which perfected the draft and combustion, and consequently abated the nuisance. The money expended for litigation would have amply paid for a good design. It is this, one of the instances where money and ignorance, assisted by legal chicanery, produced discontent and unhappiness among the very customers on which a rich corporation depended for their existence. Can they not live peaceably together?

Heating of rooms are either periodically—as for halls, churches, etc.—or are continuously, where the heating arrangement must be capable to furnish heat for a longer period of time.

In a room to be heated, the atmospheric air required for combustion is drawn to the fire from the room, to be restored through the untightness of doors, windows, etc. In opposition to this voluntary ventilation ventilating ovens are constructed, which not only supply the room with sufficient air of the same temperature as in the room, but also draw off, regulate, and discharge the unhealthy air produced into the smoke stack.

CENTRAL HEATING.

Central heating, generally speaking, is every heating arrangement, by which many rooms, from a common source of heat, are warmed; but specially, we understand such arrangements, by which the conveying of heat (attached to a suitable medium), from the common source, is distributed to the rooms to be warmed.

The calculation of every heating arrangement is divided in two parts: the first consists in the finding of the quantity of heat required per unit of time, for all the rooms to be warmed; the second, the calculation of the corresponding sizes of the parts of the arrangement for the heating, such as the heat accumulating, distributing, conducting, and delivering, composing the whole arrangement. The first has already been stated; the second part is depending on the system selected, either heating by hot air, warm water, or by steam

HEATING BY HOT AIR.

By heating with hot air, the same is heated outside of the rooms to be warmed, and then conveyed to them. The main parts, therefore, are: an apparatus for the making of the heat, and for heating the air, and the flues conducting the same.

The apparatus for the creation of the heat and for warming of the air, consists of a heating oven (calorifere), and the heating chamber, a room wherein the calorifere is set up.

An oven built for this purpose must fulfill the following conditions, (1) must prevent an overheating of the heating surfaces; (2) must be a so-called "countercurrent" apparatus, wherein the fire gases must have an opposite directed current than the air current; (3) the same must conveniently be cleaned of dust on the outside and of soot on the inside; the cleaning from soot must not require an entry to the heating chamber; (4) the heating surfaces and connecting joints of the different parts must be made smoke tight, and the number of connections must be reduced as much as possible; (5) the expansion and contraction must go on without creating any tension in them; (6) and the utilizing of the radiating heat must be most complete.

The overheating of the surfaces is prevented by a correct proportion of the heat distributing to the heat receiving surfaces, which must be, the larger, the hotter; and smaller, the less warm the heating gases are.

The heat-distributing surface of the heating oven in square meter or square feet, as well as the hourly introduced quantity of air used as the medium for warming the rooms, is calculated by

$$Q = \frac{0.3.\,L\,(t-t_w)}{W}$$

$$L = \frac{M}{0.3.\,(t-t_i)}$$

Wherein Q is the heat-distributing surface of the heating oven in square meter; L, the quantity of air in cubic meter used hourly as medium for heat introducing, respectively, heat leading off; M, the quantity of heat per hour used up, and to be replaced by heating; W is the mean heat delivery per hour per square meter surface of the heating oven on the surrounding atmospheric air; t, the temperature of the air to be introduced into the rooms to be heated; t_i the temperature of the air to be discharged from the rooms; t_w the lowest temperature of the outside air, by which a good warming of the rooms is to be effected.

The mean heat delivery of the heating oven must not be taken below 1,800 C. and not over 2,500. The temperature, t, up to which the air is to be heated by the heating oven, respectively, the heat for the entry into the room to be heated is, on the highest, 50°.

From the above formula can be seen the important fact, not sufficiently appreciated in *praxis*, that to supply the needed transmission heat for a constant temperature, t, the quantity of air, L, cannot be selected arbitrarily; t_i is for all the rooms to be heated from the same air-heating oven, constantly.

The shape of the heating oven is very variable. The material lately used, in addition with brick and fire brick, is exclusively cast iron, seldom wrought iron.

Flues for conducting the air are, (a) flues for conducting the cold, fresh air from the outside to the heating oven; (b) flues for conducting the heated air to the rooms to be heated; (c) flues for discharging the cooled, spoiled air to the outside (ventilating flues); (d) flues for conducting the used air to the oven for the purpose of reheating (circulating flues).

The use of the flues at 1 is only conditionally recommended, expressly for the starting of the heating operation.

The section of the flues (F) is calculated in consideration of the quantity of air to be conveyed, and the assumed velocity of the same. The velocity, theoretically calculated, is never obtained in reality, the same being reduced by various resistances. If we have not to contend with extraordinary proportions (long, horizontal, and slightly inclined flues, etc.), when for them a correct calculation, under consideration of all the separate, single resistances, must be made, the following formulas for practical use can be applied:—

$$F = \frac{L}{3{,}600}\left\{\begin{matrix} v \\ v_1 \end{matrix}\right\}; \quad v = 0.5\sqrt{\frac{2gH(T-t}{273+t}}; \quad v_1\,0.5\sqrt{\frac{2gH(T-t)}{273+T}}$$

Wherein T represents the section of the flue in square meter; L, the quantity of air for each hour in cubic meter passing through the flue; v, the velocity of discharging of air into the colder air; v_1, the velocity of air discharging into the warmer air; 2g=19.62; H, the height of the flues in meter. Difference of temperature between the lower and upper end; T, the temperature of the warm air; t, the same for cold air.

The execution of the flues must be very carefully done; the brick work must be made as smooth as possible with smooth joints. Where it is possible, on account of the small size of the walls, glazed clay pipes can be used.

Flues for the conducting of hot air, and those for carrying off the spoiled air, must not (except circulating pipes) lay in the outside walls; they must run up perpendicular; all changes of direction and of section must be avoided.

There, where from the heating chambers, perpendicular or inclined flues, and flues running to different distances, are to be branched off, it must be recommended, besides the regulating arrangements to be put in the walls of the rooms to be heated, to put in a regulating slide valve at the foot of the flue, and the same, later, during the heating, to be closed; that all flues in a uniform manner fulfill their functions as desired, the sections of the flues should be nearly square or circular.

The outlet in the hot-air conductor for the common rooms should be 2–2.25 meter (6.56–7.38 feet); for high halls 3–4 meter (9.84–13.12 feet) above the floor. In very large rooms, where a uniform distribution of the hot air is desired and a powerful ventilation arrangement exists, the discharge openings of a larger number are put in the floor.

The discharge of the air from the room is done by the circulating heating flues and by heating with ventilating arrangement in winter time close to the floor, and by summer ventilation, or when the air is warm or spoiled by gaslight, close to the ceiling. For the selection of the position of the hot air and the ventilating flues, we observe that the hot air on entering the room ascends towards the ceiling, spreads over the same and towards the windows and the cool walls, where the same cools off, becomes denser, sinks, and in spreading over the floor moves towards the discharge opening in the wall above the floor.

The admission flues for fresh air, and the entry for the same, are placed in a sheltered position. Best to use two openings placed in opposite directions in the building, of which the one is to be used laying opposite to the direction of the wind. The sections of the openings must be such that the air will enter with not a higher velocity than 1.5 meter (4.92 feet) per second. It is of advantage to arrange a large air chamber close to and behind the entry for the settlement of the dust, etc., contained in the air, but which may be accomplished by application of a wire-screen filterer.

The size of the openings for entry and discharge in the room to be heated are regulated by the velocity of the air, and is from 0.5 to 1 meter (1.64–3.28 feet). The openings of all the flues must have good-fitting regulating arrangements. It is of importance that the flues are easy of access to be cleaned.

The building statistics of Washington, D. C., show that an unusually large number of buildings were erected during the past year. According to the figures, 1,330 dwellings and 303 buildings for other purposes were added to the city and the property valuation increased by $3,564,611.

Builders' Guide ..... **$ 2.00**

Mechanical Aids to Decoration.

BY A. CURTIS BOND.

MECHANISM in decoration, by which color designs and forms may be indefinitely repeated or multiplied, is always in course of progress; yet it here would seem, with all the varieties of adaptations which we witness, certain defined limits, and in numberless directions of decorative art handiwork well asserts its superiority. Yet mechanical production itself bears the stamp of intelligent purpose and constructive ingenuity, it being, so to speak, a transfer of handwork, an intermediary between the designing brain and hand, shown in the pattern and the execution. The die of the mould for molten metal and plastic material has either itself to be worked out by hand, or, if obtained by impress of relief work, the relief model has to be carved. The production and duplication of much decorative work by mechanical means is recommended by economy, in some instances by greater uniformity, but in the higher spheres of decoration, the absolute uniformity thus obtained falls far short in value of the direct work of the hand. This is evident in ornamenting in color, walls and ceilings, if the execution be skillful, as compared with stenciling. The slight variations in the ornament—for the work of the hand never absolutely repeats itself—is itself a charm, as showing greater freedom of execution, and in some instances greater delicacy of touch. Nevertheless decoration is greatly behooven to the mechanical arts for its diffusion, whether in furniture, structural surfaces, or the ornaments by which interiors are adorned.

One of the greatest novelties promised in mechanical devices, as concerns painting, is a machine consisting of a hand piece, a compressed air chamber, and an air pump, with communicating cup filled with liquid pigment, the latter filled with liquid pigment, which enables the artist to throw out a spray which, in the first instance, forms a fine line, and in the second, widens the line to the desired breadth. The skill required in the operation, the proportions to be given to the line, renders the line, which may even be thus shaded at will, something more than mechanical work.

Many devices for facilitating decorative work may be characterized as assistive. They are brought in co-operatively, and are little more than the brush to the painter. The improvement in tools merits notice here. Take, for instance, the wedge-shaped brush so useful for many purposes, previously to the manufacture of which decorative artisans had to wait the wearing down on one side of their flat brushes. Fortunes have been made by smaller devices than these, suggested primarily by individual requirements and really foreshadowed by the efforts of artificers in their practices or methods, to devise means for escaping inconveniences attached to their tools. The tools used for wood carving, and adapted to special purposes and to different scales, have been greatly increased in number of late years. There are mechanical devices which may be regarded as completing the operations of the hand, as when, previously to applying veneer, the ornament adjusted to the pattern and already rubbed down with the veneering hammer, and affixed by glue to paper, is placed between hot boards and pressed with hand screws, which, when the glue is dry, allows the work to come out quite clear from the boards and appear as one piece of veneer, which is then ready for application.

The cowl with its screw clamps comes to the aid of the veneerer to secure a graduated pressure, commencing from the center of the pieces, being an exact counterpart of curved work, and when flat employed, like the veneering hammer, for plain surfaces. The heat of the cowl quickly penetrates the thin veneer, making the glue exceedingly fluid, and the pressure applied by the clamps soon expels the greater portion of it, and causes the veneer to bed very closely to the work.

Wood carvers, in copying models, are now supplied with a marking or cutting gauge of ingenious construction by which, when once set to the required dimensions, they cannot only give all their markings the relative width, but secure depth of the ground line of the carving, and height of relief portion, or rather the excess on their own panel, so as to enable them to cut away freely, instead of timorously dealing their strokes.

The services of the lathe are particularly prominent in decorative woodwork, particularly in hand-turning. In hand-turning the tool is held by the hand, the changes of form made in the wood being dependent on the relative position or angle of the cutting edge. It is the work of an instant only to vary the relative height and angle of a hand tool to the work, converting it from a roughing to a finishing tool, or even to a scraper, which operations are often impracticable with a tool held in a side rest. With the latter the guidance is solely by the eye; with the lathe the delicate sense of feeling is appealed to, so that any variations may be made with absolute accuracy.

In the development of electricity as a motor under the system of storage, much of the preparatory work of the moulder, whether in wood or metals, will doubtless be greatly aided in the future.

Scaffold brackets is among ingenious contributions to the satisfactory execution of exterior house decorative work on walls. This work is necessarily done much better when the artisan has not to balance himself, but obtains a steady platform without unpleasant swaying. The ladder is made with large hooks at top to hang from window sills, and the platform which is transferable to any of the runs, is fastened by curved hooks attached to an environing bar both to that rung and the rung above.

Album of Mantels ..... **$ 8.00**

More Lost Arts than Fresh Discoveries.

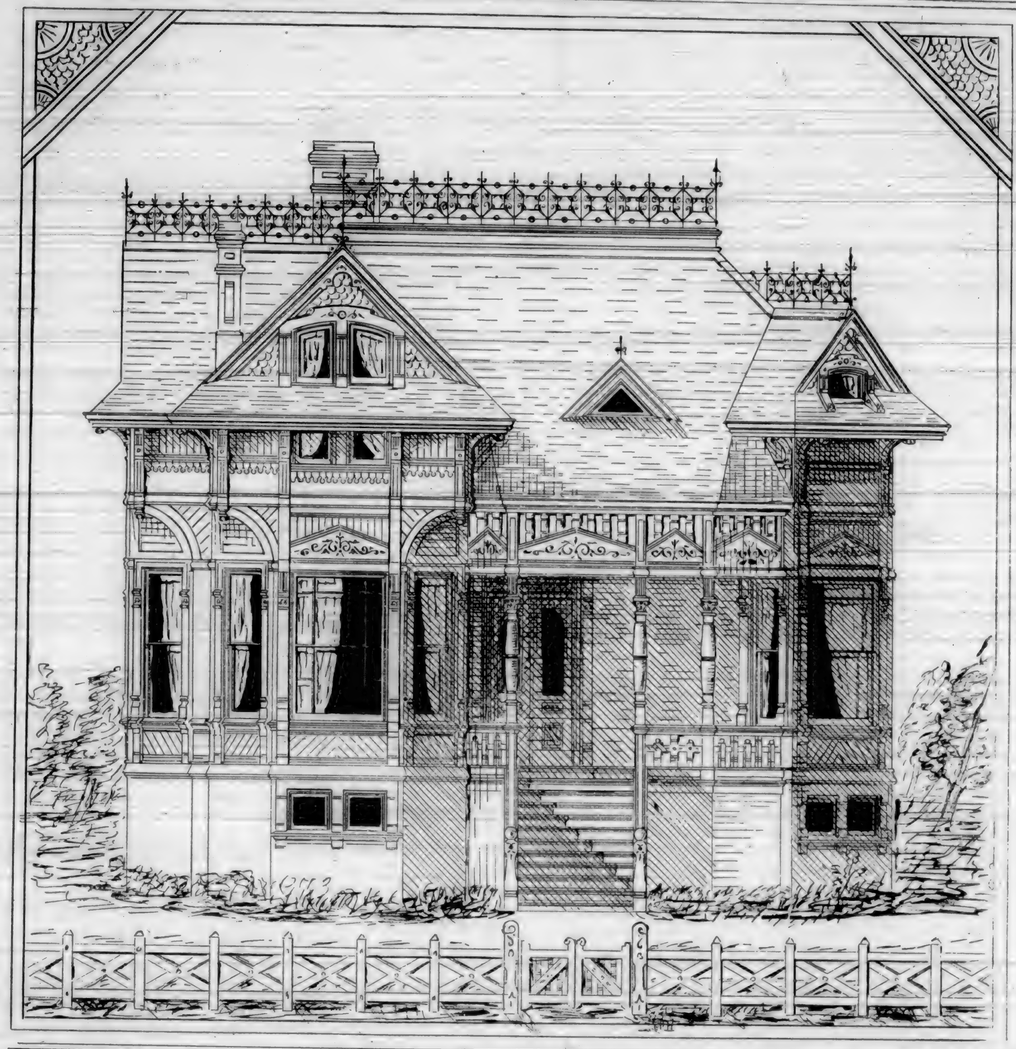
THOSE evolutionists, says the New York *Journal of Commerce*, who believe that our ancestors were fools or pigmies, will find little comfort in the fact that between the ancients and ourselves there are more lost arts than fresh discoveries. Modern chemistry has exhausted itself in the vain effort to produce a compound as useful and durable as the cement of olden times. Vitruvius, who wrote upon architecture before Christ, but whose works have only been printed within the last 450 years, speaks of *opus albarium* and *opus coronarium*, as well-known compounds, too familiar to need description. Among modern experiments are the oil cement of Adams, made of fine whiting and calcined oyster shells ground up in a mill with oil; Pashu's, called Roman cement, is made of argillaceous limestone. Bailey's cement is composed mostly of lime and sharp sand. Mastic cement (sometimes called Hamelin's) is composed of peroxide of lead and oil. The technical "stucco" is made largely of plaster of Paris and lime, and is used for interiors. The Italian stucco is chiefly lime putty, mixed with white sand or powdered marble. We presume the ancient stucco so durable was made of a peculiar sand, or of powdered marble, since the great fault of modern outside work is in the impurity of this foundation. If sand is used, it should be repeatedly washed until it will no longer discolor the purest water. The least particle of earthy matter will be brought into action in warm weather and spoil the adhesion. The wall should be oiled before the stucco is applied, and the latter should be thoroughly oiled every two or three years afterward. But our ancestors, according to the evolutionists nearer the apes than ourselves, could prepare the cement and color it after the fashion that mocks all the modern attempts at either.

Licorice Cultivation.

WHAT is there in the entire vegetable kingdom that California cannot produce? There is scarcely anything that is grown in the earth that does not find favorable soil and climate somewhere within her borders.

The cultivation of the licorice root, is one of the most recent industries of our State, and promises to be not only a successful but a very remunerative one. The experiment has been successfully tried in Sacramento County, where it is estimated that the net receipts from one acre, at thirteen cents per pound, would amount to $2,400 from the first three years' growth. No doubt other parts of the State would be equally favorable to its growth.—*The Interior.*

It is estimated that the value of the building stone quarried in 1884 was $19,000,000 as against $20,000,000 in 1883; the decline being partly due to dullness of trade and partly to the increased use of other structural materials. —*Age of Steel.*



The American Institute of Architects held its annual Convention at Nashville, in October. The number present was not large—not such a representation as should have been, considering the number of practicing architects in the United States. But this fact is not to be considered as evidence of non-interest on the part of the membership, but as proof that architects generally, all over the country, are so engaged in the conduct of their business that it is inconvenient, if not practically impossible for them to leave their offices and business even for a week. As far as the "Fellows" of the Institute residing in San Francisco are concerned, every one of them would gladly have been present, but time and circumstances forbade that pleasure. But the session is reported to have been one of the most delightful character, and those who did attend were richly repaid for the loss of time and expenditures attending. The most liberal and kind courtesies were extended to the attending members in all directions; so that, aside from the fraternal pleasures and benefits of the occasion, there was a season of enjoyment which will long be remembered by those who made the sacrifice and were present at the Convention of 1885.

Ten years ago a standard car load on all first-class railroads was 20,000 pounds, the weight of the cars being about 20,500 pounds In 1881 the load on most roads had increased to 40,000 pounds, but the weight of the car had increased to only 22,000 pounds. The master car builders of the Pennsylvania road have now adopted cars to carry 60,000 pounds; while the weight of the cars will be very little increased. Instead of hauling more than one pound of car to one pound of freight, nearly three pounds of freight can now be hauled for one pound of car. The substitution of steel for iron rails has made the change possible.

Arrest of Architects.

MESSRS. WRIGHT & SANDERS, architects of the Union Club Building, northwest corner of Post and Stockton Streets, were arrested, a short time since, for violation of the Conglomerated Code of City Ordinances, denominated "*Order defining the fire limits, and regulating the construction of buildings in the city and county of San Francisco,*" in which is contained all matters specially and properly belonging to the supervision of the fire wardens, chief engineer of the fire department, and his assistants, and also all matters which should be under the separate control and direction of a competent "building board," "board of public work," or a qualified board called by any other name. Without discussing the merits of the Code as now in force, the facts of the case in question are these: The wrought iron, or box girders to be used in the erection of said building, were specified in harmony with the requirements of the law regulating how the girders should be made. The competition was submitted to the wrought iron workers in San Francisco, and the award of contract made to the lowest bidder, who happened to be the agents of an Eastern manufacturer. This created an interest on the part of the San Francisco manufacturers in the character of work that would be produced under the contract.

The girders finally arrived, and, while the material and workmanship employed in their construction was beyond criticism, they were not constructed as the law provides, which reads: "*Wrought iron girders, if made of plate iron and of box pattern, shall have proper diaphragms placed in them at distances not exceeding five feet apart, and the riveting shall be done hot, and hammered to a proper conical head.*" No question was raised as to the sufficiency or strength of the girders, nor the quality of material or workmanship; but the diaphragms were spaced a greater distance apart than five feet, and the rivets were round, button, or cupped heads, instead of "proper conical heads." The matter was freely talked over among interested parties, and it was understood that arrest would follow the attempt to place the girders in position in the building; consequently, when they were lifted and seated on the walls, an arrest complaint was served on the architects, and a prohibitory injunction issued, stopping the work.

Although two weeks or more have passed since the arrest, at the time of this writing, no decision has been rendered, and the case still hangs before the Police Judge, under the charge of violating a city ordinance.

The violation is clearly technical, as it is not likely that the framer of the ordinance ever contemplated or intended any more than that all such girders should be properly made, and sufficiently strong for the purposes intended. But the law is arbitrary in its language, and should be either held as the absolute rule of practice, or be wiped from the ordinance book. There is no discretionary power anywhere to regulate matters of this kind; to allow, as in this case, the use of something else every whit as good as that required by the law, to be used. But if local manufacturers are held strictly to the law, even in the matter of conical head rivets "done hot," and diaphragms spaced five feet, then outsiders should be held to the same rule.

THE FIRST RAILROAD IN AMERICA.—In the course of a paper read before the Franklin Institute, bearing the title "Transportation Facilities of the Past and Present," Mr. Barnet Le Van corrects the commonly received statement that the Granite Railroad, built at Quincy, Mass., in 1827, by Gridley Bryant, for transporting stone for the Bunker Hill Monument from the granite quarries of Quincy, was the first railroad built in the United States. On this point he presents interesting testimony to prove that, far from being the first, the Granite Railroad was really only the fourth in order of precedence in the United States. We quote from that portion of the paper relating to the subject, with the simple comment that the statements made by the author are of considerable importance from the standpoint of historic accuracy: "Railroads were also first introduced in Pennsylvania. In September, 1809, the first experimental track in the United States was laid out by John Thompson (the father of John Edgar Thompson, who was afterwards the president of the Pennsylvania Railroad Company), civil engineer, of Delaware County, Pa., and constructed under his direction, by Somerville, a Scotch millwright for Thomas Leiper, of Philadelphia. It was sixty yards (one hundred and eighty feet) in length, and graded one and one-half inches to the yard. The gauge was four feet and the sleepers eight feet apart. The experiment with a loaded car was so successful that Leiper in the same year caused the first practical railroad in the United States to be constructed for the transportation of stone from his quarries on Crum Creek to his landing on Ridley Creek, in Delaware County, Pa., a distance of about one mile. It continued in use for nineteen years. Some of the original foundations, consisting of rock in which holes were drilled, and afterward plugged with wood to receive the spikes for holding the sleepers in place, may be seen to this day."—*Exchange.*

There are twenty window glass factories in Pittsburg, with 276 pots, making 838,400 boxes, at $3.00 per box. The glass trade is fairly active in all branches. Flint glass works are everywhere running to their full capacity.

Most of the private structures in Russia are built of wood, and it is estimated that the bulk of them burn down every seven or eight years. There is said to be always twenty fires, at least, in different parts of the empire.

Cumming's Details..... **$6.00**

Side-Walk Ordinances.

MR. FARWELL of the present Board of Supervisors has for several months seemed to have had "side-walks on the brain." Consequently he has proposed and introduced several orders, more than one of which has been passed by a majority vote of the Board and gone to the mayor for an expression of his opinion, with the result—veto every time; and as often the veto has been sustained; except that the last passed by the Board in October, and vetoed by the mayor, was finally passed by a vote of ten to two over the veto.

The issues and merits of the case may be thus stated: That the first side-walks laid in San Francisco were of wood, that being the only available material in the early days of the city's existence for the purpose. For several years there were no other than wooden side-walks in use, except occasional isolated cases of brick construction. But the brick obtainable, failed to serve a good purpose, owing to unequal hardness and durability—the softer wearing away more rapidly, leaving as many pot holes in a side-walk of five hundred square feet as there are small-pox pits in the face of a man who has passed through a bad case of that disease. The late Mr. Lick of Lick Observatory renown, went further, and obtained pressed brick, such as those used in the facings of buildings, but they proved to be no more durable than the common article, and brick side-walks were passed as impractical. Time and service proved that side-walks of wood construction were also but temporary expediencies, as the friction and wear and tear on the surface wore away the fibers of the wood rapidly, causing unevenness, and where knotty pieces were used, the softer parts would wear away around the knots, leaving disagreeable lumps for people to stumble over and sometimes sprain an ankle. Beside this, the sleepers and underside of the planking would soon rot, thereby destroying the hold of the spikes used in securing the planking, and, as a consequence, the spikes would work their way upward, and protrude above the planking, thus forming a rake-like surface for pedestrians to practice toe stumping, and ladies to hook the lower parts of their garments and tear them; and thousands of devout female worshipers have gone to the house of prayer full of indignation at the annoyance of having torn their skirts by catching them on a nail in the side-walk, or, perhaps, the sudden jerk carrying away the pin and string fastenings at the waist and letting more of the under-clothing drop in the street than was agreeable to a lady. During the past ten or fifteen years, however, greater care has been exercised in laying plank side-walks; the surface of the planking more generally being surfaced, larger timbers being used for the sleepers, and the spikes being set in with nail sets. The next to appear for public approval was the

ASPHALTUM SIDE-WALKS,

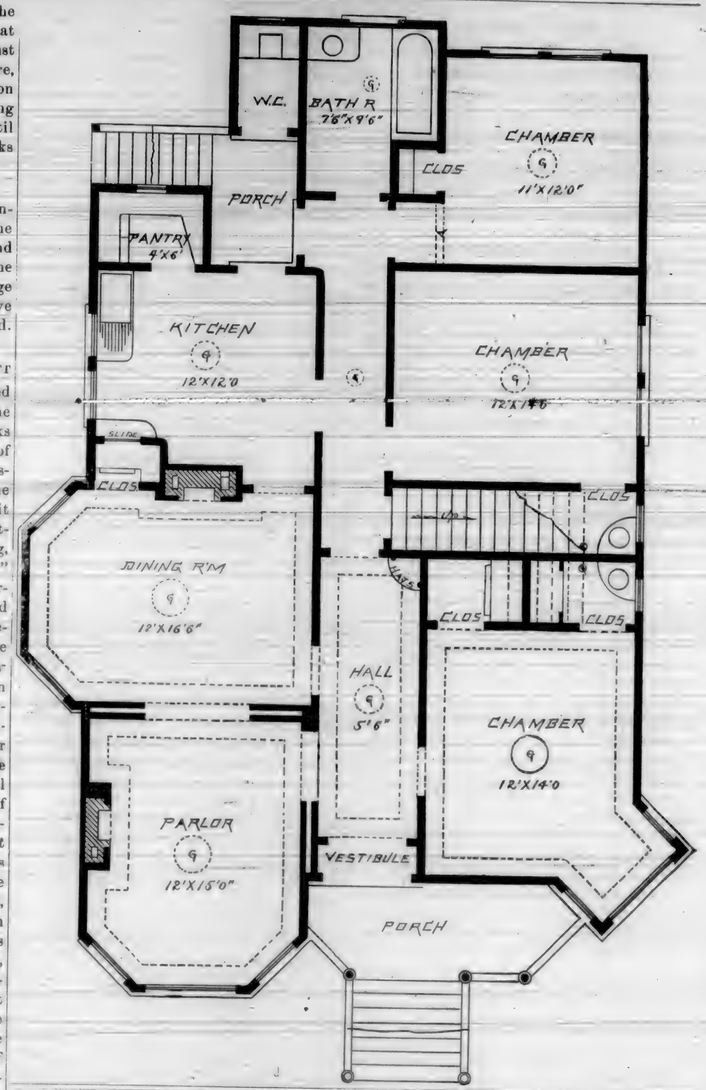
And tens of thousands of feet were laid, both in the business localities and residence quarters. These gave great satisfaction over the wooden constructions; but time proved that even the asphaltum material failed to be just the thing, as exposure to the atmosphere, evaporation, and ordinary wear and tear soon developed defects, such as softening during warm days, cracking, disintegration, etc., until at the present time but few asphalt side-walks are laid. The next in order was the

PATENT STONE OR CONCRETE SIDE-WALK,

Which, during the past ten years, has maintained great popularity, and stands to-day the most appreciated of side-walk materials; and is generally adopted by all who can afford the difference in cost over wood. A very large number of the wooden constructions have been torn up, and the patent stone substituted. The conflict between

SUPERVISOR FARWELL AND MAYOR BARTLETT

Is, the supervisor has aimed and introduced municipal legislation, to hereafter inhibit the construction of any more wooden side-walks within certain limits, and to compel the use of "natural stone, artificial stone, flagging, asphaltum, concrete, or bituminous rock." The mayor on the other hand, seems to think it possible with such a law in force, for importers and dealers in cement, asphaltum, flagging, etc., to "put up a job," and "make a corner" in the materials contemplated by Mr. Farwell's order, and so force property owners and the city to pay exorbitant prices for side-walk work. He further argues in favor of the lumber trade, claiming that there is no present prospect for another lumber combination such as has heretofore at times ruled the lumber market and shoved the price of rough lumber, which is now selling at fifteen dollars per thousand feet, up to twenty-five dollars. The public should be satisfied with the careful forethought of his excellency in the matter of guarding the common interests against the exactions of greedy and soulless monopolies, but the quality, sanitary and pleasurable features of the case seem to be ignored; that the more durable side-walks, as compared with wood, are far more protective of health, and much more agreeable to travel over. The innuendoes of "a cat in the meal bag" is freely hinted, and may exist, but this is a speculative presumption without proof; still it is a fact that the Patent stone is the only one of those named as allowable, likely to be used, and the whole matter simmers down to the question of a *corner in cement*, to prove the mayor's position correct. Owners *can* use either of several other kinds of side-walk, but nobody wants them, and entering them in the list of usables, is an appearance without substance.



Revival of Trade.

PREDICTIONS are freely made that the coming fall and winter months will witness a substantial revival of trade. Indications of this nature are observed almost daily, in all parts of the country, and are eagerly recorded by the newspapers, the public hunger for that sort of information having been sharpened by months and years of enforced abstinence. The history of mercantile and manufacturing business in this country presents a series of reactions, and the pendulum is thought to have swung in this case as far in the direction of low prices and stagnant trade as it can go. Manifestly, therefore, any change that is in store for us is likely to be for the better. But we think it improbable, and not only improbable but undesirable, that any new "boom" of the 1880 pattern will be experienced in the near future. If there should be a gradual and healthy recovery in our industries, chiefly distinguished by the absence of reckless speculation and intemperate railroad-building, it would be sufficient cause for thankfulness; and for such a change we may indulge a confident hope.

Boston has more apartment houses than any other two cities in the country, New York excepted, and of the most of them it may be said that if the evil one himself had been consulted they could not have been arranged with less regard for the health and comfort of the occupants.—*Boston Post.*

How to Decorate.

ODD pieces of furniture are still used more extensively than matched sets, and for a parlor we would suggest the following pieces: A couple of easy chairs, and occasional chairs, a divan, cabinet, fancy table, and a mantel mirror, with side shelves for the bric-a-brac.

When dining-room furniture is of oak, golden brown draperies and upholstery are very handsome and appropriate.

A library should be made as home like and pleasant as possible. Old pieces of pottery or china, metal work, ivories, glass and such other objects of art manufacture display good taste.

Brass decorations are used very extensively for bedrooms, iron and other metals for hall and vestibule.

No modern house is complete without a Louis Seize room, and the following suggestions will produce the effect desired: The woodwork is painted in a cream tint and a detail picked out in gold; the walls are draped with blue satin and the frieze has light garlands in relief, and small medallions in gold on ivory ground; add a few spindle legged pieces of furniture in gold with pale-tinted satins or light garlanded stuff, and some Dresden china bric-a-brac.

In furnishing bedrooms everything should convey a cool and pleasant appearance; the floors covered with fancy matting which may now be procured in the most beautiful designs and soft colorings; the draperies should be light and airy; if you have a canopy bed, cream white Madras will look remarkably well lined with pale blue silesia; for the bedspread, pillow-shams, bureau trimmings, and drapery for top and side of canopy, trim with lace or the pretty tassel fringe which comes for the purpose.

Sideboards of either massive oak, extensively carved, or hand-carved mahogany are very pretty and desirable for our dining-rooms.

Leather leads itself in so many ways to easy decoration that cabinets and other articles of furniture are covered with it.—*American Inventor.*

SOME COMICAL BUT COSTLY BLUNDERS.—Mistakes are expensive sometimes. A New Yorker had a lot seventy-five feet wide, intending to build four houses of equal fronts on it, and one of the middle ones first. He employed a firm of surveyors to locate the house, and they located it so that the remaining space on one side was only ten feet wide. The error was not discovered until the house was done, the proprietor having no time, probably, for such trifles. Then he sued the surveyors for damages, but they won a verdict on the ground that their plan was accepted and paid for as satisfactory, although it located the corner-stone nine feet farther in one direction than was intended. This mistake was rather more serious than that played upon a resident in a brown-stone front in Forty-seventh Street, who returned from business one night to find the entire stoop of his house in ruins, the heavy stonework having been pulled to the ground. His wife said a man had come with orders to demolish, and had done so. Although she did not know enough to command a halt for explanation, she did observe the name on the wagons. The indignant citizen took measures to prosecute, when it was found that the employer of the men had ordered them to go to the same number in Forty-eighth Street, instead of to Forty-seventh. He had learned of the mistake and had contracted to have the wrong stoop rebuilt, and he was surprised to learn that the work had not been done. These incidents of metropolitan life show that mistakes are there regarded with very little concern, those responsible not even taking the trouble to apologize or even explain. The same amount of pains spent in doing a job well that is spent in getting the job to do would pay.—*Springfield Republican.*

The Better Bridges.

A VERY pretty fight is in progress in Japan over the question of American *vs.* English bridges. Early in the year Prof. J. A. Waddell, of the University of Tokio, published an elaborate work in two volumes, for the purpose of pointing out to the civil and mechanical engineers of Japan the superiority of American to English types of bridges, and the mistake of the Japanese in following the practice of the latter. On account of defects, which the author points out in detail, the author concludes that "the trouble with English bridges, and consequently with those of this country (Japan), is that they are designed by railroad engineers, who have not made a special study of bridge designing, and are therefore incompetent to do the work intrusted to them." On the other hand the author points out in detail his reasons for the assertion: "That the United States leads the world in bridge building is a fact undisputed even in Europe." Professor Waddell's book set several bridge engineers to writing letters to the Japan *Mail*, in which the statement that American engineers now lead the world in designing bridge work is called in question. Professor Waddell replies in a very pungent letter, and, taking up his opponent's arguments, answers them in detail. He remarks that actual inspection of English bridge work in Japan shows a quality of workmanship that is even worse than the cheapest highway bridges of America. One case mentioned, a railway bridge, has its bottom cords so warped that "the floor beams bear on both sides of the same;" shims of ⅛ and ¼-inch iron are freely used, and there are open joints in the top cord that paint will not hide.—*Age of Steel.*

So rapid is the transmission of the electric current along the lines of the telegraph wire that, supposing it were possible to carry the wires eight times around the earth, it would occupy but one second of time.—*Doidge's Annual.*

An English Plan of Ventilation.

THE following description of Dr. Hogg's plan of ventilating and warming dwellings is taken from an account in the London *Lancet*. It is one of those which are more ingenious than practical, and just complicated enough to please the English: "According to this, none of the windows are to be opened; and there is but one fire-place, — that in the kitchen. Underneath the hall a large passage is used as the intake of fresh air, where it can be cooled in summer by ice or water-spray; while in winter it is warmed by hot steam pipes, economically heated by a small coke stove. The air then passes up into the hall, from which it is separated only by an iron trellis-work, and travels into every room of the house by apertures made in the skirtings and cornices. In the ceiling of each room there are one or two openings, and exhaust shafts leading to the foul-air chamber in the roof of the house, the exhaust suction being produced by a large shaft, which runs from the foul-air chamber down to the back of the kitchen fire, where the heat of the boiler and the fire suffice to attract the air. From the back of the kitchen fire, in the basement of the house, the air again travels up, a square brick shaft or chimney conveying it through the roof and into the open. In the center of this shaft is a circular metallic flue, which carries away the smoke of the kitchen fire; and this flue, always more or less heated, stimulates the current of air."—*Sanitary News.*

A Rapidly Growing Health Evil.

IT is not generally known that coal oil and gasoline stoves rapidly vitiate the air of a room for breathing purposes by the development of large quantities of carbonic dioxide. How much longer must this continue before manufacturers of such goods will obviate this new danger by inventing some form of hood and pipe for conveying this poisonous gas to the outside atmosphere? Volumes have been written concerning the ventilation of homes, and the injury that arises, especially to children and the infirm, from crowding too many people together in closed apartments, and now, with the introduction of oil and gasoline stoves in the household, a new difficulty presents itself which is not easily remedied in the endeavor to provide for health and comfort. These stoves are frequently found with several large burners in full blast, in small kitchens hardly large enough to contain air to supply the healthful requirements of one person.

Evils of this kind, where they are widely spread, must have a terrible effect upon the strength of a population who breathe every day such an atmosphere, and, thus far, we have seen no remedy. It is certainly a question for grave consideration, and whoever takes the problem in hand at once, and provides a means, at low cost, to obviate this nuisance, will confer a great blessing upon thousands who are innocently undermining their health. —*American Inventor.*

The bustling, hurrying man, as a matter of fact, is a poor worker. Too much of his steam power is expended in kicking up the dust. The habit of hurrying and being in a hurry, is fatal to good work, and diminishes the amount of work a good man can do. The men who accomplish most never seem in a hurry, no matter how much they have to do. They are not troubled for lack of time, for they make the most of the minutes by working in a methodical manner, finishing each job properly, and not expending their nerve force in bustle.—*Exchange.*

The value of well-conducted trade journals to the interest they represent, is becoming more apparent every day. They are the best possible means of communication between members of the trade, and for that reason no business man can afford to ignore them. The live manufacturer or jobber desires to keep his name constantly before the trade, and in no better way can he do it than through an advertisement in this trade Journal.

BOOK NOTICES.

Principles of Economy in the Design of Metallic Bridges. By C. B. Bender; Wiley & Sons, N. Y., publishers. A new book of 195 pages, 6x10 inches, with elaborate and comprehensive plates and diagrams additional. The subject matter is handled with ability and thoroughness.

Steam Engine Catechism, 1885. By Robert Grimshaw, President James Watts Association, received. A handy little work of 149 pages, on matters suggested by its title—engines, and steam in its ten thousand applications as a motive power. It will be found useful to young engineers, interesting to older heads, and convenient for examination boards. Price, $1.00.

The Principles of House Drainage is the title of a well-written book of 125 pages, 5x8 inches, comprising the substance of three lectures delivered by J. Pickering Putnam, before the Suffolk District Medical Society, and the Boston Society of Architects, at the Massachusetts Institute of Technology. Traps, Siphonage, Ventilation, Evaporation, Wastes, Drains, and the material features involved in sanitary science, are all handled and discussed in clear and intelligent language. Published by Ticknor & Co., and for sale at office of this Journal.

Architectural Studies.—Store Fronts and Interior Details, edited by F. A. Wright, architect, and published by W. T. Comstock, New York. *Sent by mail to any part of the world free of postage.* Price, $1.00 each part or number. Part No. 2 contains twelve neatly produced plates, with numerous scale details.

Sanitary House Inspection. "Hints and helps regarding the choice of a healthy home in city or country." By William Paul Gerhard, C. E. Published by Wiley & Sons, New York. Contains 145 pages of thoughtfully considered and well-written matter, which should be read by all interested in the subjects treated.

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Amateur Carpenters.

IT is an excellent thing for any man, whatever his business in life may be, to acquire a fair degree of mechanical skill and familiarity with tools and machinery. Such knowledge never comes amiss, even if its possessor is so fortunate as to be under no necessity of ever using it as a means of livelihood; just as a thorough practical acquaintance with the minutest details of housekeeping is valuable to any woman, though she may be surrounded by luxury all her life and have a servant to wait on her at every turn.

But it does not follow, by any manner of means, that an amateur or half-trained workman is profitable to his employer, even at half price, or at any price. Experiments of that kind are oftener made, it would seem, in the various branches of carpenter work than in most other trades—for the reason, probably, that it is easier and more common to pick up in a desultory way a superficial knowledge of carpentry than of other callings which do not in fact require so much skill and judgment for their thorough mastery. To become a good carpenter, capable of estimating a job fairly and performing it honestly, is a matter not of a few weeks or months, but of years of diligent and conscientious work. And while the temptation is very great, in awarding the contract for a job, to give it to the lowest bidder without due regard to the probability of getting the worth of one's money, it is generally found that a single lesson of that kind is sufficient. In a broad sense the rule that "the best is the cheapest" holds good in carpenter work as in nearly everything else.

A vigorous protest against the employment of what it calls "saw and hatchet carpenters," is made by the *Southern Lumberman*, which imputes to them not only want of skill but want of honesty as well. As an illustration, it mentions a building contract which one of that class of carpenters offer to take for $500, while the material alone came to $570. Somebody was badly cheated, of course, and probably the lumber-dealer, the workmen and the owner of the building all suffered more or less. Incompetency and false pretense in all trades and professions should be steadily discouraged; and the only way to put an effectual check upon them is to give the preference invariably to the trained workman, who has earned and can rightfully wear the title he claims.—*Mechanical News.*

Mr. Stanley says the length of the Congo is 2,100 miles, and the Mississippi and the Nile together would scarcely equal its tribute of water to the ocean. From the mouth of the river a steamer drawing 15 feet can steam up 110 miles, at which point a land journey of 52 miles has to be taken, on account of rapids. Then another steaming or rowing voyage of 88 miles occurs, which is succeeded by a land journey of 95 miles. After that it is possible to steam up another 1,060 miles.

Natural gas is being found in many sections of the United States, Los Angeles, California, being in the list, with fair prospects of a good thing on hand.

Disposing of Dead Bodies.

THE latest method proposed for disposing of the dead strikes one a little curiously at first, but, after a little consideration it seems not to be a very bad idea. It is a proposal by a Mr. Pratt, an Englishman, to the effect that the bodies of the dead, instead of being buried in earth or cremated, should be encased in caskets and placed in a concrete slab, seven feet long by three feet six inches wide, having a place in the center large enough to receive the coffin. Soft concrete should then be mixed and filled in around the casket, and a concrete slab six inches thick be placed on top. The sarcophagi should then be banded heavily with iron, and, as fast as they accumulate, they should be built into a sea-wall to protect the coast of England from the ever recurring devastations of the sea. The blocks would all be of the same size, regardless of the size of the casket. In the case of infant burial, two or more could be confined in one block of concrete. This is really the first scheme which has been brought forth by which the bodies of the dead could be utilized to any good purpose. It is a good suggestion from an economist's point of view, as it provides coast defenses and a revenue at the same time. The idea is respectfully referred to the Committee of the House of Representatives on Rivers and Harbors. Thus, in the revised words of an ancient rhymster,

> A good man's bones when dead and turned to clay,
> May build a wall to keep the sea away.

—*Sanitary News.*

A BLACK ENAMEL FOR IRON.—*Le Genie Civil* of Paris says: For the last few years, many efforts have been made by different processes and various materials to protect iron and give it a brilliant black coating. Recently M. Puscher, of Nurenberg, has described a very simple process whereby he claims to cover iron with a black coating similar to enamel, and very much more evenly and regularly distributed, as it is not laid upon the metal with a brush or any similar tool. M. Puscher places in a vessel about eighteen inches high sufficient finely-powdered coal to cover the bottom to the depth of about three-quarters of an inch, and over this at a height of about one inch is placed a grating which carries the objects to be treated. The vessel is then covered and luted down tightly, and placed upon a brisk fire. The vessel is at once filled with steam, which soon evaporates, and is then charged with bituminous vapor. The firing is kept up for about half an hour, so that the bottom of the vessel is dull red; after which it is removed, and, when cool, opened. The residue of the coal is found in the form of coke, and the objects placed upon the grating, which have been at a fairly high temperature for a considerable time, are found to be covered with a black coating having all the appearances of enamel but of extreme tenacity and a considerable degree of elasticity. It is claimed that objects thus treated may be bent and exposed to great variations of temperature without in the least affecting the coating deposited on their surfaces.

Rosewood.

ROSEWOOD trees are found in South America and in the East Indies and neighboring islands. There are half a dozen kinds. The name is not taken from the color of the wood, as is generally supposed, but by reason of rose-like fragrance which it possesses when first cut. Some of the trees grow so large that planks four feet broad and ten feet in length can be cut from them. The broad planks are principally used to make tops for piano-fortes. The rosewood tree is remarkable for its beauty. Such is its value in manufactures as an ornamental wood, that some of the forests where it once grew abundantly have now scarcely a single specimen. New plantations have been set out, so that the supply will not be exhausted. —*Lumber Trade Journal.*

California redwood, particularly in the shape of dimension shingles, seems to be gaining ground in the Chicago and adjoining markets. They are largely used in suburban residences, not only on the roofs, but to take the place of siding. Their rich color makes them admirably adapted to this use without the addition of paint. Only recently the supply in Chicago was entirely exhausted, and users were obliged to wait for the arrival of consignments. There is also considerable demand for finishing lumber, and redwood is seen in a good many places where two or three years ago it would not have been thought of.—*Northwestern Lumberman.*

Experienced lumbermen have always held that timber cut in the spring was not durable for building purposes. Recent scientific investigations sustain this belief. It is shown that the richer the wood is in sulphuric acid and potassium the more likely it is to rot and mould. Wood cut in the spring contains eight times as much of the former and five times as much of the latter as wood cut in the winter.

Better times are predicted, generally, in all lines of trade and manufacture. Mills and manufactories that have been entirely idle, or working on half or three quarter's, are coming to run full hours. This is pleasurable to contemplate, and would be more so if there were assurances of permanency. But experience proves that when the ball begins to roll, there is such haste and anxiety to make it go faster that it gets beyond control and soon collapses; *i. e.*, eagerness to create demand beyond natural requirements, forcing sales and flooding and glutting the markets.

Notwithstanding the general complainings of "dull times" in California, matters have gone on fairly prosperously, and the future outlook is good, and hopeful expressions are freely repeated in business circles.

Sir Christopher Wren retired from public life at eighty-six; and after that he spent five years in literary, astronomical, and religious enjoyment.

Unfair Treatment of Contractors.

THERE seems to be some misapprehension on the part of the owners of projected buildings as to the limitation of their rights in the invitation and acceptance of competitive bids from contractors. It is but just that the lowest tender by a responsible bidder should be accepted, and personal friendship between owner and contractor, political or religious affiliation or business connection should be no cause for unfair discrimination.

In cases coming under our notice all of these causes have worked in determining the acceptance of tenders on the part of owners, contrary to the advice and against the will of their architects. In one case the owner attempted to excuse his acceptance of the higher bid upon the ground that "he had business relations with the bidder." In another he "had intended from the first that the accepted bidders should do the work, and only desired the other bids as a means of comparison of prices." In the first case the architect threw up the commission rather than be a party to such injustice; and in the second the owner was compelled to pay the lowest bidder for his time and trouble, under threat of the same loss of service.

Such action is, we take it, often caused by a lack of knowledge of the expense of time and labor required in making estimates, rather than by a willingness to take unfair advantage. We commend the honorable action of the two architects cited to their colleagues in the profession when like contingencies arise.

If any one thinks that the final denudation of our pine lands is an impossibility, let him take a trip over the Wisconsin Valley division of the Chicago, Milwaukee, & St. Paul railroad. When he has strained his eyes over a stretch of 80 miles of country, which, almost the entire distance, is a fire-swept waste of small, dead pines, with scattering live trees here and there, and an occasional "clump" of green, fair-sized timber, he will admit that here, at least, the available pine has been nearly exhausted; for almost every section of this vast area has been cut over, and all the pine large enough for lumber taken off. This is in Wisconsin, not Michigan, it must be remembered. A journey through the Black River region of the same State brings to view a like devastation of pine. As it has required only about thirty years of cutting to strip this territory, with a limited consumptive demand in the first years of the slaughter, we can well conclude that in less than thirty years from the present, very little available pine will be left in either Michigan or Wisconsin.

"Now, Johnnie," said the teacher, "if your father borrows $100 and promises to pay $10 a week, how much will he owe in seven weeks?" "One hundred dollars," said Johnnie. "I'm afraid you don't know your lesson very well," remarked the teacher. "I may not know my lesson very well," Johnnie frankly acknowledged, "but I know my father."

Street Architecture, New York.

WITHOUT objecting in the least to the conclusions of the writer in the *Record and Guide*, we are disposed to think that the decline in picturesque city architecture has been due much less to the unremunerative character of investments in oriels and turrets than to the change in the municipal regulations in regard to building, which now forbid any of those encroachments on the street lines, in the way of projections and bays, which once did so much to break up the monotony of the street façades. It is not easy for the best architect to give picturesqueness to a flat four-story front, twenty-five feet wide, and the praiseworthy efforts which are often made by the owners on a given street, to persuade all who build on the street to set their houses far enough back from the street line to allow of pleasant bays and oriels in the reserved space, are usually thwarted by the obstinacy of some "hog," to give him the title which his neighbors generally bestow upon him, who insists on thrusting the clumsy square mass of his own house into the space which it was decided to keep open. For this reason, more than any other, the New York architects have returned to something like the monotonous flatness of design of twenty years ago; but it is due to them to say that they have found means to deal with their severe restrictions in ways which are often surprisingly clever. Not to mention particular instances, the professional visitor to the upper portion of New York is now constantly struck by successful devices for securing shadow in the middle of flat fronts, as well as by most interesting examples of façades in which no relief is attempted, which give him, we think, quite as much pleasure as the mingled compositions and caricatures of Fifty-seventh Street; and although we are willing to go even farther than the *Record and Guide* in assuring owners and architects who are disposed to adorn the unrestricted districts with beautiful detached houses, like those of Hamstead and Chelsea, or like the little detached "hôtels" which cover the new and fashionable part of Paris, that the taste for such habitations is already prevalent enough in New York to ensure success to those who cater to it wisely, we trust that the beginning of the work of improvement, if not also the end of it, may be intrusted to architects who can temper the exuberance of their fancy with a little discretion.—*American Architect and Building News.*

Moscow has an enormous new cathedral, built in the Græco-Byzantine style, which covers 73,000 square feet, and has cost $12,000,000. It has five cupolas, on which 900 pounds of gold were used as embellishment, and thirteen bells, the largest as big again as the "Great Paul" in London. The largest door weighs thirteen tons, and cost $310,000. The marble in the building cost $1,500,000.

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A New Phase in the Chinese Question—A Bold Strike against White Labor.

THE Mongolian cigar-makers then in the employ of Koenigsberger, Falk & Mayer, made a bold move on the 23d of October, and called a new deal, demanding the discharge of *every white man* engaged *with them in the making of cigars.*

This is the first high-handed break that the Celestials have attempted, aimed directly against white labor; and although it was a bad move for them, and a fortunate one for the white men, it is, nevertheless, a large straw that shows which way the wind blows; *i. e.*, what the Chinese would do if they could, and what they will do when and as often as opportunity permits—in isolated cases; and what they will do *en masse* should they ever be able to gain the points they, as a people, are playing for. It was bad enough that men of our own race and tongue should be humiliated to work side by side, or within the same walls, with creatures who, possessing the power, would trample in the dust and persecute with relentless severity and hate, and drive to penury and want, through unequal competition; but when they, upon American soil, raise the hand of open rebellion, assume an aggressive attitude, and demand the humiliation of those upon whose labor rights they are infringing, it is not to be wondered at that the working people as a whole are alive to the occasion, and greatly agitated; for in this first move there is a warning that should be heeded. It is *only one* instance, but it is as the ripple that precedes the storm, should they as a people strengthen and advance their present foothold, and become sufficiently numerous in the United States, with unrestricted liberty under our laws, to monopolize—as they will—all avenues of labor, and crowd every interest of the working and middle classes to an extent that will pauperize millions who otherwise might raise themselves, by their labor, to positions and conditions of comfort and moderate affluence.

All the thin-skinned sentimentalism that is prated in behalf of the "poor persecuted Chinamen," is all bosh—a waste of sympathy,—even if it is indorsed by Rev. Henry Ward Beecher, and others like him, who have themselves committed some very considerable errors of judgment, *if* not in acts in other directions. It may be well enough in a Christianizing sense, where a few can be held under "evangelizing" and "regenerating" influences, but it won't do as an immigrating, labor, and business proposition.

The proofs of the "nature of the beast" are too well established all along the Pacific Coast to need confirmation by further recitals, and this testimony is distributing itself in many other cities and States, to such an extent and of such character that the comparatively few Chinamen now on this continent are attracting very large attention, and eyes that have been blind, refusing to see what the people of this western coast have seen for years, are beginning to open and discover that there is a very important question to settle in this matter of Chinese hording and swarming upon American soil.

There is a great deal said about coolieism; but it matters not whether they come as coolies or free men, their presence is equally objectionable; perhaps more so as free agents, as then absolute personal interests would likely stimulate, rather than modify their ambitions, and augment rather than lessen their natural animosities toward the white race; adding zest and determination to their purposes of monopolizing, centralizing and controlling, until Chinese work-shops and manufactories worked by Chinese coolies or free men, as the case may be, will be located in every State, city, town, and manufacturing district upon the continent.

These assertions are not mere speculative presumptions, but are rational, reasonable, natural, common-sense probabilities,—conclusions clearly deducable from the practical experiences and contacts so far had with the people in question, who, as found in California, are a cunning, unscrupulous, treacherous and unprincipled race, in whom the shadow of truthfulness does not exist, when either falsehood or perjury can be utilized to advantage.

The firm named have wisely concluded to drop out all Mongolian help in the future, and employ white labor only. This is all very well as far as it goes, and is as it should be; but doing so will not deprive the heathen strikers of the knowledge they have gained, nor the mechanical art acquired in the manufacture of cigars, and, as it was of old, the race being mixed in with our own people are likely not only to be a "thorn in the side" of the working classes for all time, but manufacturers also will hereafter have increased cause to regret that they have educated a race against whom they cannot compete, upon any terms at present recognized as fair and equal.

Mortar for sewer work in all cases should be capable of setting in water. Portland cement and lias limes make good hydraulic mortar. The proportions of cement, or of lime to sand, should not exceed two and a half of clean, sharp sand to one, by measure, of ground Portland cement or lias lime. If clean furnace ashes or slag are available, there may be two of sand and one-half of ashes or slag, the whole to be mixed in a revolving pan, each panful to have twenty minutes' grinding. When mortar is used with bricks, the bed and joints should be spread thick and full over the entire area of both bed and joint, leaving, when pressed into place, a bed and joint never less than one-eighth of an inch in thickness of mortar. In four cubic yards of completed brickwork there should be not less than one cubic yard of mortar incorporated. In making mortar or concrete, it will be of the utmost importance to use clean materials and to preserve them clean. The water used for wetting bricks and for mixing concrete and mortar must be free from silt. Concrete and mortar should also be used on clean surfaces —*Sir R. Rawlinson, C. E.*

Healthful—Height of Stories.

THE *Sanitary News* quotes from the proceedings of the Sanitary Institute of Great Britain some sensible remarks by Mr. John Honeyman upon the advantages of low ceilings for the rooms of the smaller class of houses. In Mr. Honeyman's opinion, the popular notion that high ceilings are conducive to the healthfulness of rooms is erroneous. It is true that a room with a high ceiling contains a lar er cube of air, and, supposing the atmosphere of such a room to be perfectly pure to begin with, a man could exist longer in it before dying of suffocation than he could in a low room. Here, however, the sanitary advantages of the high room end; and ventilation, properly so called, that is, the constant change of the atmosphere, goes on, as most architects know, more satisfactorily in a room with a low ceiling than a high one. If the windows and doors extend nearly to the ceiling, as will usually be the case if the room is not more than eight feet high, the leakage of air which goes on to a very great extent around them, keeps all parts of the atmosphere of the room in motion, instead of moving the lower portion only, leaving an inverted lake of foul and hot air undisturbed under the ceiling, as is always the case where high rooms, inhabited in winter, depend for the movement of the air in them upon openings placed at some distance below the ceiling. To have the currents of fresh air circulate only in the lower part of the room, leaving the upper portion of the air in it unaffected, is practically a much worse way of ventilating the room than, with the same movement of the air, to cut off the upper stagnant portion of it by a low ceiling; for the stagnant atmospheric lake under the high ceiling, although motionless, keeps actively at work, under the law of the diffusion of gases, fouling the fresh currents which circulate beneath it; while, with low rooms and high windows, no accumulation of stagnant air can exist, the hot and foul atmospheric strata being swept constantly from the ceiling by the currents, just as dust is swept from the floor by a broom. Indirectly, moreover, the low ceiling improves the healthfulness of the room by its economy of heat. In a lofty room the poor man's stove expends a large amount of its energy in warming the ceiling, and the floor of the tenement overhead, without doing its owner any good whatever. It is only necessary to sit on top of a step-ladder for a while in a high room artificially warmed, to be convinced, without reference to a thermometer, that the temperature next the ceiling is, in all ordinary cases, far higher than that of the remaining air in the room. If the ceiling is not more than eight feet high or so, with windows to the top, diffusion co-operates with the atmospheric currents to bring the warm air at the ceiling down where it can be felt by the people in the room, while the cool drafts which blow in above the windows and doors, striking first upon the ceiling close by, carry off from it by convection a very considerable amount of heat, for the further comfort of the poor tenant's family. Saving thus a large part of the heat rom the stove, which would otherwise be wasted, the proprietor of the room is less disposed to convert his room into an air-tight box, by stopping up all the crevices around the windows and doors with weather-strips or rags, and even if he begins, from force of habit, to do so, the currents from the upper part of the windows and doors are, if they strike on or near the ceiling, so quickly modified in temperature as not to be felt as cold drafts; and this source of fresh air is left unmolested. In practice, we believe that most persons accustomed to observe the condition of air in inhabited places will agree that where similar means are provided for supplying and withdrawing air, such as a register and a fire-place, low rooms are, as a rule, decidedly fresher than high ones. In many cases a lofty room, supplied with pure warm air from a register, and ventilated by an open fire, will be found very oppressive, apparently from the influence of the large volume of stagnant air in the upper portion; while low, old-fashioned rooms with fire-places are almost always fresh and pleasant.—*American Architect and Building News.*

It is surprising to note how frequently one meets engineers, especially those in practical charge of engines, who have an idea that the function of the steam jacket is to prevent radiation of heat from the cylinder to the atmosphere, and regard its purpose in the same light as they do that of felting and lagging. In our last issue we briefly pointed out its true mission, and need not repeat it here. But this not uncommon fallacy of considering it as a non-conducting device instead of as a supply of heat for the entering and expanding steam, is worthy of special mention. We know of a naval engineer in Government service, who, much to the discomfort of his assistants, insisted on having the highest attainable temperature in the engine room, closing up all doors and windows, his directions being reinforced by the explanation: "What's the use of a steam jacket to prevent the radiation of heat from the cylinder, if the temperature of the room is not in the eighties or nineties?". And this view is cropping out constantly, in many other ways, as when exhaust steam, or steam of a pressure much reduced below that corresponding to the initial pressure of steam, is let into the jackets. If a steam jacket is to be of any practical use, the temperature of the steam it contains must at least equal that of the steam entering the cylinder. A queer and expensive kind of non-conducting device, indeed, in which the radiating surface is increased beyond that of the cylinder itself, and in which steam specially drawn from the boiler is the means.—*American Engineer.*

We Will Donate in Cash $150

TO ANY person, club, society, or association, that secures *two hundred* cash subscribers for this Journal.

The revival of business is not confined to this country alone, as recent reports from Europe, and more especially from the British Islands, indicate renewed and hopeful activity in manufactures and commerce, though the newly aroused spirit of enterprise can hardly be characterized as a boom. In these days of rapid communications, the people of all civilized countries are affected by much the same causes; but it is hardly possible for general life or general torpidity to prevail in one country while the opposite conditions continue in others.—*Western Architect and Builder.*

The postal laws seem to have been framed in some particulars expressly to oppress monthly publications for the benefit of weeklies. Take the case of the *Architect and Builder*, for instance. It costs two cents per copy to deliver it in this city, while the same paper is delivered at the residences and offices of California and New York subscribers for one cent per pound. All weeklies are delivered in the city of publication or anywhere else in the United States at one cent a pound. The absurdity of such an arrangement as this must be apparent to any one capable of a moment's reflection. In the case of monthly magazines the injustice is even more marked, as in the instance of *Harper's Magazine* as compared with the *Iron Age*. The weight of each is about the same, yet the latter is delivered to New York City subscribers for one cent a pound, because it is a weekly, while it costs two cents a copy, or about five cents a pound, to deliver *Harper's*. There is a general disposition upon the part of the monthlies to bring this matter to the attention of Congress and demand a more equitable distribution of postal burdens.—*Western Architect and Builder.*

"I'll tell you a good thing," said the Iowa dealer from Fort Dodge who came in "just to have a chat." "It illustrates how green a drummer sometimes is. A man from Wisconsin, say Oconto, for instance, sold a yard man in our town a load of cedar posts. There were 633 posts all told; the price was 10 cents apiece, and the amount $63,30. The freight bill was $69 42, which our lumber dealer paid. He then asked the Wisconsin post dealers to remit him the difference, $6.12, and they would be square. The Wisconsin men went to talking about the pay for their posts, but our townsman said he owed them nothing, but that on the other hand they owed him. He had bought the p sts delivered. An attorney was consulted by the Wisconsin gentlemen, but he told them they had no case. The drummer, I suppose, knew a cedar post when he saw it, but it probably did not occur to him that the railroads make any charge for hauling."—*Northwestern Lumberman.*

"Michael Angelo preserved his creative genius even to extreme old age; there is a device said to have been invented by him, of an old man represented in a *go-cart*, with an hour-glass upon it; and the inscription *Ancora imparo!*—Yet I am learning."

AN EXTRAORDINARY OFFER.

To All Wanting Employment.

WE want Live, Energetic, and Capable Agents in every county in the United States and Canada, to sell a patent article of great merit, ON ITS MERITS. An article having a large sale, paying over 100 per cent profit, having no competition, and on which the agent is protected in the exclusive sale by a deed given for each and every county he may secure from us. With all these advantages to our agents, and the fact that it is an article that can be sold to every house owner, it might not be necessary to make an "EXTRAORDINARY OFFER" to secure good agents at once, but we have concluded to make it to show, not only our confidence in the merits of our invention, but in its salability by any agent that will handle it with energy. Our agents now at work are making from $150 to $600 a month clear, and this fact makes it safe for us to make our offer to all who are out of employment. Any agent that will give our business a thirty days' trial and fail to clear at least $100 in this time, ABOVE ALL EXPENSES, can return all goods unsold to us and we will refund the money paid for them. Any agent or general agent who would like ten or more counties and work them through sub-agents for ninety days, and fail to clear at least $750, ABOVE ALL EXPENSES, can return all unsold and get their money back. No other employer of agents ever dared to make such offers, nor would we if we did not know that we have agents now making more than double the amount we guaranteed; and but two sales a day would give a profit of over $125 a month, and that one of our agents took eighteen orders in one day. Our large descriptive circulars explain our offer fully, and these we wish to send to every one out of employment who will send us three one-cent stamps for postage. Send at once and secure the agency in time for the boom, and go to work on the terms named in our extraordinary offer. We would like to have the address of all the agents, sewing machine solicitors, and carpenters in the country, and ask any reader of this paper who reads this offer, to send us at once the name and address of all such they know. Address at once, or you will lose the best chance ever offered to those out of employment to make money.

RENNER MANUFACTURING CO.,
116 Smithfield St., Pittsburg, Pa.

S. F. Chapter of Architects.

OWING TO the inclement state of the weather, but few members were present at the regular meeting of the Chapter on the 6th inst. No business was transacted. The next meeting will occur Friday, December 4, when it is hoped a goodly number will be present.

Fresh vegetables are so common here, and can be had so cheaply, that they actually become "monotonous," and hardly cause remark. All the year round the Chinese vegetable peddlers manage to raise them, and four or five crops in the same year is nothing unusual. Our Eastern friends can come here any time in the winter and find fresh vegetables on the tables, which they are only accustomed to see in the hot summer months.—*Rural Californian.*

Don't Fail to Write.

SHOULD this paper be received by any subscriber who does not want it, *or beyond the time he intends to pay for it*, let him not fail to write us *direct* to stop it. A postal card (costing him one cent only) will suffice. We will not knowingly send the paper to any one who does not wish it, but if it is continued, through the failure of the subscriber to notify us to discontinue it, or some irresponsible party requested to stop it, we shall positively demand payment for the time it is sent.

MASONS' AND BUILDERS' EXCHANGE
OF SAN FRANCISCO
Room 11, 314 Montgomery St.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

BRADY, O. E., President, 822 Valencia St.	Box 22
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BENDER, JACOB, 1009 Clay St.	" 73
BECK, J., 10 Eleventh St.	" 12
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RICHARDSON, GEO., 513 Ellis St.	" 39
RICHARDSON, M. B., 624 Shotwell St.	" 1
RILEY, J. F., 166 Perry St., Secretary	" 38
ROBERTS, S. N., 54 3d St.	" 55
STEVENS, W. E., cor. Larkin and Market Sts.	" 46
SCHOENMAKER, C., 323½ Chestnut St.	" 62
WAGNER, J., Potrero Ave. bet. 22d & 23d Sts	" 3
WORRELL, C. R., 888 17th St.	" 5
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YOUNG, LEWIS	" 49

BOX RENTERS—IRON MEN.

RALSTON, H. & J., Iron-men & Housesmiths,	Box 78
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WESTERN IRON WORKS.	" 69

STONE.

SCHALICKE, F. W., Patent Stone	Box 75
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PETERSON, H. M., Sand and Gravel	" 64
RICHARDSON, M. B. Concrete	" 1

BRICK.

ROBERTS & DAVIS, Sacramento Brick	Box 36
REMILLARD BRICK CO.	" 23
PATENT BRICK CO.	" 29
PETERSON, T. W. & CO., San Jose, Brick Co.	" 68

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STEVENS, W. E., Patent Chimney	Box 46
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CLAWSON, L. E., Patent Chimneys	" 2

MISCELLANEOUS.

DAVIS & COWELL, Lime and Cement	Box 43
WHITTIER, JAS. E., Asphaltum	" 41
MCCLURE, P. L., Grader and Waterman	" 30
SIBLEY, L. B., Teamster	" 40
WARREN, CHAS., Grader	" 37
BUCKMAN, A. E., Grader	" 42
KELSO, JOHN, Grader	" 76
ENGLISH W. D. & CO., Graders	" 70
BUTTERWORTH, T. C., Glazier	" 48
HARNEY & SON, Street Contractors	" 54

Staining Wood.

ON staining wood a writer in an exchange gives the following directions:—

A good mahogany color may be had by dissolving maroon lake in water, adding a piece of potash about as large as a walnut to a quart of water, plenty of the color. This will give a good mahogany imitation on any wood and can be used to darken the mahogany if so desired. Oak or ash may be stained brown by using linseed oil and benzine half and half, and burnt umber or Vandyke brown incorporated with this. Maple can be stained green-gray by using copperas in wa er; oak will also be changed to a dark-green blue through the same agency, the effect on ash being various shades of olive green. Ammonia applied to oak produces the bronze olive tint now used so much by architects. Staining by the fumes of ammonia results in all shades from light olive to the rich, deep brown of extreme age. This method is considered the best for imparting to oak or mahogany the appearance of age, and for those wishing to avail themselves of an easy, clean, and certain means of gaining the result, fumigating offers no serious obstacle to its accomplishment, the articles necessary being easy of acquirement and at small expense.

Procure for your use a box sufficiently large to receive the article; any well-made packing-box will be suitable, providing the joints or seams are close. Next get some strong full-strength liquid ammonia, not the diluted article of the druggist, pour some in a shallow receptacle—such, for instance, as a deep plate—place this in the bottom of the box, so that the fumes will rise and surround the object to be stained; close the box securely, so that the fumes will be confined as much as possible. When the article is small, of course the box need not be large—the smaller the better, for then you will not require so much ammonia. You can see how the staining progresses by wetting a portion from time to time; otherwise the change of color would not be perceptible. All that now is necessary is to leave the ammonia to do the work, remembering that the longer the exposure the darker the hue will be.

ABOUT SCREWS.—In an article on the manufacture of screws in Rhode Island the Providence *Journal* says: "It is interesting to note that, while the manufacture of wood screws probably originated in Westphalia, Germany, and was subsequently carried on in Eastern France and England before its introduction into this country, American inventors have supplied the machinery that is now universally employed. The popular feeling that the gimlet-point screw is a modern invention is erroneous. The American Screw Company have in their possession sample cards of French screws, pointed, though not so perfectly made as at present, which were brought from France early in the present century; and from an old piano now at Northampton, made about the year 1760, screws have been taken showing the same feature. Patents have been issued on gimlet-pointed screws, but they covered only a peculiar form of point. The gimlet is said to have been invented by Dædalus, a Greek.

Shavings and Saw-dust	**$1.50**
Lumberman's Hand-Book	**2.00**
Practical Geometry	**1.00**
Architects' Companion	**2 50**
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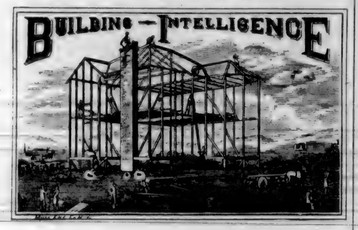

A

Alabama, cor. Twenty-fifth. Catholic Church.
O.—Rev. P. Casey.
A.—R. J. Finch.
C.—J. Binet; J. Wagner, brick work.
$24,500.

B

Bryant, nr. Seventh. Two-story frame.
O.—O. Pino.
C.—J. Kinsman.
$3,000.

Bryant, cor. Dora. Two two-story frames.
O. and B.—J. H. Worden.
Day's work.
$6,000.

Bush, nr. Scott. Two-story frame.
O.—G. Edward.
C.—N. W. Stecker.
$2,000.

Bush, nr. Lyon. One and one-half story frame.
O. and B.—D. F. Mc Graw.
Day's work.
$2,500.

Baker, nr. Bush. Additions.
O.—S. Edmonds.
C.—D. F. McGraw.
$1,000.

Bush, bet. Devisadero and Broderick. Three one-story frames.
O.—S. Gilmore.
C.—J. Drury.
$5,000.

Bush, bet. Mason and Taylor. Additions.
O.—W. S. Gage.
A.—H. C. Macy.
C.—G. R. Lang.
$6,000.

Battery, bet. Pine and Bush. Additions.
A.—McDougal & Son.
C.—A. G. Fitzpatrick.
$11,000.

Bartlett, nr. Twenty-second. Alterations
O.—B. Curbaz.
A.—H. Geilfuss.
C.—W. Pluns.
$1,000.

Bartlett, nr. Twenty-first. One story frame.
O.—N. W. Cole.
A.—G. H. Miller.
Day's work.
$3,000.

C

Clay, bet. Scott and Devisadero. Two-story frame.
O.—E. W. Ferguson.
A.—Eisen & Pierce.
C.—W. H. Whilby.
$4000.

California, bet. Pierce and Steiner. Two-story stable.
O.—H. Schroder.
A.—J. Marquis.
Day's work.
$600.

Cumberland, nr. Nineteenth. Additions.
O.—J. T. Swift.
Day's work.
$1,000.

California, bet. Fillmore and steiner. Additions.
O.—St. Paul's Episcopal Church.
A.—Piercy & Hamilton.
C.—J. H. McKay.
$2,000.

California, cor. Webster. Five two-story frames.
O. and B.—Hinkle Bros.
Day's work.
$17,500.

Church, cor. Duncan. Two-story frame.
O.—H. McGuire.
A.—M. J. Welch.
C.—M. Loftus.
$2,800.

D

Dolores, nr. Twenty third. One-story frame.
O.—A. McNab.
C.—F. W. Kern.
$2,500.

Dolores, nr. Twenty-third. Additions.
O.—J. Wall.
Day's work.
$800.

E

Eighth, cor. Harrison. One-story frame.
O.—Thos. L. Kaen.
C.—Thos. Merry.
$600.

Eleventh, bet. Natoma and Howard. One-story frame.
A.—F. Rash.
C.—J. McCann.
$1,500.

Eleventh, cor. Minna. Alterations.
O. and B.—P. Connell.
Day's work.
$1,200.

Eureka, bet. Eighteenth and Nineteenth. Two one-story frames.
O. and B.—P. O'Rourke.
Day's work.
$1,600.

F

Fillmore, bet. Sutter and Post. Two-story frame.
O.—B. Bates.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$4,000.

Fifteenth, nr. Noe. Frame stable.
O.—J. J. McDonald.
Day's work.
$800.

First, cor. Harrison. Two two-story frames.
O. and B.—W. Keenan.
Day's work.
$2,400.

Fourth, cor. Bryant. Three-story frame.
O.—A. H. Liebenburg.
A.—J. Lenzen & Son.
C.—A. Washburn.
$8,000

Fifteenth, cor. Church. Additions.
O.—J. W. Hammerton.
C.—S. McDuffee.
$750.

Fair Oaks, bet. Eighteenth and Nineteenth. Two-story frame.
O.—W. Dunlap.
A.—Schmidt & Havens.
C.—D. B. Spangler.
$2,700.

Filbert, nr. Jones. Two-story frame.
O.—R. Williams.
C—A. H. Taylor.
$3,000.

G

Guerrero, nr. Clinton Park. Two-story frame.
O.—A. Hansen.
C.—C. E. Dunshee.
$3,500.

Gregory, nr. Second. Two-story frame.
O.—P. Lastrange.
Day's work.
$1,000.

Guerrero, nr. Twenty-fifth. Two-story frame barn.
O.—R. Gray.
Day's work.
$750.

H

Hyde, No. 814. Additions.
O.—J. H. A. Folkers.
A.—Schmidt & Havens.
C.—Commery & Beardslee.
$3,000.

Haight, cor. Steiner. Two-story frame.
O.—J. W. Winter.
A.—J. Gash.
C.—J. L. Binet.
$5,000.

Hattie, bet. Seventeenth and Eighteenth. Two-story frame.
O.—J. Buckley.
Day's work.
$3,000.

Haight, nr. Lott. One-story frame.
A.—R. A. Yanc.
C.—G. R. Lang.
$2,700.

Hunt, between Third and Fourth. Two-story frame.
O.—R. Surriffer.
A.—M. P. Sebetzel.
C.—L. D. Frechecte.
$2,800.

Howard, bet. First and Second. Three-story frame.
O.—J. Burke.
A.—W. C. Jordan.
C.—C. Doherty.
$4,500.

J

Jackson, bet. Van Ness and Polk. Additions.
O.—Capt. Hanlon.
C.—D. J. O'Brien.
$1,500.

L

Liberty, near Guerrero. Two-story frame.
O.—H. Gilmore.
C.—G. Lang.
$4,000.

Langdon, nr. Bryant. Additions.
O.—T. McBride.
Day's work.
$800.

Lott, cor. Turk. One story cottage.
O.—C. Lutz.
A.—Geo. H. Miller.
C.—A. N. Nelson.
$1,800.

Linden Avenue, nr. Buchanan. One and one-half-story frame.
O—M. Williams.
A.—Townsend & Wyneken
C.—Geo. Hussey.
$1,300.

Lombard, bet. Jones and Leavenworth. Two-story frame.
O.—Miss Ella L. McCarthy
A.—George H. Miller.
C.—John Doherty.
$6,000.

M

Mason, nr. Broadway. Alterations.
O.—W. McCoy.
A.—T. D. & J. J. Newsom.
Day's work.
$3,500.

Mission, bet. Sixteenth and Seventeenth. Additions.
O.—Joe Beene.
C.—G. R. Lang.
$1,500.

Mission, opp. St. Mary's College. Two-story frame.
O.—J. E. Rising.
A.—M. J. Welch.
C.—A. Klahn.
$5,000.

Mission, nr. Twenty-first. Two-story frame.
O.—Maier & Unrath.
C.—J. Bamber.
$4,000.

Mission, nr. New Montgomery. Four-story brick.
O.—H. Warden.
A.—Pissis & Moore.
C.—S. T French; brick work, G. Richardson.
$22,000.

Market, nr. Sanchez. Two-story frame.
O.—R. B. Page.
A.—Geo. H. Miller.
C.—Doyle & Son.
$3,600.

N

N Street, bet. Fifteenth and Sixteenth Avenue, So. San Francisco. Frame Roman Catholic Church.
O.—Rev. T. Fitzpatrick.
A.—John J. Clark.
C.—J. G. Adams.
$20,000.

Noe, nr. Eighteenth. One-story frame.
O.—W. McGranahan.
Day's work.
$1,500.

Noe, bet. Fifteenth and Sixteenth. One-story frame.
O.—T. C. Conny.
A.—Schmidt & Havens.
C.—R. P. Traxler.
$2,000.

O

O'Farrell, bet. Fillmore and Steiner. Two-story frame stable.
O.—A. Levy.
A.—McDougal & Son.
C.—R. Currie
$800.

Octavia, nr. Union. One-story frame.
O.—W. Eastman.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
$2,000.

Octavia, nr. Post Two-story frame.
O.—C. Otten.
A.—T. J. Welch.
C.—J. W. Fish.
$3,000.

P

Plymouth, nr. Mission. One-story frame.
O.—Andrew Eckert.
Day's work.
$1,000.

Page, cor. Buchanan. Three-story frame.
O.—A. W. Scott.
A.—C. Day.
C.—A. Flood.
$22,000.

Q

Quinn, nr. Valencia. Two-story frame cottage.
O.—Jas. Humphreys.
Day's work.
$1,000.

R

Richland Avenue, nr. Mission. One-story frame.
O.—J. Drew.
C.—J. L. McLaughlin.
$900.

S

Sixteenth, nr. Castro. One-story frame.
O. and B.—J. Conlan.
$1,000.

Steiner, bet. California and Pine. Two-story frame.
O.—Mrs. Mary Eaton.
A.—T. D. & J. J. Newsom.
C.—R. Beal.
$5,000.

Seventeenth, nr. Collingwood. One-story frame.
O.—F Sears.
C.—E. M. Hunter.
$1,800.

Sanchez, nr. Ford. One-story frame.
O.—H. Echgelmier.
A.—Salfield & John.
C.—J. Klein.
$2,500.

Shotwell, bet. Seventeenth and Eighteenth. One-story frame.
O.—J. W. Williams.
C.—A. Comack.
$1,000.

Sixteenth, nr. Castro. One-story frame.
O.—W. Griffin.
Day's work.
$1,500

Sixteenth, near Sanchez. Two-story frame.
O.—F. W. Flettner.
C.—C. Christy.
$4,000.

Sanchez, near Sixteenth. Two-story frame.
O.—N. Atkinson.
Day's work.
$3,000.

Scott, bet. Bush and Sutter. Two-story frame.
O.—Mrs. H. M. Solomons.
A.—W. G. Copeland.
C.—Treadwell & Thompson.
$8,000.

Steiner, nr. Turk. Two-story frame
O.—S. Robitscher.
A.—Townsend & Wyneken.
C.—B. Chantler.
$2,400.

Steiner, nr. Fulton. Two-story frame.
O.—A. Wissl.
A.—A. C. Lutgens.
C.—C. Mason.
$4,500.

T

Tennessee, near Solano. Two-story frame.
O.—F. Lester.
C.—C. E. Dunshee.
$3,500.

Tenth Avenue, nr. Point Lobos Avenue. Two-story frame.
O.—P. H. Loul.
A.—F. Hillert.
C.—C. Fisher.
$2,000.

Twenty-first, bet. Mission and Capp. Two two-story frames.
O.—C. H. Lienthal.
A.—H. Geilfuss.
C.—F. Klatt.
$8,000.

Third, near King. Boat house.
O.—South End Boat Club.
A.—A. C Lutzens.
C.—E. & F. J. Owens.
$1,700.

Townsend, bet. Fourth and Fifth. Brick warehouse.
O.—Whittier, Fuller & Co.
A.—Wright & Sanders.
C.—R. Mitchell.
$10,000.

Twenty-third, bet. Shotwell and Howard. One-story frame.
O. and B.—J. D. Rogers.
$1,800.

Treat Avenue, nr. Twenty fourth. Two-story frame.
O.—C. Wheeling.
A.—W. Mosser.
C.—B. Pfarrer.
$2,600

Twenty-seventh, corner Church. Alterations.
O.—J. F Mussner.
Day's work.
$700.

Twenty-seventh, near Church. Alterations.
O.—A. Cash.
C.—A. E. Buckman.
$1,000.

Tenth, bet. Harrison and Bryant. Two-story frame.
O.—J. Wilder.
C.—J. Devine.
$1,700.

Treat Avenue, between Twenty-first and Twenty-second. Two-story frame.
O.—H Gille.
A.—H. Geilfuss.
C.—H. Meyn.
$8,300.

Twenty-fourth, cor. Noe. One-story frame.
O. and B.—P. Hahn.
Day's work.
$700

Thirtieth, nr. Noe. One-story frame.
O.—J. Downing.
Day's work.
$1,300.

U

Union, bet. Larkin and Polk. Additions.
O. and B.—G. Warren.
Day's work.
$1,500.

V

Valencia, nr. Sixteenth. Two-story frame.
O.—F. W Harris.
A.—F. Hillert.
$4,000.

Van Ness Avenue, No. 1,14 . Additions.
O.—H. Liebs.
A.—Schmidt & Havens.
C.—R. Mitchell.
$1,500.

W

Washington, nr. Drumm. One-story brick warehouse.
O.—Thos. Merry; brick work, G. Richardson.
$6,000.

Waller, near Buchanan. Two-story frame.
O. and B.—J. Crow.
Day's work.
$6,000.

West Mission, nr. Herriman. Three two-story frames.
O. and B.—P. Donahue.
Day's work.
$6,000.

West Mission, bet. Herriman and Ridley. Additions.
O.—P. Donahue.
Day's work.
$1,000.

Waller, bet. Octavia and Laguna. Two-story frame.
O.—Donald McMillen.
A.—John J. Clark.
C.—C. Chisholm.
$5,000.

Y

York, cor. Twentieth. One-story frame.
O.—S. Lang.
Day's work
$1,000.

OAKLAND.

MARKET, bet Fourth and Fifth—1-story fr dwell; cost, $1,500; o, W. Harrington; c, M. Jackson.

FOURTH, bet Jefferson and Grove—1-story fr dwell; cost, $1,600; o, W. Sagehorn; a, Chas. Mau; c, J. G. Dorrell.

MARKET, nr Twentieth—1-story ctg; cost, $1,300; o, H. Renton; c, J. G. Dorrell.

FOURTH, cor Jefferson—2 1-story ctgs; cost, $3,000; o, D. Moran; c, D. Markel.

FIFTH, bet Broadway and Franklin—2 2-story ctgs; cost, $2,800; o, Barnett Bros.; c, D. Markel.

TWELFTH, cor Adeline—1-story fr dwell; cost, $2,500; o, Mrs. Durst; a, Chas. Mau; c, A. Herbst.

TENTH, se cor Center—Addition; cost, $1,200; o, Dr. W. M. Brown; c, J. C. Johnson.

CHESTNUT, w s, bet Fourteenth and Sixteenth—3 1-story fr dwells; cost, $5,000; o, S. Carle; a, Jas. Seadler; day's work.

EIGHTEENTH, ne cor Chestnut—2-story fr dwell; cost, $5,000; o, Everett Nickerson; c, Z. P. Nickerson.

FILBERT, e s, bet Fourteenth and Sixteenth—2-story fr dwell; cost, $5,000; o, G. W. Babcock; a, S. & J. C. Newsom; day's work.

FILBERT, w s, bet Fourteenth and Sixteenth—2-story fr dwell; cost, $4,000; o, Dr. Pelton; a, W. Davidson; c, E. Childs.

FILBERT, cor Twelfth—1-story school house; cost, $3,500; o, Miss Horton; c, W. Whilbye.

THIRTEENTH, cor Washington—3-story fr dwell; cost $10,000; o, H. Matthews; a, O. Hansen; c, H. J. Hansen.

SAN PABLO AVENUE, cor Sixteenth—Additions; cost, $3,500; o, J. Garrint; c, W. A. Griffith.

SIXTH, bet Broadway and Franklin—2-story fr dwell; cost, $4,000; o, W. Davis; c, W. A. Griffith.

SIXTEENTH, nr San Pablo ave—3 1-story ctgs; cost, $3,000; o, J. Garrint; c, Griffin & Griffith.

GROVE, nr Fourteenth—2-story fr dwell; cost, $3,500; o, Mrs. L. H. Campbell; c, W. H. Bailey.

SEWARD, cor CAMPBELL—2-story fr convent; cost, $6,500; o, Father McNally; c, Maloney & Shay.

HIGHLAND PARK—1-story fr dwell; cost, $3,000; o, J. Pinet; a, Dailey & Praun; c, R. Stephens.

EAST OAKLAND.

TWENTY-FIRST, cor Twenty-first ave—Additions; cost, $500; o, George Wheeler; c, Farnham & Hodge.

EAST TENTH, cor Fourth ave—7 1-story and bsmt fr dwells; cost, $10,000; o, G. C. Wooster; c, Z. P. Nickerson.

THIRD AVENUE, cor Tenth—Alterations and additions; cost, $10,000; o, California Jute Mill Co.; c, S. J. Hubb, carpenter work; Remillard Brick Co., brick work.

EAST FOURTEENTH, nr Thirteenth ave—3 1-story fr dwells; cost, $2,300; o and b, Louis Dulcich.

FIFTEENTH, nr Sixteenth ave—Catholic Church; cost, $20,000; o, Catholic Church Parish; a, B. J. Cluch; c, G. A. Embury.

FOURTEENTH, bet Sixteenth and Seventeenth ave—1-story fr dwell; cost, $1,000; o, Thos. O'Donnell; c, G. W. Palmer.

FOURTEENTH, bet Seventeenth and Eighteenth ave—2-story fr dwell; cost, $2,100; o, Brown & Schmidt; c, A. Herbst.

THIRD AVENUE, nr Twelfth—1-story fr dwell; cost, $1,800; o, G. Calberg; a, D. Gallagher; c, Farnham & Hodge.

NINTH AVENUE, cor Eleventh—4 1-story fr dwell; cost, $6,500; o, J. F. Cummings; c, Farnham & Hodge.

ALAMEDA.

PARK AVENUE, nr Encinal—1-story fr dwell; cost, $1,500; o, Dr. Bronson; c, Farnham & Hodge.

SANTA CLARA AVENUE, s s, nr Walnut—2-story fr dwell; cost, $2,000; o, Capt. Thompson; c, C. Foster.

SANTA CLARA AVENUE, n s, nr Walnut—1-story fr dwell; cost, $3,000; o, A. Queenshoffer; c, P. Christinsen.

SANTA CLARA AVENUE, n s, nr Willow—2-story fr dwell; cost, $6,000; o and b, Reed & Ranlett.

CHESTNUT, nr Railroad ave—2-story fr dwell; cost, $3 000; o, E. Gerald; c, J. M. Reynolds.

BENTON, w s, nr Railroad ave—2-story fr dwell; cost, $2,000; o and b, F. A. Blanchard.

BENTON, w s, nr Railroad ave—1-story fr dwell; cost, $1,000; o and b, J. T. McKenney.

BERKELEY.

SHATTUCK AVENUE, nr. R. R. depot—2 1-story fr dwells; cost, $2,000; o, M. A. Barker; c, I. A. Boynton.

BANCROFT WAY, nr Harmon's Seminary—2-story fr dwell; cost, $4,000; o, W. Keith; a, W. W. Goodrich; c, H. McCrackin.

BANCROFT WAY—1-story fr dwell; cost, $1,400; o, H. Kelley; c, A. Kschieschang.

NORTH BERKELEY.

BERRYMAN'S TRACT—Fr school house; cost, $2,500; o, H. Berryman; a, O. Hansen; day's work.

BERRYMAN'S TRACT—1-story fr dwell; cost, $2,900; o, Mrs. Cheney; a, O. Hansen; c, H. J. Hansen.

SACRAMENTO.

J STREET, bet Eighth and Ninth.—3-story and basement hotel; cost, $13,650; o, A. Coolot; a, N. D. Goodell; c, Siller Bros.

G STREET, bet Eighteenth and Nineteenth.—Improvements; cost, $500; o, C. H. Gilman; a, N. D. Goodell; c, C. Ruggles.

SAN JOSE.

SECOND, cor Williams—2 2-story fr dwells; cost, $4,900; o, Martin Luther; a, Theodore Lenzen; c, A. C. Mathewson.

THIRD, cor San Salvador—1-story fr dwell, br basement; cost, $5,000; c, E. A. Van Dalsen.

1-story fr in the suburbs; cost, $2,600; o, S. F. Lieb; a, Jacob Lenzen & Son.

SOQUEL.

2-story fr dwell; cost, $3,900; o, A. Getzschman; a, Theodore Lenzen.

STOCKTON.

Cost, $10,000; o, California Paper Co.; a, C. Day; c, A. Flood.

SAN PABLO STATION.

2 1-story ctgs; cost, $3,000; o, DeRome & White; a, S. & J. C. Newsom; c, Wilcox & Graves.

1-story ctg; cost, $1,600; o, J. Latimer; c, I. A. Boynton.

SAN RAFAEL.

2-story fr dwell; cost, $7,000; o, C. Fish; a, C. Giddes; c, English & Gore.

2-story fr dwell; cost, $6,000; o, Mr. Page; a, C. Day; c, — Chisholm.

NAPA.

2-story fr dwell; cost, $4,000; o, Senator J. F. Miller; a, J. Marquis; day's work.

WOODLAND.

MAIN—3 2 story br stores; cost, $10,000; o, Dr. White; a, T. J. Welch; c, C. B. Sumner & D. S. Scott.

MAIN, cor Elm—2-story br store; cost, $3,000; o, Prior & Gibson; c, Glenn & White.

FIRST—1-story fr dwell; cost, $2,000; o, C. W. Thomas; a and b, W. H. Carson.

FIRST—1-story fr dwell; cost, $2,000; o, J. M. Miller; c, C. C. Keedy.

LINCOLN AVENUE—1-story fr improvement; cost, $1,000; o, Irving Porter; c, Glenn & White.

LINCOLN AVENUE—1-story fr dwell; cost, $1,000; o, C. M. Foster; day's work.

GRAFTON—1-story fr dwell; cost, $1,000; o, Benjamin Hennigen; b, B. E. Jackson.

WESCOTT—1-story fr dwell; cost, $1,500; o, Thomas Boots; day's work.

EAST AVENUE—1-story fr dwell; cost, $2,000; o, Napoleon Cox; b, S. Clevenger.

EAST AVENUE—1 1-story br stores and 1 2-story br store; cost, $5,500; o and c, W. H. Winnie.

1-story fr dwell; cost, $1,000; o, John Murry; b, Charles Roberts.

1-story fr dwell; cost, $1,000; o, John Thompson; day's work.

2-story fr dwell; cost, $1,500; o, Thomas Langenour; c, Glenn & White.

1-story fr dwell; cost, $1,000; o, John Rupart; day's work.

MONTICELLO.

1-story fr school house; cost, $1,600; c, Richie & Ward.

BLACK'S STATION.

1-story fr dwell; cost, $2,100; o, J. F. Dillon; a, W. H. Carson; c, Glenn & White.

1-story fr dwell; cost, $1,500; o, E. A. Rusing; c, M. Cummings.

CACHEVILLE

2-story fr dwell; cost, $4,500; o, A. Griffith; a and c, W. H. Winne.

1-story fr dwell; cost, $3,500; o, J. D. Reid; day's work.

DUNNIGAN.

2-story fr dwell; cost, $12,000; o, J. N. Decker; a, Jacob S. Morris; c, Welch & Morris.

DAVISVILLE.

2-story fr dry house and packing establishment; cost, $2,500; o, Eugene Gould; day's work.

1-story fr dwell; cost, $1,400; o, John Rowe; day's work.

1-story fr dwell; cost, $1,200; o and b, Chris Branagan.

MADISON.

2-story fr carriage house; cost, $1,000; o, Ed. Archer; c, Charles Reardon.

KNIGHT'S LANDING.

2-story fr dwell; cost, $4,000; o, Peter Ossenbruggen; day's work.

2-story br dwell; cost, $5,000; o, William Ogden, day's work.

WINTERS.

MAIN—1-story br store; cost, $2,500; o, Henry Craner; day's work.

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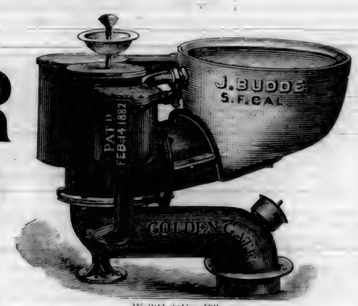

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This Closet is the best of its kind, having been so far constructed, it has the following advantages:—

1. It has a simple, strong valve, suitable for any pressure.

2. It has a real sanitary overflow, a copper float attached to a bell of the same metal resting on face of the brass overflow pipe, operated by the rising of the water in the closets above its level, thus absolutely preventing any escape of sewer gas, even the closets being without water.

3. It has no dead corner, consequently no foul water will be left in the closet after the lifting of the handle. A constant rush on of the flood chambers will keep the closet and trap perfectly clean.

This Closet takes the lead; it has been sold since February, 1885, in large quantities to the best satisfaction.

THE COMBINATION HOPPER.

This hopper is constructed to take 2 2-inch pipes, one to the right and one to the left, and a 4-inch leader in the center. It has also a movable strainer on top to take the surface water. The lower part of the hopper with side outlet is to be connected with the sewer pipe, either right or left. The upper part is independent from the lower, and is made to swivel, therefore it will suit either position of pipe. This hopper can be used only for surface, for waste, or for leader; either inlet will be stopped up with iron caps if so desired.

Side View, Combination Hopper.

PACIFIC PAN CLOSET.

This Closet is superior to all others, every working part and bolt being made of brass; closet and valve extra heavy casting. Particular attention is called to No. 4. This Closet has an oval basin fastened to the cover by brass clamps and bolts. No breaking of putty joints required to renew a pan. The loosening of two large brass nuts will separate cover with basin from the receiver. It has a heavy nickel plated cup and pull and solid brass rod.

These Closets have been in use since February, 1883. Plumbers and wholesale dealers give them the best recommendation.

Square Slop Hopper. Square Waste Hopper. Basket Hopper.

Basket Hoppers are made in one piece with Movable Strainer.

No. 126 FIRST STREET, SAN FRANCISCO, CAL.

No. 4.

The California Architect and Building News.

VOLUME VI. NUMBER 12. SAN FRANCISCO, DECEMBER, 1885. $2.00 per Annum, in Advance. Single Copies, 20 Cents.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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MISCELLANEOUS.

Strength of Brick Walls; The Boston Society of Architects; A Needed Remodeling Commission; Not Published in Personal Interest; German and American Tools; One Chinaman—Three Whites; Fall of a Solid Stone Staircase; Ancient Cisterns' Cement; Porcelain Oil Painting; A Singular Building.

Annual Building Report for 1885.

In the accompanying review for the year's transactions in building operations, ending with the present issue, will be found a full, *corrected* summary for the twelve months last past.

Although it would have been more pleasing to be able to confirm and verify each separate monthly report as made, yet, finding some discrepancies in figures, we prefer correction, so as to make the yearly statement from December 15, 1884, to December 15, 1885, as nearly faultless as possible. Our purpose is to be correct in every representation made, and departures from this will in all cases be unintentional. Sometimes the information received is misleading; others, whose special affairs are sought to be represented, have to be relied upon for facts, and in some cases erroneous statements are made. But all possible care will be exercised to equalize this, and present reliable reports each month.

Report for month ending December 15, 1885, is as follows: 66 frames, value, $176,000; 14 alterations, value, $23,850. No. of buildings, 80; total value, $199,850.

The above report is the smallest in amount made during 1885, and $238,915 less than reported for the corresponding month of last year. But the totals for the entire year show a gain of $741,192, as follows, by the corrected figures for this year:—

First six months in 1885, ending June 15	$4,267,375
Second six months in 1885, ending December 15	2,776,624
Total for twelve months	$7,043,999
Total for the twelve months of 1884	6,202,807
Gain in 1885	$ 841,192

	FRAME BUILDINGS.		BRICK BUILDINGS.		ALTERATIONS ADDITIONS, ETC.		TOTAL BLD'GS	TOTALS MONTHLY.
January	62	$ 236,850	2	$314,000	9	$ 39,300	73	$ 590,150
February	102	433,400	7	141,000	12	34,450	121	608,850
March	84	318,600	4	433,000	9	17,150	97	768,750
Totals, 1st quarter	248	$ 988,850	13	$888,000	30	$ 90,900	291	$1,967,750
April	148	$ 651,450	2	$439,000	18	$ 50,000	168	$1,131,450
May	129	310,715	2	10,930	16	44,650	147	566,265
June	126	469,100	2	72,000	20	60,810	148	601,910
Totals, 2d quarter	403	$1,631,265	6	$512,900	54	$155,460	463	$2,299,625
								1,967,750
Total for first six months								$4,267,375
July	74	$ 281,310	2	$110,000	20	$ 66,100	96	$ 457,410
August	75	268,650	3	80,000	17	46,500	95	395,150
September	119	528,650	7	143,500	43	113,550	169	785,700
Totals, 3d quarter	268	$1,078,610	12	$333,500	80	$226,150	360	$1,638,260
October	113	$ 407,539	4	$100,200	40	$ 71,375	157	$ 579,114
November	84	280,650	3	38,000	19	40,750	106	359,400
December	66	176,000	..	.....	14	23,850	80	199,850
Totals 4th quarter	263	$ 864,189	7	$138,200	73	$135,975	343	$1,138,364
								1,638,260
Total for second six months								$2,776,624
" first six months								4,267,375
" for twelve months								$7,043,999

The foregoing tabulation, as corrective of the monthly reports, shows as follows:—

	MONTHLY REPORTS AS CORRECTED.		MONTHLY REPORTS AS PUBLISHED.		IN EXCESS OF FACTS.		LESS THAN FACTS.	
	No.		No.		No.		No.	
January	73	$ 590,150	73	$ 602,585	.....	$ 12,435	.....	$ .....
February	121	608,850	121	660,397	.....	51,547	.....	.....
March	97	768,750	94	806,279	.....	37,529	3	.....
April	168	1,131,450	178	1,221,045	10	89,595	.....	.....
May	147	566,265	127	577,843	.....	11,578	20	.....
June	148	601,910	148	588,410	.....	.....	.....	13,501
July	96	457,410	99	412,050	3	.....	.....	45,360
August	95	395,150	83	347,600	.....	.....	12	47,550
September	169	785,700	169	746,100	.....	.....	.....	39,600
October	157	579,114	156	582,914	.....	3,800	1	.....
November	106	359,400	107	365,700	.....	6,300	1	.....
December	80	199,850	80	199,850	.....	.....	.....	.....

NUMBER OF ENGAGEMENTS FOR 1885.

1,182	Frame buildings	$4,502,914
38	Brick "	1,872,600
237	Alterations	608,485
1,457		$7,043,999

NUMBER OF ENGAGEMENTS FOR 1884.

905	Frames	$4,112,201
25	Brick	1,536,645
197	Alterations	553,961
1,127		$6,202,807

IN 1883.

803	Engagements	$5,261,689

IN 1882.

785	Engagements	$3,896,212

IN 1881.

533	Engagements	$3,790,732

IN 1880.

397	Engagements	$1,754,435

By the foregoing it will be noticed that in the five months *prior to the June issue*, the reports as published *overstated* the actual engagements $202,684; the four months next following shows a discrepancy, *less than actual engagements*, of $146,010, and in October and November *excesses* to the amount of $10,100. But deducting the under from the over statement the error balances amounts to an average of less than $4.722 per month, in the correct gross sum of $7,043,999.

In the future we hope to, and shall use all due and reasonable care to avoid error of statement in building reports, and in all other connections.

Building Report for 1886.

It being the intention to issue this Journal, on and after January, 1886, on the fifth day of each month, instead of the fifteenth; and the building report in the present issue, including all information in this department, up to the tenth of the present month, the January number will contain the building intelligence of but two-thirds of a month, instead of a full month. Thereafter, the information will be special to each month, from first to last day, instead of from fifteenth to fifteenth.

The great error of overstating and exaggerating for effect sake, will be carefully guarded against. No good can come from perversion of facts in this or any other connection, nor is it honest journalism to represent things to be, which have no existence in fact.

Mr. M. J. Marion will contribute articles to this Journal regularly, commencing with the January number. Mr. M. is extensively known upon this coast, in New York, and many of the Eastern cities, as a geometrician of marked skill and ability, and our readers may anticipate much that will be instructive and useful, particularly in the difficult problems involved in the construction of roofs, domes, groined arches, stair work, and the innumerable intricacies classified under the head of geometrical demonstrations.

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Strength of Brick Walls.

THE question of strength of brick walls is often discussed, and differences of opinions expressed. The following is one of the rules given: For first-class buildings, with good workmanship, the general average should not exceed a greater number of feet in height than three times the thickness of wall in inches, and the length not to exceed double the height, without lateral supports of walls, buttresses, etc., as follows, for safety:—

Thickness.			Safe Height.	Length.
8½-inch	walls		25 feet	50 feet
13	"	"	40 "	80 "
17	"	"	55 "	110 "
22	"	"	66 "	130 "
26	"	"	78 "	150 "

Where the lengths must exceed these proportions, as in depots, warehouses, etc., the thickness should be increased, or lateral braces instituted as frequently as practical.

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Building Superintendence. By T. M. Clark; published by J. R. Osgood & Co., Boston. A valuable work of 336 pages. Every builder and architect should have one in his library. Price, $3.00.

San Francisco Chapter of Architects.

THE regular monthly meeting was held the 4th inst, President Curlett in the Chair, B. E. Henriksen, Secretary. After reading and approval of minutes, the Secretary presented the certificate of incorporation of the Chapter, duly signed by the Secretary of State, with the seal of the commonwealth affixed, and neatly framed.

Reports from the various committees were considered and acted upon. That having the matter of "fire ordinances" in hand was requested to proceed as rapidly as possible, as the subject is considered one of material importance, alike to architects and owners.

Mr. J. M. Curtis was elected Treasurer for the current year.

A circular from the Master Painters' Association was presented, and received with favor by all architects present.

A committee, consisting of Messrs. J. E Wolfe, John Wright, B. E. Henriksen, Wm. Curlett, and J. B. Whittemore, was appointed to consider the unspeakably grand bequests of the honorable Senator, Leland Stanford, and report thereon.

A paper was then read by a member upon the lien law of California, in which was specially noticed the clause requiring the *filing* of all contracts with the County Recorder prior to the commencement of contemplated works. Its illegality, insufficiency for the purposes contemplated by the manipulations of the act; its immoral, unjust, and pernicious effects, were dwelt upon. The expressions of all present were in harmony with the sentiments of the paper read.

Mr. H. C. Macy was appointed by the Chair to lead the discussion at the January meeting of the Chapter, upon the subject of sewerage and drainage.

At a late hour the session ended, all present being well pleased with proceedings, the only regret being that more members were not present to reap the benefits of the occasion.

Building Improvements in New York.

THE *Real Estate Record* says: "By the end of the year 1885, about 3,400 houses will be finished or under way in this city (New York), the cost of which will be nearly $46,000,000. In Brooklyn there are about 4,000 new structures, which will cost about $20,000,000. In addition to these, about 12,000 houses, valued at not far from eighty millions, have been started during the year in localities adjacent to New York and Brooklyn, whose population does business in these cities."

Grimshaw on Saws, with Supplement, by Robert Grimshaw. A book of 279 pages, neat and clear in typographical execution, and full of facts and figures in relation to saws. The number and variety of its illustrations add greatly to its interest. It contains a large amount of valuable information. Thos. W. Hartley & Son, publishers' agents.

A Manual of Industrial Drawings for Carpenters and Other Wood-workers, by W. F. Decker, instructor in drawings in the University of Minnesota. Published by W. F. Comstock, N. Y. Price, $2.00. *Sent by mail free of postage to any part of the world.* To be had at the office of this Journal at publishers' price. An excellent, practical book.

Not Guilty—Complaint Dismissed.

IN last issue of this Journal, the arrest of Messrs. Wright & Sanders, architects, for violation of the fire ordinance of San Francisco, was noticed, and the facts substantially stated. Since then the merits of the case have been tested before a jury, in Police Court No. 2, Messrs. Rix & Firth, contractors for furnishing the box girders in issue, being the defendants, which resulted in a verdict of not guilty, upon the following grounds:—

It was shown, first, that when the fire law, under which the arrests were made, was framed and made part of the city ordinances the only plates easily obtainable in San Francisco for the manufacture of box girders were in lengths of ten to twelve feet each. Consequently, they had of necessity to be built and made with butt joints and laps. To compensate for this, the law was made to compel a diaphragm at each five feet, the ordinance making no provision for any substitution, even of a better kind; and the girders causing the arrests, although made of plates full length without piecing or lapping, were subject to the same technical regulations in their construction, *i. e.*, diaphragms at each five feet. The ordinance also requires that "the riveting shall be *done hot*, and hammered [hence, hand riveted] to a proper conical head." The girders under arrest were hydraulic, riveted to cupped or button heads. And, it being shown that the riveting adopted was equally as good, if not in fact better than the conical heads, particularly as the only restriction in that respect is "proper conical heads," leaving the real strength value contingent upon the judgment of the maker, or the caprice of the fire department inspector, the jury considered the issue upon that point as insufficient to sustain the charge.

Secondly, it was shown that the girders in dispute were well made, with all the plate parts in full length without joints, and the diaphragms sufficient in size, spaces, and number for all practical purposes, and that the riveting, being done by hydraulic pressure, was better than hammered work by hand. The jury failed to realize more than an immaterial, technical violation of an ordinance which greatly needs change and amendment in this and numerous other particulars. A verdict of not guilty being rendered in the case named, the charge against Wright & Sanders, the architects, and the owner of the property, was dismissed.

When American establishments can furnish locomotives in Australia for $2,000 each less than the price at which work not so satisfactory can be obtained in England, and in a much shorter time, as was recently done, our manufacturers certainly ought to be encouraged to compete actively for business in that great continent.—*Railway News.*

Shoppell's Modern Houses, issued quarterly, at $1.00 per number, or $3.00 per annum; 72 pages, 11x14 inches, well filled with plans and designs for suburban and country houses.

The Building Outlook for 1886.

MUCH interest is expressed in the probable building operations for the coming year. The closing monthly report for 1885 shows a large decrease as compared with the preceding month, but this fact is no criterion for judging the future.

The number of buildings erected within the last twelve months is shown to be large, and by many the falling off has been expected and prognosticated for months back. The decline cannot, however, be denominated as a "bad break," but a natural letting up—an easement for reflection and preparation, to be followed by a speedy revival of extensive operations.

Of course, no one can tell, nor approximate with any degree of certainty, the extent of future activities; but this can be stated as foreshadowing the probabilities of the future,—a splendid feeling of confidence and hope prevails in all directions. The timely rains, beautiful weather, encouraging prospects for abundant harvests, fair trade and traffic generally, the few houses and buildings to rent in desirable localities,—all serve to encourage large expectations for the future. Several large brick buildings are prominently talked of, and from probabilities almost reduced to certainties, we are justified in stating that the number of bricks in prospect to be laid in 1886 will double those used during the current year. There are also a sufficient number of plans for frame structures, now ready or preparing in architects' offices, to give a handsome commencement during the early months of the coming year.

Materials of all kinds are *cheap*—seldom, if ever, more so—with no present prospect of an early increase in prices. Labor is abundant, and contractors anxious for work. Although the number and gross amount of failures during the past year have been greater than should have been, they are far less than in some former years. But conditions in this particular are improving. Material men are scarcely as *reckless* as they used to be in encouraging unknown, untried, and doubtful parties. The responsibilities of contractors, as a class, is improving; as owners are realizing that the employment of reliable men is by far the better method, even at slight advance, which in the long run is true economy, as such a course insures better work and buildings, and often saves immediate coin, as work let to the *refuse* class often involves costs and outlays far greater than the difference in amount of bids between good and ungood contractors.

Whatever may be in store for us, to be developed as time rolls by, this one thing is eminently true,—that the spirit of great buoyancy prevails generally, and expressions of confidence in what is to be, are almost universal.

The Los Angeles "Herald" says that a large bed of choice potter's clay has been discovered in the Temescal Mountains, about sixteen miles from the California Southern Railroad.

A Needed Remodeling Commission.

IN view of the incompleteness and insufficiency of the present fire ordinances as affecting the construction of buildings in San Francisco, a board consisting of competent architects and civil and mechanical engineers, should be appointed by the Board of Supervisors, to prune and remodel the present, and provide an intelligent building law in harmony with the necessities involved in the erection of buildings in this city. Such a board ought to be able to prepare a very perfect code of ordinances, as all the principal Eastern cities are well provided in this regard—some of them of very recent date, and copies of such laws can be had to guide deliberations, and lead to a consummation entirely satisfactory to architects, property owners, and the fire department. We do not wish to be understood as seeking to reflect adversely upon the fire wardens, or the officials of the fire department, each and all of whom are doubtless performing their trusts and duties conscientiously, under the laws and ordinances as they now stand. But it is difficult for even good and honest officials to fulfill their duties satisfactorily, when the laws by which they are governed are defective, inexplicit, and insufficient. And the fact that the present ordinances are so, frequently gives rise to issues which might be provided for and regulated in a more perfect and comprehensive fire law.

PROPITIOUS INDICATIONS.—The copious rains that have fallen in California and adjacent States and Territories, since the 14th of November, have spread a general feeling of confidence in all directions, and among all classes, as by their coming, all doubts and fears as to a bountiful harvest have been dispelled, and predictions—perhaps the child of hope—are to the effect that the year 1886 will be one of very great prosperity. With nothing occurring to change the present outlook, it is fair to calculate on lively times for the incoming year. As a matter of course, with abundant harvests of cereals, fruits, and vintages, the building interests will be stimulated, and a continuance of brisk times is sure to follow.

Florence, the actor, tells the following concerning Morse: "I can remember," he said, "years and years ago, going to a dinner down in Fourteenth Street, given to Morse, the telegraph inventor. He was an elegant old gentleman, but when he got on his legs to talk he was awful long-winded. I had a friend with me. We listened to Morse's speech, while he predicted great things for electricity. I remember that he predicted, too, that some day men would be able to talk over the wires for distances of fifty miles, and that every ship that left harbor for an ocean voyage would be connected with the land by wires. When he got that far, my friend said, 'What rot,' and we went out. I have often remembered how foolish his talk sounded to me. Yet it has been all realized, except as regards ships at sea. I believe even that will come about some day."—*Electric Review.*

California Redwood in London.

THE (London) *Timber Trades Journal*, in commenting upon the growing scarcity of fine quality wood for high-class joinery work, and referring to "redwood in the Chicago market," among other things quotes from a contemporary:—

Chicago, a town of little note twenty years ago, has now become one of the largest cities of the Northwest; situated in the center of teeming forests and fertile plains, on the banks of the vast lakes and their tributaries, it became the great store-house for timber, and farm produce as well. The forests in its immediate vicinity soon became exhausted, but abundance of pine, spruce, and hemlock, with other varieties, continued, and still continue to pour down the various rivers of which it forms the connecting point. Yellow pine, for many years, and still, an abundant commodity, was rising in price, as Chicago grew, and the higher or finer grades are now at a considerable premium on the values of other descriptions. To supply this apparent scarcity the Canadian forests became contributors to the Chicago market, and yet the calls were for more.

This is probably why the dealers are looking in the direction of the Californian forests for a supply of fine lumber to meet the growing wants, and by an abundant stock check the upward tendency of high class wood that is now so glaringly in contrast to the commoner grades.

Will the Californian wood do this? At present, from the remarks of our contemporary, sufficient redwood is not brought on the market to make it take a recognized place, and till the supply is of a regular character, with enough yarded to be relied on, no encouragement is given to the demand. Supposing the requisite stock is available in Chicago, or elsewhere, when the high values of the upper grades are so marked, we fail to see how the sequoia can supply the place of pine. The woods are essentially different. They hardly have a single attribute in common between them, beyond the absence of knots and sap. First quality pine, such as we see shipped at Montreal and Quebec, is a peculiarly, silky, soft wood, with a capability of being worked up to an even surface as smooth as glass, by the mere action of sand-papering.

Sequoia will not always show this smoothness; in fact, it is rather noticeable for its grain and dark color, another feature that removes it out of the path of pine. Pine is used for patternwork, and its whiteness is an advantage in making pencil marks, but the Californian wood is as dark as cedar, and the figure on it would be a decided objection to patternmakers. Another thing, it is much heavier than first pine, sequoia being relatively 108.9; pine, 100. There are uses to which second quality and the other grades of pine are applied, the place of which sequoia could well supply, but its present price puts it quite out of the reach of consumers.

The London *Journal* adds:—

"We differ with our American contemporary, who only thinks that the Californian redwood will come into competition with the higher grades; probably the high price led him to take this view. As stated, we think it will never make headway, at any rate in this market, until it can be put in at a price that will come within the range of ordinary building woods."

"If sequoia intrinsically is as meritorious as the best grades of the deals supplied from Montreal and Quebec, with which it is to directly compete, when offered under the hammer it should go as freely. Of course it has the disadvantage of being strange to many in the trade."

OLD NEW YORK FIRE-PLACES.—On "Monday, October ye second," just 181 years ago, a Boston lady undertook a journey to New York City, an account of which was published in 1825, from a diary in the author's own handwriting, "being a faithful record of Madam Knight's adventures over 'that tract of country where she traveled about a fortnight, on horseback, under the direction of a hired guide.'" Madam seems to have been much pleased with New York, where she made many acquaintances amongst the good women of the city, "who courteously invited me to their houses, and generously entertained me." And her description of the city at that time is well worth reading. She says: "The Cittie of New York is a pleasant, well compacted place, situated on a Commodious River, which is a fine harbor for shipping. The Buildings. Brick Generaly, very stately and high, though not altogether like ours in Boston. The Bricks in some of the houses are of divers Coullers and laid in Checkers, being glazed look very agreeable. The inside of them are neat to admiration, the wooden-work, for only the walls are plastered, and the Sumers and Gist are planed and kept very white scowr'd as so is all the partitions if made of Bords. The fireplaces have no Jambs (as ours have) But the Backs run flush with the walls and the Hearth is of Tyles and is as farr out into the Room at the Ends as before the fire, which is Generally Five foot in the Low'r rooms, and the piece over where the mantle tree should be is made as ours with Joyner's work, and as I supose is fastened to iron roods inside. The House where the Vendue was, had Chimney Corners like ours and they and the hearths were laid with the finest tile that I ever see, and the stair-cases laid all with white tile which is very clean, and so are the walls of the Kitchen which had a brick floor. They were making Great preparations to Receive their Govenor, Lord Carnbury from the Jerseys, and for that End raised the Militia to Gard him on shore to the fort."—*Weekly Statement.*

A Manual of Industrial Drawings for Carpenters. An excellent work, full of instruction. 176 pages, 6x9 inches, neatly bound. Price, $2.00.

Not Published in Personal Interest.

EVERY fair-minded reader must have noticed the fact, and admit, that the conduct of this Journal has been absolutely free from any and all special reference that could be construed as being of *personal interest, i. e.*, using its columns for the advancement of the professional interests of its proprietor. There has never appeared a single article or allusion which has given special prominence to our architectural department, more than has been freely accorded to each and all brother architects, and the same courtesies would have been cheerfully extended to every member of the profession presenting like opportunities, not excepting those of spiteful turn of mind, who seem to be best pleased, and more in their natural element, when extolling and praising their own abilities, and aspersing, denouncing, and misjudging others. Sorry that this is so, but this Journal will not be affected by it, but will continue to live, prosper, and become more permanent with each year of its existence, nor change its course, whether it receives the frowns or smiles of those who from misjudgment, or motives of envy, jealousy, or otherwise, antagonize their feelings and withhold patronage.

We do not covet a single unkind thought from any one, and shall not intentionally provoke any, yet we do not expect to be able to skim along so closely to the line of perfection as to hope to be able to shape a course to the satisfaction of all. The best that any man can do will not be good in the eyes of every one. Humanity in some is exacting and merciless toward others, although none are exempt from human frailties, weaknesses, and faults. Still we shall do the best we can, hoping to receive all the encouragements our earnest efforts shall deserve, and as much more as our generous readers and the public may, in the magnanimity of their hearts and natures, see fit to bestow.

We have received from George Stinson & Co., of Portland, Maine, the well-known art publishers, a magnificent, full length, steel engraving of General Grant. It is after Anderson's celebrated photograph, which was made while the General was still in full vigor, and represents him in his sturdy, manly strength, as the people wish to remember him. It is, undoubtedly, the best portrait ever made of the General.

Messrs. Stinson & Co. are in need of agents for several important, popular, new publications, and offer inducements that should be heeded by those in need of profitable work. Those who write to them will receive, free, full particulars.

LEAD PIPE.—The Romans appear to have been acquainted with the use of leaden pipe, although they had not the appliances for falsificating any of large dimensions, or sufficiently strong to withstand pressure from the fountain head. In the museum at Cherchel is a piece of lead piping made by rolling a sheet of metal, turning the edges over, and then running molten lead along the joints.

Qualified and Competent Foremen.

EXPERIENCE proves that the right man in the right place, as foreman, to manage and direct operations in the erection of building, and in all kinds of mechanical works, is of the highest importance to all concerned—contractor, architect, and owner as well. To the contractor in two important respects: first, financially, as the profit or loss results are very materially affected by the right and proper management of the workmen, so as to obtain from them the full, reasonable, and right amount of service within the hours of labor. This can be done by a competent head man, without the workmen experiencing a sense of having been "driven"—urged beyond a fair application of his working abilities. The influence exerted upon a gang of men by a respectful, yet persevering and exacting leader, is great. Men worthy the name of mechanics will follow cheerfully when led by one capable of rightly filling the position of foreman, with a right understanding of human nature as found and developed among "gangs of men," and knowing *how* to sympathize or rebuke as may become necessary. While the good foreman needs to be firm, determined, and ever on the alert, the exercise of good judgment is of the highest importance, and a certain degree of patience is indispensable, for the purpose of pacifying and controlling, where petulancy and harshness might vex and excite the inferior passions, and promote idleness and disinterestedness, to the financial disadvantage of the contractor. Secondly, if the foreman is not in every way qualified for the position, so as to be respected and promptly obeyed by the workmen, they become careless as to the quantity of work done, with more interest in pay-day, and the expected sum of wages at the end of the week, than anything else, while under the better condition of things individual interest is felt in the progress of the work each day, with pay-day as a known certainty when the week shall end.

To architects the good foreman is the all-important man—much more so in his place than the contractor himself, as the proper understanding and correct carrying out of the plans and specifications, as a rule, are intrusted to him. Mistakes are made or avoided according to the capabilities of the foreman, who is expected to lay out and dictate all measurements, and order and direct every department of the work. With a competent man, an architect's duties become infinitely more easy and pleasant, as the professional cares and anxieties are greatly modified when the management is in right hands, both as to quality of workmanship in general construction, and neatness and completeness in the finish. And to the owner, although perhaps ignorant of the numerous possibilities attending the erection of a building, the good foreman is all important, as the results for which he pays are materially affected by the qualifications of the man who directs the mechanical operations. It is possible for a foreman to do many mean things, and incorporate defects, and hide them even from the closest scrutiny of the architect, to the injury of the owner's interests.

Eastern Competition in Wrought Iron Work.

THE facts brought out in connection with the "box girders" made East and shipped to San Francisco for use in the Union Club Building, and elsewhere noticed in this issue, are strongly suggestive, alike to "wrought iron workers," owners of property, tradesmen, general dealers, and business men. To wrought iron workers as suggesting the necessity for more complete and perfect arrangements, machinery, and appliances, enabling the handling, shaping, and *dressing* of heavy girders and all other description of works, to advantage, and doing all that can be done in any other part of the Unit d States, as cheaply and as well, barring differences in cost of labor, and even overcoming that to a large extent, if not entirely.

. . . . . .

A material difficulty in this connection exists in the fact that the *number* of shops and firms operating in this line are far too numerous for this city, except in *extremely* brisk times; that while there are two or three fairly equipped establishments, sufficient in appointments to supply all ordinary demands, or, in fact, anything that might be required of them in wrought iron work, there is no one firm or establishment of comparative "*gigantic proportions*" capable of taking hold of any work offered and defying all outside competition.

. . . . . .

The freightage and handling expenses of plate iron in long lengths certainly should not be any greater, if so great, as that of heavy, manufactured girders. In this regard, the advantages should be on the side of our local workers, with which, as a fact, leaves all the advantages possessed abroad, in the more *complete methods* of working, and any difference that may be in labor and incidentals.

. . . . . .

As far as owners are concerned, they have a *partial* right to do as they please in such case, that right being limited only to the extent of the personal obligation resting upon every man who has accumulated property in a community, to assist in strengthening and sustaining the surroundings, which give increased value to property; and every intelligent man must understand and admit that the retention and circulation of money within a community adds value to its real estate, as well as increased personal wealth,—considerations which largely or altogether regulate *rental incomes;* consequently it must be adjudged that they are more selfish than wise who spend their money in distant places that cannot, in the nature of things, be expected to return any direct or indirect advantage to the payor, beyond the primary savings in first cost.

. . . . . .

Tradesmen, general dealers, and business men are alike interested in the effects and results of every contract let to parties doing business outside the State of California, in that it removes money from local circulation, to other parts of the country, whence no return can be had or expected. The tradesman in our midst cannot spend that which he should have, but has not because sent to other parts, and the dealer and business man is short in his receipts just whatever of coin might and would have resulted to local trade in purchases that might have been indulged in, had the contract moneys been retained within local bounds and circulated among the working men and others in San Francisco.

. . . . . .

The conclusion of argument in such cases must therefore be, that in the construction of building, it is right, wise, and best that every dollar paid by owners should pass into the hands of parties residing and doing business in, and having abiding interest in the welfare and prosperity of, this city and State. This proposition is sustained by every right, consistent, and self-preservative view of the case; and every contract let direct or through agencies, to parties or firms in other States, for materials or things manufactured that might be obtained in San Francisco, is, so far as its influence extends, a public injury.

Hard Wood Lumber.

THE progress of hard wood lumber manufacture has been steadily westward. New York and Pennsylvania were once the principal hard wood producing States. Then Ohio was invaded and largely stripped of its available timber. The Indiana forests have been exploited and nearly exhausted, and coming square up against the great savannas of the Mississippi Valley, which extend, practically unbroken, to the Rocky Mountains, the westward movement was checked. The stream was divided, one part turning to the north, into Michigan and Wisconsin, while the other and larger part has trended toward the southwest, extending into Kentucky, Tennessee, Mississippi, southern Missouri, Arkansas, and Indian Territory. These two divisions of the hard wood industry are for a long time to come to be competitors in the markets of the north, though the southern belt has some most valuable woods which the northern has not.—*The Wood-Worker.*

Masinissa, who died 148 B. C., deservedly occupies a conspicuous place in Roman history. Although a barbarian, he was free from the crime so common among uncivilized tribes. Fearless in war, generous in disposition, a good statesman, and firm in loyalty to his Roman allies during an unusually long life, Masinissa may fairly be considered the hero of Numidia. Like all his race, he drank nothing but water, and, at the age of ninety, was able to jump on his horse bare-backed. He left forty-four children.

Architectural Organizations.

WITHIN the past few years the interest in architectural associations in all the more rapidly improving sections of the country has greatly increased, and in the parts where architects are most active in this direction, there seems to be more life and progressive activities. The influence of such organizations is to drive out the narrower conceits of the mind and to develop more enlarged and broader views as to personal relationship and professional courtesies and practices.

That "there is nothing new under the sun" may be a verified trueism in a general sense, as to principles and material things, but no one mind is so full of absolute knowledge as to be justified in claiming universal information upon all subjects, nor perfect understanding of all details of but few, if any. Hence, all unities and co-operations designed and calculated to harmonize views and sentiments, correct errors, and lead to right conclusions, must be fruitful in good results.

The age is one of progression. The bound from the common conditions of forty years ago to those of the present day is grand and wonderful to contemplate. And in this mighty advance and overturning the science of architecture has shared a part and made its record, whether for the better or worse would require hundreds of pages to discuss in full. But this is certain, that those who permit themselves to drift and strand upon the barren rocks and ledges of absolutely selfish purposes and individualism, must expect to perish in their self-imposed and dreary isolation.

Skipper—Contractors, and Other Things.

ALL sections of the country seem to be more or less cursed with that class of unprincipled creatures known as "skippers," *i. e.*, fellows who enter into contract obligations at any price, high, low, good or bad, as the case may be, so that they can secure to themselves the opportunity to handle and pocket coin, paying it out only as far and fast as may be necessary to mature other payments in greater amount than the aggregate of the sums paid out, until the chances to make other "hauls" are exhausted; then comes the *finale*,—the boss gone to parts unknown—skipped, leaving everybody to do the best thing possible under the circumstances. If a few of such rascals could be caught and strung up by the neck as an example, the morals of the contracting business would certainly be improved, and the world not be the least set back by the sudden disappearance of a score or two of such men.

There is a case related where one of the kind in New York contracted the erection of a lot of buildings, hiring and working a large force of journeymen, who, at the end of two weeks, were creditors for wages in the sum of nearly $2,000, but the should-be payor, the contractor, was nowhere to be found—had "skipped"—and, when the owners were interviewed by the workmen, they were informed that all moneys due had been collected by the absent one. The matter being referred to the Carpenter's Union, and a transfer of the indebtedness made to a delegate, a lien suit will be commenced to test the validity and soundness of the protective law, and trade interests generally will watch the result anxiously.

The Trade Unions in the Eastern cities are very diligent and exacting as to the strict observance of the rules adopted. The combination appears to be solid, and will likely so remain, so long as fairly brisk times continue; the only likely decline will result, if at all, under a general let down in activities, so as to bring about that wretched condition of things which has in former years spread want and privation among the laboring classes, and, in isolated cases, actual starvation. It is well and proper that men should combine for the purpose of determining and protecting mutual business rights and interests, but it is wise to temper prosperity with a great deal of good judgment and deliberation. Much more is permanently affected by a wise, moderate, yet solid and defensible course. When advantages are rendered tyrannical and oppressive, they invoke and excite prejudices and opposition, and when the occasion presents itself, retaliation ensues. That which is most to be desired is a right understanding between labor and capital—a harmonizing of the two material factors, so that each will feel its proper dependence upon the other, and neither seek to oppress.

"None Such"

Is the significant name of a ventilator and chimney top advertised by Kneass & Co., 29 Taylor Street, and which is very highly recommended, as, "No trouble to get up a good fire;" "Does all that is claimed for it;" "A thorough ventilator," etc.

It is so constructed by flanges and openings that the slightest currents of air from without and from any point, up or down, cause a vacuum and an upward and outward current of heated or foul air from within, doing all that any apparatus placed in open air for a ventilator can do, and more, because direct currents of air pass through it in greater volume than any other yet invented; therefore it is more powerful in operation, and is so constructed that the current of air from without passes through it and off in such a way that it is impossible to have a back draft.

It has no movable parts and cannot get out of order; no squeaking of rusty machinery; it is worth its cost simply to keep out the dampness when used as a chimney top.

The largest body of fresh water on the globe is Lake Superior, 400 miles long, 160 miles wide at its greatest breadth, and having an area of 32,000 square miles. Its mean depth is 900 feet, and its greatest depth is said to be about 200 fathoms. Its surface is about 635 feet above the level of the sea.

San Francisco's Sewerage.

THE universal and continuous outcry that the sewerage of this city is bad, is fully justified by the facts of the case. In some respects they are about, if not absolutely, the very worst to be found in any city upon earth's surface, with anything like equal, natural drainage advantages. Nature, or the power that caused the hills to raise their tops high above, the lower lands, left in the main but very few acres of level ground within the city's site the altitudes of the *many* hills varying from more than three hundred feet down to the bay-washed shores. In three directions,—north south, and east,—the water-sheds and courses were originally exceedingly fine, and if even *fairly* clever civil engineering had been practiced in the establishment of street grades, and consequently the grades of sewers, our present dilemma would have been avoided. It is only fair, however, to remark here that the "established grades" are those foisted upon the city by a modifying board of civil engineers, who, for reasons, set aside the "original surveys" as made by Mr. Milo Hoadley, which utilized and equalized the cuts and fills, to produce that splendid system of inclines and grades which, if they had been carried into effect, would have made San Francisco's sewerage unsurpassed by any other city in the world.

The difficulties surrounding the case are irremedial, except the partial reliefs obtained by flushing and cleaning, which, unless constantly employed, afford but temporary and momentary remedy, unless, further, the wiser and *only entirely correct and effective course*, advocated by this Journal years ago, is adopted and carried out, *i. e.*, to MAKE *the grades of the sewers such as will meet the requirements and necessities of the case*. There is a natural law or principle involved in this matter, which is absolutely arbitrary, and will not change to accommodate human views. It is all supreme nonsense and folly to say or think that sewers will run free, and clear themselves, when the lower portions *lie at dead level* for a distance of from 1,000 to 2,000 feet, particularly with the discharge or outlet end submerged below the surface of the waters of the bay, into which they empty, as is the case in this city. The debris from the higher parts is washed down to the level sections, where the more solid matter lodges and remains, settling and forming a dam, the lighter substances passing off in solution; and it needs only the exercise of the most ordinary intelligence to understand that, under such conditions, choked sewers are inevitable.

Had the suggestions made in this Journal five years ago been carried into practical effect, to wit: Take the grade of Dupont Street at California, with its eighty-six feet elevation, or modify that by raising Kearny Street ten feet, or even adopting the altitude of Kearny at California Street, thirty-five feet, as the high point of grade toward the sewer outlets, and following the same regulation correspondingly around the other portions of the city, filling in and making a uniform slope in all directions; while the expense would have been very large, the benefits would likewise have been immense; and the cost much less then than it would be to-day; and it will cost less if done *now* than at any future time, as every new building erected adds to the difficulties. The answer to this may be, It is a preposterous, monstrous proposition. The reply is, Be it so; it is nevertheless the only effectual means of remedying the most fearful, local, permanent evil and curse existing in San Francisco, and such it will continue to be until the heavy cost method of correcting the evil is adopted. Artificial means have been, and will continue to be, applied, but the ever-recurring results will be the same, no clean and clear sewers enjoyed, until the natural laws of gravitation are observed.

Master Painters' Association.

THE regular monthly meeting of the Association was held at its hall, 121 Eddy Street, on Tuesday evening, 1st inst., President Gallagher in the chair; Thos. Noble, Secretary.

Resolutions of condolence to the family of the late member, David Kanary, were adopted and ordered spread upon the minutes.

Report of committee on cards with sign signet, for the special use of the members, was adopted.

A communication from a member, J. F. Sullivan, containing resolutions and offer of co-operation by the master painters, with architects, owners and contractors, to check and prevent the numerous innovations upon the use of pure paint materials and good workmanship, was read and adopted. A committee of four, consisting of Messrs. Sullivan and Donovan, of San Francisco, and Messrs. Kress and Weiswell, of Alameda County, was appointed to confer with architects upon the subject matter of the communication.

A vote of thanks was tendered the editor and proprietor of the CALIFORNIA ARCHITECT AND BUILDING NEWS for favorable notice of the proceedings and purposes of the Association.

The resolutions offered by Mr. Sullivan, and adopted, read:—

To all parties interested in the building interests in the city and county of San Francisco,—architects, owners and contractors:

WHEREAS, The Master Painters' Association of the Pacific Coast being informed and knowing that adulterated paint materials, containing none of the elements of pure lead and oil paint, are manipulated and passed off as genuine in quality, and inferior workmanship imposed upon architects, owners and contractors by parties assuming to be practical painters, and

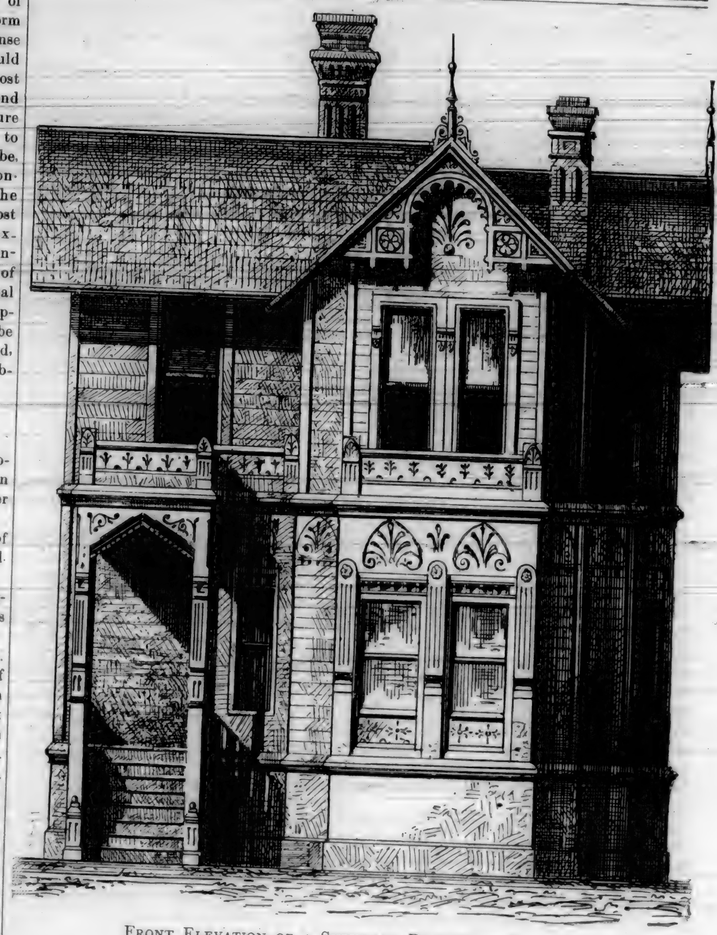
WHEREAS, It is the purpose and desire of the responsible portion of the craft, under the title of the "Master Painters' Association," to expose and prevent, as far as possible, a continuance and repetition of such wrong and demoralizing practices, therefore, be it

Resolved, That said Master Painters' Association tender its services, as an organization, to owners, architects, and contractors, by competent expert representatives, duly appointed, to detect and expose all such improper practices in the future.

To accomplish this desired purpose, said Association requests that all owners, architects, and contractors who may become satisfied that wrongs are being practiced in the painting work of any building or works, to report the case to the Executive Committee of the Association at its rooms, 121 Eddy Street, second floor, whereupon said Executive Committee will forthwith designate two competent members of the Association to investigate the facts of the case, and report to the Executive Committee the result of their investigations, whereupon said Executive Committee will report the facts to the owner, architect, or contractor in interest.

Resolved, That it is not proposed to assume any dictation or control, or in the least interfere with the architects' duties, but simply to ascertain the true state of the case connected with the painting work, and report accordingly.

Resolved, That neither owner, architect or contractor be charged for such expert services.



FRONT ELEVATION OF A SUBURBAN DWELLING.—PLATE I.

A NEW BUILDING MATERIAL.—A mixture of cork, silica and lime is coming into extensive use in Germany. It has the advantage of keeping out heat and cold, and is also claimed to be an excellent preventive of damp and defender of sound. It is substantial, light and durable, and seems to be especially adapted for ceiling and wall lining.

Kansas lands, in the last ten years, have yielded products valued at the enormous aggregate of $1,046,262,264. Yet it is one of the youngest of the States. In 1883 the corn crop was nearly double that of any other State. It stands fifth in the amount of wheat grown.

Architectural Competitions in Disfavor.

THE general expression of architects in all parts of the country, as received through all journals published in the interest of architectural sciences, is very decidedly against the practice of plain competition. By all the better class of educated architects, it is regarded as demoralizing and unprofessional in character; a bartering away of professional skill at values fixed by men who seek to obtain a large amount of architectural work and service for an exceedingly small amount of money.

A most glaring wrong and injustice is shown by the fact that, in no case of competition, are the services and labors one-tenth part compensated, as a whole, induced by the invitations, sometimes studiously seductive, very generally thoroughly deceptive, in that representations are made, calculated upon fair interpretation of the language used, to impress the minds of men not posted in such matters, with the belief that a square deal is proposed; while in fact the arrangements and understandings are all well matured, if not absolutely completed with some preferred architect.

We will not go so far as to assert and charge that where committees are appointed by respectable bodies for the purpose of procuring plans, or boards of trustees, that *all* the members in either case are alike guilty and responsible for the numerous *bad things done;* but there is always one or more of the influential members who have friends to serve, or who, for other considerations, become very active, and manipulate influences by which they virtually control the whole matter, so that any or all parties not in such special influential favor, only waste time and skill, and secure to themselves disappointed hopes and expectations.

In other cases, the competition propositions are based upon fixed purposes and intent to beat some one; to find some fool willing to belittle professional compensation to the rates of wages paid ordinary journeymen, house carpenters or brick masons. But such plan hunters sometimes pick up a boomerang, in the shape of badly damaged property, by bad planning and worse construction. And this fact is very certain, that, to include all plans made in competition during the past ten years, placing values thereon according to schedule rates, then add up all the monies paid as premiums, and all the *regular* fees received by architects, and divide the amount pro ratio among the plan-makers, and the result would not reach more than *one-tenth of one per cent* on the original estimated costs. If this is not demoralization, then that commodity is difficult of access.

The *Building Trade Journal* remarks on this subject: "This practice has been more fruitful than any or all others put together, in disappointments and loss to owners, by placing the erection of important work in the hands of inexperienced draughtsmen, or reckless, wire-pulling practitioners. It has resulted in a vast amount of bad building all over the country. Said a witty journalist: 'I always wonder, when a new Court House is finished, that the people of the county do not hang the architect the first thing.'"

The president of a corporation employed a competition architect to design a building that cost $100,000 more than the estimate (that is one of the tricks), which resulted in a large crop of litigation wherein the owner explicitly testified in court to numberless defects in plans, and finally remarked to one of the profession, "I do not think much of you architects any way." (Of course he judged all by the scrub type he had employed.) The apt reply was: "No wonder, considering the kind you patronize."

"But in regard to the general practice of architectural competitions, the impression is strangely prevalent that it cannot be overthrown, that it has always existed and always will; that it is the blood, so to speak, and cannot be cast out. Never was there a more unfounded delusion among a body of liberally educated men. So far from being a practice which has always existed, it is, with rare exceptions, an innovation of quite recent date. All the traditions of the profession, all its records of great achievement, are almost uniformly against it. Which of the notable buildings of the Middle Ages, the world-famed cathedrals, abbeys, castles, mansions, from the thirteenth century down to our own day, were designed in competition? How many of the great works of Michael Angelo, Bramante, Sansovino, Bernini, Scamozzi, the San Gallos, Palladio, Schenkel, Klenze, Labrouste, Duc, Duban, Sir Christopher Wren, Sir William Chambers, or any other of the great names of architectural history were obtained in a competition scramble? If these matchless monuments could be designed with a perfection and grace the world will never cease to admire, how can American architects maintain that a County Court House, or a club-house, or even an exposition building, cannot be properly planned without competition? The example of Brunelleschi with the Duomo of Florence, is often quoted in favor of competition, but this was an exceptional instance, and only proves the rule against the habit. If Brunelleschi was a competition architect, why was this the only instance of the kind in his work? Moreover, what achievements has the practice of competition to cite which will at all compare with these great works which have been designed without it? What record, indeed, of any kind can be shown for competitions except of great expectations and signal disappointments, of buildings which are architectural abortions, of intrigues, corruptions, scandals, and litigation?"

"The craze for competition is not an ancient and venerable custom which cannot be disturbed. In England it dates chiefly from the building of the new Houses of Parliament; in France, from the year 1860. All the great advances of the profession were made before it arose to disturb their peace—since then it has wrought only mischief."

"Nor is it true that competition is 'in the blood,' nor that it is a feature of modern civilization, nor that, because it is 'the life of trade,' it is anything but ruinous to a profession. Competition is essentially unprofessional, and is endured at all only among architects. It is not found among lawyers, doctors, artists, civil engineers, nor in any of the other professions."

Many of the leading authorities among architects have already expressed their unequivocal condemnation of architectural competitions *in toto*. At the Convention of the American Institute of Architects in New York, in 1867, President Upjohn, one of the oldest and most eminent architects in this country, thus warned the profession against them:—

"I feel as if I should not fully discharge my duty to my younger professional brethren, if, after my extensive opportunities, and long experience, I should omit all allusion to a subject, the effects of which have, according to my observation, produced much evil, and only evil, to the profession. I allude to competition — general competition — a sorry subject for architects. It burns the fingers of all those who meddle with it; it is a chronic infatuation, an *ignis fatuus*, a Will-o'-the-Wisp. . . . Now, my good friends, this species of infatuation (I can call it by no better name) should be shunned. I pray you to let general competition alone. Avoid it as an unclean thing, which can produce only heart-burning and disappointment; and, by abstaining, you will give it its death-blow."

Vice-President Hatfield and others have said: "Competition is a barrier to progress, second only to professional exclusiveness."

"Can that which engenders jealousy, false representations, misunderstandings, bitterness, dishonest propositions, and evil wishes be promotive of good, either to architects or architecture?"

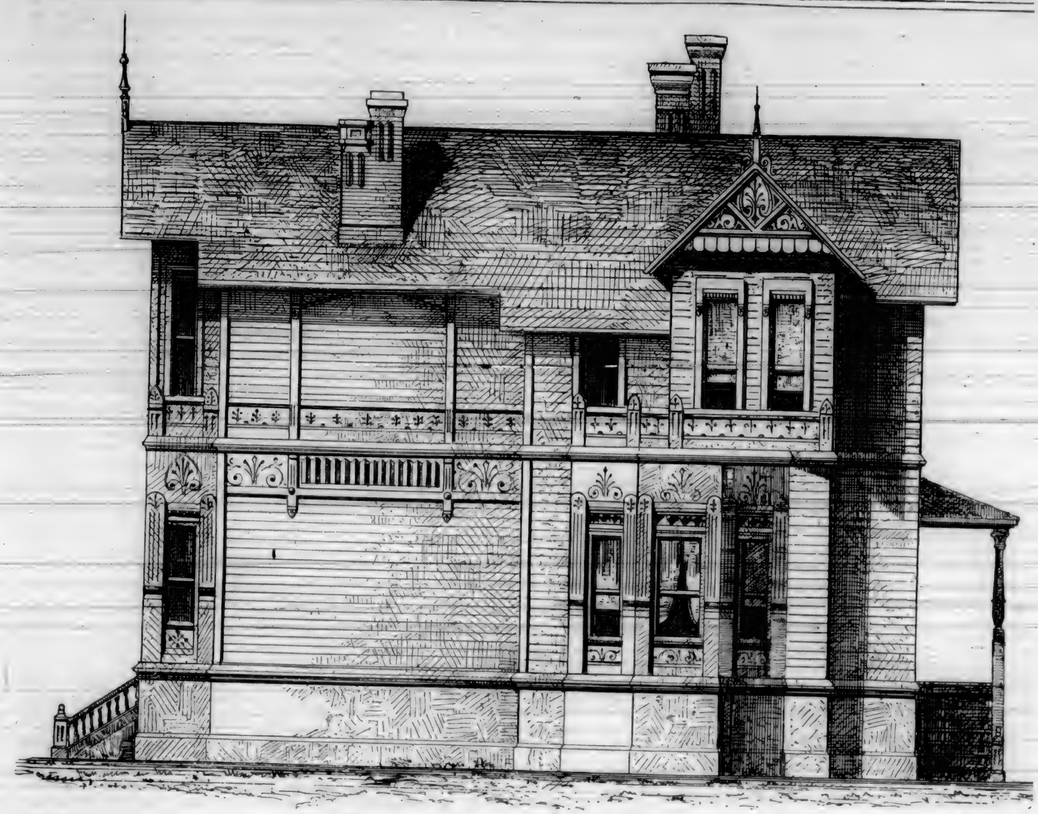
"By competition as now managed, we see that an unscrupulous competitor endeavors to rise by treading upon his fellow competitors."

"Those who allow themselves to be ensnared into its toils, soon lose their self-respect."

"Theoretically, competition is a fair method of estimating reputation, but practically it has been in nearly every case a failure."

The Toledo Court House, to cost $500,000, was wisely given to a local architect without competition.

CRUSHING RESISTANCE OF BRICK.—Walls laid up of good, hard-burned bricks, in mortar composed of good lime and sharp sand, will resist a pressure of 1,500 pounds per square inch, or 216,000 pounds per square foot, at which figures it would require 1,600 feet high of 12-inch wall to crush the bottom courses, allowing 135 pounds as the weight of each cubic foot. Walls laid up in same quality of brick and mortar, with one-third Portland cement added, will resist 2,500 pounds per square inch, or 360,000 pounds per square foot, which would require a height of wall 2,700 feet to crush the bottom bricks.



SIDE ELEVATION OF A SUBURBAN DWELLING.—PLATE 2.

German and American Tools in the British Colonies.

A CORRESPONDENT writing from Auckland, New Zealand, to the Sheffield *Independent*, records the surprise he felt at finding American and German cutlery and hardware so generally adopted throughout the colony. He says that saws of all kinds, axes, carpenters' claw hammers, bench axes, adzes, garden tools, hay and manure forks, braces, etc., of American manufacture, are preferred to Sheffield goods. The American file manufacturers are coming to the front apace, and unless the Sheffield makers put better steel into their mill saws and saw files, they will soon lose this trade. The imports of German and American cutlery, too, are largely on the increase. A much better price can be got for American articles than for Sheffield goods. A workman will give 7s. 9d. for an American hand saw rather than 5s. for an English one; 3s. 6d. to 4s. for a claw hammer rather than 1s. 6d. for English; 8s. for an American ax rather than 6s. for English. There is not much difference in quality between English and American manufacturers; if there is any it is in favor of England, but in style and finish there is no comparison, the American being far ahead. Workmen say the Sheffield tools are so heavy and unmanageable that they soon get tired in using them, while American implements are so designed that a greater amount of work can be got through with much less fatigue. Another great factor in introducing American goods is the handy manner in which they are packed, card board or light wooden boxes being used, which are much more convenient than paper parcels. A storekeeper can show an American article in a moment, but an English one has to be denuded of two or three wrappers before it can be shown, and to save time and trouble the American article is first shown.—*American Inventor*.

DECORATED CEILINGS.—Interior decorations are being much more generally adopted. Plain white walls, without any reliefs, used to satisfy, but the improved tastes of the age call for a departure, and nothing adds more to general effect than a neatly, if not richly decorated ceiling.

Our Illustrations.

WE present in this issue the elevations (plates 1 and 2) and plans (plates 3 and 4) of a medium-sized suburban dwelling. From the main hall on the first floor a direct entrance is afforded to the parlor, dining-room, and kitchen. An easy flight of stairs leads to the second floor, where the chambers, bath-room, and water-closet are situated, the latter being conveniently located off the hall. Plate 5 shows another arrangement of the first floor whereby one more room may be added if desired. The elevations are at once neat and attractive without being very expensive.

A lady on Marlboro Street who had summoned a plumber to remove a defunct rat from the wall, recently received a bill in which one item read: "To hunting up a smell and repairing it, $4.00."

A Muskegon firm proposes to cut 115,000,000 shingles this season—more than any mill in the county has ever cut heretofore.

One Chinaman—Three Whites.

THIS is an approximately fair and safe proposition, in this way: each Chinaman engaged in manufacturing operations, whether as employer or employed, occupies the place of a white worker or manufacturer, and each white worker, as a rule, and as an average, represents not less than three in family, consequently every *ten* thousand Mongolians employed excludes *thirty* thousand of the white race thus inflicting privation and wrong upon the number so excluded, and imposing upon the communities or places wherein such exclusion exists, all the loss of acceptable population and trade transactions that result in such cases.

. . . . .

The Chinaman buys nothing from white sources that can be avoided; sells all that he can to white consumers; lives upon the products of China land, or those produced by China tillage and serving upon our own soil; saves all the money possible from his resources, and sends or takes his accumulations of coin to the flowery land of his birth, leaving, as the true record of his sojourn upon American soil, the fact that he added nothing to the wealth or morals of the country, but skinned out and carried away all that was possible to him.

. . . . .

The white man, on the other hand, if prudent, careful, and successful, saves his earnings, and invests them in a home, or, perchance, in other houses and lands, and so adds to the general prosperities. Or, should he not be of the thrifty kind, securing a home or other prosperities, still he spends and circulates his earnings, thereby adding greater prosperity to general business, and wealth to the scenes of his labors. Hence it may with propriety be said that one Chinaman equals three whites, based upon present existencies, and, if viewed in the light of posterity, the comparison is increased beyond calculation, for, in the one case, there is a continual waste and injury, while, in the other, a perpetual growth and benefit ensuing down through generations. From this standpoint of facts, which cannot be assailed or controverted, it is proper to say that Chinamen, as a rule, are human leeches upon the interests of any country or community, outside of their own, tolerating them, ever extracting, and drawing from, and inflicting moral and commercial injury. Every act, thought, impulse, and feeling of their natures are supremely selfish—personally and nationally.

The Dome of St. Paul's, London, is 370 feet high, and its weight 17 tons per square foot of base.

The Dome of St. Peter's, Rome, is 430 feet altitude, and 14.7 tons pressure per square foot of base.

The Merchant's Shot Tower, Baltimore, Maryland, built of brick, is 246 feet high, and pressure at base, 61½ tons per square foot.

Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

(Continued.)

A SPECIAL attention is required for an arrangement to dampen or moisten the entering air. The reproach made against the air heating, that the air is "dried out," is perfectly unfounded. By the heating of the air, the same becomes relatively drier, but it is immaterial if the same is heated in a room to 20° by a separate oven, or by any other means; the effect will be the same. That air heating acts more as a drier than any other system is mainly due to the high ventilation connected with air heating, and therefore is an artificial dampening with this, as with any other system required, when a powerful ventilating arrangement is connected with

HOT WATER HEATING.

According to the temperature to which the water, by special arrangement of the system can be heated, there is, accordingly (1) low pressure or water heating, warming the water to 100°; (2) high pressure or hot water heating, warming the water up to 200°; (3) middle pressure heating, warming the water up to 120°.

I. LOW PRESSURE OR WATER HEATING.

The main component parts of the water-heating system are: The apparatus for heating the water (heating boiler), which is placed in the lowest part of the building, and is of a suitable construction to economize the fuel; the lowest position is selected to obtain a quicker circulation of the water, the equilibrium of the same being disturbed by the different temperature, causing a circulation of the water columns in the distribution and return pipes; to the heating boiler are attached the conducting pipes, connected with the heating body (heaters) placed in the rooms to be heated, and the return conducting pipe fastened to the heater, taking the water therefrom down to the heating oven, completing the circulation (by the different temperature) of the water; and, lastly, the expansion vessel and the air-conducting pipes.

In regard to the horizontal expansion of the system, the heating boiler should, if possible, be placed in the middle of the arrangement, when, by it, the capacity of expansion of the system in horizontal direction is conditioned. Under a medium proportion (for not too high or too low a column of water), the maximum of horizontal extension of the system can be taken about 200 meters.

The calculations for the warm-water heating boiler are not only made for the consideration of the needed transmission heat for the rooms to be warmed, but also in regard to the time required in which, from the commencement of the daily firing up, the heating of the higher rooms is accomplished. This time depends, besides on the transmission to the rooms, on the amount of the water contained in the system. The same is, for the decision on the size of the boiler, on the highest measured, by three hours. The quantity or the amount of water in the whole heating system is measured by the kind of building, on the uniformity of the heat to be distributed in the rooms, requiring a large reserve of heat or heat-supplying capacity of the system; consequently, the more water boiler and heaters must contain.

We can assume that 1 square meter direct heating surface can extract 10,000 units of heat hourly from the fire gases, to be transferred to the water for heating purposes. In shape the boilers can vary; the best are the smoke or tubular boilers, but the latter only when the flame strikes square on the tubes, and is not conducted parallel to the same.

The disposition to be made for the conducting of pipes can be arranged in a double manner, namely, the warm water can be conducted direct up to the highest point, and thence in a horizontal direction for distribution to the different separate places needed; the string of pipes, therefore, should not be above 60 to 80 meters long, measured from the boiler; or the horizontal disposition can be made below the lower floor, and thence the warm water in ascending is conducted to the places for use. The last arrangement deserves a preference for small extensions, but it cannot always, for want of space in the building to be executed.

The horizontal pipes are run covered, and are protected from cooling off by being served with non-conducting material; the vertical pipes can run in recesses, etc., of the walls and be secreted; to keep tight joints, the same must be screw joints. The conduit of the pipes starts at the highest point of the boiler, must ascend continuously to the highest point of the arrangement, respectively, of the heaters, and from them descend continuously, to enter the lowest point of the boiler.

The bore of the pipes is determined in a practical manner, by taking for each square meter heating surface for the ascend and descend pipes an average section of 0.7 to 0.89 square meter (0.10 to 0.11 square inch), and for the main ascend and descend—back conduit—pipes 0.6 to 0.7 of the whole surface of the heating body.

The air accumulated in the system escapes to the highest point, and is collected and conducted to the expansion vessel and discharged by air cocks, etc. The material applied for the conducting pipes is copper or iron; the latter is recommendable for many instances; wrought iron is preferable to cast iron; lead should never be used, nor leaded joints be made. For pipes of small diameter screw joints are to be recommended; for larger pipes, joints made with flanges, with a rubber ring inserted between them.

The heating bodies have the purpose to abstract the heat required from the water to warm the room, by being transmitted to the surrounding air. For the calculation of the size of the heating bodies, the following formulas can be applied; they have been given before, but for convenience and comment are repeated :—

$$M = 124.72\ Ka^t\ (v^{T-tA} - 1) + 0.552K_1\ (T - t)^{1.233}$$

M is the emitted heat per hour per square meter surface; K, a coefficient depending on the condition of the surface of the heating body, and has for common use the following values:—

Polished brass,	0.258	Polished black sheet iron,	0.450
Copper,	0.160	Roasted sheet iron,	3.36
Zinc,	0.240	New raw iron,	3.17
Tin,	0.215	Roasted "	3.36
Common iron,	2. 77		

K is a coefficient depending on the form and extension of the surface, and has the value for a spherical surface of radius r.

$$K_1 = 1{,}778 + \frac{0.13}{r}$$

For a horizontal circular cylinder of radius r.

$$K = 2{,}058 + \frac{0.0382}{r}$$

For a vertical circular cylinder of the radius r and the height h

$$K_1 = \left(0.726 + \frac{0.0345}{\sqrt{r}}\right)\left(2.43 + \frac{0.8758}{\sqrt{h}}\right)$$

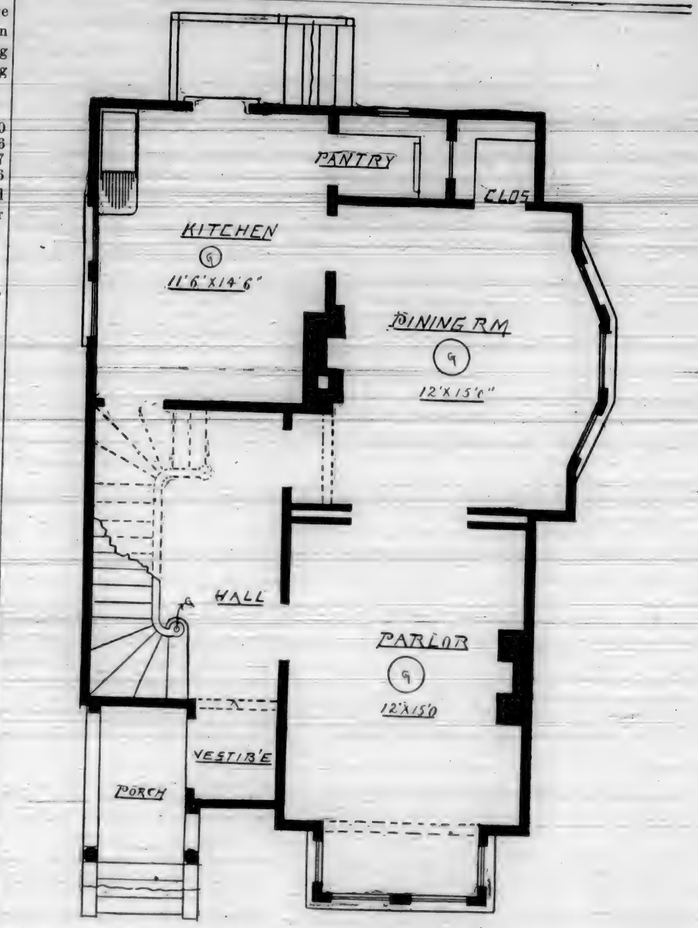
T is the temperature of the heat-delivering surface; t, the temperature of the heat-absorbing air; a, a constant = 1.0077.

From the above formulas we learn that the form and extension of the heating body, and the condition of the surface of the same, bears a large influence on the emission of heat. It is necessary for the execution of an arrangement to decide approximately, according to the form and condition of the heater, the different temperature the water obtains in the different stories of the building, for the emission of heat in heater, and afterwards to calculate the proportionate sized corrector. For the first approximate projection and estimate of cost we can take, that the heating body, for an equal-sized and equi-distanced heat-accumulating and heat-distributing surface, is capable to give over, on the average, for 1 square meter per hour 300 units of heat to the atmospheric air of the room.

In form heaters are different; a full, round water body, upright or horizontal pipes, put together and to be an ornament to the room they are placed in.

The disposition and placing of the heater in the room is rather free; large heaters are placed in the corners, smaller ones—register—in niches, under window sills. Care must be taken that the radiating heat emitted is made useful, and that by closing up with screens, etc., the air circulation is not impeded.

In connection with the heater a stop-cock must be put in, to stop the circulation as a whole or in part, by which a regulation of the temperature can be effected. The flue boilers and the conducting pipes should be constructed so strong as to stand a test, before setting the arrangement in use, of five atmospheric pressure. The expansion vessel serves to take the increase of volume of water by expansion, which is 0.003 of its volume for 1° C. The vessel must have a space not only to take this increase in volume, but, besides, for a constant quantity of water of 100 mms. (4″) high above the bottom (for the settlement of any sediment) and a volume of 100 to 200 minims



FIRST FLOOR PLAN SUBURBAN DWELLING.—PLATE 3.

(4″ to 8″) high as a surplus of height, serving against over-boiling caused by the rising steam bubbles.

Self-evidently the expansion vessel has an overflow and discharge to regulate the state of water to the height desired. The expansion vessel fulfills, besides the purpose of discharging the air and steam from the arrangement, the control of the height of water in the system. The same is located above the highest point of the string of pipes, and is connected with it by a branch pipe. It is not closed, and can therefore keep the water in the heating boiler by that much over 100° heated, equivalent to the pressure of this column of water resting in the boiler; and this is the characteristic sign of the low pressure heating system.

II. HIGH PRESSURE OR HOT WATER HEATING.

The important component parts of the arrangement are: (*a*) the heating oven or the fire coil; (*b*) the conduit of pipes; (*c*) the expansion apparatus.

(*a*) The fire coil consists of a coil of pipe of 34 mms. (1 5-16″) outside, and 23 mms. (⅞ in.) inside diameter (tested for 250 atmospheric pressure). The construction of the fire-oven and the form of the fire coil are very variable. The main consideration is, that the best abstraction of the heat from the fuel is obtained, which, besides other things, conditions that the heating oven must be a countercurrent apparatus. The length of pipe for the fire coil is decided by the quantity of heat required for the rooms to be heated. For calculation it can be taken that one running meter (3.18 ft.) of pipe of the above make can take up easily 500 units of heat, to be delivered to the water in the coil. In this approximate, the losses of

heat, the beginning and high heating are included.

Many fire coils can be interwoven one between the other, to be cleaned from a common hearth, and be connected in such a way that the water in the first coil, after passing the rooms to be heated, can enter the second coil from below, then the third, etc., and, after passing the rooms from the last coil, can enter the first coil below, to repeat the circulation of the water over again.

The fire coil, with its conduits of pipes, is called a system; the whole length of the same should not exceed 180 meters (575 feet); the shorter the better.

The conducting pipe is of the same caliber as the fire coil, starts at the upper end of the latter, passes through the rooms to be heated, and connects again, on its backward conduit, with the lower end of the fire coil.

For the circulation of the water in the pipe it is of advantage to conduct the hot water in the same to the highest point of the arrangement, and only on the return to the boiler is it passed into the heating coil of the heater placed in the rooms for the abstraction of the heat. The heating coil can be placed in a convenient position in the room, or in channels covered with grating.

Since a hot water heating apparatus consists only in an uninterrupted line of pipes, the heated water in the circulating coil must pass all the rooms. By the insertion of a threeway cock the water in the run can be connected with the heating coil, or the same may be closed and the water turned into the cock-run. The disconnection of one room increases the heating capacity of the others.

The heat emission capacity of the pipes is calculated by the formula for water heating; approximately, can be taken on an average that in a system the emission of heat per one meter of pipe is 95 to 100 units, the room having a temperature of 20°. The distribution of pipes must be done, not according to the mean value, but according to the value of emission for one unit of length for the whole length of pipe, where the whole length of the system, height of air circulation, horizontal extension, the turns and bends of the conduit, are to be considered.

The tightening of joints is executed by making universal joints with right and left threads; no tightening it off by other means must be used.

Before putting the arrangement to use, the system must be tested under a pressure of 150 atmospheres.

The filling up of the system with water is done from the lowest point, which must be done carefully, and all air expelled from the cistern before being heated, avoiding explosion of the fire coil.

As much as 200 tons of terra-cotta have been used in the Potter Building, New York. The building is 165 feet high and has eleven stories and two stories below the surface. The fronts of the first and second stories are of cast iron.

Fall of a Solid Stone Staircase.

A VERY unusual building accident happened in an interior town of France, some months ago, which illustrates anew the importance of employing competent and careful architects in the erection of public buildings, and of the exercise of constant care in constructions which are commonly supposed to be especially substantial. In the eulogies so often met with, of the superiority of European buildings to those of this country in regard to solidity of construction, we are frequently told of the stairways, which are built of solid stone, and which are at once assumed to be absolutely secure from danger. Yet it was precisely such a stair of solid stone steps, built into the solid walls of the Court House, in the small city of Thiers, France, which gave way suddenly when filled with people, and caused the shocking death of twenty-four victims, and the maiming and wounding of one hundred and fifty more. The particulars are briefly these: The stairs were very wide, and each step, consisting of a single stone, was imbedded in the wall of the building at its outer end, while the other end, by a sort of dovetail construction well understood by stone masons, rested upon the step below without other support. There was a light iron balustrade to guard this side of the stairs. An interesting trial was in progress in the court room on the second floor, and early in the morning a large crowd had gathered in the building awaiting the opening of the upper doors. Of these, it is estimated that as many as five hundred had gathered on the stone stairway. There being some delay in the resumption of the proceedings, the crowd on the stairway began to manifest its impatience by stamping. Suddenly there was a crashing sound under their feet and the whole stair gave way and sank into the pit below, with all the crowd of men, women, and children who were on it and under it. It is seldom that a more distressingly painful accident occurs, even in this land of reckless building. While few people realize the fact, it is nevertheless true that the lives of a community are almost, or quite, as completely in the care of the architects they employ, as of their physicians—with this very serious difference, that, while a doctor's mistake seldom costs more than one life at a time, a single slip of an incompetent or cheap architect may result in the slaughter of hundreds of innocent victims. There is one other difference, that, while most intelligent people are prudently shy of cheap doctors, many of them think that when an architect is wanted, any Bohemian who can make an excuse for a plan, and who will work for a day laborer's pay is good enough for them.—*The Building Trade Journal.*

The latest door-knob device we have noticed is one operated by pressing on a button in the center of the knob, similar to the ordinary electric button, but the knob itself remains stationary.

Ancient Cisterns and Cements.

SOME few miles west of Bougie are the scattered remains of the ancient Tubusuptus, the modern Tiklat. The side is strewn with Roman stone. The walls of the great cisterns are still standing, consisting of 15 galleries, each being 116 feet by 13 feet 9 inches, and about 20 feet deep. The dividing walls are 2 feet 9 inches thick, built of rubble, but carefully constructed. These great reservoirs are a peculiar feature in North Africa, being found, some in fairly perfect condition, on the outskirts, or frequently within the walls of nearly every town. Those at Carthage, for instance, known as the smaller cisterns, to distinguish them from the larger series, which may be assigned to Punic times, are even now in good preservation, although built with small and irregular-shaped stone. The hardness of the mortar here, as elsewhere, is very noticeable; and the cement lining, known as *opus signinum* extremely thin, and made of crockery shards, is of so hard a texture as to be broken with great difficulty. The secret of mortar composition appears to have passed from the Romans to the Arabs, who still employ the same ingredients in the construction of arches, terraces, and cisterns. The composition appears to be one part sand, two parts wood ashes, and three of lime. After being thoroughly incorporated, the mixture is beaten for three days and nights with wooden mallets, sprinkling a little water, and at times adding a small quantity of oil, till the whole becomes of due consistency. In the jointings of pipes, also, the Arabs follow the method of the Romans, beating together two, and lime with oil, and without water. The composition speedily assumes the hardness of stone and is impervious to water.

Owing to the shutting down of Western nail mills, pending the settlement of the wages question, nails have become scarce, and the price has advanced. Eastern nail mills are taking advantage of the situation to do a rushing business. One mill recently had to decline an order for 50,000 kegs.—*American Machinist.*

A building was in process of erection opposite a public building in Washington City. One of the clerks who had been looking out of the window for some time, said to another clerk who was reading a newspaper:—

"I have been watching that workman over there for half an hour, and he has not done a lick of work in all that time. I wonder what he gets paid for?"

Just about the same time the workman remarked to a fellow workman:—

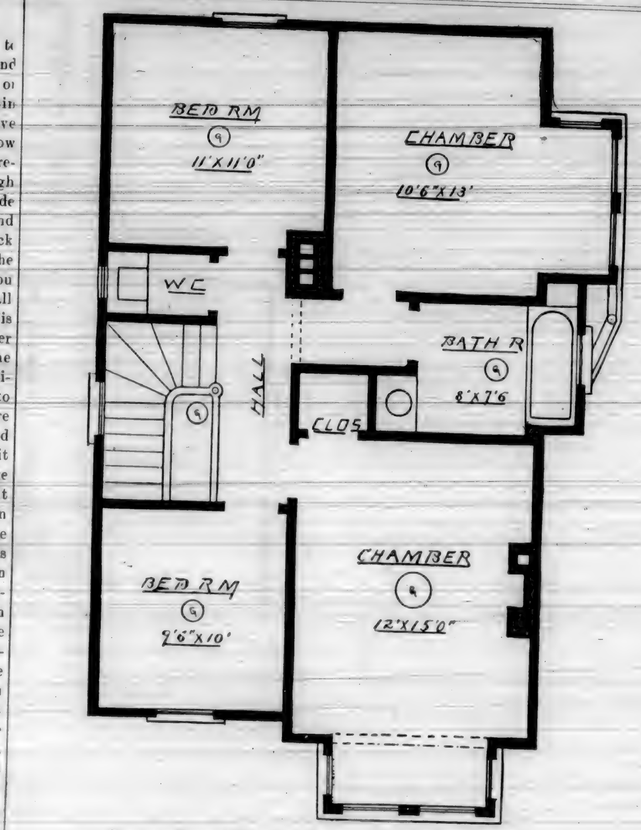
"Just look at that government clerk over there. He hasn't done anything except look out of the window for the last half-hour. No wonder the country is going to the dogs."—*The Wood-Worker.*

To darken light mahogany and cherry, bichromate of potash dissolved in water is excellent, and gives it the appearance of age.

Porcelain Portrait Oil Painting.

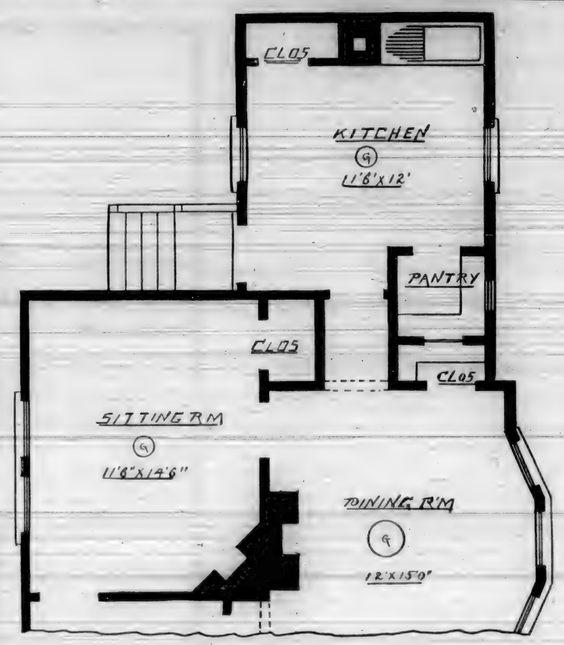
FIRST, procure the portrait that you wish to paint (a bust cabinet picture of the head and shoulders is the best), and lay it in a dish, or pan of soft water, and let it soak until the thin paper that the photo is taken on will remove easily from the card on which it is pasted. Now procure a piece of glass the size of the paper removed and with flour paste (strained through a cloth) paste it on the glass, the print side down; now hold the glass in one hand and with the fingers of the other rub on the back of the print, commencing at the head of the portrait and rub around and around until you reach the edge of the glass, rubbing out all blisters and surplus paste. When the paste is thoroughly dry, take a piece of fine sandpaper or emerypaper and sandpaper as much of the paper from the back of the print as you possibly can, without cutting through the print to the glass on which it is pasted. Now procure a little Cosmoline from your druggist, and rub this over the back of the print and hold it over a stove and warm it in, until you make the photo transparent so that you can see it as well from the back of the glass as you can from the front. Now it is ready to commence painting: procure two or three small camel's hair brushes with hair about one-eighth of an inch long and about as large around as a knitting needle. First mix a little white lead with boiled oil, two parts, and Japan dryer, one part (use oil and dryer to mix all of your colors with), with your small brush and a little of the white paint just make a little dot on the small white spot that is found in the sight of the eye of the photo (this is called the high light); mix a little black and paint the sight of the eye around the little white spot that you have made; if the eyes are blue black, brown, or gray, mix a little paint as near the color of the eye as possible and paint the rim or circle that surrounds the sight of the eye with it; now mix a little vermilion red and white together and paint the lips. If there is any jewelry represented in the photo, paint it yellow. Now procure another piece of glass the same size as the one you have and clean it off well; now cut four pieces of blotting paper each one-eighth of an inch wide and two inches long, paste one of these on each edge of the glass, the same side that your photo is pasted on; paste the top of these papers and lay on your other glass so that the edges are even; cut four strips of writing paper about three-fourths of an inch wide and two inches long, paste one of these and stick it to the upper glass allowing about one-third of its width to lap on the glass, press it closely over the ends of the glass and lap the remainder on the under glass; paste one on each end of the glasses. This will bind the two glasses together. Royal Glue for sticking and binding the glasses together is recommended. Now with a little white paint paint on the back of the (in painting hold the glass toward the light) last glass the white of the eyes; mix a little burnt Sienna and Naples yellow and white together, making a flesh color, paint all the flesh that is shown in the photo. With a little vermilion red paint the cheeks right on top of the flesh color just put on and rub this with your brush until it shows to suit your taste from the front of the glasses. Now mix up colors to match the hair or beard and clothing, and paint them. Paint the background any color to suit your taste. When done, if the colors do not suit, you can rub them off with a rag, and mix and try again. When completed place in a velvet frame and you will have one of the nicest oil paintings you ever saw.

A singular building operation is now in progress in Boston, where the old Masonic Temple, recently occupied by the United States Court, is in process of being replaced by a modern dry goods store. The structure stands at the corner of two of the principal streets, one of which, after the usual Boston fashion, had been widened through its whole length, except at the corner in question, where, either on account of the ownership of the land by the United States, or by reason of the cost of altering the old building, the city authorities had been unable or unwilling to change the original line. As the building thus projected three or four feet into the street, constituting a disagreeable obstruction, the new owners, who bought the property from the United States, reflected that if they were themselves to demolish the old Temple, which was perfectly useless to them, the city government, seeing the land cleared, would probably seize the opportunity, while there was no building on it, to condemn enough of it to complete the widening of the street. Although they would, of course, be compensated for the land taken, the reduction in the size of the intended store would be a serious detriment to their business, while the very widening of the street would deprive them of the benefit of that advertising which a store prominent enough to block the way in a crowded thoroughfare always gets; and they resolved to manage their building operations in such a way that there should be constantly on the



SECOND FLOOR PLAN OF A SUBURBAN DWELLING.—PLATE 4.

land a structure so large and costly that the city authorities would hesitate before incurring the expense of demolishing it. With this idea the work was begun by piercing the walls of the old Temple near the ground, and inserting needles, with shores outside and inside sufficient to take the whole weight of the superstructure; and removing the foundations, to replace them by the foundations for the new building. As these approached the sidewalk level, it became necessary to commence the second and more hazardous portion of the undertaking, which consisted in raising the Temple about fifteen feet, so as to allow the work of the new building to be carried on under it. Boston is somewhat noted for the skill of its building-movers, and although the old Temple was by no means a credit, in point of construction, to the masons who built it, having walls of rather incoherent rubble, faced with the "saw-tooth work" which pleased the unscientific fancy of our grandfathers, the contractor in this case contrived, by putting timbers across the windows, and tying them together, to convert the shell of the building into a reasonably rigid box, under which were placed 300 jack-screws, resting on the piles of timbers, which by this time had replaced the shores. The work of lifting was then intrusted to six men, whose duty it was to go steadily around the building, giving each screw, as they reached it, a quarter-turn. When the screws had been turned to their full length, about fourteen inches, more timbers were inserted, and the screws were reset for another lift. So far, the work has gone on with perfect success, and by the time the old Temple has ceased to be of service in protecting its owners against the economical city authorities, the new building will be far enough advanced to take its place.—*American Architect and Building News.*



ADDITIONAL PLAN, FOR FIRST STORY, SUBURBAN DWELLING.—PLATE 5.

Book Learning.

PROFESSOR HUXLEY says: "I do not say that knowledge is not an extremely good thing; but if a man is to make a good workman, or to do anything in practical life, you must give him an education that fits him for the conditions of life with which he has to deal, and you will give him an education by filling his head with a number of intellectual abstractions, or even by giving him the largest acquaintance with scientific principles. And I think it is a profound mistake, considering the career to which the majority of artisans or persons in that class of life are necessarily bound, ever to take them out of the wholesome discipline of practical contact with the realities of life, for the mere sake of giving to them a greater or less amount of knowledge. A man who is inclined to do so may always pick up knowledge, and he may do so at the same time that he is getting his education, in the highest sense of the word, out of his contact with the realities of his daily life; but if you make a book-worm of him, if you take him away from all that contact with reality and turn him back afterwards into it, he has lost touch of life. I have had to do with mankind in many stations in life, and it seems to me that what is wanted in a foreman is a man of energy, punctuality, business habits, and power of dealing with men, all of which things are not to be got out of books or laboratory work. These qualifications are the most essential qualifications in a foreman, and what you want besides in such a man is not book learning, but an intelligence sufficiently trained to be able to deal with new conditions, and an amount of knowledge sufficient to enable him to know where to go and find more if he wants it."

Facts Worth Knowing.

A CUBIT is 2 feet.
A pace is 3 feet.
A fathom is 6 feet.
A span is 10⅞ inches.
A palm is three inches.
A great cubit is 11 feet.
A league is 3 miles.
There are 2,750 languages.
Oats, 35 pounds per bushel.
Bran, 35 pounds per bushel.
Barley, 48 pounds per bushel.
A day's journey is 33⅓ miles.
Two persons die every second.
Sound moves 743 miles per hour.
A square mile contains 640 acres.
A storm blows 36 miles per hour.
Coarse salt, 85 pounds per bushel.
A tub of butter weighs 84 pounds.
Buckwheat, 52 pounds per bushel.
The average human life is 31 years.
A barrel of rice weighs 600 pounds.
An acre contains 4,840 square yards.
A firkin of butter weighs 56 pounds.
A barrel of flour weighs 196 pounds.
A barrel of pork weighs 200 pounds.
Slow rivers flow five miles an hour.
Timothy seed, 45 pounds per bushel.
A hurricane moves 80 miles per hour.
A rifle ball moves 1,000 miles per hour.
Rapid rivers flow seven miles per hour.
A hand (horse measure) is four inches.
Electricity moves 288,000 miles per hour.
The first lucifer match was made in 1829.
Gold was discovered in California in 1848.
The first horse railroad was built in 1826–27.
A mile is 5,280 feet, or 1,760 yards in length.
Corn, rye, and flaxseed, 56 pounds per bushel.
The first steamboat plied the Hudson in 1807.
A moderate wind blows 7 miles an hour.
Wheat, beans, and clover seed, 60 pounds per bushel.
The first use of a locomotive in this country was in 1829.
The first almanac was printed by George Von Purbach, in 1640.
The first steam engine on this continent was brought from England in 1753.—*American Inventor.*

The Boston Society of Architects have held council in the matter of more nearly equalizing the rates of profe-sional compensation, by increasing charges on all work costing less than $10,000. The proposition is a fair and just one, as the expense of preparing plans, specifications, and details for buildings of moderate cost very nearly equals those costing more than the sum named; and the work of superintending is but little greater in the more costly than in the cheaper class buildings. Certainly the expense to an architect in preparing plans, specifications, and details for three separate and distinct buildings, costing an aggregate of $20,000, is very much greater than those for a single building costing the same sum, and the value of time consumed in superintending the three, is infinitely more than for the single building. Consequently at five per cent in both cases, the compensation in that of the three would fall, comparatively, far below that of the single building. And five per cent being no more than should be paid by owners in any case, the regular fee of five per cent would be a hardship upon the architect.

The responsibilities and duties of architects are greatly undervalued, and the importance to owners of securing the services of a competent, experienced, and qualified man, overlooked. The miserable idea of economizing in the matter of architectural services, is a mistake that has caused thousands of owners to regret their folly. And it is a firmly established fact that the practical damages sustained by owners, to more or less valuable property through this sort of false economy, amounts to millions of dollars each decade of time. The shortages in rentals, loss of time in renting, the inferiority of the class of renters, and the diminished selling value of the property, on account of wretched planning and bad construction, in buildings planned by and erected under the superintendence of second to tenth rate architectural pretenders, in thousands of cases, amount yearly to several times more than would have paid the full schedule rates to competent architects. The owner who, for one moment, permits the consideration of economy to intervene in the selection of an architect, does a very unwise thing.

POLISH FOR MARBLE.—One-half ounce of magnesia; two ounces oxalic acid; one pint of warm rain-water. Use a white woolen cloth.

METHOD OF DEADENING SOUNDS IN BUILDINGS.—General M. C. Meigs, writes to the *Sanitary Engineer* as follows in reference to an article on deadening the sounds from water-closets, which appeared in a late issue: "I have found it impossible to make myself heard by a person on the other side of a large window, double glazed, interval between panes seven-eighths of an inch. Glass is very elastic, and should, I suppose, therefore, be a good sound-conductor. But the voice cannot be heard through two sheets of ordinary French window-glass separated by seven-eighths of an inch of air. In this, I think, may be found a hint for shutting off sound."

LEAD POISONING FROM A PAINTED WATER TANK.—Dr. Bartley, chemist to the Brooklyn Board of Health, reports an interesting case of lead poisoning which was caused by using water from a tank on shipboard, which had been painted nine months before with red lead.

The case was that of a Norwegian vessel which reached the port of New York with all the officers and crew more or less seriously ill from lead poisoning. They were removed to the Long Island College Hospital, where one of them subsequently was seized with convulsions and died. The curious element in this case is the fact that the water tank, which had been painted while the vessel was at Copenhagen, should have been used without any evil consequences during several voyages, having been several times filled at certain ports at which the vessel stopped. It was only after having the tank refilled at Cadiz, and after having proceeded on her voyage for some time, that the symptoms of sickness began to manifest themselves, when one after another of the crew sickened, until all were affected, with the result previously mentioned. Meantime the vessel had touched at several South American ports, where the tank had been again refilled several times. No less than nine months, as above mentioned, had elapsed between the time of painting the tank and the first outbreak of the malady, the tank in the interval having been in constant use.

To account for this anomalous circumstance, Dr. Bartley supposes that the first few times the tank was filled, it was with hard water—containing carbonates—the result being the formation of an insoluble film of carbonate on the surface, which protected the lead beneath from solution and the water from contamination. Later a softer water was probably used—containing nitrates and nitrites—which are known to have a marked influence on the corrosion of lead pipes, and which would act in a similar manner upon the lead paint.

The circumstance is instructive, as exhibiting very strikingly the danger of using lead paints for such a purpose as that herein described.—*Manufacturer and Builder.*

OLDEST HABITATIONS IN AMERICA.—Major Powell, Chief of the Geological Survey, who has been about a month in the field, has discovered in New Mexico, near California Mountain, what he pronounces to be the oldest human habitation upon the American continent. The mountains in this vicinity are covered with huge beds of lava, in which the prehistoric man and his comrades excavated square rooms, which were lined with a species of plaster made from the lava, and in these rooms were found various evidence of quite an advanced civilization, among them a species of cloth made of woven hair, and a large number of pieces of pottery. In the sides of the rooms cupboards and shelves were excavated. In one room, sticking out of the bare face of the wall, was a small branch of a tree. When this was pulled out, it was found that there was a hollow space behind the wall Colonel J. H. Stephenson, Major Powell's assistant, broke this with a pick and found a little concealed niche, in which was a small carved figure resembling a man done up in a closely woven fabric, which with the touch of the hand turned to dust. It was blackened and crisp, like the mummy clothes of Egypt. In all, some sixty groups of these lava villages were found, there being twenty houses in each group. The evidences of civilization were similar, but removed by their crudity and evident want of skill a good deal from the articles found in the cliff houses which have been so fully written up in the reports of the geological surveys.—*Santa Fe New Mexican.*

DISCOVERY OF A ROMAN RACE-COURSE AT NANTES.—Archæological researches have recently revealed in the neighborhood of Nantes the existence of a race-course of presumably Roman origin. The foundations of the hippodrome occupy an area of about 223 by 174 meters. Further discovery has been made in the vicinity, of an ancient roadway leading to the Loire, near the banks of which river traces of a number of villas prove the existence of a buried city, inasmuch as a theater capable of accommodating 4,000 persons has been brought to the light of day. A quantity of ornaments, jewels, and pottery has been recovered among the ruins. Thus far the absence of coins has frustrated the endeavors of savants engaged in unearthing the relics to establish the epoch of this most-recently-found city of the Roman occupation.—*New York Evening Post.*

BROWN STAIN FOR WOOD.—A brown stain for wood for the imitation of oak, walnut, and cherry-tree wood is obtained by thinning ordinary tincture of iodine with alcohol, more or less being added of the latter according as a lighter or darker shade of brown is desired. The stain should be applied with a broad brush or a rag. After it has dried, the work should be polished. It is possible, however, to dispense with ordinary French polish by adding white shellac to the stain. One or the other of these processes of polishing is indispensable to give permanency of stain.

Nothing definite has yet been reached regarding a proposed cable street railway at Washington, D. C. The route embraces the central, southeastern, and northeastern sections of the city. It will be a cable road about seven miles long, and the estimated cost is $536,000. The road is to begin from the Bank of Washington, and will take in the museum, the Soldiers' Home, the new Catholic University, Glenwood Cemetery, Government Printing Office, the jail, workhouse, the Congressional Cemetery, the navy yard, etc. The commissioners were favorably impressed with the measures proposed by the company at a recent meeting.

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BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

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BUILDING INTELLIGENCE.

B

Broderick, cor. Water. Three two-story frames.
O.—G. B. Beale.
A.—Townsend & Wyneken.
B.—H. B. Hosmer.
$14 000.

Broderick, nr. Golden Gate ave. Additions.
O.—Mrs. Collins.
C.—H. A. Conrad.
$3,000.

Bernal Heights. Two-story frame.
O.—H. Benical.
C.—L. D. Frichette.
$2,000.

C

Clementina, nr. Fifth. Alterations.
O.—L. McCloud.
C.—C. Cody.
$2,500.

Chattanooga, bet. Twenty-second and Twenty-third One-story frame.
O.—A. McPherson.
Day's work.
$2,500.

Castro, nr. Market. One-story frame.
O.—J. Andersen.
C.—F. Guttero.
$1,600.

Church, nr. Fifteenth. Additions.
O.—J. W. Hammerton.
Day's work.
$750.

Chattanooga, bet. Twenty-second and Twenty-third Two one-story frames.
O.—J. Bolger.
A.—Huerne & Everett.
Day's work.
$3,000.

E

Eddy, nr. Webster. Additions.
O.—A. Vogler.
C.—J. Weiss.
$900.

Eddy, bet. Buchanan and Webster. Additions.
O.—W. Bogler.
C.—H. J. Weiss.
$600.

Eighth, nr. Market. One-story frame
O.—W. Jones.
Day's work.
$1,000.

Eddy, nr. Devisadero. Two-story frame.
O. and B.—F. Buckley.
A.—Huerne & Everett.
$2,000

Eighteenth. nr. Sanchez. One-story frame.
O.—F. Jeannot.
A.—Huerne & Everett.
C.—B. E. Everson
$700.

F

Fulton, cor. Franklin. Ten two-story frames.
O.—J Buckweld
A.—Curlett & Cuthbertson.
C.—D. Perry.
$32,000.

Fourteenth, bet. Valencia and Guerrero. One and one-half story frame.
O.—F. A. Flaherty.
Day's work.
$2,000.

Fillmore, nr. Post. Two-story frame.
O.—H. Levy.
A.—McDougall & Son.
C.—J. A. Leonard.
$5,000.

Fifteenth, nr. Noe. One and one-half story frame.
O.—D. Maugher.
A.—McDougall & Son.
C.—Martin & Maguire.
$2,200.

Fillmore, bet. Hayes and Grove. Two-story frame.
O.—Mrs. Allie McAbee.
A.—J. H. Littlefield.
C—Haskell & Webb.
$4,500.

Fillmore, corner O'Farrell. Two-story frame.
O.—J. H. Jacobs.
C.—Treadwell & Thompson.
$6,500.

Fulton, bet Devisadero and Broderick. Two-story frame.
O.—Dr. Brucker.
A.—J. M. Curtiss.
C.—J. Bamber.
$3,000.

G

Garden, bet. Harrison and Bryant. Additions.
O.—Jas. Mooney.
Day's work.
$2,000.

H

Howard, bet. Twenty-first and Twenty-second. Two-story stable.
O.—John English.
A.—Schmidt & Havens.
C.—F. W. Kern.
$1,600.

Howard, bet. Fourteenth and Fifteenth. Two-story frame.
O.—J. Swift.
A.—Townsend & Wyneken.
C.—H. J. Weiss.
$5,000.

Howard, bet. Eleventh and Twelfth. One-story frame.
O.—J. P. Stoltz.
C.—W. A. Sherline.
$1,100.

Howard, nr. Eleventh. Two-story frame.
O.—Wm. Denie.
C.—G. M. Gray.
$1,500.

Hill, nr. Valencia. Additions.
O.—J. C. Gouldin.
C.—A. Kowlner.
$2,000

Hill, cor. Valencia. Three-story frame.
O.—J. C. Gouldin.
C.—A. Kowlner.
$6,000.

Howard, nr. Moss. Additions.
O.—Dr. J. P. P. Van Den Bergh.
Day's work.
$5,000.

Harrison, bet Fifth and Sixth. Two-story frame.
O.—George Dawson.
C.—O. M. Sherman.
$3,000.

J

Jessie, bet. Fifth and Sixth Two-story frame.
O.—J. Gould.
A.—F. J. Welch.
C.—P. Laherty.
$2,500.

Jones, nr. Pacific. Additions.
O.—W. Fell.
C.—H. Dunkirk.
$1,000.

L

Lombard, nr. Jones. Two-story frame.
O. and B.—J. P. Hunter.
Day's work.
$3,500.

Liberty, bet. Church and Dolores. One-story frame.
O.—Joseph Carr.
A.—M. J. Welch.
C.—C. F. Buckley.
$1,000.

Liberty, bet. Church and Dolores. One-story frame.
O.—Thos. Earling.
A.—M. J. Welch.
C.—C. F. Buckley.
$1,000.

M

Mission, nr. Fourteenth. One-story frame.
O.—S. A. Moore.
Day's work.
$1,000.

McAllister, nr. Lyon. One-story frame.
O.—J. H. Cope.
C.—Wm. Little.
$1 600.

Mission, bet. Ninth and Tenth. Two-story frame.
O.—F. W. Kenerleber
A.—H. Geilfuss.
C.—F. W. Kern.
$6,000.

Minna, bet. Eighth and Ninth. Four two-story frames.
O.—I. Shaw.
C.—Johnson & Walton.
$8,000.

Market, bet Seventh and Eighth. Two-story frame.
O.—J. J. Donnovan.
Day's work.
$1,000.

Market, bet Eighth and Ninth. One-story frame.
O.—Cronan & Dunbar.
C.—Anderson Bros.
$3,000.

Market, bet Eighth and Ninth. One-story frame.
O. and B—Anderson Bros.
Day's work.
$1.000.

Mission, bet Tenth and Eleventh. Two-story frame stable.
O.—W. A. Fredericks.
C.—T. C. Riddell.
$1.500.

Mission, nr. Twenty-first. Two-story frame.
O.—Peter Unrath.
A.—Daley & Praun.
C.—J. Bamber.
$4,000.

N

Nineteenth, cor. Church. Two-story frame.
O.—Geo L. Long.
A.—J. T. Kidd.
C.—A. Jackson.
$1,400

Noe, nr. Eighteenth. One-story frame.
O.—F Jenetti.
Day's work.
$1,200.

P

Pine, cor. Scott. Two-story and basement frame.
O. Mrs. Cyro Morse.
A.—J. H. Littlefield
C.—Bateman Bros.
$4,700.

Pine, nr. Buchanan. Two-story frame.
O.—C. H. Syk s.
C.—A. Ackerson.
$3,000.

Pierce, cor. Golden Gate ave. Two-story frame.
O.—Susan McGlunn.
A.—T. J. Welch.
C.—E. & F. J. Owens.
$3,500.

Page, between Devisadero and Broderick. Two-story frame.
O.—S. D. Sweetzer.
A.—Townsend & Wyneken.
C—A. H. Plummer.
$5,000.

S

Stockton, nr Montgomery Avenue. Two s ory frame.
O.—Mrs. A. Mann.
C.—J. E. Alexander.
$2,500.

Sacramento, bet. Fillmore and Steiner. One-story and basement frame.
O.—Mrs. J. W. Cherry.
A.—B. M. Dugan & Son.
C.—Casebeer & Frazier.
$3,000

Sixteenth, nr. Sanchez. Two-story frame.
O.—J. M. Granaghan.
A.—M. J. Welch.
C.—T. Sullivan.
$2,500.

Scott, nr. Golden Gate ave. Three two-story frames.
O.—Wm. Matthews.
A.—Pissis & Moore.
C.—D. F. McGraw.
$8,000.

Stevenson, 1866, nr Jessie. Alterations.
O.—Miss C. Tighe.
C.—Bateman Bros:
$1,000.

T

Twenty-third, cor. Chattanooga. Additions.
O.—M. F. Gale.
Day's work.
$600.

Taylor, nr. Broadway. Additions.
O.—J. H. McCoy.
A.—T. D. & J. J. Newsom
C.—W. Hall.
$3,000.

Twenty-fourth, bet. Mission and Capp. Two-story frame.
O. and B.—A. Roberts.
Day's work.
$2,000.

Twenty-fourth, nr Mission. Two-story frame.
O. and B.—A. Roberts.
Day's work.
$2,500.

V

Valencia, nr. Sixteenth. Additions.
O.—H. Carroll.
Day's work.
$900.

Vanderwater, nr Mason. Two-story frame.
O.—Joe Cuneo.
Day's work.
$1,500.

Valencia, nr. Sixteenth. Additions.
O.—J. T. Farrell.
Day's work.
$600.

W

Walnut, nr. Sacramento. Two-story frame.
O.—H. Lank.
C.—Crawford & Marshall.
$2,000.

OAKLAND.

SIXTH, cor Broadway—2-story fr; cost, $5,000; o, H. Davis; a, Curlett & Cuthbertson; c, W. A. Griffith.
WASHINGTON, nr Seventh—3-story brick; cost, $25,000; o, S. Hancock; a, J. Marquis; supt, C. W. Crinsby.
SEVENTH, nr Washington—3-story brick; cost, $10,000; o, — Buckrath; a, Matthews & Son; c, Remillard Brick Co.
FRANKLIN, cor Sixth—3 1-story ctgs; cost, $5,000; o, W. Collins; a, C. Mau; c, J. Todd.
SEVENTH, cor Castro—2-story fr; cost, $3,200; o, J. Rackliffe; c, J. E. Kane.
THIRTEENTH, bet Clay and Jefferson—Additions; cost, $2,250; o, H. Brussil; c, Peter Ahern.
HIGHLAND PARK—1½-story fr; cost, $3,500; o, N. R. Johnson; c, A. W. Pattiani & Co.
TWELFTH, nr Grove—1-story fr; cost, $3,000; o, F. H. Smith; c, A. W. Pattiani & Co.
SAN PABLO CROSSING—1-story ctg; cost, $2,000; o, H. Westphal; c, A. W. Pattiani & Co.
UNION, nr Eighth—2-story fr; cost, $2,300; o and b, J. W. Armstrong; day's work.
CENTER, nr Tenth—1-story ctg; cost, $2,000; o, Miss Mary J. Watson; c, J. C. Johnson.
FOURTEENTH, cor Harrison—2-story fr; cost, $3,000; o, Katie Fitzgerald; c, J. Spencer.
FOURTH, bet Jefferson and Grove—1-story ctg; cost, $1,750; o, W. Sagehorn; c, Darrell & Smith.
BIRCH, bet Second and Liberty—1-story fr; cost, $2,000; o, G. P. Morrow; c, A. W. Pattiani & Co.
EIGHTH, cor Harrison—Alterations; cost, $1,000; o, W. D. Heaton; day's work.
SIXTH, bet Alice and Jackson—1-story fr; cost, $1,000; o, Mrs. Megginnis; c, J. B. Clements.
TWELFTH, cor Harrison—Additions; cost, $1,500; o, A. C. Dietz; c, J. A. Benham.
TELEGRAPH AVENUE, cor William—Alterations and additions; cost, $2,000; o, F. Delger; day's work.
FREDERICK, nr San Pablo Avenue—2-story fr; cost, $3,600; o, Mrs. Dellehante; a, Matthews & Son; c, Jas. Toohig.
EIGHTH, cor Adeline—2-story fr; cost, $4,000; o, J. P. Riley; a, Chas. Mau; c, Jas. Toohig.
TWENTY-SIXTH, nr Market—1½-story fr; cost, $1,200; o, M. Carroll; c, W. H. Griffin.
TWENTY-SIXTH, nr Market—1-story ctg; cost, $1,000; o, H. L. Wallace; c, R. A. Pritchard.
TWENTY-SIXTH, bet San Pablo ave and Market—1-story ctg; cost, $1,000; o, C. E. Powell; c, J. C. S. Whalin.
SAN PABLO AVENUE, cor Thirty-fourth—2-story fr; cost, $3,000; o, Dr. Young; c, R. Jackson.
PERALTA, nr Union—Additions; cost, $1,000; o, David Demmorest; c, Dorrell & Smith.
HOLLIS, nr B—Additions; cost, $600; o, A. C. Bryan; day's work.
UNION, cor Peralta—1-story fr; cost, $500; o and b, Jas. Harmon; day's work.
SIXTEENTH, nr Park—1½-story fr ctg; cost, $1,600; o and b, A. R. Dow; day's work.

ALAMEDA.

DWIGHT WAY, nr Cottage ave—2-story fr; cost, $2,770; o, C. F. Wilkinson; c, A. W. Pattiani & Co.
SANTA CLARA AVE., bet Walnut and Willow—1-story ctg; cost, $2,000; o, C. Thompson; c, C. H. Foster.
SANTA CLARA AVE., nr Webb—2 2-story ctgs; cost, $6,000; o, W. Hess; a, Geo. E. Voelkel; c, A. Knepp.
MORTON, nr Central avenue—1-story ctg; cost, $4,000; o, H. Stark; c, C. Shaner.

MISCELLANEOUS.

Santa Cruz—Two-story frame. O., E. H. Garrett; A., Salfield & John; C., Chas. Kaye & Co.; $1,500.
San Rafael—School House. O., San Rafael County; A., Curlett & Cuthbertson, C., D. Perry; $12,000.
San Mateo—Memorial Chapel and Family Vault. O., Mrs. A. M. Parrott; A., Huerne & Everett; C., W. D. Perrine; $11,000.
San Jose—School-house. O., Santa Clara County; A., J. O. McKee; C., F. Davis; $3,000. Stockton Avenue. Frame cottage. O., Dr. Gunckel; A., J. O. McKee; C., Robt. Summers; $4,000. S. W. cor Reed and Second. Brick building. O., Second Methodist Church; A., Theodore Lenzen; C., A. J. McIlvain; $7,500.
Woodland—Main, cor. Elm. Two-story brick block. O., Prior & Gibson; C., Glenn & White; $6,000. First. Two-story brick stores. O., Thomas & Armstrong; A., W. H. Winne; C., Curson & Welch; $10,000. Second. One-story frame. O., Mrs. A. Spurgeon; A. and C., Gilbert & Sim; $1,200. L la. One-story frame. O., Mrs. E. Garret; C., Glenn & White; $1,000. College ave. Two-story frame. O. and B, Samuel Caldwell; $2,500. Cleaveland. One-story frame. O. and B., Henry Tuson; $1,000. Three frames. O., J. Q. A. Clark; day's work; $1,200. One-story frame. O., David Digges; C., A. Poole; $1,500. One-story frame. O., Oliver Webster; C., Albert Sears; $1,500. Frame fruit drying establishment. O., Mrs. G. G. Briggs; C., W. H. Winne; $2,500. One-story frame and barn. O., Wash Lambert.; C., Samuel Cole; $1,000.
Black's Station—Two-story frame. O., Henry Clauson; C., White & Newton; $2 000.
Knight's Landing—Building. O. and B., Mr Heelds; $8,000.
Winters—Five one-story frames. O. and B., W. J. Cannedy; $2,000.

BLUM, EPPSTEIN, & MARSH,
MANUFACTURERS OF
Inlaid Wood Flooring
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Hard Wood Interiors.
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SAN FRANCISCO, - - CAL.

"NONE SUCH"
CHIMNEY TOP VENTILATOR

See Cut in this Place next Month.

THIS VENTILATOR is especially valuable for regulating draft (upwards and downwards) made by the light, unstable atmosphere of the Coast Range of Mountains. The hundreds of tall stovepipes erected on the chimney tops of houses indicate inconvenience and trouble in the kitchen, the parlor, and chambers below.

SAN FRANCISCO, October 26, 1885.

To whom it may concern:

I take pleasure in stating that the "None Such" Chimney Top and Ventilator, which was put upon the smoke-stack of the Baldwin Hotel about two months ago, has given complete satisfaction.

It has increased the draft to such an extent that there is a perceptible saving in the amount of coal consumed; smaller fires than heretofore will now answer to keep up the steam, thus causing a great saving of the boiler also. We have heretofore had much difficulty in keeping up the amount of steam steadily required, owing to the lack of draft, all of which is now remedied by the use of the "None Such" Chimney Top and Ventilator. I heartily recommend its use to all persons, where a strong draft is required.

PEARSON & ARNOLD,
Proprietors the Baldwin.

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PATENT

WATER CLOSETS

WITH TRAP.

The Golden Gate Plug Closet.

WITH OFFSET.

This Closet is the best of its kind, having been so far constructed, it has the following advantages:—

1. It has a simple, strong valve, suitable for any pressure.

2. It has a real sanitary overflow, a copper float attached to a bell of the same metal resting on face of the brass overflow pipe, operated by the rising of the water in the closets above its level, thus absolutely preventing any escape of sewer gas, even the closets being without water.

3. It has no dead corner, consequently no foul water will be left in the closet after the lifting of the handle. A constant rush out of the flood chambers will keep the closet and trap perfectly clean.

This Closet takes the lead; it has been sold since February, 1885, in large quantities to the best satisfaction.

THE COMBINATION HOPPER.

Side View, Combination Hopper.

This hopper is constructed to take 2 2-inch pipes, one to the right and one to the left and a 4-inch leader in the center. It has also a movable strainer on top to take the surface water. The lower part of the hopper with side outlet is to be connected with the sewer pipe, either right or left. The upper part is independent from the lower, and is made to swivel, therefore it will suit either position of pipe. This hopper can be used only for surface, for waste, or for leader; either inlet will be stopped up with iron caps if so desired.

PACIFIC PAN CLOSET.

This Closet is superior to all others, every working part and bolt being made of brass, closet and valve extra heavy casting. Particular attention is called to No. 4. This Closet has an oval basin fastened to the cover by brass clamps and bolts. No breaking of putty joints required to renew a pan. The loosening of two large brass nuts will separate cover with basin from the receiver. It has a heavy nickel plated cup and pull and solid brass rod.

These Closets have been in use since February, 1888. Plumbers and wholesale dealers give them the best recommendation.

Square Slop Hopper. Square Waste Hopper. Basket Hopper.

Basket Hoppers are made in one piece with Movable Strainer.

No. 4.

No. 126 FIRST STREET, SAN FRANCISCO, CAL

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW

AUTHOR

VOLUME VII

DATE 1886

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THE

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Advertisements inserted at reasonable rates.

SAN FRANCISCO, JANUARY 5, 1886

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WHOSE who labor to make human actions harmonize, find great difficulty in piecing them together and causing them to assume the same gloss; for in general they contradict each other in so strange a way that it seems impossible that they should have issued from the same workshop.—*Montaigne.*

WHEN we truly and earnestly aspire to be, that in some sense we are; the mere aspiration, by changing the frame of the mind, for the moment realizes itself.—*Mrs. Jameson.*

ONE principal point of good breeding is to suit our behavior to the three degrees of men—our superiors, our equals, and those below us.—*Swift.*

RECTITUDE is the first law of the gentleman: When he says "Yes," it is law; and he dares to say the valiant "No," at the fitting season. The man of rectitude will not be bribed, it is only the low minded that sell themselves.—*Smiles.*

SCIENCE has been well defined to be knowledge reduced to order; that is, knowledge so classified and arranged as to be easily remembered, readily referred to, and advantageously applied.—*C. Davies.*

The Year Begins Well.

SUMMARY OF BUILDING INTELLIGENCE FOR JANUARY, 1886.

62	Frames, total cost	$265,150
4	Brick " "	247,000
13	Alterations and additions	111,100
79	Total cost	$623,250

FOR SAME MONTH IN 1885.

62	Frames, total cost	$236,850
2	Brick, " "	314,000
9	Alterations and additions	39,300
73	Total cost	$590,150
	Less errors in published statement, Jan., 1885	12,435
	Correct totals for January, 1885	$577,715

By the above it will be seen that the building activities for the month ending with present issue leads the same period of 1885 by $45,535.

Its Seventh Volume.

WITH present issue commences the seventh volume of this journal as a monthly, and its eighth, including the quarterly of 1879. As will be noticed, the enlargement, commencing with present number, increases the length of the book two inches, thus adding 576 inches of additional printed matter each month, the number of pages being as heretofore, thirty-two.

Early in its history it was recognized, and by action of San Francisco Chapter confirmed as the official organ of the profession on the Pacific Coast, which enviable recognition it continues to enjoy, and no effort in the future, within possibilities, shall be wanting in rendering it worthy of that distinction.

Situated as we are, far distant from the great principal centers of commerce, manufacturing, building, and other great interests and enterprises of the country, and at the extreme westerly terminus of communication across the American Continent, with not a foot of territory between us and the setting sun, short of the shores beyond the broad waters of the Pacific Ocean, other than the intervening islands; with mountain ranges and vast spreading, barren plains, separating us from advantages at easy command to all our Eastern contemporaries; with entire lack, or high cost of many facilities and things necessary in making up an acceptable journal, its great success is phenomenal.

Sir F. Buxton has well said: "The longer I live, the more I am certain that the great difference between men—between the feeble and the powerful, the great and the insignificant—is *energy*, invincible determination, a purpose once fixed, and *death or victory*. That quality will do anything that can be done in the world, and no talent, no circumstances, no opportunities, will make a two-legged creature a man without it."

It was the spirit of the above quotation that influenced the founding of *this*, the first journal published upon the Pacific Coast, in the interest of architectural and building sciences, and that too under the most forbidding and unauspicious circumstances and conditions, within and without—has sustained it, lo, these seven years, and will be its inspiration in the years to come.

Whatever of abilities or talent may have been lacking in the past, there has been no absence of honest purposes and desires. The great ambition has been to establish permanently, a class publication devoted to the interests represented in this journal, and such has been accomplished to an extent magnificently beyond the expectation of thousands who, in the days of its beginning, doubted the possibility of permanency. But it has been done, and, all things considered, fairly if not handsomely done, and, although "the future is a great land, a man cannot go around it in a day, cannot measure it with a bound, cannot bind its harvests into a single sheaf, and is wider than the vision, and has no end," its hopes inspire and its promises encourage earnest, persevering effort, the fullest developing possible of which the patrons of this journal may expect to realize during the year just entered upon, of which the present issue is the representative number.

Wishing happiness and prosperity to one and all of our kind readers, we ask a return of the consideration, in a renewal and continuation of subscription and advertising patronage, and the generous support that has heretofore come to us from all quarters.

Lien Law Decision as to Proper Time of Filing Lien.

THE Supreme Court of California has rendered an important decision in the case of Perry, Woodworth & Co. *vs.* Brainard, which definitely settles a feature of the lien law which has been a subject of innumerable disputes, some holding that the maturity of claim, by delivery of materials, or the completion of a sub-contract was sufficient without regard to the completion of the building or works; an error also entertained by lawyers not well posted in this department of legal practice, as was manifestly the case with the legal minds who advised and misled the plaintiffs in the above action to file a lien

prior to the proper time, and then further inducing their clients to reject the common-sense and logical decision of the Superior Court Judge, and still further advise an appeal to the court of last resort, only to meet defeat and heavy cost, which in such cases are generally considerably weighty.

The decision of the lower court was that the lien sought to be enforced by the action had been filed *prior to the completion of the building*, and was therefore prematurely filed. Such being the case, judgment was rendered in favor of the defendant and against the lienors. This not being satisfactory, the case was appealed to the Supreme Court, which tribunal confirmed the judgment of the Superior Court.

In support of the decision, Justice Ross—Justices Myrick, McKee, Sharpstein, and Thornton concurring—quotes from the lien law: "Every original contractor within sixty days after completion of his contract, and every person save the original contractor, claiming the benefits of this Chapter, must, within *thirty days after* the completion of any building, improvement, or structure, or after the completion of the alteration or repairs thereof, or the performance of any labor in a mining claim, file for record," etc., and make the "within thirty days after completion," the groundwork of the decision. Other cases of similar import are mentioned, denying the existence of "privity of contract between the owner of the building and the sub-contractor, but the sub-contractor's rights are based simply and solely upon his contract made with the contractor."

The decision further says, by the contract, the owner agrees to pay a certain sum and "this sum is a fund which may be held under the statute for the payment, *so far as it will go*, of all the various sub-contractors, for work and materials furnished by them to the contractor, who is the principal and head of all; and all the parties entitled to payment or contribution out of this fund should be able to reach the fund and get their *proportionate shares*." "One contractor ought not to be able to reach this fund and appropriate it to the extent of his claim before another sub-contractor should reach it, for if the fund *should not be sufficient* to pay the claims of all the sub-contractors, then each should be paid only a *proportionate share thereof*." "The amount of all the claims of all sub-contractors can be ascertained only after all the work and materials have been furnished, and after the building has been completed, so far as the contractor is required to complete the same; for the whole of the work may in fact be done by sub-contractors only, or the last item of work performed or materials furnished may be performed or furnished by a sub-contractor. The building in such a case will be completed by a sub-contractor, and the sub-contractor completing the building or furnishing the last item of work or materials therefor, is entitled to his proportionate share of the general fund, equally with the sub-contractor who furnished the first item of work or materials, or any intermediate portion thereof."

Building Prospects—1886.

AS a matter of course, all statements reaching beyond the present hour, are more or less speculative and hypothetical. But well trained human judgment may safely venture to step a little beyond the limits that hold the future in abeyance, and surmise the probabilities that are to be. The past and present are the measures by which the future may be measured and weighed, and upon which results yet unborn may reasonably be predicated and predicted.

There have been but few years since the organization of this State, in which all the conditions have been more favorable at the commencement of the year, for general prosperity throughout the State.

Timely and abundant rains have gladdened all hearts, in cities and country districts, and the common feeling everywhere prevailing is buoyant and cheerful. Large crops and harvestings are confidently anticipated, and the promise of abundance in all directions seems assured. As a natural sequence, confidence and hope abound in all circles of active life, and the opening of the year 1886 is full of prospective blessings.

Among the prominent good influences affecting and producing this desired state of things, is the turn matters have taken in regard to the Chinese labor question. The monster evil had settled down in our midst, taken strong root, and was fast sending its tendrils into every field of labor, trade, and commerce, until it became bold and defiant, and put forth its shoots in an arrogant strike, demanding the discharge of white men, and asserting the Mongolian right to control at least the cigar manufacturing trade. The serfs and slaves of the six companies felt that they had their fingers firmly fixed upon the throat of labor, with power to crush out all opposition, and master the situation. But the daring, aggressive move made was a grand mistake against the invaders of labor rights, and resulted in the overthrow of a gigantic Mongolian combination. And the outlook to-day for Chinese labor is more gloomy to them than it has been at any period in the history of the State.

The feeling inspired by the results in this connection is of the most pleasing character, and one of the immediate effects is the substitution of several hundred of our own race, some of them with families, as permanent, congenial fellow-citizens, instead of a like number of human beings having no sympathy with the laws, institutions, or welfare of our common country, beyond the mercenary purposes and perversions ever present with that people.

These facts in this connection are material only so far as they bear an influence upon the future of San Francisco, which they do in this wise: that every white person added to population, as against a Chinaman, is a gain in a general sense, as each individual so added becomes a consumer of American product, while the Chinaman spends nothing that can be saved and carried away to his foreign home.

But the more desirable feature of the case is the influences that flow from this improved condition of things; the healthful feeling incited, not only among the working people, but among employers and manufacturers, who feel a relief in the break that has been made, which foreshadows a redemption from the thraldom that has rested upon them, and the prospect of freedom from that cruel competition which so sternly threatened destruction to honest white effort in legitimate pursuits.

Following the movement of the cigar-makers will be the other branches of manufacture, so much demoralized by the invading hordes of Chinamen. The boot and shoe trade, from men and women's fine work, down to common slippers, is largely in the hands of Chinese operatives, and together with many other branches of manufacture, demands the pruning knife of reformation. And as one by one, the white men, girls, and boys reassert their rights to perform such labor, and purify the present polluted streams of operations, a more healthful state of affairs will arise, and, with the Mongolians gone, a bettered condition of things will come to pass, and brighter skies will span the heavens of manufacture and labor upon the Pacific Coast, and lead to numerous building improvements.

All this foreshadows the better future, and points to increased wealth among the working classes, and increased demands for white men's homes. Aside from all this, with the large amount of building done during the past five years, there are comparatively few houses to rent. This fact presents encouragement, and with the low price of all kinds of building materials, and the abundant supply of mechanical labor, it is fair to anticipate a prosperous year in building pursuits.

Without committing the unwarranted error indulged in by some of our daily contemporaries, of inflating prospects by statements of "contemplated work," much of which, as published, not likely of consummation, we may state the assured fact that a goodly number of plans are in preparation in architects' offices, and the outlook for spring is good.

Royal Institute of British Architects.

THE journal of proceedings is regularly received at this office, and contains much of interest, as showing the earnest interest taken by the members in matters pertaining to architectural sciences. The fact cannot be successfully controverted that all such organizations, properly conducted, are a source of special profit to every active member, of general benefit to the profession, and from which the building community derives great advantage.

Stand by the California Journal; Besieged But Not Dismayed.

WITHIN the past sixty days, the Pacific Coast cities and towns, especially San Francisco, have been *fairly flooded* with thousands of sample copies of Eastern class journals. They have been sent from every section of the United States where such journals are published, done up in best possible style, and with every attention to appearances, so as to render them attractive, and catch subscribers.

A host against one. Singly and alone, we are called upon to combat this mighty avalanche of competition—this well-drilled and equipped host of competitors, who come not with modest mien awaiting a welcome, but with bold effrontery and aggressive strides, entering not only workshops, offices and business places of all kinds, but private residences, soliciting patronage and support, and seeking to allure to their subscription net all who can be reached through the devices incorporated in Christmas numbers.

Unparalleled efforts. The number of Eastern journals represented this year, and the mass of sample copies distributed, exceeds, ten times over, those of any former year, from which it is fair to infer that heretofore California has been considered an unpropitious field, or the recognized great success of the CALIFORNIA ARCHITECT AND BUILDING NEWS has influenced a changed sentiment toward this coast among our contemporaries, who, after having failed for so many years to adequately supply the wants of the Pacific States in class literature, are now generously willing to divide with us the crop produced from our planting.

Overdoing. If each succeeding year from the present time shall continue to develop corresponding increase, enlargement and improvement in class journals, that has characterized the past five years, a full decade of years will not have passed ere their patrons will receive monthly issues as large as Webster's Unabridged.

Don't understand. Eastern contemporaries may not be able to comprehend the situation, because their pathways lie through much larger and broader fields, where competition is scattered through scores of adjacent States; but the dumping down in San Francisco of several tons of "sample copies," makes a very decided impression upon the "sample copy" market, and floods it. *But* "he that wrestles with us strengthens our nerves, and sharpens our skill; our opponent is our helper." So we consider it, and not only propose to hold our own in the face of the avalanche of interlopers, but to so far excel them in supplying a journal specially adapted to this coast, that their presence will be *eminently immaterial.*

Support the home journal. Every individual in any manner id entified with, or interested in building matters, whether as architect, owner, contractor, material men or otherwise, should subscribe for this journal.

The Cohesive Strength of Stone.

IN all cases which have come within my notice, the stone possessing the least cohesive strength, or that which will crush with less pressure than any other, is nevertheless strong enough, when once fixed, for almost all practical purposes. No architectural members have to sustain greater pressure, in proportion to their size, than the mullions of large Gothic windows. The tracery in the great north window of Westminster Hall is now executed in Bath stone, which is remarkable for having the least cohesive strength of all the specimens experimented upon and described in the report on the stone for the new House of Parliament. Some of the mullions of that window are less than 9 inches wide and more than 50 feet high, sustaining not only their own weight, but also the whole of the tracery beneath the arch.

The eastern window of Carlisle Cathedral, built of a friable red sandstone, is 50 feet high; the mullions are smaller and the tracery much heavier than in that at Westminster, yet in neither of these examples are there any symptoms of crushing. The cohesive strength of stones is never more severely tested than during their conversion by workmen from the rough state to being fixed in their final situation in a building. During these operations, iron levers, jacks, lewises, and various other implements, are applied, frequently without judgment, and with but little regard to the mechanical violence which a stone will bear; therefore, it may be considered a useful practical rule that, however soft a stone may be, if it resists the liability of damage until out of the mason's hands, there can be little doubt of its possessing sufficient cohesive strength for any kind of architectural work.—*C. H. Smith.*

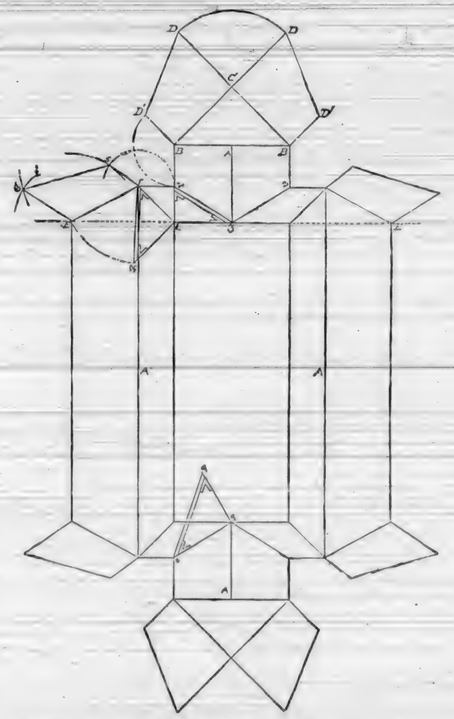
A Graphic Illustration of Roof Framing.

THE following article introduces to the readers of this journal a contributor well and favorably known upon this coast, and in many of the Eastern cities, as one possessing special abilities in the delineation and exemplification of acute and difficult geometrical, mathematical, and mechanical problems, in domes, roof framing, ground arches, and constructural works generally. His monthly contributions will prove instructive and valuable to every architect and mechanic.—ED.]

A GRAPHIC DESCRIPTION AND ILLUSTRATION OF THE METHOD OF STANDING HIP AND VALLEY RAFTERS IN POSITION OVER GROUND PLANS.

Although the science of roof framing and kindred mechanical sciences have for generations received the attention of hundreds of able minds, its simplification is still a matter to be more fully developed. Innumerable methods have been introduced, many of which possess merit, and must be regarded as good. The object of the present and succeeding articles is not to set aside any of the good things done in the same line, but to still further assist in rendering plain, and simplifying, to the clear understanding of the most ordinary mechanical intellect, the matters treated upon.

The method of determining the length and cuts of the members of a structure, by the air of "graphic" diagrams, is practical, accurate, and reliable, and commends itself especially to the student of architectural, engineering, and mechanical sciences. By its simplicity and conclusiveness, and the absence of technical phrases and algebraic symbols, the uneducated and less learned cannot fail, with but little study and application, to understand and comprehend its intricacies.



The usual process of calculation when applied in detail, becomes laborious and wearisome even to the professional mind. Hence the ease and accuracy with which the general result is reached by the graphic method, commends itself even to the less cultured, as superior to any system that requires long calculations and mental effort. The method of graphic diagrams offers better facilities—those denied by the more complicated principles—and enables the reaching of results by a simpler and less difficult process.

Explanation: Draw ground plan, A A A A; draw the elevation, B C B; square out from the back of the common rafter, B C, both sides, C D and B D, as shown; take B 2 in the compass, describe the curve, 2 D, cutting line, B D. Now take the distance A 3, line from face of gable to line of deck on the level; set compass to the distance A 3, and stand in C with it, describing the curve, cutting the lines squared from the back of common rafters, at D D; connect D D^1; now we have the length of valley rafter to stand in position over 2 3.

Now to get the length of timbers and cuts in the deck of the building, continue the deck lines, E E; make a seat line, 1 1; square up to 4; 1 to 4 is the height of elevation; 4 ^{1}1 is the length of deck rafter; take the distance ^{1}1 4, and describe curve, cutting deck line at E; ^{1}1 E is the length of rafter to stand in position over 1 ^{1}1. Now we come to the more difficult part of the cuts to be found. Examine the ground plan, and connect the line 2 I, and square up to 3; make 1 3 equal to the height of the elevation; now take 2 3 in the compass, and stand in E with it; describe the curve, X X, from E; now take another compass, and take the distance ^{1}1 2, and from ^{1}1 describe from 2; cutting curve,

X X, from E, the point now found, 5, is an important one, as it finds the direction and lean of timber when in position.

Now to find the point 6 is all that is needed to get at all of the cuts and lengths of timbers; move to the other end of plan; draw line, 7 8; square up to 9, 7 9 being the height of elevation; connect 8 9, and take it in the compass; come back to 5; stand in 5; describe curve, cutting at 6; now take the distance 1 3 in the compass, and stand at E and draw the curve 2 2; when they cut at 6, connect E 6; then 6 E is the distance that will lay level in position over 1 3 in the ground plan. Repeat that same rule on the four corners, and cut all around the outside edges; hinge and stand up, and you will have a model showing every timber in position. Weaken with the back of a knife or compass, on each hinge line, and stand up on the ground plan line; cut all around the outside of the figure, and there can be no possible mistake. In the next diagram another form of roof will be treated. Models in card-board, illustrating the foregoing, can be seen at the office of this journal.

M. J. Marion.

Mr. Garrett's Porch.

In our November issue we gave a brief account of the unfortunate litigation between Messrs. Robert Garrett, President of the Baltimore and Ohio Railroad, and his neighbor, Henry Janes, the millionaire merchant of that city, by which the latter has sought to prevent Mr. Garrett's erection of a certain porch in front of his palatial residence, now building on Mt. Vernon Place; and we remarked upon the ambiguities and puerile contradictions which are so apt to characterize our building ordinances. The latest intelligence is that Mr. Janes has announced, that in case his suit fails to stop the erection of Mr. Garrett's porch, he will relieve himself of its obnoxious proximity by moving out of his own residence, which he will then donate to the Colored Orphans' Association of Baltimore for use as an asylum for their dusky *proteges*. Here's a "how-d'ye-do," unquestionably, of a very pronounced type, and one that affects not only Messrs. Janes and Garrett, but all the other residents of this especially aristocratic section of Baltimore. It suggests remark upon the great desirability of so amending our legislation against nuisances as to protect public-spirited citizens, who have erected costly homes, from wanton spoliation by the recklessness or malice of a neighboring owner. It is plainly a crying outrage if all the other residents in Mt. Vernon Square must have the value of their investments in that section, amounting to many hundreds of thousands of dollars, imperiled by a quarrel between neighbors Janes and Garrett, in which the neighbors have no part and which they are helpless to control. It is a well-understood principle that no man has a right to use his property so as unnecessarily to injure that of his neighbor, and in all cities there are laws which in this view prohibit the erection of slaughter houses, rendering establishments, and other unhealthful nuisances.

But the law fails to recognize the fact that there are many erections which cannot be strictly defined as injurious to health, which yet destroy the value of adjacent property just as completely. Such is the case above cited. If Mr. Janes establishes his colored orphan asylum next to Mr. Garrett, the result cannot fail to be a disastrous depreciation in all the property on Mt. Vernon Square. In St. Louis, recently, a livery stable proprietor drove a profitable trade for several years by purchasing lots in a choice residence section and advertising his purpose to build a stable there. In a number of cases he was bought off only by the payment of a large bonus from the adjacent property owners, whereupon Mr. Russell would immediately select another lot and repeat the transaction. For a while this fellow established a sort of reign of terror among property holders in the finer parts of the city and earned the title of "livery stable fiend," and he recently had an imitator in Chicago. Of course we cannot here outline the necessary enactment to protect the community from such outrages, but it will doubtless provide for a considerable enlargement of the definition of the term nuisance so as to cover injury to property as well as to health.—*Inland Architect and Builder.*

Toughening Timber.—An exchange says: It is claimed that by a new process white-wood can be made so tough as to require a cold chisel to split it. The result is obtained by steaming the timber and submitting it to end pressure, technically "upsetting" it, thus compressing the cells and fibers into one compact mass. It is the opinion of those who have experimented with the process that wood can be compressed 75 per cent, and that some timber which is now considered unfit for use in such work as carriage building, could be made valuable by this means.

Real Estate Transactions, 1885.

Nothing more clearly indicates the degree of prosperity prevailing in any city or locality than the number of real estate transactions, and the prices paid for building lots and land, under a well-balanced market uninfluenced by either depressed or excited conditions.

The real estate circular furnishes the following items of facts: Sales in 1884, 3,874; value, $13,374,207. In 1885, 3,650; value, $13,250,000. City hall lots have increased in value, twenty per cent within twelve months, the present prices being from $850 to $1,000 per front foot, for a depth of one hundred feet. The cable road street-cars have been instrumental in retarding increase in values in the older districts of the city, and increasing those in the outlying sections, where, a few years ago, and until the extension of the cable roads, they remained at nominal prices. The difference in time required to reach localities ten blocks beyond the old limits is a matter of small consequence, requiring less than one minute per block.

Two years ago a lengthy article appeared in this journal, advising the immediate improvement of all lots on Market Street, inside of Ninth Street, with substantial first-class buildings. If this had been done, there would now be clustered around the city hall center, the natural centering point in this city for large retail stores for generations, if not for all time, one hundred or more prosperous business firms. All this is destined to be at a not remote period. The pioneers in this direction are the new Odd Fellows' Hall, with its fine stores, and the Murphy Building now occupied by one of the most enterprising and progressive dry goods firms in the city. The three-quarter million dollars spent in the erection of these two edifices simply reflect the character of future improvements in that neighborhood; in fact, those who own property having a market value of $1.000 to $1,500 per front foot, cannot afford to do less than erect very fine, *first-class* structures.

Mr. Magee, of the *Circular*, most excellent authority in all matters connected with real estate, says: "All of Market Street, as far out as Valencia, would now be fine retail store property, if the owners would only build suitable stores on their land. The city hall lots should have been built on five years ago." So it was strongly urged and argued by us two years ago, and we appreciate endorsement from Mr. Magee, even at the present time.

It is but a matter of time when this will be done, and business pushed *solid* out to Ninth Street. "Out to Valencia Street," about four blocks further westerly, might properly be improved with frame structures to last a few years and then give way to more permanent buildings.

Business for architects. The foregoing foreshadows future prospects for architects. Even the older portions of the city present a large field of work to be done in the removal of old and worn-out buildings, and the substitution of new edifices of greater or less cost; in addition to which will be all the growth in residence improvements which follows business enlargement and progression, and the erection of large brick buildings on principal streets, will necessarily stimulate improvements on all cross and adjacent streets, and in neighborhoods where some must locate to obtain lower rent rates.

Fall of a Brick Wall—One Man Killed.

While the December number of this journal was being worked off, a rather sad affair happened on Seventh Street, in the city of Oakland, resulting in the death of a human being, who was standing idly upon what proved to be a fatal spot.

A brick building, twenty-two feet frontage, and three stories in height, was in course of construction, and so far advanced as to be up to the level of the third floor joist. A cast-iron girder was placed at the proper point to provide for the store front openings. About the girder, and resting thereon, were the two side wings or sections of brick-work, the center portion of the front wall being omitted to provide for building a bay-window through each story, twelve feet wide.

Without any sign or warning, the iron girder dropped to the ground floor, and with it fell in a mass all brick work resting on the casting, and a portion of the westerly wall, the easterly wall being a party wall. The man killed was standing directly under the girder and front wall, at the time of the occurrence, and was badly crushed.

There are two reasonable accountings for the let-down: one, that the girder was defective, and yielded under the superincumbent weight placed upon it; the other, that the

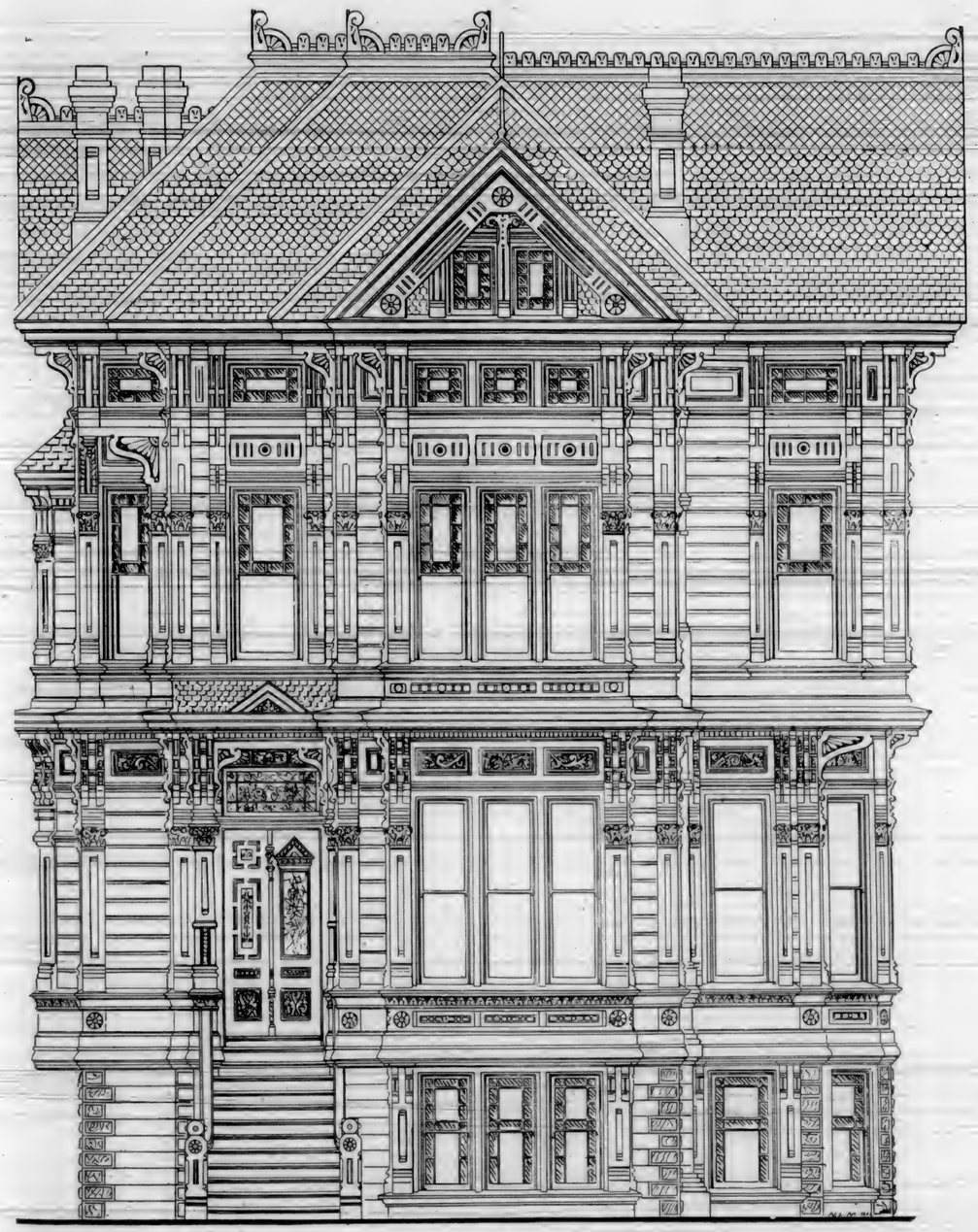


PLATE I.—FRONT ELEVATION.

brick seating on which the westerly end of the girder rested, gave way, owing to the soaked condition of the bricks from the heavy rains, and the soft mortar in the joints, the cement in which had not set sufficiently to produce any hardening effect. The wall that fell, facing the heavy rains then so copious and continuous, very naturally kept the new brick work very tender, and added greatly to the general weight; and it is altogether likely that the secret of the tumble was in these suggestions.

The girder was defective, in that there was a flaw in the bottom plate, which, although 1¼x14 inch, was rendered of no value by the flaw. But the center rib, 1x24 inch, with a top or crown flange, 1x5 inches, was more than sufficient to carry safely all the load imposed, with no more than five feet of front wall at the sides of the building.

S. F. Chapter of Architects.

OWING to the regular meeting night falling on New Year's, no session was held for the month of January. It is to be hoped that the members of the profession will re-double their interest in the Chapter work the current year. There are possible results which should call forth the united energies and efforts of every architect upon the Pacific Coast.

Commingling and friendly intercourse is necessary to a healthful life, and every hour spent in developing that which may be attained by fraternal association is as seed sown in good ground.

Self-preservation, if no higher purpose, should induce every reputable practicing architect to unite in right effort to preserve the integrity of the profession, which of late years has suffered so much from the innovations of the scale bugs, teredos and other ruinous and destructive professional insects.

P. S. A called meeting of the Chapter was held on the 8th, but being out of the regular order of time, but few were present. After reading of minutes, ordering payment of bills, and receiving the application of Mr. Seadler, of Sacramento, to become a fellow, the Chapter adjourned to meet the first Friday in February.

Nature and Art in Arboriculture.

IT does not need the arguments of Hazlitt to convince anybody who will give five minutes' consideration to the subject," remarks the *Daily News* of Monday last, "that we have no source but nature from which to borrow ideas of real beauty, and nature never yet gave us a single example of a flower-bed laid out with geometrical figures, or a flowery bank cut up by zigzags and straight lines. Nature abhors a straight line almost as much as she does a vacuum, and all her operations in woods and fields are a perpetual protest against formal regularity. No doubt it is our right and our privilege to prune and pinch, to tie and train 'the growth of the luxuriant year,' and if we insist upon it, nature will fall into line, but only under protest. We may plant and prune as we please, but if we want really beautiful effects, we must, after all, be guided by the principles on which nature works in all her loveliest achievements. 'The art itself is nature,' as Shakespeare profoundly expresses it, and we must conform to nature's laws, or all the beauty we shall attain to will be of a bad and bastard type, however much we may admire it for a time. It will be but of the type which Pope so neatly satirizes when he speaks of the garden where grove nods at grove, each alley has a brother, and half the platform just reflects the other. This is the journeyman artificer's style of garden planning—the cunning of the compass and the straight edge. We have had enough of this sort of thing and are tiring of it. What we want is a new style, in which the freedom and irregularity of nature are combined with the neatness and order that should characterize the garden plot—the order which is Heaven's first law, not the order which delights in clipping shrubs into exact spheres, which always will have tulips planted in beautiful straight lines, and exactly so many inches apart, and which year after year has, for the sake, we suppose, of a neat and orderly appearance, nipped and clipped all our embankment planes into sprouting scaffold poles, utterly destroying the natural characteristics of these fine free-growing trees. The 'mixed border,' as at present managed, is not altogether satisfactory, though it is pretty safe to predict that it will be in the direction of the mixed border combined, perhaps, with the massing of color shown in the formal beds that future developments of flower-gardening will be effected. We have in some of our parks and public gardens many an odd corner in which nature and art are combined with exquisite effect; but as yet these odd corners are the minor features of our public gardening, and stars and garters, stripes, circles, squares, gridirons, bootjacks, and hot-cross buns, are still predominant, and very often they are worked out in colors that strike the cultivated eye as the squeak of an ungreased wheel assails the ear. Now is the time to brood over these things, and plan something better for the ensuing year."—*Timber.*

Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

(Continued.)

THE purpose of the expansion apparatus is to take the increased volume of water, increased by the expansion capacity of heat. For the size of the apparatus, see the same for water heating, which is located at the highest point of the arrangement. Since the water is heated to 200° *celsius*, the highest point must be closed. By reason of this condition the expansion apparatus is a pipe closed and filled with air (expansion pipe), or is a suction and compressing valve (expansion valve) surrounded and closed in by the expansion reservoir.

The expansion pipes have a width of 60 to 70 mms. ($2\frac{5}{16}$" to $2\frac{11}{16}$"), and its length is from $\frac{1}{40}$ to $\frac{1}{50}$ of the whole string of pipes. The expansion pressure valve must be so loaded by weight (inclosed in the reservoir) that at a pressure of about 15° atmospheric the same opens, and the expanded water by heat flows into the reservoir; the expansion suction valve at the cooling of thearrangement permits the water (contracted in the pipe) to run in and fill up the system from the reservoir.

III. MEAN OR MIDDLE PRESSURE WATER HEATING.

This system can be deducted from the warm (low pressure) water as well as from the hot (high pressure) heating.

From a warm water (low pressure) heating arrangement a middle pressure heating can be made, when, as in the high pressure heating, the highest point of the pipe is closed by a pressure valve, furnishing the possibility of heating the water above 100°.

From a high pressure heating apparatus we obtain a mean pressure heating arrangement, so soon as the first is calculated, that the required heat in the room is so arranged that the water in the fire-coil is not heated above 120°.

The advantage which the warm water middle pressure heating apparatus has over the warm water low pressure arrangement is in the somewhat smaller first cost. The disadvantages are, in the higher pressure all the parts have to sustain by the insertion of the pressure valve.

The advantage which the middle pressure heating apparatus has over the high pressure, consists in the smaller tension in the fire-coil, and in the lower temperature of the water, giving a milder and less strong radiating heat, a larger reserve of hot water. The disadvantages are only in the first higher cost of the arrangement.

Apparently, in general, for warm water heating the form of low pressure is the most recommendable, and for hot water heating that of mean pressure.

STEAM HEATING.

The same depends on the extraction of the so-called latent heat of the steam. In a similar manner, as with water heating, steam is conducted to heaters placed in rooms to be warmed. In the heater the condensation of the steam to water sets free the latent heat to be given over to the walls of the heater, and by the same distributed to the surrounding air.

The important parts of the steam heating arrangement are: (*a*) the steam boiler; (*b*) the conducting pipes for the steam and for the condensed water; (*c*) the condensation apparatus.

The steam boiler for steam heating is constructed on the same general principles as a steam boiler for industrial purposes. Important for boilers for heating purposes is the volume of water and the tension of the steam. The first (water) is selected in large quantities, since the use of steam is very irregular. The use of steam is large at the starting of the heating, before a constance of heat distribution in the system is arrived at. Tubular boilers are, in general, less to be recommended than smoke-flue boilers Under certain conditions it may become necessary to use tubular boilers, which may be the case when the same is placed under rooms which are occupied, a municipal regulation forbidding the putting up of common constructed boilers in such places, which may be avoided by using the tubular boiler (so-called inexplosives). They all agree in this respect, that, through the small quantity of water and steam in them, a considerable large damage by explosion is excluded.

The use of such boilers calls for a very careful attendance, and a larger measure of water-feeding capacity, since by the small volume of water in the tubular boiler and the large

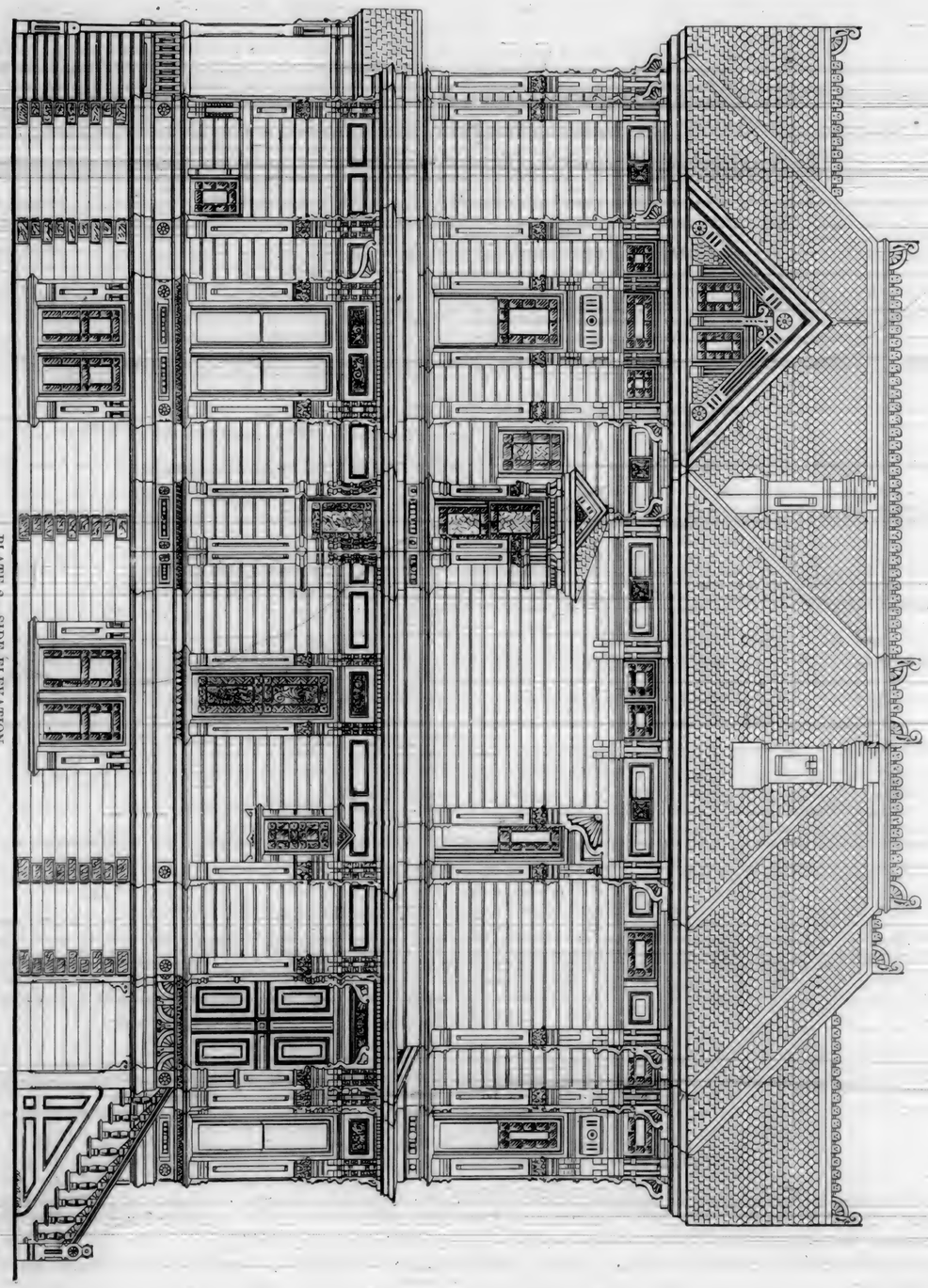


PLATE 2.—SIDE ELEVATION.

heating surface of the same, it may happen, at the beginning of the firing, to be impossible for the feed-pumps to supply—by the fast creation and use of the steam—the loss of water in the boiler as fast as required.

The feed apparatus for tubular boilers, according to those circumstances, have from two to three times the capacity of those for boilers with a large quantity of water.

For the pressure in the boiler, if possible 3 to 4 atmospheres can be taken; for pipes and heater, not above 2° atmospheres. The reduction of the pressure is made by a so-called reduction valve. For feed water for the boiler the condensed water of the heaters should be used as much as possible.

In the disposition of the steam conducting pipes special care must be taken to avoid a cooling off of the pipes as much as possible, and the condensation water to run off with the direction of the steam. The best manner is to lead the steam in a main pipe direct to the highest point of the arrangement, and from there conduct the same by the shortest route to the heater. Is this method of conducting impossible by local reasons? And when there should be a necessity to place the main conduit of the steam lower than the heater, then the conducting pipes in all cases must run ascending, the incline to be in the direction of the motion of the steam; also, care must be taken that the condensing water has an outlet at its lowest point. All branching off for steam must be made at the upper circumference of the main steam conducting pipe.

When more heaters are to be placed in the different stories above each other, the common steam-conducting pipe can be used for the condensing water conduit from the heater, by connecting the admitting and discharge pipes from each heater with the steam pipe, and insert in the connecting pipe of the discharge a "back-lift valve," which must be so balanced that, when the surface of the condensation water in the heater reaches a certain height, this column of water will open the same, giving an opportunity for the water to escape. The steam pipe, arranged for the common use of steam and water, is not recommendable; it is difficult to remove the air accumulated from the heater, the action of the back-lift valve making a disturbing noise all along the pipe. It is therefore better to arrange separate steam and condensing water pipes, and insert in each of them, with the boiler, a valve.

The section of the steam pipe should be taken at least as large as the section of a safety valve required for a boiler, to furnish the needed amount of steam. For long conducting pipes this manner of calculating—taking from praxis—is insufficient, and it is then to be recommended, to make correct calculation, considering all the losses of pressure and resistances.

Pipes not used for the emitting of heat should be protected by surrounding them with non-conducting material, and care must be taken that by the interpolation of "compensators" and movable bearings, the expansion of pipes does not produce untightness and leaking.

The condensation water—draw off—pipes, which must also be run with care, must descend continually to the end. The diameter of the same—steam having a 1696 larger volume than the formed condensation water—can be much smaller than the steam pipes; but it also must be considered that the condensation water conduits, at the beginning of the heating and before the state of continuance is established, the condensation being more intense, must carry off quick all the condensed water.

The heater applied for steam heating is similar in form as the warm water heater described before. In the construction of the same, precaution must be used to prevent any untightness and leakage by the sudden start and letting on of steam. All tightening of joints, etc., must be made with metallic or mineral stuff; all organic matters are, therefore, to be excluded.

For the calculation of the heater the previous formulas for warm water heating can be used; as an average figure may be taken, that a wrought-iron steam heater can condense in the state of continuance—the temperature of the surrounding air being 20° 1.5 kg. (3.31 lbs.) of steam per square meter (10.76 sq. ft.) in an hour's time, emitting about 800 units of heat, provided that the surface being washed by the steam is like the heat-emitting surface. With other heaters a corresponding lower (heat-emitting) figure must be brought in account. Special precaution must be taken, and means provided for the removal of the atmospheric air from conducting pipes and heaters; also when the system is placed out of work, and air to be admitted. For this purpose air valves are to be put in, to be opened and closed by hand, or self-acting arrangements being attached to do this hand work effectively in the proper time.

The three systems of central heating first discussed may be combined to the forms (1) Water air heating; (2) Steam air heating; (3) Steam water heating.

The two first combined heating arrangements are to be constructed by uniting the calculations for air and water respectively steam heating. With both kinds all the warming apparatus can be placed in one heating chamber, and from the same conduct the warm air, as with air heating, to the rooms to be heated. Or, right square under the rooms to be heated is placed a heating chamber, and led to the same from a common fire-place, the warm water representing the steam. By the last method we have the advantage, that the warm air can ascend perpendicular, and that for large horizontal distances a single fire-place is sufficient.

The steam water heating arrangement can either be executed as a warm water heater, by which the water is not heated direct by the fire, but by steam; or an oven for a steam heating apparatus is constructed, containing and holding a larger quantity of water which is heated by steam, thus supplying a large reserve for heating after the steam has been shut off. It may be recommended to name an apparatus after the first arrangement "Steam warm water heating.' This system is, on account of its expensiveness, only at such single instances to be recommended where the different warm water heating arrangements shall be served from a single fire, and the horizontal extension does not permit a concentration of the heating boilers. The second combined system, properly called "steam water heating," has of late been frequently applied for rooms where a quick warming with a longer "after heating," as with warm water, is desired.

The heaters for steam water heating, which do exist in many various constructions, can be classified in the direct and indirect. The direct water heaters contain a space filled partly with water, the other part with steam, heating gradually the water. By the indirect steam water heaters, the space for the water and for the steam is separated, and the transmission of the heat from the steam to the water is done through a common surrounding wall.

Saw and Hatchet Carpenters.

THEY are getting to be pretty plentiful of late. They always appear in great numbers when times are dull and regular skilled mechanics are slack of work. But it may be necessary to explain to some of our readers what a "saw and hatchet" carpenter is. He is a man who has no regular trade or business, but has learned to use a hand-saw and hatchet so as to be able to put up a tolerably passable rough board fence. He then considers himself a jack-at-all-trades, and is around in season and out of season making bids on all sorts of jobs, from a chicken-coop up. There is nothing he will not undertake to do, and if he can arrange to get the material on credit he don't allow any such slight consideration as the price of the job to prevent his getting it. His hatchet is not the genuine G. Washington brand, and generally serves a better purpose in beguiling the unsuspecting citizen into giving him a job, or the accommodating lumber dealer into furnishing him the material, than in the actual execution of the work.

To an inquirer not personally acquainted with the skill of carpenters of the city, business in the building line would appear phenomenally dull. It is the saw and hatchet gentlemen who make nearly all the complaint. It is true that many worthy and competent carpenters are slack of work, and the price of their labor fluctuates with the demand for their services. It is impossible to fix uniform prices on small rough jobs or house repairs, where the saw and hatchet man abounds. They are nuisances to the retail lumber dealer and the dealer in building material. They ruin the business of the honest, skilled mechanic, who has served his time and mastered the trade, and produce unsightly "puckers" around the mouth of the retail lumber dealer, who so very often has to "whistle for his pay." An instance very recently was brought to our notice where an unsophisticated property-owner—a widow—asked for bids on some cheap building. The bills for the material aggregated $570, and the bids ran all the way from $800 down to $500. Of course the saw and hatchet man got the job, and made whatever he got for it off the lumberman and the employés, and it is natural to suppose that the widow got a poor class of cheap work. We have reason to believe that the class of workmen we allude to is not confined to any particular locality, but prevails over the entire country to the great detriment of the skilled mechanic and annoyance of the lumber dealer, besides being an imposition on the citizen. A reform in this matter is much needed. If a citizen has work that is needed at all it is worth doing well, and ought to be worth a fair living price.—*Southern Lumberman.*

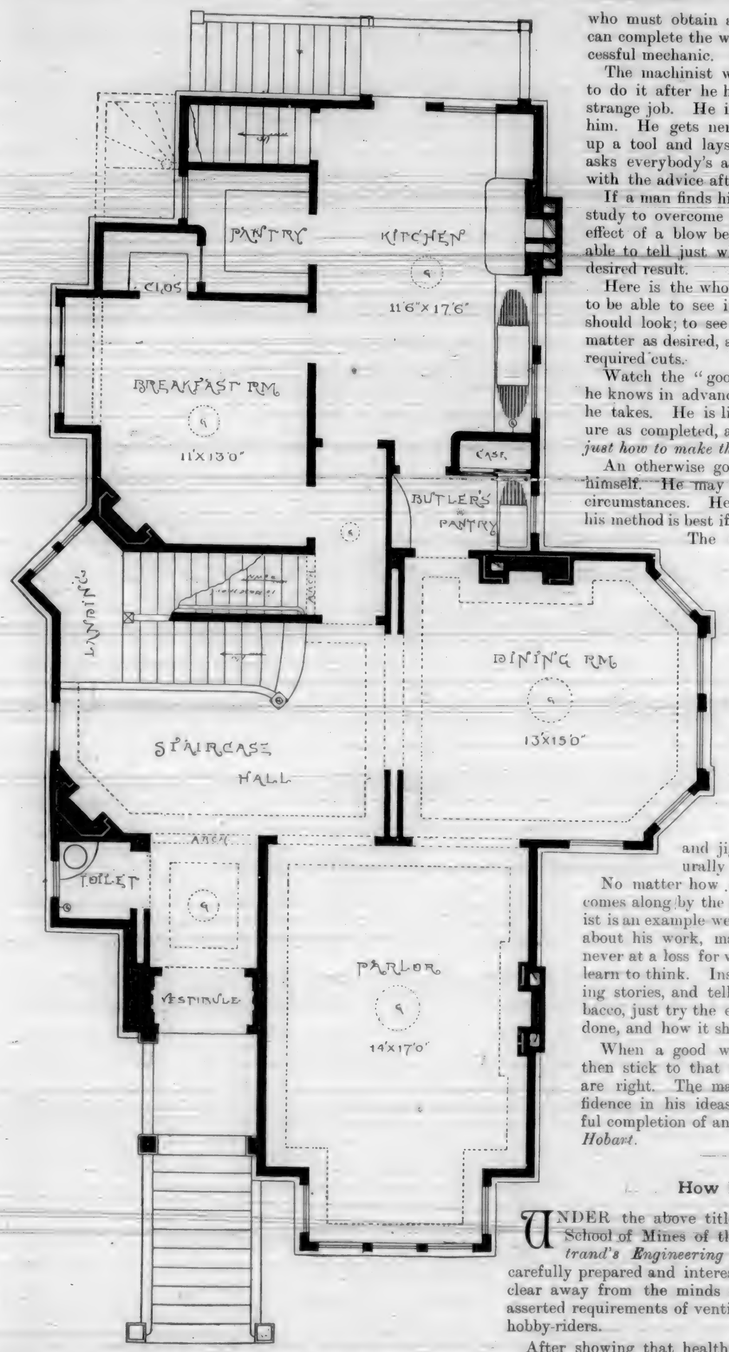


PLATE 3.—MAIN FLOOR PLAN.

Confidence.

CONFIDENCE in one's self goes far toward success. The machinist who is able to go about an ugly job feeling sure that he can devise ways and means for successfully completing the work, is the man who is valuable to his employer. A man who knows how to think, is apt to be such a man, while the man who must depend upon some job he has done before, or who must obtain an idea from his neighbor before he can complete the work, is not the man to make a successful mechanic.

The machinist who don't know what to do, or how to do it after he has got a hint, is a sorry chap on a strange job. He is in misery, and so are all around him. He gets nervous, jumps here and there, picks up a tool and lays it down again without using it; he asks everybody's advice, and don't know what to do with the advice after he gets it.

If a man finds himself in this condition he ought to study to overcome it. Let him learn to think out the effect of a blow before he strikes, and he will soon be able to tell just what kind of a blow will produce a desired result.

Here is the whole secret of being a good mechanic: to be able to see in advance just how a finished job should look; to see what cuts are needed to shape the matter as desired, and to know just how to make the required cuts.

Watch the "good machinist" and you will see that he knows in advance exactly the effect of every action he takes. He is like a good artist. He sees the picture as completed, and knows what marks to make and *just how to make them.*

An otherwise good man may have no confidence in himself. He may be too easily led by surrounding circumstances. He may underestimate himself, when his method is best if he only had the nerve to stick to it.

The other extreme is often met with. The "self-sufficient" workman is the man.

What he doesn't know about a job, never ought to be known. This man is another who doesn't know how to think. He sees or hears of a certain way of doing, and advocates that method without thinking why and wherefore, or if the method he advocates will have the desired effect.

The thinking machinist is neither of the above men. He is between them, and never reaches either extreme. He thinks when he is not aware of it, and methods and jigs suggest themselves to him naturally

No matter how ugly the job, a way to do it always comes along by the time it is wanted. Such a machinist is an example well worth following. He goes quietly about his work, makes no fuss or confusion, and is never at a loss for ways and means. Let us, therefore, learn to think. Instead of running our brains on telling stories, and telling which is the best brand of tobacco, just try the effect of thinking out how work is done, and how it should be done.

When a good way of doing a job is thought of, then stick to that way, and have confidence that you are right. The man who thinks is apt to have confidence in his ideas, and can go ahead to the successful completion of any job that comes to him—*James F. Hobart.*

How Much Ventilation?

UNDER the above title Mr. James L. Greenleaf, of the School of Mines of this city, has published in *Van Nostrand's Engineering Magazine* for November, 1885, a carefully prepared and interesting paper, designed, as he says, to clear away from the minds of some people a feeling that the asserted requirements of ventilation are made by enthusiasts and hobby-riders.

After showing that healthy men are constantly vitiating the air in which they live, and that the dangerous and unpleasant impurity thus added to the air is mainly the organic matter given off from the lungs and skin rather than the carbonic acid, he goes on to discuss the practical question, "How much air is necessary per individual to keep the impurities down to a safe limit?" His conclusion is that if we are content with a somewhat tainted air, from 1,500 to 1,800 cubic feet of fresh air per head per hour will answer, but that if we wish the air in our rooms to be entirely free from traces of mustiness, and to be perfectly fresh

to the senses, the supply must be from 3,000 to 4,000 cubic feet per head per hour. The paper is one that should be read by all architects and by all who are interested in the subject of ventilation.

Finishing.

WOOD finishing is the process of applying to the surface after it has been prepared, by filling and smoothing, or otherwise, a thin coating of varnish or other substance, to render it durable, enhance its beauty, or change its appearance. There are numerous methods of finishing, and a variety of materials are used, the varieties of varnish being the principal. The distinctive qualities of these varieties are treated under their proper headings.

In their natural state all woods are more or less porous, consisting of bundles of hard fibers, with interstices filled with a softer substance. These constitute the grain, and as the hard or soft parts predominate, the wood is said to be hard, fine, or close-grained, or soft and open-grained. To fill these softer parts, or pores, and give to the whole an even, uniform surface, hard, and capable of a brilliant polish, is the object of the finishers' art. This hard, firm surface was formerly gained by the successive application of several coats of varnish, at least three preliminary coats being required to fill the pores; the inequalities were then reduced by fine sand or glass-paper, and several additional coats laid on, the last, after becoming thoroughly hard, being polished if desired. In this operation, however, a great quantity of varnish is absorbed by the open pores of the wood, and it is consequently so expensive that it is now seldom used. Recourse is therefore had to various plans to render the wood non-absorbent before applying varnishes, and certain compounds called fillers are largely used for this purpose.

Richness of effect may be gained in decorative wood-work by using woods of different tone, such as amaranth and amboya, or inlaying and veneering. The Hungarian ash and French walnut afford excellent veneers, especially the burls or gnarls. A few useful notes on the subject are given by a recent American authority. In varnishing, the varnishes used can be toned down to match the wood, or be made to darken it, by the addition of coloring matters. The patented preparations, known as "wood fillers," are prepared in different colors for the purpose of preparing the surface of wood previous to the varnishing. They fill up the pores of the wood, rendering the surface hard and smooth. For polishing mahogany, walnut, etc., the following is recommended: Dissolve beeswax by heat in spirits of turpentine until the mixture becomes viscid; then apply, by a clean cloth, and rub thoroughly with a flannel or cloth. A common mode of polishing mahogany is by rubbing it first with linseed oil, and then by a cloth dipped in very fine brick-dust; a good gloss may also be produced by rubbing with linseed oil, and then holding trimmings or shavings of the same material against the work in the lathe. Glass-paper, followed by rubbing, also gives a good luster.

Logwood, lime, brown soft-soap, dyed oil, sulphate of iron, nitrate of silver exposed to the sun's rays, carbonate of soda, bichromate and permanganate of potash, and other alkaline preparations, are used for darkening the wood; the last three are specially recommended. The solution is applied by dissolving one ounce of the alkali in two gills of boiling water, diluted to the required tone. The surface is saturated with a sponge or flannel, and immediately dried with soft rags. The carbonate is used for dark woods. Oil tinged with rose madder may be applied to hard woods like birch, and a red oil is prepared from soaked alkanet root in linseed oil. The grain of yellow pine can be brought out by two or three coats of japan, much diluted with turpentine, and afterwards oiled and rubbed. To give mahogany the appearance of age, lime water used before oiling is a good plan. In staining wood, the best and most transparent effect is obtained by repeated light coats of the same. For oak stain a strong solution of oxalic acid is employed; for mahogany, dilute nitrous acid. A primary coat or a coat of wood fillers is advantageous. For mahogany stains, the following are given: two ounces of dragon's blood dissolved in one quart of rectified spirits of wine, well shaken, or raw sienna in beer, with burnt sienna to give the required tone; for darker stains, boil half a pound of madder and two ounces of logwood chips in one gallon of water, and brush the decoction while hot over the wood; when dry, paint with a solution of two ounces of potash in one quart of water. A solution of permangate of potash forms a rapid and excellent brown stain.

True and False.

THE statement of building intelligence for 1885, as appearing in December number of this journal, and in the *S. F. Chronicle Alta, California*, and other journals that used our table of facts, were correct. The statement in an evening journal, making the sum of expenditures $7,858,110 was not true, except in this,—to take the total sum of reports appearing in this journal, and upon general principles adding thereto ten per cent, which gives the exact figures of $7,858,110. But this was not honest journalism, as the figures given by our contemporary were presented to the readers of that journal as *original facts*, while in truth the reports of this journal were taken as a basis, and the ten per cent added, without one word of credit to us for the pilfering done from our columns.

The attempt of the journal referred to, to furnish weekly building reports in *imitation* of our monthly, are lamentable failures. To make up large lists and delusive showings, our files of two months or more back are sometimes resurrected and paraded to swell up the list; cases are reported which have no existence in fact; small jobs of a hundred or two dollars are magnified into respectable operations, and extravagant exaggerations utilized to swell appearances and bolster up appearances beyond fair and legitimate facts.

For several years, and until a few months since, this was the only journal that attempted to furnish reports of building activities, which were depended upon monthly by the city press generally, most of whom gave due credit, including the evening journal in question, until it fell upon the idea of a *new stroke of enterprise in imitating and patterning after us*, and fixing up weekly reports.

One thing is certain, the grand flourish of $7,858,110 for the year was not derived from any original data in possession of the *Evening Bulletin*. It was borrowed capital without acknowledgment.

Yellow Pine.

IN places where wooden floorings or trimmings undergo severe or constant use the valuable Southern yellow pine has become almost indispensable. In ship work its durability has been long acknowledged, but it is only within a few years that its usefulness for house purposes has been appreciated. In former times it was tedious stuff to work by hand, but its tediousness is now overcome by improved tools and steam dressing, and the increased call for hard pine wainscotings and ceilings that have attended the active building operations of late has been readily supplied. No wooden flooring that is used bare is superior to narrow strips of Georgia yellow pine. A well-laid surface of the wood improves with age and friction; its resinous quality hardens for it a sort of natural varnish. Art, too, has recently touched this sturdy old timber. Thin door panels are sawed out of planks containing thick deposits of resin. When these panels are placed in doors that the sun can strike, the effect produced is a rich, red wine color, showing inside the room. There is a process of artificially seasoning pine. There is also one of steaming it, so that the resin will show uniformity in the board, but the naturally veined surfaces are handsome enough when properly smoothed.

The supply of this timber seems exhaustless. A large fleet of schooners and other craft is devoted exclusively to its transportation from Virginia, North and South Carolinas, Georgia and Florida. The latter State is renowned for the long boards that are cut from its trees. Georgia owns the standard of quality, but any untapped stock rates high. Trees from which the pitch has been partly removed in the manufacture of turpentine turn out lighter wood, but such cuttings have not the wearing merit of sawings from virgin trees. Since the war, owing to better railroad facilities, large tracts of new forests have been opened to commerce. Europe, especially England, is a large buyer of this wood. Its excellence in railroad work on account of toughness and comparative lightness, is becoming recognized abroad as well as in this country.

When yellow pine vessels become dismasted or capsized at sea, they form most dangerous wrecks, and at night are an especial terror to navigators. Their buoyant cargoes prevent them from sinking, and they become, so to speak, a floating reef. Several abandoned schooners have been known to drift about the ocean from six to eighteen months. Not long ago one appeared on the coast of France. Captains report these drifts to the Government. The Government in turn spreads the information, but the danger is only partly provided against, as currents or driving winds can vary the situation indefinitely.

A LITTLE girl of two and a half years burnt her finger for the first time the other day. She placed her finger on a hot potato, and suddenly drew it back, exclaiming, "O der's a pin in it!"

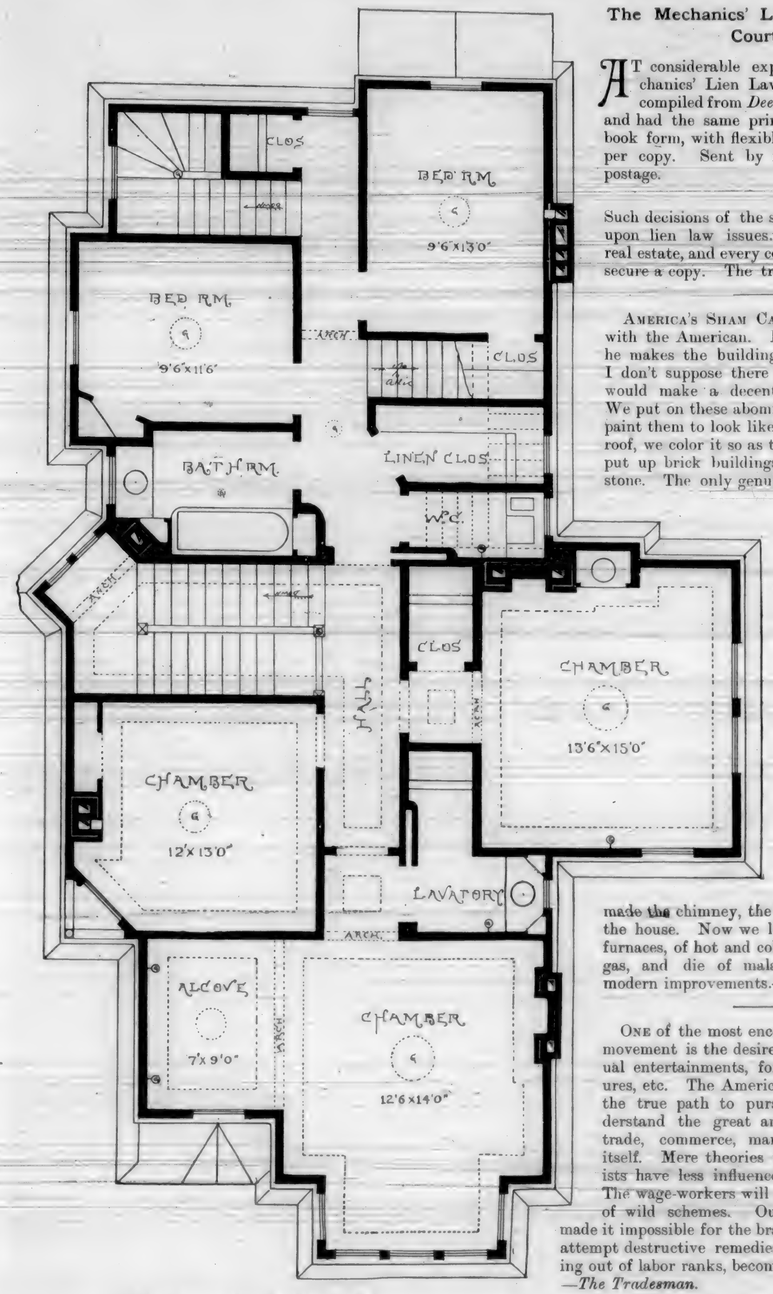


PLATE 4.—SECOND FLOOR PLAN.

THE London plumbers and gas-fitters are adopting a system of registration, for protection against incompetent workmen, who assume to do work on their own account and, by botching it, injure the reputation of the trade.

IT is stated that the Pennsylvania Railroad Company has under consideration the Frost gasoline light as a means by which to furnish illumination for its passenger coaches. The Frost light has an illuminating power equal to seventy-five candles, or nearly as much as a 6' Lungren burner.

The Mechanics' Lien Law, and Supreme Court Decision.

AT considerable expense, we have had the Mechanics' Lien Law of the State of California compiled from *Deering Code of Civil Procedure*, and had the same printed and bound in convenient book form, with flexible cloth covers; price, 50 cents per copy. Sent by mail to any address, free of postage.

ALSO,

Such decisions of the supreme court as bear directly upon lien law issues. Every architect, owner of real estate, and every contractor and workman should secure a copy. The trade supplied.

AMERICA'S SHAM CASTLES.—There is the trouble with the American. If he has $100,000 to spend, he makes the building look like a $200,000 house. I don't suppose there is a building in Detroit that would make a decent ruin. We build for show. We put on these abominable sheet-iron cornices, and paint them to look like stone. If we have a shingle roof, we color it so as to look like slate or tiles. We put up brick buildings and thinly face them with stone. The only genuine thing, as well as the only original thing about American architecture is the pioneer log-house of the backwoods. There the logs were logs with the bark on, and the roof was of clapboards split from the oak blocks, the chimney was built of clay, and stood boldly and generously out as if it were not a thing to be hidden, but the warmest and most inviting thing about a house. The floor was uncovered boards, and the blackened beams overhead stood boldly out in the grateful light of a hickory fire blazing on the huge, ample hearth. The log-house was a product of the immediate land around it. The clay dug from the well made the chimney, the logs cut in the clearing made the house. Now we live—or try to—in an age of furnaces, of hot and cold water, of shoddy and sewer gas, and die of malaria and diphtheria and all modern improvements.—*Detroit Free Press.*

ONE of the most encouraging features in the labor movement is the desire for arbitration, for intellectual entertainments, for laborers' night schools, lectures, etc. The American workingmen recognize that the true path to pursue is to know more, to understand the great and vital questions underlying trade, commerce, manufacturing and government itself. Mere theories take very little hold. Socialists have less influence than ever with the masses. The wage-workers will not be led into the adoption of wild schemes. Our public school system has made it impossible for the brain and brawn of a country to attempt destructive remedies. Men and women are arising out of labor ranks, becoming fair writers and lecturers. —*The Tradesman.*

SOME investigations made relative to the heat of combustion of stone coal have led to the conclusion by Meunier and others that during the formation of coal a certain quantity of heat must have been absorbed, since the theoretical heat of combustion was always less than that actually observed. From want of knowledge, however, as to the real constitution of coal, it is regarded as impossible to determine the nature of this absorbtion. It is also a fact that, from want of knowledge as to the composition of coal, the heat of combustion cannot be calculated. It is well known that two coals of precisely the same chemical composition may and do afford very different degrees of heat in combustion.

Child and State.

PUBLISHED by, and in the interest of, the Boys' and Girls' Aid Society of this city, contains the elevation design for the contemplated building, and many interesting facts and statements. Through the generosity of Senator Fair, the society was enabled to secure an eligible lot, and the timely gift of Mr. Crocker, of $31,000, supplies the greater part of the fund necessary to active operations.

It is hoped that before the advent of 1887 the society will not only have a "roof over its head," but a completed and fairly, if not thoroughly equipped home for hundreds, who, but for the doings of the society, might remain upon the currents of life leading to unhappiness and a bad ending.

The $4,000 from the late Mr. Sharon will still further help on the work; and pre-supposing some things not yet made known, it is fair to set down, in the list of *likely things*, considerable sums from others moved by innate nobility of soul, or by the example of the few millionaires and wealthy men who have, by their grand gifts to deeds of charity and public benefaction, reared monuments of fame, which will perish when, and not until, good deeds shall no longer be considered meritorious.

HOUSING OF THE BERLIN POPULACE.

A flood of light is let in on the singular spread of socialism in the German capital by statistics showing that in Berlin no less than 94,000 families, comprising nearly 400,000 individuals, have to live, sleep, and often work in suites of a single room. In 3,000 of these rooms there is neither stove nor fire-place. One-fourth of their tenants are poor lodgers. Twenty-five thousand families live in cellars under sanitary conditions that are characterized as absolutely shocking. Such meager accommodations as our despised New York tenements afford, with their two or three rooms to each family, are at a premium, and would be accounted a great boon by thousands. Only of the poorest and the best classes of dwellings—those renting at 10,000 reichmark a year or over—is there abundance, for the Berlin builder is a speculator, not a philanthropist. The poor have not even the chance of going to church of a Sunday, to meditate on better things to come, were they so minded; for all the Protestant churches and chapels in Berlin have together hardly seats for 50,000, while the servant girls alone number over 60,000.—*New York Tribune.*

THE BRONZE BACCHUS FROM THE TIBER.

—The chalky incrustation which covered the bronze statue lately found in the bed of the Tiber has been removed, and the admirable modeling of the statue has thus been fully revealed. It is one of the most beautiful works of the kind, and with the exception of some damage to the legs and left hand, is in a capital state of preservation. The statue, about six feet, is doubtless that of the youthful Bacchus. In the left hand is the usual staff, while the right probably held a drinking-cup, in the attitude so often seen in pictures of the god at Pompeii. The soft and feminine form, the ivy wreath on the head, the luxuriously waving hair, which is modeled in the manner of the hair of Apollo, are other proofs that the statue was meant for Bacchus. It seems to belong to the first century of the Roman Empire, when Rome was illuminated by the last rays of Greek art. The lines and surfaces of the statue in all the uninjured parts are as fresh and pure as if the work had just left the master's hand. The figure was only half buried, head downward in the bed of the river, so that the action of the water has roughened the lower parts. The eyes inserted are of ivory and give extraordinary vitality to the expression.—*London Daily News.*

SOME Pittsburg men who looked for a leak in a natural gas pipe, with a lantern, found the leak, and then went to the hospital.

Our Illustrations.

ATTENTION is directed to the illustrations given in this issue. Plates 1 and 2 represent the front and side elevation of a very comfortable private residence, suitable for either city or country. Plates 3 and 4 show the two floor plans, which sufficiently explain themselves. As will be seen, the arrangements are complete for a comfortable home, with possibilities for additional rooms and enlargement. Plates 5 and 6 are the two elevations for a convenient, moderate cost, suburban cottage. There are but few journals, even during the holiday season, which have produced illustrations of greater practical value than those in present number.

(From an address by Professor Thurston, of Cornell University.)

AT Bloomfield, New Jersey, the authorities are introducing most successfully a course of instruction of both boys and girls in the use of tools into their public school system. A manual training school affords a means of rewarding merit at Girard College, where the best students and most promising youth are admitted into the wood-working and machine shops under instruction, and there, under the careful and skillful tuition of expert mechanics, I have seen boys of twelve doing work at the vise with hammer and chisel and file that many an old workman might be glad to rival. The city of Chicago has a manual training school; at St. Louis, Washington University is doing excellent work in well-appointed shops. Boston, in her great Institute of Technology, besides the classes of aspirant mechanical engineers, has organized other classes of boys ambitious to learn the use of tools, and is cultivating the special Yankee talent in a systematic and fruitful manner; and all over the country these primary technical schools are springing up.

"A year or more ago, I received a letter from a capable and successful superintendent of schools in a Western city, saying that he had seen plainly the approach of the new era in primary education of the people for the work and life of the people, and desired to be ready for its advent in his own city, and asked to be instructed that he might intelligently direct the changes of method and system inevitably to come in his own organization.

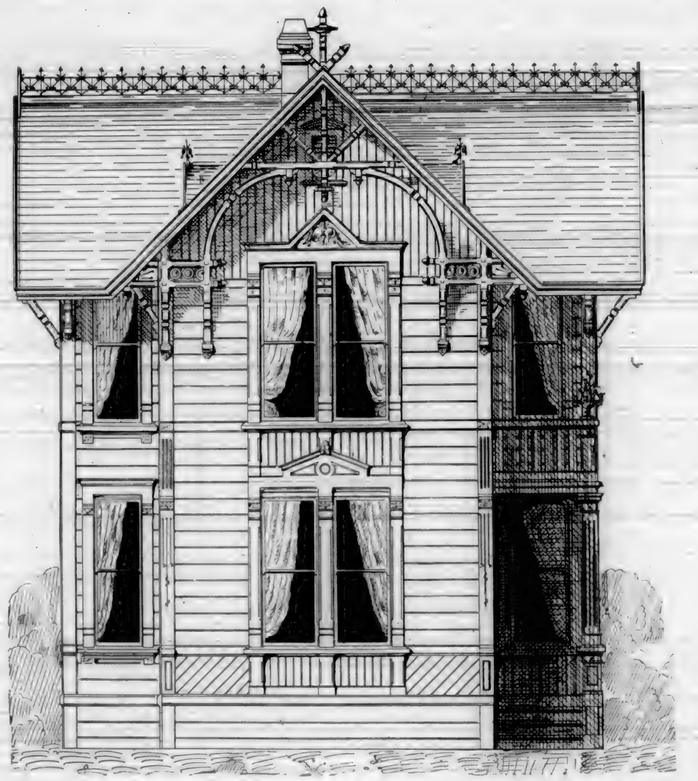


PLATE 5.

He came East and worked in the shop and studied under instructors all summer, to obtain the requisite knowledge and skill. Fortunately, he proved a natural mechanic, and an extraordinarily capable man, and he is now ready to lead in the movement when the looked-for time shall arrive.

"Trade schools now form a part of every school of engineering, and schools of engineering are springing up all over the land."

ANCIENT SANITARY LAWS.—That sanitary regulations are not wholly the invention of the present generation, is evidenced by the historical fact, which perhaps is not generally known to most people, that more than two centuries ago the father of Shakespeare was fined by the authorities of Stratford-on-Avon for depositing garbage in the street in front of his cottage.

Building Report from Woodland, Yolo County.

MESSRS. GILBERT & SON kindly furnish us the following facts relative to building improvements in that part of the State:—

"The private residences taken alone are decidedly better, and show a marked improvement over the majority of those of former years, and confidence is felt that the buildings and improvements for 1885 will compare favorably with any town of same size in Northern California in number of buildings and aggregate value.

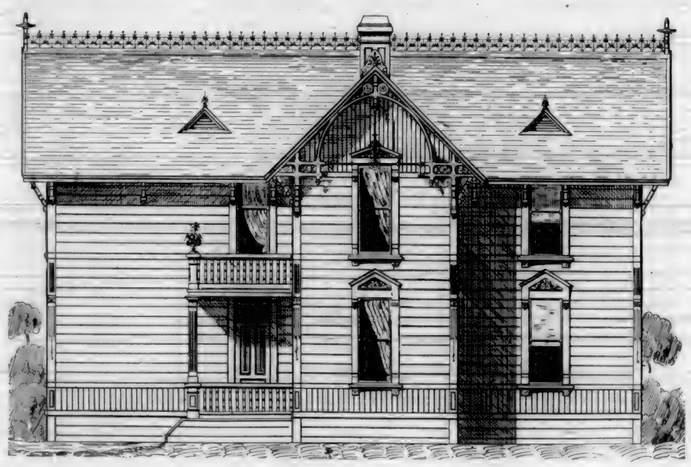


PLATE 6.

"The two months showing smallest returns were January and May—25 buildings at $34,700, and the two largest months, September and November—61 buildings at $157,375."

1885.			WOODLAND CITY.						YOLO COUNTY.				
Month.	No. per month.	FRAME BUILDINGS.		BRICK BUILDINGS.		ADDITIONS & IMPROVEM'S.		FRAME BUILD NGS.		BRICK BUILDINGS.		TOTAL VALUE PER MONTH.
		No.	Value.	No	Value.	No	Value.	No.	Value.	No.	Value.	
Jan	12	2	$ 2,200	..	$.....	4	$3,800	4	$ 5,400	2	$ 2,000	$13,400
Feb	12	3	3,100	1	1,400	3	6,300	2	3,000	3	13,000	26,800
M'h	22	8	13,500	5	37,000	4	4,700	5	7,100	..	.....	62,300
Apl	13	9	33,400	..	.....	..	.....	4	7,700	..	.....	41,100
M'y	13	4	5,300	1	5,500	2	2,000	6	8,500	..	.....	21,300
Jne	19	13	39,100	..	.....	4	5,000	1	2,100	1	12,000	58,200
J'ly	15	10	25,100	..	.....	..	.....	3	3,600	2	10,000	38,700
Agt	12	6	33,100	..	.....	2	2,000	4	5,000	..	.....	40,100
Sep	31	20	44,800	..	.....	..	.....	9	22,275	2	15,000	82,075
Oct	27	12	21,200	2	2,500	..	.....	12	24,400	1	2,500	50,600
N'v	30	10	14,000	7	19,100	1	1,000	10	33,700	2	7,500	75,300
Dec	18	8	11,700	2	16,000	1	1,500	7	12,000	..	.....	41,200
Total	224	105	$246,500	18	$81,500	21	$26,300	67	$134,775	13	$62,000	$551,075

Total number of buildings in Woodland, 144; value, $354,300. Total number of buildings in Yolo County, 80; value, $196,775. Total number of buildings for City and County, 224. Final aggregate, $551,075.

While the preceding statement shows 224 buildings and improvements for Woodland and Yolo County, at a value of $551,075, it would be safe to add to this amount 10 per cent for engagements costing less than $1,000 (minor improvements, barns, carriage-houses, out-buildings, etc., not reported), $55,107.50, making the final value invested in 1885, $606,182.50. This presents a gain over 1884 of 91 buildings and $251,628.50 capital.

For comparison, we give a recapitulation of the annual statistics for six years, from 1880 to 1885 inclusive, presenting the number of buildings, aggregate value, average value, and largest single engagement each year:—

YEAR.	NO. OF BUILDINGS.	AGGREGATE VALUE.	AVERAGE VALUE.	LARGEST NGAGEMENT.
1880	54	$126,720	$2,346	$28,000
1881	59	140,640	2,382	34,580
1882	71	169,950	2,393	15,500
1883	84	204,519	2,434	52,000
1884	133	359,544	2,702	28,000
1885	224	606,182	2,461	25,000
Total for 6 years	625	$1,607,605	$2,448	$52,000

Woodland, twenty-five years ago, contained within present city limits one dwelling. At the present time it is one of the prettiest inland cities, with rows of brick stores and structures, churches, school houses, hotels, theater, and other evidences of modern life and prosperity, besides many fine residences and the earlier constructed buildings, and the less costly cottages of more recent construction. The future outlook is good.

TO TEMPER TOOLS.—The quality of the steel should be uniform throughout; indeed, it is always better to have them tempered rather too hard than soft, for use will reduce the temper. If at any time it is necessary to perform the operation yourself, the best method is to melt a sufficient quantity of lead to immerse the cutting part of the tool in. Having previously brightened its surface, plunge it into the melted lead for a few minutes, till it gets sufficiently hot to melt a candle, with which rub its surface; then plunge it in again, and keep it there till the steel assumes a straw color, but be careful not to let it turn blue. When that is the case, take it out, rub it again with the tallow, and let it cool. If it should be too soft, wipe the grease off, repeat the process without the tallow; and, when it is sufficiently hot, plunge it into cold spring water, or water and vinegar mixed. By a proper attention to these directions, and a little practice, every workman will have it in his power to give a proper temper to the tools he may use. If a saw is too hard, it may be tempered by the same means; but as it would be not only expensive, but in many cases impossible to do it at home, a plumber's shop is mostly at hand, where the process may be repeated when they are melting a pot of lead. But here observe that the temper necessary is different to other cutting tools; you must wait till the steel just begins to turn blue, which is a temper that will give it more elasticity, and, at the same time, sufficient hardness.

Glass Flooring.

THE substitution of glass flooring for boards continues to increase in Paris, this being especially the case in those business structures in which the cellars are used as offices. At the head-quarters of the Crédit Lyonnais, the whole of the ground is paved with large squares of roughened glass, imbedded in a strong iron frame, and in the cellars beneath there is sufficient light, even on dull days, to enable clerks to work without gas. The large central hall at the offices of the Comptoir d'Escompte has also been provided with this kind of flooring, and it is said that, although its prime cost is considerably greater than that of boards, glass is, in the long run, far cheaper, owing to its almost unlimited durability.

IF you go about telling people you have an inheritance worth a million worlds, and yet get out of temper about the loss of a nickel, they will not believe you.

MASONS' AND BUILDERS' EXCHANGE OF SAN FRANCISCO.

ROOM 11, 314 MONTGOMERY ST.

BELOW will be found a list of the members composing this Exchange. Boxes are provided for each member, so that architects, owners, or others desiring the services of any particular member, or those having boxes who are not members, and yet whose business is directly connected with that of the Exchange, can readily secure the attendance of the party sought, by leaving a note in the respective boxes.

BRADY, O. E., President, 822 Valencia Street ..... Box 22
BUTLER, THOMAS, 593 Ash Avenue, Treasurer ..... " 28
BOWERS, T. N., Oakland, 804 Castro Street ..... " 49
BENDER, JACOB, 1009 Clay Street ..... " 73
BECK, J., 10 Eleventh Street ..... " 12
CAIN, R. K., 213 Page Street ..... " 61
CALVERT, JOHN, 812 Hyde Street ..... "
COX, JOHN, 608 Jones Street ..... " 16
CLAWSON, L. E., 129 Oak Street ..... " 2
DUNBAR, WM., 27 Eleventh Street ..... " 14
DOWNS, JOHN, 269 Minna Street ..... " 18
DUNPHY, ED., 1006 Bryant Street ..... " 34
FERRIS, CRAWFORD, 9 Bourbon Street ..... " 20
GLYNN, JAS., 432 Clementina St. ..... " 57
HANAVAN, JOHN H., 1711 Jessie Street ..... " 15
HOCK, T., 422 Golden Gate Avenue ..... " 60
HAFF, J., 516 Kearny St. ..... " 6
HIGGINS, ROBERT, 1724 Jessie Street ..... " 13
HUGHES, JOHN, 310 Seventeenth Street ..... " 21
JORDAN, D., 911 Webster Street ..... " 59
KNEEDLER, G. W., 1013 Vallejo Street ..... " 51
KINCAID, J. E., 2219 Pacific Avenue ..... " 45
LIEBERT, J. G., 330 Oak Street ..... " 32
LOANE, F. M., 1512 Golden Gate Avenue ..... " 38
MITCHELL, ROBERT, 807 Turk Street ..... " 26
MCCARTHY, JOHN, 2503 Folsom Street ..... " 7
MCGOWAN, MATT., 614 Linden Avenue ..... " 17
MCDERMOTT, JOHN, 124 Tenth Street ..... " 33
MCGUIRE, JOHN, 212 Grove Street ..... " 74
MULCAHY, JAS., 612 Larkin Street ..... " 33
NAGLE, GEO. D., 427 Montgomery Street ..... " 24
O'CONNOR, J. J., 648 Minna Street ..... " 19
O'BRIEN, D. J., 323 Dupont Street ..... " 31
O'SULLIVAN, P., 452 Ninth Street ..... " 35
RICHARDSON, GEO., 513 Ellis Street ..... " 66
RICHARDSON, M. B., 624 Shotwell Street ..... " 10
RILEY, J. F., 105 Perry Street, Secretary ..... " 38
ROBERTS, S. N., 54 Third Street ..... " 55
STEVENS, W. E., cor. Larkin and Market Streets ..... " 46
SCHOENMAKER, C., 323½ Chestnut Street ..... " 62
WAGNER, J., Potrero Avenue bet. 22d and 23d Streets ..... " 3
WORRELL, C. R., 888 Seventeenth Street ..... " 5
WATERSON, G. T., 638 Market Street ..... " 46
YOUNG, LEWIS ..... " 49

BOX RENTERS—IRON MEN.

RALSTON, H. & J., Iron-men and Housesmiths ..... Box 78
LEWELLYN, R., Columbia Foundry ..... " 77
PENDERGAST, THOS., Howard Iron Works ..... " 72
WESTERN IRON WORKS ..... " 69

STONE.

SCHALICKE, F. W., Patent Stone ..... Box 75
SOMERVELL, W. S., Granolithic Paving Co ..... " 55
PETERSON, H. M., Sand and Gravel ..... " 63
RICHARDSON, M. B., Concrete ..... " 1

BRICK.

ROBERTS & DAVIS, Sacramento Brick ..... Box 36
REMILLARD BRICK CO. ..... " 23
PATENT BRICK CO. ..... " 29
PETERSON, T. W. & CO., San Jose, Brick Co ..... " 68

PATENT CHIMNEYS.

STEVENS, W. E. ..... Box 46
BROWELL, J. ..... " 71
CLAWSON, L. E. ..... " 2

MISCELLANEOUS.

DAVIS & COWELL, Lime and Cement ..... Box 43
WHITTIER, JAS. E., Asphaltum ..... " 41
MCCLURE, P. L., Grader and Waterman ..... " 30
SIBLEY, L. B., Teamster ..... " 40
WARREN, CHAS., Grader ..... " 37
BUCKMAN, A. E., Grader ..... " 42
KELSO, JOHN, Grader ..... " 76
ENGLISH W. D. & CO., Graders ..... " 70
BUTTERWORTH, T. C., Glazier ..... " 48
HARNEY & SON, Street Contractors ..... " 54

AN EXTRAORDINARY OFFER.

WE want Live, Energetic, and Capable Agents in every county in the United States and Canada, to sell a patent article of great merit, ON ITS MERITS,—an article having a large sale, paying over 100 per cent profit, having no competition, and on which the agent is protected in the exclusive sale by a deed given for each and every county he may secure from us. With all these advantages to our agents, and the fact that it is an article that can be sold to every house owner, it might not be necessary to make an "EXTRAORDINARY OFFER" to secure good agents at once, but we have concluded to make it to show, not only our confidence in the merits of our invention, but in its salability by any agent that will handle it with energy. Our agents now at work are making from $150 to $600 a month clear, and this fact makes it safe for us to make our offer to all who are out of employment. Any agent that will give our business a thirty days' trial, and fail to clear at least $100 in this time, ABOVE ALL EXPENSES, can return all goods unsold to us, and we will refund the money paid for them. Any agent or general agent who would like ten or more counties and work them through sub-agents for ninety days, and fail to clear at least $750, ABOVE ALL EXPENSES, can return all unsold and get their money back. No other employer of agents ever dared to make such offers, nor would we if we did not know that we have agents now making more than double the amount we guaranteed; and but two sales a day would give a profit of over $125 a month, and that one of our agents took eighteen orders in one day. Our large descriptive circulars explain our offer fully, and these we wish to send to every one out of employment who will send us three one-cent stamps for postage. Send at once and secure the agency in time for the boom, and go to work on the terms named in our extraordinary offer. We would like to have the address of all the agents, sewing machine solicitors, and carpenters in the country, and ask any reader of this paper who reads this offer, to send us at once the name and address of all such they know. Address at once, or you will lose the best chance ever offered to those out of employment to make money.

RENNER MANUFACTURING CO.,
116 Smithfield St., Pittsburg, Pa.

Market Reports.

Hereafter we will give, as far as practicable, the Market Report (monthly) in the following manner:—

LUMBER—Nothing doing in cargo lots, and prices for same are $1 50 to $2 below the following rates, which are for retail lots:

Rough Pine, merchantable	per M feet,	$14 00
" " No. 2	" "	11 00
" Redwood, No. 1	" "	17 00
" " No. 2	" "	13 00
1x6 T. & G. No. 1 Pine	" "	26 00
" " " No. 2 Pine	" "	21 00
1x4 and 1¼x4x6 T. & G. No. 1 Pine	" "	28 00
" " " No. 2 Pine	" "	23 00
Stepping, Pine	" "	37 50
Surface Redwood, No. 1	" "	30 00
1x4 T. & G. Redwood, 12 ft. and over	" "	28 00
1x6 " " " " "	" "	25 00
1x4 and 6 T. & G. Redwood, No. 2	" "	20 00
Siding, ½ inch	" "	22 50
Fancy Pickets	per M,	25 00
Rough "	"	15 00
Rough Square	"	14 00
Shingles	"	2 00
Laths	"	3 25
Battens, ½x3	per lineal foot,	¾ ct.

NAILS—Rates were recently reduced to:—

20 keg lots	$3 15
100 keg lots	3 20
Smaller quantities	3 25

(The reduction in above rates is caused by Eastern factories unloading again on this market.)

PAINTS AND OILS:—

Pioneer White Lead (local factory)	6c @ 6½
Cal. Linseed Oil, raw (single bbl lots)	45
" " " boiled " " "	47½
Turpentine, per gallon	50

(There is a lively competition between Eastern Linseed and Home Manufactures.)

BRICK—California Building Description, soft, per 1,000 ..... $6 50
" " " red, " " 7 50
" " " hard, " " 8 50

Building Intelligence.

Where owners' names are left blank, it is so done in most instances by special request.

B

Brush, bet. Montgomery and Sansome. Five-story and basement brick.
O.—Charles Crocker.
A.—Edward R. Swain.
Total of contracts awarded for brick, carpenter, iron, granite, stone, steel, beam and vault work amounts to $180,000. Painting, plumbing, plastering, and other portions of the work not yet let.

Broderick, cor. Water. Three two-story frames.
O.—G. B. Beale.
A.—Townsend & Wyneken
C.—H. B. Hosmer.
$13,500.

Broadway, nr. Leavenworth. Alteration.
O.—H. Mahoney.
C.—M. Murray.
$1,500.

Brannan Place, Green, bet. Dupont and Stockton. Three-story frame.
O.—Joe Vacarro.
Day work.
$5,000.

Bay, NE cor. Dupont. Factory.
O.—J. Mayer.
A.—H. D. Mitchell.
C.—W. E. Wellbye.
$10,000.

C

California, bet. Larkin and Polk. Three-story pressed brick.
O.—H. Campbell.
C.—W. B. Bradbury.
$25,000.

Clay, cor Franklin. Two-story frame.
O.—P. N. Lilienthal.
A.—Pissis & Moore.
$30,000.

Church, corner Dorland. Two-story frame.
O.—C. B. Williams.
A.—C. Geddes.
C.—J. Wilson.
$5,500.

Chattanooga, bet. Twenty-second and Twenty-third. Four one-story frames.
O.—J. Bolger.
A.—Huerne & Everett.
C.—Doyle & Son.
$6,100.

California, above Montgomery. Additions and alterations.
O.—Spring Valley Water Works Co. J. Schussler, sup't of building.
Day work.
$5,000.

Clipper, corner Church. Two-story frame.
O.—H. Bernhardt.
A.—J. Hoffman.
C.—A. Klahn.
$8,500.

D

Devisadero, nr. Page. One-story frame.
O.—Miss E. O. Darrow.
C.—H. Darrow.
$800.

Dupont, bet. California and Sacramento. Additions and alterations.
O.—Joe Goetz.
A.—T. J. Welch.
C.—J. L. Binet.
$5,000.

Dolores, bet. Duncan and Twenty-eighth. Frame church.
O.—German Methodist Episcopal Church.
C.—A. Klahn.
$1,000.

Dorland, nr. Seventeenth. Two one-story frames.
O. C. Coulson.
C.—G. M. Salisbury.
$2,000.

E

Eddy, nr Mason. Additions and alterations.
O.—C. H. Twombly.
C.—C. M. McDonald.
$5,000.

Eddy, nr. Devisadero. Two-story frame.
O. and B.—F. Buckley.
A.—Huerne & Everett.
$2,000.

Ellis, nr. Gough. Two-story frame.
O.—M. Foley.
A.—T. J. Welch.
C.—Emgerson & Gore.
$5,500.

F

Fair Oaks, bet. Twenty-fourth and Twenty-fifth. Three-story frame.
O. and B.—J. L. Binet.
Day work.
$5,000.

Franklin, cor Golden Gate ave. Three-story frame.
O.—J. A. Borgerot.
A.—W. A. Bayless.
C.—J. A. Leonard.
$10,000.

Fulton, bet. Franklin and Gough. Three-story brick, United States Brewery.
O.—F. Keonenberg & Co.
A.—H. Geilfuss.
C.—Bulk work, T. Haaf; carpenter, W. Pluns.
$80,000.

G

Geary, nr. Octavia. Two-story frame.
O.—A. M. Goldsmith.
A.—J. Marquis.
C.—H. Tibbets.
$7,500.

Green, bet. Kearny and Dupont. Additions.
O.—J. Picceroni.
C.—J. Foster.
$1,200.

Gough, cor. Post. Two-story frame.
O.—Mrs. J. V. Elvert.
A.—Kennitzer & Raun.
C.—F. Klatt.
$6,500.

H

Hyde, bet. Greenwich and Lombard. Two-story frame.
O.—Mrs. Libby.
A.—Townsend & Wyneken.
Day work.
$800.

Haight, near Broderick. Two-story frame.
O.—M. Riley.
A.—J. J. Clark.
C.—J. W. Smith.
$3,000.

Hampshire, nr. Twenty-first. One and one-half story frame.
O.—W. Coons.
A.—J. B. Williams.
$1,800.

Howard, bet. Thirteenth and Fourteenth. One and one-half story frame.
O.—J. O'Connor.
A.—M. J. Welch.
C.—M. D. Creman.
$1,900.

Howard, bet. Thirteenth and Fourteenth. Two-story frame.
O.—Maria Quinn.
A.—S. and J. C. Newsom.
C.—D. B. Spangler.
$2,250.

Haight, nr. Broderick. Two-story frame.
O.—M. Riley.
A.—J. J. Clark.
C.—J. W. Smith.
$7,500.

Hyde, bet. Sacramento and Clay. Two-story frame.
O.—M. Wunch.
A.—Kennitzer & Raun.
C.—H. Meyne.
$7,500.

J

Jackson, nr. Van Ness. Two-story frame.
O.—Eliza R. Dingerfeld.
A.—Percy & Hamilton.
C.—B. F. Ellis.
$2,000.

Jackson, cor. Van Ness. Two-story frame.
O.—S. Tanen.
A.—Percy & Hamilton.
C.—B. F. Ellis.
$6,000.

Jackson, nr. Van Ness. Two-story frame.
O.—Mrs. E. Daningfield.
A.—Percy & Hamilton.
C.—B. F. Ellis.
$2,000.

L

Lombard, nr. Jones. Two-story frame.
O. and B.—J. P. Hunter.
Day work.
$3,500.

M

Mission, bet. Fifth and Sixth. Repairs.
O.—J. W. Brown.
Day work.
$2,500.

McAllister, cor. Franklin. One-story frame.
O.—B. Williams.
A.—H. Geilfuss.
C.—J. Fuchs.
$1,700.

Market, nr. Fifth, south side. Additions and alterations.
O.—J. McCauley.
Day work.
$3,000.

Mason, cor. Guerrero. Two-story frame.
O.—Sarah B. Farackerley
A.—M. J. Welch.
C.—C. Buckley.
$2,800.

Montgomery Avenue, junction Stockton. Two-story frame.
O.—
C.—A. Alexander.
$2,500.

N

Nineteenth, cor. Lapidge. Two-story frame.
O.—J. Thompson.
A.—T. J. Welch.
C.—J. Blake.
$6,500.

O

O'Farrell, cor. Gough. Two-story frame.
O.—I. Selig.
A.—J. Marquis.
C.—R. Parker.
$14,000.

Oak, bet. Scott and Devisadero. Two-story frame.
O.—P. Duffy.
Day work.
$2,500.

Oak, bet. Devisadero and Broderick. Two-story frame.
O.—N. Schlessinger.
A.—M. Donnall & Son.
C.—J. A. Leonard.
$4,800.

Oak, bet. Scott and Devisadero. Additions.
O.—and B.—J. Weigner.
Day work.
$1,500.

P

Pine, nr. Broderick. Two-story frame.
O. and B.—W. F. Lewis.
Day work.
$3,700.

Polk, bet. Fulton and Grove. Two-story frame.
O.—B. Bowman.
A.—T. J. Welch.
C.—J. Blake.
$4,500.

Polk, nr O'Farrell. Three story frame.
O.—H. Slessinger.
A.—P. R. Schmidt.
C.—H. Keenan.
$8,000.

Pine, nr. Stockton. Additions.
O.—Miss Prine.
C.—S. M. Hills.
$2,000.

Pine, nr. Larkin. Additions.
O.—Chicago Brewery Co.
Day work.
$30,000.

Pine, nr. Devisadero. Two-story frame.
O.—Mrs. Myrick.
A.—T. J. Welch.
C.—A. McElroy.
$8,500.

S

Seventeenth, bet. Noe and Sanchez. One-story frame.
O. and B.—L. Sauer.
A.—Salfield & John.
$2,000.

Sacramento, cor. Baldwin. Two three-story frames.
O. and B.—Thomas Holt.
Day work.
$8,000.

Sutter, bet. Scott and Devisadero. Two-story frame.
O. and B.—James Geary.
Day work.
$3,000.

Seventeenth, nr. Collins wood. One-story frame.
O.—W. Thomas.
Day work.
$1,500.

Seventeenth, nr. Noe. One-story frame.
O. and B.—A. Sauer.
Day work.
$1,700.

Seventeenth, nr. Noe. One-story frame.
O.—
C.—F. Bohnenberg.
$2,000.

Stevenson, near Nineteenth. Additions.
O.—H. Walsh.
C.—J. W. Powers.
$1,800

Second, near Frederick. One-story frame.
O.—N. Treadwell.
C.—B. Treadwell.
$1,200.

Shotwell, cor. Twenty-sixth. One-story frame.
O. and B.—C. O. Smith.
Day work.
$2,000.

Shotwell, near Twenty-sixth. One-story frame.
O.—A. Wadwell.
C.—McCormack & Elam.
$1,500.

T

Twenty-first, cor. Guerrero. Alterations.
O.—E. G. Denningston.
A.—Percy & Hamilton.
C.—B. F. Ellis.
$2,000.

Twenty-sixth, cor. Treat ave. One-story frame.
O.—W. Halpin.
Day work.
$1,000.

Twenty-third, nr. Bartlett. Additions.
O.—H. Fitzgerald.
Day work.
$800.

Twentieth, bet. Valencia and Guerrero. One and one-half-story frame.
O.—F. Mettmann.
C.—F. C. Kleebauer.
$2,000.

V

Van Ness Avenue, cor. O'Farrell. Work on the Roman Catholic Cathedral has been commenced. Contract to the amount of $12,000 has been let to O. E. Brady for grading and fence work.

Vincent, cor. Green. Two-story frame.
O.—C. Munsanti.
Day work.
$2,300.

Valencia, cor. Twenty-first. Three-story frame.
O.—J. T. Poheim.
A.—B. E. Henriksen.
C.—Moore Bros.
$21,500.

Valencia, bet. Nineteenth and Twentieth. Two-story frame
O.—G. Perini.
A.—B. E. Henriksen.
C.—Moore Bros.
$1,000.

Valencia, bet. Sixteenth and Seventeenth. Three-story frame.
O.—C. F. Hornung.
C.—F. O. Bergman.
$10,000.

ALAMEDA.

Park, cor. Buena Vista—2-story fr; O. H. Johnson; a, W. Benson; c, Burns & Wright; $4,000.
Central Ave., nr Park—2-story fr; a and b, Louis Aime; day work; $2,000.
Park—2-story fr; o, G. W. Coggin; c, Pattiani & Co.; $3,500.
Minto, cor Pacific—1 story frame; o, Capt. Larsen; c, H. Hansen; $2,000.
San Jose Ave.—1-story ctg; o, Mrs. Fulton; c, Pattiani & Co.; $2,000.
Union, cor Eagle Ave—1 story ctg; o, Mr. Bacon; c, A. Walker; $3,500.
Pacific Ave., nr Peru—Two 1-story ctgs; c, A. Walker; $1,600.
Benton, nr Railroad Ave—1-story ctg; o, G. Soule; day work; $1,000.
Willow—1-story ctg; o, J. N. Coleman; c, Pattiani & Co.; $3,250.
San Antonio Ave—1 story ctg; o, F. Peters; c, Pattiani & Co.; $1,950.

BERKELEY.

Oxford, nr College Way—1-story fr; o, L. Dunand; c, A. H. Broad; $1,800.
Dwight Way—2-story ctg; o, C. T. Wilkinson; c, Pattiani & Co; $3,150.
University Grounds—Additions; o, State of California; c A. H. Broad; $2,600.
Opposite Station, Berkeley—1-story fr; o, Hansen Bros.; day work; $500.
Dwight Way—2-story fr; o, H. Roach; c, C. R. Lord; $2,500.
Union, cor Alston Way—1½-story fr; o, Mrs. Wilton; c, A. H. Broad; $1,900.
Haste, nr Fulton—1-story ctg; o, Mrs. Cummings; c, A. H. Broad; $3,500.
University Ground Observatory—O, State of California; c, A. H. Broad; $3,000.

OAKLAND.

Seventh, cor Adeline—2-story fr; o, H. Sanders; c, A. B. Larmar; $3,000.
Eighteenth, nr Adeline—O, A. J. Larsen; c, F. Nelson; $1,500.
Kirkham, bet. Seventeenth and Eighteenth—1-story ctg; o, E. Thorsang; c, F. Nelson; $1,200.
Nineteenth, cor Adeline—Alteration and additions; o, F. Busby; c, G. A. Kirk; $4,000.
Thirteenth—1-story fr; o, Mrs. Jayne; c, Pattiani & Co.; $2,850.
East, cor Thirtieth—1-story fr; o, N. R. Johnson; c, Pattiani & Co.; $2,850.
Brush—1-story ctg; o, Miss Patch; c, Pattiani & Co.; $2,000.
Kirkham, opp Ninth—1-story fr; o, H. Snow; day work; $2,000.
Madison, nr Sixteenth—Four 2-story frame Dwellings; day work; $32,000.
Thirteenth, nr West—Additions; o, Mrs. Dr. Wilson; day work; $900.
Eighteenth, cor Kirkham—1½-story fr; o and b, H. Wirth; day work; $1,500.
Grove, bet Fourteenth and Fifteenth—2-story fr; o, W. H. Bayley; c, L. H. Campbell; $2,850.
Thirteenth, nr Jackson—2-story stable; o, Mr Upham; c, Knight & Littlefield; $3,000.
Thirteenth, nr Harrison—2-story fr; o, Mrs. L. R. Casey, a, Matthew & Son; c, W. Dahl; $3,000.
Castro, bet. Seventeenth and Eighteenth—2-story fr; o, H. Fife; day work; $1,000.
West, cor Fourteenth—Additions and alterations; o, W. Collins; day work; $1,000.

EAST OAKLAND.

Thirteenth, nr Fourteenth Ave—1½-story fr; o, N. R. Johnston; c, Pattiani & Co.; $2,500.
Third Ave, bet Eleventh and Twelfth—1½-story fr; o, F. Climp; c, R. A. King; $1,000.
Fifteenth, bet Seventh and Eighth Ave—1 story ctg; o, F. C. Brower; a, Robt. Trice, c, Moody & Carpenter; $2,000.
Twelfth, cor Seventeenth Ave—1½ story fr; o and b, F. E. Brumker; day work; $2,000.

MISCELLANY.

San Mateo—Two-story frame. O., R. Winson; A., Copeland & Banks; $3,500.
Merced—Front. Two-story brick. O., Terker and Selver; A., P. Manning; C., Meacy & Peck; $7,000. Fourteenth. Frame building. O., J. S. Wright; A., P. Manning; C., Fala & DeWitt; $2,000. Seventeenth. Two story and basement brick. O., Ellin Lewis; A., P. Manning; day work.

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⅜ in. tongued and grooved, European styles, solid and substantial. Also, ⅝ in. Fancy Wood Carpet Floors
Send 2-cent stamp for Book of Designs.

"NONE SUCH"
CHIMNEY TOP AND VENTILATOR

THIS VENTILATOR is especially valuable for regulating draft (upwards and downwards) made by the light, unstable atmosphere of the Coast Range of Mountains. The hundreds of tall stovepipes erected on the chimney tops of houses indicate inconvenience and trouble in the kitchen, the parlor, and chambers below.

SAN FRANCISCO, October 26, 1885.

To whom it may concern:

I take pleasure in stating that the "None Such" Chimney Top and Ventilator, which was put upon the smoke-stack of the Baldwin Hotel about two months ago, has given complete satisfaction.

It has increased the draft to such an extent that there is a perceptible saving in the amount of coal consumed; smaller fires than heretofore will now answer to keep up the steam, thus causing a great saving of the boiler also. We have heretofore had much difficulty in keeping up the amount of steam steadily required, owing to the lack of draft, all of which is now remedied by the use of the "None Such" Chimney Top and Ventilator. I heartily recommend its use to all persons, where a strong draft is required.

PEARSON & ARNOLD,
Proprietors the Baldwin.

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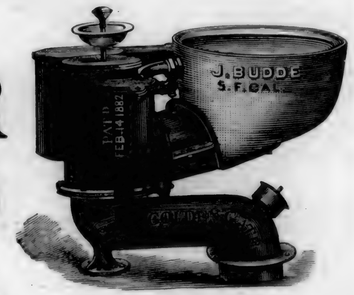

WITH OFFSET.

The Golden Gate Plug Closet.

This Closet is the best of its kind, having been so far constructed, it has the following advantages:—

1. It has a simple, strong valve, suitable for any pressure.

2. It has a real sanitary overflow, a copper float attached to a bell of the same metal resting on face of the brass overflow pipe, operated by the rising of the water in the closets above its level, thus absolutely preventing any escape of sewer gas, even the closets being without water.

3. It has no dead corner, consequently no foul water will be left in the closet after the lifting of the handle. A constant rush out of the flood chambers will keep the closet and trap perfectly clean.

This Closet takes the lead; it has been sold since February, 1885, in large quantities to the best satisfaction.

THE COMBINATION HOPPER.

This hopper is constructed to take 2 2-inch pipes, one to the right and one to the left and a 4-inch leader in the center. It has also a movable strainer on top to take the surface water. The lower part of the hopper with side outlet is to be connected with the sewer pipe, either right or left. The upper part is independent from the lower, and is made to swivel, therefore it will suit either position of pipe. This hopper can be used only for surface, for waste, or for leader; either inlet will be stopped up with iron caps if so desired.

Side View, Combination Hopper.

PACIFIC PAN CLOSET.

This Closet is superior to all others, every working part and bolt being made of brass, closet and valve extra heavy casting. Particular attention is called to No. 4. This Closet has an oval basin fastened to the cover by brass clamps and bolts. No breaking of putty joints required to renew a pan. The loosening of two large brass nuts will separate cover with basin from the receiver. It has a heavy nickel plated cup and pull and solid brass rod.

These Closets have been in use since February, 1883. Plumbers and wholesale dealers give them the best recommendation.

No. 4.

Square Slop Hopper. Square Waste Hopper. Basket Hopper.

Basket Hoppers are made in one piece with Movable Strainer.

No. 43 FREMONT STREET, ...SAN FRANCISCO, CAL.

The California Architect and Building News.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 2.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., FEBRUARY 5, 1886.

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Congratulations and Compliments.

THESE have come to us freely, from all quarters, since the January issue of this journal, for which we return hearty thanks. The improvements made have met with universal admiration and favor, and if dollars equal in number to the words of compliment expressed had been received, our exchequer would have become plethoric, and tax bills on ten million dollars' worth of real estate been items of small moment. This is gratifying, and we trust that action—*the prompt payment of subscriptions*—will express more substantially and practically, if not louder than words, the genuine sympathy of thousands for the success of this—California's first and only class journal published in the interest of architectural and building sciences.

Building Prospects.

THE total results, as shown by the following totals, would indicate unfavorably as against February, 1886. But it must be borne in mind that the present season has been extraordinarily unpropitious for building operations, while in 1885, the early months were altogether favorable. Otherwise, nothing appears to change the probable results as stated in our last issue. The continuous rains and storms have been a great drawback to active operations.

SUMMARY FOR CURRENT MONTH.

56 Frame buildings, at total cost of	$258,297
3 Brick buildings, at total cost of	93,000
13 Alterations and additions, at total cost of	25,900
72 Total for February, 1886	$377,197

FOR SAME MONTH IN 1885.

121 Buildings, at a total cost of	$660,397
Present month	377,197
February, 1886, less than February, 1885	$283,200

Notwithstanding this odds against present month, architects report a large number of plans in preparation, and prospects good.

The purpose of the reports in this journal is to give as nearly as possible the exact state of facts, whether stimulating or depressing, leaving it to the good sense and judgment of our readers to draw their own conclusions. We shall at no time seek to follow the example of journals who attempt to collate building facts, and for the sake of appearances, and to make large showing at any hazards, parade figures that do not represent facts. We claim, and know that the building reports appearing in this journal are more nearly correct than any other, and more reliable.

Our Promise Redeemed.

THE patrons of this journal were promised enlargement and improvement. As to how well this promise has been observed and fulfilled, it is only necessary to refer to the present, as compared with former issues. In typography, illustrations, matter, general make-up and appearances, the changes speak for themselves; and considering the great disadvantages we labor under, of limitedness of local field and facilities, distance from the densely populated sections, where teeming life and business is in perpetual flow from State to State, and from city to city, and innumerable facilities and advantages surround our Eastern contemporaries, our present claim to comparative excellence with the best class journals published in same interests, will meet the approval of all who review the situation.

OTHER IMPROVEMENTS WILL FOLLOW.

Changes and improvements are always attended with greater or less cost and expense, and as in the present instance in this journal, large outlay; but these become immaterial considerations, when

THE SUSTAINING HAND OF PATRONAGE

Is freely extended. And to us, a grand success of this pioneer California journalistic enterprise is more desired than the money profits returned from its publication.

LET IT BE HEARTILY SUSTAINED

By large increase in both its subscription and advertising patronage. The terms and rates are within reach of all, and none should fail to add their mite.

Architects, contractors, owners, mechanics, artisans, material men, house furnishers and decorators, and all interested in building pursuits, should realize that a journal of this kind and character is an essential and important auxiliary and medium of thought and practical information, and, as such, should meet a warm and hearty subscription indorsement.

Profits on $30,744,861—Building Contracts.

IT is always fair and reasonable to presume in business transactions, where large sums of money change hands, and the conditions surrounding operations are animated and active, that the average results would show fair gains and profits to the operators. This proposition is applicable in all cases, and specially so to the building trades of the Pacific Coast during the past six years.

From 1880 to 1885, inclusive, the amount of money known to have been expended in building-improvements in San Francisco, alone, amounts to $27,949,874, and allowing that the unreported transactions would add ten per cent to the sum stated, the total amount changing hand among contractors, material men, subcontractors and others, would reach $30,744,861. Had this large expenditure yielded the moderate profit of *ten per cent*, the aggregate of earnings to those engaged in the *erection* of buildings alone would have been $3,074,486, a sum sufficient to have shown itself conspicuously in many individual cases, over and above ordinary, personal, and family expenses.

This sum of $30,744,861 has all passed through the hands of *original contractors* in the various branches of building constructions, exclusive of the cost of lots, lands, furniture, fixture, and numerous decoration, ornamentation and other expenditures. It is fair to judge and measure the magnitude of business successes in cities and communities, by the results developed among those engaged in general or special enterprises and operations. If many millions of dollars change hands, as in the matter under review, and those who have handled the money have but little or nothing to show at the ending of transactions as profits, the inference is fair that bad judgment, reckless venture or incompetency has ruled; while on the other hand, if wise and prudent conception of values, and good management have prevailed, general appearances will clearly indicate, in various ways, that the active participants have done well. Advantageous and profitable transactions enrich and add to community as well as individual wealth; while undertakings with no more than bare living profits in them, added to the frequent cases entailing actual loss, humiliates, demoralizes, and empoverishes.

All this is applicable in the matter under discussion, and the facts of the case serve to show that the parties engaged in the various building pursuits, have enjoyed splendid opportunities, during the past six years, to improve and advance their financial condition; and if the business was one of fair average profits as a rule, the results naturally manifesting themselves would sustain the presumption that the laborer has reaped the value of his hire. That some few have done well is unquestionably true, and deplorable indeed would it be, if among the host of contractors in San Francisco there were none sufficiently wise, prudent, competent, and intelligent to handle their business with profit to themselves. But the much greater proportion have but little to show as accumulations of profits from the undertakings of the period named, and safe to say, a very large proportion—reasonably stated—fully one half of the whole number, have barely subsisted, *i. e.*, paid their way, living moderately, but with nothing left to show as gains and profits for time, labor and skill employed and expended; while very many who have rated themselves competent contractors, especially in the carpenter's department, have made sad havoc of most or all their hands have touched,—living upon moneys belonging to their creditors, extracted from the payments handled during progress of operations, and piled up, loss upon loss, to very large amounts, ending in pro ratio settlements ranging from ninety-five, fifty, forty, twenty, ten, and sometimes not one farthing per cent.

The irresistible conclusion from this condition of things is, that fools still live, and, unfortunately for the intelligent classes of contractors, there is no law under which they can be estopped plying their stupid follies. For a man who estimates and agrees to perform and furnish material and labor for one dollar, which is reasonably worth and will cost a dollar and two, five, ten, or twenty cents, is a fool without qualification, or a dishonest creature, who should be dealt with as rogues of other kinds are. But the point sought to be maintained is this: that, while a very large sum of money has flowed in building channels, the profits, if averaged among first contractors as a whole, would be far below any business standard of fairness; and the man who would assume the risk of balancing accounts between the losses and gains of the business for the six years mentioned, with the actual total balance to the credit of the $3,074,486, would need no very large money-bag to carry the sum of difference in gold coin. If the shortages could be ascertained, and were deducted from the gains, the balance would be small indeed in favor of the latter.

A very limited number of contractors, as compared with the whole, might be named as being well fixed; not rich, but in a fair way to reach a point where contracting will lose its charms, and that ease and luxury of financial competency be enjoyed which enables one to choose his comforts outside the vexations of business care and anxieties. But, of these few, while they have done well in their contracting ventures, their accumulations are more the result of investment in property and speculation, and special business advantages, than from the margins on contracts. Aside from these more favored ones, the examples of success average exceedingly small, and sustain, beyond question, the fact, that, *with the exceptions out*, the profits on house-building contracts have been far, very far, less than they should have been, the amount of money involved, considered; not averaging two per cent, and quite as likely the percentage being on the loss side; this most assuredly is true, if the few engagements that have paid—say ten in each one hundred of the whole number—be withdrawn. "Fat" contracts are occasionally, but rarely obtained; but for each one such, there are fifty that are exceedingly lean, and scores with neither fat, flesh, nor marrow in them, and creditors at completion have to content themselves with the pickings from dry bones—pro ratio settlements.

Allusion to contractors in this connection could not be avoided, as they are the mirrors through which the points in argument are reflected; for it is an indisputable fact that the parties engaged in any pursuit reflect the conditions and results of action, in their mode, style, and manner of living; in their investments, personal expenditures, and otherwise. By these the approximate magnitude of earnings and resources may be estimated, and appraisement placed upon the profitables of transactions. Accepting and applying this as a maxim of judgment, it must be admitted that not even the most successful and prosperous of the contractors in San Francisco are extravagant spendthrifts and high livers, nor those who have done fairly well and maintain good standing and credit; but to the contrary, as a rule, they are men of moderate display and economical habits; while hundreds who have misdevoted their time and personal energies to contracting, have neither a roof over their heads, nor a foot of ground to call their own. All these things considered, and the facts and comparisons applied, the proofs are irresistible that the building-contracting business has been one of exceedingly small average profit to contractors, and of large gains to owners in securing the erection of buildings at nominal prices, or no excess over actual cost of labor and material.

Master Painters' Association.

REGULAR meeting held 5th inst. E. M. Gallagher, President, presiding; J. A. Donovan, Secretary *pro tem.* Committee to confer with architects reported progress. L. Dwyer proposed, and Samuel Hurdis elected unanimously to membership; E. M. Gallagher elected President, and Thos. Downing, of San Francisco, and J. A. Wiswell, of Alameda, Vice-presidents; election of Secretary laid over until next meeting; B. L. Brandt re-elected Treasurer, and M. J. Donovan, Sergeant-at-arms.

The following members compose the Executive Committee for ensuing term: C. A. Bernard, J. S. Mellon, J. F. Sullivan, J. A. Donovan, and H. White, of San Francisco; and F. M. Farwell and P. W. Keiss, of Alameda County, with the President and Secretary as members *ex officio*.

Mr. J. F. Sullivan offered the following:—

Whereas, It has become necessary on the part of the Master Painters of the Pacific Coast, to protect themselves against the innovations and abuses which have been imposed upon the painting art, by the acts, methods, and customs of men not actuated by a high and honorable sense of right and duty to themselves nor their clients; therefore,

Resolved, That no member of the Master Painters' Association of the Pacific Coast will employ any one who, as journeyman painter, shall, from and after the present time, work for those who use admixtures commonly known as "slumgullion" or "dope," instead of pure paint stock, thereby abusing the confidence of architects and owners, and bringing disrepute upon the painters' art; for it is a well-known fact that the misdeeds of individuals operate to the disadvantage of all engaged in the business.

Respectfully submitted,

J. F. Sullivan.

Under the order of communications, the above resolution was adopted. Thanks, by rising vote, was tendered the President, for official competency and impartiality.

The first case of reference by architects.

The Committees of Measures and Values were called upon for the first time since their appointment, to examine and report upon a case of unsatisfactory painting, and reported as follows:

We, the undersigned Committee of the Master Painters' Association of the Pacific Coast, at the request of Messrs. Curlett & Cuthbertson, architects, have examined the painting work of a building on Sixth Street, bet. Broadway and Franklin Streets, Oakland, Alameda County, and find the same not in accordance with the specifications. Approved,

E. M. Gallagher, *President*,
J. A. Wiswell,
F. T. Hall,
J. F. Sullivan,
H. G. Jarmin,
A. Wason,
J. A Donovan,
M. J. Donovan,
Committee.

A curious argument is advanced that the burglar, so far from being a curse, is a blessing to society. It is argued that the fact of his existence gives employment to many men as detectives, and that artisans and inventors are constantly employed in devising means of circumventing him.

The Growth of San Francisco.

IN the July number of this journal, 1879, the following article appeared. The hue and cry then was that the building business was overdone, and the loss of rentals predicted for all those then venturing to invest money in the further improvement of real estate. The caption and substance of the article read:—

"too many idle houses."

"This is the old stereotyped expression among many owners in discussing the feasibility of improving their real estate. Every 'to let' sign noticed by them, becomes a scarecrow, and hundreds of building lots lie idle from year to year, which, if *properly* improved would produce uninterrupted income from rentals. If it is a fact that the total number of vacant tenements is large, that fact is no argument against the building of more houses in desirable locations. All facts should be considered in determining results or averages in all cases, and when the above argument is used, to it should be added—'but a large proportion of the unoccupied places are old, ill-contrived, inconvenient and undesirable places.' And the reason why many new buildings remain untenanted, is because they too are illy planned, are destitute of necessary conveniences, are badly located, with equally undesirable surroundings, etc. Of good, convenient, well-equipped houses, there are but few in San Francisco unrented to-day. If owners commit or permit errors in the planning and erection of buildings on their property, the mistake is their own, and they should not cry out, 'Too many houses to rent,' because their own are defective and undesirable They should take the blame home to themselves, and charge the non-renting to errors of their own mistaken judgment."

This was six and one-half years ago. Then, as now, the croakers declaimed and prophesied, predicting depreciation in both improved property and rentals; they said that men who, under the conditions then existing, would tie up their coin in the further improvement of their land, would play the part of simpletons, and fix for themselves sources of regret and loss; that the tenement market was overstocked with more houses on hand than sufficient to supply demand for years to come. But then, as now, there were those who heeded not the wail of discouragement, nor listened to the words of the would-be wise; but, relying upon their own more advanced ideas and better judgments, they chose to be guided by the signs of promise that omened better things, and pointed to that which has followed. Since then all of

7,000 building improvements

Have been made in San Francisco alone, and hundreds of owners are reaping the benefits resultant from a right conception of the then prospective needs and requirements, and the near future demand for more buildings. And although the voice of the croaker has been more or less continuously heard, from then until now, and still daily vexes the ears of those who have faith in the future of our great city, and the princely State of the Pacific Coast—California—the great building interests of this city falter not, as if, in addition to the growing wealth and the wholesome and promising condition of business, and matters and things generally, some powerful, irresistible hand or force of destiny was influencing, impelling and directing the minds of the whole people to permanent investment in houses, lands, and realties.

are more houses needed?

Some will answer, No. So it has been said every year during the past twenty-five, and every day of that quarter of a century. But experience proves the fact that, excepting the period made dark and gloomy by the horrors of sand-lot-ism in its day of prowess and glory, there has been no time when tenement property was a drug in the market; and judging from all the signs of the times, past, present, and prospective, building may go on as it has done during the recent past years, and 1890 will find, perhaps, ten thousand houses added to the present number in San Francisco, with demand equal to supply, and proportionately no more "to let" signs out than there are to-day.

The Sugar Pine of California

IN every practical sense and working quality it is equal to the white pine of the Eastern States—Susquehanna, Albany, etc., with the if's herein noticed. It derives its name from the sugar-like substance that exudes to its surface upon exposure. It also contains considerable pitch and gum, which is the *if* referred to, inasmuch as their presence is somewhat detrimental, in that they cause shrinkage, and the pitch, unless held back by shellac or similar preparations, will force its way to the surface, through any number of coats of paint, and in special pieces containing an excessive quantity of the resinous matter, it is almost impossible to prevent blistering. This works bad when china gloss finishes, or grained or polished work is instituted.

fresh water seasoning

Is all that is required to make this product of the forests of California equal to any white pine produced in the United States. We have demonstrated this fact, and state it from personal experience. The more thorough and continuous, within reason, the water seasoning is to each separate piece, the more complete will be its effect in the removal of the superfluous, natural components of the wood. Rafting and soaking in fresh water and transporting the rafts down rivers and streams to tide water, is about the best that can be done when the fresh water sources are available; but in California this auxiliary to seasoning is not possible. Our sugar pine grows inland, and is conveyed to market by teams or rail, or shipped on small vessels at certain points. Were it even possible to float it in the Sacramento or other fresh water rivers, there would be thirty miles of ocean salt water to cross, and the strong ebb and flow of the tide of San Francisco Bay to encounter, before it could reach the market in this city. But even such rafting and floating, while it would improve the lumber to a considerable extent, would not wholly remedy the difficulty, for the reason that the large quantity of gum and sap in it can only be entirely removed by thorough soaking and friction. The bath process would nullify but not wholly dissipate the objectionable substance—still the benefit that any application of fresh water would be to sugar pine, would be worth all it would cost, where sugar pine is used for specially fine work or finishes. Reduced to its possible condition, the sugar pine of California would rank high among the white pines of the world.

Size of Rooms and Halls—Width of Carpets.

EDITOR California Architect: I wish the architects, builders, or whoever is responsible for the size of rooms and halls in the average house, had to buy and fit the carpets. If so, I am sure they would soon learn a very useful lesson; a lesson they should all know and practice, that is to make rooms the right size for carpets. Let me illustrate what I mean. It has been my fortune or misfortune to occupy many rented houses.

One on S Street, with four carpeted rooms downstairs and the same up-stairs; every one of these rooms was 12 feet, 4 inches wide. In length they varied, but five of them were from four to six inches too long for even widths of carpet. The hall was 56 inches wide. To carpet this house cost at least from $20 to $30 more than if the builder had given a thought to the fact that carpets are always 27 or 36 inches wide. The hall was eight yards long; so, you see, it took 24 yards to carpet it. At least that is what I had to pay for, when, if the hall had been 54 instead of 56 inches wide, 16 yards would have done. Two inches taken off the hall would have saved a great deal of bother, besides from $5 to $20 on every new carpet, and in no way marred the usefulness or beauty of the hall, and the same with the other rooms. Had the parlors been made 5 inches wider, and the other rooms that much smaller, all would have been improved, as the parlors would have been 4¼ yards wide, and the other rooms 4 yards, less one inch. It is easy to cut off or turn under a few inches of carpet, but expensive and bothersome to add that much. Even where a room is one inch too wide for a carpet, it is very annoying and expensive. In most cases a moment's thought on the part of the architect would remedy these defects, at least I regard them as defects, and quite expensive defects too. Take a room 4 by 5 yards, and even 20 square yards covers it. But suppose this room 4 yards and 3 inches, by 5 yards and 3 inches, and your carpet of a large and showy pattern, and from 25 to 30 yards are required. As Brussels carpets are most used, and Ingrains are more easily patched, the principal rooms should be made to fit the even sizes of Brussels. You have nice double parlors, and you choose a nice Brussels and find your center width just one or two inches too narrow to meet your borders, and even one inch compels awkward patching and perhaps from $20 to $50 extra expense. This cannot in all cases be avoided, but in the vast majority of cases, rooms and halls can be made the right size for carpets, and ought to be.

Another point—try to fit a carpet around a door casing with heavy moulding, and you have to cut and fold and twist, and then you leave an unsightly, dust-catching corner, as you cannot make the carpet fit neatly around such mouldings. Now, Mr. Architect and Carpenter, let a woman give you a very useful lesson: Do not let such mouldings touch the floor; leave about a quarter of an inch space, and then the carpet can be neatly slipped under them. Nearly all rooms have to be carpeted, not once, but every few years; and carpets have to be put down at least once a year, and many economical housewives have to change the carpets so as to equalize the wear and tear, and the architect or carpenter that compels them to add inch strips and fit around awkward mouldings, adds 25 per cent to their cost, and is very ignorant of an important practical point in his business.

Mrs. R.

Alameda, Jan. 12, 1886.

Professor Trilobite (eloquently)—"Yes; all things came by chance, and the great globe itself, like a mushroom, sprang up in the night." *Little Bessie Brighteyes*—"I should like to know, please, sir, where the seed came from."

Skilled Labor in San Francisco.

ALL departments in the building line are well supplied in numbers, with many at present unemployed. Those out of work, of course are the less qualified workmen, the first-class men finding constant employment. Should the season just opened up, and the year 1886 as a whole, develop activities as large as is hoped for and anticipated, there will be work for all, and a scarcity of really good hands. In fact, at the present time it would not be an easy matter to engage a full force of *competent*, wood-working mechanics to start up a first-class building of any considerable value, there being but very few reliable, good men disengaged. And with the increase of good to costly buildings under contract or day work, the present force of No. 1 men will scarcely be sufficient to meet the necessities. This, per force of circumstances, combined with the less important constructions, on which the lesser class of workmen can be utilized, will provide employment for all those worthy the name of mechanics. So that, while there is lack of employment for all just now, as the season advances there may not, nor is it likely there will be any surplus of house-building operations, and it is possible that during the busier period there may be a demand for more workmen in this city, particularly as Los Angeles, San Diego, Oakland, San Jose, Sacramento, and other cities and sections of the State are likely to require, collectively, a large building force, which will more or less draw from San Francisco.

RATES OF WAGES.

Bricklayers, $4 to $5, and for extra men, $5.50; carpenters, $2.50 to $3.50; mill hands, $3.50; painters, $3; plumbers and gas-fitters, $4; plasterers, $4 to $5; roofers, $3.50; galvanized-iron workers, $3 to $4.50; moulders, $3 to $4; tinsmiths, $3; hod carriers, $3.

The Gale and Rain in California.

THE severest wind storm that has been experienced in this State, or on this coast, in ten years, occurred during the week ending January 23. It was so unusual that people generally magnified it up to something frightful; yet, as compared with the storms, gales, cyclones, etc., we read about as occurring in the various parts of the United States, ours was but a moderate breeze, not to be mentioned in the same connection.

The unroofing of a portion of the Mechanics' Pavilion was the most natural result imaginable. Its general construction was never intended for extraordinary contingencies. Covering as it does about two-thirds of an entire block, with a total depth of 412 ft. 6 in., and nearly the whole of that entire space being one large apartment; and although the construction is but fair-weather and usual-California-storm strong, with its longer dimension to the storm side, it would have passed through the late blow unharmed had not an opening been made at the weather side of the building, which admitted a volume of wind under the roof and into the building, which again freed itself by lifting off a section of the roofing on the opposite side.

Numerous fences were blown down. Yes, and what wonder is there in that? Built with 4x4 in. posts, planted from 2 ft. to 3 ft. in the ground, and located from 5 ft. to 10 ft. apart, with two rails, each 2x4 in., the upper rails being simply nailed on top of the top ends of the post, with *two* or *six* nails, as the case may be, and the bottom rails cut in between posts and the ends nailed, often with no more than two, and sometimes with four or six nails. If the wind had been really *severe*, every fence exposed to the force of the storm would have gone down, particularly as the ground had been soaked with water for weeks, and the post-hole resistance was very soft. But many of the fences blown down and quoted as arguments in proof of the occurrence of a storm, were mere lightly constructed affairs put up by "bill posters" at their own expense, with privilege of use for posting show bills. These, of course, were exceedingly fair-weather affairs, and the fact that many of these remain unharmed, reduces the idea of *violence* of storm very much.

A number of the principal rafters on the Donohoe Building rocked and fell, some turning upside down, the king post swinging below the strain beam, instead of being erect on top of same. And why? Because the storm was "fearful"? No. The braces applied to hold the rafters in place were no more than those usual in such cases, with no special preparation against a high wind. If there had been a genuine *storm* the whole roof would have been lifted and destroyed, as the entire block of constructions were open on three sides, and a portion of the roof sheathed in.

Signs were blown down by the "storm," and the wonder is that the majority of them have withstood the trade winds of summer. A baby blow ought to have been sufficient to tear off the cloth from many of them, and to throw down others, the fastenings of which were never strong and sufficient.

There are many qualifying considerations like the foregoing serving to correct the idea that any terrible storm has occurred in California, as far as wind was concerned. If it had been as severe as some of the newspaper reports make it appear, the destruction to life and property would have been tenfold greater than what it really was.

The most sad and disastrous occurrence reported is that at Los Angeles, from the rush of water from a cloud-burst, or otherwise. But, taken as a whole, the "great storm" was a moderate affair, and not the great monster that some reports set up. The total losses by damages throughout the entire coast is very insignificant, considered as the result of a "devastating gale." At the same time, we admit considerable losses in certain localities by washouts and overflows, not specially from the late storm, but the result of the continuous heavy rains of the winter.

Damaged and "Caved-in Sewers."

EACH successive "rainy season" demonstrates the insufficiency of the street sewers of San Francisco. They are emphatically so, for the reason that they do not perform the purposes of their construction *fairly well*. As the annual period for the commencement of rain comes around, more or less anxiety is felt at the Street Superintendent's office and by citizens generally. The anticipation of rain acts as a premonition of danger—a warning to "look out for squalls," a sort of accepted certainty on all sides that breaks and caves are sure to follow the first rain of any consequence, and each succeeding down-pour from the clouds; and dread and fear always accompany the prospects of a storm, as no one is so silly as to imagine that the sewers of San Francisco are sufficient in either engineering or mechanical construction to "bridge over" even a moderately severe pressure without yielding at numerous points; and so the facts and experience of years prove.

FEARFULLY MISTAKEN—CIVIL ENGINEERING.

In general terms, the engineering that gave to this city the system of grades and sewers as they exist, is a specimen of short-sightedness, inexperience, bad judgment, or something worse, seldom if ever equaled with natural advantages anywhere near as great as those left by the hand of Nature as a basis of operations. Nor is it to be wondered at that

BREAKS AND CAVES ARE COMMON,

For at all times the outlets—the discharging ends at the city fronts, east and south, where eight-tenths of the discharges empty—are choked with debris or dead water; *i. e.*, from one to two thousand feet of the sewers lie at *dead level*, and their contents pass out only by reason of the pressure from the flow from higher points. This resistance from solid matter and dead water in the level parts is often attended with damaging effects, as it holds back and piles up in the sewers, to long distances from the outlets, large volumes of water, which frequently relieve themselves by escaping into cellars at weak points, through side sewers, or at the surface by breaks, or through man-holes.

DEFECTIVE CONSTRUCTION.

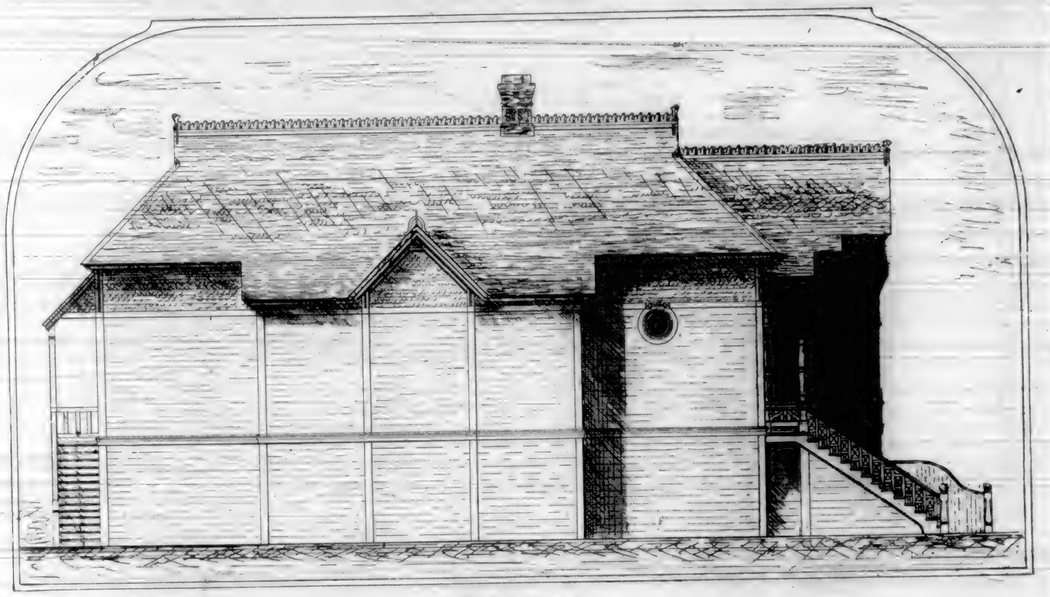
While portions of the sewers are fairly well constructed, it is a fact well known to all who are familiar with the way sewer work is managed, manipulated, and put through, that contracts are very frequently let to men, or the superintendence placed in charge of those who neither understand nor care anything about mechanical skill or good workmanship; or, if knowing, are oblivous to all the obligations imposed by that knowledge, and whose only concern is to make all the money possible out of the undertaking. Fair, right and proper profits are but secondary considerations. "*Get a contract, and make all you can out of it*," is the motto and rule of action, and any act of neglect or omission not likely to develop bad results too quickly is looked upon with indifference and utilized. In many parts the bricks in the sewer work are merely *placed* in position—not laid and bedded in good cement mortar as they should always be. Consequently it requires no very severe pressure of water, nor other test of strength, to make wreck and ruin of such work; and the numerous warning-signs from time to time placed in sewer breaks in various parts of the city, serve also, as a rule, in pointing out the spots where the sewer work is of the more "rascally" character.

These strictures, while strictly applicable to the subject matter in San Francisco, are, doubtless, more or less so in other cities. It would be unkind to claim for San Francisco that all the shrewd and clever artisans in legalized-by-custom, mechanical, mental, and practical rascalities had migrated westward and settled down in the metropolis of the Pacific Coast.

FRONT ELEVATION.

The Architectural Profession in Contract.

In no city or State in the Union, within circles reported by the architectural and class journals of the country, is there less of sterling active and progressive professional life than in San Francisco and California; a reaching out for more than personal gains and aggrandizements; a desire for enlargement of thought and ideas in a general sense, and mutual improvement and advancement in the higher possibilities of the profession. The most apparent thing manifest is, that each member of the profession feels sure in his own capabilities and relies upon his self-sufficiency, without realizing that self-sufficiency grows only on bad soil, and proceeds from inexperience—not necessarily the inexperiences of absent years, youth, but that which is worse, of men who have reached the solid period of manly vigor and prime of life, or, perchance, passed the line dividing the ascending and descending periods of human existence, yet have drawn so few lessons from the practical, living, ever-surrounding events of each day and year, as to remain ignorant of the great actuating, inspiring, advancing, persistent spirit and energy which have developed up and given to the world ten thousand joys and blessings, which have been more successfully, if not exclusively revealed, through and by the



SIDE ELEVATION.

desires of truly great minds and men to be useful to their fellowman. A life of usefulness is glory sufficient to adorn the brow or memory of patriot, statesman, hero or peasant. "The usefulness of a man is not to be estimated by the length of time during which he is employed, but by the character of the resources, powers, qualifications, which he combines and puts vigorously in operation, while he is engaged in any undertaking. Some men will be more useful in an hour than others will be in a year." It is the absence of this more generous trait of noble humanity that places the architectural profession at a disadvantage in San Francisco. The number of intelligent, clever, good architects is sufficient to keep alive measures, and prosecute plans and purposes that would place the profession, as a whole, upon a plane of usefulness far in advance of its present attitude. We clip the following from *Building*, which is but one of many similar cases heretofore presented in this journal, showing the widespread earnestness for professional intercourse and advancement:—

"The following will give an idea of the activity of the English architectural societies: The programmes of the coming session of the architectural societies are being issued. The Leeds and Yorkshire Architectural Society, which is the most energetic of those in the provinces, was opened on Monday, when the President, Mr. J. W. Connon, delivered an address. On the 26th inst. Mr. W. H. White will read a paper on 'The Past, Present and Future of the Architectural Profession,' which is sure to be epigrammatic and suggestive. In the course of the session the following papers will also be read: 'The Artistic Treatment of Ceramics, in Relation to Architecture and Decoration,' illustrated by drawings and examples, by Mr. James Holroyd; 'English Impressions of American Architecture,' by Mr. Arthur J. Gale; 'Points in the History of Collegiate Buildings,' by Mr. W. M. Fawcett, M. A.; 'Architecture of the Thirteenth and Nineteenth Centuries,' by Mr. C. Pebody, editor of the *Yorkshire Post;* and 'Church Architecture, Past and Present,' by Mr. Arthur W. Bloomfield, M. A. Mr. Aitchison, A. R. A., will also read a paper on a subject which has not been announced. One good feature of the meetings is that the principal firms in the town will exhibit designs in succession. This is a better arrangement than the simultaneous exhibition of a large number of designs by different architects. The Dundee Institute has not long been established, but some very good papers have been promised, such as the following: 'Architects, Their Work, and How Viewed by the Public,' by Mr. John Young; 'Smoke Consumption,' by Mr. George Macdougald; 'Egypt and Its Monuments,' by Mr. W. Stephenson; 'Our Gas,' by Mr. J. M'Rae; on 'Environment,' by Mr. W. Mackison. Mr. Browne, the President of the Edinburgh Architectural Association, is to deliver the closing address of the session."

In addition, full accounts are at hand, of the movements of architectural bodies in the various cities and States of America, all demonstrating earnest zeal, on the part of members of the profession, to open up and make perfect a better way than has been in past years. Brethren in California, is not the profession to you worth an effort that will place it in honorable record with those of other parts of the country?

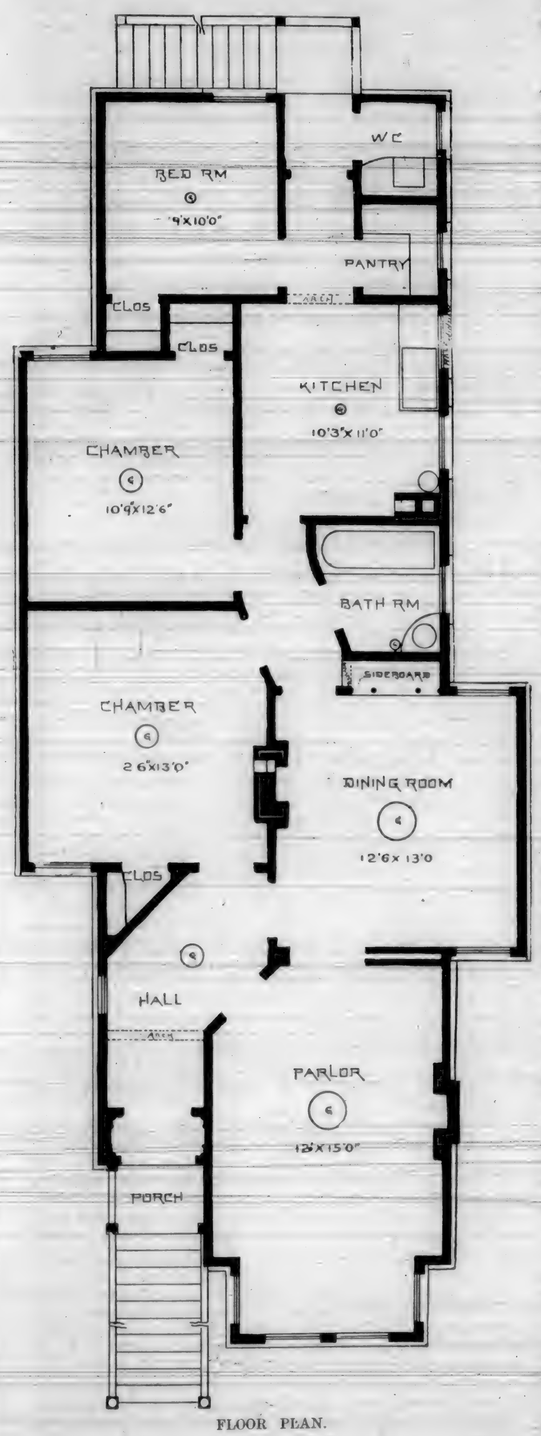
Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

(Continued.)

For the calculation of the heater the previous formula for warm-water heating can be used; an average figure may be taken that a wrought iron steam heater can condense, in the state of continuancy, the temperature of the surrounding atmospheric air being 20°, 1.5 kg. (3.31 lbs.) of steam per square meter (10.76 sq. ft.) per hour's time, emitting about 800 units of heat, provided that the surface, being washed by steam, is equal to the heat-emitting surface. With other heaters a corresponding lower heat-emitting figure must be brought in account. Special precaution must be taken, and means provided, for the removal of the atmospheric air from conducting pipes and heater, when the system is set out of work, and air to be admitted. For this purpose air valves are to be set in, to be opened and closed by hand, or a self-acting arrangement being applied to do this work at the proper time.

The condensation water flows out at the lower end of the pipe,



FLOOR PLAN.

and, that no steam escape, a valve has to be put in and only opened so much that the water escaping is alike to the amount of water condensed; or, better, if this hand-work is done perfectly by a self-acting apparatus.

COMBINATION SYSTEM.

Advantages and defects, applicability, etc., of central heating, or the different systems of the same: The general advantage with central heating over local heating consists in the better using out of the fuel, the development of a more uniform, more lasting heat, in the simplicity of the management in heating, and warming a larger number of rooms or buildings from a single fire-place, and the keeping off of all disagreeabilities connected with the working and heating of single rooms. As a general defect is to be mentioned, viz., that all central heating—especially when first set in use—requires a certain amount of intellect in working the same, more than is ever expected in a plain domestic, the introduction of any of the central heating systems is to be desisted from on this account, which otherwise would find its place if the intelligent servant and the technical help could always be obtainable.

With the selection of different systems, the extent, kind, and amount of pretension to be made, condition of the locality, and the amount of means at disposal for the construction, form certainly the most important factors for consideration.

Before beginning the erection of the building, the heating system should be decided on, and worked out in all its details, the required channels, fire-place, chimneys, etc., to be executed during, and with the progress of the work.

I. AIR HEATING.

Advantages: Cheapness of the first cost, easy attending, strong current of air in the warmed rooms, fast heating of the same, safety of working, no freezing up of the channels in cold climates, and dispensing of heaters in the rooms.

Defects: Small extension of the system in the horizontal direction, when, by any considerable extension, two or more fire-places may be required. In the reconstruction of old buildings, the impossibility of application of the system. With the establishing of many fire-places in the building, the cellar may become so overheated as to render it unfit for many purposes. Irregularity of, or too strong, ventilation, when the building is exposed with more than one side to the wind, having a large cooling surface; in this instance, high cost and irregularities in the working and a small reserve of heat. With an imperfect (becoming imperfect) construction of the heating oven, causing danger of leaking and the consequent entry of smoke in the rooms and the singeing of the dust.

Applicability of air heating is, in general, for buildings of a small, horizontal expansion, where arrangements in the plan are made before the erection of the building. Especially recommendable is air heating for such buildings where cheapness is a consideration, and where the ventilation of the different rooms can bear a change. Air heating is applicable, also, for large halls, churches, etc., and for rooms which are only used periodically.

Very recommendable is air heating for the warming of air for ventilation purposes, when the rooms are heated by another system. Not advisable when, by any want of the good working of the air-heating apparatus in all its parts (even where experiments and changes are specially excluded, as in finer and better executed buildings), the use of the same causes the occupants to feel the inconvenience of some temporary small defect or disturbance. Not recommendable is air heating for large, extensive buildings, by the necessity of building a number of fire-places. Not applicable is air heating in a building in which rooms are heated by an apparatus and at the same time have to be ventilated with a certain strength of air. In such cases, heating and ventilation must have separate arrangements, requiring many channels, and on this account become impracticable in execution.

II. WARM-WATER HEATING.

Preferences and advantages: Agreeable, mild; uniform, and constant heat; capacity of regulating the temperature in each room; a rational and sure management; large expansibility of the heating arrangement horizontally; impossibility of singeing the dust of the room on the heater and conductors; the moderate use of fuel; the wear and tear very moderate; and, with a solid, good execution of the apparatus, safety against disturbances by the management.

Defects: The first outlay in money is considerable. With badly and faultily executed connections of the conducting pipes and heater, looseness and leakage are very possible.

Applicability: Warm-water heating can be recommended for dwelling-houses of any size, executive buildings, school houses,

hospitals, court houses, conservatories, etc.; anywhere where a uniform, constant, and mild heat is demanded, the ventilating apparatus to be put in independent of the heating

Warm-water heating is excluded where cheapness is a special consideration; also for the heating of large and coldly situated rooms only periodically occupied; for theaters, churches, and everywhere where a quick effect is wanted.

Execution: In the execution, attention is to be paid that the boiler permits a quick, high heating, and the whole apparatus have a corresponding proportionate receiver of heating capacity. Dwelling-houses, for instance, require a continuous, durable heat. The size of boiler and heater must be selected in abundant measure, since that an increase of the extent of heating, as in the case with hot-air and high-pressure heating, is impossible with water heating, the water in the boiler not being heated above 100°.

Special care must be taken to the tightening of the joints and to the solid construction of the heating bodies and heater, the latter to have a position in a room easy of access. Heaters must not be placed behind chimneys. Before setting the whole apparatus in operation, the conducting pipes being bricked in in the walls of the rooms, the whole must be tried for its closing up under a pressure of 5° atmospheric, there being a possibility of defects.

During the first days of use the whole should be carefully watched, and any accruing defects remedied. Of special importance is this with middle hot-water heating The bricking up of the lines of pipes in recesses of the walls of rooms, and closing them up, must be done—to lie free—so that the contraction and expansion of the pipes will not destroy the same. The filling of the apparatus with water, and discharging, is to be done at the deepest point, the first either by the pressure of the street main water-pipe, or by a pressure-pump. The apparatus during summer-time should remain filled.

III. HOT-WATER HEATING.

Preferences and advantages: Ease of arrangement, also in old buildings; quick fitting up; small first cost, only one-half to two-thirds of that of water heating; intensive action, therefore quick effect and simple management.

Faults and disadvantages: A very small reserve of heat and fast cooling off; in cold climates danger of freezing up.

Difficulties: Under conditions, the impossibility of holding a uniform temperature in the rooms heated; danger from explosion is not excluded, but not much to be feared. Explosions mostly happen in the fire-coil in the oven.

Applicability: Hot-water heating—if possible, always in the form of middle-pressure heating—is used for single, large rooms which are to be heated daily, meeting halls, restaurants, and, conditionally, for observatories, as well as for subordinate rooms, such as vestibules and stair-houses; also for subsidiary heating where other systems are difficult to be arranged—old buildings. Lately, this manner of heating is used for prisons.

Excluded: Hot-water heating appears to be excluded for rooms situated and exposed to cold, and to rooms seldom occupied; and is not recommendable for buildings in which the rooms requiring a uniform heat, or those requiring the heat to be regulated different and independent of each other, are exposed to different outside temperatures and different directions of the wind.

Execution: In the execution of the arrangement, make the system of pipes as short as possible, and, above all, connect in the distribution of rooms those exposed to the same conditions (size of the exposed surface and the same quarter of heavens), arranging the heating oven for facilities for convenient cleaning. Don't use any tightening material for the screw joints if, after testing the system under a pressure of 150° atmospheric before accepting the work, any looseness is shown. In arranging pipes behind wainscoting, see that the air can circulate around them undisturbed, and that a free circulation is established; make such arrangements that the circulating pipes can be cleaned from the dust lodged on them. In regard to bricking up and inclosing pipes, that said on warm-water heating holds good; pipes passing through brickwork must be inclosed and pass through a muff.

STEAM HEATING.

Preferences and advantages: Large and unlimited extension in a horizontal direction; the possibility of heating a number of rooms and buildings from a single fire; quick, intensive action; easeness of introduction, even in old buildings; easily altered to a combination of hot air, steam, or warm-water heating for single rooms or buildings of a whole arrangement; the possibility of utilizing the exhaust steam, as well as the steam used for other purposes; for cooking, washing, drying, and for heating of water.

Faults and disadvantages: High price of the first cost; a better solidity in the execution is necessary, for with carelessly executed work a looseness and a disturbing noise are created; heat reserve is nothing, since with the shutting off of the steam the action ceases; by the heating of pipes and heater above 100° centigrade a strong radiating heat is produced, by many found inconvenient and disagreeable; the municipal safety control over the boiler, there being danger of an explosion through carelessness, hence requiring a competent and skillful attendant.

Applicability: Steam heating is specially to be recommended, as steam-air or hot-water heating, for large public buildings, legislative buildings, high schools, theaters, insane asylums, hospitals, jails, etc.

Excluded: Steam heating appears to be excluded from dwellings and smaller structures, unless there be an occasion to use the steam for other purposes. The direct steam heating has in its action similarity with that of hot-water heating, and the steam-water heating with that of warm-water heating.

Execution: Steam heating requires in the distribution and arrangement great caution and experience. Special care and attention is to be used in the construction of the boilers, heating bodies, and the mounting of the conducting pipes; in regard to the boiler, what has been said on the quantity of water is to be observed; and to the heater and conducting pipes, attention is to be paid to the distance, and, after shutting off the steam, the admission of air; avoid the use of organic matter for the tightening of all the single parts; care is to be taken for the correct and safe discharging of the condensed water, also that the same never runs contrary to the current of steam; arrange all the supports of the pipes to be movable.

Cold Houses—Cold Feet.

THERE are but few, if any, of the ordinarily built houses, either in California or elsewhere, and only a portion of the pretentious class of private residences, in which the occupants experience exemption from the discomforts of draughts and coldness. Even with fires aglow, and doors and windows closed, it is difficult, during cold or windy weather, to secure equality and uniformity of temperature. From causes not transparent to the uninformed in the true and correct science of house construction, cold and chilling draughts enter and sweep through the apartments, contesting claims and asserting forces with the heat of the fire.

If the fire is sought for its warming and comforting effects, the cold draughts play their part upon the back, feet, or other parts not under the influence of the fire, and to a certain extent compromise personal comfort. Again, rooms may be heated to a temperature beyond healthful, and still in the lower parts be so affected by the inlet of cold air as to inflict the punishment of cold feet, all of which is, of course, detrimental to good health, even in the most hearty and robust constitutions; and in enfeebled and weakly persons, predisposed to ailments and sickness, it is a perpetual source of evil; and hundreds of thousands of cases of illness and death have their *origin* in the facts suggested. The practical questions that follow are, What are the causes, and what the remedies? The causes are many. Prominent and first: an absence of correct, constructive knowledge on the part of those directing construction—whether as architect, owner, or builder; or, if possessing the proper knowledge, then the causes assume the shape of deliberate and willfully wrong acts, which, so far as they go, inflict and impose upon others, harm, sufferings, and discomforts—reflect a degree of criminality upon the party responsible.

To discuss in detail the various mistakes made in house construction would require more space than is at present convenient. The remedy or avoidance agency in such cases is the engagement of an intelligent, practical, trustworthy architect, and to steer clear of that class of professional pretenders whose chief qualification is a nimble tongue, apt at repeating well-studied stories, and building word castles, embellished with all the trickery of misrepresentation.

Gems.

How can the laboring man find time for self-culture? An earnest purpose finds time or makes time; it seizes on spare moments, and turns fragments to golden account.—*W. E. Channing.*

Of the enormous coal deposits recently discovered in China, it is said that the area is greater than that of the coal fields of Pennsylvania, and that the yield is the best grade of anthracite.

A man writes to an editor for $4, "because he is so infernally short," and gets in reply the heartless response: "Do as I do—stand up on a chair."

FRONT ELEVATION.

The Inventor of the Circular Saw.

IN a lonely, secluded spot in the northwest corner of the cemetery, near the ever-beautiful little village of Richmon, Kalamazoo County, Michigan, the reader can find, on a pure white marble slab, nearly concealed from view by a large cluster of lilac bushes, engraved the simple inscription, "Benjamin Cummings, born 1772, died A. D. 1843." And who was Benjam n Cummings? He was the inventor of the circular saws now in use in this country and in Europe. Nearly sixty years ago, at Burtonville, New York and Amsterdam, this man hammered out, at his own blacksmith's anvil, the first circular known to mankind. He was a noted pioneer in Richmond; a first cousin to one of the presidents of the United States; a slave owner in New York State; a leading mason in the days of Morgan, at whose table the very elect of the great State of New York feasted and drank freely of his choice liquors and wines, a vessel owner on the North River before the days of steamboats; a captain in the war of 1812, where, after having three horses shot from under him, with one stroke of his sword he brought his superior officer to the ground for insult, and because he was a traitor and a coward; and after having been court-martialed, instead of being shot, he was appointed colonel in his place. In this lonely grave are the ashes of the man who, nearly seventy years ago, at Albany, New York, took up and moved bodily large brick buildings, and, to the wonder and astonishment of the world, constructed a mile and a half of the Erie Canal through a bed of rock, and who also built, on contract, those first low bridges over the same. He also aided in the construction of the first ten miles of railroad built in the United States, and founded both the villages of Esperence and Bostonville on the old Schoharie, near Amsterdam. The study and aim of this man's life appeared to be to do that which none other could accomplish, and when the object sought was secured, he passed it as quietly by as he would the pebbles on the sea-shore.

The New York *Tribune* suggests that the improvement in the iron trade is partly due to the economy of cost arising from the use of natural gas. Of course, this adds to the profit of producers by diminishing their expenses, but it has had nothing to do with the improvement of prices. The demand for iron is increasing.

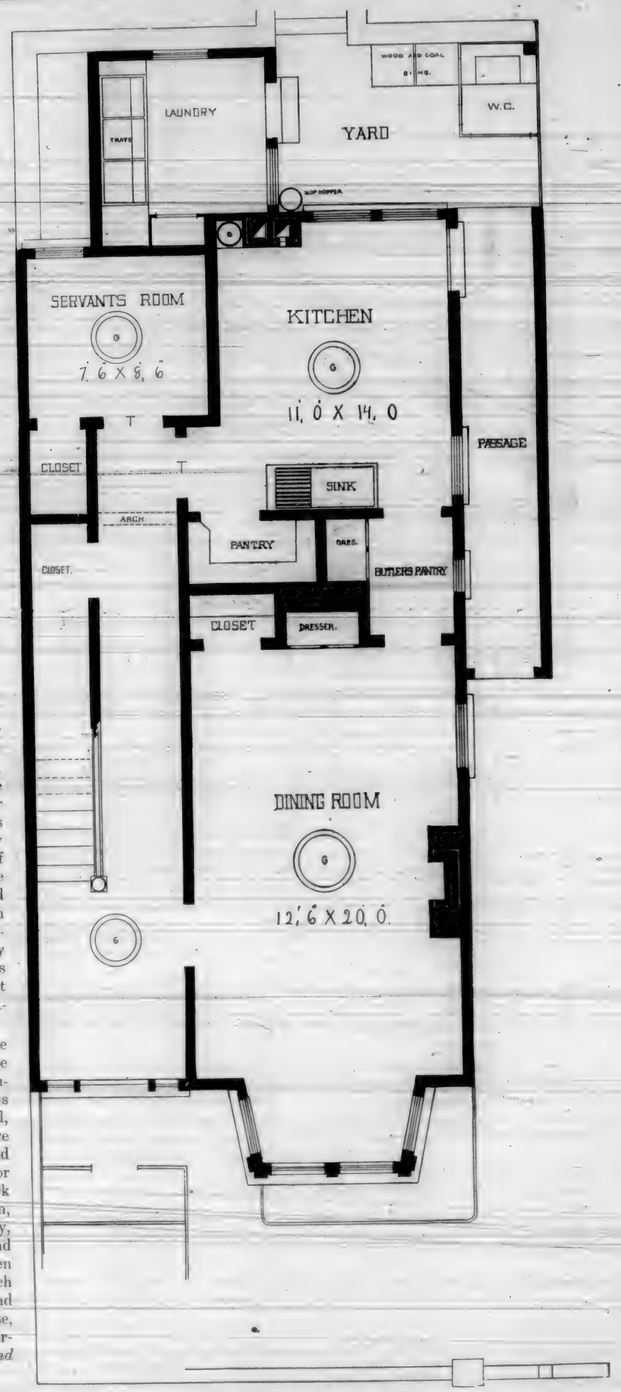
Dry Rot.

A RATHER singular accident took place a few days ago in Chicago, where a four-story brick building collapsed, early one morning, the whole interior falling into the cellar. The weakness of the structure was first observed by a boy, who saw a movement in the wall, and told the engineer, but was laughed at for his pains. Soon afterward, however, an alarm was raised, and all the persons in the building succeeded in escaping before it fell. The cause of the catastrophe is said to have been the dry rotting of the wooden girders, where they rested upon the posts. The building had been examined not long before, and pronounced safe, and it seems possible that the rotting of the timber may have been caused by painting it while green, and that the same coat of paint may have served to conceal the ravages of the fungus from those who inspected the work. Paint, which prevents the drying of the corruptible sap of green timber, is a common cause of decay, while the contact of the end grain of one piece with the side of another, as in the case of a girder resting on a post, is an equally common one, so that the safest way in buildings framed with such timbers is always to rest the horizontal pieces on iron caps or brackets, and to avoid painting until the work has become seasoned by years of use.—*Western Architect and Builder.*

Ornamental Brick.

ORNAMENTAL bricks, in addition to being produced in the ordinary red color, are also manufactured in caustic colors, as buff, brown, chocolate brown, black, etc., and they are also enameled in any desired hue, such as red, yellow, blue, green, etc. For ornamental bricks having caustic colors the coloring oxides are mixed with the clay in quantities usually of seven to ten per cent. The coloring oxide acts as fluxes, and the composition of the body must be altered in some cases to counteract this. Ornamental bricks, like ordinary pressed bricks, are sometimes colored under the glaze. When the color is to be applied under the glaze, the burned bricks are dipped into a slip of colored clay, formed usually of one part colored glass, ground, and two parts of clay, the latter causing adhesion of the slip, and the brick is either then fired, or, after being allowed to dry, is coated with a transparent glaze and then fired; but the bricks should be heated before applying the glaze, in order that all oily substances may be removed. When it is desired to apply the colors in the glaze, the brick is dipped into a transparent colored glaze, usually formed, besides the coloring oxide, of oxide of lead, silicious sand, and salt.

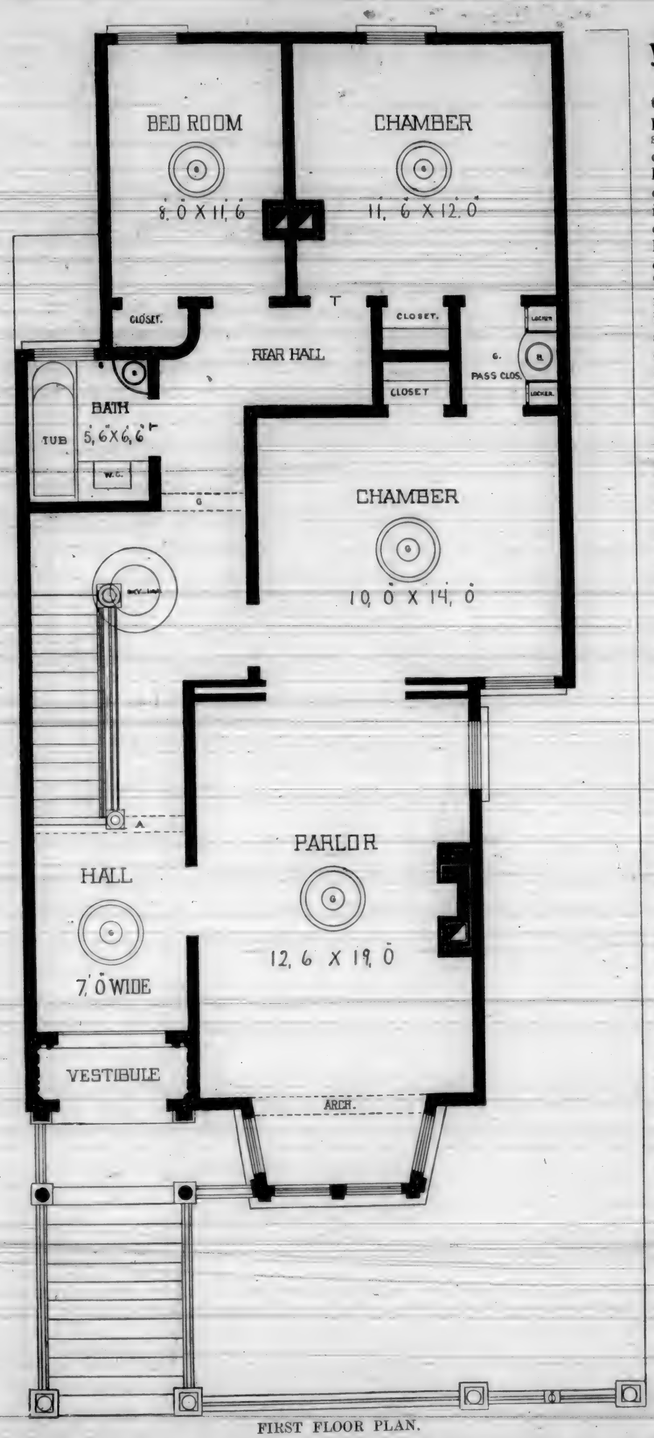
All enamels and glazes for ornamental bricks are usually applied to the one face or head which will be exposed after laying in the walls, except those intended to be used for corners and reveals of windows and door-jambs, which have one face and head treated, and are termed "rights and lefts" when they are so moulded and treated that they cannot be used for any corner. The colors now mostly used for architectural decorations and chromatic brickwork are the same, with the exception of buff and brown, as those employed by the ancient Egyptians, namely, red, yellow, blue, sometimes green, and white and black. In addition to the colors which have been given for ornamental bricks, there are others which are sometimes employed, especially for interior and expensive decorative purposes; they are turquoise, bronze-green, olive-green, violet, purple, orange, carmine, pink, gray and indigo.—*Western Architect and Builder.*



BASEMENT FLOOR PLAN.

PERIODICALLY complaints are made that the term horse-power is incorrect because it does not express the actual power of an average or even an exceptional, horse. This really makes no difference. The animal should be entirely eliminated from the mind, and the term taken at its exact meaning, viz., the raising of 33,000 pounds one foot high in one minute of time. A horse would fall far short of doing this for ten hours in a day; a steam-engine will do it for twenty-four hours.

IN 1880 the valuation of personal property in Florida was $30,938,309. In 1885 it amounts to $60,598,619. The increase comes from the encouragement given to Northern capital. There are other States in the South which might learn a valuable lesson from Florida. Over 50,000 Northern people have made investments in that State during the last five years, and many thousands of them have taken up a permanent residence.



FIRST FLOOR PLAN.

PRINTED matter may be copied on any paper of an absorbent nature by dampening the surface with a weak solution of acetate of iron, and pressing in an ordinary copying press. Old writing may also be copied on unsized paper, if wet with a weak solution of sulphate of iron, mixed with a small solution of sugar syrup.

Cable Road in Denver, Colorado.

THE first successful attempt at trial trips of the new cable car was made this week in Denver, Col., over a portion of the track of the Denver Electric and Cable Railroad Company on Fifteenth Street. The car ran a considerable distance, and at the satisfactory rate of eight miles an hour. A dynamo of twenty horse-power furnishes the motive power for the car. Quite a large number of prominent citizens took rides on the car. Prof. S. H. Short, of the Denver University, has worked very hard to make his invention a success, and his efforts seem to be already reaping their reward. The company have hoped to get their cars running in six weeks or a month. The car which is now being used in making trial trips, is shaped and fitted up very much like an ordinary street-car, and is fully as handsome in its style and appointments as any street-car in Denver. It was made by Woeber Brothers, of West Denver. The dynamo and other machinery, which is located in a building near the corner of Fifteenth and Tremont Streets, and which is used to propel the car, was made by F. M. Davis, of Denver, and all the plant and material used by the company will be of Denver manufacture. Ex-Governor John Evans, W. N. Byers, Rodney Curtis, and other well-known Denver gentlemen, are among the officers and directors of the new company. Some further trips will be made by the car, and large numbers of people will undoubtedly visit Fifteenth Street just below the Court House, and between Tremont and Glenarm Streets, and inspect the invention and its workings for themselves.—*Electrical Review.*

A Magnificent Project.

AN enormous scheme for the disposal of the sewage of London has been projected by Colonel Jones and Mr. Bailey Denton. Canvey Island, in the Thames, not far from its mouth, is a low, flat island of 4,500 acres area, which, although containing a few dwellings and a church, lies below the level of high tides, and the water is kept from overflowing it by embankments 10 to 12 feet high. To this island the proposition is to convey the sewage of the metropolis, and after purifying it by lime, which can be procured at small expense from the chalk which crops out on both sides of the river near by, discharge the effluent in the river on the falling tide, the low-water level being 10 to 12½ feet below the surface of the island. The solid portion of the sewage will be deposited on the surface and render the soil fertile and productive. The capacity of the island is such that it is estimated that it will take the sewage of London 100 years before it will be filled up to the level of the existing levees. If found profitable to do so, the liquid portion of the sewage might be pumped on to the mainland over a ridge 200 feet high and 5 miles off, and thence flow by gravity over a territory of 60,000 to 80,000 acres of arable land. The projectors estimate that the expenses of construction and maintenance could be met by a taxation of three-tenths of one per cent of the assessed valuation of the metropolitan district.—*Sanitary Engineer.*

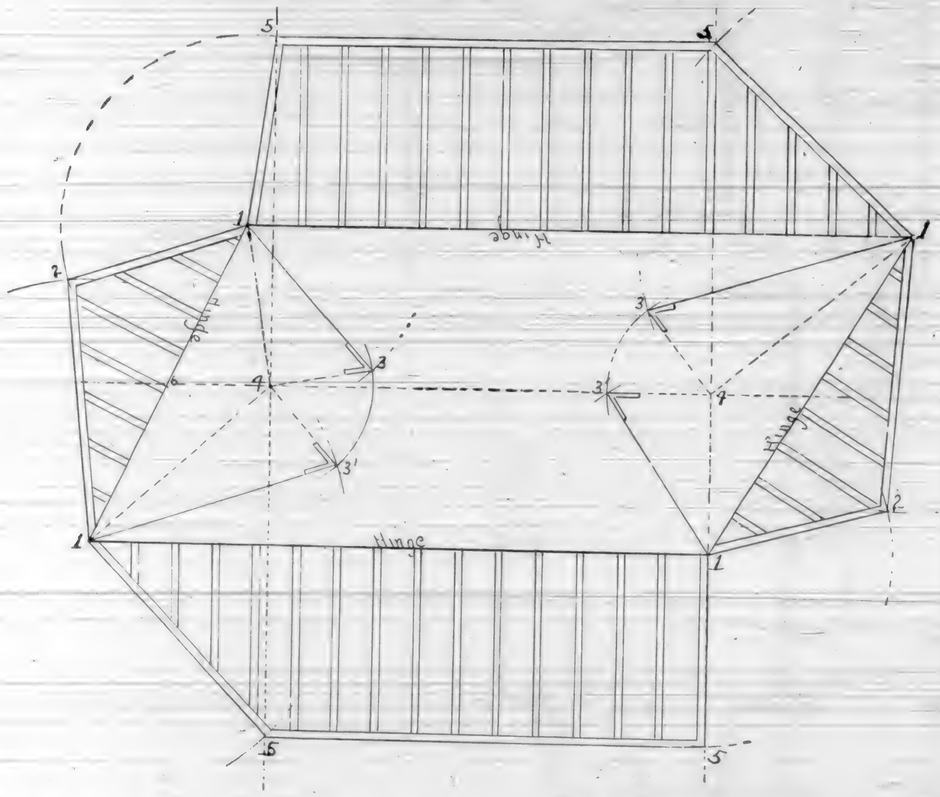
THAT part of Chicago in which the new Board of Trade Building is situated, was suddenly illuminated at 5:30 Saturday, the 23d ult., by a corona of electric lamps about the top of the tower of the Board-of-Trade Building, 312 feet above the street level. The plant is of 40,000 candle-power, said to be the largest mass of electric light and at the greatest altitude of any in the world. The engine furnishing the power will be started at dark every evening and run till daylight.

Graphic Illustration of Roof Framing.

(Continued.)

THE science of construction, through successive generations, has furnished material for all classes of interested minds and intellects, and the ever developing—new features of interest revealed by the solving of each successive problem, has served to sharpen up and vitalize ambitions and devices for other new—acquisitions in reducing to plain understanding that which has for long ages remained within the confines of unrevealed possibilities. As time rolls on, the scales of mystery continue to drop and fall, and difficult things that were, are becoming simplified and easily comprehended.

Roof construction has furnished innumerable points for solution, and the student of architecture, as well as the skillful artisan, has sought to grasp and reduce to easy mastery, the various seemingly difficult problems that have appeared. Ground plans that are regular, and of exact lateral and diagonal dimensions, to the less skillful, present no serious obstacles in the framing of the roof; but in cases where *acute* and *obtuse* angles occur, as shown by the accompanying illustration, a better and more thorough knowledge of the rules and principles of construction becomes necessary to a skillful manipulation of the material employed.



EXPLANATION.—The method illustrated by the accompanying diagram explains an easy and practical way of obtaining the results presented, which its author has applied successfully for many years:—

1 1 1 1 are the lines of ground plan; 6 4 is the height of elevation. Connect 1 4 as shown at each corner. Square out to 3 on each line; make 4 3 3, which gives the height of elevation. Connect 1 3, which is the length of hip rafters. Square out from 4 to 5, 5 5 5; then take the distance 1 3 in the compass, standing in 1; describe curve, cutting line 5, and again take 1 3, which is the shorter hip; stand in 1—draw curve cutting line 5, and bisecting curve 5 to 2—connect 5 1 1 2 2 1, and 1 and 5. This gives the length of hips in position.

The above applies to either or both ends of the roof—each being of like shape and proportions. Place the jack rafters at the desired spaces. To make a model, cut out of cardboard the form of roof as shown; then weaken the board by drawing a knife lightly around the base or hinge lines—the walls of the building—and stand up the wings, which will produce the shape of roof complete.

M. J. MARION.

Red Slate.

ALMOST all of the consumers of red slate rest under the impression that it is quarried principally in Vermont. This is an error. The only red slate in the world which it has been found practicable to quarry lies in the State of New York, although some of the quarries are so near to the Vermont line that shipments are frequently made from the latter State. From these facts the erroneous impression mentioned has arisen. As in all other colors of slate, the producers make two grades, bearing the usual distinction of No. 1 and No. 2. No. 1 is selected from the entire product, and consists only of the material which is smooth in texture, uniform in color, straight and free from "knots." All the rest of the slate which lacks these qualities is called No. 2, or second. Independent of this classification there is another concerning the color, which implies the dark red, medium, and the light or pink. The dark and medium colored slate is the best and strongest, and possesses that quality which roofing slaters always seek, called "metal," and roofing of this variety forms probably the handsomest covering which it is possible to obtain. The lightest or pink is apt to be brittle, and is not so strong, although some slaters prefer it because of the brighter hue. It is also apt to fade. For general purposes, such as strength, beauty of appearance and unfading quality, the medium bright red is deservedly the favorite. As stated above, it is found under producible circumstances only in New York, although veins have been discovered in other States, but they have not yet been found in sufficient quantities to be utilized.

IN Patagonia they fine a man two goats for killing his wife. The law is very strict on the subject, too, and if the fine isn't promptly paid he is compelled to marry again. This makes him hustle for the goats.

Large Plate Glass.

THE largest plate glass in use for store show-window purposes in San Francisco are those in the Murphy Building, corner of Market and Jones Streets; in all, forty-six sheets, running in sizes:—

2 plates	150x160 inches	2 plates	98x160 inches
2 "	142x160 "	2 "	64x160 "
4 "	136x160 "	1 "	70x130 "
1 "	130x160 "	2 "	70x150 "
1 "	128x160 "	4 "	70x136 "

The remaining sheets run 48x160, 28x130, 70x142, 70x128, etc. The handling, setting and glazing work was done under the direction of Mr. Thos. C. Butterworth, glazier, No. 7 Ninth Street, with mishap to but one sheet, which was made the subject of several very hypothetical newspaper items, but which in fact was no more than the fracturing of the lower end of one of the lights to a *small* extent.

The successful handling and placing of so many large, heavy sheets of plate glass, certainly evidence skill on the part of those doing the work; and had at least one of the lights been *destroyed* by accidental breakage, it would not have been a matter of any great surprise, as glass is a risky article to handle, requiring but slight violence to produce damage or total loss.

Size of Soil Pipes.

THE size of soil pipes should not exceed four inches. This is ample to carry off every possible form of discharge or combination of discharges to be met with in plumbing, even in the largest buildings, except for special hotel, laundry or manufacturing purposes. It is a mistake to suppose that because the fixtures are multiplied, the diameter of the soil pipe must be increased correspondingly. It is a rare occurrence, even in a hotel building, that several water-closets are fluted at exactly the same instant, and even if they were, their distance from each other, and the capacity of a four-inch pipe, would give ample room for the escape of the water. The choking of a pipe is far oftener due to its being too large, or to faulty construction, than to its want of sufficient size. The great perpendicular extension of plumbing pipes also facilitates the discharge, and pipes, which for land drainage would be much too small, will be found ample for plumbing purposes, on this account.

When it is considered how important it is that soil and drain pipes should be as thoroughly scoured as possible by the discharges sent through them, and remembered that the smaller the pipe the more perfect the flushing, we should be inclined to reduce our soil pipes to a size even smaller than four inches, were it not for the careless usage slop hoppers and water-closets are so often subject to.

The trap of water-closets is frequently made of pipe as much as four inches in diameter, and large pieces of newspaper are often used where toilet paper alone is suitable. This, and the carelessness of servants who will throw into a closet anything which is small enough to pass through its trap, would cause a great amount of annoyance and expense if the soil pipe were smaller than the trap of the slop hopper or water-closet. Hence, we have fixed upon four inches as both the smallest and largest size of soil and house drain pipe, and no other size should be used except for rare and exceptional cases.

IN Minneapolis, Minn., during the year 1885, there was expended in new buildings over $9,700,000, with which were erected 2,907 residences, 43 manufacturing establishments, 22 churches, 10 school-houses, 16 store-houses and elevators, 8 city buildings, and 150 business blocks. In St. Paul the amount expended for a similar purpose was $7,234,834, and the number of buildings erected was 3,451.

San Francisco Chapter.

OWING to a change in the time of issue of this journal, the 5th inst., and the monthly meeting of the Chapter occurring on the same day, report of proceedings will necessarily lay over until the March issue.

VERMONT has joined the onward march of civilization. The star of empire which has for a number of years been monopolized at the West, is to be lured back to its starting-point on the eastern shore of Lake Champlain. A street-car line, the first ever built in the State, was formally opened the other day in Burlington, with demonstrations suited to the importance of the event. Bands of music, speeches, rockets, Chinese lanterns, illuminated stores and dwellings, and a decorated car drawn over the line by six mules, gave significance to the occasion. It must be said, however, that the success of the enterprise was largely due to local rivalry, the citizens of Burlington having heard that a similar project was on foot at Rutland, which is only a village, with selectmen and fence-viewers, while Burlington is a city, with a mayor and ash-inspector.

Since the cable street railroad in Chicago was opened, there have been a great many improvements on the system patented, but the improvements do not run away from the original very fast. It was assumed that the gripping device was too cumbersome and heavy for Eastern refinement, so when the Brooklyn bridge was provided with a cable road, a brand new grip was adopted, the production of the matured genius of New York. That grip was a shining success only in one way. It gave daily lessons of patience to the restless people of Brooklyn by its numerous failures to move the cars for half an hour after an attempt was made to start. The people of Philadelphia were above borrowing any part of the cable system from Chicago or San Francisco, so when they built a road in Market Street, they adopted an original system entirely. It is being operated now the greater part of the time by the help of horses. On a recent juncture, the grip took occasion to vary its record by holding, and it held so well that the man in charge could not induce it to let go; so the car went tearing along like a Juggernaut vehicle, smashing everything within reach. There are indications that the new cable road opened in New York will be a most uncertain means of getting around on, but the promoters of the company have the satisfaction of knowing that they succeeded in eluding the patents that cover the system of operating the older cable roads.—*National Car Builder.*

THE FIRST TRAPPED WATER-CLOSET on record is that invented by Alexander Cumming, and patented in 1775. The basin is bowl-shaped, and the water is delivered into the lower part instead of at the top, while the soil-pipe is recurved about 12 in. or 18 in. below the basin, so as to constantly retain a quantity of water sufficient to cut off all communication of stench from below. In 1777 another water-closet was patented by Lemuel Prosser, but does not appear to have been adopted; in 1778 the well-known valve-closet of Bramah was patented. The expensive character of Bramah's arrangement led later to the introduction of the pan-closet and D-trap, which are now being removed wherever this can be done. Dr. Corfield then proceeded to describe more in detail the various apparatus in use, and the methods of disconnection of waste-pipes from drains, as well as drain ventilation. In conclusion, attention was directed to the decision of Mr. Justice Quain, that it was implied in an agreement for taking a furnished house for a short period that the house was fit to live in; and as to the proposal to introduce a similar provision for unfurnished houses into the Housing of the Working Classes Act, Dr. Corfield thought it was wise to limit this provision to houses occupied by the laboring classes, as it would otherwise have led to an excessive amount of unnecessary and vexatious litigation. He was of opinion, moreover, that the certification of houses as to their sanitary condition by local authorities would be unsatisfactory, and that greater good would be done if this were left to individual effort.—*Sanitary World.*

THE fact is, a man gets religion a good deal like he gets the measles. A fellow gets tangled up with the measles, and in about ten days the doctor comes, gives him a cup of good hot tea, and tells him to keep on taking that until it breaks out; and then keep it broke out, and he will be all right. So some of you have got tangled up in this meeting until you feel as bad as a fellow with the measles before they break out. A few hot cups of gospel tea will make religion break out all over you. Then keep it out, and you are all right. But, like the measles, if it goes in on you, it will kill you, sure.—*Sam Jones.*

Sewer Gas and Its Uses.

WHEREVER there are sewers, it is certain that there will be sewer gas. If confined within the sewer, or permitted to escape into the open air, it can do no harm. In the first instance, it is imprisoned and helpless; in the second, it is robbed of its power by the oxygen of the atmosphere. It is only when it finds its way into houses, drives out pure air, and is unconsciously taken into the lungs, that it becomes the enemy of the human race. Sewer gas is not often instantaneous in its effects, but it is none the less certain. It may be the source, or promoter, of all the so-called zymotic diseases. A zymotic disease is defined as "any epidemic, endemic, contagious, or sporadic affection which is produced by some morbific influence acting on the system like a ferment." This technical definition is not so comprehensible as the plain statement that zymotic diseases include typhoid, typhus, scarlet, cerebro-spinal and malarial fevers, small-pox, measles, diarrhea, dysentery, cholera, cholera morbus, cholera infantum, croup, diphtheria, whooping-cough, puerperal diseases, and some others. A prominent writer says: "If we look for the cause of the large mortality from zymotic diseases in our cities, we find it principally in sewer-gas poisoning. Other causes operate to swell the total, but to bad plumbing we may attribute the prevalence of pythogenic pneumonia, peritonitis, inflammatory rheumatism, typhoid and malarial fevers, croup, diphtheria, and many kindred diseases, which are almost epidemic in all our large cities."

Sewer gas does not always kill. It poisons the blood of once healthy men and women, and destroys, or cripples, their capacity for business or enjoyment. It robs men of ambition, and women of beauty. It paves the way for specific diseases which would otherwise never have sent strong men to bed for months. There are those in the city whose lives were imperiled by it, but who fled from its presence; years have passed and the poison has not yet been driven out of their veins.

There is said to be a distinct, odorless and non-analyzable element which has been denominated sewer gas, and which is as deadly in its effects as sulphureted hydrogen. If this is true, it is seldom met with. The term sewer gas is more commonly and properly applied to the pent-up foul odor which may be found in any sewer or its connections. It is easy to understand that this gas is laden or saturated with particles of decaying animal, vegetable, and excrementitious matter, which finds its way into the sewer. If this gas is breathed into the lungs, thus laden with poison, the blood must of necessity be contaminated. Further than this, the air which escapes from the sewer may bear with it the germs of contagious diseases, and deposit them where least expected. It is possible—it is probable—that the blood-poisoning resulting from the breathing of sewer gas is due to chemical changes in organic matter which has been taken into the lungs. This may come from the sewer, catch-basins, drains, privy-vaults, or waste-pipes. Sewer gas, or its equivalent, is generated in an outdoor privy vault, but it comes so soon in contact with the surrounding atmosphere that it is rendered comparatively harmless. The air which escapes from sewers into houses is dangerous because it is not diluted, nor disinfected by pure air, and because its confinement increases its potency. If all sewers were open at the top throughout their entire length, there might be no danger from the exhalations, except possibly from the germs of contagion which may have been carried into the sewers by water used in bathing the bodies of the sick. But this danger could not be so great as that which to a limited extent attends the breathing of the atmosphere which has swept through a sick room, and which many people do unavoidably and with apparent impunity breathe. In some cities of Europe sewage is conveyed away in open gutters, without serious discomfort or danger. In other cities there are open man-holes leading to the sewers, and the gases generated are allowed to pass off freely and without danger. Sewer gas is to be feared when it insidiously and persistently finds entrance to houses, offices, or buildings of any description in which people live or work. There are some people who believe it can do no harm; others know by sad experience that it is destructive of health and robs life of enjoyment, but they imagine that they are helpless against it. Again, there are many thousands suffering from its effects, and they are entirely ignorant of the fact. In mercy to this third class the warning note should be sounded, and for their especial benefit, as well as for those who know no remedy, the means for shutting sewer gas out of houses, if there are any, ought to be made known in the fullest and widest possible sense.

DRAUGHTMAN'S ASSOCIATIONS are assuming an important part in architectural advancement and improvement in the Eastern, and particularly in the Northwestern cities and localities. The young men are realizing that time lost can never be regained, and are, therefore, preparing for the future by taking care of, and utilizing the possibilities of the present; the aims and objects in all cases being for like purposes,—mutual enjoyment, general instruction, and a more thorough and perfect understanding of the ever fruitful developments which each day's experiences bring to the surface.

The "sketching clubs" are fruitful of much good, as they afford a wide range of thought, naturally embracing furniture, ornamental glass, frettings, and endless other objects and forms, all tending to improvement, culture, and the higher attainments. When will the young men of the Pacific Coast enter upon like worthy efforts?

"ON my way over," the Saginaw man said, "I was thinking what a small amount of business foresight the most of us have. There are men with millions lying idle; these men are crying aloud that if they could only find a good chance for investment they would untie their money bags; but are they not blind? How many of them purchased steel rails when they could be bought for about $25 a ton? They must have known that they could not go much lower, and eventually must go much higher. How many of them invested in pine when it was low? Precious few of them. The money in pine lands has been made by hard-headed old lumbermen who invested because it was in the line of their business rather than as a speculation. Capitalists are like the rest of mankind—they run in ruts. They keep an eye on the price of stocks and bonds, the direction in which money is naturally bent, but are blind to outside chances for investment, where profits would be almost absolutely sure.—*Northwestern Lumberman.*

"NO GIRL gets along well without a mother," says a moralist. Very true; so they don't. See what a mess Eve made of it by not having a mother. If she had been under the restraining influence of a mother's counsel and love, she would not have listened to the advice of the snake, and the apple would not have been marked by her pearly teeth. A girl that can't get a mother should do the next best thing—get a mother-in-law.

Market Report.

LUMBER—Nothing doing in cargo lots, and prices for same are $1 50 to $2 below the following rates, which are for retail lots:

Pine, Rough, merchantable	per M feet,	$14	00
" " No. 2	" "	11	00
" " " 2 in lengths	" "	12	00
" " 40 to 50 feet lengths	" "	16	00
" " 50 " 60 " "	" "	17	00
T. & G. Flooring, 1 x 6	" "	26	00
" " 1¼ x 6	" "	28	00
" " 1 x 4	" "	28	00
" " No. 2	" "	21	00
Vertical Grain T. & G. Flooring, 1 x 6	" "	30	00
" " " 1¼ x 6, 1 x 4	" "	32	00
" " "	" "	35	00
Stepping			
Furring, 1 x 2	per lineal foot		00¾
Redwood, Rough	per M feet,	18	00
" " No. 2	" "	14	00
" Surfaced	" "	30	00
" T. & G. 6 in. 12 ft. and over	" "	28	00
" " " 7 to 11 feet	" "	25	00
" " " under 7 feet	" "	20	00
" Rustic	" "	30	00
" " No. 2	" "	26	00
" T. & G. Beaded, 12 ft. and over	" "	30	00
" " " 7 to 11 ft	" "	25	00
" " " under 7 ft	" "	20	00
" Siding, ½ inch	" "	22	50
Pickets, Fancy	per M,	25	00
" Rough Pointed	"	16	00
" " Square	"	14	00
Battens, ½x3	per lineal foot,		00½
Shingles	per M,	2	00
Laths, 1¼	"	3	25
" 1½	"	3	75
Dunnage Boards, less 5 % delivered		16	00

NAILS—Rates were recently reduced to:—

200 keg lots	3	15
100 keg lots	3	20
Smaller quantities	3	25

PAINTS AND OILS:—	
Pioneer White Lead (local factory)	6c @ 6½
Cal. Linseed Oil, raw (single bbl lots)	45
" " " boiled " " "	47½
Turpentine, per gallon	52

BRICK—California Building Description, soft,	per 1,000	$5	50
" " " red,	"	6	50
" " " hard,	"	7	50

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BECK, J., 10 Eleventh Street	" 12
CAIN, R. K., 213 Page Street	" 61
CALVERT, JOHN, 812 Hyde Street	"
COX, JOHN, 608 Jones Street	" 16
CLAWSON, L. E., 129 Oak Street	" 2
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DOWNS, JOHN, 269 Minna Street	" 18
DUNPHY, ED., 1006 Bryant Street	" 34
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MCGUIRE, JOHN, 212 Grove Street	" 74
MULCAHY, JAS., 612 Larkin Street	" 33
NAGLE, GEO. D., 427 Montgomery Street	" 24
O'CONNOR, J. J., 648 Minna Street	" 19
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O'SULLIVAN, P., 432 Ninth Street	" 35
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RICHARDSON, M. B., 624 Shotwell Street	" 10
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WAGNER, J., Potrero Avenue bet. 22d and 23d Streets	" 3
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PENDERGAST, THOS., Howard Iron Works	" 72
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DAVIS & COWELL, Lime and Cement	Box 43
WHITTIER, JAS. E., Asphaltum	" 41
MCCLURE, P. L., Grader and Waterman	" 30
SIBLEY, L. B., Teamster	" 40
WARREN, CHAS., Grader	" 37
BUCKMAN, A. E., Grader	" 42
KELSO, JOHN, Grader	" 76
ENGLISH W. D. & CO., Graders	" 70
BUTTERWORTH, T. C., Glazier	" 48
HARNEY & SON, Street Contractors	" 54

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[*ERRORS CORRECTED.—Our earnest desire is to avoid errors in every connection, and be as nearly correct in every statement as possible; and the patrons and readers of this journal will confer favors by calling our attention to any error that may at any time occur.*

In January's issue Charles Crocker's building was located on "Brush Street" instead of "Bush Street." The building owned by Mrs. Eliza R. Dingerfield, on Jackson Street, near Van Ness Avenue, was twice reported at a cost of $2,000, thereby swelling the total in the amount named. A building on Scott Street, near Devisadero Street, reported "James Geary, owner," should have been "Mrs. Pelton, owner; James Geary, contractor," and the amount of cost should read, "about $6,000," instead of $3,000," thus reducing the totals $3,000. A few errors in names occurred, an initial, or letter being added or omitted, the result of difficulties encountered in obtaining the correct names. The two discrepancies noticed adds to the credit of January's totals, $1,000.]

B

Bush, nr. Scott. Three-story frame.
O.—Mrs. Anna Sebiling.
A.—Salfield & John.
C.—Hutchinson & McLane.
$6,500.

Bryant, nr. Eighth. Alterations.
O.—J. O'Keif.
C.—Jas. Mannihan.
$1,000.

Bush, bet. Baker and Lyon. Two one-story frames.
O.—T. Martin & Bros.
Day work.
$5,000.

Bartlett, bet. Twenty-third and Twenty-fourth. Repairs and additions.
O.—Julia Whitney.
A.—M. J. Welch.
C.—E. & F. J. Owens.
$600.

C

Church, nr. Thirtieth. Two-story frame.
O.—S. D Young.
Day work.
$2,000.

California, nr. Scott. Two-story frame.
O.—Hettie H. Morse.
A.—J. H. Littlefield.
C.—S. Hatfield.
$3,700.

D

Devisadero, bet. Sutter and Bush. Repairs.
O.—H. M. Newbauer.
A.—P. R. Schmidt.
C.—A. Anderson.
$900.

Dupont, nr. California. Additions.
O.—Gross & Baur.
C.—Trumson & Perry.
$1,500.

E

Eighteenth, nr. Church. One-story frame.
O. and B.—W. Tegeler.
Day work.
$1,500.

F

Folsom, nr. Fourteenth. Three-story frame.
O.—Geo. Schaffer.
A.—Salfield & John.
C.—B. Dryer.
$8,000.

Franklin, cor. Sutter. Two-story frame and brick basement.
O.—M. Brown.
A.—P. R. Schmidt.
C.—C. Chisholm; brick work, E. R. Shain.
$25,000.

Fourteenth, bet. Valencia and Guerrero. Two-story frame.
O. and B.—P. J. Haver.
Day work.
$2,500.

Fremont, cor. Harrison. Additions to Catholic Church.
O.—Father Nugent.
A.—T. J. Welch.
C.—P. F. Lynch.
$500.

G

Gough, bet California and Sacramento. Two-story frame.
O.—Geo. Bremner.
A.—H. D. Mitchell.
Day work
$6,500.

Grove, nr. Webster. Additions.
O.—W. Lang.
Day work.
$1,000.

H

Howard, nr. Twenty-fourth. Two-story frame.
O.—F. Stowe.
A.—S. Babson.
C.—W. Clark.

Haight, nr. Steiner. Two-story frame.
O.—Mrs. Lahey.
A.—Geo. E. Voelkel.
C.—Mart. Weber.
$4,600.

Howard, cor. Eleventh. Two-story frame.
B. and C.—Wm. Denney.
Day work.
$2,000.

Hyde, cor Sacramento. Seven two-story frames.
O. and B.—John Hinkle.
Day work.
$30,000.

Hattie, nr. Seventeenth cor Corbett Road. One-story frame.
O.—C. Trost.
C.—A. Discher.
$1,000.

J

Jessie, nr. Seventh. Two-story frame.
O.—W. Conklin.
C.—P. Laherity.
$1,500.

L

Lyon, bet. Pine and California. One and one-half story frame.
O.—P. Connelly.
C.—H. Monrad.
$4,000.

Larkin, cor. Hayes. Repairs to Pavilion.
O.—Mechanics' Institute.
Day work.
$4,000.

M

Mission, nr. Tenth. Two-story frame.
O.—Johannah Cassidy.
A.—Geo. E. Voelkel.
C.—I. K. Delmas.
$4,250.

Market, n s, bet. Mason and Taylor. Alterations.
O.—J. Gordon.
A.—Geo. E. Voelkel.
C.—C. O. Schnoor.
$1,200.

McAllister, bet. Lyon and Lott. Two-story frame.
O.—Mrs. Ash.
A.—T. J. Welch.
C.—Jas. Irwin.
$3,500.

Market, bet. Fourth and Fifth. Additions and alterations.
O.—Jesuit Society.
C.—M. Lynch.
$2,000.

Morton, bet. Kearny and Dupont. Two-story brick.
O.—N. L. nning.
A.—Piercy & Hamilton.
C.—Gray & Storer.
$3,000.

N

Natoma, bet. Seventh and Eighth. Two-story frame.
O.—Mary McKenna.
A.—C. J. I. Devlin.
C.—Bateman Bros.
$3,600.

Noe, nr. Seventeenth. Two-story frame.
O.—T. B. Grant.
Day work.
$2,500.

Ninth, cor. Bryant. Three-story frame.
O.—R. Cummings.
A.—M. J. Welch.
C.—W. W. Fowler.
$5,000.

O

O'Farrell, bet. Octavia and Laguna. Two-story frame.
O.—Mrs. Harrington.
A.—H. Geilfuss.
C.—H. Thom Whorden.
$4,200.

Oak, bet. Gough and Octavia. Two two-story frames.
O.—Mrs. DeLanger.
A.—T. J. Welch.
C.—R. Doyle & Son.
$6,700.

Oak, bet. Lyon and Lott. One-story cottage.
O.—A. J. Young.
C.—G. G. Gellispee.
$2,000.

P

Pacific, bet. Taylor and Jones. Two-story frame.
O.—Mrs. Scott.
A.—H. Gielfuss.
C.—Dom. Kreger.
$3,400.
Should have been reported last month.

Presidio Reservation. Four three-story frames.
O.—U. S. Government.
A.—J. H. Humphreys.
C.—F. Crowley.
$15,000.

Presidio Reservation. Two two-story frame barracks, brick foundation.
O.—U. S. Government.
A.—J. H. Humphrays.
C.—J. S. Tebballs.
$10,000.

Pierce, nr. Sutter. One-sto me.
O.—S. Nichols.
C.—S. H. Shanks.
$2,400.

Post, cor Scott. Two two-story frames.
O.—Mrs. Rebecca M. Davis.
A.—Copeland & Banks.
C.—Geo. R. Lang.
$14,000.

Post, nr. Scott. Two two-story frames.
O. and B.—J. C. Wier.
Day work.
$8,000.

Pine, nr. Steiner. Additions and alterations.
O.—John Reilly.
Day work.
$2,200.

S

Sixth, bet Howard and Folsom. Additions and alterations.
O.—W. Bloom
A.—S. & J. C. Newsom.
C.—J. H. McKay.
$2,000

Sutter, bet. Leavenworth and Hyde. Two-story frame.
O.—B. Marshall.
A.—Eisen & Pierce.
C.—Moore Bros.
$5,500.

Stockton, southeast cor. Stockton Place. Five-story and basement brick.
O.—L. & M. Sachs.
A.—P. R. Schmidt.
C.—McGowan & Butler.
Carpenter Work.—T. Riddell.
Iron Work.—O'Connell & Lewis.
$65,000.

Sacramento, bet. Franklin and Gough. Additions.
O.—E. F. Preston.
A.—Curlett & Cuthbertson.
C.—D. Perry.
$6,000.

Sutter, west of Larkin. Four-story and basement frame.
O.—
A.—McDougall & Son.
C.—
$20,000.

T

Tenth, nr. Mission. Two-story frame.
O.—F. T. McAuliffe.
Day work.
$1,500.

Twentieth, bet. Guerrero and Dolores. Two two-story frames.
O.—J. Boyhen.
A.—B. J. Clinch.
C.—P. J. Brennan
$4,600.

Twenty-third, cor. Fair Oaks. Two-story frame.
O.—W. Oakley.
A.—Townsend & Wyneken.
C.—F. W. Kern.
$4,500.

Treat Avenue, nr. Twenty-first. Two-story frame.
O.—H. Birth.
C.—W. Shiffield.
$3,550.

W

Washington, nr. Baker. Two one and one-half story frames.
O. and B.—W. Pluns.
Day work.
$5,000.

Washington, bet. Fillmore and Steiner. Two-story frame.
O.—Mrs. M. J. Meek.
C.—J. C. Wier.
$4,000.

Washington, cor. Stockton. Alterations.
O.—Methodist Chinese Mission.
A.—J. Marquis.
Day work.
$2,000.

ALAMEDA.

Central Avenue, nr Willow—1-story ctg; o, C. C. Kinsey; a and b, F. N. Delanoy; $3,000.

Central Avenue, nr Union—2-story fr; o, C. H. King; a and b, F. N. Delanoy; $3,000.

Park, nr Central ave—Additions; o, Methodist Episcopal Church; c, Jackson & Johnson; $500.

Santa Clara Avenue, below McPherson—1½ story fr; o, H. Spotz; c, S. W. Ducker; $2,500.

OAKLAND.

San Pablo Station—2 1½ story ctgs; o, M. Bolander; a, Eisen & Pierce; c, J. A. Boynton; $4,000.

Center, cor Fifth—1-story fr; o, W. Henderson; day work; $1,000.

MISCELLANEOUS.

San Jose—Two-story frame dwelling. O., E. J. Bassett: C., R. Summers; $3,200. Cottage. O., F. K. Ledyard; C., H. Clifton; $2,500. Cottage. O., H. L. Andrews; C., A. Kelsey; $1,800.

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SAN FRANCISCO, October 26, 1885.

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VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 3.

THE

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Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., MARCH 5, 1886.

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"A Journal of Architecture. The first number of the eighth volume of the CALIFORNIA ARCHITECT AND BUILDING NEWS appears in an enlarged form and new type. These signs of prosperity denote an appreciation of the journal by the class in whose interest it is ably conducted."—*S. F. Chronicle, January 18, 1886.*

"The Architect's Organ. The CALIFORNIA ARCHITECT, a monthly published in this city, has been enlarged and much improved, and the number issued to-day is one that would be a credit to any city. It is a publication that should be of great use to property owners and those who contemplate building."—*Stock Report, January 16, 1886.*

"THE CALIFORNIA ARCHITECT AND BUILDING NEWS comes to us with the opening of the new year very much enlarged and improved. It holds its own remarkably well against the older Eastern journals of the same class."—*The American Building Association News, Chicago.*

"THE CALIFORNIA ARCHITECT AND BUILDING NEWS for January comes to us in a new dress, and generally improved make-up, which renders it more acceptable than ever. It is always replete with valuable matter concerning the interests it advocates, and is ever an acceptable visitor, not only to the craft, but to those who desire to know whatever best applies to the most acceptable methods of architecture."—*Alameda Eneinal, February 3, 1886.*

IN a recent trip of the steamer *Burgos*, from England to China, during the first part of the voyage, from Plymouth to Alexandria, the consumption of coal was 282,240 pounds, the distance being 3,380 miles; the consumption per mile was, therefore, only 83.5 pounds, and the consumption per ton of cargo per mile, 0.028 pound; in other words, half an ounce of coal propelled one ton of cargo per mile.

Quarterly Review of Building Activities.

ALTHOUGH the figures presented in this article show considerable decrease in building activities as compared with the third monthly report of last year, and the quarterly report ending March, 1885, there is a good feeling among all classes of real estate owners, and very many express the intention of early commencement of new improvements.

Except among the chronic croakers who fail to discern a single ray of light even at noonday, confidence in future building movements is freely expressed, and at the slightest impulse or inducement a moderate, if not vigorous, boom in building is likely to start up. There is but little let down in the rates of rentals, and the number of vacant houses, stores, etc., is by no means large, nor nearly equal to what it has at times been in San Francisco, notwithstanding the rapidity with which new buildings have been erected within the past five years. Nor is the demand at all likely to diminish, with the increase of population steadily going on by natural augmentation from marriages and births, and the settling down upon this coast and in this city of tens of thousands who prefer the genial climate of California to the cold, frozen, snow-bound, blizzard-desolated sections, where not only common personal comforts are jeopardized, but life itself, to a certain extent endangered.

REPORT FOR MARCH, 1886.

87 Frame Buildings	Value,	$311,055
2 Brick "	"	26,200
12 Alterations, etc	"	21,830
101 Total value for March		$359,085
Total for January, 1886, as previously reported,		623,250
" " February, " " "		377,197
Total first quarter, ending March 5, 1886		$1,359,532

NOTE.—The quarterly reports in this journal being made in its third, sixth, ninth, and twelfth issue for the year, and the day of issue being the 5th of each month, December of each preceding year is made a factor in the respective reports.

January, 1885.— 73 buildings reported				Value	$590,150
February, " —121	"	"	.....	"	608,850
March, " — 97	"	"	.....	"	768,750
Total first quarter in 1885					$1,967,750

The above figures show a falling off from the first quarter of 1886, as compared with the corresponding quarter of 1885, of $608,218. But this scarcely represents the actual condition of the building interests, as the grading work of the Flood Building, corner of Market and Fourth Streets, is under way, but not included in the above, and the figuring for the other —constructive works—is in progress as we go to press. The total cost will reach in the hundreds of thousands of dollars, and will be a large item in the report for April.

The Nightingale Building, Market and Franklin Streets, is also under way, and only $11,504 of its cost included in the report of this month, whereas its total cost will be several scores of thousands of dollars.

In further modification of the foregoing figures it may be stated that the engagements for present quarter include but four over $50,000 each, to wit: one of $130,000, one $90,000, and two of $80,000 each, or a total of large jobs of $380,000; while for same quarter in 1885, there were reported two of $300,000 each, one $80,000, one $90,000, and one $53,000, a total of $823,000—a difference of $443,000 on large jobs, which would place the quarter of 1886 only $165,218 short of 1885 on residence, tenements, and the general class of buildings, so that, with the several large jobs approaching contract, it is altogether probable that the semi-annual showing for 1886 will equal that of the preceding year.

Other prominent buildings than those mentioned, upon which work has been actually commenced, but which, as a whole, have not matured into contracts for the whole work, will swell the future reports for the year sufficiently to overcome the shortage thus far reported.

There is also considerable activity in smaller constructions, and many of the architects' offices are "full of work."

ACCURACY OF BUILDING REPORTS.

The reports made in this journal are more nearly correct and reliable than any other. The attempt of some of the daily papers

to manipulate building reports do not represent actual facts. Engagements are sometimes *repeated*, and, for appearance sake, cases reported by this journal two or three months previously, are utilized to "make a respectable showing." It will be found by comparison that the weekly reports of a daily contemporary which pretends to supply its readers with reliable information, that while for the month of March, including the four weeks prior to date of present publication of this journal, said journal reports a total of 62 buildings at a total cost of $341,600, we give, for the same period, 101 engagements, at a total of $359,085. Difference in number of engagements, 39; difference in reported cost, $17,485, thus showing that our contemporary, with its 39 buildings less, reached within $17,485 of the total cost of our 101. This, if the *weekly* report of building intelligence represented the facts as to actual cost of the 62 buildings reported, the additional 39 buildings reported by us would cost but $17,485, or an average of less than $450 each, which is not a fact.

The reports from Oakland, San Jose, Sacramento, Merced, and other places outside of San Francisco, are light; but this may be accounted for by the heavy rains of the season, which renders building operations outside of cities difficult, if not impossible.

The Present Great Question in California.

WE have so frequently and plainly stated our position upon the Chinese question that no one who reads this journal should mistake or misunderstand our views. From the days of its infancy, until now, there has been but the one sentiment expressed in these columns,—that of absolute opposition to the Chinese as part of the population of the United States. The record will show that long before many of our contemporaries on this coast yielded to the power of argument existing in the actual, living facts of the case, this journal contained and expressed earnest and honestly conceived and believed convictions that the Chinese were in every sense an objectionable and undesirable element in social and business life in California; that not only labor was demoralized, and wage-earners of Caucasian blood debased and injured, but that manufacturers and producers of every class were being crowded to the wall, and that it was only a matter of time when the manufacturing and monied interests of the country would feel the pressure and begin to cry out for relief. That time has come, and from one end of the Pacific Coast to the other the sentiment expressed tallies with those to be found in the early numbers of this journal.

California Architects Inactive.

THE Chapters and Associations of Architects in the Eastern and Western States seem to be alive and engaged in earnest work, not alone in personal interests, but to all the great issues and matters involved in and relating to the more perfect, enlightened, and intelligent practice of the profession, to a fuller and better understanding of the innumerable features and principles of construction, and the endless involvments that surround and are interwoven in the study and delineation of the science of architecture.

The architects of these extreme Western States, however, seem at ease, content with the pursuit of individual success, leaving the profession, outside of personal practice, but little cared for. True, the sessions of the Chapter are held monthly, and a certain amount of routine work is done, and many excellent things *contemplated, projected, and proposed*, but for the want of *earnest workers* but little is accomplished. In all matters of general interest there must be hearty and united co-operation and determined effort to produce results of any value. It may be that we of the Pacific Coast know it all—each for himself; but more probable that a stirring up of matters, and delving after facts, figures, and secrets, at present unseen, would reveal something worth knowing. This will come to pass when the restrictions of individualism and personal views and ideas yield to a broader and more general spirit of advancement and improvement.

Important to Contractors and Owners; Lien Law Issue.

SECTION 1183 of the Mechanics' Lien Law provides that all contracts amounting to one thousand dollars and more shall be "filed in the office of the County Recorder," etc., "otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, *except the contractor*, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof."

The validity of the above piece of special legislation is likely soon to be tested under the operation of the provisions of the lien law—*special* in that it discriminates against contracts for building and constructive works, etc., and not against contracts in general for similar amounts. Hence its application is *special* and *discriminating*, and consequently unequal and unconstitutional; and further, *special* in character, as it is well known that the above and other amendments were manipulated and put through the legislature by certain influences, for *special, personal considerations and interests*, violating all principle of law and equity in the creation of *preferred creditors*, first, in securing to workmen their pay, which is reasonably right and proper; secondly, making the material man the next in order of payment, leaving what balance of contract money there may be to be divided among the sub-contractors—stair-builders, painters, plumbers, plasterers, bell-hangers, etc.—the latter, if there is not enough left to pay them in full after the workmen and material men are paid, are compelled to accept such percentage of their claim as the unconsumed balance of contract money will give them.

The Supreme Court, however, by a recent ruling has promulgated a theory and construction of the lien law which clearly indicates fatality to the foregoing, whenever the issue reaches that tribunal for decision.

The case giving rise to this article is that wherein an owner entered into a contract with a prominent and responsible contractor for the erection of a building, which was carried through to completion in a satisfactory manner, the stipulated payments having been properly made during the progress of the work, under the terms of the contract, signed by both of the parties in interest, but not "*filed*," as directed by the lien law, with the County Recorder.

The owner, by some means, discovering that the lien law released her from all further financial obligations to the contractor, by reason of the *non-filing* of the contract, although she had received and was in possession of his material and labor, declined further payment, because the law reads that "no recovery can be had by either party." Consequently, the contractor has no protection under the law to recover his rights, nor against the dishonesty of the owner to pay what she owed and had agreed to pay. An owner who receives building values and refuses to pay for them under any equitably right circumstances, should blush to make any pretense to honesty of heart or principle.

What though a legal farce, manipulated into a form of law, renders it possible for the obligator to escape his or her obligation, the moral aspect of the case furnishes no color of integrity in the party seeking shelter behind the flimsy subterfuge of an unrighteous law.

But, in the case in question, the biter will be bitten, as a score of liens have been filed, all of which are almost certain to result in judgment against the owner, and if each is prosecuted separately—as they should be for the purpose of enlarging the legal dose as much as possible, each carrying separate attorneys' fees and Court, trial, and judgment costs—it will require considerably more than the sum due as balance of contract money to settle all the claims.

Liens—Rights of Farm Hands.

SINCE the publication of the Mechanic's Lien Law in book form, by this journal, we have been called upon to answer numerous questions. Among others, "Have farm hands the right of lien on the farm or lands upon which they perform labor?" We find no special provision for such cases. If the labor performed is in the building of fences, the erection of sheds, barns, houses, or constructions of any sort, a lien thereon will lie under the general lien law; but the only recourse for wages for usual, ordinary farm-hand labor is as found in the book referred to, which contains all lien law enactments in this State.

EDITOR CALIFORNIA ARCHITECT:

Dear Sir—In your article, "Profits on Building Contracts," appearing in the last number of the CALIFORNIA ARCHITECT, you endeavored, if I understand it rightly, to set up the theory that contractors, as an average, get nothing out of their contracts, or at most their profits are very small. To a certain extent, perhaps, you are right, but permit me to suggest to you that such results are, commonly speaking, the experience of all business men. The losses that occur from time to time, through bad debts, depreciations, fluctuations, etc., are such that the final results of each year, particularly during years of light trade, so far eat up the profits that should be that merchants, manufacturers, producers, and dealers generally often find themselves but little better if not worse off at the end of the year than at the beginning.

I query, therefore, whether in your otherwise well-written and interesting article, you have not strained points a little to make out a case. True, there is nothing unusual or surprising in the fact that the building business is at times to some unprofitable, as it is but a common experience with all businesses. You theorize well, and are right in many of your conclusions, but you make a mistake in applying them specially to the contracting business. MERCHANT.

In answer to "Merchant" we reply that his criticisms are very like the scrutinies of the men in the contracting business, who, by their short-sighted errors in figuring, establish the condition of things set forth in the article referred to, *i. e.*, too limited in scope. He fails to comprehend the situation, or to take in and apply *all the facts*. It is true, as he states, that thousands of men run their business with but little average profit, and many find, by taking stock and balancing accounts, that the losses by failures and bad debts more than counterbalance the gains and profits. This is a usual and universal experience in all business operations where the *possibility of losses attaches*. If a merchant or dealer in any line of trade or commerce makes a lucky hit, and realizes a profit upon a month's transactions, amounting to one, five, or fifty thousand dollars, and the succeeding month, by failure of creditors, or unfortunate speculation, loses an equal amount, he is no better off than if he had done nothing within the time; or even worse than that, for current expenses necessarily would be greater in transacting a considerable amount of business than if no goods or merchandise whatever had been moved or handled; and with the gains and losses equal in the direct transaction, the wears and tears and incidentals would of course work an actual loss.

A STRONG POINT OVERLOOKED BY "MERCHANT."

While all as above stated is true, there is a material factor in the case which seems to have escaped the notice of our correspondent—that is, that the business contingencies of losses by failure of creditors, depreciation of values, unprofitable ventures, reverses in speculations, etc., do not exist in building contract operations. When a contractor enters into a contract obligation with an owner—presuming always that the instrument of agreement is properly drawn and signed—he receives in and by the document, a guarantee that secures him *beyond all peradventure*, against any possible loss, as far as the contract amount is concerned. The owner, by signing the contract, not only agrees to pay a certain sum of money for a specific purpose, but he virtually pledges and incumbers his land, as well as the erections to be made under the contract, as security for the faithful payment of the contract amount. This pledge and incumbrance may not be, and is not a direct, personal, voluntary act, but it is equally binding and secure, being made so by the laws of the State, to wit, the Mechanics' Lien Law, which stands unimpeached, and by the highest legal tribunal pronounced valid, as between owners and contractors, for the full amount of contract money; so that the latter is twofold secure in any contract undertaken, first by the owner's personal obligation and agreement to pay, and secondly in the sure and certain security provided by law in the land and improvements covered by the contract. Consequently, none of the uncertainties, contingencies, and risks that attach to general trade and transactions apply in the case of building contracts, as the full sum of contract *must be paid*, under any and all circumstances, by the owner, either voluntarily or from the proceeds of the sale of his lands and improvements, as by law provided. Contractors cannot, therefore, possibly suffer any loss as far as the sum of contract is concerned.

Hence the conclusions of the former article on the subject matter involved were and are correct; for contractors always receive the *full sum* of contract, except in isolated cases where, from a disposition of pure meanness on the part of owners, contractors submit to the *shaving* process in settlement to avoid lawing, or where the *shaving* has been done by the contractor, by imposing inferior material or workmanship, or both, and the owner rightfully refusing to pay without some abatement as an equivalent for the omissions and wrongs practiced.

Piecework vs. Subcontracts.

IT is argued by some that piecework and subcontract work are synonymous terms, and that in all cases of house construction, piecework is practiced in every instance of subcontracts. This is an erroneous and forced construction, viewed in the light of the common usage of the expression. Subcontracts, as a rule, carry with them the funishing or value of certain materials as well as labor. An original contractor may, and often does, include in his contract the erection of a building as an entirety; yet his special branch may be that of mason or carpenter. Consequently, it becomes a necessity that he segregate the several branches of the work, and sublet the same to those specially engaged in the respective departments; as, the mason work to a mason; the plastering to a plasterer; the plumbing to a plumber; the painting to a painter; the stair work to a stair builder; the bell work, glazing, etc., to those engaged in the several lines respectively, each and all of whom are supposed to furnish all necessary material for the respective purposes. But at the same time, the labor alone of each department may be made a matter of subcontract, and so far assume the character of piecework.

Piecework, as generally considered and understood, is an entirely different affair, and means the segregation and letting of portions of the labor at a stipulated price, instead of the same being done by regular day work. For instance: a contractor, to relieve himself from all uncertainties as to the cost of labor on any portion of the work, may let the same piecework, by agreeing to pay a party or parties a certain sum to erect the frame of the building; to put on the rustic or wall boarding; to lay the floors; to trim the house, *i. e.*, put up all the wainscoting, case and trim openings, hang doors, blinds, etc., and so cut off all labor-paid day wages, all of which means just two things: first, the contractor by thus piecing out the work, runs no risk as to the cost of the labor. Second, if the labor so pieced out is reasonably worth more than the sum agreed upon with the pieceworkers, and is less than the cost originally estimated and included in the contract amount, the contractor saves and pockets the difference, and the pieceworkers lose accordingly, compared with fair day wages, or they must put in extra hours per day, or work more incessantly—slavishly—to obtain usual wage rates of pay, or what is worse, slight and botch the work all that is possible, so as to drive through each day enough to bring them out even.

Another and serious feature of the case is that pieceworkers, as a rule almost universal, are inferior men and poor mechanics, men who find it difficult to obtain steady work by the day, either because of their mechanical inferiority, or a predominant disposition for killing time, and doing less than good hands willingly and naturally put through as a rightful duty to their employers and in justice to themselves as men; for a good and honest journeyman mechanic entertains pride both as to his mechanical executions and to his integrity for faithfulness as a man. But very few, if any, of the latter are found among the pieceworkers, who are looked upon as *rats* by the better classes.

But there is a class who rail out against pieceworkers, who are no better than those whom they decry, men who love to dictate and direct others, yet possess not the essential qualification of ability to guide, the most prominent feature of their make-up being their tongues, which they often use abusively and foolishly and to their own disgrace and disadvantage; as Æschines says, "A fellow whose tongue is his sole merit, like a flue, all there is in him, besides, were good for nothing."

Piecework has no other advantages than those mentioned—special benefits to contractors—while to it there are strong objections; for while work done under the system is sometimes fairly executed, it is never as perfect as if done by reliable, day workmen, and generally—seldom otherwise—it is poorly done, with every neglect and slight that is possible instituted so as to escape entire condemnation and re-doing. The pieceworker can have no other incentive than to make the most out of his bargain. His whole interest centers in putting through as much work as possible to augment financial results. To him, pride and satisfaction in the quality of the work cut no figure. When completed and paid for, his interest ceases, and he goes abroad to seek another chance to displace his superiors as workmen, by negotiating them out of employment as day laboring mechanics.

The Price of Labor in New South Wales.

IN the last number of the English *Engineer* is a paragraph giving the prices (in English currency) paid to various grades of mechanics in the colony of New South Wales. We have changed it into American currency, that a comparison can be made with prices that are current in the United States:—

WAGES PER DAY OF TEN HOURS.

Machine men in filing shops from	$2.00 to $2.80
Iron turners	3 53
Engine fitters	3 42
General fitters	2 82
Brass finishers	3 00
Iron moulders	3 23
Brass moulders	3 00
Pattern makers	3 00
Boiler makers	3 23
Coppersmiths	3 00
Blacksmiths	3 63
Blacksmith strikers	2 00

As a considerable, in fact the greater, portion of the manufactured

iron used in the colony is imported, persons desirous of obtaining employment in iron manufactories should be extremely careful in going to that country, the number of such establishments in New South Wales being limited. Handy mechanics, willing to make themselves useful, readily find employment, either in town or country, and generally do well.—*American Engineer.*

On Stair Railing.

Editor California Architect:

Notwithstanding the many treatises written by able authors on stair-building, from the period when the celebrated Peter Nicholson stood confessedly the master conceptor and delineator of the science of stair-building, down to the present day, there seems to have prevailed among the workmen in carpentry, a distrust in their ability to handle the many intricacies involved in stair railing, even over the commonest cylinder. This distrust exists even among the best and most competent workmen, and the great intimidating feature is railing work.

A thorough knowledge of the art of constructive joinery is imperative to perfect workmanship, with skillful and faultless stair work as the highest point of attainment in building sciences, a full and perfect understanding of which involves the necessity of a thousand lines and points of material value not required in carpentry or general construction.

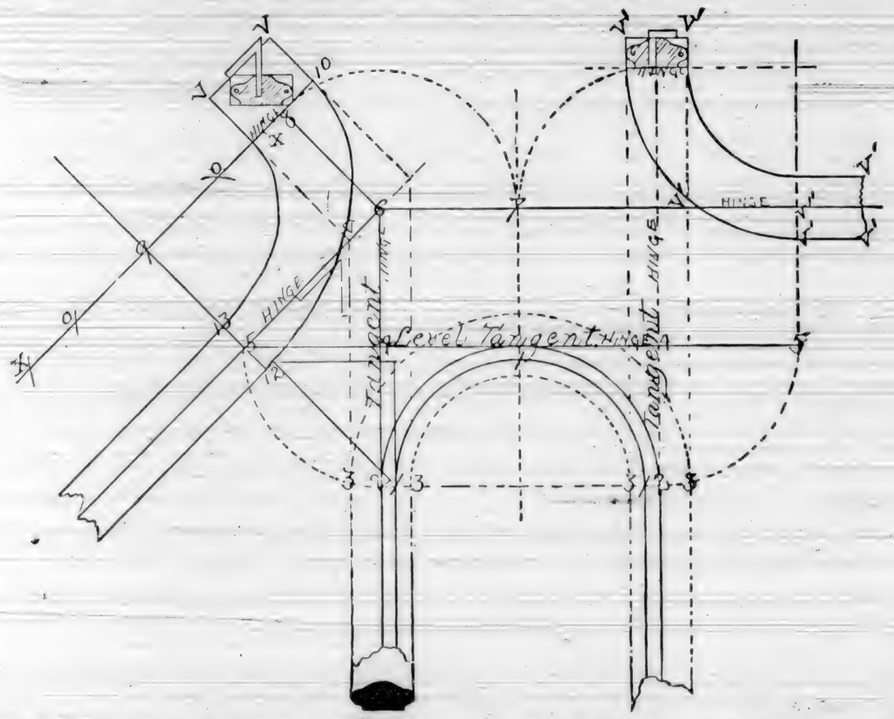
The proper construction of stairs is an all-important part of house building to both architects and owners, as their daily and hourly use affords comfort and ease, or tires and distresses, as the case may be, according to the accuracy with which the true principle of stair-building is observed. Strength and solidity are also important factors, especially in stairs subjected to severe usage in the passage of safes, heavy trunks, and weighty packages, and in cases like that in France, where, by the falling of a stone staircase, the lives of scores of unsuspecting people were destroyed and a large number maimed and crippled for life, as a result of defective construction and the over-confidence of a thousand human beings who risked their lives upon a thing of beauty, which collapsed from overloading.

I think there are not more than three sets of stairs of similar construction to that just alluded to in the United States, the most notable and prominent of which is in the State House, Columbus, Ohio. Such stairs are supposed to be self-supporting, the wide ends of the steps being inserted in the walls of the stairway, and the cylinder ends and intermediate parts lapped and cut, locking the respective steps together, so as to provide a continuous strength to the entire construction.

The following diagram shows a very easy way of getting out stair rails over cylinders, 1 1 1 being the face of cylinder, 2 the center of baluster from which the tangents must be derived, and is, in fact, one of the most important points in the ground plan, for the reason that the rail is supported all around the cylinder on the top and center of the balusters.

Commence by making the tangent as shown; place half of the rail each side of 2 3 3; draw level tangent right and left indifferently; take the compass, stand on left, describe a curve from the spring line at 2, to cut level tangent at 5; do the same on opposite side.

The tangents being unfolded, set up the highest—say from 4 to 6 on the left; connect 6 and 5, which will give the tangent in the pitch; square out from 6 to 8, and stand compass in 6; open to 7, the center of cylinder; draw curve, cutting at 8; continue line 8 to 9, parallel with pitch 6 5; 8 9 then becomes the plane of the elliptic curve covering the pitch. The breadth of rail in pitch is next to be found, as shown by the illustration, carried up from 3 8, cutting pitch line.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The Art of Bricklaying.

THERE is an art—a mechanical science—in laying bricks. The handling of a trowel in picking up and spreading mortar, and placing bricks in walls, appears to the common observer as a very simple matter, at which any ordinary man should gain proficiency by slight practice. But this is a great mistake. To lay bricks skillfully and as they should be laid, is a mechanical attainment not acquired by some in years of practice. Thousands of bricklayers spend their entire lives in the daily use of the trowel without being able to execute a clean, neat job of masonry. The difference in individual proficiency is great, and from every gang of twenty workmen there may be selected some who stand head and shoulders above others as workmen, and whose easy and skillful handling of the trowel, and grace of motion points them out as the far better men. Such men, with the same or less expenditure of effort and labor, do as much or more than their inferiors as to quantity, and do it infinitely better. But where large forces are required the impossibility to secure a sufficient number of picked men, compels the employment of others whose services would be dispensed with but for the necessities of the case. The same features hold good as far as the bosses are concerned. It is often the case that men who are unqualified to properly fill the place of journeymen drop out of the ranks of the wage-earners and constitute themselves "masters," by which means they are enabled to conceal their personal mechanical deficiencies, and are a part unwarranted by possessed qualifications.

As the result of all this, and the low prices at which work is *too often* undertaken, and the further fact that there is so little earnest devotion on the part of many masters to acquire a thorough knowledge of the art beyond the experiences and customs of daily life, there is a vast amount of poor brick-work done; and the real *master masons*—men worthy the name—are made to endure the hardship imposed by competition with the lesser class, whose knowledge of the art of brick-laying reaches not a whit beyond the extent of their limited practical experiences.

These remarks are warranted by the facts known to exist in all cities, with San Francisco not an exception. The piling up of bricks in walls forming the outlines and shape of buildings is one thing, and the skillful manipulation of materials producing the same result is another. Pertinent to this, one of the technical journals devoted to brick-making gives the following general particulars to be observed in using brick material: 1. To reject all misshapen and unsound bricks. 2. To place the beds of the courses perpendicular, or as nearly perpendicular as possible, to the direction of the pressure they have to bear, and to make the bricks on each course break joints with those of the courses above and below by overlapping to the extent of from one-quarter to one-half the length of a brick. 3. To cleanse the surface of each brick and to wet it thoroughly before laying it, in order that it may not absorb the moisture of the mortar too rapidly. 4. To fill every joint thoroughly with mortar, taking care at the same time that the thickness of mortar shall not exceed about $\frac{1}{4}$ inch. In order to prevent the use of too great a thickness of mortar, it is usual in specifications to prescribe a certain depth which a certain number of bricks shall not exceed. For example, if the bricks are $2\frac{3}{4}$ inches deep, it may be specified that four courses of bricks, when built, shall not measure more than 1 foot in depth, a condition which implies that the average thickness of mortar in the joints shall be $\frac{1}{4}$ inch. 5. To use no bats or pieces of bricks except when absolutely necessary in order to make a "closure"—that is, to finish the end or corner of a wall, or the side of an opening—and even then to use no piece less than half a brick.

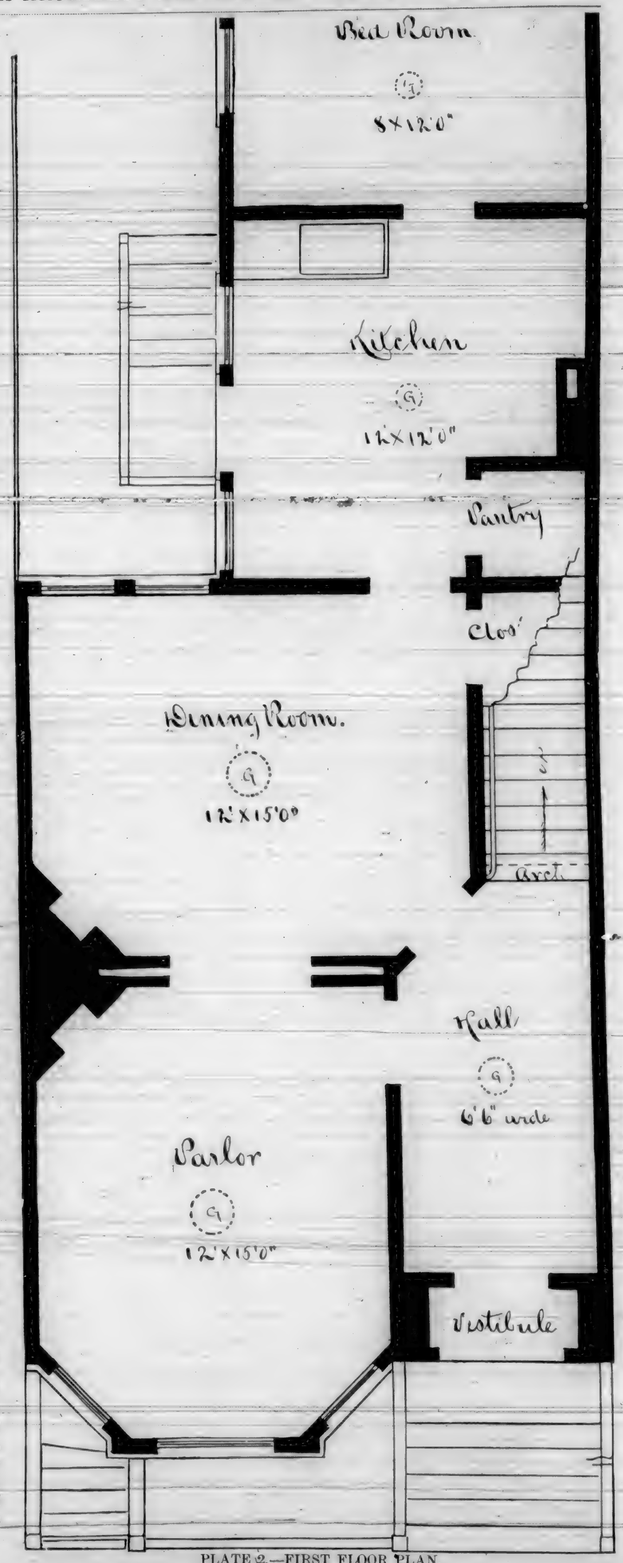

PLATE 2.—FIRST FLOOR PLAN.

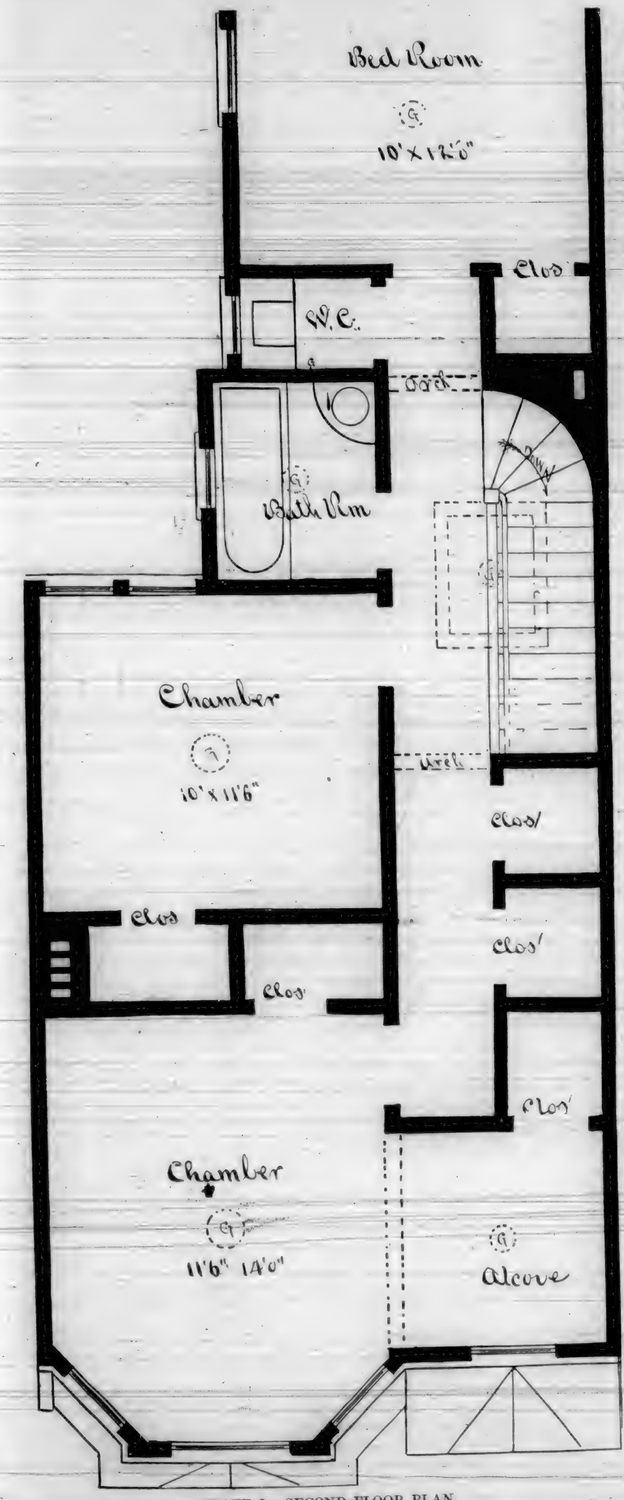

PLATE 3.—SECOND FLOOR PLAN.

A British Mansion.

A LATE issue of the London *World* contains the following interesting description of one of the handsomest and most elaborate mansions in Great Britain: "The rebuilding of Mountstuart, Lord Bute's place, near Rothesay, has now been completed, and it is one of the most magnificent mansions in Great Britain. The house covers an acre, and is in the mediæval Gothic style of the thirteenth century. The walls, turrets, and balconies are built of stone brought from a quarry in Kirkcudbrightshire. In the center is an immense tower 120 feet high, with a wide balcony all around the top. The great hall is constructed entirely of alabaster and the rarest marbles, with columns and a gallery, and the grand staircase is also of marble brought from Sicily and Carrara. The drawing-rooms are paneled with walnut and beautifully decorated, and so are the dining-rooms, the largest of which accommodates eighty guests. The ceilings and chimney-pieces of all these rooms are most artistic, and so also are the windows, the work of which is extremely elaborate. There are three immense libraries and a billiard-room, all with carved stone fire-places of antique design.

THE estimated copper production of the Lake Superior mines for 1885 gives the following figures: The total production of smelted copper was 71,150,000 pounds, 1,850,000 pounds more than the product of 1884. The Calumet and Hecla produced 47,100,000 pounds in 1885, against 40,473,585 in 1884 and 33,125,155 in 1883. The Quincy Mine product was 5,839,428, or 160,000 pounds more than in 1884. The Franklin comes third and the Atlantic fourth.

THE Northern Railway of Russia is using peat as fuel to a great extent, and saves half the cost of wood or coal by the operation. The peat is found chiefly near Moscow, and is cut mostly by steam machinery, which can penetrate to a depth of twenty feet from the surface of the bog.

THERE are 5,500 sets of telephone instruments connected with the telephone exchanges in the city of New York, besides some 600 private-line instruments. It is estimated that 50,000 conversations take place over the wires of the metropolis every twenty-four hours. For each message there must be at least five "Hellos," which would make 250,000 "Hellos" going over the wires daily in New York.

AN ORIENTAL CANTILEVER BRIDGE.—A letter from Yokohama, Japan, bearing date October 6, gives the following description of an old bridge constructed by native engineers. The writer evidently shared the popular, but erroneous, impression that engineers had urged the claim of novelty in the cantilever principle. The following is the description *verbatim:* "At the sacred city in Nikko, the other day, I was rather amused and interested at seeing a fine and very costly bridge of cantilever construction—abutments of hewn stone, shore piers, hewn granite, octagonal, monolithic, mortised for stone girders; monolithic plate beam to receive wooden superstructure. The stringers are fastened into the abutments, balance over the stone beam, but do not reach, by considerable distance, the gap being fitted by middle stringers let into the shore stringers. The Niagara bridge is a mere amplification of this one, built before America was settled, as a religious duty, very expensive, of thick, red lacquered work, and, like a bridge of angels, its planks are never profaned by the feet of the laity. But it seems queer-like, to come away here to find our new inventions very old."—*Van Nostrand's Magazine.*

NO WOMAN can lace herself so tight as a man can drink himself.

Science of Architecture.

[Special for this Journal. By F. HILLERT, Architect and Mechanical Engineer.]
(Continued.)

BY ventilation we understand the renewal of the air in a closet room. This is accomplished by the conveying of fresh air to, and carrying off of the spoiled air from the same, which is either done by voluntary and self-acting ventilation through the permeability of the walls, and its doors and windows, etc., without any separate arrangement, or by special arrangement. Of the latter and its action we will only speak.

The foundation for the calculation of a ventilation arrangement is the finding of the amount of air, for every hour, which has to be admitted, respectively discharged. The air in the room is spoiled by: (1) the respiration and transpiration of men and animals, (2) lighting of the room, (3) smoke and dust, (4) mechanical and chemical processes developing gases. It can be assumed that a grown person, for every hour, breathes out 0.020 cubic meter (0.72 cubic feet) of carbonic acid gas; one burner consuming 0.140 liter = 0.140 cubic meter = 5 feet of gas, burning with a capacity of 7.8 candles, making 0.093 cubic meter (3.32 cubic feet) of carbonic gas; good air suitable yet for men to live must not contain more than 0.7 volume per cent of carbonic acid gas. The creation of heat by one person is 130 cal., and by the combustion of 1 cubic meter of gas 8,060 units of heat are produced.

From this information can be calculated, for certain cases, the amount of air which has to be conducted into a room for every hour, to retain the same at a certain temperature, respectively, at a certain state of purity, certainly only under the presumption, in accordance with our present state of knowledge, that, besides the carbonic acid contained in the room, the other exhalations and impurities stand in the same ratio with the respired carbonic acid. This will not be always the case, and, therefore, for different purposes different quantities of air are to be taken into account. The following table furnishes the air quantity for one person for one hour required for different purposes:—

	CUBIC METER.		CUBIC METER.
Hospitals	70	Common Workshops	60
Surgical Operating Rooms	80, 100	Unhealthy Workshops	100
Halls for Contagious Sickness	150	Concert Halls and Theaters	40, 50
Prisons	50	Meeting Halls	60
House of Correction	20	Schools for Children	15, 20
Barracks (Nights)	40, 50	" Grown Persons	30, 35
Stables	180, 200	Evening Schools	35, 40

For rooms to live in, 10. to 20 cubic meters are sufficient for each person, but since the number of them will always vary, or cannot be decided beforehand, we can take, commonly, for an hour's change of air a volume equal to 1 to 2 times the amount of the cubic contents of the respective room. The letting in and taking out of the air, that is, the motion of the air, is always produced by disturbing the equilibrium of two air columns, either by warming respectively, by cooling off of one of them, or by reducing or increasing the pressure of the air column by the forcing in or by driving off of air by machine apparatus. The renewal of air by difference of temperature is named "natural ventilation," the one produced by machine, the "artificial ventilation."

1. VENTILATION BY DIFFERENCE OF TEMPERATURE.

If we connect both ends of a vertical or inclined channel with the atmospheric air, the same will remain at rest as long as the temperature of the same is equal to the atmospheric air temperature. If the air temperature in the channel becomes lower, then, by reason of its larger density, the equilibrium in the channel is disturbed, and the air in it will take a descending motion; but if the air should become of a higher temperature than the atmosphere, the first will be displaced by the latter and an ascending motion is the result. On those physical proceedings depends the ventilation by the difference of temperature.

The simplest arrangement for this system of ventilation consists to give to the room either only one channel for the admission of fresh air, or one for the leading off of the spoiled air; the leading away in the first instance and the admission in the second is done partly by the untightness of the surrounding walls, or by opening of doors and windows at times. This manner of ventilation is not rational, on account of the small and very irregular effect, by the producing of the unavoidable draughts, which, when only one discharging channel exists, is disagreeably felt at the window, and by opening of the door. We find, in execution, this arrangement mostly applied in those instances where, at the commencement of a building, the ventilation was not considered and afterwards introduced, or when unimportant rooms are to be ventilated, and when the above disagreeabilities are of minor importance.

The practical arrangement of a ventilation based on the difference of temperature consists of the entering of the outside air through channels into the rooms to be ventilated, and for conducting away of the spoiled air to above the roof, by protected channels. As long as the air in the room and in the channels is warmer than the outside air, there is a constant motion of air through the room to above; as long as the air in the rooms and channels is cooler than the atmospheric air outside, a constant setting motion of the latter in the channels and through the room, is going on. The first instance will happen through the winter period of the season; the second, in a limited manner, during the summer-time, that is, as long as the walls are capable they withdraw heat from the room, or if, for single cases, perhaps, regardless of wet, ice or water is applied, to cool and freshen the air in the room. The supply of fresh air can be arranged for the winter season for each room direct from the outside, which is not recommendable, on account of the irregularity of the source of supply by the action of the current of wind. It is best to take the air for many rooms by a common supply channel, whence the same can be branched off and distributed to each room separately.

The supply of air is taken through a channel placed in a sheltered position against dust, rain, and snow, a few meters above ground. Since the wind bears a considerable influence on the measure of ventilation by the pressure of the wind against the column of air in the channel, a densing, or, by suction, a thinning of air is produced, and care should be taken, by the arrangement of the air channel, that the action of the wind pressure should be made useful for ventilation, and the action of the suction be made harmless. It is recommendable to take the air from two different points of the compass, and according to the direction of the wind, the one or the other of the entrances should be used.

The execution of the horizontal air channels must be a careful one, that to the entrance no moisture from the surrounding ground find egress. The cold air taken from the outside should, before getting within reach of persons, be warmed to the temperature of the room. The warming can be done either in each room separately, on the heater placed in the room, or, for many rooms together, by a separate heater. In the last instance arrange as with air heating, the heating apparatus in the basement, and conduct the warmed air by perpendicular pipes to the respective rooms. With the heating of the air in the basement, an increase of the ascending motion of the air is produced, the warmed air becoming lighter than the cool air. This is an important fact, expressly for rooms located in the upper stories.

The warming of the air brings with it a reduction of the relative moisture; it is therefore necessary for all ventilation arrangements to increase the moisture of the air by the evaporation of water. The conducting channels are best placed in the middle and not in the surrounding walls of the building. The discharge from the same into the rooms can be concentrated, placed under the local heater, but better, when possible, when the outlets are distributed in as many places as possible, that the most uniform distribution of the fresh air is obtained. Care must be taken that the admitted air does not become disagreeable to the persons in the room, creating a feeling as if exposed to a draught. The discharging channels, likewise to be located in the middle walls, are to be conducted each by itself to above the roof, and to discharge the air below the roof, and give to the space below the same a corresponding outlet. Or unite the outlets in groups on the floor roof and conduct the air by a common channel to the outside or above the roof. The last arrangement is the best. To empty the air below the roof is not advisable, as in cold climates the snow lodged on the roof will begin to melt, and damper exists to the roof timber when a portion of the moisture contained in the discharged air is condensed, lodging on them and in the space below the roof (attic).

In the rooms itself the opening for discharging air should best be located close to the floor, as also close to the ceiling; the outlet above the floor serves, by normal temperature, to conduct away the heavy air, richly saturated with carbonic acid gas; the outlet under ceiling, by a high temperature, to discharge smoke and the products of combustion from burning gas light, etc. The openings for discharge should be many and in different places. For the calculation of the size of the channels use the formulas therefor given for air heating. With the above described arrangement for ventilation, based on the difference of temperature, it is only required to know and consider the difference of temperature of the rooms to be ventilated and of the outside air.

By heating of the air in the admission or in the discharging channels, the change of the current of air can be increased and hastened. So soon as the air in the admitting channel is heated above the temperature of the air in the room, we obtain in the same time an increased warming, and the whole arrangement will be hot air heating, mentioned before. Therefore, there remains only to be considered the ventilation by difference of temperature, where the discharged air is heated. This system of ventilation may be known under the name of aspiration system. The warming of the air to be drawn off can be done by a gas jet or any other special heating apparatus, either for each channel (discharging) separately, or all in common by being united before. The warming of each discharging channel by itself is, when many rooms are to be ventilated, rarely applied, and mostly only then when for some single rooms a more powerful ventilation should be desired. In most instances, and for larger establishments, it is better to warm the air to be discharged together. The uniting of the discharging channels of many stories can be arranged in many different ways; either, as before said, the channels are conducted to the attic, and there united to a common channel, or the channels are conducted in the ceiling of each story in a horizontal direction to a common ventilation channel, or the discharging channels are conducted, instead, perpendicularly up, and down to the basement, and then empty together in a horizontal collection channel to be conducted hence by a common ventilation channel to above the roof.

Under the same conditions the first arrangement is, in execution, the simplest, but in effect the most unfavorable; the second is frequently impossible of execution on account of the distribution of the building itself, but in effect the best; the third has the best chance of execution, and its effect ranges between the two former, *i. e.*, when the effect is considered identical with the larger velocity of the air to be obtained. The latter in execution is the most adapted and employed.

The heating of the air with gas is, for large establishments, very expensive, and therefore seldom used. To a fire-place or a central heating in existence, as a rule, the heat of the escaping fire gases is used. For this purpose the chimney is made either of wrought or cast iron, placed in the ventilation channel or shaft, and conducted high above the roof. For the summer season, arrangement for a separate grate fire is made, which conducts its fire gases direct to the smoke stack. When the escaping fire gases of an existing fire cannot be utilized, the arrangement of a smoke stack with a separate fire for warming of the discharged air is, economically, not much more recommendable or preferable than are separate air-heating oven steam heaters or hot water spirals.

The ventilation shaft, as well as the smoke stack, ascending in the first above the roof, should be supplied at the outlet with an air or smoke suction, and the ventilation shaft, by the use of an iron smoke pipe, should be supplied with irons for ascending for the purpose of controlling the latter.

In the execution of the horizontal collection channels, care is to be taken that all passages of the vertical discharge pipes, as all widening of channels, are made gradually; the execution in general is, besides, the same as those for the channels of air heating.

For the arranging of an "aspiration" system it is required to calculate the actual velocity of the air in the discharging channels correctly, as nearly as possible; therefore the following formulas will serve, applied under the supposition that the air in the channels has a uniform temperature, the channel itself has a quadratic or circular section, and that all changes of direction and section are gradual.

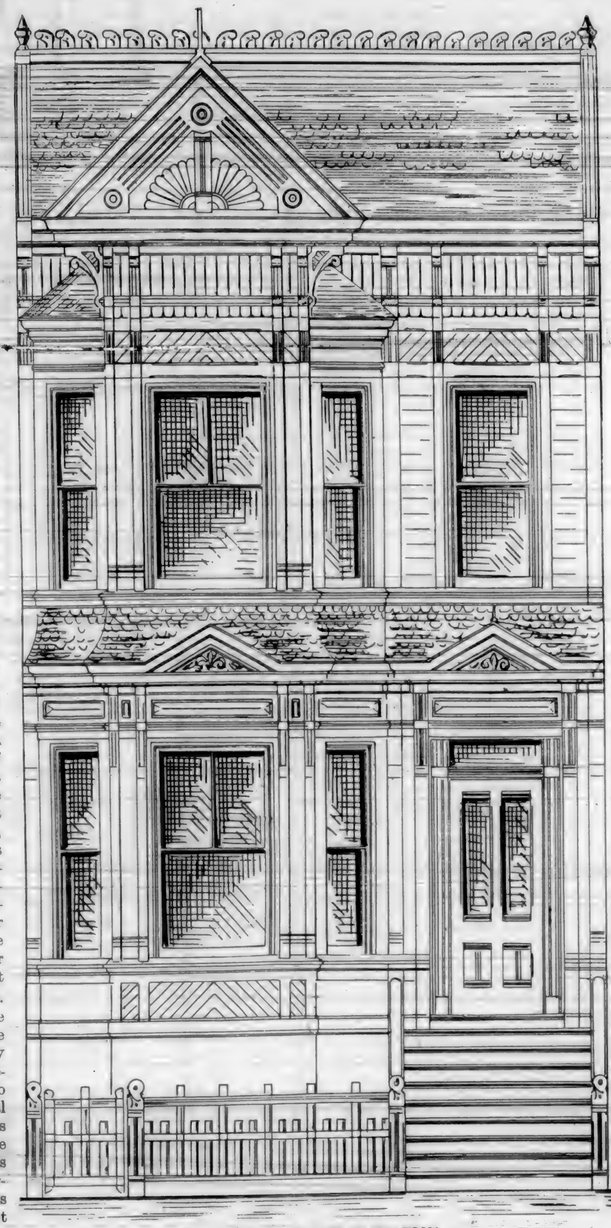

PLATE 4.—FRONT ELEVATION.

San Francisco Chapter of Architects.

THE regular monthly meeting was held February 5, President Curlett presiding, B. E. Henriksen, secretary. Succeeding roll call and approval of minutes of previous meeting, committee reports were next in order. Mr. Sanders regretted the lack of interest on the part of young men, students in the profession, to avail themselves of the opportunities at their command, through the instrumentality of the Chapter. The several classes organized are free to all young men engaged in the offices of members of the Chapter, and it seems strange that even any *one* student should be indifferent to the advantage possible through the system of class instruction, organized as part of the Chapter work; yet there is a lack of interest manifest on the part of some of those most to be benefited, which speaks less to the credit of the ambition of students than if the desire to utilize every auxiliary to useful improvement was emphasized by punctual and regular attendance at any meeting of the classes.

A communication from the Brotherhood of Carpenters and Joiners of America was read, setting forth the complaint that piecework was being permitted on certain buildings under the superintendence of a member of the Chapter. The subject-matter of the complaint being one over which the Chapter could exercise no control, no action was taken.

The same question was presented to the Chapter some two years or more ago, and received due consideration; and by unanimous vote, the Chapter expressed its disapproval of the system of piecework, but passed no law or rule making it an offense should any member permit departure from regular day labor on constructive works under charge.

The discussion of the sewerage and drainage question was to have been led by Mr. Macy, but that gentleman not being present, the matter was taken up and commented upon generally by the members present. Various suggestions were made as to causes and effects, and some deservedly severe strictures upon the character of construction of street and side sewer work, showing a criminal degree of negligence on the part of those controlling construction, and a weakness, if not dishonest disposition on the part of those who by contract pledge and agree, and are paid to do good work, with good and proper materials, but who substitute inferiority in both workmanship and materials, and consequently construct defective and faulty—instead of what should be, solid, durable and safe—sewers.

The appointment of tailors, shoemakers, beer drinkers, etc.,—men wholly unfit for the position as superintendents of construction,—received rebuke in plain terms.

The meeting was one of great interest. The number present, although not as it should have been—two-thirds of the members of the profession in San Francisco, Oakland, and San Jose—was good, and the proceedings animated and full of interest.

The application of Mr. Seadler, of Sacramento, for membership in the Chapter, was acted upon adversely to the admission of the applicant.

Chicago Soil.

THE *Sanitary News* reports a discussion at the monthly meeting of the Illinois State Architects Association upon the "Bearing Capacity of Chicago Soil," from which it appears that the "bed of blue clay found underneath the layer of loam, and the yielding muck beneath the clay," constitute the formation on which the city of Chicago is built. The clay when dry is "hard and very good for foundations, but when wet it is softened and difficult to treat." "Beds of streams and small rivers run through this stratum of clay," which seem to add to the difficulties of foundation work in certain sections. The fact that this clay is hard and solid when dry, and soft and yielding when wet, renders the study of foundations an important and first essential for architects in planning the erection of buildings in Chicago.

SAN FRANCISCO SOIL

Is much more reliable, as a rule covering all the original layout of the city—the formation being either sand, solid clay, or rock. As a matter of course, the rock-beds must be placed first in the rank of secure formations. Next in order is either the original sand or clay beds, either of which are good, many preferring the sand to the clay. For bearing purposes, when held immovable in position, sand—although in Bible history made to appear as a very treacherous and unreliable under-support for houses—is recognized in this city as safe and sure, unless by wind or water disturbed. The filled-in portions of the city, north, east, and south, will require the solidifying manipulations of centuries to become equal to the original land.

Architects and Draughtmen's Register.

FOR the accommodation and convenience of all parties—practicing architects requiring help, and draughtmen seeking employment—a register is kept in the office of this journal, for the registering of the names of unemployed draughtmen, without any charge, cost, or expense to either party. Draughtmen out of work will do well to enter their names, as orders frequently come to us, "Send us a draughtman." The register is always accessible to architects, and they are at perfect liberty at any time to call and examine list and make selection; or we will, with pleasure, furnish the names of those registered.

THE EFFECT OF ASPHALT ON WORKMEN.—French laborers who work barefooted on asphalt pavements are subject to swelling of the legs, which has been attributed, says *Iron*, to the vaporization, by the heat of the feet, of a small quantity of the petroleum or mineral oil which is contained in the asphalt. The nerves of the feet, which govern muscular action and the contraction of the blood-vessels, form an extensive and very sensitive, nervous network under the arch of the foot, where the skin is always thin, and the nerves are consequently easily affected. In England, workmen on asphalt wear list slippers, and the swelling of the feet has not been noticed.

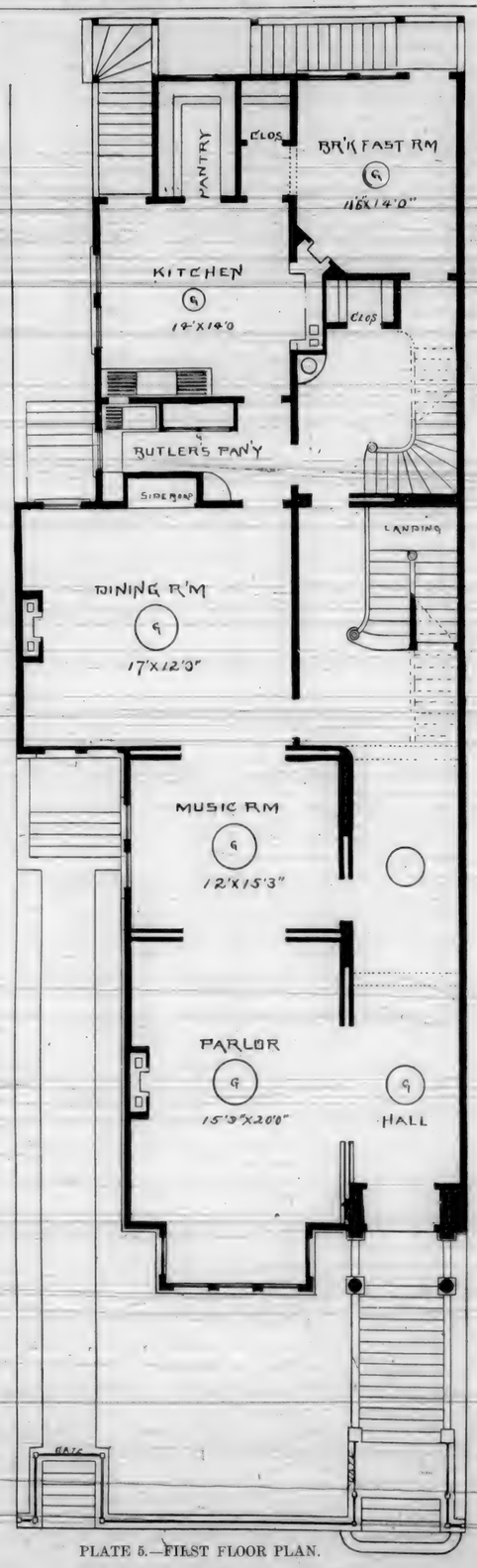

PLATE 5.—FIRST FLOOR PLAN.

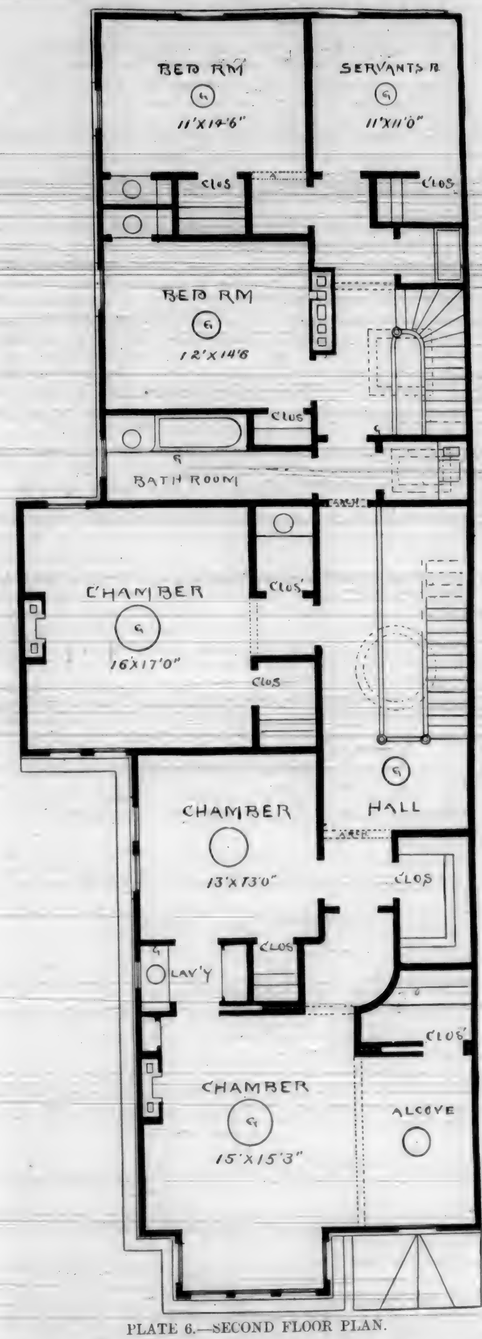

PLATE 6.—SECOND FLOOR PLAN.

CONSIDERABLE trouble is being experienced by the Chartiers Gas Company, of Pittsburg, in laying its pipes along some of the thoroughfares. The gas and water pipes already down are so numerous and close together that the street railway tracks are torn up to make room for putting down the new pipes.

BENJAMIN BAKER, an English authority on bridge building, says Americans are far ahead of the British in bridge building; that America is indeed a paradise of mechanics, and that the practice in this country tends to the production of better bridges than in England.

California Shingles.

THE shingles used in San Francisco and adjacent counties, and in all counties bordering on the Coast Range, and localities adjacent to the redwood belts, are exclusively sawed redwood shingles; in dimensions, $\frac{3}{8}$x4x14 inches. As in all other things, they vary in quality, with a market standard of No. 1 and 2, the latter consisting of those more or less sappy, and otherwise not sufficiently good to be classed No. 1, except for temporary purposes. The purchase and use of the second quality is decidedly unwise, as the sappy portions of the wood, either in shingles or in contact with the ground or moisture under any circumstances, soon perish and rot.

There is also difference of quality in the No. 1 quality, as some manufacturers turn out much better shingles than some others, with no better stock in the rifts to produce from. Some of the brands run of equal thickness, regular widths, square butts, and full points, while others lack these important characteristics, and are prolific in "swallow tails"—tapering points—and many of these slivered and rendered wholly unfit for full course work, as not more than one-half or two-thirds of the shingles are good in shape and thickness; and if "nigged" in after the custom of the full-fledged shingle layer, early leakages are sure to develop. For while 16 inches long is the supposed length, and 14 inches or less the actual average measurement, and 4½ inches the rule for weather exposure, then where the slivered and short pointed shingles occur, there cannot be full more than one lap or covering, which is not sufficient, except for sun-shade roofs, as a crack occurring in an upper shingle, over an under joint, or a corresponding split in the lower course, would inevitably open an inlet for the waters of every shower or storm during rainy spells.

In redwood trees, as in all other timber growth, there is difference in the grain of the wood, some being "nice," "first-class," others softer, and some hard and brash. The latter is the more objectionable in redwood shingles; those made of this kind of wood are liable to warp, and more apt to split from natural causes, or by the pressure of the foot in walking over them; although in the matter of wear and tear by the action of time and the elements, they are the more durable, as the moisture does not so readily enter the pores, and decay is the longer resisted.

As to durability, redwood shingles certainly have a fair claim, as, although the average thickness of the butt is less than $\frac{3}{8}$ inch, there are roofs now in use in this city which were put on twenty years or more ago, and are still rain tight, with no care looking to their preservation; while others put on more than a quarter of a century since, receiving occasional coats of paint, are in perfect condition, and are likely to remain so for a decade longer, if not for a period of fifty years, provided they receive the attention in paint which should be bestowed on all shingle roofs; for while paint preserves and protects the wood from the action of the elements, it also prevents the accumulation and growth of the greenish, semi-vegetable formations which invariably gather on the shaded, moist sides and sections of roofs in California.

Values and Equivalents.

EQUIVALENTS, as a rule, are regulated by real and actual values, demand and supply being easy, with neither excessive or unduly stimulating. This rule of valuation applies with equal force to everything exchanged or exchangable for money, whether of material, physical, or mental character. The personal, manual toil and service of those who work and strive through the years of life, with scarce a rational aspiration above and beyond the trammels of conditions in which by birth and inheritance they were placed, alike with the mind and mental labors of those who traverse the innumerable gradations of intellectual pursuits, as well as houses, lands, goods, merchandise, gems, jewels and everything namable, comes under the rule, with special advantage to those only who hold superior and commanding positions or exceptional qualifications.

Quality, as a matter of course, is always a material factor, unless stress of necessities compels the acceptance of the inferior for the better at any cost. Force of circumstances frequently compels submission to unfair exactions and hardships, and very acute corners are made in things of value, when the demand is in excess of supplies, or supply preponderates and overflows the market.

All this will be readily accepted as true, as far as goods and merchandise and all material things are concerned, but it is also equally applicable to mechanical, physical, intellectual and mental values; for these, too, in the innumerable pursuits of life, each in its order possesses value and commands equivalents according to circumstances and prevailing demands, which, if sufficiently active, will consume everything offered, with firmness as to

equivalents, the less desirable finding sale or engagement beyond actual merit value in times of posterity.

Applying this theory to mankind in their endless diversities of pursuits, the rule holds good, labor of body and mind having respective valuations—the better always commanding the higher equivalent, and in cases, the power to dictate terms. Fine abilities seldom "go begging," especially in professional spheres, and comparatively so in mechanical pursuits. Mechanics, artisans, and even laborers, who by their superior skill and competency and earnest service have reached the position of really first class in their respective lines, deserve the higher equivalent, and receive it above others whose life wants and necessities may be greater; yet, lacking the qualities which exalt their fellows above them, they are forced to submit to, and accept the equivalent for their labor, enforced by circumstances. Hence the importance of every man who is compelled to labor, striving to improve himself, to qualify himself to advance to the highest possibility, and rest not until he joins hand and gains position with those who are deservedly recognized as superior men.

As long as men content themselves with the allotments of life as received from the conditions of birth and early training, and settle down to a "can't-help-it" state of mind, they cheat and impose upon themselves heavy burdens, and debase not only themselves, but nature—through parental channels often passes down to posterity the physical and mental defects and weaknesses of father or mother, or both. This fact alone should inspire ambitions and create desires for improvement. The incentives are numerous and spread themselves along the pathway of every man, to seek and strive in an honest, right, consistent, legitimate manner to improve himself. Millions of men have lived and passed away, who were truly genuine, human gems of great value, yet from causes have not revealed the luster of their worth, because content to remain in, or unable to remove themselves from the embedments of early training.

Advancement, improvement—a climbing up among our fellowmen—are necessary adjuncts to human happiness and comfort, and is the grand balance weight that regulates equivalents and values; for the services of men are rated and paid, as a rule, according to clearly manifest merit, with those negligent of opportunities, and indifferent as to possibilities, ever at a disadvantage, and the first to be set aside when services are to be dispensed with.

Difference in Value of Labor.

THE experience of the present and all past times fully confirms the fact that there is a very material difference in the value of individual labor, some doing more and doing it better than others within a given number of hours. This fact creates a disparity in the real value of services rendered, and should regulate compensation. This it does, to the disadvantage of some, in two ways. First, in that men of greater and better mechanical skill and industry secure constant or more constant employment than others who content themselves with operating at lower levels, and working as chance opportunities present themselves, with no laudable aim or ambition for the paths that lead to honor or renown. Second, in that the better classes are always preferred, and are paid better wages. To some extent, and in some cases, this disparity and difference is not to be wondered at, because nature has withheld from some the gifts so generously and bountifully bestowed upon others. Some men might waste a whole life-time in pursuit of certain objects or results, and never attain them, for the reason that unless the physical, mental, and intellectual capacities, powers, and forces are capable and sufficient, all attempts must prove futile. No man can reach beyond the length of his arm. But unless utter submission to circumstances and an unmanly debasement pervade the mind, and the possible refinements of nature are entirely demoralized, there is a chance for improvement. And many who make no right nor earnest effort to improve themselves in directions that would better their condition might do so successfully if they would, by exercising the spirit of mastery over the inclinations that hold them back. Those who do not, because they *will not try* to do, deserve all the privations and punishments that come upon them. Neither friends nor Dame Fortune will force bread into the mouths of able-bodied men who refuse to help themselves, and reject advantages which they might utilize to their benefit. It may be hard work for some to climb and work their way upward, but better this than to remain all of life's time in the murky slums of non-improvement; for, if not advancing and lifting and gaining ground upward, such is our humanity that it cannot hold its grip at any point and remain stationary; and, if not upward, then downward it must be, and although for a time the effect of retrogression may not be rapid, it is sure, and gains pace as time rolls on, requiring but a few years to work out distressing results and debasements.

Technical Schools.

IT is doubtful if with equal expenditure of means, the same amount of effective work can be done for the future manufacturing interests of the country in any other way as can be by the establishing of schools, for which the one established in New York City, by Peter Cooper, may be taken for a model. Not that they should necessarily be of the same magnitude as this; but their aims should be in the same direction. Schools of this kind ought to be so common that every young mechanic could avail himself of their assistance in securing an education, so far as book knowledge goes, in matters relating to the trade he is learning or following. To be sure, all would not do so; but providing means would develop a large amount of latent talent that is now wasted, and the number of those who would be led, from example, to use convenient educational facilities, would increase surprisingly, the result being that manufacturers would reap the benefits of having in their employ a class of workmen bringing to their work intelligence, and a training that fitted them to think of what they were doing. And the more of the thinking, reasoning habit that is centered in any manufacturing business, the better the prospects of success.

Considering the fact, now well understood, that in the future manufacturing will partake more and more, from year to year, of the character of close competition as between different countries, the wisdom of providing every means of increasing knowledge of the subjects connected with it ought to be apparent. In European countries this is very clearly understood, and the matter discussed and helped along in every possible way. Here but little attention is paid to it outside of three or four large cities, and thousands of young men, who are anxious to devote their leisure to study, in the line of their work, find no help in doing so.

Those who have given the subject much attention have almost universally concluded that what is needed is co-ordinate education of the hand and brain. The late Professor Thompson, in his review of the reports of the British commissioners of technical instruction, a review recently made public, shows that in Europe the demand is so largely for men whose training has been, to a great extent, practical, to fill important positions, that there is an excess of men who have a training purely theoretical. He instances Germany, in which it is found that there were a large number of highly trained polytechnic graduates, for whose services there was no demand, while the Austrian Minister of Instruction lamented the inability to reduce the number of theoretical engineers, and to replace them with those who had knowledge of both theory and practice.

If such schools as the Cooper Institute were as common as they should be, this uniting of theory and practice would be the result. We have, in this country, some excellent technical schools, and some of them appear to be fairly successful in uniting theoretical and practical instruction. But no more than the merest fraction of those who ought to have theoretical training are able to take advantage of their facilities. What is wanted is an opportunity for all, so that the best that is in every young mechanic may have an opportunity to develop itself. This is what technical education is coming to in Europe, and is what it must come to here. When this is so, the most important mechanical matters in manufacturing will be in the hands of those best able to manage them in all respects, because every one who has sufficient energy to fill a position of trust, will have secured the necessary theoretical education.—*American Machinist.*

THE *American Architect and Building News* says: "Another old friend, the CALIFORNIA ARCHITECT, is also greatly improved by its new form and style; but we think it's moan that the Pacific Coast—its own preserve—has been deluged by 'tons of specimen copies' of Eastern architectural publications, is unworthy of the courage that has brought the journal to its present position, and perceived the benefits that might accrue from the improvements just referred to." We certainly fail to discover the basis upon which our contemporary reared that doleful word—moan. We merely stated the facts of the case and their extraordinariness, and concluded with the quotation, "He that wrestles with us strengthens our nerve, and sharpens our skill; our opponent is our helper," adding, "so we consider it, and not only propose to hold our own in the face of this avalanche of interlopers, but to so far excel them in supplying a journal specially adapted to this coast, that their presence will be *eminently immaterial*." If this language is susceptible of the construction placed upon it by our contemporary, we must admit that we failed to give proper expression to our views of matters; for while the "sample market was flooded" it gave us but little concern, feeling, as we did, well assured in the strong position gained by this journal among the thousands who so eagerly read its contents each month.

You Will Live Just as Long.

"GO SLOW;" "take it easy, and you will live just as long," is proper advice to over-diligent men, who do *more* than a fair and reasonable amount of hard work, within the usual prescribed limits of business application, often extending earnest labor into the hours of evening, which should be sacred to restful pleasures or social joys, and to all who are over-anxious, wearing away the vitalities of early manhood, to battle against sometimes imaginary odds, to gain business successes. But its force and application in business relationship cease with these. Men by nature made so, or by education taught to be, slow in every movement, never diligent in anything, never anxious beyond personal comfort and convenience, never intensely earnest in any pursuit, need no such advice.

To wage earners the advice is pernicious, if not in application, dishonest towards employers. The man who employs engages to pay for, and he who hires himself for wages or salary agrees to give, and sells his time and abilities for the price agreed upon, and for the hours per day usual in such cases, or as defined by stipulation, at a certain sum per diem, month or year; consequently *every moment of time* within such hours, and every *right* and *reasonable* service possible in the employed, becomes the property or value of the employer, for which he has paid or is to pay, and any misuse of either is an abuse of the employer's rights. Hence there is no such thing as a wage-earner "going it slow"—*honestly;* of "taking it easy" in the common-sense of the terms, which in effect are simply another manner of expressing the discreditable terms, "loafer" and "loafing," an idling away and waste of time and services *belonging to the employer*, and which an employe has no more right to indulge in than in misusing articles of trade. Every yard, package, or pound of goods in store or trade, belongs to employer, and costs him money, and any party found appropriating any portion of them without accounting, would be considered a *thief;* yet such goods and merchandise no more belong to and cost the owner money, than does the services of employed assistants, clerks, or day laborers; and, viewed in the light of fair—not to say strict—integrity, every hour not put in to the best advantage to the employer, by the employed, is *practical dishonesty*, and, generally, it is of mean and sneaking character, when the willful idler and cheat, conscious of wrong on his part, watches the approach of the employer, and springs to actual or pretended duty at his approach.

Most of those *seemingly* nice maxims and old saws are bad in practice for young men. "Go it while you're young, for when you get old you can't," has proved the ruin of hundreds of thousands of men and women, who, when too late to counteract, have experienced the folly of their mistakes; and millions of men now walk earth's surface in poverty, or lie in prison cells, or places of public charity, through following out the theory of the maxim quoted; better to reverse the rule, *go slowly, cautiously, savingly*, in the days of youthful vigor, so that the years of age and gray hairs may be full of strength and comfort.

A Substitute for Plaster.

THE ornamental finish of the walls and ceilings of rooms and interiors has attracted the attention of our best artists, and a succession of experiments has produced many different materials to be applied in various ways. In opera houses, theaters, public buildings, and private houses of the best class, the use of plaster has been almost entirely done away with. It was objectionable on account of its weight and liability to crack or become damaged.

Every one knows how quickly a little water will disintegrate plaster material and cause it to loosen its hold, and how frequent are accidents of that kind.

The difficulty and trouble necessary in making repairs were further reasons why a substitute should, if possible, be found. Neither a delicate design, nor objects in high relief can be reproduced in plaster. A new and improved material known as fibrous-stone composition has lately been quite extensively used in the Fifth Avenue Hotel, Wallack's Theater, and the private residences of many wealthy gentlemen, upon ceilings and walls, as well as in the ornamental finish of panels, pilasters, and cornices. It has a fibrous foundation, is extremely hard, and can be cut, sawed, filed, and nailed like wood. There is never any danger of its being displaced by sudden jars, or crumbling and tumbling down.

In case of fire it is incombustible—not lending its aid like lath to the conflagration—merely charring into a black stony substance. It is as hard as iron and has really the strength of metal without its weight.

The most esteemed value of this material for decorative purposes is the high artistic character of the work. A model in plaster is first made, the excellence of which depends on the talent of the artist. From this original model a faithful and exact fac simile is reproduced, which is sharp, clean, and with the lightness and grace of superior hand-work. It has a close texture, smooth surface, and can be at once put up without the aid of lath and plaster, and is all ready to receive paint, or metallic finish.

Neither heat nor cold will warp or shrink it and no change of atmosphere will affect it, therefore it is applicable for exterior as well as interior finish.

The combination of lightness and strength is a feature of value; great fluted pillars and deep theater cornices are furnished in sectional parts and handled with ease.

Those charmingly developed figures of heroic size, which we have noticed as posing in graceful attitudes above the stage curtain, and those other obliging females who kindly officiate as perpetual candelabra are hardly more weighty than an orphan child. In construction and manipulation, such practical advantages are easily understood. On the other hand, the delicate tracery of a hand-carved picture frame is reproduced with faithful accuracy, and the dainty, high-bred wall ornamentation of the Louis XVI. period is made with absolute exactness of detail and finish.

Comparative Compressive Strength of Granite.

COMPARATIVE tests of the granites of New England and Minnesota, instituted by Professor Winchell, with a view to determining their crushing strength, exhibit some surprising differences. The pieces employed for this purpose were 2-inch cubes unpolished, and crushed between wooden cushions the average strength of 20 specimens of Minnesota granite was found to be 93,272 pounds, or 23,318 pounds per square inch; crushed between steel plates the average strength was 104,800 pounds, or 26,200 pounds to the square inch of surface. The average obtained for the same number of specimens of New England granite was 59,789 pounds, or 14,756 pounds per square inch. The age of Minnesota granites is archæn; that of New England granites is not definitely known.

ONE of the oldest landmarks in New York has been recently destroyed. The building in question was located at 75 and 77 Nassau Street, and dated back to the period when New York was an English colony. It was a two-story brick dwelling when the Old North Dutch Church—afterward the New York Post-office—was built, and perhaps antedates the old Washington Headquarters at the foot of Broadway, on whose site the present Washington Building stands. Three stories were added in 1785, and since then it has passed through all the changes of a century practically unaltered. For some years it has been considered unsafe on account of the shallow foundations, and the owner reluctantly gave orders to have it torn down. As a specimen of the thoroughness and solidity of house-building 100 years ago the half-dismantled walls were extremely interesting. The front stood like a face of rock, the thin bricks and cement-like plaster having become welded into a single mass which the workmen broke with strong cold-chisels and even sledge hammers. The bricks used were all imported from Holland, and are about $6\frac{1}{2}$ inches long and $1\frac{1}{4}$ inches thick. The mortar was made of pure shell lime with almost no clay or sand in it, and forms a third of the solid mass. "I have torn down a great many old houses in New York and Albany," said Edward Sorensen, the contractor, "but I never saw one so well built as this. Why, it's like rock or flint. It will take my men ten times longer to tear down the walls than it would to build new ones. There's no 'Buddensiek' about these old Dutch builders. You can't find anything like that front wall now."—*Carpentry and Building.*

CHANGE IN STYLE OF ARCHITECTURE.—At the Royal Academy exhibition in London, which gives a fair idea of the architectural taste of the time, it will be found that the plain early English style, so popular with architects for many years past in the designs for churches, is giving way to later styles, especially the flamboyant decorated. A curious example of this new departure is shown in the subjects chosen for study by the art students in the Architectural Museum, Westminster. A few years since scarcely any subjects were selected for drawing or modeling but the beautiful foliages of the thirteenth century, whereas now perpendicular details are preferred almost to the exclusion of all others.

Stagnation in English Shipbuilding.

THE mechanics and laborers employed in the various branches of shipbuilding in England are much concerned over the depression which began in 1884 and yet continues. The total amount of shipbuilding on the Clyde last year, as officially reported, was 195,458 tons, against 296,854 tons in 1884, and 419,664 tons in 1883. At other British shipyards the facts are as disappointing as on the Clyde. This depression has not been affected by any struggle between capital and labor, for there have been no such contentions in the past year. The exceptionally heavy output in 1881, and the two following years, has placed upon the seas an amount of tonnage such as was never previously witnessed, and unless England soon finds new worlds to conquer it is not likely she will want any more new ships for a while.—*The Tradesman.*

UNLESS a radical change supervenes upon the present aspect of affairs, it is certain that some dregs yet remain to be drained before the *vetro flux* of depressed trade has entirely exhausted itself. If we read the signs of the times aright, there are still the last drops to be emptied before the "turn for the better" can really be said to be accomplished. Trade fluctuates in a manner known only to itself, and, although some profess to have discovered a uniformity in the cycles of bad and prosperous times, the divergences in their estimates only serve to emphasize the impossibility of successfully defining such intervals. There is, however, a magic about the mystical "seven" which, through many analogies, has become intimately associated with any change *a fundamento*, and, although the suggestion does little more than fix a coincidence, it may be well to point out that it is now nearly seven years ago that the storm of the last crisis passed over our heads, and left the commercial atmosphere free for the enjoyment of that good long spell of fair weather that followed. We can only hope that the present will prove itself a parallel, although it must be confessed that, at the moment, the clouds show the least perceptible signs of breaking.—*Timber, London.*

THE day of the esthete is approaching a close. Oscar Wilde has cut his hair and consented to appear in "store clothes;" there is melancholy loneliness about the few disciples that still cling to the memory of his curly locks and Bloomer costume that excites sympathy. Oscar was the originator, and knew when the time came to give it up—that time followed closely upon the heels of his $30,000 trip to the United States—his followers, being but imitators, don't know whether it is time to abandon the idea and hardly know how to do so, even though the time has come. The vapid conversation born with esthetic ism, the exaggerated fob charms, the solitary eye-glass, the flimsy carriage and the deliberate indifference, all prevail to a considerable extent, all have taken a hold that common sense will gradually, though not rapidly, loosen.

In the furnishing and decoration of the home, estheticism shows greater decline than in any other direction; one may be willing to pervert his or her personal dress or characteristics or actions to accord with some crazy idea he or she may entertain, because that costs nothing further than a sacrifice of sense or comfort, and this is readily made; but, when the more serious duty of furnishing comes to be considered, and one is confronted with the esthete's dictum that spareness is a guarantee of good taste, then repudiation usually follows, and the bare floor and bare wall and scant furniture are made to fit the true taste of the individual rather than the acquired.

It is interesting to watch the gradual dissolution of the esthete.—*Decorator and Furnisher.*

ACCORDING to the statements of our versatile Southern correspondent, large areas of lumber lands in the South are being purchased by capitalists, who see that the rapid consumption of lumber, in the United States, must soon make very valuable all wooded lands that are within the reach of railroads or rivers. Every dollar now invested in these untouched timber resources will multiply itself over and over again, within twenty years. This country is of vast extent and the consumption of lumber must increase constantly. The building and maintaining of railroads and the ever-increasing demands of house building, in sections destitute of stone, must swell the consumption so that, in time, prices may be pushed so high as to bring into market supplies of lumber not counted at all now because of their remoteness from consuming centers. When these investments realize, it will be on a large scale, and some great fortunes will be rolled up as easily in lumber lands as they have been rolled up in lands upon which cities have sprung into existence. It is not altogether desirable, from an economic and philanthropic standpoint, that men should thus become the owners of great tracts of land, but the competition is open and there is no law against investments such as are referred to.—*Lumber World.*

THE February number of the *Phrenological Journal and Science of Health* (Fowler & Wells Co., 753 Broadway, New York) contains very interesting articles on "Medical Missionaries," "Improve the Morals," "Knowledge," "A New Phrenology," "Professor Drayton's Familiar Talk to Our Young People," "The Stupidity of Sensible People," "Wm. H. Vanderbilt, the Richest Man in America," "Notes from a Teacher's Diary," "An Historical Article from Veronique," "The Vandals, the Goths, and the Huns," "A Magic Lamp," "Should Silver be Demonetized," "The Pictured Rocks of Iowa," "A Tired-out People," "New Theories of Muscle Action and Nutrition," illustrated, "The Physiological Basis of Faith Cure," "Pinel and Insanity," and numerous short articles instructive and interesting. The above journal is usually replete with matter which should be read in every family. Price, $2.00 per annum.

ARCHITECTS are somewhat given to quoting various authors, from Vitruvias to Owen Jones, who insist that painting and sculpture, as well as the minor arts, should be used only as the handmaids of architecture. But this is true mainly as regards monumental structures devoted to the highest uses of ecclesiastical and civic life, or to the commemoration of the dead. It does not properly apply to the private house, and, indeed, under any circumstances, it is manifest absurdity that the statue into every line and curve of which the sculptor has wrought the riches of his brain and heart, or that the portrait of the master painter should be killed by the black, vermilion, ultramarine blue, or emerald green of the frescoer, or the stenciled, stereotyped convolutions of the paper-hanger. If one listens to a solo from a Lind or a Mario, it is an impertinence to have it drowned by the frame-work music of the orchestra, though we may derive much pleasure and musical profit from the orchestra's harmonies without the solo.

The more pronounced in form and color the movable objects of an apartment may be, the more pronounced may be their background; and where they are designed and arranged with special regard to luxury and splendor, the background may be worked up to high effects of general tone, and in some instances even its details may be tolerably assertive without losing that character of subordination which is, or should be, a desideratum.

Market Report.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	per M feet,	18 00
" No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
" T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		3 15
100 keg lots		3 20
Smaller quantities		3 25
PAINTS AND OILS:—		
Pioneer White Lead (local factory)		6½c @ 6½
Cal. Linseed Oil, raw (single bbl lots)		45
" " " boiled " " "		47½
Turpentine, per gallon		58
BRICK—California Building Description, soft, per 1,000		5 50
" " " red, " "		6 50
" " " hard, " "		7 50

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Building Intelligence.

A

Austin, nr. Polk. One-story brick.
O.—M. Sweeney.
C.—H. Please.
$1,200.

B

Baker, bet. Sutter and Bush. One-story frame.
O.—D. Reese.
C.—F. A. Steinman.
$2,000.

Baker, cor. Grove. Two and one-half story frame.
O.—Boys and Girls' Aid Society.
A.—Clinton Day.
C.—Ingerson & Gore.
$30,000.

Broderick, nr. Hayes. One-story frame.
O.—Mrs. J. Fahey.
A.—Salfield & John.
C.—D. B. Spangler.

Bartlett, nr. Twenty-fourth. Three one-story frames.
O.—Julia Whitney.
A.—M. J. Welch.
C.—M. Walsh.
$5,250.

C

California, bet. Jones and Leavenworth. Two-story frame.
O.—Mrs. M. Hogan.
A.—C. I. Havens.
C.—C. Quinn.
$4,440.

Church, cor. Twenty-first. Two-story and basement frame.
O.—Jas. O. Clark.
A.—B. E. Henriksen.
C.—A. Norton.
$5,800.

Clementina, bet. Third and Fourth. Three-story frame store and two flats.
O.—P. Dumeneim & J. Lassalle.
A.—M. J. Welch.
C.—Owen Bros.
$5,400.

California, cor. Octavia. Two-story frame stable.
O.—M. Rosenbaum.
A.—W. Mossier.
C.—A. Jackson.
$3,000.

Chattanooga, bet. Twenty-second and Twenty-third. One-story frame.
O.—
C.—J. Crawford.
$2,000.

E

Eighteenth, cor. Valencia. Two-story frame flats.
O.—R. W. Coffin.
A.—A. J. Barnett.
C.—Terrill & Slaven.
$8,145.

Eddy, nr. Leavenworth. Alterations.
O.—J. Maloney.
A.—T. J. Welch.
C.—J. O'Connell.
$1,200.

Ellis, cor. Broderick. Two-story frame store and flats.
O.—Mrs. Cullen.
C.—M. J. Egan.
$3,500.

F

Fillmore, bet. Oak and Page. One-story frame.
O.—
C.—S. S. Emery.
$2,000.

Folsom, bet. Third and Fourth. Three-story frame store and two flats.
O.—P. Dumcheim & J. Lassalle.
A.—M. J. Welch.
C.—Owen Bros.
$5,400.

G

Guerrero, bet. Twenty-fifth and Twenty-sixth. Two-story frame flats.
O.—Jas. Dodd.
A.—Townsend & Wyneken.
C.—Chas. Cody.
$3,500.

Geary, nr. Devisadero. Four two-story frames.
O. and B.—B. F. Norris.
Day work.
$8,000.

Geary, bet. Jones and Leavenworth. Additions.
O.—J. Slecaur.
Day work.
$2,600.

Greenwich, bet. Jones and Hyde. Three two-story frame six flats.
O.—O. Miller.
C.—G. Knorpf.
$9,500.

H

Howard, bet. Tenth and Eleventh. Two-story frame.
O.—J. Clark.
A.—A. J. Barnett.
C.—T. Sullivan.
$3,000.

Hayes, nr. Broderick. Two-story frame.
O.—J. Cahill.
Day work.
$3,500.

Hayes, bet Devisadero and Broderick. One-story frame.
O.—
A.—W. Hoagland.
C.—Martin & Maguire.
$2,800.

Hayes, bet. Scott and Devisadero. Two-story frame.
O.—Thomas O'Brien.
C.—F. Foley.
$2,500.

Haight, bet. Webster and Fillmore. One and one-half story frame.
O.—Joseph Robinson.
A.—Townsend & Wyneken.
C.—A. McElroy.
$3,000.

Haight, nr. Steiner. Two-story frame.
O.—Mrs. McLeaar.
A.—J. Gash.
C.—J. McCann.
$4,000.

K

Kentucky, cor. Butte. Two-story frame.
O.—R. Day.
A.—T. J. Welch.
C.—A. McElroy.
$4,500.

L

Linden Ave., nr. Laguna. One and one-half story frame.
O.—T. Mahnix.
Day work.
$1,200.

Laguna, cor. Hickory ave. Two two-story frame flats.
O.—R. Dixon.
C.—J. S. Mackay.
$4,000.

M

Minna, cor. Second. Additions and alterations.
O.—A. M. Goldsmith.
A.—J. Marquis.
Day work.
$1,000.

Market, cor. Franklin. Contracts partly let. Five-story frame boarding house.
O.—John Nightingale.
A.—A. J. Barnett.
C.—O. E. Brady, brick work; iron work, O'Connell & Lewis.
$11,504.

Market, bet. Eighth and Ninth. Five one-story frame stores.
O. and B.—W. M. Fletcher.
Day work.
$3,500.

Market, nr. Sixteenth. Nine one-story frame stores.
O.—W. H. Taylor.
A.—G. H. Broadwell.
C.—C. W. Kinsman.
$7,500.

Market, bet. Eighth and Ninth. Two-story frame.
O.—T. J. O'Brien.
C.—T. B. Moore.
$2,000.

Market, bet. Eighth and Ninth. Additions and alterations.
O.—Con. Barnes.
C.—R. Bunnett.
$2,000.

Market, nr. Sixteenth. Two-story frame.
O. and B.—M. W. Kain.
A.—C. I. Havens.
Day work.
$5,000.

N

Noe cor. Market. Two-story frame store and flat.
O. and B.—R. Fox.
Day work.
$3,000.

Ninth, nr. Mission. One-story frame store.
O.—W. E. Wetzell.
C.—Anderson Bros.
$700.

Ninth, nr. Bryant. Additions and alterations.
O. and B.—P. Sullivan.
Day work.
$2,000.

O

Ocean View Station. Two-story frame.
O.—J. C. Meussdorffer.
A.—P. R. Schmidt.
C.—P. Griffin.
$5,500.

O'Farrell, bet. Fillmore and Webster. Four two-story frames.
O.—H. Samuels.
A.—J. C. Pelton, Jr.
C.—A. Jackson.
$21 000.

P

Post, bet. Fillmore and Webster. Frame church.
O.—Hamilton Park Baptist Church.
Day work.
$2,000.

Pine, nr. Devisadero. Two-story frame.
O.—A. F. Benjamin.
A.—Copeland & Banks.
C.—Geo. Lang.
$4,000.

Pine, cor. Broderick. Two-story frame.
O. and B.—W. F. Lewis.
Day work.
$3,500.

Pierce, bet. Oak and Page. Two-story frame.
O. and B.—C. Hinkle.
Day work.
$4,000.

Post, NW cor. Leavenworth. Two-story frame stable.
O.—B. Schweitzer.
A.—P. R. Schmidt.
C.—S. H. Kent.
$1,800.

R

Ridley, cor. Market. Two-story frame.
O.—G. W. Smith.
A.—C. I. Havens.
C.—E. W. Kern.
$4,000.

S

Steiner, nr. Ellis. Additions.
O.—
C.—M. Drury.
$600.

Stockton, nr. Chestnut. One-story frame.
O.—Mary Glynn.
C.—J. Doherty.
$2,750.

Sixth, bet. Brannan and Bryant. Three-story frame, flats and store.
O.—F. F. Speckman.
A.—Salfield & John.
C.—B. Dryer.
$6,500.

Sixteenth, nr Market. One-story frame school.
O.—Mrs. A. C. Hines.
Day work.
$800.

Seventeenth, cor. Sanchez. Two-story frame.
O.—A. S. Carlyle.
C.—Thos. Egginson.
$2,500.

Shotwell, bet. Twentieth and Twenty-first. Two two-story frame flats.
O.—O. J. Becker.
A.—M. J. Welch.
C.—Theodore Von Bostel.
$7,750.

Seventh, nr. Bryant. Additions.
O. and B.—J. Kane.
Day work.
$1,600.

Spear, nr. Harrison. Additions.
O.—J. Howard.
Day work.
$1,500.

Sansome, nr. Pine. Additions and alterations.
O.—Macondary estate.
A.—W. F. Smith.
C.—C. L. Tilden.
$5,000.

Seventeenth, cor. Noe. Two-story frame.
O.—H. Bohneder.
A.—H. Gelfuss.
C.—W. J. Brownrigg.
$5,000.

Scott, bet. Page and Oak. One and one-half-story frame.
O.—G. H. Luchsinger.
A.—H. Gelfuss.
C.—A. Miller.
$2,000.

Second, bet. Brannan and Townsend. Four two-story frames.
O.—E. Foster.
A.—C. I. Havens.
C.—F. W. Kern.
$5,050.

Stockton, bet. Post and Sutter. Five-st ory brick and basement.
O.—Levi Strauss.
A.—P. R. Schmidt.
C.—R. McCann.
$25,000.

Sacramento, bet. Larkin and Polk. Two two-story frames.
O.—J. W Davis.
A.—P. R. Schmidt.
C.—R. McCann.
$10,000.

Second, bet. Mission and Howard. Two-story frame.
O.—Isaac Ruddee.
A.—Jas. E. Wolfe.
C.—H. Keenan.
$3,108.

T

Thirtieth, nr. Noe. Italian Hospital repairs.
O.—Hibernia Bank.
A.—Huerne & Everett.
C.—P. Buckley.
$800.

Twelfth, bet. Folsom and Harrison. Repairs.
O.—P. Lahaney.
A.—M. J. Welch.
C.—R. Simnott.
$1,600.

Treat Ave, bet. Twenty-fourth and Twenty-fifth. One-story frame.
O. and B.—John McCarthy.
Day work.
$1,200.

Treat Ave, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O.—J. Walton.
C.—J. S. Tibbetts
$3,500.

Treat Ave, bet. Twenty-fifth and Twenty sixth. Two-story frame.
O. and B.—Joseph Sims.
Day work.
$2,400.

Twentieth, cor. Capp. Two-story frame.
O.—H. Walton.
C.—N. W. Stecker.
$2,000.

Twenty-first, cor. Capp. frame church.
O.—Grace Methodist Episcopal Church.
A.—C. Geddes.
C.—R. S. Miller.
$35,000.

V

Valencia, nr. Eighteenth. Two-story frame flats.
O.—A. Dibblee.
A.—S. & J. C. Newsom.
C.—D. B. Spangler.
$6,800.

Valley, nr. Dolores. One-story frame.
O. and B.—M. Loftus.
Day work.
$1,200.

Valley, above Dolores. One-story frame.
O. and B.—R. Bergfeld.
Day work.
$1,400.

Valencia, bet. Eighteenth and Nineteenth. Two-story frame.
O.—H. Mau
A.—Jas. E. Wolfe.
C.—Herman & Wilson.
$4,658.

Van Ness Ave, bet. Geary and Post. Alterations.
O.—Woman's Relief Society.
A.—Curlett & Cuthbertson.
C.—J. Wilcox.
$2,000.

MISCELLANEOUS.

San Jose—Santa Clara. Alterations. O., Hatman & Normandine; A., Jacob Lenzen & Son; C., W. Boyles; $700. Chapman & Davis Tract. One-story frame. O., E. O. Melcher; A., Jacob Lenzen & Son; C., Kelsey & Crawford; $2,500. Eighteen-Mile House. One story frame. O., Morgan Hill; A., Jacob Lenzen & Son; C., H. C. Skow; $3,055.

Sacramento—Thirteenth, cor. J. Two-story and basement brick. O., Dr. E. Jacobs; A., N. D. Goodell; C., Carle & Croly; $5,727.

Richland—Two-story frame and brick basement. O., Senator Wm. Johnston; A., N. D. Goodell; C., Thos. McCaffrey; $3,500.

Merced—Eighteenth. One-story frame. O., A. Bosso; C., Falla & DeWitt; $900. Seventeenth. One-story frame. O., Mrs. Edwards; C., A. M. Wellman; $

San Rafael—Additions and alterations. O., J. M. Donahue; A., T. J. Welch; C., I. Sharer; $7,000.

Centreville—Frame church. O., P. W. Riordan; A., T. J. Welch; C., A. McElroy; $3,000.

OAKLAND.

Twenty-fourth, cor Elm—1-story fr; o, H. Well; a, H. Gelfuss; c, Geo Lang; $4,500.

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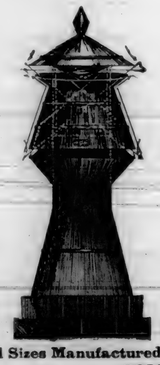

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 4.

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Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., APRIL 10, 1886.

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"High Building"—Law of New York.

BUILDING, in its issue of March 20, refers to the introduction of a bill in the New York Legislature to repeal the "high building" law, passed by the law-making body and signed by the Governor last summer, which restricted the height of tenement buildings to seventy feet on streets of sixty feet or less in width.

The passage of the restrictive law was received with favor and approval, except by speculative parties who would not only—if possible—penetrate the lofty clouds with piles of brick and mortar, but dig as deep in the opposite direction, for sordid gain, without a single regard for human life, health, or comfort.

There is but a single reasonable and right argument favoring excessive heights of tenement structures, to wit: positive insufficiency of space of territory to supply the required number of shelters for the inhabitants, and even in this and every other regard they are objectionable, as they shut out some light, and cast gloomy shadows, and provide darkened and gloomy apartments, which possess none of the elements of cheerful life. "They are so regarded *per se* and in their relation to adjoining property."

"In view of the fact that in every civilized country there is some law fixing the proportion between the height of a dwelling and the width of the street on which it adjoins, the city of New York acted wisely in having such law passed last year. It would be a serious step backward to repeal now this beneficent law. It should, by all means, be supported."

Change of Date of Issue.

WITH the January issue of this journal, the date was fixed at the 5th of each month. This, however, does not work well, and we are compelled to change date of publication to the 10th. The reason for this is, that reports of meetings held in the first week of the month often come to hand too late for insertion until the following month. Consequently, for the purpose of accommodating all interests, *the tenth day of each month will hereafter be the date of issue.*

All communications should be handed in as near the first as possible, and reports not later than the sixth of each month.

Summary of Building Activities.

OUR present monthly report shows an apparent decrease in building operations, over the same month's report for 1885; but scarcely so in real fact, as several commencements are not included this month, for the reason that only portions of the work has as yet passed to contract. With these added, the amount for April, 1886, would fully equal that of 1885.

The grading, brick work, cast iron work, wrought iron work, and carpenter work of the J. C. Flood's building, corner Market and Fourth Streets, have been let respectively, in the order named, to A. C. Buckman, Butler & McGowan, Reese Llewellyn, Sims & Morris, and C. C. Terrell. The total of these and the remaining branches will appear in future issues.

Additional contracts on the Nightingale building, to the amount of $31,035, have been let, but these do not include entire cost.

"Davis Bros.'" building is in progress, and will be an expensive building; but, as yet, the contracts awarded amount only to $19,500.

The activities in residence and tenement improvements are large, and the prospective outlook is of the most encouraging character. The report for April sums as follows:—

152	frames, value	$675,206
6	bricks "	51,000
24	alterations and improvements	112,310
182	Total for current month	$838,516

For same period in 1885: Total engagements, 168; total value, $1,131,450, showing for April of present year, 14 commencements more than in 1885, with $292,934 investment in favor of the preceding year. But, as we have stated, were the cost of the buildings commenced, and not included in present report, added, the balance would be in favor of 1886.

Delaying reports of contract amounts for portions of the work on buildings, until all the branches are let, is preferred by most architects and owners, and is more a matter of interest than importance to outsiders. We do so in many cases by special request, not failing, however, to wind up our annual report with the full sum of expenditures, as nearly and correctly as possible.

HYDRAULIC-LIME CONCRETE.—A kind of concrete, hard and solid, is now being used for building purposes in Paris. It is composed of eight parts of sand, gravel and pebbles; one part of common earth, burnt and powdered; one part powdered cinders, and one and a half parts unslacked hydraulic lime. These materials are thoroughly beaten up together, their mixture giving a concrete which sets almost immediately, and becomes in a few days extremely hard and solid, which property may be still further increased by the addition of a small quantity, say one part, of cement. Among other constructions to which this material has been applied, is a house three stories in height, sixty-five by forty-five feet, standing on a terrace, having a perpendicular retaining wall 200 feet in length and 20 feet high. Every part of this structure was made of the hard concrete, including foundations, vaults of cellars, retaining walls and all walls, exterior and interior, as well as the cornice work, mouldings, string-courses, balustrades, parapets; and the building is without band-iron, lintels or wood throughout.—*Exchange.*

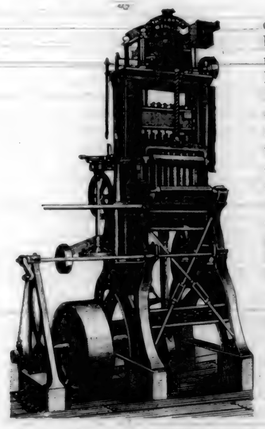
THE EXPLORATIONS AT DELOS.—In the *Revue Critique*, M. Homolle gives an account of the results of the new explorations carried on at Delos. The remains of a medieval city have been laid bare, and the discoveries in the field of classical archæology, though not so sensational as those of the previous enterprise, are still full of interest for the history of the "island schools." Fifty fragments of marble sculpture have been found, besides *terra cotta* and small bronzes. To these have to be added 224 fragments of inscriptions, some dating as early as the fifth century B. C.—none later than the first century B. C. They contain funeral inscriptions, dedications, decrees, and choragic lists. One of them is 600 lines long, and the whole, when edited, are sure to throw much light on the politics and commerce of the Cyclades.

Something New in the Manufacture of Lumber.

EVERY perfected improvement in machinery, systems, or methods calculated more fully to develop and enlarge the manufacturing and producing interests and resources of the Pacific Coast, becomes a matter of general, as well as specific and individual interest. The permanent prosperity of this State depends largely upon the practical developments in the mechanical and producing arts and sciences, with the growth, expansion, and enlargement of which, sufficient to meet and supply the daily, re-occurring necessities and demands of the times, assurance and confidence is strengthened, that California and its sister Pacific States and Territories are, in themselvese, qual to any emergency that may arise, with surplus for other markets. A people possessing the intelligence, practical capacities, energies and availabilities to produce and supply every home and local want from natural resources within their own boundaries, must ever be self-reliant, progressive, and aggressive in everything that promises personal and community comfort, happiness, and wealth.

A SPLENDID SAW-MILL OUTFIT—NEW DEVICE.

In this connection we present a cut and short description of a new saw-mill enterprise which should, from the standpoint outlined above, be a matter of interest far beyond the circle of those directly connected financially, for two special reasons: 1. Because in and of itself, the mill, with its numerous appurtenances and appliances, is a most complete and perfect mechanical conception, unequaled by anything of its kind in use upon this coast in the manufacture of lumber. 2. The mechanical construction of the mill is entirely Californian, or, more properly speaking, San Franciscan—the first of its kind ever manufactured on this coast, and another illustration of the capacity, proficiency and skill that has placed the Union Iron Works of this city in the fore ranks, if not fully equal to the oldest and best in the United States in the production of massive as well as intrinsically fine machinery.



This piece, or combination of machinery is claimed to be the largest of its kind in use in the manufacture of lumber—at least west of the Rocky Mountains. It is what is known as a "gang," but differing materially from the old, ordinary gang-saw device. It is a steel sash, or frame, 44 inches in width, with 32 saws in the frame, driven vertically by steam power. The arrangement is such that the frames and saws oscillate, so as to produce a motion similar to the old-fashioned whip saw. The vertical motion of the saws is 200 per minute, which, multiplied by the distance traveled each motion, 2 feet = 400 feet to each blade + 32 blades = 12,800 feet of cut each minute by the gang, producing each day of 10 hours, 50,000 feet of lumber, with the twofold advantage of economy in the log material, resultant from the saving produced by the use of thin-bladed saws, and the sawing of lumber absolutely true, straight, and square. The mill was designed by Mr. F. S. Farmer, who is acknowledged to have no superiors in practical saw-mill engineering on this coast, and who has built some of the finest mills known to the trade.

Mr. Irwin M. Scott, manager of the Union Iron Works, was so favorably impressed and well pleased with the drawings prepared by Mr. Farmer, that he applied, and, as will be seen by examination of the cut, placed on the head frontis-plate the name, Farmer Gang.

Some idea of the magnitude of the mill may be comprehended by the fact that the construction shown by the cut weighs 62,000 pounds, 31 tons, sand cost about $10,000. It is now being placed in position by its designer, at the extensive mill site of the Western Mill and Lumber Co., Port Hadlock, Puget Sound, Washington Territory. The office of the Company is at 840 Fourth Street, San Francisco, Turner, Kennedy & Shaw, agents. It may be further stated that the other appointments of the mill consist in part, of ten heavy steel boilers, two large engines, 28x36-inch cylinders, gang edgers, live rolls, yankee fireman, slab and sawdust conveyors, bull wheels, and all other appurtenances required in a first-class lumber saw-mill.

"Reciprocal relief,"—"home manufacture,"—is well exemplified in this connection, as the whole of this splendid machinery and outfit are the product of a San Francisco machine shop and foundry, which must be admitted as a creditable witness to the fact that there is no right or reasonable excuse on the part of any one going abroad to obtain that which can be as well or better produced among ourselves, as from quarters and parties in other sections of the country, whose only special sympathy in the interests of this city, State, and coast, is to secure contract and trade advantages, and bear away not only the *profits* on engagements, but the *full sum of cost of raw material and labor as well.* In this regard, the promoters and owners of the enterprise under notice deserve all praise; for while a financial preference was given to the San Francisco firm, they did not err in doing so, as they have in return, machinery that could not be bettered anywhere in completeness and quality of workmanship, and the money so expended remains in this city, as bread cast upon the waters, to return in part at least, in due time. And the proud satisfaction of having a mill unsurpassed, if approached, by any other within the entire scope of the great northwestern timber regions of our great continent, is one that should fully compensate for every sacrifice made in preferring and rewarding home industry, over the questionable and petty economies that might have been practiced in canvassing for a cheaper market to secure a present saving, at the expense of tenfold cost in the future to remedy the imperfections assured and certain to follow, particularly in machinery works, when cheapness is made the controlling factor. The support of "home industries" is the life of every city and State, and those who go abroad for that which can be procured at home, as good in kind and quality, certainly forfeit claim to good citizenship, as far as the best interests of the commonwealth are concerned; for money required to pay for the thing unnecessarily imported, must come from the purses of those who should have enjoyed the benefits and advantages of producing, or manufacturing the thing imported.

It is to be hoped that the example set in this case may prove powerful in argument against the unwise practice, on the part of many, of sending abroad for that which can be had this side of the mountains, without any loss or sacrifice whatever, other than that of subjugating a penurious disposition of mind to the wiser economy of sustaining home industries.

The Acoustics of Churches.

THIS subject is of the greatest importance in connection with a large church suited to modern requirements, but, unhappily, very little is really known concerning it. This, however, is certain, that echo and reverberation are caused by sound being reflected from flat surfaces within confined spaces. In churches these effects mostly result from bald, unbroken wall spaces, bad proportions, piers with flat surfaces, horizontal ceilings, and square-ended transepts, unless the transepts be of such length that the voice, decaying before reaching the end walls, is not strong enough to be unpleasantly reflected. It has been unjustly said that domes are always bad for sound, and St. Paul's is frequently instanced as an example. I maintain that a dome is not necessarily bad for sound, and many Gothic churches have more reverberation and echo than many Italian churches with cupolas. The acoustic qualities depend upon the arrangement. In St. Paul's the dome has certainly very little to do with the acoustic defects, and I quote St. Paul's as a well known example. The reverberation there is caused mainly by the flat surfaces of the piers generally, by the re-entering angles of the large piers at the corner of the octagon respectively, by the slight curve and plain circular face of the pendentives, by the square-ended transepts, and by the large flat surfaces in the aisles. At a certain distance from the re-entering angles of the large piers, at the point where the voice of a preacher is reflected from both surfaces and these reflections meet, not a word can be distinguished; while by moving out of the angle of reflection only one or two seats farther forward, and being then seventy or eighty feet from the speaker, every word can be distinctly heard. This demonstrates the effect of large piers with flat surfaces. St. Augustine's, Hackney, is an instance out of many of the effect of bald wall surface and square-ended transepts. There, when the pulpit was placed near the chancel arch, the reverberation was very great, the voice being reflected by the transepts, which have no arcades or aisles; when, however, the pulpit was moved to the west side of transept into the nave, the preacher could be heard with ease; and other instances of a similar plan give the same result. In other large churches with aisle walls quite plain to a considerable height, the reverberation is always great. Professor Roger Smith, who has given this subject much attention, has evidently arrived at a similar conclusion as to the cause of echo, etc., for he says in his work on practical acoustics, "The formation of recesses, breaking up end walls, rounding and canting off angles, bringing the ceiling onto the walls with a cove or cant, and breaking it up with groining, are all methods of avoiding the risk of acoustic failure." In plain language, this means that plain surfaces should be avoided. Domes of no great height, on square piers, or over spaces confined by flat walls and without large voids like a nave or transept, into which sound may escape, are undoubtedly bad as far as echo and reverberation are concerned. This is notably shown in the Pantheon at Rome, the reading-room at the British Museum, London, the Picton Reading-room, Liverpool, Napoleon's Tomb, at Paris, the Taj Mahal, at Agra, and numbers of the Italian and Indian domes. In these the voice cannot escape, and is reflected backwards and forwards from the flat surfaces. That a low dome is worse in its acoustic results than a high one is proved by the fact that the reverberation in the first gallery of St. Paul's is much greater than on the floor level, while in the whispering-gallery the echo is extraordinary, as the name denotes. The Picton Reading-room is also a local example of this. In fact, to avoid reflection (*i. e.*, echo and reverberation), sound must be either lost in a void, or absorbed by drapery, or deflected and shattered on the confining surfaces. In the latter case there is practically no reflection from the piers or walls. It is evident, if this can be arranged, that a larger congregation could hear more freely in a great area covered by a lofty dome than in a long and comparatively narrow nave. And this result can be obtained by the shape of the piers, the arrangement of wall surfaces, and the proportions. For a voice to fill a large space accommodating a crowd of two or three thousand people, a sounding-board would always be necessary to throw the voice forward. In the plan submitted* to give practical effect to the principles above stated, all lengthened plain surfaces of wall have been avoided; the dome is of great height, and the nave and transepts form large voids into which sound can escape. The large piers supporting the dome are circular on plan, by which means the direction of sound would simply be changed without reflection. The alternate sides of the octagon have semi-circular recesses behind the arches, broken by galleries, by deeply-recessed windows, and by double tracery. The pendentives are constructed with a great variety of curved surfaces at different angles, and broken by projecting arches and ribs. Above the pendentives two galleries break the height, also a traceried arcade in front of the deeply-splayed windows. The dome itself is of such a height that any reflection of sound taking place, in spite of the arcading to the drum and the projecting galleries, would practically be lost, and could not affect either the preacher or the audience. The transepts are as deep as the site will allow, are octagonal on plan, instead of flat, and have recesses at the angles. The aisles are broken by deep recesses formed by bringing the necessary buttresses inside (giving also greater internal effect of width, and supplying space for monuments, and having a constructional advantage with the form of roof adopted by giving better abutment at the foot of the roofing vault to aisles). The surface of the west wall is broken by projecting columns and a gallery (which also affords convenient space for arranging either heavy curtains, mats, or a screen to the west doors). The roofs, too, are groined.—*William Emerson, in British Architect.*

*Reference to which was made in *Building* for March 13, in the description of the designs submitted for the Liverpool Cathedral.

Conglomerate—"Fire Limit Ordinance," Building Law, Etc., in San Francisco.

LAWS and ordinances establishing and empowering "Building Bureaus," "Building Boards," "Boards of Public Works," etc., exist in most of the larger cities of the United States, with special jurisdiction over t e erection and construction of buildings, in matters of sufficiency of strength and other details, as regulated by the respective codes of laws and ordinances, which are from time to time changed and amended to fit each newly-developed necessity.

But—singular as it may appear, and is in fact—in the great, prosperous, and progressive city of San Francisco, there is no better building law than the *medley* of "Fire Limit Ordinances," in which is mixed up all there is in the shape of laws and ordinances regulating the science of architecture and building construction; and to complete the irregularity, the interpretation, application, and enforcement of the ordinance is placed wholly within the control of the chief of the fire department, his deputies and assistants, and those within the fire department circle. To all of which, there are many reasonable and valid objections.

The construction of buildings, in an architectural and mechanical sense, is an important special science in and of itself, requiring mechanical and professional skill and experience to rightly understand, apply, and demonstrate its numerous problems. This being so, it should be under the control of those properly qualified by individual education and practical experiences to manage and direct matters.

On the other hand, the science of combating the devouring elements is one of special character, requiring special physical and mental qualifications,—courage, strength, agility, daring, correct judgment, etc.; but men may become splendid firemen, as chiefs and subordinates, braving terrible dangers and performing acts of heroism, who, in other spheres, would amount to but little, and who, if called upon to decide issues in, or direct constructive building operations *from, personal knowledge and understanding,* would be altogether incompetent.

In the fire department sphere, the great and all-absorbing thought runs in the fire channel, and the thinkings and dictations of wardens, chief, deputies, and men are pre-eminently for fire department interests, and every other consideration is made to bend and yield to the notions and ideas incubated and vitalized under the influence of the fire department.

The two sciences, therefore, being distinctive in character, requirements, purposes, etc., should be provided with governments, managements, and dictations specially adapted to each; all matters involved in or pertaining to the control of the department,—conflagrations, storage of dangerous explosives, and the innumerable details of the special department work,—remaining with the fire wardens, chief, and their auxiliaries; and that which pertains to building construction to be placed under the control of a "Building Board," "Building Bureau," or any other form of authority composed of intelligent and competent men, familiar with the numberless involvements in building construction.

The ordinances at present affecting building construction are certainly not by any means explicit, sufficient, or consistent, and many of the provisions are daily disregarded by both architects and builders; and, being so thoroughly impracticable, their violations are permitted to pass unnoticed, even by the watchful guardians who sometimes insist upon the rigid observance of immaterial things, which are enforced because the ordinance says so and so, although, practically, for any good purpose, the same may be entirely useless and unnecessary.

These suggestions are made in all candor, without intent to antagonize or offend in any direction. The division proposed is in harmony with the results of experience in other cities, where building laws, special to constructive works, are considered to be of vast importance, and receive great attention. There is no good reason why an efficient Building Board should not be established in San Francisco. The columns of this journal are free to any one entertaining adverse views upon the subject matter introduced in this article, as well as those in harmony therewith. An intelligent discussion of the issue might prove interesting, and lead to right and desirable conclusions and results.

Strength of the Knights of Labor.

IN speaking of the great strike now going on, and extending from St. Louis to the Gulf of Mexico, the St Louis *Globe Democrat* says: "It is ascertained from the most reliable sources that District Assembly No. 17, with headquarters in this city, has a membership of from 12,000 to 15,000, and within a radius of 300 miles are about 50,000 Knights of Labor. Altogether in the country there are, counting some newly organized assemblies, about 160 district assemblies, some of which are very strong, numerically considered. Some of the district assemblies in the manufacturing districts of the East count up fully 50,000 members, and of the total membership of the order various estimates are given, ranging from 500,000 to 1,500,000. In close connection with the Knights of Labor in this city is the International Working People's Association, which will give the Knights of Labor their moral support, and, if necessary, material aid. Both organizations are said to be in close communion, and will act in concert in any emergency that may arise. The numerical strength of the International Working People's Association has been greatly underestimated, from the fact that they do not care to let their exact number be known. In the various groups of the order are included something like 10,000 members in this State and Illinois alone. In this city and close vicinity are probably 20,000 men who are members of organizations directly upholding the strikers of District Assembly No. 101.

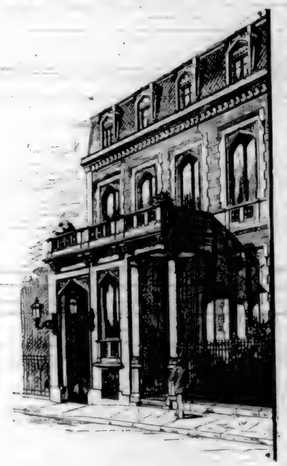
THE owner of one of a row of new houses saw a little girl taking observations on the street the other day and entered into conversation with her. "Oh, yes," she said, "I like these houses, but my papa don't." "Well, what fault has he to find with them?" "He says he cannot drive through this street because they frighten his horse."

Ancient Wood Carving.

AMONG the papers read at a meeting on Monday of the Society of Antiquaries of Scotland, was one on a wood-carver's tool box found in a bog in the island of Avie, Orkney, and exhibited by the finder. The box, which measures 11½ inches in length by 4¾ inches in breadth, and 3 inches in depth, is elaborately ornamented by a running pattern of diverging spirals, and other designs of specially Celtic character. The box was furnished with a sliding lid, which is now in fragments, and it contained a series of tool handles made of bone or horn, evidently for carving in wood, or some such purposes. The blades of the tools which have been of iron have entirely perished, but there remains in the box the piece of pumice stone with which the carver used to polish up his work. This box is one of the oldest bits of wood-carving known in Scotland.—*Ex.*

Pay of Architects.

NOTWITHSTANDING all that is said and admitted about the mercenaries of clients, the crudeness of popular taste, and the general lack of a critical appreciation of the merits of good buildings, the most serious obstacle to a due recognition of the architectural profession, by the public, is the unprofessional quality of a large portion of its membership, and often suggests a doubt whether they really know what professional conduct is. Witness the following transaction, of recent date, in a prominent Western city, where a couple of architects, in their eagerness to secure employment, sacrificed every consideration of personal profit and professional dignity. In the city of A it, is proposed to erect a $50,000 building for the Young Men's Christian Association, and part of the funds have already been pledged. Regardless of all professional etiquette, the firm of B & C, architects, addressed a written communication to the building committee, soliciting employment for this work, and offering to make "all the drawings, specifications, details, etc," and to superintend the building, *free of expense, regardless of what the structure may cost.* We are not informed of the final decision of the committee, nor of their opinion of architects who solicit work in this ignoble fashion, but the affair suggests a few very obvious reflections. As for the architects themselves, they could hardly occupy a more humiliating position than that they have voluntarily and gratuitously chosen in this transaction. Had they referred to similar buildings which they had designed and erected, or offered any other evidence of superior qualification for the work they solicit, their position would be different; but to make an appeal solely on the ground of the cheapness of their services, is, by implication, to confess that cheapness is their chief merit. A class of disreputable doctors often advertise, "No cure, no pay," but these architects have gone a step beyond the doctors in offering to take no pay in any event.



Capable talent does not go begging for employment in this gratuitous fashion. Architects who can command pay for their services are not apt to urge them, as a gift, on building committees. Moreover, employment secured in this mendicant fashion, seldom brings any profit or honor with it. The self-abasement at the start invites a series of slights, snubs, and bitter humiliations throughout. Good work, fairly paid for, brings most thanks and favors as well as most profit. The old plea that a man has a right to work for nothing, if he chooses, will not answer in this case. An architect is *ipso facto* representative of the architectural profession, and, as such, is not at liberty to solicit work, or otherwise conduct himself in a manner calculated to bring his profession into public contempt. After he has been selected as architect for a proposed building, he may contribute as large a donation as he chooses, to the cause, either in cash or in personal services; but to offer such donation or gratuitous service as an inducement for the award of the work to himself, is as disreputable in an architect as it would be in a lawyer or a physician. Such parties consciously set a depraved example, audaciously trusting to the superior honor and self-respect of their *confreres* for the success of their strategy. Were the custom to become general, of soliciting work in this manner, their sole ground of preference would be taken away. They would not dare inaugurate the practice, therefore, but for a confident belief that the most of the profession will be too honorable to resort to it under any circumstances. As for the committee, a sensible man would be very apt to inquire whether it might not be wiser, safer, and ultimately cheaper to intrust their work to a thoroughly responsible and capable architect, at a just compensation, than to risk the fifty-thousand-dollar building in the hands of those who intrusively offer their services for nothing. A good architect often saves more than the amount of his commission in his conduct of the work apart from the superior quality of the building. Moreover, it is contrary to human nature to work without pay, and when people in any business make offers of this nature, it naturally suggests suspicion of some stratagem by which they expect secretly to derive ample profits for their liberality at the expense of a confiding customer.—*Inland Architect and Builder.*

California Building Stone.

THIS is practically a *new find* in building material in this State, although long known and used in the locality of its deposit. One or more buildings are said to have been erected near the quarry, and the effect of time, wear and tear has fully proved that it is of superior quality, although that used for the purpose named was the top rock, below which a much better texture and quality of stone are found.

The specimen left in the office of this journal certainly appears well for all building purposes, whether as wall material, lintels, sills or otherwise. It is from the Valley Spring Quarry, Calaveras County. The color is good, light gray, lighter than the sandstone of Santa Clara County, and would make a very handsome contrast for trimmings in press brick fronts.

It is pure silex and silicate of soda, fine grained, easily picked, rubbed, tooled or shaped into ornamental forms. Blocks of any required size or dimensions can be quarried. It is of fine, even texture, very strong, approximating if not equaling that of the best granite, and can be worked at half the cost of granite. There are no muddy impurities in its composition, and exposure to the atmosphere simply adds to its hardening and strength. It is also said to be comparatively fireproof, and consequently superior over granite for columns and lintels.

This stone is not only suitable for all kinds of dimension and ornamental purposes, but splendid for ruble-walls, being much superior to brick in foundation walls.

The need for a stone possessing the qualities claimed for that under notice, has been long felt in California, and it is to be hoped that the material in question will fill up all hitherto deficiencies in the line of a good building stone.

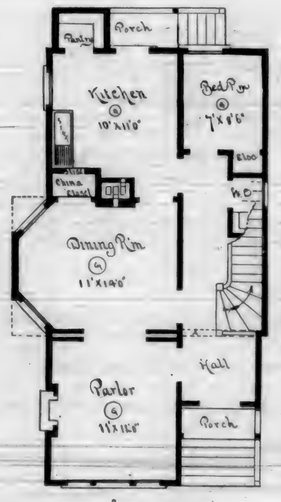
The quarry is reported to be extensive, and so far accessible to transportation that the rock can be delivered in this city at a very low price, as compared with the stone heretofore used in building construction. This being so, there seems to be no reason why it should not come into general use. The specimen in this office is free to the inspection of architects, builders, and owners contemplating the erection of buildings, and to all parties interested in the development of the State.

Examination a Pre-requisite to Practice.

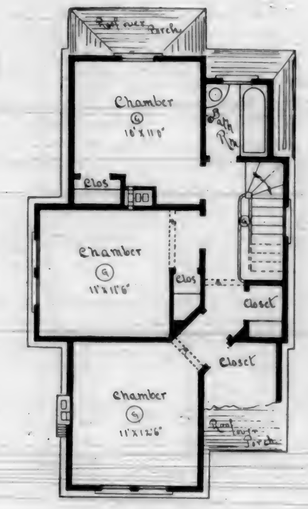
IN an article, "Essentials of a Building Law," the *Western Architect and Builder*, among other things, says: "No person should practice the profession of architecture without first having passed a satisfactory examination before the State Board, consisting of the State Architect, the Commissioner of Public Buildings, and such other members as may be thought best."

In the passage of any law or regulation enforcing the suggestion of our contemporary, which should be national in character, there would be terrible howling in present architectural circles, but not among the intelligent, experienced, and competent men who suffer daily annoyances, if not from direct competition and contact with the minnows that wiggle their tails in architectural waters, then from the innumerable innovations upon right and honorable professional practices, and the shameful abuse of privilege in departures from the consistent and true, and the substitution of the fanciful, wild, and extravagant architectural gewgaws, —not styles founded upon the time-honored orders, nor possessing any recommendation to place them on record as the legitimate offspring or result of architectural culture and refined taste.

If matters *could be* so regulated by legal, constitutional enactment as to prevent those not qualified from entering into practice,



First Floor Plan



Second Floor Plan

and imposing their services upon the unsuspecting and confiding, through false representations of themselves and their abilities to perform the responsible duties incumbent upon architects, owners, as well as qualified architects, and the profession as a whole, would be vastly benefited; for then men would understand that study, preparation, qualification, and the attainment of a proper knowledge of the innumerable details of the science, were an indispensable requirement, and those by *nature* qualified would seek every other necessary qualification.

Under such a regulation there would be no curtailment of privileges or opportunities to young men. The door of entry would be as widely open and free as now; but it would then be known and understood that the attainment of right and proper knowledge was a prerequisite to the privilege of assuming professional responsibilities as an architect, instead of, as now, any one who pleases, however little qualified, asserting claims to, and playing a part never studied nor understood by them.

Examining Candidates for Membership in the Kansas City Master Plumbers' Association.

A HARDWARE firm in a town in Kansas, desiring to go into the plumbing business, associated with themselves a man who claimed to be a practical plumber. This man made application to join the Master Plumbers' Association of Kansas City. A committee was appointed to examine the applicant and report upon his eligibility for membership. This committee sends us the following report of the examination:—

Question—Are you a practical plumber? Answer—I am.

Q.—How long have you been at the business? A.—About twelve years.

Q.—Where located? A.—Run shop four years at Greenville, O., and also at Bramptom, Canada; had in my employ fifteen men.

Q.—What are the different grades of lead pipe? A.—Light, medium, and extra strong; iron pipe the same.

Q.—Into how many pieces would you cut sheet-lead to line a tank 3x3x3 feet? A.—Five pieces, one for each side.

Q.—What would you do with the lead then? A.—Scrape it with a scraper, then paint the edges black and solder it.

Q.—What is the proper name for the tool you call scraper? A.—Why, scraper or knife.

Q.—What is the proper name of the black paint you mention? A.—Paint is the only name I have ever heard it called.

Q.—What are the ingredients in this paint, as you call it? A.—I don't know.

Q.—Can you wipe a joint? A.—Certainly.

Q.—Will you go now to Mr. Ford's shop and make one? A.—Not to-night, as it is two years since I made one.

Q.—How would you proceed to make a branch-joint, and what tools would you require? A.—Have forgotten the names of most of the tools.

Q.—How is a trap ventilated? A.—Never ventilated any.

Q. What are the different patterns of traps most commonly used? A.—Do not remember.

Q.—What is a hot-water circulation-pipe, and where used? A.—Pipe running from center of boiler to the top of the boiler.

Q.—What is a lead safe? A.—A pan under a water-closet to catch leaks.

Q.—Is there a pipe leading from the safe usually? A.—Yes, going direct to the sewer.

Q.—Are you sure you are a practical plumber? A.—Oh, yes.

Q.—What are the Philadelphia rules for gas-fitting? A.—There are no rules that I know of.

Q.—Did you work at plumbing in Chicago? A.—No; I was with the People's Gas Light Company.

Q.—You still claim to be a practical plumber? A.—Yes, sir, I do.

That is all. The above is a fair sample of the *practical plumber* found in the tin shops and hardware stores of Kansas; yet they have the unadulterated gall to apply for membership to the Master Plumbers' Association. The applicant was most respectfully told to stick to bell-hanging.

W. F. McCarthy,
Wm. Stockinger, } *Committee.*
John E. Ford,

[We are glad to learn that men of this class are not admitted to membership in the Kansas Association. We presume there is nothing to prevent this man from experimenting with plumbing work in the State of Kansas, but we hope the time will come when such men will not be allowed to attempt the execution of plumbing work anywhere. This applicant's answer to the question, where a pipe from a lead safe usually leads to, explains some of the illustrations that we give in this issue of dangerous plumbing blunders in Philadelphia.—Ed. *San. Eng.*]

We regret to add that there are very many of the Kansas City specimens of *practical plumbers* operating in San Francisco, who could not if they would, execute a perfect piece of plumbing work, and it is doubtful whether they would if they could. This class of mechanical incubuses—frauds in every sense involving skilled workmanship—are mere tinkers, lacking the natural mental necessities to qualify them to *understand* the laws of mechanical science, much less to *execute* them. The "scum of society" is often applied to certain classes, and with equal force and propriety, "mechanical scum" attaches to these tinker *practical plumbers*, who fail to exemplify more than the crudest forms of mechanical workmanship, without an approach to *skillfulness*, particularly in those matters in plumbing work which require the nicest conception and application of the plumbing art.

Since the adoption of the plumbing law in this State, this evil has been to an extent regulated, but not exterminated, until the really practical plumbers were driven to the wall by the aggressive methods of the invaders, who have worked themselves in as competitors with competent men. They made no move to reclaim their just rights, but yielded to the pressure, and learned to practice many of the mechanical connubiations by which their enemies managed to underbid and secure important jobs, as well as the greater portion of the smaller class of buildings.

Necessity finally led to the adoption of the plumbing law, which places a check upon the many rascally things practiced under the old personal privilege regulation. But the law is yet too mild, in that, while it restrains and controls the more important departments of sewer, soil, vent pipe, etc., work, it leaves it possible for the Kansas kind to operate.

The law, to be wholly sufficient for the purposes for which it was intended, should require and compel every *practical plumber* to undergo a rigid examination before a competent board of examiners, denying the right to practice, as master plumbers, to those not capable of answering correctly every essential question connected with or involved in the science of plumbing. Such examination would be an indorsement of competent men, and an exposure of those who, as a class, by their defective workmanship have been instrumental in prostrating thousands of their fellow-creatures upon beds of pain and suffering, and sending as many more to untimely graves.

Spare the Birds.

IN view of the great slaughter of birds in America for sportsmen's pleasure, and to gratify the demands of gaudy fashion, the American Ornithologists' Union has organized a "Committee on the Protection of North American Birds," consisting of Geo. B. Sennett, chairman; Eugene P. Bicknell, secretary; J. A. Allen, Dr. J. B. Holder, Dr. G. B. Grinnell, William Dutcher, and L. S. Foster, all of New York City; Wm. Brewster, Cambridge, Mass.; Montague Chamberlain, St. John, N. B., and Col. N. S. Goss, Topeka, Kansas.

The heartlessness with which millions of the feathered family are yearly destroyed, mainly to gratify the passion in the sportsmen of our country to shoot and kill birds, is incalculably great. The little innocents are shot at simply to illustrate the shooter's skill and proficiency with his gun, or for the mercenary purpose of supplying an article of extravagant ornamentation in the fashion world. And fashion, the foster sister of pride, the mother of untold evils in social and family life, demands its pleasings and gratifications with remorseless severity at whatever cost.

The object in view by the Union is the obtainment and diffusion of all possible information in reference to the magnitude of the slaughter of birds for mercenary purposes; the destruction of birds' nests, etc., etc.; to develop a public sentiment in favor of rigid protection of birds; to prevent the depredations of sportsmen and boys, and the destruction of bird eggs; to secure more perfect legislation leaving the game birds subject to reasonable season protection.

The committee requests the sending of facts and information from all sections of the country, to their head-quarters, at the American Museum of Natural History, Central Park, New York City.

Customer (entering unexpectedly)—"So, sir, I've caught you putting water in the milk." *Milkman*—"Yes—er—no; that is, sir, I'm only washing it. You don't s'pose I'm going to serve my customers with dirty milk, do you?"

The Late J. B. Gough.

ALTHOUGH the following resolutions have appeared in the daily journals, we deem it a fitting tribute to the memory of a truly good, and, in his life-time, distinguished worker in the cause of temperance and humanity, to give them a place in the columns of this journal.

Thousands have good and sufficient reasons for thanking God that this earnest man, full of devoted zeal and interest in the cause he so ably advocated, lived and labored so faithfully and successfully, with a power and influence for good not possessed by millions of other good men, influencing tens of thousands to abandon the vice of indulgence in strong drink, and turn their feet away from the paths which pursued, inevitably lead to a drunkard's grave.

If from the confines of the tomb his voice could be uttered, even louder and more earnest than in life would be his cry to the living, Touch not, taste not, handle not the accursed thing.

RESOLUTIONS OF RESPECT ON THE DEATH OF JOHN B. GOUGH.

The following resolutions were offered by Dr. R. H. McDonald and unanimously adopted at a meeting of the International Lodge of I. O. G. T., held in Grand Central Hall, San Francisco, Cal., March 1, 1886.

Whereas, An all-wise Providence has removed from the scenes of earth the illustrious and brilliant orator and devoted patron saint of temperance and prohibition, the justly renowned and beloved John B. Gough, therefore be it

Resolved, That we deeply mourn the loss that we, and humanity in general, have sustained in the death of the eloquent advocate, whose life was spent in incessant toil and tireless devotion to the uplifting of fallen humanity.

Resolved, That we tender to the bereaved and afflicted widow and family our heartfelt and sincere sympathy, and assure her that, in this case, her loss is our loss, and that we mingle our tears with hers in this great trial, but hope to meet him "beyond the river."

Resolved, That these resolutions be engrossed, and that a copy be furnished the widow and family of the deceased, and also for publication in the *Rescue*, *California Voice*, and other papers.

The following telegram of condolence was sent to Mrs. John B. Gough and family, by a Past Worthy Chief Templar of International Lodge, 291, I. O. G. T., of San Francisco, and was indorsed by said Lodge:—

San Francisco, Feb., 1886.

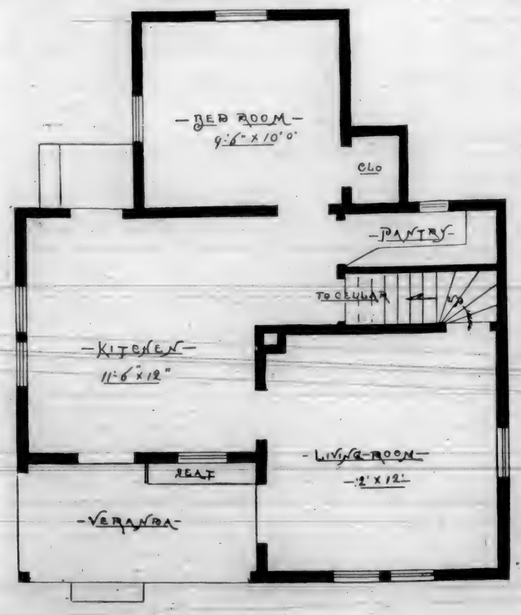
To the widow and family of John B. Gough, Boylston, Mass.—

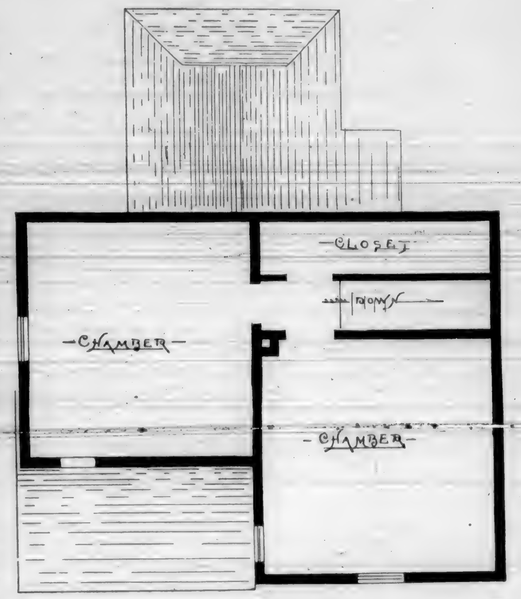
We mingle our tears with you, in this great affliction. Please put flowers on the body for us. We shall meet him "beyond the river." Our flag is half-mast. California mourns the loss of one so honored, so brilliant, so devoted, so true.

R. H. McDonald.

Secretary, Helena Young.

An oak mantel imported from England, made by a London manufacturer, bears in the center of its expensive, but plain, upper portion, which slopes backward, a warrior's steel breastplate and his trusty weapons crossed beneath it. Over the fireplace is a series of tiles, representing a troop of wild horses.





Not Fair Treatment.

THERE is in journalism, as in all other matters and transactions, a rule of right and fairness, which transgressed, is a wrong committed. These may sometimes occur without intent or design, but when frequently repeated, with plain and unmistakable opportunities to avoid them, the design and intent become transparent. This journal was the first, and to-day, is the only, or nearest reliable reporter of the building intelligence in San Francisco. So much so that the city papers generally, have used our monthly, quarterly, and yearly reports as showing the building activities, some giving us due credit always, and some occasionally, while at other times our reports have been appropriated as a whole in such manner as to make it appear that the statements made were the result of enterprise on the part of those journals, filching matter, which of course cost us considerable money and time to provide and prepare.

One of these most glaring illustrations of journalistic profligacy occurred in the *Daily Examiner*, in its issue of March 15, in which our quarterly report and tabulations were copied entire, word for word, and figure for figure, and the credit given to an obscure sheet that never originated a single fact or figure stated. There can be no reasonable excuse for this, as the journal in question was furnished with a copy of the California Architect and Building News containing said report, and had it wholly in its power to have avoided the miscredit, if it had been so inclined. It would have been a transgression of privilege to copy the item without any credit, but the appropriation of matter from these columns with credit to a source not entitled to it, and from whence it did not originate, makes it more than an oversight.

The Knights of Pythias Hall Association, by its officers, report 4,201 volumes of useful and instructive books in the library, being a gain of 268 volumes during the year 1885. Number of books issued during the year, to 1,420; readers, 12,568. The report shows a healthy and prosperous condition of things in this department of order work.

A portable bath, having a flexible rim or water-guard, which is to prevent the floor from becoming splashed, has been patented by J. H. Crocker, Brussels, Ont. The bath has an upright flange, from which four, more or less, radical arms are made to project. These arms support a strip of flexible material which completely surrounds the bath. The arms are held in place by means of enlarged heads that pass through wire loops attached to the upright rim.—*The Brooklyn Real Estate Review and Long Island Record.*

General Grant's book will be the best monument of the man; it will show every side of him and show him well.

Science of Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]
(*Continued.*)

IN the formula designated, v v_1, the velocity of the air at a constant section, $2g = 19.62$, acceleration of gravity; H the height of the channel; T the temperature of the warm, t the one of the cold air current; L L_1, length of the distances to be conducted; D D_1, the diameter respectively the sides of the channel; U U_1, the circumference washed by the air current; F F_1, sectional surface of the channel; f, a coefficient of friction, = 0.024.

$$v \sqrt{\frac{2\,g\,H\,(T-t)}{273+t}} : \sqrt{1+\frac{2\,g\,f\,L}{D}}$$

When the channel is made of two unlike parts (f.i. of a horizontal or downwards directed and of an ascending channel) then is:

$$v \sqrt{\frac{2\,g\,H\,(T-t)}{273+t}} - \frac{2\,g\,f\,L_1\,v_1^2}{D} : \sqrt{1+\frac{2\,g\,f\,L}{D}}$$

Letters marked with ' are index references to the second channel section.

If the velocity v_1 can be expressed by v, probably $v_1 = \frac{v}{n}$ then is:

$$v = \sqrt{\frac{2\,g\,H\,(T-t)}{273+t}} : \sqrt{1+\frac{2\,g\,f\,L}{D}+\frac{2\,g\,f\,L_1}{D_1\,n^2}}$$

Is the section of the channel not square or circular, and can be set for $D = \frac{4\,F}{U}$. For more than two channels of different sections is in general:

$$v^2 = \frac{2\,g\,H\,(T-t)}{273+t} - \frac{2\,g\,f\,L\,U\,v^2}{4\,F} - \frac{2\,g\,f\,L_1\,U_1\,v_1^2}{4\,F_1} - \frac{2\,g\,f\,L_2\,U_2\,v_2^2}{4\,F_2}.$$

Ventilation by machine arrangement. Ventilation can be produced either by forcing in of air or by suction; the first is commonly known as "pulsation" ventilation.

Machine arrangements, in most instances, are only applied when, by the heating of the air alone, the required velocity of the same for a safe, effective, and good ventilation is not to be obtained, or when economy or the arrangement of the building should demand it. This can be the case, either with very extensive buildings, for which a central arrangement is needed, and a large extension of the horizontal channels is required; or with buildings whose rooms require a considerable change of air, and therefore necessitate very wide channels, difficult to locate and place; or when, for economical reasons, an unusually large heating of the escaping air would be needed, ventilation would be established by difference of temperature.

In general, for ventilation of buildings, the so-called "blowers" find little or no application, and mostly are used in the so-called ventilators for rooms for manufacturing purposes, where an intense noise made by the working is no objection. In limited number, the so-called "steam injector" ventilators are there applied.

The ventilator, acting either by pressure or suction, or acting by pressure and suction combined, are constructed as centrifugal wings, or as screw ventilators.

The number of the constructions of centrifugal ventilators generally employed is not a small one; the difference between them is mostly in the box and in the form of wings, which are either straight or curved. Ventilators with even wings are applied for small pressure; by higher pressure, in the interest of increasing the degree of effect, curved wings are used. The general requirements required of a good ventilator are a noiseless movement, the effectiveness at least 0.3, easy and convenient access for removal of the wings, and, lastly, a sufficient strength of the casing.

The number of horse-power N required for the running of a ventilator is direct proportional to the amount of air needed (Q) per second of time, and the pressure (h) expressed in meter by water column, and in reverse ratio to the real effect (e) produced.

$$N = \frac{13.3\,Q\,h}{e}$$

The general description of the ventilators are: a shaft, to which are attached either straight or curved wings, or wings of a sigmental screw shape, inclosed in a wrought or cast iron casing; to the shaft a quick rotary motion by elementary power is given; by it the air is drawn in at the center of the shaft, and by the action of the centrifugal force is thrown towards the circumference and discharged through an opening left in the circumference of the casing.

The steam injection ventilator depends on the action of steam passing from a narrow, small outlet to a wider pipe; the thinning of air hereby created in the latter, by which a suction of the air surrounding the pipe is produced, is then, with the current of steam, conveyed hence. Those ventilators find only application in buildings where the noise produced by the steam is of no disagreeable consequence to occupants of the room, as in workshops.

The use of the steam injector ventilator is proportionately expensive, but its advantage consists, that neither machinery nor transmission of motion is required, and the first outlay of procuring them and mounting are small. The effect can be seen by the following table: —

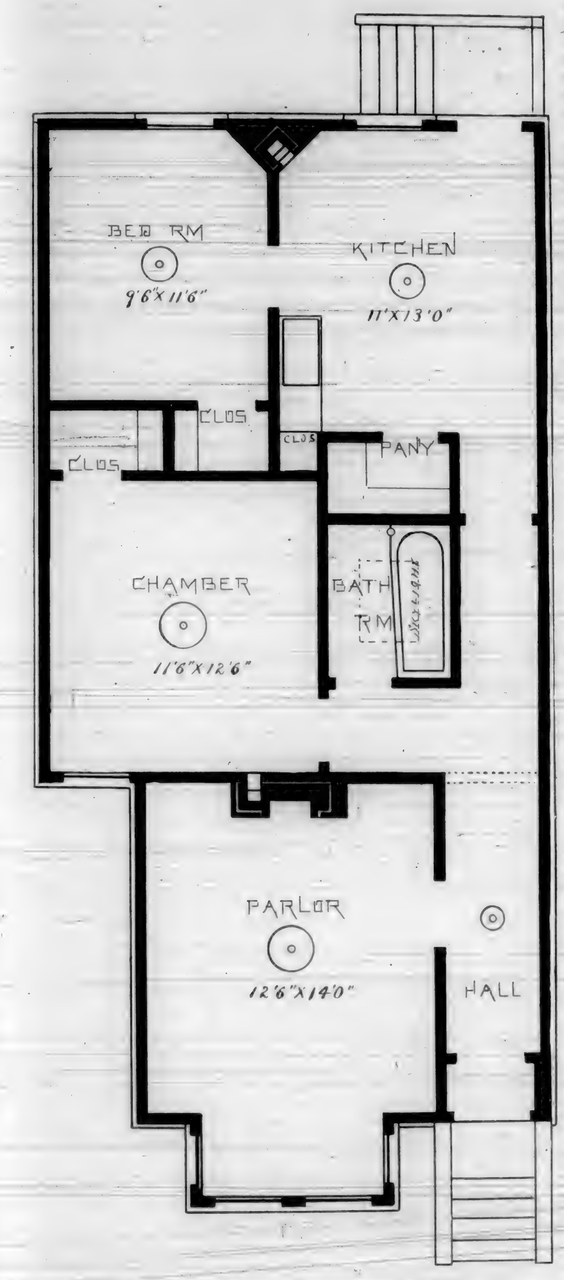
DIAMETER.		DISCHARGE OF AIR
OF STEAM PIPE IN MM.	OF AIR CONDUCTOR IN CM.	PER MINUTE IN CBM.
10	160	6
20	300	25
35	550	100
50	900	250
60	1100	400
70	1200	475
80	1500	625

Compression ventilators can be arranged for direct and indirect action, t. i., that either all air or only a portion must pass the ventilator. In the first instance the air-conducting channels are brought in direct connection with the discharge and only to be considered as a continuation; in the second instance the outlet of the discharge empties in the air-conducting channel, which is connected with the outside air. The air discharged from the ventilator produces a suction on the outside air.

As a rule, centrifugal — wing — ventilators are placed for the purpose of direct action. The placing of screw ventilators is done for the purpose of direct action. Ventilators for suction of air from buildingsare rarely applied. At most they are used as auxiliaries of other systems, since the arrangement of them is mostly complicated, therefore the working of them is difficult, and, in effect, compared with compression ventilators, gives a very unfavorable result. As a rule, it is found that, by the arrangement of compression and suction ventilators together, the first is mostly kept in operation.

With the mounting and placing of ventilators, every precaution must be taken that they are easy of access, and all parts to be open for inspection, and the bearings of the shafting to be convenient for lubrication.

The disposition of a ventilation arrangement for the application of ventilators, does not differ much from the ventilation by difference of temperature. At the lowest point of the pressing air column is placed the compression ventilator (the suction ventilator in the common discharge channel). When, with the calculation for the sections of the channels for ventilation, based on the difference of temperature in the first instance, is to be found the actual velocity, we have for ventilation with ventilators the advantage, to assume the velocity of the air within certain limits,



and from it to determine the sections of the air channels. It is always of advantage not to rate the velocity of the air too high, and grade, accordingly, the channel section smaller, making, consequently, the use and working correspondingly more expensive, the cleaning of the channels more difficult; and the danger of introducing dust into the rooms is increased and made certain.

In most cases of practical execution, the placing of vertical admission channels (the section of them having been decided on with the aid of ventilation by difference of temperature) offers no difficulties, when the arrangement of the horizontal common distribution pipes meets frequently with considerable hindrance and difficulties. In such instances it is recommendable, for ventilation with the use of machinery, to retain the sizes of the vertical channels calculated with the aid of ventilation with difference of temperature, and the horizontal distribution only in the sections to be taken smaller, to increase in them the velocity of the air.

For the correct calculation of the power required to drive a ventilator, it is necessary to know the pressure of the air, to reach the desired velocity of the same in the channels.

Ventilation of the most unfavorable instance is the one by which the drawing off of the air to above the roof, without heating the same, is to be effected, and by which, even in summer-time, a renewal of the air by the ventilator is to be safely secured.

We can consider the whole arrangement of the channels to be divided in two parts; namely, in the horizontal distribution channels, and in the vertical admission and discharging channels. In the latter exists, in winter-time, an ascending motion of the air; in summer-time, a tendency to settle. For the summer-time the ventilator, therefore, has to counteract, in all ascending channels, the falling motion of the air, as also to force the upward motion of the same. The channel, being the farthest off from the ventilator, is the one to be used for the calculation of the pressure of the air.

To v, the theoretical velocity of the air, which must exist at the bottom of the vertical channel farthest away from the ventilator, to supply the room with the required quantity of air, then is the velocity V, according to which the pressure of the air back of the ventilator is to be calculated.

$$V = v \sqrt{1 + \frac{\varepsilon\,(C_0) + C\,l}{d}}$$

$\varepsilon\,(C_0)$ is the sum of the coefficient of the resistances for all the changes of direction in the channels; C is the coefficient of friction = 0.024; l, the length of the air-distributing channels measured from the ventilator; d, the diameter of the channel. For aright angular square section with the sides = a and C is to be substituted for $\frac{1}{d} = \frac{a+b}{2\,ab}$ b.

The pressure corresponding to the velocity V in the ventilator is

$$p = \varkappa \frac{V^2}{2\,g}$$

Wherein p is the specific pressure of the air in kg. per square meter; $\varkappa$, the weight of one cubic meter of air: $2g = 19.62$, the acceleration of gravity.

Since the weight of 10,000 kg. corresponds to the height of a water column of 10 meters, p will in the same time be obtained as the height of pressure expressed in (mm.) milimeter. For the finding of the theoretical velocity v, are, as long as the vertical channels are computed and executed, with regard to the differing of temperature, the previous formulas used and given; v certainly must be obtained for the winter season as the mean of the ascending velocity in the admitting and discharging channels, while for the summer season, v must be calculated as the mean velocity of the ascending velocity, increased by the acceleration of gravity in the admitting and discharging channels.

On the Selection of a Ventilating System.—For the choice of a ventilating system, we have to consider and decide from case to case. There, where the utmost safety of ventilation is desired, it is earnestly to be recommended to make ventilation independent of heating; best to separate both arrangements.

The heating of the rooms is mostly done with reference to the outside temperature, while ventilation is dependent on the adulteration of the air, and the quantity of the same required; each must be accordingly arranged. For each arrangement different preliminary conditions exist, therefore, to work on.

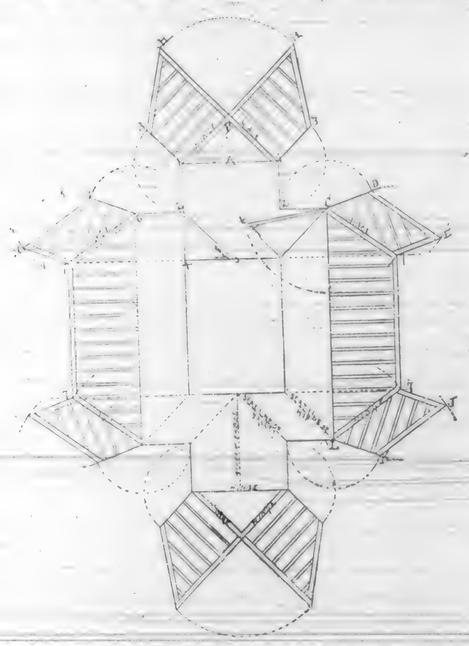
An important factor for the selection of a system is the condition whether ventilation is only desired for the winter season, or for both winter and summer. This condition, and the abovementioned separation of the heating from the ventilation arrangement, are frequently not sufficiently considered in execution. In the programmes set up for heating and vetilation, we often find the system of heating, as well as that of ventilation, the quantity of air to be renewed, decided without any previous investigation of the question, that by the arrangement of the system selected, the desired effect can be obtained. Before the adoption of any certain system, the building distributions are also to be considered, the highest outside temperature to be ascertained, up to which a full effect of ventilation can be reached. By the highest outside, the most unfavorable temperature for ventilation is then to be concluded, which ventilation system for the case under consideration is to be adopted. Self-evidently in the arrangement, that system will have a deserving preference which is the most simple in execution.

Since hereby the distribution in the building forms a question for consideration, even for buildings serving the same purpose, frequently different systems are applied, and for this reason it is advisable to employ competent persons for the designing of the ventilation project. The designing must be done in time, that the required alterations in the plans can be effected.

Addenda.—To measure the temperature of the air, etc., quicksilver thermometers are used. The measure of the temperature depends on the expansive capacity of a fluid, either ether or quicksilver. The fluid to be selected for thermometer must have a uniform expansive capacity, that is, for the same amount of increase or decrease of sensible heat an equal amount of expansion must be obtained.

Editor of California Architect—*Dear Sir:* I herewith furnish a graphic illustration of a hip and gable roof, similar to that appearing in the January number of your journal, by which the roof covering of the ground plan can be found unerringly.

First, draw ground plan to any given scale. Set up the height of roof, say A B, then draw the seat line of both the hips and valleys, on the ground as shown. Square up from the seat line of hips, and set up the height of roof as elevation A B.



Connect C and B, which gives the length of hip rafter. Square out from the deck line, 7–7–7–7. Take the compass and stand in C, and open up to B. Describe curve cutting at 7. Connect 7 and C, then C and 7 is the length of the hip rafter that will stand over C A in the ground plan in position.

—Come back to A B, draw the common rafter or gable end, and square out from common rafter as shown. Take the compass and stand in 1. Draw the curve from 2, cutting the line squared from the common rafter at 3, each side. Take the compass and stand in A; open out to the face line of deck, and with that distance stand in B and cut the lines marked H H; then connect H and 3 each side, and H and 3 will be the length of valley rafters, to stand in position over 2 5 in ground plan.

This brings the problem to the most difficult cut in the structure,—the finding of the correct lean. Draw a line from 2 to X in the ground plan, and set up the height of elevation; connect 2 and 5; take in the compass, the distance 2 5, and move over and stand in 7; draw the curve marked 8; come to number 6; stand in 6 with the compass, and open out to number 2, and draw the curve cutting at 9; connect 6 and 8, which will give the correct incline or lean of timbers. The outside commencing at 1, cut to 3; from 3 to H; from H to B; from H to 3; from 3 to 1. Cut from C to D, to E, to Y, to J, to K, to L.

Now weaken at where hinge is printed, and fold from you, and stand up on the ground plan lines. This will give a model showing every timber in place, and, in fact, give a better illustration of construction than pages of written explanations.

M. J. Marion.

The Professing Architect, as Seen by Some Others.—Men who live in houses do not build them; they hire them and have a hope—which by this time cannot be called reasonable—that the landlord has built with a view to comfort. Not so; he builds with a view to money, and the tenant suffers every day of the year, because the simplest precautions have not been taken in building to meet the changes arising from variation in temperature. It may be wrong to blame the landlord, or even the speculative builder, when the right person to blame is the architect. So far as the outside world may judge, the profession of "architect" is, from first to last, a delusion and a snare. The only thing the "professor" is good for is to blackguard the Government (or municipal authorities) or private individuals, over every bit of work done. No work is ever done by the right person, or is well done. The latter is unavoidable; for what capitalist can decide as to the right party, or how can the man act freely when selected, when every other member of the profession is like a tom-cat, snarling at every design as a whole, and at every detail in the design? Who ever heard of an architect paying attention to common-sense suggestions in designing the miles upon miles of houses in the towns of England? And surely some architect has been consulted in the majority of cases. The aim is to make a something to look at from the outside, while comfort and convenience are of no import.—*Contractor.*

Abrogation of Treaty.

THE speech of the Hon. John H. Mitchel, of Oregon, before the Senate of the United States, February 26, 1886, if in any part at variance with the laws of nations, or questionably strong upon the matter of abrogation of treaties, it nevertheless enunciates the correct and only true doctrine applicable to the Chinese issue. If the presence of Chinamen in the United States is an evil, and such it is known to be to every man who understands and comprehends the whole matter in its full and correct light, then any necessary measure calculated to crush out the evil is legitimate, and no fancy philosophy of treaty obligation should be permitted to intervene. As a matter of course, "silver-tongued" orators, and minds and intellects capable of glossing over and beautifying surfaces, and concealing the underlying and material facts of any issue, may work up appearances to a degree that will make the true seem false, and the false assume the brilliancy of truth. Fine-spun arguments and theories, covering special points, or spread out over all creation, are often made to appear as gilded certainties; while in real fact the structures so reared have no foundation below the surface. Many of the social evils, which are revolting to every refined mind, judged from the standpoint of moral rectitude, are surrounded and impregnated with alluring and pleasurable argument—so much so that millions of men and women the world over, accept them as good, and blind their eyes to underlying facts and consequences.

So in reference to the Chinese question, many good men and women who look only at the comitig, theoretical, humanitarian, Christianizing side of the issue, fail or refuse to go below these superficial aspects of the case, and hence are in total darkness and blindness as to true merit. If these "poor heathen" are to be pitied and helped by the people of the United States, that call of mercy is as loud and strong to every other Christian nation, and we fail to discover the obligation resting specially upon us as a people, to accept the whole burden that should be distributed over every civilized land, in permitting the hordes of slaves, and

the minions of vice, idolatry and heathenis from China, to swarm this grand and glorious heritage, which God in his great goodness has intrusted to us, filling it with every good and happifying thing, and making it, as it has been and is, a light to the world, whose beams of freedom and prosperity have shaken, and are at the presen moment causing the thrones of kingdoms and empires to tremble, and the down-trodden of earth to see and claim their individual rights.

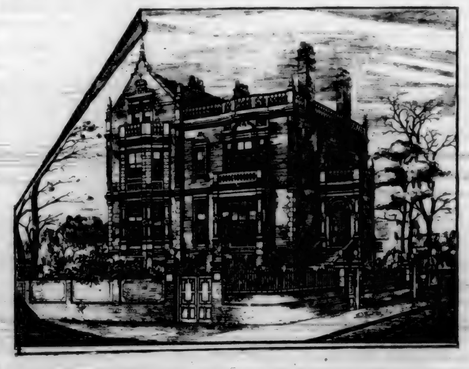
If we keep the Chinamen at home in their own land, then this nation will be able to help them. Millions of money and thousands of self-sacrificing missionaries may be sent to the flowery land to teach the children of the sun—the followers of Confucius, better things, nd establish among them the royal principles of a holy religion, and assist them to raise themselves as a nation, to that higher plane of life enjoyed by the Caucasian race upon this great continent. But if they are permitted to swarm hither, as they will by millions unless the avenues are barred, the period is not long distant when they will assume an attitude of fearful consequence, controlling labor, mechanical, and financial interests to such an extent that the dragoon flag will float on every breeze from ocea to ocean, and the triumphs achieved by them will but stimulate the pride of victory and rebellion against our institutions more bitter and relentless than was ever known in the internal conflict of nations. Chinamen have no love for Americanism, beyond its gains and profits, and with these at their command they will spurn ou philanthropies, hate our religion, despise our institutions, cling to their idolatry and vices, and make this, the land of the free and the home of the brave, the revelling place of all the abominations that at present curse and degrade the people of the Chinese Empire.

These are the *possibilities*, with open ports and all restrictions upon Chinese immigration off. China can spare twenty or more millions of her subjects, and with free entry and general encouragement in trade, manufacture, commerce, etc., it would be a matter of but limited time when their numbers in this free land would reach in millions what they now do in hundreds of thousands. And with this increased number, and a like multitude coming, and waiting daily to come, with full privileges after arrival, the white man would indeed be compelled to hang his harp upon the willows and weep over the desolation of his once happy country. The comparative few who have come among us have practically solved this apparently problematic question, and clearly and unmistakably indicated the results that would follow the influx of several, if not twenty, millions of the race.

But such a state of things cannot, will not arrive. The effect of Chinaism upon the interests of the country is too well defined and certain, and is too well understood by a sufficient number, to be permitted to longer rest in peace, and prosper. And if delayed for a period, the time will come when the safeguards against this gigantic monster will be made so strong that our working people, manufacturers, and others, will be secured against Chinese encroachments.

The Working Classes as Drinkers.

THE terribly pernicious and demoralizing habit of indulgence in beer and whisky drinking by millions of wage-earners in the United States, with the number many times multiplied throughout other parts of the world, is one of tremendous proportions and magnitude. Although, strictly speaking, this may be a matter of personal, social, moral and physical import, its effects and result so far impregnate and enter into and affect mechanical, professional, and all other circles of brain and muscle workers, that class journals in whatever interest published, as well as those devoted specially to moral and reformatory matters, are fully justified in any reference to the subject calculated to show up the resultant evils, and cause—if, perchance it may be so—some to consider the folly and injuriousness of the habit, and to view it in its true and too often fatal light.



The living evidences of mental and physical wreck and ruin through indulgence in intoxicating beverages, are in numbers, beyond all computation. Millions of otherwise most noble and excellent men, capable not only of mastering the intricacies of the mechanical and professional arts and sciences in their unlimited forms, features, and applications, but of filling, honorably and well, high positions among their fellow-men, in social, business, and domestic life and relationship—men of courage, genius, and nobleness of soul and nature,—become weak and puny slaves,—submissive, pliant vassals to an unholy and base mastery,—the indulgence in that which has destroyed more of human life and happiness than all the bloody wars of time, and the pestilences, famines, floods, fires, and destructive agencies that have visited earth's surface since the day when the juice of the first apple was tasted by the woman in Eden's garden.

It is fearful to contemplate the vast number of men badly damaged in purse and person by the use of alcoholic and malt beverages. The practice is almost universal, especially among certain classes of working people, who make "swill-tubs" of their stomachs through weakness in themselves to regulate and control an insatiate appetite for drink. The man of strong muscle and sinew arm becomes a feeble, pliant, moral coward, daring not to assert and exercise the noble prerogative of a man, even over the one little string in his make-up—a perverted taste for alcoholic or malt liquors. It is shameful and painful to see so many men bend and give way to a habit which curses always; blesses, never. Its blight is seen in nearly every workshop where the hardy sons of toil meet to labor, and in all assemblages where they gather to discuss questions relating to their labor rights and interests; and the contentions and disagreements that so often arise in such connections are stimulated and promoted by the disordered conditions of mind produced by the use of fluids not found in the laboratory of natural things, except by and through the manipulations of mankind, in changing and producing from the (in themselves) harmless, health-preserving, and life-sustaining fruits, cereals, berries, and products of the earth, to produce poison for souls as well as bodies. And still sadder, the shadows of the same curse darken the homes, the citadels where love, devotion, and sacred peace alone should be found,—of millions of families, rending and sundering ties, and casting down in sorrow and discomfort, if not in positive misery and debasement, wives, sons, and daughters, and making him who should be loved and honored as the strong support and defense of the home circle, a creature to be unloved, if not shunned and despised, as much as pitied. For he who, by willful, continuous, unmanly submission, yields to temptations and practices full to overflowing with evil, and destitute of any and every attribute of goodness, places himself in the attitude of a willful transgressor, and merits not those considerations due, or which it would be reasonable to extend to those who err, repent, and forsake their errors.

Whether so much so in other cities as in San Francisco, we are not prepared to say, but the fact with us is that, admitting the theory of St. Paul to be correct, that "a little wine for the stomach's sake," is good, the thing is overdone. Tens of thousands of men who devote their lives to manual labor, to keep within the measure prescribed by the apostle, "a little," would require food and drink receptacles as large as the pouch of the unfortunate Jumbo; and in far too many cases, the masters are but little behind the servant. Nor does the evil stop at these limits, but is found among those not wearied by hard strain upon the muscular forces; among men devoted to intellectual and professional pursuits, where the mind is in continuous exercise with subjects and matters which should inspire refined thought and develop control over every wrong doing, and every disposition and feeling calculated, if exercised, to work a moral or individual injury.

It may "do no good" to thus refer to this monster evil, but it affords conscious satisfaction that we have performed a simple duty, and that—from purest motives toward the large number of men in all pursuits, with whom business relationships enforce contact.

French Polishing.—The surface of woodwork, if the woods are valuable, is furnished by French polishing. A solution of shellac is put on a rolled wooden rubber, which is then covered with linen, and a drop of linseed oil is applied to the outer surface. The solution is rubbed in with a circular motion in successive fine coats, until a glossy and air and waterproof surface is obtained. French polishing preserves woods liable to split, such as oak, from the too rapid action of the air.

A Library of Wooden Books.

ONE of the most curiously original collections of books in any library is said to be a botanical collection at Warsenstein, in Germany. At first sight, the volumes appear like rough blocks of wood; but, on closer examination, it is found that each is a complete history of the particular tree which it represents. At the back of the book the bark has been removed from a space large enough to admit the scientific and common name of the tree, as a title. One side is formed from the split wood of the tree, showing its grain and natural fracture; the other shows the wood when worked smooth and varnished. One end shows the grain as left by the saw, and the other the finely polished wood. On opening the book one finds the fruit, seeds, leaves, and other products of the tree, the moss which usually grows upon its trunk, and the insects which feed upon the various parts of the tree; to all this is added a well-printed description of the habits, usual location, and manner of growth of the tree.—*Decorator and Furnisher.*

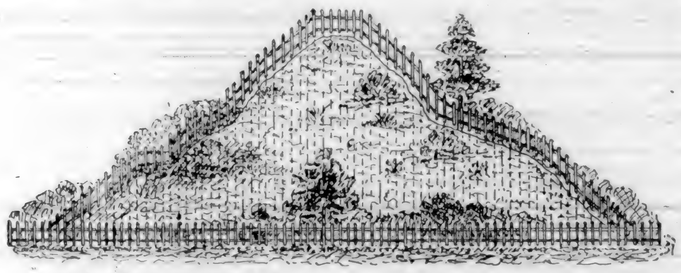
Picket Fence over or Through a Hill.

EDITOR OF CALIFORNIA ARCHITECT: Will you please decide, in your journal, the following dispute. A says that it takes no more pickets to build a fence over a hill than it would to build a level fence in a tunnel running through the same hill.

B contends that it will take as many more pickets in the over-hill fence as there is number of feet greater than at a level line; that is, if the distance from two given points is 500 feet through the hill, and it requires a rope or line 1,000 feet long to go over the hill from and to the same points, the number of pickets will be double, the pickets being spaced the same in both cases.

PICKET.

Answer.—A is right. The same question has repeatedly been asked of this and other journals, and in a former issue we exemplified the problem by the following cut:



As will be noticed, the pickets being put on vertically in both cases, spacing them the same distance, the pickets of the hill fence occupy the same relative position as those in the level fence, as far as the horizontal distance is concerned. It matters not how abrupt or high the hill may be, the vertical lines and spaces being observed—say three inches apart—the same number of pickets would be required in either case. The confusion arises from the fact that the measurement over a hill is greater, and at first thought any one not posted is likely to arrive at the conclusion that, with two pickets to each foot, 1,000 feet must necessarily require 2,000 pickets, while 500 feet on the level measurement would require but 1,000 pickets. The longer measurement *over* the hill applies to *rails* only, which in either case must be equal to the measurement from point to point.

Ventilation of Schools.

BOSTON, March 1, 1886.

TO THE EDITORS OF THE AMERICAN ARCHITECT—*Dear Sirs:* I did not intend to intrude upon your paper again, although, when I read your comments of my communication on the above subject, I began to think that the study I have made of the subject of heating and ventilation of school-houses had not been very profitable, or else your comments were not in accordance with the facts in the case.

We cannot tell what architects could or *would* do, but only what they *have* done; and I still contend that to Mr. Vinal, City Architect of Boston, belongs the credit of the best ventilated schools in New England, with the exception of Mr. Brigg's school, which I consider to be a fine example of scientific ventilation. You speak of the Worcester High School as an example of a well-ventilated building. The following is what Dr. Lincoln has to say about that school-house:—

"*Worcester High School.*—A large and pretentious building of brick and stone on prominent rising ground. The rooms are very high. The doors opening to the rooms are kept open to the very wide halls, and the air is not distinctly bad, though somewhat close. There is a considerable number of flues *not heated*. There is a large room used for drawing by fifty scholars, and once a week by ninety, which has *no ventilation*, and is *probably close*. The hall in the upper story is rather dark, owing to the lowness of the windows. The chemical library is neither well lighted nor *well ventilated*. The cellar is very large, and badly lighted. It is too wide for lighting. It is used by the boys for play, and is not a very desirable place. The same want of light is found in the water-closet in the cellar. The room for the boys' clothes, also in the cellar, is very neat and convenient, but has *no ventilation*."

Those who have made a study of scientific ventilation know that a lot of foul-air flues in a building do not of necessity secure ventilation, and, to say that considerable attention has been paid to ventilation, often means nothing more than that a lot of tin pipes or flues have been placed in a building to carry off the bad air, if it is disposed to go that way.

I do not think any ventilating engineer or practical man would care to provide for more than thirty cubic feet of air per minute per scholar, in the *winter time*, at least, as to produce more than that would be a needless waste. In regard to using fans for ventilation purposes, there are fans and fans, and the writer has only to say that those now in use in five of the Boston schools are not likely to be stopped, either on the account of expense or the neglect of the janitor. Regarding the expense of fan ventilation, Professsr Trowbridge, of Columbia College, is authority for the statement that a given amount of air can be moved cheaper, at all times of the year, by means of a fan than by an aspirating shaft.

EXPERIENCE.

[We are not yet convinced that Mr. Vinal and "Experience" are the only architects in New England who have made "a scientific study" of school-house ventilation; but we leave the matter for those who have done so, if there are any, to come forward and defend themselves against "Experience's" imputations. In regard to the Worcester school-house, it is, however, only fair to Mr. Richardson to say that the drawing-room and chemical laboratory are probably placed in positions not intended for any such purpose, and it is not necessary to infer from Dr Lincoln's description that the architect did not intend to have some means provided for securing a movement of air through his flues, whatever may be the present method of carrying on the building.—EDS. *American Architect.*]

San Francisco Chapter of Architects.

THE regular monthly meeting in March, was held on the 5th, with President Curlett presiding, B. E. Henricksen secretary, and a good average attendance of members present. After roll-call, reading and approval of minutes, and reports of committees, a general discussion ensued upon several matters of interest.

1. The necessity of the Chapter knowing its actual strength in paying membership. This point was dwelt upon as one of great importance to the welfare, and usefulness of the Chapter. A number of names of practicing architects appear on the roll, who never put in an appearance at the meetings, and who as much neglect the payment of yearly dues. This throws increased responsibilities upon the active, interested members, and, for the time being at, least, thwarts and hinders carrying into practice the many grand objects and purposes contemplated in and by the organic laws of the institution.

2. The necessity of having a room devoted to the special uses and purposes of the Chapter. As to the importance of this, there was no dissenting opinion. Beyond question, a head-quarters, a "home" for the Chapter would be a strong link in the chain of its future usefulness. But to procure a suitable room, furnish and equip it in such shape as to make it a pleasant, agreeable, and instructive place of meeting for personal resort, etc., will require more money than the present resources of the Chapter will furnish. The question then, under such circumstances intervenes, How shall the funds be raised to meet the emergencies? Shall the few dip deep into their pockets to furnish the required coin? More generous and more creditable to a time-honored profession would it be, that every reputable architect upon the Pacific Coast—especially those in San Francisco and California—unite in membership and bear an equal part of the financial burden, by the payment of such amounts of yearly dues as may be necessary to carry on and out the Chapter work, objects, and purposes.

3. The constitution provides among other things, that in cases where students employed in offices of members of the Chapter, who travel through our own or foreign lands for the purpose of perfecting themselves in the higher studies and practical observations of the science of architecture, the Chapter may, in its discretion, extend to such students financial aid and assistance, requiring in return that such student consider himself, to a certain extent, the *protege* of the Chapter, and make regular reports of all such matters and objects coming under his observation as might be of interest to the profession on this coast.

In this connection is the case of Mr. Stone, a San Francisco student, who has made for himself a most enviable reputation as an earnest, persistent, and determined worker, with every energy taxed to its utmost to prepare for reputable, honorable, and successful future practice. Mr. Stone is about to leave for the East and Europe, and is the first to offer the Chapter the opportunity to carry into practical effect the provisions of its own laws. A committee, consisting of the class teachers and the president, was appointed to consider the matter and report.

THE APRIL SESSION OF THE CHAPTER

Was held on the 22d instant, and was largely attended, President Curlett presiding, and B. E. Henrickson, Secretary.

The proceedings were marked with more than usual interest. After disposition of minutes and reports of committees, propositions for membership as fellows were received from Messrs. C. I. Havens and David Salfield, and referred to proper committees.

Mr. Macy suggested the propriety of the Chapter adopting a form of diploma, or certificate of membership, suitable for framing, to be distributed to such fellows of the Chapter as may desire to possess that form of evidence of ho orable membership. The matter was referred to a committee consisting of Messrs. Macy, Sanders, and Whittemore.

THE GIRDER.

At this point, Mr. Sanders occupied the floor for the purpose of reading a paper relating to the matter of girders. The theme reviewed and discussed in Mr. Sanders' reading was not exclusively the girder, but a range of thought embracing much of interest in an architectural and civil engineering sense. Mr. Sanders presented a number of hastily prepared sketches of girders, simple and compound, which explained themselves at a glance to those present, as to their generally understood and common uses and applications.

We had hoped that Mr. Sanders would have been able to prepare a set of girder sketches, such as might have been reproduced in the columns of this journal, and a treatise on the same for publication. But press of business engagements prevented this, and we have one less valuable article and exhibit for this issue than we fondly anticipated. Mr. Sanders was requested to pursue the subject and entertain the Chapter at an early subsequent meeting.

An animated general discussion followed the reading, in which many good and practical suggestions were made bearing upon girders, building construction, sidewalk beams, the lateral and compressive qualities of wrought and cast iron respectively, and other pertinent matters.

FROM LONDON.

Mr. Smith, from London, being present, was invited to participate in the talk, which he did with profit and pleasure to those present. Among other things mentioned by the gentleman in reference to girders was that, owing to the well-known fact of the expansion of iron by heat, iron girders are rendered less desirable in building construction, and the greater the length, the greater the objection; while wooden girders, unprotected, burn out as do other parts of the inflammable material, and in both cases walls are thrown down, or so badly sprung or damaged by conflagrations as to require being taken down, which would have remained good and sufficient for reconstruction purposes, but for the girder difficulty.

CASING WOOD GIRDERS WITH SHEET IRON.

As a remedy for the two evils mentioned, Mr. Smith stated that in his part of the world, wooden girders were more generally used in the class of buildings not constructed as a whole or generally of indestructible materials; but to render them preferable, a casing of sheet iron is applied, which makes them practically imperishable in cases of fire.

PIT PROTECTION FOR SAFES.

The gentleman also alluded to the fact that in the great metropolis of the English nation, as an absolute fire and burglar-proof protection to safes, pits are sometimes constructed of the required depth, with hydraulic attachments, of suitable power, presumably similar in action to the hydraulic ram elevators in use in San Francisco; and after the business of the day is over, the safes are secured and then let down into the pits, below the desired level of floor or ground, to remain until lifted again for purposes of business. In this way, all the securities afforded in first-class fire-proof safes are enjoyed, with the additional protection of being virtually buried up in vaults or pits below ground, so as to prevent the slightest effect from fire, and certainly largely increasing the impossibilities of burglarizing.

Altogether, the April session of the Chapter was one of the most interesting and profitable that marks its history.

If the honorable members of the profession, as a whole, would join in the Chapter work, and unite and co-operate heartily and unselfishly for its advancement and building up, in a very short period of time San Francisco Chapter would rank high among the many organizations working in scientific and professional interests; and, as far as its special object is concerned—the science of architecture—it would be regarded as the one great authority in that direction. Its doors are open, and its approach crowned with the word *welcome*, to every worthy and honorable member of the profession upon the Pacific Coast.

Literary Notes.

THE March 6th issue of *Building* contains the second paper on "Slow-burning Construction," by W. H. Dabney, Jr., architect to the Mutual Factory Fire Insurance Companies, of Boston; the continuation of Mr. Warren R. Briggs' excellent series of articles on "The Planning and Construction of School-houses," with plans and perspectives of a model suburban school. Mr. Wm B. Tuthill, architect, continues the discussion in his articles on the "City Residence, Its Design and Construction," of various plans for apartment houses, including what is known as the Duplex system. Various plans of apartment houses are given in the text. Mr. J. Pickering Putnam, well-known through his "Lectures on the Principles of House Drainage," speaks of the necessity of thorough ventilation for soil pip s and waste pipes, and of the evils and objections to special trap ventilation, in his article on "Improved Plumbing Appliances." There is also an illustrated article on the Street Memorial, in the Royal Courts of Justice, London, a Book Review Department, the Weekly Report on the Real Estate Market, a trade supplement reviewing the industrial progress, and a four-page supplement of the Building News of the week, besides editorial comments on the topics of the day. In the illustrations, sketches are give n for small laborers' cottages, for a country church, details of a staircase hall, for a city house, finished in oak, and the perspective view and plans of the new Club House for the Elmira Athletic Association.

THE March number of *Art and Decoration*, an illustrated monthly devoted to interior and exterior ornament, contains some very interesting articles on colors, imitation stones in ornamentation, interior sketches and decorative Japanese work, and many short articles, valuable and interesting. This journal should be in the hands of every one interested in art decoration. Subscription price, $2.50; single copies, 25 cents. Published by Art and Decoration Company, No. 7 Warren Street, New York.

Brick, Tile, and Pottery Gazette, heretofore appearing as *clay*, comes to hand in new dress and arrangement, with fourteen pages of interesting reading matter, and a range of advertisements comprehending all machinery used in the working of clay, and the manufacture of drain pipes and pottery devices. Subscription price, $1.00 per annum. Ottawa, Ill.

Be Thorough.

"A LICK and a promise," is the way the botch calls it. "That will do for the present," is what the procrastinator says as he half does some job. Young man, you are not to live for the present, but you are to build for the future. If you would be a success, be thorough. Are these school days with you? Get your lessons thoroughly. You will not only be better prepared for what follows by getting the lesson of to-day thoroughly, but you will acquire a habit that will be valuable all your life. If you are a mechanic, or farmer, or clay-worker, remember that whatever is worth doing at all is worth doing well. Be thorough!—*The Clay Worker.*

Good Houses.

EVERYBODY who builds, either for resident or rental purposes, wants a *good house;* a something which to obtain is worth a certain sum of money, and generally more than the amount appropriated and fixed upon in the mind of the owner as the sum to be expended. No one is wise who invests his money in any other than a good building. It may be plain and small, but the quality of material and workmanship should be considerd in the light of permanency. Houses are seldom built to last for a short period; they are generally supposed to be a permanent affair, to last not one, but several generations. And if from motives of present economies, an imperfect and shoddy structure is reared, the continuous necessities to keep it in repair but demonstrate the unwisdom of not making it good and perfect at first. The old saw, of penny wise and pound foolish, applies forcibly in such cases.

But the rule is that but few owners calculate to pay the actual value of a *good* building, leaving any profit to the man who builds. There is never an objection to the *goodness* proposition, but there is to paying the price necessary to obtain the result. The allowance for profits to the builder is seldom equivalent to the actual cost, with compensation to him who gives his time and mechanical skill to the work of construction. No one "*wants the builder to lose anything,*" yet but few are so earnest in this regard as to be willing to add enough to the amount fixed upon, to insure profit to the builder.

In building houses, as in the purchase of goods and merchandise, he who builds or buys cares but little about the real cost; it is the economies of the bargain that influence the transaction. Consequently, architects and builders, to meet this economy feature, must shave the *good* idea down as thin as possible, and mix in only so much of the desired ingredient as may be absolutely necessary to give tone and color to the structure. Hence the majority of buildings are less than *really good,* and some that have been predicated upon the *good* basis are mere—comparative shams. Yet the deceptive allurement of having obtained a building within certain limits of cost, very often satisfies the conceit of *goodness* and bad defects pass unnoticed.

This is a common experience, relieved only by the occasional cases in which owners in reality stand by the proposition of goodness, and supply the necessary funds to pay full value for a *good* thing.

OBSCURE HEAT.—At the Albany meeting of the National Academy of Sciences, Professor Langley reported on the progress of remarkable researches with the bolometer, by which he has so greatly extended our notions of the invisible spectrum. This time he dealt with the lunar spectrum, and estimated the heat derived from the unillumined moon. Rosse has estimated the temperature of the moon's surface as from 200° to 500° Fahr. By studying the moon at its full, with a rock-salt prism obtained only after repeated failures, and which from its nature had already required repolishing seven times, each time necessitating a new determination of its constants, he had succeeded, on repeated occasions, in securing a spectrum which showed two curves—one according with that previously obtained in the infra-red region beyond the visible portion of the solar spectrum, clearly due to reflection, and another, lying entirely beyond that, as clearly due to the moon itself, and revealing its real temperature. This, as shown by studying the spectrum of frigid masses, is colder than the temperature of melting ice. By comparing the mean of the spectra obtained in summer with that of those obtained in winter, it is evident that a much greater amount of heat is obtained from the moon in winter than in summer. This may simply be due to the greater amount of aqueous vapor in our own atmosphere in the summer as contrasted with the winter clarity. By directing the bolometer to the zenith and the horizon, the temperature of space has also been measured by direct experiment for the first time, and the amazing transparency of our earth's atmosphere to radiation of the earth's heat revealed; for his experiments show that our atmosphere transmits the earth's heat more readily than the sun's.

SOME of the famous staircases described by travelers and historians, in dimensions and general magnificence, so far excel anything to which designers and builders ordinarily have access that it is almost impossible to picture to the imagination the features of the work. Some staircases which are specially noteworthy on account of their dimensions, occur in the palace of Persepolis. One staircase leads from a plain in the beautiful valley of Bendamir to the summit of a terrace, out of which it is taken. It consists of two sets of two flights of stairs, each with a broad landing stage between them; the two lower flights diverge to the level of the foundation; the two upper converge to a common landing place at the top. The shallowness of the pitch, each stair being only 3 or 4 inches in height, constitutes an ascent so easily graduated that horses may be ridden up and down, while the width of 22 feet admits of a cavalcade of 10 abreast. Less noble in size, but distinguished by the character of its ornamentation, is the next staircase which opens to the view, somewhat out of line, when that just described has been mounted. It conducts to the summit of the central terrace, and is composed of four single flights, two of them being central and facing each other, the other two standing on either side of these at about 21 yards distance from them. The entire length is 212 feet, the width 16 feet, and there are 31 steps in an ascent of 10 feet. It is flanked by an immense parapet wall, surmounted by a massive rounded coping of elegant carved work, which overlaps the wall on the inside; the ends and the entire face are covered with sculptures, and exhibit a long procession of colossal guardsmen armed with spears.—*Carpentry and Building.*

A LITTLE white oak tree, growing in an ordinary flower-pot, makes a very pretty ornament for a window or front yard. It is very easily grown. Select a sound white oak acorn in January or February, plant in rich earth in a flower-pot, keep it in a warm place and well watered. In the spring, the little oak will make its appearance, and will require no care, except watering, and will withstand the winter if not too exposed to hard freezes. If the tap root is cut off in the early part of the next spring, it will continue to grow and put out new limbs, but will not get much taller, and by cutting back the central roots that will spring from the base of the tap root every spring, a few years will produce a diminutive little oak, a fac-simile, in appearance, to the lord of the hard woods. Some enthusiastic lovers of nature make veritable pets of these dwarf oaks.—*Southern Lumberman.*

WILLIAM T. BLUNT, C. E., representing the Dunham House Drainage Company, of New York, has opened an office at 413 Montgomery Street. He extends an invitation to all interested to call at above address and examine a full-size model. He gives personal supervision of all work. The pipe used in this system of drainage is all wrought iron, with screw joints and special cast-iron fitting. The whole is asphalted inside and out, presenting a smooth inner surface without depression. Send for illustrated pamphlet.

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THE AMERICAN BUILDER,
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Is a new candidate for patronage among architects and builders. Subscription price, $2 per annum. F. HOUGHTON, Managing Editor.

Its first numbers are neatly printed, and the assurance held out that improvements will be made in rapid succession with the increase of patronage.

Building and Improvements for Woodland and Yolo County for the First Quarter of 1886.

EDITOR OF THE CALIFORNIA ARCHITECT: Owing to frequent storms and continued bad weather, the building interest has experienced a set-back, and but few engagements of importance have been set in operation. Nevertheless, public feeling is buoyant, and good hopes are entertained for the coming of spring and pleasant weather to usher in the usual amount of activity.

Material men and solid mechanics of all branches are sanguine as to the ultimate result of the future, although we can hardly expect the amount of last year to be duplicated. The opinion of those competent to judge says the advance in lumber will materially retard building in this vicinity during the season.

The following record presents the amount and number of engagements for January, February, and March:—

City, 25 frame buildings; value	$28,800
1 brick building	2,000
15 improvements	6,200
Total, 41 buildings and improvements; value	$37,000
County, 10 frame buildings; value	$23,000
1 brick building	5,000
Total, 11 buildings; value	$28,000
Total for city and county, 52 buildings; total value	$65,000

Total aggregate for corresponding three months of 1885, 44 buildings; value of same, $102,500. Increase in buildings, 8; decrease in capital, $37,500.

Yours truly,
GILBERT & SON.

Woodland, March 30, 1886.

Market Report.

Pine, Rough	per M feet,		$15 00
" " No. 2	" "		12 00
" " " 2 in lengths	" "		13 00
" " 40 to 50 feet lengths	" "		17 00
" " 50 " 60 "	" "		18 00
" " Selected	" "		20 00
" " Clear	" "		25 00
" " Fire Wood	" "		8 00
T. & G. Flooring, 1 x 6	" "		27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "		30 00
" " No. 2	" "		22 00
Sepping	" "		35 00
" No. 2	" "		27 50
Furring, 1 x 2	per lineal foot,		00¾
Redwood, Rough	per M feet,		18 00
" " No. 2	" "		14 00
" Surfaced	" "		30 00
" T. & G. 6 in. 12 ft. and over	" "		28 00
" " " 7 to 11 feet	" "		25 00
" " " under 7 feet	" "		20 00
" Rustic	" "		30 00
" " No. 2	" "		26 00
" T. & G. Beaded, 12 ft. and over	" "		30 00
" " " 7 to 11 ft	" "		25 00
" " " under 7 ft	" "		20 00
" Siding, ½ inch	" "		22 50
Pickets, Fancy	per M,		25 00
" Rough Pointed	"		16 00
" " Square	"		14 00
Battens, ¾x3	per lineal foot,		00¾
Shingles	per M,		2 00
Laths, 1½	"		3 25
" 1½	"		3 75
NAILS—Rates were recently reduced to:—			
200 keg lots			3 00
100 keg lots			3 05
Smaller quantities			3 10
PAINTS AND OILS:—			
Pioneer White Lead (local factory)		6½c @	6½
Cal. Linseed Oil, raw (single bbl lots)			45½
" " boiled " " "			47
Turpentine, per gallon			58
BRICK—California Building Description, soft, per 1,000			5 50
" " " red, " "			6 50
" " " hard, " "			7 50

Buildings Intelligence.

Where owners name is left blank it is so done by special request.

A

Austin, bet. Larkin and Polk. Repairs.
O.—Capt. Taylor.
Day work.
$2,000.

B

Bryant, cor. Kate. Three story frame.
O.—C. R. Sploralo.
Day work.
$5,000.

Battery, bet. Bush and Pine. Alterations.
O.—Schweitzer & Co.
A.—M Dougall & Son.
C.—A.G. Fitzpatrick.
$4,000.

Broadway, bet. Gough and Octavia. Two-story frame.
O.—Capt. Raimond.
A.—B. E. Henriksen.
C.—Thos. H. Day.
$8,650.

Bush, bet Baker and Lyon. Two-story frame.
O. and B.—H. McGraw.
Day work.
$3,500.

Bush, cor. Hyde. Three-story frame, store and two flats.
O.—J. S. Hand.
A.—Eisen & Pierce.
C.—J. Bruce.
$7,000.

Bush, cor. Leavenworth. Additions.
O.—
C.—Geo. Lang.
$1,000.

Bush, bet. Polk and Larkin. Repairs.
O.—Capt. Taylor.
A.—W. Mooslor.
C.—A. Jackson.
$5,000.

Bush, bet. Franklin and Gough. Two-story frame and basement.
O.—W. A. Piper.
A.—H. D. Mitchell.
C.—Trotter & Harmon.
$10,000.

Bush, nr. Franklin. Two three-story frames.
O.—Capt. Samuel Blair.
A.—John J. Clark.
C.—Chas. H. Ackersen.
$15,000.

C

Clinton Park, bet. Guerrero and Dolores. One and one-half-story frame.
O.—T. L. Hill.
A.—M. J. Welch.
C.—A. Klahn.
$2,000.

California, bet. Fillmore and Webster. Four two-story frames, stores, and four flats.
O.—A. Borell.
A.—W. F. Smith.
C.—Gray & Stiver.
$20,000.

California, cor. Pierce. Two two-story frames.
O. and B.—Thos. Rendell.
Day work.
$3,500.

California, cor. Laguna. Two and one-story stone and frame.
O.—E. Hopkins.
A.—Clinton Day.
C.—D. B. Chisholm.
$25,000.

Cumberland, bet. Guerrero and Dolores. One-story frame.
O.—B. Collier.
C.—I. Brown.
$1,500.

Church, bet. Twenty-first and Twenty-second. Additions.
O. and B.—A. McLeod.
Day work.
$700.

California, nr. Front. Alterations.
O.—Selby Estate.
Day work.
$7,500.

California, bet. Pierce and Scott. Three two-story frames.
O.—H. Wardenby.
C.—H. B. Hosmer.
$12,000.

D

Devisadero, cor. Eddy. Two-story frame.
O.—H. Paulsen.
A.—M. J. Welch.
C.—Theo. Von Borstel.
$3,600.

Dolores, bet. Twenty-second and Twenty-third. Two-story frame.
O.—
C.—F. W. Kerns.
$2,700.

Dupont, cor. Geary. Four-story and basement brick.
O.—Davis Bros.
A.—Copeland & Banks.
C.—Brick and granite work, Geo. Richardson.
$19,500.

Dupont, nr. Post. Additions.
O.—Jos. Musto.
A.—P. R. Schmidt.
C.—R. McCann.
$9,000.

E

Eddy, bet Laguna and Buchanan. Four two-story frames.
O.—M. & W. Maher.
A.—C. J. I. Devlin.
Carpenter—J. W. Smith, $12,175
Plumbing—Sweeney & Kearns, 1,499
Painting—T. McCarthy, 1,035
Grading and brick work, Jos. Smith, 967
Total, $15,676

Eleventh, bet. Howard and Folsom. Alterations.
O.—John Dolan.
A.—C. J. I. Devlin.
Carpenter—C. N. Mason, $1,705
Painting—T. McCarthy, 205
Plumbing—T. Bertram, 300
Total, $2,210

Eddy, cor. Octavia. Two and one-half story frame.
O.—A. Welch.
A.—Clinton Day.
C.—Mahoney Bros.
$30,000.

Eighteenth, nr. Castro. One-story frame.
O. and B.—H. Eigler.
Day work.
$1,000.

Eighteenth, bet. Mission and Valencia. Three-story frame.
O.—H. Rodgers.
A.—M. J. Welch.
C.—R. Sinnott.
$5,000.

Eleventh, cor. Natoma. Additions.
O.—F. Ash.
C.—J. McCann.
$2,000.

Eleventh, bet. Mission and Natoma. Two-story frame.
O.—Mrs. Kehoey.
A.—Jas. E. Wolfe.
C.—Wm. Sherline.
$6,000.

F

Fillmore, bet. Pine and California. Two-story frame, store and flat.
O.—H. Nowbaur.
A.—P. R. Schmidt.
C.—Wickersham & Farrell.
$8,500.

Fair Oak, cor. Twenty-second. One-story frame.
O.—C. W. Eckstein.
C.—T. H. Lufkin.
$2,500.

Ford, bet. Sanchez and Noe. One-story frame.
O.—J. H. Carrah.
Day work.
$2,500.

Fell, bet. Polk and Van Ness. Six two-story frames.
O.—Jos. S. Spear.
C.—F. A. Brown.
$18,000.

Fulton, near Webster. Additions.
O.—Chas. Hansen.
Day work.
$1,500.

Franklin, cor. Laurel Avenue. Two-story frame.
O.—Mrs. Mandge.
A.—W. Schrof.
C.—W. Pluns.
$5,000.

Filbert, bet. Larkin and Polk. One-story frame.
O.—Robert Locher.
Day work.
$1,000.

Filbert, bet. Larkin and Polk. Two-story frame.
O.—P. Matthews.
C.—A. Nelson.
$1,500.

Filbert, bet. Hyde and Larkin. Eight two-story frames.
O.—J. A. Whelan.
Day work
$20,000.

Filbert, bet. Jones and Leavenworth. Two-story frame, two flats.
O.—G. Cazlieri.
C.—G. Voca.
$3,000.

Fillmore, bet. Clay and Sacramento. Two-story frame, store and flat.
O.—J. R. Crossley.
A.—H. D. Mitchell.
C.—W. E. Lewis.
$7,000.

Fillmore, bet. Pine and California. One-story cottage.
O.—M. Costello.
A.—J. T. Kidd.
C.—A. Jackson.
$1,400.

Fillmore, bet. Golden Gate Ave and McAllister. Two-story and basement frame.
O.—Geo. Beanston.
A.—Curlett & Cuthbertson.
C.—I. P. Kincaid.
$4,500.

Fulton, between Buchanan and Webster. One-story frame.
O.—R. Giesen.
C.—G. Knopf.
$1,000.

Fulton, bet. Fillmore and Steiner. Two-story frame.
O.—Thos. N. Furlong.
A.—Huerne & Everett.
Day work.
$3,500.

Fair Oaks, bet. Twenty-third and Twenty-fourth. Two-story frame.
O.—H. Munier.
A.—T. J. Welch.
C.—G. W. Hansbrough.
$8,000.

G

Guerrero, nr. Twenty-fifth. Two-story frame.
O.—L. Petersen.
A.—W. F. Smith.
C.—W. N. Concannon.
$2,200.

Gough, cor. Sacramento. Two and one-half story frame.
O.—C. Josselyn.
A.—Clinton Day.
C.—R. P. Hilbert.
$22,000.

Gough, bet. O'Farrell and Ellis. Two-story frame.
O.—Dr. Warner.
A.—J. Marquis.
C.—J. Robertson.
$6,000.

Greenwich, nr. Powell. One-story frame.
O.—F. Selpp.
A.—Sallfield & John.
C.—J. Klein.
$1,650.

Grove, northwest cor. Broderick. Two-story frame.
O.—John McKenzie.
A.—H. D. Mitchell.
Day work.
$9,000.

Geary, bet. Scott and Devisadero. One-story frame.
O.—P. Hartnet.
A.—T. J. Welch.
C.—J. J. Dunn.
$2,800.

H

Hayes, cor. Broderick. Two-story frame.
O.—John Glover.
A.—H. Geilfuss.
C.—Theo Von Borstel.
$3,000.

Howard, cor. Lafayette. Two-story frame.
O.—W. Alfs.
C.—H. J. Weiss.
$4,500.

Haight, bet. Octavia and Laguna. Two-story frame.
O.—W. Felter.
A.—J. Gash.
C.—T. Worden.
$7,500.

Haight, cor. Devisadero. Two-story frame.
O.—T. W. Bogart.
A.—E. R. Swain.
C.—J. Campbell.
$6,000.

Haight, nr. Stanyan. Two-story frame hotel.
O.—Mrs. Lewis.
C.—W. F. Lewis.
$3,000.

Haight, nr. Stanyan. Additions.
O.—C. Damon.
Day work.
$1,500.

Hyde, bet. Clay and Washington. Three-story frame.
O.—R. C. Hooker.
A.—Clinton Day.
C.—Ingerson & Gore.
$8,000.

Howard, bet. Fifth and Sixth. Additions.
O.—C. Ruppel.
C.—W. Jarman.
$600.

Haight, bet. Steiner and Pierce. Two-story and basement frame.
O.—J. Livingston.
A.—W. Moosier.
C.—P. Laherty.
$5,600.

I

Ivy Avenue, nr. Van Ness. Two two-story frames, four flats.
O.—Mme. Sorbbeir.
C.—J. Dutton.
$2,500.

J

Juniper, nr. Bryant. One-story frame.
O. and B.—H. Münster.
Day work.
$1,000.

Jones, nr. Filbert. Two two-story frames, four flats.
O. and B.—G. Knopf.
Day work.
$6,000.

Jones, cor. Valparaiso. Two-story frame.
O.—Miller & Knopf.
A.—Geo. E. Voelkel.
C.—Gott Knopf.
$6,500.

L

Larkin Avenue, bet. Ellis and O'Farrell and Hyde and Larkin. Three-story frame.
O.—J. Frank & B. Morrbrink.
A.—M. J. Welch.
C.—J. Klein.
$2,700.

Lafayette, bet. Mission and Natoma. Two-story frame, four flats.
O.—Sarah Falk.
C.—Doyle & Son.
$3,000.

M

Mission, bet. Fifteenth and Sixteenth. Three-story frame.
O.—F. Straub.
A.—W. Schrof.
C.—W. A. Knowles.
$5,050.

Mission, cor. Twenty-first. Five two-story frames.
O.—H. Ebbinghauser.
A.—H. Geilfuss.
Brick work—John McCarthy.
Carpenter—A. Miller.
Painting—J. Quatt.
Plastering—J. McNamara.
Plumbing—Fritz & Kean.
$29,000.

Market, cor. Fourth. Five-story and basement brick.
O.—Jas. C. Flood.
A.—A. Laver.
Grading—A. C. Buckman.
Wrought iron work—Simms & Morris.
Cast iron—R. Llewellyn.
Brick work—McGowan & Butler.
Carpenter—C. C. Terrill.

Montgomery, nr. California. Alterations.
O.—I. O. O. F.
A.—Wright & Sanders.
C.—Terrill & Slaven.
$50,000.

McAllister, bet. Fillmore and Steiner. Two-story frame.
O.—B. Conway.
A.—T. J. Welch.
C.—M. Lynch.
$6,000.

Market, nr. junction of McAllister. One-story brick.
O.—L. & M. Sachs.
A.—P. R. Schmidt.
C.—R. Mitchell.
$3,000.

Market, nr. junction of McAllister. Three one-story bricks.
O.—D. Callaghan.
A.—F. R. Schmidt.
C.—R. Mitchell.
$4,500.

Mission, bet. Seventh and Eighth. Three-story frame and basement brick.
O.—J. Tuckera.
A.—Daily & Praun.
Brick and iron work—J. J. O'Connor, $3,000; total cost, $10,000.

Market, cor. Franklin. Five-story frame.
O.—I. Nightingale.
A.—A. J. Barnett.
Carpenter work—R. McCann, $28,475
Patent chimneys—L. E. Clawson, 2,560

Total, $31,035

Mission, bet. Fourth and Fifth. Four-story and basement brick store.
O.—D. Swett.
A.—H. T. Bestor.
Brick work—O. E. Brady, $11,230
Carpenter—A. Jackson, 8,512
Total cost, 24,000

Market, cor. Sixteenth. Five one-story frame stores.
O.—W. J. Houston.
A.—C. I. Havens.
C.—F. Klatt.
$4,000.

N

Natoma, bet. Tenth and Eleventh. Two story frame, two flats.
O.—Mrs. Mack.
A.—Geo. H. Miller.
C.—McDonald Bros.
$2,900.

Natoma, nr. Second. Alterations.
O.—P. Healey.
A.—John J. Clark.
C.—J. Kelly.
$1,000.

O

Oak, bet. Fillmore and Steiner. Two-story frame.
O.—Thos. O'Neil.
A.—Geo. H. Miller.
C.—Doyle & Son.
$3,300.

O'Farrell, nr. Buchanan. Alterations.
O.—Mrs. Barendt.
A.—P. R. Schmidt.
C.—W. H. Wickersham
$3,000.

Oak, bet. Gough and Octavia. Eight two-story frames, twelve flats.
O.—Jos. McDonald.
A.—Townsend & Wyneken.
C.—John McGarry.
$18,500.

Oak, cor. Buchanan. Two-story frame.
O.—M. E. Church Society, Bishop's res.
A.—J. Marquis.
C.—Gray and Stover.
$10,000.

O'Farrell, bet. Hyde and Larkin. Three-story frame.
O.—J. Franks.
A.—M. J. Welch.
C.—J. Klein.
$2,800.

P

Pine, bet. Devisadero and Broderick Two-story frame.
O.—A. Ruisches.
A.—P. R. Schmidt.
C.—T. C. Riddell.
$7,500.

Pacific, bet. Webster and Buchanan. Additions.
O.—J. J. Scoville.
C.—J. Drury.
$2,000.

Pacific, bet. Fillmore and Webster. Two-story frame.
O.—Mrs. J. Sellons.
A.—Daily & Praun.
C.—F. Klatt.
$6,000.

Powell, nr. Post. Three-story frame.
O.—Mrs. Burnett.
A.—Copeland & Banks.
C.—Treadwell & Thompson.
$6,500.

Powell, near Union. Additions and alterations.
O.—G. Hilderbrand.
C.—J. J. Cummings.
$2,000.

Powell, bet. Francisco and Chestnut. Additions.
O.—
C.—H. Johnson.
$1,000.

Post, bet. Broderick and Baker. One-story frame.
O.—J. J. Driscoll.
A.—C. I. Havens.
C.—A. N. Nelson.
$2,500.

Pine, nr. Buchanan. Two-story frame.
O.—N. W. Griswold.
A.—Edward R. Swain.
C.—Ingerson & Gore.
$4,100.

Pine, bet. Baker and Lyon. One-story frame.
O.—Chas. Hewett.
A.—C. I. Havens.
C.—A. N. Nelson.
$2,300.

S

Sutter, bet. Baker and Lyon. Alterations.
O.—H. Levy.
C.—F. Klatt.
$1,500.

Stanyan, cor. Fell. One-story frame.
O.—J. Lanarath.
C.—C. E. Johnson.
$2,000.

Scott, bet. Oak and Fell. One-story frame.
O.—Mrs. Nichols.
A.—H. Geilfuss.
C.—W. P. Grace.
$1,500.

Steiner, cor. Fulton. Two-story and attic frame.
O. and B.—John Hinkle.
Day work.
$10,000.

Seventeenth, bet. Castro and Diamond. Two and one-half-story frame.
O.—C. Barto.
C.—W. F. Muller.
$4,000.

San Jose Avenue, cor. Army. Two-story frame.
O. and B.—J. M. Cummerford.
Day work.
$3,000.

Steiner, cor. Haight. Two-story frame stable.
O.—J. Winter.
C.—J. McCann.
$500.

Sutter, bet. Broderick and Baker. Two one-story frames.
O.—Chris A. Buckley.
A.—Chas. I. Havens.
C.—A. N. Nelson.
$4,800.

Sixteenth, cor. Harriet. Two-story frame.
O.—Jas. Madden.
A.—Geo H. Miller.
C.—C. Christy.
$2,600.

Sacramento, bet. Van Ness and Franklin. Two-story frame.
O.—Mrs. A. Cooley.
A.—S. & J. C. Newsom.
C.—J. McKay.
$7,000.

Sutter, cor. Baker. Additions.
O.—L. Crossley.
C.—S. T. Green.
$3,500.

Seventeenth, nr. Sanchez. Two-story frame, two flats.
O.—P. Hallahan.
A.—John J. Clark.
C.—P. J. Brennan.
$3,500.

Scott, nr. Page. Two-story frame.
O.—J. Hess.
A.—H. Geilfuss.
C.—J. H. McKay.
$4,800.

Sacramento, bet. Leavenworth and Hyde. Two-story frame.
O. and B.—John Hinkle.
Day work.
$4,000.

Sacramento, bet. Leavenworth and Hyde. One-story cottage.
O. and B.—J. Hinkle.
Day work.
$3,500.

Sacramento, nr. Polk. Additions.
O.—J. W. Davis.
A.—P. R. Schmidt.
C.—R. McCann.
$3,000.

T

Tenth, nr. Bryant. Additions.
O.—Thos. Grace.
Day work.
$1,000.

Tenth, nr. Bryant. One-story frame.
O.—O. Linehan.
Day work.
$900.

Twenty-fourth, northeast cor. Folsom Additions.
O.—Magnels Bros.
Day work.
$5,000.

Twenty-third, cor. Capp. Two-story frame.
O.—F. Edwards.
C.—W. W. Stecker.
$2,500.

Twenty-second, cor. Shotwell. Frame church.
O.—German Evangelical Church.
A.—J. M. Curtiss.
C.—F. W. Kerns.
$2,500.

Twenty-first, above Valencia. Two-story frame.
O.—W. Doan.
Day work.
$4,000.

Third, nr. Folsom—Three-story frame store and two flats.
O.—N. Hanley.
C.—A. G. Fitzpatrick.
$5,000.

Turk, nr. Laguna. Two-story frame, two flats.
O.—R. Fenking.
A.—Salfield & John.
C.—A. Miller.
$6,000.

Turk, nr. Buchanan. Three-story frame, three flats.
O.—F. Attinger.
A.—Salfield & John.
C.—A. Miller.
$6,500

Turk, bet. Franklin and Gough. Additions.
O.—B. Pfarrer.
C.—A. Bramah.
$1,700.

U

Union, bet. Octavia and Laguna. Two-story frame, store and flat.
O.—D. Dezerello.
C.—G. Walker.
$2,600.

Union, bet. Octavia and Laguna. Three two-story frames. Three stores and three flats.
O.—Geo. Werner.
C.—G. Walker.
$8,000.

V

Valley, south side, above Dolores. One-story frame.
O.—Mrs. J. E. Fast.
Day work.
$900.

Valley, south side, above Dolores. One-story frame.
O. and B.—J. M. McDermott.
Day work.
$1,200.

Valencia, bet. Twenty-first and Twenty-second. One-story frame.
O.—Mrs. S. Ross.
A.—G. P. Ashton.
C.—F. A. Williams.
$2,500.

Valencia, cor Twenty-third. Three-story frame, store and two flats.
O.—G. Schwartz.
C.—J. H. Thom Wohrden.
$6,500.

Valencia, nr. Sixteenth Three-story frame, three flats.
O.—E. Miles.
A.—J. Marquis.
C.—F. O. Bergman.
$8,000.

Valencia, cor. Eighteenth. Two-story frame.
O.—R. W. Coffin.
A.—A. J. Barnett.
C.—Terrill & Slaven.
$6,145.

Vanderwater, bet. Powell and Mason. Two-story frame.
O.—W. Fautz.
A.—Geo. H. Miller.
C.—A. Gilbert.
$2,500.

W

Waller, cor. Webster. Four two-story frames, eight flats.
O.—Fred Huber.
A.—W. Schrof.
C.—H. Weiss.
$14,000.

Waller, cor. Steiner. Two two-story frames, stores and two flats.
O.—J. H. Scannon.
C.—M. V. Stevens.
$5,000.

Webster, cor. O'Farrell. Four two-story frames.
O.—D. T. Cole.
C.—J. W. Fish.
$15,000.

Washington, cor. Steiner. Two-story frame.
O.—Geo. Mann.
A.—S. & J. C. Newsom.
C.—J. McKay.
$7,500.

Turk, north side, nr. Taylor. Three-story frame. O., M. Englander; A., H. Kenitzer; C., C. Chisholm; $15,000.

MISCELLANEOUS.

San Jose—Santa Clara cor. First. Two-story frame. O., B. F. Mills; A., Theodore Lenzen; C., G. E. McDougall; $5,000. On The Alameda. Additions. O., S. F. Leib; A., Theodore Lenzen; day work; $1,000.

San Mateo—Two-story frame and stable. O., John Parriott; A., Clinton Day; C., Mahoney Bros.; $20,000.

San Rafael—Additions and alterations. O., J. G. Kittle; A., Clinton Day; C., Hansen & Co.; $13,000.

OAKLAND.

West Eighteenth, cor Chestnut—2-story fr; o, Mrs. Amelia Peterson; a, J. J. & T. D. Newson; c, Biglow & Son; $2,000.

Near Mills Seminary—Alterations; o, C. Nelson; a, G. A. Bordwall; day work; $8,000.

ALAMEDA.

Alameda Avenue, bet Oak and Walnut—5 1-story frs; o, Mme. C. Moustier; a, B. E. Henriksen; c, A. Walker; $10,575.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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SAN FRANCISCO, CAL., MAY 10, 1886.

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Material Facts for Owners' Consideration.

GOOD buildings are sometimes erected without the professional services of an architect. But whether as good and as complete as they would have been under the planning and superintendence of a competent architect, is a question. The proposition suggested is reasonable. For the incessant and perpetual study of an architect is to discover and develop new ideas, to determine and mature better plans, to overcome difficulties encountered in prior experiences, to provide against defects and errors which may have occurred, and in a word concentrate the entire energies of his mind and brain to producing improved results; and it is not reasonable to suppose that among men of equal intelligence, education, judgment, industry, and advantages, those who devote their time, and employ their mental and physical energies in special pursuits, can properly understand and practice their selected avocation, and, by incidental application, also understand as proficiently those specialties which others, their equals in all intellectual and physical senses, have made matters of constant study and daily application. Men generally master not more than one thing or calling, and as the "old saw" goes, "They that are jacks at all trades master none." We admit that there are a host of contractors who would have become most excellent architects had they so applied themselves. But a reasonably perfected knowledge of architecture can only be obtained by the possession of the natural qualifications of mind and judgment, and constant practice and study. Incidental scholastic and superficial knowledge does not, by any means, qualify men to assume the practice of a profession, than which no other requires the more intense exercise of every mental and intellectual faculty. Hence, we find men calling themselves architects who are simply pretenders, mere frauds, aspiring to be what they can never become, through fatal defects in their natural or acquired qualifications. But mistakes sometimes occur even with the best and most careful architects, and generally when no architect is employed, and most always when buildings are ntrusted to the manipulations and control of parties whose presumption is only equaled by their fearful lack of judgment, and complete ignorance of every correct principle of architecture.

Building Movements.

BUT little of more than ordinary interest has developed during the past month in building circles. Yet our monthly report presents a more favorable showing than has either of the preceding months of the present year. Our January report showed a gain over the same month for '85 in the sum of $45,535, which was followed by a falling off in February and March of $608,218. But May furnishes returns in building facts which places it $320,781 ahead of May of previous year, and so far recovers the lost ground of the two prior months.

The architects' offices generally in this city have been, and are well filled with engagements, so much so that we have not been able to find competent draughtsmen to fill the many orders sent to this office for help. The offices in San Francisco are well supplied, with but occasional applications for draughtsmen, and then always for *first-class, competent men*. From other parts of the State orders have been received, but in every instance with, "send us a good man," thus indicating that the tendencies are such that it requires the best of architectural and draughtman skill to meet the demands of clients. But the supply has not been, and is not at present equal to the demand.

The prices of building materials and labor remains in favor of owners, and the fierceness of competition—if the recklessness illustrated by the figuring done by some contractors is worthy to be so denominated—removes all liability of contracts being let for more than a fair value on the transaction; and as often as otherwise the contract amount falls short of paying one hundred cents on the dollar at completion. So that, as a rule, gains and advantages are mainly with owners.

Some of the amounts given in our building intelligence list are but partial. Those on the Nightingale building, of $8,926, and on the Davis Bros.' building, of $34,185, being sums in addition to partial statements heretofore made on the same structures. The $249,500 on J. C. Flood's building includes only the carpenter work, $102,000; cast-iron work, $49,000; wrought-iron work, $45,000; grading, $5,500; and brickwork, $48,000. There are several contracts yet to be let. The summary for the month shows:

119 frame buildings	value,	$496,126
4 brick "	"	312,870
18 alterations and additions	"	78,050
141 Total for current month		$887,046
CORRESPONDING MONTH OF 1885.		
147 engagements	total value,	$566,265
Gain in May, 1886, over same, 1885		$320,781

THE exigency of getting a living, and this is especially true in large towns and cities, compels many children to begin work when they ought to be at school. This is unpleasant, but it is nevertheless a fact. As labor makes the wealth which pays taxes, it is no more than an act of justice that children thus compelled by circumstances to work through the day should be provided with facilities for pursuing in the evenings the studies they have dropped. To this end evening schools, including those equal in every respect to the "high schools," now a part of the school system of most towns and cities, should be established. This would enable many an ambitious young man to do with greater dispatch and less labor what he will probably do anyway, viz., acquire a fair education of the kind attained in schools. In these times the need of education is pressing, and every facility for its acquirement should be provided. As previously intimated, a young man of the right quality is likely to learn anyway, but as the labor of those who are obliged to work in years when they ought to be at school goes to enrich the community, they have a right to demand that the way be smoothed for them. —*American Machinist.*

THE State Department at Washington has issued a pamphlet belonging to its series of U. S. Consular Reports, entitled "Scouring of Wool in Belgium, Great Britain, and Germany." The pamphlet illustrates three machines used in Belgium for this purpose.

Bay Windows over Street Lines.

SAN FRANCISCO has been, and not inappropriately, styled the city of bay windows. Within the past twenty years or more, but very few—safe to say not more than two and one-half per cent—of all dwelling and tenement houses erected within the county limits, other than those in the erection of which the closest economies have been practiced, that one or more bay windows have not been added. When attached to buildings sitting back from the street lines, the number and sizes are always regulated by the pleasure or caprice of the owner or architect. But when projecting over the lines of streets, the sizes are supposed to be regulated by the "fire limit laws," which prescribe both width or spread, and projection beyond the face of the walls.

Until recently, the limitations as to sizes have been a source of annoyance and vexation to both architects and the fire warden's department of the city government. The limit of spread across the front has heretofore been entirely too restricted and arbitrary in all cases; so that an architect in preparing plans was allowed no greater privilege in proportions in a frontage of twenty-five feet, than he would be entitled to apply in one of eighteen feet, with the restricted width of eight feet no greater than would be proper for the eighteen feet front. Consequently, buildings of greater cost, size, and pretensions were denied the proportionate necessary increase of spread.

CORNER BAY WINDOWS,

Until the recent amendment, were also prohibited by the ordinance. But the ordinance being so framed that parties with *sufficient influence* might, and often have danced through its loose meshes by securing permits of privilege *not common* to all, except through channels not understood by some, who recognize ordinances passed by the proper authorities as *general and conclusive* alike upon all. Hence the iniquitous *special permit* practice worked injustice; for even if two parties applied for like privileges, the one being in good favor or possessing the necessary influence outside the true merits of the case, and the other having in some way rendered himself obnoxious, or gained disfavor in certain directions, the one might, and in cases has been denied privileges granted to the other. This sort of thing has been done in this city in many cases of "special permits," other than bay windows.

THE ORDINANCE AMENDED.

The universal objection to the restrictions enforced by the original ordinance, and the numerous conflicts encountered by the guardians of the law in the matter of bay windows—architects and builders generally disregarding the limits prescribed, and exercising their individual judgments in the matter—the amendments following have been passed by the Board of Supervisors, and are the law in the case until changed by subsequent municipal legislation.

ORDER No. ——Amendatory of Sections 27, 36 and 38 of Order No. 1,752, to define the Fire Limits of the City and County of San Francisco and making regulations concerning the erection and use of buildings in said City and County.

The People of the City and County of San Francisco do ordain as follows:—

SECTION 1. Section 27 of Order 1,752 is hereby amended so as to read as follows:—

[Bay or Oriel Windows—Swell Fronts.]

SECTION 27. No person shall build a bay or oriel window which shall project over the line of any street more than three feet, or more than nine feet in width, nor shall the bottom of said bay or oriel window be less than thirteen (13) feet from the sidewalk. No bay or oriel window shall be constructed upon any street, lane, alley or place which is less than thirty-five feet in width. No swell front shall be erected unless the walls are entirely of fire-proof materials, and no bay or oriel window shall project from any swell front. Bay or oriel windows constructed in frame buildings shall have piers or spaces of not less than five feet in width between them. Bay or oriel windows constructed in brick buildings shall, for a two-story building, have piers of not less than six feet in width between them, and for a four-story building, the piers separating said windows shall not be less than eight feet in width; and no bay or oriel window shall be more than four stories in height above the sidewalk. No bay or oriel window shall be erected on the corner of any brick building. The joists of bay windows in brick buildings shall be supported on lintels of iron at each story, said lintels to be the full width of the wall and rest eight inches on each jamb, and the top of the openings shall be covered with a brick or stone arch. The exterior framework of such bay or oriel windows constructed in brick buildings shall be covered with fire-proof material.

SECTION 2. Section 36 of Order 1,752 is hereby amended so as to read as follows:—

[Scuttles and Skylights in Roofs.]

SECTION 36. All store buildings over one-story in height in the City and County of San Francisco, whether already erected or hereafter to be built, shall have scuttle frames and covers or bulkheads and doors made of or covered with some fire-proof material; and all scuttles shall have ladders leading to the same; and all such scuttles or bulkheads shall be kept so as to be ready for use at all times, and all scuttles shall not be less in size than two (2) feet by three (3) feet; and if a bulk head is used or substituted in any building in place of a scuttle it shall have stairs with a sufficient guard or handrail leading to the roof. The door in the bulkhead or any scuttle, shall at no time be locked, but may be fastened on the inside by movable bolts or hooks.

All skylights of buildings outside of the fire limits where placed less than three feet in height above the roof shall be enclosed with a substantial railing not less than three feet in height. Within the fire limits all skylights exceeding twenty superficial feet shall have the frame and the sash formed with iron, and if not glazed with glass, three-sixteenths of an inch in thickness, shall be covered with protecting screens of No. 10 (or heavier) wire with meshes of not more than one and a half inches, said screens to be secured to the iron frames at least three inches from the glass.

SECTION 3. Section 38 of Order 1,752 is hereby amended to read as follows:—

[Removal of Dangerous Walls, Buildings, Chimneys, Smokestacks or Other Appurtenances to a Building, Sheds or Fences.]

SECTION 38. Whenever, in the judgment of the Board of Fire Wardens, any building, wall, chimney or smokestack, or other appurtenance to a building, shall, from any cause whatever, be in a situation to be dangerous to persons or property; or when any wooden building within the fire limits shall, in the judgment of the said Board, be damaged by fire or decay to the extent of forty (40) per cent of its actual value, to be estimated above the line of sidewalk in front of said building, the Board of Fire Wardens shall immediately give notice to the owner or owners of such building, wall, chimney or smokestack, or other appurtenances to a building, sheds or fences, or to his, her or their agent, or the person having the control thereof, if the owner cannot be found, to remove the same forthwith; and the person receiving such notice shall, within forty-eight hours after receiving the same, comply with the requirement thereof. In the event of a dispute as to the amount of damage caused by fire between the owner and the Board of Fire Wardens, said dispute shall be determined by arbitration of competent mechanics, the owner to select one arbitrator, the Board of Fire Wardens the other; and in case that the arbitrators so chosen cannot agree, they shall select a third, and the decision of the majority shall be final and conclusive—all expenses of the arbitration to be paid by the owner.

Heretofore, corner bay windows have not been allowed, and still are forbidden in the erection of brick buildings. But Section 27 as amended, omits frame buildings from this restriction. Consequently, those who desire them, can erect corner bay windows at the intersection of any two streets, over the sidewalk, where the distance from the sidewalk to soffit of the bay is not less than 14 feet.

A Queer Suit against an Architect.

THE story runs thus: Some year or more ago, a lady called on Mr. T. J. Welsh, architect, and entered into an arrangement for plans, specifications, etc., for two buildings, to cost $10,000. The agreement for compensation was fixed at five per cent for full professional services, and two and one half per cent should the buildings not be erected. They were not, and the architect allowed his claim to remain unsettled until—to save an "out-law"—suit was commenced in a justice's court for the sum of $250, being the agreed sum for plans, specifications, etc. Rather than meet the case in court, the lady, by her attorney, proposed a compromise, and the claim was settled for $150, and receipt in full passed. No demand at the time of settlement was made by the client for possession of the plans, etc., but a few days afterward, the architect was asked to surrender possession of the papers. This he refused to do upon the ground that all plans, drawings, and specifications were the property of the architect producing the same, and that the client had no right to their possession, beyond the uses to be made of them in case the work went on.

The lady client not being satisfied with this, upon advice of her attorney, commenced an action against the architect to recover the plans, etc., and also the money paid him, claiming that he had not performed his contract with her. The case occupied about a full day of the time of the court, and the testimony adduced by the architect proving conclusively, that by the rules of architectural practice in this State, and generally throughout the United States and in Europe, the plans and specifications made by an architect are his, and not the client's possessory property, beyond the uses for which they are intended to be applied in the progress of the work proposed to be done under them. Judgment was rendered in favor of the defendant.

This decision, as far as it goes, establishes the rights of architects and owners in reference to the ownership and possession of plans, etc., even if paid for by the client. An architect is not supposed to sell his plans, drawings, and specifications, but simply to embody and delineate on paper his own and his client's thoughts and ideas, shaping and utilizing them to best advantage; and the compensation received for services goes no further than payment for his professional knowledge and skill in producing the desired results, to be exemplified in actual construction in case the work goes on.

This may appear to some as a hardship upon owners, but it has another bearing of great importance to architects, who, as a rule, suffer injustice every time they part possession with plans, etc., worked out by them, as thereby they lose control over the results of their studies, and make it possible for others to reap the benefits which should be enjoyed by the men who conceive and shape the form of thought, and mechanical and professional ideas which might never have been conceived by others in the same form. It is simply retaining possession of the thing legitimately owned.

Great Influx of Strangers.

AS the result of the railroad war and low fares, very many thousands of people, representing nearly every section of the United States, have "come to see California" generally, and San Francisco in particular; some from motives of pleasure and curiosity; others uniting with these, business objects and interests, and possible permanent abiding in this State or city; and a large number of working people inspired by the hope that the demand for labor upon this coast would be such as to give employment to all wage-earners who might avail themselves of the unprecedented opportunities afforded by the railroad people of crossing the Continent "for a song." Of the latter,—those who have come to California with no other expectation or purpose than to find work as journeymen mechanics, artisans, or laborers,—a very large proportion must meet disappointment; as

the labor market was well supplied before the commencement of the great rush of visitors or immigrants which has within a few weeks added so many thousands to the number of strangers "within our gates."

The people of California would only too gladly welcome that condition of things which would give employment to tens of thousands of the hardy sons of toil, other than those whose homes for years have been in this city and State; but with no new special developments in business enterprise, nor any unfolding in any direction demanding an increase of skilled or unskilled labor, over and above the resident supply, it is impossible that more than a limited number of the more persevering and diligent seekers should find employment.

New discoveries, requiring large forces to operate them, or offering inducements to those willing to risk the uncertainties of fortune in pursuit of prospective results; the expansion of great interests and improvements demanding a large amount of manual labor, and the employment of thousands of working people to prosecute them, present inducements and justify the concentration, and gathering together at available points of a sufficient number of men to meet and supply the demand. But a rush of people to a given center, where none of these exigencies exist, and all the conditions are normal, with supply fully equal to demand, disappointment must result to some.

A CHANCE FOR EARNEST MEN.

Although what we have written expresses the general condition of things in California, as far as any considerable number of wage-earners recently arrived are concerned, there are nevertheless, reasonably well sustained good prospects for a goodly number if *really competent and qualified men* to find employment. This of course will depend largely upon the earnestness with which each in his respective calling shall seek to secure an engagement. The chances for the competent and skillful men are fair, but those who are not will find it difficult to obtain more than incidental opportunities to labor as per diem workmen.

This however may be added—that the element of versatility and progressiveness abounds in California, and there are doubtless very many as yet undeveloped means, methods and channels of business successes and enterprises possible of introduction in this State; so that those who may fail in the realization of their first conceived purposes, may, by the exercise and practical application of that genius so universally accorded to the descendants of the Pilgrim Fathers, lead to results of—at present, unthought of magnitude. Necessity is said to be the mother of invention, and it is to be hoped that many who have come, not finding openings ready made for them, nor grooves run, into which without effort they may settle, will go to work and make openings and plow new grooves in which to operate, alike with profit to themselves and benefit to the general interest. The resources of California are by no means exhausted, but remain awaiting further developments which, we hope, will, in many directions, be stimulated by the massing of so many new people on this coast at the present time.

The Growth of San Francisco.

VIEWED from the early days—the time when the briny ocean tides ebbed and flowed over nearly every foot of that portion of the city now occupied by substantial brick buildings in which the great bulk of importing and mercantile business

is at present transacted; the days when steam-ships of three, four, and five thousand tons lay at anchor, or securely moored to piers and wharves, three and four blocks in-shore-ward from the present eastern bulkhead or water front; when the block upon which the present post-office and appraisers' building was so deep in mud and tide water that the bottom could not be reached by the longest pile possible of being driven for foundation purposes; when the entire site of the city was subdivided into valleys, by high hills of natural formation, or ridges of sand ground, and thrown up by the ocean upon the western shore of the peninsula, and by the winds driven across land and piled up in sand hills and dunes, to altitudes towering above the tallest buildings,—San Francisco rightly stands as a marvel of energy and enterprise.

The amount of money expended in cutting and filling to produce the present contour of the city's surface, would be sufficient to purchase the land out and out, and to erect substantial buildings for a city of twenty-five thousand inhabitants in any other new and promising section of country.

The present and prospective greatest business street of the city, Market Street, as late as 1858, was, west of Third Street, a continuous sand hill diverging northerly after passing Fourth Street, thereby forming "St. Ann's Valley," including the site of the present Baldwin Hotel and Theater, with the location of which California tourists generally are familiar.

Golden Gate Park, now ranking well, and destined in time to be second to but few in the United States as a public park, was, but a few years ago, a barren, desolate waste, covered with sand drifts and dunes, and stunted growths, seemingly ashamed to claim membership in the tree family.

But with all these drawbacks and disadvantages, the city now spreads itself over many square miles of territory, and the expansion still continues; while the vacant places within the older limits are being filled up with permanent structures, many of them being in pretensions and cost, "good enough" for the better parts of the metropolis of the United States.

From time to time there existed the spirit of complaining and business grumblings that things were not better, and money making less easy than in the early days of California's existence. Still the car of progression has rolled on and is still advancing, and even many of those who have complained most, have become rich or well to do. And taking in the entire situation, it is reasonable and altogether likely, that within a generation from the present time, San Francisco will spread to fully twice its present size, and double, if not triple its present number of inhabitants.

As far as its building improvements are concerned, about one-tenth of the city is included within the fire limits, within which brick, stone, iron or other indestructible material alone is permitted in the erection of buildings. But beyond these limits, wood is used exclusively, except for business structures. The most costly residences are, with a single exception, wood constructions, including the private residence of Senator Leland Stanford; that of the late Mark Hopkins, costing about $1,000,000; the residence of Chas. Crocker; Senator Herst; Porter Ash; and many others of the millionaire class.

J. C. FLOOD, BANKER,

Being the only notable exception; his city residence now in course of completion being of imported stone, brick, etc. No small amount of reflection has been cast upon Mr. Flood, in view of the fact that his great fortune has been drawn mainly *from the pockets of the people of this city and coast*, and the universal sentiment is that it would have been but a small act of justice on his part to have confined his expenditures to and among those, and the community in and from whom and which he has gathered his great fortune.

The street and section of the city where the Stanford, Hopkins, Crocker, Flood, and other mansion residences stand, was, as late as 1860 or later, a rough, ungraded hill-top, covered with sand and shrubbery, and by no means desirable, being over 300 feet altitude above tide level, and adjudged unsuitable for practical life, owing to the difficulty of assent. But the grand view afforded from this elevation, taking in the whole scope of country over land and water, from all parts of the compas, was indescribably inviting and fascinating, and by degrees the tax upon limbs and muscle to make the ascent, yielded to the magnificence of the prospect when home was reached.

THE CABLE-STREET RAILROADS.

When this device as a street-car motor became a certainty, a demonstrated fact, hills no longer bore a forbidding aspect. When it was made sure that the ascents up steep grade could be made with the same ease and personal comfort, and a great deal more of scenic and romantic luxury than on level roads, the hill-tops so far as traversed by the new mode of travel, soon gained favor, and advanced in value more than double within a single year.

These cable roads have not only helped and improved hill property, but in every direction where they are operated, prop-

erty has advanced in value, and thousands of people of moderate means have been enabled to secure comfortable homes with ample grounds, long distances from business centers, yet rendered practically not far away by the splendid means provided in almost all directions, of traveling by cable road at the rates of five to eight miles per hour, at a cost of five cents for a distance of three or four miles—more or less.

LOOK WELL AHEAD.

With all that has been accomplished, with all that is, and with all that appears in the future, it must be conceded that great things have been achieved in San Francisco; that with all the vices, immoralities and cosmopolitanism permitted within her borders; with all that might have, but has not been done for her greater improvement and prosperity, she presents a record in fact unequaled by but few cities in the Union.

Science of Architecture.

[Special for this Journal. By F. HILLERT, Architect and Mechanical Engineer.]

(Continued.)

TO make a reliable scale, and to measure the same temperature felt everywhere alike, two cardinal points are selected and fixed, depending on the invariability of the freezing and evaporating point of the water; those points carefully fixed, then the space obtained by expansion, being divided in respectively 100 parts for Celsius and 80 parts for Reaumur, called the positive or + degrees of temperature, negative or – degrees below the solidification of water, used for the measurement of cold temperature. On the continent of Europe these scales are most in use, for all days and scientific purposes; for the last are the most convenient and best adapted. We here and in England use Fahrenheit scale. The zero point is the freezing point of quicksilver; 32 degrees of the same correspond to the zero point of the other scales, and the temperature of the boiling water at respectively 80° and 100° corresponds to 220° of Fahrenheit. Are Fahr., R., and C., the respective scales above named, then are, comparatively, Fahr. $= 32 + \frac{9}{5}$C. $= 32 + \frac{9}{4}$R.; C. $= \frac{5}{9}$(Fahr. $- 32) = \frac{5}{4}$R. R. $= \frac{4}{9}$(Fahr. $- 32) = \frac{4}{5}$ C.

Metallic thermometers are used for the measuring of temperature, and the action of them depends on the different expansive capacity of the different metals to be used. When two or more strips of different metals of different expansive tendency are fastened together, the action of heat will bend them; caused by the different expansion of the metals joined, giving hereby means to ascertain the temperature existing. They are used for measuring high temperatures up to 900° Celsius, when quicksilver thermometers cease to be reliable.

The term "absolute heat" is used to scale the expansive capacity of gases, and begins with 273° below zero of the centidegree scale. It is the point where the expansive capacity of the air form bodies ceases. (Is it the freezing point of air?)

The absolute temperature for 20 centidegrees is equal to $273 + 20 = 293°$ absolute.

The metric system retained, is adopted by Federal law, besides our scales in use. It originated during the French first Revolution, and was intended for general adoption. The spirit of the social French Revolution was extended and made serviceable to science. It was acknowledged as necessary to change the old system of weight and measure, and substitute for it a natural unit of measure, *i. e.*, one existing in nature, which, when lost, could be found, and used again. The leading French savants, Borda, Lagrange, Laplace, Monge, and Condorcet, used the proposition as means for the measurement of a European geographical degree, to recommend the establishment of a universal unit of measure, which was found to be an aliquot part of the earth's meridian. After the completion of extensive labors by a commission, was, on the 9 frimaire VIII. (29 Nobr. 1800) as result of this measurement, the 10,000,000 of a meridian quadrant—443,296 old Parisian lines as the true and definite meter—proclaimed and adopted. In the meantime it has been acknowledged, and the impossibility to find a natural measure, to which the experiment with a pendulum, swinging seconds, has considerably added. The metric system has been established in France, Belgium, the Nederlands, Italy, Portugal, Greece, and Roumania and made obligatory in Germany and Austria. The change requires extensive labors to change measures, formulas, and calculations to the metric system, of which nations shrink, having not the taste and time for scientific progress.

1 meter	is equal to		3.23 feet
1 square meter	is equal to		10.76 square feet
1 cubic	"	"	35.31 cubic feet
1 foot	"	"	1.305 meter
1 square foot	"	"	0.092 square meter
1 cubic foot	"	"	0.028 cubic meter
1 inch	"	"	2.54 centimeter
1 square inch	"	"	6.45 square centimeter
1 cubic inch	"	"	16.38 cubic centimeter

To measure the velocity of the air, anemometers are used. The instruments in practice, therefore, are Rotatory Anemometers, consisting of a very small, light-winged wheel, made of aluminum, and being propelled by the pressure of the air. An indicator, attached to the spindle of the wheel, furnishes the number of revolutions made in a certain time, from which the velocity of the air, with the aid of a constant, found for each instrument separately, can be obtained.

The common Rotatory anemometers are used to find the mean average velocity, but do not give any variations in the velocity of the current during the operation; if not, special arrangement (not frequently found) of the electric and acoustic kind, are attached. These apparatus are best fit for longer periods of observation. By them can only be found the mean quantity of air passing through a channel of a certain section during a certain period of time, *i. e.*, one hour under given conditions; for example: for the examination of the effect of a ventilation arrangement for the contracted and guaranteed quantity of air to be furnished.

Since the velocity of the air in the different places of the channels in general will not be the same; since, farther, by the introduction of the anemometer in the channel a small decrease in the same and a consequent deviation in the direction of the current is made; also the constant of the instrument to be reliable after a certain time, must be found anew and from other causes, those measurements of velocity can only give approximate results, with which we must be satisfied, since means are wanting and have not been found up to this time for a complete and correct measurement of the velocity of the air.

Another kind of anemometer is the statistic, *i. e.*, those which give the momentary velocity of the air, to be seen direct on a scale. They are best suitable for a controlling apparatus, and for the correct working of the ventilation system.

The above described instruments are only fit to measure the velocity of the air when the same is neither too hot nor too much soiled, and are unfit to measure the draft in a chimney, or heating arrangement. Other instruments are therefore constructed. To regulate the current of air in the channels, throttle valves, slide valves are used.

To measure the degree of moisture contained in the air, hygrometers are used. These instruments have not the purpose to give the value of the moisture, but only the proportion between the moisture contained in the air at present to that contained in it of the same temperature, when the same would be in a saturated condition. This ratio is designated "the relative moisture."

The point of saturation (thaw point) is different with the different temperatures, and the following table furnishes the quantity of moisture contained in 1 cubic meter of air at the state of saturation.

– 20	°C	1.06	gr water	+ 15	°C	12.81	gr. water	+ 60	°C	129.80	gr. water
– 15	"	1.39	"	+ 20	"	17.23	"	+ 70	"	177.41	"
– 10	"	2.39	"	+ 25	"	22.95	"	+ 80	"	290.88	"
– 5	"	3.36	"	+ 30	"	30.23	"	+ 90	"	420.52	"
+ 0	"	4.89	"	+ 35	"	39.51	"	+ 100	"	591.92	"
+ 5	"	6.81	"	+ 40	"	50.95	"	+ 112	"	860.	"
+ 10	"	9.38	"	+ 50	"	82.72	"	+ 120	"	1,120.	"

According to the present state of investigation, a degree of saturation of the air of from 40 to 60 per cent is the most favorable for the human health.

There are two different kinds of hygrometers. The first kind is based thereon, to decide for the moisture presently contained in the air, the temperature of the thaw point, and from the same under assistance of the actual existing temperature of the air to find the percentage of saturation; the second kind of instrument uses the changes of a delicate hydroscopic body produced and conditioned by the moisture of the air for the direct finding of the percentage of saturation. The last kind of hygrometer is for use the most recommendable, and are those of Saussure, and others. The first kind are those of Daniell, August, and Regnault.

Apparatus for moistening the air. With air heating the moistening is mostly done by placing open vessels filled with water in the heating chamber. The filling of the pans (arranged for a variable water surface) and the control over the same must be done from outside of the heating chamber.

This method of moistening the air is incomplete. An improvement can be made when the water pans are so arranged that the air warmed by the heater is compelled to pass over the surface of the water. For this purpose the heating chambers in a certain height are divided into two compartments, in one of them water pans are placed (arranged with overflows), one on top of the other, with spaces between them, compelling the heated air to pass over the water surfaces. The effect of moistening is certainly increased with the increase of water surfaces. Approximately can be taken, for each square meter of the channel, 15 square meters of water surface.

A self-regulating apparatus may be constructed which will fulfill the condition that when a certain desired state of moisture is passed, the apparatus will discharge, self-acting, the wanted quantity of water. A hygrometer of a separate construction closes an electric current, which opens a valve by means of an electric magnet, discharging steam or water spray so long, until the desired degree of moisture is regained, when the interruption of the electric current will close the valve and stop the flow.

The reason of writing the above was a displeasure felt by the passing and enforcement of certain municipal laws—and other matters—which are and were erroneous, having no basis. They created displeasure in society and do not give the comfort and protection which a beneficial law should. Once begun, one subject leads to another on the same scientific matter; it is inexhaustible, and may be proceeded with by abler men.

Practice was the forerunner and the foundation of the sciences in the course of progress of human culture. The fire made by friction by the primitive man, to prepare his food and to warm himself when cold, compared with the making of steam for preparing all raw material by mechanical process for the protection and comfort of men; and with chemical process by decomposition, etc., for explosives and thousands of other things, is only a slight illustration.

There has been a cry by practical men against theory, when hardly anything can be and is done by them without using the intellect, either direct or indirect. The men, for instance, attending to a shaping machine; the Chinamen, attending to the loom, work under and use the spirit and genius the inventor placed in the machine, requiring of him only the mechanical labor as attendant. They do not wish to acquire, and have not the scientific knowledge; hence criticise and condemn what they do not understand-fully as the skillful stair builder, the many practical details of construction, gained and made perfect by daily and incessant application; or the science of obtaining the numerous intricate lines, cuts, bevels etc., involved in stair-building; but he should understand most perfectly every requirement necessary to produce stairs that will afford the greatest amount of comfort to those who may use them.

"Hard" and "Easy" Stairs.

THERE is no feature in house and building construction which should be more carefully considered, or receive greater attention from architects, than the stair work; as the stairs are a part and portion of the edifice used by every one, young and old, in passing from story to story, and a sense of fatigue or comparative comfort follows each successive assent.

The architect may not, and is not supposed to understand as

Stair builders are never to blame for "hard" or uncomfortable stairs, *when controlled by plans made by another.* Whether "hard" or "easy" depends altogether upon the allotment of space for construction. The limitation of horizontal distance for run, to vertical height from floor to floor for rise, at once determines results; for if the run is made less than it should be, as compared to the height or rise, no amount of money that might be expended, nor the skill of a thousand stair builders, could pos-

sibly prevent the curtailment of comfort resultant from the lack of sufficient horizontal space.

The rise, height from floor to floor, is absolutely arbitrary, admitting of no concession or compromise; and upon this fixed factor, all other calculations in stair building must be based; so that ease and comfort, or hardship and fatigue, depend wholly upon the proper accommodation of run to rise. Hence, if the architect restricts the space within which the stairs are to be built, to less than what is necessary for the purpose, he thereby establishes an insurmountable obstacle to *easy*-stair construction; and in every case where the ascent of a flight of stairs is not comparatively comfortable, the responsibility rests upon the party designing and planning the same, whether stair builder or architect—if an architect is engaged, and his plans limit the space of run and rise for the stairs, he alone is responsible for the results. No stair builder, however skillful he may be, can possibly make easy stairs where the horizontal and vertical distances are not proportionately correct.

PROMOTERS OF AILMENTS AND DISEASE.

The importance and materiality of the subject-matter under notice is much greater than most people suppose. "These stairs do tire me so;" "It puts me all out of breath to go up these stairs," etc., are perpetual and incessant expressions, particularly with the feeble and aged; and frequently smart and active people find themselves well out of breath by going up-stairs a little lively; all of which goes to set up the fact that a vast amount of physical force and energy is required and expended in the ordinary use of stairs—millions of people the world over, being every moment of time in the act of ascending or descending these indispensable house conveniences. And the fact is well known, especially among the medical fraternity, that "climbing stairs" is a most injurious exercise to weakly and ailing persons—those not blessed with strong physical frames and sound lungs. The doctor's prohibit is placed upon multitudes, and untold numbers of prostrations upon beds of suffering have origin in too much stair exercise. And this being true, that ascending stairs is hurtful to those who are not strong, is it not an extra tax upon the strength and energies of every man and woman who is required or compelled to pass from floor to floor by means of stairs? It is more tiresome to even the strongest and stoutest of men to ascend stairs to the height of fifty feet, than to walk on level ground twenty times that distance. Although a man might, and very possibly could, "walk all day" without exhaustion, it is doubtful whether a human being could be found, capable of enduring the fatigue of one single hour's continuous ascent of stairs, particularly of those denominated "hard" to ascend. The strain upon the muscular and physical forces would be far too great for human endurance. It is questionable whether in the entire population of San Francisco a single individual exists who would be able to perform the feat, and if found, the condition at the ending of the performance would be

EXCEEDINGLY DILAPIDATED.

All this serves to verify the common every-day experiences and aversions in families and among business men and people generally to the use of stairs. The ever-present disinclination in this regard remains unexpressed from the force of circumstances, —the compulsory ascent of stairs as the only means of reaching the upper stories. People do not "go up-stairs" for any pleasure found *in the act* of going up. There may be pleasures reached through and by the act, but not *in* its performance. And it is safe to say that if necessity, curiosity, or some other special incentive never existed, rendering the use of stairs more or less compulsory, they would remain unused.

Stair building is one of the necessities created by the huddling together of communities of people, in cities, towns, and villages within limits which require structures of more than one story in height, to furnish appartments sufficient for the purposes of business and domestic life. When mankind dwelt in tents, and spread their dwelling-places over large tracts of land, the stair builder was unknown. But the centralizing and contracting effect of civilizing brought about the necessity for buildings with multiplicity of stories, to utilize which, stairs became an indispensable requirement as a means of reaching the several levels placed above one another; and for ages they have been submitted to as an evil without remedy. But during later years,

NUMEROUS DEVICES IN PASSENGER ELEVATORS

Have been invented and brought into practical use to relieve and obviate the fatigues and exertions of "stair climbing." And hundreds of thousands of persons who are "*afraid of elevators*," and speak of them as "*dangerous*," are nevertheless willing to "*risk their lives*" upon these "*dangerous contrivances*," to avoid the discomforts of reaching upper stories by means of stairways.

All this goes to show that stairs, while a common necessity in house construction, are more a source of enforced convenience than of comfort and healthfulness. And being so, their most perfect apportionment of run and rise should receive the most skillful and careful consideration, as no amount of expenditure of money, nor all the elegance and beauty of design or workmanship, can relieve the extra hardships imposed upon those compelled to use stairs not built in conformity with the best understood rules productive of "easy stairs."

What Is the Difference?

SOME of our readers may think that too frequent reference to the subject of sewer gases, is made in the columns of this journal. If health and life are immaterial considerations, then it is true. If they are important and valuable, then too much cannot be written or said. There is no intelligent person who will presume for one moment to dispute or deny, that where those poisonous vapors are breathed day and night, sickness and death must ensue. Their fatal character is beyond controversy, and the rapidity of their work depends only upon the quantity inhaled.

Reader, permit us to suggest the following: If a man should fell his wife, mother, child or friend to the floor by a blow, and he or she should die from the effects of the blow, would not a death be caused by the hand of him who struck the blow? Or if either should be pushed into the waters of the bay, and were drowned, would not he who did the pushing be responsible for the death? In either case, it would be murder, homicide, or manslaughter. Now then, if a man builds a home for his family, and its construction, appointments, and defects are such that the sewer gases are admitted, and loved ones die from the effects of those gases, is it any less a death? The blow caused death, the drowning caused death, and the gases caused death. The only difference is in the manner and circumstances of the cases. We shall not presume to say that there is the same degree of guilt in either case, but that the result is the same is certain. A man, woman, or child when killed, is *killed*, the only remaining question being the means and manner of producing the death. And when death occurs, whatever may be the cause thereof, the usual stereotyped notice occurs, "*In the providence of God, etc., it pleased the Lord to call him or her away*," thus making the Almighty responsible in all cases, while in so many instances in this connection sickness and deaths are caused by men assuming to know a great deal, yet possessing but a small amount of proper, practical knowledge in many important respects in the erection of homes for their families; doing, or permitting things to be done, at variance with all right rules and principles familiarly known to all intelligent physicians and architects to involve dangerous risks, if not fatal consequences. If the Almighty Being has anything to do with such cases, he simply makes fools of men, causing them to build imperfect and incomplete houses, and employ incompetent men to plan them, and others to execute the blundering work, so that he may kill off some loved one. We hold that God is not responsible for the bad judgment of men in the erection of their homes, nor does he require the blunderings of either architects, plumbers, sewer layers, or any other to work out his purposes. If he uses these means in any way it is to punish those who fail to observe the natural laws of creation and life, and bring upon themselves bereavements and sorrows.

A New Device in Blinds.

IN answer to several inquiries concerning Hill's Patent Inside Sliding Blinds, now being introduced on this coast, and whose advertisement appears on page 80, we give the following short description.

These blinds are made by machinery specially constructed for this work, from the best material; they are finished by hand, and are very neat, economical, and convenient. Although constructed of light material, it possesses more durable qualities than a hinged shutter. It can be closed with the window raised, and will not blow open or rattle.

As inside blinds are an important feature in most every building, too much care cannot be exercised in selecting that system and style of blinds whose general qualities are simplicity and convenience. Considerable objection has been raised against the inside folding blinds now in ordinary use, many people preferring to be without any rather than be bothered with their curtains continually catching when folding in and out. Many also object to the pocket at each side of the frame, as it forms a receptacle for dirt and dust.

The Hill Blinds are formed in compartments or sections, and are made to run in grooves, each section sliding past the other with secreted springs to hold them in position at any point. They are very easily managed, and are entirely out of the way of any article upon the window-sill; they do not in any way interfere with the curtains or draperies, and by pressing the blinds to the right, they can be instantly removed, and taken from the room and cleaned.

Wherever introduced, these blinds have given entire satisfaction. They are very popular in the Eastern States. And, as they are handsome in appearance, neat and durable, and cost considerable less than the folding blind, we think it would be advantageous to those interested, to call on Edward B. Hindes, 330 Pine Street, room 55, who is agent for the association on this coast, and see full size models.

Luck—"Good" and "Bad."

THERE are but few words in the English language more bandied and misapplied than the term, Luck; which is used to express some unknown, invisible, undefined something, having no tangible existence or application other than a speculative, convenient sentiment, utilized to fill endless numbers of gaps in the experiences and vicissitudes of life,—a substitute for the less acceptable idea of destiny; for if a man possesses in his moral, mental, or physical nature, or is specially surrounded with an influence or controlling principle or element which entitles him to the common appellation of a lucky or unlucky individual, then his fortunes or misfortunes must be the result of an agency not under his control, and not the result of clear discernment, good judgment, and prudent and discrete action; but is the enforcement of success or non-success by a power or principle which is wholly above and beyond the control of the recipients.

Those who pass through life enjoying its common comforts and successes without any specially noticeable occurrences, are considered simply good, careful business men, in nowise indebted to freaks of either good or bad luck. But those who by acts of shrewdness, cunning, or unscrupulous boldness make big strikes, and gather in great fortunes—perhaps millions—are regarded as "lucky;" "every move they make *wins*," while others of equal integrity and caliber would fail of like success under similar opportunities, because restrained by broader and more liberal views of justice and right beyond themselves.

The extravagant and reckless, as well as the weak-spirited, and those frequently out of work, alike draw their qualifications and consolations from the same source—"luck."

Those who have swamped fortunes in wild speculations, attribute their adverses to "ill luck." The criminal with the blood of his fellow creature upon his hands, and those guilty of lesser crimes, unite to patch up treaties with conscience by persuading themselves they have been the victims of circumstances—*unlucky*.

For all the faults and failures of men, their positive sins and culpable short-comings, "luck" is the antidote.

The Greeks and Romans fully accepted the theory of "luck," calling it destiny. Alexander the Great depended upon this pretext for human failures. Pliny says, "Some people refer their successes to virtue and ability, but it is all *fate*." Napoleon believed in his "star." Cromwell and Lord Nelson had similar ideas.

There are such things accredited as happy and unhappy accidents and happenings. We read of a painter who produced a long-sought effect by throwing his brush at the canvas in a fit of rage. Franklin ascribed his turn of thought and conduct through life, to the finding of a copy of Cotton Mather's essays.

It must, however, be admitted that very many most singular things occur. One man may seek to extract the juice from an orange, and perhaps meet his death by choking from the lodgment of a single seed in his throat, while another may have an iron bar run through his body and survive; another may but pierce his flesh with a thorn and die, despite the efforts of the best medical treatment, while another may swallow a jack-knife, pass it, and live on the full period of life unharmed by the event.

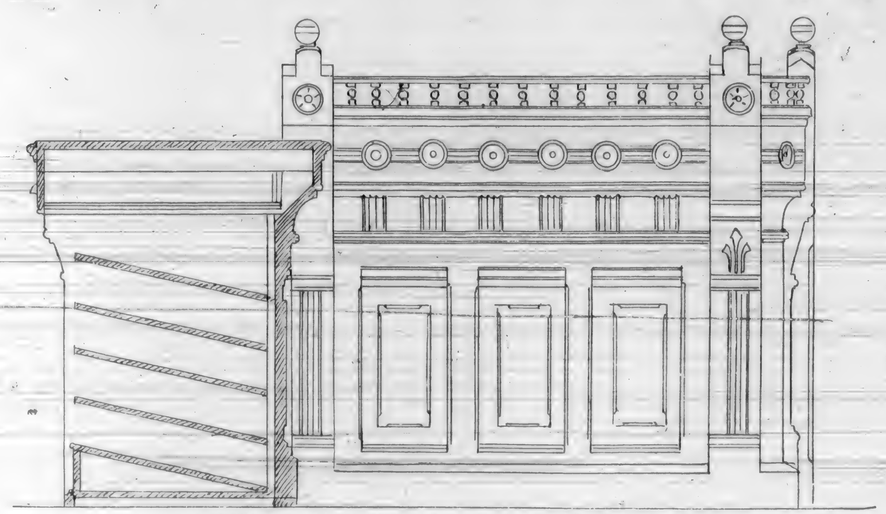
The thing called "luck" is but a bugbear—a delusion for the unphilosophical, spiritless, and indifferent to rest upon. The successful of human kind are those who do the right thing in the right way and at the right time. Those called "lucky fellows" are no more nor less than men who have been quick to utilize opportunities, and persistently follow up advantage, hunting for additional agencies and sources of wealth, and handling and protecting their gains in the one direction of profit and increase.

Luck as a doctrine or theory is demoralizing, delusive, and mischievous, and a cloak and covering for human faults and weaknesses. The things attributed to luck and chance as commonly understood, are but combinations of events, coming and going like all things in life, which, if seized upon at the right time, and successfully manipulated, yield their reward; while if neglected and allowed to pass by unimproved, they are but as the fleeting winds, those securing advantages being called "lucky," and those who do not, because they failed to succeed, through indolence or inactivity, are awarded the royal plume of "unlucky dogs."

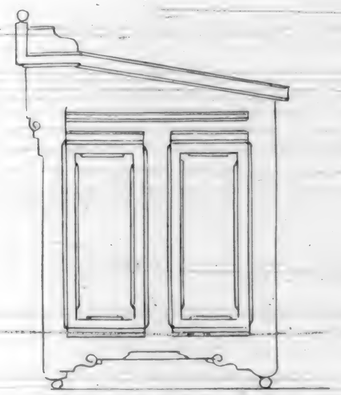
THE New York Court of Appeals has recently decided a case involving a building contract, confirming the decision of an inferior court. The New York *Daily Register* gives a rather meager report of the case, but there are several interesting points in the decision. The circumstances seem to have been that a certain builder contracted in the usual form to erect a house under the direction of a firm of architects, and with the ordinary stipulation that no payment should be made until a certificate of the architects that the payment was due had been presented to the owner. There was another provision in the contract to the effect that disputes concerning the construction or meaning of the plans should be decided by the architects, but that any other difference between the parties should be submitted to the arbitration of two competent and disinterested persons, to be selected in a specified manner; and a forfeiture for delay in completion was also agreed upon. The house was not completed for four months after the contract time, but the owner then moved in. The builder applied to the architects for a final certificate, but was told that the owner had instructed them to give no more certificates. He then went to the owner, who pointed out some little matters still remaining unfinished, and told him that when those were done he would pay at once the balance due, after deducting the amount of the forfeiture for delay. It would seem that this promise was not fulfilled, for the builder subsequently brought suit for his money. The defense claimed that the certificate of the architect was agreed to be a necessary prerequisite to obtaining payment, so that the owner was not bound to pay anything until this had been produced; and as the builder failed to bring the certificate, he had no right of action against the owner for refusing to pay.

Many decisions show that under ordinary circumstances this is an unanswerable argument but in the present case it was not disputed that the owner had instructed the architects to give no more certificates, and the court held that the owner, who had introduced the stipulation in regard to certificates into the contract for his own benefit, might waive it, and that, "if he accepted the house as under a completed contract, the plaintiff would be entitled to recover, although no certificate had been given, and even if the architect was not satisfied." Another point was made by the defense, that, as the contract provided that all differences not relating to the construction of the plans should be decided by arbitration, this stipulation should have been complied with before bringing suit. In regard to this the court held that it was no more the duty of one party than of the other to resort to arbitration, and as the defendant, so far as was shown, took no steps toward the selection of arbitrators, it was unnecessary to consider this defense. The questions which the jury was called upon to consider were two in number, the first being whether the owner accepted the house as a completed building under the contract; and whether, if it was so accepted, the delay in its completion was caused by the owner's fault. What was the jury's decision we do not know, but the Court of Appeals held that these questions were properly submitted to it, and confirmed the verdict. The case is called Smith *versus* Alker, and seems to have been decided some time in March last. It is worth observing that the ground on which the jury decided that the owner had virtually accepted his house as complete seems to have been rather his promise to pay the contract price when certain small alterations had been made, than his occupancy of the building. It has been decided more than once, we think, that the owner's moving into a new house does not constitute an acceptance of it, but in the present case the fact of his moving in, coupled with the assurance to the builder that he would pay the balance of the price, less deductions for delay, as soon as some small matters had been attended to, seems to have been regarded as a virtual acceptance from which he could not retreat without good reason.—*American Architect and Building News.*

Carpets and Decoration.—It is a great point in house decoration to secure carpets that accord with wall and ceiling tints and patterns, where these have been already put on. Irregular patches of color in carpet do not show well w ere wall and ceiling hav methodical and carefully considered designs. The carpet, too, should be responsive to warm, or brilliant, or delicate tones in these. Many a decorator suffers in reputation from the incongruity of a carpet introduced after he has done his work. As a general rule we are inclined to think that any recurrence of geometrical patterns, inclosing compartments of large size, is fatal to the success of a carpet design. The best patterns are neither up and down, nor "all over," but are evenly distributed over the whole area, or arranged with reference to a center toward which the accessories work. Some excellent combinations are those in which, on a field or ground of some secondary shade, the pattern consists of some small repeats, touched slightly with primary colors in various tints, relieved or edged with gray.



SECTION OF MAIN COUNTER AND ELEVATION OF SIDE DESK.



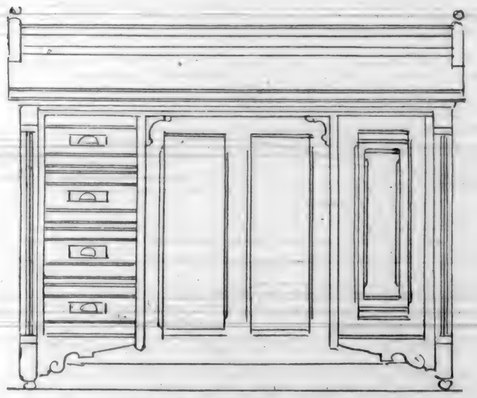
SIDE ELEVATION BROKER'S DESK.

New Zealand Insurance Company.

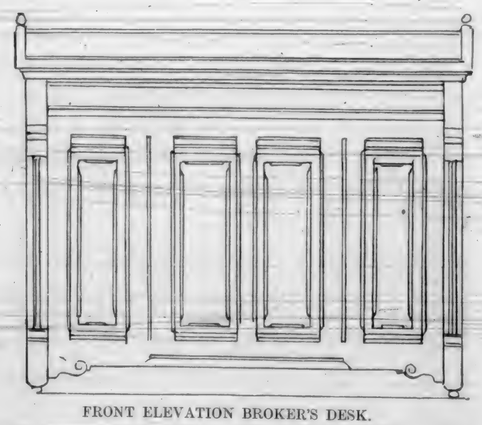
In November, 1883, we illustrated the proposed new building of the New Zealand Insurance Company, to be erected in this city on their property, 310, 312, 314 California Street. The Pacific Coast manager, Mr. Hugh Craig, has lately returned from a trip to the head office, Auckland, New Zealand. The company, for the present, have decided to let the old buildings remain and fit up for their own convenience No. 312. To carry out this idea Messrs. Wright & Sanders were employed to prepare designs for the interior fittings. How well their instructions were carried out may be seen by a visit to the company's new quarters between the hours of 9 A. M. and 5 P. M.

The contract for the carpenter and mill work was given to Mr. W. A. Knowles, of Oakland. The interior decorating is the work of Cook Bros., 108 and 110 Post Street.

A general idea of the arrangements may be gathered from the accompanying desk elevations and interior perspective on following pages. All the woodwork is in solid Eastern oak. The wainscot is surmounted by a band of Lincusta Walton 15 inches in width. The frieze and cornice are frescoed in cool, light greys, producing a very pleasing effect, and displaying excellent taste in this style of decorating. A vault of solid brick and cement 18 feet 6 inches by 9 feet 9 feet has been built across the rear of the room. The area of the office is 18 feet 6 inches by 68 feet 6 inches, and is only sufficient for the City Fire and Marine Departments.



REAR ELEVATION BROKER'S DESK.



FRONT ELEVATION BROKER'S DESK.

We note from the last quarter's report of the Underwriters' Fire Patrol of San Francisco, that there are ninety-six fire companies operating in this city, and that the receipts of the New Zealand Insurance Company are neither least or last. The New Zealand has, since its advent upon this coast in 1875, taken a prominent position in the matter of receipts, as well as figuring in every large fire, and many of the smaller ones, from which our city has suffered during the last eleven years.

The property upon which the offices are located was purchased from Sir Robert Burnett, Aberdeen, Scotland, the Newhall heirs, and M. Rosenbaum of this city. The frontage of the three properties is 60 feet on California Street, with a depth of 124 feet, with a rear frontage on Halleck Street of 60 feet 6 inches.

When foreign capital, represented by companies of this standing, comes among us and identifies itself with our citizens, we cannot do better than give it our earnest support. Had the above investment been made by a company hailing from London, we would not have been at all surprised, because we can give them a much greater return than can be obtained in the United Kingdom. But it has remained for the most progressive and youngest of Britain's daughters to come to us and put New Zealand money, which brings a higher rate of interest at home, into property in San Francisco.

We wish them continual prosperity, and hope the receipts of this bold and conservative company will so far exceed the losses and expenses as to justify them in soon erecting the large building and spacious offices for which Messrs. Wright & Sanders have already prepared plans.

The following brief history, showing the progress of this company, was handed to us by Mr. Hugh Craig, Manager for the Pacific Coast:—

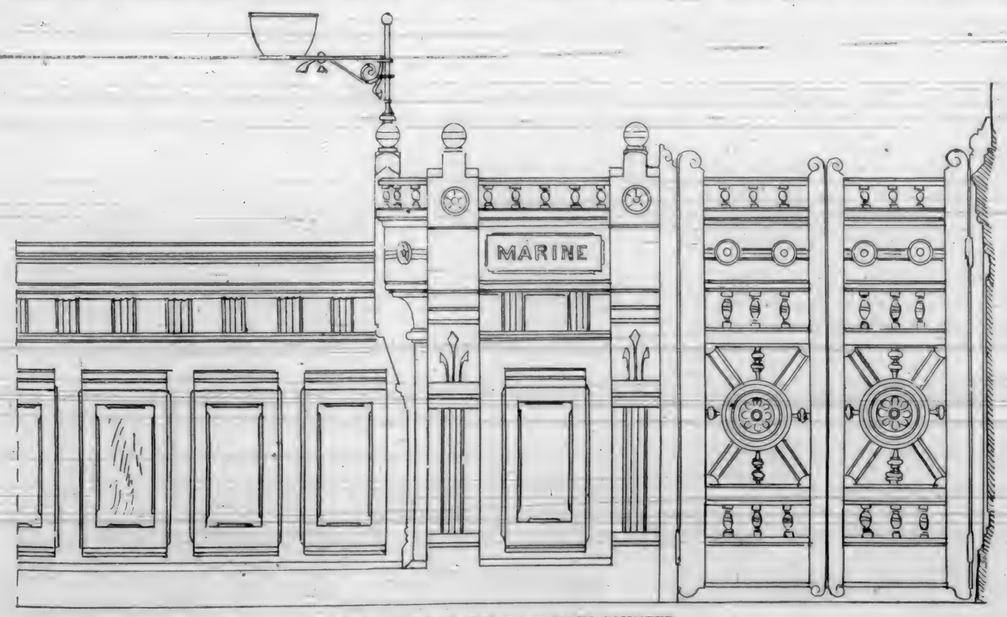
"The company was established in Auckland, New Zealand, May, 1859, with a paid-up capital of $24,225. In 1862 its paid-up capital had increased to $75,000; in July, 1863, to $150,000; in July, 1864, to $225,000; in January, 1865, to $250,000; in 1871, to $375,000; in 1873, to $500,000; and to-day the paid-up capital stands at $1,000,000; assets, over $2,750,000, with unlimited liability of shareholders."

To Imitate Black Rosewood.—The work must be grounded black, after which take some red lead well ground and mixed in the usual way, which lay on with a flat, stiff brush in imitation of the streaks in the wood: then take a small quantity of lake, ground fine, and mix it with brown spirit varnish, but not with more color than will just tinge the varnish, and if still too red, add a small quantity of Vandyke brown. If the work is well done, the surface, when varnished and polished, will scarcely be known from rosewood.—*Painters' Magazine and Coach Painter.*

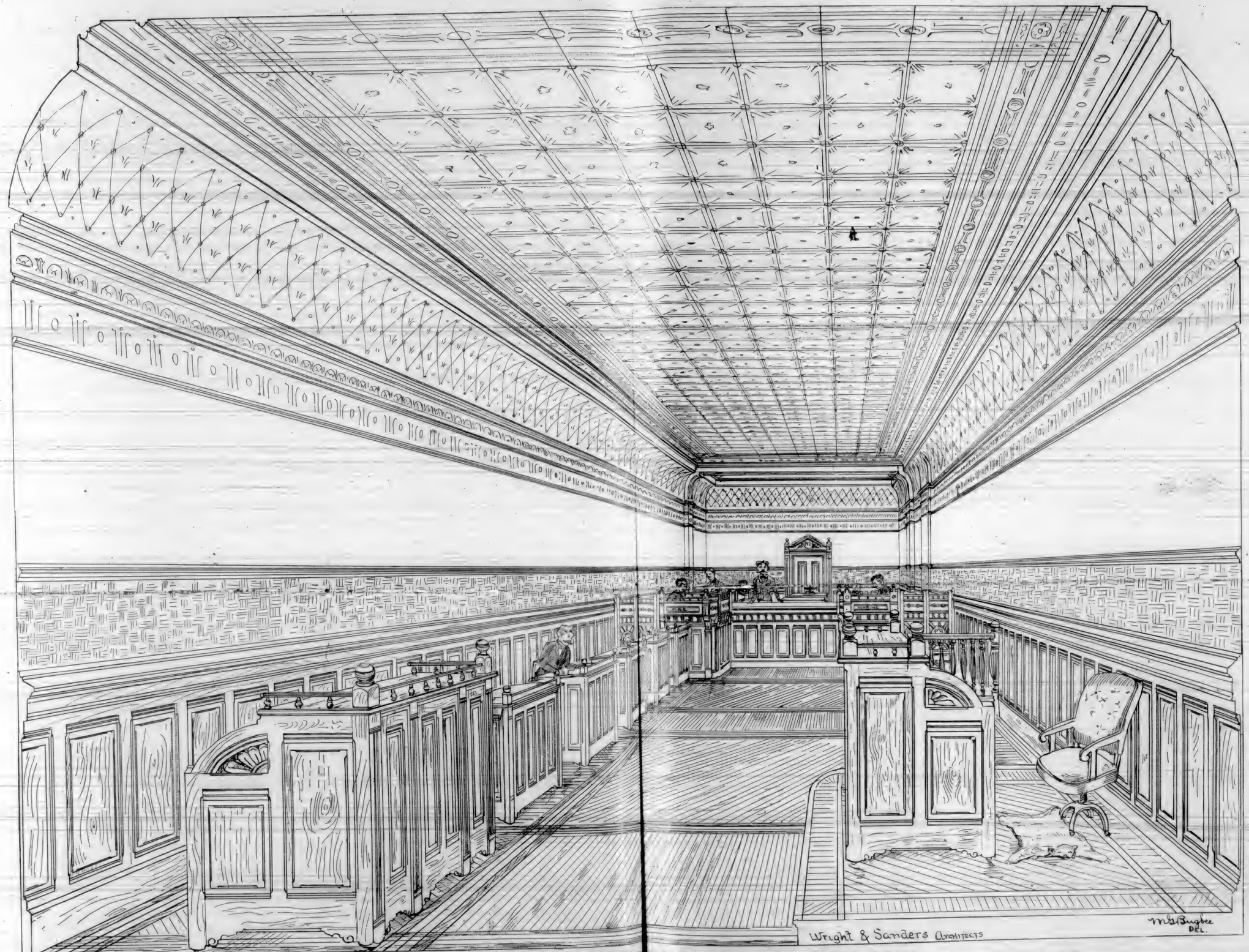
Shingle Roofs Should Be Well Painted.—There is no portion of a building of greater importance, and none subject to greater "wear and tear," than the roof. And as a general rule, no part which receives so little attention after it is on. Owners seldom trouble themselves about the roof so long as it keeps out the rains, and no effort is made to preserve it, until it begins to leak; by which time the decay assumes such magnitude, that patching and repairs simply prolong for a year or two, the time when the putting on of a new roof will become inevitable. All exposed portions of buildings require constant attention and care, and this is supremely true in reference to roofs, whether laid of shingles or metal. Shingle roofs may be preserved for a lifetime, by being properly painted when new, followed by additional coats at proper intervals. The preservative advantages of painting shingle roofs have not attracted general attention from either owners or architects, although there is no place in the known world where the necessity is greater than in California, particularly in San Francisco, where as an almost universal rule none but thin redwood shingles are used. The severe and sudden changes to which roofs are subjected, of hot suns, heavy fogs and dews, drying "north winds," occasional spells of "scorching heat," heavy rains, etc., etc., are very severe upon so light a roof covering as the fragile redwood shingles. It is, therefore, wise to protect them by painting, which increases durability, adds largely to appearances, and if a really *good fire proof paint* is to be found, and is used, gives security from fire to a considerable extent; as burning embers falling on a roof so painted, will not ignite the shingles.

Editor California Architect—*Dear Sir:* How few there are who give credit to the architect, or appreciate his many perplexing studies. He is expected to furnish, off-handedly, all information demanded of him, by whomsoever asked, whether the inquirer be a tailor, a shoemaker, a hatter, a blacksmith, or even a full-blown flower of femininity—an old maid. Even the judicial mind makes demands upon the mental resources of the architect, and but little credit is given for the numerous and varied experiences and studies necessary to all this. The professional architect is looked upon as one whose mind is equal to a common library.

If *duly qualified* as such, he stands at the head of all the professions. He must be a good geometrician; must be skilled in the art of writing up contracts and bonds; must be fully conversant with the strength of all building materials—wood, iron, stone, bricks, cement, etc.; also the market value of lumber of all grades—hardware, wrought and cast iron, glass, paints, slate, plumbing



ELEVATION OF ONE-HALF MAIN COUNTER



INTERIOR OF NEW SAN FRANCISCO OFFICE, NEW ZEALAND INSURANCE COMPANY, 312 CALIFORNIA STREET.

materials, etc. Also enjoy a knowledge of the difficult science of acoustics—a study requiring a large portion of a life-time to gain proficiently. In addition to all these, the mechanical science of construction, ventilation, proportions, symmetry, foundations, stairs, and innumerable other things must be well, if not absolutely perfectly understood.

But in the matter of remuneration, it is too often the case that the professional man's services are demanded upon the basis of but little better than day's labor compensation, although his services are expected to be almost inestimable. If the standard of remuneration for architectural professional services could be measured by the rules applied in other professions, where far less hard mental work and general knowledge are required, the profession would represent a large amount of wealth. The doctor, for a dime's worth of powder, or a shilling's worth of fluid, accompanied by a grasp of the wrist and a glance at the tongue, is at liberty to demand five or perchance ten or more dollars as a fee for services *received* if not rendered in good faith, which multiplied by numerous patients each day, must—as it does in numerous cases—rapidly augment the cash or bank account of the medical man, and enable him to erect buildings, and luxuriate in all the pleasures of a fine span of horses, with appurtenances, etc.

The legal brother professional likewise for an hour's consultation may demand a fee of twenty-five to a thousand or more dollars, and the charge is more frequently paid than refused. But the architect is drawn down u der taught, financial lines, without any of the soft snaps enjoyed in the other professions. The architect must content himself with wending his way to buildings under charge as best he pleases, through mud, slush, and dust, and move around through mortar beds, under plasterers' scaffolds, to be besmeared with the compound of lime, sand, and hair; climb up ladders and upon scaffolds of not over safe construction, over roofs and dangerous places, sometimes spoiling a whole suit of clothes, lime burning a pair of boots, and knocking fifty per cent out of the value of a silk hat, if such a luxury is indulged in,—all in daily devotion to the duties imposed upon him as an architect.

But these are not all; at the office, numerous interviews draw upon time, and days in each month are wasted in profitless intrusions upon valuable time. Endless questions have to be answered, work on the boards criticised and corrected, calculations and estimates prepared, documents to write up, and the days filled up with cares and watchfulness for the best interests of clients, and sketching and planning carried late into the hours of night.

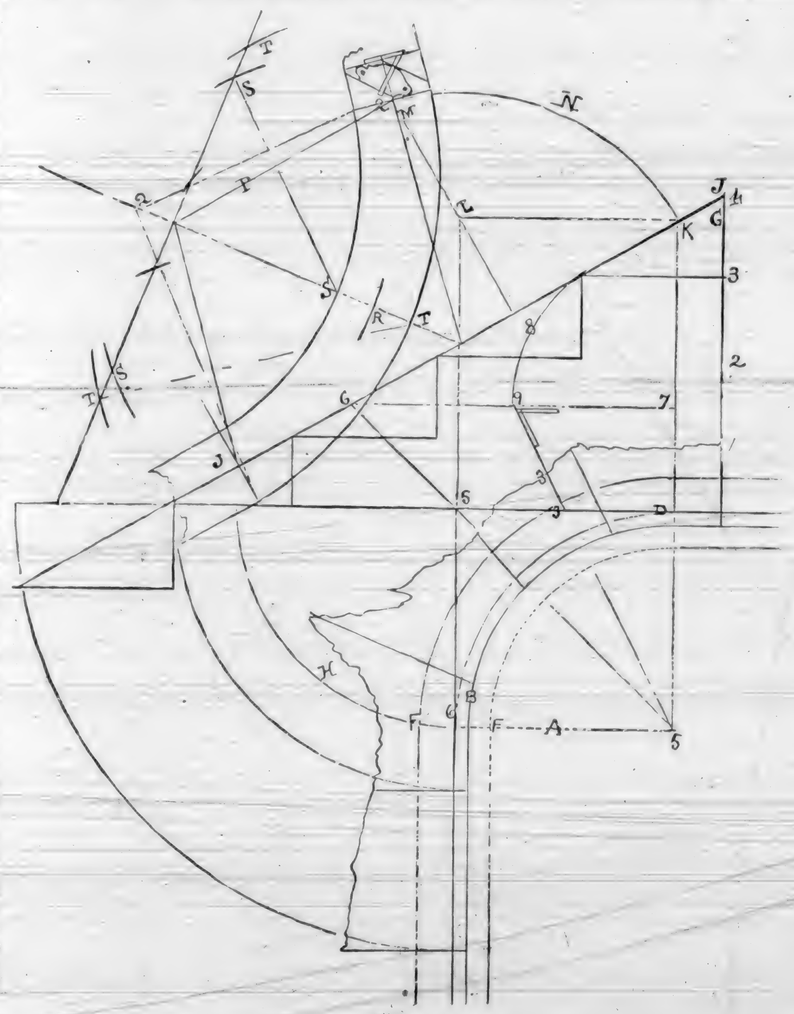
Pardon if I have assumed too much in this writing; but I have been so much in contact with architects' offices in so many States and large cities in the Union, that I feel an interest in the high and honorable profession, and regard its worthy, intelligent, and proficient practitioners as men entitled to the highest considerations. And pity it is that the profession is marred by a single individual whose exalted standing in point of honor, competency, and invulnerable integrity and trustworthiness are not such as to defy criticism.

THE following cut furnishes a *graphic illustration* of finding the cuts over a quarter turn stairs. Let B be the face of cylinder; make C, D the center of rail; make half breadth of rail right and left of C, as F F; square through center of rail from C and D to 5′, as tangents of rail falls there; space off the risers in the cylinder as shown; set up the height of risers, as 1, 2, 3, 4; now continue line D, 5 to J; take compass and stand in 5, and draw curve from F to line 5 J; do the same with curve I; next draw the line of pitch from J to J, 4; continue line from D to K; likewise line 5 to L; square from K, D, over to L, from pitch line J, J; square through L; take compass, and stand in 1; open out to K; draw curve N, cutting line M, M at 2; connect 1 and 2; which will give the tangent in mould; make line J, O parallel with line 1, 2; make line P, 2 parallel with J, 1; we will then have the parallelogram wherein the mould is found.

Now to find the bevel, draw through 5, 5′ to 6; square from 6 over to 7; stand at 7; draw curve 8 to 9; connect 9, 5; that gives the bevel; breadth of r il is found at 3, 3; take breadth of rail; lay off each s de of 2 and J; now find the pin points, and draw the curve of ould; after mould being drawn, you can cut and stand up as a model.

Explanation: Cut around curve S; cut from J to 5′, from 6 to J 4; from 4 to line D; hinge from 5′ to 1, from 5′ to D, from J to 6; cut across the joints and stand up.

M. J. M.



S. F. Chapter of Architects.

THE regular routine of business being disposed of, and the member designated to address the Chapter on "Ancient and Modern Plumbing" not being present, and having by letter informed the Secretary that it would be impossible for him to prepare a paper for the occasion which would be to him satisfactory, or instructive to the Chapter, other subjects were taken up and discussed until a late hour, with earnestness and profit.

Mr, Williams presented a drawing delineating a device for safety at elevator wells in cases of fire, which was favorably received and commented upon. The necessity for greater security in this connection was admitted, and it is only a matter of time when—as the outcome of destructive conflagrations—a practically perfect method will be found, serving that purpose, without the necessity of inclosing elevators in brick or iron shafts.

The recent destruction of Bancroft & Co.'s building, and facts known in connection with its construction, were freely talked over, with no flattering comments as to its sufficiencies as a five-story structure. It is generally understood that the best quality of hard-burned brick, laid in mortar composed of a good and sufficient quantity of Portland cement, were not imposed requirements at the time the building was erected; consequently the walls were not the most difficult ever built to topple and fall. The ruins, of course, expose the system of bond irons employed, which, if sufficient to meet the requirements of the fire law at the time the building was built, would not be so considered at the present time by any qualified architect.

The construction of the walls was such as is generally employed in California, as far as the *bond* is concerned; *i. e.*, headers each fifth course. The value of this method of bonding was contrasted with that of the English and Flemish bond, with no concession in favor of the former, except custom and cheapness.

This was followed by a general and earnest discussion of the matter of plan competition in connection with the Stockton Court House, Hall of Records, and jail.

The course determined upon by the Board of Supervisors having the matter in hand was reviewed in plain terms and condemned as unjust, iniquitable, and promotive of, if not designed to cover up purposes and intents which dare not face the clear light of square and upright dealings. It is well understood, and well and conclusively known by all intelligent architects having any experience in such matters, what is meant and intended by $800 for the first, $400 for the second, and $300 for the third best plan—all of which, however, to remain the property of the Board. The *joker* in such cases is an old familiar card, and cannot be played with impunity upon those understanding the game.

It may be that the San Joaquin County Board may be better than other Boards have been, and may be innocent in the error they have made. But if so, then they had better seek shelter by resigning, as the responsibility of what they propose to do must rest on them, whether they are acting and do act understandingly and intelligently for themselves, or are the servitors of others.

There have been too many of the unfair and unjust, and too few honorably and equitably conducted competitions for informed and competent architects not to feel aggrieved at the repetition of what, upon its face, is transparent in the case under review; and while the members of the Chapter recognize their entire inability to reform the abuses practiced in such cases, or to convince those who have happened or managed to be placed in position, to repeat another competitive wrong in the Golden State, they have the right, as architects, citizens, and men, to express in unmistakable terms their hearty disapproval of the method and manner of competition resorted to by the Stockton managers.

Mr. Sanders presented a drawing, delineating a most ingenious device applicable in testing the strength of timbers in various ways, utilizing a one pound weight in a given position to produce a pressure at another point of 2,000 pounds. The whole affair is simple and possible of being made useful in many ways. Mr. S. proposes to complete a working model of the device.

A committee was appointed to consider the Stockton competition matter, and report resolutions in reference thereto to a special meeting of the Chapter, to be held on the 14th inst.

"FAMILY colors" is a term familiar to English coach painters. In this benighted land of ours, under the new order of things, there is no distinction in "regard to color or previous form of servitude."

PURE linseed oil may be free from adulteration, yet unfit for use, because not properly refined, or freed from mucilaginous matter.

Transparent Colors.

IT is well understood that transparency in the proper sense is opposed to opaqueness. A transparent body—strictly speaking—suffers rays of light to pass through it, so that objects can be seen distinctly.

Air, water, and glass are examples of transparent bodies. The word, however, is sufficiently accurate for all practical purposes, and, although in the use of a transparent color we cannot see the ground color over which it is laid, still the groundwork exerts a modifying influence on the so-called transparent color, and the educated eye of the painter sees the ground color, or at least is conscious of its modifying effect on the superimposed color. There is a mutual support between the two, a giving and taking, the end sought being what painters term depth and richness, which cannot be gained by an opaque or heavy-bodied color.

An opaque color presents to the eye a compact film, while the beauty of a glazing color is due to its property of lying loosely, so to speak, and as varnish is employed the color is asserted by the transparent medium.

The painter may obtain transparent colors in crimson, scarlet, purple, blue, yellow, green, and brown, and semi transparent ones of less purity of tone; and as the may be used clear, over various grounds, mixed with one another, or modified by small proportions of opaque colors, every desired effect presented in nature may be correctly imitated, and the extreme richness be produced on surface work.

Carmine and the lakes, from cochineal and the madder root, supply all that is desirable in red.

Dutch pink, Italian pink, and patent yellow furnish the yellow tones, and ultramarine stands unrivaled as a blue.

Verdigris, emerald green, and green lake add to the list transparent greens of great beauty; and asphaltum has no equal among the browns. Raw sienna supplies a dull yellow, and burnt sienna a very valuable brown orange. The list might be somewhat enlarged, but those given comprise those which are most useful.

An opaque color may be rendered semi-transparent by using a large proportion of the vehicle to that of color, but such mixtures are comparatively of but trifling value.

Transparent colors are usually applied so as to retain the tone of the pigment, as it appears when moistened with oil or varnish. Thus scarlet, crimson, and purple-toned lake are painted over grounds of light and deep vermilion, Indian and Tuscan red, and as greater depth of color is desired, the change is made in the ground color. A very brilliant red is produced, by giving a thin wash of carmine over vermilion, and the same shade of carmine may be deepened through browns of varying depths, the limit being black. We may glaze lake over blue, or blue over lake, and produce purple and violet hues, but this is not generally practiced outside of striping and ornamenting. The red-toned lakes place at the disposal of the painter a wealth of warm glazing colors; in fact, nothing better could be imagined.

Next in order is yellow, which is termed an advancing color, and when free from the orange cast, and is glazed over white, or delicately tinted grounds, produces brilliance, without gaudiness.

Patent yellow gives clear, bright tones. Dutch pink and yellow lake, when "wet up," are of a dull yellow, and may be glazed over drab ground-colors, with good effect, but they are at present employed to add richness to what are termed sea, bottle, and olive greens. In this arrangement, the true color of the yellow is hidden, and its yellow tone interposes between the foundation color and the eye, a yellow medium thus producing transparency and richness that cannot be gained by any other means.

The soft, mild green, produced by English varnish over black, is well known to coach painters, and they know also, that the precise tone cannot be imitated.

A pure, dark, rich blue is supplied by ultramarine blue. It may be classed as more retiring than many shades of green that are popular, and yet blue is but little used for panels.

It is usually glazed over, dark lead color, and mixtures of Prussian or Antwerp blue and white.

But that is by no means the limit, as it may be successfully glazed over white, straw color, yellow, orange, etc., etc.

Verdigris is a perfectly transparent, bluish green, of exceeding beauty, and in former times was in constant use by coach painters, for the panels of heavy work.

Ornamental painters are now lavish of it on gold and silver leaf, and it has almost lost its place as a panel color.

Among the browns, asphaltum is the most transparent, and when painted over a dark groundwork, imparts richness, all its own.

Transparent colors are sometimes modified or changed by the addition of those that are opaque. Thus, burnt umber and yel-

low lake, or Dutch pink, produce a soft, warm brown; Prussian blue gives a rich green, and so on. The reverse of this process is to add a small proportion of the transparent to the opaque color, as lake added to Indian or Tuscan red, and to the strong-bodied, mixed browns. Of course this is in the line of economy, the purpose being to retain the body or covering power of the opaque color, and a tinge of richness from the transparent one. There is scarcely a limit to the variety that may be produced, and hence the skilled painter has no difficulty in bringing out new effects in colors.—*Painters' Magazine and Coach Painter.*

Mistakes in Building.

OWNERS are often sadly disappointed and grieved at their mistakes in the means adopted by them to avoid the expense of an architect, and obtain plans for their buildings. Sometimes they know, or become acquainted with some *honest mechanic*, to whom they are induced to intrust the whole matter of plans, specifications, and construction, only to repent when it is too late. The party to whom the proposition is made, elated with the splendid opportunity opened up to him, and full of conceit in his own abilities, uses all possible means to secure and consummate the arrangement, and plans are made—*and such plans!*—and the work progresses. Once under way, there is no stopping it, and step by step the owner discovers and realizes, one after another, grievous errors, which are difficult to remedy. And when the building is completed, he simply feels disgusted. Imperfect arrangement, poor construction, homely design, and incurable defects crowd upon him, as the reward of his folly; and regrets for his error haunt him day and night, but it is too late—the building is erected, and he must endure its defects.

But the first general dissatisfaction is primary and bearable, compared with after experiences in their various details. The plumbing work has, perhaps, been done by some tenth-rate man—some spoiler of good materials, who calls himself a "practical plumber," but who has not the slightest idea of what constitutes a really good job, not to say first class. Nor would the payment of ten times the value of the work done secure skillful workmanship at the hands of such men, for the simple reason that they do not possess, and therefore cannot practice, mechanical skill and abilities. And owners who employ this class of plumbers are unfortunate, indeed. But to continue, defects show themselves in all connections. Pipes, under the old free and easy rule, were put in of insufficient capacity, wastes entirely too small, and sometimes so cramped in making bends as to diminish their practical size one-half. "Tinker" instead of "wiped" joints; leaks at various points and places; wetting and spoiling ceilings and walls, and not infrequently carpets have to be torn up to escape the deluge. All this was followed by a still more serious defect—one affecting the health and lives of the occupants, *viz.*, imperfect or insufficient traps, pipe ventilation, bad sewerage, etc., resulting in the distribution of the vicious and poisonous sewer gases through the building, and as a consequence, the ill health and sometimes *premature death* of loved ones. The intended pleasant home is thus transformed into a mere fume-castle, a disease-breeding charnel house, not fit for human habitation.

All this is followed by continual repairing, tearing up floors, removing finishes to get at concealed places, etc.; and for all this the owner has been made to pay a good round price, amounting to more, as a rule, than it would have cost him to have secured a good building erected under the superintendence of a trustworthy architect. But bad plumbing work is not the only serious defect which so often occurs in such cases. The foundation is often wholly insufficient, and settling occurs, with any quantity of ugly cracks in the plastering. The structure is perhaps so poorly braced that the edifice trembles with every wind that blows. And when the rains fall, leaks are found at every exposed window and opening, and the roof itself yields its proportion of internal wettings. But we will not continue our enumeration of "bad things," as to do so would consume columns of space. Such cases are known to all architects, and many a "served him right" is indulged in, upon the principle that a competent physician laughs at the sufferings of a patient whose pains and agonies result from self-treatment or quack practice, and the educated lawyer smiles when his client gets himself into a *terrible fix* by intrusting his case to some pettifogger, or who tries to work out the intricacies and problems of law by his own self-conceived legal ingenuity.

UNCOVERING THE BASE OF THE SPHINX.—Since the 7th of January last, several hundred Egyptian fellaheen have been at work under the direction of Brugsch Bey (formerly commissioner to the Centennial Exhibition) removing the sand which has hitherto enshrouded the great Sphinx up to its very neck. By the end of this month the whole of it, amounting to over 20,000 cubic meters, will have been removed, and the grand old monument, raised by the Pharaohs over 4,000 years ago, will be again visible in all its beauty. A high wall is being built around it, to prevent the desert-sands from again submerging it.—*New York Mail and Express.*

THE ARCHITECT OF THE CELESTIAL KINGDOM.—The Mormons have just had another revelation from Heaven, which indicates that their prophet, the late Mr. Joseph Smith, is much more innocently employed there than he was on earth. They are building a big tabernacle at Provo, the second city in importance in Utah Territory, and the architect, a Mr. Folsom, was much perplexed about the entrances and exits, when (so he says) the Prophet Joseph appeared to him in a vision and straightened out the crookedness, remarking that architecture is his particular employment in the celestial kingdom. The Salt Lake *Herald*, a journal run by Mr. Caine, the Mormon delegate in Congress, observes:—

"As the arrangement is altogether novel, and a great improvement over similar edifices throughout the Territory, there is no reason for discrediting Mr. Folsom's somewhat startling assertion."

We recommend this seemingly well-attested vision to the consideration of the American Institute of Architects. We have heard that when the elevators were put into the Equitable Life Assurance Society's Building on Broadway, the contractor successfully consulted his deceased father or uncle, through a medium in Ohio, for the plan of them. If the Institute can make a permanent arrangement with the late Mr. Smith for professional services in difficult cases, it will be a great thing for American architecture. It is a pity that some way to communicate with him was not contrived during the building of our local monstrosity, the New York post-office. But it may not be too late even now to call him in for consultation about the Albany capitol.—*New York Herald.*

LIENS UPON PUBLIC BUILDINGS.—A decision of the supreme court involving the question of the validity of mechanics' liens upon public buildings, holds that liens of this character are contrary to public policy, and therefore void.

Parties contracting for the erection of this class of structures should therefore bear in mind the fact that the Lien Law affords them no protection in case of failure on the part of boards, and commission controlling constructive—public—works to pay the contract sum. There are methods by which collections may be reached, through suits, relief bills, etc., but these are always more or less vexatious, and often very expensive to the creditor.

Market Report.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60. " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Sepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
" T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 70
100 keg lots		2 75
Smaller quantities		2 80
PAINTS AND OILS:—		
Pioneer White Lead (local factory), 5 ton lots	6½c @	6½
Cal. Linseed Oil, raw (single bbl lots)		45½
" " boiled " " "		47½
Turpentine, per gallon		58
BRICK—California Building Description, soft, per 1,000		5 50
" " " red, " "		6 50
" " " hard," "		7 50

Building Intelligence.

B

Broadway, south side, bet. Gough and Octavia. Two two-story frames.
O.—T. C. Delamater.
C.—G. M. Salsbury.
$5,000.

Bryant, nr. Third. Two two-story frames.
O.—J. Curry.
A.—J. J. & T. D. Newsom.
C.—J. Adams.
$11,000.

Broderick, cor. Hayes. Two-story frame.
O.—J. Klopfer.
A.—H. Geilfuss.
C.—T. Von Borstel.
$3,600.

Broderick, nr. Hayes. Two-story frame, two flats.
O. and B.—R. S. Williams.
Day work.
$3,500.

Broderick, near Grove. Two-story frame.
O.—Mrs. Russell.
A.—McDougall & Son.
C.—Kerrigan & Lufkin.
$4,000.

Broderick, nr. Fulton. Two-story frame.
O.—H. R. Levy.
A.—J. Chadwick.
C.—H. G. Monrad.
$4,000.

Broderick, bet. Fulton and Grove. Two-story frame, two flats.
O.—H. Mayer.
A.—J. Chadwick.
C.—H. G. Monrad.
$4,500.

Bush, bet. Baker and Lyon. One-story frame.
O.—W. D. Nicholson.
C.—G. G. Gellespie.
$2,500.

C

Castro, cor. Fifteenth. One-story frame
O. and B.—T. Darcy.
Day work.
$2,000.

Castro, cor. Seventeenth. Two-story frame.
O.—D. Wulzen.
Day work.
$6,000.

Church, nr. Twenty-fourth. Additions.
O.—J. Duffy.
Day work.
$700.

Columbia, nr. Harrison. Additions.
O.—H. B. Russ.
A.—McDougall & Son.
C.—J. H. McKay.
$2,500.

California, bet. Buchanan and Webster. Additions.
O.—H. Erlunger.
A.—C. Kenitzer.
C.—H. Jackson.
$5,000.

D

Devisadero, nr. Oak. Two-story frame.
O.—J. Gatto.
C.—J. Sheppard.
$2,500.

Devisadero, bet. Hayes and Fell. Alterations.
O.—J. R. Dwyer.
A.—S. & J. C. Newsom.
C.—J. H. McKay.
$600.

Dupont, cor. Geary. Four-story and basement brick.
O.—A. M. Davis, of Davis Brothers.
A.—Copeland & Banks.
Carpenter work—Treadwell & Thompson, $13,685
Iron work—O'Connell & Lewis, 21,419
Sidewalk lights—Mahoney Bros., 4,081
Total, $39,185

E

Eddy, cor. Devisadero. Two-story frame.
O. and B.—F. Buckley, Jr.
A.—J. H. Humphreys.
$3,500.

Ellis, bet. Pierce and Scott. One-story frame.
O.—Mrs. Lang.
C.—W. Pluns.
$2,500.

Eighteenth, nr. Shotwell. Additions.
O.—F. Kruz.
Day work.
$6,000.

Ellis, bet. Webster and Fillmore. Two two-story frames.
O.—J. Levy.
A.—J. Marquis.
C.—J. H. Sheppard.
$6,500.

F

Fifteenth, bet. Castro and Noe. Two-story frame.
O.—J. Healing.
A.—R. Warren.
C.—J. M. Maher.
$4,800.

Fulton, nr. Scott. Two-story frame, two flats.
O.—F. Volkmann.
A.—Salfield & John.
C.—B. Dryer.
$4,000.

Fifteenth, nr. Market. Two two-story frames.
O.—H. Horstmann.
A.—Salfield & John.
C.—J. Klein.
$7,000.

Fifth, bet. Bryant and Brannan. One-story frame foundry.
O.—W. T. Garratt & Co.
C.—C. W. Kinsman.
$4,800.

Folsom, nr. Twenty-second. Five two-story frames.
O.—M. Kane.
A.—M. J. Welch.
C.—Barrett & Cremar.
$12,000.

Fulton, bet. Fillmore and Steiner. Two-story frame.
O.—
Day work.
$4,500.

Franklin, southwest cor. Post. Six two-story frames.
O.—H. Moffat.
A.—Curlett & Cuthbertson.
C.—P. Crichton.
$42,500.

Fifteenth, bet. Noe and Castro. Two-story frame.
O.—James Healing.
A.—George E. Voelkel.
C.—Jos. W. Maher.
$4,500.

Freelon, bet. Fourth and Fifth. Two-story frame school-house.
O.—Father Nugent.
A.—J. J. Clark.
C.—M. Lynch & Preston & McKinnen.
$9,500.

Fell, nr. Buchanan. Additions and alterations.
O.—Geo. Purlenki.
A.—H. Geilfuss.
C.—H. Meyn.
$3,500.

G

Guerrero, bet. Eighteenth and Nineteenth. One-story frame.
O.—J. J. Carroll
A.—P. R. Schmidt.
C.—Cormack & Elam.
$2,200.

Geary, cor. Taylor. Additions and alterations.
O.—F. Bruntz.
A.—J. M. Curtiss.
Day work.
$15,000.

Grove, bet. Larkin and Polk. Two three-story frames.
O.—A. Fassman.
A.—P. R. Schmidt.
C.—A. Norton.
$8,000.

Grove, nr. Polk. Armory Building.
O.—2d Regiment, N. G. of California.
A.—John J. Clark.
Day work.
$6,000.

H

Hickory, nr. Gough. Two-story frame. Two flats.
O.—W. Lang.
A.—Salfield & John.
C.—J. Klein.
$3,000.

Harrison, nr. Second. Additions.
O.—R. Mayers.
C.—J. C. Brown.
$2,000.

Howard, bet. Eleventh and Twelfth. Additions.
O.—J. Crowley.
A.—M. J. Welch.
C.—E. & F. J. Owens.
$2,000.

Harrison, cor. Twenty-sixth. One-story frame.
O.—John Ryall.
C.—J. O'Connor.
$1,700.

Harrison, bet. Twenty-fifth and Twenty-sixth. One-story frame.
O.—Mrs. Curran.
C.—W. McKeon.
$900.

Herriman, nr. Fillmore. Two-story frame.
O.—H. Easburg.
A.—W. H. Bayless.
C.—Schaffer & Co.
$2,300.

Haight, nr. Fillmore. Two-story frame.
O.—Mrs. C. Shaw.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$5,000.

Haight, nr. Pierce. Two-story frame.
O.—Dr. G. L. Fitch.
A.—A. J. Nicoll.
C.—R. M. Murry.
$4,200.

Hyde, bet. California and Sacramento. Two-story frame.
O.—A. Gros.
A.—Pissis & Moore.
C.—James Geary.
$6,000.

Haight, northwest cor. Pierce. Three-story frame.
O.—T. Lundy.
A.—T. J. Welch.
C.—J. A. Hayden.
$7,500.

Howard, bet. Fifth and Sixth. Alterations.
O.—B. Pasquale.
A.—B. E. Henriksen.
C.—W. H. Burt.
$1,250.

J

Jessie, bet. Eighteenth and Nineteenth. Three two-story frames.
O.—W. Rippon.
C.—J. Campbell.
$8,000.

Jackson, cor. Franklin. Two-story frame.
O.—W. H. Martin.
A.—Curlett & Cuthbertson.
C.—Brick work; B. Mitchell.
$2,100.

Jones, bet. Filbert and Greenwich. Two two-story frames.
O.—Mrs. B. Burke.
A.—Chas. I. Havens.
C.—Cremar & Barrett.
$5,300.

Jackson, northeast cor. Pierce. Three-story frame.
O.—A. N. Drown.
A.—Curlett & Cuthbertson.
C.—Mahoney Bros.
$20,000.

L

Lapidge, nr. Nineteenth. One-story frame.
O. and B.—F. C. Kleebauer.
Day work.
$3,000.

Lott, bet. Tyler and Turk. One-story frame.
O.—T. Kane.
C.—Hooks & Kane.
$1,200.

Lott, bet. Tyler and Turk. One-story frame.
O.—J. Hanley.
C.—B. Kennedy.
$1,000.

Lyon, bet. Tyler and Turk. One-story frame.
O.—B. Golding.
C.—J. J. McKeague.
$1,600.

Liberty, bet. Noe and Church. Two-story frame.
O.—M. Brook.
A.—Townsend & Wynekin.
C.—H. Cragenbush.
$3,500.

M

Market, bet Church and Sanchez. One and one-half story frame.
O.—J. B. Clott.
C.—Cormack & Elam.
$2,000.

McAllister, cor. Webster. Three-story frame store and two flats.
O.—Mrs. A. Muschler.
A.—C. Kenitzer.
C.—A. Miller.
$7,500.

Mission, bet. Twenty-first and Twenty-second. Two-story frame, two flats.
O.—G. W. Van Dorn.
C.—H. Inwood.
$5,000.

Minnesota, nr. Solano. Two-story frame.
O.—J. Money.
C.—C. E. Dunshee.
$2,000.

Mission, bet. Fifteenth and Sixteenth. Three-story frame.
O.—J. W. Lahey.
A.—M. J. Welch.
C.—W. F. Fitzpatrick.
$7,000.

Moss, bet. Howard and Folsom. Two-story frame.
O.—J. Moore.
A.—M. J. Welch.
C.—J. J. Dunn.
$3,100.

Montgomery Ave., cor. Union. Three-story frame and brick basement.
O.—L. Goedecke.
A.—W. Mossier.
C.—J. C. Classen.
$12,000.

Market, near Jones. Two-story brick.
O.—Brixotto & Silverman.
A.—Copeland & Banks.
C.—Treadwell & Thompson.
$21,185.

Market, bet. Eighth and Ninth. Three-story frame.
O.—L. Haber.
A.—C. Kenitzer.
C.—C. F. Rupper.
$12,000.

Market, cor. Franklin.
O.—J. Nightingale.
A.—A. J. Barnett.
Plastering—John Donovan, $4,350
Plumbing—J. K. Prior, 4,576
Total, $8,926

Market, cor. Fourth. Five-story and basement brick.
O.—J. C. Flood.
A.—A. Laver.
Carpenter—C. C. Terrill, $102,000
Cast iron—R. Llewellyn, 49,000
Wrought iron—Sims & Morris, 45,000
Grading—A. C. Buckman, 5,500
Brick work—McGowan & Butler, 48,000
Total, $249,500

Mission, cor. Twenty-fifth. Three two-story frames.
O.—C. Mangels.
A.—Chas. I. Havens.
C.—D. B. Spangler.
$9,000.

Mission, bet Twentieth and Twenty-first. Three-story frame.
O.—H. H. Headley.
A.—P. R. Schmidt.
C.—A. Klahn.
$6,000.

Market, bet. Jones and City Hall Ave. One-story brick.
O.—W. Heller.
A.—P. R. Schmidt.
C.—R. Mitchell.
$3,000.

Mason, nr. Filbert. Three-story frame.
O. and B.—L. Wessman
Day work.
$5,000

Montgomery Ave, cor. Francisco. Three-story frame.
O.—J. Cano.
C.—M. F. Harley.
$3,500.

N

Noe, nr. Market. Two-story frame.
O.—P. Flood.
C.—Dutton & Kennedy.
$2,000.

Noe, nr. Sanchez. One-story frame.
O.—J. H. Carah.
A.—J. J. Clark.
$3,500.

Ninth, cor. Harrison. Two-story frame.
O.—M. Bohanan.
A.—H. D. Mitchell.
C.—C. Orr.
$5,000.

O

Oak, bet. Fillmore and Webster. One and one-half story frame.
O.—W. Lile
C.—H. G. Monrad.
$2,200.

Oak, bet. Fillmore and Webster. Two-story frame.
O.—G. Gellisphee.
C.—Martin & Maguire.
$2,500.

Octavia, cor. O'Farrell. Two-story frame.
O.—G. Cohn.
A.—P. R. Schmidt.
C.—Mahoney Bros.
$10,500.

O'Farrell, near Buchanan. One-story frame.
O.—J. J. Brady.
C.—Bateman Bros.
$2,000.

Durham System of House Drainage.

STANDARD WROUGHT IRON STEAM PIPE, Special Fittings, Carefully Protected from Rust, SCREW JOINTS, and only where NECESSARY for Branches, HAND-HOLES at Bends, supported ONLY at Bottom, therefore not affected by SETTLEMENT of Walls and Floors; in fact, a PERMANENTLY TIGHT SANITARY SOIL PIPE.

SEND FOR PAMPHLET. CALL AND SEE FULL SIZE MODEL.

WM. T. BLUNT, C. E., 413 Montgomery St., San Francisco.

P

Pacific, cor. East. Two-story frame.
O.—Geo. Livingston.
C.—W. H. Wharff.
$5,700.

Protrero Ave, bet. Twentieth and Twenty-first. Two one-story frames.
O. and B. C. E. Dunshee.
Day work.
$2,000.

Post, nr. Scott. Two-story frame.
O. and B.—J. C. Wier.
Day work.
$4,000.

Pine, bet. Broderick and Baker. Two-story frame.
O.—J. Cassidy.
A. Chas. L. Havens.
C.—M. W. Kain.
$5,200.

Pierce, bet. Tyler and Turk. Two-story frame.
O.—M. Dooley.
Day work.
$4,000.

Pine, cor. Baker. Six two-story frames.
O. and B.—B. F. Norris.
Day work.
$10,000.

Post, bet. Broderick and Baker. Two one-story frames.
O.—H. Johnson.
A.—E. W. Tifft.
Day work.
$3,000.

Pacific, nr. Fillmore. Two-story frame.
O.—
A.—W. F. Smith.
C.—G. Hussy.
$4,000.

Park Ave nr. McAllister. Two-story frame and brick basement.
O.—California Title Insurance and Trust Co.
A.—W. F. Smith.
Carpenter Gray & Storer.
Brick work—R. Mitchell.
$6,000.

R

Ridley, bet. Valencia and Guerrero. Two-story frame, two flats.
O.—D. O'Neill.
A.—R. Warren.
C.—Chase & Taggart.
$4,000.

Ridley, cor Guerrero. Two-story frame.
O.—O. W. Nordwell.
A.—H. Geilfuss.
C.—W. F. Kern.
$5,500.

Rincon Place, cor. Bryant. Alterations.
O.—H. Diedrich.
A.—J. J. Clark.
C.—J. J. Dunn.
$3,000.

S

Silver, nr. Fourth. Two-story frame.
O.—M. Mepehtust.
A.—W. C. Hoagland.
C.—I. Selander.
$2,000.

San Jose Ave, nr. Twenty-seventh. Two-story frame.
O. and B.—J. M. Comerford
Day work.
$3,800.

San Jose Ave, nr. Duncan. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,700.

Seventeenth, nr. Sanchez. One-story frame.
O.—Jas. Wolf.
A.—Huerne & Everett.
C.—W. J. Bownrigg.
$2,000.

Sutter, cor. Laguna. Additions.
O.—P. N. Butt.
Day work.
$1,600.

Stevenson, bet. Eighth and Ninth. Two three-story frames.
O.—L. Haber.
A.—C. Kenitzer.
C.—C. F. Ruppee.
$8,000.

Sacramento, nr. Stockton. Alterations.
O.—H. Rothschild.
A.—J. E. Wolfe.
C.—J. Smith.
$700.

T

Twenty-seventh, bet. San Jose Ave. and Guerrero. Two two-story frames.
O. and B.—J. M. Comerford.
Day work.
$4,000.

Twenty-third, cor. Bryant. Additions.
C.—G. Rottanger.
Day work.
$5,000.

Twenty-second, bet. Valencia and Guerrero. Two two-story frames.
O.—Dr. M. A. Cachot.
A.—B. E. Henriksen.
C.—T. Steel.
$10,950.

Twenty-sixth, cor. Harrison. Two-story frame.
O.—John Ryall.
A.—M. J. Welch.
C.—J. O. O'Connell.
$1,800.

Twenty-first, cor. Howard. Two-story frame and brick basement.
O.—H. Lwieg.
A.—H. Geilfuss.
C.—F. Klatt.
$16,500.

Thirteenth, cor. Harrison. Two-story frame.
O.—Geo. Musterson.
A.—John J. Clark.
Day work.
$4,000.

Turk, bet. Taylor and Jones. Additions.
O.—M. H. La sak.
A.—J. M. Curtiss.
C.—C. B. Green.
$10,000.

Turk, nr. Franklin. Additions and alterations
O.—F. Bramah.
C.—B. Pfarrer.
$6,000.

Taylor, cor. O'Farrell Two-story frame, four flats.
O.—L. M. Starr.
A.—S. & J. C. Newsom
C.—D. B. Spangler.
$12,000.

V

Van Ness, cor. Ash Ave. Four two-story frames.
O.—J. Rich.
C.—Townsend & Wyneken.
C.—C. H. Plummer.
$20,000.

W

Waller, bet. Buchanan and Webster. One-story frame.
O.—Thos. Magee.
A.—Curlett & Cuthbertson.
C.—W. E. Cummings.
$2,000.

Webster, bet. Herman and Waller. One-story frame.
O.—L. Goodchild.
A.—Salfield & John.
C.—D. B. Spangler.
$1,400.

Washington, bet. Octavia and Laguna. Additions and alterations.
O.—Wm. Dunphy.
A.—T. J. Welch.
C.—J. Blake.
$12,000.

Y

York, nr. Twenty-third. Additions.
O.—M. L. O'Brien.
A.—G. F. Aston.
C.—H. Wren.
$1,200.

MISCELLANEOUS.

Los Angeles—Main cor. Court. Three-story and basement brick. O., Maxwell & Morra; C., Curlett & Cuthbertson; $20,000. Two-story frame. O., W. H. Mansfield; C., C. S. McNally; $6,000. Main cor. Laurel. Two-story frame. O., Dr. Custer; C., S. H. White; $5,000.

Napa—Caymus. Frame church. O., St. Johns Catholic Church; A., W. H. Corlett; C., M. Vandellur; $5,000.

St Helena and vicinity. Two one-story frames. O., F. F. Barrett; C., Mixon & Son; $2,000. Two-story frame O., W. J. Kibbier; C., Bassett Bros.; $7,000. Two-story and basement frame. O., M. J. Blanchar; C., Mixon & Son; $6 000. One-story cot; tage. O., Thos. Erwin; day work; $900. Three-story wine cellar. O., John Benson, mason, J. Deluchi: carpenter, Mixon & Son; $10,090. Two-story frame. O., D. R McLennon; day work; $1,600.

San Jose—Market cor. San Fernando. Alterations to brick building. O., Rev. N. Congrato; A., Jacob Lenzen & Son; C., R. Summers; $1,250 San Fernando, opp. San Pedro. O., Horticultural Society; A., Jacob Lenzen & Son; C. F. Davis; $6,000. On the Alameda. Alterations. O., J. Ivancovich; A., Jacob Lenzen & Son; C., H. Skow; $1,300. Second, bet. San Carlos and San Antonio. Two two-story frames. O., J. Hart; A., Jacob Lenzen & Son; C., R. Summers; $4,610. Santa Clara cor. San Fernando. One-story frame. O., Mrs. Fairchild; A., Jacob Lenzen & Son; C., S. W. Lanning; $1,085. On Alameda, bet. San Jose and Santa Clara. Two-story frame and brick basement. O., W. S. Clark; A., Theodore Lenzen; day work; $55,000. Chapman & Davis Tract. One-story frame. O., A. Oswald; A., Jacob Lenzen & Son; C., F. Davis; $1,250. Vine, nr. San Fernando. One-story frame. O., Louis Pfau; A., Jacob Lenzen & Son; C., C. Drew; $1,600.

San Rafael Two-story frame. O., D. H. Whittenmore; A., W. H. Wharff; $3,400. Two-story frame. O., —Sweeney; A., Pissis & Moore; C., L. Frichette; $11,500.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:

U. S. Government, four sets officers' quarters, Presidio Res., S. F.; H. F. Bruns, cor. Geary and Taylor, S. F.; J. C. Weir, Post, near Scott, S. F.; John MacKenzie, cor. Grove and Broderick, S. F.; L. H. Sweeney, San Rafael; R. B. Gray, cor. Pacific and Van Ness, S. F.; Raymond Hotel, 1,600 windows, Pasadena, Cal.

ENGLISH AND AMERICAN VENETIAN BLINDS

IMPROVED.

The only Perfect Venetian Blind in the market. For samples, prices and information, address,

EDWARD B. HINDES, 330 Pine St., Room 55.

PACIFIC COAST AGENT.

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Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., JUNE 10, 1886.

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Summary of Building Activities.

THE building trades have been fairly active during the past thirty days, with results as shown by our summary of facts and figures, as follows:—

Engagements, frame, 82	Cost,	$346,379
" brick, 1	"	10,000
Alterations and additions, 12	"	45,160
Total for the month, 95	"	$401,539
FOR THE SAME PERIOD IN 1885.		
Engagements, frame, 126	"	$469,100
" brick, 2	"	72,000
Alterations and additions, 20	"	60,810
Total for the month, 148	"	$601,910
Showing a decrease for 1886 of—Engagements, 53	"	200,371
First Quarterly Report for 1886—Engagements, 252	"	$1,359,532
Second Quarterly Report for 1886—Engagements, 418	"	2,127,101
Total for first six months, 1886—Engagements, 670	"	$3,486,633
First Quarterly Report for 1885—Engagements, 291	"	$1,967,750
Second Quarterly Report for 1885—Engagements, 463	"	2,299,625
Total for first six months in 1885—Engagements, 754	"	$4,267,375
Showing a decrease for the first s x months in 1886 of—Engagements, 84	"	$780,742

In view of the fact that the preceding year was one of extraordinary activities, the falling off, as shown by present report, should not be considered discouraging; for the movements in building operations are fully up to the requirements of the times, and a greater rush would simply add to the number of houses to rent, which, while not numerous, are sufficient to suggest a little moderation for the present.

The demand for good draughtsmen during the month has been large, owing to the competition for the Court House and jail at Stockton, which required a large force to compile ten sets of plans for a single building, three-fourths of which labor was simply thrown away, not a farthing being paid for the services rendered, beyond the paltry sum of premiums, insufficient in amount to compensate for a single set of plans, even had one architect received the entire amount. But with the *divis* and expenses deducted, the actual balance to the premium parties will be but little, and the rest of the competitors, who were silly enough to waste their time in efforts to secure results not assured upon merit, can only console themselves with the glory of the attempt, and hold their conceptions as the reward of their folly, and be ready for the next move made by some Board of Supervisors to humbug ambitious aspirants into another farcical competition, which nine-tenths, if not forty-nine-fiftieths, of all general competitions are.

To Our Friends.

THE proposition announced in another part of this issue, offering to *dispose of our entire interest in this journal*, will be a surprise to very many of its readers, and, in view of the fact that *it is*, and *is recognized* as, one of the journalistic successes of the period, it will naturally lead to inquiry as to the reasons for the course proposed.

We answer: It is a conclusion most reluctantly reached; *but there is a period in human life when nature calls for relief from* EXCESSIVE *cares and labor; when ambitions should yield to the restful peace of contentment with that which has been accomplished.*

More than is meet for one to attempt, is not wise; nor can any one divide between two pursuits the time required for one, and do either well.

This we realize, and therefore propose to relinquish our editorial relationships, and devote ourselves exclusively to the duties of our profession as practicing architect, with the earnest hope and desire that those who succeed us may, in every way, be fitted and qualified for the responsible duties of directing and managing its future successfully, profitably, and alike creditably to themselves and to the class journal literature of the United States.

The multiplicity of personal engagements, and other drawbacks and interruptions in our editorial work, have imposed UNDUE and EXCESSIVE mental and physical labors, and prevented the utilization of the

NUMEROUS POSSIBILITIES OF THE SITUATION,

Which are practical, accessible, and important, and rightly manipulated, sufficient in themselves to furnish an almost exhaustless amount of matter and fact for future publication.

A change of management will also remove all the objections, prejudices, and jealousies more or less existing among architects, builders, and others, by reason of the fact of its being published by a *practicing architect*. For while it has been edited and conducted upon the broadest and most generous and liberal principles, consistent with its reputation as a representative journal, carefully avoiding and excluding all matter and references which could—in reason, without torture or forced construction of plain language, and a total disregard of fair interpretation of intended meanings—be charged as designed for personal, *professional benefit*, still there are those who claim to be able to trace the personal feature in every issue, from which they draw the conclusion and advocate the theory that a practicing architect in the chair editorial, no matter what the qualifications, is improperly seated.

We have realized and do realize the delicacy of our position in this regard, and have often restrained the free use of our pen in directions where to have done so would have been attributed to wrong motives on our part.

This restraint need not exist under a new administration, and we hope our successor will exercise his fullest liberty without fear or favor; for in California, of all other places, those who read journals of any class, like fire and force in the lines they read, eloquence simplified to the common understanding, and information and instruction plainly and clearly expressed.

AS AN INDIVIDUAL ENTERPRISE,

It offers strong inducements for investment, as, in the hands of right parties, it can be made

THE VERY BEST PAYING CLASS JOURNAL PUBLISHED WEST OF THE ROCKY MOUNTAINS.

And the fact is beyond all question, that a journal of its kind is an *absolute necessity in San Francisco*, to represent all interests in any manner pertaining to the architecture, erection, decoration, furnishing, and completion in every detail, of buildings of every class, together with all mechanical, laboring, manufacturing, and producing interests.

ITS PRESTIGE.

Occupying the field alone during the past eight years—the quarterly of 1879 included—has gained for it a

SUBSTANTIAL AND PERMANENT ADVANTAGE

Over all possible competition. And its most favorable recognition by the class journals of the United States and Europe has secured to it a widely spread popularity and prominence, which time, energy, and money alone could secure. The journal and

all its interests are entirely free and clear from all indebtedness and incumbrances.

Its future in the hands of an *incorporated company of architects and builders, collectively or separately, or of individuals seeking investment, with proper editorial and managerial appointments, can be made to yield a large return upon the sum required in its purchase and improvement;* particularly so, if, combined with the journal enterprise, there is a complete outfit and presses added for general and job printing, in addition to the journal work. We have thus far continued the printing, etc., of the journal by contract, but have frequently considered favorably the arrangement above suggested, and declined its adoption solely upon the ground that such a course would augment cares and responsibilities of which we have had more than we wish to continue in the journal work alone, in addition to our numerous architectural engagements and duties.

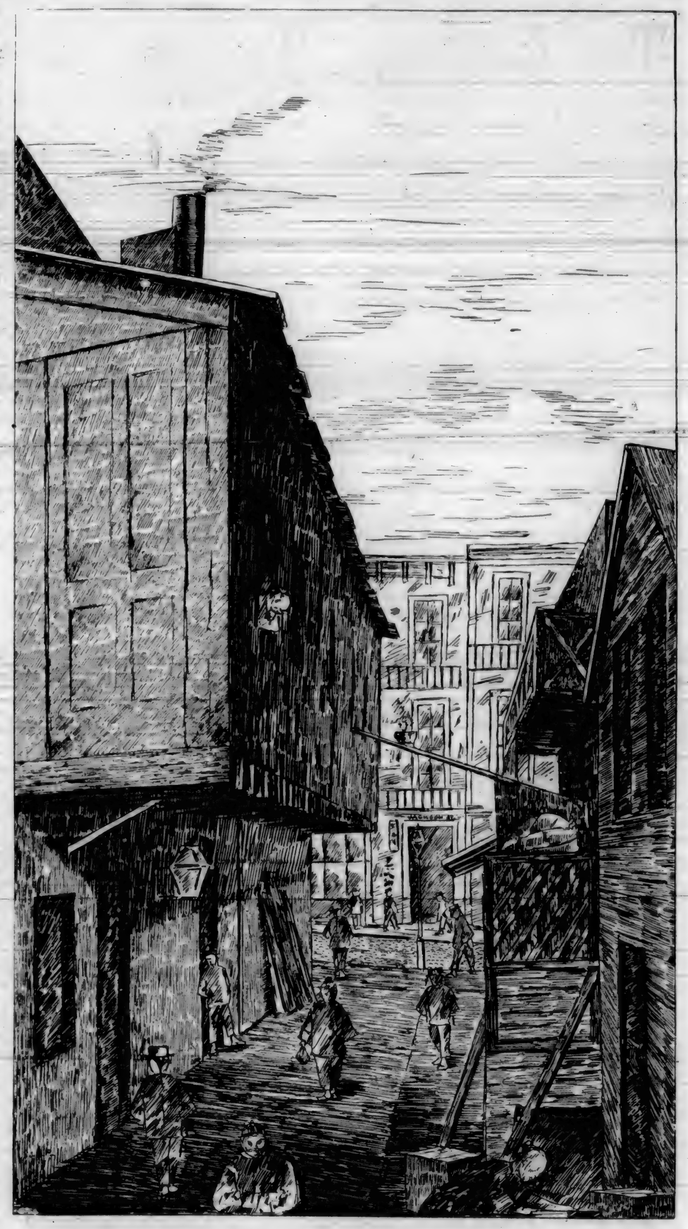
It is but seldom that an interest of so great value and assured prospects is offered for sale, but, feeling the twofold weight of professional and editorial responsibilities, it is a personal duty to ourselves to be content with the results of the former.

Redwood vs. Brick Foundations.

IN the "early days of California," redwood was considered to be a suitable and lasting material for foundation purposes, and was almost universally adopted. Many stories were related in regard to its durability, among which was one, that a certain post then (1851–52) standing in a "perfect state of preservation" at Santa Clara, had been planted by "the fathers, a hundred years ago." The general impression prevailed that redwood would last for all time, and nothing better was necessary for foundations, as a rule. But experience has demonstrated the fallacy of these first formed opinions, and shown that the redwood of California yields to the processes of decay when placed in the ground, varying only in rapidity of decomposition, according to the special characteristics of the earth, sand, or clay formation in which it is bedded, and the sapless quality of the wood itself. The black-heart redwood is far preferable to the softer, more puncky and fibrous wood, but for many years it has been difficult to obtain the better kind in quantities, without selecting and extra cost. So that while some of the earlier put in foundations, where the better quality of redwood was employed, have lasted well, the material generally used at the present time, and for a few years back, is from upland growth, and will not last one-half as long, particularly with the common practice of the day, not to spend any time in selecting the really good pieces, and rejecting the bad, but to "take it from the pile," using all that does not possess conspicuously bad defects; and contractors generally are not critical in their judgment on this score. When a load of lumber is sent to a building, the next most important question is its speedy consumption in the work of construction, which might be retarded if portions of the materials were set aside, and a delay occasioned until a substitution could be effected. So, generally the good and bad go in together, either and both of which answer all purposes to the fulfillment of the contract, and the matter of last and decay is left with the owner, as a matter to be attended to as after circumstances may develop.

The old wood foundations of very many buildings have been substituted by brick, and many more will have to be. Some very good structures rest on wood foundations, but the progress of decay and settling is such that changes are necessary. The removal of the poorer for the better and more durable is always expensive, and more or less damaging to the edifice. The difference between wood and brick is so small that no prudent man who is not pressed in circumstances is wise to build on wood foundations.

There are, however, in San Francisco, localities where either redwood or Oregon pine will last for generations, if not forever. Along the filled-in city front, where timber is bedded below the tide level, rot does not occur. Illustrations establishing this fact can be seen at the office of this journal, one of which is of Oregon pine, taken from the foundation of an old brick building which stood on the northeast corner of Battery and Sacramento Streets. It was placed in the ground in 1852, as planking under the walls of the building, and removed in 1875 for the erection of a new edifice. It is not only apparently as sound as ever, but exhibits signs of petrification, and perhaps would have maintained its soundness for a hundred years or more, if it did not by that time assume an everlasting character. Two other samples, one of redwood and another of Oregon pine, taken from the old bulkhead built on the line of Market Street, below First, on the property of Mark Sheldon, Esq., as nearly as can be ascertained, built in 1852, and removed in 1885, show no sign of decay. Each of these were, however, buried in the mud, at or below tide water. The fourth example, in contrast, is from a foundation renewed under a building erected on Sacramento Street, above Franklin. The house was built in 1874, and when re-underpined, in the latter part of 1878, the redwood taken out was more or less badly rotten, and, as may be seen by the sample, portions of the mudsills so thoroughly decomposed that chunks of it can be crumbled up in the hand like so much dry earth, scarcely sufficient fibrous tenacity remaining to resist the gentlest touch. From the foregoing, it is proper to advise that owners who desire substantial and lasting buildings should in all cases adopt brick, stone, or other indestructible material for foundations.



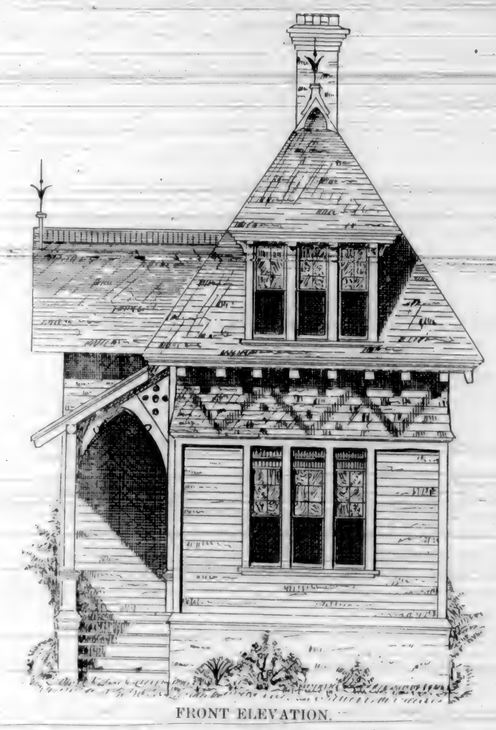
St. Lewis Alley north end.

St. Lewis Alley south end.

Interiors and Furniture.

EDITOR CALIFORNIA ARCHITECT: It certainly seems to me that persons who contemplate building homes for themselves will do well to consider thoroughly all of the points and features, present and prospective, before giving orders for their plans. Now, we all know that the general course pursued is to consult an architect, tell him what kind of a house is wanted, how much money is to be expended, and if these primary considerations are all satisfactory, the order is given to proceed with the plans. The house is finally erected, but as the total cost may have exceeded first expectations, economy becomes necessary in the fitting up of the interior, and the furniture and elaborations have to be curtailed. Now, it certainly seems to me that most people display a want of good taste and judgment in profuse exterior finishes, and exhaust their means in that which possesses no practical value as far as the real comforts of home are concerned, as compared with the pleasures to be derived from a due consideration of, and provisions for furniture and internal finishes. But few owners consider these points, or consult with their architects as to what furniture and finish will best suit certain rooms. This matter they reserve to themselves, and hence great inconsistencies exist in many fine edifices. Now, in my opinion, it is important that more attention should be paid to interior fittings and furniture. The greater portion of the leisure hours are spent with the family around the fireside, and therefore it is highly important that the surroundings should be pleasing, which cannot be when there is a lack of harmony in those things which the eye must see and the hands handle. The furniture and decorations should be suitable for the respective rooms. Among the first thoughts in connection with the building of a home should be the matter of furniture, so as to secure a final result satisfactory in every particular, which can be obtained by proper attention in the premises. Often the pleasure excited by exterior appearances receives a check upon the survey of the internal finishes and furniture. The confusions of styles, and absence of appropriateness, diminish the final admiration of all parts. The trims and finishes of the rooms may be in the Gothic style, but the furniture may be of no style, or a medley of all styles

—the chairs being, perhaps, Renaissance, the table no particular style, the mirror Grecian, the mantel Egyptian, and the carpet some gaudy thing without any particular appropriateness or design. Too much care cannot be exercised in these and all other particulars, so as to insure harmony and appropriateness. The matter of hardwood finishes is one which adds much to the comforts of home where there is an appreciation of the beautiful and elegant, while the extra cost to indulge in them, in certain rooms, is not so great as to preclude their use where absolute restriction in outlay does not exist.



FRONT ELEVATION.

But many men erect homes which they admire, but have no conception of the style of its architecture. The only thing clearly understood by them is, that the front door is the principal entrance to the building. But the effect of the interior finishes and furniture is a different thing. The commonest mind is enabled to distinguish between interior harmonies and distracted taste, or no taste at all. Consistency and harmony in these particulars enlarge and increase the pleasures of home; for where all the parts harmonize, pleasurable results follow, inspiring the sentiment, "there is no place like home."

It is not necessary to expend large amounts of money to accomplish the suggestions herein made. As a rule, furniture can be obtained made to order from original designs, at about the price that similar things would cost in any first-class establishment ready made, and it would certainly be more satisfactory.

A word or two on the subject of finishing may not be amiss. Take for instance the parlor. It should present a cheerful and pleasing appearance. The trim may be in some bright-colored wood, say butternut, prima vera or cherry, combined with black walnut; or, if preferred, make it all black walnut. The furniture should show quiet taste, simple in construction, but strongly made. If carvings are added they should be from natural subjects. In fact, a piece of furniture should be like a book—something from which to educate the mind. The carpets should be of quiet colors, harmonizing with the curtains and hangings. The hall, if laid in hard wood, say two inches wide, with a narrow carpet, presents a fine appearance; and if the hat-rack is placed in a recess, removes an obstacle which generally exists in halls; and if doors with cut or colored glass inclose the same, so much the better. A dining-room with floor of hard wood, either continuous lengths of narrow widths or in ornamental figures, would obviate the expense of carpets, except the cost of a rug in the center for the table, which, with neatly-paneled wainscoting, paneled ceiling, and trim of openings in butternut or oak, or other suitable hard wood, make a neat finish. The side-board should be built in a niche, and in my opinion should be a picture of the building and part of the room. The table should be of proper size, with the legs well under it, so that those sitting around it would not be required to hold a table leg between their knees.

Now, my reader, let me remark, that when you are ready to build, take the advice of your architect in reference to the interior finish and furniture of your building. When you are sick, you send for a physician. When you want to build, consult an architect; and in doing so, consult him in everything, for his studies and experiences qualify him to be your best adviser.

W. D. B.

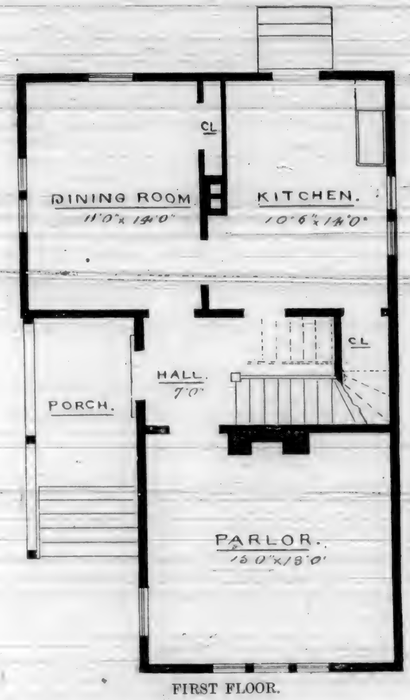
Honorable Emulations.

PRACTICED in the higher and more elevated senses, free from all the belittling influences of the human mind, they are proper and productive of good, and tend to higher developments, and greater and grander results to mankind. They are simply the result of mind upon mind, thought feeding thought, and he who produces the greater should honor the source from whence his thinking came. For the larger part of the brain, scientific and mechanical developments of the nineteenth century, derive their source of origination in something that has been suggested, produced, or expressed in ages gone by. There is scarcely anything of recent production which does not find its *thought inception* in the past; as the steam, with its ten thousand applications and uses, came to light through the humble teakettle, and the prolific brain of a boy. And those who have emulated and improved upon those first thoughts, are indebted to a very insignificant and humble origin.

The proudest achievements of the present day are largely the borrowed ideas of the past. Perhaps the origin in many cases may be very obscure, and their obscurity may almost obliterate identity, yet the germ has been planted in years or centuries gone by, and as still and quiet inspirations have come to men of later days, from inconceivable sources, their minds have enlarged and expanded into greater achievements, whether scientific, intellectual, or mechanical, commanding and receiving the admiration of the world. The world is a great school-house, and all men are scholars, some bright and apt to learn, while others are dull and slow, groping along in mediocracy and scaling down to the lower grades of humble life, and some sinking into the depths of vice and degradation. The apt scholars grasping, mastering, and perfecting the more difficult problems, bringing forth hidden treasures of mind and matter, and making the world wiser, brighter, and better. As the rains from the clouds descend to refresh, invigorate, and fructify the earth, causing the seed planted in the soil, the trees and flowers, to grow and mature, and produce other seed and fruit, so do good and bad, wise and unwise thoughts spread broadcast before the world give birth to other thoughts, similar in kind, and the fields of good and evil, advancement and retrogrades, are replenished and enlarged by the daily developments of life.

PERSPECTIVE SKETCH.

Personal glorifications too generally enter into results produced and laudations are poured upon those who have simply improved upon and perfected results, from the conceptions of some other and perhaps humbler minds to whom the birth right properly belonged. As Jacob, through his mother's device, secured to himself the birthright of Esau, so have thousands since that time secured to themselves credit and praise for results produced, which would not have been conceived or reached by them, had not the origin existed in other quarters. Still, honorable emulations are proper, and the world and society are improved and rendered wiser and better by the opening up of new, and the onward march of *improved thought*. And while present generations rejoice in their attainments over the past, they are furnishing ideas which will be emulated and improved upon in the future, by those who will hereafter perform their part in the great drama of life; and with increased learnings and experiences as age after age rolls on in the great volume of time, other and greater accessions will be made to the record of mind develop-



FIRST FLOOR.

ments, and one after another will appear on earth, simply to emulate, and still further improve upon the past and present, adding link to link, lengthening the great chain of human thought, results and developments, the ends of which will never meet, until human life shall cease, and the great family of mankind pass from earth.

REPORT OF COMMITTEE

APPOINTED BY

San Francisco Chapter, A. I. A.

TO CONSIDER AND REPORT UPON THE MATTER OF

PLAN COMPETITION

FOR THE PROPOSED

STOCKTON COURT HOUSE AND JAIL.

San Francisco, May 14, 1886.

To the officers and members of San Francisco Chapter, American Institute of Architects:—

YOUR committee to whom was referred for consideration and report, the matter of competitive plans invited by the Board of Supervisors of San Joaquin County, State of California, in connection with the erection of a public building to be located in the city of Stockton, and for the purposes of Court House and county jail, respectfully report and submit the following:—

That the invitation issued to architects by said Board to submit plans for said building, contains provisions and features recognized by the profession generally as objectionable, and subversive of all right rules which should govern in all such cases.

That the conditions and propositions are inequitable, and therefore unjust; that the sums proposed as awards are insufficient—the cost of the building considered—and not so apportioned as to be an inducement to qualified and competent men, to employ their time and professional skill in the preparation of plans; that the apparent arrangements are such as to invite and make possible the practice of manipulations, the like of which, in many well-known instances have wrought great injustice upon architects who have relied *wholly* and *only* upon the merits of their plans for success; that the retention by the Board of all plans receiving awards of premiums, should receive the unqualified condemnation of San Francisco Chapter, and all intelligent architects individually, as a suspicious means, through and by which great injustice may be, and in other cases have been accomplished, by the controlling powers selecting any one set of plans to receive the first premium, whether meritorious or otherwise; thus preparing the way for placing the work in the hands of preferred parties, and then in execution adopting in part or as a whole, either of the other premium plans, as the basis of construction; thus depriving their authors of the professional credit and financial profits which should accrue to them.

Such things are both supposable and possible, because known to have been so often repeated, that a large majority of qualified architects refuse to participate in any class of competitions; the fact being recognized in professional circles, that fair and just results are seldom meeted out to participants.

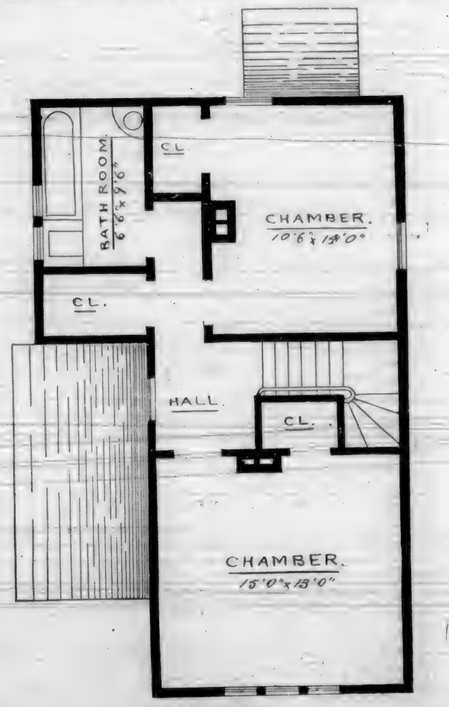
The propositions tacitly expressed, to terminate all architectural services with the adoption of plans, is unjust. If this is adhered to, then the all important and material work of details and construction must be entrusted to some favored party, who may or may not be competent. Whether this is intended as challanging the integrity of architects, or is provided to serve special purposes, it is a course which, if persisted in, must and will militate against the best interests of the commonwealth supplying the funds for construction. And if the proposition is not suggested in good faith, with full intent to carry the same into practical execution, then its present intimation is misleading and deceptive.

The Board certainly has erred in withholding the assurance of full architectural services and fee to the successful competitor. The right of an architect to furnish details, and supervise the construction of buildings planned by him, is one recognized and held throughout the profession, universal—as sacred. It cannot be questioned that the man who conceives and matures thought and study into practical illustrations on paper, is the better and only one fully qualified to exemplify such thoughts in practical execution. Plans are but outward expression of general ideas in tangible form—the germ of proportions and fitness lying in the development of the unexpressed thoughts, made complete through the harmonies and combinations in the details.

The need for the services of architects in planning important edifices, is universally conceded, in and by the fact that such services are sought in all such cases, as an indispensable requirement—Stockton not excepted; and so sought because of their value and materiality. Then why these studied efforts to withhold from those whose services and skill are admittedly so essential, fair, full and right compensation for services performed?

An important omission also appears in the entire absence of any provision for an impartial and intelligent arbitration of the merits of the respective plans. While this should be done by experienced and reliable men, fully qualified by practical, architectural and mechanical experiences—men entirely disinterested and free from all bias and personal or local interests or feelings,—such determination, and the rights and equities of the competing parties are left contingent upon the judgment, whims, and caprices of the honorable Board, and such influences as may be brought to bear.

It further appears that this is another of the numerous cases in which



SECOND FLOOR.

the attempt is being made to procure three sets of plans for a public building, at a price far below the rates of charges established by architectural societies, and the usages of the profession the civilized world over—for a single set—total cost of building considered; in addition to the large wastage of time and labor by those whose chances of any award is exceedingly remote and doubtful.

While it may not be, and confessedly is not within the province, power, or influence of San Francisco Chapter, nor any number of chapters combined, to define and dictate rules, regulations, and methods of procedures in matters of competition for any class of building, nor to prescribe and regulate conditions, fix rates of compensation, nor determine the rights and privileges that shall be held as binding in such cases, we may, as a Chapter, and as individual architects, express our hearty disapproval of practices and procedures which are calculated to be, and in numerous well-known instances have, been so prolific in impositions upon our fair and equitable rights, that the echoes of favoritism, tricks, schemes, plots, and manipulations are, and reasonably may be pre-supposed in every case where general competitions are invited.

The intimations outlined may appear comprehensive, and to some questionable; but the facts known in architectural circles are such that we feel warranted in the assumption, that the reasonable and possible proofs fully sustain all and more than is intimated in this report.

We further recommend that no member of this Chapter, nor any reputable practicing architect in this State, countenance or participate in the competition in question, nor any of like objectionable character that may hereafter be offered for general competition.

In conclusion, we claim that, as a Chapter, and as individual members of an honorable profession, we have just and honorable rights which should be respected by those desiring our professional service; that the intelligence, knowledge, skill, and proficiency enjoyed by all qualified architects, are the results of arduous study and earnest devotion to their high calling, and as a Chapter, and as individual members, we would not be just to ourselves to remain silent and permit infringements of our rights to pass without an expression of disapproval.

All of which is respectfully submitted.

JAMES E. WOLFE,
HENRY C. MACY,
GEORGE H. SANDERS,
WILLIAM CURLETT.
Committee.

The above report was unanimously adopted as expressive of the views and sentiments of the Chapter upon the subject matter involved in the report.

Art and Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

IN the first part of the present century, some architects at the time had the praiseworthy ambition—so far as the ambition went—to invent the sixth order of architecture; but it was simply recommended to them to study the orders existing, to study the principles of art and the laws of nature governing them.

This continent was settled by the Caucasian race of Europe. The southerly part was invaded and conquered by Spain, the conquerors having in the one hand the sword, in the other the emblems of Christianity. Judging from the constant strife and struggle, the Spanish conquerors were not able and rigorous enough to create out of the existing and destroyed civilization a new and better culture. The object of the conquerors was to gather from the conquered, treasures to be brought to the homes of the conquerors; they gave nothing in return. Christianity has not fulfilled its mission.

The northern part was peaceably settled by emigration from nations of the European countries, the emigrants bringing with them their customs, knowledge, culture, and unlimited energy, to make themselves here a new and happy home under the wings of liberty, social and religious, and a moderate climate, conditions required for a progressive, higher culture, if not retarded and stopped by political strife, interference and undisputed dishonesty.

The culture forming here had its beginning, its history, and tradition at the homes of the emigrant, and to there we must look and turn for information and assistance. So is it with art and architecture. The architect cannot invent a new style of architecture, unless he invents and applies a new building material, of a different cohesive structure than the one used in old and present times.

Art and architecture, to produce works of art, result from the collective exertions of all nations, from the very cradle of humanity. A true work of art will only be produced by genius, or by the application of rules on esthetics, reason formed from art work, and based on the laws of nature, and not by trying to produce something without that thought and phantasy have been exerted. The rule of thumb will not make a new style. Some works of pretension, appearing in execution and in print, show no symmetry and symmetrical equilibrium; do not bear out the stamp of purpose and utility. They are unnatural, and not truthful. They show really the want of knowledge of the beautiful, and of thought; and simply to criticise them in the spirit of art, would be doing injustice, unless it is known that the designer was in possession of the laws of the beautiful; when, being conscious of the same, he would and could not help using and applying them.

When architecture follows the dictations of popular fashions, of an unartistical taste and useless purpose, and imitating those vagaries and abnormities of an unhealthy imagination, over and over again, then this is a sign of a degenerated art time. When architects of some pretensions send off such work on the public, such artists have failed in their mission as instructors and cultivators of the public taste. Art, then, has failed to take its place in the general culture of mankind.

Modern architecture has no new style or types. It uses old perceptions, improving them in form and beauty, assisted in the execution of this work by a perfected mechanism and skill. Different is it with mechanical science, which in the last half century has made large strides in the progress, aided by the progressive sciences. To it society is indebted for the immense progress made in every branch of human activity.

I. UNALIENABLE DRIFT IN MEN FOR ACTIVITY.

The necessity of self-preservation compels man, even at the lowest state of culture, to express his wants and make an effort on the natural things surrounding him, to use them to satisfy his wants. The cravings of hunger compel the individual man to seek food to sustain his existence; the feeling of cold, to find shelter; these, and other wants and needs, compel him to exert his mental and bodily powers to provide against them. The first and primitive drift in man, is a deeply seated instinct for the exertion of his energies.

The result of his exertions on the outside world, and the benefits derived hereby, create in him not only satisfaction, but also the action itself. The feeling of his power, and the confidence in using the same, create pleasure and delight in him. He is urged from action to action; and therein rest in human beings an unalienable drift and impulse, the proof of which every leaf in history shows, and a glance in his own bosom proves.

II. THREE KINDS OF ACTIVITY.

In three kinds of activity, in which all human efforts range and concentrate, this natural drift shows and expresses itself, and obtains final results, which designate and mark the highest

possibilities of our feeling, actions, and thinking. As ideal, without which human being is impossible, and accordingly to it, are set up the ideas of liberty, immortality, and of God himself.

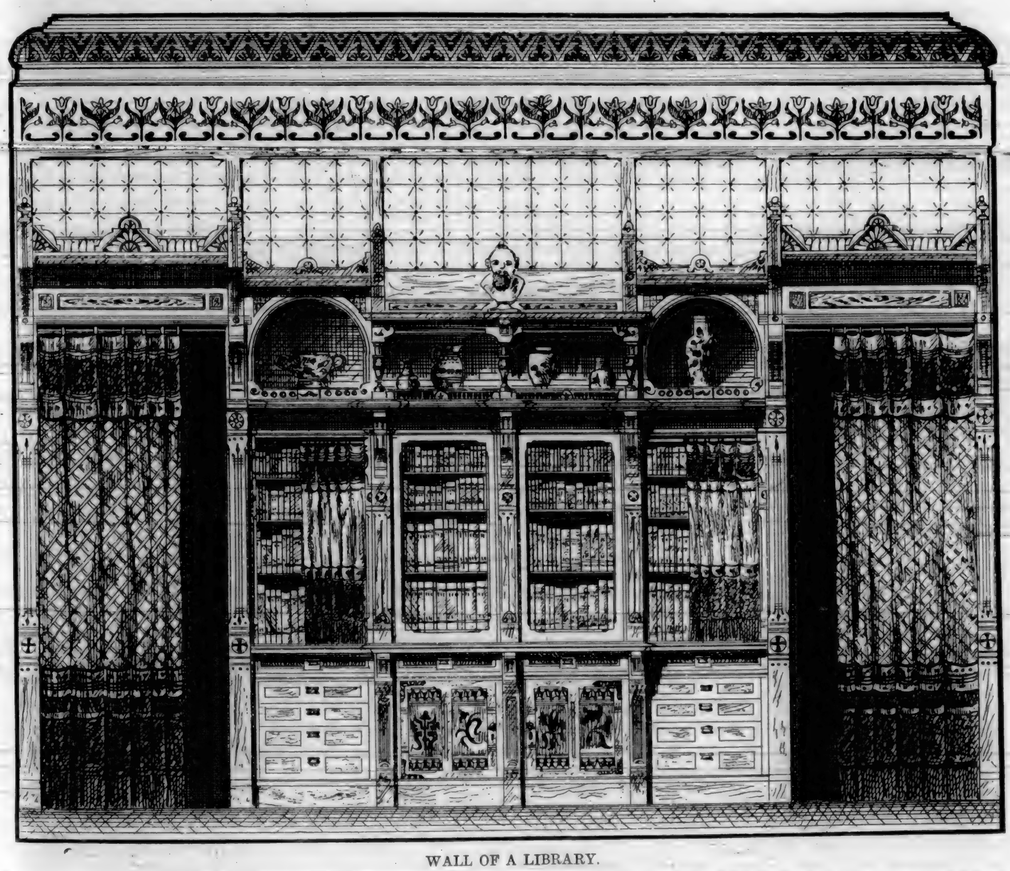
Liberty is the highest aim of our will, to which reason prescribes the laws of morality, without which, liberty is impossible. The idea of God leads to truth, then out of the conception of God, as the highest condition of the possibility of all, follows the perception of truth. The idea of immortality leads to beauty. Then the preservation of human products in their first original form, amid the constant changes of nature, gives us a presentiment of eternal duration, and we name, without prejudice to other definitions of beauty, the most perfect of such products, out of which, more than of others, the semblance of imperishability is shown, beauty.

The aims of all human efforts are, therefore, in intellectual respects, truth; in ethics, liberty, and in esthetics, beauty.

III. EXISTENCE OF THE SAME.

The natural instinct in its three different forms exists in every man, and shows itself with all nations, from the first and oldest traces of human culture up to our present day. The child's

question, "What is it," on seeing a strange object, is an expression of his inner instinct after truth. The struggle of a grown person with his bad instincts is nothing else but his effort for liberty; and the crippling of the feet of the Chinese woman is only the outcome of the instinct for beauty. Everywhere are perceptible the traces and the results of the activity of these impulses; here, in a known, clear practice; there, in an unknown, instinctive expression; here, in a uniform, systematic relation; there, in a sharp contrast of crude exaggeration and stupid neglect. With the India man the intellectual capacity is very small, the ethic laws deficient, and the esthetic creations, or forms, variegated exaggerations of an unclear phantasy. Harmony and accord predominated with the ancient Greeks. In the Middle Ages the intellectual stood back. Ethic and esthetic were shrouded and tied to positive, unremovable and fixed statuary laws and forms. In modern times these spheres balance each other more and more.



WALL OF A LIBRARY.

IV. PROGRESSIVE DEVELOPMENT OF THE SAME. FIRST, IN THE ETHIC DOMAIN.

Only those denying history will dispute progress, and deny the educational advance made by mankind in ethical respect, during the last thousand years. From barbaric custom and degrading slavery, men lifted themselves to a regulated form of state, and to nobler, finer sentiments. But neither the theocracy of the Jews in their supersensible doubtfulness, nor the democracy of the Greeks in their dissoluble development; neither the Jew's polygamy, nor the Greek's contempt of woman, designate a happy solution of the important part of the moral problem. Milder customs and perceptions were brought about and introduced by Christianity. But the sanctity of family, love of fellowship, and the pure moral laws, stood under an outside influence, not necessarily belonging to the spirit of Christianity, and gradually threatened to destroy the fruits of one and a half thousand years—threatened to make the priest a god. Our time created a clear way and put a stop by the secretions of the sick places; at least it tried, even if not everywhere with success; and open warfare exists yet between its spirit and the one of its predecessor. But only in conflict man tries his powers, and is the same decided, destiny will call on him again. But our time makes its moral law by the sentence, "Do good for the sake of good," which is comprehensible, and points hereby to the rapture consummated to the obedience of human fancy or to the dogmas of ecclesiastic by means of education to the belief of temporary or eternal punishment or blessedness.

V. IN THE INTELLECTUAL SPHERE.

The thoughts of men moved in an uninterrupted progressive education through centuries, even if the particular developing epochs were only of short duration and seldom returned. But in the time between them the attained culture acted quietly and powerfully, in making large strides onward, and preparing out of itself a new power, which again, together with the remnants of the old, started the same developing process over again. From the nearest outside things to begin, which thought men, as if it were, the spelling of thinking, he went over to other meditations on himself, inquiring after the laws of thinking and the boundary of his reason; he inquired after the connection of nature and the cause of all being—God.

VI. IN THE ESTHETIC SPHERE.

Not less is the same continuous succession to a continuous higher development in the esthetic sphere in existence. If we concentrate the exertions of the human intellectual drift in this direction in the widest sense, we comprehend hereby every change made on the objects nature has offered, and we will here unite all arrangements for the exterior living—all things that serve for the necessity, utility, convenience, education and the pleasure. It is evident that from the men of remote antiquity, living in forest and caverns, to the men living in wooden huts or

solid houses, the most influenced progress took place. Just so from this to the one which gave to the letter thousand tongues; to the wheel the speed of the wind; to the transmission of thought the speed of lightning. So on in general and the whole. A certain kind of things is between them, which we do not actually call necessary, useful, instructive, or agreeable, but which we call beautiful. These we separate and select from the many, to explore, investigate, and unite scientifically; and this is the problem of art history. To recognize their beauty and prominently the spirit of them, is the subject matter of the fine arts, or esthetic, in a limited sense.

The word esthetic means every observation made by our senses. In such an expansion it was used, setting in opposition esthetic and logic in relation to the sensible observation and reason. In the late new language, it is confined only to beautiful things, and we understand, in general, by esthetic, the science of the beautiful.

VII. CONTINUOUS PROGRESS IN ALL THREE SPHERES.

The progress in intellectual, ethic, and esthetic relation increases in an uninterrupted succession, notwithstanding the seeming retrogration and stagnation in the activity of man; and with his larger achievements grows his next problem, and so on; thus a never-resting process of development is uninterruptedly effected, being the result and consequence of preceding conditions and the necessary conditions of all later exertions. Then it seems as if at many times, many nations were at a complete standstill; that the development and progress of the human race was at rest. This was even only seemingly. Unobserved, here and there, are germs of culture formed, and at another place just at the same time important visible steps of progress are made. An illustration may be cited: the first centuries of our independent Christianity. They discarded the old culture, philosophy, forms of state, literature and art, and returned in thinking and forming to cruder customs, their ethic feeling inclined to supersensible fanaticism, and missed frequently the right position and relation to actual life. But notwithstanding this clearly visible retrogration, the most powerful progress was effected in the necessary fundamental principles, and later centuries proved that this time was of a far-reaching consequence, and its appearance was conditioned by the inner necessity.

VIII. COMMUNITY IN ALL THREE SPHERES.

The expression of the esthetic impulse in man is the first; then, before he is capable and in a position to think and to act morally, other objects impress on his mind, through his senses, and his necessary wants and requirements compel him to approach them direct, and unknowingly make them serviceable to himself. His first exertions are instinctively those of forming, moulding. From the simplest forms of formation, the club, broken from a tree, with which he killed an animal, men progressed continuously to make a multitude of well-formed instruments and tools, made well-arranged habitations, hereby above all assisted by the promethic gift of the fire. But now he began to act; the one was the master of the other; parents brought up their children; families united to larger communities; and, lastly, originated from many such families and communities a whole—a State—in which ruled a law made and sanctioned by all, or they were governed by the fancy of a chief. In the same time the unknown impulse led men to inquire of the cause of the nature surrounding him, and also of himself, and brought him to think of the same as of a divine spirit. So was religion formed. Inasmuch as not one has much truth, as imperfection and sham is in each, they are, nevertheless, the most important means of culture of the human race, and early man manifested the desire to make himself of that which he venerated as the highest cause, a picture or image, to give to his sensitive views a nutriment heretofore required. If now he venerated the fire, it was easily made; was it an animal, he shaped it as well as he could, or something similar; was it a higher developed spirit, he fell to the impossibility and adhered to the commands which the servants of this god, the ecclesiastics, proclaimed as his divine will. Fitting samples are the Brahman pictures of the India people, with their fantastic monstrosities. Liberal thinking outside of the ecclesiastic rules could alone be serviceable in this direction, and, consequently, art returned to the simple and natural. So with the Greek nation. When the human race has once outgrown its primitive condition, its impulses are rarified and refined from the instincts to the known, and are in a constant reciprocity, leading in a constant flow to a harmonious expression of all impulses together. The action must be forethought; the forming and shaping desired and wanted, and even thinking itself can only, by exercise, give sense to those of action and forming and made capable to turn to the abstract; then a purely contemplative condition towards nature cannot be thought of. In this large, general, and intensive reciprocity, men strive together for truth, liberty, and beauty, and try to perfect their beings in every direction.

(To be continued.)

The Average Life of Buildings.

"HOW long does it take for a city to re-build itself?" said the Building Inspector. "Well, that depends upon the progressiveness of the city. I should say about seventy-five years. That is the average life of a building now-a-days. There are very few houses in this city that were standing seventy-five years ago. The old houses on North Capitol Street, built by General Washington, are older than that, and there are other old buildings, but I am speaking of private houses. The buildings erected by the Government, under careful supervision and at great expense, of course, are more durable structures than those erected for private residences. The building which is being erected by Mr. Abell, on F Street, will cost more per foot, I suppose, than most Government buildings. No; it may not be a good investment, but it is not being put up as an investment; it is a monument. The new State, War, and Navy Department Building is, however, just as well built as that. That building will be standing a thousand years from now. It may, of course, need some repairs before that time, and the roof, of course, may have to be rebuilt. No material or work is allowed to go into that building unless it is up to the standard. The army engineers who have charge are very strict. Of course a private individual would not put up such a building. It would not pay. Yes; good brick ought to be as durable as stone. It depends a great deal upon the manner in which the bricks are laid. Good mortar becomes harder with age. It becomes harder than the brick itself. When dry bricks are laid during the warm months the bricks will absorb all the strength of the mortar. Brick laid at such a time ought to be wet. A wall erected in April or May, or October and November, of sufficient thickness, ought to last two or three centuries."—*Washington Star.*

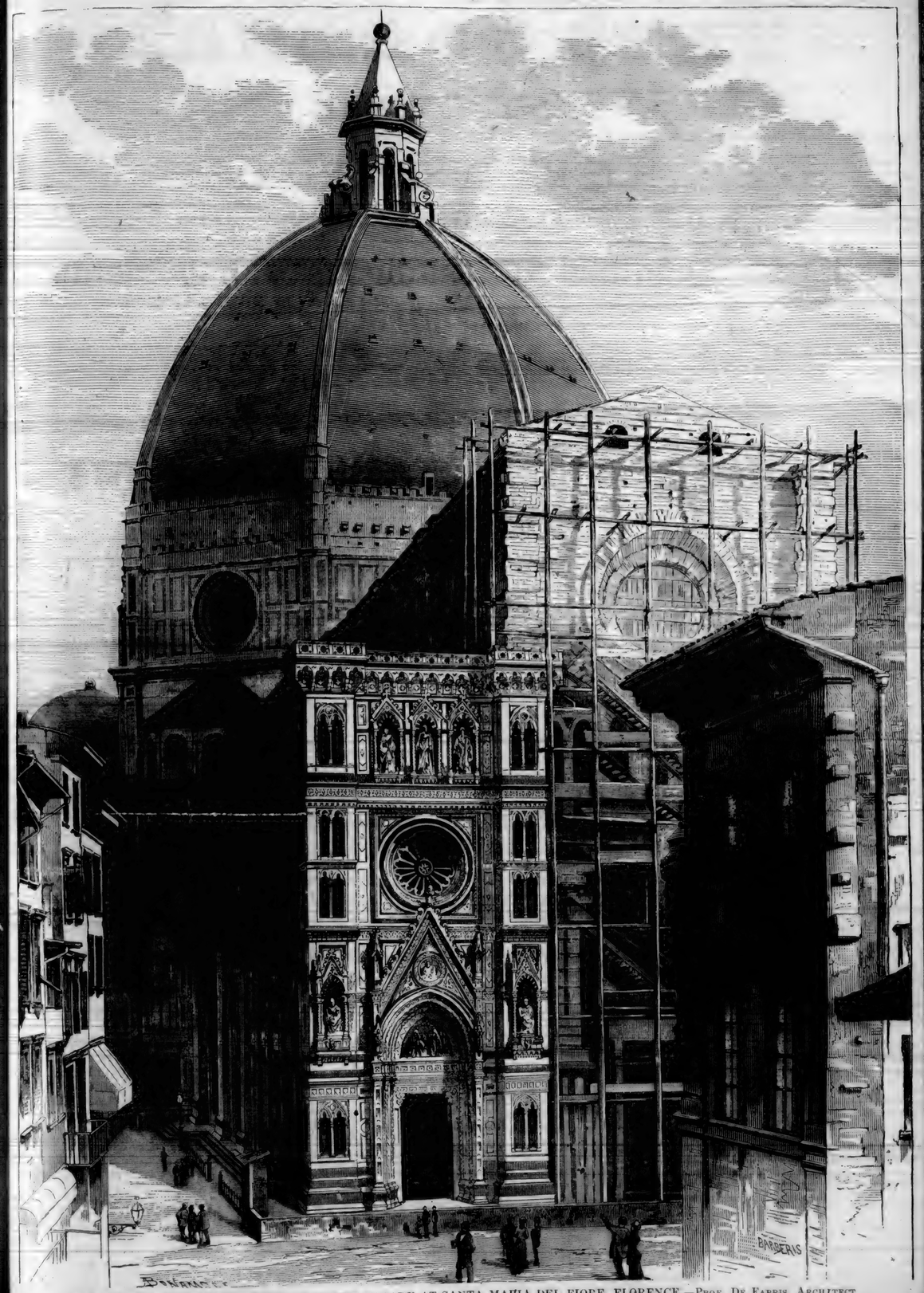
IN a recent editorial article entitled "Architectural Conservatism Indoors," the *British Architect* draws the following characteristics of English architecture:—

"We are, as a profession, too conservative, and too apt to reject a useful suggestion because it happens to be new and contrary to our preconceived notions of what is right according to recognized rules and practice. We think some of the fault of this conservatism can be traced to a lack of thorough education, and the consequent inability to found a correct judgment upon things practical and theoretical, which may not have been included in past experience. Then, again, we need a more liberal spirit of inquiry amongst us, and instead of using a material or an article merely because it is made by a particular firm, there should be some certain knowledge on the part of the architect that no better is in the market. And when a new suggestion is made, or a new invention brought out, which has a reasonable likelihood of being turned to practical account, it is as well to try how best it can be utilized, rather than to see how effectually we can put stumbling-blocks in the way of its adoption."

Much of which is, without doubt, equally true of our American architects.

ACCORDING to the *British Architect*, there is some talk of erecting the huge metallic tower invented by M. Eiffel, the mechanical engineer, on some convenient site within the precincts of the Paris Exhibition Buildings, and it is also satisfactory to know that a jury of experts will be impaneled to decide upon its structural safety prior to its erection. It will be 300 meters in height, and entirely constructed of iron. It will rest on five pillars, forming four immense arcades, lofty enough to exceed in height the towers of Notre Dame. On the summit of the tower will be erected an electric light-house, and a terrace to which visitors will be admitted. The form of the tower is specially adapted to give it stability in high winds. The oscillation at the top, under the influence of the most severe storm, will not exceed 75 centimeters. On a first platform, at a height of 70 meters, there will be a gallery of glass, which may be used as a café, or restaurant. A lift will take visitors to the summit. The expense of construction is estimated at from 5,000,000 to 5,500,000 francs.

THE elaboration of interior decoration with hard woods is increasing to a great extent in the cities, and dadoes of satin, maple, cherry, mahogany, etc., are freely used.



THE NEWLY-CONSTRUCTED PORTION OF THE FACADE AT SANTA MARIA DEL FIORE, FLORENCE.—PROF. DE FABRIS, ARCHITECT.

THIS JOURNAL

WITH ALL ITS INTERESTS,

WILL BE DISPOSED OF

TO

Parties Qualified to Assume Its Management and Control.

THE

California Architect & Building News

IS THE PIONEER JOURNAL

Published Within the Boundaries of the Pacific States of America,

IN THE INTERESTS OF

Architectural, Building, and Collateral Sciences,

AND THE

Manufacturing and Labor Arts and Interests.

Its publication as a Monthly was inaugurated during the dark and gloomy period of 1880 preceded by the Quarterly of 1879. And from the feeble beginning, which then lacked all the essential elements of journalistic experience, in addition to the absence of innumerable facilities requisite to its publication,

It Has Grown in Reputation and Influence,

Until It Is Now Recognized,

Throughout the United States and Europe,

AS THE

Representative and Leading Class Journal

Published West of the Rocky Mountains,

IN THE INTERESTS IT ADVOCATES.

The Following Notices, Selected from Scores of Like Character, Illustrate Its High Position and Standing in the Field of Class Journalism.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is considerably enlarged and very much improved mechanically and editorially, which places it in the fore rank of class journals, where it belongs. It is a credit to this coast, and we take pleasure in perusing its clear and entertaining pages.—*Alameda Semi-Weekly Argus*, Jan. 23, 1886.

Another old friend, the CALIFORNIA ARCHITECT AND BUILDING NEWS, is greatly improved by its new form and style.—*American Architect*, Feb. 13, 1886.

The first number of the eighth volume of the CALIFORNIA ARCHITECT AND BUILDING NEWS appears in an enlarged form and new type. These signs of prosperity denote an appreciation of the journal by those in whose interests it is ably conducted.—*S. F. Chronicle*, Jan. 18, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS.—We find it one of the best architectural journals published, and, unlike some journals, it believes in justice to all, and upholds all legitimate efforts for the elevation of mankind, whether "professionals" or "laboring men." We wish it success and recommend it to our readers.—*Granite Cutters' Journal*, Philadelphia, Pa., Feb., 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS has been enlarged and much improved. The number issued to-day would be a credit to any city.—*S. F. Daily Report*, Jan. 16, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS in its new dress and make-up renders it more acceptable than ever. It is always replete with valuable matter, and is ever an acceptable visitor.—*Alameda Encinal*, Feb. 3, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS appears in greatly improved and enlarged form. The current number, we think, is the best that has been issued. It shows wonderful improvement within the past two years. It is just such a journal as is needed for the Pacific Coast.—*Northwestern Farm and Dairyman*, Feb. 11, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS, enlarged and much improved in appearances. As to its contents, it has always been good. It is the best class paper that comes to our table, and we always find it worth perusal.—*Lakeport Democrat*, Feb. 20, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS appears in an enlarged form and new type. These signs of prosperity denote appreciation by those in whose interest it is ably conducted. It has a large circulation. We wish it success.—*Weekly Sun*, Jan. 23, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is the leading architectural monthly of the Pacific Coast. Its articles are well written on important topics.—*Brooklyn Real Estate Review*.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is the official organ of the association of architects, and is a fit representative of that interest. It should find a wide circulation.—*Petaluma Weekly Argus*, Jan. 23, 1886.

The CALIFORNIA ARCHITECT comes to us this month very much improved in every way—a decided credit to the Pacific Coast.—*Brick, Tile, and Pottery Gazette*, Jan., 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is a very useful and interesting publication. It is handsomely illustrated with designs for home and business buildings.—*Reno Evening Gazette*, Jan. 21, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is a monthly journal devoted to architecture, building, decorating, and furnishing, and is the official organ of the Pacific Coast association of architects. In its enlarged form it is most admirable.—*New Age*, S. F., Jan. 21, 1886.

The CALIFORNIA ARCHITECT, in its enlarged and improved form, is a publication which will interest all who are connected with the building trade.—*News Letter*, Jan. 30, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS comes to us very much enlarged and improved. It holds its own remarkably well against the older Eastern journals of the same class.—*American Building Association News*, Chicago, Feb., 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS is an invaluable periodical, not only to architects and contractors, but to house owners as well. It gives valuable plans for houses, and careful attention to drainage, ventilation, and sewerage.—*Daily San Jose Herald*, Feb. 3, 1886.

The CALIFORNIA ARCHITECT AND BUILDING NEWS comes to our table enlarged and materially improved. This enterprising journal, we are pleased to note, is keeping pace with the demand of a growing constituency.—*Northwestern Architect*, Feb., 1886.

ITS PUBLICATION IN SAN FRANCISCO,

DEVELOPED IN THE FULLNESS OF ITS POSSIBILITIES, is a universally accepted necessity; and under increased,

ENERGETIC, ENTERPRISING, AND COMPETENT MANAGEMENT,

Parties who can and will devote their TIME and TALENTS to the work, it is destined to become

A PEER IN AMERICAN CLASS JOURNALISM.

If from the adverse surroundings of its inception, with the many divided professional and other engagements and duties of its founder, it has been brought to its PRESENT, but by NO MEANS

ITS POSSIBLE STANDING AND REPUTATION,

What may it not become, with its interests and destinies under more Efficient, Diligent, Capable, and Scholarly Editorial and Managerial Control and Direction?

—:o:—

THE ARCHITECTURAL PROFESSION requires a Journal of its kind to represent its interests; to assist in sustaining unselfish and generous relationships; to advocate the right and expose wrongs wherever found in architectural circles, and assist in promoting fraternal ethics, and every right and reputable course calculated to elevate the honorable and worthy members of the profession far above the reach of reproach or disrepute, and, by all reasonable, right means, fix upon those who degrade and disgrace the profession, the mark of professional ignominy. In these directions this Journal has accomplished much, but more remains to be done.

CONTRACTORS AND BUILDERS of every class need it as a medium through and by which they may learn of every new fact and principle in mechanical science, and cultivate and develop into practice, those rules and methods best calculated to improve them as men and master mechanics—to furnish them with all current, local facts of interest, and give information from every city and town upon the Coast in reference to prospective works of public and private character.

TO MECHANICS AND WAGE-EARNERS it is a great necessity, as all men, high and low, learn and grow wiser by what they read, and the impressions made upon the senses by lines and figures representing ideas and conclusions of facts.

MANUFACTURERS AND PRODUCERS of building materials and devices of every kind need it as a means of communication with consumers.

THE COMMON INTERESTS OF THE STATE require it as a means of information at home and abroad, as to its unbounded resources in timber, building stone, marbles, iron, and numerous other valuable deposits and productions.

OWNERS OF PROPERTY require it as a channel through which they may be informed upon all matters relating to the erection of buildings.

CARPENTERS, MASONS, PLASTERERS, PLUMBERS, PAINTERS,

DECORATORS, FURNISHERS, AND ARTISANS GENERALLY,

Require it as a nucleus in and around which their interests may center, and through which each alike may derive special benefit.

Its Future is Full of Assurance and Promise.

With All Possibilities Wisely Utilized and Judiciously Handled, but which, from force of circumstances, have been to a large extent hitherto neglected, it may be more than doubled in every interest.

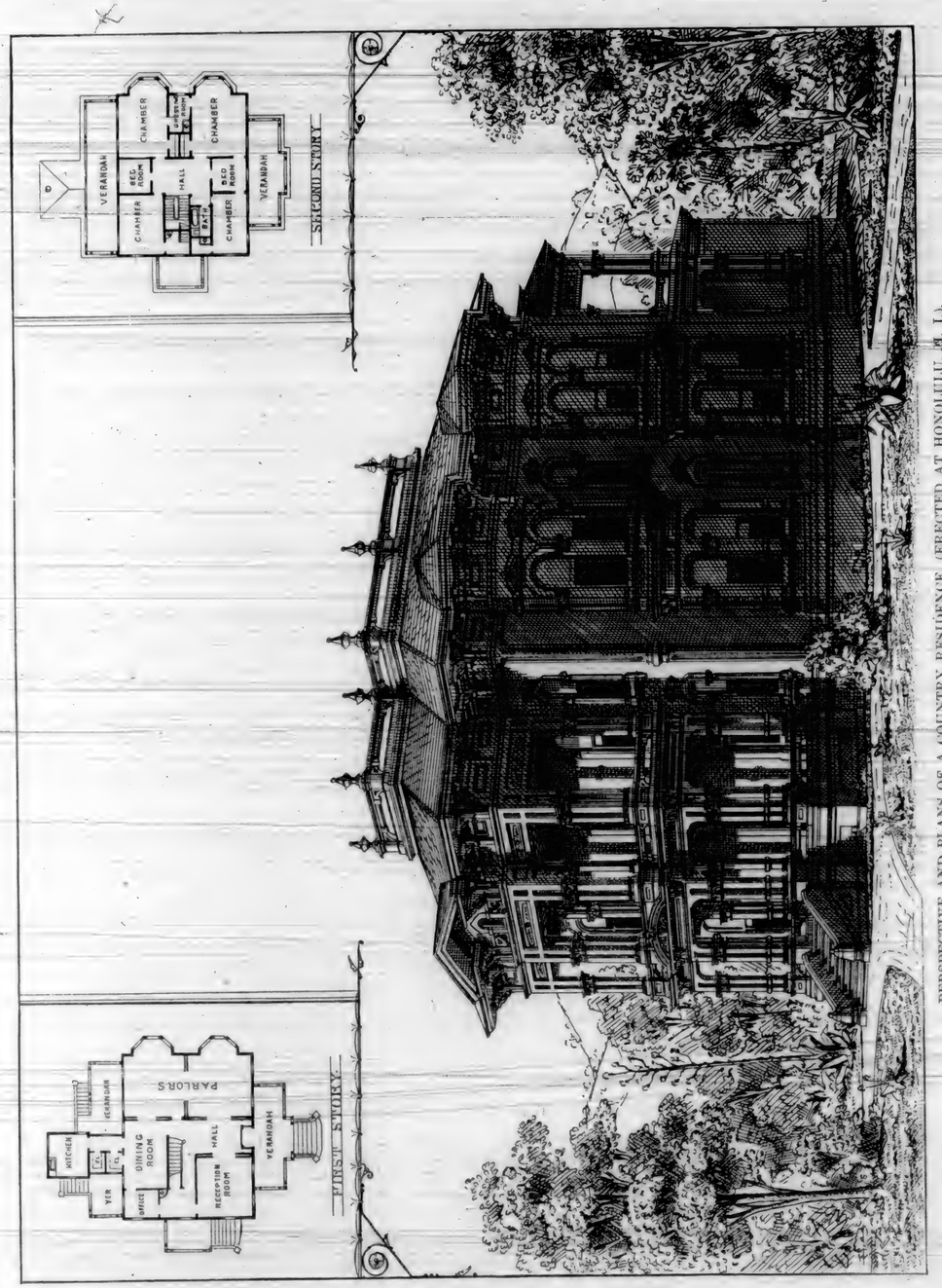
—:o:—

ITS ADVERTISING PATRONAGE.

But few Class Journals present better evidence of substantial prosperity and general favor than is shown by the advertising column of this Journal. Yet not one-half of what may be, has been reached. LOCAL ADVERTISEMENTS can be greatly increased and a large, neglected PATRONAGE FROM THE EASTERN STATES SECURED.

THIS PROPOSITION OF SALE

Is made to relieve ourselves from the excessive and double cares and responsibilities involved in editing a Class Journal and pursuing the responsible duties of practicing architect—to the latter of which we propose to devote our undivided attention, yielding control of the Journal, we hope, to more able and competent hands. We also hope its future will pass to some one of the manor born—some live Californian, familiar with all coast and local interests and requirements, either individually or in the form of an incorporated company. But if not this, then that some Good—Eastern, Western, Northern, or Southern—Man will enter the field with complete connections with all great centers of business and life, east, west, north, and south, and give not only to California, but to the people of the United States, Europe, and All Civilized Places on the Globe, a Journal of Peerless Merit.



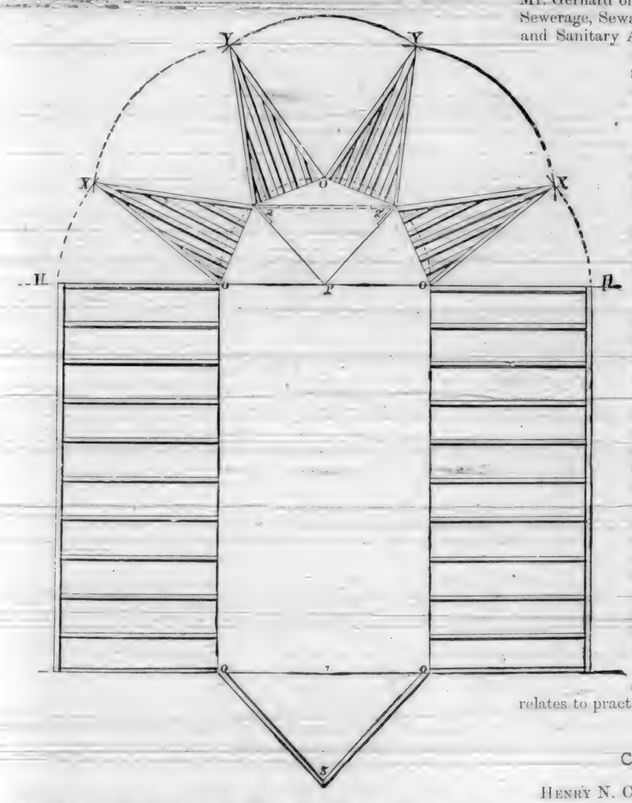
PERSPECTIVE AND PLANS OF A COUNTRY RESIDENCE (ERECTED AT HONOLULU, H. I.).

EDITOR CALIFORNIA ARCHITECT—*Dear Sir:*

As I have been frequently requested by some of the most able and competent master builders to give an easy rule for finding the cuts and covering of conical, hexagonal, and octagonal roofs, I offer the following, trusting it will be of service to them in laying out this kind of work.

The accompanying cut shows the timbers in position over ground plan. The method of obtaining this result is as follows: 0, 0, 0, 0, 0, 0, is the ground plan; 1, and 3, is the height of elevation. Make 1, 2, in ground plan, equal to the elevation, viz., 1, 3, after which connect 2, 2, in the ground plan, which will give the length of hip needed. Square out from O, H, right and left, indefinitely, then take the distance 2', 2 in the compass and stand in O, describing curve, cutting line squared from H, then cut at X, as shown; move compass to 2', and cut at X, and Y; move compass to O, and cut at Y, right and left; move compass to 2, and cut at Y, and X; move compass to O, and cut at X, and H. Thus obtaining the accurate length of all timbers, lay the jack rafters, or cripples, a suitable distance apart, and the problem is finished. To make a stand-up model, cut all around the outside, following the straight lines, viz., H, to O, to X, to 2', to Y, to O, to Y, to 2, to X, to O, to H. Now weaken on all the base lines, fold from you, and the model will show all timbers in their correct position. Yours truly,

M. J. MARION.



ARCHITECTS and sculptors will be much interested in the statements recently published in some of our foreign exchanges, that the long-lost quarries of valuable ancient marbles have been rediscovered. Among colored marbles employed by the Romans in their palaces and monuments some authors quote the Numidian marbles. But this name is misleading, for several quarries containing the genuine *giallo antico*, also a rose-hued marble, and a brown *breccio*, are located outside of the geographical limits of Numidia. One of these is situated east of Numidia, near Simmittu, in the Medscherdan Valley, along the railroad between Algiers and Tunis. The other quarry is said to have been discovered by a Mr. Delmonte, dealer in Carrara marble, and is described as being situated along a line of hills near the village of Kleber. Mr. Delmonte offers to deliver the marble in Oran, ready for shipping, at a price of 450 francs —90 dollars per cubic meter. The marble of this quarry, originally of a pure white color, has assumed an ivory tint due to presence of oxides of iron. There is also a pink variety, capable of being highly polished. Other varieties are also found, notably a yellow marble, similar to the *giallo antico*, a dark red marble, resembling the *rosso antico;* another variety called *pavonazzo*, on account of its resemblance to the colors of the feathers of a peacock. Some of the varieties of marble were used in the construction of the English church at Algiers. It is also rumored that a French geologist has discovered clues towards the finding in Upper Egypt of the Lucullan marble, a pure black variety, used in Roman architecture.—*Building.*

Book Notices.

"A PLEA for Sanitation in Factories and Workshops." By Wm. Paul Gerhard, Consulting engineer for Sanitary Works, 6 Astor Place, New York.

Author of the following works: "House Drainage and Sanitary Plumbing," Hints on the Drainage and Sewerage of Dwellings," "Diagram for Sewer Calculations," "Sanitary Questions," "Sanitary Drainage of Tenement Houses," "A Guide to Sanitary House Inspection," "Domestic Sanitary Appliances," etc. Mr. Gerhard offers professional advice on questions of Drainage, Sewerage, Sewage Disposal, Water Supply, Ventilation, Heating, and Sanitary Architecture. Plans and specifications also prepared for house drainage, and the sanitary arrangement of plumbing work. Correspondence solicited.

"BUILDERS' Work and the Building Trade." By Col. H. C. Seddon, R. E. Bound in cloth; price, $4.00. For sale by Jos. A. Hofman, 208 Montgomery Street, San Francisco, Cal.

This is an English work just published by the Rivingtons, of London, England, and makes a valuable addition to the two volumes, "Notes on Materials and Building Construction," published some time since by this firm.

This work has nearly 300 illustrations, showing nearly every style of brick and stone work, diagrams of constructive carpentry and joiner's work, tiling and slating, and a lot of other information pertaining to the building trades.

There is a very useful and practical chapter on bricklayers' work; also one on concrete and plastering; and some useful information is given on painting, coloring washes, and the tools used for cutting and rubbing for ornamental brick work. Very useful hints are also given for estimating the cost of all kinds of brick, stone, and concrete work. The methods of framing, in the chapter on carpenter's work, will be found very explanatory, as many illustrative diagrams have been given. The other trades appear to be thoroughly dealt with. There are several useful appendices, giving experiments upon concrete slabs, forms of specifications for concrete floors and roofs, and several valuable tables.

This work will undoubtedly take its place as a text-book of technical reference in all that relates to practical building operations.

Copp's Lists of Patented Mines.

HENRY N. COPP, the land and mining lawyer of Washington, has issued a book of 150 pages, which gives lists of about 10,000 mines patented by the United States up to January, 1886. These lists are arranged by States and Territories, and thereunder by counties and districts. It also gives instructions for the restoration of lost and obliterated corners of the public surveys.

This publication is an added evidence of Mr. Copp's industry, and will, without doubt, be in every mine owner's library. In it we observe the names of many of our wealthy and enterprising citizens. Parties contemplating the purchase of a mine can now readily determine if it has been patented. The purchase of unpatented mines is a risky business, as lawsuits are frequently purchased at the same time. The book sells for fifty cents, and can be had through the news dealers and of the publisher.

Publications Received.

THE May number of *Art and Decoration* contains fifty-four illustrations among which are pictures in the National Academy, two studio interiors in perspective, designs for stained glass window, suggestions for panel in lobby of theater, suggestions for *rapoussé* work, designs for tapestry painting, and twenty illustrations by Raguenet, with many short, interesting, and instructive articles pertaining to interior and exterior ornament. Subscription price, $2.50 per year. Single copies, 25 cents. Published by Art and Decoration Company, 7 Warren Street, New York.

THE May number of the *Inland Architect and Builder* is unusually attractive and valuable. The leading articles are reminiscences of the late architect, H. H. Richardson, who ranked at the head of his profession in the U. S., written by P. B. Wight, and a practical illustrated essay on Brickwork, by George Beaumont. Reports of the Nebraska State Convention of Architects and of the Cleveland meeting of the National Engineers' Society are given, besides building news from over one hundred Western cities. Among the illustrations are the new Court House at Madison, Wis., the West Chicago Club House, a design by Architect Beman for a Grant memorial, and several well-designed residences by prominent architects. Architects and others interested in building will find the *Inland Architect and Builder* profitable reading. Published by The Inland Publishing Co., Chicago. Subscription price, $3 a year.

THE *American Architect and Building News* (Gelatine Edition). The following is the table of contents for the May number:—

CONTENTS.—Mural Painting—Wood Architecture of the Northern Hartz—The Erection of Colossal Statues—Concrete Floors—Pile Driving—Communications—Notes and Clippings—Trade Surveys.

ILLUSTRATIONS.—Rood-screen in St. Peter's, Louvain—House at Ottawa, Canada (Gelatine Print, issued only with Imperial and Gelatine Editions)—Wood Architecture of the Northern Hartz, Germany—Court House, Clar on County, Pa.—House at Garrison on Hudson, N. Y.—Ancient Light-house, Island of Pharos—Modern Light-house, Island of Pharos.

Subscription for the Gelatine Edition, $7.00. Published by Ticknor & Co., 211 Tremont Street, Boston, Mass.

THE June number of *Mind in Nature*, discusses the question of "Mind in Animals," by Lady Murray-Aynsley, followed by notes on "Intelligence of the Elephant and the Orang." Doctor Valin continues his quest for the "Spiritual Evidences of Man's Descent," this time in the "Demon of Science." A. N. Waterman asks, "Is Spiritualism Only a Nervous Disease?" and F. A. Becher contributes "A Few Notes upon Mental Phenomena and Mathematics." Professor Thwing tells, "How to Induce the Trance." John Wetherbee reviews "The Spirits of Darkness." H. M. Hugunin describes an "Electrical Cloud Birth." Wm. Q. Judge in his remarks on, "Matters Touching Theosophy," replies to the discussion on "The Occult World" in former numbers of "Mind in Nature."

There are also extracts from Rev. T. T. Munger on "Truth," from Doctor Pettegrew, on "Faith as an Element in the Cure of Disease." "More Metaphysical Twins," is a report of several cases where persons were seemingly united in some psychical manner, that caused one to suffer the same mental or physical pains that disturbed the other, even though they were hundreds of miles apart. All those interested in the problem of "Mind in Nature," will find this little magazine well worth ten cents. COSMIC PUBLISHING COMPANY, 171 Washington Street, Chicago.

DECIDEDLY unique and original is the little cycling scrap-book just issued by the Pope Manufacturing Co., of Boston, Mass. Upon the covers are fac-similes of the covers or front pages of thirty-seven of the leading American publications, and inside are between two and three hundred newspaper and magazine clippings and quotations from prominent personages pertaining to the hygienic, business, and pleasurable advantages of cycling. By an arrangement of tint and type, the selections have the appearance of genuine pasted scraps, which makes the book worth possessing as a curiosity, as well as for the really valuable information it contains. The book will be sent upon request free by mail upon receipt of stamp, to any one interested in cycling.

COMPLAINTS are often made by those using iron saw-tables that the table becomes charged with electricity to such an extent as to be disagreeable. The table is undoubtedly charged by the friction of the belt. To prevent the table from becoming charged run a small copper wire from the leg of the table to a water, gas, or steam pipe. Anything that will carry off the current as fast as produced will do the work effectually.

Master Plumbers' Association.

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The Building Interest of Woodland and Yolo County.

FOR THE SECOND QUARTER OF 1886.

EDITOR OF THE CALIFORNIA ARCHITECT: In comparison with the corresponding three months of 1885, the reader will readily see a decrease in the amount of capital invested this quarter, and as a ready conclusion infer that the building interest has taken a retrograde movement, and the following report is conclusive evidence. But when the true cause is considered, the effect is not serious nor depressing, but, to the contrary, is believed as an indication of prosperity.

The present outlook of the grain crop, the fruit of the orchard and vineyard, are, beyond a doubt, better and far more promising than ever before known in this county; therefore all are too much engaged in preparing for the coming harvest to look after building, which is considered of second importance, and the lull is only an index of better and more prosperous times in the near future; and with the coming fall it is anticipated that building in all its branches will be brisk, and there will be plenty of work.

CITY OF WOODLAND.

15 frames, value	$40,005
7 improvements, value	4,550
22 Total	$44,555

YOLO COUNTY.

22 frames, value	$35,150
4 improvements, value	1,600
26 Total	$36,750

Total for city and county, 48 buildings; value, $81,305. Number for corresponding months of 1885, 45 buildings; value, $120,600, presenting a decrease of $39,295. Accept our thanks for past favors and courtesies. Respectfully yours,

Woodland, June 4, 1886. GILBERT & SON.

The Building Interest.

SOME idea of the relative spread of the rapidly growing cities in the United States may be gathered from the following statistics of buildings erected during 1885:—

Philadelphia	5,937
St. Paul	3,451
Minneapolis	3,370
New York	3,368
Chicago	3,133

There were 7, 900 building permits issued in Philadelphia during the year. In the above computation, however, the only buildings included are 5,627 dwelling houses, and 310 other separate and substantial buildings for factories, stores, etc. Smaller structures, or additions to buildings already erected, are not included. It will be seen that Philadelphia is 2,500 buildings ahead of its foremost competitor. Twenty-five hundred buildings of this class furnish enough accommodation for a new city of 10,000 inhabitants.—*Iron Trade Review.*

Carpenters,

AND others interested in building: We call your attention to the advertisement of *Ives' Patent Sash, Lock, and Door Bolt*, on page XI. Mr. Ives offers to forward to any carpenter one *Ives' Patent Sash Lock* for ten cents in stamps to cover expense of mailing. These locks are undoubtedly the best we have seen, and we think it would be an advantage to all interested in building to send for one of these samples before selecting any other style, and see the advantages obtained by using the *Ives'* patent.

San Francisco Chapter of Architects.

OWING to death and sickness in the family of the Secretary, the usual postal notices were not mailed in proper season, and but few members received them until after the evening of the meeting. Consequently, there were so few in attendance that all business, and the discussion of the subject appointed for the evening, was deferred until the July meeting, reports in the daily papers to the contrary notwithstanding.

The San Rafael Unpleasantness.

WE have received several letters in reference to the school building at San Rafael, in which the position is assumed that the Chapter of Architects should take the matter in hand, as the name of one of its officers is, to some extent, mixed up in the affair, which, as far as the purchase of the school-house lot is concerned, has led to the resignation of the Board of Trustees and their arrest for bribery, etc., terminating in the suicide of one of the parties to the transaction—a man who, until the exposures in the case became a matter of public concern and notoriety, had maintained a good reputation for integrity and good citizenship.

As far as the architect in question is concerned, the reflections thrown out are wholly speculative and inferential, beyond the fact that the new Board have found, or claim to have found, the necessity for, and have advertised to "receive sealed bids for doing certain work in the new school-house on Fourth Street, in the town of San Rafael," etc., with all of which the Chapter certainly can have nothing to do, nor is it a part of the Chapter work to interfere in matters of the kind, unless the same is brought before it in some tangible form by the parties aggrieved.

Our Illustrations.

THE two sketches representing views in Chinatown are from life, and correct in every part, except that there is but one Chinaman represented for every twenty to be seen in the same locality from early morn till midnight. The front elevation, perspective, and plans of cottage are self-explanatory.

The perspective and plans for a residence are those of a building planned by us, and erected at Honolulu, H. I.

The remaining illustrations carry with them sufficient explanations.

Market Report.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Sepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
" T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" Square	"	14 00
Battens, ½x3	per lineal foot,	00½
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 70
100 keg lots		2 75
Smaller quantities		2 80
PAINTS AND OILS:—		
Pioneer White Lead (local factory), 5 ton lots		6½c @ 6½
Cal. Linseed Oil, raw (single bbl lots)		45½
" " boiled " " "		47½
Turpentine, per gallon		58
BRICK—California Building Description, soft, per 1,000		5 50
" " " red, " "		6 50
" " " hard, " "		7 50

Building Intelligence.

Where owners' names are left blank, it is so done in most instances by special request.

B

Baker, near McAllister. One-story frame.
O.—John Boyd.
A.—Eisen & Pierce.
C.—D. Perry.
$2,500.

Baker, bet. Washington and Jackson. Four two-story frames.
O. and B.—W. F. Lewis.
Day work.
$14,500.

Baker, bet. Washington and Jackson. One story frame.
O. and B.—W. F. Lewis.
Day work.
$3,000.

Baker, nr. Golden Gate Avenue. One-story frame.
O.—J. T. Fitzhenry.
C.—C. Carberry.
$2,000.

Bryant, bet. Twenty-fourth and Twenty-fifth. One-story frame.
O.—J. Bellie.
A.—J. Gash.
Day work.
$2,000.

Broadway, cor. Laguna. Two and one-half story frame.
O.—Peter Hopkins.
A.—Clinton Day.
C.—R. T. Gulbert.
$12,500.

Birch Avenue, nr. Larkin. Three-story frame.
O.—F. Fanstman.
A.—P. R. Schmidt.
C.—A. Norton.
$3,000.

Brannan, bet. Sixth and Seventh. Alterations.
O.—E. L. Goldstein.
A.—P. R. Schmidt.
C.—H. Keenan.
$1,360.

Bryant, cor. Second. Three-story brick addition to wine cellar.
O.—Lachman & Jacobi.
A.—P. R. Schmidt.
C.—Mahoney Bros.
$9,250.

C

Clay, bet. Dayisadero and Scott. Two two-story frames.
O.—D. S. Culp.
A.—Copeland & Banks.
C.—O. E. White.
$10,000.

California, cor. Baker. One and one-half story frame.
O.—C. Denervand.
A.—W. F. Smith.
C.—Gray & Stover.
$3,000.

E

Eddy, bet. Octavia and Laguna. Two-story frame.
O.—L. Kaplan.
A.—P. R. Schmidt.
C.—Commary & Beardsley.
$5,500.

Ellis, bet. Van Ness and Franklin. Alterations.
O.—I. Levy.
A.—E. John.
C.—B. Dryer.
$1,000.

Eighteenth, nr. Castro. Two-story frame.
O. and B.—J. M. Comerford.
Day work.
$2,000.

Eddy, cor. Laguna. Six two-story frames.
O.—
A.—W. F. Smith.
C.—J. Robinson.
$30,000.

F

Fulton, nr. Larkin. Three-story frame flats.
O.—F. Fanstman.
A.—P. R. Schmidt.
C.—A. Norton.
$4,500.

Fell, bet. Laguna and Buchanan. Two-story frame.
O.—R. J. Stinsen.
A.—T. J. Welch.
C.—Bateman Bros.
$5,500.

Fourteenth, nr. Howard. Two-story frame.
O. and B.—L. Cuner.
A.—W. Mooser.
Day work.
$4,000.

Fifth, bet. Mission and Howard. Three-story frame.
O. and B.—A. Zehn.
Day work.
$6,000.

G

Guerrero, nr. Twenty-first. Additions.
O.—J. Davis.
C.—G. W. Lang.
$2,200.

Golden Gate Avenue, bet. Pierce and Scott. Two-story frame.
O.—J. P. Lartigan.
A.—T. J. Welch.
C.—H. Monrad.
$8,000.

Golden Gate Avenue, southeast cor. Larken. Additions.
O.—Michael Skelly.
A.—H. D. Mitchell.
C.—Owens Bros.
$12,500.

Green, bet. Powell and Mason. Two-story frame.
O.—V. Menisini.
A.—G. V. Coppelletti.
C.—J. J. Dunn.
$4,000

Greenwich, bet. Kearny and Dupont. Two-story frame.
O. and B.—Thos. Merry.
Day work.
$4,500.

Gough, cor. Grove. Three-story frame.
O.—R. E. White.
A.—McDougall & Son.
C.—H. Townsend.
$9,000.

Golden Gate Avenue, cor. Lyon. One-story frame.
O. and B.—J. McPherson.
Day week.
$2,000.

Grove, bet. Octavia and Laguna. One-story frame.
O.—M. Kelly.
Day work.
$600.

H

Howard, cor. Tenth. Improvement for school-house.
O.—P. Scanlan.
A.—T. J. Welch.
C.—John Blake.
$6,000.

Haight, bet. Webster and Fillmore. Two-story frame.
O.—P. Brown.
A.—T. J. Welch.
C.—Jas. Haven.
$3,000.

Hayes, southeast cor. Laguna. Two three-story frames and brick basement.
O.—L. M. Fabry.
A.—Miller & Armitage.
C.—R. Mitchell, brick and iron work.
$6,315.
Balance of contract not yet let.

Hayes, bet. Gough and Octavia. Two-story frame.
O.—H. Tobelmann.
A.—H. D. Mitchell.
C.—Chase & Taggart.
$4,000.

Hyde, cor. Sutter. Two and one-half story frame.
O.—J. Rosenstern.
A.—Frisia & Moore.
C.—A. Jackson.
$13,500.

Howard, bet. Fourteenth and Fifteenth. Two-story frame.
O.—Wm. T. Dowling.
A.—M. J. Welch.
C.—R. Sinnott.
$2,500.

Harrison, bet. Twenty-fourth and Twenty-fifth. One-story frame.
O.—T. O'Brien.
C.—Jos. Sullivan.
$1,400.

Hartford, nr. Nineteenth. One-story frame.
O.—A. F. Thing.
A.—G. F. Bordwall.
C.—J. Bruce.
$2,000.

Haight, bet. Webster and Fillmore. Two-story frame.
O.—R. Sutherland.
C.—H. Lukes.
$4,200.

J

Jackson, cor. Franklin. Two-story frame.
O.—W. H. Martin.
A.—Curlett & Cuthbertson.
C.—D. Perry.
$23,650.

Jones, bet. Lombard and Chestnut. Two-story frame.
O.—S. Castle.
A.—Miller & Armitage.
C.—F. W. Kern.
$3,750.

L

Liberty, nr. Guerrero. Two-story frame.
O.—Jos. Hutchensin.
A.—W. F. Smith.
C.—R. O. Chandler.
$3,000.

Linden Avenue, bet. Octavia and Laguna. Additions.
O.—
C.—A. Allspaugh.
$700.

M

Mission, north side, bet Fifth and Sixth. Alterations.
O.—Sol. Tesmore.
A.—B. E. Henriksen.
C.—John Apel.
$5,750.

McAllister, nr. Steiner. Two-story frame, two flats.
O.—John Dunhand.
A.—E. John.
C.—J. F. Long.
$6,000.

Market, bet. Tenth and Eleventh. Three-story frame store and two flats.
O.—Meade estate.
A.—T. J. Welch.
C.—Anderson Bros.
$12,000.

Madison Avenue, off Harrison, bet. Fifth and Sixth. One-story frame.
O.—Thos. McCreagh.
A.—Pissis & Moore.
C.—G. Tressler.
$2,500.

Market, bet. Church and Eighteenth Additions.
O.—G. Smith.
A.—Miller & Armitage.
C.—R. Doyle & Son.
$2,200.

Mission, bet. Third and Fourth. Four-story and basement brick.
O.—Hermann Meese.
A.—Miller & Armitage.
C.—Brick work, C. Morrell.
$10,000.
Balance of contract not yet let.

Market, bet. Sanchez and Noe. Two-story frame.
O.—John Johnson.
A.—Chas. I. Havens.
C.—Jas. Geary.
$3,000.

N

Noe, cor Ford. Two-story frame.
O.—C. Gallagher.
Day work.
$3,000.

O

Olive Avenue, bet. Polk and Van Ness. Two two-story frames.
O.—J. W. Bridgeman.
A.—H. T. Bestor.
C.—Thos. Rendell.
$6,350.

Oak, cor. Devisadero. Three one-story frame stores.
O.—
C.—J. Sheppard.
$2,000.

Oak, bet. Pierce and Scott. One-story frame.
O.—A. Wolf.
C.—B. Dryer.
$2,500.

P

Pacific, bet. Mason and Taylor. Additions and alterations.
O.—S. McAuliff.
A.—Miller & Armitage.
C.—B. Kroeger.
$1,500.

Post, nr. Pierce. Two-story frame.
O. and B.—J. C. Wier.
Day work.
$6,500.

Pierce, bet. Post and Sutter. Two story frame.
O.—Mrs. Durand.
A.—T. J. Welch.
C.—Samuel T. Green.
$3,500.

Page, cor. Broderick. Four two-story frames.
O. and B.—John. Hinkle.
Day work.
$16 000.

Q

Quinn, bet. Valencia and Guerrero. Two-story frame.
O.—
A.—T. J. Welch.
C.—J. W. Smith.
$2,500.

S

Sutter, bet. Pierce and Scott. Two-story frame.
O.—Mrs. Bramer.
C.—A. Walker.
$2,200.

Sanchez, bet. Seventeenth and Eighteenth. Two-story frame.
O.—Jos. Clark.
A.—J. Marquis.
C.—Chalwin & Wilson.
$3,000.

Sanchez, nr. Seventeenth. One-story frame.
O.—H. Petzola.
C.—B. Pfanrer.
$1,850.

Seventeenth, nr. Sanchez. Two story frame.
O.—P. Hallihan.
A.—J. J. Clark.
C.—J. B. Gunyan.
$3,500.

San Jose Avenue, nr. Twenty-seventh. Two and one-half story frame.
O. and B.—J. M. Comerford.
Day work.
$4,000.

Stevenson, nr. Herriman. Two two-story frames.
O.—Mrs. H. A. O'Brien.
A.—T. J. Welch.
C.—H. A. Conrad.
$7,000.

Sacramento, bet. Jones and Leavenworth. Two-story frame.
O. and B.—H. Gallagher.
Day work.
$2,250.

Steiner, bet. Pine and California. Two-story frame.
O.—Chas. McLane.
A.—C. J. I. Devlin.
C.—Ratkin & Kerrigan.
$2,764.

Sacramento, bet. Jones and Leavenworth. Two-story frame.
O.—Wm. Hogan.
C.—H. Gallagher.
$2,000.

Sutter, cor. Laguna. Additions.
O.—W. Butt.
Day work.
$1,500.

T

Twenty-second, nr. Valencia. Two three-story frames.
O.—Dr. T. D. Whitney.
A.—H. E. Henriksen.
C.—Jos. Steele.
$11,300.

Twenty-third, bet. Valencia and Guerrero. One-story frame.
O.—
C.—H. Norris.
$1,500.

Twenty-third, bet. Valencia and Mission. Two-story frame.
O.—
C.—J. H. Thom. Wohrden.
$3,000.

Turk, nr. Pierce. Two-story frame.
O.—Mrs. J. Webster.
Day work.
$3,500.

U

Union, bet. Octavia and Laguna. Two-story frame.
O.—G. and L. Ratto.
A.—W. Mooser.
C.—G. B. Caraglia.
$3,500.

V

Van Ness, cor. Clay. Repairs.
O.—Mrs. Greenewald.
A.—J. E. Wolfe.
Day work.
$1,200.

Valencia, nr. Twenty-second. Two one story frames.
O.—P. Dean.
A.—J. E. Wolfe.
C.—Alexander Flood.
$2,000.

Valencia, junction of Mission. Three-story frame.
O.—F. S. Wensinger.
C.—J. H. McInnis.
$11,000.

Valencia, cor. Twenty-fifth. Two-story frame.
O.—A. Merry, M. D.
C.—A. Nelsen.
$2,500.

W

Washington, nr. Fillmore. Two-story frame.
O.—A. M. Starr.
A.—S. & J. C. Newson.
C.—John Rebman.
$5,000.

MISCELLANEOUS.

Grass Valley—Two-story cottage. O., J. F. Kidder; A., J. E. Wolfe; day work; $8,000.
Sacramento—Twelfth, bet. J and K. Three-story frame, brick basement, and Mansard-roof. O., Bishop Manogue; A., B. J. Cluen; C., A. McElroy; $16,649.
Piedmont—Two-story frame. O., Mrs. F. C. Myers; A., Matthews & Son; C., J. T. Merrill; $6,000.
Oroville—Two-story frame. O., N. Goldstein; A., P. R. Schmidt; day work; $6,000.
San Jose—East side First, bet. San Fernando and San Antonio Streets. O., E. Auzerais; A., Theodore Leuzen; C., Thos. Livingston; $1,400.
Cady Station, Sonoma Co.—Two-story stone winery. O., — Goldstein; C., S. F. Building Co.; $12,000.
Dixon—One-story frame. O., J. M. Gregory; A., J. E. Wolfe; day work; $2,000.

OAKLAND.

Fifteenth, No. 1507.—Additions; o, M. Hanley; a, W. Kirk; c, J. H. Jones; $1,250.
Eighteenth, cor. Eighth Ave.—2-story fr; o, Geo. Watson; a, J. J. & T. D. Newson; c, Fess & Gale; $8,000.
Jackson, cor Thirteenth—Additions; o, I. Upham; a, Matthews & Son; c, W. A. Knowles; $4,500.

BERKELEY.

1-story fr; o, M. Mercier; a, W. Mooser; day work; $2,000

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:

U. S. Government, four sets officers' quarters, Presidio Res., S. F.; H. F. Bruns, cor. Geary and Taylor, S. F.; J. C. Weir, Post, near Scott, S. F.; John MacKenzie, cor. Grove and Broderick, S. F.; L. H. Sweeney, San Rafael; R. B. Gray, cor. Pacific and Van Ness, S. F.; Raymond Hotel, 1,600 windows, Pasadena, Cal.

ENGLISH AND AMERICAN VENETIAN BLINDS

IMPROVED.

The only Perfect Venetian Blind in the market. For samples, prices and information, address,

EDWARD B. HINDES, Agent, 330 Pine St., Room 55.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 7.

THE

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A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., JULY 10, 1886.

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Building Intelligence Facts.

ALTHOUGH there has been a great deal of complaining about dull times during the past month, the number and cost of buildings reported as commencements since our last issue, show that the work still goes bravely on, and that many owners of property are by no means inclined to allow their real estate to lie unimproved. This would not be the case were the indications not encouraging and promising. Those who buy or own building lots are, as a general thing, competent to judge correctly the advisability of planting more of their means in building improvements. And, further, such persons are generally cautious and calculating, and require good and sufficient evidence to induce them to invest, which they are not apt to do unless there exists at least fair assurances of satisfactory returns upon the money invested. Hence it may reasonably be inferred that the outlook is sound and prospectively good.

There is a permanent, healthy tone and under-current which stimulate many owners to active operations in building improvements, while others, who hold back, are strongly inclined to break away from the influences that restrain them, which state of facts assures of a continuation of activities. For those who "want to improve," and do not from trivial cause, will not long remain inactive, while others go ahead and reap the results of their greater confidence.

As will also be noticed by the report, many of the improvements are of the better class, and in the list of "flats," and houses for renting, the cost indicates good buildings generally. The labor agitation has had a somewhat retarding influence, as some owners are disposed to resent by withholding expenditures, when seeming arbitrary demands are imposed. But in the building trades in San Francisco, there have been no strikes among operatives calculated to unduly advance prices. The tendencies have rather been, among contractors, to under-value and underbid on work offered; so much so, that during the season the *pro rata* settlements have been numerous.

REPORT FOR JUNE.

79 frame buildings	cost,	$512,526
2 brick "	"	29,000
18 alterations and improvements	"	111,195
99, total of buildings	total "	$652,721

FOR SAME PERIOD IN 1885.

96 engagements at a total value of	$457,721
Showing a gain for 1886 of	195,311
And a gain on preceding month of 1886 of	251,182

Negotiations not Concluded.

THE announcement in its last issue, that the entire interests of this Journal could be purchased, has resulted in large numbers of inquiries and offers, but none as yet conclusive. The opinion that it is

"A SPLENDID PROPERTY,"

Has been freely expressed, but the query of personal qualification to edit and manage such a Journal seems to intervene. There has not been to us a single doubt expressed that, in right hands, it is the

BEST CLASS JOURNAL PLANT WEST OF CHICAGO;

Still, the "peculiar personal qualifications and fitness" called for seem to be a barrier, and a thousand suggestions have been volunteered as to the class of mind, intelligence and executive abilities required in its conduct, all of which we know from experience to be more or less imaginary and hypothetical; for when the present management began its publication, in 1879, it was without the slightest experience in connection with the publication business, and equally as little as editor and manager; besides which, at the time of its commencement, the building, financial and all other interests of the State, were encompassed and engulfed by the terrible state of depression brought about by sand-lotism, and the fearful gang of demagogues and panderers, to the worst and most wicked passions and fancies of the deluded and thoughtless crowds of unreasonable men, who were incited to clamor and hope for *Reform!* with the ultimatum of murder, arson and the annihilation of all "bloated bond holders," which included a large proportion of the successful and well-to-do citizens of this city. This state of things brought about a condition of approximate or absolute poverty and distress among mechanics and the working classes, and great financial contraction in all directions. Yet with all these

MOST TERRIBLE CONDITIONS,

Which passed away only by slow degrees as time rolled on, *this Journal worked and paid its way*, increasing in influence and public favor, until it has reached its present high position among the class journals of the country.

If, therefore, from a beginning unaccompanied by a single encouragement, other than a personal determination and purpose to brave the issue, so much has been accomplished, what we ask may not be anticipated for its future, with its foundations well and firmly laid and cemented, its superstructures all well proportioned, and its surroundings all of the most favorable character.

WHO SHOULD OWN AND CONTROL IT?

Many personal propositions have been made to purchase, by men seemingly well, if not in every respect qualified for its management, but who have not the financial resources.

The more general sentiment prevailing is, that it should be controlled by the architectural profession as a whole, or by *a syndicate of prominent architects*, to make it absolutely THE REPRESENTATIVE ARCHITECTURAL JOURNAL *of California and the entire Pacific States and Territories.*

Under such management and control, the splendid reputation it has already gained by the unaided efforts of a single individual, would be increased ten-fold.

At present there exist jealousies and prejudices, which would disappear, with the Journal under the general, interested management of a number of reputable architects.

If, as some now suppose and say, the present and past successes of the Journel are the results of the influence of one architect and his office, is it not then fair to presume that if twenty or more architects should concentrate their personal and office influence in its favor, its

FUTURE WOULD BE GRAND BEYOND COMPARISON.

Present management urged to continue. A large number of personal friends and patrons, among them many of our most prominent professional brethren, leading contractors, advertising patrons, and owners of real estate, have urged us to continue our publication labors, adding, "The Journal must be continued;" "It is a necessity on this coast;" "Such a Journal we must

have," etc., to all of which we have given the one reply stated in our first announcement, that we want and must have relief from the excessive cares, labors and responsibilities imposed by the triple duties of editing and managing the Journal, and as practicing architect,—a complication of more than any one individual can master successfully, without compromise of all personal comforts, and undue strain upon the mental and physical strength and energies.

Many well-informed parties have said to us during the past month, "We know of no one in San Francisco qualified to assume its charge." This may be true as far as individual knowledge is concerned, but it is not so as a general fact. There are, beyond question, in this city,

HUNDREDS OF COMPETENT MEN

Who, if not familiar with all the details of monthly publications, are sufficiently qualified to master the situation within sixty days, during which time the assistance that will be given by the present management, will perfect them in the entire work.

If it passes to parties who are not practical architects, it will gain instead of

LOSING ARCHITECTURAL FAVOR,

As such a change will secure patronage in directions at present inimical to its success; and influences now opposed to it among mechanics will change to support, and so give it additional strength and prosperity.

The many offers thus far received are held contingent upon those that may follow. As we are not in haste to make the change, we shall deliberate thoughtfully upon each proposition submitted, hoping that when a change is made, it will be such as to place the Journal in right hands, and thus make its future an assured success for all time.

Appropriate Souvenir.

MR. JAMES E. WOLFE—*Dear Sir:* In laying the cornerstone for the new Methodist Episcopal Church South, of Woodland, on the 10th inst., we took the liberty to present to the officers of the church the last number of the CALIFORNIA ARCHITECT, with your regards, which was accepted with thanks, and the volume placed in the casket with many other valuable articles, and the casket was sealed and deposited in the cornerstone of the edifice, there to remain until some future generation may, perchance, open it and again unvail to the world that *May number of 1886*, from its long and peaceful rest, and those columns you have so earnestly and ably furnished will be perused by many an ardent observer, who will carefully scan the record of the past and mark the infinite diversity of human aims in this short-lived struggle of dependent humanity. Let us work and work well, while the day lasts, and be ready when the great Architect of the universe has need for us, and hope that our bodies may rest as secure and peaceful as the volume in the corner-stone, while our spirits and good influence will ever on.

Respectfully yours,

GILBERT & SON.

Woodland, June 14, 1886.

Press Excursion.

THE annual excursion of the Press Association will take place this month. The members, in a special train over the C. P. R. R., will leave this city on the 19th, and will visit Reno, Truckee, Lake Tahoe, Carson, Virginia City, and other points of interest. As press of business will prevent a personal inspection of the country in regard to building news, we have secured the services (kindly volunteered) of a brother editor, and will report in this Journal the state of building activities as they exist over the line traversed by the excursionists.

ALL law-abiding citizens regret the late terrible scenes of riot and bloodshed in Chicago, caused by the misguided anarchists, and every true American citizen, whether native or adopted, is ready to advise that they be stamped out, and to assist, if necessary, in doing it. But that riot has been of value to the trade organizations of the country in showing the public the great difference between the anarchists and organized labor, officered by men who are outspoken upholders of law and order, and who seek to hold in check the vast heterogeneous mass comprising their assemblies. They counsel peace, moderation, arbitration, and when very serious grievances appear they are ready to say to employers, "Come, let us reason together."

A bound volume of this Journal, for either of the years. 1880, 1881, or 1882, will be sent free to all new subscribers for balance of this year and 1887.

Twenty-first Industrial Exhibition of the Mechanics' Institute.

THE annual exhibition of the Mechanics' Institute will be opened in this city on Monday, August 16. Its general character will be similar to that of its predecessors. The Directors have separated the exhibits into two classes, viz., those that are entered for exhibition, and those for competition. If the latter, they must be in position, and receipted for, on or before August 26. If not entered by that time, under no circumstances will such articles be allowed in competition, except with the written consent of all the contesting exhibitors, and the sanction of the Board of Trustees.

The following extract from the Rules and Regulations will be of benefit to those desiring to enter articles for either exhibition or competition:—

The award of a gold medal for best general display will debar any article in the same from competing for any other premium.

Space applied for and not occupied by August 21, may be assigned to other exhibitors.

No articles will be allowed in the Exhibition of an explosive, inflammable, dangerous, or offensive character.

No nostrums allowed in the building.

Articles must remain on exhibition until the close of the Fair.

All exhibitors will be required to keep the space under their control clean, and in good order. All coverings over goods to be removed before 11 A. M.

The greatest care and vigilance will be exercised by the managers, and the most effectual means taken, through the agency of the police and otherwise, to effectually guard and protect the property on exhibition; but under no circumstances will the Mechanics' Institute, or the managers of the Fair, be responsible for any loss or injury to articles placed on exhibition. *The owner must take all risks.*

The list of articles in the premium list is divided into forty-seven classes. The prizes consist of gold, silver, and bronze medals, and diplomas. Coin prizes will be given in the various classes as follows:—

Horticulture and Farm Products. In the former class the first, second, third, and fourth prizes are, respectively, $75.00, $60.00, $40.00, and $25.00. In addition, special prizes will be awarded to best display of flowers from private gardens. Premiums in this class will be a medal and coin, the latter being in amount, $15.00, $10.00, and $5.00, according to merit.

The largest premium to be given is in Class 47, Farm Products, viz.: For the best, most extensive, and varied exhibit of farm products (exclusive of live stock) by any county in the State, Gold Medal and $250; second best display, Grand Silver Medal and $150; third best display, Silver Medal and $100; fourth best display, Bronze Medal and $75.00.

All articles entered under the headings, Fruit, Dried Fruits, Nuts, Canned and Preserved Fruits, Vegetables, Dairy Products, Honey, Meats, etc., Wools and Cottons, will be subject to competition for medals or diplomas, and a monetary prize, ranging in value from $75.00 to $5.00.

The Directors have been very earnest in their endeavors to include in the different classes all articles liable to be placed on exhibition, but should anything be entered not included in the list, they have reserved the right to declare the exhibitor entitled to a special prize.

We sincerely hope that the Directors will take measures to illustrate to their patrons the *practical* workings of technical schools. This can be readily done, and perhaps be the means of inducing some of our moneyed men to encourage the establishment of such schools in many different portions of the State.

As an inducement to increase their membership, the Directors wisely adopted a rule by which each and every one belonging to the Institute can purchase a season ticket to the Fair at one-half the usual rates.

Risk of Contractors.

ONE of the most serious risks which building contractors incur and yet one which many of them habitually overlook till a costly damage suit opens their eyes, is the civil responsibility of an employer for injuries suffered by his employes while in his service. A recent suit in Paris, reported in *La Semaine des Constructeurs*, is instructive as showing the tendency of French courts to hold contractors to increased responsibility for their workmen. A mason employed in the erection of a building in Paris was struck on the head and instantly killed by a large piece of iron, which was accidentally dislodged from an upper floor directly over where the mason was at work. His widow sued the contractor for twelve thousand francs damages. It was held to be a contractor's duty diligently to care for the safety of his men by all reasonable means, to warn them of the dangers attending their employment in various locations, and to furnish adequate protection where possible. In this case, the contractor, failing to do this or even to warn the man of his danger, was responsible for the fatal accident, which a little more care on his part might have prevented. The editor remarks, in comment, that the tendency of the French courts is to increase severity in estimating the responsibilities of employers for the safety of their workmen, and cites another case where it was explicitly held that contractors are bound "to care for the safety of their men, and to protect them from the dangers incident to their work;" that "under penalty" they must anticipate "possible causes of accident," and take, and cause to be taken by their agents, all necessary precautions to prevent or avert them; that "they are bound even to guard the workmen against the consequences of their own imprudence." The general rule of the French courts is, further, to acquit the employer of responsibility only where "the imprudence of the victim has been the sole cause of the accident." This looks severe, but we should hesitate to say it is not in strict accord with the dictates of a sound public policy, as well as of humanity. It would certainly be well for American contractors to lay it to heart, as a measure of their moral, if not legal, responsibility.

In connection with the rigid rulings of the French courts, it may be well to note the tendency of English law on the same subject. A recent case, that of Griffiths against the St. Katherine's Dock Co. of London, reported in the *Building and Engineering Times*, furnishes an illustration. The plaintiff was injured by the fall of an iron door, which had been in an unsafe condition for a long time previous to the accident, and this fact was well known to the defendant company, as was proved and admitted on the trial. The court held that this alone was not sufficient to make the company answerable in damages, that it was necessary further to prove that this danger was unknown to the plaintiff, up to the time of the injury. The general principle was laid down that, "if a servant enters or continues in an employ, knowing of the danger incident thereto, he cannot recover, since he might have escaped by leaving the service." It may be well, perhaps, to admonish some classes of employes, that if they continue in dangerous work, they do so at their own risk; but it is not difficult to imagine cases where the peculiar nature of the business or of the workman's position is such that he is practically unable to leave his employment, though he knows it to be dangerous. In overcrowded London, a man who should throw up one place might suffer much privation before he could get another, and the new place might prove yet more dangerous than the old, and farther from his home and in many other ways less desirable. But it is difficult to imagine a reason other than criminal negligence, why a corporation should knowingly permit the premises occupied by its workmen to be in an unsafe condition and remain so; and the law which relieves a corporation of responsibility for accidents which happen to its men through such willful neglect to repair its own premises, on the heartless excuse that the injured men knew of the danger, looks more like a temptation to manslaughter than anything else. We trust it will not be considered an authoritative precedent for American courts.—*The Inland Architect and Builder.*

Farm and Fireside of April 1 gives some interesting figures showing how the mechanics of Springfield, Ohio, are kept in poverty. It cites two cases of losses, the first being a loss of $25,000 a year on coal. "The retail price of coal in Springfield has been a dollar a ton higher than in Columbus, the difference in price being more than double the difference in cost of hauling." The five thousand families will burn during the year not less than fifty thousand tons of coal, on which they have been wrongfully taxed more than a half dollar a ton, or $25,000 per annum, which might have been saved by uniting in the purchase of coal. The other loss is one that comes through rum. Springfield maintains 175 saloons, and the estimate is made that the 25,000 inhabitants expend $350,000 annually, which enormous sum is mainly drawn from the pockets of laboring men.

THE first Bessemer steel converted in the South was made at Chattanooga, Tenn., on April 19, by the South Tredegar works. The experimental cast of two gross tons proved excellent steel under all tests applied. The material used was pig-iron from Cranberry ores, North Carolina, and shows that ore to be excellent steel material. The plant has a capacity of eighty-five tons per day. The success has caused much gratification among Southern iron-masters.

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Building Permits.

AS we understand it, in nearly all the Eastern cities, laws or ordinances exist, requiring the obtainment of building permits in *all cases* of the erection of new or remodeling of old buildings. Such a regulation is good, and should be in practice everywhere, as it would regulate procedures and prevent many of the difficulties which so often arise in San Francisco, particularly in connection with the alteration of buildings within the fire limits. At present, there are ordinances requiring permits to open streets, for the putting in of sewers, etc., on which a deposit of twenty dollars is required, to insure the proper replacing of the street, and also permits to occupy a certain portion of the street during the erection of buildings, building areas, etc., in certain parts of the city, at least. If this permit rule was general and imperative in all cases, it would furnish an easy method of ascertaining the extent of building improvements made during the year. As it is now, everybody does and acts as he pleases, and there is no check upon irregularities. There should be a compulsory and imperative law upon this point. It would be an easy matter for an owner, architect, or builder, to report every improvement entered into, and obtain a permit; and a penalty should attach to every violation of the rule. The do-as-you-please practice is all well enough in most matters, but there are others in which individual rights and privileges should be made to subserve public interests. No harm could possibly result from such a regulation, while the general information afforded by it would be at least gratifying to every one interested in the growth and improvement of the city. Speculative estimates are often indulged in as to the amount of work under way at certain periods, often varying materially from actual facts. The permit system would remedy this, and furnish daily statistics of what was being done in the building line. Excessive or diminished estimates of business conditions sometimes do harm, and the degree of business prosperity is often misrepresented, leading to wrong conclusions. In cases of death, and in other matters, obligatory ordinances compel notices of the occurrences, because the public good seems to demand it, and the growth and prosperity of the city is a matter in which all citizens are interested, and in reference to which they have a right to be informed, which would be the case if a perfect permit system was established; one which could not be ridden over with impunity, as too many of the regulations on the ordinance book are.

THE modern improvements of the past few years have received great favor and general adoption in nearly all classes of buildings—but practically in the better kind. But with the convenience afforded by them, they have been the medium of a vast amount of sickness, suffering, and *loss of life*,—not of necessity, but because too great neglect and carelessness have been practiced in their application, and too much indifference to *serious consequences*. The modern improvements as a general thing are good, but the best invention in the world may be rendered worthless, or injurious by being tampered with by unskillful hands. There are hundreds of *pretending* mechanics, to whom it would be unwise to intrust anything requiring good judgment and practical mechanical skill, and the greater number of defects and failures in connection with the introduction of these improvements, grow out of this one cause or fact. There is no good reason why wash basins, etc., may not be set in any chamber or place, with perfect freedom and security from all bad effects, yet there are *hundreds of ladies* who object to their introduction, because of known cases where they have proved offensive,—while in fact, the whole difficulty exists in the incompetency of the superintending party, or the mechanic doing the work, and not in the thing objected to.

Circumstances.

THAT circumstances have a great deal to do in shaping a man's life, no one can deny; for experience teaches us, and observation and historical research prove it so.

Shakespeare says, "There is a divinity [or something else] which shapes our ends, roughhew them as we will." There is no absolute dictation or iron-bound fatality in this quotation, but rather the opposite. While we would not ignore the existence of a divine power in the universe, in whose hands, and under whose control are all things in heaven and earth, while there is at times some circumstances over which man has no control, still there is nothing in these two facts which in any way hinder man from being successful and happy if he observes well the laws of his being and the laws that govern and control the movements of ordinary life.

We are not, by any means, mere living and breathing human machines, but, on the contrary, we are free, responsible agents, gifted with the power of choice, and capable of discovering right from wrong, and with full liberty to do what we will, and be what we may.

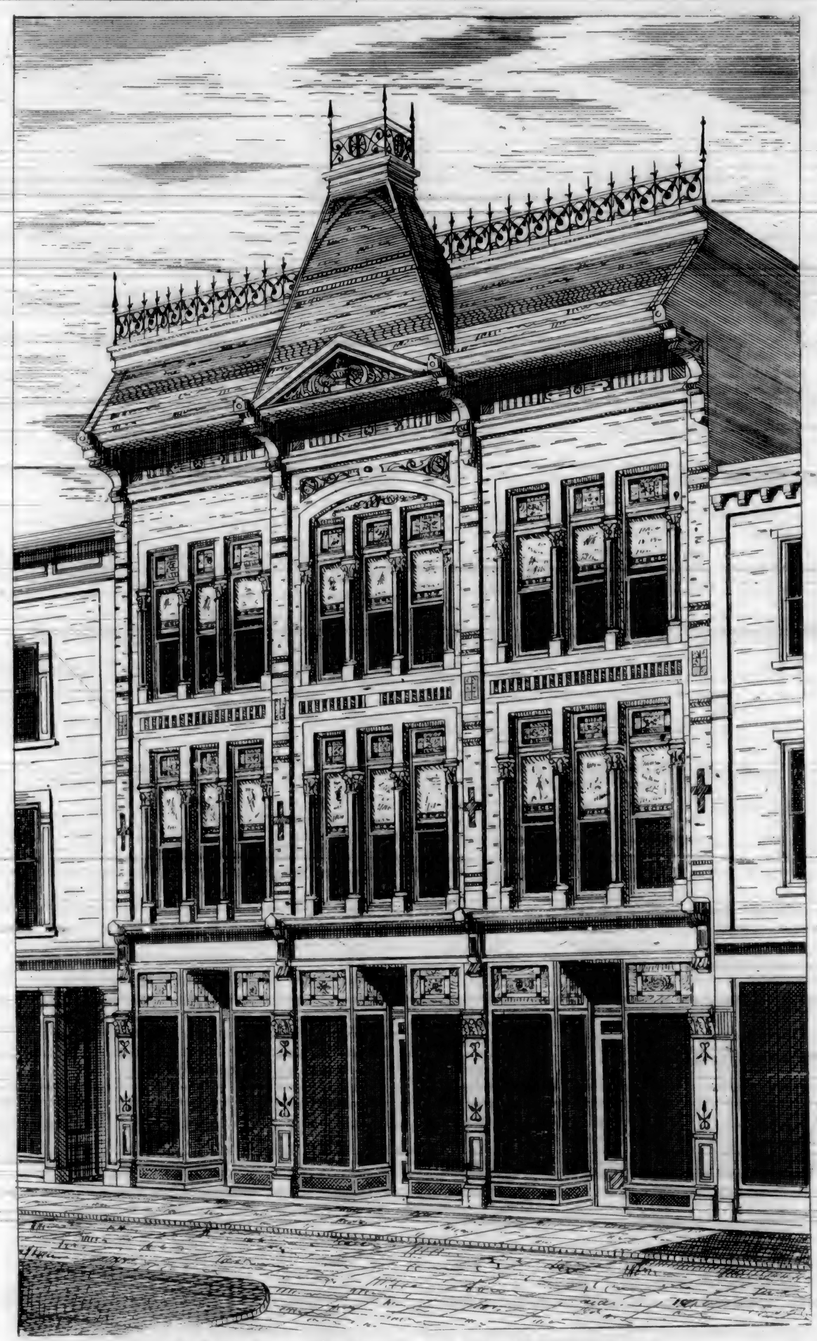


PLATE 1.—FRONT ELEVATION FOR A MERCANTILE EDIFICE.

S. F. Chapter of Architects.

THE regular night for the meeting of the Chapter occurring this month on the eve of the holiday, the attendance was limited to but a few members. The time was, however, profitably spent in general conversation and discussion of topics of interest to the profession. The reading of papers by Mr. Sanders was postponed until next month, when it is hoped there will be a full attendance.

Ash, oak, walnut, etc., must step down and out before many years, and give place to mahogany, which is now used for insides and for ornamental work on railway coaches; 10,000,000 feet of mahogany annually is now the figure, as against 500,000 feet five years ago. It is said that the mahogany is now but slightly dearer than our native woods—walnut and cherry—but that it is superior to them, in that it does not warp nor check.

Eight-Hour Movement.

THE full strength of the eight hour movement at the end of the first week after May 1, the date of its attempted inauguration, was clearly shown by statistics published. The total number of workmen committed to it in all parts of the country was estimated by *Bradstreet's* at 325,000. The demand for shorter hours was early conceded to 150,000 without a strike, and to 356,000 as the result of the strike, leaving 140,000 still striking at the time referred to, or defeated. The trades in which the movement was most successful are those connected with house building, agricultural implement making, furniture making and machine building. These trades are not subject to foreign competition. In those which are subject to such competition, either in the way of exportation of the domestic product or importation of the foreign, the movement met with very little success. The whole movement may be regarded as experimental. In those branches of industry which yield sufficient profit to warrant an increase of wages, for that is what shorter time most commonly signifies, the increase has been very generally granted. In others it has not been granted, or, if granted, it will be withdrawn later. The principal part of the loss entailed by such an experiment proceeds from the stoppage of machinery. This machinery may be of the nature of general business superintendence, clerical force and organized system, as well as actual machines and tools in use. A deduction of 20 per cent. from the producing power of a large manufacturing establishment means more to the community than a deduction of one fifth of the laboring force.

The organization of labor has thus far proceeded upon a false assumption, namely, that the wage-earners are a class having rights and interests other than and different from those of other classes. In a republic, where all men are equal before the law, and where the theory of government presumes that the greatest good of the greatest number will be sought in the framing and execution of all statutes, the idea of class rights and interests is mischievous. The interests of the wage-earner are the interests of all citizens. The time cannot be far distant when the need of yet another organization among the workingmen of this country will be recognized—an organization to protect intelligent and conservative men in the exercise of their civil rights against the oppression of those who follow the lead of dangerous demagogues, and are blinded by ignorance, prejudice, and passion, to their own welfare. The happenings of the past six months have been very instructive as emphasizing the tendency of labor to oppress labor, and the need of protection for those of independent thought and action against its cruel coercion. The order of Knights of Labor, however restrained, cannot accomplish this object. Its purpose, as defined in its fundamental law, is not that to which a majority of the thoughtful and intelligent wage-earners of the country can subscribe. It demands a scheme of national and State legislation inconsistent with the best interests of the community, and especially of the wage-earner. Those who are attracted to the order by its profession of principles are not safe leaders of a movement which wise men can follow.—*Carpentry and Building.*

Proportion of Rooms.

SPEAKING on the subject of proportion of rooms, with reference to their sanitary features, Douglass Golton says: "For purposes of ventilation the height must bear some relation to the size. Adequate movement in the currents of air cannot be secured in a room unless the height be proportioned to the width and length. The minimum height must be fixed with reference to that which will allow the currents of air to circulate without being inconvenient to the occupants. Therefore, in proportion as the width and length of a room are increased, so must the height be increased. On this account it is not advisable to make rooms much less than ten feet high. With large rooms, as the height should be increased in proportion to the size, if the cubic space be the measure of the number of occupants, the area or floor space per occupant would diminish with the size of the room. As, therefore, the height of rooms is necessarily variable, it follows that it is rather the floor space which must be considered in allotting accommodation to the occupants of a room than the cubic space. In barracks a floor space of from 50 to 60, and occasionally 80, square feet is allowed per occupant. These are for rooms occupied by day as well as for sleeping-rooms. In work-houses, for dormitories, a minimum floor space of 25 square feet has been admitted, provided the ventilation was carefully attended to. In nurseries and servants' rooms from 50 to 60 square feet are desirable per occupant—that is to say, a room 10 feet square, or 10 feet by 12 feet in area, should not contain more than two persons. In school rooms which are only occupied during parts of a day, and where the air can be changed between the periods of occupation, a less amount would suffice, and from 15 to 20 square feet are sufficient."

Our Illustrations.—Plate 1, front elevation for a mercantile or business house. Plate 2, a cabinet and case of drawers. Plates 3, 4 and 5 descriptions of the ferry steamer *Solano*, the largest ferry boat in the world. Plate 6, the better class of Chinese garden huts, many of them being far more wretched in general appearance, the walls and roofs being covered with old tin cans, etc.

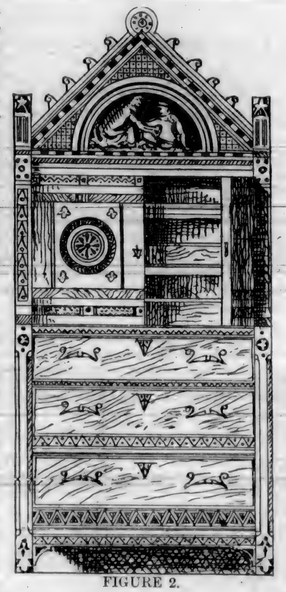


FIGURE 2.

But few fully and rightly understand or realize that errors may be committed in the erection of a home for their families calculated to produce sickness and death to loved ones. Yet it is so, and those who contemplate the erection, particularly of private dwellings, cannot exercise too much care and caution in every particular, so as to avoid mistakes and errors of every sort. Too often pretenders, willing to render services for nominal compensation, whose knowledge beyond the mere matter of drawing lines and coloring plans is exceedingly limited, and so far as possessed, of an imperfect character, are intrusted with the responsible duties of an architect. Consequently when they enter into detailments by specifications of that which is to be done, they conglomerate ideas so badly, and specify so much at variance with good mechanical judgment and common sense, that a superabundance of serious blunders and impracticabilities at variance with all proper mechanical principles follow. This is particularly the case in reference to plumbing and sewer work, than which there are no more essential features in connection with house-building. They commit, virtually, criminal errors; for their mistakes sometimes destroy more valuable lives than their own. Both owners and architects should consider this subject carefully, the former to avoid the mistake that all men are competent in the lines of business or profession followed by them, and the latter, not to claim an understanding of matters beyond their actual qualifications and the reach of improvement. No man is fitted to perform duties in any connection, who conceives the notion that beyond the bounds of his own knowledge there can be no advancement. Advancement and progression have been going on since the day that Noah left the ark, and sensible and practical men realize the fact that there is and ever will be more to learn, and that the fountains of improvement and knowledge will continue to flow so long as life lasts. It is only simpletons who *know it all*, and assert for themselves absolute superiority of thought and practice. Care is therefore necessary in the selection of parties to intrust with responsible duties, and owners will best subserve their own interests by its fullest exercise in connection with the erection of homes for their families. There can be no question but that *tens of thousands of lives* have been sacrificed by the employment of cheap, incompetent architects, plumbers, etc., resulting in imperfect dwellings, where, through defective plumbing and sewer work, the poisonous gases have entered buildings, to work out their own terrible results. The veriest fraud of a plumber will often assert absolutely perfected knowledge of the intricacies in this connection, and with the cavalierness of a highwayman claim that those things that have occupied and puzzled capable minds are, to him, well understood. Good meaning, honest owners are often entrapped by such deceivers into a reposal of confidence, which results injuriously. If the plastering, painting, and other works of a building are poorly executed, each and all are annoyances, but not fatal to health and life. Hence the importance of certainty in these special directions, by and through which alone healthful homes can be secured.

It would require 50,000,000 pounds of wire to erect a telegraph around the earth at the equator, and but a half-pound of the thread made by a certain species of spider.

The Ferry Steamers of California.

GREAT credit is unquestionably due those who conceived the plans, and to the skill and genius of California mechanics and artisans in the production of the many elegant and powerful steam vessels used as "ferry-boats" upon the bay of San Francisco and its tributary waters.

Pre-eminent for massiveness and power is the *Solano*, the special object of the accompanying illustrations, plying between Benicia and Port Costa, across the flowing and ebbing waters of Suisun Bay, and completing the connection of Central Pacific Railroad travel to and from Sacramento and across the continent, while the *Piedmont* and many other large and commodious passenger ferry-boats, fill out the link between San Francisco and Oakland. The *Tiburon*, *Newark*, *Bay City*, and numerous other elegant ferry vessels—population and travel considered—provide ferry facilities as great and comfortable as are to be found in any part of the world; and in the matters of convenience, size, and completeness, the ferry steamers upon the bay of San Francisco are unsurpassed.

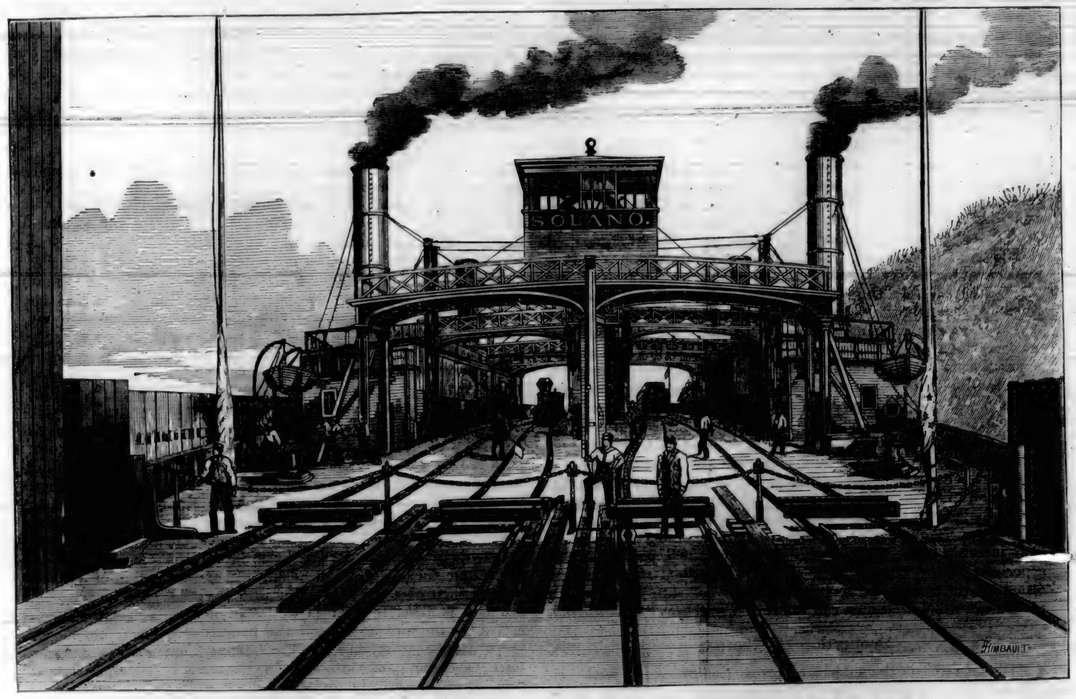


PLATE 3.—THE "SOLANO" IN DOCK, SHOWING GENERAL LONGITUDINAL APPEARANCE.

Equal credit is also due to the companies who have by their means brought about these handsome results, in that home labor and material have been employed in nearly every instance, and local industries encouraged. Large amounts of money have been disbursed among mechanics and working people in steam ferry enterprises. The first connection between San Francisco and Sacramento by Central Pacific Railroad was by way of Niles; but the considerable grades on that route and the greater business promise of a shore route, induced the company to seek a right of way along the margins of San Francisco, San Pablo, and Suisun Bays, and the straits of Carquinez. But the first change made in the location of the road, while it avoided grade, did not diminish the distance, and this fact, combined with other considerations, culminated in the building of a shorter and more direct line of travel. The distance between San Francisco and the capitol city, Sacramento, by the "old river route," is one hundred and twenty-five miles, and about the same by the first located roadways. To overcome this, and remedy the discomforts of tedious traveling by water, the project was conceived of building an air-line railroad across the tule and marsh land and through the counties lying westerly from Suisun Bay. To this end, proper surveys were made, showing a decrease of nearly forty miles.

In order, however, to render the proposed new route practicable, it was found necessary to establish a ferry at Port Costa, situated thirty-two miles from San Francisco. To gain time was the principal idea which led to the conception of the largest ferry-boat in the world. Size, indeed, was needed in order to accommodate the numerous trains, crossing and re-crossing, in order that travelers and merchants would not suffer from long and tedious delays incident to small boat accommodations.

It will be noticed that there are four lines of rails on the deck of the steamer. To show its immense carrying capacity, the following measurements will enable any one conversant with railroad cars to estimate the number the *Solano* will take at one time. The extreme length of the main deck is 494 feet 8 inches; length of hull, 406 feet 2 inches; width over all, 116 feet; width between wheel casings 64 feet; height amidships, 18 feet 6 inches; height at ends, 15 feet 9 inches; draught when loaded, 6 feet 6 inches; tonnage 3540 tons. From the above measurements, it will be seen that there is ample accommodations for forty-eight freight cars, or twenty-four passenger cars, besides locomotive and tender. As long trains have to be divided, it is necessary that an extra locomotive accompany each train that is ferried over. Our engraving also accurately shows the arrangement of the apron or stage by which trains are transferred to and from the boat. This is so nicely arranged and balanced that scarcely a jolt is felt by the passengers in the cars when the train leaves the steamer for *terra firma*.

Two separate vertical beam engines propel the boat. These were built by Messrs. Harlan and Hollingsworth, of Wilmington, Delaware. The cylinders are 5 feet 2¼ inches in diameter, with 11 feet .28 inches stroke. Each engine is fully capable of developing 2,000 horse-power. Steam is furnished by eight boilers, each 7 feet .25 inches in diameter and 16 feet long. They are made of steel, and have 143 tubes 3.94 inches in diameter, and 16 feet long. The total heating service is 19,630 square feet. No coal is used, the steam being developed by the burning of crude petroleum. The wheels are 30 feet in diameter and have 24 floats. Each wheel can be worked independently of the other. Unlike any other steamer that we have seen, the wheels are not on a line, one being considerably in advance of the other; this was done so that the boat could be easily and quickly turned in order to enter the slips on each end of the ferry route without injuring the same.

The above engraving represents the general construction of the *Solano*. Beneath each line of rails runs a deep Pratt truss, the top flange of which is attached to the deck and the bottom to the hull of the boat. The latter is divided by bulkheads into

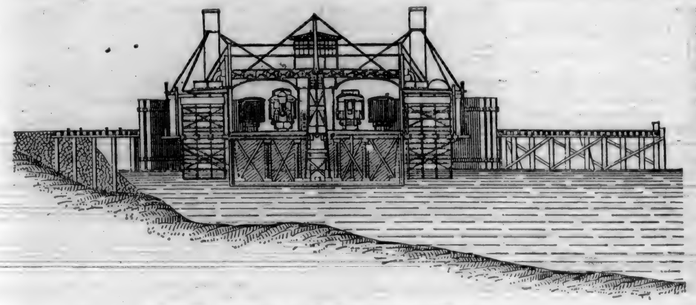


PLATE 5.—FIG. 2, SECTIONAL VIEW OF HULL.

twelve compartments. There are four balanced rudders at each end of the vessel, 10 feet 6 inches long and 6 feet 6 inches high. These are worked by hydraulic steering gear, but can be actuated by hand when desired. The pilot-house is more than 40 feet above the deck. The stages, or aprons, for embarking and disembarking trains, are massive iron structures, 98 feet 6 inches long and weighing 150 tons. They are provided with four lines of rails, and are controlled by hydraulic gear to adapt their position to the rise and fall of the tide.

The two towers seen in the back ground (Figure 2) near the center of the engraving, are similar to those near the slip where the *Solano* is at rest. They mark the entrance to the slip on the Benicia side of the bay. The large mountain on the right is called Mount Diablo. The track on the right is the one by which passengers and freight are conveyed to Stockton, Los Angeles, New Orleans, and way stations. It also connects at Lathrop with trains for Sacramento and all points east to New York, *via* Central Pacific Railroad. Immediately around the turn as shown, are the immense warehouses and docks of the Nevada Transportation Company.

Some difficulty was experienced in selecting a name for the subject of this article. The inhabitants of Benicia, with a just pride, desired the leviathan to be named after that place. After careful deliberation, the company decided that too much confusion would likely be caused in regard to the distribution of mail matter. Letters and packages intended for the boat *Benicia* might be delivered to the town by that name, and *vice versa*. So the name of the county in which Benicia is situated was given to the magnificent specimen of marine architecture, justly entitled to be called the largest ferry-boat in the world.

Why Nearly All the Railroads Are Four Feet and Eight and One-half Inches Wide.

A CORRESPONDENT asks: "Why was the standard gauge of railroads fixed at 4 feet 8½ inches? What was the scientific reason for adopting the fraction of an inch?"

There is no scientific or any other reason for it, except precedent and custom. In fact, all scientific or practical considerations that can enter into the question are against it. When Mr. Stephenson built his first locomotive, he, for some reason best known to himself, built it to the gauge of the old tramways—for vehicles drawn by horses—in England, which was 4 feet 8½ inches. That became what was known as the "narrow gauge" in England, and was naturally followed in this country to a very great extent. Some of our roads have a gauge of 4 feet 8½ inches; others, 4 feet 8¾ inches; and still others, 4 feet 9 inches. In England they have a 6-foot "broad-gauge," and at one time, for a very little while, tried a 7-foot gauge. The Erie road, built by English capital, was at first a 6 foot gauge, but in 1876 the changing of it to 4 feet 8½ inches was begun, and now it is all of that gauge. The Pennsylvania Railroad Company uses a gauge of 4 feet 9 inches, because that is a compromise gauge between the former gauge of 4 feet 8½ inches on the Eastern lines and 4 feet 10 inches on its roads west of Pittsburg. It would be well if the 4 feet 8½ inches gauge could be widened a little, to enable greater width of the fire-boxes of locomotives, and consequently more powerful engines, such as it would be desirable to employ.

Light colors absorb less and reflect more heat than dark colors. White is the best reflector, and black the best absorber and radiator, provided the colors are not covered by coatings of varnish.

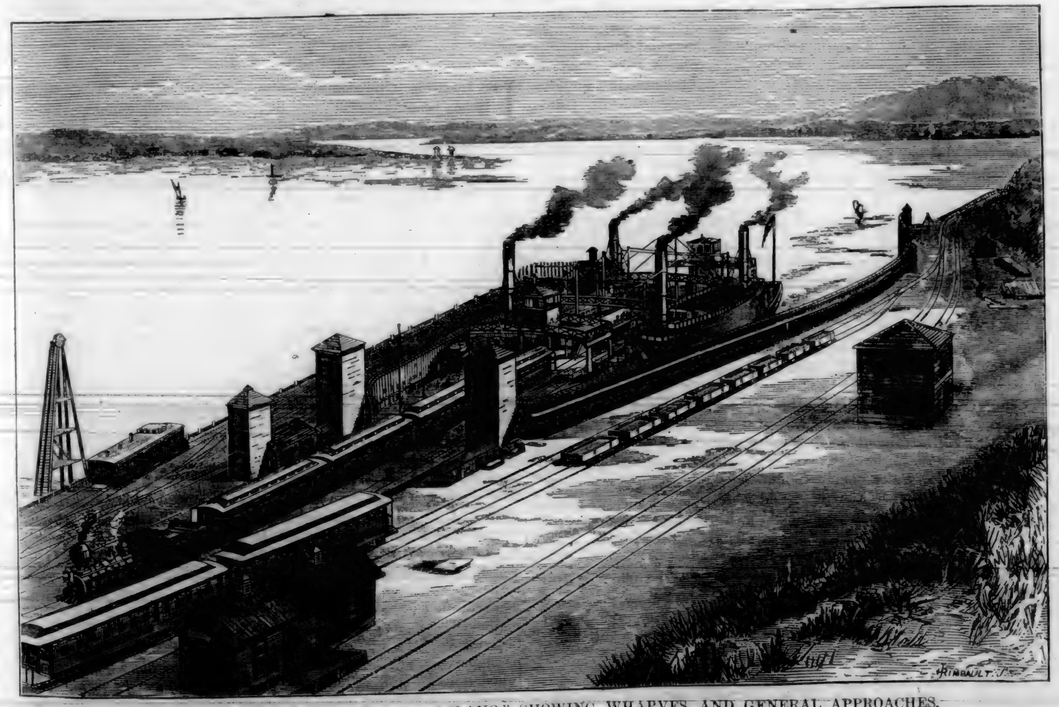
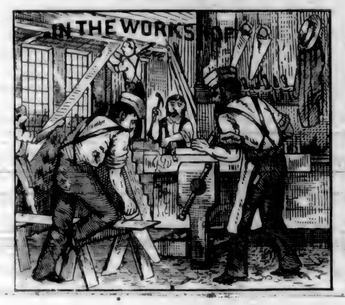


PLATE 4.—ISOMETRICAL VIEW OF "SOLANO" SHOWING WHARVES AND GENERAL APPROACHES.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade. We especially invite suggestions from apprentices and young mechanics.

"A carpenter is known by his shavings." He is also known by the character of his work, and the state of his tools may be known by the same standard.

To Find Number of Studs Required around the Outside of Building.—Take three-quarters of the circumference—in feet—of the outside of the building. Add one stud for each corner, angle, and opening; or, allow one stud for every foot of the outside measurement.

In planning stairs, think of your head room from the lowest starting point to the highest landing, or somewhere in ascending or descending stunning falls and broken limbs may accompany bruised foreheads and broken heads.

The "Steel Square and Its Uses," as it originally appeared in these columns, will not be published in book form. We have, however, a work by that name which we will forward to any address upon receipt of $1.00, either in coin or one-cent stamps.

Bad work is set out by the "rule of thumb."

Driving Nails.—The handle of a hammer should be grasped at a short distance above the end of the handle, in such a manner that the end of the handle projects an inch or more beyond the side of the hand. The hand and the eye act so well together in concert that, after a little practice, the amateur will have no difficulty in hitting a nail square on the head. If not so hit, the force of the blow will be partly lost, and the nail will be moved out of position. In driving nails in hard wood, a hole should first be made, either with a brad-awl or a gimlet. Sometimes a knot will cause a nail to swerve from its right direction, and even to curl up, thrusting the point through the wood at no very great distance from the hole at which it has entered, "coming out," in workman's parlance, "*to have a look at the fool that is driving it.*

One thousand feet of lath are 2,000 pieces, and will cover 120 square yards.

Jack Planes; Why so Called.—"Since every Jack became a gentleman, there's many a gentle person made a Jack." So wrote W. Shakespeare, Esq., in his immortal tragedy, "Richard III." The term "jack" seems to have been applied to any mechanical contrivance for replacing the personal service of an attendant, or to an implement subjected to rough and familiar usage. In England the most common name is John, and the familiar synonym of that cognomen—Jack—was applied to the plane. It is derived from the Jewish word "Jacobus," and was corrupted into "Jacques" in France, and, being the commonest Christian name in the latter country, was used as a contemptuous expression for a common man; hence the term "jack" is applied as mentioned above. Besides the jack plane, we have roasting jack, jack screw, boot jack, jack towel, jack boots, black jack, etc.

One and one-fourth yards of good sand will suffice for 100 square yards of plastering; 1½ barrels of lime for one coat, and 2½ barrels for two coats, for same number of yards; one bushel of hair to above quantities. One-third barrel plaster will hard-finish 100 square yards.

Tall Chimneys and Spires.—Lowell has four chimneys over 200 feet high. The Merrimack Company has two chimneys 283 and 206 feet respectively; also 110 steam engines. Glasgow, Scotland, has a 446-foot chimney, not for smoke, but for chemical fumes, and another chemical chimney of 350 feet; and Manchester, England, has one of 415 feet. The Merrimack Company's is the tallest smoke-chimney in the world. The Tremont and Suffolk Company has one 225 feet, and the Lawrence Company one 211 feet. The chimney of the Pacific Mills, Lawrence, is 227 feet; that of the Navy Yard, Boston, 239½ feet. Bunker Hill monument is 221 feet tall. Trinity Church spire, New York, is 284 feet.

Fifty pounds of building paper will cover sixty yards.

Many thoughtless workmen seem imbued with the notion that the more glue there is used in joining wood together, the stronger will be the joint. This is a great mistake, for a *thick layer of glue makes a weak joint.* Indeed, the thinner, in reason, the glue, the stronger will be the joint, the great desideratum being the exclusion of air. If the air could be *entirely* expelled from between two surfaces, they would adhere one to the other without glue. In the manufacture of a certain sort of glass, where one piece is ground against another to bring them to a *face*, it is sometimes the case that the air is so perfectly excluded that the two plates adhere so firmly to each other that they cannot be separated without fracture. Glue should be used while hot, and the surfaces to be joined rubbed together before the clamps are applied.

Whitewash.—One-half bushel good, fresh, unslaked lime. Slake it with boiling water, covering it during the process, to keep in the steam. Strain the liquid through a fine seive or strainer, and add to it a peck of clean salt, previously dissolved in warm water; three pounds of good rice, ground to a thin paste and stirred in while boiling hot; one-half pound powdered Spanish whiting, and a pound of clean glue, which has been previously dissolved by first soaking it well, and then hanging it over a slow fire, using an ordinary glue pot. Add five gallons of hot water to the mixture, stir it well, and let it stand a few days, carefully covering it over. *Must be applied hot.* One pint will cover one square yard of finished surface. This wash retains its brilliancy for years; can be applied to surfaced lumber instead of paint.

Tints may be imparted to whitewash by adding a little blue black, or indigo, or orange red, or Venetian red.

The Flight of Time.

Its tramp is steady, quiet, rapid, sure, and its periods certain. It has been flying for myriads of ages, carrying with it growth and decay, happiness and misery, light and darkness, sunshine and storm; and still it speeds its onward course, heeding not the wails of grief and anguish, as it lands one after another of the human family beyond its confines. Its history is made up of joys and sorrows, hopes and disappointments, bright suns and dark hours, silvery lit and starry skies and midnight gloom; balmy zephyrs and resistless storms, each and all passing away *in the breath of time.* Millions of years mark its duration, and millions more will yet pass to its account; yet it matters not how fast it flies, if in its flight it bears no story of misspent days and hours, as far as those now wafted upon its ever-vanishing course are concerned. Its records will tell how well or badly each has improved its fleeing moments. That which has been and is we know. That which is beyond in the vast immensity of the great hereafter, is hidden from human knowledge by the dark and impenetrable veil of uncertainty, through and beyond which no mortal eye hath seen or penetrated, except so far as revealed to multitudes who live in the light of faith in things not made manifest by sight, allured by the angel Hope to realize that when time and mortality to them shall have passed away, a brighter and better condition awaits them, where, purified from all the entanglements and ills of time, the realms of purity and perpetual rest will be entered and enjoyed; where, in the immortality that will abide forever, they will revel in scenes of perpetual peace and uninterrupted love and purity. Thus the votaries of Hope, holding faith in future bliss, draw consolation to themselves, and the embitterments of time are mellowed and softened by the dews distilled from faith in things hoped for. Still flying time stops not nor pauses in its speedy passing away, nor stays its onward course, because from its embrace millions and millions of human kind have passed away, nor any remain beyond their allotted time to enjoy its enchantments and opportunities.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

A young mechanic inquires for a "correct method of finding the length of one of the sides of an octagon, the diameter being given."

Rule.—Knowing the diameter of an octagon and the length of one of its sides, to find the length of side of any octagon, add or subtract, as the case may be, to the known length, two and one-half inches for each six inches of diameter.

In order to use this rule, it will be necessary to remember some one certain measurement. Assume 8 feet as the average width. The length of side will be 3 feet 3¾ inches. Paste this with the rule on inside of your tool-chest lid. Suppose diameter is 9 feet 9 inches. Difference between 8 feet and 9 feet 9 inches is 21 inches. Apply the rule, and we have $3\frac{1}{2} \times 2\frac{1}{2} = 8\frac{3}{4}$; add this to the length of side given, and the result is 4 feet ½ inch, which is the correct length of side.

The weight of zinc per superficial foot is as follows:—

Nos.	10	11	12	13	14	15	16
Weight, oz.,	9	11	13	16	19	22	25

Never use iron nails in laying zinc, as iron and zinc combined, causes galvanic action, which ultimately destroys the latter named metal.

There is no absolute need of painting zinc work; for exposing it to the atmosphere has the effect of coating it with a thin film of oxide, which protects it from the further action of the air as effectually as paint.

Paper Hanger's Paste and How to Apply It.—Good paste for paper hanging is made of old flour, mixed to a milk-like consistency with water. When put in a kettle to boil, a little size or glue may be added, which will increase its tenacity. A little alum may also be added, in order to keep the paste sweet and to cause it to spread more freely. When boiled, it should be of the thickness of ordinary gruel, and laid on the paper smoothly and equally with backward and forward strokes of the brush. Care should be taken not to load the brush with too much paste at one time, lest the paper be rendered too damp. When an overabundance of paste is used, a little is pressed out at the edge when the cloth is used to dab the paper against the wall. This may be removed by a sponge dipped in clean water.

In answer to a student; there are three primary Greek orders: Doric, Ionic, Corinthian, to which the Romans added the Tuscan and the Composite.

The ancient Greeks seem to have been unacquainted with the principle of the arch, all their doorways, windows, and spaces between columns being on the principles of the architrave. In Roman architecture, the arch is one of the principal features. In Greece, the rivers are very small and the means of crossing them were simple; but in Italy the width of the rivers necessitated the use of arched bridges.

Dormer windows are small windows built out of a high-pitched roof; they are so called because they were originally used for dormitories or sleeping chambers.

A woman made the first orange box in California, and has built up an industry that now amounts to 50,000 boxes a year. —*Ex.* Truly, Californians have to go away from home for items.

Indications point to an increased price for tools in the wood-working line. Mechanics should make calculations accordingly.

Mortar and paint may be removed from window glass with hot, sharp vinegar.

Soot falling on a carpet, if covered thickly with salt, can be removed without injury to the carpet.

A good moth powder is made of ground hops one dram, Scotch snuff two ounces, camphor gum one ounce, black pepper one ounce, cedar saw-dust four ounces; mix thoroughly, and strew among the furs and woolens to be protected.

Largest Mass of Solid Brick Work.—The Mengoon pagoda is one of the most interesting sights in Burmah, and in its unfinished state is the largest mass of solid brick work in the world.

Origin of the Doric Shaft.—The Doric shaft, with its characteristic diminution and channelings, was known in Egypt more than 1,000 years before its introduction into Greece, as is proved by the monuments of Beni-Hassen. Commercial relations had existed between the two countries for centuries, and it cannot be assumed that the Greeks had not seen Egyptian works of architecture. They could not have arrived at precisely the same results by independent invention.

New York City embraces an area of 24,394 acres.

"Too Many Irons in the Fire."—This is an old proverb, another version of which is: "He that hath too many irons in the fire, some of them will burn." This morsel of metaphorical wisdom, evidently the work of a blacksmith, is, of course, intended as a warning against undertaking too much, and, at first sight, sounds like a prudential maxim, well adapted to secure efficiency and singleness of aim on the part of all workers. But, more closely considered, the precept shows for itself what it really is—a piece of narrow-minded, petty prudence, adapted only to the guidance of incapables and fools.

The fact is, nobody who is good for anything needs any such cowardly caution about having "too many irons in the fire." Your active, efficient characters, they who do the largest share of work in the world, are the men who want and will have a great many "irons in the fire." Shovel, poker, tongs and all, these masterly workmen keep them always hot and always busy. The rapidity of their daily accomplishment is only equaled by its variety. Both their combinations and their execution are such as perplex and startle little minds, and lead them to repeat in full chatter much such petty maxims as the one now under consideration. It is by such men that human progress is advanced, inventions and discoveries are made, fortunes are won, and all valuable improvements and reforms are achieved.

One cwt. per superficial foot is an ample allowance for the probable load on an ordinary dwelling-house floor, exclusive of the weight of the floor itself. Two cwt. per superficial foot is sufficient, in many cases, for warehouses and factory floors.

The weight of a crowd of men closely packed is about 84 pounds per superficial foot.

Girders are often sawn through the middle, and the two pieces bolted together with the sawn sides outwards, not, however, as is often erroneously supposed, to increase the strength of the girder. It is really weakened by such an operation. The main benefit to be derived is that an opportunity is given to examine the heart of the timber, and thus expose cases of rottenness. Girders cut as suggested are much less liable to rot. The oldest author on architecture, Vitruvius, "directs a space of two fingers' breadth to be left between the beams for forming the architrave over columns in order that air may circulate between and prevent decay." Every observing mechanic has noticed that decay begins at the joints and other places where the pieces are neither perfectly close, nor yet sufficiently open to allow any dampness to evaporate.

In Amsterdam, there is a floor constructed which has no joists whatever. The room is sixty feet square. The floor consists of three thicknesses of tongued and grooved flooring, each layer being one and a half inches thick. The first course is laid diagonally across the opening; the second, also diagonally, but the reverse of the first; and the third course is laid parallel with one of the sides of the room. Each layer is securely nailed to the other. The middle of the floor is kept about two and one-half inches higher than it is at the sides of the room.

Art and Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

IX. THE SENSE FOR BEAUTY.

As the first efforts in forming must naturally have been crude and simple, nevertheless man tried any way to give to the objects of the same a form which pleased him, if only by its agreeability the purpose in view was expressed. So is it proper, even on the most primitive or simple building, a projecting cornice is attached, that the rain-water falling from the roof does not run down the wall; but this cornice gives to the structure an indicating and marked form, pleasant to him if only by the purpose which is by it expressed. Gradually we seek, with consciousness to perfect the necessary and required raw material to such forms, agreeable to the purpose, which, on the whole, finish and complete a work pleasant to our view. In this way manifests itself in the highest degree the impulse or drift to form the sense for beauty. But this sense for beauty is manifoldly graded, and shows itself in most different ways; nevertheless it is the highest ornament of a nation, and the high perfection of the same by the Greek people, giving to them as such the brightest luster, and shine for all time to come. With the development of such perfections is necessarily united and conditioned a high standard of culture of the impulse for liberty and truth; then the last impulse could not express itself either with a nation existing in brutal stupidity, or with such living in despotic fetters and bondage, or living together in immoral concubinage. There would be the sense for beauty, and its expressions and manifestations for nobody's approbation and admiration, and never would come to a perfect execution. Here it would shrivel through fear, or grow wild in licentiousness. Uniform harmonies, development of thought and will, are indispensable for his own perfection, and by the same he gains such active capacities as he can and must use and apply for the general culture of mankind.

X. ITS IMPORTANCE FOR THE EDUCATION OF THE HUMAN RACE.

That the sense of beauty is necessary and unalienable for the promotion of the education of the human race, is clear and evident in every way. If we would take the sense to feel it from our world, we would cease to be human beings. Not only would it destroy the one who is used to live in artistical ideas, and find in its enjoyment the highest pleasure and satisfaction, but even of the most modest and contented every attraction to live would be taken away; from the simple peasant girl, the pleasure of a flower; from the wild man of the desert, the delight in his plumage and colored adornment.

With necessity is the sense for the beautiful implanted in humanity, and in each human being are unquestionable traces to be found. By the awakening, enlivening, and cultivation of the same will be effected the imperceptible, uninterrupted, and most powerful influence on the whole human race. He knows to give form to the first religious inspiration; he permits the eye to rest always, and always with love, on nature; it leads to deep meditation over the same; it leads to respect of the sexes, to mildness of manners, and, lastly, to art; and by artistical works a considerable retractive effect is exercised. The importance of the sense for beauty has been intelligently explained and made to become universal property. It would therefore appear as if beauty is only the servant of attaining truth; but this is an illusion; for if this be true, it must be first established that the highest purpose of life would be exclusively the attaining of truth. But who will assert this, since the purpose of life could be, with the same right, the perfect ennobling and refining of our soul, the reaching of the highest good? And, lastly, should not also the attaining of the highest beauty, in the viewing of the "epitome of all heavens" be revealed and disclosed,—be a worthy purpose of life, but not an exclusive one? But also this cannot be correct. The spheres do not exclude, but condition each other; are inseparable, and act always through and by each other, so that it is no profanation of Christian mysteries, but a deep, in its If supported, truth, when in the meaning and comprehension of the sense of the "undivided Trinity," truth, goodness, and beauty, the common aim of the intellectual, the ethical, and the esthetic impulses of men have combined. So aspires the sense for the beautiful to the same aim, and finds, lastly, its termination in the same idea, in which rest the origin and fulfillment of truth, and liberty, God.

XI. ART AND POETRY.

As far as history dates back, we find in the earliest nations the coincidence of activity in the sense of the beautiful in the most differing and manifold manner. The first traces of the same appear in the habiliments of man, his utensils, arms, and such like, which were embellished, not showing directly their practical purpose, *i. e.*, the seam in a cloak being covered by a strip of cloth of a different color; or such as by the form of the object the purpose and its conditions were directly visible and evident, as in a column, as of something free-supporting. To such structures nothing compels man but his own instinct and drift, so that which he makes he gives its form a charm, pleasant to the eye or ear, to read on his mind by the two organs, to give him pleasure in the object made.

Such exertions in the sense of beauty we name art, in the widest sense, or poetry, poesie. Then here are the arts of forming and sounding not yet separated, and the Greek word and meaning taken therefrom means a making, producing, and forming by tradesmen as well as artists and poets. The law which guides and inspires him is his own feeling and sense. He is able to bring the undetermined into form and shape. He is able to perceive, if his inner instincts and impulses are expressed, that his sense of beauty is satisfied. The process which goes on in the mind of men we lead back to the fancy or imagination, that is, the capacity of the soul to conceive and put before her things or objects which the organs of sense do not observe. Free and independent out of his imagination and conception, man learns to make and form beautiful objects and things, and he uses for this purpose the natural material and stuff, to bring them (beautiful things) into existence.

XII. DIFFERENCE IN THE ARTS OF SOUNDING AND FORMING.

Is the material or stuff used or employed words or sounds, then the objects formed belong to the dominion of the sounding arts, poetry in the closer sense and the art of sounding or music. Are the former objects of a bodily form, then they belong to the domain of the forming arts, such as the art of building, sculpture, painting. The means of the first group, that is, the condition by which necessarily the work of the same reach our observation, is time. Those of the latter group is space. The objects of the first group act on the ear, and its forms are conditioned by the motion in the time. Those of the latter act on the eye, and its form is conditioned by bodily stuff being in space. Different are both kind of objects, not by their origin and meaning, but merely by the way and manner in which the originators brought them to appearance and expression. There exists not only no opposition and contradiction between each of them, but more of a complete uniformity in their origin. Both are only daughters of the same mother; but she gave them to different husbands, and the children of the one worked with rule and square, the chisel, the palette, while those of the other took to the pen and to the lyre; but not one of them denies the common origin, and they acknowledge and recognize each other as sisters and brothers, and all breathe the same inspiration.

A series of pursuits and activities are rightfully included in the arts, but with the same rights the objects of the same belong to the beauties of nature. Those are all living, and man only forms the living, without taking from them the conditions of their origin and the passing from their existence. They form and make a transition from nature to art, and consist principally in the art of gardening, dancing, with the art of riding, to which may be added mimic and the art of play acting.

XIII. ART AND THE BEAUTIFUL.

The common definitions and explanations of "Art" and its spirit are, as known, insufficient and partly empty phrases. This lays in the difficulty of giving a definition of "Beauty," and we must limit ourselves to understand and comprehend the capacity of man to produce beautiful objects, either immaterial, as the bodily or the sounding, and further expanded and narrowed down to the totality of all such things, which we call works of art, although we should use analogy, as in the dominion of nature (kingdom of animation), the kingdom of art. If we would give an abstract definition of art, we would lose ourselves in the domain of phrases, or proceed solely descriptive, by separating the human action from its subject and make it objective. In the last manner may be seen in art a presentation, that is, an activity, by which the inner thought or spirit comes to appearance. But this illustration is hereby so limited and bounded that

this activity has no useful, practical purpose, but only to produce or represent. It is clear that by this definition man is forcibly removed, but again being introduced in the same, it would only make clear that art is nothing else but man's activity, respective capacity, to produce and make beautiful things. In the same time it has been tried, those which are beautiful things, to be solved with this definition. Nobody and nothing gives us the right to exclude man from this definition of art, since art is not conceivable without a human representative, or its products without a human originator. Art, man has alone.

XIV. WORKS OF ART.

The object and purpose of art are the making and creating of beautiful things. Beautiful things made by man are therefore works of art, and only because they are beautiful are they works of art. The spirit of a work of art is its beauty, and, figuratively speaking, the purpose of art is beauty. Things having another purpose are called useful, lovely, agreeable, useless, or bad.

If now we review a multitude of such things, which generally are included within the sphere of art, we find between them a large number of such which, to us, do not appear beautiful, and which we must call ugly as the works or objects of remote people; nevertheless we don't object to adopting them as works of art. The reason therefor is that such things and objects, at the time they were made and to their people, appeared beautiful; or were considered as such by their own maker. Who could in real earnest call beautiful the images or figures of the Assyrians at Khorsabad, the paintings of the Egyptians, or a Madonna of the Byzantines; and who could call beautiful the abortions of the Rococco? The decision on all these objects is, that they were produced by the originators in a clear, or in an indistinct and with an unconscious intention to make beautiful objects; or that, at the time of their creation and making in general, they were thought to be beautiful.

A complete contrary and contrast would be that which was made intentionally to be ugly and was made ugly. Such an idea of ugliness does not exist, since all which is ugly or kindred to it has other purposes to fulfill; let it be for the existing of fear or grief, a tickling of a sensual pleasure, or other perceptions or objects, transformations and deformities, as exist in nature. The humoristic, the comic, and the satirical are connected herewith, and will be mentioned hereafter.

An uncultured, coarse sense and mind will hold that as beautiful which appears to a cultured and refined mind, hard, ugly, and such like. With the general advance of education and culture, the appreciation of beautiful things will increase with the individual man as well as with whole nations—and the human race. In regard to its orginator, he shows by his work of art his own coarse or refined sense, and since the same, with very few exceptions, always corresponds and is the outgrowth of the sense of beauty commonly existing in his people; then this work of art will show the sense, way of thinking, and sense of feeling of the whole nation. In the series of the works of art made by the same is revealed its inner and particular development and historical culture, which would, without the same, be forever lost and unknown to us. What would we, for example, know of the Greeks, if of the high temples and towns, of the marble figures of the gods, of the pictures and utensils, no trace was preserved; the genius of Homer would be dumb and silent to us, the muse of Sophocles lost forever, and all that which, being kindred to those spheres, would be to the slightest presentiment strange to us. To think this, though, is already impossible, since Greek life without art is not conceivable. By our works of art we will be judged by posterity, justly, according to the merits of the present age.

XV. BEAUTY.

Since the purpose and the spirit of a work of art is the beautiful, we have now arrived at the question: What is beauty? A general logical definition of beauty cannot, by any means, be established or put up; since it must be brought back to that capacity of man which is not of a logical nature, the mind. But the beautiful is, nevertheless, not possible without certain practical relations; the same are again to be put up with difficulty and explored, as the reasonable necessity of a conclusion is missing. Then, from the divided opinion of men, and the want of proof bearing the logical test of such opinion, to call an object beautiful is to raise the question, Are objects beautiful themselves, or do we only feel in our minds the impression of beauty; or, Is beauty an objective property of bodies, such as gravity, expansion, color and such like; or, Is it only a subjective sensation in man transferred to one subject? Without illustrating these points for and against it, and perhaps arriving at a result, it may be sufficient to state that beauty is neither purely objective nor purely subjective, but is both at the same time. If beauty was purely objective, she must appear to all men alike, as a red colored body must appear red to all; but would beauty be purely subjective, she would not make on the many one and the same impression, but would appear different to all; so much different from each other as each individual man's form, mode of thinking and of feeling, differs from those of another. At the same result we would arrive, when we reflect that beauty is not purely spiritual, but is attached to a certain concrete form, through which it operates on our senses by our eyes and our ears. The peculiar form being unconditionally attached to the object, is inseparable from the beauty of the thing itself; then the same would, when changed in its form, cease to be beautiful. In this sense, beauty is something objective, adhering to the thing itself. Otherwise is this form, for such a one not comprehending the same, just as incomprehensible as if beauty did not exist, and he would not call the thing beautiful; but only the one will find the same beautiful, having a suitable fine feeling, refinement, a fit and proper way and manner of perception, from which it can be concluded that the beauty is transferred to the things by the person enjoying it.

But how are we to proceed? If from general truth, a logical conclusion of the spirit of the beautiful cannot be formed, lays therein generally the impossibility to get closer and nearer to the same? or does a method exist which at least approximately leads to this aim? This is the empirical method, which tries to deduct from experience a principle. It has been truthfully said that we cannot proceed in the same way as in geometry, which goes from the general to the special, and singly and from the spirit of the thing to their properties and concludes, but we must content ourselves, from only single pieces, to draw probable conclusions. Of what sort or kind these conclusions must be is clear; that they cannot be purely defining the object; nor be purely of a physiological kind, to explore and investigate the affections and emotions in the human mind; but must refer themselves from the relation of the beautiful thing to man, which in the main will be objective and formative explanations. But the conclusive characteristic signs or marks which we perceive by viewing beautiful things are these—that the thing itself pleases us well, and that we in the same thing, merely as stuff and as a body, positively take no interest. When we, for example, find a bronze monument beautiful, we do not consider by far the value of the material which, when coined to pennies, would make to many no indifferent object. In this feeling, not wished for nor desired (disinterestedly) lays a deep satisfaction in the mind of man to make and produce beautiful things. The capacity and ability on which this satisfaction and pleasure is based. is "Taste," which is man's esthetic capacity of judging things in regard to the beauty of the subject; taste is ruling. The word "taste," being raised to a school expression, is nothing else than the sense for beauty of the single individual man, so that it is eas to be seen, in regard to the definition for the beautiful, we move around in a circumference. Two illustrative reflections come to our aid,—one that the pleasure of the beautiful is not purely sensitive, and the other, that in the appearance of the beautiful thing lays direct the semblance of a spirit; both differences we must recognize clearly and plainly by our intellect and reason. If now this contentment and pleasure are not purely sensitive and expanded, are not exclusively in our feeling, then they exist necessarily in accord with feeling and thought, the mind and the spirit, or, as may be expressed, in the harmonious play between imagination and intellect. But that in the appearance of the beautiful lays direct a spiritual sense, leads to the recognition of the purpose of the beautiful thing, which directly becomes perceptible; without that the intellect sees directly the purpose. The point in question is the spiritual meaning of the beautiful thing, which in the aspect comes directly to view, in the most suitable manner, so that a perfect harmony between the spiritual meaning and contents—the idea, and the outward appearance of its form, exists.

XVI. BEAUTY OF NATURE.

It is now the time to mention in a few words the relation of beauty in nature to beauty in art. In nature all things have certain practical reasons and purposes, and undergo and underlay an uninterrupted change; and beauty is here only an adornment of the necessary, even if the same in a higher sense itself is needed, and so united, that with and by each change, the same itself is changed, dissolved, or destroyed. The conditions under which beauty is attached to nature are inconstant, continuously beginning and ending. Man alone is capable of producing things of which beauty is not a subordinate aim, but is the sole and exclusive purpose, untouched by the changes of nature, unalienable, retaining its beauty, giving a presentiment of eternal duration.

(To be continued.)

PLATE 6.—CHINESE GARDEN HUT.

Graining.

In graining work that is paneled, the lights and shades of the panel should be stronger than on the rest of surface. The rails and stiles of doors should be more simple than the panels in the imitation of dark decorated woods, as rosewood. If the cross rails are full of work, make the upright stiles plain, for their appearance is changed by their position with regard to light. Perhaps the greatest triumph in staining is imitating successfully the curls of mahogany. Graining in maple wood is suitable for dining-rooms; the color of maple varies very much, and therefore it is necessary to select a choice piece for imitation. Pollard-oak graining suits well for a dining-room, with its warm color and rich effect, the color varying from the lightness of maple to the darkness of mahogany, so affording a range of choice. Oak color is adapted to all styles of wainscot, harmonizing with warm colors on wall space, whether this be papered or painted, and making pleasing contrasts with cold ones. It also looks well on the ceiling cornices of lobbies. In wainscot graining the lights and shades on the panels should be the strongest. If the prevalent color of a room be warm, the graining of the wood-work should correspond; if crimson, maple, satin wood, or oak graining may be employed; if green, some cool-toned and light-colored wood. Smoothness of surface is important in the grained imitation of woods, as well as the rendering of deep, transparent, and shadowy half tints. The grainer should not revel, as we have seen some do, in knots, which, indeed, should be left out, as well as the representation of cross-grained stuff, which the architects would avoid in real wood, whether for stiles, rails, or panels. Where wood has been previously painted, the grainer should examine it closely to see that it is not liable to peel off, and so spoil his work. Where marble has to be imitated, in order to secure a transparent effect the best polished copal should be used with colors, never turpentine.—*Painters' Magazine and Coach Painter.*

The world moves on, inventions and progress still rush together for the benefit of the present generation; but we look back with a feeling of veneration to the art and talent displayed in ancient architecture. In all the modern edifices of which we pride ourselves, the striking features are but a reproduction of the thought of the old masters, with the exceptions that we build in a few months buildings that would have taken them years to complete. We are gradually returning to the age of artistic wrought iron, cunning designs in brass, elaborate wood carving and marble tessellate pavements. Acquiring wealth rapidly, we are less inclined to look at the cost of the work so artistic and durable. The old Romans prided themselves on the marble floors of their dwellings, and the proof of their knowledge of its durability is demonstrated by the recent discoveries made in Roman ruins, where the marble mosaic pavement retains its original designs and colors. Of late years, an Italian artist, Mr. Caretti, has introduced this work in some of our new-fashioned residences, and a handsome design for the hall of Mr. A. D. Kohn's house is his latest work. Should, in centuries to come, Macaulay's New Zealander be digging in the ruins of Chicago, a marble mosaic pavement may be brought to light, and create a discussion as to whether Chicago was an old Roman city or the creation of a more modern age.

Some of our scientific exchanges are describing a kind of concrete that is said to be in use for building purposes in France. It possesses the desirable qualities of solidity and hardness. It is said to be composed of 8 parts of sand, gravel and pebbles; 1 part of common earth, burnt and powdered; 1 part of powdered cinders, and 1½ parts of unslaked hydraulic lime. These materials are thoroughly beaten up together, their mixture giving a concrete which sets almost immediately, and becomes in a few days extremely hard and solid, which property may be still further increased by the addition of a small quantity—say 1 part—of cement. Among other constructions to which this material has been applied is a house three stories in height, 65x45 feet, standing on a terrace, having a perpendicular retaining wall 200 feet in length and 20 feet high. Every part of this structure was made of the hard concrete, including foundations, vaults of cellars, retaining wall, and all walls, exterior and interior, as well as the cornice work, mouldings, string courses, balustrades, parapets, and the building is without band iron, lintels, or wood throughout.

In order to render glue insoluble in water, it is only necessary to add a little potassium bi-chromate to the water in which it is dissolved, and expose the glued part to the light. One-fiftieth part of the bi-chromate will suffice.

A bound volume of this Journal for either of the years 1880, 1881, or 1882, will be sent free to all new subscribers for balance of this year and 1887.

Glimpses of Sunshine.

Mechanics are apt to compare their life of toil and scanty pay to a long season of cloudy weather. They feel that they are under a shadow, hemmed in by circumstances which they cannot control, and that they must keep on treading, as does the horse, on an endless treading-machine. Skilled mechanics here and there have good-paying positions, but the great mass have all they can do to make ends meet. Probably this is partly due to this era of extravagance in the mode of living and of dress. The American mechanic cannot submit to live like a savage, nor even like some in our midst, who swarm together like pigs. He is fond of home, and no matter how humble it may be, he will make it as bright and cheerful as his means will permit; in fact, he is more likely to spend a little more than he earns, than he is to pinch and deny himself to save a few dollars every year.

But in the last ten or fifteen years the men who work at trades have experienced a steady decline in their incomes, partly from lower wages, and partly from lack of work.

It used to be that men were employed from January to December, but that day is past, and nine months is now about the average time made. Week and piece-work prices were formerly higher, and probably the employers obtained better prices than they do now. But labor-saving machinery has placed the employers on a footing by which they make as much clear profit as formerly, but it is distributed over an increased output.

The mechanics, especially the skilled ones, have had no means of competing by their labor, as an offset to the rapidity of steam power. The effect has been to push them aside, or compel them to accept greatly reduced pay, or turn their hand to something else. There has been a steady weeding out of good mechanics, and a steady influx of laborers who had brains enough to feed a machine.

Crowded out of their regular work, and compelled to squeeze in wherever there was an opening, it engendered a spirit of unrest, and a determination to make an effort to better their condition by concerted action. We now witness the result in the gigantic organizations that have been formed, and which are making demands that are rapidly being acknowledged by the public as reasonable and just.

For a time there was a chaos of doubts, fears, and misapprehensions on the part of the public, and even many workmen stood trembling, and fearful that the demands of organized labor would but increase their burdens. But when the workmen stated their case calmly and fearlessly, and showed that they were in earnest, and that nothing could swerve them from their purpose to gradually and lawfully compel just treatment, a little blue sky began to appear, letting in glimpses of sunshine in the form of concessions by a generous firm here and there over the country.

The Saturday half-holiday movement among merchants has grown out of the great labor agitation, and it is plain to be seen that capital is on the giving hand. Labor must not make unreasonable demands, even under sore oppression; but having once decided on what is fair and just, it should not cease all lawful efforts until its claims have been granted. The crying need of the hour among mechanics and laborers is a little business knowledge. They need to learn that but a small proportion of men have the ability to start and develop an enterprise which may give employment to hundreds of men.

They need to learn that out of these one hundred that are steadily employed probably not one of them has the business capacity to carry on the works for a single day. They need to learn that the finished products must find a market, and that the profits over and above the cost of labor, stock, and contingent expenses are not always sufficiently large to warrant an increase in the first cost.

When the majority acknowledge the above stubborn facts, they will be much stronger in self-defense, for it will guard them against foolish outbursts of temper, and strikes, which always result in heavy losses of money and great privation in their families. What labor needs is perfect organization, guided by common-sense views of business, and plenty of money to stand out against oppression.

The money can he easily had; for if one million wage-people pay in but one dollar a year apiece, a fund is at once created that in a few years will command the respect of even the most exacting capitalist.—*Painters' Magazine and Coach Painter.*

The *Journalist* for March says: "The trade journals are a recognized and important factor in the journalistic profession, and many of the brightest and ablest men in the country are engaged in their conduct."

Amateur Carpenters.

It is an excellent thing for any man, whatever his business in life may be, to acquire a fair degree of mechanical skill and familiarity with tools and machinery. Such knowledge never comes amiss, even if its possessor is so fortunate as to be under no necessity of ever using it as a means of livelihood; just as a thorough practical acquaintance with the minutest details of housekeeping is valuable to any woman, though she may be surrounded by luxury all her life, and have a servant to wait on her at every turn.

But it does not follow, by any manner of means, that an amateur or half-trained workman is profitable to his employer, even at half price, or at any price. Experiments of that kind are oftener made, it would seem, in the various branches of carpenter work than in most other trades—for the reason, probably, that it is easier and more common to pick up in a desultory way a superficial knowledge of carpentry than of other callings which do not in fact require so much skill and judgment for their thorough mastery. To become a good carpenter, capable of estimating a job fairly and performing it honestly, is a matter of not a few weeks or months, but of years of diligent and conscientious work. And while the temptation is very great, in awarding the contract for a job, to give it to the lowest bidder without due regard to the probability of getting the worth of one's money, it is generally found that a single lesson of that kind is sufficient. In a broad sense the rule that "the best is the cheapest" holds good in carpenter work, as in nearly everything else.

A vigorous protest against the employment of what it calls "saw and hatchet carpenters" is made by the *Southern Lumberman*, which imputes to them not only want of skill, but want of honesty as well. As an illustration, it mentions a building contract which one of that class of carpenters offered to take for $500, while the material alone came to $570. Somebody was badly cheated, of course, and probably the lumber dealer, the workmen, and the owner of the building all suffered more or less. Incompetency and false pretense in all trades and professions should be steadily discouraged; and the only way to put an effectual check upon them is to give the preference invariably to the trained workman, who has earned and can rightfully wear the title he claims.

What Will Come of the Labor Troubles.

Definite and excellent results will come out of the chaos of strikes and violence and the accompanying discussions. Experience is a thorough teacher.

The first result will be the cutting loose of respectable workmen from association with the anarchists. They see with consternation the hideous purposes of these social bandits, and are hastening to denounce them. The manifesto of the Chicago Knights of Labor has the right ring.

A second result will be an end of strikes and boycotts to force non-union men out of employment. The utter collapse of the great St. Louis strike and of the Third Avenue strike in New York, and the multiplying arrests of boycotters for conspiracy, settle that question. If men want to strike on their own account, they can do it; but by the same measure that their right to quit work is defended, the right of other men to earn a living by any employment that is offered them will be defended also, and at any necessary cost.

A third result will be a little longer in coming, but it will come. American workmen will learn the lesson which a majority of British workmen learned several years ago, that the only successful strike is the one that never occurs. The waste of strikes has become so enormous that the imagination can scarcely picture it. It has become a chief factor in trade depression, and, as such, a prime cause of low wages. The only way to raise wages is by keeping at work, respectfully presenting the demand for an increase, and abiding loyally by the decision of conference or arbitration, holding the strike in reserve as a last and extreme resort.

The present disturbances are deplorable and disastrous, but they will clear the air.—*Ex.*

Book Notices.

OSBORN'S TABLES OF MOMENTS OF INERTIA, AND SQUARES OF RADII OF GYRATION. By Frank C. Osborn, C. E. Is designed to supply partially, at least, a need felt by engineers and draughtsmen engaged in structural works in iron and steel.

DIRECTORY OF ARCHITECTS FOR 1886. By Byan & Co., Holyoke, Mass., and New York. Supplies in main part the names and addresses of architects in the United States, California included.

STEAM HEATING PROBLEMS. Published by the *Sanitary Engineer*, New York. Contains many valuable suggestions, and one hundred and nine illustrations, upon the subject treated. Its authorship is a sufficient guarantee of its value as a book of information upon its subject matter.

Report of Building Improvements for Woodland, Yolo County.

EDITOR CALIFORNIA ARCHITECT: The following statement presents the facts in connection with the building interests in this section for the first six months of each of the years named.

1883.—	26	engagements of all classes	value	$ 73,350
1884.—	53	" " "	"	135,852
1885.—	91	" " "	"	223,200
1886.	100	" " "	"	147,305

It will be seen by the above that the number of constructions in the six months of 1886, is nine greater than in 1885, but in cost, $75,895 less. G. & SON.

Market Reports.

CORRECTED FOR JULY, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft.	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75

NAILS—Rates were recently reduced to:—

200 keg lots	2 70
100 keg lots	2 70
Smaller quantities	2 75

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6¾
" " " " " less quantities	7
Pioneer White Lead (local factory), 5-ton lots	6½
Cal. Linseed Oil, raw (single bbl. lots)	45
" " boiled " "	47½
Turpentine, per gallon	47
BRICK—California Building Description, soft, per 1,000	5 50
" " " red, " "	6 00
" " " hard, " "	7 50

Building Intelligence.

Where owners' names are left blank, it is so done in most instances by special request.

B

Brannan, cor. Langton. Two-story frame.
O.—Thos. Tierney.
A.—D. Salfield.
C.—H. Keenan.
$2,800.

Brannan, cor Ritch. Three-story frame and brick basement.
O.—J. L. Buckman.
A.—H. Geilfuss.
C.—H. Thom Wordben.
$8,000.

Bush, southeast cor. Octavia. Five two-story frames.
O.—David Samuels.
A.—Copeland & Banks.
C.—Treadwell & Thompson.
$35,300.

Bartlett, nr. Twenty-second. Additions to school house.
O.—City of San Francisco.
A.—Curlett & Cuthbertson.
C.—J. McCann.
$2,500.

Bartlett, cor. Twenty-fourth. Two-story frame, store and flat.
O.—W. Murphy.
Day work.
$2,500.

Baker, bet. Fulton and Grove. One and one-half story frame.
O.—Mrs. Schintz.
C.—G. G. Gillespee.
$2,100.

C

Clay, cor Webster. Three-story frame.
O.—B. E. Hardy, M. D.
A.—McDougall & Son.
C.—P. Griffin.
$6,000.

California, bet. Fillmore and Steiner. Two-story brick stable.
O.—A. Ioid.
A.—W. F. Smith.
C.—W. H. Fletcher.
$10,000.

California, bet. Cherry and Maple. Two-story frame. Children's Hospital.
O.—Directors of Children's Hospital.
A.—McDougall & Son.
C.—J. A. Leonard.
$13,000.

California, bet. Devisadero and Broderick. Alterations and additions.
O.—M. Mahoney.
Day work.
$600.

Chenery, bet. Thirtieth and Randall. Two-story brick and frame laundry.
O.—L. Barolles.
A.—W. Moesler.
C.—W. Fletcher.
$10,000.

Castro, bet. Eighteenth and Nineteenth. Additions.
O.—T. Trewen.
C.—O. D'Anis.
$2,000.

Castro, bet. Seventeenth and Eighteenth Two-story frame.
O. and B.—H. L. Kofoed.
Day work.
$3,000.

Castro, cor. Beaver. Two-story frame.
O.— — Sanderson.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$3,000.

Church, nr. Market. One-story frame.
O.—J. Magee.
Day work.
$1,200.

D

Devisadero, nr. Sutter. One-story frame.
O. and B.—G. G. Gillespee.
Day work.
$600.

Dolores, bet. Fifteenth and Sixteenth. One and one-half story frame
O.—Mrs. J. De H. Deniston.
A.—J. Gash.
C.—W. E. Cummings.
$2,000.

Duncan, cor. Sanchez. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,200.

Devisadero, nr. Hayes. Two-story and basement frame.
O.—A. B Block.
A.—S. & J. C. Newsom.
C.—Moore Bros.
$4,500.

E

Eleventh, nr. Harrison. Two-story frame.
O.—E Redmond.
A.—P. R. Schmidt.
C.—H. Keenan.
$2,800.

Eighth Avenue, nr. Point Lobos Avenue. One and one-half story frame.
O.—A. & C. B. Abraham.
A.—Townsend & Wyneken.
C.—C. N. Post.
$1,500.

F

Fillmore, nr. Clay. Two-story frame.
O.—Mrs. Frutiger.
A.—C. Kenitzer.
C.—C. Mason.
$5,000.

Fillmore, bet. McAllister and Fulton. Two-story frame.
O.—H. A. Cline.
A.—E. R. Swain.
C.—H. Conrad.
$4,800.

Fulton, cor. Baker. Three one and one-half story frames.
O. and B.—T. H. Day.
Day work.
$4,500.

Fair Oak, bet. Twenty second and Twenty-third. Two two-story frames.
O.—Mrs. Fogerty.
C.—Jas. Fogerty.
$4,000.

Fifteenth, bet Valencia and Mission. Additions to church.
O.—Third Congregational Church.
C.—Farrell & Bell.
$10,000.

Folsom, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O.—W. H. Wiester.
A.—Copeland & Banks.
C.—Commary & Beardslee.
$9,000.

Fifth, bet. Harrison and Bryant. Alterations.
O.—H. Costa.
A.—C. J. L. Devlin.
C.—H. Schotter.
$1,295.

Franklin, bet. Washington and Jackson. Two-story frame bas ment and attic.
O.—Wm. Haas.
A.—P. R. Schmidt.
C.—McCann & Riddell.
$15,500.

Folsom, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O.—H. T. Kellum.
Day work.
$3,500.

Franklin, cor. Jackson. Two-story frame.
O.—W. Martin.
Plumbing and slating contracts let.
$5,200, additional to amount given last month

G

Greenwich, bet. Jones and Leavenworth. Two-story frame.
O.—Mrs. Jane H. Hemenway.
A.—S. W. Hemenway.
C.—A. Flood.
$3,800.

Grove, nr. Van Ness Two one-story frames.
O.—I. Harris.
C.—J. H. McKay.
$1,800.

Golden Gate Avenue, bet. Hyde and Larkin. Two-story frame addition.
O.—O'Brien Bros.
C.—H. Keenan.
$1,000.

Guerrero, cor. Eighteenth. Three-story frame.
O.—A. Hayward.
A.—Pierey & Hamilton.
C.—J. B. Gunyear.
$8,800.

Gough, bet. Ellis and O'Farrell. Two-story frame.
O.—H. Lynch
A.—T. J Welch.
C.—W. H. Whickersham.
$7,000.

Geary, bet Gough and Octavia. Two-story frame.
O.—Mrs. C. Callaghan.
A.—C. I. Havens.
C.—F. W. Kern.
$6,500.

Geary, bet. Taylor and Mason. Three-story frame.
O.—C. Afflerbach.
A.—J. Marquis.
C.—S. Hatfield.
$5,000.

Grove, bet. Steiner and Fillmore. Two-story frame.
O.—Mrs. Louisa I. Amos.
A.—S. & J. C. Newsom.
C.—Geo. A. Emburg.
$5,000.

H

Harrison, cor. Park Avenue Additions.
O.—Mrs. H. Hugg.
C.—D. F. McGraw.
$2,000.

Haight, bet. Steiner and Pierce. Two two-story frames.
O.—R. McElroy.
A.—J. Marquis.
C.—M. Murry.
$10,000.

Harrison, cor. Sixth. Three-story frame, four stores and six flats.
O.—Wm Bryan.
A.—H. T. Bestor.
C.—C. H. Ackerson.
$25,000.

Barrison, cor. Rincon Place, Rincon Hill. Additions and alterations.
O.—Baron Von Schroder.
A.—T. J. Welch.
C.—J. Blake.
$16,000.

Hayes, cor. Laguna. Reported last month.
O.—L. M. Fabry.
Carpenter work—H. Mayn.
$8,000 additional to last month's report

Howard, southeast cor. Moss. Three-story frame and brick basement.
O.—J. Hintz.
A.—Miller & Armitage.
C.—B. Dryer.
$9,400.

J

Jackson, cor. Pierce. Three-story frame.
O.—A. N. Drown.
A.—Curlett & Cuthbertson.
Plumbing contract let.
$1,500.

Jackson, northwest cor. Pierce. Two and one-half story frame
O.—D. W. Loring.
A.—W. F. Smith.
C.—F. W. Kern.
$10,000.

K

Kentucky, nr. Sierra. Two-story frame.
O.—J. Chassem.
A.—D. Salfield.
C.—B. Dryer.
$5,000.

L

Lake, bet. Second and Third Avenue. One and one-half story frame.
O.—Mrs. M. Uhrig.
C.—S. Hatfield.
$1,800.

Lily Avenue, bet. Gough and Octavia Additions.
O.—F. & B. Bernon.
A.—Townsend & Wyneken.
C.—J. T. O'Brien.
$500.

M

McAllister, cor. Broderick. Four two-story frames.
O.—A. Drucker.
A.—J. M. Curtis.
C.—J. W. Wessenger.
$10,300.

Merchant, cor. Battery. Alterations.
O.—Hilderbrand & Posner.
A.—J. J & T. D. Newsom.
C.—H. Bray.
$3,200.

Mission, bet. Twentieth and Twenty-first. Three-story frame.
O.—Wm. McCafferty.
A.—A. J. Barnett.
C.—A. G. Fitzpatrick.
$10,500.

Market, cor. Franklin. Additional contracts.
O.—John Nightingale.

Glass—F. H. Rosenbaum,	$2,525
Sidewalk lights—Mahoney Bros.,	2,469
Sheet metal—Jos. Forderer,	1,625
Painting— — Smith,	2,200
Total	$8,819

Mission, bet. Third and Fourth. This building reported last month; four-story brick.
O.—H. Meese.
A.—Miller & Armitage.
Iron work, plumbing, etc.
$5,000.

O

Oak, bet. Gough and Octavia. Alterations.
O.—F. & B. Bernon.
A.—Townsend & Wyneken.
C.—J. T. O'Brien.
$1,000.

P

Pacific, bet. Webster and Fillmore. Two-story frame.
O.—G. H. Hooks.
A.—G. A. Bordwell.
C.—Ingerson & Gore.
$3,500.

Pacific, nr Mason. Additions.
O.—H. Williams.
Day work.
$1,200.

Pacific, cor. East. Two-story frame.
O.—A. Vollmer.
A.—W. H. Wharff.
C.— — Tarr.
$2,000.

Point Lobos Avenue, bet Eighth and Ninth Avenues. One-story frame.
O.—C. S. Nathan.
C.—C. Sanborn.
$2,000.

Pine, bet. Broderick and Baker. One and one-half story frame.
O.—H. Welzer.
C.—T. V. Steinmann.
$2,200.

Post, bet. Pierce and Scott. Two-story frame.
O. and B.—J. C. Wier.
Day work.
$6,500.

P Street, nr. Thirteenth Avenue. South San Francisco. Two one-story frames.
O.—D O'Leary.
A.—J. H. Humphreys.
C.—F. P. Heald.
$2,000.

Pine, bet. Polk and Van Ness. Alterations.
O. and B.—O. S. Warriner.
A.—W. H. Wharff.
Day work.
$1,500.

Park Avenue Road. One and one-half story frame.
O.—Frank Loane.
A.—Pissis & Moore.
C.—Moore Bros.
$2,500.

S

Sutter, cor. Jones. Six-story frame and brick basement. Family hotel.
O.—A. Baker.
A.—J. H. Littlefield.

Carpenter—R. Smith,	$91,500
Brick work and excavating—Pierce & Burnett,	9,800
Plumbing—Sweeney & Kearns,	17,777
Plastering and deafening—C. Dunlop,	16,000
Painting—Jos. Larsen,	7,000
Patent chimneys—L. E. Clawson,	5,800
Cost,	$148,807

Sutter, bet. Kearny and Dupont. Additions and alterations.
O.—A. Hayward.
A.—Percy & Hamilton.

C.—W. Hall,	$19,300
Brick work—J. McCarthy,	6,048
Total cost,	$50,000

Seventeenth, bet. Valencia and Guerrero. Two-story frame. Two flats.
O.—Mrs. Matilda Hunt.
A.—E. John.
C.—J. Klien.
$3,750.

Sutter, cor. Franklin. Alterations.
O.—M. Brown.
A.—P. R. Schmidt.
C.—Degan & Orford.
$2,200.

Shotwell, bet. Twenty-fifth and Twenty-sixth. One-story frame.
O and B.—C. O. Smith.
Day work.
$2,000.

Steiner, nr. Oak. Two-story frame.
O.—Mrs. M. G. Day.
A.—S. & J. C. Newsom.
C.—J. Rebman.
$4,000.

Stevenson, nr Twentieth. One-story cottage.
O.—M. Bluerson.
A.—Geo. E. Voelkel.
Day work.
$1,600.

T

Taylor, cor. O'Farrell. Additional contract, for extra story, on report of last month.
O.—L. M. Starr.
C.—D. B. Spangler.
$5,000.

Twenty-fifth, cor. Bartlett. Alterations and additions.
O.—United Workmen Co-operative Boot and Shoe Factory
A.—M. J. Welch
C.—Jas. Ross.
$2,000.

Twenty-fourth, bet. Howard and Shotwell. Two-story frame.
O.—J. F. Reilly.
A.—M. J. Welch.
C.—Cremer & Bassett.
$2,850.

Twentieth, bet. Valencia and Guerrero. Two-story frame.
O.—A. Meyers.
A.—J. T. Kidd.
C.—J. Bruce.
$4,500.

Turk, bet. Laguna and Buchanan. Three two-story frames.
O.—M. Kalinsky.
A.—C. I. Havens.
C.—Cremer & Bassett.
$8,000.

Turk, bet. Laguna and Buchanan. Two-story frame.
O.—Mrs. Esther Kalinsky.
A.—C. I. Havens.
C.—Cremer & Bassett.
$4,000.

Turk, cor. Pierce. Two-story frame.
O. and B.—J. Doherty.
Day work.
$4,000.

V

Valencia, nr. Twenty-second. Three two-story frames.
O.—B. Curtaz.
A.—H Geilfuss.
C.—A. Miller.
Brickwork—J. Haff.
$14,000.

Valencia, nr. Twentieth. Additions.
O.—F. G. Norman.
A.—G. A. Bordwell.
C.—Jos. Dutton.
$2,000.

Van Ness, cor. Grove. Two one-story frames.
O.—I. Harris.
C.—J. H. McKay.
$1,800.

Valencia, nr. Twenty-third. Alterations and additions.
O.—W. A. Vondernienburg.
A.—M. J. Welch.
C.—Theo. Von Bostel.
$2,800.

Washington, bet. Webster and Fillmore. Two-story frame.
O.—Miss Lee.
C.—Soule Bros.
$2,000.

Webster, nr. Fell. Two one-story frames.
O.—J. Carroll.
A.—J. J. Clark.
C.—Doyle & Son.
$2,800.

Washington, bet. Polk and Van Ness Two-story frame and brick basement.
O.—H. W. Hyman.
A.—P. R. Schmidt.
C.—K. Sent.
$11,500.

MISCELLANEOUS.

Oakland—One-story brick. O., A. Michel; A. and B., W. H. Wharff; day work; $3,0 0. Cor. Brush and Thirteenth. Two-story frame. O., A. Rowe; A., J. J. & T. D. Newsom; C., Knight & Littlefield; $7,500.

Gilroy—One-story frame. O., R. Graef; A., Jacob Lenzen & Son; C., J. J. Dorland; —$2,200.

Niles Station—One-story frame. O., California Nursery Co.; A., Jacob Lenzen & Son; C., J. D. Egan; $1,550.

San Jose—East side First bet. San Fernando and San Antonio. O., E. Auzerais; A., Theod re Lenzen; C., Thos. Livingston; cost,—$14,000—instead of $1,400, as reported last month. East side Market bet. Santa Clara and St. Johns. Two-story brick. O., G. Fromis; A., Theodore Lenzen; C., R. Summers; $6,500. South side Santa Clara bet. Orchard and Vine. Two-story frame. O., Mrs. E. Buhot; A., Theodore Lenzen; C. J. McIlvain; cost, $1,500.

Healdsburg—Methodist Episcopal Church. A., T. J. Welch; day work; $15,000.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:

U. S. Government, four sets officers' quarters, Presidio Res., S. F.; H. F. Bruns, cor. Geary and Taylor, S. F.; J. C. Weir, Post, near Scott, S. F.; John MacKenzie, cor. Grove and Broderick, S. F.; L. H. Sweeney, San Rafael; R. B. Gray, cor. Pacific and Van Ness, S. F.; Raymond Hotel, 1,600 windows, Pasadena, Cal.

ENGLISH AND AMERICAN VENETIAN BLINDS

IMPROVED.

The only Perfect Venetian Blind in the market. For samples, prices and information, address,

EDWARD B. HINDES, Agent, 330 Pine St., Room 55.

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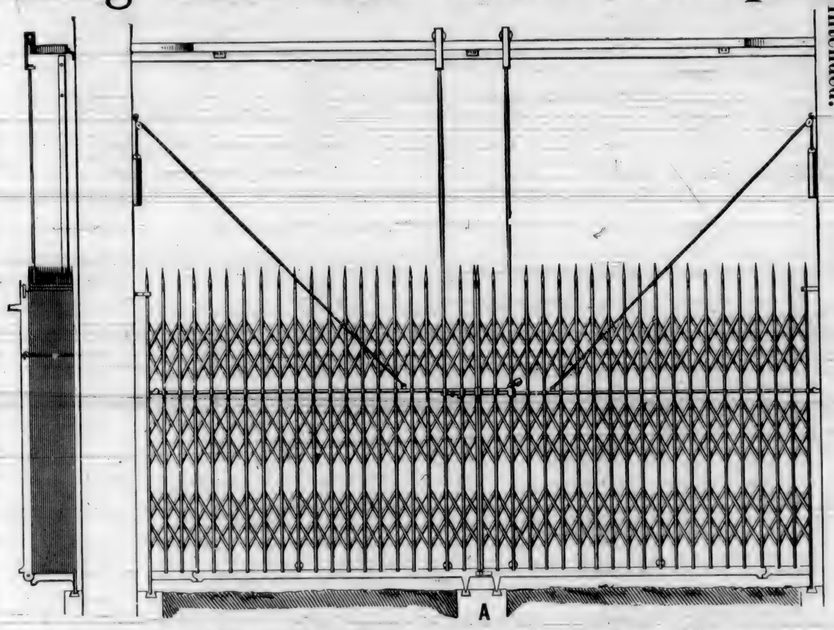
These Gates and Guards are manufactured to order in San Francisco, to fit and fill openings as desired. Descriptive Catalogues and Price List furnished.



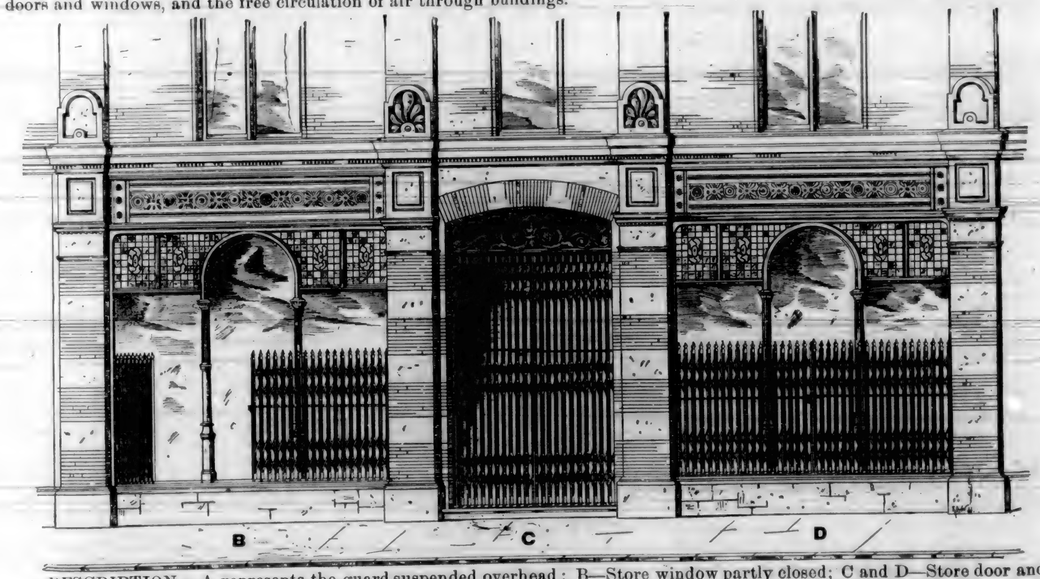
ABSOLUTE SATISFACTION GUARANTEED.—They are easily handled and adjusted, and are the most perfect device in use for the purposes for which they are intended.

Protect Your Homes and Business Houses

WITH * THE * IRON * FOLDING * GATES * AND * GUARDS.

They are ornamental in design, and afford perfect security when applied to store doors and windows—to vestibules, doors and windows of dwellings, and at stables, elevator wells, etc.

When in position they are an absolute safeguard against **Burglars, Thieves, Tramps and Designing Persons,** and can be removed and replaced without unhinging. As a **Sanitary Device** they are superb, permitting the opening of doors and windows, and the free circulation of air through buildings.



DESCRIPTION.—A represents the guard suspended overhead; B—Store window partly closed; C and D—Store door and window fully closed.

CEO. H. RICE, President. **E. J. ROBINSON, Agent,** 109 California Street, San Francisco, Cal. **J. P. LECOUNT,** Secretary.

The California Architect and Building News.

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THE

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Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., AUGUST 10, 1886.

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Building Summary.

AS will be noticed by our monthly report, the number of contracts let since our last issue is considerably less than those for the similar period of 1885. How far the G. A. R. Encampment may have contributed to this result, is a matter of conjecture. One thing is certain, that the encampment business engrossed the attention of a large number of our citizens, and business generally was greatly affected by it.

REPORT FOR AUGUST, 1886.

64 frame buildings, value	$376,431
8 alterations and additions, value	12,950
72, total number of engagements, total value	389,381

REPORTED IN AUGUST, 1885.

95 engagements of the value of	395,150
August report, 1886, less than 1885	5,769

The Offered Sale of This Journal.

SINCE the first announcement in its pages that the entire interests of this journal would be disposed of to competent parties, a great many personal inquiries have been made, and propositions submitted and declined.

A sale contingent upon certain stipulations might have been made a month ago, but as we propose an *unconditional surrender* of the situation, we shall *hold the fort* until a competent *commander-in-chief* shall arrive, with satisfactory *financial credentials.*

Negotiations now pending with parties and firms east of the Rocky Mountains, may result in a full change of management by the first of January next, if not sooner. In the meantime the journal will be continued as heretofore to the best of our overburdened abilities.

A GENERAL EXPLANATION.

Those who have made inquiry by letter, and personally, have asked for all the facts of the case, and what will be included in the sale.

As a general answer, we state: A sale will include every interest of the publication,—its good-will, subscription list and advertising patronage, office appointments, desk, bound volumes and back numbers since 1879, outstanding accounts due from all sources, five hundred copies, more or less, architectural, mechanical, and other publications (optional), and all else pertaining to the publication and circulation of the journal.

We state, in answer to the question repeatedly asked by correspondents, in reference to

COMPOSING ROOM AND PRESSES,

That there are none. The journal has been conducted *incidentally* in connection with our architectural pursuits, and printed and bound ready for distribution by contract.

But with these limited facilities and restricted advantages, and personal attention divided between two great interests—editor and manager, and practicing architect—each demanding our whole time and energies, we have continued our publication work for eight years (less four months) with a profit to ourselves, making a most enviable reputation for the journal, as evidenced by the hundreds of complimentary notices from time to time published by technical, class, and other journals, and preparing the way for some one to continue its publication with great success and profit.

G. A. R.

THE Twentieth Annual Encampment of the Grand Army of the Republic, held in San Francisco, has been a grand affair, meeting the highest expectations of the home guards, the citizens of the Pacific Coast, and the visiting host from all quarters of the United States.

But our daily contemporaries of this city have so fully and elaborately chronicled all matters pertaining to this great and ever-to-be-remembered gathering of patriotic men and women, that anything on our part, more than a mere notice of the event, is unnecessary.

One remarkable feature, however, is worthy of special mention; that while the number of men, women, and children moving to and fro through the streets of San Francisco, entering and leaving the city by trains and ferries during the period of the encampment, aggregated hundreds of thousands, approximating 2,000,000 persons, not a single accident to life or limb has occurred in connection therewith.

Aggregating the number of trips of street-cars during each day, from 3,000 to 4,000 cars were moved daily, or for the week, some 25,000 to 30,000 trips on all the lines—perhaps more—yet the accidents reported in this connection do not reach the average of such happenings during ordinary times. This is the more remarkable in view of the fact that Market Street was "swarmed all day long" with the living masses, and parts of each day hundreds of cars passing a given point each hour; while at the Pavilion, on several occasions, the Larkin street-cars were run through surging crowds, and at the park terminus, frequently from one to two thousand people at the same moment transferring to and from cable to steam-cars, or in and out through the entrances to the park. Yet under all those risky conditions, the week passed without leaving any sad and mournful monument of sorrow to mar the pleasures which seemed to flow in all directions.

The Circus Style.

CIRCUS in this sense—that a circus is a place that offers to the public a variety of funny things, as well as a few instructive and pleasing features, and the more really funny the entertainment, the better it draws, consistency being but incidental in its make-up.

In this view of the case—true merit and pure architectural rules and principles aside—the numerous clownish structures erected in San Francisco and elsewhere, are so thoroughly funny in general appearance, effect, and detail, that every intelligent architect or competent architectural critic can but laugh at the endless contortions, distortions, ill proportions and abominations set up to public gaze, and the whim of prevailing taste with those who seek and accept these structural mal-formations, are something astonishing.

The modern idea of house-designing, in the hands of competent and artistic architects, has, in some cases, evolved neat and pretty delineations. But the liberties possible under the false guise of Eastlake have also made it possible for consummate pretenders to operate, and conceal and disguise their ignorance of true principles, and practice their abominations under the pretext of a fancy name, used to excuse error, and gull clients to accept ignorance and incompetency as a style of architecture.

There can be no objection to any neat, consistent, and meritorious departure from the old order, in which symmetry, proportion and good taste has been respected and blended. The progressive age in which we live, not only commends but invites inovation upon the forms and features which have held the world subjugated to the creations of the ancients. Beautiful and to be admired, the grand old structures the world over stand as exemplifications of that depth of conception which evolved the classic orders, and will so stand until the curtain of time is rung down at the close of all human existencies, and the consuming flames lick up every vestige of human thought, and crumble into ashes the last evidence of human—architectural—skill, if such an event shall ever transpire.

But in architecture, time must work, and has worked, changes, and those possessing true merit and excellence will become renowned and admired, and be placed side by side with those of the early ages; but the nondescripts passed off under the name of Eastlake—meaning any structural abomination, however erroneous, as well as those of modest neatness and pleasing appearance—can exist only as remembrances of the freaks of fancy of the period, to be looked upon in future years as most singular exhibitions of the reckless corruptions tolerated in the latter periods of the nineteenth century.

This is none too severe criticism, as much that is now practiced is defenseless upon any hypothesis of refined ethics, good taste, convenience, or consistent form, and in details innumerable, fearfully at variance with rational comparison with anything in true art or nature, and inclining in harshness and hideousness in general effect, to structures among barbarous races, or the semi-civilized and idolatrous nations.

In many of the examples the ill-shaped lines and inconsistencies are positively repulsive to the eye of those who have studied the beautiful from forms, as handed down to present generations through successive ages; yet there is at the present time a too general disposition to favor extravagancies in house designing, as in all other things, and to recognize as good the wildest imaginations and concepts of men, who in the attempted pursuit of classic architecture would fall to the deepest depths of obscurity.

Life of Cast-Iron Pipes.

THE fact is well sustained that the wear, by rust, in uncoated cast-iron pipe exposed to the action of clean, fresh water on both sides, is not more than one-eighth of an inch in three generations. With the present method of protecting such pipe with asphaltum, the life of the ordinary cast-iron pipe, used in building construction, may be greatly prolonged; indeed, even an ordinary coating of coal-tar pitch, when properly applied, is sufficient to add at least a score or two of years to its durability. The life of a soil pipe, even when quite thin and uncoated, has been found, by experience to be so great that it is not unreasonable to suppose that the greasy matter contained in sewage serves to coat and protect the iron from the corrosive action of the water and the acid components of the sewage.

The defects and leakages more generally met with in such pipes, are caused by the defective manner in which the joints are made, and improper placing and securing. Materials and devices used in buildings are often made to bear the faults of bad workmanship, and frequently "tearing to pieces" is done under the presumption that the things torn out are worthless, or not good, while the real difficulty lies in the defective handling and fitting.

Copper Boiler Explosion.

THE explosion of a copper boiler, in the kitchen of the Winchester House, in this city since our last issue, by which human life was jeopardized, and property damaged to the value of nearly $2,000, was an occurrence of infrequent happening.

The possible explosion or collapsing of copper boilers connecting with ranges or stoves, is a matter well understood among plumbers and competent architects, and as a rule, precautions in the shape of tanks and steam pipes are applied in all such cases, and when sufficient and properly connected, there can be but little danger of either collapsing or explosion, even if the sheet metal of the boiler is light. Consequently the fact that a copper boiler did explode in the kitchen of the house named, is *prima facia* evidence that the vent—the "steam pipe,"—was too small, was trapped, or choked by corrosion or otherwise. To produce an explosion by steam, the vapor must be confined and accumulate until its force becomes greater than the resistance afforded by the vessel or chamber in which it is bound. An insufficiency of water alone would not cause an explosion in any case where a vent was applied capable of carrying off all excess of power in the steam beyond the strength of the holder. Hence it is fair to conclude that the cause of the explosion was the absence or obstructed condition of such proper vent or escape. There might have been but a fractional part of the quantity of water required to fill the boiler, and no explosion occurred, if there had been a sufficient escape for the steam produced by the water passing through the water-back. The boiler may have been constructed of light material, but that fact alone would not have been sufficient to produce the explosion, if the precaution against the result had been free and of sufficient size.

The fact that the boiler was thrown to a great height, and the building construction in which the accident happened demolished, proves that there was a considerable accumulation of steam in the boiler, and that it was so bound as to obtain a force beyond the resisting and retaining capacity of the shell in which it was held.

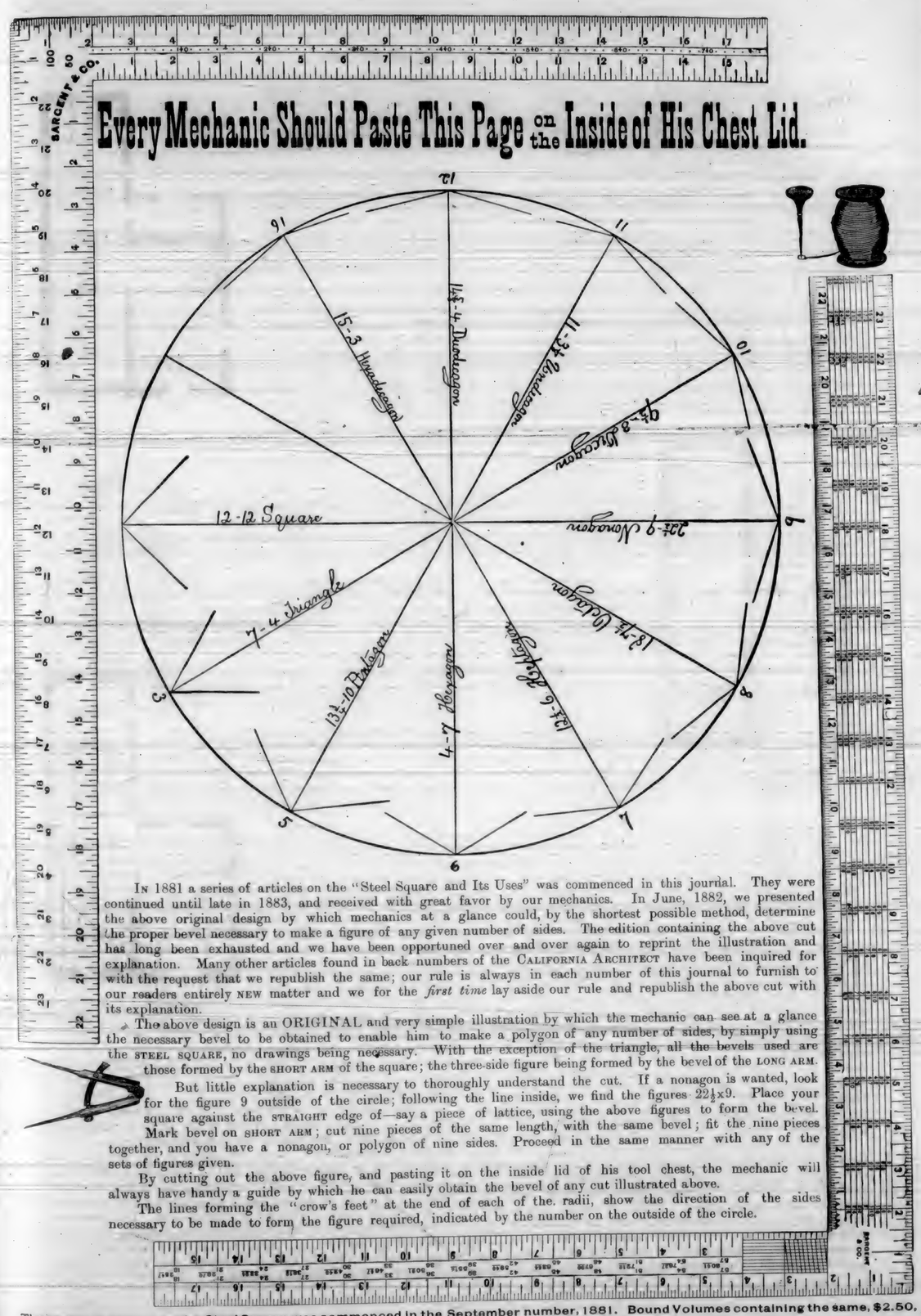
The lesson to be drawn from the case under review is, that vent pipes—of sufficient capacity to boilers are most important and necessary adjuncts, and that they should be kept free from corrosion or stoppage of any kind.

A second lesson suggests itself to manufacturers of boilers, and plumbers, not to make or use those of thin metal. Had the boiler in question been a little heavier, say five dollars' worth more of copper in the weight of the sheet-metal, the accident would not have occurred just when it did, and might not have happened at all. The repeated and frequent draining of water for dish-washing and kitchen purposes, after meals, the time when the explosion in question occurred—just after breakfast—when the fire in the range was less than it had been in cooking the meal, clearly indicates that there was a chokage in the vent pipe, terminating as stated, in the explosion of the boiler, loss of a sum in damages to property sufficient to build a neat little homestead for a family, and the severe scalding of one of the helps, and some injury to others.

STAINING MARBLE.—The art of staining marbles in a permanent manner has long been lost, but an American has rediscovered the process or discovered a new one equally effective, so that it is now possible to paint a marble surface with pigments which sink into the substance of the stone to any desired depth and then to polish the surface as highly as before the marble was treated.

ACID PROOF CEMENT.— A cement for resisting sulphuric acid even at boiling heat may be made by melting caoutchouc at a gentle heat and adding, with constant stirring, from six to eight per cent of tallow. Then mix therewith enough dry slaked lime to make the whole the consistency of soft paste; finally, add thereto about twenty per cent of red lead, whereby the mass immediately sets hard and dry. A solution of caoutchouc in twice its weight of linseed oil, aided by heating, and the addition of an equal weight of pipe-clay, yields a plastic mass which will likewise resist most acids.

SHINING BLACK INK.—The best shining black ink, used for mourning paper, and the manufacture of which has up to the present time been kept a secret by the makers, may be prepared, according to the *Papier Zeitung*, of lamp-black, borax, and shellac. The ink is made as follows: In one liter of hot water sixty grams of borax are dissolved, and to this solution three times the quantity of shellac is added. After this mixture has been properly dissolved, the necessary quantity of lamp-black is added, the whole thing being constantly stirred. Should the luster not be satisfactory, more shellac is added.



IN 1881 a series of articles on the "Steel Square and Its Uses" was commenced in this journal. They were continued until late in 1883, and received with great favor by our mechanics. In June, 1882, we presented the above original design by which mechanics at a glance could, by the shortest possible method, determine the proper bevel necessary to make a figure of any given number of sides. The edition containing the above cut has long been exhausted and we have been opportuned over and over again to reprint the illustration and explanation. Many other articles found in back numbers of the CALIFORNIA ARCHITECT have been inquired for with the request that we republish the same; our rule is always in each number of this journal to furnish to our readers entirely NEW matter and we for the *first time* lay aside our rule and republish the above cut with its explanation.

The above design is an ORIGINAL and very simple illustration by which the mechanic can see at a glance the necessary bevel to be obtained to enable him to make a polygon of any number of sides, by simply using the STEEL SQUARE, no drawings being necessary. With the exception of the triangle, all the bevels used are those formed by the SHORT ARM of the square; the three-side figure being formed by the bevel of the LONG ARM.

But little explanation is necessary to thoroughly understand the cut. If a nonagon is wanted, look for the figure 9 outside of the circle; following the line inside, we find the figures 22½×9. Place your square against the STRAIGHT edge of—say a piece of lattice, using the above figures to form the bevel. Mark bevel on SHORT ARM; cut nine pieces of the same length, with the same bevel; fit the nine pieces together, and you have a nonagon, or polygon of nine sides. Proceed in the same manner with any of the sets of figures given.

By cutting out the above figure, and pasting it on the inside lid of his tool chest, the mechanic will always have handy a guide by which he can easily obtain the bevel of any cut illustrated above.

The lines forming the "crow's feet" at the end of each of the radii, show the direction of the sides necessary to be made to form the figure required, indicated by the number on the outside of the circle.

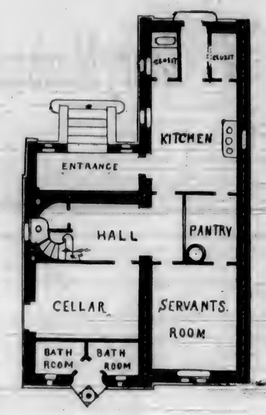
The series of articles on the Steel Square was commenced in the September number, 1881. Bound Volumes containing the same, $2.50.

Floor Plans for a Seaside Cottage.

THE accompanying engraving represents the plans for a building to be erected near the seashore. One of the first things to be thought of in designing houses to be built near the water is the arranging of the various rooms in such a manner that perfect light and ventilation are secured without the windows being too much exposed to the fury of prevalent storms, or the regular blow of trade winds. This fact has been carefully kept in view in the plans as presented on this page.

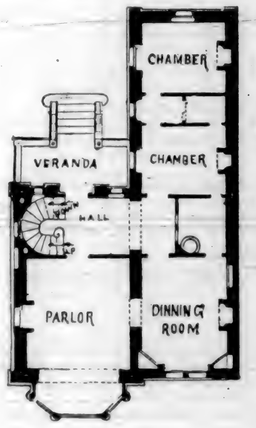
Another fact must be kept in view: Such houses as the one illustrated must be provided with suitable bath and dressing-rooms, handy of access from the beach. By examining our first-floor plan, it will be seen that two such rooms are provided for. They are directly in front of the intended building and can be entered very easily. The front, as shown, faces the sea, the main entrance being in the rear. Following out the suggestion given above, no windows have been placed on one side of the building, thus presenting a blank surface to the fury of the storm which may happen to rage. The plan may be reversed so as to have said wall face any point of the compass and still carry out the general design shown.

The arrangement of the first story will commend itself especially to those who find it inconvenient to have servants around among the living rooms. Ample accommodations are found in this floor for all kitchen work. By the means of a dumb waiter, the meals, after being cooked, can readily be transferred to the dining-room; a large cellar affords ample room for the storing of coal, vegetables, etc., while the servants are provided with a fine front room, with a beautiful room.



FIRST STORY

Via parenthesis, we may remark that one of the principal reasons why servant girls are so hard to keep in one place is the insufficiency of their bedroom accommodations. They are put anywhere, and often sleep in rooms in which the sun never shines. This is radically wrong; servants are hard-working people, and nature demands that they should have proper rest and well-ventilated rooms. There are already too many houses in which the servant's room opens directly out of the kitchen; consequently the room is filled with the smoke and fumes arising from the cooking; the bed clothes, etc., are permeated with the noxious vapors, and when the weary servants retire for the night, they are compelled to breathe the same kind of *greasy* air that is inhaled during the day. The result is a few months' stay in one place and then a change. By all means, ladies, see that your houses are so planned that the servant can have a sunny room.

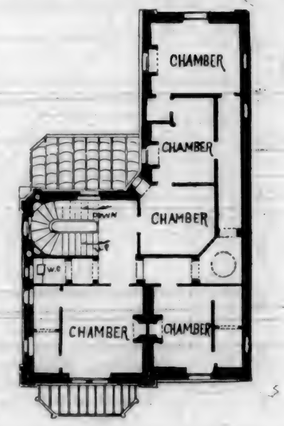


SECOND STORY

Ample bedroom is provided for a family of at least eight persons, and by *doubling up* in the beds, many more can be provided for. Should an attic be wanted, the stairway can be carried up similar to that shown on third-story plan. The rear portion of the attic could be fitted up as an observatory, with the telescope, etc. Children living in such a house could thus be early taught the rudimentary principles of astronomy. The front portion of the attic would make a fine billiard room, leaving ample room between stair hall and observatory for a children's play room.

While the arrangement as shown will not be acceptable to many, it must be remembered that a sea-side cottage is not intended for a permanent residence. Compactness with ample accommodations; every convenience and yet only a moderate outlay of money; these two facts must be well borne in mind when planning a house of the character shown. Being away from a town, no water pipes are indicated, nor gas pipes marked; to those wishing to go to the expense, an artesian well and windmill and pump complete will supply the one, and a gas machine the other.

The front elevation we do not give. This may be varied to suit the tastes of those building. We have only endeavored to present the general plan of the house, leaving it to an architect to supply the balance of the drawing. A house of the character shown can be built in this section of the country for any amount from $5,000 upwards, depending greatly upon the accessibility of the different materials required in its erection.



THIRD STORY

Painting Floors.

NOW that the fashion is more and more prevalent of using carpets th t do not completely cover the area of the floor, and which thus escape distortion by being so cut as to coincide with every angle, recess, or curve of the walls, floor painting should certainly be more generally adopted. Painted borders are all well enough, but the whole area of the floor may be advantageously laid out in color. This painting necessarily involves priming, which, in itself, as applied to floors, is hygienic, as having the effect of closing the pores in which dust lodges, the dust, with its darkening and forbidding effect, never failing to obtain lodgment unless, indeed, the boards should be of costly hardwood, which is the exception, not the rule. It may be said that a floor painted all over will not be seen. but, without replying that a painted border where the whole area is not colored is a deception, we may remark that the entire treatment of a floor or cover affords a security against unsightliness should any portion of the central carpet be accidentally raised, and that in the event of its removal for purposes of cleaning the painted ground suffices, more especially if enriched with a few rugs or tinted or patterned mats.

In the hot summer months a floor artistically painted will be often found preferable to carpet, as aiding in the movement of the air, not harboring dust, and proving on the whole cooler. Paint may be so compounded and laid on floors as to suffer but little injury, even when exposed, in a long course of time. Should the colors become dull, a slight varnishing will suffice to renew much of their pristine freshness. There are many rooms in a house which would be all the better for not being fully carpeted. Such especially are bedrooms. When we speak of painting a floor we do not refer to giving it a uniform hue. The handsome designs carried out in encaustic tiles may be repeated in color. Geometrical figur s centered with small leaf patterns are peculiarly appropriate; so, too, a host of fresco patterns, these being varied in successive tiers. Longitudinal lines representing the chromatic scale of colors might be repeated at certain intervals. Diagonal lines in different hues, lying thwart each other, in basket-work style, would have a good effect. The borders, as a matter of course, should be differently treated.

DOVETAILING.

THE art or mechanical science of dovetailing consists in fastening boards or timbers together by letting one piece in the form of a *dove's tail spread*, or wedge reversed, into a corresponding cavity in another, so that it cannot be drawn out. The mere fact that a mechanic can explain what a dovetail is, does not imply that he is therefore fully acquainted with all the mechanical skill necessary to perform the operation required with artistic ability. Practice alone, with a careful attention to details, is the main requisite necessary to perform a neat and accurate joint.

Again the mechanic must study; because he has practiced enough to enable him to make joints hardly discernible to the naked eye, is no reason why he must consider himself as perfect. He must have a thorough conception of the proportion which a piece made to fit into another should have toward that into which it is fitted, so as to produce the greatest strength with the least possible waste of material. He must also know how to proportion a joint so that it shall not fail or give way before another.

It is in the latter particular why so many joints made by the most skillful workmen separate with a trifling strain, or from being bound too tightly together, fly and split in all directions. This is owing to want of study on the part of the mechanic, as he is lacking the information necessary to estimate the strength required to resist the stress on the joint.

In Fig. 1 we represent the common dovetail. The projecting ends are called the *pin* of the dovetail, and the aperture into which this pin is fitted is called the *socket*. The form shown is the strongest of all the various patterns, and is used in tool chests, backs of drawers, and in places generally where strength is considered of more utility than beauty.

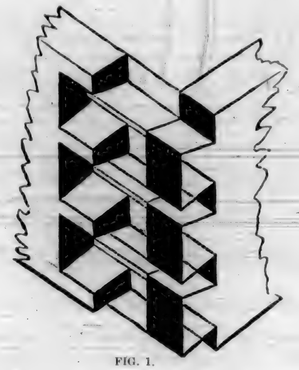


FIG. 1.

In laying out the dovetail, it is best to allow the pin to be a little long, so that after the work has been put together, the projections can be smoothed off with the plane, thus making a clean surface.

The strength of the joint depends on the *form* of the dovetail, as well as on the proportion it bears to the parts cut away. No absolute rule can be given for the bevel of the *pin;* in ordinary work an angle equal to about 75° or 80° is that usually employed. To those who do not understand how to obtain the angle required, we would say, take a pair of compasses and scribe a circle; draw two diameters at exactly right angles to each other; the arc of the circle will thus be divided into four parts, each equal to 90°; divide the arc of one of these sections into five equal parts; draw a line from the center of circle to the point nearest the perpendicular; this line in relation to the diameter will give the bevel necessary for the *pin* of the dovetail.

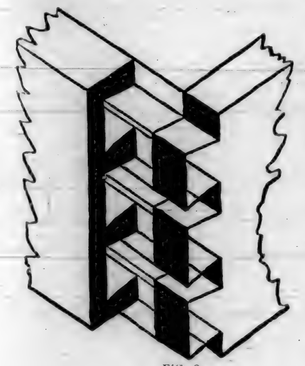


FIG. 2.

Young mechanics are apt to allow too great a bevel for the *pin*. This fault must be carefully guarded against. Too much of a bevel decidedly weakens the joint. The best rule to go by is to study the nature of the wood, and give as little bevel as possible and still prevent the possibility of the pieces pulling apart. Hard or tough wood admits of much greater bevel than redwood or pine.

Fig. 2 represents the *lapped* dovetail. In this form the ends of the dovetail show on one side of the angle only, and is generally used in the front of drawers in cabinets, bureaus, etc., where the side cannot be seen unless the drawers are opened.

Fig. 3 represents the *mitred* or *secret* dovetail. In this the dovetails are not seen at all. While, admittedly, this is the weakest form of all the various patterns, still it is very useful where neatness is required, and is generally employed in making fine boxes, etc., for the parlor or library.

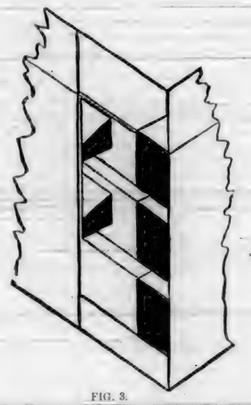


FIG. 3.

As represented in Fig. 4, a tenon may be held tight in a mortise, by framing the latter in the shape of a dovetail, and *fox-tail wedging* the tenon into it; this is done by four thin wedges into and projecting from the end of the tenon, so that on coming in contact with the bottom of the mortise hole, they may be driven into the tenon and enlarge it sufficiently to fill up the dovetailed mortise. Care must be taken to so arrange the wedges that the two outer ones may be driven first, and then the inner ones; by this means only thin pieces of the tenon are split and turned outwards at a time, thus avoiding the risk of splitting the tenon beyond the shoulder, which might occur if fewer and thicker wedges were used. Light blows should be given at first so as to cause the tenon to gradually split.

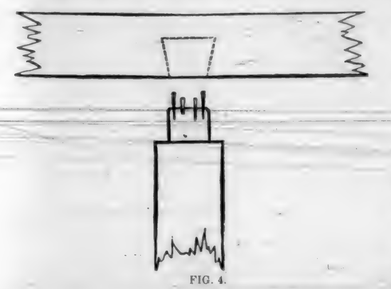


FIG. 4.

The mechanic must have his tools in perfect order. Only dull instruments as well as tools slip over work. If the edges are keen, they will *grab* hold of the wood as if eager to do their part. In fine work it is absolutely essential that the tools be in perfect condition, as a slip of the plane or saw may cause damage which cannot be easily repaired.

Scribing.

SCRIBING is the operation by which a piece of wood-work is made to fit against an irregular surface. Thus, for instance, the base-board of a room, by scribing, is made to meet the unevenness of the floor. To determine just the amount of wood necessary to be removed, take a pair of compasses and open them to a width equal to the greatest distance or space between the base-board and the floor. Having *set* the compass, draw them along the floor so that a mark will be scribed in the board, corresponding to the bumps on the floor. Cut the wood away according to this line, and on refitting the board, a good joint will have been obtained.

A curious flower was recently discovered on the Isthmus of Tehuantepec, Mexico. It has a faculty of changing its color during the day. It grows on a tree. Another peculiarity of this floral chameleon is that it only gives out perfume at noontime. One of the strangest things about this flower, however, is that it should be found in Mexico when its colors are those of the United States flag. In the morning it is white; at noon it changes to red, and at night it adopts a soft blue color.

American Institute of Architects.

We have received a copy of the proceedings of the Institute at its nineteenth annual session, 1886, containing also an expressive likeness of the first president of the Institute (deceased), Richard Upjohn.

The address of welcome was delivered by Dr. Thomas A. Atchinson, which was responded to by Mr. Kendall, in which the following occurs: "Additional associations for the furtherance of professional interests have been formed under most favorable auspices, and we must feel especial gratification in the increased facilities for the study of architecture, which are offered by the Institute of Technology, in Boston; by Architectural Department of the School of Mines of Columbia College, in New York; by the Illinois Industrial University, at Champaign, and by other institutions of learning in various parts of the country, so that the student in America can now obtain a professional training, which will be of greater practical value to him than the architectural courses of Paris, Vienna, or Berlin."

The addresses, containing many interesting references, were listened to with deep attention, and received hearty applause from members and guests. The following extracts from the proceedings indicate the spirit and feelings actuating our professional brethren—members of the Institute:

"It would seem desirable that some effort be made to bring about a closer union and relationship between the architectural associations of this country. To this end it seems but proper that some advance be made by the American Institute of Architects, as the oldest organization of architects on the continent. As a means to that end, it would seem desirable that this Convention take some action looking to a representation through a regularly appointed delegate at all conventions of architectural societies throughout the Union, and that such societies be requested to send each a delegate to all conventions of the A. I. A."

San Francisco Chapter is duly noticed in the report of proceedings.

Matters relating to supervising architects to public works, compensation, competitive plans, etc.; were considered.

A "Bill to establish the office of Commissioner of Architecture, and a Board of Public Biddings, and for other purposes," was presented by the committee previously appointed to prepare such a bill, in which among other things occurs:—

"Section 27.—That any contractor who shall construct the building on which he is engaged in a different way from that prescribed in the plans and specifications, or who shall supply different or inferior material from that called for in the specifications, or who shall cause the work to be done in a manner different from that called for in the specifications, or in his contract, except as provided for in this act, shall, on conviction of such offense, be fined in any sum *not less* than five hundred dollars."

Reference is made to the following "words of our first president, Richard Upjohn, spoken at the convention of 1867. After sketching the early struggles and history of the Institute, Mr. Upjohn said further: 'It is the duty of every one of its members to throw the full force of his abilities and influence, so far as the demands of his first duties toward himself and his dependents will permit, into combined effort to make the Institute attain its object, and realize its noble ideal. If we do so, if we show that we respect our work, and ourselves as its doers, that we know what we mean, and mean to do it, so far as our providential opportunities will permit, if we make what we have done apparent, and show that we have well laid out our plans for the future, and have the men, the intellect, and the culture to carry them out well, we shall find that Providence will not fail us, but will, through the medium of outside co-operations, supply us according to our need and progress with the material means requisite to make our mental capital available.'

"Eighteen years have passed since these words were spoken. The Institute has developed and grown strong under its federal system of united chapters. A bright and useful future seems to be open before us; the art of architecture is more appreciated, and the practical science of building is more generally and better understood. To be members of the American Institute of Architects should be our pride, and an attendance upon its annual conventions a journey of pleasure and profit to all fellows and associates."

The many reports of committees, and speeches by able representatives of the profession, contain a large amount of instruction, and furnish data and facts of great value to those earnest in desires to improve themselves in the practice of a profession time-honored and noble, yet ever challenging the best efforts of the human mind to keep pace with its unfoldings, and ever furnishing new bases of thought, and revealing new beauties through each succeeding generation.

The suggestion expressed, that every chapter in the United States should be represented at the annual councils of the grand body, is a good one, and honored, indeed, will be the man who shall be the first from California to represent San Francisco Chapter and the architectural profession upon the Pacific Coast.

Technical Terms.

Some of the technical terms used in the building trades are very curious, and while many of them have some direct clue as to their derivation and meaning, others possess nothing whatever to show their signification or origin. Technical terms vary to a far greater extent than one would imagine. Even in different sections of the same district one will often find a considerable difference in the pronunciation and manner of spelling technical words; in fact, it is often difficult to determine what the correct spelling and pronunciation should be. An instance of this variation may be found in the word "rebate" in the Dictionary of Architecture, which is therein given, spelt in no less than twenty-three different ways: Rabbet, rarebet, rabbit, rabit, rabbit, and others are given. Other words, equally as well known, vary in as great a degree.

At a recent examination in building construction the following question was given: "Give a short description and sketch, where necessary, explaining the meaning of each of the following terms: 'Tumbling In,' 'Welsh Arch,' 'Dutch Arch,' 'Birdsmouth,' 'Hot Short,' 'Cold Short,' 'Natural Bed,' 'Sandwich Girder.'" Although the terms all refer to well-known features of construction, some of the terms are sufficiently uncommon to render an explanation of their meaning of some interest to our readers.

"Tumbling In" is a term in brick-work used to denote the way in which the courses of bricks are built out of the horizontal when it is wished to reduce the width of a chimney or buttress, or the length of a wall.

"Welsh Arch" is another term used in brick-work, and refers to a bad piece of workmanship. When beams of any considerable thickness are built into walls, when, in fact, they are more than about seven inches in width, a single brick over them will not carry the superincumbent load, and it is therefore usual in good work to turn a ring arch over the end of the beam, leaving a small space around it for the purposes of ventilation. Bricklayers often do not take the trouble to turn a fair arch, but compromise the matter by constructing what they term the "Welsh Arch," which simply consists of a brick splayed at each end, supported on the splayed ends of the adjacent bricks. It need scarcely be added that this construction should not be permitted in any good work.

"Dutch Arch." This refers to another form of bad workmanship of the bricklayer. The strength of this "arch"—there is really not a single quality of the arch about it—lies wholly in the adhesive power of the mortar.

The word "Birdsmouth" has two meanings. First, it is a term used by framers as applied to the joint made at the foot of a common rafter, where it rests upon the wall plate; and, secondly, it is applied to the cutting of bricks where it is necessitated by the corner of a building coming at an acute angle.

"Hot Short" and "Cold Short" are both terms applied to defects or impurities in iron. The presence of sulphur, and, probably, also, magnesium, makes the iron red or hot short, that is, brittle at a high temperature; and the presence of phosphorus and silica, cold short or brittle at a low temperature. Both are serious defects; the latter the more so. These impurities come either from the ore or from the coal and flux used in course of its manufacture, and certain materials are, where necessary, used to remove them, common salt being usually employed for the purpose.

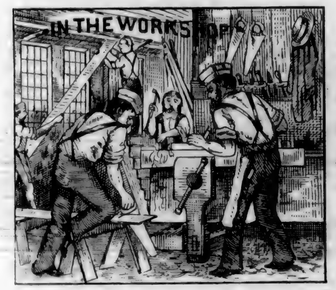
"Natural Bed" is of considerable importance to masons. It refers to the plane of deposit of aqueous or sedimentary rocks. It is very advisable that all such stones should be laid on this bed in order that the stone may the better resist the action of the atmosphere upon it.

"Sandwich Girder" is simply a vulgar name given to the flitch girder, consisting of a beam of wood sawed longitudinally down the center, the two portions being reversed or the faces of the parts previously forming the center being placed outside, a plate of wrought-iron placed between them and the whole well bolted together, forming a strong, light, stiff girder suitable for many positions, and more particularly for loads and positions like those of a breastsummer.—*Artus, in Building.*

Plumbers should be careful not to use lead in contact with oak, unless the latter is perfectly dry and free from sap, otherwise the gallic or acetic acid in the wood will turn the lead into acetate of lead or ceruse.

Front Elevation for a Country Mansion.

The above unique illustration was designed especially for this journal. If surrounded by trees as shown it will present a very striking and handsome appearance. Much depends upon the manner in which it is painted. Rich, warm colors should be used. The arrangement of the porches and verandas is such as to give shelter from the sun in summer and the storms of winter. The cost may be varied anywhere from $10,000 upward. There is no economy in trying to save a few hundred dollars on such a design as that shown. Only the best material and skillful work should be used and employed. Special pains should be taken to have the chimneys built in a substantial manner.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade. We especially invite suggestions from apprentices and young mechanics.

Do not attempt to peep through key-holes, for in the future disappointment will follow. A new lock is now out, and will soon be on general sale. The key-holes for opposite sides of the doors are out of line with each other, and the locking bolt has two key-bit receiving notches, and there are also special key-hole guarding plates, making a simple but strong lock, not easily picked, and entirely preventing the pernicious habit of peeping through the key-hole.

It is a common idea that a "chimney cannot be too large;" in other words, the larger the area of the flues, the better the draught will be. This is not always the case. In many cases—in foundries, manufactories, etc.—where a chimney has been built large enough to serve for future additions to the boiler power, the draught has been much improved as additional boilers have been set to work. The cause of this is to be found in the increased steadiness of draught, where several boilers are at work and are fired successively, as also in the better maintenance of the temperature of the flue.

One thousand brick, closely stacked, occupy about fifty-six cubic feet.

A cubic foot of good gas, from a jet one-thirty-third of an inch in diameter, and a flame of four inches, will burn sixty-five minutes. Internal lights require four cubic feet, and external lights about five cubic feet per hour. When Argand burners are used, from six to ten feet will be required.

Dry bricks will absorb about one-fifteenth of their weight in water.

A correspondent desires information in regard to seating space in theaters. There is no general rule in universal practice regrading the space to be allowed each person. Boards of Work, Boards of Supervisors, and architects, in different parts of the country, have endeavored to formulate certain dimensions to be used for each individual present in the theater, but when there is a rush, the rules suffer as well as the visitors, in the general squeeze for a place. Generally, the following figures will represent the minimum space to be allowed in the different parts of the house: Width of seat, in dress cicle, eighteen inches; family circle, sixteen inches; orchestra seats, same as dress circle; gallery, fourteen inches. To be comfortable, not less than eighteen inches in width should be allowed for each person. The above measurements apply only to those theaters not using the new-fashioned tip-up seats. Desks used by scholars in our public schools are in length as follows: For two scholars, three feet ten inches long; for one scholar, two feet long. A chair for a scholar five years of age, should be nine and one-half inches high; ten years of age, thirteen and one-fourth inches; fifteen years of age, fifteen and one-half inches; over fifteen years of age, sixteen and three-fourth inches.

In selecting house decorations see that the effect is not destroyed by the surroundings; for instance, when the carpet is faded and the furniture shows many years of faithful service, by no means indulge in bright colors, plush and satin chair scarfs, elaborately embroidered table coverings. Where it is necessary to conceal defects, subdued colors have a more pleasing result.

To Restore Discolored Ivory.—Wash well in soap and water, cleaning out any carving with a small brush, and place while wet in full sunshine. Wet for two or three days, several times a day, with soapy water, still keeping the article in the sun with a glass shade over; then wash again and the ivory will be beautifully white.

We have repeatedly called the attention of carpenters and painters to exercise more care in the building of scaffolds, as they are certain death-traps where improperly constructed. There is scarcely a day but what the papers record the death of either a carpenter or painter, resulting from the falling of a scaffold, and it is certainly strange that these repeated warnings do not have more effect upon the workmen who build them. They not only owe it to themselves, but to their families, and we would urge that it be the duty of the architect, builder, or boss, to thoroughly inspect each scaffold erected. By so doing serious accidents will be avoided.

The houses which sell the quickest are the ones which contain the latest improvements. Improvements are in their very nature such as to add to the convenience and comfort of their possessors. And the old-fashioned portable wash-tub and the cistern, handmaids of the ancient days, were at one time designated "improvements." But the march of progress has not only carried them, but all other kindred household appliances, to the realms of shade, and so in degree the same may be said of everything pertaining to architecture, sanitation, and equipment. From the cellar to the garret whatever conduces to make a well-appointed, finely-equipped, and properly-piped and ventilated house, is that which is rewarded by prompt and profitable returns. And what is appliceable in one sphere of action applies with equal force to all others. Those who are heedless of this are always left behind, and make up the long line of "disappointeds" which strew life's pathway.

To Put an Egg-Shell Polish on Fancy Woods.—Three parts of shellac, one part of gum mastic, and one part of sandarac gum are dissolved together in forty parts of alcohol, and form a beautiful polish, which may be applied with a brush or cloth.

Salt and Digestion.—If a piece of salt is taken into the mouth, the flow of saliva is temporarily increased, though it is not certain that the amount secreted in any given time is any greater than it would have been had no stimulants been used. It has been argued, also, that the effect of salt on the gastric juice in the stomach is the same, and that its use promotes digestion. Some recent experiments, however, on a man who had an artificial opening into his stomach to supply food, which he could not take through the mouth, seems to negative this assumption, and that salt hinders the secretion of the gastric juice and digestion rather than promotes them. If the amount of salt is considerable, digestion almost ceases. Experiments like these have great value, for they help to clear away the superstitions of past ages, which seem to be held by the educated and the ignorant alike.

Steel Nails.—Establishments for the manufacture of steel nails and steel nail plates are on the increase in this country. These nails, it is alleged, are produced much more cheaply than those of iron, owing to the cheaper process—the Bessemer—in preparing the metal, but their grip is less than that of iron nails.

A bill of goods had been sold, and when the proprietor came in he saw the sales book and hurriedly called the salesman: "Did you sell Eiddler this bill of goods?" he inquired. "Yes, sir, I did," was the reply. "How did you sell them?" "On time, sir." "On time! good heavens, young man, why didn't you sell them on eternity, so the account wouldn't be outlawed by the statute of limitations."

Wood Preservative.—Introduce into the pores of the wood the following solution: Mix two parts of gutta-percha with one part of paraffine, heat to liquefy the mixture and apply while hot

A Fine Lubricant.—A good lubricant for fine machinery and one which will not gum or corrode may be obtained by putting pure olive oil into a clear glass bottle with strips of sheet lead; expose to the sun for two or three weeks and then pour off the clear oil for use.

To Polish Glass.—To polish plate glass and remove slight scratches, rub the surface gently, first with a clean pad of fine cotton wool, and afterward with a similar pad covered over with cotton velvet which has been charged with fine rouge. The surface will acquire a polish of great brilliancy, quite free from any scratches.

The heaviest wood known among the four hundred species of trees found in this country is said to be the black ironwood of Southern Florida, which is thirty per cent heavier than water. Sixteen of the species, it is stated, are so heavy that their perfectly dry wood will sink in water.

ASKED, ANSWERED, AND COMMUNICATED.

Ed. Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Los Angeles, Cal., July 21, 1886.

Editors California Architect and Building News—*Gentlemen:* I observe in your July issue some one asks for "correct method of finding the length of one of the sides of an octagon, the diameter being given."

The rule is given, but the writer cannot exactly see into it. Will you kindly, in your next issue, try to explain the rule more clearly, and illustrate or suppose a case where the diameter is less than twelve inches. By so doing you will greatly favor one of your readers. X. Y. Z.

The rule, as given in our July issue, is applicable to any octagon, regardless of the length of side. If our correspondent will read carefully, he will find that the rule says, "*add or subtract, as the case may be, to the known length, two and one-half inches for each six inches of diameter.*" Thus the mechanic must remember some one certain measurement for a certain given width. To illustrate, we will use a different width from that given in the July issue. An octagon 7 feet in diameter, the length of one of the sides will be 2 feet 10¾ inches. Now to find the length when diameter is 12 inches, the difference between 7 feet and 1 foot is 6 feet; allowing 2½ inches deduction for each 6 inches of the 6 feet, will give 2 feet 6 inches; subtract this from the known measurement given above, and we find 2 feet 10¾ inches less 2 feet 6 inches, leaves 4¾ inches, the correct length of side when octagon is 12 inches in diameter. We simply used 9 feet for width of octagon, as that is the average width for bay windows The following are some of the measurements in practical use:—

Diameter	7	feet	6	inches; side,	3	feet	1¼ inches
"	8	"	0	" "	3	"	3¾ "
"	9	"	0	" "	3	"	8¾ "
"	10	"	0	" "	4	"	1⅝ "
"	10	"	6	" "	4	"	4¾ "
"	12	"	0	" "	4	"	11¼ "

The rule can be applied whether the diameter is 8 inches or 80 feet.

Driers in Paints.—What are they, how used, and how do they act?

The above three questions are asked by a young apprentice. Their brevity pleases us. The drying of linseed oil is due to the readiness with which it absorbs oxygen, and any material which promotes this absorption is termed, in painters' parlance, a "drier." These, by yielding up the oxygen they contain, encourage the oxidation of the oil.

As many pigments retard the drying of the oil, the addition of driers is necessary to prevent the paint from remaining sticky, or "tacky," as it is termed.

The principal driers are acetate, or sugar of lead, sulphate of zinc (white copperas), and litharge (oxide of lead).

Observe the following points in using driers:—

Not to use them unnecessarily with pigments which dry well in oil color.

Not to employ them in excess, which would only retard the drying.

Not to add them to the color till about to be used.

Not to use more than one drier to the same color.

Avoid the use of driers in the finishing coat of light colors, as they are liable to injure the color.

Our correspondent should procure a standard work on painting, and spend his leisure time in study; this office can furnish any work published in any branch of the mechanical, scientific, or professional occupations and trades.

A bricklayer's hod, measuring 1 foot 4 inches by 9 inches by 9 inches, equals 1,296 cubic inches in capacity, and contains 20 bricks.

What is meant by "larrying," a term used by bricklayers? The best way of laying the paving or bricks in the body of the wall, after sufficient facing bricks have been laid, is to lay in between the face bricks a thick bed of "larry," or rather liquid mortar, and then slide each brick along in it into its proper place, in doing which the mortar rises to the top of the joints, the process being called "larrying."

Please state specifically the difference between carpenter's work and joiner's work.

Carpenter's work, as distinct from that of the joiner, consists of framing and putting together all the wood-work connected with the proper construction and stability of a building or other kind of structure. He supplies all the wood-work required to be built in or bedded on brick walls, such as plates, templates, etc.; also all centers, turning pieces for arches, etc.; the carpenter constructs roofs, lays the floors, erects partitions, nails on the rustic outside, and what is usually termed inside finishes.

It is seldom that a carpenter is a first-class joiner. The larger timbers with which the carpenter has to deal, and the comparative absence of that high finish which is essential to joiner's work, render it almost impossible for the same man to be a first-class hand at both branches of the trade. A first-class joiner is always too slow and cramped at carpenter's work, and a first-class carpenter is not usually sufficiently attentive to those details which constitute highly finished joiner's work.

After a house has been built and covered in, the joiner takes in hand all the wood-work, as a rule, connected with paneled partitions, doors, skirtings, dados, etc. In joiner's work, close-fitting joints and smooth surfaces are the chief objects in view, whereas the aim of the carpenter is to give strength to resist the strains to which his work may be exposed.

All surfaces left exposed to view are worked smooth with the plane by the joiner. He must also exercise great care in fitting and framing the various parts together, that they may be affected as little as possible by the shrinking or warping of the material used.

We have stated the difference between a carpenter and joiner as the terms are generally used. In San Francisco, and, in fact, all over the Pacific Coast, the term joiner is seldom used except in connection with cabinet work. The first question a foreman asks of an applicant for work is, "Are you a full hand?" and the answer establishes the questioned mechanic's abilities to perform any certain work. "First hand," "second hand," "floor nailer," "partition setter," "inside finisher," etc., are terms used by men applying for the honor of swinging a hammer or pushing a jackplane, etc., on any certain job. We remember seeing a sign as follows:—

JOHN SMYTHE.
CARPENTER, JOINER, & PIECE WURKER.
Floors naled and Sash put in.

If the man's abilities were equivalent to the knowledge of grammar, as evidenced by the sign, we pity the looks of the work with which he was connected. *Piece workers* are the *scabs* in the carpenter's trade

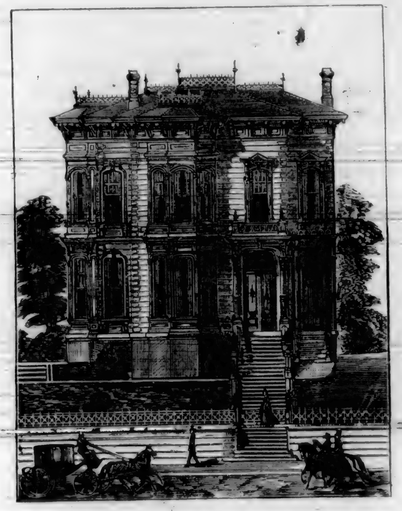
Lead Dots.—In securing lead to wood-work on roofs, etc., and to effectually protect the nails from rust, etc., the following method is used: Wherever a nail comes, hollow the wood out slightly; drop the lead into the hollow; drive the nail in through the center of the hollow, and then fill up level with solder. The same may be done without hollowing out, but then the lead dot covering the head will project above the surface of the lead work.

In giving old lead in exchange for new lead, it is generally customary to allow six pounds per cwt. discount on the weight of the old material, on account of the latter containing dirt, etc.

Fish vs. Scarf Joints.—When the beams abut end to end, and are connected by pieces of wood or iron placed in each side, and firmly bolted to the timbers, the joint is called a fish joint. When in a joint the pieces overlap each other, and are bolted together, the joint is styled a scarf joint.

An average gas burner consumes about four feet of gas per hour. Windows, as ordinarily constructed, will admit about eight cubic feet of air per minute.

At the drum-tap 9,000,000 drilled soldiers would take arms in Europe.



Art and Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

XVII. BOUNDARY OF PERCEPTION.

To enter on the many explanations of beauty which partly contradict each other is impossible, since the best of them can be referred back to the harmony of spirit and form, and the accord of the power of imagination with intellect when divested of the learned shroud. The difficulty of the subject matter lies herein, that we must abstract the spirit of the beautiful from a number of beautiful things; that our feeling, depending on many conditions, will always speak with it; and that objectivity and subjectivity, principally and with lasting truth, cannot be parted and separated from general views and definitions, which, in themselves, would be comprehensible. Human speculation finds here a boundary she cannot pass, but could she succeed in uncovering the secrets of the human heart, and the miraculous blending of spirit and mind, as they are shown by the pleasure in the beautiful, and discover sober and intelligent laws, it may be that the finest ornament of beauty worth living for would be lost irreparable to humanity.

XVIII. IDEAL OF BEAUTY.

By such characteristics of beauty, as well as a pleasurable sensation of man, the quality and nature of things point by the impenetrability of its spirit back to a mystic cause, without which we cannot conceive or think of the consummate perfect beauty. Then as to man indeed the truth of yonder unapproachable image always will remain, but will destroy him as soon as he lifts the veil; but, nevertheless, he anyway incessantly aspires and presses towards the eternal tree of knowledge, hunting and seeking his liberty in vain, through all zones and seas, and at last, beginning with the smallest, wrestling with himself, must gain his liberty; so he also strives mightily towards the beautiful, but the highest fulfillment of the same remains to him always concealed. Man has presentiment, demand, and pursues to the highest aims of truth, liberty, and beauty, but he never reaches them. Name the primeval cause to which those aims point, as we like, put the relation to a supersensible cause, if we want to express ourselves generally comprehensible; and still more, to give to the human being a contentment of mind, we must, then, always say that the highest truth, and the highest good, as also the highest beauty, rest in God. The being of God once settled, out of him flows the wonderful harmony, which in our feeling, in our mind, solves, in fact, the problem of the spirit and conception of beauty.

The highest beauty is in God, has been said with categorical decisiveness of conviction. And in fact if we speak, from things which by our intellect we do not comprehend, the secret precedence in our breast, but anyway are touched in our deepest mind by unexpressible beauty, and almost raised above ourselves, then we find the purest and only fulfillment in the belief in the existence of God. We see then in beautiful things the images of eternal beauty, and in nature the appearance and phenomena in which only one highest spirit, God, is expressed; and in art the secret revelation of the human spirit, in which rushes the aspiration of the divine breath,—truly a noble and exalted vision of nature and of art. And if we look back to our inward mind and place together and compare the manner of sentiment of man himself, we recognize that in yonder trait is divine beauty; and where we find it expressed clear and shining, we stop there admiringly and say, A godlike, a beautiful soul. The pure inner harmony of mind, undisturbed by any blemish, any uneasiness, finding in itself and its God the most perfect satisfaction, and anyway knowing nothing in its own heavenly purity and innocence, but in sacred aversion and awe recoils when compelled to approach divinity by a worldly symbol. The same speaks wonderfully and enchantingly, and in the figure and in the eyes of such men rests, visible glorious, and magnificent, a beauty which could be called superterrestrial if she would not appear visible on earth; but even in death such a soul may be able to effuse over its dying feature the purest luster, the noblest peace. Nobody praises the soul higher than a poet. To him she stands higher than beauty of nature or beauty of art, and well may be added, unknown to himself, the beauty of his own soul, untarnished by meanness and coarseness.

We can easily realize and perceive that with such supersensible and figurative illustrations for our knowledge, nothing is to be gained where our sensitive faculties come direct to play, as with the beautiful.

XIX. SPIRIT AND NATURE OF A WORK OF ART.

When the beautiful, as has been explained, in respect to the thing, is perfect, harmony of idea and appearance, or, as we commonly say, in accord and harmony with sense and form, so is herewith expressed the characteristic of the meaning of a work of art. But how is this harmony between the spirit and form to be understood? In the inward, immediate, and direct manner, and so that the meaning, the idea, of a certain work of art cannot appear in a changed form; not to be represented and made to appear in other stuff, without itself being changed and altered. Hereby is, in the same time, the impossibility expressed, to bring the idea of a work of art to view by words; what direct can be seen at each piece of music, on every object of the forming art from which, by the most correct description, a clear view and conception never can be gained; the same finds, in a closer sense, its unlimited application on poesy. Then, as soon as it is tried to reproduce the meaning of a tragedy, of a poem, in other words, the insufficiency and inability appear. The work of art is inseparable from its own peculiar exclusive form, which necessarily belongs to its spirit and meaning, as the body to the soul of man; but the form is enlivened and spirited by the idea showing and existing in the work of art, as its soul, which is invisible, as the soul of man. Considering, and not to drive the comparison of a work of art to its highest pitch, and arrive at discouraging results for the human mind, that man is a living organization, having a purpose of his own will, when the work of art is a make, having only the semblance of an organic life. But since the work of art does not know a purpose of will, but only wants to fulfill this one, to be beautiful, it can attain the same more perfect, as in general the natural organization, having other purposes to fulfill.

The idea of a work of art only originates in the fantasy of man, *i. e.*, it originates in the power of his imagination, his mind; without that the intellect in a rational way can get to the same—in direct excitation, with which throughout a more or less raised effect of the mind is connected. The idea of his own imagination, man will and must, by his own inner urgence and drift, make visible and conscious to himself, and in doing this he creates at least a basis for his work of art. He does not sober down the charm of his own inner vision, in giving the same in words, and with his intellect seeks an expression accordingly for it; but his inner vision of mind flows direct into the lines, in the color, into the modeling clay. He touches the lyre and draws from it melodious sounds which, in his own imagination, presageful and yet knowingly lived, or he powers them in words. He does not seek the whole richness of his soul. So works of art are produced, noble, high, and beautiful in all, perfect and well equipped.

XX. RETROSPECT.

Connecting all together, we obtain from all our observations which we, in regard to the explanation of beauty, as well as in creating a work of art and its enjoyments, always and unalienably, were referred to incidents of our mind, taking away therefrom all logical perception and arriving in us to a consciousness which distorts, stains, and destroys, so soon as we wish to reconvey them to bases of reason, to establish and prove the same by ideas of reason. But if we now consider that the happiness and the pure contentment is poured out by the world of the beautiful, and when we think that the highest reward for a good and noble act done disinterestedly lays in our soul, and if, lastly, we must acknowledge to ourselves that even the abstract thought gives the highest contentment to man, only then, when in a victorious satisfaction out of a conflict he has gained to the world a truth, can rest a moment,—well might we throw up the question, since such moments to the human being grant a complete satisfaction, and hereby a presentiment of the highest happiness is accorded. Does, then, the inner essence of human life lay more in the pleasurable perception, or, as we might believe, in the thinking?

Before we proceed any farther, we should attach here some remarks on the other kind of the æsthetic effect on our mind. We spoke of the beautiful, but with it the whole dominion of sensible impressions is not exhausted in regard to the form and its signification. But since to our feeling, if otherwise we do feel, nothing is indifferent, it follows we distinguish only that which is agreeable to our senses from that which is disagreeable. The former is positive; the last negative. The last we call ugly, terrible, monstrous, and such like, but here we cannot enter on its explanation.

XXI. THE SUBLIME.

The positive does not exhaust itself alone with the beautiful, it includes in the same time the sublime and the cheerful, and between these two lies the beautiful. The sublime exists only in nature, and only such things are for us sublime which bring us direct by the power and might of their aspects to the presentiment of a divine cause of their creation. Not the magnitude of the spiritual meaning for itself is decisive for the sublime, but this religious relation; not the preponderance of the ideas over the form, but the indirectness with which our mind, by its aspect, is directed to God. But if art wants to effect such like, she becomes symbolic; man can only express that by his work, what he comprehends; that lying and being in the sublime, he does not comprehend; he has only a presentiment, and therefore can never make the sublime. But the perfected work of art, we say, originates by a breath of divine inspiration, and therefore must, in the perfect work of art, lie a touching point of the sublime, even only a touching point.

XXII. THE CHEERFUL, MERRY.

The cheerful (jolly) is not in nature, but only in art. If before the sublime our disposition becomes one of veneration, even of worship and adoration, then we want to enjoy the beautiful, full and whole; but over the merry we want to laugh. But as not all that we venerate is sublime, that we enjoy is beautiful, so is not all over which we laugh, merry.

To explain, the cheerful or merry, or, as it may be called, the comic man, has not been successful. The question, What is comic? has not been solved. We decide, with surprising security, this or that is merry or that is not; but why we do so we cannot support by a general everywhere-satisfactory definition. Since Aristotle, all æsthetics on the definition of the merry, became themselves merry æsthetics. The grades and undergrades of the merry in all possible arts make it more difficult to bring them to a common subordination, to one definition, which we will leave to the reader to bring under one cap, the humoristic, the witty, ironic, the caricature, the burlesque, grotesque. If we limit ourselves to the forming art, we recognize that in all comic works pure harmony is disturbed in a manner, that subject matter belonging together are set up, that is, that contrarieties are united in an unusual manner, and that matters belonging together are connected in an unusual manner. To this opposite only spiritual, only in the idea, then, the work produced is humoristic; but if it appear in form, it becomes a caricature.

XXIII. THE HUMORISTIC, THE CARICATURE, AND THE SATYR.

The humoristic picture, the truly proper form of the appearance of the comic in art, is always without a sting and harmless, and follows the general rules of form.

This meaning is in the spiritual conception, in the manner with which the artist entangles the contrarieties and solves them again. With humor we can only view general evil, folly, and weakness, and humoristic work, therefore, can only in a general sense point its expressions against a certain person; then the conditions of human society furnishes stuff for the forming and introduction of contrarieties. Inasmuch as the plastic in single works can be humoristic, painting is any way the dominion in the forming art, and indeed a part of the mythological objects, the animal, fable, etc.

Caricature is wit drawn, and has always the purpose to ridicule, to scoff, to mock, to humble; is mostly directed against a certain person. She has therefore a point. She is an exaggeration and therein lies her comical result. But since the same already pursues an outward purpose, she does not belong any more to the dominion of the pure art; she uses art as a means for its purpose; may be that the figure is stretched, and that to the same is given an excessive large head; and may be that the same introduced in extraordinary relation to other figures and things. The caricature always remains a certain premeditated disfiguring and deforming of the peculiar form, and therefore in this sense does not belong to the domain of art. An intermediation between her and the humoristic work is the figurative satyr, which, as it were, in a harmless way, secures its victim, and, when secured, and begins to rejoice over the humor, the person of the same unaware, is struck a blow in the face with the satyr's cloven foot. Hereby is a regular form observed, but the spirit is directed against a certain object with the intention of a covered assault. This particular moment taken from speech is in art difficult to represent, but it may be introduced in the same with the assistance of the comic allegoric.

We must desist here from a further expounding of these difficult relations, which would remove us from our purpose, and point only to the fact that as the beautiful in its highest perfection touches the sublime, so its lowest state has already mixed with the ugliness, that is, its own negation; it is in us a gradual succession of æsthetic impressions and feelings; but when the merry passes over us without any deep impression, the sublime captivates us, the beautiful gives us full, pure, and noble satisfaction, which remains with us and is lasting.

The morning gate of beauty is the consecrated land of perfect humanity; behind him lies the merry world, before him the sublime infinity; but only under the ark of peace, which is a protective haven adored with all the gifts of art expanded over the race of mortals, men thrive, whole, good, able, and noble.

XXIV. THE DIFFERENT ARTS, THE THREE DIVISIONS.

We have before already separated the forming from the art of sounding, according to their marks of perception, and both only in the manner as to their expression, designated them as different. We turn ourselves exclusively to the first, which we, in future, will abbreviate, simply calling it art, when the sounding art generally is introduced as poetry and music, which is the plain language therefore in general use. Of the art in the closer sense we have the art of building (architecture), of sculpture, and of painting, the two latter united to the arts of forming. They are founded throughout on the same origin, and their differences are again only in their peculiar condition in which each of them in their manner brings its work to appearance.

XXV. THE ART OF BUILDING (ARCHITECTURE).

The art of building is the least art in all its parts since the inventing or designing artist does not himself execute his own work, but has the same done by others, under his direction. The sole artistical effect lies in the conception of the plans which he makes and fixes, and accordingly the building is executed.

At such designing the artist's fantasy must be in complete and full tension, to bring to him in his mind the building to be designed so clear and visible that he can oversee it as with a single glance, detecting no faults and finding it satisfactory. Then with the plan once decided and determined and the execution started, the same, on the main, must be proceeded with, as changes of any considerable extent and importance are not admissible; when the other artists, and fully the poet and the musician, have unlimited sway. But not only this, but more the mechanical fitting together of the building material, the construction based on the statistical laws; but, before all, the problem that the building itself must satisfy its practical purpose, gives to the art of building an unartistic addition, and yet are all these moments absolutely necessary to give to the building a beautiful appearance. Then were the same put up without connecting and joining of material, without construction, hewn and worked out as a whole of the natural rock, as perhaps the free-standing buildings and cavern temples of the Indias, it will always bear the character of the crude and accidental; but when a building has no practical purpose whatever, or at least not a reasonable one, as, for instance, some monuments erected in our time, it brings forth the impression of the gloomy, uncomfortable, and senseless. From this we learn that the purpose is the essence of the artistical idea; that a building without it misses its vital part, as a work of art is in want of the spiritual sense and meaning. It is, then, no more a work of art, but a nonsensical play work: just as a purposeless heaping up and adorning of heavy and huge masses of stone would be a senseless play. Herefrom it would also appear that the art of building with its practical purposes could not produce a work of art, which would for itself be beautiful, and in fact and in the face of the higher demands of art ceases to be art. But the artistical lies in the conception of the purpose in its perfected sense, and in the effort to show this in the building as a direct expression. This is the principal thing;

but a second moment we have in this, that the crude masses of the material used in the construction, must obtain a beautiful form, in which the legitimacy and law of the former finds its expression so that the building, as an organic growth, destined for a clear, unmistakable purpose, is expressed by its form. The beauty in the art of building has a good deal of similarity with the beauty in nature (see No. 15), from which the same obtains his artistical form not in a direct manner but so that she unites the same with geometrical symmetry, and so finds a natural expression for the mathematical dryness of the construction. Herein exists the æsthetical language in the art of building, the ornament, which is the more powerful, perfect, and beautiful, the more in an indirect manner, the construction of the statistical motives and destination of the building members adorned by it, is shown. So before all the Greek Doric column, a strongs powerful, slightly swelling or tapering shaft growing out of the bottom (foundation) of the building in a thickly set stem, giving to the heavy burden resting on it a sure and safe support and by its ribs and caneluers fluting, giving to it the appearance as something organic, grown in the manner of a cane, tapering gradually with the ascend where one or more rings impart to it a larger and stronger coherence. The plant grown in Greece (*Dolden specia*) was a hollow tube and ribbed outside, having a larger compressive resistance and likely was taken as the symbol for the adoration of the shaft of the column.

Above the same swells, in beautiful curved lines, the capital on which an ornament of turned-down leaves indicates that the weight of the entablature is acting upon it. Around the square plinth, serving as a mediator and receiver of the weight of the beam resting on the column, runs a beautifully arranged ribbon artistically wrought around. This may serve to indicate how the art of building ornaments and decorates, whereby it cannot be passed in silence that very many ornaments, namely, with barbaric people of the middle ages, and even later, and now, partly in their rawness and partly by their playing tendence, are far off from the earnest and the truth of that which it should be to give to the form of the construction a spiritual meaning. To the fantasy is here left a wide range, and it can on the different parts of a building on the massive inclosure, the running around, the free standing, the loaded and the load, the free overhanging, etc., sufficiently manifold, manifest itself, of which the more or less perfect ornaments of all the different styles of building give evidence.

Have the single parts of a building in accordance with their spirits obtained their beautiful form, then they have again to be referred by their position and situation to each other and to the whole purpose of the building, the spiritual meaning of the same as a whole, what namely holds good and is true in regard to the preventing of the mixing of the different styles of architecture. This purpose finds its first expression in the first sketch, on which is based every matter in the ground plan, which arranges the situation and position of the single rooms to each other according to their contemplated use, but already indicates what construction the artist in the execution of his building will use. Is a wide, large hall, perhaps for the sitting of a legislature, to be made, then are no Doric columns nor Gothic arches or such like to be applied, but inclosing walls are to be erected, over which a wide ceiling, free and easy, is to be suspended. This is, in the same time, foreseen and decided in the plan, and since, as has been shown, the ornament,—the art language of architecture,—are not to be selected arbitrarily, but must be founded on the construction, then the plan points already to those, and the same to the construction. The unity of idea is therefore unconditionally existing, notwithstanding all apparent contrarieties, and as the building artist conceives his problem, and then shapes and forms it, he must complete all in one in his fantasy; plan, which arranges the building member to each other, construction, style, ornamentation. One is conditioned by the other, not one before the other, and all besides each other. By means of a comprehensive drawing he supports the picture of his imagination; and his sense of taste must be his guide for the production of a real, true work of art.

It is generally known that the Washington Monument is higher than any other structure now in existence. While this fact is seldom disputed, still it does not equal the Biblical Tower of Babel, which, according to the best authority, before its fall had reached an altitude of about 680 feet, being 125 feet higher than the monument erected to the memory of Washington.

A Frenchman has found means to restore the life-like expression to the eyes of dead persons. He places a few drops of glycerine and water in the corners of the eyes and the effect is said to be startling, so life-like do the eyes become.

Building Outlook in San Francisco.

Although the remark is repeated by a thousand tongues daily, that "building is being overdone in this city," still a hundred, more or less, of owners of building lots demonstrate each month, by commencing building improvements, that the streams of faith in the future of San Francisco continue to flow.

There is a considerable showing of vacant houses in the city, but not sufficient to deter others from improving their real estate. The greater number of erections are for rental purposes, but there are also a large number of private residences under way and contemplated. The improvements are not confined to any special locality or portion of the city. Some parts are more desired than others, but all alike share in the general prosperity.

As to the quality of construction prevailing, it averages fair, but only a small proportion aproximating first-class. The universal disposition of owners is to economize, and build as "cheaply as possible." There are but few cases of even reasonable liberality in outlay. The dollars of cost are weighed for all they are worth, and made to spread out to the last grain of value, without fair and equitable compromise in the class of material and workmanship. The best of everything is wanted, and any suggestion proposed by architects to lessen outlay, by introducing low-cost articles of not unquestionable quality, is almost sure to be rejected, with a lingering desire on the part of the owner, to enjoy the benefits of the more expensive without increasing the total cost.

These remarks apply more particularly to houses built to rent, in the erection of which wise and prudent economy is proper, as rentals are generally regulated by the sum of costs of construction, and renters are not willing, as a rule, to pay five or ten dollars per month more for a house containing no more than equal accommodations, simply because the owner may have exercised a fair degree of liberality in introducing better materials or fixtures, which do not produce some visible effect to the eye, and an impression upon the mind of the renter that the demand for the extra amount is warranted in certain ways and is reasonable.

It is poor economy, however, if not absolute folly on the part of any owner who attempts to cut down outlay, by resorting to the use of "shoddy" construction in any part. For, while it may prove a present saving, it is an expensive one by reason of the continual repairs afterward required to "keep things in order;" for it will be found, as a rule, that poorly constructed buildings require almost constant attention to keep them in repair and good condition. "Shoddies" of any sort are poor investments, particularly in permanent building constructions, where decades, if not generations, of wear and service are required. This, intelligent owners readily realize, and, therefore, dictate approximately first-class material and workmanship, as practically the more sensible and economical course. But it is not always the case, indeed, but seldom, that this intelligent understanding of matters is followed to its legitimate application,—a willingness to pay the excess in value and cost of the good over the inferior. Consequently, the absence of fair liberality toward those engaged in building works, by those for whose profit and benefit they are executed, has a bad effect, in that it stimulates purposes on the part of contractors to meet this condition of things, by practicing methods and procedures calculated to equalize the exactions of those who want excellently well-built houses, at five to twenty per cent less than a right and proper cost. It is simply absurd to suppose that men will not work out every possible saving in executing contracts, in which a fairly liberal disposition is not manifest by owners, in confining competitions to recognized, trustworthy, and competent bidders, and excluding the rough scruff and irresponsible class from the privilege.

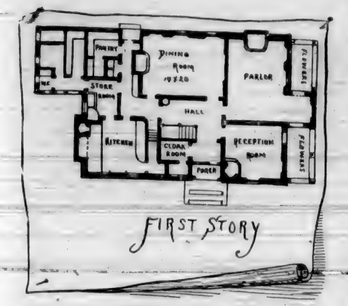
Tract distributers in New York complain that thousands of tracts are being distributed throughout the tenement house districts and along shore, printed in imitation of the genuine, and bearing titles such as: "Be Saved," "Salvation for All," and the like, which, after a page or two of religious argument, run off into eloquent patent medicine advertisements.

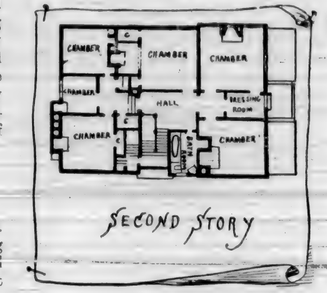
Smallest convenient size of slab for a fourteen-inch-wash bowl, 21x24 inches. Height of slab from floor, two feet six inches.

A double bed is six feet six inches long, by four feet six inches wide. A single bed is two feet eight inches wide, by same length as above.

A 4x8-foot billiard table requires a room not less than 13x17 feet.

Plans for a Commodious Country House.





The accompanying engravings will well bear a study from those contemplating the erection of a commodious country building, where compactness ist he principal feature to be taken into consideration. The rooms are ample in size, and a close study will disclose that every convenience is provided for usually found in this class of houses.

About Sleeping.

We believe in sleep and enough of it. A man may get rich faster by long working hours, but certainly he will live the longer by devoting at least eight hours of the twenty-four to reposeful conditions of mind and body. Franklin declared that six hours sleep were enough for any man but a fool. Franklin was undoubtedly a great philosopher, but in this respect he probably erred in making his own frugality the standard for the rest of mankind.

Still one may sleep too much. A recent writer grows enthusiastic over what he calls the forgotten act of lying abed. It is certainly a clever bit of consolation for those who must do it.

"One of the most useful yet neglected of all the arts is that of lying abed. The damage that is done by persons getting up is past all reckoning. All the mischief and crime, the counterfeiting and forgery, the murder and theft, are perpetrated by parties who persist in getting up. Not only individuals do wrongly by leaving their bed, but rivers as well do an immense amount of damage. "What man ever broke his leg on a slippery pavement or was run over by an omnibus, who lay in bed?

What great achievements have been accomplished in war, in poetry, in literature, by genius abed! 'Coming events cast their shadow before'—one of the most memorable lines in the English language—originated with the poet, Tom Campbell, one morning before he had risen. Longfellow thought out that exquisite poem, "The Wreck of the Hesperus," after he had retired. Ben. Franklin said, 'Early to bed and early to rise makes a man healthy, wealthy, and wise.' Now Franklin started out all right but got terribly mixed up when he said 'early to rise.' There is the fatal mistake. People who rise early are sure to catch the malaria; the ground is full of half-hatched poisonous germs; the sun is not up and has not warmed them into life, giving them wings and set them adrift. Poor mistaken man, he arises, inhales them all; they fructify and poison his entire system; hence chills, fever, malaria, and half the ills that human flesh is heir to.

"'Rise before the sun,
And make a breakfast of the morning dew,
Served up by nature on some grassy hill;
You'll find it nectar.'

"Was ever more arrant nonsense written? Fancy a man getting up on a cold, rainy morning and climbing high hills on an empty stomach, but to eat—what? Why, dew. How long would that fellow last? Wouldn't he be a fit candidate for Lone Mountain, and no questions asked? But the early bird catches the worm. Yes, but the sharp boy knocked that delusion in the head forever and eternally when he said: 'Father, there's the point—what in thunder did the worm get up so early for! He trifled with destiny; he tempted fate; he should not have done it.' That boy was a benefactor to the human race. He was sound on the lie-abed question.

"That French proverb says: '*De lit a la table, de la table au lit*'—'From bed to grub, from grub to bed.' That's something like it. Get up and eat, eat and go to bed again. Why not? All the animals do it. All nature, the grandmother of us all, teaches it. Every animal in the world eats and seeks repose. The cow eats, and, lying down, placidly chews her cud; the anaconda swallows an ox, horns and all, and goes to sleep—'sleep that knits up the raveled sleeve of care, the birth of each day's life, sore labor's bath, balm of hurt minds, great nature's second course, chief nourisher in life's feast.' And yet this is what they would deprive us of who say, Get up, and who oppose the art of lying abed.

"Mrs. Macbeth strikes the key-note when she shouts: 'To bed! to bed!' A Spanish minister, suddenly raised to power, signalized the event by going to bed and staying there for fear he might have something to do. It was in bed in the little inn of Waterloo, that the Duke of Wellington received the list of the terrible casualties of the fatal June 18. Gray's 'Ode to Music' was written in bed, and Sam Johnson's 'Lobo's Voyage to Abyssinia' was dictated to the printers before the great author of the 'Lives of the Poets' and lexicographer had arisen. Peter Pindar (Dr. Wolcott) was so fond of lying abed that he received his visitors lying beneath spreads and counterpanes. Rossini wrote one of his finest operas in bed, and was too lazy to pick up a sheet that had fallen away. George IV. lay in bed to read the newspapers, and Macaulay read twenty pages of Schiller before getting up. John Foster thought out his sermons in bed, and the methodical Anthony Trollope used to read an hour before getting up."

The extensive outdoor use of zinc by builders at the present time has directed attention to the peculiar process of oxidation which this metal undergoes, and which is so important to be considered in all applications involving exposure. The rusted surface does not rub off or blow away, but forms a sort of hard crust or enamel upon the surface of the metal, and when laid upon boarding which is or may become damp, or exposed to steam or condensation below, it rusts on both sides. The thin zincs first introduced in this way were rusted through, brittleness ensuing and failure being the result. But if the zinc be of sufficient thickness, after a certain time oxidation ceases, and the result is a body of solid, sound metal, encased above and below by a solid coating, thoroughly impermeable to the accidents of weather or temperature, and which requires no painting. The various ways of spreading zinc consist, mainly, in laying it in a corrugated form without boarding, the trusses of iron or wood of the roof carrying the weight, or in rafters about one foot more or less apart, with a corrugation at each rafter only, or upon a general surface of boarding, in the manner of a lead flat.

It ought to be the aim of every husband and wife to build for themselves some kind of a home, though it be ever so humble, and then to beautify and make it attractive by every device of taste and love. It is possible for very poor people to become real estate owners; the obstacles in the way are not insurmountable; only let each home be built according to its owner's means, not those of their neighbors. How precious is the vine planted by the hands of the children! the shrubs and flowers tended by a mother's loving care! A more intimate knowledge of these pleasures is purifying, ennobling, and strengthening to all natures. The man who loves flowers, trees, and all beautiful things cannot be a bad man; the children who are taught to love these things from infancy, who work, and care for, and help make beautiful their home, are more helpful and unselfish, less frivolous, and more likely to make good and noble men and women. We believe if there was more home-building there would be a smaller number of unhappy marriages, less recourse to courts of law, and fewer divorces.

Some Facts about Bells.

THE nature of the country has much to do with the sound of bells. In a hilly locality a bell will not be heard half so far as if the land were level or nearly so. A bell will be heard a great deal further lengthwise of a valley than over the hills at the sides. Where bell-rooms are lower than the surrounding buildings and trees, these obstructions break the sound and prevent its free passage to a distance. Towers having small windows or openings, with the lower boards close together, often box up the sound. In cities, the noise of steam and horse-cars, manufacturing establishments, carriages and carts rattling over the pavements, etc., is so great that bells are not expected to be heard at any considerable distance, and this is the reason why, in all cities, several bells are used for fire alarm purposes, it being impossible for one bell, no matter how large it may be, to be heard above the thousand and one noises incident to every large place. It is said that the largest bell ever made in this country weighed 22,000 pounds, and before it was fractured hung on the City Hall, in New York. On one or two occasions this bell was heard up the Hudson River thirteen miles, in the night, when the city was comparatively quiet. It is a great mistake to suppose that bells can be heard in proportion to their weight; that is, a bell of 2,000 pounds will be heard twice as far as one of 1,000 pounds. This is not so, for the reason that the larger bell does not possess anything like twice the resonant surface of the smaller one. What is gained and admired in the larger bell is its deep, majestic, and dignified tone, which it is impossible to secure in the smaller one, the weight of the bell invariably governing its tone. A bell of 100 or 200 pounds, in an open belfry, on an engine house, a school-house, or a factory in the country, is frequently heard at a long distance, out of proportion, apparently, to one of 1,000 pounds in a church tower near by; and instances of this kind frequently cause no little comment in the way of comparison. One reason for this is that the small bell has a sharp, shrill, penetrating sound, that must, of necessity, be heard a great deal farther, in proportion to its weight, than the low, mellow, "church-going" sound of the church bell. The same principle applies to the whistle of a locomotive, and it is heard a long distance, simply because its tone is shrill and penetrating. When hung stationary, and struck or tolled, bells will not be heard, as a rule, half as far as when swung. The swinging motion throws up the mouth of the bell, and not only carries the sound off, but imparts to it a richness that is always absent when the bell is at rest and struck. A great deal is to be gained by ringing a bell properly, throwing the mouth well up, and not lazily jingling it. It is not physical strength that is required in ringing a bell so much as "getting the knack" of catching the rope just right, particularly on the second "down pull." The windows in the tower should be as wide open as possible, and the tower ceiled just above the windows.

Market Reports.

CORRECTED FOR AUGUST, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
" T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75

NAILS—Rates were recently reduced to:—

200 keg lots	2 70
100 keg lots	2 70
Smaller quantities	2 75

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6¾
" " " " " less quantities	7
Pioneer White Lead (local factory), 5-ton lots	6½
Cal. Linseed Oil, raw (single bbl. lots)	45
" " " boiled " " "	47½
Turpentine, per gallon	47
BRICK—California Building Description, soft, per 1,000	5 50
" " " red, " "	6 00
" " " hard, " "	7 50

A LOAD of mortar measures a cubic yard, to make which requires a cubic yard of sand, and nine bushels of lime. Thirty hods filled with mortar will make a load.

THE largest match factory in the United States is situated in Akron, O., which turns out 57,000,000 matches in one day when run to its full capacity.

Building Intelligences.

Where owners' names are left blank, it is so done in most instances by special request.

A

Army, bet. Guerrero and San Jose Ave. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,700.

Alms House Track. Three-story frame.
O.—City of San Francisco.
A.—McDougall & Son.
C.—Owens Bros.
$45,000.

B

Bush, cor. Jones. Two-story frame.
O.—W. Norris.
A.—J. J. Clark.
C.—R. Walls.
$7,500.

Bryant, cor. Langton. Two-story frame.
O.—J. Mahoney.
A.—J. J. Clark.
Day work.
$2,500.

Bush, cor. Van Ness. Alterations.
O.—Capt. Blair.
A.—J. J. Clark.
C.—C. H. Ackerson.
$1,800.

Broderick, bet. Hayes and Fell. Two-story frame.
O. and B.—J. Adams.
Day work
$4,500.

Bush, nr. Devisadero. Two two-story frames.
O.—T. Edwards.
C.—W. Davis.
$4,500.

Broadway, bet. Gough and Octavia. Two-story frame.
O. and B.—G. M. Salsbury.
Day work.
$2,500.

Broadway, bet. Gough and Octavia. Two-story frame.
O.—T. C. Delamater.
C.—G. M. Salsbury.
$2,000.

Broadway, bet. Laguna and Buchanan. Two-story frame.
O.—C. L. Hovey.
A.—S. & J. C. Newsom.
C.—G. A. Embury.
$4,500.

Bush, bet. Baker and Lyon. Two-story frame.
O.—H. Euler.
A.—J. Marquis.
C.—Martin & Maguire.
$8,500.

C

Clay, bet. Franklin and Gough. Two-story and basement frame.
O.—A. F. Lipeal.
A.—H. C. Macy.
C.—Bateman Bros.
Brick-work—W. E. Stephens.
$8,000.

Chattanooga, bet. Twenty-third and Twenty-fourth. One-story frame.
O.—
C.—J. Bruce.
$2,000.

California, cor. Hyde. Three two-story frames.
O.—P. White.
C.—F. A. Brown.
$11,500.

Clay, bet. Hyde and Leavenworth. Two-story frame.
O.—J. Berger.
A.—Pissis & Moore.
C.—A. Jackson.
$6,000.

Duncan, bet Guerrero and Dolores. Two-story frame.
O.—H. Dunning.
A.—M. J. Welch.
C.—M. Loftus.
$4,200.

F

Folsom, cor. Twenty-third. Two-story frame.
O.—L. J. Lange.
A.—C. Kenitzer.
C.—F. W. Kern.
$4,500.

Fair Oak, cor. Twenty-third. Additions.
O.—F. H. Wulzen.
Day work.
$2,200.

G

Golden Gate Ave., bet. Fillmore and Steiner. Alterations.
O.—P. Berwin.
A.—P. R. Schmidt.
C.—P. Griffin.
$1,500.

Geary, cor. Dupont. Additional contracts reported before.
O.—A. M. Davis.
A.—Copeland & Banks.
C.—Treadwell & Thomson
$35,450.

Golden Gate Ave, bet. Scott and Devisadero. Two two-story frames.
O.—Margaret Chandler & R. S. & R. de la Hautiera.
C.—Bateman Bros.
$9,000.

H

Hayes, nr. Franklin. Additions.
O.—C. Christen.
A.—B. E. Henriksen.
C.—D. J. O'Brien.
$1,100.

Howard, nr. Third. Car House.
O.—Omnibus R. R. Co.
A.—J. J. Clark.
Day work.
$4,500.

Howard, nr. Third. Additions.
O.—John Murtha.
A.—M. J. Welch.
C.—A. G. Fitzpatrick.
$2,000.

Hayes, cor. Laguna. Additional contracts and total cost.
O.—L. M. Fabry.
A.—Miller & Armitage.
Painting, plumbing, plastering, etc. $ 6,700
Total cost of building, 20,100

Haight, bet. Devisadero and Broderick. Two-story and basement frame.
O.—J. Cardoza.
A.—Miller & Armitage.
C.—C. Quinn.
$6,250.

K

Kentucky, nr. Sierra. Two-story frame.
O.—D. Keefe.
A.—David Salfield.
Day work.
$2,250.

L

Liberty, nr. Dolores. Two-story frame.
O.—Jos. Kennedy.
A.—J. J. Clark.
C.—C. Dunshee.
$3,000.

Larkin, nr. Turk. Four-story frame.
O.—G. G. Burnett.
A.—Jas. E. Wolfe.
C.—Chambers Orr.
$8,500.

M

Market, nr. Jones. Alterations.
O.—F. Grass.
A.—P. R. Schmidt.
C.—J. E. Alexander.
$850.

McAllister, nr. Hyde. Additions and alterations.
O.—H. Dodel.
A.—David Salfield.
C.—B. Dryer.
$1,000.

Mason, bet. Eddy and Market. Additions.
O.—J. P. Schmitz.
C.—R. Currie.
$2,500.

O

O'Farrell, northeast cor. Octavia. Two-story attic and basement frame.
O.—L. Dinkelspiel.
A.—P. R. Schmidt.
C.—J. A. Leonard.
$17,000.

Oak, bet. Fillmore and Steiner. Two-story frame.
O.—Mrs. Kellam.
A.—S. Emery.
$5,000.

Oak, nr. Devisadero. One-story frame.
O.—M. W. Collins.
A.—R. H. Daley.
C.—R. O. Chandler.
$2,000.

P

Polk, nr. Market. Three-story frame.
O.—John Nightingale.
A.—A. J. Barnett.
C.—A. Jackson.
$6,841.

Pierce, nr. Sutter. Two-story frame.
O.—Dr. Salfield.
A.—David Salfield.
C.—S. F. Green.
$3,750.

Polk, cor. Bush. Three-story and frame market.
O.—Capt. T. G. Taylor.
A.—W. Mooser.
C.—G. B. Gonyeau.
$25,000.

Powell, bet. Francisco and Chestnut. Three-story frame.
O.—M. Votti.
C.—G. M. Salsbury.
$3,000.

S

Silver, cor. Fourth. Three-story frame.
O.—F. Joubert.
A.—W. Mooser.
C.—J. A. Leonard.
$9,500.

Seventeenth, nr. Shotwell. Three-story and one-story frame.
O.—L. Van Lank.
A.—H. Geilfuss.
C.—C. Miller.
$6,500.

San Jose Ave, bet. Twenty-third and Twenty-fourth. Two-story frame.
O.—W. A. Von der Neinburg.
A.—M. J. Welch.
C.—A. B. Tarr.
$3,600.

San Jose Ave, bet. Twenty-seventh and Army. Two two-story frames.
A. and B.—J. M. Comerford.
Day work.
$7,500.

San Jose Ave, nr. Duncan. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,500.

Sanchez, nr. Twenty-seventh. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,500.

Seventeenth, nr. Noe. Two-story frame.
O.—
C.—W. J. Brownrigg.
$5,000.

Scott, bet. Page and Oak. Eleven two-story frames.
O. and B.—Charles Hinkle.
Day work.
$48,000.

T

Twenty-third, cor. Dolores. One-story cottage.
O.—Miss A. Murphy.
A.—J. J. Clark.
C.—M. Cuddy.
$2,000.

Twenty-sixth, bet. Harrison and Treat Ave. One-story frame.
O.—O. Moore.
A.—P. R. Schmidt.
C.—J. C. Bassett.
$1,600.

Twenty-fifth, cor. Bartlett. Three two-story frames.
O.—T. Edwards.
C.—N. Ellis.
$8,000.

Twenty-seventh, nr. Sanchez. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,300.

Twenty-third, nr. Fair Oak. One-story frame.
O.—M. Baron.
Day work.
$1,000.

Tennessee, cor. Sierra. Two-story frame.
O.—Bridget Sullivan.
A.—M. J. Welch.
C.—C. E. Dunshee.
$2,700.

V

Van Ness, cor. Pacific. Four two-story frames.
O.—R. B. Gray.
A.—J. Marquis.
C.—I. E. Alexander.
$25,000.

OAKLAND.

Broadway, cor. Fourteenth. Three-story brick. O., Senator J. G. Fair; A., E. R. Swain; $100,000.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

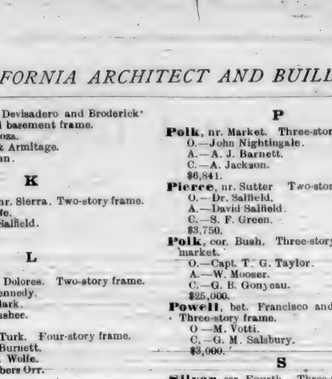
Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.



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They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

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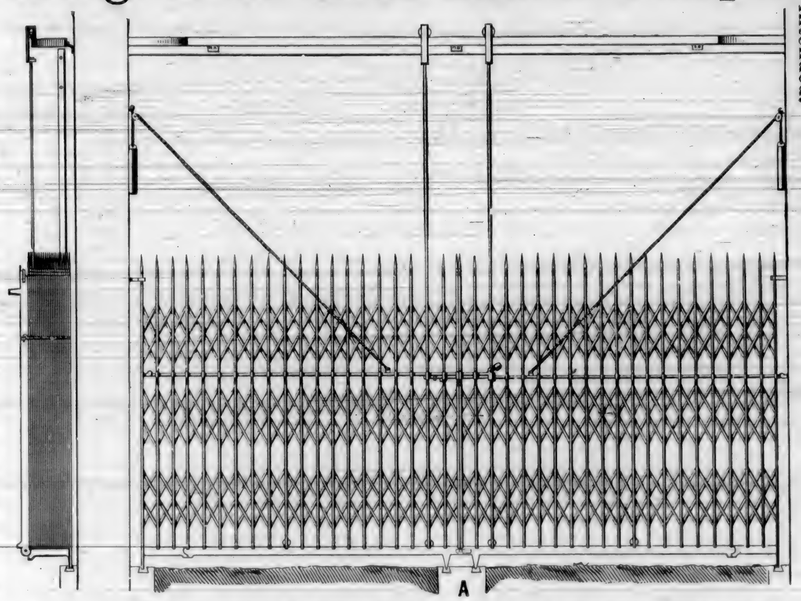
The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

S. W. Fabry, cor. Hayes and Laguna; architect, Miller & Armitage. John MacKenzie, cor. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John Marquis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architect, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architect, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore, Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

Folding Gate and Guard Company.

These Gates and Guards are manufactured to order in San Francisco, to fit and fill openings as desired. Descriptive Catalogues and Price List furnished.



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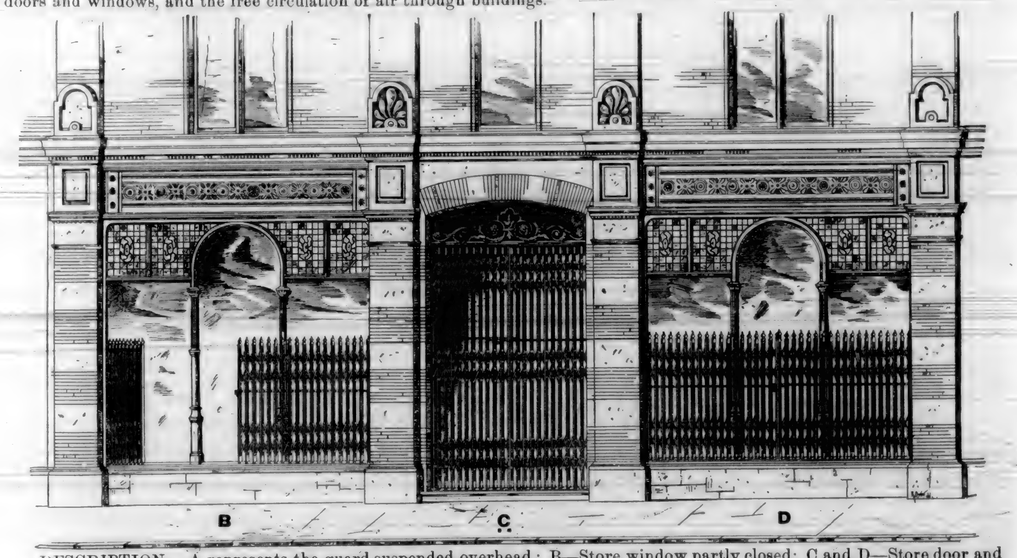
They are ornamental in design, and afford perfect security when applied to store doors and windows—to vestibules, doors and windows of dwellings, and at stables, elevator wells, etc.

When in position they are an absolute safeguard against **Burglars, Thieves, Tramps and Designing Persons,** and can be removed and replaced without unhinging. As a **Sanitary Device** they are superb, permitting the opening of doors and windows, and the free circulation of air through buildings.



DESCRIPTION.—A represents the guard suspended overhead; B—Store window partly closed; C and D—Store door and window fully closed.

GEO. H. RICE, President. **E. J. ROBINSON, Agent,** 109 California Street, San Francisco, Cal. **J. P. LECOUNT,** Secretary.

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SAN FRANCISCO, CAL., SEPTEMBER 15, 1886.

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THE OFFERED SALE OF THIS JOURNAL.

SINCE the first announcement in its pages that the entire interests of this journal would be disposed of to competent parties, a great many personal inquiries have been made, and propositions submitted and declined.

A sale contingent upon certain stipulations might have been made a month ago, but as we propose an unconditional surrender of the situation, we shall hold the fort until a competent commander-in-chief shall arrive, with satisfactory financial credentials.

Negotiations now pending with parties and firms east of the Rocky Mountains, may result in a full change of management by the first of January next, if not sooner. In the meantime the journal will be continued as heretofore to the best of our over-burdened abilities.

A GENERAL EXPLANATION.

Those who have made inquiry by letter, and personally, have asked for all the facts of the case, and what will be included in the sale.

As a general answer, we state: A sale will include every interest of the publication—its good-will, subscription list and advertising patronage, office appointments, desk, bound volumes and back numbers since 1879, outstanding accounts due from all sources, five hundred copies, more or less, architectural, mechanical, and other publications (optional), and all else pertaining to the publication and circulation of the journal.

We state, in answer to the question repeatedly asked by correspondents, in reference to

COMPOSING ROOM AND PRESSES,

That there are none. The journal has been conducted incidentally in connection with our architectural pursuits, and printed and bound ready for distribution by contract.

But with these limited facilities and restricted advantages, and personal attention divided between two great interests—editor and manager, and practicing architect—each demanding our whole time and energies, we have continued our publication work for eight years (less three months) with a profit to ourselves, making a most enviable reputation for the journal, as evidenced by the hundreds of complimentary notices from time to time published by technical, class, and other journals, and preparing the way for some one to continue its publication with great success and profit.

San Francisco Chapter American Institute of Architects.

THE regular meeting of the Chapter was held on September 3, in the rooms of the San Francisco Art Association.

The proposition of H. T. Bestor to become a member as Fellow, was favorably acted upon, and he was duly elected.

Proposition was received from A. M. Squire to become a student member. Messrs. Pissis, Curtis, and Sanders were appointed as an Investigating Committee.

The following communication was received from the Builders' Association of California:—

To S. F. Chapter, A. I. A.: The Builders' Association of California, recognizing the fact that there is in use in San Francisco nearly as many different forms of contracts as there are architects in the city, and believing it to be desirable to adopt one form for use that shall meet the requirements of the building trades, that shall be alike equitable and just to both the owner and contractor, have appointed the undersigned a committee on the part of said association, with instructions to communicate with you and ask the appointment of a like committee on your part, to meet, consider, and present a form to our respective associations for adoption and general use. We would, therefore, respectfully request your association to appoint such a committee at its next meeting, to meet with us at such time and place as you may select, for the purpose aforesaid.

Hoping the above will meet with your favorable consideration, we remain, gentlemen,

Your obedient servants,
Jos. Wilcox,
Jere O. Mahoney,
Chas. C. Terrill.

The Chapter, in accordance with above, appointed Messrs. Wolfe, Kirk, and Gash as the committee.

Election of officers being in order, the following gentlemen, having received the highest number of votes, were duly installed in their offices for the ensuing term: President, A. Pissis; Vice-President, T. A. Eisen; Secretary, B. E. Henriksen; Treasurer, J. M. Curtis; Trustees, G. H. Sanders, A. Laver, J. E. Wolfe, J. Gash, W. P. Moore.

Resolution carried that delinquent members be notified to pay up; failing to do so, suspension will follow.

Summary of Building Activities.

Below will be found the third quarterly report for 1886, as compared with 1885:—

360 engagements for 3d quarter, 1885	cost,	$1,638,260
277 " " " 1886	"	1,490,279
83 decrease		$147,981

As may be seen, the difference of 83 engagements and cost of $147,981 must be recorded in favor of 1885. The corresponding monthly report for the month of September is:—

169 engagements for 1885	cost,	$785,700
106 " " 1886	"	448,177
63 " in favor of 1885		$337,523

We Want YOU, Who Have Not, TO PAY UP.

ANTICIPATING retirement from the management of this journal, those who have *not paid up* their subscription dues will confer a favor by *doing so at once*. Let there be no delay in this matter. We propose to clean up as neatly and nicely as the good pleasure of *honestly disposed* patrons may make possible, and as thoroughly—☞*as the law provides*☜—with those who refuse or neglect to settle their accounts.

Every unpaid dollar due us has been faithfully earned by unceasing desires and earnest efforts to found and perpetuate a California class journal in the interests represented in these columns, and measured by the mental and physical cares and labors, and the financial requirements to this end, every dollar yet due us has been honestly earned and should be paid promptly.

We hope not to be required in any case to invoke legal redress, but as protection of publication interests, which have been and are so often abused by that portion of the reading public who seek to obtain their reading matter without cost, the law in such cases made and provided is, that every man who *receives* a subscription journal of any sort, can be held and made to pay the full amount of subscription, up to the time of *payment* and stoppage.

Questions and Answers.

BUSINESS MANAGER OF ARCHITECT: Will you please to let me into one of the secrets of the "perfumers' art," and tell me how it is possible to make so much "triple extract of heliotrope," when I know from my extended travels, there is very little indeed of heliotrope flowers cultivated for the perfumer to use?

CURIOSITY.

San Jose.

ANSWER.—I do not know that it is just right to expose the secrets of the perfumer or any other art or profession. But as "Curiosity" is an old friend, I will just this once let her know how to make essence of heliotrope without the flowers. Add to a tincture of vanilla a small proportion of oil of bitter almonds; add essence of rose, and orange flower, *q. s.*, and you will have an excellent extract of heliotrope. G. H. W.

EDITOR CALIFORNIA ARCHITECT: I have taken the *Carpenter and Builder* (published in New York), for the past three years. There has been quite a controversy in it in regard to the number of shingles a man can put on a roof in a day. How many do *you* think a man ought to lay in a day, provided he made a good job? H. T.

San Francisco.

ANSWER.—A man working for us, that put on three thousand a day, each shingle to be well nailed, would be doing a very *faithful* day's work. Of course, we know five, and as high as six thousand, have been put on by one man; but we are not answering to "*slapping*" them on, but simply a good day's work well done.

BUSINESS MANAGER OF ARCHITECT: I have a roof, the span or width of which is forty eight feet, and the height eighteen feet. It is rectangular, hipped at each end. I can figure out the length of my common rafters easily enough, viz., thirty feet. What will be the length of my hip-rafters? Also, how do you get the length of the latter?

ANSWER.—If your rafters are 30 feet in length (I notice that does not allow of any projection), by the same rule your hip-rafters will be 38.41 feet. You have simply worked out the problem of finding the hypothenuse, two sides being given. Apply same principle to the hip-rafter—regarding a common rafter as one of the sides, and half the width of the roof the other side, of your triangle.

EDITOR ARCHITECT: As I want to furnish all materials for my building, I take the liberty of asking you how much of lime, sand, and hair will it require to make enough good mortar to plaster 100 square yards?

ANSWER.—Eight bushels good lime, sixteen bushels clean sand, one bushel of hair. The longer the latter the better.

A HOUSE in danger, a family in peril.

THE builder that deceives the architect wrongs the client as well, and if he connives at bad workmanship he demoralizes the workman and constitutes himself a criminal.

GARDEN mold may be good for vegetables, but as a component of mortar it spells early ruin.

GOOD workmanship needs no coat of paint to enhance the execution, for like sculptor's work, good workmanship is best judged in the nude without drapery or color.

WET your bricks, wash your sand, slake your lime, but perish not your mortar with water, or your work will not be worth its bond.

The Shingling Question.

IT is rather amusing to see one whose experience is more than local, to read the questions and answers appearing in various journals in reference to what constitutes a good day's work at shingling. Many unwise and intelligent discussions arise from the diversity of answers given and opinions expressed; while the fact is, that no general answer can be framed which will apply to all sections of country—for the reason that shingles, like nearly all else used in the erection of buildings, possess special characteristics within certain naturally prescribed limits. The man who might perchance "lay" 2,500, or even 3,000, of California's soft redwood shingles within ten hours, would find himself loser upon a bet to lay 1,500 Eastern cypress shingles—or in some cases 1,000—fully half an inch thick, within the same number of hours. There is, also, a material difference whether six-penny or four-penny nails are used, and whether there is to be *one* or *two* nails driven in each and every shingle, or on an average, two nails to each *three* shingles. Again, it makes quite a difference whether the shingles are made of soft redwood, the only shingle now used in San Francisco, or sugar-pine, or white fir, qualities more common in other parts of the Pacific Coast. Either of these kinds, compared with those made of harder wood in other States, and much thicker, requiring six-penny nails, bear no comparison. And the man who glories, as some do, over the feat of laying 2,500 or 3,000 redwood shingles, performs no better nor more noteworthy day's work than do other men who enjoy a sense of pride at having laid 1,000 of a heavier and more difficult kind to lay.

Material Facts for Owners' Consideration.

GOOD buildings are sometimes erected without the professional services of an architect, but whether as good and complete as they would have been under the planning and superintendence of a competent architect, is a question. The proposition suggested is reasonable. For the incessant and perpetual study of an architect is to discover and develop new ideas, to determine and mature better plans, to overcome difficulties encountered in prior experiences, to provide against defects and errors which may have occurred, and, in a word, concentrate the entire energies of his mind and brain, to producing improved results; and it is not reasonable to suppose that among men of equal intelligence, education, judgment, industry, and advantages, that those who devote their time, and employ their mental and physical energies in special pursuits, can properly understand and practice their selected avocation, and by incidental application, also understand as proficiently, those specialties which others, their equals in all intellectual and physical senses, have made matters of constant study and daily application. Men generally master not more than one thing or calling, and as the "old saw" goes, "They that are jacks at all trades, master none." We admit that there are a host of contractors who would have become most excellent architects had they so applied themselves. But a reasonably perfected knowledge of architecture can only be obtained by the possession of the natural qualifications of mind and judgment, and constant practice and study. Incidental scholastic and superficial knowledge does not, by any means, qualify men to assume the practice of a profession, than which no other requires the more intense exercise of every mental and intellectual faculty. Hence, we find men calling themselves architects who are simply pretenders, mere frauds, aspiring to be what they can never become, through fatal defects in their natural or acquired qualifications. But mistakes sometimes occur even with the best and most careful architects, and generally when no architect is employed, and almost always when buildings are intrusted to the manipulations and control of parties whose presumption is only equaled by their fearful lack of judgment, and complete ignorance of every correct principle of architecture.

Facade of Suburban Dwelling.

VARIETY in architectural arrangements is as much to be desired as variety in dress. The accompanying illustration presents the front view of a dwelling lately erected in a suburban portion of a country town. The original plan contemplates two houses with exactly the same façade, only having the main entrance doors on opposite ends of the front. By this arrangement of two owners combining the main features of a design, and building conjointly, a much richer and grander effect is produced. From a short distance away, the house would present the appearance of a magnificent villa. As shown, wood, brick, or stone may be used in the construction. Shingles on the gables would much heighten the effect. Due regard must be exercised in regard to the colors used in painting the exterior.

Art and Architecture.

[Special for this Journal. By F. HILLERT, Architect and Mechanical Engineer.]

XXVI. SCULPTURE.

THE art of building incloses space and makes rooms, to which, by the form signifying the purpose, and its creation the semblance of organic life is given, raising the same to a work of art.

With sculpture, every practical purpose for the use of its work drops away; its way of beginning and the staff are of themselves indifferent; they are only wanted to be seen. From the art of building to sculpture, is a large step for independent development, to pure liberty of art from all outside efforts consummated. What conditions are imposed upon sculpture, above all the visible, bodily appearance of the work? The same have, with the work of architecture in common, the extension in length and breadth, but as works of art they are inaccessible to their inside, even as a colossus, the Statue of Liberty of New York, etc., and only its outside in her artificial form, immaterial of the same, is hollow or of a solid mass. The ideas which man can speak out and embody in such work of art, must be shown and given in bodily individuality. The sculptor is to individualize, that is, to make figures. From the—from nature borrowed, mathematically sheamated—ornament by which the art of building indicates, sculpture makes a large stride, by taking the organic living for its model and pattern. Men and animals, single or in groups combined, are her objects, but she has to represent the same so that, out of the form, the figure speaks directly the spiritual, also the character, an action or a general idea. In the structure of the body, the position, the tension of the muscles, the motion, the form of the head and the features of the face, must by this the spirit be spoken out; what in reference to a certain action, an olympic and sword combat, or a certain character, such as of a sudden anger, must lie near by and be self-evident. In reference to the representation of a personified idea it is more difficult to find the right, and we must admire the high sense for beauty of the ancients, which gave to them the idea of love, the most graceful figure; to the idea of pain, the noblest expression; to that of strength, the most perfect form. In the gods and heroes of the ancients are general ideas personified, and this is the highest problem of the plastic. The Christian plastic, compared with the antic, is, ideally taken, poor, since, with the exception of the crucified, of Maria and the disciples, by the legions of saints, is hardly a figure, in which really something general, human, and dignified is spoken out; and only lately we arrived to represent faithful, devout submission, the joyful death of a sacrifice and similarities, even if more so shown in painting.

The works of sculpture are made from one kind of stuff, worked from outside toward the inside, as with stone, marble; or from the inside toward the outside, by putting on, as with modeling clay; or they are cast in a certain form with bronze, iron, and cast-stone, etc. Since, first, what was probably done in past ages for marble and cast-work models of clay were made, then is, in regard to a true work of art, the making of the model in clay is decisive. The later executions are secondary, and belong to the technic, whereby we must not lose sight that the artist already at the making of the model must know how, later, he will complete his work, since the manner of his execution here and there in single parts at the commencement will require a different treatment.

By all works of sculpture is only one kind of stuff, therefore only one color in existence, sculpture colored, as, perhaps, the gilded ivory pictures of the ancients, inlaid bronze work, or even heads of marble with eyes of precious stones, and such like are exceptions and change nothing in the principle; then the colored painting of a statue is something barbaric and belongs always to the period of transition. The corporeity and the hardness of the material, as well as the single color, limit principal sculpture in its production and point the same irrevocably to the statue and figures, denying to the same the physical life, the world of sensibility, and, namely, of deep passions. The eye is yet closed and dead; the soul does not speak through those bright stars. The eyes closed, which is only missing on few figures, is an indication for the whole manner in which the plastic forms. Not bodies in imitation of nature she desires to make, but figures—idealized, spiritual, and godlike. So is the outline of the plastic art the ideality, which, not considering accidentalities of single persons, conditions the image in her eternal duration and pureness. Partly and seemingly dessication from this highest axiom will afterwards be referred to.

Selecting a group, there can come to expression a situation or a conflict, since the position and relation of the single figures to each other can speak and point to an action, or they all can be united to a common idea, as the former, *i. e.*, in the group of the Farnesian bull, and the latter in the group of Neobe and her children, is the case. The single statue will always bear the character of "in itself" sufficient.

But the plastic possesses more, as in the group the means to show actions and situations, namely, in the raised picture, the relief which, from the complete fullness of the space, is already set back from the surface, and by a slight raising and lifting off of the bodies from the background, giving to the same the semblance of a full appearance. Besides the statues is here the representation of other things possible, as trees, buildings, implements, and such like; and the plastic finds here an expansion of her domain, outside and above her original limits, without, however, taking away from her the conditions of bodily matter, and points hereby to the possibility, by extensive training, to an art which is equipped with farther-reaching means, and which is

XXVII. THE ART OF PAINTING.

This art abandons the bodily of the art of building and sculpture, and sacrifices the real actuality, whose semblance she reaches and again obtains, by a delusion or by other means. She is set back in the surface, the plain or curved, and her means of representation is the color. As the things appear to the eye, which only can be seen from a point, and that only from one side at the time, so she would let the same also appear in the picture. If we, in the rear of a visible object for the eye, the front side of the thing would set up a perpendicular wall, then this would represent the

ground plan of the picture; but the plan is filled up with the visible front part of the things, and, indeed, so that those being farther back in the space appear smaller, as they actually are. This semblance is reproduced in the picture, and is designated with the name of "perspective." A work of painting is, therefore, the presentation of objects on a plane, which, by means of color and perspective, produces the semblance of reality, naturally understood under the general condition of a work of art.

By the possibility to represent in an unlimited manner the whole extent of reality, painting possesses in the same time the means to bring to view the inner feelings of the soul, the tender, soft emotions, general ideas of the most affecting modesty to the highest magnanimity, as far as they can take in general a visible form. The offers direct a hand for the personification of an idea, and know how to bring the same with astonishing ease to appearance. Color is her stuff and material, and a few strokes drawn with a pencil on paper, obtain first and have only appearance, when the same by the coloring are set off from the paper. The different coloring material used conditions the appearance of the painter's work; then that which is only drawn in one color, on a certain priming ground, will only in part arrive to the semblance of reality, and the same to be tried to be gained by shading and shadows; but that which is executed in many colors, obtains again, by the material condition of the color, a different character. The different coloring material requires also surfaces for painting of a different material. The mode of the color mixing, preparation, and grinding, the spreading and the treatment of singularities, have also a considerable influence on the colored, that is, the color in her artistical effort, that the finest graduations needed everywhere are made possible. In the coloring, painting has an inexhaustible source of representing the most opposite and contrary dispositions, and hardly perceptible shades. Works of painting are divided, partly in reference to the kinds of means used in representing, and partly according to the kinds of the represented objects; but both, as can already be seen, only refer to the outside aspect.

Morecorrect would be a separation of the different works according to the kind of ideas they represent, so that such works which would unite the most important, significant and essential to one group; but such which contain the accidental, momentary, and insignificant, to another group. The first would be named the historical works in the highest and most expanded sense; the latter, to be designated as genera. The dividing line of the two groups will frequently run over and overlap each other, and we will be compelled to divide the same according to the kind and method of painting, as above indicated, or according to the subject treated, such as religious, historical, historic genera, genera, likeness painting, animals, landscape.

XXVIII. RELATION OF THE THREE ARTS TO EACH OTHER.

While the art of building must content itself to give, by indication to their works, the semblance of the organic, while the sculpture has to remain in the outer form of the organic, the painting penetrates to the organism itself, and lays down the deepest connections of the spiritual and objective in one form, which has departed from nature so far, that the same, instead of the natural occupation of space, which the art of building and nature demand, has withdrawn to a surface, and on it, as illustrated before, the semblance of perfect reality made possible. But of the three arts, is the art of building the fundamental and lawful, standing in the forefront, historically and æsthetically before the others: it educates so, as to say, the artistical sense and the art, and makes man capable to feel himself independent to form; and again, to perceive the work of art as something different from the creations of nature. The sculptor, whose hand and skill for work have already been trained in making of building adornments, the ornaments, columns, etc., steps in next, and at the commencement leans closely onto the art of building, whose rooms she adorns and ornaments; but she also wakens to an independent consciousness, and teaches above all others the beautiful proportion and the ideality. The painting, which has perfected itself the last, enters now, opens to art the reality of things and of the soul. The sister arts are supplementary to each other; they finish the circle of the beautiful, as far as visible to the eye. Their principles unite themselves to a higher unit, which every active artist, wherever he may stand, must be conscious of, namely, cannot enough be pointed out to so lively conception of the strict laws of the art of building, which give, well and truly comprehended, everywhere a sure foundation for intuition, judgment, and invention. Through the union of the arts by their works, speaks a higher whole, and only so arrives each to its wordiest position, to the solution of its highest problems. Nothing better and higher exists in the plastic, as the adornment of the sanctuaries of Olympe and Athens; nowhere is painting higher than there, where it ornaments walls and ceiling of a large room, etc.; and where a building shall arrive at a true and real beauty, perfect monumentality and greatness of the sister arts must reach out and assist the wreath of plastic and figurative ornament, as in museums and fine theaters. But as architecture is connected with the building trades, so points painting however by its gift to actions of the souls of men, which only exist in the time to make them visible in space, already to poetry and music the art of sounding. So it could appear, as if the arts overlapped each other—the art of building over sculpture, by the plastic decoration and the statuary ornament, the figurative, forming to painting by the relievo or raised picture to the simple drawing; but nevertheless the boundaries are fixedly drawn and must be strictly kept; then if one of the arts should forget her conditions and her mode of representation, and, going over to the domain of the other next above, her works become unthoughtful, repulsive, and repellent, then the art of building would become individualized, or the sculpture pictures give, then they are not to be approved; their works do not please a refined and cultivated taste. When, therefore, painting draws statuaristic or architectonic, if figurative forming forms architectonic, it is this, anyway, a restraining of the artistical capacity; but the work carries with it severity and dignity.

XXIX. ART AND RELIGION.

It has already been said that a work of art is the reflection of the state of culture of its originator, his time, and of his people, and this, therefore, coming direct from the original self of its originator, he again being rooted with his whole thought and mode of thinking, with his time and with his people. In the different periods of history must, therefore, appear a different kind of art. The main reason lies in the religion of the people; then the religion, since the beginning of the human race, has been that moment and impetus, in which every time and always the highest interests were united, in which the measure or scale for the thinking capacity, the depth of perception, for the striving after morality, the arrangement of state and for personal dignity is given. That religion, more than anything else, separates and unites people, is clear, and needs no further explanation, since every section of history gives speaking proof; and our time itself, which designates partly a beginning, where the positive religious being passes over to the liberated humanity, is rich in such examples.

Art is intimately related to religion; then the impulse after divinity does not satisfy at first a reasonable perception, but it leads much more to the lowest state of all perceiving, corresponding to the sensitive intuition, necessarily thereto, that man tries and endeavors to make himself a concrete presentation of that which his soul desires very much to see. The most sensitive religions begin with elementary objects, such as the sun, fire, and similarities, and pass over to natural things, as trees, animals, and such like. An imposing progress lies then in the taking of personal objects as deities; and, lastly, the personification of a godlike or any ideas referring to divinity in a certain form. This is true for the whole humanity up to to-day, with the exception of Protestantism, as far as they are true to its spirit and principles; then Judaism and the Mohammedans, who discard images of God and set up only hereby a wise prohibition against extravagancies of phantasy; but the Protestantism, that is, as a universal historical idea, and not in the accidental exterior community with the so-called "Evangelists," whereby it is intended to disabuse a misunderstanding against the works of art of eminent, not Protestant artists, is not hostile to art; as to the former religions, he is only from its own inner spirit against the works of art as images of the godly divinity, and repels from it all supernatural; wherefore he only accentuates the purely human and the nobility of humanity. It is a large process of culture, which only one, and that a very small part of humanity, has brought about, laboriously and slowly, and their universal historical sense and their aims are not very difficult to be recognized. The pace of development runs from the sensual creed to the spiritual consciousness.

The more variable and different religions of nations are from each other, so much different are the arts of the same, and consequently the more they come near to each other, the more similar are these. Yet, when many nations are of one and the same religious belief, the difference in the arts will only be recognized and seen in small, insignificant works, which are to be traced to the different perceptions of the same religion through the different characters of the people, and such like. As long as a people has its own religious belief, it has its own national art, and if one and the same religion is in common with more nations, then is art periodical.

XXX. NATIONAL ART OF THE ANCIENTS.

The national art rules the collective antiquity. Here every nation has its own national religion, and art oversteps the boundary of

the people only together with the religion. The types of the old kinds of art are different in their main spirit; and even then, if we believe that some early relation existed between them, we are on the main only authorized to find in them the first impulses to an independent activity within their own nationality. The most important example pertaining hereto is the dispute on the influence which the Egyptian and Asiatic art had on the ancient Greek art. In the face of the monuments, to deny such influence unconditionally is the prerogative privilege of the superabundant Hellenist, when otherwise to trace and pursue the same up to the prime period of the Greek art, to find in all imitations and perfected Egyptian patterns and models, is a preconceived prejudice of those who are incapable to conceive and comprehend the independent people's character. If the old Pelasgians, and, more so, the old Dorians and Ionians, received from the more advanced people the incitation for art exercises, then this is by no means a lowering of the Greek spirit, but sooner a glorification, since they obtained imperfect and raw germs, which, by their own force, were brought to the highest perfection. Something similar executes itself uninterruptedly in all dominions of life, and the judgment here goes from one extreme to the other. At the time of the Roman emperors, as the deities of the different nations and their culture were introduced in Rome, an inclination for a barbaric art was gained, as numerous sculptures of this period, which were executed in the Egyptian style, show. Religion is now undoubtedly conditioned by the natural disposition of the people, their bodily constitution, the formation of their soil, the lay of their country, and similar influences; but it is already formed, in some measure, by the art training of some nominal value, and thus stands in a closed and fixed relation to the same, which is naturally without detriment to any change after time may make with it. So we find perfectly formed religious creeds, which have already called forth a certain fixed art, but which were proclaimed by an interested priesthood as unimpeachable commandments of divinity.

The true reason is the inordinate desire of power and self-interest of the priests, who, by their divine threatening and menace to exclude the people from every and any interest in their religious organizations, and every, even the slightest, attempt in that direction, is punished in the severest way. So originates a perfect stand-still in the religion, and the once created art forms are retained unchanged. Art is therefore under such conditions that the vein of its life is tied and its development played out. In this way it happened that the same unaltered types of art remained thousands of years in Egypt, and the rigid and stiff Byzantinism, longer than five centuries, showed the same lifeless forms.

In the Indias was the appearance of the reformed Buddhisms the cause of a new and less important art, or the one of the Bramaisms, but the Asiatic and African nations, being under the dominion and rule of an oppressing priest religion, their art is, therefore, more or less typically stiff, without any developing progress.

The liberty of the Greeks created the first true art from small, typical, narrow commencement to a perfected beauty. The Romans were, in art and religion, essentially dependent on Greek influence, but by both were taken up in their peculiar national form.

Please Make Immediate Settlement.

As an entire change in the management of this journal is likely to occur at an early day, those who are indebted to us will greatly oblige by

MAKING PROMPT PAYMENT.

Do not hold off because you may for a time, but pay up at once and remove the obligation. It is *our due* and *your duty*.

THE most celebrated carpenter I ever heard of, was the Carpenter of Rouen. You never saw him, but you have seen the ruin of the carpenter, perhaps.—*Builder and Woodworker.*

No, we never did. We never saw a good carpenter ruin anything, but we have seen fellows who pretended to be, that did ruin everything they undertook, including their own and the prospects of good carpenters for profitable jobs. We suppose this class is not common to any one city, but may be found in Rouen, Paris, London, Amsterdam, New York, and all other cities. We certainly don't need any "Rouen" or "ruin" carpenters here.—*Southern Lumberman.*

Remember on the occasion of our successor taking charge of this Journal, we propose to publish entire a delinquent list of subscribers. Prompt attention to paying your back subscriptions is absolutely essential.

A COUNTRY SKETCH.

Spoiled Buildings—Owners' Follies and Griefs.

OWNERS are often brought to grief by their mistakes in the means adopted by them to avoid the expense of an architect, and obtain plans for their buildings. Sometimes they know, or become acquainted with some *honest mechanic*, to whom they are induced to intrust the whole matter of plans, specifications, and construction, only to repent it when it is too late. The party to whom the proposition is made, elated with the splendid opportunity opened up to him, and full of conceit in his own abilities, uses all possible means to secure and consummate the arrangement, and plans are made—*and such plans!*—and the work progresses. Once under way, there is no stopping it, and step by step the owner discovers and realizes, one after another, grievous errors, which are difficult to remedy. And when the building is completed, he simply feels disgusted. Imperfect arrangement, poor construction, homely design, and incurable defects crowd upon him, as the reward of his folly; and regrets for his error haunt him day and night, but it is too late—the building is erected, and he must endure its defects. But the first general dissatisfaction is primary and bearable, compared with after experiences in their various details. The plumbing work has, perhaps, been done by some tenth-rate man—some spoiler of good materials—for there are, in San Francisco, some of the least qualified men to be found in the United States, who call themselves "practical plumbers"—men who have not the slightest idea of what constitutes a really good job, not to say first-class. Nor would the payment to such men, of ten times the value of the work done, secure skillful workmanship at their hands, for the simple reason that they do not possess, and therefore cannot practice, mechanical skill and abilities. And owners who employ this class of plumbers are unfortunate, indeed. But to continue, defects show themselves in all connections. Pipes are put in of insufficient capacity, wastes entirely too small, and sometimes so cramped in making bends as to diminish their practical size one-half; "tinker" instead of "wiped" joints; leaks at various points and places; wetting and spoiling ceilings and walls, and not unfrequently carpets have to be torn up to escape the deluge. All this is followed by a still more serious defect—one affecting the health and lives of the occupants, viz., imperfect or insufficient traps, pipe ventilation, bad sewerage, etc., resulting in the distribution of the vicious and poisonous sewer gases through the building, and, as a consequence, the ill health, and sometimes *premature death* of loved ones. The intended pleasant home is thus transformed into a mere fume-castle, a disease-breeding charnel-house, not fit for human habitation. All this is followed by continual repairing, tearing up floors, removing finishes to get at concealed places, etc.; and for all this the owner has been made to pay a good round price, amounting to more, as a rule, than it would have cost him to have secured a good building, erected under the superintendence of a trustworthy architect. But bad plumbing work is not the only serious defect which so often occurs in such cases. The foundation is often wholly insufficient, and settling occurs, with any quantity of ugly cracks in the plastering. The structure is perhaps so poorly braced that the edifice trembles with every wind that blows; and, when the rains fall, leaks are found at every exposed window and opening, and the roof itself yields its proportion of internal wettings. But we will not continue our enumeration of "bad things," as to do so would consume columns of space. Such cases are known to all architects, and many a "served him right" is indulged in, upon the principle that a competent physician laughs at the sufferings of a patient whose pains and agonies result from self-treatment or quack practice, and the educated lawyer smiles when his client gets himself into a *terrible fix* by intrusting his case to some pettifogger, or who tries to work out the intricacies and problems of law by his own self-conceived legal ingenuity.

Landlord's Liability for Bad Drains.

The old question of the responsibility of a landlord for the defective drainage of a house which he had let to a tenant came again before the High Court in the case of Bartram *vs.* Aldous, which was the first case tried before Mr. Justice Grantham. The case is specially instructive, as the fact of the house being in an unsanitary state was not disputed. Evidence, which was admitted to be accurate, was given to show that the waste-pipes from the bath-room opened direct into the main sewer, and that the house-drains were untrapped. The natural consequence was that sewer-gas escaped into the house, and the tenant's family became ill. Under these circumstances he refused to pay two quarters' rent which was due, and brought a counter claim for the damages which he had sustained through becoming tenant of a house which was uninhabitable.

By English law a landlord who lets a house does not ordinarily warrant that it is fit for habitation. The tenant is supposed to make inquiries, and ascertain the material facts for himself; and if he makes a bad bargain, so much the worse for him. The fact of the drains being defective, of itself, affords no answer to a claim for rent, and Mr. Aldous was obliged to rely on a representation which he alleged the landlord to have made at the time of letting the house, to the effect that the drains and water-supply were both perfect. On the question of this representation having been made there was a conflict of evidence, and the jury gave their evidence in favor of the landlord. Whether this verdict was right or not is a matter which does not concern us here. The case shows plainly that a tenant of an ordinary house cannot, *after he has made his bargain*, impose on his landlord the additional liability of providing proper drains. There are, no doubt, exceptions to this rule. It has been decided that a landlord who lets a *furnished* house, impliedly warrants that house to be fit for habitation, and that he may therefore be liable to pay damages consequent on its not being so. The Housing of the Working Classes Act of last year, 48 & 49 Vict. c. 72, sect. 12, also provides that in any contract "for letting of habitation by persons of the working classes, a house or part of a house, there shall be implied a condition that the house is at the commencement of the holding in all respects reasonably fit for human habitation." Neither the Legislature nor the judges have seen fit to incorporate any such condition into contracts for the letting of houses of a superior class, and there the intending tenant must protect himself. This he can do by having the house surveyed before he becomes tenant, when, if his surveyor is competent, any gross sanitary defects are likely to be detected. He might also insist on the insertion in his lease of a covenant by the landlord that the drains, etc., are, and shall be kept in a proper condition. Such a covenant is at present unusual, and the landlord's solicitors would probably for that reason object to its insertion. But if the intending tenant insisted, and the house was in such a state as to comply with the requisition, the covenant would most likely be conceded; if the landlord's agents persisted in refusing, that fact should certainly be sufficient to raise a suspicion that the house was not altogether fit for habitation. Too often landlords let, and tenants take houses without giving any real thought as to their sanitary condition. Greater attention at the time of letting to the duties and to the risks which they respectively incur, would save many disputes and much subsequent unpleasantness, and would be beneficial to the health of the community.—*Sanitary Record.*

La Semaine des Constructeurs publishes a short note upon a matter of considerable importance to builders. So far as we can gather from the note, a contractor agreed with the officials of a certain town to construct a building in accordance with plans and specifications offered him on behalf of the town. He carried out his contract to the letter, but after the building was completed it showed signs of weakness, and the contractor was called upon to make the work good. He defended himself on the ground that he had faithfully carried out the plans and specifications, and proved that he had done so; but the highest court in France decided that, notwithstanding this, he was bound to make good the defects which had appeared in the building, for the reason that he had neglected to inform the town officials of the improper character of the materials specified, and to warn them that it would be impossible to do good work with them. This decree, which was given by the Council of State on the second day of last April and is reported in the journal *Droit* of the eleventh, will surprise those contractors who think it business-like to conceal their knowledge of defects in plans or specifications in the hope that they will be able to get a good price later for extra work in changing the work done in accordance with imperfect documents, but there can be no doubt that it expresses the general policy of the law. As applied to architects, this policy requires that the client should be clearly informed of the inconveniences or risks which would be incurred in following out his instructions, if the architect, knowing of these inconveniences, would free himself from responsibility for them. Before the law, the architect is always the adviser of his client, and is bound to advise him faithfully. In the absence of explicit instructions, and even, to some extent, in opposition to them, he is clothed with a very extensive authority in directing the conduct of the works which are placed in his charge, and in return for the discretion which the law allows him he is obliged to assume a proportionate responsibility. The client may, in unmistakable terms, take this responsibility away from him, but interference with the architect's work, and even the giving of contrary orders, will not have the effect of shifting the responsibility for the building from the architect to the client unless the former takes care to warn his client against the possible consequence of his actions, so far as he can foresee them.

Paint, Putty, and Piety.

"Mr. Editor: I wish you would say a word about putting one's religion into one's work. Last year I built a new house, and employed a Christian man to paint it. He makes good prayers at the prayer-meetings, and utters a good word of advice to the young. But in his work he failed to exercise the same degree of moral sentiments, and did not fill up the nail holes in many parts of the work, and did not paint the top edges of the upper story, and other places which could not be seen from below, but which as much, or more, needed painting. He took care to slight the work just where he thought it could not be discovered, and the nails not being puttied, they caused leaks, which led to a detection of his neglects. I have discounted that man's piety and prayers, ever since. Perhaps this painter treated me as he did because I am a woman and a widow. Any way, I prefer Christians who fill up the holes with putty, and paint the top edges.

"Lady Friend.

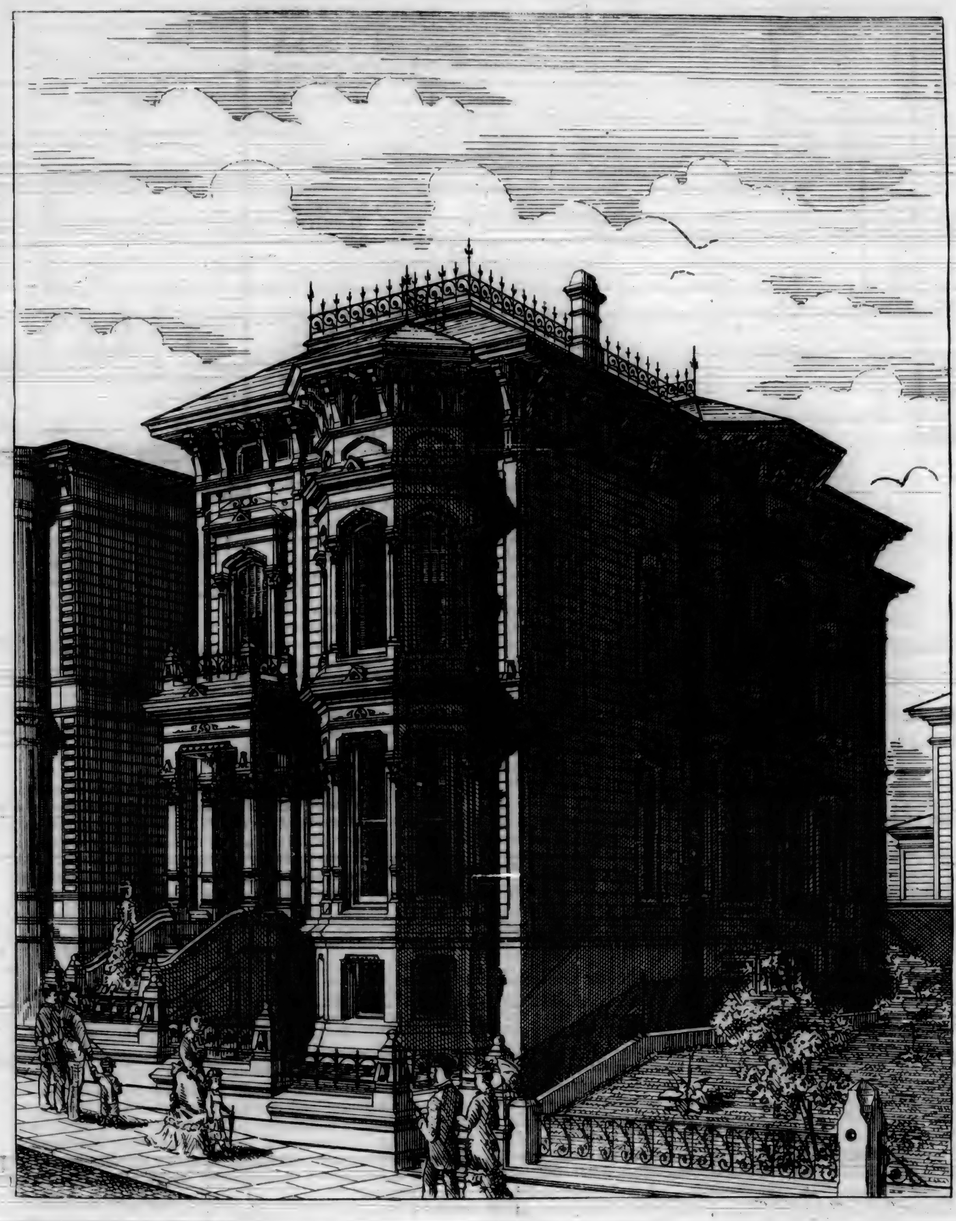
"Our lady correspondent has said quite as effective words about putting one's religion into one's work, as we could possibly say. And our friend is right; you Christian painter, how could you let those nail holes go unputtied, and those top edges and places which you imagined would not be detected, go unpainted? Was it Christian-like? Was it manly? Was it honest, particularly toward a woman—a Christian sister? We advise painters who pray and talk well, to putty and paint well; for right doing is better than right talking and loud praying. We want Christian painters who will fill up the holes with putty, and paint well the upper edges." (An Eastern editor's criticism on above.)

And the California Architect and Building News adds: This is severe on Christian painters. By-the-by are all the painters in San Francisco, Christians? If *none* but Christian painters leave nail holes unputtied, and upper edges, roof gutters, and parts not easily seen, go unpainted, Christianity is certainly in the ascendancy among San Francisco painters, and extensively represented in our midst. The lady brings no charges in reference to the character of stock used by the Christian painter. It may have been pure lead and oil. San Francisco Christian (?) painters sometimes don't use those ingredients—soap, potash, whiting, etc, are cheaper, and owners often want cheap work, and they get it. We have known painters in this city whose Christianity and piety have not been brilliant nor self-evident, and their prayers—sort of ejaculatory expressions—prefix to sentences, beginning with the letter d, who have—well, never mind the rest, we won't repeat, they call it paint, painting, and pure stock!

A very simple test to ascertain whether the air of any apartment contains sewer gas is made by saturating unglazed paper with a solution of one ounce of pure lead acetate in half a pint of rain water; let it partially dry, then expose in the suspected air. The presence of sewer gas in any considerable quantity soon darkens or blackens the test-paper.

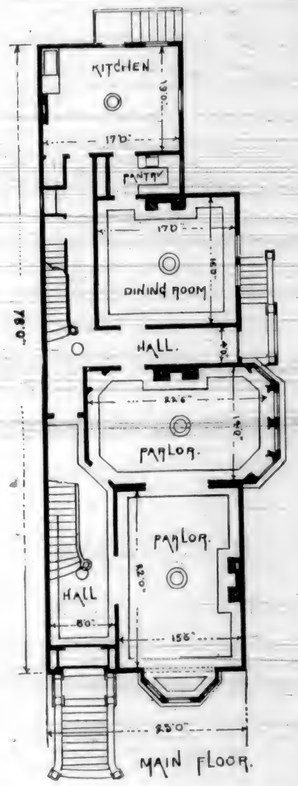
Two ounces of soda dissolved in a quart of hot water will make a ready and useful solution for cleaning old painted work preparatory to repairing. This mixture, in the above proportion, should be applied when warm, and the woodwork afterward washed with water to remove all traces of soda.

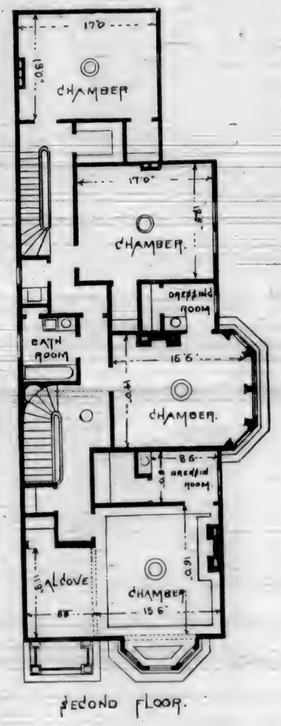
We carry a full assortment of architectural publications, and are prepared to forward to any address copies of any work published, at lowest market price.



A Representative San Francisco Dwelling.

The above cut and accompanying plans on opposite page aptly represent the average architecture of a dwelling intended for those who move in the well-to-do walks of life. Although the design is intended for any location, still the building appears to better advantage when placed on the side of a hill. The exterior is in perfectly good taste, without any attempt to clap on the *balderdashnian* styles commonly but erroneously styled as Eastlake, Queen Anne, etc. When finished as per plan, the beholder is at once struck with the solidity, clean-cut finishes, and the general well-to-do appearance of the structure, thus establishing at once the owner as a practical business man. The general plans, and arrangement of the rooms on the different floors, will well repay a careful study. The first thing observed is that no waste room exists in the house; no dark closets to bother the careful housewife; in fact, while studying the general plans, you are at once impressed with the general compactness in the whole arrangement. This feature especially recommends itself to the lady of the house, as it requires much less work to keep the various rooms in the *shining dollar order*. Notice the basement; it extends under the whole house, and is





amply lighted in every portion by numerous windows judiciously placed. Servants have a careless fashion of disposing of old boots, bottles, worn-out umbrellas, and all sorts of trash in the dark holes of the basement; but in the plan as laid out, no chance exists for receptacles of the stuff that should only find a place in the ash barrel that is emptied regularly by the proper person.

Should it be desired to heat the house by steam or hot water, ample room exists in basement for a furnace room.

The billiard room is large and convenient. Should more light be required, extra windows can be placed each side of the chimney. There is also ample room for a children's ten-pin alley between the billiard table and the hall partition. If so used for this purpose, care should be taken to have the flooring of extra good quality.

The partitions in rear of the billiard room can be either plastered, or made of tongued and grooved boards planed both sides. The latter gives more room and answers every purpose.

The main floor plan is at once suggestive of compactness and convenient arrangement. Should it be desired, the sliding doors in parlors may be done away with, and the opening arranged for a *portiere*. While we do not advocate the use of portieres between a hall and parlor or dining-room, still between two such parlors as shown in engravings, we think they are much preferable to sliding doors. The latter will every once in a while get out of order, but the former having none of its portions concealed from view, will last as long as—a good housewife informs us—as long as the stuff of which it is composed is in fashion. According to this lady's authority, portieres are like fashions in dresses, to be changed as often as the purse will allow.

The dining-room is so situated that no smell from thence can permeate into the parlors, the intervening hall proving an effectual barrier. The latter is an especial feature in the arrangement of the main floor; by its use you have access to yard, basement, parlors, and upstairs; the door in main hall effectually divides the front and rear sections, and cuts off completely all danger from the smell of cooking, etc., ascending to the second floor. All such doors should be provided with self-closing springs, so as to guard against their being accidentally left open by careless servants or the future heirs of the master of the house. No cornice is shown in rear hall, that being a matter solely regulated by the owner's purse. The kitchen is well lighted, and is handy of access from hall and yard and also convenient to the basement, which is reached by stairs both from outside and inside. Pantry is large, and is provided, as shown, with a sink, shelves, and drawers.

Much care and study have been exercised in the arrangement of the second or bedroom floor, so that suitable and convenient spaces may be had for beds, bureaus, chairs, tables, etc. Many designs have been presented to us as individual owners' studies, representing plans that would suit said owner's ideas to perfection, and yet, after a little talk, they have been either torn up or thrown into the waste basket. The *first* duty appears to have been either the *last*, or not thought of at all, viz., the arrangement of the room for the proper disposal of the furniture necessary for the uses to which the room is to be subjected. Take the front chamber in plan. The alcove at once suggests the proper place for a bed. The largest size of a double bed is not over 5 feet in width. The alcove is 11 feet 3 inches in length. Thus over 3 feet each side of the bed is left for such purposes as the occupant of the room may desire. Between the chimney and bay window there is a suitable space for a bureau, organ, book-case, lounge, or any other article of furniture. The best place for a bureau is in the dressing room between the window and wash-stand. If placed there, the space in front room as mentioned can be used for a large looking-glass, by which ladies can see their full dress uniform to advantage. It will also be noticed that room on the walls is abundant for the hanging of pictures, etc.

All the other rooms are equally convenient, being so arranged that, when furnished, they will present an appearance at once indicative of home comforts.

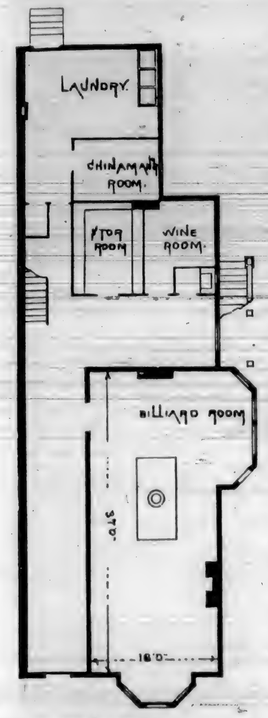
The attic is large, well lighted, and ventilated. The large room can be used as a dance hall or for any other purpose which suggests itself to the mistress. The tank room—easy of access—is located in one corner, thus doing away with the hot water boiler in kitchen. As arranged by us, the tanks present a vast superiority over the copper boiler; plenty of hot water is always to be had whenever a reasonable fire is kept up in the range. A window in the room gives light, and—what is absolutely essential—plenty of air, so that the water may be thoroughly aerated.

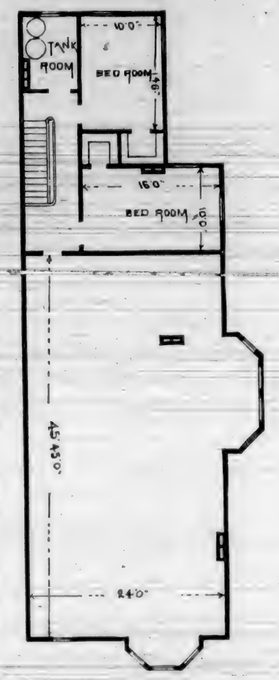
Having presented a general description of the house as shown by the engravings, we will add a few hints suitable for those intending to build or occupying a house after its erection.

When you have determined to build, the first thing to be done is to go to the best architect within your reach and consult him as to the most expeditious method of reaching the result desired. Do this before consulting any builder or contractor, and you will invariably find it to your advantage. The reason is plain. The architect stands as a disinterested third party between you and your mechanic, he having made a special study of the arrangement and convenience of modern structures, and, being constantly employed in designing such, is better versed than any one else you could find. In selecting your plan, give the architect a short synopsis of what you consider best adapted to your wants, and the amount you desire to expend; then let him work the design up and submit it to you for inspection, which will enable you to see and correct all which does not suit you, and your house, when completed, will come up to your expectations.

Painted woodwork may be classed among the necessary evils of house decoration. No one in his sober senses will put paint on good woodwork if he can get an equal effect by the use of natural wood. But the costliness of all hardwood, and especially the expense of working it, renders the use of pine practicably inevitable.

A kitchen and its belongings should not be planned solely for the comfort or ease of the cook, but for the general health of the household, for the purer the air below the purer will that be which circulates above.





Mortar and paint may be removed from window glass with hot, sharp vinegar.

Grained wood should be washed with cold tea, and then, after being wiped dry, rubbed with linseed oil.

Remove flower-pot stains from window-sills by rubbing with fine wood ashes and rinsing with clean water.

Strong brine may be used to advantage in washing bedsteads. Hot alum water is also good for this purpose.

Oil-cloths should have a coat of varnish applied once in six months, after being scrubbed with hot soap-suds and thoroughly dried.

Plush goods and all articles dyed with aniline colors, faded from exposure to light, will look as bright as ever after sponging with chloroform.

Soot falling on the carpet from open chimneys, or from carelessly handled stove-pipes, if covered thickly with salt, can be brushed up with out damage to the carpet.

Carpets should be thoroughly beaten on the wrong side first and then on the right side, after which spots may be removed by the use of ox gall or ammonia and water.

Whole cloves are now used to exterminate the merciless and industrious moth. It is said they are more effectual as a destroying agent than either tobacco, camphor, or cedar shavings.

A good moth powder is made of lupuline (ground hops) one dram; Scotch snuff, two ounces; camphor gum, one ounce; black pepper, one ounce; cedar sawdust, four ounces. Mix thoroughly and strew among the furs and woolens to be protected.

Furniture needs cleaning as much as other woodwork. It may be washed with warm soap-suds quickly, wiped dry, and then rubbed with an oily cloth. To polish, rub it with rotten-stone and sweet oil. Clean off the oil and polish with chamois skin.

A cheap paint for a kitchen floor, that will save much work in cleaning, can be made with five pounds of French ocher and a quarter of a pound of glue dissolved in two quarts of boiling water; then apply enough boiled linseed oil to make the paint flow easily from the brush.

When hard-finished walls have been calcimined, the soiled coats should be washed or scraped off before a new one is put on. This is the most disagreeable part of the process. The furniture should be covered, as the lime makes spots that are removed with difficulty, especially upon black walnut.

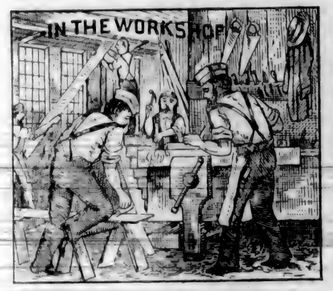
To clean marble the following is recommended: Common soda, two pounds; powdered pumice-stone and finely powdered chalk, one pound each. Pass through a fine sieve and mix to a thin paste with water. Rub it well all over the marble and the stains will be removed; then wash the marble over with soap and water and it will be as clean as it was at first.

Build with seasoned timber, or you will build to your own discredit and others' loss.

After the dust has been thoroughly beaten out of carpets, and they are tacked down again, they can be brightened very much by scattering corn meal mixed with coarse salt over them, and then sweeping it all off. Mix the salt and meal in equal proportions.

Ladies the Best Planners.

In many particulars in connection with the comforts and convenience of family residences, the mistress often displays better judgment than the master. Nor is this fact at all strange. If the lady is observant and intelligent, her continued experiences and contact with the general arrangement of home more fully qualify her to comprehend alike the convenient and practical, and the objectionable arrangements met by her in home experiences, and gathered in the course of her visits among friends. Sometimes men are obstinate, and refuse their wives the privilege of any say in the matter—following their own views in all things; but, as a rule, better and more satisfactory results are reached, when the opinions of an intelligent wife are at least consulted. Although some architects "don't want anything to do with the women," yet it is questionable whether every man in the profession who enjoys the patronage of female clients, either as wives or sole owners, has not received from them many sensible and practical suggestions; and it is perfectly reasonable that it should be so; for while the architect may fully understand the theories and principles of architecture in every phase and department, he cannot understand the detail workings of his plannings, except so far as he may have "tested them" in some special manner; while the women-folk are brought in hourly contact with all defects or perfections that exist, and are thereby the better qualified to at least express an opinion. In addition to this, it is an incontrovertible fact, that many ladies enjoy much better general ideas of planning buildings than do their husbands; not because the husband lacks good intelligence and business capacities, but for the reasons already stated. Home and house experiences on the part of the wife, and the intense desire and determination on her part to have everything just as it should be, naturally qualify and leads the mind to right conclusions. With all the objections urged by some, to women interfering with such matters, if the many little details of occurrences that transpire during the period in which the "talking over" of plans is indulged in between man and wife could be discovered, perhaps there would be but few well-arranged houses found not to a large extent shaped by the mind of woman. For from the hour when the husband reveals an intention to build, the wife, as a rule, enters heartily into the proposition, and she at once commences to study up her part, not only so as to secure for herself all of the little conveniences of arrangement which would never be thought of by the husband, but to make the house generally as perfect in detail as the amount of money to be expended and "best judgment" will accomplish. Consequently, in the repeated discussions which ensue, the wife introduces this, and that, and the other feature, until by the time a final conclusion is reached, first thoughts are materially changed, and, to a greater or less extent, the wife's ideas and suggestions permeate almost if not quite every arrangement of the building.

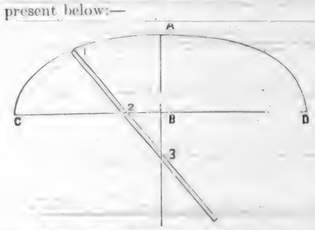


We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade. We especially invite suggestions from apprentices and young mechanics.

Business Manager Architect: Will you please illustrate a method for drawing the *half oval;* one that will apply to making an elliptic on a large gateway?

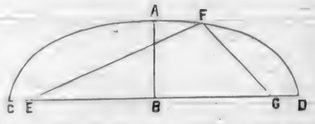
Palo Alto Farm.

Answer.—There are many methods by which the required curve can be made. One of the oldest, as well as simplest, we present below:—



Let C D be a given distance, and A B a given height. Take a straight edge; from the end of this set off 1 3, equal to the distance C B, and again, set off 1 2, to equal A B. Now lay the straight edge on the line C D, with 1 at C. Then, with a pencil, make any number of points, all of which will be in the curve, by moving the straight edge, keeping 3 on the line A B, and 2 on the line C D.

Another simple way is represented by the adjoining cut:—

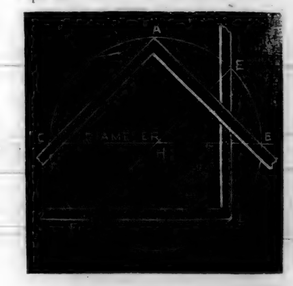


C D being any distance, A B any height. Mark two points on C D, as at E G, to correspond to the distance C B or B D, using A for the center. In these two points put a pin or nail. Tie a string at E, stretching it over the point A, and fastening at G. Now, with a pencil in which a groove has been cut, to prevent slipping, sweep the curve.

Let no building workman be too proud to take a hint from the humblest laborer that attends him, for the experienced looker-on betimes sees more than the doer.

Artificial like natural drainage, is governed by gravitation, and the absence of a proper fall in either is as opposed to nature as a swamp is to health.

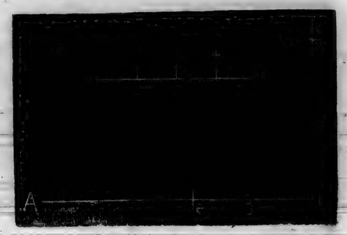
How to find the diameter and center of a circle with the square:



This cut shows at a glance how the diameter and center of a circle can be found. Place the square as shown at A B C. The line B C will be the diameter. Place the square so that the point of the square A will touch any other point of the circle, as at D; draw E F. The point of intersection, H, will be the center of the circle.

J. C. is informed that no regular rule can be laid down for the projection of cornices on buildings. Much depends on the style of architecture employed. To use a general rule, however, we might say that for a building seventy feet in height, the proper projection should be about thirty-six inches.

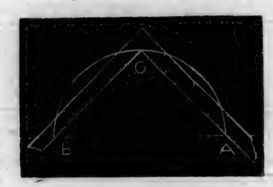
A correct mechanical method by which two fences can be set at right angles to each other:—



From any scale of equal parts, as that represented by the line D, which contains 5, set off from B, on the line A B, the distance B e equal to three of these parts; then from B, with a radius equal to four of the same parts, describe the arc a b; also from e as a center, with a radius equal to five parts, describe another arc intersecting the former in C. Lastly, join B C; the line B c will be perpendicular to A B.

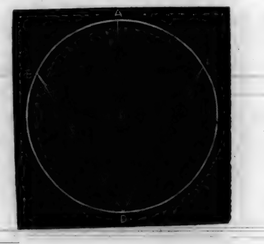
This mode of drawing right angles is troublesome on paper; but in laying out grounds or foundations of buildings it is often useful; since, with a measuring rod, line, or chain, perpendiculars may be set out very accurately. The method is demonstrated thus: the square of the hypothenuse being equal to the sum of the squares of the other two sides, the same property must be inherent in any three numbers of which the squares of the two lesser numbers added together are equal to the square of the greater. For example, take the numbers 3, 4, and 5; the square of 3 is nine; the square of 4 is 16; 16 and 9 added, make 25, which is 5 times 5, or the square of the greater number. Although these numbers, or any multiple of them, such as 6, 8, 10, or 12, 16, 20, etc., are the most simple and most easily retained in the memory, yet there are other numbers, very different in proportion, which can be made to serve the same purpose. Let n denote any number; then n^2+1, n^2-1, and $2n$, will represent the hypothenuse, base, and perpendicular of a right angle triangle. Suppose n equal 6; then $n^2+1=37$; $n^2-1=35$; $2n=12$. Hence, 37, 35, and 12, are the sides of a right angle triangle.

How to make a circle with a square:—



Drive in a nail at the points A and B. It is better to use a "French" nail, as, being round, the square slips easily. The nails evidently cannot be farther apart than the length of the "*tongue*." Place the square in the position indicated in the cut; and with a pencil held firmly in the crotch at C, and the square kept on the nails, a circle can easily be drawn.

A simple way to describe an equilateral triangle within any given circle:—



Upon any given point A in the circumference, with the radius A S, describe the arc B S F. Draw B F. Make B D equal to B F. Join D F. B D F will be the equilateral triangle required.

Friend Architect: Please tell me how to compute the number of joists it takes in a building when spaced sixteen inches from centers?

Amateur.

Answer.—Multiply the length of the building in feet by 3, and divide the product by 4. For instance: the building is 124 feet long = $124\times3=372\div4=93$, the number of joists required. This rule is applicable, no matter what the thickness of joists may be, as long as they are spaced 16 inches from centers. Allow one extra, except when the end sills are utilized in place of joist. Of course deduct when the latter is the case.

Business Manager Architect: How many pounds of lath nails does it take to put on 1,000 laths?

Answer.—There are 420 lath nails in a pound. So 11 pounds is what you will require for 1,000 laths.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

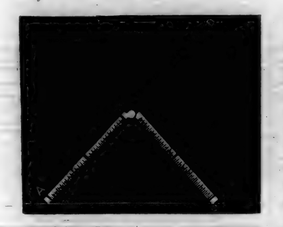
The columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human infirmity to arrive at the moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected, as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

Editor Architect: What is the exact height of Mount Diablo?

Oakland.

Answer.—According to Professor Davidson, it is 3,843.63 feet above tide level.

To square a board with a pocket rule, no square being necessary:—



Apply the rule on the board as shown by the engraving. Make a dot at the point C. With the left hand hold firmly that part of the rule denoted by A B, and with the right hand extend the rule as shown by the letters A B D. Draw a line through the points C and D, and it will be found to be exactly at right angles to the edge of the board. It is evident that the above method may be employed, using the rule at any angle.

The Chinese Must Count.

The Chinese have a most ingenious method of reckoning by the aid of the fingers, performing all the operations of addition, subtraction, multiplication, and division, with numbers from one up to 100,000. Every finger of the left hand represents nine figures, as follows: The little finger represents units, the ring finger tens, the middle finger hundreds, the forefinger thousands, and the thumb tens of thousands. When the three joints of each finger are touched from the palm towards the tip, they count one, two, and three of each of the denominations named. Four, five, and six are counted on the back of the finger joints in the same way; seven, eight, and nine are counted on the right side of the joints from the palm to the tip. The forefinger of the right hand is used as a pointer. Thus, 1,234 would be indicated by first touching the joint of the forefinger next the hand on the inside; next, the middle joint of the middle finger, on the inside; next, the end joint of the ring finger, on the inside; and finally, the joint of the little finger next the hand, on the outside. The reader will be able to make further examples for himself.

In putting up your screen doors and windows be very particular to have a little hole in one corner so that the flies can go outdoors when they get tired of being inside.

Waxing Floors.—The following is a good recipe for waxing floors, and the method of application. Stir twenty-five parts of shredded yellow wax into a hot solution of twelve parts of pearl-ash in soft water. Keep the mixture well stirred until the effervescence ceases, then remove it from the fire and stir in twelve parts of finely-ground yellow ocher. It may now be poured into cans to cool. When wanted for use, one part of it is dissolved in five parts of boiling water. Apply warm with a paint brush. It dries in a few hours, when the floor is polished with a floor-brush, and afterward wiped with a woolen cloth. It is said this wax coating will last for six months with ordinary use.

Queen Anne Hodge Podge.

Architect—Well, I declare that is a pretty fair house plan for an amateur, only you have left no space for stairways and closets. Did you make it yourself?

Prospective Builder—Yes, but the only thing that puzzles me is to know what style of cottage it is. It is not Gothic, nor Italian, nor—

"No, it is absolutely nothing. As to style, it is simply a meaningless hodge-podge, to be frank with you."

"Well, what shall I call it, have you no name for hodge-podges?"

"Oh! yes. We call 'em Queen Annes."

The Very Latest.—A man out West bought a bedstead, the wood of which was so green that one warm spring day it broke out all over with little groves of waving branches. In autumn the children picked the chestnuts from the side pieces, and the next spring tapped the headboard for maple sugar.

Don't.—Don't call a very large, stro g, sinewy man a prevaricator. If you are sure he is a prevaricator, hire another man to break the news to him.

Glycerine Glue.—A German chemist has discovered that the strength of glue is very greatly increased by the addition of one fourth as much glycerine as glue. Glycerine has many other uses, among which one of the least known is its property of removing pencil marks from paper in a very perfect manner. It may also be combined with starch and plaster of Paris, to form one of the most durable cements for various kinds of apparatus.

There is nothing so tends to shorten the lives of old people, and to injure their health, as the practice of sitting up late, particularly winter evenings. This is especially the case where there is a grown-up daughter in the family. This sanitary item is published at the request of several young men.

To remove iron taste from new kettles, boil a handful of hay in them, and repeat the process if necessary. Hay water is a great sweetener of tin, wooden, and ironware. In Irish dairies everything used for milk is scalded with hay water.

A rubber cushion under the legs of a work-bench will deaden the sound of hammering so completely that it will not disturb the inmates of adjoining rooms.

What has become of the straw lumber which, three or four years ago, we were told would revolutionize the lumber business?

One of the most important features in an interior arrangement is the actual and relative height and width of doors and windows. The question is whether the apparent proportions of apartments cannot be greatly modified by the treatment of the necessary openings. A window in the center of one side of a room gives more light than if at one side of the center, but it has the effect of shortening the length of that side. The same is true of doors in similar positions. The higher a window is the more light it will give, but the lower the room will appear. In doors, nothing is gained by increasing the height beyond a proportion to the width that shall prevent a stunted appearance. Their relative height to that of the windows is a nice question of balance that can be best determined by experience.

Wood may acquire an oak, walnut, or cherry tree color by staining it with ordinary tincture of iodine diluted with spirit until the exact shade is obtained. White shellac must be added to the iodined solution if the stain is to be made permanent, or the wood after the stain is applied may be French polished. The iodine may be laid on with a rag or a brush.

If stove polish is mixed with very strong soap-suds, the luster appears immediately; consequently there is less dust to breathe and blacken.

Editor Architect: How do you cut a hip-rafter? and oblige

Sonny.

Sacramento.

Well, Sonny, we have always used a *saw* for that performance; but if you want to know a *rule* by which you can cut any kind of a rafter, we will be most happy to inform you.

Sketch of Country House.

THE accompanying sketch will be found a very desirable plan for an attractive farm-house building. No attempt has been made to pile on a lot of mannerisms, in order that the outside appearance may be showy. By a study of the plan, it will be noticed that the house can be thoroughly ventilated by through drafts in every direction. This is a luxury to be appreciated by those living in the interior of California.

The design shown will freely admit of successive additions, in case they become necessary, without marring the beauty of the original plan. In fact, these, when properly designed, add to the variety of outline, and its beauty of light and shade.

To build well, and to do so at a low price, is always desirable; and to build artistically, imposingly, and attractively, does not imply elaborate finish or profuse ornamentation. Sandpaper and decoration will never make an ill-proportioned building attractive to an educated taste, while a rough exterior of harmonious lines and forms will pass current with those who have an eye to the artistic.

WE understand that M. de Lesseps has succeeded in having a large part of his new loan of one hundred and twenty million francs taken up, mainly, it is said, by females of the peasant class. If half that is said about the real condition of affairs at the Isthmus is true, this enterprising enthusiast is likely to prove one of the greatest moral scoundrels of the age, and we do not envy him the objurgations which, when failure is at length acknowledged, will shower upon him. But there are some things which even the magnetic de Lesseps cannot accomplish, and we are not surprised that in face of the doubtful condition of his undertaking at the Isthmus of Panama, the Tunisian Government has refused to allow him to undertake the flooding of the chotts that lie between the coast of the Mediterranean and the great desert to the south of them. M. de Lesseps estimated that the cost of digging the canal that would be necessary for this immense irrigation scheme would be forty million dollars, which he probably looks on as a mere bagatelle, but which the canny Africans seem to believe could hardly be raised by a man who already finds it hard to raise money for the prosecution of an enterprise in which the whole world is interested, and of which the bonds and securities can be bought in any market, if any one thinks them worth the purchase.—*American Architect.*

A LITTLE paragraph has been going the rounds of the technical journals about the painting of tin roofs, which seems to contain a valuable suggestion. Most persons suppose that a tin roof ought to be left exposed to the weather for a month or so, until the iron of the plates has corroded enough to cover the tinned surface with a tinge of rust, probably forced through the pores of the coating. The theory of this notion seems to be that paint will not stick to a fresh surface of tin, which is apt to be greasy as well as smooth, and that the slight roughness given by the rust is of value for holding the paint; but the writer of the paragraph in question believes that if painting is delayed until oxidation has begun, the action continues beneath the coating, until the plates are destroyed, while a layer of paint put on over fresh plates would defend them for an indefinite period from the commencement of oxidation. There is certainly a possibility that this view of the matter is the correct one, and architects, who have many opportunities for observing the weathering of roofs, might do their fellow-citizens a service by investigating the facts with care.

MANY a man who has failed to make a home, or, strictly speaking, a homestead that his children can love, has been doomed to see them leave it, and seek in other places, and amid new surroundings, these satisfactions that have been denied them in what should have been the dearest spot on earth. The charm of a beautiful home would go far to kindle and keep alive that enthusiasm which sustains the soul, enabling it to triumphantly contend against discouragements and obstacles.

THE most afflicted part of the house is the window. It is always full of pains, and who has not seen more than one window blind?

Built-up Timbers.

THE statement that a 12x12-inch beam, built up of 2x12 planks spiked together, is stronger than a 12x12-inch solid timber, will strike the novice as exceedingly absurd. Every millwright and carpenter knows that it is so; at least he has been taught to believe that it is so, whether he ever tested it by actual experience or not. The inexperienced will fail to see why a timber will be stronger simply because the adjacent vertical longitudinal portions of the wood have been separated by a saw; and if this were the only thing about it, it would not be stronger; but the old principle that a chain is no stronger than its weakest link comes into consideration. Most timbers have knots in them, or are sawed at an angle to the grain, so that they will split diagonally under a comparatively light load. In a built-up timber no large knots can weaken the beam except so much of it as is composed of one plank, and planks whose grain runs diagonally to the outside cut will be braced and strengthened by the other pieces spiked to it and having the grain running in a different direction.

MEANING OF "INSOLVENT"—MINNESOTA LAW.—The term "insolvent," as used in the Minnesota insolvent law, applies in the case of a merchant or trader to inability to pay his debts in the ordinary course of business, and not merely to an inability to pay his debts when his affairs shall be ultimately wound up. So held by the Supreme Court of Minnesota in the case of Daniels *vs.* Palmer *et al.*

A CORRESPONDENT of the *Metalworker* complains, and we think with a good deal of justice, about the lack of attention, on the part of architects, to the proper grouping of plumbing fixtures in dwellings. A little more judgment displayed would, according to him, be certain to insure better working and entail less expense in doing repairs than under the prevailing apparently haphazard plan of putting fixtures in the first place that offers. The same correspondent attributes much of the discomfort to the inmates, and the blame which is so often visited on the plumber, to the lack and care bestowed upon the proper grouping of fixtures by the average architect. While in drawing the plans an architect never loses sight of the prominent features of the house—the doors, windows, flues, etc.—the plumbing apparently comes in as an after-thought. He sets down a water-closet, a bath, or a sink just where he thinks most convenient, the last thing entering his mind, if it does concern him, being how the plumber is to get his pipes in proper place. The architect evidently considers that this is the plumber's business, and, as a consequence, the latter is frequently taxed to the utmost to procure proper fall for his waste-pipes, or to so arrange his hot and cold water pipes as will insure them against freezing or bursting in most inaccessible places. The correspondent concludes by saying that if architects would devote some of their ability to the proper arrangement and location of the plumbing work in a house with a view to future contingencies, much of the unnecessary expense and of the odium now resting on the plumber would be avoided.

Market Reports.

CORRECTED FOR SEPTEMBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " " 7 to 11 feet	" "	25 00
" " " under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	per M feet,	$30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75

NAILS—Rates were recently reduced to:—

200 keg lots	2 50
100 keg lots	2 60
Smaller quantities	2 70

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6¾
" " " " " less quantities	7
Pioneer White Lead (local factory), 5-ton lots	6½
Cal. Linseed Oil, raw (single bbl. lots)	45
" " boiled " "	47½
Turpentine, per gallon	47
BRICK—California Building Description, soft, per 1,000	6 00
" " " red, " "	7 00
" " " hard, " "	7 75

Building Intelligences.

Where owners' names are left blank, it is so done in most instances by special request.

A

Army, bet. Guerrero and San Jose Avenue. One-story frame.
O. and B.—J. M. Comerford.
Day work.
$1,800.

B

Bush, bet. Pierce and Scott. Three one-story frames.
O.—J. H. Donnelly.
A.—M. J. Welsh.
C.—W. Burke.
$5,600.

Baker, bet. Sutter and Bush. Two-story frame.
O.—P. Connelly.
C.—F. Roettger.
$2,700.

Baker, bet. California and Sacramento. Two-story frame.
O. and B.—Geo. Hinkle.
Day work.
$4,000.

Buchanan, cor. Oak. Two-story frame.
O.—Mrs. S. Ludwizson.
A.—David Salfield.
C.—A. Klahn.
$3,500.

Bush, northeast cor. Jones. Three-story frame.
O.—L. A. Berteling.
A.—Geo. E. Voelkel.

Carpenter work—F. Knopf,	$10,250
Brick work—J. Wagner,	827
Plumbing—J. Shafer,	1,290
Painting—F. Shafer,	1,060
Total,	$13,427

Bush, bet. Taylor and Jones. Alterations.
O.—L. A. Berteling.
A.—Geo. E. Voelkel.
C.—G. F. Knopf.
$775.

Bryant, bet. Third and Fourth. Two-story frame.
O.—Thos. Boyne.
A.—F. Hillert.
Day work.
$1,000.

C

California, bet. Scott and Devisadero. Two-story frame.
O.—John F. Lindow.
A.—H. Geilfuss.
C.—F. W. Kern.
$6,500.

Columbia, bet. Folsom and Harrison. Two two-story frames.
O.—T. H. Hittell.
C.—A. Nelson.
$7,000.

Caroline, bet. Folsom and Harrison. Two-story frame.
O.—T. H. Hittell.
C.—A. Nelson.
$1,600.

Castro, cor. Seventeenth. Two-story frame.
O.—P. H. Dearon.
C.—Geo. W. Graham.
$2,000.

California, cor. Scott. Two-story and basement frame.
O.—Mrs. E. E. Chase.
A.—Curlett & Cuthbertson.
C.—C. M. Cornell & Co.
$9,000.

D

Devisadero, bet. Eddy and Ellis. Two-story frame.
O.—Mrs. E. Tully.
A.—P. R. Schmidt.
C.—A. Norton.
$2,800.

Devisadero, west side, bet. Post and Sutter. Two two-story frames.
O.—J. H. Jellett & Geo. Leviston.
A.—C. I. Havens.
C.—C. E. Dunshee.
$7,000.

E

East, nr. Market. Two-story frame.
O.—State of California.
Day work.
$1,500.

Eleventh, nr. Howard. Two-story frame.
O.—Wm. Deeney.
C.—J. J. Sweeney.
$1,800.

Eddy, cor. Buchanan. Two two-story frames.
O.—A. Hayes.
C.—D. E. Hayes.
$9,000.

Eddy, nr. Buchanan. Two-story and basement frame.
O.—T. Costigan.
A.—T. J. Welsh.
C.—S. T. Green.
$5,000.

Ellis, cor. Octavia. Eight two-story frames.
O. and B.—B. F. Norris.
Day work.
$17,500.

Eleventh Avenue, nr. Point Lobos Avenue. Two-story frame.
O.—Miss Bella Ryan.
A.—F. Hillert.
C.—Eadie & Rodgers.
$2,090.

F

Fourth, nr. Clementina. Three-story frame.
O.—Thos. Emery & Son.
A.—S. & J. C. Newsom.
C.—J. H. McKay.
$10,000.

Folsom, bet. Sixth and Seventh. Three-story frame.
O.—D. Harrington.
C.—W. E. B. Stiles.
$5,000.

Ford, bet. Sanchez and Noe. One-story cottage.
O.—P. Sheea.
A.—M. J. Welsh.
C.—Doyle & Son.
$2,000.

Fremont, cor. Harrison. Additions.
O.—Father Nugent.
A.—T. J. Welsh.
C.—M. Lynch.
$3,500.

Francisco, bet. Powell and Mason. One-story frame.
O.—Chas. Willmott.
A.—Copland & Banks.
C.—O. E. White.
$2,000.

G

Guerrero, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O. and B.—F. Vacker.
A.—Wright & Sanders.
Day work.
$4,000.

Greenwich, cor. Bush. Two-story frame.
O.—F. G. Eickhorst.
C.—G. H. Walker.
$3,000.

Golden Gate Avenue, cor. Buchanan. Four three-story frames.
O.—M. W. Smiles.
A.—Wm. Mooser.
C.—John Campbell.
$14,000.

H

Haight, bet. Broderick and Baker. Two-story frame.
O.—J. C. Merryfield.
A.—M. J. Welsh.
C.—Gray & Storer.
$3,600.

Hayes, cor. Ivy Avenue, bet. Franklin and Gough. Three-story brick.
O.—Henrietta Loewa.
A.—C. Geddes.
C.—W. Fletcher
Brick work—G. Richardson.
$14,000.

Hayes, bet. Franklin and Gough. Additions.
O.—H. Winters.
C.—M. McDonald.
$1,600.

Haight, cor. Buchanan. Three two-story frames.
O.—Mrs. Mabel Treadwell.
A.—J. Gash.
C.—T. F. Merrill.
$15,000.

Howard, nr. Fifteenth. Two-story frame.
O.—H. Hilderbrand.
A.—John & Zimmermann.
C.—A. Miller.
$3,800.

L

Lapidge, bet. Nineteenth and Twentieth. Two-story frame.
O. and B.—F. C. Kleebauer.
Day work.
$2,700.

Lyon, nr. McAllister. Two-story frame.
O.—John Tobin.
A.—David Salfield.
C.—H. Inwood.
$1,800.

Larkin, bet. Vallejo and Green. Two two-story frames.
O.—A. Bremer.
C.—Martin & Maguire.
$4,000.

Larkin, bet. Vallejo and Green. Two two-story frames.
O.—Father Nugent.
A.—T. J. Welsh.
C.—M. Lynch.
$3,500.

M

Mission, nr. Second. Additions.
O.—Geo. A. Low.
A.—James E. Wolfe.
C.—Moore Bros.
Brick work—J. Smith.
$6,000.

Market, cor. Ninth. Two-story frame.
O.—J. S. & C. F. Doe.
A.—J. J. & T. D. Newsom.
C.—Thos. H. Day.
$21,495.
The amount $21,495 also includes the three-story frame on Ninth Street near Market.

Mason, bet. Sacramento and Clay. Alterations.
O.—M. L. Kaufmann.
A.—Miller & Armitage.
C.—A. Gilbert.
$1,500.

Mission, bet. Twenty-fifth and Twenty-sixth. Four two-story frames.
O.—John S. Morgan.
A.—Chas. V. Pierce.
C.—J. Bruce.
$12,000.

McAllister, bet. Buchanan and Webster. One-story frame.
O.—F. Younger.
Day work.
$1,500.

Market, bet. Jones and City Hall Avenue. Three one-story frames.
O.—Hyman Bros.
A.—R. B. Schmidt
C.—Mahoney Bros.
$11,000.

Mission, bet. Twentieth and Twenty-first. Two-story frame.
O.—B. Phillips.
C.—F. E. Dunbar.
$3,000.

McAllister, bet. Webster and Buchanan. Three-story frame.
O.—L. Leiser.
A.—H. Geilfuss.
C.—A. H. Plummer.
$7,500.

N

Ninth, nr. Market. Three-story frame.
O.—J. S. & C. F. Doe.
A.—J. J. and T. D. Newsom.
C.—T. H. Day.
Cost included in the job cor. Market and Ninth, same owners.

Natoma, cor. Russ. Alteration.
O.—John Devenny.
A.—McDougall & Son.
C.—J. H. McKay.
$3,000.

O

Oak, nr. Steiner. Two-story frame.
O.—Chas. Sawyer.
A.—J. H. Humphreys.
C.—C. L. B. F. Jones & Co.
$2,500.

Oak, bet. Webster and Fillmore. Two-story frame.
O.—W. F. Laughlin.
A.—P. R. Schmidt.
C.—Hugh Keenan.
$3,900.

Octavia, cor. Ivy Avenue. Two-story frame.
O.—Jane McLaughlin.
A.—Miller & Armitage.
C.—R. Parker.
$4,650.

P

Page, bet. Devisadero and Broderick. One-story cottage.
O.—E. Mutelstadt.
A.—H. Geilfuss.
C.—O. R. Chandler.
$3,000.

Pine, cor. Pierce. Two and one-half story frame.
O.—M. Sabin.
A.—W. F. Smith.
C.—F. W. Kern.
$7,500.

Post, bet Pierce and Scott. Two-story frame.
O. and B.—J. C. Wier.
Day work.
$4,000.

Post, bet. Kearny and Grant Avenue. Alterations.
O.—Kohlberg, Strauss & Frohman.
A.—Chas. I. Havens.
C.—P. Griffin.
$1,500.

Pine, nr. Lyon. One-story frame.
O.—A. Houschildt.
A.—H. Geilfuss.
C.—J. McKay.
$2,700.

Polk, cor. Bush. Additional contracts.
O.—Captain Taylor.
A.—W. Mooser.
C.—C. B. Gonyeau.
$5 000.

Pacific, cor. Leavenworth. Two-story frame.
O.—J. B. Hobson.
A.—J. J. & T. D. Newsom.
Carpenter work—Wessinger & Ponge, $8,825
Brick work—Geo. D Nagel. 1,725
Patent pavements—California Stone Co 500
Cost, $11,050

Post, cor. Hyde. Three-story frame.
O.—C. Weller.
A.—J. Marquis.
C.—V. Bergman.
$12,000.

S

Sutter, cor. Baker. Two-story frame.
O.—Mrs. Eugene Young.
C.—G. G. Gillespie.
$4,000.

Stuart, nr. Market. Two-story frame.
O.—Renton, Holmes & Co.
Day work.
$2,000.

Sutter, bt. Broderick. Additions.
O.—F. McCormack.
C.—R. Discher.
$1,600.

Sixteenth, north side, bet. Guerrero and Dolores. Two two-story frame stores and dwellings.
O.—Wm. McDowell.
A.—Charles I. Havens.
C.—A. Klahn.
$4,500.

T

Twelfth, cor. Glenn Park Avenue. Additions.
O.—C. J. Dempster.
A.—Huerne & Everett.
Day work.
$1,500.

Taylor, bet. Turk and Eddy. Four-story brick.
O.—P. Dupray.
C.—John W. Wessinger.
$17,000.

Twentieth, bet. Guerrero and Dolores. One-story frame.
O.—P. Gadina.
A.—M. J. Welsh.
C.—Joseph Dutton.
$2,500.

Twenty second, cor. Fair Oak. Two two-story frames.
O.—Mrs. A. H. Flagg.
A.—M. J. Welsh.
C.—Cormack & Elan.
$1,600.

Turk, bet. Taylor and Jones. Three-story frame.
A.—H. W. Burckes.
C.—Geo. W. Hansbrough.
$7,000.

Twelfth, bet. Mission and Howard. Frame church.
O.—Trustees Church of Christ.
A.—McDougall & Son.
C.—Ingerson & Gora.
$8,500.

U

Union, nr. Larkin. Two-story frame.
O.—Mrs. Brooks.
C.—Martin & Maguire.
$3,500.

V

Vallejo, nr. Van Ness. Two-story frame.
O.—Captain Barber.
A.—W. G. Hoagland.
C.—J. A. Benham.
$3,500.

Valencia, bet. Twenty-second and Twenty-third. Additions.
O.—F. Haake.
C.—C. H. Muresky.
$4,000.

Valencia, nr. Ridley. Two-story frame barn.
O.—R. Tobin.
A.—T. J. Welsh.
C.—P. J. Smith.
$1,500.

Vallejo, cor. Hodges Alley. Two story frame.
O.—J. J. Boyle.
A.—T. J. Welsh.
C.—G. T. Knupf.
$3,700.

Valencia, cor. Ridley. Three-story frame.
O.—John Fisher.
C.—John L. Binet.
$8,000.

Van Ness, cor. Ellis. Alterations.
O.—D. Hunter.
A.—H. T. Bestor.
Day work.
$10,000.

W

Webster, cor. Pacific. Two two-story frames.
O.—
C.—J. P. Sheppard.
$7,000.

Washington, nr. Stockton. Additions.
O.—Mrs. Pauline Mitchler.
C.—W. T. Veitch.
$4,500.

Washington, cor. Octavia. Two and one-half story and basement frame.
O.—Alex. Boyed.
A.—Curlett & Cuthbertson.
C.—Peter Crichton, $18,790
Brick work, 2,000
Total, $20,790

Welch, bet. Fourth and Fifth. Two-story frame.
O.—Mrs. M. Sand.
A.—T. J. Welsh.
C.—Doyle & Son.
$3,000.

MISCELLANEOUS.

Sacramento—J, bet. Seventh and Eighth. Alterations and improvements. O., R. P. Burr; A., N. D. Goodell; C., Sprague & Elliott; $1,800. K, bet. Front and Second. Elite Theater. Alterations and additions. O., F. W. Fratt; A., N. D. Goodell; C., Heninger & Polland; $1,000. Second, bet. J and K. Improvements. O., H. W Harkness; A., N. D. Goodell; C., Wolf & Norris; $600. Sixth, cor J. Improvements. O., L. C. Chandler agent; A., N. D. Goodell; C., T. J. Heninger; $350. J, bet. Second and Third. Additions and alterations. O., M. A. Burke; A., N. D. Goodell; C., B. F. Bell; $12,000. I, bet. Sixth and Seventh. Improvement Library Building. O., City of Sacramento; A., N. D. Goodell; C., Munford & Churchill; $450. G, bet. Eighteenth and Nineteenth. One and one-half story frame. O., C. H. Gilman; A., N. D Goodell; C., Siller Bros.; $400. Near Sugar Beet Factory. Two-story and basement frame. O., D. McCarty; A., N. D. Goodell; C., Wolf & Norris; $5,200.

Hicksville—One and one-half story frame. O., Wm. Fry; A., N. D. Goodell; C., Heninger & Polland; $1,200.

San Jose—Third, nr. Santa Clara. Two-story frame. O., Dr. E. S. Mead; A., Theodore Lenzen; C., H. C. Skow; $3,500. Five. Two-story frame. O., Mr. Leunardi; A., Theodore Lenzen; C., Thos. Livingston; $3,000.

Santa Clara—Franklin. One-story frame. O., Mr. Nugent; A., Theodore Lenzen; C., Mr. Clifton; $2,500.

Alameda—Two-story frame. O., W. T. Ryer; A., Geo. A. Bordwell; C., Ingerson & Gore; $4,500.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

ENGLISH AND AMERICAN VENETIAN BLINDS (IMPROVED).

The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address

EDWARD B. HINDES, Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

Or, W. S. HOLLAND, Pasadena, Cal., Manufacturer and owner of P. C. Territory. Rights to manufacture, and territory for sale.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, c r. Hayes and Laguna; architects, Miller & Armitage. John MacKenzie, cor. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John Marquis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architects, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty-fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 10.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., OCTOBER 15, 1886.

THE OFFERED SALE OF THIS JOURNAL.

SINCE the first announcement in its pages that the entire interests of this journal would be disposed of to competent parties, a great many personal inquiries have been made, and propositions submitted and declined.

A sale contingent upon certain stipulations might have been made three months ago, but as we propose an unconditional surrender of the situation, we shall hold the fort until a competent commander-in-chief shall arrive, with satisfactory financial credentials.

Negotiations now pending with parties and firms east of the Rocky Mountains, may result in a full change of management by the first of January next, if not sooner. In the meantime the journal will be continued as heretofore to the best of our over-burdened abilities.

A GENERAL EXPLANATION.

Those who have made inquiry by letter, and personally, have asked for all the facts of the case, and what will be included in the sale.

As a general answer, we state: A sale will include every interest of the publication—its good-will, subscription list and advertising patronage, office appointments, desk, bound volumes and back numbers since 1879, outstanding accounts due from all sources, five hundred copies, more or less, architectural, mechanical, and other publications (optional), and all else pertaining to the publication and circulation of the journal.

We state, in answer to the question repeatedly asked by correspondents, in reference to

COMPOSING ROOM AND PRESSES,

That there are none. The journal has been conducted incidentally in connection with our architectural pursuits, and printed and bound ready for distribution by contract.

But with these limited facilities and restricted advantages, and personal attention divided between two great interests—editor and manager, and practicing architect—each demanding our whole time and energies, we have continued our publication work for eight years (less two months) with a profit to ourselves, making a most enviable reputation for the journal, as evidenced by the hundreds of complimentary notes from time to time published by technical, class, and other journals, and preparing the way for some one to continue its publication with great success and profit.

We Want YOU, Who Have Not, To PAY UP.

ANTICIPATING retirement from the management of this journal, those who have *not paid up* their subscription dues will confer a favor by *doing so at once*. Let there be no delay in this matter. We propose to clean up as neatly and nicely as the good pleasure of *honestly disposed* patrons may make possible, and as thoroughly—☞ *as the law provides* ☜—with those who refuse or neglect to settle their accounts.

Every unpaid dollar due us has been faithfully earned by unceasing desires and earnest efforts to found and perpetuate a California class journal in the interests represented in these columns; and measured by the mental and physical cares and labors, and the financial requirements to this end, every dollar yet due us has been honestly earned and should be paid promptly.

We hope not to be required in any case to invoke legal redress, but as protection of publication interests, which have been and are so often abused by that portion of the reading public who seek to obtain their reading matter without cost, the law in such cases made and provided is, that every man who *receives* a subscription journal of any sort, can be held and made to pay the full amount of subscription, up to the time of *payment* and stoppage.

Summary of Building Activities.

THE number of engagements and the cost of same for month of October, as compared with same month of 1885, may be seen below:—

157	engagements for 1885	Cost,	$579,114
54	" " 1886	"	230,720
103	" in favor of 1885	"	$348,394

Antiquity of the Hot-Air Furnace.

THE younger Pliny, writing to one of his friends about one of his country seats, mentions among other things that next to the smaller drawing-room there is a semi-circular room with windows arranged so as to get the light of the sun all day. He says: "Out of this is a bedroom which can be warmed with hot air." He also refers to the "bath with its cooling room and its hot room." As Pliny, Jr., lived A. D. 62–116, we may assume that hot-air furnaces are no new thing.

Pointers for Advertisers.

DON'T expect an advertisement to bear fruit in one night. You can't eat enough in a week to last you a year, and you can't advertise on that plan either.

People who advertise only once in three months, forget that most folks cannot remember anything longer than seven days.

If you can arouse curiosity by an advertisement, it is a great point gained. The fair sex doesn't hold all the curiosity in the world.

Quitting advertising in dull times is like tearing out a dam because the water is low.

IT would require 50,000,000 pounds of wire to erect a telegraph around the earth at the equator, and but a half pound of the thread made by a certain species of spider.

How to Pay a Compliment.

TO pay a high compliment is to tell the truth, and to tell it as though you mean it. And the only way to do that is to mean it. If a girl is pretty or accomplished, if she plays well, or sings well, or dances well, or talks well; in a word, if she pleases, why in the name of common sense shouldn't she be told of it? Don't blurt it out before everybody. That will only make her feel uncomfortable, and make you appear ridiculous. Say it quietly when opportunity offers, but say it strongly. Convey the idea distinctly and fully, so that there may be no mistake about it. But don't do it "officially." Formality is about the coldest thing known. More than one maiden has been made happy—say for half an hour—by a man's taking the trouble to say a pleasant thing about a toilet that he liked, and many of fashion's follies have been given up by girls when they noticed a discreet silence concerning them on the part of their gentlemen friends. A bewitching little black-eyed beauty once said to a gentleman: "I like to have you say sweet things to me, it seems to come so easy and natural." In general terms, it may be said that it is always better to say an agreeable thing than a disagreeable one; better for all parties. The gallant who, when a young lady stepped on his foot while dancing, and asked pardon, said, "Don't mention it; a dainty little foot like that wouldn't hurt a daisy," not only told the truth, but doubtless felt more comfortable than the boor who, when his foot was stepped on, roared out, "That's right; climb all over me with your great clumsy hoofs."

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

Quarrying Large Stones.

THE Greeks had a predilection for large blocks of marble or stone, and their method of quarrying is interesting even to-day. They were extracted in the following manner:—

In order to procure the square stones—after the top and front faces of a given mass of the rock in the quarry have been brought to a plain surface—incisions, usually from 4 to 5 inches wide, were made on the top surface, marking out the boundaries of the intended size of the block. These incisions being continued down to the desired depth of the block, there remained nothing more to be done than to separate it from its lower bed, which operation was performed, as there is every reason to think, by the expansion of wooden wedges saturated with water. The cylindrical courses for the shafts of the columns were extracted (as may be observed at the quarries of Selinus, in Sicily) by means of a circular passage-way, 2 feet 8 inches in width, being hewn out of the rock and taking the entasis of the intended column, thus leaving an isolated mass of stone in the center the exact shape and size of the required shaft. I should here add that the stone columns of every temple occupy almost invariably the same relative position in the building which they occupied in the quarry.

This circular mass of stone has now, like the square blocks, only to be lifted from its lower bed; and the method employed, which, from the examinations of the quarries at Selinus, can be no longer doubted, bears me out in a conjecture I had previously made on the square blocks. A hole, or deep incision, wedge-shaped, was made in the lowest part of the insulated cylinder, in the direction of its center, but considerably to one side, reasons for which will be obvious. Into this hole, I presume, a wooden wedge was inserted, which was saturated with water, and which, being suffered to expand while in this position, would, at no great distance of time, heave up the mass, on the same principle applied to the splitting of slate and mill-stones in France, and so separate it in the direction of its bed. Nothing, I think, appears more likely, from the consideration of the facts observed at Selinus, than that such was the method employed; and since I see from my memoranda that I observed the branch of a shrub not one inch in diameter, which by its growth in a crevice of a rock had split a mass of stone weighing about 50 tons, I can readily conceive that the small orifice with its wooden wedge would have been sufficient to loosen the required mass.

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

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Loafing.

WHILE there are many complaints made, from time to time, says the *Mechanical News*, about the dullness of business and the hardness of the workingman's lot, we hazard the statement that about one-half of the hard times and business depression is the direct or indirect result of loafing—either good, or solid, square, old-fashioned, primitive loafing, or the modern revised version, which is called, for some occult reason or other, "soldiering."

There are very few honest, safe, and profitable occupations in which success can be attained by sitting down and waiting for it, or is got by luck. There is more gold got out by patient labor than was ever brought to light by stubbing the toe against nuggets. The diamond fields are the scene of patient, plodding labor, neglecting no shovelful of dirt.

There is a marked difference between workmen who are doing for themselves, or who are piece-working, as well as among those who are "by time." One man will loaf away an hour a day. It may be listening to, or watching his neighbor; or hunting a match or helping hunt one; or wondering what to do next; or it may be distributed all through the day by deliberate and careful attention to the science of slow moving as applied to the prevention of heat or rupture; but it is there, all the same; there is an unproductive hour, or a day with a tenth or an eighth less work in it than it should have.

A day's workman cannot afford to loaf. He may lose his place, for a selfish reason. He is not giving an honest equivalent for what he receives, for a moral one. He is getting into the habit of working slowly, which will interfere with his profits if he gets on piecework—selfish reason No. 2. He is setting a bad example to others to render a poor equivalent for their pay—moral reason No. 2.

We could keep on piling up reasons of each kind against loafing, but they will suggest themselves; and then the case is somewhat analogous to the one where the lawyer announced twenty-nine reasons why his client did not appear at the trial. In the first place, he was dead. The second reason was that "the first reason was reason enough."

There are many foundries and factories, mills and shops, where no smoke issues from the stack and no rumble of work is in the air, and in which more energy and less loafing, on the part of proprietors and employés, would have enabled work to continue right along, at least at a rate which would pay hands and keep the business in public mind until times were better. Ten per cent more work out of every man would not have strained any one, and would have made just the difference between a slight loss in the business, and "expenses cleared." And that ten per cent more work would have improved every man on the place.

We just heard an anecdote of a noted stenographer who drops into profanity if a day goes by without his having anything to do; not because he loses the earnings of that day, but because he loses speed. He gets some one to read fast to him, in order to keep up his speed.

Go into an engine room and see the engineer doing nothing all day, and you will see a man who will not earn any more ten years from now than he is now getting. Instead of loafing, he might be reading, or drawing his engine out to scale, or learning something about the machinery his engine drives.

The time for loafing is after work. Then it should be free and unreserved, and will be beneficial and rightly earned.

Third Quarterly Report

ENDING with September, for town of Woodland and Yolo County

Woodland—16 frames		Cost,	$25,900
"	3 brick	"	14,500
"	9 improvements	"	3,900
Total—28		"	$44,300
County—3 frames		Cost,	$7,800
"	1 brick	"	7,000
"	3 improvements	"	2,100
Total—7		"	$16,900
City and County for 1886—35 engagements		Cost,	$ 61,200
" " " 1885—58		"	160,875
Excess in favor of 1885—23		"	$99,675

Method of Obtaining Length of Rafters.

FOR some months past there has been quite a discussion of various plans for obtaining the length of rafters. Many of the methods presented are not desirable, for the want of accuracy. Some years ago the subject came up for discussion where I was at work, and I then prepared the following table, which is very simple and mathematically correct. Any mechanic can copy it on the back of a business card and tack it to the lid of his tool-chest, where it will always be handy for reference. The word "pitch" means such a fractional part of the width of the building. The further north you go the steeper the pitch, on account of the snow; also certain localities have pitches peculiar to that section of the country.

Pitch.	Square.	Rafter.	Brace.
1-6	4 and 12	0.527046	1.054092
5-24	5 and 12	0.541666⅔	1.083333
1-4	6 and 12	0.559017	1.118034
7-24	7 and 12	0.578852	1.157704
1-3	8 and 12	0.600925	1.201850
3-8	9 and 12	0.625	1.25
5-12	10 and 12	0.6508541	1.3017082
11-24	11 and 12	0.6782843	1.3565686
1-2	12 and 12	0.7071068	1.4142136

The first column indicates the pitch of the roof; the second gives the figures on the square that will cut the various pitches; the third gives the length of a rafter for a building one foot wide, and the fourth gives the length of braces for runs of the same proportion as the figures in the second column.

The manner of using the table is as follows: For any given pitch multiply the tabular number by the whole width of the building, and the product will be the length of the rafter in feet and decimals of a foot.

Example.—What is the length of a rafter of a building 18 feet wide at ⅓ pitch?

Solution.—0.600925 × 18 = 10.81665 feet, or 10 feet 9 13-16 inches.

Example.—What is the length of a brace having 40x48 inch run?

Solution.—40x48 inches is the same proportion as 10x12; hence, 1.3017082 × 48 = 62.482 inches, or 62½ inches, always using the longest run for multiplier.

Example.—What is the length of a brace having 35x35 inch run?

Solution.—1.4142136 × 35 = 47.4974 inches, or 49½ inches.

"EDITOR ARCHITECT:—Please settle a difference of opinion by stating the proportion between the load a given floor will bear when the joists are not bridged, and the same floor thoroughly bridged, with two rows of herring-bone bridging."

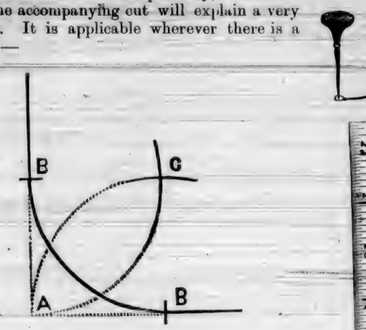
A floor will not bear any more weight by being bridged. The advantage to be gained by bridging lies in the fact that an individual joist is strengthened thereby, thus increasing its power to resist a concentrated load upon it, such as a heavy book-case, safe, etc.

A "YOUNG mechanic" wants us to inform him how to tell whether butts are for left or right-hand doors.

Lay the butts on the bench or table with the knuckle-joint towards the right hand. If they are open at the top they are right hand; if open at the bottom, they are left hand. A door that opens away from you to the right, is called a right-hand door. If it opens away from you to the left, it is called a left-hand door.

"EDITOR CALIFORNIA ARCHITECT: I often have occasion to *round off the corners* in various branches of my work, and what I require is a rule by which I can do so, and have the curvature perfect. Will you kindly furnish me the information, as others besides myself would no doubt be benefited. Respectfully, AJAX."

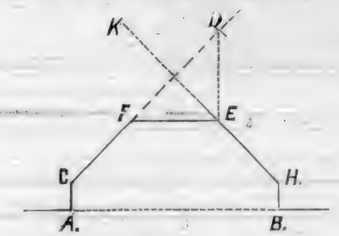
ANS.—The accompanying cut will explain a very simple way. It is applicable wherever there is a right angle:—



Let B A, A B represent the square corner of a shelf, or any object. Suppose the radius of the curved corner to be 1 inch. From A, as a center, mark off 1 inch each way, as at B B. With B B as centers, and radius A B, describe the circle A C. The point of intersection, C, will be the center of the arc B B.

"BUSINESS MAN. OF ARCHITECT: Is there a quicker method of finding the length of the sides of a bay-window, drawn on paper, than the old way of spanning around with a pair of compasses, till you get the three sides equal? READER."

ANS.—The cut will explain a very *neat way*.



Extend C F or E H; lay off on the line C D a distance equal to the width of your window, as A B. At D drop a perpendicular, and at the point where it intersects E H, as at E, draw E F, parallel with A B.

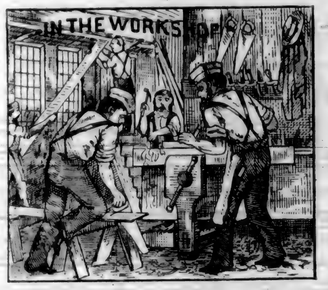
A CARPENTER wants to know how to remove the stains in his apron, caused by wet nails. For his information we will state: Soak the stains in a weak solution of chloride of zinc, and rinse immediately in water.

DO NOTHING in building by guess-work, and in its conduct trust not too much to memory, for a jotting or, too at the proper time are worth a hundred jogs on the brain, for the purpose of safe recollection.

IF you would set out good work, do it by practical geometry; if indifferent or bad, by the "rule of thumb."

A FAIR day's work for a fair day's wages should be estimated by its quality as well as its quantity.

THOUGH a strong man, the carpenter cannot raise his frame without assistance.



We will be pleased to receive for publication in this column items of information in regard to practical ideas connected with the mechanical part of the building trade. We especially invite suggestions from apprentices and young mechanics.

Business Manager of Architect: In putting on a moulding around a circular head of a window, it is necessary, of course, to kerf the moulding in order that it may bend without breaking. Is there any rule by which we may know just how much solid wood to leave between each kerf?

Ans.—There are many solutions to this problem, but for simplicity and exactness, the following rule is better than any other which we can at present call to memory:—

Let A B C be a curve to which a moulding or other work is to be bent. Supposing the stuff to be one inch thick, take a strip equal to this, and run a gauge line on to the thickness of a veneer; then make a cut down to veneer. This done, lay a strip on the drawing, keeping the cut opposite S, the center of the given curve. Fasten the lower part of strip; its face is now on line S P. Move it to the left until cut at S closes, which causes its face to be on line S T, and gives for solid wood between each kerf 2 3. Here it must be kept in mind that the same saw with which the cut was made in strip must be used for kerfing the work.

Some materialistic scientists are very fond of quoting the remark of Kant: "Give me matter, and I will explain the formation of a world;" but they omit the other words, "Give me matter only, and I cannot explain the formation of a caterpillar."

Wall supports for clothing: When you drive a nail into a wall, clothes press, or closet, to hang things on, drive it through a spool up to the head. Select a spool with a hole large enough so that the nail will not split it.

California Architect: I have a post, the lower half of which is to be square. The upper half is to be octagon shape, so that the angles of the octagon shall be in the middle of each side of the square. Will you please illustrate a simple method by which I can draw the octagon?

Ans.—Let A B C D be the square. Draw the diagonals A D and C B and the center lines *e f* and *g h*. From the center *i*, with a distance equal to half the width of the square, as *i h*, mark on the diagonals the points *k l m n*. Join *e k*, *k g*, *g l*, etc., and you have the figure required.

The following tables will be found of much benefit to parties residing in the country, who desire to know the weight of doors, sashes, blinds, etc., so as to form a basis for railroad expenses:—

WEIGHTS OF DOORS.

	1 Inch.	1¼ Inch.	1½ Inch.
2 ft. 0 in. x 6 ft. 0 in.	20 lbs.	25 lbs.	32 lbs.
2 " 6 " x 6 " 6 "	27 "	33 "	38 "
2 " 8 " x 6 " 8 "		35 "	40 "
2 " 10 " x 6 " 10 "			48 "
3 " 0 " x 7 " 0 "			50 "

WEIGHTS OF WINDOWS.

	1¾ Inch.	Glazed.	Unglazed.
7 x 9		13 lbs.	6 lbs.
8 x 10		15 "	6½ "
9 x 12		20 "	7½ "
9 x 13		21 "	8 "
10 x 12		22 "	8 "
10 x 14		23 "	8½ "
10 x 16		26 "	9 "

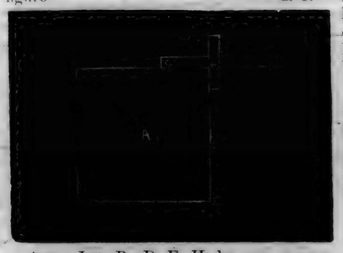
WEIGHTS OF BLINDS.

7 x 9	11 lbs.	2 ft. 6 in. x 6 ft.	6 in	5 lbs.
8 x 10	13 "	2 " 8 " x 6 "	8 "	24 "
9 x 12	14 "	2 " 10 " x 6 "	10 "	25 "
9 x 13	17 "	3 " 0 " x 6 "	6 "	24 "
10 x 12	17 "	3 " 0 " x 7 "	0 "	25 "
10 x 14	19 "	3 " 0 " x 7 "	6 "	28 "
10 x 16	21 "	3 " 0 " x 8 "	0 "	31 "
10 x 18	22 "			
10 x 20	25 "			

WEIGHTS OF LUMBER—DRY.

Sugar Pine, rough, per M ft	2,500
Yellow Pine, " "	2,760
Rustic, " "	2,000
Flooring, " "	1,900
Ceiling, ⅜ in. thick, "	800
" ½ " " "	1,200
" ¾ " " "	1,400
" ⅞ " " "	1,600
Common Boards, surfaced one side, per M ft	2,000
Dimensions, rough, per M ft	2,700
Shingles per bunch	40
Pickets, per 100 ft. of lumber contained	200

Business Manager of Architect: Will you please illustrate a method for setting a gauge for an octagon without drawing the figure B. Y.



Ans.—Let B D E H be any square. From B with the radius A B, draw A C. Set the gauge to equal C H.

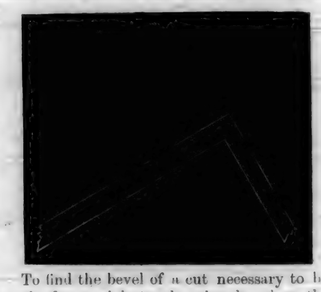
Mechanical Editor of Architect: I send you a method I have used for some time, to get the bevel cuts for *splayed* work, or work having sides equally inclined or *flared*, the base of the work being a right angle.

Draw two parallel lines, any distance apart, as A B, C D. Let 2 A be the given *flare;* from A, square down a line cutting in C; take 2 as a center, and A radius, strike the arc cutting the perpendicular from 2 in F; join C F. This gives bevel P for direction of cut on face of stuff.

To find a bevel for miter on the edge:—

Take 2 as center; strike an arc, touching line A B and cutting at D; join D F. This gives bevel R for miter on edge of stuff, which should be square for application of bevel.

I do not claim the above at all as original. It is simply the way I learned in the East, and put in practice on my work in California.



To find the bevel of a cut necessary to be made for a right angle triangle, place the blade of the square on 7, and the tongue on 4. The bevel to use is the one formed by the blade or long arm of the square.

Any multiple of the above-mentioned figures may be used, as 3½ to 2, 14 to 8, etc. Take three pieces of scantling or other lumber, apply the square as per rule, cutting all three pieces of equal length and with the same miter; by putting the pieces together a perfect equilateral triangle will be formed.

In planning stairs, think of your headroom from the lowest starting-point to the highest landing, or somewhere in ascending or descending stunning falls and broken limbs may accompany bruised foreheads and battered hats.

Perspective is necessary in drawings, but do not carry its principles into practice in putting together workmanship.

Houses may not be built from the roof downwards, though they are often burned in that direction by plumbers' fires.

In making out building quantities do not overrate them too much, for you may calculate too liberally for your own good, as well as estimate by guess-work too lowly to your own and others' loss.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

The columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

San Francisco, Sept 30, 1886.

Editor Architect: Will you please answer the following questions in your columns: From which part of the redwood tree do the bird's-eye and curled burls which are used for veneering work, etc., come? Are there only a limited number of trees containing such burls? Is there any difference in the quality of redwood lumber growing in the different parts of the State? and does the redwood grow in the Sierra Nevada Mountains? Th. Weinert.

Answer.—Bird's-eye and curled burls are obtained from the lower part of the tree. In fact, many stumps have been dug out and sawn up for the sole purpose of obtaining the above varieties, the upper or lumber portion having, in many cases, been used long ago. Only a limited number of trees contain bird's-eye specimens. The different kinds of redwood are generally known as hard and soft, according to the part of the tree from which it is obtained. Redwood does not grow in the Sierra Nevada Mountains, except in very isolated instances. Its growth is confined to the vicinity of the ocean; in fact, a foggy condition of the atmosphere seems essential to its mature growth.

To construct a scale by which the side of any octagon is known at once.

Take any right angle, as A B F. From B, with any radius, draw the quadrant A D; divide it at C; with C as a center and with any radius, make an arc at O; with same radius and center D intersect the arc; through the point of intersection draw B K, and the scale is complete.

To prove the scale, make the distance B F equal A D, figure 5; square up from E, cutting at H; then F K equals 2 L, the side of the octagon.

The above is an exceedingly neat and easy way to get the side of an octagon without drawing the whole figure.

Editor Architect: As you have extended invitations several times to mechanics, asking them for communications in regard to improved methods of finding the length of rafters, I beg leave to submit to your approval the following method used by me in the Western States. Many of the mechanics in that section practice the rules given in all their roof work. While not giving the length with that same degree of exactness that would be found by the rule for finding the hypotenuse, two sides being given, still it is so near exact that the difference cannot be noticed, and I am sure it is a far quicker method than that old way.

I do not think that any simpler method can be given for finding the bevels at the heel and point of rafters than that explained in the issue of your journal referred to, so in this article I will deal with the length alone.

The most common width of buildings in California is 24 feet. And I propose to take that width for the practical test of my proposition. As you have given several ways by which the same result can be obtained, I will take up each of them and compare with mine.

Finding the length of the hypotenuse by the old rule, we obtain for a one-quarter pitch 13 : 4.99, or, as near as it can be used on the square 13 feet 5 inches.

Allowing one inch to the foot and trying your second method, we find, as the result, 13 inches and 7-16 scant, or 13 feet 5 inches. This is a very simple method, and when the rule is kept perfectly straight, the results are very satisfactory.

By my way I simply multiply the width of the building by the decimal .56, 24 × .56 = 13.44, or, as near as can be worked by the square, 13 feet 5 inches.

Let us try the same rule for a greater width—say 60 feet. By finding the hypotenuse we find as near as can be used by the square, 33 feet 6½ inches. By my method it would be 60 × .56, or 33.60, equal to 33 feet 7 inches full. By this method the rafters in wide buildings are a little long. Thus, if the building is 52 feet wide, by the hypotenuse it would be 29 feet 1 inch; my way it would be 29 feet 1½ inches. I consider this an advantage, as it leaves the point of the rafter very slightly open.

For a one-third I follow the same plan, only using the decimal .6. Unlike the decimal used for a quarter-pitch, the lengths obtained are a very small fraction short; as, for instance: a rafter for a building 60 feet wide, by finding the hypotenuse, would be 36 feet 1-16 of an inch. By my way, 60 × .6 = 36 feet. A slight difference, truly. If building is 48 feet wide, then by the first method we find 28 feet 10 inches full; by my way, 28 feet 9 3-8 inches. A little practice will enable the mechanic to allow just enough to make up for the slight difference, so that when rafters are put together the fit will be perfect.

The one-half pitch can be found in the same manner by using the decimal .71. Taking the 24-foot building, length of rafters by the hypotenuse we find 16 feet 11⅜ inches; my way they would be 17 feet full. Again, building 60 feet wide, rafters by the first method would be 42 feet 6⅛ inches; by my way 60 × .71 = 42 feet 6 inches. By using this decimal, the length is so near practically correct that it may be used in all cases.

For a full pitch use the decimal 1.12, and as in the preceding mentioned pitch, and it will be found so near correct that it can be practically used in all cases.

It will be noticed that I have not made any allowance for projection of rafters over the plate. In this case gauge from the crowning side of your rafter the thickness of your projection; allow enough for the latter, and find the lower bevel according to the way you described in your last; measure the length of your rafter from where this bevel crosses the gauge line.

A little practice will enable the mechanic to lay off a rafter in a very short time. I have used the above myself, and have no trouble whatever. If any of your readers will work out the lengths of rafters according to their own methods, and can show that the one I use has any defects, I will be pleased to hear from them through the columns of your journal. Trusting that the above will so meet with your appreciation that you will deem it worthy of your notice, I am, respectfully, your well-wisher.

W. Helianus.

E. M. H. writes: "I have been working on buildings where the head carpenter, with a ten-foot pole, a pencil, and a square, will lay out the pattern for the rafters in less time than it takes me to write this. Upon asking for information how to do the same thing, I was told to study up the matter as he had done. Please give me a more practical answer."

Although not a very polite answer to receive from a fellow-workman, it is directly to the point. If E. M. H. will invest a few dollars in practical works on the "Steel Square and Its Uses," etc., he will, with a little study, lay out rafters as easily as the "head carpenter." Of course, in laying out a rafter, the first thing to find out is the pitch, or rise, of the roof. A quarter-pitch is one where the peak of the roof is one-quarter the width of the building higher than the plate; one-third pitch, peak one-third higher, etc. Or, in other words, a one-quarter pitch has a six-inch rise in each foot of width; a third pitch has an eight-inch rise in each foot, etc.

Pick out a straight piece of timber for a pattern. For a quarter-pitch, place the square against the straightest edge, with the tongue on 6 and the blade on 12. The bevel of the blade will be the bevel of the heel of the rafter, or the part resting on the plate. The bevel of the tongue will be the bevel of the point of the rafter.

Proceed in the same way with any given rise to the foot. For 5-inch rise to the foot, use 5 and 12 on the square; for 7-inch rise to the foot, use 7 and 12; and so on. The length of the rafter may be obtained in several different ways. Suppose the building is 36 feet in width, roof one-quarter pitch. On the square lay your rule so that the point will be at 18 on the blade, or one-half the width of the building, allowing one inch to the foot, and let the rule cross the tongue at the figure 9, which represents the rise of the roof, or one-quarter pitch. We find by looking at the rule the distance is 20⅛ inches, or 1 inch to the foot—20 feet 1½ inches. For a third pitch, let the rule cross at 12 instead of 9, and we have the length 21 feet 7½ inches.

Use a smaller scale for buildings that have a greater width than 48 feet. For those who understand the extracting of the square root, that plan enables them in a very short time to get the precise length of the rafter.

In the way just described, no allowance has been made for projections of rafters over the plate. It is obvious that a little different application of the principle will have to be applied if the rafter has a projection of one, two, or three feet.

Octavius Morgan.

THE subject of our sketch is a gentleman well-known in the Southern part of this State. A stranger upon his arrival in Los Angeles, he has, by his own individual energy, raised himself to a standard to be envied. He began his career as an architect in the beautiful "City of the Angels" in connection with Mr. Kysor. Since the formation of the partnership, the firm has had charge of a great many of the more principal buildings, both in Los Angeles and the surrounding country, some of their artistic plans ranking with those of any architect in the State. Mr. Morgan is a member of the San Francisco Chapter, American Institute of Architects.

Octavius Morgan.

"By Day's Labor."

THERE is perhaps a less comparative proportion of work done "by the day" in San Francisco than in any other city. The "day's-work jobs" are limited in number, and only in exceptional cases are they of any considerable extent or cost. The reasons why this state of things exists are numerous, and their recital in elucidation of the many facts involved would fill hundreds of pages of this journal. There are two sides to the main question, each prolific in argument, tending to illustrate that selfishness, avarice, cupidity, covetousness, and their kindred inspirations, control the acts of men in innumerable instances.

The more fatally forcible argument is against the operating classes, who apparently fail to comprehend or realize the error so often committed on their part, in seeking to protract and make the most of work intrusted to them under the day's-work system, either by excessive charges for material furnished, or tardiness, amounting to what is understood by the term "loafing," *i. e.*, killing time, and idling away the time, so as to prolong the work in hand and extend its duration.

The *mischievous* fact of the matter, as far as the working classes are concerned, is in the creation of a general sentiment and belief that workingmen cannot be trusted—that work done by the day costs very much more than a right and proper price, and excessively more than if done by contract. Consequently, this conclusion has become general, if not universal, that safety from excessive charges and wasteful cost in the execution of all classes of work can only be secured under contract arrangements.

This state of things induces a feeling of distrust, and creates antagonism between employers and employes, often amounting to "real ugliness." Tricks and deceptions are imagined on the one hand, even where not in practice; and, on the other hand, resorted to in fact in many cases, because the underlying principles are defective. The attempt to use advantages wrongfully often works to the disadvantage of those making the attempt, and operatives generally have lessened their opportunities and reputations by "piling on" too much; and, instead of being content with legitimate and fair profits, and working as steadily and faithfully on day's-work jobs as when restricted by contracts, have created prejudices against "day's work," and enforced the contract rule.

If the contract system was preferred for reasons alike honorable to all concerned, there could be no objection to its adoption; but, from the fact that it is more the outcome of irregularities practiced and suffered, than from necessity or preference, it amounts to a partial, if not conclusive, presumption, that under contract forms of operation certain protections are afforded to the paying party, which are not assured by the "day's-work" rule; and the fact that protection is sought, argues the existence of a wrong or evil, either real or imaginary, as *protection* is wholly unnecessary in the absence of danger; and this feeling or sentiment of distrust and fear of overcharges and excessive cost, influences many to adopt the contract system, who, if confident that they would be honestly and squarely dealt by, would prefer to have their work done under the "day's-work" regulation. This adverse sentiment to day's labor bears severely upon many good and honest men, who would exercise as great diligence and integrity in the execution of work by "the day" as though bound by contract obligations. There are many such, but the more general experience creates the rule by which such matters are judged; and, by this rule of judgment, the conclusion is almost universal that proper economies and fair dealing cannot be secured where work is permitted to be done without contract restraints and limits.

It is to be regretted that this conclusion is too well sustained by the practice of a considerable number, if not a majority, of those who have been intrusted in good faith with the execution of works of various kinds, upon the presumed integrity of the operating parties. Many—influenced by one, or either, or all the evil inspirations mentioned in the preceding portion of this article—overstep all bounds of consistency and fairness, and, frequently, for no other reason than manifest excess in charges, are compelled to modify their demands.

All this is greatly to be regretted, as it works to the disadvantage of the working classes, and justly so—only so far as right and honest principles and rules of trade are violated, and questionable methods adopted to draw from paying parties more than a true and right value for the work performed and materials used.

By the "stringing it out" and "piling on" process, men may sometimes secure large pay and profit for the time being, but every such occurrence works to the after disadvantage of the party who enjoys (!) such *temporary* profitable results; and, however much or little justified, as far as other men are concerned, those who suffer by wrong acts—it matters not by whom committed — naturally withhold confidence in others, and pre-judge the virtue of the masses, by the experiences encountered in one or more individual cases.

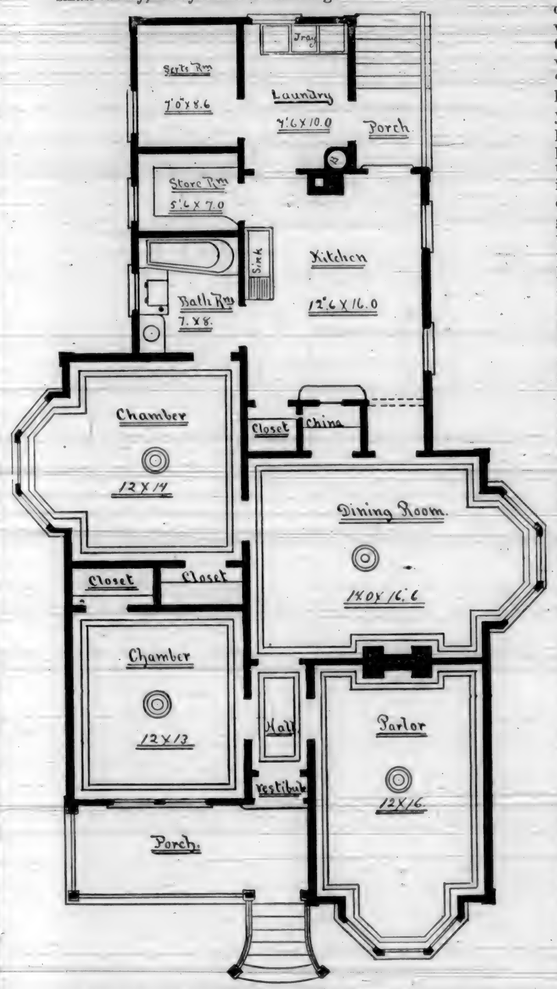
"Alas for the alum in the bread, and the chalk in the milk, and the powdered glass in the sugar, and the Venetian red in the cocoa, and the no-one-knows-what in the syrup. If a man not at all bigoted, but very liberal on the subject of temperance, and of the high-license persuasion, wants to imbibe some inspiration to help him fight down the fanaticism of prohibition, and he goes up to the counter and pays for an honest drink, he swallows and smacks his lips over coccolus indicus, and potash, and cochineal, and blue vitriol, and other delectables; some of these things put in to make the beverage hot, and some to make it red, and some to make it mix, and some to counteract the fatality of the others. Our officers of health have done a good work, but their chief work is yet to be accomplished. The ghastliness of diet to which millions of the American people are subjected may account for much of the sudden death and otherwise unaccountable and increasing suicide. It is amazing that there is any good sound health left for this systematized and almost universal poisoning process. Let us agitate the subject."

When you have the woodwork in a room painted, it is a good plan to have about two inches of the floor painted also; have the paint the same color as that of the base board; then if, when changing carpets, the carpet will not come close to the wall, the little space left will not be so unsightly.

A Convenient Plan for a Country or Suburban Home.

THE provision of a convenient dwelling for a family in the country, or the suburb of a city, is a matter of great importance, and, perhaps, no portion of an architect's practice has been so usefully bestowed as that which has been devoted to the study of a plan for the occupancy of those who have to calculate every item of housekeeping cost, and who, living by mechanical labor, have need of frugal employment of their means to bring up a family in comfort.

The plan presented is peculiarly adapted to those having a small family, and yet like to have a guest chamber when needed.



In case of friends who call to stop overnight, what more convenient than the front chamber shown? The whole front of the house is at the disposal of the guests for their quiet enjoyment, and no noise from the kitchen will mar their slumbers should they sleep till late from being overtired from a long ride.

The parlor is large and well lighted, and so is the dining-room. Bath-room is supplied with modern conveniences. Ample closet room is found wherever needed.

Should more room be desired, the laundry could be placed under the house and the existing space transformed, with but little alteration, into a bedroom. If *cost* is an item to be considered, the cornices designated in the four principal rooms, could be omitted.

As shown, the plan could be carried out at a cost ranging from $1,800 to $2,500, depending entirely on the finishes and the depth of the owner's pocket.

Does Good Plumbing Render a House Safe?

MANY vague ideas still prevail with laymen about what constitutes a safe system of "sanitary plumbing." It is, however, not too much to expect that architects, who are constantly arranging in their plans for the so-called "modern conveniences," should have at least a fair knowledge of the rudiments of modern plumbing. What, then, shall we say of an architect who can be guilty of such gross misrepresentations and misstatements as those which appeared recently under the heading, "The Danger of Sanitary Plumbing," in the correspondence columns of the New York *Evening Post*? Starting with the incorrect assertion that "experts disagree both in system and workmanship as to good or sanitary plumbing," this "architect" tries his best to alarm the public by stating that water (in traps) will not at any time prevent the steady flow of sewer gas, and that "sewer gas rises, expands, presses, constantly generates, and must have space," and broadly maintains that "so far as all appliances yet known to the plumbing trade under the head of sanitary plumbing, as back air or direct ventilation go, no absolutely safe plan has yet been devised by which water and waste can be introduced into any bedroom or adjoining closet and the health of its inmates be unimpaired." It seems almost superfluous at this day to say that the above contains gross exaggerations and only goes to prove that "Architect" is not sufficiently well posted on the subject, a fact which becomes more apparent by his description of a fine house, said by him to have been "the best plumbed house in New York," done by experts, and which he takes as an example to illustrate the danger of modern sanitary plumbing. In this house, he tells us, five basins and one bath were trapped by a single unventilated trap in the cellar, at a distance of about 60 feet from the fixtures. How "Architect" can make the untruthful assertion that the above house was plumbed by experts it is hard to understand. He has probably never heard of Board of Health Regulations, which, since 1881, require in this and other cities each wash-basin and other fixture in a house to have a separate ventilated trap placed immediately underneath the fixture.

"Architect" winds up by advising the householder to "strip his bedrooms of all plumbing whatever; to let no sewer connection of any kind come into a sleeping-room; to go back to the clean, old-fashioned bowl and pitcher, and to put all plumbing in an annex or separate building"—advice which, by the way, is not at all new, for years ago the late Dr. Frank H. Hamilton recommended the same thing. Thanks to the better understanding of the subject, such views are now considered to be old-fogyish and exaggerated.

Only last week we had occasion to make some remarks upon the uselessness of assertions, by well-meaning but ill-informed physicians, in regard to the unreliability, from a health point of view, of so-called "safe sanitary plumbing." Such ideas, spread by means of the daily press, are apt to do a great deal of harm. We are glad to note that "Architect's" ideas have been controverted by an architect of the highest standing, Mr. Carl Pfeiffer, who wrote to the *Evening Post* as follows:—

"Permit me to send you a few remarks referring to the letter of your correspondent 'Architect' in the *Evening Post* of to-day. I do not hesitate to take issue with him. His suggestion that all plumbing should be confined to one wing of a house may be pleasing to old fogies and to timid, nervous old women, but the advice to have no plumbing at all would, no doubt, be still more acceptable to them. If 'Architect' will call upon me I will show him in more than one house that there is not only no escape of any air or gases whatsoever from the plumbing pipes, but that the air of the room is sucked into the pipes. One of our well-known citizens and a resident of Murray Hill is so pleased with the plumbing of his house and feels so secure against the escape of sewer gas, after several years of trial, that he has assured me he would not hesitate to have an open end of his sewer-pipe close to his pillow at night. It seems odd that the same people who are so nervous about plumbing will sit for hours in the poisonous atmosphere of an unventilated parlor, theater, public hall, or church, contracting headaches and more serious diseases, without ever thinking of the necessity of pure air for their lungs. Much has been written against plumbing less reasonable than would be the suggestion to prohibit by law the manufacture of confectionery and the baking of pies and puddings."

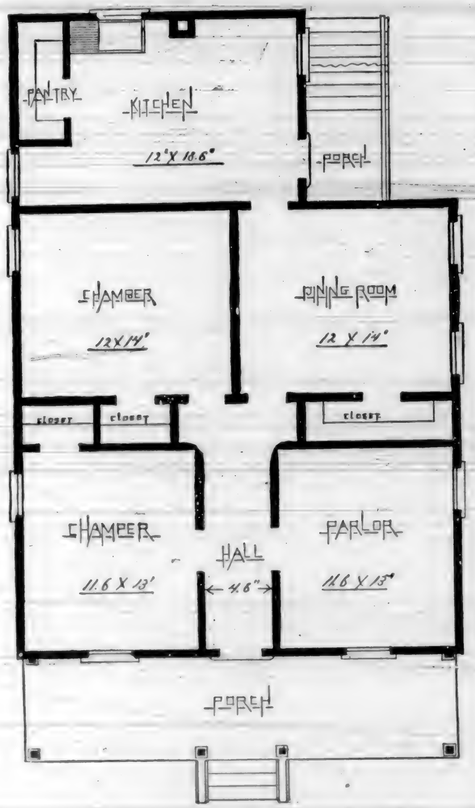
How to Make a Rust Joint.

FOR making a rust joint that will bear heat, cold, and rough usage, the following formula has been highly recommended: Ten parts iron filings, three parts chloride of lime, and enough water to make into paste. Put the mixture in between the pieces to be joined, and bolt them together, leaving until dry. After twelve hours the cement has been known to break off the solid iron.

Japan is said to have less than 10,000 paupers among her 37,000,000 inhabitants. In that country a man whose income is $1,000 a year is regarded as very wealthy.

A Cheap Five-Room Cottage.

THE tender care of an architect is essentially required when preparing a plan for those in humble circumstances, and yet whose pride must not be cast down by too plain an exterior, or too cramp interior. The plan presented is admirably adapted to meet the wants of the class referred to. The rooms are all of good size, with ample closets; plenty of light and means of ventilation are secured to each room. The house is so arranged that "modern conveniences" can be added at any time. According to the plan shown, the house can be built for a sum ranging from $1,500 to $1,800.



Hiders in the Bushes.

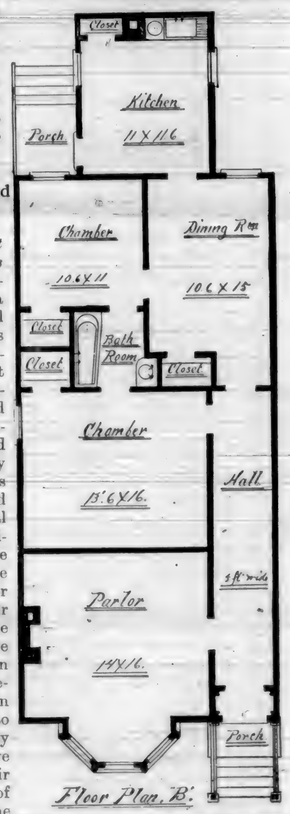
MANY subscribers outside the cities and counties in which papers and journals are published, withhold payment of subscription amounts under the fancied and dishonest protection of distance and difficult means of dunning and collection. Not being influenced or controlled by honest motives or purposes, nor shamed by the contempt expressed by publishers and authors universally, and smiling complacently under the lash of strongly worded denunciations from time to time found in print, they deem it smart to beat those who furnish them with valuable information or reading matter of interest, and think it *fine* to peruse journals and papers without paying for them, none of which is highway robbery nor burglary in the first degree, but is akin thereto in spirit, requiring simply the *occasion* and *courage* to perpetrate the higher crimes. Small thefts, cheating, peculations, and all of their kind are but the lesser offshoots and outgrowths of that more sturdy and defiant human growth, which, at times, is found under masks on the highways, with the deadly rifle, revolver, and the keen-edged dagger as means of defense. The nature that is so far tainted with dishonesty as to cheat, if it can, the publisher of any book or journal out of the rightful payment of the subscription cost, is one of the kind fitted to perform the role of brigand, provided the other requisites necessary to make up a bold and daring character could be contained within the skin of the man who seeks to *make* a dollar or two by *cheating the editor*.

Have we any of this kind on our subscription list? We hope not, and as proof that we have not, we further hope that every subscriber to this journal who has not, will at once forward their subscription balance up to December, 1886, at which time, or earlier, a new management will assume direction of its future.

A full list of delinquents will in due time be published in these columns.

Plan for a Narrow Lot.

FOR a narrow lot, the accompanying plan presents many inducements. Ample light is furnished each room, which are all of good size. Although not shown, a skylight over rear end of hall would be found to be a very useful addition; with a large transom over the door leading to principal chamber, the latter room would be much more cheerful. This house can be built anywhere from $1,300 to $1,500.



The Demand for a Good Pavement.

THE *American Architect and Building News* says: "One of the greatest needs of our cities is a wholly satisfactory material for paving. Many cities have grown weary in experimenting with this and that material, and are still casting about for new ideas and methods. Real estate owners on the busy streets find that the matter of noisy pavements seriously affects the rental of their stores and offices, and men with capital invested in team horses direct their drivers to sacrifice quick transit, and take roundabout streets rather than risk injury to their horses by traversing the greasy asphalt, or the equally insecure wooden blocks. The wooden pavements, that had their origin in the West, and sprang into favor a few years ago, largely because of their comparative cheapness, soon proved their unfitness for the uses of heavy travel. Besides the necessity for their frequent relaying, there was the difficulty experienced in keeping them down. Like the ghost of Banquo they cannot be depended on to remain "laid," as was strikingly shown not long ago in Devonshire Street, Boston, where a slight flooding of the street caused the pavement blocks to rise and float gaily with the tide.

Of the various kinds of asphalt or concrete that are used, opinions differ greatly. Of course much depends upon the particular kind used. Washington, Philadelphia, Cleveland, and other smaller cities, testify to good results from some forms of asphalt, but in Boston there is a pretty general concurrence of opinion against the material. Teamsters, especially, condemn it largely. In Detroit there has been an experiment on a small scale with a hard brick pavement, which is said to have stood the test of heavy travel with considerable success. The smoothness of this surface, however, it seems, must be a serious drawback, if generally adopted. A material that is coming in favor in Western cities is crushed Michigan granite, which has the quality of readily cementing itself and proving very durable, while making roadways sufficiently smooth to obviate undue noise. Its expensiveness is one argument against its more general adoption; but cheap and experimental pavements have certainly had as much attention as they deserve.

In order to close out our large stock of books on hand, we will make a reduction of TEN per cent on the publisher's price. Any book can be furnished by us, no matter what the name, or the cost thereof.

Cooking Water.

CHARLES DELMONICO used to say of the hot-water cure: "The Delmonicos were the first to recommend it to guests who complained of having no appetite. 'Take a cup of hot water and lemon, and you will feel better,' was the formula adopted." For this anti-anorexic remedy the caterers charged the price of a drink of their best liquors, twenty-five cents or more, and it certainly was a wiser way to spend small change than in alcohol. "Few people know how to cook water," Charles used to affirm. "The secret is in putting good, fresh water into a neat kettle, already quite warm, and setting the water to boiling quickly, and then taking it right off to use in tea, coffee, or other drinks, before it is spoiled. To let it steam, and simmer, and evaporate until the good water is all in the atmosphere, and the lime and iron and dregs left in the kettle—bah! that is what makes a good many people sick, and is worse than no water at all."

I am very glad to find such excellent authority on a question which has vexed me sorely, not only because of my own epicurean tastes, but because it was nearly impossible to obtain properly cooked water for invalids and convalescents. A critical taste will detect at the first mouthful, if the nose has not already demurred and given warning, the faintest trace of dead-water in tea, coffee, porridge, and many other items designed for the stomach.

More frequently than otherwise, the breakfast kettle is set boiling with a remnant of yesterday's supply in it; the coffee-urn has been neither washed, dried, sunned, nor aired; possibly, in the interest of a rigid and mistaken economy, some of yesterday's coffee is also "boiled over," and the partakers wonder at their lassitude and dyspeptic conditions. Whatever else be neglected, the tea-kettle and its associate pots should be thoroughly cleansed, dried, and aired every day; and in no case should water that has stood even an hour in pitcher, pail, or kettle be used for cooking.

If people will drink tea and coffee, let them at least have it as nearly free from poisonous conditions as possible. That much benefit may be derived by many people from drinking hot water is not disputed, but the water should be freshly drawn, quickly boiled in a clean and perfect vessel, and immediately used. The times of using, the adding of milk, mint, lemon, or other fruit juices, is a matter of preference or special prescription. This article has in view the perfect preparation of boiled or "cooked" water.

Fire Protection.

THE Eureka Fire Hose Company of New York, is manufacturing a light, strong, cotton, rubber-lined fire-hose, called the "Eureka Mill," which has proven to be the most durable and reliable, and the easiest hose to handle ever made. It is lined with the finest Para rubber, and has now been in a large number of hotels, factories, public buildings, etc., for fire protection for the past ten years, and although in many cases hung over hooks or pegs with short kinks, which would ruin rubber hose in six months, it is still as strong and perfect and reliable for fire duty as when first put in. It is undoubtedly the only hose to use for fire protection, for there is practically no deterioration with age, and it stands an immense pressure, while the rubber hose of to-day is unreliable after six months, good-for-nothing after twelve, stands very little pressure even when new, and is stiff and hard to handle. No hotel, mill, factory, public building, or large building of any kind should be without some inside fire protection. Manufacturers and others of experience always look to it that they are well supplied in this direction, and only those who come directly in contact with this trade begin to realize how often inside fire protection of the right kind really prevents great conflagrations, or at least renders unnecessary the dragging in of the large, dirty heavy hose of the fire department, and the use and misuse of a large amount of water. A fire should be taken at the start, and this cannot be done unless the hose is handy, and is light, so that the gentler sex may handle it if necessary, and must be strong to insure efficiency and as a protection against the damage caused by bursted hose. In some of the large buildings going up in this city to-day, there has been no provision whatever made for fire protection, and it behooves the architects of these buildings to bestir themselves and make some provision of pipes, etc., before it is too late, or they may at some future day be severely censured for neglecting to attend to so important matter. There are a large number of buildings and manufactories in this city now supplied with this hose, and we shall give a list of them at some future day. But we desire particularly to call the attention of those interested, to hose as seen in the fire-closets of the Baldwin Hotel, where it has been since the hotel was completed, over ten years ago, and is to-day as perfect as when first put in.

The agency for the Pacific Coast is in the hands of W. T. Y. Schenck, 256 Market Street, who makes a specialty of fire hose and fire department apparatus and supplies.

Rules Regarding Cement.

EMINENT engineers are authority for the following important conclusions:—

Cold water is probably not injurious, only as it retards setting.

All cements when mixed with sand to a proper consistence for mortar will fall to pieces if placed in water before setting has commenced. Portlands do so even without sand.

Pressure while setting, with the degree of the thoroughness of the mixing or the gauging, the proportion of water used, and other considerations, may easily affect the results one hundred per cent, or even much more.

If too much water is present in mortar, the consolidation by ramming is proportionally imperfect.

Any American cement of good quality will with one and one-half to two measures of sand give a mortar strong enough for most engineering purposes.

American cement requires less water than Portland.

Sand retards setting, so that cement which, by itself, would set in half an hour, may not do so for some days if mixed with sand.

When one part sand is added to one part of cement, the strength is lessened one-half. Two parts of sand to one of cement, averages about one-third the strength of pure cement. These for tensils and transverse strains. The crushing strength does not diminish so rapidly.

Brick or stone should be moist and entirely free from dust, or mortar will not adhere.

Slacked lime retards the setting of cement.

The temperature of air and water has far more influence in the testing of cements than has before been suspected.

After using in air, cement, or cement with sand, should be kept moist or watered until completely hard.

Walls of buildings are often built of cement concrete deposited between smooth-faced planks as a mould, the planks being moved upwards as the work goes on. Cement should be nearly dry and tamped hard.

Post holes running down below frost and tamped full with concrete are safe and economical supports for warehouses and similar buildings.

Concrete may be used in large masses under water, and when properly put down, is found good for piers and shore protection.

One-quarter to one-half cement is a common rule of mixture for cement and lime for plaster work in air.

Neither concrete nor cement can be emptied in water loose with good results, but must be conveyed to place in boxes or bags.

The white efflorescence, most common to Portland cement, is supposed to be injurious to the strength of brick and other materials.

Any disturbance of cement after setting commences is prejudicial to strength.

The best sand for concrete is that with angular, coarse grains of uneven size. The more uneven the sizes, the less the voids, and the coarser the grains, the less quantity of cement required to cover the surface.

MECHANICS' GEOMETRY,

— OR THE —

Science of Framing by the Aid of Cardboard Models.

We have lately received a number of this Celebrated Work, and will forward a copy to any address —$5.00, less 10 per cent.

THE new city hall of Philadelphia is the largest building in the United States. It has already cost $12,000,000 and covers 3,000 square feet of ground more than the Washington Capitol. Its north side tower will rise 535 feet, making its height only 20 feet less than that of the Washington Monument.

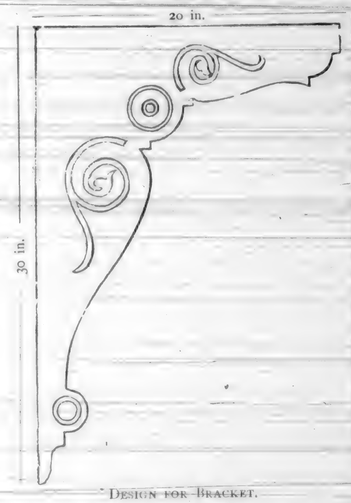
In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

ART AND ARCHITECTURE.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

XXXI. PERIODICAL ART OF THE MIDDLE AGE.

THE spreading of Christianity changed the whole state of things, and the Middle Age does not any more know national differences in art. Of the nations which did not come within the historical development, not considering themselves the art of the Middle Age, are the Christian and the Mohammedan. The latter carried with it so many restrictions, coming from religious commandments, that it was struck with a destiny like so many of the old arts, the same remained typical, and its progressive development is only very small. But it has, with the Christian art, the same property in common that it ruled a number of nations, that it forced the same on every new conquest made, together with the Koran, the holy book of the prophet, from the shores of the Ganges to that of the Ebro. So far as the victorious arms of the sons of Mohammed penetrated, monuments and traces of them are found, but all of them show the same typical form, the same style.



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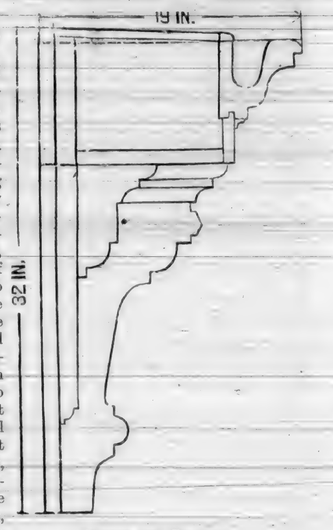

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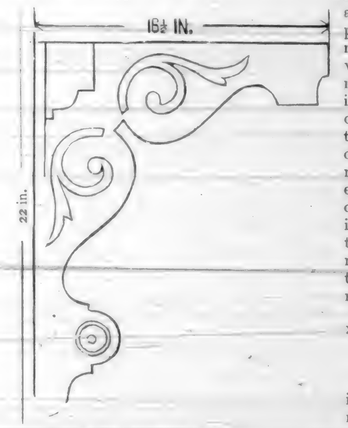
It is different with the Christian art. The Christian doctrine was by the different Christian nations differently taken up, conceived and retained, and in the course of time was developed and became church religion, changed and alternately transformed. The main cause of such transformations was the bodily and spiritual conflicts which were conducted for the defense and propagation, and always obtained a living stream, through which every involuntary or designed stoppage by priests became impossible for any length of time. Art followed all phases of religious development, and always took new forms and modes of expression. There are four main groups to distinguish, to which we must unite the similar monuments, and in course of time they followed each other. It originated periods, which mark a characteristic division of the art of the Middle Ages, which were largely and as a whole in common to all Christian nations, naturally without detriment to the above-mentioned special perceptions and singularities. In the first centuries of the independent Christianity, the relations to the antiquity were numerous and of considerable influence, that the same leaning to the antique traditions, formed an art, in which the Christian elements, as it were, slumbered in the bud; this is the so-called period of the ancient Christians. In the Byzantinian is already marked an important step to an independent originality. It alone satisfied itself to arrive at a certain height, then rested, and remained standing in a lifeless rigidity without developing itself to perfection. It reigned over a large portion of Western Europe, besides its native land, the Greek Empire, and soon the same became displaced by an art, the principle of which originated and grew in Germany, by transforming and uniting the forms of previous centuries to a new art. In this way originated the Romanic style, which expanded over all Christian countries at the time, except Byzanz; and the same again became displaced by the Gothic, taking and completing the same route through the Christian nations. As far as the origin of the four periods and the development of the different styles were concerned, and of any influence with and on the religious perceptions, and the churchship, is a problem not here to be discussed; but in general we will find in the ancient church and the immediate intonation of the latter, antiquity; in the Byzantine, the turning away from the occidental development and perception; in the Roman, the first independent innovation of the original force of the spirit of the German people; and, lastly, in the Gothic we find expressed the highest development of the church idea of the Middle Age. But that in common to all these periods, and uniting the same to a whole, is the Christian element, and thus a direct and clear view of the Christian religion is everywhere recognized in the works of art.



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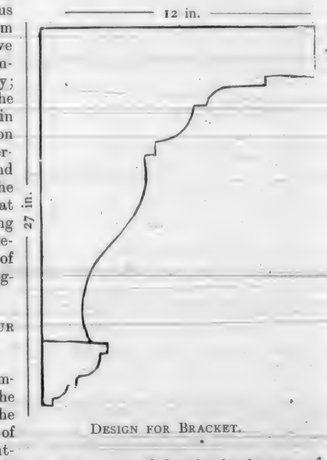

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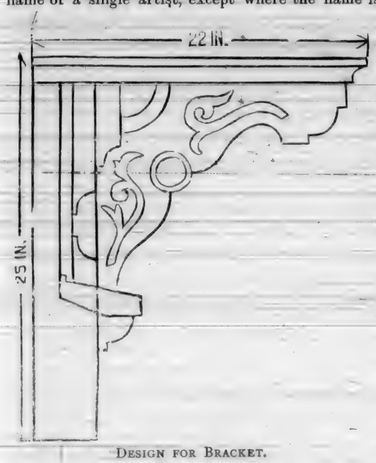
XXXII. UNIVERSAL INDIVIDUAL ART OF OUR TIME.

With our time the state of affairs is seemingly changed, but only seemingly, that the new religion, which is now forming, and the art, acting developingly, are the spirit of humanity. The coarse, the sensual, has outlived itself, and a nobler and finer spirit conditioned a refined perception. New gods were not proclaimed, but in the breasts of men spoke a sentiment, an inner, invisible voice of a new love. Before the Reformation, this spirit already lived and existed in the nobler natures, and it was the same which brought and called forth, suddenly, the hidden to expression, and to collect together every interest in the combat about the sacred endowments and goods, beside which disappeared the contemplative rest of artistic activity. This led to the highest flourish in art. The noble mind comprehended all which was worthy to be offered, not only breaking the narrow boundaries of ecclesiastic conception, and placing, in place of the supernatural, the human perfection, but also by enlivening the spirit of past times, knowing no boundary than the one it made itself, it became universal,

embracing the whole humanity, and what the same offered to it, as also individual, since that which it received it regenerated out of itself, adorned with the seal of its own spirit. Art in modern times is also universal in reference to the sphere of its objects and forms; individually in reference to the producing artist. Neither in the ancient times, nor in the Middle Ages impressed itself as such in an eminent manner in the works of art. The individuality of its originator, then the feeling, sentiment, and perception of all was the same, and the differences in the works of the artists, originated by their personalities, properties, and perceptions, were proportionately subordinate, so that the person of the master had to recede and stand back. Scopas and Praxiteles created works which in their artistical spirit were alike, and the same is the case with all the preserved Greek sculptures, that we can weigh on the same the measure of beauty, the grace of the technical execution, but we are incapable to give the name of a single artist, except where the name is preserved by traditions.



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Similar is the Middle Ages, where the plastic had a smaller practice, and the significant preference extended to the art of painting, on account of the favorable spirit, should have called forth a noted expression on the individuality of the artist who should have been called upon for the remembering and expression of the Christian mode of perception. Style and perception are, on the large and the whole, everywhere the same, and only in our time is it the case that artists and their art schools, in their works, manifest and reveal a peculiar style, and a singular artistic character of their own. In our time the person of the artist is in art, and in its full appreciation, and in regard to objects made, no sphere of life, of history, or of nature is excluded. On the admission of the artistic treatment only the poetic value is decisive, and no other laws conduct and lead to art than those established by itself. The right of the individuality is so extensive, that where a pressure from the outside is tried, let it be by political power, or ecclesiastic influence or despotism, such power always, beginning with the lowering of the artist, degrades art, not worthy to be called so, or, what is better, the same causes a general retreat from within its reach.

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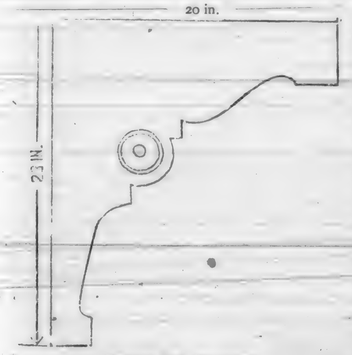
Art demands and requires unconditional liberty. It is looked upon with suspicion; and when compelled to execute commands of caprice, it is lost; and the one who tries to guide and manage the same to his will, will be punished with the total loss of the art. History does not lack examples of this kind.

XXXIII. FUTURE.

With this course, seemingly, the development of art in the main possibilities of its beginning, has passed through, and only through and from, the persons of eminent artists and cultured people, who exert an important influence. The pure national and the pure Christian art is buried for all time to come; then only the breaking in of a raw but gifted people of nature could destroy the old culture and art, and, beginning new, could create a natural religious art. But who could believe in the possibility of such incredible events; but what might occur after the wreck of the European people, shall not concern us. Largely gifted men of genius will, as long as our historical culture lasts, produce large, flourishing times of art, and out of the decline and ruin only the conscientious deeds and actions of the manly spirit will be saved from sinking. That the declining of flourishing art is not the work of accident or caprice, but that all goes to conform to unchangeable laws, based on nature, will next be spoken of.

Redwood.



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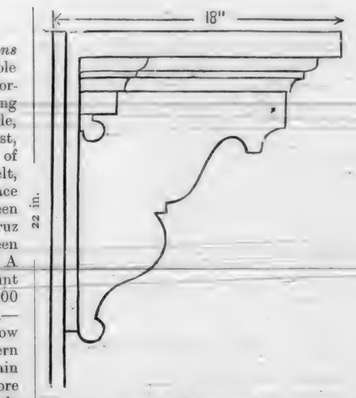
THE redwood—*sequoia sempervirens*—is found in any considerable quantity nowhere but in California, in a belt about 400 miles long from north to south, and 30 miles wide, on the average, from east to west, which lies upon the western slope of the Coast Range. North of this belt, pine, fir, and spruce gradually displace the redwood. The region lying between the northern boundary of Santa Cruz County and Russian River has been stripped of this precious timber. A recent careful estimate puts the amount of standing redwood at 26,000,000,000 feet, and the yearly consumption—which is constantly increasing—now reaches 200,000,000. In the southern part of the belt, where there is less rain and fog, the tree does not average more than two or three feet in diameter, and the wood is hard and flinty. Further north, in Humboldt County, the size increases, so that specimens twelve to eighteen feet in diameter and from 150 to 250 feet high are not uncommon; on large tracts experts estimate a quarter million feet per acre. The average size of saw-logs is six and eight feet in diameter. The wood is soft, coarse-grained, and very brittle, and so straight in grain that often it is not a hard matter to split out inch boards eight or ten inches wide, and from ten to fifteen feet long. When dry it is lighter than pine, spruce, or fir. Yet the butt log will often sink in water, when the top logs float like cork. The growth is slow, the annual rings often indicating an age of thousands of years. As the bark, which is very thick, soft, and fibrous, contains no resin, fires which run through the woods do not kill the standing timber, but, of course, must injure young sprouts. The great durability of the wood makes it desirable for shingles, railroad ties, and fence posts. It is highly valued for tannery tanks, which often last ten years, as the tanning solution does not act upon it as upon other woods. Wine merchants



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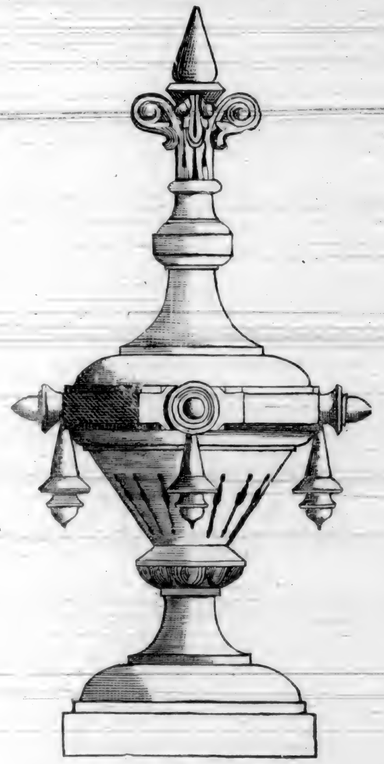
also seek it for vats, because a certain insect found in new grape juice, which bores pine readily, appears to dislike redwood. As its color is similar to that of Spanish cedar, and imparts no flavor to tobacco, it is prized for cigar boxes, and is largely used in New York for that purpose. Its extensive use in buildings, it is claimed, largely accounts for the immunity of San Francisco and other coast cities from large fires, there being little or no resin in it, and therefore less difficulty in putting out fire when once started. Some of the grain curls so that when polished and varnished, it rivals rosewood for cabinet uses.

Knots in Lumber.

"YOU would probably be surprised," remarked an observing lumberman the other day, "to see how some of my country orders run. I have customers who won't have a knot imperfection in their lumber, if they can help it, but who will take lumber so shaky it will hardly hold together, without a kick.



Ornament For Fence Post.

Indeed, if it looks well, they are very likely to send in another order to be filled out of the same lot. Now, every practical lumberman knows that for ordinary use, such as lumber is applied to by most country buyers, a good sound knot does not hurt it a particle, while shake is more or less of defect for any purpose. It used to puzzle me to account for this peculiarity on the part of some of my country friends, until I happened, while out on the road one day, to drop into the office of a man whose purchases run to this sort of lumber. I had some particularly good stock, in which the imperfection was chiefly confined to knots. It was sound, and I thought it an especially desirable lot of lumber of the grade. I wanted to send him a car load, but, though I argued diligently with him, he would not buy. Finally he asked me to go out into the yard and see how his sales ran. I did so, and an hour's observation convinced me that he knew what he wanted better than I did. The grangers who came in to buy would invariably kick about the knots, but show them nice, clean-looking boards that were shaky, and they would take them every time, in preference to lumber that was really better in every respect, but the imperfection of which was apparent on the face of it. I marveled no longer at the seeming peculiarity of my friend's taste in lumber, and whenever he sends in his orders now, endeavor to give him what will best satisfy his customers." And, no doubt, there are many among the retail dealers, even, who do not appreciate the comparative worthlessness of shaky stock as compared with that which is only defective because it is knotty, though the knots may be red and sound. Buyers have been known to object vigorously to a really excellent article of dimension which showed a good many knots, and take in lieu of it, at the same price, cleaner looking, but not nearly so good, stock in which the imperfection was chiefly shake. Unless the difference is carefully pointed out to a user, he is not apt to discover it. A shaky piece of lumber, where the defect is not so great as to entirely destroy its usefulness, makes a very presentable appearance, and this is what users largely depend upon in judging of it. They buy it, and use it, and when it afterwards shows a disposition to crack and split, they, as likely as not, lay the blame upon the paint, or the weather, or some other cause which has nothing in the world to do with it. And when they buy again, they make the same mistake. It would not in many instances be possible to convince such people that they are wrong in their judgment, and perhaps it is not the best policy to try.

Unnoticed Dangers.

FAR too many houses, both in the city and country, stand on made land or at least that which was formerly swampy. The foundation walls, when there are any, for houses often stand on posts alone, are built of solid masonry, but with no cement either outside or in. Such walls are porous and soak up water nearly as rapidly as a sponge. Then it slowly trickles down the inside, emitting malaria and forming a fine soil in which all matter of fungoid growths flourishes. The rooms over such places are first-class disease breeders, and every home should be frequently examined to see that these dangers do not exist.

The drain pipes often leak in cellar and basement. This adds to the danger of the rooms above; the two fiends, stagnant water from the sewer and water filtering in through the walls, work in concert to sap the life of the little ones, and to fit them to yield to the first disease.

The walls of the rooms themselves, in far too many houses, are disease breeders. A neat and tasty paper upon the wall makes a room inviting and adds to the home comfort. But, unfortunately, even when the paper is made free from poison, and good paper can be so made, the paste with which it is attached is just the home for minute organisms which produce certain diseases. This is bad enough when there is only a single layer of paper, but when, as is often the case, several layers of paper and paste are laid on the same wall, outside of one another, the danger is multiplied many times; such walls are really masses of festering filth; the best wall is undoubtedly the plain plastered wall.

All cases like these demand caution. Those who are responsible for the home comfort, cannot be too careful; the health, often the life, of the loved ones, particularly children, depends upon rigid exclusion of all these lurking-places of disease and breeders of death. Beauty should be and is consistent with perfect safety in the home.

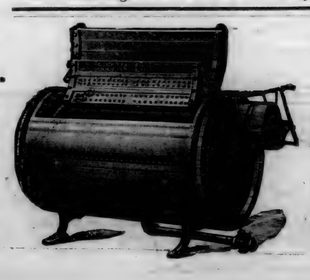
Sharpen your tools properly and you will husband your strength.

Please Make Immediate Settlement.

As an entire change in the management of this journal is likely to occur at an early day, those who are indebted to us will greatly oblige

BY MAKING PROMPT PAYMENT.

Do not hold off because you may for a time, but pay up at once and remove the obligation. It is our due and your duty.



NOTICE.

The Office of the

TROY

Laundry Machinery Co

And Manufacturers of

LAUNDRY MACHINERY

Has been Moved to

209 Fell Street, S. F.

J. E. CHAPELL, Agt.

Master Plumbers' Association.

How rd Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

MEMBERS.

Bush & Mallett	34 Geary Street
Bush, D.	316 Sutter Street
Butterworth, J. B.	1809 Polk Street
Connor, J. H.	528 Third Street
Daniel, Wm. L.	234 Post Street
Doherty, John	349 Kearny Street
Downes, Chas.	41 Second Street
Duffy Bros.	17 Trinity Street
Enright, Wm. & Co.	39 Sutter Street
Firmin, Jno. L. E	Cor. Thirtieth and Bartlett Streets
Fritz & Kean	130 Geary Street
Gray, Jno. T	230 Sutter Street
Huffschmidt Bros.	637 Clay Street
Hobro, W. D.	728 Washington Street
Reilley, C. J.	214 Montgomery Avenue
Shepard Bros.	526 California Street
Sweeney & Kearns	623 California Street
Vance, R. A.	623 Geary Street
Welch, J. D.	Cor. Tyler and Fillmore Streets
Wilson, Wm. F.	25 Stockton Street
Williamson, H.	329 Sutter Street

Selections from Goethe.

WE like to look into the future because we desire the incidental, which we know lies therein, to point our way.

We cannot well be in any company without thinking: the accident that brings us together in a crowd we expect to contain friends of ours.

We may live as retired as we please, still we will be either a debtor or a creditor.

If we meet a body indebted to us we are sure to remember the fact; but when we meet a person to whom we are indebted, ten to one we will forget the fact.

Nobody would talk much in a crowd if they knew how many misunderstood them.

To be communicative, comes by nature; to adopt what others tell us, is culture.

It is presumable that the speeches of others are so much misquoted because they are really not understood.

Whoever talks long before others without flattering them, becomes obnoxious.

Every word expressed causes counter thought.

Both flattery and opposition make conversation disagreeable.

Nothing indicates men's character better than their ideas of what is ridiculous.

Sensual men laugh where there is nothing to laugh about.

To the intelligent most everything is ridiculous; to the reasonable, almost nothing.

Passions are vices or virtues; they are, however, always intensified.

The golden mean is in nothing more desirable than in our confidence in or mistrust of those we love.

A passion is tempered by confession.

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

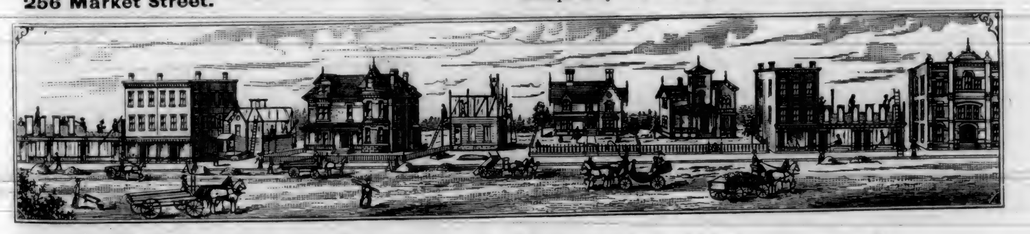
Market Reports.

CORRECTED FOR OCTOBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Fire Wood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	per M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in. 12 ft. and over	" "	28 00
" " 6 in. 7 to 11 feet	" "	25 00
" " 6 in. under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" Square	"	14 00
Battens, ½x3	per lineal foot,	00½
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 50
100 "		2 60
Smaller quantities		2 70
PAINTS AND OILS:—		
Pioneer and Nevada White Lead, 1,000-lb. lots		6½
" " " " less quantities		7
Pioneer White Lead (local factory), 5-ton lots		6½
Cal. Linseed Oil, raw (single bbl. lots)		45
" " " boiled " "		47½
Turpentine, per gallon		47
BRICK—California Building Description, soft, per 1,000		6 00
" " " red, " "		7 00
" " " hard " "		7 75

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this journal. Avoid publicity by sending us the amount of your indebtedness immediately.

A simple and convenient way of obtaining the weight of cast iron when the number of cubic inches is known, is to divide the number of cubic inches by 4 and then add one per cent of the cubic inches. The result is exactly the same as if it had been multiplied by .26, the weight of one cubic inch.



Bush, bet Powell and Mason. Three-story frame.
O.—S. Manin.
A.—H. Geilfuss.
C.—J. H. McKay.
$6,800.

Brosnan, nr. Valencia. Two-story frame.
O. and B.—J. Perry.
Day work.
$2,200.

Broderick, nr. Hayes. Two-story frame.
O.—J. S. Antonelle.
A.—J. J. & T. D. Newsom.
C.—J. G. Adams.
$8,000.

Bluxome, bet. Fifth and Sixth. One-story brick warehouse.
O.—J. L. Moody.
A.—C. I. Havens.
C.—W. M. Fletcher
$8,500.

Baker, nr. California. Two-story frame.
O. and B.—Geo. Hinkle.
Day work.
$4,000.

C

Castro, nr Fifteenth. Two-story frame.
O.—M. Burns.
A.—J. J. & T. D. Newsom.
C.—Spangler & Bawkins.
$2,800.

Clay, north side, bet. Scott and Devisadero. Two-story frame flats.
O.—G. I. Becvk.
A.—Jas. E. Wolfe.
C.—Jas. Geary.
$5,000.

Clay, south side, bet. Scott and Devisadero. Two-story frame.
O. and B.—J. Hilbert.
Day work.
$2,000.

California, nr. Polk. Two-story frame flats.
O.—Allen & White.
A.—H. C. Macy.
C.—F. Klatt.
$3,800.

Capp, bet. Twentieth and Twenty-first. Two-story frame.
O.—M. J. Colby.
A.—T. J. Welsh.
C.—Doyle & Son.
$4,000.

D

Dolores, nr. Twenty-fourth. Two-story frame.
O.—J. B. Davis.
A.—C. Geddes.
C.—C. H. Murasky.
$2,500.

E

Elgin Park, bet. Herriman and Ridley. Three two-story frames.
O. and B.—G. Edwards.
Day work.
$10,000.

F

Fifth, cor. Brannan. Three-story frame hotel.
O.—F. Stoetzer.
A.—H. Geilfuss.
C.—F. Klatt.
$7,000.

Fulton, cor. Webster. Brick chimney and boiler house, and other improvements.
O.—National Brewery Co.
A.—H. Geilfuss.
C.—John McCarthy.
$12,000.

Fifteenth, nr. Castro. One-story cottage.
O and B.—T. Dorsey.
Day work.
$2,000.

G

Geary, bet. Mason and Taylor. Three-story frame and brick basement.
O.—Wm. John.
A.—John & Zimmermann.
C.—B. Dryer.
$7,000.

Geary, bet. Webster and Fillmore. Additions.
O.—Mrs. Emma G. Beggs.
C.—J. B. Gonyeau.
$5,000.

Grove, bet. Gough and Octavia. Additions and alterations.
O.—J. D. H. Hoffman.
A.—W. Winterhalter.
C.—J. hn McMann.
$2,000.

Grove, bet. Webster and Fillmore. Two-story and basement frame.
O.—H. Brune.
A.—H. Geilhuss.
C.—H. Weiss.
$7,500.

Guerrero, nr. Twenty-fifth. Additions.
O.—H. Bryant.
Day work.
$800.

H

Haight, southeast cor. Webster. Three-story frame and stable.
O.—John W. Tamm.
A.—John & Zimmermann.
C.—A. Miller.
$8,000.

Haight, cor. Fillmore. Two-story frame.
O.—Chas. Hagmaier.
C.—G. G. Gelispee.
$2,300.

Howard, bet. Twenty-fifth and Twenty-sixth. Two-story frame flats.
O.—F. Gulbraidsen.
A.—P. R. Schmidt.
C.—Wickersham & Farrell.
$2,600.

Howard, bet. Twenty-fifth and Twenty-sixth. One-story and basement frame.
O.—Samuel Moote.
A.—Chas. I. Havens.
C.—W. B. Kruger.
$3,000.

L

Laguna, cor. California. Additions.
O.—W. Sumpkins.
C.—Farrell & Bell.
$3,000.

M

McLee Court, bet. Harrison and Bryant and Eighth and Ninth. Two-story frame.
O.—August Vetter.
A.—John & Zimmermann.
C.—Jacob Klein.
$2,600.

Market, nr. Eighth. One-story frame.
O. and B.—H. Bruns.
Day work.
$1,000.

Minna, bet. Ninth and Tenth. Three-story frame flats.
O.—D. McDonald.
A.—P. R. Schmidt.
C.—C. W. Beardslee.
$4,800.

Market, junction of Valencia. Brick additions to Cable House.
O. and B.—Market Street Cable Railway Co.
Day work.
$20,000.

Mississippi, cor. Santa Clara. One-story frame.
O.—Miss C. O. Neill.
A.—A. J. Barnett.
C.—T. B. Moore.
$1,700.

N

Ninth, cor. Mission. Additions.
O.—H. Dimond.
A.—C. J. Devlin.
$2,500.

O

Octavia, southeast cor. Geary. Two-story frame.
O.—J. Schroeder.
A.—John & Zimmermann.
C.—Wm. Pluns.
$6,500.

P

Page, cor. Devisadero. Two-story frame.
O.—E. Daniels.
C.—A. H. Bailey.
$4,000.

Pine, northeast cor. Gough. Two-story frame.
O.—Estate of Jas. Irvine.
A.—P. R. Schmidt.
C.—For Grading, W. T. Commary.
$200.

S

Seventeenth, bet. Valencia and Guerrero. Two two-story frames.
O.—John O. Neill.
A.—John & Zimmermann.
C.—J. Klein.
$5,000.

Steiner, nr. Bush. Two-story frame.
O.—G. L. Henzel.
Day work.
$2,500.

Seventeenth, cor. Folsom. Two-story frame factory.
O.—Sterling Furniture Mfg. Co.
C.—C. H. Munster.
$3,000.

Seventeenth, cor. Folsom. One-story cottage.
O.—Wm. Foley.
A.—C. J. I. Devlin.
C.—J. W. Smith.
$805.

San Jose Ave, cor. Dolores. One-story cottage.
O.—Miss M. Ryan.
C.—H. J. McLaughlin.
$1,200.

Sutter, bet. Franklin & Gough. Two-story and basement frame.
O.—D. Cohn.
A.—Pissis & Moore.
C.—W. Langstaff.
$22,000.

Sutter, bet. Franklin and Gough. Alterations.
O.—J. Labraton.
A.—Pissis & Moore.
C.—A. Jackson.
$2,000.

T

Twenty-ninth, nr. Sanchez. One-story frame.
O.—J. H. Johnson.
C.—J. E. Leomer.
$1,500.

Townsend, between Third and Fourth. Brick warehouse.
O. and B.—L. Walker.
A.—C. J. I. Devlin.
$4,000.

Twenty-second, cor. Howard. Two-story stable.
O.—H. Zwieg.
A.—H. Geilhuss.
C.—F. Klatt.
$2,500.

Tehama, bet. Third and Fourth. Two-story and basement brick.
O.—Lenoronand Bros.
A.—Huerne & Everett.
C.—Geo. Richardson.
$5,870.

Twelfth Ave, cor. Clement. Two-story frame
O.—Lucy E. Marsh.
A.—S. & J. C. Newsom.
C.—Moor Bros.
$5,300.

V

Valencia, junction Twenty-fifth. One-story frame.
O.—S. P. R. R. Co.
Day work.
$1,200.

Van Ness, cor. Fell. Three-story frame.
O.—Mrs. Ryland.
A.—Jacob Lenzen.
C.—Anderson Bros.
$9,000.

Valencia, nr. cable car house. One-story frame.
O.—J. J. Haley.
C.—Stevens & Gray.
$6,000.

W

Washington, cor. Octavia. Additional contracts.
O.—Alex. Boyd.
A.—Curlett & Cuthbertson.
Plumbing—R. Rice.
$2,500.

Washington, nr Steiner (in rear). Two-story frame.
O.—Fannie M. Farrell.
C.—J. H. McKay.
$2,200.

MISCELLANEOUS.

San Jose—One-story frame, nr. County Hospital. O., C. F. Boss; A., Theodore Lenzen; C., R. Summers; $1,800. Park Ave., south side. One-story frame; O., P. Glein; A., Theodore Lenzen C., H. C. Skow; $600. Two-story frame on University Tract. A., Theodore Lenzen; C., A. J. McIlvain; $2,500. A frame pump house. O., San Jose Water Co.; A., Theodore Lenzen; C., G. E. McDougall; $700.

Fresno City—Two-story brick. O., J. M. Brady; A., Theodore Lenzen; $10,000.

Tulare City—Two-story and and basement brick. O., J. Goldman & Co.; A., H. C. Macy $10,000.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

ENGLISH AND AMERICAN VENETIAN BLINDS (IMPROVED).

The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address as below.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, cor. Hayes and Laguna; architects, Miller & Armitage. John MacKenzie, cor. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John Marquis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architects, Pissis & Moore A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

EDWARD B. HINDES. Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

Or, W. S. HOLLAND, Pasadena, Cal., Manufacturer and owner of P. C. Territory. Rights to manufacture, and territory for sale.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 11.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., NOVEMBER 15, 1886.

EIGHTY-FOURTH MONTHLY ISSUE.

Completion of Its Seventh Volume as a Monthly.

ITS publication being commenced in January, 1880, but one more number—that of December—remains to complete its *seventh* volume as a monthly—EIGHT, including Quarterly of 1879.

For the purpose of establishing this Journal, and securing for it the reputation it at present enjoys, of being *excelled by but few of like character published in the United States*, neither expense, effort, attention, nor personal, mental, or physical energies or application, have been spared. Upon the issue of reputation we submit the testimony of those who have read the contents of its columns, and given unsolicited testimony.

During the period named there have been issued and circulated of monthly issues, including two supplemental editions,

MORE THAN 350,000 COPIES.

No *monthly* journal, certainly none of class character published within the Pacific States, and but few class monthlies within the United States, can make an equal showing. And when all the material facts, conditions, and surroundings are considered, the conclusion that a great work has been performed, must be reached and admitted; for at the beginning there was scarce a single auxiliary available, in good and practically perfected shape. Crudeness and inexperience,

FROM EDITOR TO "PRINTER'S DEVIL,"

was the order of things, and in addition to *doing* that which was to be done, the secret of *how best to do it*, had to be learned.

WITH THE SAME DEGREE OF ENERGY AND ENTERPRISE IN EXERCISE DURING THE NEXT AND SUCCEEDING YEARS,

it is reasonable to anticipate greatly enlarged results, and to see this Journal excelled only by the very few old and long-established journals, published at the great centers of population and enterprises, where scores of millions of dollars are expended annually within a single city or county in the erection of buildings alone, and hundreds of thousands of mechanics and artisans are employed daily upon constructive works.

But to accomplish this, subscription patronage must be extensive and promptly paid, and advertising support liberal. The cost and expense of each issue must be paid monthly, whether or no the management receives its pay from patrons. Every patron who fails to pay up at the proper time, should bear in mind the fact, when he first opens each monthly number, that he is enjoying the instructions and benefits of a publication which has cost some one else a certain amount of money, and a sense of honesty and fair dealing should not only prompt, but compel immediate payment of subscription amount.

We hope that the patrons of this Journal will consider this important matter in its equitable and just light, and by or before or during the month of January,

SEND IN THEIR SUBSCRIPTIONS FOR 1887.

Be sure to obtain the December number.

Retrospect.

IN looking back over the past seven years, as founder and editor of this Journal, very many pleasing recollections present themselves, which will not be forgotten while life lasts.

The numerous expressions of personal good-will, friendly feelings, hearty wishes for our success, approval of efforts made, and many expressions of kindly import, have been sources of great pleasure.

While some men conduct and manage newspapers and journals for personal objects and purposes, and shrink from no act, however vile and depraved, to further their designs, nor any means, however corrupt, that will yield gold, even at the expense of truth, honor, or fairness, the chief object of every intelligent and honorable man editing, managing, or to any extent controlling a publication of any character, is to inform, instruct, and edify those who read, in printed form, the thoughts that flow from a pure mind. With truth and right as a bulwark, every good man who wields the pen as an editor, finds an eminent reward in the approbation of those who read his mind productions; not in a feeling of vanity that he has pleased, but in a sense of solid satisfaction at having so expressed himself as to receive approval from others, alike with himself, intelligent and well disposed.

While acknowledging personal defects and short-comings, and a lack of those marked scholarly and intellectual abilities, such as thousands in journalistic pursuits enjoy, we lay honest claim to purity of purpose in the conduct of this Journal. In no instance has there been any purpose to deceive, mislead, or misrepresent. An earnest desire to do justice to all, wrong to none, and to inform, instruct, and benefit our patrons, has been the controlling motive influencing every line from our pen or pencil.

Summary for November.

58 Frames	$282,335
16 Alterations and Additions	36,500
4 Brick	112,950
78 engagements. Total cost	$431,785

Delinquent Subscribers.

IT is astonishing with what cool unconcern some people permit their subscription indebtedness to journals to remain unpaid.

There seems to be no sense of shame or principle of right and fair dealings with such people; true, sometimes good and honest men *forget* to pay small indebtednesses, and the object of this notice is to refresh the memory of such good and honest men who have not paid up, that we will very thankfully receive the amount due us, if they will kindly forward the same during the present month.

How Axes Are Made.

IN the manufacture of axes, the material passes through twelve different operations before it is ready for labeling and boxing.

At first it is a rectangular piece of iron, about three-fourths of an inch thick, three and one-half inches wide, and about six inches long. The bit is of steel, and in some instances is inserted in a slit made in the iron, and in others it is drawn over the edge of the iron. There is a growing demand for axes made entirely of steel. The most important part of the process of manufacturing is tempering. "This is really where the axe is made," said a manufacturer. The grinding and polishing is the most laborious part of the process. It is here that the rough, irregular-shaped semblance of an axe is ground and polished until it is as bright as a mirror. It is said that the work will prove fatal within five years to any man who pursues it steadily. The air is filled with imperceptible dust from the stones, and many of the workmen tie small sponges saturated with water over their nostrils.

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

Paper Read Before the S. F. Chapter American Institute Architects, by Fellow G. H. Sanders, Nov. 5, 1886.

Mr. President and Gentlemen: The resisting power of our building stones to vertical pressure having been at various times brought to our notice, we decided to settle the question by actual test. Finding that there was a hydraulic press at the miners' foundry, we decided to take advantage of the courtesy of the proprietors, who kindly placed the apparatus at our disposal. Through the good offices of P. H. Jackson all preparations were made, and early in the month all was ready, and the tests were made.

Having at sundry times collected a number of blocks of stone and granite and bricks of various kinds, we were enabled to test the following materials, viz.: Penryn granite, Miles freestone, Sutro Heights stone, San Jose sandstone, Stock brick, San Jose pressed brick, Chicago pressed brick, Lincoln Hollow brick, and some ordinary concrete blocks. Unfortunately, it soon transpired that the adjustment of the press was not such as to insure anything like a crucial test, the faces of the piston and abutment block not being parallel with each other and the faces of both. But especially the abutment block, which was loosely held between two jaws of an upright stanchion piece (see diagram), was quite rough and rusty from exposure to the air, so that though hoop iron was used to pack and adjust the abutment block, it was impossible with such means to bring their faces into anything like parallelism. The hurry, too, with which the experiments were conducted prevented the possibility of those careful observations and abundant notes which render such experiments really valuable.

Perhaps after all the chief benefit derived from the tests was finding out, in view of a future occasion, how *not* to do it. Nevertheless, the experiments were of a great interest. In the first place, the question of bedding occurs. Some of the blocks were crushed between pine boards, others between sheets of thick lead. The result seemed to be indifferent, in some cases the lead, and in others the pine, seeming to gain the higher result. In one case a brick (the Stock brick) was bedded in cement, but the cement was not allowed sufficient time to set, so that the result was nearly *nil*. We believe that every specimen should be bedded between plates of planed iron in pure, sifted cement, and thoroughly set, prepared, perhaps, a month or more beforehand, and then placed between truly planed, mathematically adjusted surfaces of the ram. Under such circumstances alone can uniform and reliable results be looked for with any confidence. Secondly, it also appears, from the results which will be laid before you, that, as probably might be expected, the largest specimens give the lowest results as to the relative resistance per square inch of area. Thus a block of sandstone 3x3x3 gives a resistance of 75 tons ultimate crushing strength, or a resistance per square inch of area of 9,312½ pounds; whereas, a block of Penryn granite 6x6x6 gives an ultimate crushing strength of 128 tons, but a resistance per square inch of surface of only 7,727⅜ pounds. Possibly this is due, to some extent, to the greater difficulty of adjusting the pressure over the whole of a large surface equally, than in the case of a surface ¼ the area. Otherwise one would suppose that the greater bulk should offer as proportionately greater a resistance.

One other point it may be well to notice, namely, the almost uniform occurrence of cracks, spalting, or other partial failure of the material, early in the process of crushing. This is no doubt due to the gradual adjustment of the blocks to the conditions of pressure brought to bear upon them, after which, every part having been brought to an equal bearing, the block is in a position to sustain the pressure until the ultimate limit of resistance is reached. On this account, granting that the surfaces of the ram and the surfaces of the best blocks can be brought to perfect adjustment, there is no doubt that, as some experimenters have found, the highest result would be reached without any intervening bedding substance whatever.

STONE TESTS.

No. 1. San Jose Sandstone.
Block 6x6x6 = area 36 inches. (Note—between sheets of lead.)
20 tons spalted on edge.
50 " " "
70 " badly crushed—3,944½ lbs., 1 inch area.

No. 2. San Jose Sandstone.
Block 6x6x6 = area 36. (Between sheets of lead.)
10 tons slightly cracked.
55 " bulged on top.
75 " split and crushed—4,166⅔ lbs., 1 inch area.

No. 3. Miles Freestone.
6x5½x6 = area 33.
60 tons spalted on top.
70 " cracked in middle.
75 " " "
85 " " in opening.
100 " crushed—6,060⅔ lbs., 1 inch area.

No. 4. Penryn Granite.
6x5½x6 = area 33.
95 tons cracks on top.
105 " more cracks.
110 " badly cracked.
115 " " "
128 " " crushed—7,727 3-11 lbs., 1 inch area.

No. 5. Sutro Heights Metamorphic Sandstone.
4x4x3⅜ = area 16.
15 tons corner came off.
30 " cracked on top.
55 " " in middle.
60 " crushed—7,500 lbs., 1 inch area.

No. 6. Block of Concrete (made about Jan. 1, 1886).
Composed of 2 vols. fine gravel.
" " 1 " coarse gravel.
" " 2 " broken rock.
" " 1 " Portland cement.
Or 5 of rock to 1 of " "
4 in. x 5 in. x 4 in. thick (6 months old).
20 tons cracked.
30 " crushed—2,500 lbs., 1 inch area.

No. 7. Block of Concrete (same age and size).
20 tons cracked.
32 " crushed—2,666 lbs., 1 inch area.

No. 8. San Jose Sandstone Brick.
8x4½x2⅝ = 31½ in. area.
Ram, 8 inches diameter.
15 tons cracked on top.
30 " badly cracked at ends.
55 " cracked in middle.
80 " crushed on top.
85 " thoroughly crushed—5,312½ lbs., 1 inch area.
(The above placed between lead plates.)

No. 9. San Jose Sandstone Brick. (Placed between pine boards ⅜ inches thick.)
60 tons cracked.
80 " crushed—5,000 lbs., 1 inch area.

No. 10. San Jose Sandstone Block. (Placed between lead plates.)
3x3x3.
15 tons spalted.
25 " crushed—5,555 lbs., 1 inch area.

No. 11. San Jose Sandstone Block. (Placed between pine boards.)
4x4x3⅜.
70 tons cracked.
75 " crushed suddenly and completely—9,312½ lbs., 1 inch area.

No. 12. 4½x3⅜x4½ block (between pine boards.)
30 tons cracked.
40 " crushed—5,333⅓ lbs., 1 inch area.

No. 13. Sacramento Stock Brick (rough).
4x8x2½ (between wood) = 32 inches area.
20 tons cracked.
40 " crushed—2,500 lbs., 1 inch area.

No. 14. Petersen's San Jose Pressed Brick.
4x7¼x2⅜ = 29 inches area.
15 tons cracked.
30 " badly cracked.
40 " crushed—2,758⅝ lbs., 1 inch area.

No. 15. Chicago Pressed Brick. 20 inches area.
20 tons cracked.
40 " crushing.
60 " crushed—6,000 lbs., 1 inch area.

No. 16. Salmon Brick (pressed).
4x8½x2½ = say 31 inches area.
10 tons cracked.
35 " crushed—2,258 lbs., 1 inch area.

No. 17. Gladding, McBean & Co.'s Hollow Brick.
4½x8x4 = 32 inches area.
Crushed at 2½ tons—156 lbs., 1 inch area.
Cracked at about 1 ton's pressure.
Splitting lengthwise. (Surfaces very much in wind.)

In all cases the splitting commenced at the top of the blocks, and worse to the left side of the blocks, indicating a bad adjustment of the apparatus. The surfaces of the ram and the contra block were not smooth, especially the latter, being rusty and very rough, and making a very irregular impression in the lead plates and pine boards. This fact would have to be taken into account in judgment of the respective values of the above experiments. In the stone blocks, too, it was not possible to have the surfaces crushed parallel with natural bed in all cases, the bed being in nearly all cases perpendicular to the line of pressure, the blocks and bricks in nearly all cases splitting lengthwise, and bulging up on top (rarely on bottom) and spalting. One small San Jose block crushed on natural bed at the high figure of 9,312½ pounds per square inch of area, being a block 4 inches square and 3⅛ inches thick.

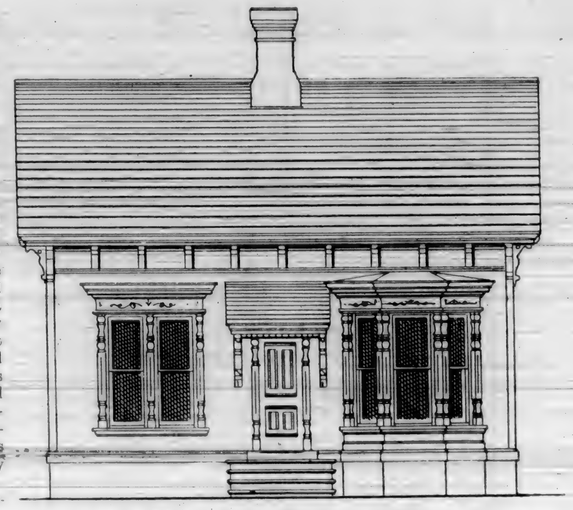
A Closet Shelf.

If there is anything that adds to one's comfort in an emergency, it is a closet shelf prepared for emergencies. That is clear. Accidents, nervousness, sudden pain, midnight calls for help, parcels that want doing up, broken crockery or ornaments, all find a ready answer to their calls on this carefully prepared shelf. It is so easy to prepare and keep in order, can be small or large, as one decides to confine its contents to a few things or enlarge to many. I intend to give a list for the smallest one that I think it advisable for any one to keep, be she keeping house or boarding. First of all come the things that are to be ready for illness, sudden or otherwise,—camphor, for faintness, headache, or a sudden attack of diarrhœa, although, for the latter, there is nothing equal to a tablespoonful of raw flour in a glass of cold water, to be taken in two doses half an hour apart. A closely covered little box of raw flour is easily kept on the shelf, to be often renewed, lest it get musty. A small tin can of flour and mustard, mixed in equal parts, ready to make into a paste for a mustard plaster, is to me a pleasanter arrangement for a hastily required mustard plaster than the "mustard leaves" ready at the drug stores. In a little box beside this can should be old linen and cotton rags, for the other half of the plaster, as well as for cuts or bruises; also a strip of flannel a "finger" broad and three-quarters of a yard long, to put upon the outside of a cotton cloth, several times folded and wet in cold water, for a compress for a sore throat. Keep your case of court plaster in this box of rags, and a spool of white linen thread, both conveniently near the necessary pair of small scissors.

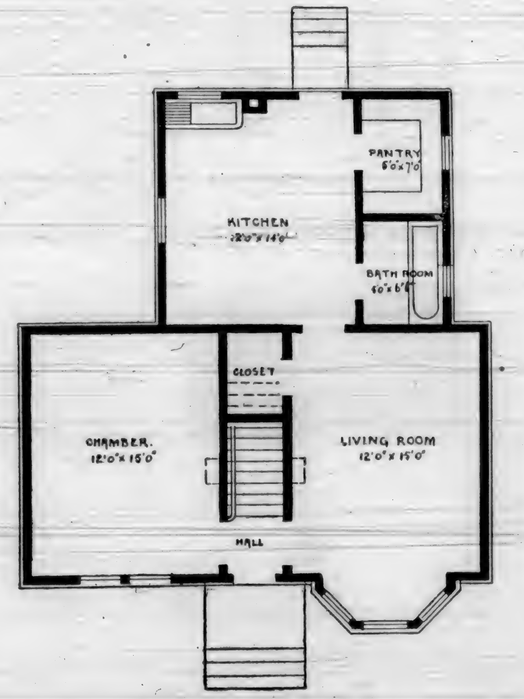
Camphorated oil, which is best when made at home by dissolving camphor gum in warm olive oil until no more will dissolve, is invaluable for sore throats and chests, or a cold on the lungs. Rub in well, and there will be no cold taken afterwards, as there is after the old-fashioned "goose grease." Vaseline is good for this purpose also, as well as for many others that every one knows about. There is nothing, for chapped hands, equal to glycerine and tincture of hydrastis, fifteen drops of the latter to an ounce of glycerine. Wash the hands in warm water thoroughly, and, before wiping, rub in a little or good deal of the mixture, according to the need.

Tannin, a dry, greenish powder, is a great comfort where a sudden severe nose-bleed occurs in the family. Once snuffing it up well into the nostrils generally ends the trouble. Tannin forms, with water, a good gargle for a sore throat, as it is a healthy astringent. It is the best thing I know of for severe chafing, especially for infants. The effect is almost magical. Pond's extract of hamamelis is another indispensable for this emergency shelf. It is really good for nearly all the ills mentioned on the wrapper of the bottle. An excellent way to get hamamelis is by the quart, and it is the cheaper way. On principle, my emergency shelf always holds olive oil, alcohol, and ammonia. Hot summer days, and headaches, find me grateful for my bay rum bottle. I quite forgot to put arnica in my remedy list, although it is decidedly second to tincture of calendula for cuts or wounds. Both are to be diluted with water when used.

It is very pleasant to turn from the above list and point you to my "Perfect" mucilage bottle; that is its commercial name, and well deserved. How many times you will use it if convenient on its shelf. Next it should stand a bottle of stratena, or one of its relations in the cement family. If Clytie's head comes off, or the butter dish cover breaks in two, or your favorite china cup gets into so many bits that it will only do for an ornament after a vigorous use of the cement, you will be glad of the remedy. A bottle of shoe polish, or box of shoe paste, is a handy thing when one dresses in a hurry. Last, but not least, comes a ball of twine. If you are fortunate enough to possess a silk bag, with pretty ribbons and pair of scissors, to hold your string ball, it is delightful. Otherwise, a ball on the end of the emergency shelf will save much hunting for string, and much vexation of spirit.



Front Elevation of a One or One-and-a-Half-Story Cottage.



Plan for above Elevation.

It Didn't Work.

When the employes in an Indiana furniture factory, operated by a German, struck for eight hours a day, he granted it; but when they wanted ten hours' pay for eight hours' work, he called them up and said:—

"My frens, maype I do ash you like. I haf an order from Shegago for ten dozen shairs. I vill sheep him eight dozen, und bill him for ten. If he doan't kick on me, it shows me dot der rule vorks both ways und we vhas all right."

It is needless to add that the idea didn't work; and that his men are receiving eight hours' pay.

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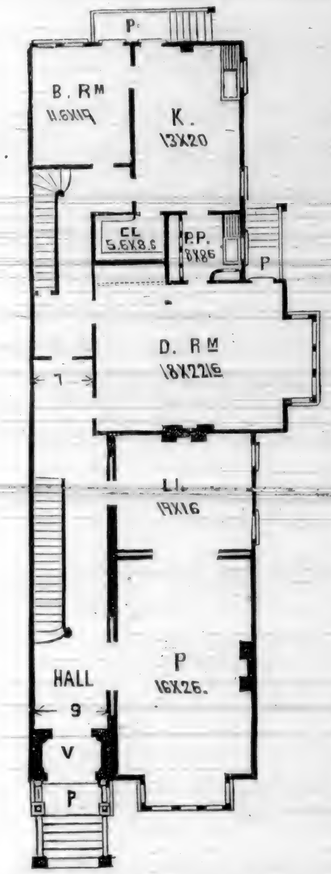
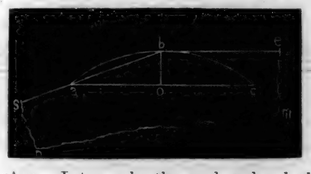


First Floor Plan City Dwelling.

A Practical Way to Describe the Arc of a Circle too Large for a Pair of Dividers.



Ans.—Let *a c* be the cord, and *o b* the height of the required arc, as laid down *on the drawing*. On a separate piece of paper, *s e m n*, draw *a c*, *o b*, and *a b*, also *b e* parallel to the cord *a c*. It is well to make *b s* and *b e* a little longer than *a b*. Then cut off the paper carefully along the lines *s b* and *b e*, so as to leave remaining only the strip *s a b e m n*. Now if the straight sides *s b* and *b e* be applied to the drawing so that any parts of them shall touch at the same time the points *a* and *b*, or *b* and *c*, the point *b* on the strip will be in the circumference of the arc, and may be pricked off. Thus any number of points in the arc may be found, and afterwards united to form the curve.

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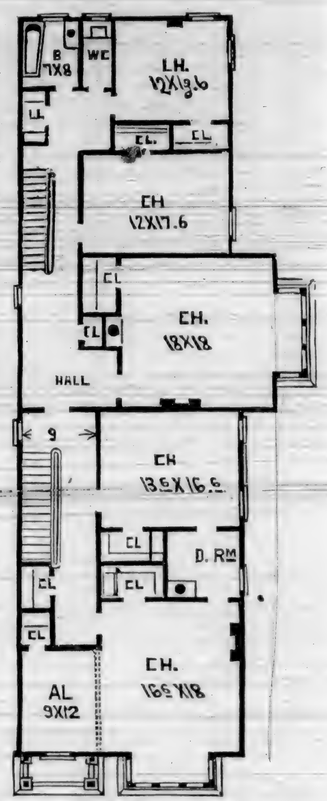
Plans for a City Residence.

The accompanying plans were adopted by a gentleman in this city whose principal design seemed to be the comfort of his family, with due regard to modern conveniences. He evidently found favor with the rule, "We must begin by observing what has already pleased, if we wish to judge rightly as to what will please in any future production."

The first floor contains a large parlor, connected with a library by sliding doors. In close proximity is a spacious dining-room, with place for sideboard, and an ample butler's pantry, with sink, lockers, cupboard, shelves, etc. The pantry is in direct communication with the kitchen, a large, well-lighted, and ventilated room. From the kitchen access is easily gained to the basement by means of the rear stairs shown, and also to the yard, and to a comfortable servant's bedroom.

The second floor contains five good-sized bedrooms, all amply supplied with closets. Special pains has been taken in the plans shown to have a place for each and every article of furniture necessary to a bedroom. It will be noticed that in each of the upper and lower halls there is shown a door, placed so that all draughts can be shut off between the front and rear stairs. No cornices are shown, these being left to the consideration of those who desire to use, as a model, the plans shown in our engravings.

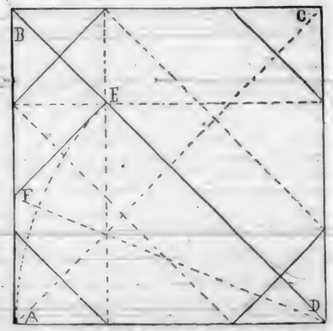


Second-Floor Plan City Dwelling.

Earthquakes.

In view of the wholesale destruction of property, coupled with loss of life, wrought by the recent earthquake at Charleston, South Carolina, the movement of which was felt from the Atlantic to the Mississippi, it seems proper to raise the question, whether we are to assume that a recurrence of the calamity is improbable, or are to adopt a method of construction in our larger buildings which will withstand similar strain. The Mexican and South American States are frequent sufferers from this cause; the Pacific Coast is subject to shocks of greater or less severity; and, though Charleston has not experienced a severe shock since 1811, it is not at all improbable that a like disaster may occur within the next twenty years. It would certainly be the part of wisdom for the city of Charleston, while reconstructing her shattered buildings, to seek a measurable security from future demolition, at the expense of an increased expenditure in construction. The havoc that would be worked in any of our Northern cities by a similar shock, may well be imagined by one familiar with the method frequently employed in the erection of structures for commercial and manufacturing purposes. To place a roof on four walls of brick or stone, built to a height of from three to eight stories, without cross walls and lateral bracing in exterior walls, is an invitation to ruin by earthquake or by fire. If Americans are building for the pleasure of seeing their work tumble in before fire or earthquake, too many have hit on the proper construction to insure this result. If we are building that our work may outlast this generation and the ones hereafter, we need to inaugurate a new era, in which the skin-builder shall starve for the lack of a job.—*Inland Architect.*

Dr. E. Parmley Brown says that the excessive use of common salt is one of the main factors in the destruction of human teeth.



To find the sides of an eight-sided polygon, draw the square A B O and D, and join D B. From D as a center, with D A as a radius, describe an arc, cutting D B in E. Then E B equals the side of polygon, and E F D equals the angle to mitre the sides.

By the use of the square to mitre the sides, place the square with E D on the blade, and E B on the tongue; mark from the latter for the angle required.

By calculation—let E D equal 18x18 inches, equal 324 plus 324 inches, equal 648 inches, square root of which is 25.4558 inches, minus 18 inches, equals 7.4558 inches, or 7 and 7-16ths inches equal E B.

By proportion—7.4558 inches : : 18 inches : 7.5 inches; 7.5x18 inches equal 135 inches; divided by 7.4558 inches equal 18.1067 inches, or 18 and 3-32d inches equal E D.

Christmas Presents to Mechanics.

We have on hand the largest assortment of mechanical and scientific works to be found in California. These we are determined to close out, as by the beginning of the year, a new management will assume control of this Journal. We publish below a list of works now on hand, with the publisher's price. TO ALL PURCHASERS WE WILL ALLOW A DISCOUNT OF FIFTEEN PER CENT. Select any work from the list. DEDUCT ONE-SEVENTH OF THE PRICE. Forward the money to this office, and by return mail you will receive the book.

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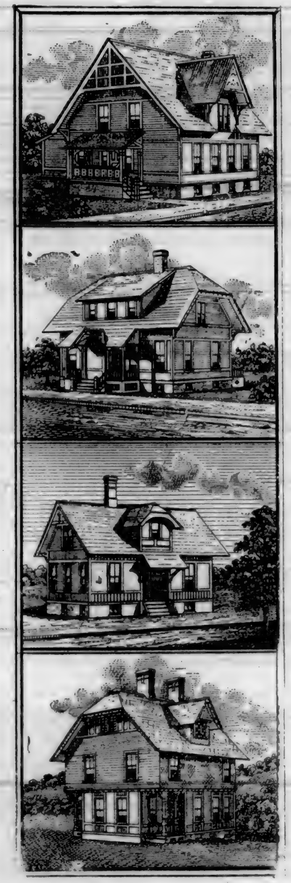

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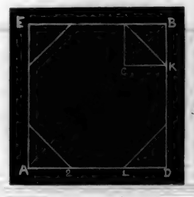
A COUNTRY VILLA.

LATH do not make a very good showing, it is said, on the average dealer's books. There is no profit in them. The handling costs too much in proportion to the quantity and value of the stock turned over. Practically there is as much labor expended in moving a bundle of lath as there is a bunch of shingles, which is worth several times as much. No one ever saw a lumber-shover wrestling with more than one bundle of lath at a time, and though it is a small load, he makes out that it shall be a full one. The margin of twenty-five to thirty-five cents which there is in this item for the dealer, does not cover the expense of handling them through the yard, and in consequence the lath account usually shows a balance on the wrong side. But yards must keep them, whether they pay or not. They are like a good many of the small notions that many kinds of retail merchants are obliged to handle; there is no money in them, but they must be kept and sold just the same, because the buyer demands that he shall be accommodated to that extent.—*Ed.*

How to Lay off an Octagon.



IF the timber is not square, mark off the largest square that can be formed. Draw a line from corner to corner, as A B. Mark the distance of one side of the square, as A D, on the diagonal A B, at C. Draw C K parallel to E B. Set a gauge to B K, and run this distance on all four sides of the square. Work off the corners, and a perfect octagon will be formed.

New Motion to a Grindstone.

AN improvement in the driving of grinding stones and emery wheels is that by which the wheel is given a reciprocating lateral motion in addition to its rotation. Every one has noticed the advantage of moving a tool from side to side on a hand grindstone so as to equalize the attrition on the different parts of the edge. It is found that by making the grindstone move and keeping the tool still a more perfect result is attained, while the detached particles of steel have an opportunity to drop off the grindstone instead of being crushed into it, and the wear of the stone and the heating of the tool are both greatly diminished.

A Country Villa.

THE elevation and plans here presented will convey to those intending to build an idea of how a comfortable, picturesque building should be erected. We are prepared to furnish the plans for this or any other kind of a dwelling in any part of California.

A CONSIDERATION in the use of stone for important buildings is that of having it quarried, stored, and seasoned for some time before being hewn and placed in the walls. By these means the natural sap is allowed to evaporate, and the stone tested as to its quality. This would add to the cost, but the money would be well spent if this precaution prevented the wasting of stones from the rains, frosts, or atmospheric influences, which, especially in our cities, soon act on the surface of a newly quarried stone. Stone that is quarried one day and built the next is in a green state, and unfit for use. It is not in condition—it is at its weakest—its pores are open and ready to absorb not only moisture, but the gaseous and disfiguring influences which tend to its destruction. Every hewer knows that to get a polish on a stone that has lain for some time is very different from what he gets on one fresh from the quarry, and this of itself should be sufficient to warrant the precaution recommended, which is to thoroughly season the stone before using it.

An Octagon by the Use of the Square.

ALONG the face of the "tongue" will be noticed two parallel lines, with a row of dots interspersed with figures, between them. The figures simply show that the dots are numbered by tens. This is known as the "eight square," or octagonal scale. This scale is based upon the fact that each face of a regular octagonal scale is almost exactly five-twelfths of its shortest diameter.

In using the scale, the timber is first squared to the diameter desired for the octagon, and a line drawn from the center of each face to the center of the opposite face; then, with the dividers, as many spaces of the scale are taken as there are inches in the diameter of the timber, and the distance thus obtained is set off each way from the center line upon each face, which gives the position of the angles of the octagon.

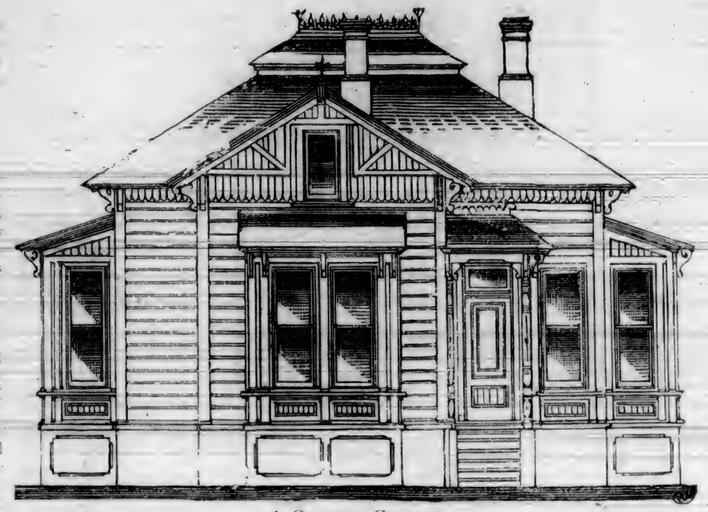
For instance: let A B C D be the square end of a stick of timber six inches on a side. Draw the center lines A B and C D from the center of the faces A and C. Now with the dividers take from the scale 6 spaces, and lay off this space on each side from the center of each; as A 1, A 8, D 2, D 3, B 4, B 5, C 6, C 7; join by a line the points 1 2, also 3 4, 5 6, and 7 8; and you have the outline of the largest octagon stick that can be cut from this piece of timber.

THE United States is the only country in the world which spends more for schools than for military and naval armament. It spends about $93,000,000 for education and $47,000,000 for war. It spends for education nearly three times as much as Great Britain, three times as much as Germany, and six times as much as France.

A PIECE of iron rolled in the new Falcon Mills at Niles the other day is as thin as a sheet of ordinary paper. It would take 150 sheets to constitute one inch in thickness. The mill made this piece just to see how thin they could roll.

A Country Cottage.

THE accompanying plan will suggest a few ideas to those seeking for the elevation of a country cottage, who desire beauty combined with distinctive features, at a low cost.

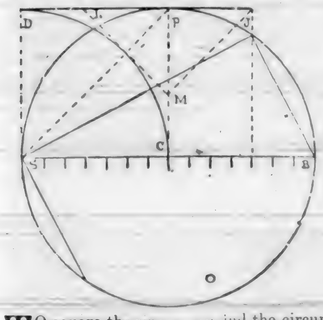


A COUNTRY COTTAGE.

Priming for Wood, Paper, Lime, or Hard Plaster Walls.

A SUPERIOR priming for these purposes, which, it is claimed by the inventor, Herr Kall, of Heidelburg, is cheaper than linseed oil, and closes the pores so perfectly that less paint is required than with oil and red lead. Priming coat is thus described: The substitute used for boiled oil consists of ten parts of boiled blood, as furnished by the slaughter-houses, with one part of air-slacked lime sifted into it through a fine sieve. The two having been well mixed are left standing for twenty-four hours. The scum that collects on top is cleared off, and the solid portion is broken off from the lime at the bottom; the latter is stirred up with water, left to settle, and the water poured off after the lime has settled. The clear liquid is well mixed up with the solid substance before mentioned. The mass is left standing for ten or twelve days, after which a solution of potash permanganate is added, which decolorizes it and prevents putrefaction. The mixture is then stirred up, diluted with more water to give it the consistence of very thin size, filtered, and then a few drops of oil of lavender added. The preparation, if preserved in closed vessels, keeps a long time without change. A single coat will suffice for priming.

How to Square a Circle.



TO square the circle is to find the circumference when the radius is given, and for effecting this it is necessary to know the ratio of the diameter to the circumference.

To find the circumference when the radius is given geometrically:—

FIG. 1.—Let C S equal the radius; from the points C and S as centers, describe the circle and arc C D; tangent to the arc and circle draw D P. Join S P; at right angles to S P draw L M tangent to the arc D C, and M J equal M L parallel to S P. Then D J equals one-fourth ($\frac{1}{4}$) of the circumference of the circle, and S J equals the side of a square equal in area to the area of the circle.

To find the ratio of the diameter to the circumference:—

Divide S B, the diameter, into fourteen equal parts, eleven of the parts equal D J or one-fourth of the circumference, multiplied by four equals forty-four, divided by two equals twenty-two; fourteen divided by two equals seven; equal to seven twenty-seconds, the ratio required.

The Law as to Party Walls.

A PARTY wall is the wall dividing lands of different proprietors, used in common for the support of structures on both sides. At common law an owner who erects a wall for his own buildings which is capable of being used by an adjoining proprietor, cannot compel such proprietor, when he shall build next to it, to pay for any portion of the cost of such wall. On the other hand, the adjoining proprietor has no right to make any use of such wall without consent of the owner, and the consequences may be the erection of two walls side by side, when one would answer all purposes. This convenience is often secured by an agreement to erect a wall for common use, one-half on each other's land, the parties to divide the expense; if only one is to build at the time, he gets a return from the other party of half of what it costs him. Under such an agreement, each has an easement in the land of the other while the wall stands, and this accompanies the title in sales and descent. But if the wall is destroyed by decay or accident, the easement is gone, unless by a deed such contingency is provided for. Repairs to party walls are to be borne equally, but if one has occasion to strengthen or improve them for a more extensive building than was at first contemplated, he cannot compel the other to divide the expense with him. In some States there are statutes regulating the rights in party walls, and one may undoubtedly acquire rights by prescription on a wall built by another, which he has long been allowed to use for the support of his own structure.

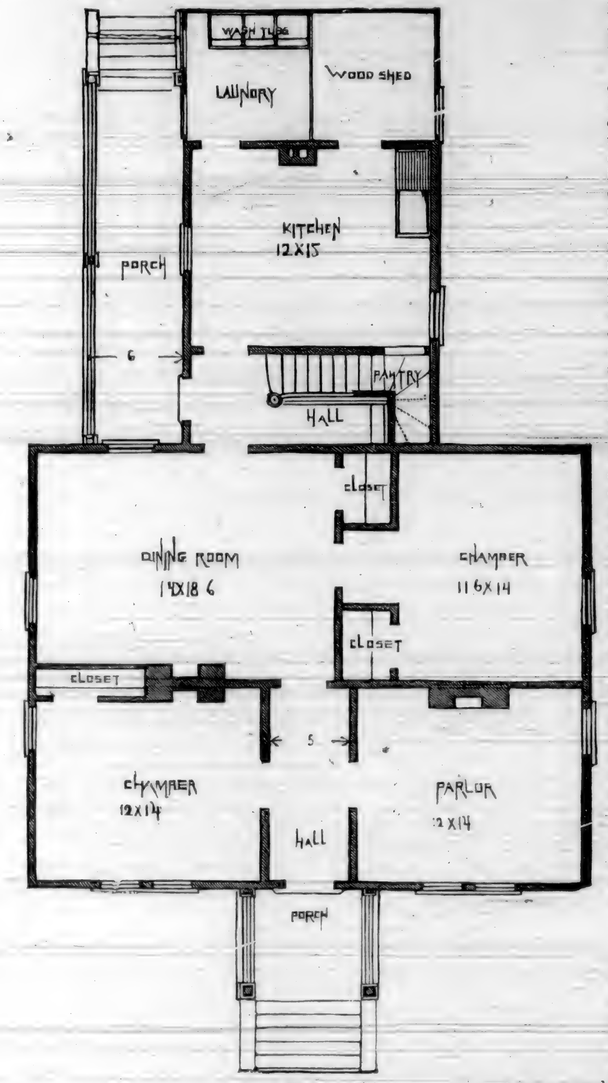
A PLUMBER was sent to the house of a wealthy stock-broker to execute some repairs. He was taken by the butler into the dining-room, and was beginning his work, when the lady of the house entered. "John," said she, with a conspicuous glance toward the plumber, "remove the silver from the sideboard and lock it up at once." But the man of lead was in nowise disconcerted. "Tom," said he to his apprentice, who accompanied him, "take my watch and my chain, and these coppers, home to my wife at once. There seems to be dishonest people about this house."

BUSINESS MANAGER OF ARCHITECT: What is the rule for finding the length of braces between two posts, when they incline one foot in six feet rise?

The cut represents a frame, the posts of which incline one foot in six feet rise. Let the distance B B represent seven feet. The braces are run at an angle of 45°. The post inclining one foot in six, leaves the distance at A A six feet. We have given the rule in a previous number. In this case the brace would be 8 ft. 5 13-16 inches.

Permanent and Unwashable Colors on Walls.

A METHOD of applying paint to a wall so as to secure the greatest possible permanency, is to have the wall coated with mortar composed of lime and sand, and to throw over it a very weak wash of water with which potash silicate is mixed; then proceed to paint, and syringe the surface with a strong solution of the potash silicate. There are, however, a number of colors to be avoided in this process, among which are cadmium yellow, Naples yellow, baryta chromate, chrome-red, ultramarine, cobalt blue and green, chrome green, ivory black; also lime carbonate, baryta white, and zinc white, as the alkali would injure some of these and destroy others. The pigments should be mixed with potash silicate. The latter should be applied warm on the painted surface.



A CHEAP COUNTRY HOME.

A Cheap Country Home.

THE above plans are self-explanatory, every room and its dimensions being plainly and accurately marked.

IN acquiring Burmah, England has got possession of vast forests of teak, which, never plentiful in India, was becoming commercially very rare. Of all the woods grown in the East this is the most valuable. It is neither too heavy nor too hard; it does not warp or split under exposure to heat and dampness; it contains an essential oil which prevents its rotting under wet conditions, and, at the same time, acts as a preservative to iron and repels the destructive white ants; it is, withal, a handsome wood, of several varieties of color and grain, and takes a good polish.

THE beautiful embroidery upon linen and muslin which is sold in this country as "French" embroidery is made by the poor peasants of Ireland, who are able to earn at it about sixty-two and one-half to seventy-five cents a week—working twelve to fourteen hours a day.

Does Charring Timber Promote Durability?

THE general belief has long been that it does, and in accordance with this conviction the practice has been widely followed. But a contrary view of the subject is taken by *Wood and Iron*. That journal says in a recent issue: "As charcoal would endure for ages in places where timber would decay speedily, the practice of charring the surface of fence posts and other timber has been repeatedly recommended in books and ephemeral publications, as eminently worthy of universal adoption.

"The theory upon which such a recommendation is based would seem to warrant a confident expectation of satisfactory results in practice; but repeated experiments with charred timber have furnished conclusive assurance that the process will not promote its durability. Indeed, numerous experiments have shown that charring promotes premature decay. Two posts split from the same log may be set side by side in the ground, the surface of one being charred and the other not; and it will be seen that the charred post will perish before the other.

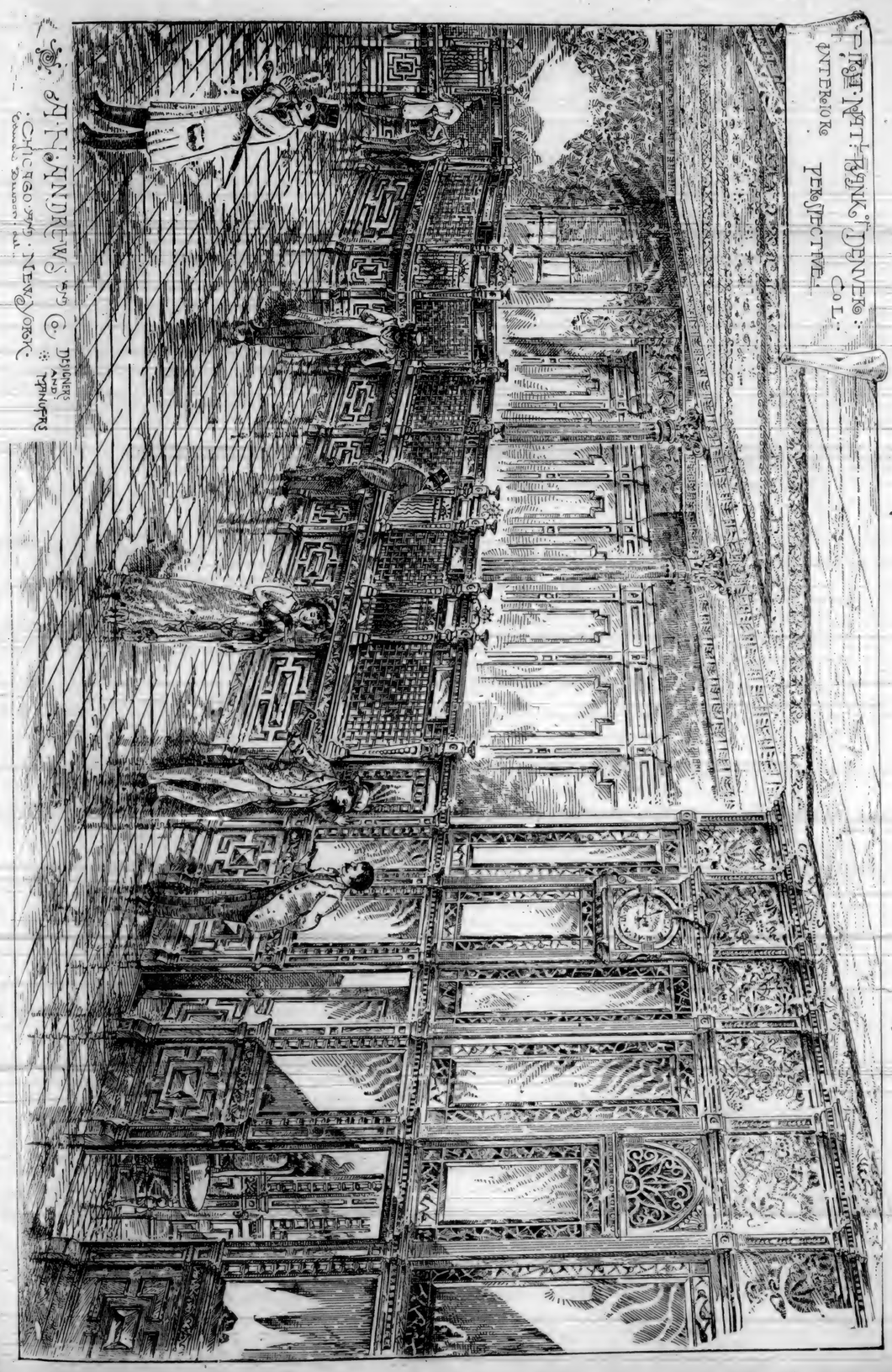
"The same is true of railroad ties, and all such timber as may be exposed to the altering influences of wet and heat. Could the entire timber be changed from its perishable condition to one solid piece of charcoal, the durability would be promoted to a surprising length of time; but the strength of the material would be destroyed. When fence posts or other sticks of timber are exposed to the rapid action of wet and heat, the surface will decay first. One might suppose, therefore, that when timber is enveloped by a layer of charcoal, the durability of the entire piece would be greatly promoted. And such would be the case were it not for the fact that the charcoal is not impervious to water; and as water reaches the timber below the charred surface, decay will commence soon after the grain of the wood has been exposed to the influences of the weather. When the change has once begun beneath the charred surface, the durable covering of coal will be of no service whatever in preserving any portion of the wood. Taking this practical view of the subject, it will be perceived that if only half an inch of the outside of a post be charred, the post will not endure so long as if the same thickness of wood has been left uncharred, to waste away by slow decay."

TWO OF the largest castings in the world are to be seen at Nara and Kamakura, Japan, the one at the latter place being 47 feet high, and the other, at Nara, being 53½ feet from the base to the crown of its head. The statue at Nara is supposed to have been erected in the eighth century, but it was destroyed and recast about 700 years since. In endeavoring to recast it several mishaps occurred, and when at last success came, some few thousand tons of charcoal had been used. The casting, which is an alloy of iron, gold, tin, and copper, is estimated to weigh 450 tons.

A SOUTHERN writer furnishes this bit of history. The first doors of St. Peter's Church at Rome were made of cypress. They gave way to the bronze doors after being in use 100 years, and are as sound as when placed in the building. The boxes in which mummies are found are made of this imperishable wood.

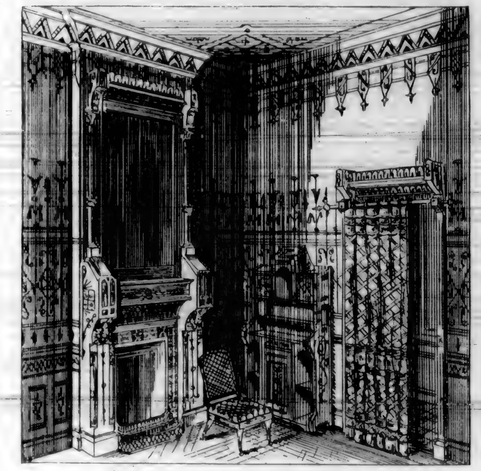
ALL the cannon foundries of Europe are overrun with orders and working day and night. While they make guns abroad, we make plows and work to raise the food that must support the luxury of war.

Notice Our Holiday Offer on Page 161.



ART AND ARCHITECTURE.

[Special for this Journal. By F. HILLER, Architect and Mechanical Engineer.]



XXXIV. GRADES OF DEVELOPMENT IN ART.

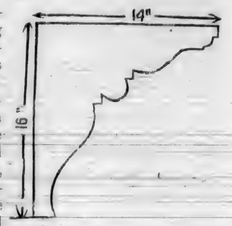
THE figure three has evidently a privileged signification in all relation of men and of nature. Was to be and to pass away. Beginning, middle, and end designate simple forms of those relations whose changes, expansions, and exaggerations are easy, as if self-evident seen, so that here only may be remembered, that in the religions of nations being more capable of civilization, or of people more advanced, Trinity appears on the main in Lens, Poseidon, and Hades in the India; Trinity in Brahma, Siva, and Vishnu, up to the undivided Trinity of the Christian church. This third partition is also, in the development of the arts, of the largest signification, and her close observation makes amazingly more easy the comprehension of the works of art. Germinate, green, and fade are here also the three kinds of appearances, which show themselves and are recognized as the front step, the flourishing and the declining decaying.

XXXV. FRONT STEP.

By the observation of the spirit of a work of art was the sense, purport, and the form of the same drawn in closer perception, and regard, and set up, the perfect harmony of both leading to the highest beauty. But before man arrived to the same with his work, generations must toil and trouble hundreds and thousands of years to prepare the means for him, that he can find a truly worthy sense and purport, to possess a full comprehension of form, and to overcome all hindrances and obstacles successfully in forming the same.

In the petty insignificant beginnings of art the crude predominated first, and the struggle with the resisting material and with his own unskillfulness. And even then the human heart just then desired at this grade of culture a visible representation of the most difficult, "divinity." Already many times it has been stated before, that such a desire leads to symbolizing; that is, to a kind of representation, by which something not lying directly in the form should be indicated by the same or certain other signs. She is called the symbolic grade, or, also, since she always desired to bring up a divine holy spirit, the hieratic symbolic grade. She embraces the art of all barbarous people, those of the Greek to Peadias and his time, and of the Christian nations up to Raphael and his time. She also embraces a great and powerful time and an unmeasurable treasure of works of art and monuments.

The only particular characteristic of all works of this fore grade is, that the spirit overreached the form; that is, that the technical means for its representations were insufficient, and, therefore, partly, as if it were, had to be guessed at. The master of such works thought deeper and felt keener, as he was able to express, finding the only fitting form insufficient there remained some of that, which he intended to put in his work, back, which could not be brought direct to view and appearance, but anyway so that it was not altogether without an indication.



If in the fore grade of art of a people sets in a standstill of a long duration in the general development, then the imperfect forms gradually lose their original symbolic expression, and they transmit themselves from generation to generation as unchangeable types, so that its duration and stability by custom, agreement, and conventionalism become unimpeachable. She herself became external, conventional, rigid, and deadening. Large periods of barbaric people, as the Egyptians, Assyrians, Indians, the last hundreds of years of the Byzantines, have such conventionality, which originally was symbolic art. But if there is no standstill, but a lively progressive development, as in the art of the middle ages of the Western Christianity, then the symbolic works gain a special esthetic force. Then the one who is capable of penetrating and comprehending the defective and less perfect forms, will learn to listen and watch for that which the master could not express. Such works impart the attractions, charm, and the honest industry, the true love, the originality of thought, and the intensity of feeling richly reward the trouble which must be expended to solve the difficulty of her form. The first manly efforts which they attest are exceedingly interesting, even if the first crude beginnings are darkly veiled and hid, as the helpful ways of a child with its thousand slumbering germs for development, which gradually plainer and clearly come out. But not only the conscious effort alone recompenses for the fault in the perfection of the form. It is the impartiality and naturality, the amiable modesty, and the fresh boldness, which draw and lead us again with love to the works of a young and rejuvenated humanity. Even the works of barbaric nations, which fall and show the grotesque and distorted, are tokens of remembrance estimable and venerable, of the strife and struggle of young original generations, when even if the work itself does not give us pleasure and satisfaction.

XXXVI. FLOURISHING PERIOD.

When man at last has succeeded to obtain the full cleverness and security in the making of forms, and has learned to comprehend that he only can make objects which he understands, but not supernaturally divine, but naturally human things, then is the time not far off for the real flo rishing period. Then such cleverness and understanding are for once the closing end of a long time of preparation, and secondly, are they the signs of the

height of a general historical culture, a striving after knowledge, a craving after liberty, and those conditions are the times of birth of great artistic genius. In full equilibrium and noble harmony set itself in the works of the same, the spiritual and the bodily. Meaning and form correspond perfectly to each

other, and a pure beauty displays itself before the amazed eyes of our own time and the admiring posterity. Here is nothing symbolic, nothing which lived in the soul of the artist was perceived, and did not obtain expression, and was made visible. In no line, in no motion, is something which has not directly a spiritual signification and expression. Nowhere is a too much or a too little; everywhere is complete conformity with which the spiritual lives in the appearance, and the form finds its signification and meaning.

As in the highest sense only one beauty exists, we would probably conclude that the highest works of art could only be of one kind. This is not so, since we have not to deal with absolute beauty, but only with beauty, made and produced by men, by defective men with infirmities and passions, which is frequently conditioned, not only by the material used for the work of art, but also by the influence of the time of creating, as has already been mentioned, but also by other conditions, to which the perception and the manner of the technical execution chiefly belongs. The conditions of the beautiful are, however, by no means to be taken as one-sided, or to be so comprehended, that a Madonna by Durr could be reproduced in a Raphaelic manner of drawing. They act rather uniformly and jointly and together on the spiritual and the formal, so that the master could not take the idea otherwise than with the full consideration of the former. In a work of art is the intimate belonging together, the unconditioned inseparability, so that nothing in the form can be changed without altering the idea and to the same nothing added or taken therefrom without altering and transforming of the form.

The duration of such an art period will depend, if the same is solely founded on single individuality, or if the same is directly upheld and carried by the whole people. In the former instance, and if the single individualities are, in the fullest measure, children of their time, she will die with the individuals, as it happened in Italy; but, in the latter case, she can last hundreds of years, even if for once she shines brighter; at other times in the shadow of troubled events is dangerously threatened, as the Greek art shows us a bright example.

IN a late number of the *Gazette des Architectes* is an interesting account of a controversy between the Paris Omnibus Company and a M. Ezebeck, whose premises at Auteuil adjoin a stable belonging to the omnibus company. In order to economize in the cost of the ground, which is very high in this locality, the company has arranged its stable in two stories, and has stalled a portion of its 580 horses on what we would call the second floor, on a level with the sleeping-rooms in M. Ezebeck's tenements adjacent. On this reverberating floor, and the inclined plane by which the horses ascend and descend at all hours of the day and night, their heavy tramping creates an intolerable and never-ceasing jar and turmoil which so greatly disturb M. Ezebeck's tenants, that some of them have entered suit against him for pecuniary damages, and others threaten various methods of obtaining redress, while those who are not constrained by leaseholds have moved out. All this damage, he claims, is owing to the proximity of the stable, and for several years past he has been endeavoring to compel the omnibus company to modify its stable in such a way as to abate the nuisance. To this the company has already consented, and on the advice of an expert, it constructed an additional wall between its stable and M. Ezebeck's premises at an expense of 50,000 francs, which it was hoped would abate the annoyance. Unfortunately, this wall entirely failed of its purpose, and M. Ezebeck has applied to another expert, Architect M. Gelis Didot, whose report is printed in full by the *Gazette*.

M. Didot's explanation of the failure of the wall already built to interrupt the transmission of noise and jar from the stable to the tenements, and his advice as to the proper remedy, are interesting and suggestive, while his communication is such a model of clearness and conciseness that we regret our inability to print it entire. Briefly resuming, he ascribes the failure of this intercepting wall chiefly to the fact that it stands upon the same footing as the original stable wall, and that through this footing all jar and vibration produced in the stable wall are transmitted practically undiminished to the new wall and thence to M. Ezebeck's premises. The new wall is thus practically one with the old one as to the noise and shock complained of. He also finds the distance of this new wall from the old one, namely, ten centimeters, altogether too slight. M. Didot recommends that a new wall be constructed at a distance of two to five meters from the stable wall; that the new wall have a footing entirely separate from the stable footings; that it be sunk to a greater depth, and that the space between the walls be left open or filled with some non-conducting substance. He also suggests that the inclined ascend to the second floor might be removed to some part of the stable more remote from the tenements, and also that the horses be stalled in some other portion. Incidentally he mentions the precautions imposed on other noisy occupations, as that of gold-beating, printing, and numerous manufactures. Sometimes their machinery rests upon special foundations, built up from the ground wholly independent of the building itself, or upon columns rising from special foundations, or on rubber cushions. We may add that sand boxes are sometimes used for a like purpose. M. Didot's comparison between the stable and a gold-beater's shop is vivid and impressive. He says the former establishments, at the most, seldom have more than twenty hammers in operation, while in the stable, even if there are but eighty horses present at a time, the noise from their iron-shod hoofs on the reverberating floor would be equivalent to that of 320 gold-beaters' mallets, or sixteen times the noise from one gold-beating shop.

The Strongest Brick Walling.

A BRICK of average quality requires a pressure of from 600 to 2,000 pounds and upwards per square inch to crush it, the figures varying in different descriptions of bricks, and being as high as 4,395 pounds in hard-burnt facing bricks. Brick walls and brick piers, if properly built, will bear very heavy weights, as will be seen from these figures. The strength of a wall is not dependent, however, upon the strength of its brick alone, but upon three distinct conditions:- (1) the manner in which the bricks are arranged; (2) the strength of the mortar, and (3) the strength of the bricks. Each condition is of considerable moment, and, considering that brick-work is rarely weighed with a load even approaching one tithe of the crushing weight, it is obvious that the first and second conditions are of the greatest importance.

The object of mortar in a wall is simply to form an adhesive material between the bricks of which the wall is composed. It has no function beyond that. Good mortar is certainly not so strong as good brick, and the mortar joints should, therefore, be kept as thin as is consistent with the perfect adhesion of the bricks. The current custom of making thick mortar joints has the effect of considerably weakening the brick-work, and should be discouraged.

One of the strongest forms of bonding in brick walls, is that known as "English bond," in which the bricks are arranged in alternate courses of headers and stretchers. The small amount of cutting required, the avoidance of two vertical joints over one another, and the large number of headers in the wall render it very strong and suitable for heavy work; in fact, English bond, if properly carried out, conforms very nearly indeed, to all the requirements of good bonding.

In thick walls of heavy buildings, such as warehouses and structures of the same class, the strength of the bond may be improved, to some extent, by arranging every fourth course of bricks diagonally, forming what is sometimes termed "diagonal bond." The advantage is that a lap of four, instead of two inches, is obtained. The elevation of this bond is the same as that of ordinary English bond. The header courses are the ordinary header courses of English bond, arranged alternately with stretcher and diagonal courses. The diagonal courses are arranged alternately in opposite directions. One disadvantage of this arrangement of the bricks at an angle, is the fact of its leaving small triangular spaces on each side, which tend, to some extent, to weaken the wall. These spaces should, however, be carefully filled in with pieces of brick, and not be allowed to be left simply filled in with mortar.

THE output of a Swiss watchmaker is 40 watches a year; of a United States mechanic, 150; and the American earns in his skilled line of labor three times as much as his Swiss competitor.

TAKE any saw running constantly in one direction, and after having made 10,000,000 revolutions, examine its particles at a newly broken surface with a microscope, and it will be found that every molecule of iron composing that saw has been displaced.

THE total cost of the Riel Rebellion in the Northwest Territory was $4,700,000 and the casualties 26 killed and 206 wounded.

The Carpet Beetle.

THE rapid increase of these insects, and the great destruction of carpets and woolen clothes which they occasion, make it of importance that every housewife be informed as to their history, appearance, and the remedies for preventing and getting rid of the pests. The Zoological Department of the Agricultural College of Michigan has recently issued a very complete bulletin concerning these insects, from which we quote the following paragraphs:—

"The carpet beetle belongs to the family *Dermestidæ*, and is closely related to *Dermestes lardarius*, the bacon beetle, which thrives upon dried insects and other museum specimens, as well as most kinds of animal tissue. It is a minute but handsome beetle only one-eighth of an inch long, and about two-thirds as broad as long. The main color is black, while a dorsal red line extends longitudinally, bordering each wing-cover internally, and is marked by three projections on each wing-cover. Opposite these red projections on the outside of each wing-cover are three white spots. This handsome little pest will be found in concealed places from October till the following spring. As the beetle does not eat, no harm will be done by the insect while in this stage, except as in egg laying it prepares for future mischief.

"The larva—the real mischief maker—is about one-half longer than the beetle. It is ringed with light and darker brown bands, and the body is margined with tufts of brown hairs. These are very long at the ends of the body, and at the front obscure the head. Similar shorter hair clothes the whole body. The ringed and hairy character makes it easy to identify this larva.

"When the larva is fully developed, usually late in July and August, it seeks some concealed place, as the crevice between the boards of the floor, where it changes to a pupa. Sometime before the full change to the pupa is made, the larva skin breaks open. These pupæ, which will be seen from July to October, and even later, are quiet, and so of course do no damage while in this state.

"We see, then, that the injury from the carpet beetle comes through the larvæ, and is most marked in June, July, and August, when the larvæ are most numerous and abundant. The fact, however, that beetles are emerging from the pupa state from October till the following spring, together with the artificial conditions of heated rooms, will undoubtedly, as has been the case with the clothes and carpet moths, vary their habits in this respect, so that very likely in our rooms that are always kept warm, development may be hastened and the insect may become even double brooded, so that quite possibly we may find the larvæ feeding at all seasons.

"The fact of the rapid increase of these insects, and the terrible destructiveness which attends an onslaught by them, make it imperative that we find a remedy for this evil, or else abandon the luxury of carpets, not to speak of woolen garments. Cases are known where the insects have taken entire possession of houses from basement to garret, in a year or two's absence of the owner, and have destroyed or seriously injured all woolen belongings, even to the picture cords. Its small size, fearful destructiveness, and its power to resist insecticides make it a terrible pest; and wisdom urges that all learn to detect it so as to stamp it out upon its first arrival.

"Experience shows that it first attacks carpets, and there is where we may look for an assault. Like the well-known carpet moth, *Tinea tapetzella*, it works first and most at the borders of the carpet.

"I should recommend the ironing of wet cloths placed over the affected part of the carpet, using flat-irons that are very hot. The cloths may be two or three thicknesses of common toweling, wrung out of water just so they will not drip, then iron till dry. To secure the best results, one ought to have a dozen or more of irons. I have found that this, thoroughly done, is most deadly to the carpet moth larvæ, and surely the intensely heated steam penetrating every fiber of the carpet, and to every crevice of the floor, must sound the knell of every larval carpet beetle that feels its deadly presence. I have tried this on delicately tinted carpets, and while it was delightfully efficient in destroying insects, it did no injury whatever to the carpet. The only caution here, then, is to make thorough work; *be sure of a full head of steam!*"

THE privy vault, which for the most part cannot be dispensed with in localities which are not sewered, and have no regular water supply, is commanding considerable attention just now when sanitary surroundings are so much sought after. Various theories as to the best mode of construction are being advanced, proper regard being had for the safety of wells contiguous thereto, so as to guard against their pollution, and while each plan suggested from time to time may have its merits, it is worth while to consider one which was offered at the late Master Plumbers' National Convention, and which, from its simplicity and cleanliness, must commend itself to general approval. It was in treating the subject of "The Danger of the Privy Vault," in an essay prepared by a member of the Baltimore Master Plumbers' Association, that the best substitute for the common privy came up for consideration, when the following was offered: Instead of making under the privy seat, in country places, for instance, the usual excavation, the essayist recommends that there should be a strong, galvanized iron box made to fit under the seat into which everything could fall. The back or sides of the privy house should be so constructed that when full the box could be drawn out and emptied. Before being put in position, dry earth or ashes to the depth of about four inches should be placed in the bottom, and in the privy there should be a box, with either ashes or earth, a little to be sprinkled over the box, under the seat, whenever used. One effect of such an arrangement would be that the contents of the box would serve as a fertilizer, while the main object, that of keeping the air and the soil free from pollution, would be fully secured.

IN Ireland the total number of land-holders is 68,716, and of these 36,141 own less than one acre of ground.

Please Make Immediate Settlement.

As an entire change in the management of this Journal is likely to occur at an early day, those who are indebted to us will greatly oblige

BY MAKING PROMPT PAYMENT.

Do not hold off because you may for a time, but pay up at once and remove the obligation. It is our due and your duty.

Market Reports.

CORRECTED FOR NOVEMBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Firewood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1¼ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, } 1 x 3, and narrower }	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00½
Redwood, Rough	M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in 12 ft. and over	" "	28 00
" " 6 in. 7 to 11 feet	" "	25 00
" " 6 in. under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ½x3	per lineal foot,	00½
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75
NAILS—Rates were recently reduced to:—		
200 keg lots		2 50
100 "		2 60
Smaller quantities		2 70
PAINTS AND OILS:—		
Pioneer and Nevada White Lead, 1,000-lb. lots		6½
" " " " " less quantities		7
" White Lead (local factory), 5-ton lots		6½
Cal. Linseed Oil, raw (single bbl. lots)		45
" " " boiled " " "		47½
Turpentine, per gallon		47
BRICK—California Building Description, soft, per 1,000		6 00
" " " red, " "		7 00
" " " hard " "		7 75

Master Plumbers' Association.

Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

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Bush, D.	316 Sutter Street
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Connor, J. H.	528 Third Street
Daniel, Wm. L.	234 Post Street
Doherty, John	349 Kearny Street
Downes, Chas.	41 Second Street
Duffy Bros.	17 Trinity Street
Enright, Wm. & Co.	39 Sutter Street
Firmin, Jno. L. E.	Cor. Thirtieth and Bartlett Streets
Fritz & Kean	130 Geary Street
Gray, Jno. T.	230 Sutter Street
Huffschmidt Bros.	637 Clay Street
Hobro, W. D.	728 Washington Street
Reilley, C. J.	214 Montgomery Avenue
Shepard Bros.	526 California Street
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Wilson, Wm. F.	25 Stockton Street
Williamson, H.	329 Sutter Street

In our December issue we will publish complete a list of those who are in arrears for subscriptions to this Journal. Avoid publicity by sending us the amount of your indebtedness immediately.

A BRIEF but forcible sermon is preached by the *Builder and Woodworker*, of New York, on the morality of home decoration. It argues that every improvement in the house is an improvement in morality. The efforts to acquire, to maintain, and to improve it are a daily, life-long schooling in morality. And in the train of these virtues, and akin to them, comes the sense of the beautiful. The house, the home, is one's own, is as potent as it is simple and unfailing in working these humanizing effects. We see evidences of this in what remains to us of the domestic architecture of the Middle Ages. Men then bestowed much thought on the designing and decoration of their houses, because they were their own.

Fire Hose and Carden Hose, W. T. Y. Schenck, 256 Market Street.

A

Ash Ave., bet. Laguna and Buchanan. Additions and alterations.
O.—Mrs. Caroline Klein.
A.—Townsend & Wyneken.
C.—N. B. Ritchie.
$1,800.

B

Bush, bet. Laguna and Buchanan. Additions.
O.—H. Maginnis.
Day work.
$800.

Bryant, bet. Second and Third. Two two-story frames.
O.—Chas. H. Castle.
A.—Chas. I. Havens.
C.—R. Doyle & Son.
$7,500.

Boardman Place, bet. Bryant and Brannan. Two one-story frames.
O.—J. J. Mahoney.
A.—J. J. Clark.
C.—J. Wilcox.
$2,000.

Berry, bet. Fifth and Sixth. Ice House.
O.—Boca Rowing Co.
A.—John & Zimmermann.
Day work.
$1,000.

C

Clementina, bet. Eighth and Ninth. Repairs.
O.—Thos. McGorey.
A.—M. J. Welsh.
C.—R. Sennott.
$700.

E

Eighteenth, cor. Church. Two-story frame.
O.—A. Simon.
A.—Darwin.
C.—Dutton & Kennedy.
$2,600.

Eighteenth, near Church. Two-story frame.
O.—
C.—A. B. Tarr.
$2,500.

Eddy, bet. Devisadero and Broderick. One-story frame.
O.—W. McLaughlin.
C.—R. O. Chandler.
$2,000.

F

Filbert, near Montgomery Ave. Two-story frame.
O.—J. Trueworthy.
C.—A. H. Taylor.
$3,500.

Fell, bet. Laguna and Buchanan. Two-story frame.
O.—Patrick Parrell.
A.—A. Warren.
C.—M. Murry.
Brick work, J. McCann.
$4,500.

Fifteenth, cor. Guerrero. Two-story frame.
O.—Jos. Buettgenbach.
A.—John & Zimmermann.
C.—Theo. Van Borstell.
$6,500.

G

Guerrero, bet. Twenty-second and Twenty-third. One story cottage.
O.—John Bell.
C.—Geo. Houston.
$2,000.

H

Howard, bet. Twenty-first and Twenty-second. Repairs.
O.—Jordan.
A.—M. J. Welsh.
C.—M. Walsh.
$600.

Hayes, near Buchanan. Three two-story frames.
O.—R. H. Swain.
Day work.
$10,500.

Hayes, cor. Webster. Additions.
O.—Capt. O'Christenson.
A.—David Salfield.
C.—A. Klahn.
$500.

Harrison, bet. Thirteenth and Fourteenth. Alterations.
O.—P. Leddy.
A.—J. J. Clark.
C.—J. Madden.
$1,300.

J

Jackson, near Larkin. Two-story frame.
O.—Mrs. E. Lore.
A.—Townsend & Wyneken.
C.—Arnold & Dyer.
$4,500.

K

Kentucky, near Sierra. Two-story frame.
O.—John Gurtz & H. Voss.
A.—David Salfield.
C.—B. Dryer.
$2,500.

L

Larkin, cor. Filbert. Six two-story frames.
O. and B.—J. A. Whalen.
Day work.
$21,000.

Lombard, bet. Jones and Leavenworth. Three two-story frames.
O.—Mr. and Mrs. Jacques.
A. and B.—A. W. Pattiani & Co.
$12,000.

Leavenworth, near Clay. Alterations and additions.
O.—R. Magee.
A.—H. D. Mitchell.
Day work.
$3,000.

Linden Avenue, bet. Octavia and Laguna. Additions
O.—S. Borker.
C.—Jos. Dutton.
$2,500.

Lyon, cor. Post. Two-story frame.
O.—E. Cassiday.
A.—M. J. Welsh.
C.—A. J. Smith.
$2,500.

M

McAllister, cor. Lyon. Two-story frame.
O.—John Grace.
A.—T. J. Welsh.
C.—Jas. Irwin.
$6,000.

McAllister, bet. Buchanan and Webster. Three three-story frames.
O.—J. H. Backus.
A.—John M. Curtiss.
C.—J. W. Wessinger.
$13,000.

Market, cor. Annie. Alterations.
O.—Mrs. M. C. Bishop.
A.—Percy & Hamilton.
C.—J. G. Day.
$7,500.

Market, bet. Third and Fourth. Five-story brick.
O.—H. H. Bancroft.
A.—Clinton Day.
Brick work—John McCarthy, $27,000
Total cost, about $90,000

McAllister, near Franklin. Three-story frame.
O.—John R. Morton.
A.—Hiserne & Everett.
C.—F. Buckley.
$5,000.

Market, cor Tenth. Three-story frame.
O.—Inventors' Institute of California.
A.—John Gash.
Total cost, about $85,000

Mission, near Hermann. Two one-story frames.
O. and B.—J. Duncal.
Day work.
$1,800.

Mission, cor Potter. Additions.
O.—Mrs. M. Green.
Day work.
$1,200.

Mission, bet. Sixth and Seventh. Additions.
O. Central M. E. Church.
A.—J. Marquis.
C.—Moore Bros.
$8,000.

Mt. St. Joseph, South San Francisco. Orphan Asylum.
O. Sisters of Charity.
A.—J. J. Clark.
C.—Mahoney Bros.
$10,000.

Minna, bet. Eighth and Ninth. Brick party wall.
O.—J. Andrews.
A.—John & Zimmermann.
C.—Jacob Beck.
$950.

N

Nebraska, cor. Alameda. Two-and-one-half-story frame.
O.—Lucy Bros.
A.—Townsend & Wyncken.
C.—N. C. Post.
$2,800.

O

Oak, bet. Pierce and Scott. One-story frame.
O.—B. Crocker.
C.—P. Laherty.
$1,500.

P

Page, cor. Fillmore. Three two-story frames.
O.—N. F. Fitzgerald.
A.—S. & J. C. Newsom.
C.—A. Semott.
$10,000.

Page, bet. Pierce and Scott. One-and-one-half-story frame.
O.—L. E. Sawyer.
Day work.
$2,600.

Post, bet. Dupont and Stockton. Four-story brick.
O.—Z. V. Dodge.
A.—Miller & Armitage.
Brick, etc.—J. Wagner, $5,400
Carp'ter work etc.—J. G. Adams, 4,800
Plumbing—J. D. Welsh, 850
Painting—J. F. Lynch & Co., 500
Total cost, $12,000

Page, bet Pierce and Scott. One-story frame.
O.—G. P. O'Connell.
A.—Townsend & Wyncken.
C.—J. H. Lennon.
$1,400.

Pacific Avenue, near Buchanan. Two-story frame.
O.—Samuel Carson.
A.—Percy & Hamilton.
C.—Gray & Stover.
$6,500.

Pierce, bet Haight and Page. Two-story frame.
O.—Mrs. Luckey.
A.—J. Marquis.
C.—Martin & Maguire.
$4,000.

Pine, nr. Gough. Two and one-half-story frame.
O.—Mrs. M. Irwine.
A.—P. R. Schmidt.
C.—W. T. Commary.
$15,500.

Point Lobos, bet. Wood and Collins. One-story frame.
O.—J. Schrader.
A.—John & Zimmermann.
C.—A. Miller.
$1,750.

Pacific Ave., nr. Fillmore. Two-story frame.
O.—J. H. Langhorn.
A.—J. J. Clark.
C.—J. Adams.
$4,900.

S

Sanchez, bet. Twenty-ninth and Valley. Two-story frame.
O.—G. Boysen.
C.—J. G. Lowner.
$1,800.

Scott, bet. Eddy and O'Farrell. One-story frame.
O.—D. Collins.
C.—P. Jones.
$2,000.

Steiner, cor. Hermann. Additions.
O.—H. Iburg.
Day work.
$1,500.

Sutter, bet. Van Ness and Franklin. Alterations.
O.—Mrs. M. Zimmerman.
A.—P. R. Schmidt.
C.—H. Keenan.
Brick work—R. Mitchell.
$5,200.

Sanchez, nr. Market. One-story frame.
O.—
C.—P. Laherty.
$2,200.

Scott, bet. Jackson and Washington. One-story frame.
O.—F. D. Marsh.
A.—J. T. Kidd.
C.—O. White, $1,725
Plumbing—Williams, 260
Cost, about $2,000

T

Twenty-first, cor. Treat Avenue. One-story frame.
O.—
C.—Chris. Raetz.
$2,500.

Thirteenth, cor. Belcher. One-story frame.
O.—W. Turney.
A.—J. T. Kidd.
C.—M. Loftus.
$1,500.

Thirteenth, nr. Belcher. Two-story frame.
O.—A. Giovannini.
A.—Miller & Armitage.
C.—A. Krohn.
$2,500.

Townsend, cor. Rich. Three-story brick.
O.—Mrs. Mark Hopkins.
A.—A. G. Moore.
C.—T. H. Day.
Brick work—E. R. Shain.
Cost, about $10,000

Tennessee, nr. Solano. Alterations.
O.—F. Lester.
C.—C. E. Dunshee.
$2,200.

Turk, nr. Scott. Additions
O.—A. Schropfer.
Day work.
$900.

Turk, nr. Scott. One-story frame. (In rear.)
O.—A. Schropfer.
Day work.
$1,000.

V

Vallejo, bet. Powell and Mason. Two story and basement frame.
O.—T. S. O'Connell.
A.—Miller & Armitage.
C.—S. T. Green.
$5,000.

W

Washington, cor. Octavia. Additional contract.
O.—Alex Boyd.
A.—Curlett & Cuthbertson.
Painting—J. H. Keefe.
$1,500.

MISCELLANEOUS.

San Jose—Sixth. One-story cottage. O., A. Bergen; A., Jacob Lenzen & Son; C., F. Davis; $1,545. Eighth. Two-story frame. O., Wm. Fruehling; A., Jacob Lenzen & Son; C., W. Boyles; $4,650. Santa Clara. Two-story frame. O., Jos. Feist; A., Jacob Lenzen & Son; C., G. N. Hensley; $3,150. Santa Clara. Two-story frame. O., Mrs. Bradley; A., Jacob Lenzen & Son; C., Chas. Curats; $2,650. First. Additions. O., O. A. Hale & Co.; A., Jacob Lenzen & Son; C., A. J. McIlvain; $3,500. Terrain, cor. Bassett. One-story brick. O., —Schnider; A., T. Lenzen; C., G. E. McDougall; cost, $5,000. East side Narrow Gauge Depot. One-story brick. O., C. McKirnan; A., T. Lenzen; day work; cost, $6,000.

Hollister—Two-story brick. (Masonic Hall.) O., D. K. Sanford; A., Jacob Lenzen & Son; C., Jacob Dorn; cost, $8,500.

Seattle, W. T.—One-and-one-half-story frame. O., N. Toklas; A., P. R. Schmidt; $5,000.

Sausalito—Two-story frame. O., T. M. Curtan; A., Chas. I. Havens; C., A. Beyer; $4,750.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

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The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address as below.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, c r. Hayes and Laguna; architects, Miller & Armitage. John MacKenzie, cor. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John Marquis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architects, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. J. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty-fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

EDWARD B. HINDES. Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 12.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., DECEMBER 15, 1886.

THE CONTINUANCE OF THIS JOURNAL.

WE hoped to have been able in this number to announce the new management of this Journal as completed, and to have introduced our successors by name to its numerous patrons. But as this pleasure is delayed for the present, we shall continue its regular issue with renewed energies, into 1887, with the determination that it shall not lack any of the qualities and recommendations which have gained for it

THE HIGH AND HONORABLE REPUTATION

it now has, through hard, earnest effort and personal sacrifice.

It is highly probable that at an early day it may be our pleasure to pass its interests into worthy hands, who will prosecute the work until it shall be excelled by no other journal in the United States, as far as all needed purposes of the Pacific Coast and a practical, instructive, and indispensable publication is concerned.

California and the Pacific Coast require just such a journal, and we propose to continue to supply this great want, and

SHALL CONTINUE ITS PUBLICATION

until satisfactory arrangements can be made with parties capable and qualified to assume its management, and prosecute its future to the full extent of

ITS GREAT POSSIBILITIES.

THE EIGHTH VOLUME OF THIS JOURNAL WILL BE COMMENCED WITH THE

JANUARY NUMBER, 1887.

IT was reasonable to anticipate that some one of the many very earnest negotiations that have been opened touching the sale of this journal would, ere this, have resulted in an arrangement by which we should have been enabled to announce in the present number a change of management and proprietorship. Such, however, not being the case, it will appear in January, 1887, with more than the usual

HANDSOME ILLUSTRATIONS.

It has been decidedly interesting to note the numerous and varied earnestly expressed views of friends and patrons in reference to the course marked out by us of seeking relief from the *excessive* labors of editing and managing the interests of this journal, and the responsible duties of a practicing architect, to the latter of which we propose to devote our entire energies and attention after disposal of this journal.

Some seem to think, and tacitly to say, that, having "worked up so excellent a journal, we should continue to manage it." We accept the compliment, but claim the right to follow our own judgment as to personal interests and comforts. If the number of summer suns passing over our head had been twenty less than they now number, no reasonable offer would be an inducement to us to part with our interest and relationship with this journal, as there is a future for it sufficiently assured, and pleasures in manipulating and directing its matter and interests, to make it an object to retain our position. As it is, we shall continue our work into the coming year, and seek to hold its columns firm in the favor and patronage hitherto so liberally extended by appreciating subscription and advertising patrons, so that, when others do assume control, the foundation of future success will be in good and sound condition.

Our Black List.

SINCE the publication of our intention to print a list of all delinquent subscribers in our December number, we have been pleased to see the unanimity with which those owing money have either forwarded the same to us, or written letters asking further time, or otherwise explaining the cause of the arrearage. We want it distinctly understood that no threat was intended in our notice to publish names. We have been to a great expense to build this journal to its present standing, and, having trusted many of our patrons for one or two years, we claim that it is our right to have monies owing us paid at once. If not paid, we will publish the list as contemplated, and then take such means as the law allows to collect all claims justly due.

For the benefit of those who do not understand the law in regard to the payment of subscriptions to any journal, we publish the following digest of decisions that have been rendered by our Superior Courts:—

1. *Any person who takes a paper regularly from the office—whether directed to his name or another's, or whether he has subscribed for it or not, is responsible for the payment.*

2. *If a person orders his paper discontinued, he must pay all arrearages, or the publisher may continue to send it until payment is made, and collect the whole amount, whether the paper is taken from the office or not.*

3. *The Courts have decided that refusing to take newspapers and periodicals from the post-office or removing and leaving them uncalled for is prima facie evidence of fraud.*

OUR JANUARY NUMBER 1887 WILL BE HANDSOMELY ILLUSTRATED.

Annual Building Summary for 1886.

WITH this issue the building record for 1886 is closed, and those whose interests it is to watch the development of our building resources and engagements can calmly consider the whys and the wherefores why the summary is not as large as the previous year. The year opened auspiciously for an active season, and hopes were entertained that a regular building boom would take place later on in the season; but, as time rolled on, the engagements became fewer, until, at the present time, building is almost at a standstill, with no immediate prospect of a recovery. The late unhealthful excitement in regard to stocks has completely demoralized the minds of those who, but a short time ago, were content to receive a fair percentage on their money; and the slow process of saving money by the sure methods adopted by our working classes for the past few years, have been scattered to the winds by their fierce efforts to make a fortune by gambling in stocks.

The low prices of our cereal productions have also been the means of retarding building growth. We know of three captains who intended to build either in this City or Oakland, but the low price of wheat, creating low charter prices, really prevented their wishes being carried out, and so, for "a last voyage, my dear, you shall go with me," their families made the trip to Havre and Liverpool merely to reduce expenses.

The exciting election also had a tendency to draw people's attention away from building. This had no sooner been settled than the first cause above mentioned completely demoralized building activities. Other causes might be noticed, but those enumerated are sufficient. But few large buildings have been commenced during the year. In this respect the succeeding year promises more than that just closing.

LABOR AND MATERIALS.

The labor market has been strong, and is to-day in a very satisfactory condition. A less number of skilled mechanics are unemployed than at the same time last year. The demand for the country is, and has been, very good, with no present signs of abatement. Lumber is much higher than one year ago; in fact, it has been raised to such a figure that it materially affects the cost of a building. Hardware is also held at firm prices. Bricks are much lower than quoted at our last yearly report. Contractors are growing wilder in their calculations, and it is getting about time that owners should consider the *man* who presents the lowest bid, as well as the amount of the *bid* itself.

SUMMARY.

During the first six months of 1886 there were quoted in this journal

670 building engagements, valued at $3,665,964

and for the last six months

478 building engagements, valued at 2,735,705

thus making a grand total for 1886 of

1,148 building engagements, valued at 6,401,669

COMPARISON.

The number of building engagements, and their value, since 1880 are as follows:—

1880—	397	engagements, value	$1,754,435
1881—	533	" "	3,700,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669

Although not equal to the bonanza year of 1885, still it must be admitted that the showing is a very good one. In the above estimate we have allowed for the Flood mansion on California Street, no account of which has heretofore appeared in these columns.

GREETINGS.

We cordially return our thanks to those who have so successfully endeavored to maintain this department of this Journal to that excellence which has compelled all to admit that, for the fullest information in regard to building news, the California Architect stands without a rival on the Pacific Coast. To our country informants we extend our sincere thanks for favors rendered, and trust to deserve their support in the future. Let all who can give a helping hand towards sustaining a class Journal strictly devoted to those designated by its title.

Architects, Attention!

We want every architect on the Pacific Coast to contribute a short article for the January number of this journal. It should be your aim to make your home journal interesting to all who may read it, and there is no surer way to obtain this end than by each one writing a short article. Illustrate it, if need be; we will make the cuts. Be sure that the articles reach this office by the 5th of January.

To Contractors.

What contractor in the city but knows of some little idea that would be beneficial to the readers of this journal. Help to build up this journal by a free interchange of thoughts. It will pay you tenfold to be in communication through our columns with all the master mechanics of the Pacific slope. Do not let the thought enter your mind that you cannot write well enough. Do the best you can, and we will see that your ideas are presented in proper shape. What say friends Terrill, Day, Smilie, Mahoney, Gray, Owens, Moore, Worden, and a host of other mechanics tried and true, of the building contractors of California?

Apprentices.

When you have found out any ideas that should be known by every one, forward them to us, and we will publish them under your own names, that others, hearing of your good deeds, may go and do likewise.

Mean People.

THOSE WHO READ PAPERS, BUT NEVER SUBSCRIBE TO THEIR SUPPORT.

THERE is a class of people who are absolutely mean. Honest they claim to be, and may be in a general sense, but it is little less than dishonesty on the part of those who are able to pay for journals to borrow them from others to obtain their contents, or in other ways to gain possession of them, for the purpose of extracting the information and instruction contained in their columns. Every line of a printed journal costs its author money, and no one enjoys the right to appropriate to his own use and benefit that for which he pays nothing. We daily meet persons who have something to say in praise of this journal and its contents, and tell how eagerly they peruse its pages, but whose names are not upon our subscription list. This is a shame, and we suggest to such the absolutely unfair and dishonorable course they are pursuing. If it contains instructive and interesting matter—a fact which we have never heard questioned—then every man who reads it should subscribe to its support. And if all *free readers* will send in their subscriptions, we will soon be able to increase its interest in all departments.

Let all subscribe at once.

Setting Out Stairs.

AFTER determining the height of the riser from the "story rod," the right proportion of tread must be found. Sometimes steps are arranged so that it is easier for a man to go up "two at a time" than to walk up in the proper manner. The reason is, both tread and riser are made small. When a riser is reduced, the tread must be increased; and the contrary when the riser is increased, the tread must be reduced in width. Joiners do not often break this rule, but masons very often do, notably in steps leading to and from railway stations. A simple rule may be given for finding a suitable proportion.

Take any suitable step as a standard step, that is to say, if you know of a staircase which is comfortable and easy to walk up, take it as a standard to gauge others by. Suppose you have a riser given, and require the width of a suitable tread, make use of the following proportion:—

As the given riser : standard riser : : standard tread : required tread.

If the tread is given and the riser required, then:—

As the given tread : standard tread : : standard riser : required riser.

To work out an example: Suppose 10-inch tread and 7-inch riser be taken as a suitable step, let 6-inch be the given riser; then by substituting the value of treads and risers for the names, we have—as 6′ : 7′ : : 10′ : the required tread; this gives $\frac{7.0}{6}$ or $11\frac{2}{3}$ for the size of a tread. Nicholson gives as a standard a tread of 12′ to a riser of $5\frac{1}{2}$′. Working out the example given by this proportion, we get 11′ instead of $11\frac{2}{3}$′; either of these sizes will be an agreeable step.

A rough and ready rule for the *usual* sizes of treads and risers is to make 2 risers and 1 tread equal to 24 inches.

NOW IS THE TIME TO SUBSCRIBE FOR 1887, $2.00 PER ANNUM IN ADVANCE.

A List of Mechanical and Architectural Works

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DEDUCT ONE-SEVENTH FROM PUBLISHED PRICE.

elect any work from the list, deduct one-seventh of the price given, forward us the money, and by return mail yo will receive the book or books selected, with charge prepaid.

Bound Volumes of the California Architect and Building News, 1880 to 1886, $2.00 each.

Street, Store and Bank Fronts,	$2 50
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Lessons on Hand Railings,	5 00
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Artistic Homes,	3 50
Modern House Painting,	5 00
Old Homes Made New,	1 50
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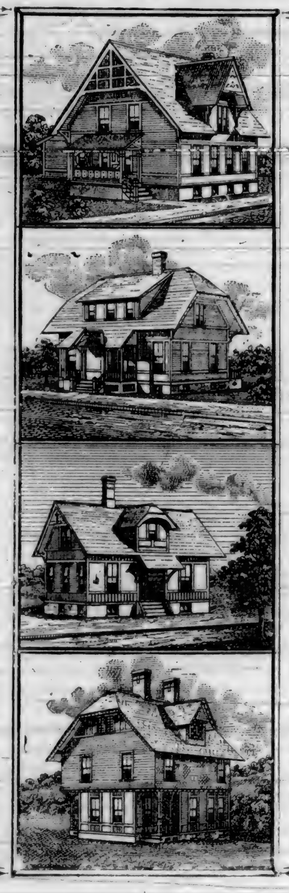

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MECHANICS' GEOMETRY, Or Science of Framing, BY USE OF CARD BOARD MODELS. REDUCED FROM $5.00 TO $4.00.

OUR JANUARY NUMBER WILL BE REPLETE WITH INTERESTING INFORMATION.

[Written expressly for this journal.]

The Origin of the Mechanics' Lien Law.

THE law of mechanics' liens, as we have it in existence to-day throughout the United States, is particularly an institution of this country, and was unknown in the earlier nations in the same manner and to the same extent as it now prevails with us.

There were, however, many of the fundamental and underlying principles of our law in vogue in England before our time; these were the creation of the civil law of that country. Domat, in his treatise on the civil law, says: "Architects and other undertakers, workmen and artificers, who bestow their labor on buildings or other works, and who furnish materials, and in general all those who employ their time, their labor, their care, or furnish any materials, whether it be to make a thing or to repair it, or to preserve it, have the same privilege for their salaries and for what they furnish as those have who have advanced money for these kinds of works, and which the seller has for the price of the thing sold." The privilege of the seller here referred to is thus defined by the same learned authority: "He who has sold an immovable thing, *for which he has not received the price*, is preferred before the creditors of the purchaser, and before all others *as to the thing that is sold*. Thus the seller who has not received the price may follow it (the thing sold), into what hands soever it may have passed, if he has delivered it before payment." Again: "The creditor, whose money has been laid out in preserving or repairing the thing, has a privilege, for he has preserved the thing; it being for the common interest, both of the proprietor and creditors; and it is, as it were, his own to the value of what he has laid out upon it." And again: "If a third person lends to an architect or other undertaker money which is laid out on a house, or any other work, and said money has been advanced by order of the master for whom the said work is to be done, this third person shall have the same privilege as if he had lent the money to the master himself for that use. But if the money was lent without the master's knowledge, or without his order, and if the master has paid the undertaker, he who has lent the money will have his action *only* against the *person to whom he lent it*. But, if the master has not paid the undertaker, this person may use the privilege, whether he has lent the money with the master's order or without it." Sir Thomas Tomlin defines undertakers as "such as the king's purveyors, employed as their deputies. The name is given in several statutes to persons who undertake any great work, as draining of fens," etc. Clearly, the contractor under our law, and the undertaker under the English law, are the same. It will thus be seen that in England a *privilege* attaches only to the thing itself over other creditors; while in this country a *lien* attaches not alone to the thing, but to the land. The American system is purely statutory, and derives nothing of its origin from the civil law of England.

Speaking of the legislative foundation for a lien law, Mr. Phillip says: "None were ever adopted, and none to this day are to be found on the statute books of Great Britain, securing in any manner to the mechanic or material man a lien on the buildings which their industry or capital have contributed to erect." The necessity for a lien law arose undoubtedly from two causes: First, all absence of even the remnant of the hampering and cumbersome feudal land system, and the fact that here the land was coming into the possession of the masses; while in England the landed estates were held only by the few; and second, the necessity to aid in the rapid improvement of the land, by giving to the mechanic and material man, whose work and materials were the necessary means to such improvement, full security for the value of his labor and the materials which he might furnish. On September 8, 1791, the Commission appointed to improve as speedily as possible the city of Washington, as the permanent seat of the National Government, adopted a memorial, from which we quote: "Your memorialists conceive it would encourage master-builders to contract for the erecting and finishing of houses for certain prices agreed on, if a lien was created by law for their first claim *on the house erected, and the lot of ground on which it stood.*" On December 19, the General Assembly of Maryland passed the first distinct and definitive law in this country. The first law was, however, very meager and crude, and by no means as useful as that which to-day forms part of the statute law of every State in the Union.

This law was at first greatly disliked, and met with opposition in the courts and in the legislative bodies; yet it has steadily grown in favor, until its importance and benefits are acknowledged alike by both. There is yet much room for advancement before that point is reached, and a law is upon our statute books which, giving an undue advantage to some, recognizes and protects the rights of all.

It may not be out of place, then, to say that this important law, which was created in 1791, had for its mother the principles of the civil law of England, as we have stated; and for its father the minds of Jefferson and Madison, both of whom were at that time members of the Commission which recommended the passage of such a law.

And so it is that to-day we have in this State a lien law, a creation of the Constitution, and an enactment of the Legislature.

To Dispose of Kitchen Garbage.

MEN of intelligence, housholders, and housekeepers ask us how it can be done without the fumes or gases getting into the house. I answer, Very easily. First, as to the manner or *modus operandi*: The burning of coal fires in ranges and in cooking stoves constantly gives off gases more volatile, more penetrating, and more poisonous and deleterious than the gases from the burning of the refuse kitchen matter, such as potato peelings, turnip tops, and other trimmings, when thrown into the fire, when these substances are fresh; and so also of the scraps of meat, bones, etc., after dinner, if thrown into the fire. Now, if the gases that are generated constantly by the burning of coal fires in ranges and stoves are all carried off harmless and unperceived, as they are by the chimney, the less penetrating and less powerful gases from the kitchen refuse will be carried off harmless and unperceived.

This is about all the philosophy there is about it, and it is a perfectly simple process; any man or family can try it and *do it*. As to this material being of any value or any use to anybody, as some say it is, and ought to be saved, it is quite a mistake; it is of no sort of value or use to anybody who has not a pig-pen near his house, to throw it into whilst it is fresh; to attempt to save it in large cities is penny-wise and pound-foolish. It costs more than it comes to, for it cannot be kept any time without undergoing decomposition and becoming putrid and filthy; and it is this *vile leaven* that poisons the streets and fills the air with pestilence, supplying the pabulum of diphtheria and fevers the most malignant and deadly, not only in the streets, but in the houses; and whole hetacombs of children are slain by the unseen foe that enters our dwellings in the filthy garbage box. The boxes or receptacles of this vile stuff cannot be kept clean; they are a nuisance in or about the house or on the premises. In a few cases, in cities where large hotels have a farm near by, the material can be carted off before it becomes putrid, and used in the hog-pens. Very few know the importance of keeping our dwellings free from all decaying matter. Cleanliness is next to godliness; pure air and pure water, the first essentials for life, are the gifts of our Creator, and when they come from his hand they are pure and undefiled.

The Helping Hand.

WE ask ONE and ALL of our kind friends and patrons to assist us in the matter of subscriptions and advertisements. In doing so, they will each receive full recompense in the ENLARGEMENT and IMPROVEMENT OF THIS JOURNAL. The past does not fully illustrate the future, and we hope erelong to be in a position to inaugurate and perfect all the contemplated better things which will come to pass—a part of the programme laid out by the founder of the CALIFORNIA ARCHITECT AND BUILDING NEWS. We have received congratulations from a thousand sources, and flattering notices from scores of journals published on this coast, and east of the "great divide," but that which we require most is, MANY THOUSAND MORE SUBSCRIBERS. We have done the best we could under the circumstances, but with the enlarged circulation secured, for which we ask and aim, we shall produce a California Journal which in all the departments of architecture, mechanical and other sciences, and matters sanitary, hygienic, etc., will be a source of pride and instruction to the people of this coast.

A RECENT issue of the *Fireman's Journal* has the following: "The hand grenade craze is dying out and several companies have practically abandoned business. The *Journal* was the first paper in the country to expose the worthlessness of these so-called fire extinguishers. We did so at the sacrifice of considerable advertising patronage, but we were satisfied that they could not be conscientiously recommended. Persons putting their trust in the efficiency of hand grenades to extinguish fires, we were convinced, would find themselves deceived. Gradually the press and public came to our way of thinking, and hand grenades lost their popularity. A barrel of them was never worth a bucket or two of water, and one chemical extinguisher would do more real service in putting out fires than a car load of them. Hand grenades have had their day, and the gullible public is now waiting for some other cheap device to waste its money on."

EVERY ARCHITECT SHOULD TAKE A PRIDE IN BEAUTIFYING THIS JOURNAL.

A Gothic Cottage.

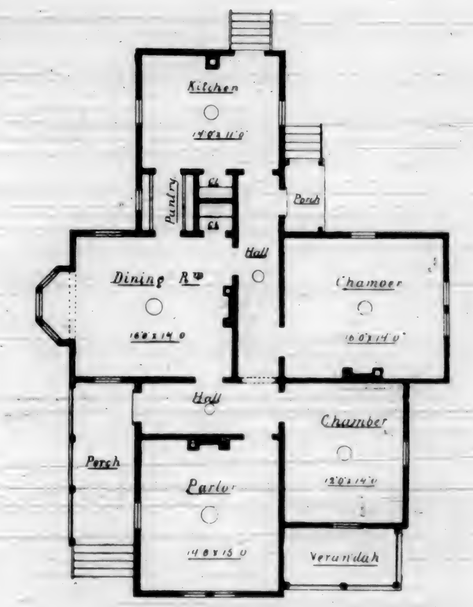
I GIVE in this design the floor plan and elevation of a small, one-story, five-room Gothic cottage, compactly and economically arranged, and suitable for any family desiring a cottage of this style or design.

The building is entered at the side, from a large porch, into a hall, with the parlor on the right and the dining-room on the left, and an arch, with ornamental brackets, connecting the two halls. The rear hall is four feet wide and twenty feet long, and has an outside entrance door protected by a small porch, thus affording an exit to the rear yard without the annoyance of passing through the kitchen. The kitchen is isolated from the remainder of the house, thus preventing all disagreeable odors from penetrating the other apartments. The dining-room and kitchen are connected by a large pass pantry, provided with shelves, drawers, etc., and well lighted by a window, and each room has a large closet which can be used for china, linen, towels, cooking utensils, etc. The separate entrance to the kitchen makes it convenient to reach the wood-shed and slop-hopper placed near the foot of the steps.

The dining-room is of sufficient size to accommodate a large family, and is provided with a fire-place and bay-window, making it a very pleasant sitting-room to sew or read in. The bay-window has transom lights, glazed with colored glass, giving the room a very pretty effect as the sun shines through them. The parlor and chambers are finished in natural shade of black-walnut, and each fire-place is furnished with marble mantels, plated bar fenders and fronts. The dining-room and kitchen are wainscoted, and all wood-work grained imitation of oak. In the center of all rooms are placed ornamental plaster of Paris center pieces of suitable size. The exterior of the building is plain and inexpensive, yet very attractive. The tracery gables are finished with large rosettes and fancy shingling, and the bay-window with neat brackets and panels, surmounted by a small fancy balcony. The porch, veranda, and double windows, although plain, give the building a pleasant and striking appearance. Any person desiring to build a cottage of this style will save money by addressing, for further information,

DAVID SALFIELD, *Architect*,
216 Kearny Street,
San Francisco, Cal.

A GOTHIC COTTAGE.



FLOOR DESIGN OF A GOTHIC COTTAGE.

A New Work on Designs for Dwellings.

A NEW book of designs is now being printed by Mr. D. Salfield, embracing plans and elevations for every description of a country and city dwelling. The accompanying cut is selected as representing a cottage of Gothic design. One of the main objects seems to have been the production of a neat but unique exterior, and yet one which can be built at moderate cost. The description given is very comprehensive. Each design is presented in a clear manner, with dimensions plainly marked. The price of the work has been placed at the low cost of fifty cents each, upon receipt of which a copy will be forwarded to any address. Agents desiring to secure territory for sale of this work can do so by directing a letter to Mr. D. Salfield, 216 Kearny Street.

The above work is now in press. We will speak more extendedly of it in our January issue.

TREES UNFELLED ARE REAL ESTATE.—There was an amusing case tried here the other day. Some smart fellows from up North were perusing around for timber and happened upon an old, unsophisticated farmer and bought from him forty walnut trees for $5.00 apiece as they stood. They paid the money and took a bill of sale, and the old man felt rich. When the old woman came home he told her what a bonanza he had struck. She was surprised, but was not satisfied, and said it was a Yankee trick. In a few days another feller came along and offered $10 a tree, and she made the old man sign, and she signed, too. The money was tendered back to the first purchaser but he refused to take it and sued for the timber. The court held that trees not cut down were part of the realty, and realty could not be sold without the wife's signature; so the sharpers lost their timber and their money, too.—*The Atlanta Constitution.*

IT is the thinking man who makes improvements upon existing methods. A planer, a moulder, or some other machine may be defective in some slight way, and the thinking man soon finds it out, tells the manufacturers of it, and the fault is remedied. But the man who only "puts in time" is not apt to find out these things.

Going Security.

I AFFIRM that the system of indorsing is all wrong and should be utterly abolished. I believe that it has been the financial ruin of more than, perhaps, all other causes. I think that our young men, especially, should study the matter carefully in all its bearings, and adopt some settled policy to govern their conduct, so as to be ready to answer the man who asks them to sign his note. What responsibility does one assume when he indorses a note? Simply this: He is held for payment of the amount in full, principal and interest, if the maker of the note, through misfortune, mismanagement, or rascality, fails to pay it. Notice, the indorser assumes all this responsibility, with no voice in the management of the business, and no share in the profits of the transaction, if it prove profitable; but with a certainty of loss if for any of the reasons stated the principal fails to pay the note.—*Judge Waldo Brown.*

INCREASED PATRONAGE WILL ENABLE US TO MAKE STILL FURTHER IMPROVEMENTS.

ASKED, ANSWERED, AND COMMUNICATED

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

The columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected, as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

Country Architects

Can greatly help us by forwarding to this office information in regard to building and other improvements in their respective localities.

San Francisco, Dec. 3, 1886.

Editor California Architect and Building News: Will you please give a receipt in the Everybody's Column of your journal to dissolve silver, for instance a piece of coin, so as to make a solution of silver, and oblige a

Mechanic,
A subscriber since 1879.

Nitric acid will dissolve silver. It will also dissolve any alloy with which it may be mixed.

San Francisco, Cal., Nov. 19, 1886.

Editor California Architect—*Sir:* Will you please to favor me with a rule to mark out the top and bottom cut of a sloping brace of square timber, which stands with one diagonal corner vertically over the opposite; that is to say, the cross section of the brace is diamond shaped <>, and not square, as is usual. I cannot find a method for these cuts in any of the books on carpentry which I have examined.

Very respectfully submitted, D. Bink.

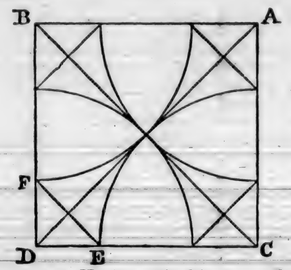
We have published rules for the above, but would be pleased to hear from any of our mechanical friends who will demonstrate the proposition. Make the drawing necessary, a rough one is sufficient, and we will make the engraving and publish the explanation.—Ed. Architect.

Editurs Arkitect: Don't want your paper anoth r year; you don't got good phylosophey in it, and don't tel how to get a hip raftur so the jints will be strate, nor how to Rekote old sand paper with new sand when the furst sand is rubd off. What diskount wil you allow for new names on your book?

R. G. Best,
A Karpintur.

Mr. Best is cordially thanked for above letter. Such letters do an editor's heart much good. First, he does not want our Journal, and then wishes to be appointed an agent to solicit subscriptions. Thanks, Mr. Best, we will begin the good work by adding your own name on our list for 1887, that is, upon receipt of $2.00, our regular subscription price.

Continued Favor.—The numerous letters and postals received from various parts of the United States, seeking advertising space in our columns, soliciting sample copies, etc., all attest that the reputation of this journal is co-extensive with the limits of the great continent upon which we dwell; and all this without a single effort on the part of present management during the past eighteen months to solicit patronage by any of the usual methods adopted, other than the regular monthly issues. We long to see this journal in the hands of younger enterprising and competent parties, who will take hold and utilize the many offered and offering opportunities to make it a greater success even than it has been.



Editor Architect: Having noticed in your valuable journal, in the past few issues, different ways of describing an octagon, I send you the following, which, although old, is neat and good. Draw diagonal, as A D, in any given square. Take one-half of it for a radius, and, with A B C D as centers, describe the segments of a circle. Join the points of intersection, as E F, and you have a perfect octagon.

This is the correct way to frame the key for a splice,

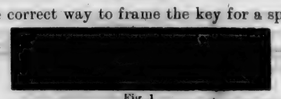


Fig. 1.

And this is the wrong way.

Fig. 2.

The driving in of the key, as shown in figure 2, has a tendency to split off the triangular section, as shown by the dotted lines, there being but little wood to resist the pressure.

Afraid of Themselves.—Many who have consulted us in reference to the purchase of this journal's interests, have hung upon the fear that *they* do not possess the qualifications necessary to success. Every time this is repeated it causes a smile, remembering, as we do, that without a single hour's practical experience as editor or publisher, either as principal or employé, during the gloom resultant from the sandlotism of 1879 this journal was first started, with *no other* backing than personal energies and determinations, not even the advice of others who had embarked in a like publication, for there had been no journal of like character published upon the Pacific Coast prior to this. And if, with all these disadvantages, and the terrible financial conditions then existing with ourselves and generally, so much has been accomplished, and so presentable and successful a journal established and sustained, what may not be done in the future, with all the avenues of success opened up, the whole field of operation made plain, and every facility acceptable, requiring only the individual efforts and energies of the right men in the right place to produce results of the most satisfactory character? There is no more reason to doubt the permanent and profitable success of this journal, under efficient management, than there is to doubt any other reasonably well-assured thing.

Practical Lessons on the Science of Carpentry.

A WORK that every mechanic should have. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. This book is also of use to all who have barns, bridges, and out-houses to build, and require information how to accomplish the work. Price of this work is now but $4.00, having been reduced from $5.00 to above amount. Sent, post-paid, anywhere in the United States or Canada.

Delinquent Subscribers, Notice.

Remember, according to decisions in the courts, before a subscriber can discontinue any publication "HE MUST PAY ALL ARREARAGES," or the publisher may continue to send the paper or journal until payment is made, and collect the whole amount WHETHER THE PAPER IS TAKEN FROM THE POST-OFFICE OR NOT.

"It Ought to Be a Good Investment."—Facts and figures prove that this journal *is*, and, we say unhesitatingly that, in competent and qualified hands, it *can* be made one of the successful, paying publication interests of the Pacific Coast.

BOUND NUMBERS OF THIS JOURNAL MAKE A SPLENDID BOOK OF REFERENCE.

PREMIUM DESIGN OF THE SAN JOAQUIN COUNTY COURT HOUSE, DAVID SALFIELD ARCHITECT.

How to Cool a Cellar.

We reproduce the following from the *Scientific American:* A great mistake is sometimes made in ventilating cellars and milk-houses. The object of ventilation is to keep the cellars cool and dry, but this object often fails of being accomplished by a common mistake, and instead the cellar is made both warm and damp. A cool place should never be ventilated; unless the air admitted is cooler than the air within, or is at least as cool as that, or a very little warmer. The warmer the air the more moisture it holds in suspension. Necessarily, the cooler the air, the more this moisture is condensed and precipitated.

When a cool cellar is aired on a warm day the entering air being in motion appears cool, but as it fills the cellar the cooler air with which it becomes mixed chills it, the moisture is condensed, and dew is deposited on the cold walls, and may often be seen running down them in streams. Then the cellar is damp and soon becomes moldy. To avoid this the windows should only be opened at night, and late—the last thing before retiring. There is no need to fear that the night air is unhealthful—it is as pure as the air of mid-day, and is really drier. The cool air enters the apartment during the night, and circulates through it. The windows should be closed before sunrise in the morning, and kept closed and shaded through the day. If the air of the cellar is damp it may be thoroughly dried by placing in it a peck of fresh lime in an open box. A peck of lime will absorb about seven pounds, or more than three quarts of water, and in this way a cellar or milk-room may soon be dried, even in the hottest weather.

An Omen.

A SUPERSTITIOUS subscriber, says one of our exchanges, who found a spider in his paper, wants to know if it is considered a bad omen. Nothing of the kind. The spider was merely looking over the columns of the paper to see who was not advertising, so that it could spin its web across his shop door and be free from disturbance.

Rise in Lumber.

Prices of lumber have been raised to about correspond with the schedule of 1879. Building in consequence has received a temporary set-back.

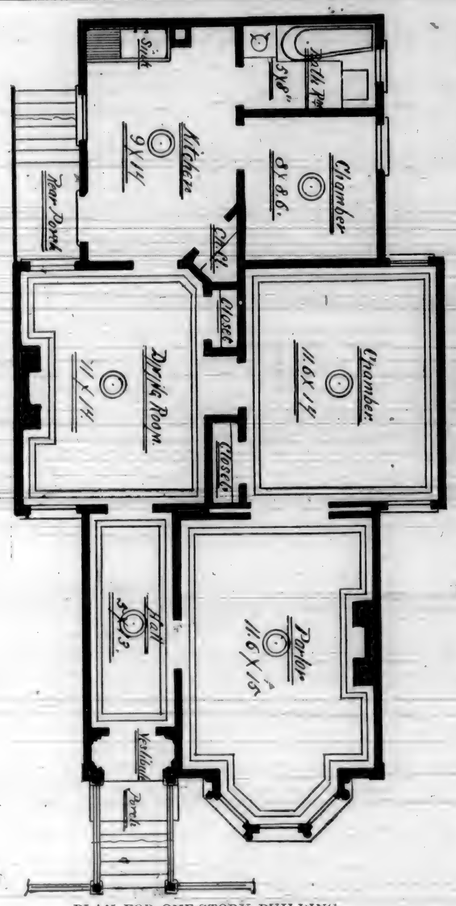
As He Begun It So Shall He Finish It.

Were it possible to hang up mottoes in shops, as sacred and patriotic mottoes are exhibited in homes to stimulate remembrance and instruct children, the above is the advice and admonition I would impart to every mechanic on his entry into a shop, not only to inform him that he must exercise care and skill on the work which it will be his task to reform, but to teach him also perseverance and patience during the performance. All thinking mechanics are fully aware how much these two attributes are necessary to success and how difficult it is to acquire them, even though resolution aids in the effort to develop them.

Is it not a frequent sign to see one lose patience over some trivial joint or apparently unattainable miter and ultimately avoid or alter the plan laid down for its execution? It is only too often seen and is explained by stating that patience and the powers of reasoning are not brought into action, but remain dormant, and consequently useless at the very time they should be actively awake and helping. The most important aid is neglected. What a difference it would make, if, as skilled workmen, we bring the greatest gift we are endowed with (to wit, the intellect) to bear on what the tool, guided by the hand, is to shape and combine, if, when we did not comprehend, we compared line with line, placed each piece and joint in its place on the plan so clearly defined in our mind, considered even the smallest detail, and, above all, were courageous and tried. Better far to fail in our honest effort than shirk that which we are bound in conscience and the duty owed to our employer to endeavor. By these means, what one begun one would (as he ought to) complete satisfactorily to himself and those to whom he is responsible.

Complimentary Notices.—We might fill several pages of this journal with the unsolicited, complimentary notices that have from time to time appeared in a hundred or more of the standard class journals of the United States, and the daily and weekly journals of the Pacific Coast, many of them ranking this unequaled except by about three of the leading Eastern journals, enjoying the great advantages of wealth, long existence, and extensive and perfect facilities. This, and all other facts in connection, serves to eliminate all reasonable doubt as to the future of this journal in right hands.

EVERY EFFORT WILL BE PUT FORTH TO MAKE THIS A SPLENDID JOURNAL.



PLAN FOR ONE-STORY BUILDING.

Bookless Homes.

We form judgments of men from little things about their houses, of which the owner, perhaps, never thinks. Flowers about a rich man's house may signify only that he has a good gardener, or that he has refined neighbors, and does what he sees them do. But men are not accustomed to buy books unless they want them. If, on visiting the dwelling of a man of slender means, we find he contents himself with cheap carpets and very plain furniture, in order that he may buy books, he rises at once in our esteem. Books are not made for furniture, but there is nothing else that so beautifully furnishes a house. The plainest row of books that cloth or paper ever cover, is more significant of refinement than the most elaborately-carved *etagere* or sideboard.

Give us a house furnished with books rather than costly furniture. Both, if you can, but books at any rate. To spend several days in a friend's house, and hunger for something to read, while you are treading on costly carpets, and sitting on luxurious chairs, and sleeping upon down, is as if one were bribing your body for the sake of cheating your mind.

Books are the windows through which the soul looks out. A house without books is like a room without windows. No man has a right to bring up his children without surrounding them with books, if he has the means to buy them. It is a wrong to his family. Children learn to read by being in the presence of books. The love of knowledge comes with reading and grows upon it. And the love of knowledge, in a young mind, is almost a warrant against the inferior excitement of passion and vices.

Let us pity those poor rich men who live barrenly in bookless houses. Let us congratulate the poor, that in our day books are so cheap that a man may every year add a hundred volumes to his library, for the low price of what his tobacco and his beer would cost him. Among the earliest ambitions to be excited in clerks, workmen, journeymen, and, indeed, among all that are struggling up in life from nothing to something, is that of owning, and constantly adding to, a library of good books. A little library, growing larger every year, is an honorable part of a young man's history. It is a man's duty to buy books. A library is not a luxury, but one of the necessaries of life.

The color of old oak is pleasant for bed-chamber woodwork, and in north rooms terra cotta paper of an old pink shade is pleasing; and in south rooms olive green of a middling dark and golden shade. Tint ceiling, pale, soft olive green.

There is no absolute need of painting zinc work, for exposing it to the atmosphere has the effect of coating it with a thin film of oxide, which protects it from the future action of the air as effectually as paint.

Assignments of Wages.

Since the law requiring the assignments of wages to be recorded in the cities and towns of the State went into effect, the number of such assignments is believed to have been more than doubled in this city. In September, sixty-five deeds of assignment of wages were recorded at the city hall, and thus far this month the record is twenty-nine. There is firm conviction that the new law operates as an inducement to fraud. Women appear at the city hall almost every day, and, with tears in their eyes, complain that men who have been boarding with them have assigned their wages, and upon application to the employers for assistance in collecting the board bills, they have copies of the deeds of assignment thrust in their faces and are told that there is no redress; they must place the bills on the profit and loss account. One case is known of, where the employe assigned her wages to a perfect stranger, to whom she did not owe a penny, and for the purpose of defrauding a boarding mistress who had been more than ordinarily obliging. The assignee, upon learning the particulars of the case, immediately collected the entire wages due the woman and paid them to the boarding mistress. That there are parallel cases is quite probable, especially when wages are assigned to small liquor dealers, as they frequently have been.—*Providence Journal.*

A Good Old Idea.

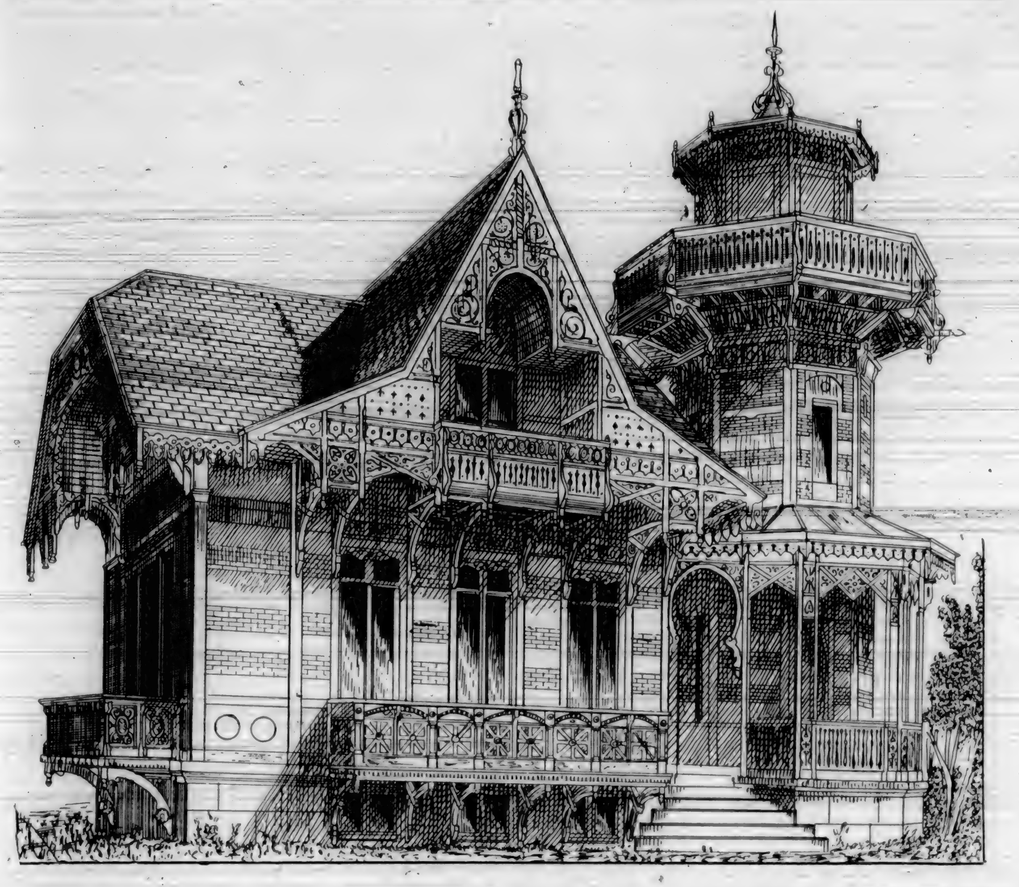
That the eight-hour movement is not a modern idea may be learned from the verse which appeared on a banner carried at a workingmen's demonstration in England between 1815 and 1820:—

Eight hours of work,
Eight hours of play,
Eight hours of sleep,
Eight shillings a day.

Some time since, says the *Building News*, United States Architect Clark suspended a plummet line from the interior of the dome of the Capitol building at Washington, and it was found, by actual measurement, that the lead swung over a space of four and one-half inches, making a total dip from the perpendicular of eight and one-half inches. This movement involves the entire dome, and to some slight extent the entire structure, and is caused by the alternate contraction and expansion due to the action of the sun upon the material of which the building is composed. No doubt the principal part of the motion is due to the more ready expansion of the iron of which the dome is constructed; but similar experiments at Bunker Hill Monument show that a structure built entirely of stone and mortar is also similarly affected by the sun's action. It has been very properly said that by this motion the statue of the Goddess of Liberty, upon the summit of the dome, daily courtesies to the rising sun, and salutes him in a like manner as he sinks to rest, but without the formality of turning herself around.

Some workingmen who are dissatisfied with the social conditions and affairs generally in this country, think that no benefits accrue to them from protection. It is a mistake, and none would find it out quicker than the workingmen themselves, should the import duty be taken off. For instance, does any one suppose, taking the iron trade as a sample, that there could be a difference of $3.50 more per ton paid for puddling here than in England, unless there was a duty put on the foreign article into which muck iron enters? In other words, the price per ton for puddling in England is $1.50 (six shillings and threepence) as against $5.00 per ton here and in the West, and the iron workers here are in a very great measure indebted to a protective tariff for it.

EVERY ARCHITECT and CONTRACTOR ON the PACIFIC SLOPE SHOULD CONTRIBUTE



Design for a Country Seat.

The Builders' Agreement.

The organization of labor and the attempt of labor organizations to prescribe the terms and conditions of employment, leads necessarily to the organization of employers, and counter agreements as to terms and conditions. The most specific and important agreement so far made by employers is that entered into by members of the Master Builders' Association of Boston, on October 4, which is obtaining the signatures of other master builders throughout New England, and will go into effect on April 1, 1887. Its five articles relate to the method of payment, the hours of labor, a protecting clause in contracts in relation to strikes, improper interferences with business by workmen, and arbitration. Most of the rules agreed upon are meritorious, showing a disposition to make reasonable concessions, while maintaining rights that some of the demands of the labor organizations would subvert; in one or two particulars ground has been taken that is of doubtful expediency. The method of payment, after April 1, is to be by the hour, except for piece-work and in contracts by the year. The experiment of working but nine hours a day is to be fairly tried for one year, unless the workmen engage in a strike. The protecting clause in contracts, which architects and real estate owners have signified their willingness to grant, will relieve the builders of obligation to complete work at a specified time if their operations are interrupted by strikes. This will deprive strikers of a great advantage that they have often had. The "improper interferences" by workmen, which the agreement condemns as "unfair and intolerable," are strikes and threats to strike because certain other workmen are employed, because certain workmen are discharged, because certain stock is used or not used, because more than a certain number of apprentices are taken on, and for other equally untenable reasons. The agreement binds the builders promptly to discharge workmen who engage in such interferences, and to prosecute all conspiracies. The fifth article recognizes the right of employes to be heard individually or through a spokesman on any grievance, and promises arbitration as a remedy. All these are sound principles. The questionable part of the agreement, and the one that will probably make trouble, is the refusal to recognize the trade union or other labor organization, in any way. The labor organization has the same justification as the employers' organization, and it has come to stay. It is far wiser to adopt the discriminating policy of recognizing such of its acts and demands as are just, and refusing to yield those that are wrong or mistaken, than to attempt to ignore it.—*Work and Wages.*

Economy in Fuel.

One of the most difficult things to teach a girl is economy in fuel. Nothing seems to satisfy but a continual piling on of coal. As soon as a little gas has been burned off, a vigorous shaking and raking out of ashes follows; then the stove filled anew, touching and lifting the covers, which soon become red hot, and the process is repeated from morning till night. Teach her, in order to obtain and secure a good draft, the coal ought never to be above the lining; and in this connection I am reminded of another practice which seems to come to kitchen girls by intuition or handed down by tradition; that is, to put sad irons, or flat-irons, as generally called, on the stove over the hottest fire hours before use, consequently they are ruined, for if once heated to redness, will ever after retain heat but a short time, and lose their smoothness, too. I would rather lend almost anything else to a neighbor than a flat-iron. In ironing, have two holders to use alternately, thereby lessening the heat of the hand, and insuring a greater degree of comfort.

The workman that makes the most noise will be often found doing the least work, and doing it badly.

AN ARTICLE OR FURNISH US A SKETCH FOR PUBLICATION IN OUR JANUARY NUMBER.

Art and Architecture.

[Special for this Journal. By F. Hillert, Architect and Mechanical Engineer.]

XXXVII. DECLINE.

But has the time of an art period passed over and away from a people? Then to them of it remained a certain possession. Not as if the genius of large masters could be inherited to posterity, but its successors gain and retain some of the power and force over moulding and forming, and since the same by the former was raised to a high grade of perfection, they found themselves in possession of advanced technical means, which they could with ease use and handle. The high spirit, the daring flight of fantasy, and the truth of working of those whose technical means once served for the noblest formation, are passed from hence, and the successors are unable to replace its defects.

Instead of the clapping of the wings of a genius is now the miserable fluttering of a checkered creature, which nibbles to-day here, and to-morrow there. In such a way decline of art begins to set in; it is the third grade of each developing epoch, and fulfills the last possibility of the relation of the spirit and form to each other, namely, that the same brilliancy and splendor cover a poor idea, that the form, so to say, overreaches the spirit. The pretending aspect of such works of art by the emptiness and want of spirit repulses every finer sentiment, each trained and cultivated eye unresistingly, and fills with that uncomfortableness which everywhere spread shallowness creates. An effected and beautiful shaped woman dazzles many, but the one who can read in her spiritless eye the hollowness of her mind, will turn with displeasure from her. A Don Quixote, with a martial beard, clad in a brightly polished armor, will always find people who take him to be a true hero and knight, when, in reality, he is only a silly coxcomb. In art such works corrupt the less trained and unexperienced the easiest; then the form is pleasant, and through her to comprehend her meager spirit, is, in fact, no small difficulty. Anyway we always will see human figures and forms, always architecture and ornaments, but they are beings without soul, life, and individuality, embellishments of exaggerated form and false application.

That the decline must progressively increase, is only the sequence of the general laws of nature; and that a conscious, energetic will can work to oppose it, is a fact hardly wanting the proof. But where the same is not powerful enough, the evil increases and spreads, as an avalanche, with increasing force, so that at last, instead of a cure, a total extermination, either by force or its own weakness, must set in; that then the soil, cleared from the weeds and freshly prepared, can take up a new and healthy seed; and the same, in a pure, sunny atmosphere, can germinate and grow to a pleasant blooming. But the will of resistance is itself powerful; it will not only endeavor to find and perceive the relation, and oppose the hollowness by intrinsic performances, but it will also give the incitation to an aftergrowth and under conditions, to a new direction, if, namely, it can introduce a new element, a principle different from those existing, and with the former can unite in a new whole.

The departure from the harmonious, flourishing condition of the one where the brought over and imitated form preponderates, we name, in accordance with their spirit and sense, mannerism, and understand by it the characteristic of an art practice which works more by hand trained by use, executing hand work (trades like), as that they went back to original own work of mind and brain.

This handiness in working is learned and gained by the artist from exterior practice, and not obtained from his inner own force, and therefore he is only a casual possessor of the same, whose intrinsic real value he does not realize, so that a misuse of the same he cannot evade and avoid. His mode of treatment sinks by necessity to over-refining, to the exterior, to the mechanical, and therefore becomes just only a "manner," whereby his work becomes mannerism.

XXXVIII. EXAMPLES.

No epoch in art history is without those three grades, not even in the instance where the flourishing period is only conditional, and in relation compared to the state of culture of the time being, as with the one of all barbaric people. Although with them having only taken in a low point of the symbolic foregrade, nearly all were treated typically and with servility, nevertheless are those three periods of development, even if difficult to be recognized, and we will not take the trouble in vain to seek and find them in the Egyptian monuments. In the Greek art this division is publicly recognized; in the middle ages it comes clearly to view, and in modern times it is generally known. The classic age has in all times of large culture and historical developments, the longest and most lasting flowering period. The Christian middle ages were extraordinarily energetic and fruitful in the symbolic, but the late time surpassed all former epochs by a mannerism longer than 200 years; till our time, with the beginning of a new section of the history of the world, art also began a new development.

The past is not wanting examples of the three periods of development in architecture, sculpture, painting, etc.

XXXIX. RETROSPECT.

When we have separately recognized the work of the first grade alongside of those of the following period, it was done by forcible reasons explained; but if, on the contrary, the mannerism was condemned, we can hereby neither deny the necessity of its appearance, or that the same brings with it certain advantages, but which can be easily dispensed with; and between them are those of the most importance, that works of this kind, by reason of their mastery in form and their narrow and small spiritual value, are readily comprehended and are able to inspire large masses of half civilized for a certain participation for art. Certainly mannerism makes shallow, as the poetical originality to sober intentionality, as also grace to indolence and immodesty, chaste sensitivity to immoral vileness, and in this respect is even the small advantage offered, more as doubtful. In theory, as in the practical consequence, it remains in the same way rejectable, and is just as little to be sanctioned as any other decline in other spheres of life, if he, as the same is to be comprehended, is the necessary consequence of pre-existing developments. We see why at certain times science, statesmanship, religion, and morality must degenerate, and only art should stand outside of the general law; but as the decline of the former can be opposed, so in art can the same be checked, by clear comprehension, prudence, and a fixed will to do so.

Art demands a country flourishing in prosperity and in liberty. In a country with no liberty, in poverty, art cannot be. The struggle of the masses of the people must be above the wants and necessities; the single individual must carry his head erect in the full feeling of his humanity, if out of them a few preferred ones shall step out, to reach to their people their purest flowers, —the works of art. Social, religious, and State relations are therefore in art of a far-reaching influence. After the Persian wars flourished with Greek liberty, art; in Spain perished a growing art through the tyranny of priests and kings; in Germany, in consequence of the Reformation, the flourishing art was broken off (stopped); in the Netherlands the wars and victories against Spain created a new, high life of art; and, lastly, the revolution of 1789 and the wars of 1813 have in France and Germany developed a new art. Italy and other countries begin to stir anew. It is a constant and intense reciprocal action in a good and bad sense between the large events of history and the end and culminating points of art developments; but we will not investigate to what kind this relation is, *but will simply take* the unquestionable facts as such.

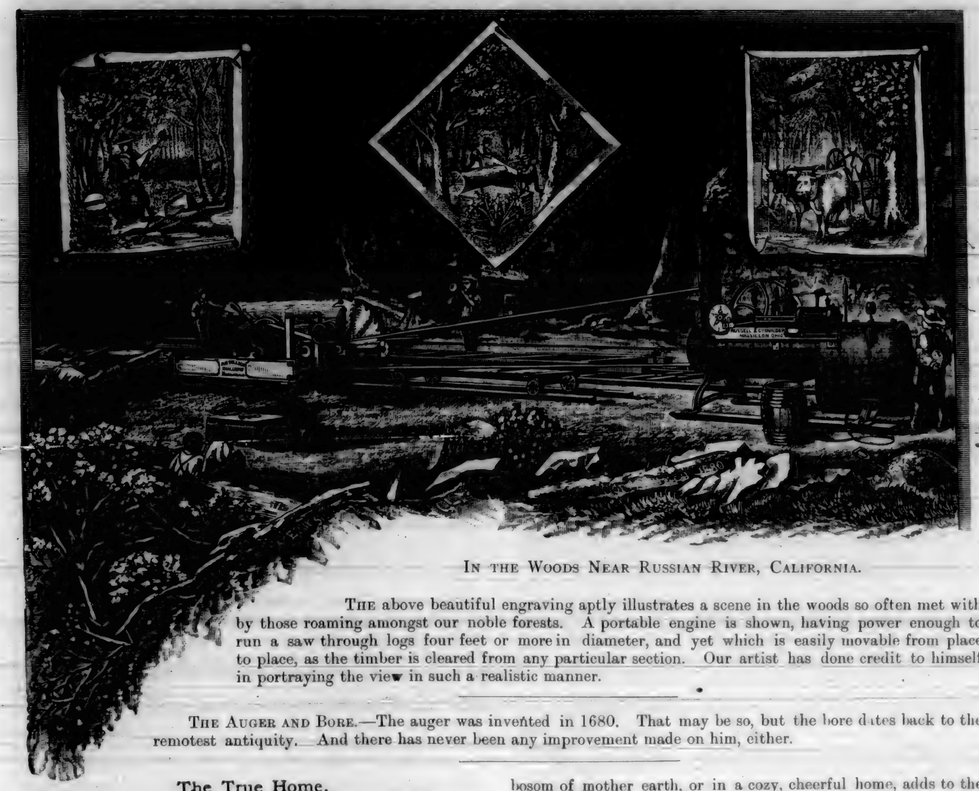
People of culture, enjoying at least some liberty, and whose means of learning were above the necessities to sustain life, such will certainly wish to have an own art practice, and try to come to its assistance and do all that is possible to retain itself in the possession of the flowering art. Of course the general condition of the people is the foundation of art, but can by this the more or less favorable bases of development be advanced or retarded, and it is therefore not without any importance to become enlightened and acquainted about the means for the practice of such influence. It may be admitted that with all efforts for the promotion of art, the intention to promote unquestionably lies before us; but, for all that, this endeavor not seldom turns out to the contrary, and is detrimental instead of being useful. The true and correct perception of the spirit of the art and of the condition of the people is the only sure and safe means to arrive lastly to the insight and comprehension of the good.

The fostering care of the art is necessarily divided into two domains: the one, where art is educated; the other, where art is practiced. The former depends on the means for education, the latter on the furtherance and promotion.

SUBSCRIBE NOW FOR 1887.

Invisible Nails.—For attaching mouldings and other light lumber a new kind of nail has been contrived, which leaves no nail holes. It is made with a point at each end and with an outwardly projecting head or shoulder midway between the points. The nail is first driven into the wood by means of a punch which straddles the protruding point and bears on the head. When enough have been driven in, the moulding is placed over the nails and driven down.

NEW ENERGY WILL BE DISPLAYED IN OUR JANUARY NUMBER. SUBSCRIBE NOW.



In the Woods Near Russian River, California.

The above beautiful engraving aptly illustrates a scene in the woods so often met with by those roaming amongst our noble forests. A portable engine is shown, having power enough to run a saw through logs four feet or more in diameter, and yet which is easily movable from place to place, as the timber is cleared from any particular section. Our artist has done credit to himself in portraying the view in such a realistic manner.

The Auger and Bore.—The auger was invented in 1680. That may be so, but the bore dates back to the remotest antiquity. And there has never been any improvement made on him, either.

The True Home.

The home should be as beautiful and pleasant as it is possible to make it. Home is the place for rest and pure enjoyment.

It is the refuge from care, trouble, and all the tumults and turmoils of life. It is the one spot where the heart's purest affections gather themselves, and seek their *chosen* resting-place. It is the woman's first duty to make this dwelling-place, over which she is the mother-queen, as cheery, cozy, and lovely as she can. The first requisite for this desired consummation is that she herself be happy, hopeful, pleasant, and contentedly agreeable. To become this she must live hygienically; she must eat proper food, wear comfortable clothes, and not be oppressed by too many cares and burdens. If she is her own housekeeper, she should study to do her work on the most simple and easy plan, cook but few dishes at a time, and have each as perfect in itself as possible.

Woman has no more important duty than that of making home pleasant. Neatness and cleanliness are indispensable to a cheery, cozy-looking room. A plain room, plainly furnished and scrupulously clean, is far more bright and beautiful than a more pretentious one richly adorned with costly furniture that is soiled, mutilated, and always in disorder. A few thrifty, nicely kept flowering plants and trailing vines are one of the most enlivening adjuncts to a living room, and a sheltered sunny window is far better for them, in moderately cool weather, than the overheated and often dusty inside position, and they are just as easily seen also.

Should there be unsightly objects in the room or recesses that contain necessary adjuncts to comfort and convenience, a bright chintz curtain will screen them from view, and will of itself make a pleasant resting-place for the eye. Should a bit of plastering fall from the wall, a piece of white muslin neatly pasted over the place will hide the defect and save all further scaling off and droppings of litter. In a thousand ways one can vail the ugly and add to the beautiful, until the humblest little home may become a very bower of pleasantness and cheerfulness.

The love of the beautiful needs the fostering care of every one who would make life pleasant and happy. Whoever creates a lovely picture, whether on canvas, in a poem, or on the broad bosom of mother earth, or in a cozy, cheerful home, adds to the world's priceless treasure, and does something toward elevating, refining, and happifying the race.

Stick to Your Business.

There is nothing which should be more impressed upon the minds of young men than the importance of steadily pursuing some one business. The frequent changing from one employment to another is one of the most common errors committed, and to it can be traced more than half the failures of men in business, and much of the discontent and disappointment which render life uncomfortable. It is a common thing for a man to be disappointed with his business, and to desire to change it for some other, which, it seems to him, will prove a more lucrative employment; but, in nine cases out of ten, it is a mistake. Look around you, and you will find among your acquaintances abundant verification of our assertion. There is an honest farmer who has toiled a few years, got his farm paid for, but does not grow rich very rapidly—as much from lack of contentment mingled with industry as anything, though he is not aware of it. He hears the wonderful stories of California, and how fortunes may be had for the trouble of picking them up: mortgages his farm to raise money; goes away to the land of gold, and, after many months of hard toil, comes home again to commence at the bottom of the hill, for a more weary and less successful climbing up again. Mark the men in every community who are notorious for their ability and equally notorious for never getting ahead, and you will find them men who never stick to one business long, but are always forsaking their occupation just when it is beginning to be profitable.

We are short of the October issue of this year. Who has one to spare?

Norway pine, which until lately has been neglected by Michigan lumber in favor of the softer white pine, is coming into favor with railroad car builders on account of its greater strength.

Subscribe now for 1887.

NEW ENGRAVINGS—ORIGINAL ARTICLES—OUR JANUARY NUMBER WILL EXCEL.

Report of the Building Interest of Woodland and Yolo County for 1886.

EDITOR OF THE CALIFORNIA ARCHITECT AND BUILDING NEWS—*Dear Sir:* We submit the following report of the building and improvements for our city and county as kept and corrected monthly, and may be considered as approximately right, having devoted time in collecting and care in estimating the value of all on our list; and, although the amount in comparison with last year presents a falling off, still we are gratified for having so large amount to show, it being above the average of the past six years, both in number of engagements and amount of capital invested. The following table will present the number of engagements, their kind, and value of each as substantially set forth. It also shows the work has been evenly distributed throughout the entire year, as a sure evidence of a healthy and substantial growth, which is noticeable by all citizens.

1886		City of Woodland.					Yolo County.				
Months.	No. per month.	Frame buildings.		Brick buildings.		Additions and improvements.	Frame buildings.		Brick buildings.		Total value per month.
		No.	Value.	No.	Value.	No. Value.	No.	Value.	No.	Value.	
Jan.	16	10	$10,800			4 $1,800	2	$5,000			$17,600
Feb.	17	7	8,000			5 3,000	5	13,200			24,500
Mch.	19	8	10,000	1	$ 2,000	6 3,200	3	5,800	1	$5,000	26,000
April	18	8	7,600			1 1,300	9	21,200			30,100
May	16	3	20,800			2 2,200	9	8,000	2 Imp.	800	31,800
June	14	4	11,605			4 1,050	4	5,950	2 "	1,800	20,405
July	14	5	8,300	1	500	4 1,500	1	6,000	3	8,600	24,900
Aug.	11	6	7,100	2	14,000		2	1,800	1 Imp.	500	23,400
Sept.	10	5	10,500			5 2,400					12,900
Oct.	14	8	7,700	1	4,000	3 3,000	2	2,550			17,250
Nov.	15	11	29,000	3	12,500	1 1,000					42,500
Dec.	8	4	3,900	1	2,000	1 300	2	2,500			8,600
Total	172	79	$135,205	9	$35,000	36 $21,650	39	$72,000	9	$16,700	$280,55

The preceding monthly statement, with its total footing, shows our building and improvements for the past twelve months to be—city of Woodland, 124 buildings, valued at $191,855; Yolo County, 48 buildings, valued at $88,700; final aggregate, city and county, 172 buildings, with a value of $280,555.

In scanning over our record for the past six years, we find the *average* number of engagements for each twelve months to be 104, while the value of the same is $267,934.75. With this fact in view, our most sanguine citizens cannot but be satisfied with the labors and improvements of the past twelve months.

Accept our hearty thanks for the many courtesies and favors tendered us during the past year, and our best wishes for your future welfare and prosperity.

We remain most respectfully yours, GILBERT & SON.
Woodland, Dec. 4, 1886.

Labor Fable.

A RICH man had a piece of land on which a young mule was grazing. "I shall harness you," said the man to the mule, "and make you plow this land to grow melons on, of which I am very fond, while the stalks will supply you with food." To which the mule replied: "If I consent to toil on your terms, you will have all the melons and I will be worse off than now, inasmuch as I shall have to eat dry stocks instead of the fresh, green grass. I'll not do it, sir." "How unreasonable you are," remonstrated the land owner; "your father never had any other food but thistles, and yet worked sixteen hours a day without grumbling." "Alas! that is true!" retorted the mule, "but then, you know my father was an ass."

The California Architect

Is a success in every respect, not only to its proprietor, but in the estimation and good opinion of its numerous subscribers.

WE agree that all disputes between capital and labor are deleterious to the interests of both and should be settled in an amicable spirit.

STRIKES and rumors of strikes are the order of the day in different parts of the country. There is prospect of a good fall and winter trade, providing labor troubles can be avoided; but if troubles arise there is no doubt that they will have a tendency to depress and stagnate business.

PLUMBERS should be careful not to use lead in contact with oak, unless the latter is perfectly dry and free from sap, otherwise the gallic or acetic acid in the wood will turn the lead into acetate of lead or ceruse.

Bridging.

THE object of bridging floors is not only to prevent the joists overturning, but it is principally to distribute the weight resting directly on one joist over those joists immediately adjacent, and in that way to considerably stiffen the floor as a whole. The pieces of timber of which the bridging is composed may, and do, act either as ties or struts, according to the manner in which the load is centered; and, in the case of a moving load, as of a person passing over the floor, will act alternately as ties and struts in quick succession. The strutting being placed obliquely to the joists, the strain is practically neither that of a direct tie nor of a direct strut; that is, neither simple compression nor simple tension in either case, but is in both modified by a cross strain. There is some tendency for the joists to turn over, which augments the cross strain, so that of the three stresses, the cross strain is of most importance.

Now, it is a very well known rule that the strength of a beam or a piece of timber subjected to a cross strain is directly as its breadth and as the square of its depth; and it will be obvious, therefore, that the system of placing the bridging with its greatest scantling vertical, is the proper one, and is a good deal stronger than the system usually employed. In the first system the bridging is reversed alternately, so that the pieces may butt against the joists at points directly opposite one another, which tends to further strengthen and stiffen the floor.

The only advantage in the second system over the first is that it does not necessitate a man turning round to nail the pieces alternately as he comes to them, and therefore is saving of a small amount of time. But when it is considered how much additional strength is obtained by the first method, it will be seen that the saving of time, under the circumstances, is by no means a wise economy.—*Building.*

M. MASPÉRO'S EGYPTIAN DISCOVERIES.—Among all the countries in which archæological explorations are going on, Egypt, which is the oldest, remains the most interesting. M. Maspéro presented last summer to the Academy of Inscriptions a report of his operations for the previous nine months. He has made a wise change in giving up the monopoly of antiquities which the Bulak Museum had, offering to share all that are found with the finder. The result is that now he is informed when a discovery is made, and finds the tombs unpillaged. He has, as it were, made the poachers gamekeepers. One such undisturbed tomb, besides the owner, his wife, and a large family, contained all the implements of his trade, and, best of all, the first part of the romance of "Sinuhit," a work of the seventeenth or eighteenth dynasty, of which only the second had been previously known. These romances, it is supposed, were put into tombs to amuse the leisure of the dead; the "Book of the Dead" has one chapter designed to teach the dead to play chess in the other world. The correctness of the portrait-statues of the Egyptian monarchs has received a striking confirmation. M. Maspéro presented to the academy photographs of mummies of various kings that have been unrolled at the Bank Museum, and stated that the face of Seti I. (an account of whose tomb, by the way, with over a hundred plates, has just been published as the ninth volume of the *Annales du Musée Guimet*), which is perfectly preserved, shows a wonderful resemblance to contemporary portraits of him that have been found on monuments. Such confirmation was not needed. The features of the Egyptian kings are so individual and full of character that one could not suppose they were fancy sketches. It is curious to hold an inquest on a corpse forty centuries old. Coroner Maspéro determines on examination of the body of Ra-skenen, that he died fighting. There are three wounds, one that knocked him over and two others that finished him, and traces of decomposition show that some time was lost in bringing him from the field of battle. Another case is not quite so clear. A man twenty-five or thirty years old was left in most unusual style, without any inscription. Moreover, he was embalmed as usual; the internal organs were not removed, but the exterior was covered with some matter at once fat and caustic. The body shows that the man died in horrible suffering, and the question arises, was he poisoned or was he embalmed alive? Here is a hint of a palace tragedy on which some antiquarian novelist may write a novel more sensational than anything that Ebers has yet given us.

TREVELICK made a speech in Toronto the other day and said some good things. "Lawyers are a necessary evil in a bad society and a single mechanic is worth a dozen of them." A single mechanic is worth a hundred. Reform the corrupt and oppressive laws and the lawyers will have to work for a living instead of living on the workers.

BUILDING INFORMATION FROM THE COUNTRY WILL BE THANKFULLY RECEIVED.

Market Reports.

CORRECTED FOR DECEMBER, 1886.

Pine, Rough	per M feet,	$15 00
" " No. 2	" "	12 00
" " 2 in lengths	" "	13 00
" " 40 to 50 feet lengths	" "	17 00
" " 50 " 60 " "	" "	18 00
" " Selected	" "	20 00
" " Clear	" "	25 00
" " Firewood	" "	8 00
T. & G. Flooring, 1 x 6	" "	27 00
" " 1½ x 6, 1 x 4, 1¼ x 4, 1¼ x 3, 1 x 3, and narrower	" "	30 00
" " No. 2	" "	22 00
Stepping	" "	35 00
" No. 2	" "	27 50
Furring, 1 x 2	per lineal foot,	00¾
Redwood, Rough	" M feet,	18 00
" " No. 2	" "	14 00
" Surfaced	" "	30 00
" T. & G. 6 in 12 ft. and over	" "	28 00
" " 6 in. 7 to 11 feet	" "	25 00
" " 6 in. under 7 feet	" "	20 00
" Rustic	" "	30 00
" " No. 2	" "	26 00
Redwood, T. & G. Beaded, 12 ft. and over	" "	30 00
" " " 7 to 11 ft	" "	25 00
" " " under 7 ft	" "	20 00
" Siding, ½ inch	" "	22 50
Pickets, Fancy	per M,	25 00
" Rough Pointed	"	16 00
" " Square	"	14 00
Battens, ¾x3	per lineal foot,	00¾
Shingles	per M,	2 00
Laths, 1½	"	3 25
" 1½	"	3 75

NAILS—Rates were recently reduced to:—

200 keg lots	2 50
100 "	2 60
Smaller quantities	2 70

PAINTS AND OILS:—

Pioneer and Nevada White Lead, 1,000-lb. lots	6¾
" " " " " less quantities	7
" White Lead (local factory), 5-ton lots	6½
Cal. Linseed Oil, raw (single bbl. lots)	45
" " " boiled " " "	47½
Turpentine, per gallon	47
BRICK—California Building Description, soft, per 1,000	6 00
" " " red, " "	7 00
" " " hard " "	7 75

We are short of the October issue of this year. Who has one to spare?

SUBSCRIBE NOW FOR 1887.

Building Intelligences.

Where owners' names are left blank, it is so done in most instances by special request.

A

Austin, cor. Polk. Public hall.
O.—Captain Taylor.
A.—W. Mooser.
C.—J. B. Gonyeau.
$3,700.

B

Bush, cor. Polk. Fitting up store.
O.—Mr. Valechmidt.
C.—H. Norton.
$2,200.

Brosnan, nr. Valencia. Additions.
$600.

Bush, cor. Mary Lane. Alterations.
O.—Tittle estate.
A.—G. E. Voelkel.
C.—J. Beck.
$1,200.

Bush, bet. Dupont and Stockton. Additions.
O. Church Notre Dame.
A.—Plissis & Moore.
C. J. Geary.
$6,000.

Bush, bet. Laguna and Buchanan. Additions.
O.—H. Maginnis.

Broadway, bet. Pierce and Scott. Repairs.
O.—W. Thomas.
A.—Smith.
C.—Gray & Stocker.
$2,200.

Broadway Place. One-story frame.
O.—Mary E. Carey.
A.—J. J. Clark.
C.—W. E. Sweet.
$1,700.

Bush, nr. Devisadero. Additional story.
C.—A. Jackson.
$1,600.

C

California, bet. Mason and Taylor. Two-story stone mansion.
O.—J. C. Flood.
A.—A. Laver.
Estimated cost, $250,000.
[We have no means of knowing the exact cost of this building, and so have placed it at a figure which we deem as near right as possible to obtain.]

California, bet. Devisadero and Broderick. Alterations.
O.—A. Rapp.
C.—W. Pluns.
$3,500.

California, nr. Fillmore. Additions.
$500.

California, No. 213. Additions.
C.—F. Williams.
$800.

Central Ave., nr. Jackson. Additions.
O.—Carrie McFarland.
C.—J. Rebman.
$4,000.

D

De Boom, nr. Second. Four tenements.
O.—D. Sullivan.
A.—J. J. Clark.
C.—Creamer.
$4,000.

F

Fifth, bet. Mission and Howard. Four-story frame.
O. J. H. Gardiner.
A.—C. J. Devlin.
C.—M. J. Kerrigan.
$6,500.

Folsom, bet. Eighteenth and Nineteenth. Two story addition.
O.—Kelly & Co.
$1,000.

Folsom Street Wharf. Frame building.
O.—State of California.
C.—B. McMahon.
$1,600.

Folsom, No. 1039. Additions.
O.—Wm. Dorgan.
A.—A. J. Barnett.
C.—C. S. Carter.
$4,000.

Front, nr. Market. Additional story and general repairs.
O.—J. C. Johnson.
A.—H. C. Macy.
Mason—G. D. Nagle.
Carpenter—F. Klatt.
Cost, about $20,000.

G

Geary, bet. Kearny and Dupont. Alterations.
O.—J. Rosenberg.
A.—F. R. Schmidt.
C.—M. C. Lynch.
$750.

Master Plumbers' Association.

Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

MEMBERS.

BUSH & MALLETT	34 Geary Street
BUSH, D.	316 Sutter Street
BUTTERWORTH, J. B.	1809 Polk Street
CONNOR, J. H.	528 Third Street
DANIEL, WM. L.	234 Post Street
DOHERTY, JOHN	349 Kearny Street
DOWNES, CHAS.	41 Second Street
DUFFY BROS.	17 Trinity Street
ENRIGHT, WM. & CO.	39 Sutter Street
FIRMIN, JNO. L. E.	Cor. Thirtieth and Bartlett Streets
FRITZ & KEAN	130 Geary Street
GRAY, JNO. T.	230 Sutter Street
HUFFSCHMIDT BROS.	637 Clay Street
HOBRO, W. D.	728 Washington Street
REILLEY, C. J.	214 Montgomery Avenue
SHEPARD BROS.	526 California Street
SWEENEY & KEARNS	623 California Street
VANCE, R. A.	623 Geary Street
WELCH, J. D.	Cor. Tyler and Fillmore Streets
WILSON, WM. F.	25 Stockton Street
WILLIAMSON, H.	329 Sutter Street

CARBOLIC ACID FOR CUTTING TOOLS.—Carbolic acid is recommended for moistening the tools with which metals are worked. The efficiency of the grindstone is even said to be increased by the use of acid. The dark and impure acid can be used for this purpose.

NOT long since, in an arbitration case, an engineer was thus examined as to his professional experience and capacity, so called: "How long have you been in the profession?" "Twelve years." "Are you thoroughly acquainted with your work, theoretically and practically?" "Yes." "Do you feel competent to undertake large constructions?" "Yes, most certainly." "In what engineering works have you been engaged during the last twelve years?" "The manufacture of iron bedsteads." We fear that many professed first-class men in other pursuits would make similar irrelevant replies if they were subjected to a test as to their capacity.

GLAZE your sashes with putty if you will, but make your miters and other joints without it.

HIT the nail straight upon the head and you will save many crooked blows.

Fire Hose and Carden Hose, W. T. Y. Schenck, 526 Market Street.

Golden Gate Avenue, Two-story frame.
O.—D. Marcucci.
A.—J. J. Clark
C.—C. E. Dunshee.
$4,700.

Gough, bet. Geary and O'Farrell. Three-story frame dwelling.
O.—B. Etlinger.
A.—J. E. Wolfe.
Mason—E. R. Shane.
Carpenter—— Wickersham.
$13,500.

Guerrero, bet. Fifteenth and Sixteenth. Two-story frame.
O.—J. Kreling.
A.—F. Raabe.
Superintendent—F. Raabe.
$5,000.

Guerrero, bet. Fourteenth and Fifteenth. Two two-story frames.
O.—J. Wolff and wife.
A.—Huerne & Everett.
C.—W. J. Brownrigg.
$4,500.

Geary, nr. Fillmore. Additional story.
$1,500.

H

Howard, nr. Erie. Two-story frame.
O. Mrs. Purcell.
C.—S. G. Worden.
$2,000.

Howard, nr. Fourteenth. Additions.
$800.

Howard, nr. Ninth. Two-story frame.
O. and B.—J. Ziegenbein.
$700.

Howard, bet. Twenty-first and Twenty-second. Additions.
O.——McCanley.
C.——Sanches.
$2,100.

Hyde, bet. Ellis and Eddy. Alterations.
O. G. Edwards.
A.—J. J. Clark.
Day work.
$4,700.

K

Kearny, cor. Morton. Alterations.
O.—Levi Strauss.
A.—P. R. Schmidt.
C.—R. McCann.
$900.

L

Linden Avenue, bet. Buchanan and Webster Two-story frame.
O.—J. W. Grelis.
A. Townsend & Wyneken
C.—A. McDonald.
$2,000.

Langton Street, No. 318. Alterations.
O. J. Wilson.
A.—Townsend & Wyneken.
$950.

M

Market nr. Sixth Improvements.
O.—G. Campbell.
$800.

Mission, nr. First. Additional story.
O. J. Carroll.
A.——Devlin.
C.—G. D. Nagle.
$2,000.

N

Nineteenth, nr. Sanches. One-story frame.
O.——Springer.
C.——McFarland.
$1,200.

Noe, nr. Seventeenth. Two-story frame.
O.——Rohrder.
$600.

Notre Dame Academy. Additions.
A.—Huerne & Everett.
C.—J. Blake.
$500.

O

Oak, bet. Devisadero and Broderick. Two-story frame.
O.—James G Imartin
A.—Miller & Armitage.
C.—F. Kern.
$2,500.

Oak, nr. Fillmore. Two-story frame.
O.—N. Wynne.
A. J. J. Clark.
$6,300.

P

Post, nr. Gough. Three two-story frames.
O. Mrs. Ewert.
A.——
C.——
Estimated cost, $15,000.

Pennsylvania Avenue, bet. Solano and Butte. One story frame.
O. James Eve.
$1,800.

Pine, cor. Stock Exchange Alley. Improvements.
O.—Bell Telephone Co.
C.——McKillican.
$3,000.

Park Avenue, bet. Harrison and Bryant. Two two-story frames.
O.—F. Meyers.
C.—W. Little.
$5,000.

Pierce, bet. Haight and Page. Two-story frame.
O. Mrs. Luckey.
A.—J. Marquis.
C.—Martin & Maguire.
$4,500.

S

Sumner, nr. Howard. Two-story frame.
O.—Catherine McMahon.
A.—Townsend & Wyneken.
C. Hawkes & Mannion.
$2,000.

Sacramento, bet. Kearny and Dupont. Additions.
O.—Yeong Wo Co.
C.—D. J. O'Brien.
$8,000.

Santa Clara, cor. Mississippi. One-story frame.
O.—Mr. Kelly.
$1,800.

St. Mary's Hospital. Alterations.
A. J. J. Clark.
Cost, indefinite.

San Jose Road, bet. Twenty-eighth and Twenty-ninth. Three one-story frames.
O.—J. McKibben.
C.—H. Keenan.
$1,200.

Sixth, nr. Harrison. One-story frame.
$500.

Sanches, bet. Twenty-ninth and Valencia. One-story frame.
O.—Anderson & Co.
C.—J. E. Loomer.
$1,600.

Stevenson, cor. Annie. One-story and basement brick.
O.—Sharon estate.
C.—S. M. Hills.
$10,000.

T

Twentieth, cor. York. Two-story frame.
O.—Jas. Holle.
A.—G. E Voelkel.
C.—J. Wineohl.
$3,200.

Twenty-second, cor Capp. Two-story frame.
$3,500.

Tenth, nr. Mission. Two-story frame.
$1,800

Twentieth, nr. Valencia. Additions.
$500.

U

Utah, nr. Twenty-third. Two-story frame.
O.—Mr. Sullivan.
C.—W. Shalfield.
$1,200.

W

West Mission, bet. Ridley and Hermann. Two-story frame.
O.—— Donahue.
$2,500.

West Mission, cor. Hermann. Two-story brick.
O.—Market Street R. R. Co.
$4,000.

MISCELLANEOUS.

Alameda One-story frame. O., Mr. Locke; A., H. D. Mitchel; C., W. H. Studley; $2,000.

Clayton Stone wine house. O., Mt. Diablo Wine Co.; A., J. E. Wolfe; C., J. D. Nagle; $2,500.

Mountain View One-story cottage. O., F. Hinzelot; A., Miller & Armitage; C., J. A. Wright; $3,000

Fresno City Two-story frame. O., Schmolz; A., G. E. Voelkel; day work; $3,000.

Madera One two-story and four one-story brick buildings. O., T. L. Cludiene; A., G. E. Voelkel; total cost, $10,500. Frame cottage. O., L. Knuser; A., G. E. Voelkel; $1,200.

Los Angeles Alterations and additions. O., J. D. Huray; A., Curlett & Cuthbertson; day work; $2,500.

HILL'S PATENT INSIDE SLIDING WINDOW BLINDS

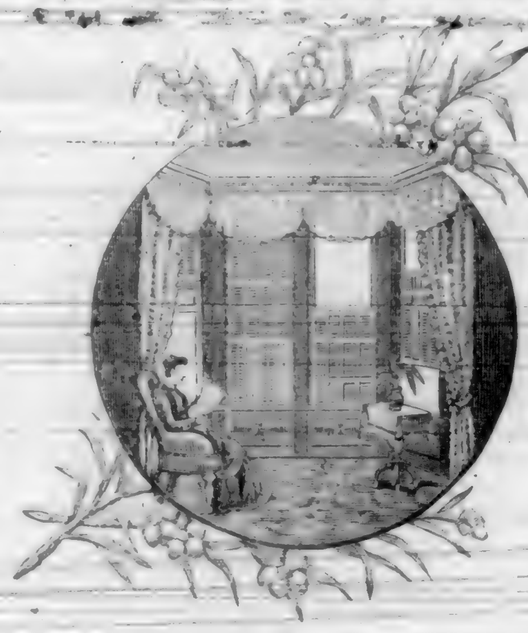
Are Adapted to Any Style of Window

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging-Houses are Unexcelled.

THEY are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to stop curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean, and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.



THERE IS NO SAGGING, BANGING, OR GETTING OUT OF ORDER!

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require NO HINGES—all trimmings furnished with blinds—are MADE OF ALL WOODS, finished or unfinished, and COST LESS than old-style folding blinds. They have been extensively used by the best architects and builders throughout the East and West, and have given perfect and entire satisfaction wherever introduced.

ENGLISH AND AMERICAN VENETIAN BLINDS (IMPROVED).

The only perfect Venetian Blind in the market. The Blinds can be seen at the Mechanics' Fair. Or for samples, prices, and further information, address as below.

The following are a few of the owners who have adopted the HILL BLIND in preference to any other:—

L. M. Fabry, cor. Hayes and Laguna; architects, Miller & Armitage. John MacKenzie, cor. Grove and Broderick; architect, H. D. Mitchel. H. F. Bruns, cor. Geary and Taylor; architect, John M. Curtis. R. B. Gray, cor. Pacific and Van Ness; architect, John Marquis. Albert Meyer, Twentieth nr. Valencia; architect, J. T. Kidd. J. C. Weir, Post nr. Scott; architect, J. C. Weir. Dr. J. Rosenstirn, cor. Sutter and Hyde; architects, Pissis & Moore. A. M. Starr, Washington nr. Fillmore; architects, S. & J. C. Newsom. J. H. McKay, cor. Washington and Steiner; architect, J. H. McKay. U. S. Government, Presidio Reservation; architect, J. H. Humphreys. Baron Von Schroder, 553 Harrison; architect, T. J. Welsh. G. G. Burnett, Larkin nr. Turk; architect, James E. Wolfe. A. F. Le Jeal, Clay bet. Franklin and Gough; architect, H. C. Macy. J. C. Weir, Post nr. Scott (second order); architect, J. C. Weir. P. Dupuy, Taylor nr. Turk; architect, W. H. Bayless. L. S. Morgan, Mission bet. Twenty-fifth and Twenty-sixth; architect, C. V. Pierce. N. W. Cole, Mission nr. Twenty-fifth; architects, S. & J. C. Newsom. John Ritchie, Woodland; architect, W. H. Carson. Court House, Petaluma; architects, S. & J. C. Newsom. L. H. Sweeney, San Rafael; architects, Pissis & Moore. Court House, Santa Rosa; architects, S. & J. C. Newsom. Raymond Hotel, Pasadena; architect, J. H. Littlefield.

EDWARD B. HINDES, Office 330 Pine St., Room 55, S. F., Cal., Manufacturer for California, except Counties of Los Angeles, San Diego, Kern, San Bernardino, and San Luis Obispo.

Or, W. S. HOLLAND, Pasadena, Cal., Manufacturer and owner of P. C. Territory. Rights to manufacture, and territory for sale.

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND
AUTHOR BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW
VOLUME VIII

DATE 1887

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The California Architect and Building News.

VOLUME VIII — ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. — NUMBER 1.

THE

California Architect & Building News.

A MONTHLY JOURNAL,

Devoted to Architecture, Decorating, and Furnishing.

PRICE, $2.00 PER ANNUM.

The official organ of the Pacific Coast Association of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Subscribers will please notify us promptly of any failure to receive this journal, and also of any change in their address.

Advertisements inserted at reasonable rates.

SAN FRANCISCO, CAL., JANUARY 15, 1887.

Our patrons are informed that C. L. Crabbe has no connection whatever with this Journal. He is not authorized to make any collections, or receive either subscriptions or advertisements.

Bound Volumes of the year 1886 are now ready. We will forward a copy to any address upon receipt of $2.50.

HAND IN OR SEND

Your SUBSCRIPTIONS for 1887

To THOSE who so promptly responded to our request for immediate settlement of subscription and advertising balances,

WE SAY, THANK YOU.

To those against whose names remain unpaid balances, we say,

PLEASE PAY UP AT ONCE.

Remembering THAT—Defrauding an editor is considered one of the meanest kinds of peculation; THAT—"*Honest men are the gentlemen of nature;*" THAT—"The man who pauses in his honesty, lacks but little of the rogue;" THAT—A rogue in spirit is a rogue in gain."

Therefore,—Let every one who *receives* or *reads* this journal, forthwith forward to this office, its subscription price for 1887, and any and all unpaid indebtedness.

The Outlook for 1887.

IT IS PROMISING. True, the natural tendencies of the human mind, hopes and desires, are to anticipate and prognosticate continuance of good things, and to grasp after every appearance or indication of better; and often, the mere "wish being father to the thought," induces prophesying and predictions which have no other foundation than the desire that the thing predicted may be realized and enjoyed. False hopes are often stimulated by unreal appearances, which, logically and intelligently considered, fail of any reasonably well assured probability; hence people frequently deceive themselves, and venture out upon the merest crust of prospect, beneath which may lie almost fathomless depths of disappointment.

Fully impressed with the correctness of the suggestions made, we glance cautiously at the impenetrable future, and as far as it mysteries can be judged by the appearances and indications possible of utilization, we feel well assured in saying that the building business in San Francisco will be good during the year 1887. There are signs of encouragement in all directions, and it is safe to anticipate large activities in building improvements.

An Effort in the Right Direction.

THE responsible and better class of carpenter contractors in San Francisco, have for a considerable time, maintained an organization designed to remedy the many gross and glaring irregularities, an evil long existing in the building trade. And as we understand it, while the objects and purposes of the society are mutual protection and individual rights and interests, they are claimed upon rational, intelligent, just, and equitable grounds.

To say that the building, particularly the carpenter contracting, business, has, in the main, been run loosely in San Francisco during the past three decades or more, commencing in the early periods of this city's history, and at times since becoming most deplorably bad, with failure succeeding failure, followed by *pro rata* settlements, and discredit upon an honorable business, does not fully express the state of things that has been. The object of the organization is, to arrive at right understandings as between owners and contractors, and the establishment of such practices as will be *impartially* just between all parties. Owners and contractors have respective equal rights and equities. Neither should seek nor wish to gain undue advantage. But the fact must be admitted that the man who does honest work and pays his bills, one hundred cents on every dollar, stands but little show in competition with those who substitute wood butchery for workmanship, and settle their indebtedness at ninety or perhaps ten per cent on the dollar. And it must also be admitted that it is a most provoking and distressing attitude for men of integrity to be forced to occupy, to silently witness their chosen life avocation demoralized and abused, and the once honorable distinction of "honest mechanic," besmeared with the filth and foulness of men enjoying but limitedly, or not at all, mechanical knowledge, to an extent entitling them to recognition as "skillful workmen," and whose honesty of purposes and practices are ever contingent upon the uncertainties of either their defective or designing judgments, with no care for the often damaging results that follow.

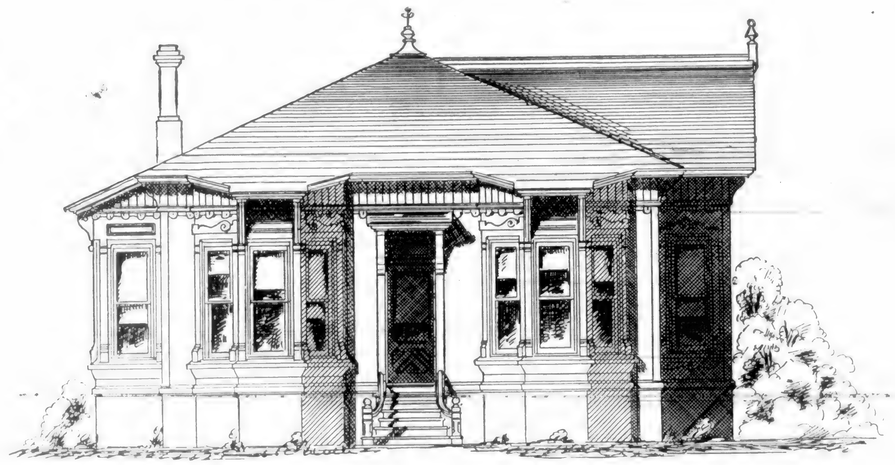
Any number of right thinking men who can combine and bring into practice methods and procedures which will abate the evils that have been and are in the building business, and bring about a bettered and improved condition of things, deserves commendation; and we hope that a generous and just disposition will be exercised by all in interest—contractors, architects, and owners alike—each of whom, being just and honest in every intent and purpose, should have but one common sentiment in reference to matters so plain of understanding as those involved in the erection of buildings.

Meeting of the S. F. Chapter.

THE regular monthly session of the Chapter was held on the 7th inst, President A. Pissis presiding, B. E. Henricksen, Secretary.

Minutes of previous meeting read and approved. Mr. Sanders on behalf of the Committee on Classes, read an interesting paper in relation to the progress of the class work, and the necessity for increased facilities in the shape of a convenient room for class meetings, as well as a permanent place—a headquarters for the Chapter. Mr. Sanders read the paper with much earnestness, and expressed the hope that erelong there would be that concert of action applied, which would secure all that is necessary to make both the class work and the Chapter grand successes. The report was adopted and ordered spread upon the minutes.

The committee on the application of Arthur M. Squires, for student membership, reported favorably, and the candidate was elected. The appointment of a committee to confer with the Board of Freeholders, in reference to a Board of Public Works and a



Front Elevation for a Conveniently Arranged Country Home.

City Engineer was suggested, and a committee of three, consisting of Mr. John Wright, James E. Wolfe, and J. Gash was appointed for the purpose.

A committee of three—James E. Wolfe, T. J. Welsh, and J. Gash was appointed to consult with a like committee from the Builders' Association of California, in reference to amendments to the Mechanic's Lien Law.

A general discussion of the Lien Law ensued, and some of its many objectionable features reviewed, showing its inequities and uncertainties, and its illy expressed intents, meanings, and applications.

The reading of a paper on ancient and modern plumbing was deferred until the February meeting.

Building Summary for January.

Considering the dull period through which this city has been passing, the statement for the current month is very satisfactory, exceeding in amount any similar period on record. Our country building interests are looking up very finely, and a great deal of work is assured to mechanics during the coming year.

In January, 1885, we reported in this journal,

73 Building Engagements, of the value of $602,585.

In January, 1886,

79 Building Engagements, of the value of $623,250.

In January, 1887,

Eleven brick buildings	$475,000
Forty frame "	160,200
Eight additions, &c	15,500

Making a total for January, 1887, of

59 Building Engagements of the value of $650,750.

COUNTRY BUILDING ITEMS.

We call especial attention to our list of improvements in every portion of the Pacific slope.

"Carpenters' Steel Square and Its Uses."

We have just received a large consignment of this practical work for mechanics, and upon receipt of $1.00 will forward a copy to any address.

OUR EIGHTH VOLUME.

With this number we begin the eighth volume of this journal. Since January, 1879, we have successfully carried on the enterprise of establishing an architectural journal on the Pacific Coast. We enter the new year full of confidence for the future, and our ambition is more than gratified when we reflect that, from a few subscribers in the start, we can boast of a larger circulation than all the rest of architectural journals combined that are published west of the Rocky Mountains. We sincerely thank our numerous patrons who have done so much to help us. Subscription price will remain the same, viz., $2.00 per year in advance.

The Best of Drummers.

There is no better drummer for business men than a well-established and reliable trade journal. It pays no railway fare, for no extra baggage, for no luxurious hotel bills, for no cigars or other incidentals usually charged up to the firm by the regular traveling man. It goes directly to the customer each and every week at all seasons of the year. It is a constant medium of friendly intercourse between the wholesaler and retailer. It tells the latter from week to week how and where he may order the latest and most attractive goods, and points out to him the most favorable time for buying and stocking up his store. The trade journal is constantly growing in importance. Its merits are being recognized more and more each year, as is evidenced by the increase of its subscription list, and the extent of its advertising patronage.

It is a common idea that a "chimney cannot be too large;" in other words, the larger the area of the flues the better the draught will be. This is not always the case. In many cases—in foundries, manufactories, etc.—where a chimney has been built large enough to serve for future additions to the boiler power, the draught has been much improved as additional boilers have been set to work The cause of this is to be found in the increased steadiness of draught, where several boilers are at work and are fired successively, as also in the better maintenance of the temperature of the flue.

An old saw-mill man explains the origin of the term "mill culls" thus: "In old times this was the class of culls that went to the mill man in lieu of a saw bill, consequently "mill culls.'"

NOW IS THE TIME TO SUBSCRIBE FOR 1887, $2.00 PER ANNUM, IN ADVANCE.

Conveniently Arranged Country Home.

On page 2 we present the elevation, and on page 3 the plan, for a very desirable and well arranged country or suburban home. The elevation is one that will attract attention from its neatness and simplicity. It is especially designed to do away with all fancy outside work. The plan is admirably adapted for a home in the country where fluctuations of temperature occur. A perfect system of ventilation can be had through the various parts of the house. In case of a hot spell, there is room enough on the side porch for a table, so the occupants can dine in the open air.

The bath-room is handy of access from several rooms, as well as being in easy communication with the outside porch. A pass slide between the pantry and dining-room closet enables the servant to confine all the smell of cooking to its proper quarters.

The front chamber is conveniently arranged for visits from "city cousins." There is ample closet room. If thought more desirable, one of the windows looking out on side porch can be changed for a door.

CARPENTERS' STEEL SQUARE AND ITS USES, PRICE $1.00

History of the Saw-Mill.

There are few tools more ancient than the saw. All the ancient nations appear to have had it; certainly the Hindoos, the Egyptians, the Greeks, and the Romans. The saw may have existed even before there were any men on earth. There is a creature called the saw-fly, with the saws in its tail, which it actually uses for sawing the stems, leaves, and fruits wherein its eggs are to be deposited. There is also a saw-fish, the long snout of which is a saw. It is said also that the original inhabitants of the island of Madeira found a ready-made saw in the backbone of a fish.

The Greeks had a pretty story attributing the invention of the saw to the accidental finding of the jaw-bone of a snake by one Talus, who used it to cut through a small piece of wood. Being a slave, and finding that the jaw bone eased his labor, he made a saw of iron, and thus gave mankind a new and most valuable tool.

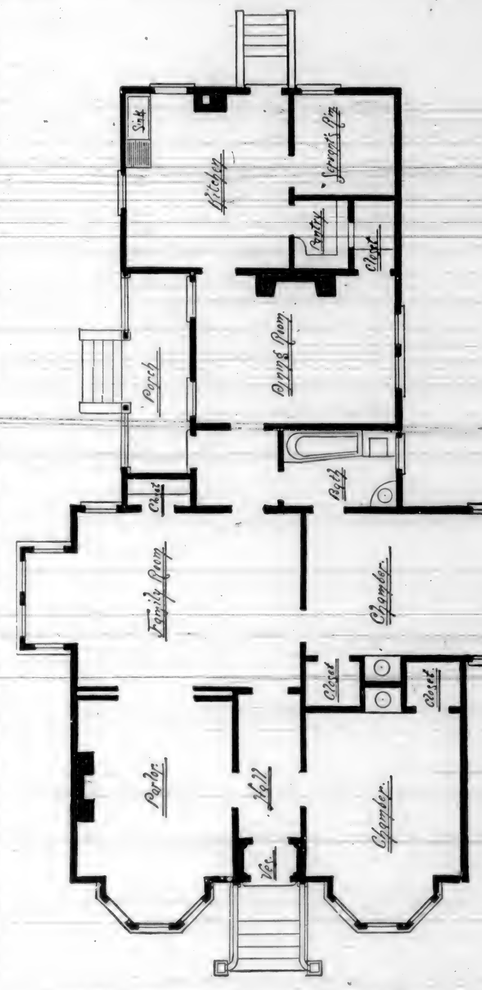
The ancient saws differed from ours in two ways. The teeth were so arranged that the cut was made by pulling instead of pushing; and the teeth, instead of being set one to the right and one to the left alternately, were set so that ten or a dozen in succession were slanted one way, and the same number the other way. The ancients had several varieties of the implement. The Greeks, for example, had crosscut saws for two men, also saws for cutting marble into slabs. And they had a kind of tubular saw for hollowing out a marble bath-tub, similar in principle to the method now employed.

Among the pictures uncovered in the buried city of Herculaneum there is a representation of two genii sawing a piece of wood on a carpenter's bench very much like ours, and using a saw with a wooden frame similar to those now employed. Still more strange, the frame saw, tightened with a rope and stick, such as our street wood-sawyers use, was probably as familiar to the Romans as it is to us.

A saw-mill, however, by which wind, water, or steam is made to do the hardest part of the work, was not known to any ancient nation. Sawing by hand, next to digging a stiff clay soil, is about the hardest work that men ordinarily have to do. It is therefore not surprising that our ease-loving race began to experiment a good while ago with a view to applying the forces of nature to the performance of this toil.

A learned German investigator, who has investigated the subject very thoroughly, states that the first trace of the saw-mill yet discovered is in the records of the German city of Augsburg for the year 1337. The reference is slight, and does not fix the fact with certainty. But there are two saw-mills near that city which are known to have existed as far back as 1417, and they are still used. Before that valuable invention, all boards and planks were split with wedges, and then hewn to the requisite smoothness with the ax. The splitting of boards is still practiced in remote settlements, as I myself have seen; and it is recorded of Peter the Great, of Russia, that he had much difficulty in inducing the timber cutters of his empire to discontinue the method. At length he issued an edict forbidding the exportation of split planks. Even in Norway, covered w th forests as it was, there was not one saw-mill before 1530. Nowhere in Europe, it appears, was the introduction of the saw-mill so long resisted as in England. In 1663 a Hollander erected one in London; but it brought upon the poor man such an outcry and opposition that he was obliged to abandon it. The sawing of timber by hand furnished occupation, at that time, and long after, to large numbers of strong men. In every town there were saw-pits, as they were called, for the convenience of the sawyers, one of whom stood at the bottom of the pit and the other on the log. We can easily imagine that when every beam, plank, and board, thick or thin, had to be sawed by hand, the sawyers must have been a formidable body, both from their numbers and their strength.

After the failure of the Dutchman in 1663, there was no serious attempt to start another saw-mill in England for more than a hundred years. In 1767, an English timber dealer of large capital built a saw-mill to be moved by the wind. It was thought to be a great and difficult enterprise, and it attracted much public attention. Some years before an author had explained the advantages and economy of saw-mills; then the Society of Arts gave the scheme of building one their approval, and finally the mill was actually built by an engineer who had studied the saw-mills of Holland and Norway. No sooner was the mill complete than the sawyers assembled in great force and tore it to pieces. The Government compensated the owner for his loss, as was just. Some of the rioters also were convicted and imprisoned. A new mill was then built, which was allowed to work without molestation, and proved so profitable that others were soon introduced.



Plan for Conveniently Arranged Country Home.

BUILDING CORRESPONDENCE DESIRED FROM EVERY PORTION OF THE PACIFIC SLOPE.

DESIGN FOR COUNTRY MANSION.

Design for Country Mansion.

THE accompanying engraving is taken from a design that was awarded a diploma at one of the fairs held by the Mechanics' Institute in this city. James E. Wolfe, architect.

MECHANICS' GEOMETRY,
Price - - - - - - $4.00.

Closet Ventilation.

A NEW JERSEY architect claims the distinction of being the first house-designer to ventilate clothes closets, and this fame-making act was performed in the year of grace '86. Some of our readers may contest the claim, but we are compelled to admit we have never seen a ventilated clothes closet in a private dwelling, although we have long been in search of one. Seriously, this failure on the part of architects is a matter of grave importance, and when it is considered that no cost is attached to the obtaining of what all admit the necessity for, the continued neglect of architects in this respect is past accounting for. The St. Paul *Farmer* has been publishing a series of excellent articles on common sense in building, and while it emphasizes the housekeeper's demand for closets, it forgets to ventilate them. It says: "So, in planning a home, the ladies' wishes must be attentively considered, 'first, last, and all the time.' Generally the first demand is for closets large and closets many, closets dark and closets airy, closets here and closets there—closets everywhere! But though closets may be classed in the category of those good things of which it is difficult to have too many, still they are to be kept judiciously in the background, filling space which would not otherwise be of much use, as at the end of halls and in 'half stories' in the low space under the roof at the side of rooms. For instance, if the wing of a house is sixteen feet wide, and the walls run up but three feet above the second floor level, leaving the ceiling to slope from that height upwards, the space near the walls is of very little use in a room. But if three feet be taken off for a closet at each side, then there results a room ten feet wide, with side walls high enough for most purposes in a bedroom, and with two good closets, or one of the closets may be entered from another room or hallway."—*Ex.*

[We print the above merely to show the errors in the article to those acquainted with facts. Plans are on file in this office that are nearly a quarter of a century old, showing plainly the ventilation of closets by means of a hole in the ceiling covered with wire cloth, and having direct communication between the joists with the outside air. How anyone can have the cheek to claim a *new* invention in '86 that is of almost ancient origin, is an insolvable mystery.—ED. ARCHITECT.]

In no part of the world, probably, has the saw been more minutely and curiously developed than in Great Britian, where they have saws so fine as to cut diamonds, and circular saws nine feet in diameter and a quarter of an inch thick. They have also veneer saws so accurately adjusted as to cut eighteen slices of veneer from a rosewood plank an inch thick. In London they will put a log of mahogany upon the mill and cut it into slices so thin that the sawdust weighs more than the veneer. Yankees have beaten this performance. They take a piece of mahogany or rosewood, soften it by steam, and cut it into veneers with a knife, without making a grain of sawdust.

Daniel Webster tells us that his father had a saw-mill after his removal to New Hampshire, at the source of the Merrimac River. Daniel, who was by no means fond of labor at any part of his life, liked nothing better in his boyhood than to attend this saw-mill, because when he had put his log in position and started the saw, he had sixteen good minutes for rest or reading before the business required further attention.—*Journal of Progress.*

And we may further add that it is a part and parcel of the history of the successful saw-mills on this coast that they have been supplied with saws made by the works under the control of Messrs. Spaulding, Patterson & Sheffield, and known as the Pacific Saw Manufacturing Co., Nos. 17 and 19 Fremont Street, San Francisco. All the saws in the mills are supplied with the patent Spaulding inserted teeth. The one fact that it is the successful mills that have used these saws, should induce every proprietor on the Pacific slope to at once replace their old-fashioned saws by the splendid new manufactures of the Pacific Manufacturing Co.

A 4x8 billiard table requires a room not less than 13x17 feet.

A Simple Rule for Measuring Straight Logs.

THE *Southern Lumberman* says an experienced log and lumber inspector gives the following short and easily remembered rule for ascertaining the contents of a log by Doyle's rule when a copy of Scribner's book is not available:—

RULE.—Square the diameter of the log after subtracting 4 inches from it, and the result will be the exact contents in inch boards of a log 16 feet long. A log 8 feet long will be half this amount, 12 feet long three-quarters, 14 feet long seven-eights, and so on.

OAK may be darkened by exposure to the fumes of ammonia in a close box, but if the work is first oiled with linseed oil and wiped dry with a cotton or linen cloth, and then a solution of bichromate of potash (say half ounce of potash to one pint of water) be applied, it will darken it and not raise the grain, either of oak, mahogany, or cherry. Care, however, must be taken that the work is not made too dark by too many applications of the solution.

EVERY ARCHITECT SHOULD TAKE A PRIDE IN BEAUTIFYING THIS JOURNAL.

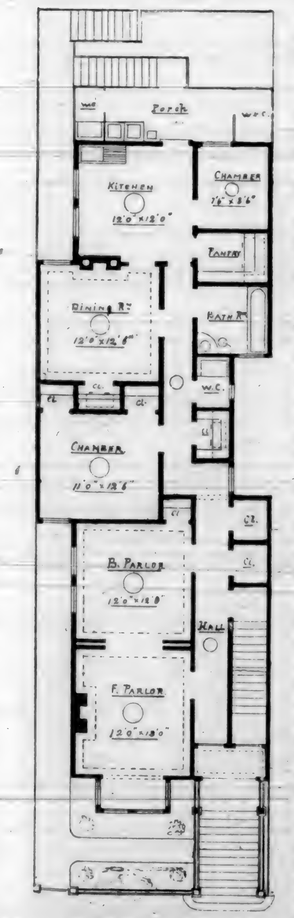
Design for City Flats.

[The accompanying elevation and plans for city flats were prepared by Mr. Salfeld, architect, 216 Kearny Street. We append his personal description of the same. In future it will be the aim of the editor of this journal to secure the best talent available for illustrations of houses of every conceivable design and form.]

WE present on this page a design for two flats in the Eastlake style of architecture, the first containing six rooms and the second seven. With the exception of a hall bedroom on the second floor, and one or two closets on the first, the two plans are designed nearly alike, and one description will answer for both. The elevation has a graceful and picturesque effect, and is cheap and economical in construction. The architraves of the bay-window and entablature over portico are supported by small turned columns, unique in design, and very pretty and attractive. The columns of the porch are turned with octagon cap, faced with small rosettes. The frieze of the entablature is constructed with turned balusters, with ornamental scroll work, and blocked bed mould above. The projecting gable over bay-window is finished with turned rosettes, fancy shingling, and moulded cornice. The light and airy exposure, convenient arrangement, closet accommodations, etc., of the spacious rooms, can readily be seen by referring to the floor plans. The halls extend through the building, thus affording communication with any of the rooms without passing through others. In the hall of the first story are two large closets, and a flight of basement stairs, with door opening into hall, is constructed under stairs leading to second story. The basement is seven feet and six inches high, planked and partitioned off into cellars and other rooms. The rooms are well proportioned, provided with commodious closets, and all other necessaries required by a family who appreciate the conveniences of a model home. We wish our readers to understand that a plan is the main consideration in building, and that an elevation can be changed into any style to suit the taste of the owner, therefore we devote more time and space to the study and description of the plan, knowing it to be most important.

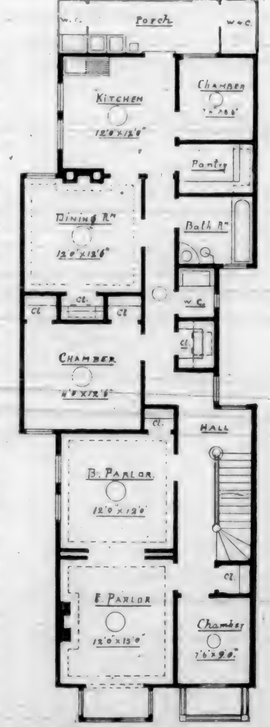
Elevation

[The above is from a new California work entitled, "Country and City Homes." It contains eighty pages of designs for all classes of buildings, and is sold for 50 cts. a copy. We will forward one to any address upon receipt of the amount.—ED.]



FIRST FLOOR PLAN.

THE policy adopted by some large employers of labor of discriminating against members of trade unions and labor organizations in engaging hands is, in our judgment, the most unwise which could be followed. The workmen may be induced to form an alliance with employers for their mutual advantage, but they become restive and intractable when an effort is made to deprive them of their rights. The true policy of the employer is to make no distinction between union and non-union men, and to refuse unconditionally to aid the unions in compelling those who prefer independence to join them. The employer who consents to discharge good men because they will not join the unions and submit to the fines and penalties usually imposed upon them for not having joined sooner, places himself completely under the control of the worst elements of organized labor, and has no reason to expect fair or just treatment at their hands. In dealing with workingmen a little tact usually accomplishes more than a great deal of bluster and obstinacy. For example: Not long ago a manufacturer employing more than a hundred men was waited upon by a committee of the union to which a majority of his workmen belonged, and was told that it would be necessary for him to discharge ten non-union men in one of his departments. To have refused unconditionally would have led to a strike, entailing serious inconvenience and loss. After considering the matter for some minutes, he replied: "Well, boys, this is not a good time to quarrel. I am running fuller than the state of the business warrants, and have been thinking of reducing my force. At the end of the week I shall have to discharge twenty men. These will include the ten non-union men you object to, and I will leave it to you to pick out the ten union men I am under the necessity of parting with. Whenever you are ready to report your list of names I will notify the twenty men that I shall not have work for them after Saturday." The committee reported back to the union, but the list was never furnished, and the non-union men are still at work. The alternative presented to the committee was a perfectly fair one, and it carried vastly more weight than argument or angry contention. The manufacturer's interest is to "show fair" in the struggle between independent labor and labor controlled by the unions, and if possible to ally all in his employ so closely to himself by the ties of self-interest that there will be no inducement to take shop questions outside the shop for adjustment. Whether a man belongs to a union or not is a question with which the employer has no occasion to concern himself.—*Carpentry and Building.*



SECOND FLOOR PLAN.

INCREASED PATRONAGE WILL ENABLE US TO MAKE STILL FURTHER IMPROVEMENTS.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters, and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

THE columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected, as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

WE intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas on the practical questions of the day; and we hope to receive from those interested, and especially amongst builders, questions arising in their daily practice. No matter what may be the solutions given to the various problems presented, we shall only be too pleased to receive replies from our readers, where they see other and better solutions for them. If a general interchange of ideas can be brought about, great advantages will ensue to all. Let not a month go by without bringing up for discussion practical topics in the architectural, mechanical, or scientifical pursuits. We desire a general expression of opinions, for or against, of every article presented by us. Every communication will receive deliberate and careful consideration.

EDITORS ARCHITECT: I noticed in your December issue that Mr. D. Bink was in trouble, and had applied to you for information in regard to a rule to mark out the top and bottom cut of a sloping brace of square timber, with the diagonal corners standing vertically over the opposite. In answer, I offer the following:—

1. To a man that can make all the cuts and bevels necessary for framing a hip roof. If you compare the top end of the brace with the ridge and valley rafter in a roof, you will readily see that they are the same. So if you take a square stick, say a 4x4, it will form a $\frac{1}{6}$ pitch. If the brace is set at an angle of forty-five degrees, you get the bevel thus:—

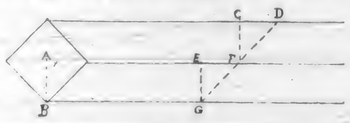


FIG. 1.

Take one-half of the diagonal width, as at A B, and measure this distance along the edge of the stick, as at C D. Square over to the other and join D F. Measure as before, making E F equal to C D. Square across timber again, and join F G.

2. For a simpler way, that will suit all braces and at any angle, take a piece of timber and mark as above. Suppose you have a 4x4 to be cut, say 6 feet from a post, and run up on the post 8 feet 6 inches. Lay your square on the lines laid down thus:—

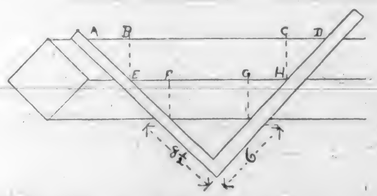


FIG. 2.

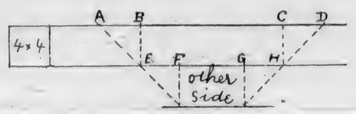


FIG. 3.

Transfer the distance A B in figure 2 to the side of the timber in figure 3. Square over to the other edge, and join the angles as before; then cut.

Another way: Take your square and find the distance across from $8\frac{1}{2}$ on one arm of the square to 6 on the other, same as for a common rafter. This distance will mark the side, using the line formed by the arm of the square with the 6.

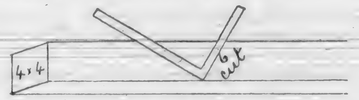


FIG. 4.

Cross over on the other side and cut.

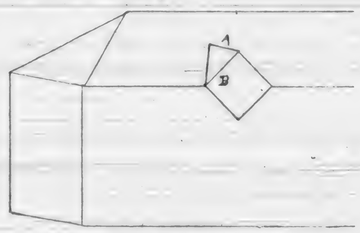


FIG. 5.

A B represents the ridge or edge of the 4x4; the line to the left of B the valley or side of the 4x4. It will be noticed that the ridge A is one-half the width of the width B.

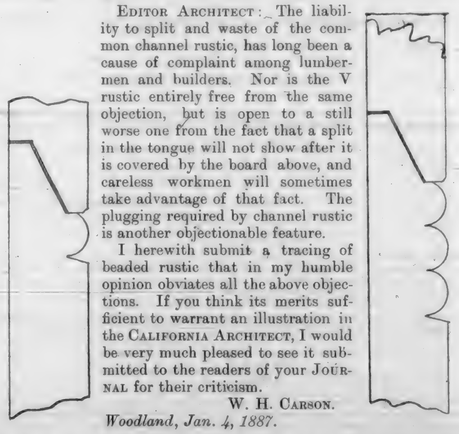
Of course if my propositions hold good, and practical experience has so proven them, any distance can be used instead of those given, by applying the instructions given.

Yours truly, B. MCMANUS.

Oakland, Dec. 29, 1886.

[The above is one of several answers received in regard to the inquiry of Mr. Bink. We thank its author for the interest shown, and trust that all of our mechanical friends will emulate his example. We will be pleased to hear from those who make a practical demonstration of above theory in regard to the correct working of the principles advanced.—ED. ARCHITECT.]

EDITOR ARCHITECT: The liability to split and waste of the common channel rustic, has long been a cause of complaint among lumbermen and builders. Nor is the V rustic entirely free from the same objection, but is open to a still worse one from the fact that a split in the tongue will not show after it is covered by the board above, and careless workmen will sometimes take advantage of that fact. The plugging required by channel rustic is another objectionable feature.



I herewith submit a tracing of beaded rustic that in my humble opinion obviates all the above objections. If you think its merits sufficient to warrant an illustration in the CALIFORNIA ARCHITECT, I would be very much pleased to see it submitted to the readers of your JOURNAL for their criticism.

W. H. CARSON.

Woodland, Jan. 4, 1887.

TO FIND the weight of round iron per foot, square the diameter in quarter inches and divide by six; the quotient is the answer, and very near the actual weight.

IT is sound business policy to patronize the liberal advertiser. He has confidence in his goods, or he would not risk his money in advertising them. He can sell cheaper than a non-advertising competitor because he can manufacture in large quantities and get material at lower prices.

FOR attaching mouldings and other light lumber, a new kind of nail has been contrived, which leaves no nail-holes. It is made with a point at each end and with an outwardly projecting head or shoulder midway between the points. The nail is first driven into the wood by means of a punch which straddles the protruding point and bears on the head. When enough have been driven in, the moulding is placed over the nails and driven down.

IT has been ascertained that timber which has been floated in water for a considerable time is no longer liable to the attack of dry rot. The albumen and salts are slowly dissolved out, thus depriving the fungus of the nutriment needful for its development. A French experimenter has shown that fresh sawdust rots away in a few years in damp earth, whereas sawdust from which the soluble matters have been soaked by water, remains unchanged under like circumstances.

THE question of how to prevent checking in the ends of timber when it is being seasoned is engaging the attention of English engineers. According to a recent report, it has been ascertained, after trying a number of expedients, that by painting the ends of the timber with thick glue several kinds of lumber can be dried without checks. It is supposed that the glue penetrates far enough to cement the layers of the wood together near the ends, and thus keep the ends from drying faster than the rest of the wood. Of course this method requires seasoning under cover, since rain would have the effect of dissolving the glue.

POWDERED glass is largely taking the place of sand in the manufacture of sand-paper. It is readily pulverized by heating it red hot and throwing it into water, the finishing being done in an iron mortar. By the use of sieves of different sizes of mesh the powder can be separated into various grades, from the finest dust to very coarse, and these should be kept separate. A strong paper is tacked down and covered with a strong size of glue, and the surface covered with powdered glass of the desired fineness; when the glue is dry the surplus glass is shaken or brushed off. Muslin is better than paper, and lasts much longer in use.

THE blistering of paint upon wood is not, as is generally believed, the direct effect of heat upon oil in the paint. If it were, we should find it taking the same action upon iron or plaster, which, we need scarcely say, is not the case. Heat, in the case as above noted, is a secondary agency, the primary one being steam, generated from the moisture in the porous wood, below or behind the impervious face or coating of paint. It is truly speaking a blister; but it is also a blow, expansion or cavity caused by the generation of steam. Blisters formed on wood, if cut or pricked at an early stage, so as to let out the steam, may be erased by carefully rubbing them down to their original bed, especially so if separation has taken place on the face of the wood, in preference to the face of the priming, or first coat of paint.

Wooden Bolts.

THE following article from an exchange on the subject of wooden bolts will doubtless prove of interest to our readers:

"Why do you make so lavish a use of nails in the carpenter-work of our houses, to the exclusion of the honest, old oaken pin? Pull down any building, if it be merely a barn, more than two hundred years old, and you will not find a single nail in the original work; rafters and joists were all bolted together so stoutly as almost to defy the tools of the destroyer. Many an old manor barn, when pulled down of late years—as, unfortunately, only too many of them are—has shown itself to have been better built than most palaces are now. There are arguments in the way of economy of time, and so on, in favor of the use of nails in house building, but they are as nothing compared with the solid advantage of using wooden bolts. The iron nails in time canker and rot rafters and floors, but bolts hold them together 'like grim death,' and render a house practicably indestructible."

THE ash is one of the most valuable of trees. Its timber is elastic, tough, and durable. It is called the "husbandman's tree," on account of the great variety of household and agricultural implements that are made of it. It used also to be called "the martial ash," because weapons of war were formed of its light, yet tough wood.

RECENT inquiries show that among the 20,000 carpenters in London, the expert workers average only eighteen cents an hour, while the inexpert get only twelve cents. Carpenters in Paris can only earn $1.70 for ten hours' work; in Berlin they work only eight hours a day for $1.05 per day, and are out of work on the average three months in the year.

THE latest example of "Queen Anne," or nondescript architecture, is furnished by the Philadelphia Mint, the superintendent of which, in order to obtain more room, and in the absence of ground to build upon, added a roof story, putting a French mansard on a building of pure Grecian architecture. *Engineering News* dubs the new style Franco-Grecian.

"MOONLIGHT nights are the bane of railroad engineers," recently remarked a head official of the Baltimore and Ohio Railroad. "All engineers dread moonlight nights. They try the nerves to the utmost. Engineers like to run on dark nights. On a moonlight night the trouble with them is no trouble at all—shadows. An engineer, looking out from his engine, sees before him all manner of shadows. He is sure that the dark shadow across the track he sees is a man, or a rock, or some kind of an obstruction. He doesn't know, and he is kept in a state of nervous excitement all the time. Going around curves, along hillsides, many curious shadows are outlined on the track; and very often an engineer is so worked up over a night's ride that he is scarcely able to perform his duties."

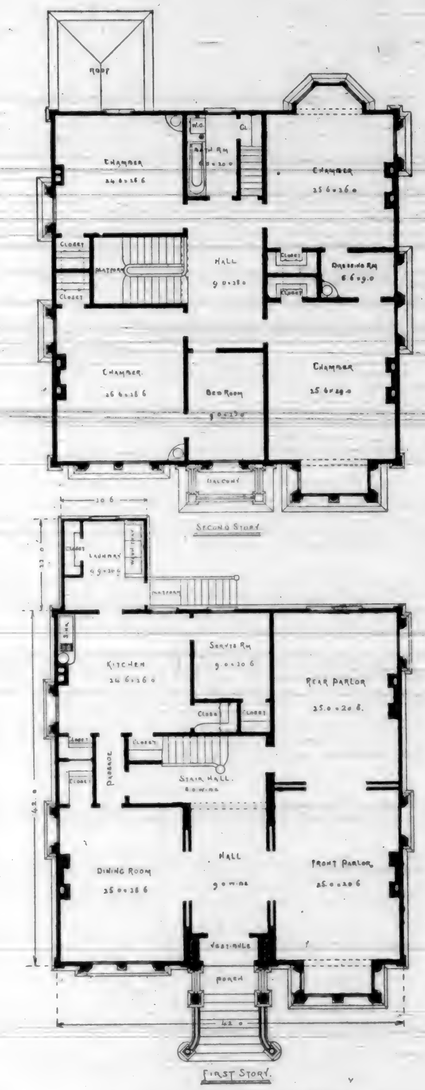
Built-up Doors.

A FEATURE of the building trade is the extensive use that is made of veneers. The method of building up doors of strips of pine has tended directly to this result. The built-up door, made of strips of pine glued together, is stronger than any other kind, at least of equal weight, and will not warp. But it necessitates the use of veneers of some kind. For heavy doors, quarter-inch stuff is used; but for the smaller doors in residences, one-eighth inch is often considered thick enough. The kind of wood depends on the finish of the room. Mahogany, cherry, oak, and curly or bird's-eye maple are perhaps the most common. This method of construction is particularly valuable where the opposite sides of doors have to be finished differently, to correspond with the rooms which they respectively face. This has often been done by making the door of two layers generally of equal thickness, the unequal shrinking and swelling of which would twist the door, and often tear it to pieces. The objection is raised against veneering that it is dishonest, and so not true art. That criticism should never be made in regard to such work as that mentioned. The built-up door of pine, veneered with mahogany, costs about as much as one of solid mahogany, and is a better one.—*Ex.*

Have a Specialty.

THE following from an exchange is well worth reading:—

"Many persons fail in achieving their ends, for the reason that their efforts are too diffused and cover too much ground. In engineering, the details are so great, and the fields so vast, that many may be specialists without coming in direct conflict with each other, and the man who knows one thing well, instead of many things superficially, is always in request. Special information, provided it is thorough, is always better paid than general information, that skims the surface and leaves the depths untroubled. In these days of technical papers and encyclopedias, the average reader can know a little of many subjects, but it is notorious that a little knowledge is dangerous, and, we might add also, that it is useless. The versatile man is generally an inefficient one, and, while he may be interesting as a companion, or to while away an hour in gossip, he is of no use in mechanical emergencies. Where would the versatile man be in certain of these, which often arise in the profession? From the necessity of his calling, an engineer may know and be well informed on a great variety of technical matters. He must know these thoroughly or indifferently, according to his desires, but this does not prevent him from making a study and investigation of some particular line or subject."



A Convenient Country "Box."

THE accompanying plan is an admirable one for a country or suburban house. It will repay careful study. Prepared especially for this Journal, by James E. Wolfe, architect.

The Architectural Draughtsman.

NUMEROUS inquiries have reached us from time to time from persons anxious to acquire a knowledge of architectural or mechanical drawing, asking us to indicate a course of study which, while being thorough, should not be too extended. Some of the inquirers wished to gain a knowledge of the subject for the purpose of making it a profession, while others desired to learn something of it for the purpose of assisting them in their trades.

The investment of time occupied in learning architectural drawing is almost certain to prove profitable. A mechanical draughtsman who is fairly well educated in other respects is nearly sure of finding employment at a fair salary in almost any town of size, for where there is a town there will be building going on, and the services of a draughtsman needed in getting out the drawings and plans. Even in comparatively new settlements, the services of a man who can make working, and other drawings, are generally in more or less demand. Draughtsmen and designers are required in nearly all the mechanical trades,—in the manufacture of silk, woolen and textile fabrics, paper-hangings, lace, carpet, and floor cloths; in fact, it is scarcely too much to say that there is not a mechanical art in existence in which the services of a draughtsman are not either directly or indirectly required.

It is a most erroneous idea to suppose that so long as a man can "draw to scale" he is entitled to call himself a mechanical draughtsman. To become justly entitled to such a term, a course of study of no mean order is necessary. First, we have geometry, which is the real basis and foundation of all mechanical drawing, and a knowledge of that subject is therefore absolutely essential; but a man who wishes to become a good draughtsman must go far beyond that. In the course of his vocation it will frequently happen that problems will arise needing a very intimate knowledge of the principles and practice of orthographic projection for their solution, so that he must make himself acquainted with the subject in a deeper and more extended manner than would be sufficient for the preparation of simple plans.

Then besides a good idea of coloring, and an artistic filling in finishing off drawings, a draughtsman should know something of isometrical projection. Take the case of farm buildings. Probably there is no simpler and clearer way of giving an accurate idea of the extent and arrangement of the agricultural class of buildings than to make the drawings in isometric projection, showing the plans and elevations in one view, and at the same time permitting perfectly accurate measurements being taken from them. The system is simple and very easily acquired, and is of great practical advantage in many other ways. Then perspective drawings are required, and a knowledge of that subject is necessary. The ordinary plans and elevations of a building prepared for working from are not sufficient to give an accurate idea of it to persons unaccustomed to such drawings. As a matter of fact, an elevation is a drawing of a building as it is, and not as it appears, and on that account it is desirable, when preparing drawings for a client, to show them in perspective. The art displayed in the coloring and finishing of such a drawing will do much in helping a man to decide upon the eligibility of a design for his purpose. Many architects, in designing the external portions of a structure, remembering this fact sketch their rough designs in perspective, from which they obtain a much better idea of the final appearance than they could possibly get from the ordinary plan and elevation.

What is sometimes termed "free-hand" drawing, that is, drawing without the aid of instruments, is very necessary to a good draughtsman. There is scarcely a drawing, large or small, in which some detail or other has not to be put in by hand, and the neatness of the drawing, as a whole, will largely depend upon the accuracy with which this is done. In the best perspectives the lines are first set out to rule in pencil, and are afterwards inked in by the unaided hand. In this way the stiff and conventional appearance of ruled drawings is avoided. Again the draughtsman must be able to work freely with his unaided hand, in order to put the lettering in neatly. It is surprising how many drawings are spoiled in appearance by the slovenly and inexact manner in which the lettering is done. On even, well-executed drawings it is not at all uncommon to see the lettering put in, as far as possible, by mechanical help, all the straight lines being ruled, and the curves put in with the compass. This practice is to be condemned, because the letters drawn in such a way will always have a stiff and inartistic appearance, while the very obvious manner in which they were drawn can scarcely redound to the credit of the draughtsman. In finishing off all drawings, excepting, perhaps, highly finished and elaborate perspectives, and other drawings of much importance, many architects only take the trouble to write the various titles upon the drawing, whilst others stamp them on with a rubber stamp, or stencil them on with special stencils made for the purpose. All these methods are equally objectionable. With a little practice anyone can learn to put in the lettering by hand almost as quickly as stenciling or stamping. For ordinary working details, and other purposes where a comparatively rough style of lettering suffices, the upright engrossing style answers very well, as it looks neat and is quickly executed. In ordinary "printing" letters it is usual to fill in each letter with a fine-pointed pen. This method, although probably the best where extreme accuracy is required, occupies too much time in ordinary cases. We therefore recommend students to try the use of the "inking in" pen for the purpose. It should be held in the hand in the same way as a pencil, and each stroke of a letter be traced with one movement of the pen. In working upon a smooth-surfaced paper or tracing linen, this method is of great advantage, as all

(Continued on page 10.)

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A List of Mechanical and Architectural Works

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The amounts given below are the Publishers' Cash Prices. We intend to reduce our stock, at present the largest of its kind in California, and therefore make the accompanying liberal offer.

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Lumberman's Hand-Book,	2 00
Practical Geometry,	1 00
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Woodward's Country Homes,	1 50
Woodward's Farm Homes,	1 00
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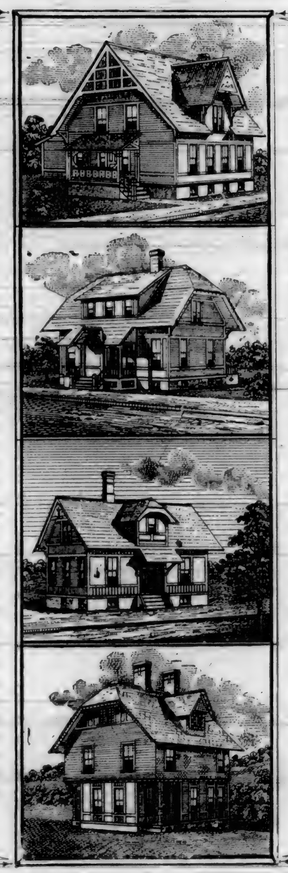

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Steel Square Problems,	1 00
Work Shop Companion,	35
Bound Volume California Architect,	2 00
Specifications,	50
Barn Plans,	1 50
Solution Pyramid Problem,	1 50
Standard Scroll Book,	2 00
Swiss Cottage,	2 50
Every Man His Own Mechanic,	3 50
Tredgold's Carpentry,	7 50
Builders' Companion,	1 50
Builders' Work,	5 00
Builders' Construction, (Three Volumes, Very Fine)	14 00
People's Cyclopedia, (three large volume,)	20 00
Homes for the People,	2 00
Mural Painting, (New)	3 00
Home Hand-Book,	10 00
Ruskin's Works, (four volumes)	6 00
Industrial Drawing for Carpenters,	2 00
Limes, Cements and Mortars,	4 00
Wonders of Art,	1 25
Architecture and Building,	3 50
American Cottage Building,	3 50
Windmills, by Wolff,	3 00
Illustrated Drawing Book,	1 00
Hand-Book of Legendary Art,	3 00

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MECHANICS' GEOMETRY,

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BY USE OF CARD BOARD MODELS.

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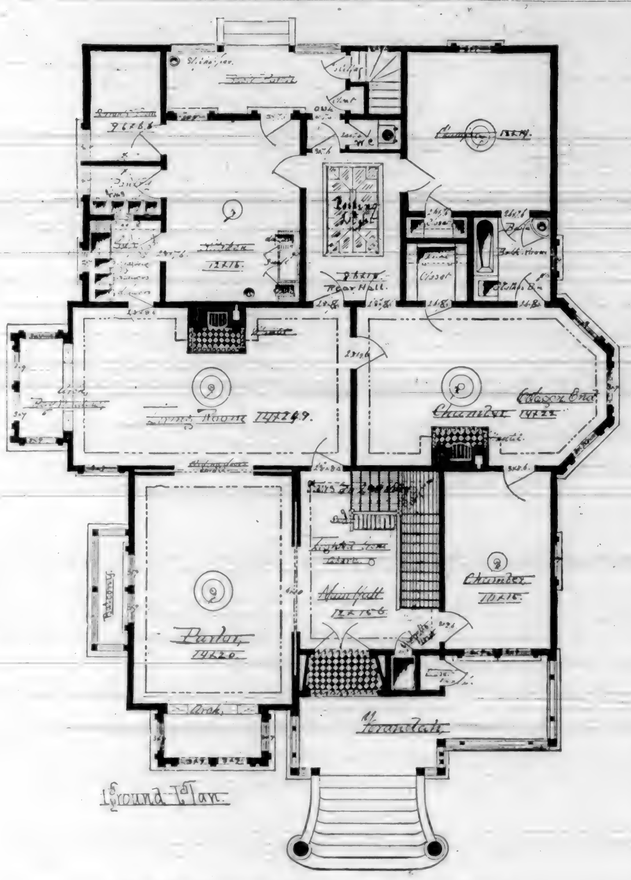
OUR FEBRUARY ISSUE WILL BE REPLETE WITH INTERESTING INFORMATION.



PLAN FOR COUNTRY HOUSE. (See opposite page.)

the parts of the letters are of one thickness and uniform throughout, while the time occupied is little more than that taken in writing the word in the ordinary way.

Those who are deficient in the art of free-hand drawing will find the following an excellent system of practice. The object is to render the hand free, and to train the eye in accurately judging distances. Obtain a blackboard and a piece of chalk, or, in the absence of these, a sheet of rough paper—a newspaper answers the purpose—and a soft pencil. Then take chalk or pencil firmly between the finger and thumb, and rapidly draw a curve of some kind, moving the hand and arm from the elbow, and not from the wrist. Draw a number of curves in the same way in all directions, taking care not to sketch them, but to trace the whole curve with one movement of the arm. Then draw a number of parallel lines in various directions—horizontal, vertical, and oblique—and then draw fresh curves joining onto the straight lines. This is literally to "get the hand in," and a half an hour's practice occasionally will be of considerable benefit. The student may afterwards proceed to make upon paper careful copies of free-hand drawings, choosing at first figures of simple outline, such as the outline of a vase, or a number of curves meeting at a center and forming some kind of a design. The method in this case will be entirely different from the blackboard practice. Lightly sketch vertical and horizontal guide lines, mark off upon them points where the figure intersects, and then lightly sketch in the outline through these points, and, when satisfied as to the accuracy of the figure, complete with a bold, even, and continuous line. Remember that the distances must all be judged by the eye alone, and the use of rule or measure never be resorted to. After having become somewhat proficient with this class of figures, the student may next proceed to take more difficult copies. The designs for terra cotta, and other ornamental panels and belt courses taken from the manufacturers' catalogues, can be easily obtained, and will answer the purpose admirably.

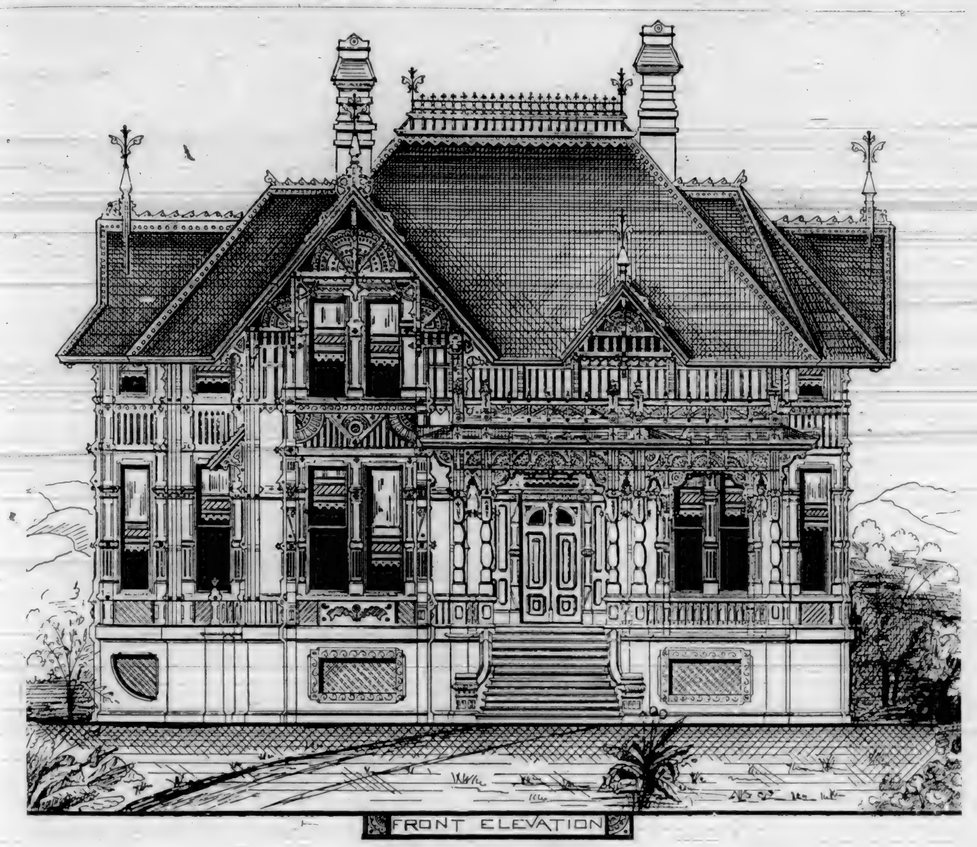
The subject of coloring is important. Many a good drawing has been hopelessly spoiled by indifferent coloring. In most cases the colors required are simple washes, but it is quite necessary that they should be perfectly uniform. To obtain a flat, uniform wash, the drawing should be placed on a board, which should be slightly tilted. A full brush of color should be taken each time, so that there is always a little pool of color upon the paper until the bottom is reached, when it will be gathered up. The secret of obtaining good flat washes is to keep the colors very thin, that is, to add plenty of water to them. If the color is too thick it will not flow readily, and it dries too quickly to make it possible to obtain a flat and uniform wash. In cases where a deep flat wash is required, it may be easily obtained by giving the drawing several washes, one on the other, of course allowing each coat of color to dry before another is added. The colors used should be of the best quality. It is absolutely impossible to obtain a satisfactory result with inferior colors, no matter how skillfully they may be applied Those imported and manufactured by either of the firms, Newton & Windsor, Rowney or Reeves, are among the best.

In conclusion, we would urge the would-be draughtsman to make a systematic study of the subjects above mentioned, to practice regularly and constantly, and to acquaint himself with the technical details of the art he proposes devoting himself to. If architecture, then the construction of the various details of building, making himself perfectly familiar with the various technical terms, and obtaining at least some considerable knowledge of the orders of architecture. Remember that absolute accuracy is not only essential to a good drawing, but that an error or a mistake of any kind in the plans may be productive of the most serious consequences when the building is actually erected. A case in point is within our recollection. A draughtsman, in drawing out the plans for a certain building, omitted to show a window opening onto a light shaft. The plan from which the omission was made was of the second story and four upper stories, which were all alike. There were six houses being erected from the same designs, so that the simple omission of four lines from the drawing meant the omission of thirty windows altogether. The joinery used in the houses was supplied by a firm under contract for the whole quantity, and they of course declined to supply these windows, as they were not shown on the plans, and they had not therefore allowed for them in their estimate. A clause in the contract to the effect that every article of joinery necessary to properly complete the buildings should be supplied whether shown upon the plans or not, caused the owner to affirm that these particular windows were obviously necessary. Upon this, however, they could not agree, and litigation was the result, all caused by a small act of carelessness on the part of the draughtsman. Probably the best way to avoid errors is to carefully go over the drawings, after they are finished, in the most minute manner, and to check every detail and item. If the specifications are then prepared without reference to the finished drawings, and the two are afterwards compared, errors will be avoided as far as possible. ARTUS.

A Popular Journal.

THAT this journal is extensively read, and its contents duly criticised, is proven by the fact that an error, which was shown in one of our plans not long since, has been the subject matter of twenty-nine communications received at this office in regard to the blunder. Who will say that this is not the best advertising medium on this coast, when even a little error is so extensively noticed. Terms for advertising are so reasonable that our pages should be filled with notices from those having wares in the building line to dispose of.

BOUND VOLUMES OF 1886 ARE NOW READY. PRICE $2.50 EACH, POST-PAID.



DESIGN FOR A COUNTRY HOME.

Design for a Country Home.

WE are indebted to Messrs. S. and J. C. Newsom for the above elevation and the accompanying plan on opposite page. The arrangement is one that recommends itself to the lovers of a well-planned house. The elevation will suit those who desire a very showy house, without appearing too gorgeous.

Downing a Redwood.

NOW she takes it! Keep clear!" shouted Jim Lake, a muscular Sonoma "bull-whacker," in warning to the group of woodchoppers in the redwood forest at the northern end of the San Francisco and North Pacific Railroad, as the death-rattle of a California giant was heard. After hours of under-cutting and cross-sawing, they had cut through all but one and a half inches of the monstrous trunk, fifteen feet in diameter, and the cracking of the wood announced that the monarch was about to fall. Its lofty top, 275 feet above the ground, wavered a moment, and bowed gracefully and with a stately air, like a grand lady courtesying; then gathering impetus as it left the perpendicular, the great trunk rushed to the earth with terrific force. Keeping to the course marked out for it by the woodsmen, it tore the foliage from the protruding limbs, filled the air with flying branches and bits of bark, swept away every article in its path, and descending with tremendous force, struck the ground with a thud to be heard a mile. Clouds of dust shot up sixty feet; the earth shook and rumbled. The prostrate giant trembled once from top to stump, and all was over. It was a death-scene of awful grandeur and solemnity. Even the lumbermen, accustomed to the sight daily, dropped their sledges, double-bitted axes, mauls, goads and water buckets, and gazed in silence at the overthrow of the many-centuried monarch.

SOMETIMES an elevator brings a man nearer heaven than he wants to go.

Just Published, "Modern Architectural Practice."

THE initial architectural publication for 1887 has been received. It is from the well-known architectural book publisher, W. T. Comstock. The full title of the book is "Modern Architectural Practice," No. 1. A large country house. Bruce Price, architect.

In this work the author presents the full plans and details for a large building to be erected in San Mateo County, Cal. The general design is calculated to represent the "American style" of architecture. The author tersely remarks in the preface: "In handling the problem no style has been followed, for no style could be attempted in its purity. It would answer equally the assertion that 'it is French in its feeling,' 'Romanesque in its handling,' or 'Dutch in its mass,' still it is an American house, planned for American uses, and built of American materials. Its disposition of rooms is new to any style of the past, yet the wants of the cliant have been fully met, and upon them it has been built."

The book is handsomely bound, printed on heavy paper, and contains twenty-four 12x15 plates, and full specifications illustrated by wood-cuts and diagrams, showing special features of construction; containing a large variety of doors, windows, and finish, wainscoting, paneled ceilings, staircases, balustrades, mantels, sideboard, pantry, bath-room, and laundry fittings, and other interior details; also exterior details, giving full and complete drawings of stone work, carved work, porches, main entrance, entrance doors, outlines of mouldings, gables, bay-windows, porte cochére, and all other details necessary for a full and complete understanding of the work. The price of the work has been placed at $5.00, upon receipt of which we will forward a copy to any part of the country.

SET out your work with accuracy, and the time you will save will bring profit as well as credit to your employer and yourself.

NEW ENGRAVINGS—ORIGINAL ARTICLES—EACH SUCCESSIVE NO. WILL EXCEL.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. We have been busy the past two months in perfecting arrangements by which we can secure information from every portion of the Pacific slope. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

For eight years there has appeared in this journal, building news from every portion of the country. But in its condensed form it did not attract the attention it deserved. We begin the New Year by making a specialty of the item mentioned.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interests of Architects, Contractors, and Material Men.

Alameda.

A new building will be erected on Park Street by Mr. Boehmer.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

W. Augistine is erecting a cottage on corner of Pacific Avenue and Chapin Street.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

A fine business block will shortly be erected on Park Street near the S. P. R. R.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Mrs. Gill is having built a $2,500 house on Buena Vista Avenue.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Robert Harvey is about commencing to erect a $3,500 building on San Jose Avenue.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Alvarado.

Large additions to the sugar factory are proposed.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Anaheim.

Albrecht & Co. are erecting a brick building for Mr. Langenberger.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Aptos.

The saw-mill at this place was lately destroyed by fire. Mr. Hihn, with his accustomed energy, has started to rebuild.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Crescent City.

Plans have been adopted for a $5,000 school-house.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Colton.

Plans are being prepared for a new opera house, by Mr. Grey, formerly of San Francisco.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Clayton.

Geo. D. Nagle is erecting large additions to the winery of the Mt. Diablo Vineyard Improvement Co.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Davisville.

Leggett & Drummond are considering plans for an iron warehouse for storage purposes.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

A Grangers' store and bank building is also on the tapis.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

Duncan's Mills.

Lumber mills around this neighborhood are shut down for the season.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

Fresno.

M. H. White is erecting a handsome building.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

It is rumored that T. E. Hughes, *et al.*, are taking active measures in regard to the erection of a $75,000 hotel building.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Highland Springs.

On the tapis, the erection of a $5,000 hotel.

Drawing for Bricklayers, for $1.50.
" " Cabinet Makers, for $1.50.

Los Angeles.

A large bank building is being erected, at a cost of $70,000. S. and J. C. Newsom are the architects.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

On January 7 a contract was let for a four-story building. Owner, Wm. Vickery; architect, R. B. Young. Cost, about $35,000.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Los Gatos.

Architect Clinch, of San Francisco, has just let a contract to Butler & McGowan for a three-story brick building for the Jesuit Fathers. Cost will be about $35,000.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Madera.

C. S. Peck has signed a contract to erect a brick building, to cost $6,000, for Mr. Schmidt.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Monrovia.

Twenty houses are in course of construction in this town. A street railway will shortly be commenced. Monrovia is in the neighborhood of Los Angeles.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

New Lighthouse

Will be built in Suisun Bay, near junction of Sacramento and San Joaquin Rivers.

WE WANT A BUILDING CORRESPONDENT IN EVERY TOWN IN THE STATE.

San Bernardino.

Plans are being prepared for a hotel in East San Bernardino Valley.

Steel Square Problems, for $1.00.
Work-Shop Companion, for 35c.

The contract for building a large hotel in San Bernardino has been let to Gray & Keefer, for $61,500.

Bound Volume California Architect, for $2.00.
Barn Plans, for $1.50.

So great is the building activity in Ontario that the light of the moon has been utilized to further building interests.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Santa Cruz.

A new hotel to cost about $10,000 will shortly be erected here. J. S. Green is to be the owner.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

San Jose.

James Phelan is contemplating the erection of a new building to be used as a theater.

Builders' Construction (three volumes, very fine), for $14.00.
People's Cyclopedia (three large volumes), for $20.00.

Spencer & Rich are erecting, on the corner of Marker and San Augustine Streets, a two-story and basement brick building. Architects are J. Lenzen & Son, H. C. Skow being the contractor. Cost, about $6,000.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

The same architects and contractor are erecting, for Luis A. Arguello, a two-story brick building on First Street. Cost, $11,500.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

A one-story cottage is being built on Tenth Street. Owner, W. Taylor; architects, J. Lenzen & Son; contractor, W. Taylor. Cost, $1,500.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Santa Rosa.

Contract for the new County Hospital has been let to Carle & Croly, of Sacramento. It will cost about $10,000.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

San Rafael.

J. Rosenthal is having a two-story frame dwelling erected, at a cost of $10,000. S. and J. C. Newsom are the architects, and Quink & Bignama, contractors.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

San Diego.

A large brick building for manufacturing purposes is being erected by Frank Kimball.

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

Seattle.

T. W. Bennett will shortly erect a large building for storage purposes.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

J. M. Colman will also erect a similar building to the above.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Visalia.

A new hotel will in a short time be built at this place.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

SAN FRANCISCO.

C

California, bet. Baker and Lyon. Two two-story frames.
O.—G. C. and Annie Letcher.
A.—Charles Geddes.
C.—Gray & Stover.
$8,500.

Church, cor. Twenty-ninth. Additions.
O.—Bowers.
$600.

California, Nos. 1324-1328. Improvements.
O.—W. Dutton.
C.—W. H. Wharff.
$750.

California, nr. Filmore. Two-story frame.
O.—A. A. Bennett.
A.—A. A. Bennett.
C.—I. A. Boynton.
$4,500.

D

Dolores, cor. Twenty-eighth. Two-story frame.
O. and B.—Blackfeld.
$2,500.

Dolores, cor. Duncan. One-story frame.
O. and B.—Comerford.
$1,000.

E

Eddy, cor. Steiner. Two-story frame.
O.—Kennedy.
A.—M. Balezynski.
C.—Smith.
$9,000.

F

Fremont, nr. Mission. Four-story and basement brick.
O.—M. P. Jones.
A.—Wright & Sanders.
Mason—J. G. Leibert.
Carpenter—T. H. Day.
$60,000.

Francisco, cor. Taylor. Three one-story frames.
O. and B.—Fontana & Co.
$8,000.

Fremont, nr. Mission. Four-story and basement brick.
O.—Mrs. — Joseph.
A.—Wright & Sanders.
Mason—J. G. Leibert.
Carpenter—T. H. Day.
$30,000.

Folsom, No. 1039. Additions.
O.—W. Dorgan.
A.—A. J. Barnett.
C.—C. S. Carter.
$4,000.

Fair Oaks, bet. Twenty-first and Twenty-second. Additions.
O.—J. Bolger.
A.—T. J. Welsh.
C.—Doyle & Son.
$2,000.

G

Guerrero, cor. Alvarado. Two-story frame.
O.—John Bell.
C.—Geo. Houston.
$2,000.

Guerrero, cor. Sixteenth. Alterations.
O.—Pacific Improvement Association.
A.—J. Marquis.
C.—D. Perry.
$4,500.

Geary, cor. Martha Place. Four-story brick.
O.—Chas. Schroth.
A.—J. Marquis.
Mason—G. Watterson.
Carpenter—J. Wilcox.
$60,000.

Guerrero, cor. Alvarado. Two-story frame.
O.—Fogarty.
C.—McCormack.
$1,700.

Green, No. 2112. Improvements.
O.—E. Fretwell.
C.—W. H. Wharff.
$2,500.

H

Harrison, cor. Fifth. Two-story frame.
O.—A. Trobock.
A.—W. P. Moore.
C.—L. Helbing.
$2,300.

Haight, nr. Broderick. Two-story frame.
O.—H. J. Shillcock.
C.—W. F. Lewis.
$3,500.

L

Larkin, cor. Vallejo. Two-story frame.
O.—J. Gandolfo.
A.—Townsend & Wyneken.
C.—N. B. Ritchie.
$3,800.

L, bet. Seventh and Eighth aves., S. S. F. Frame building.
O.—P. Riordan.
A.—W. H. Bayless.
C.—M. Murray.
$1,500.

M

Mission, bet. Tenth and Eleventh. Three-story frame.
O.—H. C. Patridge.
A.—R. C. Ball.
C.—J. J. Dunn.
$6,000.

Mason, cor. O'Farrell. Additions.
O.—A. McCartney.
A.—H. T. Bestor.
$1,800.

Mission, bet. Nineteenth and Twentieth. Two-story frame.
O.—D. P. Smith.
A.—J. T. Kidd.
C.—J. W. Meyer.
$5,500.

Market, cor. Fremont. Five-story and basement brick.
O.—S. Lachman.
A.—Wright & Sanders.
Carpenter—J. Grant.
Masons—Riley & Loane.
$180,000.

Market, nr. Eighth. Repairs.
O. and B.—Anderson Bros.
$500.

Mission, cor. Seventh. Additions.
O.—J. Easton.
C.—J. Ross.
$700.

O

O'Farrell, bet. Powell & Stockton. Brick building.
Owners—G. Walter, J. H. Roberts, A. Schroepfer.
A.—A. Schroepfer.
Masons—Wilson & Young.
$5,000.

Oak, nr. Fillmore. Two-story frame.
O.—N. Wynne.
A.—J. J. Clark.
C.—J. G. Adams.
$5,500.

O'Farrell, bet. Powell and Stockton. Brick building.
O.—A. Ludwig.
A.—H. D. Mitchell.
C.—C. Orr.
$2,000.

P

Page, bet. Pierce and Scott. Two-story frame.
O.—F. Behre.
A.—B. E. Henriksen.
C.—Harmon & Trotter.
$2,400.

Post, bet. Gough and Octavia. Two-story frame.
O.—Mrs. J. B. Elwert.
A.—W. Mooser.
C.—J. A. Ehmann.
$6,000.

Pine, nr. Fillmore. Two-story frame.
O.—J. Paillasson.
A.—Huerne & Everett.
C.—Moore Bros.
$5,000.

Post, nr. Devisadero. One-story and basement frame.
O.—A. Klain.
C.—F. Roettger.
$1,800.

WE WANT A BUILDING CORRESPONDENT IN EVERY TOWN IN THE STATE.

S

Second, No. 531. Two-sto y frame.
O.—Mrs. M. Handy.
C.—W. E. B. Stiles.
$2,800.

Sutter, bet. Dupont and Stockton. Three-story and basement brick.
O.—C. R. Bishop.
A.—W. F. Smith.
Mason—C. Worrell.
Carpenter—W. M. Fletcher.
$35,000.

Second, nr. Folsom. Four-story and basement brick.
O.—Wieland.
A.—W. Winterhalter.
C.—J. Haaf.
$100,000.

Sanchez, bet. Twenty-ninth and Valencia. One-story frame.
O.—Anderson & Co.
C.—J. E. Loomer.
$1,600.

Santa Clara, cor. Mississippi. One-story frame.
O.—Mr. Kelly.
$1,800.

Steiner, nr. Eddy. Two-story frame.
O.—P. McSherry.
C.—Chas. Teaft.
$4,200.

T

Twelfth, bet. Market and Mission. Frame church. (German Cong.)
A.—Kenitzer.
C.—F. W. Kern.
$8,000.

Townsend, bet. Fourth and Fifth. Foundations (concrete) for three brick warehouses.
O.—Mrs. M. F. S. Hopkins.
A.—O. G. Moore.
C.—C. A. Warren.
$3,000.

Twenty-first, No. 812. Three-story frame.
O. and B.—F. Klatt.
$7,500.

Twenty-sixth, bet. Valencia and San Jose ave. Two two-story frames.
O. and B.—Nowes.
$3,000.

Twenty-fourth, cor. Church. Two-story frame.
O. and B.—F. Kleebauer.
$2,000.

Twenty-third, cor. Guerrero. One-story frame.
O. and B.—Klahn.
$2,000.

Twenty-seventh, cor Church. Two-story frame.
A.—J. J. Crooks.
C.—Eagan.
$6,000.

V

Van Ness, bet. Sutter and Fern ave. Five two-story frames.
O.—I. Kohn.
A.—P. R. Schmidt.
C.—P. Crichton.
$37,000.

STEEL SQUARE, ITS USES, PRICE $1.00.

IN selecting house decorations see that the effect is not destroyed by the surroundings; for instance, when the carpet is faded and the furniture shows many years of faithful service, by no means indulge in bright colors, plush and satin chair scarfs, elaborately embroidered table coverings. Where it is necessary to conceal defects, subdued colors have a more pleasing result.

GRIMSHAW ON SAWS, PRICE - - - $4.00.

EDITOR BUILDING: I should like to have your opinion as to the respective merits of thick and thin mortar joints in brick-work. C. H. B.

The object of mortar in brick walls is to form an adhesive substance between the bricks, and it has little, if any, function beyond. The average bricks of which walls are composed are certainly harder than the hardest mortar, so that the object would seem to be to keep the joints as thin as possible for this reason alone. The wider the bed joints the greater will be the settlement of the building. For these reasons the mortar joints should all be kept as thin as is consistent with perfect adhesion between the bricks, and, without doubt, should be thinner than it is now usual to form them. The side joints will be regulated in size by the dimensions of the bricks. The quality of the mortar in a brick wall is of much more importance than would seem to be generally understood. This was well illustrated in an accident which happened recently in this city. A flour warehouse fell to the ground by reason of the bad mortar used in its construction. The flour barrels were loosely packed in such a manner as to throw considerable thrust upon the walls, and, the mortar being of very bad quality, the bricks were separated, with the result of bringing down the building.

Fire Hose and Garden Hose, W. T. Y. Schenck, 256 Market Street.

ONE thousand brick, closely stacked, occupy about fifty-six cubic feet.

SUBSCRIBE NOW FOR 1887.

ITEMS IN REGARD TO BUILDINGS IN THE COUNTRY THANKFULLY RECEIVED.

RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd lengths	19 00
" " second quality	16 00
" " selected	24 00
" " c ear except for Flooring	29 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 00
" " " other sizes, No. 1	34 00
" " " all " No. 2	27 00
" " Stepping, No. 1	40 00
" " " No. 2	30 00
Ship Timber and Plank, rough, selected	25 00
" " " selected, planed, 1 side (average, 40 ft.)	27 00
" " " " " 2 "	29 50
" " " " " 3 "	32 00
" " " " " 4 "	34 00
Deck Plank, rough (average 35 ft	29 50
" " dressed	34 00
Pickets, rough, B. M	19 00
Furring, 1x2, per lineal ft	0¼
Lath, 1½ 4 ft., per M	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M	20 00
Spruce dressed shelving, to 14 inches, per M	35 00
" " ½ inch " " "	35 00
" " wider, per M	40 00

REDWOOD.

	per M ft.
Rough Redwood, merchantable	$20 00
" " second quality	16 00
" " selected	24 00
" " clear	33 00
Dressed " common surface	22 00
" " ½-inch surface	28 50
" " No. 1	33 00
" " No. 2	26 00
" " T. & G., 1x6, 12 ft. and over, No. 1	30 00
" " " other sizes, No. 1	30 00
" " " 7 to 11 No. 1	26 00
" " " under 7 No. 1	23 00
" " Rustic, No. 1	33 00
" " " No. 2	28 00
" " T. & G. beaded, 12 ft. and over, No. 1	33 00
" " " " other sizes No. 1	33 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft	0⅔
Shingles, per M	2 00
" fancy, per M	3 75
Posts, split	13
Shakes, split, per M	9 00
" sawed "	11 00

Master Plumbers' Association.

Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

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Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., FEBRUARY 15, 1887.

Our patrons are informed that Clarence L. Crabbe has no connection whatever with this Journal. He is not authorized to make any collections, or receive either subscriptions or advertisements.

Bound Volumes of the year 1886 are now ready. We will forward a copy to any address upon receipt of $2.50.

Mechanic's Lien Law, Twenty-five per cent, Thirty-five Days, Filing Contracts, etc.

THE law as it now is, among its many other maladroit provisions, makes it obligatory upon owners to retain in their hands twenty-five per cent of contract sum, for a period of thirty-five days from and after date of completion of buildings, or works of any kind, with the alternative that if said twenty-five per cent is not so retained, the owner remains liable to creditors of the contractor, who may have performed labor, or furnished materials, for the period of time named, although the owner may, in good faith and with honest intent and purpose, have paid the full sum of agreement to the contractor, at completion, or prior to the expiration of the thirty-five days. Consequently, if an owner presumes to act kindly, and pay promptly upon completion for the materials and labor performed for, furnished to, and enjoyed by him, he must assume all the risks and chances that may follow the payment of more than seventy-five per cent of the amount of contract price, prior to the expiration of the time provided in the statute—nearly one-tenth of a whole year.

The thirty-five-day clause serves no good purpose, nor is it just when made compulsory by legal enactment. Parties to any transaction may agree upon credit payments, but when a form of law is passed by the law-making powers, which proposes to *compel* men to give and accept credit, whether they desire to do so or not, is an invasion of personal and business rights—"special legislation" in that its operation selects a *special class of operators*, and subjects these to its *special penalties*. In addition to this, it imposes positive hardships and inconveniences, more or less upon all concerned, but especially upon those least able to bear them—sub-contractors—who, as a rule, need all they earn as soon as it is earned, and being kept out of any portion of their earnings for thirty-five, or any other number of days, is a deprivation both unjust and unfair. For while some of our building contractors have the means to liquidate all claims against them, promptly, the larger number are possessed of no bank accounts, and can only pay as they receive the contract payments; and as a further rule, stair-builders, plasters, plumbers, painters, and other sub-contractors, are made to share a part of this thirty-five days' requirement, and it is no wonder that "the Lien Law," is a common expression among those who are compelled to bear the burdens it imposes.

Hundreds of thousands of dollars are continually tied up by this process of law, which should be in circulation. But few owners are benefited by this delay in payments, as but infinitesimally few, if any, commence building improvements with any consideration, if even a knowledge of the fact that the law gives thirty-five days' credit on one-fourth of all contract sums they may enter into, exceeding $1,000. Nor is it likely that one in one thousand would commence building simply, or to any extent, by reason of this provision of law. Owners, as as a rule, see to it that their resources are, or will be equal in proper time to any undertaking ventured upon; and again, as a rule, payment at completion is convenient, and is preferred to having an unsettled balance hanging for thirty-five days. The few who would desire such accommodations, can always make the arrangements, without any necessity of forcing anyone to accept an undesired thing.

It gives no additional security. It is a bad law, in that it does not increase security to any creditor of a contractor, except that it operates as a period or specie of notification, in which creditors may be able to find out that certain contract money, as a whole, has been earned. If upon this is based the merits of the provision in question, it is a heavy imposition upon very many innocent parties, and is a legal circumlocution which could be greatly simplified by aiming directly at the evil sought to be remedied—that of dishonest men receiving the moneys of contracts, and failing to pay their debts. If creditors must be notified, if they are unable to keep the run of things, and cannot rely upon the integrity of their customers, the law otherwise provides—sensibly—a means of protection, *i. e., notify the owner*, which done, the owner must reserve the amount of claim from the contract amount, or be responsible to the creditor in the amount due him. Thus every creditor, by taking timely precaution, can make himself safe, without the unfair, unjust, and iniquitous imposition of a penalty of thirty-five days' waiting for the payment of moneys due. "Delicacy" toward the man mistrusted is the common excuse for not pursuing the notification course. "Don't like to," for fear of offending—who? The man whose honesty or ability to pay is questioned. But this course would require personal action and individual responsibility; hence the promoters and advocates of the thirty-five days' rule shirk this plain, reasonable, and effective method, and skulk behind the bulwarks of ungenerous legal construction, to avoid a course that might, perchance, displease a customer who had been suspicioned as more dishonest than he proved to be, even if this shirking disposition has the effect of paralyzing the circulation of a few hundred thousand, or, perhaps, a million dollars.

Banks and loaners gain, borrowers lose. Loans, particularly

EACH SUCCESSIVE ISSUE OF THIS JOURNAL WILL SHOW A MARKED IMPROVEMENT.

when money is tight and interests comparatively high, are charged to the borrower from the time the loan is granted, upon the theory that the amount of the loan is "set apart to the borrower," at the time the loan is passed upon. This, however, is not practically true in all cases, but when applied, operates as a grinding process upon the borrower, who receives no abatement of interest during the thirty five days, while the bank or loaner is at liberty to speculate with the moneys "placed to the credit of the borrower," for the full period of the law's delay, and thereby receives double interest on the amount.

Designed to head off rogues. Yes; at whose expense? Everybody concerned specially, and the entire building trade in general. The framers of the preposterous proposition failed to take in the whole situation, or to exercise intelligent comprehension as to effects, in that in the attempt to catch the disbonest, good men's rights are throttled. Legislation which proposes to withhold moneys due, rightfully belonging to other parties, is ill conceived and unjust. As a matter of course the law is general in application, and good men may be punished by its provisions, in that they may be deprived of moneys due them by right, if not by law. Of course, owners under contract with good, responsible men, may pay the contract moneys at pleasure, and assume the risks in doing so, but some are apt to utilize the legal privilege of holding onto their coin as long as the law allows, and this is more likely to be the case in large jobs, involving large sums, more than in those of moderate cost. Take, for instance, the Flood building, on Market Street, the contract of which for carpenters' work alone, amounts to over $100,000, and with the other contracts, a total of over $300,000, which leaves in the hands of the millionaire owner, under the thirty-five days' clause, of the contract amount earned at completion of the building, seventy-five or more thousand dollars of moneys *rightfully* due others, who may stand, hat in hand, and beg, while the owner may laugh and reply: Wait the law's appointed time, and I will pay you what you have already earned.

The intent of those who manipulated the framing of the present law, was, in the main, good, in that it proposed to provide better security for the payment of material men, sub-contractors, and workmen, with that other nicely worked in, objectionable joker, which makes those furnishing materials the *second* in class of preferred creditors, labor being *first*, leaving "sub-contractors" *third*, with no chance to get any pay, provided the balance due on contract amount at final settlement should be no more than sufficient to pay, *first*, workmen; *second*, material men. To claim fairness or equity in such an arrangment of law, is simply a ridiculous absurdity. In cases where there are shortages in the contract sum, imposing the only alternative—*pro ratio* settlement, every individual creditor is, by every consideration of right, entitled to a fair and just proportion of the money to be divided. But the last amendments to the law, those now in operation, were brought about through the efforts, and at the expense of those who were personally interested in classifying the "rank of each lien," as follows: *First, all persons performing manual labor; second, "persons furnishing materials;" third, "sub-contractors;"* poor fellows, how gratifying to them to stand by and see the wealthier class, the class abler to lose, step in and take all that is due them, if there is enough for that purpose, and if not enough, then to take all there is, and those who have furnished both material and labor, as "sub-contractors," be smiled at as unfortunates, because in the *third* class, yet as justly a creditor, and entitled to pay as much as those who receive all, or the larger portion of their claim.

The filing of contracts in the manner provided by the law, *to wit*, "prior to the commencement of the works," is mischievous, oppressive, and unjust, in that it jeopardizes and endangers the rights of owners and contractors, if not so filed in point of time, the Superior Courts holding that the plans and specifications are parts of the contract, and must also be filed, and sometimes to do this, the commencement must be delayed, which should not be rendered necessary by unwise, and impractical legislation. Yet if the filing is not done in time, the contract obligation is rendered void, and the owner must suffer, while all the purposes of filing might be as well accomplished, if filed within five (or ten) days after "commencement" was inserted for the arbitrary "before." The less than one dozen of those interested in the entire building business in San Francisco, who hold to the "before," use a very unfair argument in defense, by claiming that there are contractors who, in less than ten days after commencement of the work, can and do practice deceits and rascalities which would not be possible by an earlier filing. To admit this as true, it does not reflect much credit upon the intelligence or acumen of those who allow themselves to be caught by such (very few) disreputable fellows, for none but men without business standing or reputation would do any such rascally things; and if such persons can ply their games, and beat men of long business experience as material men, mill men, etc., those beaten ought to acknowledge themselves beaten, and keep quiet through shame at the r own want of fair business smartness, rather than seek to impose onerous exactions upon ninety-seven-hundredths of those who are square and upright in all their transactions. There is a moral debasement running all through the law, as it is, which aims at protection to material men, etc., without any consideration of the rights and conveniences of honest mechanics, architects, or owners, for which reasons the law should be, and likely will be amended during the present session of the Legislature.

Contract Equities.

THE greater number, in fact nearly all building contracts, are made up from the owner's standpoint, and either the architect or attorney who formulates the obligation, is very careful to include and guard his client's every interest, with no special provisions protective of the party of the second part—the contractor. Building contracts, in a general sense, propose two things: First, that the contractor shall furnish and provide the material and labor required to carry out and fulfill the requirements of the plans and specifications, and, second, that the owner is to pay the agreed sum of contract for the proper execution of the work contemplated by, and defined in, the agreement.

If there were no contingencies involved or possible, a contract containing no more than is written above, would serve all practical purposes. But as it is, there are numerous possibilities that may arise during progress, in reference to quality of materials sought to be used, character of workmanship, delay in progress of the work, liabilities for debts created by the contractor, injury to person or property, and a variety of mishaps that the owner must be protected against. This is usually carefully attended to in preparing the contract, with scarce a word not intended to obligate the contractor. He must do this, and that, and the other thing, just in the way and manner prescribed by the plans and specifications, subject to penalties and charges for all neglects and failures that may occur; but it is seldom that contracts provide against hardships that may be imposed upon the contractor. Yet alike, the man who builds a building, using his skill and mechanical abilities and his means and credit to fulfill his agreement, and he who pays coin for such fulfillment, have rights and equities, which should be respected and properly treated in the one as much as the other.

The figuring and valuations leading to contracts, are usually based upon the plans and specifications, and if the plans do not show and fairly represent what may afterwards be *claimed* as the "true intent and meaning" thereof, the architect producing the plans being the "*conclusive*" authority upon the point of intent and meaning, the man most affected by the interpretation, is obliged to accept the rendering of the architect, and proceed accordingly, although doing so may add materially to the costs of the work, more than would be required if the plans were interpreted by disinterested parties. Plans *intended* to show, and *properly showing* true intent and meaning, may be widely differing propositions.

The specifications are another most important factor, and if so sufficiently clear and intelligently drawn as to cover all requirements, there can be no issues in regard to them; but if vague, and possible of more than one construction, they thereby become misleading; and if "conclusively" read and interpreted by the man who in haste put them together with omissions, or through incompetency failed to incorporate all that was wished for by the owner, the effect upon the contractor is the same, if bound to submit to an arbitrary rendering.

Again, under rulings of the courts in this State, if an owner neglects or refuses to make the progress payments, the contractor is not thereby relieved from progressing with the work, nor can he claim such non-payments as "prevention of contract" by the owner; but he must go on and complete before he can lien the property or commence legal proceedings to recover the contract moneys. Or an owner may not be prepared at the time called upon to make a payment, or he may hold the moneys due the contractor for speculative purposes; meanwhile the contractor must go on, nurse his credit, provide the necessary cash to pay workmen, and suffer many hardships, because the owner pleases, or is forced to delay payment.

Certainly these, and numerous other considerations, which space will not permit us to recite in this issue, should influence both architects and owner to a reasonable and just appreciation of the equities which should be incorporated in building contracts.

NOW IS THE TIME TO SUBSCRIBE FOR 1887, $2.00 PER ANNUM, IN ADVANCE.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting was held on the evening of the 4th inst., A. Pissis, president, presiding; B. E. Henricksen, Secretary. The committee appointed to interview the freeholders in reference to the Board of Public Works, reported that nothing had been accomplished in regard to the subject matter of its appointment.

James E. Wolfe, of committee to confer with a like committee from the Builders' Association, in reference to a uniform builders' contract, reported that the conference of committees had prepared and submitted a form of agreement, which was thought to adjust the rights and equities of both contracting parties, in lieu of the usual rather one-sided obligation generally used, in which the binding claims are more oppressive than generous to and upon the contractor. The new form presented for the consideration of the Chapter, suggested clauses of contract which, while compromising none of the owners' fair and reasonable rights, extended such reliefs and qualifications to the parties of the second part, as were consistent with fair dealings between man and man. A motion to accept and file was debated, the Chairman of the committee urging that the Chapter should express its approval or rejection, or suggest such amendments to the proposed form as would make it acceptable; but the sentiment prevailed that each architect should enjoy the right to draw up contracts to suit his own and his client's notions, and if the building clauses should be distasteful to the party of the second part, he could exercise the right to decline signature, leaving the architect the alternative of letting the work to some other party less scrupulous in regard to obligations which might, under certain conditions and circumstances, be made severely oppressive. The motion to receive and file, prevailed. Hence the time and labors of the joint committee resulted in waste, as far as concert of action by the Chapter was concerned.

A report was also received, through the same source, in reference to the amendments to the mechanic's lien law, stating that material changes and amendments have been formulated and forwarded to Sacramento for legislative action, with the hope that our law-makers, now assembled at the State Capitol for the ostensible purpose of legislating for the common weal, will oblige nine-tenths of their constituents engaged in the building business, by expunging many of the hardships and weaknesses of the law as it now exists, and substituting fairer and more equable and practical features, much better calculated to insure the purposes of the statute, without imposing any of the many—at present impractical and bad—conditions of the present law. Two of the most important changes modifies the present requirement that twenty-five per cent of the contract sum shall remain unpaid until thirty-five days from and after completion, to a delay of ten days; also, that instead of the contract being filed *before* the work is commenced, the time for filing to be extended to *within ten days after* commencement.

A paper was read by Mr. Gash, on the subject of ancient and modern plumbing, which, by order of the Chapter, is published in full in present issue of this journal.

Contractors Should Secure Fair Prices.

IN a short time building activities for the year 1887 will be fairly begun. Let each contractor resolve that he will maintain prices throughout the year. There is nothing so detrimental to the building trades as dishonorable competition. If you cannot figure to do good work, furnish good material, and pay reasonable wages, leave the job alone. If builders could combine and hold to fair prices, there would be a great deal of money made this year. Do not charge exorbitant prices for your work or owners will invest their capital in other ways. But figure so as to make a fair margin and enough to allow for extras. The common complaint among builders has been that such close figuring was done that legitimate contractors could not get enough work to keep their men going. Somebody gets beat. Is it the owner, the dealers in building material, or the contractor? We think in many cases it is the three. Why disgrace the profession in this way? Just as much work will be done if contracts are figured so as to leave a fair margin as there will be if the figures are so low that everybody will be beat. Turn over a new leaf this year and make some money.

JUDGE MILLER recently decided a case in the New York Court of Appeals, in which he held that if the owner of a building employs a mechanic to make repairs upon the same with no specific arrangement as to terms and conditions, such employment is in the nature of an independent contract, which imposes upon the employe the responsibility incurred by the negligence of himself or those who are aiding him.

Building Summary for February.

THE past month has been dull, as far as letting new contracts is concerned. Allowance must be made for the bad weather of the past few weeks. During the month just passed, the following summary will show the number of building engagements, and the value thereof:—

30 frame buildings, value	$126,000
5 brick " "	53,250
13 alterations and additions, value	25,200
48	$204,450

Why Are Bath and Water-Closet Combined?

MODERN houses located in cities, all contain a convenience the names of which are too numerous for mention. Perhaps the French No. 100 is as good as any. "Retiring Room," is a euphemism which will meet the same fate as the once delicate word "privy," which signified a private retiring room. Whatever its name, we all want it, but we want it perfect of its kind, able by its mechanical construction to remove from us without injury to our senses or our health those matters for which the body has no more need.

Most modern houses also contain another convenience, to some extent a necessity, but in great part a luxury. This consists of a tub, usually resembling a coffin in shape, and capable of containing enough hot or cold water to cover the body. At its simplest, a bath is a matter of cleanliness; but in its most developed condition it may be considered one of pleasurable sensations, and it is to be noted that unless the latter are received by the bather, he is much inclined to omit the bath.

No matter how carefully the privy, water-closet, retiring-room, or whatever else it is called, be constructed, the sense of smell will always find some offense there, and that of sight may at times have its delicacy offended. Since this is the case, the question may be asked, "Why is it usual to locate the water-closet in the bath-room? Why is the bather condemned to have his sense of smell offended by emanations which proceed from matters excreted either by his own body or those of other members of the family? What natural connection is there between a water-closet and a bath.

If the matter were simply one of smell, or even one of smell and sight combined, it might concern delicacy, but would have no grave import. But in fact it is a matter of health also. Even though the closet be as perfect as plumber and sanitary engineer can make it, it ought not to be combined with the bath-room because of the possibility of derangement, the probability of its use by members of the family suffering from sickness or disease, and the fact that it requires conditions different from those of the bath-room in order to maintain it perfect. For half the year, at least, through our long winters, the bath-room, if it is to be at once a source of health and of pleasure, requires to be heated, while the closet is decidedly better without any artificial heat. The former is, or ought to be, a place in which we spend some little time, while the latter is, or ought to be, for actual necessity only.

It is comfortable, no doubt, at times, to have the closet handy, and handy it can be, but should be accessible from the bath-room only by passing through a door. It should be so placed that access to it can be obtained without entering the bath-room, so that it can be used by one member of a family while another is bathing. Who among us does not know the misery of waiting until another has bathed, or the equal misery of bathing while the too handy necessity beside the bath is in use?

A great deal of modern delicacy is opposed both to convenience and health; but here is a matter in which convenience and health are consonant with delicacy, since the last is in the highest degree outraged by the usual arrangement; yet delicacy has not yet taken umbrage at the unholy union of privy with bath, nor have convenience or health brought in their batteries against it.—*W. N. Lockington, in Builder and Decorator.*

Something to Be Remembered.

SWING all doors to the right as you enter an apartment; they are thus handled conveniently.

It is better to oil floors than to paint them; a monthly rubbing will make them as good as new.

Soiled wall paper may be cleaned with dry bread carefully applied.

Leaks in sewer or plumbing pipes may be detected by injecting oil of peppermint into any portion of the apparatus.

If varnish or oil does not flow easily, add powdered camphor.

Shellac and borax boiled in water produces a good stain for floors.

BUILDING CORRESPONDENCE DESIRED FROM EVERY PORTION OF THE PACIFIC SLOPE.

Evolution in Architecture.

BY H. M. HUGUNIN.

THE gradations that have occurred in architecture from the earliest period to the present day are as marked as those that distinguish every other branch of art. The earliest dwellings of which we have any record were caves, or grottoes, which date to a time before ancient Troy was built. Some of these

ANTIQUE CAVERN-DWELLINGS

Are said to have recently existed in the Island of Sicily; and on the coast of Syria, not many years ago, was an extensive subterranean city, constructed like a beehive. Mud buildings were imitations of martin's nests, and Plutarch mentions cottages made of framework and mud. In the days of Abraham the nomadic tribes

DWELT IN TENTS,

Which they removed from place to place as the exigencies of their herds required, and in Arabia the wandering tribes still live in their primitive houses. These, with the caverns, the mud kraals of the Hottentots, and the wigwams of the American Indians, were the first habitations of man. In form the kraal and the home of the Esquimaux resemble each other. The one, however, is built of mud, and the other of ice.

Towns were originally built for protection, and erected like fortresses, and to them the herdsmen and tillers of the ground retired when endangered by their enemies.

Of the cities now existing, Damascus, in Syria, is the oldest, and to this day retains many of its early characteristics. The

WIGWAM OF THE AMERICAN INDIAN,

In all tribes, from the arrival of Columbus, in 1492, to the present era, displays its original features, although native skill has sometimes produced a few changes in the material. Poles united at the top, and so spread at the bottom as to encompass a few square feet of ground, form the accustomed frame. Upon this are fastened strips of bark or the skins of animals. The ground is the floor, on which a fire is built in the center, the chimney consisting merely of an opening left in the covering at the summit of the structure. Here the family reside until a scarcity of food or other social need compels them to remove to another locality.

ARCHITECTURE AMONG THE NORTH AMERICAN INDIANS.

A primitive home, easily taken to pieces, and carried about the country.

THE HOME IN THE FOREST.

When white men began to emigrate from the Old to the New World, the conveniences to which they had been accustomed, and the inconveniences of the Indian wigwam, led them to erect dwellings more suitable to their tastes and habits. Unlike the Indians, they were producers of various crops, and required more land or a homestead. Shelter was a prerequisite while they were clearing away the forest and preparing the soil for cultivation. Building materials and tools were scarce and of the rudest sort; and the home was made of branches of trees for framework, covered and floored with slabs or boards roughly hewn from fallen trees, with fireplaces and chimneys wrought with stones and clay. In other cases the trunks of trees were piled one upon another, leaving great intervals of space between, to be filled with strips of wood and mud. Roofs were constructed of rough slabs, boards, or bark. Windows were few and consisted, in the warmest season, principally of open spaces in the walls. In such dwellings were born and reared some of the noblest men and women whose names and deeds emblazon the records of this nation. The ancient cottages of Great Britain, were a trifle in advance of the first home in the wilderness, but still devoid of elegance in either construction or material. Low walls of stone, the doorways reaching nearly to the eaves, the diminutive, latticed window, and the roof thatched with straw, composed a dwelling both picturesque and comfortable for the rustic family. In such a residence was born the favorite Scottish poet, Robert Burns, near Ayr, in 1759.

THE LOG HOUSE.

The style of building common among the early settlers in the United States.

The house where George Stephenson, "the father of English railways," was born, at Wylam, England, shows a better class of rural cottages, but is lacking in every element of beauty, indicating the rude, practical rearing of the common laboring class. But the genius of Burns and of Stephenson have cast about these cottages haloes of glory that make them very attractive.

EARLY HOMES IN AMERICA.

In America, also, the early homes of many of our millionaires, statesmen, and warriors were no better than those in which the great and noble of Europe were first cradled. General Grant's birthplace on the banks of the Ohio; the log cabin of Abraham Lincoln, in the wilds of Macon County, Ill., in 1830; and the first home of Jay Gould, in Connecticut, are fair examples of the dwellings in which many of our most noted men have been reared.

But as the country gradually developed, and its varied resources were brought into requisition, one by one, the agriculturists became competent to erect better dwellings, and with the increase of commerce, merchants acquired more room and means for the exercise of their social tastes, and soon

RURAL AND METROPOLITAN MANSIONS

Began to beautify the natural surroundings of town and country. The plain stone or brick mansion, with its square windows and corners, its porticoes with massive columns, its general air of solidity and comfort, with here and there an ornamental gable, a bay-window, and graveled walks in the gardens, filled with beautiful flowers, succeeded to the uncouth wooden tenement of former years of frugality and privation.

VARIATIONS OF ARCHITECTURE.

Architecture, like the fashions in dress, has varied with each succeeding age, governed by the necessities of the people quite as much as by their tastes. In the old medieval days of knightly lords and fighting henchmen, arose the turreted strongholds, the impregnable castle, the moat, the drawbridge, and the guarded approach; and the edifices of that age, ruined and picturesque, now adorn many a landscape in the European States. Then rose the abbey and

THE BUTTRESSED CATHEDRAL,

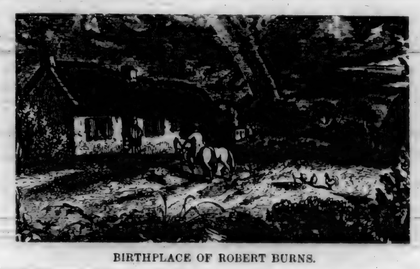
With their quaint forms, their solid masonry, their gorgeous windows, their imposing towers, and their fretted interiors, dignified, solemn, and inspiring throughout.

Later ages brought more cheerful ideas of social and religious life. The knights, henchmen, and monks passed away. The new generation was more peaceful. Taste succeeded strife and spoil. Learning and the arts of peace became popular, and genius evolved new and more pleasing forms of architecture. Mansions grew less like castles and dungeons, cathedrals became churches, with more of light and love in their worship, and dignity and arrogance gave

place to gentler emotions. Sociability led to frequent exchanges of opinions; men cultivated those things in architecture and art that tended to elevate the mind, educate the taste, and develop comfort, convenience and elegance in the home.

THE PROGRESS OF IMPROVEMENT.

As the arts and sciences expanded, they were pressed into service for the improvement and adornment of the residence. Old-fashioned systems were discarded, and new materials and new arts were brought into requisition for the expression of the spirit of the age. The grate superseded the fireplace; the stove succeeded the grate; the furnace took the place of the stove; the steam-heater crowded out the furnace. The whale-oil lamp pushed the candle out of the family room; kerosene oil superseded whale-oil; coal-gas threw both oils out of the household economy, and electric lights drove gas-light into the background. So in architecture. Antediluvian granite and costly marble succeeded the limestone and brick in masonry, as common stone and brick had superseded wooden building material.



BIRTHPLACE OF ROBERT BURNS.

The old style cottage of the English peasantry, common in England in the past century.

SECURITY AND GRANDEUR

Were born of iron and terra-cotta; and with each recurring change in building and building material came increased elegance, convenience and luxury.

It is true that in this growth of architectural display the styles and rules of the old arts in building have been largely ignored and sacrificed, and new forms and features, unknown in other times, have been pressed into the service of

THE MODERN ARCHITECT AND BUILDER,

But in all this is manifested the changing spirit of the ages. Just as the arbitrary sentiments of the medieval times have passed away, and as the more liberal spirit of the nineteenth century now prevails, so the architecture of the past has succumbed to the more independent, versatile and attractive shapes assumed in the buildings of to-day. This is the epoch of

ORIGINAL AND ELABORATE ORNAMENTATION,

And the expansion of these grand architectural achievements is limited only by the capital of the individual who desires to build.

HOUSE IN WHICH JAY GOULD WAS BORN.

The form of dwelling which succeeded the log house in New England and the Middle States.

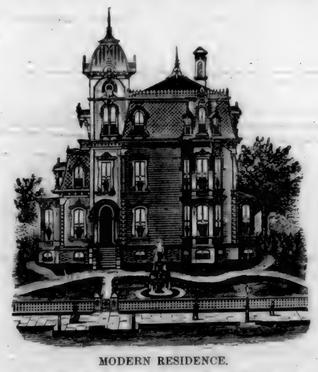
If we compare, for example, the beautiful villa of Alexander Pope, at Twickenham, England (exhibited in the poem on another page), with the magnificent family mansion of James C. Flood, at Menlo Park, in California, twenty miles from San Francisco, we shall be struck with the contrast they present.

PUBLIC EDIFICES.

We call attention to one more striking contrast in the architecture of the past and present. A representative of a past age is Independence Hall, Philadelphia, where the Centennial Congress held its sessions, and where the Declaration of Independence was adopted July 4, 1776. Venerable in its architecture and associations, it did honor to the social and political era in which it became famous, but, in contrast with the present Capitol of the United States, it shows the difference that a century has wrought in American architecture.

THE PRESENT CAPITOL AT WASHINGTON,

Critically considered, externally and internally, may not strictly be termed a grand architectural triumph, but in its vast proportions, imposing elevations and valuable art-works, it sheds luster upon the nation which it represents.



MODERN RESIDENCE.

The style of dwelling with mansard roof which was largely in fashion in the United States from 1860 to 1870.

In America, for several generations, architecture scarcely kept pace with the improvements in other branches of art throughout the country, and has been more especially developed within the past decade, so far as residences are concerned, than at any former period. For nearly a century there were but few radical changes, and these were improvements rather in securing convenience and comfort than elegance.

WIGWAM AND SHANTY.

It is true that the wigwam and the board shanty had their places, just as they have now, among the Indians and lumbermen of the wilderness, and in these, there was, of course, little or no improvement. Shelter was the only object sought, and everything among these primitive classes was sacrificed to secure comfort, even in its rudest form.

FIRST FARM HOUSES.

The pioneer settler on new lands felt the necessity of ample shelter for himself and his family, but beyond this his ambition did not extend until he had gained cultivated soil sufficient to yield him all the necessaries of life. Then the log house and the board shanty were supplanted by the neat, plain frame house, without paint, or cornice, or blind, or a single ornament in its construction. In time a cornice, shutters, and a coat of paint were added. As prosperity increased, a back kitchen was attached. Later on, a wing was projected on one side, with a small portico in front. Next year the growing family required another wing on the other side, with another portico.

THE HOUSE OF SIX GABLES.

Wealth continuing to accrue, a new site and a new house of larger size and more imposing appearance was planned and built. It had a stone cellar, or basement, was two stories high, built of wood, with high ceilings, and had long windows, green venetian blinds, a six gabled roof, dormer windows, and several entrances, reached by steps.

THE RURAL MANSION.

A few years later, a new location suggested the large square tenement, two stories high, with a substantial cellar, a center hall running through the building, large rooms, immense windows, a square hip roof with heavy cornice, and chimneys on every side, a covered piazza extending around three sides of the lower story, and venetian shutters to every window.

THE MANSARD VILLA.

A town residence becoming desirable, brick, stone, and mortar grew into a mansion of two stories and a basement, with bay-windows, or a swell front, a mansard roof, stone steps, and iron balusters, a fanciful porch at the front door, and a general air of gentility pervading the whole. Lawns, walks, and flower-vases distinguished the front yard.

THE HOME OF A BUSINESS MAN.

Cultivated taste soon induced the wealthy citizen to invest in a more attractive residence. Fifty or a hundred thousand dollars were expended in a family mansion of more elaborate grandeur, the finest material, the most delicate ornamentation, and a degree of architectural beauty seldom realized, and of which the house-owner had seldom dreamed. To build it, marble, granite, freestone, iron, pressed brick, terra-cotta, and hard woods in great variety were brought into requisition; curves and oblique lines were diversified in its elevation, and a towering cupola embellished with the numerous artistic designs of modern architecture, topped the stately edifice.

THE PALACE OF THE CAPITALIST.

But the millionaire was not content with this, the most notable architectural triumph of his times. Money bought a noble situation; purchased the taste and skill of the best architects for its design, and ship-loads of the most costly stones that modern quarries, east or west, can produce, the best skilled builders, the choicest of everything, native and foreign, that can be used in its construction were ordered, until the expense mounted into a million or more of dollars. Of such is the mansion of James C. Flood, the work of which occupied several years, and it is undoubtedly one of the finest dwellings ever designed and erected in America. In it are combined all the elements that make architecture beautiful.

Architecture possesses the versatility that characterizes the kaleidoscope; it can produce a thousand varied charms, which depend solely upon the good taste of the designer and the skill of the artisan to perpetuate forever.

RESIDENCE OF J. C. FLOOD.

The summer home of Mr. J. C. Flood, at Menlo Park, near San Francisco, California, is of unique modern architecture, constructed from new and original designs, regardless of cost.

EGYPTIAN ARCHITECTURE.

The records of ancient architecture are replete with wonders and curiosities, and as history is often said to repeat itself, it would not be strange if modern innovations in this art should develop styles of private and public edifices just as unique and worthy of attention. The ancients built, undoubtedly, with a view to the perpetuity of their houses, and, therefore, endowed them not only with permanency, but also with a degree of ornamentation that still excites the admiration of the beholder. Some of these peculiar structures form a pleasant study.

The earliest Egyptian column resembled a stalk of the lotus-plant, capped by its calyx, and this flower possessed a powerful influence in forming the public taste of the past ages, when Egypt was in the height of its prosperity. But its early style of architectural ornament was heavy, and suggested no repose. Everything was built on a grand scale, suited only to the vigorous careers of her despots and conquerors. Her buildings were characterized by forests of columns, avenues of sphinxes, lions or rams, of collossal size. They also made large moles, with giant statues in front of them, with obelisks, gateways preceded by avenues, and detached from the moles.

The general plan of the great Egyptian temples is thus described by Devon: 1. An avenue of sphinxes. 2. Two colossal figures on each side of a gateway formed by immense towers of truncated pyramids and overhanging cornices. 3. This gateway led into a court full of columns, and chandeliers around the walls. 4. Passing across this, there are other courts, likewise full of columns, through gateways ornamented with colossal figures and obelisks. 5. In the center was the sanctuary, without light, consisting of a single excavated block. One, at the Temple of Latona, was seventy-one feet broad in front, carved out of one entire stone, and roofed by another.

The palace of the kings of Babylon, now in ruins, is a vast mass, measuring 2,100 feet each way. The walls are eighty feet thick, one within another and strengthened with buttresses.

The most astonishing collection of finished and costly architecture in the world, now a mass of splendid ruins, is at Baalbec, in the valley between Libanus and Anti-Libanus. The platform, on which was raised a temple to Baal, or the sun, contains stones thirty feet above the level, more than 60 feet long, 24 feet thick, and 16 broad. Each of these stones measures 23,000 cubic feet, and weighs 2,500 tons, squared, sculptured, and brought from distant quarries. Six of the columns are each 72 feet high, formed of three stones each 7 feet in diameter, with finished Corinthian capitals and friezes. It is believed to have been the work of the giants who formerly, as all authorities agree, dwelt in the mountains of Lebanon. Three stones still remain in a wall at Baalbec, 63 feet, 64 feet and 67 feet long. It is stated that the place was in existence in the days of Solomon, when it was called Baalath, but it was not built by him.

The modern Arab tent is said to exactly resemble that of three thousand years ago, and is made of black and brown cloth, the product of camels' or goats' hair. Arabian architecture advances slowly.

Pliny says that the Cyclops of Greece were the inventors of the fortifications of towns and towers, and from them is derived the Cyclopean style of architecture, which is noted for its extraordinary magnitude. The Cyclops were distinguished for their power, prowess, and mighty structures, and are believed to have been the giants referred to by the prophet Isaiah. The peculiarity of their style was the piling up of immense blocks, without cement. Tyryns, now in ruins, is mentioned by Homer as a well-walled city, and was undoubtedly the work of Cyclops, as was, also, the ancient city of Mycenæ. The Gate of the Lions, at the ruins of the latter, was built by the Cyclops, and the lions, from which it derives its name, are said to be the only existing specimens of the sculpture of those ages. They have no tail, a circumstance observable also in the sculptures of Persepolis, where animals like those at Mycenæ are represented. The Cyclops appear to have been a nomadic class of artisans, for two fine specimens of their architecture are found at Ausidonia and Saturnia, towns of Italy, anterior to Rome. In view of these facts, Sir Richard Phillips says: "There can be little doubt that the fraternal association of Masons originated in the traveling jobs of the Cyclops and early builders."

A characteristic of the architecture of the ancients was massive solidity, necessary, probably, as a means of defense against enemies.

The Homes of England.

BY MRS. HEMANS.

THE stately Homes of England! How beautiful they stand,
Amidst their tall ancestral trees, o'er all the pleasant land:
The deer across their greensward bound
Through shade and sunny gleam,
And the swan glides past them with the sound of some rejoicing stream.

The merry Homes of England!
Around their hearths by night,
What gladsome looks of household love
Meet in the ruddy light.
There woman's voice flows forth in song,
Or childish tale is told,
Or lips move tunefully along
Some glorious page of old.

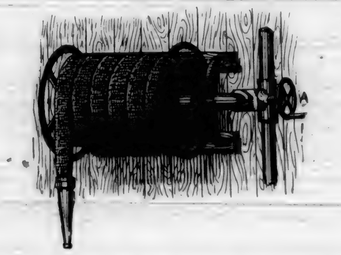
The blessed Homes of England! How softly on their bowers
Is laid the holy quietness that breathes from Sabbath hours!
Solemn, yet sweet, the church-bell's chime floats through their woods at morn;
All other sounds, in that still time,
Of breeze and leaf are born.

The cottage Homes of England!
By thousands on her plains,
They are smiling o'er the silvery brooks
And round the hamlet-fanes.
Through glowing orchards forth they peep,
Each from its nook of leaves,
And fearless there the lowly sleep,
As the bird beneath their eaves.

The free, fair Homes of England!
Long, long in hut and hall,
May hearts of native proof be reared
To guard each hallowed wall!
And green forever be the groves, and bright the flowery sod,
Where first the child's glad spirit loves its country and its God.

WE are indebted to Thos. E. Hill, Esq., editor of the *National Builder*, for the matter contained in the foregoing article, as well as the beautiful cuts illustrating the same. The *National Builder* is published in Chicago, at 103 State Street. Price, $3.00 per year.

Fire Protection.



PROBABLY one of the most useful inventions of late, is the "Paragon" Hose Reel, represented by the above cut. It is designed for use in warehouses, public buildings, manufactories, hotels, etc., and especially in buildings where there are times when only a watchman or a few persons are about. It is permanently fastened to the wall, out of the way, supported by suitable brackets, and connected directly with the supply pipe through a hollow journal and packed joint, which allows the water to pass freely into the hose, the hose being connected to the hollow journal inside the reel, and reeled up as shown in the cut. Upon the discovery of a fire, the party present quickly turns on the water by the valve "A," takes the hose pipe and runs off toward the fire, the hose running off of the reel freely, without a twist or a kink, and the water following immediately, thus saving the very valuable time usually lost in strightening out the kinks and twists in the hose, and in going back to turn the water on.

Every hotel, public building, and manufactory should have one or two of these reels, with hose to reach to every part, on each floor.

The packed joint is simple, allows the reel to turn freely, and automatically becomes more tightly packed as the pressure increases, thus obviating all danger of leakage. They can be seen in the Market Street Cable Railway Co. building, California Cracker Co., American Cracker Co., Fireman's Fund Insurance Co.'s building, H. S. Crocker & Co., the new Oriel building, at the junction of Page and Market Streets, and in many other public buildings, factories, etc. W. T. Y. Schenck, 256 Market Street, is the patentee and manufacturer, and furnishes them for any size or quantity of hose. He is also agent for the "Eureka," "Paragon," "Red Cross," and "Eureka Mill" brands of cotton rubber-lined hose, the latter being especially adapted for inside fire protection in mills, factories, public buildings, hotels, churches, etc.

STEEL SQUARE, ITS USES, PRICE $4.00.

TRANSFER VARNISH FOR ENGRAVERS.—Take six and a half ounces mastic in tears, twelve and a half ounces resin, and of genuine pale Venice turpentine and sandarac, of each twenty-five ounces. Dissolve, add one quart turpentine varnish, agitate well, and strain.

Scarcity of Competent Draughtsmen.

ALREADY, architects are beginning to feel the scarcity of competent draughtsmen. This office is naturally looked to by the profession as the headquarters of disengaged draughtsmen; but for months there has not been on our books a single name the owner of which really claimed to possess the abilities required to well and truly delineate the plans and details of an ordinary building. Even second-rate men are very scarce, while the small army of "tracers," copyists, etc., that so infested the various offices two years ago, seem to have disappeared entirely.

The principal reason for this lack of the proper kind of talent, lies in the fact that the surrounding country has drawn off everyone who thought their condition could be bettered. The southern part of the State now has about as many draughtsmen as the northern part. Just before the holidays, architects from San Diego, Los Angeles, Pasadena, and other places, visited this office, and left *carte blanche* orders to have their wants supplied, no matter what the wages demanded were. Even with this pressing need to be supplied, but one draughtsman could be found to take the offer.

Several firms in this city have applied for the first disengaged men of whom we may hear. Repeated inquiries, however, develop the fact that there are no idle draughtsmen in this city, and none whose engagements will shortly expire. We need about a dozen more to be added to our regular corps in San Francisco.

Our Eastern friends who read this article, and who may desire to come to this place, must give serious consideration to the following facts. For nine months in the year there is a considerable amount of building going on; the remaining three months being slack months, as statistics will show. During the past year, in this city alone, 3,732 buildings have been erected at a cost of $19,648,505.

Wages vary from $2.50 to $5.00 per day, depending altogether on the ability of the draughtsman. The hours are the same as in most Eastern cities. Above all things, *do not come here with the idea that you know it all.* Our details are essentially different from those East. There, stone and brick buildings are in the majority as far as numbers are concerned. Here, the exact opposite is the case. FULLY NINE-TENTHS of the buildings in California are built altogether of wood, the chimneys and in some cases the foundations, alone excepted. We do not think in the whole State of California, that there are fifty buildings on which stone "trimmings" are used, and yet there are buildings costing up in the hundreds of thousands. So a new draughtsman must be prepared to spend a little time in studying our details.

Should anyone desire to make the Golden State his future home, we will take pleasure in informing him of the chances of employment. When writing, state age, qualifications, etc., so that ample information can be given to those who will bid you come. Be sure to state the number of years engaged in the profession, and the degree of skill to which you consider that you have arrived. No charge is made for any advice we may give.

Do not—California like—pack up and start for this place as soon as you read this article. From twelve to fifteen good draughtsmen are all we want at present. Write to this office FIRST, give all information necessary, and then wait for our answer; when you get the latter you can depend on any statements we make.

HAND IN OR SEND

Your SUBSCRIPTIONS for 1887

TO THOSE who so promptly responded to our request for immediate settlement of subscription and advertising balances,

WE SAY, THANK YOU.

To those against whose names remain unpaid balances, we say,

PLEASE PAY UP AT ONCE.

Remembering THAT—Defrauding an editor is considered one of the meanest kinds of peculation; THAT—"*Honest men are the gentlemen of nature;*" THAT—"The man who pauses in his honesty, lacks but little of the rogue;" THAT—A rogue in spirit is a rogue in gain."

Therefore,—Let every one who *receives* or *reads* this journal, forthwith forward to this office its subscription price for 1887, and any and all unpaid indebtedness.

ARCHITECTS SHOULD REGULARLY CONTRIBUTE ARTICLES TO THIS JOURNAL.

ASKED, ANSWERED, AND COMMUNICATED.

☞ Architects, Contractors, Carpenters and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

THE columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected, as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

WE intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas on the practical questions of the day; and we hope to receive from those interested, and especially amongst builders, questions arising in their daily practice. No matter what may be the solutions given to the various problems presented, we shall only be too pleased to receive replies from our readers, where they see other and better solutions for them. If a general interchange of ideas can be brought about great advantages will ensue to all. Let not a month go by without bringing up for discussion practical topics in the architectural, mechanical, or scientifical pursuits. We desire a general expression of opinions, for or against, of every article presented by us. Every communication will receive deliberate and careful consideration.

The Right Ring in a Letter.

WINTERS, YOLO CO., Jan. 25, 1887.

To the Publishers of the CALIFORNIA ARCHITECT—

INCLOSED please find $2.50 for the CALIFORNIA ARCHITECT and a copy of MR. David Salfeld's new work entitled, "Country and City Homes."

I am glad to notice the gradual improvement in the CALIFORNIA ARCHITECT from year to year. At first I was not a subscriber, but after receipt of the first few copies, I found it indispensable and so secured the back numbers. I have now a complete set. I feel interested in the permanent success of your journal, and were I a younger man, would gladly contribute to your columns. I hope that Mr. Wolfe will *stick* to being its editor until there is a *su e* thing of having his place filled (*which, by the way, is no easy thing to do*). Respectfully,

T. D. BALL.

Thanks, Mr. B.; the years you complain of are just the best argument why you *should* contribute to our columns. Age gives experience, and the latter is the best teacher. We shall be pleased to hear from you as well as many others from your delightful county.

"STUPID" sends a communication in regard to the "Diagonal Brace Question." No name or address being given, it will lay over for the present.

Table for the Use of Nails.

THE *National Builder* gives the following table for the use of nails:—

For 1,000 shingles allow 3½ to 5 pounds fourpenny nails, or 3 to 3½ pounds threepenny nails.

For 1,000 laths allow about 6 pounds threepenny fine nails.

For 1,000 feet clapboards, about 18 pounds sixpenny box.

For 1,000 feet boarding boards, 20 pounds eightpenny common.

For 1,000 feet boarding boards, 25 pounds tenpenny common.

For 1,000 feet top floors, square edge, 38 pounds tenpenny floor.

For 1,000 feet top floors, square edge, 41 pounds twelvepenny floor.

For 1,000 feet top floors, matched, blind nailed, 35 pounds tenpenny floor.

For 1,000 feet top floors, matched, blind nailed, 42 twelvepenny floor.

For 1,000 feet furring, 1x3, 45 pounds tenpenny common.

For 1,000 feet furring, 1x2, 65 pounds tenpenny common.

For 1,000 feet pine finish, about 30 pounds eightpenny finish.

Lumber Measure. Save This Table.

BELOW will be found, in a very convenient form, a table by the use of which the number of feet in any given size of timber, can be readily and accurately obtained.

The column on the left gives the size of the timber; the figures on the top the length in feet. It will be readily apparent that any quantity can be found besides those given. Suppose the timber was 14x28, 100 feet long. This in length would be 2 pieces 30 feet long and 2 pieces 20 feet long = 1,634 feet; double this = 3,268 feet, the correct answer.

A piece 16x16=30 feet long, can be found similarly, being equal to 4 pieces 8x8 of same length.

Every mechanic should have a copy of this table pasted on the inside of his chest lid.

TABLE OF LUMBER MEASURE.

Size in Inches.	12	14	16	18	20	22	24	26	28	30
2x3	6	7	8	9	10	11	12	13	14	15
2x4	8	9	11	12	13	15	16	17	19	20
2x6	12	14	16	18	20	22	24	26	28	30
2x8	16	19	21	24	27	29	32	35	37	40
2x10	20	23	27	30	33	37	40	43	47	50
2x12	24	28	32	36	40	44	48	52	56	60
2x14	28	33	37	42	47	51	56	60	65	70
3x4	12	14	16	18	20	22	24	26	28	30
3x6	18	21	24	27	30	33	36	39	42	45
3x8	24	28	32	36	40	44	48	52	56	60
3x10	30	35	40	45	50	55	60	65	70	75
3x12	36	42	48	54	60	66	72	78	84	90
3x14	42	49	56	63	70	77	84	91	98	105
4 4	16	19	21	24	27	29	32	35	37	40
4x6	24	28	32	36	40	44	48	52	56	60
4x8	32	37	43	48	53	59	64	66	75	80
4x10	40	47	53	60	67	73	80	87	93	100
4x12	48	56	64	72	80	88	96	104	112	120
6x6	36	42	48	54	60	66	72	78	84	90
6x8	48	56	64	72	80	88	96	104	112	120
6x10	60	70	80	90	100	110	120	130	140	150
6x12	72	84	96	108	120	132	144	156	168	180
8x8	64	75	85	96	107	117	128	139	149	160
8x10	80	93	107	120	133	147	160	173	187	200
8x12	96	112	128	144	160	176	192	208	224	240
10x10	100	117	133	150	167	183	200	217	233	250
10x12	120	140	160	180	200	220	240	260	280	300
12x12	144	168	192	216	240	264	288	312	336	360
12x14	169	196	224	252	280	308	336	364	392	420
14x14	198	229	261	294	327	359	392	425	457	490

GRIMSHAW ON SAWS, PRICE - - - $4.00.

AN illustrated article by Fred Larcy, on the "Diagonal Brace Question," will appear in our next.

STEEL SQUARE, ITS USES, PRICE $1.00.

MECHANICS, and all others interested, should remember that we can furnish any books printed, at the shortest notice and the lowest prices. We have reduced the price of "SCIENCE OF CARPENTRY MADE EASY," TO $4.00.

CONTRACTORS SHOULD REGULARLY CONTRIBUTE ARTICLES TO THIS JOURNAL.

Paper Read Before the S. F. Chapter, American Institute of Architects, Feb. 4, 1887, by Fellow John Gash, Esq.

MR PRESIDENT AND GENTLEMEN: In my papers for this evening's reading, I would say by form of preface that my object is not directly to speak of the way or how plumbing should be done, as of this subject, like many others, much has been already said and written; it is rather to show the growth and progress of the sanitary system of the home, both in the comfort of the supply of water for culinary purposes, as also for the bath.

Like most of the subjects that are partially lost in the sands of time, we find dim references of both of these in Biblical lore. The tales of Abraham and Jacob watering their flocks, and their daughters drawing water from the wells for domestic use. Nor was this labor unattended by a blessing, as we read of Rebecca, the daughter of Bethuel, going to the well to fetch water, and there meeting the servant of her future husband, Isaac, a domestic romance that has and may well be read and copied by Rebecca's daughters from then till now.

The refreshing advantages of the bath are too well known to the whole animal kingdom and to man in all ages and countries, and its luxuries may be read of in the history of the Jews, Romans, Grecians, and Egyptians, and those ruins of the baths of Caracalla and Diocletian stand as monuments telling of the luxury to which the bath had been carried in those days.

But the drawing of water from the well for culinary purposes has long been abandoned, and the introduction of water into dwellings by means of piping, and the conveying of water therefrom, has perhaps occupied the attention of more persons in the present age than any other factor in building. The architect, sanitary and civil engineer, with the army of physicians, have jointly and severally handled this subject until, I am happy to say, our system of plumbing is pretty thoroughly understood, nor indeed has any foreign or European country made such advances in this as has been made in our own country; and I would say, perhaps no city in the Union can boast of as thorough a system of plumbing as we can in our own city of San Francisco, without, of course, any reference to its sewerage, which, perhaps, runs to the other extreme, and can scarcely be found any worse.

For many centuries physicians had a practical monopoly of what little was known of the conditions affecting the public health, and there seemed to be no incentive to original investigation and experiment, even if the means of prosecuting an inquiry so important to all classes of the people, had been at the command of those who, under more favorable circumstances, would doubtless have made important contributions to the literature of plumbing.

To the medical profession we owe the greater part of what has already been learned and placed on record, of the truths which form the basis of sanitary science. Indeed, so strongly has this matter been taken hold of by the public mind that they no longer attribute the visitation of the "Angel of Death" to the "afflictive dispensations of providence" which are so mysterious and past finding out.

People often wonder why we do not have such fearful visitations of epidemics at the present day—as the plague of London, the ancient spotted fever, sweating sickness, etc.—yet we have outbreaks of cholera, yellow fever, and typhoid, with other diseases, which may be traced to that most deadly foe of the household, sewer gas, which stealthily creeps through our house through the night, and midst the dazzling splendor of the beautifully draped parlors and rich and modern upholstery, leaves its deadly trail, whose odor is inhaled by some dear member of the household, perhaps a loving child, a fond parent, or an affectionate brother or sister.

This foe of the fireside, you gentlemen, as architects, should most assiduously battle against.

When you hear of persons desiring to have their houses filled up with all the modern conveniences, so-called, bear in mind an unseen stranger as above referred to, may be also introduced.

By sewer gas I mean the gaseous emanation from decomposing sewerage which, when it mingles with the confined air of our unventilated living and sleeping rooms, retains its terrible power for mischief long enough to do its deadly work effectually. And here I would say the worst features of sewer gas poisoning are very often found where sewer gas proper does not penetrate.

In most houses the so-called sewer gas, which is both a nuisance and a danger, is chiefly manufactured on the premises, and does its fatal work none the less effectively because it is called by a wrong name. The worst defects of the commonest plumbing done by contract are rarely noticed in new houses.

All the sewer connections are made that ever will be made, but we pass from room to room without noticing any unpleasant smell, and therefore never suspecting danger. When the pipes are fouled by the waste of the house, the trouble begins, and it increases from month to month, and year to year, as the foulness within the waste pipe system accumulates, and until the gaseous products of decomposition within pipes are prevented from mixing with the air we breathe in living and sleeping rooms.

From the most careful analysis of sewer gas, it shows that it is composed chiefly of carbonic acid, nitrogen, sulphurated hydrogen, and some fetid vapor. The elementary gases and those of known compositions which are commonly found in sewers and unventilated cess-pools, though mostly capable of destroying life under favorable conditions, are not considered responsible for much, if any, of the fatal effects properly attributed to sewer gas. Carbonic acid is the gas usually found present in greatest volumes in sewers, both ventilated and unventilated.

The proportion as determined by analysis varies according to circumstances, but it is usually large. This gas is an invariable product of the decomposition of all substances containing carbon. Inhaled in concentrated form it quickly produces death, and even when considerably diluted with atmospheric air, produces asphyxia, and unless the victim is quickly rescued from its influence, death follows promptly. It does not readily leave sewers and cess-pools, however, owing to the fact that its specific gravity is considerably greater than the air, and so much of it as would naturally find its way into a house from a sewer or cess-pool, has been proved beyond a reasonable doubt to cause typhoid fever.

In one case in the town of Croydon, where the gas was known to have entered the house, it did not smell offensive, only a faint, sickly odor being recognized. In this case the gas was driven into the house by a shower filling the conductors with water. The problem of the present age seems to be the thorough ventilation of sewers, and so many ways and means have been suggested that a description of even a few of them would be more than my paper would allow; but the most universally adopted seems to recommend "man-holes" in our streets, covered with gratings as open as might be consistent with strength, and these kept free from street cleanings; and to oblige every house-owner to vent his soil pipe (unobstructed by any form of trap along its line) to a point above his roof; the ventilation of sewers might be a success. The stopping of sewerage by the incoming tide, etc., the difficulties attending steep grades, and other such obstructions to be met in many cities, would admit of many theories, a paper on which, by one of you gentlemen, would be, I am sure, warmly received by our Chapter.

But the sanitary conditions of cities and towns nowadays, and those of a couple of hundred years ago, are very gratifying. After the fall of the Roman Empire to the end of the Middle Ages the people of Europe may be said to be unwashed. Of Paris it is recorded, by Rigord, physician to Philip Augustus, that one day looking from his window, he saw a carriage passing, and the substance forming the streets being stirred up by the revolution of the wheels, emitted a stench so powerful as to overpower the king. This so disgusted him that he urged the citizens to pave the streets, and to assist in the purification of the city he built walls round the cathedral to prevent it from remaining any longer a common corner for convenience.

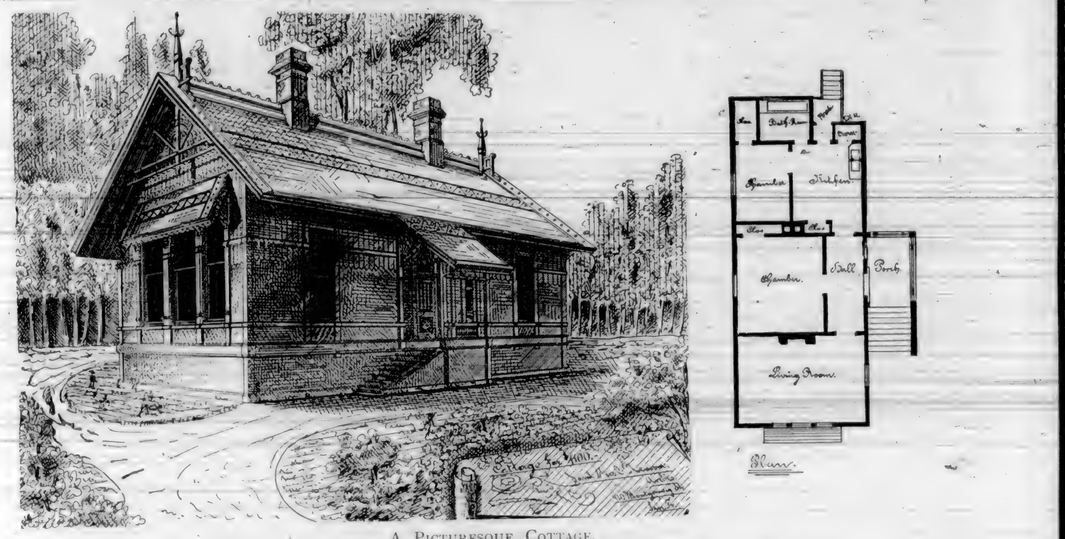
Nor was the city of London any better. A writer of the period says that the streets around St. Paul's were covered with horse manure a yard deep. Floors were of clay, covered with rushes which grew in the fens, and which were so slightly removed now and then that the lower part remained for many years undisturbed and in it such a collection of foulness as only can be found in a scavenger's dog-cart. Cleanliness of the person was a thing almost unknown.

One old writer says the better classes of people wore clean garments on the outside, but the inner ones were often worn until they fell piecemeal away from their unwashed bodies.

Comparing this account with the advance the present generation has made in cleanliness, we bring as if ourselves to that age in which Rome could so boastingly speak, amongst other things, of her aqueducts for water supply, her public baths, giving facilities to her citizens to take at the rate of 70,000 baths per day. A revival of the luxury of the bath, known under the name of Roman, Turkish, Russian, German, Jewish, Medicated, Vapor, Hot Air, Gas, and Animal Baths, have become almost universal in our own age and time. Many of which are well represented in our own city.

The continuation of my papers on "Baths, Ancient and Modern," their history, manner of construction, the ancient and modern system of heating, the luxury of the baths of Caracalla, Titus, and Diocletian, their arrangements adorned with the most valuable column paintings and statues; in a word, for every

OUR MARCH ISSUE WILL BE REPLETE WITH INTERESTING INFORMATION.



A Picturesque Cottage.

species of polite and manly amusements,—to give them any sort of a description would, in fact, require another paper with this, when I will be able to furnish with them a few drawings, showing their internal arrangements, and sections showing their mode of heating such quantities of water, etc.

Warner's Hangers.

IT is a pleasing duty to bespeak attention to one of the most ingenious of modern architectural conveniences, a device, indeed, which justly claims rank among the necessities of home building.

Warner's Patent Sliding Door Hangers, owned and manufactured by E. C. Stearns & Co., Syracuse, N. Y., are as nearly perfect in producing the effects desired by their use as human ingenuity may hope to achieve.

That over 100,000 sets of these hangers are now in use, that some 1,200 leading architects accord them an unqualified approval, are but the logical sequence to established merit.

The main features of "Warner's" are too well known and appreciated to need more than a bare summary. They obviate cutting the carpet; do away with the floor rail; always remain on the track; are easily adjusted to shrinkage; are entirely concealed, and run so true that the heaviest doors are easily moved.

"Warner's" is the pioneer hanger in the market. It has suggested numerous imitations which have done valuable service to the public by advertising the original; for the sale of Warner's is at present greater than the combined product of its many competitors.

In a word, Warner's Patent Sliding Door Hangers completely and perfectly fill a great public need, and admit of no rivalry, because they exactly and economically produce the effects required.

Thermometers.

PERHAPS not one in a hundred can tell off-handed why a point thirty-two degrees below freezing point on Fahrenheit's thermometer is called zero. For that matter, nobody knows. The Fahrenheit scale was introduced in 1720. Like other thermometer scales, it has two fixed points, the boiling point and the freezing point, or rather the melting point of water. The Centigrade and Reaumur scales call the freezing point zero, and measure therefrom in both directions. Fahrenheit kept the principle on which he graduated his thermometers a secret, and no one has ever discovered it. It is supposed, however, that he considered his zero—thirty-two degrees below freezing—the point of absolute cold or absence of all heat, either because, being about the temperature of melting salt and snow, it was the greatest degree of cold that he could produce artificially, or because it was the lowest natural temperature of which he could find any record. The grounds on which Fahrenheit put one hundred and eighty degrees between the freezing and boiling points are likewise unknown.

A Picturesque Cottage.

OUR engraving portrays a one-story cottage very conveniently arranged for a small family. The hall is so situated that easy access is obtained to all the principal rooms. If found necessary a fire can be had in every room, the chimneys being so placed that accommodations in this line are very convenient. The elevation is plain, but just suited to those whose purses are not of the longest. As shown, the house, with present prices of materials, can be built anywhere from $1,250 to $1,500.

Useful Hints in Building.

SEE that chimneys are built on good stone foundations; settlement will be avoided and one of the causes of unexplained fires will be removed.

Do not finish windows to the floor; the circulation across the floor is one of the causes of cold houses.

Stops to doors and windows should be fastened with round head screws, so as to be easily moved.

Do not construct solid doors of two kinds of hard wood; the action of the atmosphere on one or the other will cause the door to warp.

In building book-cases let there be a half-inch space between the back of the shelf and the wall; dust can then easily be brushed back, falling to the bottom.

Do not locate a furnace register next to a mantel, that is, if you wish to utilize the heat.

Do not build a cistern in the cellar of a house unless you wish to generate unhealthy atmosphere.

A closet finished with red cedar shelves and drawers is death to moths and insects.

Porch floors should be of narrow stuff and the joints laid in white lead.

The ceilings of closets may be made lower than the apartment adjoining; it saves plastering.

A ventilating flue from the kitchen into the chimney often does away with atmospheric meals.

In building frame houses, fill the studding one foot high above the sill with brick; this discounts the use of rat traps.

Ash pits in cellars under fire places and mantels save taking up ashes, for they may be raked down through a hopper.

Plaster cornices and center-pieces are relegated to the past. Paper and fresco work is the proper thing.

Sliding doors into small apartments are to be preferred in place of folding.

Don't inclose the sink; no place in a kitchen is so much neglected.

Do not use one chimney flue for two stove-pipes; the draught of one will counteract that of the other.

Lime water is a fire-proof protection for shingles or any light wood-work.

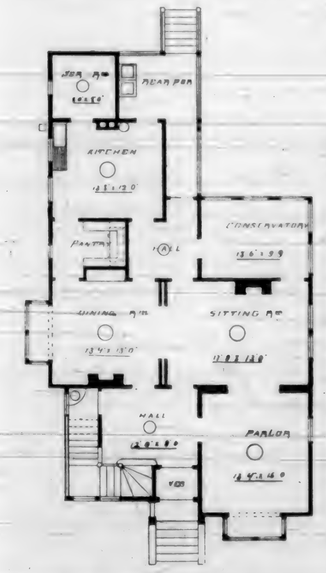
BOUND VOLUMES OF 1886 ARE NOW READY. PRICE $2.50 EACH, POST-PAID.

Perspective Elevation of a Country or Suburban Dwelling. D. Salfield, Architect.

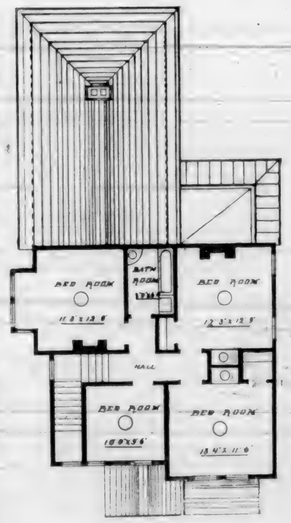
The accompanying plans below, and the perspective above, illustrate a design for a nine-room suburban or country home, suitable for a small refined family wanting all the privacy and elegance of a first-class dwelling, and yet embodied in a small space without any great outlay or expense.

The broken outline of the building, with gables in every direction, finished with fancy shingling, carved brackets, ornamental finials, and high pitched roof, and the square bay-windows on the front and on the side, would make a very picturesque, attractive building, if surrounded by shade trees or shrubbery. A careful examination of the floor plans will show at once the convenience and beauty of arrangement. The front entrance door opens into a large hall, with the parlor on the right, and doors communicating with dining and sitting-rooms in front. A beautiful conservatory, with glass sides and roof, opens off the rear hall and sitting-room.

The cuts illustrating this article were kindly furnished us by David Salfield, architect, whose office has lately been moved to 339 Kearny Street.



First Floor Plan.



Second Floor Plan.

Architects, Attention!

We want every architect on the Pacific Coast to contribute a short article for the March number of this journal. It should be your aim to make your home journal interesting to all who may read it, and there is no surer way to obtain this end than by each one writing a short article. Illustrate it, if need be; we will make the cuts. Be sure that the articles reach this office by the 5th of the month.

To Contractors.

What contractor in the city but knows of some little idea that would be beneficial to our readers. Help to build up this journal by a free interchange of thoughts. It will pay you tenfold to be in communication through our columns with all the master mechanics of the Pacific slope. Do not let the thought enter your mind that you cannot write well enough. Do the best you can, and we will see that your ideas are presented in proper shape.

Apprentices.

When you have found out any ideas that should be known by every one, forward them to us, and we will publish them under your own names, that others, hearing of your good deeds, may go and do likewise.

TREDGOLD'S CARPENTRY,
Price, - - - - - - $7.50.

ARCHITECTS SHOULD REGULARLY CONTRIBUTE ARTICLES TO THIS JOURNAL.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. We have been busy the past two months in perfecting arrangements by which we can secure information from every portion of the Pacific slope. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

For eight years there has appeared in this journal, building news from every portion of the country. But in its condensed form it did not attract the attention it deserved. We begin the New Year by making a specialty of the item mentioned.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interests of Architects, Contractors, and Material Men.

Alameda.

J. Maristany is erecting two six-room cottages on Alameda Avenue. Cost, $4,500.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

Mrs. Bromley will soon erect a new building on Everett Street.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

Henry Godfrey has contracted for a $2,500 brick building.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

Fresno.

Mr. Timothy Paige is about to erect twenty cottages in the western part of town.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Wm. Pool and Robt. Minto are building handsome residences near town.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Haywards.

John H. Boden is about to erect a $3,600 dwelling.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Los Angeles.

A large building for a passenger depot will be shortly commenced for the A. T. & S. F. Railway Co. It will be of brick, and two stories high. A large freight depot will also be built near the above. The latter, however, will be of frame.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

For the winter season there is a vast amount of building going forward. Residences continue to spring up all over the expansive area of the city, which embraces thirty-six square miles, as if by magic. There are not less than two hundred new homes now in course of construction in the municipality. Many of these are very elegant edifices, each of which will cost a great deal of money. Foremost among such are Mr. W. T. Lambie's new house, which covers a sightly knoll in the extreme east of East Los Angeles; the new mansion of Mr. A. Classell, on Fort Hill; and still another in close proximity to this, the Badbury palace, on the hill at the corner of Court and Hill Streets; the residence of Mr. Tyler Longstreet, and that of Mr. A. H. Judson nearly side by side in the Dana Tract on Figueroa Street. The cost of these will range at from $10,000 to $30,000 each.

In business blocks, there are notably the improvements made by Mr. Hellman and Colonel Baker, near the new post-office, which embrace a vast area of space between Main and New High Streets, at the intersection of Sonora Street; the great blocks of brick buildings going up at the corner of Main and Second Streets, for Mr. Newell and others; the big block to cost $80,000 for the Los Angeles Improvement Company on the corner of Second and Fort Streets; a new block on the corner of Upper Main and Walters Streets, for W. A. Clinton; the giant block for Louis Phillips on the corner of Spring and Franklin Streets; a small brick block on the corner of New High and Marchessalt Streets; the large block for Martin Bastincherie on the corner of Commercial and Wilmington Streets. Less magnificent buildings, both for residence and business purposes, are going up all over the city, in all parts. These remarks apply equally to East Los Angeles, Boyle Heights, the hills west of the city, the plains near the river, the region around the University in West Los Angeles, and all the sections that lie between these quarters of the municipality.

As to the future, the architects say the prospect is most excellent. They are ready to gamble heavily on the proposition that there will be more bricks laid in the year of grace, 1887, than were laid in its predecessor, within the city of Los Angeles. This is without reference to the new county Court House, of course.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

R. B. Young, architect, is preparing plans for a new building for John Wigmore.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Modena.

Collections are now being made for a new church building at this place.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Monrovia.

A two-story building, to cost about $4,000, has just been commenced; Johnson & Parker, owners.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Combs & Banning will shortly commence the erection of a business block.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Rev. J. B. Greenfield, A. Fell, Stewart & Perham, John Thomas, and others, are all contemplating building in the spring.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Baptist and Methodist Churches are under way, and also a planing mill.

Builders' Construction (three volumes, very fine), for $14.00.
People's Cyclopedia (three large volumes), for $20.00.

Monrovia is in Los Angeles County.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Piedmont.

The inhabitants of this place are much elated over the prospects of having a new $100,000 hotel building.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Pasadena.

J. E. Howard has about completed arrangements for a $10,000 residence.

EACH SUCCESSIVE NUMBER WILL BE COMPLETE IN ITS BUILDING REPORTS.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Milton Stratton, Dr. Whittier, and J. P. Day, have each purchased property, which they intend to improve in the spring.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

Pacific Grove.

A large new hotel building will shortly be erected at this place.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Petaluma.

Mr. Gerkins intends shortly to build a house on corner of Fifth and D Streets.

Artisan, for $5.00.
Builders' Guide, for $2.00.

San Diego.

According to the papers here, active work is steadily in progress for the new hotel to be erected on Coronado Beach.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Suisun.

Extensive repairs are being made to the Catholic Church.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

San Bernardino.

The contract for the new Stewart Hotel has been let to Gee Brothers. Consideration, $62,263. In our last issue we gave Mr. Keefe the credit for the job, but, as he failed to give bonds, Gee Brothers at once qualified. Total cost of the building will be about $65,000.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

R. E. Davis is erecting a $2,800 dwelling.

Artisan, for $5.00.
Builders' Guide, for $2.00.

San Buenaventura.

Dr. Cody has completed a contract with J. C. Capito, for a nice dwelling.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Sebastopol.

Plans are being prepared for a new hotel for Messrs. Barnett & Co.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

San Jacinto.

F. M. Porter is preparing to build a $6,000 brick building.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Santa Monica.

The Episcopal Church Society have already secured $2,500 towards their proposed new building.

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

Stockton.

About $6,000 has been subscribed towards the erection of a $30,000 agricultural pavilion in this place.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

San Jose.

H. Grees and R. Emmett have been buying property upon which, in the spring, they will erect desirable residences.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

The residents of this place are much elated over the prospects of a fine large hotel to be built at this place. The sum mentioned for its construction is not less than $300,000. James Phelan is the moving spirit in regard to the enterprise.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

Tyler Beach proposes to erect a $50,000 building on St. John Street.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

Selma.

A new hotel has just been commenced. It will be three stories high, and front 120 feet on two different streets.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Tulare City.

Brick building. Owner, G. W. Weybert; architect, H. D. Mitchell. Cost, $40,000.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

SAN FRANCISCO BUILDING NEWS.

B

Bartlett, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O. and B.—John T. Grant.
$5,000.

Bluxome, bet. Fourth and Fifth. Two-story brick.
O.—Mrs. M. F. S. Hopkins.
A.—O. G. Moore.
Mason—T. Whitehead.
Carpenter—T. H. Day.
$10,000.

Bartlett, cor. Twenty-fifth. One-story brick.
O.—Co-operative Factory.
$750.

Baker, cor. Hayes. Brick work of building.
O.—F. Heywood.
A.—C. I. Havens.
C.—O. E. Brady.
$5,000.

C

California, nr. Devisadero. One two-story frame and one one-story frame.
O. and B.—L. Bruns.
$4,700.

California, bet. Maple and Cherry. Additions to Children's Training School.
A.—McDougall & Son.
C.—P. Griffin.
$1,500.

Cliff House. Repairs.
$3,000.

California, cor. Battery. Additions to brick building.
O.—Sherwood.
A.—J. T. Gaynor.
C.—Thos. White.
$35,000.

California, cor. Mason. Additions.
O.—W. H. Crocker.
A.—Curlett & Cuthbertson.
C.—C. L. Ferris.
$1,000.

E

Eddy, bet. Octavia and Laguna. Additions.
O.—A. Marks.
C.—H. Keenan.
$4,500.

Everett, bet. Third and Fourth. Three-story frame.
O.—P. J. Grey (Parochial School).
A.—T. J. Welch.
C.—Bateman Bros.
$10,000.

F

Florida, nr. Twenty-second. Additions.
O.—P. Sullivan.
C.—Jos. Dutton.
$1,700.

Fulton, bet. Octavia and Laguna. Two-story frame.
O.—Eliza Baum.
A.—Townsend & Wyneken.
C.—O. E. White.
$6,000.

Fillmore, cor. Germania. Two-story frame.
O.—E. H. Perry.
C.—T. M. Quackenbush.
$3,500.

Fillmore, nr. Clay. Additions.
O.—Bennett.
C.—J. A. Leonard.
$3,000.

Fair Oaks, bet. Twenty-first and Twenty-second. Two-story frame.
O.—Julius Abrams.
C.—R. Stephens.
$2,800.

G

Gough, cor. McAllister. Three two-story frames.
O.—Mary Ohngemach.
A.—T. J. Welch.
C.—S. S. Greene.
$10,000.

Gough, bet. Geary and O'Farrell. Three-story frame.
O.—B. Ettinger.
A.—J. E. Wolfe.
Mason—E. R. Sham.
Carpenter—Gray & Stover.
Additional contracts, $1,500.

H

Haight, bet. Broderick and Devisadero. Two-story frame.
O.—J. P. Murphy.
A.—Townsend & Wyneken.
C.—P. Laherty.
$4,000.

J

Jones, nr. California. Two-story frame.
O.—Geo. Whittell.
A.—Clinton Day.
C.—Ingerson & Gore.
$5,000.

M

Market, nr. City Hall Avenue. One-story brick.
O.—Chas. Baum.
A.—Townsend & Wyneken.
C.—Geo. Richardson.
$2,500.

McAllister, nr. Lyon. One-story frame.
O.—L. Zinnamon.
C.—B. Dryer.
$3,000.

Mission, bet. Fourth and Fifth. Two frame buildings. Additional stories to each.
A.—O'Connor.
C.—R. McCann.
$3,000.

Mission, bet. Twentieth and Twenty-first. Additional story.
O.—Garrity.
C.—B. Dryer.
$3,000.

N

Natoma, nr. Sixth. Two-story frame.
O. and B.—A. Norton.
A.—Miller & Waugh.
$3,700.

WE WANT A BUILDING CORRESPONDENT IN EVERY TOWN IN THE STATE.

Ninth, bet. Market and Mission. Three-story frame.
O.—P. Degan.
A.—T. J. Welch.
Carpenter—Bateman Bros.
Mason—O. E. Brady.
$10,000.

O

O'Farrell, bet. Stockton and Powell. Carpenter work on new brick building.
$5,000.

P

Pine, bet. Devisadero and Broderick. Two two-story frames.
O.—Mrs. Celia Hagan.
A.—Copeland & Banks.
C.—E. O. White.
$9,000.

Pine, bet. Baker and Lyon. Two-story frame.
O.—Maria Roethe.
C.—W. Pluns.
$4,000.

S

Sutter, bet. Van Ness and Franklin. Two-story and basement frame.
O.—I. Kohn.
A.—P. R. Schmidt.
Mason—O. E. Brady.
Carpenter—S. H. Kent.
$15,000.

Sutter, cor. Mason. Brick additions.
O.—Jennie W. Cushing.
A.—Pattiani & Co.
C.—Pattiani.
$2,700.

Stewart, bet. Mission and Howard. One-story frame.
O.—Pacific Pine Mfg. Co.
C.—J. T. Grant.
$1,000.

Seventeenth, nr. Noe. One-story and basement frame.
O.—P. H. Maas.
A.—L. Feiling.
C.—J. Kerrigan.
$2,400.

Scott, cor. Broadway. Two-story frame.
O.—E. Williams.
C.—Gray & Stover.
$4,500.

Sanchez, nr. Seventeenth. One-story frame.
O.—John Guinaw.
C.—O. E. White.
$1,200.

San Jose Avenue, cor. Twenty-sixth.
Four two-story frames.
O. and B.—Norris.
$5,000.

Steiner, nr. Oak.
One-story frame and basement.
O. and B.—C. Holm.
A.—W. Schrof.
$3,000.

T

Twenty-fifth, nr. Bartlett. Additions.
$500.

Twentieth, bet. Valencia and Guerrero. Two-story frame.
O.—R. S. Moore.
A.—C. I. Havens.
C.—Doyle & Son.
$6,700.

V

Valencia, bet. Twenty-fourth and Twenty-fifth. Additions.
$500.

Valencia, cor. Sixteenth. Additions.
$800.

Mexican Windows.—Mexicans seem to entertain the idea that windows were made to look in at as well as to look out of, and it is a matter of daily occurrence for men, women, and children of the *gamin* order, including peddlers and professional beggars, to congregate outside the bars and stand calmly staring in at us by the hour. The first sight of these barred windows strikes the stranger in Mexico rather unpleasantly, and he is apt to fancy himself in prison behind them, with his iron bedstead and brick floor for suitable accessories. In time, however, he realizes not only the conveniences, but the necessity of them, and by and by feels an uneasy sense of insecurity if by some rare chance he finds himself not thus protected. The greater portion of Mexico is a land of perpetual summer, where windows must be open both night and day, and these gratings cannot be "picked" like locks, or noiselessly cut like panes of glass. But though one may sleep here in perfect security without closing a shutter, it is well to move one's effects from proximity to the windows, for the *ladrones* have a habit of throwing in ropes with hooks attached and dexterously drawing out even your garments—from which practice, perhaps, originated the Texan slang word "hooking," for stealing. It is only justice to add that there is far less thieving going on in Mexico, in proportion to population, than in our own country, for the influence of Roman Catholicism is paramount, especially among the poorer classes. I venture to assert that with all your spring-bolts and careful precautions to bring in even the door-mats at nightfall there is more stealing done in any Northern city in a single day than in all Mexico in a year's time.—*Quo.*

CARPENTERS' STEEL SQUARE AND ITS USES, PRICE $1.00

Walnut oil gives new oak the effect of old.

Common brick absorb a pint of water each, and make a very damp house.

The lowest priced builder is not always the cheapest, as poor work will testify.

In arranging the openings of a room, do not forget the wall space. It is sometimes advisable to build a house to suit the furniture.

Terra cotta flue linings are a great improvement over the old roughly plastered chimney.

To properly select the colors applicable to the proper place, consult an educated painter.

RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd lengths	19 00
" " second quality	16 00
" " selected	24 00
" " clear except for Flooring	29 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 00
" " " other sizes, No. 1	34 00
" " " all " No. 2	27 00
" " Stepping, No. 1	40 00
" " " No. 2	30 00
Ship Timber and Plank, rough, selected,	25 00
" " " selected, planed, 1 side	27 00
" " " " " 2 " average, 40 ft.	29 50
" " " " " 3 "	32 00
" " " " " 4 "	34 00
Deck Plank, rough	29 50
" " dressed (average 35 ft	34 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	0½
Lath, 1½ 4 ft., per M.	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M	20 00
Spruce dressed shelving, to 14 inches, per M	35 00
" " ½ inch " " "	35 00
" " wider, per M.	40 00

REDWOOD.

	Per M ft.
Rough Redwood, merchantable	$20 00
" " second quality	16 00
" " selected	24 00
" " clear	33 00
Dressed " common surface	22 00
" " ½-inch surface	28 50
" " No. 1	33 00
" " No. 2	26 00
" " T. & G., 1x6, 12 ft. and over, No. 1	30 00
" " " other sizes, No. 1	30 00
" " " 7 to 11 No. 1	26 00
" " " under 7 No. 1	23 00
" " Rustic, No. 1	33 00
" " " No. 2	28 00
" " T. & G. beaded, 12 ft. and over, No. 1	33 00
" " " " other sizes No. 1	33 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft.	0½
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split	13
Shakes, split, per M.	9 00
" sawed "	11 00

Master Plumbers' Association.

Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

MEMBERS.

Bush & Mallett.....34 Geary Street
Bush, D.....316 Sutter Street
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Daniel, Wm. L.....234 Post Street
Doherty, John.....349 Kearny Street
Downes, Chas.....41 Second Street
Duffy Bros.....17 Trinity Street
Enright, Wm. & Co.....39 Sutter Street
Firmin, Jno. L. E.....Cor. Thirtieth and Bartlett Streets
Fritz & Kean.....130 Geary Street
Gray, Jno. T.....230 Sutter Street
Huffschmidt Bros.....637 Clay Street
Hobro, W. D.....728 Washington Street
Reilley, C. J.....214 Montgomery Avenue
Shepard Bros.....526 California Street
Sweeney & Kearns.....623 California Street
Vance, R. A.....623 Geary Street
Welch, J. D.....Cor. Tyler and Fillmore Streets
Wilson, Wm. F.....25 Stockton Street
Williamson, H.....329 Sutter Street

ITEMS IN REGARD TO BUILDINGS IN THE COUNTRY THANKFULLY RECEIVED.

The California Architect and Building News.

Volume VIII. Entered at Post-office, San Francisco, as Second-class Mail Matter. Established January, 1879. Number 3.

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 Montgomery Street, Rooms 11, 12, 13.

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OUR ADVERTISING RATES.

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Back Cover, Outside, Each Insertion	do.	2.00
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Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.0
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., MARCH 15, 1887.

Bound Volumes of the year 1886 will be forwarded to any address upon receipt of $2.50.

Deceptive and Misleading Specifications, and Consequent Unjust Practices.

PARTIES claiming to have been unfairly dealt with in the letting and execution of certain branches of mechanism in connection with a prominent frame building now in course of erection in this city, have sought to ventilate their grievances through the columns of the daily journals, for the purpose of exposing wrongs claimed to have been perpetrated in the specifications as compared with the work as executed—the material and workmanship as done and furnished being inferior, and of much less value than required by the letter of the specifications.

While some of our contemporaries have published articles based upon the matter above introduced, they have departed from the true issue involved, and indulged in severe language, intimating or asserting—"building frauds," "cheating owners," "collusion," "robbery," "cinched," etc.

To what extent these accusations may be sustained by existing facts, it is not our purpose now to discuss, as it would require several pages, if not several volumes, of this journal to contain all that might be written in this connection without conclusively settling the debatable question as to who is most to blame for the state of things said to exist,—owners who are poised as the unsuspecting, helpless birds, whose pockets are plucked of their golden plumage, or the men employed by the innocents as architects and contractors. Owners, actuated by right and honorable motives and purposes, who are so unfortunate as to fall into the hands of "scalpers," either as architects or contractors, are to be sympathized with; but when, from the promptings of avarice, penuriousness, and mean economy, they place themselves in the power of men whose most prominent if not only recommendation is *cheapness*,—men who neither know nor care for the high standard of integrity which should be pre-eminent with, and actuate those practicing the profession of architect, they willfully do an act which deserves no other style of commiseration than that usually bestowed,—"*It serves them right.*" The spirit underlying all such transactions is, diamond cut diamond; yet if the promoters of bad results—owners who employ men whose chief qualifications are their glib tongues and indiscriminate assertions and promises to do impossible things—happen to come off second best, then no language possible is sufficiently severe to portray the villainies of the *rogues* that win the game.

In the issue introduced by this article, the statement is made that the specifications for the several branches of workmanship and materials to be used in the construction of the building referred to, required qualities which would have cost the contractor very much more than those permitted to be used by the successful bidder; that both the workmanship and materials used are of a kind differing widely from those specified, and that thereby those who figured squarely and honorably by the specifications, with the intent of strictly carrying out, in execution, the fair and true meaning and requirement of the written document, were misled, deceived, and consequently defrauded.

The principle involved in this matter is, that in all cases of fair competition, every man asked or permitted to figure, should be placed upon equal footings, and the specifications should plainly state, exactly and fully, just what is to be, and will be, required, without any reserve of advantage to any party whosoever, either in workmanship or material, unless it is plainly made known to every competitor that a preference will be given. If this is not done, and the bidding purports to be untrammeled by any consideration other than what appears in the specifications, then any advantage given to any one of the number figuring, becomes an act of injustice, at which defeated contestants have good cause of complaint.

The right of owners or architects to prefer individual operators, cannot be questioned; but neither is justified by any rule of right or fair dealings, to draw upon the time and skill of others for certain subordinate reasons, to examine plans and estimate values, with all the chances of success adverse to the parties so drawn upon. It is not a fairly admissible proposition that, "we want A, B, C to figure as a guide to determine whether D, our favored man, is not taking advantage of his preferred position"—unless the parties used for this purpose are paid fair remuneration for the loss of time and skill consumed in such figuring.

In cases where competent and responsible men estimate upon work offered in competition, and figure to follow faithfully the requirements of the plans and specifications, they have good, sufficient, and just grounds for complaint, when they find that the party to whom the work shall have been let, have been allowed privileges and abatements in cost of execution, not made known to all others estimating on the work at the time of bidding. Fair competition deals alike with all in interest, and private information to, and secret understanding with, any one party, can be considered only as an unfair and unjust transaction.

Draughtsmen in Demand.

ALL draughtsmen out of employment will do well to read an article in this issue in reference to the want of draughtsmen. Give close attention to the same. Fully fifty more than our usual corps can find remunerative employment. The prospects this year are decidedly encouraging for a large amount of work in the building line. In the article in question, please note that it is *architectural draughtsmen* who are required and not carpenters or architects.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

Pressing Need of Competent Draughtsmen.

THE article in our last issue entitled "Scarcity of Architectural Draughtsmen," has attracted much attention, and many inquiries have been sent to this office in regard to chances of employment.

CARPENTER SKETCHMEN NOT NEEDED.

A large proportion of the letters received are from carpenters who consider that their experience as practical mechanics, aided by a faint smattering of the knowledge of draughtsmen, will enable them at once to enter an architect's office as first-class men. Such men are not the kind that are needed.

ARCHITECTS NOT WANTED.

Neither do we care to receive letters from those who call themselves architects, and who are continually writing for the formation of desirable partnerships. There are enough architects here now, and many to spare.

COMPETENT DRAUGHTSMEN NEEDED.

Young men who have made a study of the profession, and who know themselves that they possess a fair amount of ability as designers, and who are willing to allow that they do not know it all, are the kind of help that is very much needed, not only in this city, but in several of the principal towns on this coast.

CONTRACT DRAUGHTSMEN NOT NEEDED.

This city is the abiding-place of a few architectural rovers—a good name for them—who will not enter an architect's office unless a contract is made between the architect and rover, by which the former is bound to employ the latter a certain length of time at specified wages. No chance is given to employ the said rover for a week to test his ability, but upon the strength of his saying he can do this and that he must be, perforce, installed, at once as leading draughtsman in the office. Such men are *not* wanted.

A TRUE TEST.

Men are desired who, upon applying for a situation, can be conducted to the draughting table, furnished with the proper subject, paper, and instruments, and at once comprehend the architect's ideas, and proceed to exemplify the same in a practical manner. Such men *are* wanted.

NUMBER WHO CAN FIND EMPLOYMENT.

From present appearances we know of places that will absorb about twenty applicants. Everything looks favorable for steady employment for some time to come. Many of the country architects will engage men for a specified time, provided they possess the requisite ability.

REMUNERATION

Varies considerably, depending altogether upon the ability of the applicant. Four dollars per day, may be given as the average price of good men. Some men are cheap at $6.00, or even $8.00 per day. Some are dear at $1.00. Young men who have been but a few years at the study, should be content with $2.00 and $2.50 per day. Monthly rates run from $50 to $125, according to talent.

INQUIRIES ANSWERED.

We will answer all inquiries addressed to us in relation to the subject under consideration. No charge is made for any information, but we consider that the least anyone can do, is to inclose stamps for return postage. A half dozen stamps amount to but little, but when we are called upon to furnish them by the hundreds, it becomes another matter. We can only answer those to which our attention is particularly interested, if stamps be not inclosed for return postage.

WRITE FIRST

Before starting. At least ten can be put immediately to work. We do not wish to be the means of having scores of men come here and be disappointed upon their arrival. Write first to us for particulars, and then you will have a positive guarantee that you will be employed if we bid you come.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

Our Quarterly Report.

ALTHOUGH buildings, in neither value nor number, equal the corresponding time of last year, still we are free to admit that the prospects are more encouraging for a large amount of work to go ahead than was evidenced last March, one year ago.

In 1886, for the first quarter of the year, we reported in this journal 252 engagements, valued at $1,359,532. For the same time this year we report 191 buildings, valued at $1,209,100.

REPORT FOR MARCH.

65	frame buildings, value	$221,500
9	brick " "	105,500
10	improvements "	26,900
84		$353,900

Several large buildings will soon be started, and we are confident that our next quarterly report will show a much better comparison with those of former years.

Meeting of the San Francisco Chapter of Architects.

THE regular session was held on the evening of the 4th inst., A. Pissis, President, presiding. In the absence of B. G. Henricksen, Secretary, a member was appointed Secretary *pro tem.*

Roll call, reading and amendment of minutes followed.

Mr. Saunders reported progress in the class work, stating that there was a far too great lack of interest on the part of students from the several architects' offices, in availing themselves of this valuable auxiliary to their advancement in the study of architectural science.

The fire ordinances of San Francisco, relating to the construction of buildings, was taken up and freely discussed and reveiwed, and the unanimous opinion of every member present was, that the ordinances relating to the erection of buildings, in numerous particulars, required remodeling and reconstruction.

The discussion was free and spirited, and the defects reviewed without any reflection upon those who, years ago, suggested and framed the ordinances as they now are, which were then suited to the occasion, but which time and experiences have proven defective and insufficient for the regulation of the building science at the present day.

In view of these facts, a committee, consisting of John Wright, James E. Wolfe, J. Clark, H. S. Bestor, and W. P Moore, was appointed to take the matter of the fire ordinances as far as the *construction of buildings* is concerned, into consideration, and to report thereon at as early a day as possible. The proposition extended no farther than the simple matter of *building construction*, in connection with which the laws, as they now stand, are inadequate and impractical in numerous respects.

The Law as to Party Walls.

A PARTY wall is the wall dividing lands of different proprietors, used in common for the support of structures on both sides. At common law an owner who erects a wall for his own buildings which is capable of being used by an adjoining proprietor, cannot compel such proprietor, when he shall build next to it, to pay for any portion of the cost of such wall. On the other hand the adjoining proprietor has no right to make any use of such wall without consent of the owner, and the consequence may be the erection of two walls side by side, when one would answer all purposes. This convenience is often secured by an agreement to erect a wall for common use, one-half on each other's land, the parties to divide the expense; if only one is to build at the time, he gets a return from the other party of half what it costs him. Under such an agreement each has an easement in the land of the other while the wall stands, and this accompanies the title in sales and descent. But if the wall is destroyed by decay or accident, the easement is gone, unless by a deed such a contingency is provided for. Repairs to party walls are to be borne equally; but if one has occasion to strengthen or improve them for a more extensive building than was at first contemplated, he cannot compel the other to divide the expense with him. In some States there are statutes regulating the rights in party walls, and one may, undoubtedly, acquire rights by prescription on a wall built by another, which he has long been allowed to use for the support of his own structure.—*Building.*

REMOVING PAINT.—An excellent medium for removing paint-spots from garments and like fabrics, may be had by mixing four tablespoonfuls of alcohol with a tablespoonful of salt. Shake the whole well together and apply with a sponge or a brush, then wash out in clean, tepid water.

An Eastlake Cottage.

IN presenting this design, attention is called to the compactness and beauty of arrangement of plans, well-proportioned rooms, no unnecessary waste of space occupied by long, gloomy halls, and each door and window having its distinct purpose or cause.

The design, as illustrated, is a model of compactness and arrangement. On entering the hall from the vestibule, the parlor and dining-room are situated on the right, separated by a neatly designed, paneled sliding-door, and each room having a large bay-window, with an ornamental arch. On the left of the hall are entrances to two bedrooms, with a bath-room between them, and each room provided with a large closet with shelves, drawers, hooks, etc., usually found in closets.

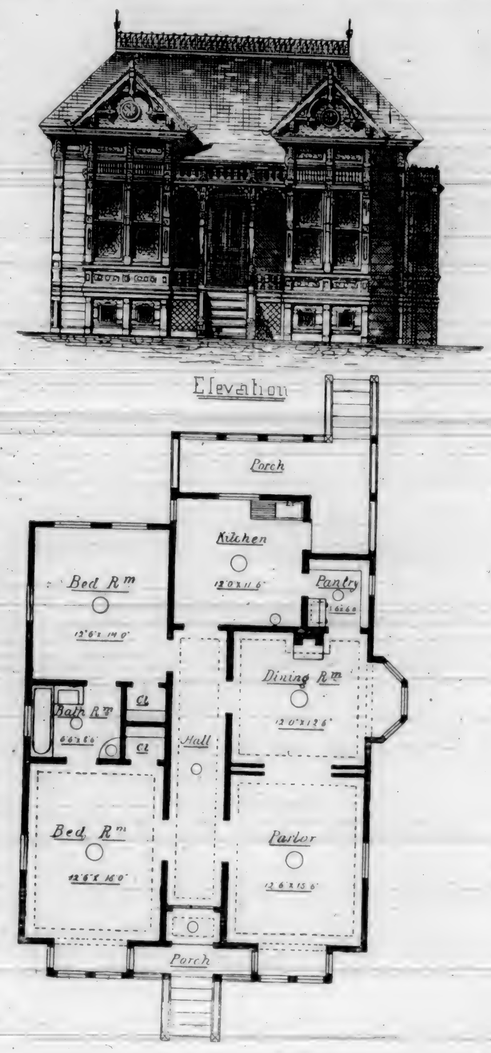
The bath-room contains a wash-stand with nickel-plated bibbs, and a Golden Gate plug water-closet, finished in black walnut and nickel-plated trimmings. The bath-tub is provided with hot and cold water, through nickel-plated bibbs, with attached soap-cups; the room is wainscoted five feet high and finished with moulded cap and paste-board.

The floor should be covered with linoleum, giving the room a neat appearance, and making it easy to clean. The kitchen is provided with a sink, boiler, and a large paste-pantry; and a commodious rear porch, inclosed by posts and railings, affords a good place to do washing, cleaning, etc.

The dining-room is finished with paneled wainscoting, and all the wood-work finished in oak and highly polished. The dining-room should be papered with some neat floral design, and the floor covered with a carpet harmonizing with the rest of the furniture.

The windows are furnished with sliding blinds, which slide in the casing, thus preventing the tearing of curtains and lambrequins. One chimney suffices for a fire-place for the dining-room, and a separate flue for the kitchen. The elevation is of Eastlake style, and needs very little description, as a glance will show that it is neat in design, and solidly constructed. The roof is covered with the best quality of redwood shingles, laid four and a half inches to the weather, and well nailed.

DAVID SALFIELD, *Architect.*



AN EASTLAKE COTTAGE.

NEW ADVERTISEMENTS.

Sure Sign of an Unqualified Success.

THAT this Journal is an assured success, is proven by the large number of advertisers that have kept their wares before the public by means of notices in these columns. We call special attention to the following NEW ADVERTISEMENTS in this issue:—

Wooden Mantels—

The West Coast Furniture Company, under the supervision of L. and E. Emanuel, stand at the head of any firm in the State, in the preparation of artistic designs for Wooden Mantels. SEE NEW ADVERTISEMENT.

Ransome's Pavements, etc.—

This industrious inventor in cement and concrete work will fully explain in next issue why the space occupied by him will contain information of interest to all who contemplate building. SEE NEW ADVERTISEMENT.

Wire Lathing—

J. H. Roebling's Sons Company, 14 Drumm Street, are prepared to furnish in quantities to suit, their Patent Stiffened Fire-proof Wire Lathing. They also keep Sash Cord, Wire Rope, etc. SEE NEW ADVERTISEMENT.

Plumbers' Slabs—

Plumbers and others will do well to call on E. Dumontelle Steam Marble Works, 523 Fifth Street. Slabs, Marble Mantels, Furniture Marble, and everything in that line on hand or worked to order. SEE NEW ADVERTISEMENT.

Plumbers' Supplies and Gas Fixtures—

Nye & Co., carry the largest stock of any firm on the Coast. In fact but few firms in the United States can show the profusion of artistic designs in Gas Fixtures, that are displayed in the warerooms of Nye & Co., in the Grand Hotel Building, Market Street. SEE NEW ADVERTISEMENT.

Cement—

The Dyckerhoff-Portland Cement has long stood at the head of strong cements. Chas. Duisenberg & Co. are the agents on the Pacific Coast. SEE NEW ADVERTISEMENT.

Electric Gas Lighting—California Electrical Works—

Are prepared to furnish all work in their line. Burglar Alarms and Hotel Annunciators are among their specialties. SEE NEW ADVERTISEMENT.

Wire Work, Crestings, etc.—

The California Wire Works have extra facilities for the preparation of railings of wrought iron or wire, window guards, crestings, finials, etc. SEE NEW ADVERTISEMENT.

Window Shades—

W. McPhun, 1075 Market Street, furnishes houses or stores with the best of Window Shades. SEE NEW ADVERTISEMENT.

American Contractor—

Is published by B. Edwards at Chicago, Ill. A careful perusal of the advertisement will explain why every contractor should subscribe. SEE NEW ADVERTISEMENT.

Builders' Hardware—

The Pioneers—D. N. & C. A. Hawley—carry a full assortment of Builders' Hardware. SEE NEW ADVERTISEMENT.

Redwood Logging in California.

THE whole world concedes to America pre-eminence in the size of her trees available for timber. In no part of the world are trees to be found equaling in size the forest monarchs of California, save in certain parts of Australia and Tasmania, where the *Eucalyptus* trees grow perhaps to equal dimensions, but the wood of the Eucalyptus is gnarled and worthless, twisting and warping if used. California's big trees are of two varieties, the *Sequoia gigantea*, the most celebrated examples of which are found in the vicinity of the Yo Semite, and the *Sequoia sempervirens*, or redwood, which, though extending from the vicinity of Santa Barbara on the south, to Oregon on the north, are found in greatest size in Humboldt County. In the early English works on phytography, it was sought to link the name of their great Wellington to the trees of the Yo Semite, but now it is agreed that to the father of the American nation this honor appropriately belongs, and the name of *Washingtonia gigantea* is now coming into favor in popular and in scientific usage.

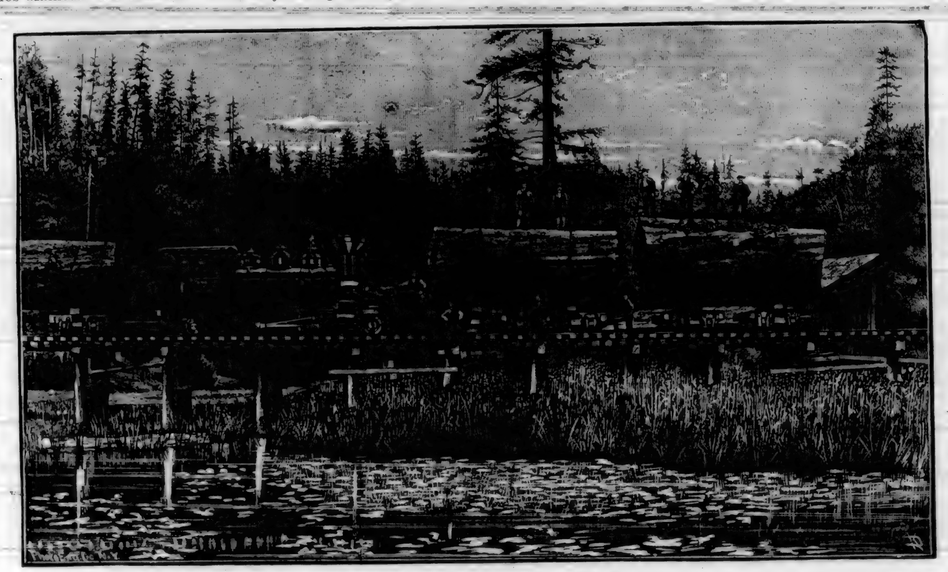
In the forests of Norway, Sweden, and Finland, the great timber-producing countries of Northern Europe, the standard width of boards is six inches, and trees larger than eight to ten inches diameter are unusual. Several years ago a large American locomotive establishment shipped a cargo of locomotives to H n lo. the terminus of one of the Finnish railways. They w re pa ked in boxes of Michigan two-inch pine plank, many of them fifteen to eighteen or more inches in width. Boards of this extraordinary width attracted much attention, and an employe of the railway obtained sufficient of the empty boxes and fashioned them into a house—the best in the place—and people came in considerable numbers to marvel at trees which could produce boards like those. The thrifty house-wives greatly prized pieces of the same boards for making moulding boards, and many were distributed for this purpose. If our ordinary lumber of commerce could excite such surprise, how much greater the astonishment and admiration of the same people at California's wonders! An American gentleman was once waiting at a Russian custom house to have his effects examined and passed. As he opened his trunk a photograph of one of the great trees was lying on top, exposed to view. The inspector examined it eagerly. "Ah," said he, "that is from California. I have a brother there who has written us at home much about them, but we could not credit it. I have never seen a photograph of them.

The picture was presented to him, whereupon work was suspended until it had been handed about and discussed by all, up to the chief of the custom house. The photograph showed a great tree partially cut for felling, with twelve persons sitting uncrowded in the V-shaped cutting. This calls to mind a *bon mot* of the late George Whitney, of Philadelphia, who, on seeing the same photograph, exclaimed, "Why, it is a photograph, but it really looks like a wood-cut!"

A peculiarity of the redwood forests is the absence of undergrowth. It is, therefore, difficult to realize their magnitude without a familiar object near by with which to compare them, until one begins to make such a comparison the trees do not appear of extraordinary size. Like the cataract of Niagara, the first view is frequently disappointing, and familiarity, far from breeding contempt, serves to increase the feeling of awe inspired by overpowering magnitude.

In consequence of the great size of the redwood the process of getting the logs to the mills has been a slow and expensive one. Floating has been impracticable, owing both to the size and the weight of the logs, even where there are streams; hence logging railroads are in California a necessity instead of an economic convenience, as in the pine forests east of the mountains. In some cases long lines of oxen laboriously drag the logs through the woods, and in other cases, tackling, operated by cattle or mule power, or sometimes by donkey engines is employed to load the logs. But those methods are too slow, and are being superseded by steam power conveniently applied.

The necessity for some special means of handling these great logs led Mr. John Dolbeer, a large lumber operator of San Francisco, to think of attaching a steam windlass to an ordinary locomotive. A patent was granted him for a device by which the steam windlass could be thrown into gear with the driving wheels of the locomotive for the purpose of propelling it, or could be used separately for its legitimate work of lifting and handling logs. Since then the Baldwin Locomotive Works, of Philadelphia, have built, for logging railroads on the Pacific Coast and elsewhere, a special type of double end logging locomotives, equally adapted for running in either direction, and equipped with a powerful steam windlass at the forward end. Unlike Dolbeer's locomotive, however, the windlass is entirely disconnected from the driving gear of the locomotive, and the locomotive can be built either with or without it. The locomotives referred to have two pairs of driving-wheels coupled and a two-wheeled or pony truck at each end. A saddle tank carries the water and the rear truck carries a large wood-box. The forward truck is center bearing, the rear truck side bearing. The wheel base is extended sufficiently to distribute the weight of the engine over a good length of track, while at the same time it is perfectly flexible, allowing the locomotive to run on the roughest track and pass the shortest curves with ease and without injury to itself or the track. A powerful steam-break acting on both pairs of driving-wheels controls the motion of the engine on steep grades and serves to lock it firmly while the windlass is in operation. The windlass is a Copeland & Bacon six-inch double cylinder, with single or double gearing as the weight of the logs to be handled requires.



Transporting Redwood Logs By Rail.

The two accompanying engravings show the method of handling the great redwood logs of Humboldt County, California, by the Albion Mill Company. The first engraving shown herewith is from a photograph of a logging train, only part of which, however, is shown. The locomotive is of the type referred to above. The largest log shown is twelve feet in diameter. The second engraving shows the operation of unloading one of the large logs with the steam windlass, the log shown being so large as to require splitting before going to the saw-mill. Some of this green redwood timber is very heavy and will sink when put into water. The logs handled frequently weigh twenty to thirty tons.

Redwood is the common lumber of the Pacific Coast, taking the place of the pine and hemlock of the Eastern States and the deals of England. It is used for clapboards, siding, shingles, in fact for every purpose where it is not subject to wear. When dried it is quite soft and wears rapidly by attrition; it is, therefore, unsuitable for flooring or stair purposes. It is used to some extent for railroad ties, though not so well adapted to this service as harder woods. Particularly on curves the spikes become loosened by the lateral pressure against the rails. Redwood is remarkable in that its shrinkage is mainly in the direction of its length. Though its grain is usually straight, it can be found with grain curled, bird's-eye, and other fantastic shapes, rivaling in this respect the most beautiful bird's-eye and curly maple. Its rich color, much resembling red cedar, its beautiful grain when carefully selected, and its great durability when not subject to wear, make it most desirable for interior decoration. With the low transcontinental freight now ruling, and likely to continue, it must become recognized in the Eastern States as a wood rich in economic and ornamental possibilities.—*N. W. Lumberman.*

Unloading Redwood Logs By Windlass.

Kitchen Scrubbing.

OLD flannel of all kinds should be kept for scrubbing and cleaning paint—undervests, drawers, skirts, all come in for it. In England where scrubbing is still the glory of the poorer people, cottagers vying with each other on the color of their boards, there is a coarse, gray flannel made, called "house-flannel," expressly for the purpose. Next to flannel, is old, coarse, soft linen, old kitchen towels, crash, etc. So necessary to good cleaning is soft, absorbent material that I would almost rather my maids destroy articles of far more value than the scrub cloths, because the supply is so limited, especially if we give away our disused underclothing. For this reason keep the supply under your own care; see that after each using the cloth is dried and not thrown away until it is really used as long as possible. Many girls will be conscientious about towels and dusters because they have a money value, but cleaning cloths, being only rags, they will consider may be thrown aside any time and fresh ones taken.

In addition to the soft, wet cloth, a dry rubber (best made of old Russian crash that has done service for round or dish towel) should be kept. A scrubbing brush of hard bristles is best; the soft excelsior brushes are of little use except for coarse paint, and brushes made of broom straw, although not entirely satisfactory, are about the best one can get when bristle brushes are not to be had, or are too expensive.

Tables that have been neglected may be bleached by spreading on them overnight a layer of wood ashes, made into a mortar-like paste, with water; the next day brush it off and scrub. The same paste may be laid on floors when spotted with grease.

In cleaning floors never wet too large a space at once. If beyond the comfortable range of the arm, there is almost certain to be a dark circle when dry, showing where you leave off each piece; because, being out of easy reach, you have no power to scrub well or wipe dry. Always in using the drying cloth, rub it well beyond the space you are now cleaning over to the one last done.

The use of a little washing soda or borax in the water is excellent for boards, and if they have been neglected, a small lump of lime in the water greatly helps to make them white. After tables are scrubbed attend to the sink, put a lump of washing soda, as large as an egg, at least, over the sink hole and pour a kettle of boiling water over every part of it, using your sink brush to send it into all greasy parts.

Wash, the last thing before the floor, all finger marks from the paint; also the chairs, if painted; the backs of them, if caned; the top of the flour barrel, and the windows. Be especially careful to clean kitchen window sills; so many things are put on them, they are more apt to be soiled than any others. Needless to say that floors must always be swept before they are washed.

To clean oil-cloth, do not scrub it unless it has been badly cleaned many times, when, with the fine corrugated surface now usual, dirt, or rather the dirty water allowed to remain in it, will have grimed it so that you will need to use a soft brush and scrub the way of the lines; but usually warm water, one wet and one dry cloth are all that are needed. Oil-cloth and paint need the wiping with a coarse, dry cloth as much as boards, and well repay the extra trouble. Skim milk used in place of water to clean oil-cloth gives it brightness and luster. Painted floors must be treated just as oil-cloth is.

I have one thing more to say about the kitchen sink. If you put in it a lump of soda weighing a half pound or more every day or two, you will have no trouble with the drain-pipe becoming clogged with grease. So large a piece will dissolve very slowly, but all the water that goes down will help to cleanse instead of soil the pipe. Whenever you have a kettle of boiling water that you do not need at once, pour it into the sink.

Graining.

OAK.

THERE are few graining colors that look better than oak as applied to wainscoting and to the doors of halls, as well as the woodwork of landings. We have seen oak graining on pine that was hardly distinguishable from the finest natural wood, with its medullary rays, curly knots and veinings. Dark oak is well adapted for the wainscots of staircases having abundant light, while the light descriptions suit darker and smaller staircases. Oak graining looks particularly well where common wood is employed, and care in reproducing natural markings and veinings will be well employed. Good specimens of natural wood should always be alongside of the painter.

For light oak graining the following may be recommended as a ground: White lead in equal quantities of raw linseed oil and turpentine, with a half pound of dryers to each seven pounds of lead, and with sufficient Oxford ochre to make a light tint. For darker wainscot an additional amount of ochre must be intermixed. The color should be well strained and finished off with fine sand-paper.

A quarter of a pound of burnt umber, ground in linseed oil and well thinned with an extremely limited quantity of dryers, and a small quantity of raw sienna, ground in linseed oil, and which is added for purposes of enrichment, constitutes a good graining color for doors, as well as wainscots and other woodwork in halls, staircases, and landings. It is to be laid on evenly and thinly.

The over-graining color for general use in oak is made up of Vandyke brown, ground in water. The exposed streaks and curves caused by the comb and veining horn on the dark graining color are the lights, and the graining color the shades. The ground is to be shown up so as to match the medullary rays of the natural wood. All harsh, hard lines are to be avoided. When they appear at once soften them down. Mottled appearances, so charming when well done, come in on over-graining, for which Vandyke brown, ground in water, is usually employed. The over-graining need not follow closely the natural markings of the wood, room being afforded for the fancy of the painter. To give the appearance of the panels and rails of a door being framed with oak of a darker hue fewer lights should appear on the styles. The lights across the grain in the work of oak graining are well set off by an occasional wavy or zigzag light across the grain. Panels serve well to display curly knots skillfully distributed.

Pollard oak graining requires considerable skill. The ground is to be prepared with color in oils, as for wainscot oak, using yellow ochre, or Venetian red and yellow ochre, or orange chrome as the coloring matter, according to the depth of tone required in the graining, which is so largely influenced by the tone of the ground. When dry, this is to be sponged over with whiting and water. The surface of the graining color may be made up of Vandyke brown and water for indoor work, laid evenly with a brush and worked level with a hog mottler. The brush having been dipped in the deepest and darkest of the graining color, dabs of this are made where the panels are to be located. These are dabbed over with a coarse sponge, and next the dabs are drawn into groups by sundry curls of dark tints. Smaller curls and fine lines are put in with a sable pencil. The over-graining color, put on when the former coat is dry, is made up of the same pigment ground in beer, but thinner. It is applied with an overgrainer. The tints are then softened with a badger softener, the colors being drawn toward the group of knots, lights being taken out where needed and harsh lines softened by drawing the softener across them in every direction. When the over-graining is dry it should receive two coats of oak varnish.

SATINWOOD.

The ground to be used for satinwood graining is made up of a white lead, oil color, just tinted with chrome yellow, raw sienna, or yellow ochre. The work is to be cissed in with whiting and beer. The graining colors may be either middle chrome and deep black, or Vandyke brown or York brown mixed with beer and rubbed in smooth and even with a tool and hog's-hair mottler. Next a coarse sponge is moistened in beer and drawn down over the work so as to leave the liquid to run in rather broad streaks in a slightly wavy or oblique direction. The whole is softened with badger softener. With a clean, moist camel's-hair mottler the grainer proceeds to work down the edges of the streaks with a jerking movement, so as to impart that varied and fanciful appearance so much admired on the natural wood. The over-graining color is composed of Vandyke, York brown and black mixed with beer, but in different quantities than those used in the graining color, for the purpose of making different tints and shades. First put in the heart with a small sable pencil, brush this lightly with the badger softener and finish the rest of the over-graining with a sable tube over-grainer, the hairs of which have been separated with a comb. The work, when dry, is to be varnished with two coats of the best pale oak varnish.

MAHOGANY.

The ground lead for mahogany is white lead, oil color, tinted with Venetian red and yellow ochre, or chrome ochre may be substituted for yellow ochre where a deeper tone is desired. The various tones of color are obtained by useing more or less of the pigments. When the ground color is dry it is to be cissed with whiting and beer. The ground color is made up of Vandyke brown, or this color and black or burnt sienna and black, or burnt sienna and Vandyke brown to suit the ground and desired effect. The pigments mixed with black are to be rubbed in dark, then the work is gone over with a moist camel's-hair mottler, producing the peculiar curly and feathery grain of mahogany, and shading off as it goes from mid-feather to paler points and sides. The mid-feather is produced by gathering in the grain from the sides and working it along toward the point. The over-ground color is made up of Vandyke brown, with a little crimson lake when a brighter hue is desired. This color is to be mixed with beer and applied with a hog's-hair or sable grainer. The over-grainer must be made to follow the direction of the feathers and curls. Rising from their center and becoming gradually more prominent, the forms are gradually lost in the general matter of the surface. If the wood is too light in color, or not sufficiently rich in hue, it may be varnished or treated to a megilp of boiled oil and turpentine, and when this is dry, the surface may be again treated to an over-graining, with a mixture of brown lake and black or burnt sienna, or Vandyke brown and crimson lake. This may be continued until the real tint is obtained, then the whole must be nicely stippled with a softener and allowed to dry a whole day. The surface may then be varnished.—*Painters' Magazine.*

Hints on the Care of Tools.

THE following hints on the best means of keeping tools in good condition cannot fail to be useful:—

Wooden Parts.—The wooden parts of tools, such as the stocks of planes and handles of chisels, are often made to have a fine appearance by French polishing; but this adds nothing to their durability. A much better plan is to let them soak in linseed oil for a week, and rub them with a cloth for a few minutes every day for a week or two. This produces a beautiful surface, and at the same time exerts a solidifying and preservative action on the wood.

Iron Parts.—Rust preventives.—The following recipes are recommended for preventing rust on iron and steel surfaces:—

1. All steel articles can be perfectly preserved from rust by putting a lump of freshly-burnt lime in the drawer or case in which they are kept. If the things are to be moved (as a gun in its case, for instance), put the lime in a muslin bag. This is especially valuable for specimens of iron when fractured, for in a moderately dry place the lime will not want renewing for many years, as it is capable of absorbing a large quantity of moisture. Articles in use should be placed in a box nearly filled with thoroughly pulverized slaked-lime. Before using them rub well with a woolen cloth.

2. To keep tools from rusting, take one-half ounce camphor, dissolve in one pound melted lard; take off the skum, and mix in as much fine black-lead (graphite) as will give it an iron color. Clean the tools and smear with the mixture. After twenty-four hours, rub clean with a soft linen cloth. The tools will keep clean for months under ordinary circumstances.

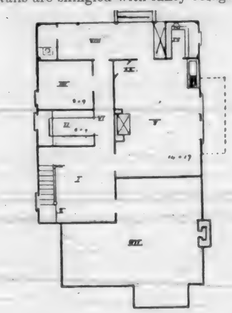
Strength of Brick Walls.—For first-class buildings with good workmanship, the general average should not exceed a greater number of feet in height than three times its thickness of wall in inches, and the length not to exceed double the height, without lateral supports of walls, buttresses, etc., as follows for safety:—

Thickness.	Safe Height.	Length.
8½ inch walls.	22 feet.	50 feet.
13 "	40 "	80 "
17 "	55 "	110 "
22 "	66 "	130 "
26 "	78 "	150 "

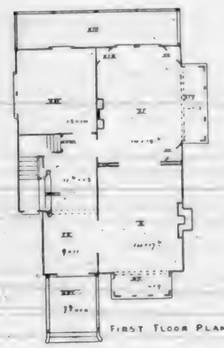
Where the lengths must exceed these proportions, as in depots, warehouses, etc., the thickness should be increased or lateral braces instituted as frequently as practicable.

The above is a plan for a country home, especially designed for a farmer, the total cost of which will not exceed $5,000. It is suitable for a lot on a hill-side, and makes a convenient and handsome dwelling. The foundation is of brick, stepping off to suit the grade of lot. The basement contains the kitchen, servants' rooms and store rooms, and also a large veranda off the rear. The first story contains parlor, dining-room, library, and large main hall. After entering the front door, you find yourself in a large hall, on one side the commodious stairs and colored glass windows, on the other side, double doors connecting the parlor with the main hall, also single doors to the basement and library. The parlor is lighted by a large square bay window, with large panes of twenty-six ounce glass below, with smaller lights above, as shown. Off the parlor is the dining-room, connected with sliding doors. The dining-room is also connected with the rear porch by a large twenty-six ounce glass boxhead window. In one corner of the dining-room there is a dumb waiter.

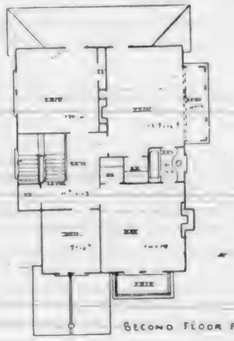
The second story, which is reached by an easy and commodious staircase, with three landings, and placed near the center of the building, so as to afford ready communication to the several chambers, contains four chambers and also a good-sized bath-room. Off the front chamber, over the bay window, is a balcony, from which a view of the surrounding country may be had. The roof is of redwood shingles, painted two coats and the side walls are shingled with fancy octagon shingles where shown.



Basement Plan.



First Floor Plan



Second Floor Plan

I	Hall
II	Dairy
III	Servants room
IV	Pantry.
V	Kitchen.
VI	Passage.
VII	Unfinished
VIII	Verandah
IX	Dumbwaiter
X	Stairs

IX	Entrance Hall
XVII	Stairs going up.
XVIII	Stairs going down
X	Parlor
XII	Sitting room
XI	Dining room
IX, XIV	Bay Windows.
XV XI	Closets.
XIX	Dumbwaiter.
XVI	Porch.
XIII	Verandah

XXVI	Hall
XXVII	Stairs going down
XXI	Chamber
XXII	Chamber
XXIII	Chamber
XXIV	Chamber
XXV	Bath room
XXVII	Bay Window
XX	Closets
XXIX	Balcony

ASKED, ANSWERED, AND COMMUNICATED

☞ Architects, Contractors, Carpenters and Mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them and we will make the cuts.

Free to All.

The columns of this journal are open to all who differ with us upon any subject presented. We are too old in years and experience to assume that we have passed the reef of human liability to err, or for one moment to suppose that we have reached the realms of thought where perfection reigns supreme. But this we do assure—that whatever of error there may be contained in our columns will be speedily corrected, as soon as attention is directed thereto, and we are convinced of the error. We will give place to a reply in any case, when a mistake or wrong statement has occurred. It is our desire and purpose to be fair, just, and correct in all things, and do no person or subject any violence. We therefore invite free discussion and criticism, and again state that the columns of this journal are at the service of all who desire to differ with us upon any theory or subject, or who take exception to anything at any time appearing in our columns.

We intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas on the practical questions of the day; and we hope to receive from those interested, and especially amongst builders, questions arising in their daily practice. No matter what may be the solutions given to the various problems presented, we shall only be too pleased to receive replies from our readers, where they see other and better solutions for them. If a general interchange of ideas can be brought about great advantages will ensue to all. Let not a month go by without bringing up for discussion practical topics in the architectural, mechanical, or scientifical pursuits. We desire a general expression of opinions, for or against, of every article presented by us. Every communication will receive deliberate and careful consideration.

Working Drawings.—Will you inform me what is the exact meaning of the term, "working drawings." I notice that architects often add to their specifications that working drawings will be supplied where required. Are not plans, elevations, and sections, enough for working purposes? Boss Carpenter.

Yonkers, N. Y.

Answer.—The term "working drawings" is generally understood to mean detail and other drawings worked out to a sufficiently large scale to show every detail of the construction, often being full size. Ordinary plans and elevations are not drawn to a scale large enough to work from, excepting to set out the main dimensions, so that where any peculiar or unusual construction is to be used, detail or working drawings are supplied by the architect, and the contractor has therefore no excuse for bad construction.

A new method of securing veneer to its base consists in spreading glue or other adhesive matter between the veneer and the base, passing the two secured parts under a heated roller to melt the glue and cause it to enter the pores of the wood, then finally passing the connected base and the veneer under chilled rollers to harden and set the glue, and prevent the warping or shrinking of the veneer consequent upon the gradual cooling or drying of the glue.

The word "striping," as formerly used in England, referred solely to a style of painting in which the panels of bodies were painted in alternate stripes of light and dark color, as light and dark brown, blue, green, etc. The stripes were three-quarters or an inch wide.

How foolish it is for a man who has labored all his life at some mechanical trade, and attained wealth and all the comforts that money can purchase to surround himself with, to suddenly conceive the idea that it is not genteel to be a mechanic, abandon his trade or sell it out, thinking to elevate himself in the estimation of his fellow-men by wearing fine clothes and putting on aristocratic airs that are unnatural to him. Such men may be flattered to their face, but behind their backs they are invariably spoken of with contempt. I admire the old English style. If a man there is a successful manufacturer or mechanic, no matter how wealthy he becomes, his sons and grandsons are not ashamed to be known as mechanics themselves, but write themselves with pride as successors to the old firm. For honesty, integrity, and genuine respectability, commend me to the intelligent, hard-working mechanic!

Natural Position of Wood.

The problem, says a scientific writer, has interested many, why two pieces of wood, sawn from the same section of tree, should possess very varied characteristics when used in different positions, as, for example, a gate post being found to decay much faster if the butt end of the tree is uppermost than would be the case if the top were placed in this position, the reason being that the moisture of the atmosphere will permeate the pores of the wood much more rapidly the way the tree grew than it would in the opposite direction. Microscopical examination proves that the pores invite the ascent of the moisture, while they repel its descent. The familiar case of a wooden bucket is in point—that is, some of the staves appear to be entirely saturated, while others are apparently quite dry. This also arises from the same cause, viz., the dry staves are in the position in which the tree grew, while the saturated ones are reversed.

Redwood Logging in California.

This article and the cuts illustrating the same were kindly furnished us by the *Northwestern Lumberman*, of Chicago, one of the leading papers of its class in the world.

Advertisements that Have Appeared In Every Issue of This Journal since Its Inception in Jan., 1879.

F. H. Rosenbaum & Co.....Window Glass, etc.
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John Mallon.....Cut Glass, etc.
J. Browell.....Patent Chimneys.
Montague & Co.....Tileing, Grates, etc.
Pacific Rolling Millls....Rolled Beams, Girders, etc.
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Burr Brothers.....Hoppers, Traps, etc.
Commercial Insurance Co.....Insurance.
W. E. Stevens.....Patent Chimneys.
Kellett & McMurray.....Plaster Decorations.
Renton, Holmes & Co.....Lumber.
Turner, Kennedy & Shaw.....Lumber.
Dunham, Carrigan & Co.....Builders' Hardware.
Jesse & Drew.....Stair Work.

Besides the above a majority of the cards of contractors, painters, plasters, etc., have appeared in this journal regularly since the first issue.

That all parties are benefited by advertising, is conclusively proven by above statements. Some of the firms jocularly say, they have a mortgage on the space taken by them, as long as they remain in business. Let all continue the good work by sending us an ad.

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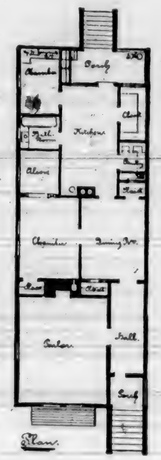

The Right to Reject Bids.

AMERICAN ARCHITECT.

A private corporation advertise for bids on an important structure in the usual form, "reserving the right to reject any and all bids." The sealed bids are opened in private by the company's officers, the terms of the bids are not made public, and the contract awarded to one of the bidders, who agrees with the company not to allow the amount of his bid to be known. What are the rights of bidders under such circumstances, and what remedy, if any, has the lowest bidder among those shut out, granting him to be solvent and capable, and his proposed bondsmen above criticism? Very respectfully,

A Contractor.

The bidders have no claim to know the amount of the accepted tender, if the parties immediately interested wish to keep it to themselves, nor has the lowest, or any other bidder, under the conditions of the bidding, a right to insist upon the acceptance of his offer. The reservation made in the advertisement that the company should have the right to reject any and all bids makes this clear, but even where no stipulation of this kind is made, it has been repeatedly decided that the party inviting bids has a right to consider other circumstances besides the relative amount of the tenders, and to accept the one which seems, on the whole, most advantageous for him.

CALIFORNIA WOODS.

AN ABUNDANCE OF LUMBER FOR BUILDING.

THE BIG SEQUOIA VARIETIES.

Monster Trees—Durability of Redwood—Scarcity of Useful Hard Woods—Eucalypti.

Much of the value of a country as a place for homes depends upon the quality and quantity of the native timbers. It is true that the timber may be in such excessive quantity as seriously to retard the development of a country. The settlers of the Atlantic Coast had a fearful contest with the solid belt of timber, six or eight hundred miles wide, which met them, like *chevaux de frieze*, at every point. There were no open glades ready for the plow, no parks with stately trees so far apart that grass grew as high as a man's head, as in California. When the immigration reached the open prairies, a few miles across, inviting the plowman to immediate work, the settlers' joy was unbounded.

A Scarcity of Timber.

But as they went farther west, the open glades became larger; the timber thinned out until the groves became a day's ride apart, and finally ceased altogether. It was too much of a good thing. Even in Kansas, the settlers who were in advance of railroads had to dig holes in the hill-sides for dwellings; hence the significant and ominous name for a home—"dugout." There was no timber for fuel. Cornstalks, and even the corn itself, were used to warm the houses. The writer well recollects cooking a scanty breakfast with cornstalks for fuel, while crossing the *wilds* of Iowa on the way to California in 1850.

During the past winter the thermometer went fifty degrees below zero in Dakota and Montana, and no timber within hundreds of miles. The building of homes in such a country, however fertile the soil, must be attended with serious difficulties, especially in a land of blizzards. No wonder people freeze to death in their beds.

California Well Supplied.

All of California north of the thirty-sixth parallel is well timbered, or within easy reach of lumber. The Sierra Nevadas from the base to the summit furnish the finest pine timber to be found in the world. The sugar pine is without a peer. It rises in a straight, tapering shaft, symmetrical as a column of the Parthenon, a hundred feet, without a knot or limb. A large variety of other pines, firs, and spruces of immense size affords and inexhaustible supply of lumber for all domestic uses. At the base of the Sierras the pine gradually gives way to a great variety of oaks, including the evergreen live-oak. These do not grow in a dense wood as in the Eastern States, but in the shape of a well-cared-for park. The greater portion of it is so open that carriages may be driven anywhere. This oak timber is brittle, inelastic, and of little economic value except for wood. Scattered over the alluvial plains, it adds much to the general beauty of the country.

The Redwoods.

The Coast Range of mountains has its valuable timbers as well as the Sierra Nevadas, though the varieties are entirely different. The pine is represented by but one or two useless varieties, giving place to the *Sequoia Sempervirens*, a close relative of the *Sequoia Gigantea*, or Big Tree family, found only in a few groves along the Sierras and said to be the largest trees in the world, some of them measuring thirty feet and upwards in diameter, and three to four hundred feet in height. Though not so large as the *Sequoia Gigantea*, the coast *Sequoia* is an enormous tree. The first Americans thought they were monsters. Compared to the trees of the older States they were. One man built a house and fenced in forty acres of land with a five-rail fence, all from one tree. Two hundred thousand shingles from a

single tree were not unusual. Some of the trees were fourteen feet in diameter, sound to the center, and a hundred feet to the firs' limbs. The lower part of the trunk, for ten or fifteen feet, usually settles upon itself, forming a curly grain, now much prized for finishing lumber, but formerly considered worthless. A high scaffold was built to cut the tree off above this swell.

COULD NOT BE HANDLED.

When the trees were felled they had to be blasted to pieces before they could be sawed. No saws were long enough; in fact, the logs could not be moved with any means at the command of the millmen. Then of what use was a twelve foot-wide plank except as a sample production of California?

The redwood, as the first settlers called this tree, from the reddish tint of the wood, is of free grain. It is not unusual to see split siding for a house, twelve feet long and a foot wide. It readily splits into posts, rails, pickets, stakes for grapes or any other purpose. It is inferior in strength to the pine, fir, or any of the soft woods, but has numerous oth r qualities which make it valuable. It is a common saying that it never rots. A post form ng the cross at the Santa Clara Mission, set in the ground seventy years ago, was perfectly sound when it was taken out, though the wind and weather had worn it nearly off above the ground. Fences built of it in 1850 are as sound as on the day they were erected. Houses will last generations, as far as decay is concerned. Being destitute of resinous matter, like that which prevails in the pine family, the redwood is not as inflammable. A house burns slowly, affording time for fire companies to get engines to work. The buildings in San Francisco are to a great extent constructed of redwood, to which fact San Francisco owes much of its exemption from devastating fires.

OTHER TIMBER.

The Coast Range abounds with numerous other valuable varieties of timber, such as the fir, spruce, cypress, madrone, etc. Excepting the last, they are all soft woods, relatives of trees of the same name in the East. They make good flooring and dimension timbers, being stiff and strong, but are not used to any extent for finishing lumber.

The madrone is a slow-growing evergreen, with irregular trunk and spreading top. The wood has about the texture of the sugar maple, is of a dark, rich color, and takes a fine finish. It is coming into use for furniture and fine finishing. The laurel, or pepper tree, is also a hard, elegant wood with about the same uses.

The reader will observe a scarcity of timber suitable for wagons and machinery. The want of it is seriously felt. The Puget Sound firs are strong enough for car building, also for some agriculture machinery, but nowhere is there anything equal to the oak or hickory of the Eastern States. At present all are imported. Even the oak staves for wine casks are brought over the Rocky Mountains.

THE EUCALYPTI.

Our only hope is in growing imported varieties. The locust flourishes well, as do varieties of the walnut and hickory, but our main reliance for hard wood timber is on the eucalypti, a family of about fifty varieties, some of which are equal to any of the Eastern hard woods. The *Eucalyptus Globulus* (blue gum) promises to be eminently useful. It is a rapid grower, adding two inches to its diameter and several feet in height each season. Some of the trees planted as ornamental trees twenty-five years ago are now four feet in diameter, with three good saw log cuts on the trunks. The wood is hard, tough, fine-grained, and said to be the strongest timber of its weight known; but as its grain interlaces, preventing its being split into rails or shingles, it is rather unpopular. They are not suitable for ornamental trees Being such vigorous growers, they are of necessity gross feeders, absorbing all plant food within fifty or sixty feet but are excellent forest trees. The tall, plume-like trees, a hundred feet or more high, have become quite a feature in the landscapes of San Jose. Nothing can be more stately than a eucalyptus grove fifteen or twenty years old. Every farmer with twenty acres of land should give one acre to a grove of these trees. It will insure him wood for the next hundred years.

IT seems to be conceded by good authority that elasticity is a property of young wood, and the greater the exposure the greater the elasticity.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

BUILDING PROPOSALS.

Plans and specifications for the building of the University of Arizona will be received at the office of the Board of Regents, at Tucson, A. T., until Monday, May 2, at 10 A. M.

The design for the buildings must comprise within its scope, plans and specifications to include (under the law) accommodations for the following departments:

1. The department of science, literature and the arts.
2. The department of theory and practice and elementary instruction.
3. The department of agriculture.
4. The normal department.
5. The department of mineralogy and school of mines.

The Regents desire plans and specifications, which will provide for all these departments, and which will constitute a complete university, modeled upon the most approved methods, comprising in architectural design all the latest improvements in mechanical skill that will add to the comfort and convenience of pupils and the advantage for proper training.

It is the intention of the Board of Regents to inaugurate this enterprise by the erection of a single building or portion of a building at present, as the funds now on hand are only sufficient for that purpose. They desire that this first building shall serve as a model for all the others to be erected.

It is the intention to devote the funds now on hand for the establishment of a school of mines and when the plans and specifications have all been received and a selection made, it will then be determined which of the buildings included in said plans and specifications will be the most suitable for the department of mineralogy and school of mines, and the work of constructing this building will then begin.

All the buildings are to be of stone or brick, and to be built upon a plan most suitable for this climate, and with a view to their substantial and permanent character. The Regents desire to call special attention of architects to the necessity of providing means for the greatest shade around the buildings to protect the occupants from the great heat and light consequent upon the hot, dry summers of Arizona. They should be erected upon a plan which will admit of their future enlargement without destroying their architectural beauty and design.

The amount to be used for the building now under consideration cannot exceed the sum of twenty thousand dollars ($20,000).

The amount of $500 will be paid for the design accepted by the Board, reserving to itself the right to reject any or all plans and specifications submitted.

CHARLES M. STRAUSS,
Secretary.

IMITATING ROSEWOOD.—Various methods have been devised for treating the surface of certain woods so as to produce imitations of choicer varieties. Some of the most attractive work in this line, however, is made by simply spreading on the surface of the material a concentrated solution of hypermanganate of potassa, this being allowed to act until the desirable shade is obtained. Five minutes suffice ordinarily to give a deep color, a few trials indicating the proper proportions. The hypermanganate of potassa decomposed by the vegetable fiber with the precipitation of brown peroxide of manganese, which the influence of the potassa at the same time sets free, fixes in a durable manner on the fibers. When the action is terminated, the wood is carefully washed with water, dried, and then oiled and polished in the usual manner. The effect produced by this process in several woods is remarkable. On the cherry, especially, it produces a beautiful red color which resists well the action of air and light, and on other woods it has a very pleasing and natural effect.

QUARTER-SAWED lumber has become so popular with customers throughout the country that a great many mills are devoting considerable attention to that class of work.

A List of Mechanical and Architectural Works

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The amounts given below are the Publishers' Cash Prices. We intend to reduce our stock, at present the largest of its kind in California, and therefore make the accompanying liberal offer.

Select any work from the list, deduct one-seventh of the price given, forward us the money, and by return mail you will receive the book or books selected, with charges prepaid.

Bound Volumes of the California Architect and Building News, 1880 to 1886, $2.00 each.

Street, Store and Bank Fronts,	$2 50
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American House Carpenter,	5 00
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Mechanics' Geometry,	4 00
Artisan,	5 00
Detail Cottage Architecture,	10 00
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Album of Mantels,	8 00
History of Architecture,	15 00
Building Superintendence,	3 00
Buck's Architectural Designs,	50
American Cottage Homes,	3 00
Village and Country Homes,	5 00
Science of Carpentry,	4 00
Universal Assistant,	2 50
Plaster, How to Make it,	1 00
Shavings and Sawdust,	1 50
Lumberman's Hand-Book,	2 00
Practical Geometry,	1 00
Practical Perspective,	5 00
Woodward's Country Homes,	1 50
Woodward's Farm Homes,	1 00
Woodward's Graperies,	1 00
Manual for Furniture Men,	1 00
Landscape Gardening,	1 50
Common-Sense Church Architecture,	1 00
Painter, Gilder and Varnisher,	1 50
How to Paint,	1 00
Architects' Companion,	2 50
Model Homes,	1 00

Hand Railing and Stair Casing,	1 50
Drawing for Carpenters,	1 75
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" " Cabinet Makers,	1 50
" " Stone Masons,	1 50
Building Construction,	1 25
Linear Drawing,	1 25
Cutting Tools,	1 50
Cumming's Details,	5 00
Carpenter and Joiner,	7 50
Stair Builders' Guide,	3 00
Drawing and Shading,	1 25
Carpenters' Manual,	50
Steel Square Problems,	1 00
Work Shop Companion,	35
Bound Volume California Architect,	2 00
Specifications,	50
Barn Plans,	1 50
Solution Pyramid Problem,	1 50
Standard Scroll Book,	2 00
Swiss Cottage,	2 50
Every Man His Own Mechanic,	3 50
Tredgold's Carpentry,	7 50
Builders' Companion,	1 50
Builders' Work,	5 00
Builders' Construction, (Three Volumes, Very Fine)	14 00
People's Cyclopedia, (three large volume,)	20 00
Homes for the People,	2 00
Mural Painting, (New)	3 00
Home Hand-Book,	10 00
Ruskin's Works, (four volumes)	6 00
Industrial Drawing for Carpenters,	2 00
Limes, Cements and Mortars,	4 00
Wonders of Art,	1 25
Architecture and Building,	3 50
American Cottage Building,	3 50
Windmills, by Wolff,	3 00
Illustrated Drawing Book,	1 00
Hand-Book of Legendary Art,	3 00

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COUNTRY
BUILDING INTELLIGENCE

Alameda.

REAL ESTATE AND IMPROVEMENTS.

The construction of a five-room cottage for Mr. Godfrey has been commenced on St. Charles Street, near Railroad Avenue.

A small cottage is being built on Taylor Avenue, near Prospect Street.

The construction of a six-room cottage for Col. J. W. Hawkins was commenced last week, on San Jose Avenue, near Walnut Street.

Mrs. A. Painter will build a six-room cottage on Regent Street, near San Jose Avenue, work to be commenced on the building this week.

Peder Hundrup is building a four-room cottage on the corner of Everett Street and Blanding Avenue.

A seven-room residence, to cost about $3,500, is being built for Mr. Lainer, on Kings Avenue, west of St. Charles Street.

An addition has been added to the rear of the skating rink building, on Lincoln Avenue. The two stores in the building will be converted into a laundry.

N. K. Holinquist is about building two cottages on Second Street.

A two-story brick building will soon be erected by Mrs. Nellie Liese, on Park Street.

The following parties are all contemplating building in the near future: John Gale, R. Harvey, P. A. Markson, Mrs. M. L. Troost, John Anderson, F. Foote, C. Radgwill, and many others.

Astoria.

The Truckee Lumber Company will soon erect a large saw-mill near this place.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Auburn.

J. J. Smith is erecting a cozy cottage.

Byron Springs.

L. R. Mead intends to enlarge the hotel at this place.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

East Oakland.

Fifth Avenue and Tenth Street. Repairs. Owner, C. Kirk; architects, J. J. & T. D. Newsom. Day work. Cost, $1,500.

Fresno.

W. H. McKenzie will erect a handsome dwelling.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Geo. W. Meade will soon commence the erection of a building 150x250 feet, two stories high.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

G. L. Bradley will erect a large brick building.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

J. W. Ferguson will begin the erection of a two-story brick building in the course of a month.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

It is proposed to erect a $25,000 brick building for school purposes.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

A new Presbyterian church will shortly be erected at this place.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Gilroy.

George E. Hersey is making extensive improvements to his property; J. Lenzen & Son being the architects.

Healdsburg.

The Episcopalians are preparing to build a new church.

Los Angeles.

R. Dunnigan is preparing to erect a three-story brick building on Buena Vista Street, near Bellerue Avenue.

Napa.

W. A. Brown is about to build a one-story frame, at a cost of $2,000. J. Marquis is the architect.

Oakland.

Chas. Mau is building a house on Filbert, near Fourteenth. Cost, $4,000. Day work.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Brush, between Twenty-second and Twenty-third, Oakland. Owner, John Winter. Contractor, Toohig & Moore. Architect, Chas. Mau. Cost, $3,773 (except sewer and mantels).

Brick building. Owners, A. J. Snyder and J. Woener. Contractor, brick work, Remillard. Carpenter, W. Winnie and R. Murray. Architect, Chas. Mau. Cost, $9,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $2.00.

Pacific Grove.

The new hotel building at this place will be in size 100 x 142 feet, three stories in height. Work was begun on the foundations the latter part of February.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

Portland, Or.

Dr. Glisan is to erect three residences on Eleventh and B Streets.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Port Hadlock, W. T.

A large saw-mill is being erected at this place. Also a warehouse.

Steel Square Problems, for $1.00.
Work-Shop Companion, for 35c.

Redlands.

W. C. Butler is about to erect a $3,000 dwelling.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Messrs. Owen & F. S. Hale will also soon build commodious dwellings.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

Riverside.

Over $5,000 has already been subscribed towards a new church for the use of the Episcopalians.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

The Catholics are also preparing to erect a large church.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Mr. Turner is putting up a two-story brick building.

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

Colburn & Myers are having erected a brick building.

Album of Mantels, for $8.00.
History of Architecture, for $15.

The contract has been let for a two-story brick building, 125 feet front.

EACH SUCCESSIVE NUMBER WILL BE COMPLETE IN ITS BUILDING REPORTS.

R. B. Taylor will soon commence the erection of a two-story brick building.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Messrs. Rich, Woodall, Bohman, and others are all contemplating building.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

G. Lyon contemplates the addition of another story to his brick building.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Sacramento.

Dr. G. L. Simmons is making extensive alterations to the brick building on J. Street near Second.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

St. Helena.

J. C. Mixon has secured the contract for the erection of a house and barn for G. Stein.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

San Jose.

Henry French is building a two-story brick house. Architects, J. Lenzen & Son; contractor, P. R. Wells. Cost, $8,500.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Maurice O'Brien has let the contract for a one-story brick building to G. E. McDougall. Architects, J. Lenzen & Son. Cost, $4,000.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

J. H. Kohlhaner is building a one-story frame for P. Reen. J. Lenzen & Son, architects. Cost, $4,500.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

George Hobson, owner; J. Lenzen, architect, J. Davis, contractor, for a $1,300 cottage, on Hobson Street.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

C. Curdts is about to build a one-story frame. Owner, C. Oner; architects, J. Lenzen & Son. Cost, $2,000.

H. L. Hirsch is building a one-story cottage on corner of Orchard and San Carlos Streets; Theo. Lenzen being the architect; A. J. McIlwain the builder.

Artisan, for $5.00.
Builders' Guide, for $2.00.

On San Carlos Street, T. J. Gillespie is erecting a two-story cottage. Theo. Lenzen, architect. It is built by day's work.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

R. Wiltz is having built a two-story dwelling with barn attached, at a cost of about $5,000. Theo. Lenzen, architect.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

U. Wood is erecting a large house on Second Street.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

San Rafael.

The Tamalpais Hotel, lately partly burned, is being repaired at a cost of about $1,250. Huerne & Everett are the architects; F. Buckey doing the work.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

Santa Cruz.

J. S. Green has contracted with Kaye, Knapp & Company to erect a two-story building on Beach Hill. Cost, $2,240.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Santa Rosa.

J. Hall is erecting a two-story building near town.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Allen & Bryant are erecting a building; Simpson & Roberts being the contractors.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Seattle.

Many new buildings are going up at this place.

Practical Perspective, for $5.00.
Woodwards' Country Homes, for $1.50.

Robert Abrams is preparing foundations for a large building.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

H. H. Lewis is contemplating the erection of a row of houses on corner of Third and James Streets.

Architecture and Building, $3.50.
American Cottage Building, for $3.50.

Kerns Brothers have secured the contract for grading, bridging, etc., for five miles of the Seattle, Lake Shore & Eastern Railroad.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

SAN FRANCISCO BUILDING NEWS.

A

Ashbury, cor. Frederick. One two-story frame; one one-story frame.
O.—Mrs. E. F. De Long.
A.—C. I. Havens.
C.—F. W. Kern.
$8,000.

B

Broderick, nr. Golden Gate Avenue. Two-story frame.
O.—S. W. Collins.
A.—Townsend & Wyneken.
C.—N. Churchhill.
$1,800.

Bush, nr. Jones. Three-story frame.
O.—Mrs. Maria Sjoholm.
A.—Geo. E. Voelkel.
C.—J. H. McKay.
$8,000.

C

Clementina, bet. Eighth and Ninth. Two-story frame.
O.—Wm. Feehan.
A.—J. J. Clark.
C.—C. E. Dunshee.
$2,500.

Clay, bet. Front and Davis. Additions.
$500.

Cortland Avenue, cor. Wool. One-story frame; two-story barn.
O.—J. G. Fair.
C.—Treadwell & Thompson.
$6,000.

Cortland Avenue, nr. Wool. One-story frame.
O.—J. Johnston.
$1,500.

Cortland Avenue, nr. Wool. One-story frame.
O. J. S. Woods.
$1,500.

D

Devisadero, nr. Haight. Two two-story frames.
O.—A. E. Marchand.
A.—S. Hatfield.
$8,000.

Devisadero, bet. Sutter and Bush. Two-story frame.
O.—B. Dinkelspiel.
A.—C. Kenitzer.
C.—F. W. Kern.
$3,500.

E

Elgin Park, bet. Ridley and Herrmann. Two-story frame,
O.—J. T. Mahoney.
A.—M. J. Welsh.
C.—T. Sullivan & D. Hartnett.
$3,250.

Eddy, No. 1128. Two-story frame.
O.—A. Marks.
A.—P. R. Schmidt.
C.—H. Keenan.
$7,000.

F

Fair Oaks, bet. Twenty-second and Twenty-third. Two-story frame.
O.—F. L. Zipp.
A.—C. I. Havens.
C.—A. Klahn.
$3,700.

Fifth, nr. Bryant. Three two-story frames.
O.—Korbel Bros.
C.—Munster.
$4,000.

Fifth, nr. Mission. One-story frame.
O.—Mrs. M. Meyer.
C.—W. Zehfup.
$750.

Fremont, nr. Market. Brick additions.
O.—G. W. Gibbs.
A.—E. R. Swain.
C.—Riley & Loane.
$5,500.

G

Golden Gate Avenue, bet. Polk and Van Ness Ave. Two two-story frames.
O.—D. Breslau.
A.—W. Mooser.
C.—J. H. McKay.
$7,000.

Geary, bet. Jones and Leavenworth. Two-story frame.
O.—Dr. Richter.
A.—P. R. Schmidt.
C.—W. T. Commary.
$12,500.

H

Herrmann, bet. Webster and Fillmore. Two two-story frames.
O.—A. T. Winn.
A.—H. T. Bestor.
C.—I. P. Kincaid.
$3,000.

Hyde, bet. Clay and Washington. Frame buildings.
O.—Mrs. C. Hirshfeld.
C.—A. Jackson.
$12,000.

Hayes, nr. Polk. Additions.
O.—Heckersheimer.
C.—A. McDonald.
$700.

Holly Park, nr. Mission. One-story frame.
O.—F. Gonzales.
C.—G. W. Graham.
$1,200.

Howard, nr. Sixteenth. Brick building.
O.—C. Spreckles.
A.—
C.—C. L. B. Jones.
$9,000.

WE WANT A BUILDING CORRESPONDENT IN EVERY TOWN IN THE STATE.

L

Laidley, nr. Mercedes. One-story frame.
O.—Forster.
$500.

M

Market junction Valencia. One-story frame.
O.—Hotaling.
A.—W. Mooser.
C.—Farrell & Bell.
$4,000.

Mission, bet. Twentieth and Twenty-first. Additions.
$1,000.

Market, nr. Eighth. Additions.
O.—W. Cronan.
$500.

Mission, nr. Fourth. Alterations.
O.—J. W. Wilson.
A.—R. H. Daley.
C.—Wessinger.
$2,000.

Mission, nr. Fifth. Three buildings. Alterations.
A.—O'Connor.
Mason—Dunbar.
Carpenter—R. McCann.
$15,000.

Mission, bet. Twenty-first and Twenty-second. Four two-story frames.
O.—N. W. Cole.
A.—Miller & Armitage.
C.—F. W. Kern.
$12,000.

Mission, nr. Twenty-eighth. Two-story frame.
O.—Wm. Byrnes.
A.—M. J. Welsh.
C.—L. Frichette.
$2,250.

Mission, nr. Thirtieth. One-story frame.
O.—J. Gibeau.
$750.

Mission, cor. Cortland ave. Improvements.
$500.

McAllister, bet. Webster and Buchanan. Three-story frame.
O. J. McCormack.
A.—C. J. Devlin.
C.—McDonald.
$8,500.

Minna, bet. Tenth and Eleventh. Two-story frame.
O.—P. Brady.
C.—McDonald.
$3,000.

Main, bet. Market and Mission. Three-story brick.
O.—R. R. Thompson.
A.—W. Patton.
C.—R. Smilie.
$50,000.

O

O'Farrell, nr. Octavia. Two-story frame.
O.—Mrs. A. Raphael.
A.—S. and J. C. Newsom.
C.—Moore Bros.
$6,000.

Old Mission Road. One-story frame.
O.—Mrs. Cassidy.
$500.

P

Pacific Avenue, cor. Fillmore. Two-story and attic frame.
O.—Susan A. McGlauflin.
A.—J. Marquis.
C.—J. Wilcox.
$14,000.

Post, nr. Taylor. Three-story frame.
O.—J. Meyer.
A.—H. D. Mitchell.
C.—G. H. Walker.
$6,000.

Pleasant, bet. Taylor and Jones. Two-story frame.
O.—E. R. Warner.
A.—G. E. Voelkel.
C.—Johnson & Turner.
$1,600.

Post, nr. Pierce. Two-story frame.
O.—J. C. Weir.
A.—J. C. Weir.
C.—J. C. Weir.
$7,000.

Pacific, cor. Larkin. Two-story frame.
O.—H. Grimm.
A.—Copeland & Banks.
C.—W. Pluns.
$5,000.

Pierce, nr. Sutter. Two-story frame
O.—Tripulture.
C.—R. Currie.
$5,000.

Pacific, cor. Mason. Alterations.
O.—J. H. Hienmann.
C.—T. G. Fritts.
$2,000.

Pacific, nr. Mason. Five two-story frames.
O.—J. H. Hienmann.
C.—T. G. Fritts.
$10,000.

R

Ridley, nr. Guerrero. Two two-story frames.
O.—Owen Keenan.
A.—T. J. Welsh.
C.—J. W. Wessinger.
$8,000.

Richland Avenue, nr. Mission. One-story frame.
O.—Mrs. A. E. Lewis.
$1,500.

Richland Avenue, nr. Mission. One-story frame.
O.—Archibald.
$1,500.

Richland Avenue, nr. South Avenue. One-story frame.
$600.

Richland Avenue, east of South Avenue. One-story frame.
$800.

Ridley, cor. Guerrero. Two-story frame.
O.—Danl. McMillan.
A.—
C.—T. H. Day.
$8,000.

Ritch, bet. Brannan and Townsend. Two-story frame.
O.—Morgan & Co.
A.—C. V. Pierce.
C.—J. Bruce.
$3,250.

S

Sutter, No. 120. Store fitting.
C.—Mahoney.
$3,000.

Sacramento, nr. Leavenworth. Alterations.
O.—Miller.
$1,500.

T

Treat Avenue, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O. and B.—S. R. Doyle.
$4,500.

Twenty-fifth, cor. Harrison. One-story frame.
O.—J. Wheeler.
C.—Hopper.
$1,500.

Third, bet. Brannan and Townsend. One-story brick.
O.—Morgan & Co.
A.—C. V. Pierce.
Mason—Shain & McGuire.
Carpenter—J. Bruce.
$11,000.

Turk, nr. Buchanan. Tw -story frame.
O.—L. Levi.
A.—Townsend & Wyneken.
C.—J. Lennon.
$4,000.

Townsend, bet. Fourth and Fifth. Five one-story bricks.
O.—M. F. S. Hopkins.
A.—O. G. Moore.
Carpenter—J. T. Grant.
Mason—T. Whitehead.
$30,000.

V

Valencia, bet. Eighteenth and Nineteenth. Two-story frame.
O.—Chas. Meyer.
A.—John & Zimmerman.
C.—Adam Miller.
$4,500.

W

West Park Avenue, nr. Mission. One-story frame.
O.—G. L. Marshall.
$700.

West Park Avenue, nr Mission. One-story frame.
O. and B.—G. W. Graham.
$2,000.

West Park Avenue, nr. Mission, One-story frame.
O.—Geo. Crofford.
C.—Geo. W. Graham.
$1,000.

West Avenue, east of Mission. One-story frame.
$800.

RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd l ngths	19 00
" " second quality	16 00
" " selected	24 00
" " c ear except for Flooring	29 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 00
" " " other sizes, No. 1	34 00
" " " all " No. 2	27 00
" " Stepping, No. 1	40 00
" " " No. 2	30 00
Ship Timber and Plank, rough, selected,	25 00
" " " selected, planed, 1 side } average, 40 ft.	27 00
" " " " " 2 " } average, 40 ft.	29 50
" " " " " 3 " } average, 40 ft.	32 00
" " " " " 4 " } average, 40 ft.	34 00
Deck Plank, rough } average 35 ft	29 50
" " dressed } average 35 ft	34 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	0½
Lath, 1½ 4 ft., per M.	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M	20 00
Spruce dressed shelving, to 14 inches, per M	35 00
" " ½ inch " " "	35 00
" " wider, per M.	40 00

REDWOOD.

	Per M ft.
Rough Redwood, merchantable	$20 00
" " second quality	16 00
" " selected	24 00
" " clear	33 00
Dressed " common surface	22 00
" " ½-inch surface	28 50
" " No. 1	33 00
" " No. 2	26 00
" " T. & G., 1x6, 12 ft. and over, No. 1	30 00
" " " other sizes, No. 1	30 00
" " " 7 to 11 No. 1	26 00
" " " under 7 No. 1	23 00
" " Rustic, No. 1	33 00
" " " No. 2	28 00
" " T. & G. beaded, 12 ft. and over, No. 1	33 00
" " " " other sizes No. 1	33 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft.	0½
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split	13
Shakes, split, per M.	9 00
" sawed "	11 00

BUSINESS CHANGES.

David Salfield has moved to 339 Kearny. He has taken a partner; the firm's name is Salfield & Kohlberg.

E. R. Swain has retired from his profession as architect.

J. J. Clark has moved his office to room 70, St. Ann's Building.

Mr. O. G. Moore has united with Mr. Schulze in a professional capacity, and they will hereafter be found at 325 Montgomery Street.

ITEMS IN REGARD TO BUILDINGS IN THE COUNTRY THANKFULLY RECEIVED.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 4.

THE

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Full Page Inside	**One Insertion**	**40.0 0**

Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., APRIL 15, 1887.

Fate of the Amended Lien Law.

IT has not received the approval of his excellency, Governor Bartlett, and is therefore dead. The fond hopes of thousands of mechanics and material men are again blighted, and the abominations of the present law perpetuated for a period of at least two years longer. The Governor may experience no compunctions of conscience at the great mistake he has made, being perhaps ignorant upon the many vital points and features involved in the law and its working, but if he could be induced to listen to the honest, heart-felt opinions and views as expressed by a congregation of ninety-five per cent of *all* those affected by his failure to do the right thing,—sign the amended bill,—*he* would be as regretful at his mistake as *are* the thousands who felt sure that the present legal monstrosity would have been virtually eliminated from the statute book by amendments possessing some reasonable degree of justice, equity, and fairness.

But the deed is done, and cannot be recalled, and the whole building fraternity, mechanics and material men alike, must settle down to a realization of the serious and grievous fact that for at least two years more the heavy and *hurtful* manacles of a bad lien law must be worn. It may be that his excellency had not the time to give the amendments due consideration; or, being unadvised, and not understanding the evils and hardships imposed by the present law, he failed to recognize the necessity for any amendments; or, not having studied the law as it is, he did not comprehend the fact that the present lien law of the State of California is one of the worst conglomerations of legal error and outrage to be found among the law books of the States of the Union combined.

We have not the slightest idea that the Governor was influenced to permit the amendments to go to their death for want of an executive prescription by any other motive than that of not time to consider, or ignorance of, or non interest in, the important measure before him.

Its pretenses to protection of rights are simply farcical, as back of these, and underlying the material features of the law, there are most serious and injurious provisions, which jeopardize tens of thousands of dollars to every one hundred protected. And the more serious feature of the case is that the greater hardships are imposed upon those the least prepared to endure them,—contractors and small contractors,—while in fact *not a single individual* is to any extent benefited or made more secure in his rights by reason of the tangled and unjust conglomeration of impractical notions, put together for *special* purposes, and by legislative enactment made a law of the State.

We are warranted in the assertion that the present law was "put through" without any investigation of its merits by the Legislature assembled. It was received from the committee to whom it was referred, and they being influenced and persuaded by those at the time favoring the *new experiments* contained in the law, reported favorably upon the amendments culminating in the passage of the law as it is, and the Legislature as a body accepted the recommendation of the committee, without questioning the wisdom or rightness of their recommendations, and made the thing recommended a law of the State.

Even those most earnest, and who made themselves personally interested in the passage of the law as it is, became, by the two last past years' experience, and the loud, long, and universal denunciations of those whose just rights and equities have been so materially compromised, convinced that amendment and change were necessary, and met in council with the representatives of the building interests, both material men and mechanics, and joined in perfecting and recommending the amendments which the executive has permitted to expire by limitation without his signature. Consequently, the Governor of the State, perhaps entirely innocently, has committed a great error, through which no rights or interests are secured or benefited, but severe inconvenience, financial risks, and many difficulties imposed upon every man engaged in the building business,—owners, material men, and builders, alike. A present discussion of the hardships and errors contained in the law as it is, and the interpretation given by the courts and legal fraternity, would serve no good purpose, as the demise of the amendments passed by the late legislative body, for want of the Governor's signature, ends all chance for relief until the next assembling of the law-making body, when, it is hoped, the many who are inconvenienced and hurt by the present law will take the matter in hand at an early stage of the Legislature, and see to it that wise amendments are substituted, by which all reasonable and right protections will be extended to all parties, and the onerous and unjust exactions of the present law removed.

The matter of the *dead letter* amendments was taken in hand at too late a day in the session, and fell through, not upon merit or demerit, but, being in the "last batch" of bills presented to the Governor for signature, shared a common fate,—failed for want of executive attention,—a small matter so far as those wholly disinterested are concerned, but a serious one to those who will be compelled to endure its provoking iniquities two years longer.

Building Record for April.

OUR report this month is very satisfactory for this season of the year. Prospects ahead are very encouraging. The only drawback to a successful building season, is the greed of the material men in raising the prices of their wares to the greatest limit to which the dear public's pocket can be strained.

During the month there has been commenced—

6 brick buildings, valued at		$173,500
77 frame "	"	431,850
17 alterations	"	31,450
100		$636,800

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

DEATH OF LEVI GOODRICH,

Pioneer Architect of Santa Clara County.

ON Saturday evening, April 2, Levi Goodrich, a prominent member of the architectural profession on this coast, passed away to meet the great Architect of the universe above. Mr. Goodrich was one of the best-known citizens of Santa Clara County, and his death will not only be mourned in the garden city, but many other towns will sadly miss his genial face. Although a very large man, he has enjoyed comparatively robust health up to about one year ago. Steady application to a large business commenced to show its effects, and he was compelled to seek recreation. While visiting San Diego in a laudable effort to recruit his weary frame, he was overtaken by a stroke of apoplexy that caused his death in a short time. We are indebted to Bro. H. H. Main, of the San Jose *Herald*, for the following account of Mr. Goodrich's career:—

"Levi Goodrich was born in New York City on the first day of January, 1822. In his youth he acquired the trade of a carpenter and builder in Massachusetts, but subsequently went to New York and entered upon the study of architecture, which was also the profession of his father. He followed that pursuit in New York till 1849, when he sailed for California in the ship *Loochoo, via* Cape Horn, and arrived at San Francisco on September 16 of the same year. Immediately upon his arrival he began the practice of his profession. In fact, before he left the vessel he was called upon to draw plans and specifications for a three-story wooden building, which was erected on what is now the corner of Kearny and Washington Streets, where the old Hall of Records stands. On November 30, 1849, he came to this country in a small sailing craft to Alviso, the trip consuming three days and two nights. From Alviso he walked to this city. He soon began work, however, and there are in this and neighboring counties many monuments of his architectural skill. In 1850 he erected the adobe building which formerly stood on the site now occupied by the store of T. W. Hobson & Co., on West Santa Clara Street. From that time to within a year ago he has been engaged in business here. Among the principal buildings for which he prepared the plans are the Court House, county jail, the First Presbyterian church, three public schoolhouses, the Bank of San Jose, the old and the new State Normal School buildings, Knox Block, Martin's Block, the College of Notre Dame, the new buildings at the University of the Pacific, and many others. He was also the architect of the Court Houses and jails of Monterey and San Diego Counties. During the period of his residence here he twice visited Europe for pleasure and study. Several years ago deceased married Mrs. S. L. Knox. About a year ago he retired from business, being succeeded by his only son, E. B. Goodrich, and G. W. Page. Subsequently E. B. Goodrich left here for the East, where he now is.

"It is about a year ago that the health of Mr. Goodrich began to fail. His physician then reported that a blood-vessel in his brain had probably burst. Since that time his condition has been watched by his family and friends with apprehension."

Mr. Goodrich was a prominent member of San Francisco Chapter, American Institute of Architects, and a most hearty supporter of the CALIFORNIA ARCHITECT.

The Future Cost of Building.

WITH the late rise in the price of building materials, particularly lumber and brick, increase in cost of constructions must follow. To this must also be added the other material fact that contracts, as a rule, have heretofore been taken at too low a figure, and hundreds of *pro ratio* settlements have resulted, by which owners have been benefited. But the universal sentiment of material men and competent contractors against the class of men who go about seeking whom they may devour, *i. e.*, those who undertake work at unwisely low figures, knowing in the premises, so far as they know anything, that it will be impossible for them to execute their undertaking and pay their bills, together with the fact that, as it now appears, there will be enough for all at paying prices, will largely diminish the number of the reckless, don't-care class, and more jobs will fall into the hands of right men, and, as a consequence, in this direction cost of building will advance.

These three things, increase in price of lumber and bricks, and improvement in contract values, must necessarily make buildings more costly for some time to come; yet not more so under the circumstances than the state of things will warrant.

The largest possible price to be obtained is a common rule and maxim of trade in all things, but too much largeness is likely to "kill trade." People generally are willing to submit to a reasonable amount of pressing, but when squeezed too much they are apt to demur—squeel a little. We hope it will not be so in reference to building materials and building matters in San Francisco this season, which now looks most cheering.

The State Booming in Every Part.

FROM every part and section of the State of California, there comes the echoes of boom—boom—boom; and as a matter of course, San Francisco is sharing largely in these grand outbursts and developments which are so rapidly advancing the Golden State to a prominence in the great sisterhood of States, which assuredly presages a condition of things at no distant day, along the present western confines of our great country, the magnitude of which no mortal man can now fully contemplate, nor human foresight comprehend or foretell.

The general law, commercial, agricultural and other interests everywhere abounding, are duly heralded in the daily journals, with but little exaggeration. A glorious era has dawned upon the Pacific Coast, and every portion of its vast limits is enjoying the cheering and refreshing influence of substantial prosperity. Money is abundant and seeking investment, and while thousands of enterprises are being prosecuted with beneficial and profitable results, others are being sought after, and men of energy and means not only stand ready to take hold of any new proposition that promises fair return, but are themselves prospecting—searching for new fields in which to plant largely and freely of their abundance. All of which pictures a beautiful future for every willing heart and hand, and opens up prospects for the working and laboring classes, never before more brilliant.

During more than a quarter of a century, this golden scion of the American Union remained in its incubating state, to a large extent incased in the shell of its own isolation, and hedged in by the prejudices of millions of our own people, and those of other nations, who refused to grant us more than a humble name and place among the civilized communities of earth; but time and the inevitable force of circumstances, and irresistible proofs of inherent resources and greatness, have brought around the period when these shells could no longer hold the gigantic life within, and this heretofore divided and much abused portion of the land of freedom and liberty stands forth in all the glory of its long-restrained grandeurs and resources; and eager thousands from every part of our own and foreign lands, are seeking its glorious climate, its soil, and its innumerable inviting and incomparable resources and advantages.

As a natural consequence under this state of things, millions upon millions of dollars are being expended in buildings and improvements of every description. Not a single competent building mechanic or architect is at most more than temporarily unemployed. In most parts of the State, although thousands of working people are rushing hitherward monthly, there is a demand for qualified workmen, and not only in San Francisco, but in other cities and places, proficient draughtsmen cannot be found to supply the demand for help in the offices of practicing architects.

The building reports appearing in each issue of this journal, furnish some criterion for judgment as to the immense volume of building operations, yet this with safety may be doubled or tripled within the actualities that exist. Nor is this spasmodic. There is the tone of permanency in it all, which presages continuance, and men of energy, activity and enterprise may safely contemplate measure of wealth in the future according to the degrees of wise judgment and prudent enterprise entered into. Folly and reckless adventure are ever the forerunners of loss and disappointment, but those who embark upon the present crystal stream of general prosperity, guided by caution, prudence and good judgment, may reasonably anticipate early and safe arrival at the port of financial success.

Getting Oil out of a Grindstone.

YOU can get the oil out of a grindstone if you will mix a pail of whiting and water to the consistency of thick cream. Move the grindstone near the stove, or where it can be made and kept as hot as its safety will allow. Give it a thick coat of whiting by spattering it on with a brush. It will soon get saturated with the oil. Then scrape it off, and repeat until it is all extracted.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

Mantel Bed, Opened.

THE Ideal Folding Bed is one of those sensible, convenient, and practical household necessities that appeal at once to the good-will of the intelligent housekeeper. It folds under a mantel board, can be entirely concealed by curtains, and is, when desired, detachable from the frame, and may be rolled, upon castors, to any portion of the room. The spring is of woven wire, is very durable and comfortable, and the entire bed folded with all of the bedding, occupies but fifteen by sixty-two inches.

Waifs from the World of Wood.

A CURIOUS geological phenomenon exists in the vicinity of Behring's Strait. At Elephant Point, Kotzebue Sound, a ridge two miles wide and 250 feet high seems to be a vast mass of ice, thinly covered with clay and vegetable mold. In this soil birches, alders and berry-bearing plants grow luxuriantly, with the stratum of perpetual ice as the underlying rock within less than a foot from their roots.

Nutmegs grow on little trees which look like small pear trees, and which are generally not over twenty feet high. The flowers are very much like the lily of the valley. They are pale and very fragrant. The nutmeg is the seed of the fruit, and mace is the thin covering over the seed. The fruit is about the size of a peach. When ripe it breaks open and shows a little nut inside. The trees grow on the islands of Asia and tropical America. They bear fruit seventy or eighty years, having ripe fruit upon them all the season. A fine tree in Jamaica has over 4,000 nutmegs on it every year. The Dutch used to have all this nutmeg trade, as they owned the Banda Islands and conquered all the other traders and destroyed the trees. To keep the price up they once burned three piles of nutmegs, each of which was said to be as big as a church. Nature did not sympathize with such meanness. The nutmeg pigeon, found in all of the Indian Islands, did for the world what the Dutch had determined should not be done, carried the seeds, which are their food, into all the surrounding countries.

The crop-destroying rabbit appears to be not the only animal plague of Australia. The decay of the forests is traced by Rev. P. Macpherson, of the Royal Society of New South Wales, to the opossums. After much investigation it was ascertained that a single animal would devour about two hundred leaves of the eucalyptus, or blue gum tree, in a night, proving that the 18,000 opossums killed annually in one county in Victoria were sufficient to destroy upward of thirteen thousand trees and lay bare a space of 700 acres, or more than a square mile.

The oldest tree in the world is said to be the cypress of Santa Maria del Tule in the Mexican State of Oaxaca. It is thought to have spanned the whole period of written history. Humboldt said that in 1801 it measured 42 feet in diameter, 146 in circumference and 282 feet between the extremities of two opposite branches.

By a new process of manipulation hats which it is claimed are more serviceable and finer than anything now on the market are made from wood pulp. They are impervious to water and not wanting in flexibility. It is claimed that felt hats will have to take a back seat as soon as the new hats can be placed on the market in sufficient numbers to supply the demand. They are certain to revolutionize the hatters' trade, as they can be moulded in any shape or style desired and colored to meet the taste of the public. They can be made to have a glossy or nappy appearance.

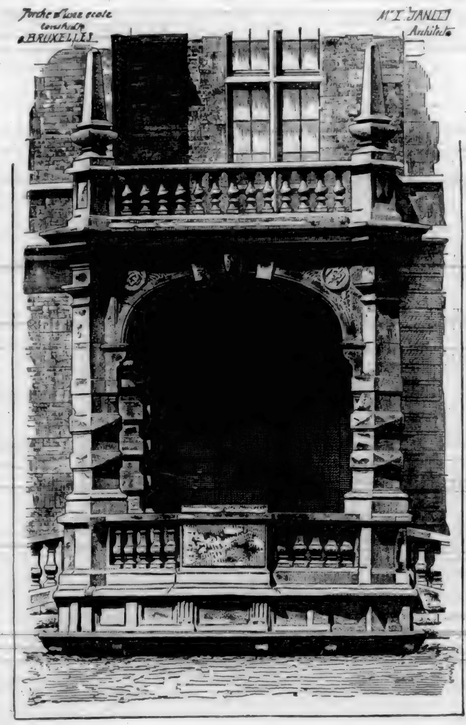
The largest tree in California is in Tulare County, and is 450 feet high, and the trunk is 138 feet in circumference. It is called the "Father of the Forest."

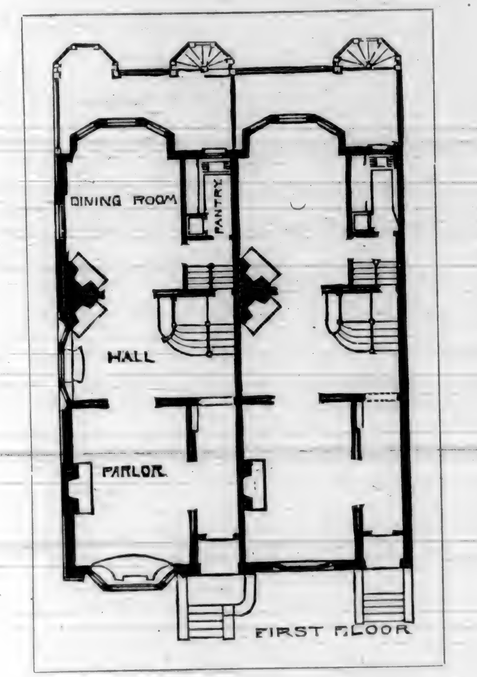
A marine alga of Arctic regions grows at a temperature far below zero, and its spores disappear at higher temperatures. It thus appears that intense cold is necessary to the existence of some forms of vegetable life, together with extreme dryness, and this class of plants includes the cryptogams of red snow.

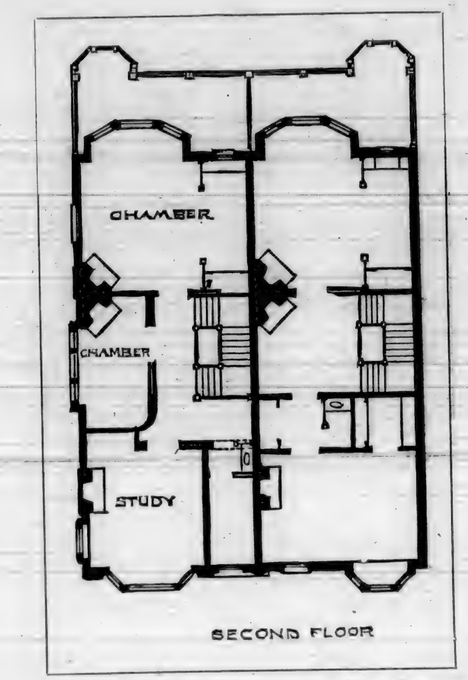
Mahogany is being rapidly introduced into every part of India where it promises to thrive. A single pound of seeds planted in green-houses in the southern districts have yielded between three and four thousand plants. It is thought probable that the world may some day look to India for its mahogany as well as its quinine, instead of America. The Indian product of the latter has already become so extensive and of such superior quality that the cinchona bark exports of the United States of Columbia are said to have fallen off 50 per cent in five years.

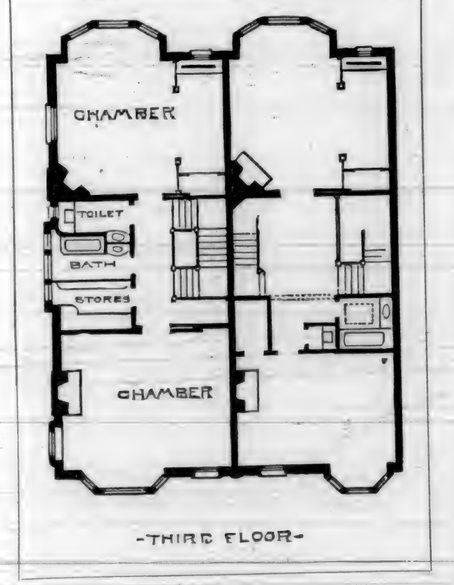
Vast arid and almost rainless tracts in Australia, according to Mr. Joseph Bosisto, of Victoria, are thickly covered with a dwarf eucalyptus, barely eight feet high. The stem of this shrub contains half a pint of water, which bushmen quickly obtain, yet inexperienced travelers often die of thirst.

In the arid regions of Egypt a French botanist, M. Volkens, has found roots twenty times as long as the part of the plant above the surface. On some of these desert plants the same observer has noticed a very curious moisture-absorbing contrivance. Glandular hairs put forth by the leaves yield a bitter crystalline liquid which spreads out at night and collects the dew. —*Lumber World.*









New Books Just Received.

ARCHITECTURAL STUDIES, PART VI., contains twelve designs for houses, costing from $500 to $2,500, shown on a large scale, giving perspectives, elevations, and plans, with which are given specifications, bills of materials, and estimate of cost. Price, $1.00.

SAME AS ABOVE, PART VII. Twelve plates, giving designs for interior wood-work and fittings for moderate cost houses, with full working details. Price, $1.00.

MODERN ARCHITECTURAL DESIGNS AND DETAILS. A few copies remain of this really good work. Price, $10.00.

DETAIL COTTAGE AND CONSTRUCTIVE ARCHITECTURE. Similar to the above in general design.

LEFFELL'S HOUSE PLANS. $3.00 post-paid.

SCIENCE OF CARPENTRY MADE EASY. Price, $5.00.

MECHANIC'S GEOMETRY, or the Science of Framing by the use of Card-board Models. $5.00.

We will send the California Architect for one year, *free*, to purchasers of either of the latter two works.

THE AURORA, a family magazine. Printed by Bacon & Co., San Francisco. With no "continued stories," clear type, exceptionally good reading matter, the *Aurora* recommends itself as an interesting family magazine. The price, for such first-class matter, is exceptionally low, being but $1.50 per year. The San Francisco News Co. is the general agent, to whom orders can be addressed.

Corrugated iron conductor pipes are better than tin. In the first place they will expand when filled with ice, without bursting, and in the second place outlast tin.

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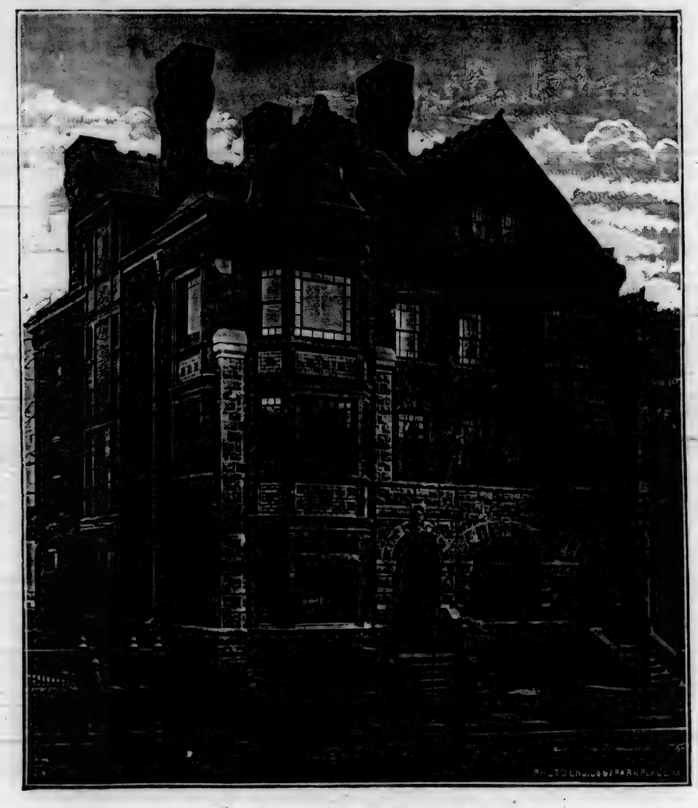


A Stylish Double Residence.

A Stylish Double Residence.

THE elevation shown, and the accompanying plans on opposite page, are well worth the study of those who seek for an attractive, stylish house, having all the modern improvements.

The unique and imposing character of the exterior is aptly illustrated by the illustration. The materials are brown stone, over burnt brick and terra cotta, harmoniously combined. The stoops and vestibules are paved with mosaic, and the side walls of the latter tiled to the ceiling. Broad piazzas run the entire width of the rear at the first and second stories.

The interiors are spacious and home-like in appearance. The doors, trimmings, floors, and all the wood-work on the first story are intended to be of antique American oak, enriched with teak-wood carvings. The woods to be employed in the upper stories are ash, cherry, white and yellow pine, with cabinet finish throughout. All the floors to be double and polished.

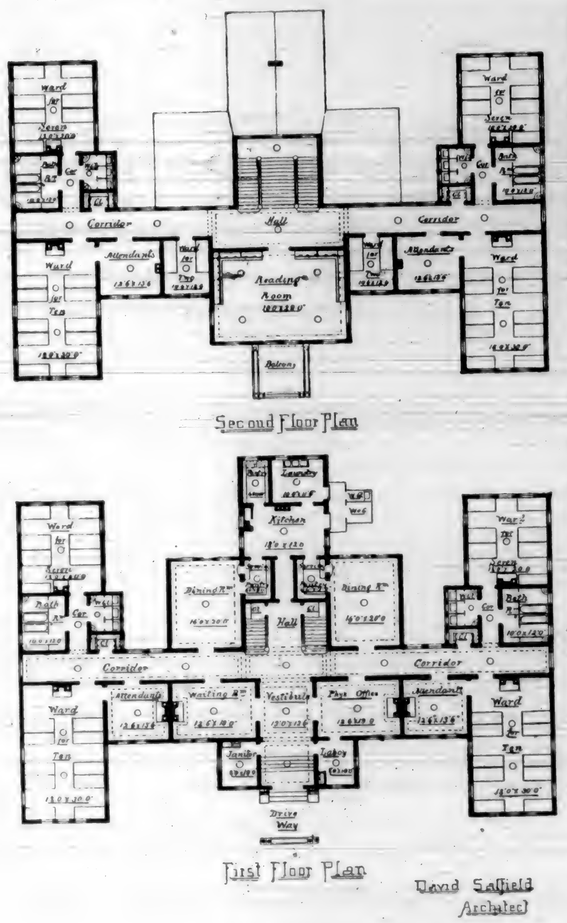
Original designs in old copper are to be used for interior hardware. All the fire-places and wash-stands are to be handsomely tiled. Especial care to be taken with the plumbing. Among the many features which can merely be mentioned are duplex furnaces, French ranges, porcelain washtubs, large ice closets, electric bells, speaking-tubes, and burglar alarms.

W. C. Taylor, architect, is the designer of the building. We are indebted to J. P. Hayward, of the *Real Estate Bulletin*, for the use of all cuts in connection with this article.

Introduction of Oil Painting.

FOLLOWING is a translated extract from the Italian work of Vasari as to the introduction of oil painting: It happened that John of Bruges, pursuing the art in Flanders, and much esteemed in those parts for his great skill, set himself to try different colors; and being a man who delighted in alchemy, he labored much in the preparation of various oils for varnishes and other things. Now it happened upon a time that after having given extreme labor to the completion of a certain picture, and with great diligence brought it to a successful issue, he gave it the varnish and set it to dry in the sun, as is the custom. But whether the heat was too violent, or that the wood was badly joined or insufficiently seasoned, the picture gave way at the joinings, opening in a very deplorable manner. Thereupon John, perceiving the mischief done his work, determined to proceed in future so that the same thing should never injure his work in like manner. And as he was embarrassed both by his varnishes and by the process of tempera painting, he turned his thoughts to the discovery of some material that would dry in the shadow, to the end that he need not expose his pictures to the heat of the sun. Accordingly, having made many experiments on substances pure and mixed, he finally discovered that linseed oil and oil of nuts dried more readily than any others of all he had tried. Having boiled these oils, therefore, with other mixtures, he thus obtained the medium which he, or rather all the other painters in the world, had so long desired.

He made experiments with many other substances, but finally decided that mixing the colors with these oils gave a degree of firmness to the work, which not only secured it against all injury from water when once dried, but also imparted so much life to the colors that they exhibited a sufficient luster in themselves without aid of varnish; and what appeared more extraordinary to him than all beside was that the colors so treated were much more easily united and blended than when a tempera. Rejoicing greatly over this invention, as it was reasonable he should do, John then commenced a multitude of paintings with which he filled all those parts, to the great delight of all who beheld them, as well as with very large gain to himself, his experience increasing from day to day, and his pictures constantly attaining to a higher degree of perfection.—*Painters' Magazine.*



Plan of Country Hospital.

Is It a Curse?

In 1840, says the *Age of Steel*, when there was no wood-working machinery worth mentioning in use, one person out of every thousand was a cabinet-maker or upholsterer. In the ten years following, wood-working machinery came largely into use. Now, if machinery is a curse to the mechanic, it must be because it deprives him of work or reduces his wages. But neither of these conditions followed the introduction of machinery; on the contrary, in 1850, in a population of 23,191,000, there were 23,522 furniture-makers, or one to every 985 people; and annual earnings had advanced 20 per cent. In 1860 the proportion of furniture-makers to population was the same as in 1850, but during the ten years wages had advanced so that whereas the mechanic (averaging all classes, including children) in 1850 earned $298 per year, in 1860 he was earning $327. Bringing the comparison down to the year 1882, the number of operatives had increased to one in 657 of population, and the average annual earnings of each operative had increased to $434.70. Of food products, a dollar will purchase as much now as it would in 1850, and a very much greater quantity of manufactured products; so the difference in annual earnings between 1840 and the present, considered relatively to its value—that is, its purchasing power—is enormous. It therefore appears that, as the use of machines has multiplied, the demand for operatives in the furniture industries has increased, and the annual wages have also increased about three-fourths.

Security Against Thieves and Tramps.

The Folding Gate and Guard Company are offering to the public a device for securing the entrance to their stores and dwellings, which should receive universal, public attention and favor. It is neat in design and general appearance, practical and safe in construction and application, and convenient for all the purposes for which it is intended.

Folding, as it does, into small compass, and being at all times accessible, it is preferable to those cumbersome appliances which require much handling and stowing away at the opening and closing of places of business, and affords perfect security against burglars and desperadoes, not of the most daring and aggressive class. In dwellings and places provided with this safe-guard, any door may be left wide open, and a full current of ventilation obtained, without danger of ingress by miscreants. They are worthy of the attention of every occupant of either store or dwelling, being alike applicable in all cases.

A GIANT MONOPOLY.

A Lumbermen's Organization on a Large Scale.

A Proposed Plan Which Will Give Control of the Trade in Redwood to a Syndicate, and Insure Immense Profits.

The redwoods of the Pacific are the only ones of that lumber on the face of the globe. Their area is 4,125 square miles. Government experts give the average feet of lumber to the acre at 50,000; practical lumbermen make it 100,000 feet. Some places, such as Eel River Valley, give half a million feet per acre. The total quantity is about 264,000,000,000 feet. Most of the land bearing this vast and valuable source of wealth is already in the hands of private capitalists, *i. e.*, the millmen, who have been quietly obtaining titles to large tracts. They at any rate control the avenues of approach to the redwoods, and may be considered masters of the situation. That such they consider themselves is evident, for within the past few days they have arranged so as to control the production, price and export trade in one of the most valuable lumber products of the world. The redwood is practically indestructible compared with other woods; does not take fire as readily, and can be polished till it looks to the eye like colored marble.

For a short time past all the leading redwood magnates of the coast have been in the city perfecting their organization. The proposed plan contemplates a depot on the other side of the bay, probably near Vallejo, where this lumber will be stored and dried. Here all cargoes will, it is said, come; hence it will be distributed throughout the interior, sold in the city, shipped East by railroad and exported abroad. What is intended for the lower coast will not, however, come here, but will be shipped direct. The plans are all perfected. The only thing that troubles the lumber magnates is that the provisions of the interstate commerce law will advance the rates on shipment East. The quantity to be handled here will be from one hundred to one hundred and twenty million feet a year.

This, however, does not give a proper idea of the value of the trade, and of the importance of the step taken. The total cut of redwood in 1887 was 228,769,251 feet, worth in San Francisco $5,000,000—reckoned at $20 per thousand for rough redwood. The price was advanced in 1886 $3.00 per thousand. It may be estimated that one-third of the $5,000,000 is profit. Another advance of $3.00 would add the modest little sum of say $750,000 in 1887 to the millmen's profits. This will be a great year for building all over the State, and the parties in this little combination can, if they make the advance, pocket a profit of say a million and a half dollars.

Scratching Matches on Paint.

A correspondent speaking of the defacement of paint by inadvertent scratching of matches, says that he has observed that when one mark has been made others follow rapidly. To effectually prevent this, rub the spot with flannel saturated with any liquid vaseline. "After that people may strike their matches there as much as they like, they will neither get a light nor injure the paint," and, most singular, the petroleum causes the existing mark to soon disappear, at least when it occurs on dark paint.

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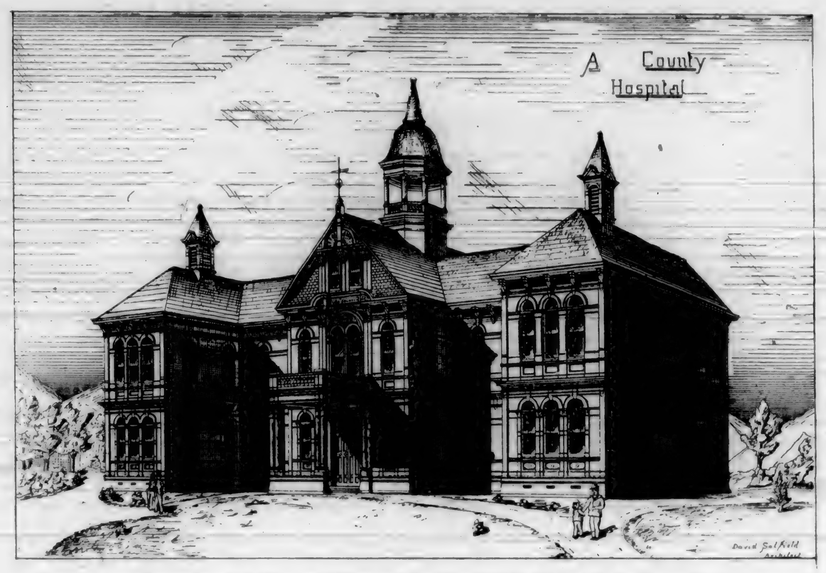

Design for a County Hospital Building.—D. Salfield, Architect.

Some Facts about Saws.

Cutting-off saws are the subject of much abuse, from the fact that the work required of them generally is not as fine as of splitting saws. It is not necessary that slabs be cut square or smooth; so the saw is not filed or set as regularly as board-saws. Further, there is not near the care bestowed on them that they should have. They are wrenched, twisted, and broken by the cheapest help that is employed about the mill.

Small and fine cutting-off saws for trimming finish lumber are better cared for; indeed, it is a necessity that they should be, to do the work so it will pass. Nevertheless, I wager that nine out of ten take double the power to drive them that is necessary, and one-half are so filed and set that the work is not smoothly done.

A saw, the teeth of which pitch both sides of the eye alike and set very little, may cut or wear away the lumber quite smooth, but at the expense of power and time.

The class of saws run by power, known as drag or butting saws, come in for an equal amount of abuse. The same may be said of "cross-cut" saws, for cutting mill logs and felling trees. Still further, that saw which is recommended as a cure for dyspeptics—the "buck-saw"—is most generally in a condition to induce the disease instead of curing it.

The carpenter's saw is mostly in better hands; for a carpenter is a mechanic, and comprehends the conservation of forces enough to know that a saw nicely filed and set takes less muscle and does the work more to his liking than the one that is badly filed and set. This class of saws is in good hands enough, so I shall say but little about them.

The principles of speed, tension, and causes of breakage from sharp corners filed at the bottom of the tooth, hold good in circular cut-off saws the same as in circular splitting saws. But it is much more difficult to avoid a sharp corner in this class; so I suppose they will have to take the chances for a while yet. But there are other causes of breakage, and a remedy. Of this I shall speak.

Experience and experiment have demonstrated that the best form of cut-off teeth is on the principle of the dado head, that is, cutters and clearers. The saw that has one tooth to every inch of circumference should have four cutters and one clearer. The cutters should have a double shear on the back so it is quite pointed, and a shear of five to eight degrees on the front. More than that causes the tooth to spring sidewise and make set, cracking the plate thereby. The clearer should be filed square, that is, at right angles with the plate. No set by bending; the front should pitch back of the center somewhat. The point should be hammered so as to produce a hook. Use a light hammer, inclining the face of the hammer backward, so the top of the hook will clear the circle of the cut. This shortens the tooth and widens the point. The result of this method is rather shavings instead of sawdust.

The amount of set, of course, is governed by the kind of lumber that is cut. A cedar shingle bolt requires much more set than oak or maple.

The cause of breakage is this: without clearer the core or center tends to spread the shear outward, as it is set pulling in opposite directions. With a clearer the core is cut out as fast as made. It strikes me this method is so reasonable that it needs no further demonstration. It is not original with me, but I do not remember to have seen it in print.

Another cause of breakage of cross-cutting circular saws is the tension. They are not "open" enough. They are invariably hammered straight, that is, even tension throughout, and the edge is strained by labor and speed so that a twist of the cant causes a break. Of course, all things being right, a saw may be broken by too much twisting, but if they are hammered open so they will fall away from the straight edge somewhat on the cross test they will stand a deal of hard usage.

The principle of cutters and clearers holds good in all cut-off saws, except it may be in fine, smooth, and slow work. In this case the saw should be absolutely round and even set, or no set, and a concaved saw.

The principle of clearers in drag saws is equally essential for fast work. I have put a drag saw through a twelve-inch frozen beech in six strokes, having every sixth tooth a clearer; the teeth one and one-fourth inches long, slightly hooking, filed double shear, the clearer having the point hammered hooking and one-tenth inch shorter than the cutters.

My attention was first called to this method by a tree-sawyer who was very successful in sawing down oak trees in Massachusetts (where they fairly scrape the ground to save timber). The saw he used was the style of two clearers and four cutters. I noticed the saw-dust in shavings form, sometimes three inches long. I found his method was to hammer the points of the clearers to a nice hook, so it cut instead of scraping.—*C. E. G., in Mechanical News.*

Tin roofs should always be painted on the under side with mineral paint and be laid in single sheets, flat lock.

Common brick work will sustain 800 pounds to the square inch before crushing and weighs 112 pounds to a cubic foot.

White paint, white furniture, curtains, white walls, and white woodwork are the latest agony.

In finishing California redwood the filling should be stained with a little crimson lake.

ASKED, ANSWERED, AND COMMUNICATED.

We intend to make a specialty of this department of our journal, and, in order to make it thoroughly interesting, we desire the co-operation of all architects, mechanics, etc., whether subscribers or not. In this column there is a great opportunity for comparison of ideas on the practical questions of the day; and we hope to receive from those interested, and especially amongst builders, questions arising in their daily practice. No matter what may be the solutions given to the various problems presented, we shall only be too pleased to receive replies from our readers, where they see other and better solutions for them. If a general interchange of ideas can be brought about, great advantages will ensue to all. Let not a month go by without bringing up for discussion practical topics in the architectural, mechanical, or scientifical pursuits, We desire a general expression of opinions, for or against, of every article presented by us. Every communication will receive deliberate and careful consideration.

About Miters.

PRACTICALLY it is quite as easy to make a good miter as it is to allow an imperfect one to suffice, and although a little more time may be absorbed in doing so, yet its effect upon the cost of manufacture is not sufficiently great to merit serious consideration.

One point to which we would particularly draw attention is that of making a miter a perfect joint, each piece fitting close to the other at all points, and not simply at the upper edge, or at the edge which meets the eye. Such a miter as this has no strength in itself, and never can be depended upon. It holds itself together because the mouldings or whatever the part mitered may be is firmly fixed, and not because of any strength in the miter itself. The larger the miter, in the case of mouldings especially, the more careful ought the man to be in making the joint quite true in all points, so that when fixed together the miter may be glued and so better enabled to stand and remain intact.

The most important axiom of the cabinet trade—that all the material used in the construction of work must be thoroughly dried and seasoned—holds good in this as in all other branches. If the wood be not quite dry, then the miters will never be as perfect as they should be, for no matter how well they may be made in the first instance, the shrinking and possible warping of the wood, after the first job has stood for some time, overturns all calculations and destroys at once all possibilities of good and perfect workmanship being maintained.

As we have had occasion to mention before, mouldings mitered around pillars, or which are so narrow that their safety, when in prominent positions, is a matter of conjecture, should be strengthened by being grooved to a slight depth, say one-eighth inch, into the rail or pillar upon which they are placed. It entails no further trouble in mitering, and is not very difficult to accomplish if done before the job is put together.

All mouldings that have many internal miters—such as is the case in frames for over-mantels and side-boards etc.—being filled with numerous small panels, should be polished before being fixed into the rabbet. A much cleaner job is thereby insured, and, if carefully fitted afterward, no trouble will be experienced in leveling off the polished surface of the wood.

The latter is the objection usually urged against this mode of procedure, but if properly done, all the leveling might very readily be effected from the under side, thus leaving the polished surface untouched. By this means the miters will be quite free from the collection of polish and filling-in which usually gathers in the corners if the mouldings are polished after the job is completed by the cabinet-maker. Therefore, the plan we recommend should be adopted in every case where possible.

With regard to the proper intersection of all the members of the mouldings that may happen to be under manipulation, we should like to say that unless the miter be a perfectly true one, it is impossible for the intersection to be satisfactory, and will have to be in a manner forced by "cooking" the miter, easing off and paring away until the different members meet each other in a proper manner. We need hardly add that a miter which has been finished off by this carving process will be far from being what it should be, and will never present the neat and clean appearance which is so desirable. We would also like it to be clearly understood that although a perfect miter includes and consists of a perfect joint, yet a perfect joint, however close it may be, is not necessarily a perfect miter. Unless the man works each piece which he may happen to be mitering in the miter-trap, or shooting board, as the case may be, and guages and corrects it by means of a bevel set to a true miter—an angle of 45 degrees—he is very apt to make one piece a little longer or a little shorter than its fellow, and although the result may be a perfect fitting joint, yet the probability is that it is not a miter, and will therefore not intersect as well or as neatly as it should do.

The question, as argued by many men, as to whether scribes or miters are the better for cabinet work is not one that can be settled off-hand. Both are very good, equally so we might say, in their way, and if thoughtfully introduced the scribe will prove itself a very valuable substitute for the miter. In making a scribe we should advise the workman to make its shoulder cut inwards from the point of contact, so that it becomes rather thin on the edge. By this means, when the joint is not as close as might be wished, the application of a clamp would very easily draw it up.—*Builder and Woodworker.*

THE CARLAND TRAP.

IT is a sure seal or safeguard against sewer gas. All danger from *evaporation* or *syphonage* overcome. It prevents back water. Should all the water *evaporate* out, it is still a *shut-off* against sewer gas. It has an opening at the bottom and top to remove any obstruction. The loaded ball valve F, is slightly heavier than water; it floats up and around the chamber while the water is flowing out, afterwards falling gently into its seat, thereby forming a shut off against the induction of sewer gas or back water.

TO ALL WHOM IT MAY CONCERN:—About four years ago I had one of the "Garland Traps" put in my office, where it has been in constant use and has given entire satisfaction. I was greatly annoyed by both sewer gas and back water until I had this trap put in, since which time there has been no trouble whatever. I consider my place a particularly *severe test case* of the *superiority* of this trap, and after using it four years, heartily endorse it as the only good and reliable trap in the market.

DR. C. O. DEAN,
126 Kearny St., S. F.

Value of Pictures in Rooms.

A ROOM without pictures is as barren as a room without windows; each shed light and cheerfulness on surrounding objects. Nothing, we think, is more melancholy, particularly to a person who has to pass much time in his room, than blank walls; for pictures are loop-holes of escape to his soul, leading it to other scenes and other spheres. It is such an inexpressible relief to a person engaged in writing, or even reading, on looking up, to find his soul escaping, as it were, through the frame of an exquisite picture, to other beautiful and perhaps idyllic scenes, where the fancy for a moment may revel, refreshed and delighted.—*Sel.*

Design for a Building to be Built of Cleveland Stone.

Tin Roofing Plates.

IF the foundation of a building is paramount in construction, as doubtless it is, the roof which is to protect the whole edifice is only second in importance. The qualities of tin as a roofing material rank high, as may be amply proved by the great popularity it has attained during the past few years. Convenient in application, durable, and very economical, it has gained in favor and is now employed to a far greater extent than any other material throughout the country.

Of late, tin roofing has been severely attacked on all sides. With the competition of these days and the consequent reduction in the price of roofing in this description, much of the material has been of far inferior quality to that produced in former years. With the lowering of price, we get a corresponding reduction in the quality of the material, so that at the present time the market is stocked with tin plates, many of them of so inferior a quality as to be wholly unfit for their purpose.

Under these circumstances, it is a pleasure to refer to the plates of Messrs. Merchant & Co., of No. 525 Arch Street, Philadelphia, who have also offices at New York and Chicago. This well-known house issued the first quality of plates in the market, under the name of "The Gilbertson Old Method." They are of far greater weight than usual, averaging 120 pounds for each box of IC 14x20, and have an extra thick coat of uniformly good quality. To prevent fraud, and guarantee that the purchaser shall get what he is paying for, each sheet is stamped with the name and thickness of the metal, and thus the owner and architect have insured the proper performance of the contract by the builder, in this important respect at least.

We have not space here to show the material gain from a pecuniary point of view, effected by the use of a good quality of roofing, but that it is the truest economy in the end there can be no doubt.

The house of Merchant & Co. has long been identified with the best quality of tin plates, and no better proof could be had of the justice of this than the fact that their goods were chosen, after undergoing the most thorough and severe tests, for the White House at Washington, and this at a price higher than that of their competitors.

We have had enough of bad roofs and more than sufficient of the grumbling of builders, owners, and architects at the poor quality of tin plates. Let them use the goods of Messrs. Merchant & Co., and see that they are properly laid, and there will be no further cause for either the one or the other.

Tay & Co. are the authorized agents in San Francisco for the brand of tin mentioned.

A New Work—"Architectural Studies."

WE have before us Parts VI and VII of "Architectural Studies," just issued by William T. Comstock, of New York.

The first of these is devoted to small and low-priced country houses, giving among them a number of designs that can be executed for $1,000 or less. One is impressed, in looking over these designs, at seeing how much a little good taste can do for the improvement of houses where only a small sum of money is to be expended. The second of the two, Part VII, is devoted to the interiors of moderate-cost houses, giving a large number of examples of window finish, wainscoting, window-seats, staircases, hall and library finish, book-shelves, china closets, mantels, bath-room fittings, with full working details drawn to large scale, carrying out the idea of good, tasteful, but moderate-cost interior fittings, as Part VI does that of good planning and well proportioned exteriors, the whole scheme being to furnish suggestions for building, a good, comfortable home, after a well-thought-out plan and within the limits of a moderate purse. They are published in paper, portfolio, at the cost of $1.00 each.

PLASTERING and lathing are usually estimated by the square yard. Local customs govern the allowance to be made for opening closets, etc. In some localities it is the custom to deduct all openings, such as windows and doors. In other places half of the openings are deducted, while the custom in still other sections of the country, is to measure on all openings and figure them in. Closets, presses, etc., in one place, would be figured at their actual surface contents, while in other sections of the country the contents of the surface would be doubled. Suppose you desire the number of lath to lay a square yard. The calculation of this is very simple. A standard lath is 1½ inches by 4 feet long, and consequently contains one-half of a square foot. It would, therefore, take 18 lath to lay a square yard of surface if the lath were laid close together. As a rule, however, the lath fall sufficiently short in width to allow for the openings which are left between them. Each bundle should contain 100 lath. As some bundles fall short of this, and as there is more or less waste in cutting, it is necessary to make an allowance, and each lather has a rule for this, resulting from his experience, which varies from 20 to 22 lath to a square yard.

An inch of well-haired mortar between floors will be found to effectually deafen them against sound.

CARPENTERS' STEEL SQUARE AND ITS USES, PRICE $1.00.

Carpenters Here and Abroad.

THE carpenters of the United States enjoy a great many privileges unknown to the European artisans, and occupy a social position much higher than do their English cousins. It is a poor carpenter in America who cannot make three dollars a day, while abroad finished workmen hardly get that sum a week. A comparison of the carpenters of the United States and the carpenters of London, serves to show how much higher in the social scale are the American workmen.

There are about 20,000 men in London who make their living as carpenters and joiners. Of these, nearly 5,000 are inexperienced workmen, and are not allowed to belong to the various trades organizations, toward which the spirit is very strong. There are two large trade societies in London. The Amalgamated Society of Carpenters and Joiners is the larger, and at present is composed of 3,000 members in London, and 26,000 in other places in the kingdom. Next is the General Union of Carpenters and Joiners. This Union has 1,000 members in London, and about 6,000 throughout the kingdom. Thus, it will be seen, that only about one-third of the workmen are trade-unionists, partly because the Unions are for insurance as well as for trade purposes, so that age and other restrictions keep out many who are in sympathy with the Union. Expert carpenters in London do not get half the wages of American carpenters. There are few carpenters here who will work for less than 30 cents an hour; there are equally few in London who get more than 18 cents an hour.

The regulation hours and pay—that is, 52½ hours a week at 9d. an hour—are quite generally enforced all through London, although some few firms get more and give less. Uniform pay has brought out another class of carpenters who are not benefited by the uniformity. These are the unskilled workmen, who are paid all the way from 3½d. to 7½d. an hour. There are very few apprentices in London, as neither masters nor men like to be bothered by having them around. This system has not yet forced the importation of German skilled mechanics, which importation must in time necessarily follow, as it has in other trades in which apprentices have been done away with.

The social condition of most London carpenters is deplorable. Few have any means at all of comfort or enjoyment, and, more than that, there is a lamentable lack of the necessities of life. They live, ordinarily, in a few rooms, for which the rent averages from $2 to $4. Taxes are paid by the landlord. To help out, the children are put to work as soon as old enough, and sometimes as much as $10 a week is added to the family purse by this means. These families ordinarily breakfast on bread and butter and tea. Dinner depends largely upon the state of the family purse.

In hard times, all money must go for food to keep the man strong and well, so that the wife and children are frequently obliged to make all their meals of the same monotonous diet. The carpenters, when working right along, make about ten dollars a week, but out of this sum must come reductions for the sixteen compulsory holidays that occur during the year; they, however, average about six months of work. Of course, some carpenters save money, and eventually become foremen. Some keep a small store in connection with their trade, and thus accumulate money. On the other hand, some sink into utter wretchedness, thus making the average condition lamentable.

The Parisian carpenters are much more intelligent, and their social condition is much higher than that of the London carpenters. Their number is daily decreasing, owing to the introduction of bronze and metal cornices and other constructions that were made of wood. The tendency is very strong for secret societies. The most important is the fraternity of *Compagnons du Devoir, or Compagnons Passant.* The different degrees of the order are designated by the names of animals, such as the wolf or dog.

There are no engagements between the workmen and the bosses. The *patron* can dismiss his workmen at any time he pleases without any notice whatever, and the workman can put his tools on his back and knock of work also at any time without giving notice. However, when the *patron* dismisses the workmen he must pay the latter the entire day's wages for the day of dismissal.

Wood is so deer in France now that a builder can import his doors and sashes from Germany cheaper than they could be made at home. The carpenters live decently, however, and while much below the plane of the American mechanic, he is much above the London workmen.

Probably the best situated workmen as regards work and wages, and the most discontented and distrustful of all, are the German carpenters. Most of them are Socialists, and on elections they vote solidly for the red candidates. As there is considerable building going on in Berlin now, there is plenty of work, and wages are fair. They live comfortably as a rule, although some of them are in poor circumstances. The average German workman is not happy unless he has at least one strike in a year, and more are frequent. Political trades-unions have been suppressed by the Government, and now the majority of carpenters belong to the great Carpenters' Association, which numbers more in membership, probably, than any other existing trades-union.

Reviewing the situation of all four classes of mechanics, the American workmen are in far better circumstances than any of the European.—*Manufacturer and Builder.*

BUILDING PROPOSALS.

Plans and specifications for the building of the University of Arizona will be received at the office of the Board of Regents, at Tucson, A. T., until Monday, May 2, at 10 A. M.

The design for the buildings must comprise within its scope, plans and specifications to include (under the law) accommodations for the following departments:—

1. The department of science, literature and the arts.
2. The department of theory and practice and elementary instruction.
3. The department of agriculture.
4. The normal department.
5. The department of mineralogy and school of mines.

The Regents desire plans and specifications, which will provide for all these departments, and which will constitute a complete university, modeled upon the most approved methods, comprising in architectural design all the latest improvements in mechanical skill that will add to the comfort and convenience of pupils and the advantage for proper training.

It is the intention of the Board of Regents to inaugurate this enterprise by the erection of a single building or portion of a building at present, as the funds now on hand are only sufficient for that purpose. They desire that this first building shall serve as a model for all the others to be erected.

It is the intention to devote the funds now on hand for the establishment of a school of mines and when the plans and specifications have all been received and a selection made, it will then be determined which of the buildings included in said plans and specifications will be the most suitable for the department of mineralogy and school of mines, and the work of constructing this building will then begin.

All the buildings are to be of stone or brick, and to be built upon a plan most suitable for this climate, and with a view to their substantial and permanent character. The Regents desire to call special attention of architects to the necessity of providing means for the greatest shade around the buildings to protect the occupants from the great heat and light consequent upon the hot, dry summers of Arizona. They should be erected upon a plan which will admit of their future enlargement without destroying their architectural beauty and design.

The amount to be used for the building now under consideration cannot exceed the sum of twenty thousand dollars ($20,000).

The amount of $500 will be paid for the design accepted by the Board, reserving to itself the right to reject any or all plans and specifications submitted.

CHARLES M. STRAUSS,
Secretary.

A CLOTHES chute or small dumb waiter from the second story to the laundry are a great convenience.

BY wrapping plumbing pipes with heavy felt paper they will be protected from frost.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal free.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. We have been busy the past two months in perfecting arrangements by which we can secure information from every portion of the Pacific slope. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

For eight years there has appeared in this journal, building news from every portion of the country. But in its condensed form it did not attract the attention it deserved. We begin the New Year by making a specialty of the item mentioned.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

A cottage is being built on the corner of Park Street and Blanding Avenue.

Artisan, for $5.00.
Builders' Guide, for $2.00.

J. H. Young will shortly commence the erection of three cottages on Clinton Avenue, corner Oak Street.

Plaster, How to Make it, for $1.00.
Shavings and Sawdust, for $1.50.

Fred Brammam is about to build a cottage on Buena Vista Avenue.

People's Cyclopedia (three large volumes), for $20.00.

A. H. Peterson will erect a large residence on corner of Santa Clara Avenue and Mozart Street.

Builders' Construction (three volumes, very fine), for $14.00.

R. E. Combs will also erect a building.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

The First Presbyterian Church is to be moved to another part of the town and extensive improvements added. Proposals are invited for the same.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Paul Bunker is to build a $4,000 residence on San Antonio Avenue.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

The brick has been purchased for the new Thompson Block, to be erected at the corner of Park Street and Central Avenue. The structure is expected to cost at least $60,000, and will be the finest building in the city. Wm. Patton is the architect.

Shavings and Sawdust, for $1.50.
American Cottage Building, for $3.50.

Two-story frame. Owner, E. M. Battles; contractor, J. Bernard; architect, Smith. Cost, $1,800.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Central Avenue. Two-story frame. Owner, J. E. Youngberg; architect, G. A. Bordwell; contractor, S. J. Shelper. Cost, $3,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Beaumont.

A $25,000 hotel is to be built at this place. Formerly this town was known as San Gorgonio.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Berkeley.

Two-story frame. Owner, S. Perkins; architect, C. Day; contractor, J. Spencer. Cost, $4,000.

Album of Mantels, for $8.00.
Architects' Companion, for $2.50.

East Riverside.

It is the intention to erect a $10,000 hotel at this place.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Fresno.

Joseph Spinney will erect a dwelling.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

We understand Hon. J. M. Shannon will shortly commence the erection of an elegant residence.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

D. E. Nichols will erect a two-story brick building.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Goldstream, B. C.

James Phair will erect an $8,000 hotel building.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Gridley.

Active measures are being taken towards the erection of a $20,000 hotel.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Helena, Mont.

A $60,000 club building is proposed.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Healdsburg.

John A. Paxton, it is said, will erect a winery.

American House Carpenter, $5.00.
Cutting Tools, for $2.00.

Kingsburg.

The following parties have signified their intention to build as soon as spring has fairly begun. J. R. Allison, A. A. Smith, E. Winslow, Landrum Smith, O. Warner, Wm. Peakes, J. H. Busikist, Wm. Weymeier and J. P. Clark.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Los Angeles.

Whitter, Fuller & Co., of San Francisco, propose to erect a large brick building.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Monterey.

Material is being handled to replace the fine hotel building lately destroyed. It is calculated that it will take $500,000 to erect the new building.

Cutting Tools, for $1.50.
Home Hand-Book, for $10.00.

Napa.

A syndicate is being formed to erect an $80,000 hotel building.

Wonders of Art, for $1.25.
Limes, Cements, and Mortars, for $4.00.

Oakland.

The State has stopped its manufacture of doors, sash and blinds. The principal firms in that business in the city of San Francisco, have combined, and will erect in Oakland, a large manufactory for above named materials.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Eleventh Street near Market. Two-story frame. Owner, Mary L. Ginn; architects, Matthews & Son; contractor, Geo. L. Voice. Cost, $4,000.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Peralta, near Sixteenth. Two-story frame. Owner, H. B. Fritzchen; architect, M. P. Schetzel; contractor, M. W. Rain. Cost, $2,500.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

West Street, corner Thirteenth. Two-story frame. Owner, M. P. Brown; contractor, Pattiani & Co. Cost, $3,000.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

San Pablo Avenue. Two-story frame. Owner, L. Friedman; architect, Chas. Man; contractor, H. McCracken. Cost, $4,000.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

Fifth Street near Grove. Frame building. Owner, Mrs. A. Downey; architect, Chas. Man; contractor, P. F. Nelson. Cost, $1,600.

Ontario.

The railroad company intend erecting a fine depot building.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Oregon Items.

Among the new buildings of importance now under way in Portland, or to be built this summer, are a three-story brick building on the southeast corner of Front and Morrison for W. S. Ladd, a three-story brick addition to the building on the northeast corner of Front and Morrison by S. G. Reed, a three-story brick building on the southeast corner of Third and Washington by Henry Fatling, a $11,000 residence on Seventh between Morrison and Alder, six handsome cottages on B between Ninth and Tenth, to cost $12,000, for Dr. Glisan, and a number of other handsome buildings in various portions of the city.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

A new flouring mill will soon be erected at Elberton, Washington, near Colfax.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Spokane Falls has 5,000 inhabitants, and about 50 buildings are now under way.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

A force of men is engaged in getting out stone at the quarry near Coos Bay for the jetty works. Work on the harbor improvement will commence about May 1.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

A force of men is engaged surveying the route of the Seattle & Bellingham Bay Railroad.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Contract has been awarded for the delivery of 25,000 piles for the jetty at the mouth of the Coquille River.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Ira F. Powers will build a furniture factory in South Portland.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Hoffman & Bates have secured the contract for building the N Street elevated railroad.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Sellwood is to have a $4,000 school-house.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Mrs. Hewett is erecting a residence.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Pomona.

Near this town, a large hotel is to be built, at a probable cost of $40,000. Messrs. Park and Oldham, of Pomona, can be written to for particulars.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Portland.

A $35,000 pavilion, in which to hold fairs, etc., is on the tapis.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Reno, Nev.

A two-story brick building to be used as a post-office will be commenced shortly. Wm. Thompson is the manager.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Riverside.

A saw and planing mill is about to be erected by Messrs. Walker and Banta.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

A new Episcopal church on Tenth Street, will be commenced in a few weeks.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

Important building operations will soon be going on extensively in the center of the city. A fine block is to go up adjoining the St. George Hotel on the north; an additional story is to be put on Frankenheimer & Lightner's store; a new block is talked of adjoining Wilbur & Reynold's dry goods store; Clarence Stewart will remove the Cochrane second-hand store and extend his building over that, two stories high, adding at the same time another story to his present place of business, and G. D. Cunningham proposes to connect his corner block with the building next to the city hall, making the building occupied by Drs. Woodill & Ainsworth two stories high and arching the alley between the two buildings, giving a uniform appearance from the corner up to the vacant Perrine Block. When C. O. Perrine puts in his four-story block from there to the corner of Orange it will give that side of Eighth a fine, imposing look.

Cutting Tools, for $2.00.
Cumming's Details, for $5.00.

Saucelito.

One and one-half story frame. Owner, Mrs. Small; architect, Behrnd. $2,000.

One and one-half story frame. Owner, Mr. Hamlin; architect, Behrnd. $3,000.

San Luis Obispo.

It is understood that arrangements are being perfected for a $100,000 hotel building.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Santa Ana.

Plans preparing for S. H. Fichenal's new building.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Seattle, W. T.

Mrs. Howard H. Lewis will improve her property on Mill Street by the addition of a two-story brick building.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

Stockton.

A. Wolf will erect a two-story bui ding on the principal business street.

Practical Perspective, for $5.00.
Drawing for Carpenters, for $1.75.

Spokane, W. T.

I. T. Benham & Son have secured the contract for a $12,000 hotel. J. N. Squier is the owner.

Drawing for Stone Masons, for $1.50.
BuildingConstruction, for $1.25.

Selma.

A. Barieau is erecting a brick building 90x120 feet, two stories high.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

H. A. Lemon is putting up a brick building 35x70 feet.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Geo. B. Otis is having materials hauled for a brick building.

Practical Perspective, for $5.00.
Woodwards' Country Homes, for $1.50.

Kutner, Goldstein & Co. are making preparations to build a brick building.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Materials are being hauled for the construction of gas and water works.

San Bernardino.

Large swimming baths will be erected.

The railroad company are erecting a round-house with a capacity of twenty-five stalls.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

A machine shop 90x160 will shortly be built.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Also a car shop of the same size as above.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Sonoma Co.

It is an assured fact that a railroad to connect with the main line, *via* Petaluma and Napa, will be started very soon. Also a branch line from Santa Rosa to Sebastopol. Lots of supplies of all kinds will be needed for their construction.

South Riverside.

A prominent Minnesota capitalist intends to erect a two-story brick building to contain five stores.

San Jose.

Architect Page has let a contract to Mr. Piggotts for J. L. Reidy. Cost, $2,500.

At the fair grounds large additions are to be made for the use of racing horses. About $2,000 will be required.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

E. O. Smith is arranging for the erection of a handsome $6,000 residence on First Street, near the railroad depot.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Capt. J. C. Morrell is having plans prepared for an eight-room dwelling on Fourteenth Street.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

A site for a fire-proof Hall of Records for Santa Clara County has been selected in San Jose.

San Diego.

A $15,000 brick building is under advisement for the use of the Grand Army Post, G. A. R.

Seattle, W. T.

J. Morris Haller has commenced excavating, preparatory to the erection of a block of buildings.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Ventura.

On the tapis a $50,000 hotel, a large brick block, and a $15,000 dwelling for L. J. Rose.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Watsonville.

A new saw-mill will be erected near this place.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

Yaquina, Or.

A brick railroad depot will be erected at this place.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

Yamhill, Or.

A two-story building for the use of the I. O. O. F., is contemplated.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

SAN FRANCISCO BUILDING NEWS.

A

Ash Avenue, cor. Buchanan. Alterations.
O.—L. Junker.
A.—Salfield & Kohlberg.
C.—F. Weineohl.
$1,300.

B

Bush, near Broderick. One-story frame.
O.—C. and M. Kerstein.
A.—Townsend & Co.
C.—J. J. Dunn.
$1,500.

Bryant, nr. Main. One-story frame.
$600.

Broadway cor. Montgomery Ave. Repairs.
$500.

C

Castro cor. Twenty-fourth. Two two-story frames.
O.—J. B. Mahoney.
A.—T. J. Welsh.
C.—J. McInery.
$7,000.

California, cor. Jones. Two-story, basement and attic, frame.
O.—Chas. Crocker.
A.—Curlett & Cuthbertson.
Mason—O. E. Brady.
$40,000.

California, bet. Octavia and Laguna. Two-story frame.
O.—S. Foorman.
A.—Chas. Geddes.
C.—A. Jackson.
$2,700.

Chesley, nr. Harrison. Alterations.
O.—B. O. Malley.
A.—Townsend & Co.
C.—J. O'Connor.
$900.

Clementina, nr. Ninth. Two-story frame.
A.—J. J. Clark.
C.—C. E. Dunshee.
$3,500.

Cliff House. Four-story frame.
O.—A. Sutro.
A.—Behrnd (Phelan Block).
Day work.
$30,000.

Cortland Avenue, corner Wool. One-story frame; two-story barn.
O.—J. G. Fair.
C.—Treadwell & Thompson.
$6,000.

D

Dolores, nr. Twenty-ninth. Two-story frame.
O.—Weissenduck.
C.—R. Bergfeld.
$3,000.

Dolores, near Eighteenth. Two-story frame.
O.—McKenna.
$3,000.

E

Eddy, nr. Taylor. Four-story brick.
O.—M. Rosenbaum.
A.—Salfield & Kohlberg.
C.—T. Day.
$75,000.

Eureka, nr. Eighteenth. One-story frame.
O.—F. H. Weineger.
A.—M. P. Schetzel.
C.—W. Kain.
$1,200.

Eddy, No. 1128. Two-story frame.
O.—A. Marks.
A.—P. R. Schmidt.
C.—H. Keenan.
$7,000.

F

Fifth, near Mission. Additions.
O.—Mrs. M. Meyer.
C.—W. Zehfuss.
$750.

Fifth, near Brannan. Two-story frame.
O.—J. Baumberger.
C.—Frichette.
$2,200.

Fifth, near Brannan. Two-story frame.
O.—Teustemacher.
$1,500.

Folsom, bet. Fourth and Fifth. Additions.
O.—Mrs. A. Brand.
A.—H. Geilfuss.
C.—F. Klatt.
$7,000.

Folsom, bet. Fourth and Fifth. Concrete foundations for three-story brick.
O.—A. Field.
A.—J. E. Wolfe.
C.—Granolithic Paving Co.
$3,000.

G

Green, nr. Stockton. Repairs.
O.—Zeigler.
$1,000.

Guerrero and Seventeenth. Two-story frame.
O.—J. McCarthy.
A.—W. Schrof.
C.—Cormack & Elam.
$7,000.

Geary, nr. Leavenworth. Additions.
O.—T. Ross.
$2,000.

H

Haight, bet. Webster and Buchanan. Thirteen two-story frames.
O.—J. Nightingale.
A.—A. J. Barnett.
C.—McCann & Riddell.
$75,000.

Hayes, cor. Baker. Two-story frame.
O.—F. Heywood.
A.—C. I. Havens.
C.—Mahoney Bros.
$20,000.
Brick foundation previously reported.

Howard and Seventeenth. Two-story frame.
O.—G. C. F. Schwarz.
A.—C. I. Havens.
C.—J. G. Adams.
$5,000.

Haight, bet. Steiner and Pierce. Two-story frame.
O.—J. E. Kunkler.
A.—Copeland & Banks.
C.—W. Pluns.
$5,500.

J

Jones, bet. California and Sacramento. Two-story frame.
O.—W. E. Shepman.
A.—J. P. Chadwick.
C.—W. B. Ritchie.
$3,500.

Jessie, bet. Seventeenth and Eighteenth. Two-story frame.
O.—J. Graham.
A.—T. J. Welsh.
C.—Doyle & Son.
$2,700.

Jackson, nr. Montgomery Avenue. Alterations.
O.—E. G. Lyons.
A.—W. Mooser.
C.—J. H. McKay.
$2,700.

Jackson, near Devisadero. Two-story frame.
O.—C. W. Randall.
A.—J. M. Curtis.
C.—Wilson & Son.
$3,500.

K

Kearny, nr. Vallejo. Four-story frame.
O.—H. Kohler.
C.—G. Rocca.
$8,000.

Kearny, cor. Post. Alterations.
O.—J. Stanton.
A.—H. Geilfuss.
C.—P. H. Jackson.
$2,200.

L

Leavenworth, bet. Broadway and Vallejo. Additions.
O.—Margaret White.
A.—Townsend & Wyneken.
C.—Dyer & Arnold.
$1,700.

Leavenworth, near Clay. Two-story and basement frame.
O.—J. Wolf.
A.—H. Geilfuss.
C.—W. Pluns.
$6,000.

Leavenworth, No. 808. Additions.
O.—Mrs. Allen.
A.—J. E. Wolfe.
C.—Moore Bros.
$1,100.

M

Market, nr. Sixth. Preparatory work.
O.—E. J. Baldwin.
A.—A. A. Bennett.
C.—R Ringrose.
$4,500.

Mission, near Nineteenth. Two-story frame.
$2,500.

Minna, bet. Tenth and Eleventh. Two-story frame.
O.—P. Brady.
A.—T. J. Welsh.
C.—A. McDonald.
$2,800.

McAllister, cor. First Avenue. Two-story frame.
O.—M. O'Brien.
C.—J. Sullivan.
$3,200.

McAllister, nr. Lyon. Two-story frame.
O.—A. Philpot.
A.—Townsend & Wyneken.
C.—J. Irwin.
$3,800.

Mission, nr. Twenty-eighth. Two-story frame.
O.—W. Byrnes.
A.—M. J. Welsh.
C.—L. Frichette.
$2,250.

Mission, bet. Third and Fourth. Four-story brick.
O.—D. Kiel.
A.—Behrnd (Phelan Block).
Mason—J. Wagner.
Carpenter—Houston.
$20,000.

Main, bet. Market and Mission. Three-story and basement, brick.
O.—R. Thompson.
A.—W. Patton.
C.—R. Smilie.
$43,000.

Mission, nr. Seventh. Additions.
$1,500.

Madison, nr. Harrison. Two-story frame.
$2,200.

Morton, near Dupont. Improvements.
$500.

Montgomery Avenue, cor. Green Street. Repairs.
O.—Larrimore.
$3,000.

N

Nineteenth, nr. Castro. One-story frame.
O. and B.—Wilson.
$1,200.

Ninth, near Howard. Two-story frame.
O.—M. McGrath.
A.—H. Geilfuss.
C.—J. W. Nelson.
$5,500.

O

Oak, nr. Ashbury. Two-story frame.
O.—J. W. Reilly.
A.—M. J. Welsh.
C.—A. Klahn.
$2,800.

P

Pine, corner Fillmore. Two-story frame.
O.—Mrs. W. H. Armstrong.
A.—B. E. Henriksen.
C.—G. G. Gillespie.
$5,700.

Post, corner William. Three-story frame.
O.—J. Rosenthal.
A.—Salfield & Kohlberg.
C.—J. H. McKay.
$10,500.

Pacific, bet. Gough and Octavia. Two two-story frames.
O.—Mrs. R. Greenbaum.
A.—Keintzer.
C.—C. Chisholm.
$7,500.

Park Avenue, nr. Harrison. Three one-story frames.
O.—Goldstine.
A.—P. R. Schmidt.
C.—H. Keenan.
$5,000.

Park Avenue. Same as above. Additions.
$2,000.

Page, bet. Webster and Fillmore. Two-story frame.
O.—F. D. Black.
A.—A. J. Barnett.
C.—W. T. Commary.
$7,000.

Pacific, cor. Buchanan. Two-story frame.
O.—O. H. Baldwin.
A.—S. and J. C. Newsom.
Day work.
$18,000.

Polk, cor. Pine. Additions.
O.—S. Foorman.
A.—C. Geddes.
C.—A. Jackson.
$3,000.

S

Seventeenth, cor, Mission Avenue. Two-story frame.
A.—T. J. Welsh.
C.—J. Blake.
$7,000.

Steiner, bet. Eddy and Turk. Two-story frame.
O.—P. McSherry.
A.—Schoenstein.
C.—C. H. Taft.
$2,500.

Stevenson, bet. Hermann and Ridley. Four two-story frames.
O.—L. F. Caldwell.
C.—M. Brennan.
$5,000.

T

Tenth, bet. Folsom and Howard. Two-story frame.
O.—P. McEnroe.
A.—T. J. Welsh.
C.—J. Blake.
$4,000.

Twenty-fifth, nr. Bartlett. Additions.
C.—Dunshee.
$600.

V

Van Ness, cor. Vallejo. Five two-story frames.
O. and B.—J. Hinkle.
$40,000.

Vallejo, cor. Laguna. Two-story frame.
O.—W. S. Johnson.
A.—W. F. Smith.
C.—F. W. Kern.
$4,500.

Vallejo, nr. Polk. Five two-story frames.
O. and B.—J. Hinkle.
$25,000.

Valencia cor. Willow Avenue. Two-story frame.
O.—Jos. Moore.
A.—C. I. Havens.
C.—R. Doyle & Son.
$7,000.

W

Washington, cor. Mason. Three-story brick.
O.—Powell Street Railroad.
Masons—Butlers & McGowan.
$28,000.

Bound Volumes of the year 1886 will be forwarded to any address upon receipt of $2.50.

For $5.00 we will insert your business card for one year, and send you this Journal, free.

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Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

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RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd lengths	19 00
" " second quality	16 00
" " selected	24 00
" " clear except for Flooring	29 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 00
" " " other sizes, No. 1	34 00
" " " all " No. 2	27 00
" " Stepping, No. 1	40 00
" " " No. 2	30 00
Ship Timber and Plank, rough, selected,	25 00
" " " selected, planed, 1 side	27 00
" " " " " 2 " average, 40 ft.	29 50
" " " " " 3 "	32 00
" " " " " 4 "	34 00
Deck Plank, rough	29 50
" " dressed average 35 ft	34 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	0½
Lath, 1½ 4 ft., per M.	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M	20 00
Spruce dressed shelving, to 14 inches, per M	35 00
" " ½ inch " " "	35 00
" " wider, per M	40 00

REDWOOD.

	Per M ft.
Rough Redwood, merchantable	$29 00
" " second quality	16 00
" " selected	24 00
" " clear	33 00
Dressed " common surface	22 00
" " ½-inch surface	28 50
" " No. 1	33 00
" " No. 2	26 00
" " T. & G., 1x6, 12 ft. and over, No. 1	30 00
" " " other sizes, No. 1	30 00
" " " 7 to 11 No. 1	26 00
" " " under 7 No. 1	23 00
" " Rustic, No. 1	33 00
" " " No. 2	28 00
" " T. & G. beaded, 12 ft. and over, No. 1	33 00
" " " " other sizes No. 1	33 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft.	0½
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split	13
Shakes, split, per M.	9 00
" sawed "	11 00

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. * ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 5.

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Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., MAY 15, 1887.

The Sewerage of San Francisco.

THE presence of Mr. Waring, a gentleman of national, if not world-wide, reputation as a thorough scientist upon all sewer questions, is a welcome guest in our city, and it is hoped that his extensive experience and knowledge in and of the subject matter, will enable him to suggest remedies for the foul and health-destroying condition of the sewers of San Francisco. That they are such, no one conversant with facts will question. That the lives of thousands, nay, tens of thousands, of human beings in this city, both old and young, have been jeopardized or sacrificed by sewer agencies, is beyond reasonable doubt, and enormous sums of money have been consumed in building those conduits intended to protect life and health, but which only in part perform the purposes for which they were and are so intended.

Mr. Waring will find in the course of his investigations, that nature had provided a site for a city, as far as drainage is concerned, surpassed but by few on earth, with hills and high grounds at its back and center, and abundant surplus material to fill all low places to make perfect the inclines to the bay. He will also find that a grave mistake was made by those who established the grades in the early days of the city, even if the eastern boundaries had been extended no farther than Front Street, which at one time was supposed would be the water front. Had this remained as the limit of extent eastward, then the grade should have been uniform from Kearny Street, which would have added some fifteen feet to the fall from that point. Another mistake was made in fixing *base* at the low altitude of $6\frac{7}{10}$ feet, as that figure necessarily forces the sewer outlets below the tides, so that at times the waters of the bay form a liquid embankment against the outgo of solid matters, and change of tide had and has to be relied upon to clear the sewers. Had the water front remained a permanent fixture at Front Street, the sewer difficulties would have been less. But when eastward the city front sped its way, several blocks beyond the first intended point, no remedy for level sewers existed, except to raise all the streets and buildings west of Front Street. This not being resorted to, the only thing remaining to be done was to extend the sewer at base level to the outlet.

Mr. Waring will also find this material fact to overcome, viz., a thousand feet of dead-level sewerage at the east front of the city, and much more at the south front to overcome. Again, the present 3x5 feet sewers are at times insufficient to free themselves from the great rush of water passing through them—so much so, that south of Market Street, in places, the water forces its way up through the man-holes and floods the streets. If all this can be met and successfully overcome by Mr. Waring, he will have done a most excellent thing for the city of San Francisco. Until he shall have more fully developed and made public his recommendations, nothing can be said favoring or disapproving his propositions. But we may with confidence expect some very practical and feasible suggestions from him.

Will Present Prosperities Continue.

QUESTIONS as to the permanency of the great and widespread prosperities which have developed throughout the length and breadth of California, and the Pacific States and Territories generally, during the past few, and especially the last three years, lead some to feel that it is too good a condition of things to endure for any great length of time, and timidity and fear begets doubts and misgivings, and these corrode what little of progressive vitality they may possess, rendering inert and dormant energies which, if properly exercised, would bring personal compensation, and at the same time assist in stimulating others to safe ventures and undertakings, which, otherwise, might continue undeveloped for long periods of time.

Nothing so demoralizes the common interest of communities, as the lack of enterprise among the people composing the commonwealth. One sterling, active, wide-awake citizen, with scarce a dollar to his name, is worth more to any city or State than a thousand grasping, hoarding, centralizing, purse-bound, avaricious men, whose idol—god—is accumulated possession and personal wealth. The one as compared with the other, is as the showers and zephyrs of spring to the parching heat of mid-summer, or the chilling blasts of winter's storms. California has been too abundantly cursed with the latter class, and as a consequence the general interests of the State have been held in check, and thousands of possibilities which are at the present time so apparent, have remained unapplied and practically worthless during more than a generation of human life.

Perhaps the time lost was necessary to ripen and mature the present and recent past state of things, and make clear and plain how great and goodly a strip of land lies along the Pacific Coast, as part of the domain of free America. And now that people from all sections of the Union and from foreign countries, as well as ourselves, are made to realize the inherent values and greatness of the Pacific States, why should it be feared that we, as a people, cannot continue advancing and prospering, with never more than the occasional, periodical, temporary death in commercial, producing, manufacturing, and mechanical life, which at times comes to the most favored and prosperous people.

If present prosperities were the result of some uncertain thing, worked up and stimulated by various unreal, spasmodic, speculative games, controlled by combinations with a mere stock and chance prospect, then fears might be justified. But the fact that the present beautiful outlook is the result of permanent investments in lands and business pursuits and productions, and things necessary to human life and happiness, there can be but one conclusion reasonably drawn—that permanent, present, and still greater future prosperities are fully assured, and that those who doubt the stability of present things, do so more from personal, mental, and business deficiencies, than from any indications sustained by good judgment or apparent probabilities.

CARPENTERS' STEEL SQUARE AND ITS USES. PRICE $1.00.

The Elevator Shaft.

AMONG the modern improvements in building, the elevator justly holds a leading place. High buildings, whether used for business or as habitations, are rendered far more convenient and enjoyable when the labor of climbing stairs is reduced to the lowest possible degree. The lofty hotel is no longer dreaded by the traveler, for he knows that if he is assigned to a room even on the sixth floor he will not have to take up a weary march over a bewildering variety of passages and stairways.

The elevator is on call at any time, and it speedily lands the economical guest on the sky floor, which, by the way, is the pleasantest part of the house in a large city. But this indispensable comfort introduces a most dangerous companion, namely, the shaft or space in which it must work. The shaft being boxed in, produces a flue, which, unlike many chimneys, never fails to possess a good draft.

By it the old subdivision by floors is broken, and according to the size of the elevator, the whole building is united. The floor of the elevator must act as the temporary one for all above the upper one, and as it can be at but one place at a time, the shaft or flue is always open at some place.

A fire occurring on any floor and burning its way to the elevator is almost instantly past control, and carries terror to the upper stories, which otherwise would have been unharmed, or, at least, there would have been sufficient time allowed for the inmates to have retreated somewhat orderly by the stairways, instead of instantly being confronted by roaring flames and suffocating smoke.

Now, the wonder is that there are so few elevators arranged to cut off a fire and confine it to the story in which it originated.

The daily papers frequently give the particulars of large fires which would have caused but trifling loss if the elevator shaft had been closed.

The report often shows that a small fire started on the lower floor, but on reaching the elevator it was in a twinkling spread to the upper floors. The space acts as a most unmerciful blower for the flames, and the frequent loss of life caused by it leads many to dread its presence and to wish for the old style. In some of our business houses there are doors at each floor which open and close automatically, and this seems to be the only safeguard that can be introduced, and if it is possible to have a similar arrangement in hotels it is passing strange that they have not been introduced.

Quite recently the Temple Theater and Egyptian Museum of Philadelphia, was totally destroyed by fire, which originated in the lower part of the building, said to be fireproof. The flames at first were not alarming, but the friendly elevator was near at hand, and the fire, having got within its suck, it at once mounted to the top of the building and in a few hours the huge and costly building and its contents were a mass of ruins. Two women in the upper floors were saved by the bravery of the firemen, who reached them by means of an extension ladder, otherwise there was no means of escape.

Two firemen were killed by falling walls, and the elevator shaft may be justly chargeable with their death and the loss of the building, as otherwise the flames might have been confined to the story in which they started. There was a wealth of ornamental work in the building, a small portion of the cost of which might have been profitably spent to render the elevator space something more than a flame-feeder and death-trap. Carriage factories with the elevator within the building are nursing the same evil; but as the space has to be quite large it would be difficult to guard every story by trap-doors. The place for the elevator is on the outer wall of the building.

The practice is common among all to place their chief dependence on a night watchman, whose duty it is to keep up a tramp, tramp over the premises and be ready to repel robbers or quench incipient fires. This worthy guard of the building is too often selected from among old men who are too much broken to follow hard work during the day, but who still have enough vitality left to walk leisurely over the building and keep an eye open against enemies of every kind. This man is supposed to be able to stamp out a fire, or to throttle a robber, but somehow or other he is always at the wrong part of the building to do either. Should a fire originate on the top floor, he happens to be promenading the cellar; and should the flames burst forth in the engine-room, he will most likely be looking out of the scuttle-hole in the roof. He is seldom in the right place at the right time, and is very rarely in the position or temper to check an incipient fire, no matter what appliances are at hand.

Extinguishers and interior water plugs are forgotten, or reported as being out of order, but *he* always manages to escape unharmed.

Manufactories wherein a large number of hands are employed should be under proper discipline to be able to quench a fire before it can gain great headway, providing that the fire occurs during work hours. But not one out of a hundred is under such discipline, and when a vicious flame bursts forth there is a pell-mell rush to get out of the building, instead of a disciplined few in each department who are ready to face danger by fighting the fire. The employes of the Columbus Buggy Company recently gave another exhibition of their valor under the appalling fear caused by a supposed earthquake, but which proved to be an explosion and fire within the vast building.

In two minutes after they were made aware of the true cause of the shock, the workmen had several streams of water playing on the fire and adjoining buildings, thereby preventing a great fire.

In a building, or buildings, so efficiently guarded the open elevator shaft might not be such a dangerous auxiliary to a small fire, but if by any means it should get a slight advantage the possibilities are that it would gain the mastery, not only over the shop brigade, but the combined force of the city fire department, as was the case with the Temple Theater, in Philadelphia.—*Painters' Magazine.*

Self-Evident Facts.

THAT this Journal is at present prospering equal to any period since its first issue; that—its advertising columns in evidence—business men find it the best medium for advertising, and for that reason we are crowded for space to accommodate new patrons. It is *the* medium through which those dealing in manufacturing, or producing anything used in the construction, equipment, or furnishing of buildings, can most successfully reach owners and those requiring things in the building line.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

Building Summary for May.

Our record shows that during the past month there have been commenced—

73 frame buildings, value	$376,700
6 brick " "	232,000
9 additions and alterations	84,100
88 buildings, value	$692,800

"Elastica."

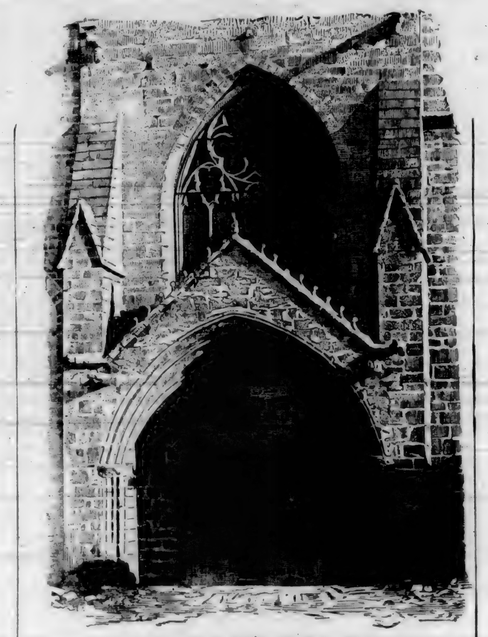
ARCHITECTS and owners have long desired to use an article on the finishes of houses, that would give a fine polish, and yet not scratch or mar white. In this one particular "Elastica" stands at the head of modern preparations. Scratched with the nail or other hard substance, there will be no visible effect, and absolutely none of the white scratches so noticeable with many other compounds. "Elastica" possesses in the highest degree great resisting powers to atmospheric influences, action of water, and alkali. The manufacturer, Mr. Rosenberg, personally called at our office, and demonstrated the superiority of "Elastica." It is kept by all of our principal dealers in paints, etc. Those living away from our large cities can receive information direct from Rosenberg & Sons, 207 Avenue D, New York City.

"Architect, Builder, and Mechanic."

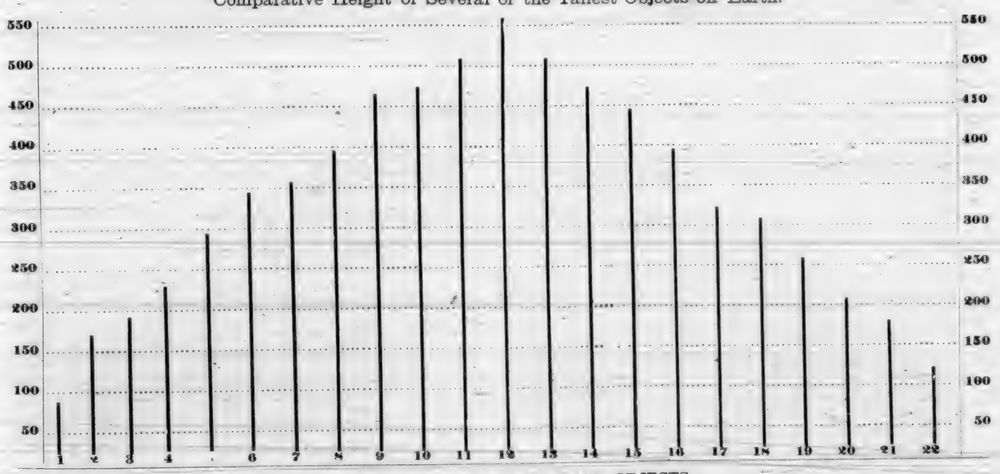
THIS is the title of a new journal published in Los Angeles, California. It gives promise of becoming a valuable aid to those in its particular line. Published semi-monthly, at the rate of $1.00 per year. Address, A. Willhartitz, 7½ North Main Street, Los Angeles.

See that two nails are put in each shingle if you want a good, tight roof. Redwood or cedar shingles are the best and last the longest. Dip shingles in lime water to make them lasting.

The proper height for the base-board of a room is one inch to every foot of height.



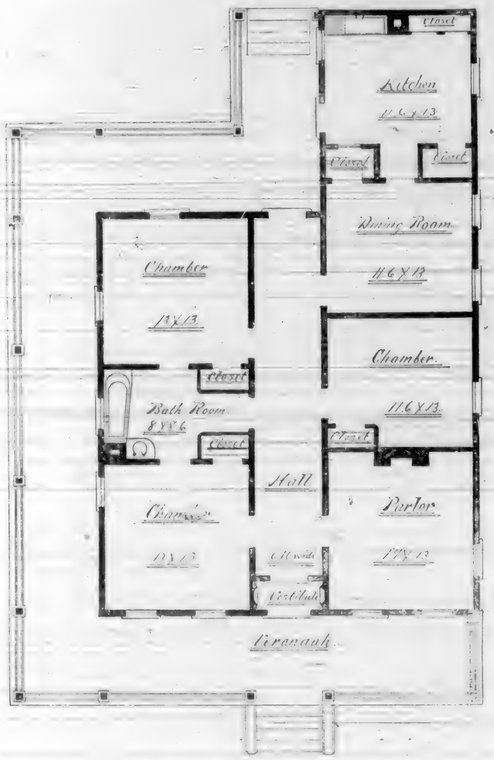
Comparative Height of Several of the Tallest Objects on Earth.



DESCRIPTION OF VARIOUS TALL OBJECTS.

1. Pompey's Pillar, near Alexandria, Egypt, 94 feet.
2. Niagara Falls, New York and Canada, 164 feet.
3. Cathedral (Minster) at York, England, 198 feet.
4. Bunker Hill Monument, near Boston, Mass., 221 feet.
5. Capitol at Washington, D. C., 287½ feet.
6. Bartholdi's Statute of Liberty Enlightening the World, 341.
7. St. Paul's Cathedral, London, England, 360 feet.
8. Cathedral at Antwerp, Belgium, 403 feet.
9. Great Pyramid at Gheezeh, in Egypt, 460 feet.
10. Notre Dame Cathedral at Rouen, France, 470 feet.
11. Cathedral at Cologne, Germany, 510 feet.
12. Washington Monument, Washington, D. C., 555 feet.
13. Old St. Paul's Church, London, England 508 feet.
14. Cathedral at Strasburg, Germany, 468 feet.
15. St. Peter's Church at Rome, Italy, 448 feet.
16. Cathedral at Freiberg, Germany, 385 feet.
17. Board of Trade Edifice, Chicago, Ill., 320 feet.
18. Big Trees, Calaveras Co., California, 300 to 330 feet.
19. Central Spire of Cathedral, Lichfield, England, 250 feet.
20. The Monument, London, England, 202 feet.
21. The Albert Memorial Monument, London, England, 180 feet.
22. Temple of the Sun, Cuzco, Peru, S. A., 120 feet.

—*Hills' National Builder.*



Plan for a Country Dwelling.

THE above plan possesses many qualifications necessary for a convenient country home. The arrangement especially recommends itself to the consideration of those living in our warm valleys. There is a direct ventilation through the house, by means of the hall; the kitchen is conveniently placed so that, if found necessary, the table can be set on the veranda. As shown, there are no extra finishes, the design being to represent a convenient arrangement, at a low cost. If necessary, the veranda can be continued all around the house.

Practical Ideas for Builders.

IN building a house there are many things which the builder might suggest to the owner as a convenience that he might not otherwise think of. I find in my business that I am often called upon for advice, and have therefore carefully posted myself on such points as will be of the most service to my patrons. Quite often I have had parties come to me to secure my services in building a house, and not being able to employ an architect, relied upon me for advice in many of the details, and were I not posted in these things I should be at a loss how to answer. If you think your readers will not look upon me as egotistical, I will give a few hints, which no doubt every carpenter knows but does not think of putting to use.

First, then, I never advise my customers to have winding stairs. They are regular men-traps, and nothing large can be carried up or down without knocking off plastering or hurting someone. Straight, continuous stairways cause draughts and loss of heat, and if a child starts to fall at the top it never stops until it falls the whole length. My idea is to have flat landings and right-angled turns. These give a fine effect and are artistic and fashionable. I generally put in a light wall strip of beaded work to protect the plaster while trunks or furniture are being carried up or down. If I can so arrange it in the plans I advise a back stairway, as this is one of the most convenient and useful adjuncts to a dwelling. Stairs should not have over seven-inch raisers, and six-inch would be better. I never plan to have a fire-place come between windows if it is possible to have it in the blank wall. Open fire-places should be as wide as possible. Great depth is no advantage; in fact, it prevents the warming of those parts of the room on each side of the fire-place. If there is any tendency to chimneys not drawing, or drawing the wrong way, there should be a whirling cowl, or else a triangular hood of brick or flat stone.

The flues should have large man-holes in them, in the attic, so that large openings can be made in them to draw off hot air in summer. These holes may be covered with sheet iron in winter. I made my attic cool and comfortable by this means, after a servant had given me warning that the upper room was too hot to live in.

A bay-window is not a very expensive thing, all considered, and it sometimes makes a room just commodious and pretty which otherwise would have been cramped and ugly. It gives a good chance to decorate; you can put a lambrequin or curtain across it, and seats in it, and busts at the side, and plants at the back, and a bird cage in the arch, and a fancy stand in the middle; or you can put sash across it and make a little conservatory of it. It is a good place to work or loaf in. While I do not believe in making a house look as though it had been vaccinated for bay-windows, and had taken splendidly, one or two often redeem an otherwise thoroughly ugly, unhomelike and inconvenient house.

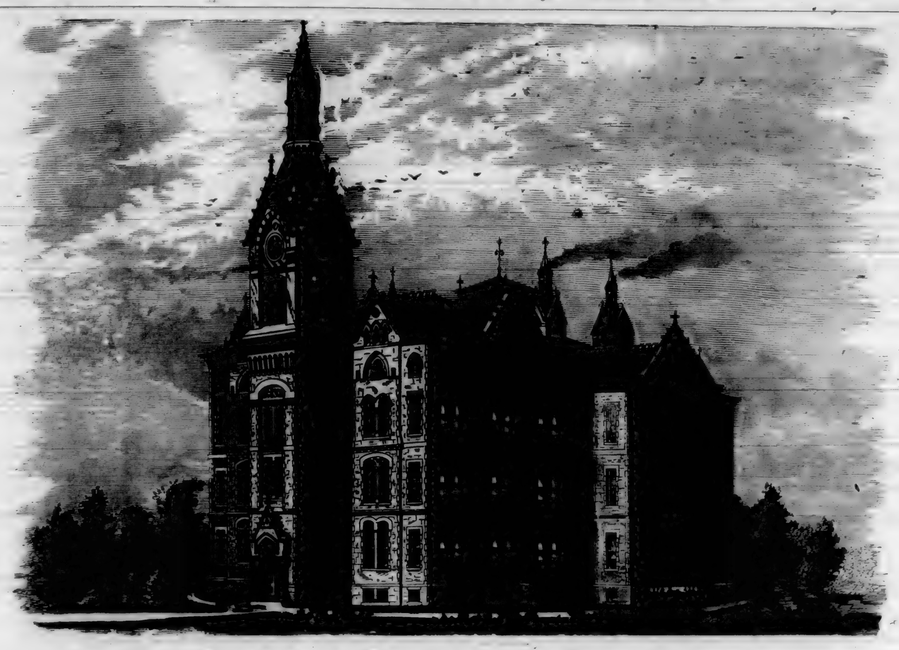
I have a few more little hints that I will try to give in a future article if your readers find this acceptable.—*J. C. G., in American Builder.*

White Efflorescence on Walls.

MANY untenable theories have been propounded relative to the efflorescence frequently breaking out on walls, and causing much annoyance to the painter where there have been given coats of color by the defacement that ensues. Should the various saline particles in a dequitescent state which lead to its formation have found lodgment in the walls of a building, they will assert themselves exteriorly unless the pores of the wall be hermetically sealed. The efflorescence is caused by the fixed alkalies, potash and soda, crystallizing on the surface of the wall. This unsightly efflorescence will totally or partially appear and disappear from time to time. The conditions under which this occurs are worthy of note. The changes are found to correspond closely with changes of temperature and of dryness and humidity of the atmosphere. The ordinary mode for reducing the efflorescence when it makes its appearance, is roughly to brush off the crystals, but what is wanted is their absolute prevention. The potash in the bricks, the true germinating cause, owes its existence to the putrefaction of animal and vegetable substances in the clay out of which the bricks are made. The potash on making its way to the surface absorbs nitrogen from the atmosphere, and thus nitrate of potash, or saltpetre, is produced. Some dampness, however, in the bricks, such even as may be occasioned by rain, is necessary to bring out the potash, evaporation from internal or external heat following on, the existing dampness being the means of exudation. The efflorescence is gradually formed, and after it has become sufficiently thick it is crystallized by the nitrogen of the atmosphere, and is at once rendered visible. The molecules come out under the influence, as we have stated, of successive weak solutions of potash and dampness, and when the successive depositions of this watery solution are sufficiently strong, crystallization follows. Evaporation is thus essential to the production of the efflorescence, and could evaporation be prevented it would cease. The eminent French chemists, MM. Thenard and D'Artel, have shown that the best way of preventing the access of any damp from the bricks, or preventing any damp that may have found lodgment exuding, is to lay on the surface a preparation of wax and lithargerized oil. This is so effective in closing the minutest pores that even when applied to stucco that has afterwards been painted in oil colors, the composition is found to have penetrated so deeply and had such a hardening influence that no infiltration of water from wall or roof could have any effect. The preparation is equally applicable to wood, which, when saturated with it, will not permit of the exudation of damp.—*Painter's Magazine.*

Modern Cottages.

BY J. H. Kirby. This new work contains 125 illustrations of cottages, dwellings, and miscellaneous work. The cuts illustrating the work are of more than ordinary merit. The author devotes considerable space to "Hints on the Practical Construction of Dwelling Houses." This work will recommend itself to the consideration of those desiring a well-planned house. Copies may be obtained at this office.



Design for a High School Building to be Built of Stone.

Worth Thinking About.

DO you think, because you are a mechanic, blacksmith, or moulder, that it is necessary to carry the marks of your trade on your clothes when your day's work is done? Is there anything particularly edifying to the friends you meet in the streets, male and female, in the sight of dirt-begrimed clothes and skin? We do not believe that there is, and we do not believe that any persons ever yet advanced their interests by neglecting to keep themselves tidy. Let the mechanic who has been in the habit of carrying his "trade-mark" about with him wherever he goes—taking a general pride in his general untidiness—just stop and think, and run over in his mind the list of his fellow-workmen who have been, as he thinks, especially fortunate in securing promotions and better positions; and if his memory serve him rightly, he will remember that those were the chaps who were always neat about their persons, and who used to be so particular in taking care of their tools never caring to lend them. These were the men who used to be dubbed "old women," "fads," etc.; they are now the men who have won positions for themselves and know how to maintain them. It does not make a man any the worse mechanic for being neat in his person; and, argue as you will, the world as it goes has a greater respect for a clean mechanic than it has for a dirty one.

How to Mark Tools.

MUCH trouble can often be saved by marking tools with their owner's name, which can easily be done in the following manner: Coat over the tools a thin layer of wax or hard tallow, by first warming the steel and rubbing on the wax warm, until it flows, and let it cool. When hard, mark your name through the wax with a graver, and apply aqua-fortis (nitric acid); after a few moments, wash off the acid thoroughly with water, warm the metal enough to melt the wax, and wipe it off with a soft rag. The letters will be found etched into the steel.

THE measuring of a candle power of a light is accomplished by comparing the shadow cast by a rod in the light of a standard candle with the shadow cast by the light to be tested. By moving the latter toward or away from the rod, a point will be reached at which the shadow cast by both lights will be of the same intensity. The intensity of the two lights is directly proportional to the squares of their distances from the shadow, *i. e.*, suppose the light to be tested is three times the distance of the candle, its illuminating power is nine times as great.

Large Trees.

THE following extract is going the rounds of the press and will serve to show the ideas of some people as to the size of our trees:—

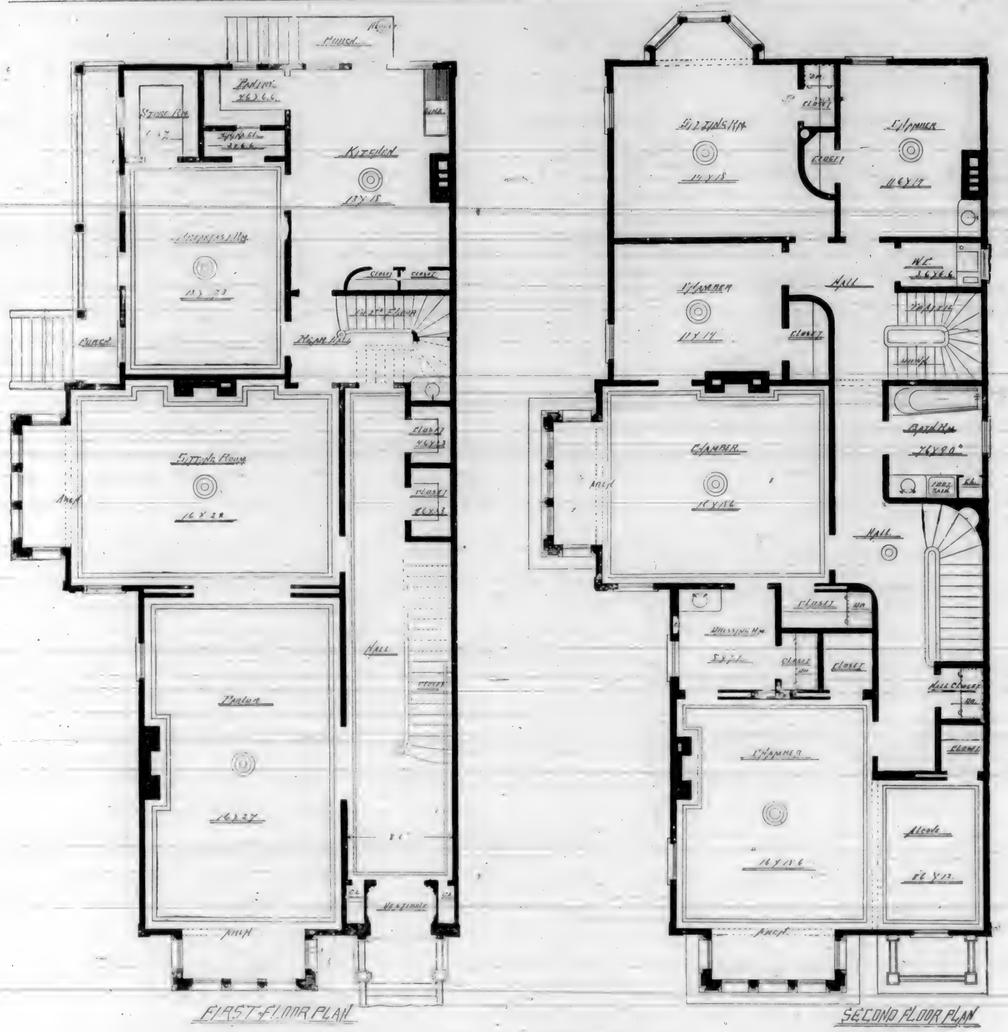
"So you have been out in' California?" I inquired of old Dan Whiting, the other day. "See anything of those big trees that we read so much about?"

"Wall, I ruther guess, yes," said Dan. "Saw a holler tree there you could drive a team of horses through. One afternoon me and Sam Washburn, we started to chop down the biggest durn tree you ever see. We are pretty slick wood-choppers, us two, but we worked like beavers at that there tree for nigh onto two weeks. All day long fur fourteen days we kept a-choppin', and Sam he kinder felt like givin' th' thing up as a bad job, but I coaxed him, and told him it wudn't take more'n anuther week to get through the tree, but I lied like thunder. Anyway, we went to work on th' fifteenth day as usual. 'Long 'bout ten o'clock I got pretty tired, and stopped a bit to rest. While I stood there leanin' on my axe handle, a big chip came a-flyin' from around the tree and took me straight in th' face. It was sort of funny proceedin', so I jest took a walk and looked onto th' other side o' th' tree, and there b'gosh what 'spose I found? There were two big fellers, both old wood-choppers, a-workin' away with their axes on th' other side of our tree. I said, 'Howdy,' and they stopped work. Them two duffers had been choppin' away thar on our tree fur nigh two months, and were only half through!

"They do have good-sized trees out thar, stranger, that's a fact."

DEATH UNDER THE HOUSE.—Death lurks under the house in early spring, in the shape of decaying and moldy vegetables in the cellar, and the decomposing remains of weeds and fungi which developed the preceding season in the damp, dark, unventilated space beneath that portion of the house not included in the cellar. Killed by the winter's frost, this decomposable matter is ready to send forth the pestiferous gases and disease-producing germs which cause some of the common maladies incident to spring. Clear away the filth from these oft-neglected places, and save suffering and doctors' bills.

A MANUFACTURER out West informs us, and wishes to inform the American public, that his patent buzz saw has just captured the finger of scorn, and that it will never again be pointed at anyone.—*Puck.*



Plans for a Commodious City Dwelling.

Plans for a Commodious City Dwelling.

THE plans shown are well worthy the attention of those seeking a comfortable city residence. Sizes of rooms are distinctly marked. Any information in regard to the plan will be furnished inquirers by addressing this office.

Folding Gates and Guards.

A PERFECT SECURITY AGAINST THIEVES AND TRAMPS.

THE perfect and beautiful device, as fully illustrated on page vii of this issue, recommends itself at once to the careful consideration of those who would have their stores and homes perfectly secure against tramps and thieves. These gates and guards are manufactured to order in San Francisco, to fit and fill any desired opening. They are ornamental in design, and apply equally as well to store windows, vestibules, stables, elevator wells, etc.

As a sanitary device they are superb, permitting the opening of doors and windows, and the free circulation of air through buildings.

Full information in regard to the above can be obtained by applying either personally or by letter to E. J. Robinson, Manager, 109 California St., San Francisco, or to the Secretary of the Company, J. P. Le Count.

IT seems that a lawyer is something of a carpenter. He can file a bill, split a hair, chop logic, dovetail an argument, make an entry, get up a case, frame an indictment, empanel a jury, put them in a box, nail a witness, hammer a judge, bore a court and chisel a client.—*Exchange.* Furthermore, he can saw the air, jamb the books down, cut up a witness, screw money out of the victim, floor an opponent, spout nonsense, shelve an enemy, lumber up his speech with Latin, set men at loggerheads, veneer a falsehood with plausibility, rip up the code, ex-plane knotty points, varnish a story, plank down solid law, board his bill out, table an object, pigeon-hole a case, mould the opinion of a juror, paint the other side blacker than it is, polish off another lawyer, post an ignorant witness, prop up a bad argument, and plaster a judge all over with taffy.

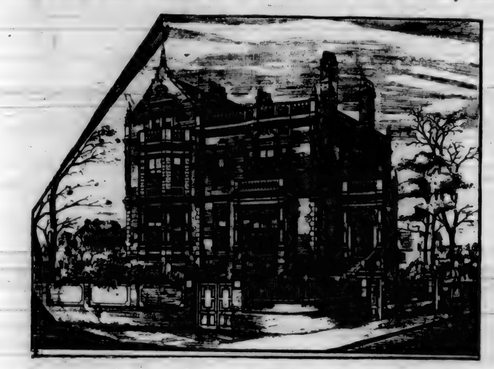
WE note an unusual number of patents for stove-pipe dampers. Dampers don't amount to much. What is wanted is a device that will make every end of every length smaller than any other end of any other length.—*Machinist.*

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

Dwelling Houses.

THE increasing interest in the subject of architecture shown by the daily press is the most promising sign that we as a nation are progressing in art development. In a word to our exchanges, we urged in our last issue that editors of newspapers give more attention to architecture, and to sanitary and



safe construction, not, however, overlooking the æsthetical side of the subject, which, of necessity, is of slower growth than the more practical features to which special attention was called. We are pleased to republish an editorial which appeared recently in the Des Moines *Leader*. The subject, "Dwelling Houses," is one in which the people are interested, and the writer handles his subject well. He says:—

"Few people realize how great is the public importance of the study of style in buildings. With it a community or country may be made permanently beautiful, or for the want of it eternally disfigured. We do not wish to ride any hobby and follow out the train of thought to the question of the good and evil effects of to-day's architecture on the minds and morals of to-morrow's 'rising generation.' Running everything into morals and religion is as bad as running it into politics. Beauty and business will suffice for present considerations. We all know that a town or county characterized by pretty houses is all the prettier for it, and especially in the case of the town, will profit by it in a business way and in its own upbuilding.

"Hence we can hardly say too much, if what we say is right and true, about style in building houses. Not that we ought to look out and always be 'stylish.' As a rule stylish people are those who know the least about style. 'The highest art is to conceal all art.' And this leads us to the particular subject of our homily.

"Last fall we called attention to the fact that the light and flimsy in architecture was passing away, and the heavy and substantial was taking its place. This movement has developed into real and rapid revolution. It almost takes one's breath. We expected that something about as heavy as the old Greek styles would be reached before long. But already they have been left away behind.

"Nothing will ever be prettier than the Greek. But one forgotten consideration must be recalled and kept constantly in mind. The Greek styles which we admire were all public building styles. In fact, they were temple styles. We cannot adopt them in our temples, because our temples are fixedly Gothic. We may and do adopt them in our other public buildings, and there they look pretty. But even in Athens it was against the law to finish private dwellings in the high styles of architecture.

"You cannot make a Greek porch fit nicely on a modern residence. You may get a certain very pretty effect, but still it is not the effect you want. Ink looks pretty on paper but not on the baby's face, no matter how artistically it is applied.

"It is not because the Greek is too heavy. It is as light as wicker beside the dwelling styles we have. The column has developed into a great pillar of stone or brick, arched perhaps to its neighboring pillar. The balustrade is a brick or stone wall. The roof of the porch is a continuation of the roof of the house, from which the gable cornice is gone. Great heavy shutters swing from the outside of square, old-fashioned windows. The chimney is an immense pile, and looms up in grim prominence.

"Everything is as modest as it is heavy. There is no strutting, no boasting, no lowering. The house bows and invites, though it does not smile. It is not severe. It is substantial and hearty. We are afraid it is almost ugly. Its countenance is shaggy and solid as some kind-hearted old Scotchman's, or his whole-souled dog's.

"And yet, after all, there is a beauty in it. Of course we have described the extreme, and it is an extreme from which there is likely to be a recession. Fortunately we are likely to have mingled together the extremes in both directions, and a great variety of means between them. After all, variety is the spice of life. Even the extremes may be so proportioned and toned that the art in them will be concealed.

"We speak of these things because the building season is on, and our architects, builders, and home seekers need to be looking out for these things. Our advice to all is the same as it has been,—not to be caught with a style which is so much in the fashion to-day that it will be antiquated to-morrow. Build a house that will always look pretty, no matter how much fashions may change. But it is profitable and possible in a house, which lasts long and is always for sale.

"Of course the very heavy is most appropriate to stone and least to wood, brick coming in between. But porch, and modesty, and cordiality, and substantiality are proper and will be durable in all. And as to the weight it depends on where it appears. Let it be remembered that we are building for a generation which will have more sense and better taste, and be able to detect at a glance these things which we can't appreciate until we have studied them. And the more money you put into a house, and the more lasting you build it, the more careful you must be to make it please that coming generation. Let us see if we can do as well in our dwellings as the Greeks did in their temples—challenge the admiration of 2,000 years to come.

"But then we don't need to do that. Our climate would long since have destroyed the Greek masterpieces, as it is crumbling the Obelisk. Still times and tastes, as well as weather, change more rapidly here than in the Orient."

PRELIMINARY ANNOUNCEMENT.

Twenty-Second Industrial Exhibition

Mechanics' Institute of San Francisco.

THE Board of Trustees of the MECHANICS' INSTITUTE take pleasure in announcing that the TWENTY-SECOND INDUSTRIAL EXPOSITION of the Society will open in its spacious Exhibition Building, bounded by Larkin, Hayes, Polk and Grove Streets, on **Thursday, September 1st, 1887,** and will close on **Saturday Evening, October 8th, 1887,** thus keeping open continuously to the public for the period of one month and eight days.

The great popularity of these exhibitions in the past is the best guarantee of their merit, and of their usefulness in the future, and it may be truly said, that their profit to the exhibitor is in equal measure to their instruction to the visitor.

No better means of advertising useful articles can be conceived than a daily opportunity, under pleasant circumstances, and in the midst of a vast and orderly crowd of inquiring people, of personally displaying and explaining the merits of one's inventions and productions.

The Exhibition Building is complete in all its appointments.
No Charge is made to exhibitors for space.
Steam power and **water** furnished **free.**
In addition to gas, powerful electric lights will be used at night.

Arrangements are being made to secure art exhibits, pictures, statuary, etc., of unusual merit.

Engagements have already been entered into with leading manufacturers, which ensure an unusual exhibition of notable inventions, mining and other industrial machinery in actual operation, and a complete display of the finished products of our California workshops.

A Grand Orchestra of skilled musicians, including many specialists and solo performers from the East and Europe, giving Grand Concerts each afternoon and evening under the direction of the celebrate **Frederick N. Innes**, has been contracted for at great expense, and will make the coming Fair memorable in the musical annals of the State.

For space or any further information, apply at the **office of the Institute, No. 31 Post Street, S. F.**

FACTS

About the Manufacture and Relative Value of Roofing Plates, and about the Laying of a Good Roof.

MANUFACTURE.—Roofing Plates, which are made of either steel or iron, are coated with a mixture of lead and tin, by two methods. The original method was by dipping the crude iron or steel plates into a mixture of tin and lead and allowing the sheets to absorb all the metal coating that was possible, and it is by the same process that the "Gilbertson's Old Method" is made to-day. The other process, by which the majority of Roofing Plates are made, is known as the "Patent Roller Process," by which the plates are put into a bath of tin and lead, and are passed through rolls, the pressure of which leaves on the iron or steel a thickness of coating that determines the value of the Roofing Plate. These rolls can be so adjusted as to leave a good amount of coating on the plate, such as the "Camaret" has, or an ordinary coating, or a very scant one. Hence the *only actual difference* between the "Camaret" and the "Gilbertson's Old Method" is that the latter plate has the heavier coating of metal.

Misleading Terms.—There are at the present time certain brands of Roofing Plates in the market, styled "Double-Coated," "Re-Dipped," "Double-Dipped," etc., etc., all of which terms are, however, *incorrect and misleading*, as it is *impossible* for any plate to take more metal than adheres to it by the first dipping, if left in the bath of tin and lead a requisite length of time, and no plate can have its coating increased in thickness by being re-dipped.

Assorting.—The value of a plate does not entirely depend upon the material and coating, but upon the care used in assorting, or picking out the defective sheets from the good ones. There arise in the manufacture of all Roofing Plates, imperfect sheets, such as sheets with blisters, or with broken corners, etc., which are called "Wasters." These are packed by themselves, the IC plates being marked "ICW" and the IX plates "IXW." The perfect plates are designated by the manufacturers as "Primes," while the imperfect sheets are called "Wasters," and the latter are sold at considerably less than the Prime Plates.

Sizes.—There are two sizes of Roofing Plates made, 28″x20″ and 14″x20″. The larger size is mostly used, from the fact that it requires less seams on the roof, and consequently cheapens the cost of putting on. There is a size 10″x20″, now used for gutters and leader pipe.

Thicknesses.—There are only two thicknesses of Roofing Plates made,—IC or No. 29 gauge, which represents in weight 8 ounces to the square foot, and IX or No. 27 gauge, which equals in weight 10 ounces to the square foot.

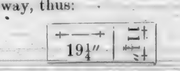
The IC plates are used to a far greater extent than the IX, from the fact that they are less expensive. For the very best roofs, however, IX Plates are preferable, the extra thickness being worth more than the extra cost.

Weights.—The old standard net weight per box IC 14x20 Roofing Plates was 112 lbs.—1 lb. per sheet—but this became reduced by competition and the desire for cheapness to 108 lbs., which is to-day the standard net weight. Indeed some tin plates are being brought out weighing very little more than 95 lbs. per box.

The standard weight of IX 14x20 Roofing Plates is 28 lbs. over that of IC 14x20, and 20x28 plates of course weigh just twice as much as 14x20.

Stamping.—Every sheet of the "Gilbertson's Old Method" and "Camaret" is now being stamped, not only with the name of the brand, but also the thickness—IC or IX; and as a further protection for these plates, every box of both brands contains a slip bearing our guarantee and the name of the assorter.

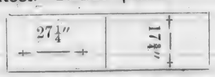
Laying the Roof.—14″x20″ plates. Many claim that a better roof can be made of 14x20 tin than 20x28. The cost of laying a roof of the smaller size will amount to 25 to 30 per cent. more than the cost of 20x28 size, owing to the greater number of seams, and hence more tin, solder, cleats, and work are necessary in laying. Locality has much to do with use of the two different sizes. The 14x20 tin can be laid in two ways. The most desirable way (and that which makes the best roof) is by laying the sheets the 14-inch way, thus:



In order to lay the tin this way more cleats are of course necessary than by laying the sheets of 14x20 the 20-inch way, as well as more solder, nails and labor.

The above represents the net surface when laid the 14-inch way.

Laying the Roof.—20″x28″ plates.



The above represents the net surface when laid the 20-inch way.

If two roofers figure to lay a roof of 20x28, and one lays it the 20-inch way, he cannot lay it as cheaply as the one who would lay it the 28 inch way, but at the same time he *can* make the *better roof*.

Advantages of Standing Seams.—Standing seams allow a greater amount of expansion and contraction than the flat seams, as the flat seams being soldered, make the entire roof practically a solid sheet.

For a steep roof the tin should be put on with a standing groove and with the cross seams put together with a double lock. A cheaper way is to double lock the seams and put white lead into the joints instead of soldering; but we would recommend that the cross seams be locked and well soldered.

Soldering.—We recommend the use of resin only as a flux in soldering, although some roofers use diluted chloride of zinc. "Half and Half" Solder (a mixture of half tin and half lead) is the mixture most suitable for roofing purposes.

Painting the Roof.—An excellent paint for the purpose is composed of 10 lbs. Venetian Red, 1 lb. Red Lead, 1 gallon Pure Linseed Oil.

The substitution of benzine or fish oils for the pure linseed oil should not be allowed.

The roof will last longer and be less liable to rust if painted on the under surface before laying. It is a good plan to put one or two layers of felt paper under the tin to serve as a cushion for same, and to deaden the noise made by the rain falling on the tin.

A year after the first coating the roof should be painted again, and then a good roof will only require painting once in four years.

A roof of first-class material well soldered and properly laid should last forty years.

Suggestions to Those Specifying Tin Roofing.—In the light of the facts herein stated, we would suggest to architects and others desiring the very best quality of tin roofing that when they specify "Gilbertson's Old Method," or "Camaret" guaranteed brands, they should insert the full name of the brand in the specification and should require that every sheet be stamped not only with the name of the brand but also the thickness IC or IX.

To Prevent Screws from Rusting.—It is well known that iron screws are very liable to rust, more especially when they are placed in damp situations. When they are employed to join parts of machinery, they often become so tightly fixed that they can only be withdrawn with considerable trouble, a fracture sometimes resulting. In order to avoid this inconvenience, screws are generally oiled before being put in their places, but this is found to be insufficient. According to the *Moniteur Industrielle*, mixture of oil and graphite will effectually prevent screws becoming fixed, and, moreover, protect them for years against rust. The mixture facilitates tightening up, is an excellent lubricant, and reduces the friction of the screw in its socket.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal free.

The "Universal Tinker and Amateur's Assistant."

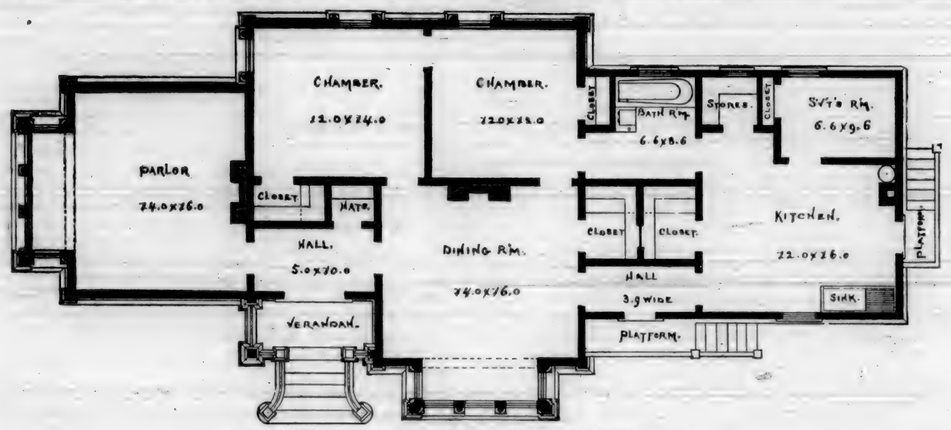
THIS is the title of a new monthly journal to be issued about the 1st of July, 1887.

The new journal is not intended to take the place of the valuable juvenile papers or magazines that are now so popular among our young folks; it is rather intended for young men and women than for boys and children. It will not be a "story-teller" unless the story told has a mechanical or scientific application. It will not be a "picture book," yet it will be illustrated with diagrams, designs and working drawings, and a sprinkling of illustrations of new tools, new amateur machines, new and old devices for doing work, and engravings of finished amateur effort.

The *Universal Tinker* will not confine itself to constructive work, but will take up every subject that may be brought before it and that may be dealt with from an amateur's standpoint.

It is intended at first to make it a sixteen-page journal, but may be enlarged or reduced as circumstances may warrant. The price will be $1.00 per year, payable in advance, but if at the end of the year we are encouraged to enlarge or further improve the *Universal Tinker* we shall increase the price to two or three dollars a year.

Any further information will be cheerfully furnished by addressing the proprietors, Hodgson & Bertrand, 294 Broadway, New York City, N. Y.



Plan for a Comfortable Country Dwelling

Plan for a Comfortable Country Dwelling.

THE above plan is very complete in all those little details that go to make a home in the country truly pleasant. Access to all the rooms is very conveniently arranged. The parlor is situated away from the living portion of the house. Every room is abundantly supplied with windows and closet room. The kitchen and its apartments will recommend themselves to the consideration of every thrifty housewife. Sizes of all the rooms are very distinctly marked.

Suggestions to Country Builders.

CHAS. HARDY, in the *National Builder*, says: Travel and intimate observation in the States of Illinois and Missouri reveal the fact that very few carpenters and contractors have made much pecuniary headway. Indeed it would hardly be erroneous to state that for the amount of business done few branches of trade have less profit to show.

The cause of this is probably to be found in the fact that, although nominally wages appear to be satisfactory, yet the average reduced by the inevitable interruption to work that the winter season brings with it, during which any small surplus is consumed. Contracts too, are of short duration, and especially in the smaller cities the interval between two contracts is a long one. A system of letting contracts by bids or competition, however fair it may be in theory, still works very unjustly where many of the bidders make no accurate, thorough and itemized estimate. It is common, extremely common, to hear a country bidder say that his employes have earned more than himself on a job, or had he to pay wages he would have been money out of pocket at its completion; and that to avoid this, he had worked it out himself alone, at a remuneration which left him only starvation wages or even worse. This is of course not intentional.

Very few indeed have any system which enables them to see day by day what is the result that a given job is showing. At the best this is discovered at the end of the season. It is no wonder that they underestimate, for underestimation is the natural consequence of overeagerness to obtain a contract, unchecked by a thorough and accurate fore-estimate of the result.

Underestimating means working for nothing and forcing others to do the same; it means impoverishment and poor work. The contractor has himself and his family to maintain, and the temptation is great to get out by doing poor work. I would suggest that every contractor purchase an account book large enough to enter, line by line, upon a single page every item of his estimate, giving quantity, price and labor for each item. Let him leave opposite to this page a blank page, on which he may enter on the corresponding line opposite the actual amount purchased, and the actual amount paid, together with the actual amount of labor expended upon the item, and he will thus be able to see the result of his contract.

Were such a system adopted it would never be abandoned. An estimate, if clear and explicit, would be gone over twenty times, with the result that the contractor would become expert in estimating, and a mistake once made would never be repeated.

There is an advantage in taking the items in a certain order and pre-erving that order. It is impossible to exaggerate the good effects of a system which enables the tradesman to know day by day exactly how he stands.

Every contractor has an interest in his competitor's knowing how to estimate correctly. It does not need many underestimators to ruin a business for a season.

Carpenters are far too apt to imagine that all that is wanted to make a successful contractor is to be a good mechanic. This is a great mistake. The country contractor should be a good business man, and have a constant clear insight into his business. His business is not like that of a merchant where he is constantly selling the same articles in small quantities at a steady pro t to the same customers. With the contractor each new contract is on a new basis, with a new customer in one large amount, composed of varying quantities, at various prices; and it is evident that it must require vastly more care and forethought to conduct his business successfully than one that is steadier. He is also entitled to a profit upon the labor he employs and pays for. He should also estimate the risk of damage to the building while in course of construction.

Prudence and wise precaution are not a waste of time and trouble, and if not exercised when called for, the consequence will assuredly have to be borne in loss and anxiety.

A coat of coach varnish will keep sap from striking through painted work.

CONTRACTORS, ATTENTION!

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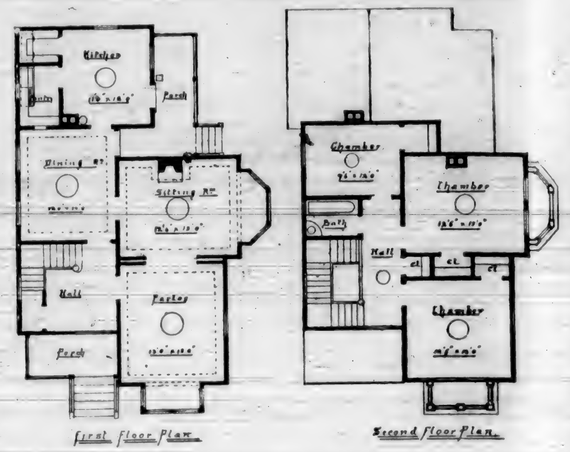
Elevation.



A Country or Village Residence.

THE above engravings represent the floor plan and perspective view of a country or village residence, also suitable for the city, are beautiful in design, and illustrate the advantages and necessity of employing an architect, by their well-proportioned, neat and graceful elevations, and compact, convenient, and well-arranged plans.

This building was erected in Santa Cruz, Cal., furnishing a home for one of its most prominent citizens. In reality the building has a pleasing, graceful appearance, so desirable in villages or country homes. As you approach the building the heavy, projecting cornices and gables, with neat brackets, fancy shingling, and ornamental finials; the bay-windows with chamfered pilasters and carved brackets, surmounted by graceful and spacious balconies; the large porch with turned columns and balusters, and the front door with raised panels and ornamental glass transoms, etc., cause you to stop and admire the architecture before you enter. Upon entering the building you find yourself in a large hall with a beautiful flight of platform stairs leading to the second story, and inclosed by black walnut newels, railings, and balusters. On the right is a door communicating with the parlor, and in front, one with the dining-room. The parlor and sitting-room are separated by large, paneled, sliding doors, which can be thrown open, making a very large and beautiful apartment. In the center of the ceiling of the rooms are decorated center-pieces, and the parlor, sitting, and dining-rooms have moulded cornices of plaster of Paris.

The kitchen is provided with a large pantry, in which is a slide to pass dishes, food, etc., into the dining-room; it also has a large closet with shelves and drawers for linen, towels, etc.

The rear porch is inclosed by a neat railing, and for convenience a slop hopper is placed near the kitchen door.

This design is a most desirable one for any family wishing the conveniences and pleasures of a model home. Any information desired will be promptly forwarded by addressing David Salfield, architect, 216 Kearny Street, San Francisco, Cal.

Black Walnut.

BLACK walnut has been extensively used, the New York *Herald* remarks, in making furniture for nearly fifty years. The demand for it, however, is on the increase. The forests of the North have been pretty well cleared out, and now the Southerners are looking forward to a chance in the market. Tennessee and Arkansas lead the van. Black walnut timber has been cut in almost incredible quantities in both these States, and land-owners have reaped a rich harvest. Next comes the States further south. They have immense tracts of timber-land covered, not only with the walnut tree, but also with the best woods required in carriage building. It is suggested by the New Orleans *Picayune* that the time is not far distant when Northern capital will be invested in manufactories on the edge of Southern forests and the banks of Southern streams. To which the *Herald* replies: "Our neighbor may rest assured that if there is money in it Northern cash will meet Southern enterprise half way."—*Scientific American.*

AN exchange refers to it as a singular fact that bricklaying is one of the parts of skilled labor that invention has never interfered with. Bricks are laid one by one to-day as they were in Egypt and Babylon four thousand years ago. It might also have added that bricks are put into the hat in about the same way as in the time of Noah.

NEVER paint a kitchen floor—oil and stain it.

WHITE marble mantels are again coming into favor.

THE pressure of wind on a slanting roof is equal to twenty pounds to a square foot.

WHITE paint, white furniture, curtains, white walls, and white woodwork is the latest agony.

AN inch of well-haired mortar between floors will be found to effectually deafen them against sound.

TIN roofs should always be painted on the under side with mineral paint and be laid in single sheets, flat lock.

NEWLY plastered walls and newly laid shingles should not be painted for six months. Shrinkage will then be over.

SINKS for kitchens are now made of iron enameled, porcelain, soap-stone and crockery-ware; 20x40 is the best size.

CEMENT concrete four inches thick troweled down and finished with a coat of Portland cement makes the best cellar bottom.

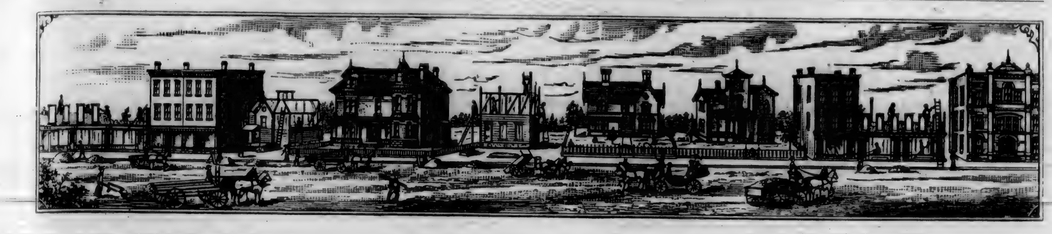
THE cause of many incipient fires is the faulty construction of chimney flues. Always see that they are thoroughly plastered inside.

THERE is no absolute need of painting zinc work, for exposing it to the atmosphere has the effect of coating it with a thick film of oxide which protects it from the future action of the air as effectually as paint.

A MIXTURE of cork, silica, and lime is coming into use in Germany as a building material. It has the advantage of keeping out heat and cold, and is also claimed to be an excellent preventive of dampness and deadener of sound. It is substantial, light, and durable, and seems to be especially adapted for ceiling and wall lining.

ARTISTIC TILES AND MANTELS.

ONE of the most artistic displays in Tiling, Mantels, Brass goods, etc., can be found in the rooms of E. A. Pattison & Co., 308 Stockton St., San Francisco. The design in tiling entitled "Cupid among the Roses," is worthy of particular mention. This firm is the sole Pacific Coast Agent for the Perth Amboy Terra Cotta Co. A large and well selected line of wooden and iron mantels is kept constantly on hand, and the prices are such as to command the attention of those about building. The floors of Messrs. Pattison & Co's warerooms are covered with Tile and Parquette flooring of the most beautiful and artistic designs, and should be examined before purchases are made elsewhere. Special personal attention is given to furnishing designs and estimates for all work connected with the tasteful arrangement of everything connected with Mantels and Tiling. This firm also makes a specialty of stained glass. Write or call for information as per address mentioned.



COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

William Neal is building two neat cottages on the corner of Clinton Avenue and Oak Street. They will contain four and five rooms respectively, and will cost about $1,500 each.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

A small cottage has been erected on Clinton Avenue, near Oak Street by J. H. Young. He intends enlarging it in a few weeks.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Fresno.

J. L. Smith, the contractor, is building a very neat and attractive family residence for himself, on the extreme northern portion of I Street. The main building is 17x28, with a front extension 12x10, two stories in height. The estimated cost is $1,250.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Webster Brothers, of the City Drug Store, have decided to build a one-story brick building immediately south of the buildings recently completed by J. M. Braly, on I Street. It will front twenty-two feet on I Street, and be eighty-five feet deep, and will be fitted up in first-class shape.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

A. Wilheimer has made arrangements to erect a brick building opposite the old city hall building, on I Street. It will be 22x85 feet in size, one story, and will have a fine plate glass front.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Geo. L. Bradley has purchased the lots formerly occupied by the dwelling of R. H. Fleming, on I Street, and will erect a substantial brick building thereon.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

In addition to the above the following parties will build: S. H. Williams, C. L. Purring, C. H. Sweet, Wm. Faymonville, Mrs. Bedford, and others.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Kingsburg.

Mr. Landrum Smith will commence building in May.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Modesto.

In a few weeks Messrs. Wood & Turner will erect a commodious building.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

The Modesto Bank has decided to build a fine two-story brick building.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Mrs. Parker is about to build a fine dwelling.

Cutting Tools, for $1.50.
Home Hand-Book, for $10.00.

Oregon Items.

It is probable that another immense warehouse and dock will be built on the river front between the Albina sawmill and the O. R. & N. docks this summer.

Practical Perspective, for $5.00.
Woodwards' Country Homes, for $1.50.

Merges & Vosper have let the contract to Buxton & Sparks for construction of two cottages on Russell Street near the corner of Kirby.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Charles Schmid, of Portland, is having a two-story frame store built on the east side of Helm Street, just south of the Tivoli saloon. F. Miller is the contractor.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

The old central school building on the southeastern corner of Sixth and Alder Streets, Portland, will be remodeled, at a cost of $3,000, as a hotel.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

John M. Pittenger, of Albina, will build a fine residence.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Work on the new paper mill at La Camas has been commenced, a force of men now clearing away the debris of the old mill.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Wm. M. Wisdom, of Portland, has purchased a piece of ground in the Belmont Park at Mount Tabor, and he will erect a dwelling-house thereon. Others contemplate making similar purchase and improvement.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

The Orphan's Aid Society of Salem intends to build a home for children in that city. It will cost about $15,000, and be modeled after that of Portland.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

The women of the Portland church congregations have raised about $1,000 for the new Y. M. C. A. building.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

A new Catholic school is to be built in Pendleton.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Bids have been received for construction of W. S. Ladd's four-story brick, in Portland, on the southeast corner of Front and Morrison Streets. The entire cost will be $60,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Dr. S. E. Josephi intends to build a private sanitarium in Portland costing about $10,000.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

N. K. West is having a two story brick store erected on the corner of Fourth and N Streets, Portland.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Buxton & Sparks have commenced construction of two frame cottages on the northeast corner of Russell and Borthwick Streets, for Merges & Vosper, of Hillsboro, Oregon. Mr. Merges will also build, in a short time, a handsome residence.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Petaluma.

Capt. John Henry is building a warehouse.

American House Carpenter, $5.00.
Cutting Tools, for $2.00.

San Jose.

One mile from town, two-story frame with barn. Owner, R. Wiltz; architect, Theodore Lenzen; contractor, J. D. Stewart; cost, $5,000.

Wonders of Art, for $1.25.
Limes, Cements, and Mortars, for $4.00.

On First Street. Mr. Farrington is adding $3,000 in improvements on his brick building. Theodore Lenzen, architect.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Mr. Kelly is building a frame cottage. Cost, $2,500. Theodore Lenzen, architect.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

G. J. Koenig is building a $2,500 house. Theodore Lenzen, architect.

Hand Railing and Stair Casing, for $1.50.
for Drawing Carpenters, for $1.75.

J. W. Lyndon, Los Gatos, Queen Anne cottage. $8,000. G. W. Page, architect.

Shavings and Sawdust, for $1.50.
American Cottage Building, for $3.50.

Mr. Johnson, East San Jose. $1,700 cottage. Jacob Lenzen & Son, architects.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Mrs. Winchester, Los Gatos Road, Eastlake house, $2,400. Robert Summers, builder.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

E. O. Smith, Eastlake house on First Street, $8,000.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

C. J. Martin, extensive improvements on Hamer House.

Album of Mantels, for $8.00.
Architects' Companion, for $2.50.

Snook Hotel, Southern Pacific depot, $4,000, Russel Bros., builders.

Woodward's Farm Homes, for $1.00
Woodward's Graperies, for $1.00.

L. A. Booksin, Willows, $2,000 cottage. Mr. Garratt, builder.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

M. Zarcone, $1,800 cottage on Sixth Street, G. N. Hemsley builder.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

C. C. Smith, St. John Street, between Eleventh and Twelfth, two houses costing $1,300 each.

People's Cyclopedia (three large volumes,) for $20.00.

Theo. Lenzen has made plans for a $6,000 house on the Alameda, and a $3,000 house on Lenzen Avenue, for Mr. Myers.

Plaster, How to Make it, for $1.00.
Shavings and Sawdust, for $1.50.

The Fredericksburg Brewing Company will make extensive improvements the coming summer, the cost amounting to about $40,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Theo. Lenzen has made plans for the Bank of Gilroy building, to be commenced within the next few days.

Builders' Construction (three volumes, very fine), for $14.00.

Bids will be received in a few days for building the Congregational church on Third and San Antonio Streets, to cost about $6,000. The plans were drawn by G. W. Page.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Auzerais House, additions; architect, Theodore Leazen. Cost, $1,600.

Santa Rosa.

A fine building will be erected under the supervision of James E. Wolfe, architect, for Mr. Barnett.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Miscellaneous.

The Southern Pacific proposes to build a mammoth hotel near the Seal Rocks after the fashion of the Del Monte at Monterey.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

There are now thirty-three hotels building in Los Angeles County, ranging in price from $30,000 to $600,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Helena, Montana, is having a boom. Buildings are being put up on every hand, and thousands of dollars invested.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

The Tacoma Warehouse Company intends building a wharf and large warehouse.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

R. P. Hastings will build in Green Valley, Cal.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

S. E. Holden will erect a large brick building in Napa.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

The gas company in Santa Rosa are adding large improvements to their works.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

G. M. Haller will erect a row of stores in Seattle.

Practical Perspective, for $5.00.
Drawing for Carpenters, for $1.75.

In Ventura, L. J. Rose has let the contract for a $60,000 hotel building to Mr. D. Perry, of San Francisco.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

In this city a new story is talked of on the Merchants' Exchange.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

A large building will be erected on Folsom and Twenty-sixth Streets for a Polytechnic School.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

In Pasadena, C. H. Richardson is building a $7,000 residence.

Cutting Tools, for $2.00.
Cumming's Details, for $5.00.

SAN FRANCISCO BUILDING NEWS.

B

Broadway, bet. Van Ness Avenue and Franklin. Frame school building.
O.—P. Birmingham.
A.—T. J. Welsh.
C.—Bateman Bros.
$20,000.

Broderick and Washington. Two-story frame
O.—C. E. Hempel.
C.—C. S. Waterbury.
$5,000.

Bush, bet. Powell and Mason. Additions.
O.—G. Hageman.
A.—B. E. Henriksen.
C.—Moore Bros.
$3,000.

C

Clipper, near Noe. Frame dwelling.
O.—Mrs. A. Kepfler.
C.—G. Houston.
$1,400.

California, cor. Pierce. Five two-story frames.
O.—James Whartenby.
A.—Moore & Schulze.
C.—R. Smilie.
$25,000.

California, bet. Kearny and Montgomery. Four-story brick.
O.—Abby M. Parrott.
A.—Pissis & Moore.
Masons—Riley & Loane.
Carpenter—W. M. Fletcher.
$75,000.

Clementina, bet. Fourth and Fifth. Two-story frame.
O.—Alex Donaldson.
A.—M. J. Welsh.
C.—J. J. Dunn.
$3,500.

D

Devisadero, near Geary. Two-story frame.
O.—J. F. McComic.
$4,500.

Dolores, near Twenty-eighth. Two-story frame.
O.—Flanagan.
$3,000.

Dolores, near Twenty-sixth. Two one-story frames.
O.—R. Bergfeld.
$4,000.

Dolores, near Twenty-ninth. Two-story frame.
O.—R. Bergfeld.
$3,000.

Devisadero, near California. Two two-story frames.
O.—Duncan.
A.—W. F. Smith.
C.—J. V. Hussey.
$7,000.

Devisadero, near Eddy. One three-story frame and two two-story frames.
O.—J. W. McDonald.
A.—T. J. Welsh.
$12,000.

E

Eddy, cor. Glasgow. Additions.
$500.

Ellis, bet. Taylor and Jones. Two story frame.
O.—A. Smith.
A.—H. D. Mitchell.
$7,000.

F

Fifth, cor. Bluxome. One-story brick building.
O.—F. L. Whitney.
C.—Mahoney Bros.
$5,000.

Folsom, bet. Fourth and Fifth. Three-story brick building.
O.—A. Field.
A.—J. E. Wolfe.
Mason—E. R. Shain.
Carpenter—Moore Bros.
$40,000.

Fourth, near Louise. Additions.
$500.

Fell, near Fillmore. Frame building.
O.—H. S. Murphy.
A.—M. Balczynski.
C.—R. O. Chandler.
$5,500.

Fillmore, bet. Fell and Oak. Two-story frame.
O.—J. Flood.
A.—T. J. Welsh.
C.—J W. Smith.
$8,000.

G

Green, near Buchanan. Two-story frame.
O.—J. Hulacher.
C.—A. P. Payson.
$4,500.

Green, near Laguna. One-story frame.
$1,200.

Geary, bet. Jones and Leavenworth. One two-story and one three-story frame.
O.—A. Koenig.
A.—P. R. Schmidt.
C.—R. Smilie.
$46,000.

Green, near Buchanan. One-story frame.
O.—Wm. Reston.
A.—Miller & Armitage.
C.—C. Christie.
$1,800.

Golden Gate Avenue and Webster. Two two-story frames.
O.—E. C. Querel.
A.—T. J. Welsh.
C.—S. S. Greene.
$13,000.

Golden Gate Avenue, cor. Broderick. Two-story frame.
O.—J. W. Keer.
A.—Percy & Hamilton.
C.—Ingerson & Gore.
$6,000.

Grove, bet. Broderick and Baker. Two-story frame.
O.—McGraugh.
$4,000.

H

Howard, bet. Fourth and Fifth. Three-story frame.
O.—Ellen McKerman.
A.—J. I. Clark.
C.—J. G. Adams.
$12,000.

Hayes and Baker. Two-story, attic and basement.
O.—F. Heyward.
A.—C. I. Havens.
C.—Mahoney Bros.
$20,000.

Hayes and Devisadero. Two-story frame.
O.—Miss E. W. Luecke.
A.—Moore & Schulz.
C.—J. T. Grant.
$5,000.

Harrison, bet. Ninth and Tenth. Two two-story frames.
O.—Anna Mangles.
A.—M. P. Schetzel.
C.—B. Dryer.
$6,500.

Hyde, bet. Post & Sutter. Three-story frame.
O.—Mrs. Conolin.
A.—M. Balczynski.
C.—R. O. Chandler.
$7,000.

Howard, near Twenty-fourth. Two two-story frames.
O.—Margaret P. Jennings.
C.—George Neuston.
$4,500.

Haight, bet. Steinar and Pierce. Two-story frame.
O.—P. Laherty.
Cost, $6,000.

J

Jackson, near Franklin. Additions.
O.—J. D Fry.
A.—Copeland & Banks.
Day Work.
$1,500.

Jackson, near Devisadero. Two-story frame.
O.—A. S. Brackett.
C.—Wilson & Son.
$5,000.

K

King, near Third. Brick building.
O.—A. Hayward.
A.—Percy & Hamilton.
Mason—J. McCarthy.
Carpenter—C. W. Kinsman.
$12,000.

M

Montgomery and California. Alterations and additions.
O.—Mrs. A. M. Parrott.
A.—Pissis & Moore.
C.—Mahoney Bros.
$15,000.

McAllister, near Lyon. Two-story frame.
O.—Thos. McDonough.
A.—W. C Hoagland.
C.—J. F. Easley.
$3,800.

Montgomery Avenue, bet. Filbert and Greenwich. Two-story frame.
O.—M. Sichel.
A.—P. R. Schmidt.
C.—P. Griffin.
$7,500.

Montgomery Avenue, near Union. Two-story frame.
O.—J. M. Orjubin.
A.—Miller & Armitage.
C.—L. Neissman.
$7,500.

Market, near Ninth. Two-story frame.
O.—T. Henwright.
C.—Burns.
$3,000.

Mission, near Eleventh. Additions.
O.—Mrs. M. Frederick.
A.—P. R. Schmidt.
$2,100.

Market, near Fifth. Three-story brick.
O.—E. J. Baldwin.
A.—A. A. Bennett.
$75,000.

Market and Jones. Additions.
O.—Murphy estate.
A.—T. J. Welsh.
Carpenter—J. L. Binet.
$60,000.

O

Oak, bet. Lyon and Scott. One-story frame.
O.—M. Windmuller.
A.—P. R. Schmidt.
C.—T. Knorpf.
$2,800.

Oak, near Buchanan. Two-story frame.
O.—Mrs. Marshall.
C.—C. M. Saulsbury.
$4,000.

P

Page and Devisadero. Two-story frame.
O.—Sweet.
A.—J. Newsom.
$5,000.

S

Seventh and Harrison. Two-story frame.
O.—Wm. Wehmoller.
C.—G. Houston.
$2,800.

San Jose Avenue and Twenty-fifth. Addition.
$1,000.

Seventh and Minna. Four-story frame.
O.—L. A. Meissnor.
A.—John & Zimmerman.
Mason—Hock.
Carpenter—Miller.
$14,000.

Scott, bet. Washington and Jackson. Two-story frame.
O.—F. C. Tallot.
A.—C. I. Havens.
C.—Gray & Stover.
$8,000.

Scott, near Page. Two-story ra me
J.—J. mes Hess.
A.—H. Geilfuss.
C—H. J. Weiss.
$12,000.

Sacramento, bet. Jones and Leavenworth. One-story frame.
O.—McDonald.
Day Work.
$3,000.

T

Tehama, bet. Fourth and Fifth. Four two-story frames.
O.—Ellen McKernan.
A.—J. J. Clark.
C.—J. G. Adams.
$6,000.

Tennessee, bet. Solano and Mariposa. Five one-story frames.
O.—Mr. Reece.
$6,000.

Twenty-fourth and Church. Two-story frame.
O.—W. C. Thompson.
A.—C. V. Pierce.
C.—Hawks & Bray.
$2,500.

Tenth, near Market. One-story frame.
O.—Christensen & Lord.
$1,000.

Twelfth Avenue and Clement. Frame dwelling.
O.—Mrs. Whiteside.
C.—Thompson.
$2,000.

Twenty-sixth, near San Jose Avenue. Two-story frame.
O.—Fisher.
C.—Mead.
$1,500.

Twenty-sixth, near San Jose Avenue. Additions.
$500.

Twenty-first, near Capp. Two-story frame.
O.—A. A. Hole.
A.—H. Geilfuss.
C.—H. J. Weiss.
$3,000.

U

Union and Polk. Two-story frame.
O.—Mr. Cummerton.
C.—Ellis.
$3,500.

Union, near Buchanan. One-story frame.
O.—J. W. Cudworth.
Day Work.
$1,600.

V

Valencia, bet. Herman and Ridley. Two-story frame.
O.—T. J. Bass.
A.—A. J. Barnett.
C.—A. Jackson.
$2,500.

Valencia and Willow. Two two-story frames.
O.—Joseph Moore.
A.—C. I. Havens.
C.—Doyle & Son.
$7,000.

Van Ness, bet. Turk and Eddy. Two-story frame.
O.—E. W. Joy.
A.—A. J. Barnell.
C.—A. Miller.
$7,000.

W

Washington, near Mason. Three-story brick.
O.—Powell Street Railroad Co.
C.—C. Green.
$25,000.

Y

York, bet. Twenty-fourth and Twenty-fifth. Two-story frame.
O.—C. Shoeppe.
A.—Salfield & Kohlberg.
C.—A. Klann.
$3,300.

New Books Just Received.

ARCHITECTURAL STUDIES, PART VI., contains twelve designs for houses, costing from $500 to $2,500, shown on a large scale, giving perspectives, elevations, and plans, with which are given specifications, bills of materials, and estimate of cost. Price, $1.00.

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MECHANIC'S GEOMETRY, or the Science of Framing by the use of Card-board Models. $5.00.

We will send the CALIFORNIA ARCHITECT for one year, *free*, to purchasers of either of the latter two works.

THE AURORA, a family magazine. Printed by Bacon & Co., San Francisco. With no "continued stories," clear type, exceptionally good reading matter, the *Aurora* recommends itself as an interesting family magazine. The price, for such first class matter, is exceptionally low, being but $1.50 per year. The San Francisco News Co. is the general agent, to whom orders can be addressed.

CORRUGATED iron conductor pipes are better than tin. In the first place they will expand when filled with ice, without bursting, and in the second place outlast tin.

CONTRACTORS, ATTENTION!

For $5.00 we will insert your business card for one year, and send you this Journal, free.

A Famous Property to be Sold.

THE West Point Foundry has been posted for sale at the Real Estate Exchange. This property is situated at Cold Spring, Putnam County, in this State, and comprises forty acres of land with several acres of buildings.

The foundry was established in 1819, and has been in constant operation ever since. In 1820, orders were received for cannon for the United States Government, and a lot of thirty-two pounders, round shot, smooth bore, were turned out, which were considered great guns in those days. All the celebrated "Parrott" guns, which played so important a part in settling the contest for the Union during the civil war, were made in this establishment.

The latest and most pretentious work undertaken was the finishing of two eight-inch rifled steel guns, being of the very few of the largest calibre of that description as yet made in the United States.

At present there are but two other gun-making establishments in this country, one at South Boston and the other at Washington; the West Point foundry, however, is the largest and most completely equipped of the three.

The property was located at Cold Spring before the advent of steam or the railroad, on account of the superior water power (twenty-eight feet fall), and also with a view to increased safety on account of the distance from the coast. It has grown to its present proportions gradually; latterly steam power has been supplied, and now the largest castings used for any purpose are being turned out for contractors all over the country.—*Real Estate Bulletin, N. Y.*

A Cozy Home.

THIS is the title of a new work by Frank L. Smith. It contains full plans and elevations for 10 houses ranging in cost from $1,500 to $5,000. The general character of the work may be told by its full title, viz., "A Cozy Home, How It Was Built, A Discussion of Its Design, and the Methods and Materials Employed in Its Construction." From the title one would infer that but one plan was given; but the author embraces 10 complete plans, with practical suggestions on each.

We have received a large consignment of the above work, and will forward a copy to any address upon receipt of the price, TWENTY-FIVE CENTS.

STRONG DAMP-PROOF GLUES.—For a strong glue which will hold in a damp place the following recipe, says an excellent authority, works well. Glue prepared in this way will hold leather belts in damp cellars, wheel pits and similar situations.

Take of the best and strongest glue enough to make a pint when melted. Soak this until soft. Pour off the water as in ordinary glue-making, and add a little water if the glue is likely to be too thick. When melted add three tablespoonfuls of boiled linseed oil. Stir frequently and keep up the heat till the oil disappears, which may take the whole day and perhaps more. If necessary add water to make up for that loss by evaporation. When no more oil is seen a tablespoonful of whiting is added and thoroughly incorporated with the glue.

Prepared in this way the glue is stronger than that made in the ordinary way and resists dampness far better.

THE British Consul at Swatow, who forwarded thirteen parcels containing samples of tools in common use by Chinese carpenters, and soon to be exhibited before the manufacturers and artisans of Sheffield, says he has always noticed in the Chinese carpenter's tool-box at least one, if not more, old European plan-irons or chisels, in many instances worn down a third of their original length. This seems to him to indicate a preference for European steel, and that were tools made of such steel, obtainable at anything like the market rate of Chinese tools, a large trade might be the consequence, for the carpenter plays a very important part in Chinese house-building. Fine finish and polish were quite unnecessary, the only requirements being durability and cheapness.

A YOUNG mechanic wants to know how to tell whether butts are for left or right-hand doors. Lay the butts on the bench or table with the knuckle-joint toward the right hand. If they are open at the top they are right hand; if open at the bottom, they are left hand. A door that opens away from you to the right, is called a right-hand door. If it opens away from you to the left, is is called a left-hand door.

SPIRITS of turpentine will remove unpleasant odors from the hands when all other deodorants fail.

Master Plumbers' Association.

Howard Building, S. W. Cor. Stockton & O'Farrell Sts., S. F., Cal.

MEMBERS.

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RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd lengths	19 00
" " second quality	16 00
" " selected	24 00
" " clear except for Flooring	29 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 00
" " " other sizes, No. 1	34 00
" " " all " No. 2	27 00
" " Stepping, No. 1	40 00
" " " No. 2	30 00
Ship Timber and Plank, rough, selected,	25 00
" " " selected, planed, 1 side	27 00
" " " " " 2 " average, 40 ft.	29 50
" " " " " 3 "	32 00
" " " " " 4 "	34 00
Deck Plank, rough	29 50
" " dressed average 35 ft	34 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	0½
Lath, 1½ 4 ft., per M.	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M	20 00
Spruce dressed shelving, to 14 inches, per M	35 00
" " ½ inch " " "	35 00
" " wider, per M.	40 00

REDWOOD.

	Per M ft.
Rough Redwood, merchantable	$20 00
" " second quality	16 00
" " selected	24 00
" " clear	33 00
Dressed " common surface	22 00
" " ½-inch surface	28 50
" " No. 1	33 00
" " No. 2	26 00
" " T. & G., 1x6, 12 ft. and over, No. 1	30 00
" " " other sizes, No. 1	30 00
" " " 7 to 11 No. 1	26 00
" " " under 7 No. 1	23 00
" " Rustic, No. 1	33 00
" " " No. 2	28 00
" " T. & G. beaded, 12 ft. and over, No. 1	33 00
" " " " other sizes No. 1	33 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft.	0½
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split	13
Shakes, split, per M.	9 00
" sawed "	11 00

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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SAN FRANCISCO, CAL., JUNE 15, 1887.

The Amended Mechanics' Lien Law.

IN the April number of this journal, taking our cue from statements published by our daily contemporaries, that among the bills *not signed* by the governor was the amendments to the Mechanics' Lien Law, our views of the matter from that standpoint were plainly expressed, and, although in error as to the main fact, the spirit of the article was and is pertinent, as far as setting forth the views of ninety-five per cent of all those interested, and the monstrous defects of the law then and now are concerned—were misled to the conclusion that the amendments had been consigned to a silent repose for at least two years, by reason of the governor failing to approve. We now find in the recently published statute book, containing the enactments of the late Legislature, a series of attempted amendments approved by His Excellency, which to some extent amends, and in others confuses badly, so much so that one of the ablest of the legal profession remarked to us, "I have made the lien law of California a study, and had gained, as I supposed, a fair interpretation and understanding of its intricacies, but now I must admit that I am all at sea, not feeling assured of anything under the law; and further, if subjected to a strict legal analysis before an intelligent court of competent jurisdiction, I am satisfied that it would be so thoroughly shattered and divested of practical force and effect that what remained would be of service only as waste paper."

The attempt to amend—make better—is a very defective piece of legislative work, in that it fails to remedy numerous glaring defects, which have caused much annoyance, inconvenience, and trouble in building circles, and drawn curses loud and long from thousands who have experienced the hardships imposed by some of the unreasonable provisions.

The amendments as passed will be found in full in another part of this issue. *Reputed owner* is generally introduced for *owner*, as found in previous law, to avoid mistake in the identity of the responsible contracting party. Section 1,183 is also amended in reference to filing contracts to read. "*Said contract, or a* MEMORANDUM *thereof, setting forth the names of all the parties to the contract, a description of the property to be effected thereby, together with a statement of the general character of the work to be done, the total amount to be paid thereunder, and the amounts of all partial payments, together with the times when such payments shall be due and payable,*" shall, "*before the work is commenced, be filed,*" etc., and, unless so filed, they "*shall be wholly void, and no recovery shall be had thereon by either party thereto.*"

We repeat that the proposition just quoted is infamous, in that it works hardships, inconvenience, and annoyance, and may be utilized to bad purposes and results. It is a legal means whereby one or more designing men may cheat and rob innocent persons. It is a legal trap in which persons not well informed as to the law—and thousands there are who are not—may be caught and fleeced, while no good purpose is served by the filing process. It is, beyond all question, special legislation, in that it applies to and affects specially building contracts, and no others, and as such is unconstitutional and illegal, while its monstrousness is severely aggravating, in so far as it dictates to contracting parties that an obligation entered into by and between them shall be and become void unless conforming to a notion conceived in and emanating from the brains of one or more fanatics who imagined it necessary for their purposes, and hunted up a funny idea, which, by personal effort and influence, they managed to push through the Legislature, and have made into a law, for the purpose of controlling the actions of thousands, nine-tenths of whom utterly disapprove the measure. Legislation which seeks to vitiate the solemn obligations of contract, other than for fraud, is a step in advance of reason and right between man and man.

The amendment which now makes it necessary to file the whole contract, *or a memorandum of its contents*, changes the filing feature some, and will perhaps puzzle those of our Superior Judges who have enunciated the doctrine that the specifications are and must be considered under the former law as a part of the contract itself. Will they now hold that the memorandum is virtually the contract, and that the specifications also attach thereto? The law as amended reads, Such contracts "*shall be subscribed by the parties thereto;*" and this is followed by, "*or a memorandum thereof,*" and shall be filed, but no provision is made as to or by whom the filing is to be done, nor as to whether at all, or by whom the memorandum is to be signed. The facts to be set forth in the memorandum are defined, but nothing in words appears as to the signing. Section 1184 is also amended, but still retains that most silly, inconvenient, and unbusiness-like provision "that twenty-five per cent of contract amount shall remain unpaid for at least thirty-five days after the final completion of contract, while another section provides that sub-contractors, material men, etc., shall have but thirty days within which to file their liens; consequently, those who have claims for work done or materials furnished must either resort to the actual filing of a lien within "thirty days," or lose all security in the building for and upon which they have performed labor or furnished materials. If they fail to do this, then they are entirely at the mercy of the contractor, who, if not honest and able to meet his obligations, can, if so disposed, devise means which will give his creditors no better, at best, than a judgment of legal process. Common sense and fairness would have suggested that the advantage of the five days' time should be in favor of the right to lien, the twenty-five per cent retained to be due and payable in twenty-five days, or the time to be made equal in both cases. Cases are on record where "smart Alicks" have waited until the last moment, and when too late for other creditors to prepare and file liens, the sly ones have secured to themselves the material defects of the law, and filed claims for the full amount due them, although the balance of contract money has not been sufficient to pay more than seventy-five per cent of the total sum of indebtedness. It is all right and proper that every creditor should save himself from loss, when he can do so with equal justice to all other parties similarly situated, but when established law provides the strategy by which the shrewd, cunning, and unscrupulous may gain advantages, and beat the trusting and unsuspecting, such laws must be considered as more infamous than just.

Our readers, however, will be able, by comparing the amendments with previous law, to judge of present merits, if any there are to be found in the Mechanics' Lien Law, as it is and will be for the next two years.

An Act to amend sections 1883, 1884, 1887, 1191, and to repeal section 1203 of an Act of the Legislature of the State of California, entitled, "An Act to establish a Code of Civil Procedure," approved March 11, 1872, all relating to Liens of Mechanics and others. [Approved March 15, 1887.]

The people of the State of California, represented in Senate and Assembly, do enact as follows:—

SECTION 1. Section 1183 of the Code of Civil Procedure is amended so as to read as follows:—

Lien upon property upon which they have bestowed labor.

SEC. 1183. Mechanics, material men, contractors, sub-contractors, artisans, architects, machinists, builders, miners, and all persons and laborers of every class, performing labor upon or furnishing materials to be used in the construction, alteration, addition to, or repair, either in whole or in part, of any building, wharf, bridge, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure, shall have a lien upon the property upon which they have bestowed labor, or furnished materials, for the value of such labor done and materials furnished, whether at the instance of the owner or any other person acting by his authority, or under him as contractor or otherwise; and any person who performs labor in any mining claim or claims, has a lien upon the same, and the works owned and used by the owners for reducing the ores from such mining claim or claims, for the work or labor done, or materials furnished by each respectively, whether done or furnished at the instance of the owner of the building or other improvement, or his agent; and every contractor, sub-contractor, architect, builder, or other person, having charge of any mining, or of the construction, alteration, addition to, or repair, either in whole or in part, of any building or other improvement as aforesaid, shall be held to be the agent of the owner for the purpose of this chapter. In case of a contract for the work, between the reputed owner and his contractor, the lien shall extend to the entire contract price, and such contract shall operate as a lien in favor of all persons, except the contractor, to the extent of the whole contract price; and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and the said contract, or a memorandum thereof, setting forth the names of all the parties to the contract, a description of the property to be affected thereby, together with a statement of the general character of the work to be done, the total amount to be paid thereunder, and the amounts of all partial payments, together with the times when such payments shall be due and payable, shall, before the work is commenced, be filed in the office of the County Recorder of the county, or city and county, where the property is situated, who shall receive one dollar for such filing; otherwise, they shall be wholly void and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

Contracts shall be in writing.

SEC. 2. Section 1184 of the Code of Civil Procedure is hereby amended so as to read as follows:—

Contract price payable in installments.

SEC. 1184. No part of the contract price shall, by the terms of any such contract, be made payable, nor shall the same or any part thereof be paid in advance of the commencement of the work, but the contract price shall, by the terms of the contract, be made payable in installments at specified times after the commencement of the work, or on the completion of specified portions of the work, or on the completion of the whole work; *provided*, that at least 25 per cent of the whole contract price shall be made payable at least thirty-five days after the final completion of the contract. No payment made prior to the time when the same is due, under the terms and conditions of the contract, shall be valid for the purpose of defeating, diminishing, or discharging any lien in favor of any person, except the contractor, but as to such liens, such payments shall be deemed as if not made, and shall be applicable to such liens, notwithstanding that the contractor to whom it was paid may therefore abandon his contract, or be or become indebted to the reputed owner in any amount for damages or otherwise, for non-performance of his contract or otherwise. As to all liens, except that of the contractor, the whole contract price shall be payable in money, and shall not be diminished by any prior or subsequent indebtedness, offset, or counterclaim, in favor of the reputed owner and against the contractor; no alteration of any such contract shall affect any lien acquired under the provisions of this chapter. In case such contracts and alterations thereof do not conform substantially to the provisions of this section, the labor done and materials furnished by all persons except the contractor shall be deemed to have been done and furnished at the personal instance and request of the person who contracted with the contractor, and they shall have a lien for the value thereof. Any of the persons mentioned in section 1183, except the contractor, may at any time give to the reputed owner a written notice that they have performed labor or furnished materials, or both, to the contractor, or other person acting by authority of the reputed owner, or that they have agreed to do so, stating, in general terms, the kind of labor and materials, and the name of the person to or for whom the same was done or furnished, or both, and the amount in value, as near as may be, of that already done or furnished, or both, and of the whole agreed to be done or furnished, or both. Such notice may be given by delivering the same to the reputed owner personally, or by leaving it at his residence or place of business, with some person in charge, or by delivering it to his architects, or by leaving it at their residence or place of business, with some person in charge, or by posting it in a conspicuous place upon the mining claim or improvement. No such notice shall be invalid by reason of any defect of form, provided it is sufficient to inform the reputed owner of the substantial matters herein provided for, or to put him upon inquiry as to such matters. Upon such notice being given, it shall be the duty of the person who contracted with the contractor to, and he shall, withhold from his contractor, or from any other person acting under such reputed owner, and to whom by said notice the said labor or materials, or both, have been furnished, or agreed to be furnished, sufficient money due, or that may become due to such contractor, or other person, to answer such claim and any lien that may be filed therefor for record under this chapter, including counsel fees not exceeding one hundred dollars in each case, besides reasonable costs provided for in this chapter.

Written notice of labor performed.

Notice, how delivered.

SEC. 3. Section 1187 of the Code of Civil Procedure is amended so as to read as follows:—

Time and place of filing claim.

SEC. 1187. Every original contractor, within sixty days after the completion of his contract, and every person, save the original contractor, claiming the benefit of this chapter, must within thirty days after the completion of any building, improvement, or structure, or after the completion of the alteration, addition to, or repair thereof, or the performance of any labor in a mining claim, file for record with the County Recorder of the county in which such property, or some part thereof, is situated, a claim containing a statement of his demand, after deducting all just credits and offsets, with the name of the owner or reputed owner, if known, and also the name of the person by whom he was employed, or to whom he furnished the materials, with a statement of the terms, time given, and conditions of his contract, and also a description of the property to be charged with the lien, sufficient for identification, which claim must be verified by the oath of himself, or of some other person; any trivial imperfection in the said work, or in the construction of any building, improvement, or structure, or of the alteration, addition to, or repair thereof, shall not be deemed such a lack of completion as to prevent the filing of any lien; and in case of contracts, the occupation or use of the building, improvement, or structure, by the owner, or his representative, or the acceptance by said owner or his agent of said building, improvement, or structure, shall be deemed conclusive evidence of completion; and cessation from labor thirty days upon any unfinished contract, or upon any unfinished building, improvement, or structure, or the alteration, addition to, or repair thereof, shall be deemed equivalent to completion thereof for all the purposes of this chapter.

Description of property.

SEC. 4. Section 1191 of the Code of Civil Procedure is hereby amended so as to read as follows:—

Lien upon lot for improving.

SEC. 1191. Any person who, at the request of the reputed owner of any lot in any incorporated city or town, grades, fills in, or otherwise improves the same, or the street or sidewalk in front of or adjoining the same, or constructs any areas, or vaults, or cellars, or rooms, under said sidewalks, or makes any improvements in connection therewith, has a lien upon said lot for his work done and materials furnished.

SEC. 5. Section 1203 of the Code of Civil Procedure is hereby repealed.

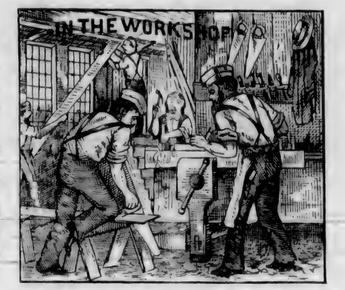
SEC. 6. This Act shall take effect and be in force from and after its passage.

ESSENTIALS OF PERSPECTIVE.

By L. W. MILLER. Price, $1.50. The newest as well as one of the best of the books on the subject.

ASKED, ANSWERED, and COMMUNICATED.

☞ Architects, Contractors, Carpenters, and mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them, and we will make the cuts. We especially invite suggestions from apprentices and young mechanics.



Not Enough Draughtsmen.

SEVERAL times, in the columns of this journal, we have called attention to the scarcity of draughtsmen. And although several promptly answered our appeals, the demand is now greater than at any previous time. From ten different towns and cities, and from numerous offices in this city, comes the demand for first-class draughtsmen, and there are none to fill the places. We can immediately place several in good positions, if they will send us their address, and state their qualifications. Wages will vary from $18 to $25 per week, according to ability.

Wrong Statements Corrected.

IN the May issue of the *Carpenter*, the following statement appears:—

CALIFORNIA.

"Stay away from the Pacific Coast. The cheap railroad fares have flooded every town with hordes of idle labor willing to work for even a dollar a day. Wages flat and work scarce.

ALAMEDA.—Moderate; $2.50 to $3. 9 hours.
SAN FRANCISCO.—Overstocked; $2.50 to $3. 9 hours.
SAN RAFAEL.—Middling; $2.25 to $3. 9 hours.
OAKLAND.—Dull; $2 to $3. 9 hours a day.
LOS ANGELES.—Fair; $2.50 to $3. 9 hours.
PASADENA.—Medium; $2.50 to $3. 9 hours.
SAN DIEGO.—Middling; $2.25 to $3. 9 hours.
SANTA BARBARA.—Dull; $2.40 to $3.
SAN BERNARDINO.—Quiet; $2.00 to $3.00."

In several places in the same issue, attention is called to the remarkable dullness in building circles, and the low prevailing wages received by mechanics. We do not know the source from whence the *Carpenter* gets its information, but we emphatically protest against any journal printing news and disseminating the same as gospel truths, without first receiving the most unqualified assurances from *different* sources, that the statements made are correct. We have frequently noticed, in trade journals, that the opinion of one man is given as the sentiment of the entire community, and should his feelings be warped by presumed bad treatment of any of his workmen companions, the neighborhood is to be condemned and written down, because the one man hath so ordained.

San Francisco is not "overstocked" with carpenters willing to work for "$2.50 to $3.00 per day of nine hours." *Carpenters* are generally well employed, and the ruling rate of wages is $3.50 per day, and no *carpenter* will work under that rate. Unfortunately, we have an army of floor-layers, piece-workers, etc., who will take anything they can get at any price; but, in behalf of the CARPENTERS of the Pacific Coast, we protest against placing such scabs in the same category as mechanics.

San Rafael is but a small country town of not over 3,000 inhabitants, but we venture to say, without fear of contradiction, that there is not a *carpenter* working in or around the town, who receives but $2.25 a day, as per clipping prices.

We think if the San Bernardino *carpenters* could get hold of the informant who quotes their wages at $2.00 per day, there would be little left of him to write future articles. And so with the whole list; there is not a fair statement in any case, of either amount of work, or wages.

In this city building is very brisk, as our regular monthly statements will prove. In Oakland more work than usual is going on, and much more to follow. Los Angeles and San Diego are reveling in present activities and future engagements. In fact, all over the State there is more work being done in the building line than for many years past for similar periods. The ruling wages for *carpenters* is $3.50 per day, with a reduction for piece-workers and apprentices.

To the honor of California *carpenters*, it may be said that sooner than work at their trade for less than mechanic's wages, they would stow their tools in the basement, and go to the harvest field, or other honest employment, at $40 per month and board.

WHY DOES VARNISH CRACK?—How many paintings and how much decorative coloring is spoilt by cracking of the varnish. Much of this is due to poor mastic varnish. Good varnish on good color coats will not give any signs of cracking, until, by repeated varnishings, it has accumulated a thick coating of brittle, inelastic gum. On the principle that it takes two to make a quarrel, two or more coats of varnish must be given before this trouble makes itself manifest. As in all drying concretion occurs, one cause of cracking is putting on one coat before another is perfectly dry. To reduce the risk of cracking to a minimum, where varnish is to be applied as a finish, all coatings should have oil in their composition, and yet be mixed to dry flat, and they should be applied very evenly and thinly, even if this necessitates an extra job.

Varnish colors may be painted on the glass of inside of window to imitate stained glass. Some very brilliant colors may thus be obtained.

THE production of cut nails in the United States in 1886, is the greatest in the history of the country, being 8,160,963 kegs, as against 6,696,815 kegs in 1885.

Cutting Rafters.

I HAVE a rule for cutting rafters one-third pitch which may interest the readers of *Carpentry and Building*. Suppose the building to be 18 feet wide. I take half the width of the building, which in this case is 9 feet. I multiply by $2\frac{1}{2}$, and call the answer inches, giving in this case $22\frac{1}{2}$ inches, or 1 foot $10\frac{1}{2}$ inches. I add this to half the width of the building, which gives the length of the rafter 10 feet $10\frac{1}{2}$ inches. Since this overruns, say $\frac{1}{16}$ inch to the foot, it would make this measurement $\frac{9}{16}$ inch too long. Call this $\frac{1}{2}$ inch, which leaves the rafter 10 feet 10 inches in length. The figures I would make in a problem of this kind would be as follows:—

18	9	
$4\frac{1}{2}$	1	$10\frac{1}{2}$
$22\frac{1}{2}$	10 ft. 10 ins.	

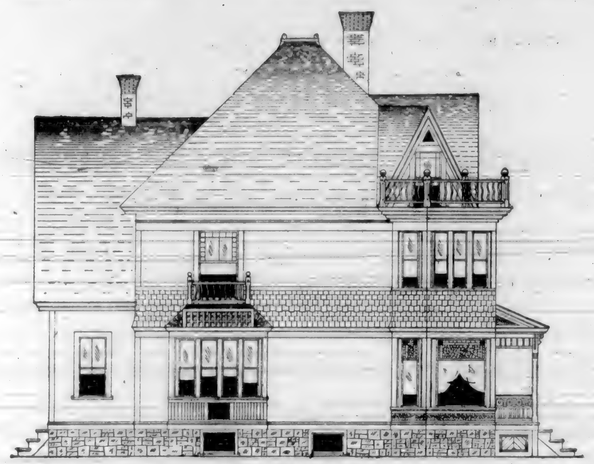
The matter of subtracting the $\frac{1}{2}$ inch excessive length in this case, alluded to above, would be done in the head. I shall be glad to know what the readers of the paper think of this method.—*S. J. P., in Carpentry and Building.*

Characteristic of a Good Floor.

ONE of our contemporaries in specifying the features of a good floor arranges the specification in the following form:—

A good floor should be
A test of the builder's skill;
Of thoroughly seasoned lumber;
Without creaking boards;
Without splintering edges;
Without gaping joints;
Without curling section;
Flat as a table-top;
Rigid and smooth;
Almost imperceptibly jointed;
Undisturbed when laid;
Laid on straight-edged joists;
Without heading joints;
Laid without showing nails;
Of edge-nailed boards;
Laid on a bed-floor.
A good floor is a rarety.

THE Supreme Court of Vermont has announced its decision in the famous case of the Rvegote stonecutters' conspiracy, growing out of the attempt of the workmen to prevent the employment of other workmen, and to deter them from working by denouncing them as "scabs," and threatening to make them publicly odious as such. The decision of the Supreme Court is that a conspiracy among workmen to prevent others from working or from being hired is a crime at common law, and punishable under the statutes of Vermont.



Side Elevation.

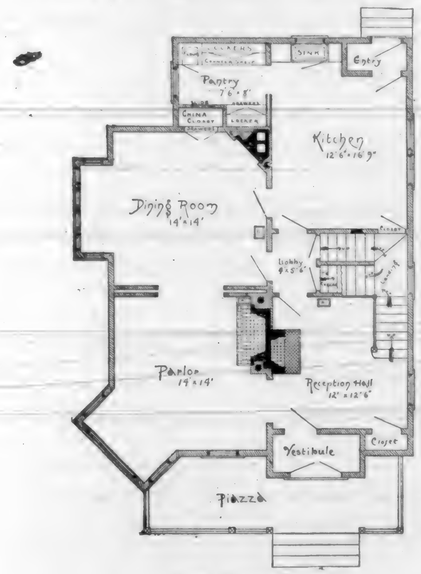
Front Elevation.

A Cozy Home; How It Was Built.

FRANK L. SMITH, ARCHITECT.

THE suburban cottage and its construction have become of prime interest to a large class of people at the present day. Being of comparatively small cost, and lending itself to varied and attractive design, a man of quite limited means may aspire to the ownership of a cozy home, where he can put into execution the ideas he may have fostered for a long time as to what a house and its furnishings should be. He studies the many architectural publications, and sees many designs that please him in some respects, and many more that he has no use for whatever. Turning from one to the other, not finding just what he wants, he despairs of obtaining a ready-made plan. The chances of his doing so are about even with his getting a ready-made coat that will be a perfect fit. He may find something that will answer, but falls far short of what he wants.

The average man who is to build a low-cost dwelling does not seek or employ an architect's services, for the reason that he believes he can put the money to better use in the finishings of the house, and the inevitable result is that he is not satisfied. One forgotten thing after another will crop up, and a change is made here, and a change there; and finally, after nearly endless worry, he enters a completed house that is not what he wanted, and that has overrun his estimate. He resolves to build again as soon as he can dispose of his first venture, and a second time will profit by his previous experience. But the building of one house is not sufficient to enable a man to steer clear of the many pitfalls in house building, and the only satisfactory and economical way is to employ an architect in the beginning.



First Floor Plan.

Make up your mind what you wish to have and to spend, and if the two do not agree, either take what your money will buy, or do not build. Employ an architect in whom you have confidence, and do not be in a hurry. Carefully study the sketches he will make for you, have everything arranged beforehand and reduced to writing, and there is no reason why your house should cost you a cent beyond the estimate, or cause you more anxiety than getting a new suit of clothes.

* * * * * * * * * * *

A client of mine came in the office and said, "I want a snug, cozy home. I have not a great amount at my disposal, but that little I want spent judiciously. I do not want an inch of room wasted. There must be three rooms upon the first floor, with a large entrance or reception hall, easy flight of stairs, dining-room and parlor communicating with sliding doors, one fire-place at least, large kitchen, with ample pantry accommodations, and back stairs, bay-window in dining-room, and corner bay-window in parlor. On second floor there must be four chambers, ample closets, bath-room, and access to the attic, though latter is not to be finished. All rooms are to be accessible from a common hall, and the whole to be quiet, and yet attractive in appearance. Now can I get such a house built for $3,000?"

Here was a client whose requirements were modest, and whose wants are similar to those of one-half the people who build houses. In a short time I had prepared the plans illustrating this article. The house was commenced, and in three months ready for occupancy. Everything having been fully determined upon in the beginning, the owner had but few suggestions to make as the work progressed, and his dreams were unclouded by visions of "extra" bills, that too often prove the bugbear of building operations.

* * * * * * * * * * *

Are you not in need of an architect's services? If you intend to build a house, you certainly are. But I hear you say that your friends and neighbors have built houses time and again, and that they managed to get along without an architect, and consequently have saved money.

It certainly is true that the large majority of dwelling-houses are built without the services of an architect; yet it does not follow that such services are not beneficial, and even necessary.

When you have a case at law, you do not appear before the justice in your own behalf, but rather place your interests in the hands of an able advocate. When your child is ill, you do not go at once to the apothecary; but, instead, you call the family physician, and let him first prescribe.

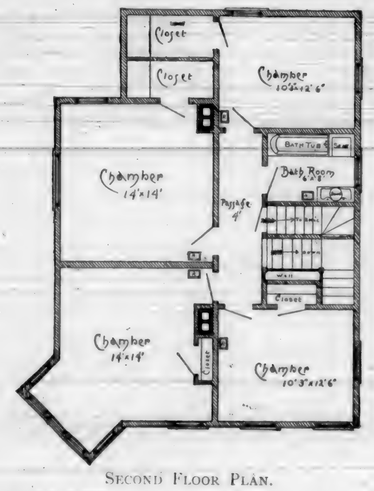
The architect stands to his client very much in the light of both attorney and physician. He makes a "diagnosis" of your case, after a careful investigation; prescribes in the shape of plans and specifications; sends you to the carpenter, who compounds the prescription. He draws up the legal papers, audits the accounts, and, in the end, assures you that you have been fairly dealt with, and have received what you have paid for.

An architect is not necessarily a builder, any more than a physician is an apothecary; nor is the carpenter necessarily an architect, any more than the apothecary is a physician.

The architect can save you money. He discovers your wants, your likes, and your dislikes. He reduces them to a tangible form; he draws up the specifications so minutely that every variety of material and labor is distinctly set forth as to its quality and kind.

When completed, plans and specifications are presented to a builder for an estimate. He knows exactly what is expected of him. There is no chance for controversy or quibble; all has been settled by the owner through his architect. In consequence, if several contractors estimate upon the building, it is known that their figures are all upon the same basis.

Where a carpenter receives his orders directly from the owner, in some such a way as this, "Build me a house like Mr. Brown's,



Second Floor Plan.

but with such and such changes," there never can be any definite contract, for the changes and alterations, in the way of "extras," amount to a very considerable sum in most cases. Carpenters like these "extras," though they often grumble about them, for they are the fat pickings of the job, and are often a source of more profit than the original contract.

"Extras" are to be rigidly avoided, and it is the duty and province of the architect to so perfect his plans and specifications that none will be necessary. On almost every building erected in such a manner, enough might be saved on the extra work to more than pay for an architect's services.

* * * * * * * * * * *

This article and the illustrations accompanying are from a new work entitled, "A Cozy Home," the price of which is but *twenty-five cents*. We are indebted to the author, Frank L. Smith, architect, for the use of the cuts and the extracts from the book. "A Cozy Home" contains ten full sets of plans, one set of which is here represented complete. To anyone contemplating building, the "Cozy Home" will give many valuable ideas. We have a full supply on hand, and will send a copy, post-paid, upon the receipt of twenty-five cents.

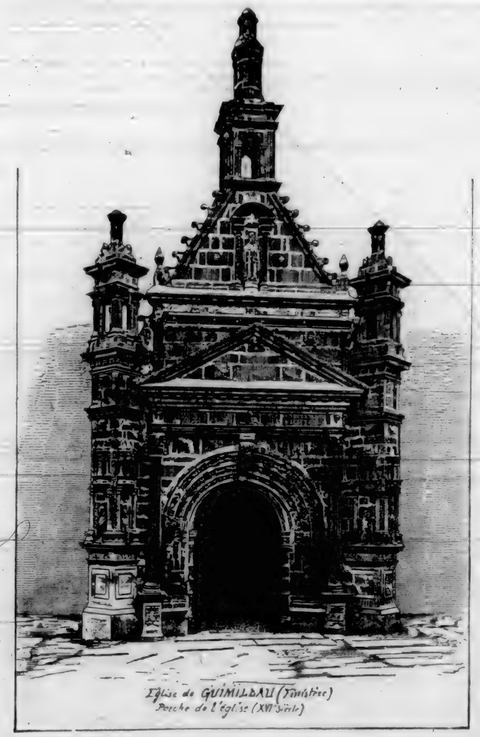
Draughtsmen Wanted.

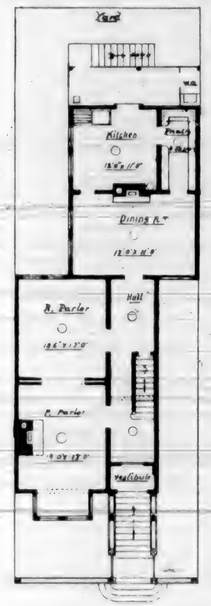
We have situations for 20 good draughtsmen. Send your address to this office for full particulars. Those wanting places in first-class offices please correspond with us immediately, as the demands are urgent.

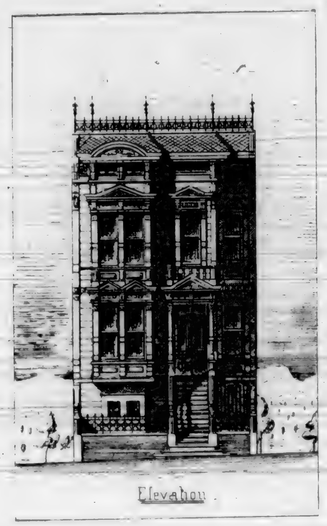
Are Advertisements Read?

WE have always taken the ground that advertisements in a trade journal are as much read as the editorial matter itself. In fact, many people subscribe more for the purpose of keeping the run of all the new things connected with the building interests than they do for the "good ideas" contained in the reading columns. Those that study and invent or manufacture superior articles for use in buildings or connected therewith, are sure to let people know of their wares through the columns of the trade journals. The following pithy observations are not original with the editor of this journal, but they will be well worth careful reading:—

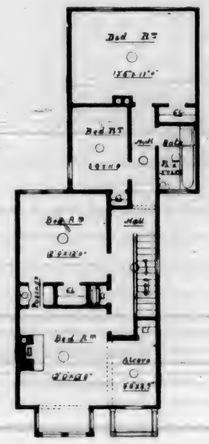
The first time a man looks at an advertisement he does not see it.
The second time he does not notice it.
The third time he is dimly conscious of it.
The fourth time he faintly remembers having seen something of the kind before.
The fifth time he half reads it.
The sixth time he turns up his nose at it.
The seventh time he throws the paper down impatiently.
The eighth time he ejaculates, "There's the confounded thing again!"
The ninth time he wonders if there is anything in it.
The tenth time he thinks it might possibly suit somebody else's case.
The eleventh time he thinks he will ask his neighbor if he has tried it, or knows anything about it.
The twelfth time he wonders if the advertiser can make it pay.
The thirteenth time he rather thinks it must be a good thing.
The fourteenth time he happens to think it is just what he wanted.
The fifteenth time he for a long time resolves to try it as soon as he can afford it.
The sixteenth time he examines the address carefully and makes a memorandum of it.
The seventeenth time he is tantalized to think he is hardly able to afford it.
The eighteenth time he sees painfully how much he is in need of that particular article.
The nineteenth time he counts his money to see how much he would have left if he bought it.
The twentieth time he rushes frantically forth and buys it.







Elevation



Second Floor Plan

A Two-Story City Residence.

IN this design we give the floor plans and geometrical elevation of an eight-room city dwelling. This building has a front of twenty-five feet by a depth of sixty-five feet, including rear porch, and occupies a lot twenty-five feet front by one hundred and twelve feet six inches deep, and contains a basement story under the entire building seven feet six inches high, occupied by a laundry, cellar, and store-rooms. The building is so arranged that the rooms are lighted from each side, as well as from the front and rear. The house is entered through a deep, richly-paneled vestibule, into a wide hall communicating directly with all the rooms, and containing a flight of stairs terminating in the second story hall, with turned black walnut newel-posts at the top and bottom. The two parlors are connected by large sliding doors, nine feet high and six feet six inches wide, and when thrown open make a very large and elegant apartment. The fire-places are finished in best Italian marble, and each has an ash-pit communicating with the cellar. The rear hall in the second story is a continuation of the main hall, separated by an arch. The stairs and halls are lighted by windows three feet wide by two feet high, and glazed with colored glass, with ornamental figure in the center.

The front bedroom has an alcove room separated by an arch, which should be used for a dressing-room. The two front bedrooms have a passage between them, containing a wash-basin with marble top and back. On one end of the rear porch is a water-closet, inclosed with tongued and grooved boards, dressed and painted. A flight of rear stairs, descending from the rear porch, communicates with the rear yard. The well-proportioned bay-window, graceful cornice, iron cresting, portico, balcony, etc., are solidly constructed, and speak for themselves without further comment on the beauty and artistic appearance of the building.

How to Prepare Calcimine.

SOME of our readers may wish to prepare their own calcimine, and we give these rules for the purpose of enabling them to do so:—

Soak one pound of white glue overnight; then dissolve it in boiling water and add twenty pounds of Paris white, diluting with water until the mixture is of the consistency of rich milk. To this any tint can be given that is desired.

Lilac—Add to the calcimine two parts of Prussian blue and one of vermilion, stirring the mixture thoroughly, and taking care to avoid too high a color.

Brown—Burnt umber.

Gray—Raw umber, with a trifling amount of lampblack.

Rose—Three parts of vermilion and one of red lead, added in very small quantities until a delicate shade is produced.

Lavender—Make a light blue and tint it slightly with vermilion.

Straw—Chrome yellow, with a touch of Spanish brown.

Buff—Two parts of spruce, or Indian yellow, and one part of burnt sienna.

Blue—A small quantity of Prussian blue will give a soft azure tint. Dark blue is never desirable.

Delicate tints in the foregoing varieties of colors are always agreeable and tasteful, and so great care must be taken that they are not too vivid. The tints will always appear brighter than in the calcimine pot, and the workman or workwoman must keep this fact in mind when adding the coloring powders. It is a good idea to give the ceiling a calcimine two or three shades lighter than that of the walls, so that it may seem merely a delicate reflection of their deeper tones. The ceiling can be calcimined with the lighter tint, and then more coloring added for the walls.

Origin of Slanting Roofs.

TO find the source from which the European nations have derived the art of building in stone, we must look to the land of the Pharaohs. From Egypt the craft passed to Greece, and from the Greeks it was taken up by the Romans, to be by them disseminated through the north and west of Europe in the process of colonization. The similarity, in regard to the constructive parts of the ancient Greek buildings to some of those found in Egypt of older date, affords strong confirmation of the tradition that the Greeks borrowed the art from the Egyptians. The Greeks, however, in the adopting of it, added a new feature, the pediment, and the reason for this addition is easy to find. Egypt is practically rainless. All the protection from the climate required in a palace or temple in such a country is shelter from the sun by day, and from the cold by night, and for this a flat roof, supported by walls or pillars, with archives, is quite sufficient; but when, as in all European countries, rain has to be taken into account, a slanting roof becomes a necessity. The Greeks, with their eye for symmetry, provided for this by forming the roof with a central ridge, as an obtuse angle, from which it sloped down equally on either side. The triangular space that formed at the end of the building above the architrave was occupied by the pediment, and this part of the façade, which owed its birth to the exigencies of the climate, was thenceforth regarded as so essential to the completeness of the work, that it was said that if a temple were to be erected in the celestial regions, where rain would not be possible, the pediment could not be omitted.—*Popular Science Monthly.*

MODERN HOUSE PAINTING, for $5.00.

San Francisco Chapter of Architects.

THE regular meeting of the Chapter was held on the evening of the 3d inst.—President Pissis presiding. After the reading of the minutes, and routine business was passed, the committee appointed by the Chapter to mature and submit proposed amendments and improvements to the present city ordinances relating to the erection of buildings, made a report which led to a general discussion of the subject matter, ending with instructions to said committee to proceed as rapidly as possible with the work in hand so that the issues upon the many vexing and vexatious questions so frequently arising under the present law might be met, and, if possible on the part of those now exercising arbitrary control of matters, better and more mutual understanding and arrangement between those most interested may be perfected.

The session was unmarred by a single word or occurrence not of the most pleasing and harmonious character, except regrets that every "better architect" in the city did not join in honest efforts to perpetuate an organization founded in good faith, with honest, impersonal purposes for the best good of the entire profession.

City Fire Law Ordinances Declared Invalid.

ACTING Police Judge Page, presiding in Police Court No. 1, on the 9th inst. declared Section 1752, of the peculiarly entitled—"*Order defining the Fire limits and regulating the Construction of Buildings in the City and county of S. F.*," invalid,—peculiar in that the "order" covers a thousand—more or less—distinct questions and issues, mixing up technical fire matters and matters specially architectural, scientific, and mechanical in one common jumble. The decision as understood not only invalidates the section mentioned, but the whole, nearly one hundred sections included in the "order." The "order" in many of its parts bearing upon the construction of buildings, has been a source of great annoyance to competent architects and builders, who have been held under the "order" to requirements of the most unreasonable and unnecessary character, and a great many hitches, stoppages of work from trifling and defenseless causes, arrests, etc., have from time to time occurred.

Under present circumstances, it will be necessary to formulate new ordinances covering the ground made vacant by the decision, or the legal repassage of the "order" as it is, which was declared invalid simply upon the ground of irregular publication.

We will not presume for one moment that the fire department people, who have dictated or influenced the formulation of the "order" set aside, have any other than safety and right purposes in mind, but as there are other than fire department interests involved, there should be easily available measures adopted by which mutually understood conclusions may be reached.

Semi-Annual Building Record.

TO a stranger it would appear at first glance that an unusual number of buildings were in progress of erection, but our semi-annual report does not show a very good comparison with other years.

During the month just ended we report:—

104 frame buildings, value		$477,500
7 brick	" "	196,164
26 alterations	"	57,550
137		$731,214

For comparison we give the number for each month of present year:—

Jan., 59, value		$650,750
Feb., 48,	"	204,450
March, 84,	"	353,900
April, 100,	"	636,800
May, 88,	"	692,800
June, 137,	"	731,214
516		$3,269,914

For the similar period in 1886:—

670 buildings, value	$3,486,633

A large decrease is noted in the *number* of new buildings, while there is but little falling off in the *values* of same between the two periods. This shrinkage is principally caused by the

HIGH PRICES OF BUILDING MATERIALS.

In business buildings owners do not so much stand on a difference in price of lumber, etc. But a laboring man can ill afford to pay the difference. One year ago rough lumber could be had for $15 per M. in small quantities, and much less by cargo. Rustic, best quality, $30 per M. To-day the prices are $20 for rough, and $35 for rustic. That these extortionate prices have stopped the erection of small buildings, is fully proven by our building record. Hardware, brick, etc., having been advanced in price as much as the public will stand, and lumber a little more than poor people can afford, we can reasonably expect a falling off in the erection of

AVERAGE COST FRAME BUILDINGS.

We hope the lumbermen will take this fact into consideration, and instead of calling the dealers of that commodity together for the purpose of considering how much they can squeeze out of the dear public, that they will consider that the future advancement of San Francisco is of far more importance than the addition of a few dollars to the coffers of already rich men.

The argument is used that an advance of $5.00 per M. does not effect the value of a small house more than $75 or $100. All right, then, if that is so, let the poor man have the benefit of that same $100; he will beautify the section in which he may build, to that extent, while the rich lumberman will simply place that amount in the bank to lend out at interest when occasion offers. **Let it be distinctly understood that those in moderate circumstances will not build as long as values of building materials are constantly advancing,** and this fact is **thoroughly proven** by the decrease of 154 buildings for the first six months of this year.

Advance in Lumber Rates.

PRICES have again been advanced. In fact, the changes made are so frequent that the Lumber Association merely corrects old lists and mails them to its patrons. It would cost too much to print new circulars every week. The late advances are all made in surfaced lumber. Rustic is now $35 per M., and other kinds in proportion. We hear it rumored that yet another squeeze will be given to the dear public's pocket. Price of lumber and other building materials has been raised so much that an estoppal has been placed on the erection of small buildings. A careful observer cannot but notice the few buildings in course of erection in the outlying districts. Hundreds of small houses would be dotting the blank spaces, if it was not for the greed of the Lumber Association in placing their wares at a figure to compel those in moderate circumstances to forego the building of small tenements, and repairs that are actually needed. Gentlemen of the Lumber Association, is it not about time that you halt in your design to squeeze the dear public, and give the poor residents of the Point Lobos tracts and the Mission a chance to put up a little home? Lumber is fully fifteen per cent too high in the price asked, and this is just enough to debar many from building.

ARTISTIC TILES AND MANTELS.

ONE of the most artistic displays in Tiling, Mantels, Brass goods, etc., can be found in the rooms of E. A. Pattison & Co., 308 Stockton St., San Francisco. The design in tiling entitled "Cupid among the Roses," is worthy of particular mention. This firm is the sole Pacific Coast Agent for the Perth Amboy Terra Cotta Co. A large and well selected line of wooden and iron mantels is kept constantly on hand, and the prices are such as to command the attention of those about building. The floors of Messrs. Pattison & Co's warerooms are covered with Tile and Parquette flooring of the most beautiful and artistic designs, and should be examined before purchases are made elsewhere. Special personal attention is given to furnishing designs and estimates for all work connected with the tasteful arrangement of everything connected with Mantels and Tiling. This firm also makes a specialty of stained glass. Write or call for information as per address mentioned.

"In the Heart of the Sierras"—The Noble Trees of California.

A MERE statement of dimensions and altitudes of the grand trees of California, can give no realizing sense of their idealistic presence and magnitude. It is the grandeur of their exalted individuality and awe-inspiring presence that thrills through the soul, and fills it with profound and speechless surprise and admiration; and not merely of one tree, but of whole vistas formed by their stately trunks. Who, then, by pen or pencil, can picture these as they are seen and felt?

Cut 1. The Grizzly Giant.

Once fairly within the impressive precincts of the grove of big trees, we are soon brought face to face with one of the oldest, most storm-tossed, and grizzled of this entire family of Brobdingnags. It is called

"THE GRIZZLY GIANT"

(see cut 1), and it looks at you as defiantly as the oldest veteran grizzly bear ever could. By careful measurement, we found its dimensions to be, at the ground, including a jutting spur, ninety-one feet, and three feet six inches above the ground, seventy-four feet six inches Professor Whitney places its circumference, eleven feet from the ground, at sixty-four feet three inches; with its two diameters at base, thirty, and thirty-one feet; and eleven feet above base, twenty feet. . . .

The "Mariposa" is eighty-six feet in circumference at the ground, and seven feet above it, is sixty-six feet. This tree seems to have been badly burned by two consuming fires, at different periods, after each of which the new growth has, visibly, attempted its restoration. . . . The "Workshop" is an immense living giant, with a capacious hollow at its base, which forms a room twelve by sixteen, in which all sorts of little souvenirs are made from broken pieces of the big tree. . . .

The "Haverford" (named after the "Friends" College, Philadelphia), in which sixteen horses have stood at one time, is burned into three compartments; across two of the spurs of which the distance is thirty-five feet; and transversely, thirty-three feet. . . . The "Washington" has a girth of ninety-one feet at the base, is round and very symmetrical. Although burned out somewhat near the ground, the new growth, as usual, is rapidly healing the wounds that fire has made. This is an especially excellent provision of nature for preserving and perpetuating this grand species, when in its prime; inasmuch as while restoring the ravages of the elements by the new growth, a much needed support is added to the abutments, which intercepts and prevents its premature downfall. . . .

The "Ohio" is seventy-six feet in girth at the ground, and six feet above the ground is fifty five feet. The "U. S. Grant" is sixty-five feet six inches below, and forty five feet above. The "General La Fayette" is thirty feet in diameter, and is situated about thirty yards from the above two. . . .

The "Wawona," the "Tunnel Tree" (see cut 3), through the heart of which a wagon road passes, is not only one of the great attractions of the Big Tree Grove, but may be considered one of the sights of California. At the base this tree is twenty-seven feet in diameter; while the enormous trunk, through which the excavation is made, is in solid heart wood, where the concentric rings, indicating its annual growth, can be readily seen and counted, and its approximate age determined by actual enumeration, and thus satisfactorily settle that interesting fact beyond the least peradventure. The arch, or "tunnel," as it is called, is ten feet in height, by a width of nine feet six inches at the bottom, and six feet six inches at the top. "Driving through a living tree," one would suppose to be as great a feat as Daniel O'Connell's, who boasted that he could "drive a 'coach and four' through any act of Parliament ever made in the British House of Commons!" . . .

The "New York" is one hundred and four feet in circumference, and over three hundred feet in height. The "Ohio" is one hundred and three feet in circumference, and three hundred and eleven feet in height. The "Massachusetts" is ninety-eight feet, with an altitude of three hundred and seven feet. . . .

A few points of interest may be well to notice in regard to the "Mother of the Forest." If cut up into inch boards, it would make five hundred and thirty-seven thousand feet of sound lumber. From the ground to the first branch it is one hundred and thirty-seven feet. Its full height is three hundred and twenty-one feet, with a circumference at the base of ninety feet. One hundred and sixteen feet from base it is thirty-nine feet six inches circumference. The average thickness of bark is eleven inches, although in places it exceeds two feet.

Great as are these majestic proportions, they are eclipsed by those of the "Father of the Forest." This tree, when standing in its primitive majesty, is accredited with exceeding four hundred feet in height, with a circumference at its base of one hundred and ten feet. Now, with its majestic form prone

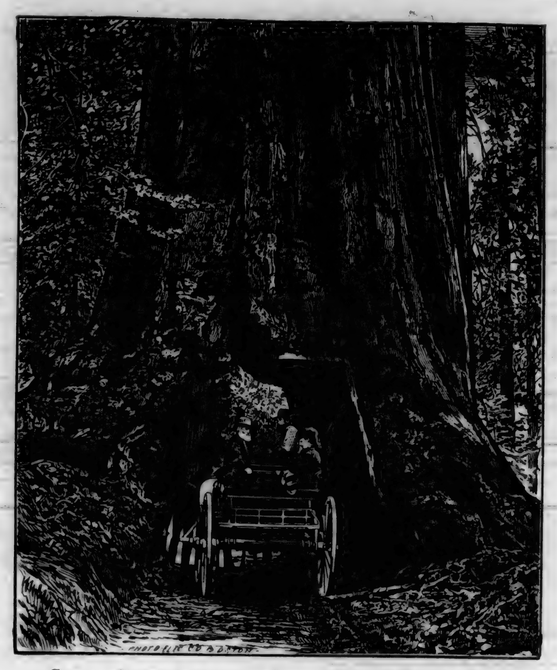
Cut 2. Miner's Cabin.

to the ground, the following measurements recently taken, proves that he was among the giants of those days, and that "even in death still lives." From the roots, to where the center of the trunk can be reached on horseback, it is ninety feet. The distance that one can ride direct through it on horseback, is eighty-two feet six inches. But no one can approximately realize the immense proportions of this prostrate forest sire, without climbing to its top, and walking down it for its entire length; by this, he will ascertain that it was nearly two hundred feet to the first branch. . . .

"Old Hercules," the largest standing tree in the grove until 1862, then being three hundred and twenty-five feet in height, by ninety-five feet in circumference at the ground; this was blown down by a heavy storm in that year. . . .

Let us take a peep at the original Big Tree stump. It is perfectly smooth, sound, and level. Its diameter across the solid wood after the bark was removed (and which was from fifteen to eighteen inches in thickness), is twenty-five feet, although the tree was cut off six feet above the ground. On July 4, 1854, the writer formed one of a cotillion party of thirty-two persons, dancing upon this stump; in addition to which the musicians and lookers on numbered seventeen, making a total of forty-nine occupants on its surface at one time.

This tree was three hundred and two feet in height, and at the ground ninety-six feet in circumference before it was disturbed. Some sacrilegious vandal removed the bark to the height of thirty feet, and had it transported to England, where it was burnt at the Crystal Palace fire. The next act in this botanical tragedy was the cutting down of the tree in order to accommodate those who wished to carry home specimens of its wood as souvenirs of their visit. But how to do this was the puzzling conundrum. If one could fittingly imagine so ludicrous a sight as a few lilliputian men attempting to *chop* down this Brobdingnaggian giant, his contempt would reach its becoming climax.



Cut 3. Driving through Living Tree "Wawona."

This, therefore was given up as altogether too chimerical and impracticable. Finally the plan was adopted of *boring it off with pump-augers* (see cut 4). This employed five men twenty-two days to accomplish; and after the stem was fairly severed from the stump, the uprightness of its position and breadth of its base, prevented its overthrow; so that two and one-half of the twenty-two days were spent in inserting wedges and driving them into the butt of the tree by logs suspended on ropes, thereby to compel its downfall. While these slow and apparently hopeless attempts were being undertaken, and the workmen had retired for dinner, a gust of wind took hold of its top, and hurled it over without the least seeming effort; its fall causing the earth to tremble as by an earthquake.

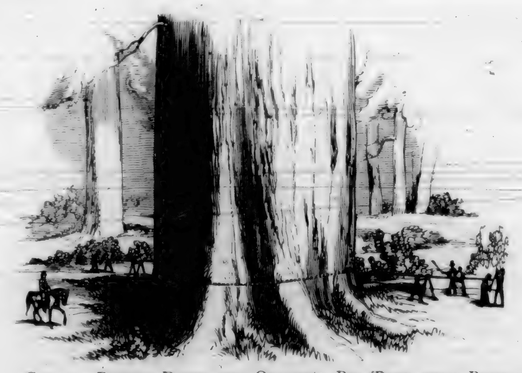
The cuts illustrating this article and the description thereof, are taken from a new work, by J. M. Hutchings, entitled, "In the Heart of the Sierras," the Yo Semite Valley, both historical and descriptive; and scenes by the way; Big Tree Groves; the High Sierra, with its magnificent scenery, ancient and modern glaciers, and other objects of interest; with tables of distances and altitudes, maps, etc. Profusely illustrated.

Copies may be had by addressing the Pacific Press Publishing House, Twelfth and Castro Streets. Oakland, Cal., or at the branch office, No. 18 Post Street, this city. Price, in fine English Cloth, embossed in jet and gold, gilt edges, $4.50. Finer bindings furnished if desired.

This work is sold by subscription, and active, energetic agents are wanted in all parts of the world. Address as above, for terms and territory.

To Soften Wrought Iron.—To soften wrought iron, heat until it becomes a low red color, and cool it in soft soap. Re-heat it to a low red as before, and let it cool in lime. It is said that this treatment makes the iron very soft.

Painting of Buildings.—The taste of the ancient Greek was too artistic and complete to allow him to indulge in the vulgar pride of parading the marble of the Parthenon when he could heighten its effects. Color was applied to all those parts which by form or position were protected from the rain. Thus the sculptures on the pediment and frieze were given highly colored backgrounds, and the sculptures themselves were painted. The brush was also employed to adorn the work of the chisel in the echinus or mouldings of the capital, and the walls beneath the colonnade were covered throughout with pictures, on the ground of polished marble, illustrative of the divinity to whom the temple was dedicated.



Cut 4. Boring Down the Original Big Tree with Pump-augers.

Measurement of Brickwork and Masonry.

Brickwork is measured by either one of four methods, viz: By the number of bricks it contains; by the number of cubic feet; by the perch of 25 cubic feet; or by the reduced rod consisting of 272 superficial feet and a width of a brick and a half. The first method is most generally employed, and the cubic foot and perch in a few localities. The reduced rod is the method used principally in England.

To ascertain the number of bricks contained in a wall: First find the superficial area, then multiply by 7½ (the number of bricks in one foot of brickwork four inches thick), and then multiply by the number of half bricks in the thickness of the wall. Example: How many bricks does a wall 12 ft. × 20 ft. and 2 bricks thick contain? Answer, 7,200, viz.: 12 × 20 = 240 × 7½ = 1,800 × 4 = 7,200.

Ashlar masonry, or that which is dressed on either face, bed, or side joints, is measured by the cubic foot; rubble masonry, sometimes in the same way, but usually by the perch of 25 cubic feet.—*Scientific American.*

Saw-Dust Ornaments; How Made.

A MOULD, or die, which has the design to be produced artistically engraved and sunk in it, is covered with thin strips of chemically prepared veneer of any desired kind of wood, and a material previously prepared, consisting chiefly of sawdust, is fed on the top of the veneer; the mould is then closed and heated, and afterward subjected to a hydraulic pressure of some tons to the square inch. The article to be produced is then taken from the mould in a semi-shaped state, inspected, recovered with veneer as often as may be found necessary, and after five or six minutes a panel, or frieze, is produced equaling in artistic effect handiwork that has taken very many days to produce. These panels have a fine surface and show up the grain of the wood well; they can also be sawed, planed, or bored like ordinary wood."

Preservation of Pencil and Charcoal Drawings.—Pencil drawings may be fixed by immersing them in weak skim-milk, or coating over them, rapidly, a solution on the drawing side, of two ounces of best alcohol, in which four grains of camphor have been dissolved. An ounce of shellac dissolved in half a pint of alcohol, applied lightly with a brush, will serve to fix charcoal drawings.

Furnishing of Plans by Architectural Journal.

NATURALLY, subscribers to an architectural journal expect to find elevations and plans of different kinds of buildings in each issue, together with information in regard to the same. But we do not conceive it to be the duty or place of the editor to advertise that plans, etc., to suit various tastes will be furnished to anyone inquiring for same.

It is with pride that we can refer to the back issues of the California Architect in this regard. During the eight years of its existence, with but two or three exceptions where individualities were distinctly shown, no plan or set of plans has been credited to the editor of this journal. It has been his aim simply to give the various designs shown as examples of California architecture, keeping his own name out of sight completely. Credit, however, in every case, has been given to those who have furnished plans or other illustrations, and letters received in regard to same, were forwarded immediately to the proper parties. The following extract will serve to show how this subject is regarded elsewhere:—

"*Should any of our readers desire to procure plans and specifications for building, whether churches, schools, dwellings, stores, carriage houses, homes, etc.; or if they desire plans made for alterations, enlargements, or additions of any kind, to existing buildings; erection of porches, bay windows, extensions, wings, etc., they are reminded that all business of the kind will receive prompt attention at this office on very moderate terms. Address* ——."

The journal from which the above is taken is not by any means the only one that is quietly but surely "cutting up into small slices" the architectural profession. Rumor has it that an architectural journal that has received all sorts of benefits and advantages from the profession in substantial form, and by being recommended to advertisers as the *only* journal representing the profession, etc., etc., and therefore the proper one to advertise in, makes it a business to run opposition to the very men who made and continue to support it, by furnishing drawings, specifications etc., etc., "*on very moderate terms*" very likely. This is another example of the "peculiarities of gratitude," doubtless the "moderate terms" prove quite effective, and while the regular practitioner may by these terms be enabled to "take a rest," young draftsmen will have excellent opportunities to pick up a few ideas and a few dollars; so, after all, everything may be for the best.

New Books Just Received.

AMERICAN STAIR BUILDER. New edition of 1887. By Lucius D. Gould. Price, $2.50. One of the best works on the subject of stair building.

MODERN COTTAGES. By J. H. Kirby. Just issued. Price, $1.50.

PICTURESQUE CALIFORNIA HOME, NO. 2. The great success attending the sale of the first volume, prompted the authors to issue the second one. The cuts in No. 2 are entirely new. Mailed to any address, either No. 1 or No. 2, for $3.50 each.

ESSENTIALS OF PERSPECTIVE. By L. W. Miller. Price, $1.50. The newest as well as one of the best of the books on the subject.

IMPROVED PLUMBING APPLIANCES. By J. Pickering. Putman, architect. 94 illustrations. Price, $1.50. A perfectly new work just received and too late for further notice in this issue.

DIRECTORY OF ARCHITECTS. Fourth edition. Price, $1.00.

MODERN ARCHITECTURAL DESIGNS AND DETAILS. A few copies remain of this really good work. Price, $10.00.

DETAIL COTTAGE AND CONSTRUCTIVE ARCHITECTURE. Similar to the above in general design.

LEFFELL'S HOUSE PLANS. $3.00, post-paid.

SCIENCE OF CARPENTRY MADE EASY. Price, $5.00.

MECHANIC'S GEOMETRY, or the Science of Framing by the use of Card-board Models. $5.00.

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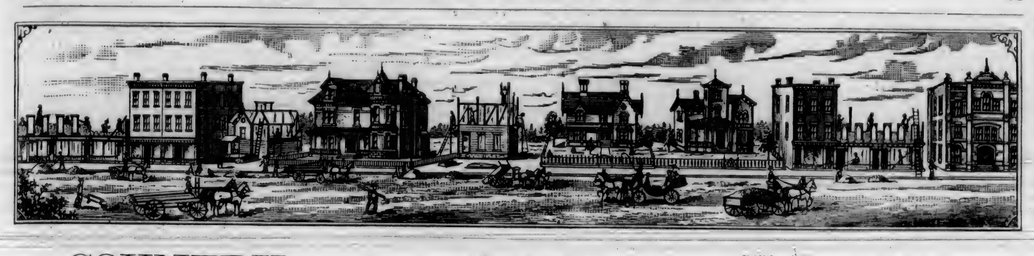
RETAIL PRICE LIST OF LUMBER.

PINE, FIR, AND SPRUCE.

	Per M ft.
Rough Pine, merchantable to 40 ft. inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	23 00
" " " 1x3 and 1x4, Fencing	21 00
" " 1x3, 1x4, and 1x6, Fencing, odd lengths	19 00
" " second quality	16 00
" " selected	24 00
" " c ear except for Flooring	31 00
" " " Flooring less than Dressed Flooring	1 00
Fire Wood	9 00
Dressed Pine, Flooring, 1x6, No. 1	32 50
" " " other sizes, No. 1	35 00
" " " all " No. 2	27 00
" " Stepping, No. 1	42 50
" " " No. 2	30 00
Ship Timber and Plank, rough, selected,	25 00
" " " selected, planed, 1 side	27 00
" " " " " 2 " average, 40 ft.	29 50
" " " " " 3 "	32 00
" " " " " 4 "	34 00
Deck Plank, rough	35 00
" " dressed average 35 ft	40 00
Pickets, rough, B. M.	19 00
Furring, 1x2, per lineal ft.	01
Lath, 1½ 4 ft., per M.	3 50
" 1½ 4 ft., "	4 00
Rough dunnage, delivered, per M.	20 00
Spruce dressed shelving, to 14 inches, per M.	37 50
" " ½ inch " " "	37 50
" " wider, per M.	42 50

REDWOOD.

	Per M ft.
Rough Redwood, merchantable.	$20 00
" " second quality.	16 00
" " selected.	24 00
" " clear.	35 00
Dressed " common surface.	22 00
" " ½-inch surface.	30 00
" " No. 1.	35 00
" " No. 2.	28 00
" " T. & G., 1x6, 12 ft. and over, No. 1	33 00
" " " other sizes, No. 1	35 00
" " 7 to 11 No. 1	26 00
" " under 7 No. 1	23 00
" " Rustic, No. 1.	35 00
" " " No. 2.	30 00
" " T. & G. beaded, 12 ft. and over, No. 1	35 00
" " " " other sizes No. 1	35 00
" " " " 7 to 11, No. 1	26 00
" " " " under 7, No. 1	23 00
" " Siding, ½ inch	23 50
Pickets (fancy), 4 feet, B. M.	25 00
" (rough pointed) "	17 00
" (" square) "	15 00
Battens, ½x3, per lineal ft.	02
Shingles, per M.	2 00
" fancy, per M.	3 75
Posts, split.	13
Shakes, split, per M.	9 00
" sawed "	11 00



COUNTRY BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

San Antonio Avenue. W. H. Wharff has prepared plans for a $3,500 house for Paul Bunker.

Azusa.

Three-story frame hotel. Owner, Land and Water Co.; architect, T. Golding; contractor, day work. Cost, $12,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Beaumont.

Three-story frame. Owner, Southern Cal. Investment Co.; architect, J. L. Frank; contractors, H. J. Dego and J. M. Forquer. Cost, $25,000.

Shavings and Sawdust, for $1.50.
American Cottage Building, for $3.50.

Burbank.

One-story frame. Owner, L. Burbank; contractor, M. E. Mather. Cost, $1,800.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

Two-story hotel. Owner, Dr. Burbank; contractor, D. Scammon. Cost, $20,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Two-story frame. Owner, T. W. T. Richards; contractor, M. E. Mather. Cost, 3,000.

Claremont.

Two-story and attic frame hotel. Owner, Pacific Land and Improvement Co.; architects, Caukin & Haas; contract not let. Cost, $20,000.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Covina.

Methodist Church. Architects, Strange & Gottschalk. Day work. Cost, $7,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Cucamonga.

Two-story frame hotel. Owner, J. C. Lynch; architect, Chas. W. Davis; contractors, Mills, Fisher & Co. Cost, $9,375.

American House Carpenter, $5.00.
Cutting Tools, for $2.00.

East Los Angeles.

Two-story frame cottage. Owner, C. F. Harris; architects, Costerisan & Merithew; contractor, H. Rheya. Cost, $5,000.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

One-story frame. Owner, M. Sommerfield; architect, A. M. Edelman. Cost, $3,300.

Wonders of Art, for $1.25.
Limes, Cements, and Mortars, for $4.00.

Etiwanda.

One-story brick. Owner, trustees of school district; architect, E. Newcomer; contractor, Samuel Lefler. Cost, $3,750.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Hollister.

C. N. Hawkins is erecting a dwelling from plans prepared by Theodore Lenzen. Cost, $2,000.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

Los Angeles.

Alterations. Owner, Dora Jones; architects, Kysor, Morgan & Walls; contractors, Hargett & Ball. Cost, $25,000.

Cutting Tools, for $2.00.
Cumming's Details, for $5.00.

Two-story frame. Owner, J. R. Boal; architect, Newsom; contractor, day work. Cost, $6,000.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

Not let. Tabernacle for Hope Street M. E. Church, granite and frame, copper and tile roof. Architects, Caukin & Haas.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Two-story frame residence. Owner, Percy Wilson; architects, Strange & Gottschalk; contractor, Useb Petro. Cost $4,000.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

One and one-half-story frame cottage. Owner, F. H. Rhodes; architects, Costerisan & Merithew; contractor, Ed. Harrington. Cost, $2,500.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Two-story frame residence. Owners, C. Worth. Architects, Strange & Gottschalk; contractor, C. Wilson. Cost, $2,950.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Three-story brick block. Owners, Kysor, Morgan & Walls; contractors, O'Shea & Bell. Cost, $45,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

One and a half-story frame cottage. Owner John Best; architects, Costerisan & Merithew Cost, $2,800.

Practical Perspective, for $5.00.
Drawing for Carpenters, for $1.75.

Four-story brick. Owners, Pres. College Committee. Architect, Newsom; contractor, J. Rebman. Cost, $17,000.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

Alterations and additions, three-story brick building. Owners, Baker and Hellman; architect, Kysor, Morgan & Walls; contractors, O'Shea & E. F. Collins. Cost, $26,000.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

One-story frame cottage, brick. Owner, Electric South side track; architects, Strange & Gottschalk; contractor, C. F. Warren. Cost, $6,400.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Three-story brick building. Owners, Patton & Widney; architects, Kysor, Morgan & Walls; contractors, F. E. Green & Haskell. Cost, $35,000.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

Four-story Fort Street bank, brick. Owner, L. A. Imp. Co.; architect, Newsom; contractor, J. Rebman. Cost, $80,000.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

One-story double frame. Owner, W. Barnard; architect, Newsom; contractor, J. Rebman. Cost, $5,500.

Builders' Construction (three volumes, very fine), for $14.00.

Twenty-five one story frame cottages. Owner, Electric Homestead Association; architects, Strange & Gottschalk; contractors, Wyatt Bros. Cost, $15,150.

Plaster, How to Make it, for $1.00.
Shavings and Sawdust, for $1.50.

Three story brick block. Owner, F. M. Hellman; architects, Kysor, Morgan & Walls. Cost, iron work, $5,200; grading, $1,400.

People's Cyclopedia (three large volumes), for $20.00.

Owner, S. B. Zwynn; architect, Cosserisan & Merithew; contractor, W. A. Vernon. Cost, $2,300.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Two-story frame. Owner, Judge Bicknell. Day work. Cost, $15,000.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Two-story frame residence, brick. Owner, Dr. Owens; architects, Strange & Gottschalk. Day work. Cost, $4,000.

Woodward's Farm Homes, for $1.00
Woodward's Graperies, for $1.00.

Two story frame. Owner, H. Jevne. Day work. Cost, $12,000.

Album of Mantels, for $8.00.
Architects' Companion, for $2.50.

Three-story brick. Owner, Mr. Mappa; architect, A. M. Edelman; contractor, J. E. Wood. Cost, $23,000.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Remodel First National Bank. Architects, Caukin & Haas; contract not let. Cost, $30,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Magnolia.

Two-story frame hotel. Owner, Dr. Bedford; contractor, J. Gerry. Cost, $20 000.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Two story brick. Owner, Dr. Bedford; contractor, J. Rebman. Cost, 28,000.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Monrovia.

Two-story frame. Owner, E. W. Little; contractor, Zimmerman & Blair. Cost, $5,000.

Architecture and Building, $3.50.
American Cottage Building, for $3.50.

Two-story bank and stores, brick. Owner, F. M. Myers; architects, Caukin & Haas; contract not let. Cost, $10,000.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

Two-story frame. Owner, E. F. Spence; contractor, J. Rebman. Cost, $10,000.

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

Two-story frame. Owner, C. Z. Culver; architect, Newsom; day work. Cost, $5,000.

Napa.

One-story frame. Owner, T. C. Grant; architect and builder, W. H. Wharff. Cost, $4,500.

Ontario.

Two-story bank and stores, brick. Architects, Caukin & Haas. Cost, $20,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Orange.

Two-story frame hotel. Owner, C. Z. Culver. Day work. Cost, $20,000.

Album of Mantels, for $8.00.
History of Architecture, for $15.

Portland, Or.

Dr. Josephi will erect a private sanitarium to cost about $6,000.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Redlands.

One-story frame. Owner, Trinity Church; architect, Frank Crocker; contractors, Newell & Paine. Cost, $2,647.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Sacramento.

The Capital Hotel will be enlarged under the direction of Architect Goodrich.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Salem, Or.

A new wing will be added to the State Insane Asylum. Cost, about $90,000.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

San Bernardino.

Two-story brick. Owner, Christian Kurtz; architects, Jones & Palmer; contractor, Ernest Vieweger. Cost, $7,500.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Two-story brick. Owner, Richard Stewart; architects, Jones & Palmer; contractors, Burt & Porter. Cost, $3,425.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

Two-story brick. Owner, Richard Stewart; architects, Jones & Palmer; contractors, Sims, Anderson, Baker & Co. Cost, $2,210.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Two-story brick. Owner, Richard Stewart; architects, Jones & Palmer; contractors, Driver, Burt & Goodall. Cost, $6,250.

Plaster, How to Make It, for $1.00
Shavings and Sawdust, for $1.50.

San Jose.

Cottage on Fourth Street, near Julian. Owner, Mr. Stern; architect, Theodore Lenzen; contractor, P. R. Wells. Cost, $1,300.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

Cottage for James Wood. Architect, Theodore Lenzen; contractor, W. S. Bowles. Cost, $1,700.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

G. N. Schafer is erecting a $3,000 dwelling on Stockton Avenue. Theodore Lenzen, architect.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

G. W. Page is the architect of the new Congregational $6,000 church.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Santa Ana.

Two-story frame school. Architects, Kysor, Morgan & Walls; contractor, Drips. Cost, $19,000.

Artistic Homes, for $3.50
Modern House Painting, for $5 co.

Sierra Madre.

Two-story frame hotel. Owner, Dr. Pinney; day work. Cost, $12,000.

Practical Perspective, for $3.00.
Woodward's Country Homes, for $1.50.

Miscellaneous.

ALAMEDA.—School and hall for Catholic Church. Figures now being received. John J. Clark, architect.

ST. HELENA.—New college and church. Plans now ready for figures. John J. Clark, architect.

OAKLAND.—Contract labor for brick work, $42,000. Remillard & Co. John J. Clark, architect; St. Mary's College, owners.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Work has commenced on the proposed extension of the Court House buildings in Suisun.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Work has commenced on the Catholic Church in Benicia. It will cost about $25,000.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Work has commenced on the brick foundation for J. J. Post's residence on the corner of Fifth and Columbia Streets, Seattle. The main building will be 51½x31½ feet. Otto Ranke has the contract for the brick work.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Contract has been let for a 900-foot wharf in Tacoma.

Cutting Tools, for $1.50.
Home Hand-Book, for $10.00.

A $4,000 brick store is being built on Pacific Street, Tacoma, by C. Uzaforage.

Practical Perspective, for $5.00.
Woodwards' Country Homes, for $1.50.

A country hotel is being erected at Warm Springs Station (C. P. R. R.) for H. Pohlmann. Theodore Lenzen; architect. Cost, $3,000.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Under the supervision of Captain Powell, plans are being prepared here for order light station at Cape Meares. This station will be located just south of the entrance to Tillamook Bay. It will cost about $60,000.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Riverside citizens have subscribed $66,700 toward two railroads for the valley.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

The foundation for a Catholic Church has been laid in Lathrop. The structure, when completed, will cost $1,500.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

The corner-stone of the First Presbyterian Church, on the northwest corner of Tenth and Alder Streets, Portland, Or., has been laid. The church will cost about $100,000 when finished.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

A contract has been let by Toklas & Singerman for construction of a four-story brick store in Seattle on the corner of Front and Columbia Streets. It will cost $75,000 when completed.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

It is rumored that the S. P. Company will build a new bridge across the Pajaro River at Watsonville. It is expected that work will commence in about two weeks.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

A large hotel and sanitarium is to be built at Altadena, north of Pasadena.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

A $1,000 church is to built by the Presbyterians of Gervais, Or.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

The Methodists intend to build a $30,000 church in Seattle this summer.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

About $2,000 has been raised for a church edifice in Paradise Valley.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

C. C. Powning will erect a fine brick building in Reno, Nev.

SAN FRANCISCO BUILDING NEWS.

B

Baker, nr. Sutter. Two-story frame.
C.—Roettger.
O.—J. Gleason.
$3,200.

Brannan, nr. Fifth. Additions.
$500.

Belcher, nr. Ridley. Two two-story frames.
O.—G. W. Moore.
A.—G. W. Wright.
$14,000.

Belcher, nr. Fourteenth. One-story frame.
O.—R. T. Barry.
C.—D. Perry.
$1,500.

Bluxome, cor. Fifth. Additional story.
O.—E. Buckler.
$1,200.

Brannan, nr. Fifth. Two-story frame.
O.—E. Stoetzer.
A.—H. Geilfuss.
C.—L. D. Frichette.
$2,000.

Bush, nr. Taylor. Two-story frame.
O.—Mrs. M. E. Cusheon.
A. and B.—W. H. Wharff.
$6,000.

Bush, cor. Steiner. Interior fittings.
O.—J. Cuff.
A.—T. J. Welch.
C.—Mahoney Bros.
$4,500.

Bryant, bet. First and Second. Alterations to brick building.
O.—Lachman & Jacobi.
A.—P. R. Schmidt.
C.—Mahoney Bros.
$15,000.

Broderick, nr. Hayes. One-story frame.
O.—George Wittman.
A.—Townsend & Wyneken.
C.—N. B. Ritchie.
$1,500.

C

California, nr. Baker. One-story frame.
O.—Mulvy.
C.—Walker.
$2,500.

California, nr. Laguna. Two-story and attic frame.
O.—C. F. Doe.
A.—Curlett & Cuthbertson.
C.—A. Jackson.
$18,000.

Capp, cor. Twenty-second and Twenty-third. Two-story frame.
O.—Mrs. J. F. Harris.
A.—A. J. Barnett.
C.—O. E. White.
$6,500.

California, nr. Baker. Remodeling.
O.—J. McGinn.
$1,700.

Chestnut, bet. Powell and Mason. Brick Building.
O.—Scheutzen & Co.
A.—Winterhalter.
C.—J. Haaf.
$14,000.

California, bet. Scott and Devisadero. Two-story frame.
O.—J. Dupuy.
A.—W. Mooser.
C.—J. B. Gonyeau.
$7,500.

California, cor. Laguna. Two-story and basement frame.
O.—C. F. Doe.
A.—Curlett & Cuthbertson.
C.—A. Jackson.
$20,000.

Church, cor. Twenty-ninth. Two-story frame.
O.—Henry Beuttner.
A.—Warren.
C.—Mitchell & Son.
$4,800.

D

Dolores, cor. Twenty-ninth. Frame building.
O.—J. Carstensen.
A.—Salfield & Kohlberg.
C.—B. Dryer.
$5,500.

Devisadero, bet. Post and Geary. Two-story frame.
O.—J. F. McCormick.
A.—B. E. Henriksen.
C.—J. C. Weir.
$2,500.

Davis, cor. Sacramento. Preliminary contract.
O.—Mrs. A. M. Parrott.
A.—Pissis & Moore.
C.—American Bridge Building Co.
$10,164.

E

Eddy, bet. Laguna and Buchanan. Three-story frame.
O.—O. H. Marx.
A.—H. D. Mitchell.
Day work.
$7,000.

Ellis, bet. Jones and Leavenworth. One-story frame.
O. and B.—Smith.
$4,000.

Elgin Park, nr. Ridley. One-story and basement frame.
O.—F. Bowers.
$2,500.

Eddy, bet. Steiner and Fillmore. Two-story frame.
O.—Annie Gill.
A.—M. Balcynski
C.—C. E. Dunshee.
$3,700.

F

Fifth, cor. Brannan. One-story frame.
O.—W. T. Garratt.
$4,000.

Fourth, nr. Channell. Frame Warehouse.
O.—S. P. R. R.
$3,000.

Fourth, nr. Channel. One-story frame.
O.—Wesson.
$800.

Fifteenth, bet. Noe and Castro. Two-story frame.
O.—G. R. Starr.
$2,500.

Fillmore, nr. Hyde. Two two-story frames.
O.—Mrs. Platt.
$4,000.

Filbert, bet. Hyde and Larkin. Alterations.
O.—J. Moeller.
A.—H. Geilfuss.
C.—F. Klatt.
$3,200.

Fell, nr. Buchannan. Two-story frame.
O.—J. Heilfron.
A.—H. Geilfuss
O.—J. Blake.
$5,500.

Folsom, cor. Twenty-fourth. Two-story frame.
O.—L. Bogald.
A.—C. I. Havens.
C.—F. W. Kern.
$3,200.

Fifteenth, nr. Noe. Two-story frame and stable.
O.—Geo. Starr.
A.—Damroger.
C.—A. Klahn.
$3,500.

Folsom, bet. Third and Fourth. Alterations.
O.—Duchen & Lasalle.
A.—M. J. Welsh.
C.—R. Linnott.
$1,800.

Franklin, cor. Linden. Two two-story frames.
O.—Jane James.
C.—Chas. Jones.
$6,500.

Fillmore, nr. Fulton. Additions.
O.—Chas. Becker.
A.—John & Zimmerman.
C.—W. Pluns.
$2,000.

Folsom, cor. Tenth. Frame buildings.
O.—Mrs. C. H. Rogers.
A.—T. J. Welsh.
C.—W. P. Clark.
$12,000.

Franklin, cor. Linden Avenue. Two two-story frames.
O.—Mrs. J. James.
A.—S. and J. Newsom.
C.—C. L. B. Jones.
$5,500.

Folsom, cor. Twenty-fourth. Two-story frame.
O.—L. Bagaler.
A.—C. I. Havens.
C.—F. W. Kern.
$3,000.

C

Gough, cor. Pine. Additions.
O.—Raphael.
$800.

Gough, cor. Oak. Three two-story frames.
O.—George Raphael.
A.—Macy & Jordan.
C.—N. R. Ellis.
$14,000.

Grove, bet. Gough and Octavia. Two-story frame.
O.—G. Hoffman.
A.—W. Winterhalter.
C.—L. Weisman.
$3,700.

H

Howard, cor. Spear. One-story frame.
O.—White Bros.
$3,000.

Haight, nr. Scott. Two-story frame.
O.—M. McCarthy.
A.—M. J. Welch.
C.—T. Sullivan.
$3,500.

Harrison, bet. Second and Third. Two-story frame.
O.—J. R. Watson.
A.—Macy & Jordan.
C.—O. E. White.
$10,000.

Hayes, nr. Baker. Three-story frame.
O.—A. Goehring.
A.—John & Zimmerman.
C.—W. Pluns.
$8,000.

Henry, bet. Noe and Castro. Two-story frame.
O.—G. B. Bellett.
$2,100.

Hill, nr. Valencia. Two-story frame.
O.—Mrs. C. Weglehner.
C.—F. W. Kern.
$3,500.

Howard, bet. Seventh and Eighth. Two-story frame.
O.—J. Clancy.
A.—H. D. Mitchell.
C.—C. A. Flood.
$6,000.

Hyde, cor. Union. Additions.
$700.

Hayes, bet. Scott and Devisadero. Two-story frame.
O.—Wm. Sutherg.
C.—G. G. Gillespie.
$3,000.

Howard, cor. Lafayette. Three-story frame.
O.—Maurice Sheehan.
A.—C. I. Havens.
C.—Doyle & Son.
$10,000.

Herman, bet. Valencia and West Mission. Two-story frame.
O.—Market Street R. R. Co.
$3,000.

Harrison, nr. Sixteenth. Three one-story frames.
O.—John Center.
Day work.
$3,000.

Harrison, cor. Seventeenth. Additions.
$600.

Hayes, cor. Webster. Two-story frame.
O.—A. Hughes.
A.—Clark.
C.—H. Kennan.
$4,000.

Howard, bet. Eleventh and Twelfth. Three-story frame.
O.—W. A. Frederick.
A.—C. I. Havens.
C.—Doyle & Son.
$8,000.

Hyde, nr. Jackson. Two-story frame.
O.—W. Vellguth.
A.—J. J. Newsom.
C.—Wissinger & Co.
$5,000.

Hill, nr. Valencia. Alterations.
O.—Caroline Weglehner.
A.—H. Geilfuss.
C.—F. W. Kern.
$3,250.

Haight, nr. Broderick. Two-story frame.
O.—J. Hughes.
A.—J. J. Clark.
C.—H. Keenan
$4,000.

Hayes, nr. Baker. Two-story frame.
O.—A. Goehring.
A.—John & Zimmerman.
C.—W. Pluns.
$6,500.

I

Illinois, nr. Napa. Two-story frame.
O. and B.—John White.
$1,800.

K

Kentucky, nr. Napa. Two-story frame.
O.—Ovicomi
$2,000.

L

Larkin, cor. Union. Two-story frame.
O.—Mrs. Hynes.
C.—J. Adams.
$2,400.

Larkin, nr. Broadway. One-story frame.
$1,500.

Leavenworth, bet. Clay and Washington. Two-story frame.
O.—Anna V. Daniels.
A.—Pissis & Moore.
C.—Moore Bros.
$5,000.

Leavenworth, nr. Pine. Two-story frame.
O.—T. J. Shackelford.
A.—J. M. Curtis.
C.—Moore Bros.
$4,000.

Lombard, bet. Powell and Mason. Two-story frame.
O.—J. B. Metzler.
A.—J. J. Zimmerman.
C.—B. Dryer
$2,700.

Leavenworth, bet. Pine and California. Two story frame.
O.—Schackelford.
A. J. M. Curtis.
$4,000.

Lombard, bet. Powell and Mason. One-story frame.
O.—Chas. Metzler.
A.—John & Zimmerman.
C.—B. Dryer.
$3,000.

M

Market, cor. City Hall Avenue. Three-story brick building.
O. George T. Marye.
A.—W. F. Smith.
Masonry—Parkin.
Carpentry—N. H. Kent.
$20,000.

Mission, bet. Eighteenth and Nineteenth. Three-story frame.
O.—F. Eidenger.
A.—Miller & Armitage.
C.—F. V. Steinman.
$6,800.

Market, cor. Tenth. Three-story brick.
O.—Mrs. Hopkins.
A.—Moore & Shultz.
$125,000.

Mason, nr. Filbert. Two-story frame.
O.—Corrigan
C.—Gilbert.
$2,500.

Masonic Cemetery.
O.—E. J. Baldwin.
A. Pissis & Moore.
C.—Redman & McLennan.
$7,000.

Mission, nr. Twentieth. Additions.
$700.

Mission, bet. Third and Fourth. Four-story brick and basement.
O.—J. C. Roberts.
A.—C. Kenitzer.
C.—C. Chisholm.
$15,000.

Minna, nr. Ninth. Two-story frame.
O.—Mrs. Corrigan.
A.—J. J. Clark.
Day work.
$2,700.

Mission Road. Two-story frame.
O.—C. B. Rodgers.
A.—J. J. Clark.
C.—Doyle & Son
$4,500.

Magdalen Asylum. Remodeling.
A.—J. J. Clark.
Day work.

Mission, bet. Eighteenth and Nineteenth. Three-story frame.
O.—F. Eidenger.
A.—Miller & Armitage.
C.—J. C. Steinman.
$5,000.

O

Octavia, bet. Ellis and Eddy. Five two-story frames.
O.—Estate of W. Sharon.
A.—J. P. Gaynor.
C.—A. Miller.
$40,000.

P

Pacific, bet. Gough and Octavia. Two-story frame.
O.—L. Emanuel.
A.—S. and J. C. Newsom.
C.—J. H. McKay.
$7,500.

Pine, cor. Sansome. Alterations.
O.—Dr. Ryar.
$6,000.

Page, cor. Broderick. Two-story frame.
O.—Fred. Plageman.
A.—John & Zimmerman.
C.—Theodore Van Borstel
$12,000.

Post, nr. Lyon. Additions.
$700.

Pine, cor. Jones. Improvements.
$1,000.

Paraguay, nr. Railroad Ave. Additions.
O.—C. G. Meyer.
A.—John & Zimmerman.
C.—F. Bohnenberg.
$1,000.

Post, bet. Powell and Mason. Two-story frame.
O.—Chas. Brenig.
A.—W. Mooser.
C.—A. Jackson.
$5,000.

Post, nr. Baker. Two-story frame.
O.—L. Feder.
A.—McDougall & Son.
C.—Townsend & Co.
$1,800.

S

Seventeenth, bet. Valencia and Guerrero. Two-story frame.
O.—Mrs. M. Huant.
A.—John & Zimmerman.
C.—J. Klein.
$4,500.

Sheridan, bet. Ninth and Tenth. Two-story frame.
O.—James Lonergan.
C. P. Lynch.
$2,500.

Sutter, bet. Jones and Leavenworth. Two two-story frames.
O. Mrs. H. Toy.
A.—P. R. Schmidt.
C.—S. H. Kent.
$8,500.

Steiner, cor. Jackson. Two-story frame.
O.—M. J. Balfe.
A.—Curlett & Cuthbertson.
C.—W. Linden.
$8,000.

Sansome, nr. Jackson. Additions.
O.—J. G. Kittle.
A.—Percy & Hamilton.
C.—George Richardson.
$3,500.

Sansome, cor. Sacramento. Additions.
$1,500.

Spear, bet. Market and Mission. Two story brick.
O.—Capt. Hartshorn.
A.—Percy & Hamilton.
C.—J. McCarthy.
$10,000.

Sixteenth, cor. Mission. Alterations.
$800.

Sutter, bet. Baker and Lyon. Alterations.
O.—Hazelbrush.
C.—Weinohl.
$800.

Stockton, nr. O'Farrell. Repairs.
$600.

Sixteenth, bet. Church and Sanchez. Two-story frame.
O.—Emina A. Hunter.
A.—Reed.
C—S. D. Matthews.
$3,600.

Steiner, cor. Jackson. Two-story frame.
O.—M. J. Balfe.
A.—Curlett & Cuthbertson.
C.—W. Linden.
$8,500.

Sutter, nr. Webster. Two-story frame.
O.—W. H. Kane.
A.—J. T. Kidd.
C.—W. Harmon.
$5,000.

Scott, nr. Washington. Two-story frame stable.
O.—E. C. Talbot.
A.—C. I. Havens.
C.—Gray & Stover.
$1,800.

T

Thirteenth Avenue, nr. N. Estate dwelling and stable.
O.—J. Betzold.
A.—M. Balczuski.
C.—B. F. Ellis.
$3,200.

Turk, bet. Laguna and Buchanan. Two-story frame.
O.—Dr. Kleinburg.
A.—J. E. Voekel.
C.—J. K. McKay.
$6,000.

Twenty-sixth, cor. Serpentine Ave. Two frame buildings.
O.—J. Fitzgerald.
$3,000.

Twenty-ninth, nr. Church. One-story frame.
O.—J. L. Lyomon.
C.—S. F. Daniels.
$1,000.

Twenty-fourth, cor. Church. Two-story frame.
O.—Nicholas Thompson.
C.—G. E. Houkes.
$4,000.

Twenty-first, cor. Vicksburg. Two-story frame.
O.—John Foster.
C.—W. P. Ruggles.
$3,500.

Twenty-ninth, cor. Church. Two-story frame.
O.—H. Buttner.
A.—R. Warren
C.—F. Mitchell.
$3,500.

V

Vallejo, nr. Laguna. Two-story frame.
O.—Mrs. S. M. Huntington,
A. and C.—W. H. Wharff.
$3,600.

Virginia Avenue, cor. Mission Road. Two-story frame.
O.—P. B. Rogers.
A.—J. J. Clark.
C.—Doyle & Son.
$4,500.

Van Ness, cor. Ellis. Additions.
O.—D. Hunter.
$700.

Valencia, bet. Twentieth and Twenty-first. Additions.
$500.

Valencia, bet. Twenty-second and Twenty-third. Two two-story frames.
O.—Joseph Moore.
A.—C. I. Havens.
C.—F. W. Kern.
$6,500.

Van Ness Avenue, cor. California. Conservatory.
O.—Sloss.
$500.

W

Waller, cor. Webster. Two two-story frames.
O.—J. Williamson.
A.—C. V. Pierce.
C.—Kincaid & Thompson.
$6,000.

Washington, bet. Fillmore and Steiner. Two-story frame.
O.—F. F. Laplace.
A.—Huerne & Everett.
C.—F. Buckley.
$5,500.

CARPENTRY MADE EASY.

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HOWARD CHALLEN, Publisher,
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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No Others Received.

SAN FRANCISCO, CAL., JULY 15, 1887.

The Fire Ordinances.

IN view of the fact that Acting Police Judge Page has declared order No. 1752, comprising all ordinances relating to fire matters and building construction, invalid, a general meeting of the architects in San Francisco was called and a representative number assembled on the 17th of June last to take the situation into consideration—there being no difference of opinion among the members of the profession that the order named was, and as re-enacted is, defective and insufficient. A free discussion of the subject matter was entered into, resulting in the appointment of a committee of three to prepare a petition to the Board of Supervisors asking that action be deferred in the re-passage of the order until amendatory suggestion could be prepared—it being declared invalid simply upon the technical ground of insufficient publication and requiring only proper re-publication to render it again effective.

The committee performed the duty assigned them, and although the time for completing their work was exceedingly limited, thirty-six of the most prominent architects readily appended their signatures to the petition, which was duly presented to the Board and referred without producing the result desired.

The reason for this was, as expressed by His Honor the Mayor and members of the Board, that unless the invalid order was repassed the city might be without any fire law. That while the invalidation restored the ordinance operating prior to the passage of 1752, it was not an assured fact that it would stand the scrutiny and assault of some shrewd limb of the law, who might seek and find fatal defects therein, resulting in like fate that befell order 1752; consequently, for the city's protection and safety, it became necessary to re-enact the invalid order with all its deficiencies and defects until a better could be provided. The assurance was also given that whenever a more practical form of Fire and Building Ordinance should be presented, the Board would give it attention and careful consideration, and if found to be an improvement upon the present, it would be passed.

This places the whole matter in the hands of the architects, builders, and others most directly interested to formulate a code of *Building Ordinances* that will meet every requirement of the fire department and the entire building fraternity, not including those features which may be more specially denominated *Fire Ordinances*, relating to destructive agencies, etc.

There is no disposition expressed on the part of either the architects or builders in San Francisco to antagonize the fire wardens, or the chief or members of the fire department, but there is an earnest wish that an ordinance may soon be perfected, relieved of all those features which in the past have caused annoyances, vexations, arrests, etc., for causes which if placed within the arbitration of a board of impartial, competent referees, would be given consideration according to merit, and adjusted upon equitable basis, instead of—as in the present ordinance—the same rule applying in all cases, while in fact scarcely any two are relatively equal. But if anything is to be effected in the matter, the architects or builders, jointly or severally, must take the initiative, and proceed as best judgment and experience may suggest.

Perfect Ventilation and Pure Air Essential to Human Life and Health.

THIS no intelligent person will question. It is a fact so universally understood that argument in its support is wholly unnecessary; still, while its vital importance is universally admitted, and its factorship in the healthfulness of mankind recognized, a strange degree of apathy, except in words, exists in the practical application of the means best calculated to secure this highly essential provision of the great Creator, who, in his creation of our earth, not only fixed the great sources of light in the firmament, but also surrounded the planet upon which we dwell with the prerequisite to health—pure air. As is well known, its entire absence produces death, and human life and health, in large degree, are affected by the free or restricted use of this health-giving agency.

All this being well understood, tens of thousands have employed their genius, talents, and both mechanical and scientific skill in discovering and devising the most perfect and practical method of utilizing this indispensable element in dwellings, churches, school-houses, theaters, and places where people dwell or assemble in large numbers for purposes of worship or pleasure, and as a result numerous devices have been worked out and applied that in part, at least, have produced the object sought, while but few of the inexpensive kind have gained a perpetuity beyond occasional use.

Hence it is with pleasure that we notice the invention of our fellow-townsman, Mr. P. Abrahamson, who has perfected a ventilator that must supersede all others in its simplicity, completeness, and practicability. The array of testimonials from those who have used them should be sufficient to satisfy the most scrupulous as to its effectiveness, giving, as it does, an abundant supply of fresh air without a particle of draft. It is practical for all purposes of ventilation, from the sick room to the largest structures in which people live or assemble.

Building Summary.

FOR the first time this year, our monthly report is larger than its predecessor in 1886. Values of reported improvements to date are far ahead of last year to similar period. During the month there have been commenced of building improvements,

70	frame buildings,	value	$648,700
2	brick "	"	52,500
20	alterations	"	50,500
92			$751,700

The high prices of building materials is materially affecting the construction of small houses.

Price of Lumber Again Advanced.

ANOTHER dollar has been added to the price of lumber, thus making rough lumber $21 per M; rustic, $36 per M, and other kinds in proportion. Our list will be found corrected so as to correspond with latest quotations.

We sincerely hope that the "raise" will come to a halt very soon. Lumber is now 75 per cent greater in price than it was a short time ago. We repeat again that the erection of small buildings has been practically stopped on account of the exorbitant price of materials.

Wood Mantels.

THE firm of L. and E. Emmanuel is one of our largest manufacturers of wood mantels. In a conversation with these practical men the following points were brought out:—

"The old mantels in England were made of wood. It took America a long time to discover, however, that grave-yard material is not exactly the thing to incase fire-places. Why mantels made out of marble slabs should have been introduced, it is difficult in the light of present tastes to understand. They are cold and gloomy. There is a home look about a wooden mantel that is an incentive to proper home conduct. We are not prepared to say that marble mantels have caused unpleasantness that has led to divorce, but it would not be surprising to learn that they had. Pleasant surroundings lead to contentment and happiness. No one will dispute the influence of flowers, happily chosen wall decorations and works of art. White marble slabs in our parlors and drawing-rooms do not inspire the sympathetic side of human nature. The feeling is to get away from them, and there should be nothing in a home which the inmates should want to get away from. There is nothing inviting about such mantels. They are repellent. They are going fast, and let us hope that no vitiated taste will whirl them into fashion again."

Mechanics' Liens.

THE laws of nearly all the States and Territories provide for the securing and collection of builders' and mechanics' liens upon property for which materials have been furnished, or on which labor has been performed. The following is a synopsis of the general laws relating to these liens:—

A lien is lost by the voluntary surrender of the property to the owner or his agent. There is no common law lien without possession. It is a right created by law in favor of the tavern-keepers, livery-men, pasturers, carriers and mechanics. It may be created by contract between the parties, as in a lease.

Whatever is affixed to land belongs to the owner of the land, except in a few cases. Hence, carpenters who built houses on the land of others had no lien. But as the principle is just, and the practice beneficial, States have, by law, given builders and persons who furnish material a lien on the land and building, if claimed within a limited time. Under this kind of mechanics' lien, no possession is required. The right to pay the charge and take the property is a right of redemption which is lost by a public sale of the property. The surplus, if any, is paid to the owner.

Liens by State law are generally foreclosed in a court upon a petition for that purpose. By its decree the property is sold and the proceeds divided according to the rights of the parties.

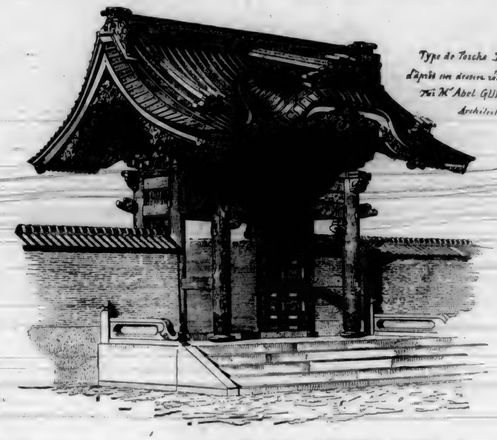
Liens may, in certain States, be enforced against vessels and wharves as well as buildings, for construction, alteration, or repairs. In most States, while the same general principle is maintained, the modes of procedure vary.

A workman desiring the protection of the law for the security of his wages, may draw up a paper, addressed to the county clerk of the county where the work was done, filled up in a manner similar to the following form, setting forth all the circumstances of the work done, his bargain with the contractor, the failure to receive his pay, and his fears that he will lose all if his lien is not made. This paper, sworn to before a justice or notary public as true, is filed in the county clerk's office and becomes a cloud upon the building, which the owner is only too glad, frequently, to remove by paying the debt himself and taking it out of the contractor's bill. In either event the owner or contractor must pay the debt if it is an honest one.

NOTICE TO THE COUNTY CLERK.

To Philip Best, clerk of the city and county of New York, in the State of New York—

SIR: Please to take notice that I, James Van Horn, residing at No. 45 Conkling Avenue, in the city of New York, in said county, have claim against William Y. Heath, owner (or only contractor, as the case may be)



of a new two-story brick dwelling-house, amounting to Nineteen Hundred and Sixty-two Dollars and forty cents, now due to me, and that the claim is made for and on account of brick furnished and labor done before the whole work on said building was completed, and which labor and materials were done and furnished within three months of the date of this notice; and that such work and brick were done and furnished in pursuance of a contract for twenty thousand serviceable brick and the mason work of putting up the outer walls of said new building, between the undersigned and the said William Y. Heath, which building is situated on lot ——, in block ——, in Westel's Addition to the city of New York, on the west side of Salina Avenue, and is known as No. 432 of said avenue. The following is a diagram of said premises:

[*Insert diagram.*]

And that I have and claim a lien upon said dwelling house and the appurtenances and lot on which the same stands, pursuant to the provisions of an Act of the Legislature of the State of New York, entitled, "An Act to secure the payment of mechanics, laborers, and persons furnishing material toward the erection, altering, or repairing of buildings in the city of New York," passed, —— 18—, and of the Acts amending the same.

JAMES VAN HORN.

New York, December 1, 1882.

James Van Horn, being duly sworn, says that he is the claimant mentioned in the foregoing notice of lien; that he has read the said notice, and knows the contents; and that the same is true to his own knowledge, except as to the matters therein stated on information and belief, and as to those matters he believes it to be true.

JAMES VAN HORN.

Sworn before me this first day of December, A. D. 1882.

J. L. LESLIE, *Police Justice.*

The lien laws of certain States provide that any person who shall either labor himself, or furnish laborers or materials for constructing, altering, or repairing any building, shall have a lien therefor upon such building and the specific lot or tract of land on which it is located; but a suit to enforce payment of said claim must begin within six months from the time the last payment therefor is due. Landlords, also, may enforce a lien for arrears of rent upon all crops of their tenants, whether growing or matured.—*Hill's National Builder.*

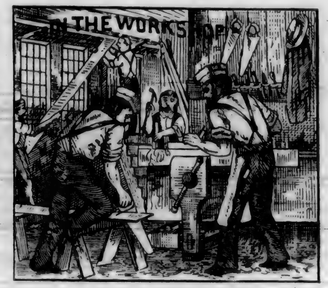
A REMARKABLE TREE.—A Nevada paper describes a remarkable kind of wood which is said to grow there. The trees do not grow large, a tree with a trunk about a foot in diameter being much above the average. When dry the wood is about as hard as boxwood, and being of a very fine grain, might, no doubt, be used for the same purposes. It is of a rich red color and very heavy. When well seasoned it would be a fine material for the wood carver. In the early days it was used for making boxes, for shafting, and in a few instances for shoes and dies in quartz batteries. Used as a fuel it creates an intense heat. It burns with a blaze as long as ordinary wood would last, and is then found—almost unchanged in form—converted into charcoal that lasts twice as long as ordinary wood. For fuel, a cord of it brings the same price as a ton of coal. Unfortunately it burns out stoves faster than any kind of coal.

DRAUGHTSMEN SCARCE.

Still the demand for draughtsmen is unabated, and many architects are really pressed for help. We can readily place twenty first-class draughtsmen in good positions. Any information will be furnished upon application to this office, either in person or by letter.

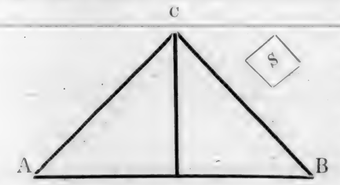
ASKED, ANSWERED, and COMMUNICATED.

☞ Architects, Contractors, Carpenters, and mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them, and we will make the cuts. We especially invite suggestions from apprentices and young mechanics.



Two Steel Square Problems.

TO DETERMINE by the steel square the result of any number, for example—6 multiplied by the sin 45°: Take 6 on both blade and tongue, and mark the line AC = BC = 6. Then CD drawn to the middle of AB = 6x sin 45°. Sin 45° = 0 70711.



STEEL SQUARE PROBLEM.

Problem.—Referring to any rectangular frame-work which slopes alike on all four sides. *Given*—The rise and seat of the corner-posts. *Required*—The cuts for the ends of the corner-posts, the blade of the bevel to be applied to the two faces adjoining to the ridge-line.

By the Steel Square.—On the blade take the rise. On the tongue take the seat x sin 45°. Mark along the tongue. The angle made by the tongue and the line is the proper bevel.

Problem.—Given—The run and rise of a common roof. We wish to place upon it a perpendicular square pipe to stand upon the roof diamond-shaped, thus: ◇S◇. *Required*—The cuts for the bottom end of the pipe; the blade of the bevel to be applied to the two faces adjoining the lowermost vertical edge.

By the Steel Square.—On the blade take the run of the roof. On the tongue take the rise x sin 45°. Mark along the tongue. The angle made by the tongue and the line is the proper bevel.

If the bevel is applied to mark the end of the higher half of the pipe, we have only to reverse the direction of the stock of the bevel so as to mark an obtuse angle.

—These two problems are very much alike. Their demonstration is a good study in solid geometry.—*Fred Lasey, in Builder and Wood Worker.*

To remove paint and putty from window glass put sufficient saleratus into hot water to make a strong solution, and with this saturate the paint or putty which adheres to the glass. Let it remain until nearly dry, then rub off with a woolen cloth.

Architectural Pupilage.

MR. WILLIAM WOODWARD, an English architect, gives a father the following advice concerning instruction for a son who expects to become an architect:—

1. Do not think that he is in a fair way of doing justice to himself, or to his master, by confining his studies to the office hours. Home studies, schools of art, and the other accessible fields of morning and evening architectural education, are absolutely necessary.

2. Do not think that your son has acquired much more than the rudiments of his business at the end of three or five years of pupilage, or that the architect with whom you have placed him will be able to inject into him the knowledge which his master has taken thirty years of practice to acquire.

3. At the end of his three or five years of pupilage, put him into another architect's office for, say, another five years, as an improver. This will enlarge his mind, and get him out of a few awkward grooves into which he slipped in the first office; or, better still, if within your power, let him commence practice on property which is entirely your own.

4. Unless you have friends who will secure him employment at the end of his educational career, settle the largest annuity upon him; he will require it.

5. There are abundantly ample (perhaps too many) sources of architectural knowledge open to your son; the rest is in his own hands.

A PRACTICAL HINT.—This was the way a country blacksmith was seen removing that portion of the ax handle from the ax that remained in the eye, the break being close to the iron. The wood could not be driven out, and as nails had been driven in at the end, it could not be bored out. He drove the bit, or sharp edge, into moist earth, and built a fire around the projecting part. The wood was soon charred so that it was easily removed. The moist earth so protected the tempered part of the ax that it sustained no injury.

FOR glue to be properly effective it requires to penetrate the pores of the wood, and the more a body of glue penetrates the wood the more substantial the joint will remain. Glues that take the longest to dry are to be preferred to those that dry quickly, the slow-drying glues being always the strongest, other things being equal. For general use no method gives such good results as the following: Break the glue up small, put into an iron kettle, cover the glue with water and allow it to soak twelve hours; after soaking boil until done. Then pour it into an air-tight box; leave the cover off until cold, then cover up tight. As glue is required, cut out a portion and melt in the usual way. Expose no more of the made glue to the atmosphere for any length of time than is necessary, as the atmosphere is very destructive to made glue. Never heat made glue in a pot that is subjected to the direct heat of the fire or a lamp. All such methods of heating glue cannot be condemned in terms too severe. Do not use thick glue for joints or veneering. In all cases work it well into the wood in a similar manner to what painters do with paint. Glue both surfaces of your work, excepting in case of veneering. Never glue upon hot wood, or use hot cauls to veneer with, as the hot wood will absorb all the water in the glue too suddenly, and leave only a very little residue, with no adhesive power in it.

THE DAM AT SAN MATEO.—A remarkable dam is about to be constructed by a water company at the San Mateo Cañon, four miles from San Mateo, Cal., in order to form a reservoir. The cañon is very narrow and steep, and 15 feet below the bottom is a solid rock on which the foundation of the dam will rest. The structure will be 170 feet high, 175 feet wide at base, 20 feet at the top, and 700 feet in length. It will be the largest stone dam ever known to have been built. The dike will have a curvature of eighty feet, and the convex side will be upstream. The material will be a new sort of concrete composed of stones. The walls will be perfectly smooth. The reservoir that will be formed by it and the adjacent hills will be about eight miles in length and 150 feet deep in the deepest places. Its capacity will be about 32,000,000,000 gallons. The water will be conveyed by tunnels to the city of San Francisco.

PAINT on the walls of a kitchen is much better than kalsomine or whitewash. Any woman who can whitewash can paint her own kitchen. The wall needs first to be washed with soapsuds, then covered with a coat of dissolved glue; this must be allowed to dry thoroughly, and then covered with paint. A broad flat brush does the work quickly.

IN times now long past, flooring strips were supposed to be thoroughly seasoned before they were put down, but now the tree that stands in the forest to-day may form the floor that is laid a week or ten days hence.

WHEN cleaning a stove, if a small quantity of sugar is put into the stove blacking it will not burn off so quickly.

A PORTABLE SAW MILL.

THE above engraving represents a familiar scene to those who have watched the gradual clearing of our forests. In certain localities the timber, from a distance, looks like an immense forest, capable of yielding millions of feet of lumber; but, upon close inspection, the area is very limited that will furnish material for first-class lumber. Again, there are regions that seem to require just so much lumber. The portable mill shown in cut is especially adapted to just such places. Easily moved from place to place, and with a cutting capacity of many thousands of feet per day, the mill recommends itself to the consideration of those who are endeavoring to build up new towns. Full particulars can be obtained by addressing the J. I. Case Co., Racine, Wis.

The Essentials of Perspective.

A New Work, by L. W. MILLER.

THE aim of the book is to simplify and make real the basic laws underlying the draughtsman's art, in the hope that correct habits of thought and expression will aid in developing an art that will be symmetrical and harmonious, and not disfigured by the errors too often noticed in the work of our artists.

The point of view throughout is that of the artist rather than the merely scientific theorist, and the result is a thoroughly practical and simple text-book free from all unessential or theoretical discussion.

The style is clear, direct, and practical, and its instructions are happily supplemented by the numerous drawings which the author informs us "are the same that he has used for many years in teaching perspective from the blackboard." They therefore have the merit of practically illustrating the fundamental principles of the science, and are purposely made free from burdensome details in order that the applications made may be apparent at a glance.

PRICE, $1.50.

We will send a copy, post-paid, to any address upon receipt of the publisher's price, one dollar and fifty cents.

Agreeable Colors.

THE most agreeable colors are those difficult to name which seem to tremble on the verge of another color. Both white and black are, in nearly every case, enriched and improvised by judicious tempering with other colors. Thus white will be improved with a dash of yellow or red for warmth, blue or green for coldness, so that a green tinted white will look best in a pattern where there is much Indian red, and a pinky white may be opposed to much blue or gray. Black is always improved by the addition of a little blue, in which we follow nature, who rarely employs black unmixed with other color. Black is, after all, a relative color, requiring contrast to advantageously set it off. Under certain circumstances, where it would have a harsh or unpleasant effect, burnt umber may be made to stand for it. It is noticeable that emerald green, so beautiful in itself, regarded as a color, is terribly self-assertive.—*Painters' Magazine.*

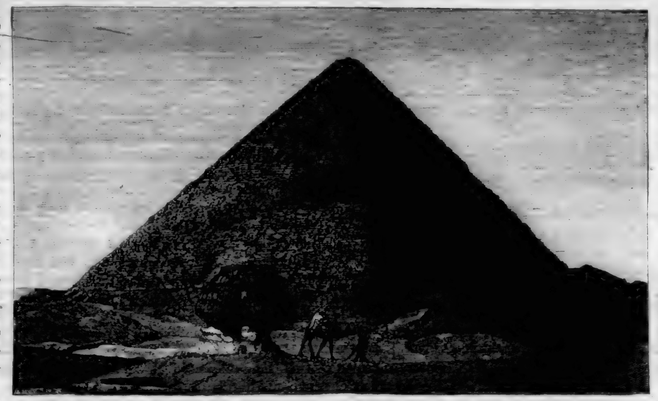
The Pyramids of Ghizeh.

UPON the western banks of the Nile, within a few miles of the renowned city of Cairo, are to be seen the wonderful tombs of Egyptian kings, the pyramids.

Although there are many such structures scattered over the sands of the desert, the three pyramids at Ghizeh command our attention as the most remarkable evidence of mechanical skill and constructive genius of all ancient works. The largest pyramid, as shown by our illustration, stands upon the rock plateau of the Nile, a few hundred feet from its banks, and is the grandest edifice—if it may be so termed—ever erected under the Egyptian monarchs.

The largest, or the Pyramid of Cheops, was 480 feet high, and its base is a square measuring 764 feet, and covers an area of about thirteen acres. It is constructed of an almost solid pile of stone masonry, consisting of about two hundred courses, each gradually receding back of the other until the top is reached, which originally was a point, but is now a platform thirty-two feet square.

It is believed that these pyramids were covered with an outer casing of stone or marble. The great pyramid, however, was covered with syenite, red granite, brought from a quarry situated near Syene, nearly 500 miles from Ghizeh. Many remains of this ancient covering are to be found at the base of this pyramid, while a portion of it still remains in place. The theory that these stupendous structures were erected for the purpose of kingly tombs, is evinced from the fact that part way up the side upon the north face is to be found a small opening, that originally was sealed up and covered over, probably for ages. Connecting this entrance were long, narrow passages, terminating in small sepulchral chambers, that originally contained the mummy case of the dead. These have long since been removed by relic hunters and explorers.



Pyramid of Cheops and the Sphinx, Remarkable as a Work of Masonry and Sculpture.

The four faces, or sides, of the pyramids are directed to the four cardinal points of the compass, proving that the ancients were acquainted with the laws that govern modern science.

One of the wonderful features of these grand structures, from a mechanical point of view, is the large size of some of the stones used. They gradually vary from the largest at the bottom, from six feet square by sixteen feet long, to three feet by eight feet, the platform at the top being formed of nine large stones, each weighing a ton. When we contemplate the complicated machinery required to raise these blocks to a height of five hundred feet, we are nonplussed; but when we realize that many of these massive blocks, weighing from ten to thirty tons, were brought from four to five hundred miles, we are amazed at the resource, genius, and constructive ability of that singular and remarkable race of people, the ancient Egyptians.

THE SPHINX—THE GIGANTIC MONUMENT OF ANTIQUITY—A REMINISCENCE OF EGYPT.

A few years ago the editor of this journal terminated a long and interesting tour of Egypt at Cairo, within the shadow of the prehistoric pyramids, and surrounded by the mighty relics of the Egyptian dynasties. Standing on the banks of the historical Nile, and looking out upon that almost unknown sea, the great desert, whose rolling sands have for ages buried many gigantic works of the ancients, our attention is arrested by those huge piles of masonry, which serve as tombs for numberless dead, and which we have learned to call the Pyramids of Ghizeh. Within three hundred paces of these colossal ruins stands the most striking object to be found in Egypt.

As if keeping sentinel over the downfall of a mighty people, guarding the sacred relics from the hand of the modern vandal, the Sphinx, that colossus of monolithic structures, raises its head above the ever-drifting, restless sands. Its face turned toward the east—staring into vacancy and the events of centuries—gigantic, majestic, awe-inspiring, it has witnessed the flight of time for nearly seven thousand years, witnessed the birth and fall of dynasties, the rise and decline of empires, the origin and destiny of Republics.

The archæologist, who wanders amongst the ruins of ancient Egypt, soon learns that upon that ancient highway, the Nile, are to be found the stupendous and gigantic structures that seem to have exhausted all human resources and rules of mechanics; the lofty walls and monolithic columns of Carnak and Luxor, the colossal statues of Memnon and Rameses, the Caryatidic Temple of Ipsambool, all strike the beholder with a profound awe and reverence, not only for the mighty works themselves, but the resources and deeds of a powerful and potent people.

The Sphinx, in comparison with the great stone structures of Egypt, stands pre-eminently the grandest work of time. Of an uncertain era, yet belonging to prehistoric ages, its workmanship bears witness to a period of educated art that even the lapse of ages, and the hand of time, have not obliterated.

It has generally been supposed that the Sphinx was a stone image entire, partaking of the head and shoulders of a man, and the breast and body of an animal, as many of the Sphinxes of Thebes and Carnak were formed, but recent excavations have dispelled the idea. It was demonstrated by Caviglia, in 1816, that the Sphinx of Ghizeh was shaped from a spur of solid rock, and that instead of being a body formed from the rock itself, it is little more than a gigantic head, 172 feet long and 56 feet high. The length is derived from what would seem to be the rear end of the spur or rock to the nose. The height is from the neck to the top of the head.

The rock in front of the figure or breast was removed by the ancient builders to a depth of fifty feet below the neck, or level of the sand on the pyramidal plateau, near which the Sphinx stands.

Caviglia found, upon removing the sand which had for ages accumulated about the breast of the figure, that two thousand three hundred years ago there existed a small nave or temple, built in front of the breast. This chapel was formed of three tablets, dedicated by the Egyptian monarchs, Thothenes III. and Rameses II., to their deity, the sun, of which the Sphinx was the emblem. These tablets formed the three sides of the temple, the fourth being composed of doors, on either side of which were recumbent lions, as if guarding the entrance. Opposite the doorway was placed a miniature altar, supported between the forepaws of a lion. This is believed to be of Roman origin. In 1869 another effort was made to excavate the statue that had become buried to the neck by the ever-drifting sand, when it was found that surrounding the Sphinx, nearly circular in form, was a flight of stone steps descending from the surrounding plateau to the temple before spoken of, and it is now believed that the statue stands in the midst of a circular basin of stone, hollowed out of the solid rock, and that the Sphinx was left in the center, while the surrounding rock was excavated. The rock from which the figure is cut is the common granite to be found on the Nile, and from which much of the work is constructed that lines the banks.

Upon examination it will be found that the Sphinx has been repaired by the introduction of blocks of red syenite or granite, but this work is generally supposed to be of Roman origin. Much of the stone used for this purpose seems to have been

Design for a Suburban Residence to be Built of Stone.

brought from the neighboring temple of Khafra, which was constructed of red syenite.

We note that at present renewed efforts are being made under the supervision of Messrs. Maspero and Grebaut, the noted engineers, to excavate the figure. Already the level of the platform temple and steps has been reached, after a continued labor of fifteen months, and it is expected that the excavations will be so far continued that we shall know more of the origin and purpose of this gigantic sentinel of the desert.—*Hill's National Builder.*

Working Without Thinking.

THE practice is too common for the mechanic to work without thinking. Having learned a trade he goes through a daily routine, which is so familiar that he could almost do it with his eyes closed, or in the dark. The part he has to do probably has little or no variety in it, and he settles down to the conclusion that there is no avenue open to him for advancement. He works like an inanimate machine, which, when the power is on whirs away day in and day out, until it is worn out, and unfit for further duty.

The unthinking workman does not closely observe even his own field of operation, and therefore never suggests any improvement in methods or material. A worker in woods, of this type, never stops to inquire from whence his supply of wood is obtained; when is the best time to cut timber, the better method of seasoning it, its extreme strength and durability; nothing is thought of beyond the mere fact that it is to be worked up into wheels, bodies, buildings, etc., as the case may be. Should anyone put the question to him covering either of the above, he would very likely give the curt reply that he had not time to bother his brains with such things, as they would be of no value to him.

The above model will serve for mechanics of every kind. It is a fact that some of the most valuable improvements have been thought out by men who worked at an entirely different branch from that to which the improvement pertained. In the carriage line the body-maker has invented a new kind of spring, axle, or something else. The blacksmith may have studied out an improvement on the sewing machine; the painter, a new tap and joints, and the trimmer has brought to light a patent priming or filler for woods. One's own trade seems to warp the mind, and from its monotony cause a lack of interest therein, beyond a desire to push it through and get done with it.

Now, if the skilled workman would take greater pride in his calling, and endeavor to master its every feature by long and arduous study, there would soon be wonderful advancement in the mechanic arts.—*Painters' Magazine.*

Harvey's Hot Water System of Heating.

THE difficulty of obtaining a uniform distribution of heat in buildings warmed by hot-air furnaces is well-known, and this difficulty has been met and overcome by an ingenious device consisting of a water-back in the furnace and water radiators in rooms remote from furnace where more heat is desired; this is produced by hot-water circulation, a very superior method of heating all kinds of buildings, especially dwelling-houses. The advantages in the use of this improvement in ordinary hot-air furnaces will be readily seen and appreciated by anyone familiar with furnace and hot-water heat. The hot-water circulation begins as soon as the furnace fire is started and the heat of the radiators increases and diminishes with the heat of the furnace and continues long after the furnace fire is out. Just here is where the economy comes in, and it is one of the principal advantages that this combination possesses over that of the combination hot-air and steam furnace where no heat is derived from radiators until steam is made, and should the fire become too low to make steam the radiators get cold.

The Bundy Hot-water Radiator, with vertical tubes and its upper and lower circulating chambers, is perhaps the most efficient, and is pronounced by those who have used it the quickest circulator on the market. It has been extensively used in Canada, England, and the United States for the past three years.

The cost of such an appliance is very moderate.

Its economy is unquestionable.

Its durability is the strongest argument favoring its use.

The comfort afforded and the advantages to health are of the most practical importance.

It is equally adapted to the *small cottage* or the largest residence.

In building a new house a large proportion of the expense of this system can be saved by discarding the extra chimneys and mantels, one chimney being sufficient.

It can readily be introduced into houses already occupied without damage to the walls, furniture, or carpets.

C. D. Harvey not only introduces the Bundy Radiator, but also the Harvey Hot-water Radiator and Furnace, to the attention of those who desire first-class methods of heating houses.

Mr. Harvey has been in this city over TEN YEARS and has introduced his system in over five hundred different houses. Upon application he will furnish a list of testimonials in accordance with the above.

Mr. Harvey can be found at 30 New Montgomery Street, corner Jessie. He has the largest stock, embracing all the latest improvements in the heating line, to be found west of the Mississippi Valley.

The Essentials of Perspective.

BY L. W. MILLER.

I WISH for a moment to consider the principles of perspective as applied to fixing the sizes of the objects represented. In the first place, let it be clearly understood that the only measurements which are of any consequence to the draughtsman are *relative* measurements. As far as the artist is concerned, he never thinks of any others; but architects and others who work from plans and elevations which are drawn to scale, do indeed use the actual measures, because in their case that is the most convenient way, but even then the actual measures become relative as fast as they are applied to the drawing, and these last are the only ones which appear in the result.

The term "drawing to scale," an expression constantly used in connection with the construction of geometrical plans and diagrams, has absolutely no significance when applied to a drawing in perspective. You may draw two or three lines in it by scale if you wish, but all the others will have to be measured by means of these; and even the first two or three may be put in just exactly as well without reference to any scale at all, and indeed much better, as far as producing a good effect is concerned. No one can tell in looking at a perspective drawing whether a building is twenty feet high or fifty feet, except by comparing it with some other object for which we carry a fairly accurate standard in our minds. Steps, for example, are of about the same height for all kinds of buildings and furnish a pretty good standard by which to measure other things; and lamp posts, gateways for foot-paths, etc., serve a similar purpose. The commonest and surest standard of heights is, however, the human figure. The horse answers pretty well, but you are not so sure of him. A pony may easily be mistaken for a horse, but a child will never be mistaken for a man if he has been drawn in any respectable fashion: and so the magnitudes of a picture become intelligible the moment the human figure is introduced.

Two kinds of measurements are employed in making pictures. The first enables us to determine the apparent size of an object with reference to some very obvious dimension—its height, for instance; the other relates to the foreshortening of objects, and to fixing distances between them, along lines which run to a vanishing point.

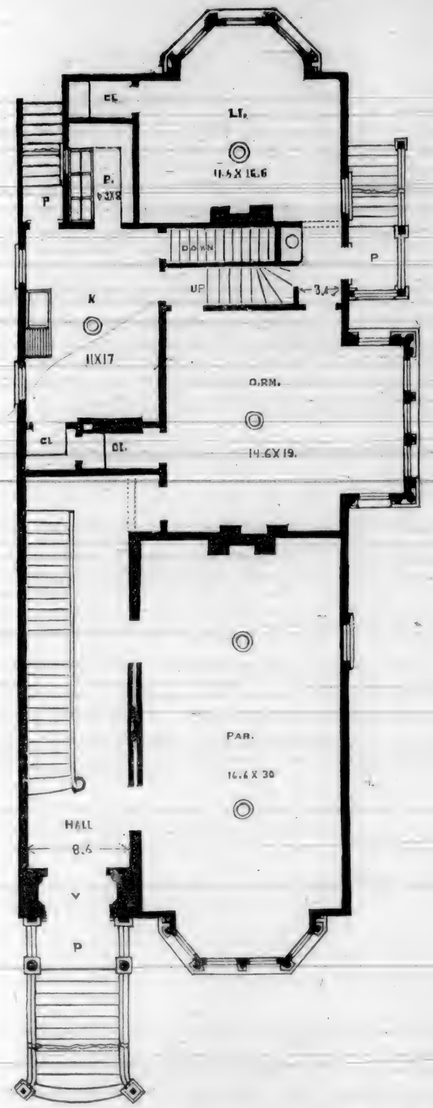
Look at the small engraving at top of page. It is quite a different, and a very much easier, matter to determine how high one driver's head ought to be, as compared with the other's, than it would be to measure the distance between the two. Now the length of the house might be compared with that of another one which was known to stand parallel with it—supposing such an one had appeared in the picture—by just such a process as that employed to determine the relative heights of the two men; but the width of the end of the house—which, as you see, faces the road—would have to be determined by the same method as that which would be employed to measure the distance between the carts.

The same is manifestly true of the spacing of the posts in the fence, or of the widths of the windows, and, generally, of all distances which one has occasion to measure along lines, which are said to "run into the picture," because they go to a vanishing point.

* * * * * * *

Measurements by Means of Triangles.

If the method of measuring by means of diagonals of squares is not applicable to every case that can possibly arise in the course of a draughtsman's practice, another and more general



statement of what really amounts to the same principle, will be found to be so; and as the greater includes the less, this other method might have been described in the first place, and all that has been said about diagonals omitted; if the method explained had not been not only simpler, and for that reason more convenient whenever it was applicable (and it almost always is, as artists use perspective) but being somewhat easier to understand, its discussion beforehand serves a very good purpose.

If in measuring the windows in a previous study it had also been necessary or desirable to determine the exact length of the house itself, the reader will see that we have not yet learned enough about perspective to do it; there is a way, however, of fixing such measures.

The width of each window and the length of the house itself in our large sketch shown were fixed in this way—at least they might have been so determined, if the drawing had been made to measure instead of being sketched on the spot.

The line to be measured is, in this case, the ground line of the front of the house. Let us measure its length first and attend to the windows afterwards. We have seen that any measures we may have occasion to use must be set off, if we are to be sure of them, on some line that is parallel to the picture plane, and that such a line is always parallel to the horizon of the plane in which it lies; that is, it is always parallel to the original or actual horizon when drawn on level surfaces and always vertical or upright when drawn on vertical surfaces, and so on. Our observations at the screen taught us that long ago. Such a line is drawn, then, in such a position as to have one point in common with the line to be measured. Theoretically, this may be wherever you please, but in practice it will usually be most convenient to draw this imaginary line through the nearest end of the line to be measured. As it is never used for any other purpose, it may be called the "line of measures."

The point which was called the vanishing point of diagonals in preceding figures, has been called the vanishing point of the base of the triangle in our large engraving (see the little diagram in the corner).

This name is a good one, because it does not allow the student to forget the real significance of the point, something which pupils find it very easy to do; but it is too long, and we shall have to call the point simply "measuring point"—only do not forget that it always *is* the vanishing point of the base of an isosceles triangle, otherwise it would not be of the slightest use as a measuring point. If your picture necessitates the establishing of many measurements, you have to regard it as in good part covered with pictures of isosceles triangles the bases of which all vanish at one or other of these points.

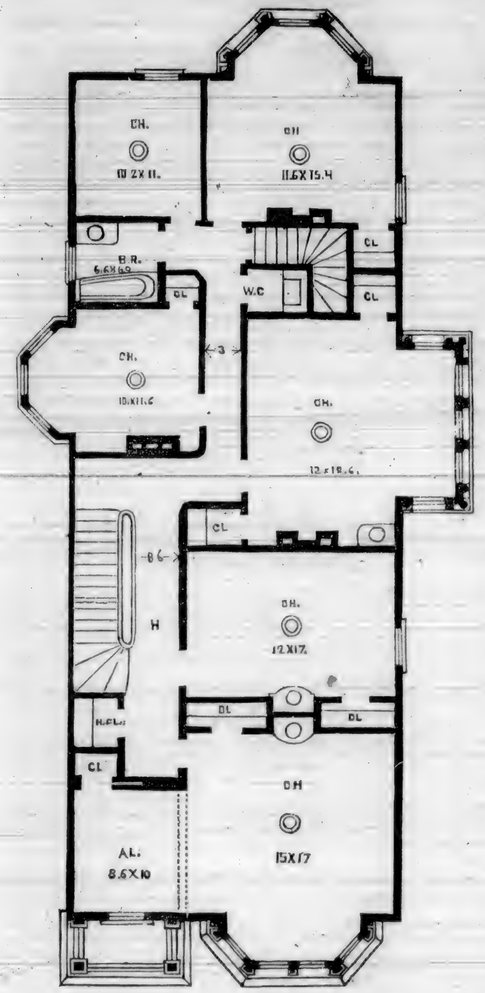
The above is taken from a new work (by publisher's permission) entitled, "The Essentials of Perspective." We have carefully read the book and can confidentially recommend the same to anyone desiring to become proficient in perspective drawing.

Boys as Inventors.

SOME of the most important inventions have been the work of mere boys. The invention of the valve motion to the steam engine was made by a boy. Watt left the engine in a very incomplete condition, from the fact that he had no way to open or close the valves, except by means of levers operated by the hand. He set up a large engine at one of the mines, and a boy was hired to work these valve levers. Although this was not hard work, yet it required his constant attention. As he was working these levers he saw that parts of the engine moved in the right direction, and at the exact time that he had to open or close the valves. He procured a long, strong cord, and made one end fasten to the proper part of the engine, and the other end to the valve lever. Then he had the perfect satisfaction of seeing the engine move off with regularity of motion. A short time after, the foreman came around and saw the boy playing marbles at the door. Looking at the engine he soon saw the ingenuity of the boy, and also the advantages of so great an invention. Mr. Watt then carried out the boy's inventive genius in a practical form, and made the steam engine a perfect automatic-working machine. The power loom is the invention of a farmer boy who had never seen or heard of such a thing. He cut one out with a knife, and after he had got it all done, he with great enthusiasm showed it to his father, who at once kicked it to pieces, saying that he would have no boy about him who would spend his time on such foolish things. The boy was afterward apprenticed to a blacksmith, and he soon found that his new master was kind and took a lively interest in him. He made a loom of what was left of the one his father had broken up, which he showed to his master. The blacksmith saw that he had no common boy for an apprentice, and that the invention was a very valuable one. He immediately had a loom constructed under the supervision of the boy. It worked to their perfect satisfaction, and so the blacksmith furnished the means to manufacture the looms, the boy to receive one-half the profits. In about a year the blacksmith wrote to the boy's father that he should visit him and bring with him a wealthy gentleman, who was the inventor of the celebrated power loom. You may be able to judge of the astonishment of the old man when his son was presented as the inventor, who told him the loom was the same as the model he (the father) had kicked to pieces but a year before.

Cyrus H. McCormick was not twenty-two years old when he produced the first practical reaper the world ever saw. Numerous other instances where boys produced valuable inventions might be cited.

IN building book-cases, there should be a half-inch space between the shelf and the wall—dust can then be easily brushed back, falling to the bottom.



Useful Hints Relating to House Building.

IN building a house for myself, to cost about $5,000, what are the special points which I must watch—points which may be overlooked by the architect or contractor, because, perhaps, not properly in their province, or because the owner should himself know them? I have never yet built a house, and am, in consequence, wholly inexperienced—an easy prey to imposition and mistakes.

The writer having had some experience in building houses as an owner, and paid somewhat dearly for it, proposes in this article to indicate some of the points desired.

In the first place, be most careful in the choice of your lot. Do not allow the cost per foot to be the most important element in your decision. A low-priced lot in the beginning may be the dearest in the end; that is, if it is chosen simply because it is low in price. Avail yourself as much as possible of the benefit of others' improvements. If there are desirable residences adjacent to the lot of your choice, the value of yours will be assured at the outset. Remember that you are about to put a certain sum of money upon whatever lot you select, and that a badly located lot will decrease the value of this; while, on the contrary, a good lot will enhance the value. Many have suffered disappointment, and actual loss, by an error of judgment in this regard. Your choice will make the difference between a good asset and a poor one.

Having chosen well to this point, see to it in the second place that the lot can be easily drained. To this end, it is not necessary that the ground should be high, but rather that it have a slope in some direction; otherwise, owing to the soakage into the ground of the surface water, which ought to run off, your cellar may be damp or wet at times. A dry cellar is of the utmost importance, and this is one of the ways to secure it.

Another point to be considered in your choice should be the exposure it would give your house. By this we mean the way it should front. A wise decision here will conduce greatly to the comfort and health of your family. The writer's experience is that the best frontage or facing for a house is a little west of south. This, more than any other, opens up the rooms to the sun in the winter and to the southwesterly breezes in the summer, thus making the house warm, healthy, and cheerful in the former, and cool and delightful in the latter, as the prevailing winds during the summer are from the southwest. At the same time, they carry away from the house the odors and heat of the kitchen; and during the winter the living part of the house is protected from the cold northerly blast.

A good size for the lot for a house to cost about $5,000 is 60x150 feet. If a stable in the rear is needed, the lot should not be less than 175 feet deep.

The next subject to be settled upon is the plan and specifications for such a house as your limit of cost will cover. This is a most difficult undertaking, and often ends in disappointment, usually because too much is expected for a given sum of money.

If style of interior and exterior is required, the size must be curtailed. If the rooms must be spacious and numerous, then the style and finish must be plain and unpretentious, both within and without. Of one thing be assured—everything cannot be obtained for $5,000 at the present cost of labor and materials.

This point fully understood, the writer has found that the quickest and best way to get the plan desired is to look at houses already built in the immediate or adjacent towns, which approximate to the cost named. Among the many which are now to be seen in all our suburban towns, there will be no difficulty in finding a house which will entirely satisfy the requirements. No mistake can then be made in the cost, for the builder himself is near at hand to duplicate for you, for a definite sum, the house you may select.

Disappointment in architectural effect will not happen, because you can see beforehand what an appearance the finished house will present.

It is better far to go to an architect with ideas well defined of what is wanted, and to ask of him to add to these his own taste and skill, than to go (as many do) with nothing settled in the mind but the cost, and to require of him to produce something entirely original in design and finish. His effort to fill such an order is generally a failure, not from any want of skill on his part, but rather because of his inability to grasp the intangible and indefinite ideas which may be in the mind of another. He must have some standard to work up to besides simply the cost.

If the architect succeeds in his effort as to the plan, you may consider you have made a fortunate beginning.

The specifications come next. As for these, let them be most carefully drawn, leaving nothing open, indefinitely or obscurely stated. Have them so drawn that they cover everything you want; otherwise you will have extras, which are always very costly.

It is a remarkable fact that anything taken from the specifications, after the contract has been signed, you can get no allowance for, but anything added to them greatly increases the cost. Why this should be so, only the contractor can tell you, and he generally will not. Hence, you must plan beforehand so as to avoid them, or, in the pithy words of the late Rev. Henry Ward Beecher, "First think out your work, and then work out your thoughts." This applies pre-eminently to building operations.—*Scientific American.*

THE AMERICAN CONTRACTOR

THE principal object of this publication is to furnish information, IN ADVANCE OF CONTRACTS, to architects, builders, contractors, and all those directly interested in furnishing materials of all kinds for buildings, bridges, plumbing work, machinery, and the thousand and one trades that are benefited by all kinds of building improvements. One great feature of this journal is the furnishing of special information to its yearly subscribers, having a special system of its own in this regard. It is published by B. Edwards, Chicago, and the subscription for the weekly edition is $5.00 per year. Subscriptions may be left at this office or sent direct to Mr. Edwards.

The Top of the Redwood Tree.

From time to time we have given engravings showing the stumps, thickness of bark, etc., of our great redwood trees. The above cut shows the top of one of our large trees and is a faithful representation of the average tree. No grander sight can be seen in nature than a grove of these magnificent trees, with their tops waving in the air at a height of—in cases—over four hundred feet.

ART SCHOOL—PAINTING—CRAYON.

Mr W. E. Rollins, formerly teacher of the drawing class in the art school, has opened a studio in the Washington Block, corner Montgomery Avenue and Washington Streets. We can cordially recommend this gentleman to those desiring to become proficient in either painting, or the skillful transferring of natural objects to the canvas by the use of the crayon. Mr. Rollins is a strict disciplinarian, and this feature is one of the most important necessary to a pupil's thorough advancement, as it enables him to become identified with the preceptor's ideas, and thereby in after years reproduce with a master hand the various objects in nature.

PICTURESQUE CALIFORNIA HOME, NO. 2. The great success attending the sale of the first volume, prompted the authors to issue the second one. The cuts in No. 2 are entirely new. Mailed to any address, either No. 1 or No. 2, for $3.50 each.

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" fancy, per M.	3 75
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COUNTRY BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Astoria.

Geo. Flavel will erect a brick building.

Album of Mantels, for $8.00.
Architects' Companion, for $2.50.

Burbank.

One and a half story frame cottage. Owner, W. H. Gancher; architects, Curlett, Eisen & Cuthbertson; contractor, E. Lane. Cost, $3,000.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

Two one-story frame cottages. Owner, W. H. Gancher; architects, Curlett, Eisen & Cuthbertson; contractor, E. Lane. Cost, $1,600 each.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

East Los Angeles.

Two-story frame residence. Owner, Dr. S. G. Newton; architect, John C. Pelton, Jr.; contractor, V. Gifford. Cost, $3,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Two-story frame residence. Owner, Mrs. Dr. Griffin; architect, John C. Pelton, Jr.; contractor, Van R. Liddell. Cost, $7,000.

One and a half story frame cottage. Owner, Miss M. H. Chapman; architect, John C. Pelton, Jr.; contractor, V. Gifford. Cost, $2,500.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Fresno.

D. D. Hudson will build a $4,000 residence.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Haywards.

Two-story frame. Owners, Chisholm & Ferrell; contractors, Whitehill & Matthews. Cost, $3,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

One-story frame. Owner, M. Knox; contractor, Flick. Cost, $3,000.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

Two-story frame. Owner, Heatherington; contractor, Flick. Cost, $2,000.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

One-story frame. Owner, Geo. Prouse. Cost, $1,000.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Two-story frame. Owner, Alex Allen: cost, $2,500; contractor, Collins Harr.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Parsonage Congregational Church. Cost, $2,000.

Album of Mantels, for $8.00.
History of Architecture, for $15.

Two-story frame. Owner, Chlotts; contractor, Dahl; architect, Matthews. Cost, $4,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

One-story frame. Owner, A. C. Bloomer. Cost, $2,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Hollywood.

Three-story hotel. Owner, O. C. Weyse; architect, John Hall. Cost, $75,000.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Los Angeles.

Stable, 48x100 feet. Owner, Olive Street R. R. Co.; contractor, A. F. Mackay. Cost, $4,000.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

Two-story frame residence. Owner, Jas. M. Damron; architects, Glover & Thompson; contractors, Zeller & Britton. Cost, $4,000.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Two two-story frame residences. Owner, J. K. Skinner; architect, C. H. Brown; contractor, A. F. Mackay. Cost, $5,000 each.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Two-story frame residence block. Owner, Herm. J. Baer; architect, John C. Pelton, Jr.; contractor, V. Gifford. Cost, $11,000.

Woodwards' Country Homes, for $1.50.
Practical Perspective, for $5.00.

Two-story frame block. Owner, M. Schwenz; architect, R. H. Dorn & Son. Cost, $3,800.

Woodward's Country Homes, for $1.50.
Science of Carpentry, for $4.00.

Two-story frame residence. Owner, J. M. Riley; architects, Costerisan & Merithew; contractor, day work. Cost, $10,000.

Universal Assistant, for $2.50.
Practical Perspective, for $5.00.

Three-story hotel. Owner, John Eberle; architect, John Hall. Cost, $15,000.

Cutting Tools, for $1.50.
Home Hand-Book, for $10.00.

One-story frame cottage. Owner, Mrs. Foggarty; architects, Costerisan & Merithew; contractor, J. W. Wilson. Cost, $1,700.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Two one-story brick warehouses. Owner, W. W. Montague & Co.; architects, Curlett, Eisen & Cuthbertson; contractor, W. W. Fletcher. Cost, $6,000 each.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Two-story frame residence. Owner, M. Aguierra; contractor, A. F. Mackay. Cost, $3,000.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

One-story frame cottage. Owner, A. A. Eckstrom; architect, J. W. Forsyth; contractor, T. M. Plotts. Cost, $2,100.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Two-story frame residence. Owner, S. B. Olmstead; architect, John C. Pelton, Jr.; contractor, N. Gifford. Cost, $3,600.

Practical Perspective, for $3.00.
Woodward's Country Homes, for $1.50.

Three-story brick block. Owner, A. B. Miller; architect, W. R. Norton; contractor, L. D. Griswold. Cost, $5,500.

Artistic Homes, for $3.50.
Modern House Painting, for $5 00.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

Two-story frame residence. Owner, Frederick Mohr; architect, John Hall; contractor, B. F. French. Cost, $5,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Two-story frame residence. Owner, Herm. F. Baer; architect, John C. Pelton, Jr.; contractor, D. Hennessey. Cost, $8,000.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Olympia.

Mr. Chalmers has let the contract for a brick building to Patunde & Co.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Pasadena.

Addition to two-story frame residence. Owner, E. C. Webster; architect, J. L. Frank; contractor, Geo. Webster. Cost, $7,000.

Builders' Construction (three volumes, very fine), for $14.00.
Plaster, How to Make it, for $1.00.

The opera house is an assured thing. It will cost $80,000. Address, Col. A. M. Gray.

Architecture and Building, $3.50.
American Cottage Building, for $3.50.

Pomona.

One-story frame cottage. Owner, J. H. Adams; architects, Costerisan & Merithew; contractor, day work. Cost, $1,500.

Shavings and Sawdust, for $1.50.
People's Cyclopedia (three large volumes) for $20.00.

One and a half story frame cottage. Owner, Dr. F. D. W. Crank; architect, J. W. Forsyth; contractor, Henry Hanson. Cost, $3,000.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Santa Monica.

One-story frame cottage. Owners, Potts & Carlisle; architect, J. W. Forsyth; contractor, T. M. Plotts. Cost, $1,800.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Salinas.

A brick hotel is being built by Jas. Jeffery.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

San Lorenzo.

Two-story frame. Owner, Elias Llewelling; architect, Matthews; contractor, Dahl. Cost, $6,500.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

Ventura.

Three-story brick hotel. Owners, Rose & Fargo; architects, Curlett, Eisen & Cuthbertson; contractor, David Perry. Cost, $60,000.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

Walla Walla.

Architect Babcock has let the contracts for the $10,000 Ennis Block.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Winters.

J. Cradwick and H. Seaman are each building a two-story brick building. They will spend about $5,000. A. Ritchie was their architect.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

D. P. Edwards is having built a cozy $2,000 cottage. T. D. Ball is doing the work.

[Our correspondent claims that the lumber combination will deter many from making improvements, owing to the recent advancement in prices.—ED.]

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

SAN FRANCISCO BUILDING NEWS.

A

Army, nr. Guerrero. Two one-story frames.
O. and B.—J. M. Comerford.
$3,000.

B

Buchanan, bet. Union and Filbert. One-story frame.
O.—Louis Zimmerman.
A.—W. Schrof.
C.—I. Merry.
$1,400.

Balny, nr. Twenty-fourth. Two-story frame.
O.—Deering.
Day work.
$1,500.

Bush, No. 2238. Additions.
$1,600.

Bartlett, bet. Twenty-fourth and Twenty-fifth. Additions.
$1,200.

Belcher, bet. Ridley and Fourteenth. Two-story and basement frame.
O.—G. W. Moore.
A. and B.—G. W. Wright.
Day work.
$4,000.

Broadway, cor. Buchanan. Frame building.
O.—A. A. Adler.
A.—Macy & Jordan.
M.—J. Haaf.
C.—J. M. Kelly.
$17,000.

Bartlett, bet. Twenty-fifth and Twenty-sixth. Additions.
O.—Gibbs.
$3,500.

Bush, nr. Hyde. Two-story frame.
O.—J. Eliaser.
C.—R. Parker.
$4,000.

C

Clementina. Alterations.
O.—L. G. Somps.
A.—G. E. Voelkel.
C.—J. H. McKay.
$5,000.

Clay, bet. Van Ness and Franklin. Additions.
O.—L. Schwabacher.
A.—O. Kenitzer.
C.—Thos. Mannix.
$1,300.

Castro, cor. Nineteenth. Two-story frame.
O.—E. Ring.
A.—T. J. Welsh.
C.—C. M. Arnold.
$5,500.

Clay, nr. Franklin. Alterations.
O.—W. M. Hoag.
A.—J. J. Newsom.
C.—Martin & Maquiro.
$3,200.

Chattanooga. Three one-story frames.
O. and B.—J. M. Comerford.
$5,000.

Capp, nr. Twenty-fifth. One-story frame.
O.—C. O. Smith.
$2,200.

Capp, cor. Twenty-second. Alterations.
O.—D. B. Murphy.
A.—S. and J. Newsom.
C.—Knowles & Wetmore.
$3,500.

California, cor. Jones. Carpenter work, etc.
O.—Chas. Crocker.
A.—Curlett & Culbertson.
C.—Mahoney Bros.
$50,000.

California, bet. Scott and Devisadero. Two-story frame.
O.—H. M. Levy.
A.—P. R. Schmidt.
C.—P. Crichton.
$8,000.

California, cor. Jones. Two-story and attic frame.
O.—Mrs. F. F. Moulton.
A.—Clinton Day.
C.—R. P. Herbert.
$15,000.

California, cor. Stockton. Church building.
O.—Congregation Shari, Zedek Israel.
A.—Salfield & Kohlberg.
C.—L. Weisman.
$9,000.

D

Devisadero, bet. Haight and Waller. Two one-story frames.
O.—Marchand.
C.—Hatfield.
$8,000.

Dolores, bet. Twenty-second and Twenty-third. Alterations.
O.—S. Hueler.
C.—F. Kern.
$1,600.

E

Eighteenth, cor. Jessie. Two two-story frames.
O.—Anna Dunn.
A.—H. Wharff.
C.—O. E. White.
$6,500.

F

Folsom, cor. Twenty-fourth. Two-story frame.
O.—Mr. Kern.
Day work.
$3,500.

Folsom, cor. Stuart. Two-story frame.
O.—J. Schulte.
A.—P. R. Schmidt.
C.—Kent.
$12,000.

Fulton, nr. Broderick. Two-story frame.
O.—A. Dorrity.
C.—G. Houston.
$2,600.

Fourth, cor. Louisa. Alterations.
O.—J. H. Richard.
A.—W. Mooser.
C.—H. Munster.
$1,300.

Fillmore, bet. Tyler and McAllister. Two-story frame.
O.—E. O. Turner.
A.—M. Balcynski.
C.—R. O. Chandler.
$5,500.

First, cor. Tehama. Additions.
O.—Rix & Firth.
C.—J. R. Wilcox.
$7,000.

C

Geary, nr. Mason. Three-story frame.
O.—H. Mathews.
A.—H. T. Bestor.
C.—C. M. Mason.
$18,000.

Guerrero, nr. Twenty-sixth. One-story frame.
O. and B.—J. M. Comerford.
$1,500.

Guerrero, nr. Army. Three two-story frames.
O. and B.—J. M. Comerford.
$9,000.

Golden Gate Park. Building for children's play-house.
A.—Percy & Hamilton.
C.—M. J. Kelly.
$40,000.

Golden Gate Avenue, bet. Jones and Leavenworth. Additions.
O.—Rev. G. Becher.
A.—Rev. Bro. Adrian.
C.—J. Klein.
$11,000.

Gough, cor. Pine. Additions.
$800.

Golden Gate Avenue, nr. Octavia. One-story frame.
$1,000.

H

Haight, nr. Devisadero. Two-story frame.
O.—McCarthy.
A.—Welsh.
C.—Sullivan.
$3,000.

Haight, bet. Webster and Fillmore. Two-story frame.
O.—L. Friedlander.
A.—P. S. Barber.
C.—H. Inwood.
$3,800.

Hampshire, cor. Twenty-fifth. Alterations.
O.—Mrs. McKenny.
A.—J. J. Newsom and J. W. Wessinger.
$2,000.

Haight, nr. Broderick. Two-story frame.
O.—J. Hughes.
A.—J. J. Clark.
C.—H. Keenan.
$4,200.

J

Jackson, cor. Devisadero. Two-story frame.
O.—Hallafy.
A.—Swain.
C.—S. M. Hills.
$7,000.

L

Lyon, nr. Sacramento. Two-story frame.
O.—A. Balaner.
C.—Van Wei.
$5,000.

Lyon, cor. Sacramento. Two one-story frames.
O.—D. R. Collins.
$4,000.

Larkin, nr. McAllister. Alterations.
O.—H. Plagman.
A.—John & Zimmerman.
C.—B. Dreyer.
$3,000.

Liberty, nr. Valencia. Two-story frame.
O.—B. Schloss.
A.—A. J. Barnett.
C.—D. F. McGraw.
$4,500.

Larkin, nr. Turk. Additions.
$1,000.

M

Mission, bet. Twenty-second and Twenty-third. One-story frame.
$2,500.

Mission, nr. Nineteenth. Three-story frame.
O.—A. McElroy.
A.—T. J. Welsh.
C.—R. Doyle.
$7,500.

Market, cor. Fell. Four-story and attic.
O.—M. C. De Laveaga.
A.—P. R. Schmidt.
C.—Mahoney Bros.
$130,000.

Mission, bet. Fourth and Fifth. Two-story brick and basement.
O.—E. McGary.
A.—J. J. Barnett.
C.—O. A. White.
Brick mason—Richardson.
$45,000.

Masonic Cemetery. Brick vaults.
O.—B. A. Becker.
A.—W. Mooser.
C.—W. Matthews.
$7,500.

O

Oak, bet. Octavia and Laguna. Additions.
O.—J. Carbery.
$3,000.

Oak, nr. Scott. Two-story frame.
O. and B.—W. Plums.
$4,500.

P

Powell, nr. Francisco. Three-story frame.
O.—J. J. Thuersen.
A.—W. Schrof.
C.—Knopf.
$4,400.

Polk, cor. Sutter. Alterations.
A.—P. R. Schmidt.
C.—Wilson & Son.
$3,000.

Pine, cor. Franklin. Alterations.
O.—H. Simon.
A.—Pissis & Moore.
C.—Langstaff.
$5,000.

Post, nr. Baker. Two-story frame.
O.—Sheehan.
$1,800.

Page, bet. Scott and Devisadero. Eight two-story frames.
O. and B.—W. Hinckle.
$35,000.

Page, bet. Octavia and Laguna. Two-story frame.
O.—Mrs. McDermott.
$4,000.

Page, nr. Webster. Two-story frame.
O.—Black.
A.—A. J. Barnell.
C.—Commary.
$5,500.

Post, cor. Franklin. Two-story frame.
O.—H. M. Levy.
A.—P. R. Schmidt.
C.—P. Crichton.
$7,800.

Pine, bet. Van Ness and Franklin. Two-story frame.
O.—J. Deutsch.
A.—W. H. Wharff.
C.—H. E. Hatch.
$4,500.

Pine, bet. Van Ness and Franklin. Two-story frame.
O.—A. Oberdena.
A.—W. H. Wharff.
C.—H. E. Hatch.
$4,500.

S

Stevenson, nr. Seventh. Repairs.
$1,000.

Stuart, nr. Folsom. Two-story frame.
O.—Scott.
C.—Kincaid & Thompson.
$2,500.

Stuart, nr. Folsom. Two-story frame.
O.—Rider.
C.—J. P. Smith.
$3,000.

Stuart, nr. Folsom. Two-story frame.
O.—Scott & McCord.
C.—J. P. Smith.
$3,000.

Steiner, nr. Pine. Additions.
O.—Mrs. Kafka.
$1,500.

Sutter, nr. Broderick. Two-story frame.
O.—Stowell.
A.—W. P. Moore.
C.—D. F. McGraw.
$6,500.

T

Twenty-sixth, nr. Dolores. One-story frame.
O. and B.—J. M. Comerford.
$1,500.

Twenty-fifth, cor. Harrison. One-story frame.
O.—P. Gleeson.
A.—T. J. Welsh.
C.—R. Sinott.
$2,000.

Twenty-second, cor. Treat Avenue. One-story frame.
O.—J. H. Handley.
C.—J. Dyer.
$2,500.

Turk, cor. Laguna. Two-story frame.
O.—D. Silverstein.
A.—H. D. Mitchell.
C.—G. H. Walker.
$5,000.

V

Van Ness, cor. O'Farrell.
O.—St. Mary's Cathedral.
M.—Butler & McGowan.
C.—Mahoney Bros.
$130,000.

W

Willow Avenue, nr. Mission. Two two-story frames.
O.—A. Deerie.
A. W. Schrof.
$10,000.

Washington, nr. Scott. Two-story frame.
O.—M. Poltzen.
C.—W. Plums.
$3,000.

Washington, nr. Scott. One-story frame.
C.—W. Plums.
$3,000.

New Books Just Received.

AMERICAN STAIR BUILDER. New edition of 1887. By Lucius D. Gould. Price, $2.50. One of the best works on the subject of stair building.

MODERN COTTAGES. By J. H. Kirby. Just issued. Price, $1.50.

ESSENTIALS OF PERSPECTIVE. By L. W. Miller. Price, $1. 0. The newest as well as one of the best of the books on the subject.

IMPROVED PLUMBING APPLIANCES. By J. Pickering Putman, architect. 94 illustrations. Price, $1.50. A perfectly new work just received and too late for further notice in this issue.

DIRECTORY OF ARCHITECTS. Fourth edition. Price, $1.00.

MODERN ARCHITECTURAL DESIGNS AND DETAILS. A few copies remain of this really good work. Price, $10.00.

DETAIL COTTAGE AND CONSTRUCTIVE ARCHITECTURE. Similar to the above in general design.

LEFFELL'S HOUSE PLANS. $3.00, post-paid.

SCIENCE OF CARPENTRY MADE EASY. Price, $5.00.

MECHANIC'S GEOMETRY, or the Science of Framing by the use of Card-board Models. $5.00.

ARTISTIC TILES AND MANTELS.

ONE of the most artistic displays in Tiling, Mantels, Brass goods, etc., can be found in the rooms of E. A. Pattison & Co., 308 Stockton St., San Francisco. The design in tiling entitled "Cupid among the Roses," is worthy of particular mention. This firm is the sole Pacific Coast Agent for the Perth Amboy Terra Cotta Co. A large and well-selected line of wooden and iron mantels is kept constantly on hand, and the prices are such as to command the attention of those about building. The floors of Messrs. Pattison & Co's warerooms are covered with Tile and Parquette flooring of the most beautiful and artistic designs, and should be examined before purchases are made elsewhere. Special personal attention is given to furnishing designs and estimates for all work connected with the tasteful arrangement of everything connected with Mantels and Tiling. This firm also makes a specialty of stained glass. Write or call for information as per address mentioned.

Union Artificial Stone Paving Co.

THEO. VAN TASSELL is the manager of this newly-incorporated company. He is fully prepared to furnish all kinds of cement and artificial stone work. See new ad.

Labor Becoming Tyrannic.

PERSONS who watch the movements of various labor organizations of the present day cannot help seeing the evident tendency of those organizations to become monopolistic, to refuse freedom to others, to tyrannize over laborers in various disagreeable ways, and to attempt to acquire control of things not properly within their jurisdiction. For instance, not long ago there was a convention of glass-blowers at Atlantic City, New Jersey, and during the session a resolution was adopted abolishing the apprentice system in glass factories. The matter has, perhaps, small importance, but it is significant of the tendency of the labor movement, and it has an interest beyond the narrow boundaries of the glass industry, because similar action has already been taken by other trades. The point involved is this: Men who are earning their bread at skilled labor formally declare that no American boy shall be allowed to acquire the skill required to perform that labor. They turn their backs on the five or six million young men and boys in this country and deny them their right to become expert mechanics. The purpose, of course, is to make skilled labor scarce, and so to keep up wages. The result is to exclude the young from the chance to earn good wages, to force many of them into idleness, and to tempt others into crime. Against such a system the people of the country have a right to make vigorous protest. It is a matter that affects society at large. It touches directly every man who has children, and indirectly every human being from the lowest to the highest. The right of a boy to learn any honest trade that he desires to learn is positively indisputable; and to this is joined the clear right of every employer to take a boy into his shop to help him to acquire knowledge and skill. The denial of these rights by a trade union is tyranny, and it ought to be resisted to the last extremity. We assert that the solitary chance of the success of the labor movement, so called, lies in its obedience to the requirements of justice. When it sets justice at defiance, it is doomed. The people of this country are not going to permit any body of men to trample the most ordinary human rights under their feet.

On the same subject a Chicago journal says: "A father might to-day tramp all over Chicago with a son who wanted to learn an honest trade, so as to become a useful citizen, and fail, unless he took him to the Manual Training School and paid tuition for him. Hundreds of boys are now thus taught handicraft at the expense of fathers who can afford to pay for it. But let a poor man's son try it, and he will be met at the door of the factory or shop by a walking delegate of the Knights of Labor and turned away. If that does not do, his young face will be bruised by brutal fists, and so will the faces of those who stand by him. If anyone supposes that there is any limit to this kind of opposition, any point at which the would-be monopolists of labor would draw the line of limitation upon themselves, he does not understand depraved human nature. If individual liberty to acquire skill and earn bread and control earnings is not protected by law and by resolute public sentiment behind that law, then a reign of absolute lawlessness is visible not very distant in the future. The disbarred classes on one hand, and the employing classes on the other, will join hands and fight for their rights. The violence will not very long be all upon one side, and the violence which has human liberty and rights back of it will win. We are always glad to see a tyrannical and heartless employer forced to do right by "organized labor," but when organized labor determines to rob the American boy of his birthright, then it is evoking moral and material forces against itself which will not fail to beat it to pieces.—*Lumber World.*

Household Conveniences.

NOTHING astonishes an American abroad more than the backwardness of foreigners in adopting the little household conveniences which with us are matters almost of necessity. On the Continent, where people seem to live generally in the streets, and to have well-founded objections to staying in their houses any more than they can help, it is not so surprising that great pains should not be taken to render domestic life easy and convenient; but in England, the country, above all others, of beautiful and happy homes, one is often distressed to see the labor habitually expended upon work which in this country would be done almost automatically by some sort of ingenious appliance. We remember once going over the Belgravian mansion of Sir George Grey, ex-viceroy of India, and finding the kitchen in this aristocratic abode furnished with an enormous open fire-place, in which swung a crane, with pot-hooks and hangers, the whole, with the addition of a brick oven, forming the only cooking apparatus of the establishment; and every traveler can give plenty of illustrations of the discomforts of English houses. Even where American devices are transported across the water, they are received with suspicion, and are regarded as eccentric novelties for years after they have come into universal use with us. The last of these inventions to be introduced to the British public seems to be the well-known electric gas-lighting apparatus. Few houses, even of very modest pretensions, would now be built in or near any of our Northern cities without this indispensable feature; but it appears to gain ground very slowly in England. The *Builder* says, rather doubtfully, after describing the system by which the gas can either be turned on, lighted, or turned off by pushing a button, with the automatic burner, or turned on by hand and lighted by a pull at a pendant chain, that the apparatus appears to it "rather a pleasing toy than a serious convenience;" going on to explain that "it is hardly worth while to have a special electric mechanism merely to light the gas." This sounds very funny to people who never think of using matches or tapers to light the gas in their houses, and who would not on any account go back to that old-fashioned and dangerous practice. Even if the *Builder* thinks it of no advantage to be able to light the gas in the room by pulling a chain, or touching a button, instead of feeling in the dark on the mantel for the match-box, at the peril of upsetting the bric-a-brac behind which it lies concealed, and then succeeding in reaching the key, and turning on the gas just in time to have the red-hot remnant of the match drop into one's sleeve, while the gas, unlighted, pours into the room, it must, we should imagine, acknowledge that there is practical utility in an apparatus by which the gas in any room can be lighted from any other. In thousands of American houses the entrance-halls and vestibules are now lighted by the touch of a button in the rooms above, so that a ring at night, or an unusual noise below stairs, is immediately answered by lighting up the rooms, as a preliminary to a descent to see what is the matter; while in hundreds more the lanterns in the carriage, porch, or along the driveway are lighted and extinguished from the house in the same manner. With us the use of this simple and effective system is rapidly extending. We know a house where not only the gas-lights, but the fires are kindled and extinguished by the touch of a button; and the best of all systems of burglar alarm is that under which the house-breaker, on crawling through the basement windows, instead of frightening the family out of their wits by sounding a bell and displaying a sign in the bedrooms to the effect that ferocious criminals have arrived in the kitchen, sets in motion an apparatus which begins by suddenly illuminating with great brilliancy the place in which he had intended to do his deeds of darkness, at the same time deafening him by ringing an immense gong close to his head until the attention of the police is attracted to the place; the whole of the little drama going on without interrupting the slumbers of the unconscious master of the house in his room above.—*American Architect and Building News.*

LATH OR LATHS?—Lath or laths is the question. Most of the newspapers print it in the plural. At the East it is commonly called laths. In the West one scarcely ever hears a lumberman talking about laths; simple lath in a collective sense is good enough for the wild and untutored Western merchant. Webster's dictionary says that laths is right, and that is sufficient for the Eastern lumbermen who have graduated from college or high school to the lumber yard. Webster has doubtless decided that if it is right to say boards, pickets, and shingles, it is the proper thing to say laths. By the same rule corn should be corns, because beans are beans, and trout should be trouts. Words are as usage makes them. The *Lumberman* says lath, thus taking the liberty to disagree from the dictionary, choosing rather to conform to common sense and side with the great mass of men who handle the stuff.

"OAK is the grand, everlasting wood of the ages," quotes a lumber journal.

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by express, prepaid.

HOWARD CHALLEN, Publisher,

150 NASSAU STREET, NEW YORK.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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THE

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Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Sing'e Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to th building interest.

No Others Received.

SAN FRANCISCO, CAL., AUGUST 15, 1887.

Improving the System.

THE building contracting business in San Francisco, and more or less throughout the State, within the past twenty-five years or more, in all the mechanical branches, has been conducted in a manner anything but satisfactory as a whole to architects, material men, or the responsible and better class of contractors. The true history of the business during the past quarter of a century presents a deplorable state of facts. Incompetent and irresponsible men, and withal men enjoying no fair degree of honest intent and purpose, have from time to time crowded in and operated as contractors, monopolizing a large proportion of the work offering, taking it at *taking* prices, with but little concern as to involvments, consequences, or results, thereby rendering it difficult and almost impossible for honest contractors to compete, and in thousands of cases ending in compromise, and, in short, *pro rata* settlements.

The effect of this has been sadly disastrous all around. The really competent and good men have been prevented from realizing what was and is their due—engagements at living prices, and fair compensation for the skill and service required of them in conducting and executing honest work. Material men have suffered severely by short payments, millions of dollars within the time named being lost through trusting men who had all to gain and nothing to lose by contracts undertaken at ruinous prices, and but for the fact that building materials, especially lumber, the chief commodity used in building construction in California, has always, except at special times when breaks in combinations and fierce competition for a period has "knocked the bottom out" of regular trade, paid, as it is now doing, large margins of profits, many of the dealers would have been forced to succumb under the severe losses which have at times followed in quick succession.

And while architects have not been involved in the direct losses growing out of this state of things, they have been severely contingent losers in time, annoyances, and vexations, as every engagement made with inferior contractors involves trouble and expense to the man of plans, who is expected to combat and counteract the short-comings of those under his supervision, and in the event of failure of any kind he is expected to be a Solomon, meeting the antagonizing views of everyone involved in the transaction, and satisfying the demands of all contending parties, or else meet the denunciations of those who may feel themselves aggrieved. While those who suffer more financially are greater losers in dollars and cents, the architect is by far the worst punished party concerned, in the misrepresentations and vexatious annoyances that attach to every case of failure by a contractor.

All this suggests, Who is most to blame? As a rule, those who lose place the *onus* upon the architect, who has, unfortunately to himself, yet innocently, allowed the contract to fall into improper hands. But a single second thought must bring the conviction that no sane or sensible architect would willingly permit himself to be the victim of such circumstances as generally follow engagements with men of known disrepute and dishonor. And when contractors present the credentials of ample credit, and their material men as bondsmen, it is not an easy matter for the architect to convince the owner that he should pass the lowest man, and pay from ten to twenty-five per cent more to the second or third higher bidder. Consequently, architects reply, and the majority of the better classes of contractors chime in, No; the fault lies in the fact that incompetent men are granted credit without regard to their financial or moral responsibility. The doors of trade are too easy upon their hinges, and the custom has been next to universal that any man, no matter what his actual pecuniary or moral status might be, could find all required credit and bonds necessary to enable him to claim his rights as a contractor, and undertake the work of construction, whether large or small.

But with the many-sided views existing in the issue, it is not likely that a unanimous agreement can possibly be reached as to who is most chargeable, nor is it now necessary, if all interested contractors, material men, and architects, will combine upon a plan that will serve every best interest, and substitute for the bad that has been, a condition of things that will be just to all concerned, and best alike for contractors, material men, architects, and owners, leaving the possibilities of failures and *pro ratas* in the future to extreme and incidental cases, averaging, at most, fairly within the limits of experience in the commercial world, and, we hope, far less.

But some will say, Have not owners profited by the state of things referred to? Yes, they have. But in reply, Have they not done just as all other men have done in other connections, availed themselves of the benefits appearing from this condition of affairs? It is a universal law among mankind to make the best bargain possible, and he who would refuse acceptance of a proposition purporting to lighten the drafts upon his exchequer, would not be estimated in the business world as sagacious and prudent, the results promised being the same. Hence to remedy the evils that have been in the building line, material men, contractors, and architects must advise the method, and by faithful, honest understanding carry into practice such rules and systems as will insure integrity and justice to all parties.

THE REMEDY IN HAND.

A movement is on foot among the material men, and others concerned in the risks and responsibilities of the building trades, which we hope will be worked to a successful issue, the object of which is to close the doors that have been open too wide, and bar them against the ingress of impecunious interlopers, by making reputation, competency, and responsibility a necessary password to credit. Let this be done and strictly adhered to, and it will not be long ere the skunk-weed class will disappear.

Building Summary for August.

THE past month has been a brisk one as far as building improvements are concerned. The number of improvements now under way is much greater than the same period of last year. Recapitulation for the month is as follows:—

105 frame buildings, value	$388,100
7 brick " "	150,000
24 alterations, value	44,250
136	$582,350
From Jan. to Aug. 15, 1886, 841 buildings, value	$4,528,735
" " " " " 1887, 744 " "	4,603,964

The indications are that in the remaining months of this year the discrepancy in *number* of buildings will be overcome, and this year show a larger number of improvements than 1886. The *value* is certainly greater.

San Francisco Chapter of Architects.

THE regular meeting was held the evening of the 5th inst., President Pissis presiding. After the reading and approval of minutes, reports of committees, and attention to general business, the nomination of officers for the ensuing year followed, the election to be held September 2. The committee reported favorably upon the application of Gingero Hamada as associate member. At this point a general discussion was indulged in, in regard to the past work of the Chapter, and its future prospects. An expression of abiding faith in its possibilities was unanimous, and the best of feelings permeated the evening's intercourse. The many material benefits to the profession, growing out of the Chapter's organization, were fully reviewed. The adoption by the Chapter of a schedule of charges for professional services, which is by our courts recognized as authority in cases of dispute, has been of great advantage to both members and non-members of the Chapter. But the more especial good done by the organization is found in its moral influence in bringing together a large portion of the membership of the profession, and establishing professional courtesies and friendly intercourse far greater than existed prior to the existence of the Chapter.

A more general, interested co-operation of the architects of San Francisco would doubtless add to the efficiency and influence of the Chapter. Among those who have assisted by service as officers and otherwise, and at convenient times or regularly attend the meetings of the Chapter, are Messrs. Wright, Sanders, Curlett, Laver, Pissis, Welsh, Clark, Moore, Wolfe, Henricksen, Bestor, Curtis, Gath, Macy, Bennett, Everett, Babson, Eisen, while many others in San Francisco, San Jose, Los Angeles, Oakland, Sacramento, and other places, hold inactive membership, and visits from non-members frequently occur.

While the Chapter may not have made that decidedly successful advance possible, and placed itself in the position for good that it might have done, its management has been free from individualism and clique influence. A generous and liberal sentiment and harmony of purpose have prevailed, and those who have been most earnest in the work have been actuated by best judgment and honest intent and purpose; so that whatever mistakes may have been made have been the result of error of judgment.

Those who have not affiliated are alone to blame for any seeming imperfection of the organization, as the doors of the Chapter have ever been open to every good man, and those who could have done better than seems to them to have been done by those who have done the best they knew how, are at fault in not assuming the position that has ever been free to them, and by the force and influence of their greater wisdom helping to found and perpetuate an architectural organization in San Francisco that would accomplish all that could be accomplished by a body of intelligent, practicing architects.

THE SEWAGE SYSTEM FOR SAN DIEGO, CAL.—The *Sanitary News* describes a somewhat novel plan for disposing of sewage in the system which Colonel Waring has engaged to build for San Diego, Cal., at a cost of about $400,000. The main sewer runs a quarter of a mile into the harbor to an outlet-reservoir constructed alongside the deep ship-channel. The reservoir will have an area of one acre, and cost some $50,000. The collected sewage will fill this reservoir not more than one and a half feet deep. High tide will add three and a half feet of sea water to the mass. The contents thus diluted will be discharged into the outgoing tide by automatic gates opening an hour after high tide, and closing an hour before low tide. At Stockton and Sacramento, where the conditions are nearly identical, Colonel Waring will make wells in various flat parts of the cities, connecting with a deep outlet well by large siphons. Colonel Waring has used this plan for two years successfully at Norfolk, Va. At Los Angeles he recommends the purchase of 10,000 acres of land six miles from the city, and the disposal of the sewage upon it by irrigation.

Artificial Stone Sidewalks.

THE superiority of well-laid artificial stone sidewalks is universally admitted, and as a rule everybody is having new sidewalks put down, and those who can afford the slight additional expense over wood, especially in front of new buildings, adopt the more durable, and practically more economical, device—artificial stone. There are numerous examples of excellent work of this kind in San Francisco, and some wretched abortions. When the number engaged in contracting this class of work was limited to those who both fully understood the art of manipulating cement, and who retained a feeling of pride in the quality of work done by them, a better class of work was produced. But its growing and rapidly increasing popularity offered inducements to many adventurers to become sidewalk contractors, until at the present time there is a host of them—some good workmen, having learned the trade by service under the earlier employers who introduced the business in this city, and as many more who possess not the first item of practical knowledge, except to make a few figures by way of ascertaining the number of square feet contained in the space to be covered, and ordering the required material. As to the proper way to manipulate the same they know nothing, and are forced to depend upon such hired help as they may control; consequently competition is large and zealous, and, as a result, prices low, with the *finale* of some miserably poor work.

Some men are actually contracting to put down artificial stone sidewalks in San Francisco for less than the first cost of the raw material alone, required in the execution of good work, with nothing allowed for labor. Many owners think this is nice, and imagine that they are doing a good thing for themselves by a deal of this kind, failing to realize the fact, as fact it is, that to do cheap work of this kind the cheapening is compensated to the worker, by the inferior quality or diminished quantity of cement used, and the economizing of labor. The outcome of all this is that some of the earlier laid sidewalks put down by the pioneer *cheap* men are, after a few years' wear, worn out or so badly distigured by cracks that they present very unsightly appearances, while many of the cheaply laid kind laid within the past year or two are in the line of their predecessors in kind, badly cracked.

It is all well enough to obtain the thing one wants as cheaply as possible, provided the thing actually wanted can be had for the cheap figure; but it is a little bit of humbuggery played on one's self to smile at a result which in reality gives the occasion to laugh to the party smiled at.

Most of the very cheaply laid sidewalks will prove "good for the trade," inasmuch as they will wear out in a few years, and require relaying, while those laid in first-class manner will endure for a generation.

Answer to "Draughtsmen Wanted."

SINCE the first appearance in this journal of the article with above heading, we have received scores of letters, asking information in regard to situations. So far, our time and postage stamps have been freely given to answer inquiries; but we must decline, in future, to answer letters that do not contain return postage. Our books will show that over one hundred letters have been answered, upon which, in addition to our own trouble, we have had to supply stamps in order that the letters may be received by applicants. We will gladly answer any letter sent us by those seeking information, but will only do so when proper postage is inclosed for return answer.

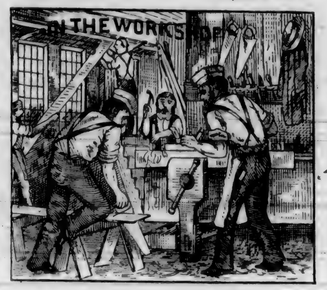
MORE DRAUGHTSMEN ARE WANTED.

From present appearances, the demand will be greater than ever. We can readily place from fifteen to twenty good draughtsmen at good wages and a long engagement. Please remember that *carpenter sketchmen* are not wanted. We can only place thorough draughtsmen, who can execute all the details necessary to every portion of a building.

PLUMBERS, as well as architects, will be interested in the account given in the *Deutsche Bauunternehmer* of a novel method for thawing the ground, as a preliminary to excavation in winter. Instead of building a fire over the spot to be excavated, as is with us the ordinary practice, those who use the new method spread over it a layer of quicklime, followed by a stratum of snow. More lime is put on, and this again covered with snow, and if the ground is frozen to a great depth, several alternate layers are used. The whole is then left to itself overnight, and in the morning the ground is found to be free from frost. If no snow is to be had, water may be used for slaking the lime, which is then to be covered up to keep in the heat.

ASKED, ANSWERED, and COMMUNICATED.

Architects, Contractors, Carpenters, and mechanics generally are respectfully requested to furnish us items of interest for this column. We will gladly answer any and all questions pertaining to the architectural and building interests. If illustrations are necessary to explain your ideas, send us a sketch of them, and we will make the cuts. We especially invite suggestions from apprentices and young mechanics.



Pitch of Roofs.

From M. O. F., Nevada City, Cal.—I have a dispute with a brother tinner with reference to the pitches of roofs. My argument is that the term one-half pitch, one-third pitch, etc., refers to the fractional parts of the ¼ circle—in other words, the fractional part of 90°. Therefore, one-half pitch would be an angle of 45°, and one-third pitch, 30°, and so on. The argument of my opponent in this controversy is that a roof that rises 12 in. in 12 in. run is full pitch, while a rise of 6 in. in 12 in. run is one-half pitch, simply because 6 is one-half of 12. By the same argument, a rise of 4 in. in 12 in. would be one-third pitch, because 4 is one-third of 12. Will you please explain this subject and greatly oblige?

Answer—The term pitch referring to the slope of the rafters of a roof, as used by architects and builders, is dependent upon both span and rise. Pitch is expressed in several different ways. Sometimes it is given in the degrees of angle which the rafter makes with the horizontal. This method, however, is not in common use outside of the books. The most general plan, however, of expressing pitch is by the height in parts of the span. Accordingly, it is quite common to hear a roof spoken of as one-half pitch or one-third pitch. If, for example, the span is 30 feet and the height is 10 feet, the pitch by this method is called "third pitch." Another plan, but not in such general use, is by the length of the rafters in parts of the span. Thus if the span is 30 feet and the length of the rafter 20 feet, by this method the pitch would be called "two-thirds pitch." It would seem from the statement made by our correspondent above that neither he nor his opponent in the controversy is correct. The latter is manifestly wrong, and he employs terms which have apparently been invented for his purpose. For example, notice the term "full" pitch. In describing his own explanation of these terms, our correspondent fails to indicate how the angle is to be measured, and we do not know that we quite understand what he means, although his description of the method is apparently plausible. What we have printed above is the recognized standard adopted by builders and architects in general. —*Carpentry and Building.*

PINE naturally treated is one thing; painted in brown or red and called black walnut, mahogany, or cherry, it is decidedly another. So in hard woods; to show the natural color and to bring out the beautiful grain of the wood is far preferable to any treatment which aims at different results.

Redwood Shingles.

From A. W. H., Westfield.—"I desire to refer one or two questions about California redwood shingles to the readers of *Carpentry and Building*. I have seen redwood shingles that when first put on the walls and oiled looked very well, but after a few days or weeks, however, dark-colored shingles began to appear among them, and accordingly the sides of the building looked very bad indeed. I desire to inquire if there is any way by which this difficulty can be overcome."

In answer to the above, it may be stated that, to insure equality and uniformity of color, redwood shingles intended for oiling should be selected. The texture of the California production varies greatly, some being fine-grained, light-colored, soft woods, and other trees producing hard and brash kinds, down to what is known as black-heart redwood; consequently the yield in shingles from the respective classes must vary greatly as to color under treatment. Before exposure to the weather, this difference is not so marked, nor even when used in ordinary roofs and painted, or the natural surface exposed to the weather. But it must be apparent that where soft, porous, and hard-grained, brashy shingles are laid indiscriminately in same connection, and oiled, the oil penetrates the one and disappears, and remains on the surface of the other, producing widely different results in a little while.

Again, sappy redwood shingles should never be used, as the sappy parts have no lasting quality anywhere, and if used in shingles and oiled, the sappy portions will speedily show contrast.

Be Saving and Buy a Lot.

EVERY young man who earns wages ought to buy a lot and make a start of a home. The way to get a start is to save a little money each month and make a payment on your purchase, and so, little by little, pay for a lot and build your house. Don't spend all your money on livery turn-outs and dances and ice-cream to please your best girl. After a while you will need a home for that best girl, and the youngsters that some way or another generally come around and want to "put up" with you. Put a little of your spare cash into the ground as you go along, and after many days it will bring you a royalty.

Glue Which Will Hold in Water.

POWDER and dissolve one part of glue in one of thick linseed oil varnish boiling hot, and mix thoroughly. In using it, heat the two planed sides of the wood, apply the glue warm, and press the pieces together.

To Clean Oil Paintings.

THE following recipe will be found valuable for the purpose: Mix well together two ounces of wood naphtha, one ounce spirits of salts, and a quarter of a pint of linseed oil. Before being used the bottle containing them should be shaken. The application is simply with a soft pad of linen, to which should be given a circular motion. When nearly dry give a second dressing, when the picture will come out in all its details.

Restoring Moulded Picture Frames.

SHOULD any portion of the moulding be destroyed, it may be restored by a composition made by boiling together some Venice turpentine, resin, and linseed oil, then adding glue dissolved in water, and, finally, whiting, till the mass is brought to the consistency of putty. The composition is then shaped to supply the defective part, and is to be colored or gilded to match the rest of frame.

A DOWN-EAST Yankee has invented a new screw—half nail, half screw—which is said to beat anything extant. Two blows of the hammer, two turns of the screw-driver, and it is in. Its holding power in white pine is said to be 332 pounds, against 298 pounds, the holding power of the present screw.

PLASTER when dry, treated with two coats of warm boiled oil, will, when painted, stand the elements as well as wood. Rogers' statuary is made in this manner. Shellac varnish is used sometimes in place of boiled oil, but if there is any common lime in the work it is apt to scale.

TO BE AVOIDED.—Resin is frequently used for producing an immediate adhesion of the belt to the pulley, and for this it is well suited, but if the owner has any regard for the consequences, he will soon learn that while the resin will give an instant grip to the slipping belt, it will soon be ground into the leather, stiffen the material and make the last state of that belt worse than its first.

NOT MUCH NEED OF IT.—There is not so much need of sandpaper in the manufacture of furniture and all cabinet work now adays, as the machinery used turns out very perfect work. It is estimated by one of the largest manufacturers of sandpaper in the country that not more than seventy per cent of the amount of last year's business will be done this year.

THE salt industry at Manistee and Ludington, Michigan, has greatly curtailed the lath business. Edgings alone are now cut into lath, as slabs are more valuable for salt-barrel staves.

Constitution of the Builders' Association of California.

ARTICLE I.

Section 1. This Association shall be known as The Builders' Association of California.

Sec. 2. Its object shall be to encourage a more intimate acquaintance and cultivate a feeling of friendship among its members; to make them better acquainted with the wants and necessities of the building business; to arbitrate and settle disputes, if any arise among the members, and generally to advance and protect their business interests as contracting builders.

ARTICLE II.

Section 1. Any carpenter residing and doing business as a general contractor and builder in the State of California, and who has announced his willingness to join this Association prior to the adoption of this Constitution, shall be eligible to membership herein without vote, upon the payment of the fee, as provided in this Constitution and the By-Laws.

Sec. 2. Any carpenter residing and doing business as aforesaid may become a member, upon being proposed by two members and receiving the affirmative vote of two-thirds of the members present at a regular meeting, and paying the fee as prescribed in the By-Laws.

ARTICLE III.

Section 1. The regular meetings shall be held at least once a month upon the day and hour fixed in the By Laws and in the City of San Francisco.

Sec. 2. Special meetings may be called by the President (and in his absence by the Vice-President) at his discretion, and shall be called by him at the written request of the Executive Committee or of five other members.

Sec. 3. The President shall state the object of the special meeting in the call therefor, and no business shall be transacted, except such as appertains to the business specified.

Sec. 4. Adjourned meetings may be held at any time by authority of a majority vote of a quorum at a regular meeting, notice being given of such meeting as provided in the By-Laws, stating the business for which the meeting is to be held, and no other business shall be transacted thereat, except such as is stated in the notice.

ARTICLE IV.

Section 1. Nine members shall constitute a quorum for the transaction of business at all meetings.

ARTICLE V.

Section 1. Each individual member shall pay an admission fee of not less than twenty-five dollars, which fee shall accompany the application for membership.

Sec. 2. The dues to be paid by each member shall not be less than one dollar and fifty cents per month, payable in advance.

ARTICLE VI.

Section 1. The elective officers shall be a President, a Vice-President, a Recording Secretary, a Financial Secretary, a Treasurer, and an Executive Committee of seven members.

Sec. 2. The appointed officers shall be such as are prescribed in the By-Laws.

Sec. 3. Four members of the Executive Committee shall at all times be residents of the City and County of San Francisco. Four members of said committee shall constitute a quorum thereof.

Sec. 4. The President shall preside at the meetings, preserve order, see that the rules and laws are enforced, sign all drafts for money voted by the Association, appoint all committees unless otherwise ordered or provided for, and have the care and custody of all bonds which may be required of the other officers.

He shall see that all other officers and committees perform their respective duties, and shall report any neglect or delinquency forthwith to the Association. He shall not speak upon any question except one of order without calling the Vice-President, or in his absence some other member, to the chair.

He shall vote only upon applications for membership or upon questions requiring a two-thirds vote, except to give the casting vote when the members are equally divided. He shall at the commencement of his term appoint a Finance Committee consisting of three members not having charge of the Association Funds, and perform such other and further duties as may be imposed by the By-Laws.

Sec. 5. The Vice-President shall, during the absence or inability of the President to act, perform all the duties of that officer. He shall preside when called upon by the President, and perform such other duties as may be imposed upon him by the laws or rules.

Sec. 6. The Recording Secretary shall keep correct minutes of the proceedings of the Association, file and preserve all papers and documents belonging thereto, conduct the correspondence, draw and attest all drafts for monies voted and perform all other duties usually devolving upon a secretary, or which may hereafter be imposed by law or rule.

Sec. 7. The Financial Secretary shall keep correctly the accounts between the Association and its members and others, in proper books to be provided for that purpose. He shall collect and receipt for all money due from any source, and pay the same to the Treasurer at each meeting, when practicable, but at least once each month, taking his receipt for the same. He shall report at the first stated meeting in each month the amount of all moneys received during the preceding month, and the source from which received, together with the amounts paid out and for what paid. His books and accounts shall be kept in such a manner that the financial condition of the Association and the state of each account can be determined at any time. He shall render the Finance Committee all the facility required in the examination of his accounts, and upon retiring from office, deliver to his successor, or other person designated by the Association, all money, books, papers, or other property belonging thereto.

Sec. 8. The Treasurer shall receive and receipt for all money received by him as such and deposit the same, or all amounts in his hands exceeding fifty dollars, in some bank designated by the Association or the Executive Committee, in his name as Treasurer of the Builders' Association, with the distinct understanding that the said account shall be transferred to his successor in office, upon notice from the Association, through the President and Secretary thereof, stating the person who has been elected to succeed him.

The money, when so deposited, shall be paid out by said bank, only upon drafts or checks signed by the President, attested by the Secretary, and countersigned by the Treasurer.

The Treasurer shall keep a correct account of all moneys received, deposited and paid out, and render a correct report thereof, at the first stated meeting in each month.

Upon retiring from office he shall deliver to his successor or such person as the Association shall designate, all money, books, papers, and property in his hands belonging thereto.

Sec. 9. The Executive Committee shall have and exercise a general supervisory care over the affairs of the Association. They shall designate the bank in which the funds of the Association shall be deposited, unless the same shall have been done by a vote of the Association, and require the officers to change the same, when in their judgment the safety thereof requires it. They shall hear, examine into, and, if possible, settle all disputes between members, when they can do so to the satisfaction of all parties concerned; otherwise report the facts, testimony, and their conclusions thereon, to the Association for their action.

All amendments to the Constitution and By-Laws or Rules, and all agreements to be entered into by and between the members affecting the building business, shall be referred to them to examine and report thereon before action.

ARTICLE VII.

Section 1. The regular elections for officers of the Association shall be held semi-annually at the second meetings in January and July in each year, and they shall be installed at the first regular meetings in February and August following their election.

Sec. 2. The elections shall be by ballot and the majority of all the votes cast shall be necessary to elect, except where there is only one nominee for an office, when the election may be by acclamation.

Sec. 3. The time and manner of making nominations and matters pertaining to the qualifications, etc., of officers may be provided for by the By-Laws.

ARTICLE VIII.

Section 1. The money of the Association shall be kept in one General Fund.

Sec. 2. Rent, salaries, and other necessary current expenses may be paid by a majority vote of a quorum at any regular meeting. But no money shall be otherwise appropriated or paid out in amounts exceeding twenty-five dollars for any one purpose, except by resolution signed and introduced by a member, which shall be laid over at least one week and then passed by a two-thirds vote of the members present.

ARTICLE IX.

Section 1. Any amendments to this Constitution must be proposed by a member at a regular meeting, each section proposed to be amended written out in full as it will read when amended. Such proposition shall then be laid over for two weeks, and when acted on must receive the affirmative vote of two-thirds of the members present, *except* as provided in section 2 of this Article.

Sec. 2. By-Laws not in conflict herewith may be adopted from time to time as the Association shall determine, and may be repealed or amended as provided in said By-Laws. But no By-Laws or Rules shall be passed abridging the right of any member to carry on or transact his business in such manner as he shall deem just and proper, unless such law or rule shall have received the affirmative consent of at least three-fourths of all the members of this Association. Due notice of the passage of any such By-Law or Rule shall be given to each member in writing at least two weeks before the same shall take effect and be in force.

This Section shall not be repealed except by a three-fourths vote of all the members of the Association.

BY-LAWS.

Section 1. The regular business meetings of this Association shall be held on the second and fourth Wednesdays of each month in the City and County of San Francisco, at 8 o'clock P.M.

Sec. 2. Notice of all special or adjourned meetings shall be given either by postal card or by advertisement in two or more daily papers of the City and County of San Francisco. The notice must state the nature of the business to be transacted thereat.

Sec. 3. The fee for admission to membership shall be twenty-five dollars. The dues shall be one dollar and fifty cents per month, payable in advance.

Sec. 4. Any member who shall be in arrears for three months dues shall be notified by the Financial Secretary, and if he fails to pay the same, or such part thereof as shall bring him less than two months in arrears, during the space of two mo ths thereafter, he shall be suspended from the rights and privileges of membership, and so notified.

Sec. 5. Any member guilty of a violation of his agreement entered into and signed by him with the other members, or of a violation of the Constitution, By-Laws or Rules of the Association, first having been duly tried by the Executive Committee (or by a Special Committee duly appointed in case the Executive Committee or any member thereof are disqualified from acting), and duly convicted by their report and a vote of the Association, shall be fined, suspended or expelled, as shall be adjudged by a two-thirds vote of the members present.

Sec. 6. Any member desiring to bring charges against another shall reduce the same to writing, specifying clearly and explicitly the nature of the same, with time, place and circumstance connected therewith and signed by him and delivered to the Association or Executive Committee.

Sec. 7. A copy of the charges shall be immediately served upon the member against whom they are made by the Recording Secretary or some person selected by him or by the Executive Committee, and at least five days' notice given him of the time and place of trial.

Sec. 8. The testimony shall be taken in writing by the committee and signed by the witness. The committee may adjourn from time to time and a quorum may proceed at any meeting.

Sec. 9. When the testimony is all in on both sides they shall consider the same and see if they can settle the matter to the satisfaction of all parties. If they fail to do this they shall report the testimony, together with their conclusions thereon, to the Association for their action and decision.

Sec. 10. The Association shall then proceed to take action thereon and may have the testimony read if desired by either party. During the reading and discussion of the testimony both parties shall be entitled to be present and to be heard. But when the Association proceeds to act thereon all parties interested shall be excluded from the room.

Sec. 11. If the Association finds the accused guilty, it shall forthwith proceed to fix the penalty, first voting upon expulsion. If two-thirds of the members vote in favor of that penalty, the member shall stand expelled. If not, the next vote shall be upon suspension. If two-thirds of the members vote in favor of suspension that shall be the penalty, and the Association shall proceed to fix the time or duration thereof by vote, which time shall not exceed six months. If two-thirds of the members do not vote in favor of suspension, the penalty shall be a fine, and the Association shall then proceed to fix the amount of the fine (unless the same shall have been previously fixed in the By-Laws for like offenses), which may be done by a majority vote, but shall in no case exceed the sum of two hundred dollars.

Sec. 12. The President, in his discretion or when directed by the Association, shall appoint a Sergeant-at-Arms to serve during his pleasure, who shall have charge of the room, furniture, etc. He shall serve papers when required by the Association or by the Executive Committee, assist in preserving order at the meetings, and perform such other duties as may be required of him by the Association or the presiding officer thereof.

Sec. 13. The Finance Committee shall examine and audit all demands against the Association; examine and report upon the books of the officers at the end of each term, and at such other times as the Association may require.

Sec. 14. The President may appoint a special committee of investigation at any time he may deem the same necessary or when required by vote of the Association; said committee shall consist of one or more members who shall examine and report upon the matter referred to them.

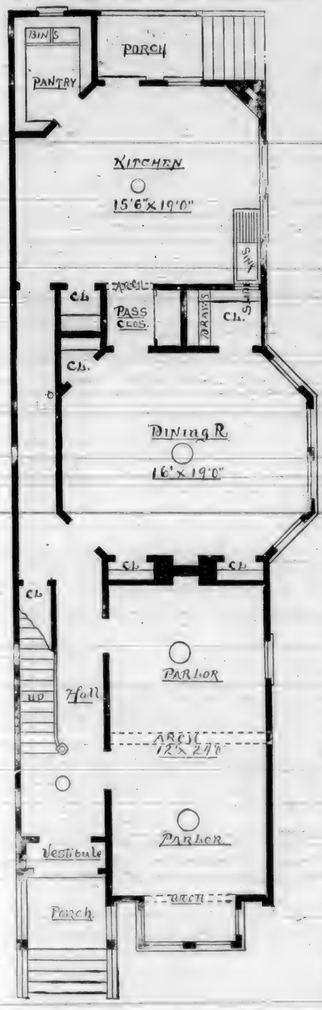
Sec. 15. The Association may at any time require its officers who have the charge or collection of its funds to give bond for the faithful discharge of their duties, which bonds (when required) shall be made payable to the President, in trust for and for the benefit of the Association.

Sec. 16. The Association may employ a clerk to take charge of its rooms, who may also act as Secretary, or it may assign either of its Secretaries to that duty.

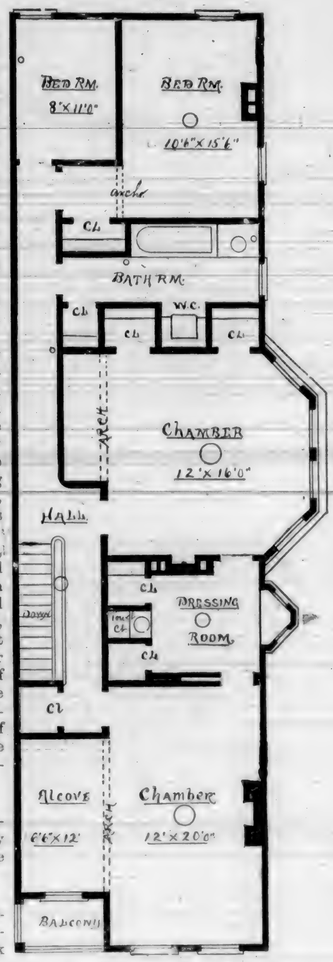
It may pay any of its officers or employes for their services such sums as it may from time to time determine by By-Law or Rule.

Sec. 17. Nominations for officers shall be made at the first regular meetings in January and July of each year, but nominations may be made on the night of election, if the nominees all decline or if ordered by a two-thirds vote of the members present.

Sec. 18. These By-Laws may be repealed or amended in any manner not in conflict with Section 2 of Article VIII of the Constitution, by designating the Section proposed to be repealed or by writing out in full the Section proposed to be amended as it will read when amended, such proposition being signed by the member offering the same, the proposition being first laid over for one meeting and adopted by a two-thirds vote of the members present.



First Floor Plan of $5,500 Dwelling.



Second Floor Plan of $5,500 Dwelling.

Carved Signs.

Carving is practically an art as well as a craft, not merely in interior woodwork but in sign work. Carving well executed in these gives an enriching effect. Soft wood is generally selected for ease of working, this being stained, painted, or gilded. Many fanciful contours are produced, and much taste is frequently displayed in these productions which have laid hold of popular taste. Good carving in the undulations it exhibits will afford not only contrast of form to the general surface but an attractive play of light and shade. The forms at the same time should be well defined, for a mere medley of protuberances and depressions is confusing and unattractive. Right proportion and disposition of parts will impart an aspect of completeness to the design that will not fail to please.

As regards the technique of carving it may be classified in four divisions: 1. The ornamentation of a plane or curved surface with designs in slight relief. 2. The ornamentation of a plane or curved surface in high relief, the *alto relievo* of the Italians. 3. Work entirely curved or wholly in relief. 4. Figures in the round. The first division includes all carving which follows the contour of the sign-board, or forms the contour itself. Undercutting, as a rule, should be sparingly used.

The wood selected for carving, that is to say, the portion to be operated on, should be rubbed over with chalk and the design outlined in strong, dark lines. The depth of the ground of the relief work having been determined, care must be taken that the tools do not cut beneath this. The amount of detachment or absolute relief will depend on the degree of skill required to be exercised in securing due proportions, proper spaces to clusters of ornament if introduced, and the proper degree of prominence and depression to the figure. There must be an observance of right proportions.—*Painters' Magazine.*

It is estimated by a leading Chicago commission house that 8,000,000 cross-ties, mainly cedar, were cut in territory contiguous to the great lakes the past winter.

Owing to the increased growth of the fruit-growing industry on the Pacific Coast, box making in California and Oregon has been very brisk this season.

Valuable Hints.

If varnish or oil does not flow easily, add powdered camphor.

Shellac and borax boiled in water produces a good stain for floors.

Don't inclose the sink—no place in a kitchen is so much neglected.

Porch floors should be of narrow stuff and the joints laid in white lead.

Lime-water is fire-proof protection for shingles or any light wood-work.

Common brick absorb a pint of water each, and make a very damp house.

The lowest-priced builder is not always the cheapest, as poor work will testify.

A closet finished with red cedar shelves and drawers is death to moths and insects.

Do not locate a furnace register next to a mantel, that is, if you wish to utilize the heat.

Terra-cotta flue linings are a great improvement over the old roughly-plastered chimney.

For basement flooring, oak is preferred to maple because it will stand dampness better.

To properly select the colors applicable to the proper place, consult an educated painter.

A ventilating flue from the kitchen into the chimney often does away with atmospheric meals.

Stops to doors and windows should be fastened with round-head screws, so as to be easily moved.

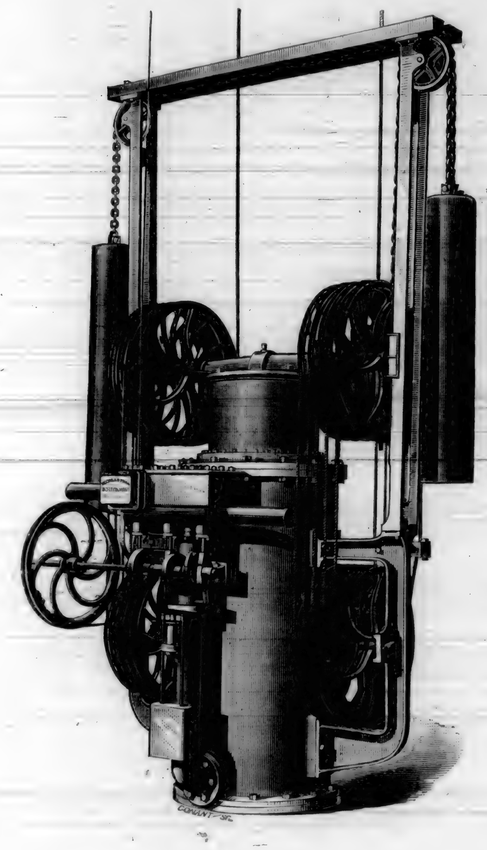
It is better to oil floors than to paint them—a monthly rubbing will make them as good as new.

Do not use one chimney flue for two stove-pipes—the draught of one will counteract that of the other.

Do not finish windows to the floor—the circulation across the floor is one of the causes of cold houses.

Ash-pits in cellars under fire-places and mantels save taking up ashes, for they may be raked down through a hopper.

Do not construct solid doors of two kinds of hard wood—the action of the atmosphere on one or the other will cause the door to warp.



Elevators.

IN considering the many new patents for elevators, and the appliances connected with the same, two essential requisites are necessary. The first one is in regard to the absolute safety of the devices; the second relates to the cost of running expenses. It is a fact that many are more interested in the last proposition than the first, taking it for granted that an elevator is safe as long as it is well built and supplied with any of the modern safety appliances to guard against accidents.

An elevator that thoroughly combines the above two essentials, should receive the consideration of all those who require, either in public, mercantile, or private buildings, an elevator that is simple in all its details, easily understood, and the running expenses of which are considerably less than those of any other machine now in use.

Our attention has recently been called to a new double capacity patent hydraulic elevator, which certainly seems to embody these desired qualities.

The object of this double capacity hydraulic elevator is economy in the use of water. It can be operated by water-pressure from the city main, or from a tank in upper story of building; is always ready for use, night or day, and costs nothing when not in operation. No engineer, steam boiler, or tanks required when city pressure can be obtained.

This machine has one capacity for light loads, and another which, combined with the first, will lift heavier loads. The loads to be lifted may be varied to suit.

A double-capacity hydraulic elevator divides the water into two parts, and uses water in proportion to the loads lifted. Consequently if the lighter load is lifted a less quantity of water is used than though the maximum load is lifted. A single capacity elevator requires as much water to lift the empty car as to lift the maximum load.

In practice it has been found that the loads are constantly varying, and in an ordinary day's use, they will average about one-half the maximum. It is therefore desirable to have an auxiliary power instantly available for any increased load which may be put upon the car, especially if this auxiliary power costs nothing when not in use. The double-capacity machine fills this requisite, and is practically two elevators combined in one, either of which can be used when required. It stops automatically at each end of its stroke, and may be called from one floor to another by pulling the hand-rope at the floor where wanted.

A very important feature, and one not possessed by other machines, is the patent automatic lock or regulator, which avoids a waste of water by preventing the use of the larger capacity when the smaller capacity is competent for the load. Its action is entirely automatic, and dependent upon the load in the car; and it is impossible for a careless or unskilled operator to use more water than is required. The ordinary method of operating double-capacity elevators heretofore has been for the conductor to pull on the valve-rope until, in his judgment, he has opened the valve; but should he pull too far, the full quantity of water, though not needed, is admitted, and the desired economy is not obtained. A double-capacity machine without an automatic lock is little better than a single-capacity machine, and when it is known that elevators are often operated by those who know little or nothing of their construction, and that at each trip there may be a saving or loss of from fifty to seventy-five gallons of water, dependent upon the variation in pulling of the hand-rope, the object of this invention will be apparent.

This machine is guaranteed to be safe, economical, and durable, all parts being strongly and substantially built and made of the best material; when repairs are needed, the arrangement is such that each and every portion is accessible.

The Bancroft History building has been supplied with these elevators, and it is worth the time and attention of those about to build, to thoroughly examine the workings and cost of running these in actual use, before adopting any other style.

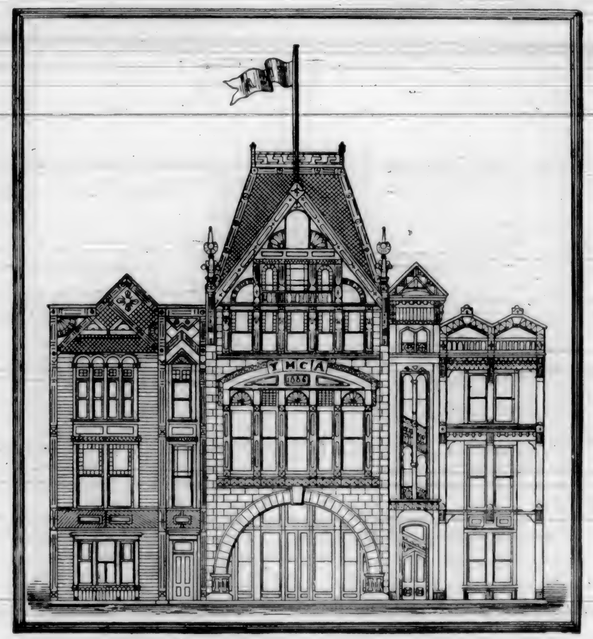
Information in regard to the above will be furnished upon application—either in person or by letter—to the San Francisco Tool Co., corner of First and Stevenson Streets, they being prepared to construct freight or passenger elevators of this style to lift any required load.

In towns and cities having electric plants furnishing light and power the economy of these elevators is still further increased by using pumping apparatus accessory to the elevator, consisting of a tank on top and one at the base of the building, with a pump connecting the two and run by an electric motor actuated by electric power. The pressure and quantity of water are obtained from the upper tank. The elevator discharges into the lower tank, from whence the water is pumped to the upper. The water is thus used over continually without waste.

The San Francisco Tool Co. make such electric motors, under the Keith system, pumps, tanks, etc. The Company is now outfitting the Pacific Power Co., of San Francisco, with a complete large electric plant for distributing power by electricity for elevator and other purposes. It is now running a small plant furnishing power for manufacturing purposes. All interested in this matter are invited to call and inspect the apparatus.

The Y. M. C A. Block.

IN this number of the ARCHITECT we give a cut of the new Young Men's Christian Association building now being erected by Messrs. Gilbert & Sons, contractors and builders, of Woodland, Yolo County. The foundations of the structure, for in reality there are three buildings in one, are laid firmly in brick, each building having its own foundation and own separate studding, so that each structure is independent, although in the block, and can be sold separately or as a whole. The total frontage is 70 feet, depth 108 feet, height to the top of the mansard tower 75 feet 6 inches. The three buildings contain three floors. The one on the right is rented to a doctor for a residence, the first floor of which is arranged especially for Turkish and Russian baths, after the famous Hammam, of San Francisco. This enterprise will give Woodland what few towns of its size East or West can boast of—first-class scientifically arranged and managed steam baths. The building on the left is arranged for a private residence and has been rented to one of Woodland's enterprising merchants. The architecture of the three buildings, as seen in the front elevation, is distinct in each, yet not so striking



THE Y. M. C. A. BLOCK.

as to destroy the effect of a harmonious whole. The building on the right will take after the Eastlake style in finish, the center one, the Young Men's Christian Association building, which projects and is surmounted by the mansard tower, will be finished nicely after the Queen Anne style. The building on the left is rather quaint, being a modification of the Eastlake and suggestive of the Italian. The first floor of the Young Men's Christian Association building will be introduced by a spacious recess under an arch, at the left of which is the ticket office, and directly opposite is the Association bulletin board and directory. From this corridor you enter a private office to the left and the large store in the center, which will be sub-let by the Association. At the right you enter the hall-way leading to the stairs and rooms above, also to the gymnasium in the rear, with its bowling alley, walking track, gallery, tub and shower baths, and with all the improved gymnasium apparatus. It will be one of the finest equipped gymnasiums on the coast. The reading-room and library, the reception parlors and main hall, also the secretary's office, are located on the second floor and are models of convenience, and will be fitted up in a most attractive manner. The third floor is divided up into class-rooms, ladies' central committee kitchen, rooms for boys' branch, and quite a number of lodging-rooms for young men. These apartments will be airy and commodious and will afford the Society delightful quarters. These three buildings are each provided with front and back stairways. They will have all modern improvements and lack no really essential feature to make them complete for their purposes. The probable cost of the block will be $25,000 when finished, and will be a credit to the enterprising builders. The Association is fortunate in getting the second Association building erected on this coast, and no doubt its usefulness will be increased a hundred-fold when it gets into the new building. Surely the business men cannot invest their money in anything where it will do as much good and bring larger returns than in the Young Men's Christian Association.

Sobriety in the Saw-Mill.

A GREAT deal is said about total abstinence in different directions of labor, as to the lack of it, or the necessity for it, and the railroads, especially, have been widely commended for their increasing efforts toward its establishment among their employes, who not only have their own lives in their hands, but those of countless others, as well as the safety of all kinds of property. The importance of a level head, under such circumstances, cannot be overestimated, and it is more or less a requisite in any vocation.

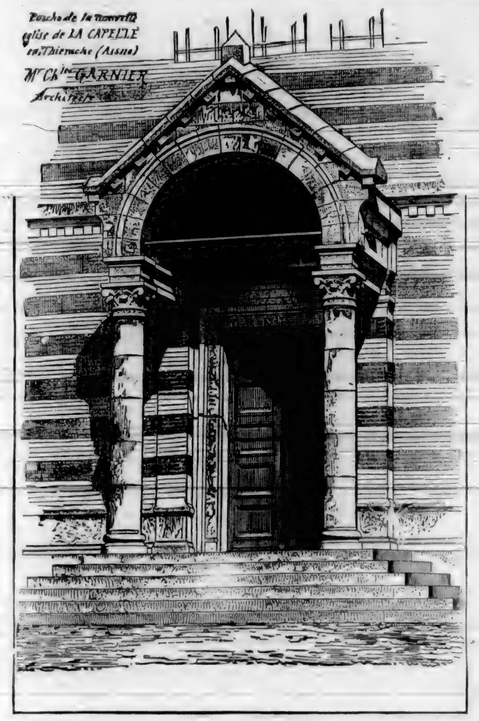
But if there is any place more than another where drunkenness has no business whatever, it is in a saw-mill; and what is more, it is a very notable and undeniable fact that an intoxicated man at work in a saw-mill is a rarity. It is a place where everything goes with precision; where an error may mean limbs or lives, and where bad judgment might in a second wreck a piece of complicated machinery and occasion great damage. With sobriety and the best of care the accidents that occur in saw-mills are of shocking character and alarming frequency. The injury that might be done in a mill or factory of any kind if a man's functions were upset by drink is, of course, apparent, but a saw-mill seems to present the greater details of danger, and to involve unusual exactness. Give a drunken man full swing of the lever, clear the mill of other workmen, and there is no limit to the havoc he would probably create. If the inebriated sawyer did no other damage, what would be the character of the lumber he sawed? If one log looked like three to him, and he could see a double saw, with no ability to tell an inch from a foot, the product he turned out from a log would be a sight to behold.

It would not do to say that an intoxicated man, or one partially under the influence of strong drink, never could or never did run a saw-mill. It would be incredible to suppose there had not been several such cases, but it is the rule that the men who operate saw-mill machinery are sober. Some men have an ability to drink a certain amount of whisky and still control their functions, we reflect, and a man who was a little shot, and a devil-may-care fellow, might pull through a good many tough places.

But the saw-mill owner and the men who labor in it appreciate the situation. They know it means business; they know the danger, and the nicety with which everything must be handled. If they get careless they may pay dearly for it. As a result intemperate men largely keep away from saw-mill labor, either from choice or as a matter of compulsion. It is the exception when it is told that an accident in a saw-mill was caused by intoxication. That the rule of sobriety so generally prevails among saw-mills, while largely a question of direct necessity, is a fact for which lumber manufacturers deserve to be commended, for it takes determination to enforce it, and demands a recognition of merit, which, to a considerable extent, has been granted. The best engineers, filers, and sawyers are men whose industry, exemplary habits, and consequent skill entitle them to good wages, which they receive, and nobody ought to begrudge them what they get.—*Northwestern Lumberman.*

SLIDING-DOORS into small apartments are to be preferred in place of folding.

IN building frame houses, fill the studding one foot high above the sill with brick—this discounts the use of rat-traps.



Recipe for a Cement for Repairing Worn Places in Stone Steps.

LA SEMAINE DES CONSTRUCTEURS, in reply to a correspondent who asked for the recipe of a cement for repairing the worn places in stone steps, gives the composition of the famous "*ciment Sorel*," which has for many years been used by a few contractors, who make a great secret of their process, for filling cavities and restoring abrasions in stone or marble. The first person to use the cement, Sorel, was the inventor of the so-called process of "galvanizing" iron, by covering it with a protecting film of zinc. In the course of his experiments he found that the oxide of zinc, mixed with a solution of the chloride of the same metal, gave a substance which soon became in air as hard as marble; and with slight variations, this mixture is the one employed by all his successors. Sorel, in practice, either used the washed residues from the manufactories of zinc white, which are perhaps heavier and less pure than the white pigment, or heated the ordinary zinc white of commerce to redness to increase its density, upon which the hardness of the cement depends. This, when intended for use, he mixed with a rather concentrated solution of chloride of zinc, having a density of fifty to sixty degrees by Beaume's hydrometer, usually adding about three per cent of borax or sal-ammoniac to lessen the rapidity of setting. So prepared, the "*ciment Sorel*," after setting, soon becomes as hard as marble. It adheres very strongly to stone, and resists heat, cold, moisture, and even the action of acids, and may be colored. To reduce the cost, and assimilate it to stone, powdered granite, marble, or hard limestone may be mixed with it, but soft, earthy substances should not be used. As at present manufactured in Paris, various additions are made to the powdered zinc oxide, to give certain colors or textures, and the chloride solution is sent separately in bottles, the price of the whole, ready for mixing, being about seven cents a pound. The basis of the cement is in all cases the same, some trifling differences in the mode of preparation, such as washing the zinc white with water containing borax before calcining it, or using protochloride of iron, or chlorohydric acid, in the solution, in place of zinc chloride, serving mainly to support the claims of particular manufacturers to a special method of fabrication. In general, the heavier the zinc oxide, and the more concentrated the chloride, the stronger is the cement. To repair stone, either in the shape of statues or steps, the portion to be operated upon should first be scraped to a fresh, clean surface, and then moistened with the liquid chloride. A sufficient quantity of the dry cement is mixed with enough liquid to form a stiff paste, and placed in position, and after being allowed to set a few days, is trimmed off, and smoothed by rubbing with a piece of stone. In summer it will become hard enough to rub down in two days; in winter five or six days are necessary. While setting it must be protected from rain, and two weeks should elapse before a staircase repaired with it is opened to general use. Some of our readers, whose recollections of their experiences in the dentist's chair are fresh, will probably be struck by the similarity of the operations described to those which the dentist goes through in repairing a large cavity with cement filling, and in fact the cement used by dentists is nothing else than the "*ciment Sorel*," prepared with care for their purposes.

Strength the Great Factor.

THE architect or builder who can look back upon a long and honorable career with no element of failure to blot its history can boast of either great prudence and care, or an extreme amount of that commodity called "luck." But few extensive builders have passed through life without recalling some piece of construction where the element of failure was paramount to that of safety. We believe in the truism that it is better to be on the safe side in all our structures. The want of size in timber, the simple absence of a bolt, a few inches in the thickness of a wall, have often brought about elements of danger in buildings that call for the strongest condemnation. There are two reasons for this state of affairs: one is an imperfect knowledge of the strength and capacity of building materials, and the other is a self-confident conviction of a belief born of a hasty and careless consideration of the subject.

The failure of roof trusses, of girders, and joists, the cracking of walls, the settlement of buildings, all may be indirectly traced to the above causes.

In all constructive architecture the first and important factor to be carefully considered is strength. Where doubt exists, well-known authorities should be consulted and living examples examined. The experience of any architect or builder of extended practice is worthy of consideration.

Especially to the young architect and builder is this a serious matter, and although he may, in self-confidence, assume that he has mastered his profession, he will soon learn that after years of practice he has just begun to learn, and it is at this stage he begins to practice carefulness and give some study—perhaps when it is too late—to the factor of safety. Especially is this applicable to the construction of masonry. That great common product of every locality, bricks, used in all our great structures, have in them not only the element of safety, but danger to an extensive degree, if not properly and carefully used.

A brick of medium quality will withstand a great pressure to crush it, if properly laid. From 400 to 1,000 pounds per square inch will crush ordinary brick-work, if laid carelessly. Of course we understand that the figures vary according to the quality of the brick, but the manner of laying has more to do with the safety of brick-work than the strength of the material itself. Not only the manner of laying and bonding, but the mortar goes far to render the work free from failure. The liability to crush and grind, communicated from one brick to another, is much reduced by a bed of good mortar, for the mass, upon becoming compact and homogeneous, is as a solid body upon which movement and crushing effect cannot act; and although the weight of a high wall would seem to bear more upon the bottom courses, yet if we consider the fact that by good mortar and workmanship we cement the work into one common mass, we bring it to the condition of a post or column, bearing the weight of a superstructure equally the same at the bottom as at the top. The fact that much of the brick manufactured by hand in small districts is soft and unburned, renders their use dangerous unless extra care is taken in laying them. Very seldom should brick work be used in isolated or high piers, for the support of great loads; but if used at all, they should be of the best quality, hard-burned, and laid in cement divided by good bond-stone. High piers are liable to buckle or spring out of plumb before crushing, and should in all cases be avoided if we have any regard for the great factor of all good construction—STRENGTH.—*Hill's National Builder.*

IN KANSAS and NEBRASKA, where something neat yet cheap is demanded, whitewood has the call over pine for house finish.

Southern California Sandstone.

A FINE specimen of sandstone from quarries near Los Angeles has been left at the office of this journal, than which in texture and color we have seen nothing finer in this State. The deposit is within a mile or two of Los Angeles City, and the ledge is found in stratas of from six to sixty inches in thickness. Even the heavier stratas are said to be entirely free from seams and fractures, with marked uniformity in color. It appears not to be affected by exposure to the atmosphere, except to improve it in hardness. The proprietors of the quarry propose its introduction for building purposes in San Francisco as soon as transportation facilities are completed.

It is certainly gratifying to notice the unearthing of these natural finer products of our State in building materials. With the sandstone of Santa Clara County, and the more recently discovered Los Angeles stone, an ample supply of beautiful building stone of the kind is at hand, serving all present purposes, with the great probability that other counties of the State will in turn unbosom deposits of sand and other fine stones for building purposes, which will reduce the propensity of a certain class of owners who feel disposed to "send East" for the brown sandstone of Connecticut, to a simple exhibition of folly.

The American Glossary of Architectural Terms.

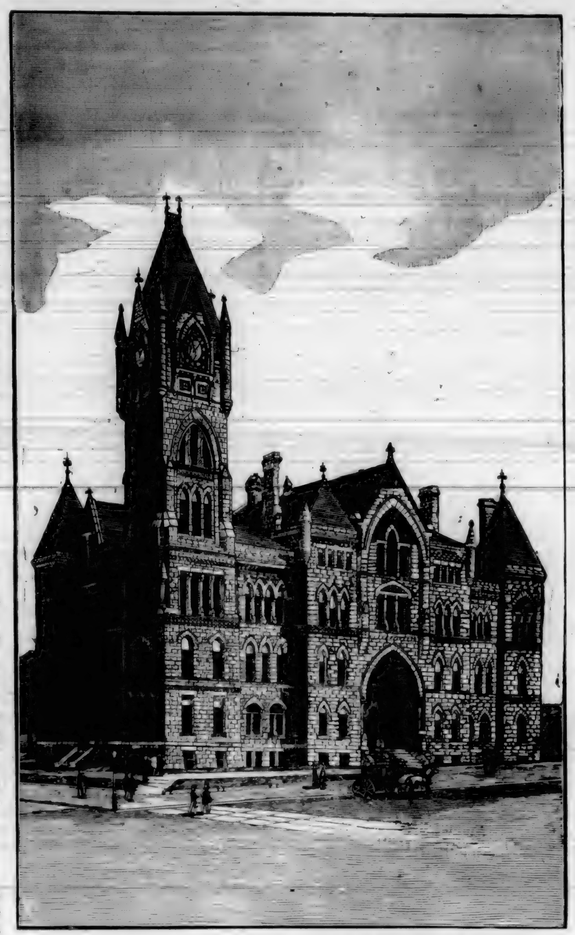
THE object of this new work has been to prepare a concise dictionary of all proper terms used in America and England, but not to treat of words whose etymology is uncertain. It is the only work of the kind ever issued adapted to the wants of the American architect and builder, arranged from a professional and practical standpoint. The illustrations are the most perfect and complete ever presented in any work of a similar standing, and the method used to exemplify on one page the meaning of the terms on the opposite page certainly recommends itself to all. Architectural students of all degrees should order a copy of this work. It is beautifully bound and printed, and will be sent to any address upon receipt of $2.50.

Steam and Water Radiators.

IT will be news to some to know that three-fourths of all the radiators in use in the East are those manufactured by the A. Griffin Iron Co. Not content with supplying over one-half of America, they are making great efforts to secure the entire control of the Pacific Coast, and to this end are shipping weekly car-load lots, so as to fully meet all requirements of the trade. Their very best goods are shipped to this city, and in quantities to suit any demand, no matter how large they may be. C. D. Harvey is the agent on this coast, and may be found at 30 New Montgomery, corner Stevenson Street.

THE curious fact that the usual heat produced by friction is absent when the articles are magnetized, is just now being discussed by scientists who are seeking an explanation. Very striking examples are described in a late number of a scientific periodical. A workman fastened a couple of powerful magnets to his lathe to hold more securely a piece of metal which he wished to drill and turn. The presence of the magnets kept the metal so cold that no water was needed to keep the drill moist and cool. This unusual circumstance may lead to important mechanical advantages. It is such circumstances as the one noted above that lead to valuable discoveries. The scientists, who are looking for a reason why the heat should be absent, may not hit upon any valuable idea, but some practical mechanic probably will.

IN arranging the openings of a room, do not forget the wall space. It is sometimes advisable to build a house to suit the furniture.



DESIGN FOR A PUBLIC BUILDING TO BE BUILT OF STONE.

New Inventions and Improvements.

MESSRS. E. C. STEARNS & Co., of Syracuse, N. Y., manufacturers of hardware specialties, ever responding to the demand for labor-saving tools and improvements generally, have recently produced and added to their constantly increasing line, several new articles, three of which are now ready for the trade. These consist of an improved "Silent Saw Vice," entirely new in design; an excellent door clamp, also entirely new in design, being a departure from the old style iron clamp, and a register and ventilator added to "The McGuire Star Thimble."

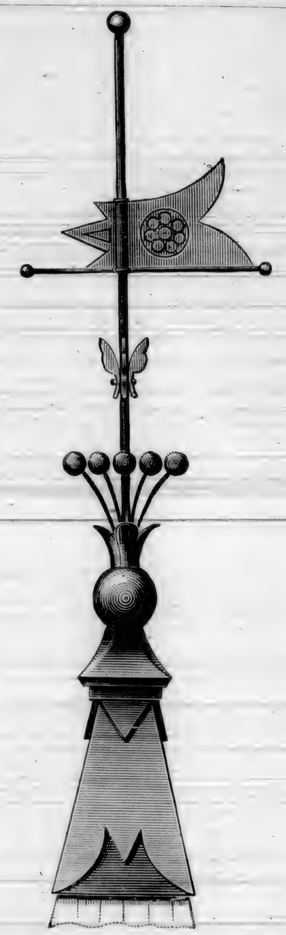
These three articles are soon to be handsomely illustrated in our columns.

Garland Trap.

WE are pleased to note that the "Garland Trap" is being used in all our *boom* towns and cities. It is superseding, in this city, all other patents, from the fact that its wonderful efficiency as a preventive of sewer gas obtaining access to buildings, has been over and over again thoroughly proven. See that your architect calls for the "Garland Trap."

MODERN ARCHITECTURAL DESIGNS AND DETAILS. A few copies remain of this really good work. Price, $10.00.

DETAIL COTTAGE AND CONSTRUCTIVE ARCHITECTURE. Similar to the above in general design.



Finials in Sheet Metal.

THE vagaries in designs with which architects are wont to trim public and private buildings at the present time are almost without parallel. There is no portion of a building perhaps where odd conceits are oftener shown than in the finials surmounting towers. Two pieces of work of this kind are shown in the accompanying engravings. One is a very neat design of a finial carrying a vane, and may be asserted to belong to the conventional order of work of this nature. The other, in addition to the orthodox architectural features of the lower part, has a nondescript beast with wings and forked tongue, hanging to the rock. Whatever may be the designs of finials, the question of the material out of which they are to be constructed is a matter of considerable importance to the builder. Sheet metal work is gradually being recognized as the most appropriate article and there are comparatively few pieces of work of this kind at the present time in which this material does not figure as an important element. The designs here shown are selections from a new catalogue recently issued by Bakewell & Mullins, of Salem, Ohio. The work is a volume of 200 pages and contains a thousand or more engravings representing architectural trimmings of almost every conceivable kind ranging on the one side from ambitious allegorical groups and statuary, heroic size, to leaves, rosettes, scrolls, etc. on the other. While the book is only a trade catalogue and intended primarily for the use of the customers of the establishment named, it is more of interest to architects, builders, and sheet metal workers in general on account of the number of designs it contains, more particularly because it shows work that has actually been executed and in many cases indicates the buildings upon which it has been employed. The work is one which will doubtless have a wide circulation.

New Books.

We have on hand the following books, which will be sent to any address upon receipt of the price.

Essentials of Perspective	$ 1 50
Modern Architectural Designs and Details	10 00
Detail Cottage Architecture	6 00
Leffel's House Plans	3 00
Science of Carpentry	5 00
Mechanic's Geometry	5 00
Artisan	5 00
Artistic Homes	3 50
Mechanical Drawing	1 00
American House Carpenter	5 00
Building Superintendence	3 00
Builder's Companion	1 50
Cutting Tools	1 50
Cottages	1 00
Ornamental Drawing	1 00
Grimshaw on Saws	4 00
Universal Assistant	2 50
Limes, Cements, and Mortars	4 00
Builder's Guide	2 00
Gould's Carpentry	2 50
Trussed Roofs, Ricker	3 00
Amateur Mechanic's Workshop	3 00
Handbook of Legendary Art	3 00
Dwellings, Reed	3 00
Plumbing Appliances	1 50
Modern House Painting	5 00
Stair Building Made Easy	1 00
Cabinet Maker's Companion	1 25
Manual for Furniture Men	1 00
Rural Architecture	1 50
Architecture, Horton	1 50
Wonders of Art	1 25
Common Sense in Church Building	1 00
Old Homes Made New	1 50
Hints on Household Tastes, by Eastlake	3 00
American Cottage Builder	3 50
The Suburban Cottage	1 50
Homes for the People	2 00
Country Homes, Woodward	1 50
Cottage and Farm House, Woodward	$1 50
Suburban Houses, Woodward	1 50
Rural Homes, Wheeler	1 50
Manual of Industrial Drawing for Carpenters	2 00
Illustrated Drawing Book	1 00
Mathematical Drawing Instruments	1 50
Drawing for Carpenters	1 75
Shavings and Saw Dust	1 50
Linear Drawing	1 50
Practical Draughting	1 00
Drawing for Cabinet Makers	1 50
Handrailing and Staircasing	1 50
Painter, Gilder, and Varnisher	1 50
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Paper Hanger's Companion	1 25
Principles of House Drainage	1 00
How To Paint	1 00
Practical Geometry	1 00
Lumberman's Hand Book	2 00
Lien Law	50
Cozy Homes	25
Every Man His Own Mechanic	3 50

CIVIL ARCHITECTURE,
A SPLENDID WORK,
PRICE, $10.00.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Alameda.

H. K. Starkweather is having built a $2,000 house on Pearl Street.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Alhambra.

Completion of school-house frame. Architect, B. J. Reeve; cost, $2,000.

Cutting Tools, for $1.50.
Home Hand-Book, for $10.00.

Covina.

M. E. Church, frame. Owner, M. E. Church; architect, Reynolds; contractor, day work. Cost, $7,000.

Cutting Tools, for $1.50.
Cummings' Details, for $5.00.

Coronado Beach.

The foundation for a new house, the property of Architect Falkenar, has been laid.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

The laying of the brick foundation for the new building to be erected by the Methodist Society, on the corner of D and Fourth Streets, is commenced. A very handsome three-story brick is projected. The ultimate cost will reach $60,000.

Coronado will have a fine school-house, on a lot 300x500 feet, bounded by E and F Avenues, and Sixth and Seventh Streets, being the second block west of the plaza.

Shavings and Sawdust, for $1.50.
People's Cyclopedia (three large volumes), for $20.00.

Earlham.

A Friends College, to cost $50,000, is projected.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

East Oakland.

Highland Park. Owner, Highland Park College; architect, S. & J. Newsom; contractor, Knowles & Wetmore. Cost, $5,500.

Drawing for Bricklayers, for $1.50.
Drawing for Cabinet Makers, for $1.50.

Garvanzo.

A planing-mill is now erected here.

Woodward's Farm Homes, for $1.00
Woodward's Graperies, for $1.00.

A brick-yard is already at work.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

The town boasts a new telegraph office.

Painter, Gilder, and Varnisher, for $1.50.
Architects' Companion, for $2.50.

A large number of houses are under contract and building in Garvanzo.

Limes, Cements, and Mortars, for $4.00.
Wonders of Art, for $1.25.

Judge Hatch is building a $7,000 house.

Woodward's Farm Homes, for $1.00.
Woodward's Graperies, for $1.00.

A large addition will be built to the Garvanzo Park Hotel.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

Los Angeles.

Three-story and basement brick. Owner, J. Mullally; architect, B. J. Reeve. Cost, $25,000.

Album of Mantels, for $8.00.
Architects' Companion, for $2.50.

Two-story and basement brick. Owner, P. Gaimer, architect, B. J. Reeve. Cost, $11,500.

Manual for Furniture Men, for $1.00.
Common-Sense Church Architecture, for $1.00.

Three-story frame. Owner, Gamable; architect, B. J. Reeve. Cost, $14,000.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Two-story frame residence. Owner, W. S. Hutton; architect, John Hall. Cost, $200.

Pavilion frame, brick. Owner, D. R. Waldon; architect, H. R. Leonard; contractor, R. W. McIntosh. Cost, $3,500.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Three-story and basement brick. Owner, L Phillips; architect, B. J. Reeve. Cost. $500,000.

Architecture and Building, for $3.50.
American Cottage Building, for $3.50.

One-story frame and brick. Owner, Mr. S. Callaghan; architect, John Hall; contractor, J. M. Tibbets. Cost, $500.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Four-story and basement brick. Owner, L. Phillips; architect, B. J. Reeve. Cost, $100,000.

Every Man His Own Mechanic, for $3.50.
Tredgold's Carpentry, for $7.50.

Two-story frame residence. Owner, M. E. Church; architect, Reynolds; contractors, Monroe & Co. Cost, $2,000.

Woodwards' Country Homes, for $1.50.
Practical Perspective, for $5.00.

Four-story and basement brick. Owner, L. Phillips; architect, B. J. Reeve; contractor, Grant. Cost, $160,000.

Woodward's Country Homes, for $1.50.
Science of Carpentry, for $4.00.

One-story frame cottage, brick. Owner, N. J. Rowan; architect, John Hall. Cost, $2,500.

Monrovia.

There are between thirty and forty buildings being erected in Monrovia at the present time.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

Several more contracts are now being let, some of them for very fine residences.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

One-story frame cottage. Owner, Mrs. Hutchinson; architect, E. A. Coxhead; contractor, Leitch. Cost, $2,500.

National City.

Griffith & Heat are building a large brick block on Eighth Avenue. The contract is for $9,000.

Practical Perspective, for $5.00.
Builders' Companion, for $1.50.

L. E. Brown has prepared plans for another $15,000 house.

Ontario.

Two two-story brick blocks. Owner, C. P. Lyndal; architect, Geo. Fyfe; contractor, John Geary. Cost, $3,400.

Two-story brick block. Owner, H. O. Bryan; architect, Geo. Fyfe; contractors, McIntyre & Newman. Cost, $2,900.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Pomona.

The demand for building material is so great that a number of carpenters are compelled to suspend operations, awaiting the arrival of some kinds of lumber.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

W. H. Sailor is building a house in the Garthside tract.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

J. W. Heckman is building for L. W. Carpenter a $1,600 house on Holt Avenue.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Henry Warren is building a $1,500 house on Centre Street.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

Completing Catholic Church. Architect, B. J. Reeve; cost, $1,500.

Builders' Work, for $5.00.
Building Superintendence, for $3.00.

Redlands.

Jas. F. Drake is having a two-story house built.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Rialto.

W. H. Wickersham, of Los Angeles, has been given the contract for building the large hotel at Rialto. George B. Robinson, from El Paso, Texas, has taken the contract for doing the brick work. Work on the building will begin at once. The house will cost in the neighborhood of $125,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Riverside.

H. A. Westbrook is building a residence on Brockton Square. The edifice will cost $10,000.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

A new chapel is being erected on Sixth Street for the United Brethren.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

T. J. Wood has matured his plans for the erection of a large brick block on Orange Street. It is to be 26x80 feet, two, and perhaps three stories high.

American House Carpenter, $5.00.
Cutting Tools, for $2.00.

Rosecrans.

A large hotel is to be built at once.

San Bernardino.

Architect C. H. Jones has made plans for a one-story building for E. Katz.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

The corner-stone of the new $20,000 M. E. Church was laid with appropriate exercises.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

The Anderson building, opposite the St. Charles Hotel, will be the largest in the city. It will cost $52,870.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

The laundry building for the Southern California Road, at this place, will soon be ready for occupancy.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

One-story brick for Katz, $5,000.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Two-story frame for R. H. Skelly, $2,300.

American Cottage Homes, for $3.00.
Builders' Work, for $5.00.

Two-story frame for J. E. Drake, $2,500.

Album of Mantels, for $8.00.
History of Architecture, for $15.

One-story brick for S. Haile, $6,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Two-story office for Russ Lumber Co., $3,000.

Six cottages for S. Weil, $3,000.

San Diego.

An Agricultural Hall is about to be built.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

An opera house to cost $300,000 is to be built in the near future.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

The bricklayers are at work upon the foundation of the new railroad depot at the foot of D Street.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

The masons have commenced work upon the foundation of the Methodist Church, corner Fourth and D Streets.

Practical Perspective, for $5.00.
Drawing for Carpenters, for $1.75.

Two million dollars' worth of buildings have been lately contracted for, of which half are in the way of construction.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

Work on the railroad depot at the foot of D Street is being pushed rapidly. A portion of the frame is already in place. The building is to be 40x100 feet.

San Pedro.

Two-story frame. Owner, Mr. Bloomfield; architect, John Hall. Cost, $3,000.

Santa Ana.

Two-story brick. Owner, Dr. Medlock; architect, B. J. Reeve. Cost, $12,000.

Santa Monica.

Episcopal Church, brick. Architect, E. A. Coxhead; contractors, Davidson & Johnston. Cost, $3,000.

San Luis Obispo.

A $200,000 hotel is shortly to be erected, some three miles south of this town, by a company, and ground for the enterprise has already been broken, water pipes are laid, and erection is to be commenced at once.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

Santa Paula.

Three brick buildings are soon to be erected at Santa Paula, one of which will be occupied by a banking firm.

Album of Mantels, for $8.00.
History of Architecture, for $15.00.

The Alvarado Bridge.

The contract of the county of Alameda with the California Bridge Company to construct an iron bridge at Alvarado, was approved recently by the Board of Supervisors. The contract price is $7,440. The contract for the construction of the new Receiving Hospital was awarded to C. L. Crissman. The contract price is $3,878.

Shavings and Sawdust, for $1.50.
American Cottage Building, for $3.50.

Miscellaneous.

Captain Flavel, of Astoria, will build two fine brick buildings in that city this season. Each will be three stories high; one on the corner of Chenamus and Main, the other on the corner of Chenamus and Cass Streets. The cost of both will be $60,000.

Architecture and Building, $3.50.
American Cottage Building, for $3.50.

A $10,000 flouring mill is to be built in Heppner, Or., this summer.

Woodward's Country Homes, for $1.50.
Plaster, How to Make it, for $1.00.

J. P. Allen will build a large family residence for Will Shoemake, on the northwest corner of Twelfth and K Streets, Modesto. The building will cost, when completed, between $4,000 and $5,000.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Contract has been let for construction of the Despain Block in Pendleton, Or. It will be of brick, and cost nearly $18,000.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

Hoffman & Bates, of Portland, Or., have been awarded the contract for building snow-sheds on the Northern Pacific road west of the Cascades, and Hugh Glenn & Co., of The Dalles, for those on the east side. Both contracts will consume about 11,000,000 feet of lumber.

Artisan, for $5.00.
Builders' Guide, for $2.00.

Mr. H. F. Larrabee is drawing plans for a two-story brick hotel, 48x86 feet, to be erected by Mrs. Kornmeyer, on the east side of Railroad Avenue, Oakdale, Cal.

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

M. J. Mertens has purchased, and will soon erect a fine residence thereon, the lot on the northwest corner of Alameda Avenue and Union Street.

Builders' Companion, for $1.50.
Artistic Homes, for $3.50.

SAN FRANCISCO BUILDING NEWS.

B

Broderick, nr. Fulton. One-story frame.
O.—Mrs M. Clark.
C.—Thos. Elam.
$2,500.

Broderick, nr. Fulton. Alterations.
O.—H. R. Levy.
A.—J. P. Chadwick.
C.—H. Ritchie.
$1,000.

Bryant, bet. Secomd and Third. Three-story frame.
O.—Thos. Green.
A.—W. H. Armitage.
C.—W. E B. Stiles.
$5,500.

Broadway, Buchanan. Three-story. ic frame.
O.—A. adler.
A.—Macy & Jordan.
C.—J. M. Kelly.
$18,000.

Bush, nr. Pierce. Alterations.
O.—S. Nicoll.
$1,500.

Bush and Steiner. Alterations.
O.—Mrs. Goull.
C.—Haner.
$1,800.

Buchanan, cor. Filbert. One-story frame.
O.—L. Zimmerman.
A.—W. Schrof.
C.—T. Merry.
$1,700.

C

Clay, nr. Mason. Additions.
Cost, $600.

California, bet. Kearny and Montgomery Streets. Alterations.
Cost, $1,000.

California, cor. Steiner. Two-story frame.
O.—J. G. Broemmeb.
A.—P. R. Schmidt.
C.—C. hisholm.
$12,000.

California, cor. Baker. Alterations.
O.—P. McGinn.
A.—Mooser.
C.—Hayes.
$2,000.

California, nr. Laguna. Alterations.
O.—O. F. Willey.
A.—J. J. Newsom.
C.—Lynch.
$3,50 .

Chattanooga, nr Church. Four one-story frames.
O.—Comerford.
$6,000.

D

Devisadero, bet. Pine and Bush. Two two-story frames.
O.—Mrs. F. G. Miller.
A.—C. Kenitzer
C.—C. T. Rupple.
$8,000.

Davis, bet. Sacramento and Commercial. Four-story brick and basement.
O.—Mrs. A M. Parrott.
A.—Pississ & Moore.
Mason—Riley & Loane.
Carp.—Langstaff.
$75,000.

E

Eighteenth, cor. Howard; three-story frame.
O.—J. E. A. Helms.
A.—Salfield & Kohlberg.
C.—J. J. Dunn.
$9,000.

Eighteenth, nr. Dimond. One-story frame.
O.—R. McGillan.
A.—J. J. Devlin.
C.—F. A. Williams.
$1,500.

F

Fifth, nr. Bryant. Two-story frame.
O.—Klemm.
$1,500.

Fulton, cor. Baker. One-story frame.
O. and B.—T. H. Day.
$2,000.

Fulton, cor. Baker. One-story frame.
O.—Mr. Doyle.
C.—Houston.
$2,500.

Folsom, nr. Fourth. Additions.
Cost, $500.

Fremont, nr. Market. Four-story brick building.
O.—C. R. Bishop.
A.—W. F. Smith.
Mason—C. B. Merrill.
Carpenter—T. H. Day.
$45,000.

Fourteenth, nr. Howard. Two-story frame.
O.—K. Muller.
A.—Salfield & Kohlberg.
C.—A. Klahn.
$2,800.

Fillmore, nr. Hayes. Additions.
O.—Miss A. Hill.
A.—Townsend & Wyneken.
C.—C. F. Coady.
$2,000.

Fourteenth, nr. Guerrero; three two-story frames.
O.—Con McCarthy.
A.—T. J. Welsh.
C.—P. Maloney.
$10,000.

Franklin, cor. Post. Additions, plumbing and painting.
O.—H. Levy.
$4,250.

C

Greenwich, bet. Mason and Taylor. Three-story frame.
O.—Mrs. O'Connell.
A.—G. E. Voelkel.
C.—G. W. Graham.
$3,500.

Green, bet. Octavia and Laguna. Two-story frame.
O.—J. Jennings.
A.—A. J. Barnett.
C.—T. Sullivan.
$3,500.

Geary, nr. Gough. Two-story frame.
O.—Mrs. A. Taft.
A.—H. Geilfuss.
C.—C. E. Dunshee.
$4,500.

Geary, cor. Webster. Additions.
O.—Mrs. Hydenfelt.
C.—McDougall & Son.
$1,500.

Geary, nr. Webster. Additions.
O.—W. Hunt.
A.—H. D. Mitchell.
C.—G. Pattison.
$2,000.

Green, cor. Octavia. Two-story frame.
O.—Jennings.
A.—A. J. Barnett.
C.—Sullivan.
$3,500.

Green, cor Octavia. One story frame.
O.—Mr. Mahoney.
A.—W. Mooser.
C.—E. Grimm.
$2,000.

Golden Gate, south side, bet. Octavia and Laguna. Two-story frame.
O.—A. Fassman.
C.—A. Norton.
A.—P. R. Schmidt.
$11,800.

Gough, cor. Oak. Five flats, stores and cottages.
O.—Geo. Raphael.
A.—Macy & Jordan.
C.—N. R. Ellis.
$12,000.

Green, cor. Octavia. One-story frame.
O. and B.—M. Webber.
$1,400.

Golden Gate Avenue, cor. Larkin. Alterations.
O.—P. Spreckles.
$800.

Golden Gate Avenue, cor. Franklin. Two three-story frames.
O.—W. Gleason.
A.—J. Bestor.
$6,000.

H

Howard, near Twenty-fourth. Frame building.
O.—M. P. Jennings.
C.—Geo. Houston.
$1,700.

Howard, bet. Tenth and Eleventh. Additions.
O.—Sarah Mier.
C.—P. Farrar.
$2,200.

Howard, nr. Thirteenth. Additions.
$1,500.

Haight, nr. Webster. Two-story frame.
O.—M. Kolning.
A.—John & Zimmerman.
C.—F. W. Kern.
$5,500.

Harrison, cor. Fourth. Additions.
$600.

Haight, nr. Devisadero. Two-story frame.
O.—W. Hayes.
C.—Newbert.
$3,500.

Hollis, nr. Ellis. Alterations.
O.—W. A. Searls.
A.—Townsend & Wyneken.
C.—T. Roth.
$1,000.

Hayes, nr. Scott. Two-story frame.
O.—W. Whitefield.
A.—McDougall & Son.
C.—A. Klahn.
$3,500.

Haight, nr. Webster. Two-story frame.
O.—Friedland.
C.—H. Elmwood.
$3,000.

Haight, bet. Fillmore and Steiner. Two-story frame.
O.—J. P. Devine.
A.—Chas. Geddes.
C.—J. and M. Rountree.
$3,000.

Hayes, nr. Broderick. Two-story frame.
O. and B.—C. Keenan.
$3,000.

Haight, nr. Buchanan. Two-story frame.
O.—Mary Deering.
A.—M. J. Welsh.
C.—R. Sinnott.
$5,000.

Hawthorne, nr. Folsom. Two-story frame.
O.—Kenyon.
C.—Dutton.
$2,500.

Hampshire, nr. Twenty-first. One-story frame.
O.—C. H. Munster.
$1,400.

Howard, nr. Thirteenth. Additions.
$1,500.

Howard, cor. Eighteenth. Two-story frame.
O.—J. Davis.
A.—Copeland & Banks.
C.—Wm. Pluns.
$6,000.

Hermann, cor. Jessie. Two two-story frames.
O.—Mrs. A. Kemme.
A.—T. J. Welsh.
C.—P. J. & M. Brennan
$9,000.

J

Jessie, nr. Second. Three-story brick.
O.—Sharon Estate.
Builder—S. M. Hills.
$8,000.

M

Market, bet. Fifth and Sixth. Additions.
O.—P. F. Butler.
A.—T. J. Welsh.
C.—J. J. Dunn.
$5,500.

Mint Avenue, nr. Fifth. Two-story brick.
O.—J. F. Leve.
C.—R. Ringrose.
$2,000.

Mission, nr. Eighth. Three-story frame.
O.—McGeary.
A.—Townsend & Wyneken.
C.—McGeary.
$8,000.

Mission, nr. Twenty-fifth. Additions.
$700.

Mission, bet. Twenty-fourth and Twenty-fifth. One-story frame.
$600.

McAllister, cor. Steiner. Two-story frame.
O.—A. J. Turner.
A.—H. Geilfuss.
C.—R. P. Hurlburt.
$7,000.

McAllister, cor. Fillmore. Two-story frame.
O.—E. Turner
A.—Balczynski.
C.—R. O. Chandler.
$5,600.

Mission, bet. Twenty-third and Twenty-fourth. Frame building.
O.—J. M. Tully.
A.—M. J. Welsh.
C.—Sticker & Son.
$2,000.

Mission, nr. Twenty-eighth. Two-story frame.
O.—M. Boyd.
Day work.
$900.

N

Noe, cor. Castro. One-story frame.
O.—W. Schroeder.
C.—O. E. White.
$1,900.

O

Oak, nr. Laguna. Two-story frame.
O.—J. Kennedy.
A.—J. Marquis.
C.—Martin & Maguire.
$5,800.

P

Page, nr. Fillmore. Two-story frame.
O.—E. W. Spencer.
A.—G. M. Salsbury.
$3,600.

Post, nr. Broderick. One-story frame.
O.—John Murphy.
B.—P. Lynch
$1,500.

Post, bet. Buchanan and Webster. Two two-story frames.
O.—B. Getz.
A.—J. J. Clark.
C.—C. E. Dushee.
$7,500.

Post, cor. Broderick.
O.—F. Nightingale.
$1,500.

Pine, cor. Baker. Three two-story frames.
O. and B.—G. Hinkle.
$12,000.

Pacific, nr. Leavenworth. Two-story frame.
O.—Wm. Kelm.
A.—Miller & Armitage.
C.—H. Jensen.
$3,000.

Page, cor. Steiner, two-story frame.
O.—Devine.
A.—C. Geddes.
C.—Rountree.
$3,500.

Pine, nr. Broderick. Two-story frame.
O. and B.—D. F. McGraw.
$3,500.

Pine, nr. Broderick. Two-story frame.
O.—H. Welker.
C.—F. A. Steinman.
$3,500.

Pine, corner Baker. Two-story frame.
O.—L. Feder.
A.—McDougall & Son.
C.—Townsend.
$5,000.

Post, nr. Franklin. Alterations.
O.—Mr. Blum.
$1,500.

S

San Jose Avenue, bet. Twenty-third and Twenty-fourth. Two-story frame.
O.—W. J. Tillman.
A.—M. J. Welsh.
C.—J. W. Smith.
$3,500.

Seventeenth, cor. Sanchez; one-story frame.
O. and B.—M. Loftus.
$1,200.

Seventeenth, nr. Noe. One-story frame.
$1,000.

Stevenson, bet. Nineteenth and Twentieth. Additions.
O.—M. and H. Beverson.
C.—J. W. Maher.
$1,300.

Stevenson, bet. First and Second. Four-story brick.
O.—W. Campbell.
A.—Pissis & Moore.
C.—Jas. Geary.
$12,000.

Seventh, nr. Jessie. Two two-story frames.
$3,500.

Sacramento, bet. Polk and Larkin. Two-story frame.
O.—H. Tietjen.
A.—H. Geilfuss.
C.—T. Von Borstel.
$4,500.

Stockton, bet. Broadway and Vallejo. Four-story frame.
O.—A. Aronson.
A.—W. H. Armitage.
Mason.—C. J. Harney.
Carp.—L. Weisman
$11,000.

Stuart, cor. Folsom. Two-story frame.
O.—J. B. Rider.
Day work.
$4,500.

Sacramento, bet. Steiner and Pierce. Alterations.
O.—Schmidt.
A.—Chas. Geddes.
C.—Geo. R. Lang.
$4,500.

T

Turk, bet. Pierce and Scott. Alterations.
O.—L. Turnker.
A.—John & Zimmerman.
C.—B. Knaus.
$4,000.

Twenty-second, nr. Valencia. Two-story frame.
O.—B. Flaherty.
A.—C. J. Devlin.
C.—H. Foote.
$4,500.

Twenty-fourth, nr. Capps; one-story frame.
O.—Mr. Lang.
B.—Comerford.
$2,000.

Twenty-first, nr. Harrison; two one-story frames.
O.—Mr. Watson.
C.—C. O. Smith.
$4,200.

Twenty-first, nr. Folsom. Additions.
$900.

Tenth, nr. Market. Two-story frame.
$900.

Turk, cor. Scott. One-story frame.
O. and B.—T. Rouke.
$1,500.

Turk, cor. Laguna. Two-story frame.
O.—A. M. Silverstein.
A.—H. D. Mitchell.
C.—G. H. Walker.
$4,000.

Turk, bet. Buchanan and Laguna. Two two-story frames.
O.—J. Davis.
A.—Copeland & Banks.
C.—W. Pluns.
$6,500.

Turk, bet. Pierce and Scott. Two-story frame.
O.—Mrs. L. Trunker.
A.—John & Zimmerman.
C.—B. Knaus
$4,000.

U

Union, nr. Laguna. Two one-story frames.
O.—J. W. Cudworth.
A.—G. E. Voelkel.
$4,000.

Union, cor. Buchanan. One-story frame.
O.—J. W. Cottle.
A.—G. E. Voelkel.
Day work.
$2,500.

Union, cor. Polk. Two-story frame.
O.—J. Cantrell.
C.—M. Shay.
$2,600.

Union, cor. Octavia. Frame building.
O.—F. Stempke.
C.—P. T. Fleary.
$900.

V

Vallejo, nr. Stockton. Two-story frame.
O.—J. Dans.
A.—Cappelletti.
C.—F. C. Adams.
$2,500.

Van Ness, cor. Jackson. Two-story frame.
O.—Nolan.
Day work.
$10,000.

Vallejo, nr. Battery. Two-story frame.
O.—Mrs. J. Campbell.
A.—Townsend & Wyneken.
C.—A. McDonald.
$2,000.

W

Washington, cor. Hyde. Six two-story frames.
O.—Captain Burns.
A.—Clinton Day.
C.—G. Lang.
$32,000.

Washington, nr. Devisadero. Two-story frame.
O.—D. M. Richards.
A.—C. I. Havens.
C.—C. Quinn.
$3 800.

Wood, cor. Point Lobos Road. One-story frame.
O.—J. Murphy.
Day work.
$1,800.

Washington, cor. Larkin. One-story frame.
O.—J. F. Stuart.
C.—R. M. Murry.
$3,000.

Y

York, nr. Twentieth. Two story brick.
O. and B.—B. Vincent.
$8,000.

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By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to under tand and difficult to do until they are fully explained and tested, It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 9.

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Advertisements alone inserted that refer to materials us d in the construction and Furnishing of houses, and to matters and trades belonging to tn building interest.

No Others Received.

SAN FRANCISCO, CAL., SEPT. 15, 1887.

Weekly Building Edition

OF THE

California Architect & Building News.

For some time past, we have been making careful arrangements by which we could present to our subscribers a **WEEKLY SUMMARY OF BUILDING ACTIVITIES.** Our plans are almost perfected, and in a short time we will supply, **WEEKLY,** a list of all buildings in progress in the city, and also in every portion of the coast. Various agencies have been established in different parts of the State, through which building news will be sent direct to this office.

In this weekly edition, there will **POSITIVELY BE NO ADVERTISEMENTS INSERTED.** Its columns will be strictly given to the furnishing of city and country building news, and for absolutely no other purpose.

Architects from every portion of the coast can have notices of contemplated building improvements, upon which they desire bids from city contractors, published **FREE** in this Weekly Edition. There also will be no charge for county notices of proposed public improvements. In fact, this **WEEKLY** is intended to cover the whole subject as a reliable gazetteer of public and private building information. Of course it must be expected that it will take a little time to make this weekly perfect in every particular, but it will have the same energy and perseverance to back it up as has been shown in building the "California Architect" from almost nothing to its present high standard.

TERMS.

This **WEEKLY** edition will be furnished **FREE** to all yearly subscribers to the "California Architect and Building News." Material men will at once recognize the great value of a weekly building list that can be relied upon as being as near correct as it is possible to obtain information.

NINE YEARS ago this Journal was started by the present Proprietor, and its appearance to-day, with crowded advertising columns, and entertaining reading matter, is a sufficient endorsement of its merits as the leading Journal of its class on the Pacific slope. Without being egotistical, we can safely say that the circulation of the "California Architect" is larger than that of all the rest of similar journals put together, published this side of the Rocky Mountains.

Remember, this Weekly Edition is furnished free to all subscribers to the "California Architect." We will also give the remaining numbers of this year free to all new subscribers for 1888.

The Boom.

THAT there has been a large amount of booming done in California within the last past few months, is beyond question; and although the fever is not so high now as it has been, it is still sufficiently active for all practical purposes. The larger proportion of the booming has been intrinsically legitimate, while much has been fictitious, strained, and overwrought, to an extent that numerous silly transactions have been consummated by which excited men and women have paid for single building lots, a mile or miles away from business centers, as much, and in cases ten times more, than a whole acre of the same land could have been bought for six months prior.

Every county and section of the State has participated in the boom sentiment, and more or less inflation indulged in, notwithstanding the entire absence of any new development in scores of localities to justify or sustain advance in values over those which have existed, other than the fact that the population of the State is being greatly increased by large immigration, which should have the effect of strengthening and confirming land values, but not of exciting them ten or a hundred-fold, except where the increase of population has concentrated in great force, as at Los Angeles, San Diego, and some other places in the southern counties.

But as matters have gone, owners of land in every county of the State have assumed, whistled their courage up to believe, and have used means and measures as each deemed wisest and best, to persuade others that the only thing necessary to a realization of ten to a thousand per cent advance on moneys invested was to "buy right here."

Transactions stimulated and sustained by solid, intrinsically good and well-assured backings, will in the future compensate fully for all present seeming chances taken, for all signs and facts are pregnant with greatness for the future developments and advancement of the Golden State in all that is calculated to make it one of the very grandest and greatest in the sisterhood of the American Union. But, unfortunately, not all who have plunged into the booming tide have done so wisely or well; and the limit of inflation having been reached, and the shadows of reaction being plainly discernible, and the fact becoming transparent that many of those rampant natures who have been misled by the gaudy butterfly offerings have began to realize that as long as there were simple-minded men and women to buy anything in the shape of lands and lots that were well and sufficiently mapped and boomed, there were individuals and syndicates to bond or buy parcels and tracts, and subdivide the same to suit and accommodate eager buyers at prices yielding to the sellers from one to three hundred per cent profit, and leaving the buyers to wish they had not been so hasty in pur-

chasing, and wondering when or how long ere the amount paid could be again realized.

THE EFFECT UPON BUILDING IN SAN FRANCISCO.

The tens of thousands of building lots, and the miles in acres of agricultural lands sold and purchased, has necessarily diverted many hundreds of thousands of dollars in that channel, which, under the prior usual order of things, would have been spent in building improvements in San Francisco. Hence building operations have considerably quieted down, and much of the drawn-off moneys being tied up in purchases which will not soon advance beyond the prices paid, nor at present return the purchase money, the effect of the boom is likely to be felt for some time to come, except so far as those who have reaped the golden harvest from the lands sold may feel inclined to invest their gains in property improvements.

SOME OF ITS FRUITS.

1. As a consequence of the "Southern California boom," a majority of the horde of impecunious, defaulting, unreliable building contractors, who used to infest this city, have gone to that inviting section, either to ply and repeat their unwise methods, or seek in pastures new to make for themselves an honorable reputation and a fair fortune.

2. Some of our best contractors have also gone South. For these there need be no fear. Judgment and integrity having marked their San Francisco career, it is safe to say that nothing less, with good fortune added, will follow them.

3. The demand for draughtsmen has been such that the draughtsman's bureau of this journal has been overtaxed to supply the demand. Orders are on file for still more draughtsmen.

4. Journeymen carpenters and brick-layers have been, and still are, in demand, both in San Francisco and Southern California, at advanced wages, $3.50 to 4.00 for carpenters, and $6.00 for brick-layers.

The lumber market, and more or less other materials, have been affected by the lively demand in Southern California for building materials. Many classes of lumber in San Francisco are, and have been, scarce, and prices strong. Still, the San Francisco building outlook is beautiful. There is not one drop of discouragement to a whole ocean of fine prospects and promises for the queen city of the Pacific.

California Architecture—Typical Nothingness.

A CORRESPONDENT in the *Carpentry and Building*, styling himself "C. K., Long Beach, Cal.," forwards to the journal referred to the "elevation and ground plan of a typical California house." A more *typical* representation of nothingness was never forwarded to a journal to print, and how it ever came to be inserted in the one mentioned, claiming, as it does, to only insert ideas and illustrations that may be relied upon, is more than we can conceive.

There is not a chimney nor wash-basin shown in the house. Not a single bedroom has a closet connected with it, and the 10x14 kitchen is without a pantry, closet, chimney, or any other convenience. The dining-room as arranged is so deficient in the method of being lighted by windows that on a dark day a lamp would needs be kept lighted continually. The shape of the parlor would disgrace an old backwoods cabin. With the exterior appearance, the less said the better. The rail and balustrade as they appear in the engraving, are simply the design of a school-boy who is hardly old enough to spell the word *proportions*, let alone the ability to interpret the meaning of the word.

There is absolutely no wonder why "C. K." adds to his description, "I have thought that perhaps some of your readers might not only be interested in the plan and view that I send, but that they also may be able to suggest some variations," etc. Truly a nice way to get a plan that is architecturally correct, for the small sum required for a year's subscription.

We are always pleased to see illustrations of architecture on this coast, represented in the Eastern journals. But we must protest against such incongruous specimens as the one referred to as a sample of *typical* California architecture.

Summary for September.

UNTIL the commencement of the real estate boom, building activities were very brisk. The past month has witnessed quite a falling off in the *number* of improvements, although *values* are considerably larger than those of last year. Our record for the month is as follows:—

69 frame buildings, value	$402,850
32 alterations, value	161,100
4 brick buildings, value	44,000
95	$607,950

During the first nine months of 1886 the record shows
947 buildings, value $4,876,922
During the first nine months of 1887, 839 buildings, value 5,211,914
Showing a decrease in *number* of 108, and a gain in *value* of 334,992

Prospects ahead for the winter months are very favorable and much of the disparity shown in *numbers* between the two years quoted will be overcome before our yearly report in December.

Building Activity in Los Angeles.

MANY HOUSES AND BUSINESS BLOCKS IN PROCESS OF ERECTION.

AT the present time there is a remarkable activity going on in building, and especially is this true of the heart of the city.

A glance down the principal thoroughfares discloses the fact that there is scarcely a block between the Plaza and Fifth Street in which one or more buildings are not being erected or additions being built on those already standing. This activity in building will create a great change in the appearance of the city before the winter sets in, for instead of the streets being lined with one and two-story buildings, most of them will have been transformed into four-story houses, and the gaps or vacant lots which have been in existence will be filled up. Thus parties who were here last winter, and who are coming again this fall, will hardly recognize the city as the same that they left less than a year ago. With all the activity in building there is a demand for rooms which cannot be supplied, and unless the completion of the buildings in course of erection is hastened, the rush is likely to find the city unprepared. On every side the brick buildings are in such a stage of erection that it will not be possible to have them ready for occupancy before November or December, and at that time the rush will be here. One cause for the delay is said to be the scarcity of brick. One building has been delayed considerably by the scarcity of pressed brick, and no doubt others are in the same category. Outside of this class of buildings there are a large number of houses in course of erection further out, but at the present time there are at least ten people looking for houses where one is to be found. There are families waiting to come to Los Angeles, but they cannot come because they cannot rent houses. In San Francisco, and in other cities, there are enterprising men who erect houses especially for rent, and in those cities there is not as much demand as here. It seems strange that something of the kind has not been done here. A close search in Los Angeles has failed to reveal the existence of a single house composed of flats, and in what other city of a like population is this the case? It is true that until recently there has been no necessity for apartment houses or flats, but at the present time fully two hundred would be rented before completed, especially if erected near to the heart of the city.—*Herald.*

MR. C. MERCHANT, of Merchant & Co., Philadelphia, U. S. agents and manufacturers of the celebrated "GILBERTSON'S OLD METHOD," and "CAMARET" brands of tin-dipped roofing plates, has just returned from England, where he accomplished two important things in connection with the business of roofing plates. As is generally known, this firm was the first to bring out guaranteed roofing plates, which had before been unknown in this country, their guaranty covering all the different points which enter into the value of roofing plate, thickness, coating, weight, squareness, etc. In order to prevent the use of inferior materials where requisition had been made for their brands, they were obliged to adopt the plan of stamping the sheets with the brand and thickness. Others followed by stamping the brand, but not the thickness, thus making it possible to use thinner and cheaper plates instead of the ones specified. This action on the part of unreliable firms has led Merchant & Co. to take another important step, that of stamping each box with its weight. There are two sizes and two thicknesses of every brand of roofing plate, and the importance of using every precaution to insure the use of just what is specified is therefore evident. Another important step in this connection is an arrangement which Merchant & Co. have made with the makers of the two brands which they represent, that the "seconds" or imperfect sheets (which come out with the majority of brands) shall not be sent to the United States nor sold to anyone in England. There will be, therefore, only one kind of goods sold, and the quality of goods bearing these brands is then positively insured.

ELEVATION, PLAN, DETAILS, AND SPECIFICATIONS OF AN "ALAMEDA" COUNTRY HOME.

CALIFORNIA can justly boast of a larger number of pretty places and picturesque localities in which to erect residences of moderate cost, than can be found in any other State in the Union. The beautiful town of Alameda, covering, as it does, a large extent of ground, embracing several square miles, may be regarded as a paradise for those who wish a quiet retreat, away from the din and confusion of the city, and yet be in close connection with the great mart. Nearly every portion of the town is covered with a natural growth of oak trees. Nor does this growth stop at this point; for a long distance to the north the ground is covered by the beautiful trees from which the neighboring city of Oakland derives its name.

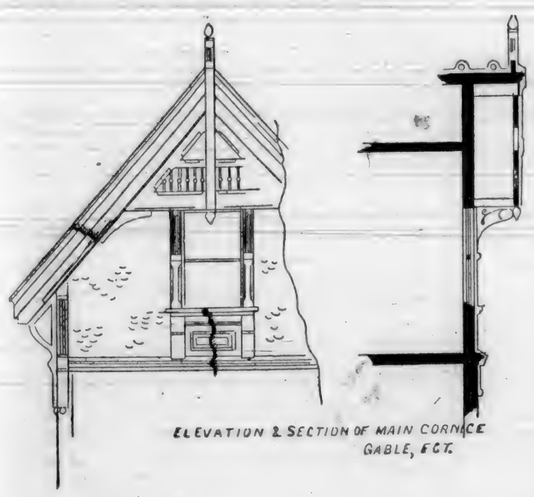
PERSPECTIVE VIEW OF $2,500 ALAMEDA COUNTRY HOME.

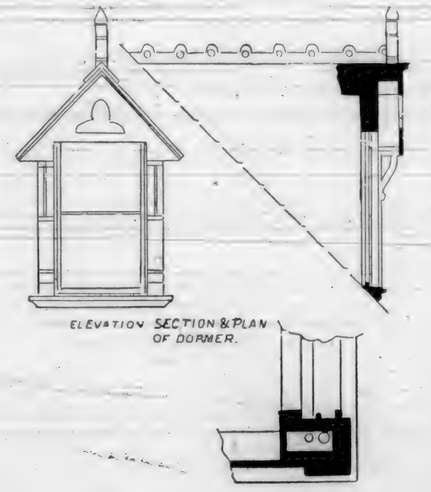
Extremes meet in architecture as well as other matters. Some esthetic persons have sought to copy the humble abode of the laborer in the external view of a dwelling, while the internal arrangements and fittings rival those of Aladdin's palace. Others seek to have the outside present to the eye a conglomeration of whimsical ideas, while they have not deigned to cover the floors with a carpet, nor have a door between any of the rooms or halls, excepting those connecting with the outer world.

Much benefit has been derived from these whimsical erections, and it is only by much study and close application to the fancies of their clients, that architects have been enabled to prepare the beautiful Bijou plans, a good representation of which is given in this issue. In justice to the architectural profession, we must say that no portion of their practice has been so usefully bestowed as that which has been bestowed upon the production of plans for such homes, a full plan of which accompanies this article.

The elevation, as shown, is a model of neatness and economy. At once attractive in appearance and substantial in all its surroundings, it does away with all those horrible idiosyncrasies and bugbears of the Elizabethan and Queen Anne styles. There are no small windows to cause the one who cleans them to utter a whole vocabulary of cuss words at the architect who made so many corners to dig out. There is no part of California but what needs all the sunshine that was intended to enter a room, and the large windows shown allow the heat and light to make glad the hearts of the dwellers therein. Even with the thermometer at 100 degrees and over in the shade at noontime, still when evening comes, the cool winds that invariably bless the sleep of those who are tired from their daily toil, has easy ingress from these same large windows. And in winter, from the absence of snow in all of our beautiful valleys, the same windows are a source of joy and comfort for the occupants to observe the driving rains, or admit the blessed sunshine as it pierces through the wintry clouds.

Great care should be exercised in painting the exterior. The colors selected should be a happy blending of light and dark shades. They should be graded from rich, heavy grades at the bottom, to the lighter tones of the gable peaks, preserving, through the intermediate section, a consistent harmony. The roof may be of dark slate color. The trimmings may be colored with a combination of blue, black, and Indian red. The body of the house may be varied to suit the above. It must be distinctly





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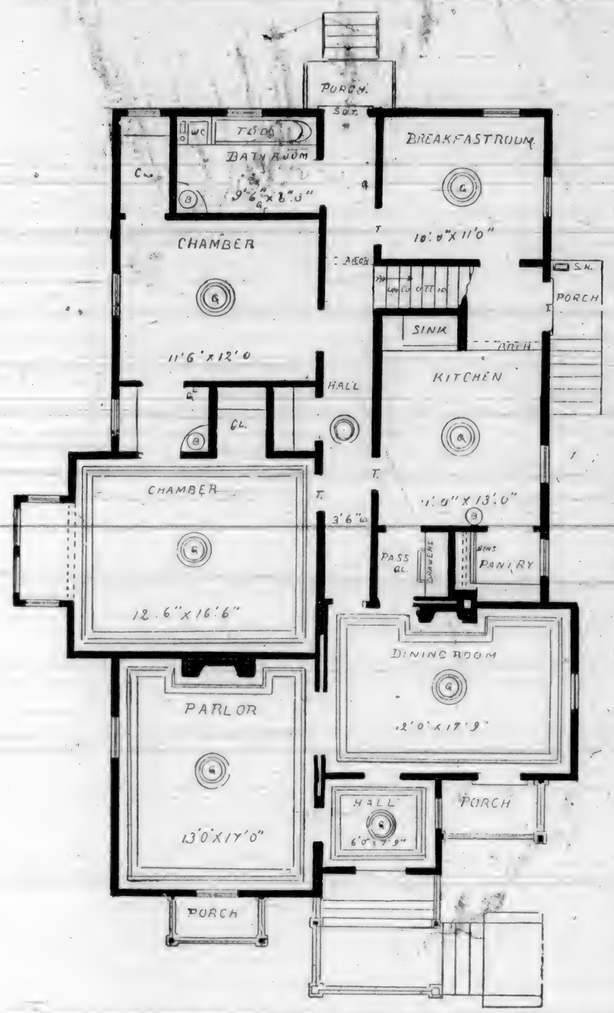


Plan of $2,500 Alameda Country Home.

borne in mind that all buildings of the same class cannot be treated alike. Trees have a wonderful effect on colors used, and the main study of the painter and owner should be that the salient points of form and detail be enhanced by the proper selection of the various colors. By all means, if you are building a home for yourself, take the good wife into your confidence, and let her judgment be given on the various colors to be used.

The arrangement of the rooms, as shown by the plan, is very desirable for anyone with a small family. A feature is made of the entrance-way. From the hall, one can pass either to the parlor or dining-room, the latter being the general sitting-room. The parlor is large, 13x17 feet in size. It has a fire-place as shown; a cornice is also designated. Sliding doors connect this room with the dining-room, the size of the latter being 12x17¾ feet. A cornice and fire-place are also shown. In case of company or family gathering, the two rooms will be practically one. The porch shown in front will be very handy for the gentlemen who smoke, or, on warm days, the ladies can use the same for sewing purposes, sheltered, as the plans show, by the roof overhead.

You pass from this room into a hall, from which you can enter all the rest of the rooms. The main chamber is 12 feet 6 inches by 16 feet 6 inches, besides a large bay-window, having four windows for light and air. There is also a cornice in this room, and a place for a stove to connect with parlor chimney. There is a very large closet, and also wash-room, which is well-lighted and ventilated. Passing along the hall, we next come to a large linen closet. This will be found very serviceable for the storage of the linen in daily use.

Then comes a large chamber, 11 feet 6 inches by 12 feet. No cornice is shown. Should a fire be needed in this room, a patent flue could be placed therein, starting from near the ceiling. A large closet is also connected with this room. At the end of the hall is the bath-room, 6 feet 3 inches by 9 feet 6 inches. A wash-bowl and water-closet are shown. The window, being directly over the tub, assures perfect ventilation.

On opposite side of hall from bath-room is a room designated as breakfast-room, in size 10x11 feet, with two windows. This can be used as a bedroom, should the dining-room suffice for the needs of the occupants of the house. This room is very convenient, as it can be reached by three different ways. The next room is the kitchen, in size 10x13 feet, with plenty of light and ample means of ventilation. The place for the stove-pipe is indicated by the dotted lines leading to the dining-room chimney. Should it be found more desirable to have the stove in a different position from that indicated, a patent flue can be put in, starting near the ceiling. A large pass-closet, amply fitted with drawers and shelves, connects with the dining-room. There is also a large pantry fitted up with bins, etc.

A stairway is shown, near breakfast-room, leading to the attic. No plan is given of the latter, as the space can be divided according to the individual tastes of the parties building. The rear hall is 3 feet 6 inches wide.

The whole plan is very compact, and will bear careful study. The detail drawings as shown will give an adequate idea of the various finishes. Each one is distinctly marked.

We append a general set of specifications to aid those who may see fit to adopt the design. Should anyone want a complete set, we can forward them a printed copy.

SPECIFICATIONS.

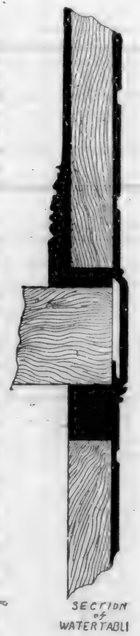
Excavations.—All rock, dirt, etc, to be cleared away from site of the building; trenches for walls and piers to be extended down to firm and solid ground; the bank to be dug well away from the walls, and the same to be left open until the walls are well set and dry.

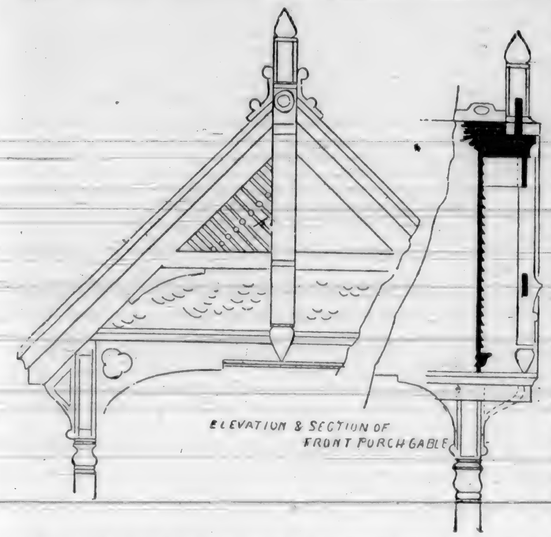
Drains.—To be of iron-stone pipe, with cemented joints. The fall to be not less than one-fourth inch to one foot; no drains to be less than sixteen inches from surface of ground.

Brick Work.—Hard, well-burned brick to be used throughout. All brick walls to be made level and straight to the proper and exact height, and to a true line from one end to the other, even to the splitting of a brick where necessary. Piers 12x12 inches. Turn trimmer arches for the support of all hearths at the time chimneys are built. All sills to be set in mortar after walls are proper height.

Size of Timbers, etc.—Main sills, 6x8 inches; plates, 2x4; studs, 2x4; underpinning, 4x6; joists, 2x10; ceiling joists, 2x4; rafters, 2x4; bridging, 2x3 and 2x4. Studs and joists spaced 16 inches from center; rafters, 2 feet 8 inches from center; underpinning, 2 feet 8 inches from center. All timber below main sills to be of redwood.

Roof to be sheathed with 1x6 Oregon pine, well nailed to every rafter. Gutters arranged so as to carry off water wherever directed.





Rustic.—All laps and butt joints, to be painted before being nailed in position. Butt joints to have a 3x11-inch piece of tin to keep out water.

Outside Steps to be built upon strong stringers, inch risers of redwood, and two-inch treads of Oregon pine, with nosing and scotia. The recess to front hall will be floored six inches below main floor, with three-inch Oregon pine, put together with white lead.

Floors.—Oregon pine, tongued and grooved, 4 inches wide, to be used throughout the house. One tongue nail and one through nail to be driven in each piece at each nailing.

Grounds to be of ⅞-inch Oregon pine to all openings.

☞ *No inside finish to be put on until the last coat of plastering is on.*

Face casings to be 6 inches wide and 1¼ inches thick, with suitable plinths.

Sash beads to be fastened on with raised-head screws.

All interior work to be hand smoothed and sand-papered.

All carved or planted-on work to be primed before putting up.

Base in all rooms to be 10 inches wide with 2-inch moulding.

Wainscoting.—Rear hall, kitchen, and breakfast-room to be wainscoted 3 feet high, and capped with nosing and scotia. Bath-room, 6 feet high all around.

Pantry and Pass Closet to be fitted up with shelves and hooks complete, and bins and drawers as shown.

Lathing.—Good sound lath to be used, laid on not less than ⅜ of an inch apart. Joints broken over 8 laths. No lath to be put on vertically, to finish out to corners or angles; neither must there be any lath run through angles and behind studding from one room to another. All angles to be formed and nailed solid by carpenter before laths are put on.

Plastering.—All walls, partitions, and ceilings to be plastered one coat of well-haired mortar, made of best lime and clean, sharp sand, free from loam and salt, using best cattle hair. To be made at least eight days before using.

Brown coat to be covered with a good coat of best white hard finish. All plastering to extend to the floor. Center-pieces where designated on plans.

Painting.—All interior woodwork to have three coats of best white lead, in such tints as may be approved by the owner. Kitchen floor to be oiled two coats.

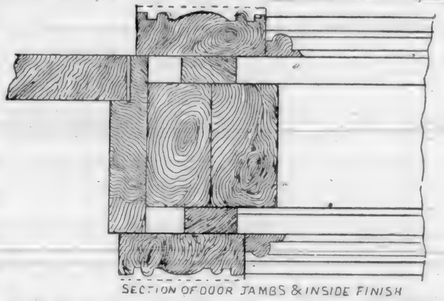
Gas Pipes to be introduced so as to give the number of lights shown on plan.

Plumbing.—Water-pipes to be of galvanized iron ¾ inch in diameter. No ½-inch pipe to be used. A 40-gallon galvanized iron boiler, with necessary connections, to be placed in the kitchen. Sink to be of size shown by drawing, to have 2-inch iron water-pipe and a Garland trap; 3½-inch brass strainer; back of sink to be lined with zinc. Slop-hoppers to be placed as shown. Wash-basins to be located as per plan, and to have all necessary hot and cold water connections. Water from all basins to discharge into an open slop-hopper outside. Bath-tub to be lined with No. 12 zinc, to have a 1¼-inch waste, with Garland trap. All necessary fixtures for bath-tub to be placed in proper position. The water-closet to be Budde's patent. Place safe trays under all sinks, bath-tub, wash-basins, water-closets, etc, with 2-inch turned-up edges, well nailed to woodwork. Three-fourths inch wastes. All waste or soil pipes to be connected with the sewer, and extend the same above basins, sinks, bath-tub, water-closets, etc., out through the roof.

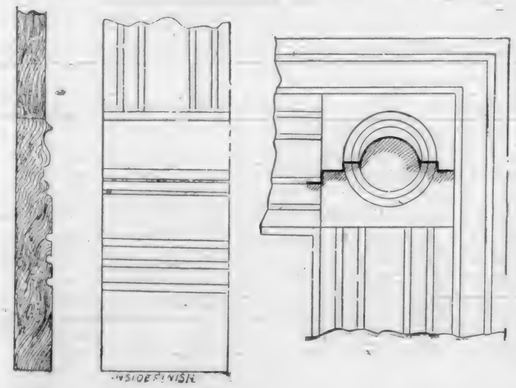
Generally.—Drawings and specifications are intended to correspond, and to be illustrative the one of the other All drawings to be furnished by the architect, details to be given from time to time as the work progresses. Should the necessity arise that any change or changes be made from the original design, the owner shall have the right so to do without invalidating the contract, adding to or deducting from the contract price the agreed sum of any change made.

COST.

The above specifications are given as a general index



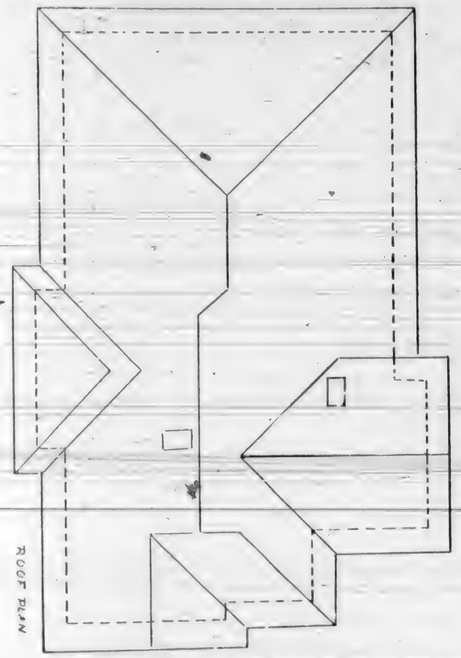
of the work. No accurate estimate can be given from them of the cost of the house. Quality and price of hardware, etc., have been omitted, leaving same to the pocket-books of intending builders. As shown, with finishes indicated by the details given, the house can be erected at a cost of about $2,500. Of course this figure can be changed considerable. Using best of materials, etc., the price should be given at $3,000, at which sum a truly cozy home can be obtained by those seeking a permanent dwelling-place.



Outside Painting.

Architecture having inclined to a greater degree of decoration, mainly owing to the development of the renaissance style, which aims at picturesqueness, affords far more opportunities than formerly for attractive and varied color effects. No reason convincing to ourselves has yet been advanced why bright and even gay colors should not be more extensively used in the outside painting of houses, care being taken that the application shall be judicious. They would particularly serve to emphasize what we may term the ornamentally constructive portions, which need to be specially brought out. A very

SAMPLE COPY.



Roof Plan of Alameda Country Home.

little bright color, such as a band of red on olive, will often have a brilliant effect. In an instance which we have in view—a country house—the body of the house is in pea-green, and the olive and red are applied to the cornice and window frames. these colors also appearing in the stoop and piazza. We have seen a business building painted blue, whilst the cornice was of yellow, and the effect was excellent; for a building is not to be considered in the light of a design painted on a wall, or ceiling, or on canvas. It is sufficient that good contrasts are presented, instead of possessing a monotonous appearance. The architect aims at varied combinations of forms, including projections and recesses, and it is for the painter and decorator to give these their best effect in color. We are not recommending mere meretricious gaudiness, than which it is better that a whole house should be painted, exteriorly, one uniform, subdued hue. Too strong a protrusion of color is always a viclation of all the rules of harmony and contrast. A house, according to its style and situation, allows of a treatment in colors that in another case it would be manifestly unwise to follow. Let a house be surrounded by umbrageous trees, and red will establish a fine contrast, looking particularly well should the structure be furnished with a tower. There are many country residences in which positive colors have been employed with excellent results; but there remain many more which admit of great improvement by more variety in the way of coloring.—*Painters' Magazine.*

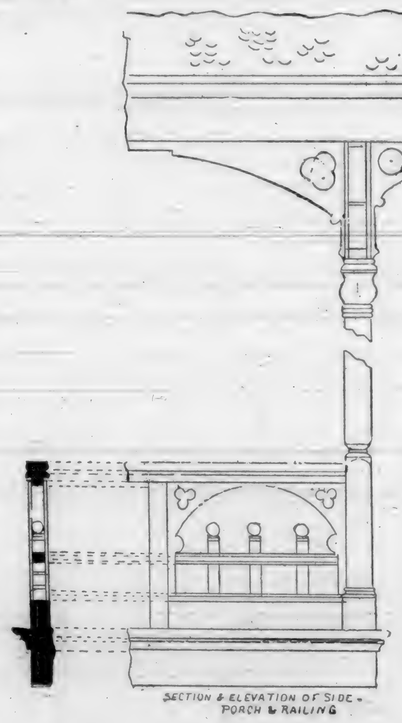
Make two rooms in a house as nearly as possible of the same size and form, for the convenience of turning carpets, and also so as not to require a waste of lumber.

What Is an "Architect"?

Is the question asked by the *Record and Guide.* As they state, in the present condition of affairs, "anyone possessing the knowledge of a poor carpenter, the skill of an indifferent draughtsman, a little audacity, and a ten-dollar bill, can appoint himself an architect, and, alluring the public by cheap rates, fill our streets with buildings that are both dangerous and hideous." It is for this reason that we have advocated the licensing of architects. If it is impossible to achieve this result, real estate papers can help to some extent by urging upon their subscribers the enhanced value of buildings designed by architects of reputation in matters of design, construction, and sanitation, and that the fact of a building being constructed under the direction of a reputable architect is, in so far, a guarantee of its being well built.

In regard to the nominal compensation allowed to the "grinders out of plans by the yard," it should be considered by builders, as well as by owners, a suspicious circumstance to find anyone ready to accept a fee less than that prescribed by the American Institute of Architects. We have frequently called attention to the fact that where a so-called architect accepts a nominal sum for superintendence the full commissions are more than made up by taxes on the contractors and sub-contractors, which money eventually comes out of the owner's pocket. Our definition of an architect would be one who has studied the profession of architecture from youth, who has spent not less than five years in the office of a recognized member of the profession, both working at the boards and as superintendent of construction, and one who occupies a portion of his time throughout his life in studying the progress of his profession. A man who says he has no time to read architectural works, or to attend conventions, must be behind the times and only fit for the second rank.

Constant study is as necessary for an architect as for the members of other professions, and one would hardly be likely to intrust his health to the care of a physician who knew nothing of the discoveries constantly occurring in the medical world. With the facilities now afforded to youth, it would be perfectly fair to expect the coming generation of architects to be graduates of architectural departments of colleges, and then to hold certificates of study for a term of years in the office of an architect belonging to some generally recognized architectural associat on. —*Building.*



ARCHITECTS AND BUILDER'S POCKET-BOOK.

BY F. E. KIDDER. PRICE, $3.50.

The new edition of this valuable work has been issued, and we can now supply all orders. It is the most complete, and contains more valuable information for the architect and builder, than any other work of its kind printed. It is of convenient size for the pocket. The print is beautifu ly clear. Price, $3.50.

Remaining numbers of this year sent free to all new subscribers for 1888.

DESCRIPTION OF THE NEW BROOKLYN PRESBYTERIAN CHURCH.

We invite the attention of our readers to the engravings of the plans and elevation of our new and beautiful house of worship, now being erected on the corner of Twelfth Avenue and Fifteenth Street, East Oakland. The building occupies a lot having a frontage of 140 feet on the street and 150 feet on the avenue. The dimensions of the building are 70x143 feet. There is about six feet of yard upon the street frontage, and 25 feet upon the avenue frontage. As the lot is two feet above the walk, this space can easily be made most charmingly beautiful. Upon the western side of the church there is a vacant portion of the lot with a frontage of 45 feet on the street, and 150 feet in depth. Upon the rear portion of this space there will be erected sheds for horses and carriages, while the front portion will be appropriated to drive-ways, walks, and lawn. The auditorium fronts upon the street, from which is its main entrance. The rear portion of the building is for Sunday-school and social meetings, with an entrance from the avenue, and also upon the opposite side of the building from the vacant lot.

Brooklyn Presbyterian Church, Twelfth Avenue and Fifteenth Street, East Oakland, Cal.

(see plans on next two pages.)

The dimensions of the several parts of the building are given upon the engravings of the plans. The roof of the auditorium is supported by strong trusses, the heavy, varnished timbers of which are exposed to view from within the room. Several feet above these timbers is a plastered, dome-shaped ceiling, formed into panels about four feet square by varnished beams and cross timbers. The ceiling in the lowest place is about thirty feet from the floor, and at the highest point about fifty feet. There are four stained-glass windows near the top of the dome, and three large windows in the front and two sides of the auditorium. These three windows will b made very beautiful and consecrated to the memory of three former pastors,—Pierson, the first pastor, Dean and Patterson, both passed to their reward.

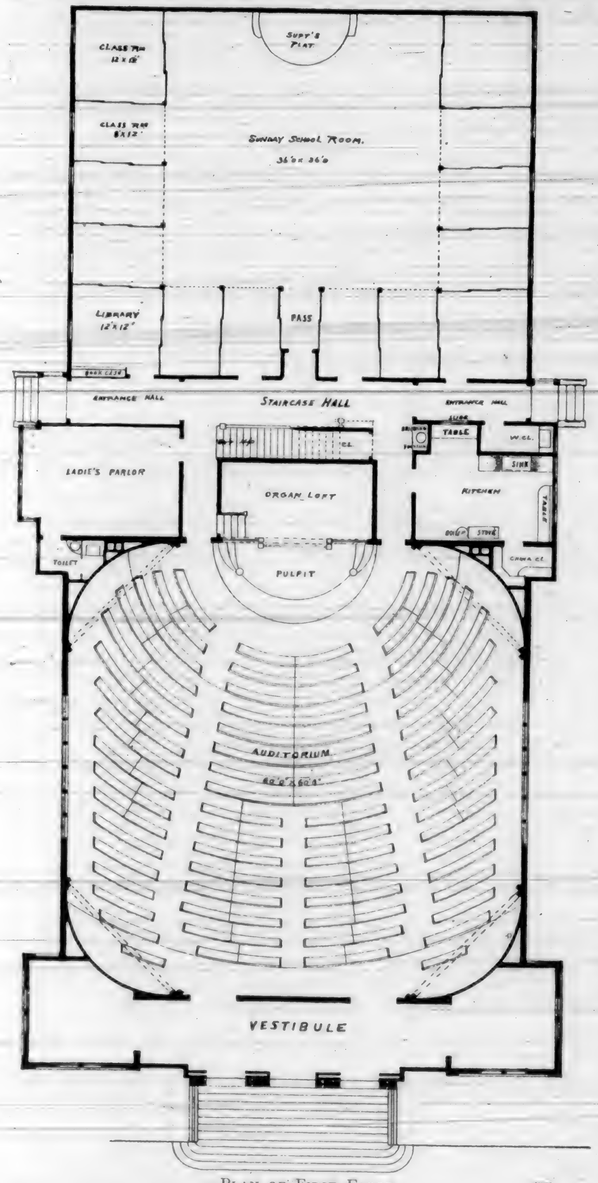
The auditorium is estimated to seat from five to six hundred, without the gallery, which will be added when required. The floor is well inclined, and the seats will be arranged in a semi-circular form. In addition to the main entrance, there are two other entrances, one upon either side of the organ loft, and leading from the main hall of the Sunday-school department. These, being upon the level of the lowest portion of the auditorium floor, will be convenient for those who wish to avoid ascending steps. They will also connect the auditorium with the other portions of the church, and afford facilities for rapid egress.

The Sunday-school portion of the church is constructed upon a unique but very simple plan, with a view to securing, as fully as possible, the massing of all the scholars into one assembly for general exercises, and their separation into rooms for class recitations. To accomplish this there are employed sliding doors and "slat partitions." This portion of the church is 48x60 feet, with a gallery 12 feet deep upon three sides. Beneath this gallery there are triple sliding doors, coming out from the outer walls to the pillars supporting the gallery. These doors, when drawn back to the wall, are entirely out of the way, and do not interfere with the oneness of the room or school, and when drawn out to the pillars, they form, under the gallery, four rooms 12 feet square, and ten alcoves 8 feet wide and 12 feet deep. These alcoves are then shut off from the main room and converted into class-rooms by means of "slat partitions," drawn down from the ceiling, which is under the gallery, and between the pillars supporting the gallery.

These "slat partitions" are made of white ash slats eight feet in length, three-fourths of an inch thick, and one and one-fourth inches wide. These slats are formed to slightly overlap each other, and are fastened closely together by means of a thin but strong brass ribbon, and all glued firmly to heavy canvas. They thus form a strong curtain, which can be folded or rolled at pleasure. The ends of these slats run in grooves in the pillars

and they are drawn up into the ceiling by weights, which are suspended in the outer walls. When thus drawn up, these partitions lie horizontally between the gallery floor and and the ceiling below.

Thus, upon three sides of this main room, and beneath the gallery, there are formed fourteen nice class-rooms, which as speedily all dissolve into one general room. The front of the rooms, and can be separated into rooms for classes, if desired, by means of cloth curtains. When the "slat partitions" are all up, and the sliding doors are all drawn back to the wall, there is nothing to obstruct the view in any part of the room or gallery, save the small pillars five inches in diameter. There are then five doors from the entrance hall into the main room, and two from the hall above into the gallery. The sliding doors are shown upon the plan; the "slat partitions" are indicated by dotted lines between the pillars.



Plan of First Floor.

It will be seen that the primary department is so far removed from the other portions of the school that the exercises of one will not disturb the other, and yet the little ones, by taking seats in the gallery, can participate in the general exercises of the school if desired.

Including the pastor's study and the ladies' parlor, there are twenty class-rooms for the Sunday-school, besides the gallery. In several of these rooms there are electric bells, connected by wire with the Superintendent's desk, by means of which the order of exercises is readily communicated to all the school.

The kitchen is located near the main room, with sink, and tables, and china closets, and a "pass window" which opens into the main hall. This will be found very convenient for socials and other kindred gatherings of the church.

By observing the plan it will be seen how fully all the room has been utilized, and how numerous and wisely distributed are toilet and other rooms and closets. The entire cost of the building will not exceed $25,000, at which price it will be one of the best buildings for the cost in all our lovely city.

Ingerson & Gore are the contractors. Geo. A. Bordwell is the architect. A goodly portion of the credit for the interior arrangement, however, must be given to the pastor, Rev. E. S. Chapman.

gallery is closed by "slat partitions" the same as the rooms below. When these partitions are all drawn down, the central room is 36 feet square, with octagonal, dome shaped, plastered and paneled ceiling, 35 feet high. It is lighted from four windows in the dome, and one large window in the rear wall, over the Superintendent's platform. This will also be a charming room for prayer and other social meetings, so cozily shut away from the outer world, and capable of being enlarged at pleasure. The gallery floor is sufficiently inclined to afford a good view of the lower

Low Ceilings.

THERE was a time—and it was not many years ago—when it seemed that a ceiling could not possibly be too high. Ordinary rooms in an ordinary house—rooms with a width of thirteen or fourteen feet—were made with their height equal to their width, and people rejoiced to think how airy their habitations were. But the openings into these lofty rooms were not always of height proportionate to the apartment, and three or four feet of warm vitiated air at the top of a room is of no benefit to its inmates. A few years ago it became the fashion to study the roadside hostelries, old farm-houses, and country dwellings built here and in England in the century preceding the declaration of independence. These models had low ceilings, often so low that a tall man might bump his head against a beam, doors so low that the same unfortunate individual was compelled to stoop on entering, and windows, for these were the days of dear glass, so low that their width exceeded their height. These windows were filled with small panes, which in older examples were set in lead and formed part of a casement—and in other cases were puttied into wooden sash-bars that kept out half the light. It became the fashion to copy these inconveniences, which builders of the time would have gladly dispensed with had they known how, and thus it comes to pass that a modern "cottage," as it is now the fashion to call what a few years since would have been styled a "villa" or a "mansion," must have disproportionately low ceilings, and either leaded lights in awkward casements, or tiny square panes in tavern-looking sashes.

Shade of common sense—is humanity crazy, that it thus jumps from one extreme to the other? Must we live in rooms eight feet or eight-and-a-half feet in height, with windows the top of which is scarcely level with our heads, just because our worthy great-great-grandfathers did so? Because an unventilated lofty parlor is a waste of money and space, must I reside in a parlor so low that it cannot be ventilated quickly enough to be healthy? It gives a sort of cemetery sensation to enter a modern room, 20 feet by 14 feet by eight feet high, and oh, it's such a stuffy death!

It is strange that almost everyone, when making a comparison, forgets the first condition of a comparison, viz., other things being equal. It is undeniable that a ceiling may be too high. There is such a thing as proportion, and too great a height is money and space wasted in the production of disproportion. The heights of rooms in an ordinary house must oscillate between numbers the largest of which is not twice the smallest, and must, moreover, as a rule be the same throughout a story, whether the room be large or small. The problem is to get the best average height, the height which best combines the requirements of proportion, fresh air, and economy. It is evident that this height ought, so far as proportion goes, to be greater in a house having large rooms than in one in which the length and breadth of the rooms is smaller, but considerations of economy check the increase of height in the former case, while the necessity of head room and cubic air space limit it in the opposite direction.

The only way to arrive at a sensible compromise between mere fashion and economy on the one hand, and the claims of proportion, light, air, and liberty on the other, is to ask the question, For a room of a given length and width, what is the best height?

For example, what is the best height for a rectangular room 20 feet by 14 feet? The writer places it at 11 feet. If the room were a square of 14 feet, 10 feet would be sufficient height.

It would be interesting to hear opinions upon these matters, provided always that admiration of a low ceiling because it is the fashion were not allowed as an opinion.

The matter greatly concerns the health and comfort of everyone. Landlords and speculating builders are taking greedy advantage of the fashion which enables them to charge for houses containing about three-fourths of the cubic contents once thought a necessity, prices in excess of those formerly charged for the larger cube. The clinching argument in favor of low ceilings is usually economy in heating. Still greater economy in heating could be gained by living in an air-tight box of six feet cube. We approach this condition of things too nearly as it is, with our furnace flues pouring in hot, dry air, and our windows filled with rubber strips.—*W. N. Lockington, in Builder and Decorator.*

Shingles in Modern Architecture.

THOSE who have watched the tendency, or, we may say, the evolution, of style in wooden suburban and country houses, must have noticed the gradual disappearance of the monotonous and uninteresting clapboard, with its uncompromising horizontal lines.

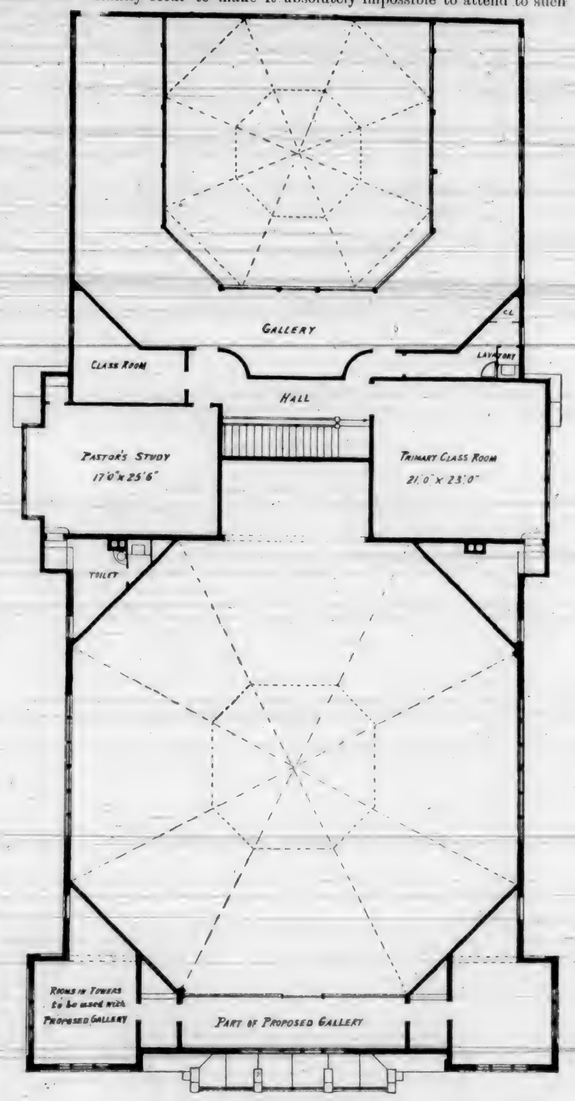
The cry is, "The clapboard must go," and it is going. But what is replacing it? The answer is instantaneous—the shingle. With the many ingenious methods of laying shingles, the greatest variety of effect can be obtained without cutting them at all.

But now comes the important question of coloring. At first paint was used, but the dull monotony of masses of color covering the grain of the wood has now almost universally given way before the modern creosote stains. Many attempts have been made to imitate the effect of stains without using creosote, but they have been sad failures, as other oils do not penetrate the wood and bring out the grain in relief. A test was recently made at the request of well-known architects of Boston, by a prominent chemist, of all the materials sold under the name of "stains." The result was that he pronounced "Cabot's Creosote Stains" among the best of them all.

These creosote stains have already been so long in use that the preserving properties of the creosote have begun to show their value on houses in all parts of the United States.

Planning of Rooms.

WHATEVER the length of a room may be, it will not be disagreeably proportioned if its height and breadth are the same: and if the length may be limited, once and a half the breadth is the most pleasing. Galleries, of course, will be much longer than that proportion, and the corridors will necessarily be narrower than they are high. Entrance halls should be cubical, regularly polygonal, or circular. Access should be given to a room by the end; it should be lighted on one side, and the fire-place may be at the other end, or on the other side; if the former, there should be two doors, or one and the appearance of another, that the fire-place may be immediately opposite a door. Many things, however, from localities and otherwise, constantly occur to make it absolutely impossible to attend to such suggestions as these. In halls and saloons not commanding a pleasing view, the windows may be advantageously placed above the usual level, for agreeable effect, for light, and for ventilation. In rooms lighted from above, as the Pantheon in Rome is, a columnar ordinance may be judiciously adapted, but otherwise columns and their accessories can seldom be well disposed internally.—*W. Hosking, in Carpentry and Building.*



Plan of Second Floor.

Remaining numbers of this year given free to all new subscribers for 1888.

Questions and Answers.

Enlarging Drawings.—John R. McC. writes: What is the quickest and most practical way to enlarge architectural and other drawings?

Answer—For accuracy and speed photography is to be recommended; but as this necessitates special apparatus and some amount of skill, you would probably find that the instrument known as the "pantagraph" would suit your purpose. These may be purchased at any store where artist's instruments are sold for from 25 cents to $20, and after a little practice are easily used, and prove very accurate. In the absence of this instrument, the enlargement may be executed by first drawing a number of parallel lines over the drawing at equal distances apart, and then other parallel lines at right angles. These are taken as the basis of measurements. Upon the plain sheet of paper lines at right angles to one another like those on the drawing are formed. Measuring with the two different scales of the original drawing and copy, an enlargement may soon be produced. Full details of the process will be found given in any of the manuals of drawing. The proportional compasses will be found to be a material assistance in the operation.

Burnt Clay for Concrete.—S. T. W. writes: In a recent number of your journal I see burnt clay is recommended as a good substitute, both for ballast to be used in forming concrete, and for sand to be used in making ordinary mortar. Will you please give me some further particulars as to the manner in which it should be prepared?

Ans.—The clay chosen for this purpose should be a stiff one. A suitable quantity having been dug, it is mixed with coal dust or small coal, and piled in a heap, previous to which a suitable fire is formed at the bottom consisting of wood, shavings, or straw, with small pieces of wood on top, then larger pieces, and finally some large coal. The fire is lighted through a touch-hole left for the purpose, and the bulk of the clay is added after it becomes well alight. In using burnt clay for ballast, it needs only breaking up; but used in lieu of sand, it will need grinding. Great care must be taken that the whole of the clay used is thoroughly well burnt.

Artificial Stone—Valuable Patent Right for Sale.

(SEE ALSO OUTSIDE BACK COVER.)

We would call attention to the description below of a new compound for artificial stone, samples of which may be seen at this office.

COMPOSITION FOR ARTIFICIAL STONE, ETC.

John Lorenz, of Muskegon, Michigan, has invented a new and useful composition forming an artificial stone, to be used in the construction of walls, paving, and all other purposes in which an artificial stone is applicable.

The nature of his invention consists in a proper combination of ashes and cinders, or clinkers, with ordinary cement to form a perfect and durable artificial stone, for the purpose above specified. A material has been used for these purposes, composed of clear ashes and cement, and also of clear cinders and cement, as well as these materials combined with lime or adhesive substances; but so far as our knowledge extends, no one but the inventor has yet used the compound formed of ashes and cinders with cement.

Experience has shown that artificial stone made of ashes and cement is susceptible to the action of the elements to such a degree as to cause it to soften, scale, crack, and easily wear out; and, further, artificial stone made from cinders and cement has been found to be too gritty for many of the purposes hereinbefore set forth, is liable to become rough by use, and requires a very large amount of cement in its formation, and consequently is more expensive than stone constructed by a combination of ashes with cinders and cement. By experiment I have demonstrated that this combination produces a stone which will not be injuriously affected by heat, water, or frost, and is, therefore, free from cracking, crumbling, scaling, or softening, and can be dressed and polished to such an extent as may be required.

The right to manufacture above on the Pacific Coast is offered for sale. Please notice adv. on outside back cover. Full particulers can be had at this office.

Material for One Hundred Yards of Three-Coat Plastering.

Eight bushels of good lime, one bushel of hair, one load of sand, one barrel of plaster of paris. Two of the eight bushels of the lime are required for the second coat; 1,440 lath, 10 pounds of nails, will do 100 yards of lathing.

HILL'S
Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and t nements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop f r the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen, also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. H. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Deyhn, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY
BUILDING INTELLIGENCE

In this and succeeding issues we intend to devote considerable space to information in connection with buildings, from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the EIGHTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

Colton.

W. R. Fox, M. D. Residence, frame. J. F. Walin, contractor. Amount $6,440. E. Newcomer, architect.

Mural Painting (new), for $3.00.
Home Hand-Book, for $10.00.

M. A. Murphy. Residence, frame. J. F. Walin, contractor. Amount, $3,360. Jones & Griffiths, architects.

Limes, Cements, and Mortars, for $4.00.
History of Architecture, for $15.00.

Transcontinental Hotel, additions. E. Newcomer, architect. Cost about $5,000.

Shavings and Sawdust, for $1.50.
American Cottage Building, for $3.50.

Methodist Church Society, frame church. Wm. Pierce, contractor. Cost, $2,650. E. Newcomer, superintendent.

Architecture and Building, $3.50.
American Cottage Building, for $3.50.

Florida, San Jacinto Co., Cal.

Kerr & Young's Hotel, frame. Amount, $10,000. E. Newcomer, architect.

Oakland.

St. Mary's College. Architect, J. J. Clark; contractor, Remillard & Co. Cost of brick work, $43,000.

Oregon.

At Salem, contracts have been let for the construction of the new wing to the Insane Asylum. It will cost $9,000.

Artisan, for $5.00.
Builders' Guide, for $2.00.

A. H. Johnson will build a warehouse on his dock at the foot of K Street.

Practical Perspective, for $5.00.
Woodward's Country Homes, for $1.50.

A two story frame dwelling is being built on the corner of Seventeenth and N Streets for John Myer.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

R. P. Earhart, ex-Secretary of State, is having a handsome building built on Tenth Street, between Mill and Market, to cost $7,000.

Woodward's Country Homes, for $1.50.
Plaster, How to Make it, for $1.00.

A great shingle-making industry can be built up on the Sound, where there are unsurpassed facilities for the manufacture of cedar shingles. The *Oregonian*, in speaking of the growing demand for cedar shingles in the East, says: "This week a local house received a telegraphic order for fifty car loads of cedar shingles. Orders from Ohio, Missouri and other Eastern points have been and are being filled almost daily. A Pittsburg man desires a great quantity, which could not be supplied at this time."

Steel Square Problems, for $1.00.
Workshop Companion, for 35c.

J. A. Van Easton will erect a $2,000 residence.

Builders' Companion, for $1.50.
Artistic Homes, for $3.50.

The new temple of the A. O. U. W. will be erected on an available site not further back than Fourth Street, and between Salmon and Oak. The building will be of brick, and cost not less than $70,000.

Wonders of Art, for $1.25.
History of Architecture, for $15.00.

The four-story addition to the Portland Savings Bank building on Washington Street will be commenced at once. It will cost about $17,000. Contract has been let for the work this week.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

Three frame stores are being built by Charles Logus on Fourth Street between K and L, Portland, to cost $3,000.

Ruskin's Works (four volumes), for $6.00.
Industrial Drawing for Carpenters, for $2.00.

Redlands.

Stimmel & Lissenden, store and office. Brick building. Cost, $5,800.

Artistic Homes, for $3.50.
Modern House Painting, for $5.00.

Y. M. C. A. Brick building. Cost, $4,000. Brooks, contractor.

American Cottage Homes, for $3.00.
Builders' Work, for $5.00.

Mrs. C. Wells. Frame residence. Lancaster & Minor, contractors. Cost, $3,000. E. Newcomer, architect.

Practical Perspective, for $3.00.
History of Architecture, for $15.

Sloan's Hotel building, brick. Cost, $15,000. S. J. Logie, architect and contractor.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

Washington Territory.

At Puyallup, a $12,000 hotel is being erected.

Science of Carpentry, for $4.00.
Universal Assistant, for $2.50.

Contract Let.—The Portland man, who put in the lowest bid for the construction of the Methodist Church in Seattle, raised his bid from $24,000 to $30,000, and finally backed out altogether and went home. The trustees immediately decided to build a brick basement, and construct the superstructure of wood. We are authorized by Rev. A. J. Hanson to state that the contract for the construction of the brick basement has been let to Mr. Parke for $2,950. He will begin work to-day, and his contract requires that the work be completed in 20 days. The basement will be of brick, 13 feet in the clear and be made ready for the superstructure, which will be let as soon as the foundation is completed.

Building Superintendence, for $3.00.
American Cottage Homes, for $3.00.

A four-story brick block 100x115 feet, is to be erected on the corner of Ninth Street and Pacific Avenue in Tacoma, for W. H. Fife. Cost nearly $80,000.

At Garfield a school building will be erected. Lawrence & Holbrook are the contractors.

Miscellaneous.

Bids for Proposed New School-houses in S. F.—Bids were opened for building, according to plans and specifications of the department architect, two school-houses, one on Union Street near Franklin, and the other on Page Street between Baker and Broderick. The bids were as follows:—

Bidders.	Union Street School.	Page Street School.
John Blake	$23,978	.....
A. McElroy	.....	$23,494
T. C. Riddell	24,350	23,990
Moore Bros.	25,453	25,493
S. P. Green	21,995	22,695
J. H. McKay	18,440	18,940
John J. Dunn	25,993	26,695
H. T. Bray & Co.	20,796	21,396
G. W. & J. W. Hansbrough	23,400	23,800

[Contract was awarded to J. H. McKay for Union Street school-house, at figures given.]

SAMPLE COPY

Ray White is building a two-story house on his Central Colony property in Fresno.

Practical Perspective, for $5.00.
Drawing for Carpenters, for $1.75.

Building is very brisk in East Oakland and a large number of buildings is going up in all portions of the eastern part of town. One of the reasons for this is the fact that a large number of good building lots is changing hands and as a natural consequence buildings are going up in many parts of town. There is a tendency here to erect houses with some attempt at ornament and the severe straight outline of the old-time building is a thing of the past. The new Williams Block on East Twelfth Street, the Fowler building on the corner of East Fourteenth Street and Thirteenth Avenue, and the Look & Leonard building opposite, testify to the new styles in vogue. In dwellings the tendency is the same way, and while the architecture is often very mixed, still the architect and the builder both show a desire to depart from the old style of cottage with the false second story, and make some improvements.

Drawing for Stone Masons, for $1.50.
Building Construction, for $1.25.

The sum of $2,300 has been subscribed by the Trustees of the University of the Pacific for the construction and completion of the fourth story to the East Hall building.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

The contract for the building of a quartz mill for the Centennial Mining Company at Genesse Valley, California, has been awarded to George Brandt, of Reno.

Hand Railing and Stair Casing, for $1.50.
Drawing for Carpenters, for $1.75.

The sale of between 40,000 and 45,000 acres of land in a body, lying south of Tulare Lake, to a syndicate of capitalists from Pasadena and Los Angeles, has been completed. Improvements will be commenced at once, including artesian wells, a new town, etc. The consideration is about $450,000.

Builders' Companion, for $1.50.
Builders' Work, for $5.00.

The railroad company are putting up their depot at South Riverside as fast as they can obtain labor and materials. The frame will be up this week.

American House Carpenter, for $5.00.
Cutting Tools, for $2.00.

At Riverside G. H. Brown will build a $5,000 residence.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

It now appears that the building of the City Hall is attracting attention outside of San Jose. Several contractors from San Francisco, Stockton and other places are figuring on the work.

Grimshaw on Saws, for $4.00.
Mechanics' Geometry, for $4.00.

Burnam Bros. have enlarged their wine cellar in Bennett Valley.

Builders' Work, for $5.00.
Building Superintendence, for $3.00.

Aaron Hassett will build a new winery at Healdsburg. Capacity, 25,000 gallons.

Lumberman's Hand-Book, for $2.00.
Practical Geometry, for $1.00.

It will take nearly 300,000 feet of lumber to build the timber foundation of Hotel Rubidoux, the work on which will be commenced this week.

Cutting Tools, for $2.00.
Cumming's Details, for $5.00.

It is stated to-day that the Santa Fe, the Southern Pacific (Altadena Road probably) and the Long Beach and Pasadena Electric Railway are to immediately build a mammoth new depot of fine architectural design at Raymond Station.

Plaster, How to Make It, for $1.00.
Shavings and Sawdust, for $1.50.

At Brooklyn, Alameda Co., Mr Frank Moryer is building a $2,000 house, Martin & McGuire are contractors.

Universal Assistant, for $2.50.
Practical Perspective, for $5.00.

Swaine & Hudson, of Marysville, were the successful bidders for constructing the new Hesperian College at Woodland, their bid being $16,780.

SAN FRANCISCO BUILDING NEWS.

A

Ashbury, nr. Waller. Two-story frame.
O.—W. T. James.
C.—A. R. Denke.
$4,700.

B

Belcher, cor. Fourteenth. Three-story frame.
O.—Mr. O. Day.
C.—J. Mooney.
$3,500.

Broderick, nr. Fulton. Three-story frame.
O.—Mr Rider.
A.—W. C. Hoagland.
C.—R. Curry.
$5,500.

Bluxome, bet. Fourth and Fifth. Additions.
O.—Mrs. M. F. Hopkins.
A.—Moore & Schultze.
C.—J. T. Grant.
$3,000.

Bush, bet. Jones and Leavenworth. Frame building.
O.—P. Boland.
A.—Charles Devlin.
C.—Moore Bros.
$7,500.

Broadway, bet. Mason and Taylor. Two-story frame.
O.—F. Grinley.
A.—W. Armitage.
C.—A. McDonald.
$2,250.

C

Calvary Cemetery. Tomb.
O.—A. Welch.
A.—J. J. Clark.
C.—Degan & Orford.
$1,700.

Clementina, No. 440. Additions.
$1,000.

Clementina, No. 442. Additions.
$1,000.

Commercial, nr. Sansome. Brick building.
O.—J. H. Fisher.
A.—H. Geilfuss.
C.—Haaf & Son.
$13,000.

D

Dolores, cor Twenty second. Two-story frame.
C.—F Weineohl.
$5,500.

Devisadero, bet Sutter and Post. Two-story frame.
O.—B. Hacker.
A.—John & Zimmerman.
C.—B. Dryer.
$8,000.

Devisadero, nr. Grove. Two-story frame.
O.—F. Rider.
A.—W. C. Hoagland.
C.—R. Curry.
$6,000.

E

Eighteenth, corner Shotwell. Two stories and basement.
O.—Rev. P. Cummins.
A.—C. Devlin.
Mason—O. E. Brady.
Carp.—Bateman Bros.
$18,000.

Eighth, bet. Mission and Minna. Two-story frame.
O.—J. Andreas.
A.—John & Zimmerman.
C.—A. Miller.
$7,500.

F

Folsom, cor. Twelfth. Two three-story frames.
O.—T. Murphy.
A.—T. J. Welsh.
C.—J. McInery.
$9,500.

Fell, nr. Fillmore. Two-story frame.
O.—J. Fogarty.
C.—J. Houston.
$2,500.

Fourth, cor. Welsh. Three-story frame.
O.—J. Shirley.
A.—Pissis & Moore.
C.—A. Jackson.
$22,000.

Fifth, Nos. 426 and 428. Additions.
O.—J. Loefter.
$800.

Folsom, nr. Sixth. Additions.
$600.

Fulton, cor. Octavia. Two three-story frames.
O.—Mrs. C. Curby.
A.—C. Kenitzer.
C.—A. Miller.
$17,000.

Folsom, bet. Fourth and Fifth. Three-story frame.
O.—C. Ingwersen.
A.—M. J. Welsh.
C.—C. Zwierlein.
$5,000.

G

Gough, cor. O'Farrell. Frame building.
O.—Mrs. Hope.
A.—T. J. Welsh.
C.—J. L. Binet.
$17,000.

Golden Gate Avenue, nr. Octavia. Two-story frame.
$1,000.

Guerrero, nr. Twenty-third. Three two-story frames.
O.—B. Edwards.
$7,000.

Guerrero, nr Twenty-third. One-story frame.
O.—T L Smith.
C.—Rountree Bros.
$1,600.

Guerrero, bet. Fourteenth and Fifteenth. Two-story frame.
O.—J. Wolf.
A.—Huerne & Everett.
C.—E. Buckley.
$4,200.

Guerrero, bet. Twenty-fifth and Twenty-sixth. Two-story frame.
O.—M. Quinn.
C.—G. Houston.
$2,600.

Geary, cor Franklin, Unitarian Church.
A.—Percy & Hamilton.
Mason.—O. E. Brady.
Carp.—Gray & Stover.
$60,000.

Golden Gate, cor. Masonic ave. Two-story frame.
O.—Protestant Episcopal Old Ladies' Home.
A.—C. V. Pierce.
C.—Kincaid & Thompson.
$20,000.

H

Haight, bet Broderick and Baker. Two-story frame.
O.—L. L. Janes.
A.—J. J. Clark.
C.—J. G. Adams.
$3,000.

Howard, bet. Third and Fourth. Additions.
$600.

Harrison, No. 728. Improvements.
$2,000.

Harrison, cor Fifth. Additions.
$800.

Haight, cor. Broderick. Three-story frame.
O.—A. Boomer.
A.—Townsend & Wyneken.
C.—A. McElroy.
$13,500.

Hayes, cor. Polk. Additions Mechanics' Pavilion.
$1,000.

Haight, nr. Steiner. Two-story frame.
O.—J. Weise.
A.—John & Zimmerman.
C.—B. Dryer.
$4,500.

L

Larkin, nr. Pine. Additions.
$500.

Larkin, cor. Washington. One-story frame.
O.—J. F. Stewart.
C.—R. M. Murray.
$3,000.

M

Mission, nr. Thirtieth. Two-story frame
O.—M. Molloy.
Day work.
$3,000.

Mason, cor. Filbert. Additions.
$800.

Market, bet. Van Ness and Franklin. Four-story frame.
O.—E. Le Roy.
A.—Pissis & Moore.
C.—H. A. Conrad.
$23,000.

Market, nr. Sixth. Store fittings.
O.—Keane Bros.
A.—T. J. Welsh.
C.—Kemp & Co.
$5,000.

Market, nr. Fourth. One-story brick.
O.—H. G. Fiske.
$1,000.

Madison Avenue, nr. Harrison. Additions.
O.—A. Trobock.
A.—W. H. Wharff.
C.—F. E. Dunbar.
$1,200.

McAllister, cor. Hyde. Four-story frame.
O.—Mrs. L. Albretch.
A.—Wright & Sanders.
C.—J. H. McKay.
$17,000.

Market, nr. Fifth. Store fittings.
O.—P. F. Butler.
$1,800.

Market, bet. Third and Fourth. Brick building.
O.—W. H. Brown.
A.—J. J. & T. D. Newsom.
C.—D. Jordan.
$18,000.

N

New City Hall. Improvements.
O.—City of San Francisco.
A.—A. Laver.
C.—M. J. Kelley.
$100,000.

O

Octavia, cor. Golden Gate Avenue. Alterations.
O.—Mr. John.
A.—John & Zimmerman.
$1,500.

Oak, cor. Gough. Two two-story frames.
O.—W. J. Byran.
A.—J. A. Whelan.
C.—R. O. Chandler.
$3,000.

P

Pine, nr. Devisadero. One-story frame.
$1,000.

Powell, nr. Clay. Alterations.
O.—Commercial School.
A.—T. J. Welsh.
C.—Bateman.
$7,000.

Polk, nr. California. Additions.
$600.

Palace Hotel. Additions.
C.—S. M. Hills.
$4,000.

Page, nr. Broderick. Two-story frame.
O.—P. J. Euler.
A.—J. Marquis.
C.—Martin & Maguire.
$6,000.

Pacific Avenue, nr. Lyon. Frame building.
O.—J. Nash.
A.—J. Marquis.
C.—Bateman Bros.
$9,000.

Polk, cor. Union. Two-story frame.
O.—J. Cantro.
C.—M. Shay.
$3,700.

Pine, cor. Franklin. Alterations.
O.—H. Simon.
C.—Langstaff.
$4,000.

Pine, nr. Baker. Two-story frame.
O.—P. Furst.
A.—Saltield & Kohlberg.
C.—C. Roeler.
$5,500.

R

Railroad Avenue, nr. Twelfth. One-story frame.
O.—G. Kirchner.
$1,000.

Railroad Avenue, Nos. 97 and 99. Additions.
$1,000.

S

San Jose, cor. Twenty-fourth. Additions.
$700.

Solano, nr. Minnesota. Two-story frame.
O.—J. Mooney.
A.—Townsend & Wyneken.
C.—C. E. Dunshee.
$4,200.

Sutter, nr. Pierce. Two-story frame.
O.—S. Siegel.
A.—Salfield & Kohlberg.
C.—Weissman.
$6,500.

Sutter, nr. Taylor. Additions.
O.—Mrs. Irnesdell.
C.—J. B. Gonyeau.
$1,800.

St. Peter's Convent.
O.—Sisters of Mercy.
A.—J. J. Clark.
B.—J. W. Smith.
Day work.
$5,000.

St. George Place, nr. Pine. Two-story brick.
O.—P. H. Seymour.
A.—P. O'Connor.
Carp.—R. McCann.
$12,000.

San Jose Avenue, cor. Twenty-fifth. Two-story frame.
O.—C. Depuy.
A.—McDougall & Son.
C.—Nelson.
$8,000.

San Jose Avenue, nr. Twenty-fourth. Additions.
$1,000.

Stevenson, nr. Eighteenth. Additions.
O.—H. Henderson.
A.—M. J. Welsh.
C.—D. Chisholm.
$1,500.

Sutter, nr. Jones. Two-story frame.
O.—C. Hathaway.
A.—P. R. Schmidt.
C.—S. H. Kent.
$9,500.

Seventeenth, bet. Valencia and Guerrero. One-story frame.
O.—R. Gatto.
A.—Copeland & Banks.
C.—W. Pluns.
$2,700.

T

Tehama, nr. Second. Four flats.
O.—J. H. Tomkinson.
A.—J. J. Clark.
Day work.
$3,500.

Tenth, nr. Howard. Alterations.
O.—St. Joseph's Church.
A.—J. J. Clark.
Day work.
$2,000.

Twelfth, bet. Mission and Howard. Additions.
O.—P. Spreckles.
A.—John & Zimmerman.
C.—B. Knaus.
$3,000.

Twenty-second, nr. Dolores. Additions.
$1,200.

Twenty-fifth, nr. Bartlett. Two-story frame.
O. and B.—Ellis.
$2,500.

Turk, nr. Buchanan. Two two-story frames.
O.—W. Vellguth.
A.—J. Newson.
C.—M. Lynch.
$11,000.

Twenty-third, nr. Bryant. Frame building.
O.—P. Collins.
A.—M. J. Welsh.
C.—A. Klahn.
$1,200.

Twenty-second, nr. Dolores. Additions.
O.—J. Hughes.
C.—Doyle & Son.
$1,700.

U

Union, nr. Mason. Two two-story frames.
O.—Mrs. Lachman.
C.—J. P. Hanson.
$7,600.

V

Valencia, nr. Twentieth. Additions.
O.—Farnsworth.
$4,000.

Vallejo, above Mason. Two-story frame.
O. and B.—J. P. Hanson.
$3,600.

W

Waller, nr. Broderick. Two-story frame.
O.—Sarah Hillyer.
C.—Thomas Elam.
$2,000.

Webster, nr. California. Additions.
O.—J. Coffey.
C.—W. Pluns.
$1,500.

Z

Zoe, bet. Bryant and Brannan. Additions.
O.—Mrs. L. McCormick.
C.—M. C. Lynch.
$4,500.

SPECIFICATIONS.

We have on hand a supply of a

NEW FORM OF SPECIFICATIONS,

Especially adapted for the Pacific Coast.

We will send a Copy to any address upon receipt of 50 cents, or $5.00 per dozen.

Also Palliser's new Specifications, just received.

We can supply any number of either the above.

SAN FRANCISCO LUMBER CO.,

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PRINCIPAL OFFICE, PIER 12, STEUART STREET.

YARDS AT

Pier 12, Steuart Street, Third & Berry Street, Pier 3, Steuart Street.

WM. B. HOOPER, Manager. C. A. BARKER, WALTER DICKINS, Assistant Managers.

Notes.

THE cause of sewer gas in a house may often be traced to an uncleaned catch-basin.

FINISH pockets to slide doors air-tight, and thus avoid a common mistake made by builders.

HIGH doors are fast being relegated to the past; wide openings appropriately draped are much in vogue.

RUBBER stops for windows, instead of wood, do away with that nuisance termed weather strips.

IN designing your house, thoroughly study your plan before contracting, thus saving much annoyance and extras.

He who expects to build a three-thousand-dollar house for two, either believes a builder a supernatural being, or pays his attorney by the year.

LOOSE SCREWS.—It is a common thing when a screw or staple becomes loose, to draw it out, plug up the hole or holes with wood, and then re-insert it. But screws and staples so secured soon come out again. It has been found that a much better way is to fill up the holes tightly with cork. Screws and irons so secured will remain perfectly tight just as long as when put into new wood.

A Carpenter and His Shavings.

A prominent city landlord, who is putting up many of the wooden houses in a district which is being rapidly filled, when asked by an old resident for a few barrels of shavings the other day, replied: "We don't have any shavings in the houses now; they are all made at the mill, and you will have to go there for them." I don't believe that the carpenters nowadays make more than a barrel of shavings in building a house. Modern residences are put up pretty much as Solomon's temple was, the parts are brought together all prepared and fitted, and it is short and easy work to put them together.

The wooden house is turned out of a saw and planing mill much as if it were a toy block. Like ready-made clothes, the average mechanic can put up a ready-made house, while there is still the same opportunity for elaborate workmanship and outlay as in fine clothing.

WE have received the Prospectus of the Academy of Architecture and Building, located at 3066 South Ninth Street, St. Louis, Missouri, of which H. Maack is the principal. The institute is designed to be for the building trades what the commercial colleges are for business men. Instruction is to be given only during the winter, leaving young mechanics their time to devote to remunerative employment during the busier months of the year. By this means, it is argued, young men who could not otherwise afford the cost of instruction, will be enabled to avail themselves of the opportunities afforded. The circular contains the course of study through three terms, and also indicates the requirements for admission, as well as cost. This enterprise seems to be a commendable effort to afford technical education in a form to be of the greatest service to young mechanics in the building trades.

Table of Multipliers for Short Calculations to Ascertain the Number of Pounds.

FOR	cast iron	multiply	the	cubic	inches	by	260
"	"	"	"	"	feet	"	450
"	wrought iron	"	"	"	inches	"	281
"	"	"	"	"	feet	"	487
"	stone	"	"	"	inches	"	9
"	"	"	"	"	feet	"	156
"	lead	"	"	"	inches	"	41
"	"	"	"	"	feet	"	710
"	oak	"	"	"	inches	"	33
"	"	"	"	"	feet	"	58
"	clay	"	"	"	inches	"	78
"	"	"	"	"	feet	"	135
"	water	"	"	"	inches	"	36
"	"	"	"	"	feet	by	$62\frac{5}{100}$

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

Professional Partnership Desired.

I DESIRE to correspond with any young architect or draughtsman who has a thorough knowledge of construction and building, and who is desirous of going into business for himself, and who may be desirous of a partnership, to locate at Colton or vicinity. Can guarantee a good practice; have had five years' experience in architect's office. Address all correspondence to

WM. A. NETHERCOT,
Box 201, Colton, Cal.

AMERICAN GLOSSARY OF ARCHITECTURAL TERMS.

PRICE, FIVE DOLLARS.

IN our notice of this really excellent publication in our last issue, we inadvertently gave the price at $2.50. It should have been $5.00. A consignment is now on the way, and all orders can be promptly filled.

HILL'S PATENT INSIDE SLIDING BLINDS.

THAT advertising does pay is shown by the re-insertion of the advertisement of above blinds. The rushing city manager, Mr. Hindes, concluded that he would not be *blind* to his own interests any longer, and so is reaching out for the trade of the whole Pacific Coast. This journal was selected by him as the most proper medium to secure that end, and the result will soon be shown in the numerous orders that will pour in upon him.

POOR'S DIRECTORY OF RAILWAY OFFICIALS.

PRICE, TWO DOLLARS.

THIS publication for 1887 (the second annual number) has just been issued. It contains very complete and admirably arranged lists of steam and street railroad officials corrected up to the time of publication; also lists of car and locomotive builders, car axle, wheel and spring manufacturers, railroad contractors, bridge builders, and rail mills. In addition to the general list of railroads, which for convenience is made to conform to that of the "Manual," there are special lists of general managers, general superintendents, freight and passenger agents, master mechanics, master car builders, master car painters, purchasing agents, and chief engineers. The volume also contains an alphabetical list of the names of all the officials in the general list, by means of which the road with which each name is officially connected can be readily referred to. The railroad commissioners of the several States, officers of sleeping and parlor car companies, and a list of Mexican and Central and South American railroads, are also given. The "Directory" is intended to be supplemental to the "Manual," and contains a vast amount of information which cannot be given in the larger publication without increasing its size to unwieldly dimensions. It should be noted that in one respect the present number of the "Directory" is a great improvement upon that of last year; it opens sideways like an ordinary book, instead of endways.

Market Reports.

THE retail price list of the California Lumber Exchange for September 9, 1887, is as follows:

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4, 1¼x3, 1x3 and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G. Beaded, under 7 feet	24 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1½	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ½x3, per lineal foot	01

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 10.

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Terms per annum - - - - $2.00 in advance.

Published on the 15th of each Month.

When money is sent for subscriptions, the receipt of a copy of this Journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	**Per Square**	**$ 2.50**
Back Cover, Outside, Each Insertion	**do.**	**2.00**
Page Preceding Reading Matter	**do.**	**1.75**
Page Following Reading Matter	**do.**	**1.50**
Inside Pages	**do.**	**1.00**
Full Page Inside	**One Insertion**	**40.00**
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., OCT. 15, 1887.

Weekly Building Edition

OF THE

California Architect & Building News.

FAVORABLE progress is being made towards establishing our WEEKLY EDITION. Extra pains are being taken to collect building information from every portion of the country. The WEEKLY EDITION will be 10x13 inches in size, and ENLARGED AS OCCASION MAY REQUIRE. It will only contain building news and will not, under any circumstances, be used for any other purposes. Positively no advertisements will be inserted. It will be delivered FREE to yearly subscribers of the CALIFORNIA ARCHITECT AND BUILDING NEWS. Thus, for the sum of TWO DOLLARS PER YEAR, you will obtain the WEEKLY BUILDING NEWS, giving you all the latest information, and the CALIFORNIA ARCHITECT, with its twenty-eight pages of interesting matter connected directly with all branches of the building trades, embellished with several pages of illustrations, showing plans for all kinds of city and country houses. Now is the time to subscribe. **Remaining numbers of this year given free to all new subscribers for 1888.**

THE attention of architects is called to the proposals for plans for the Provincial Royal Jubilee Hospital at Victoria, B. C. See page 140.

BALTIMORE, Sept. 27, 1887.

CALIFORNIA ARCHITECT AND BUILDING NEWS—*Dear Sirs:* Our advertisement in your September number is of no value to us, but a positive injury, as you have the cut of the pulley upside down. The screw end is the top of the pulley.

Yours respectfully,
C. SYDNEY NORRIS & CO.

While we sincerely dislike to do anything displeasing to our advertising patrons, and especially so when assuming the magnitude of "positive injury," yet we are almost glad that our printer did for once, not knowing nor pretending to know the bottom from the top, perpetrate the blunder of turning things upside down in this case, as it has called out the foregoing communication from the firm interested, and demands of us correction and reply. That a printer might innocently make a mistake of the kind is admissible, but when a competent mechanic, a mill man, who has handled thousands of pulleys, deliberately perpetrates a like error in the practical use and application of the pulley in question, it gives rise to the presumption that some of the gear in his mental mechanical department must be terribly deranged or fractured—very much upside down. For if the mechanical construction of the pulley suggests anything in reference to its proper position, it is that the beveled, dove-tailing end should be placed downward to carry the weight of sash, glass and weights, with the screw in the upper end, simply to hold the head in flush with the pulley stile, the bottom being insufficient for all other purposes.

Messrs. Norris Co. were doubtless provoked almost to madness when the mistake of the printer was noticed, and we can imagine them in a state of frenzy, ready to pull somebody's hair, if not their own; but if they had been called upon to witness what we personally met with during the present season they would have been vexed, *almost* as much as we were, and would have been provoked to say as many naughty words as we uttered, when the window frames containing nearly 200 of the Norris pulleys were delivered at the building with every pulley placed in the pulley stiles just as they appeared in the September issue, top end and screw at bottom, and the beveled bottom end at top.

Had this been the result of a set of "jackknife carpenters'" misconception there would have been the palliation of ignorance or stupidity, but occurring as it did in one of the largest and best equipped mills on this coast, where none but competent workmen are employed, it amounts to a sort of hallucination, in which the faculties became deranged and finally settled down with the wrong end up.

The excuse. When called to an account the reason given was that when the pulley is placed upside down, the letters of the word "patent" are upright, while when the pulley is rightly placed, "patent" is upside down. There is a small thread of argument and reason in this which Messrs Norris & Co. might correct, as to some extent misleading; but this should weigh nothing in the mind of practical mechanics as against the conclusively certain proper position of the pulley, as clearly shown by its construction.

Merits of the pulley. We have never used a pulley that works prettier, nor gives more complete satisfaction, being positively noiseless, which, in comparison with the distressing rattling noise of the ordinary patent pulley, makes them invaluable, and the smooth steel pins of the axles, and the large smooth grooves in the wheels, assure long wear and great service in both pulley and sash cord. They are safe to recommend any time.

San Francisco Chapter, A. I. A.

THE regular meeting of the Chapter was held on the 7th inst. and was largely attended. President Pissis presided; B. E. Henricksen, Secretary. After reading an approval of minutes, the reception and payment of bills, and the usual routine of business was transacted, the standing committees made report of progress. The Committee on Fire Ordinances also reported, reciting the facts of the interview with the Committee on the Board

of Supervisors, at which were present of Chapter members, Messrs. Pissis, Welsh, Henricksen, Gash, Wolfe, Bestor, Clark and others. The proposed amendments are elsewhere noticed. Gingero Harmada, having been duly proposed at previous meeting, was elected associate member of the Chapter. Several communications were received from the Secretaries of the A. I. A. and the Western Association of Architects, in reference to the annual sessions, inviting co-operation. But the time limiting the opportunity for action having passed, the matter of necessity went to file. The election of officers for the ensuing year was next taken up, and resulted as follows: President, George H. Sanders; Vice-president, E. Moore; Secretary, G. H. Wolfe; Trustees, John Wright, A. Laver, B. E. Henricksen, A. Pissis, James E. Wolfe. Congratulations and general discussion ensued, and the expression of hope and promise that the Chapter, under the efficient leadership of the newly-elected President, would be of the most satisfactory character.

It would be well for the architectural profession upon this coast, if the good and right intent, purpose and work of the Chapter organization could be appreciated and entered into with earnest zeal. Much might be done worthy of doing, and good accomplished without injury to anyone. Why not have it so that there would be an annual gathering of the architects upon this coast, of like character with the other semi-national associations which meet once a year, gathering their members from many States and sections of the country? The American Institute of Architects was the first to organize as a grand or parent organization, for the purpose of concentrating and developing the possibilities of the profession, preserving its grand record of facts and the history of the past as made by the army of worthy men, who, in past periods and ages, did so much to ennoble and magnify the science of architecture. This was followed by other conclaves, embracing one or several States, as the *Western Association of Architects*, and they have all to a greater or less extent accomplished desirable results, and a large degree of enthusiasm attends their annual sessions.

Then why not the architects of this coast enter into the Chapter work, and from thence evolve the *Pacific Coast Association of Architects*, holding its annual sessions, and inviting members of the profession from every section of the United States to visit us? Why not be alive to our professional interests beyond the mere mercenary features, and give a little in time and money to enjoy the rich repayment which would follow and flow through a sectional grand body?

Its Continued Prospects.

NOT boastfully, but in a spirit of appreciation and honest gratitude, we refer to the present healthful and substantial condition of this Journal. It has done well, is now doing well, and the prospects for its future are entirely satisfactory. Its eight years of growth, with their sunshines and storms, has matured it into a thrifty, sturdy and successful enterprise, notwithstanding the many sources of opposition which have aimed to cripple and injure its influence. We do not ask credit for anything brought about by its agency, but those who will follow the currents through from 1879 to the present time, noting the landmarks as they pass along, will scarcely be able to escape the conviction that this journal and its management has exerted an influence in numerous ways for good, and that it has *preceded* in many directions claimed by others as enterprise. No better proof can be asked or given as to its prosperity than reference to its advertising columns, while its subscription list of paying subscribers continues to increase.

Amending the Ordinances.

THE Committee from the Board of Supervisors, Messrs. McDonald, Hawkins and Knorp, with the committee from the Fire Wardens, Messrs. Kelly, Mahoney and Siebe, have for several weeks had before them certain amendments proposed by or from the Fire Warden and Underwriter standpoint, some of which relate especially to building construction, and, therefore, of interest to, and should elicit and receive the personal or delegated attention of, every member of the profession. There is no special duty resting upon any one or limited number of architects to interest themselves in the matter, and if they did, it is altogether likely that the charge of extra officious would be hurled at them by those who will neither do themselves, nor appreciate the doings of others. One of the proposed amendments increases the thickness of walls, and consequently the cost of brick buildings, in that it restricts thirteen-inch walls to the last or upper story only, instead, as heretofore, permitting thirteen-inch walls for the third and fourth, fourth and fifth, etc., stories.

Another proposes to limit the height of buildings to sixty feet from the level of the sidewalk, to the extreme height over all, including main cornice and the horizontal finishes above same. This is insufficient and inadequate as a maximum height, and surely discriminating and unfair as between lots level or on the low or declining grade sides, and those on the high or hill sides of streets—the latter certainly and reasonably requiring greater latitude as to height.

Another proposes relief, by increasing the limit of span between walls, which heretofore has been 85 feet. The amendment suggests 100 feet, but this is opposed by the chief engineer of the fire department, upon the grounds that he *thinks* and *considers* that 85 feet is enough. The architects present before the committee asked that the limit be extended to the full width of buildings erected on 50-vara lots. This was met by the suggestion from the chairman of the committee, that the limit be made equal to two water lots—two-thirds of a 50-vara lot.

Other amendments affecting theaters, halls, and places for public assemblages, elavator shafts, etc., are in the category of the proposed amendments, requiring a great deal of study and just discrimination to render them equitable. The problems involved should receive the earnest attention of several thoroughly practical, qualified minds, to arrive at the best and right conclusion.

The entire ordinance as a whole is a map of more or less crude ideas thrown together in a heap, and nothing short of raking the whole pile over, segregating the good and practical that may be found from the absurd and impractical, and the introduction whole cloth of an entire new construction, will be the successful means of producing a fairly complete fire and building ordinance.

The doubtful and possible of double-construction sections, the unnecessary and absurd requirements and restrictions, the empowering of incompetent men, wholly ignorant of mechanical principles as applied in construction works, to dictate and domineer over those who have applied all the years of their boyhood and manhood to qualify themselves as practical architects or builders, and many other wrong features, render the Ordinance under notice far from fair, just, right and equitable, and most unquestionably objectionable to those who suffer so many vexations and annoyances from an arbitrary, insufficient and imperfect law.

THE Abrahamson Ventilator, a California invention, has proven itself a most valuable and practical device, and is working its way into general use. In addition to the numerous other testimonials in its favor is the fact that it is being included among the indispensable good things in buildings recently erected or to be erected as soon as arrangements can be made—among them, H. Lebes' factory, the three new public schoolhouses, residence of Mr. Swabacher, Clay Street near Franklin, New City Hall, San Jose, Fresno Jail, Presbyterian Churches at Oakland and Alameda, Woodland Bank, United States Mint, and elsewhere.

Building Summary for October.

A summary of our reports shows a decided gain over the similar period of last year. During the month we report:—

63 frame buildings, value	$257,840
2 brick " "	37,200
19 alterations "	55,300
84	$350,340

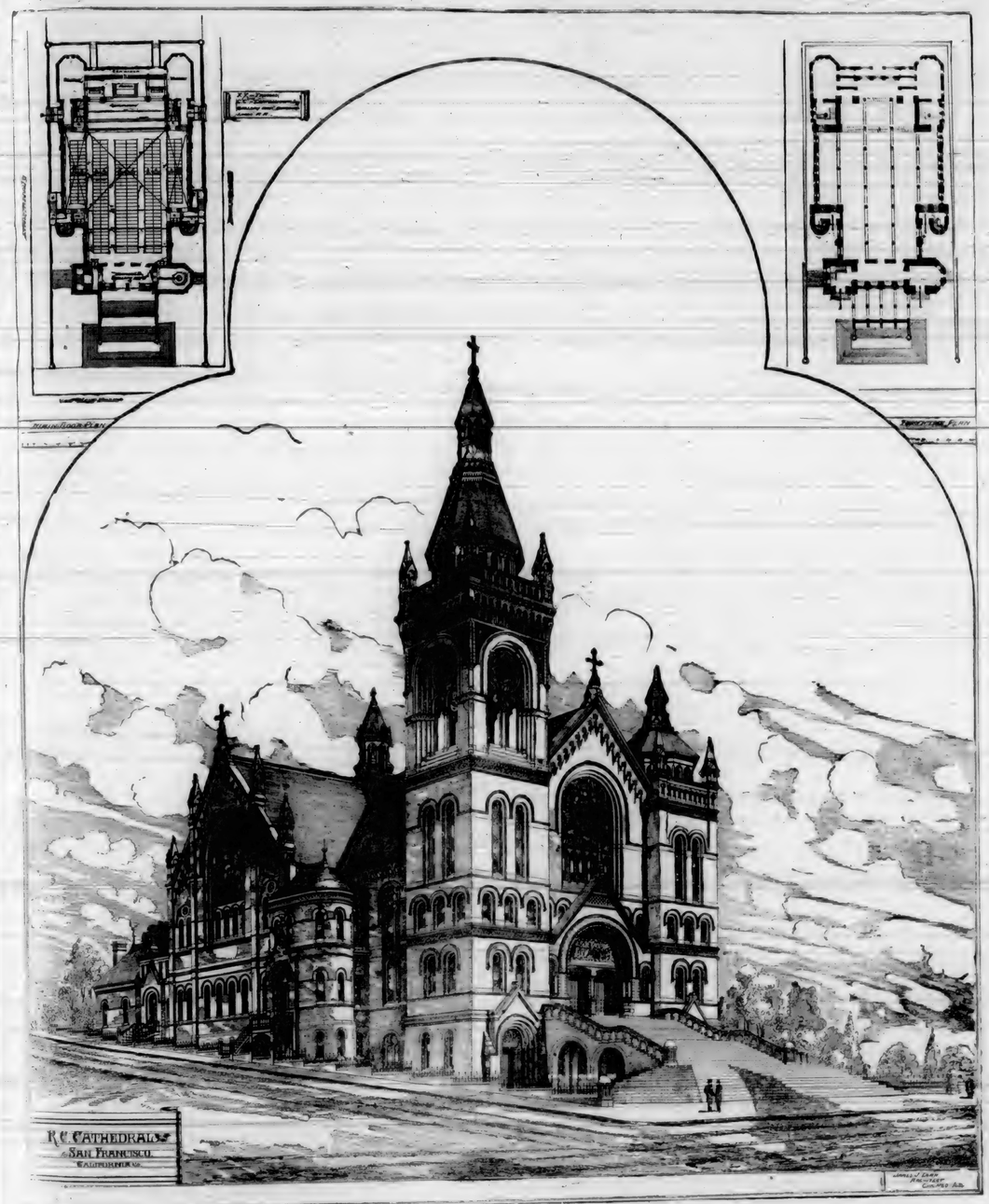
During the first ten months of 1886 the record shows 1,001 buildings; value, $5,107,642.

During the first ten months of 1887, the record shows 923 buildings; value, $5,562,254.

Showing a decrease in *number* of 78, and a gain in *value* of $454,612.

This is a very fine showing. From present appearances the number of improvements made this year will about equal those of 1886, but the value of the same will largely exceed the same in the grand total.

INTERESTING correspondence may be anticipated in the next succeeding issue of this journal, of items gleaned by the wayside, by the editor of this journal, during a trip across the continent, and through nearly all the more prominent cities of the country.



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PRESENTED BY THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

PERSPECTIVE VIEW OF THE NEW ST. MARY'S CATHEDRAL.

Corner Van Ness Avenue and O'Farrell Street, San Francisco, California.

California Architect and Building News,

240 Montgomery Street, San Francisco, Cal.

Published Monthly by the San Francisco Architectural Publishing Co.

On the 15th Day of Each Month.

Established January, 1879.

Weekly Building News,

PUBLISHED EVERY SATURDAY.

The Weekly Building News will contain all the latest items in regard to buildings in every portion of the State. As far as possible we intend to make a specialty of obtaining news in advance of contracts, particularly in country work. Architects can greatly aid us in this regard by forwarding notices of intended improvements upon which they desire bids from City Contractors. There will be no charge for any such notices published in the Weekly.

The Monthly California Architect and Building News contains several pages of illustrations in each number, embracing every description of city and country business buildings, residences, farm and school-houses, churches, suburban homes, etc. Also 28 pages of reading and other matter prepared especially on matters pertaining to the building interests.

Price of the Two Publications, $2 per Annum.

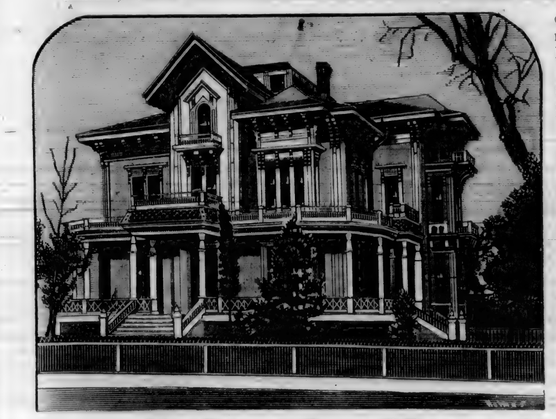
Purchasing Agency.

Connected with this office is an agency for the purchase of everything pertaining to the building interests. We do not seek to make pecuniary profit from this branch of the business. As far as possible, consistent with business principles, we will purchase from those advertising in the California Architect, and endeavor to help those that help us. But we are not bound so to do. In all cases we will seek to obtain the lowest market prices, and patrons can depend upon being furnished the best goods of the kind ordered, in the shortest space of time, and at the lowest cost.

OUR BOOK DEPARTMENT.

Manual of Industrial Drawing for Carpenters	$2 00	Amateur Mechanic's Workshop	$3 00	Essentials of Perspective	$1 50
Illustrated Drawing Book	1 00	Every Man His Own Mechanic	3 50	Modern Architectural Designs and Details	10 00
Mathematical Drawing Instruments	1 50	Handbook of Legendary Art	3 00	Detail Cottage Architecture	6 00
Drawing for Carpenters	1 75	Dwellings, Reed	3 00	Leffel's House Plans	3 00
Shavings and Saw Dust	1 50	Plumbing Appliances	1 50	Science of Carpentry	5 00
Linear Drawing	1 50	Modern House Painting	5 00	Mechanic's Geometry	5 00
Practical Draughting	1 00	Stair Building Made Easy	1 00	Artisan	5 00
Drawing for Cabinet Makers	1 50	Cabinet Maker's Companion	1 25	Artistic Homes	3 50
Handrailing and Staircasing	1 50	Manual for Furniture Men	1 00	Mechanical Drawing	1 00
Painter, Gilder, and Varnisher	1 50	Rural Architecture	1 50	American House Carpenter	5 00
Water Closets	1 00	Architecture, Horton	1 50	Building Superintendence	3 00
Sewer Gas	1 25	Wonders of Art	1 25	Builder's Companion	1 50
Steam Engine Catechism	1 00	Common Sense in Church Building	1 00	Cutting Tools	1 50
Paper Hanger's Companion	1 25	Old Homes Made New	1 50	Cottages	1 00
Builder's Guide	2 00	Hints on Household Tastes, by Eastlake	3 00	Ornamental Drawing	1 00
Cozy Homes	25	American Cottage Builder	3 50	Grimsnaw on Saws	4 00
Principles of House Drainage	1 00	The Suburban Cottage	1 50	Universal Assistant	2 50
How To Paint	1 00	Homes for the People	2 00	Limes, Cements, and Mortars	4 00
Practical Geometry	1 00	Country Homes, Woodward	1 50	Trussed Roofs, Ricker	3 00
Lumberman's Hand Book	2 00	Cottage and Farm House, Woodward	1 50	Gould's Carpentry	2 50
Lien Law	50	Suburban Houses, Woodward	1 50		
		Rural Homes, Wheeler	1 50		

Bound Volumes of California Architect and Building News, $2.50.



Front Elevation "Woodland" Home.

A "Woodland" Home.

THE plans and elevation of a "Woodland" home are well worth the attention of those desiring to build a home that will contain all the necessary requisites to make a country or suburban dwelling truly home-like and comfortable. Entering a spacious front hall, you are at once struck with its handsome appearance, a direct view being obtained of the stair hall with its winding stairs. You pass into the large parlors, arranged especially for comfort, and having superior advantages in the way of light and ventilation. Across the stair hall is shown a large sitting-room, in size 16x22, with five windows, giving ample light. Two bedrooms lead off on either side, and a passage to the dining-room. The kitchen is in close proximity to the laundry, wood-house, etc. On the second floor are seven bedrooms, all well supplied with cupboards. Messrs. Gilbert & Son, of Woodland, are the architects, and the plans shown are of only one of the numerous fine dwellings that have been built by this firm.

THE HOTEL VENDOME, SAN JOSE.

Plans and Specifications Adopted—Work to Be Begun at Once.

AT a meeting of the Hotel Vendome Directors, the plans and specifications prepared by Jacob Lenzen & Son, of 75 East Santa Clara Street, San Jose, were unanimously adopted, and by the coming week contractors will be figuring upon the work.

The Hotel Vendome will be one of the most commodious and elegant suburban hotels in the United States. It will be in the Queen Anne style, and no expense will be spared to make it in every way attractive, comfortable, and luxurious—a credit to San Jose and to the gentlemen who conceived the enterprise and are now, with commendable alacrity, carrying it into execution.

The new structure will be situated 250 feet from First Street, which it will face, and 25 feet from Vendome Avenue. It will stand somewhat back of the Maddox residence, as now situated. The latter building is to be removed to the corner of San Pedro Street and Vendome Avenue, and will be used as a club-house, after the necessary changes in both exterior and interior have been made.

The hotel will have a frontage of 254 feet. The central portion, or main body of the building, will have a depth of 210 feet, with which will be connected two wings, each 42 feet front by a depth of 120 feet. The foundation will be of brick, with pressed brick facing, and the building proper of wood. The floors will be all doubled, with mortar deafening.

The basement will be 9 feet clear, the first story 15 feet high, the second story 12 feet, third story 11 feet, attic 10 feet.

The basement will contain dining-rooms for servants, barber shop, fuel and store rooms, bakery, etc.

On the first floor will be the main entrance, 41x66 feet, in which will be located the office, grand stairway, elevator, private stairway, etc. Here, also, will be the dining-room, —x80 feet, with two wings, 30x40 feet, 30 chambers, ladies' parlor, billiard-room, reading-room, baggage-room, etc.

There will be fifty-three rooms on the second floor. Here suites can be extended to seven rooms, if desirable, and on the front nine rooms can be merged into a single suite. Here, also, will be toilets, bath-rooms, etc.

A nequal number of rooms will be on the third floor, with the same facility for suites and an equal number of toilet and bath-rooms.

In the attic there will be forty rooms.

Three towers will rise from the hotel, the central one to be 100 feet high and the others about 85 feet each.

Fire-places will be constructed in each of the principal rooms. Steam will be used to heat the corridors and for other purposes.

The grounds surrounding the hotel will be graded up to the basement, for which no digging will be required.

The stables, laundry buildings, etc., will be situated at some distance in the rear of the hotel.

Jacob Lenzen & Son will have the plans sufficiently completed in detail by Tuesday to permit contractors to make estimates upon the different portions of the work, which Mr. Lion states will be pushed forward as rapidly as possible.

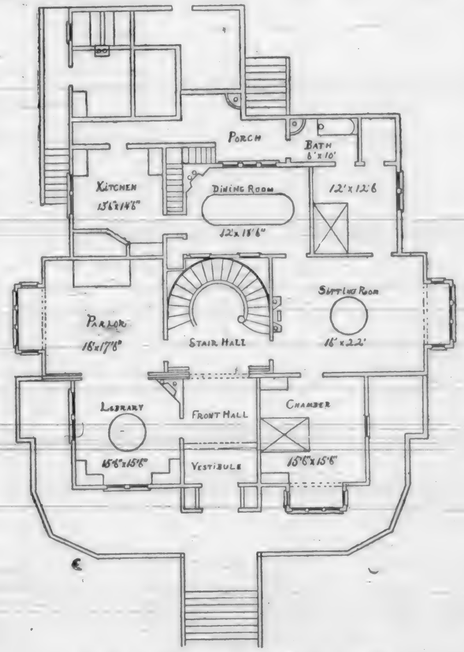
NEW WORKS JUST RECEIVED.

"MANTELS AND SIDE WALLS."

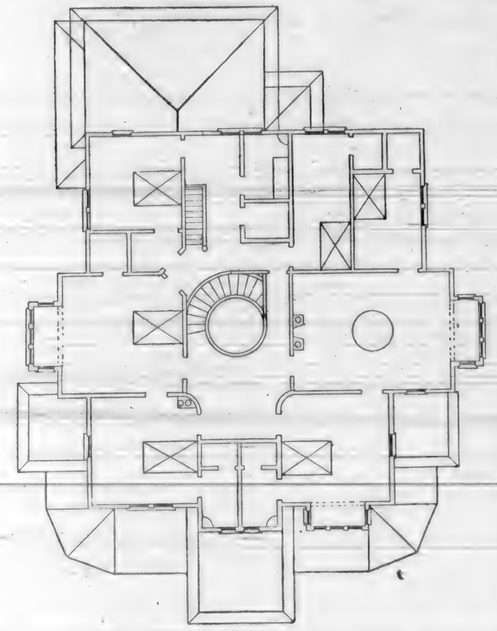
Thirty-two lithographic plates in a portfolio representing designs in the *Cheminee*, Louis XIII., and Louis XVI. styles. Also plates showing various accessories such as mirrors, decorative panels, wainscoting, clocks, etc. These plates are all by the celebrated designer, M. Prignot. Price for portfolio, $5.00.

"SHORT HISTORY OF ARCHITECTURE."

From Chas. Scribner's Sons we have received a copy of this new work by Arthur Lyman Tuckerman. The general design the author had in view was to trace the origin of each style, its characteristic points, and its connection with those which preceded and succeeded it, without introducing technical terms or any but the most important dates. All the great historical events are presented within a small compass. A fuller description will be given soon, as the book was received too late for an extended notice.



First Floor Plan "Woodland" Home.



SECOND FLOOR PLAN "WOODLAND" HOME.

Industries in Lumber.

AS San Francisco is the great maritime center of the woodlands of the Pacific Coast. it would seem to be a foregone conclusion that it should be the seat of great industries in lumber. Add to that the fact that most of the houses of the coast are of wood, and it should appear as if it ought to be overshadowing. As a matter of fact, however, some other special lines of industry surpass it in importance. The quantity of lumber consumed in California in the course of a year is about five hundred and sixty-four million feet, of which two hundred and sixty million feet come from Puget Sound. Thus very nearly two-fifths of the whole is imported. The value of the whole in the State is about eleven and a quarter millions of dollars. Of this San Francisco handles yearly three thousand million feet, worth six million dollars, all coming from the coast from Puget Sound to the Golden Gate, and employing quite a fleet of vessels in its transit. Thus far the raw material which the planing-mill, the manufacturer of doors and sashes, the producer of furniture, the manufacturer of boxes, converts into myriad forms of usefulness and many of beauty. The planing-mills of San Francisco and the manufactures of sashes, doors, and blinds, equal about six millions of dollars in value. Besides supplying lumber for house building to the city and suburbs around the bay, we export largely of doors, sashes and blinds to every port on the Pacific. The furniture industry will equal in value this year a million and a half of dollars, and what magnificent furniture we can turn out anyone may see for himself in the pavilion. Our box makers have a great field to supply. The value of the product this year will not be less than a million and a quarter dollars. There is a great increase, owing to the heavy packing of canned and dried fruit and of salmon. Cigar boxes of themselves equal in value say $250,000. We have not included cooperage stock in the value of lumber imports to San Francisco, but from the extension of our wine and beer industry the value of cooperage made in San Francisco cannot fall short of a million dollars. Carriages and wagons, of which there are some fine specimens in the fair, will equal a million dollars in value. We will make nearly a hundred thousand dollars in value of billiard goods. Our wooden-ware factories will add to the value of our industries in this line not less than two hundred thousand dollars. The totals of the leading industries noted will not be less than eleven and a half millions of dollars. The grand total of San Francisco's industries in this line will at least equal thirteen millions of dollars. The processes of manufacture, therefore, on the whole about double the value. The importance of this interest must steadily increase, and it must grow even more rapidly than the growth of the city.

California Veneers.

CALIFORNIA sycamore is a wood that is as little known as it is handsome. It has the appearance of quantities of fine vertical lines close together and generally wavy. It looks very much like the Eastern beechwood, and before its value for finishing and decorating was discovered it was used for cigar boxes. It is called buttonwood in New York. Sycamore is used principally for veneering, as it is very strong and can be cut easily. It is a very unostentatious wood, being rather fine in its markings and quiet in its shades.

For fancy decoration, panels of furniture, doors and other places where a highly marked wood is required, the redwood, laurel, sycamore and walnut are greatly used. They are usually found handsomely marked. The redwood is probably the most used, as it is not only cheap, but is very beautiful More variety can be found in this wood than in any other. The walnut is still used, but is gradually giving place to the fancier and more modern woods. The tendency nowadays is to make furniture from lighter and fancier material than formerly, and the somber, gloomy walnut, with its massive appearance, is gradually giving place to the lighter woods.

The finishing of a house is usually done by veneers, as it is cheaper and just as satisfactory as solid wood. The wood is cut into veneers of about one-eighth of an inch in thickness, and they are then planed and polished until reduced to the required dimension. In very hard woods such as the mahogany, the veneers are very thin indeed, being a thirty-second of an inch in thickness, and often thinner. The polishing is a somewhat slow and laborious job and is always performed by a skilled and special man. It is done by rubbing the wood with boiled linseed oil until it assumes a high polish. Only hard woods can be used, because others do not take a good polish, nor do they last for any length of time.

It is only during the last eight years that the finishing of houses in natural woods has come into prominence at all, and up to a very few years ago this style of interior decoration was used by few except the rich and esthetic, but of late it has sprung into a deserved prominence. When two or more woods are combined the effect is often very handsome, and the many who are using this method of finishing attest its popularity.

The wood must be cut so as to bring out the figure, or the markings of the wood, otherwise it is worthless. To do this requires great skill and knowledge of the natures of the various woods. Occasionally an apparently worthless piece of wood is found which will contain some very fine and striking markings, in which case somebody usually makes a small fortune, for the prettier the markings the more valuable the wood. The wood generally used comes from Santa Cruz. Occasionally a piece is found which will contain some perfect figure, as an animal, a head or some geometrical figure. This wood is, of course, very valuable and greatly prized.

The figuring in woods is generally attributed to the fact that the bark of a tree outgrows the interior, and then becomes wrinkled in the attempt to fit itself to the tree. The tree comes to its assistance and attempts to fill up the wrinkles, thus causing the markings. Woods that grow in well-watered soil are always most highly marked on this account.—*Wood Worker.*

"ARTISTIC HOMES."

GEO. W. MYERS has forwarded us a copy of "Artistic Homes." The price is $1.00. It contains thirty-two designs of various kinds of dwellings and is well worth the price asked.

"RECENT PRACTICE IN SANITARY DRAINAGE."

THIS is No. 93 of Van Nostrand's Science Series. The full title is, "Notes Embodying Recent Practice in the Sanitary Drainage of Buildings, with Memoranda on the Cost of Plumbing Work," by Wm. Paul Gerhard, C. E. For sale at this office. Price, 50 cents.

THE HANDSOME ILLUSTRATION OF THE NEW ST. MARY'S CATHEDRAL to be built on the corner of Van Ness Avenue and O'Farrell Street, is taken from the *Inland Architect and Builder*, of Chicago. The editors of that journal kindly furnished us with an electro of the cut, by which we are enabled to present to our readers a beautiful view of the "great cathedral" of San Francisco.

The New City Hall of San Jose.

HEREWITH is presented a view showing the front elevation of the new City Hall. This structure will be one of which San Jose may justly be proud. From the view here presented it may be seen what an imposing edifice it will be.

As seen from the engraving, which shows the north or main front, the structure will be two stories with a basement. In the center of the front will arise the clock tower, and chaste pavilions will ornament the four corners. The finish on the four sides will be similar. The windows are large, with semicircular tops, and they will give the building a light, airy appearance. The style of architecture is modern, with a blending of Grecian, presenting a solid but ornate appearance.

The edifice will be of brick. The basement, laid in the excavation already made, will be of solid masonry plastered on the outside to represent stone work. Above the basement the exterior will be pressed brick, the interlying mortar striped with black putty. The steps to the vestibule, the lower floor, and the coping will be of granite; the water tables, window sills, etc., will be of artificial stone; and the ashlars, cornice, and general trimmings will be of terra cotta. There will be appropriate projections and recesses in the sides so as to avoid sameness and give a symmetrical outline to the whole.

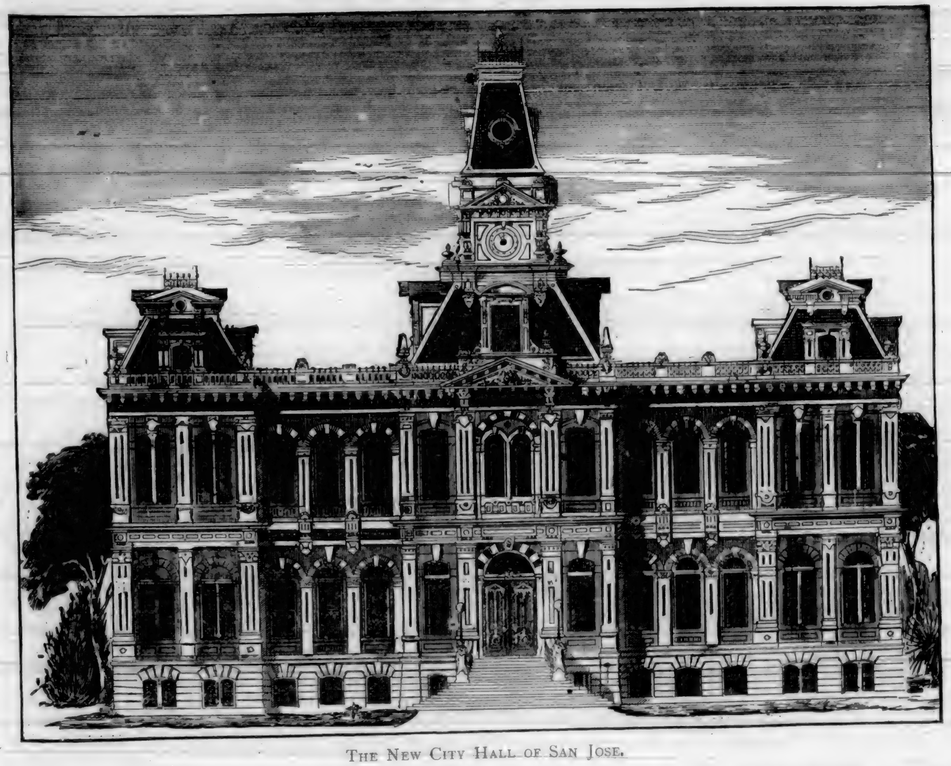
The inside finish is in keeping with the exterior. Care has been taken to secure the very best means of lighting, arrangements having been made for either gas or electricity; also for supplying water throughout the building, and for draining. The heating apparatus, likewise, has been carefully attended to, and will be either by steam or hot-water radiation.

The basement will be provided with a passage through the center for the accommodation of carts bringing coal and other supplies, and the police carriage. In the basement will be the offices for the police, the jail, and rooms for the storage of supplies, and the furnaces and engines for the use of the building. The rooms in the basement will all be ten feet six inches clear in height, and the walls will present a brick finish.

The first story presents a spacious vestibule and entrance facing Market Street, looking northward, and a side entrance facing San Antonio Street. The front entrance is 32x34 feet, opening into a lobby 18x44 feet, which connects with two stair halls, 20x50 feet. On the west side of the main entrance is the Mayor's office, and two rooms for the Treasurer. Back of these will be the witness room, connecting with the Police Court room, 40x40 feet. On the east side will be the office of the City Attorney, of the School Superintendent, and, connecting with the latter, the room 20x30 feet for the Board of Education; also a jury room. All the rooms in the first story are to be plastered and will be 21 feet 6 inches high.

Two large stairways conduct from the lower to the second story. In the front part of this story, under the main tower, will be the Council Chamber, 32x84 feet. On this floor will be the offices for the City Assessor and Clerk, the City Engineer, a reading-room, and a large hall, 30x40 feet, for the Free Public Library. The rooms in the second story are to be 24 feet clear.

Should there be a demand for the space the pavilions may each be fitted up with one or more comfortable rooms. Likewise in the tower several fine rooms might be arranged. The room under the belfry, and just over the clock, provided with four oriel windows, will make a fine lookout, commanding a view of the whole city and the surrounding country. A stairway is provided for the tower to ascend to the upper deck.



THE NEW CITY HALL OF SAN JOSE.

The main building will be 132 feet long, facing Market Street northward, and 93 feet deep. The height of the main building will be 60 feet, and that of the tower to the upper deck 112 feet.

The awards for the construction are as follows: F. Altman, cast-iron work, $1,887; F. Kuchenbeiser, wrought-iron, $5,890; Coombs, Blanchard & O'Neil, granite, $5,150; P. R. Wells, masonry, carpentry, painting, plastering, and plumbing, $117,000. Total contracts let, $129,927. Estimated costs of other works, vaults, safes, etc., $3,000; furnaces for heating, $2,000; extra plumbing for electric apparatus, $250; elevator, $250. To these figures add the allowances for the architect's services, 3 per cent, and the total cost of the building will be $139,489.

For the details of this description, as well as for the use of the engraving, the CALIFORNIA ARCHITECT returns due acknowledgment to the architect, Theodore Lenzen, of San Jose.

The Mechanics' Fair Exhibition.

THE fair lately held in this city is justly regarded as the most successful that the Mechanics' Institute has ever conducted. It is impossible to give a complete account of all the exhibits, but such of those more directly connected with the interests of this Journal are here noted.

CUT AND ORNAMENTAL GLASS.

John Mallon, of 17 and 19 Fremont Street, presented a beautiful variety of cut and ornamental glass. The designs of the latter were more than usually attractive, and many were the comments upon the push of business ability shown by Mr. Mallon in introducing the artistic designs presented.

BRASS BEDSTEADS.

E. H. Marwedel, of 541 Market Street, had a full assortment of brass bedsteads and cornice poles. Each time we passed remarks were overheard praising the general neatness and appearance of the old but new-fashioned bedsteads, with many wishes for the fashion to change again in their favor.

TOWNSEND'S "HOUSEHOLD TREASURE."

C. H. Townsend, of 440 Fifth Street, had samples of his improved kitchen table, yclept the household treasure. Convenient receptacles are found for all the various manipulating articles most in use by the thrifty housewife.

MAHONEY BROS.' RAILROAD CARS.

These gentlemen should be awarded a gold medal for the beautiful car exhibited, to be used on the Powell Street Railroad. For excellence of material, perfect character of the work employed, artistic arrangement of the various accessories needed, these cars stand the peer of any in use on any cable line in the United States. Mr. Thomas Downing, by his artistic skill as a painter, has done his share towards the achieved success of these cars. Mahoney Bros. deserve a fitting recognition at the hands of the workingmen of San Francisco, for endeavoring to build in our midst a factory that will give employment to scores of the wage workers of the city.

INTERIOR DECORATIONS.

A fine assortment of wall paper, linerusta—walton, etc., for interior decorations was shown by G. W. Clark & Co., of 645 Market Street. Some of the patterns were very beautiful, and owners will do well to examine the same.

KRELING & SONS.

One of the finest displays in the fair was made by this firm. The furniture and bric-a-brac ornaments commanded the attention of observers, while the richness of the designs of the mantels and the good work shown in every little detail, proclaimed that someone was at the head of the firm who made a study of turning out only designs and material of the very finest workmanship.

MAMMOTH STICK OF LUMBER.

Renton, Holmes & Co. had on exhibition the largest stick of timber ever sawed in a mill. It was 20 by 20 inches in size, 151 feet long, and contained 5,033⅓ feet. But very few knots could be seen throughout the whole length of the stick.

FIRE HOSE.

W. T. Y. Schenck exhibited all grades of rubber and cotton hose, and samples of all the paraphernalia incident to the complete equipment of a fire department.

ABRAHAMSON'S PATENT VENTILATOR.

Mr. Abrahamson personally attended to his own ventilators, and explained to the thousands who inquired the working of his patents. He had models of old and new windows, and showed how the ventilators could be adapted to each; also the method of placing them over doors. For full particulars of Mr. Abrahamson's inventions, our readers are referred to page vii of this issue.

STOVES, RANGES, ETC.

George H. Tay & Co. deserve more than ordinary mention for the excellent display of articles in their line. One stove should be particularly noticed. It combines all the features of a handsome parlor ornament with the utility of a cooking stove. Placed in a dining-room, it serves the purpose of heating, and can be used to boil tea, coffee, etc., without in the least affecting the beautiful design. Messrs. Tay & Co. also make a specialty of the hot-water system of heating houses. They should be consulted by owners who desire to have houses thoroughly heated at a minimum expense.

FINE BUTTS AND LOCKS.

Frank P. Latson had a beautiful exhibit of fine bronze hardware, such as locks, butts, etc. All the higher grades were represented, and called for much praise from those interested.

SCHUSTER BROS.

These gentlemen tried to outdo their competitors in having a large show of stoves, ranges, granite ware, etc. In the latter item the ladies seemed particularly interested.

SIMOND'S SAWS.

John Simonds, of 511 Mission Street, exhibited a very large and beautifully arranged assortment of saws of every conceivable design.

LUMBER.

Harris & Jones, 838 Bryant Street, showed the immense throng what California can do in the way of lumber. Their display of sugar pine, yellow pine, etc., attracted much attention.

LIGHTNING SAWS.

Union Saw Co., represented by J. F. Wyman, presented a very attractive arrangement of saws of every conceivable design. Their improved lightning cross-cut saws were the subject of much comment from those who go down in the woods to earn their daily bread.

SUGAR PINE.

Towles Bros., of Nevada County, had two sections of a tree, the first being cut 3 feet above ground, about 12 inches thick, and over five feet in diameter. Another section from the same tree, 161 feet from the ground, was 4 feet 6 inches in diameter. They were deservedly worthy of the attention bestowed upon them.

SONOMA'S LARGE TIMBER.

From the Big Bottom Mill, Sonoma County, a section of a tree was shown over seven feet in diameter.

SAN MATEO'S GRAND LUMBER.

Hanson & Co. take the palm on the exhibit of fine lumber from La Honda, San Mateo County. One plank shown was 13 feet long, 50½ inches wide and 3 inches thick. It was perfectly clear, not a knot in its whole length. Also another piece dressed on all sides and edges, 12 feet long, 50 inches wide, 1½ inches thick, absolutely free from cracks or knots.

CALIFORNIA WIRE WORKS.

"A magnificient exhibition of one of the industries of the coast." Such was the gist of the remarks made by thousands upon viewing the grand display by the above company. Their wire cables attracted unusual attention, from the great size and exquisite workmanship. Crestings, fences, finials were also in abundance.

HILLS' PATENT BLINDS.

It is but a short time since these blinds were manufactured in this city, yet by the persevering energy of Mr. Hindes this industry is growing of colossal proportions. The first factory was started "Los Angeles Way." That was entirely inadequate to do the work required. So branch after branch was established in various parts of the State, until Hill's Patent Blinds have become household words among builders. Mr. Hindes has associated with him Mr. Murray, a man of practical ideas, who insists that his workmen perform every little detail of the various parts of the work with the utmost exactness. These blinds have been indorsed by all the leading architects of the coast.

HUMBOLDT COUNTY.

Just a slice off a redwood tree, but oh how beautiful! Over four feet in diameter, with part of the bark left on for a border, and polished so one's face could be distinctly seen. The specimens of redwood shown were simply grand.

BUNDY RADIATORS.

"Whew, how hot! and where does all this heat come from? Surely not from that little furnace." Many were the remarks the substance of which is embodied in the above. The new furnaces now being introduced by Mr. Harvey are giving complete satisfaction and are a wonder in two particulars—economy of space and the small amount of fuel needed. The radiators are of a new pattern and are very handsome in appearance. Any inquiry in regard to heating apparatus will be answered by addressing C. D. Harvey, 30 New Montgomery Street.

REDWOOD.

What a Worker in all Kinds of Wood Has to Say about California's Great Production—An Experience of Fifty Years.

EDITOR *Wood and Iron:* In response to your question, of "What do you know about redwood?" I will state a few facts, which all acquainted with the wood, I am sure will certify to, viz.: That it stands *first* for general use of all woods known. None are perfect in all requirements, but the redwood certainly comes nearer to perfection than any other known in our day; this I, after fifty years' practical experience, can certify to. There are the Brazilian and Mexican rosewoods—they can never be depended upon for holding together with glue; they are full of oil—destroy the oil and you destroy the beauty of the wood. *Per contra*, no wood in the world holds better than our redwood when glued. There is the St. Domingo, the Cuban, the Mexican, and the Honduras mahogany, all beautiful woods, but for general use and for beauty they pale before our redwood. There is the Spanish cedar, I suppose a member of the mahogany family; it is full of gum; no matter how much polish may be put upon it, the gum forces its way through, and it is impossible to keep it smooth. No such trouble affects our redwood. I have pieces that were polished years ago, have been kicked about the shop, sometimes outside, sometimes in, but the polish is there—no gum exudes through that. There is our own beautiful walnut, a melancholy wood, carrying one back to the funeral of his grandfather; a room fitted up with it looks more like a morgue than a dwelling—nothing cheerful. But mark! I have an order for walnut doors, we will say; the order is imperative; they must neither warp, twist, nor shrink; they must keep their place in all weathers, at all stations of the mercury in Fahrenheit they must not move. Do I trust the walnut? No, no; I cut redwood into segments, make a redwood door, and put a thin coat of our walnut *on the outside*. The redwood is the only wood that will fill the bill required above.

In connection with this, I would say that I have tried white pine (Canadian), sugar pine, Port Orford cedars, and other woods; none come up to the mark like our redwood. There is the butternut, the chestnut, and other woods of the walnut family—they are used for their excellence in holding glue, hardly ever seen upon the outside. The walnut and the butternut produce a burl, but far inferior in quality, in size, or in beauty to the redwood burl. I have some in my possession ten feet long. Not even the far-famed burls of the Danube, which, when landed in America, bring almost their own weight in gold, exceed in beauty the burls of our beautiful redwoods. There is the pine, the whitewood, the basswood, and others of the whitewood family, which can be used for certain purposes only. Our redwood fills all their bills, and for beauty and the quality of keeping its place, it allows of not even a comparison, it is so far ahead.

Then come our oaks—the live oak of Florida, the white, the black, the red of the Eastern States and Canada—not one of them equals the redwoods for general utility or beauty. The white oak cracks by seasoning, and cannot be depended upon until stacked up for years; the red oak you can blow through a piece ten feet long. Our redwoods have none of those failings. Then there is the ash. After being for a few months in use, the grain will rise and sliver, especially if it is knocked about a little. It also produces a burl, but far, far inferior to our majestic redwood.

But if I do not tire your patience, I would like to contrast the treatment of those woods that are turned out as lumber in the East and in Canada with the treatment given our redwoods: In the first place, they are cut down in the forest when the *sap is down*, in cold weather. They are hauled to the water, in which they are allowed to swim for months, then carefully sawed, carefully piled; strips are nailed upon the ends of the better boards to preserve them from splitting; they are well and carefully treated; they are left in the water until the little sap left in them is thoroughly washed out. Well do they understand how to make the best of what they have.

Now for the contrast. The redwood is felled at any time, mostly when the sap is running and the tree full of life. It is hauled to the mill directly, where, if handy, a vessel lays; piece by piece, as fast as sawed, it is loaded close together in the hold—in the forest to-day, to-morrow at sea in the shape of lumber. Arrived in port, it is sold immediately, or perhaps ordered before it was cut; loaded upon wagons, and built into a house or barn almost instantly. Now it goes there full of sap or life; that dies, decays and rots in the lumber. It is brutalized, murdered, abused most shamefully—not through ignorance, for all mechanics should know that no well-made lumber is allowed to retain its sap when put to practical use.

Compare this murderous abuse of our redwood with the care bestowed upon the others, and you will wonder no longer that its beauties have been passed over; it being plenty, it was made to be abused; it being a *home product*, it was voted no good; it being cheap, and no import duties to pay, of course then it could not be of any value.

Now, gentlemen in the lumber business, treat it better; cut at the proper season; dry and season in the proper manner; give it a little care and attention, and it will well repay the trouble. Let some wholesome law be enacted for its protection, at least from vandals; and know that if we stand first in the production of the precious metals, first in cereals, and first in climate, we also stand first in the most beautiful woods on the face of mother earth—the largest, the highest, and the most beautiful. But even the most beautiful has been destroyed through ignorance.

Now a word to the finishers or varnishers that do not understand the treatment of redwood. Would you daub a piece of Danubian or, as it is called, French walnut, with oil? You know you would ruin it, destroy its grain and tints forever. Well, the redwood requires the same care as that, no more, and then you can preserve its beauties for many, many years. The following recipe is one at least that preserves its color and tints for years, for the truth of which I can show anyone interested. Use as near as may be the following proportions:—

Take one quart spirits of turpentine.
Add one pound corn starch.
Add one-fourth pound burnt sienna.
Add one tablespoonful *raw* linseed oil.
Add one tablespoonful brown japan.

Mix thoroughly, apply with a brush; let it stand say fifteen minutes; rub all off you can with fine shavings or a soft rag; then let it stand at least twenty-four hours, that it may sink into and *harden* the fibers of the wood; forty-eight hours is better. Afterward apply two coats of white shellac; rub down well with fine flint paper; then put on from two to five coats of best polishing varnish, as the openness of the grain requires; after it is well dried rub with water and pumice-stone ground very fine; stand a day to dry; after being washed and wiped clean with chamois leather then rub with water and rotten stone; wash as before; lay it one side to dry; clean and rub with olive oil until dry. If you have been careful to fill up all the pores perfectly you have a polished wood that surpasses all others; if you have not the pores or grains perfectly filled, of course you must apply more rubbing with pumice-stone and more varnishing until the object is attained; and, friend, you would have to do the same with any other wood. To add weight to what is told in these few lines, I would say that when such architects and artists as Percy & Hamilton, Wm. F. Smith, and others, have indorsed the redwood and its beauties for years, and have worked wonders in bringing it into notice, for mantels, wainscoting, doors, casings, and other inside decorations not necessary to detail, giants in their professions, they have used their beautiful art in connection with their refined taste to render our redwood where it now stands, "Excelsior." I have sent, some twenty months ago, by ship *Santa Clara*, to New York, thence by rail to Brattleboro, Vermont, to the order of Mr. Brooks, enough to finish two large rooms. This spring I have made and shipped to New York, per order of Mr. DeWitt, mantels, desk for library, door for library, library table, and all the casing for doors and windows and other mouldings required in library and bedroom. I have sold samples to every State in the Union, and feel confident that it is but a question of time when pianos, inside decorations of houses, banks, offices, etc., will be made of our glorious redwood.

Now, Mr. Editor, I have given you *jack-plane* facts and hints, I have no wish to be positive nor arbitrary; there are many others, if asked, will add their testimony to the many virtues of our glorious redwood; and if any should have a doubt or a fear upon the question, let him or her come to 213 Mission Street, and judge for themselves. I will also *give* the frugal, doubting tourist from the East, a piece at any time, that he may look upon and admire, free *gratis*, and [illegible] up that we here are the most blessed and fortunate people upon earth, and first in all—gold, silver, wheat, and lumber.

Some little time ago I was showing a gentleman and lady from the vicinity of Buffalo, New York, some specimens of the beautiful wood, when he said, "Really, friend, taking your climate, your minerals, your fruit, vegetables and cereals, and this really wonderful wood, I must own and regret that the Pilgrim Fathers landed upon the wrong side of the continent."—*Wood and Iron.*

A New California Industry—Inyo Dolomite Marble.

Mill and Quarries, 1887.

AMONG the many evidences of the great natural wealth of California, but few have attracted more attention than the splendid exhibition, in the late Mechanics' Fair, of the marble extracted from the quarries in Inyo County, Cal. And in introducing a new article of commerce, it may be expected, and it is but right and proper, that its claims to superiority should be made known, and wherein it differs from similar material in the market.

The great objection to marble is the tendency to change and decay when exposed to the atmosphere, losing every attraction, and in a few years well-nigh destroyed, which is the main cause, no doubt, of so much Scotch granite being imported into this country for our cemeteries.

In offering you our Inyo Dolomite Marble, we offer you a material that will stand the test of time—equal if not better than granite, which, geology says, "is the most durable stone of primary formation"—for this marble is less affected by the carbonic acid and other gases in the atmosphere than even granite. Italian and Vermont marble are composed of lime and carbonic acid, with some silica, and the gases in the atmosphere acting on the marble, set the carbonic acid free, which destroys the marble. The Inyo Dolomite Marble is composed of carbonate of lime and carbonate of magnesia, and, therefore, these gases have comparatively no injurious effect. The juice of the citrus fruits and the acid in wine will destroy the polish on ordinary marble, but will not damage our Dolomite Marble. This liability or certainty of ordinary marbles receiving injury from causes enumerated, and becoming an offense to people of nice taste, where a blemish or defect would destroy their value in an important sense, has changed marble for wood, as in case of mantels and grate surroundings, where wood cannot be said to be really appropriate or in good keeping, and robbed even fine furniture, to some considerable extent, of a most fit and ornamental covering, which, we believe, will begin to be re-instated in both cases, when it is known there is a marble called "The Inyo Dolomite," that will keep its deep and charming polish and rich luster without blemish, against all these well-known causes. And we believe, in view of all these tests, especially the effect our atmosphere has on imported marbles, as seen in our cemeteries, that the *native stone* should be altogether preferred. But so far as climatic influences may have to do with crystallization—though not an accepted scientific theory—we believe if Italian skies are anywhere surpassed in softness and beauty, and in perpetual clearness of atmosphere, it is around that wonderful sheet of water called Owen's Lake. And one thing we can say *and prove*, that no marble was ever found under Italian skies, or in Afric formation, having a more perfect, a finer and clearer crystallization, than this *to-be-famous* Inyo Dolomite Marble, now exposed in solid layers and in place at the base of the old Inyos, near the head of that body of mineral water. But they say it is harder to work. True, it is more solid and compact, but then you have something enduring which will not deteriorate. It is harder to make a knife of steel than of iron, but who wants an iron knife? The difference in labor is trifling, compared to the difference in real enduring worth. Another thing is important: Our marble is free from flint, which cannot be said of the Vermont and Italian; and it will be shown to dealers and consumers that the difference in cost of working, even though trifling, will not be figured to their disadvantage.

A comparative test of the pressure or weight required on fair samples (as believed) of the Vermont, Italian, and Inyo marbles, to crush or destroy the grains, was recently made by Mr. Emmet Rixford, a very intelligent student in the senior class of the University of California, under the supervision of Professor Hesse, with results as follows:—

Vermont	an inch cube crushed at	6,000	lbs.	pressure.
Italian	"	"	"	10,000 "
Inyo	"	"	"	26,900 "

This extraordinary solidity or compactness of the Inyo marble accounts for its not absorbing water to any appreciable extent in calculation; also accounts, in a great measure, for its resistance of atmospheric influences, and the action of even the powerful acids. Air and water are the great change workers. If this marble will not absorb water, and atmospheric agencies cannot enter it, or impinge upon it, actual use will undoubtedly confirm these positive scientific determinations, and, therefore, it will be conclusive to every thoughtful and logical mind that there is really *no experiment* in bringing this marble into immediate use.

If the ancient pride in fine marbles and its ideal and architectural uses should be revived, Inyo Marble Quarries can supply the demand. Dealers and consumers who are loyal to the best interests of the State, will at least examine our marble, and will not be deterred by prejudicial remarks from any quarter; that is all we ask, which we are fully confident will result in business, and if this State enterprise is encouraged on its *real merit*, it should, ere long, save a million a year to our commonwealth, that must otherwise go out of the State to pay for an imported article of no finer appearance, to say the least, and as to durability and permanent beauty, bearing no comparison to our own Inyo marble.

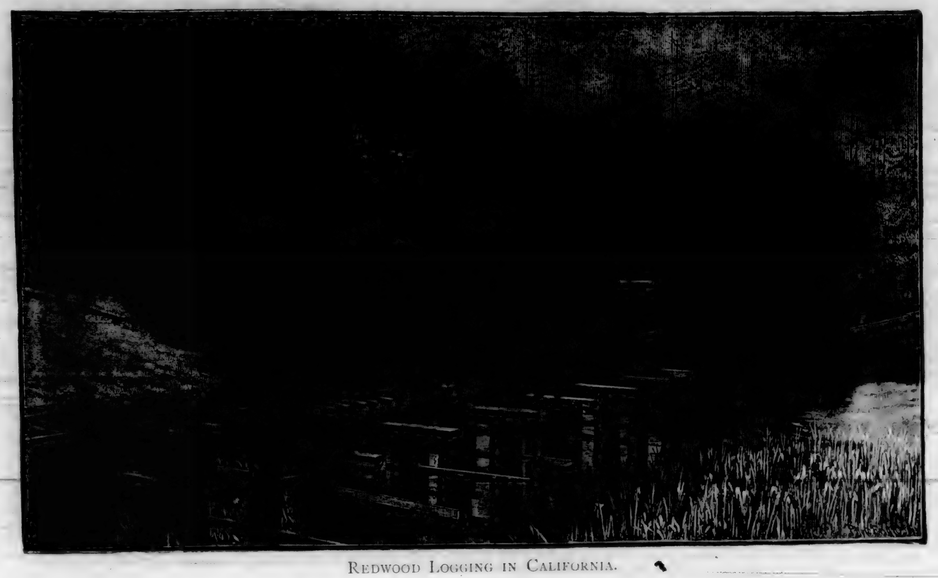
We do not enter the field to provoke competition; we come before the public with a valuable stone, taken from our own mountain-side. We ask no favor beyond its real merit, as compared with similar outside products. We simply ask your patronage, to enable us to open up a great treasure-house of our State, which has been too long locked up. And with your encouragement and patronage, *this California enterprise* can be made as great a public benefactor to the State, and secure as important results as have ever been secured to any State or people by the production of a similar material or article of commerce in any part of the world.

The Inyo Marble Company of California.

Outside Paints.

VARIOUS opinions are expressed by members of the trade as to the use of linseed oil and zinc in outside paints. Those who favor the mixture of zinc with lead claim that when zinc is thus blended, its characteristics of drying hard, lacking body and having a tendency to chip, are not apparent in such paint. Zinc has certainly the quality of being most free from acid, and acid, as all are aware, saponifies oil, on the presence of which depends the vitality of paint. A Mobile painter who mostly uses lead and oil for outside work makes it a point to get only the best lead and ripest oil, but it will not stand in that climate more than three years except when used for repainting, when it lasts somewhat longer. Some painters use equal parts of white lead and zinc. A painter who aims mainly at durability says that he primes with pure lead, and top-coats with two parts of lead and one part American zinc. Another painter makes a still more free use of zinc, using a mixture of two-thirds zinc and one part lead to heighten weather-proof qualities; this advantage, in his view, offsetting the lesser opacity, and less covering quality of zinc as compared with lead. A Southern painter writes in favor of a mixture of one-third zinc and two-thirds white lead. He has also used with satisfaction for outside work a paint made up of one-half zinc and one-half whiting. A long-experienced painter expresses a preference for pure white lead and oil, and deprecates the mixture of zinc and lead. He uses boiled oil, and submits the following formula, which he frequently carries out: First coat of pure lead and boiled oil; second coat of lead with half-boiled oil and turps; third coat lead and boiled oil. —*Sel.*

A fine stick of timber was brought down to Seattle, W. T., the other day to be made into a mast. The piece of timber is 86 feet long and will be 30 inches in diameter at the deck, which is 20 feet from the base; 17 inches will be the diameter at the smaller end. It is without a knot or blemish and contains 5,504 feet. The stock cost $15 a thousand at the camp and will be worth $175 when it is ready for the vessel.



Redwood Logging in California.

Redwood and Its Future.

THE operations of W. Cutten, who has gone East as a representative of the redwood lumber companies of Humboldt, Mendocino and Siskiyou, are, of course, of interest; but it may be questioned whether his object and the object of his constituents are well considered. He proposes to place on the Eastern market redwood in large quantities and at low prices, so as to tempt people to build houses of it instead of pine or hardwood. We do not believe California can spare redwood for any such purpose as that.

It must be remembered that the area occupied by the Sequoia sempervirens, or true redwood, is limited. It is found in groves of moderate extent in Santa Cruz and San Mateo Counties; it is fairly abundant in Mendocino and Humboldt Counties; there are groves of it in Siskiyou and Trinity, and it is found to some extent further north. But for commercial purposes, it may be said to be found exclusively in Mendocino and Humboldt. The redwood that goes to market from forests outside of these counties cuts no figure in the lumber market. Now, large as these counties look on the map, their five million acres are a very small tract indeed, if they are expected to furnish much of the building timber for the Eastern States. It would not take long to exhaust them, and, as is known, though young shoots do spring from the stumps of redwood trees which have been cut down, their growth is so slow that the tree may be practically said not to reproduce itself.

California cannot certainly afford to supply the Eastern States with redwood to build houses at anything like present prices. In a very little while our whole output will be needed for finishing work, decorations, furniture and other superior uses. Redwood is destined to take the place to a considerable extent of mahogany, black walnut, bird's-eye maple, cherry and oak. It is as handsome as any of these, takes a fine polish, is durable and shrinks less than any other soft wood. Ever since rosewood went out of use in consequence of the extinction of the supply, house decorators have been at their wit's end to find a substitute, and they have been driven to fall back on mahogany, which is growing scarcer year by year in consequence of the increased demand. Black walnut can never be made "dressy;" the cherry and the bird's-eye maple do not yield large planks; oak looks baronial, but is somber for any room except a dining-room. Redwood is suited for any kind of decoration. It makes fine furniture, and for mantels and wainscots it is equal to the handsomest woods of Australia, which are so scarce and so dear. It is a mere question of time when the East and Europe will realize its possibilities, and then it will sell not by the thousand feet, like pine, but by the ton, like mahogany.

In the old houses of the merchant princes of New York, built in the last century, you will still see dining-rooms of solid mahogany. The table is a solid slab of mahogany, with massive mahogany legs; the chairs are mahogany; the sideboard is the same, and even the massive folding-doors, which connect with the library, and the great door from the staircase, are of solid mahogany, worth almost its weight in silver. There was no veneer in those days. Furniture dealers are appalled when they witness such extravagance. But the furniture-maker of the future, when he comes here to pick up a few tons of redwood to complete the decorations of the drawing-room of some Eastern palace, will be far more amazed when he perceives that there was a time here when we built our houses and our stables of redwood, and even paved our sidewalks with the precious wood.

Grates, Mantelpieces, Tiling, etc., etc.

THE EXHIBIT OF W. W. MONTAGUE & CO.

THE house of W. W. Montague & Co., Market Street, had without doubt the finest exhibition at the fair. This was on the gallery over the entrance, and occupied quite a large space. It consisted of the latest and most beautiful designs in grates and mantelpieces, with the usual accessories in very handsomely wrought brass, etc. Of these there were a large number exhibited, all differing in design, but all strictly original, and so much the more attractive on this account. In tiling there was an equally good showing, the patterns in this being very unique. The whole exhibit was brilliantly lighted up, and gazing at it one at once realized the fact that it was an art exhibit. Of course to make such an exhibit the house of W. W. Montague & Co. possessed the best facilities. It can take what is required from its stock and never miss them. Each piece shown, however, was representative of a beautiful idea skillfully wrought, and it is therefore not to be wondered at that the display excited far more than ordinary attention. Notwithstanding the beauty of the articles, they are placed reasonably in price, and this is certainly an added merit. This house, in fact, can sell reasonably, it sells so largely, and its expenses are so moderate proportionately. It certainly to-day, in the above, as in its other lines, stoves, tinware, etc., is recognized as the leading house of San Francisco and the coast. In connection with it the following sketch will prove interesting:

This house was founded just seven years after the year of the Argonauts, 1849. The city differed widely then from to-day. Fourth and Market was about the limit one way, Stockton the other, while North Beach was the fashionable quarter to a certain extent, although Rincon Hill disputed the sway. There

were many vacant lots, too, between the center and Fourth Street. Oakland was certainly not then the Athens of the Pacific, but a straggling, illy-built village, with which communication was uncertain. Steamer day was an important fact, and was looked for anxiously by merchants, for beyond the fact of letters and intelligence from the outside world, the news and invoices received often raised or lowered market rates. The Vigilantes, too, were engaged in summary reforms. Mining, of course, was the main industry. Credit from steamer day to steamer day was accounted a great accommodation, and so it was when we remember the unstable character of things. Men were always on the move, and not having usually any family, they went where chance called. In these unsettled times it was a risk to start a house, expenses were so enormous and salaries so high. Of course good prices were obtained, but still the high pressure of everything required business men to be of rare ability to hold out long, money and everything else being taken into consideration. Messrs. Locke and Montague were the original founders.

Mr. S. M. Locke dying in 1876, the name was changed to the present style. The old firm occupied the building Nos. 406 and 408 Battery Street. Proving too small for an increased trade, in 1883 a removal was made to Nos. 110, 112, and 114 Battery Street, where subsequently an additional frontage of 145 feet was added to the already large stores. The necessities of greatly enhanced trade compelled still another removal, and the firm had the handsome building Nos. 309 to 317 Market Street, erected especially for it, into which it moved in December, 1883. The new building is 90x137½ feet, six stories high, with a water and damp-proof basement, giving over 70,000 feet of floor surface, every inch of which is required in the various details of business. This great space is crowded with an enormous stock of goods, conveniently arranged, and embracing every known article in the many different lines. The firm manufactures many articles, all of which are noticeable for finish, durability, quality, and workmanship. In 1883 Montague & Co. received the grand prize medal of the Mechanics' Institute for their artistic and superior exhibition of mantels, tiles, and grates, and this was followed in after years by other medals. The growth of this firm is only, in fact, paralleled by the growth of the city and State. Just as population increased so did its business. It made a point of meeting the demand for necessaries by furnishing these of superior make and at reasonable charge. It has always been the friend of home industry, and in stoves and ranges made a great endeavor for a home industry, but the time for that had not come. The demand out here was too limited, and the expense was too great. Eastern houses fill a demand ten times greater, so, of course, could undersell. In fact, out here the demand would scarce pay for the patterns for a first-class store. If a firm like this, with channels of trade all over the coast, found difficulty, we may be very sure the time was too early for such an experiment. It now has the agency for the best Eastern articles, but stoves and ranges, however, embrace only one department of its stock. This includes tiling of all kinds, tin plate, sheet iron, iron pipe, house furnishing hardware, plain, Japanned, and stamped tinware, etc. Its standing naturally commends it to Eastern manufacturers of prominence, and they are anxious for it to accept their agencies. We have not a doubt it refuses many agencies. What it offers we may certainly conclude are standard. Its immense business now enables it to sell reasonably, and this it certainly does. The fact that it has such a business shows that it satisfies customers. By its reasonable expense, too, in proportion, not much has to be added to first cost of goods.

A great house is that of W. W. Montague & Co., with a trade as wide as the means of communication to and from this city will admit, extending north and south, far to the east, and across the ocean to the Pacific Islands, and to China and Japan.

The house certainly has unequaled facilities to offer, and has made strenuous efforts to promote home industry, handling, where it possibly could, our own manufactures. Its present position has been built up solely by enterprise, and the offering of really suitable and serviceable articles of every-day requirements at such prices as placed them within the reach of all. We cordially commend it to our many readers.

DARKENING ROOMS.—People should avoid completely excluding light for any length of time from rooms that have been finished in oil color, as the paint will then be apt to take a yellowish tinge.

Remaining numbers of this year given free to all new subscribers for 1888.

HILL'S
Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and tenements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitcheli, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. B. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Ralczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY
BUILDING INTELLIGENCE

We earnestly desire the co-operation of country editors and mechanics generally to this department of our Journal. Forward us all the building news connected with your different localities. Architects should also notify us of "plans to figure on." No charge is made for such notices. Direct letters to office of this Journal, 240 Montgomery St.

Bakersfield.

O. Mattison will build a two-story brick building at a cost of about $12,000.

A large hotel is contemplated. Address Hirschfeld Bros. It will cost about $40,000.

Chico.

A number of prominent citizens have been canvassing the city for contributions to build a new hotel. The citizens are to raise $20,000 and donate a site for the building, and a gentleman from San Francisco will furnish $80,000 and proceed with the building. Fifteen thousand dollars was raised yesterday. William Earll, F. W. Burnham, F. C. Lusk, and Mayor Barnard are the prime movers in the undertaking.

Los Angeles.

THE MAIN STREET HOTEL.—Proposals for the excavation of the lot on the corner of Tenth and Main Streets, where the mammoth hotel is to be built, will be opened and the contract will be let shortly afterward. Mr. Denker, of Hammel & Denker, is in the East studying the designs of the hotels there, and upon his return plans will be drawn for the hotel, and the construction will commence shortly after.

Lake Tahoe.

Architect M. J. Curtis and D. Kaiser, of Carson, are at Sugar Point, Lake Tahoe. Mr. Curtis has the contract to build the new hotel at that point for Captain Lapham, and Mr. Kaiser will be the landlord. The hotel will be 34x120 feet and three stories high; also there will be built this fall an annex, a saloon 24x36 and six five-room cottages. The whole to cost $35,000.

Oakland, Alameda, and Vicinity.

D. C. Scanlon is building three cottages on Hobart Street, to cost $2,000 each.

D. C. Scanlon is also building two cottages for Mrs. J. M. Jones, on Jones Street, to cost $1,800 each.

D. C. Scanlon is making $1,000 worth of improvements upon the place of J. T. Gardiner.

W. T. Veitch will shortly begin a $4,500 house for Mrs. Moore.

Scanlon & Gearn will shortly begin three cottages on Hobart Street, to cost $2,000 each.

J. C. Wilson, Councilman from the Second Ward, is building five cottages on Hobart Street, to cost $1,800 each.

The total cost of building in this quarter is $33,600.

THE SATHER BUILDING.

The contracts for the Sather building on Washington Street, adjoining the Wilson House, have been let. The Judson Manufacturing Company has received the contract for the iron work, at $725. Knight & Littlefield have the carpenter work, at $10,373. The Remillard Brick Company have the contract for the brick work, at $3,745. The total is $14,843. The Sather building is well under way.

OAKLAND BUILDINGS.

The Davis Block, on the corner of Washington and Eleventh Streets, is being pushed rapidly forward, and the walls of the first story are up. The framing of the first story has been put in and the cellar has been completed. The undressed stone facings are being put in on either side of the entrance to the upper stories, the whole making a very pretty combination.

It is understood that James de Fremery is having plans drawn for a four-story building on Washington Street.

Dr. J. M. Young is building two cottages on Park Avenue, near Hollis Street, to cost $1,000 each. Robert Jackson is the contractor.

Goodrich & Newlon, of Oakland, are drawing plans for a smelter, etc., for the Crittenden Smelting, Mining, and Milling Co., of Pima County, Arizona. Total cost, $69,000.

W. T. Veitch is refitting the stores 909 and 911 Broadway. George W. Henderson is doing the moving and the iron work. The cost will be $4,000.

EAST OAKLAND BUILDINGS.

A house is being built on Sixth Avenue, between East Fourteenth and East Fifteenth Streets.

F. A. Brown is building a cottage on Eighth Avenue, between East Fifteenth and East Sixteenth Streets, for W. C. Orcutt. The contract price is $2,060.

Charles J. Gaillard is building a cottage for W. G. Reese on East Twentieth Street, between Seventh and Eighth Avenues, to cost $1,550.

S. T. Higgins & Sons are building for Mrs. M. C. Littlejohns a cottage on Tenth Avenue between East Twenty-fourth and East Twenty-fifth Streets, to cost $1,671.

The East Oakland Methodists intend building a church on Eighth Avenue and Seventeenth Street soon.

OUTSIDE THE CITY.

P. S Glasford is having a $1,700 cottage built on the Hillegas Tract, Berkeley, by C. R. Lord.

J. S. Greenleaf is having a house built by Woodhouse & Sandy at Klinknerville, to cost $2,300.

Knowles & Wetmore will build for L. Georges a house at Fruit Vale, to cost $2,700. J. J. & T. D. Newsom are the architects.

J. B. Cogswell has agreed to erect a house for Mrs. H. Gross in Berkeley to cost $3,100. Percy & Hamilton are the architects.

Goodrich & Newlon have received orders from M. B. Strelinger to advertise for bids on his house to be erected in Berkeley.

A. H. Broad has agreed to do the carpenter work on a building for A. Carlisle, on the corner of Vine and Spring Streets, Berkeley. The contract price is $2,720.

Petaluma.

A planing mill is being erected on the corner of C and Second Streets.

Portland, Or.

A. J. Cooper, a Chicago capitalist, offers to build a $700,000 hotel if the citizens give him $250,000.

Permits have been granted for construction of a one-story frame dwelling on the corner of Sixteenth and M Streets, for J. Connor, to cost $2,200; two one-story frame dwellings on the corner of Lownsdale and Clay Streets for Mrs. Rice, to cost $2,200, and a three-story frame dwelling on the corner of Tenth and Mill Streets, for R. P. Earhart, to cost $8,500.

Work will be commenced in a few days on the building of the cyclorama of the Battle of Gettysburg. It will be located on the corner of Third and Pine Streets.

W. S. Ladd has started the subscription for the new hotel project with $25,000.

A three-story brick addition is to be made at once to the rear of the *Oregonian* office building, and another story added to the main structure. The cost will be about $10,000.

Charles H. Dodd has ordered the construction of a four-story brick block, 75x80 feet, on the southeast corner of Front and A Streets, to cost $60,000.

A two-story frame dwelling is to be built on D Street, between Twelfth and Thirteenth, for P. W. Gillette, to cost $2,000.

Chas. H. Dodd has been granted a permit to build a four-story brick block on the corner of Front and A Streets, to cost $75,000.

A Methodist Church is soon to be built at Burns, to cost about $1,200.

Baker City has voted to issue $30,000 in bonds to build a new school-house.

Riverside.

A. W. Boggs has secured the contract for the foundations of the Rubidoux Hotel. J.

C. Pelton was the successful competitor for preparing plans, etc.

Sacramento.

L Street, bet. Eighth and Ninth. Two-story and basement residence. Owner, John Sheeren; architect, N. D. Goodell; contractors, Bohn Brothers. Cost, $4,000.

G Street, bet. Ninth and Tenth, two-story and basement residence. Owner, Mrs. Ellen Manning; architect, N. D. Goodell; contractor, B. F. Bell. Cost, $3, 00.

Capital Hotel, cor. K and Seventeenth Streets, alterations and additions. Owners, Blessing & Guthrie; architect, N. D. Goodell; contractors, Carle & Croly. Cost, $9,000.

J Street, bet. Ninth and Tenth, alterations and improvements. Owner, L. Elkus; architect, N. D. Goodell; contractors, Bohn Brothers. Cost, $1,200.

J Street, cor. Seventh, improvements and additions. Owner, T. M. Lindley; architect, N. D. Goodell; contractor, W. M. Reese. Cost, $10,000.

San Jose.

There will doubtless be more building done this fall than at any previous period in the history of San Jose. Among those who propose to erect residence buildings at once, are the following: Eugene Rosenthal, a handsome residence on his lot on Julian Street, between Third and Fourth. G. R. Jones, of Montreal, Canada, residence on Union Avenue, at a cost of $8,000. H. A. Hughes, lately from the East, a neat cottage on North Sixth Street, at a cost of $4,000.

C. D. Smith, of the firm of Kaufman, Smith & Hensley, has recently purchased a very desirable lot on Sixth Street, and has contracted for the erection of a fine dwelling.

G. N. Hensley, of the same firm, residence on Sixth Street.

W. S. Kaufman, the third member of the firm, fine dwelling on Third Street.

Theodore Lenzen is supervising the construction of a new residence on the Quinn Ranch, one on the Parr Ranch, one in Alviso, and a three-story hotel and an Odd Fellows' hall at Salinas. P. E. Bussell is completing the plans for a cottage on Lenzen Avenue for X. E. Burns, and also a plan for a $30,000 residence for an Eastern gentleman who recently purchased in this city.

Three cottages will soon be erected on the Lendrum Tract, in East San Jose, by William Winter, a San Francisco capitalist. Other San Francisco men propose to build here soon.

F. Brassy and Henry Ahlers have let to A. Kelsey, the well-known builder, a contract for the construction of two handsome residence houses at the corner of McLaughlin and Lick Avenues, in the Brassy & Ahlers addition to East San Jose, the price being $7,000 each.

Messrs. Brassy & Ahlers will build also another house close to the others, to cost $4,500, and the contract for still another will be let in a few days, making four handsome houses in all. San José is to be congratulated upon having two such energetic and enterprising men.

CONTRACTS LET.—Contracts have been let by Architect G. W. Page for the completion of the fourth story of East Hall of the University of the Pacific. A. J. McIlvain has the contract for $737.

A contract by the same architect has been made with J. J. McDaniels, for changes and additions to the building of the Home for Feeble-minded Children, for $2,700.

A third contract has been let to W. J. Wolcott for excavating and laying the foundation for the Conservatory of Music Chapel of the University of the Pacific for $3,227.

The following bids for building the new City Hall were opened:—

J. D. Stewart, common bricks, $112,654; pressed, $117,350; sandstone trimming, extra.

P. R. Wells, common, $112,000; pressed, $117,000.

Thos. Livingstone, common, $112,000; pressed, $117,500.

A. J. McIlvain, common, $114,500; pressed, $117,000.

Chas. Turel, San Francisco Co., common, $115,999; pressed, $119,999.

Albert Washburn, San Francisco, common, $116,881; pressed, $121,881.

Thos. Flynn offered to do the sandstone work if called for, at $7,825.

The contract was awarded to P. R. Wells and his bonds fixed at 25 per cent of the amount of his bid.

The total cost of the New City Hall will be as follows:—

F. Altman, cast-iron work	$1,880 00
F. Kuchenbeiser, wrought-iron	5,890 00
Combs, Blanchard & O'Neil, granite	5,180 00
Contracts already let	$ 12,950 00
P. R. Wells, brick and lumber work	117,000 00
Vaults, etc	3,000 00
Heaters, four	2,000 00
Electric Wires	250 00
Elevator	250 00
Total	$135,450 00
Architect's services, 3 per cent	4,062 60
Sum total	$139,512 60

Mrs. Mabury will build a $10,000 dwelling. P. R. Wells, contractor; Theo. Lenzen, architect.

N. D'Oyly is building a $12,000 dwelling from plans prepared by his architect, Theo. Lenzen. Thomas Livingston is contractor.

Theo. Lenzen has prepared plans for twelve brick buildings for New Chinatown. E. Base is contractor; $6,000 will cover the cost.

Six miles from town E. N. Parr will build a $5,000 dwelling. Theo. Lenzen is his architect; F. Davis, contractor.

One mile from town R. Wiltz is building a $4,500 dwelling. Theo. Lenzen, architect; Nickelson, contractor.

C. Lefranc, seven miles from town, is making large additions to his wine cellar. Theo. Lenzen, architect; G. E. McDougall, contractor.

San Rafael.

San Rafael Hotel. Three-story frame. Owner, San Rafael Hotel Company; architects, Curlett & Cuthbertson; contractor, Plereighton. Cost, $80,000.

Turlock.

San Strauss, of Turlock, has just purchased a piece of property near that town, and will immediately commence the construction of a $4,000 residence. James E. Wolfe, of San Francisco, is his architect.

Winters.

E. J. Englehardt is erecting a two-story frame to cost about $6,000. A. Ritchie is the architect and builder.

Judge Wm. Sims is having a two-story residence built. Gilbert & Son, of Woodland, are architects; R. B. Nissen, of Capay, contractor. Cost, $4,000.

T. D. Ball is superintending repairs on Mrs. D. Hemenway's residence.

W. J. Pleasants (seven miles from town) is spending about $2,500 in improvements.

A large force of men are grading on the Winters and Ukiah Railroad.

Most of the business firms of the town are having artificial stone sidewalks laid.

Miscellaneous.

It is estimated that it will require 11,000,000 feet of lumber to erect the buildings already under contract at San Carlos City, Lower California.

The stone foundation for the new schoolhouse at Rutherford has been laid, and contracts for the carpenter work will soon be open.

The rock foundation for the new Catholic school in St. Helena is completed, and work begun on the frame work.

Bassett Brothers, contractors and builders, have commenced work on the frame work of the Catholic College.

J. E. Whitson, of Selma, will soon let the contract for the building of his $30,000 hotel in that town.

The new County Hospital in Fresno City will cost $12,000. J. W. Bones is preparing plans and specifications.

J. H. Hamilton, of Fresno, is building a cottage on I Street, north of El Dorado Street.

Contractor Morrison, of Tacoma, was recently awarded the contract for building the addition to the Court House. The bid was $971.

The contract of building the superstructure of the Methodist Church in Seattle, and finishing up the basement, was let recently to Moses Keezer for $15,000.

The S. P. R. R. Co. are making arrangements to build a large, commodious new depot at Sumner. The old one will be used exclusively for freight.

THE LOS GUILUCOS HOTEL.

Thomas J. Ludwig states that he has closed the contract for the erection of a $11,000 hotel at the town site of Los Guilucos, and that work will soon be commenced. Teams have commenced hauling brick and lumber for the foundations.

ANAHEIM'S HOTEL—CONTRACTOR SCHINDLER SOON TO BEGIN WORK.

The contract for the cement sidewalks on the tract has been awarded to the Los Angeles Paving Company, of which Mr. E. A. Saxton, formerly of Anaheim, is manager. They expect to put a number of men at work shortly. Mr. Charles Schindler, who has the contract for the brick work, has received the foundation plans, and will start his men at work very soon. Directors Goldthwaite and Kroeger have the superintendence of the work of caring for the tract, grading streets, etc., and they are getting ready to make some wonderful improvements in the property.

PLANS APPROVED.

A meeting was held recently of the State Board of Examiners, Governor Waterman presiding, and Trustees Gally and Cunningham being present. The plans and specifications for the erection of three new wards at the hospital, and for furnishing the building, were submitted to the Board of Examiners by Messrs. Cunningham and Gally, and unanimously approved by the Board.

WORK ON THE SAN JOSE NEW CITY HALL.

The work on the New City Hall will be commenced at once. Sunday a cargo of cement arrived in San Francisco, and the amount necessary for the building here has been obtained by Daunes & Van Doren. The sewers will be laid first and then the foundations will be pushed forward. The sub-contractors are as follows: W. J. Wolcott, brick work; L. C. W. Otto, artificial stone and cement work; W. W. Montague, tiling; M. Lenzen, painting; W. P. Dougherty, mill work; John Stock & Sons, plumbing and tinning.

The contracts for the erection of a depot at Carlsbad and Encinitas were let, recently, by the California Southern Railroad Company, to F. M. Johnson, the contractor of the Barstow depot.

Architect Pugh, of Salem, is now engaged in making preliminary drawings of the proposed new Court House of Benton County. The building will cost $55,000, and will be in the Ionic style of architecture, and be of brick and stone. It will be built in 1888.

Fred E. Saider is building a handsome residence on Eighth Street in Seattle, to cost $12,000.

The Donahue Road will erect a new station in Coleman's Magnolia Tract, near Grant Avenue, San Rafael.

Architect Theo. Lenzen is in Salinas superintending Jeffery's new hotel. It is a three-story brick building, and will cost $20,000.

The Odd Fellows are erecting a $12,000 hall in Salinas. Theo. Lenzen has prepared the plans.

Mrs. Tilden is having built a $7,000 dwelling in Alviso. W. S. Boyles is the contractor, Theo. Lenzen, architect.

Near Dixon, Solano County, Cal., two-story and basement residence. Owner, J. F. Brown; architect, N. D. Goodell; contractor, B. F. Bell. Cost, $8,000.

SAN FRANCISCO BUILDING NEWS.

A

Army, nr. Guerrero. One-story frame.
O. and B.—Comerford.
$1,400.

B

Brannan, nr. Fourth. Additions.
$6,000.

Broadway, cor. Dupont. Three-story frame.
O.—V. Meninsini.
A.—Cappelleti.
C.—J. G. Adams.
$10,000.

Broderick, cor. Sacramento. One-story frame.
$1,000.

Bush, cor. Scott. Two two-story frames.
O.—D. Lohson.
C. and B.—W. Bluns.
$9,000.

C

California, nr. Laguna. Additions.
O.—T. Whitely.
A.—Huerne & Everett.
C.—McCready Bros.
$1,200.

California, nr. Front. Additions to brick building.
O.—S. L. Jones & Co.
A.—Macy & Jordan.
Carp.—Bateman Bros.
Mason—Dunbar & Morrell.
$17,000.

California, cor. Devisadero. Two-story frame.
O.—Geo. Hinkle.
Day work.
$6,500.

Capp, bet. Twenty-fifth and Twenty-sixth. One-story frame.
O.—Doyle.
C.—Sullivan.
$1,700.

Capp, nr. Twenty-fifth. Additions.
$1,000.

California, corner Devisadero. Two-story frame.
O.—George Hinkle.
Day work.
$6,500.

Clay, cor Laguna. Two-story frame, basement and attic.
O.—Irving Scott.
A.—Matthews & Son.
C.—Littlefield.
$10,000.

Columbia, bet. Twenty-fourth and Twenty-fifth. St.-Peter's Convent.
O.—Sisters of Mercy.
A.—J. J. Clark.
C.—Degan & Orford.
$5,000.

D

Davis, cor Vallejo. One-story frame.
O.—Coos Bay Coal Co.
$1,200.

Davis, cor Vallejo. Coal Bunker.
O.—Coos Bay Coal and Navigation Co.
C.—San Francisco Bridge Co.
$15,000.

Dolores, nr. Twenty-sixth. One-story frame.
O. and B.—R. Bergfeld.
$2,000.

Dupont, nr. Sacramento. Additions.
$500.

E

Eddy, cor. Van Ness ave. Two-story frame, basement and attic.
O.—Frattinger.
A.—R. R. Schmidt.
C.—P. Griffin.
$11,000.

Eighth Avenue, nr. Point Lobos Road. Star of the Sea Church.
O.—Father McGinty.
A.—Charles Devlin.
C.—J. Blake.
$10,000.

Eighteenth, nr. Douglass; one-story frame.
O.—W. Richter.
C.—A. Discher.
$1,500.

Eighteenth, nr. Castro. One-story frame.
O.—F. Reusche.
A.—P. R. Schmidt.
C.—F. Elam.
$2,800.

F

Fillmore, cor. Sacramento. Alterations.
O.—Schroeder & Bohman.
Day work.
$1,500.

Fourteenth, nr. Belcher. One-story frame.
$1,200.

G

Garden, nr Harrison. Additions.
$1,000.

Gilbert, nr. Bryant. Additions.
$700.

Golden Gate Avenue, cor Octavia. Two two-story frames.
O.—Wm. John.
A.—John & Zimmerman.
C.—B. Dreyer.
$7,000.

Guerrero, nr Twenty-sixth. Two-story frame.
$4,500.

Grove, bet Gough and Octavia. Two story frame.
O.—G. Ehrman.
A.—W. H. Armitage.
C.—L. Weisman.
$6,500.

H

Howard Court, nr. Fourth. Repairs.
$1,200.

Howard, nr. Thirteenth. Two-story frame.
O.—A. Johnson.
A.—John & Zimmerman.
C.—Schutt & Krecker.
$3,200.

I

Industrial School. Frame building for barn.
C.—H. Simmons.
$2,500.

Iowa, nr. Ropewalk. One-story frame.
O.—L. Meyer.
$1,500.

Iowa, nr. Solano. Two-story frame.
O.—Annie Hook.
C.—C. E. Dunshee.
$3,500.

J

Jackson, bet. Montgomery and Sansome. Alterations.
O.—D. Ghirardelli.
A.—W. Mosser.
C.—J. W. Wessinger.
$4,000.

Jackson, cor. Mason. Alterations.
O.—E. Frank.
A.—Salfield & Kohlberg.
C.—L. Weisman.
$7,000.

L

Laguna, bet Clay and Sacramento. Two-story basement and attic frame.
O.—Earls.
A.—Matthews.
C.—Littlefield.
$10,000.

Larkin, nr. Chestnut. Frame building.
O.—W. Perry.
A.—G. A. Bordwell.
C.—B. F. Ellis.
$1,500.

M

Minnesota, cor. Solano. Three-story frame.
O.—J. Mooney.
A.—Townsend & Wyneken.
C.—C. E. Dunshee.
$4,500.

Mission, nr. Ninth. Repairs.
O.—W. A. L. Miller.
$500.

Mississippi, nr. Solano. One story frame.
O.—Burglas.
C.—Meade.
$1,000.

Minna, nr. Fourteenth. Frame dwelling.
O.—J. Warren.
C.—G. Houston.
$1,600.

Market, bet. Fourth and Fifth. Alterations of old St. Ignatius Church into theater building.
$2,500.

Montgomery, nr California. Repairs.
$1,200.

N

Natoma, nr. Fifth. Three-story brick.
O.—J. F. Boyd.
A.—McDougall & Son.
C.—A. G. Fitzpatrick.
$45,000.

P

Pacific Avenue, nr. Fillmore. Two-story frame.
O.—Mrs. M. E. Green.
A.—Percy & Hamilton.
C.—Gray & Stover.
$8,000.

Pacific Avenue, nr. Gough. Five two-story frames.
O.—J. J. Hall.
A.—S. & J. C. Newsom.
C.—Knowles & Wetmore.
$15,000.

Page, bet. Gough and Octavia. Two-story frame.
O.—H. Dickerson.
C. and A.—J. P. Chadwick.
$4,000.

Pierce, nr. Haight. Two-story frame.
O.—M. A. Eddleman.
C.—J. Rountree.
$1,500.

Protrero Avenue, bet. Twentieth and Twenty-first. One-story frame.
O.—A. Pringle.
C.—C. O. Smith.
$2,000.

Powell, nr. Greenwich. Additions.
O.—B. Higgins.
A.—B. J. Clinch.
C.—T. O'Donnell.
$2,500.

Q

Quincy Place, nr. California. One-story brick.
O.—E. Garnier.
C.—Schoenmacher.
$2,200.

S

Sutter, nr. Taylor. Additions in rear.
$1,000.

San Jose Avenue, nr. Twenty-seventh. Two-story frame.
O. and B.—J. Comerford.
$3,000.

Sansome, nr. Sacramento. Additions.
O.—Palmer & Rey.
A.—Macy & Jordan.
C.—J. E. Kelly.
$6,000.

Sacramento, bet. Laguna and Buchanan. Two-story frame, basement and attic.
O.—R. C. Chambers.
A.—Matthews & Son.
C.—Littlefield.
$10,000.

Sanchez, nr. Seventeenth. Two-story frame.
O.—J. G. Hill.
C.—J. C. Gillespie.
$2,500.

Sierra, nr. Kentucky. One-story frame.
O. and B.—Keenan.
$1,000.

Sixth, nr. Harrison. Two one-story frames.
O.—J. Holjes.
C.—Munster.
$3,000.

Solano, nr. Iowa. Two-story frame.
O.—Annie Hook.
C.—C. E. Dunshee.
$3,500.

T

Tennessee, nr. Solano. Five one-story frames.
O.—Reis.
C.—R. O. Davis.
$5,000.

Tennessee. Additions to St. Thomas' Church.
$1,000.

Thirtieth, nr. Noe. Two-story frame.
O.—Pope.
$3,500.

Treat Avenue, nr. Twenty-second. Frame building.
O.—Oliver Madson.
A.—M. J. Welsh.
C.—Chisholm.
$4,500.

Twenty-sixth, nr. Dolores. One-story frame.
O. and B.—J. I. Comerford.
$1,000.

U

Union, nr. Franklin. Frame school.
O.—City of San Francisco.
A.—T. J. Welsh.
C.—P. B. McKay.
$18,440.

V

Vallejo, nr. Mason. Two-story frame.
O. and B.—P. J. Hanson.
$3,600.

W

Webster, cor. Clay. Additions.
O.—Veseria.
A.—C. Kenitzer.
C.—C. H. Rupell.
$1,000.

Washington, bet. Gough and Octavia. Two-story frame.
O.—P. G. Sabatie.
A.—Pississ & Moore.
C.—Jas. Geary.
$6,500.

Y

York, bet. Twenty-fifth and Twenty-sixth. Five one-story frames.
O.—Dr. C. C. O'Donnell.
Day work.
$4,000.

Provincial Royal Jubilee Hospital.

TO ARCHITECTS.

Designs, Plans and Specifications are invited for the above building in accordance with memorandum of particulars, copies of which, together with contour plans of the site, may be obtained on application to the undersigned. A premium of $800 will be paid for whichever designs and plans, if any, may be adopted. Such designs, plans and specifications to become the property of the Provincial Jubilee Royal Hospital Building Committee.

Plans for this building to be addressed, in sealed envelope, to the undersigned, and to be handed to him by or before noon of the 7th of December next.

WILLIAM CHUDLEY, Hon. Secretary,
Sept. 13, 1887. Wharf St., Victoria.

CIVIL ARCHITECTURE,

A SPLENDID WORK,

PRICE, $10.00.

Lumber Market.

THE retail price list of the California Lumber Exchange for September 9, 1887, is as follows:—

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	28 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4, and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G. Beaded, under 7 feet	24 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1¼	4 00
Laths, 1½	4 50
Furring, 1x2", per lineal foot	01
Battens, ½x3, per lineal foot	01

SPECIFICATIONS.

We have on hand a supply of a

NEW FORM OF SPECIFICATIONS,

Especially adapted for the Pacific Coast.

We will send a Copy to any address upon receipt of 50 cents, or $5.00 per dozen.

Also Palliser's new Specifications, just received.

We can supply any number of either the above

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to under tand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

Manual of Industrial Drawing for Carpenters	$2 00
Illustrated Drawing Book	1 00
Mathematical Drawing Instruments	1 50
Drawing for Carpenters	1 75
Shavings and Saw Dust	1 50
Linear Drawing	1 50
Practical Draughting	1 00
Drawing for Cabinet Makers	1 50
Handrailing and Staircasing	1 50
Painter, Gilder, and Varnisher	1 50
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Paper Hanger's Companion	1 25
Builder's Guide	2 00
Amateur Mechanic's Workshop	$3 00
Principles of House Drainage	1 00
How To Paint	1 00
Practical Geometry	1 00
Lumberman's Hand Book	2 00
Lien Law	50
Cozy Homes	25
Every Man His Own Mechanic	3 50
Handbook of Legendary Art	3 00
Dwellings, Reed	3 00
Plumbing Appliances	1 50
Modern House Painting	5 00
Stair Building Made Easy	1 00
Cabinet Maker's Companion	1 25
Manual for Furniture Men	1 00
Rural Architecture	1 50
Architecture, Horton	1 50
Wonders of Art	1 25
Common Sense in Church Building	1 00
Old Homes Made New	1 50
Hints on Household Tastes, by Eastlake	3 00
American Cottage Builder	3 50
The Suburban Cottage	1 50
Homes for the People	2 00
CountryHomes, Woodward	1 50
Cottage and Farm House, Woodward	1 50
Suburban Houses, Woodward	1 50
Rural Homes, Wheeler	1 50
Essentials of Perspective	1 50
Modern Architectural Designs and Details	10 00
Detail Cottage Architecture	6 00
Leffel's House Plans	3 00
Science of Carpentry	5 00
Mechanic's Geometry	5 00
Artisan	5 00
Artistic Homes	3 50
Mechanical Drawing	1 00
American House Carpenter	5 00
Building Superintendence	3 00
Builder's Companion	1 50
Cutting Tools	1 50
Cottages	1 00
Ornamental Drawing	1 00
Grimshaw on Saws	4 00
Universal Assistant	2 50
Limes, Cements, and Mortars	4 00
Trussed Roofs, Ricker	3 00
Gould's Carpentry	2 50

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 11.

THE

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OUR ADVERTISING RATES.

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Back Cover, Outside, Each Insertion	do.	2.00
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Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.00
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., NOV. 15, 1887.

Weekly Building News.

Before the next issue of this journal, subscribers will have received the first number of the weekly supplemental issue of this journal. Please bear in mind that it will only contain building news, *and will be used for no other purpose. Positively no advertisements inserted. In size it will be 9½x 14, or same as one page of this journal. It will be printed on same quality of paper, and will be furnished* **FREE** *to all subscribers to the "California Architect."*

TERMS--Two Dollars per year for both publications.

Office, 240 Montgomery St., San Francisco.

The attention of architects is called to the proposals for plans for the Provincial Royal Jubilee Hospital at Victoria, B. C.

Twenty-first Annual Convention of the American Institute of Architects.

THE Convention (as above) met in Chicago, October 19–21. It was one of the most successful meetings of the association since it first began its existence. Rooms in the newly completed Art Institute building were engaged for the Convention. Twenty-three cities were represented, the members numbering about sixty. No representative from California appeared in the roll call.

Among the more important resolutions considered was the following:—

"*Resolved*, That a committee of five members be appointed, of which the chairman of this Convention shall be an *ex-officio* member, the other members to be selected by him, to act jointly with one of a similar number to be appointed by the Western Association of Architects at their next annual meeting, to report as to the best and speediest methods of consolidating all the architectural societies of America into one organization, the report to be full regarding the form and constitution for local societies, and also regarding the form and constitution and permanent place of meeting for the national or representative body; that the Western Association of Architects be, and are hereby invited, to unite with us in this work, and to appoint a committee as above."

After considerable discussion, it was adopted.

Another question of much importance to architects related to a uniform system of contracts. This was referred to a special committee.

Richard M. Hunt, of New York, was elected President; Henry J. Potter, of New York, Secretary; O. P. Hatfield, re-elected Treasurer.

One of the social features of the Convention was the omission of the usual official banquet, and in its place a series of "lunches" was inaugurated.

Owing to the illness of the President, Mr. Walter, the Convention was presided over by the Vice-President, Ed. H. Kendall. We print the address in full, giving thanks to the *Inland Architect*, of Chicago, for our ability so to do.

THE PRESIDENT'S ADDRESS.

"Having known for only two or three weeks that, owing to serious illness, our esteemed President, Mr. Walter, could not be with us to-day, I can do little more than call you to order, and formally endeavor to perform the duties of chairman.

"I shall ask you, however, to undertake the business of this, our Twenty-first Annual Convention, with that especial dignity of bearing and soberness of purpose which would seem to be called for upon the attainment of our corporate majority, and will remind you that we are called together, in this great and prosperous city, for the purpose of exchanging our annual greetings, of renewing our allegiance one to another, of giving evidence that we are competent to do the work required of us, of investigating the current developments in the science and art of our profession, and of increasing our usefulness to ourselves and to our clients in all possible ways.

"We shall listen to papers from representative men upon subjects of especial interest, and reports of important committees must be heard and acted upon.

"One of the greatest difficulties encountered by your Board of Trustees, now that our field is so much enlarged, is the frequent meagerness of information concerning candidates for membership, and, in order to reduce this difficulty to a minimum, must we not soon devise a better method than the present one of determining whether or not those who wish to join us are qualified by education, by business habits, and by personal characteristics so to influence public opinion that we may command the respect and confidence of the several communities in which we work?

"Whether the present method can be made sufficient by a keener sense of responsibility on the part of those who know the applicants for fellowship, or associateship, or whether we should create an office, in the nature of a traveling secretaryship, the duties of which would be to come in personal contact with all our members and would-be members, and by intercourse and

correspondence, to make the institute more surely a common ground where the best instincts and interests of our profession should center, is a subject which we ought soon carefully to consider.

"We must all feel gratified by the growing interest taken in our institute, which is clearly shown by the large number of applications for membership, and of requests for information as to the organization of additional chapters during the past year, and you will all bear me out when I say that we are especially glad to have admitted so many who are also members of the Western Association of Architects.

"It is our wish to have the active co-operation of all the best men in the profession, and the being a member of other associations or societies, instead of being a bar against, is in fact the very best reason for joining the institute, as it would then get the benefit of doubly organized work, and the general welfare would be correspondingly advanced.

"Then, again, we wish to see and personally know all those who are doing good work in this great country, and the day will soon come when these annual meetings will be eagerly looked forward to, and be largely attended, and when they will be considered not so much from the standpoint of duty as from that of pleasure and privilege; then, also, will the American Institute of Architects accomplish its highest degree of usefulness when it becomes the chief vehicle of professional pleasures as well as of professional duties; and when, to the formal requirements of routine and committee, are generously added the fraternal leaven of impulse and comity."

S. F. Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held on Friday evening, November 4, A. Pissis, President, in the chair. The regular routine of business was first transacted, after which the new officers elect were installed in their various positions. Mr. A. Pissis in a happy speech introducing G. H. Sanders as his successor as President of the Chapter. Mr. Eisen gave way to W. P. Moore, as Vice-President. B. E. Henriksen resigned his portfolio and books connected with the position which he had so long and ably filled as Secretary, to the care of Secretary elect, George H. Wolfe. J. M. Curtis tendered all accounts, and the balance of cash remaining in his care, to date, to the custody of the Treasurer elect, J. J Clark. All the proceedings connected with the installation were conducted in a pleasant, genial manner, that served at once to make the new officers feel at home in their respective positions.

A proposition was introduced for new membership in the Chapter, but was laid over till next meeting.

The Secretary was instructed to notify every architect on the Pacific Coast whose address can be obtained, in regard to the meetings of the Chapter, and endeavor to interest them in the workings of the same.

The President delivered a few remarks, and presented the following suggestions on "WHAT WE CAN DO."

What we can do:

1. First to render the Chapter meeting useful, instructive, and in consequence, well attended.

2. To enlist the co-operation of the members of the Chapter to that end.

3. Also to enlist the assistance of kindred professional and the interest of the public.

1. That the Executive Committee at once proceed to obtain promises of papers for Chapter members, with subject and date. Also from members of the profession outside of the Chapter. Also from members of the different professions and trades, having bearing on building and architecture, or professional and practical subjects, and that special invitations be issued to those known to be engaged in building.

2. By each member of the Chapter being requested by the Secretary to communicate such matter of interests of a professional or scientific nature which may come under his notice by oral or written communication.

3. By inaugurating, first an exhibition of drawings and original designs by the members of the profession generally. Such prints and photographs as may be in the possession of professionals or their friends, of an architectural character, loaned for the occasion.

4. By an open competition to the younger members of the profession with money, prizes, and honorable mention.

A very interesting discussion followed on the subject, "HOBBIES OF ARCHITECTS." It was participated in by Messrs. Sanders, Pissis, Henriksen, Moore, Bestor, Clark, and others, for over an hour; general good feeling prevailed, as one or the other of the gentlemen named provoked smiles, and at times roars of laughter, on the distinctive hobby of some particular architect. A paper on the subject mentioned will be read before the Chapter at some future time.

It was decided that it would be advisable to ask scientific gentlemen, not members of the Chapter, to read papers on subjects of which they had made special study. Among those mentioned were E. L. Ransome, who has given the subject of "CEMENTS" particular study; Chas. Gladding, who gives his attention to "TERRA COTTA," and its adaptation to buildings; J. P. McMurray, who is one of our best informed men on the subject of "PLASTER ORNAMENTS." J. P. Jackson, P. Huerne, and many others were mentioned.

The President notified the members that he would be prepared at the next meeting with his annual address.

The meeting adjourned at a late hour, all feeling that a new era of prosperity was about to dawn, and that one and all would use their best endeavors to promote the interest of the S. F. Chapter of Architects.

Building Summary for November.

THE latter half of this year is showing a perceptible gain over the first six months. At present building is very brisk, and every indication points toward this state of affairs continuing through the winter. During the past month the summary of building news is as follows:—

68 frame buildings, value	$272,700
5 brick " "	210,500
23 alterations	50,000
96	$533,200

For the first eleven months of 1886:—

1,079 buildings, value $5,539,427

For the first eleven months of 1887:—

1,019 buildings, value $6,095,454

Showing a decrease in NUMBER of buildings of 60, and a gain in VALUE of $556,027.

Newspaper Laws

SUBSCRIBERS who do not give express notice to the contrary are considered as wishing to continue their subscriptions.

2. If subscribers order the discontinuance of their periodicals, the publishers may continue to send them until all arrears are paid.

3. If subscribers neglect to or refuse to take their periodicals from the office to which they have been directed, they are held responsible until they have settled their bill and ordered their paper discontinued.

4. If subscribers remove to other places without informing the publisher, and the papers are sent to the former direction, they are held responsible.

5. The courts have decided that refusing to take periodicals from the office or removing and leaving them uncalled for, is *prima facie* evidence of intentional fraud.

6. Any person who receives a newspaper and makes use of it, whether he has subscribed for it or not, is held in law a subscriber.

7. The postmaster who neglects to give the legal notice of the neglect of a person to take from the office the newspapers addressed to him, is liable to the publisher for the subscription price.

THE largest sheet of plate-glass ever brought to this country, so far as we can discover, was 120x210 inches. That is as large as the steamers' holds can accommodate. They are larger than that in England, where they are made 12x20 feet, and one-quarter to three-eighths of an inch thick. No plate-glass is manufactured in this country, though the business would be well protected under our present tariff. These plates come chiefly from England, though some are imported from France and Belgium. The import covers between three and four millions of feet yearly. The system of packing is so complete that little or no breakages occur. The business is rapidly increasing.—*Builder and Wood-Worker.*

Prosperous.

[From S. F. Bulletin, of September 23, 1887.]

IT is not often that a class journal, identified with a single profession or interest, makes much headway outside of the particular circle or clique that it represents. Of course there are exceptions, and among these can be named the CALIFORNIA ARCHITECT AND BUILDING NEWS. This publication was started more than eight years ago, and has won good reputation as authority on building and architectural matters. Increased activity in the improvement line has induced the owners to consider the propriety of issuing a weekly summary of transactions that would be of interest to the various trades associated with the house building industry. A sheet of the nature outlined would be an acceptable addition to the real-estate literature of the day.

Thanks, editors of *Bulletin*. The weekly will appear in a short time, and we will endeavor to merit your kind notice.

Our Weekly Edition.

FROM all quarters of the State we have received encouragement since the idea was first broached of a weekly building supplement to this journal. In the Oakland *Tribune* of November 5, the following will be found:—

"The CALIFORNIA ARCHITECT AND BUILDING NEWS has, heretofore, been issued monthly, and now the editors have decided to issue a weekly edition, 10x18 inches in size, to contain building news of all kinds from all parts of the State. This weekly edition will be devoted wholly to this variety of news, and no advertisements will be allowed. This paper is continually making improvements of all kinds."

We could fill a page with notices in a similar strain, but the above will suffice to show that the continued improvements in this journal are being noted by all our contemporaries.

Notes by the Wayside.

[EDITORIAL CORRESPONDENCE.]

CHICAGO, Ill., November 4, 1887.

AFTER a continuous residence of nearly thirty-seven years in California, we commenced our first trip across the continent, to the home of our boyhood, on the 26th ult.

At the end of seven days, less forty minutes, including stoppages of twenty-four hours each at Salt Lake City and Denver, we arrived at Chicago on the 2d inst., having enjoyed beautiful, warm weather all the way, except the run down Platte Valley from Denver, which approached a temperature almost oppressively hot; and the two days thus far spent in the city of the lakes, has been pleasant and comfortably warm. All this has been a matter of surprise, as accounts of cold weather, snow, and storms published prior to our departure from San Francisco, led to the anticipation that the reverse of the delightful weather enjoyed, would have been encountered. Up to the present writing, we have seen and know but little of this city and its environments, beyond the gleanings from general observations, and the conclusions enforced by the rushing, bustling, tumultuous business activities to be seen upon every hand. But more of Chicago in future correspondence. As soon as possible we found the office of Messrs. Edbrook & Burnham, and never was mortal man more surprised than Mr. Burnham when, without announcement, we stood face to face with him, enjoying both the hearty welcome extended, and the expressions of astonishment depicted upon his countenance at again meeting one with whom a decade of years ago he enjoyed copartnership relationships in the queen city of the Pacific Coast. We make this special mention of Mr. Burnham, because he is so well and favorably known to many in the architectural profession in San Francisco, who will be pleased to hear of him, and to further learn that he, with his partner, Mr. Edbrook, is in the enjoyment of a splendid practice, having at present employment for some ten or more assistants in his office.

It is no easy matter to swing around in a city like this—to learn the names of streets, find localities, addresses, etc. Consequently we have up to present moment been able to visit but one of our worthy contemporaries, the *Inland Architect*, where the cordial and hearty reception extended was such as to make even the wayfaring man feel that he was among friends. There was truly a whole-souled expression in the words of Mr. R. C. McLean, when he extended the hand of hearty welcome, and expressed gladness at meeting a representative of the architectural and journalistic profession from California. All this, too, under circumstances calculated to try the patience of the the most Job-like man: typos on a strike, and press men against their inclinations forced to abandon work, until concessions claimed by somebody else should be acceded to, or comprises made that would make it possible for the unwilling idlers to resume work. But one good brother in management seemed fully equal to the emergencies, and expressed full confidence that no material inconvenience would result to prevent the regular issue of the journal.

But as it is our purpose, after we shall have seen and learned more, to make Chicago the special subject of future special correspondence, we will go back from this queen city of the lakes, in Illinois, to the city which in time is destined to become the queen city of Utah, seated, as it is, in parts upon the level lands of the valley bordering upon the great Salt Lake, and the gentle inclines, slopes, and sides of hills lying at the base of the majestic range of mountains forming the picturesque background of the city, and following the valley southward in their uninterrupted grandeur for a long series of miles.

The lake is a mysterious sheet of water, spreading out to an average length of between ninety and one hundred miles, by a width approximately fifty to sixty miles. Its waters are so thoroughly impregnated with salt that a human body cannot be sunk beneath its surface, except by a head or feet foremost dive, and then only to be popped up like a cork to float or swim around. It is stated and claimed by the people of Salt Lake City, that even now the average number of visitors to the great bathing places on the lake fully equals five thousand for several months of each season. And if this be true, within the next decade it may be safely asserted that tens of thousands will be the number assembled at the present citadel of Mormonism, to enjoy the pleasures of the peculiar and healthful waters of the great mountain lake, which, while over four thousand feet above the level of the ocean, is in saline impregnations equal to any upon which the merchant and war fleets of the world float.

But we must leave the lake, with its numerous wonders and mysteries, and turn our attention briefly to the present of Salt Lake City and its reasonable probabilities and self-evident certainties. Its situation is among the best inhabited by human kind. The choice of the site is claimed by the devotees who first settled upon it, to have been pointed out to the leaders of the tribes of Mormonism, "by the Lord." Whatever part Providence may have taken in this particular, it is very evident that no one of fair intelligence and judgment in search for a dwelling-place for himself and people, having stood upon any of the commanding points within the limits of the present city of Salt Lake, would have passed in search of a more eligible and beautiful place of permanent abode. The facts of interest clustering around this city and its environments would require a thousand sheets of manuscript to present them fairly; consequently we must pass on to interests more specially pertaining to the building interests, simply adding that Salt Lake City was founded by a company of Mormons, July 24, 1847. The corner-stone of the temple—a massive granite structure—was laid April 6, 1853, and, up to date, is said to have cost $3,500,000. It is 100x200 feet, by 100 feet height of walls, and tower, when completed, 200 feet high. Three million dollars more is called for to complete, so that total cost will be between six and seven million dollars. If the same building was let by fair and righteous contract in any other city, or in Salt Lake, untrammeled by the influences which have swallowed up so large an amount of money, the total expenditure would not exceed $1,000,000, or at the most extravagant, $1,500,000. The tabernacle, 150x250 feet, is a peculiar construction, capable of seating from 12,000 to 15,000 people.

There are nearly 100 miles of streets in Salt Lake City, none of which are paved or sewered. They are generally 132 feet wide, and the blocks 660 feet square. But a multitude of interesting facts must be left untouched for the present.

The building improvements of the city are in a flourishing condition, and general activity and prosperity prevail. The much larger proportion—in fact nearly all the buildings in progress of erection—are brick constructions with stone trimmings, some few, however, being laid up of adobe brick, for economy's sake, and still fewer built of wood.

"Truckee pine," for framing purposes, $45 per M; Oregon

Perspective View of Woodland School-House.

pine, rough, $35 per M: redwood, $30; common brick, $7 50, delivered at site; press prick, $22.

Carpenters' wages, $3.25; masons', $3.75; stone-cutters', $3.50; painters', $3.00; plumbers', $3.00 to $4 00; hod carriers', $2.00.

But limitation in time will at present prevent more as engagement to be present at a debate by members of the profession. at 1 o'clock, to be followed by luncheon, and the necessity for early mailing, so that this may reach San Francisco in time for November issue. render it necessary to close for the present.

We have simply introduced Salt Lake and its interests, have not touched Denver, and have but named Chicago. The innumerable items of great interest remaining unnoticed, will provide subject matter for future correspondence.

NEW PUBLICATIONS.

"INTERIOR DECORATION."

By Arnold W. Brunner and Thomas Tryon, Architects.

The authors, in this new work, concede that the house is built to suit the tastes of the owner. The exterior features are all arranged in architectural array, so that the gables and chimneys make, with the walls and roofs, the harmonious composition which, until now, has existed on paper. Within, all is perfect. The halls, rooms, stairways, and cupboards are of ample size and properly located, so that every long-desired plan is at last realized.

But, alas! smooth-plastered walls, well-laid flooring, and white ceilings are not enough to constitute what we call a home. The house must be decorated. And it is with the broad purpose of illustrating how this can best be done, artistically, that the authors have placed before the people generally, the above-named book.

For sale at this office. Price, $3.00.

"MANTELS AND SIDE WALLS."

By E. Prignot and other architects and designers. 32 large plates.

The designs represented are in the Cheminee, Louis XIII., and Louis XVI. styles. The engravings are very fine, and artistically represent the various fine details.

Price, in portfolio form, $5.00. Send to this office.

"School House and Church Architecture"	**$ 3 00**
"Public Buildings"	**3 00**
"Detail Cottage and Constructive Architecture"	**6 00**
"Modern Architectural Designs and Details"	**10 00**
"Monckton's Practical Carpenter and Joiner"	**5 00**
"Mechanic's Geometry" (how to frame by card-board models)	**5 00**

School-Houses.

As people enter a town or city for the first time, they notice particularly the character of its public buildings. As architecture embraces to the elevation of national and individual character, and the increase of the physical comfort and well-being of mankind, it becomes the duty of the officers of every city to study carefully into every detail of the work of constructing buildings for public use. A celebrated German writer and thinker, F. Schlegel, has described architecture as "frozen music." If a building has for its primary object the education of the young in every branch, should we not pay some degree of attention to the building in which the minds of the youth are to be moulded? We have seen school-houses in the country where the wise and faithful teacher has been obliged to take the children and run around the room to keep warm, because of the wind blowing the cold air through the cracks in the siding upon the children, who were almost freezing. We hope that there are not many Boards of Directors in our State who allow their children to go to school in a building that is not as good as the barns they have for their animals. While this may seem to be an extreme case, yet there is large room for improvement, not only in our country districts, but in our cities. How many are to-day complaining of our school buildings because they may be illy contrived, poorly heated and ventilated.

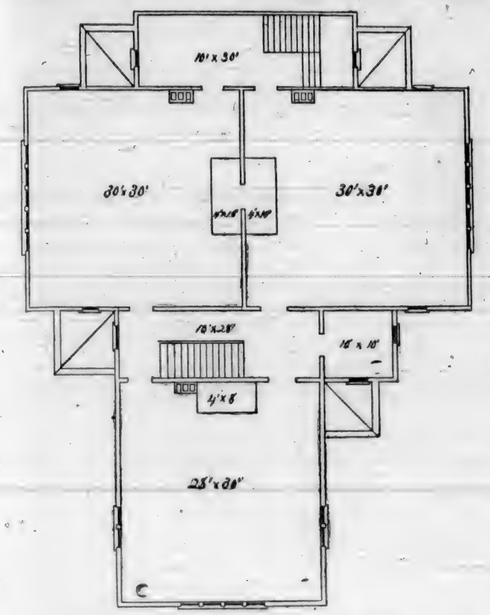
In this issue of the Architect we give a cut of the Walnut Street public school building, in Woodland, which is one of the three now being used, and under the management of an efficient Board of Trustees. The building sets well up from the ground, the rooms are well arranged, high, light, and airy, and the ventilation good. This is one of the buildings that has been specially arranged for the comfort and convenience of all who labor and study therein. Messrs. Gilbert & Sons are the architects, and superintended the work of building, in which they have succeeded in combining utility and beauty of architecture. Architecture bears a strict analogy to language. Both are an expression of thought, and in the one, and in the other, the richness, variety, and precision of the expression will be in proportion to the quantity of the thought to be expressed.

First Floor Plan Woodland School.

Mechanics' Liens.

AN INTERESTING DECISION BY JUDGE LEVY.

Some time ago Elizabeth Doherty had a building erected. A number of liens were filed against the same. These were all assigned to one C. A. Barker. The owner set up the claim that the action of those holding the liens assigning them to a third party, was illegal. In rendering a decision fully sustaining the plaintiffs, Judge Levy remarked: "It would require express words to prevent the assignment of a claim and the incidental lien. If every case in action is assignable, then a claim of a mechanic is one of them, and the assignment of the claim transfers the lien. In the cases at bar the liens themselves are transferred. It would be a gross injustice to the mechanic if he could not transfer his demand against an unwilling creditor, and thus perhaps be provided with the only means of a speedy return for his labor. To deprive the mechanic of this privilege to realize at an early date on his work, without the sanction of clear language in the statute, so clear that he who runs may read, would be to apply a rule of construction unworthy of the liberal spirit of our mechanics' lien law. Certainly, the bare right to sell his demand, without at the same time assigning his lien, would be holding the word of promise to the ear, and breaking it to the hope of the mechanic or laborer."



Second Floor Plan Woodland School.

How Are Paints Analyzed?

It is often a matter of prime importance to ascertain the constituents of a paint. The majority of master house painters, indeed, never trouble themselves with getting an analysis of a pigment. Should a paint prove unsatisfactory, they merely change the brand, and usually continue uninformed, however they may suspect adulteration, of the cause of disappointment in its working. Analysis, after all, is a somewhat expensive affair, and necessitates the labor of an expert. To manufacturers and large dealers, more particularly to the latter, the employment of chemical tests from time to time is a necessity. Danger, though not of a dynamitic order, may lurk in the raw material supplied to them commercially as pure; or an article in itself unadulterated may contain for the purpose wanted a disproportionate amount of a given constituent, rendering it unserviceable, or at least objectionable. There are clerks who closely watch over the interests of their customers, in becoming thoroughly acquainted with the qualities of what they sell, which is done partly by ascertaining the constituents, and again watching the effects of subsequent combinations where two or more pigments are mixed together for certain hues; further, by ascertaining from practical painters how they work. It will doubtless be of interest to our readers to learn something of the processes of resolving an article into its constituents.

At the New York Convention it was suggested that possibly it might be desirable for the body of master house painters and decorators to appoint officially a chemist to whom members might send samples of paint for examination, but the subject was not formally discussed. It is easy to perceive the advantages that would arise from such an arrangement on the part of State organization, which would encourage members to have samples made at the moderate price at which these could be obtained. Many occasions arise on which the purchaser wishes to discover exactly what he has got; and even the labeling of goods for what they are, even if enforced by law, would not wholly dispense with such occasions. There is abundant evidence to show that even laws which carry penalties, if violated, cannot make all manufacturers and dealers honest.

Among other objects of analysis is the discovering of the amount of coloring principle. For instance, a sample of plumbago should moisture 0.26 per cent; ash, 8.5; carbon, 91.19. Some of these coloring principles contain great colorific intensity, and will stand an admixture of white pulverulent substances, such as barytes and whitening, without assuming a gray appearance.

The sample to be analyzed may be in the dry state, ground in oil or in liquid form, ready for use. In the latter case, the fatty or resinous portions of the paint are extracted with benzine, alcohol, and ether, which leave the pigment in a form of powder suitable for analysis. In some cases the additions may be removed by simple ignition; however, as reductions are very apt to take place, that is to say, some of the elemental constituents of pigments thus destroyed, this process is followed only in a limited number of cases.

In analyzing dry colors, or those freed from oil by extraction, the main difficulty consists in the separation of the different lead salts, as, for instance, plumbic sulphate and carbonate from each other, and from baric sulphate and silicate (clay) a solution is first applied to separate the two. Sodic hydrosulphate proves an excellent solvent for the plumbic sulphate. In fact, all analysis is based on chemical reactions. It will surprise most persons that the most complicated process of analysis occurs with chrome green, blue, and yellow. It is so elaborate that space prevents an account of it. Then there are chemical tests to be applied to the various substances precipitated, or otherwise separated from their compounds. As a confirmation for the correctness of the result, the several residues of extraction are weighed, sometimes after being again dissolved and reprecipitated.

To ascertain the relative "strength" of two colors of similar shade, the following experiment is made: Half to one gram of each sample is mixed with five to ten times its weight of a pulverulent substance, which exerts no chemical action on the pigments, as, for instance, baric sulphate. After sufficient mixing, the shades are compared, and the darker one made equal to the light one by further addition of baric sulphate. On re-weighing the samples their weights will give the ratio of their relative "strength."

In the case of so-called liquid or ready-mixed paints, the vehicle, as well as the suspended coloring matter, is an object of analysis. The vehicle for paint is combined with the aim of obtaining approximately the same specific gravity as that of the pigments, so as to keep the latter suspended (most of them "settled," however, nevertheless). Among the most commonly occurring constituents of the vehicle may be mentioned benzine, oil of turpentine, resins, linseed oil, etc. Soap, water, glue, small quantities of soda, borax, or alum, besides all kinds of low-grade oils, are frequently met with. The nature of a vehicle may be approximately determined by fractional distillation.—*Painters' Magazine.*

Apt Names for Bad Workmen.

Strikes bring out the technical slang of the trades, and particularly the opprobrious epithets with which the different classes of workmen distinguish the unskilled operatives who labor at the same trades. In most cases it will be found that these slang terms originate in some technicality of the trade. Thus the telegraphers call a poor operator a "plug," after the little metal implement which divides the switches on the key-board, inasmuch as the plug or "key" is a comparatively unimportant part of the machinery. Printers designate an unskilled type-setter a "shoemaker" or a "blacksmith." The derivation of the former appellation is from the fact that a compositor who makes errors is obliged to correct them after the type is set up by taking out the misplaced letters and "pegging" the proper ones into

THE RUBIDOUX—Southern California Architecture.

their places. Tailors also use the word "shoemaker" to distinguish a poor hand, as an unskilled workman makes his stitches too far apart, and is therefore better adapted to sew leather, where he can punch the holes with an awl before putting the ne dle through. The appellation "blacksmith" is applied to a printer whose fingers are clumsy, and a jeweler also terms an unskilled worker at his trade a "blacksmith" for the same reason.

A term of opprobrium which was use l by old New York printers to designate an unskilled compositor was the word "boarder," from the fact that a poor hand was generally a drinking man and spent his time loafing or "boarding" in liquor saloons. All striking trades workers in common use the general word "scab" to distinguish workmen who take the place of strikers. The derivation is obviously from the fact that the scab is a morbid growth, and lives only at the expense of the well-being of the rest of the body. Shakespeare uses the word scab as a word of opprobrium, and Webster defines scab as "a mean, dirty, paltry fellow," which may have suggested the original application of the word to its present use. The printers and telegraphers, two of the most intelligent classes of workmen, are the only tradesmen who have invented names to particularize the scabs of their respective professions. Thus, compositors call a scab a "rat," in contemptuous allusion to the rodents who infest printing offices. The telegraphers have only recently invented a term for scab operators. They call them "contumists," though the application is not of technical derivation, but is probably an attempt to manufacture a word from the Latin *contumæ*, the root of contumacious, to describe a stubborn and obstinate person.

The various names actors give to the unskilled members of their profession are familiar to most of the reading world. A poor actor is termed variously a "stick," "fakir," "statue," or "dummy." A "stick" or "statue" is, naturally enough, an actor who is awkward and stiff on the stage. The term "dummy" is derived from the fact that when a traveling company has not enough members in the company to fill up a large stage, men and women are employed to stand in the back with choruses or supernumeraries, and take no other part. They are called "dummies." "Fakir" is a generic term, and comprises those actors who lack talent and depend upon other resources. For instance, a comedian who makes faces is called a "nugger," and a tragedian who bellows is a "ranter," and both are "fakirs." The professors of the manly art are also apt in this style of nomenclature. They call a cowardly fighter a "duffer," and a weak, unskilled boxer, a "sand bag" or "stuff," the latter terms being derived from the contrivance upon which the pugilist does his practice.—*Carpentry and Building.*

THE rapid increase of hotel building in the southern part of California, is a fact that is noted by most all metropolitan journals throughout the Eastern States. With the exception of the new hotel on Coronado Beach, opposite San Diego, probably no one has caused more comment than that represented above. The length of the building is 341 feet; length of the north side, 282 feet, and the south side, 199 feet, while the total area of the main floor comprises 19,473 square feet. The exterior will present a combination of the English, Gothic, and Swiss styles of architecture, and with a touch now and then of Old Holland timber work, presents a very beautiful and uniform appearance. The dining-room is 50x100 feet in size; ladies' parlor, 40x65; kitchen, 66x70. Billiard room is circular in form, having a diameter of 40 feet. Ball-room is 40x100, with ceiling 20 feet in height. A children's play-room is provided, same size and character as billiard-room. From the above measurements one can somewhat judge of the great size of the building. There are 250 guests' rooms. The hotel is thoroughly supplied with all the modern conveniences, and when in running order, no doubt will be one of the leading hotels in California. J. C. Pelton is the architect.

Safety Dumb Waiter Fixtures.

THE New York Safety Dumb Waiter Fixtures are the most complece, simple, and absolutely safe waiter made. They move with perfect ease, and are perfectly noiseless in their operation. They are provided with a safety rope, thus avoiding the chances of an accident. These fixtures are handsomely bronzed, and packed one set in a box. They can be adjusted by any carpenter or mechanic. Full directions accompany each box. Dunham, Carrigan & Co. have been appointed as agents for this city, and they will keep a full stock on hand. Manufactured by the Edward Storm Spring Co., of Poughkeepsie, New York.

Constitutionality of the Plumbing Act.

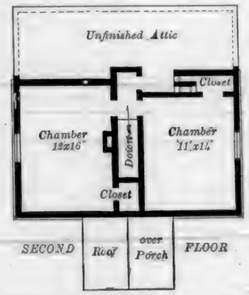
A PLUMBER, by the name of Chas. Friermuth, was lately arrested and convicted for a violation of the provisions of the Plumbing Act, passed March 3, 1885. The defense set up the plea that the Act was unconstitutional. In order to test the matter, after being found guilty, Mr. Friermuth quietly went to his free accommodations, but was immediately released on a writ of *habeas corpus*. Judge Wallace decided the Act constitutional, which leaves the matter open for Mr. Friermuth to take an appeal to the Supreme Court.

A Wage-Worker's Comfortable Home.

FRONT ELEVATION

IN the accompanying plans and elevations of a small but comfortable home, we had, primarily, in view the expenditure of but a small sum of money, and, in view of this fact, the rooms have been kept to a size convenient for the purposes marked on each. The outside finish, also, while presenting an attractive appearance, has but few, if any, embellishments that can be dispensed with. The addition of the front porch adds much to the beauty and utility of the design, and yet the expense of the same is but trifling. We present a few suggestions to those who are interested in the plans given.

A well-lighted and ventilated basement is always to be desired in a country home, as it prevents the articles kept therein from being affected by either heat or cold. (We are now writing in California, where very cold weather is never experienced.) A farmer or mechanic can construct his own

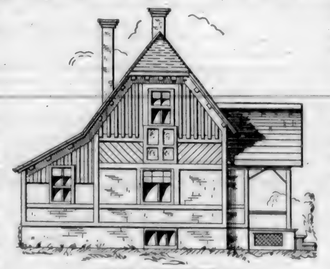


basement at but little expense. There are but few places where rock cannot be conveniently had. During the spare time, haul enough of this material to the building site. With the aid of one mason, you will soon have a basement that will bid defiance to the storms. Calculations can be made so that the dirt excavated can be placed on the four sides of the house, sloping gradually from the walls outwards, so as to insure proper drainage. If the cellar is to be used at times as a work-shop, it would be well to place more windows on the side for light; but those shown will be found sufficient for all ordinary purposes.

The walls of basement being finished, see that the wall plate is well bedded, and as near level as possible. This is important, as it saves much time hereafter. After the joists are placed in position, fill up the spaces between them with rock, so that rats and mice will not be able to get a foothold. This is also an important fact. Cut your flooring, and turn it upside down. Do not nail it until house is all inclosed. By this means the workmen have a substantial place to work on, and, better still, the lumber has a splendid chance to thoroughly dry and shrink. Do not rest your plates on the joist. Nail thoroughly a piece of flooring first on top of the joist, and let your plates rest on that. This prevents the unpleasantness, common to so many houses, of a draft from under the base-board. These suggestions may look simple, but they serve, if carried out, to make a home truly comfortable to live in.

Do not spare the braces; they cost but little. Have them well nailed. Then when the storms come, as you sit in your dainty parlor, what a pleasant sense of satisfaction you have to feel that no storm can shake your little abode, for it is well nailed together, well braced, and founded upon a rock.

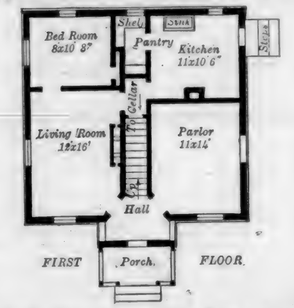
Two more essentials of the building must receive careful attention. See that your chimneys are well built. Do not let a single joint pass your observation. Have the in-



SIDE ELEVATION

side well and smoothly plastered. Take no chances on, "*That will do.*" It will not do to have your house catch fire from a defective flue simply because you wanted to save an hour's time and a bucket of mortar. Notice carefully the shingling of your roof. Do not let the workman fool you by saying one nail in two shingles is good enough; that is all nonsense. Shingles must be well nailed, as much so as the flooring. Look out for the flashing around the chimney. No leak is wanted there, and a little care will effectually prevent the same.

The plans are very legibly marked as to the size and character of the rooms. Any mechanic can erect the house shown by the designs given. We hesitate to give the cost of the house. Lumber in this city has increased from $15, a little over a year ago, to $25 at present time. Wages are higher. All necessary materials are higher. But for a general average, we may say that the build-



ing will cost anywhere from $1,200 to $1,600, depending altogether on the location.

The unfinished attic will be found a convenient receptacle for the storage of trunks, etc. By increasing the height of the stories a little, this part can be utilized for sleeping-room in case of necessity.

Mutual Destruction.

IT is a fact, but nevertheless one that has escaped the attention of many, that many substances and materials used in building are mutually destructive. Certain kinds of wood which, taken individually and separately, possess remarkable lasting and wearing properties, placed in positions of mutual contact rapidly deteriorate, and, may be, soon disintegrate and decay. In a farm fence two woods, cypress and walnut, each a timber justly celebrated for long wear and immunity from the destructive atmospheric influences, when placed together rotted very rapidly. The same was true with reference to cedar posts and cypress leaders and palings. At the point of contact decay set in at an early day and progressed very rapidly; and to prove that actual contact was the ultimate cause, the two were separated in a number of instances, in every one of which rotting ceased, and the wood remains perfectly sound save where they were in contact formerly.

With the growing scarcity of many valuable building woods, it becomes necessary to back and fill with varieties not formerly used. As a result there are many structures already tottering with decay that should have remained perfect and erect for many years yet, and that, too, when the timber is in out-of-the-way and isolated positions favorable to long life and usefulness.

Though the world of science is yet too young and weak to reconcile the two branches, architecture and chemistry, the time will come when the scarcity of building material in general, wood in particular, will necessitate chemical as well as architectural analyses before it will be deemed safe and expedient to place two untested woods, or other substances, together. All have seen the effects on timber exposed to gases emanating under certain processes of manufacture, and many have marveled at the permanency of some and fragility of others, when, as is often the case, conditions and surroundings being changed, the property of wood often changes correspondingly.

It is safe to state that no two varieties of wood possess the same essential chemical characteristics, and the instant one possessing much alkali is placed near another that may acid in its reaction, it will invite rapid dissolution and decay. What is true with reference to wood applies with all the force to other materials used in structures. Two uprights, the main-stay of a quite large country bridge, rotted off at the ends when bolted together with an iron bolt. New ones were placed in and fastened by wooden pins of the same variety, and ten years have elapsed, and still they stand. In the first instance beech, which is known to contain much acetate, was used, and the iron soon oxidized, transmitting the rot to the wood, and though the rest was perfectly sound, about the splice soon rotted off, while in the latter case the same wood, I believe from the same tree, was used, but the wooden pins did not rust, and the joint remains firm and sound at this writing, and it is now nearly ten years since the renewal was made. Now, if a wood like ash or oak, having less acetate in its composition, had been used, instead of rotting and oxidizing it would have tended to preserve the iron, hence would last longer than if fastened with pins made of its own species of wood, or any other, for that matter. —*J. Frederick Elsom, in Inland Architect.*

San Francisco's Wooden Houses.

THE captious and transient critic rarely visits us without having his fling at our wooden houses. A city of shanties, a wilderness of redwood, a big lumber yard and a collection of sheds, are some of the expressions which he throws at our devoted heads and into the pages of his correspondence. He contrasts San Francisco with the brick-and-mortar cities of the East, much to the discredit of the former city; he compares the flimsy character of our architectural materials with the brown-stone veneers of New York and the solid limestone walls of St. Louis, and he charges us with living in a flimsy place and in houses that must impress their owners' minds with feelings of instability and change.

Our critic has much reason in what he says, but at the same time there is a good deal to be urged in extenuation. The main point in the answer is that with us it has been very largely a question of supply and demand of material. The first missionaries have left their architecural imprint in the crumbling ruins of adobe walls. They built of adobe because the clay was at hand, the sun was nearly always shining warmly enough to bake their bricks and the work of kneading and cutting was an easy one that the Indians could learn in an hour. That was one reason; and another was that the padres were rabid on the subject of arboricide. They believed and carried out the belief that the man was blessed who made one blade of grass to grow where none had grown before, and instead of cutting down trees they planted them. To destroy a tree was a crime against nature, and they gave much loving care to the culture of "shade-making trees." The oliviers of the San Diego Mission, the lovely avenue along the Alameda of Santa Clara, the vines of the Mission San Jose and the gardens of Santa Barbara all prove how deep was the love of the padres for leaves and blossoms and how they strove to add to the scant beauty of their surroundings. When the use of timber was imperative, as, for instance, in the raftering of a church, they only used a few massive logs and scarcely squared them at that. Every other part of the building was made of clay. The roofs were covered with clay shaped into convoluted tiles and burned a deep red; the walls, as we have seen, were built of clay blocks burned in the sun, and the floors were lined with flat tiles made of a finer clay and brought from Spain.

Then came the early mining era, when men lived in tents, or in lean-tos of branches and calico. But the summer breeze blew the calico into rags and the winter's rains poured through the rents, and some other shelter was absolutely necessary. Of what material that shelter was to be built was a very serious question. The adobe was thought of, but the hunting for clay beds and the tedious waiting for the bricks to dry when once they had been made was a work and waiting not at all suited to the hurry-skurry miner. Of stone there was very little, and its use meant quarrying, and our argonauts decided that they would have all the pick-and-shovel work they wanted in the mines. There remained, then, lumber, and the first "house" that was built in San Francisco was of rough sawed lumber. The planks were brought up in a schooner from Monterey, where a mill had been established, and soon other mills were started and the lumber-carrying trade became one of sufficient importance to keep a small fleet of coasting schooners busily employed. That was an era of experiments. Some man pressed the Mission people into service and built an adobe hotel on the southwest corner of Clay and Kearny in 1847, but he had no imitators. Then some enterprising spirit brought out a ship load of bricks from the East, in the fifties, but they were worth almost as much as though they had been made of bullion. Granite was brought from China, sheet-iron from France and more bricks from Philadelphia; but all were found too expensive or too troublesome to work in those easy-going days, and the handy plank, upright and a nail or two grew steadily in public favor.

So the building of wooden houses was due to a question of material and the expense of securing it, and so it has largely been ever since. We have grown accustomed to our houses of planks, and, being accustomed to it, we are led to discover excuses for its short comings and to find good points where strangers can only see faults. It will be curious to look into some of these claims for the next minute or two.

We are in the habit of saying, for instance, that our frame houses are warmer than those made of brick, for San Francisco is not entirely without residences built in the Philadelphia fashion. This proposition, we think, is scarcely tenable. It may be true that the sun will heat a box more quickly than it will a pile of bricks, but it is equally true that the pile of bricks will retain that warmth long after the box has grown cold. Stone retains the warmth still longer than brick, and this is susceptible of very easy proof. Let the reader walk for an evening beside a brick wall, a stone wall, and a wooden fence that have been all day long in the eye of the sun, and he will find that the stone wall gives out a heat that is perfectly perceptible at two feet of distance, that the bricks are warm to the touch and that the fence is cold. Then, too, if the wooden wall, allows the warmth to penetrate easily it must also allow of easy entrance to the cold and the wind. About this latter proposition there can be no doubt, and the proof is to be found in every wooden house parlor in San Francisco. Let the southwest wind blow up smartly in January or February, and every room in the house with that exposure is so cold and damp that fire is needed all day long. The fact of the matter is that the old brick houses were built with too much wall and too little window. We want all the sun we can get, and in the wooden houses, there being less support wanted, there is generally as much window-glass space as of plank.

It has been said, too, that the wooden houses of San Francisco are its salvation from extensive fires, because the redwood lumber does not burn easily, because it scorches rather than blazes. There may be something in this, but we would much rather believe that our immunity from large conflagrations is more owing to the efficiency of the fire department than to the incombustibility of redwood. When once a big fire has got full headway we are afraid that the wonderful sequoia will not check its progress.

The wooden house has done good service, but unless we are very much mistaken it has seen the prime of its days. It has enabled us to build up a great city quickly and cheaply; it has resulted in a pleasing if not very classic form of architecture, but we do not depend upon it as exclusively as we did. The brick fields of the State are spreading, the quarries are being opened, good building-stone is found in every county in quantities sufficient to build a metropolis, and lumber is becoming yearly more expensive.

Besides this, the necessity and inclination to build hurriedly are both past. We no longer look upon ourselves as flitting sojourners, we know that we shall spend our years in this same city of San Francisco; we want to erect substantial monuments to the spirit of domesticity; we are running to the brown stone blocks and cyclopean walls; we are "going in" for solidity; we have new ideas of style, and we believe that the time is not far distant when the man who spends his money in a redwood mansion will be looked upon as being behind his times.

FOR ELEVATORS.

Automatic shutters or doors that completely close the well openings at each floor of a building. A California invention.

Probably no one subject has been more generally studied by inventors than *elevators and the safety appliances connected therewith*. Hundreds of patents have been obtained for the purpose of guarding those who are obliged to go up and down to the various stories of our large buildings, from receiving injury, should any portion of the machinery break. The large fires that have occurred in this city in brick buildings, turned the attention of many of our deep thinkers to providing a simple remedy against the spread of fire through a building, by means of the elevator shaft. Device after device was experimented with. Difficulties beset the inventor's path, until the object sought to be obtained seemed farther away than when the thoughts first run in the direction referred to.

Mr. A. G. Page studied and experimented after the Bancroft fire in this city, to overcome the various defects noted by fire marshals and the insurance men generally; and in the Page Automatic Fire Shutter we have the successful result of his inventive genius. The device is a very simple one. Two wooden shutters or doors are thoroughly covered with sheet iron. These are hung on a level with the floor, and fit closely the opening through which the elevator passes. A set of doors are placed at the level of each floor, be there two or six stories. As the elevator rises, the doors below the floor of the cage close automatically, while at the same time the doors of the floor above open. The same operation is repeated at each floor ascending or descending.

One of the chief merits of this device is that the doors, after the elevator has passed, can be used the same as the floor. Hand trucks loaded with goods can be freely rolled across the doors. They are securely held in position by an ingenious automatic lock, and cannot be moved except by the running of the elevator. On the main floor, especially, this will be found of great benefit, for, after the elevator has passed upwards, truck loads of goods can be moved across the elevator way, on a level with the floor, without any obstruction.

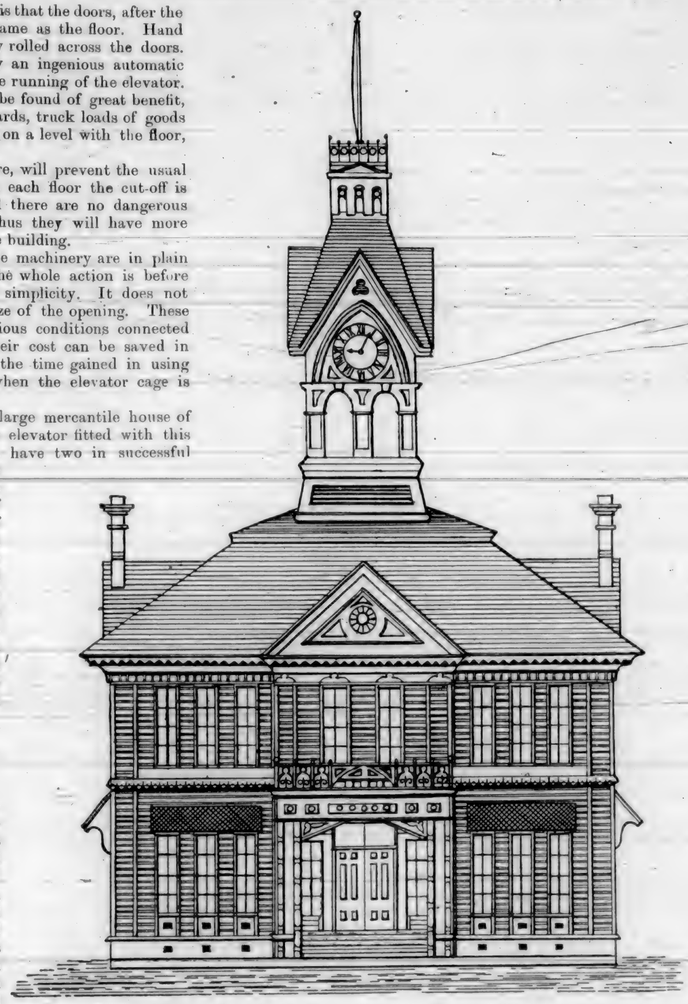
Again, this invention, in case of a fire, will prevent the usual fiery draft up the elevator shaft. At each floor the cut-off is perfect. The firemen instinctively feel there are no dangerous openings for them to fall into, and thus they will have more energy to penetrate into all parts of the building.

All the different parts of the simple machinery are in plain view. In going up or coming down, the whole action is before you, and you wonder at its extreme simplicity. It does not matter about the height of story or size of the opening. These shutters can be fitted to suit the various conditions connected with any description of building. Their cost can be saved in mercantile buildings in one year, from the time gained in using the different floors at all times, save when the elevator cage is stopping at any particular floor.

This device is no experiment. The large mercantile house of Cunningham, Curtis & Welch has the elevator fitted with this device. The San Francisco Tool Co. have two in successful operation. The chief engineer of the Fire Department, the fire marshal, the fire patrol, the city architect, many of our leading architects, and agents of the principal insurance companies and "Insurance Union" have given their approval of the invention. We shall call attention from time to time to the various buildings in which it is to be introduced. The device is clearly illustrated in the advertisement in this issue, and the company are prepared to execute all orders for shutters in new buildings or in those already constructed to insure safety from fire or accident.

Elevation of School Building at Lodi.

LODI is the largest town in northern San Joaquin Valley. It contains many nice buildings, but none receive the notice that is bestowed upon the public-school building. All the citizens look upon it with pride, and strangers entering the beautiful farming town are soon made to feel that more than ordinary attention is given to bestowing a liberal education upon the young of the section in which is built the fine school-house, a faithful representation of which is portrayed above.



Elevation of Public School Building, Lodi, Cal.

Japanese Carpentry.

W. K. BURTON, in the *British Journal of Photography*, gives the following interesting account of how Japanese carpenters work:—

"The work-shop is a room perhaps twenty feet square, the floor all covered with straw mats. We are accommodated with chairs. This is an unexpected and certainly a pleasant advantage. We had looked to sitting on the floor, and accommodating our lower limbs as best we could.

"And now to give some idea of the manner of working, if possible. There are four carpenters in the shop. Each squats on the floor with his bench—or what takes the place of the bench—and his smoking gear beside him. The bench is nothing more than a flat board of hard wood, the dimensions some three or four feet long, about eighteen inches wide, and an inch thick. It lies directly on the straw mats. The smoking gear consists of a stone-ware bowl, which is filled with wood ash, in the center of which a few embers of charcoal are kept always alight. The bowl stands in a square box, in one corner of which also stands a short piece of bamboo, into which is knocked the tobacco ash after smoking. The pipe has a wooden stem and a metal mouth-piece and bowl, the latter very diminutive. A pinch of tobacco is put into the bowl, the bowl is thrust among the live embers, a single puff, or at most two, are taken, the ash is knocked out of the pipe into the bamboo pot, and the smoke is over. The tobacco is the very mildest, and is cut exceedingly fine. I think no Japanese workman is ever without this smoking gear. In his work he pauses every few minutes, takes his smoke, as I have described, very deliberately, then returns to his occupation. The smoke is by no means unpleasant, but would certainly be too mild to satisfy certain photographers at home that I could mention.

"The bench has no arrangement whatever for fixing the work. It is merely the board of wood that I have described, without any addition whatever. That work should be turned out, on such a bench, of a quality to rival all but the finest camera work at home, is a thing I certainly should not have believed unless I had seen it. One thing which enables a Japanese carpenter to get on without any arrangement for fixing his work is that he uses his feet as well as his hands.

"It is doubtless mostly due to practice, but also in great measure to the foot gear used by the Japanese, that they can use their toes to grip in a manner which Europeans could not imitate at all. The foot gear consists either of straw sandals or wooden clogs, the latter generally mere thick slabs of hard wood, which are held on the feet each by a thick cord, which passes up between the big toe and the one next to it, bifurcates just over the toes, and joins the sandal or clog again at each side of the heel. The foot is thus never cramped or distorted, as with us, and the toes can be freely used. A Japanese tailor holds his cloth with his toes, and a carpenter holds and turns about his wood with his feet. I was about to say that he manipulated it, but this, I presume, would not be allowable.

"The tools are much more simple than ours. The hammer is merely a cylindrical mass of iron, with a transverse round hole through which the handle passes. The saw is merely a strip of steel with serrated edge, and with a "tang" whereby it is fixed into a round handle like a chisel handle, much as we fix a file at home. The work is done by the upward or drawing stroke.

"The plane is in general form somewhat like ours, but the wooden portion is much thinner, shallower from top to bottom, and the knife is inserted much nearer one end than with us. It is unlike our planes in that there is no second adjustable iron, and that there is no wedge for fixing the iron. The iron is just in the form of a chisel, and is held in position by friction against the sides. With the plane, as with the saw, the work is done by pulling or drawing, not by pushing. The knife is fixed near the end, which goes in advance as the plane is drawn along. One would suppose that with such a primitive tool only rough work could be done, but the very reverse is the case. I have seen a Japanese carpenter do what anyone who has ever practiced carpentry will know is by no means an easy thing. I have seen him take out of the middle of a board of hard wood a thin, delicate shaving several feet long, and the whole width of the plane-iron. One reason, perhaps, why such good work is done with the Japanese plane is that unless the edge of the knife is kept in very good condition, the tool will not work at all. It is, therefore, kept as sharp as a razor, a deal of time being consumed in the very frequent setting of it.

"One result of the simple construction of the Japanese plane is that a carpenter thinks nothing of making a special plane for any piece of moulding or such like work that he may have to do. These are sometimes very minute. I have seen them only about an inch and a half long and three-eighths of an inch wide. It thus comes that much of the work done by us with gouges, chisels, etc., is done by the Japanese with the plane. None of the other tools that I noticed differed greatly from those used at home, except in being rougher and less finished in appearance.

"The work that was being done was merely the exact copying of an English camera and dark slides. At work of this kind the Japanese are very clever, but they appear to have but little capacity for original mechanical contrivance. They, moreover, have very little idea of saving labor by machinery, or of division of labor. The consequences are that, although they turn out work of the kind that I have been describing, cheaply—the camera was to cost about one half what it would cost at home—they would turn it out no more cheaply if goods were manufactured on a large scale. If a thousand dark slides were to be made, each one would be made precisely as the first, one workman doing the whole of the work. It is probably due to this very fact, to the fact that the Japanese use little or no machinery, and that, as a rule, an article is made from beginning to end by one individual, that we owe the indefinable artistic charm which there is in the commonest product of Japanese labor. It is because each article has something of the individuality of the worker in it.

"The camera maker thought it his duty to keep us entertained as we watched the progress of the work, and brought up to us, one at a time, what he considered the greatest treasures of his store. He brought first a fine and very large musical box. It was of French make, but set to play Japanese airs, or music, rather, for I have failed as yet to find any approach to air or melody in the Japanese singing or playing. He next produced a Hall type writer, afterward various other mechanical toys for our amusement. The bellows of the camera was being pressed in the selling shop by the simple expedient of piling lithographic stones on the top of it to a height of some four or five feet.".

Remaining number of this year given free to all new subscribers for 1888.

HILL'S
Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and tenements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. H. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY
BUILDING INTELLIGENCE

We earnestly desire the co-operation of country editors and mechanics generally to this department of our Journal. Forward us all the building news connected with your different localities. Architects should also notify us of "plans to figure on." No charge is made for such notices. Direct letters to office of this Journal, 240 Montgomery St.

Alameda.

J. Cordes is building a very handsome two-story house on Briggs Avenue, near Ninth Street, to cost $4,000. C. H. Foster is the contractor.

J. B. Finley is remodeling his cottage on Alameda Avenue, near Willow Street, at a cost of about $2,200.

Work has been commenced at the Clark Pottery Works upon a new fire-brick kiln, which will have a capacity for 40,000 bricks.

Joseph A. Leonard, the architect, has associated himself with A. H. Todd in the real estate, house-building, and house letting business. The firm name is now Todd & Leonard.

Alterations. Owner, John Wulzen; architects, John & Zimmerman; contractor, R. Wadell; cost, $2,500.

Berkeley.

J. L. Barker has two houses in Berkeley under way, to cost $2,000 each.

Dr. George M. Baronidas appeared a few weeks ago before the Berkeley Trustees, and stated that he and his associates were preparing to build a $150,000 hotel, four stories in height, with a bank and drug store on the ground floor; also to erect a large bath-house, 60x80 feet, covered with colored glass, to be used for hot and cold-water baths.

P. S. Glasford is having a $1,700 cottage built on the Hillegas Tract, by C. R. Lord.

J. B. Cogswell has agreed to erect a house for Mrs. H. Gross, to cost $3,100. Percy & Hamilton are the architects.

A. H. Broad has agreed to do the carpenter work on a building for A. Carlisle, on the corner of Vine and Spring Streets. The contract price is $2,720.

Oakland.

George E. De Golia is having a very pretty modern cottage built on Hobart Street, near Telegraph Avenue. A. W. Pattiani & Co. are the architects and contractors, and the price is $1,302. It will be completed by the first of next month.

The California Mill has the contract for the mill work on St. Mary's College, for $16,921. The Mill Company has filed a bond in the sum of $10,000, with C. F. Doe and W. J. Adams as sureties.

The proposed Presbyterian Church of Temescal will cost $8,000.

A nine-room residence is being built for Mrs. J. P. Mene, on Hobart Street, to cost $5,000.

Councilman Wilson's five cottages on Hobart Street, near San Pablo Avenue, are well under way.

A handsome residence is being built by G. W. Kelly on the Glen Echo Tract, to cost $8,000. W. T. Veitch has the contract.

C. W. Gibson has had Charles Mau draw the plans for a two-story flat house, to be situated on Alice Street, between Twelfth and Fourteenth Streets. It will have a frontage of thirty feet, with a depth of seventy feet, and will be of two stories, with six rooms and bath on each floor. The cost will be about $5,000.

Dr. A. Cane is having a handsome house built at Klinknerville, to cost $4,068. It is a handsome two-story building, with all modern conveniences. J. T. Quirk is the contractor, and W. Winterhalter was the architect. It is to be finished by December 30. The contractor has filed a bond of $4,000 with Frank Johnson and D. F. McGraw as sureties.

J. S. Greenleaf is having a house built by Woodhouse & Sandy, at Klinknerville, to cost $2,300.

Pomona.

Killam & Wethercot send the following list of buildings for which they are architects: J. M. Howard, $3,000; J. W. Goodwin, $3,200; I. M. Case, $2,600; A. H. Summers, $3,500; additions to Presbyterian Church, $2,500; J. A. Driffill, $3,200. In addition to the above, there are in course of erection the following: Congregational Church, $5,000; R. M. Kirkland, $3,500; R. G. Hamilton, $2,500; George Way (2), $4,000; A. F. Crank, $3,300; J. J. Burdick, $4,000.

Portland, Or.

Otto Kleeman, the architect, has prepared the plans for a large family hotel to be built on the corner of Fourth Street and Holladay Avenue, for Logus & Burkhard. It will be three stories high, in modern Gothic style, 100 feet deep and 150 feet front. The center tower and observatory will be 105 feet high. The rooms will be laid out in suites, with bath-rooms and all modern conveniences to each. There will be a grand staircase and elevator, besides two side staircases and a freight elevator. The grounds will be laid out around the whole block in walks, with shade trees. The basement and foundation will be of brick, and the other stories of wood, but finished in the finest manner. The estimated cost of the building, without furniture or work on the grounds, is $65,000.

Contract has been let for completion of the Harrison Street school-house. It will cost, complete for occupancy, about $15,000.

I. W. Baird offers to erect a $50,000 theater, if citizens will subscribe a sufficient sum to buy a site for the same.

San Jose.

John Auzerais is having a two-story brick building erected at a cost of $18,000. Theo. Lenzen is architect; M. D. Green, contractor.

G. Peirana is adding a second story to his brick building. Theo. Lenzen is architect; Drew is contractor. Cost, $5,000.

Additions are being made to the Odd Fellows' old hall. Owner, R. Roberts; architect, Theo. Lenzen; contractor, J. D. Stewart. Cost, $6,700.

Theo. Lenzen is also architect for F. Baumgardner's $5,500 building, and also for addition to M. Appleton's house. Cost, $2,000.

Following are the bids received on the Auzerais building, mentioned above: H. Clifton, $16,275; Fuller & Lashbrook, $15,850; M. D. Green, $15,800; W. S. Boyle, $16,127; Thomas Livingstone, $16,125; E. A. Van Dalsen, $15,987; J. D. Stewart, $15,965; A. J. McIlvain, $15,963.

San Luis Obispo.

The new hotel, to cost $110,000, which has already been commenced, will be finished in course of six months, a great benefit to the town.

It is settled definitely that the magnificent Andrews Hotel is to be rebuilt.

Mr. Crocker will commence building a brick store on the southern corner of Higuera and Garden Streets, 45x90 feet ground dimensions, and one story in height. The building will cost about $8,000. Architect Laird has the plans nearly completed.

Contractor I. L. Wilson is now at work on two cottages. One is for Mrs. Kiddoo, and will cost $1,800, and the other is for Mr. Latimer, and will involve an expense of $2,100.

A great necessity of this city is a commodious theater building, with all the modern appliances. It is said that L. M. Warden contemplates erecting such an edifice on his lot on Higuera Street, near Chorro Street.

In the meantime in all the towns south of San Luis Obispo—at the Avila Hot Sulphur Wells, Ynocenta, Arroyo Grande, Nipomo, Santa Maria, Santa Ynez, and Los Olivas, a good deal of building is already under way, or is contemplated, and the next year will see many important improvements. Architect Laird has lately completed plans for an elegant hotel to be erected on the last-named place, to cost $10,000; and a large depot is also to be built very soon.

Contractor Hampton has commenced work on the Marsh Street bridge.

Miscellaneous.

PROPOSALS FOR BIDS TO BE RE-ADVERTISED FOR THE NEW CITY HALL, LOS ANGELES.

The following bids for the new city hall have been received:—

CARPENTER WORK.

W. O. Burr	$109,100
Robert Smiley	98,779
A. Washburne	99,888
F. E. Greene	128,600
W. R. Phelps	116,150
A. F. Mackey	116,000

BRICK WORK.

James W. Wadsworth	$ 98,171

PLUMBING AND GAS.

W. C. Furrey	$ 6,000
H. Williamson	4,344
Wm. Henderson	5,350

It was decided that the three lowest bids would make the cost of the building too much, and it was resolved that bids for the construction of the whole or in part be re-advertised for, returnable on Monday, the 24th instant. The architects, Caukin & Haas, were instructed to cut off as many of the extras as possible, in order to bring the building as near the limit, $150,000, as possible.

J. S. Landon is building a $2,000 cottage in Pasadena. Hill & Dean are the contractors.

T. H. Goff, the architect, is drawing plans for a fine three-story brick building to be erected on Third Street, San Bernardino.

The contract for building J. C. Herrington's residence, in Fresno, has been awarded to A. Jackson, for $3,700. The structure will be a two-story, on North J Street, between Tuolumne and Calaveras Streets.

J. M. Saffell is preparing plans for J. C. Herrington's $5,000 house in Fresno.

The trustees of the new Catholic Seminary in San Rafael will shortly commence work on the $70,000 contemplated building.

The Southern Hotel Co. of Tulare City are preparing to build a $40,000 hotel. Consult architects, McDougall & Son, of San Francisco.

In Los Angeles it is understood that the Southern Pacific Railroad Co. are intending to build an $80,000 depot. Also a $40,000 building for same purpose is contemplated by the Atchison, Topeka & Santa Fe Railroad.

It is understood that the contract has been let for the Terracina Hotel, at Redlands. Full particulars may be had by addressing T. A. Goff. Over $30,000 will be used.

The Presbyterian Church Society of San Diego intend to erect a $25,000 church. Address Reid Bros., architects, for full particulars.

The East Riverside Improvement Co. will commence the construction of a new hotel right away, to cost, when completed and furnished, about $21,000. Bricks for the foundation are now on the ground. A contract has been made to build a fine railroad station before January 1. The Improvement Company has contracted to furnish the railroad company with water. The building of an $8,000 school-house will be commenced very soon. S. H. Herrick, of Riverside, is the manager of the company.

SAN FRANCISCO BUILDING NEWS.

A

Ashbury, nr. Frederick. Two two-story frames.
O. and B.—W. Lewis.
$10,000.

B

Bay, bet. Hyde and Larkin. One-story frame.
O.—A. Hanson.
C.—G. M. Salsbury.
$2,000.

Brannan, bet. Fifth and Sixth. Alterations to French Hospital.
A.—Pissis & Moore.
$1,800.

Brannan, cor. Eighth. Two-story frame.
O.—Mrs. Romelly.
$2,000.

Broderick, nr. Hayes. Two-story frame.
O.—C. G. Bruntsch.
A.—Townsend & Wyneken.
C.—A. McElroy.
$3,800.

Baker, cor. California. Two-story frame.
O.—P. Connelly.
C.—F. Roettger.
$3,500.

Berry, bet. Third and Fourth. One-story frame.
$500.

Broderick, nr. Fourteenth; two-story frame.
O.—Mrs. C. Dixon.
A.—A. J. Barnett.
C.—T. Sullivan.
$4,000.

C

Clementina, nr. Fifth. Additions.
$1,000.

Capp, bet. Twenty-fifth and Twenty-sixth. Two one-story frames.
O.—C. O. Smith.
$5,000.

Capp, bet. Twenty-first and Twenty-second. Frame building.
O.—J. D. Spreckles.
A.—C. Geddes.
C.—Geo. Lang.
$5,500.

Clay, cor. Dupont. Brick building.
O.—L. J. Harvey.
A.—C. Day.
C.—R. Mitchell.
$35,000.

Calvary Cemetery. Brick vault.
O.—Estate of Mary Rogers.
A.—John & Zimmerman.
C.—Comuth & Briggs.
$4,500.

Clay, bet. Hyde and Leavenworth. Two-story frame.
O.—Annie Pomeroy.
A.—Curlett & Cuthbertson.
C.—A. Jackson.
$7,000.

D

Dolores, nr. Twenty-third. Two-story frame.
O.—E. P. Enas.
A.—S. and J. C. Newsom.
C.—J. H. McKay.
$4,500.

Dolores, cor. Twenty-ninth. One-story frame.
O.—T. Roy.
C.—R. Bergfeld.
$1,800.

E

Eighth, nr. Howard. One-story frame.
$1,500.

Eighth, nr. Harrison. Additions.
$1,500.

Eighteenth, cor. Sanchez. Alterations.
$1,000.

Eleventh Ave., nr. Railroad Ave. Two-story frame.
O.—G. Kelly.
C.—C. Rinz.
$3,500.

Ellis, bet. Steiner and Pierce. Two-story frame.
O.—E. Aigeltinger.
A.—John & Zimmerman.
C.—R. O. Chandler.
$3,500.

F

Fillmore, nr. Fell. Two-story frame.
O.—Annie Hill.
A.—Townsend & Wyneken.
C.—C. Coady.
$4,500.

Folsom, nr. Third. Additions.
$3,000.

Folsom, bet. Twenty-third and Twenty-fourth. Additions.
O.—Mary Philips.
A.—H. Geilfuss.
C.—Schutt & Precker.
$2,200.

Folsom, nr. Fifth. Additions.
$1,000.

Fell, nr. Fillmore. Two-story frame.
C.—J. Houston.
$3,500.

Fillmore, nr. Hayes. Additions.
O.—Vaultman.
$2,500.

Fifteenth, bet. Valencia and Guerrero. Three one-story frames.
O.—Mrs. Crane.
A.—C. Geddes.
C.—Doyle & Son.
$6,000.

Fifth, cor. Clementina. Four-story frame.
O.—H. Voorman.
A.—S. and J. C. Newsom.
C.—S. Walker.
$16,000.

Fifth Ave., bet. M and N. Frame building.
O.—Mr. Brown.
C.—Elliott.
$4,000.

Fifth Ave., bet. M and N. Six one-story frames.
O.—R. Giles.
$5,000.

Fremont, cor. Howard. Three-story frame.
O.—Fulton Iron Works.
Day work.
$15,000.

Franklin, bet. Broadway and Pacific. Two-story frame.
O.—Zadig.
A.—Pissis & Moore.
C.—Moore Brothers.
$8,000.

G

Grove, cor. Buchanan. Two-story frame.
O.—Julia Sullivan.
C.—Stiles.
$3,500.

Geary, bet. Grant Ave. and Stockton. Four-story brick.
O.—J. P. Whitney.
A.—C. Day.
C.—J. McCarthy.
$75,000.

Guerrero, nr. Twenty-sixth. Two two-story frames.
O.—V. Chaigneau.
C.—F. W. Kern.
$7,000.

H

Haight, nr. Webster. Two-story frame.
O.—L. Schwalm.
C.—G. Houston.
$4,000.

Hayes, nr. Webster. Two-story frame.
O.—Kirshbaum.
A.—Chas. Geddes.
C.—L. B. Jones.
$10,000.

Harrison, cor. Twenty-second. Frame building.
O.—Gibbon.
A.—M. J. Welch.
C.—A. Klahn.
$2,000.

Howard, bet. Main and Spear. Brick building.
O.—Payne Brothers.
A.—Curlett & Cuthbertson.
C.—Moore Brothers.
$16,000.

Hubbard, nr. Folsom. Alterations.
O.—S. M. Hills.
$3,000.

Hubbard, nr. Howard. Alterations.
O.—Sharon estate.
C.—S. M. Hills.
$1,500.

Howard, nr. Hubbard. Alterations.
O.—Breslauer & Co.
C.—Fiege.
$2,500.

Hayes, nr. Webster. Additions.
O.—O. Commery.
$2,000.

Howard, bet. Second and Third. Building constructions.
$1,200.

Harrison, bet. Ninth and Tenth. Three-story frame.
O.—J. Dwyer.
A.—M. J. Welch.
C.—McCreedy Brothers.
$4,500.

Haight, nr. Buchannan. Additions.
O.—J. Bock.
C.—Zwierlein & Pavel.
$2,800.

Herman, bet. Fillmore and Steiner. Cottage.
O.—Mrs. C. Hummelman.
A.—John & Zimmerman.
C.—A. Miller.
$2,500.

I

Iowa. Two-story frame.
O.—M. Johnson.
$3,500.

J

Jackson, cor. Octavia. Two-story frame.
O.—Emil Sutro.
A.—Pissis & Moore.
C.—A. Jackson.
$11,000.

Jackson, bet. Larkin and Polk. Alterations.
O.—Chas. Sageborn.
A.—John & Zimmerman.
C.—G. F. Knorpf.
$3,500.

L

Laguna, nr. Clay. Two-story frame.
O.—R. C. Chambers.
A.—Matthews & Son.
C.—Littlefield.
$10,000.

Lewis, bet. Taylor & Jones. Frame building.
O.—J. V. Bretonelle.
A.—Wm. Mooser.
C.—Kincaid & Thompson.
$4,700.

M

Market, nr. Sanchez. Additions.
O.—G. Smith.
A.—W. H. Armitage.
C.—A. McDonald.
$900.

Market, cor. Eighth. Frame constructions.
$2,500.

Morton, nr. Stockton. Alterations.
$500.

Montgomery, bet. California and Sacramento. Alterations.
O.—Mrs. A. M. Parrot.
A.—Pissis & Moore.
C.—Gonyeau.
Mason work—Riley & Loane.
$10,000.

N

Nineteenth, cor. Noe. Alterations and additions.
O.—H. A. Dahler.
C.—A. Miller.
$2,500.

O

Octavia, cor. Pacific. Two-story frame.
O.—Mr. Theller.
A.—W. Smith.
C.—S. W. Kern.
$4,500.

Oak, bet. Scott and Devisadero. Two-story frame.
O.—E. Huebner.
A.—John & Zimmerman.
C.—F. W. Kern.
$5,000.

P

Pine, cor Baker. Two-story frame.
O.—L. Aronson.
A.—Copeland & Banks.
C.—J. Bruce.
$5,000.

Pine, nr. Lyon. One-story frame.
O.—F. Hart.
A.—A. J. Barnett.
C.—Doyle & Son.
$2,000.

Pine, cor. Baker. Two-story frame.
O.—J. F. Kaufman.
A.—Copeland & Banks.
C.—J. Bruce.
$4,200.

S

Sutter, cor. Pierce. Five two-story frames.
O.—S. Siegle.
A.—Salfield & Kohlberg.
C.—T. Steinman.
$16,000.

Scott, bet. Clay and Sacramento. Two-story frame.
O.—C. E. Doughty.
C.—J. P. Shepard.
$4,000.

Sanchez, cor. Seventeenth. One-story frame.
O.—J. G. Hill.
A.—Woods.
C.—G. S. Gillespie.
$2,500.

Sanchez, cor. Nineteenth. One-story frame.
$2,500.

San Jose Ave., nr. Twenty-fifth. Two three-story frames.
O.—B. F. Harris.
Day work.
$5,500.

Seventeenth, cor. Noe. Two two-story frames.
O.—I. E. Blood.
C.—W. J. Pierce.
Day work.
$7,500.

Sansome, bet. Pine and California. Four-story stone front.
O.—M. Heller.
A.—Wright & Sanders.
Stone work—McClennan & Redmons.
Brick work—Mitchell.
Carpenter work—Ed. Farrell.
Plumbing work—Wilson.
$80,000.

T

Thirteenth Ave., nr. W. One-story frame.
O.—F. Hunter.
$1,200.

Twenty-eighth, cor. Dolores. Additions.
O.—J. Comerford.
$1,000.

Turk, nr. Steiner. Two three-story frames.
O.—M. Trespaille.
A.—J. F. Kidd.
C.—Kincaid & Co.
$12,000.

Twenty-first, nr. Sanchez. Two-story frame.
O.—Nolt.
A.—C. Curtis.
C.—Sanchez.
$4,500.

Twentieth, cor. Collinwood. Two-story frame.
O. and B.—F. De Guerre.
$2,500.

Twenty-first, nr. Sanchez. Two-story frame.
O.—H. S. Gray.
A.—Bordwell.
C.—H. S. Gray.
$4,500.

Turk, bet. Leavenworth and Hyde. San Francisco Turner Hall. Alterations.
O. San Francisco Turnverein.
A.—John & Zimmerman.
C.—G. F. Knorpf.
$1,500.

W

Washington, nr. Broderick. Two-story frame.
O.—D. Richards.
A.—C. Havens.
C.—C. Quinn.
$6,000.

Washington, cor. Polk. Frame building.
$500.

Washington Ave., nr. Howard. Alterations.
$600.

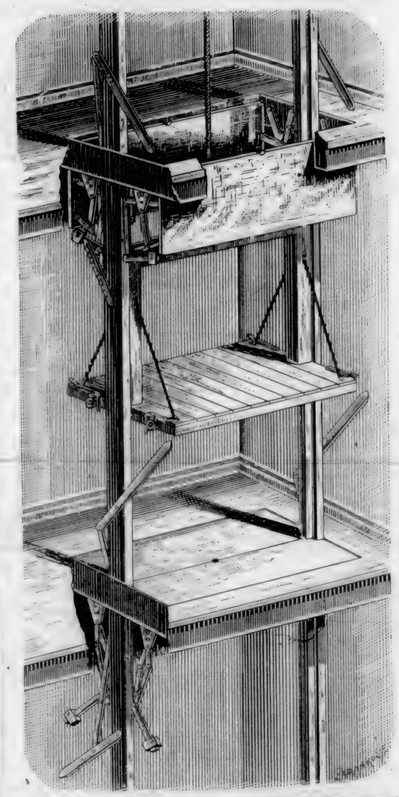
THE PAGE

Automatic Fire Shutter Co. of California.

The Best Automatic Fire Shutter Known.

Manufacturers Under United States Patent of the Automatic Shutter.

INCORPORATED APRIL 29TH, 1887.



ADAPTED TO PASSENGER AND FREIGHT ELEVATORS,

For Protection from Fire in Elevator Shafts, and from Liability to Accident.

PATENTED MAY 10, 1887.

Now in operation at 22 and 24 Jessie St., and 327, 329, 331 Sansome St., S. F. Call and examine the same.

The cut represents a freight elevator, showing two floors of the building. The elevator platform is represented as ascending, having passed through the hatchway of the lower floor. The shutters below the elevator platform have just closed level with the floor, completely and firmly closing that hatchway. The shutters of the second floor are next being opened by the ascending elevator platform, and after it has passed through, these close automatically, in the same manner as seen at the first floor. In the descent of the elevator platform, the shutters open below as it approaches the hatchway, and after passing through, they close again firmly and completely. Each shutter opens and closes automatically as the elevator passes, and are so counterbalanced as to offer no resistance to the ascending or descending platform.

H. W. SEVERANCE,

Manager and Agent,

Office, 218 California Street, San Francisco, California.

The Clerk of the Works.

THE term and business of the clerk of the works are practically unknown in this country. In England the clerks of the works constitute quite a large class, have their own society, and form a useful, prosperous, and intelligent body of men. Here, a synonymous term would be building superintendent. In both countries the general custom is for the architect who draws up a design to personally superintend its execution. This necessitates a visit to the job once a week, or oftener, according to its extent. But when a building in course of erection is very large, as, for instance, a city hall, a private mansion, or any other building of great extent, the works need, in the interest of the owner, a constant supervision, and so the business of the professional clerk of the work arises. The custom of employing such a superintendent is much more common in Great Britain than it is here—in fact, in the former country few jobs of any considerable extent are carried out without his aid.

The duties of a clerk of the works are essentially those of superintending the construction of a building, as a deputy for the architect. He has to see that the work is carried out exactly in accordance with the drawings and specifications. He cannot alter any of the construction on his own responsibility; neither is he supposed to interfere directly with the work of the mechanics. His orders are, however, by courtesy, accepted by the contractor and foremen, and it is not seldom that his personal knowledge is of great benefit to the workmen in helping them out with any complicated or difficult problem arising in the construction. One of his most important duties is to examine the whole of the material delivered upon a job, and to reject any portion which is not of the specific quality. Another is to take measurements, and keep a list of any extra work which may arise during the course of the erection of the building, and in like manner to keep an account of work not carried out in consequence of alterations being made in the original plans, so that due allowance may be made for them. As a rule, the clerk of the works is a mechanic, often a carpenter or mason, who is above his fellows in intelligence and knowledge. Sometimes a draughtsman will act in this capacity, but the necessary and very intimate knowledge of construction and of the characteristics of good materials is such that few are other than advanced mechanics of extensive practical experience. The salary usually paid may be said to be about twice that of the carpenter or mason, and many a young mechanic will study hard in his leisure hours in the hope that he may eventually get to be a clerk of the works.—*Ex.*

Provincial Royal Jubilee Hospital.

TO ARCHITECTS.

Designs, Plans and Specifications are invited for the above building, in accordance with memorandum of particulars, copies of which, together with contour plans of the site, may be obtained on application to the undersigned. A premium of $800 will be paid for whichever designs and plans, if any, may be adopted. Such designs, plans and specifications to become the property of the Provincial Jubilee Royal Hospital Building Committee.

Plans for this building to be addressed, in sealed envelope, to the undersigned, and to be handed to him by or before noon of the 7th of December next.

WILLIAM CHUDLEY, Hon. Secretary,
Sept. 13, 1887. Wharf St., Victoria.

CIVIL ARCHITECTURE,

A SPLENDID WORK,

PRICE, $10.00.

Lumber Market.

THE retail price list of the California Lumber Exchange for September 9, 1887, is as follows:—

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4, and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G. Beaded, under 7 feet	24 00
Redwood, Siding, ½ in.	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1½	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ½x3, per lineal foot	01

SPECIFICATIONS.

We have on hand a supply of a

NEW FORM OF SPECIFICATIONS,

Especially adapted for the Pacific Coast.

We will send a Copy to any address upon receipt of 50 cents, or $5.00 per dozen.

Also Palliser's new Specifications, just received.

We can supply any number of either the above.

CARPENTRY

MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to under tand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

Manual of Industrial Drawing for Carpenters	$2 00
Illustrated Drawing Book	1 00
Mathematical Drawing Instruments	1 50
Drawing for Carpenters	1 75
Shavings and Saw Dust	1 50
Linear Drawing	1 50
Practical Draughting	1 00
Drawing for Cabinet Makers	1 50
Handrailing and Staircasing	1 50
Painter, Gilder, and Varnisher	1 50
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Paper Hanger's Companion	1 25
Builder's Guide	2 00
Cozy Homes	$ 25
Principles of House Drainage	1 00
How To Paint	1 00
Practical Geometry	1 00
Lumberman's Hand Book	2 00
Lien Law	50
Amateur Mechanic's Workshop	3 00
Every Man His Own Mechanic	3 50
Handbook of Legendary Art	3 00
Dwellings, Reed	3 00
Plumbing Appliances	1 50
Modern House Painting	5 00
Stair Building Made Easy	1 00
Cabinet Maker's Companion	1 25
Manual for Furniture Men	1 00
Rural Architecture	1 50
Architecture, Horton	1 50
Wonders of Art	1 25
Common Sense in Church Building	1 00
Old Homes Made New	1 50
Hints on Household Tastes, by Eastlake	3 00
American Cottage Builder	3 50
The Suburban Cottage	1 50
Homes for the People	2 00
Country Homes, Woodward	1 50
Cottage and Farm House, Woodward	1 50
Suburban Houses, Woodward	1 50
Rural Homes, Wheeler	1 50
Essentials of Perspective	1 50
Modern Architectural Designs and Details	10 00
Detail Cottage Architecture	6 00
Leffel's House Plans	3 00
Science of Carpentry	5 00
Mechanic's Geometry	5 00
Artisan	5 00
Artistic Homes	3 50
Mechanical Drawing	1 00
American House Carpenter	5 00
Building Superintendence	3 00
Builder's Companion	1 50
Cutting Tools	1 50
Cottages	1 00
Ornamental Drawing	1 00
Grimshaw on Saws	4 00
Universal Assistant	2 50
Limes, Cements, and Mortars	4 00
Trussed Roofs, Ricker	3 00
Gould's Carpentry	2 50

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME VIII. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 12.

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO. - No. 240 MONTGOMERY STREET, Rooms 11, 12, 13.

Terms per annum - - - - $2.00 in advance.

Published on the 15th of each Month.

When money is sent for subscriptions, the receipt of a copy of this Journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	Per Square	$ 2.50
Back Cover, Outside, Each Insertion	do.	2.00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.00

Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, CAL., DEC. 15, 1887.

OUR WEEKLY EDITION.

The initial *number of the Weekly Building News made its appearance last week. The* regular *issue will not commence until January, 1888. For over four years this journal has been printed in Oakland, and, not wishing to change, we made arrangements to have the* Weekly *also published there. But we find the labor too great; so we have completed all the necessary contracts to have the same published in this city. After the first issue the* **WEEKLY BUILDING NEWS** *will appear regularly on Monday of each week.*

COVERNMENT WORK.

We have received authority from the Government at Washington by which contractors will be notified of all work to be done for same on this coast. Other arrangements are being actively consummated by which the **WEEKLY BUILDING NEWS** *will be* **THE** *medium for contractors for all description of work to obtain the newest items in regard to any public work—city, county, country, or Government.*

Close of the Ninth Volume.

WITH this issue we close the ninth volume of this Journal, and in so doing we again desire to thank our patrons for favors received during the past year and also for the past nine years. Looking over the pages as they are now presented and comparing them with those of nine years ago, we cannot help expressing our deep obligations to all who have stood so nobly by us. For nine years, in each successive issue, we find the same familiar "ads.," many of them occupying the same spaces as when they started in 1879. For nine years the same editorial pen has held sway over the various articles presented. We feel that we have given satisfaction to our patrons. No opportunity has been allowed to pass to improve this journal in every manner. We have carefully studied the wants of our readers and endeavored to give satisfaction to all. We will use renewed efforts in 1888 to make this journal equal to any published. To do so, however, we need a little more assistance from members of the architectural profession. *Promises* have been made by the score. What we need, however, is *action.* Make a business of it to send to this office, at least three times a year, an article on any subject of which you have made a study. Send us sketches of original ideas used in your various elevations and details. Full credit will be given in each and every case. Again thanking all for their generous support during the past year and trusting a renewal of the favors for 1888, we lay down our pen on the editorial work of 1887, and wish one and all a Merry Christmas and Happy New Year.

The City Hall Imbroglio.

SOME time ago bids were called for by the City Hall Commissioners for completing the Larkin Street wing of the New City Hall. Upon opening the bids the following were found to be the contestants:—

Headley & Morehouse	$81,755
Charles C. Terrill	82,000
John McCann	86,560
Albert Washburn	84,800
McGowan & Butler	64,800

It was readily apparent to the Commissioners and those present at the opening of the bids that a screw was loose somewhere. It hardly seemed possible that four bids should be handed in with less than $5,000 difference between them and then one of our most reputable contracting firms should be about $17,000 lower than the next lowest bid.

Upon investigation it was soon discovered that a pool existed between the first four named, and that strenuous but unsuccessful efforts had been made to induce the fifth one to join. We do not propose to enter into full details in regard to the affair. The editor of this journal being on a visit East, and having left the charge of the journal in the manager's hands, we frankly admit that we do not feel competent to deal with the subject. We leave it to the editor's masterly hand to deal with the same upon his return. We will say, however, we admire the manly stand taken by Charles C. Terrill. He frankly admitted that he considered the business of pooling issues as perfectly legitimate. Lumbermen have pooled on their products, brick manufacturers on theirs, and so on, and why should not contractors, when the conditions of the contract were very hard, do the same thing.

[*While admitting the manly way in which Mr. Terrill addressed the commissioners, we wish it distinctly understood that we do not indorse his opinions.*—MANAGER.]

Quite in contrast was the action of another bidder who admitted that he had put in a bid but had *never read the advertisement or specifications.* He stated that there was a man who could go to the commission and burst up McGowan & Butler's contract. Auditor Strother, in the manly, independent manner for which he is noted, told Mr. Headley—the bidder referred to—that the man who said he could do such a thing was "an infamous liar." When pressed to name the man who had such a "potent pull," it turned out to be one of Headley's own bondsmen. He also admitted he had offered Butler $5,000 for the contract.

After due consideration the contract was awarded to McGowan & Butler at their figure. The same firm was also awarded another contract on the same building for stone work, etc., for the main tower, the consideration being $32,600.

Annual Building Summary for 1887.

THE record for the year closes with this issue. Although in *number* of new improvements it is behind either of the three years preceding, still in the *value* of the work done, it is exceeded by the single bonanza year of 1885.

The following table will show the monthly totals, and the grand total for the year :—

	Frame Buildings.		Brick Buildings.		Repairs and Alterations.		Total No.	Total Cost.
	No.	Cost.	No.	Cost.	No.	Cost.		
January	40	$109,200	11	$475,000	8	$ 15,500	59	$650,750
February	30	126,000	5	53,250	13	25,200	48	204,450
March	65	221,500	9	105,500	10	26,900	84	353,900
April	77	431,850	6	173,500	17	31,450	100	636,800
May	73	376,700	6	232,000	9	84,100	88	692,800
June	101	477,500	7	196,164	28	57,550	137	731,214
July	70	648,700	2	52,500	20	50,500	92	751,700
August	105	388,100	7	150,000	24	44,250	136	582,350
September	59	402,850	4	44,000	32	161,100	95	607,950
October	63	257,840	2	37,200	19	55,300	84	350,340
November	68	242,700	5	210,500	23	50,000	96	503,200
December	39	185,200	8	258,000	27	66,400	74	509,600
Grand Total	723	$3,949,140	71	$1,987,614	228	$668,250	1092	$6,605,054

In order to compare with previous years, we give the totals for each year since 1880.

COMPARISON.

The number of building engagements, and their value, since 1880, are as follows :—

1880—	397	engagements,	value	$1,754,435
1881—	533	"	"	3,790,732
1882—	785	"	"	3,896,212
1883—	803	"	"	5,261,689
1884—1,127		"	"	6,202,807
1885—1,457		"	"	7,043,999
1886—1,148		"	"	6,401,669
1887—1,093		"	"	6,605,054

The high prices ruling during the year for labor and all kinds of building materials have done much towards causing a cessation of the building of houses of moderate cost.

The labor market all over the State is in more than a satisfactory condition. Full prices rule for every branch of mechanical labor, while in some, men are actually hard to obtain even at extra high wages.

DRAUGHTSMEN.

There is not, throughout the whole Pacific Coast, a *competent* draughtsman idle. During the past year, there has been a dearth of help in this direction, and we have been unable to supply the demand. We can readily place from eight to ten good men who thoroughly understand detail work.

THANKS

Are extended to all those who have so kindly helped us during the past year. We request a renewal of the favors for 1888, and will use our best endeavors to increase the popularity of the CALIFORNIA ARCHITECT AND BUILDING NEWS.

TERMS FOR 1888,

Two dollars per year with the addition of the *Weekly Building News* furnished free to subscribers.

American Edition of the Illustrated London News.

THE illustrations of the *Illustrated London News* (American edition) for November 5, present, as usual, instruction as well as entertainment, and cover the customary broad range of this long-established and widely-known publication. They are indicated by the following titles: Sketches of the Bulgarian Elections, The Disputes Between Fishermen at Plymouth, State of Ireland, The Late Mrs. Craik, H. M. S. Wasp, Sketches on the River Congo, Sketches at the Cat Show, Crystal Palace, The Late Lady Brassey, Grand Durbar at Mandalay, In the Semois Valley, Ardennes, A Tame Lion, Algiers, and The Kali Ghaut, Calcutta. Reading matter in abundance is also provided, while now it is becoming quite generally known that news-dealers everywhere sell the paper for ten cents. Subscriptions can be sent direct to the New York office, which is in the Potter Building.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held in the rooms of the Art Association on Friday evening, December 2. President Geo. H. Sanders in the chair. The following-named members were present: Geo. H. Sanders, W. P. Moore, Geo. H. Wolfe, J. J. Clark, A. Pissis, B. E. Henriksen, J. M. Curtis, Oliver Everett, H. T. Bestor, J. Gash, C. J. Laver, and Clinton Day.

After reading the minutes, the committees on the various classes reported satisfactory progress made by the pupils in the different branches.

The Treasurer made his first report since his inauguration. During the month there had been collected from dues, the sum of $132. A full report was promised at next meeting.

A proposition was received from W. J. Cuthbertson to become a member as Fellow. Referred to A. Pissis, W. P. Moore, and B. E. Henriksen, as investigating committee.

The annual address was read by President G. H. Sanders. A vote of thanks was tendered the reader, and upon motion it was ordered printed in the official organ of the Chapter. [It will be found on another page of this issue.—ED.] Fellow Gash made a few remarks referring to the progress made during the past year, and earnestly entreated the members to make greater endeavors and have 1888 show marked improvement over its predecessor. He would prepare a paper to read at the next meeting and would promise two or three during the year.

The President remarked that the reading of papers at each meeting was the surest method of causing the members to take an interest in the association. He had given a little time during the past month to preparing a list of subjects for papers to be read, and presented the following list for the members' consideration :—

1. The Use of Iron in Architecture.
2. The Distinctive Use of Materials.
3. The Proper Treatment of Terra Cotta.
4. The Legitimate Employment of Stucco.
5. Fire Proofing.
6. What is Style?
7. The Proper Use of Ornament.
8. Ornamental Construction.
9. German Renaissance.
10. French "
11. English "
12. Italian "
13. Gothic "
14. Moresque "
15. Interior Decoration.
16. Exterior "
17. Architectural Timber Work.
18. Constructional Novelties.
19. Improvement in Mode of Internal Surface Finish.
20. Hollow Brick.
21. The Evils of Plaster as an Internal Surface Finish.

An impromptu discussion followed on the last subject mentioned. The President said that architects ought to consider the anomaly of calling for lumber to be thoroughly seasoned; diagonal boarding to be covered with tar, paper, etc., and then having plaster put on, the inside containing tons of water. He mentioned a sample of plastering that had been shown to him, in which the brown coat of mortar had been entirely dispensed with. The laths were closely placed together, and the plaster-of-Paris coat alone applied. Mr. Corbett had informed him that plaster could be so applied that in one day it would be dry and ready to paper on the next.

Clinton Day inquired if such was the case, would not the proposition assume that the laths must be thoroughly seasoned?

The argument will be resumed at a future meeting. The President asked in conclusion, why the plaster-of-Paris coat should be called the *hard* finish when it really was not as hard as the brown coat, when the latter is perfectly dry.

A discussion ensued in regard to the incorporation of the Chapter, and its effect upon those who were obliged to use the courts in order to collect their accounts. One trouble seemed to be that clients did not seem to understand that they were to pay for plans and yet not become the possessor of the plans themselves. Clinton Day naively remarked that people who *built* houses did not care for the drawings, it was those who had plans prepared and *did not build*, that caused trouble.

A full definition was asked for the word "premium," and the following was accepted as a true meaning of the word: Decided that it referred to payment for plans submitted in addition to the regular charges for the same, unless other conditions are specifically described. As a rule the premium was deducted from the architect's regular commission of five per cent.

The most exciting debate of the evening occurred upon the presentation of the following resolution:—

Resolved, That a register be opened in the Secretary's office for the purpose of recording the names of those who are thoroughly proficient in the different branches of work connected with buildings, and who are recommended by one or more architects.

In explanation it was stated that there was no intention of keeping a black list; on the contrary, it was simply the purpose to keep a list embracing the *best* in their various callings.

The whole subject was laid on the table till next meeting.

PROCEEDINGS OF THE CHAPTER.

Full report in this issue of the San Francisco Chapter of Architects should be read by everyone connected with the building interests. The one subject of doing away completely with the brown coat of mortar in plastering is well worth the attention of those contemplating building. Much time as well as expense can be saved by the method proposed.

The definition of the word "premium" is fully given. The advisability of opening a register for the names of *thorough mechanics* is considered. A list of useful subjects is given for future discussion. The President's address should be preserved, as it shows careful study, and many thoughts are entirely original. The whole proceedings are well worth perusal.

Big Redwood Planks.

THERE seems to be quite a competition among the Pacific Coast lumber mill owners as to which has the largest capacity for sawing redwood planks. This state of affairs was brought about by the commissioners of the Humboldt County exhibits inviting samples of redwood planks from the respective mills of the county, to be placed on exhibition at the Mechanics' and State Fairs. "The Carson Mill," says the Seattle *Press*, "was one of the first to respond, by donating a good-sized plank, six feet wide, which was looked upon and spoken of with great favor. The Vance Mill thought that they could do better than that, so they went to work and produced a lot of planks, which measured six feet and eight inches wide. The Vance planks produced a sensation. But McKay's mill concluded they had something to do in this redwood plank business, and so they quietly got to work, and the result of their labors in the sawmill line produces a lot of planks and boards which measure ten and eleven feet in width. These are sawed from a section of a redwood tree thirty feet from the butt, and show the full width of the log, sap and all. They are perfect in grain, with no flaws or knots to mar. This will give an idea of the size of the log, the sap being left to show the natural surface."

A Universal Favorite.

THE most popular, most enjoyable, and cheapest publication on the Pacific Coast is the *West Shore* magazine, and it should be in every house, counting room, and library. The farmers, especially, will find it a clean, wholesome, entertaining family visitor. It is the cheapest illustrated magazine in the world, and has no superior in artistic merit. The *West Shore* for 1888 will be greatly enlarged in size, and improved in contents, both literary and artistic. A magnificent, large oleograph of the entrance to the Columbia River is now being prepared, and is superior in every respect to the handsome colored engraving of Mount Hood issued last year. This beautiful marine picture and the November and December numbers of 1887 will be sent free to all who subscribe now for 1888. A most liberal clubbing list with leading publications is now made up, and will be sent to anyone who desires to take the *West Shore* in connection with other publications. The subscription price is only $2.50. Address L. Samuel, publisher of the *West Shore*, Portland, Oregon.

Sawing by the Thousand.

IN nearly all the saw-mills which "saw by thousand," lumber is not manufactured as it should be, and there is a great deal of unnecessary waste. The interests of the mill man are not naturally those of the log owner. The mill man generally wants to get as many thousand through the mill in a day as possible, and he is not particular whether the lumber is well made or not, or how much material goes into sawdust or mill wood which might go into lumber. The log owner is interested in getting as much good, merchantable lumber out of his logs as possible, and he does not care particularly how long it takes to accomplish it so long as he pays for the work by the thousand. Lumbermen who will take the pains to go to the mills where the mill men for the most part cut their own timber, and job and retail their own lumber, will have it demonstrated to them very quickly that better lumber is made in these mills.—*The Wood-Worker*.

Paper Read before the San Francisco Chapter, A. I. A.

BY GEORGE H. SANDERS.

GENTLEMEN OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS: It is customary to demand of the President-elect a more or less elaborate paper as an inaugural address. It may be as well to reassure you by stating at the outset that on the present occasion you will be asked to listen to one of the briefest and simplest.

I propose, in fact, to do little more than to review slightly the condition of architecture in the world at the present time, especially in America, and more especially in our own State and city, with such remarks in *finale* as the subject seems to demand.

Looking over the architectural field just at this time with a professional eye, bearing in mind at the same time the conditions which go to make up at any one time the spirit and form of what we call architecture, and a curious and interesting and at the same time rather hopeful spectacle is presented to us. Much has been written from time to time, on the subject of the Battle of the Styles. But from recent evidences regarding the progress of the fight, one would almost think that the parties were about to shake hands and have a wedding instead. Let us hope if it is so that the auspicious nuptials will be productive of a less motley offspring than we have hitherto had reason to anticipate from the somewhat heterogeneous character of the parentage.

Viewed philosophically, however, the present condition of the architectural art is just such, we believe, as might have been foreseen from the circumstances under which the art has existed for so many centuries. In fact, the changes which have taken place during the last century may be regarded as but a condensation of the variations which have been occurring whenever man has followed his instinct to build, and adorn as he built. From time immemorial great political changes have occasioned great variations in the architectural methods of mankind, the conquerors inevitably carrying their methods with them.

The swarming of the Arians out of the great plain of the Indus into surrounding countries in prehistoric times, everywhere left their traces in the shape of Druidical remains, which have, to succeeding ages, been the wonder and enigma of civilized man.

The colonization of the Greeks left indelible traces of their arts and influence wherever they went. The widespread dominion of Rome in its turn carried its architecture and its institutions throughout the then known world.

The destruction of the Roman Empire by the Vandals from the North inaugurated the Dark Ages, but raised from the fragments that were left a newer and truer architecture, which even now, among us in America, is beginning to bud and blossom with a new life which may result in who knows how much beauty?

The Mohammedan invasions from Spain to farther India resulted in stupendous changes in style and method wherever they went, and in later days, the Spanish invasions of Central and South America, the English in India and ourselves in America, have built up a new world of architecture, which, if allowed healthily and independently to develop, will, it is safe to say, lead to results as far beyond our present anticipations as this present is beyond the promise of half a century ago.

The thousand years which supervened between the breaking up of the Roman Empire and the revival of learning in the fifteenth century witnessed the birth, life, and death of the great styles embraced in the one word "Gothic"—including Byzantine, Moorish, and other Oriental styles of the far East, as well as German, French, and English round-arch styles and the pointed styles which sprang from them in the West and led to the marvelous developments and the exquisite beauty which is sure to result from the rational expansion of natural methods.

But the Reformation, by breaking up the monasteries of Northern Europe, brought to light vast stores of manuscripts and literary treasures preserved therein from classic times. This aroused a taste for classic literature and an admiration for the Pagan lore of Greece and Rome, and together therewith a revival of their arts and architecture.

The Renaissance came and the Gothic, everywhere effete and lifeless, fell before its active and all-powerful rival. First, however, leading to curious amalgamations and transitional mixtures which, however picturesque and novel at the time, were soon superseded by what was considered purer art.

All Europe put on a classic dress and became half Pagan in the process. Even the Church of Rome, which had been the mother of the beautiful art of the Middle Ages, was among the first to adopt the new taste, and a century later the great structure of St. Peter's—and still later, the Protestant Cathedral of St.

Paul's, marked the consummation of one of the most rapid transitions of artistic principle the world has ever known. Succeeding this period came the Neo-Greek era, arising from the travels of Stewart and Revett, and the publication by the press of their great works.

The false and feeble imitations of the beautiful works of Greece in the brick and stucco shams of the time, led to the furious onslought of Pugin and the ultimate Gothic revival. But this in turn led to evils which illustrate the utter futility of copying forms irrespective of the needs and environments of the time. The Parliament Houses of England, to mention one of many cases, are a notable example of the danger of this course, being found on completion conspicuously unfit for the purposes for which they were intended. Constructed architecture *versus* architectural construction is a certain failure wherever and whenever it may be attempted. The vagaries of the Gothicists and the inanities of the classicists brought out the ratiocinations of Violet le Duc and the moralizations of John Ruskin.—than whom, perhaps, no greater or more useful writers on art and architecture have ever taken up the pen. Indeed, Pugin, Le Duc, and Ruskin may be taken to stand for the three vital principles of science, philosophy, and poetry in art, and to have lifted not only architecture but all the other arts as well, into a higher atmosphere and a purer life. At the same time busy writers in every field have been collecting, comparing, and experimenting, until there is a vast fund of materials at command, and fields are not wanting in which to erect nobler temples to the arts than the world has ever known. To them is undoubtedly due in a great measure the vast development of the decorative phase which has supervened during the past quarter century. And although it has been a handful of grain to a bushel of chaff, the higher principles of artistic truth once established on rational grounds have been caught at by lesser lights, popularized and practicalized into possibilities, and the result is, architects of ability entering the field of decorative art and exalting it at once into a higher and better existence. Thence the widespread demand for and supply of artistic materials of all kinds and the great improvement and versatility in design in external architecture—the same principle acting and reacting throughout the whole realm of the arts, especially in the field of domestic architecture. This has resulted in a better quality of design in public buildings the world over, and here let us refer to a peculiar feature of the current century:—

THE GREAT COMPETITIONS.—In preceding ages the patronage of "big jobs" was the prerogative of the great. The successful man was the great artist, who, once gaining recognition by one of the great personages of the day, forthwith became the rage of the time, and by a sort of divine right monopolized every work of importance throughout the land he lived in.

Notwithstanding the many evils credited to them, we think it can hardly be denied that competitions have been the means of bringing out much latent talent which would otherwise have been born to blush unseen. It has served to bring about the universal study of styles, and has, through thorough knowledge, rendered something like the nationalization of *style* an accomplished fact: so that at the present time we have what may be readily recognized as the French, the German, and the English styles—each perfectly distinct from the others, though many and varied be the elements which constitute and make up the whole of each. And in the same sense may we not begin to say that here in America we are fast developing an American style?

And here seems to be the place to notice what has been called the "Richardson style." That the last-named individual builded, if not better than *he* knew, at least a good deal better than some of *us* knew, seems to be conclusive from the strong following which he has obtained. The so-called style has in truth a great deal of elasticity and promises developments which will aid greatly, as *one* of the elements of a national style. That, however, is in fact a much greater matter than the revival under the stimulus of genius of a shadow of the past.

The strongly marked features of the Richardsonian architecture would seem to be the discriminating use of arcuation and trabeation, or a combination of both methods, of closing openings, the use of the round and occasionally the elliptical arch with the free use of shafts and foliated caps, and other decorative features, naturally treated in a Byzantine manner, and roofs of a pronounced but not of a high pitch.

The use of rough stone facings is, of course, a circumstance not essential to the "style," but often aiding admirably in producing a bold and picturesque effect.

The Greeks and the Oriental nations from whom they derived their art employed trabeated or beamed construction to the entire exclusion of all visible arcuation—though arches were occasionally used in a concealed situation.

The Romans, on the contrary, while adhering to the salient features of Greek architecture, boldly adopted the arch, though usually in subordination to the beam, but finally making it a leading feature in their constructions. Surviving the empire, the arch and vault gave rise to the variety of arched styles embraced by the general term Romanesque.

Richardson seems to have adopted the German Romanesque as the central idea of his system, with the immense advantage of a world of variation in the cognate round-arched styles to fall back on, even supposing that a limit to its possibilities of adaptation, combination, and composition is soon found within its own especial limits. Nevertheless we repeat, this does not and cannot constitute an American style, but the outcome of the whole tendency of the national mind developing freely in the employment, in its own peculiar way, of any and all styles of the past, present, and future, governed by true principles of construction, taste and imagination, alone can develop such a style.

The great structures which elevators have rendered possible, and which have lately been erected in such numbers in some of our Eastern cities, almost phenomenal as they are in dimensions and cost, are already beginning to transform our cities, and cannot fail to transform our architecture.

Such vast masses of material piled up to unprecedented heights have the element of sublimity in their bulk alone, and inevitably tend to educate their designers out of all littleness, to cultivate simplicity and grandeur of conception and breadth of treatment in every detail—the same sort of influence which the noble ponderosity of the Pitti Palace must have exerted in Florence, an influence far nobler and better than that which the stupendous but false and imitative architecture of St. Peter's had in Rome, or, still worse, St. Paul's in London. Indeed, in almost every street of the noble Tuscan city, on the banks of the Arno, are found, in temple, palace, and mart, grand examples of noble architecture, pure in form as they are practical in purpose. Eloquent preachers indeed are they, of sound principles, and enduring exemplars of their own true doctrines.

Turning to our own city and State, where the "gospel of wood" has in a sense become vernaculated, though here and there a few solid structures, substantial in form and pleasing in appearance, begin to appear like exclamation points (and sometimes interrogation points) in the dead level of our structural prose, let us briefly consider the result. No impartial professional or unprofessional eye either, it would seem, can fail to observe and to rejoice at the improvements which have taken place.

Compare the pretty, interesting, and continually varied domestic buildings of the present time, which are so rapidly taking the place of the tasteless boxes of a dozen years ago, and one cannot but be pleased with the change. Not but that there is much left to desire, that scarcely a single example can be found which is not more or less susceptible of simpler, honester, more constructional and generally *better* treatment. That alone can come with time and knowledge of the true principles, which have to be learned and to a great degree *evolved* from the new conditions which are every day arising. The thing *is* that a new *idea*, a new departure, has been inaugurated, and a considerable step has been taken towards the solution of the ever evolving, ever growing problem of translating our wants into correspondential language as written in the cities we live in, the houses we inhabit, the clothes we wear, and the lives we live, all potent factors in the development of our civilization and the progress of the world.

One word more on *our* civilization. What does the word mean? It is derived from "civitas," which means a "citizen," and generally may be taken to mean, in a very broad sense, the development of citizens (or city dwellers) out of savages. But here we have the Japanese, in a certain sense a highly civilized nation, wildly reaching out after, and adopting, our institutions, our architecture, our clothes, and our religion. Why? Perhaps it may be said that, emerging from the darkness and twilight of the past, and blinded by a light they do not understand, they are alike unconscious of their own excellencies and of our defects, and in too many cases may be grasping at the shadow, while surrendering the substance. At least it may be taken as a prognostication, if not a prophecy of the universal assimilation of mankind in the future, of the leveling of the mountains, the filling up of the valleys, and the making straight the highways of the good time coming.

Editorial Correspondence.

LAFAYETTE, Ind., November 12, 1887.

REACHED this city on the 10th—fifteen days from San Francisco. The several lay-over stoppages made at cities and places *en route* have consumed time, but in return yielded a line and amount of thought and information which it is hoped will hereafter be utilized in articles pleasing and instructive to the readers of the CALIFORNIA ARCHITECT AND BUILDING NEWS.

This is a staid and quiet place, with but few building improvements under way. The total will not exceed seventy-five thousand dollars, with a population variously claimed at twenty to twenty-five thousand.

There is but one architect—Mr. James F. Alexander, Secretary of the Western Association of Architects, practicing the profession in this city. His operations, however, are not confined to this locality, but extend in all directions hundreds of miles away, with this as his office center. He is a genial, kind-hearted gentleman, deeply interested in the science of architecture, and a most earnest and diligent worker in the interests of the association of which he is at present the efficient Secretary.

La Fayette is prettily situated along the margin of the Wabash River, with splendid surroundings and fertile land in all directions, calculated under favorable circumstances to make it a thriving and prosperous place, with five to ten times the present number of inhabitants. But the wheels of progress appear to be choked by the inactivities of its wealthy men who, having made themselves rich during the prosperous conditions which a few years ago made this a common center for sales and purchases of the product of the soil and merchandise of every kind, for a large extent of country around, ere the present system of railroads supplanted the earlier methods of transportation by horse and mule teams, which brought hither weekly thousands of farmers, stock-raisers, and others, to engage in general traffic and transactions, from which many of those then active in business accumulated large fortunes.

But the changes from the animal to the iron horse demanded new and greater energies and activities, which those who had already reaped the golden harvest failed to put in practice, realizing that their financial safety was assured in the fortunes possessed, with no special care for the future of the city or its people, beyond their own personal interests and conveniences. Consequently the advancements and prosperities have been slow, and La Fayette remains one of the quiet, slow-going, pleasant cities of the Union, with unimproved opportunities, which, utilized for what they are worth, would add largely to both the wealth and population of the place.

CINCINNATI, NOVEMBER 15.—After enjoying the hospitalities of Mr. E. P. Knight for several days, started for Cincinnati at 9 o'clock, A. M., passing through Indianapolis, which presented the appearance of a very important and prosperous city of some 200,000 inhabitants, with a net-work of rails and a large Union Depot, showing it to be a point of large railroad activities, with locomotives and trains of cars moving in all directions. The general aspect of the country and the appearance of the many towns and villages passed through, indicated a degree of general prosperity that seemingly should be gratifying to the people of Indianapolis and the surrounding country. A stoppage of half an hour gave too limited an opportunity to gain more than a passing observation of things in general, which looked well.

At 3:45 o'clock arrived at Cincinnati, and while at first glance not fascinated by the general appearance of the city in proximity to the depot, which is located in one of the older localities, where many of the primitive structures still stand as monuments of the architectural tastes which prevailed at the time when the *too narrow* streets were first built upon, and when four walls, roof, and floors, with small, unornamented openings, served all the then purposes for practical uses. Still—utilizing the opportunities afterward afforded, first impressions were greatly modified, and the beauties and grandeurs of sites, localities, and building improvements—many being, in the fullest sense of the terms, beautiful and elegant, no other conclusion could in fairness be reached than that Cincinnati as a whole is a business center of great importance in many regards, with numerous rows and blocks or single structures of from five to ten stories in height, and well up to, and claiming rank and equality with the best modern buildings erected at equal cost in any other city in the Union; while its hill-tops, rising to altitudes of hundreds of feet along, and looking down upon, the great Ohio River, furnishing a river view of surpassing grandeur reaching across the waters that ever flow between, and divide, the two great States of Ohio and Kentucky, encompassing within the scope of vision from a single point, several cities, towns, and places along or near the river banks on the Kentucky side, which, together with the innumerable lovely building sites and mansion-like edifices distributed in all directions upon those picturesque elevations, gives to Cincinnati advantages and beauties of situation over which its citizens may well be proud.

WESTERN ASSOCIATION OF ARCHITECTS.

The fourth annual session of the Association convened in the large ladies' ordinary of the Grand Hotel in this city, and was called to order at 11 o'clock, by President John W. Root, of Burnham & Root, Chicago; James F. Alexander, of La Fayette, Secretary. President Root delivered his annual address, which was well received.

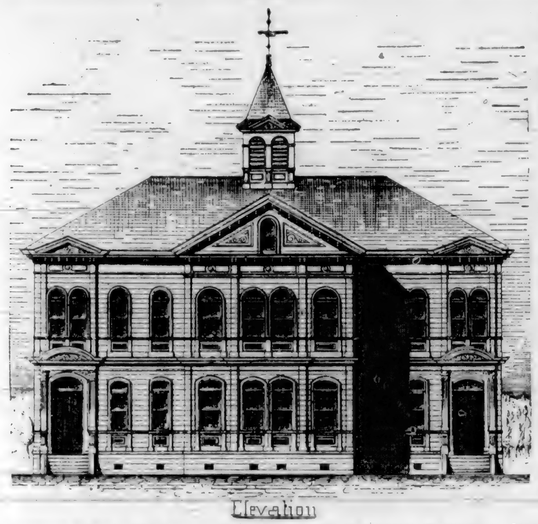
The minutes of previous session were considered read, they having been published in the *Inland Architect*, of Chicago, under the supervision of the officers of the Association, the journal named furnishing a short-hand reporter at its own expense, who reports full proceedings, thus giving the members opportunity to read and criticise the report during interum of session. There were about one hundred members present, as against more than two hundred at the session of last year held at Chicago. This difference in attendance was altogether the result of place of meeting, not as against Cincinnati specially, but Chicago being the more central point of all interests in this section of States, with nearly one hundred and fifty resident practicing architects, only a few of whom felt it possible to tear out four or five solid days from their professional duties and engagements, and the membership of the Association northwesterly from Chicago being large, and Cincinnati lying some three hundred miles southeasterly from the city of the lakes, is the reason why the attendance of members was less than it was one year ago. But these facts seemed not in any degree to diminish or modify the zeal and interest of those in attendance, as the work of the session was taken up and entered into with great earnestness, and the spirit and sentiment permeating and pervading the occasion was clearly in the best interest of the Association, and calculated to make it a power for good to the profession as a whole, and greatly so to its individual members.

The legislation of the session was strongly in the right direction, looking to the improvement and elevation of the profession, and against every practice calculated to impeach or impair the good reputation and honorable position and standing that should be and is enjoyed by every truly good and honorable man assuming and practicing the duties and responsibilities attaching to the practice of the profession.

A CODE OF ETHICS.

Strong condemnation was expressed in deprecation of the unprofessional and mean practices resorted to by many to gain patronage without regard to the means necessary to that end. In view of the facts in this connection, a committee was appointed to formulate a code of ethics for the government of the members of the Association, and the feeling seemed to be unanimous that such a code should exist and be observed, and, so far as within the range of possibilities, be made imperative. Certainly no competent, right-minded man can feel otherwise than in favor of so necessary a rule of practice, in view of the damaging and demoralizing effects resultant from the acts of those who have no sense of personal honor or rectitude toward their fellows or the reputation of the profession, but sink all manly sense of right in the filthy pool of extreme selfishness, grasping for ends and gains which fairly and justly belong to others.

The financial report showed the Association to be in good financial condition. Uniformity of building contracts received consideration and was properly referred. The large number of applicants for membership in the Association made it necessary to postpone action thereon until the members should have an opportunity to criticise the printed list of nearly one hundred names, so that none be admitted who might reflect discredit upon the Association. Action was had in reference to certain statutory revisions in the respective States within this jurisdiction, for the regulation of the practice of architecture and proposing radical reforms in the regulation of the buildings of the National Government. The committee to organize State Associations reported Kentucky, Tennessee, Wisconsin, New York, Michigan, Alabama, and Louisiana, as having joined hands, and added one hundred and fifty names to the roll of the Association. A few minutes before lunch-time, His Honor, Mayor Smith, was introduced and entertained those present with words of welcome. After lunch, eighteen open-topped carriages, some carrying six or more persons, were loaded up with members of the Association, and driven to all points of interest possible, up to an hour after gas-light, including stoppages at the beautiful residences of Mr.



Design for a Six-Room School-House—Salfield & Kohlberg, Architects.

George K. Shoenberg, Alex McDonald, and A. R. Vail, each of which were thrown open to the visiting architects, and full and free opportunity given for inspecting the same from ground floor to roof. One of these very elegant residences is said to have cost $600,000. The floors are about all inlaid in hard wood, with hard woods for finishes generally.

SECOND DAY OF SESSION.

Among other matters considered was that of all the architectural associations of the United States consolidating. A committee was appointed to act with the Corresponding Committee from the American Institute to consider the proposition and report at the session next year.

The eighty names appearing in the printed list for membership were the next in order, with the rule applying that the whole be voted for at once, but any name scratched five times to be considered rejected.

ELECTION OF OFFICERS.

President, Sidney Smith, of Omaha, Neb.; First Vice-President, James F. Alexander, La Fayette, Ind.; Second Vice-President, W. C. Smith, Nashville, Tenn.; Secretary, N. S. Patton, Chicago; Treasurer, S. A. Treat, Chicago; Directors—J. W. Root, Chicago; W. R. Forbush, Cincinnati; J. J. Flanders, Chicago; C. F. Schwinefurth, Cleveland, Ohio; Geo. B. Ferry, Milwaukee, Wis.

Speeches were called for. That of Treasurer-elect Treat was terse, and to the point: "This is my speech, membership dues are payable for 1888."

A vote of thanks followed, and the Convention adjourned *sine die*, to meet at Chicago next year. The arrangements made for a visit to the Mammoth Cave of Kentucky were improved by those who had the time to spare in the enjoyment of this grand wonder of nature.

THE OHIO STATE ASSOCIATION.

There is, as one of the auxiliaries of the Western Association, an Ohio State organization, under whose auspices the present annual session has been held in Cincinnati, the members of which have done well and nobly in the reception and entertainment of the visiting members. Every reasonable provision was made by the Ohio brethren to make the fourth annual session of the Western Association of Architects a success, and they certainly succeeded well. Although California was not officially represented, the representation present attracted much attention to the State, and many kindly expressions followed, hoping, and earnestly desiring, that hereafter, beginning with the session to be held next year at Chicago, the golden chain of fellowship and union with the Association might be consummated with, and extend to, and include, the State of California and other Pacific States. J. E. W.

Design for a Six-Room School-House.

THE accompanying plans illustrate a design for a first-class school-house, arranged to admit speedy egress in case of fire, and thoroughly lighted and ventilated. Large folding doors separate the rear school-rooms and each room is provided with a closet and cloak-room. A wide corridor passes through the building, with a stair hall at each end, giving two entrances, thus separating the two sexes.

The design possesses many other valuable features, but for lack of space they are omitted, trusting that if more definite information is needed, parties will send for same to Salfield & Kohlberg, architects, 339 Kearny Street, San Francisco.

Architects, Attention!

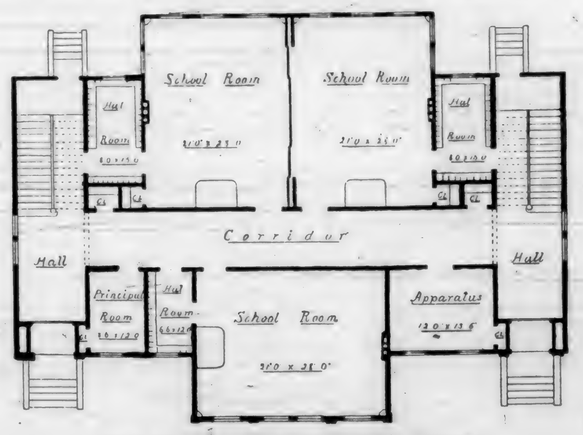
We want every architect on the Pacific Coast to contribute a short article for the January number of this journal. It should be your aim to make your home journal interesting to all who may read it, and there is no surer way to obtain this end than by each one writing a short article. Illustrate it, if need be; we will make the cuts. Be sure that the articles reach this office by the 5th of January.

To Contractors.

What contractor in the city but knows of some little idea that would be beneficial to the readers of this journal. Help to build up this journal by a free interchange of thoughts. It will pay you tenfold to be in communication through our columns with all the master mechanics of the Pacific Slope. Do not let the thought enter your mind that you cannot write well enough. Do the best you can, and we will see that your ideas are presented in proper shape.

Apprentices.

When you have found out any ideas that should be known to everyone, forward them to us, and we will publish them under your own names, that others, hearing of your good, deeds may go and do likewise.



First Floor Plan of Six-Room School-House.

The Back Yard.

BY A HOUSEWIFE.

THERE is need of a crusade in these parts. That defiling of the back yard of the average city home by the ash barrel and its kin is a worse offense against the senses of the properly civilized man, than was the presence of the infidel in the holy places of old, to the pious prejudices of the original crusaders.

Those of the ancients who derived their domestic notions from the cave or cell, would think our modern domestic establishment turned wrong side out. Instead of one or more series of rooms grouped about as many courts prettily ornamented perhaps with fountains playing in the impluvia, we have our rooms placed back to back, so to speak, the best of them looking for public appreciation, and the others asking no odds of the family or neighbors.

Our immediate ancestors had their farm-house with its necessary accompaniment of granaries, barn, etc. We move to town and build our shingle palace or brick mansion with its large front show window, in which the well-preserved, gilt-edged family Bible and the Roger's group have it which and t'other for supremacy—and set up in our back yard to represent the out-buildings of our ancestry, a privy, a pile of slabwood generally as dumped, a few barrels, perhaps a cheap stable. Not then satisfied with the amount of decaying wood about the premises, we lay a lot of wood walk.

Walking along the avenue we see a pretentious residence; it must be occupied by people of great refinement, for is not the most prominent room in the house the library, the whole street side taken up with an immense bay-window, the glass reaching nearly to the floor? How splendidly it was lighted as we passed last night—what elegant sets of books on the shelves—plenty of pictures, too. Let us to-day take a look at the back yard. Why do not these people board up the windows at the back of the house? Here is a well with a dirty puddle by it, the pump standing on a rotting platform, hard by some kitchen garbage, farther on ashes, and so it goes, the whole rear of the lot so bad as to discourage vegetable life even. It is mercifully screened in part from the general view by a high, unpainted board fence, against which, now and then, a weed or tuft of grass grows. Where is th re better field for the crusade?

Older cities East have not outgrown these same traditions. Multitudes of face brick houses are built with every effort for show on the front, and none on the rear. The rear of the lots may be divided by good brick walls, very likely with the unpatented, crystalline anti-feline crestings, but defend us from the sights and smells inclosed by these walls.

Now why should we desecrate the only spot of nature left us in these city homes? It will blossom for us with a little coaxing, and the wilderness of dirt and rubbish may be turned into a garden of roses.

The rear of the house and the out-buildings, though not so expensively finished, have a right to be carefully and artistically done. A wood-shed is not a nuisance if inclosed, well boarded, and painted, and the wood kept inside. A privy has no right to exist. If there be no proper system of drainage in the house for a water-closet, partition off an earth closet from the wood-shed or stable. Tasteful, well-cared-for out-buildings and fences are not only not an offense to the artistic sense, but are rather pleasing, indicating thrift, tidiness, and comfort. But when we consider the opportunities they offer for the support of the vine morning-glories, sweet-peas, nasturtiums, climbing roses, and like forms of plant life, what a joyous recompense for so little labor and care. Then all the available back yard space that is not used for walks, drives, etc., should give either vegetables or flowers—minister to the comfort or culture of the family.

Listen to people who lament the bad influences of street associations upon the children. Yet they say, very reasonably, "The children must have outdoor air," etc., and they have never considered but that the only alternative from the housing of the children is the freedom of the streets. They do not know what moral education is contained in a few feet of ground, congenial work for the hands, and the prettiest of life development studies for the mind. Give each of these street-loving children a flower-bed, a small set of garden tools, some flower seeds, and what help and advice they need, and note if there be not germs of nobler thoughts and desires taking root at the same time in their fertile natures. But—to moralize a little—there is a kinship between the ornamented front and disgraceful rear of a residence,

Second Floor Plan of Six-Room School-House.

and the fine clothes and the false heart of the wearer, and we fear that the majority of people who inhabit that sort of residence would rather risk some contamination of their children's characters than to see their faces, hands, and clothes besmeared with mother earth.

The back yard of the future will be a bower of flowers and greenery, and the leisure-hour resort of the family.—*Northwestern Architect and Improvement Record.*

Wanted—an Architect.

WE have often wondered why contributors to the comic journals should lay the scene of nine-tenths of their outrageous jokes in Ireland. But we wonder no longer, for we have just read one of the best bits of nonsensical fun we have heard of for a long time, which also is Irish "entoirely," and as it is on a matter strictly professional we give our readers the benefit of it. The Naar Board of Guardians, in their capacity of rural sanitary authority for the union, desired to erect cottages under the Laborers' Act, and for this purpose invited "tenders from duly qualified parties for the joint position of architect and clerk-of-works" for carrying out the work. The tenders were "to state the rate per cent on the outlay required for the furnishing of plans and estimates and for superintendence of erection, etc., *which must embrace car hire and all other expenses.*" Eighteen tenders were received. Of these, one Dublin gentleman (we think he must have been a gentleman) required 7½ per cent; three thought they could do it for 5 per cent; whilst two declined to undertake the job for less than 4; another called 3½ per cent a moderate charge, and two others thought 2½ little enough; 2¼ was the percentage asked by two other competitors, and 2 per cent was the rate fixed in two other tenders. But one Dublin boy, who desired a safe thing, asked 1½ per cent on outlay, and £2 10 s. a week for supervision—a reasonable way of looking at the matter we take it—and yet another offered his services for 1½ per cent.

Yet one remained, and he, with a resolute indifference as to what became of him, said he placed his talents and time at the disposal of the guardians for the small sum of *1 per cent on the outlay!* With an irony all the more cutting because it was evidently unintended, one of the guardians got up and solemnly stated his belief that *Mr. So-and-So's tender was exceedingly reasonable!* Need we say that such magnanimity was warmly responded to, and the guardians, without any attempt to obtain a further reduction, unanimously accepted the offer, and appointed the "highly recommended" individual to the proud position of cottage-architect-extraordinary to the Board. Sufficiently absurd in its ludicrousness as this business reads to an enlightened understanding regarding the nature of an architect's duties and his remuneration, there was still needed a climax to complete its absurdity. This is furnished in the statement that after the decision of the guardians the "highly recommended" one was "called before the Board *and his duties explained to him.*"

Though we may read the above in the light of a huge joke, yet there is a shadow of grim reality in the transaction which finds a reflection much nearer home. We need not go beyond the seas to discover people ignorant of the very meaning of the

word architect, but who presume to set up as authorities in the delicate task of selection. Many a competition committee and local authority in England furnish every-day proof to the contrary. Cases there are, too, which, if we cared to rake up dead ashes, we could enumerate as being identical in principle with the one quoted above. The fault of all this lies chiefly with the profession, for, after all, the public do but take architects, like every other purchasable commodity, at their market value. And at the present time the freedom of the Guild of Architects to all comers without respect of persons provides us with an overplus of mediocrity which, unable to produce any architecture, finds its outlet in the mongrel business of half architect, half surveyor. Nor do we see any remedy for such a state of things until the prescriptive right of professional competency shall be made the *sine qua non* of professional practice. Free entrance to the profession certainly, but let there be at least a barred door against the admission to practice of such as have neither the knowledge nor experience to entitle them to be called architects.—*British Architect.*

Eighth Annual Report of the Building Interest of Woodland and Yolo County for 1887.

Editor of the California Architect and Building News, of San Francisco, Cal.—*Dear Sir:* Should you find space in your valuable columns for this conspectus, setting forth the yearly result of the saw and hammer in our land of wheat and vine, you will have the thanks of our appreciative citizens, and the best wishes of the writer.

The closing year has not proved to be one of extraordinary activity in the building line, and while all anticipate larger gains in the future, there are very few that will complain of the past. The enormous advance in lumber has produced a stagnating effect, and settled two facts: 1. We have not experienced a boom. 2. We do not fear the recoiling influence of a collapse. And our present standing is on a solid basis, which has always characterized the uniform stability of our city and Yolo County. A few of the most important improvements will bear the record of the year, and deserve special mention:—

Two new lines of railroad are under course of construction in Yolo County. El Dorado Bridge, spanning Cache Creek, five miles west, is an important item to the interest of Woodland. Cost, $17,500. The new Hesperian College and property, valued at $20,000; the Young Men's Christian Association block and gymnasium, which, when entirely equipped, will be valued at about $30,000; St. Luke's Episcopal Church and lot, valued at $5,000; electric light building, machinery, and entire lines and fittings, valued at $12,000; and many other fine buildings for business and private residences, will date from 1887. The months of August and September have been the most active. This is noticeable nearly every year. The following report, by months, will set forth the number of structures, their kind, style, and value:—

1887.		City of Woodland.						Yolo County.				
Month.	No. per mo.	Frame Buildings.		Brick Buildings.		Addition and Imp't.		Frame Buildings.		Brick Buildings.		Tot. l value per mo.
		No.	Value.	No.	Value.	No.	Value.	No.	Value.	No.	Value.	
Jan	4	2	$ 3,000	1	$2,700			1	$1,500	....		$ 7,200
Feb..	6	4	8,000	....	.....	2	$10,000	....	.....	....		18,000
Mar..	5	3	3,200	....	.....	1	9,800	1	2,000	....		6,000
April	6	4	2,100	1	6,000	....	.....	1	1,500	....		9,600
May..	5	3	5,700	1	2,500	1	250	....	.....	....		8,450
June	7	4	1,900	....	.....	2	1,100	1	1,500	....		4,500
July.	11	1	3,200	3	8,500	4	4,100	3	6,160	....	Eldorado bridge, near Woodland.	21,960
Aug..	9	6	26,750	....	.....	2	1,450	1	4,000	....		32,200
Sept..	9	4	8,500	1	2,500	....	.....	3	9,500	1	$17,250	37,700
Oct..	8	4	6,300	....	.....	3	1,500	1	1,000	....	.....	8,800
Nov..	11	6	13,550	....	.....	2	1,600	3	5,500	....	.....	20, 50
Dec..	10	3	1,500	2	4,000	4	4,000	1	1,000	....	.....	10,500
Total	91	44	$83.700	9	$26,200	21	$24,800	16	$33,660	1	$17,250	$185.560

Woodland and suburbs has contributed to the above seventy-four buildings and improvements valued at $134,700; Yolo County, seventeen buildings valued at $50,850. The county list is undoubtedly but a small portion of what has actually been built, not having time to secure all. The preceding report sets forth but a limited number of buildings, representing an outlay of moderate proportion, nevertheless the magnitude, taken from an architectural standpoint, is most gratifying. The greater number of structures are of good, solid design, well planned and faithfully executed, and the general tone of satisfaction is decidedly unanimous, and it may be hoped that throughout the entire State the year 1887 may be proud of its building results.

It is a fact, nevertheless, that some towns need considerable encouragement in the line of improving in their style of architecture, and they should follow the valuable suggestions set forth monthly in the California Architect and Building News, and they would surely derive a benefit of vast importance. Any person with good eyes and a keen, quick conception need travel but very little to learn and obtain a fair degree of knowledge of the manner and usages of the people of that country through which they pass, and to notice that part most carefully which he is versed in and personally interested. An architect will observe and quickly scan the structures of the city or town and at once pass judgment upon the merits displayed in the buildings. Should that place have had the good fortune of having plenty of right, sound, level-headed citizens, guided by efficient architects and supported by competent mechanics, the building will possess an air of general refinement, embracing artistic beauty, and combining comfort, economy, and durability. This will be plainly discernible throughout the entire place, and is a ruling feature which makes and determines, to a great extent, the prosperity and prominence attained. Such places rapidly increase, and are known as go-ahead localities. But other places unfortunately without such progressive advocates of the true and right, and void of good architectural influence, is another condition and needs no comments. A shoddy, ill-constructed, ungainly building on one corner of a block has been duplicated on an opposite, thus placing the wrong side to the street, with perhaps some prominent wing left off to accommodate the purse of the new builder, having an unsightly part exposed. This and numerous other duplications of rank stupidity, without judgment or taste, will characterize the entire place. And still this class of worthy citizens will wonder why their town does not boom. Under such circumstances, why should it? The omission of improvement in the style of their buildings, and the want of more architectural taste and refinement, is the underlying cause. One thorough, enterprising, persevering architect or mechanic will do more in the direction of elevating the standard of building than a score of those who only copy from others without sufficient discernment to rightly discriminate between true and false styles, or one of merit and up to the times in points of architecture.

The come-by-chance, medley manner in which are introduced many styles of finish in one structure, concentrating the very essence of bad taste and perverted judgment, not having enough of one to classify any known order of architecture, may possess a certain degree of picturesqueness or character to obtain an effect, but this fails to heighten true design, or accomplish any noble result by which we may judge that true artistic excellence was the ruling idea of the designer.

Now let us at once leave *by the wayside* all those old *nondescripts* and *threadbare landmarks* which have outlived their age, for we know we can build better and cheaper, and keep pace with the age we live in, always earnestly endeavoring to take one step further in advance, and with higher aim learn to despise many incongruitous fancies we too often copy and always regret, and by borrowing very little and lending less to perpetuate their existence, we may attain that merit and reward due to all who advocate progression in the erection of our homes and other buildings; and this twofold good we may obtain from every-day life should be secured and placed to the credit side of our improvement account. We would not wish to indulge in any fancy imaginations, or advocate any flimsy surface ornamentation void of utility or protection. This would have a debasing tendency, well calculated to perpetuated retrograding influence. True, architecture must not depend upon inspiration or imagination alone, but must embrace thorough technical knowledge based on personal experience, with long and diligent practice. Without this we are wandering in the dark, and not a single ray of daylight to enlighten our path or gladden our hearts with the visions of brighter and better things in art.

In conclusion, we would wish to tender our thanks for many courtesies and favors shown during the past twelve months, and sincerely desire you may obtain the reward you so justly deserve for the able manner in which you have conducted the California Architect and Building News, to the entire satisfaction and approval of subscribers, advertisers, and constituents in general.

We remain most respectfully yours, Gilbert & Sons.

Woodland, Cal., Dec. 3, 1887.

This Journal and the
Weekly Building News
will be furnished conjointly
For $2.00 per Year.

Scarceity of Skilled Workmen.

There is a common remark among master mechanics that skilled workmen are scarce. The reason of this is obvious. The apprenticeship system, which was general fifty years ago, has almost ceased, or been indifferently carried out. Boys agree to serve three or four years to learn a certain trade, and by the time they have obtained a smattering knowledge of it, disregard their engagements, leave and go elsewhere, and then assume that they are skilled workmen. To back themselves up, they join some labor organization, the majority of whose members are, like themselves, incompetent. If in an establishment there are men who can do a fair day's work, and do it well, the majority at once enter into a combination to reduce them to their own incompetent level. They reason because six honest, capable men can do twice as much work in a given time, it keeps others out of employment. To keep their work upon a level, all must be governed by the lazy, incompetent majority.

Besides, master mechanics, as well as their men, dislike the apprenticeship system, the master mechanics because boys do not begin to pay for a year or two, and the men because it increases their number and has a tendency to lower the rates of wages. An intelligent machinist, at present in California, writes to his father that he never has any difficulty in obtaining employment, because he flatters himself that he can turn out more work in a day than four ordinary hands, and had frequently done so when work was pressing, and, what was more, what he did was well done. Pretenders, who know but little of the trade, frequently spoil work, which not only entails heavy expense, but causes delay.

A skilled workman is always assigned the best jobs, because a foreman has confidence in him that he will come up to time, a matter of no small importance in any establishment. Such a man in a very short time finds himself an object of dislike, if not positive hatred. His employer dares not pay him wages according to his merit, for this would bring about a strike, and his shop-mates say that he works to curry favor, and does more than he is paid for. Thus, the best mechanic in a shop, if he wishes to have peace with his fellow-workmen, must sink himself down to the general level. The best man in a shop is the generally most disliked, even if he should keep down in speed, because he is sure to have the best jobs.

There is just as much friction among workmen themselves as there is between them as a whole and their employers. These facts are well known; every man is a spy upon his neighbor, so that if the labor question were settled between employer and employed, it will never be settled among workmen themselves. Master mechanics see this, and, like their men, make little or no provision to meet the probable eventualities of the future. They work and live by the day, and hence do not care to take apprentices. The result of such a system, a want of system, is seen in the careless way some houses are built; before their shells are completed they tumble down: even the scaffolding of some is so poorly put together that the very men who put it up come down with it, and either lose their lives or have their limbs broken.

In the whole labor market business is unsettled in consequence of discontinuing the old apprenticeship system. The ignorant and insolent are in a majority; and if they can do nothing else, they can fight and create a disturbance. Many of them seem to think that manual labor is degrading, and want to live without work. They envy their employers if they happen to have a few dollars ahead, forgetting the great truth that employers often work eighteen hours out of twenty-four, thinking and arranging the business they have on hand.

When a certain class of mechanics were receiving five dollars a day wages, most of them only worked two or three days in a week, while their employers toiled at their desks every day until midnight, and became rich. Labor of all kinds is honorable, and is worthy of reward.

It is estimated that Placer County has 450,000,000 feet of lumber fit for manufacturing purposes in her forests.

Design for a Public Building to be Built of Stone.

All the mills on the Sound are busy cutting lumber to supply the California markets. They are working 11½ hours per day, the men being allowed an extra day's pay each week. There are no orders for foreign ports, excepting the two for Australian ports from the Puget Mill Company, and the advance in the price of lumber from Puget Sound over that of British Columbia has a tendency to divide our foreign trade with our neighboring mills. The Washington Mill, at Hadlock, has been compelled to shut down for a period of several days, owing to a fire which occurred some time ago, burning out the wooden foundation to the boilers, which will be replaced by brick.

Shingles for Chicago is the latest wrinkle in the business of this bay. J. G. Loveren has shipped 120,000 fancy direct to the South Branch Lumber Company, Chicago.

This Journal and the
Weekly Building News
Will be furnished conjointly
FOR $2.00 PER YEAR.

Something about Redwood Stumps and Roots.

HAVING read several articles in your worthy paper in regard to the merit and valuation of California redwood, in your last issue I noticed two articles, one from Kansas City, Mo., signed C. N. E., and the other signed "Jack Plane.' The last-named article contains all I could say about the virtue of redwood, provided redwood is used when seasoned; green or wet wood is not good either to be used in buildings or for furniture. I have given most of my attention to using redwood in the manufacture of furniture. For certain pieces of furniture redwood could not be surpassed in beauty by any other wood, provided a man understands the finishing of the same to perfection. The recipe given in the article signed "Jack Plane" for finishing redwood would not suit me, especially when redwood has to be finished to retain its natural color. I have been in the business of working and finishing all kinds of wood for forty-five years, and for the last four years I have given most of my attention to the working and finishing of redwood. By experimenting I found that in the finishing of redwood, to have it done well and quick, also to have it retain its natural color, a somewhat different manipulation is required than by finishing other woods intended for fine work. To use fillers, such as corn starch, whitening, etc., is unnecessary, for redwood has no pores to be filled. I have a compound and a way of doing the work to perfection, different from any other process now in use. By my finish redwood is as smooth as glass, the figures of the wood are brought out distinct, whether to be finished in bright natural color or in imitation of rosewood, walnut, mahogany or other kinds. I use mostly such redwood as is rejected by carpenters, or has hitherto been used very little. I use the stumps and roots, which have always been a nuisance to farmers, and which they (the farmers) are glad to get rid of; such stumps, after the timber is cut, are in general left standing, with the expectation that they will rot in course of time, but none have found out yet how long that will take, for I have recently used the wood from stumps of which the trees had been cut down twenty-two years. The stumps were partly burned, and after digging them out I found the inside portion fresh, green and solid. The wood, after being cut in proper shape, now is most beautiful. The diameter of such stumps is often enormous. By proper means and manipulation such stumps can be made to bring more money than the price of the land and the value of timber that has been cut from them. There are fortunes to be made in this point, more reliable than a gold mine, provided someone will carry out a certain and proper plan, which plan I am willing to disclose to any party who wishes to interest himself in such an enterprise, namely, in making the most money out of redwood *stumps* and *roots*.

Anyone doubting my present statement is cordially invited by me to call at my place of business, which is at 576 Seventh Street, corner of Jefferson, Oakland, Cal. There I will convince the most skeptical of the truth of my words, by showing him fine furniture, fine-finished samples of panel-work, picture frames, etc., all redwood, finished in any shade and color; also fancy redwood cut in slabs and in junks in the rough—but the most beautiful pieces I have on hand are always taken from stumps.

My way of finishing redwood to greatest perfection can be learned by anyone, and I am willing to confer my knowledge of working and finishing the same to such parties who wish to profit by it, provided I see some recompense for my trouble.

Respectfully, Wm. Fay.

IVES' PATENT SASH LOCK

MANUFACTURED ONLY BY H. B. IVES & CO. New Haven, Ct. BELL TIP, ORNAMENTAL.

SEND FOR ILLUSTRATED PRICE-LIST.

IVES' SASH LOCKS.

A very important feature of the IVES' SASH LOCK is in its securely locking when closed and simultaneously drawing the meeting rails closely together. All the movements are accomplished by cams without the instrumentality of springs, thus avoiding the possibility of getting out of order. During the past year we have used scores of dozens of these locks, and in every case they have given perfect satisfaction.

HILL'S

Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and tenements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. H. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY BUILDING INTELLIGENCE.

We earnestly desire the co-operation of country editors and mechanics generally to this department of our Journal. Forward us all the building news connected with your different localities. Architects should also notify us of "plans to figure on." No charge is made for such notices. Direct letters to office of this Journal, 240 Montgomery St.

ALAMEDA.

Central Avenue, nr Grand. Frame building. Owner, C. H. Shattuck; architects, Mathews & Son; contractors, Knowles& Wetmore; cost, $4,747.

1st payment, when roof is sheathed, $475; 2d payment, when inclosed, $900; 3d payment, when ready for plaster, $600; 4th payment, when white mortar is on $500; 5th payment, when building is completed, $1,087; 6th payment, 35 days after completion and acceptance, $1,185. Limit, March 21, 1888. Signed Nov. 14, 1887. Filed Nov. 16, 1887.

High, nr Central Avenue. Frame building. Owner, A. F. Flemming; contractor, J. B. Cogswell; cost, $6 000.

1st payment, when frame of building is up, $1,200; 2d payment, when first coat of mortar is on, $1,200; 3d payment, when plaster is on, $1,200; 4th payment, when the building is completed, $1,200; 5th payment, 35 days after completion, $1,200. Sureties, F. P. Latson. Amount bond, $5,000. Signed Nov. 16. Filed Nov. 18, 1887.

OAKLAND.

Twelfth, nr Alice. Frame building. Owner, C. W. Gibson; architect, Chas. Mau; contractor, J. J. Deuschle; cost, $4,975, except mantels, sidewalks, and sewers.

Payments, 75 per cent work done; balance 35 days after completion. Limit, March 1, 1888. Filed Nov. 16, 1887.

West, bet Ninth and Tenth. Frame building. Owner, A. Martin; architects, Mathews & Son; contractor, R. M. Murray; cost, $2,500.

1st payment, when roof is sheathed, $800; 2d payment, when finished, $1,075; 3d payment, balance 35 days after completion, $625. Limit, 30 days from completion of brick work. Signed Nov. 11, 1887. Filed Nov. 16, 1887.

Oakland Hospital. Owner, Fabiola Hospital Association; architects, Mathews & Son; contractor, Fwohig & Moore; cost, $12,863.

Payments 75 per cent, when work is done; balance 35 days after completion. Limit, April 1, 1888. Signed Nov. 11, 1887. Filed Nov. 17, 1887

Twenty-third Avenue. Frame building. Owner, E. H. Clough; contractor, Wm. McDonald; architects, Goodrich & Newlon; cost, $2,805.

1st payment, when inclosed, $500; 2d payment, when brown mortar is on, $500; 3d payment, when plaster is on, $500; 4th payment, when finished; 5th payment and balance 35 days after completion. Limit, Feb. 1, 1888. Signed Nov. 12, 1887. Filed Nov. 15, 1887.

Harrison. Frame building. Owner, Kate Mitchell; architects Goodrich & Newton; contractor, G. J. Happ; cost $1,310.

1st payment, when inclosed, $300; 2d payment, when brown mortar is on, $300; 3d payment, when painted, $300; 4th payment, when finished, $200; 5th payment, balance 35 days after completion, $210. Limit, Dec. 1, 1887. Signed Oct. 4, 1887. Filed Nov. 17, 1887.

Twenty-eighth. Frame building. Owner, C. Clivio; architects, Goodrich & Newlon; contractor, G. J. Happ; cost, $840.

1st payment, when frame is up, $100; 2d payment, when inclosed, $100; 3d payment, when plastered, $200; 4th payment, when finished, $200; 5th payment, balance 35 days after completion, $240. Limit, Feb. 1, 1888. Signed Nov. 7, 1887. Filed Nov. 17, 1887.

SAN DIEGO.

We are indebted to the San Diego *Union* for the very complete reports presented.

A large brick business building will soon be erected on Fourth Street, between D and E Streets. W. H. Hill and Dr. G. H. Schmitt are the owners. The structure will be three stories in height, and 50x66 feet in size. The cost of the building will be about $10,000. H. J. Simpson is the architect.

A building will be erected on the northwest corner of D and Second Streets. It will be three stories in height. The size of the building is 50x70 feet. Comstock & Trotsche are the architects. The cost of the building will be about $20,000. Mrs. F. E. Hamilton, of Phœnix, A. T., is the owner.

The contract will be let next week for a large residence for E. Morgan. It will be built on the corner of H and Twentieth Streets. It will have two stories. The size of the building will be 38x58 feet. Clements & Stannard are the architects.

The contract has been let for $5,250 for building the residence of Mrs. L. F. Shirley. The location is on Second Street, between Cedar and Date Streets. Clements & Stannard are the architects, and Davey & Melville the contractors.

Work will soon be begun on a residence for T. J. Hayes. It will be located on the corner of H and Twenty-fourth Streets. E. Guenther von Swarzenberg is the architect.

The contract has been let for a boarding and lodging-house to be erected on the corner of Tenth and D Streets. It will be two stories in height. The cost will be $7,000. E. H. Darrah is the owner, and R. E. Osgood the architect.

R. M. Mills will soon erect a two-story dwelling on the corner of Third and Cedar Streets. The cost will be $6,000.

The granite to be used in the construction of the gutter around the Reed Block is on the ground, on the corner of H and Sixth Streets.

The Board of Supervisors are considering the plans for the proposed additions to the Court House, which have been drawn up by Comstock & Trotsche, architects. The cost of the proposed additions will be about $50,000. No definite action has yet been taken, but it is thought that the Board will adopt the plans, and order the work begun soon.

The following building permits have been granted:—

Mrs. Emily Knite, two-story corrugated iron building, on the southwest corner of Sixth and I Streets.

Troop & O'Connell, one-story corrugated iron building, on Sixth Street, between J and K Streets.

Emile Isebel, two-story frame building on lot 2, block 52, Sherman's Addition.

Nat Kennedy, one-story brick building, 25x50, on corner of I and Fourth Streets.

J. Severin, three-story frame building on the corner of K and Fifteenth Streets.

Carl Linguist, two-story frame building on the southeast corner of State and B Streets.

Porter, Lang & Co, corrugated iron building, 50x90, on I Street.

R. Mills, two-story dwelling, corner of Third and Cedar Streets.

Plans have been completed for a residence for J. Bills, of Oakland, to be erected at National City. It is to have two stories and an attic with twelve large rooms. D. P. Benson is the architect.

A residence will soon be erected for A. B. Griffith, at Chula Vista. It will be one and one-half stories in height. The cost will be $6,000. Joseph Falkenhan is the architect.

Plans have been completed in the office of Comstock & Trotsche for a fine residence for Colonel D. Horne, to be erected at Oceanside. It will cost about $10,000, and work will be commenced immediately.

Myerhoffer Brothers, of Oceanside, are making preparations for building a two-story solid brick business block. The cost will be $8,000.

The contract will be let next week for a cottage for J. Paine, to be erected on Coronado Beach, near the Hotel del Coronado. E. Gunther von Swarzenberg is the architect.

H. C. Simpson, architect, has prepared plans for a brick business block, to be erected on Orange Avenue, near the Hotel del Coronado. It will be three stories in height. F. F. Wright & Co. are the owners.

Moser & Whitney have ordered plans for a brick business block to be erected on the corner of Third Street and Orange Avenue. The building will be three stories in height. Joseph Falkenhan is the architect.

The same architect has prepared plans for a fine residence for Postmaster J. D. Brownlee. It is to be erected on G Avenue, near the corner of Third Street.

A residence will soon be built for H. S. Ballow, on the corner of C Street and Orange Avenue. It will be a six-room cottage. Joseph Falkenham is the architect.

A contract will be let next week for a three-story frame building to be erected on the corner of Front and H Streets. J. B. Randall is the architect. The building will be 100x100 in size, with seven stores on the ground floor, and sixty rooms above. The cost of the structure will be $20,000. D. Stone is the owner of the building.

The same owner will soon have a residence erected in Middletown. It will have two stories and an attic, with nine rooms. J. B. Randall is the architect. The cost of the residence will be $9,000.

Comstock & Trotsche, architects, have completed the plans for nine residences, one business block, and a bank building. The work on all these structures is to be begun immediately. They are as follows: Five residence flats for Mrs. E. Pierce. They are to be erected on Florence Heights, adjoining the Southwest Institute. Four of the flats will have six rooms each, and the other ten rooms. The cost will be $12,000.

The contract will soon be let for a cottage for Judge J. D. Works, to be erected on Florence Heights. It will be in the Queen Anne style, two stories in height, with twelve rooms.

A cottage will soon be erected for J. H. Clark, on Fifth Street, between Date and Elm. It will be a double house, containing two stories and a basement, with fourteen rooms.

Work will be begun immediately on a large and elegant residence for John Sherman. It is to be erected on the corner of Second and Fir Streets. The work will be done by the day. The structure will be 46x60 feet in size, and will contain twenty rooms. The cost will be $20,000.

The plans have been completed for a cottage for Mrs. A. Carroll. Its location is on the corner of Twenty-second and K Streets. The cost will be $5,000.

Banking rooms will soon be arranged in the southeast corner of the Horton House for the Bank of San Diego. The offices will extend fifty feet on D Street and forty feet on Fourth Street. The cost of the improvements will be $10,000.

Plans have been completed for a large business block, to be erected on D Street, near the Plaza. The building will cost $20,000.

Comstock & Trotsche, architects of the foregoing eleven buildings, estimate that their total cost will be $60.000.

Gunther von Swarzenberg, architect, has completed the plans for a cottage for Charles D. Blaney. It will be two stories high. The site is on Florence Heights. The contract will be let next week, and work on the building will then be begun immediately.

The same architect is drawing plans for a three-story brick business building, soon to be erected on Third Street. It will be three stories in height and 100x100 feet in size. The cost of the building will be $10,000.

A. H. Towle, architect, has prepared plans for six cottages soon to be erected in a row on Seventeenth Street, from the corner of H Street. Mrs. Reidy is the owner. The cost

will be about $1,500 apiece. The contracts will be let next week.

Dr. Barnes is having a brick building erected adjoining his office on Sixth Street, between D and E Streets. The cost will be $5,000. H. A. Terry is the builder.

Excavation for the foundation of a brick business building, to be erected on Fourth Street between D and E streets, adjoining the site of the proposed Gassen & Pauley Block, has been commenced. The building will have sixty feet front and a depth of sixty-six feet. It will be three stories in height.

The excavation preparatory to the erection of the Gassen & Pauley Block, on the corner of Fourth and E Streets, was begun this week.

A residence will soon be erected for J. H. Hensley on Fourteenth Street, between C and D Streets. It will be two stories in height and will contain seven rooms. The cost will be $2,500.

Excavations were begun this week for a four-story frame lodging-house on the northwest corner of Second and D Streets. It will be 60x80 feet in size.

The following building permits were granted at the last meeting of the Board of City Trustees.

M. G. Wheeler, a three-story frame building, on lots 11 and 12, block 13, Sherman's Addition.

W. H. Forbes, one-story frame cottage, on D street, between Thirteenth and Fourteenth streets.

V. O. Harter, one-story frame cottage, on Twenty-second, between E and F Streets.

S. Howe, a number of one-story sheds and rooms, to be covered with tin or iron, on block 94.

Amos Beard, frame dwelling on the north half of lot 2, block 27, Sherman's Addition.

George H. Colter, one-story corrugated iron building, on lot H, block 96.

J. H. Hensley, two-story frame dwelling, on Fourteenth Street, between C and D Streets.

C. H. Danielson, one-story frame dwelling on lots 40 and 41, block 322, Reed & Daley's Addition.

G. A. Cooper, two-story-frame dwelling on lot A, and north half of lot B, block E, Horton's Addition.

C. R. Orcutt, five-room cottage on lot 39 block, 10, Kimball's Addition.

A. Frohburg, one-story dwelling on lot 31, block 322, Reed & Daly's Addition.

H. W. Bowman, three-story brick veneered building on lot 4, block 11, Horton's Addition.

A. Pauley, Trustee, First Baptist Church, building on lots G and H, block 48, Horton's Addition.

SAN JOSE.

Among the improvements now going on in this city and vicinity are the following: A cottage for Henry Roehr on St. James Street, between Fifth and Sixth, to cost $2,750; a $2,000 cottage on the Gish road for James Gally; two cottages on St. James Street, near San Pedro, for Mrs. Abels; a cottage on North Fifth Street for Mr. Holland; three cottages for J. A. Clayton; a $5,000 residence at Campbell's Station for Edward Parr; a $6,000 residence on the Alameda for Mr. Baumgardner; store building on Third Street, near San Fernando; cottage on the corner of Santa Clara and Eighth for J. Lotz; a $1,200 cottage on Balbach Street for John Ingham; a $2,500 cottage on Edward Street for T. C. Barry; two $1,600 cottages on Lackawanna Street, for A. and E. Van Dalsem; residence on Stockton and Julian Streets for E. A. Averet; brick business building on North Market for Theo. Lenzen; a $1,800 cottage in the Willows for Mrs. Hart; a $2,500 cottage on Fifth Street, near Washington, for Mr. Hudson; a $2,500 cottage for D. A. Porter on San Fernando, between Fourth and Fifth; an elegant studio corner St. James and Whitney for R. D. Cooper and A. M. Wood; three $1,500 cottages on Fifteenth Street, near Julian for Kennedy, Surryhne & Co. The architects, builders, carpenters, and masons in this city are all busy, and the prospect for a lively winter in the building line is very cheering.

A BRICK ADDITION TO THE ELECTRIC LIGHT BUILDING.

BIDS were received up to 11 o'clock Tuesday at the office of Jacob Lenzen & Son, architects, for a brick addition to the electric light building on Fourth Street, between Santa Clara and St. John Streets. The contract was let to C. Drew, who proposes to make the improvements for $1,200. The addition is necessary in order to make room for larger engines and more machinery.

To-day, at the office of the same architect, bids were opened for the construction of three cottages, and the contracts let as follows: Two cottages for Mrs. Abel on St. James Street, near San Pedro, to Robert Summers.

One cottage for Mrs. Farrell, on Park Avenue, between Orchard and Vine Streets, to Mr. Lobdell.

The cottages will be modern style, and cost several thousand dollars each.

MISCELLANEOUS.

IMPROVEMENTS AT LITTON'S.

Some extensive improvements at Litton's are in contemplation. Colonel Donahue bought the property with a view to subdividing it and selling villa sites. The plans embrace the building of a new passenger depot, about a quarter of a mile this side the present depot (the latter to be retained as a freight depot), the laying out and beautifying of a large park, just west of the track, the opening of a broad avenue from the new depot to the hotel site, where a $100,000 hotel will be built, and many other important improvements.

Galt talks of a flour-mill.

Ukiah wants a new school-house.

W. G. Hastings, architect, San Bernardino, has commenced the construction of an $1,800 cottage for D. A. Grosvener, on I Street, between First and Second.

John Magrath has been awarded the contract for building the foundation for the new addition to the Occidental, at Seattle.

The large planing mill lately destroyed by fire will be rebuilt. Particulars can be obtained by addressing the Madera Flume and Trading Co.

The contract for the carpenter work on the Everest Block, in Riverside, has been let to J. E. Porter, for $31,868. It must be completed by March 24, 1888.

C. O. Perrine will soon commence the erection of a one-story brick building in Riverside.

The contract for grading the Pomona and Elsinore Railroad was let November 5, to Mr. Stegeman, the work to be finished by the end of January, 1888.

The Crocker Brothers have awarded the contract for building their new store on the corner of Higuera and Garden Streets, San Luis Obispo, to Thomas Helm, for $6,500. There were three other bids, as follows: William Rodgers, $7,179; J. L. Wilson, $7,460; and Daniel Forsyth, $6,986.

Large additions are about to be made to the American House, in Santa Maria. H. M. Whaley has received the machinery for a large planing mill, and will soon have it in position.

Mr. Van Dorin, of San Bernardino, is building a handsome cottage at Oceanside.

A contract has been awarded to a San Jose firm for the grading, sewering, and the laying of asphaltum sidewalks on Alvarado Street, Monterey, at the expense of $13,750.

Geo. W. Meade will shortly have erected in Fresno a large brick building on J Street, corner Tulare.

E. B. Lyman is building on North O Street.

Mrs. A. L. Fleming, of Alameda, has let contract to J. B. Cogswell to build on High Street, near Fountain. Cost, $6,000.

A two-story cottage, containing six rooms, is in course of erection for Henry Morris, on Railroad Avenue, near Willow Street, Alameda. It will cost about $2,000.

AN INSOLVENT OAKLAND CONTRACTOR.

S. Hatfield, a builder and contractor, filed his petition in insolvency with the Clerk of the Superior Court this afternoon. His liabilities amount to $7,757, and his assets consist of real estate valued at $250, a homestead valued at $2,500, incumbered for $1,000; debts due petitioner, $2,185, and personal property exempt from execution of the value of $360; liens on other personal property amounting to $2,000. The creditors who reside in San Francisco, to whom the insolvent owes over $100, are H. and J. Ralston, $125; C. A. Hawley & Co., $125; Christensen & Lord, $130; Starbird & Goldstone, $3,300; J. Smith, $125; U. S. Upham & Co., $165; P. R. O'Brien, $300; Wells, Russell & Co., $150; Hanson & Co., $700. The Oakland creditors are: Burnham & Standeford, $695, and Union Savings Bank, $1,000.—*Oakland Tribune.*

SAUCELITO.

Two-story frame. Owner, George Meade; architect, H. D. Mitchell; contractor, R. P. Traxler; cost, $20,000.

Two-story frame. Owner, J. E. Schubert; architect, H. D. Mitchell; contractor, R. P. Traxler; cost, $8,000.

POMONA.

[Reported by W. A. Nethercot, architect.]

Residences for J. S. Teague, $4,500. S. I. Ford, $2,750. E. F. Kysor, $3,600. C. G. Kellogg, $3,000. J. C. Garlick, $2,500. Mrs. J. P. Fuller, $7,000. Geo. Egan, $9,000. Three for J. G. Packard, costing respectively $4,000, $4,500, $5,500. N. P. Killane, $8,000. C. C. Warren, $5,000. Brick stable for J. E. McComas, $5,500.

SAN FRANCISCO BUILDING NEWS.

We give a list of all contracts recorded from middle of November to date.)

Recorded City Contracts.

A, nr Eighth Avenue. One-story and basement frame. Owner, Thos. Harkens; architect, G. H. Miller; contractor, M. J. Scott; cost, $1,855.
1st payment, when frame is up and braced satisfactorily to the arch, $250; 2d payment, when building is inclosed and outside finish properly advanced to the satisfaction of the arch, $468.75; 3d payment, when building is completed and accepted by said arch, $468.75; 4th payment, 35 days after completion and acceptance, $468.75. Limit, 65 days. Signed, Nov. 29, 1887. Filed, Dec. 10, 1887.

Battery, nr California. Alterations. Owner, Robt. Sherwood; architect, John P. Gaynor; contractor, Benj. F. Ellis; cost, $4,300.
1st payment, when the work is half done, $1,600; 2d payment, when completed, $1,625; 3d payment, balance 36 days after completion. $1,075. Signed Nov. 15, 1887. Filed Nov. 16, 1887.

Broadway, bet Gough and Franklin. Two 2-story frames. Owner, Fritz King; architect, Clinton Day; contractor, Chris. Chrisholm; cost, $7,750.
1st payment, when frame is built, sheathed, and roof ready for shingling, $1,800; 2d payment, when brown coat of mortar is on walls and ceilings, and the exterior has prime coat of paint on, $1,600; 3d payment, when doors, windows, and inside finish is ready for prime coat, $1,800; 4th payment, balance when completed and accepted. Limit, May 1, 1888. Sureties, Frank P. Latson and C. S. Holmes. Amount bond, $2,875. Signed Nov. 7, 1887. Filed Nov. 15, 1887.

Bush, bet Polk and Van Ness Avenue. Four-story frame. Owner, M. Luxenberg; architect, P. R. Schmidt; contractor, A. Norton; cost, $5,470.
1st payment, when frame is up, $1,000; 2d payment, when brown coated, $1,000; 3d payment, when hard finished, $1,000; 4th payment, 35 days from completion and acceptance, $2,470. Limit, 100 days. Signed, Dec. 8, 1887. Filed, Dec. 10, 1887.
Plans are being prepared for two buildings on Guerrero and Fifteenth Streets. One will be a three-story and the other a two-story and basement. Consult G. H. Miller, architect.

Castro, nr Seventeenth. One-story and basement frame building. Owner, J. W. McCormick; architect, F. V. Pierce; contractor, F. W. Kern; cost, $2,185.
1st payment, when frame is up, $408; 2d payment, when brown coat of mortar is on, $408; 3d payment, when first coat paint is on, $408; 4th payment, when completed and accepted by said architect, $414.75; 5th payment, 35 days after completion and acceptance, $546.25. Limit, 90 days; signed, Dec. 3, 1887. Filed, Dec. 7, 1887.

Clay, cor Central Avenue. Two-story frame. Owner, Sarah E. Cotrel; architect, John J. Clark; contractor, Wm. Linden; cost, $4,725.
1st payment, when frame is up, $1,000; 2d payment, when brown mortar is on, $1,000; 3d payment, when white coat plaster is on, $800; 4th payment, when completed and accepted, $1,060; 5th payment and balance, 35 days after completion and acceptance, $1,175. Limit, March 9, 1888. Surety, A. T. Knorp. Amount bond, $5,000. Signed Nov. 9, 1887. Filed Nov. 21, 1887.

Devisadero, bet Sacramento and Clay Alterations. Owner, Louis Marshall; architect, J. J. Clark; contractor, J. G. Adams; cost, $2,940.
1st payment, when frame is up, $1,100; 2d payment, when brown coat of mortar is on, $1,100; 3d payment, 35 days after completion, acceptance, and delivery of said building, $749. Limit, 90 days. Signed, Nov. 23, 1887. Filed, Dec. 12, 1887.

Golden Gate Avenue, bet Van Ness Avenue and Franklin. Plumbing and gas-fitting. Owner, Simeon Wenban; architects, Pissis & Moore; Contractors, Wm. Snook & Son; cost, $1,345.
1st payment, when rough work is in, $509; 2d payment, when completed, $600; 3d payment, balance 35 days after 2d payment, $336. Signed Nov. 16, 1887. Filed Nov. 18, 1887.

Golden Gate Avenue, bet Van Ness Avenue and Franklin Two 2-story frames. Owner, Simeon Wenban; architects, Pissis & Moore; contractor, Jas. Geary; cost, $14,150.
Payments to be made from time to time as work progresses, until 75 per cent of work performed in proportion to amount of contract price: balance of 25 per cent 35 days after completion and acceptance. Limit, April 1, 1888. Sureties, C. S. Holmes and W. A. Weeker. Amount bond, $5,000. Signed Nov. 16, 1887. Filed Nov. 18, 1887.

Guerrero, bet Seventeenth and Eighteenth. One-story frame and basement. Owner, S. Beatty; contractor, H. Foote; cost, $2,704.
1st payment, when frame is up, $400; 2d payment, when first coat of plaster on, $400; 3d payment, when plastering is finished, $700; 4th payment, when ready for painter, $800; 5th payment, when work is completed, $228; 6th payment and balance 35 days after completion, $676. Limit, 65 days. Signed, Nov. 23, 1887. Filed, D c 3, 1887. Surety, Jas. W. Beane and J. Kelly.

Holy Cross Church, Calvary Cemetery. Alterations and additions. Owner, Rev. John McGinty; architect, Chas. J. I. Devlin; contractor, Frank Buckley; cost, $1,787.
1st payment, when completed, delivered, and accepted, $600; 2d payment, balance 35 days after acceptance, $1,187. Limit, Dec. 20, 1887. Signed Nov. 14, 1887. Filed Nov. 16, 1887.

Kearny, near Post. Store fittings. Owners, Rosenthal Bros. & Co.; architect J. Marquis; contractors, J. Kemp & Co.; cost $3,000.
The sum of $3,000 to be paid in one payment at the completion of said work providing contractor furnishes a bond against liens. Otherwise 25 per cent of said contract price to be retained 35 days after completion of said work. Limit, Jan. 2, 1888. Signed, Nov. 29, 1887. Filed, Dec. 3, 1887.

Kissling, bet Eleventh and Twelfth. Two-story and basement frame building. Owner, Mary McDonald; architects, Pierce & Kidd; contractors, P. J. and J. J. Collins; cost, $4,309.
1st payment, when frame is up, $645; 2d payment, when inclosed and roof on, $645; 3d payment, when brown mortar is on, $645; 4th payment, when white mortar is on, $645; 5th payment, when completed and accepted, $645; 6th payment, balance when completed, accepted, and no liens. Limit, 90 days. Sureties, Louis Triebel and Geo. M. Williams. Signed Nov. 10, 1887. Filed Nov. 15, 1887.

Main, bet Market and Mission. Concrete floor. Owners, Louis Taussig & Co.; architect, P. R. Schmidt; contractor, Geo. Goodman; cost, $2,450.
The amount of $2,450 to be paid in one payment when entire work completed. Limit, 20 days. Signed, Dec. 1, 188 . Filed, Dec. 3, 1887.

Market, cor Van Ness Avenue and Franklin. Additions. Owner, E. Le Roy; architects, Pissis & Moore; contractor, H. A. Conrad; cost, $6,500.
Payments to be made from time to time as the work progresses, at the rate of 75 per cent of amount of work performed in proportion to contract price; balance 25 per cent 35 days after completion. Limit, 160 days from Aug. 12, 1887. Surety, A. W. Starbird. Amount bond, $4,000. Signed Oct. 20, 1887. Filed.

Market, cor Tenth. Two-story brick building. Owner, Mrs. M. F. S. Searls; architects, Moore & Schultz; contractor, J. T. Grant; cost, $7,500.
1st payment, when building is roofed and tinued, all floors laid except finished floors, second-story sashes glazed, and entire building brown coated, the sum of $2,250; 2d payment, when all carpenters', joiners', and tinsmiths' work, electrical, etc., etc., is finished, completed, and accepted, keys delivered the further sum of $3,375; 3d payment, 35 days from the date of final completion and acceptance of all the above-mentioned work, the final sum of $1,875. Sureties, W. H. Hansen and Geo. W. Watson. Amount of bond, $2,600. Limit, April 1, 1888. Signed, Dec. 8, 1887. Filed, Dec. 12, 1887.
Brick mason contract of building situated corner Market and Tenth. Owner, Mrs. M. F. S. Searls; architects, Moore & Schultz; contractor, F. P. Fitzsimon; cost, $3,152.
1st payment, when second-story joists are laid, the sum of $1,354; 2d payment, when all the brick-layers' work, granite excavations, and other work of said building mentioned in brick-layers' specifications are finished, completed, and accepted, the sum of $1,010; 3d payment, 35 days after date of completion and acceptance of said contract work, $788. Limit, Feb. 15, 1888. Signed, Dec. 8, 1887. Filed, Dec. 12, 1887. Sureties, C. A. Warren, J. J. Tracy. Amount of bond, $1,015.

Minna, bet Eighth and Ninth. Two-story frame building. Owner P. M. Schmitt, architect, Surveyor Western Loan Association; contractor, John Foster; cost, $3,600.
1st payment, when building is inclosed and roof on, $900; 2d payment, when brown coat of mortar is on, $900; 3d payment, when white coat of mortar is on, $500; 4th payment, when completed and accepted, $700; 5th payment, balance 35 days after completion and acceptance and no leins. Limit, 76 days. Sureties, John T. Gray and John Lewis. Amount of bond, $2,500. Signed Nov. 14, 1887. Filed Nov. 15, 1887.

Mississippi, bet Mariposa and Solano. Two-story frame. Owner, Caroline Scherrer; architect, C. E. Dunshee; contractor, C. E. Dunshee; cost, $3,000
1st payment, when rough frame is up, chimneys built, and rustic on, $750; 2d payment, when first coat of plaster is on, $750; 3d payment, when plastering is finished, $750; 4th payment, balance when completed and all bills paid, $750. Limit, Jan. 15, 1888. Signed Nov. 7, 1887. Filed Nov. 16, 1887.

Montgomery Avenue, bet Vallejo and Green. Two-story frame. Owner, Geo. L. Bradley; architects, Townsend & Wyneken; contractor, J. Mcgeary; cost, $7,985.
1st payment, when frame is up, $1,500; 2d payment, when house inclosed and ready for lathers, $1,500; 3d payment, when first coat of mortar is on, and outside work is done, $1,500; 4th payment, is trimmed doors and windows hung and whole finished and accepted, $1,485; 5th payment, 35 days after completion and acceptance, $2,000. Limit, March 20, 1888. Sureties, Richard McCann and Robt. Ash. Amount of bond, $5,000. Signed, Dec. 6, 1887, Dec. 7, 1887.

Post, cor Buchannan. Frame building. Owner, J. V. Hall; architects, Salfield & Kohlberg; contractors, Tucks & Bucher; cost, $4,280.
1st payment, when frame is up, $1,000; 2nd payment, when roof is on and building inclosed, $800; 3d payment, when brown coat of mortar is on, $800; 4th payment, when completed and accepted, $688; 5th payment, balance 35 days after acceptance, $1,000. Limit, 70 days. Surties, R. Reshlacher and G. H. Woerg. Amount bond, $4,000. Signed Nov. 14, 1887. Filed Nov. 18, 1887.

Post, cor Buchannan. Plumbing and gas-fitting. Cost, $916.
1st payment, when rough work is finished, $150; 2d payment, balance when completed and accepted, $166. Limit, no time specified. Signed Nov. 14, 1887. Filed Nov. 18, 1887.

Post, cor Buchannan. Grading, brick work, etc. Owner, J. V. Hall; architects, Salfield & Kohlberg; contractor, T. Hook; cost, $220.
1st payment, when foundation and chimneys are up, $200; 2d payment, balance when finished and accepted, $120. Signed Nov. 14, 1887. Filed Nov. 28, 1887.

Townsend, bet Sixth and Seventh. Three warehouses, stables, sheds, boiler house, etc. owner, Mrs. M. F. S. Searls; architects, Moore & Schultz; contractors, Richard-on & Gale; total cost, $36,000.
1st payment, when brick work throughout is ready for the first-story joists, $7,000: 2d payment, when the easterly one-story warehouse is ready for the roof and the brick work of the two-story building is ready for second-story joist, the further sum of $6,185: 3d payment, when the brick work of easterly warehouse is entirely finished, and the two-story building is ready for the roof, the further sum of $4,015; 4 h payment, when the entire brick work, stone work, excavations, fillings and grading, wrought and cast-iron, etc., of the entire job is finished, completed, and accepted, the further sum of $7,625; 5th payment, 35 days from the date of final completion and acceptance of the above-mentioned contract and work, the further sum of $8,275. Limit, April 15, 1888. Sureties, J. G. and H. V. Deming. Amount of bond, $11,035. Signed, Dec. 7, 1887. Filed, Dec. 12, 1887.

Twenty-third, S. E. cor Church Street. Frame building. Owner, Park McMurray; architect, P. Lynch; contractor, P. Lynch; cost, $1,800.
1st payment, when frame is up, $500; 2d payment, when brown mortar is on, $500; 3d payment, when white coat of mortar is on and building completed; 4th payment, 35 days after completion, $450. Limit, February 1st, 1888. Surety, P. Swift. Filed, Nov. 29, 1887.

Washington, cor Dupont. Three-story and basement brick. Owner, Pedro Salom; architect, J. H. McKay; contractor, J. H. McKay; cost, $8,175.
1st payment, when grading, walls and area walls are completed, $1,532.80; 2d payment, when second story joists are laid and walls and stone front completed to a level of said joists, $1,532.80; 3d payment, when roof is on and completed, $1,532.80; 4th, when building is completed and accepted by owner, $1,532.80; 5th payment, and balance 35 days after completion and acceptance and no liens, $2,043.80. Limit, 3 months. Filed, Nov. 29, 1887. Surety, H. Wheeler. Signed, Nov. 25, 1887.

Unrecorded City Contracts.

Bartlett, nr Twenty-fifth. One-story frame. Cost, $550.

Broadway, bet Franklin and Gough. Two-story frame. Owner, Mrs. C. L. Holbrook; architects, J. J. & T. D. Newsom; contractor, R. A. Pogue; cost, $4,000.

Broadway, bet Stockton and Powell. Three-story frame. Owner, G. Taccoui; architect, G. V. Cambetti; contractor, G. W. Hansbrough; cost, $4,500.

California, corner Sansome. Vault constructions for Bank of California. Contractor, E. L. Ransome; cost, $6,000.

California, cor Fillmore. Repairs. Owner, A. A. Bonnett; cost, $1,000.

Capp, nr Twenty-first. Additions. Cost, $6000.

Clara, near Fifth. Additions are being made by Contractor Waterbury at a cost of $1,000; same contractor is repairing building on Jessie Street, near Fourth, at a cost of $800.

Cook, nr Point Lobos Avenue. One-story frame. Owner, S. Rowland; contractor, C. C. Terril; cost, $2,000.

Eleventh, nr Mission. Additions. Owner, — Patrick; cost, $1,500.

Eleventh, near Mission. Mr. Patrick is having an additional story to his house; cost, about $2,500.

Elliott Park, cor Steiner. Repairs. Owner, C. Hansen; contractor; J. McClennan; cost, $3,000.

Ellis, cor Devisadero. Alterations. Owner, J. Hayes; architect, M. J. Welsh; contractor, J. Hayes; cost; $3,000.

Fell, bet Broderick and Baker. One-story frame. Owner, H. T. Puckhaver; architect, C. I. Havens; contractor, A. Klahn; cost, $2,500.

Folsom, bet Fourth and Fifth. Alterations to buildings belonging to the Kester estate. Architect, G. E. Voelkel; cost, $800.

Folsom, near Twenty-third. Mr. Phillips is spending $2,500 placing two additional stories to his present building.

Howard, cor Eleventh. Additions. Cost, $500.

Howard, bet Seventh and Eighth. Three-story frame. Owner, — Peale; architects, Townsend & Wyneken; contractor, S. F. Elliott; cost, $7,600.

Howard, cor Thirteenth. Two two-story frames. Owner, B. J. Fisher; architect, C. I. Havens; contractors, Doyle & Son; cost, $8,500.

Howard, bet Twenty-fourth and Twenty-fifth. Two story frame. Owner, — Mitchell; contractor, F. W. Kern; cost, $6,500.

Kearny, near Post. The stores formerly occupied by Keane & Co. are being remodeled at a cost of $4,000.

Lyon, cor Grove. One-story frame. Owner, R. D. Bronson; architects, J. J. & T. D. Newsom; contractor, R. A. Pague; cost, $2,000.

Mason, cor Jackson. Alterations. Architects, Salfield & Kohlberg; cost, $3,700.

Market, near Sixth. Store recently occupied by J. K. Prior is being refitted at a cost of nearly $2,000.

McAllister, nr Broderick. One-story frame. Owner, J. F. English; architect, C. I. Havens; contractors, Wheeler & Burdick; cost, $2,700.

McAllister, cor Franklin. Alterations. Owner, B. Winthouse; architect, H. Geilfuss; contractor, B. Dryer; cost, $5,500.

Mission, near Eighteenth. Architect Bayless is having an additional story placed under his present house that has just been raised.

Mission, nr Twelfth. Additions. Cost, $900.

Mississippi, near Mariposa. Mrs. C. Scheerer is having a two-story frame erected at a cost of $3,000. C. E. Dunshee doing the work.

New City Hall. Contracts have been let to McGowern & Butler for finishing portions of the City Hall; contract No. 2 calls for $68,400, and contract No. 4 for $32,600. A. Laver is the architect.

Pacific, bet Hyde and Larkin. Two-story frame. Owner, J. Cuna; architect, W. H. Armitage; contractor, R. F. Bridewell; cost, $2,000.

Page, bet Baker and Broderick Frame building. Owner, City of San Francisco; architects, T. J. Welsh; contractor, J. H. McKay; cost, $20,000.

Pierce, cor Perine. Frame building. Owner, — Rice; contractor; J. Johnson; cost, $800.

Post, bet Fillmore and Webster. Two-story frame. Owner, S. Attell; architects, Townsend & Wyneken; contractor, N. L. Mead; cost, $6,000.

Sacramento, cor Waverly. Chinese Chapel. Owner, Chinese Baptist Mission; architects, Wright & Sanders; cost, $10,000.

San Bruno Road, nr Fifteenth Avenue. Additions. Owner, J. J. Crank; cost, $500.

Scott, nr Clay. Additions. Owner, — Bates; architect, C. I. Havens; contractor, F. W. Kern; cost, $2,000.

Scott, near Sacramento. F. E. Dietz is making additions to the tune of $2,500.

Sea Wall. C. C. Crissman has a $2,400 contract to erect a shed on the wharf.

Sixth Avenue, near R Street. Mr. Legalett is having erected a four-story frame; cost $3,000; Contractor Bolinenberg superintends the work; same owner is also having a two-story frame erected to cost $1,500.

Stockton, nr Sacramento. Alterations. Owner, Zion M. E. Church; architect, Chas. Geddes; contractor, S. M. Hills; cost, $3,000.

Twenty-fourth, near Capp. A one-story frame is being erected to cost $2,500.

Twenty-sixth, cor Valencia. Three-story brick. Owner, A. E. Hecht; architects, Macy & Jordan; brick contractors, Riley & Loane; carpentry, day work; cost, $100,000.

Valencia, bet Twentieth and Twenty-first. Additions. Cost, $1,000.

Van Ness, cor Fulton. Two-story frame Owner, I. Harris; architect, G. E. Voelkel; contractor, J. H. McKay; cost, $12,000.

Washington, nr Central Avenue. Frame building. Owner, J. T. Dunn; contractor, R. O. Chandler; cost, $6,000.

Mechanics' Liens.

LIENS RECORDED.

F. E. Chapman *et al.* vs. M. Bigley. 17th and Collinswood. Amount, $180. Nov. 25, 1887.
R. E. Shain vs. Arthur Field. Folsom bet 4th and 5th. Amount, $2,010. Nov. 25, 1887.
John F. Sullivan vs. C. B. Williams. Freelon near Zoe. Amount, $324.35. Nov. 26, 1887.

LIENS ENTERED SATURDAY, DEC. 3.

W. P. Clark to Chas. H. Rodgers.
O. E. White, [illegible] to Bailey & O'Donnell.
C. Wendle, [illegible] nell.
O. E. White to E. H. Kittredge.
C. Wendle to C. F. Doe & Co.

UNRECORDED LIENS.

F. C. Adams *et al* to R. J. Andrews.
R. J. Andrews from I. Dan *et al.*

How to Live a Hundred Years.

"HOW to Live a Hundred Years" is the title of an article in the *Cosmopolitan* for July, the gist of which is that people might so prolong their lives by temperance and abstemiousness as to live to the good old age of a hundred years. Also that such an age, under said conditions, might become the natural limit of life.

There is no doubt but that many of the usual ingredients in the daily diet of the average family might be eliminated therefrom, not only with impunity but with profit. Take pie for instance; if that delectable article, so dear to the American palate, were forever banished from our tables and fresh fruit established in its stead, it would undoubtedly be a change that would go far towards the attainment of the desired longevity. We will say nothing about the substitution of that simple and natural beverage, milk, for coffee and tea, because we should be "treading upon our own [editorial] toes;" we therefore wisely refrain and confine ourselves to the banishment of pie.

But to be serious, let us now consider some of the forces which operate against the health and long life of mankind.

These influences are at work, daily, nightly, hourly with the strength of combination and constant re-inforcement and tend not only to shorten life, but to blot out humanity altogether, if not heeded and a remedy applied in time. These foes to health are found doing their deadly work not infrequently in the houses of the rich, as well as those of the poor, and of people of moderate means.

Plainly speaking, defective plumbing probably kills more people annually than any other cause. The subject of perfect plumbing and proper sanitation is one which too often appeals to deaf ears, or hardened hearts. Unheeded and unrecognized, the

most deadly foes lurk in many a happy home, snatching first one and then another of its loved ones, sometimes destroying a whole household with their poisonous vapors—and it is then termed a "terrible dispensation of Providence." It is characteristic of humanity to lay the blame at any other door than its own. Thus it is that Providence is so often accused of heaping much of the suffering and affliction upon His creatures which is really due to the improvidence of some of His careless or ignorant subjects.

Temperance and abstemiousness will not avert disease and death while our houses are filled with poisonous gases, our tables supplied with impure water, and our atmosphere polluted with foul odors.

Architects, builders and plumbers are frequently blamed for the cheap and poor plumbing found in so many houses. Generally the owner or proprietor is the only one deserving censure. Good plumbing costs more than poor. Plate and stained glass, fine finish, the decoration of walls and ceilings, are the things that show; plumbing is one of the things which is for the most part hidden, or, if not altogether out of sight, is at least not specially ornamental. These considerations settle the question as to where the inevitable "cutting down" is to come in, with the result that beauty and elegance blaze from the windows and shine in the hall and parlors, while death hides in the kitchen and bath-room.

If the grim skeleton could but confront the proprietor of all this grandeur with a bare statement of facts, he might be sadly shocked to hear himself denounced as a criminal. We hope to live to see the time when the sanitary condition of the home shall be the first and most important factor to be considered by all parties concereed in the operation. Heaven speed the day!—*Architectural Era.*

A GIANT of the forest was felled some time ago by the Blakeley Mill Company, which will be heard from in time. It measures 240 feet in length, the first limb being 160 feet from the butt, which measures 72 inches, and 40 inches at the top. It scales 33,000 feet of lumber.

THE foundation of a chimney is no place in which to get rid of all the bats and other refuse bricks that may have accumulated. It is safe to watch the builders very closely and see that they do not put that kind of material in the chimneys they are building for you.

Lumber Market.

At a late meeting of the Lumber Exchange the advisability of increasing the retail price of lumber was the subject of much discussion, but upon vote, it was decided to make no change in the schedule. The prices below are those ruling Dec. 1, 1887:—

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4, and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G. Beaded, under 7 feet	24 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1½	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ½x3, per lineal foot	01
Nails, for 10 d	2 90
Lime, per bbl	1 40
Cement per bbl., according to brand	$2 50 to 4 50
Brick, per M	from $6 00 to 11 00
White lead, per lb	06

Linseed oil, 50 cents per gallon in bbl, 2½ cents additional for boiled.

CARPENTRY

MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

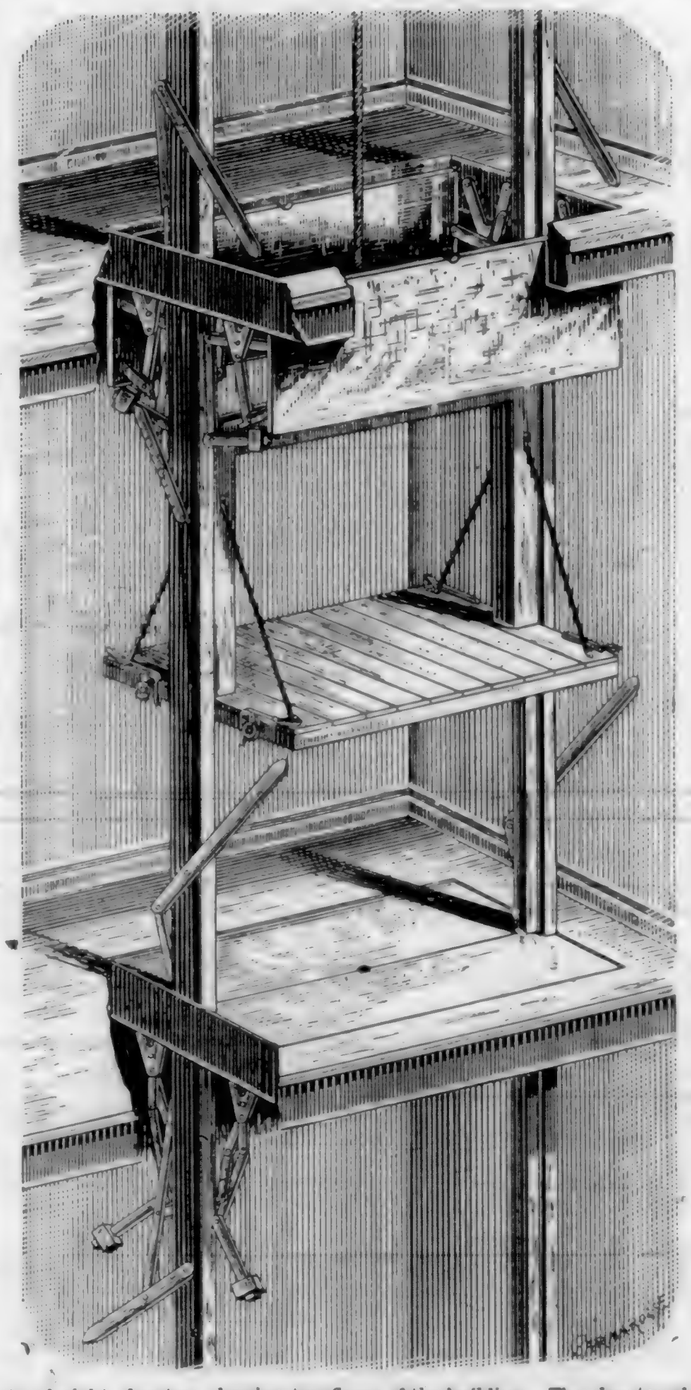
THE PAGE

Automatic Fire Shutter Co. of California.

The Best Automatic Fire Shutter Known.

INCORPORATED APRIL 29TH, 1887.

Manufacturers Under United States Patent of the Automatic Shutter.



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For Protection from Fire in Elevator Shafts, and from Liability to Accident.

PATENTED MAY 10, 1887.

Now in operation at 22 and 24 Jessie St., and 327, 329, 331 Sansome St., S. F. Call and examine the same.

The cut represents a freight elevator, showing two floors of the building. The elevator platform is represented as ascending, having passed through the hatchway of the lower floor. The shutters below the elevator platform have just closed level with the floor, completely and firmly closing that hatchway. The shutters of the second floor are next being opened by the ascending elevator platform, and after it has passed through, these close automatically, in the same manner as seen at the first floor. In the descent of the elevator platform, the shutters open below as it approaches the hatchway, and after passing through, they close again firmly and completely. Each shutter opens and closes automatically as the elevator passes, and are so counterbalanced as to offer no resistance to the ascending or descending platform.

H. W. SEVERANCE,

Manager and Agent,

Office, 218 California Street, San Francisco, California.

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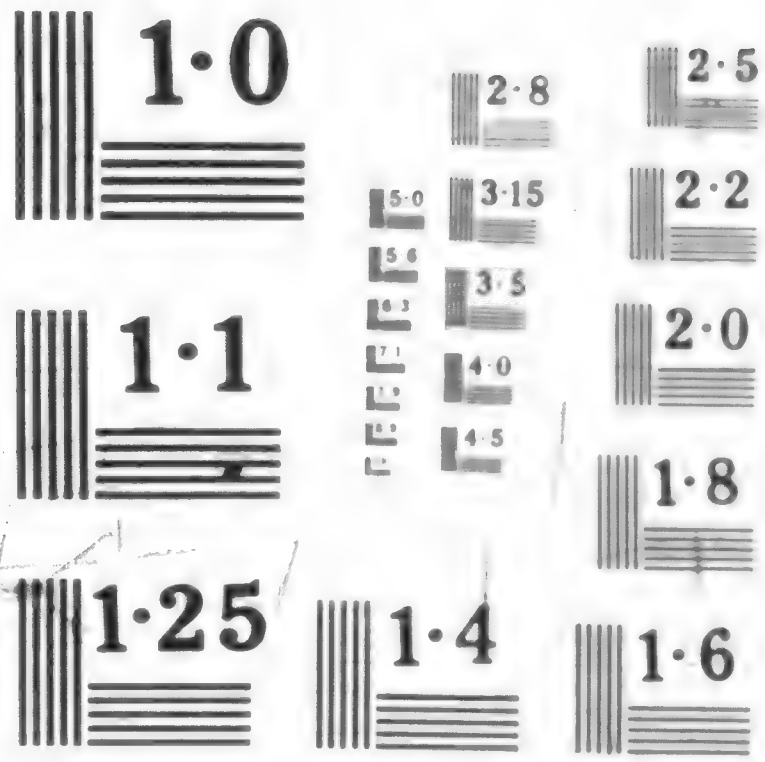

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FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW

VOLUMES 9-12

DATE 1888 - 1891

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VOLUME IX

DATE 1888

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The California Architect and Building News.

Entered at Post-office, San Francisco, as Second-class Mail Matter. Established January, 1879.

Volume IX. Number 1.

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO., No. 240 Montgomery St., Rooms 11, 12 and 13.

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OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	Per Square	$ 2.50
Back Cover, Outside, Each Insertion	do.	2.00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.00

Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, JANUARY 15, 1888.

A Change to the City.

For four and a half years this Journal has been printed in Oakland. With the beginning of the year we have decided to change to the city, and our patrons will welcome our improved appearance. The delay in receiving this issue is caused by the great amount of work, necessary to reset every advertisement, etc. Hereafter we will be as usual, promptly on time.

Our Tenth Volume.

With this number we begin the tenth volume of this Journal. For eight years it has carried the distinctive name it now bears. One year previous that time, it went under the more modest one of "*Quarterly Architectural Review.*" So in reality we begin to-day our tenth volume.

We cordially tender our thanks to those who have so generously given us their support during the past nine years, and trust to make this Journal so complete in all its various departments, that it will be found a necessity to every one who intends to build, or who have already built.

There is no surer criterion of success than success itself. The establishment of a *Weekly Building News* proves that our efforts to give only reliable building information, has met and is still meeting with proper acknowledgment by all interested parties.

The Weekly Building News, is published by the same company that have printed the California Architect so successfully. The price has been placed at $2.00 per annum. WE WILL GIVE THE WEEKLY BUILDING NEWS FREE FOR ONE YEAR TO ALL SUBSCRIBERS TO THE CALIFORNIA ARCHITECT.

Bound Volumes of 1887.

We have a few bound volumes of 1887, which we will send to any address upon receipt of $2.50 each. The number is very limited, and those desiring same should send their orders at once.

San Francisco Chapter American Institute of Architects.

The regular meeting of the Chapter was held on Jan. 6th 1887. President Sanders in chair.

The following were present—G. H. Sanders, G. H. Wolf, H. I. Bestor, B. E. Henriksen, R. H. Daley, J. Gash, W. P. Moore, C. J. Laver, J J. Clark, J. M. Curtis, and by invitation J. P. McMurray.

N. J. Cuthbertson was elected a member of the Chapter as Fellow.

J. Gash asked for further time to prepare a paper promiseds as the subject selected required much time and thought to fully elucidate. The subject selected would be "the circle and its relation to architecture."

J. P. McMurray then read a paper on "the best practical way of plastering walls." It was well received, and an animated discussion ensued on the various points presented. The paper was ordered printed in the California Architect and a vote of thanks tendered the speaker.

A general conversation then took place in regard to Eastern Plaster and Golden Gate Plaster. It was decided that the latter was much preferable owing to the fact that the former is affected by the long sea voyage.

California Welcome.

GREETINGS, warm and cordial, were extended to the informal repesentative from the Pacific Coast present at the Fourth Annual Session of the Western Association of Architects, held at Cincinnati, 16th and 17th ult.; and regrets earnest and sincere were freely expressed that there was not a State organization in California, under the jurisdiction and in affiliation with the General Western Association, and represented by duly elected delegates.

WILL MEET AT SAN FRANCISCO.

Many of the officers and members were enthusiastic over the hope and prospect that the architects of California will at once perfect a State organization, and send delegates to the convention to be held in 1888 at Chicago; and as many were the *personal* promises of favoring a session of the Grand Body at San Francisco at an early date.

Personal desires and promises to visit California, were general among the architects present, and the holding of an annual session of the Grand Body in San Francisco seemed to present the most sure and favorable opportunity to that end; as in that event transpiring, such low fare arrangments could be perfected with the railroads as would induce a very large delegation of representative architects to visit California.

The proposition suggested is one worthy of immediate attention by the architects of the Pacific Coast, and one that would be of very great benefit, both to the individual members, and the architecture profession as a whole. The fact of the existence of San Francisco Chapter presents no bar to the forming of a State association under the jurisdiction of the Western Association, as the members of the Chapter and all other architects on the Coast are equally illegable to membership; and the further fact that there are no antagonisms between the two grand bodies, the American Institute and the Western Association of Architects, but a feeling and sentiment largely in the ascendeney, if not seven-eights unanimous, that all the Grand Bodies of the profession unite and become

ONE GRAND ORGANIZATION.

This proposition is freely discussed and debated on this side the mountains, and it is both possible and probable that the union will be perfected. No special terms nor sectional considerations appear to be mixed in. The one broad and comprehensive view of the situation—*the best good of the profession as a whole*, seems to be the aim and object influencing the movement.

WILL CALIFORNIA RESPOND.

Seeing what the brethren of the profession east of the Rocky Mountains are doing and contemplating, for the general good, is it not high time that the architects of California bestir themselves and reach beyond the cramped and narrow limits of exclusive personal interests. Even the giants of the profession in these north-western and lake regions recognize the value and importance of these affiliations, and no argument can be sustained

against the potency of organizations founded for high and honorable purposes, and permeated by the spirit of generous truth and right, where every man lends his personal influence and talents as common helps, and submit to every thought and word of others, better than his own.

The Fresno Jail.

Some time ago, the Board of Supervisors of Fresno County called for plans for a jail building. The designs of Mr. J. Gash, architect, were accepted. The contract was let and the building of the jail rapidly progressed. The Supervisors and architect, not long ago, got at loggerheads with each other; one of the "differences" is fully explained in the circular below. It seems that proper ventilation for tank room had been provided in the plans, etc., but which did not accord with the views of the Supervisors. The latter assumed complete control of the building and followed their own ideas in regard to the tank room. Upon Mr. Gash, *kicking*, and presenting a report from our city health officer, the inspector of plumbing of this city, and the Fresno County physician, in regard to the difficulty, Mr. Gash was excused from further superintendence on the building as architect.

We have not seen the plans as formulated by Mr. Gash, or as they appear changed by the Supervisors, consequently we cannot give an opinion on their respective merits. The gist of the case seems to be—have the board the right to discharge an architect before the completion of the building, simply because their views are not in accord with his.

We take the ground that a public body of any kind, as well as a private individual has the right at any time to dismiss any one in their employ, provided, they pay all just claims due up to time of dismissal. If the architect claims that there is only one proper way to do any certain undertaking, and a public board of any kind claims equally as strong in another way, it seems to us that the party who controls the money is the stronger one of the two and the architect should either endeavor to harmonize the differences, or at once resign and throw the whole blame where it properly belongs.

We are promised a statement from the other side of the case, which we will give due attention when received. The following circular is self explanatory:

December, 12th, 1887.

In the plans of the Fresno Jail looking at it from a sanitary point of view, I believe it will be very unhealthy for the inmates of the prison to have the tanks removed within four inches of the side wall—making a dark recess 30 feet long, eight feet high and four inches wide.

The amount of unhealthy emination that usually leaves a person confined, must necessarily settle there and must produce diseases, known as jail fever, typhoid fever, etc.

By all means there ought be at least two feet space left and side windows for ventilating purposes as shown in drawings. Those windows as now put in could not sufficiently ventilate the prison.

The space of six inches over head should not be less than one foot for ventilation.

The four inch space would also be a perfect nuisance from rats, dead and alive, and the accumulation of filth generally.

J. L. Meares, M. D., Health Officer.

J. E. Sweeey., Inspector of Plumbing, City and County of San Francisco and drawings City and County of San Francisco.

Lewis Leach, Fresno County Physician.

Large and Handsome Display of Architictural Drawings.

THE display of the handiwork of Architects at the session of the Western Association of Architects at Cincinnati was large, and many of them of great merit. The Association some months ago sent out invitations in all directions to Chapters and Architectural Associations, and to persons—S. F. Chapter receiving one, but the only presentation from the Pacific Coast was a set of Photos., of Mr. Haywards residence by Messrs. Piercy & Hamilton.

Nearly or quite five hundred sheets of drawings, most of which were well delineated perspectives, filled the spacious halls and reading room of the Grand Hotel. While some of the efforts were poor as compared with the better conceptions and executions, there was a generous rivalry, and those who were not in the fore ranks as good designers, certainly learned much, and may on other occasions become close competitors, or lead in the race for first premium.

Pine vs. Redwood.

The recent burning of the box factory on San Pedro street should teach builders a valuable lesson. The factory was a large rambling structure and was of Oregon pine. The alarm of fire was turned in as soon as possible and the fire department was on hand immediately, but the big structure was a roaring furnace in a twinkling, and the water poured into it had no effect whatever. Great volumes of black smoke rose from the towering flames, and the structure was destroyed.

Only a short time prior to that disaster Gillespie's lumber mill had taken fire. In general construction and in abundance of inflammable material the two concerns were practically identical except in one particular—the kind of lumber of which they were made. The fire had gained about as much headway when the five engines arrived as it did in the case of the box factory; yet the flames at the mill were extinguished without any trouble and and the resulting damage was trifling. In the case of the mill, an important institution, employing a considerable number of men and large capital, was saved; but in the case of the box factory there was a loss of many thousands and several men were thrown out of employment. There can be no doubt whatever that this striking difference in results was due to the difference in the material employed in the construction of the respective buildings. In the box factory it was pine and in Gillespie's mill it was redwood.

Other instances of this kind could be pointed out in fires that have occurred in this city, and of course a similar condition of affairs exists in every other city on the coast. The result is this: The insurance companies find their principle losses in pine structures, and the higher rate of insurance thus required compels those paying insurance on redwood structures to bear more than their share of the expense of insurance. In order to adjust this discrepency on an equitable basis it would be but right for the insurance companies to charge a lower rate for insuring redwood houses than for insuring those made of pine, other things being equal.

A limited use of pine even in the construction of redwood houses is considered advisable, though not always necessary. Floors and certain timbers are made of pine, because for flooring the pine is firmer and more durable and for joists the pine is stronger. Redwood will break across the grain sooner than pine. But it will be readily seen that where great strength in timbers is to be secured it may be had with redwood by increasing the size, and this would increase the cost correspondingly; but as pine and redwood cost about the same price the greater security from fire when redwood is used will more than compensate for the small extra cost of employing larger timbers.

Redwood is a very peculiar lumber. Although a member of the great family of coniferæ and therefore a cousin of the pine, it differs from nearly all its relatives in at least one important particular—it contains no turpentine, or at best so little that it is not appreciable. In this respect it is more like its cousin the cedar than the pine. When pine is cut the turpentine in it evaporates, leaving a sticky resin that burns with great freedom. The resin of commerce—commonly called French or English resin—is made by distilling crude turpentine taken from living pines. The distillation gives two products, one being spirits of turpentine and the other resin. It is the presence of resin in pine that makes it burn so readily and the absence of it in redwood that makes that so hard to burn. The housewife knows by experience that if she make a redwood fire in her stove it is liable to go out, but that a fire of pine or fir will burn briskly. Hence pine or fir is better than redwood for kindling fires.

Pine that is very rich in resin is more durable than that which is poor; but it is the resin that makes it dangerous for building purposes. Redwood is the most durable of all known woods, and hence on that account alone is cheaper and better than pine.

Builders are beginning to pay more attention to these things and more sensible procedure may be expected for the future. In fact, people here appreciate redwood less than do those of the Eastern States. There it is considered one of the most valuable woods for ornamental purposes and is now used largely in the interior finish of fine houses. The idea has been copied to a certain extent by builders here. There are many varieties of grain, some of them being beautiful and the color of all being richer than mahogany and nearly as rich as the costly rosewood of Brazil.—*San Jose Herald.*

THE RECEIPT is acknowledged of a fine catalogue just issued by E. C. Stearns & Co., Syracuse, N. Y. The book is handsomely bound, containing an unusally large attractive list of Door Hangers, Screen Frames, and other hardware specialties manufactured by them.

Editorial Correspondence.

New York, Jan. 1st., 1888.

It is with greatest pleasure that we send greetings across the great American Continent, to the readers of the California Architect and Building News, wishing one and all a "happy New Year," and blessings and prosperities equal to the necessities and right wishes and desires of all. The years roll by, evolving the special results which follow its events and happenings, and each striking from the tally of time, the simple and smallest figure—one; yet these simplest of enumerations soon accumulate to "three score years and ten," a lenght of life permitted to but a small proportion of the human family, and then the end.

During more than two months journeying from the great business emporium of the Pacific Coast—San Francisco, to the metropolis of the Atlantic—through states, cities, towns, and villages—through fertile valleis abounding in all that pertains to agricultural and pastorial life; over hills of gentle mein, or royal mountains of towering heights and grandures—some sterile and seemingly barren, others well wooded and more or less covered with verdure, and still others capped with eternal snow, cannot be otherwise than a perpetual, ever flowing well of thought, from which one may forever after the experience, draw freely and exhaust not the source.

A thousand features of interest occurring during the journey have for the time being been passed, as the mind naturally inclines to matters and interests of present and immediate surroundings; hence these of New York import become the more special for present notice.

As representative of the C. A. and B. N. we have been most kindly received by the editors and managers of the *Scientific American, Santilary Engineer, Cosmopolitan, Carpentry and Building, Builder and Wood Worker, Building, American Machinist, Mechanical News, Manufacturer and Builder, Painters Magazine, and Real Estate Bulletin* and other journals, all of whom expressed great pleasure at the personal interview and hearty wishes for the prosperty of the California representative of class journals. As a matter of course many questions were asked and answered, but not without some amusement at the queer notions pervailing in the minds of many, in regard to conditions, customs, and matters and things in general in California. To best of humble abilities, erronious opinions and conclusions were corrected and the Golden State as a whole—its resources and possibilities; its manufacturing and commercal intrests and prospects; its agricultural, vinicultural, fruit, mineral and other inexhaustable products and sources of wealth explained and set in proper order. The expressions of great interests in Pacific Coast matters were free and general, and if by wishes as expressed in words, could make the Golden State great and prosperous, there would be a flood in that direction so overwhelming that even the "oldest inhabitant" would stand aghast at the deluge that would sweep from San Diego to Alaska, and from the Rocky Mountains to the shores of the Pacific Ocean.

As representing the architectural profession in California, the welcome and congratulations extended by the many architects called upon in New York has been of the most hearty and earnest character. The members of the profession in this city, as well as those called upon at Denver, Chicago, Lafayette, Cincinnatti, Baltimore and Philadelphia, express a large degree of interest in matters architectural on the Pacific Coast. In many cases California has been referred to as a place of most interesting and special character, abounding not only in endless natural sources of beauty and admiration, but equally special and peculiar in its architecture as represented by the structures erected within its limits. The desire to see personally and understand from observation the architectural specialities of California, has been very generally expressed by members of the profession in all the cities herein named, and fully one-half of those conversed with, have stated a purpose and interest to visit the Pacific Coast at an early day; and fully fifty have personally said to your correspondent, that when the architects of California shall so energize the Chapter work as to render it conspicious for life, action and energy, the project of an annual session of the parent chapter—the Grand Body—to be held in San Francisco will be favored, advocated, and beyond reasonable doubt prevail.

Although there are frequent misrepresentations made in the *Journal* of the United States and the world at large, in reference to California affairs, there is at the same time a conservative, generous and fair tenor of mind among multitudes of fair minded people, who have not seen and do not from personal observation know the actual facts existing in quarters thousands of miles distant, and who are patient to await profs positive, rather than accept the too often unreliable products of imaginative brains, or the say so, I, from sources where individual or colateral interests may be to discredit, reproach or crush, where it would be more truthful, wiser and more just to approve and sustain. This disposition has been clearly manifested and expressed in all the circles entered by us in this and other cities, and the facts herewith stated should be a most energizing incentive to all Pacific Coast architects, from the Sierras to the southern border line, and from the lash and roar of the briny waters that break upon the western confines of our great continent, to the great divide which defines the eastern limits of the State, to harmonize and unite in earnest work, and by manly and concerted efforts and action, bring about the assembling of the representative members of the profession in the United States, upon the shores of the Pacific Ocean. If the Chapter and membrs of the profession in San Francisco will not move in the matter and secure the result, we hope those of Los Angeles and other sections will at once organize and secure to themselves and Southern California specially, the honor, pleasure and profits that most assuredly would flow from such a gathering of architectural peers of the United States.

In this connection it may be well to state that the question of consolidating all present—"parent bodies" into one grand union, encompassing all sections and states, east, west, north and south, is the talk of the hour The matter has been considered and discussed at the late annual sessions of the A. I. A. and the W. A. A., resulting in the appointment of a joint committe consisting of Messrs. D. H. Burnham, (Burnham & Root) Chicago; A. J. Bloor, New York, Secretary of the A. I. A.; T. P. Chandler of Philadelphia; T. M. Clark of Boston; and E. H. Kendall, New York. The committe held its first session in the rooms of the A. I. A. on the 30th ult; and entered into a preliminary consideration of their work with perfect unimity as to the disirableness of consolidation, with no question as to its being recommended by the committe, provided there shall be no hitch in working up the details, which does not at present appear at all likely. The consolidation would have the effect of concentrating in one, all the great talents in the profession, instead of as now, dividing and sectionizing it into two factions, which, although not opposing and antagonizing each other, still not working and co-operating in one harmonious union, for the common good of the profession and all concerned. With all these things considered, it would be indeed strange, if the number of intelligent gentlemen in the profession in California should allow the opportunity to pass unimproved, for a solid and efficient local chapter organization, which would command respect, both at home and abroad, and at the same time wield an influence for good in the general practice of the profession, which would greatly elevate and relieve it of many of the objectionable and injurious features that have become by far, too common, owing mainly to the absence of strict and honorable society relationships, and the non observance of a code of ethics that would render morally impossible, every act not in harmony with a high sense and standard of professional truth, right and justice.

The architects this side the mountains, (east), seem to understand perfectly and thoroughly, the value of, and the benefits to be derived from sustained, efficient, city, state, sectional and national organizations, and thousands have placed themselves on record as members of either the A. I. A. or the W. A. A.; and among the number so recorded are to be found the names of the brightest architectural lights and giants of the profession in the United States. And for the purpose of strengthening and making firmer the affinities, and drawing nearer together in sympathies, cordialities and co-operations, the consolidation bridge is in course of construction, designed to span the entire continent from ocean to ocean, with firm and solid piers and abutments in *every* state! Yes, if California will do her part, and furnish the last link required to complete the grand design.

Building activities in New York are reported as not very brisk. But few of the architects visited claim any large engagements, generally they say—"not much going on in the city," while many report the preparation of plans for country work. But judging from general appearances in the several offices, the conclusion is reasonable that there is no boom on in the building line just now. At the same time considerable building is under way in the Harlem and west side districts, but it is mainly in speculative constructions—"built by the mile and sawed off"—all built "*first class*" and "for sale cheap." However, people seem to accept the gag—"first class," and thousands of mere shells and poorly built structures find ready purchasers as such, which would not qualify as third, and some times fifth rate constructions.

All interested in building should take the *Building News*.

Elevations, Plans and Details of a Country California Home.

The full set of plans presented are well worth the study of those who desire comfort and elegance, and yet have the same at a moderate cost. The exterior will appear much richer when built, than as shown in the cuts. It will be noticed that we have discarded the Queen Anne style of windows so much in vogue. For our part we cannot conceive why architects should insert windows with thousands of corners and angles to be kept clean. Windows with small panes of glass may look pretty from a distance, but they will not bear close inspection. The servant girl has neither the time nor patience to clean thoroughly all the corners, and unless they are so done the window presents to a person of neat and cleanly habits an appearance at once repulsive. These small windows received their name from the date of the first use of glass, when each pane was taxed a certain sum. At first small panes of glass were used; as the tax was on each pane of glass of certain sizes, only the rich could afford many panes, and a house all dotted with small panes of glass received the name of the Queen Anne style. We believe in letting the sun's rays have free scope to our rooms, and this cannot be done by shutting out a goodly portion of the light with bars and stiles necessary to frame many lights in a window.

FRONT ELEVATION OF CALIFORNIA HOME.

The arrangement of the rooms is one of special study. With the exception of the kitchen section, the whole lower floor can be used as one immense drawing room, and yet, by the aid of sliding doors judiciously placed, each room is distinct by itself. The library room is very convenient, having outside communication with the porch, a large closet, fire place, etc.; also direct communication with the dining room.

The arrangements of the kitchen are very complete. An unusual amount of closet and pantry room is provided. The butler's pantry is provided with a sink. The connection with the dining room is convenient. The stairs in rear are very handy for the servants.

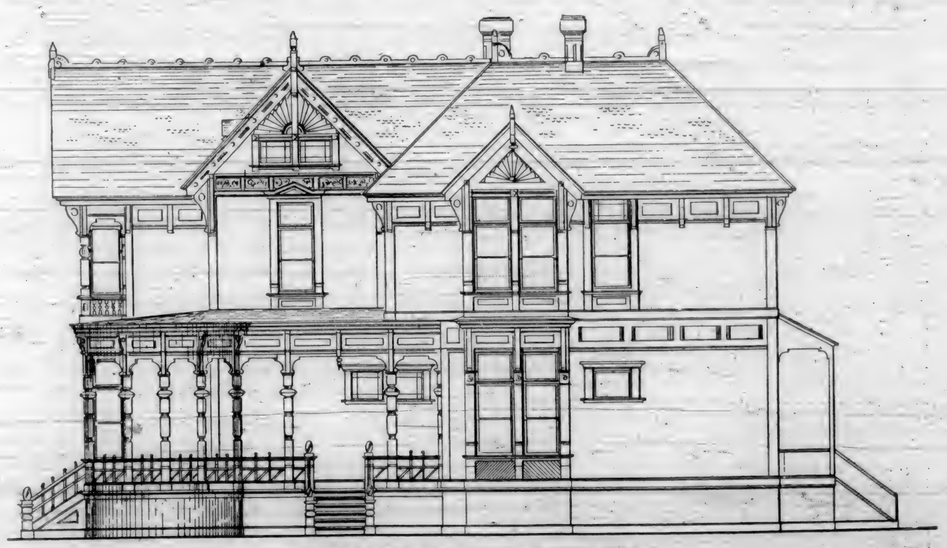
The front chamber in second story is octagonal shape. Due care has been given that plenty of room is had for every article of furniture needed in bed room. Ample space will be found for the bed, bureau, easy chairs, etc.; while the closets are not large, the number of them will be found sufficient for all ordinary uses.

The large chamber in center of building will be found a very convenient one. Should the house be placed on a sightly location, the four windows will be very serviceable to gaze on the beauties of nature. Every room on second floor is well supplied with closet room.

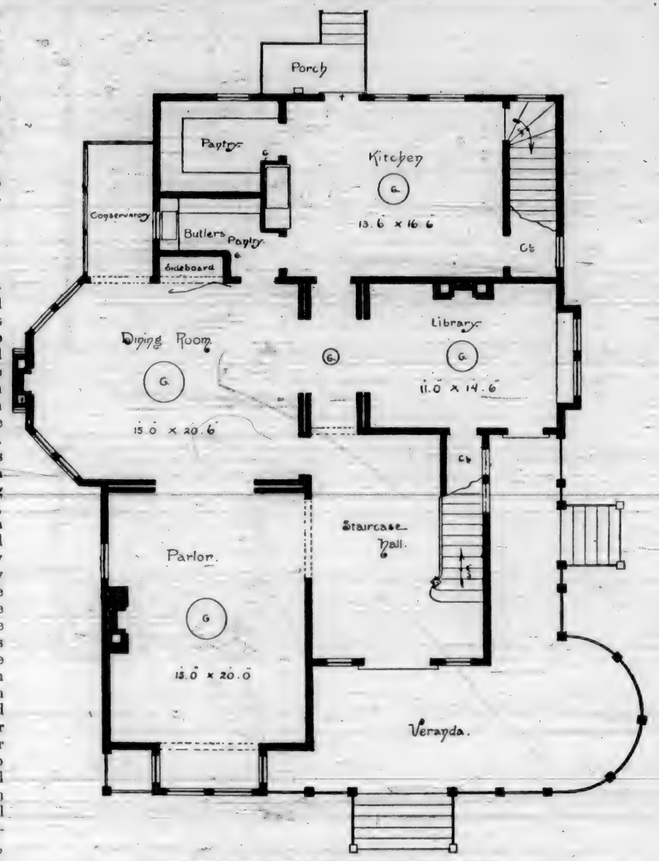
No wash basins are shown in any of the bedrooms. Should these be required, ample spaces exist for their location. The house is designed for a location away from a city, where wash bowls in a bedroom are not regarded as a necessity.

The details shown will give any one an adequate idea of the finishes used. No cornices are shown in the parlors, etc., as paper is intended to be used on all the walls except kitchen section.

As shown, the house can be built for $6,000 to $7,000, depending altogether upon location.



SIDE ELEVATION OF CALIFORNIA COUNTRY HOME.



1ST FLOOR PLAN OF COUNTRY CALIFORNIA HOME.

Facts and Opinions.

An announcement is made by Merchant & Co., of Philadelphia, that will be read with more than passing interest by all consumers of tin plates. It is to the effect that they have completed arrangements, with reference to the several well known brands of which they make leading specialties, by which for the future these plates will have the actual net weights upon the boxes. They say in their card containing this statement that they have done this in order to protect consumers from being imposed upon by light-weight plates, which may be offered in competition with their plates, and classed as equal to them, and add significantly, that now consumers have it in their power, by weighing competing plates, to determine whether or not they are getting the worth of their money. From these statements, many will infer that this most radical step is simply a defensive measure, and has been resorted to in order to protect the brands of the firm against an aggressive competition, waged not on the basis of quality, but rather upon cheapness alone. Others of our readers will, no doubt, see in this step only the logical outcome of the general line of policy which the firm has been pursuing for many years past, and all such, after recognizing the eminent fitness of this step at this particular time, will look ahead in an endeavor to determine what the next move will be. Whether this step upon the part of Merchant & Co. is purely a defensive measure, or is taken in carrying out a well defined scheme of business, which requires years to unfold in its entirety, its importance to the trade at large, and to consumers in particular, is not to be gainsaid.

The stockholders of the Folding Iron Gate and Guard Co. held their annual meeting at their office (No. 79 New Montgomery street) on Monday evening. The following directors were elected to serve for the coming year: Geo. H. Rice, W. R. A. Johnson, J. P. Le Count, H. Dutard, W. E. Norwood. Geo. H. Rice was elected President. W. R. A. Johnson, Vice-President, J. P. Le Count, Secretary and Manager. The report of the Secretary for the past year was read, and apparently was very satisfactory to the stockholders. The indications are that this enterprise will attain considerable prominence in the near future.

Cheap Building Plans, Studded with Foreign Products.

It is certainly amusing the way some architectural and building publications parade themselves upon their ability to produce "cheap chromos" of what they term desirable residences at a moderate cost. If the pictures were produced without attempting to give specifications, they would be viewed by intelligent builders as more valuable. The specification, however, is the straw that breaks the camel's back, and at once determines that the delineator is a greater success as a picture maker than as an architect. It is not our purpose to hold up the designer to ridicule—he, no doubt, is brow-beaten into the production by glibly stories of the publishers, who enchant the poor devil with visionary dreams of great fame that awaits him. He thus stretches his imagination at the cost of privateering, and grinds them out in quick succession, like the shooting of a Gatling gun.

A certain New York publication has the effrontery to announce in its columns in italics, "an almost endless series of the latest and best examples." It thus bids for the architects' work, and seeks to draw to its own office all the "building plans and specifications" needed on earth. Not satisfied with this, it wants to obtain a patent right for every inventor, do his engraving and herald his invention to the world. After a time the same concern will, no doubt, want to run the government of the United States on moderate terms, to say nothing of wanting to contract for every corn crib or chicken roost from Halifax to Mexico, fore and aft. It prides itself on being a purely American institution, yet it permits its picture makers to specify French sheet glass, to the disparagement of the American product, equally as good. The hardware to be the best city hardware, to simply knock out the home dealer, because he will not subscribe for its sheet. If the house is built in Jericho, the contractors must use Jersey brick, and damn anything for inside finish but two coats of English white lead. It is unnecessary for us to indulge the reader's time with what it dubs as "an extended abstract from the specifications, and covers the most important features." The scheme is to get some one contemplating building interested in the gush it thus throws out with its cheap chromos; then, after the reader finds that no person on earth could build a house from the "extended abstract," it kindly informs him that full plans, specifications and details

may be had on moderate terms at its office. This is the Live and let Live policy of a New York publication.

Architects are certainly interested in it, if they want to starve to death.

Builders cannot live without it, if they want to have no independence. Manufacturers and producers of American building materials certainly want to advertise in no other if they want to encourage foreign competition.

You ask who we hold in this esteem? That prince of borrowed thoughts, borrowed habits and borrowed manners; that stalwart monument of plagiarism; that contortionist of the development of American science; *The Scientific American*, sailing under the appellation of "The Architects' and Builders' edition." You ask us why we assail it then?

We answer: Because we detest its damnable practices, and unbosom ourselves as an organ for the advancement of the American Builders' science, untainted by selfishness, unharrassed by the thoughts of destroying those we first make mad. May we not see it glittering upon the footstool of pure culture, as the representative of the progress of American architecture, manufacture and mechanics.—*Builders' Gazette.*

Campo Seco Stone.

Granite, for a long time, held undisputed sway as *the* building stone. During the past few years, however, numerous quarries have been opened in various parts of the state. Among the more important deposits or quarries are those lately opened by the Campo Seco Co., in Calaveras county. It does not require the tools necessary to work granite; those will be found plenty firm enough that are capable of working sandstone. An immense saving in time for working the stone is thus gained, and is a fact that will be especially recognized by carvers and masons. The stone is of a light gray color, and rapidly hardens by exposure. It is claimed to be absolutely fire proof, thus excelling granite. Another strong factor is the exceeding lightness in weight, thus enabling blocks of almost any size to be conveniently handled. Specimens of the stone taken from the quarry may be seen at the office of the company, 1505 California street.

How to Prepare Calcimine

Some of our readers may wish to prepare their own calcimine, and we give these rules for the purpose: Soak one pound of white glue over night; then dissolve it in boiling water, and add twenty pounds of Paris white, diluting with water, until the mixture is of the consistency of rich milk. To this any tint can be given that is desired.

Lilac.—Add to the calcimine two parts of Prussian blue and one of vermilion, stirring thoroughly, and taking care to avoid too high a color.

Gray.—Raw umber, with a trifling amount of lamp black.

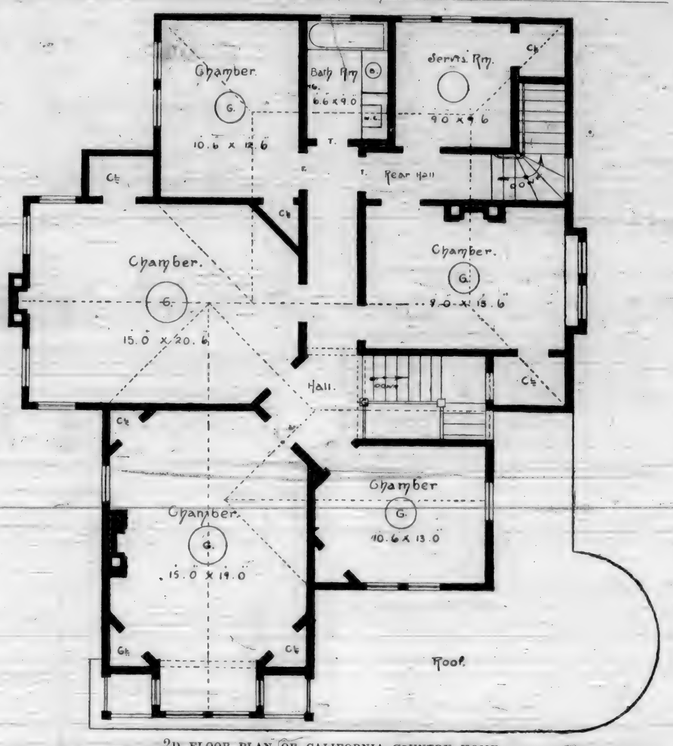
Rose.—Three parts of vermilion and one of red lead, added in very small quantities, until a delicate shade is produced.

Lavender.—Mix a light blue and tint it slightly with vermilion.

Straw.—Chrome yellow, with a touch of Spanish brown.

Buff.—Two parts spruce or Indian yellow, and one part burnt sienna.

The Weekly Building News in connection with The California Architect and Building News for $2 per annum.



2D FLOOR PLAN OF CALIFORNIA COUNTRY HOME.

NEW PUBLICATIONS.

"INTERIOR DECORATION."

By Arnold W. Brunner and Thomas Tryon, Architects.

The authors, in this new work, concede that the house is built to suit the tastes of the owner. The exterior features are all arranged in architectural array, so that the gables and chimneys make, with the walls and roofs, the harmonious composition which, until now, has existed on paper. Within, all is perfect. The halls, rooms, stairways and cupboards are of ample size and properly located, so that every long desired plan is at last realized.

But, alas! smooth plastered walls, well laid flooring and white ceilings are not enough to constitute what we call a home. The house must be decorated, and it is with the broad purpose of illustrating how this can best be done artistically, that the authors have placed before the people generally, the above named book.

For sale at this office. Price $3.00.

"MANTLES AND SIDE WALLS."

BY E. PRIGNOT AND OTHER ARCHITECTS AND DESIGNERS.

32 LARGE PLATES.

The designs represented are in the Cheminee, Louis XIII, and Louis XVI. styles. The engravings are very fine, and artistically represent the various fine details.

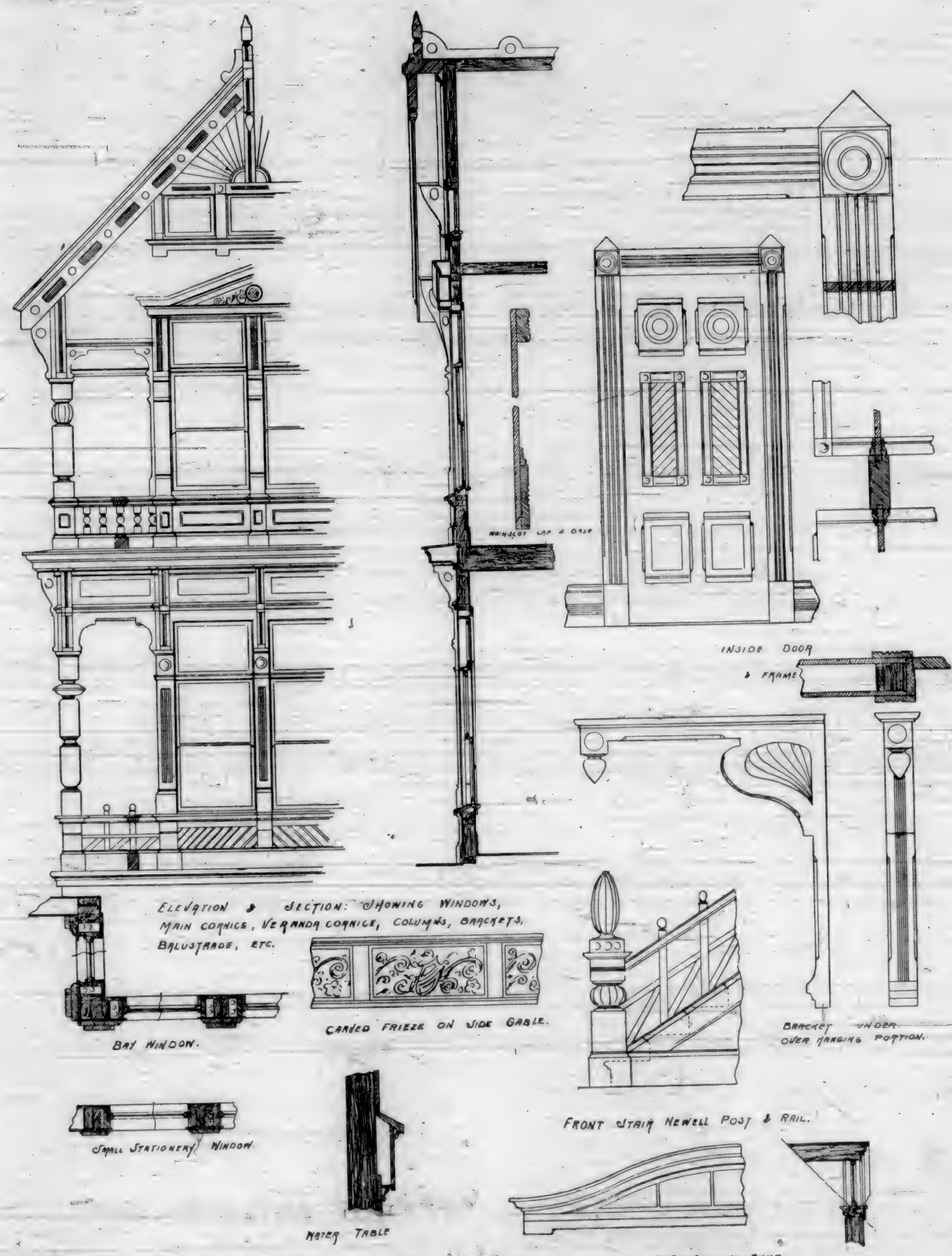
Price, in portfolio form, $3.00. Send to this office.

"School House and Church Architecture"	$ 3 00
"Public Buildings"	3 00
"Detail Cottage and Constructive Architecture"	6 00
"Modern Architectural Designs and Details"	10 00
"Monckton's Practical Carpenter and Joiner"	5 00
"Mechanics' Geometry (how to frame by card board models)	5 00

STORE FRONT AND INTERIOR DETAILS.

A NEW WORK, EDITED BY F. A. WRIGHT.

This is No. 2, of the series being issued by W. T. Comstock. The remaining numbers will treat of "Doors and Windows," "Gables," "Small City Houses," and other kindred subjects. Notices of each will appear when received. The price of each number is $1 00.



EXTERIOR AND INTERIOR DETAILS OF CALIFORNIA COUNTRY HOME.

The Best Practical Method of Plastering Walls.

Paper read by J. P. McMurray before the S. F. Chapter, A. I. A.

Before we consider the best method of making and applying mortar to walls, let us examine the nature and properties of the materials used and their chemical action upon each other. If these facts can be correctly ascertained we will be better prepared to bring about the proper result, as it will be evident that any process or condition that facilitates the natural, chemical or mechanical action of the material used will improve the mortar.

The common limes are nearly pure carbonates of lime, the only effect of burning them is to drive off the carbonic acid. By slaking them the lime becomes a hydrate, and in this state is capable of acting chemically, though feebly on the surface of pure siliceous sand. As such sand is silicic acid all alkalies are solvents in a greater or less degree. This combination causes the first setting of the morter, which is also strengthened by the mere mechanical action of the sand. The greater part, however, of the lime has not combined with the sand, but remains in the state of a hydrate, in the proportion as the latter absorbs carbonic acid from the air it gives out its water and passes to the state of a carbonate; such morter therefore acquires its final hardness and dryness when the whole of the hydrate has been decomposed and the water has been replaced by carbonic acid. In losing 22 per cent of water it combines with 46 per cent of carbonic acid.

We have now a general idea of the nature of the materials under consideration, and will proceed to make our mortar with the best lime and clean, sharp sand. (Loam in sand is always detrimental, but clayey earths are not necessarily so.) We will use our judgment as to the proper proportions of lime and sand, as a barrel of lime varies in strength as well as in quality, owing to the size of the lumps and the sand varies in degree of coarseness. The lime should be slacked under water and not allowed to burn. This should be mixed with an abundance of good long hair, before the sand is worked in. The hair should be thoroughly beaten before soaking, so as to break up all clots which are a source of weakness as well as a waste of material. The sand should then be well mixed in as the grit assists in the seperation of the hair, and a thorough mixing of the sand and lime at this time is very important, as it materially assists in bringing about the first condition of hardness by having every particle of sand in contact with the lime. The longer it remains in this condition, if moist, the better for freeing the silica of the sand.

The mortar is now ready for use if the lathing is properly done. Green laths are best for several reasons, they retain the proper width of key which should never be less than $\frac{3}{8}$ of an inch. While the dry lath as soon as wet, swell, and pinch the key, thereby weakening it, shrinks as the mortar dries out, and repeats it with every coat of mortar, which must effect to some exient the bond between the lath and the mortar, While the green lath retains the full width of key and shrinks only once, and then very gradually and does not split at ends by nailing as the dry lath. The joints should be broken every 5 or 7 laths as the settling of joints, or the springing of a stud makes a crack by the opening of butt ends of lath. No knotty, sappy or unusually thin lath should be used. They can be put on quite open, as we will use our mortar well haired and not wet and slushy, and to bring about this result we will temper the mortar 24 hours before using it, which will add materially to the first condition of hardness by bringing fresh particles of lime in contact with the silica of the sand, not pulled down and hashed up with water, but well tempered with the blade of the hoe as if for immediate use. When ready for use there will be less water in its composition, and yet it will be of proper consistency to spread. Mortar thus treated will make larger and stronger keys, being tougher and the particles of lime and sand form a closer union, thus assisting the second or mechanical condition of hardnees as well as the chemical action of the material. Mortar, like steel, is improved by working it. This coat should just cover the lath nicely, no matter how thin, as we will draw up on the same scaffold with a good heavy coat of brown mortar, made as the first, but without hair, and containing more sand. This we will leave with the proper application of the darby.

We draw up with brown mortar for the reason that the mortar applied to the lath requires more lime to make it adhesive to the wood and toughness to hold the key from dropping. If it is drying weather the windows should be in, or the space covered with muslin to insure slow and uniform drying to assist in the third condition of hardness. At the proper time it must be well floated, not only for the purpose of leveling the surface which is of only a secondary importance compared to the working up and compressing the mortar and bringing the particles together, as a large portion of the water has evaporated, leaving air spaces to be filled by compression. The proper time to float is when the larger portion of the water has evaporated and the moisture apparently gone; but the proper application of the float brings the moister to the surface leaving a nap on the surface of the wall.

Floating when dry does injury by weakening the parts when there is not moisture enough in the wall to make it adhesive again. When dry, finish with high gaged stuff. The best and least wavey surface can be produced by laying on the gage stuff with a float and drawing up with a trowel; the wooden float cuts through an inequality on the wall while other smooth steel trowel has a tendency to slip over it.

The above method is two coat work, properly speaking, calling for more labor than the usual way of putting on two coat work. And we believe that it complies better with the conditions and natural qualities of the material used than any other process in practice. But as there is a very general belief that a good job of plastering should have three coats of mortar, it will be necessary to compare the merits of the two methods as practically in use. In three coat work the scratch coat must be necessarily thin, as there is to be a brown coat over it; if the scratch coat were to be heavy, the brown coat would weaken by overloading the wall or ceiling, as the brown coat has to be sufficiently thick to cover the irregularities of the scratching and raking up of hair and mortar in scratch coat. Therefore the thin scratch coat is cut up and weakened by the scratching, and being thin, it dries out rapidly, not having time for proper crystalization and when dry the heavy sandy brown mortar requiring pressure to spread, springs and enfeebles the keys more or less. The lath if dry goes through a second swelling and the brown coat dries quickly as it has the atmosphere on one side and the lath and scratch coat on the other to absorb the moisture and the union between the two coats is never perfect and can be often seen separating by the jar on sides of casings, etc. And in regard to straightness, that should be done on the joists and studs previous to lathing. It is not good practice to overload lath, to straighten a wall, and there is no reason why a straight wall should be made crooked by the application of $\frac{3}{8}$ of an inch of mortar if properly applied. It might be well to say here that grounds $\frac{3}{4}$ thick are sufficient for lath and plaster and every wall should have that amount on all its parts.

By the two coat process we get the proper kind of mortar on the lath for keys and adhesion to the wood, the brown coat with the proper sand for strength, which also prevents cracks, by having sufficient sand to prevent shrinkage and giving as heavy a body as the lath should be required to carry, which is all in one body, the union being perfect and a thick moist body, which insures slow drying and what is of great importance, a plastic body to float and compress, if taken in the proper time and no hair to collect in tufts on the surface by floating. The strength of the above wall can be greatly increased by the addition of say, 1 barrel of plaster of Paris to the hundred yards of the first application, as this coat is where the greatest strength and adhesion is needed. There are probably sufficient glutinous scraps in the hair to retard the set of the plaster, if not, a little glue size may be added so that no inconvenience may occur by fast setting. By far the hardest walls we have ever seen were composed entirely of sand and plaster of Paris, about 2 parts of sand to one of plaster mixed with hair and applied in the usual manner as common mortar.

A Guaranteed Fire Proof Roofing.

Attention is called to ad., of M. Ehret Jr. & Co., St. Louis, Mo. They make a specialty of water and fire proof roofing at less price than metal or shingles, and is so simple that any one can put on from six to eight hundred feet a day. It is durable, of light weight and is adapted to any climate. Has been in use more than 6 years in all parts of the United States, Canada and Europe. Send for samples and net prices. Special prices to Dealers, Contractors, Builders, etc. Quality of goods are fully guaranteed.

WEEKLY BUILDING NEWS

IN CONNECTION WITH

California Architect and Building News

TWO DOLLARS PER YEAR.

WARREN H. WILLIAMS.

Warren H. Williams.

Another one has gone to meet the great Architect of the Universe above. Warren Haywood Williams is no more. It was our painful duty in July, 1880, to chronicle the death of his father; and to-day we offer the last tribute to his son, who in his lifetime well performed the duties of his chosen profession.

Warren H. Williams was born in the city of New York on the 9th day of February, 1884. He started for this city at an early age and arrived here in August 1852. The career of young "Warry" as he was familiarly called by his schoolmates, is well remembered by the Manager of this Journal. Both came to California in the same year, and it seems noticeable that the difference in their ages was just about equal—in number of days—to the difference between the time of the arrivals of each in this state.

Passing over his school boy's days, Mr. Williams entered his father's office—the late Stephen H. Williams—on the 2d day of January, 1860. As an apprentice, he showed remarkable quickness in adapting himself to the various requirements of his future calling. He became a full partner with his father not long afterwards, and remained with him until Sept. 6, 1872.

Salt Lake City, in 1872, was a city of great expectations, and Mr. Williams concluded to open an office there. The boom, however, was of short duration and after a trial of but a few months, he left the city of the saints, and cast his lot with the citizens of Portland, Oregon. He arrived there January 23, 1873, and has ever since—until his demise—been intimately connected with the growth of that city. He worthily won the esteem of the entire commercial community. He was also an active worker in many secret orders, and was a Fellow of the San Francisco Chapter American Institute of Architects.

A special meeting of the Chapter was called upon receiving information of the death of Mr. Williams. A goodly number of the architects were present. The President stated the object of the meeting, and by a resolution, the following named Fellows were selected as a committee to prepare suitable resolutions: R. H. Daley, G. H. Wolfe, T. J. Welsh, J. J. Clark and the President G. H. Sanders.

At a meeting of the Committee held immediately after the close of the special meeting of the Chapter, the following preamble and resolutions were adopted:

Whereas, Under the dispensation of Divine Providence, our late Fellow, Warren Haywood Williams, has been removed by death, at Fresno City, on his return from the Eastern States, whither he had gone for the benefit of his health, and,

Whereas, We deem it expedient, and due to our late brother as a son of a late distinguished member of the architectural profession on this coast, and himself a prominent and successful architect, and a Fellow of the S. F. Chapter of the A. J. A., and as a mark of respect to his family, to offer the following resolutions:

Resolved, That we tender to his bereaved wife and family, our united and sincere condolence and sympathy on the sad occasion which has deprived them of a husband, father and brother, and ourselves of a friend and fellow member.

Resolved, That these resolutions and preamble be forthwith engrossed and forwarded by the Secretary of the Chapter to the family of the deceased.

—WEEKLY—

BUILDING NEWS

—In Connection with—

California Architect and Building News

TWO DOLLARS PER YEAR.

Plaster for Mouldings.

Where walls and ceilings are to be moulded whilst yet in a plastic state, some decorators are using a fibrous plaster, with the object of securing greater firmness and tenacity. The idea itself is not new, animal hairs having formerly been intermixed with lime, but this is a new application. In England and France a fine wire netting is at times inserted between two courses of plaster, to afford greater firmness in holding picture frames. The tenacity of some of the old mouldings in old New York houses, whilome aristocratic, is very remarkable, retaining as they do, their original sharpness of outline.

The mechanic who thinks he has arrived at perfection may be written down as an ass. There is no such thing as "perfection" in the mechanical arts, and the man who claims to be a complete and finished mechanic knows in his heart he claims that which does not belong to him, and he will soon discover that his vanity, or his fraudulent pretenses do not deceive the employer to any great extent. Blow and bluster will not make good work, or pass for efficiency, and the man who uses those sort of weapons seldom deceives an employer. "I never employ a man who knows it all," said a large contractor to us the other day. "Give me a modest, neat looking man," he continued, "and I'll hold you a dollar he is a good workman, and one that may be relied upon; though, of course, that sort of man seldom comes in search of employment. Bragging fellows, who state they can do anything from dressing a board to designing and building a cathedral, are quite numerous, and may be had at any moment." Doubtless this is true, but it does not argue that there are not many of the modest workmen. There are plenty of them, good, reliable fellows—fellows that seldom or never have need to seek employment. They are always engaged. Most of them own their own homes, are intelligent chaps, models in their own neighborhood, the best of citizens, have neat, thrifty wives and healthy, happy children, and their country is proud of them, for it understands that they are towers of strength and bulwarks of true freedom. It is not from this class Anarchists or noisy demagogues are drawn: they do nothing until they have first considered the results, and all their actions are tempered with wisdom, hence their ability to become good mechanics.

Building engagements have been limited in number during the past week, in every portion of the State. The exceedingly cold weather has been responsible for much of the dullness, as Contractors do not find it to their advantage to start work, when men have to spend half their time keeping their fingers warm.

It will be strictly the aim of the management of the Weekly to give only *live* items of building news, and not try when times are dull, simply to fill up the pages with information that is of no good to any one, in a practical sense.

Weekly Building News

—IN CONNECTION WITH—

California Architect and Building News!

$2.00 PER YEAR.

RICHLY Rewarded are those who read this and then act; they will find honorable employment that will not take them from their homes and families. The profits are large and sure for every industrious person. Many have made and are now making several hundred dollars a month. It is easy for any one to make $8 and upwards per day, who is willing to work. Either sex, young or old; capital not needed; we start you. Everything new. No special ability required; you, reader, can do it as well as any one. Write to us at once for full particulars, which we mail free. Address Stinson & Co., Portland, Maine.

DEEP Sea Wonders exist in thousands of forms, but are surpassed by the marvels of invention. Those who are in need of profitable work that can be done while living at home should at once send their address to Hallett & Co., Portland Maine, and receive free, full information how either sex, of all ages, can earn from $5 to $25 per day and upwards wherever they live. You are started free. Capital not required. Some have made over $50 in a single day at this work. All succeed.

INVENTION has revolutionized the world during the last half century. Not least among the wonders of inventive progress is a method and system of work that can be performed all over the country without separating the workers from their homes. Pay liberal; any one can do the work either sex, young or old; no special ability required. Capital not needed; you are started free. Cut this out and return to us and we will send you free, something of great value, and importance to you, that will start you in business, which will bring you in more money right away, than anything else in the world. *Grand outfit free.* Address True & Co. Augusta, Maine.

HILL'S
Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and tenements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. H. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, F. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY BUILDING INTELLIGENCE.

We earnestly desire the co-operation of country editors and mechanics generally to this department of our Journal. Forward us all the building news connected with your different localities. Architects should also notify us of "plans to figure on." No charge is made for such notices. Direct letters to office of this Journal, 230 Montgomery street.

ALAMEDA.

First and M. Frame building. Owner, Patrick Callaghan; architect, M. J. Welch; contractors, McCate & McGlinching; cost, $4,800.

Klinknerville. Additional story; owner, C. A. Klinkner; architect, Chas. V. Pierce; contractor, S. A Boynton; cost, $1,057.

Webster and Durant. Frame building; owner, Peter Thomson; architect, Matthew & Son; contractor, B. S. Spencer; cost, $4,070.

Klinkerville. Frame building; owner, C. A. Klinkner; architect, Chas. V. Pierce; contractor, S. A. Boynton; cost, $4,000.

SAN DIEGO.

Building operations are being pushed with the utmost activity in every portion of the city. Work was begun during the week ended Saturday last on six lodging-houses, with nearly 200 rooms, and as many more are to be erected.

A three-story frame lodging-house is being erected on Eight street, between E. and F. J. K. Butler, J. S. Harris and A. N. Kimball are the builders and owners. The building will contain thirty rooms and will cost about $3,000.

R. E. Osgood is preparing plans for a two-story house for R. Steadman, to be erected on Fourth street, near the Florence Hotel. It will contain twelve rooms and will cost $3,000.

Work will soon be commenced on a tenement house block for John Bovyer. It will be erected on the corner of Elm and Boulevard streets. The house will cost $16,000 and will be divided into four houses of seven rooms each. A. H. Towle is the architect.

A. T. Large, Jr., has prepared plans for a frame business building to be erected on the corner of H and India streets. It will be two stories in height and will cost $3,000.

Plans are being prepared for a large Unitarian church to be erected on the same lot as the present building. The new auditorium will be 45x70 feet in size. Comstock & Trotsche are the architects.

E. B. Newkirk and J. M. Apfeld are the architects and builders of a four-story frame lodging-house and business building now being erected on the corner of D and Columbia streets. The building will cost $8,000.

The car-sheds and stables being erected for the San Diego Street Company are very extensive. They are located on the north-west corner Arctic and D streets. The sheds for stabling horses will be 500 feet long and eight feet wide. In the center there will be a two-story frame building, 30x220 feet in size.

Joseph Falkenhan, the architect, is building for himself a residence on Coronada Beach. It will contain fourteen rooms and will cost $5,500.

A residence is being erected for John Ringen, on block 8, Coronado Beach. It will be two-stories in height. The cost will be about $5,000, French & Wilde are the builders.

Standard & Clements are the architects of a two-story frame business building being erected for W. J. Warner in Roseville. The cost will be $3,500.

Extensive additions are being made to the residence of Warren Kimball, in National City. The cost will be $5,000. R. C. Ball is the architect.

The following building permits have been granted by the Board of City Trustees since our last report:

J. H. Clinkscales, one-story frame dwelling, on lot D, block 13, Horton's addition.

Charles S. Sherman, a corrugated iron building, 16x50 and 12 feet high, on Seventh street between E and F.

E. H. Gates, five one-story frame houses, on L street, between Tenth and Eleventh streets.

Susan A. Felly, iron addition to house on east side of Third street, between G. and H.

C. A. Severin, two-story frame building for a hotel, on lot 2, block 19, Sherman's addition.

How Quin Har, a corrugated iron building with tin roof, on lot H, block 111, Horton's addition.

J. P. VanClain, two-story brick and corrugated iron building, on lot B, block 86, Horton's addition.

A. H. Julian, corrugated iron building, on lot D, block 95, Horton's addition.

Brewster & Whalen, a two-story veneered, brick and corrugated iron building on the corner of Fourth and C streets.

R. W. Taylor, two-story frame building, on lot F, block 43, New San Diego.

Fox Brothers, one-story corrugated iron building, 50x75, on Sixth street, between G and F.

T. W. Graham, a two-story frame building, on block 202, lots G and H, Caruthers & Horton's addition.

C. E. Keller, a residence on lot 1, block 59, Sherman's addition.

T. P. Noble, one-story frame cottage on Thirteenth street, between F and G.

J. D. Works, a dwelling house and stable on lots G, H and I, block 310, Horton's addition.

George M. Hellar, four-room frame cottage, on lot 10, block 51, Sherman's addition.

William D. Connell, one-story dwelling on west side of Ninth street, between H and I.

D. B. Cosgriff, two-story frame house, corner of L and Fourteenth streets, San Diego.—*San Diego Union.*

Work is now progressing rapidly on a very large and fine building on the west side of Fifth street, between C and D streets. Mrs. Emma Sheldon is the owner, and J. D. Raymond the contractor and builder. The structure is to be solid brick, four stories in height. The size of the structure will be 56x85 feet. The front will be of pressed brick and galvanized iron, with a mansard roof.

T. O. Weary, the architect, will soon build for himself a residence on the corner of Date and First streets. It will be two stories in height, with eight rooms, and will cost $5,000.

Work has been commenced on a three-story business block, on the corner of Fifth and B streets. In size it will be 50x55. The cost of the building will be $10,000. John Dill and Frank Klepsh are the owners. E. Guenther von Schwartzenberg is the architect. The same architect has completed plans for an eighty-four room lodging-house, to be erected on Eleventh street, near H. It will be three-stories in height, 70x100 feet in size. L. Kloe is the owner. The cost of the structure will be about $14,000.

The following building permits have been granted during the last two weeks.

Daniel Cleveland, six-story brick block with basement, corner of Sixth and E streets.

Kirby & Beam, addition to house on Sixth street, between E and F, 20x24 feet, front of glass and sides of iron.

S. G. Ingle, salesroom under warehouse on Sixth street, to be covered with corrugated iron.

Hamilton & Co., iron shed, 20x 20, on G street, between Fifth and Sixth.

Frank E. Johnson, corrugated iron office, 6x20, on E street, between Fourth and Fifth.

W. T. Walker, frame building on Sixteenth street, between G and H streets.

Jesse Gilmore, wooden building, lot 7, block 298, Middletown.

D. Chollister, a frame dwelling house on lot 9, block 3, Bay View Homestead.

S. J. Beers, one-story frame cottage on lots 41 and 42, block 129, Mannasse & Schiller's addition to San Diego.

Joseph Logan, two-story corrugated iron building, on lot J, block 37, Horton's addition.

Calvin Washburne, two frame houses on I street, between Second and Third streets.

T. P. Russell, one-story corrugated iron building, corner Sixth and I streets.

C. W. Street, two-story frame building, on lot K, block 39, Horton's addition. Three store rooms below and forty-four lodging rooms above.

William H. Carter, three-story building, corrugated iron, Sixth street between G and H.

T. W. Hampton, two story frame building, on lot F, block 228, Horton's addition.

John R. Booth, two frame dwellings, one lot on B, block 251, Horton's addition, and one on lot 11, block 297, Middletown.

A. W. Tripp, frame dwelling, block 1, lot 4, Sherman's addition.

M. G. Kellogg, corrugated iron building, west side of Fourth street, between H and I streets.

T. K. Smith, veneered brick building, on lot E, block 100. Horton's addition.

J. B. Hooper, frame cottage, lot A, block 55, Horton's addition.

M. G. Kellogg, brick veneered building, on lots K and L, block 46, Horton's addition.

Henry B. Morris, one-story frame dwelling, on lots E and F, block 48, Horton's addition.

J. A. and Eliza Sheriff, corrugated iron warehouse, corner Fifth and L streets.

Henry Timpkins, stable, 36x50, on city block 288.

L. E. Huff, stable, on lot 9, block 177, Horton's addition.

C. H. Ackerman, one-story corrugated iron building, 45x50 feet, three one-story cottages, and 1 two-story building, on southeast corner A and Artic streets.

M. J. McCarthy, two-story frame building, 20x32 feet, on lots E and F, block 130, Horton's addition.—San Diego Union.

MISCELLANEOUS.

Hill & Dean are building a $2,000 house in White's addition, Riverside, for F. A. Tettley; also a $1,500 house in the same addition for Mr. Cronin.

In Lugonia, three houses are to be erected on the property of Mr. Morrison.

At Medford, Or., the Episcopal Church people have secured a handsome building site, and expect to erect a church thereon.

The building trade in Alameda is very active for this season of the year, and the outlook for increased activity is very bright. A number of magnificent residences are in course of construction in the central portion of the city, which section has been built up considerably during the past six or eight months. The prevailing style of architecture is pleasing. There is no city in the State which can claim superiority to Alameda in point of beautiful dwelling houses, and there are very few cities that can equal our own in this respect. The neighborhood in the vicinity of High street has been graced by a number of handsome dwellings, the most notable being that of Hermann Cordes. The West End is holding its own. At the present time there are few business structures under way.

INSOLVENCY SETTLEMENT.

The accounts in the solvency matter of R. P. Sanchez, a carpenter and builder, have been ordered by Judge Finn to be settled on payment to the creditors of 6.27 cents on the dollar.

MEADE'S HOTEL AT FRESNO.

J. J. and T. D. Newsom, the architects, have brought suit against George W. Meade to recover $3000 for forming and drawing plans and making estimates for a $200,000 store and hotel building at Fresno City, proposed by the defendant.

PUNGENT ITEMS ON BRICKS.

Bricks are made of mud and so are brickbats, but base ball bats are not. Some bricks are made of soft mud and others are not. You can't throw a soft mud brick like you can a hard brick. People in glass houses don't throw bricks or brickbats. Bricks are worth more money than brickbats, but I like to throw the brickbats the best. A brick is made the size of a brick and not of a brickbat. Bricks are of all colors. A man who makes bricks is a brickmaker when he is poor and a brick manufacturer when he is rich. A hen can lay eggs but she can't lay a brick. A man who lays brick is sometimes called a brick mason, but not the kind of a mason that goes out at night and comes home with a brick in his hat. Bricks are made of clay and Henry Clay was a brick when he made a speech. A sick kitten likes to lay up to a hot brick. When winter comes pa makes ma have a hot brick because her feet are cold. A red-headed girl is called a brick-top, and when she goes out you always see a white horse go by. There are good bricks and some bad bricks, but any man who makes bricks thinks he makes the best bricks. Bricks are made for houses and to walk on. A man when he is busted walks around and presses bricks and is dry for a drink. A man can get to be a lawyer if he studies hard in four years, a doctor in three years, and a preacher in no time; but pa says it takes twenty years to be a brickmaker. This is all I know about bricks.

NEW LUMBER COMPANY.

"The Garden City Lumber Company." The objects of the corporation are to manufacture lumber, shingles, laths, etc., and every kind of rough and dressed building material; also to buy, sell, exchange and deal in the same; to purchase land and erect buildings thereon, and to transact all business incidental to the purchase and disposal of lumber, wood, building material and woodwork, and real estate. The principal place of business is to be in San Jose, and the term of existence of the corporation is fifty years. The capital stock is in the sum of $100,000, divided into 1,000 shares of $100 each; the amount actually subscribed is $10,000. The directors for the first year are T. J. Gillespie, J. C. Morrill, Mattie Fisher, Peter Baltz and R. H. Jamison, the last named being of Agnews.

CHICO

Comes to the front with an offer of a half block of land and $10,000 cash, to any one who will build a $75,000 hotel.

Mr. T. E. Snell has had erected at Smith Creek, Santa Clara Co., a cottage of eight rooms a laundry with modern improvements and a granery; cost, $3,000. James F. Talbot was the builder.

WINTERS.

L. A. Danin is building a shop—F. McNeal is making additions to his own dwelling—T. D. Ball is superintending additions to W. J. Pleasants' house in the town of Pleasants. Mr. P. is also having a fine stone foundation prepared for the erection of a dwelling which will be built in the spring.

REDLANDS.

Jones & Griffiths are preparing plans for a $15,000 school building.

Clark's Pottery at Sacramento was lately burned, entailing a loss of over $40,000.

Chinese carpenters in San Francisco have struck for $3 per day. The regular wages have been $2.50. Thus, one by one, do the guileless Chinamen imitate the ways of the heathen Americans.

F. T. Fuld of Riverside proposes to erect 10 houses on his Grove St. property.

Address Architect W. H. Carson in regard to a new $10,000 church shortly to be erected in Woodland.

PERIODICALS WANTED.

Geo. D. Kellogg, of Newcastle, Cal., is the President of a literary society, that is free to all residents of that growing town. All editors are requested to forward him copies of their respective journals. We cheerfully place the Society on our free list, and hope others will follow.

PURCHASING AGENCY.

We can supply contractors, builders, or owners with anything required to erect and complete a building, at the very lowest market prices.

S. & J. C. Newson have dissolved partnership, the former retaining control of the S. F. office.

SITUATION WANTED.

One of the best and quickest draftsmen in the State requires a situation. First class perspective and colorist. Specimens forwarded. Address A. B. care of Harris & Jennens, 1104 Grand Avenue, Kansas City, Mo.

NEW CITY HALL.

The following bids were received for work on the New City Hall as follows:

For completing the stone steps leading to the colonnade of the Hall of Records:

John Sheedy	$5,987
M. J. Healy & Co.	8,000
Degan & Orford	5,528
McGowan & Butler	7,615

For erecting fifteen iron columns and one tier of rolled-iron joists:

Reese Llewellyn	$36,700
Savage Sons & Co.	40,000
Sims & Morris	37,500
O'Connell & Lewis	34,600

Bids were ordered to be advertized for 5 days, after which time will be considered.

GOVERNMENT WORK

Several announcements from the office of the Supervizing Architect of the U. S. Treasury Department have been received. The date for which the articles are to be furnished will not allow contractors in this city, time to present bids. Those who make a business on bidding on Government work, will do well to call in this office at least once a week.

Officers of the San Francisco Chapter American Institute of Architects for term ending Oct, 1888:

President	G. H. Sanders
Vice "	W. P. Moore
Secretary	G. H. Wolfe
Trustees	A. Laver
"	J. Wright
"	A. Pissis
"	J. E. Wolfe
"	B. E. Henriksen

DEATH OF WARREN H. WILLIAMS.

Warren Haywood Williams, son of the late Stephen H. Williams, died on Saturday morning, January 7th, at 5:30 A. M. in Fresno City. Aged 44 years.

TWO DOLLARS PER YEAR.

The California Architect and Building News and the Weekly Building News will be furnished conjointly to subscribers for TWO Dollars per annum.

1,500 a week is the absolutely guaranteed circulation of this Weekly Building News.

ANNUAL BUILDING SUMMARY FOR 1887.

During the year just passed the following number of buildings were erected:

FRAME BUILDINGS.

	No.	Cost.
January	40	$160,200
February	30	126,000
March	65	221,500
April	77	431,850
May	73	376,700
June	104	477,500
July	70	648,700
August	105	388,100
September	59	402,850
October	63	257,840
November	68	272,700
December	39	185,200
Total	723	$3,949,140

BRICK BUILDING.

	No.	Cost.
January	11	$475,000
February	5	53,250
March	9	105,500
April	6	173,500
May	6	232,000
June	7	196,164
July	2	52,500
August	7	150,000
September	4	44,000
October	2	37,200
November	5	210,500
December	8	258,000
Total	71	$1,987,614

REPAIRS AND ALTERATIONS.

	No.	Cost.
January	8	$15,500
February	13	25,200
March	10	26,900
April	17	31,450
May	9	84,100
June	26	57,550
July	20	50,500
August	24	44,250
September	32	161,100
October	19	55,300
November	23	50,000
December	27	66,400
Total	228	$668,250

Making a grand total for the year of 1093 buildings, value $6,605,054.

The number of building engagements and their value since 1880 are as follows:

Year	No	Value
1880	397	$1,754,435
1881	533	3,790,732
1882	785	3,896,212
1883	803	5,261,689
1884	1,127	6,202,807
1885	1,457	7,043,999
1886	1,148	6,401,669
1887	1,093	6,605,054

Receipts of Lumber for the Year.

The following table shows the total amount of pine, redwood, shingles and ties received in San Francisco during the year 1887:

Months.	Pine.-Ft.	Redwood.-Ft.	Shingles.-M.	Railroad Ties.-No.
January	21,917,000	9,136,078	3,735,500	18,000
February	8,856,000	5,612,494	2,546,000	28,100
March	16,936,672	10,559,292	6,006,000	85,015
April	16,817,000	6,104,000	1,400,000	8,938
May	12,545,000	10,833,350	1,002,400	53,319
June	21,619,000	3,681,000	751,800	86,860
July	12,825,374	18,446,473	6,389,355	108,751
August	17,158,883	9,479,124	6,577,036	205,701
September	20,898,200	7,488,527	4,973,400	175,293
October	22,519,000	13,649,485	4,344,000	147,268
November	17,835,616	16,761,790	11,936,111	101,503
December	19,981,236	6,943,976	10,008,500	74,788
Total	209,908,981	118,693,590	59,689,702	1,093,536

Subscribe for The Weekly Building News.

A company has been incorporated at Enterprise, Or., for the purpose of building a flouring mill.

A new block is to be built just across Fourth street from the Redlands Hotel, in town of Redlands.

The building occupied by the Land and Town Company will be moved next week, and the erection of the new three-story block commenced. The new structure will be 50x100 feet, and will be built of stone, similar to the material used in the building of the Sweetwater dam.

The Congregationalists have decided to build on A street, Ontaria, and have secured two lots on the southeast corner of Palm avenue.

Twenty houses are under contract to be built at Redlands close to the southern foothills.

The dwelling house on the corner of Main and Second streets, Seattle, was, Tuesday, being raised preparatory to being moved to the north end of the Stetson and Post block, to make way for a business block to be erected by Judge Thomas Burke.

ARIZONA IMPROVEMENTS.

Robert McPherson of McPherson, Los Angeles county, has been in the city for several days in connection with Arizona water schemes. Mr. McPherson is President of the McPherson Canal Company, which is prosecuting a plan for bringing water from the Gila river, and applying it to the irrigating of some 80,000 acres desert land in the neighborhood of Gila Bend. He has also large interests in the St. Louis Canal, which conveys water from the Salt river for the watering of an immense tract of land in the Salt River Valley, near Phoenix, Ariz. Mr. McPherson asserts that water alone is needed to convert Arizona's howling deserts into gardens of fertility.

DEPOT GROUND.

Active work was commenced yesterday laying off the ground for a depot near the cemetery, on the line of the proposed San Bernardino and Bear Valley Railroad. This road is an established fact and work will soon be commenced surveying the right of way. We understand that a right of way has already been procured as far as the foothills near Arrowhead.

OLD SAN JOSE LANDMARK.

It is Torn Down to Make Way for Improvements.

The old adobe house on Market street, near the junction of First, was yesterday torn down to make way for nineteenth century improvements. The house was built in 1846 by Pedro Zepeda and was always occupied by members of his family. In 1852 John Balbach bought land adjoining and also acquired an interest in the Zepeda property. The removal of the house became necessary on account of the recent opening of a new street, 60 feet wide, running from Market to Orchard and lying between Balbach and Colfax. Upon the site of the old adobe will be erected two handsome stores by A. F. Herrmann and James P. Pierce, the present owners of the property.

ABRAHAMSON'S VENTILATORS.

The following buildings are in the course of construction, for all of which the Abrahamson Ventilators have been specified by the architects, and contracts have been made to furnish them for each of the buildings:

In all the class and teachers rooms of three new public schools in S. F.
San Jose Court house.
Fresno Jail.
Merced Young Ladies Seminary.
Woodland Bank.
Woodland Presbyterian Church.
Alameda Presbyterian Church.
Oakland Presbyterian Church.
Also specified in the New St. Mary's College, Oakland.

These Ventilators are also in use in all the principal departments in the United States Mint, S. F.

G. Swabacher's corner, Clay and Franklin streets.

Club Rooms, corner Sutter and Kearny streets.

Residence, corner Turk and Buchanan streets.

S. F. Verein, corner Sutter and Dupont streets.

H. Liebes & Co. fur work-shops.

Bohemian Club.

Many others are specified by architects for large hotels and private residences.

State, County and Shop Rights For Sale.

Work was lately commenced on the second story of C. F. Roe's building on Third street, San Bernardino. The entire upper floor will be occupied by the Board of Trade.

CRAIG,
Notary Public and Commissioner of Deeds,
316 MONTGOMERY ST., BET. CAL. & PINE,
Commissioner for New York, Arizona, Nevada, Pennsylvania, Utah, Oregon, Idaho, Washington Territory, Ohio, Massachusetts, New Hampshire, Illinois, New Jersey, and other States and Territories.
Depositions a Specialty. Acknowledgements taken and oaths administered at any hour of the day or night. LEE D. CRAIG
Residence—507 Turk St., cor. Larkin.

SAN FRANCISCO BUILDING NEWS.

(We give a list of all contracts recorded from middle of November to date.)

Broderick, between Page and Haight. Frame building. Owner W. P. Turner; architect L. B. Townsend; contractor N. C. Post; cost $5200, limit April 28, 1888; Signed Jan. 9th, 1888; filed Jan. 11th, 1888; amount of bond $2500, surety Chas. Moe.

1st payment $1200, to be paid when frame is up and chimney half up; 2d payment $1100, to be paid when house is enclosed roof on, and first coat of mortar on; 3d payment $700, to be paid when outside work is done and house hard finished; 4th payment $900, to be paid when all is done and accepted by architect; 5th payment $1300, to be paid 35 days after completion and acceptance or if said builder shall show all bills clean on the house.

Bartlett and Twenty-second. Two-story and basement. Owner, Henry C. Videau and Ella Videau; architect, Huerne & Everett; contractor, F. W. Kern; cost, $4,250; limit, 85 days; signed Dec. 31, 1887; filed Jan. 3, 1888; filed at request of said architect; amount of bond $4,250; sureties, F Joost and O. W. Norswell.

1st payment, $1,062 50, to be paid when frame is up, rustic on and roof sheathed; 2d payment, $1,062 50, to be paid when brown coat of mortar is all on; 3d payment, $1,062 50, is to be paid when building is completed and accepted by said architect; 4th payment and balance, $1,032 50, to be paid 35 days after completion and acceptance.

Eddy, bet Jones and Leavenworth. Two-frame buildings. Owner, John Manning; architect, T. J. Welsh; contractor, George W. Hanisbrough; cost $10,900; limit, 100 working days; signed, Jan. 3d, 1888; filed Jan. 7th, 1888; filed at request of architect. Amount of bond $8,560. Sureties, D. S. Cartwright, and D. W. Hawley.

1st payment, $1,612, to be paid when frames are up; 2d payment, $1,612, to be paid when brown mortar is on; 3d payment, $1,612 when white coat is on; 4th payment, $1,614, to be paid when finished; 5th payment, $2,200, to be paid 35 days after completion and acceptance.

Fell and Market. Stair builders' contract. Owner, M C. De Leveaga; architect, P. R Schmidt; contractors, Drew & McLaughlin; cost, $3200; filed, Dec. 21, 1887; signed October 19, 1887.

Payments to be made in installments, at the rate of 75 per cent on value of work performed; balance of 25 per cent 35 days after completion, but no oftener than twice a month.

Guerrero near Twenty-sixth. Two-story frame; owner, Mary Lee; contractor, W. H. Greenwood; cost, $4,150; limit, no time specified; signed, Dec. 28, 1887; filed, Dec. 29, 1887.

1st payment, $500, to be paid when the foundation is laid and the first tier of joice are on; 2d payment, $1,000, to be paid when frame is up and building is enclosed; 3d payment, $1,000, to be paid when first coat of mortar is on; 4th payment, $1,500, to be paid when the white coat of mortar is on; 5th payment, $645, when the job is completed.

Geary, bet Gough and Octavia. Two story frame. Owner, Miss Rosalia Rosenberg; architect, R. P. Schmidt; contractor, Wm. T. Commary; Cost $4,810; limit 100 working days; signed Jan 5th, 1888; filed Jan. 10th, 1888; filed at request of architects amount of bond $4,810. Surety G. M. Perine;

1st, payment $940, to be paid when rough frame is up; 2d payment $900, to be paid when brown coat is on; 3d payment $900, to be paid when hard finished; 4th payment $900, to be paid when completed and accepted; 5th payment $1,210, to be paid 35 days after completion.

Geary, cor of Franklin. Frame building. Owner, Aaron Cahn; architect, J. Marquis, contractor, F. A. Williams; cost $10,275; limit, July 1st, 1888; signed, Jan. 10th, 1888; filed Jan. 10th, 1888; filed at request of architect. Amount of bond $10,275, sureties Moore & Smith.

1st payment $1,875, to be paid when frame and all the rough boarding and roof boards are on and chimneys up; 2d payment $1,875 to be paid when the roof and cornice is finished, all gas and water pipes in partitions set, stairs up, all out-side frames set and building ready to lath; 3d payment, $1,875 to be paid when all the out-side finish is on, porches up, rear fences up, brown coat of mortar on, sash glazed and fitted ready to hang; 4th payment $1,875 to be paid when the white coat of mortar is on, all inside finish on, bath tubs, wash basins, etc., all plumbing finished and the necessary wood work; 5th payment $2,775 to be paid 35 days after the building is finished and accepted and the owner in possession of said premises.

Larkin, bet Pine and California. Alterations. Owner, O. A. Pater; architect, Wm. Schroff; contractors, C. P. Moore & Bro; cost, $1,925; limit, Feb. 26, 1888; signed Dec 15, 1887; filed Dec. 24, 1887; amount of bond, $1,000; surety, J. F. Kennedy.

1st payment, $600, to be paid when the frame is up and new roof on and chimneys built; 2d payment, $800, to be paid when window frames are set, first and second coat of plaster on and building finished; 3d payment, $525, to be paid 35 days after completion and acceptance, providing there are no leins.

Masonic Cemetary, vault. Owner Philip A. Roach; achitect, Chas. J. Devlin; contractor, Wm. Matthews; cost, $1,950; limit, June, 30th, 1888; signed, Jan. 16th, 1888; filed Jan. 11th, 1888; Amount of bond $1,500. Sureties W. R. Moran, and P. Dugan.

1st payment $450, to be paid when all the brick granite and marble work is completed exclusive of marble work on monument; 2d payment $1,000, to be paid when completed and accepted; 3d payment $500, to be paid 35 days after acceptance.

Market and Fell. Elevator contract for a 5-story frame building. Owner, M. C. De Lavegaa; architect, F. Buckley; cost, $2,975; limit, 55 days; signed Dec. 27, 1887; filed Dec. 28, 1887; filed at request of architect; amount of bond $3,000, sureties, O. J. Prestor & J. J. McKinnon.

1st payment, $2,600, when half of the work is done, according to architect's estimate; 2d payment, $5, 00, to be paid when completed, tried and accepted; 3d payment, $2,000, to be paid 35 days after completion.

Mission near Twenty-third. Plaster contract of two 2-story frames. Owner, Ed. Stoetzer; architect, H. Geilfus; contractor, Hunteman & Harper; cost, $1,100; limit, 75 working days from date; signed December 29, 1887; filed Jan. 3, 1888; filed at request of architect; amount of bond, $1,100; surety, R Tiernon.

1st payment, $435, to be paid when the brown coat is on; 2d payment, $435, to be paid when white coat is on, all cementing is done; 3d payment, balance, to be paid after entire building is completed and accepted by architect, $430.

Mission and Twenty-third. Carpenter's contract of two 2-story frame buildings. Owner, Ed. Stoetzer; architect, H. Geilfus; contractor, B. Knaus; cost, $5,560; limit, 75 working days from date; signed, Dec. 29, 1887; filed Jan. 3, 1888; amount of bond, $3,000; sureties, John Coop and G. H. Morrison; filed at request of architect.

First payment, $1,000, when frame work of building is up; 2d payment $1,000, to be paid when buildings are enclosed and roofed; 3d payment, $1,000, to be paid when the floors are laid and partitions are set; 4th payment, $1,000, to be paid when all outside work, yard, fence and porch work is completed; 5th payment, $1,000, to be paid when the entire inside finish is on, doors, windows and blinds are hung; 6th payment, $1,430, to be paid when the entire building and works shall have been finished and completed and accepted by the architect; 7th payment, $2,145, to be paid 35 days after completion and acceptance by architect.*

Scott and Washington. One-story frame and basement. Owner, J. J. Driscoll; architects, Copeland & Banks; contractor, J. J. Dunn; cost, $3,000; limit, April 15, 1888; filed Dec. 31, 1887; signed Dec. 16, 1887; filed at request of said architects; amount of bond, $3,000: sureties, M. Joost and C. S. Holmes.

1st payment, $700, to be paid when frame is up; 2d payment of $1,000, to be paid when brown coat of mortar is on, and also outside finish; 3d payment, $500, to be paid when house is completed and accepted by architect; 4th payment, $800, to be paid 35 days after completion and acceptance by said architect.

Provided that should said contractor furnish to said owner satisfactory proof that the building is free from lein, the last payment shall be due upon final acceptance of the work by the architect.

Seventh and Stevenson. Alterations. Owner, A. Loisbach, architect; Huerne & Everett; contractor, F. Buckley; cost, $2,975; limit, 55 days; signed Dec. 27, 1887; filed Dec. 28, 1887; filed at request of architect; amount of bond $3,000, sureties, O. J. Prestor & J. J. McKinnon.

1st payment, $2,600, when half of the work is done, according to architect's estimate; 2d payment, $5, 00, to be paid when completed, tried and accepted; 3d payment, $2,000, to be paid 35 days after completion.

Mission near Twenty-third. Plaster contract of two 2-story frames. Owner, Ed. Stoetzer; architect, H. Geilfus; contractor, Hunteman & Harper; cost, $1,100; limit, 75 working days from date; signed December 29, 1887; filed Jan. 3, 1888; filed at request of architect; amount of bond, $1,100; surety, R Tiernon.

1st payment, $435, to be paid when the brown coat is on; 2d payment, $435, to be paid when white coat is on, all cementing is done; 3d payment, balance, to be paid after entire building is completed and accepted by architect, $430.

Mission and Twenty-third. Carpenter's contract of two 2-story frame buildings. Owner, Ed. Stoetzer; architect, H. Geilfus; contractor, B. Knaus; cost, $5,560; limit, 75 working days from date; signed, Dec. 29, 1887; filed Jan. 3, 1888; amount of bond, $3,000; sureties, John Coop and G. H. Morrison; filed at request of architect.

First payment, $1,000, when frame work of building is up; 2d payment $1,000, to be paid when buildings are enclosed and roofed; 3d payment, $1,000, to be paid when the floors are laid and partitions are set; 4th payment, $1,000, to be paid when all outside work, yard, fence and porch work is completed; 5th payment, $1,000, to be paid when the entire inside finish is on, doors, windows and blinds are hung; 6th payment, $1,430, to be paid when the entire building and works shall have been finished and completed and accepted by the architect; 7th payment, $2,145, to be paid 35 days after completion and acceptance by architect.*

Scott and Washington. One-story frame and basement. Owner, J. J. Driscoll; architects, Copeland & Banks; contractor, J. J. Dunn; cost, $3,000; limit, April 15, 1888; filed Dec. 31, 1887; signed Dec. 16, 1887; filed at request of said architects; amount of bond, $3,000: sureties, M. Joost and C. S. Holmes.

1st payment, $700, to be paid when frame is up; 2d payment of $1,000, to be paid when brown coat of mortar is on, and also outside finish; 3d payment, $500, to be paid when house is completed and accepted by architect; 4th payment, $800, to be paid 35 days after completion and acceptance by said architect.

Provided that should said contractor furnish to said owner satisfactory proof that the building is free from lein, the last payment shall be due upon final acceptance of the work by the architect.

Townsend and Seventh. Tinning and galvanized iron work. Owner, Mrs. M. F. S. Searles; architects, Moore & Schultz; contractors, Conlin & Roberts; cost, $5,230; limit, May 1, 1888; sureties, Robt. Mitchell and Thos Downing; amount of bond, $1,744; signed, Dec. 24, 1887; filed Dec. 27, 1887.

1st payment, $1,100, to be paid when roofs of easterly one-story warehouse and two-story factory are done; 2d payment, $1,820, to be paid when tin-smith work is completed and accepted; 3d payment, $1,310, to be paid 35 days after completion and acceptance

Townsend and Seventh. Painters' contract of warehouse, etc. Owner, Mrs. M. F. S. Searls; architects, Moore & Schultz; contractor, W. R. Eaton; cost, $1150; limit, May 1, 1888; signed Dec. 7, 1887; filed Jan. 3, 1888; filed at request of T. Hopkins.

1st payment, $550, to be paid when painting and glazing of the easterly one-story warehouse and of the two-story factory, together with the boiler, shop machine and sobler shops is done; 2d payment, $312, to be paid when entire painting and glazing of the above contract is entirely done, finished and accepted; 3d payment, $288, the balance, to be paid 35 days after final completion and acceptance of painters' contract.

Vienna Place. bet Folsom and Harrison. Dwelling house. Owner, J. R. Watson; architect, Macy and Jordan; contractor, Aaron E. White; cost, $3,100; limit, April 1st, 1888; signed, Jan. 5th, 1888; filed Jan. 10th, 1888. Amount of bond $2,000. Sureties, N. Ponish and F. P. Lateon.

Payment to be made as the work progresses to the amount of 75% of labor and material on the ground and worked into the building when said payment is made; the final and last payment of 25% of the cost of said building to be paid 35 days after completion of said building; it is understood that said building be delivered to owner free from encumbrance of any kind.

Van Ness Avenue and Fulton.—5 stores and two flats. Owner, Isaac Harris; architect, Geo. E. Yoekel; contractor, J. H. McKay; cost, $10,200; limit, April 1st, 1888; signed, Jan. 1, 1888; filed Jan. 3,

1888; filed at request of contractor. Amount of bond $6000. Sureties, Turner, Kennedy & Shaw and John F. Kennedy.

1st payment, $755, to be paid when the grading and the brick foundation are done, the frame is up and the rafters are put on; 2d payment, $1,000, to be paid when the building is enclosed and the roofs and platforms are trimmed; 3d payment, $1,475, to be paid when all flooring and tracing is done, the rough plumbing and gas pipes are in, when the sewerage is completed, the main cornice is put on and the first coat of plastering is done; 4th payment, $1500 to be paid when all outside finish is put on and primed, and all the plastering is done; 5th payment, $1500, to be paid when the inside finish is put on, stairsare completed, doors are hung and all inside finish is primed; 6th payment, $1500, to be paid when the job is completed and accepted by the owner; 7th payment, $2,5.5, the balance, to be paid 35 days after the acceptance of the job.

Washington and Dupont.—Stone mason contract. Owner, P. Salone; architect, S. Newsom; contractor, J. Pfeifer. cost, $1,200; limit, March 1, 1888; signed, Jan 3, 1888; filed Jan. 3, 1888; filed at request of said architect.

Payments are made at the rate of 75% of the work done, and balance when work is completed.

Washington and Dupont. Contract for the terra cotta work for a brick building. Owner, P. Salone; architect, S. Newsom; contractor, J. H. McKoy; cost, $4,775; limit, Feb. 10, 1888.

1st, payment, $1,200; 2d payment, $1,200; 3d payment, $1,175; 4th payment and balance 35 days after work is completed, $1,200, is to be paid. Provided all bills are paid for labor or materials furnished on the work, or provided releases are furnished owner for all claims against the building for work or materials ordered by contractors of the second part.

UNRECORDED CONTRACTS.

Buchanan and Sacramento. Six 2-story frames. Owner and Builder, Chas. Huikle; Cost, $30,000.

Clay and Devisadero. Additions. Owner, Marshall; Architect, J. J. Clark, Contractor, J. Adams; Cost, $1.500.

Castro, bet fourteenth and fifthteenth. One story frame. Owner, Mr. Foy; architect, M. J. Welsh; contractor, Chisholin & Bachle; cost $2,500.

Fifteenth, near Mission. 2-story frame. Cost, $1,600

Fulton, corner Webster. Tank House. Owner, National Brewery; Contractor, Hewe; Cost, $2,000.

Geary, near Stockton. 4-story brick building. Owner, J P. Whitney; Architect, Clinton Day; Carpenter Contractors, Mahoney Bros: Total cost, $150,000.

Hayes, corner Buchanan. Repairs to Church building. Cost, $1,500.

Larkin, near Pine. Alterations Owner, A. Patek; contractors, Moore Bros; cost $2,500.

Mason and Pine. Repairs. Owner, W. K. Bennell; Cost, $1.500.

Market, between 8th a d 9th. Frame building "Un re r." Owner, Chettain & Gilletti; Cost, $1,600.

Mission, near Eighteenth. One story frame. Owner, G. W. Johnson; contractor, McComas; cost $1,500.

Pierce, ne r Ellis. Additions. Cost, $1,-2,00.

Pierce, near Ellis. Addition. Cost $1,200

Pierce, near Turk. Addition. Owner, Pat Kane; Cost, $800.

Point Lobos and 33rd. Ave. House for Cemetary. Owner, Congregational Beth Israel; Architects, Salfield and Kohlberg; Contractor, W. S. Lott; Cost $1500.

Ridley, near West Mission. Additions. Cost, $2.500.

R. R. Avenue. Additions. Owner J. M. Soule; Cost, $600.

Stevenson, cor. 7th. Alterations. Owner, A. Lorsbach; Contractor, F. Buckley; cost, $3,500.

Stevenson and Willow. Two story frame. Owner and builder; J. Wilcox cost $3,500.

Sutter, near Broderick. Two-story frame. Owner, W. Grosse; Contractor, J. C. Weir; Cost, $6,000.

Sutter near Baker. One story frame. Owner, J. Rohr; contractor, G. G. Gillespie; cost $2,000.

Sutter, near Broderick. Two-story frame. Owner, C. Breyfuss; Contractor, J. C. Weir; Cost, $6,000.

Seventeenth and Noe. Two story frame Owner, John Howatt; contracter, G. G Gillespie; cost $3,000.

South Broderick, bet fourteenth and Ridley. Two story frame. Owner. John Dixon; architect, A J. Barnett; contractor, T. Sullivan; cost $5,000.

Turk and Larkin. Seventeen 2-story frames. Owner, Mayre; architect, Smith; contractors, Gray and Stever; cost, $30,000.

Twenty Second and Treat Avenue. Two story frame, Owner, Metson; architect, M. J. Welsh; contractor, Chisholm & Bachle; cost $4,000.

Valencia and Twenty Sixth. Three story brick building. Owner, E. Hecht' Architects, Macy & Jordan; Contractor Riley & Losne; Cost, $100,000.

Webster, near Sutter. Repairs. Owner, S. G. Smyth; contractor, C. B. Kimball; cost, $3,200.

Webster. bet. Bush and Sutter. Additions to Six houses; Owner, J. H. Smyth; Contractor, C. B. Kimball; Cost, $4,000.

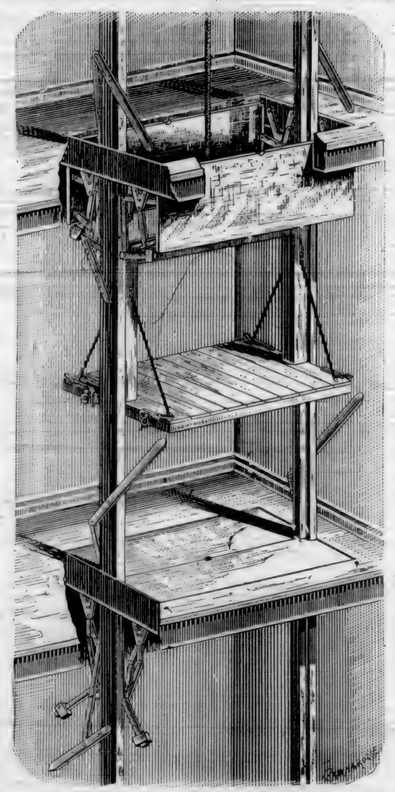
THE PAGE

Automatic Fire Shutter Co. of California.

The Best Automatic Fire Shutter Known.

INCORPORATED APRIL 29TH, 1887.

Manufacturers Under United States Patent of the Automatic Shutter.



ADAPTED TO PASSENGER AND FREIGHT ELEVATORS,

For Protection from Fire in Elevator Shafts, and from Liability to Accident.

PATENTED MAY 10, 1887.

Now in operation at 22 and 24 Jessie St., and 327, 329, 331 Sansome St., S. F. Call and examine the same.

The cut represents a freight elevator, showing two floors of the building. The elevator platform is represented as ascending, having passed through the hatchway of the lower floor. The shutters below the elevator platform have just closed level with the floor, completely and firmly closing that hatchway. The shutters of the second floor are next being opened by the ascending elevator platform, and after it has passed through, these close automatically, in the same manner as seen at the first floor. In the descent of the elevator platform, the shutters open below as it approaches the hatchway, and after passing through, they close again firmly and completely. Each shutter opens and closes automatically as the elevator passes, and are so counterbalanced as to offer no resistance to the ascending or descending platform.

H. W. SEVERANCE,

Manager and Agent,

Office, 219 California Street, San Francisco, California.

Lumber Market.

At a late meeting of the Lumber Exchange the advisability of increasing the retail price of lumber was the subject of much discussion, but upon vote it was decided to make no change in the schedule. The prices below are those ruling Dec. 1, 1887:

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4 and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. &G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G, Beaded, under 7 feet	24 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1¼	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ½x3, per lineal foot	01
Nails, for 10 d	2 90
Lime, per bbl	1 40
Cement per bbl., according to brand	$2 50 to 4 50
Brick, per M	$6 00 to 11 00
White lead, per lb	06
Linseed oil, 50 cents per gallon in bbl, 2½ cent additional for boiled.	

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5,00 by mail, prepaid.

FOR SALE AT THIS OFFICE.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 2

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO., No. 240 MONTGOMERY ST., Rooms 11, 12 and 13.

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OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	Per Square	$ 2.50
Back Cover, Outside, Each Insertion	do.	2.00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.0 0
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, FEBRUARY 15, 1888.

The Editor's Return.

The editor of this Journal has returned from his four months' trip to the East, and hereafter will attend to the editorial management.

Scarcity of Draughtsmen.

Already has the demand for draughtsmen begun. We must admit our inability to fill orders. No competent men are to be had in this city. There are a few floating around, but they are not of that steady disposition required by an architect.

Eastern young men who are thoroughly proficient can find no better field than California. Work promises to be plenty during the entire year. We will cheerfully answer all communications.

ENCLOSE STAMPS FOR REPLY. This announcement is necessary. Last year, more than one hundred letters were received, some of them from England, desiring information on the subject matter, and almost, without exception, we were expected to give our time, to answer letters, and pay the postage besides. This, in future, we must decline to do, and unless a stamp is enclosed for a reply, we will not answer letters.

A Welcome Visitor.

Thos. E. Hill, editor of *Hill's National Builder*, Chicago, is on a tour to this coast. He paid this office a visit, and we were pleased at his remarks in regard to the progress of San Francisco Architecture. He has promised to prepare a paper to be read before the Architects of this city. Due notice will be given of time and place of meeting.

Bound Volumes.

A few bound volumes of 1887 are now to be had. The number is very limited. A copy will be sent to any address upon receipt of $2 50.

San Francisco Chapter American Institute of Architects.

The regular meeting of the Chapter was held on Feb. 3d, in the rooms of the Art Association. President Geo. H. Sanders presided. The following members were present—G. H. Sanders, G. H. Wolfe, J. J. Clark, A. Pissis, R. H. Daley, J. Gash, C. J. Laver, H. T. Bestor.

R. H. Daley, as Chairman of the Committee on Memorial resolutions, reported that at a meeting of the Committee, an appropriate preamble and resolutions had been prepared, and the same suitably engrossed. It was before the Chapter for adoption. On motion, report was received and adopted and the Committee discharged with the thanks of the Chapter.

The discussion was then renewed in regard to the advisability of the Chapter having a "*Book of Registry*" to contain the names of responsible and competent mechanics in the various trades pertaining to the building interests.

Mr. Gash took a favorable view of the proposition and thought it best to have a register containing the names of the various contractors who were proficient in their calling, so if any architect wanted a competent man, he could find his address by consulting the registry. A good man would take pride in having his name placed where it would be seen by the principal architects of the city.

The President remarked that he had called the attention of his partner to the proposition, and it had met with a favorable reception.

Mr. Daley inquired by what process would a name appear on the register—ballot or recommendation?

Gash replied that names would appear as they received the endorsement of the architects belonging to the Chapter.

A discussion ensued in regard to the formality by which names would appear in the book.

Mr. Pissis said, he had not, as yet, found any necessity for such a book, even if one was in existence. The good contractors would not want their names there, as they generally had all the work they could do. It would simply be a scramble amongst the poor and incompetent men to have their names appear where they would consider it beneficial to themselves.

Mr. Daley thought that the members would be placed in a delicate position. Some architects would heartily endorse a particular man, while others, would find serious fault with he same-party.

Mr. Clark had studied the matter a little and thought the best way was to have a "*Trial Book.*" A name endorsed by an architect, was to be placed in the book. Then, if after a certain period, say a month, no fault was registered against the name, then the name was to be entered in the "*Registry.*" By this means, a judicial investigation, as it were, would be made of each name.

On motion, a committee of two were appointed to consider the whole matter. J. J. Clark and John Gash were named as such committee.

John Gash then read a paper on the subject—"*The circle as a factor in Architecture.*" It was received with applause and a vote of thanks tendered the reader.

Mr. Sanders vacated the chair and gave a history of the working of the various classes connected with the Chapter. The principal reason of satisfactory progress not being made, was the fact that no suitable place of meeting could be had. The students should have a large room where they could have models, instruments, papers, etc.; without these no class can be successfully conducted. Two nights and one afternoon each week ought to be devoted to the classes. During the past month in company with another teacher, he had visited various buildings searching for suitable rooms, as yet, however, unsuccessfully.

On motion, it was decided that the Chapter as a whole, be appointed a Committee to secure rooms for the use of the Chapter and students.

Adjourned.

TEN CENTS does not seem to amount to much as it rattles around in your pocket, but sit down and figure up whether it will pay you best to buy two glasses of beer, or two instructive papers.

Some Hints on Building and Estimating.

*From "Hints and Aids in Estimating," by F. T. Hodgson; Industrial Pub. Co., N. Y., as printed in *Builder and Wood Worker*.

The rules known to architects, builders and contractors, for an approximate estimate of buildings by cubing the quantities, are of little services to beginners, unless they possess an intimate knowledge of the different classes of buildings and their values, and can make the proper allowances for extra charges to be added for costly material and enrichment, all of which have to be taken into account. It is always the safer way to take trouble and time in fully preparing a statement in brief of details, both of work and material, when making an estimate, then omissions will likely be noticed and adjusted.

It must always be borne in mind that it is not the mere wall, rough carpentry, plastering and roofing that makes the great bulk of the cost of a building, unless one of a very plain description. It is the decorative part and interior finish and numerous small, but expensive, items that fill up the bill.

In the first place, there should be a design of the building, elevations, plans and details; and no proprietor, builder, or contractor should begin work until these are supplied; for building without a plan is like sailing a ship without a rudder, and is sure to end in trouble and dissapointment, both to contractor and owner. After a plan is agreed upon, and the contract signed, no deviation should be made, as very often what may appear a trifling matter to the owner, may involve so many changes in other parts of the building, as to be more costly than serviceable.

After the quantities are taken out, and written down in the form already given, and the prices current for material and labor in each particular added—the prices being for the completed work, as, for instance, the price of a door should mean the cost of the door, frame, casings, architraves, locks, hinges, mouldings, fixings and hanging complete, including the painting. By adopting this system the estimator will know that each item is complete, and it will almost be impossible to err in the final result. When all the items are written up, and everything is known to be entered, the totals should be made up, and 20 per cent. added to cover contingencies.

It is convenient practice to those unaccustomed to taking out quantities, to note down on the plan of each room the quantity of plastering, cornice, flooring, wainscoating, windows, doors, blinds, etc., contained therein, and abstract afterwards the different items under their proper headings.

The following is a good form for an estimate. Use foolscap paper, and rule the same as this:

Quantities.	Description of Work.	Price. $ cts.
300	Yards, cubic, excavating for foundation walls, drains, posts, etc., etc., and removing stuff	
40	Toises rubble masonry in foundation walls, including all materials set in mortar, pointed, including moving rubbish	
84	Thousand bricks laid in mortar, in walls and in partitions, joists struck, including setting of all walls, plates, boards and offset timber	
3001	Feet lineal, of flooring joists, 10x3, fixed complete, with all trimming pieces, etc	
16	Squares of 1¼-inch matched flooring, laid complete, including nails	
14	Door, 3x7 feet, 2 in. thick, in four panels, moulded on both sides with 7¼-inch moulded architraves, casings, frame and threshold complete, including 3-inch butts and lock worth not less than 80 cts.; hung and trimmed complete	
12	Window and frames, sashes 6 ft. x3 ft. 4 inches in four lights. Frames to be prepared for weights, sashes to be double, hung and furnished with proper window locks. Glass to be ———— brand and well glazed	
12	Pairs of inside shutters or blinds, to open in two flaps or each side, moulded soffit, sills, etc., hung complete	
1	Double windows, etc	
12	Summer blinds, etc	
80	Yards of stucco cornice	
106	Yards of plastering, three coats hard finish, including lathing and all materials	
7	Centre pieces	
2	Stucco brackets in hall	
2	Flights of stairs, including rails, newels, balusters, brackets, and all complete	
20	Squares of shingling, etc., including all materials	

The foregoing description will be a guide for all other items. After making use of these forms, they should carefully be laid aside for future reference.

General Memoranda of Items for Estimates.

Excavations, per cubic yard. Ascertain the quantity of earth to be excavated for foundation walls, drains, fence posts, etc.

Foundation Walls, per cubic foot, 87 feet English, to the toise of masonry. Find the number of cubic feet in walls and footing courses, deducting all openings over 9 feet in width.

Tile Drains. Calculate the number of lengths, bends and junctions required; add cost of laying and connecting, including covering in, etc.

Galvanized Iron and Lead Pipes. State the length and diameters of all galvanized iron pipes necessary, and the weight of lead pipes per yard lineal, together with all traps, overflow pipes, and cocks necessary.

Water Closets. If water closests are to be provided, state how to be fitted up, and cost.

Bath. State description of bath, if of galvanized iron or other metal, including fixing in frame and casing.

Brick Walls, per foot cube. Twenty bricks (of 8 inches x2¼) are generally allowed to a cubic foot. Find the number of cubic feet in the walls, division walls and chimneys; deduct all openings; measure all chimneys as solid.

Carpentry. Under this head commence with the heavy timbers, such as flooring joists, roofing, wall plates, lintels, bond timbers, wood-bricks, insertions for cornices, projections for galleries, studding for partitions, furring for ceilings, skirting, trimmers, etc.; framing for stables, fencing and posts.

Joiner's Work. This will include all floors, doors, windows, blinds, shutters, casings, base, and fittings of every description in wood work; all the different sized doors and windows must be kept separate.

Stove Pipe Rings. State number.

Mantle Pieces and Grates. Number mantle pieces and grates, and state price; provide for hearth stones and fixings all complete.

Closets. State quantity of shelving required, cloak nails, hooks, etc.; omit not to calculate for plastering and skirtings.

Pantry. Describe the fitting up of pantry, wheather with cupboards or open shelves, and state if with sinks, and cost.

Kitchen. State how to be fitted up with shelves, pantry, closet, etc.

Bell Hanging. State number of bells, fixed complete.

Gas Pipes. State number of lights in each room, etc.

Staircases. Describe the different stairs and their length, width and thickness; state the kind of balusters and their numbers, also newels; give the dimensions of hand rail.

Roof. Describe the kind of roof; whether metal and what kind. If slate number of piles of felt under it, gravel, etc.

Gutters and Conductors. State the width of gutters and how to be lined, and also length and direction of gutters.

Outside Porches. Provide for all double doors and constructions of porches as described in specifications, as well as all steps leading thereto.

Fences. State the different kind of fences and take a price at per lineal foot, including gates and everything necessary to complete them.

(TO BE CONTINUED.)

About Lending Tools.

"Idler in the *Manufacturers' Gazette* has a few words to say about lending tools, which we deem worthy to be passed around. There is no practice that deserves condemnation more promptly and severely than this.

"Charley" says: "Never lend a tool to a man who gets less than $2 per day, for men who are not worth that money are not supposed to understand the use of the tools."

"Charley" also says: "Don't lend tools to a man who gets over $2 per day, for that man is able to buy tools of his own."

These rules are worthy of careful consideration by every mechanic. There is nothing more aggravating than the tool-borrowing man, who poses as a brother workman. There are cases where it is right to lend tools, but it is not right to find tools for "wood-butchers" and "pick-axe" mechanics, who steal into a trade of which they know little or nothing.

A man who has brains enough to make him a good mechanic, always takes pride in having a complete set of tools for the work he expects to perform, and it is not right for him to find tools for every "bummer" who may chance to get 'longside him a job.

The monkey wrench should not be excepted, or placed upon the "lending list," neither should the hammer or cold chisel be found there.

It is a good policy to lend a decent man tools until pay-day, especially when the man in question has come to work on a strange job, or on work different from what he has been accustomed to.

If after pay-day this man has purchased none of the tools he needs, it is safe to set him down as a "beat", and never lend to him.

It is true that "circumstances alter cases," but they never alter the "free-lunch" tool fiend into a worthy mechanic. The only way to deal with him is to "say no," and then "stick to it."

Editorial Correspondence.

Boston, January 7, 1888.

After nearly three weeks spent in New York, the great emporium of American enterprise and active life—arrived in this city of crooked, criss cross, irregularly defined, and especially in the old quarters—narrow streets. To one accustomed to the comparatively straight and systematic lay out of highways as found in San Francisco, Sacramento, Salt Lake City, Denver, Chicago, Philadelphia and other cities where some attention has been paid to right angles, equilaterals and parallels, the twists, turns, curves and-all-around-the-compass directions of streets in Boston becomes confusing.

Commonwealth Avenue with its great width, lined along each side with costly and substantial residences, more or less elegantly finished and furnished, but all of the kind in which the outlay has been unstinted, and the beautiful and esthetic sought after and utilized—is one the most striking reliefs from that contractedness everywhere to be found in the Boston of one hundred years ago. Columbus and other avenues, and the extension of Tremont and other streets made to conform to the more modern idea of widths and straightness, are admirable improvements in the highways, and goes very far towards relieving Boston of the reputation long attached as being the city of all cities for crooked streets.

The march of improvments are visible everywhere and on every hand in and around this city.

The numerous modern styles—five, six, seven, eight and ten story brick and stone edifices of recent construction, many of them occupying sites of former antiquated structures, to be seen in the business sections of the city—the filling in of the "Back Bay" district for building purposes; the laying out of scores of miles of new, and the extension—and as much as practical and possible—widening and straightening of old streets and avenues, and the erection of thousands of new buildings, to meet alike the wants and comforts of those who obtained their bread through labor and toil, and those whose pathways through life, dame fortune in her awards for merit and skill in business pursuits or as often—her freaks of bountous gifts at random thrown into hands unsoiled by any honest effort to earn the gold with which their paths seem to be lined, and to whom every luxury of need or purest fancy comes at the bidding, clearly indicate a growth, expansion and enlargement of the most gratifying character to the people of the Hub, and no one need be surprised at any hurrahing or exultation that may be heard from this section of the country or its people.

When size, growth and prosperity of birth place and ancestry becomes the topic of the hour, and when the boulevards, parks and drives contemplated to be made and built along both shores of Charles River shall be completed as now projected, it may be expected that the people of this city who have not traveled widely, will then assert and believe that Boston is a city unparalleled and unequalled by any other upon the American Continent. The Boulevard project, when carried into effect, will certainly be a grand feature in providing miles of pleasure grounds for man and beast, along the borders of the river named, and form a picturesque view of great beauty on both sides of the water.

16th. The appearances outdoors to-day are very wintry. There was snow on the ground upon our arrival in Boston, and there have been several falls since, but none more than four to ten inches up to date on an average in depth, neither of which remained in its glory long, as in every instance a gentle shower of rain wound up the ceremony, and melted away much of the snow, greatly to the disgust of those who had prepared themselves with gingling bells, fine horses, handsome sleighs, elegant robes and all the prerequsites to a pleasant ride, including "Forms Devine" wrapped in mantles and furs, defying winter's fiercest blast.

Such a thing never occurring in California, it seems a strange sight to see brick buildings under way, with their unfinished walls covered and the structure deserted—not a man to be seen anywhere, and the only noise to be heard—the bleak winds whistling through the appertures and among the timbers and scaffolding. The sigh—O, for the "glorious climate of California" was natural and earnest.

Have seen and conversed with a goodly number of Boston architects, and have found them all pleasant, sociable gentlemen, ready to impart all desired information, and to offer their personal attention in any services asked of them. As a rule, all the offices show signs of activity, and architects speak encouragingly of the prospects for the year for this city and its approximities, and some are so confident as to predict that years of splendid prosperity will follow. They report favorably upon the responsibilities, methods and practices of contractors engaged in the building business, as a rule the tricky and untrustworthy being the exceptions. Consequently architectural and building pursuits in this section of country are rendered far more pleasant, than in cities and places where the pre-eminent thought and incentive to action is to make money, with every sentiment of fair dealings and sense of honor between man and man, held subserviant to the possibilities in sight.

Six hours visitation and inspection of, and through the more prominent of *Harvard College* buildings, Cambridge—Mass. afforded an instructive and pleasant passtime.

The newer of the college buildings conform to the more modern ideas in architecture—press brick with stone trimmings—the stone being made a prominent and expressive feature.

In this connection the brick manufacturers' art becomes an important factor, as bricks are made in all manner of shapes and forms, serving very effectively to express many of the prominent details.

Messrs. Burnham & Root have adopted this style for the San Francisco *Chron cle* building, and while there is nothing new in the *style* adopted, as compared with brick structures in Chicago, Baltimore, Philadelphia, New York, Boston, etc., the gentlemen named have enjoyed so large and extensive a practice in that class of buildings, that something unique and excellent may be expected in the details of the edifice.

The interior of *Memorial Building, Law College, gymnasium* and others of the Havard College buildings are very handsome in many of their details and general effects—and an additional beauty met the practicle eye in the character of mechanical execution visible throughout. The contrast between the newer edifices, and those first erected for college purposes, very clearly illustrates the progress that has been made in the science of architecture within the past forty years. The evolutions which have rolled in upon the professions so many and varied changes in conception and delineations, have also modified and changed constructive science in a thousand ways. Many things in construction done and practiced at the present time, and found to be improvements upon old methods, and amply sufficient for the purposes for which they are intended, were unknown in architecture and construction a few decades in the past, or if known and comprehended, were discarded by the architects and builders of former times; and noting the changes in their endless rounds as evolved within the past one-third of a century, who can tell what yet may come to pass, alike in architecture and building, as well as all other arts and sciences.

Leaving the college grounds, a position in front of the old home of the immortal Longfellow called up many tenderemotions—thankfulness that heaven had given to our beloved land one so good and great as he, to be known and recognized the world over as one of the great poets of the age, and sincere sorrow that he and all such human gems could not remain in life with full vigor of body, mind and intellect, far beyond the allotted period of man's existence.

Thence with feeling of patriotic reverence, standing beneath the unleafed branches of the *old elm* tree, where the immortal Washington assumed command of the armies of the feeble few in number, but great and grand in patriotism, valor, purposes and achievements, the impression came with force that the spot whereon we stood was hallowed ground, and that when the people of these United States shall forget or fail to recognize the sacredness of those places memorable in our country's history, and protect and preserve with earnest care, every fibre to the utmost and last possibility, that bears the impress to any extent, of those patriot fathers who imperilled and sacrificed their homes, their comforts and even their lives to rear the Alters of Liberty—free and glorious in every part, and far greater than was ever before enjoyed by mankind, that then the leaves of the tree of liberty should begin to wither and fall, and the oppressions and manacles which our forefathers severed and destroyed return upon an ungreatful and forgetful people

Returning to Boston in the face of a cold bleak wind, with the thermometer below zero, and the ground covered with snow eight or twelve inches deep, was an experience that contrasted vastly in favor of the climate of California. The beautiful snow and fields of crystal ice are all very well in poetry, and even in experience when the experience is tempered withall the antidotes of warm clothing, furs, robes and wraps—blazing fires or heated fumes from furnaces through pipes, registers, etc., but not half so delightful to those unused to the severe chills of winter's bitterest cold, whose breath comes from below zero—when subjected to the severity of blasts so cold and piercing that the blood seems to chill and crystalize in the veins through which it is intended to flow.

As the result of diligent inquiries and investigation all along

the line of travel, from San Francisco to the north-western boundaries of the State of Maine, in reference to matters pertaining to building and fire laws and ordnances, we have found those in operation in Boston to be more comprehensive, well defined and complete, than those of any other city passed through during the journey from the Pacific to the Atlantic Coasts. The system of building and fire laws operating here, including the *Fire Department* in all its specialties as such—extinguishing fires and performing all acts special to the department work. Second—a "*Building Inspectors Bureau*," with a chief inspector, deputy inspectors, secretaries, etc.,—all of course under the control and directions of the Chief of Bureau. This department controls all matters pertaining to the erection, alteration and repairs of buildings, granting permits in either cases, without which no one is allowed to build, alter or repair buildings. Plans in all cases of intended improvements must be submitted for inspection at this office, to be criticized by deputies who possess all the advantages to be derived from a mechanical education and experience in practical building, and therefore fully competent to adjudge and pass upon the merits or demerits of a set of plans, and recommend or disapprove the submittals, subject to revision by the head of the department, whose sanction and approval must accompany every "building permit" issued. This department controls all that pertains to building construction, and full and complete record is kept of every building erected since the organizaton of this department, and of each and every alteration or change made in connection therewith. The library of registry and record is very large and daily increasing, and the written reports that each deputy is required to file daily, fill scores of cases and places of custody. The plumbing department is also under the same jurisdiction, and a corps of competent plumbing inspectors supervise all in that line: so that, while the fire department is in full control over all fire matters, the construction of buildings is placed in hands and under regulations and supervision of such character that the best possible results are attained without any jarring or conflicts, each pursuing the even tenor of its way, and good management seeming to prevail in all the departments.

January 20. The last few pages of this manuscript were pencilled at the old family home of the Emerson family, situated in a beautiful—for Maine—small valley, the boundaries of which forming in part the dividing line between the States of Maine and New Hampshire.

Snow, snow and ice everywhere, as far as the eye can reach, and the winds wafting the snow in almost blinding drifts in the faces of those compelled to be outside, piling up here and there, while through every crack and crevice, however small, the currents force the particles of winter's white mantle in piles within dwellings and places designed for shelter and comfort.

To morrow morning at break of day, sleighs will be awaiting at the door to carry us nine miles away to the cars that will take us back to Boston. The ordeal will require all the courage and daring possessed by three stray San Franciscians to brave the storm, and battle with the fierce winds, cold, and drifting snow that is sure to be encountered—still we hope to survive.

25. Have reached the Hub and find it still stinging cold, but nothing in comparison with the murderous blizzards that have swept over the north-western and other sections of the country, carrying death and sorrow in their paths. But the date, and the dangers of snow storms and blockades on the mail routes remind us that to ensure receipt of this in time for the February issue, it should be consigned to the mail box without further delay; with this only added, that our visit of more than three months from San Francisco to Maine, has been full of interest and pleasure, with not a single event so far occurring to mar or impair the happiness enjoyed. All arrangements to that end being completed, we shall now wend our way homeward as rapidly as possible, and prepare the next *Editorial Correspondence* in the city of San Francisco.

A Western Magazine.

The January number of *The West Shore*, though somewhat delayed in publication by reason of its change of form and increase of size, has reached us, accompanied by an elegant oleograph in nine colors. This is a splendid marine view, showing a large ocean steamer crossing out to sea from the mouth of the Columbia river. The magazine itself is a specially fine one, having numerous illustrations tinted in the pages amid the reading matter. As usual it is full of information about the great Northwest. Published by L. Samuel, Portland, Oregon, at $2 50 per year.

"The Circle as a Factor in Architecture."

Paper read before the S. F. Chapter A. I. A. by Fellow John Gash.

Mr. President and Gentlemen:

I have taken for my papers this evening the "Circle as a Factor in Architecture."

The term Architect is taken from the Greek Architection, meaning a master builder and is known to be used as early as the days of Heredotus.

It is reasonable to suppose that it was the first of arts, since men preferred habitation to dwell in, before the need of the ornaments which the other fine Arts may add.

While its origin was as simple and rude as man himself, yet as the dawn of civilization began to illuminate the human mind, so did it develop with it the first and leading one of the fine Arts.

Of the divine origin there can be no doubt, as animals inferior to man bear testimony thereto, by the display of the instinct they show in their little habitation. The birds adopting the "circle" as their universal style and the bee the Heragon. That man should adopt the Circle as a factor in Architecture would be reasonably expected and that it should hold the first place in the Geometrical laws that were afterwards applied to the use of stone and wood for building purposes giving as the poet says to "airy nothing an existence." And here I would say that it is only when those laws are observed by the Architect that his work may be considered as belonging to the fine Arts.

However skillful the sculptor may be, or powerful the painter may be with his brush, yet if the subject selected is not of beautiful form and symmetry, the eye is not satisfied, and the efforts of the artist is in vain, hence the Architect must ever bear in mind the necessity of the true application of the circle, square and triangle, in his work. Amongst the Ancients the circle was a very prominent factor, not only in Bumlany, but in their religious customs and superstitions, and that it would be so, might be inferred from the solemnity with which the Eastern nations welcomed it, the most glorious of all conceivable or inconceivable objects, the *rising sun*, and as he lifted his head above the Eastern Horizon, and as each portion of its outline developed itself, filling the human mind first with awe, then with joy and gladness as it cast its light and heat all around, making nature itself laugh with joy, and as the Monarch of the day travelled on his course, the grand refrain of nature went after until one grand girde of joy encompassed the whole earth. Little wonder man should take so beautiful a form, as a factor in his work and make it the emblem of "beauty and strength" as shown in Architecture more especially.

That this intuition was universally observed in building, may be manifestly seen in the Ancient Architecture of Egypt, India, Persia, China, Greece and Rome, but while the circle may be said to be applied in the grand plans for buildings in the above countries, it remained for the Roman Architect to make the circle the factor of classic Architecture and the stepping stone of building to be classed as the foremost of the so-called "fine Arts."

While the Architect of Greece may take the tree as a factor for the columns of its temples, she can nevertheless lay but very small claim to the circle, having more a love for the Ellipses as may be seen from the ground plans of many of her public buildings and the general profile of the molding employed in her ornamental decoration.

To Roman Architecture are we indebted for the "Circle as a factor in architecture" both in the ground plans, columns, moldings, and general proportions. Taking a circle for the outline of the length and height of the building and regulating therefrom the height of its columns, taking the diameter of one of these for a module or unit of measurement, every height of column, its capital, front, cornices, and every member thereof, being some portion of the diameter of the column which is used as a unit of measurement. To the researches of Gwilt, Sir William Chambers, Palladio, Vignoli and others are we indebted for those measurements, as taken from the Theatre of Marcellus, The Temple of Concord, Colloseum, The Roman Pantheon, The Temple of Bachus, The Arch of Tetus, and the Farnese Palace at Rome. In each and all of these you will see the semi-circle and quadrant of a circle the factors employed in various proportions with the fillet forming the cornices and facades of the above buildings.

The diameter of the column being the unit of measurement, what is known as the five orders of Architecture is distinguished by the number of diameters in each order, the Tuscan being 7 dia, the Done 8, the Ionic 9, and Corinthian 10, and from these diameters the entire outline of the orders are measured.

It is true the Capitals and Entablatures are destructive and different, nevertheless the principal is the same and all based on the circle as a factor.

It is sometimes foolishly remarked how singular it is that a new order is not yet discovered by the American Architect.

It may just as well be said why does not a new system of calculation be discovered, but just as long as the nine digits are adopted as the basis of calculation, so long with the present system of calculation exist and so it is in Architecture, so long as the circle remains as the factor of assign, so long with what is known as the five orders exist. While classic architecture thus used the circle as its factor, it yet remained for Gothic Architecure to give it the soul like existence which it has, as may be seen not only in its moldings but in the ground plans, doors, windows, naves, aisles, spiresand towers of its building. The *semicircle* starting as some small river rising as if from the sands of time, and becoming a leading factor in what is known as the Norman style, as may be seen in Westminister, Winchester, Ely, Oxford and in fact in all churches and buildings of the 11th and 12th centuries. Nevertheless much earlier specimens of Architecture claim the semi-circular arch, examples of which may be found in Egyptian tombs dating as far back as the building of the Pyramids, the Arch of Cloacci, Maxima in Rome, constructed in the reign of some of her earlier irngs. The *semi-circle* wended its way into the 12th century and there known as the early English flowed on in every conceivable form that the genius of the architect could conceive, the pointed arch formed by the intersection of two circles with equal radius, formed what may be called the true Gothic Arch, the circular or rose window with its trefoils or three circles, the quatrefoil or 4 circles, the ball floor used as an ornamental molding, being a globe like figure with trefoil six rings in its face.

Perhaps the best example of this class of rose window is to be found in Lincoln Cathedral, York Cathedral, St. Ouen in Rouen and Strassburg Cathedral. Flowing o'er into the last half of the 13th century, what is known as the *decoration period*, the circle cuts a very prominent figure—more prominence being given geometrical figures in this period than any other, also the soft curvings of tracery like the winding of some mighty stream, softly curving and branching into numberless tributaries, so beautiful, does the tracery of this period blend one part of a circle into the other, that nature seems almost surpassed in beauty—St. Mary's of Chiltenham and others being fine examples.

The ever changing hand of time still varying in style, flows into the transition or perpendicular style of the 15th century by reason of what was called the Flamboyant style, of the last century introducing in its place, the square and rectangle style, the pine Gothic and Lancet Arch was a leading factor as may be seen in York Cathedral, Swinbroob Oxfordshire, the new College of Oxford and also Merton College. In the 16th century the Roman style was revived, intermixed with Gothic details and known as the Renaissance, and revivng the semi-circular Arch, the circular Dorne, the circular Apee, a marked feature of the church architecture of this period.

Thus you see the circle played a very marked factor in architecture and not only in that but in navigation and astronomy and it is the leading factor. By the use of the circle and the labors of Sir Isaac Newbon, Napier and others the navigation can as miuutely travel the pathless ocean, and by his quadrant locate the island he may discover with the same pression as an Architect would a door or window in a building.

In like manner the Astronom through the labors of Gallio, Hersith, and others so carefully the orbits of the heavenly bodies that the very day and hour of an Eclipses can be foretold hundreds of years ahead.

The great mathematician of the ages past have been found in the circle, no easy problem it being yet an unsolved question to find the exact ratio between its diameter and circumference and being a perfect figure in itself it plays sad havoc with the square and triangle and yet by ehe compass taking one extreme of the diameter of a circle, as center and the center of circle as radius and describing an arc joining the other extreme end of the diameter with the two points where the arc cuts the circumference you form an Equalateral trianglo inscribed with a circle. The sections of a circle by geometrical lines form man a very pleasant study nor only to the architect but to all lovers of geometry Fluids as well as solid bodies are under circular influence Quicksilver when separated from the ore and raised in smoky vapor, being finally separated, forms into liquid bodies, each particle of which is a globule in itself and water when separated into separate drops, form into globules in like manner. The pearly tear that falls from the eye drops in the form of a circle and as the poet beautifully describes it:

"The very law that molds a tear,
And bids it trickle from its source.
That same law preserves the earth a sphere
And guides the planets in their cource."

Wonderful figure without beginning or end, what a fitting emblem of Divinity itself.

Campo Seco Stone.

Winters, Cal., January 31st, 1888.

To the Publishers of The California Architect and Building News:

In the present (January) number of California Architect and Building News I see an article, headed "Campo Seco Stone," which attracted my attention in as much as I believe we have the same or something very similiar near Winters in inexhaustible quantity and very easy of access—the Winter & Ukiah R. R. will cut through a fine ledge of it. The road is already graded a few miles out of Winter, past or through the quarry. I consider it one of the best building materials extant—considering cost.

In 1861 the undersigned superintended and planned a house (farm house residence) for the old California Pioneer, John R. Wolfskill, Esq. He thought to build an *adobe*, but I prevailed on him to use the soft stone—so we called it here. Some said it would not bear its own weight, but I was satisfied that it would make a substantial house if properly constructed. I came to the conclusion from noticing the stone where it cropped out of the ground and had been exposed to the sun for many years, had become quite hard and in some instances had become parcially glazed over, similar to arch brick in a brick *kiln*. When it is first taken out of the ground (when it is damp) it will scarcely bear its own weight; it is so porous when it gets dry (which it soon does in our hot sun) it is not heavier than green wood.

When I commenced the house I knew but little about how to handle stone, and could find no one who knew any better than I did, so I had to study and experiment. I got a couple of brick masons to lay the stone, and had to use farm laborers in the quarry and to saw up the stone at the building. I got a cross cut saw, and set two men to work, but the saw soon got dull and I very soon found it would not do to file it every time it got dull, so I set my wits to work to devise "ways and means" to cut or *gum* the teeth. I made a pattern for a die and clamp and had a rough blacksmith to make them. In that way we got along very well. However, should I have another job I would go to the saw works and get a *soft saw*, they are just as good and I *think* better than hard ones, and they are easily gummed, and I would also go to a machine shop and get something made so the saw could be easily sharpened. We used up eight cross cut saws on the job. The house is 52 feet front, by 22 feet wide, with an L 22x33 feet, all two story high. The first story walls are two feet thick, and the second are eighteen inches thick; the partitions are twelve inches; the house is the most comfortable to live in there is in this part of the country; cool in summer and warm in winter; it is a non-conductor of heat or cold; is perfectly fire proof.

My great anxiety during the building of the house was in regards to the plastering. I was afraid the mortar would not cling or hold to the stone. When the plasterer got ready to commence operation I sent a man ahead of him with a water pot and had him wet the walls as wet as they could be made. The result was entirely satisfactory. The plaster stays better on than any house in this vicinity.

Twelve years ago Mr. W. came to me and asked me what I thought he had better do with his house, he said the mortar joints on the outside (where they were most exposed to the weather) were open and mortar had got out of some of them. I advised him to have it painted and *sanded* (after having it well painted up). He done so, and it looks as well to-day as it did the day the painter finished it. The house does not possess any architectural beauty. It was built a long time ago. I got the *study* from Ranlet.

If you can pick out anything in this communication that you think will interest the *readers* of the California Architect and Building News, all right; if not consign it to the W. B. I will cheerfully answer any questions, that I can, should any one wish to learn anything further. I should be glad to see *the stone* in use, I believe it can be got cheaper than brick and is much better for residences. When the walls are thoroughly dry, then paint as above. There is no damp. Any one who would take the trouble to come to our town and call at Mr. Wolfskill's ranch could see for themselves. Mr. W. takes pleasure in showing his house and orchard He has date trees in bearing and most everything else.

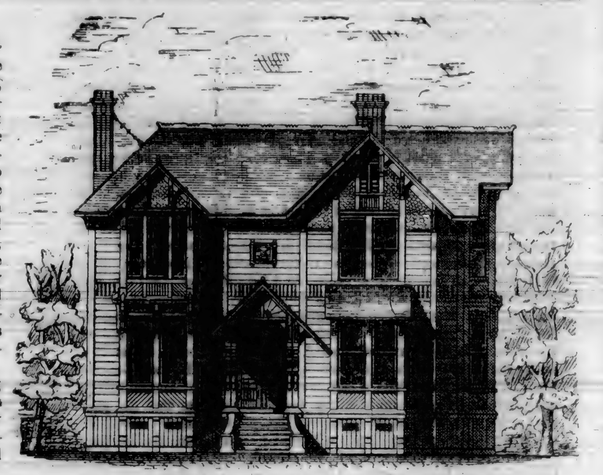
Respectfully,

T. D. Ball.

A Country Dwelling.

The principal object of anyone contemplating building is not only to have a symmetrical, attractive elevation, but to have the interior well arranged, and suitable to their wants and tastes. A building may have many projections, and look very neat and attractive from the outside, but it is often the case that when the interior is examined, the arrangement of the rooms, halls, stairs, etc., is so poorly designed that no person understanding the value of a convenient house would care to live in it. This difficulty is easily overcome by careful study, and judicious arrangement of halls, closets, sideboards, etc. The cuts on this page show the elevations and plans of a building especially designed for a country residence. To give full effect to the design, it should be built at some distance from other buildings, surrounded by tall trees and shubbery. One would at once notice its homelike and picturesque appearance.

The front entrance is protected by a projecting gable, supported by neat columns. The front doors are double and neatly panelled. The bay window is covered by a heavy projecting gable, and furnished with pilasters and panels. The house should be painted in parti-colors.



A COUNTRY DWELLING—SALFIELD & KOHLBERG, ARCHITECTS.

The rooms are all large, well lighted and with ample means of ventilation. Closet room will be found in abundance. No wash bowls are shown in the bed rooms, but they are so arranged that should the owner desire the same, there is desirable room for one in each apartment. The rear porch is so arranged that in hot days it can be used as a dining room. If another room is wanted, it can be easily had by making the kitchen two stories high, instead of one as shown.

Saltield & Kohlberg are the architects. Any information in regards to the plans given will be furnished by them.

Their office is at 339 Kearny Street.

The Marshall Monument.

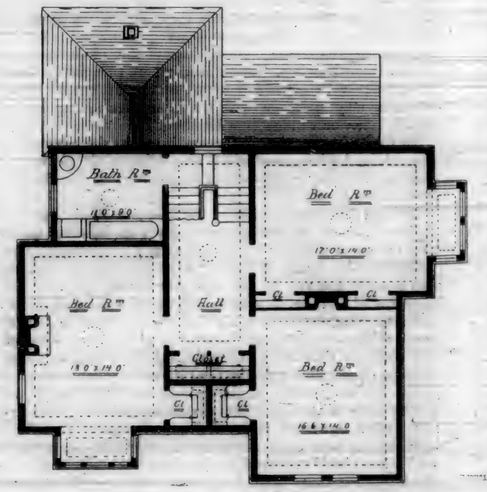
Miller and Pinkham have prepared a competitive design for the "Marshall" monument. The lower portion of the base consists of granite blocks one foot in height by fifteen feet square. On top of this is a similar layer of granite thirteen feet square by two feet in height, the corners projecting and sides leveled. On each projecting corner there is a bronze bear; while on the leveled sides is cut in large letters "Marshall." There is still another layer of granite one foot in height by six feet square, which supports the pedestal; four feet square by five feet six inches in height. The lower portion of the pedestal is finished with base and brackets; the upper with molding. The pedestal is polished and on each side there is a sunk bronze panel with the following inscription, and sketches: "Sutter's Mill, location of discovery." The "Great Seal of California" (while in the Godess' hand is held a wreath) "To the memory of Jas. W. Marshall, Discoverer of Gold in California." On the fourth his nativity, age and a historical sketch.

This pedestal is surmounted by a granite column cylindrical in form, sixteen and one-half feet in height, four feet in diameter at the base, and three at the top, finished with molded cap. Standing on this, is a figure of Marshall six feet and six inches in height. One foot is perched upon a rock, while his elbow rests on his knee and in his hand he holds a nugget, which the attitude of the figure would suggest he was contemplating.

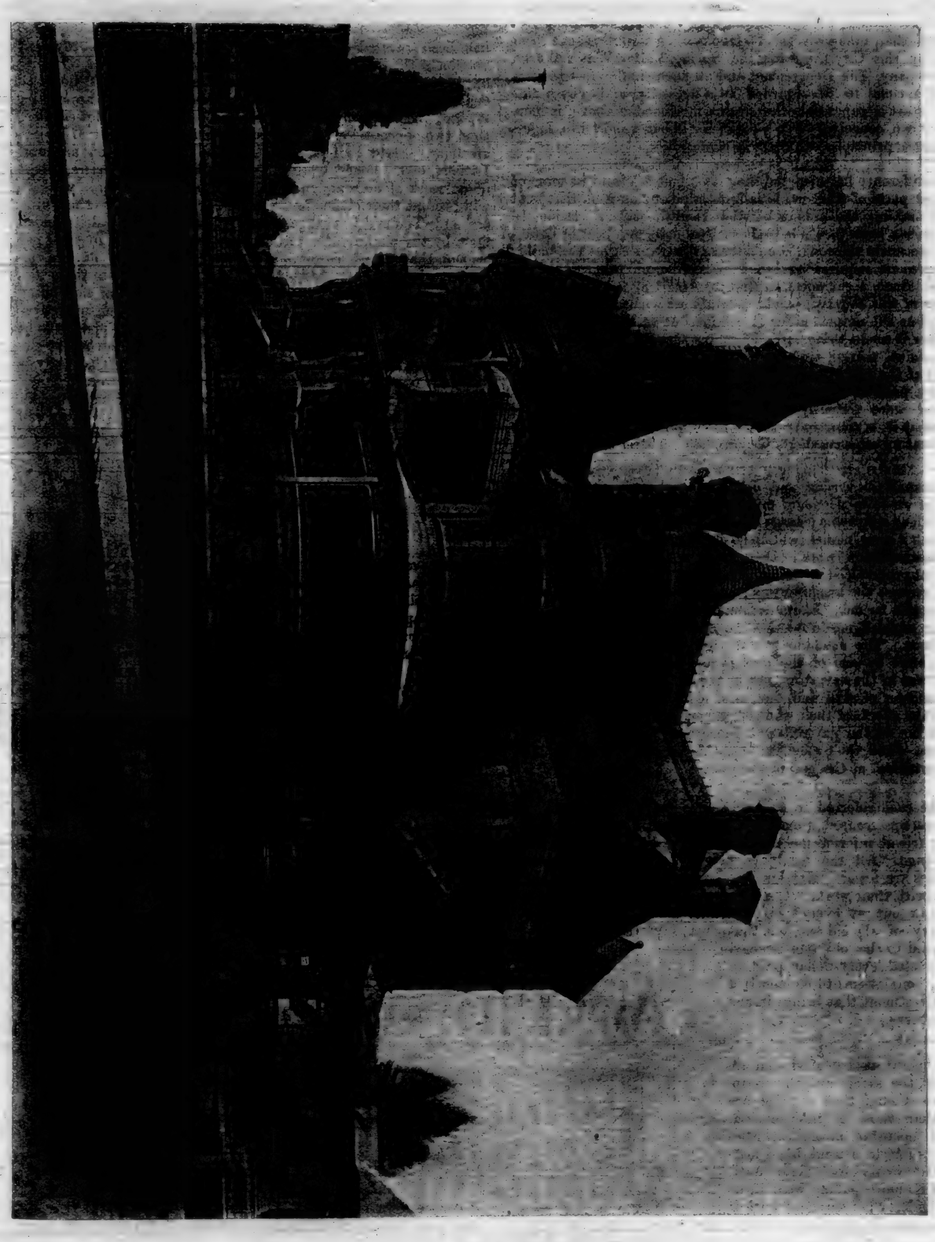
The height of the entire structure is thirty-two feet and six inches. The whole presents a very striking appearance, being of fine proportions, original in design and historical.

Weekly Building News, in connection with California Architect and Building News, Two Dollars per year.

FIRST-FLOOR PLAN COUNTRY BUILDING.



SECOND-FLOOR PLAN COUNTRY BUILDING.



A RESIDENCE IN SOUTHERN CALIFORNIA.

Another Reliable (?) Journal.

Another party has been found who intends to start a journal, one of the principal aims being to give a full and accurate report of all building contracts, recorded and unrecorded, etc. The prospectus claims that it is the only journal that gives such information. *This is a palpable falsehood*, and one that condemns the whole project, almost before it is placed before the public. For more than nine year the California Architect has been taken by the City Assessor, the Spring Valley Water Works, Gas Company, Fire Department and all such similar institutions. It has become to be regarded as a necessity, and why a man should start a paper flaunting such a falsehood as above, is more than we can conceive. We predict for it but a short life, unless its business principles are entirely changed.

The difference between building in America and in some of the older parts of the world is illustrated by an item that is at present making the rounds of the English papers. Some 16 years since a town hall was built at Rochdale, at a cost of $150,000. Recently the town council have discovered that the building at present requires thorough re-roofing and other expensive repairs. Such occurrences as this in America, at least in many portions of this country, would pass almost without notice, being accepted as the natural order of affairs, but on the other side of the water it seems things are different. One of the aldermen, on the occasion named, took the opportunity to denounce the contractors of the building, stating that they had scamped the work in every possible way, and measures by which they might be punished were seriously considered. The item in question concludes that it is monstrous that a town hall which was erected at so great an expense should require repairs after only 16 years.

Owners of expensive and delicate wood-working machinery too often waste by economy misapplied. Not long ago I visited an old friend who owns a large establishment. He was complaining about a new planer which he had lately put in. It would not do satisfactory work. It seemed to be balky. The superintendent pronounced it "no good," and it was left standing idle. At my request the machine was started and a specimen of work was brought to me. Examination of the work and then of the machine enabled me to remove the cause of trouble in less than a half-hour. The machine was all right. It is one of the best planers built by one of the best firms in the country, and the trouble was in the operators, not in the machine. The operators were not men of skill and tact, and every machine in the place showed the effects of their want of judgment. They were "cheap" men so far as the pay-roll was concerned, but they were very dear men when the owner made up his record of profit and loss and reputation at the end of the year.

* * *

In the case referred to a change was made. A new superintendent was secured, a man who has tact, skill and experience, and my friend informs me that already he sees the benefits of the change. All the machines now run well and satisfactory. Stoppages are fewer. Repairs are less. Customers are better pleased with their work. The men are instructed how to get the best work out of every tool. The new manager receives twice the salary of the old one, but the owner says that, where every dollar paid to the old one seemed to be wasted, every dollar paid to the new one seems to be merely a good investment that brings immediate returns.

* * *

The moral is that good men are the best, the safest and the cheapest, even though their salaries are larger than those of inferior men. A good operator never furnishes machines for the second hand market. He wears each one until there is no more paying wear in it. When he has "got through" with it the planer is only fit for the scrape pile.

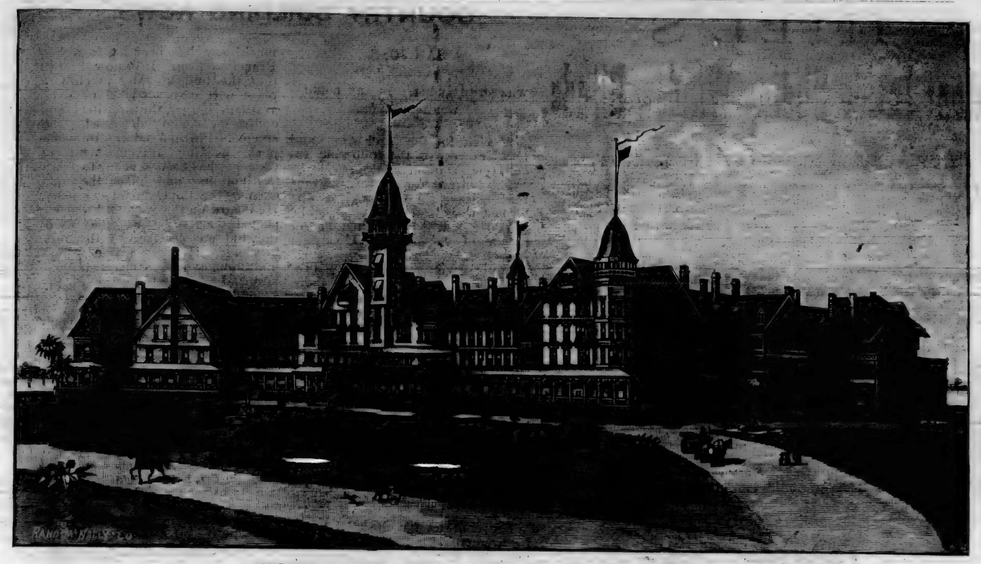
It is intimated in Chicago that the coming building season is casting a shadow before it in the shape of a renewal of the demands of the workingmen who were defeated last season in their attempt to secure higher wages and shorter hours. This excludes the bricklayers, who feel bound by the results of the arbitration which was had in their case, also the gas-fitters, who have a contract with their employers which they will respect, and the stone cutters and stone handlers, who are also expected to abide by the terms of the contract made some time since, but it includes almost all other classes of working men employed in the building trades. The following scale has been printed in the Chicago daily papers as embodying a portion of the demands which will be made: Carpenters, 35 cents an hour for eight hours' work. Cornice-makers, eight hours to constitute a day's work at $2 50; regulation of the apprentice system; no shop employing less than 30 men to be allowed more than two apprentices. Painters, eight hours' work at 37½ cents an hour. Slate roofers, eight hours' work at 35 cents an hour. Lathers, eight hours' work at $3 a day. Hodcarriers, eight hours' work at 30 cents an hour. The tin and sheet-iron workers will present their claims for an adjustment of rates to the Builders' and Traders' Exchange in a few days. The scale decided upon by the workingmen will average an advance of over 10 per cent on that of last season. It is stated on the part of the employers that it is not likely that they will acceed to these demands—at least not without a struggle. There was no feeling of amity between the employing carpenters and their men after their trouble of last summer, and the feeling at present is of the same nature. The master carpenters' is the strongest element in the Builders' and Traders'-Exchange hall. That body is likely to oppose the journeymen as radically as ever. Should the action of the masters be against accession, a general strike in the building trades will probably be set for May 1. This will be a most unfortunate occurrence for the Chicago building trades and allied interests.

Wood Working Chiplets.

By Job in Lumber World.

Operatives in wood-working establishing are necessarily subjected to the unpleasant and unwholesome effects of dust, and in planing mills and similar establishments it seems to be impossible to escape this nuisance. Modern shops are supplied with machines for carrying away much of the dust and shavings made by wood working machinery, but even in the best-equipped shops the workers are obliged to inhale more dust than is wholesome. I have always noticed that planing mill, saw-mill and furniture factory operatives, and in fact all men who work in wood, have a peculiar appearance that is the result of inhaling wood-dust. An observer would never mistake an old planing mill operator for a worker in a machine shop. Each bears in his face and general appearance the marks of his occupation.

In wood-working shops it is the men in the smaller plants who suffer most from the baneful dust nuisance. I have seen large and well-furnished planing mills in which there was very little dust flying, even when every machine was in full operation, while in a small shop I have seen one planer make the air solid and unbreathable with dust. Every occupation has its unpleasant features, and this is the most unpleasant feature of wood-working.



SOUTHERN CALIFORNIA HOTEL ARCHITECTURE—REID BROS. ARCHITECTS

Don't Take a Back Seat.

Make up your mind you will have a front seat in life, and attract to you the powers that carry you to the front seat. If (in mind) you take the back seat, you get only the back seat. The confident determined mood of mind, steadily kept up, brings to you other confident people. Confidence, in the business world, means both cash and credit.

Don't be a screw! What keeps thousands of noses on the grindstone of hard times, is that they have no confidence or courage in themselves to take risks or responsibilities. They keep a poor-house in their minds and live in it. They aspire to be only a screw in the business machine, instead of striking out and making a machine of their own. The screws are book-keepers, telegraph operators, clerks, and all who never hope or plan for anything beyond a situation and steady wages. Confidence and brains combined find such screws ready made by the thousand. They make the screw do as much work for as little money as possible. When one screw is worn out they throw it aside and get another.

The screws find fault with the monopolist. Their real slavery is in their own minds. They never think, aspire, plan, or demand in thought to be anything but screws. They think there is no place for them at the head of abusiness. Their first and great step towards staying permanently at the tail of a business lies in thinking that they must remain at the tail.

Real business does not lie alone in being industrious. The goody-goody books and maxims have only told half the story about industry. A great deal depends upon what you are industrious about. If you spend all your time in polishing pans or blacking boots, your industry won't carry you very high. The industrious mind in a rested body plans in an hour what brings in more money than a tin pan polisher may earn in a year. People who work only, or mostly, with their bodies, have as good a right as the capitalist to work with their minds. The world always wants new things, more curious things, more improved things, more amusing things. No workman in any trade, any art, any profession, should be content with doing what some one else has done before him, even though he does it well. He should aim at doing something better than any one has done before him. When he can do this, he must next push it on the world's notice.

Push is a talent as much as skill in any art. You can commence pushing by imagining yourself a pusher. Keep yourself before yourself in your mind as a pusher, and such a frame of mind will at length make you push. There is a power of continual imagination of yourself in any certain character which does make you more and more like such character. Imagine that the best belongs to you, and you will find the best coming to you. Imagine the worst—see yourself in the poorhouse—and the poorhouse comes to you. Success, like charity, must commence at home—in the mind.

If now you are compelled to live in a poor room, and on poor fare, do so only under protest. Keep your mind on the better room and on the better fare. Don't say "I s'pose I must always take up with this." But say, rather, "I am going to have better things than these." You are then creating for yourself strength, not weakness. You are then ever strengthening this inexplicable mental attraction which will bring these things to you.

Bound Volumes.

A few bound volumes of 1887 are now to be had. The number is still very limited. A copy will be sent to any address upon receipt of $2 50.

Sawdust waste continues to disturb some of our esteemed cotemporaries. One of the most esteemed, the Chicago *Timberman*, figures out that in 1882 the Saginaw river mills sawed 1,000,000,000 feet of lumber, and that 200,000,000 feet of the timber went into sawdust via the circular saw. Estimating the cost at $14 a thousand, our cotemporary decides that lumber worth $2,800,000 was in that year in one section turned into sawdust and burned. It is claimed that this wastage could be reduced twenty per cent. by substituting the band saw for the circular saw.

If your town has no efficient fire department, give your people no rest until one is provided. It is the duty of every one to help create a healthy public sentiment in this respect. A town that is "at the mercy of the flames," and whose people have not enough public spirit to provide fire extinguishing apparatus, is not a town fit for a wise man to live in.

Weekly Building News

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They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and t nements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, or making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. B. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyneken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. Schetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties of San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY BUILDING NEWS.

SAN JOSE.

WHAT THE ARCHITECTS ARE DOING—WORK GOING ON.

A visit to the architects and builders reveals the following encouraging state of affairs:

The contract for erecting a seven-room cottage for W. T. Oliver was let last week, the lowest bid being $2,650. It will be situated on the corner of Locust and Goodyear streets.

Louis Scheller will build a two-story brick structure on San Fernando street, the lower store to contain two stores and the upper fifteen office rooms. Contractor Scow will build it and the Santa Clara Valley Mill and Lumber Company will furnish the mill work. The cost is $7,453.

The contract for constructing a two-story brick building for J. T. Colahan has been let through Jacob Lenzen & Sons for $3,300. The lower story will contain one store and the upper eight office rooms. It is on the site of the old Chinatown facing on San Fernando street.

The contract for the mill work for a cottage for R. C. Stiller has been let through the architect, Theodore Lenzen, to the Independent Mill and Lumber Company. The cottage will be finished with a brick cellar 35 by 45 feet, which will be fitted up and used for wine storage. The dwelling part will contain seven rooms. Total cost over $3,000.

P. Maguire intends building a double house containing six rooms in a suite on the corner of Fourth and San Fernando streets, and a similar one on the corner of Pleasant and San Agustin streets, for renting purposes.

Architect Page has prepared plans for a $5,000 house on Third and Julian streets for G. B. Bowman and a $1,000 office for Dr. Pierce, at Second and St. James streets.

J. Lenzen & Son have plans for a cottage for Mr. Habuemann at San Carlos and Locust streets, to cost $1,450; frame cottage with brick basement for Mr. Oliver at Goodyear and Locust streets, $2,700; on Fifth, between St. John and Santa Clara streets, one-story frame for Mr. Coats, to cost $2,700.

The following houses are being built in different sections: On Lenzen avenue for Mr. Rohb, one-story, $2,500; on Tenth street, near Santa Clara, three frame cottages with finished brick basement, for N. B. Edwards, to cost $2,000 each; on Park avenue, between Vine and Orchard streets, a one-story cottage for Mrs. Ferrel, to cost $2,600; two cottages on St. James, near San Pedro street, for Mrs. Ables, to cost $1,500 each.—[Herald.

AN IMMENSE ESTABLISHMENT TO BE ERECTED IN OAKLAND AT ONCE.

The scheme for erecting an immense pork packing establishment in the suburbs of Oakland is being energetically pushed, and it is now announced that the erection of the building and establishment of the industry are only questions of time. Already $250,000 has been subscribed, and United States Senator, John P. Jones is said to have secured a controlling interest in the enterprise. A site has been purchased on the low land near the foot of B street at a cost of $11,000, and the contract for the necessary machinery has been let to a San Francisco firm. It is now known that the building and machinery plant will cost $100,000 or over. William Berger, the architect and contractor who designed and erected. Philip Armour's immense pork packing establishment in Chicago, has been sent for to erect the building and place the machinery for the Oakland company. He is now on the way, and was expected to arrive last Saturday evening, but was detained by the snow blockade. He may arrive at any hour now, and as soon as he gets here and has time to look over the ground work is to be begun. It is estimated that this enterprise will be backed by a capital of $1,000,000, and will become one of the city's largest manufacturing interests.—[Tribune.

SACRAMENTO.

The Siller Bros. have purchased lot five, on the southwest corner of Thirteenth and P streets, of J. M. Beebe, and will commence immediately to erect four neat cottages, two fronting on thirteenth street and two on P street. That part of the city is fast losing its vacant lots and will soon be compactly built. The lot above referred to was purchased five years ago for $1,000, and was sold for $2,000. Between four and five years ago this entire block was vacant, and now it is expected that within three months the last vacant lot will be built upon and occupied.

At the awarding of the contract for the building of the new addition to the Odd Fellows Temple, on Ninth street, between J and K, Tuesday evening, George B. Dean, a Sacramento contractor, secured the prize. His bid was for $8,888.88, and the work is to be completed by June 1st. The new addition joins the old hall on Ninth street, and will be twenty feet wide by eighty feet long, and three stories high. The architecture, externally, will conform with the old building. The new part will be used for a banquet hall and Lodge rooms.

A NEW LODGING HOUSE.

Dr. Bogart is building a two-story frame boarding and lodging house on his property on E street near First. The building will contain thirty rooms and will be completed in thirty days. San Bernardino is sadly in need of lodging houses and it is to be hoped that more persons will build them. It is firmly believed by those interested in the future prosperity of San Bernardino, that there will be sufficient demand for furnished rooms in this city to fill all the lodging houses that can be built within the next five years and there is not a better investment in the county than in the building of such places for rent.—[Daily Index.

ANOTHER THREE STORY BRICK.

The Farmers' Exchange bank San Bernardino, which institution has recently puchased that property on Third street on which now stands two frame stores occupied by the Capitol saloon and McGill's Furniture store, have given the tenants of those places notice to vacate within thirty days, when the directors of the bank will immediately commence the construction of a fine three-story brick building on those premises.

SAN DIEGO.

A house containing flats is being built for D. C. Collier, on Seventh street, near Cedar.

J. Pattinson is the contractor for a ten-room lodging house on Arctic street between A and Ash.

The brick work has been begun on Chadbourne & Co's block, on the corner of Fourth and C streets.

Four frame building are being erected for Sidney Thomas on lots A and L, block 326, Horton's addition.

Schioder & Weary, architects, are prepairing plans for an $8,000 residence, to be erected near the Hotel Del Coronado.

Work will soon be commenced on two two-story frame tenement houses on Ninth street, Thomas B. Sanderson is the owner.

A two-story residence is being built for F. O. Wadsworth on G street, between twenty-fourth and twenty-fifth. The cost will be $3,600.

A five-story brick building with frontage of sixty-five feet, will soon be erected on Fifth street, between C and D streets. Nesmith is the owner.

J. Van Claine is the owner of a three-story lodging house being built on Seventh street, between J. and H. In size it will be 50x70 feet, and the cost will be $7,000;

The erection of the Grand Army building, designed by Bordwell, Kooken & Co., will soon be pushed with as much energy as possible. The excavating has already been begun.

James W. Reed is the architect of a $50,000 residence being built for H. L. Story, opposite the Hotel Del Coronado. The house, stable and carriage-house are to be of stone.

Arrangements are being made to build two first-class apartment houses, 25x60, three stories high, on Orange avenue, Coronado Beach. T. Thompson and T. J. Fisher are the owners.

Plans have been drawn for a ten-room cottage for R. K. Clark, to be erected on H street, between Twenty-third and Twenty-fourth. It will cost $3,000. C. F. Kirby is the architect.

Clements & Stannard are the architects of a three-story veneered brick business building now being erected on Seventh street between F and G. In size it will be 50x80 feet. The cost will be $10,000.

The large frame hotel being built for N. E. Nason on the corner of D and Front streets is nearly completed. The building is 100 feet square and four stories high. It contains 100 rooms, and is to cost $25,000.

A contract for the erection of a residence for J. G. Gordon has been let for $5,300. In size it will be 53x38, two stories in height, with ten rooms and a detached kitchen. Bordwell, Kooken & Co. are the architects.

Work is in progress on a two-story business building on Fourth street, between F and G. It is to be 50x90 feet in size, and will contain twenty-nine lodging rooms on the upper floor. Tallefer & Co. are the contractors, and Boswell & Cook, the architects.

Building improvements in this city during the past week were pushed with even greater activity than usual. The principal rush is in the direction of business and lodging houses, although a large number of fine residences and cottages are being built.

W. T. Whiteway is the architect of a large three-story building being erected on Seventh street, bet. G and H. In size it will be 50x88 feet. There will be two stores on the lower floor and thirty lodging rooms above. The cost will be $10,000 A. B. Foreman is the owner.

SAN BERNARDINO.

A steam laundry is wanted in this place.

Bids are wanted for the new Cunningham warehouse.

J. W. Kent is building an elegant residence on the Martin tract.

Numerous artesian wells are being sunk in different parts of the valley.

A dozen or more nice looking cottages are going up on the Boren tract. A year ago the place was a howling wilderness.

J. E. and M. W. Littlefield have the contract for five new Andreson-Drew block. It will be 3 stories high, 80 by 100 ft. in size, with a wing 32 by 80 ft.

A gentleman just in from Chino says that ground has been broken for the smelting works soon to be erected. When in operation Chino will be a right lively spot. He also said that the narrow guage road between Ontario and Chino is nearing completion. When the whistle of the engine is heard keep an eye out for an unusual boom.

PERRIS.

George S. Blethen, of San Diego, is going to move here, and will commence his residence this week.

Mr. Reyon, one of San Diego's oldest citizens, has spent the winter here, and is so well pleased that he is going to build and locate here for life.

Ora Oakes, a "a well-to-do" merchant of San Francisco, purchased a block in Blethen's addition and is going to build a fine business house and residence.

The greatest need of Perris is a bank. We want one badly and the man that starts it will make money. Any one with surplus capital could do well here now and build up a splendid business.

A company is now forming in San Diego to put in a warehouse here for handling grain, which will help this country, and also tend to turn matters toward San Diego. The warehouse is to be built in the Y where the road branches to San Jacinto on Blethen's addition.

SEATTLE

In the town of Morro, J. K. Wolfely is hauling lumber. He will build a dwelling.

The Presbyterian Society is on the lookout for a choice lot which they can adorn with a church.

Otto Ranks has secured the contract for the "Boston Block". His bid was $94,250. Mr. Herman Chapin is the agent for the owners, who reside in Boston.

POMONA.

During the year 1887, there were built in this place, 268 buildings, the cost of which was $668,553.

BAKERSFIELD.

KERN COUNTY CALIFORNIA.

A gentleman from Fresno tells the *Bulletin* of the recent purchase in Fresno county by Moore & Smith, the lumber merchants, of some 3,000 acres of timber land: "This firm next spring will erect two mills, sixty miles up the Kings river from Fresno, where the lands are situated. Each of the mills will cut from 75,000 to 80,000 feet a day. They will also build a standard-gauge railroad from Centerville, twenty-two miles southeast of Fresno, up on the Kings river canyon, the site of of these mills, and perhaps beyond.

OAKLAND.

A new car repair shop is being built in the West Oakland railroad yards.

It is understood that a new Episcopalian Church will be built here shortly.

Wells, Fargo & Co. will build a new express office near Sixteenth street station.

John Ziegenbein is building a cottage on Thirteenth street near the intersection with Peralta street.

The California Door Company has entirely completed its building in West Oakland and has commenced operations.

The East Oakland Brewery on the corner of East Fourteenth street and Eighteenth avenue will have some $5,000 worth of improvements put upon it during the coming few months.

FRESNO.

Geo. W. Strine will soon begin the erection of a two-story residence on the corner of Mariposa and R streets, to cost $4,000

Work has commenced on a $5,000 residence for Lee Gundlefinger, on the corner of Inyo and K streets.

FRESNO CITY.

Attorney E. W. Risley is having plans drawn for a fine residence. The house will cost $1,000 and will be erected on north I street at the corner of San Joaquin street.

LUGONIA.

An $1,800 residence is to be built on the Morrison Bently tract by a lady from Los Angles.

Mrs. Early is having built a residence on State street, between Sixth and Seventh, Redlands, to cost $2500.

ALAMEDA.

Mr. J. N. Webster is having a neat and comfortable cottage erected on Pearl street, a short distance south of the Narrow-gauge. It will cost about $1,500.

The plans for the Riverside Y. M. C. A. building have been accepted by the building committee, and the contract will be let if it doesn't exceed the estimated cost made by the architect, which is $22,000.

D. W. Walker has taken the contract for the erection of two miles of picket fence, on the ranch of J. C. Holloway near Sebastopol.

BUILD HOUSES

The inquiry of people coming into this city, for houses to rent is met with the answer that there are scarcely any houses fit to be occupied, which can be obtained at any price. Every house that is built for rent is now occupied and people are compelled to either seek quarters in uninhabitable buildings or leave the city. It is suggested that capitalists who would otherwise put their money out at a low rate of interest, build habitable dwellings and make preparation for the people who are coming into this city if they desire prosperity. The investment proves to be a paying one, working the benefit of both the individual and the entire community.—[Santa Rosa Republican.

COLTON STREET RAILROAD.

Ground has been broken from the Davenport corner, north; we do not know just how far, for the street railroad. The men are at work leveling and preparing for the ties. The ties are being distributed along the line as fast as possible to-day and it is Mr. French's desire to get them laid and all in readiness to begin putting down the iron as soon as it arrives, which he thinks will be in three or four days. The cars will be here probably by the time the track is ready. We have reason to hope that it will not be long before we have a street railroad in actual operation between this place and San Bernardino.

A NEW HARDWARE COMPANY.

The Dunham, Carrigan & Hayden Company has been incorporated to deal in hardware and metals of all kinds, both wholesale and retail.

The capital stock is $900,000, of which $630,000 has been subscribed. The directors are Benjamin F. Dunham of Oakland, Brace Hayden of New York, Andrew Carrigan, Claude T. Hamilton and Charles E. Miller, of this city.

The Riverside Press imforms us that A. C. Willard, manager of J. C. Pelton's office in this city says, that if lumber could be obtained, he would have underway in ten days eighteen cottages, ranging in price from $1,800 to $3,500 each. Work on three private residences costing from $10,000 to $13,000 each, would be commenced within sixty days.

A large new brick building is in course of construction on the corner of First and F streets, San Bernardino. It will be occupied as a wholesale grocery store by Messrs. M. A. Newmark & Co., of Los Angeles.

E. J. Davis has commenced the erection of a one-story brick business block, 54x60 feet, on his lot, corner of Main and Ninth streets, Riverside. It will contain two large store rooms.

The Supervisors of Auburn have ordered the erection of a $3,000 building 50x90 feet as additional room for the County Hospital.

Dr. Squires will soon commence the erection of a dwelling in Redlands.

SACRAMENTO

F and 7th. Sts. Two, two story and basement residences; Owner Frank Foster; architect, N. D. Goodell; contractor, E. A Bovyer; cost, $5,700.

K and L, 2nd. and 3rd. Sts. Improvements; owner, Huntington, Hopkins & Co.; architect, N. D. Goodell; contractor, Siller Bros. cost $1,000.

Third st. bet. J and K sts. Improvements; owner, James McClatchy & Co.; architect, N. D. Goodell; contractor, Bohn & Bro.; cost $800.

M and 8th. sts. Improvements; owner, L. Zoller; architect, N. D. Goodell; contractor, Heninger & Kinkel; cost $800.

Ninth St. bet. O and P Sts. One story and basement residence; owner Mrs. Anna Yule; architect, N. D. Goodell; contractor, C. Ruggles. $1,500.

H St. bet. 7th. and 8th. Two story basement residence; owner, Mrs. H. Roche; architect, N. D. Goodell; contractor, Thos. J. Heninger; cost $3,000.

SAN BERNARDINO.

A $2,200 school house has just been completed at Irvington.

Work on Col. D. A. Shaw's new residence at Lugonia, to cost about $8,000, will soon begin.

Architect Goff has completed plans for a $15,000 residence to be erected by W. L. Wilkens, on the corner of Tenth and G.

Gee Brothers yesterday began laying the mosaic pavement at the E street entrance to the Stewart.

In about ten days the new $12,000 residence of James Waters, Jr., on Second, between G and H, will be ready for occupancy.

Mr. Chris Kurtz has concluded to erect, in a short time, a four story brick block on the site of the present old land mark, now occupied by him in San Bernardino.

Notwithstanding what has been said concerning the Electric Light and Power Company, work on improvements continue with unabated zeal At considerable expense a new dynamo and other accessories to good lighting are being made, and when finished will be one of the most complete plants in the state.

ALAMEDA.

A handsome cottage is in course of construction on Regent street, south of San Jose avenue. It is for G. A. Flach, recently from New York. It contains five rooms and will cost $2,500. J. A. Leonard is the contractor.

Plans have been submitted to the Trustees of the Methodist Church which, if adopted and ordered made will result in the church building becoming enlarged and being made, more imposing in appearance. Part of the plans call for the raising of the building some fifteen feet, which will increase the acoustic qualities of the Auditorium. It is also proposed to extend the front of the building eight or ten feet, so that the stairs leading to the entrance will commence at the sidewalk.

The contract has not yet been awarded, but Lynne & Lyman being the lowest bidders, will probably be given the contract to-day.

SAN LOUIS OBISPO.

Arroyo Grande seem always to get in on the good things. The latest is a building association that has recently been organized. Already several thousand dollars of the stock has been taken and several cottages spoken for. The leading gentlemen in the project are S. Clevenger, J. F. Beckett, J. W. Lewis, Isaac Kite, Y. Y. Newman, J. S. Brooks, F. L. Warner and Chas. Chrannell.

OREGON NEWS.

SALEM, OREGON.

Eds. Weekly News. — Enclosed please find postal order for your Building News. I congratulate you on the energy shown in establishing a weekly record of building improvements.

—Business at this time of the year in Oregon, is necessarily dull. A stock company will build a $4,000 hotel at Dallas, Polk County, about 12 miles from this place. Mr. D. Pugh, is the architect, The same gentleman is architect of the additions being made to the asylum. Will keep you informed of news from this section.

Mr. A. Pauly, of Pauly & Sons, Tehachipa, arrived here yesterday, states that the business of the manufacture of lime in that vicinity is growing to large proportions. The firm of Holmils & Co., of San Francisco, are now running three kilns that turn out from five to six thousand barrels the month, which is far from supplying the demand, and the business might be extended indefinitely if it were not for want of fuel. About two hundred and fifty cords of wood are used monthly. Most of this lime goes to Los Angeles, where it is considered the best in the market and always has the preference. Hendrickson & Co. are about to start four more kilns, which they expect to have in operation next month.

In building the Coronado Hotel, at San Diego, which is perhaps the largest and most gorgeous in its appointments of any hotel in the world, 400 carpenters have been at work for two years. They now have there, direct from Chicago and New York, 300 hotel waiters, and every room in the house is already engaged from the opening date, which is the first proximo. The Atchison and Topeka Company are the principal owners of this hotel, and they have sold lots enough in the vicinity to pay for the building and furniture.

Work has been commenced on the fine new $100,000 hotel at Hesperia, and also for a fine new building to be occupied by the *Herald*. The company have plenty of water for domestic and irrigating purposes and a sixteen-inch main, filled with water under pressure, runs the entire length of town.

A. S. Danielson, of Clinton Ranch Home, San Bernardino, is just completing three dwellings on Danielson Avenue, a few rods north of the Base line. Two are one and one-half story houses and one a cottage, all to cost about $6,500.

J. P. Stewards is building a $1,000 barn for S. Hoy in the town of Winters.

WORK ON THE FLUME.

The line of the great San Diego Flume has been graded down to near the Sweetwater trestle, which is the largest along the whole route. Progress was impeded to a certain extent during the recent heavy rains, as it was impossible to do hauling of any description, yet the contractors figured on certain allowances to be made for inclement weather, and they express no fear that they will loose the $30,000 bonus by reason of a failure to complete the work by March 1st. Within a fortnight it is expected that the laying of the flume will progress at the rate of two miles per week.

THE REDLANDS SCHOOL HOUSE.

Bids for the construction of the new Redlands school house were opened yesterday afternoon at the office of Jones & Griffiths, architects.

Following are the bids:

Lynne & Lyman	$15,500
Minor	16,750
Beach	17,500
Hero	16,898
Malone	21,969
Wernicke	17,115
Gee Brothers	19,688
Bishop & Zroicker	17,080

THE NAIL WORKS BUILDING.

A large quantity of lumber for the San Diego Iron and Nail Company's mills at Roseville, Point Loma, was received by the Russ Lumber Company last night. It will be lightered to the Roseville wharf during the first of the week when work will be commenced on the buildings for the new enterprize.

It is said that a large force of men have commenced work on the extension of the Utah Southern south from Frisco, Utah, and that it is the intention of the company to build straight through Nevada to California and Los Angles.

A street-paving contract, involving $160,000, is now being executed at Santa Barbara. It is claimed that this is the largest contract of the kind ever let in the State.

C. W. Filkins, of Riverside, has purchased three lots in block C, this city, and will at once begin the construction of a tenement row.—[Index.

A new shingle mill is to be buil, nine miles from Saratoga, Santa Clara county, It will cost $3,000, and give employment to thirty men.

Work has been commenced on the foundation for the new post-office building on the corner of E and Court streets, San Bernardino.

The foundation is being laid for a one story brick building, to be rected on Orange street, Lugonia. T. P. Minor has the contract.

The excavation for the foundation the Hotel Vendome in San Jose are entirely finished, ready for the bricklayers.

Dr. Sandborn has just begun the erection of a fine house in Redlands.

Senator Button intends to erect a residence in Colton.

LUMBER MILL MACHINERY MEN.

The large saw mills of Renton, Holmes & Co., at Port Blakely, have been burnt down completely. With their accustomed energy, the gentlemen named will immediately commence to rebuild. Lots of new machinery, etc., will be wanted. The loss was about $250,000.

BIDS FOR THE CONVENT.

The following bids for building the Convent School building in Petaluma have been received by Father J. F. Cleary.

Jas. Melnery, San Francisco	$24,950
A. C. Hanson, Petaluma	23,293
J. M. Kill, Petaluma	20,082
E. D. Hedges, Petaluma	19,200
Geo. Furner, Petaluma	19,071
Bateman Bros., San Francisco	18,995

A new ferry depot will be built on Coronado Beach, San Diego. J. T. Barnes & Co. are the contractors. It will cost $7,000.

A large hotel is on the tapis in Marysville, the cost is set at $100,000. Address A. F. Abbott for particulars

BUSINESS CHANGES.

Thos. J. Welsh, architect, has moved from 302 Montgomery St., to Room 95 Flood building, corner Market & Fourth Sts.

J. I. Kidd & Chas. V. Pierce can now be found at 410 Kearny St.

Sam Newsom has assumed control of the City office, his brother being in the lower country office.

Chas. Kenitzer has taken a partner and the firm name is now Kenitzer & Kollofrath.

MECHANICS' LIENS.

SAN FRANCISCO.

Geo. McCahon vs. Wm. M. Hoag et al. S. Clay, 27.6 E. Gough, E. 50x100. W. A. 124. Jan. 17, 1888. $155.

M. & A. Hansen vs. H. Finkenstedt et al. N. Jackson, 97.6 W. Mason, W. 20x68.9, 50 V. 605. Jan. 23, 1888. $551.17.

J. W. Wessen vs. H. Finkenstedt et al. N. Jackson, 97 6 W. Mason. W. 20x68.9, 50 V. 605. Jan. 10, 1888. $406.74,

Whittier, Fuller & Co. vs. Wm. G. Gleeson. S. W. Elm Av. and Franklin street, S. 40x63. Jan. 10, 1888. $69.40.

Dan Kelleher vs. Anna C. Cosgriff. Sewer on Pacific, between Fillmore and Webster. Jan. 13, 1888. $370.50

Lewis and Swift vs. Geo. E. Dunn et al., W. Church, 315 N. Fourteenth S. 25 by W. 125; Feb. 6th. 1888, $155.99.

Hinckley, Spiers & Hayes vs. Fields Biscuit & Cracker Co., S. E. Folsom, 412.6 S. W. Fourth, S. W. 137.6x275, 100x176; Feb. 6th, 1888. $4,000.

CRAIG,

Notary Public and Commissioner of Deeds,

316 MONTGOMERY ST., BET. CAL. & PINE

Commissioner for New York, Arizona, Nevada, Pennsylvania, Utah, Oregon, Idaho, Washington Territory, Ohio, Massachusetts, New Hampshire, Illinois, New Jersey, and other States and Territories.

Depositions a Specialty. Acknowledgements taken and oaths administered at any hour of the day or night. LEE D. CRAIG. Residence 530 Turk street, cor. Larkin

SAN FRANCISCO BUILDING NEWS.

Baker bet. Bush and Pine. To build complete one story frame; cost, $2,000; owner, A. Frazier and wife; contractor, Louis Weismann; architect, Wm. H. Armitage.

1st payment, when frame is up, $400; 2d payment, when brown mortar is on, $500; 3d payment, when finished and accepted, $350; 4th payment, 35 days after acceptance, $750; limit, 60 days; signed, Jan. 9, 1888; filed, Jan. 12, 1888.

Broderick, bet. Page and Haight. To build complete; cost, $5,200; owner, W. J. Tamin; contractor, N. C. Post; architects, Townsend & Wyneken.

1st payment, when frame is up and chimneys one-half done, $1,200; 2d payment, when enclosed, roof on, and first coat of mortar on, $1,100; 3d payment, when outside is done, hard finished and half cased, $700; 4th payment, when finished and accepted, $900; 5th payment, 35 days after acceptance, and all bills paid, $1,300; limit, April 28, 1888; surety, Chas F. Doe; amount bond, $2,500; signed, January 9, 1888; filed, January 11, 1888.

Chattanooga, bet. 23d and 24th. Two story frame building; owner and builder, F. C. Kleebauer; cost $6500.

Chattanooga and 22d. Addition to frame building; owner, A. T. Hall; architect, Mr. Croft; days work; cost $1000.

Capp and 24th. Five two story and basement, frame buildings; owner, Jos. Coop; contract r, N. G. Chadwick; cost $15,000.

California, near Filmore Owner, A. Borel; architect, Wm. F. Smith; contractors, M. J. and J. D. Egan; cost, $4,100; limit 42 days after Jan. 30, 1888; sureties, S. H. Harmon; filed, Jan. 23, 1888.

Dolores and 21st. A two story frame; owner, Mr. Frazer; contractor, Geo. Fressler; cost $2500.

Fair Oak, b t. 2 st and 22d. A two story frame and basement; ow er, F. S. Traveler; architect and builder, A. R. Denke; cost $4500.

Fourth, bet. King and Berry. Frame stable; cost, $6,700; owner, Union Ice Co., contr ctor, S. G. Worden; architects, Townsend & Wyneken.

1st payment, when 20-story floor beams are on, $1,800; 2d payment, when enclosed, shingled, outside work done, $1,500; 3d payment, when completed and del vered, $1,600; 4 h payment, 35 days after completion, $1,700; surety, J. F. Kennedy; amount bond, $6,700; filed, Jan. 28, 1888.

Fell, 171.10½ W. Broderick, 25x1-7 6. Build complete one story frame: owner, B. E. Henricksen; contractor, C. E. Sunshee; architect, B. E. Henricksen; cost, $2,475.

1st payment, when roofing and siding are complete, $465; 2d payment, when brown mortar and outsi e finish are completed, $465; 3d payment, when sashes are glazed and hung, and white mortar is finished, $465; 4th payment, when varnishing is done and trimmings on, $465; 5th payment, 35 days after acceptance, provided no liens, etc., $61..; limit, 65 days; sureties, J. F. Kennedy and A. J. Turner; amount of bond, $2,500; signed Jan 17, 18-8, filed Jan. 20, 1888.

Geary, bet Jones and Taylor. Plumbing, gas fitting, etc ; owner, G. H. Woerz; contractor, Earnest Flnck; architects, Salfield & Kohlberg; cost, $613.

1st payment, when rough work is finished, $350; 2d payment, when finished and accepted, $263; signed Dec. 22, 1887; filed Jan. 16, 1888.

Geary, bet Jones and Taylor. Brick work, etc., on three story frame; owner, G. H. Woerz; contractors, Jacob Haaf & Son; architects, Salfield & Kohlberg; cost, $1,175.

1st payment, when basement walls are up, $500; 2d payment, when accepted, $400; 3d payment, 35 days after completion, acceptance and release, $275; sureties, John H. Wieland; amount of bond, $1,000; signed, Dec. 19, 1887; filed Jan. 16, 1888.

Geary, bet Jones and Taylor. Carpenter work, 3-story frame, brick basement; owner, G. H. Woerz; contractors, Fuchs & Bucher; architects, Salfield & Kohlberg; cost, $5,600.

1st payment when frame is up, $1,000; 2d payment when roof is on and building enclosed, $1,200; 3d payment when brown coat of mortar is on, $1,000; 4th payment when finished and accepted, $1,000; 5th payment, 35 days after acceptance, $1,400; limit, 90 days; sureties, C. Rohrbacher and H. Niemann; amount of bond, $5,000; signed Dec. 19, 1887; filed Jan. 16, 1888.

Geary, bet Gough and Octavia. To build complete; owner, Rosalie Rosenberg; contract r, Wm. T. Commary; architect, P. R. Schmidt; cost. $4,810.

1st payment, when rough frame is up, $900; 2d payment, when brown coated, $900; 3d payment, when hard finished, $900; 4th payment, when completed and accepted, $900; 5th payment, 35 days after completion and acceptance, $1,210; limit, 100 days; surety, G. M. Perine; amount of bond $4,810; signed, Jan. 5, 1888; filed, Jan. 1, 1888.

Golden Gate Avenue, bet. Van Ness avenue and Franklin. An addition to a frame building; cost $3150; owner, Henry Hufschmidt; c ntractors, Schutt & Krecker; architect, H. Geilfuss.

1st payment, when building is raised, entire frame up, enclosed and roof on, $500; 2nd payment, when floors are laid, partitions set ready for plasters, $450; 3d payment, when brown c at of plastering is on, and all outside yard, porch and fence work is complete, $500; 4th payment, when white coat of plastering is on, and doors, windows and blinds hung, $500; 5th payment, when building is completed and accepted by the architect, $400; 6th payment, 35 days after completion, $300; limit, 70 days from date; sureties, C. W. Gercke & A. W. Bode; amount bond, $3000; signed Feb. 2d, 1888; filed Feb. 4, 1888

Harrison and 11th. A two story frame; owner, Mr. Harms; contractor, H. T. Warden; cost

Howard, b t. 16th and 17th. Two-story frame; cost $3,675; owner Lafrenz Foge; contractor, Jno. G. Adams; architect, Chas. J. Havens.

1st payment, rough frame up and enclosed, $650; 2d payment, rough gas and water pipes in and brown mortar on, $650; 3d payment when hard finished and outside painted, $675; 4th payment when completed and accepted, $750; 5th payment, 35 days after, $950; limit, 90 days; surety F. Joost; signed Jan. 23; filed Jan. 24.

Hayes and Webster. Three story frame; cost, $8200; owner, Dr. Nat. T. Coulson; contractor, Wm. T. Commary; architect, A. J. Barnett

1st payment, when rough frame is complete, $1600; 2d payment, when floors are laid and roof and rustic is on, $1200; 3d payment, when br wn coat of mortar is on, $1200; 4th payment, when white co t of plaster, and outside finish is on, $1200; 5th payment, when building is complete and accepted, $1400; 6th payment, 35 days after completion, if no liens are on building; limit, July 1st, 1888; sureties, F. Joost and Wm. Commary; amou t of bond, $4500; signed, January 31st, 1888; filed, Feb. 4th, 1888.

Herman, bet Octavia and Laguna. To build, except plumbing, gas fitting and painting; owner, Mrs. A. A. Smith; contractor, R. P. Sanches; architect, Wm. Mooser; cost, $5,875.

1st payment, when foundation and entire frame is up, $1,000; 2d payment, when roofs completed and brown mortar on, $1,000; 3d payment, when plastered, sashes hung and glazed, fences up and outside doors hung, $1,000; 4th payment, when completed and delivered to owner, $1,030; 5th payment, 35 days after acceptance, provided all bills are paid, $1,345; limit, May 10, 1888; sureties, J. Wagner and Frank P. Doe; amount of bond $5,400; signed Jan. 17, 1888; filed Jan. 23, 1888.

Levenworth, bet. Clay and Washington; 9 two-story frame; owner and Builder, Hinkle; Cost about $50,000

Larkin, bet Pacific and Broadway. Improvements to old two-story frame; owner, I. Friedman; contractor, J. P. Chadwick; architect, Wm. H. Armitage; cost, $760.

1st payment, when brown coat is on, $400; 2d payment, when finished and accepted, and no liens, $300; limit 40 days; signed Jan. 11, 1888; filed Jan. 17, 1888.

Market and Fourth. Building; to build three division partitions and put in two elevators and stairs; owner, James C. Flood; contractor, Chas C. Terrill; architect, none given; cost, $5,450.

1st payment, when partitions are up and first coat of mortar on, $2,000; 2d payment, when finished, except painting and varnishing, $2,000; 3d p yment, when completed provided no liens, $1,450; limit, March 1, 1888; signed Jan. 16, 1888; filed Jan. 16, 1888.

Market, bet. 7th and 8th. A 2-story brick; owner, Mahoney Bros.; contractors, McGowan and Butler; architect, none given; cost, $4,998.

1st payment, when brick work is ready for 2d-floor joists, $1,874; 2d payment, when brick work is complete and accepted, $1,874; 3d payment, 35 d ys after completion, $1,250; signed, Jan. 30, 1888; filed, Jan. 30, 1888.

Mission, bet 17th and 18th; alterations; owner, Mission Turn Verein; ontractor, H. W. Weiss; architects, John & Zimmerman; cost, $3,080.

1st payment, when partitions are set and building ready for lathing, $800; 2d payment wh n rough frame up and new store front in, $700; 3d paym nt, when hard finished and ready for painting, $330; 4th payment, 35 d ys after acceptance, if no claims, $750; limit, March 15, 1888; surety, Wm. Alfs; amount of bond, $1,000; signed Jan. 10, 1888; filed Jan. 20, 1888.

McAllister, 137-6, W. Filmore, 26.2x137.6. To build complete one-story frame; owner, Mrs. M. J. Brady; con ractor, Wm. Pluns; architect, E. E. Hendricksen; cost, $2,300.

1st payme t, when roofing and siding are completed, $440; 2d payment, when brown plastering and out-ide finish is done, $440; 3d payment, when sashes are glazed and hung and white plastering is finished, $440; 4th payment, when varnishing is done and trimmings on, $440; 5th payment, 35 days after completion and acceptance, providing no liens, $600; limit, 70 days; sureties, Fabien Joost and David Woerner; amou t of bond, $2,300; signed Jan. 14; 1888; filed Jan. 16, 1888.

Oak, 110 W. Buchanan; structure alterations, etc.; owner, Chas. Dietle; contractor, H. J. Weiss; architec , H. Geilfuss; cost, $1,428.

1st payment when building is moved and brick work finished, $428; 2d payment, when completed and accepted, $500; 3d payment; 35 days after com letion, $500; limit, 30 d ys; surety, Wm. Alfs; amount of bo d, $1,400; signed Jan. 17; filed Jan. 24, 1888.

Shotwell, bet. 17th and 18th. A two story frame and basement; owner and builder, J. A. Devany; cost $5000.

Scott, 75 S Oak, S. 25x106.3; 2-story frame; owner, Henry Trenze; contractors, J. Rountree & Bro.; architect, James Rountree; cost, $4,355.

1st payment, when fr me is up and sheeting on, $700; 2d paymen t, when enclosed, $1,000; 3d payment, when brown mortar is on and sash in, $1,000; 4th payment, when completed and accepted, $1,000; 5th payment, when all bills are paid and claims released, $655; limit, April 20, 1888; surety, Jos. Smith; amount of bo d, $4,000; filed Jan. 24, 1888.

Seventeenth, 275.11½ W. Dolores. To build, except plumbing, gas fitting and sewerage; cost, $2,995; owner, Lawrence Johnson; contractors, Schutt & Krecker; architect, H. Geilfuss.

1st payment, when frame is up, enclosed and roofed, $500; 2d payment, when floors are laid and partitions set, $400; 3d payment, when brown mortar is on, and outside porch and fences completed, $450; 4th payment, when white mortar is on, doors, windows and blinds hung, $450; 5th payment, when completed and accepted, $445; 6th payment, 35 days after completion and acceptance, $750; sureties, T. C. Jensen and C. W. Gerk; amount bond, $5,000; signed, Jan. 28, 1888; filed, Jan. 30, 1888.

Townsend, bet Sixth and Seventh, 275x275.2. Basalt and macadam pavement and concrete foundation; owner, Mrs. M. F. S Scarls; contractor, Chas. A. Warren; architects, Moore & Schulz; cost, $1,550

Turk, bet. Hyde and Larkin. Seventeen two-story buildings; owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, H. S. Gray and Cook Stover; cost, $23,000; limit, May 1, 1888; signed, Jan. 28, 1888; filed, Jan. 28, 1888; sureties, G. W. Stewart and Louis A. Larsen.

1st payment, $4,332; 2d payment, $4,332; 3d payment, $4,332; 4th payment, $4,332. Duffy Bros., plumbing, $3,444.

Turk, bet. Hyde and Larkin. Plumbing; cost, $3,444; owner, George T. Marye, Jr.; contractors, Duffy Bros.; architect, Wm. F. Smith.

1st payment, 50 per cent. of value of work when rough work is done; 25 per cent. on completion; balance, 35 days after completion; limit, May 1, 1888; signed, Dec. 29, 1887; filed, Jan. 28, 1888.

Vicksburg and 24th. Add tions to a frame building; owner and builder, D. Linden; costs $500.

York, bet. 22d and 23d. One story frame, (painting and grading are excepted in contract); owner, E. Woods; architect, M. T. Welsh; contractor, F. T. Williams; cost $12.0.

1st payme t, when br wn mortar is on, $420; 2d payment, when buildi g is finished, $420; 3d payment, 35 days after acceptance, $420; surety, J. Rose, $800; signed Feb. 4, 1888; filed Feb. 6, 1888.

Vallejo 92 W. Davis, W. 45x60. To build complete 2-story building; cost, $1,960; owner, Nicholas Luning; contractor, F. W. Ke n; architects, Percy & Hamilton.

1st payment, 75 per cent. of labor and material in place in building, will be paid as work progresses; bal. in 35 days after completion and acceptance; limit, April 30, 1888; sureties, O. W. Nordwell and F. Joost; amount bond, $4,000; signed, Jan. 26, 1888; filed, Jan. 30, 1888.

New Montgomery, cor Mission; 4-story and basement brick building. Owned by the Sharon estate, and to be occupied by Wells, Fargo & Co. Architects, Shepley, Rutan & Coolidge; (the latter is the supervising architect on this coast) mason, Geo. Richardson; carpenter, Adam Miller; plumber, W. F. Wilson; estimated cost, $250,000

M. C. de Laveaga is having 29 mantels made by W. H. McCormick for $1160, to be finished the 10th day of March; 1st. payment, when the entire work is commenced $696; 2nd. payment 35 days after completion, $464; the mantels to be made of best Italian oeinee; P. R. Schmidt is the architect; signed, Feb. 2nd. 1888; filed, Feb. 7th 1888.

ELECTRIC IMPROVEMENT COMP'Y

Fisher's System of Electric Street Railways,
American System of Electric Arc Lighting.
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CALLENDER INSULATING AND WATERPROOFING CO.'S HOUSE AND TRINIDAD ELECTRIC LIGHT WIRES.

Estimates furnished for Electric Railways, Electric Light and Steam Plants.

OFFICE—217 Sansome Street, San Francisco, Cal.

"Botch" Workmen.

Last month we made reference to half-fledged workmen. These remarks referred more particularly to carpenters, but it does not necessarily follow that carpenters are the only persons possessing the quality of "botch." We have met plasterers, painters, plumbers, tinners, bricklayers, and stonecutters, whose reputation for first-class "botch-work" ranked much higher than that of any carpenter we ever met.

The uninitiated would scarcely believe it, but it is a fact that first-class bricklayers—good honest capable workmen—are more difficult to find than other workmen connected with building. Indeed, few know the amount of "botch" bricklaying that is done in every town and city in the country. It is much easier to pass off "botch" brickwork as good than carpenters' or joiners' work, and fewer people are qualified to judge of the quality of the former than of the latter. The same may be said of plastering. Perhaps there is no branch of building where less knowledge and skill are used than in plastering. For some reason that we could never discover, the man who plasters your house knows less of his trade, the qualities of the materials he employs and the manner of making the best use of his tools and appliances than any other workman. So well is this understood that most men who have carried the hod to a plasterer for three or four weeks aspire to become plasterers—and they generally get there—and thus the influx to the trade, of incompetence, goes ever on, and plastering goes ever on, and plastering keeps in a chronic state of "botch-hood."—*Builder and Woodworkers*

We are in the habit of regarding the Egyptian obelisk as almost without precedent in the way of size of single stones, and yet it occasionally happens that modern quarrying operations produce stones of as great a size. A very large stone was recently taken out of the Bodweil quarries, at Vinal Haven, Me., a short time since, that is an illustration in point. A local paper, after making the assertion that it is the largest stone ever quarried in the vicinity named, adds that, if erected, the gigantic shaft would be the highest, largest and heaviest single piece of stone now standing, or that ever stood, so far as there is any record. According to this authority, it considerably exceeds in length any Egyptian obelisk. The shaft in question is 115 feet long, and 10 feet square at the base. Its weight is estimated at 850 tons.

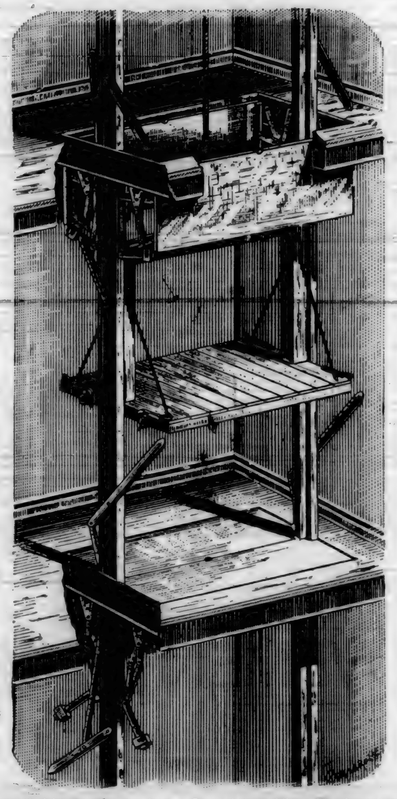
THE PAGE

Automatic Fire Shutter Co. of California.

The Best Automatic Fire Shutter Known.

INCORPORATED APRIL 28TH, 1887.

Manufacturers Under United States Patent of the Automatic Shutter.



ADAPTED TO PASSENGER AND FREIGHT ELEVATORS,

For Protection from Fire in Elevator Shafts, and from Liability to Accident.

PATENTED MAY 10, 1887.

Now in operation at 22 and 24 Jessie St., and 327, 329, 331 Sansome St., S. F. Call and examine the same.

The cut represents a freight elevator, showing two floors of the building. The elevator platform is represented as ascending, having passed through the hatchway of the lower floor. The shutters below the elevator platform have just closed level with the floor, completely and firmly closing that hatchway. The shutters of the second floor are next being opened by the ascending elevator platform, and after it has passed through, those close automatically, in the same manner as seen at the first floor. In the descent of the elevator platform, the shutters open below as it approaches the hatchway, and after passing through, they close again firmly and completely. Each shutter opens and closes automatically as the elevator passes, and are so counterbalanced as to offer no resistance to the ascending or descending platform.

H. W. SEVERANCE,

Manager and Agent,

Office, 218 California Street, San Francisco, California.

Lumber Market.

At a late meeting of the Lumber Exchange the advisability of increasing the retail price of lumber was the subject of much discussion, but upon vote, it was decided to make no change in the schedule. The prices below are those ruling Dec. 1, 1887:

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4 and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	36 00
Redwood, T. & G. Beaded, 7 to 11 feet	27 00
Redwood, T. & G. Beaded, under 7 feet	24 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	19 50
Pickets, Rough Square	17 50
Shingles	2 25
Laths, 1½	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ¼x3, per lineal foot	01
Nails, for 10 d	2 90
Lime, per bbl	1 40
Cement per bbl., according to brand	$2 50 to 4 50
Brick, per M	$6 00 to 11 00
White lead, per lb	06

Linseed oil, 50 cents per gallon in bbl, 2½ cent additional for boiled.

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

FOR SALE AT THIS OFFICE.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX — ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. — NUMBER 3

THE

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Established January, 1879.

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OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	Per Square	$ 2.50
Back Cover, Outside, Each Insertion	do.	2 00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.0 c
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, MARCH 15, 1888.

Quarterly Summary of Building Operations.

The quarter just closed has been a very satisfactory one as regards the number of new buildings. We tabulate each month separately:

	Value.
JANUARY.	
60 frame buildings	$190,200
4 brick "	279,000
13 alterations	29,100
77	$498,300
FEBRUARY.	
51 frame buildings	$186,500
2 brick "	258,000
8 alterations	18,200
61	$462,700
MARCH.	
36 frame buildings	$147,200
1 brick "	10,000
8 alterations	31,600
45	$188,800
Making a grand total for quarter:	
137 frame buildings	$523,900
7 brick "	547,000
29 alterations	78,900
173	$1,049,800
1st quarter of 1886—252 engagements	$1,359,532
" " 1887—191 "	1,209,100
" " 1888—173 "	1,049,800

Taking the extortionate prices of lumber into consideration, (compared with those ruling in 1886) and the summary given above is a very encouraging one. So far the prospects look decidedly more encouraging than at a similar period last year.

The system now in use in this city of recording contracts compels us to keep two statements as regards the cost of buildings. For instance, a contract is let, with plumbing and painting excepted. Each architect has a system of his own, by which these items can be approximately valued. We simply place our valuation on price recorded, and in our summary give full value of building. The apparent difference between the summary, as given each month, and the quarterly summary is thus accounted for. We shall use the utmost care in giving careful estimates; we do not claim perfection, but we think our reports can be relied upon as being about correct.

Raise in Prices of Lumber.

Lumber prices have again been advanced as the following changes will prove: Spruce, dressed half-inch, shelving to 14-inch, $37 50, an advance of $2 50. Dressed redwood, half inch tongued boards, $34, an advance of $3; dressed redwood, surfaced and grooved, 1x6, 12 feet and over, No. 1, $37 50, an advance of $3 50; the same other sizes, No. 1, $37 50, an advance of $1 50; the same, 7 to 11, No. 1, $28, an advance of $1; the same, under 7, No. 1, $25, an advance of $1; the same, rustic, No. 1, $38 50, an advance of $1; the same, rustic, No. 2. $33 50, advance of $1, the same, tongued and grooved, beaded, 12 feet and over No. 1, $37 50, an advance of $1 50; the same other sizes, No. 1, $37 50, an advance of $1 50; the same, 7 to 11, No. 1, $28, an advance of $1; the same under 7, No. 1, $25, an advance of $1. Pickets, rough, pointed, $20, an advance of 50 cents; pickets, rough, square, $18, an advance of 50 cents.

The most noticeable change is in the advance of 1x6, tongue and groove, redwood, there being a raise of $3 50 per M. rustic has been raised $1 00. Perhaps there may be a just cause for the advance in prices, but we fail to see it. The recent burning of one of our largest mills had no bearing on above quotations, as said mill never sawed redwood lumber, its product being pine, fir, spruce, etc., no redwood whatever growing in that locality. There is as yet, no stringency in the labor market, so that bugbear cannot be urged. There is nothing on the surface to indicate any just reason for the raise.

The whole matter simply resolves itself into this:—every indication points to a large increase in the number of new buildings. The gentlemen comprising the Lumber Exchange are all rolling in wealth, but they are not satisfied, and seeing a chance to fleece a few more dollars from a willing public, they unite, heart and soul in so doing, and virtually say to the public, we care nothing for the future welfare of the City, as long as we can squeeze a few more dollars from those who have to build. Gentlemen of the L. E., is it not time to call a halt?

Enlargement of our Weekly Eddition.

The *Weekly Building News* is meeting with great success. We have labored diligently to give our readers a full account of building operations in various portions of the Pacific Coast. That is the sole aim of the *Weekly*. Every item, every editorial, will relate strictly to building matters, and we hope to secure a goodly portion of those interested in building matters, as our regular subscribers.

Advertisements Solicited.

Extra reasonable rates will be given to those placing advertisements in the WEEKLY BUILDING NEWS. To meet the space for those whom we are confident will help us, we will shortly enlarge the present weekly edition to a

FOUR PAGE SHEET

And as soon as possible thereafter, to eight pages. Remember for the first year we give the 'California Architect and the Weekly Building News" together for TWO DOLLARS PER YEAR.

Editorial Correspondence.

No one who has remained continuously west of the Rocky Mountains, since California became one of the great sisterhood of States, can rightly comprehend, or form any correct and sufficient conception of what lies easterly of the great dividing ridge.

By careful reading and attention to published statements, the mind may be trained to an extent within its capacity, to follow the advancements and improvements from time to time reported through the various channels of information, but conceptions and conclusions so reached, are more likely to fall short of the positive actualities, and the mind pictures thus drawn fail in accuracy at every point, and the magnitude that abound on every hand be scarcely approached—particularly in all the larger cities of the United States, and also in the lesser live cities advantageously situated, with good surroundings, and blessed with enterprising, energetic citizens, possessing sufficient mental and physical lubrications to run out beyond the stingy confines of extreme selfishness, into the broarder fields of liberal ventures, calculated to develop not only every reasonably assured recourse, but also those having no stronger claim to favor than the possibilities. Hence growth, increase and advancement rule generally in the older cities of the United States, while others that at the dawn of in American rules and laws upon the Pacific Coast, were mere camps, military posts, or small villiages, have become great cities extent and expansion, great in business enterprises, and successes, and so great in future prospects, that no sane man would venture to predict or determine, other than as a speculative proposition.

New York, Boston, Philadelphia, Baltimore, Washington D. C., Cincinnatti and many other of the earlier settled cities of the Union, have multiplied the number of constructions within their boundaries, from fifty to five hundred per cent., and investments to cover similar sized lots and parcels of land, a thousand per cent. in some cases, thus showing that with all the other great onward and upward movements in commercial, manufacturing and general business directions, in their thousands of shapes and forms, beauty, solidity and durability in the construction of buildings have kept pace in the onward march, transforming barren wastes, sterile plains, and mountain sides into thrifty places for the habitation of men, who—"Trusting in God and keeping their powder dry"—have "gone West," dotting the continent across with unmistakable marks of American civilization.

* * *

Since return to San Francisco, all sorts of enquiries and questions have been propounded, which to answer fully would occupy many columns of this Journal. "Which do you consider the greatest city of the East?" being the most frequently asked. While Chicago is a vigorous, persistant ambitious aspirant for first place, New York smiles, confident that the Survey of the City that will pluck from it the long worn laurels of supremacy as the pre-eminently Chief City of the Union, has not yet been made. Still Chicago is spreading and growing in all directions, and gathering under its municipal wings and within its Corporate folds, scores of square miles of adjacencies, peopled with industrious, progressive people, being hindered only so far as the waters of the great Lake commands in the absorption of other additions. In time, it is altogether possible that in population the City of the Plains will stand unequaled in point of population. The thousands more of square miles of level land, adjacent to the present City, suggests the possibility of further annexation and additions, which consummated would provide business and residence accomodations for five millions or more people. So that in the matter of population, Chicago may in time exceed even New York, as the area of land limitations are vastly in its favor; unless the latter shall enter the field of annexation and gather in Brooklyn, Williamsburg and other places, "across the river," and cover the sister islands with the mantle of New York jurisdiction, and make them all with their hundreds of thousands of industrious people, members of one great municipal family.

But New York and Chicago are but two of the great family of American Cities. Philadelphia, Boston, Baltimore, Cincinnatti, St. Louis, Minneapolis, St. Paul, Kansas City, Denver, and far too many to name—other prosperous and more or less great cities,—east, west, north, south and central, have strong claims to high consideration, as occupying honorable positions, most of them having doubled or trebeled the number of former population, and correspondingly advanced in all the elements and characteristics necessary to future greatness.

* * *

ARCHITECTURE EAST AND WEST.

The prevailing styles east of the Rocky Mountains are widely different from those so generally adopted in California, except so far as the introduction of light colored sand stones and press brick used in the more recent constructions in San Francisco are a departure from former styles. In the eastern cities, brown, rose or other dark colored stones are prominent factors in building constructions, alike in business, residence, church and other edifices, and the variety of treatments are only equaled by the diversity of conceptions and conceipts affecting the minds of the designers.

While this outstretching, far reaching, unrestrained disposition to bring forth and introduce something new and original, has evolved very many superb and beautiful structures, and developed masterly skill and genius on the part of the designer, it has also originated many architectural monstrosities, so entirely deficient in lines of beauty and symmetry, as to induce a smile from the beholder, contemplating some of the queer, not to say ugly, examples of this unrestrained by rule—architectural libertanizm to be found in the prominent cities, and the architects in some of the lesser places, seeking to imitate, and being able to defend themselves in the creation of designs decidely peculiar, by reference to the execution of similar things at the hands of more pretentious architects in larger cities, become as reckless and extravagant, as vain in their ideas of the consistant and beautiful, and bring forth designs based only upon individual

Timber Piles and the Teredo—A New Invention Wanted.

The chief engineer of the San Francisco Harbor Commission has recently made a report on the experiments ordered to be carried out with piles prepared by various methods, with the view of determining the best way of competing with the *Toredo navalis*. In June, 1882, in pursuance of the orders of the board, ninety-nine piles were driven in Mission street pier 1, then being constructed. During the past month, after an exposure of five years and four months, one or more of the piles of each method, and four unprepared, or naturally bark-protected piles, were removed for examination. When deemed best, a sample of these piles was preserved for future examination. The various methods were given the names of the inventor or experimenter to identify them. All of the prepared piles were barked for a distance of forty-feet, which was the length treated.

A. W. Von Schmidt, of San Franbisco, prepared two piles by jacketing the driven pile with sewer pipe, and filling the space between the pile and the pipe with concrete or grout composed of sand, gravel and Portland cement. The cost of this covering exclusive of the cost of furnishing and driving the pile, was 75 cents per linear foot, or $30 00 per pile—a total of $60 00 for the two. One of these piles was removed. It was found that the teredo had not attacked it, but near the upper part one or two sections of the sewer pipe had been broken and the limnoria had weakened the pile about one-fourth or one-fifth of its original strength.

Frank Shay, of San Francisco, prepared twenty-three piles at 25 cents per linear foot or $10 00 per pile. His method was a modification of the Culver process, or a covering of asphaltum and burlap. The modification consisted of a substitution of wire cloth for the burlap. The pile was given a coat of hot asphaltum, then wrapped in the wire cloth and given a second coat of asphaltum, dusted over with sulphate of lime. Two of these piles were removed, and found so badly injured as to break in drawing them from under the cap. Only traces of the recovering were left.

James McKeon & Co., of Oakland, prepared ten piles, at 16½ cents per lineal foot, or $6 50 per pile. The protecting coat consisted of so-called "marine cement," applied, whitewash fashion, in four coats. The composition of this marine cement was kept secret, except that it contained an "extremely poisonous substance of great efficacy." This coating did not adhere well in driving the pile. Two of the piles thus prepared have been removed, and both have been practically destroyed by the teredo.

W. H. Raye, of Oakland, prepared twenty piles at 16½ cents per lineal foot or $6 45 per pile. His method of protection was similar to one just described, and the material used was a wash of Portland cement and other secret iugredients. The two Raye piles removed were practically destroyed by the teredo. Pearce & Beardsley, of Oakland, prepared forty-four piles at 34 cents per foot and $13 55 per pile. Their covering was another modification of the Culver process of burlap and asphaltum, and was a covering of burlap, saturated with "Pearce's compound," a mixture of naphta and carbon, bi-sulphide, with a small proportion of lime-stone, kaolin, sawdust, and sulphur. Of

the piles thus prepared, two were removed. One has been practically destroyed, and the other seriously attacked.

There were driven at the same time, and in the westerly part of the pier, eleven cedar piles. Two of these were removed and found very slightly attacked—practically as sound as ever, although the bark fell off in removal. It is to be regretted that these piles were not subjected to a more severe test, and unless otherwise ordered, they will be redriven in that part of the water front most infested by the teredo, so as to further test their resistance powers.

In August, 1882, two eucalyptus piles, furnished by Mr. William T. Coleman, were bolted under the same pier. In October, 1886, one of these was removed, and found very seriously injured by the teredo, and the sap wood above water had rotted to a depth of 1½ inches. Four yellow piles driven at the time of construction were also removed for comparison. All had been very slightly attacked, but not one of the four so seriously as to in any way impair its strength. Many of the fender piles, however, had been entirely cut off, and the mooring and cluster piles destroyed.

To sum up: The coatings applied by the various experimenters, depending upon their adhesion to the pile, utterly failed to afford even the protection given by the bark. This has been the history of such experiments in other places. Of the eight coated piles removed belonging to Shay, McKeon, Pearce & Beardsley, and Raye methods, but one retained sufficient strength to permit its removal, and this one was more severely attacked and damaged than any of the four "unprotected" piles pulled up or the cedar piles. These results are however not wasted, as they afford valuable guides for the future to those unacquainted with the history of pile protection, and point out what lines of experiment may be avoided.

The Von Schmidt trial was not a new experiment, as this method has been tried elsewhere—notably at Galveston, Texas—and found too costly and liable to injury to compete with the old fashioned and efficient cresoting process. Considering the fact that about forty-five per cent. of the gross receipts of this board have been spent in wooden structures, and that about twice to twice and a half the cost of a pier is spent in repairing it before the entire renewal becomes necessary, this question of pile preserving is most important, and it is recommended that more extended and better directed experiments be made.—*Scientific American.*

The Plumber and His Tools.

BY A MASTER PLUMBER.

The old adage, "A workman is known by his chips," is also trite when used in reference to the character of his tools and his care for them. To no branch of industry does this apply more forcibly than to the plumbing trade of to-day. In the long ago, when the art of the plumber was far behind its present state of advancement, the trade was handicapped in its endeavors to improve its condition by the absence of the manufacturing interests which abound to-day, and which so bountifully provide all plumbing material, sanitary specialties, tools, etc., adapted to particular uses.

In the present age, both manufucturer and plumber are working hand in hand, keeping even pace with the times, and meeting the growing demand for better work. The result is apparent. To-day the plumbing trade stands in the foremost ranks of industrial pursuits, and the old time spirit of conservatism that characterized too many of the craft, is fast disappearing.

The old-fashioned ways of their "daddy's" that were once held so very, very dear, are being reverently laid down to rest, and in their places spring up the methods of the wide-awake children of progress, armed and equipped for a more important work, the battling with the rapidly increasing needs of the present.

In all branches of industry, vast progress has been made. The public has learned justly to discriminate between good and indifferent work. Therefore, to keep abreast of the times should be the aim of every intelligent mind; to do so requires not only a study of the end, but also of the means contributing to its attainment. Not the least important of these means are the tools of the craft. As a true tempered sword to the hand of the swordsman, so is a good tool in the hand of a skilled artisian; both hold the ring of success in the very clink of the metal. With a clear head, a steady hand and the finished tools of to-day, no man has any excuse for being a clumsy mechanic; and the workman who does not realize this, must sooner or later go to the wall, where he properly belongs. Neither has he any excuse for begrudging his tools the care necessary to keep them in good condition. As a man's clothing reveals, in a certain sense the character of the man—an absolutely unclean condition bespeaking his own low estimation of himself—so it is with his tools. No plumber has a right to enter a household with a dirty bag (naturally suggestive of a poker and its accompanying Italian) and proceed to terrify the inmates by opening up a sarcophagus of dried mummies, dignified by the name of a "kit." If he does so he is very apt to be the man not wanted in the event of future repairs being needed on the same premises.

To this slovenly class of mechanics is due the prejudice actually existing against the craft; for, if a man has no respect for himself, he certainly will not respect the rights or interests of those unfortunate enough to employ him.

Many people dread the entrance of a plumber into their homes; not on account of the bill that is so sure to shadow him as his faithful, much needed helper, but because of the damage to walls, woodwork, etc., that is almost as sure to follow in his wake. Much of this destruction could be totally avoided by the use of proper tools. Of course it is not necessary that a plumber should carry a carpenter's or mason's kit in addition to his own special stock, but a good, sharp, compass saw, or a couple of wood chisels would never come amiss. Neither would a gouge or two (on intimate terms with a grindstone) a small pointing trowel, nail punch and floor chisel. The latter in lieu of some of the crowbars now used for that purpose, will not only be found handy, but absolutely necessary, unless floor-butchering is the aim in view. As regards special plumbing tools, they should be selected carefully, from the class that combines strength, lightness and beauty of design. The old fashioned tools that make the helper a beast of burden and a hunchback before he reaches his majority should be discarded, and, where obtainable, adjustable tools should be used instead. Indeed, so very handy are many of these devices that a man can now carry half a dozen of the old time contrivances in his own coat pocket. Among small tools, one that will be found most indispensable, is a pair of five-inch or six-inch pocket plyers. The plumber who does not possess this always handy tool has lost a great helper, and will speedily repair his oversight, unless he unfortunately belongs to that class of numsculls who would not hesitate to us. an old chisel and hammer on a watch spring.—*Sanitary News*

Who Owns the Tools in the Mill?

Perhaps whose place it is to furnish the tools? would be better. I don't know that any law-suit ever came out of this, as to whether the owner or the employe ought to furnish the tools necessary to do the work and repairs in and about a planing mill. Take it all together a man needs from some source a pretty good kit of both carpenter and machinists' tools—saws, augers, bits, chisels, plains, &c., in the way of carpenters' tools, and hammers, drills, cold chisels, hack saw, &c.; in the way of machinists' tools. A fair kit of tools for a foreman of a mill can not be provided for less than an even hundred dollars, and then he will not have much to brag about.

Tools in a mill are very much shorter lived than the ordinary carpenter's kit, because in the repairs about a mill, which are much oftener done in a hurry than at leisure, he is expected to pitch in, with nails and bolts more often in the way than otherwise, and hand saws and chisels, come out of the skirmish with blunted and broken teeth and broken corners, the whole kit very often the worse for the skrimmage.

No proprietor ever asks how much the broken bit, auger or chisel costs, or ever insists on furnishing tools for these hand jobs. Very often it may cost a foreman five dollars to replace broken tools, after repairs have been made. Now is it not as proper and right for the mill owner to furnish these tools as it is for the employe, or is it supposed that custom has made it a law that employes must furnish their own tools, and get no recompense for breakage and hard wear? Every *man* takes pride in having a fair kit of tools, even to wrenches, and I think I have set the price low when I said a hundred dollars would only make an average or poor show of such a set of tools. I have a single rachet drill, with drills, that cost only a trifle short of $30, and it does not take much of a drill to cost a dollar!

The owner never thanked me for using these costly tools in times when minutes represent dollars in their business, and never say, when a drill is broken, "run up to the store and get one to replace it." Are all owners like this, or have I fallen among thieves who take the whole pound of flesh and give nothing in return? When I use all my tools up, can I get a place to work where the owners find their own tools for repairs?—G. Rumble in *Wood-Worker*

California Colonial Architecture.

We herewith present the plans, elevation, details and specifications of a country dwelling, in what we term, for want of a better name, "California Colonial Architecture." Extreme simplicity chartcterizes the exterior, relieved somewhat by the rather novel arrangement of the brick columns, as shown. These should be built of a good quality of hard brick, with joints nicely struck. The interior arrangement is somewhat different from any we have ever published. Sizes of all rooms are distinctly marked, and the plan is sufficiently plain to be understood by those seeking a design for a comfortable home. Any information in regard to the plan will be furnished upon inquiry being received. Following are a general set of specifications to be followed by those considering the plans given.

FRONT VIEW.—CALIFORNIA COLONIAL ARCHITECTURE.

Brick Work.—The foundation walls to be of hard brick. Height, 3 feet above ground. Should a sufficiency of stone be obtainable, it may be used instead of brick. Chimney's to be built as shown. Flues 8x8 inches, well pargetted. The chimney in front to be built of best hard burned brick, joints well struck, and to be in every way a clean, smooth job. Ash vaults to be placed in each chimney, as per details. The mason is to furnish all rough brick, mortar etc., for setting mantels, ranges, etc. The doors to ash vault to be 12x16 inches cast iron, with hinges, latches, etc., completed. Ventilating grates to be placed in basement wall, ten in number, to be situated where directed by the owner or architect.

Carpenter Work.—All timber used, unless otherwise specified, to be of the best quality of Puget Sound or Oregon Pine. All joists and studs to be mill sized. Special attention must be given to the thorough nailing of every standing part.

Wall plates (basement) redwood, 3x12 inches; underpinning, (basement) redwood, 3x6 inches; braces (basement) redwood, 3x6 inches; corner posts (basement) redwood, 6x8 inches; main sills, pine, 6x10 inches; 1st floor joists, pine, 2x10 inches; 2d floor joists, pine, 2x10 inches; intermediate sills, pine, 4x8 inches; headers and trimmers, pine, 4x10 inches; ceiling joist. pine, 2x6 inches; rafters, 2x6 inches; hip rafters, 2x10 inches; valley rafters, 2x10 inches; corner posts, 4x6 inches; outside studding, 2x4 inches; partition studding, 2x4 inches; closet studding, 2x3 inches; joists and studs, 16 inches from centers; rafters, 32 inches from centers; underpinning, 32 inches from centers. All corners and center posts in basement to be thoroughly braced. All angles and corners to be thoroughly braced throughout the building. A line of flush bridging to be placed around the entire building, and in each partition, midway between floor and ceiling. All corners to be solid, to receive necessary lathing. The ends of the joists to be solid bridged. Bridging for wainscoting to be inserted wherever said material is to be used. Place double line of herring-bone bridging in each set of floor joists, to be well nailed, using 2x4 lumber. Carpenter is to do all cutting necessary for plumber or mason. He is also to see that wall plates on the brick or stone work are level.

Roof.—No. 1 shingle to be used, laid 4½ inches to weather. Sheathing 1x6, joints broken every other course. Shingles to be well nailed; no one nail in three shingles will do. If particular attention is not given to this requirement, the roof will have to be taken off and replaced. The carpenter to guarantee the roof for one year, the owner claiming the right to hold $50 of the contract money to secure this result. Gutters and conducters to be placed as per details.

Rustic.—No. 1 rustic to be used, not over 8 inches wide. All channels behind casings to be thoroughly plugged, plugs first being dipped in white lead, a bead to be driven in each one to hold it in place.

Porch Ceiling.—To be of clear, well seasoned redwood T and G, not over 4 inches wide; both tongues and grooves to be painted before being nailed in place.

Floors.—To be of first quality, 1x4, T and G pine, well seasoned, and not to be laid until building is enclosed. Floors to be laid before partitions are set. Porch floors to be vertical grain, and tongues and grooves to be painted before nailing, to be face nailed, nails set and holes puttied.

Stairs, Etc.—Main stairs, as shown, 7½ inch risers of redwood; treads of Oregon pine; rails, newell and balusters of main stairs to be of black walnut; newells 9 inch square of design as per details. All stairs to be housed, keyed, blocked, glued and put up in a workmanlike manner, with the risers tongued into the treads, back tongued and properly furred for plastering. Hand rail hung on iron brackets at each 4 feet up one side of rear stairs; 2-inch carriages for all outside steps, cut out of solid plank, and set not over 2 feet from centers. Give all outside steps ⅜ of an inch pitch in one foot of width, so that water will easily drain off.

Wainscoting.—The dining room to be paneled 4 feet high. The kitchen to be wainscoted 3 feet 6 inches high, except over sink, to be 5 feet; bath room to be 5 feet all around; rear stairs to be wainscoted 3 feet high, same to continue around rear hall.

Windows.—To be in design as per plans and details, all hung with weights, and to be fitted with Ives' Patent Locks and Norris' sash pulleys. Use best Silver Lake braided cord.

Doors.—To be of uniform height (with exception of front door) in each story, 1⅜ inches thick, sugar pine stiles and rails, redwood panels raised and moulded, width as per plans. Front doors 1¾ inches thick, made as per details; colored glass in panels of front door.

Inside Finish.—None of the inside finish is to be put up until plastering has been completed and the building thoroughly swept clean. Use none but clear and well seasoned redwood, the whole of which is to be smooth dressed and sand papered. Grounds to be put on for plastering work, ⅞ of an inch square. Clothes closets to have 1x14 shelves, with a rack under for hooks. All shelves in closets to be placed as directed. Kitchen pantry to have 4 rows of shelves, with flour bins etc., complete. Sinks in kitchen to have moulded caps, drain boards, frame and drawers of sugar pine. Casings for doors and windows to be 1x16, made as per detail, with corner blocks. Base boards to be of rustic 10 inches wide, and a light moulding 2½ inches wide. Picture moulding in parlor, dining room and the two principal chambers. Mantels in hall and dining room to be made of walnut, at a cost of about $75 each.

Plastering.—All walls and ceilings throughout the building to be lathed with 1½ inch pine laths, with joints broken every 8th lath. Rough or brown coat to be made of fresh burnt lime, and clean, sharp sand, to be well tempered and a sufficiency of hair to be used. White coat to be of Plaster of Paris, trowelled to a smooth and polished surface. In all cases brown mortar to extend to the floor.

Plumbing.—Gas pipes to be run so as to have a drop light in each room; gas pipe in newell at foot of main stairs. Side light in kitchen over sink. "Golden Gate" water closet to be used, with everything complete. Safe wastes under bath tub, water closets and wash bowls with 1-inch waste pipe discharging on outside of building through proper conductors.

Painting.—The outside of the building to be painted with 3 coats of paint, of colors selected by the owner. Roofs to have 2 coats of Prince's metallic paint. The inside finish to be of oak, cherry or walnut, as owner may select. All grained work will have a heavy coat of varnish. All iron and tin work to have two coats of paint. All work to be thoroughly cleaned before priming; all nail holes, cracks or other defects are to be thoroughly filled with putty. The graining to be a good imitation of the wood selected by the owner. Angle beads to be whiteued. Use none but the best lead and pure linseed oil.

Generally.—Drawings and specifications are intended to illustrate each other generally, so that a thing shown on one and not mentioned in the other, or *vice versa*, is to be done the same as if fully set forth in both. All works are to be done with the most approved kinds of the various materials mentioned, and none but the best workmen are to be employed.

PERSPECTIVE VIEW.—CALIFORNIA COLONIAL ARCHITECTURE.

Keep Plumbing Fixtures Clean.

There are many housekeepers who imagine that first class plumbing should not require any attention. How often have we seen plumbing fixtures of the best design and quality kept in the most filthy condition—a condition so bad that inferior plumbing would cause less injury to health?

Where people are aware that the plumbing in their houses is of an inferior quality, they take every precaution to reduce the evil to the greatest possible extent by cleanliness; but when the plumbing is of the best quality many seem to think that cleanliness is not required, and blame the plumbing for any sickness which may result from their carelessness in not keeping the fixtures clean.

The fact of the matter is that the better the plumbing the greater the care to keep everything in perfect order. Where there is good work there is generally a large number of fixtures, and the more fixtures the greater the necessity of cleanliness. In houses where the best plumbing is done, servants must be to a large extent depended upon to keep everything in order; and where servants are not closely watched, the work they should do is only too often neglected. The habit which many servants have of storing anything and everything about the plumbing fixtures should not be allowed. It should be insisted upon that all fixtures should be left perfectly open and clear, so that a free circulation of air should pass in and about them. Closets, sinks, etc., should be regularly cleaned and all copper lining kept bright. The wood-work surrounding all fixtures should be thoroughly washed at frequent intervals or otherwise kept perfectly clean. In short, we would urge the most perfect cleanliness of all the figures and surroundings in every part.

The servants' fixtures should receive the attention of the mistress, as servants are proverbially careless of their surroundings. It is not enough that the principal fixtures should be clean—all should be clean, even in the most out of the way part of the house.

It often happens that because the plumbing is good, temporary and local smells are noticeable. With bad plumbing there is always a close, heavy odor, to which people become accustomed, and the temporary odor is not noticeable. When plumbing is good, the careless or indifferent use of the apparatus may be noticeable because of the absense of the overpowering and ever-present odor usually about inferior work.

Another portion of the house that should receive close attention is the cellar. Nothing should be allowed to remain in it in a state of decay or filthiness. The cellar should be kept as scrupulously clean as any part of the house.—*Canadian Architect.*

Redwood.

Redwood can be sucessfully utilized for encasing engine cylinders, parts of cotton machineay, moldings, patterns and dozens of other uses to which white pine and various hardwoods are now put. The California Redwood Association, through its local representative, seems determined to push the semi-obscure wood to the front this year, and as a competitor, it may change the complexion of trade in certain directions. Every honest effort will be made to boom redwood. As the quality is invariably clear, the only thing to be done is to advertise that fac and place the selling price on a basis where consumers cannot but observe the advantages offered.—*N. W. Lumberman.*

Paper hangers' paste is best made by first heating the water to boiling, then adding flour, stirring constantly to prevent the formation of lumps. The flour may be passed through a sieve, so as to insure it a more equal distribution Agitation is continued until the heat has rendered the mass of the desired consistency, and a few moments further boiling it is ready for use. In order to increase its strength, powdered resin in proportion to one-sixth to one-fourth of the weight of the flour is added. To prevent its souring oil of cloves or a few drops of carbolic acid should be added.

Even in the Holy Land, sanitary improvement is the order of the day. Bethlehem has well paved streets and Jerusalem is becoming clean. Tanneries and slaughter-houses have been banished from the city proper, a system of sewerage is underway.

Cement to Fasten Glass to Brass.—Boil three parts of resin with one part of caustic soda and five parts of water, thus making a kind of soap, which is mixed with half its weight of plaster of Paris.

Files: Their Use and Abuse.

No one thing stands out more prominently in the cash account of an ordinary planing mill plant, than the money paid for files; and with graining machines, grindstone and emery wheels, and whatever appliances there may be for sharpening saws, planer knifes, side cutters, &c., still there seems to be a bottomless pit in the file account that unceasingly swallows up greenbacks, gold and silver dollars, and silver certificates alike, seemingly without any mercy or recompense. A dozen files melt like the dew, and it is a lcuky thing if more than half of them are ever got togethor and taken to the file cutter to be cut.

The few different kinds of files used in saw and planning mills would seem to be a reason why the expense for files should not be so large, the common single-cut mill file being about all the kind that is used. A very few bastard double-cut, will suffice for all the repair work done about a mill, and unless we go largely into small sawing, where a taper file can be used to good advantage, the flat single cut mill file is about all we find use for. Files ought to be made of a uniform, even grade of steel, well and evenly hammered, so that when they are hardened they will not warp [illegible].

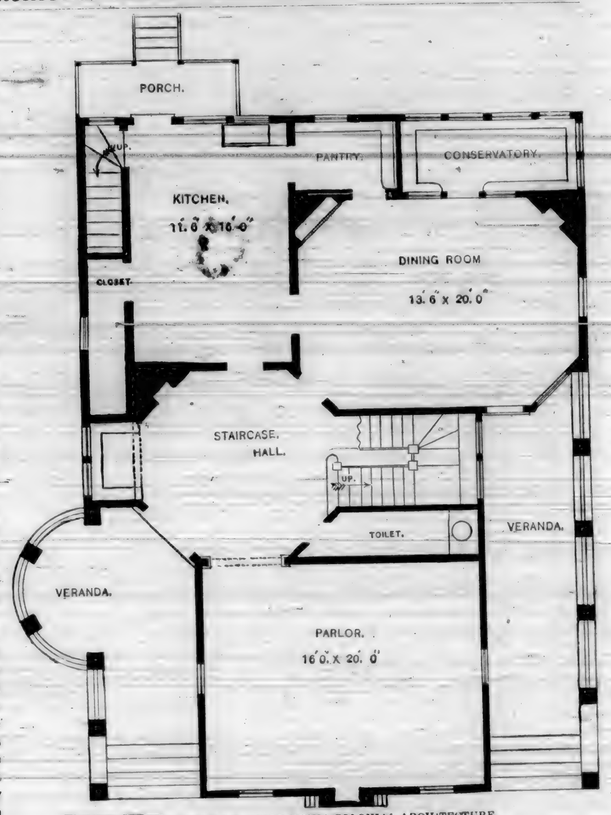
We very often find files, especially re-cut files, that fold up in hardening so one side is round and the other hollow, and consequently from such files we get but little work and of a poor quality. Very much depends upon the coarseness of the cut of mill files, as too coarse a cut will not do as good work or last as long as the finer cut ones.

There are five grades of single-cut files known to the trade, rough, coarse, bastard, second cut and smooth. The bastard cut is the nearest right for sharpening planer knives and side cutter bits, as well as for filing generally. In some cases the "coarse-cut" will answer, but the rough-cut ought never be used on work of this kind. For small, nice saws the second-cut is very nicely adapted; as they leave a fine clean edge. I have had double-cut files that have done splendid work on saws, but generally they are not as good for saw filing. Very much depends on the users of files, whether they are long or short-lived. When you see a man trying to make a file cut both ways you may know that he journeys often to where the files are kept, and the file account runs up amazingly. A man should never allow himself to let his file drag on the back stroke, as it wears out much faster than the forward stroke does, and a gigging stroke is abominable. A long, steady, even stroke will do more work than three little, short, quick ones will, and the files last very much longer. The very first thing a person ought to learn in filing, whatever it is, whether iron, brass or steel, or thing else in fact, is to lift the file from the work on the back stroke.

As I have already said, much of the value of the file depends on the filer and it is worse than useless to try to determine the value of files in the hands of nine-tenths of those who are required to use them. It is a trade to learn, and to learn it well requires as much brain and skill as any other trade. How many persons using files can file two pieces of iron or steel so that when rubbed togethor one will lift the other? And still it is a thing that can and has been done.

With all the appliances for sharpening saws and cutters, we cannot get along without the file. It is a good servant, but subject to to all sorts of abuse and neglect. Frequently a man is set to run a table saw, and in most cases he is expected to do his own filing. The result is, all sorts of shaped teeth and a big file account, which not infrequently amounts to nearly as much as the man's wages do. One *great* source of loss is the abominable carelessness in regard to looking after the worn out ones. We find old files everywhere. If a man wants to clean out an oil hole, he gets a file and uses the tang, and lays it down just where he uses it, and that ends *that* one. If he wants to pry anything apart, he gets a file, and that breaks it, and that one is gone. If he wants to scrape the dirt from a piece of stuff, he gets a file, and if it is not just right for what he wants, and it will serve him better if broken, he hits it a clip with a hammer, and that settles *that* one; and from driving nails to blocking up machinas we find the file is *always handy*, and when he once goes astray, it goes to the bourne from whence no file ever returns. If lumber working firms would get in the habit of *charging the files to the man when taken*, and giving him credit on their return, there would be fewer files lost, and more work done with what are used. Somebody should know when a file is properly worn out. Many persons in filing use up but little more than half the file, and what is left sharp goes to the grinder as readily as if worn smooth from tip to tang.

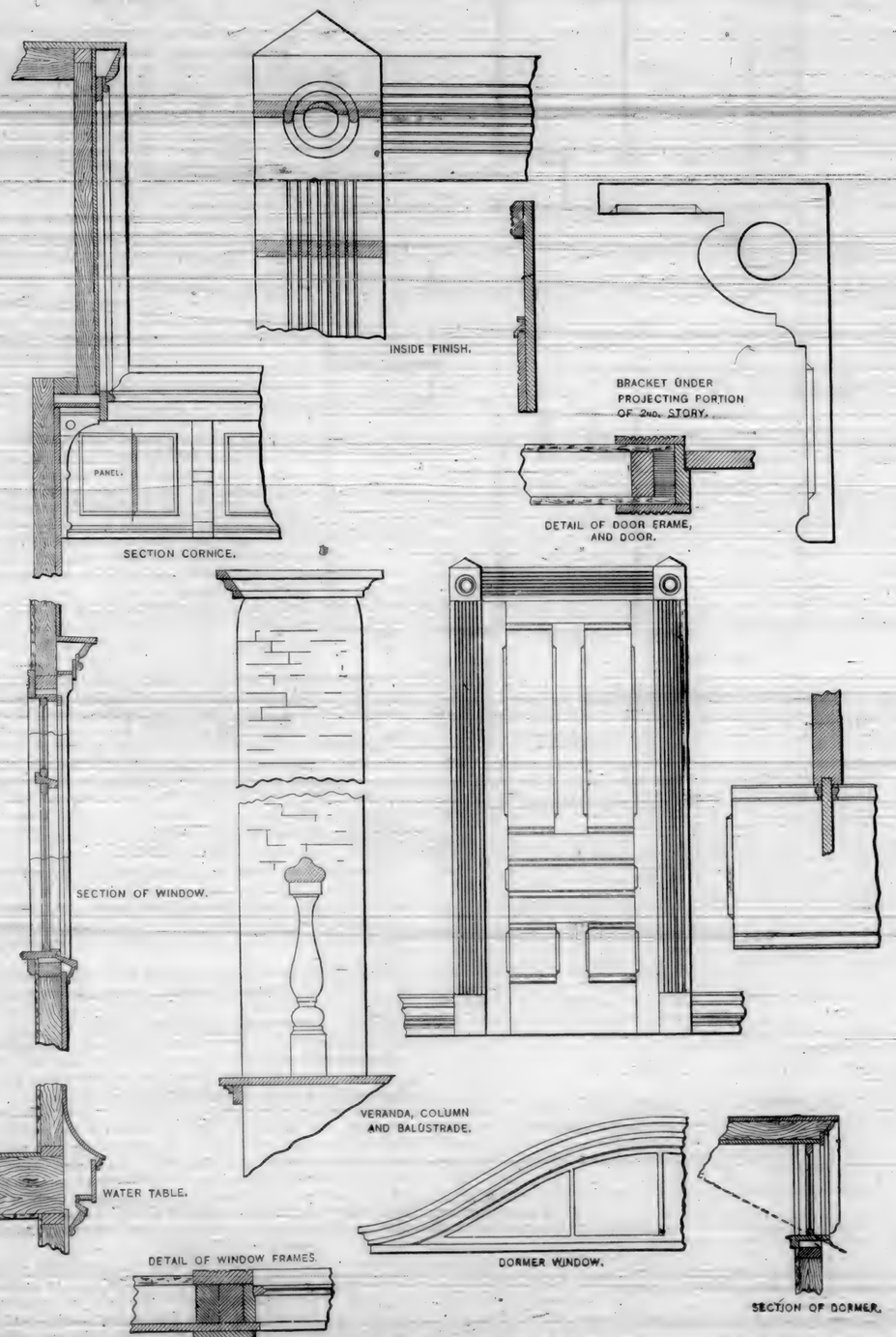
I see no other way to lessen the cost of files than to make those who use them responsible, and hold them to strict account for every one taken—*count them out and count them back*, and hire those to do the filing who understand their use. One man in a mill, large or small, is enough to have the care of the saws, and if he cannot do it alone give them competent help. Then your file will do all it can or ought to do. He should know when a file is poorly cut or improperly hardened, and all poor or imperfect cutting or tempering should be returned to the cutter and the price deducted from the bill.—*J. T. Langdon in Wood Worker.*



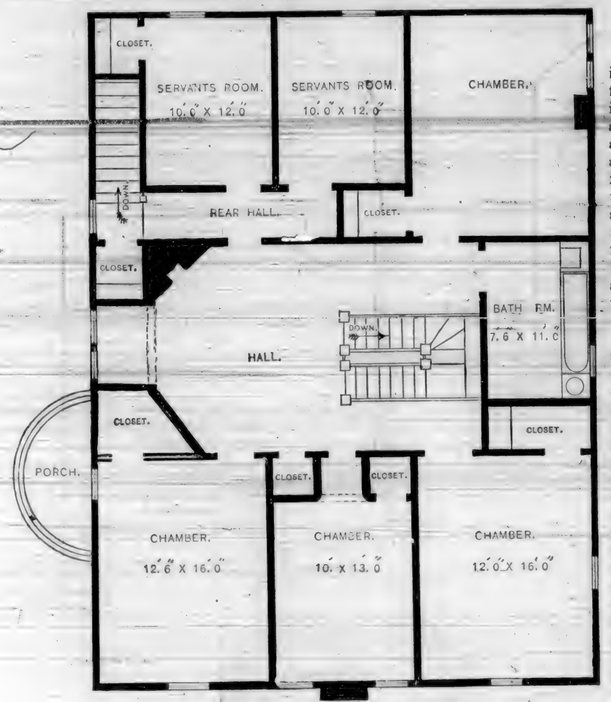
FIRST FLOOR PLAN.—CALIFORNIA COLONIAL ARCHITECTURE.

EHRET-WARREN MANFG. CO.
113 N. 8th Street, ST. LOUIS, MO.
—SUCCESSORS TO—
M. EHRET, Jr. & CO., St. Louis.
S. D. WARREN & CO., St. Louis and Kansas City, Mo.
MANUFACTURERS OF
ROOFING FELT,
SHEATHING FELT,
BUILDING FELT.

ALSO EHRET'S
BLACK DIAMOND ROOFING
(FIFTH YEAR IN USE.)
Water Proof. Fire Proof.
Costs Less than Metal or Shingles.
—FOR—
FLAT and STEEP ROOFS
Anybody Can Apply It.
Send for Samples, Prices, Testimonials.
NOTICE—We manufacture all our own goods. To insure getting them ask for the Black Diamond
Special prices. Delivered anywhere



DETAILS OF CALIFORNIA COLONIAL PLAN.



SECOND FLOOR PLAN.—CALIFORNIA COLONIAL ARCHITECTURE.

Land Sharks.

They are always found in any western city, about the hotels, and on the street corners, a set of men claiming to be real estate agents. They are like a lot of vultures watching for their prey. They do not give a stranger time to rest, eat or sleep, until he is given a description of all the cheap property they have for sale.

It is generally safe for a stranger to steer clear of all persons who thus button-hole them.

If you desire to purchase a farm or city property, consult some real estate agent at his office, from whom you are likely to obtain reliable information, and if he does not have what you want he will not bore you.

When you find a man who does not have a business to justify him in keeping an office, it is safe to let him alone.

The real estate business may be, and is carried on in just as honorable a manner as any other business, and an honorable agent is often a great help to a stranger in assisting him in making selections of what he wants, but the class of agents referred to above, bring the entire business into bad repute, so that many times strangers on coming to a place feel like avoiding all real estate agents.

Were concave ceilings introduced into parlor, dining and reception rooms, better opportunities for the decoration would be afforded. A concave sky, although the curve is all but imperceptible, is certainly more pleasing than a flat sky. With such a ceiling the cove could be dispensed with, and with it angular molded lines, forming border of ceiling, would disappear, giving place to flower, leaf and branch designs reaching upward and outward. To a lofty room such a ceiling would impart increased stateliness. Where the ceiling is structually flat converging ribbed arches with central pendant or base might be carried out in paper mache. Rooms present so many angles, mantels and furniture contributing a considerable share, in additions to walls, that curvilinear forms are welcome variations. Even deep coffers, polychromatically decorated, are enchanced in beauty by a curved ground, which carries the eye naturally from one side to the other side of the ceiling surface, thus causing it to take in the whole.

Favoritism.

Of all contemptible phases in any kind of business it is to have a few men who always receive special favors, always have the best part of the work, and if work is dull or anyway slack a few are favored and always kept at work at something, or nothing, as the case may be, while the others, less favored, are sent home and have to shift as best they can for the necessities of life. In the milling business, where men work through thick and thin, rain and shine, and lug and tug, it is the quintessence of meanness to send part of the men home and let a few favored ones have the benefit of a partail rest. Men that work in a gang through all the weathers and under all conditions should all have the same treatment exactly, and if there's "rest for the weary" let all share alike.

We all know when the season is up and the plant shuts down until another season, that everybody has to ride out on the white horse. There is no cause or complaint about this; but some mills run through the year, and a few cold days in the height of winter are the only times they hold up, and then foremen of gangs often take the opportunity to show some personal feeling which has arisen out of some trivial thing when work was driving, and the thing was laid up until a more convenient season when the blow would be felt, and the poor fellow should feel there is such a thing as a *boss*. Every man in a gang or crew of men should have exactly the same treatment and the same kindness and consideration. No two men have the same capacity for work, and foremen should know just where to place every man so he can work to the very best advantage.

No foreman should discriminate between any of his men, or allow himself to treasure up anything said through the busy season. If the man has done anything worthy of censure, let it be given then and there, and if necessary discharge him at once; but the foreman should never disgrace himself so much as to carry the load and dump it on the poor fellow's head when he is in a tight place and can not get work.

So many days work means so many dollars, and necessity and not choice compels most men to labor through rain and shine for the necessaries of life for themselves and those depending upon them for support, and these men who labor long and well should all share alike at the hands of those who employ them.—*Woop Worker.*

Panel Doors.

The house carpenter of the last and previous generations, who could from rough lumber make a good four-panel door in twelve hours, was considered a fair, diligent worker. A greater number left the door unsmoothed and unfit for the hinges than those who gave it the finishing touches requisite for the priming and hanging.

What of these necessary appendages now? Such is the present demand for first-class panel doors that, were it not for our improved wood-working machinery, the number of door makers would be necesarily, multiplied by a full score. Indeed it is exceedingly doubtful whether one hundred men can, now, be fouhd in this or any other country, who can make, finish and smooth-up as many panel doors in a given time—say one week—as five practical workers with our present door-making machinery.

A late census report before me says that "figure 445 illustrates a machine, with a capacity for 500 doors per day, working on doors of seven feet in length on both sides of the door every minute. Tenons, wedges, etc., are cut off by adjustible saws at the work end, and, the table adjusts for thickness by inclined planes." And this machine can instantly be anjusted for doors of any orcinary thickness. What would 40 men do towards finishing up 500 doors of their own make? It would take them double the time of the two men at the machine?

These facts are introduced not only to illustrate the wide progress made in wood-working machinery, but also to impress the minds and hearts of many uneasy workers who are clamoring constantly for fewer hours of labor and higher wages than before genius and skill furnished these beneficent machines, which now perform nearly all the heavy, muscular work, merely requiring of us activity, punctuality and strict attention to our business.—*W. W. E. in Wood Worker.*

HILL'S

Patent Inside Sliding Window Blinds,

Are Adapted to any Style of Window,

And Suitable for all Buildings, Dwellings, Stores, Office Buildings, and for Houses Built to Rent, Hotels, Boarding or Lodging Houses are Unexcelled.

They are entirely inside of the window casing, and while requiring no furring out or boxing, make it an impossibility to tear curtains, interfere with plants or window ornaments, or become broken by contact with chairs or other movable articles.

The light can be admitted and sunlight excluded from any part of the window; can be instantly removed and taken to any part of the house to clean and as easily replaced.

They can be opened or closed with the window raised, and without removing articles from the window-sill, and cannot blow open or rattle. The Blind is very light (one-half inch in thickness) and strong, possessing more durable qualities than a hinged blind one inch in thickness.

There is no sagging, banging, or getting out of order.

They are made in three sections in height (each section sliding past the others), and any number of divisions in width corresponding to the folds in the old-fashioned folding blinds. They require no hinges—all trimmings furnished with blinds—are made of all woods, finished or unfinished.

The Blind manufactured throughout the United States and Canada by the members of the HILL SLIDING BLIND ASSOCIATION, is the only sliding Blind ever put into practical and general use, or that has been adopted and used by the leading architects and builders, both East and West.

It is rapidly displacing the objectionable folding blind, also shades, which since they have ceased to be considered the fashion, are used principally in cheap dwellings and t nements.

The Hill Blind is the only sliding blind made of white cedar, and where the grooved slide can be used as the window stop, or placed on the pulley stile, similar to the ordinary stop—"the slide is only 2⅜ inches wide"—plenty of room can be obtained by setting the casing flush with the pulley stile, in light studded buildings. NOTE.—Any other sliding blind using the slide as the stop for the sash, is an infringement of our patents of February 26, 1884, and February 24, 1886, and anyone selling, using, of making such a blind will be prosecuted by the HILL SLIDING BLIND ASSOCIATION, as they are determined to stop the sale of several cheap and worthless imitations.

The Hill Sliding Screen, working the same as the blind, is the only screen covering one-half of the window, which will remain at any desired point, and which can be instantly removed, when not required, or to clean the windows.

Over eight thousand sets have been specified and put in, throughout the Pacific Coast, since April 1, 1885.

We refer to the following prominent architects of San Francisco, who have used or specified the Hill Blind and Screen; also hundreds of owners throughout the Pacific Coast:

Miller & Armitage, Pissis & Moore, H. D. Mitchell, John Marquis, John M. Curtis, Moore & Schultze, J. T. Kidd, J. H. Humphreys, T. J. Welsh, Jas. E. Wolfe, Townsend & Wyncken, Chas. J. Devlin, Geo. E. Voelkel, Copeland & Banks, M. Balczynski, Edw. R. Swain, Chas. V. Pierce, S. & J. C. Newsom, Wm. Mooser, Chas. Geddes, Macy & Jordan, H. T. Bestor, A. A. Bennett, Salfield & Hohlberg, A. J. Barnett, John J. Clark, G. V. Capelletti, P. R. Schmidt, M. P. S hetzel, Clinton Day.

HINDES & MURRAY,

Main Office and Factory, 411 Mission Street, Corner of Fremont.

Sole owners of the right to SELL and MANUFACTURE for the Pacific Coast, except Counties f San Diego, Los Angeles, San Bernardino, Santa Barbara, Kern, San Luis Obispo, and Ventura in California.

COUNTRY BUILDING NEWS.

SAN DIEGO.

The erection of a two-story frame building for T. O. Wadsworth will soon be begun on lots 39 and 40, block 7, Reed and Chase's addition.

Work has been begun on a three-story corrugated iron warehouse for D. H. Hewitt. It is located on lots K and L, block 60, Horton's addition.

George Journey, builder, is erecting a corrugated iron warehouse for J. W. Wescot on Seventh street, between H and I. It is 50x100 feet in size.

Breden & Hatcher, builders, are erectig a substantial corrugated iron warehouse for Toles & Decker, on Sixth street between K and L. It will be 50x100 feet in size and will cost $5,000.

A store building for George N. Hale & Co. is being erected on D street between Fifth and Sixth. It is of frame, 50x75 feet in size. F. E. Joanson & Son are the builders.

John Diehl and Fred Vitepsch have obtained a permit from the Building Inspector to erect a three-story brick building on lot G, block 10, Horton's addition. The cost of the building will be $7,700.—*Union*

Work on the foundation of the Snyder block on Sixth street, between E and F is progressing rapidly. The plans have recently been changed so as to enlarge and materially improve the building. It will have a basement and four stories instead of three.

A business building is being erected for H. N. Conklin, on Sixth street between I and J. The building will be sixty feet square, and will contain two large stores. J. Bailey is the builder. The cost will be $5,000.

A three-story brick building, 50x 90 feet is being erected by T. K. Smith, on Ninth street near I. There will be two large stores on the ground floor, and forty lodging rooms in the upper stories. The cost will be $12,000. S. C. Smith is the architect and contractor.

Stannard & Clements, architects, are preparing plans for a hall, and business building, to be erected on the corner of Fourteenth and H streets. It will be 50x70 feet in size and two stories high. The cost of the building will be $40,000.

A cottage will soon be erected for Carl Schutze, on D street, between Thirteenth and Fourteenth. It will contain five rooms and a basement, and will cost $2,000. Emil Guenther von Schwartzenburg is the architect.

F. E. Johnson & Son, builders and contractors, are erecting a corrugated iron warehouse for J. Sheriff, at the foot of Fifth street. It is two stories in height, and 50x 100 feet in size. Two similar warehouses will soon be erected in the same neighborhood. They will cost about $4,500 each.

The building operations of this city are still seriously interfered with by the continued scarcity of lime. During this week work was suspended on three large lodging houses and two business buildings, because no lime could be procured to finish the plastering. Dealers in lime do not promise any change for the better for ten days or two weeks, and then the market will only be supplied temporarily. In the meantime work is suspended on ten large business structures and innumerable smaller buildings.

REDDING.

F. Dustin is building a $1,500 residence on Willis street.

Mr. G. Haskell is building a $1,500 cottage on Willis street.

Work will soon be commenced on Harry Hill's new two-story dwelling on Market street. This will be a fine building.

Mr. H. Nunnamaker is preparing to erect a $2,000 cottage on the corner of Court and Tehama streets. J. G. Farhner is the contractor.

Mr. England, of Santa Cruz, is building a fine building on Court street. Cost, $1,500. Farhner, contractor.

The contract is out for a $30,000 hotel, to be erected by a stock company on the corner of Market and Butte streets.

St. Claire's new four-story residence is about completed. This structure will cost between $5,000 and $6,000. Farhner, contractor.

F. H. Deakin's new two-story stone front brick building on Market street is completed. Holt & Gregg contractors.

Hoff's new brick building on Yuba street is almost completed. It is quite an ornament to Yuba street. Holt & Gregg are the builders.

McCormick, Saeltzer & Co.'s new three-story store to be erected on the corner of Market and Yuba, will be begun in about a week. The building will have a firm iron front. Holt & Gregg contractors.

ED. "NEWS:"—I see by the BUILDING NEWS received by the *Democrat* that you wish a correspondent in every city, and so I will try and furnish a few of the most important items weekly, if the same will be acceptable. I send a few by this mail. We are having quite a building boom, so I can furnish a good deal. Yours respectfully, J. D. Stanford.

SEATTLE, W. T.

TO WEEKLY BUILDING NEWS, 240 Montgomery street:—

Addition to Occidental hotel, 4-story mansard roof, brick; cost, $40,000.

Work on H. A. Smith's 4-story brick, cor. James and Second will soon begin, to cost $50,000.

Work on 4-story brick for M. & K. Gottstein, on S. E. cor. Front and Columbia will soon begin; cost $75,000.

Mill street, west of Front; 4-story store brick and iron; elevator. Owner, H. L. Lesler; Otto Ranke, contractor; cost, $50,000.

Just completed; 4-story brick and stone S. E. cor Front and Columbia; elevator; Toklas & Lingerman; Otto Ranke, architect; cost $80,000.

Second street between Columbia and Cherry; 4-story and basement brick and stone; elevator, Boston Improvement Co.; Otto Ranke, contractor; cost $192,000.

Three story brick, west side of Front bet Mill and Columbia; elevator. Lewis Methham & Yash; Otto Ranke, architect; cost, $60,000.

Over three hundred frame dwellings now in process of construction and about eight or ten frame store buildings. Building boom is expected in the spring. Yours truly,

JAMES A. CAREY,
Pub. *Seattle Star.*

Seattle, W. T., Feb. 15, 1888.

SAN BERNARDINO.

R. A. Davis is building a cottage on G, near Ninth street.—*Index.*

G. H. Wadleigh is building a residence on Tenth street near F.

A three story brick block will soon be started by W. Smith Hale.

L. W. Heath is building a neat cottage on E, near Ninth street.

J. D. Greenwade is erecting a $7,000 residence on Seventh street.

Mr. Byrne's $20,000 house is almost ready for carpets, furniture, etc.

Several new residences are in process of erection on the Alta Vista tract.

H. H. Whaley has concluded to erect a brick block opposite the Andreson-Drew building on E street.

The contract has been signed for the new post office block, Littlefield Bros. are the contractors, and the amount is $47,780.

R. E. Davis has the contract for building the new schoolhouse in the Fairview district, and expects to begin the work in a few days.

Jones & Griffith, architects, have prepared designs and plans for a $50,000 building for the Farmers' Bank. Contract will be let early in March.

Plans are being drawn for a $30,000 school building, to be built at an early day in this city. It will have all the modern appliances, and will be one of the best and most substantial structures in the state.

Mr. E. Somers is having prepared plans for a three-story brick building, to be erected on the southwest corner of E and Second streets. It will have a frontage of 225 feet, the lower floor to be used for stores and the upper for offices.

SAN LUIS OOBISPO.

Wanted.—Some one with some capital and more energy and sense to start a few lime kilns in this county. Lime is steadily climbing up in price. There is found to be a heavy demand for it the coming years, and we have as good material as there is on the coast in many parts of the county to make it out of, and still there is not a barrel being burned. Talking the other day with a practical builder, he told us at the old Dana homestead he kicked out of the ground some lime which had [been] left over and thrown aside in building operations there about, thirty-five years ago, and the lime was still as hard as a rock. That is the kind of material we have; wood is abundant, and some one is allowing an opportunity to make a fortune escape him.

RIVERSIDE.

The contract for the Y. M. C. A. building has been signed. H. A. Westbrook is the contractor. J. C. Pelton is the architect. The bids were as follows: S. B. Robinson, $16,387; H. A. Westbrook, $15,777; B. B. Taylor, $16,705; John E. Porter, $16,763; A. W. Boggs, $17,666; J. E. Gibson, $19,000.

MODESTO.

I. E. Gilbert & Co. have engaged architects to prepare plans for a fine 2-story brick building. It will be commenced in April.

SALEM, OR.

Architect D. Pugh is preparing plans for a $3,000 residence for F. Stenver.

HESPERIA.

A contract was yesterday let for the construction of a school house up Lotle creek. It will be after a modern design.

C. A. Barnes yesterday let a contract for the building of a large planing mill at Hesperia, and work will begin in a few days.

General Manager C. A. Barnes is to have a new granite dwelling, to cost $4,000, J. C. Pelton, of Los Angeles, being the architect. It will front the Park, on Olive street.

Contracts for the building of eighty houses at Hesperia have been let. Failure to obtain the necessary lumber is the only thing holding back the activety of the saw and hammer.

COLUSA.

A. J. Hankins is building a commodious two-story residence in the southeastern part of the city.

Steps are being taken to build a club house at Arlington. I. Thomas offers 100x300feet for the building. Twenty-seven hundred dollars has already been promised for the erection of the house.

Addington & Green are erecting a one-story brick building adjoining the post office. P. Muttersbach is also building a one story frame dwelling on Clay street. Several more buildings have been erected lately and several more are contemplated.

FRESNO.

J. L. Smith has been awarded the contract for the County Hospital. His bid was $25,240. The highest bid was $33,348. This is entirely too much difference on a job costing the above amount.

On Monday last, E. O. Miller let the contract for the building of his residence on Court street, to Mr. Banta for the sum of $4,694, the building to be completed within 90 days. It will be two stories in heigh', Eastlake finish, and will contain eight rooms.

EUREKA.

Henry Rohner will have erected on the corner of Fifth and E streets, this spring, a two-story building, 90x110. The structure will contain three store rooms and the upper portion fitted for tenements and office purposes.

SANTA MARIA.

Jones and Lucas are having erected a 2-story building 50x60.

J. F. Goodwin will shortly erect a 2-story brick building.

Jas. Beattie is about to build.

WHITE OAKS NEW MEXICO.

G. R. Young has closed a contract with Mr. Foley to erect a store foundation 25x85 feet, with a cellar 25x30 feet. On the corner of White Oaks Avenue and Carizo street.

To be Rebuilt. — Paulson & Drum are rebuilding their sash and door factory, recently destroyed by fire, on a much larger scale. The excavating for the planing mill is being carried on rapidly, and when completed this portion of the mill will be 80 feet longer than the old one. The saw mill part of the establishment will also be greatly improved, and the output increased to 30,000 feet of lumber per day.

Tacoma, Feb 1.

REDLANDS-LUGONIA.

Four brick buildings are under way on Orange street.

The proposition has been advanced to combine these two towns under above name. We hope the name selected will be different, as it is too cumbersome.

A contract for building a new five-story flouring mill at Milton, Or., has been let to an eastern contractor. Lumber has been purchased and work commenced. These mills and a large foundry on the same acre of ground will cost $30,000. The power will come from the Walla Walla river by race and flume.

A LARGE TWO-STORY BRICK BUILDING WILL SOON BE BUILT IN SAN JOSE.

Architect B. J. Clinch of San Francisco has completed the plans for a new additional building for the Sisters of Notre Dame, which have been approved, and the specifications will soon be in readiness for bidders. The new building will be a two-story brick 96x40 feet. The first story will be occupied by class rooms, piano rooms and parlors. The second will be used exclusively as a chapel. The Rev. Father Kenna, who has urged the erection of the new building as a necessary adjunct to the beneficial and increasing labors of the Sisters, will assist in securing subscriptions for it, as it cannot be built without some outside assistance.

ANOTHER NEW CHURCH.

The Centennial Methodist Episcopal Church of West Oakland has contracted for a lot on the north east corner of Tenth and Union sts. 61½x140½, on which it expects to build an edifice costing in the vicinity of $12,000. The church will be 55x85 feet in the clear, and two stories in height. The architecture will be in modern style, and the building will be finished and furnished so as to give the best facilities for effective church work in all departments.

NEW CHURCHES FOR OAKLAND.

A lot has been purchased by the Centennial Methodist Episcopal Church of West Oakland. It is located on the northeast corner of Tenth and Union streets, in a most excellent locality. The trustees of the church have under consideration he advisibility of the construction of a church building to cost $12,000. Plans have been prepared which provide for a frame building in a modern Gothic style. The plans provide a church 55x85 feet, with seating capacity of 500 per sons. The finishing will be in hard, natural woods.

The Unitarian Church Society has re-organized, so as to have the power to hold real estate, and before this year is ended will build some kind of a house of worship to cost about $25,000. No plans have yet been decided upon.

There is considerable talk of building a church below Seventh street, in order to carry the warfare of the cross into the enemy's country This plan has been talked about only, but it might be carried out before the end of the year.

H. E. Hatch will build for the First Universalist church and parish of this city a small church building. It is to be on the west side of West street between Eleventh and Twelfth streets. The cost will be $2000; J. C. Matthews & Sons are the architects.

The new church building of the Seventh Day Adventists is nearly completed.

The Brooklyn Presbyterian church has been fully finished a nd the new windows inserted.

The old Brooklyn Presbyterian Church on East Fourteenth street near Fifteenth avenue, will probably be moved to Fruit Vale, and used thereas a branch of the main church.

The proposed building for the Young Men's Christian Association building was fully described in the *Tribune* of Monday. The structure will cost $45,000, according to the plans considered.

OAKLAND BUILDINGS.

The Burdick residence on Nineteenth street, is being rebuilt by W. T. Veitch at a cost of $1500.

T. H. Downing is building a residence on Ninth avenue and Twenty-first street, to cost $5,000.

C. W. Gibson is building flats on Twelfth street, near Jackson street. C. W. Mau is the architect.

A house is being built on the corner of Webster and Durant sts. for Mr. Huntington. Walter Mathews is the architect.

Colonel L. L. Bromwell's new residence, on the corner of Ninth and Madison streets, is being remodeled at great expense.

J. S. Burpee is building for himself a handsome double flat residence on Grove st., near Sixteenth street, at a cost of $5,000.

Mr. Soudry on San Pablo avenue, opposite Fifteenth street, is having stores built. Ingerson & Gore are the contractors.

The residence of C. Green on Twentieth street, near Telegraph avenue, which was burned some time ago, is being rebuilt at a cost of $1,500

Philip Bogart is having a cottage built for him on Brush st., between Twenty-first and Twenty-second streets, to cost $1800.

W. M. Concannon is building for George Harvey a residence on Chester street, near Eighth street, The cost will be $3,000.

George I. Gale has contracted to build a house on Fifth street, bet. Alice and Jackson sts., for Henry McCloy, to cost $2,000.

Alfred Woods has entered into a contract with the building firm of Knowles & Wetmore, by which the latter agree to erect a building on Laurel street, near Grove, for $1500.

Another house of the same style is being built for Mr. Wilson, on the corner of Harrison and Durant streets, to cost $5,500. Walter Mathews is also the architect.

M. L. Broadwell is building a residence of five rooms on Brush street, near Twenty-first. The cost will be $3,000.

Peter Peterson is building a cottage containing five rooms, between Alcatraz avenue and Adeline st., at a cost of $1,600.

SAN DIEGO.

W. E. Montgomery, frame building, lot L, block 147.

Charles Collins, one-story brick, lot G, block 112, Horton's addition. cost $1,000.

The following building permits have been granted by Building Inspector Theilen:

E. P. Smith, one-story frame cottage, lots 17 and 18, block 48, Middletown addition.

Mrs. Belle Decker, two one-story frame cottages, lot B, block 58, Horton's addition.

Thomas Roberts, one and one-half-story frame house, 24x26 feet, H street near India.

A. Morgan, two-story frame cottage, lot G, block 28. Horton's addition; cost $3,500.

Patrick Wynan, four three-room cottages on lots 1, 2 and 3, block 129, Mannasse & Schiller's addition.

Bredner & Hatcher, two-story corrugated iron warehouse, 50x100 feet, on lot E, block 138, Horton's addition. Cost, $4,500.

W. B. Brimhall, one-story frame cottage, lot 3, block 15, Reed & Hubbell's addition, and one-story frame cottage, lot 16, block 12, Reed & Hubbell's addition.

A. H. Julian, corrugated iron building, lot G, block 95.

Martin Frantz, two-story frame building, 20x30, on H street.

J. L. Palmer, frame barn, 16x16, lot A, block 242, Horton's addition.

R. C. K. Russell, two two-story cottages, 18x38 each, in Middletown.

F. Nielson, frame addition to building, 20x20, lot A, block 93, Horton's addition.

R. Didle, one-story frame building, lot G, block 172, Horton's addition.

Mrs. E. Halawell, two-story frame building, on India street near Bay.

G. A. and H. M. Hart, one-story cottage, on lots 3 and 4, block 139, Mannasse & Schiller's addition.

H. B. Burns, addition to building, lots J, K and L, block 13, Horton's addition; cost $3,500.

San Diego Land and Town Company, two-story frame building for offices, lot L, block 144, Horton's addition; cost $3,000.

Charles Collins, one-story brick building, 42x100, lots G and H, block 109, Horton's addition, cost $3,000.

The plans have been completed in the office of R. E. Ball in this city for the San Diego Land and Town Company's building at National City.

Armitage & Wilson are the architects of a five story brick building being erected on Fifth street between G and H. It is brick throughout and 25x100 feet in size. The cost will be $15,000. C. Tyler Longstreet is the owner.

Work will soon be begun on a three story brick building on the corner of B and Fifth streets. The size of the building is 52x54 feet and it will cost $8,000. E. Guenther von Schwarzenberg is the architect.

The new Presbyterian church, upon which work has already been commenced, will be a handsome and commodious structure. The galleries and auditorium will seat 700 persons. Reed Brothers are the architects.

SAN BERNARDINO.

For a few weeks past the *Index* has made prominent the matter of public improvements, not only in the sewerage and side-walking of the city but in letting its readers know of the many magnificent business and residence houses in contemplation, together with dimensions and probable cost. The result has been most satisfactory, as it has attracted the attention of the outside press. For instance the San Francisco *Building News*, which is authority on such matters, clipped from the *Index* twenty building items for one week. Such instances of recognition in matters of such material worth to the city are cheering, and the *Index* will continue in giving to the public all legimate building news to be found, as will be seen below.

[Thanks, Bro. Editors of the *Index*, for your kin lly notice of the Building News. It is our intention to give credit for all news in these columns to the proper authoriti s. We are afraid, however, we will have to send a bill to the *Index* for a new pair of scissors, as the buildi g items are so numerous in its columns that one pair will soon be worn out.

LUGONIA.

F. A. Shorey will build a 2-story brick block.

Mrs. Wilson will build a fine residence.

REDDING.

We have won the county seat fight. Hurrah for Redding.

Pete Hoff is laying a fine concrete sidewalk in front of his new brick.

Mr. Baker is building a neat residence in the west end, near West street

Mr. B. Leighbin will build a fine house shortly on his ranch on Stillwater.

Mr. G. Remple will shortly build a brick residence on the east side of the river.

Mr. Manning, of Los Angeles, is building a handsome residence on the hill in the west end of the city.

Thos. Houston is preparing to erect a fine $2,000 residence on his lots on the corner of Continental and Butte streets.

A gentleman from San Jose is erecting quite a handsome residence on Sacramento street in the west end.

H. R. Bemis is erecting a fine residence in the west end on Sacramento street. J. G. Farbner is the contractor.

Mrs. C. A. Parker will soon commence to build an addition to her handsome residence on the corner of Court and Butte streets.

It is rumored that the railroad company will build a fine eating house in this city the coming spring. Lumber is already on the ground, and we believe the rumor is true.

Mr. Skinner of Santa Cruz was in town a few days since, looking for a location. He intends to erect a fine dwelling as soon as he finds a suitable place.

The Odd Fellows are now taking stock, and will soon commence the erection of a magnificent structure (brick) on the corner of Butte and Market streets. The upper part to be used as a hall for themselves, and the lower story to be used for stores, etc.

I. D. Stanford.

ARROYO GRANDE.

The first house of the Building Association will be soon finished.

As soon as the weather permits a kiln of 200,000 bricks will be burned and lots more to follow.

Still the houses go up. There has been thirty-two buildings put up here during the last year. If we continue at this rate we will have a city yet. Several more houses are under contract.

J. W. Smith is putting up a neat residence, and it is said he and some one else will soon be keeping house then; he will also put up one to rent. Mrs. Lowe will soon begin two $1,500 cottages, both of which are already rented.

Carpenters are coming here from Nipomo to work, the demand for them at present being much greater than the supply. During the past three months there has been a great deal of building going on. At present there are in the course of construction or soon to be commenced several houses.

The King County Investment Company, Seattle, contemplates the erection of a number of cottages in the very near future, on some of its property in the eastern part of town.

The Arlington House, in Seattle, partially destroyed by fire, will be immediately rebuilt. Address the owners, Crawford & Harrington.

SAN DIEGO.

J. A. McRae, two-story seven-room frame dwelling, lot 7, block 24, Middletown, cost $1,800.

L. H. Shinner, two two-story frame dwellings, lot F, block 180, Horton's additon, cost $4,000.

A. J. Verlange, one-story four-room frame dwelling, lot 4, block 48, Sherman's addition, cost $1,000.

The same builders are erecting a two-story frame house for H. Bowman. The cost will be $14,000.

Brewster and Whaley, four-story brick hotel, lots A and B, block 36, Horton's addition, cost $30,000.—*Union.*

The same architects have completed plans for a ten-room dwelling, to be erected on Sixteenth street. The cost will be $3,000.

The same architect has completed plans for two dwellings for O. J. Stough, to be erected at Morena. They will cost $10,000.

John Keiler two one story five-room, frame cottages, 16x40 eet each on J street between Thirteenth and Fourteenth, $1,000

Work will soon be begun on an office for the College Hill company, to be erected on University Heights. George S. Spohr is the architect.

A large frame hotel will soon be erected at La Mesa, about five miles from this city. Cost, $30,000. Stannard & Clements are the architects.

R. G. Clark, two two-story and attic, frame dwellings, brick foundation, ten rooms, A street between Twelfth and Thirteenth, cost $1,000.

A two-story frame building will be built on Thirteenth street, between J and K. Cost about $6,000. J. Duncan is the owner and J. B. Randell the architect.

Six apartment houses, containing six rooms each, are being erected for Judge Collier, on Seventh street between Cedar and Date. Cost, $10,000. Brewster & Whalen are the builders.

Plans have been completed by J. B. Randell, architect, for a two-story frame dwelling to be erected in Middletown. It will contain twelve rooms, and will cost $6,000. Mr Lowenstein is the owner.

The same architect has prepared plans for residences for George J. Keating and George J. Leovy. The residence of the former will be on the corner of Second and Juniper streets, and of the latter on the corner of Ivy and Brandt. They will cost $5,000 each

The work of excavation has been begun on a four-story house on the corner of Twenty-eighth street and National avenue. The cost will be $15,000 and the work will be done by the day. George S. Spohr is the architect.

Work has been begun on the foundation of a large hotel on the southeast corner of Fourth and C streets. It is to be solid brick, four stories in height, and 100x100 feet in size. The building will cost about $40,000. Brewster & Whalen are the owners and builders of the structure.

The large brick building, the foundation for which is now being laid on the east side of Fifth street between E and F, will be known as the Henrietta Nesmith building. It will be a solid brick structure with four stories and a basement. The size of the building will be 50x110 feet. The cost of the building will be about $30,000.

FOREST GROVE, OR.

Plans are being prepared by architect A. McDonald for a $10,000 residence for Dr. Bailey, at Hillsboro.

EAST OAKLAND.

J. A. Eastman is building a residence on East Twenty second street, between Twenty-first and Twenty-third avenues, costing $2,000.

Juan Bacigulapi is building a cottage on East Twenty-first street near Twenty-second avenue; cost $1,200.

Chris Williams is building a cottage on East Fifteenth street, between Twenty-first and Twenty-second avenues, at a cost of $1,500. J. C. Nelson is the contractor.

W. H. Luelling is building a small cottage on East Seventeenth street, between Fifth and Sixth avenues; cost about $800.

W. W. Woodcock is building an elegant residence, consisting of eleven rooms on the corner of East Twenty-sixth street and Tenth avenue, costing $3,500. S. J. Shelper is the contractor.

Cleland & Davis are remodeling and enlarging a residence on the corner of Seventh avenue and East Fifteenth street, at a cost of $2,000.

Frederick L. Havens has commenced erecting a residence on Fourth avenue and East Fourteenth street, which will cost $3,500. S. J. Shelper is the contractor.

F. A. Brown has commenced building a seven room residence on Seventh avenue, near East Fifteenth street, to cost $2,500.

James Davidson is building a house on Peralta and Fifth street, at a cost of $1,800.

D. C. Scanlon is building three elegant residences of nine rooms each on Poplar near Tenth street, at a cost of $2,400 each, amounting to $7,200.

D. Thornton is building a cottage of five rooms on Twelfth avenue and East Eighteenth street, at a cost of $1,800.

F. R. Weider is erecting a cottage on East Twenty fourth street, near Twenty-first avenue, costing $1,500.

SUBURBAN.

John G. Hoyt is building a large country villa on Fairmount avenue. Knowles & Wetmore are the contractors; cost, $5,000.

Peter Swanzen is building two cottages of five rooms each, on Julian street, between Eighth and Tenth streets, at a cost of $1,800 each.

A. W. Pattiani & Co. are building for Lewis H. Bissell a two-story ten-room house on Morton street near Santa Clara avenue, at a cost of $3,000.

W. N. Concannon is building a large, two-story residence on Central avenue between Willow and Chestnut, to cost $3,000.

C. Waite has the contract for building a cottage on Pearl street near the South Pacific Coast crossing, at a cost of $1,800.

A. R. Deneta, contractor, is building an eight-room, two-story residence on McPherson street, at a cost of $3,000.

MISCELLANEOUS

J. Monroe is about to build a house in Arroyo Grande.

G. K. Glenn has just commenced t building on Walnut street in the own of Woodland.

Mendocino papers are already beginning to lament the scarcity of laboring men.

ONTARIO.

W. H. Brooks is erecting a three-story building, to cost $75,000. D. Kilpatrick is the architect.

J. H. Glenn has let a contract to Kuy Kendall & Melson for a new building.

OAKLAND.

F. G. Williams is building on Webster street near Piedmont junction, two two-story residences at an estimated cost of $5,000.

C. A. Ingerson is building a residence for himself on Lake street near Lake Merritt. It will cost $5,000.

A. M. Overton is building a residence on Eighteenth street, between Telegraph and San Pablo avenues, of which Matthews & Son are the architects, and William Dahl is the contractor. The structure will cost $10,000.

Stephen Watts is building a seven room cottage on Delger street between San Pablo and Telegraph avenues, at a cost of $2,000.

James White is building a five-room cottage on Thirty-third street, near Grove, at a cost of $1,500. J. J. Kane is the contractor.

Mr. Mauss is building a six-room cottage on Fifth street, between Madison and Oak streets, costing $1,500.

C A. Ingerson is building a two-story residence on Athol avenue, Peralta Heights, to cost $5,000.

The bidders for the contract to improve the Park street Methodist Church property in Alameda are as follows: Gray & Stover, $5,650; C. A. Brown, $5,275; J. B. Cogswell, $5,200; Burgner, $5,100; Waddell, $4,592. The contract has not yet been awarded.

SAN BERNARDINO.

Gideon Carter will erect two buildings on F street.

The lime and marble works at Victor will soon be in full blast with a dozen large kilns in operation. In a few weeks the scarcity of lime will be a thing of the past, and building operations can proceed as usual.

Hon. H. C. Rolfe has just paid $5,000 for a fine lot; he intends to erect a beautiful dwelling.

WEST OAKLAND.

John McRea is building a two story residence on Tenth street, between Poplar and Magnolia streets, consisting of ten rooms. W. H. Weilbye is the architect and builder; cost, $2,750.

W. G. Swenson is building a cottage of six rooms on Magnolia street, between Eighth and Tenth streets. A. W. Pattiani & Co., contractors; cost $1,750.

PETALUMA.

E. W. Guerkink has commenced a cottage on Eighth street; also one on Sixth street.

CONTRACT AWARDED.

DESCRIPTIONS OF THE DESIGN SELECTED FOR THE MARSHALL MONUMENT.

The design submitted by F. Marion Wells of San Francisco was unanimously adopted by the Marshall Monument Commissioners. It will stand 39 feet 6 inches in height. The monument itself will be 30 feet high, of colossal proportions, the cap being 5 feet square, on top of which is a portrait statue of Marshall 9 feet six inches in hight. The plaster of Paris model of the statue on file represents the "Discoverer of Gold," dressed in the garb of the frontiersman of forty years ago. His pants rolled up to the boot tops, soft felt hat, pistol at his side, his arms bared to the elbow. In the open palm of his hand rests a nugget of gold, the first taken from the mill race at Coloma. His right hand index finger extended points to the river below to the very spot where the memorable discovery was made. To give some idea of the size of the monument, it can be stated that one block of granite will weigh fourteen tons, and the statue itself will weigh between five and six tons. The monument will rest on the grave of Marshall, on the apex of Marshall hill, which is elevated above the main street of the town of Coloma some 300 feet, and it is half a mile distant. It is a sightly point, and for this reason was selected by Marshall as his last resting place. It can be seen from every point in the valley, and no one can ever pass through that most beautiful mountain vale without seeing this monumental pile. The Commission had two objects in view—size and symmetry of form—both of which are attained in the design adopted. Made of native granite, it will stand for ages, and through all time will be an honor to the state, as well as serving to perpetuate the name and history of the man who made the discovery that at once populated the Pacific coast, and within three short years carved from the wilderness of the west a state that now is, and through all time must be the brightest star in the Confederation.

The necessary papers will be drawn up within a few days, the contract awarded and the monument completed within the next ten months.

The "Chronicle" at its Old Tricks

It is the chief duty of any journal to give as near a possible, exact information in regard to any transaction which has taken place. In giving building news, too much care cannot be exercised, as some mistakes will inevitably occur. When a newspaper of the standing of the *Chronicle* wilfully alters items from the WEEKLY BUILDING NEWS, and claims them as original, it is about time to show how the building reports of the said morning paper are made up.

In its issue of March 9th, it records—"19 building contracts were filed during the week closing yesterday." *There was absolutely no such thing, neither was there one-half of that number.* It then goes on with a reputed list of *recorded* contracts, of which the abstracts are as follows:

Valencia and 24th; frame building by day work; cost, $5,000.

There is not a contractor or material man in the city who will not laugh at the idea of a man building a house, paying each week all the labor employed, and all sums due for material, and then rushing down to the recorder's office to file a contract that does not exist.

Again, B. Bergfeld is listed as erecting several houses. He is credited as owner and builder. Why should he record a contract when none exists?

The law does not require a contract to be recorded when the amount is under $1,000; and yet we have the 8th item in the *Chronicle's* list as "Additions—Owner, John Parry; cost, $500." Surely a man must be a spendthrift to record a contract for which there is no necessity.

There are several other blunders given, showing conclusively that whoever writes up the *Chronicle's* building news, he or they are sadly deficient in knowledge of our building laws.

A grand blunder is again made when the ubiquitous, etc., says, the amount for this week is $19,000, the largest of any for this year. Reiterating "he or they" have kept no statement of their previous reports, as the above is an egregious blunder.

The whole long and short of the matter is, that the report was copied from the "WEEKLY BUILDING NEWS" and the editor of the *Chronicle* has not the manliness to allow his reporters to give credit to the "WEEKLY." There is this grand difference between the two reports: The "BUILDING NEWS" gives a list of ALL buildings in process of erection, when the contract is recorded you will find in this Journal an abstract of everything connected with the same, giving time of payments, etc.; when the contract is not recorded, the main items alone are given and do not cover as recorded contracts. The *Chronicle* reports embraces those that are recorded, and even-

The Weekly Building News in connection with THE CALIFORNIA ARCHITECT AND BUILDING NEWS for $2 per annum.

JOYFUL NEWS TO TILE LANDS RESIDENTS.

The use of the mosquito has at last been discovered. Professor Webster says that "injurious organic matter in the water, instead of decomposing and poisoning people, is changed into 'wiggle-tails' which in due time become mosquitoes, and the winged matter flies away, leaving the water purified to the extent of their ability to remove the impurities. If fish are kept in the water they eat the "wiggle-tails," and grow large enough to serve as food for man. Thus the poisonous ingredients of impure water becomes healthful food. Without mosquitoes most marshy or swampy land would be dangerously insalubrious."

MONOPOLY SHOT FROM "WINTERS."

I see the BUILDING NEWS is improving. The number just received is quite interesting. I take great interest in reading of building improvements in different parts of the coast. I wonder if the California Lumber Exchange believe in a *future state* talk of monopoly. I think they are the worst I ever saw. Mr. E. Dafoe is building a two-story house in Winters, at a cost of $2,500. T. D. Ball.

Brick masons have commenced work on the new fire and burglar proof vault for the postoffice in Modesto. The vault will be built from the ground floor and will be a solid, substantial structure.

J. H. Waggoner is having a neat and conveniently arranged cottage erected on his lots in the northern part of the city at the intersection of Stanislaus, Silva and P streets, Fresno.

Col. C. B. Barstow, contractor and builder, is erecting in Sumner a two-story building for Mrs. M. M. Crawford.

Archbishop Gross, of Portland contemplates building a sister's school at Roseburg the coming summer, so says an exchange.

J. A. Webster will soon commence a new building in Fresno.

Geo. L. Joy of South Riverside will build a $10,000 residence. The contract has just been secured by Mr. Porter of Riverside.

F. A. Treen has secured a contract to make additions to Hasbrouck & Co.'s store in Seattle.

Architect Boone is hard at work on plans for A. W. Engel's residence

SAN FRANCISCO BUILDING NEWS

CITY CONTRACTS.

Albion Avenue, near 16th street. Additions to U. S. Laundry; cost $500.

Bartlett, cor 25th, 2-story frame. Owner, B. Edwards; builder, Ellis; cost, $3,500.

Church, near 29th street; 3 1-story frames. Owner and builder, R. Bergfeld; cost, $5,000.

Church, near 28th street; 2-story frame. Owner, Mr. Himmelstoss; builder, R. Bergfeld; cost, $3,500.

Clay and Drumm; 1-story brick. Owner, McAllister estate; contractors, Richardson & Gale; sub-contract, O. E. White; architects, Percy & Hamilton; cost, $8,987; signed Feb. 24th; filed Feb. 28th.

Payments, 75 per cent of the value of the materials and labor from time to time, as work progresses, and balance 35 days after completion and acceptance.

Clay and Drumm; 1-story brick. Owner, McAllister estate; contractors, Richardson & Gale; architects, Percy & Hamilton; cost, $16,422; limit, May 25th; sig ed Feb 21st; filed Feb. 24th; sureties O. E. & H. V. Dunlap; bond $10,000.

Payments, 75 per cent of the value of the materials and labor from time to time, as work progresses, and balance 35 days after completion and acceptance.

Clay bet Sansome and Battery; third story to frame building. Owner, Hannah S. Crane; co tractors, Thompson & Moore; architect, Chas. Geldes; cost $1,750; limit, April 1st; signed Feb. 15th; filed Feb. 24th; surety, John Crop.

1st payment, $407, when frame is up and roofed; 2d payment, $400, when building is finished outside and first coat of mortar is on; 3d payment, $475, when completed and accepted; 4th payment, $125, 35 days after completion and acceptance.

Dolores, and 20th street; additions. Owner, John Farry; contractor, F. Nelson; Cost, $600.

Eugene, near Mission; 1-story frame. Owner, John Garrity; architect, M. J. Welsh; contractor, O'Brien & Son; cost, $1,300.

Fourteenth, near Sixth avenue, two-story frame. Owner, Clinton Hiram Tubbs; architect, Walter Matthews; contractors, Pierce & Rush; cost, $8,000.

Fifteenth avenue, bet R. R. avenue and N street; a 2-story frame. Owners, Geo. & Sarah Cooling; contractor, J. P. Rines; architect, D. Dodge; cost, $2,600; limit, 90 working days from date; signed Feb. —th; filed March 1, 1888.

1st payment, $500, when foundation and frame are complete; 2d payment, $500, when roof is complete and brown mortar is on; 3d payment, $475, when building is white coated, sash hung and glazed, and outside doors hung 4th payment, $475, when finished complete and delivered to owners; 5th payment, $550, ten days after acceptances, if all bills are paid.

Fulton, bet Laguna and Buchanan; additional story. Owner, F. Reckenbeil; contractor, B. Knauss; architect, H. Gellfuss; cost, $2,790; limit, 45 working days from date; signed, Feb. 28th; filed March 3d; sureties, Lackeman & Hufschmidt; amount of bond, $2,500.

1st payment, $500, when roof is raised and frame up and enclosed; 2d payment, $500, when floors are laid, partitions set and brown coat of plastering on; 3d payment, $500, when white coat of plastering is on and doors, windows and blinds hung; 4th payment, $500, when completed and accepted; 5th payment, $700, 35 days after completion.

Fulton and Scott; a frame building. Owners, S. A. & E. P. Kolb; contractor, J. F. Logan; architects, Townsend & Wyneken; cost, $4,492; limit, June 1st; signed March 3d; filed March 5th; surety, C. A. Warren; amount of bond, $3,000.

1st payment, $1,000, when frame and chimney is up and roof boarded; 2d payment, $800, when first coat of mortar is on and house enclosed; 3d payment, $900, when hard finish is on and first coat of paint on, and doors and sash hung; 4th payment, $692, when finished and accepted; 5th payment, $1,100, 35 days after completion and acceptance.

Guerrero and Seventeenth; 2-story frame. Owner, P. H. Havery; contractor, W. A. Powell; cost, $3,000.

Golden Gate Avenue, bet Leavenworth and Taylor. Paving with bituminous rock. G. M. Perine—City and County of San Francisco; sureties, H. Weilbree and F. P. Latson; cost, $3,630.

No payments to be made until bond is filed in office of Clerk of Board of Supervisors, on condition that contractor shall keep in good order said roadway for five years; signed Jan. 14, 1888; filed Feb. 8, 1888.

Hyde, bet Geary and Post; 2-story frame. Owner, Mary E. Waechter; architects; Copeland & Banks; contractor, Wm. Plans, sureties, F. Joost and D. Wessner; 90 days to complete; cost $3,250.

1st payment, $1,400, when brown mortar is on; 2d payment, $1,030, when completed and accepted; 3d payment, $810, 35 days after completion and acceptance, no liens.

Lafayette and Natoma. A 2-story frame. Owner, Phillip Cosgrove; co-tractors, Brannan Bros.; architect, M. J. Welsh; cost, $3,994; limit, 90 days from date; signed Feb. 24th; filed Feb. 25th; sureties, Preston & McKinnon.

1st payment, $798, when frame is up; 2d payment, $998, when brown mortar is on; 3d payment, $998, when completed and accepted; 4th payment, $1,000, 35 days after completion.

McAllister, bet Filmore and Steiner. Two-story frame. Owner, Mrs. Brady; contractor, Plus; architect, B. Henricksen; cost, $3,000.

McAllister, near Gough; 3-story frame. Owner, A. Marks; architects, Salfield & Kohlberg; contractor, H. Rohling; sureties, F. Joost and J. J. McKinnon; 90 days to complete; cost, $6,770.

1st payment, $1,200, when frame is up; 2d payment, $1,100; when roof is on and building enclosed; 3d payment, $1,200, when brown mortar is on; 4th payment, $1,550, when completed and accepted; 5th payment, $1, 00, 35 days after acceptance.

Howard, bet. 8th and 9th; additions. Owner, McGiffan; contractor, Gordon; cost, $700.

O'Farrell, bet Jones & Leavenworth; 4 2-story frame buildings. Owner, S. Kelley; contractor, C. F. Ruppel; architects Kenitzer & Kolilrath; cost, $13,725; limit June 16th; signed Feb. 29th; filed March 2d; sureties, Ch. Hellwig & H. M. G. Dahler; bond, $13,000.

1st payment, $3,000, when frames are up; 2d payment, $3,000, when enclosed, roofing completed and first coat of mortar is on; 3d payment, $1,500, when plastering is finished, 4th payment, $1,800, when all woodwork is finished and ready to paint; 5th payment; $1,000, when completed and accepted; 6th payment, $3,425, 35 days after acceptance.

O'Farrell, bet Jones and Leavenworth; 3-story flat. Owner, M. F reer; contractor, C. E. Dunshee; architect, J. J. Clark; cost, $4,000; limit, June 1st; signed Feb. 23d; filed Feb. 28th; sureties, J. F. Kennedy and G. T. Shaw; bond, $4,000.

1st payment, $1,200, when brick work is complete and frame up; 2d payment, $1,000, when brown coat of mortar is on; 3d payment, $800, when inside finish is on; 4th payment, $1,000 35 days after completion and acceptance.

Page and Laguna; additions. Owner, Chas. Dietle; contractor F. Klatt; architect, H. Geilfuss; cost, $7,740; limit, July 1st; signed Feb. 24th; filed March 3d; sureties, J. F. Kennedy and G. T. Shaw; amount of bond $7,500.

1st payment, $1,200 when frame is up; 2d payment, $1,200, when building is enclosed, floors laid and partitions set; 3d payment, $1,200 when all outside yard and fence work is complete; 4th payment, $1,200, when doors, windows and blinds are hung and inside ready for painter; 5th payment, $1,000, when finished and accepted; 6th payment, $1,940, 35 days after acceptance.

Page, bet Frederick and Devisadero. A two-story frame; cost, $3,500; owner, Andrew Mocker; contractor, B. Dreyer.

Potter, near Leavenworth; 3-story frame. Owner, Mary Levy; architects, Schmidt & Shea; contractor, S. H. Kent; sureties, C. S. Holmes and H. C. Smith; to be completed July 1st; cost, $8,434.

1st payment, $1,000, when rough frame is up and enclosed; 2d payment, $1,500, when brown mortar is on and rough gas and water pipes are in; 3d payment, $1,500, when hard finished, washstands, closets and bath tubs are set; 4th payment, $1,500, when completed and accepted; 5th payment, $2,134, 35 days after completion and acceptance.

San Jose Avenue and 29th street; 2-story frame. Owner, S. McNeil, contractor, Thos. McLaughlin; cost, $2,500.

Sansome bet Pine and California streets painting and glazing of a brick and stone building. Owner, william Heller; contractor, J. P. Fraser architects, Wright & Sanders; cost $1,950; limit, June 15th; signed Feb, 15th; filed March 1, 1888; sureties, H. C. Robinson & Crawford Ferris; bond $500.

Scott, bet Oak and Page. A 2-story frame and basement; cost, $1,500; owner, H. Trezise; contractors, Jas. Rountree & Bro.

Tennessee, near Butte. Two-story frame Owner, H. Crapo; architects, Townsend & Wyneken; cost, $3,400; surety, B. Joost.

1st payment, $1,000, when frame is up and enclosed; 2d payment, $1,000, when brown coat is on, sashes in and greater part of outside work done; 3d payment, $1,400, 35 days after completion; signed Feb. 10, 1888; filed Feb. 11, 1888.

Tenth and Bryant. A 1-story frame cottage. Owner, H. W. Dwyer; contractor, A. Klahn; architects, Salfield & Kohlberg; cost, $5,748.

1st payment, when entire frame is up, $800; 2d payment, when brown coat of plaster is on, $748; 3d payment, when building is completed and accepted, $500; 4th payment 35 days after completion, $700; limit, 65 working days; signed Jan. 10, 1888; filed Feb. 15, 1888; surety, C. S. Holmes; amount of bond, $2,500.

Twenty-Ninth and San Jose avenue; 1-story frame. Owner, John Gillogly; builder, John Gillogly; cost, $1,500.

Twenty-Eighth and Church; 2-story frame. Owner and builder, R. Bergfeld; cost, $5,500.

Tenth and Bryant; the carpenter work of a brick warehouse. Owners, Cole, Ellett & Co.; contractors, L. P. Kincaid & H. C. Thompson; architects, Chas. V. Pierce & J. T. Kidd; cost, $12,830; limit, 15 days after brick mason has completed; signed, Feb. 27th; filed March 1st; sureties, J. F. Kennedy & F. P. Latson; bond, $12,830.

Payments, 75 per cent of the value of the labor and materials furnished for building and works at each time of a definite payment, and the residue of 25 per cent 35 days after acceptance.

Twenty-Second and Chattanooga streets; a 2-story frame. Owner, Frederick Hertje; contractors, L. P. Kincaid & H. C. Thompson; architects, C. V. Pierce & J. T. Kidd; cost, $3,800; limit, 90 working days from date, signed Feb. 25th; filed March 1, 1888; sureties, F. P. Latson & J. F. Kennedy; bond, $3,800.

1st payment, $570, when frame is up and rafters on; 2d payment, $570, when building is enclosed and shingled; 3d payment, $570, when floors are laid and studding set; 4th payment, $570, when inside standing finish is up; 5th payment, $570, when building is accepted; 6th payment 35 days after acceptance.

Valley, near San Jose avenue; 2-story frame. Owner, Mr. Hicks; contractor, J. Tubman; cost, $3,000.

Valencia, near 26th; 2-story frame Owner and builder, R. Simmit; cost $4000

Valencia and 24th. Owner, J. H. Fitzgerald. Day's work; cost, $5,000.

Waller, bet Scott and Devisadero. A 2-story frame and basement; cost, $2,500; owner and builder, C. C. Murphy.

Webster, bet Haight and Page. A 2-story frame; cost $5,000; owner and builder, Jas. Rountree & Br.

Webster, bet Haight and Page; 3-story frame, 3 flats. Owner, Arthur Bohun; architect, P. R. Schmidt; contractor, J. G. Adams; sureties, F. Joost and E. K. Harmon; to be completed by July 10th; cost $5,499. 1st payment, $1,000 when rough frame is up and enclosed; 2d payment $1,000, when brown coated; 3d payment, $1,000, when hard finished; 4th payment, $1,100, when completed and accepted; 5th payment; $1,399, 35 days after completion.

Waller, bet. Scott and Devisadero; 2-story frame, brick basement. Owner, M. A. Murphy; contractor, C. C. Murphy; cost $5,500.

Incorrectly given last week at $5,500

OUR BOOK DEPARTMENT.

Manual of Industrial Drawing Carpenters	$2 00	Water Closets	1 00
Illustrated Drawing Book	1 00	Sewer Gas	1 25
Mathematical Drawing Instruments	1 50	Steam Engine Catechism	1 09
Drawing for Carpenters	5 75	Paper Hanger's Companion	1 25
Shavings and Saw Dust	1 50	Builder's Guide	2 00
Linear Drawing	1 50	Cozy Homes	25
Practical Draughting	1 00	Principles of House Drainage	1 00
Drawing for Cabinet Makers	1 50	How to Paint	1 00
Science of Carpentry	5 00	Architecture, Horton	1 50
Mechanic's Geometry	5 00	Amateur Mechan's Workshop	3 00
Artisan	5 00	Cottages	1 00
Artistic Homes	3 50	Ornamental Drawing	1 00
Mechanical Drawing	1 00	Grimshaw on Saws	4 00
American House Carpenter	5 00	Universal Assistant	2 50
Building Superintendence	3 00	Rural Architecture	1 50
Builder's Companion	1 50	Wonders of Art	1 25
Cutting Tools	1 50	Common Sense in Church Building	1 00
		Handrailing and Staircasing	1 50
		Painter, Gilder, and Varnisher	1 50
		Every Man His Own Mechanic	3 50
		Handbook of Legendary Art	3 00
		Dwellings, Reed	3 00
		Plumbing, Appliances	1 50
		Modern House Painting	5 00
		Stair Building Made Easy	1 00
		Cabinet Maker's Companion	1 25
		Manual for Furniture Men	1 00
		Hints on Household Tastes, by Eastlake	3 00
		Old Homes Made New	1 50
		American Cottage Builder	3 50
		The Suburban Cottage	1 50
		Homes for the People	2 00
		Detail Cottage Architecture	6 00
		Leffel's House Plans	3 00

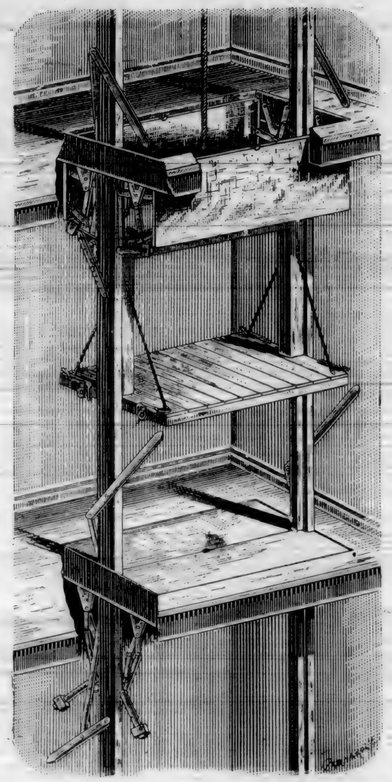
THE PAGE

Automatic Fire Shutter Co. of California.

The Best Automatic Fire Shutter Known.

INCORPORATED APRIL 29TH, 1887.

Manufacturers Under United States Patent of the Automatic Shutter.



ADAPTED TO PASSENGER AND FREIGHT ELEVATORS,

For Protection from Fire in Elevator Shafts, and from Liability to Accident.

PATENTED MAY 10, 1887.

Now in operation at 22 and 24 Jessie St., and 327, 329, 331 Sansome St., S. F. Call and examine the same.

The cut represents a freight elevator, showing two floors of the building. The elevator platform is represented as ascending, having passed through the hatchway of the lower floor. The shutters below the elevator platform have just closed [illegible] with the floor, completely and firmly closing that hatchway. The shutters of the second floor are next being opened by the ascending elevator platform, and after it has passed through, these close automatically, in the same manner as seen at the first floor. In the descent of the elevator platform, the shutters open below as it approaches the hatchway, and after passing through, they close again firmly and completely. Each shutter opens and closes automatically as the elevator passes, and are so counterbalanced as to offer no resistance to the ascending or descending platform.

H. W. SEVERANCE,

Manager and Agent,

Office, 218 California Street, San Francisco, California.

HUGH B. JONES. MATTHEW HARRIS

HARRIS & JONES,

DEALERS IN

ALL KINDS OF LUMBER

DOORS, SASH AND BLINDS.

Sugar Pine, Yellow Pine and White Cedar

A Specialty.

BRYANT STREET,

Cor. Oak Grove Ave. Bet. 5th. and 6th. Sts.

TELEPHONE No. 3096.

VANDENBURGH & LEWIS,

STAIR BUILDERS.

813 BRYANT ST. NEAR FIFTH.

Lumber Market.

(For latest quotations see first page reading matter.)

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 40 to 50 feet lengths	23 50
Pine, Rough, 50 to 60 feet lengths	24 50
Pine, Rough, 60 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4 and narrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 0
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	37 50
Redwood, Rustic, No. 2	22 50

List of Members of the Builders' Association of California

330 PINE STREET, ROOMS 11 & 12.

Adams, J. G., 407 Broderick.
Bateman Bros., S. W. Post and Scott.
Binet, Jos. L., 325 Fair Oaks.
Blake, John, 1138 17th.
Brennan Bros., 618 Eddy.
Bruce, John, 2407½ Howard.
Buckley, Frank, 1111 Devisadero.
Burpee & Hudson, 836 29th street, Oakland.
Burrell, A., 22 California.
Chisholm, Chris, 330 Pine.
Chisholm, Dan. 110 Chattanooga.
Chrichton, P., 2806 Howard.
Christy, Chas., 828 Kirkham, Oakland.
Classen, J. C., 232 Francisco.
Commary, Wm. T., 804, Hayes.
Conrad, H. A., 625 California.
Chandler, R. O., 1210 Pierce.
Day, J. G. San Diego.
Day, Thos. H., 1012 Devisadero.
Dryer, Bernard, 4 Collingwood.
Dunshee, C. E., 417 Ridley.
Farrell & Bell, 828 Union.
Fish, J. W., 836 Valley.
Fitzpatrick, A. G., 411 Twenty second.
Fletcher, W. M., Los Angeles.
Geary, James, 2324 Sutter.
Gillespie, G. G., 1509 Devisadero.
Gonyeau, J. B., 33 Hardy.
Grant, John T., 22 Turk.
Gray & Stover, 378 Shotwell.
Green, C. B., 34 Hawthorne.
Greene, S. T., San Diego.
Griffin, P., 20 Russ.
Hatch, H. E., 1717 Chaste, Oakland.
Hurlbut, R. P., 115 California avenue.
Ingerson & Gore, 971 Broadway, Oakland.
Jackson, A., 12 Middle.
Keenan, Hugh, 219 Scott.
Kent, S. H. 711 Leavenworth.
Kern, F. W., 118 Fair Oaks.
Kincaid & Thompson, 730 Seventeenth.
Klahn, Aug., 5 Chenery.
Klatt, F., 814 Twenty-first.
Klein, Jacob, 24 Lilly avenue.
Kreger, Wm. B., 801 Guerrero.
Knauss, B., 536 Fulton.
Lang, Geo. R., E. 14th St. & 14th Ave., Oakland.
Leonard, Jos. A., Alameda.
Langstaff, Wm., 617 Jessie.
Mahony Bros., 307 Van Ness.
Maher, J. W., 105 Precita avenue.
MacDonald, Allen, 1303 Buchanan.
Martin & Maguire, 133 Gough.
McCann, Richard, 217 Waller.
McElroy, A., 373 Jessie.
McInerny, James, Hancock and Noe.
McKay, Jas. H., 124 Main.
Mead, W. H., 246 Minna.
Mecredy Bros, Church, bet 17th and 18th.
Miller, Adam, 23d and Bryant, 516 Kearney.
Moffit, Thos., Victoria.
Moore Bros., 252 Octavia and 1 Russ.
Norton, A., 1331 Ellis.
Parker, R., 527 Grove.
Plume, Wm., 3109 Sacramento.
Rebman, J., Los Angeles.
Riddell, Thos. C., 16 Twelfth.
Robertson, John, San Rafael.
Rohling, Henry, 114 Collingwood.
Simpson, R. F., 326 Telegraph Av., Oakland.
Smilie, Robt., 1125 E. Third Av., East Oakland.
Smith, James W., 1220 Eddy.
Sullivan, Timothy, 20 Laskie.
Terrill, Chas. C., 617 Seventeenth.
Thompson & Moar, 338 Golden Gate Av.
Waterbury, C. S., 1322 Scott.
Wharff, Wm. H., Green and Laguna.
White, O. E., 879 Seventeenth.
Wilcox, J. R., 608 Willow Av.
Williams, F. A., 545 Natoma.
Worden, S. G., 1013 Valencia.
Zwierlein & Pavel, 421 Bush.

Practical Geometry	1 00
Cottage and Farm House, Woodward	1 50
Country Homes, Woodward	1 50
Lumberman's Hand Book	2 00
Limes, Cements and Mortars	4 00
Suburban Houses, Woodward	$1 50
Rural Homes, Wheeler	1 50
Modern Architectural Designs and Details	10 00

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 4

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO., No. 240 MONTGOMERY ST., Rooms 11, 12 and 13.

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OUR ADVERTISING RATES.

Front Cover, Outside, Each Insertion	Per Square	$ 2.50
Back Cover, Outside, Each Insertion	do.	2.00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.0 0
Each Subsequent Insertion according to Agreement.		

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, APRIL 15, 1888.

Is a Wife Responsible for Plans Ordered by the Husband.

An interesting case to architects has been on trial in our lower courts, and as it has been appealed, the decision will be awaited with interest. It seems that an owner A wanted to have changes made in a certain building across the bay, employing for his purpose an architect B; A represented himself as having certain monetary interests; it was generally understood between the parties that the wife was the one having the cash, and in her individual right. B goes on and prepares an elaborate set of plans, with tracings, etc., complete. Owing to arrangements made by A not being consummated, and a general decline in the real estate boom then in progress, nothing further was done than the preparing of plans, estimates, etc. Several weeks rolled away, when B, seeing that no work was intended to be done, presented his bill to A. The latter, to use a California phraze, was completely busted. After a still longer wait, the demand was again made, the wife of A being included in the summons to settle the bill. The wife acknowledged that all the money was her individual property, and claimed that she had given no instructions to the architect in regard to the plans, neither had she become responsible in any way for debts, architecturally or otherwise, contracted by her husband. B brought suit for $299 in the Justice's Court, and recovered judgment against the husband and wife. B proved that the wife was around the building and gave numerous suggestions in regard to the alterations to be made in the building. A appealed the case to the Superior Court, and in a short time it will come up for trial. We will be present and will report the case in full, as many points of importance to architects will be presented.

A Hint to Painters.

Bright colors and positive tints may be employed in outside decoration with excellent effect in emphasizing architectural features, but the more brilliant they are, the greater is the demand for good judgment in their application.

Editorial Correspondence—East and West of the Rocky Mountains.

With kindest consideration and sympathies for and with the people of those storm, tornado, cyclone, and tempest-cursed sections of the American Continent, where terror, suffering and hundreds of deaths from these causes have so fearfully distressed the inhabitants, and caused losses and sorrows beyond intelligent conception or accurate computation, it is with gratitude and pleasure that we refer to the goodly land of the Pacific Coast, exempt as it has been until now, and is likely to be in the years to come, from those severities of climate which have prevailed in various sections and portions of the Atlantic and inland states within the past two months, destroying so much of human life and comforts, and furnishing matter and facts of the saddest kind to shade the pages of local history.

In California—Storms have touched lightly; winter has past harmlessly, and bright spring in all its grandest glories has come, opening up and manteling fields, orchards and vineyards with richest verdure, foliage and blossoms, while as yet ice and snow hold sway over thousands of square miles of country east of the Rocky Mountains, and the husbandman's arm yet remains partially powerless to plow or sow, and seeds and roots in the ground as yet are unable to shoot forth and come to life. It would not be reasonable to expect that all, or a majority of those who have passed through the trying and hard climatic conditions that recently paralized business and produced a semi-chaotic state of affairs in New York City and State, and in other Atlantic and northwestern sections of country, will abandon their homes and seek refuge in California; but to as many as will come, the Pacific slope offers immunity from anything approaching the climatic terrors of the recent past, east of the great mountain divide.

But shelter and security from winter storms and bitter temperatures are not the only inducements offered to those who desire to escape from possible reoccurrences of that which befel so great a number of people, and devasted so large an area of country since the commencement of the present year. Beyond these considerations lies the other material fact, that almost every part of the Pacific Coast extends assurances that industrious, frugal and enterprising men will find ample fields in which to sow and reap, by the earnest and right application and exercise of their mental or mechanical abilities of whatever honest or honorable character they may be. Although vast areas of the public domain has been taken up, and thousands of acres are daily being secured by location or purchase, there still remains of virgin soil, land enough for a vast number of people, and California will only begin to appear in her true character as a State among those of longer settlement, when thousands more farms, and as many farmers' homes and families occupy present waste places, and orchards and vineyards greet the eye, where at present the dreariness of unsown and uncultivated fields are to be seen; or flocks or herds of animals feed in ranges of valley and hill country, almost if not quite as great in extent of acreage, as the entire of some of the smaller States of the Union. True—*land lovers*—men whose heart and soul is set upon the possession of all the land they can by any means gain control of, and whose delight and greatest joys center in grasping and holding as much of earth as possibilities will permit, have held a chain around the neck of California's prosperity, and by far too much of this state of things still continues; but, as compared with the earlier years of the State's history, this evil has abated to some extent, either from coin poverty to maintain the luxuries of land richness and wealth, or death has interposed its prerogative, and bid the "Land King" lie as humble beneath the surface of earth, as he who in life owned not one foot of land. So that, one by one large holdings have been segregated into smaller divisions, and thrift and earnest work has transformed many that were desolate places, into prosperous and interesting districts. But with all this happening to a certain extent, there are still too many grasping tyrants over the

soil; too many occupying and exercising exclusive individual control over sections of country that should be owned and occupied by a thousand honest tillers of the soil. But the evolutions and mutations of time are ceaseless and tireless, and judging the future by the past, it is reasonable to presume that within the present generation great changes will be wrought, and much that is now owned and held in single hands, will be well distributed. But aside from life by the soil, new towns are springing up in all directions throughout the length and breadth of the State—some of them assuming the importance of from three to twenty thousand of inhabitants, and all more or less prosperous—some growing to be important centres of trade and commerce, while in all the older cities, from San Francisco down, the prosperities are great and permanent, with apparent future of the most encouraging character.

All these things considered, with the many not mentioned, certainly presents California in a most enviable light, as one of the most favored portions of God's heritage as to climate, and boundless in resources for the uses, purposes, and happiness of the people who dwell within its limits. The inducements are many, why hundreds of thousands of people east of the Rockies should come to the Pacific Coast, and enjoy life in security from reoccurences of the fearful visitations of the past season with them. Nor is California the only place upon the Pacific Coast inviting and justifying multitudes to "Come West," for the facts stated in reference to California, are largely applicable to all sections from San Diego to Alaska.

The attention of architects and builders on the Coast is respectfully invited to the advertisement of Messrs. N. & G. Taylor Co., the old established tin plate and metal dealers of Philadelphia, in the present issue. It may not be generally known but this firm was the first to guarantee brands of roofing tin, also the first to have stamped upon each sheet the thickness of the tin and the name of the brand. They are the sole importers of the genuine old style brand of roofing tin. In a letter to us the other day they say that the past season has been the largest they have ever experienced for the sale of their guaranteed brands of roofing-tin. In fact, they consider a new era has dawned upon the trade. Certainly there is no question about this, as there is a noticeable demand from all over the country for the better qualities of roofing-tin. Every mail brings them letters, particularly from architects seeking information on the subject of roofing-tin.

Messrs. N. & G. Taylor Company feel confident that a better time is quickly approaching, when architects will use special care in the wording of their specifications and clearly name the brand of roofing-tin they wish used. The next important thing is to see that the roofer to whom the contract is awarded uses the brand as specified. Under cover of the guaranty made by Messrs. N. & G. Taylor Company, architects are perfectly safe in specifying the genuine old style brand of extra heavy ternes. Every perfect sheet is stamped with the name of the brand and thickness, also the trade mark, thus absolutely protecting architects, roofers and property-owners in every possible way against the fraudulent use of inferior tin and dishonest competition. Write to them for information and samples of the tin. The brand, we understand, is carried in large stock by all the leading jobbers on the Pacific Coast.

No More Fences.—Every progressive and intelligent land owner should seriously consider the following resolution; not only meditate upon it, but demand of his member in the Legislature to act accordingly.

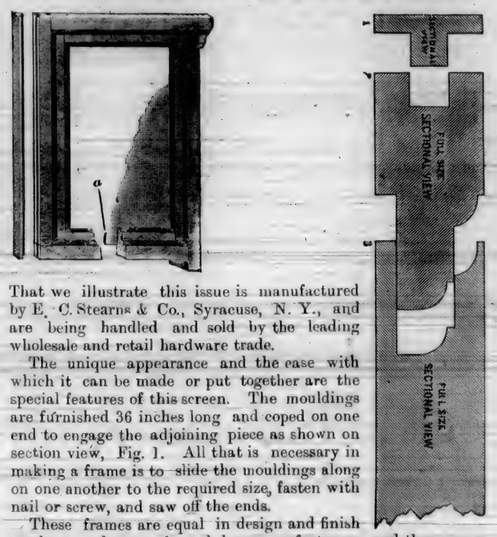
Whereas, the wholesale devastation of our forests is detrimental to the best interests of the soil;

Whereas, a great deal of timber is yearly wasted by maintaining unnecessary fences, and,

Whereas, the Supreme Courts of some States have decided that a barb wire fence is illegal; therefore,

Resolved, That every State should amend their existing fence laws so that no land owner is compelled to maintain any fence whatever.

The Stuart's Window Screen Frame



That we illustrate this issue is manufactured by E. C. Stearns & Co., Syracuse, N. Y., and are being handled and sold by the leading wholesale and retail hardware trade.

The unique appearance and the ease with which it can be made or put together are the special features of this screen. The mouldings are furnished 36 inches long and coped on one end to engage the adjoining piece as shown on section view, Fig. 1. All that is necessary in making a frame is to slide the mouldings along on one another to the required size, fasten with nail or screw, and saw off the ends.

These frames are equal in design and finish to those made by sash and door manufacturers, and they are retailed at much less cost, all stained, which is at a much lower price than the cost of the usual square stick with half round moulding to tack over the wire cloth.

Fig. 2 shows the frame put together before the mouldings have been sawed off, and the wire cloth is shown broken away to expose to view the small strip 'a' which is furnished to tack over the wire cloth.

There are sticks, as shown by No. 1 in Fig. 2, to allow the screen to slide up and down; thus the window can be raised and lowered without disturbing the screen.

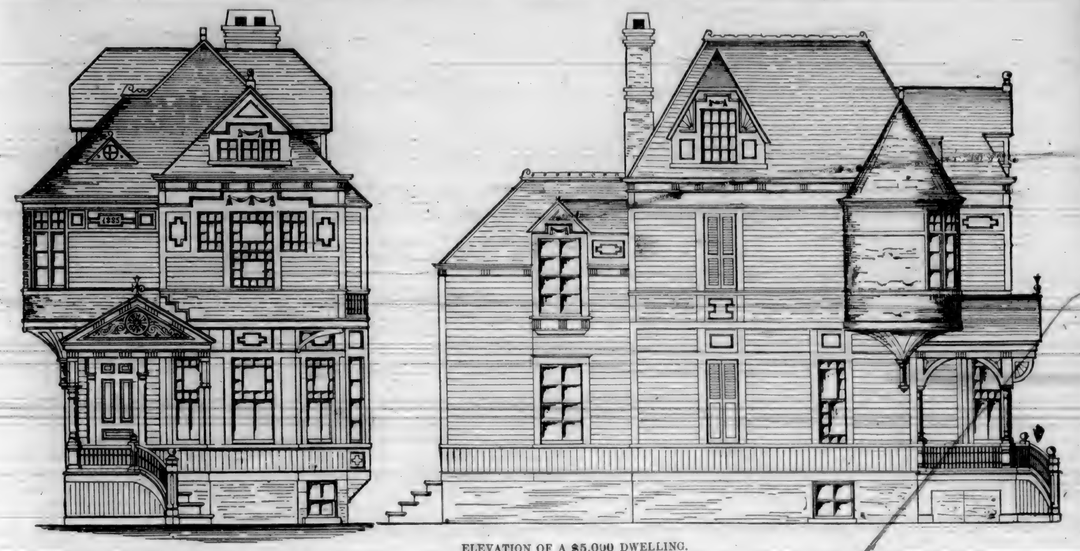
A Fire Kindler—Not Patented.

When the corn season commences, just save the cobs. Then get a boiler into which you put six gallons of water, and one pound of saltpetre. Heat it to the boiling point, and then put in as many cobs as the water will cover. Let them stand a short time, and then take them out and place in the sunlight until thoroughly dry. They can be easily lighted with a match after they are dry and will make a hot fire.

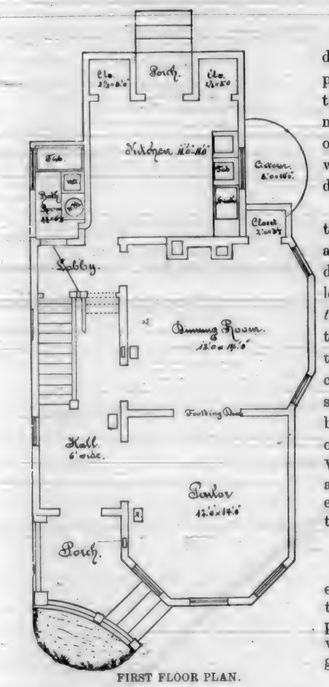
MAKING AUGERS.

The principle of the auger now in use all over the world is said to have been discovered by accident. In 1680, Benjamin Pugh, an Englishman, while watching some boys working endeavoring to bore a hole in the ground with a piece of iron barrel hoop, noticed that after the hole had been sunken some distance into the earth, and the pliable metal of their improvised tool had become heated, it twisted and carried the dirt up to the surface nicely, and he could not see why the same principle should not apply to wood. The invention of the auger was the result.

Although everyone is perfectly familiar with this common place tool, but comparitively few know the process of its manufacture. In making augers, says a contemporary, the iron which forms the main or spiral part is welded into the steel of which the tip is made before forging. The bar is then put under hammers and forged into shape. It is then put into what is called a "wringing machine" and twisted up in a rough shape into the spiral form, after which it is passed through "crimpers," giving a uniformity of twists. The augurs are next put through "straighteners" and revolved, making them perfectly straight, when they are ready for putting on the head, which is the most delicate operation in their manufacture, and requires the work of a skilled artisan. They are then subjected to a "grinding out" process, which consists of putting them through two rubber wheels to rough polish the twist. The fitter-up then takes hold of them and "lightens" or fits the head; then the filers file down and sharpen the heads, after which they pass through the hands of the polishers, where they are polished and hardened ready for market.



ELEVATION OF A $5,000 DWELLING.

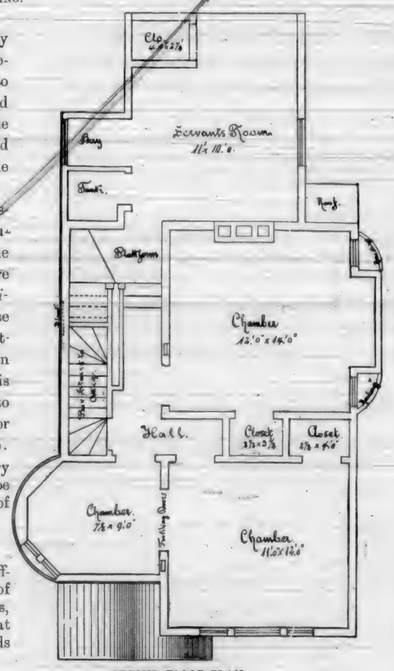


FIRST FLOOR PLAN.

The elevation and plans given are entirely different from anything that has heretofore appeared in this journal. To give full effect to the design, the lot on which it is built should not be less than 40 feet in width. But little ornamentation is used on the exterior, good work being the essential in order to show the design in its beauty.

The internal arrangement is plainly illustrated, and varies somewhat from plans usually presented to California builders. The design was formulated in Canada, and we were led to ask the editors of the *Canadian Architect and Builder* the use of the cuts, because the price given was $3,000, and we were utterly unable to comprehend the difference in cost between building in Canada and in this state. Why it should cost about double to build in this state is one of the problems for our manufacturers and builders to determine. With a finished basement to contain a laundry and other conveniences, the price would be even greater than that placed at the head of this article.

Grindstones, large or small, good or indifferent, are hopelessly ruined by running out of true. A wobbly grindstone and a nervous, passionate mechanic make a combination that will spoil every tool in the shop that needs grindstone treatment.



SECOND FLOOR PLAN.

A Few Hints for the Builders' Association to Consider.

Architects and contractors, says the *Sanitary News*, will be interested in the action taken by the National Builders' Association at its annual meeting in Cincinnati last week. The association decided that general plans, details and specifications when offered for final competitive estimates, should be on a scale of not less than one-eighth of an inch to the foot, should be done in ink or some unfading process, and be complete in every part; such parts of the work as require a higher scale to be comprehended should be one-fourth of an inch to the foot; specifications should be definite; estimates should not be made to cover an indefinite depth of foundation, but where the soil requires going below the depth indicated on the plan, it should be paid for as extra work at agreed prices; the specification is to be the guide for estimating, and all demands made by the specifications, unless objection be made thereto in writing when the bids are submitted should be covered in the estimate offered; improper demands made by plans are not to be considered; grouping of special work must be mentioned and placed under appropriate headings; specifications must distinctly state when it is necessary to cut or change the work of one mechanic in placing the work of another, and such work should be cut or changed by the mechanic who put it in at

the expense of the mechanic for whose accomodation the change is made; contractors are not to be restricted as to sub-contractors, without notice; on reserved portions of the work, let by the owner to a third party, the principal contractor should receive 10 per cent; the lowest invited bidder, whether a general or sub-contractor, should be given the contract and estimates for changes should be made only by him, unless the changes involve a complete alteration in the plans, and then the full competition should be again opened; in no case are the lowest two-bidders to be called upon to estimate upon changes to see which shall have the contract. If the price estimated for changes should not be satisfactory to the owner, it should be settled by arbitration Compensation for the lowest bidders when all estimates are rejected is demanded as follows: For estimates amounting to $5,000 or under, $25; $5,000 to $50,000, $50; over $50.000, $100. When security is demanded of the contractor, a like sum should be given by the owner. A good deal of discussion was indulged in on the rights of sub bidders in the hands of architects and the general contractors—unsolicited bids—and a rule was passed to the effect that any member detected in trading on any of the sub-bids will be liable to forfeiture of membership, censure or suspension. It was also decided that bids should be opened in the presence of bidders when practicable, and that when a penalty is demanded for delay in completion beyond the day named, a premium of like amount be awarded the contractor, for completion before the time. These remedies, some of them are new, but all seem to be just, and we await with interest their practical operation.

Chisels.

In mortising without a machine, grind your chisel to a long basil or bevel. It will drive easier with a mallet.

Keep the flat side of the chisel facing the marks.

Grind the chisel on one side only.

A paring chisel is the very finest chisel made. It is long, thin, and made of fine steel. A paring chisel should have an octagon handle, long and true, and should be put on in perfect line with the blade of the chisel.

Paring chisels, as the name indicates, are used for "paring or cutting any superfluous stuff on fine work." They are the sharpest and the most dangerous tools, when in good order, an amateur can use.

A mortise chisel is a thick, heavy tool, made of iron faced with steel. Generally there is a socket to receive the handle. Sometimes the top end of the handle is enclosed in an iron ring, placed there to resist the force of the mallet used in "driving" a mortise.

A firmer chisel is one midway between a mortise and a paring chisel. It is the most useful for amateurs, as it can be used for mortising and paring. They are pretty strong, and generally have turned handles with brass ferrules. For general work they should not be ground too thin, for if they are finely tempered they will break when used for mortising, and if used for paring they will answer very well if ground medium in thickness.

If I was asked how many chisels an amateur should want, who did not have "wealth enough" to get complete sets of the three kinds, I should say:

For paring chisels, get one two-inch, one one-and-a-half-inch, and one one-half-inch; for firmer chisels, get one one-and-three-quarters, one one-and-a-quarter, and one three-quarters; for mortise chisels, get one quarter-inch, one three-eighths, and one half-inch. These will give the amateur a fair supply and give him all he wants for general amateur work.

Gouges are not so much in request by amateurs; sometimes, however, work cannot be done without them. It is generally the best policy for an amateur to buy gouges only as he wants them. The style of gouges is unaccountable; every curve requires a different set of gouges. When you want a gouge, get the curve, take it to a dealer, and get a tool to suit.—*Universal Tinker*

For sharpening tools, instead of oil, which thickens and smears the stone, a mixture of glycerine is recommended. The proportions of the composition vary according to the class of tools to be sharpened. One with a relatively large surface is best sharpened with a clear fluid, three parts with glycerine being mixed with one part of spirits. A graver, having a small cutting surface, only requires a small pressure on the stone; and in such cases the glycerine should be mixed with only two or three drops of spirits.

The mechanic who thinks he has arrived at perfection may be written dowu as an ass. There is no such thing as "perfection" in the mechanical arts, and the man who claims to be a complete and finished mechanic knows in his heart he claims that which does not belong to him, and he will soon discover his vanity, for his fraudulent pretenses do not deceive the employer to any great extent. Blow and bluster will not make good work or pass for efficiency, and the man who uses that sort of weapons seldom deceives an employer. "I never employ a man who knows it all," said a large contractor to us the other day. "Give me a modest, neat looking man," he continued, "and I'll hold you a dollar he is a good workman and one that may be relied upon; though, of course, that sort of man seldom comes in search of employment. Bragging fellows, who state they can do anything from dressing a board to designing a cathedral, are quite numerous, and may be had at any moment." Doubtless this is true, but it does not argue that there are not many of the modest workmen. There are plenty of them, good, reliable fellows—fellows that seldom or never have need to seek employment. They are always engaged. Most of them own their own homes, are intelligent chaps, models in their own neighborhood, the best of citizens, have neat, thrifty wives, and healthy, happy children, and their country is proud of them, for it understands that they are towers of strength and bulwarks of true freedom. It is not from this class anarchists or noisy demagogues are drawn; they do nothing until they have first considered the results, and all their actions are tempered with wisdom, hence their ability to become good mechanics.—*The Timber Worker.*

IMPORTANCE OF CARPENTRY.

The carpenter has more to do with the co struction of a building than any other person employed by the architect. Whether a building is to be erected of brick or stone, still it is the carpenter who forms all the patterns and guides for the bricklayer or the mason to work from. Nay, even if a cottage is to be built of mud, the first step is to procure boards adapted by the carpenter for forming moulds, by which this mud is brought into the required form; or, even if the mud is heaped up with forks, as in the cob walls of Devonshire and Wiltshire, the carpenter is required so supply what are called wooden bricks to be built into the walls for attaching, at a future period, the internal finishings.

In the interior of the house everything depends on the carpenter, and most things are, indeed, done by him. The floors and doors and windows are almost entirely his work, and he forms mouldings for the cornices which are put up by the plasterer If, therefore, we could improve the taste of the rising generation of carpenters, we should have no fear of operating, through them, all on the various artizans employed in the construction of houses, and ultimately, on the general taste of the whole community. —*J C, Loudon.*

Before the passage of an insolvency law a note was given. After the law was passed a new note was given in renewal of the first one .In suit upon this last note the defense of discharge under the insolvency law was made. Held that the maker's discharge under the insolvency was a bar to the suit, even though the note was given in renewal of one made before the enactment of the insolvency law.—*Snow vs. Foster, Maine Supreme Ju'd ial Court.*

Humboldt Ties Preferred.

The following from the Auburn *Republican* incidently brings to view the connection that Humboldt County has with a growing demand for an article that this county can supply in unlimited quantity. At the same time it is wise to avoid wasting the timber, or railroad building is yet in its infancy in this State:

"There are probably more new ties used in the course of a year on the railroad between Rocklin and Summit than any roadbed of the same length on the coast. The heavy gaade, and particularly the numerous curves, are hard on the wearing quality of ties, and there are from twenty to twenty-five thouaand new ones put in between Sacramento and Tamarack, a distafice of 93½ miles, every year. The number of ties to a mile is about 2,700, and a regulation tie is 6x8 inches and eight feet long. A better quality of tie is necessary for the mountains than for the level tracks in the valley. According to Roadmaster Rabe, the very best tie is made of redwood, but he gets very few of these, only occasionally making requisition for them from below. These redwood ties come from the Humboldt forests, and will last twelve or thirteen years. After that service they make good fence posts, and readily sell for that purpose, each tie being good for two posts. By far the greater part of the ties used on this division come from our own mountains. Mr. Rabe says the next best tie after redwood is made from the heart of the sugar pine. These ties come mostly from Towle Bros., and from the vicinity of shed No. 27. They cost 36 cents each, but under steel rails they last from ten to twelve years, and Mr. Rabe has seen them in good condition after being laid fourteen years. Only a few of these choice ties can be had, because the heart of the sugar pine is too valuable, and is in great demand for other purposes. The common ties, and the kind mostly used, is made of red fir, yellow pine or spruce. These cost the railroad company about 34 cents.

A young man seeking employment in a Southern City saw the word "Push" on the door of a large manufacturing establishment, and walking in accosted the proprietor: "I saw your motto on the door and came in to tell you that I wanted work. I am chock full of 'push,' and if you will give me something to do I will demonstrate what I say. A man needs 'push' to get along in the world these days." The proprietor was so pleased with the youth's manner and business-like air that he gave him a job unloading pig iron in the foundry at 75 cents a day. In three years that same youth was foreman in the foundry department; three years later he was foreman of the shops, and he is now a partner and manager of the concern.—*Ex.*

Don't Undervalue the Boy.

Too many men make their boys feel that they are of little or no account while they are boys. Lay a responsibility on a boy and he will meet it in a manful spirit. On no account ignore their disposition to investigate. Help them to understand things. Encourage them to understand what they are about. We are too apt to treat a boy's seeking after knowledge as mere idle curiosity. "Don't ask questions" is poor advice to boys. If you do not explain puzzling things to them, you oblige them to make many experiments before they find out; and though experimental knowlege is best in one sense, in another it is not, for that which can be explained clearly does not need experimenting with. If the principle involved is understood, there is no further trouble, and the boy can go ahead intelligently.

Do not wait for the boy to give up before you begin to treat him as an equal. A proper amount of confidence, and words of encouragement and advice, and give him to understand that you trust him in many ways, helps to make a man of him long before he is a man in either stature or years.

Give him tools, and let him find out for himself whether he has got any mechanical taste or not. Do not discourage him, as parents are apt to do, by saying; "Oh it is no use for you to try to do anything with tools. I never have any taste that way, and of course you have not." If a boy finds he can make a few articles with his hand, it tends to make him rely on himself. And the planning that is necessary for the execution of the work is a discipline and an education of great value to him. The future welfare and happiness of the boy depends on the surroundings of his youth. When he arrives at that period in his life when he is obliged to choose what profession or what line of business to follow, it is highly important that he should take no false step. And if in his youth he has cultivated a taste for any particular branch, the choice of a profession or business will be made more easy.

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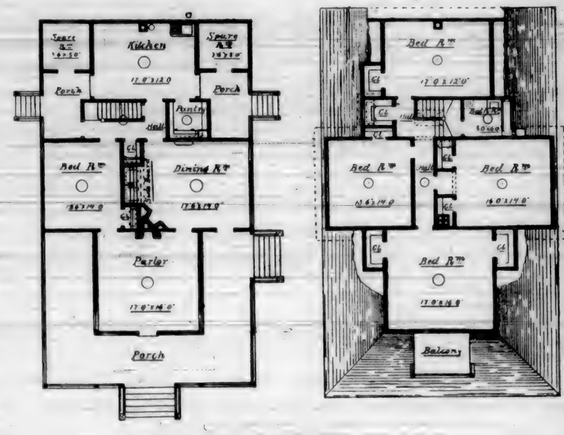
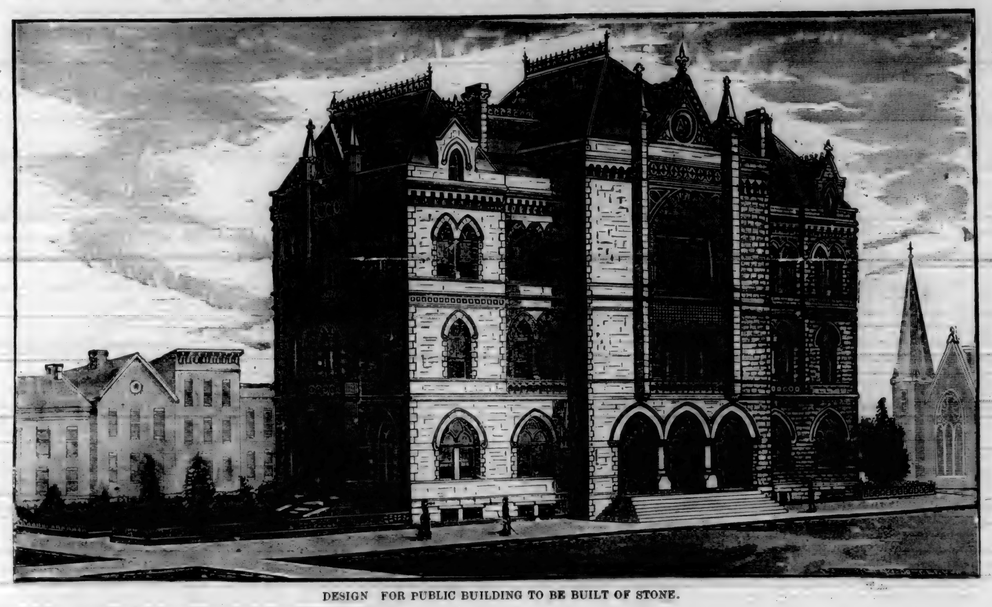


A Country Residence.

The above engraving illustrates a very pretty and unique design for a ten-room country dwelling lately built at Vacaville, Solano Co., Cal. The building site is on a sloping ground, surrounded by large, spreading shade trees, making a most beautiful building spot for a country residence. A glance at the plans will readily show the reader the beauty of arrangement, convenient apartments and superiority in every way of the design for a country dwelling, where the summer days are hot and sultry. One principal feature of the design is the large front porch, enclosed by neatly turned balusters, shading the rooms from the hot sun and affording a very pleasant and agreeable sitting place during warm weather. The kitchen is placed in the rear of the building and the entrances are protected by two porches furnished with balusters, railings and steps to correspond with the front porch. A spare room opens off of each rear porch which are intended to be used for workingmen and cook. The kitchen is provided with a spacious pantry with shelves, drawers and a slide to pass dishes into the dining-room. The dining-room has a large sideboard placed in a recess with an ornamental arch in front. One chimney contains fire-places for the dining-room and parlor, and separate flues for the bed-rooms on the second floor. The second floor contains four large bed-rooms, a bath-room and numerous closets. The bath-room is furnished with a wash-basin, water-closet, bath, and a clothes-shute running down to a basement room fitted up with clothes-box, wash-trays and all necessary conveniences used in a laundry. The basement is finished into a milk-room, store-rooms, etc. A commodious balcony is constructed in the roof of the front porch, which is reached through two front windows in the bed-room of the second story. The elevation needs no description, as a close examination will reveal many features which are novel and beautiful. Full information in regard to painting, plumbing, etc., will be forwarded on application. Address,

Salfield & Kohlberg, Architects, 339 Kearny St.



DESIGN FOR PUBLIC BUILDING TO BE BUILT OF STONE.

Mechanics' Institute Exposition of 1888.

THE BOARD OF TRUSTEES announce that the TWENTY-THIRD INDUSTRIAL EXPOSITION OF THE MECHANICS' INSTITUTE will open in its grand exhibition building, bounded by Larkin, Hayes, Polk and Grove Streets, on TUESDAY, AUGUST 7TH, 1888, and will close on SATURDAY EVENING, SEPTEMBER 15TH, 1888.

The past Exhibitions held by the Institute have done more than all other means combined to illustrate the advance in inventions and mechanic arts upon this Coast.

The Mechanics' Institute of San Francisco was first organized in 1855, but it was re-incoporated in 1869 under the provisions of a liberal Act of the Legislature providing for the formation of Mechanics' Institutes, Chambers of Commerce, and kindred useful bodies. The designs and objects of the association, set forth in its articles of incorporation, are most useful and important to the commonwealth, and include the maintenance of a great and growing Library of circulation and reference, the formation of classes, and delivery of Lectures for tuition, and the purchase of propety and erection of buildings for any scientific, mechanical and literary purpose.

Article VI of its Articles of Incorporation reads as follows:

"No shares of stock, nor any individual right in the property of this Association shall exist or be aquired during the existence of the Association, but the property belonging to and in the name of the Mechanics' Institute, shall be held in trust by the Trustees for this Association, and never be diverted from the purposes and intention for which it is organized."

All the profits and pecuniary results of the Exposition, Library, property and enterprises of the Mechanics' Institute inure solely to public and useful ends, and not to the private or personal benefit of any one

The membership of the Mechanics' Institute is large, and it is supported by all classes; it is primarily an association of mechanics, and its exhibitions are emphatically expositions of Pacific Coast industry. During the past two years, the management has greatly enlarged the scope of the Fairs, which now include comprehensive exhibits of the natural products of our soil, the fruits of husbandry, also ores, minerals and timber, and other exhibits illustrative of the natural wealth of our State and Coast.

Regarding the coming Exposition, it is the intention of the management to make every effort to surpass the successes of the last few years. Everything points toward a prosperous year; a large concourse of visitors from the East is expected, and the Exposition will furnish a grand opportunity of displaying the products of our workshops and manufactories, and of advertising the capabilities of the climate and soil of this Coast, and its advantages for resideе and investment.

The SAN FRANCISCO AND NORTH PACIFIC R. R. CO., the NORTH PACIFIC COAST R. R. CO., and the PACIFIC COAST STEAMSHIP CO. (MESSRS. GOODALL, PERKINS & CO., AGENTS), will transport exhibits free of charge, and the SOUTHERN PACIFIC CO. has also adopted a liberal policy regarding the Exhibitions of the Mechanics' Institute.

The Exhibition Building is complete in all of its appointments. *No charge* is made to exhibitors for space. *Steam power* and *water* furnished *free*.

Arrangements are being made to secure art exhibits, pictures, statuary, etc., of unusual merit.

A large orhestra of skilled musicians, including solo performers, will render a grand concert each afternoon and evening during the continuance of the Exposition.

Other attractions and interesting features will be presented from time to time.

The Rules and Regulations governing the Exposition, Premium List, and Applications for Space will soon be ready, and can be had, or will be sent with any further information desired, on application at the office of the Institute, 31 POST STREET, SAN FRANCISCO, CAL.

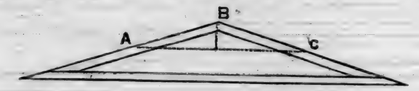
PURCHASING AGENCY We have perfect arrangements by which we can supply merchandise of any description connected with the building interests, at the very lowest market prices. Architects, Draughtsmen, or Mechanics can obtain the best articles of all kinds. Contractors' orders promptly filled. As far as possible, we will purchase from those advertising in this Journal. By helping our advertisers, we necessarily help ourselves; our patrons are well aware of this fact and many have authorized us to make special prices on all goods ordered through this agency. We will use all legitimate methods to largely increase the subscription list of the "California Architect and Building News." By attending to the wants of those unable to visit the city, using the utmost diligence and economy in purchasing, we expect to add at least 1000 subscribers to our list.

EVERYBODY'S COLUMN.

Questions and Answers.

Under this head it is our purpose to give practical information on any subject within the scope of this Journal which may be asked for by any of our readers. We cordially invite inquiries and will do our best in all cases to get useful replies.

C. B. asks:—"Will you please give me a little help? I wish to know how to set out the curve for the centre of a brick arch, the rise of which is very small in comparison to the span. Suppose I wish to make a centre for an opening five feet wide and that the rise is only four inches. I cannot use a piece of string or a compass, as the center would be away nearly in the next block.



Answer: To set out the curve in such a case as our correspondent refers to is not at all difficult. Proceed as follows: Mark out on the floor, or on a large bench with a piece of chalk, two points at a distance apart equal to the opening, in this case five feet. Connect these two points, A and C, by a straight line and divide it into two equal parts. In the centre set up the rise B four inches, when you will have three points, A, B and C, representing the rise and the opening. Now take a piece of board at least fifteen feet long and cut the top off in two splays so that the apex of them is on the point B, while the two splayed lines pass through the two points, A and C. If two nails be driven in at A and C respectively, and a pencil or sharp point be affixed to the board at B, it will describe the arc required so long as the splayed sides are kept against the nails, A and C. Instead of using one piece of board, three pieces nailed together will answer the purpose as shown in the cut.

J. H. R. writes: "Will you please give me a rule for calculating the strength of an ordinary floor joist?"

Answer:—Multiply the breadth of a beam by 600 and this by the square of the depth and divide by the length. The breadth and depth are taken in inches while the length is taken in feet. For example, suppose the joist to be ten feet long and two by five inches. Then $2\times600=1200$. $1200\times25=30,000\div$ by $10=3,000$, which represents the number of pounds required to break the beam when supported at both ends and uniformly loaded. To find the load which it is safe to put upon it, divide by six.

Geo. McL. asks for a means of preventing the bottoms of posts which are set up in damp ground from rotting.

Answer:—Cover the parts with a coating of creosote or oil of tar, or char them and cover with coal tar.

S. T. asks how to render window glass semi-opaque.

Answer:—Dab the glass over with putty and varnish or make a solution of alum and apply it to the surface of the glass when it will be found to crystalize, forming what is known as frosted glass. To prevent it from being rubbed off it is advisable to give the surface a coating of clear varnish.

W. T. W. writes:—"The kitchen sink of my house has become stopped, in consequer ce, I believe, of grease accumulated in the pipes. Will you please give me a recipe which will clear it; something which will prove effectual in keeping it clear."

Answer:—If the trouble arise from the cause you mention, you may clear the pipe by pouring down a solution of common lye made by dissolving it in boiling water. If you will pour down a little of the hot lye from time to time, it will dissolve the grease and keep the pipes always clear.

John S. W. would like us to indicate the best form of joint for connecting the foot of principle rafter to tie beam in a framed roof.

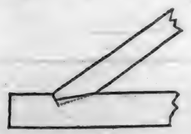


FIG. 1.

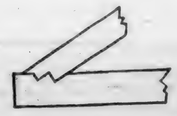


FIG. 2.

Answer:—Opinion differs among practical carpenters as to which is the best form, but that represented in Fig. 1 is certainly one of the simplest while nothing can be said against its efficiency. It is, however, sometimes objectionable from the fact that it necessitates cutting in at some distance from the end, and to overcome this the form shown in Fig. 2 is recommended. In both cases it is very necessary that some means of preventing the boards separating be used. An iron strap encircling the two pieces is perhaps the best that can be used, or an iron bolt answers where the weight is not very considerable.

R. R. S. asks how to remove varnish from a valuable piece of furniture.

Answer:—Soak a piece of soft rag in methylated spirits and briskly rub the wood the same way as the grain. This is a somewhat slow process, but it is thoroughly efficient while no injury can possibly be done by it to the article under treatment.

G. H. has a store in this city, the windows of which are frequently covered with moisture or frost. He would like to find a way to keep them clear.

Answer:—The accumulation probably results from a want of a proper system of ventilation. By forming an iron grating or suitable outlet at the top of the window, the moisture-charged air will have an opportunity of escaping and will, in many cases, get rid of the trouble, but where this cannot be done, the formation of double windows is recommended.

G. G. asks:—"Is there not some way in which we can darken oak?"

Answer:—Yes. Apply with a rag or brush a solution of bichromate of potash of a strength depending upon the depth of color required.

Half-Timbered Houses.

HUNTSVILLE, ALA., Jan. 16, 1888.

TO THE EDITOR:

You would oblige a subscriber by giving a short history of the half-timbered houses erected in England during the Elizabethan period, and their characteristics. Yours truly,

WM. H. H. Subscriber.

ANSWER.—These buildings were constructed of timber framework, arranged sometimes vertically, with horizontal beams at stated intervals, or the timbers were arranged diagonally, so as to form geometrical figures, as squares, diamonds, triangles, etc., etc., the space between the timbers being filled with plaster and cement work studded with pebbles, broken glass, etc.; in fact, the same class of work now known as Rough-Cast work. In many examples curved timbers were introduced, branching from a center post, after the form of a king post in a truss framing.

Another peculiarity of half-timbered houses consists in projecting the second story beyond the face of the lower, and supporting the projection on ornamental timber brackets. The gables surmounting these projections were finished with barge boards, frequently of delicately carved work and of beautiful design.

The gable proper was paneled up in various designs and enclosed square mullioned windows, filled with small square lights and diamond shaped glass.—*Builder.*

White Paint Mixture.

LOUISVILLE, KY., Dec. 27, 1887.

TO THE EDITOR:

Can you give a reader a good mixture for painting what is known as white work? and oblige GEO. C. K.

ANSWER—The following is an excellent whitework finish: After applying one or more coats of white lead, mix and apply as color-and-varnish either pure white lead or dry zinc in hard drying varnish; give ample time for drying; then rub down with fine pumice stone and apply a second coat of above mixture, adding a little more varnish, but not enough to affect the purity of the color. When dry, rub lightly with pulverized pumice stone, wash clean, and then rub every part nicely with pulverised rotten stone being careful to have every part of the same lustre. This gives an egg-shell finish to the surface.—*Builder.*

METHOD OF USING GLUE.

CRAWFORDSVILLE, IND., Feb. 25, 1888.

TO THE EDITOR:

Please give the proper method of using glue, and oblige Jas. H. G.

ANSWER.—Much depends on the quality of the glue and the manner of its application. One fact is self-evident—that if the body is of sufficient strength to fully penetrate the fibers of the wood, and yet leave sufficient in the joint to form a cementing of the parts, the work will stand without shrinkage. Use glues that are slow-drying, for they are the strongest and most reliable. For general use, the following directions are to be observed: Break the glue into small pieces; put into a pot, and soak ten to twelve hours; then boil until properly done; place the same into any air-tight receptacle, and when cold cover it. Use from this prepared mixture from time to time as required, melting in a double pot, as usual.—*Builder.*

COUNTRY BUILDING NEWS.

SAN BERNARDINO.

T. H. Goff will soon erect two residences.

Gee Bros. are about to build a large workshop for their own use.

Plans for a $3,000 residence are being prepared for Isaac Benjamin.

J. C. Christy has let a contract to Uttley Bingham for the erection of three residences.

Brick-laying has begun on the Van Dorin building, on Third street.

Plans are being drawn for Mr. Tittle by Jones & Griffith for a brick stable on the corner of D and Second.

Mr. E. Somers intends to soon begin the erection of a building 100x100, on his property corner of E and Second. He says it will be a daisy.

Work on the foundation of the Smith Haile building, on Third street, has begun the water having been pumped from the foundation.—*Index.*

Mr. M. Katz has notified Jones & Griffith to prepare plans for a three-story building to be erected on his Third street property, adjoining the Occidental. It will cost about $30,000.

Plans are being drawn by Jones & Griffith for a building to be erected on the corner of D and Fourth. It will be three stories and to cost about $25,000. Mr. A. Swring will build it.

Architect Goff is preparing plans for a three-story building to be erected near D on Fourth, by Lawyer Otis. It will be 70x70, and will cost not far from $35,000. The building is to be constructed after the latest designs.

Yesterday T. H. Goff, the architect, let the contract for erecting the large building for Dr. Bogart, on Court street, to Ernest Waycott. The price is $11,075, and the building is to be ready for occupancy by June 1st.

Jones & Griffin yesterday received instructions from Mr. Chris. Kurtz to prepare plans for a building 80x170, to be built on the site now occupied by the Southern hotel, corner of D and Fourth. The building is to cost about $40,000, and will be used as a hotel.

Ed. Katz and Charles Leonard yesterday purchased the adobe portion of the old Southern hotel, which is to be torn down to make way for an elegant three-story brick building. Plans for this new building are being drawn and will soon be ready for contractors to bid on. Messrs. Katz & Leonard are to use the adobe walls in a large warehouse which they are to begin the construction of in a short time, and for which Messrs. Jones & Griffith are to draft the plans.

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RAGGIO'S NEW BUILDING IN SAN JOSE.

The excavations for the foundations for G. Raggio's new building on the southwest corner of First and Julian streets are completed, and in a day or two the brick masons will commence work. The building will be of brick, three stories high; it will have a frontage of 87 feet on First street. The cost will be 30,000.

CALISTOGA.

Bids were received as follows for the erection of a school house in this town. The figures are remarkably close.

John Taylor, Calistoga	$6,175
Thos. B. Bassett, Lakeport	6,200
John Morton, Calistoga	6,470
J. C. Mixon & Son, St. Helena	6,534
Wm Commary of San Francisco	6,598

PETALUMA.

C. Tempel, the hardware merchant, will in a few days commence the erection of a two story brick building on his lot on the south side of Kentucky street near Western avenue. The building will front 50 feet on Kentucky by 80 feet in depth and is intended for business, and will it is said be occupied by the owner. Mr. Temple went to the city last Monday to contract for an iron front for the building. A. B. Case, who owns the adjoining lot, it is said will also build about the same time.

Messrs. Jones & Griffith, architects, have just completed the plans for a new two-story brick building 5x65 feet, to be erected on Orange street, Redlands, by Mr. George E. Otis of San Bernardino.

FRESNO.

M. J. Church contemplates the erection of a large Sanitarium in this city in the near future. The building will be a four-story brick and will cover a quarter of a block of ground.

The members of the Adventist church held a meeting on Monday afternoon, and a fund of $31,000 was subscribed to be used in the construction of a church edifice. The following persons compose the committee to draft plans and specifications and select a site for the new building: M. J. Church, J. W. Beall, V. B. Stephens, J. M. Church, W. D. Bowen, F. R. Dunlap, W. H. Ingels, Mr. Darling, and A. A. Cooley.

A two-story residence will be erected for Mrs. Geo. McCullough on her premises north of the Court-house. Size will be 30x40 feet and two-stories high; established cost about $3,000. J. M. Saffell is the architect. Bids will be received by him until next Saturday at 5 o'clock for the construction of the building.

SOME ELEGANT BRICK BUILDINGS.

Donahoo, Emmons & Co. have commenced breaking ground on I street, at the rear of their hardware store on Mariposa, for a fine three-story brick building, 25x75 feet. This is the first of the two which they propose to build before they have finished. The other will also be three stories high, and will stand on the grounds which they now occupy. The former is expected to be finished by the latter part of next month, when the one to be erected on Mariposa street will be begun. The proposed three-story brick for the First National Bank, adjoining and on the corner, will also be commenced at that time, and the two will go up at once.

LUGONIA.

F. A. Shorey, the indafatigable contractor and builder has just commenced another house on the Inter-Railroad tract, making five dwellings which he has in course of construction at the present time, three for Bentley & Morrison, one for Miss Washburn and this last one for G. F. Lyons, the popular painter. When these buildings are finished Mr. Shorey will put up a two-story brick block for himself, on the west side of Orange street, opposite the *Southern Californian* office.

RIVERSIDE.

Wednesday a contract was let by the Southern California Motor Road Co., to build a bridge across the Santa Ana about 1200 feet above the California Southern bridge. The bridge will be a little over half a mile in length, and the cost of its construction will be in the neighborhood of $30,000. The Pacific Bridge Co., of San Francisco, secured the contract.

TULARE CITY.

Work has been commenced on Krogh's brick building. Preliminary notice of this job was given some time ago in this journal.

COUNTRY BUILDING NEWS.

SAN BERNARDINO.

T. H. Goff will soon erect two residences.

Gee Bros. are about to build a large workshop for their own use.

Plans for a $3,000 residence are being prepared for Isaac Benjamin.

J. C. Christy has let a contract to Uttley Bingham for the erection of three residences.

Brick-laying has begun on the Van Dorin building, on Third street.

Plans are being drawn for Mr. Tittle by Jones & Griffith for a brick stable on the corner of D and Second.

Mr. E. Somers intends to soon begin the erection of a building 100x100, on his property corner of E and Second. He says it will be a daisy.

Work on the foundation of the Smith Haile building, on Third street, has begun the water having been pumped from the foundation.—*Index.*

Mr. M. Katz has notified Jones & Griffith to prepare plans for a three-story building to be erected on his Third street property, adjoining the Occidental It will cost about $30,000.

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Jacob Lenzen & Son, architects, have drawn plans for a handsome two-story brick building for F. W. Tenant, which he proposes to erect at once on his property just south of Germania Hall on South Second street. The building will have a frontage of 58 feet and a depth of 120 feet.

RAGGIO'S NEW BUILDING IN SAN JOSE.

The excavations for the foundations for G. Raggio's new building on the southwest corner of First and Julian streets are completed, and in a day or two the brick masons will commence work. The building will be of brick, three stories high; it will have a frontage of 87 feet on First street. The cost will be 30,000.

CALISTOGA.

Bids were received as follows for the erection of a school house in this town. The figures are remarkably close.

John Taylor, Calistoga	$6,175
Thos. B. Bassett, Lakeport	6,200
John Morton, Calistoga	6,470
J. C. Mixon & Son, St. Helena	6,534
Wm Commary of San Francisco	6,598

PETALUMA.

C. Tempel, the hardware merchant, will in a few days commence the erection of a two story brick building on his lot on the south side of Kentucky street near Western avenue. The building will front 50 feet on Kentucky by 80 feet in depth and is intended for business, and will it is said be occupied by the owner. Mr. Temple went to the city last Monday to contract for an iron front for the building. A. B. Case, who owns the adjoining lot, it is said will also build about the same time.

Messrs. Jones & Griffith, architects, have just completed the plans for a new two-story brick building 5x65 feet, to be erected on Orange street, Redlands, by Mr. George E. Otis of San Bernardino.

FRESNO.

M. J. Church contemplates the erection of a large Sanitarium in this city in the near future. The building will be a four-story brick and will cover a quarter of a block of ground.

The members of the Adventist church held a meeting on Monday afternoon, and a fund of $31,000 was subscribed to be used in the construction of a church edifice. The following persons compose the committee to draft plans and specifications and select a site for the new building: M. J. Church, J. W. Beall, V. B. Stephens, J. M. Church, W. D. Bowen, F. R. Dunlap, W. H. Ingels, Mr. Darling, and A. A. Cooley.

A two-story residence will be erected for Mrs. Geo. McCullough on her premises north of the Court-house. Size will be 30x40 feet and two-stories high; established cost about $3,000. J. M. Saffell is the architect. Bids will be received by him until next Saturday at 5 o'clock for the construction of the building.

SOME ELEGANT BRICK BUILDINGS.

Donahoo, Emmons & Co. have commenced breaking ground on I street, at the rear of their hardware store on Mariposa, for a fine three-story brick building, 25x75 feet. This is the first of the two which they propose to build before they have finished. The other will also be three stories high, and will stand on the grounds which they now occupy. The former is expected to be finished by the latter part of next month, when the one to be erected on Mariposa street will be begun. The proposed three-story brick for the First National Bank, adjoining and on the corner, will also be commenced at that time, and the two will go up at once.

LUGONIA.

F. A. Shorey, the indafatigable contractor and builder has just commenced another house on the Inter-Railroad tract, making five dwellings which he has in course of construction at the present time, three for Bentley & Morrison, one for Miss Washburn and this last one for G. F. Lyons, the popular painter. When these buildings are finished Mr. Shorey will put up a two-story brick block for himself, on the west side of Orange street, opposite the *Southern Californian* office.

RIVERSIDE.

Wednesday a contract was let by the Southern California Motor Road Co., to build a bridge across the Santa Ana about 1200 feet above the California Southern bridge. The bridge will be a little over half a mile in length, and the cost of its construction will be in the neighborhood of $30,000. The Pacific Bridge Co., of San Francisco, secured the contract.

TULARE CITY.

Work has been commenced on Krogh's brick building. Preliminary notice of this job was given some time ago in this journal.

COLUSA.

J. R. Bolst is erecting a fine dwelling.

TURLOCK.

The Methodists intend to build a $5,000 church; almost $4,000 is subscribed.

SANTA ROSA.

T. J. Ludwig has the contract for building a large cannery.

HANFORD.

J. C. Rice is about to erect a dwelling.

SEATTLE.

A three-story building is being erected by the Mechanic's Mill Co. for A. L Palmer.

C. F. Reitze will build a handsome residence in South Seattle.

Robt. Russell will build two houses, to cost $4,000. Work will shortly begin.

Geo. Milne, plumber, of San Francisco, is now on a visit to this place.

Fisher & Clark are preparing plans for a row of four houses in North Seattle. They will cost $12,000. Mr. A. A. Bell is the owner.

SANTA MARIA.

Jones & Lucas are erecting a business building.

NILES.

W. Butt intends to build.

ORLAND.

Dr. Welch will erect two houses.

LAKEPORT.

Marshall Arnold intends in the near future to erect a fine dwelling.

C. Geible intends to erect a substantial building.

SAN LUIS OBISPO.

Plans for the Hall of Records were made by J. N. Preston & Son. See "Notice to Contractors" in regard to bids.

IMPROVEMENTS AT BARTLETT SPRINGS.

The proprietors of Bartlett Springs are making extensiee improvements this spring. They now have a force of twelve carpenters at work. We understand they are at present at work upon the construction of an 80-foot addition to the hotel.

SAN JACINTO.

T. Early is having erected a brick building.

VISALIA.

Frank Sisler will erect a residence. The old buildings on the Colvin property are to be torn down, to make way for a fine brick edifice to be built some time during the summer.

E. O. Miller will erect a dwelling.

PORTLAND, OR.

Fulton & Dement will erect a three-story brick building. D. Canute has the contract.

COLUSA.

H. Morris is constructing a brick building on Main street.

NIPOMO.

Mr. Runnels is erecting a $6,000 residence and a $2,500 stable.

PASO ROBLES.

Mayer & Seigold will erect a brick building.

Geo. R. Adams has contractors figuring on a brick building. It will be 100 feet frontage.

A large bath house is to be constructed at a cost of $25,000.

Plans are being prepared for a brick building on Pine street.

CLOVERDALE.

Mrs. A. W. Moulton will build a large winery on her place near town. E. G. Furber has the contract.

A CONTRACT AWARDED.

The firm of J. G. Reinhardt & Co. have been awarded the contract for laying the pipe, putting up the windmill, tank, tower, etc., for the Estudillo Land and Water Company. The amount for which the contract was let is $2,885. This includes all the work required on the system. The pipe-laying will be under the superintendence of G. F. Reinhart. The firm have sub-let the contract of building the tank and erecting the tower and windmill to W. L. Nourse.

ANOTHER BIG BUILDING.

The plans have been drawn and the contract will be soon let for the erection of a three-story brick building adjoining Clark & McElvaine's livery stable on E street, below Third. The building will be fifty feet wide and will have two storerooms on the ground floor 25x150 feet. The upper story will be used for a lodging house.

Work on the houses for Mr. C. W. Filkins in the Brown tract begun yesterday. These houses are being constructed for tenement purposes. There is a great demand for small, comfortable residences, and the capitalist who gets there first will reap the harvest.—*Index*.

Building Report Submitted by Wm. A. Nethercot, Pomona, Cal.

The work on People's Bank Building is progressing rapidly, and will make a handsome and substantial structure. Plans are out for a brick two-story building for H. Oxeratt, to be built immediately.

Residence for Jas. Fulton, $3,000.
Residence for Dr. Rose, $3,000.
Residence for H. M. Warren, $3,500.
Residence for Jos. Fairholm, $2,500.
Residence for T. Wright, $3,000.
Two stores for Mrs. E. H. Bailey, $4,000.
Residence for E. T. Kysor, $5,000.
Residence for J. A. Packard, $4,000.

CITY BUILDING NEWS.

A NEW CHURCH.

Clinton Day, architect, has plans ready for a new church building to be built on the corner of Octavia and California. It will be occupied by the St. John's Presbyterian Society. Work will be commenced in about a month from date. It is understood that Contractor R. P. Hurlbut will erect the building. Estimated cost about $50,000. The size of the building is 137 ft. 6 in., by 69 ft. 6 in.

In Contemplation.

J. S. Keefer will erect a two-story brick building in Monrovia.

The property on Geary street, just east of Stockton, will shortly be improved. Some of the old frame structures have already been removed.

Call at McDougall & Son's office for plans to figure on hotel building.

NILES.

E. Ransome of San Francisco will builp.

NOTICE.

To Contractors and Builders.

BIDS WANTED.

Bids will be received in the office of James E. Wolfe, architect for the erection of a two-story brick building in the town of Newman, two and a half miles south of Hill's Ferry. Must be in before the 18th of April. Plans etc. at office, 240 Montgomery.

TREASURY DEPARTMENT, Supervising Architect, March 24, 1888.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock, P. M., on the 1st day of May, 1888, for the labor and material required in the erection and completion of the U. S. Court House, etc., building at Carson City, Nev., in accordance with the specification and drawings, copies of which may be seen at this office, at the office of the Superintendent, offices of the Builders' Exchanges at San Francisco and Oakland, Cal., Builders and Traders' Exchanges at Denver, Col., and Kansas City, Mo., Permanent Exhibit and Exchange, Chicago, Ill., and at the Mechanics' Exchange, St. Louis, Mo. Each bid must be accompanied by a certified check for $500.

WILL A. FRERET,
Supervising Architect.

Sealed proposals for a two-story building in Napa; owner, Bank of Napa; architect, J. Parkinson; time, before April 16th.

S. L. Shaw, of San Buenaventura, will receive bids for a school house. Time, before April 14th.

Sealed proposals will be received for the construction of addition to building for the Agricultural Experiment Station, University of California, at Berkeley, said proposals to be received at the office of Clinton Day, architect, No. 310 Pine street, San Francisco, at or before noon, Tuesday, the 24th day of April, 1888.

J. H. C. BONTE,
Secretary of the University of California.

Plans to Figure on.

No charge will be made in these columns for building proposals.

Architects in every portion of the State will greatly oblige us by forwarding notices of contemplated improvements, upon which they desire to receive bids from city contractors.

James E. Wolfe has returned from his eastern trip and can be found at the old office, 240 Montgomery Street.

SAN FRANCISCO BUILDING NEWS

CITY CONTRACTS

Bartlett, bet 21st and 22d, two-story frame. Owner, Elizabeth L. Justi; architect, C. I. Havens; contractor, J. G. Adams; cost, $3,662; sureties, E. N. Harmon, B. Joost; filed March 26th; limit, 90 days.

Building enclosed, $650; brown mortar all on, $650; mortar all on and building primed, $650; building completed, $762; balance, $950, 35 days after acceptance.

Broadway, bet Franklin and Gough, two-story frame. Owner, H. B. Jones; architects, Pissis & Moore; contractor, C. A. Conrad; cost, $7,265; filed March 23d; limit, June 4th.

1st payment, $1,500, when frame is up; 2d, $1,300, when first coat of plaster is on; 3d, $1,200, when plastering is finished; 4th, $1,400, when building is ready for painting, and $48 50 when painting is completed; balance, $1,816 50, 35 days after completion.

Beth Israel Cemetery, Brick vault. Owner Celine F. Levy; contractor, Chas. R. Hawthorne; cost, $1,525; filed March 23d; $800 when completed; $725 when accepted.

Bush and Devisadero, two-story frame excavating, mason work, etc. Owner, D. H. Hiller; architects, John & Zimmermann; contractor, Hock & Son; cost, $1,665; surety, C. E. Backus, $1,600; filed March 24th; limit, July 1st.

1st payment, $1,000, when cellar walls are done; 2d, $400, when chimneys and granite work are done; balance, $265, 35 days after completion.

Bush and Devisadero, same as above, carpenter, plastering work, etc. Contractor F. W. Kern; cost, $4,260; sureties, F. Joost, O. W. Nordwell, $4,200; signed, March 19th; filed March 24th; limit, July 1st.

1st payment, $1,500, when building is enclosed and all partitions set; 2d, $800, when outside finishes are up and first coat of mortar is on; 3d, $900, when building is plastered and ready for paint; balance, $1,060, 35 days after completion.

California, bet Van Ness avenue and Franklin, a frame building. Owner, Mrs. J. B. Pissis; contractor, Wm. Langstaff; architects, Pissis & Moore; cost, $9,100; limit, 100 days from date; signed March 21st; filed March 27th; sureties, O. J. Preston and J. J. McKinnon; amount of bond $3,500.

1st payment, when frame is up, $1,700; 2d payment, when first coat of plaster is on, $1,700; 3d payment, when plastering is finished, $1,700; 4th payment, when building is entirely ready for painter, $1,600; 5th payment, when building is completed and accepted, $125; 6th payment, 35 days after 5th payment, $2,275.

California, near Front, improvements. Architects, Wright & Sanders; contractors, Giles & Barker; cost, $1,500.

Dolores, a shrine in rear of Notre Dame. Owner, Rev. Mother Aloise de la Croix, contractor, Chas. C. Terrill, architect, Huerne & Everett; cost, $700: no limit specified; signed March 26th; filed April 4th.

Payments three-quarters or $525, when the work is finished and accepted. One-quarter or $175 35 days after acceptance.

Diamond, between 18th and 19th. Additions to frame building. Owner, Mrs. M. E. Tittel; contractor, J. C. Brown; cost $600.

Diamond, between 17th and 18th. One story frame and basement. Owner and builder, A. Willis; cost $1,500.

Danvers and Caselli Ave. A frame dwelling, barn and windmill. Contractor, J. C. Brown; cost $3,000.

Devisadero and Ridley. A frame dwelling. Owner, Jas. Alva Watt; contractor, R. O. Chandler; architect, J. H. Littlefield; cost, $4,830; limit, June 15; signed, Feb. 15th; filed, March 10; sureties, E. Aigeltinger and Christenson and Lord; amount of bond ——

1st payment, when brick and frame-work is completed, rustic on, and the roofs boarded in, $1,200; 2nd payment, when interior cornices are on, roofs tinned, sewerage done, plumbing roughed in, door and window frames set, the first coat of plastering on, and exterior painted one coat, $1,200; 3rd payment, when exterior is all finished and painted two coats, plastering all completed, and inside woodword ready for painting, and plumbing work finished, $1,200; 4th payment, 35 days after, $1,230.

Eddy near Webster, 3 frame buildings. Owner, California Bottling Co.; architect, W. Winterhalter; contractor, Adam Miller; cost, $5,000; sureties, Chas. Lachman, H. Ebbinghauser, $5,000; May 1st, limit.

Payments to be made as work progresses at the rate of 75 per cent. of the value of work done, balance 35 days after completion.

Eddy and Franklin. A two story frame and basement. Owner, Samuel Steiner; contractor, H. J. Weiss; architect, H. Geilfuss; cost, $8,650; limit, August 1st, signed March 8th; filed, March 13th; sureties, Wm. Alfs and C. Johns; amount of bond, $6,000.

1st payment, when the entire frame is up, $1,300; 2nd payment, when the building is enclosed, floors laid and partitions set, $1,300; 3rd payment, when all the outside yard, basement and fence-work is done, $1,300; 4th payment, when doors, windows and blinds are hung, and inside ready for painter, $1,300; 5th payment, when building is completed and accepted by architect, $1,250; 6th payment 35 days after 5th payment, $2,168.

Ellis, bet Stockton and Powell; additional story. Owner, Sam'l Kellett; architect, T. J. Welsh; contractor, A. A. Willis; cost, $6,000.

Ellis, near Larkin, three-story frame. Owner, D. A. Williams; contractor, G. W. Hansbrough; cost, $8,000.

Fulton between Webster and Fillmore Streets. A frame building. Owner, Chas. Mayer; contractor, Theodor v. Borstel; architects, John and Zimmerman; cost, $5,249; limit, July 1st; signed, March 6th; led, March 12th; surety, David Woerner; amount of bond, $5,00.

1st payment, when frame is up, $1,000; 2nd payment, when building is enclosed, roof on, and partitions set, $800; 3rd payment, when rough mortar is on, $1,000; 4th payment, when white coat of plastering and all inside finish is on, $1,200; 5th payment, 35 days after acceptance, $1,249.

First Avenue, near Point Lobos road, two-story frame school house. The following were the bids: M. C. Lynch, $15,192; Richard Sinnott, $15,965; James Irwin, $15,350; J. N. Smith, $15,685; Brennan Bros., $16,400; G. W. Hansbrough, $14,400; J. H. McKay, $15,890; John J. Dunn, $14,757; R. Doyle & Son, $15,220. The contract was awarded to G. W. Hansbrough.

Folsom and Fourteenth, alterations and additions. Owner, P. Murphy; contractors, Brennan Bros.; architect, Wm. Mooser; cost, $4,000.

Folsom, bet 1st and 2d, three-story brick building. Owner, Dickman, Jones & Co.; contracting mason, E R. Shain; architects, Pissis & Moore; cost, $9,364; limit, 65 working days from date; signed March 19th; filed March 27th.

1st payment when building is ready for 1st floor joist, $2,300; 2d payment, when building is ready for 2d floor joist, $1,300; 3d payment when ready for 3d floor joist, $900; 4th payment, when ready for roof timbers, $750; 5th payment, when brickwork is complete, $1,000; 6th payment, when all work is completed and accepted, $750; 7th payment 35 days after 6th payment, $2,364.

Folsom, bet 1st and 2d, three-story brick building. Owner, Dickman, Jones & Co.; contracting carpenter, Wm. Langstaff; architects, Pissis & Moore; cost, $4,800; limit, 60 working days from date; signed, March 20th; filed March 27th; sureties, O. J. Breston and J. J. McKinnon; amount of bond, $2,000; witness, J. O. Doane.

Payments of 75 per cent of the labor performed from time to time as work progresses, and balance of 25 per cent 35 days after completion.

Fourth and Berry, alterations. Owner, Union Ice Co. architects, Townsend & Wyneken; contractor, S. G. Worden; amount, $4,100; securities, Geo. T. Shaw, P. J. Turner, $3,000; time, May 5th.

75 per cent as work progresses, and balance in 35 days after completion.

Filbert and Powell, additions; owner, P. J. Kearny; cost $500.

Fourth and Bryant, 3 story frame. Owner, Miss Bertha Spitz; architect, Geo. E. Voelkel; contractor, John H. McKay; cost, $8,440; limit, July 15th; signed, March 16th; filed, March 22nd; sureties, J. F. Kennedy and L. B. Doe; bond, $8,440.

1st payment, when brick foundation is done, frame is up, and rafter on, $1,200; 2nd payment, when chimneys are up, building enclosed, and main cornice is finished, $1,200; 3rd payment, when brown coat of mortar is on, floors laid, platform set, and roof ready for tinning, $1,200; 4th payment, when plastering is complete, $1,200; 5th payment, when house is complete and accepted, $1,530; 6th payment, 35 days after acceptance, $2,110.

Geary, bet Webster and Fillmore, additions. Owner, H. H. Hobbs; contractor, J. B. Gonyeau; filed March 26th; cost, $680.

Greenwich, bet Mason and Taylor, a house of two flats. Owner, Geo. McCluskey; architect and contractor, Geo. M. Salsbury; cost, $2,850; limit, July 1st; signed March 15th; filed March 27th; sureties, F. P. Bull and W. H. Jordan; amount of bond, $2,850.

1st payment, when rough frame is up, $750; 2d payment, when building is enclosed and roof, sides and rustic on, $700; 3d payment, when brown coat of mortar is on $700; 4th payment, 35 days after completion, $706.

Grove, bet Broderick and Baker. A frambuilding. Owner, Geo. W. Harman; architect, Geo. M. Salsbury; contractor, G.

M. Salsbury; cost, $2,795; limit, June 8th; signed, March 8th; filed, March 15th; sureties, F. P. Bull & Lyman Green; amount of bond, $2,795.

1st payment when rough frame work is done, $700; 2d payment, when house is enclosed and window frames are in, $700; 3d payment, when rough coat of mortar is on, $700; 4th and last payment, when building is completed and accepted, $695.

Grove, bet Fillmore and Steiner, a two-story attic and basement frame building. Owner, Geo. W. Smith; contractor, Wm. Pluns; architect, Chas. I. Havens; cost, $6,855; limit, 95 working days from date; signed March 16th; filed April 3d; sureties, F. Joost and David Woerner; bond, $6,855.

1st payment, when rough frame is up and building enclosed, $1,500; 2d payment, when brown mortar is on, $1,250; 3d payment, when hard finished, $250; 4th payment, when completed and accepted, $1,355; 5th payment, 35 days after acceptance, $1,750.

Greenwich and Taylor. additions. Owner, August Wolff; cost $500.

Golden Gate Ave and Lyon Street. A one story cottage and basement. Owner, R. D. Cameron; contractor, C. E. Dunshee; cost $2,250; limit, June 1st, signed, Feb. 29th; filed, March 13th.

The whole amount to be paid upon completion and acceptance of building, provided there are no liens upon the same.

Hancock & Sanchez. One story frame and basement. Owner and builder, John Lend; cost $1,500.

Hancock & Noe. One story frame and basement. Owner and builder, Jas. McInery; cost $2,500.

Illinois, bet Napa and Shasta, two two-story frame. Owner and builder, O. W. Helm; cost, $5,000.

Larkin, cor Washington, two-story frame. Owner, Henry Sanders; architects, John & Zimmerman; contractor, Geo V. Hussey; cost, $6,500; sureties, L. Dettmann, Wm. Oakley, $6,500; signed March 20th; filed March 24th; limit Aug. 1st.

Frame up, $1,000; enclosed and partitions set, $1,500; rough mortar and outside finish on, $1,000; plaster all on, $1,500; 35 days after acceptance, $1,500.

Laguna and Turk, same as above. Painting work. Contractor, J. Thomas; amount, $1,840; securities, O. S. Orrick, G. G. Francis.

Outside primed and inside two coats on, $690; when completed, $700; balance, $450, 35 days after completion.

Laguna and Turk, same as above. Plumbing work, Contractor, Rich. Rrice; cost, $2,750; securities, Robt. Dalziell, J. W. Porter.

$1,000, rough pipes in; $605, washstands, bath tubs, closets in; $450, when completed; balance, $700, 35 days after completion.

Laguna and Turk. Six two-story frame residences. Owner, J. Carroll; architect, C. I. Havens; carpenter, J. G. Adams; cost, $30,500; securities, E. N. Harmon, B. Joost, $20,000; limit, Sept. 1st; signed March 31st; filed April 2d.

Frame up and enclosed $5,000; first coat of mortar on, $5,000; white coat finished, $5,000; when completed, $7,500; balance, $8,000, 35 days after completion.

Leavenworth, bet California and Sacramento; a two-story frame and basement. Owner, Joseph Shaen; architects, Copeland & Banks; contractor, Gray & Stover; cost, $3,700: limit, 90 working days from time of delivery; signed March 10th; filed March 15th; sureties, Chas. Dunlop & J. B. Coffin; witness, Louis A. Larsen; amount of bond, $4,000.

1st payment, when frame is up, rustic and roof is on, and brown coat of mortar on, $2,000; 2d payment, when building is completed and accepted, $775; 3d payment, 35 days after acceptance, $925.

Mint Avenue, near 5th, two-story brick; Owner, City of S. F.; architect, P. J. O'Connor; contractors, McCann & Riddell; cost, $14,000.

Mission, near Second, alterations; cost, $800.

Mississippi, bet Butte and Napa, one-story frame. Owner, Olivet Pres. Church; contractor, R. O. Davis; cost, $3,000.

Natoma and Lafayette, four flats. Owner, Mr. Cosgrove; contractors, Brennan Bros.; architect, M. J. Welch; cost, $5,000.

Nineteenth and Hartford. Two story frame and basement. Owner, H. L. Place; contractor Wm. J. Peters; cost, $3,000.

Page and Ashbury. One story frame and basement. Owner, Robt. Rirk; contractor, John Foster; architect, Geo. Miller; cost, $3,800.

Stanyan, near Haight, additional story; cost, $700.

Scott and McAllister, a frame building. Owner, Mrs. Mary Atkinson; contractor, Thompson & Moar; architect, Wm. F. Smith; cost, $7,300; limit, Aug. 15th; signed March 26th; filed March 28th; surety, Behrend Joost.

Payments of 75 per cent of the value of the labor and materials in four equal payments of $1,375, and balance 35 days after completion.

Scott and Ridley. Eight two story frame buildings. Owner and builder, Wm. Hinkle; cost $38,000.

Scott between McAllister and Fulton. A two story frame. Qwner, H. Brunn; contractor, F. W. Kern; architects, Kenitzer & Kollofrath; cost, $5,200; limit, July 7th; signed, March 8th; filed, March 10th; sureties, Behrend Joost and O. W. Nordwell; amount of bond, $5,000.

1st payment, when frame is up, $700; 2nd payment, when building is enclosed, the roofing complete, and brown coat of plaster on, $1,400; 3rd payment, when all the woodwork and iron-work is finished and ready to paint, $1,400; 4th payment. when completed and accepted, $400; 5th payment, 35 days after acceptance, $1,300.

Sutter nr. Stockton. Repairing of a synagogue. Owners, Congregation Emanu El; contractor, A. E. Eldridge; architect, Wm. Patton; cost, $900.

Payments in sums by installments as the work proceeds, and the balance within 32 days after the work is completed, provided no installments shall exceed 75 per cent. of the value of the work done; signed, March 5th; filed, March 10th.

Sanchez bet. 23d and 24th. A frame church; Owner, Lebanon Presbyterian Church; architect, Chas. Geddes; contractor, Fred W. Kern, cost, $3,880; limit, July 1st; signed, March 9th; filed, March 15th; surety, Behrend Joost.

1st payment, when frame is up, except spire and roof boards, $750; 2nd payment, when building is finished outside and ready for plastering, $1,000; 3rd payment, when entire work is completed, except painting and putting on of door and window trimmings, $900; 4th payment, when building is completed and accepted, $260; 5th payment, 35 days after acceptance, $970.

Sutter between Powell and Mason, No 517, additions. Owner, Maria Coleman; contractor J. W. Wissinger; contractor is also the architect; cost, $8,380; sureties, R. Llewellyn, H. Fisher, $5,000.

Payments to be made as work progresses at the rate of 75 per cent. of the value of the work done, balance 35 days after completion.

Steiner, N. E. cor. Pine, 2 story frame. Owner, Nancy Roney—architects, Townsend & Wyneken—contractor, M. C. Lynch; cost $3,783; sureties, W. Hagen, C. Riegelhuth, $2,000; signed Mar. 17; filed, 19th; to be finished June 10th.

1st payment, when frame is up, $800; 2nd, when brown mortar is on, $783; 3rd, when building is completed $700; balance, $1,500, 35 days after completion.

Shotwell near Eleventh, frame dwelling. Owner, Wm. Dunsing; contractors, W. S. Tuttle and G. E. Hawkes; architects, Townsend & Wyneken; cost, $1,935; surety. J. W. Wessen, $1,900; signed Mar. 13; Filed, 17th; 70 days to complete.

1st payment, when frame is up $500; 2nd, when brown coat of mortar is on $475; 3rd, when plastering is completely finished, $475; balance of $585, 35 days after completion.

Tenth and Bryant; the carpenter work of a brick warehouse. Owners, Code, Elfelt & Co.; contractors, I. P. Kincaid & H. C. Thompson; architects, Chas. V. Pierce & J. T. Kidd. Cost, $12,830; limit, 15 days after brick mason has completed; signed, Feb. 27th; filed, March 1st; sureties, J. F. Kennedy & F. P. Latson; bond, $12,830.

Payments, 75 per cent of the value of the labor and materials furnished for buildings and works at each time of a desired payment, and the residue of 25 per cent 35 days after acceptance.

Twenty-second and Chattanooga Streets; a 2-story frame. Owner, Frederick Hartje; contractors, I. P. Kincaid & H. C. Thompson; architects, C. V. Pierce & J. T. Kidd; cost, $3,800; limit, 90 working days from date, signed, Feb. 27th; filed, March 1, 1888; sureties, F. P. Latson & J. F. Kennedy; bond, $3,800.

1st payment, $570, when frame is up and rafters on; 2d payment, $570. when building is enclosed and shingled; 3d payment, $570, when floors are laid and studding set; 4th payment, $570, when inside standing finish is up; 5th payment, $570, when building is accepted; 6 payment 30 days after acceptance.

Texas, bet Mariposa and Solano, one-story frame and basement. Owner, H. Roberts; contractor, R. O. Davis; cost, $1,900.

Turk and Taylor, arificial stone work. Owner, Fabrizio Nigro; contractors, Chatain & Gilletti; architect, Wm. Mooser; cost, $7,007; limit, 50 working days from the time of possession; signed Feb. 1st; filed March 12th; sureties, W. E. Davis & B. T. Clinch; amount of bond $2,000.

Payments made in five payments, at the rate of 75 per cent of the value of the materials and labor incorporated into said building as the work progresses, and the remaining 25 per cent divided into two payments, one-half paid 35 days after acceptance, and the other half one year after acceptance.

Turk and Taylor, brick and stone work. Owner, Fabrizio Nigro; contractor, D. O'Sullivan; amount, $7,950, bond, $8,000; sureties, John J. Mahoney & Peter Crichton. (Payments similar to Chatain & Gilletti's contract.)

Turk and Taylor, plastering, etc. Owner F. Nigro; contractor, Chas. Dunlap; amount, $2,575; surety, W. E. Lucas.

Turk and Taylor, machine work, wrought and cast iron work. Owner, Fabrizio Nigro; contractor, Joshua Hendy; amount $8,700; sureties, Calvin Nutting & J. Hendy. (Payments as above.)

Turk and Taylor, carpenter work. Owner, Fabrizio Nigro; contractor, J. B. Gonyeau; amount, $12,380; sureties, C. S. Holmes & G. W. Wilson. (Payments as above.)

Tennessee and Sierra, one-story frame. Owner, Mr. Rasmusson; contractor, O. W. Helm; cost, $850.

Twenty-second between Valencia & Guerrero, a frame building. Owner, Henry Planz; architect, John & Zimmermann; contractor, Schutt & Kreeker; cost, $3,885; limit, July 1st; signed, March 17th; filed, March 20th; sureties, T. C. Jensen and A. W Borle; bond, $4,000.

1st payment, when frames are up, $600; 2d payment, when building is enclosed, roof on, floors laid and partitions set, $600; 3rd payment, when rough mortar is on, and outside finish done, $800; 4th payment, when all outside and inside finish is ready for painting, and white coat of plastering is on, $885; 5th payment, 35 days after acceptance, $1,000.

Valencia, and Twenty-first, improvements. Cost, $800.

Waller, bet Webster and Fillmore, a three-story frame. Owner, Thomas Brown; contractor, Andrew A. Newbert; architect, Fernando Nelson; cost, $4,350; limit, July 1st; signed March —th; filed April 4th, surety, A. J. Turner; bond, $4,350.

1st payment, when building is framed and enclosed, $1,425; 2d payment, when brown coat of mortar is on, $1,425; 3d and last payment, when building is completed, $1,500.

Linden Avenue and Buchanan, a two-story double dwelling. Owner, John Curley; contractor, Rufus Parker; architect, J. H. Humphreys; cost, $1,975; limit, 65 days from date; signed March 27th; filed March 27th; surety, C. S. Holmes; bond, $1,500; witness, Walter Sutton.

1st payment, when roof is on, $450; 2d payment, when brown mortar is on, $450; 3d payment, when building is accepted, $581; 4th payment, 36 days after acceptance, $494.

Los Angeles is to have a mammoth cold storage building of three-story brick, near Fifth St. 120x120 feet which will produce 50 to 75 tons of ice daily. Capital $800,000.

Fred Holt will erect a two-story brick building on his lot on Court street near the Holt block, Visalia.

NEW BUILDINGS.—C. Temple and A. B. Case will soon commence the erection of a couple of good brick buildings on Kentucky street, near Western avenue, in Petaluma.

PASADENA.

Work on the new Episcopal church edifice will soon commence.

Bids are wanted for erecting an Odd Fellows Hall in Redding. Address architect A. A. Cook, Sacramento. Bids must be sent before April 10th.

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NEW ORLEANS LOUISIANA: { NOVEMBER 10, 1885. MARCH 31, 1886.

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THOS. WOODWARD, Chairman Committee on Award

SAN DIEGO, CAL., FEBRUARY, 18, 1888.

T. W. PETERSEN & CO.

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Kindly acknowledge receipt in enclosed envelope.

Very Respectfully

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 5

THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO., No. 240 MONTGOMERY ST., Rooms 11, 12 and 13.

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A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, MAY 15, 1888.

How the Mechanic Can Educate Himself.

"It was but a few years ago that the opinion was quite prevalent that any mechanic who wrote for publication was a theoretical fellow and not considered of any practical value in the world. This idea, if not quite dead yet, certainly has no very large following among intelligent persons. The test of time has shown that these theoretical fellows have come to the front and accomplished the most, even in spite of the mistakes that they have made, which were the laughing stock of the purely practical man.

While it may be true that some of the best mechanics in the country do not write at all, yet it is an undeniable fact that the one who does write is a better and more intelligent mechanic than he would have been if he had not written at all. The very fact of a man attempting to explain to others what he has learned, and trying to put it in such a shape as not to convey a wrong idea, invariably leads the writer to a better understanding of the subject than he would otherwise have had.

The editor of this journal has at various times advanced new ideas that were in opposition to the prevalent teachings of the day, and in nearly every instance the new idea had its inception while writing on the subject, so that in a number of cases the article actually written was a flat contradiction to what it was the original intention to write. More often, however, the new ideas that come this way change the entire drift of the article and bring in branches of the subject that were not originally contemplated.

To the young man who wishes to make himself proficient in any branch of mechanics, we say, think over the subject carefully, write out your ideas and send them for publication. The effort will be of great benefit to you, even if you never hear from it again. Do not be afraid of making a mistake that some one will find out; the writer has made a good many, and acknowledged them too, and we do not know that it ever hurt him. A mistake made will be pounced upon by some watchful person, and then the original writer will have learned something that he would never have otherwise found out."

The above remarks should be carefully considered by our own mechanic. We take pleasure in publishing them as they appeared in a late issue of *Wood and Iron*, published in Minneapolis, Minn.

Rooms for the Chapter of Architects.

Those having rooms vacant in a desirable quarter, suitable for meetings of the Chapter, will please send terms for the same to G. Wolfe, Secretary, 240 Montgomery street, before the 1st of June. Rent must be moderate. All propositions must be in writing.

San Francisco Chapter, American Institute of Architects.

The regular monthly meeting of the Chapter was held Friday evening, May 4th. The following members were present: G. H. Sanders G. H. Wolfe, Albert Pissis, W. J. Cuthbertson, R. H. Daley, J. M. Curtis, H. T. Bestor, John Gash, C. J. Laver. A few visitors were also present.

The proposition of M. J. Lyon to become a member as Student was referred to the following committee: Cuthbertson, Daley and Curtis.

But one member of the "Registry" Committee being present, progress was reported, and the committee was requested to have full report at next meeting of the Chapter.

A discussion ensued which was participated in by every member present, in regard to procuring a room for the use of the Chapter. Several locations were canvassed, and the Chapter resolved itself into a "Committee of the Whole," to report at next meeting.

W. J. Cuthbertson presented the following motion, which was adopted:

Resolved, "That a committee be appointed to consider the subject of "COMPETITIONS; to draw up a set of rules in regard thereto, and to present their ideas to the Chapter for consideration." President appointed as such committee, Fellows, Cuthbertson, Gash, Curtis and Pissis.

Mr. Gash presented the following: "Where the law of California calls for a premium being offered to architects for submitting drawings for competition, it is always understood that such *premium* has nothing to do with the usual *commission* allowed architects for drawing plans and preparing specifications."

The above was signed by all those present, as individuals, with the understanding that it was not an official act of the Chapter.

Meeting adjourned.

High Buildings in San Francisco.

The contemplated erection of the *Chronicle* building, with a greater number of stories than has hitherto been seen in San Francisco, seems to have disturbed some minds badly and caused sensative natures to fear and tremble, that should the "dreadful thing" be consummated an "awful calamity" must in the nature of things follow, by reason of the unsteady, earthquaky nerves of old mother Earth, or the high revelries and antics sometimes indulged in by the elements, forces or whatever it may be that occasionally scares so many people, and once in a decade of years—more or less—shakes down a ricketty old chimney in San Francisco, and frightens housewives and kitchen maids by the rattling or tumbling down of dishes and odds and ends, so carelessly laid or placed that a very small sized earthquake would cause them to fall and rattle without any extra effort on the part of the shaker.

Supervisor McDonald, in the consideration of the question of privilege, asked by the monied man of the *Chronicle*, to be allowed to construct an oriel window over the lines of the streets, made himself a conspicuous representative of that class of people who limit and constrain their conceptions of allowable things within the mental fossilations which becomes alarmed at anything outside of stiff necked training; or that looms up higher, delves deeper, or spreads broader than the personal limitations of thoughts which holds them in the "old beaten tracks," with reluctant concessions in favor of anything that is new and of seemingly strange concept.

It is a strange assumption indeed that denies to the people of San Francisco the right to cope with the other great cities of the American Continent when progressive and enterprising business men and committees have found it the right thing to do, to build high as well as broad. And it is a safe assertion to make that the shake that would damage a well consucted ten-story stuc-

ture, built upon correct architectural and mechanical principles, would wreck most seriously hundreds of the shoddy edifices in this city of one-half the number of stories. It is not so much the height or number of stories that should command attention as the character of construction. If the municipality had a well organized *Building Bureau*, under the direction and management of men competent and qualified by experience and mechanical and architectural knowledge to have charge of so great an interest and competent to determine questions of construction, the looseness and latitudes that have too much prevailed in San Francisco would be at an end, and the public generally could rest satisfied that buildings passing the scrutiny of such a board would be safe against all earthquakes and electric commotions that would not cause fear and trembling, if there was not a structure within the city's limits more than one story in height.

There are thousands of the high-story class buildings in the cities east of the Rocky Mountains, and thousands more will be built, notwithstanding that of late years there have been more earthquakes reported east than west of the great mountains, wide and still high buildings are in order.

The remark is common, that there is plenty of room to extend the area of business houses, and that no necessity exists to build such high buildings. That is all very well, so far as it goes, but it is very short and does not go very far, practically; for business men do the very reverse of this and seek to cluster more than spread. Every enterprising man seeks to get as near the center as possible, and will put up with great limitations and inconvenience rather than leave the heart of trade and commerce. This fact is illustrated in every city in the civilized world; nay, more: even the heathen Chinese cling together and hurdle in dens and mere breathing places, although they could relieve the crowding to which they are subjected and find plenty of room for all practical purposes by spreading, but they will not spread. The rule applies with all people and in all cities. Hence it is simply sentiment that feeds fancy upon the spreading idea. Men of all classes prefer centralizing and getting together; and it is useless talk to advocate or argue in favor of segregating and distributing the fibres of business relationships. It never has and never will work that way; and our wise city fathers had as well accept the inevitable and not attempt to check the strong, natural currents of business life, which is bound to flow on and ever, notwithstanding any or all the temporary dams that may be improvised to check the flowing tide.

The necessity for tall structures has not been and is not now very great; but as San Francisco increases in business importance and its boundaries enlarge, this necessity will develop itself with great practical force, as business men will concentrate and keep within the circle, if they have to go twenty stories high to get there.

At present, and for a few years to come, the demands of business for buildings is and will be supplied with less than ten-story edifices; but when the east and west streets of the city shall be cut through to the ocean beach westward, with handsome homes and mansion-like residences along their sides, and cable, electric or other motor cars climb the steep hills back of the Mission, and the leaves of trees growing in homestead gardens in San Francisco county fall across the San Mateo County line, the day will have passed when cavelling at high buildings will be heard. All restrictive notions will then have passed into oblivion, and public opinion and business necessities stand upon the same platform, and buildings be erected, if need be, outtopping the twelve and thirteen storied structures to be seen in New York, Chicago and other great cities of the United States.

Those City Hall Columns.

By the terms of contract between the City Hall Commissioners and O'Connell & Lewis, for the casting of 15 columns to be used in the construction of the great and grand Municipal Tower that is to be, said columns were to have been turned in a lathe after casting. Technically, the contractors are under obligations to perform said turning work, without regard to consequences.

The letter of the obligation says—turn them. As a rule, the requirement should be enforced, being one of the conditions of contract. But the theory that there are exceptions to every rule applies with material force in this case. When the architect incorporated the "turning" feature in the specification, it was under the supposition that the usual and ordinary process of moulding and casting would be adopted, and that the turning was a necessity to smoothness and clean work. The matter of neatness and smoothness was more considered than increased strength, for none more than Mr. Laver understands the fact that the removal by turning or otherwise of the skin of a casting diminishes strength far beyond the sustaining quality of the metal removed. And while the columns might be ample for all the purposes for which they are intended, even after being turned, that amplitude is greatly increased by the retention of that which would be removed by the turning.

The omission of turning is a technical evasion, which furnishes opportunity to those who wish to raise the cry of attempt to defraud the city; and such it might reasonably be considered had not the contractors provided something better in strength and equally as neat in appearance, as a substitute, without in any way tinkering with the architectural design and general effect. O'Connell & Lewis might have disregarded every other consideration and cast the columns in the usual way, and finished them up as required by the specifications, and neither the City Hall Commissioners nor the architect could have objected, or had them otherwise, without due allowance being made to the contractors as to cost. And it is altogether possible that the contractors in this case have allowed an opportunity for them to—using a very common phrase—"fleece" the city a little, in that had they called the attention of the architect and Commission to the method by which the columns were cast, stating the gain in strength that would follow, and guaranteed as to smoothness, they might have secured some extra compensation instead of placing themselves in present position, and opening the door for parties inimical to them from business jealousies or assumed motives of guarding the city's rights, to urge the enforcement of the strict letter of the contract and specifications.

The whole matter resolves itself into a question of equity. The contractors have at extra cost and expense to themselves produced—as is conceded—splendid castings by an unusual method, and practically given the city more than was required of them as far as the carrying capacity of the columns is concerned, without tarnish to appearance, provided the turning is omitted. Hence to charge them with cost of turning would be an ungenerous act, and one calculated to stimulate rather than correct the too prevalent disposition of contractors to take advantage of contract obligations without any equivalent.

TIN ROOFING PLATES.

The accompanying Letter will explain itself fully. The reputation of the Tin Plates furnished by Merchant & Co. is fully established on this Coast, and the offer they make speaks for itself.

Philadelphia, April 25th, 1888.

Editor, California Architect and Building News,
240 Montgomery Street, San Francisco, Cal.

Dear Sir:

In reading the article which appears on your first page, in reference to Roofing Plates, we must express our surprise at the misstatements made therein, and particularly that portion of the article where the parties referred to claim that they were the first to guarantee, and then to stamp plates; while there is any amount of evidence (and we can produce same) to show that the statement as made is not only incorrect but positively untrue, as it is well known (in this section of the country at least) that we ourselves were the first to introduce the very features referred to, and it is only necessary for any one doubting this to look up back files of such papers as "The Metal Worker" to see that we were advertising positive guarantees and stamping the sheets of our brands long before other importers. In order to back up this assertion on our part we will say here that if we cannot prove we were the first to guarantee and stamp roofing plates, we will willingly furnish the roofing tin, free of cost, for the first house built in San Francisco after receipt of this letter. But leaving out entirely the question of guaranteeing and stamping, and quality as well, there is a point of even greater importance which it will pay architects and property owners wanting to specify and use the best plates to consider; and that is that the "Gilbertson's Old Method" and "Camaret" are the only two brands of roofing plates in the market to-day of which no imperfect or waster sheets are imported, and consequently the only brands that thoroughly protect the architects and property owner. On the other hand, the plates of the house referred to in your article do not protect the architect in his specifications, for the reason that the wasters of their plates are imported and can be bought by any one wanting them. Please understand we do not mean to say that a good roof cannot be made with the old style plates, providing the primes alone are used; but when we assert that ninety-seven per cent of the roofers (as far as our own city is concerned) who upon receiving a contract will buy and put on wasters instead of primes, we state only a fact, and the advantage in specifying our brands will readily be seen by those wanting to secure only the best; for when they see the stamp on the sheet they can at once feel satisfied that they have secured but one kind *and that the best*. To prove the correctness of our assertion, that the wasters are imported and sold by the sellers of "Old Style," we stand ready to give our check for one thousand dollars to any charitable institution if we cannot prove that within the last ten days the sellers of Old Style in this city have offered roofers the wasters of their brand, and they would not dare to put up their check for one-tenth of this amount to prove anything to the contrary.

With the facts so clearly against the house referred to, we can hardly understand how they can make statements in the columns of first class journals and newspapers when the same can so easily be proved to be false. We write you in this way simply because, under the circumstances, we feel it our duty to do so, and particularly because of the great distance between us and the constant liability of many architects on the coast (without a knowledge of the *standing* of any of the importing houses here) to be misled by the false statements referred to.

We enclose you herewith copy of a letter we wrote to the "Stoves and Hardware" of St. Louis some time ago, which if you carefully read when you get a leisure moment, we think you will find of interest. At the time to which that letter refers, the "Gilbertson's Old Method" was the only brand to which the waster question applied; but since then we also took similar action in regard to "Camaret," and, as said before, these are the only two brands imported into the United States to-day of which no imperfect or waster sheets are imported, or can be had by any one *at any price*.

We have to admit that we have lost profits on account of not selling wasters of these brands, and yet, owing to the increased demand for and sales of the prime plates themselves, we feel that our action is being fully appreciated by architects and property owners desirous of being furnished with every safeguard against the use of wasters or other inferior goods where only the best material is wanted.

To any one doubting that wasters can be had of all other brands but ours, allow us to suggest that they can readily satisfy themselves upon this point by having any roofer or roofers write the different houses for prices for primes and wasters of the various brands. With the above facts before you, we would greatly appreciate any statement you may be pleased to make in our behalf.

Yours very truly,

Merchant & Co.

CHEAP LUMBER.

Reduction of From 35 to 50 Per Cent.

A Texas Syndicate to Ship Fine Yellow Pine Lumber From the Forests of Texas and Louisiana to Southern California.

It is stated on good authority that a heavy syndicate of Texas capitalists completed arrangements for shipping a fine quality of yellow pine lumber, from the heavy forests of Texas and Louisiana, to Southern California, over the Southern Pacific, and that prices will be reduced from 35 to 50 per cent.

The arrangements for shipping the lumber have been completed with the Southern Pacific, and the work of establishing yards has commenced. Orders for lumber are now being taken.

If this movement turns out as reported, it will be a grand thing for Southern California.

The above, taken from the *Riverside Press*, will be good news to those in this city who are anxious to build, but who are deterred from so doing by the high prices of building material, and more especially, lumber. The lumber men claim that owing to the great demand last season in the southern counties for lumber, the "tug men," "ship owners," etc., put up a job and raised their rates so much that of necessity several dollars per thousand had to be added to the price of lumber. Now that the incubus of high freight has been removed, and the building interests of this city nearly flattened, compared with three years ago, we trust that our manufacturers will see that the next "schedule" will tabulate the various kinds of lumber at prices that will cause many owners to have buildings erected, who would otherwise simply leave their money in bank.

A Puget Sound "Trust" that Reduces the Price of Lumber.

The objectionable "*Trust*" is a veritable Hydra and has at length cropped up in the Lumber Trade in a most unexpected manner; in fact it has selected a totally opposite course to that usually followed, by combining not to raise, but to reduce prices for the benefit of the combination. Our contemporary the *Mississippi Valley Lumberman* this week gives a practical illustration of the mode adopted by a Trust on Puget Sound and the name of the first victim to its workings, a Mr. B. F. Corliss of Tacoma, who it appears had towed a boom of logs containing over 322,000 feet to Seattle upon a previous order from Stetson and Post of that city, who alledged that as the bulk of his logs had been sold to the Port Gamble Mill they could not take them without the consent of Port Gamble. To cut the story short, he went thither and got the consent to a sale and returned to Stetson and Post who assented to take the logs but stated they were paying but $6.50 whilst he had been receiving $7.00 and therefore refused to accept it. "Very well" said the firm "we don't want your logs," at the same time handing him a check for $100 for his trouble. The situation now dawned upon Corliss who saw that if he did not sell here he could not hope to find a market elsewhere on Puget Sound and he therefore accepted the terms offered. The combination in question goes by the name of the Puget Sound Brokerage Association and no member is permitted to bid within 25 cents per thousand as much as the first bidder for any state logs. If Port Gamble for instance offers Mr. Corliss six dollars per thousand and he refuses, Port Gamble at once telegraphs the fact to all the other mills and no member of the association may bid more than $5.75. The tendency therefore of the price of logs under this arrangement must always be down, never up. As a measure of defence and retaliation the loggers have arranged to boycott the dealers and to build mills of their own. We need no better illustration of the necessity for legislative measures than that which here presents itself. It is true that such over-reaching methods tend to defeat themselves—but anything in restraint of trade is a curse to society and should be dealt with accordingly. This great nation prides itself upon its commercial activity and success but these can only be maintained when Capital and Labor work hand in hand and profits are fairly divided.

And the Same Will Apply to British Columbia Lumber.

The introduction of Canadian timber either sawed or in log, to the American market, should be a question entirely separated from politics, and become one of more expedient utility.

Do we want the product of Canadian forests over here?

Can our own home supply be lengthened out by thus drawing from outside sources?

How much local injury would result from the free importation of Canadian lumber to our manufacturers?

Would any such presumed local injury be equalized and obviated by the saving of our own pine?

These are the questions demanding an honest reply in the discussion of this question of free timber, and not how it may or may not effect the individual.

A Cheboygan, Mich., man says: "Free lumber is the only hope we have for the preservation of our pine, and even at that is only giving a respite of a few years ere the inevitable will come. As it is, we have been foolish in excluding Canadian lumber from our markets, as we, in so doing, have forced the Canadian article to seek other outlets, and to-day it finds a ready market in the West Indies, and South America. This great American nation has use for every stick of timber that grows upon this continent."—*Timberman*.

An English invention relates to set squares for draftsmen, having one of the edges beveled at various angles. It is just the kind of set square that a draftsman in this country would relegate to his department of curiosities.

To Effectually prevent screws from becoming fixed and rusted, make a mixture of graphite and oil, which will facilitate the tightening of them up, reducing the friction in the sockets, and protecting them for years from rust.

Elevation, Plans and General Specifications of Flats Costing $4,500.

The plans presented are those of convenient, well arranged flats, of five and six rooms, which, according to present values of labor and materials can readily be built for $4,500. The front is very neat, the finishes not being too heavy. The plans are admirably portrayed, the name and size of rooms distinctly marked, and all the conveniences clearly shown. Should any one adopt the general plan and prefer to add, say $500, to the cost, we would suggest cornices in the halls, parlor, dining room and principal chamber. A wash bowl might be added in the latter room. The yard improvements for upper flat would somewhat depend on size of lot.

We have repeatedly in this journal, given specifications of different classes of houses, and those for flats would not materially differ from those of any two-story house.

The principal requirement in flats is to so construct them that parties living down stairs will not be annoyed by those living over head, or vice versa. The "deafening" employed should be of such a character as to preclude all noise from being heard either down or up. Decidedly the most effective way is the following: Let the joist in second story be 2x12. Nail on a strip 5 inches below the upper edge of the joist on both sides. After the joists are in position, fill in between them with short pieces of board. Then have a wet mixture of clay and chopped straw, and fill in between the joist; this should be tamped well; have a scraper made so it will just go in between the joists, and the cutting edge be one inch below the top of joist; rake back and forth until the clay and straw mixture has an even surface just one inch below the top of the joist. Care should be taken to have the surface even. After this mixture has laid a few days to dry out, put pieces of lumber 2x4 inches, by required length, on the clay between the joists. Having scraped the surface of the deafening one inch *below* the top of the joist, there will be one inch of lumber *above* the top of the joists. Fill in with same material as before between these 2x4 pieces. Of course this will give an inch of mud and straw over the joist. Put down your flooring, *nailing only to the 2x4 pieces.* Floors laid this way have no direct communication with the joist, and sound will be effectually prevented from penetrating below. The extra cost of the above is but very little, and owners will find that flats so constructed will retain tenants permanently.

Another way, if cheapness be considered, is to have rope an inch in diameter, pressed between rollers, so as to have two flat sides. This is to be nailed on top of the joist, and floor laid and nailed through the rope. We have seen this method tried, but it does not give satisfaction equal to the first method.

In building flats, the plumbing must be especially considered, and care taken to arrange everything so as not to disturb the occupants of either flat. This part of the arrangements should absolutely be placed under the control of the architect. Let his reputation be at stake regarding every matter connected with the sewerage and plumbing, and our word for it, there will be less growling from owners in the sweet hereafter about defective plumbing work. Say to the architect very plainly, "Mr.——, I know nothing whatever in regard to plumbing. I want my house as perfect in that line as it is possible to have it, and I won't consider the few extra dollars it may require in order that your ideas may be fully carried out."

More attention should be paid to the stairs. We have been in flats where the noise made by people going up or down the stairs is simply unendurable to those living on the first floor. Good workmanship and careful construction will obviate this difficulty. As mentioned before, these flats can readily be constructed for the amount quoted, $4,500, at the present ruling prices of matreials.

FRONT ELEVATION OF SAN FRANCISCO "FLATS," COSTING ABOUT $4,500.

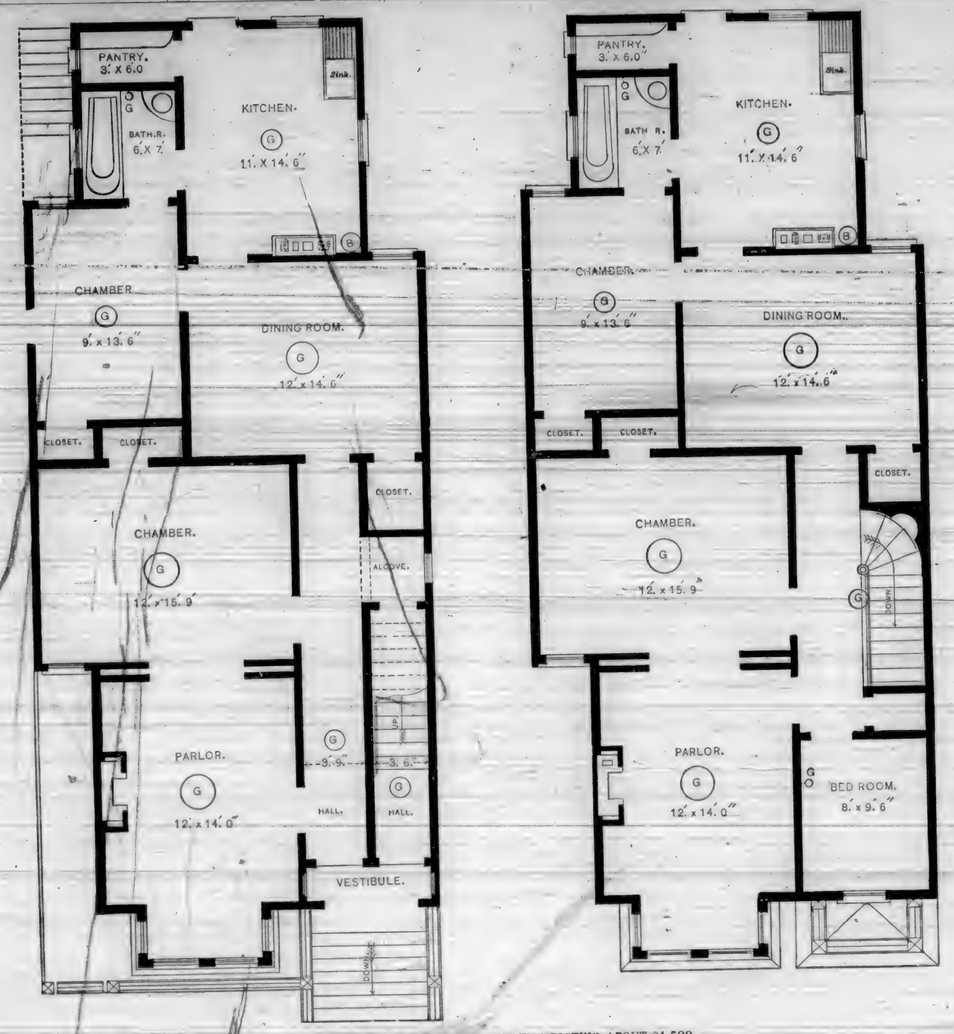
Will Lumber be Cheaper?

This is a question often asked us by owners, and to which we have to give an equivocal answer. Some contractors have informed us that certain inducements are held out to them in the way of discounts, by which they can figure a little lower than those who "know it not." The manufacturers claim that no change will occur.

Are the causes which led to the raise in lumber prices still existing? Last year the demand for San Diego and the adjacent towns was simply enormous. Mushroom cities sprung up in every direction. Los Angeles had great hopes of soon catching up to San Francisco; but the blow has come, and San Diego's building interests have completely become quiescent. Brick foundations were started, but left to mark the intentions of the owners, the joists not being placed on the walls. The break is a bad one, and it will take years to get over the sudden inflation. Of course, the almost complete cessation of building operations in the principal city, and the sudden halt of speculation completely puts a quietus on the starting of any more mushroom towns. So we can regard the whole country around San Diego as almost completely closed against large orders for building materials for the present.

While Los Angeles has not flattened quite so much as her sister city, still the boom there has come to a complete standstill, and the amount of lumber to be used this year will be very small, compared to last year's orders. Practically, the whole southern part of the state will send but few orders of any magnitude.

North of Los Angeles, the country between Modesto and Fresno is the only part in which much building material will be required, and the demand for that section will be determined, in a great measure, by the magnitude of the crops. Between Modesto and this city there are no present indications of any more than the usual or normal amount of work to be done, incident to a sparsely settled country.



PLANS OF SAN FRANCISCO "FLATS," COSTING ABOUT $4,500.

In this city there is nothing like the amount of work going ahead that should be at this time of the year. The average amount of business buildings are in course of erection, but there is a dearth of small houses in the suburbs, that prove, almost better than any other criterion, that the city is progressing and its mechanics prospering. From present appearances there will be fully 400 buildings less this year, than there was in 1885; and this, in face of the fact that thousands of permanent residents have been added to our population.

As far as this city is concerned, we can positively assert that the small number of buildings under way is owing, more than to any other cause, to the high price of lumber. The greatest raise has been in the clear lumber, and of course this seriously affects "mill bids," as the mills necessarily use the better class of lumber.

The question simply resolves itself into this—is the present high prices of lumber warranted by a *legitimate* demand for lumber? To which we unhesitatingly answer, "No!"

"Straws show which way the wind blows." A prominent contractor of this city was approached by one of the lumber ring with an offer to place lumber on the cars at Schedule price. The job was in the country. This is a virtual deduction of about $1 10 per M.

Another contractor who erected over $200,000 worth of buildings last year has made an arrangement by which he gets lumber at $20 per M. This is a reduction of $2 50 from schedule.

We have it direct from a lumber dealer, that if a certain kind of lumber was used in a building the owner would save $2 50 per M.

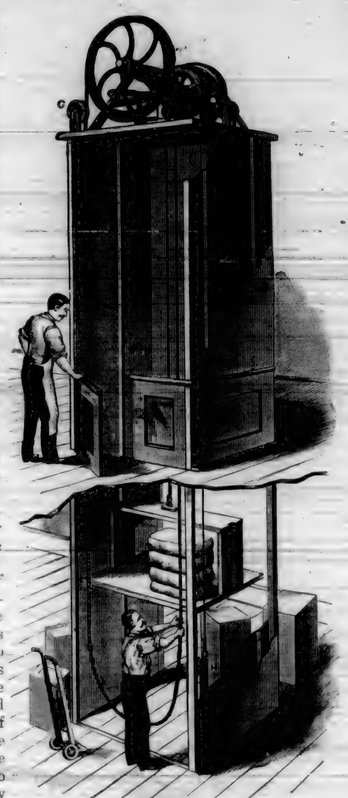
Everything at present tends to show that the market is weakening, and that in a short time mill men will not have to pay $10 per M for lumber used by them, more than the same is worth.

The whole question hinges upon the reports of the Combination, and what they can maintain, and the contractors and what they really can do. If one contractor can obtain a concession, it will soon become general along the whole line. We confidently expect that in a short time prices for lumber will be much more favorable for those desiring to build.

To effectually prevent screws from becoming fixed and rusted make a mixture of graphite and oil, which will facilitate the tightening of them up, reducing the friction in the sockets, and protecting them for years from rust.

It is all well enough to say that thirteen is an unlucky number, but this country started in business with thirteen states, and seemed to be holding her own up to going to press.

The Humphrey Pony Hand Elevator.



The Edward Storm Spring Company, Limited, Poughkeepsie, N. Y., are directing special attention to the Humphrey Pony Hand Elevator, as shown, which has just been brought out by this company, and are having a large demand for them. The engraving very clearly shows the features of the article, which is adapted for use in various places. It is intended for light store and factory work, hospitals and public buildings, for carrying flour, coal, ashes and other heavy substances in tenements, flats and private dwellings, and many other uses, which are met by its capacity. *The Low Price of this Elevator* permitting it to be used in many places instead of the dumb waiter, as it has many times the lifting capacity, and its simplicity of construction are points which are made in regard to it. The company sends them out already adjusted on a shelf, ready to place on top of well hole, if requested, by giving dimensions of well. One of the many valuable features of this elevator is it can be adjusted to any size well hole, or opening from 24 inches to four feet wide, and can be set up by any carpenter; no complicated parts to get out of order, and made strong and servicable. The weight can be made to run on either right or left side, as wanted. The circular of the company, relating to this elevator, illustrates fully its use, and explains in detail the brake attachment to the efficiency of which they call attention.

The First Razor.

The earliest reference to shaving is found in Genesis xii., 14, where we read that Joseph, on being summoned before the King, shaved himself. There are several directions as to shaving in Leviticus, and the practice is alluded to in many other parts of Scripture. Egypt is the only country mentioned in the Bible where shaving was practiced. In all other countries such an act would have been ignominus. Herodotus mentioned that the Egyptians allowed their beard to grow when in mourning. So particular were they as to shaving at other times that to have neglected it was a subject of reproach and ridicule, and whenever they intend to convey the idea of a man of low condition and slovenly habits the artists represent him with a beard. Unlike the Romans of a later age, the Egyptians did not confine the privilege of shaving to free citizens, but obliged their slaves to shave both beard and head. The priests also shaved the head. Shaving the head became customary among the Romans about 300 B. C. According to Pliny, Scripio Africanus was the first Roman who shaved daily. In France the custom of shaving arose when Louis XIII came to the throne young and beardless. The Anglo-Saxons wore their beards, until, at the conquest they were compelled to follow the example of the Normans, who shaved. From the time of Edward III to Charles I, beards were universally worn. In the reign of Charles II the mustache and whiskers only were worn, and soon after this the practice of shaving became general throughout Europe. The revival of the custom of wearing the beard dates from the time of the Crimea, 1854–55.

Corrosion of Mortar.

The fact that mortar of old chimneys suffers greatly from the corrosive effect of the creosote of wood soot, says an exchange, was pointed out years ago. The creosote formed from the slow combustion of wood contains a large proportion of pyroligneous vinegar or erude acetic acid. This acid is formed in large quantities, when the combustion of wood is slow, and many quarts will be condensed in cold weather where a large wood fire is very much checked. The time required for such a condensation is bu a few hours. The acid dissolves lime readily, carrying it away in solution. In this way the mortar is frequently entirely removed from the tops of chimneys in the country. New chimneys suffer in the same way. Cases might be instanced where the top courses of brick in chimneys but two years old are entirely without support, other than that afforded by the sand, with which the lime was mixed. Usually bricks can be lifted from the top courses of chimneys with the fingers, if the chimney is more than eighteen months old.

At Home and Abroad for News.

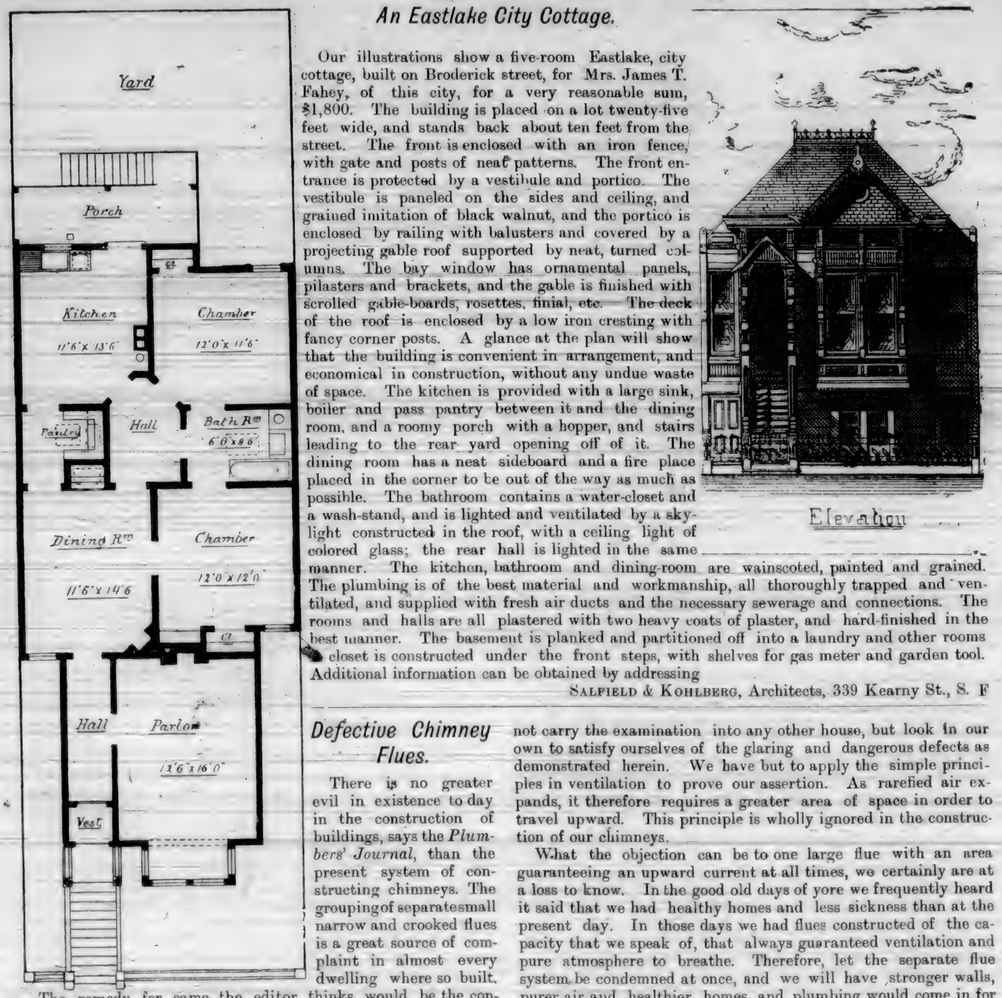
The stories which are told of great resources of mahogany and primitive methods of getting out and handling it are generally corroborative. They suggest that the time must come when enterprise and progress will turn the habitat of that wood into scenes of active industry, which will revolutionize methods and results in mahoganv getting. The San Francisco *Examiner* contains the following from a correspondent: "The high hills of San Domingo are vast forests of mahogany. Some of the hills are 3,000 feet high, but there being no snow, owing to the tropical location, and not a railroad in the republic, they cannot get the mahogany down. So there it is, untold quantities of it, worth big money, but bringing nothing. These fine forests of mahogany are dirt cheap. I suppose they can be bought from the government for $25 an acre. The time must come ere long when no money can buy them. From other islands of the West Indies a great deal of mahogany is exported at a big profit. Three-fourths of it goes to Europe, principally London, while the other fourth goes to New York. It is largely shipped in the log in sailing vessels. There isn't a single sawmill in all San Domingo. The lumber they do manage to get out is manufactured by the hand, by the slow whip-saw process."

How Paints are Obtained.

Every quarter of the globe is ransacked for the materials—animal, vegetable and mineral—employed in the manufacture of the colors one finds in a paint box. From the cochineal insect is obtained the gorgeous carmines, as well as the crimson, scarlet and purple lakes. Sepia is the inky fluid discharged by the cuttle fish, to render the water opaque for its own concealment when attacked. Indian yellow is from the urine of the camel. Ivory black and bone black are made out of ivory chips. The exquisite Prussian blue is got by fusing horses' hoofs and other refuse animal matter with impure potassium carbonate. It was discovered by an accident. In the vegetable kingdom are included the lakes, derived from roots, barks and gums. Blue black is from the charcoal of the vine stalk. Lampblack is soot from certain resinous substances. From the madder plant, which grows in Hindoostan, is manufactured turkey red. Gamboge comes from the yellow sap of a tree, which the natives of Siam catch in cocoanut shells. Raw sienna is the natural earth from the neighborhood of Sienna, Italy. When burned it is burned sienna. Raw umber is an earth from Umbria, and is also burned.

To these vegetable pigments may probably be added Indian ink, which is said to be made from burnt camphor. The Chinese who alone can produce it, will not reveal the secret of its composition. Mastic, the base of the varnish so called—is from the gum of the mastic tree, indigenous to the Grecian archipelago. Blister is the soot of wood ashes. Of real ultramarine but little is found in the market. It is obtained from the precious lapis lazuli, and commands a fabulous price. Chinese white is zinc. Scarlet is iodide of mercury, and cinnabar, or native vermillion, is from quicksilver ore.

An Eastlake City Cottage.



Elevation

Our illustrations show a five-room Eastlake, city cottage, built on Broderick street, for Mrs. James T. Fahey, of this city, for a very reasonable sum, $1,800. The building is placed on a lot twenty-five feet wide, and stands back about ten feet from the street. The front is enclosed with an iron fence, with gate and posts of neat patterns. The front entrance is protected by a vestibule and portico. The vestibule is paneled on the sides and ceiling, and grained imitation of black walnut, and the portico is enclosed by railing with balusters and covered by a projecting gable roof supported by neat, turned columns. The bay window has ornamental panels, pilasters and brackets, and the gable is finished with scrolled gable-boards, rosettes, finial, etc. The deck of the roof is enclosed by a low iron cresting with fancy corner posts. A glance at the plan will show that the building is convenient in arrangement, and economical in construction, without any undue waste of space. The kitchen is provided with a large sink, boiler and pass pantry between it and the dining room, and a roomy porch with a hopper, and stairs leading to the rear yard opening off of it. The dining room has a neat sideboard and a fire place placed in the corner to be out of the way as much as possible. The bathroom contains a water-closet and a wash-stand, and is lighted and ventilated by a skylight constructed in the roof, with a ceiling light of colored glass; the rear hall is lighted in the same manner. The kitchen, bathroom and dining-room are wainscoted, painted and grained. The plumbing is of the best material and workmanship, all thoroughly trapped and ventilated, and supplied with fresh air ducts and the necessary sewerage and connections. The rooms and halls are all plastered with two heavy coats of plaster, and hard-finished in the best manner. The basement is planked and partitioned off into a laundry and other rooms a closet is constructed under the front steps, with shelves for gas meter and garden tool. Additional information can be obtained by addressing

Salfield & Kohlberg, Architects, 339 Kearny St., S. F

Defective Chimney Flues.

There is no greater evil in existence to day in the construction of buildings, says the *Plumbers' Journal*, than the present system of constructing chimneys. The grouping of separate small narrow and crooked flues is a great source of complaint in almost every dwelling where so built. The remedy for same, the editor thinks, would be the construction of one large flue extending from cellar to the highest available point, with branches from each floor running up and connecting at the ceiling of the floor above, or direct at each floor to the main flue. In this manner a guaranteed upward draught at all times would be assured.

Go into any dwelling to-day, and what do you find? For instance, light a fire in the rear parlor, and the draught will be down the front parlor flue, through the hall and room, and up through the rear parlor flue, or *vice versa*, down the rear parlor flue and up the front parlor flue. When that is not the case, on the opening of a window or door, an immediate counter current is the consequence, all which certainly and clearly demonstrates that our method in house construction of chimneys is far from perfection. We calculate by the building of one large main flue, into which all branches should be carried direct from each floor or apartment, is the only safe and true method by which the evil now complained of can be overcome, and the lungs be spared from the poisonous gasses they are forced to inhale, as it is a well known fact that no gasses are more poisonous than those of sulphureted hydrogen or coal gas that permeates our dwellings.

From whence the barbarous practice of constructing our chimney flues in the separate system emanated, we know not; but whoever instituted that system, if held responsible for the deaths caused by it, would have a great deal to answer for.

We trust and hope our remarks on this subject will not go unheeded, as a careful observation of any one in their own house will go to prove and substantiate whatever we claim. We need not carry the examination into any other house, but look in our own to satisfy ourselves of the glaring and dangerous defects as demonstrated herein. We have but to apply the simple principles in ventilation to prove our assertion. As rarefied air expands, it therefore requires a greater area of space in order to travel upward. This principle is wholly ignored in the construction of our chimneys.

What the objection can be to one large flue with an area guaranteeing an upward current at all times, we certainly are at a loss to know. In the good old days of yore we frequently heard it said that we had healthy homes and less sickness than at the present day. In those days we had flues constructed of the capacity that we speak of, that always guaranteed ventilation and pure atmosphere to breathe. Therefore, let the separate flue system be condemned at once, and we will have stronger walls, purer air and healthier homes, and plumbing would come in for less misapplied complaints, when in reality the cause emanates from the defects we speak of.

Tin Sash Weights.

The goats of Harlem, it seems, are not to have undisputed rights to the tin cans, for the Italians will certainly delve in the dust heaps for them when it is known that they are marketable. From the Boston *Commercial Bulletin* we learn that tin cans and tin chips have been converted into sash weights with more or less success during the past ten years. In Chelsea there is a large furnace, having the capacity of ten tons a day, and the largest of the kind in the country. The material melted comes from junk shops; also from tin manufacturers in the shape of chips. Old sheet iron is also used. This material has to be transformed into cast-iron, and a very high degree of heat must be secured. There is no secret about the process; the only thing is to have a proper sized furnace and and to get a sufficient heat. The business has developed of late, but the manufacturers say the margin of profit is small. It costs more to melt the scraps than common iron. Chips ready for the furnace cost seven dollars a ton. The sash-weights produced are of a superior quality.

EVERYBODY'S COLUMN.

It heing our desire to make this column of the greatest practical use, our readers are cordially invited to ask questions on any subject within the scope of this journal.

P. L. Writes: "Will you please tell me how to mix cement, so that it will not crack or chip off?

Answer:—The cause of cement cracking is generally in consequence of its poor quality. You should test it by mixing a small quantity without sand and putting it in a bottle. If this be left in water for a few days, and the cement shrinks, it will be apparent by a small space between it and the side of the bottle. When this occurs the cement is almost sure to crack. The fact is often overlooked, that cement to set properly must be kept damp. We have seen some of excellent quality, which was allowed to be exposed to a hot sun, with the result that the moisture evaporated before the cement could set. In such cases water should be constantly thrown over the surface until a proper hardness is reached.

John R. W. asks us to explain the cause of dry-rot in lumber, and to suggest a cure.

Answer:—Dry-rot is a fungus which is generally supposed to be produced by a want of ventilation. Where timber is confined it is subject to attacks and especially where the wood is somewhat green. It is for this reason that it is advisable to provide openings through foundation walls so that the air may have free access to joists. To eradicate dry-rot is often somewhat difficult. The surest plan is to remove every piece of lumber affected and then to apply the following mixture to the whole of the wood: Equal portions of common train oil, wood, tar and oil of cassia.

J. S. T. asks: "What is the strongest form of brick arch?",

Answer:—That known as the horseshoe or moorish arch, the curve of which is more than one-half of a circle. This arch is very useful for heavy tunnel work, and properly constructed will bear very heavy weights.

Student writes: "Will you give me some rule to follow for the proper provision of ventilation in ordinary rooms. What amount of air space should be allowed?"

Answer:—It has been stated that every person requires at least three cubic feet of air per minute, and sometimes as much as five. An ordinary window allows about eight cubic feet of air to pass in a minute. It will be seen, therefore, that where a room is to be occupied by a number of persons, an independent inlet and outlet for the air should be provided.

P. B. O. wants to know how to make cements, of red and black colors respectively.

Answer:—To the mixture of cement and sand add Indian red in sufficient quantity to produce the desired tint. A black cement is produced by adding about half a pound of lamp black to a bushel of cement and sand.

MAY BE USEFUL.

The average weight of anthracite coal is 9.35 pounds per cubic foot.

Coke (loose) weighs 23 to 32 pounds per cubic foot.

Bituminous coal weighs, per heaped bushel, loose, 75 pounds; one ton occupies 48 cubic feet.

Cast iron weighs, per cubic inch, .2616 pounds; in round numbers, one-fourth of a pound to the cubic inch.

Green sand castings are six per cent. stronger than dry sand castings.

Cast iron will expand and contract between extreme ranges of temperature in this country with a force equal to 4¾ tons per square inch of surface exposed.

Wrought iron expands and contracts between extreme ranges of temperature equal to nine to one per square inch of section.

One gallon U. S. standard, contains 231 cubic inches, weight of water in same, 8,331 pounds; one cubic foot contains 7.4805 gallons of water.

The velocity of steam, of atmospheric pressure, flowing into a vacuum is 1,660 feet per second; into air, 650 feet per second.

To find the pressure, in square inches, of a column of water, multiply the height of the column in feet by 434.

The proper safe working load for wire rope is as follows: One-half an inch in diameter, 1,005 pounds; five-eights inch, 1,500 pounds; three-fourths inch, 3,500 pounds; one inch, 6,000 pounds. This is for nineteen wires to the strand, hemp centers.

To find the diameter, when the circumference is known, multiply the circumference by .3183.

To find the area of a triangle, multiply the base by one-half of the height.

ELASTICA FINISHES.

The Rosenberg Elastica Finishes which have been introduced on the Pacific Coast over three years ago, have had a marvelous success. Their non-marring properties and resistance to alkai make them peculiarly adapted for the wants of the coast.

Redwood, for instance, which was formerly painted owing to the want of a sufficiently elastic article to produce a natural wood finish, can now be finished with Elastica, so as to produce a durable finish. There are many instances which prove the superior qualities of the Rosenberg Elastica Finishes for the various wants of the Pacific Coast, amongst which, we mention a few.

The woodwork of the steamer Santa Rosa, to which it was applied both outside and inside, stood the weather for nearly two years, after being exposed to the hot sun and salt water, and when last seen was in good order. At El Paso baths, Elastica Finish was submerged in the sulphur water of the springs in competition with others for seven months, and finally proved the only finish, which would stand the test, and was then adopted for finishing the new bath-house. The El Coronada Beach Hotel, as well as the principal buildings, which have been, and are being erected, such as Crocker's house, have been and are being finished with the Elastica Finishes.

These few instances show that it supplies a much needed want. The success of Elastica Finishes is not alone confined to the Pacific Coast, but all portions of the world where it is being used largely, and with great favor.

Rural Homes, Wheeler	1 50
Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	3 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50
Modern House Painting	5 00

BUILDING INTELLIGENCE.

Only reliable news will be found in this column. Our custom has been for the past eight years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices.

Remember this journal is in the TENTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors, and Material Men.

CITY BUILDING NEWS.

Birch Avenue, near Larkin, four two-story frames. Owner, Sharon estate; contractors, Moar & Thompson; architect, Wm. F. Smith; cost, $9,000.

Broadway, No. 1906, additions. Owner Eliz. Nelson; contractor, J. H. Shepley, cost, $1,500.

Buchanan, between Bush and Pine, frame dwelling; owner, J. W. Smith; architect, T. J. Welsh; contractor, J. Walsh; amount, $7,350; sureties, B. Joost, W. Shyarks, $5,000; filed, April 11; time, 80 days;

Payments, when frame is up, $1360; brown mortar on, $1360; white coat finished, $1360; completed $1370; balance, $1900, 35 days after completion.

Bush, bet Franklin and Gough, frame dwelling. Owner, B. Kearns; architect, J. J. Clarke; contractor, W. Linden; amount, $4,716; sureties, P. Swift, F. P. Latson, $4,000; time, Aug. 16th; filed April 18th.

Frame up, $1,300; all enclosed, $1,200; brown mortar on, $1,100; balance, $1,116, usual 35 days.

California nr. Leavenworth, two-story additions; cost, $1,000.

California and Battery, alterations. Owner, Grangers' Bank; architects, Townsend & Wyneken; contractor, A. Elroy; cost, $2,500.

Dale Place near Golden Gate Ave, 2 two-story frame. Owner, Mr. Della; builder, C. N. Smith; cost, $6,000.

Davis and Market, four-story brick building. Excavation, side walk, etc., in connection with same, cost, $8,000. Owner, Maria Coleman; architects, Schmidt & Shea; contractor, C. H. Ackerson; 75 per cent. as work progresses; balance in 35 days.

Davis, bet Pine and California. Owner, H. Ackerman; architect, T. J. Welsh; contractor, Jas. Geary; amount; $7,280; sureties, W. A. Meeker, J. Murphy, $5,000; time, July 18th; filed April 19th.

All framed, $1,100; extra finishes completed, $1,100; brown mortar on, $1,100; white mortar on, $1,100; completed, $1,060; balance, $1,820, usual 35 days.

Devisadero and Page, two-story frame and basement. Owner, L. Friedlander; contractor, F. V. Steinman; architect, P. S. Barber; cost, $5,000.

Devisadero and Oak, two-story frame and basement. Owner, W. Stemka; contractor, J. Droga; cost, $5,000.

Ellis, bet Taylor and Jones, two-story frame. Owner, W. Wolf; architects, Salfield & Kohlberg; contractor, H. Ruhling; cost, $7,115; sureties, B. Joost and J. J. McKinnon; filed, April 25th; limit, 90 days. Seventy-five per ct. paid every three weeks as work progresses and balance 35 days.

Ellis, bet Octavia and Laguna, 2 three-story frame. Owner, Mrs. J. Zoel; architects, John & Zimmerman; contractor, Adam Miller; cost, $17,000.

Fourth, cor Welsh, repairs. Owner, G. G. Burnett; architect, J. E. Wolfe; contractor, C. S. Waterbury; total cost, $800.

Filmore and Waller, frame dwelling. Owner, Kate B. Proctor; contractor, J. P. Chadwick; cost, $1800.

Plastering finished, $700, and balance, 35 days after completion.

Franklin and Ellis. Masons contract, other contracts not yet let. Owner, Academy of Sacred Heart; architect, Chas. J. Devlin; contractors, McGowan & Butler; cost, $12,500; signed, April 7th; filed, April 12th; sureties, Jno. C. Roberts and J. Mahoney; bond, $8,000.

Payments of 75 per cent. as work progresses and balance 35 days after completion.

Geary and Kearny, alterations. Owner, J. J. Farley; architect, T. J. Lynch; contractor, Mahoney Bros; cost, $5,850; limit, 30 days; filed, May 3.

When iron work is in position, $2,150; when completed, $2,275; balance, 1,$425, 36 days after.

Geary, near Octavia, excavations. Owner, I. J. Federlein; architect, J. E. Wolfe; contractor, N. McDonald; cost, $1,800. finished ten weeks from commencement. Pay according to amount of work done each two weeks.

Geary, bet Scott and Devisadero, two-story frame. Owner, John McGown; architects, Schmidt & Shea; contractor, J. Irwin; cost, $4,670.

Greenwich, near Mason, two frame flats; owner, Geo. McCloskey; architect and builder, G. M. Salsbury; cost, $2,850; sureties, W. H. Jordan, F. P. Bull $2,800; time, July 1st; gled, April 6th.

Payments, frame all up, $750; roof and rustic on, $700; brown mortar on, $650; balance, $750, 35 days after completion.

Geary, bet Hyde and Larkin, 5 three-story frame and 5 one-story frame in rear. Owner, F. V. Merle; architects, Schmidt & Shea; contractor, H. A Conrad; cost, $37,476; sureties, C. G. Berson, F. H. Rosenbaum, Blyth and Trott, filed, May 4th; limit, Oct. 1st.

When the rear buildings are framed and first story up of front, $4,600; rear buildings ready to lath and front ones enclosed, $4700; brown mortar on rear, and front ready to lath, $4,700; hard finished, $4,700; ready for painting, $4,700; all completed, $4,700: balance, $9,376; 35 days.

Page near Webster, two-story frame. Owner, Eliz. Grosh; contractor, H. Keenan; cost, $3,500.

Golden Gate Ave. nr Lyon St. A frame building. Owner, Lavinia A. Kenarke; architect, R. H. Daly; contractor, Ivory Wells; cost, $2,085; limit, July 1st; signed, April 3rd; filed, April 12th; sureties, J. J. Cooney and M. H. Witkins; bond $2,085.

1st payment, when frame is enclosed and roof on, $390.93; 2nd, when brown mortar is on, $390.93; 3rd, when putty coat is on and outside work done, $390.93; 4th, when completed, $390.93; 5th, 35 days after completion, $521.30.

Guerrero, near 18th two-story frame; owner; J. I. Adcock; architect, A. J. Barnett, contractor, Wm. Little; cost, $5,400; surety, E. N. Fritz $3,000; time, July 15th; filed, April 7th.

Payments, frame up and roof on $1350; outside finishes all up and plastering completed, $1350; when finished, $1350; balance, $1350, 35 days after completion.

Hayes, bet Buchanan and Webster, two-story frame. Owner, M. Greenwood; architect, Chas. Geddes; contractor, W. I. Commary; cost, $4,971; filed May 3d; limit, July 20th.

Roof on and enclosed, $500; brown mortar on, $1,250; white coat on, inside finish done, $1,000; completed, 979; balance $1,242; 35 days.

Howard and 18th, a frame building Owner Cath. Murphy; architect, Wm. Hoagland-contractors, Jno. Martin and Jas. McGuire; cost, $4,848; limit, July 15th signed, April, 14th, filed, April 16th surety, J. W. Wesson; bond, $2,500.

1st payment, when frame and chimneys are up, $900; 2nd, when enclosed and roof on, 900; 3rd, when completed, $937.50. 4th, 35 days after completion, $1211.50.

Hayes and Webster, frame building. Owner, O. Christensen; architects, Salfield & Kohlberg; contractor, A. Klahn; amount, $7,200; sureties, C. S. Holmes, B. Joost, $7,000; time, 90 days; filed, April 17th.

Frame up, $1,500; partitions set, $1,300; plastering finished, $1,300; balance, $1,800, usual 35 days.

Hampshire near Solano, one-story frame; Owner, Mary C. Hongaard; contractor, C. E. Dunshee ; cost, $1,900.

Julian Avenue, No. 126, repairs, etc. Owner, B. E. Tittel; contractor, M. C. Lynch; amount, $1,620.

Plastering finished, $800, and balance 35 days after completion.

Leavenworth nr. Pine, additional story. Owner, Mr. Smith; contractor, Mr. Pleace; $1,500.

Leavenworth nr. Sacramento, additions; cost, $800.

Larkin, bet. Clay and Washington, two-story frame residence. Owner, Jane Smith; architect, C. J. I. Devlin; contractor, A. McDonald; sureties, J. J. McKinnon and F. P. Latson, $5,000; am't of contract, $6,985; filed, May 7th; limit, 90 days.

Frame up, $600; enclosed and roof on, $800; brown coat of mortar on, $900, plastering finished, $1,200; when ready for painting, $1,000; when completed, $730; balance, $1,755; usual, 35 days.

Lombard, near Jones, frame dwelling; owner, Caroline G. Jacques and husband; architect and builder, A. W. Pattiani; cost, $7,800; filed, April 9th; time, August 1st.

Payments; first-story joists on, $800; enclosed, roof on and chimneys built, $1,800; mortar on, doors and windows in and building primed; $1,800; when completed, $1450; balance, $1,950, 35 days after completion.

Main and Mission. Excavation and Brick work. Owner, D. B. Hinckley; architect, Percy & Hamilton; contractor, Robt. Mitchell; cost, $5,850; limit, July 1st; signed, April 12th; filed, April 13th.

Payments, 75 per cent. as work progresses on 1st Saturday of each month and balance 35 days after.

$5,000, when floors are all laid; $5,000 when carpenter work is finished; $5,500 when building is all completed; balance, $19,500, 35 days after completion.

Michigan, between Shasta and Napa, three-story frame; owner, A. Schultz; architect, A. J. Barnett; contractor, F. J. Williams; carpenter work only contracted for; $200, when 1st story joists in, $200 when 3rd story joistz on, $250 when ready for plastering, $175 when completed, and balance, $275, 35 days after completion; total amount, $1100; surety, J. Ramos, $500. time, June 20th.

Market, bet 6th and 7th, six-story brick building. Owner, Jos. Rosenthal; architects, Salfield & Kohlberg; masons, Riley & Loane; carpenters, Moore Bros; cost, $110,000.

Mission, bet 9th and 10th, in rear, two-story frame. Owner, F. Knebeler; architects, John & Zimmerman; contractor, F. Klatt; cost, $2,000.

Minna near 4th, two-story frame. Owner, Adolph Schwimm; contractor, C. Zwierlein; cost, $3,885; limit, 80 days; filed, May 7th.

When framed, 600; roof on and enclosed, $800; plastering finished, $1,285; when completed, $1,000.

McAllister and Broderick, brick, carpenter work, etc. Owner, Wm. Cradock; architect, H. Geilfus; contractors, Schutt & Krecker; cost, $4,240; limit, July 15th; signed, April 11th; filed, April 13th; sureties, T. C. Jensen and C. W. Gerke; bond, $3,000.

Mason near Eddy, two-story brick. Owner and builder, J. K. Prior; cost, about $5,000.

Mission, near 9th, frame building. Owner, J. Smith and wife; architects, Armitage & Wilson; contractor, J. Foster; cost, $5,250; sureties, P. Swift, J. W. Gray, $3,000.

Enclosed, $1,312 50; brown mortar on, $1,312 50; completed, $1,350; balance, $1,312 50, usual 35 days.

Manitoba, near Yasoo, one-story frame. Owner, Eugene Legallet; architect, J. J. Clark; contractor, C. E. Dunshee; cost, $2,550; filed, April 17th.

Frame up and rustic on, $910; brown mortar on, $500; plastering finished, $500; balance, $640, 35 days after acceptance.

Market, corner Davis, a three-story brick. Owner, Maria Coleman; architects, Schmidt & Shea; contractor, C. H. Ackerson; amount, $39,863; sureties, C. Hansen, R. Mitchel, $39,863; filed, April 19th.

75 per cent progress payments, balance, usual 35.

Market and Sixth, alterations. Owner, Mr. Hughes; contractor, G. McCann; cost, $1,000.

Main and Mission. Carpenter work, plumbing, etc. Owner, D. B. Hinkley; architects, Percy & Hamilton; contractor, B. F. Ellis; cost, $5,970; signed, April 12th; filed, April 13.

Payments, 75 per cent. as work progresses on 1st Saturday of each month and balance 35 days after.

Post, bet Larkin and Polk, two-story flat. Owner, Mrs. A. Brady; architects, John & Zimmerman; contractor, F. W. Kern; cost, $7,000.

Prospect Place, between Pine and California, two-story frame. Owner, Thomas McDonough; architect, Chas. J. Havens; contractor, Wm. Pluns; cost, $2865; limit, 75 days from date; signed, April 11th; filed, April 11th; sureties, F. Joost and A. D. Moore; bond, $2865.

1st payment, when frame is up and enclosed, $500; 2nd, when brown mortar is on, $500; 3rd, when plastering and outside finish is completed, $500. 4th when completed, $600; 5th, 35 days after, $765.

Post, near Pierce, two-story frame; owner, Eva M. Carter; architect and builder, J. B. Gonyeau, cost, $4,400; filed, April 11th; time, 90 days.

Payments, frame up all inclosed and sheathering on $1,100; brown mortar on, $1,100; when completed, $1,100; balance, $1,100, 35 days after completion.

Polk and Bonita, frame dwelling. Owner, J. Coakley; architect, J. P. Chadwick, contractor, C. E. Dunshee; cost, $3,625; limit, 80 days; signed, April 11th; filed, April 13th; aureties, G. T. Shaw and D. C. W. Hodgkin; bond, $3,000.

1st payment, when enclosed and roof on, $900; 2nd, when brown mortar is on, $900; 3rd, when outside is finished, $900; 4th, when building is completed and accepted, $925.

Pine and Devisadero, additions to building. Owner, Ed. Platz; architect, G. G. Gillespie; contractor, A. Jackson; amount, $2,500; filed, May 7th.

Framed, $800; enclosed, $800; plaster on, $1,285; $1,000 when completed.

Ridley, near Stevenson, two three-story frame flats; owner, C. P. Kuencke and wife; architect and builder, B. Dryer; cost, $7,495; sureties, F. Joost, W. Shyarks, $7,000; limit, 80 days.

Payments, enclosed and roof on, 2,000; plastered, $3,495; balance, $2,000 when building is finished, if all bills are paid.

Shasta, bet Michigan and Illinois, frame dwelling. Owner, G. A. Castner; architect, M. J. Welsh; contractor, M. Ryan; amount, $1,455; surety, J. W. Hodgkins, $1,455; time, 60 days; filed April 17th. Roof on, $300; brown mortar on, $400; finished, $300; balance, $455, 35 days.

Sacramento, near Broderick, two-story frame. Owner, H. Hansen; architects, Armitage & Wilson; contractor, F. V. Steinman; amount, $4,715; sureties, J. Stande, H. Weisman, $2,500; time, July 17th; filed April 19th.

Enclosed, $1,215; brown mortar on, $1,140; complete, $1,160; balance, $1,200, usual 35 days.

Stuart nr. Howard, one-story frame; cost, $800.

Sacramento, Nos. 822, 822½, alternations. Owner, Mme. T. de St. German; architect, B. E. Henricksen; contractor, C. H. Norton; amount, $1,200; time, 25 days; filed, April 21; 75 per cent paid, progress payments and balance usual 35 days.

Stevenson, near Seventh, frame dwelling, Owner, John Sullivan; architects, Armitage & Wilson; contractor, Timothy Sullivan; amount, $5,329; time, July 16th, filed, April 17th; surety, B. Joost, $3000.

Building enclosed, $995; brown mortar on, $995; white mortar on, $995; completed, $995; balance, $1,345, usual 35 days.

Spofford Alley near Clay, brick building. Owners, Chee, Tung, Kong & Co., Chinese Free Masons Society; architect, Clinton Day; contractor, W. E. B. Stiles; cost, $13,300; filed, April 25th; sureties, G. E. Williams, E. Phillips, J. D. Kanary; limit, Aug 15th.

Second floor joist on, $3,000; third floor joist on, $2,500; roof and mortar finished, $3,000; balance, $4,800; 35 days.

Sub contract on above for brick work let to G. W. Kneedler; am't $5,245. Payments made according to above in ratio to am't of contract.

Third, bet Brannan and Townsend, three story brick building, engine house etc. Owners, Kohler & Van Bargen; architect, H. Geilfuss; contractors, J. Haa & Son; sureties, J. V. Davis, H. W. Wife land; cost, $78,100; limit, Oct. 1st.

Payments, $4,000, grading completed; $6,000, when basement walls are up to 1st story; $8,000, 1st story walls completed; $7,000, 2d story walls completed; $6,000, 3d story walls completed; $6,000, fire walls finished; $6,000, when roof is all on.

Sub-let contracts on above.—L. B. Sibley has the grading for which he receives $5,045; progress payments. Roche & Sheedy have the cut stone work; amount, $5,781; 75 per cent as work progresses. P. H. Jackson has the iron work, amount, $3,360. J. W. Wissinger performs the carpenter work, etc.; amount, $33,960. The sub-contracts are paid 75 per cent. as work progresses, with the usual 25 per cent held for 35 days after completion. Plumbing contract not yet let.

The total cost of the above will be in the neighborhood of $100,000.

Tenth, between Howard and Natoma, general removal of buildings, etc. Owner, Omnibus R. R. Co.; architect, J. J. Clark; contractor, J. G. Adams; cost, $8,235; sureties; E. R. Harmon, B. Joost; time, July 18th; filed, April 20th.

75 per cent progress payments, and balance; usual 35 days.

Union street wharf, sheds. Owner, State of Cal.; contractor, McMahon & Son; cost, $10,000.

Valencia, bet 18th and 19th, four story frame, brick basement. Owner, Wm. Hildebrand and Ph. Klose; architects, Salfield and Kohlberg; contractor, B. Dryer; amount, $23,800; sureties, G. S. Holmes, B. Joost, $20,000; time, Sept. 1st; filed, April 21st.

Payments when 3d-floor joists are on, $3,000; building entirely framed, $2,800; enclosed and partitions set, $3,000; brown mortar all on, $3,000; plastering completed, $3,000; building completed, $3,000; balance, $6,000, 35 days after acceptance.

Vallejo, near Polk, frame dwelling; owner, E. Lanzendorf; architect and builder, W. H. Wharff; amount, $4,737; surety, John F. Cassell, $3,000; time, July 1st; filed, April 9th

Payments, frame up, $650; roof on and enclosed, $650; brown mortar on and frames set, $650; plastering all completed, $650; when completed, $937; balance, $1,200, 35 days after completion.

Van Ness, cor O'Farrell, galvanized iron work, slate roof gutters, tin and lead work, etc., on new St. Mary's Cathedral. Architect, T. J. Welsh; contractor, W. Cronan; cost, $15,749; sureties, J. W. McDonald, M. J. Donovan, $10,000; limit, Dec. 31st.

Payments, 75 per cent as work progresses, and balance 35 days after completion.

Valencia, corner 26th, frame. Owner, L. Kelly; arheitect, M. J. Welsh; contractor, Brewman Bros.; cost, $3,980; sureties, Preston & McKinnon; time, 75 days; filed, April 20th,

Frame up, studs all set, $995; brown mortar on, $995; completed, $995; $995, the usual 35 days.

Van Ness Ave., between Clay and Washington, alternation. Owner, H. Liebes; architect, Schmidt & Shea; contractor, P. Griffin; cost, 5,529; limit, July 10th; signed, April 10th; filed, April 16th. sureties, O. J. Preston and J. J. McKinnon; bond, $5,529.

1st payment, when attic frame is up and new work enclosed, $1,000; 2nd, when brown mortar is on, $1,000; 3rd, when hard finish is on, $1,000 4th, when completed, $1,140; 5th, 35 days after completion, $1,389.

Washington, near Devisadero, two-story frame. Owner, Chas. J. Leist; architect, W. Winterhalter; contractor, Victor Hoffman, Jr.; cost, $5,100; sureties, B. J Clinch, W. A. Nelson, $5,000; limit June 30th.

Payments, brick work finished, frame up and roof on, $1,250; all enclosed and brown mortar on, $1,250; when completed, $1,300; balance, $1,300, 35 days after completion.

Waller and Broderick. Two-story frame. Owner, T. J. Davis; architect, M. J. Welsh; contractor, Hugh Keenan; cost, $2,600; limit, 60 days; signed, March 26th; filed, April 12th.

1st payment, when ready for plasterer, $833; 2nd, when plastering is completed, $833; 3rd, 35 days after completion, $834; 4th, 90 days after 3rd payment, $150.

18th St. bet Mission and Howard. Owner, Bertha J. Fischer; architect, Chas. I. Havens; contractors, R. Doyle & Sons; cost, $2,035; limited, 80 days; signed, April 10th; filed, April 11th; sureties Jno. McCarthy & Thos. Winters

Payment, when brown mortar is on, $500; 2nd, when hard finished and outside primed, $500; 3rd, when completed, $500; 4th, 35 days after completion, $525.

Lower Prices for Lumber.

A careful observation of the reports in this Journal will convince any one that the number of new buildings in progress is not by any means, as large as the general prosperity of the city would seem to warrant. The Extortionate price demanded for lumber is primarily, the princial cause of scores of owners quietly shelving plans after they have been figured on. We know of dozens of conitracts that would have been let provided owners secured a reasonable return for their outlay. With lumber fully $8.00 on an average above what it should be, lath much higher than circumstances warrant, is it any wonder that contractors, plasterers, etc., should charge for their work according to the standard set up by the lumber manufacturers. In the Bonanza year of 1885, there were erected in this City 1544 buildings; in 1886, the number dwindled to 1236; in 1887 the aggregate had decreased to 1131; and the present year—so far—shows a still further falling off from its predecessors. With the thousand of new people coming here, many of them to permanently reside among us, still the number of new buildings is steadily on the decline.

A remedy for this state of affairs is soon to be applied. There is much talk of an English company with an abundant capital, soon to start an active opposition to the present unjust rates of lumber.

While we are in favor of a protective tariff generally, still we hope the duty on lumber will be placed at merely a nominal figure, and thus encourage those holding large tracts of timber land in British Columbia, to at once commence operations necessary to place lumber in this market. By so doing, we not only relieve ourselves from the operations of an outrageous lumber trust, but we also save own forests for the benefit of those who may succeed us.

COUNTRY BUILDING NEWS.

More New Buildings in San Bernardino.

Messrs. Jones & Griffith yesterday received an order from Father Stockman to prepare plans for a three-story building to be erected on the southwest corner of D and Fourth streets. The building is to be of brick, stone and iron, 50x110 feet, and to be supplied with all the modern appliances. It will cost, when completed, in the neighborhood of $40,000.

The above named firm of architects also received an order yesterday from Mr. Ancker, to prepare sketches for a half dozen semi-detatched villas. When the plans are accepted Mr. Ancker will begin the work of construction at once. They will be built on C street.—*Index.*

Alhambra.

The contract for the Presbyterian church has been let to F. S. Glover.

Fresno.

C. F. Riggs is endeavoring to raise subscriptions to build a $50,000 theater building.

The contract for building the new hospital on the county poor farm was let by the supervisors to J. L. Smith, the contract being a little over $25,000. The board of supervisors went out to the county poor farm to select a site for the proposed new hospital building. Work on the latter will be commenced at once.

Gridley.

A contract has been let to build a $12,000 brick hotel. R. M. Beebee & W. Brown are owners.

Healdsburg.

T. S. Merchant is making preparations for building a large cannery.

Klinknerville.

It is proposed to build a school-house to cost about $15,000. Wm. Kirke is the Architect.

Livermore.

Contract Let.—Bids for the construction of the Chapin block on Second street, Seattle, directly north of the Boston block, were opened in Architect Boone's office on Monday, and the contract was awarded to Mr. S, E. Clough on his bid of $12,500. The block will be of wood, two stories high.

A New Building in Los Angeles.

The tearing down of one of the old land marks on South Spring street was commenced yesterday. The old South Methodist Church stood here for many years, but in 1884 the congregation selected new quarters, and the building was turned into a concert garden and afterwards changed into a variety theatre, and finally into a general market restaurant and real estate offices. E. B. Miller, the owner, has decided to erect a five story brick block, the plans of which have been accepted. The work will be pushed forward as rapidly as possible, and by December 1st it is expected the building will be complete.

OLYMPIA, W. T.

Architect B. F. Hartsock can be addressed for particulars iu regard to a new hall for the I. O. O. F.

PETALUMA.

Ed. D. Hedges, the architect and builder, is having a boom in his business. He is putting up a neat residence for George N. Smith, on B street; also one for Thomas Gray on the grounds of the Real Estate Association, Higbee's addition, and one for David Smith, on Keller street. He is also preparing plants for several other houses.

PASADENA.

E. S. Frost has laid the foundation of a new brick block on East Colorado street. This will be the third brick block erected by Mr. Frost in the last two years.

A $15,000 hotel will be erected in the town of Traver.

PACIFIC GROVE.

Maudlin B others are erecting a cottage for Mrs. P. Kilburn.

PENDLETON, OR.

G. W. Babcock has finished the plans for a $70,000 Court House. The Pauly Jail Co. of St. Louis have the contract.

PLEASANTON.

C. H. Dall will erect a building to cover his lot 54 x 150 feet in size.

RED BLUFF.

Sidney Charles will make large additions to the Tremont Hotel. Holt & Gregg have the contract. Amt. $4,000.

SAN BERNARDINO.

Mr. Willard Wilson will commence the erection of a new two story brick block on Court sreet, adjoining Dr. Bogart's building on the east. It will be twenty-six feet front and eighty feet in depth.

Mr. Jack Ruffen will also commence the erection soon of a three story block on Third street, near the block now owned by him.

Messrs. Otis & Waycott have ordered plans and specifications for a new two story block to be erected beside the Swing block on Fourth street.

Work will be commenced soon on Mr. J. W. Swing's new three story block, corner of Fourth and D. streets.

A. L Ancker has had plans drawn for three semi-detached villas to de erected near his present residence.

Ike Lenjamin has had plans and specifications drawn for a two-story house, which he will erect on Seventh Street.

Architects Jones and Griffith yesterday closed a contract with the Los Angeles Granite and Brown Stone Company for the Ventura brown stone to be used in the front elevation of the new Farmers' Exchange bank building. It calls for the delivery of the stone on the premises for $2,881, and to begin this week.

A contract was also let to Willian Carmichael for the cutting and setting of all the stone to be used in the street front of the building for $4,000. The work of cutting and dressing this beautiful Ventura brown stone will be done in the rear of the building, and will begin immediately on receipt of the first shipment.

Mr. Austin Chute is to build an elegant residence on Fifth Street, near Mount Vernon. Work will begin soon.—*Index.*

Anspachu Bros. are building a warehouse D. Schneider is erecting a cottage on Rincon Av. E. F. Thomas is putting up a house about a mile from town. The machinery for I. E. Rickey's new planing mill has arrived and it will soon be placed in position. N. Dimond will make improvements on his 4th St. property. I. Easterday has the contract for a dwelling for E. Denison.

The bids on the building of Mr. I. Benjamin's new residence to be erected on Seventh street, near F. street, in the immediate vicinity of the home of Judge Willis, were opened this afternoon in the office of Jones & Griffith. The bids of the different contractors were as follows: S. A. Howe, $5,110; Oscar Jacobs, $5,225; W. J. Hastings, $5,675; W. G. Pearce, $4,652; A. L. Beach, $4,237; —Needham, $5,650; Kelly & Stevens, $6,380; W. H. Young, $4,449; and J. C. Actings, $4,756.72.—*Index.*

The contract for building the new two story brick building, 52 by 80 feet, to be erected for Oakdale Lodge No. 228, I. O. O. F., has been let to Julian Mourot, of Modesto, and the contract papers were signed yesterday. Work will be commenced upon the building as soon as the material can be obtained. The contract price of the building is between $9,000 and $10,000.

San Jacinto is to have a Congregational church building this summer. It will be of brick, 36 x 56 feet.

THE STANFORD MAUSOLEUM.

The Magnificent Tomb to be Built at Palo Alto.

In style of architecture, the simple but effective methods of the ancient Egyptians will be followed. Massive, imperishable granite of a light shade of gray, with an interior lining of the finest Italian marble, will be employed. The item of expense has not been considered, the designers being given carte blanche as to cost, and directed to secure the best of material and workmanship to be had. The total outlay necessary to complete the tomb and to prepare the surroundings will reach $100,000, and may considerably exceed that amount. The item of transportation alone will be a large one, as the granite will be shipped from Vermont and the marble from Italy.

The site selected is a beautiful four-acre plot in the Senator's grounds just outside of San Francisco. It already contains handsome shrubbery, and occupies an altitude commanding a magnificent view of the bay. A driveway sixty feet wide will be made, circling around a slight elevation, on the brow of which will be the tomb. The art of the landscape gardener will be employed to beautify the approaches and render even more effective the vistas of the park.

The structure will be in the form of a temple and will be twenty-five feet square. There will be a double row of massive granite columns supporting the roof of the portico at the front. On each side of the entrance will be a majestic sphinx carved from a single block of granite. Heavy bronze gates close the entrance, and within are solid doors of polished granite. The roof and sides are also of granite and are to be built in the most substantial manner. The stone employed is the Barre granite, from Barre, Vt. It has a slight bluish gray tint, which shows delicate carving to advantage and retains its color without change. Each block was cut the requisited shape at the quarry and marked to designate its position. They were then boxed, to prevent injury, and shipped to San Francisco. All the main portions of the structure have been sent on, and work on excavations for the tomb has been commenced.

The carving of sphinxes and the more delicate portions of the stonework, have been done in this city under the direction of Caterson & Clark, the designers of the tomb. The two majestic sphinxes are admirably done, and as worthy guardians of the ashes of an American money king as their prototypes were of the remains of the ancient Ptolemies.

The interior of the mausoleum will be done in white marble. The ceiling will be a single arch of marble with a span of twenty-five feet. There will be no crypts or vaults, and provision will be made for the remains of only three persons—those of the Senator and Mrs. Stanford and the son. These will occupy sarcophagi placed on the three sides of the chamber. The body of her son, over which Dr. Newman preached the funeral oration nearly two years ago, is now in a receiving fault in San Francisco awaiting the completion of the tomb. The sarcophagi are being made in Italy; each one will be hewn from a single block of the purest white marble. The lid will be made of a separate piece, and the exterior ornamented with the most exquisite carving. The caskets containing the bodies will be inclosed in a leaden casing before being placed in the sarcophagus. Each receptacle will contain an appropriate inscription, and the name of "Stanford" will appear over the entrance.

The mausoleum will be completed during the coming summer, and, when completed, will be a fitting abode for the remains of one of the most successful men of the day; a railroad magnate, a millionaire and a philanthropist, who is building a university that will cost between $15,000,000 to $20,000,000; a man who lives magnificently, with wealth and friends, and everything that makes life worth living, yet who has had the great sorrow of losing his son, his only child, and when he and his wife are called to another world and their remains occupy their stately tomb the family history will end.

VISALIA.

Mr. Harrell will soon commence the erection of a three-story brick building.

Dr. King is having an office building erected.

Ground at South Riverside will be shortly broken for an elegant new opera house to be completed by next winter. The opera house is to be three stories high and of pure Romanesque architecture. The front will be of Colton marble. The main auditorium will have a seating capacity of 750 people. In the building on the first floor will be three stores, each 125x25. The second story will be broken up into offices. The third floor will be used for club rooms. The opera house will be erected on the corner opposite the bank building. A syndicate of Kansas City capitalists have hold of the enterprise. The estimated cost of the opera house is $75,000. A. C. Willard is the architect.

C. M. Loring has offered to build a $50,000 opera house at Riverside, providing the lot now occupied by the Citrus Fair Association is given as a site.

SUTTER CITY.

Quite a number of buildings are in course of construction in this place. Chief among them are 11 buildings erected by the Sutter City Building Association at a cost of $20,000. Salfield & Kohlberg are the architects. A $15,000 school building is also under way; plans by the same parties. The Sutter Co. Building Association are erecting an $11,000 hotel, Salfield & Kohlberg being the architects. P. D. Sardemeyer is building an $8,000 residence, plans by same parties as above. The Sutter Co. Reclamation and Improvement Co. are having a $2,000 residence bnilt.

MODESTO.

Julian Mourot has secured the contract for I. E Gilbert's two story brick builbing.

RIVERSIDE.

Myron Alguire is having plans drawn for an $8,000 residence—E. L. Allen is building on his Ninth street property—C. A. Whitman and F. DeVine are each building.

SAN JACINTO.

H. B. Smith will, in a short time, erect a handsome dwelling. R. L. Wardrobe has donated a large lot to the Baptist Church Society, and the latter are taking active steps towards erecting a fine church. The Congregational Society intend to build a $4,000 church.

J. R. Messerly is having a dwelling erected by Stice & Burns.

Mr. Winters is having a handsome residence erected.

A new church building will soon be erected on the lot of the Union Church, in San Andreas. The new building will be dedicated as a Congressional Church, and will cost about $1,200.

PORTLAND, OREGON.

Architect W. F. McCaw have plans finished for a $6,000 residence for Captain W. Young. Garrett & Co., have secure l the contract.

BANK BUILDING.

The Kern Valley Bank at Bakersfield, will soo n erect a two-story brick building.

TACOMA.

Wm. Bradley will erect a $15,000 brick building from plans prepared by Goddard & Robertson.

Farrel & Darmer have let to Dongan & Bringham the contract for 2 three-story brick buildings. Owners M. Kaufman & W. Wolff. Cost $14,000.

In White Oaks, New Mexico, M. Whiteman is having erected a two-story brick building.

E. B. Hamilton of Auburn will erect a dwelling house. It will be octagon shape with plate glass windows on every side.

M. A. Berg is building a $3,000 dwelling on Pacific Ave. in Alameda.

CHURCH AT TURLOCK.

J. P. Allen of Modesto has been awarded the contract to build the Methodist Church. Cost, $4,250.

SAN GABRIEL.

Miss Chase will soon have erected a two-story building.

A General Growl in Californa in Regard to Exorbitant Lumber Rates.

The California papers are continuing to fight high prices, for lumber, and the Pasadena *Star* has been boycotted by the local lumbermen. The Gladstone *Exponent* states that a real estate company offers to furnish lumber to those who build on its lots at from $25 to $30 under the prices charged by local yards, which is thought to be good proof that there is a big leeway between actual cost to the dealers and their selling prices. The latter are called extortionate and monopolistic. The San Francisco *Post* scores the "lumber trust" which it denominates the coast combination, and claims that freight rates have not advanced sufficiently to justify the price charged for lumber, to any material degree. It also mentions that the coast has a demand annually for about 1,000,000 orange boxes, 750,000 fresh fruit boxes, 3,000,000 for canned fruits and over 1,000,000 for vegetables, making a total of 5,600,000, which are costing about twice as much as during the season of 1885–86. A Chicago contractor is quoted by the San Diego *Post* as saying a house which could be built for $1,300 in this city would cost $2,200 if built in California. It goes on to say that when a land company can furnish its customers with lumber for several dollars under the prices charged by dealers, and prices in San Francisco are so much less, it is apparent there is something wrong. There has been an exhaustive expose of facts and figures, much newspaper oratory and charges of robbery, and underneath all the agitation and criticism lies the fear that the boom will subside.—*N. W. Lumberman.*

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Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	38 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	37 50
Redwood, T. & G. Beaded, 7 to 11 feet	28 00
Redwood, T. & G. Beaded, under 7 feet	25 00
Redwood, Siding, ½ in	25 00
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Pickets, Rough Square	18 00
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Battens, ½x3, per lineal foot	01
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

VOLUME IX. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 6

THE

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A Square is One Inch In Depth By Width of Sing'e Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, JUNE 15, 1888.

Competition Plans.

The Academy of Science and the Olympic Club have issued invitations to local architects generally, to compete for the plans for buildings contemplated by the respective organizations named. The conditions are in the main, conventional, including the little joker so important in all such cases, to render award No. one to the *right man* possible, within the letter of the invitation. The gentlemen composing the respective committees are men of acknowledged repute for integrity in all personal transactions, and either would resent any imputation shadowing reflection upon the *intended* fairness, and the impartiality of their propositions. But the best of men may err in judgment, and the wisest be misled in arriving at conclusions; but it seems strange that in all such cases—the two in question not excepted— there should be a plank or condition incorporated in the invitations placing numbers one, two and three at the mercy of the adjudging parties, and rendering it easy to manipulate and award number three by actual merit, first premium and 5 per cent. upon the cost of construction; while the total of the premiums offered, will not pay one-tenth of the actual cost to architects to prepare the plans, to say nothing of the professional skill required. provided a reasonable number engage in the competition. A large amount of labor will be wasted.

Lumbermen's Committee Meeting in the Office of this Journal.

On the 23d of May, gentlemen representing the Pine Lumber Association, the Redwood Lumber Association, and the Retail Dealers' Association met in the office of this Journal. They had been appointed as a Committee to confer with the Editor in regard to the articles published on the high prices of lumber. The Chairman of the meeting gave the following facts in regard to the present situation. The owner of a large mill have a great many expenses of which the general public are not aware. It is a benefit to the mill owner to have married men in preference to bachelors. The owners erect houses and to each one gives from one-half to two acres of ground to cultivate, etc., charging the nominal rent of $10 per month. A school is provided for the children—secular and spiritual. On stated occasions, a minister preaches the gospel. In fact, it is the mill owner's pride to surround the little colony with all the benefits of civilization. Having done so, he manifestly cannot at a minutes notice, discharge such a class of he'p, and therefore must keep them going whether lumber is worth $12 or $25 per M.

Owing to the large demand for skillful labor in the woods, the price for the same has greatly inoreased; consequently the cost for logging is much more than it has been for years. Freights are also much above the prices usually paid.

The gentleman quoted one of our largest firms who had lost $75,000 last year in the lumber business. The firm, however, owned the store at the mills, in which last year they made a clean profit of $40,000, thus reducing the loss to $35,000. This fact was quoted merely to show that at prices of "Schedule," the lumbermen were not making the large amounts of money generally credited to them.

All the facts necessary were presented to us to show that at the quotations given, the lumber manufacturers were not making anything but a fair profit.

The Committee offered us free access to their books, and gave us a cordial invitation to call upon them individually and obtain any information we desired.

The gentlemen were very earnest in their endeavors to present all the facts to us, laying particular stress that our articles were extensively copied in Eastern Journals. From facts that had come under their observation, they were satisfied that our articles were hurting the general prosperity of the State, by keeping away those who would come here but for the generally conceived Eastern opinion, that the LUMBER TRUST was so anacondish in its tenacity to squeeze on the pockets of the dear public, that building was almost out of the question owing to the cost of materials.

We are well aware that our articles are extensively copied and that is the reason we have been very careful in their insertion. We have from time to time, called attention to the high prices of lumber, because we were satisfied that it was merely a little manipulation on the part of the manufacturers. ONE of the little jokers can be shown as follows:—

The receipts of Lumber at San Francisco for the first five months of the year compare as follows:—

	1888	1887
Pine, ft.	94,368,031	77 071,672
Redwood, ft.	46,989,688	42,245,214
Shingles, No	55,541,150	14,689,900
R. R. Ties, No.	534,631	192,472

According to the above summary 141,357,739 feet of lumber alone have been received. Five firms may be said to have been the manufacturers of nine-tenths the above total, and of this total, TWO THIRDS WAS SHIPPED ON VESSELS BELONGING TO THE MANUFACTURERS. Thus, virtually, those who produced the lumber, made their own terms for frieght. At $6.00 per M. the frieght on above amount for proportion owned by the manufacturers, would be in round figures about $560,000.

Now, the lumbermen, controlling as they do the ships engaged in the carrying trade, can with a stroke of the pen raise frieghts $1.00 a thousand. By so doing, although the price of lumber has not been raised, they add the neat sum of $140,000 to their bank account.

The above is only one of the little jokers by which high prices of lumber are maintained.

We thank the gentlemen of the committee for their friendly call, and will assure them that we will use our best endeavors to be just in all our statements, and do all we can to further the interests of those intending to build.

The Sidewalks in San Francisco.

The sidewalks of this city have from time to time been the subject of newspaper comment, and never complimentary, except in special cases of individual liberality in laying down some durable device; and the criticisms of visitors as published, have rated them as among the very worst features of the city's improvements. But the facts of the case, as a rule—if ever—have not been stated.

The primative, plank sidewalks were never more than an apology, and never did more than serve a temporary purpose, lasting in fair condition but a limited period of time, and decaying so rapidly that in a little while after being laid, the spikes would loose their hold in the sleepers, and protrude the surface of the planking, forming annoying obstructions—often termed "sidewalk hooks" to catch and tear ladies dresses, and furnishing the cause for many a round oath, particularly from persons with more corns on their feet than dollars in their pockets.

But in the early times, lumber was the only available material for the purpose, and necessity forced its use, not only for side walks, but also for the street roadways, until by custom, plank was recognized as the only alternative. But the hard wear and tear upon the road ways soon demonstrated the worthlessness of lumber, and the first substitute resorted to—was the semi-barberous cobble stones, which in turn was to some extent substituted by the "Nicholson pavement"—once considered the great desideratum, only to meet its fate as a worthless experiment, yielding place to the basalt blocks bituminous rock, etc. Thus from wood to indestructable stone for the streets, except the few blocks still encumbered by dilapidated planking, and the parts of the city where rotten, soft rock is spread to make clouds of red dust in summer, and rosy-hued mud during the rainy seasons, denominated "Macadam," exists.

So in side walks. Planking has long since ceased to be considered a permanent thing, and is only resorted to as a temporary improvement, or on the score of cheapness. Among the expedients following the early use of lumber, was asphaltum which at one time was accepted as a good thing, and some brick sidewalks were lain, the late James Lick even going to the extra expense of sending East for press brick to lay in front of the Lick house; but both the asphaltum and brick pavements failed to meet expectations—the asphaltum disintegrating and perishing after a year or two's exposure to the atmosphere, sun's rays and wear and tear, and the bricks less vitrfied than others wearing away and forming pot holes, until walking upon them became a punishment. This too in a very short space of time, while in other cities the same materials—bricks—have been in use for generations, and are still considered acceptable for sidewalk purposes. This fact suggests the inquiry as to the reason why that in Baltimore, Philadelphia, Boston, New York and othes cities bricks should prove a good sidewalk material, and in San Francisco fail to maintain a like reputation. The answer is, that the sharp sand blown everywhere by the summer winds, grind off the surface ten-fold more rapidly than in cities where sand is scarce, and the winds less in force and duration. Hence any material that can be easily effected by the grit of sharp sand, is unsuitable for sidewalk purposes in San Francisco.

But during the past ten years the patent stone device has accomplished its triumphs over all others, proving itself not only a competitor with nature's stone, but for regularity and smoothness of surface and durability, it is equal, if not superior to the large slab, natural formations. True, there are examples which argue against the merits of the made stone, but these are but evidences that pretenders, who have not understood the science of manipulating cement ingredients, have done the work, or that owners have played the fool's part in seeking cheap men, rather than pay fair value and secure satisfactory and durable work. But when properly laid by skilled operators, the best sidewalks that can be put down are the patent stone device; and their excellence never fail, and never will fail, and so far as quality is sacrificed to avarice, the pennywise and pound foolish principles apply.

Within the past year or two every one able to afford the small additional present outlay over wood have adopted the patent stone, and to old citizens it is pleasing to notice the thousands of feet now in use, and the growing tendency and wise prudence of owners to make these the universally used sidewalk. And when, less than another decade, one-half, or more, of the sidewalks of San Francisco shall, as they will be, laid of patent stone, no city in the Union will be better provided with splendid street walk ways.

During our recent visit east, special attention was attracted to the sidewalks, and in many of the cities visited, our observations were none to the discredit of San Francisco—barring its sidewalks of wood. In Cincinnati, Chicago, Washington, Baltimore, Philadelphia, New York, Boston and other cities we found miles of sidewalks lain of brick, and many of them anything but smooth and even, and others of large flag stone, with ungainly joints and rough surfaces, compared with which the good class of patent stone in San Francisco were infinitely superior, so that in honest fact, people who visit San Francisco cannot but admit that excepting those of wood, the sidewalks in San Francisco are good, and it is only a matter of short time when the sidewalks of every prominent street in the metropolis of the Pacific will equal any sister city in the Union, and surpass those who still countenance brick and inferior natural stone for sidewalks.

Semi-Annual Building Summary for 1888.

The number of new buildings, and the value of the same, for each month of the present year, is clearly shown in the accompanying table:

	Frame		Brick		Repairs	Total	Total
	No Build'gs,	Value.	No Build'gs,	Value.	Value	No	Cost.
January	60	$ 190,200	43	279,000	29,100	77	$498,300
February	51	186,500	2	258,000	18,200	61	462,700
March	36	147,200	1	10,000	31,600	45	188,800
April	56	284,950	5	44,300	29,100	74	358,350
May	55	269,600	10	331,500	37,300	79	638,400
June	72	396,750	9	84,420	92,100	101	573,270
Total	330	1,475,200	31	1,007,220	237,400	437	2,719,820

For the first 6 months of the past 3 years, the record stands:

1885—754	building engagements,	value	$4,267,375
1886—670	"	"	3,486,633
1887—516	"	"	3,269,914
1888—437	"	"	2,719,820

A decided falling off is noticeable both in number and value. This is owing altogether to the high prices of building materials. A large number of those who have buildings erected must borrow a portion of the cost of same, and when the rents returned will not enable the owner to meet his interest without loss, the erection of that class of buildings is almost completely stopped. It was all very well for our lumber manufacturers to supply the great Southern demand at the expense of stopping building in this city, but we think regrets will soon follow. Already the order has gone forth to take off $1.50 FROM EACH QUOTATION ON THE LIST, and from what we can learn a further shading of prices will soon be made. Many mills are being run on three quarter time now, in order to keep down the production: and the prospects look much brighter for those who desire to build small houses. We feel our efforts have been justly appreciated, as the few subscribers we have lost among those who feel themselves and their interests abused by our practical endeavors to secure lower rates of lumber, have been counterbalanced TEN TO ONE by property owners and builders who have applauded our editorials on the subject of high prices of lumber.

JUST RECEIVED.

The Carpenter's Steel Square and its Uses.

We have just received a large number of the above named books. A copy will be sent to any address upon receipt of ONE DOLLAR It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

The Plumbing Law.

Numerous requests have been sent to us to give the decision against the Plumbing Law in full and we herewith present it, together with the facts of the case.

One, Charles Friermuth was requested by Plumbing Inspector Sweeny to modify certain work and have same conform to the Plumbing Law. This he refused to do and was arrested and fined. A lawyer agreed to get him out of his snap for $15. We believe that Mr. Friermuth had to put up five different times as that number of complaints were filed. The lawyer seeing a job for himself, agreed to defeat the whole law for a specified sum. The amount was raised, or partly so, and the following decision tells the story.

We can not possibly see what good was accomplished in the endeavors made to overturn a law that sought nothing but benefits to the whole community. Mr. Friermuth and his lawyer may think they were smart but a new law will soon be in force that will be more stringent than the old one.

In the Superior Court of the City and County of San Francisco, State of California: Dept. No. 6. Hon. Wm. T. Wallace, Judge. Ex parte Friermuth on habeas corpus.

POINTS DECIDED.

1. The Act of March 3, 1885, conferring certain authority upon Health Officers in Cities and Counties, is unconstitutional.
2. Classification must be made upon the basis of actual population.
3. Where the Statute is a palpable violation of the Constitution, it is the duty of the Courts to interfere.

The petitioner, Charles Friermuth, is held in custody upon a conviction of violation of one of the provisions of the Act of March 3, 1885, entitled "An Act to grant the boards of health or health officers in *Cities* and *Cities and Counties* the power to regulate the plumbing and drainage of buildings" etc. The particular provision violated by him is the one found in the third section of the Act providing that the drainage and plumbing of private buildings in any City or City and County must be constructed in accordance with plans previously submitted to and approved by the Board of Health of such City or City and County. The plan adopted by the petitioner in constructing his house in the City and County of San Francisco was not a plan which had been so approved and he was accordingly held guilty of a misdemeanor under the sanction in the seventh section of the Act to the effect that any person violating any of its provisions should be deemed guilty of misdemeanor and, upon conviction, punished accordingly. The proper disposition of the case, as will be presently seen, requires a consideration of several important questions of constitutional law; the case was here on a recent occasion when the petitioner was remained *pro forma*, as it was deemed preferable that these questions should be determined by the Supreme Court: upon a renewed application made to that tribunal for a writ of habeas corpus the case was, however, a second time sent here for decision and I now proceed to its consideration.

1. The Act is plainly an emanation of the general police power—the existence of which power, as observed by Mr. Chief Justice Shaw grows out of the nature of well ordered civil society that every holder of property, however absolute and unqualified be his title, holds it under the implied obligation that his use of it shall not be injurious to the equal enjoyment of others having a corresponding right to the enjoyment of their property nor injurious to the rights of the community.

The existence of the police power of the State is not questioned: the proper mode of its legislative exercise is the point now in controversy; the power cannot be exercised through the agency of a local law if a general law can be made applicable, for the Constitution declares that no local law shall be enacted in *any* case "where a general law can be made applicable." (Art. 4. Sec, 25, Clause 33.) The word "local," considered in an etymological sense, imports restriction to a designated place: considered in a legal sense, and as applied to legislation, a local law may be said to be a law which has for its exclusive object the interest of some particular locality or localities, and is not designed to operate elsewhere than in places pointed out in the law itself.

The Statute now under consideration is obviously local in both those senses, for its purports to spend its entire operative force within designated localities. But that circumstance will not of itself constitute it a local law within the inhibition of that Constitution, if there be a proper classification of the localities in which it is to operate: such classification, however, must proceed upon the basis of *population*: it "cannot be made on any other basis than that of population" is the language of the Court in *Desmond v. Dunn* (55. 251). The classification here attempted is not upon that basis, but upon the mere denomination of "Cities" and "Cities and Counties" regardless of the population of either and to the utter exclusion of other municipal organizations, recognized by the Constitution and laws, called "Towns" containing in some instances, as was proven in this case, a larger population than is to be found in some "Cities." It results then that if a general law could have been made applicable in this case the Statute in question was not one within the Constitutional authority of the Legislature to enact. And I have no doubt that a general law could have been made applicable. It has been said in the Supreme Court that it may not be an easy matter to define with precision the distinction between a general law and one that is local (55. 490), while in the Supreme Court in Kansas it has been remarked that it is difficult to conceive of a case in which a general law could not be made to apply: the best definition of a general law perhaps is that given in the concurring opinion in ex parte *Westerfield* (55. 522). "A general law must include within its sanction all who come within its purpose and scope. It must be as broad as its object." The Statute here in question might have been made "as broad as its object:" that object was health: sanitary rules were prescribed for designated localities more stringent in character than those to be observed elsewhere: the Act proceeds upon the idea—no doubt correct in itself—that disease and contagion are to be especially anticipated and therefore more carefully guarded against in thickly settled communities rather than in those of comparatively sparse population. The vice of the legislation is in assuming the density of population to be necessarily greater in each locality called a "City" or "City and County" than could be found in any other locality or municipal cognizance, for instance, a "Town." That a general law—that is a law based upon classification of municipal localities by reference to actual respective populations—might have been enacted would seem too plain to require argument or illustration. The conclusion reached is that the Act in question being a local law enacted in a case in which a general law might have been made applicable for that reason unconstitutional, and the petitioner is entitled to be discharged from custody.

In delivering this judgment it is proper to remark that the reasoning indulged in assumes that the inquiry as to whether a general law might be made applicable in this case is one which may be entertained by the Courts: that it is not, as held in Indiana, Missouri and Kansas, one exclusively for the Legislative Department of the State. This question, though adverted to in *Earle v. S. F. Board of Education* (55. 491), has never so far as I am advised, been decided in this State. I have thoroughly examined the question for myself, and am satisfied that the inquiry is not one solely for legislative determination, but that, as in other cases in which a palpable violation of the Constitution has occurred, it becomes the duty of the Courts to interfere. An examination of the authorities and a presentation of the reasoning by which I am led to this decision would, however, too much prolong this opinion.

The petitioner is discharged from custody.

SEWER POISON—How shall one know when he is poisoned by sewer gas? is a question frequently asked. Dr. Hun, in the *Medical News*, says that he has carefully studied twenty-nine cases, and thinks it probable that the following condition may result from sewer gas poisoning: Vomiting and purging, either separately or combined; a form of kidney trouble; debility, in some cases in which the heart is especially involved; fever which is frequently accompanied by chills; sorethroat, which is frequently of a diphtheritic character; neuralgia. These conditions may occur separately, but are frequently combined, and it is especially common for the fever to be associated with the other forms of sewer gas poisoning. Finally, in cases of sewer gas poisoning, there is one group of symptoms which is almost always prominent, and these symtoms are loss of appetite, drowsiness, extreme prostration, and a dull, unpleasant feeling in the head and whenever this group of symptoms occurs; not as a result of an attack of acute disease, but as a chronic condition, a suspicion is justified that the patient is exposed to sewer gas, infection.

JUST RECEIVED: THE CARPENTER'S STEEL SQUARE AND ITS USES.

We have just received a large number of the above named books. A copy will be sent to any address on receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

THE NORRIS PULLEY.

Various attempts have been made to introduce a pully, the different sizes of which would be suitable for all kinds of sash. Some of the patents answered very well for light sash, but proved unsuccessful for those which contained large lights of French plate glass. Again, some kinds made especially for the latter would not answer for the first mentioned. The great requirements for perfect sash pulleys, that are absolutely required, consist first in having the wearing parts composed of such material that they are but little affected by wear, and second that the moving parts operate without noise. In these two essentials the Norris Pulley stands without an equal. As much care is taken in the manufacture of those costing but $1 10 a dozen as the fine bronze metal case and wheel costing $22 60 per dozen.

It will be noticed from the cut that these pulleys are inserted in the frame in a totally different manner from those of any other pattern. It is at once apparent that for strength there is no comparison between the above and the old fashioned way of a screw in the lower end. A great saving in time and labor is gained by having only one screw to insert. In a large house this saving amounts to considerable. Carpenters can put in this pulley by hand ten times faster than they can any other style, which to them in labor and screws is more than cost of pulley.

We have used the Norris Pulley in houses which we have constructed, and can confidently recommend them as superior to any other with which we are acquainted. The cheapest pulleys are made first-class, with large size hard pin, deep groove, the hub of wheel extending through to bear on the case, wheels run true, no burrs on the wheels to cut the rope. If, by mistake, at any time a pulley in a new lot should not meet the above requirements, Messrs. Norris & Co. will cheerfully take them back.

There is a splendid line of samples of above pulley in this office, and those about to use pulleys of any kind are invited to call and examine the same. Those in the country who can not call can either send here for information or write directly to the manufacturer, C. Sydney Norris & Co., Baltimore, Md.

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NOTICE TO ARCHITECTS.

Plans and specifications will be received up to 2 o'clock P. M., of July 5, 1888, by the Board of Trustees, of the Free Public Library, for a library building to be erected on the north half of lots 2 and 4 in block 12, east of Center street, in the city of Stockton, State of California. The dimensions of said building to be 50 feet front by 80 feet deep; the building to be two stories high, and to be connected by a capacious and easy stairway of not less than 10 feet in width. Said building to be constructed mainly of brick, of which the South wall of the Eureka engine house shall constitute one wall. The upper story to be lighted from above, in connection with capacious windows at both ends of the building. A premium of $150 will be given for such one plan as may be accepted, if any, by the board. The cost of said building not to exceed $12,000, for which the estimate under the plan accepted must show that the construction is possible at that figure, and for which the architect whose plans may be accepted shall assume the contingent responsibility under the statutes of the state. It being understood that the plan accepted shall be the property of the Board of Trustees, to be used in any manner they may please. and the acceptance of the premium by the architect shall be the purchase price for the same. The board reserves the right to reject any or all plans and specifications. By order Board of Trustees Stockton Free Public Library.

W. F. CLOWDSLEY, Secretary.

San Francisco Chapter American Institute of Architects.

The regular meeting of the Chapter was held on June 1st. Owing to the absence of the President—he being in New York—Vice President W. P. Moore presided.

M. J. Lyon was elected a student member. At present, he is in the office of Macy Jordan.

Various members reported as a Committee of the Whole, in regard to procuring suitable rooms for the use of the Chapter Propositions were received in regard to the Murphy Building, the Howard Building, the Phelan Building and others. Definite action was postponed until next meeting.

The Chairman of the Committee on "Competitions" reported that he had called two meetings, but their conclusions were not as yet, sufficiently matured to place them before the Chapter. One months further time was granted for a written report.

An informal discussion was indulged in relative to the best manner of conducting the affairs of the Chapter so as to make them more interesting. All members present gave their views on the subject, and it is likely at next meeting more definite action will be taken.

A Gentle Hint to the Lumber Trust.

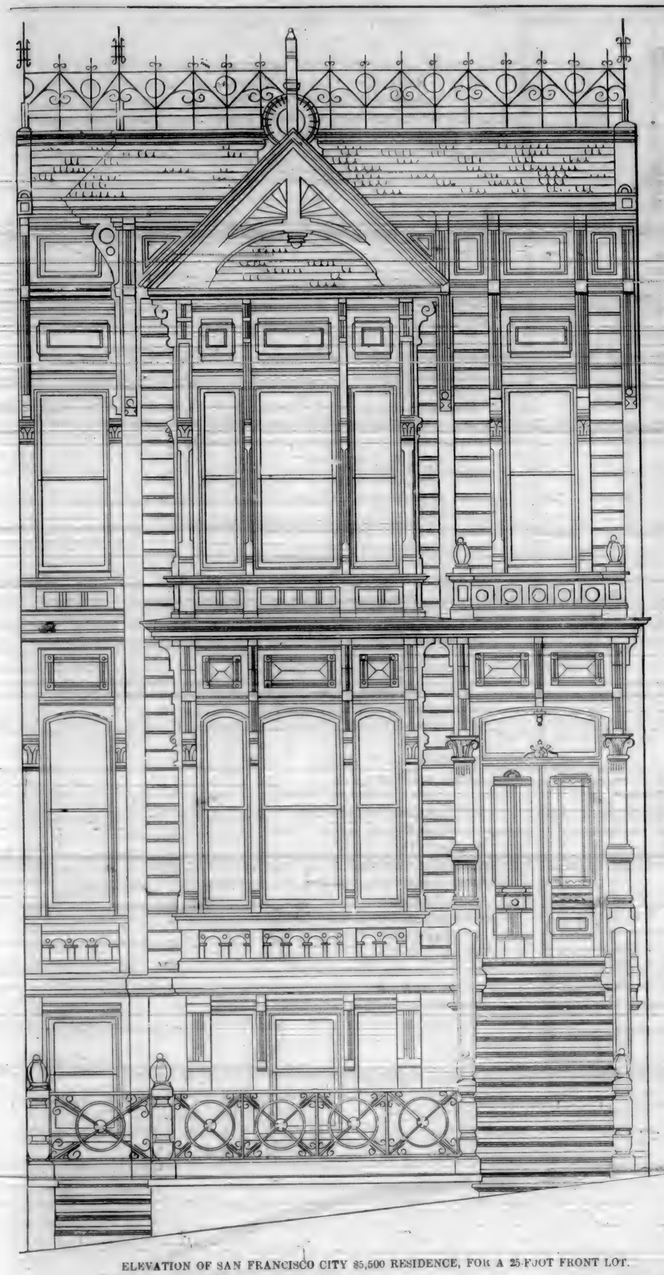
A CONTRACT FOR THE GENERAL RESTRAINT OF TRADE IS AGAINST PUBLIC POLICY.

AN IMPORTANT DECISION.

The Supreme Court has affirmed the decision of the lower court in the case of the Santa Clara Valley Mill and Lumber Company, against Isaac N. Hayes et al.

This was an action to recover $10,000 for a breach of contract between the parties, who were all engaged in the manufacture of lumber in the county of Santa Cruz, by the terms of which defendants agreed not to manufacture any lumber to be sold during 1881 in the counties of Monterey, San Benito, Santa Cruz or Santa Clara, except under the contract. Defendants failed to comply with the agreement, and the action was brought.

The court found that the sole object of the contract was to form a combination among all the manufacturers at or near Felton, for the purpose of increasing the price of lumber, limiting the amount to be manufactured, and giving plaintiff control of the entire supply of lumber for that year in the counties named. The effect was that no wholesale market existed at Felton during that year, and dealers could not purchase lumber in any quantity during the year 1881. The Court further found that the contract was against public policy, and gave judgment for defendants.



ELEVATION OF SAN FRANCISCO CITY $5,500 RESIDENCE, FOR A 25-FOOT FRONT LOT.

$5,500.

City Dwelling for a Lot Twenty-Five Feet Front

In this city a building lot has generally 25 feet frontage; the depth varies from 85 feet to 137½ feet. It is this average width that causes so many strangers to say that so many of our houses are quite similar in appearance. When it is taken into consideration that lots are 25 feet frontage, and that light way must be had to rear rooms, thus cutting off the frontage about four feet, it must be confessed that where owners *will have the universally used bay window*, our architects have almost exhausted the whole range of original fronts, and there is a sameness about houses built on a regular size lot. When the width is greater, however, there is no city in the world of the size of San Francisco, can lay claim to possessing so many examples of fine dwelling architecture as can be found by those perambulating our beautiful hills and valleys.

The example given in this issue is for a house possessing many conveniences, and specially adapted to a 25-foot lot. The front is somewhat different from the usual style, and if finished according to plan will present a very neat appearance.

The plans have been carefully studied, and we think the arrangement of the rooms is such that any one following the plan will be perfectly pleased with the house when built. At present prices of materials, the building represented can be built for about $5,500.

Sack's Automatic Water Closet.

This closet has been introduced several years in this city, and the general verdict of those using the same is that they are superior to any other AUTOMATIC CLOSET now in use. We know of some that have been in use for years, without requiring repairs of any kind. A company has lately been formed, whose intention is to thoroughly introduce this closet in every portion of the Pacific Slope. See the new ad. on page IX.

The wooden parts of tools, such as the stocks of planes and handles of chisels are often made to have a nice appearance by French polishing; but this adds nothing to their durability. A much better plan is to let them soak in linseed oil for a week, and rub with a new cloth for a few minutes every day for a week or two. This produces a beautiful surface, and has a solidifying effect on the wood.

Steel Square and its Uses.

We have just received a large number of the above named books. A copy will be sent to any address upon receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

Weather Strips.

A great improvement is observable in the mode of insertion and the quality of the material used in the weather strips, as produced by Bradstreet, of this city. Samples may be seen at this office, with prices affixed. By sending a note to the manufactory, 1326 Ellis, an agent will call on you and explain thoroughly how to stop your windows from rattling, and to prevent dust from coming in the cracks.

Our City and Country Building News.

We call especial attention to the Building News given in this Journal. There is no journal printed in California but the *California Architect*, which can be depended on for reliable building news. We have special correspondents in the principal sections of the State. As for city news, we are so far ahead of any other publication, that no comparison can be made.

PLANS FOR SAN FRANCISCO CITY $5,500 RESIDENCE, FOR A 25-FOOT FRONT LOT"

Last year, Frank L. Smith of Boston. issued a very entertaining little work entitled a "Cosy Home and how it was built". This year the same gentleman sends us another work called "Homes of to-day." It contains 30 pages of designs of buildings and is sent to any address for the sum of 25 cents.

The Art of Estimating.

If in each trade itself there should spring up by the proper evolution of study and experience, one man or many men, who were perfectly competent to give a correct estimate of the cost of any given piece of work in this particular trade in any or many of the states of the United States, such men would find themselves amply rewarded for their particular knowledge, and such knowledge would be of the utmost value, not only to architects, but to engineers, builders and contractors, and the public at large. We do not believe there are many men in this country who, in any trade connected with building operations, can give correctly the cost, for example, of one square foot of any piece of work with which he is familiar in all the counties of any state in this country, where building is going on, not even within the limit of three per cent. excess or deficit of the actual cost. That one could become so expert upon such work in this country that a remark of this kind could not be truthfully made, no one will deny, and that it can be made forcibly illustrates the chaotic condition of estimating in this country. Architects in New York accept commissions from Portland, Me., to Los Angeles, and contractors cover an equally large territory. Even within much smaller limits the same assertion is almost equally true. To become expert upon estimating, what must a man do and know? In his chosen field he must first know every material that is used, its methods of manufacture, its quality, its market value, and the reason for its use. He must know the kind of labor employed upon such material, a fair knowledge of the skill required to perform such labor and the amount of labor required to perform a certain unvarying unit of the work to be done, viz., a square foot, a lineal foot, a cubic yard, or other established measure. This work must be thoroughly done, but it can be well done, as the writer has seen demonstrated again and again. He must have tabulated sheets of the value of labor per hour in every known labor center in this country, and keep his lists up to date. He must be an omniverous reader of the published lists of bidders figures on contracts, that so many of our valuable technical journals now make a feature of, and to which the writer feels an indebtedness he knows he can never repay. He must, if he can, keep a general track of the rise and fall of values. If he has had the training of an engineer he can do this to the best possible advantage by keeping a series of profiles of the value of labor per hour in various localities. This will give him a graphic map, which will enable him to intelligently estimate at a moment's notice in any locality in this country. The value of material could be mapped in the same way. It is also somewhat singular that the opinions as to what constitutes a fair return on the money invested by the contractor vary so largely in different parts of the country. In order to arrive at this element in the calculations, an estimator must keep the run of the loanable value of money. Where rates are low, percentages are lower, and conversely. The fairest criteria, we think, may be based upon the interest on bond and mortgaged real estate. This kind of investment has permanence, and is free from the manipulated fluctuations of railway securities. The resulting estimate will be safe and conservative.

The preliminary work to be done to prepare the way for an accurate estimate of cost of any building is:

1. The gathering of the facts in regard to material of every kind and nature that enters into a building.

2. The kind of labor and its amount in the execution of the work to be done.

3. The establishment of a system of reference tables or profiles, which will be an epitome of the estimator's information in the field he desires to cover. In regard to aids in obtaining this information, we have space only to mention a few.

The most important information to be obtained, because it is of the sort that is generally unknown, is the amount of work a man can and ought to do in an hour's time. The best method we have found to obtain this kind of information is to question the workman himself. It sometimes needs considerable tact and shrewdness, in order to obtain from the workman himself what he considers a fair estimate of an average man's work for an hour. It is also a kind of work that needs a spirit of patient inquiry, a comparison of replies, and a collation of results, in order to deduce from them all a fairly average result. This may seem at first sight a slow and tedious process, but it is essentially the only one that is safe and conservative.

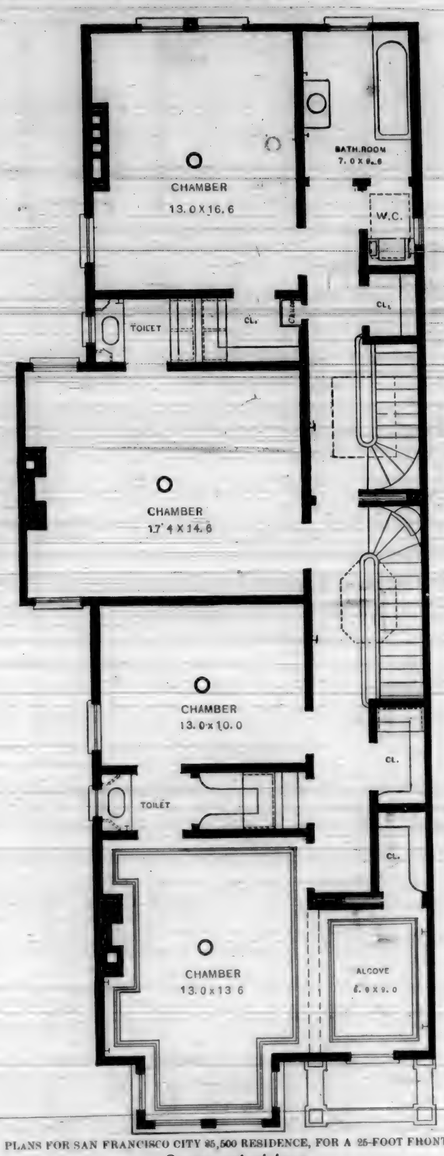
To obtain informaton in regard to materials the estimator must industriously collect from manufacturers and dealers in supplies their business circulars, catalogus, priee lists and advertisements of their wares, and, above all, do not forget their discount

sheet. Arrange and classify their contents according to the trades they refer to, and index them in some systematic manner, so that a reference to anything they contain may be had without a moment's delay.

To keep posted on novelties, new but meritorious inventions, constant reference must be had to the various trade and technical journals. The same journals will contain summaries of bids on important work, which must occasionally be analyzed and referred to items as a check upon the estimator's standard of values. It must be constantly borne in mind that it is the actual value which is wanted of a piece of work, not merely the skeleton representitive which is embodied in the word price; many a piece of work may have several prices to different men, but it can only have one value, and that value is the amount of labor done upon or with a given material in a certain unit of time. To reduce his work to an admirable system, a man must have an orderly mind, and be possessed of methodical habits. Much will depend upon the system to be adopted; each individual must work out for himself a system of reference that will be to himself, individually, the most serviceable. His work and methods must be logical, his results accurate and obtainable. The most authoritative sources of the price of labor (we do not say its value) is to be found at the rooms of the various associations of builders and manufacturers in all of the large cities of the country. Many trades journals are in the habit of publishing at various intervels the prices paid per day to different sorts of skilled labor, and many a missing link can be obtained from such tables.

The evidence presented here is somewhat *ex parte*. The answers to the queries propounded cannot be deduced from any series of arguments. What we have pointed out is something to be done in the future, and will, we believe, shape itself to the current needs of our building art. In older countries than ours, confessedly behind us in push and progress, the tendency is to a more systematic division of labor in the high art of design and construction, and the ends to be attained are more the outgrowths of experience than a change in the nature of reforms, and is is because of our lack of experience in the development of all phases of art that we are in our present chaotic conditions as to the estimation of the cost of buildings.

In France, the *Soiete Centrale des Architects Francase* publishes the *Serie de Prix*, or official price list of building materials, which is used by every contractor in making his estimates. We have nothing approaching such a list in this country, and probably never can have, owing to our geographical magnitude; but, if we had, there would be no opportunity for a man to become proficient in the art of estimating. In England Laxton's annual price list, now a volume of more than 600 pages, is so complete as to be used constantly by contractors in compiling their estimates for all large tenders; and we learn that it is now proposed to erect a large building in London for a reference museum of building materials. The general scheme of this museum is, in addition to other desirable ends, to present a classified arran ement of such materials, and will contain a complete set of catalogues, price lists, etc., of all manufacturers and dealers in the kingdom, kept up to date. If such museums could be established in, say, Boston, New York, Philadelphia Cincinnati, Chicago, St. Louis, Omaha, Denver and San Francisco as centers of information, the task of estimati g would soon be resolved into its proper shape, and become what it should be, a well established art.—C. Powell Karr, in *Carpentry and Building*.



PLANS FOR SAN FRANCISCO CITY $5,500 RESIDENCE, FOR A 25-FOOT FRONT LOT

Lower Prices for Lumber.

Prices for lumber have been reduced $1.50 per thousand *"all through the list"*. At least, that is the way a prominent lumber firm notified us. The reduction noted would be much greater only as same authority says, "we have to make an allowance for those that don't pay. If all contractors promptly settle we could now afford reasonable rates." So it seems there is a good profit in lumber at $20 per M. provided all those purchasing the same would only settle their bills. We have contended all along that $18 was ample for rough lumber, and $20 was a very high price And the lumber manufacturers finding out that the progress of the City has been materially checked by the extraordinary high prices of $22.50 for rough and $40 for flooring, have come down the magnficient tumble of $1.50 per M.

Corrugated Iron.

Turn to page x of this issue and note particularly the add of Cincinnatti Roofing Co. For roofs and sides of warehouses, nothing is better than Corrugated Iron. One great danger to which our grain warehouses are exposed, is the liability to take fire from sparks issuing from the stack of the passing locomotive. In California, all the warehouses are built close to the main line of a railroad and are peculiarly liable to catch fire. Write to to the Cincinnati Corrugating Co. and get a catalogue; after reading same, you no doubt, will at once take pains to make your exposed buildings absolutely fire proof.

STAIR BUILDING,

IN ITS VARIOUS FORMS AND

THE NEW ONE - PLANE METHOD

OF

HAND RAILING,

BY JAMES H. MONCKTON.

A PERFECTLY NEW BOOK, PRINTED IN 1888.

The author presents in this work *for the first time*,—as applied to hand railing—the *one plane method* of drawing face-molds, a method in which only one plan of projection is required. By the plane process of drawing a face mould, a center line of wreath may also be unfolded, and fixed in its relation to the elevation of tread and rise; thus determining the length of each baluster on the curved plan and gaining a knowledge and control of the wreath's exact position not before attainable.

The experienced stair-builder will learn that this one-plane method of drawing all face moulds—and also the manner of finding the angles with which to square wreathe prices—is simple, uniform and rapid. The student or apprentice will find that the elementary study of hand railing in the practical and novel way presented is easily acquired; he will also see that the detail instruction given in stair building from a step ladder to expensive and difficult staircases is presented in a manner to be clearly understood and quickly learned.

The Architect will find the best examples yet printed of Newells, Rails and Balusters, some of them being of exqusite design. The book is elegantly bound, printed on good paper, with illustrations far in advance of any similar publication.

The Bancroft Company have the above book for sale and orders sent to them—721 Market street, will receive prompt attention. Any order sent to this office will be immediately attended to, and the books promptly forwarded on receipt of the price, six dollars.

Eastern Opinion of the Subject.

"We are informed that the Lumberman' Association of the Pacific Coast is taking steps to maintain the position it has gained in the past few months with regard to prices in lumber. Nearly all the mill owners of Callfornia and the far northwest join hands to maintain values. Their association has been somewhat of a success and now we are informed that they have ordered that the mills in Mendocino and Humboldt counties, California working under its dictation, shall run three weeks each during the months of May, June, July and August or three quarter time it is the purpose of this organization to keep the supply of lumber entirely within the range of the demand. It appears that the extraordinary call for lumber during the past season has begun to fall off. Perhaps the collapse of the southern California speculative boom is responsible for this temporary disarrangement of the lumber mills. At any rate the association's edict has gone forth, and manufacturers have adjusted their affairs to meet the already strongly felt decline in the demand for lumber on the lower coast."

Some lectures have been recently given at the British Museum upon the art of ancient Babylonia, which are reported in the *Builder*. It is hardly necessary to say that since the discovery of several subterranean stores of cuneiform inscriptions, made upon cones of clay, our knowledge of Babylonian ways has become greatly enlarged, and it may not be long before as much is known of the history of Mesopotamia as of ancient Egypt, where, as some one says, the events which occurred in the fifteen and sixteenth centuries B. C. are recorded with greater precision and in more minute details, than the history of any European State in comparatively modern times. It is not long since a great number, some forty thousand, we believe, of inscribed cones were discovered, and sent to the British Museum to be deciphered, and a few months ago, while hardly more than a beginning had been made in translating the first consignment, two hundred thousand more were dug out of a subterranean chamber under the mound of Tel Ibrahim. This chamber is supposed to have been one of the "stack rooms" of a great public library of which five are known, from inscriptions, to have existed, in what we should call the five university towns of the Empire, Borsippa, Kutha, Larsa, or Larissa, as some maps call it, Eridu, and Babylon. Not only is the existence of these centers of learning well attested by the inscriptions, but we know the character of the sciences principally cultivated in each, Eridu and Kutha having been the seats of theological knowledge, while Borsippa was the center of technical instruction, and Larsa of mathematics; and the library attached to each was mainly devoted to books, or rather tablets, of apappropriate chacter. Not only were these libraries well stocked, but the books were arranged and catalogued with such skill that authorities of the British and the Continental museums have adopted the ancient system as being still the best for the sort of material with which it dealt. Most people will remark the similarity between this sort of literary, or rather educational enthusiasm, and the passion for scholarship which still exists among the educated Chinese, and it is not very surprising to find that it is now regarded as certain that the Chinese writing is intimately related to the cuneiform character, as if the people of Mesopotamia has diffused civilization eastward to the Chinese valleys, as well as westward to Asia Minor, and indirectly to Greece and Rome.

Artistic Homes.

A new work containing 44 plates of Residences, Churches, School-houses, etc.

Some of the designs are very good. No dependence can be placed however on the figures given as the cost of each plan; that is, to those who build on this coast. In many cases the figures are not one-half of what they should be if applied to buildings here, and in several instances not even one-third.

The publishers claim a copyright on every plan presented, and warn persons from copying *any portion* of plans represented. As an almost fac-simile of several of the plans appeared years before the book was printed, we fail to see where the copyright comes in. In the *California Architect* of the past 9 years will be found nine-tenths of the features presented in the plans contained in *Artistic Homes*.

Price 25 cents each, post paid.

Rural Homes, Wheeler	150
Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50

CITY BUILDING NEWS.

Bartlett, near Twenty-Second, 2-story frame. Owner, Munson; cost $1,200.

Bluxome bet 4th and 5th, one-story brick building. Owners, Overland Freight Transfer Co. Architects Schulze & Meeker; contractors, Mahoney Bros. Cost $3650; filed May 18; limit Aug. 1.

Payments; roof tinned $1,700; completed $1,035; balance $915, 35 days.,

Bluxome nr 5th. Repairs. cost $600.

Bush cor. Stockton. Alterations to Beresford House. Owners, Coleman Bros; Architect, J. E. Wolfe. Cost $8,000.

Bush, bet Dupont and Stockton, additions to Catholic church. Owner, O. Renandier; architects, Huerne & Everett; contractor, J. L. Binet; filed June 2; limit 100 days; securities, F. H. Rosenbaum; F. G. Norman, $10,208; total cost, $10,208.

Payments: brickwork finished, $2,552; brown mortar on, $2,552; completed $2,552; balance, $2,552; 35 days.

Buchanan, cor Laguna, one 3-story frame and one 2-story frame. Owner, N. T. Franklin; contractors, Kincaid & Thompson; cost of 2-story, $4,400; 3-story, $5,325; filed June 4; limit 100 days.

When framed, $1,000 for 3-story, $825 for 2-story; ready to lath, $1,000 for 3-story; $825 for 2-story; plastered, $1,000 for 3-story, $825 for 2-story; balance, $1,327 for 3-story, $1,100 for 2-story; usual 35 days.

Columbia bet 23d and 24th. 1-story frame. Owner Hannah Mahoney. Architect and builder, Geo. Houston. Cost $2,650. Filed May 11, limit 90 days.

Payments; enclosed and roof on $655; brown mortar $665; plastering furnished and windows hung $665; balance $665, 35 days.

Columbia bet 23d and 24th. Owner, Mary Quirm. Cost $2,650.

All the condltions are same as above.

Clay cor Jones. Brick foundations for 3 dwellings. Owner Magdalena Ils; Architect W. C. Jordan; contractor Geo. D. Nagle; filed May 24. Limit June 18.

Payment, 75 per cent. as work progresses. 25 per cent. stands for 35 days after completion.

Clay nr Mason. Repairs $600.

Castro nr Sixteenth, two-story and basement, owner, Robert C. Clarke; contractor, Kincaid and Thompson; architect, Armitage and Wilson cost $5000, limit, 90 working days; signed, June 5, 1888, filed June 6, 1888; amount of bond, $3000; sureties J. F. Kennedy and F. S. Satson.

1st, when frame is up and enclosed, $1250, 2nd, when brown coat of mortar is on, $1250, 3rd, when completed and accepted, $1250, 4th, 35 days after completion and acceptance, $1250.

Ellis bet. Taylor and Jones. Plumbing work on H. Rohling's house, let to Ickelheimer & Bros. Amount $1,120.

Payments to be 75 per cent. as work progresses and balance on acceptance by the architects, Salfield & Kolberg.

Eddy cor Buchanan. 2-story frame. Owner Isaac Jacobs; architects Townsend & Wyneken; contractors H. & O. W. Townsend; cost $6,500. Sureties A. D. Moore, A. Kendall $4,000; filed May 26; limit 130 days.

Payment; basement walls up, $200; frame up $800; roof on and chimneys up $1,100; brown mortar on $1,300; white mortar on $1,475; balance $1,625, 35 days.

Ellis bet Stockton and Powell. Additional brick story. Owner Samuel Kellett; architects T. J. Welsh; contractor A. A. Willis. Cost $6,000.

Eddy nr Mason. 2-story brick. Owner J. K. Prior. Cost $4,500.

Ellis nr Jones. Additions. Cost $600.

Ford between Sanchez and Noe. Frame building. Owner, Martin O'Brien; architect, J. J. and T. D. Newson, contractor, Jas. Finn; cost, $1,850, signed, May 31, 1888; filed June 5 1888: limit, September 1, 1888.

1st, when building is framed and roof on $300; 2d, when enclosed, windows in and prime coat on, $500; 3d, when last coat of plaster is on, front and rear steps built and all the outside of building is completed $250; 4th, the payment when completed and accepted, $300; 5th. 35 days after completion and acceptance, $500.

Fillmore near McAllister, two-story frame biulding; owner, Henry Goetze; contractor, A. Elmann; cost, $5825; limit Sept. 26, 1888; signed June 1888; filed, June 7, 1888.

1st, building enclosed, $1000; 2nd, brown coat on, $1000; 3rd hard finished, $1000; 4th, when completed $1200 5th, 35 days after completion, $1625.

Fifth cor Folsom. 3-story frame. Owner D. B. Murphy; architect T. J. Welsh. Contractor, J. McInerney; amount $16,157; sureties J. J. McKinnon, O. J. Preston; $12,000; Filed May 10th; limit Oct 1.

Payments; foundations laid $1,200; all framed $1,223,55; ready for lathing $2,423,55; brown mortar on $2,423,55; white mortar on and building primed, $2,423,55; completed $2,423,55; balance $4,039,25, 35 days.

Fell and Devisadero. 2-story frame, store and flats. Owner Theo. Green; architects I. Newson; contractor J. J. Dunn. Filed May 19; limit 72 days. Surety B. Joost $2,000.

Payments; when framed $726; ready to lath $726; plastered $726; outside primed $726; completed $726; balance $1,265, 35 days.

First Ave. nr Point Lobos road. Frame school building. Owner City of S. F. Architect T. J. Welsh. Contractor G. W. Hansbrough. Cost $15,000.

Fourth cor Townsend. Additional story. Owners S. P. R. R. Cost about $20,000.

Fell and Devisadero. Mill work on J. J. Dunn's contract; contractor A. Kendall; cost $1,160.

Payments to be made according to Dunn's payments.

Filbert, nr Taylor, 2 story frame. Owner Konrad Peter; contractor, Henry Jansen; architect, Geo. Miller; cost, $3,400; limit, 65 working days; signed, May 12, 1888; filed, June 4, 1888, amount of bond, $2,500; sureties, Veinkohl Bros. and H. Fietjen.

1st, when frame is up, $850; 2d when building is enclosed, $850; 3d, when white coated, $850. 4th, 35 days after completion $850.

Geary and Jones. 3-story frame. Owner, Heincken; architect, Townsend and Wyneken, contractor, M. C. Lynch; cost, $6704; limit, October, 1st, 1888, signed, June 8, 1888; filed, June 8, 1888; amount of bond, $6,704; sureties, M. C. Lynch, and P. Swift.

1st, when frame is up, $1000; 2d, when brown coated, $1,700; 3d, when hard finished and shash in, $1,700; 4th, when all is finished, $628; 5th, 35 days after completion, $1676.

Geary, bet Hyde and Larkin. Painting contract on P. V. Merle's houses, let to J. St. Denis & Co.; amount, $2,850.

Outside primed and 2d coat on inside, $700; 2d coat on outside and inside, work ready for graining, $700; completed, $700; balance, $750; 35 days.

Greenwich bet Mason and Taylor. 2 flats and store. Owner Geo. McCluskey; contractor G. M. Salsbury; cost $3,950. Securities F. P. Buell, Lyman Green $3,950; filed May 17; limit July 12.

Payments; framed $1,025; enclosed $975; brown mortar on $925; balance $1,035, 35 days.

Golden Gate between Lyon and Scott. 2-story frame. Owner Martin Heberger; architect L. Hippely; contractor R. Parker; cost $2,330; security C. S. Holmes; filed May 26. Limit Aug. 25.

Payments; framed $582,50; plastered $582,50: completed $582,50; balance $582,50, 35 days.

Geary bet Hyde and Larkin. Plumbing contract on P. V. Merle's house. Architects Schmidt & Shea; contractor R. A. Vance; surety R W. Snow; cost $4,550 Filed May 22.

Payments; rough pipes in $1,650; completed $1,700; balance $1,200, 35 days.

Golden Gate Park. Music Stand. Owners, City of S. F. Architects Percy & Hamilton. Contractors Gray & Stover. Cost $2,700.

Haight bet Steiner and Fillmore. 2-story frame dwelling. Owner Andrew Burke. Architect A. J. Barnett. Contractor Chas. A. Laherty. Cost $3,800; surety M. Hansen $2,000; filed May 9th; limit Aug. 15.

Payments; building enclosed $950; brown mortar on $950; completed $950; balance $950, 35 days.

Hayes cor Steiner. 2-story building. Owner P A. Morbié; architect G. V. Capelletti; contractor J. J. Dunn; cost $8,250. Security C. S. Holmes $4,000; filed May 12; limit 100 days.

Payments; building framed $1,500; floor laid $1,500; brown mortar on and outside finishes up $1,500; when completed $1,500; balance $2,250, 35 days.

Haight nr Stanyan. 2-story frame. Owner Wm. Merz; architects, John & Zimmerman; contractor Benedict Pfarrer. amount $3,600; securities Blyth & Trott $3,600; filed May 23; limit Sept. 8th.

Payments; roof on and floored $600; rough mortar on $900; white mortar on $900; balance $1,200, 35 days.

Hayes and Baker. Frame stable. Owner F. Heywood; architect C. I. Havens; contractors Mahoney Bros; cost $3,650. Sureties Oscar Lewis, Robert Mitchell; filed May 23; limit 75 days.

Payments; 75 per cent. as work progresses and balance on completion.

Kate and Fillmore, frame school building. Owners, City of San Francisco; architect, T. J. Welch; contractor, J. H. McKay; cost $20,000.

Kearny cor Sacramento. Improvements. Cost $1,500.

King bet 4th and 5th. Freight sheds for S. P. R. R. Cost about $25,000.

Larkin nr Turk. 3-story frame. Owner W. Wynn; architects, Armitage & Wilson; contractor H. Thom Wohrden. Cost $4,000 Sureties, J. W. Fritsch. H. M. G. Dahler; limit 75 days.

Payments; enclosed $1,000; brown mortar on $1,000; completed $1,000, balance $1,000, 35 days.

Lyon bet Post and Sutter. 1-story frame. Owner Henry Schwarz; architect and builder, G. G. Gillespie; cost $2,035. Filed May 17; limit 75 days,

Payments; framed $500; brown mortar on and outside finish up $500; completed $525; balance $510, 35 days.

Larkin nr Clay. 2-story frame. Owner Mr. Smith; architect C. J. Devlin. Cost $6,500.

Lafayette nr Mission. 1-story frame Cost $3,000.

Market, Junction and Geary. Alterations. Owner J. T. Farley; architect T. J. Welsh; contractor Mahoney Bros; cost $2,350; filed May 10.

Payments; 75 per cent. as work progresses.

Mission bet 9th and 10th. 2-story frame in rear. Owner F. Kenerbeber; architects John & Zimmerman; contractor F. Klatt; cost $1,780; security J. F. Kennedy, $1,800; filed May 10; limit June 30.

Payments; enclosed and partitions set $500; rough mortar on, outside finishes up $350; ready for painting $480; balance $450, 35 days.

Marquesas nr Yazoo. 2 frame cottages. Owners Chas. and Jerome Milby; architect Geo. E. Voelkel; contractor, A. Jackson. Cost $5,100; sureties. C. F. & F. P. Doe, $5,000; filed May 23; limit 15 days.

Payments; rafters on $400; ready to lath $600; brown mortar on $780; white mortar on $1,200; balance $1,275, 35 days.

Mission nr Atnhony. Alterations $500.

Market nr Powell. Additions to Baldwin Theatre. Owner E. J. Baldwin. Cost $30,000.

Market nr Castro, one-story frame, owner, P. Rothermal; contractor, O. E. White; architect, Jas. H. Humphreys; cost, $2220, signed June 7, 1888; filed, June 7, 1888; limit, 75 days from time of signing contract.

1st, when frame is up and building is enclosed, $500; 2nd, when brown coat is on, $600. 3rd, when accepted by owner, $550, 4th, 35 days after completion, $570.

Mission, nr Main, additional story; cost, $1,500.

Main, nr Mission, repairs, cost, $1,000.

Morton, nr Kearny, alterations; cost, $800.

Mission, nr Twelfth, 4 4-story frame. Owner, Jas. Palmer; contractor, M. Chisholm; Architect, C I. Havens; cost, $10,628. Limit, 90 days; signed, June 5 1888; filed June 5 1888; sureties, Frank P. Latson and J. J. McKinnon.

1st, when frame is up building is enclosed, $1,878; 2d, brown coated and principal part of outside finish is on, $2,000, 3d, when hard finished outside mill work is on, $2,000; 4th, when completed and accepted by architect, $2,000; 5th, 35 days after completion and acceptance, $2750.

Noe, Ridley, Castro and 14th. Additional building to the German Hospital. Architect H. Geilfuss; contractor F. W. Kern; amount $10,340; filed May 9; limit Sept. 1.

Payments; when framed $1,550; roof on partitions set $1,550; brown mortar on $1,555; plastering finished and outside trim completed $1,550; building completed $1,550; balance $2,585, 35 days.

Plumbing in connection with above let to Fritz & Kean; amount $1,673; 75 per cent. as work progresses and balance 35 days.

Nineteenth nr Guerrero. 1-story frame. Cost $2,500.

O'Farrell nr Franklin. Three-story frame dwellings. Owner A. Gross; architects, Pissis & Moore; contractors R. Doyle & Son. amount $12,389; securities, A. Sbarboro, J. McCarthy; filed May 8th, limit 100 days.

Payments, when foundation is laid $800; when buildings are framed $2,100; brown mortar on $2,100; plastering finished $2,000; when ready to paint $2,000; when finished, $289; balance $3,100, 35 days.

O'Farrell nr Franklin Same as above; plumbing work W. S. Snook & Son; amount $1,094; rough work and sewers in $420; all completed $400; balance $274, 35 days.

Post nr Octavia, repairs, owner, Issaacs; architect, J. E. Wolfe; cost $700.

Pine nr Battery, additional story to brick building. Days work, J. J. & T. D. Newsom, architects: cost, $8000.

Plumbing contract, house on Mission near Twelfth. Owner, Jas. Palmer; contractor, Fritz and Keane, architect, C. I. Haven, cost, $1,200; limit, as fast as required by architect; signed, June 5, 1888; filed, June 5, 1888; surety, Wm. Little.

1st when all rough and gas and water pipes are in $600; 2nd, when entire work is finished and accepted by architect $6.00

Post bet Larkin and Polk. 2-story frame; owner Mrs. A. Brady; architects John & Zimmerman; contractor F. W. Kern; sureties O. W. Nordwell, B. Joost $4,000; filed May 10, limit Sept. 1.

Payments, frame up and partitions set $1,500; brown mortar on $1,000; white mortar on and ready for painting $1,040; balance $1,200, 35 days.

Polk nr Turk. 3-story frome; owner J. H. Von Ahnden; architect C. I. Havens; contractor J. Bruce; cost $6,700; sureties; J. S. Morgan, F. P. Latson; filed May 23; limit 90 days.

Payments, enclosed $1,250; brown mortar on $1,250; white mortar on finished $1,250; completed $1,250; balance $1,700, 35 days, filed, June 6, 1888; limit, August 11, 1888.

1st, when frame is up $300; 2d, when the building is enclosed and brown coated, $300; 3d, when the interior is finished and second coat of painting done, $300; 4th, pay, when the entire contract is completed finished and accepted, pay delivered, $202; 6th, 53 days after final completion, $368.

Pacific nr Fillmore. 2-story frame; owner Eva A. Haxe; architect S. Newson; contractor J. H. McKay; cost $5,900; filed May 25; limit 100 days.

Payments, framed $885; ready to paint $885; brown mortar on $885; white mortar on $885; completed $885; balance $1,475, 35 days.

Pacific cor Buchanan. 2-story frame; owner S Sweet; architects Copeland & Banks; contractor O. E. White; cost $19,630; securities C. F. Doe, S. W. Fuller; filed May 26; limit 8 months.

Payments, first-story joists on $3,000; enclosed $3,000; brown mortar on $4,630; completed $4,000; balance $5,000, 35 days.

Painting on above. Contractor J. F. Sullivan; amount $1,125.

Plumbing on above. Contractors, Ickelheimer & Bro. Cost $2,330.

Post cor Pierce. 3-story frame. owner Philip Siebel; architects John & Zimmerman; contractor Theo. Von Borstel; cost $8,620; surety J. F. Plageman $8,000; filed May 23; limit Sept. 1st.

Payments, framed $1,500; partitions set $1,500; rough mortar on $1,000; white mortar on $2,420; balance $2,200, 35 days.

Post nr Octavia. Repairs; owner Isaacs. architect J. E. Wolfe; cost $700.

Paraguay cor Yazoo. 2-story brick building; owners Masonic Hall Association; architect H. Geilfuss; contractor W. A. Dunshee $10,000; filed May 23; limit 130 days.

Payments; on 1st of each month, 75 per cent. of value of work done; balance 35 days after completion.

Post nr Mason. 4-story brick building; owner W. S. Hobart; architects Percy & Hamilton; mason J. McCarthy; carpenters Gray & Stover; cost $25,000.

Sixteenth, near Castro 1-story frame. Owner, Geo. M. Cummings; contractor, Alex. A. Willis. cost, $1,470, signed, June 4, 1888; filed, June 6, 1888; limit, August 11, 1888.

1st, when frame is up $300; 2d, when the building is enclosed and brown coated, $300; 3d, when the interior is finished and second coat of painting done, $300; 4th, pay, when the entire contract is completed. finished and accepted, pay delivered, $202; 6th, 53 days after final completion, $368.

San Jose Avenue nr Twenty-fifth; additious; cost, $2500.

Sutter nr Scott. 2 dwellings and repairs to old builbing; owner Jessica M. Davis; architects Copeland & Banks; contractor O. E. White; cost $8,830; sureties F. P. Latson, C. F. Doe; filed May 26; limit 4 months.

Payments, roof on $2,000; brown mortar on $2,500; completed $2,030; balance $2,300, 35 days.

Same as above, plumbing work. Contractors Fritz & Kean; amount $1,225; rough work done $450; completed $450; balance $325, 35 days.

Sacramento nr Baker. 2-story frame; owner H. C. Holmes; architects Armitage & Wilson; contractor C. B. Green; cost $3,225; filed May 21; amount 60 days

Payments, when enclosed $800. brown mortar on $800; completed $800; balance $825, 35 days.

Second cor Stevenson. Grading contract preparatory to erection of a 5-story brick building; architects Percy & Hamilton; contractor L. B. Sibley; cost $2,000.

San Jose Ave. nr 24th. Additions. Day's work cost $3,500.

Stevenson nr Ridley. 2-story frame (flats); owner Wm. Kilday; contractor P. Lynch; cost $2,919; filed May 31; limit 80 days.

Payments, framed $800; brown mortar on $700; white mortar on $689; balance $730, 35 days.

Steiner, bet McAllister and Fulton. 2-story frame; owner N. Iverson; architect Schmidt & Shea; contractor P. O. Chandler; cost $4,370; sureties L. Triebel, H. Bennett, E. Aigeltinger; filed May 22; limit 90 days.

Payments, roof on $800; brown mortar on $800; completed $870; balance $1,100, 35 days.

Twelvth, bet Howard and Folsom. One row of four flats and one row of 12 flats; owner E. P. White; architect J. H. Littlefield; contractor A. McDonald; cost $26,628; sureties J. J. McKinnon, B. Joost, filed May 15; limit Oct. 10.

Payments, 75 per cent. as work progresses and balance in 35 days.

Painting contract let to Gus V. Daniels; amount $2,840; payments as above.

Turk bet Leavenworth and Hyde. Alterations; owner E. A. Denicke; architects John & Zimmerman; contractors Schutt & Krecker; cost $,580; filed May 23; limit July 14.

Payments, brickwork finished $500; rough mortar on $680; balance $400, 35 days.

Tenth cor Harrison. 2-story frame; owner Jas. Fitzgerald; architect C. J, Devlin; contractors Moore Bros; cost $3,138. sureties J. F. Kennedy, J. W. Fountain $3,000; filed May 26; limit 70 days.

Payments, ready for plastering $700; plastering finished $800; ready for painting $550; completed $300; balance $788, 35 days.

Tenth, bet Mission and Howard. Owner Howard St. Cable R. R. General reconstructions; architect J. J. Clark; contractor J. G. Adams; cost $10,000.

Twenty-Sixth nr San Jose ave. Additions. Cost $800.

Twenty-First nr Valencia. Additions. Contractor Elam. Cost $1,800.

Twenty-Seventh n Dolores. 1-story frame Cost $2,000.

Twenty-Fourth, cor Florida, additions. Owner, P. Casey; architect, B. J. Clinch; contractors, Doyle & Son; cost, $2,749; Filed June 2; limit 60 days.

Payments, brown mortar on, $1,000; completed, $1,000; balance, $794, 35 days.

Union and Leavenworth. five 2-story frames; owner R. Demora; architect W. Mooser; contractor G. Roccoa; filed June 1; limit 110 days.

Payments, when framed $3,800; roof on $3,800; rough plastering finished $3,800; white mortar on $3,800; completed $3,800; alance $6,000, 35 days.

Union, bet Webster and Fillmore. Frame building. Owner, John Muldoon; contractor, Geo. H. Walker: cost, $1,700; filed, June 4, 1888; signed, June 1, 1888; amount of bond, $1,500; sureties, C. Dix.

1st, when the building is enclosed, $550; 2d, when the building is brown coated, $550; 3d, payment when completed and accepted by owner.

Van Ness Ave. nr Washington. 2-story, attic and basement frame; owner E. N. Torrey; architects Macy & Jordan; contractor J. N. Kelly; cost $20,000.

Van Ness Ave. cor O'Farrell. Additional contract on St. Mary's Cathedral; architect T. J. Welsh; contractor W. Cronan; cost $16,000.

Valencia, bet 25th and 26th, 2-story frame. Owner, M. McKenna; architect, M. T. Welsh; contractors, J. B. Taubman & R. Armstrong; cost, $4,764; surety, C. S. Holmes, $4,764; filed June 1st; limit 80 days.

Payments: all framed, $1,000; brown mortar on, $1,200; completed, $1,200; balance, $1,364; 35 days.

Washington bet. Van Ness and Franklin, two-story, basement and attic frame: owner, Chas. Hirsch; architects Kenitzer and Kollofrath, contractor, C. Chisholm; cost, $8430; securities C. S. Holmes, F. P. Latson $7000; filed May 17; limited Oct. 1.

Payments; frame up $1000; brown mortar on, $1700; ready for painting, $2000; completed $1620; balance, $2100, 35 days.

York bet 22d and 23d. 1-story frame; owner H. Nelson; contractor H. Munster; cost $1,160; filed May 16; limit 60 days.

Payments, brown mortar on $600; completed $560.

COUNTRY BUILDING NEWS.

HAMMERING AWAY IN SAN JOSE.

New Buildings Now Going Up in Different Parts of Town.

[Special to the California Architect.]

The Independent Mill and Lumber Company is furnishing material for the following new buildings in San Jose:

Three modern cottages on the corner of Sixth and Empire streets, which Mr. Hill, the contractor, is putting up for M. Madden after designs by J. O. McKee.

A cottage in the Willows for Moses Wingate, for which A. Kelsey is contractor.

J. A. Boulware's modern cottage on St. James street, near Seventh; T. P. Ownby, contractor.

Improvements and additions which Mr. Shrimplin is having done to his residence on South Fifth street, under the direction of P. Pigot, the contractor.

The Alameda Mill reports among the new buildings of the week Mrs. Ingles' modern cottage near the Willows, for which F. Newhall is the contractor.

Wm. Wallace's cottage on St. John near Tenth street, W. S. Boyles, contractor. This mill is also furnishing a large smount of lumber to E. B. Saunders, who is engaged in making tanks for wineries.

The Garden City Lumber Company is furnishing material for Baltz' Hotel, a large two-story building with twenty-five bedrooms, for which J. D. Stewart is contractor.

The Stock store on First street, Mr. McIlvain contractor, in which a new front is being put with large plate glass windows.

James Hurler—A cottage on Orchard street, A. Kelsey contractor.

A cottage for L. Jacobus on Colfax streer which is being put up by day work undet the supervision of the owner.

Two cottages on Delmas avenue for T. J. Gillespie by day work.

A two-story mansion near the Infirmary for W. E. Lewis, erected by day work.

Also, near the Infirmary, a two-story residence for A. W. Elliott, which is building by day work.

A cottage on Park avenue, for which W. B. Mitchell is the contractor.

A residence on Balbach street, near Orchard, for Mr. Dulton, the butcher, S. Folsom, contractor.

A modern cottage on Fifth street for Mrs. Palmer, which is being erected by day work with J. D. Stevens as superintendent of construction.

The mill is also furnishing the matetial for a handsome barn at Los Gatos, of which J. W. Lyndon is the owner, and Mr. Carhart the contractor.

The Santa Clara Valley Mill and Lumber Company is furnishing the material for the following new buildings:

A two-story Queen Anne cottage designed by Jacob Lenzen, architect, for J. W. Kimberlin of Santa Clara. Fuller & Ashbrook are the contractors, and the cost is estimated at $6,000.

An East Lake cottage at Los Gatos for W. H. D. Trantham, which will cost about $1,600. Mr. Lobdell is the architect of this building, and the contract was awarded to B. L. Wallace.

A cottage on San Carlos street between Second and Third, which is being put up by William Curtis, the contractor. The cost of the building is estimated at $3,000.—*S. J. Herald.*

FRESNO IMPROVEMENTS.

[Special to the California Architect.]

No person can estimate the rapid develpment of Fresno unless they take a walk or a drive, around town and the suburbs. There are no less than 250 mechanics and assistants now busily engaged in erecting buildings of various dimensions. Brick-layers $4 to $4.50 per day. Capenters, $3 to $3.50 per day and hod-carriers and mortarers $2.50. None are idle and times are good. Give the laborer plenty of work and good wages and the retailers are at once happy and the wholesaler has his bills promptly met.

There are three fine residences in course of construction in the northeast part of the city. The Fresno bank will build at the corner of J and Tulare street as soon as the specifications are complete. Mr. Thompson is erecting a two story house for two stores and offices, next to the *Expositor* on J street. The new building opposite the new hotel, corner I and Tulare street and a second story is being added to the stores on I street. All denotes prosperity and a demand for more room. The plans for the hotel on I street have been rejected and it is believed that a premium will be offered for competitive plans. The hotel will cost $75,000 and will be under the I street Improvement Company.

PETALUMA.

A. B. Hill has commenced the erection of a handsome cottage on Seventh street. E. D. Hedges has the contract.

NEW HOTEL.

The hotel at Bakersfield, the contract for the erection of which was secured by W. H. Doherty, of Tulare, will be an imposing affair, costing $75,250. Mr. Doherty also secured the contract for building the new and and elegant hotel at Visalia.—*Tulare Standard.*

A NEW JAIL FOR SANTA ROSA.

Last Friday the Board of Supervisors passed an order anthorizing the Clerk to advertise for three weeks according to law the intention of the Board to purchase for public use the lot on the corner of Third street and Hinton avenue of A. B. Ware for $10,250. The purposes of the purchase are to secure land upon which to erect a county jail. The situation of the jail at present proving very damaging to the remainder of the court house building on account of the offensive odors necessarily arising from such an institution, and the demand for a larger room for the Hall of Records have caused the Board to take this action. It is the intention to tear out the old jail and fit up an office there for the County Recorder. The Board has been considering the proposition for some time, and with $160,000 in the treasury can afford to erect a substantial building.

Work has commenced on the Santa Rosa depot of the Santa Rosa and Carquinez railroad. About twenty carpenters are employed.

PUGET SOUND.

Seattle, W. T.—In speaking of the new mill about to be built at Point Defiance near Tacoma, the other day, J. R. McDonald, president of the Satsop Railroad Company, and one of the prime movers in the new concern, said that the Satsop Railroad Company has not by any means given up its idea of building a mill of its own. Ever since the owners of the Satsop Railroad Company became extensive timber owners they have been figuring on the proposition of building a mill as fine as any on Puget Sound. They have procured one site, and are now nogotiating for the purchase of another near this city. The reason why the building of the mill has been delayed from time to time is that the company has always found quick sale for its logs at good prices. It felt that it did not need a mill as long as those conditions prevailed. Mr. McDonald thinks that the company will surely build within a year. A large exporting mill would add very materially to the business activity of this city.

The Hon. Matthew J. McElroy, member of the late legislature for Skagit county, has been selected by the Puget Sound Loggers' Association to serve them in the capacity of assistant secretary, which means that he is to do all the work connected with the office and let some other fellow have the glory. It is generally conceded that the loggers could not have selected a man better equipped to fill that office. Mr. McElroy is already at work collecting information for the use of the loggers.

Waldo Avery, of East Saginaw, Mich., was in this city about a week ago. He came in one day and vanished on the following night, so that only one of the colony of Saginaw people in this city caught a glimpse of him. He explained his sudden departure in a subsequent letter, and added that he would return in the course of another month. It is said that Mr. Avery is on a search for good timber lands, both for himself and other Michigan people.

Very similar is the object of the visit of two lumber men from LaCrosse, Wis., who are now in this city. They are W. D. Fox and A. Gile, and it is safe to say that they will carry home with them the deeds to a few sections of Puget sound timber lands.

The Hon. R. A. Case, member of the late legislature from Asotin county, has purchased a little island at the mouth of the Puyallup river, near Tacoma. The tide about covers the island at high water, but Mr. Case is about to have the Blue Mountain Lumber Company, of Asotin, to move its saw mill to the island. In that case the lovely little island will be transformed into one of the lively spots on the sound.

James W. Currie, the logger, said last Wednesday that he thought the organization of the Puget Sound Loggers' Association was the most opportune thing that has occurred in lumber circles on the sound for a long time. The loggers, he says, do not propose to be aggressive, but they are now in shape to be firm, and to insist upon justice being done them.

The long delay in starting the actual work of construction on the Seattle & West Coast Railroad has been a source of great disappointment to the Seattle people especially, and to the people of the territory at large. But that disappointment is all dissipated now. The Seattle, Lake Shore & Eastern people have taken hold of the new road, and construction will be pushed immediately. The road will be completed to Snohomish, 13 miles distant, by May 15th. The grading is nearly finished that far, and the rails are now on hand, as are also funds in sufficient quantities. No one class of people is more pleased at this prospect than the lumbermen, who realize the full value of such a road running through valuable timber lands.

The Gig Harbor Lumber Company has filed articles of incorporation with the territorial secretary, at Olympia. The principal place of business for the new concern is at Tacoma. The capital stock is placed at $100,000, and the objects set forth are to carry on a general lumber and logging business. The incorporators are Francis Hall, Ozro Fobes and Ira A. Town, of Tacoma, W. T.; and E. S. Prentice and J. H Parker, of Albert Lea, Minn.

The Oregon Improvement Company is fast completing its long wharf to deep water when it can begin in better shape the exportation of lumber on a large scale.—*N. W. Lumberman.*

BUILDING PROGRESS IN LOS ANGELES.

(Special to the California Architect.)

The activity in the construction of buildings in this city has given rise to much comment, and is constantly surprising visitors who come expecting to find the progress of the city as effectually stopped, as it is in other sections of the country. It is considered as one of the most promising and encouraging signs of the prosperity of the future that so much money is being placed in improvements, which, for the most part, are substantial and solid. It is a sign that the crisis, upon which the city wavered when it was uncertain whether it would remain an interior town or to become a great metropolis, has passed, and that the people have decided in favor of the latter, and are making haste to supply the want created by their delay. For a long time building was confined to residences and these spread rapidly in every direction until it became evident that the business interests of the city demanded proper accommodation. The stores which were sufficient for the city two years ago were found to be inadequate for the increased population, and there was a demand for more than double the number then in existence. Professional men could not find offices, and private dwellings were impressed into service, and even then there was not a sufficient supply for the demand. It was at this time that property owners decided that the tide of immigration had been turned Los Angelesward never to be stayed and that they were perfectly justified in investigating their money in permanent improvements in the shape of business block. The start was made and one after another followed the leader until to-day there is not a block in the business portion of the city but which contains new and handsome buildings, either just erected or in the course of construction. Millions of dollars have been spent and many millions more have been placed in bank to pay for these improvements, and the end is not yet, nor will it be until Los Angles has become entirely transformed, until all of the old one and two story buildings have been torn down and replaced by structures of five or more stories, until Los Angles, Main, Spring and Fort streets from one end to the other are lined with as costly architecture as graces any metropolis in the United States, and at the present rate of progress, this state of affairs will exist inside of the next half decade.

The building of business blocks does not interfere with the erection of dwelling-houses, and every day the vacant spaces between residences are being filled with cottages and houses of pleasing and picturesque design; and yet when another season rolls around the demand for more will be as great as it is at present.

There are so many improvements in progress that it is almost impossible, without the employment of an army of men, to give a complete list, but the following will give an idea of what is going on in the building line:

BUSINESS BLOCKS.

Hotel Splendid, corner of Tenth and Main area covered, 300 by 332 feet; 7 stories, brick and stone; to cost when complete, $1,000,000.

County Court House, corner Fort and Temple; to cost $500,000.

City Hall, Fort street, near Third; to cost $250,000.

Government Building, corner Main and Winston; to cost, when complete, $300,000.

Southern Pacific Railroad Depot, Fifth and Alameda streets ;to cost $200,000.

Atchinson, Topeka and Santa Fe Depot, First and Sante Fe streets, $100,000

Los Angeles Cable Road, 3 engine-houses and twenty miles of track; $1,500,000.

Temple Street Cable Road extension; $65 000.

Los Angeles Water Company, improvements in service; $75,000.

Philips Block, corner of Franklin and Spring; $250,000.

Newark Block, corner Spring and First; $100,000.

Bryon & Bonebrake Block, corner Spring and Second streets: $225,000.

Burdick Block, corner Second and Spring Sts.; $150,000.

Young Men's Christian Association Block; Fort near Second; $150,000

J. M. Griffith Block; Fort street near Second; $200,000.

E. B. Millar, Spring street; near Second; $100,000.

Burbank Opera House, Main street; between Fifth and Sixth; $150,000.

Addition to Grand Opera House; $30,000.

O'Neal Opera House, Spring street between Second and Third streets; $65,000.

Lan Franco Block, Main street near Requena; $75,000.

Vickery Block, corner of Main and Sonora streets; $70,000.

I. N. Van Muys Block, Main street between Third and Fourth street; $50,000.

Lankershim Block, Maine, corner Winston; $40,000.

Crocker Block, Fort street between Second and Third streets; $60,000.

Spence Block, Fort, street, near First street; $15,000.

Post Office, Fort street between Sixth and Seventh; $55,000.

Freeman Block, corner Sixth and Spring streets; $75,000.

Panorama, Main street, near Mayo; $30-000.

W. C. T. U. Block, Temple street, corner Fort; $50,000.

Foy Block, Spring street, between Second and Third; $8,000.

Brown Block' Spring street, between Seventh and Eighth; $15,000.

Barker Block, Spring street, between Fourth and Fifth; $30,000.

Jadoby Block, corner Second and Main (Temporary); $15,000.

Macy Block, corner Macy and Upper Main; $25,000.

Tononi Block, corner Upper Main and Water; $57,000.

Weid Block, corner Eighth and Main; $20,000.

Norton Block corner Seventh and Bill; 5,000.

Pease Block, 535 North Main street; $20-000.

McGarvin & White Block, Spring street, between Second and Third; $18,000.

Jones Block, between Third and Fourth, on Sprinig; $15,000.

City Water Company, corner Marchessault and Alemeda, $12,000.

Philips Block, Los Angeles street, near First; $95,000.

Celestine Block, Los Angeles street, near First; $30,000.

Orphans' Home cor. Virgin and Yale; $60,000.

J. J. Smith, Olive, between Fifth and Sixth; $15,000.

Abstract Title Co. corner New High and Franklin; $54,000.

Simpson Tabernacle, Hope street; $50,000.

Wm. Lacy, Downey Avenue, near bridge; $25,000.

Fullerton Bros.; Fourth near Hill; $10,-000.

Dr. Spinks, Hill and Fifth streets, $15,-000.

Total business construction, $9,454,000.

A visit to sixteen architects resulted in ascertaining that residences and private dwellings now in process of building in the city amount to about $2,500,000.

Besides these the plans are being drawn for about as many more, and the total summed up is as follows:

Business improvements,	$6,454,000
Residences, "	2,500,000
Improvements projected,	2,250,000
—*L. A. Herald*	$11,200,000

THE RAILROAD OFFICES.

Progress of Important Work at Fourth and Townsend Streets.

Information was imparted to a *Call* reporter yesterday, which, to a certain extent, settles the question of the possible removal of the general offices of the Central Pacific and the Southern Pacific Railroad Companies, or the Southern Pacific Company at Fourth and Townsend streets. The company does not appear anxious for a change of location, for during some weeks past work has quietly but steadily progressed on plans for the remodeling of the general offices at Fourth and Townsend streets, and yesterday morning work was actually commenced on the contemplated alterations.

The plans, so far as could be learned yesterday, call for the raising of the roof of the entire building and the construction of another story, which is to be finished on the same style as the other floors of the building. Some time must be spent on the preparation of stages for the removal of the heavy cornices and the determination of the number of frames, screws and other appliances needed to raise the roof without damage, and this preliminary work was commenced yesterday morning. The company owns the block or all except a very small portion of the block bounded by Fourth, Fifth King and Berry streets, which it now proposed to cover with immense freight sheds.

There are now two brick warehouses on the block, one used by an oil company for the storage of petroleum, the other being the King-street grain warehouse, covering about a quarter of the block, which now contains about 7000 or 8000 tons of grain. The lease of the grain warehouse people expires shortly, and this great brick structure, with the oil warehouse, will be torn down to make room for the new freight sheds.

One of the sheds is now well under way. A force of fifty men is engaged on it. The surfaced floor has been laid for the entire length of the shed, the stanchions and roof timbers are all in place, and the corrugated-iron sheeting is being put up on the sides. The ends of the sheds and the roof will be of corrugated iron. The shed now going on to completion is 60 feet wide and 640 feet long. The second shed on the other side of the block, upon which work has also been commenced, will be 75 feet wide and 680 feet long. Between these two sheds four lines of track will be laid. One of the sheds will be used as a freight-receiving depot, and the other for discharging. On one corner of the block a derrick platform is being constructed for the receipt of heavy machinery. All of this work it is proposed to complete as speedily as possible, and from present indications it all will be finished before the beginning of the winter season.

NEW SCHOOL HOUSE AT RIVERSIDE.

Yesterday the contract was let for the Building of Riverside's new school house on the corner of Fourteenth and Walnut. The carpenter work was let for $10,350, and the masonry fo 25,298. The entire structure, when completed, will cost in the neighood of $65,000.

S. B. Robinson has the contract for the carpenter work, and Alguire & Downs for the masonery. There are to be eight study rooms, recitation rooms, assembly rooms, basement, gymnasium, office etc., and will have accommodations for 500 pupils. It will have all the modern appliances, being connected with the sewer system of the city, and when fully finished will no doubt be one of the most complete school edifices in the State.

NEW SCHOOL HOUSE AT PETALUMA.

The bids for building the new schoolhouse were as follows: Ed. D. Hedges, $13,189; A. Walker, $13,041; Wm. Camm $12,925; James Kill, $12,900. As the school Directors have but $12,000; in available funds to be used at present, it will be necessary to alter the plans or in some other way reduce the cost of their limit.

Ed. Building News:—Mr. Lowell is putting up two more handsome cottages on his block on M street. One good feature of them, which we hope to see generally adopted in dwellings that may hereafter be built, is a brick foundation. The usual wooden supports under the buildings have nothing to commend them. The upper part of a redwood tree has no durability whatever, and it quickly rots in situations the least exposed to dampness. And of such is about one-fourth of the redwood lumber in the market. The proportion of this used under buildings soon gives way with troublesome consequences. Better have a foundation, the permanecy of which is unquestionable, at once.—*K. C. Cal.*

MINTURN.

Architect La Romer, of Stockton, is drafting plans for a winery building to be put up at Minturn, Fresno county, by the Sierra Vista Vineyard Company. The structure is to be erected by James Brown. It will be 90x250 feet in ground dimensions and two stories high in the center. It will have a capacity of 500,000 gallons. There will be two crushers. Besides the main winery building there will be an engine room, a distillery and a storage warehouse for brandies. The sum of $25,000 is to be expended this year at Minturn.

SAN BERNARDINO.

Messrs. Jones & Griffith are preparing plans for a building 50x80, for E. Somers, to be erected on the corner of E and Second, will be two stories high, and to cost about $12,000.

Mr. T. H. Goff, one of this city's best architects, is engaged in drawing plans and specifications for a fine new residence, to cost about $8,000, for Judge Rowell. It will be built on the west side of E street, between Fifth and Sixth.

SEATTLE, W. T.

Wm. Gross is about building four residences on Sixth and James streets.

A new saw mill is being erected at Edmund's, fifteen miles north of this city, on the Sound. It will be supplied with the best and latest machinery, including band-saws and a 100-horse power Corliss engine, the only one on the Sound. The capacity of the mill will be about 50,000 feet daily.

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NEW ORLEANS LOUISIANA: { NOVEMBER 10, 1885. MARCH 31, 1886.

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[ATTEST] CHARLES TURRILL, Commissioner.

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B. D. WOOD. Director General.

THOS. WOODWARD, Chairman Committee on Awards

SAN DIEGO, CAL., FEBRUARY, 18, 1888.

T. W. PETERSEN & CO.

DEAR SIRS:

I send you by mail, Diploma awarded you by the North, Central and South American Exposition, for your display under my charge.

Kindly acknowledge receipt in enclosed envelope.

Very Respectfully

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The above diploma was given to the firm mentioned, for the best display of PRESSED BRICK, at an Exhibition that attracted world wide attention. Mr. PETERSEN has made a special study of Kiln burning, so as to have all the bricks of an even color. We have seen car-loads of bricks, delivered in this City, and the uniform color pervading the entire lot was such as to attract more than ordinary attention from those around. MR. PETERSEN absolutely guarantees that every brick is perfect. If edges or corners are broken, he doe not allow them to leave the depot. Any one ordering brick from above firm, can rest a that they will obtain the very best Brick there is made in California. San Francisco address is Townsend St. between 6th and 7th. San Jose, P. O. Box 187.

Lumber Market.

Pine, Rough, per M feet	$22 50
Pine, Rough, No. 2	18 50
Pine, Rough, 41 to 50 feet lengths	23 50
Pine, Rough, 51 to 60 feet lengths	24 50
Pine, Rough, 61 to 70 feet lengths	25 50
Pine, Selected	26 50
Pine, Clear	33 50
Pine, Fire Wood	10 00
T. & G. Flooring, 1x6	35 00
T. & G. Flooring, 1¼x6, 1x4, 1¼x4 and carrower	40 00
T. & G. Flooring, No. 2	29 50
Stepping	45 00
Stepping, No. 2	32 50
Redwood, Rough	22 50
Redwood, Rough, No. 2	18 50
Redwood, Surfaced	37 50
Redwood, T. & G. 6 in., 12 feet and over	34 00
Redwood, T. & G. 6 in., 7 to 11 feet	27 00
Redwood, T. & G. 6 in., under 7 feet	24 00
Redwood, Rustic	38 50
Redwood, Rustic, No. 2	32 50
Redwood, T. & G. Beaded, 12 feet and over	37 50
Redwood, T. & G. Beaded, 7 to 11 feet	28 00
Redwood, T. & G, Beaded, under 7 feet	25 00
Redwood, Siding, ½ in	25 00
Pickets, Fancy	26 00
Pickets, Rough Pointed	20 00
Pickets, Rough Square	18 00
Shingles	2 50
Laths, 1¼	4 00
Laths, 1½	4 50
Furring, 1x2, per lineal foot	01
Battens, ½x3, per lineal foot	01
Nails, for 10 d	2 90
Lime, per bbl	1 40
Cement per bbl., according to brand	$2 50 to 4 50
Brick, per M	$6 00 to 11 00
White lead, per lb	06

Linseed oil, 50 cents per gallon in bbl, 2½ cent addtional for boiled.

CARPENTRY MADE EASY.

By Wm. E. Bell, a practical mechanic, who fully appreciates, from personal experience, that there are many things perplexing to understand and difficult to do until they are fully explained and tested. It is designed to make the science and art of carpentry clear and comparatively easy to all who require information on the subject. Price, $5.00 by mail, prepaid.

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Ackerman, C. H.,	215 Kearny.
Adams, J. G.,	407 Broderick.
Bateman Bros.,	S. W. Post and Scott.
Binet, Jos. L.,	325 Fair Oaks.
Blake, John,	1138 17th.
Brennan Bros.,	618 Eddy.
Bruce, John,	2407½ Howard.
Buckley, Frank,	1111 Devisadero.
Burpee & Hudson,	836 29th street, Oakland.
Burrell, A.,	22 California.
Chisholm, Chris,	330 Pine.
Chisholm, Dan,	110 Chattanooga.
Chrichton, P.,	109 Baker bet Page and Oak.
Christy, Chas.,	828 Kirkham, Oakland.
Classen, J. C.,	232 Francisco.
Commary, Wm. T.,	504, Hayes.
Conrad, H. A.,	625 California.
Chandler, R. O.,	1210 Pierce.
Day, J. G.	S. n Diego.
Day, Thos. H.,	1012 Devisadero.
Dryer, Bernard,	4 Collingwood.
Dunshee, C. E.,	417 Ridley.
Ellis, B. F.	999 Chestnut.
Farrell & Bell,	828 Union.
Fish, J. W.,	836 Valley.
Fitzpatrick, A. G.,	411 Twenty-second.
Fletcher, W. M.,	Los Angeles.
Geary, James,	2324 Sutter.
Gillespie, G. G.,	1503 Devisadero.
Gonyeau, J. B.,	33 Hardy.
Grant, John T.,	22 Turk.
Gray & Stover,	1310 21st.
Greene, E. B.,	34 Hawthorne.
Greene, S. T.,	San Diego
Griffin, P.,	20 Russ.
Hoffmann, Victor Jr.,	5154 4th.
Hatch, H. E.,	1717 Chaste, Oakland.
Hurlbut, R. P.,	115 California avenue.
Irwin, James,	908 16th.
Ingerson & Gore,	971 Broadway, Oakland.
Jackson, A.,	12 Middle.
Keenan, Hugh,	219 Scott.
Kent, S. H.	711 Leavenworth.
Kern, F. W	118 Fair Oaks.
Kincaid & Thompson,	730 Seventeenth.
Klahn, Aug.,	5 Chenery.
Klatt, F.,	814 Twenty first.
Klein, Jacob, 24	Lilly avenue.
Kreger, Wm. B.,	801 Guerrero.
Knaus, B.,	536 Fulton.
Lang, Geo. R., E. 14th St. & 14th Ave.,	Oakland.
Leonard, Jos. A.,	Alameda.
Langstaff, Wm.,	647 Jessie.
Mahony Bros.,	307 Van Ness.
Maher, J. W.,	105 Precita avenue.
MacDonald, Allen,	1303 Buchanan.
Martin & Maguire,	135 Gough.
McCann, Richard,	217 Waller.
McElroy, A.,	373 Jessie.
McInerny, James,	Hancock and Noe.
McKay, Jas. H.,	124 Main.
Mead, W. H.,	246 Minna.
Mecredy Bros,	Church, bet 17th and 18th.
Miller, Adam,	23d and Bryant, 516 Kearney.
Moffit, Thos.,	Victoria.
Moore Bros.,	252 Octavia and 1 Russ.
Norton, A.,	1331 Ellis
Parker, R.,	527 Grove.
Plums, Wm.,	3109 Sacramento.
Quinn, Charles,	133 Oak.
Rebman, J.,	Los Angeles.
Riddell, Thos. C.,	16 Twelfth.
Robertson, John,	San Rafael.
Rohling, Henry,	14 Collingwood.
Steinman, F. V.,	423 Bush.
Simpson. R. F.,	326 Telegraph Av., Oakland.
Smilie, Robt.,	1125 E. Third Av. East Oakland.
Smith, James W.,	1220 Eddy.
Sullivan, Timothy,	20 Laskie.
Terrill, Chas. C.,	617 Seventeenth.
Thompson & Moar,	338 Golden Gate Av.
Waterbury, C. S.,	1322 Scott.
Wharff, Wm. H.,	Green and Laguna.
White, O. E.,	879 Seventeenth.
Wilcox, J. R.,	608 Willow Av.
Williams, F. A.,	545 Natoma.
Willis, A. A.,	30 Diamond.
Worden, S. G.,	1013 Valencia.
Zwierlein & Pavel,	421 Bush.

Practical Geometry	1 00
Cottage and Farm House, Woodward	1 50
Country Homes, Woodward	1 50
Lumbermen's Hand Book	2 00

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, JULY 15, 1888.

Weekly Building News.

Having received a great many letters in regard to the establishment of the WEEKLY BUILDING NEWS, we desire to make the following statement: When the design was first formulated to give to those interested a weekly digest of building news from every portion of the coast, it was supposed that enough subscribers could be obtained to support the same without the necessity of inserting advertisements. The management was satisfied if expenses were cleared for the first year. The encouragement received was not such as to warrant its publication, unless advertisements were inserted. So the management determined to withhold publication for a while, and in the meantime secure a competent corps of canvassers, through whose aid at least four pages of advertisements will be obtained. It is the intention to have the Weekly eight pages instead of four as it at first appeared, one half of the space to be devoted strictly to building news, and the other half to advertisements connected with the building interests. It will be enlarged from time to time as building activities will warrant. We make this full explanation in behalf of the management, as some parties have ungenerously endeavored to disparage the undertaking and have made remarks utterly beneath those who aspire to be in the front ranks of journalism. Over 1500 copies will be printed and distributed each week and special arrangements will be made to have them delivered where they will do the most good.

The Chapter Meeting.

The proceedings of the last Chapter meeting, given elsewhere in this issue, should be read by every one connected with the building interests.

Subdivisions of the House.

The manner in which the interior of the human dwelling has been evolved or set apart to different uses forms a curious department in the history of civilization. When man has felt a need he has endeavored in some way to supply it. Even while he was still half wild beast he was obliged to have a shelter from the elements. This satisfied, he lived for unnumbered ages with his family or tribe crowded in a single room like animals gathered in a pen or fold. A sense of delicacy, with a longing for comfort, caused the construction of the bedchamber, a desire for convenience of the kitchen, the need of quiet and retirement of the study and the disinclination to admit occasional guests to the intimacy of the household, or the wish to have a chamber where friends might be assembled and which might represent the elegance of the mansion, of the parlor, or as the French now call it, the salon. The word "parloir," (room for speaking or conversation) from which we get the English word "parlor," is still found in French dictionaries, but has been banished from Paris and other large French cities to the most rural part of the provinces.

The word "chamber" was by the French originally applied to nearly every subdivision of the house, the parlor and dining-room included. Now they use it merely to indicate the sleeping-room. Its original usage survives in the phrases, "Chamber of Deputies," "Chambers of Commerce," and some formal modes of speech. The word "apartment," used in English to express the different rooms of a house, means in France an assemblage of rooms sufficient for the need of a family.

Of all the rooms of a family mansion the bed chamber has the most interesting history, not mearly that it has been the ordinary scene of births and deaths, but for social and political reasons. Let us take France for instance as the most pertinent illustrations of the subject. Three hundred years ago all occupations of life were performed in a single large room which formed a great part of the mansion. Here were found the master of the house, his family and the servants engaged in their various occupations. Here the head of the family carried on his literary labors if he was a man of learning, while the woman of the household spun and wove, and the male domestic cooked or performed other menial duties. This was the rule, to which sometimes, in the case of kings and noblemen, there were exceptions. But even a king's bedchamber was not kept private. The monarch generally had two, one where he could take, if he insisted on it, a good honest sleep, and which was of moderate dimensions, and the other a state bedchamber where he held audience, where his rising in the morning and his going to bed at night were in the presence of a crowd of lackeys and courtiers. He was not allowed to die in his private bedchamber, although he could pass there a part of his fatal illness. When his end was evidently at hand he was carried into the large chamber called "chamber of parade," placed in its magnificent bed and permitted there to draw his last breath in the midst of as many of his courtiers and aristocratic subjects as could gain admission. It was because the bedchamber was so public during the Middle Ages that it was so handsomely decorated and that the bedstead became a work of art, many specimens of which are preserved in European museums. In old engraving the king is represented attending to affairs of state in a bed surrounded by his Ministers and parsons of the Court, and great queens partaking of their meals in their chambers, as was the custom, the bed on one side of the room, the table on the other.

It was while the Bourbons were on the throne that the bed and bedchamber achieved their greatness. Here Louis XIII used to receive and converse affectionately with those whom he intended to turn over to the tender mercies of his Minister Richelieu. Here Anne of Austria, when regent, received her Ministers and her distinguished guests. During the reign of Louis XIV the cerimonial attending his getting up and going to bed became ridiculous. To be permitted to assist at the making of the King's toilet in the morning was considered one of the greatest honors that could be accorded to a courtier; to be allowed to take part in the adjustment of the royal shirt, a distinction to be handed down as a tradition to one's own posterity.

As late as 1750 princes and even honest burghers received in their bedchambers. It was during this epoch that the queens of society received in bed. Mme. De Maintenon received the court before she was out of bed in the morning. Women connected with the French Kings by less honorable ties received the homage of their numberless flatteries in the same manner without shame or without seeming ridiculous in the eyes of those who sought to profit by their influence near the throne.

The first salons in French houses only date back to the end of the seventeenth century—that is, to about 1680 or 1690—and the first dining rooms only to 1750. Up to that period the rich had eaten habitually in the rooms where they slept. As for those in moderate circumstances and the poor, they still lived, cooked, slept and received their friends in the same apartment, or if they had a separate bedroom it was no more than a closet or a hole in the wall into which they forced themselves with difficulty.

In England as on the Continent the bedchamber was evolved in much the same manner. There was originally the central hall occupying the body of the castle or mansion, where everybody lived in common and every household office was performed, except perhaps the cooking, which might have been relegated to an outhouse. After the evening meal, which was taken with copious libations, the greater part of those present fell to the floor dead drunk and slept in the straw or rushes that covered it till morning. What bedrooms there were were made by hanging pieces of tapestry or other drapery across the corner of the room or over some alcove or recess in the wall. In time these transient screens became permanent partitions. In houses where the architecture became later more elaborate the alcove in which the bed was placed might be flanked by pillars which served as the support of rich curtains. All this refers to the sleeping-rooms of the Middle Ages, and a period comparatively modern. The Greeks and Romans slept, as any one can see at Pompeii, in little stone rooms that were no larger and not nearly so well ventilated as the cells of an American penitentiary.

In the seventeenth and during a greater part of the eighteenth century no parts of a palace were well warmed, least of all the doors and windows were not well made, and the magnificient fireplaces, of which many specimens are extant, served only to grill one side of the person, while the other was benumbed with cold. This is, perhaps, one reason why so many of the fine ladies of the early part of the last century received in bed. It was quite as convenient and far more comfortable for themselves, while as for their guests, who were often persistent and annoying, they would become tired and leave the sooner.

From this account of the gradual division of the dwelling into rooms it will seen that there was little delicacy and scarcely any comfort, either in England or on the Continent, till the latter part of the last century, or a little more than 100 years ago. There was not much receiving in bed, either of kings or their subjects, after Louis XIV the house existed with all, or nearly all, its modern appointments. There was a separate room for every household function—the parlor, library, dining room, bedchambers, nursery and rooms for servants. It is a king to whom civilization owes much, and whose memory, considering the interest he took in the achievement of our independence should be cherished in America. From the first hut made by the savage man by drawing down the branches of a small tree on all sides and plastering it over, with mud there is, let us say, to the house of the American gentleman of to-day, what a distance! It represents the whole sum of human achievement, the entire development of man's faculties of his intellectual needs, his refinement, his self respect, in short, the best that is in him in sentiment, in moral aspiration. There is in the American house—let us say palace—an excess of luxury that may not always be desirable, and apartments, such as smoking and billiard rooms, which were unknown even in the mansions of France in the epoch of Louis XVI. This princely residence has been evolved from the colonial period, when there was a bed in the front room, another bed in the "keeping room," where the family table was spread, and beds also in other rooms, if by good fortune the house was further subdivided. The enlargement of the house came first in the Northern States. In the Northern States the bed is still a conspicuous object in all houses except those of the rich, the peculiarity being due in part to the absence of an entrance hall, which represents in its scanty dimensions the hall of the castle in which the old baron held wine and wassail.

The houses are built so close together in Atlanta City, that women can borrow kettles and flat irons through the windows without going out-doors.

San Francisco Chapter, American Institute of Architects.

The regular monthly meeting of the Chapter was held in the rooms of the Art Association on July 6th. W. P. Moore, vice-President, was in the chair. The following members were present: W. P. Moore, G. H. Wolfe, J. J. Clark, A. Pissis, J. E. Wolfe, W. J. Cuthbertson, R. H. Daley, H. T. Bestor, M. J. Lyon.

After the routine business was disposed of, the special committee on Competitions reported that as yet they had come to no definite conclusion. The whole matter in regard to Competitions was then thoroughly discussed by every Fellow present. It was thought that the present was the most opportune time for discussion, owing to the fact that there were two large competitions on hand.

The "Olympic Club Competition" was the one principally discussed, as the remuneration offered for plans was totally inconsistent with the amount of work expected.

(It is generally understood that a certain architect had been selected in the first place to prepare the plans; but on the representations made by three other architects, who are members of the Association, that, being members, they were entitled to have an equal show, it was decided to have competition plans.—Ed. Architect.)

Great stress was laid on the propositions that the main point to be considered was the appointment of a Professional Referee to decide upon the best plan, and, secondly, the successful competitor to be the superintendent, with compensation at full professional, percentage. It was remarked that a committee had been appointed to make the selection. The members of the committee were human, and liable to err, and that was the point most to be feared, as the committee's decision, even if palpably wrong, was nothing but an error of judgment.

One member was very emphatic in regard to the liability of committees erring. (The best name to call it is *beforehand fixing.—Ed. Architect.*) The public should be taught the right idea in regard to to the value of an architect's services. Examples in the past show conclusively that the whole system of competitions is a fraud. In fully 90 per cent of the competitions in California, a committee will, through a circular, invite architects to prepare plans, knowing *beforehand* in their minds, that the choice of architects has been decided upon. Reference was made to the Competition in regard to a large public building in this state. Eleven competitors offered plans. Each one presented seven sheets of double elephant paper, representing all the points to be shown, thus making seventy-seven sheets in all to be examined IN ONE HOUR after plans were received by the committee, the award was made, showing conclusively that the successful party had been selected beforehand. No *honest* set of men could have unrolled seventy seven sheets of paper and laid them out on a table ready for a thorough examination in the short space of one hour.

In another case of a church in this city, one of the trustees of the church came to the speaker and told him it was no use for him to send in his plans, as the selection had been made. It is not to be presumed that a church trustee would steal directly money from your pocket, but here was a clear case of robbery in permitting architects to take their time and the money necessary for draughtsmen's services, paper, etc., knowing full well he was throwing away the same.

Another case, where the church committee wanted it distinctly understood that under no circumstances would any plan be considered, the cost of which exceeded $60,000. Some of the competitors, since dead, religiously prepared their plans, keeping that figure in view. The plan adopted by the committee was evidently selected beforehand. The building, when finished, cost $115,000. The speaker inquired by what right had a committee selected the plan, knowing it could not be built for the amount called for, thus, virtually telling several parties who had honestly striven to comply with the requirements of the printed circulars calling for a competition, that they had been asked to present plans merely for a show of fairness, the architect having been decided upon beforehand.

One member thought that the only way to prevent the abuse referred to was for architects not to engage in competitions. This was answered by another member, saying in that case eastern architects would be invited. Another member facetitiously remarked that Stockton has a dose of good eastern architect, and he for one was not afraid of eastern competition.

Another point was brought out in the discussion. Committees would be in a great rush for plans. They *must* be in by the time prescribed, and in many cases, notably the Lick Trust Statuary, keep plans after receiving them for months before giving a decision. This was unjust to the architect who had paid out his money for help and given his own time towards striving for a premium. The architect had a right to know if he was to receive any of the advertised premiums.

The committee was granted further time to make a full report.

One of the members of the committee on the "Registry Book" reported adversely to the proposition made. The matter was postponed until next meeting, in order to hear from the other side of the question.

Adjourned.

A Fair View of the Situation.

While the prosperities in California are no less inflated than they have been, viewed from a building stand-point, they are far from discouraging. The cooling down from a boom condition, to one of natural, permanent and regular character, cannot but produce a changed appearance, and to some extent modify hopes and expectations that had run wild in outreachings after results, that should be waited for with some degree of patience. Eagerness and haste to attain and accomplish ends more rapidly than circumstances warrant, as often end in disappointment as success. The natural laws that govern and control human affairs, will regulate and equalize things; and when pressures beyond the requirements of communities are brought to be enforced, the stimulated and inflated must yield to the resistance that fixes limitations at which human calculation, ingenuity and persistenc must halt.

That overreachings have influenced transactions in the offerings and sales of building lots and lands in the cities and county districts of the state, and their values; and that fortunes have been realized, both by sale and purchse, cannot be denied; but many will have to abide their time when they will be able to obtain present and recent par-investment prices; still the state is solid in every part, with a grand future in prospect. That which has been forced is simply anticipating that which was destined to come to pass in due time. The only question being as to whether it is always, or at any time prudent to attempt to forestall the inevitable, by force of vigorous and shrewd efforts, or to go a little slower, and be patient until the times come when the demand shall equal the supply, and necessities call for an advance.

By all this the building business has been materially affected in several ways. In the inflated localities it has caused vigorous building activities, and large demand for building materials. This has led to advance in prices, not only as to the special localities in which such activities existed, but in all parts of the state. The expansion of market for materials so far enlarged the field of demand, that manufacturers had it all their own way in dictating prices; and so long as this demand continued active prices, however exhorbitant, had to be submitted to because there was no need for competition, as between manufacturers, each and all being able to dispose of their products at ruling rates; hence improvements everywhere, both in the commercial and older cities, and in all the newer portions of the state, have, for a year or two past, cost more than they would have cost when lumber was free on the market, at from three to ten dollars, or more, per thousand less than the prices at which it is now held, and has been for the period named. And while a few dollars per thousand upon the item of lumber alone is not a material factor in the general result of cost of a building, it is nevertheless of sufficient importance and magnitude to deter those who deem ruling prices an extortion, from undertaking building improvements.

The lumber manufacturers of the Pacific Coast complain that their product should be made the obstacle to any improvement, and assert that present rates are none too high: that the cost of production fully warrant, and equity of profits not only fully justify even present prices, but that a still greater advance would be reasonable.

Be this as it may, the manufacturers are themselves to blame for the adverse opinions held by the community, as they—by their uncertain standards, varying rates from time to time, according to the spirit of competition in exercise among themselves, sometimes supplying the market at rates which no informed person would consider near remunerative, yet impressing the public mind that if rough lumber could at any time be sold for twelve or thirteen dollars per thousand, why should it be worth much more at any time, or under any circumstances.

The fact that the manufacturers were at war among themselves was no affair of consumers, and the misfortunes of a "broken market" that unquestionably did, during the great competition eras, result in loss to the lumbermen, is a matter that the public disregard; and owners of real estate have been and are unwilling to recognize fair dealing in prices of lumber of the same kind and quality, at one time twelve, and at other times twenty-two dollars per thousand.

Another feature of the case is, that building improvements in the larger cities have been retarded by reason of the very many land and town lot booms that have been offered in nearly every portion of the state, with every device known to the shrewd and active minded men who have managed them, to induce investments; and hundreds of thousands and millions of dollars in the shape of speculative purchases have been drawn away from the commercial centers, that would have been spent in building improvements under a less inflated rate of things.

But reactions under their circumstances do not by any means indicate failure in any extended sense; but a mere checking up in the heated race, to acquire wealth speedily, a cooling down from fever heat to a normal condition, and an equalizing of transactions, with the necessities of the times.

Interesting Lawsuit against a Firm of Builders.

A case was recently tried in England involving the responsibility of contractors, which we find reported in the *Builder*. The Messrs. Peto Brothers, very eminent builders in London, had a contract for the erection of a hotel in Covent Garden. In carrying out their contract, they were obliged to excavate about nine feet below the foundation of the wall, between the hotel and the adjoining house and underpin the wall. In doing so the wall was cracked from top to bottom. The owner of the adjoining estate sued the Messrs. Peto for damage to his wall. The contractors resisted on the ground that the work which they had done was carried out under the provisions of the Metropolitan act, and that the settlement and cracking of the superstructure was an inevitable consequence of the underpining, and they urged that the work having been done in accordance with the statue, no one could be held liable for the result of it; that if any one could be held liable, it was the owner of the building they had constructed and not themselves, and finally, that the work had been carried out with the utmost care, and that, as the cracking was avoidable under any circumstance, there had been no negligence involving anybody's responsibility. The defendants did not call any witness to prove their assertion that the cracking of the wall was the necessary consequence of underpinning it, and his lordship, the judge, remarked that if all the builders in London had come and said so he should not believe them. In his opinion there had been very considerable negligence. He was sure that the settlement was not the inevitable result of the work done, because he had himself seen a wall underpinned without producing any cracks, so that the damage not being the necessary consequence of work done according to the statue, the defendants could not use that for avoiding their responsibility, and for much the same reason, the burden could not be shifted on the shoulders of their employer. No one remained to bear it except the builders and the judge condemned them to pay the assessed damage to the wall, about two hundred dollars, with two hundred and fifty more as consolation to the owner of the injured house, and the costs of the suit.—*American Architect.*

The Mechanics' Institute Fair.

The annual Fair of the Mechanics' Institute will be held in the usual place, commencing next month. It is now about time that our Carpenters and Joiners made a display. Every other branch of industry has been represented, but, with the exception of a large shaving or two, nothing has been exhibited as the handiwork of a large portion of our wage workers. Perhaps this notice to the Builders' Association may cause some of our skilled carpenters to prepare articles for the next Fair.

STEEL SQUARE AND ITS USES.

We have just received a large number of the above named books. A copy will be sent to any address upon receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

A widow with a brown-stone house is as attractive as a building and loan association.

The cross-cut saw gets dull in spite of its teeth.

A Very Interesting Letter From Messrs. N. & G. Taylor Co. of Philadelphia on the Subject of Roofing Tin.

PHILADELPHIA, June 30th, 1888.

EDITOR, CALIFORNIA ARCHITECT AND BUILDING NEWS, San Francisco, Cal.

Dear Sir: Our attention has just been called to a letter which appeared in your issue of May 15th, signed by Messrs. Merchant & Co. of our city. It is so full of errors and mis-statements, and its tone is so unjust, that were it not substantiated by appearing under your own sanction, we should very much doubt it authenticity, and would pass it in silence.

In fact, no reply from our House would be necessary in any *Eastern* paper, but some explanation is due to *your* readers, accompanied with a few *facts*.

Messrs Merchant & Co. appear to forget that when they went into the tin plate business not many years ago, they found our firm selling guaranteed and stamped brands of tinplates. They know that it was our custom at that time to stamp the brand and our name on various plates, and they also know that very many years before they introduced the Gilbertson's Old Method in imitation of the Genuine OLD STYLE brand, we had always stamped the top and bottom sheet in each box of the Genuine OLD STYLE with the brand and our name. Those of your readers who are fortunate enough to have some of our old circulars or catalogues of that time can confirm us in these statements. It was on account of imitations being used that we were compelled to have *every* sheet of the Genuine OLD STYLE brand stamped with the brand and trade mark, as well as our name as guarantor. While we have been followed by others in the matter of stamping the brand on Roofing Tin, they fail to follow us as far as having their own name added, without which what redress has an architect or property owner!

We cannot conceive how any one can have the presumption to appropriate to themselves novelties which clearly originated with ourselves, and while we *regret* the tone of their article, and the necessity of a reply on our part, still misstatements must be corrected.

We fail to see the cause of this outburst of feeling against the Eastern Importers and tin roofers (who, as every body knows, are well acquainted with the *real value* of all brands imported) unless it be their failure to confirm the estimate which Messrs Merchant & Co. wish to place on certain brands of tin. Messrs. Merchant & Co. attack the tin roofers of Philadelphia, using this language: "But when we assert that ninety-seven per cent. of the roofers (as far as our own city is concerned) who upon receiving a contract will buy and put on wasters instead of primes, we state only a fact." This is a sad reflection upon the integrity of our roofers, that "ninety-seven per cent. of them are entirely devoid of all business honor."

We fail to see how our friends, Messrs. Merchant & Co., can possibly substantiate this assertion, unless the contract should call for one of their own brands, and they should sell the wasters bearing the same stamp as the prime. It could not occur in any other way, and probably not in this, at the present time, as it was through the Philadelphia roofers that it became known that Messrs. Merchant & Co. were selling the *wasters or imperfect* sheets of so-called guaranteed plates *stamped exactly like the primes*; The tin roofers of Philadelphia, as a class, bear the highest reputation for their quality of their work, and the knowledge of the relative value of material We have customers in this city who have been buying of us continuously for over *forty years*; others whose parents and grand-parents bought of us—old and reliable mechanics who learned their trade before the time of labor-saving machinery, and who not only know a good article of roofing tin, but also how to put it on a roof. We have been closely identified with all these men too long to imagine that such a charge could be made against them. If an architect should be deceived, and the roofer comply with the sepcification, the fault should not fall upon the roofer, but upon the one who has deceived the architect.

The celebrated OLD STYLE brand is now so well established upon the Pacific Coast that it needs no defense nor encomium at our hands. It has been sold a great many years with perfect satisfaction unaffected by any competition. Messrs. Harper, Reynolds & Co of Los Angeles handle car-loads of it; the John Stock's Sons of San Jose have used it in large quantities, and the fact that the large house of Messrs W. W. Montague & Co. of San Francisco have allowed us the use of their name as headquarters for the sale of the brand in San Francisco is of itself sufficient evidence of popularity and confidence.

Many years ago the first sale was made in California, if we recollect aright, to Mr. G. H. Swinerton of Sacramento city, and a large lot was sent to Walla Walla, Washington Territory, thus inaugurating on the Pacific Coast the use of a high grade guaranteed roofing tin. We simply insert these facts here to show your reader that our OLD STYLE brand is the original brand—the pioneer in the field—and that all other plates made by the manner of hand dipping have simply sprung into being *imitation of our brand*, but, of course, without its characteristics. There is no occasion to enter into an elaborate array of facts and dates; it is simply sufficient for us to say that we have always guaranteed the OLD STYLE brand of ternes, in fact, a *guarantee* accompaning this brand of the *original intention in introducing it*. It has always been made and sold to the trade with this distinct understanding by our House. To guard against imitations when we introduced the brand we took special precautions to have every top and bottom sheet of it stamped with the brand, as we have already stated above, and this was done many years before any rival appeared in the field at all. Later on we found it was imperative to have every sheet stamped, not only with the brand and thickness, but also with the trade mark of target and arrow, and at the same time, the brand was duly registered in the English courts.

We wish to introduce some collateral evidence here as to who were the first to stamp tin plates or roofing tin. The first selection is from the London *Ironmonger* of May 14th, 1887, and reads as follows:

ROOFING PLATES.

To the Editor of the "Ironmonger."

SIR.—N. & G. Taylor Co., Philadelphia having called our attention to the injustice of an article which lately appeared in your journal, we feel sure that you will give us an opportunity for explanation upon their behalf.

We desire to state for the information of your readers that the "system" of stamping and branding each sheet separately, which is claimed as a novelty by a competing firms is simply a gross imitation of an idea which originated with N. & G. Taylor Co. and has been carried out at their request for their "Old Style" brand of terne-plates over many years.

We have reason to suppose that the new mode of branding became necessary for the better protection of Messrs. Taylor's purchasers against the numerous attempts to imitate and counterfeit the well-known and successful "Old Style" brand, as employed for terne plates of the highest quality.

Yours obediently,

THE COPPERMINERS' TIN PLATE CO., L'td.

P. W. FLOWER.

Cwm Avon Tinworks, Port Talbot, South Wales, May 9.

The second selection is from a letter to us under date of March 30th, 1887, from the Cookley Tin Plate Works, which letter is in our possession. Many of your readers may recollect the photographic reproduction of it which we issued last year, and we extract from it simply the followlng paragragh bearing on the matter in question:

"As others have followed you in stamping the brands on plates, it is no more than *justice* to yourselves that the fact should be made public that we have followed this custom *for you* at our works for at least fifteen years, having without interruption during that time so stamped, at your request COOKLEY K Tinned Sheets."

The elaborate catalogue issued by our House in the year 1872 will be found to contain the distinct guarantee made by us on hand dipped plates, for which we received the only award of merit given at the Centennial Exposition held in Philadelphia 1876. The diploma and medal we have at our office here for inspection.

At the commencement of their article Messrs. Merchant & Co. say: "The Gilbertson's Old Method and Camaret are the only two brands of roofing plates in the market to-day of which no imperfect or waster sheets are imported." *This is not true*, and the claim is probably made with a view of counteracting the effect of our circular of May 24, 1887, an *original* copy of which we enclose for insertion elsewhere in your present issue. At that time the *Camaret Wasters were stamped exactly the same as primes*, and there was no security at all in the use of this brand.

As already stated above, importers are well acquainted with the value of all brands imported, and each one knows whether the wasters of his plates are passed through the patent rolls and shipped to America, and sold under another brand as *prime*, or are sold for consumption in Europe.

Now there have never been any wasters of Cookley K at all, and we again bring in as a witness the following additional extract from the same letter of the Cookley Tin Plate Works, a follows:

"The home trade are only too glad to secure the wasters at a very slight reduction, *and these are not shipped to America*."

Is anything more conclusive wanted as proof that Cookley K Wasters have never been imported?

In conclusion, we have to state that there are no Wasters of the OLD STYLE. We have had them, but they were *never* stamped, and they could not conflict in any way with the use of this brand in prime. We discontinued the importation of them some time *since*, and if there are any to be had to day, they must be some very old stock indeed. Architects and property owners have always been fully and amply protected in the use of the OLD STYLE, by the fact that no Roofing Tin is the Genuine OLD STYLE brand unless it bears the stamp. Even if the roofer could obtain Wasters he could not use them, as they would not be stamped. Any one could detect such a substitution, just the same as if any brand at all were put on in place of the Genuine OLD STYLE. We don't see how we could more thoroughly protect architects and property owners in the use of the OLD STYLE brand.

We thank you for the space you kindly grant us for the insertion of this article. We have tried to make it as brief as possible. We have stated our position, and fortified it by facts beyond dispute, and we further strengthen it by evidence from two of the largest, most prominent and reliable makers of Roofing Tin in Great Britain.

Very truly yours,

N. & G. TAYLOR CO.

Wood, Plaster and Concrete.

The respective merits of these materials in the construction of buildings have recently been reviewed in their relation to the acoustics of theaters, and the general gist of opinion is that concrete has proved a success. It is obviously difficult to compare two materials like wood and concrete, so different in their phisical properties. But for the inflamable nature of wood, it must be admitted to be the most desirable acoustically for the lining of rooms and halls adapted for music. The Italian congress of architects, in 1880, laid down certain rules respecting the form and materials desirable for halls of music and theaters, one of which was that wood was the proper material to augment the energy of sound, and giving preference to fir; they also recommended that the room should be lined with wood, isolated as much as possible from the fabric of the building; that the soffit of the theater (ceiling) and the fronts of the boxes should have their surfaces composed of thin planks, fitted together like boxes, and the columns should be of wood, also hollow,

These recommendations, obviously intended to promote resonance, are opposed to all our ideas of incombustibility, and, in fact, would promote the spread of flames. No better prescription for an inflammable interior could be given than that the hall should be lined with wood isolated, and that the boxes should be separate boxes of wood.

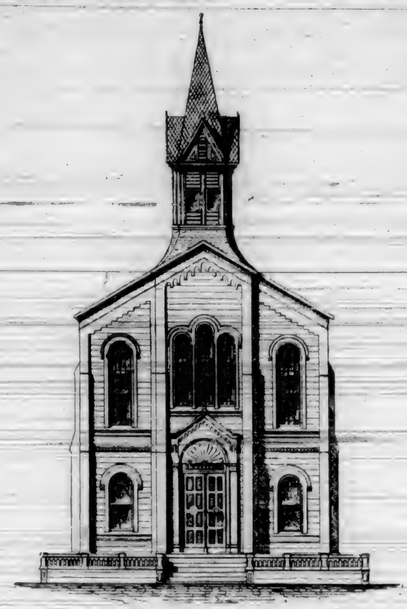
From acoustic considerations, then wood is preferable to all other materials as a wall lining, but its inflammable nature renders it undesirable in the construction of the auditorium of a theater. For the re-enforcement of sound, it stands foremost: in other respects its presence adds materially to the risks of fire. The employment of plaster or cement is undoubtedly inferior as an acoustic surface; it has none of the vibrating properties of wood; the sound waves recoil and produce confused sounds.

STEEL SQUARE AND ITS USES.

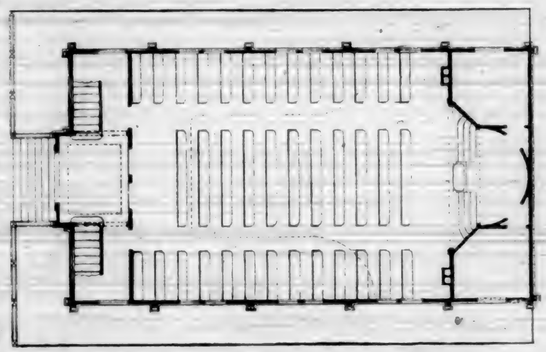
We have just received a large number of the above named books. A copy will be sent to any address upon receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may he applied.

A prominent architect of this city has recently given up business and retired to the country. He is young, talented, energetic, and a master of his profession; but the question plugged to him by a female client was too much for him. She asked him why he didn't divulge his plans.

"Where are ye livin' now, Moike? "In Donegal Street, No. 11. Come and see me." "Faith, I will. Ought I to come in be the airy, or be the front dure?" "I dont care; but as I'm occupyin' the garret, it would be more convanient for ye to come in be the skylight.



Elevation



VILLAGE CHURCH.—The plan illustrates a design for a small, plain neat church, in the modern American style of church architecture

The pulpit is placed in the rear, with a room on each side, to be used for a choir, trustees and studio.

The building is well lighted by high double windows, glazed with different pieces of colored glass, separated by small sashes and two bars across the center. On each side of the vestibule is a wide flight of stairs leading to hall above, which communicates with a large, spacious gallery. The recess containing the pulpit has a large proscenium arch in front, with ornamental brackets.

The foundation is faced with pressed red bricks, laid neat and close, with white mortar joints. The rafters, purtins, studs, etc., can be dressed, chamfered, oiled and varnished, making a very nice inside finish, and sufficiently broken to form a good acoustic.

The inside is neatly finished with capped, grained and varnished wainscoting. The floor has a gradual fall toward the pulpit, thus affording a nicer arrangement of the seats, and a better view of the pulpit, as one pew rises slightly above the other.

The church is entered by a wide flight of stairs, through large, double-paneled doors, with a semi-circular rosette, and a small, fancy, projecting gable above The sides and front have large, heavy projecting buttresses, running nearly up to eaves, which gives the church a heavy, rich appearance. The steeple is a very striking feature of the building; the small windows, with louvers above and below, thoroughly ventilate the building. The fancy shingling, gables, pilasters etc., are all pretty in design and form a neat, unique and inexpensive spire.

Any further information in regard to construction, painting location, etc. will be promptly forwarded on application. Address,

SALFIELD & KOHLBERG, 339 Kearny St., S. F.

How to build the House.—Some things one ought not to do.

By Edward W. Blakely.

That there are architects and architects, and that their work ranges from very good to indifferent and extremely bad, is a fact that no observant person will for a moment question. As it must moreover be admitted that the number of really first class architects is quite limited, it follows as a matter of course that there must be a great deal of questionable work done in the way of planning our dwellings and business buildings, especially in our large cities and towns. While recognizing the really excellent result produced by many of our practical architects, and the magnificent buildings that adorn our own and other cities, it must be said that there are many residences where the flagrant disregard for everything but effect is so evident, that one might well wonder if ever an architect designed them, or if like Topsey they "growed."

I have in mind a house where it is almost impossible to use any article that is of what might be called regular size. Without exception every room is some inches out of the regular width for a carpet, and in order to cover the floors a fraction of a width must be on one edge, and in the length, the carpet wastes in cutting according to the number of figures in the yard. Some of the rooms are quite large, and in selecting an elegant carpet for one of them it was found that as the desired style had one pattern to the yard, and there were eight length required, the waste on account of the awkward size of the room would be a trifle less than half a yard on every length of carpet. Two inches over a width must be added to the sides, which necessitated the purchase of an entire length in addition. The trifle more of width, while very little advantage to a room of that size, made six yards of carpet necessary in order to fill a few inches of space, and instead of calculating with any idea of economy the architect entailed a cost in carpet alone of nearly $30 to cover a space two or three inches wide on two sides of a room. Whenever it became necessary to purchase or refit carpets for the floor in that house there was an amount of grumbling, and when at last it passed into other hands and was offered for rent, several persons refused it because of the enormous waste of carpets, the useless pieces alone costing more than enough to cover the floor of one good sized room.

The casings of all the best rooms are elaborate and project some distance into the apartment, and it is necessary to cut out not less than four inches from the edges of the carpets in order to fit them around the moldings. In this way the borders are almost destroyed, and it would be impossible to change them about or put them down in other than the original way.

The windows are about three inches wider than the ordinary, and shades must be made to order, a trifling item for the original owner, but of a great deal of importance when the house came to the renting stage. They are too narrow for fine effects with ordinary lace curtains, and could not well be used with more, and the curtain poles used in other houses will not fit at all. The spaces between the windows or doors are too narrow for ordinary articles of furniture, the hall is an eccentricity; and so all over the house; there appears to be a sort of vicious disregard for established usages, and it is as though the designer had been seized with a desire to make every item of fitting up and furnishing as expensive as possible, without in any way givin an adequate return either in comfort or convenience, or even in beauty of detail or general effect. It really is quite as easy to build a house properly, as to construct one which is so conveniently shaped and badly fitted that nothing one may have will suit it.

There is need of a great deal more practical common sense than is ordinary shown in the planning of houses. Between the traditions of conservatives and the technical knowledge of some of our professional architects the housekeeper fares very badly. Economy of space, which in city residences especially is of the highest importance, is apparently quite disregarded, and angles and corners are left vacant when they might be used to the greatest advantage, while the spaces occupied by cupboards and closets could be left free to the manifest convenience of those who perform the household service.

In beginning the plans for the building of a dwelling, special consideration for health, convenience and comfort should be the leading ideas. Architectural beauty is a minor matter, and where the choice must be made between beauty and convenience the former should always be sacrified. This is not, however, the plan followed by the average architect, who is quite likely to ignore every principle that conflicts with the beauty of symmetry of his design.

There is an urgent demand for plans in which economy of space and simplicity of design are the leading features. Country people of moderate means have little time and less money to spend on architectural ornamentation or effect. Given a neat, comfortable dwelling at a moderate cost and they are quite content to dispense with angles, gables, and oriel windows until such time as the farm or the business is paid for, and the income will warrant their indulgences in some of the decorations and luxuries of life.

There is more useless room in the ordinary kitchen than in any other portion of the modern house. The idea seems to have come down through the years that a kitchen must be wide and roomy, and with a big throated chimney. Other points have not attached to the plans for this apartment, and upon this skeleton of a suggestion each architect hangs whatever convenience may, according to his conception of the needs of the place, be required. As a result we have for country houses great barn-like rooms bitterly cold in winter, and exposed to the beating sun of summer, a wide doorstep, and a flue that is large enough to carry all the warm air out of the place in winter, and so wide that the draft of the stove is more by grace and the weather, than because of any rational arrangement to accord with the principles of ventilation.

Anyone who will take the trouble to go through a ship's kitchen will see at a glance what are the possibilities of economy of space. The entire stores for hundreds of persons may be prepared in a room fifteen feet square. It costs but little when building a house to provide sensible, practical conveniences in the way of pantries, cupboards and lockers, and the most trifling outlay may save any amount of hard work and time, which may be turned to valuable account.

Not many years since I heard a farmer's wife say that she had spent weeks of time carrying every drop of waste water through the kitchen and over an entire length of a long porch to throw it into a drain. It would have cost three or four dollars to run a pipe from the kitchen sink, under the porch to the drain, but this was deemed an unnecessary expense, and so this woman had walked a distance of over thirty feet and back from the kitchen sink to drain on an average of eighteen times every day, and in summer weather even much more than this.

Her China closet is situated on the side of the dining-room opposite to the kitchen, and every dish must be carried across the dining-room to be put away. To get to the cellar she must cross kitchen and dining-room and go down the cellar under the main stairway, or else go half way around the house and enter by the outside cellar stairs. The milk is kept in a spring house at least one hundred feet from the door, and as there is no convenience there for washing the pans, all of the milk things must be brought to the house and washed.

The water for all of this work is drawn from a well with buckets and heated in a kettle or boiler on an ordinary stove. On the evening before washing day the wearisome task of getting the water ready must be gone through with. Bucketful after bucketful is drawn and poured into a barrel, and into this is thrown a little wood ashes, just how much the housewife is able to tell exactly by tasting it. Then all must be carried to the kitchen, and the work of washing may begin.

And yet these people are economical of everything except time and strength, or at least they think they are. But the cupola on the top of the house cost more than a set of stationary tubs would have done, with all of the drainage pipes and fittings to carry the waste water down a hill and into a small stream at the back of the house. The extra filligree work on the porches cost more than a well arranged cistern, and the outlay for a set of brackets under the edge of the roof would have built a cellar stairway twice over.

But under those unfavorable and laborious condition an intelligent American family lived and toiled. That they prospered and grew wealthy was no doubt due to their energy and persistence, but when one takes into account how much more time there would have been for even necessary work, the thousand and one things that are always to be done in a farm house, it seems a poor comment on the good sense of the average individual to pay out money for architectural frivolities and unnecessaries, and let the wife and daughters wear themselves out for lack of a few conveniences.

The china closet should be built in the wall between kitchen and dining-room, or in such a location that it is accessible from both rooms. Every house of any pretentions should have drain sink from the kitchen or some point near the kitchen door, and pipes to carry water away. If the house stands on an elevation this is a very easy matter. A well or pump should be so arranged that the task of drawing water will be as light as possible. A cistern should be built with every house, no matter how unpretentious. A few hours of work and a very small amount of material will be sufficent to provide a place for enough ice to last nearly all summer.

A couple of ingenious boys once made a most admirable arrangement of this sort at an almost nominal cost. They lived on a bit of table land at the foot of a hill. There was a spring in the side of the hill and a spring house for milk and butter. The boys dug a deep hole in the side of the hill above the spring house smoothed the floor, slooped it slightly downward on the outer edge, and coated the bottom and sides with water-lime cement. There was a slight depression in the floor near the front, and from this a few feet of iron pipe led down into the ground and connected with a trough or a spout made of the trunks of small saplings. These the energetic lads had contrived to split in two pieces, the middle was cut out by a gouge and hard work, and the too pieces of the sapling were then nailed together and connected with the iron pipe leading thence through three or four feet of earth to the spring house, where it ended over a trough. The bottom of the pit in the hill side was repeatedly washed and allowed to remain uncovered until snow fell. A large bundle of clean oat straw was placed over the pipe and carefully packed down. The floor of the pit then had about a foot deep of clean sawdust from the neighboring mill. This the mill owner was glad to get rid of and the boys to get it in large loads. A store of sawdust was laid by for future use.

The pit was about twelve feet square by fifteen feet deep, and when the first snow fell the work began.

Every leisure moment was occupied in filling the pit with snow, packing it closely and pouring on just enough water to make it solid. As fast as the pit filled up the boys filled in the sides with a foot or more of sawdust. Long before spring the pit was full. Then a great mound of sawdust was piled over the ice and the earth was thrown over it. Above this were bundles of straw over which sawdust was sifted until it formed an almost solid mass, then more earth was piled on and a double row of Maderia roots was planted just at one edge.

In the case of this family other improvements followed this beginning, until the house had its own system of water-works, and by the time they had so prospered that a new house was to be built, the ingenious boys had perfected a plan by which not only their dwellings, but all of the farm buildings were abundantly supplied with water.

The cost of materials used for the first snow pit was less than five dollars, and it was estimated that the gain on its account in dairy products alone was not less than fifty dollars for the season.

This is economy, and it is a kind that is much less common than it ought to be.—*Decorator and Furnisher.*

LUMBER INTERESTS.

Unpleasant Charges against the Mills by the Loggers.

"I have reduced the output of my camp at Stuck Junction fully 25 per cent," said Terrence O'Brien, Thursday, "and will shut it down altogether after the Fourth of July, unless the railroad company shows a disposition to be more accommodating in the way of furnishing cars. I shall also

REDUCE THE OUTPUT

Of my camp on the Seattle, Lake Shore & Eastern about one-third. While the mills are cutting down our scales, and also cutting down the price of logs, they fail to reduce the price of lumber one cent on the thousand. The excuse for their conduct is that the bottom has fallen out of the California market, but I notice that the mills run night and day, just the same, and turn out as much lumber as they can. The whole trouble now threatening is brought about by an over supply of logs. This spring prices were good, and every man who could get hold of a piece of timber started a camp, which he had a perfect right to do. About this time the Port Blakely mill burned down, thus

REDUCING THE CONSUMPTION

About 200,000 feet per day. Notwithstanding this new camps were opened, and as soon as the mills discovered the large surplus of logs on hand and the increased production over the consumption they at once commenced hammering down the price on logs. The men in the logging business who had made their business a study saw just what this over production of logs would lead to, and for the purpose of

AVERTING THE GREAT CALAMITY,

The Loggers' Association of Puget Sound was formed. It is the desire of the association to regulate the production of logs so that the logger will get a fair price for his labor and interest on the capital he has invested in the business."

"What did you mean when you said the mills were cutting down the scale as well as reducing the price of logs?"

"When a man sells a boom of logs to a mill company the logs are towed to the mill and there scaled and the logger paid for his timber according to the mill scale. At the same time every intelligent man engaged in the business

SCALES HIS OWN LOGS

Before they leave the camp, so as to know about what he is going to receive for his boom. The other day my friend Curry sold a boom, and the mill knocked 125,000 feet off his scale in a boom of something like 425,000 feet."

"Why did he submit?"

"What could he do! He must accept the scale they give him or take his logs back to camp at his own expense. You see, the

MILLS ARE ALL BANDED TOGETHER

Under what is known as the Puget Sound Brokerage Association, and when a fellow offers his logs to one mill that settles it, for he must sell his logs at that place or not at all. If Curry had towed his logs to another mill he could not have sold them at any price, so he submitted to what any fair-minded man would call a piece of highway robbery."

"Has there been a falling off in the price paid for logs?"

"Yes, and there is

NO USE DISGUISING IT.

But there has been no reduction in the price of lumber. Logs that brought $7.50 per thousand readily, six weeks ago, now only bring $6, and shorter logs, which brought $7 per thousand, now only bring $6 and $6.50."

"What remedy would you suggest?"

"Simply a common sense remedy. There is a good foreign as well as good domestic demand for lumber, and the mills must have logs to supply these markets. My idea would be

TO REDUCE THE PRODUCTION.

Of logs to allow the mills to consume the surplus on hand at present, and then only cut and put into the water sufficient timber to keep the mills running. By pursuing that course the logger would always be enabled to command a good fair price for his timber, and the mills at the same time be making money."—*Seattle Post Intelligencer.*

THE IDEAL SASH PULLEY.

We illustrate herewith a new Sash Pulley just completed and now ready for the market. It is known as the "Ideal" and is manufactured by the Stover Manufacturing Co., Free Port Ill., who claim it is the cheapest and best ever offered to the trade, and the easiest and quickest put in place. It requires the boring of two seven-eight inch hole to make a place in the frame for the Pulley which makes its own mortise by simply driving it in, insuring a perfect fit in every instance. A little Marking Guage, also illustrated, is used to make the prick marks for boring the holes. The Guage is laid in the groove in the frame and, struck a light blow with a hammer, and the marks are accurately laid out for boring. No chisels or screws are used in applying the Ideal Pulley, and there is no possibility of their becoming loose or getting out of place. The saving of time in putting them in the frame is a great advantage.

EVERYBODY'S COLUMN.

The drawing instruments used by draughtsmen are very susceptible of rust. To remove the same without injury to the instruments, mix 10 parts of tin putty, 8 parts of prepared buck's-horn and 25 parts of Spirits of Wine, to a paste. Cleanse the articles with this, and finally rub with soft blotting paper.

Ed. Architect—Kindly inform us of some method by which grease spots on wall-paper caused by people leaning their heads against same, may be removed without injury to paper?

M. C.

Oil spots on wall-paper caused by persons leaning their heads against walls may be removed by making a paste of Fuller's earth and cold water and laying some gently on the surface to be cleaned, leaving it until dry, when it may be brushed off and the spot will have disappeared. It works best on plain paper but it does not succeed so well on thoroughly colored.

To Cure a Door in Wind.

Philadelphia, May 25, 1888.

To the Editors of the American Architect:

Dear Sirs,—Can any of your readers suggest, or inform me if they are cognizant of any method by which a twisted door can be made straight? In considering an answer to the above query I apprehended that correspondents will conjecture the kind and situation of the doors. The doors I have in mind when asking the question are veneered with the same kind of wood upon both sides, and have, since first they were hung, been subject to the same temperature upon each side, if there is such a thing as the possible straightening of a door out of "wind" I have no doubt it will interest a great many of your readers to know of it.

Architect.

[A door may often be taken out of wind, temporarily at least, by clamping in a frame and allowing it to remain for a time.—Eds. American Architect.]

The possibility of the prosecution of negligent plumbers for bad work leads to the inquiry, what protection have good plumbers from bad ones in the matter of competition? The bad plumber can under-bid the good one, and if complaints are well founded, there is a good deal of bad work and cheap work going on. The trade ought to have some sort of control over its members in this respect. The rigid legislation of a year or two ago has not produced all the good results then looked for. The attention of local medical and sanitary authorities has been recently called to unscientific work, and the matter will probably not be allowed to rest until some better system is devised. The plumbers themselves have as much at stake as anybody else, and the organization could wisely investigate the charges made as to inferior work done in utter disregard of sanitary requirements

Grindstones.

A correspondent of an Eastern paper gives a description of a visit to the Bay of Fundy and along the shores, where the grindstone quarries are located. The superintendent of the quarry says when the tide is out his men go down on the rocky shore and work out near the water. At low tide the men on the shore drill some holes in the ledge, put in powder ond blast out great pieces o f rock When the tide rises again they float out some big logs and empty barrels over where the loosened rocks are. When the water goes down again they fasten a big rock to the raft with heavy chains, so when the tide again rises it lifts up the raft and the rock with it. Then they tow it as near the shore as they can. If it is the right kind and size for a millstone, sometimes it is allowed to lie there until the workmen, with stone chisel and hammer work it into the proper shape. At other times, by means of a derrick, it is drawn out on the wharf. Then it is rolled on a track and hauled to the factory.

At the great stone factory the large piece of rock is placed on a carriage with a saw similar to the up and down saw in a mill, the rock is sawed into great slabs of the right thickness for the grindstone. The saw does not have teeth, but wears its way through the rock with the aid of sand and water, which are continually pouring on. Then the slabs are taken, a hole made in the center the edges trimmed off with a chisel, and the whole placed on a kind of lathe, turning it until it is true and the edges smooth. The rock from which the grindstones are made is a kind of sandstone, and there is a great difference in the "grit," some being coarse and some fine. Often several different degrees of "grit" are found in the same quarry. There are many quarries along the shores of the Bay of Fundy. The reason stone is taken from under water, when there are many quarries a little distance from the shore, is because the best stone comes from the bottom of the bay, where it is covered at high tide.

Deafening Floors.

Various expedients have been used and suggestions given for "deafning" floors, as it is called. We have all heard, says the *Building News*, of mortar mixed with chopped hay or straw—a kind of pugging laid on rough boards, carried, by fillets fixed to the sides of joists. This sort of pugging has stood well for centuries, and is found to answer well as a deafning material. Among other substances used are dry lime rubbish, sand, lime, hair, and dry ashes, sawdust, and even cockle shells and cork chippings have been found in the floors of old houses. Any of these materials in layers of 1½ inches to 2 inches will suffice to deaden sound. Recent suggestions have been thrown out in our own journal by correspondents. One of these is use thick felt laid below the floor boards. A French journal throws out another suggestion attributed to General Loyre, who proposes, instead of loading the floor with plaster, to fill in the space between the boarding and the plastering of ceiling with shavings which have been rendered incombustible by dipping them in a tub of thick whitewash. As it is known that soft substances inclosing air spaces form an excellent non conducting material to sound, it is thought that the shavings so treated will be found of great service, and it is said they are so incombustible as to add considerably to the fire-resisting properties of the building. Where it is desired to disinfect the space between the floor and ceiling the shavings may be saturated with chloride of zinc, or the latter may be added to the lime wash. The shavings have at least the merit of being light, which some of the materials we have named are not, and if they can be rendered non-combustible—a very essential condition—we do not doubt that this kind of deafning, so cheap and easily procured, will be largely used. Slag wool made in the form of tiles or bricks is a good material to prevent the transmission of sound, and any fibrous material formed into cellular slabs answers the purpose.

Rural Homes, Wheeler	150
Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
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Sewer Gas	1 25
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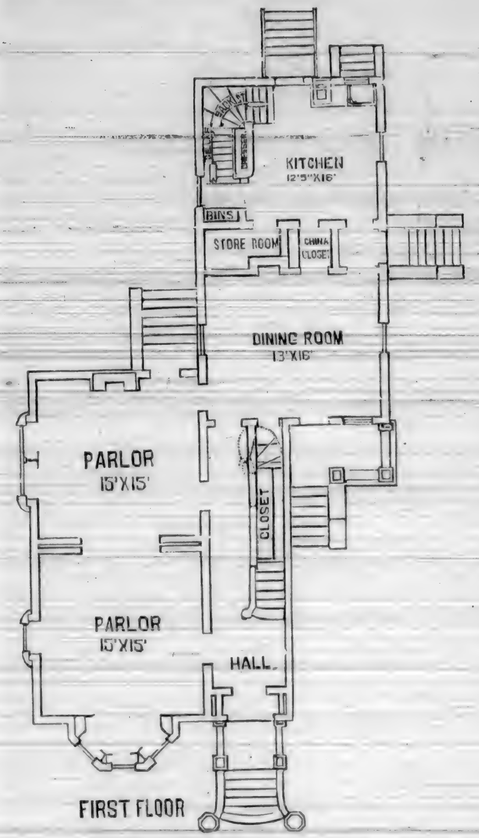
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50



STAIR BUILDING,

AND IN ITS VARIOUS FORMS AND

THE NEW ONE-PLANE METHOD.

OF

HAND RAILING

BY JAMES H. MONCKTON.

A PERFECTLY NEW BOOK, PRINTED IN 1888.

The author presents in this work *for the first time*,—as applied to hand railing—the *one plane method* of drawing face-molds, a method in which only one plan of projection is required. By the plane process of drawing a face-mold, a center line of wreath may also be infolded, and fixed in its relation to the elevation of tread and rise; thus determining the length of each baluster on the curved plan and gaining a knowledge and control of the wreath's exact position not being attainable.

The experienced stair-builder will learn that this one-plane method of drawing all face-moulds—and also the manner of finding of angles with which to square wreathe prices—is simple, uniform and rapid. The student or apprentice will find that the elementary study of hand railing in the practical and novel way presented is easily acquired; he will also see that the detail instruction given in stair building from a step ladder to expensive and difficult staircases is presented in a manner to be clearly understood and quickly learned.

The Architect will find the best examples yet printed of Newells, Rails and Balusters, some of them being of exquisite design. The book is elegantly bound, printed on good paper, with illustrations far in advance of any similar publication.

Any order sent to this office will be immediately attended to and the book promptly forwarded on receipt of the price **$6.00**

A Suburban Home.

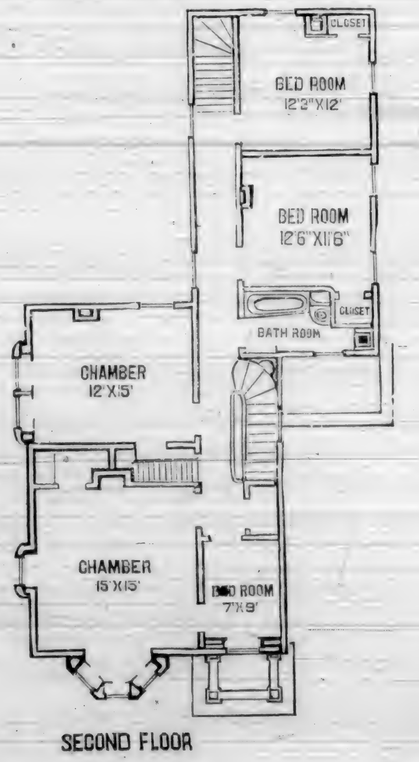
For real comfort the accompanying plans are just suited for those requiring a house containing commodious rooms with corresponding necessities. The first thing especially noticeable in the arrangement is the ease with which access can be obtained to every portion of the house. There are five entrances on the first floor, thus peculiarly adapting itself to those who may desire a convenient suburban home. Especially if the house be placed on a large lot will this feature recommend itself. The sizes of the rooms are very plainly given. The plans as presented are well worth a careful study. With a neat elevation the house can be built anywhere between $5,000 and $7,000. Any of the architects connected with the *San Francisco Chapter* can furnish the full plans, details and elevation to those pleased with the general design shown.

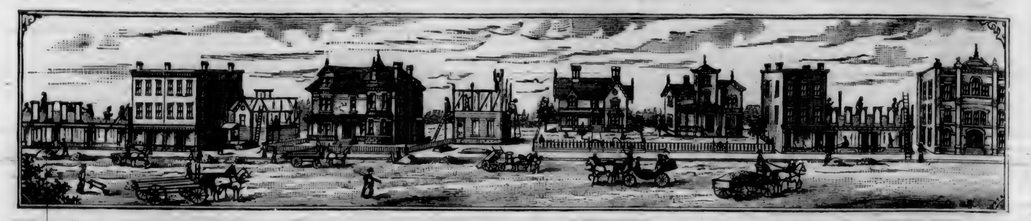
Weather Strips.

A great improvement is observable in the mode of insertion and the quality of the material used in the weather strips, as produced by Bradstreet, of this city Samples may be seen at this office, with prices affixed. By sending a note to the manufactory, 1326 Ellis, an agent will call on you and explain thoroughly how to stop your windows from rattling, and to prevent dust from coming in the cracks.

Messrs. E. C. Stearns & Co., of Syracuse, N. Y., report a very gratifying increase in their export trade during the past four months, and mention that the outlook for the balance of the year is very favorable.

Among others, they mention recent shipments of the celebrated 'Silent" saw vises, wood clamps, etc., to Glasgow. Bench drills to Northampton, England, and Aspinwall, Panama, and to the United States of Colombia.





CITY BUILDING NEWS.

Battery, No. 915, additions in rear. Cost, $2,000.

Birch bet. Octavia and Laguna; 2-story frame. Owner, F. B. Schonstein; architect D. M. Stanley; contractor, Jacob Klein; cost, $2,325

Payments; 1st when frame is up, $580; 2nd, when brown coated, $580; 3rd, when white coated, $580; 4th, 35 days after completion, $585; signed, May 8th; filed, June 11th; limit, August 15.

Broderick bet. Eddy and Turk, Frame building. Owner, G. Dagenais; architect, J. J. Clark; contractor, R. O. Chandler; cost $2,200.

1st payment when frame is up $500; 2nd, when brown coat of mortar is on $500; 3rd, when inside finish is done $600; 4th, usual 35 days, $600.

Broadway bet. Webster and Fillmore, 2-story frame basement and attic. Owner, Mrs. O. Mau; architect, Schmidt & Shea; contractor, Wm. Pluns; cost, $17,050.

1st payment, when 1st story floor joists are laid $2,500; 2nd, when floors are laid, $2,500; 3rd, when brown coat of mortar is on and inside finish on, $2,500; 4th, when hard finished $2,500; 5th, when completed, $2,700; 6th, usual 35 days $4,350; limit, 182 days; signed, June 26th, filed, June 27th.

Broadway bet. Webster and Fillmore. Plumbing contract. Owner, Mrs. O. Mau; architect, Schmidt & Shea; contractor R. Rice; cost, $1,985.

1st payment, when rough pipes are in, $700; 2nd, when completed, $785; 3rd, usual 35 days, $500; signed, June 27th filed, June 28th.

California and Kearney, Improvements. Owner, Wm. Kleeman; architect, J. J. and T. D. Newsom; contractor, Grey & Stover; cost, $5,425.

1st payment, when wall arches are in on Kearney St. $1,000; 2nd, when wall arches are in on California St. $1,000; 3rd, when completed, $1,318; 4th, usual 35 days, $1,357; limit, 70 days; signed, June 7th; filed, June 28th; sureties, J. Wagner and T. Anderson; amount of bond, $6,000.

Capp, near 20th, 2-story frame. Owner, Abby J. Judkins; architect and contractor, W. T. Veitch; cost, $7,350.

Payments as follows: 1st, when frame is up, $1,837; 2nd, when building is enclosed, $1,837; 3rd, when white coat or hard finish is on, $1,837 4th, 35 days after completion; $1839; limit, October 1st; signed, June 4th, filed, June 15th.

Capp, nr 25th, two 2-story frames; cost, $5,000.

Clay and Mason, frame building. Owner, Claus Wreden; architect, Henry Guilfuss; contractors, Victor Hoffman; cost, $6,600; signed July 2d; filed July 5th; limit, Oct. 1st.

1st payment, when frame is up, $1,000; 2d, when building is enclosed, $1,000; 3d, when the brown coat of plastering is on and all outside yard and basement work is done, $1,000; 4th, when hard finished and inside finish is on, $1,000; 5th, completed and accepted, $950; 6th, 35 days after completion, $1,650.

Clay and Laguna, 2-story frame dwelling. Owner, John Hooper, architect, J. C. Matthews & Son; contractor, Burpee & Judson; cost, $18,280; signed, June 25th; filed, July 9th; limit, 5 months and 5 days. Payments made at rate of 75 per cent. as work progresses; balance 35 days after completion.

Clay, nr Montgomery, additions; cost, $800.

Dehon, bet Dolores and Sanchez, 2-story frame. Owner, Mrs. L. Petsch; architect, J. Behrnds; contractor, G. Gerish; cost, $2,500.

Devisadero and Haight, frame building. Owner, Jas. J. Groom; architect, Cope, land & Banks; contractor, O. E. White; cost, $3,360.

1st payment, when brown coat of mortar is on, $2,000; 2nd payment; when building is finished; 3rd payment, 35 days after completion; limit, 94 days; signed, June 12th; filed, June, 16th; sureties, F. R. Latson; Jos. W. Beane.

Eighteenth near Dolores, frame building; Owner, Theresa Flood; architect, J. Marquis; contractor, Rountree Bros; cost, $3,423.

1st payment, when roof is on, $600; 2nd, when ready for lathers, $600; 3rd, when brown coat is on and sashes hung, $600; 4th, when hard finished and carpenter work completed, $623; 5th, usual 35 days, $1,000.

Fell St. (724) Alterations. Owner, Miss Annie McDermott; contractor F. A. Williams cost, $2,125; signed, July 5th; filed, July 5th; limit, 60 days.

When building is enclosed, $531.25, 2d, when the building is rough coated, $531.25; 3d, when completed outside and trimmed inside $531.25. 4th, when completed and accepted, $531.25

Fourth, cor Bryant, repairs to West Coast Furniture Company. Cost, $4,000.

Fourth bet. Harrison and Byrant. 3-story frame. Owner, D. Cutter and Wm. Casar; architect, M. J. Welch; contractor, Taubnan & Armstrong; cost, $8,640.

1st payment, when frame is up and rafters on, $1729; 2d, when first coat is on, $1729, 3d, when exterior finish is on, $1729, 4th, when finished and accepted $1729, 5th, 35 days after acceptance, $1729.

Limit, 90 working days; signed, July 3, 1888; filed, July 9, 1888, sureties, Geo. Watson and R. L. Taylor; amount of bonds, $8,645.

Franklin, nr Market, 2-story frame. Owner, M. J. Gorman; architect, T. J. Welsh; contractor, P. Sullivan; cost. $4,500.

Fremont nr. Market. 5-story brick building. Owners, Huntington, Hopkins & Co.; architects, Wright & Sanders; carpenter, C. C. Jerrill; cast iron work, O'Connell & Lewis; granite and stone work, Knowles & Co·; total cost, about $150.000.

Geary, 1200, grading and brickwork. Owner, A. Cahn; architect, J. Marquis; contractor, J. O'Sullivan; cost, $2,100.

1st payment, when brickwork and grading are finished and refuse removed from 1208, $750; 2d, when brick and grading work is finished and refuse removed from 1204 and 12, $750; 3d, 35 days after completion and acceptance, $600; signed, July 5th; filed July 6th; limit, 46 days.

Geary nr. Octavia. Church; owner, 1st English Evangelical Lutheran Church; architect, Samuel Newson. carpenters, Moore Bros.; cost, $10,160. Signed, July 2, 1888; filed, July 9, 1888; limit, 100 working days. 1st, when Moore Bros. get their 1st payment, $1,000; 2d, when Moore Bros. get their 2d payments, $2,500; 3d, when Moore Bros. get their 3 d payment, $1,600; 4th, when Moore Bros. get their 4th payment, $900; 5th, when Moore Bros. get their 5th payment, $800: 6th, when Moore Bros. get their 6th payment, $800; 7th, 35 days after completion and acceptance, $2,560.

Geary near Octavia, 1st English Evangelical Luthern Church; architect, Samuel Newson; contractor, J. J. Conrad, bricklayer; cost, $16,500.

1st payment when J. J. Conrad gets his 2d day, $2,000; 2nd, when J. J. Conrad gets his 3p pay, $1,100; 3d, when J. J. Conrad gets his 4th pay, $500; 4th, when J. J. Conrad gets his 5th pay; $500; 5th, when J. J. Conrad gets his 6th pay, $500; 7th, 35 days after all the building is completed, $1,900; signed, July 2d, filed, July 9th; limit, 100 working days. surety, T. E. Knowles; amount of bond $3,000

Geary bet. Laguna and Buchanan, 3-story frame. Owner, David Stang; architect, John & Zimmerman; contractor, Schutt & Krecker; cost, $7,865.

Payments as follows: 1st, when frame is up, $1,500; 2nd, when floors are laid and partitions set, $1,500; 3rd, when outside finish and brown coat is on, $1,000; 4th, when hard finished and rear building completed, and inside ready for painters, $1,865; 5th; usual 35 days after completion and acceptance; limit, September 15th; signed, June 7th; filed, June 15th; sureties, A. W. Bode and C. W. Grecker.

Grove and Taylor, 2-story building. Owner, Frank Deckelman; architect, W. W Winterhalter; contractor, A. N. Nelson; cost, $2,105.

Payments; 1st, when building is enclosed, $526.25; 2nd, when brown coated, $526.25; 3rd, when the building is prime coated, $263.37; 4th; 35 days after completion. $789.38; signed, June 20th; filed, June 22d.

Golden Gate Avenue, nr Lott, 1-story frame; cost, $1,500.

Hyde and Washington, 2 story cottage. Owner, A. M. Burns; architect, J. C. Matthews & Son; contractor Knight & Littlefield; cost, 7,494;

1st payment, 75 per cent as work progresses; balance, 35 days after completion; limit, October 10th; signed, June 22nd; filed, June 25th.

Hartford, and 19th, alterations. Owner, Capt. Dahler; cost, $1,000.

Haight near Steiner, two 2-story frames. Owner, John H. Effinger; architect, H. Geilfus; contractor, T. Van Brostel; cost, $7,936,

1st payment, when frame is up, $1,000; 2nd, when floors are laid and partitions set, $1,100; 3rd, when brown coat of mortar is on, $1·100; 4th, when white coat or hard finish is on, $1,100; 5th, when completed and accepted $1,136; 6th, 35 days after completion and acceptance, $2,500; signed, June 11th; filed, June 13th; limit, September 15th; sureties,——

Howard near 11th, frame building. Owner, Ellis Hughes; architect, A. J. Barnett; contractor, Thomas Morris; cost, $5,300.

1st payment, 75 per cent. as work progresses; balance, 35 days after completion; signed, 16th of June, filed, June 18th; sureties, Reese Llewellyn; amount, $3,000.

Howard bet 16th and 17th, 3-story frame. Owner, Rev. D C. Crowley; architect, Chas. Devlin; contractor, J. W. Smith; cost, $13,945.

1st payment, when first story joists are set, $750; 2nd, when roofed exclusive of tower $1,250; 3rd, when building is enclosed $1,200; 4th, when rough coat of mortar is on, $1,500; 5th, when hard finished, $2,500 6th, when ready for painting, $2,000; 7th, when completed; 8th, usual 35 days, $3,495; signed, June 19th; filed, June 20th; limit Nov. 1st; sureties, J. Coop, B. Joost; amount $10,000

Howard, bet 23d and 24th, 2-story frame. Owner, F. C. Hornung; architect, Smith & Shea; contractors, Martin & McGuire; cost, $1,292.

1st payment, when frame is up, $792; 2d payment, when rough coat of mortar is on, rough plumbing work done and outside primed, $800; 3d, when completed and accepted, $800; 4th, usual 35 days; limit, 80 days; signed June 28, 1888; filed, June 29, 1888.

Jackson near Scott, 1-story frame and basement brick. Owner, Jos. Haber; architect, Pississ and Moore; contractor, A. McElroy; cost, $10,300.

Payments as follows 1st, when brick work is done, $1,200; 2nd, when frame is up, $1,500; 3rd, when first coat of mortar is on, $1,500; 4th, when hard finish is on, $1,500; 5th, when ready for painters, $1,500; 6th, when complete and accepted, $500; 7th, 35 days after completion, $2,000; limit, 120 working days: signed, June 15th, filed, June 16th; sureties, B. Joost and B. Thyarks.

Jackson nr. Pierce. Frame dwelling; owner, R. Bruce, architect, W. F. Smith; contractor, Kern; cost, $14,000.

Jackson nr. Pierce. Frame dwelling; owner, Mrs. H. Van Wyck; architect, W. F. Smith; contractor, Kern; cost, $15,000.

Jessie, cor Ecker, 4-story brick. Owner, O. D. Baldwin; architect, S. Newsom; day work; cost, $20,000.

Kearny, cor Jackson, brick additions to hotel building. Cost, $3,000.

Lyon bet. Sutter and Post, 1-story frame. Owner, C. H. Hildebrand; architect and builder, G. G. Gelispie; cost, $1,815.

1st payment, when frame is up, $450; 2nd, when brown coat of mortar is on, $450; 3rd, when completed, $450; 4th, usual 35 days, $465; limit, 75 days; signed, June 21st; filed, June 21st.

Mission, No. 556, additions. Owners, Dalziel & Moller; cost, $1,000.

Market bet. 6th and 7th, 5-story brick. Owner, Jos. Rosenthal; architect, Salfield & Kohlberg; carpenter contractor, T. H. Day; cost, $23,950.

1st payment, 75 per cent. as work progresses each month; balance, 35 days after completion; limit, 3 months; signed, June 18th; filed, June, 18, 1888; sureties, C. S. Holmes and B. Joost: amount, $8,000.

Market bet. 6th and 7th, 5-story brick. Owner, Jos. Rosenthal; architect, Salfield & Kohlberg; contractor, Riley & Loane; brick mason; cost, $38,000.

1st payment. when ready for 1st floor joists, $5,000; 2nd, when ready for 2nd joists $6,000; 3rd, when ready for 4th story floor joist, $8,000; 4th when ready for 6th story floor joist, $7,000; 5th, when completed and accepted, $2,500; 6th, 35 days after completion, $9,500; limit, April 1, 1889; signed, June 14th; filed, June 18th; sureties, H. S. Loane and M. O'Connell; amount, $1,500.

Market bet. 6th and 7th 5-story brick. Owner, Jos. Rosenthal; architect, Salfield & Kohlberg; contractor, Albert Weinert; statuary; cost, $3,654.

1st payment, when clay models for portico accepted, $250; 2nd, all models completed, $500; 3rd, when Atlas is completed, $500; 4th, when models in plaster Paris, $300; 5th, side figures of portico done, $500; 6th, when all are in place $634; 7th, 35 days as usual, $950; signed March 8th; filed, June 18th.

Market bet. 6th and 7th, Wrought Iron Work. Owner, Jos. Rosenthal; architect, Salfield & Kohlberg; contractor, Sims & Morris; cost, 4,150.

75 per cent. as work progresses at end of each month; balance, 35 days as usual; signed, June 10th; filed June 18th.

Market bet. 6th and 7th, Cast Iron Work. Jos. Rosenthal; architect, Salfield & Kohlberg; contractor, Reese Llewellyn; cost, $2,750.

1st payment, when basement columns are accepted, $600; 2nd, when 1st story columns are accepted $1,400; balance $750, usual 35 days; signed, June 10th; filed, June 18th

Market and Davis, additions. Owner, Mrs. M. Coleman; architects, Smith & Shea; contractor, Chas. H. Ackerson; cost, $3,808.

Payments are made at the rate of 75 per cent as work progresses; balance, usual 35 days; signed June 28, 1888; filed June 29, 1888.

Market, bet 16th and 17th, 1-story frame. Owner, Rothermel; contractor, O. E. White; cost, $3,000.

Market, bet 16th and 17th, 3-story frame. Owner and builder, W. Kahn; cost $7,000.

Mission bet 18th and 19th, 3-story frame. Owner, John Haman; architect, Wm. Schrof; contractor, George Gale and J. C. Mires; cost, $6,330; limit, October 20th; signed, June 25th filed, July 5th.

1st payment, when frame is up, rustic and roof boards on and chimneys built, $1,630; 2d, when all window frames are set, the brown coat of mortar on and main portion of the outside finish and roof is on, $1,535; 3d, when hard finish is on, the interior and exterior finish is all up, sashes hung and 1st coat of paint is on, $1,535; 4th, balance 35 days after completion and acceptance; sureties, John Gale and A. Powell.

McAllister and Gough, alterations. Owner, Aaron Gorfinkel; architect, Salfield & Kohlberg; contractor, Fuchs and Bucher cost, $3,238.

1st payment, when raised and studding set, $800; 2d, when brown coat is on, $838; 3d, when completed, $800; 4th, 35 days after completion, $800; limit, 65 days; signed, June 18th; filed, June 21st.

Natoma bet. 1st and 2nd, alterations. Owner, J. M. McElroy, Jr; architect, J. J. Clark; contractor, J. D. McDonald; cost, $1,195.

1st payment, when building is raised and enclosed, $250; 2d payment, when rough coat of mortar is on, $250; 3d, when inside finish is on, $250; balance, 35 days, $445; limit, 30 days; signed, June 20th; filed, June 21st.

Nineteenth, nr Hartford, alterations to two buildings. Owner, Mrs. Ward; cost, $1,500.

Pacific, bet Buchannan and Webster, frame building. Owner, Henry Falkenstein and wife; architect, S. Newsom; contractor S. C. Buzelle; cost, $7,300; signed, July 3d; filed July 5th; limit, 120 working days.

1st payment, when graded and foundation is in, $600; 2d, when frame is up and chimneys built, $800; 3d, when inside is ready for lathing and cornice and roof is on, $1,200; 4th, when outside is finished and primed and brown mortar is on, $1,000; 5th, when hard finished, $900; 6th, when works are all done, $975; 7th, 35 days after completion, $1,825; sureties, S. C. Buzelle and J. F. Kennedy; amount of bond, $2,000.

Post near Octavia, 2-story frame. Owner S. G. Mish and wife; architect, B. McDougall and son; contractor, J. R. McLean; cost $5,755; signed, June 30th; filed, July 5th; limit, October, 15th.

1st when the grading is finished, brick walls for the house and area walls are laid and chimneys to top of them $500; 2nd, frame up roof boarded and rustic on, $800; 3rd, when roof is tinned, floor laid, gas and water pipe laid and window frames set and brown coat of mortar is on the walls and ceiling $955; 4th, when hard finished, the door jamb set, sash glazed and hung, inside stairs up front fence wall built front steps up, outside mill work complete and the outside primed, $1,000; 5th, when completed and accepted, $1,000, 6th, 35 days after completion and acceptance, $1,500; amount of bond, $4,000; sureties, J. S. Doe and John T. Grant.

Prospect Ave., junction with Lundy's Lane, five 1-story frame. Contractor, Frichette; cost, $6,000:

Prospect Ave., nr California Ave., 1-story frame. Cost, $1,500.

Sutter and Lyon, 2-story frame; Owner, Catharine Brady; architect, Schmidt & Shea; contractor, A. Norton; cost, $3,551.

1st payment when building is enclosed, $600; 2d, when brown coat is on, $665; 3d, when white coat is on, $665; 4th when accepted and completed $730; 5th, usual 35 days, $891.25; limit, 100 days; signed, June 20th; filed, June 23d.

Scott near Walla, frame building. Owner, H. H. W. Stroecker; architect, H. Geilfuss; contractor, Fraser & Foster; cost, $4973.

1st payment, when frame is up, $800; 2d, when floors are laid and partitions set, $700; 3d, when rough or brown coat is on, $800; 4th, when inside finish is on, $728; 5th, when completed, $700; 6th, usual 35 days, $1,245; limit 1st October; signed, June 12th, filed, June 19th.

Second, cor Stevenson, 5-story brick. Owner, T. E. Cunningham; architects, Percy & Hamilton; contractor, J. R. Wilcox; brick, McGowin & Butler; cast iron, McCormick Bros.; concrete, E. L. Ransome; plumbing, Duffy Bros.; plastering, Fisher; total cost, $100,000.

Sacramento and Pierce, two 2-story frame building. Owner, C. J. Wingerter, architects, Schmidt and Shea; contractor, Wm. Pluns; cost, $12,720.

1st payment, when rough frame is up, $2,320; 2d, when brown coated, $2,400; 3d, when hard finished, $2,400; 4th, when completed and accepted, $2,400; 5th, 35 days after completion, $3,200; signed July 6th; filed July 7th; limit, Oct. 20th; surety, B. Joost.

Seventeenth, nr Collinswood, additions Owner, J. R. Drew; cost, $1,500.

Seventeenth, nr Diamond, additions. Owner, G. Monroe; cost, $2,500.

Seventeenth, nr Sanchez, 1-story and basement frame. Owner, Gilfoy; contractor, A. A. Willins; cost, $3,000.

Twenty-Fifth, nr Treat Ave., 1-story frame. cost, $1,860.

Turk, No. 116, alterations. Owner, R. Finking; contractor, A. Miller; cost, $1,200.

Thirteenth bet Isis and Folsom, 2-story frame. Owner, Mrs. Mary T. Campbell; architect, M. J. Welsh; contractor, C. Coady; cost, $2,650.

$600 when frame is up; 2d, $600 when 1st coat of mortar is on; 3d, $600 when completed; 4th, usual 35 days; limit, 70 days; signed, June 20th; filed June 22nd.

Twentieth, bet Guerrero and Dolores, millwork contract. Owner, J. A. Anderson; architects, Pierce & Kidd; contractors, Towle & Broadwell; cost, $1,017.

1st payment, when exterior millwork is done and delivered on premises, $381.00; 2d, when entire millwork is finished, completed and accepted, $381 00; 3d, balance, 35 days after completion; signed May 5th; filed July 6th.

Turk, near Larkin, a frame building. Owner, Mrs. A. Baily; architect, F. J. Welsh; contractor, R. O. Davis; cost, $4,134.

1st payment, when frame is up, $1,000; 2d, when brown mortar is on, $1,000; 3d, when finished and accepted, $1,000; 4th, balance, 35 days after acceptance, $1,134. Limit, 90 days; signed July 2d; filed July 7th; surety, W. C. Meeker; amount of bond, $4,000.

Union and Leavenworth, Plumbing contract. Owner, G. Rocca; architect, Wm. Mooser; contractor, Samuel Eckleheimer and Bro. cost, $1,625

1st payment, 75 per cent. as work progresses; 2nd and balance, 35 days after completion; limit, 90 days; signed, June 5th; filed, June 20th.

Van Ness Ave. and Jackson St. owner, F. A. Frank; architect, C. Day; contractor, Jas. Kelly; cost, $22,900

1st payment, when frame is built, sheathed and roof ready for shingles, $4,000; 2d, when chimneys built and brown coat of mortar is on all walls and ceilings, $5,000; 3d, when hard finished, $3,500; 4th, when the stairs are built and doors and windows hung, and inside ready for painters, $4,675; balance usual 35 days after final completion; signed, June 20th; filed, July 9th; limit, Feb. 25, 1889.

Valencia, bet 25th and 26th, improvements. Cost. $6,000.

Webster, bet Waller Hermann, 1-story and basement frame. Owner, Henry Smith; architect, John & Zimmerman; contractors, Rountree Bros; cost, $1,950.

1st payment when framed, $500; 2d payment, when rough coat of mortar is on, $500; 3d, when completed, $450; 4th, the usual 35 days, $500; limit, September 8, 1888; signed June 25, 1888; filed June 30, 1888; surety, W. A. Meeker.

COUNTRY BUILDING NEWS.

LOS ANGELES.

The erection of buildings in Los Angeles is still one of the things which attracts the visitor's notice when he takes a tour of the city, and there seems to be no cessation to the activity in this respect, which has been so marked during the past year. Scarcely a day goes past but workmen commence on new contracts. Excavating work has been begun on the site of Brodie's store, and a new edifice will go up thereon. This is another addition to a large list hitherto published. The demolition of the one-story brick, southeast corner of Fort and First, makes way for a three-story brick by Judge Reddick, which will be an ornament to that part of the city. The W. C. T. U. Temple, on the corner of Fort and Temple streets is beginning to show the people that the ladies are providing an ornament to our city. The terra-cotta finish is a distinctive feature of the edifice, and it speaks well for the taste of the architect.

The court house is going ahead more rapidly. It will have a main frontage on Fort street of 180 feet, with the same dimensions on New High. The Temple street front is 150 feet, and the south end, which comes to within a few feet of the jail, 140 feet also. The main entrance will be from Fort street, but access is had from Temple and New High also. The south end entrance will be for convenience of communication with the jail. The building is two stories and a 17-foot basement; the basement being all above the surface. The basement is to be of granite, quarried near Riverside. The upper stories will be of marble from a quarry near Victor station, San Bernardino county, trimmed with a reddish sandstone from Flagstaff, Arizona. The trimmings will be largely ornamented by the hand of skill.

The Crocker block, on Fort street, is going ahead rapidly, and will be ready for occupancy before the rain commence. The Y. M. C. A. building, on the opposite side of the street, is now being pushed forward rapidly.

The Simpson Tabernacle is progressing quite rapidly, and will be an ornament to the corner of Hope and Seventh streets. The site of the tabernacle is on Hope near Seventh, and the lot fronts 134 feet on Hope street and is 162 feet deep. Bricks to the number of 600,000 will be on the ground in the course of three weeks, and all other building material will soon be ready for pushing the splendid work forward to completion. The church will be furnished with a pipe-organ twice as large as any now in the city, and will cost about $8000. The total cost of the building and lot will be near $70,000. Adjoining the church is to be a handsome brick parsonage.

LOS BERROS.

The following are some of the improvements: Mr. Eale, a fine residence, cost from from $1000 to $1200; Mr. Persing's, another fine residence, cost from $1200 to $1500; Mr. Binkley's, a neat cottage, cost about $1000; Mr. Barrot, a fine two-story building, intended for a hotel, cost $1500, Mr. Waterman contractor; Mr. Strowbridge, a story and a half house, cost about $408; Mr. Kenny, a two-story building for store and post office, costing from $1500 to $2000; Mr. Robinson has just laid the foundation of a house to cost about $1200.—*A. G. Herald.*

SAN JOSE.

The Southern Pacific Company is building a second story to the central part of their main warehouse at the San Pedro street depot to be used as a general freight office. The new office will be directly over the old one, and will be a model of convenience and comfort.

Plans have also been prepared for an elegant depot at San Carlos, bet. Belmont and Redwood City, which is to be built from sand-stone from the Goodrich quarry.

SAN BERNARDINO.

I. R. Brunz will erect a brick building.

OAKLAND AND ALAMEDA.

G. M. Flick has contracted with M. A. Lent to build for the latter a residence on the south side of East Sixteenth street, 100 feet east of Eighth avenue, for $4,000. It is to be two-story frame building. Payments are to be made in installments of $1,000.

W. W. Wilkens is having a residence built in North Oakland. Nelson & Nickerson are the contractors. The cost will be $2,860. The building is to be finished July 17th. W. Kirk is the architect.

A. W. Pattiani & Co. are building for E. C. Sessions a cottage on Twenty-fourth avenue, near East Twentieth street, in the Sessions tracts, East Oakland. The contract price was $1040. The building is a modern Queen Anne cottage.

The Swedish church on West street, near Twelfth, has been completed.

Stephen Watts has just completed for his own use a very handsome cottage on Delger street, near San Pablo avenue. It cost $4000.

ALAMEDA BUILDING.

G. Laver is building for C. Winter a one-story cottage on Pacific avenue, Alameda. The cost will be $1230, and the building will be completed by August 1. A. R. Denke is the architect.

J. J. Denschl is building a frame house on Charles street, near Railroad avenue. The contract price is $3250. The architects are F. X. Fisher and V. L. Fortin.

G. A. Flash, an artist of considerable fame, is building on Regent street, south of San Jose avenue. The building is being arranged so as to allow for a large studio and art gallery for the artistic owner.

On Madison and Ninth streets Walter Mathews is remodeling the residence of Col. L. L. Bromwell, and putting $8,000 worth of new work into an already handsome house. This work is nearly completed.

The residence of Everett Grimes on East Fourteenth street near Sixth avenue, has been completed, at a cost of $12,000.

Plans have been drawn for a residence for F. W. Henshaw, on the corner of Fifth avenue and East Twentieth street, to cost the same amount of money, The contract will be let very soon.

Mr. Gale's residence at the corner of Central avenue and Regent street, Alameda, is about completed.

Pattiani & Co. have begun for M. E. and E. Schieffeln two frame cottages on Alameda avenue and Lafayette avenue, Alameda. The cost will be about $1300 each. They will be very pretty, comfortable little buildings.

Bids for the construction of the Chapin block, on Second street, Livermore, directly north of the Boston block, were opened in Architect Boone's office on Monday, and the contract was awarded to S. E. Clough on his bid of $12,500. The block will be of wood, two stories high.

It is proposed to build a school-house, to cost about $15,000, at Golden Gate, otherwise known as Klinknerville. William Kirke is the architect.

W. H. Wellbye will build for N. J. Ashton a handsome two-story frame residence on Magnolia street, near Fourteenth street, Oakland. The house will be Queen Anne style in architecture, and will cost $2,200. A stable will be built in the rear, and when completed this will be one of the finest residences in the neighborhood.

RIVERSIDE.

F. W. Haskell is building a two-story residence on Ninth street in White's addition. It will have ten rooms, is built of good brick and will cost $2000.

The California Architect and Building News.

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THE

California Architect & Building News.

Established January, 1879.

The official organ of the San Francisco Chapter American Institute of Architects. Published by the SAN FRANCISCO ARCHITECTURAL PUBLISHING CO., No. 240 Montgomry Street, Rooms 11, 12 and 13.

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Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, AUG. 15, 1888.

LUMBER TAKES A TUMBLE.

A Reduction of $2 Per M All Along the Line.

The lumber firms in Sacramento have reduced the price of lumber on an average about $2 per thousand feet. This will be good news to all desiring to build houses, as there is no doubt but that the great increase in the prices of lumber retarded materially the building boom in this city. The reduction is mainly in Oregon pine and redwood, and when Frederick Knox of Richards & Knox was interrogated to-day by a *Bee* reporter in reference to the reduction he said that the decline in prices was due solely and wholly to a reduction of freights. He did not believe the reduction an unmixed blessing, so far as this portion of the State is concerned, and stated that the price of Oregon pine and redwood had created a demand for California mountain lumber which had set all the mills going to their utmost capacity. Furthermore, he said, when lumber was cheap carpenters' wages were about $2 per day, whereas they are now $3 and $3 50.

Mr. Knox scouted the idea that there had been any "trust" broken, or anything of that kind. The decline was in accordance with the rules of trade—nothing more.

It is understood that the only loss to dealers in this city will be on the stock on hand—amounting to from $24,000 to $30,000.

Notwithstanding all this, it is well known that the high price of lumber has deterred many from building in this city, and cheap lumber would mean hundreds of additional happy homes in Sacramento.—*Sacramento Bee, Aug. 2nd.*

Bids are wanted for the erection of a brick building in the town of Newman. Inquire either at Cahen & Son, Hill's Ferry, or of James E. Wolfe, architect, 240 Montgomery St., this city.

Our Stand on the Lumber Question.

Several of our contempories have taken this Journal to task for the stand we have taken in regard to the high schedule of rates for lumber adopted by the Manufacturers Association. This Journal has now been established nearly TEN YEARS. and during that period we have steadfastly proclaimed for fair prices for building materials. Our friend on California street has the following in a late issue:

"There seems to be a combination among certain newspapers of both high and low degree, in this city, that has decided to ruin if possible the lumber trade of the Coast. They don't hesitate to misstate facts, misrepresent the position of affairs, and brand as greedy cormorants all engaged in the manufacture of lumber. They have kept up their howls until the retail trade has been seriously affected, and people are beginning to believe that they are paying an exorbitant price for their lumber. This persecution—and we can call it by no other name—injures not only this section but the whole Coast, retards it, developement, prevents honest labor from being utilized, and will set our whole Coast back several years. We cannot see the object of it. The cost of manufacturing lumber is well known, the cost of transportation is known, and it is well known that there is not a large profit in the business. Because at one time when there was a controversy between certain millmen lumber was sold far below even the cost of manufacturing, and when the firms engaged in the controversy lost thousands and thousands of dollars, that is no reason why the manufacturers now should not have a reasonable profit, and that is all they ask.

In looking over the advertising pages of the Journal referred to we find a goodly portion of its patronage comes from those it would seek to help, viz., the lumber dealers, and naturally its editorals would not be against those who give it such a generous support. We are sorry, however, to have Friend Everett make so many naughty statements in such a short space.

In another article in the same issue from which above is taken he says, "there is no Trust on this Coast. The Pine Association is composed of several of the large mills etc." That is, there is no "Trust," only the large mills have an "Association."

It will be noticed that "we have kept up our howl until the retail trade has been seriously affected." Of course this is from the standpoint of the lumbermen. The TRUTH however, is simply this. During the existence of this City as a city, whenever the chance offered, the lumber manufacturers have raised the price of lumber until building operations have almost stopped, and only when forced, by the absolute dearth of orders, have they reduced the price.

Look at the year 1883. A combination of 12 of the largest firms *compacted* together to squeze those intending to build. A "BONE YARD" was established in the Southern part of the city. Small mills outside of the ring sent lumber then—as well as at the present time—to the city. The cargo was immediately bought by the "Ring" and transferred to the "Bone Yard." Millions of feet of lumber were piled up, until the load became too great. Shipments were made to Sandwich Islands, Central America etc., merely to relieve the strain. The price in the city remained at the same exhorbitant figures, but people living a thousand miles away could get lumber almost at their own figures.

Still the lumber to be bought by the "Boners" came into market. Some of our bright contractors conceived the happy plan of also buying by the cargo. A large scow was handily moored, and a scow cargo taken on. Rates for this kind of a cargo were lessened. It was the beginng of the end. Scow cargoes could soon be had by any one. Lumber took a tumble and in a short time could be had for $13 per M. At that time—as records will prove—we complained the rates were too low, arguing that $18 was a fair price and manufacturers should endeavor to maintain that figure.

Gradually a recovery was had and another combination formed. This time those composing the same were required to put up the *cash*, which was to be forfeited on certain conditions. This in turn gave way to the present corner, Trust, Combination, or whatever term you choose to apply.

The great demand for the Soutern Counties opened the way. The money holders of the Trust discovered a nice plum. They bought or controlled nine-tenth of the lumber carrying ships. Freights began to advance, and as they did, of course, lumber also advanced. It was given out that owing to the great advance *in freights*, say $2 per M, that amount must be added to the price of lumber. It was the old "Contract and Finance Committee" over again. To ship 5,000,000 feet a month from one company was nothing unusual, but the extra freight on same was just $10,000, which amount went in the pocket of the "greedy cormorants," as brother E—expresses. It has always been so in this city. Lumber would be placed at too cheap a figure. Buildings would start up in every direction. The screws would be

gradually applied, until the building operations nearly ceased, and then down lumber would come. No thought is taken of the demand for this city. If, to-morrow, an unexpected demand should spring up from any outside section, no hesitancy would be used by the lumber manufacturers in restoring the price from which they were compelled to recede. Having caused building operations to almost cease in this city, they are merely willing to give owners a little breathing spell to get them to renew building, when, if the demand warrants, away goes up the price of lumber and a general dullness ensues. Surely our manufacturers are sagacious enough to know that our people will not always stand this battledore and shuttlecock way of fixing the value of lumber.

We merely look at FACTS. Owing to the extortionate prices charged for lumber, building engagements are very limited in number for this season of the year. For the first 6 months of the present year, compared with those of last year, there is a falling off in number of 75 improvements, and $550,094 in values. And this in face of the fact that the city is steadily growing. Ask 100 property holders in regard to improving their property and 90 of them will say "Lumber is too high."

It is not alone that rough lumber is too high, but the price of surfaced lumber has been advanced in a 2 to 1 ratio compared with the production of each. And this fact has enabled the mill men to so raise their bids that a fair rate of interest was not returned on the money invested, to those building.

At present the general tendency of the market is downward. Two reductions have been made and the price may be set down as $20 for rough lumber.

Several other items could be given in regard to an analysis of the "extract" but we have said enough to convince the many who take this Journal, that the position we have assumed all along in regard to the extortionate prices heretofore charged for lumber, is the correct one. We are pleased that our efforts have met with success and trust soon that the fair price to manufacturers and dealers and consumers of $18 per M. will be recognized as the legitimate value to be placed on rough lumber.

Cheap Plans a Bad Investment.

HERE is a tale of two buildings in one city: A and B were shoe merchants, who bought lots about the same time in a growing section of their town, and erected thereon stores of about equal value for their own use. So far the course and experience of the two were alike. But A employed an architect of good standing and paid him $500 for his services, while B hunted up an obliging builder who generously furnished the plans for nothing. At this stage of our narrative B was financially $500 ahead of A, and took much satiafaction in contemplating his own superior shrewdness.

Fortunately for B, but quite as much by chance as cuteness, he fell into the hands of an honest and competent builder, who gave him as good a building as he knew how to construct. Each merchant moved into his new store, the two being but a few blocks apart, and set about working up trade. A's store while costing the same as B's, was unique in design, a well proportioned novelty, which attracted much notice when building, and was widely talked of. This talk advertised A's business as well as A himself. Then he had a handsome engraving made of his store and published it in the papers and printed it on his letterheads and envelopes. It attracted attention, and custom grew. This also enhanced in value adjacent real estate, and having built on only half his lot, A was able in a year to sell the other half for an advance of a $1,000 on cost. This put him abreast of B and $500 better.

Moreover, the purchaser employed the same architect and erected another taking front adjoining A's, and this also was talked of and drew trade, which drew other trade, and again property advanced in value. Then a fine store, to correspond with this improving locality, was erected opposite and shortly two more of the same sort. The locality became choice for business, and after a few years A sold outstore and business at a profit which amounted to a comfortable fortune.

B's complacency over the $500 he had saved on his plans soon vanished as he compared his monotonous box-like front with the other store. No one talked about his store, there being absolutely nothing in it to talk about. In time other equally monotonous fronts were erected opposite and adjacent to his. The street has its character fixed as of inferior grade; no enterprising party who wants to erect a fine improvement thinks of going to that vicinity now though land continues cheap there. B does about the same business every year, and considers his property worth about the same now as when he bought and built. He would gladly sell for a moderate advance, but the location not being popular, he has few offers and is still holding on waiting for better times.

The moral is that parsimonious economy may begin almost anywhere more safely than in the selection of an architect to draw one's plans.—*Inland Architect.*

The Reason Why.

THE life of California as a State is brilliant in a thousand ways, but far less so than it would have been, had more of those whohave become millionaires and rich men through her prolific bounties and innumerable resources, and the opportunity so lavishly opened up to them on every hand by the inherent richness and wealth of the Golden State, from which they have amassed—in numerous instances—Collossal fortunes and individual prominence, many of whom being raised from humble life and conditions, to possessions and rank among the money honored of earth, been true and kind in return to the great benefactress to whom they are so largely indebted for what they possess and enjoy of this world's goods.

It may be claimed that genius, thrift etc. smartness has brought these fortunes to the favored ones, who within short periods of time—a generation or less have become rich. This in its way may be true, but all the smartness and genius possible, would fail in individual exploits after riches, if the field of operation was sterile and barren and the golden fountains dry. Men who get more than others, where the chances are equal and even to all, are to be accredited with superior money-making abilities, and entitled to pre-eminence as wealth gatherer. But that is not the direct point in present issue. The fact that most of those who have grown rich in California have reached that happy condition by reason of, and through the manifold—easy and available opportunity special to this state should imposes a moral obligation which to disregard is at least ingratitude toward the source from whence so much has been received. Yet this ingratitude is distinctly stamped upon the acts of every one—the hundreds who have gained the grand object and purpose of human existence and left the State which to them has been so generous and kind, to enjoy the luxuries, invest and spend in other cities and communities having no part nor lot in at least the preliminary accumulations of the wealth gained in California and which should be employed and utilized in weaving garments of prosperity to adorn and beautify the Golden Goddess that opened the doors and unlocked the vaults of hidden treasures for ages concealed from human eye and hand and scattered them so freely at the feet and in the path way of those who have so successfully participated in gathering in that flow of gold which has never ceased to pour forth from the secret recesses of California's store house of precious metals and her fields fruitful and prolific in all that is necessary for the wants and comforts of human life. Had only a portion of the millions of gold that have been carried from this State and invested elsewhere; been retained within her borders and used and employed in devloping the possibilities of the Pacific Coast, a vastly different condition of things would exist at the present time and population number thousands where only hundreds are now to be counted.

Had enterprise and love of State more than selfish and personal ambitions for ease, notoriety, and the allurements of life in the older great commercial and business centers of the U. S. been the controlling purpose of our California made rich men, instead of being as now, in bondage to a single inefficient R. R. the whistles of competing lines would be heard from San Diego to Washington Territory—thousands of acres now in grass would be yielding golden grain and luscious fruits, millions of tons of precious deposits as yet untouched would have seen the light and thousands of men, women, boys ane girls would be earning bread in manufactories and industrial pursuits and a greatly increased prosperity rule the hour. Hence the less grand position of California and her cities, towns and country places among the sister states and cities of the Union than might have been is more the fault of those, who the State by her recourses have made rich, than any lack of natural available possibilities.

STEEL SQUARE AND ITS USES.

We have just received a large number of the above named books. A copy will be sent to any address upon receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the umerous uses t, which it may be applied.

BOTH SIDES OF THE QUESTION.

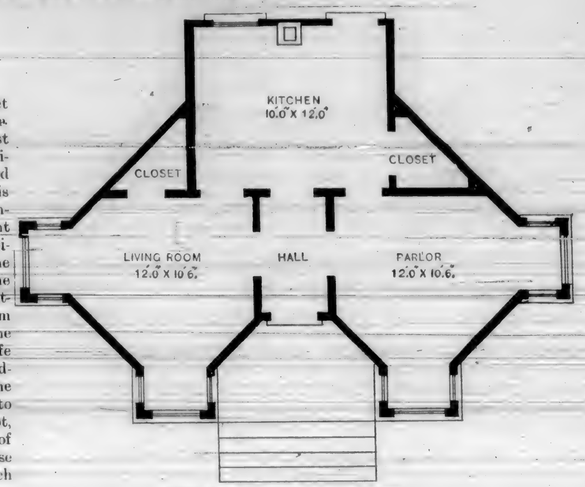
The Most Important Factor.

ONE of the most extraordinary statements we have lately met with is to be found in the current monthly number of a Chicago periodical. It asks the question "Who is the most important factor in the construction of modern edifices—the architect or the builder? and says: "The *National Builder* is disposed to give due honor to both, as distinct professionals, each in his own line capable of performing good work but not necessarily intruding upon each other's especial domain. The intelligent builder as the actual constructor of buildings, if of long experience, holds a title in fee simple to public consideration, as one who ought to be able to design a building, as he is to start at the foundation and complete it. If he has superintended the erection of a large number of buildings, purchased material for them and studied their method of construction, he should soon become familiar with those principles which enter into good and safe construction and hence become capable, from a practical standpoint, to compute the strength of material, to understand the adaptability of certain parts one with the other, and in fact, to compete with his architectural brother. Such a man, no doubt, could, in many instances, undertake the professional duties of the architect with success and credit, and would, in the course of a general business, be able to meet the many questions which daily perplex the practicing architect."

How any one can pretend to promulgate the idea that a builder is a professional man is beyond ordinary comprehension. Why a man who pays mechanics and laborers their wages for laying brick and mortar, as shown in an architect's plans and specifications, should be dubbed an "architectural brother" would puzzle a Philadelphia lawyer. We do not believe that any reputable builder will appreciate such an attempt to put him in a false light. A good builder is one who sees that his workmen carry out the ideas of the "author" of the building, giving the quality and brand of materials specified by the architect, and endeavoring, by systematical control of the work to earn a fair per cent. of profit on the contract. An inferior builder is one who indeavors to cheat the owner by using cheap material and evading the strict letter of the specifications in order to save money on his work. But no builder wishes to answer the responsibility of the architect on whom lays the odium in case his structure will not carry the required load. The builder's responsibility is only to erect such a building as the plans call for, not to figure out the strains.

It is owing to such statements as those of the *National Builder* that architects are so little thought of by the unthinking public. In answer to the question we would therefore say, the prime "factor in the construction of modern edifices" is the architect. The builder is as the instrument in the hand of a skilled surgeon; if the knife should be blunt the operation would be bungled, and if a builder is incompetent or tricky the edifice designed by the architect will suffer in so far as his ideas have not been carried out. We have advocated the licencing of builders; and believe that they should understand thoroughly the practicible rules of mechanical construction, but the artistic education so absolutely necessary in the profession of architecture is not demanded by the builders' trade; but what is required is that thorough technical knowledge and skill in execution which enables him to comprehend the drawing furnished by the architect and to carry out the work in a manner to give credit to himself as a builder, realizing the conception of its author. In making this statement we do it with no feeling derogatory to the builders, believing that they, as we do, recognize the importance of a strong line being drawn between the architect in his profession and the builder in his trade. As it is inadvisable for the architect to usurp the position of a contractor, it is equally so for the builder to attempt to be his own architect.—*Building.*

AN ingenious New York builder of down-town flats was struck recently by an idea which he has put into effect with great success in his latest building. He noticed that one of the first things his tenants did when they went into a house was to hang portieres in every available doorway. He has saved them some trouble and himself the expense of doors by putting a simple rod for the curtain instead of the door in each of the inner doorways in his latest flats. The idea was novel enough to catch the house hunting mind, and he gets more rent from the flats than though they were fitted with doors, and has no lack of tenants.



A Cozy Home for a Family of Two

Oil Holes.

The early history of oil holes is clouded in mystery. Some historian states that Noah used oil holes in the machinery of the ark, while others claim that the hinges of the gate of the garden of Eden had holes in them, and that Adam went around every Monday morning with a tenpenny nail to clean them out. However that may be, since oil has been used on machinery oil holes have been in vogue.

For the benefit of those who do not know what an oil hole is, I will state that it is a small canal to conduct oil to the working surface of machinery. Sometimes it fails to conduct it, then a tenpenny nail is the thing to use.

I have read in the History of Grease about some kind of a patent oil hole for loose pulleys. I have never seen any of them; in fact all that I have ever seen were straight holes—regular centrifugal pumps, throwing out all the oil that does not happen to soak into the joints before the wheels start.

When I oiled line shafts I used to carry a lot of pine plugs in my pocket, and when one was missing I replaced it with a new one, not because I was ambitious to do a good thing, but because I had to do it. A plug in the oil hole of a loose pulley is a good thing. How much machinery comes to us into which we can not get oil; if we are fortunate enough to find the place, we oil it once. You have a machine in the shop with oil holes for every stud and gear except one or two. When you put up the machine notice those places and resolve to keep them oiled, so you make a tin eave-spout to run oil into them, and hold in one hand and pour oil into it with the other. That is all right, but after a while you put a new hand on the machine who never saw that make before. He knows that some machines have hidden oil holes, thinks he will oil all the places he can see, and trust to Providence until he learns the machine better. He finds out at the end of two or three weeks that Providence is not in the oil hole business.

Farmers in general do not find the oil holes in their machinery. If I were making agricultural machinery, I think I would paint oil cans all over the machine; then they might take the hint if they did think that it meant that they were self oiling. Do not counter-bore oil holes unless you do it on the other end, for it makes a bigger place to catch dirt and dust.

If you cannot get oil into machinery without a funnel, use a portable tin one. Messers. Brown & Sharpe have a good dodge on oil holes. They stamp OIL HOLE around the hole, and if the machine is clean and the men can read he knows where to oil and does not oil the pin holes, and let the oil holes go.

In shops where they use axle grease, oil holes must be big enough to let it down. Whoever saw an oil hole stopped up because it was too big? When grooves are made in boxes they should be large. It is a good practice to counter-bore oil holes on the inside if it can be done, as in the case of half-boxes, oil-holes through studs and the like.—*John Coffin, in Wood Worker.*

FRONT ELEVATION OF "SANTA ROSA" COUNTRY DWELLING.

Country Residence.—The "Santa Rosa."

WE present the full plans and elevations, and accompany the same with a general set of specifications for a very convenient and cozy country home to which we have given the name of "Santa Rosa." The plan was designed for a gentleman in the beautiful town of that name, and we are indebted to the architect, Mr. S. C. Newsom, for the privilege of producing the same, and also for the general specifications.

For a country summer residence the plans will bear a careful scrutiny. You pass from a spacious verandah into a commodious hall, from which easy access is had to every part of the house. The usual doors leading to the parlor and dining room are done away with, their places being filled by large archways, designed for portieres. The parlor is quite large, being 14 feet 6 inches by 17 feet 6 inches, with ample windows on five sides of the room. A hallway 6 feet in width connects with the dining room, which is 17 feet six inches square. A commodious pantry is connected with this room, having close connection with the kitchen by the aid of a dumb waiter, made by the Ed. Storm Spring Co., of Poughkeepsie, N. Y. By this arrangement all smell of cooking is confined to its proper place. A large butler's pantry is at the other end of the dining room, fitted up with a sink, etc., and connected by a stairway with the basement. On either side of the front door is a small closet, which will be found very handy for the repository of parasols, umbrellas, etc. In a summer resort the parasols used are as large as umbrellas, and hence we name these closets as a proper receptacle for same.

The library is not only large and well lighted, but due regard to beauty has also been exercised in the construction of the windows. There is also ample wall space for book cases and pictures.

Passing up an easy flight of stairs to the second story, we find 4 commodious bedrooms, and a large bathroom containing all the modern conveniences. Each room is provided with an ample number of windows, thus securing—during hot weather—means for thorough ventilation.

The plans of the basement are well defined, with sizes of various rooms clearly shown.

The front and side elevations give an adequate representation of the building, and the various features presented will bear careful study.

COST.

The cost of the building, as per plans shown, with materials at prices at which they now are, will be between five and six thousand dollars. This amount can be greatly increased according to the finishes used, or can be lessened if the owner so determines.

We present a general set of specifications for the consideration of those who want to erect such a building, but we urge those who so intend to at once employ a competent architect, and not be misled by contractors furnishing plans for nothing. Select an architect in whom you have confidence, and be guided solely by his judgment.

SPECIFICATIONS.

For the Labor, Material and Mechanical Workmanship Required for the Erection and Completion of a "Santa Rosa Unique Dwelling."

To be situated on the corner of Contract and Building streets in the town of Santa Rosa for Richard Heavypurse.

The drawings are to be considered with and are made a part of these specifications.

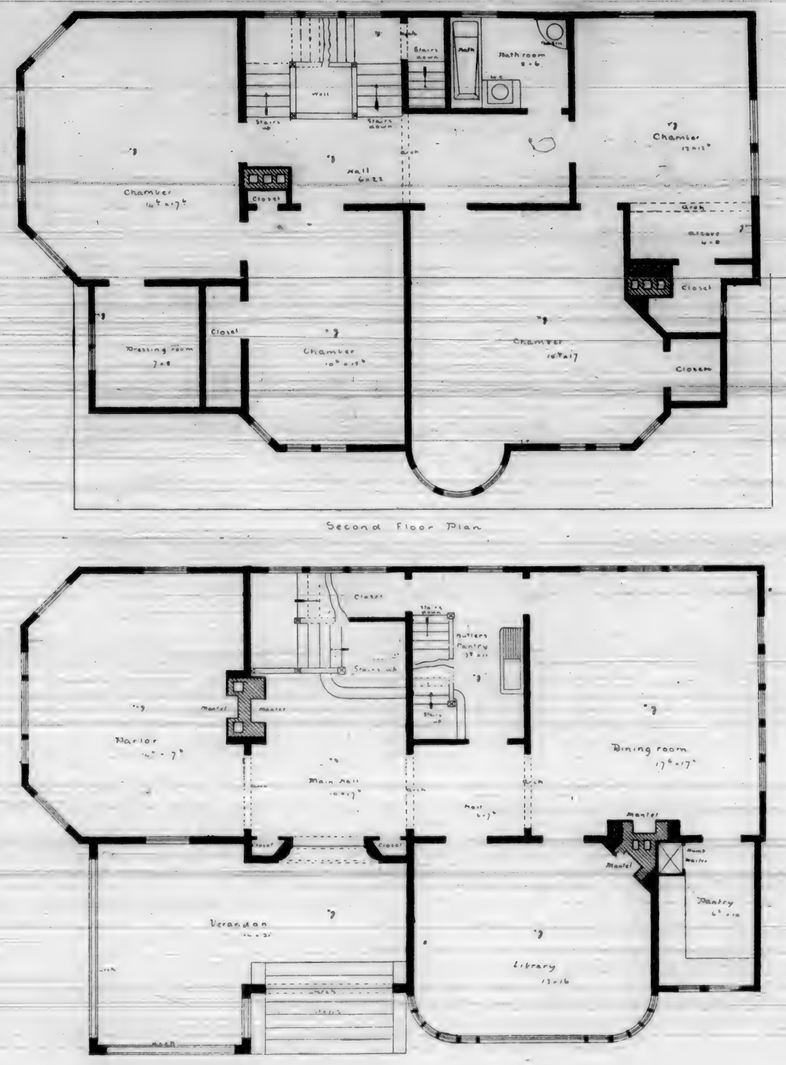
MATERIALS ETC.

All timber to be Oregon Pine (unless otherwise specified) and to be best quality.

All lumber to be Red Wood (unless otherwise specified) and to be well seasoned.

All Doors and Sash to be of Sugar Pine, thoroughly seasoned, made in best manner

All materials to be of the best quality; the work to be done in the most thorough and workmanlike manner, in accordance with the plan and these specifications.



FLOOR PLANS.—"SANTA ROSA" COUNTRY DWELLING.

Buildings to be thoroughly cleaned and swep out, and the premises cleared of rubbish. Windows to be cleaned after building is cleared.

All material to be as specified; otherwise they will not be accepted.

No part of the work to be sublet unless by the consent of the architect and owner.

DRAINS.

To be iron stone, 6 inches diameter; branches 5 inches; joints to be well cemented with best Portland cement; not less than ¼inch to the foot fall; to connect with the sewer or a cess pool according to circumstances.

EXCAVATIONS.

All necessary dirt or rock to be cleared away from intended site; excavations for footings (as for drainings) down to firm ground. Dig bank well away from walls and leave the same open until the walls are dry. After walls are dry, bank the earth against them. The ground to be sloped away from the building—all around—and all surplus earth to be removed.

CHIMNEYS

To be built to correspond with drainings. All flumes to be 8x8. Partitions in chimneys to be not more than 4 inches in thickness. Top out above roofings using pard burned picked brick, laid in white mortar, in accordance with the design and detail drainings.

Ash pit dump grates of iron where ash pits are provided for, Furnish an iron frame, properly walled in place to each ash pit. there to have iron doors hung and secured in appropriate manner as directed.

Thimbles in chimney where required; also provide the neces sary bricks, mortar etc., for setting mantels and grates.

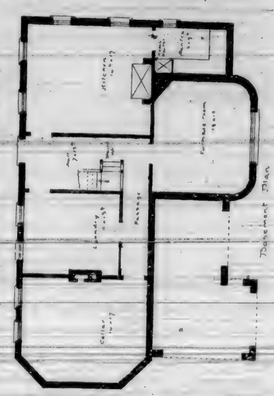
INSIDE FINISH.

Door jambs of Oregon Pine: 1½ inches thick and to be of proper width to receive lath and brown mortar.

SASH STOPS

Or beads, inside at the sides of all the windows, to be fastened with raised head silver-headed screws.

SIDE ELEVATION. "SANTA ROSA."



BASEMENT PLAN.—"SANTA ROSA."

All doors to be hung with loose joint butts of sufficient size to clear the architraves. To be of enameled iron or bronze as owners may select.

Every window—where necessary—to be hung with Ive's Patent Sash Lock. All doors to have same make door bolts.

All necessary hardware to be selected by the architect; to be paid for by the contractor as part of his contract.

BRICK WORK.

Use good, hard burned brick throughout, which are to be well wet before being laid. Best Santa Cruz lime and clean sharp sand to be used in making mortar. All brick walls to be made perfectly level and straight to the proper and exact hight and to a true line from one end to the other.

Piers to be built as per drawings. Turn trimmer arches for the support of all hearths at the time chimneys are to be built.

Underpin all sills with suitable mortar after the walls are up.

HEIGHT OF STORIES.

Basement	8 feet 0 inches
First Story	12 " 0 "
Second "	as per plans.

SIZE OF TIMBERS ETC.

Wall Caps	2 inches	x	8	inches.	Redwood
Main Sills and Trimmers	6 "	x	6	"	Pine.
Plates	2 "	x	4	"	"
Underpinning	4 "	x	4	"	Redwood
Corner Posts	4 "	x	6	"	"
Joists—basement floors	2 "	x	6	"	"
Joists—first inches	2 inches	x	10	inches.	Pine
" —second "	2 "	x	12	"	"
Ceiling Joists	2 "	x	6	"	"
Rafters	2 "	x	6	"	"
Studs	2 "	x	4	"	"
" (corners, door and windows) doubled	4 "	x	4	"	"
Bridging	2 "	x	4	"	"
Studs and joists	16 inches between centres				
Rafters	32 "	"	"	"	

Main sills and trimmers to be halved together; the main sills to run across the building as well as lengthwise.

The entire frame to be thoroughly braced and strongly nailed.

Joists around stairs, fire places, chimneys, etc., to be doubled and framed together in the best manner. Both tiers of joists to have two rows of herring bone bridging well nailed. All partitions to be well braced. Double headers to all doors and windows. All corners to be studded or furred solid before lathing

ROOF.

To have gutters arranged to carry off the water as per directions of the architect. Roof sheating 1x6 Oregon pine, well nailed into each rafter. Use best sawed red-wood shingles laid 4 inches to weather. Fancy Shingles—Where and as shown.

RUSTIC.

Enclose the outside with $\frac{7}{8}$x8 inches red-wood and rustic Same to be hauled to the ground when building is commenced, and properly stacked; laps to be painted before rustic is put on; every butt joint to be painted, and behind each place a strip of tin 3x11 inches.

FLOORS

Will be laid of first quality T. & G. Oregon pine, 1x4 inches; to be stacked on premises at same time as rustic; joints to be smoothed off after nailing; one blind nail and one through nail in each course at each nailing; nails to be well set; no floors to be laid until roof is on.

SASH ETC.

To be made of best clear sapless, dry sugar pine with acorn mold sash bar and weather-lipped meeting rails; to be hung with best Silver Lake braided cord and iron weights; sash 1½ inches thick. Single sash in basement to be hung with butts, and to have necessary fixtures to securely lock same.

DOORS, ETC.

All doors, unless otherwise provided for, to be made of clear, dry sugar pine, free from sap; raised panels and raised mouldings on each side, and must be made in strict accordance with the drawings.

STEP LADDER.

Of Oregon Pine, neatly made, dressed, and painted to be placed where directed—to be used for access to roof.

FRONT STEPS.

To be substantially and neatly built; risers of inch red-wood; treads of $1\frac{3}{8}$ inch Oregon Pine, to have a pitch of not less than $\frac{1}{2}$ inch, to carry off water;

ANGLE BEADS.

Of white pine for all fire-places and chimney corners and all other corners similarly exposed.

FACE CASINGS.

To be 6 inches wide, rosewood, $1\frac{1}{2}$ inches thick; plinths and corner blocks as per details.

BASE.

In all rooms and halls; 10 inches wide, with $2\frac{1}{2}$ inch moulding on top of same. Follow details.

NOTICE.

No inside finish to be put on until the plastering is entirely completed,

All interior wood work to be finished up perfectly clean to be hand smoothed and sand-papered, and at completion, to be properly cleaned, and all stains and finger marks removed or such work as may require finishing in a natural manner.

WASH BASINS.

Will be enclosed underneath with inch I and G redwood, no piece over $2\frac{1}{2}$ inches wide; to have a neat panel door, hung and trimmed with fastenings etc., to correspond to other hardware

WAINSCOTING

Dining room and library to be wainscoted to a heighth of 3 feet; panelled as per details; kitchen to be wainscoted to a heighth of 3 ft. all around, T. and G beaded redwood; capped with nosing and scotia. Butlers pantry same as kitchen, Bath room same 5 ft. high. All wainscoting $3\frac{1}{2}$ inches wide.

Sink in Butler's pantry to be neatly enclosed, properly capped, fluted drain board. Door underneath, well hung and to have proper fastenings.

CLOSETS.

All closets to be fitted up with shelves and hooks complete as directed by the architect.

STAIRS, ETC.

To be built as shown by the plans, in the most substantia manner, to be properly supported and rough bracketed. Risers of Red wood, $1\frac{3}{8}$ inch Oregon Pine treads, tongued and grooved together and both housed into wall string. Treads to have nosings, with fillet and cave under; the finish work of stairs to to be put up after the plastering is thoroughly finished and dry; wall strings $1\frac{1}{8}$ inch, top edge moulded to correspond to base. Front string and landing facias to be finished with Oregon Pine and Red wood, worded and moulded as per drawings.

Newels to be of Black Walnut—thoroughly seasoned—and to be of pattern as per details, Hand rail of walnut, closely bolted at the joints, add to all ports, newells etc.; Newells 8x8 inches.

Rear stairs as shown, with hand rail hung to wall.

MANTLES.

To be of wood, L. & E. Emmanuel's best make, in accordance with the details To cost $100 each.

BATH ROOM.

To be wainscoted all around to a hight of 5 feet. The tub to be neately capped with walnut and the front to be panelled. Water closet is to have seat and flap, hinged, all the work to be put together with screws. Wash basins to have door underneath. Shelves and hooks to be placed where directed.

WASH TUBS.

To be placed in laundry. They are to be made of sugar pine, 2 inch thick for bottom, side and ends, and $1\frac{1}{2}$ inches thick for division 3 divisions, each one having a separate lid hung with brass hinges. To be put together with white lead. Hot and cold water in each division.

LATHING.

Lath to be put on $\frac{3}{8}$ of an inch apart; joints broken every 12 inches, and each lath to have 4 nails; no lath to be put on vertically to finish out to corners and angles; no lath must run through angles and behind studding from one room to another. Carpenter is to personally attend to all the angles and corners and see they are *solid* before lath are put on.

PLASTERING.

All walls, partitions ceilings, throughout the building to be plastered with one coat of brown mortar, and one coat of hard finish. Brown mortar to be made of pure, unslacked lime, and clean, sharp sand free from loam. A bountiful supply of best cattle hair to be used and thoroughly mixed in; to be made at least 8 days before being used. Brown coat to be floated and true.

CENTRES.

Owner to select all centres and brackets. $40 will be allowed to cover the cost of those selected; which amount is to be included in Contractors Contract.

PAINTING etc.

All materials to be the best of their respective kinds. All wood work to be puttied where necessary after priming coat is on. The exterior to have 3 coats of best lead and linseed oil in colors, selected by the owner.

All doors to be painted 3 coats and grained in imitation of black walnut.

Roof to be painted 2 coats Prince's Metallic.

All tin work and leaders same as roof.

Stair Rail, balusters and newells to be filled with Wheeler's Wood Filler and to be finished with 2 coats of shellac and rubbed down with pummice and oil to an even surface.

All wood work must be perfectly clean before filling; care must be taken that the nail holes and other defects, are filled with putty, colored to match the finish of woods where used. Before the second coat is applied on finish work inside, the primed work is to be thoroughly sand papered.

All grained work to be finished with a heavy coat of best varnish.

GAS FITTING.

Gas pipes are to be run in every room as marked on plans. They are to be placed in accordance with the rules and regulations of the Gas Company. The certificate from the Gas Inspector is to be furnished the owner.

PLUMBING.

Water pipes to be $\frac{3}{4}$ inch, nothing less about the building, To be of galvanized iron. All fittings to be of same material. 4 hose cocks to be placed on outside of building where directed by owner.

Tanks to be of 80 gallon capacity, copper made, to have a cover, secured with clasps and staples; 8 inch copper ball, $\frac{3}{4}$ inch cock; $1\frac{1}{2}$ inch standing overflow and plug, and all necessary pipes and connections.

Boiler to be of copper—50 gallon capacity—on an iron stand; sediment cock and all necessary connections.

Sinks to be of galvanized steel; 2 inch waste pipe with Garland Trap under sink; $3\frac{1}{2}$ inch brass strainer; hot and cold water supply, with $\frac{3}{4}$ inch compression cocks. Sinks to be lined up at back of same with zinc, nailed with brass nails.

Two slop hoppers to be placed where directed.

Wash trays to have Garland trap underneath.

Wash Basin—16 inch diameter; $1\frac{1}{2}$ inch waste and overflow; marble top and backs, molded on edge, $1\frac{1}{4}$ inches thick. All the garniture for hot and cold water to be nickel plated.

Bath Tub to be copper lined; $1\frac{1}{2}$ inch waste and overflow, Garland trap; hot and cold water fixtures complete, nickel fixtures.

SACK'S WATER-CLOSET.

To be put in complete according to instructions accompanying each closet.

SAFES.

Of sheet lead under sink, bat-tuinh, wash-basins, water-closets, etc., turned up two inches and well tacked to wood-work all around. To have each $\frac{3}{4}$ inch waste pipes discharging outside. Same under tank.

WASTE PIPES.

The soil pipe to connect direct with sewer. This pipe is to extend up and through the roof. All other wastes are to connect with an open hopper. All wastes to wash basins etc. are to extend up and through the roof. All pipes are to be properly fastened to the walls of ceilings. All joints to be wiped.

TINNING.

All valleys to be tinned, same running up not less than 10 inches under shingles. Tin work in valleys to be rosin soldered.

Put up where marked on detail plan the necessary number of galvanized iron conductors with all necessary curves, bends, etc. to convey the water from the roof to the open hoppers. Conductors to be firmly secured to building with galvanized iron fastenings. Screens over openings in gutters.

Size of conductors, $2\frac{1}{2}$ inches

Window caps, scuttle etc., to be tinned.

Proper flashings in chimneys.

Where tin work of roof comes against the building, the tin must rim up at least 6 inches behind the rustic. All tin flashings to have two coats of paint on under side before being used; also to be painted on top on such portions as wood work or roof covering will lap on; this painting to be done by tinner with metallic roof paint.

SPEAKING TUBES.

One from each pantry off dining room connecting with kitchen. One from upper hall connecting with kitchen.

ELECTRIC BELLS.

One from front door to connect with annunciator in kitchen; one in dining room, main hall on each floor, parlor and two large bed rooms on second floor. Annunciator in kitchen properly secured to wall.

"No adequate idea can be conveyed of the impressions received by a 'tenderfoot' in the center of a forest where such gigantic trees stand in solid phalanx" says a tourist who recently examined some of the redwood trees of northern California. "I was impressed with a sense of fear, loneliness and littleness. Three trees, selected at random in different parts of the forest, measured respectively 80, 76 and 74 feet in circumference, 6 feet above roots, and the first branches to be at least 150 feet above ground, to which point there is no apparent diminution in size. A comparison of those standing with others of equal size and height that had been felled proved to be more than 350 feet to the topmost leaf. To see an isolated tree of such proportions is an interesting spectacle, but to be in a narrow path where they are in such proximity to each other as to momentarily change one's course is a novel experience, yet a strangely pleasurable one."

Filling Contracts.

Fill your contract. If you make a contract, fill it if it "takes a leg." If you get caught in a trap, bleed if it need be, but don't squeal. Bought wit comes high sometimes, but most men must have it. If you sell what you have not got and don't know where to get it, hustle until you find it. The man you sold to sold to another man, and *he* has *got to have it;* there's no let up with him, he has got to have what he bought; and if he don,t get it from the man who sold it to him, there will be a squeezing of the lemon until the oil runs out of the rind. If you are fool enough to make a foolish contract, stand by it like a man, it will save you from doing such a foolish thing in your future transaction. The laws of business demand that each man shall do just as he agrees.—*Chicago Lumber Trade Journal.*

The task of Uncovering the Sphinx.

The last occassion on which the great Sphinx was cleared down to the level on which the paws rest was in honor of the opening of the Suez Canal, in 1864. The over-shifting sands had, however, reburied it almost to the throat when Professor Maspero during his last year of office at Boulak, began again the work of disinterment. This work has now been going on somewhat intermittently for more than twelve months, and is at the present time in active progress under the direction of Professor Maspero's successor M. Grebaut, and is, according to the London *Times* conducted in the following manner. A tramway has been laid down from the Sphinx to the edge of the pyramid plateau, passing close under the west face of the granite building popularly, though incorrectly, called the Temple of Sphinx. Under the tamway light trucks convey the sand to the point of which their contents are discharged, the trucks being loaded by Arabs of both sexes and all ages, who carry the sand upon their heads in large flat baskets, ascending and decending all day long from the excavations below to the tamway above, and vice versa. The means look curiously inadequate, but the results are astonishing. Already the entire forepart of the great stone monster is laid bare, and already the huge chest, the paws, the space between the paws, the altar in front of them, and the platform upon which they rest, are once more open to the light of day. Nor is this all. Between the Sphinx and the edge of the pyramid plateau a vast space has also been cleared, thus bringing to view a fine flight of steps, some forty feet in width. These steps, which are described by Pliny, were uncovered by Caviglia in 1817, but have been entirely lost to sight for nearly seventy years. A second flight of steps and the remains of two Roman buildings were also found by Caviglia, and will again be brought to light if M. Grebaut continues to work in this direction.

THE RIGHT OF THE SPHINX,

That is to say the direction of the granite temple, to the southward—a further excavation is in progress, the result of which will probably confirm the surmises of those who believe the Sphinx to stand in a huge artificial amphitheatre hewn out of the solid rock. This gigantic work would, of cause, be contemporaneous with the Sphinx itself, whice Mariette attributed to the mythic ages before the advent of Mena, the first King of the first dynasty, and which Maspero considers to be, if not actually prehistoric, at all events the oldest monument in Egypt.

From the level of the area below the great flight of steps (which lead down and not up to the Sphinx) one now measures the whole hight of the huge human-headed monster, whose battered countenance stands out against the cloudless sky one hundred feet above. The space between the paws is thirty-five feet long and ten feet wide. This space was anciently converted into a small sanctuary lined with votive tablets, only one of which—the famous stela of Thothmes IV—yet remains in sight. This stela records how the king, when upon one of his hunting expeditions, lay down to rest at mid-day in the shadow of the Sphinx. He there fell asleep and dreamed a dream in which the venerable image conjured him to clear away the sand in which it was nearly buried. Then the Prince awoke and "made silence in his heart," and vowed to do that which the god had commanded.

THE PAWS OF THE SPHINIX,

As they now appear, are a restoration of Roman date, being cased in comparatively small slaps, and to some extent hollow underneath. The breast of the Sphinix has likewise been faced with slabs, apparently in Roman times, and these slabs have again been repaired by cutting away the weathered surface and inserting a fresh facing. Like the legs of the Colossi of the plain and those of the great statue of Aboo Simbel, the paws of the Sphinix are covered with the Greek scrawls of early travelers; but these graffi-ti are mostly of a late period, and so slightly scratched that few are legible. Such as they are, however, Professor Maspero has, it is understood, devoted himself to the ungrateful and difficult task of translating them.

M. Grebaut's elevations are not limited to the clearing of the Sphiuix only. Various interesting tombs have lately been discovered in the vicinity of the great Pyramid, and to the westward the face of the Libyan cliff has been reached, where it forms the natural boundary of the Pyramid plateau. Some good early rock-cut tombs, with built fore courts, have been found in the face of this cliff in two of which the walled-up recesses or secret chambers, called "serdab," which were constructed for the safe-keeping of funerary portrait statues, are yet intact with their contents.

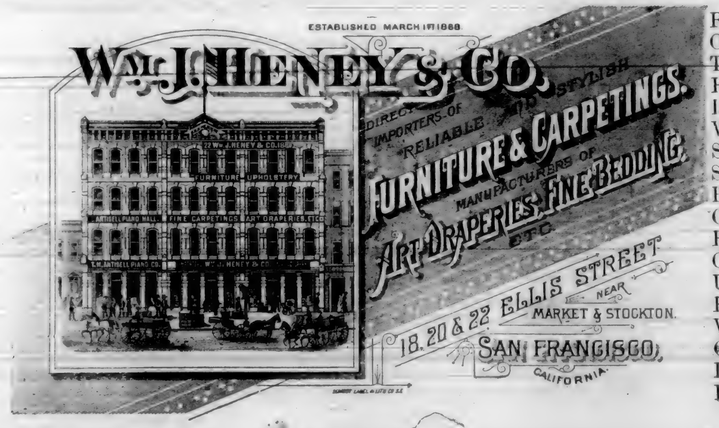
No two men do work exactly alike; every good workman has ideas of his own, and when he attempts to follow out ideas given by the foreman or some one else, he is pretty sure to make a "botch" of it. General principles are the same, but the details should invariably be left to the workman himself, otherwise he not only loses confidence in himself, but becomes a mere machine which requires constant watching.

STEEL SQUARE AND ITS USES.

We have just received a large number of the above named book. A copy will be sent to any address upon receipt of ONE DOLLAR It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

Fireproof Building Material.

The *Real Estate Record* says that fire ruins show that porous terra cotta bricks and blocks best resist fire, water and frost. Next to these in the order of fire resisting qualities come concretes and burned clay work. In the best work done the iron work is encased in porous terra cotta, tile, or brick work in roof, floor and tile construction. The hollow tiles are faced with vitreous tile slate, or any good weatherproof coating, or with a single thickness of brick. Iron and steel framework incased in fireproof materials gives the best possible results. There is a growing preference for light porous walls of hollow material protecting and iron or wooden framework. Massive and heavy walls of brick or stone will do for architecture, but they are not as much of a mechanical necessity as they were regarded a few years ago.



Rural Homes, Wheeler	150
Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wondersof Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50

The McClelland Anti-Siphon Trap Vent.

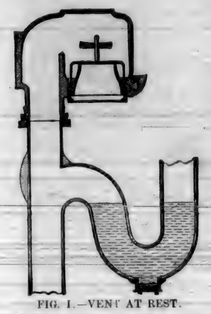


FIG. 1.—VENT AT REST.

This vent fulfills all the conditions sought to be secured by trap vent pipes, and possesses the merit of great simplicity and economy, with absolute security.

It admits a free flow of air into the waste pipe on the sewer side of the trap whenever a slight vacuum pressure occurs, without disturbing its seal. The air enters through an open thimble, extending upward; and the opening is closed by an inverted cup, whose edges dip down into an annular groove containing mercury. (See Fig. 1.)

This cup is very light, so that it is lifted out of the mercury and suspended by the inflowing air whenever a partial vacuum occurs in the pipe, as shown in figure 2; but drops back into the mercury the instant the demand for air ceases. The deep seal thus formed, by the mercury around the edge of the cup, furnishes absolute security any outflow of sewer air.

Practical experience has demonstrated that each trap must be so vented as to receive on its sewer side an instant supply of air sufficient to meet every demand, without disturbing its seal.

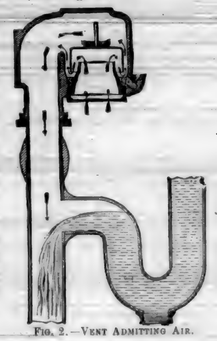
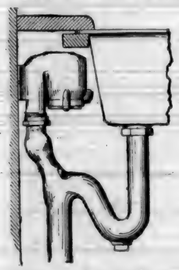


FIG. 2.—VENT ADMITTING AIR.

ITS ADVANTAGES ARE:

That it affords *absolute security against siphonage*, in all proper situations; while the same security is *not* furnished by any other means.



That it simplifies the drainage system by discarding long lines of vent pipes, reduces the amount of material and the number of joints to a minimum, and correspondingly reduces the danger of leaks.

That since the vent is in plain view, it can be inspected with convenience and certainty; vent pipes, on the contrary, are usually concealed in the walls and cannot be readily inspected.

That it combines the greatest simplicity, and is easily applied either in new work or repairs; while vent pipes are complex, costly and unreliable, and their introduction is especially annoying and destructive to finished walls.

The Vent should be connected with the crown of the trap, by a short piece of pipe, extending upward to a convenient fastening place as nearly level with the top of the fixture as possible. It is sometimes found convenient to carry the Vent above the fixture, and this is recommended to be done when practicable. It should be put up level and securely fastened.

Manufactured by the DuBois Manufacturing Co., 245 Ninth Avenue, New York City.

Architects Interviewed.

"Interviewing" is all well enough in its way, when truthfully reported, but it is all wrong when the "interviewer" gives to the public, statements of his own concoction, accredited to the "interviewed" who has not been seen at all, and who in fact has said nothing.

An illustration in this connection is found in the reporters interview of several architects and others published in the *Examiner* of July 6th, in regard to the concrete foundation of the Larkin street wing, of the New City Hall, which among others named as "interviewed," James E. Wolfe, architect. This was a decided error on the part of the "interviewer," as Mr. Wolfe was not seen, and did not make any statement whatever upon the uestion in issue.

Self Lubricating or Norris Anti-friction Pulley.

Any of the Norris Pulleys made Self Lubricating or Norris Anti-friction when so ordered.

We particularly desire to call the attention of Architects and Builders to the illustration of the Norris Anti-friction or Self Lubricating Pulley. With this Pulley, Messrs. Norris & Co. have overcome a great difficulty hitherto existing with Sash Pulleys. It is well known when two metals are working together without any lubricant that they become dry and commence to wear. Especially so is this the case with Sash Pulleys; as it is almost impossible to reach them with oil, they soon rattle and become so noisy, that it is disagreeable and unpleasant to raise the windows.

Many attempts have been made to overcome this, some by having pins to revolve around the main pin or axle of the pulley, and various other ways; but none of them give satisfaction, as in a very few years they make more than those having the simple pin or axle.

By examining the illustration, you will see that Norris & Co. have overcome all noise and wear by keeping the Pin or Axle always Lubricated.

All Pulleys near on top of the pin as all the weight is downward. Norris & Co. use a very large size Steel or Gun Metal Pin and on top of pin where the wheel bears on it, they cut a chamber and in that chamber they place a lubricating substance which does not run out or evaporate, thus making it impossible for the wheel or pin ever to wear away or have any friction.

Where there is no wear or friction, you have No Rattle or Noise. Norris & Co. guarantee all their Self Lubricating Pulleys to be perfectly noiseless; they will on application send samples to any Architects, Builders, or Mill Men free of charge.

We have been in Messrs. Norris & Co's warehouse and know they make the largest assortment of Pulleys of any house in the World.

They make over 1600 different qualities, varying in price from 20 cents to $36.00 per dozen. For further particulars, address C. Sidney Norris and Co., Baltimore, Md.

Steel Square and its Uses.

We have just received a large number of the above named book. A copy will be sent to any address upon receipt of ONE DOLLAR. It contains a full treatise on the Carpenter's Steel Square and the numerous uses to which it may be applied.

CITY BUILDING NEWS.

Army, near Dolores, three one-story frame. Owner and builder, J. C. Weir; cost, $6,000.

Bush, cor Montgomery, alterations; cost, $2,500.

Bush and Sansome, six-story stone and brick bank. Owner, First National Bank; architect, Wright and Saunders; contractor, F. E. Knowles & Co.; cost, $47,680; signed July 11, 1888; filed July 30, 1888; limit Feb. 11, 1889.

Payments to be made at the rate of 75 per cent as work progresses on the 1st of each month; balance usual 35 days.

Bush and Sansome, iron contract. Owner, First National Bank; architects, Wright & Saunders; contractors, Bigelow & Little; cost, $10,133; signed, July 11, 1888; filed July 27, 1888; limit, Nov. 1, 1888.

Payments.—Full payments to be made for steel beams and iron girders, when in; 75 per cent as rest of work progresses on 1st of each month; balance, 35 days.

Bluxome bet. 4th and 5th. Alterations. Owner, Mrs. M. F. S. Searles; architects, Schultz and Meeker; contractor, Thos. Day; cost, $1,086; limit, Aug 15, 1888; signed, July 7, 1888; filed, July 13, 1888; sureties, B. Joost and W. Thyarks; amt. of bond $350.

1st payment $811 when completed. Balance usual 35 days $275.

Buchanan bet. Turk and Eddy. Alterations. Owner, Thos. Robinett; architect, G. V. Capeletti; contractor, G. B. Ferrari; cost, $1,250; limit, 40; signed, June 21, 1888; filed July 3, 1888; sureties Blyth & Trott; amount of bond $1,250.

1st payment when frame is up, $300; 2d when completed, $300; 3d, usual 35 days, $650.

Bank nr. Lincoln. Cottage; owner, Lizzie Keller; contractor, B. Pfarrar; cost, $800; signed, July 12, 1888; filed, July 23d, 1888.

1st payment, when shingled, $400; 2d, when brown coated, doors, etc., in, $200; 3d, 200 in $10 monthly installments with 8 per cent. interest.

Bush and Sansome. Carpenter work. Owner, 1st National Bank; architect, Wright and Sanders; contractor, I. H. Day; limit, May 29, 1889; 75 per cent. to be paid on 1st of each month as work progresses. Balance 35 days; filed, Aug. 4, signed, July 25.

Clay and Laguna. 2-story residence. Owner, Jno. A. Hooper; contractor, Burbee & Judson; architect, J. C. Mathews & Son; Cost $18,280; limit, 155 days: signed, June 25, 1888; filed, July 9, 1888.

Payments, 75 per cent. as work progresses; balance usual 35 days.

Cliff House. 6 stores and tenements. Owner A. Sutro; architect Wm. F. Smith; contractor S. H. Kent. cost $11,000; Security F. P. Latson; limit 90 days; signed July 11, filed July 13.

Payments, four payments of $2,000 each, balance 35 days.

Clay and Buchanan. 2-story dwelling; owner, Mrs. E. B. Hopkins; architects, J. C. Matthews; & Son contractors, Knight & Littlefield; cost, 15,995; limit, 6 months; signed July 2, 1888; filed July 21, 1888. 1st payment, 75 per cent. as work proesses; 2d, balance usual 35 days.

Clay and Jones. 3 frame buildings. Owner, Magdalen & Co.; architects, Macy & Jordan; contractors, Bateman Bros.; cost, $14,850; limit, 90 days; signed, July 17, 1888; filed, July 20, 1888; sureties, Moore & Hansen; amount of bond, $8,000.

1st payment, when roofed, $2,500; 2d, when floors are laid, $2,000; 3d, when brown coated, $2,500; 4th, when white coated, and fronts finished $2,000; 5th, when ready to paint; 6th, balance, usual 35 days, $3,850.

Clay bet. Scott and Devisadero. 2 residences. Owner, Geo. C. Brooke; architect, J. M. Curtis; contractor, A. H. Plummer; cost, $4215; limit, Oct. 1st, 1888; signed July 5, 1888; filed July 11, 1888; sureties, F. Kalfleisch, Blyth and Trott.

1st payment when ready to plaster $1053.75; 2d payment when painted $1053.75; 3d payment when; completed $1053.75; 4th usual 35 days $1053.75.

Ellis bet. Polk and Van Ness. 3 story frame. Owner, Wm. John; architects, John & Zimmerman; contractor, F. W. Kern; cost $7050; limit, Oct. 15, 1888; signed, July 7, 1888; filed, July 12, 1888; sureties, B. Joost; and O. W. Nordwell; amount of bond $7000.

1st payment when frame is up $1000; 2d payment when partitions are set $1500; 3d, when outside is done $1000; 4th inside ready to paint $1800; 5th 35 days or releases given, $1750.

Fell and Webster. 2-story frame; owner, G. Trautner; architect, H. Geilfus; contractor, J. F. Logan; cost, $2,669; limit, Oct. 15 1888; signed, July 18, 1888; filed, July 20, 1888.

1st payment when frame is up, $550; 2d, when floors are laid; 3d, when rough coated, $550; 4th, when hard finish and inside finish on, $550; 5th, when completed, $589; 6th, usual 35 days, $919.

Ford bet. Sanchez and Noe. Alterations. Owner P. Hurue; architect, Hurue and Everett; contractor, F. Buckley; cost $1,825; signed, July 9, 1888; filed, July 10, 1888.

1st payment additions completed $912.50; 2d repairs completed $456 25. Balance usual 35 days $456.25.

Franklin and Ellis, plumbing. Owner, Academy of Sacred Heart; architect, C. J. I. Devlin; contractors, Sweeny & Kearns; cost, $4,645.

1st payment, when sewers are set and heating pipes to first floor, $750; 2d, when all pipes are in, $1,500; 3d, when completed, $1,230; 4th and balance, 35 days, $1,165; limit, Oct. 15; signed June 22, 1888; filed June 22; sureties, Hurlbut & Rosslance; amount of bond, $4,000.

Fair Oaks, near 22d, two-story frame and additions in rear. Owner, Lawton; cost, $5,000.

Fifth, near Bluxome, additional story to frame building; cost $900.

Fifth, nr Brannan, two-story frame; cost, $2,200.

Fremont between Market and Mission. Carpenter work to brick building, owners, Huntington, Hopkins & Co; architect Wright & Sanders; contractor C. C. Terrill; cost $25,000; time 6 months; signed June 30; filed Aug. 1.

Payments, 75 per cent. as work progresses on 1st of each month; balance 35 days.

Fourth, between Bryant and Harrison. 3 story frame. Owner Cutter & Casar; architect M. J. Welsh; contractor, Taubman & Armstrong; cost $8,645; limit for carpenter work 90 days; signed July 3d, '88; filed July 9th, '88; sureties Geo. W. Watson and R. L. Taylor; amount of bond $8,645.

1st payment when frame is up $1,729; 2d, when brown coat of mortar is on $1,729; 3d, when exterior is completed $1,729; 4th, when building is entirely completed $1,729; 5th, usual 35 days $1,729.

25 and 627 Front street. 1 story brick and basement. Owner C. Harris; architect P. J. O'Connor; contractor C. B. L. Jones; cost $2,675; limit Aug. 10, '88; signed June 23, '88; filed July 18, '88.

1st payment when west wall is underpinned and first floor joist on $1,200; 2d, payment when completed and all claims paid $1,475.

Filbert, bet Mason and Taylor, additional story and improvements; contractor, Battiste; cost, $2,500.

Green, nr Dupont, repairs; cost $500.

Green, bet Kearny and Dupont, repairs; cost, $500.

Geary and Mason, three-story frame. Owner, M. Meyerhoff; architects, Schmidt & Son; contractor, M. C. Lynch; cost, $7,822; signed, July 24, 1888; filed July 25, 1888, limit, 83 days; sureties, P. Swift and Jno. Lewis.

1st payment, when frame is up, $1,427; 2d payment, when outside finish is on; $1,465; 3d payment, when hard finished, $1,465; 4th payment, when completed, $1,465; 5th payment, balance, usual 35 days, $2,000.

Green nr Laguna, 2 story frame. Owner, W. J. Smith; architect, John & Zimmerman; contractor, Schultz & Krecker; cost $3,555; limit Oct. 15, '88; signed July 14, '88; filed July 17, '88; sureties C. W. Gercke & F. C. Jensen; amount of bond $3,500.

1st payment when building is framed $700; 2d payment when floors are laid $500; 3d, rough mortared and outside finish on $700; 4th, inside ready to paint $755; 5th, when all bills are paid or 35 days $900.

Golden Gate Ave. and Steiner. Grading, owner, T. W. Riordan; architect, C. J. J. Devlin; contractor, McHugh & Kenny; Cost $5,559; signed, July 20, 1888; filed, July 23, 1888; limit, Dec. 18, 1888; surities, Degan P. and Jas. Mahaley; amt. of bond, $5,000.

Payments, 75 per cent. as work progresses, on the first of month; balance, 35 days, as usual.

732 Geary. Alterations; owner, S. Wood; contractor, Wm. Little; cost, $1,950; signed, July 7, 1888; filed, July 19, 1888.

Payments, 75 per cent. as work progresses; balance usual 25 days; no payment less than $400.

Geary and Devisadero addition; owner, D. Hartnett; architect, F. J. Welsh; contractors, Baldeman Bros.; cost, $2,750; signed July 23, 1888; filed July 30, 1888; limit 60 days.

1st payment, when framed, $687; 2d, brown coated, $687; 3d, when completed, $687; 4th, usual 35 days, $689.

Hayes, cor Laguna, additional story; owner, Little; contractor, A. Newbert; cost, $5,000.

Hayes, nr Lott, two additional stories; owner, C. L. Ayers; architect, M. J. Welsh; cost, $3,500.

Hayes, cor Baker, 1½-story stable; cost, $1,800.

Hayes, nr Octavia, additional story; cost, $2,500.

Lombard, bet Stockton and Dupont, 1-story frame; owner, Bellett; contractor, McCracken; cost, $3,000.

Lombard and Kearney. 2-story frame; owner, Jno. McGrath; architect, Jno. T. Kidd; contractor, Wm. Commary; cost $2,452; limit, 70 days; signed, July 20, 1888; filed, July 21, 1888; surety, F. P. Latson.

1st payment, when framed, and flooring on hand, $500; 2d, when partitions are set, $600; 3rd, brown coated and front up, $300; 4th, when completed, $439; 5th, $600 35 days.

Mission and 12th, additional story. Owner, Jas. Palmer; architect, Chas. Havens; contractor, D. Chisholm; cost, $6,020; signed July 28, 1888; filed July 30, 1888; limit 30 days; sureties, Frank P. Latson and J. McKinnon.

1st payment, when partitions are set, $1,000; 2d payment, when outside finish is on, $1,000; 3d payment, standing finish is on, $1,250; 4th payment, completed, $1,250; 5th payment, usual 35 days, $1,520.

Market and Ecker. Alterations; owner D. N. & E. Water; architect, Schultz & Meeker; contractor, Mahoney Bros; cost $43,000.

1st payment 75 per cent. as work progresses on, first of month from Sept. 1st; balance usual 35 days.

Mission and 12th, plumbing; owner, Jas. Palmer; architect, Chas. I. Havens; contractors, Fritz & Kean; cost, $1,000; signed July 28, 1888; filed July 28, 1888.

1st payment, when rough pipes are in, $500; 2d payment, when completed, $500.

Masonic Cemetery. Moseleum. Owner, E. J. Baldwin; architect Pissis & Moore; contractor A. McClennan; cost $6,976; limit 1 year; signed July 17, '88; filed July 18, '88.

1st payment 75 per cent. Feb. 1st, '89 or upon completion; balance usual 35 days.

Mission, No. 548; improvements; cost, $800.

Mission, near 1st, repairs; cost, $2,500.

Montgomery Av., cor Broadway, 1-story brick; cost, $1,000.

Natoma and 7th, three-story frame. Owner, Daniel Sullivan; architect, A. J. Barnett; contractor, Brennan Bros.; cost, $5,194; signed July 16, 1888; filed July 28, 1888; surety, Frank P. Latson; amount of bond $2,500.

1st payment, when roof is on, $1,200; 2d payment, when brown coated, $800; 3d payment, white coated, $600; 4th payment, when completed, $1,294; 5th payment, usual 35 days, $1,300.

New City Hall, contract let for fifteen cast iron columns and two tiers rolled iron joists. Contractors, Risdon Iron Works; cost, $50,000.

Nebraska bet Sonoma and Yolo. 2 story frame. Owner, J. Kenry; architect, M. J. Welsh; contractor, H. I. Bray; cost, $4,500; sureties J. F. Kennedy, P. Donohue; limit, 80 days, signed July 12; filed, Aug. 1.

Payments, framed $900; brown mortar on $900; outside finish on $900; completed $900; balance $900—35 days.

Oak and Cole, one-story frame. Owner, Jno. F. Schroeder; contractor, R. Sinnott; cost, $2,480; signed July 19; filed July 24, 1888; limit, Oct. 1; sureties, R. Warren and B. Joost; amount of bond, $2,000.

1st payment, when building is shingled, $612; 2d, when brown coated and drop frames set, $612; 3d, completed, $612; 4th, balance, 35 days, $614.

Pierce and Oak, two-story frame. Owner and builder, A. H. Bailey; cost, $4,500.

Page, nr Pierce, two two-story frame. Owner and builder, H. Keenan; cost, $6,500.

Post and Lyon, 3 frame buildings; owner J. H. Seeba; architect Wm. Mooser; contractor, R. P. Sanchez; cost $2,350; limit 105 days; signed, July 18, '88; filed July 19, '88; surety, F. P. Latson; amount of bond, $8,000.

1st payment 75 per cent. as work progresses, and balance, 35 days.

Ridley and Elgin Park, three-story frame. Owner, C. F. Scheele; architect, W. Winterhatter; contractor, A. McElroy; cost, $6,445; signed, July 18, 1888; filed July 24, 1888; limit, 80 days; sureties, F. Joost & W. Shyarks; amount of bond, $4,000.

1st payment, when building is roofed, $1,250; 2d payment, when building is brown coated, $1,250; 3d payment when hard finished, $1,250; 4th payment, when building is completed, $1,250; 5th payment, balance, usual 35 days, $1,445.

Ridley bet Scott and Devisadero. Double tenement. Owner Jos. Alex; architect H. I. Bestor; contractor G. A. Nagle; cost $2,970; securities Lewis & Swift, $1,500; limit 65 days; filed July 16, signed 14th. Payments, when framed $500; brown mortar on $600; plastering finished and outside work done $520; balance $750, 35 days.

Shotwell, nr Twenty-Fourth, -story cottage. Owner, P. Donahue. Architects Townsend & Wyneken; contractors, Thompson & Moore; cost, $2,800, limit, Oct. 1, 1888; signed, July 10, 1888; filed, July 13, 1888; surety, B. Joost; amount of bond, $2,000.

1st payment when roof is stripped, $700; 2d, when brown-coated and outside finish is on $700; 3d when hard finished and sash hung $700; 4th payment usual 35 days $700.

Sutter bet Franklin and Gough. Alterations. Owner, M. Haller; architect Schmidt & Shea; contractor, James Irwin; cost, $2,540; limit, 70 days; signed, July 10, 1888, filed July 13, 1888; O. J. Preston and J. J. McKinnon, sureties.

1st payment partitions set $600; 2d payment $600 when brown-coated and outside finish on; 3d payment when completed $700; 4th usual 35 days $640.

Shotwell No. 506 Alterations. Owner, Kate Conville; architect, M. J. Welsh; contractors, Donovan & Williams; cost, $1,650; securities J. J. Green, H. M. Wrede, $1,625; limit, 50 days; filed Aug. 1, signed July 28.

Payments, framed $400; brown mortar on $400; completed $400; balance 450—35 days.

Second nr. Howard. Residence. Owner, W. J. Bryan; architect, J. J. Clark; contractos, R. O. Chandler; cost, $6,600; limit, 60 days; signed, July 3, 1888; filed, July 3, 1888; sureties, B. Joost & F. M. Stevens; amount of bond, $5,000.

1st payment, when frame is up and brick work done, $1,850; 2d payment when partitions areset, $1,550; 3rd, when inside is finished, $1,550; 4th, the usual 35 days, $1,650.

Stevenson nr. Ridley. Additions. Owner, Martin Doyle; architect, P. Lynch; contractor, P. Lynch; cost, $2,869.

1st payment, when frame is up, $800; 2d, when brown coat of mortar is on, $670; 3d, when hard finished $681; 4th, 35 days after completion, $718.35; limit Sept. 14; signed June 26, 1888; filed, July 2, 1888.

Sixth and Jessie. 4-story frame. Owner T. L. Barker; architect, Clinton Day; contractor J. T. Grant; cost $63,666; limit 8 months; signed June 23, '88; filed July 18, '88.

1st payment when 1st floor joists are in $5,000; 2d, when masonry of 1st floor is built $9,000; 3d, when 3d and 4th story joists are set and second and third masonry done $10,000; 4th payment, when roofed and brown coated $10,000; 5th, when doors and windows are hung and inside ready to paint $10,000; 6th payment, balance and 35 days after completion.

Sacramento, nr Webster, (in rear) additional story; cost, $1,500.

Webster, nr Sutter, additions; cost $600.

Treat Av., near 23d, 1-story frame. Owner, J. Granville; contractor, F. Nelson; cost, $1,750.

Twenty-seventh, near Guerrero, 1 story frame; owner, F. Donahue; contractor, M. Loftus; cost, $1,700.

Third, bet Brannan and Townsend, stable and alterations. Owner, Max Popper; architect, A. J. Barnett; contractor, McCann & Riddell; cost 2,500. Limit, 28 days; signed July 2, 1888; filed, July 2, 1888.

1st payment, when completed, $1,538 50; 2d and balance, usual 35 days, $572 50.

133 Twelfth. Alterations. Owner, Catharine Gersing; architect, Geo. E. Voekel; contractor, F. C. Adams. Cost $2,390; signed, July 19, 1888; filed, July 23, 1888; limit, 72 days.

1st payment, foundation in studding up, etc., $200; 2d, brown coated, $200; 3d, when plastered, $200; 4th, when ready to paint, $390; 5th, when accepted, $800; 6th, when accepted, $800; 7th, usual 35 days, $600.

Treat ave nr 25th. Frame building. Owner Jos. Granville; architect F. Nelson; contractor F. Nelson; cost $1,600; limit Sept 3d; signed July 5, '88; filed July 5th.

1st payment when enclosed $400; 2nd, when brown coated $400; 3d when completed $400; 4th usual 35 days $400.

Third nr Brannan. Excavations. Owner, Kohler and Von Bargen; architect, H. Geilfuss; contractor, G. Raisch; Cost $1,100; limit, Sept. 1st. When complete $825; balance $275—35 days.

Union and Leavenworth. Plastering five buildings; owner, G. Rocca; architect, Wm. Mooser; contractor, Alex Mennie; cost $1,900; signed, July 3, 1888; filed, July 21, 1888.

1st payment, when brown coated, $700; 2d, when completed, $700; 3d, according last payment, main contract $500.

Van Ness Ave. and Jackson. Residence. Owner, F. A. Frank; architect, Clinton Day; contractor, Jas. M. Kelly; cost, $22,900; limit, Feb. 25, 1889; signed, June 30, 1888; filed, July 9, 1888.

1st payment, when roof is ready to shingle, 4,000; 2d, when brown mortared, $5,000; 3d, exterior ready to paint; 4th, inside ready to paint, $4,675; balance, usual 35 days.

Van Ness avenue and McAllister. Additions to 3 buildings; owner. J. Du W. Allen; architect G. E. Voelkel, contractor W. H. Elliot: cost $10,837; limit 90 days; signed July 19, filed Aug. 1.

Payments, when brick foundations are in $800; frames up and chimneys built $1,000 ready to plaster $1,200; outside finishes done $1,500; ready for painting $2,000; completed $1,752; balance $2,585, 35 days.

OAKLAND.

Stephen Watts has contracted to build for S. H. Smith a handsome frame cottage on Seventh avenue, to cost $2,280.

B. Spencer has secured the contract for the building of the new residence for Judge W. F. Henshaw, in East Oakland. The contract price was $6,247.

W. K. Weilbye is building for Mary Howard a two-story frame house on Brush street near Seventeenth street, to cost $8,000. It is to be completed by October 25th, and will be paid for in three installments of $2,650 each.

H. Sackville is building for A. J. E. Furbish a two-story frame cottage, to cost $3,500.

The frame work for the second story of the Canning block is up and the building will be completed by September 15th.

W. G. Reese has in course of construction a frame cottage for J. Marchi, an Cypress street, near West Twelfth street. The cost will be $4,363. Pissis & Moore are the architects.

H. E. Hatch is building for M. S. Baker a frame cottage on East Twenty-first street, near Twenty-ninth avenue. The cost will be $2,200.

McLeod & Herbst are building for M. Noonan a store and barn for $3,190.

The Hambleton stables, which were destroyed by fire some weeks ago, are being rebuilt.

A. W. Pattiani & Co. are building for E. C. Sessions a cottage on Twenty-fourth avenue, near East Twentieth street, in the Sessions tracts, East Oakland. The contract price was $1,040. The building is a modern Queen Anne cottage.

W. W. Wilkins is having a residence built in North Oakland. Nelson & Nickerson are the contractors. The cost will be $2,860.

G. M. Flick has contracted with M. A. Lent to build for the latter a residence on the south side of east Sixteenth street, 100 feet east of Eighth avenue, for $4,000. It is to be a two-story frame building. Payments are to be made in installments of $1,000.

Burpee & Judson have contracted with the Seventh avenue Congregational Church to erect a church edifice on the northeast corner of Eighth avenue and East Fifteenth street to cost $10,180.

ALAMEDA.

A considerable amount of building is in progress in Alameda at present, though work has been quiet during the early part of the spring. This is attributed to the high price of lumber. The prices are now beginning to fall, owing to the decreased demand in the south. The activity of the city in improving its streets and sidewalks, constructing sewers and supplying electric lights has attracted the attention of those who wish quiet homes, and the city will undoubtedly increase its population.

The largest house that is now in the course of construction is that of Mrs. Clara A. Bissell wife of the passenger agent of the Atlantic and Pacific railroad, at the corner of Alameda avenue and Union street. When completed it will be a magnificent residence, and one of the largest and most costly that has been erected in Alameda for several years. The foundation has already been laid. It will be two stories in heignt, with a large basement and attic, and will contain fifteen rooms. It will be elegantly fitted up and furnished throughout with all modern improvements. Its style of architecture is of a high order. The cost will be $10,000.

Miss E. Wingate, a music teacher in San Francisco, is building a very handsome cottage on Paru street near Encinal avenue. It will contain six large rooms, and will cost in the neighborhood of $2,000.

B. S. Hill, who is at present residing at 2916 Santa Clara avenue, is building a two story dwelling, containing ten rooms, at the corner of Morton street and Encinal avenue. It is being built by day work, and the estimated cost is $3,000.

G. Laver is building for C. Winter a one story cottage on Pacific avenue. The cost will be $1,230, and the building will be completed by August 1st. A. R. Denke is the architeet.

J. J. Denschl is building a frame house on Charles street, near Railroad avenue. The contract price is $3,250. The architects are F. X. Fisher and V. L. Fortin.

G. A. Flash, an artist of considerable fame, is building on Regent street, south of San Jose. The building is being arranged so as to allow for a large studio and art gallery for the artistic owner.

Mr. Gale's residence at the corner of Central avenue and Regent street, Alameda, is about completed.

Pattiani & Co. have begun for M. E. & E. Schieffein two frame cottages on Alameda avenue and Lafayette avenue, Alameda. The cost will be about $1,300 each. They will be very pretty, comfortable little buildings.

RIVERSIDE.

P. Munroe is building a ten-room house on Hall's addition. When completed it will cost about $4,000.

Work on the new school building is progressing finely. The contractors, Down & Alguire, have a large force of brick masons at work and are pushing the work vigorously. It will require in the construction of the building 1,200,000 bricks.

A. McCrary & Son have just taken a large contract for flume work for Fudickar & Howes', upon which they have already commenced. They are also busy putting in the culverts for the motor road.

IMPROVEMENT CONTEMPLATED IN SANTA ROSA.

The buildings are being removed from the property on the corner of Fourth and A streets, known as the Dr. R. P. Smith residence, and it is the plan of the owners to have a large business block erected upon it. Guy E. Grosse, B. M. Spencer and C. A. Wright purchased the property last fall. There has been a proposition made to erect a two-story wooden building upon the lot, but the owners are desirous of using only brick material. Although nothing definite has been determined, Mr. Spencer says it is the intention to mark the spot by a large business building.

LIVERMORE.

J. Gayetti is building a story-and-a-half side addition to his residence on Junction avenue.

The plans and elevation for Philip Anspacher's proposed new cottage, at the corner of L street and College avenue, are completed, and the contract will soon be let.

A NEW CHURCH.

Over $7,000 have been raised by subscriptions for the building fund of Christ (Episcopal) Church. It is the intention of the vestry to build a church edifice costing in the neighborhood of $18,000, on their recently acquired lot, corner of Santa Clara avenue and Grand street, Alameda, and it is possible that work will be commenced upon it within sixty days. The vestry have not yet positively decided what they will do with the present church building.

BUILDING OPERATIONS IN SEATTLE.

The Seattle Gas Light Company has let a contract to Otto Ranke for the construction of a new gas house, adjoining the old one, which, when completed, will cost in the neighborhood of $30,000. The structure will be of the same width as the present house and 140 feet long. It will have a stone foundation, and will be built of brick and cement, and will be two stories high. The foundation has already been laid, and Mr. Ranke expects to begin laying brick on the superstructure next week. He has one kiln of brick ready for use, and another ready to be burned. When this building is completed the gas company will have the necessary facilities for more than doubling its present supply of gas.

"Work is coming in faster than we can get away with it, said Mr. Steinman, the architect, Saturday. I have just opened bids for Mrs. H. A. Atkins' three-story building, to be erected on Columbia street, between Third and Fourth streets. J. Sogmeister was the lowest bidder, and will undoubtedly get the contract. The bids were as follows; J. Sogmeister, $6,700; W. M. Morse, $7,308; L. Hartwig, $7,960; Hamilton & Ricketson, $8,000; F. G. Mitchell, $8,256; Wilson & Nixon, $8,256; McEachen & Co., $8,815.

"The building will be of wood, three stories and a basement. The three upper floors will contain 11 rooms each, and the basement will have the dining-room, kitchen, laundry, boiler-room, etc. It will be heated with steam and hot air combined throughout."

"What are you working on?"

"We have just completed the plans for a large double house for Mr. L. Kline, the contract for which will be let next week. The building will be 40x52 feet in size, two stories high, with an attic. It will be located on the corner of Third and University streets, contain all the modern conveniences, and cost about $5,500.

TWO DOUBLE RESIEENCES.

The plans have also been furnished for two double houses two be erected on the corner of Fifth and Pike streets by Bailey Gatzert. Each house will contain six rooms and a bath-room. Tne main building will be 38x18 feet in size.

Here also are the plans for a neat residence to be built by Mr. Harper, of the electric light works, in Kinnear's addition. It will cost $3,000.

Mr. McDonald, of the firm of Fisher & McDonald, intends soon to build a neat two-story residence on Tenth and Spring streets. It will cost about $5,000. Here is a letter just received from the board of school directors at Chehalis, announcing the acceptance of my plans for their new school house. The building will cost $7500. By the middle of next week we will have a lot more work ready for the contractors to figure on.

Bids were opened Thursday in the office of H. Steinman, for the construction of a brick building for Mr. Himrich of the Bay View brewery, to be used as a brew house, engine house and boiler room adjoining the brewery. The structure is to be of brick, with a stone foundation. Mr. Lohse was awarded the contract for the brick work, and Mr. Redwood for the carpenter work. The building will cost $8,000.

LIVERRMORE.

Bids for the construction of the Chapin block on Second street, directly north of the Boston block were opened in architect Boone's office on Monday, and the contract was awarded to S. E. Clough on his bid of $12,500. The block will be of wood, two stories high.

C. C. Wilder has moved into his recently completed cottage, corner of Fourth and H streets.

H. W. Farmer is building a stable on his premises, corner of Chestnut and K streets.

Mrs. Hart has completed a very neat addition to her L street cottage and repainted the edifice.

THE BUILDING BOOM IN SAN JOSE.

Contracts Filed for Important Improvements

The following builders' contracts have been filed in the Recorder's office:

L. H. Lewis and Henry Lux for a carriage house and tank with brick foundation in East San Jose, to cost $3,017.

M. Kenny and Owen Leddy with the Fredericksburg Brewing Company, for a three story brick brew-house, at the corner of the Alameda and Cinnibar street, to cost $4,500.

Daniel J. Byron and E. Mc Laughlin for a brick basement at the northwest corner of Seventh and Reed streets, cost $1,287.

M. D. Green and Henry Lux, for a two story dwelling, brick basement, on the Alum Rock road, cost $9,800.

M. Kenny and Owen Leddy with the Fredericksburg Brewing Company for brick improvements to the Brewery for $5,500.

L. H. Lewis with Henry Lux for a carriage and tank house on the Alum Rock road for $3,017.

M. D. Green with Henry Lux for a two story frame house on Alum Rock road for $9,800.

D. J. Byron and E. McLaughlin for a brick basement on the corner of Seventh and Reed streets. $1,287.

E. Barre with R. Summers, for a cottage on Orchard Street for $1,170.

A three story brick building to cost $60,000 will, it is rumored, be erected on the Porter property on the northeast corner of Santa Clara and Second streets; the frontage on the former street is 137½ feet.

MISCELLANEOUS BUILDING NOTES.

C. R. Lord is the contractor for the new Paralta Park hotel. The price is $18,000.

It is proposed to build a schoolhouse, to cost about $15,000, at Golden Gate, otherwise known as Klinknerville. William Kirke is the architeet.

J. G. Pierce has the contract for the new building for W. T. Barnett, on Ashby avenue near Shattuck avenue. The contract price is $1,989. W. W. Goodrich is the architect.

Ingerson & Gore of this city have contracted to build a $9,000 stable for James Adams on Fifth street, between Bryant and Harrison streets. San Francisco. J. J. and T. D. Newsom are the architects.

R. W. Gorrill of Oakland of the Pacific Bridge Company is preparing to open a quarry and go into the business of macadamizing streets.

M. S. Jordan has returned from Auburn, and will stay in Oakland a little while.

William B. Kreger is building a brick wine cellar on the Rancho del Agua de Caliente (Warm Springs), owned by Josiah Stanford. The cost will be $15,900. The building is 100x200 feet, and has outbuildings for various processss in making wine.

At Irvington Charles C. Melver, the well known vineyardist, is building a new brick wine cellar 15x100 feet. The improvement is a substantial one.

A. J. Salazar is having plans drawn for a brick wine cellar to hold 100,000 gallons, to be erected on his Mission San Jose rancho.

Ed. G. Hedges is building a fine barn for Dreese Bros., on western Avenue, Petaluma.

J. D. Stephens will erect a nice cottage at Highland Springs for a resort during the heated portion of the year. W. H. Carson is the architect, Messrs. Stephens and Bean draughtsmen.

REDDING.

The Board of Supervisors adopted plans of A. Cook, of Sacramento for a $40,000 Court House.

Manual of Industrial Drawing
Carpenters $2 00
Illustrated Drawing Book 1 00
Mathematical Drawing Instruments 1 50
Drawing for Carpenters 75
Shavings and Saw Dust 5 50
Linear Drawing 50
Practical Draughting 1 00
Drawing for Cabinet Makers 1 50
Science of Carpentry 5 00
Mechanic's Geometry 5 00
Artisan 5 00

McCLELLAN
Anti-Siphon Trap Vent.
SAFEST and MOST-ECONOMICAL

Device for Venting Sewer Gas. Traps.
Can be attached to any Trap at Less than Half the Cost of back-air pipes.
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ARCHITECTS, MASTER PLUMBERS AND HEALTH AUTHORITIES.
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For Sale by all Jobbers in Plumbers' Supplies, of whom Circulars may be obtained

North, Central and South American Exposition.

NEW ORLEANS LOUISIANA: NOVEMBER 10, 1885. MARCH 31, 1886.

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THEO. W. PETERSEN & CO.

★ OF SAN JOSE CAL ★

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In acknowledgement of which the Signature of the proper Officials and the seal of the North Central and South American Expositions are hereto attached.

[ATTEST] CHARLES TURRILL, Commissioner.

I. M. W. COMICO, President.

B. D. WOOD, Director General.

THOS. WOODWARD, Chairman Committee on Awards

SAN DIEGO, CAL., FEBRUARY, 18, 1888.

T. W. PETERSEN & CO.

DEAR SIRS:

I send you by mail, Diploma awarded you by the North, Central and South American Exposition, for your display under my charge.

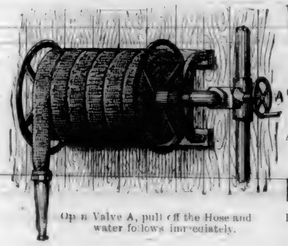
Kindly acknowledge receipt in enclosed envelope.

Very Respectfully

CHAS. B. TURRILL.

Commissioner for California; North, Central and South American Exposition, and Manager Southern Pacific Company's Display.

The above diploma was given to the firm mentioned, for the best display of PRESSED BRICK, at an Exhibition that attracted world wide attention. Mr. PETERSEN has made a special study of Kiln burning, so as to have all the bricks of an even color. We have seen car-loads of bricks, delivered in this City, and the uniform color pervading the entire lo was such as to attract more than ordinary attention from those around. MR. PETERSEN absolutely guarantees that every brick is perfect. If edges or corners are broken, he does not allow them to leave the depot. Any one ordering brick from above firm, can rest at a t they will obtain the very best Brick there is made in California. San Francisco addres is Townsend St. between 6th and 7th. San Jose, P. O. Box 187.



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Open Valve A, pull off the Hose and water follows immediately.

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222 & 224 MARKET ST., SAN FRANCISCO.

List of Members of the Builders' Association of California

330 PINE STREET, ROOMS 11 & 12.

Ackerman, C. H.,	215 Kerrny.
Adams, J. G.,	407 Broderick.
Bateman Bros.,	S. W. Post and Scott.
Binet, Jos. L.,	325 Fair Oaks.
Blake, John,	1138 17th,
Brenhan Bros.,	618 Eddy,
Bruce, John,	2407½ Howard.
Buckley, Frank,	1111 Devisadero.
Burpee & Hudson,	836 29th street Oakland.
Burrell, A.,	22 California.
Chisholm, Chris	330 Pine.
Chisholm, Dan,	110 Chattanooga.
Chrichton, P.,	109 Baker, bet Page Oak
Christy, Chas.,	828 Kirkham Oakland.
Classen, J. C.,	232 Francisco.
Commary, Wm. T.,	804 Hayes
Conrad, H. A.,	625 California.
Chandler, E. O.,	1210 Pierce.
Day, J. G.	San Diego.
Day, Thos. H.,	1012 Devisadero.
Dryer, Bernard,	4 Collingwood.
Dunshee, C. E.,	417 Ridley.
Ellis, B. F.	999 Chestnut
Farrell & Bell,	828 Union
Fish, J. W.,	836 Valley
Fitzpatrick, A. G.,	411 Twenty-second
Fletcher, W. M.,	Los Angeles
Geary, James,	2324 Sutter
Gillespie, G. G.,	1503 Devisadero
Gonyean, J. B.,	33 Hardy
Grant, John T.,	22 Turk
Gray & Stover,	1310 21st
Greene, E. B.,	34 Hawthorne
Greene, S. T.,	San Diego
Griffin, P.,	20 Russ
Hoffmann, Victor Jr.,	515½ 4th
Hatch, H. E.,	1717 Chaste, Oakland
Hurlbut, R. P.,	115 California avenue
Irwin, James,	908 16th
Ingerson & Gore,	971 Broadway, Oakland
Jackson, A.,	12 Middle
Keenan, Hugh,	219 Scott
Kent, S. H.	711 Leavenworth
Kern, F. W.,	118 Fair Oaks
Kincaid & Thompson,	730 Seventeenth
Klahn, Aug.,	5 Chenery
Klatt, F.,	814 Twenty-first
Klein, Jacob, 24	Lilly avenue.
Kreger, Wm. B.,	801 Guerrero.
Knaus, B.,	536 Fulton.
Lang, Geo. R., E. 14th St. & 14 th ve.,	Oakland.
Leonard, Jos. A.,	Alameda.
Langstaff, Wm.,	617 Jessie.
Mahony Bros.,	307 Van Ness.
Maher, J. W.,	105 Precita avenue.
MacDonald, Allen,	1303 Buchanan.
Martin & Maguire,	133 Gough.
McCann, Richard,	217 Waller.
McElroy, A.,	373 Jessie.
McInerny, James,	Hancock and Noe
McKay, Jas. H.,	124 Main
Mead, W. H.,	246 Minna
Mecredy Bros,	hurch, bet 17th and 18th.
Miller, Adam,	23d and Bryant, 516 Kearney
Moffit, Thos.,	Victoria
Moore Bros.,	252 Octavia and 1 Russ
Norton, A.,	1331 Ellis
Parker, R.,	527 Grove
Plums, Wm.,	3109 Sacramento
Quinn, Charles,	133 Oak
Rebman, J.,	Los Angeles
Riddell, Thos. C.,	16 Twelfth
Robertson, John,	San Rafael
Rohling, Henry,	14 Collingwood
Steinman, F. V.,	423 Bush
Simpson, R. F.,	326 Telegraph Av., Oakland
Smilie, Robt.,	1125 E. Third Av. East Oakland
Smith, James W.,	1220 Eddy
Sullivan, Timothy,	20 Laskie
Terrill, Chas. C.,	617 Seventeenth
Thompson & Moar	338 Golden Gate Av
Waterbury, C. S.,	1322 Scott
Wharff, Wm. H.,	Green and Laguna
White, O. E.,	879 Seventeenth
Wilcox, J. R.,	608 Willow Av
Williams, F. A.,	545 Natoma
Willis, A. A.,	30 Diamond
Worden, S. G.,	1013 Valencia
Zwierlein & Pavel,	421 Bush

Practical Geometry	1 00
Cottage and Farm House, Woodward	1 50

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX — ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. — NUMBER 9

THE

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OUR ADVERTISING RATES.

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Back Cover, Outside, Each Insertion	do.	2.00
Page Preceding Reading Matter	do.	1.75
Page Following Reading Matter	do.	1.50
Inside Pages	do.	1.00
Full Page Inside	One Insertion	40.0 0

Each Subsequent Insertion according to Agreement.

A Square is One Inch In Depth By Width of Single Column.

Advertisements alone inserted that refer to materials used in the construction and Furnishing of houses, and to matters and trades belonging to the building interest.

No Others Received.

SAN FRANCISCO, SEPT. 15, 1888.

FOUR EXTRA PAGES!

WE have been compelled to add **FOUR EXTRA PAGES.** It has been evident to any one reading this Journal, that for some time past its columns have been overcrowded. Last issue "ads" were refused, as our arrangements had not been perfected to increase the number of pages, and we would not draw on our reading matter for room. In a measure we have relieved the pressure and with this number we present a Journal that will compare favorably with any printed in the United States.

BUILDING NEWS.

There is no other Journal in this city, that compares with this in the reliability of its Building News.

SUBSCRIBE NOW!

TERMS: Two Dollars per Annum.

The Price of Lumber Question.

DURING the current year, the price of lumber in California has been a prominent issue as between owners contemplating building improvements, and the manufacturers of building materials. Our worthy contemporary, *Wood and Iron*, speaking from the lumbermans' stand point, in very kindly terms, says in a late issue, that this journal "still continues off in its views of the price of lumber," etc. We do not think so, and until convinced of error, we shall remain off.

We admit the argument, "that the price of lumber in a building, cuts but a small figure in its total cost." This fact we have times without number, urged when discussing the question personally with owners. There is more apparent than real objection upon this point, as a building requiring 50,000 feet of lumber and costing ten or fifty thousand dollars is increased in total cost but fifty dollars with a rise of one dollar per thousand feet, and no more than two hundred and fifty dollars, with five dollars per 1,000 added to what our lumbermen consider a too low price.

But the difficulty is, that consumers are not convinced that the higher rates prevailing until recently, were a commercial equity or necessity. Owners generally understand that lumber has been sold at rates far below those attained by the increased schedule of prices, and they do not trouble themselves to learn the reason why. Those who have in times past bought at twelve, thirteen and fourteen dollars per 1,000, are thereby led to the conclusion that the very intelligent class of men who handle and produce the great building commodity—lumber, are the parties to know just what lumber is worth in the market; and it being a staple, which should be as steady as a clock dial, owners understand abatements however low, when fixed by those controling the interest, as the true indication of value. They do not look for, nor care anything about the causes of depressed markets, nor whether such depression is the result of dealers slaughtering each other, waging a war of competition among themselves or otherwise. The consumer does not ask why it is so, but accepts the advantages of low prices as a fact possible, and unwillingly submits to a rise, when neither flood, famine, nor any recognized sufficient or feasible event has transpired to make it reasonably clear that advance is legitimate. And to make this view of the case stronger, it must not be overlooked, that when three or four years ago, lumber was sold for ten dollars per thousand less then the figures reached by the high price schedule of recent date, a very large number of buildings were erected, and the demand fully equal, and sometimes in excess of supply, not because lumber was cheap, but from the fact that so many considered it wise policy to build, from a remunerative, paying point of view. There was a steady demand for more buildings of almost any class, and as many would have been erected those years, had the lumber market not been broken all to pieces by the deliberate acts of the lumber interest men in waging a war of business extermination among themselves. Had fair, steady, reasonable prices prevailed, consumers would have been satisfied and accepted the condition as a proper thing. But when those in interest found that the producers of their own will and caprice drove home the steel gad of unwise competition, and toppled prices down to the verge of business ruin—and which did bring financial ruin to some—they accepted the advantage thus offered, and recent clamor about high prices resulted more from the course pursued by the manufacturers than any other.

It is always easier to maintain fair values than to regain and stimulate them after demoralization. And it is right here where the growl comes in. The lumbermen having provided and dished out, at former times and often, rich repasts in cheap lumber, owners have accepted the hospitalities set before them, and naturally feel sore when the door is either by degrees and quietly closed or slammed in their faces, and their fears aggravated by an extra charge for admission.

There was no "flagrant error" in our statement, that the decline in building was attributable to the cost of lumber. We should not have so stated, had we not been fully convinced that it was true. People often "cut off their noses to spite their faces," even in a building sense, but many will submit to almost any amount of loss, rather then consent to what they deem an

over-exaction. It is certainly not extra-wise in owners to allow well located real estate to lie unimproved year after year, because one or two per cent of total cost stands in the way. It seems to us "penny wise and pound foolish" for an owner to incur months or years of loss in rentals and income, simply because to improve may cost an extra sum less than the amount of taxes which must be paid each year on the unimproved property. But still this is the disposition of many, and even wealthy men been heard to say, "I will not improve at present rates of building materials, but wait for another break in prices"—not because the intrinsic value thereof may not be equal to the price demanded, but because there have been breaks, and breaks being possible at any time, they prefer to wait for them, as generous dispensations from the hands of those who have, and alone can inaugurate them. The force of argument comes in this line of thought, and if material producers would make their bullwarks firm against these irregularities, the public would in time accept the conditions as inevitable, and pay fair prices right along. "Supply and demand regulates," is all very well as a theory, but singular as it may appear, it is none the less true, that the price of lumber has at times been raised at periods when a decline in demand was unmistakably evident, and but little work preparing in architects' offices. Demand present, or prospective, in such cases has been anything else but justifying, and if the rule applied always, the natural tendency of prices would be downward and not accumulative.

The "stoppage of mills," "using up forests, etc," are all questions of serious import, but the true cause of outcry is found in the statements contained in this article.

The New City Hall Tower.

THIS important feature of San Francisco—"New City Hall," is and has for months or longer time, been a bone of contention among those directly—officially—concerned in determining its height, style, proportions—and naturally if not necessarily—involving every specialty connected with its design and construction, from foundation to the finial upon its loftiest apex.

The main question in issue, and in reference to which there are diversities of views and opinions, both in the Board of Commissioners, and the mind of the generous public who will be required in due time to furnish the necessary funds, is that of altitude; whether the mythical God—Mercury—with his outstretched wand surmounting the uppermost height of the construction, shall be permitted to stand upon a base 400 feet or more above the heads of the living masses below, or be limited to a standing point 250 feet more or less above the base of the construction.

Beyond such individual consultation and advice as each may have sought, the gentlemen constituting the City Hall Commission, have—until recently handled the questions arising within their official circle—yet neither claiming any special qualifications as scientific, architectural or mechanical experts, to render judgment, or decide the, in fact, most momentous, material and important issues and involvments, essential or contingent, attaching to the construction of the tower that is to be; the consummation of which must and will stand for generations if not for centuries, as a monument to the good and wise, or the mistaken judgment of the men into whose hands as a committee, and upon whom must rest for all times, the responsibility of fixing the height, approving the style and authorizing its construction.

It would be ungenerous to surmise that either of the honorable gentlemen, composing the Commission, have been or are influenced or controlled in their action, by any other motive than the public welfare. While his Honor Mayor Pond, Auditor Strother and Attorney Flournoy may each—as is his personal right and privilege—have preferences as to the parties who shall perform the various required services, especially in the all important matter of preparing the plans and determining principles and qualities of beauty, height, practical construction, and the many features and delineations which are never fully understood until practically executed, it would be terrible indeed, if true, if such individual preferences were allowed for one moment to intervene in a matter so gigantic as the erection of a tower to stand for all time as the city's most conspicuous monument.

An evidence that the Commissioners are both willing and anxious to arrive at the wisest and best conclusion, is exemplified by the fact that they have so far waived their official rights and prerogatives, and the exercise of arbitrary determination of all questions under their control, by inviting the leading civil engineers of the city, and S. F. Chapter of Architects, of the A. I. A., to examine and express judgment as to the various features of the new tower, from a professional, scientific and practical standpoint—all of which, however, is beyond question a very great annoyance to Mr. Laver, the City Hall architect, whose responsibilities unhampered by any extraneous interruption are great, and much more so when fettered by checks and interferences, which prevent the free exercise of his best judgment. Whether the report of the Committee of Architects will remove existing difficulties, remains to be seen.

AN IMPORTANT MEETING.

San Francisco Chapter American Institute of Architects.

THE regular monthly meeting of the Chapter was held in the rooms of the Art Association on September 7th, G. H. Sanders, President, in the chair.

The following members were present: G. H. Sanders, John Wright, J. J. Clark, J. E. Wolfe, W. J. Cuthbertson, O. Everett, H. T. Bestor, J. Gash, J. D. Cebrian, B. E. Henricksen, J. M. Curtis, W. P. Moore, A. Pissis and G. H. Wolfe. Several students were also in attendance.

Edward Kollofrath was unanimously elected a member as Fellow.

Propositions for membership were received from Wm. Patton, G. W. Percy and John Newsom. Referred to Committees.

It being the annual meeting, the election of officers next took place for the ensuing term. The result was as follows:

President, (re-elected) G. H. Sanders.

Vice President, (re-elected) W. P. Moore.

Treasurer, J. M. Curtis.

Secretary, (sixth term) G. H. Wolfe.

TRUSTEES.

A. Laver, J. Wright,
A. Pissis, J. E. Wolfe. B. E. Henricksen.

Secretary presented plans of New City Hall Tower to the Chapter. A general discussion ensued in which every member present took part. The prevailing opinion was that the matter was placed before the Chapter by those in authority, viz., the Board of New City Hall Commissioners, and therefore should be taken hold of in a scientific manner. That in order to do so, certain data and drawings should be in possession of the Chapter. This could best be done by a committee. A motion was made that a committee of five be appointed to take charge of the whole subject matter. After considerable debate, the motion was carried, and the President appointed the following Fellows as such committee: Albert Pissis, James E. Wolfe, B. E. Henricksen, W. J. Cuthbertson, John Wright.

Meeting adjourned subject to the call of the President.

The Redwood Belt.

THE redwood is limited to a strip of country averaging twenty miles in width, extending from the bay of Monterey to the Klamath river, a distance of 350 miles. Redwood lumber is in great demand, and already vast forests of these stately trees have been swept away. The redwood, however, does not grow in poor soil, and in many places where the trees have been cut, young redwood forests are again springing up. Those who imagine that there is any immediate danger of the redwood becoming extinct are certainly drawing upon the very remote future for ills. The tree is of comparative slow growth, but half a century will give to the young growth quite the appearance of a native forest.

TWENTY-THIRD INDUSTRIAL EXPOSITION OF THE MECHANICS' INSTITUTE.

THE Twenty-third Exhibition of the Mechanics' Institute is over, and we may safely say in its general arrangements and the studious efforts made by the Directors to please the public generally, a grand success has been scored for the Institute.

We can simply call attention to those articles directly connected with the building interests. First and foremost in the consideration of architects are the subjects of

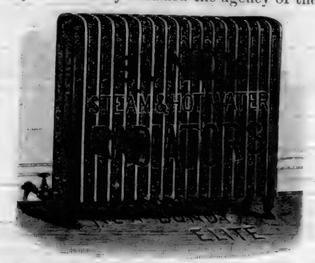
HEATING AND VENTILATION

Scientific men have given much of their time to the consideration of these subjects. The progress made during the past year has been wonderful, and deserves more than a passing notice.

HEATING

A glance at the back numbers of this journal will show to any one the vast improvement made in Heating Apparatus for buildings. For years the Harvey Radiator was illustrated in these columns. Hundreds of houses were supplied with them. They were good *then*, they are good *now;* and Mr. Harvey's countenance o'erspreads with a smile when he says, "they are not so pretty as those now in use, but the heat gets there all the same." The system now used by Mr. Harvey is far superior to that of a few years ago.

Mr. Harvey has recently assumed the agency of the celebrated



This method of artificial heating is recognized as being far superior to grates or hot air furnaces from every point of view. A uniform and spring-like temperature can be maintained throughout the house with but slight attention.

In the exhibit will be found Harvey hot water radiators and boilers, and Bundy's direct steam or hot-water radiators, Bundy's Triumph, for steam or hot water, the Bundy Elite, for hot water or steam, and the Bundy corner direct, column direct, circular direct, angle indirect, horizontal indirect, and Climax indirect radiators. Also, the Bundy hot-closet, dining room radiator, the latter a most useful and highly ornamental contrivance for disseminating warmth throughout the dining room, while at the same time affording a very convenient mode of securing an equable degree of heat for meats, vegetables and other food which may be placed within it. The collection of radiators on exhibition illustrates that decorative art in dwellings is not confined to the adornment of walls, floors, ceilings, or wood work, but is carried into the more utilitarian adjuncts of a wisely ordered household. These radiators are of ornamental design and beautifully decorated in blue and gold, blue and silver, bronze, or bronze and silver, antique bronze, silver embossed, and can be thus decorated to suit the taste of the purchaser. Thus the heating appliances of a room can be made to harmonize in color and design with its wainscottings, panelings and other decorations, and become part and parcel of artistic *ensemble*. A splendid Bundy Vertical Tube Direct Radiator Screen in highly ornamental antique brass (the first yet imported to this coast) occupies a conspicuous place in the center of Mr. Harvey's exhibit, and it is a thing of beauty. These screens, or covers, are made to fit any style or size of radiators. Mr. Harvey is a thoroughly scientific artisan, and a very close yet comprehensive study of the laws of heat and ventilation, united with a practical experience in constructive work, extending over many years, renders him the best qualified man in our midst for the intelligent direction of this most important sanitary work. He offers hundreds of references from those who have had his valuable services on this coast. Mr. Bundy publishes references to well-known people in every State and Territory east of the Rocky Mountains.

By a happy co-incidence, the exhibit of

ABRAHAMSON'S VENTILATORS

Is almost directly over that of the Harvey & Bundy Heaters, showing that these two subjects are inseparably connected. Mr. Abrahamson devotes all his time and attention to his perfect ventilators, and he is fully prepared to explain his system satisfactorily to any one.

The advantages of a perfect system of ventilation, which at the same time obviates a draught, are too palpable to admit of any adverse opinion. Peter Abrahamson has mastered a difficult problem in this direction through a patented invention that meets every requirement and commands the approval of numerous prominent citizens, among whom are Professor J. W. Anderson, Superintendent Public Schools; Peter A. Smith, Superintendent California Sugar Refinery; Harvey Platt, Superintendent Pioneer Woolen Mills; Alfred W. Perry, M. D., Charles F. Crocker, California cor. Jones; Palace Hotel; Mr. Reed, Berkeley; Dr. Gonzales, Fresno, and many others. By this ingenious system a constant circulation of air is secured, which, admitting pure air from out of doors, also expels the heated and poisoned atmosphere from the rooms where it is used. We give Mr. Smith's testimonial, as follows:

Peter Abrahamson, Esq.,—Dear Sir: The ventilators you put in my bedroom work to perfection; they keep the air fresh and cool. I would not be without them for double the cost. I can recommend them as the best and most perfect I have ever seen. Any information will be cheerfully given by calling at 504 Ninth street, San Francisco. Respectfully yours,

Peter A. Smith,
Supt. Cal. Sugar Refinery.

In addition to the above, by consulting the advertising pages of this Journal you will find a long list of those who have adopted Mr. Abrahamson's system. Many of the Architects heartily endorse his views and the general adoption of the Ventilators is but a question of a short time.

FINE ART IN STAINED CLASS.

One of the most attractive displays at the Mechanics' Fair is the exhibition of stained glass from the Pacific Glass Cutting Works of John Mallon, 19 Fremont street. The exhibit is fitted up as a room-interior, one wall of which is covered by an immense plate-mirror and the other three by numerous examples of glass windows and panels through which the light enters the apartments, showing in all their detail the brilliancy and fineness of the coloring and delicacy of the workmanship. The two kinds of glass work—the open mosaic and the painting in oil—are represented by many examples. A memorial window designed for the Presbyterian Church of San Diego is an especially handsome production, and a beautiful window of Moresque pattern composed of 2,500 pieces of brilliantly colored glass, as well as a Longfellow window with a finely painted head of the poet as a center piece, deserve all the admiration that can be bestowed upon them. Fine screens in mosaic abound, which reflect the scintillating light in all the colors of the rainbow. The exhibit is a credit to the industrial interests of the State, and the establishment it represents has almost a monopoly of the home market in its line.

REDWOOD VENEERS

Of all the elegant booths at the Fair few make a more superb appearance than that of Hurlbut Bros., the leading veneer dealers. The redwood veneer work which is used in the ornamentation of their quarters is by far the finest ever seen on the coast. All who see it express the greatest admiration, and it is generally conceded to be as handsome wood as earth can produce.

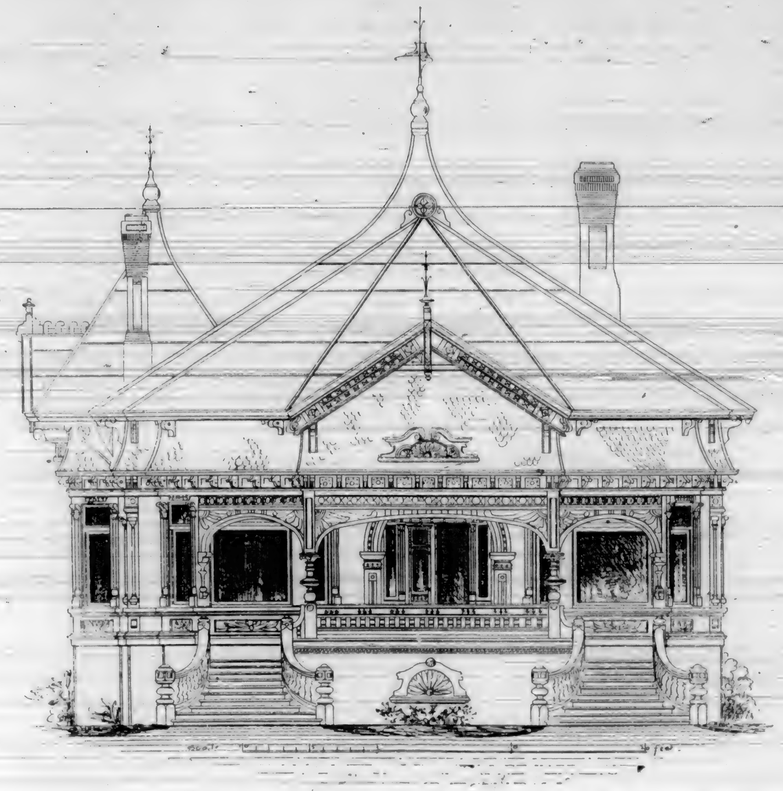
"ELASTICA"

Keefe & Fraser have on exhibition what is perhaps the finest display of California redwood ever seen anywhere. It is hard to imagine anything more beautiful in the way of wood than are many of the specimens of curly and buhrl wood of California's great staple. The specimens are beautifully finished with "elastica"—a new preparation intended to supersede varnishes for such purposes—and colored with stains which are the exclusive property of this firm.

FINE LUMBER, HARRIS & JONES

Starting in a small way, this firm has gradually advanced to the front rank. Their display of lumber is very fine. One board is shown without a check or crack. It is 12 feet long, 44 inches wide and 4 inches thick. They also have beautiful examples of Oregon pine and maple, red and white cedar, spruce, sugar pines, etc. Bryant street, corner Oak Grove avenue is their office.

[Continued on Page 117.]



"Sonoma"—A Beautiful Country Home—Cost $5,500.

The plans illustrating a country home in Sonoma County, Cal., were kindly furnished to us by Mr. Sam'l Newsom. Sizes of the rooms are plainly marked. The various apartments are roomy and every modern convenience has been introduced. As shown, the building can be erected at present price of materials, for the sum named.

PLASTER.

FEW people have any idea what a valuable material plaster of Paris is, and how it enters into the things of every day life about us, from the hard finish on the wall to the lamp collar which is fastened with it.

It is found in raw state in almost every land, and is made of gypsum rock, (a sulphate of lime.) It is quarried, calcined, ground to various degrees of fineness and then recalcined or boiled in huge caldrons, and is then fit for use. The best is made mostly in New York, from rock quarried in Nova Scotia, and is the kind used by dentists for all sorts of fine castings. We get another grade from Michigan, sometimes called by the trade blue plaster, on account of a blue cast in it. This kind is used mostly for hard finishing of walls. Another grade, coarser plaster, comes from Iowa, which has been used extensively for what is called "stucco plastering," in which a mortar is made of one part of plaster to two of sand and enough glue size to keep it from settling too quick. It makes one of the hardest kind of walls, but can be attempted only by the most skilled mechanic.

Plaster in setting can be retarded or accelerated by the use of various ingredients. Glue size is best for retarding, as it makes it materially harder after it is dry. Sugar, molasses and cream of tartar can be used for the same purpose. Cream of tartar is dangerous to use, as a little too much will kill the plaster from settling entirely. Two of the best things to use in making plaster set thick are common salt or alum. Plaster that has been kept a long time and has gathered moisture, or that has been set in a damp place, will also set quick. This can be remedied by removing all lumps that may have formed, and heating it on a stove in some metal vessel. When heated it will appear to boil like a liquid. Ground, uncalcined plaster is used extensively to improve what are called sour lands. Plaster in setting heats slightly, which causes it to expand. An eminent authority claims that this expansion will cause it to fill the crevices of a mold. But this is a mistake, as the expansion does not take place until it is quite hard.

Mortar made in the following manner will stand if used in almost all sorts of weather: One bushel of unslaked lime, three bushels of sharp sand; mix 1 lb. of alum with one pint linseed oil, and thoroughly mix this with the mortar when making it, and use hot. The alum will counteract the action of frost on the mortar.

For seventy yards of surface provide 1,000 pieces of lath, and eleven pounds of lath nails.

For 100 square feet of roof, 1,000 shingles, laid four inches to the weather, and five pounds of shingle-nails, will be necessary.

In estimating amounts of siding and flooring, allow one-fifth more than the surfaces to be covered for the lap in siding and the matching in the flooring.

Experiments with cypress and walnut woods, and also with cypress and cedar, show that they will rot each other while joined together; but on separating them the rot will cease, and both woods then remain perfectly sound for a long time.

An Evidence of Prosperity.

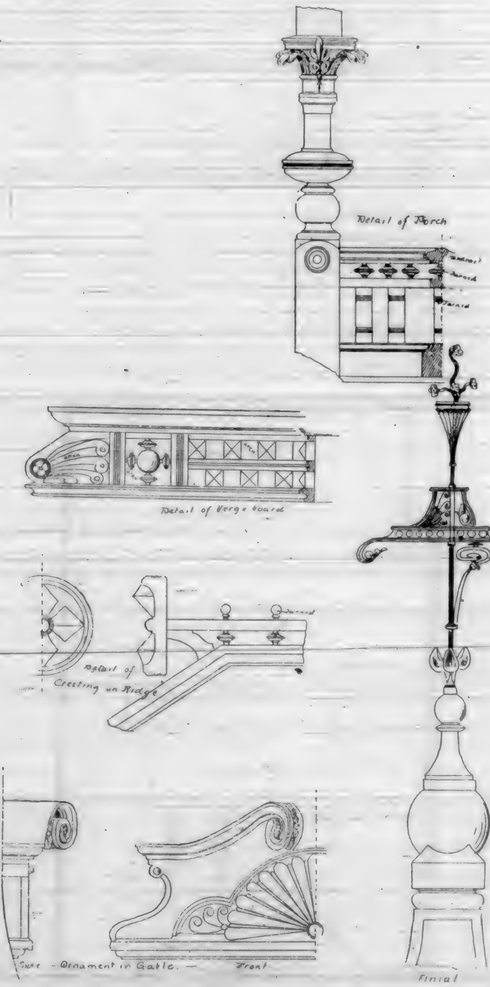
NO journal this side of the Rocky Mountains has ever published as complete an edition of news connected with the building interests as the one we present to our readers this month.

Our illustrations are produced by a new process, and are remarkable for their fine, clean appearance. We are prepared to furnish cuts of the same quality of work to those who may desire the same.

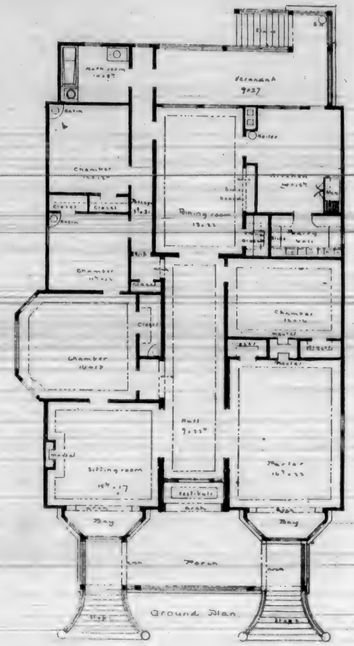
Our building news department will, in a short time, be greatly enlarged. We intend to be more thorough than all the other journals combined.

Subscribe now for 1889.

Remaining numbers of this year free to all new subscribers for 1889.



"Sonoma"—General Details.



"Sonoma"—Floor Plan.

NOW IS

THE TIME TO SUBSCRIBE

FOR 1889.

WE will send the remaining numbers of this year free to all new subscribers for 1889.

WE PROMISE

New and Beautiful Architectural Designs.

With our new process, we are enabled to produce cuts far ahead of anything heretofore presented.

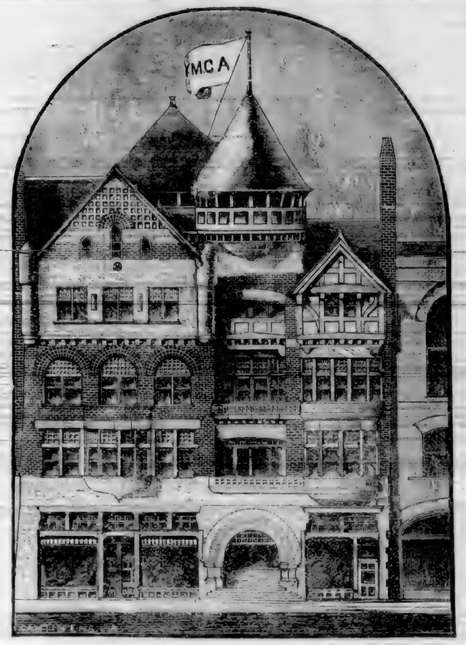
COMPLETE BUILDING REPORTS.

Our corps of building correspondents will be doubled next year. We have also had the city districted and a competent party to take charge of each district. Our city news will, therefore, be perfect.

ARCHITECTS

Have promised, with the new year, to send us each month an article, and, where necessary, illustrations for same.

Subscribe now for 1889.



YOUNG MEN'S CHRISTIAN ASSOCIATION BUILDING, LOS ANGELES, CALIFORNIA.

We give our readers in this issue views of the new Association building now in course of erection at Los Angeles, Cal. The following description of it is sent to us. The site for this important addition to the fine edifices of the "City of Angels" is on the west side of Fort street between Second and Third streets. The lot is 70 feet front by 110 feet deep. The building will cover the whole width of the lot and extend back to within five feet of the rear boundary, thus reserving an alleyway and light for the basement. The plans show a building, four stories in height above the basement, with an attic story. The front portion of the first story is occupied by three stores (two 24x65 feet and one 18x65) and the main entrance to the Association rooms, the latter being 11 feet between the piles of the arch opening into a vestibule 13 feet wide. The rear part of this story is taken up by the upper part of a gymnasium. Having ascended the main staircase, which is eight feet wide, one finds himself in what is really a part of the reception hall, but if desired, can be shut off from the latter and made to serve as a vestibule to the auditorium. To the left is an arcade of three semicircular arches, filled in with bronze scroll work, and supported by graceful columns with sculptured capitals and bases. Beyond this arcade is the reception hall proper, 23x22 feet, situated in the center of the building and having the other rooms arranged around it. Directly opposite the visitor as he enters is the Secretary's office, so placed that the Secretary or his assistant can command a full view of the entrance, and at the same time overlook the reading room and library.

The members' parlor, 18x36 feet, reading room, 22x30, and library, 18x30, occupy the front of the building on this floor. A curtained arch divides the reception hall from the reading room, which is the middle one of these three, separated from the library on the one side by a scroll-work screen and leading into the parlor through an anteroom on the other side. The anteroom can be thrown into either the reading room or the parlor by means of sliding doors. It also opens out into a balcony over the main entrance, where members can enjoy the open air. The parlor is provided with an oriel bay window of stone, having a slight projection over the sidewalk, thus giving larger window surface, as well as adding to the size of the room. Another bay window extends in front of the library and reading room, and forms a connecting lobby between the two rooms. The library will be fitted up with alcoves for books, an open pressed-brick fireplace, and everything made convenient and comfortable for the studious.

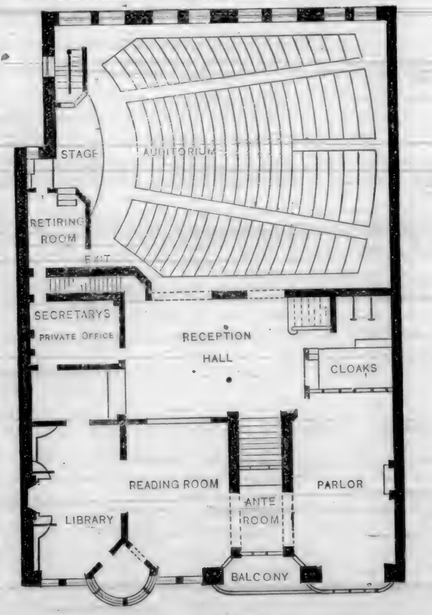
The auditorium, 64x49 feet, occupies the rear of the building, is directly over the gymnasium, and like the latter is two stories in height. It is calculated to seat 525 persons on the lower floor and 250 in the gallery. To the right of the entrance hall or vestibule are the cloak room and toilet room. The members' parlor may also be entered from this side. Next to the Secretary's office is the stairway leading down to the gymnasium. On the third floor are placed the recreation room, 34x28; the boys' room, 16x30; and a class room, 18x32; these rooms being divided one from the other by sliding doors. Another class room is provided in the rear of the one above mentioned, and the two rooms can be thrown together by opening the sliding doors. There is an open court or well on this floor which lights the center of the building and the reception hall which is beneath. The rear of this floor is occupied by the gallery of auditorium, a kitchen, 16x14; toilet rooms, staircases, etc.

On the fourth floor are ten rooms, to be rented for lodgings to young men; these average 12x14 feet and are all outside rooms. Apartments for janitor are also on this floor.

We now turn to the basement, to many the most attractive part of the building—containing the gymnasium and baths. The former occupies the rear of the building and is directly under the large auditorium. A room is set apart at one end for the instructor.

A running track, six feet six inches wide extends around the walls, at about ten feet above the gymnasium floor. Above the running track is a gallery for the convenience of visitors wishing to view the gymnastic exercises. Dividing the gymnasium from the bath rooms are the member's lockers, about 600 in all, with wash bowls and toilet conveniences adjoining. The remainder of the basement is taken up by the swimming bath, 14x44 feet, with diving platform, etc.; eleven sponge baths, five tub baths, shower and needle bath room, two bowling alleys 70 feet long, and the engine and boiler room.

The general style of the building is American Romanesque, although the mullioned and oriel windows and some other features belong, strictly speaking, to the English Gothic style of the fifteenth century, they are made to harmonize with the more severe and impressive style of the three or four centuries earlier. The principal entrance is well-defined and inviting,



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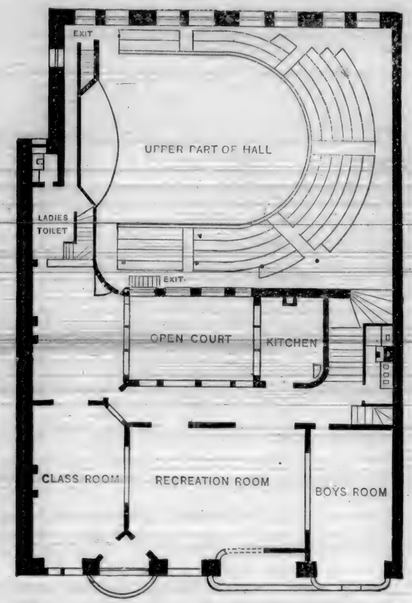


and may be said to be typical of the characteristic strength of the Association in all parts of the world. The balconies over the entrance open from the principal rooms of the building, and over these balconies is a circular open tower from which a fine view of the city may be obtained. The front of the building will be faced with pressed brick and brown stone trimmings, with terra cotta panels. The first story will be entirely of brownstone, in pitch-faced broken ashlar work. The entrance will be closed at night time by a portcullis of wrought iron or bronze.

The building, when finished, will cost probably $55,000.

"SANITAS" PLUMBING APPLIANCES.

THE superiority of the Sanitas system and appliances is now so widely recognized that the word "Sanitas" has become synonymous with sanitary safety. It suggests scientific and solid construction, and simplicity of form and action, and the use of the Sanitas goods assures these qualities. The fact that their principles of construction are everywhere being imitated by other manufacturers, as far as the Sanitas patents will allow, indicates the reputation they have among the trade.

The extraordinary success which the Sanitas appliances have met with, has, as above indicated, led to a number of imitations and infringements. We are informed that in several instances, even where the Sanitas goods have been called for in specifications for building, portions of the goods furnished under the contract have been such imitations and infringements. We would therefore call the attention of architects, builders and others interested, that every article manufactured by us bears in a conspicuous place, the word SANITAS.

THE "SANITAS" TRAP

(1.) It is sometimes asserted that the seal of the Sanitas trap can never be broken under any conditions. This is erroneous. Its seal can be pumped out by a force-pump, or by a laboratory pumping apparatus, especially devised to destroy the seals of traps by siphonage. But the seal of the unvented Sanitas trap never can be and never has been destroyed by siphonage in good plumbing work. Furthermore, the unvented Sanitas trap will stand a severer test of siphoning action than will the vented S-trap. This has been demonstrated over and over again, and the demonstration can be repeated at any time to the satisfaction of any who are interested, provided care be taken to vent the S-trap in a manner which is practical in plumbing, using a vent-pipe the size, length, and average number of bends found in ordinary practice. The seal of the Sanitas trap will be lowered by severe siphoning action, but it cannot be broken.

(2.) Again, it is sometimes asserted that the Sanitas trap can not be clogged. This is also erroneous. The trap can be clogged by matches or kitchen refuse, if improperly used, just as can any ordinary waste-pipe; but when properly set and used, the Sanitas trap will never become clogged to the point of losing its effectiveness. If improperly used, as when under kitchen sinks the cook takes out the sink strainer and sweeps into the trap bones and refuse never intended for the waste-pipe, the Sanitas trap will be fouled; but it then has the great advantage over all others of providing the easiest and safest means of removing this refuse matter, and that with the aid of an ordinary screw-driver. When used under sinks, the trap should be placed close to the sink outlet, and the sink-strainer should never be removed. The grease will then pass through the trap in a liquid state, and be caught in the suitable grease receptacle beyond.

(3.) It is often thought that where special trap vent-pipes are called for, the Sanitas trap is not needed. The Sanitas trap is so constructed that its seal cannot be injured by evaporation produced by trap venting. Therefore, where trap vent-pipes are called for, the use of the Sanitas trap is particularly necessary. In virtue of the peculiar construction of the Sanitas trap, its outlet-pipe forms its own vent-pipe, which is infinitely better than a special vent-pipe, inasmuch as it is always kept open by the scouring action of its own discharges. But even if it should ever become closed by grease, no harm could come in this case, since the same closure would not only shut off sewer gas and siphonage, but also at once announce itself and be removed.

(4.) Finally, the seal of this trap can never be destroyed by back pressure, in properly arranged plumbing. For with the main soil-pipe vented as it should be, no back pressure can be generated strong enough to do mischief, where ordinary care and intelligence are used in originally laying out the work.

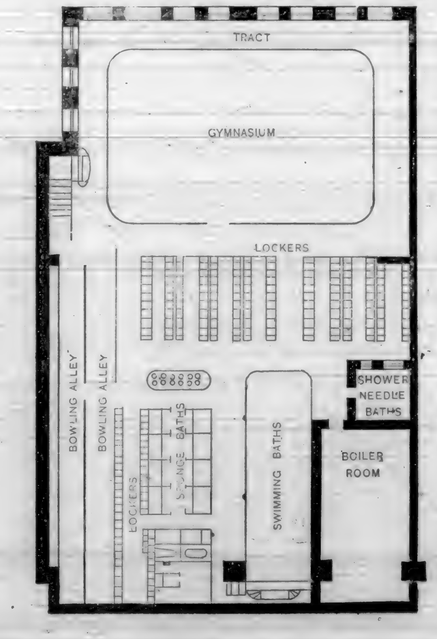
Besides the trap, the Sanitas Manufacturing Company have a full line of bath tubs, pantry sinks, water closets, etc., etc. The latter will be more fully described in next issue.

WILLIAM E. HOYT, C. E., S. B.

Chief Engineer of the Buffalo, Rochester & Pittsburg Railroad, formerly Chief Engineer of the Massachusetts State Board of Health, in his lecture on "Household Sanitation," delivered before the Academy of Sciences, at Rochester, N. Y., in January, 1886, writes: "I know of nothing to compare with the Sanitas appliances in convenience, efficiency and safety. They should be regarded in the same light as valuable discoveries in medical science."

These various appliances are kept in full stock in this city by the agents,

ARNOLD & Co., 40 California Street, San Francisco, Cal.



(Continued from page 112.)

A GRAND REDWOOD PLANK

Perfectly free from knots or checks, there stands against the side of the Pavilion a redwood plank, 13 feet long, 50½ inches wide and 3 inches thick. Where in the world can this be beaten?

CALIFORNIA SLATE

The slate quarry in El Dorado Co. can furnish slate equal to any in the world. The color is a rich blue-black. The grain is very fine and the surface is unusually smooth. The samples in the Fair prove conclusively that those wanting a perfect fire-proof material need not go out of the State to procure the same. J. O. Hanscom is Secretary of the Company, and the office is at 10 California street.

RANSOME'S PATENT CONCRETE MIXER

E. L. Ransome, of 402 Montgomery street, presents one of his celebrated Patent Concrete Mixers. In a late issue of the *Scientific American*, attention was called to their superiority. By their aid any one can prepare material ready for instant use. Mr. Ransome has these machines for sale. He also makes a specialty of renting the same, so that those who only want them for certain work can return the "Mixer" when they have finished the job.

CALIFORNIA WIRE WORKS

The grand display presented by the California Wire Works entitles them to a gold medal. In fact it should be a diamond medal, if truly intrinsic merit was considered. They have a machine in active operation making barbed wire fencing. We have noticed people stand for hours watching the same. Then their French or wire nail machine. How it seems to eat up the coils of wire. The latter is placed in such a position that the machine is fed continuously, and the nails drop in a perfect shower in a large box underneath. It will hardly do for one to pick them up, at least for some little time, as they are hot when they leave the machine. Then, the grand display of wire rope for rigging; the mammoth hawsers for large vessels; the steel wire rope for our cable systems; beautifully designed summer houses, and even down to fine bird cages; wire screenings of every size, from that strong enough for a jail to that in general use for kitchen windows. In fact, everything in the shape of wire ornaments, and for every purpose for which wire can be utilized, this Company presents in its various exhibits the practical results of many years of study and improvements. The office of the Company is at 329 Market.

MANTELS, MIRRORS, AND BRIC-A-BRAC

S. & G. Gump have one of the most exquisite displays in the Fair. The designs in mantels are very artistic. A feature of their display is the beautiful varieties shown in tiles and hearths. Their parlor ornaments attract much attention from their unique styles.

FINE CARPETS

Next to the building of the house comes the furnishing thereof, and the goodly housewife turns her first attention to the carpets. No other place this side of the Rocky mountains can show the assortment of goods exhibited by Sloane & Co. Ravishingly exquisite designs may be seen of the Chehalas and Royal Fereghan (both Persian), Gobelin and Victorian Moquettes, Scotch Axminsters, Afghan, and in fact every kind of patterns to suit the most aristocratic tastes. Besides the carpets, Messrs. Sloane & Co., keep a full assortment of window hangings and adornments. This grand establishment may be found on Market street, near 3d, Nos. 641 to 647.

"MATHUSHEK'S PIANOS."

Geo. F. Wells presents a grand display of "Mathushek" pianos. Of the thousands who stand daily at his booth, but few are there who would not at once award the palm to the "Mathushek." Mr. Wells feels proud in the fact that the last prize ever given at the Mechanics' Fair for an eastern made piano was won by the "Mathushek." One peculiarity of the firm making these grand instruments is, that they never advertise. So that any one reading a notice of these pianos can say that it was to the excellence of the tone and finish that such praise was called forth. Some of the Piano Companies spend thousands of dollars yearly in advertising. This must be charged *pro rata* to each piano. With the "Mathushek." the buyer gets this discount Mr. Wells can be found at 1360 Market street.

LARGE STICK OF TIMBER

Suspended overhead is the largest stick of timber ever sawn at a mill. It is 151 feet long, 20 inches square and contains 5033⅓ feet of lumber. But few knots can be seen in its entire length

WILL & FINCK'S CUTLERY, ETC.

This firm's display proves that skill and energy will surmount al difficulties. Starting many years ago, in a very small way, they have gradually advanced, until to-day, there is not a house this side of the Rocky mountains can compete with them. Their display of home-made cutlery is superb. One of the specialties of this firm is their electric bell system. Many of our largest hotels and other buildings have been furnished with their electric bells and electric lightings. The annunciators furnished by this house are a model of neatness and availability. Their place of business is 818 Market street, in the Phelan building.

Mr. J. B. Kershaw, who represented Messrs. N. and G. Taylor Co., tin plates, metals and tinners' supplies, Philadelphia, from 1879 to 1886 as traveling salesman through the west and northwest, will again fill the same position with this old and reliable house, on and after August 1st. This notice will be acceptable to the trade west of the Mississippi, extending out to the coast, with whom Mr. Kershaw has hosts of friends.

Messrs. N. and G. Taylor Co. are the sole importers of the genuine and guaranteed brand of OLD STYLE Roofing Tin, and the return of Mr. Kershaw to this live and energetic house is not without considerable significance, and it is fair to presume that he finds it more profitable to sell the guaranteed, and what may be called the "original brands" of this house, rather than push the sale of any imitations that may be handled by other parties.

Messrs. N. and G. Taylor Co. carry a full line of all their guaranteed brands in not only their Chicago and New Orleans warehouses in addition to the stocks carried by jobbers who handle their goods, but have also placed their goods in the hands of Messrs. W. W. Montague & Co., of San Francisco; Harper & Reynolds Co., of Los Angeles, and we are now advised, have just established an agency with Messrs. Peters & Miller, galvanized iron cornice and tin plate workers, of Tacoma, Washington Territory. They sell an immense quantity of their guaranteed brands all along the line of the Central and Northern Pacific, in fact, from a circular just issued by this house, we notice in the list nearly all the prominent jobbers and tin plate houses of the United States, which seems to us not only flattering to the brand they represent the sale of, but also creditable to this old and reliable house of Taylor & Co., who established their business as far back as 1810, in the old city of Philadelphia.

Rural Homes, Wheeler	1 50
Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50

Copyrighted by G. H. Wolfe.

SAN FRANCISCO.

The above beautiful design was prepared especially for this Journal, and is peculiarly appropriate for a suburban home.

STANDARD UNIFORM CONTRACT.

Some time ago, special committees from the American Institute of Architects, the Western Association of Architects, and the National Association of Builders, were appointed to draw up a form of contract for general use, all over the United States.

The object sought to be obtained by the Committee was to prepare a Form of Contract which could be received and adopted generally by architects and builders as a Standard Form, and in which the several provisions necessary to constitute an equitable agreement, as between the owner and the builder, would be incorporated. The Joint Committee were empowered by their respective Associations to prepare and adopt such a Form of Contract, and this work, as embodied in the accompanying printed copy, may be said to be the authorized Standard Form of said Association.

A copy of the "Contract" has been forwarded to this office. We present it in full. AS THE "CONTRACT" HAS BEEN COPYRIGHTED, copies can only be obtained through the "Inland Publishing Co." Chicago, Ill. If desired, forward your application to the Company, and your name and address will be printed in the proper places.

We can furnish them complete, with your names, etc., added for $2 00 per hundred or $10 per thousand.

THIS AGREEMENT, made the.....day of .....in the year one thousand....hundred and..... by and between.....
.....
.....
.....part of the first part (hereinafter designated the *Contractor*;) and.....
.....
.....
.....part of the second part (hereinafter designated the *Owner*;).....

WITNESSETH that the Contractor, being the said part of the first part, in consideraton of the covenants and agreements herein contained on the part of the Owner, being the said part of the second part, do covenant, promise and agree with the said Owner, in manner following, that is to say:

1st. The Contractor shall and will well and sufficiently perform and finish, under the direction, and to the satisfaction of .....Architect (acting as Agent of said Owner), all the work included in the.....
.....
.....
.....
.....
.....

agreeably to the drawings and specifications made by the said Architect, and signed by the parties hereto, (copies of which have been delivered to the Contractor), and to the dimensions and explanations thereon, therein and herein contained, accord-

ing to the true intent and meaning of said drawings and specifications, and of these presents, including all labor and materials incident thereto, and shall provide all scaffolding, implements and cartage necessary for the due performance of the said work.

2d. Should it appear that the work hereby intended to be done, or any of the matters relative thereto, and are not sufficiently detailed or explained on the said drawings, or in the said specifications, the Contractor shall apply to the Architect for such further drawings or explanations as may be necessary, and shall conform to the same as part of this contract, so far as they may be consistent with the original drawings, and in event of any doubt or question arising respecting the true meaning of the drawings or specifications, reference shall be made to the Architect, whose decision thereon, being just and impartial, shall be final and conclusive. It is mutually understood and agreed that all drawings, plans and specifications are and remain the property of the Architect.

3d. Should any alterations be required in the work shown or described by the drawings or specifications, a fair and reasonable valuation of the work added or omitted, shall be made by the Architect, and the sum herein agreed to be paid for the work according to the original specification, shall be increased or diminished as the case may be. In case such valuation is not agreed to, the Contractor shall proceed with the alteration, upon the written order of the Architect, and the valuation of the work added or omitted shall be referred to (3) three Arbitrators, (no one of whom shall be personally connected with the work to which these presents refer), to be appointed as follows: one by each of the parties to this contract, and the third by the two thus chosen; the decision of any two of whom shall be final and binding, and each of the parties hereto shall pay one-half of the expense of such reference.

4th. The Contractor shall, within twenty-four hours after receiving written notice from the Architect, to that effect, proceed to remove from the grounds or building, all materials condemned by, whether worked or unworked, or take down all portions of the work which the Architect shall condemn as unsound or improper, or as in any way failing to conform to the drawings and specifications, and to the conditions of this contract. The Contractor shall cover, protect and exercise due diligence to secure the work from injury, and all damage happening to the same by neglect, shall be made good by

5th. The Contractor shall permit the Architect, and all persons appointed by the Architect, to visit and inspect the said work or any part thereof, at all times and places during the progress of the same, and shall provide sufficient, safe and proper facilities for such inspection.

6th. The Contractor shall and will proceed with the said work, and every part and detail thereof, in a prompt and diligent manner, and shall and will wholly finish the said work according to the said drawings and specifications, and this contract, on or before the.....day of .....in the year one thousand....hundred and..... (provided that possession of the premises be given the Contractor, and lines and levels of the building furnished him, on or before the..... ....day of.....in the year one thousand.....hundred and.....), and in default thereof the Contractor shall pay to the Owner.....dollars for every day thereafter that the said work shall remain unfinished, as and for liquidated damages.

.....

.....

7th. Should the Contractor be obstructed or delay in the prosecution or completion of the work by the neglect, delay or default of any other contractor; or by any alteration which may be required in the said work; or by any damage which may happen thereto by fire, or by the unusual action of the elements, or otherwise; or by the abandonment of the work by the employees through no default of the Contractor, then there shall be an allowance of additional time beyond the date set for the completion of the said work; but no such allowance shall be made unless a claim is presented in writing at the time of such obstruction or delay. The Architect shall award and certify the amount of additional time to be allowed; in which case the Contractor shall be released from the payment of the stipulated damages for the additional time so certified and no more. The Contractor may appeal from such award to arbitrators constituted as provided in Article 3d of this contract.

8th. The Contractor shall not let, assign or transfer this contract, or any interest therein, without the written consent of the Architect.

9th. The Contractor shall make no claim for additional work unless the same shall be done in pursuance of an order from the Architect, and notice of all claims shall be made to the Architect in writing within ten days of the beginning of such work.

10th. The Owner agree to provide all labor and materials not included in this contract in such manner as not to delay the material progress of the work, and, in the event of failure so to do thereby causing loss to the Contractor, agree that will reimburse the Contractor for such loss; and the Contractor agree that if shall delay the material progress of the work so as to cause any damage for which the Owner shall become liable (as above stated), then shall make good to the Owner any such damage—over and above any damage for general delay herein otherwise provided; the amount of such loss or damage, in either case, to be fixed and determined by the Architect, or by arbitration, as provided in Article 3d.

11th. The Owner shall effect insurance on said.....work, in his own name and in the name of the Contractor, against loss or damage by fire, in such sums as may from time to time be agreed upon with the Contractor, the policies being made to cover work incorporated in the building, and materials for the same in or about the premises, and made payable to the parties hereto as their interest may appear.

12th. Should the Contractor at any time refuse or neglect to supply a sufficiency of properly skilled workmen, or of materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the agreements on part herein contained, such refusal, neglect or failure being certified by the Architect, the Owner shall be at liberty, after three days written notice to the Contractor, to provide any such labor or materials, and to deduct the cost thereof from any money then due or thereafter to become due to the Contractor under this contract; and if the Architect shall certify that such refusal, neglect or failure is sufficient ground for such action, the Owner shall also be at liberty to terminate the employment of the Contractor for the said work and to enter upon the premises and take possession of all materials thereon; and to employ any other person or persons to finish the work, and to provide the materials therefor; and in case of such discontinuance of the employment of the Contractor he shall not be entitled to receive any further payment under this contract until the said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this contract shall exceed the expense incurred by the Owner in finishing the work, such excess shall be paid by the Owner to the Contractor, but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, either for furnishing materials or for finishing the work and any damage incurred through such default, shall be audited and certified by the Architect whose certificate thereof shall be conclusive upon the parties.

13th. And it is hereby mutually agreed between the parties hereto, that the sum to be paid by the Owner to the Contractor for said work and materials shall be.....

.....

.....

subject to additions or deductions on account of alterations as herein before provided, and that such sum shall be paid in current funds by the Owner to the Contractor in installments, as follows:

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It being understood that the final payment shall be made within.....days after this contract is completely finished; provided, that in each of the said cases the Architect shall certify in writing that all the work upon the performance of which the payment is to become due has been done to satisfaction; and provided further, that before each payment, if required, the Contractor shall give the Architect good and sufficient evidence that the premises are free from all liens and claims chargeable to the said Contractor; and further, that if at any time there shall be any lien or claim for which, if established, the Owner or the said premises might be made liable, and which would be chargeable to the said Contractor, the Owner shall have the right to retain out of any payment then due or thereafter to become due, an amount sufficient to completely indemnify against such lien or claim, until the same shall be effectually satisfied, discharged or cancelled. And should there prove to be any such claim after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging any lien on said premises, made obligatory in consequence of the former's default.

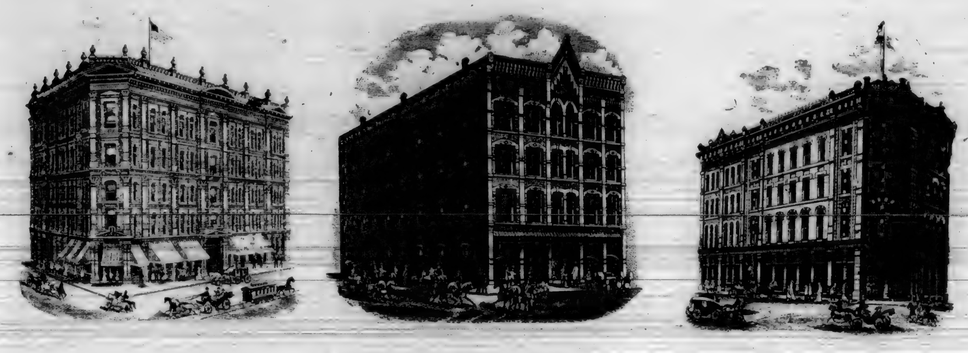
14th. It is further mutually agreed between the parties hereto, that no certificate given or payment made under this contract, except the final certificate or final payment, shall be conclusive evidence of the performance of this contract, either wholly, or in part, against any claim of the Owner, and no payment shall be construed to be an acceptance of any defective work.

15th. And the said Owner hereby promise and agree with the said Contractor to employ, and hereby employ to provide the materials and to do the said work according to the terms and conditions herein contained and referred to, for the price aforesaid, and hereby contract to pay the same, at the same time, in the manner, and upon the conditions above set forth.

16th. And the said parties for themselves, their heirs, executors, administrators and assigns, do hereby agree to the full performance of the covenants herein contained.

In Witness Whereof, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

In presence of.....



Various Designs for Business Buildings.

Great Chances for Three Inventors.

I have often taken occasion to remark that the world is awaiting the appearance of three great inventors, greater than any who have gone before; and to whom it will accord honors and emoluments far exceeding all ever yet received by any of their predecessors. The first is he who will show us how, by the combustion of fuel, directly to produce the electric current; the second is the man who will teach us to reproduce the beautiful light of the glowing-worm and the fire-fly—a light without heat, the production of which means the utilization of energy without that still more serious waste than the thermo-dynamic loss now met with in the attempt to produce light; while the third is the inventor who is to give us the first practically successful air ship. The first two of these problems are set for the electric engineer, and we may be pardoned excess of faith, should it prove to be such, when, contemplating the enormous gain to humanity which must come of such inventions, we look confidently for the genius who is to multiply the wealth of the world to an extent beside which even the boon conferred by the creators of the steam engine and telegraph will not appear overshadowing. When this inventor comes forward, and most probably not till then, it is very likely that we shall see steam superseded by a rival.—*Prof. R. H. Thurston.*

Galvanized Iron for Water Pipes, Tanks, etc.

I had the notion of using galvanized iron pipes, coated inside and out, for the service pipes of my house, but on asking advice on the subject, I have been informed that the material is declared to be unhealthful, and that its uses is forbidden in many places. I happened to notice, also, the accompanying note on the subject, in one of the scientific papers, which is to the same effect (clipping enclosed). Will you please give me the benefit of your opinion?—M. W., Cumberland, Md.

Answer. The clipping enclosed read as follows: "We do not consider galvanized iron to be a safe material for water pipes. Zinc is a metal which is readily attacked and dissolved by certain waters, forming unwholesome and poisonous salts." Replying to the above, we do not share in the opinion conveyed in the quoted item. We have never met with any well-authenticated case of hurtful influence exerted by zinc or galvanized iron when used as the contact surface for service pipes or tanks for water for household use. There is but one salt of zinc that may be said to possess actively poisonous qualities—namely, the chloride; and the likelihood of this salt being formed under any circumstances at least in quantity sufficient to dangerously affect the water is almost infinitely small. The action of portable water on a surface of zinc will be to form an exceedingly thin coating of oxide, and ultimately of carbonate of zinc over the entire surface. And as this salt is very insoluble, it will effectually protect the underlying metal from the further chemical change for an indefinite period. The Massachusetts State Board of Health, some years ago, investigated the subject, and made a report affirming the comparative harmlessness of zinc or galvanized iron for the purpose herein named. An instructive confirmation of this judgment is given by the example of the city of Hartford, Conn. In 1855, at the recommendation of the Water Commissioners of that city, service pipes of iron, galvanized inside and outside, were adopted there, and have been in use ever since. They are used also, to a considerable extent in Philadelphia, and other cities. So far as we are aware, in none of these places has the slightest bad effect been traced to the practice. Such evidence ought to outweigh any amount of condemnation based simply on hypothesis. In writing some time since, in this journal, on system, we took occasion to comment on the immunity, from any specific disease, of the men who work at the galvanizing pots, that could be traceable to the absorption of the metal. The use of sal-ammoniac as a flux to clear the surface of the melted zinc in the pot, causes clouds of the chloride to be carried into the air. Yet the men work at these pots day after day, sometimes when ventilation is bad (as on a damp day), enveloped in clouds of it so as to appear like shadowy figures at a short distance away, without noticeably affecting their general health. It is safe to assert, we believe, that a galvanizer handling iron about a galvanizing pot, takes into his system through the mouth and nostrils, whence it finds its way into the stomach and lungs, more zinc in the course of a single day's work than he would be likely to get from his galvanized water service pipes in a month. In the face of such a fact as this, the denunciation of zinc for water-storage tanks and conduits, out of fear of the consequences of the homœopathic doses of this metal that would be dissolved, is, in our judgment, a bugaboo.—*Mfr. and Builder.*

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CITY BUILDING NEWS.

There is no Paper or Journal on the Pacific Coast that pretends to give a Full Report of Building News, *except the*

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Architect and Building News.

Ash Ave, between Buchanan and Laguna, residence. Owner Peter Flynn; architect Henry Geilfus; contractor Jas. Finn, cost $2,045; signed Aug. 16th, '88; filed Aug. 18th; limit Oct. 20th.

1st payment when roof is on $500; 2d, when partition and outside work done $500: 3d, when completed $530; 4th usual 35 days $515.

Ashbury and Waller, frame building. Owner, Julia Gascon; architect, Wm. Mooser; contractor, J. J. Plunn; cost, $2,900; signed, Aug. 15, 1888; filed Aug. 16, 1888; sureties, F. Joost and C. S. Holmes; limit, 10 days.

Payments, seventy-five per cent as work progresses; balance 35 days.

Army Ave, near San Jose avenue, additions to two buildings. Cost, $800.

Broderick, between Sutter and Bush, one-story frame Owner, S. Leszynski; architect, W. H. Armitage; cost, $3,000.

Bush between Fillmore and Webster, two-story and basement frame. Owner Rosalie Morris; architect John & Zimmerman; contractor F. W. Kern; cost $4,215; signed Aug. 15th, '88; filed Aug. 17th, '88; sureties O. W. Nordwell and F. Joost; limit Dec. 1st, '88.

1st payment when framed $800; 2d, when partitions are up $800; 3d, rough mortared and outside finish on $800; 4th when the inside is ready to paint $750; 5th and last usual 35 days, $1,062.

Buchanan, near O'Farrell. additions. Owner, W. Pluns; Cost, $1,500.

Bryant ave between 24th and 25th, two-story frame. Owner, Patrick Angler; architect and builder, Geo. Houston; cost, $3,000.

Clinton Park. near Dolores, two-story frame. Owner and builder, J. McBean; cost, $4,500.

Capp, near Twenty-fifth, one-story frame. Owner and builder, Lewis; cost, $3,000.

Clayton between Page and Oak, one-story cottage. Owner, Miss Marie J. Castlen; architect, Jas. E. Wolfe; contractor, J. W. Sims; cost, $1,975; signed, August 30th, filed, September 1st; limit, Nov. 10th; surety, D. Jordan; amount of bond, $1,000.

1st payment, roof sheathing on, $300; 2d, floored, $300; 3d, brown coated, $450; 4th, completed, $431; balance, usual 35 days.

Clay between Central ave and Walnut street, two-story frame. Owner, J. W. Kelly; contractor, S. M. Hills; cost, $2,700

Clay, near Walnut, two-story frame. Owner, W. J. Kelly; architect and builder, S. M. Hills; cost, $2,500; signed Aug. 30, 1888; filed Aug. 31, 1888.

1st payment, when enclosed, $600; 2d, when brown coated, $600; 3d, when completed, $600; 4th, usual 35 days, $700.

Clay and Mason, residence. Owner C. Wreden; architect H. Geilfus; contractor F. W. Kern; cost $3,080; signed Aug. 14th; filed Aug. 18th, '88; limit Nov. 15th, '88.

1st payment when roofed $600; 2d, brown coated $600; 3d, hard finished $600; 4th when completed $510; 5th and balance usual 35 days $770.

Columbia and 24th, improvements. Owner Louis Kahn; architect H. Geilfus; contractor J. W. Sims; cost $1,625; signed Aug. 16th, '88; filed Aug. 18th, '88; limit Oct. 15th, '88.

1st payment when brickwork and planking is done $600; 2d when completed $600; 3d, usual 35 days, $425.

Diamond, near Eighteenth, two-story and basement. Owner, N. Straub; architect, John Zimmerman; contractor, J. Klein, cost, $3,300; signed, Aug. 25, 1888; filed, Aug. 28, 1888; surety, C. S. Holmes; limit, Nov. 1st, 1888.

1st payment, when frame is up, $825; 2d, when partitions are set, $825; 3d, ready to paint, $425; 4th, when completed, $400; 5th, usual 35 days, $825.

Diamond, near 18th, two-story and base, ment. Owner, N. Straub; architects; John & Zimmerman; contractor, J. Klein-cost, $3,300; signed Aug. 25, 1888;

1003 Devisadero, alterations. Owner Anna Callingham; architect Schmidt & Shea; contractor Thos. Elam; cost $1,325; signed Aug. 16th, '88; filed Aug. 17th, '88.

1st payment when building is enclosed on roof $490; 2d, when completed $500; 3d and last usual 35 days $335.

Emma, near Ridley; two-story frame. Owner, J. T. Meyers; contractors, Martin & Maguire; cost, $2,800.

Eddy and Buchanan, two-story frame. Owner-Elizabeth Burns; architect, B. Henrick, sen; contractor, A. G. Fitzpatrick; cost, $4,262; signed Aug. 14th; filed Aug. 16th, sureties, Jas. Pendergast; limit, 70 days; amount of bond, $4,300.

1st payment, when roof is on, $800; 2d, when brown coated and outside finish on, $800; 3d, white coated and sashes hung, $800; 4th, when varnished and trimmed, $800; 5th and balance, 35 days, $1,062.

Emma near Ridley, two-story frame, Owner Jno. F. Meyers; contractor Martin & Maguire; cost $2,550; signed Aug. 6th, '88 filed Aug. 17th, '88; sureties, J. W. Wesson; limit 90 days.

1st payment when framed $500, 2d, when brown coated and pipes in $500; 3d, plumbing done and doors hung $500; 4th, white coated and prime coat of paint $500; 5th, when completed $500.

Eighteenth and Noe, two-story frame. Owner, McQueen; contractors, McCready Bros.; cost $5,000.

Eighteenth, near Collingwood, one-story frame. Owner, Graham; builders, McCann & Schetzer; cost, $2,000.

Eighteenth, near Collingwood, additions; cost, $1,200.

Fell bet Webster and Franklin, two-story frame. Owner, Wm. Olsen; architect, H. D. Mitchell; contractor, R. Sinnott; cost, $2,950; filed, September 5th; limit, Nov. 12th.

Payments—frame up, $900; brown mortar on, $800; white mortar on, $700; balance, $550, 35 days.

Fell between Webster and Franklin, building, W. Olsen; architect, H. D. Mitchell; contractor, R. R. Fraxler; cost, $2,620; signed, August 27th; filed, August, 28th; limit, Nov. 5th, surety, C. A. Malm.

Payments; 1st, when frame is up, $600; 2d, when brown coated, $700; 3d, when building is primed, $700; 4th, usual 35 days, $620.

Fell, betwen Webster and Fillmore, two-story frame. Owner, Catherine Ruhling; architect, John & Zimmerman; contractor, Adam Miller; cost, $6,020; signed Aug. 16th; filed Aug. 30th; limit, Nov. 15th; sureties, Chas. Lackeman and H. Williamson.

1st payment, when framed, $1,000; 2d, when partitions are set, $1,000; 3d, outside finish on, $1,500; 4th, when inside is ready to paint, $1,000; 5th, usual 35 days, or when bills are all paid, $1,520.

Ford, near 17th, two two-story frame. Owner and Builder, I. Sullivan; cost, $4,000.

Fifth, near Mission, additional story. Cost, $2,500.

Folsom near 8th, building. Owner, Mrs. E. Hauser; architect, Saftield & Kohlberg; contractor, Kincaid and Thompson; cost, $4,460; signed, Aug. 16, 1888; filed, Aug. 29. 1888; limit, 65 days.

1st payment, when building is framed, $800; 2d, when building is roofed, $800; 3d, when building is brown coated, $840; 4th, when completed, $900; 5th, balance usual 35 days; sureties, F. P. Latson and John F. Kennedy; amount of bond $4,660.

Fillmore between Golden Gate ave and McAllister street, two-story frame. Owner, E. McEneany; architect, M. J. Welsh; contractor, T. Sullivan (plumbing and gas excepted) cost, $3,487; sureties, F. Joost, W. Thyarks; signed, Sept. 4th; filed, Sept. 5th; limit, 79 days.

Payments; frame all up, $870, brown mortar on, $870; completed, $870; balance, $877, 35 days.

Fillmore between Golden Gate ave and McAllister, two story frame. Owner, E. McEarney; architect, T. J. Welsh; contractor, T. Sullivan; cost, $4,500.

Fifth, near Harrison, two story frame. Owner, Jno. Loffler; architects, John & Zimmerman; contractor, C. Roeber; cost, $1,220; signed Aug. 22, 1888; filed Aug. 30, 1888; limit, 30 days.

1st payment, when frame is up, $400; 2d, when roofed, $400; 3d payment, 35 days, $420.

Franklin and Ellis, stair building. Owner Academy of Sacred Heart, architect C. J. I. Devlin; contractor A. Sanborn; cost $2,100; signed Aug 9th, '88; filed Aug. 17th, '88.

1st payment when the stringers treads and risers of main stairs are in place $1,000; 2d when completed $1,100.

Franklin and Ellis, plastering contract. Owner, Academy of Sacred Heart; architect C. J. I. Devlin; contractor, Martin Carrick; cost $3,550; signed Aug. 8th, '88; filed Aug. 17th, '88; sureties, Flanagan & Mason; amount of bond $3,000; limit Sept. 1st, '88.

1st payment, 1st coat of mortar $900; 2d, hard finish $850; 3d when completed $900; 4th, usual 35 days, $900.

Fulton, No. 426, two-story frame. Owner, Mrs. M. Dowling; architect and builder, G. M. Salsbury; cost, $3,500.

Fulton, near Lyon, two-story frame. Owner, H. Winter; architect, John & Zimmerman; contractor, F. W. Kern; cost, $4,170; signed Aug. 22, 1888; filed Aug. 30, 1888; limit, Dec. 1, 1888; sureties, Joost & Nordwell.

1st payment, when framed, $800; 2d, when brown coated, $1,000; 3d, inside finish ready to paint, $1,300; 4th, usual 35 days, $1,020.

426 Fulton, two-story frame. Owners, Jas. and Mary Dowling; architect, Geo. M. Salsbury; contractor, Geo. M. Salsbury; cost, $3,135; signed Aug. 23d, 1888; filed Aug. 30, 1888; limit, Nov, 22d, 1888.

1st payment, when rafters are set, $1,000; 2d, when building is brown coated, $1,100; 3d, balance, usual 35 days, $1,035.

Golden Gate ave near Larkin, two-story additions and repairs to building. Owner, Carpenter & Son; architect, W. H. Armitage; cost, $6,000.

Gold n Gate ave near Larkin two-story additions. Owner, M. Shaff and L. Wilbert; architect and builder, J. J. Cummings; cost, $1,120; signed, August 29th; filed, August 29th; limit, Oct. 1st.

1st payment, $100 one week; 2d, when building is enclosed, $200; 3d, when building is completed, $120; 4th, 90 days from Aug. 29th, $700.

Golden Gate Ave and Polk, brickwork. Owner, Hugh Keenan; architect, C. J. I. Deylin; contractor, C. Ferris; cost $4,380; signed Aug. 2d, '88; filed Aug. 18th, '88; limit 4 weeks; sureties R. Llewellyn and J. Williamson; amount of bond $4,000.

Payments, 75 per cent of work done when wall and piers are ready for 1st story and 1st story walls are ready for 2d story joists and when 2d story walls are ready for roof frames; balance on completion if no liens.

Golden Gate ave corner Polk three-story brick. Owner, Bryan; architect, C. Dev lin; mason, C. Ferris; carpenter, H. Keenan: cost, $25,000.

Guerrero street, additions. Owner, Mrs. H. Kahler; architect, H. Daley; cost, $1,500.

Guerrero st. No. 11, alterations. Owner, H. S. Kaler; architect, R. H. Daley; contractor, Ivory Wells; cost, $1,500.

Guerrero, near 26th, additions; cost $800.

Harrison, near 26th, two-story frame. Owner, Geo. Fuchs; architect, R. H. White; contractor, Rountree Bros.; cost; $4,157; signed Aug. 29, 1888; filed Aug. 31st, 1888; limit, 90 days; surety, Latson & Kennedy.

1st payment, when roofed, $900; 2d payment, brown coated, $800; 3d, primed, $700; 4th, completed, $707; balance, usual 35 days.

Harrison near Sixth, two-story frame. Owner, George Fuchs, architect, R. H., White; contractor, Rountree Bros. cost $4,500.

Hayes between Laguna and Buchanan, two-story frame. Owner, Mrs. M. Tracy; architect, W. Mooser; contractor, J. Bruce; cost, $4,800.

Hyde between California and Sacramento, two-story frame. Owner, Jas. Ford; architects, Schmidt & Shea; contractors, Linden Bros. cost, $3,954; signed, Aug. 17; filed Sept. 3d.

Payments; frame up and enclosed, $740; brown coated, $740; hard finished, $740; completed $744; balance, $990, 35 days.

Howard near 15th, two-story frame. Owner, Henry Haustien; architect, H. Geilfus; contractors, Schutt & Krecker; (except plumbing and painting) amount, $3,950; signed, Sept. 3d; filed, Sept. 3d.

Payments; when frame is up $590; enclosed and partitions set, $590; brown mortar finished, $590; white mortar on, and inside finishes up, $590; all completed, $590; balance, $1,000 usual 35 days.

Howard and 20th, plumbing contract. Owner Nellie G. Barkus; architect J. H. Littlefield; contractor Sweeney & Kearns; cost $688. signed Aug. 3d, 1888; filed Aug. 9th 1888.

Payments $344 when rough pipes are in; balance usual 35 days.

Howard near 15th, two-story frame; Owner, H. Hanstein; architect, H. Geilfus; contractor, Schutt & Krecker; cost, $4,500.

Howard and 10th, grading. Owner, Omnibus Cable Co; architect, Percy & Hamilton; contractor, C. A. Warren, cost $4,540; signed Aug. 2d, 1888; filed Aug. 7th, 1888; limit 49 days; sureties Shain & Richardson.

Payments at rate of 75 per cent as work progresses, balance usual 35 days.

Howard and Natoma, contract for well boring. Owner, Omnibus Cable Co; contractor, Wm. Allingham; cost $5.80 per foot; limit 35 days; signed Aug. 7th; filed Aug. 7th.

Payment at the rate of 75 per cent; balance 35 days after completion.

Howard and 20th, two-story frame building. Owner, Nellie G. Barkus; architect J. H. Littlefield; contractor, Ingeeson & Gore, cost $7,800; signed Aug. 3d, 1888; filed Aug. 9th, 1888; limit Dec. 10, 1888; sureties W. J. Adams and R. L. Taylor.

Payments,75 per cent as work progresses; balance usual 35 days.

Hancock, near 19th, one-story frame. Owner, Dr. Merrill; contractors, Kincaid & Thompson; cost, $2,500.

Jessie, near Ninth, additions. Cost, $1,800.

Jones and Clay, painting. Owner, Magdalena Ils; architect, H. C. Macy; contractor, Geo. J. Smith; cost, $1,595; signed Aug. 6, 1888; filed Aug. 11, 1888.

1st payment, when primed, $350; 2d, when ready to grain, $200; 3d, when ready to varnish, $345; 4th, when completed, $300; 5th and balance, usual 35 days, $400.

Jackson and Pierce, carpenter work. Owner Kate A. Van Wyck; architect Wm. F. Jones; contractor Thompson & Moar; cost $8,250; signed July 8th, '88; filed Aug. 17th, '88; sureties F. Joost; limit 5 months.

Payments 4 installments of $1,537.50, balance usual 85 days.

Kentucky and Solano, one-story frame Owner, John Daly; architect and builder C. E. Dunshee, cost $1,100; signed Aug. 8th 1888; filed Aug. 9th 1888; limit 50 days.

1st payment $300 on or before completion; balance $25 per month at 8 per cent.

Kearney, corner of Commercial, alterations. Owner, Mark Sheldon; cost, $4,000.

Lyon, near Hayes, one-story frame. Owner, W. B. Webster; architect, A. J. Barnett; contractor, R. P. Sanchez; cost, $4,000.

Moss between Howard and Folsom, two-story frame. Owner, J. J. Heinz; architect, W. H. Armitage; cost, $3,000.

Noe, near 17th, one-story frame. Owner, Dr. Blood; contractors, Kincaid & Thompson; cost, $2,500.

New Montgomery, between Filbert and Greenwich, frame building. Owner, Giovanni Guatelli; architect Wm. Mooser; contractor, Davoni & Idralgero; cost $13,000; limit 110 days; signed Aug. 7th, 1888; filed Aug. 8th, 1888; sureties J. Cuneo and G. DeLuca.

Payments 75 per cent as work progresses; balance 35 days.

Natoma, bet 6th and 7th, two-story frame. Owner, Thos. McLaughlin; architect, M. J. Welsh; contractor, R. Sinnott; cost, $3,000; signed July 3d; filed Aug. 14th; limit, 65 days; sureties; Jno. B. Walters and Owen Prunty.

1st payment, when frame is up, $750; 2d, when brown coated, $750; 3d, when completed, $750; 4th, usual 35 days, $750.

O'Farrell, near Laguna, two-story frame. Owner, Franklin Bros.; cost, $14,000.

Post between Pierce and Scott, two-story frame. Owner, Mrs. Julia Chadwick; architect, T. J. Welsh; contractor, J. A. Shepard; cost, $4,837; signed, Sept. 7th. filed, Sept. 11th; limit, 90 days; sureties, J. H. Jones, J. L. Shepard.

Payments; frame up, $1,200; brown mortar on, $1,200; completed, $1,200; balance, $1,237, 35 days.

Polk near Grove, one-story frame. Owner and builder, J. W. Smith; cost, $1,000.

Page between Baker and Lyon, two-story frame. Owner, Michael E. Finn; architect and builder, Geo. Houston; filed, Sept. 11th; cost, $3,696.

Payments; rustic on, $922; brown mortar on, $922; white mortar on, $922; balance, $936, 35 days.

Pierce, bet Sacramento and Clay, plumbing. Owner, C. J. Wingerter; architects, Schmidt & Shea; contractors, S. Ickleheimer & Bro.; cost, $1,443; signed, Aug. 14, 1888; filed Aug. 15, 1888.

1st payment, when rough work is in, $500; 2d payment, when completed, $580; 3d, usual 35 days, $363.

Pierce, bet Sacramento and Clay, two-story frame. Owner, C. J. Wingerter; architects, Schmidt & Shea; contractor, Wm. Pluns; cost, $4,100; signed, Aug. 11, 1888; filed Aug. 15, 1888; sureties, F. and B. Joost; limit, Nov. 4, 1888.

1st payment, when ready to plaster, $900; 2d, when hard finished, $900; 3d, when completed, $900; 4th, usual 35 days, $1,400

Pierce, bet Turk and Eddy, residence. Owner, J. Mackonsy; architect, Wm. Mooser; contractor, J. W. Reid; cost, $4,100; signed Aug. 11, 1888; filed, Aug. 13, 1888; limit, 10 weeks and 3 days; sureties, E. Lundstedt and P. Mitchell.

Five payments, at the rate of 75 per cent as work progresses; balance, usual 35 days

Pine and Octavia, four dwellings. Owner, S. Wenlan; architects, Pissis and Moore; contractor, A. Jackson; cost, $19,388 signed, Aug. 28, 1888; filed, Aug. 31 1888; limit, 100 days.

1st payment, when framed, $4,000; 2d, when brown coated, $3,500; 3d, when hard finished, $3,500; 4th, when ready to paint, $3,000; 5th, when completed, $538; balance usual 35 days, $4,850.

Pine and Octavia, four dwellings. Owner, S. Wenlan; architects, Pissis & Moore; contractor, A. Jackson; cost, $19,388; signed Aug. 28, 1888; filed August 31, 1888; limit, 100 days.

1st payment, when framed, $4,000; 2d, when brown coated, $3,500; 3d, when hard finished, $3,500; 4th, when ready to paint, $3,000; 5th, when completed, $538; balance, usual 35 days, $4,850.

Steiner, near Haight, frame building. Owner, A. C. Christensen; architect, Salfield & Kohlberg; contractor, John F. Grant; cost, $3,667; signed, Aug. 28, 1888; filed, Aug. 29, 1888; limit,—surety, Geo. W. Watson and A. D. Moore; amount of bond, $3,600.

1st payment, when building is brown coated, $1,375; 2d, when completed, $1,375; 3d, usual 35 days, $917.

Sutter, near Gough, additions to school building. Architect. T. J. Welsh; cost, $4,000.

Second, corner of Market, alterations to a part of Grand Hotel. Hussey, Superintendent, $10,000; architect, Smith.

Sanchez, bet 15th and 16th, 2 story and basement frame. Owner, Christana and August Goetze; architect, A. Goetze; contractor, Wm. Pluns; cost $4,220; signed July 10th, 1888; filed Aug 10th, limit 85 days; sureties B. Joost and W. Thyarks.

1st payment when enclosed and roofed $1,000; 2d, when brown coated $1,000; 3d, when completed $1,120; 4th and balance usual 35 days $1,100.

Stockton and California, three story frame. Owner Janet S. Portuus; architect and builder, F. E. Neubauer; cost $11,260; signed Aug. 15th, '88; filed Aug. 16th, '88; limit 4 months.

Payments 75 per cent as work progresses; balance usual 35 days.

Sumatra and Susquehanna, one-story frame. Owner, B. Sallies; architect W. H. Armitage; cost, $2,800.

Scott, near Jackson, additions. Cost, $4000.

Townsend and Clarence Place, three story brick. Owner, Cal. Elec. Light Co.; architects, Percy & Hamilton; cost, $60,000.

Townsend and Clarence Place, brick work. Owner, Cal. Elec. Light Co.; architects, Percy and Hamilton; contractors, Richardson and Gale: cost, $15,690; signed, Aug 22, 1888; filed, Aug. 28, 1888; limit, 75 days.

Payments 75 per cent 1st, Saturday in each month; balance usual 35 days.

Townsend and Clarence Place, wrought iron. Owner, Cal. Elec. Light Co.; architect, Percy Hamilton; contractors, Biglow and Little; cost, $3,557; signed, Aug. 22, 1888; filed, Aug. 28, 1888; limit, 60 days.

Payments 75 per cent 1st, Saturday each month; balance usual 35 days.

Townsend and Clarence Place, carpenter work. Owner, Cal. Elec. Light Co.; architect, Percy and Hamilton; contractor, Thos. Day; cost, $11,796; signed, Aug. 22, 1888; filed, Aug. 28, 1888, limit, 45 days.

Payments, 75 per cent 1st Saturday in each month; balance usual 35 days.

Townsend and Clarence Place, Joshua Hendy machine works. Owner, Cal. Elec. Light Co.; cost, $5,175; signed, Aug. 22 1888; filed, Aug. 28, 1888; limit, 40 days.

Payments 75 per cent 1st, Saturday in each month; balance usual 35 days.

Townsend and Clarence Place, iron roofing. Owner, Cal. Elec. Light Co.; architect, Percy and Hamilton; contractor, Jos. F. Foderer, $2,900; signed, Aug. 22, 1888; filed, Aug. 28, 1888; limit, 20 days.

Payment, 75 per cent 1st Saturday each month; balance usual 35 days.

Turk near Larkin, two-story frame. Owner, Daley; architect, Welsh; contractor, Davis; cost, $6,000.

Treat ave, between 24th and 25th, frame building. Owner J. Qminlan; architect, Geo. Houstan; contractor Geo. Houstan; cost $2,790; signed Aug, 8th 1888; filed Aug. 9th 1888; limit Nov. 10, 1888.

1st payment when rafters are in place $690; 2d, when brown coated $700; 3d, hard finished and inside doors are in place $700; 4th and last $700, 35 days as usual.

Twentieth and Howard, two-story frame, painting. Owner, Nellie G. Backus; architect, J. H. Littlefield; contractor, Jos. Larsen; cost, $460; signed Aug. 3, 1888, filed Aug. 13, 1888; limit, 18 days. 75 per cent as work progresses; balance; usual 32 days.

Twenty-second, bet Harrison and Alabama, residence. Owner, Mrs. D. E. Keeks; architect, M. J. Welsh; contractor, T. Sullivan; cost, $2,375; signed, Aug. 11, 1888; filed Aug. 13, 1888; sureties, F. Joost and W. Thyarks; limit, 70 days.

1st payment, when building is framed, $593; 2d, when brown coated, $593; 3d, when completed, $593; 4th and last, usual 35 days, $596.

Twenty-third near Noe, two-story frame. Owner, Mrs. Roberts; architect, W. H. Armitage; cost, $4,500.

Twenty-seventh and Duncan, alterations. Owner, R. Dhu; architect, M. J. Welsh; contractor, E. Edwards; cost, $1,875; signed Aug. 13, 1888; filed Aug. 13, limit, 60 days; sureties, J. Lewis and P. Swift.

1st payment, when framed, $400; 2d, when brown coated, $400; 3d, when completed, $400; 4th, usual 35 days, $675.

Van Ness and Sacramento, two-story frame, basement and attic. Owner, J. H. Neustadter; architect, Smidt and Shea; contractor, S. H. Kent: cost, $23,950; signed, Aug. 30, 1888: filed, Aug. 31, 1888.

1st, payment, when second-story joists are set $3,500; 2d, floors laid, $3,500; 3d, brown coated, $3,500; 4th, outside finish on, $3,500; 5th, when completed, $3,950; balance 35 days $6,000; limit, seven months.

Van Ness, and Sacramento, plumbing. Owner, J. H. Neustadter; architects, Schmidt and Shea; contractors, Duffy Bros.; cost, $2,985; signed, Aug. 30, 1888; filed, Aug. 31, 1888; limit, seven months; sureties, Watson & Adams.

1st payment, rough pipes in, $900; 2d, all vessels except washstands set, $550; 3d, when completed, $785; 4th, usual 35 days $750.

filed Aug. 28, 1888; surety, C. S. Holmes; limit, Nov. 1, 1888.

1st payment, when frame is up, $825; 2d, when partitions are set, $825; 3d, when, ready to paint, $425; 4th, when completed, $400; 5th, usual 35 days, $825

Van Ness and Sacramento, painting. Owner, J. H. Neustadter; architects, Schmidt & Shea; contractor, J. J. Donovan; cost $1,815; signed Aug. 30, 1888; filed Aug 31st, 1888; limit, 7 months.

1st payment, $600, 2d coated; 2d, completed, $750; 3d, 35 days, $465.

Vallejo, near Webster, dwelling. Owner, D. D. Harris; architects, Pissis & Moore; contractor, C. S. Waterbury: cost, $5,450; signed, Aug. 20, 1888; filed, Aug. 31, 1888; limit, 80 days; sureties, Latson & Holmes; amount of bond $2,000.

1st payment, when framed, $1,200, 2d, brown coated, $1,000; 3d, hard finished, $900; 4th, ready to paint, $900; 5th, completed, $80; 6th, usual 35 days $1,370.

Valencia, between 24th and 25th building. Owner, M. K. Meachem; architect, M. J. Welsh; contractor, J. J. Dunn, cost. $6,550; signed Aug. 9th, 1888; filed Aug. 11th, 1888; limit 75 days; sureties, C. S Holmes and B. Joost.

1st payment when frame is up $1,560;

Remaining Numbers of this year given free to new subscribers for 1889.

2d, when brown coated $1,560; 3rd when completed $1,560: 4th and last, usual 35 days $1,570.

Valencia, near Herrman, additions. Cost, $600.

Valencia, near Sixteenth, additions to brewery. Cost, $800.

Washington and Waverly Place, three-story and basement, brick. Owner, Woo Tam; architect, J. J. and T. D. Newsom; contractor, Dennis Jordan; cost, $3,250; signed, Aug. 27, 1888; filed, Aug. 28, 1888; limit, Nov. 25, 1888; surety, R. Llewellyn.

1st payment, when excavated, $500; 2d, when the first story is up, $500; 3d, when the roof is on, $500; 4th, usual 35 days, $550; $1,200 is to be paid by monthly installments of $100 with interest at 8 per cent.

Webster, bet O'Farrell and Geary, two frame buildings. Owner, L. Houser; architect, J. Marquis; contractor, M. J. Gorman; cost, $10,650; signed Aug. 13, 1888; filed Aug. 13, 1888; sureties, J. Mahoney and Duffy Bros.; limit, 117 days.

1st payment, chimneys up and buildings roofed, $2,050; 2d, ready to lath, $2,000; 3d, when 1st coat of mortar is on, 1 coat of paint and sash glazed, $2,000; 4th, when hard finished, plumbing and all fencing done, $2,000; 5th, $2,500, 35 days; 6th, $100, at 60 days.

Waverly Place near Clay, three-story brick building. Owner, W. Altreuter; architects, Townsend and Wyneken; contractor, J. Pharo; cost $8,000.

COUNTRY BUILDING NEWS.

ALAMEDA.

Work has been commenced upon a handsome residence for Charles L. Hermann, on Alameda avenue, between Chestnut and Willow streets. It will be two stories in height, contain eleven rooms, and will be equipped with all modern conveniences. The cost will be about $4 500. J. A. Leonard, of this city, is the architect.

ANAHEIM.

A Goldthwaite will give all information in regard to a $6,000 school building to be erected.

CHEHALIS, W. T.

N. B. Coffman can be addressed in regard to a $7,000 school building.

EUREKA, H. B.

Henry Buhne, the tug owner, will build a $10,000 residence. Jas. Simpson has the contract.

FRESNO.

Architect Praum, formerly a partner with Mr. Daley of this city, has taken Mr. Saffell into partnership.

They have let a contract to G. B. Campbell for $10,000 additions to the building of J. W. Ferguson. Also a $20,000 brick building to same contractor for S. W. Griffith; plans are being prepared for Griffith & Co's $5,000 three-story brick building, also for a $7,000 building for P. Myer.

PASADENA.

H. Ridgeway is preparing plans for Mr. Brockaway. A $2,000 brick building is o ntemplated.

PETALUMA.

Work has been commenced on H. B. Higbee's new residence on the Stanley lot. Ed. Hedges has the contract. It will be a one-story cottage and have all the modern improvements.

PORTLAND, OR.

Architect Kleeman has let a contract to Works & Gilbert for a $1,500 cottage for J. Barbey.

SHELTON, W. T.

A hotel building is being erected by Wm. Shorter.

SAN DIEGO.

Architects Clemments & Co. notify us that a portion of the Hamilton Building will be erected at once. The total cost will be near $400,000.

Henry Timkin will erect a $9,000 residence, he having let the contract for same to Brewster & Whalen.

Comstock & Trotsche send us word that they are preparing plans for improvements to the Consolidated National Bank. Will cost nearly $60,000.

SEATTLE, W. T.

S. Frauenthal will soon build a $10,000 house.

SCARCITY OF MASONS—Contractors complain that brick masons are very scarce in Seattle, while the bricklayers' union claims that there are plenty of masons here to do all the work on hand at the present time. This indicates an unaccountable difference of opinion between the contractors and the masons.

Two large school houses will be built. Total cost over $100,000. Address contractor Jas. Parke, for information.

SAN MIGUEL.

G. W. Spencer will have erected a brick building.

A $1,000 hotel is being contemplated.

W. J. Smith will soon commence a five-room cottage for Amos Whittemore.

Work will soon commence upon a five roomed cottage for Amos Smith. W. J. Smith has the contract.

SAN BERNARDINO.

Architects Jones & Griffith yesterday let a contract to W. G. Hastings to erect two five-room cottages on G, between Second and Third, for Major B. B. Harris.

Wendell Easton, of Easton & Eldridge, the great realty firm of California, has aptly said that in architecture Los Angeles is entering upon the "stone age." The progress is from adobe to frame, from frame to brick, from common brick to pressed brick, from pressed brick to red stone and granite. Our new quarries will soon inaugurate the "marble age"

SANTA CRUZ.

The plans are being figured on for an Odd Fellows' Building. Address D. A. Damkroeger.

SAN JOSE.

S. Ellsworth is having a house built on his Saratoga avenue property.

TACOMA, W. T.

Architects Farrell & Darmer have plans for Birmingham & Hogue's $20,000 three story brick building, and also for an $18,000 brick building for Geo. B. Kandle.

Rev. G. H. Greer will have built for him by H. M. Matheson, a $12,000 brick building.

RIVERSIDE.

Dr. S. R. Magee is building a fine residence on Magnolia avenue.

Work will soon be commenced on a handsome new residence for Mrs. Chalmers, the plans for which have just been prepared by A. C. Willard. The building is to be erected on Magnolia avenue and when completed will cost about $8,000.

A. C. Willard has severed his connections with J. C. Pelton, Jr., and has just opened an office in the Castleman block, where he is prepared to execute plans and drawings for any and classes of buildings.

The plans are out for the building to be erected at the corner of Eighth and Orange streets, and it is expected that work on the building will be commenced within eight or ten days. The building will have a frontage on Eighth street of 75 feet. It will be three stories high, and when completed will be the handsomest block in the city.

The accepted plans for a new residence for R. S. Crombie are now ready. They were drawn by A. C. Willard, and are of the Queen Anne Eastlake style of architecture, and will go into the hands of the contractors the first of the month to make bids. The building is to be erected on Orange street between Thirteenth and Fourteenth and will be a two-story eleven-room house.

Contract was let September 1st to J. L. Woodward for a building for G. N. Reynolds.

Pottinger & Kroonen have commenced building the house for Mrs. J. S. Johnson, on Orange street, opposite the Glenwood. It is to be a two-story eleven-room house.

Work has been commenced on the new building to be erected by A. H. Naftzger, A. Haeberlin and Down & Alguire, at the corner of Eighth and Orange streets. It will be two stories with fifty feet frontage on Eighth street, and running along Orange street ninety feet. It will be an imposing structure, built of pressed brick with red Arizona sandstone trimmings. The plans for the building were drawn by J. C. Pelton, and the contract for the brick and stone work was taken by Down & Alguire.

LIVERMORE.

All the carpenters in town are very busy at present.

John Beck is improving his property by the addition of a large stable.

The contract for the erection of Philip Anspacher's new cottage, corner of L street and College avenue, has been let to Capt. A. J. Palmer, of this place, and ground was broken last week. The work will be pushed rapidly forward. This will be one of the handsomest cottages in our town.

Jos. Fletcher is building an addition to his cottage.

VICTORIA, B. C.

Fisher & Wilson have let contract to Elford & Smith for a two-story brick building.

SAN PEDRO.

A school house to cost $2,500 will be built. A. G. Barton has the contract.

Remaining Numbers of this year given free to all new Subscribers for 1889.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX — ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. — NUMBER 10

THE

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A Square is One Inch In Depth By Width of Sing'e Column.

Advertisements alone inserted that refer to materials us d in the construction and Furnishing of houses, and to matters and trades belonging to tn building interest.

No Others Received.

SAN FRANCISCO, OCT. 15, 1888.

But Seldom We Speak of Ourselves.

Without being egotistical we may safely say that this number of the CALIFORNIA ARCHITECT exceeds any of its predecessors in the amount of valuable reading matter furnished to its subscribers. It contains:

An Editorial on the New City Hall Tower.
Proceedings of the Chapter of Architects.
President Sander's masterly Address.
The New Plumbing Law.
A very interesting letter from E. C. Gilbert.
Report in full of the Committee on New City Hall Tower.
A complete summary of City Building News.
Country Building News.
List of members of Builder's Association.
Superb Illustrations.
An instructive article by Arthur Seymour Jennings.
And many other notable features. A steady improvement will be noted in each successive issue.

An Extra Edition.

For the past two months we have largely increased the number of our monthly issue. In December we guarantee to print 5,000 extra copies, which will be sent to parties all over the Coast who are interested in building matters.

SUBSCRIBE NOW FOR 1889.

Weekly Building News.

We are making arrangements to re-establish the WEEKLY BUILDING NEWS. One of our largest real estate dealers will assume control of the department devoted to transactions in real estate. Taken in connection with weekly building reports, we will present a complete record of all transactions benefitting directly those who build and those who furnish materials after dwellings are erected.

The City Hall Tower.

SINCE the first move was made toward the erection of the New City Hall, no one feature of the construction has attracted more general attention, interest and comment, nor provoked more pronounced controversy and disagreement as between the gentlemen composing the Board of Commissioners, than the tower.

To the architect it has been a very hard nut to crack, and the insignificant stipend pocketed by him each month in the shape of salary is a miserable compensation for the numerous annoyances alone encountered, to say nothing of the time, services and skill required of him as an architect. That he has and should have pride and ambition in the matter is both natural and reasonable, and it would be much less than fair to attribute wrong motives to him in striving to carry out and complete, according to his best judgment, so conspicuous and important a part of the work on the City Hall as the tower, which, if he is allowed to proceed with, must stand for all time as a monument to his architectural skill and genius, or stamp upon his name and memory all the ignominy that failure to produce a handsome, well-proportioned and properly-constructed tower will entail. Professionally, it will be life or death to him, as present and future generations will associate his name with praise if good, and reprobation and condemnation if he shall produce an architectural deformity at the expense of the public treasury. All this Mr. Laver undoubtedly well understands, and, as a sensible and intelligent man, has fully weighed and considered in his earnest efforts to have his high-tower plan adopted by the Commissioners and carried into execution; and, if the option was left with him, not a day of the time required in the construction of the tower would be lost. Is Mr. Laver wedded to his high-tower proposition? There can be no question upon that point, as he, with many other competent critics and judges, is satisfied that, if erected, the architectural delineations will be imposing and handsome in detail, and the general effect such as to command admiration from those whose esthetic eye and good judgment are capable of seeing and accepting the products of other minds than their own, upon the real merits of the thing produced, divested of all selfish and prejudiced cavillings, which, when applied, will see nothing except from the limited standpoint of their own individual notions.

It may be charged by some that this style of reasoning is inconsistent on the part of this journal, in view of the facts connecting the writer with a report made to the City Hall Commissioners upon the subject matter of this article. If so, we do not see it in that light. We have taken no decided stand in the matter, nor in any way expressed a fixed opinion in favor of or against any "type" of tower. And it appears to us that the question under review and all others, whether square, round or polygonal, have more than one side, to comprehend which, each must be viewed from a proper standpoint.

Mr. Laver, in his recent defense before the Board of Commissioners, very naturally and reasonably commended and argued the force and value of the reports of the two well-known civil engineers named by him, whose qualifications none will question, as against the report of the Chapter of Architects. Mr. Laver would not have been just to himself had he not done so, as the report of the former fully recommended and sustained the carrying out of the high-tower plans, while the latter simply commended said plans as good in architectural design and possible of construction, and further suggested and recommended a change of "type of tower." But this suggestion was a disturbing and interfering element, which furnished Mr. Laver's opponents a new battle-axe and subjected him to new and increased difficulties. The two reports concur on some of the propositions involved but differ on others—one in nearly every particular sustaining the architect, the other doing so as far as the judgment and opinions of the chapter thought right, with suggestions added which it was hoped would lead to an amicable and intelligent settlement of all differences of opinion, and result in the erection of a tower satisfactory to all parties directly concerned in its construction, and which would meet favor in the eyes of the community, who are to be the payors for whatever may be done.

VERY IMPORTANT PROCEEDINGS, S. F. CHAPTER OF ARCHITECTS.

Inaugural Address of G. H. Sanders, President of the Chapter.

A goodly attendance of members was noted at the last meeting of the Chapter. Among those present were W. J. Cuthbertson, J. B. Whittemore, H. T. Bestor, J. Gash, R. H. Daley, A. Pissis, W. P. Moore, E. Kollofrath, G. H. Sanders, G. H. Wolfe. G. W. Percy, W. Patton and John Newsom were elected members as Fellows.

Proposition received from C. Herbert Hasty to become a Student Member. Referred to Committee.

President read annual address, which was ordered printed in the official organ of the Chapter. (It will be found in full in this issue.—Ed. Architect.)

A vote of thanks was tendered the President for his able address.

A communication was received from the Secretary of the New City Hall Commissioners requesting the Chapter to examine the revised plan of the tower, as prepared by Architect Laver. Plan of same accompanied the communication The same was referred to the committee who had charge of the previous report.

Following is the report in full of the Committee appointed by the Chapter to consider the plans of the New City Hall tower:

To the San Francisco Chapter of the American Institute of Architects:

Your Committee appointed at the last regular meeting to consider the resolutions of the New City Hall Commissioners in reference to the proposed tower, beg leave to report, as follows:

Immediately on their appointment, your Committee made arrangements to prosecute the task imposed upon them, and on the day succeeding their appointment, called for and received the necessary drawings and other data requisite to enable them to proceed.

Having made a thorough and repeated examination of the drawings submitted for their inspection, have unanimously arrived at the following conclusions:

First.—They consider that the design submitted by Mr. Laver for the New City Hall Tower is in itself well adapted in its external architectural features, to complete and adorn the building to which it is to be added. The hight—which has been more or less called in question—is considerable, but is not, in the opinion of the Committee, in excess of the proportions permissable in so vast a structure as that to which it is to be applied. On the contrary, in view of the enormous frontage and other dimensions of the New City Hall, it would be difficult to fix an assignable limit, beyond which it would not be possible to harmonize and proportion a structure of this description under given conditions.

They find, also, that the mansard roof, so called, in both the modified as well as the complete example exhibited in the drawings submitted to the Committee, while serving to fill up and prepare the structure for the reception of the tower, is by no means indispensable; at the same time it establishes the fact that should additional space be at any time required, the same may be obtained by its addition, with advantage, whenever deemed desirable.

They find, however, upon examination of the internal structure of the proposed tower, that on account of the position and nature of the bearings available, it will be necessary to construct it in iron instead of the solid material composing the walls of the completed portions of the building. They also find that in order to perfectly adapt the designs submitted by Mr. Laver to the existing structure, some additions to or modifications of the plans submitted to the Committee seem necessary; but these, considering the comparatively and unnecessarily immature condition of the drawings are probably intended by Mr. Laver in the final execution of the work when determined on. In the mean time your Committee, with this proviso, beg to suggest that in their opinion, to secure the entire stability of the superstructure, the iron beams forming the foundations of the whole should be extended under the projections at the angles of the tower, no provisions for that purpose appearing on the drawings as submitted to the Committee They also think that a broad sill plate composed of wrought iron beams and top and bottom plates should be placed on the circular brick wall surrounding the great circular hall under the tower. This would serve to equalize and distribute all unequal strains and bearings, and rectify any possible defects in the foundations of this part of the building. The Committee deem this provision absolutely necessary, for though the construction of the tower (which is of wrought iron, steel and sheet metal) is of the lightest practical description; the weight of the whole tower will be in the neighborhood of three thousand tons. But dead weight alone is not the only consideration, since the variable strains caused by windage will be very considerable, under even ordinary circumstances, and there are times when, at such a hight, the velocity of the wind will mean several hundred tons added to the ordinary weights at different points of the circle.

Second.—For the above reasons, while the Committee have full confidence in the ability of Mr. Laver to carry to completion the excellent design proposed by him in as satisfactory and substantial a manner as is possible under the circumstances, and with the materials at his command, they feel compelled to say in view of the various objections which may be urged against the erection of any structure of the sort proposed, that they believe some such type as that adopted by the first Commissioners, would be found on the whole, more suitable for the purpose than the new and loftier design, though in the nature of things, less imposing in appearance and less in proportion to the size and importance of the building. The difficulty and expense of keeping such a structure in repair and proof against the destructive effects of climate and season, is a powerful argument, though one of an economical rather than artistic nature, in favor of reducing as much as possible the area, and especially the hight of the exposed surfaces. And here your Committee would suggest that instead of employing materials, such as galvanized iron or steel in the external casing of the tower, which would need the preservative applications of some sort of paint, and would lead, as before stated, to endless repairs, they are of opinion that the use of copper, though of greater prime cost, would in the end prove of much more economical and of vastly greater architectural value, as it is a material beautiful and artistic in its application and effect, and eminently durable and in every way admirably adapted to the work proposed.

Third.—This brings your Committee to their last and final position. While they fully concede the many points of artistic merit as a whole, of both designs exhibited in Architect Laver's projects for the proposed tower of the New City Hall, and while they are quite ready to admit the *possibility* of their construction with safety and substantiability compatible with materials of such a perishable nature as those rendered necessary by the adoption of the peculiar method of construction hitherto submitted, they are not so ready to admit the *advisability* of such a course; and in view of the conditions existing in the present building, consisting as they do, of a great circular chamber, some 80 feet in diameter, surrounded by a massive brick wall, and including a circular peristyle of columns some 60 feet in diameter from centers, they believe that the possibility exists of erecting a perfectly unique structure in the form of a circular tower, or dome tower, which would offer features superior to any square structure yet proposed, and that before either of the designs now before the Commissioners are finally decided upon, it would be advantageous to furnish, as an alternative, such a design—homogeneous in material, with the existing building and equal to it in durability, and as free from necessity for endless protection and renovation.

Such a structure, we believe, would not only redound to the credit of all concerned in its production, but would ultimately be found to be of great economical advantage to the city generally.

It would be of a hight proportioned to its possible diameter, and would compensate in dignity of material for comparative lack in magnitude, though a tower or dome of more than ninety feet in outside diameter, is one out of which it would seem that a very grand and imposing structure could surely be evolved. All of which should be left with confidence to the well-known genius and artistic ability of the architect of the building.

Respectfully submitted,

ALBERT PISSIS,
JAMES E. WOLFE,
B. E. HENRICKSEN,
W. J. CUTHBERTSON,
JOHN WRIGHT,
Committee.

San Francisco, Sept. 17, 1888.

INAUGURAL ADDRESS OF G. H. SANDERS, PRESIDENT OF THE CHAPTER.

Fellows and Associates of the San Francisco Chapter:

Duly recognizing the honor and responsibility of addressing you a second time in an "Inaugural," and acknowledging also the ground of expediency which brought this about, I can only promise to fulfill this, and the succeeding duties of so important an office during the following year, as well as I know how.

It is conceded that an address of this kind should aim at something more than a mere review of a year's progress, seasoned with a few glowing prophecies of future advance in matters architectural.

So far, indeed, as the Chapter and its work and prospects are concerned, it may be said that we have not been altogether standing still, but that some advance has been made towards winning a position of honorable usefulness and gaining the confidence of the public in matters relating to the important province of constructive taste.

Our membership has somewhat increased during the year, and there has been a marked tendency among professional brethren still outside our society, to cast in their lot with the Chapter. This is a movement which should meet with every encouragement on our parts, as every added member widens our influence, increases our means of general utility, and brings us more and more *en rapport* with every portion of the building public and the constructive problems of the day.

It would be easy to tell a long story of our aspirations and our aims, about which indeed, we are apt to talk much and do little.

Perhaps it will be better worth while just at the present time to say a few words about a man who, though leaving but little so far as formal expressions of thought in set phrases is concerned, has left large evidences on every side of having done more to solve the problem of the architecture of the future, at least in America, than any other man of this or any age, for the time in which he lived—I allude of course, to the widely influential name of "Richardson." In some degree, like Phidias among the Greeks, or Michael Angelo among the Moderns, but in a wholly different way, the man, Richardson, lived and worked among us—well known and respected while he lived, but who bids fair to be better known and still more widely respected, nay revered in his works, and the example which those works place before the impressionable minds of the men of this age and nation—I repeat of *this* age and nation, for who can doubt that as the age is made by men, men are also made for each particular age, and by each particular age; in other words, are the outcomes of the times in which they live, and of their peculiar environment.

Now, as to this man, Richardson, I propose in the following remarks to elucidate from his works as well as I am able, some of the principles of design which have made this particular artist and professional man, at this time, so notable a figure in the foreground of architectural art.

In the first place I would say that I do not propose to give anything like a regular review of the man or his works, though an admirable basis is laid for the same in the notable book of Mrs. Van Renssalaer on the life and works of Richardson, lately published, and to which I am indebted for such authentic data as may be found in what I shall read to-night.

Born in 1838, of noble ancestry, (among which, on the mother's side, may be mentioned the well-known philosopher, divine and author, Priestly) educated at Harvard, and professionally trained at the Ecole des Beaux Arts in Paris, the man was undoubtedly broadened out into a very cosmopolitan character, and on that very account was doubtless better fitted than any other man of his day and generation for the life work which fell to his lot. He was constitutionally a large bodied, large hearted, large minded man, who wanted everything about him as "big" as himself, and who, almost immediately throwing off the superficial effect of his education and training, forthwith set to work with stone-axe and gavel, unfettered by rules and untramelled by precedents, to hew out a system—an architecture for himself, for his clients, and for such of his brother architects who would follow in his footsteps, or at least join him in exploring the new fields he had discovered.

It was inevitable with such a character as his, but that the type of his selection, as regards style, if type he must have, should be full, large and capacious as himself, and nothing could better fit his fancy than the massive and ponderous features of the round arched styles of Southern France. But in his hands it assumed a new guise. With him, pillar, arch and lintel seemed to become vitalized into a new existence. Base, shaft and cap seem to be so united and so well fitted for their purpose, that no other shaft, base and cap could by any possibility be devised which could do their work equally well in any other way; the arch becomes a new creation, each vousoir is in its turn the only vousoir in the whole arch, and every lintel would rest quietly under the weight of the whole world and never wake up. Every window becomes in turn the most important window in the structure, and every part of it is so thoroughly adjusted to every other part that it is without a peer among windows in its particular place and station. The wall surface is so carefully studied and adjusted, that it is difficult to find fault with a single stone.

The settled purpose he always had before him was absolute perfection in every part. One notable quality of the man, however, was the devoted zeal which he seemed to inspire in every one around him; they worked for him as they worked for no other man, and as if each was responsible for the whole, and so each and all conspired to carry out his suggestions in the most thorough manner, as the only way of securing the best result in the whole, so that every part of the work on his buildings shows indefatigable industry and zeal in those who have executed it. A piece of carving is wrought as if it was the only carving in the structure, and worked out with a care and minuteness, and such regard for the whole result, as if the artistic effect of the structure depended on it alone.

Every window, door, turret, column, arch, lintel, or feature of whatever kind is carefully designed and laboriously adjusted until each fits into its place like a wheel in a complica ted mass of machinery, and each of which is indispensable to the action of the whole system.

Apply the above remarks to each department and to each material throughout a building, inside and out, and it is easy to see the thorough "technical" quality which would be certain to pervade the structure. But not alone this more strictly utilitarian element with its three subordinate attributes of utility, strength and adaptation or fitness, is to be thought of as entering into the sum total of the design, but considerations definitely ornamental must claim a still larger share of careful study in proportion to their higher artistic value in the domain of art. Every part must be carefully and completely subordinated to every other part and to the whole, so that every design must have entire unity of effect, and not only as to its general forms, but each detail, however unimportant, must be subjected to the same careful scrutiny, consideration and re-consideration—and this as regards color as well as form, even to the veriest shade.

Decoration, both in form and color, must be made truly ornamental. Every particle of ornamentation must be made in its turn as thoroughly a part of the building and as indispensable as any other merely utilitarian feature; it must be properly distributed as regards the whole, as well as within its own limitations. It must be thoroughly satisfying to that sixth sense, as it has been called, the sense which is capable of appreciating the subtile qualities of beauty styled "Æstheticos" by the Greeks (and meaning that which is capable of affording pleasure to the senses), and this as regards both form and color and arrangement of both, and not of individual parts alone, but of the parts in relation to the whole, and the whole to its parts.

Thus again we have a trine, the Æsthetic series of attributes—decoration or ornamentation, symmetrization and beauty. But we must take higher ground still if we would adequately grasp the full meaning and intent of the remarkable work of the remarkable man we are considering. As the swelling undulations of the wide-spreading plains are to the sweeping lines of the rolling hills, even so are these hills to the lofty mountains around whose feet they group themselves in humble yet contented emulation. And so are the exaltations of mere technical utility with such incidental and inseparable pleasure-giving qualities as arise from recognized adaptation of material and purpose, to the vastly greater and more exquisite results of ornamental qualities sought for their own sake and capable of gratifying the yearnings of the human soul for the beautiful; and these again to those pure aspirations of the intellectual faculties of the mind, rising far above the illusions and seductions of sense into the lofty regions and untainted atmosphere of Truth. Under the austere supervision of this high principle, *Nee Vile fanos* becomes a potent and most all-pervading legend, written in effect on each substance, form and subject throughout the whole realm of design, from the lowest foundation stone to the highest finial, from the outermost outline to the innermost recesses of the material temple; all things therein become representative of the designer and embody and incarnate him in his work. Every virtue and every vice, which either strengthens or weakens the creative power of thought, will

find its corresponding impress on the substance and form of every structure which has been evolved out of his consciousness or has obtained the seal of his approval.

And it is manifest that this principle in its turn, will pervade everything which is the subject of the designer's art, from the most utilitarian arrangement of plan to the highest expression of his skill in sculpture and painting. In the first it speaks in mechanical adaptation of means to ends; in the latter it voices itself in distinct symbols—modified by more or less powerful expression, into an utterance of ideas—simple or complex, as the case may be, and capable of telling the most momentous truths, with all the added force of dramatic incident and forcible illustration.

This highest, or "phonetic" phase of the architectural art thus also includes a trine of attributes, viz: Symbolical form, artistic expression, and ideal representation.

It is not claimed that all these particular and more or less complicated expresions of analytic thought found any definite utterance in the words or expressed ideas, or even had a conscious existence in the mind of Richardson. It is only claimed in that so far as the above sentiments and principles, crudely expressed and imperfectly formulated as they are in this paper, may be found embodied in the works and example of this man who was so earnest in his efforts to establish and promulgate true art; he has left an impress on the age, and has aroused a taste for the substantial, the beautiful and the true, which no other man of the present century, or few before him, have succeeded in accomplishing, none indeed in so brief a period as the active portions of Richardson's life really covered. He constantly sought in the evolution of a design, to obtain a single broad and comprehensive idea, and every subordinate part was carefully studied and brought into harmony therewith. In every department of the execution, and in every subordinate feature, truth of form, truth of material, truth of expression, with few and only early exceptions, was sought for with unswerving devotion.

In the often elaborate carvings which adorn his works, this is constantly found to be the case. Not contented with good general forms, authentic detail, graceful curves and some sort of ideal character, every part of even the least important feature is arranged with scrupulous attention to its relative effect in the whole composition. The beauty and grace must be of the right sort and harmoniously adapted to every other bit of grace and beauty found elsewhere in the structure, and the ideality must be expressed in consistent terms. Another notable point was his attention to materials. They must be of the best and carefully selected as to both quality and color. Again they must be properly placed. No degradation of a nobler by subordination to an inferior substance in the general construction is tolerated for a moment—stone, brick, metal, wood, plaster or glass must be of the best attainable quality and placed in the order of their dignity and character.

To convince oneself of the value of these principles, one has only to look about him to find them violated on every side.

Fatal facility of bedizenment in wood, paint and plaster has given us a terribly corrupt heredity, in a love for all sorts of flimsey ornament and useless and meaningless decoration. "Constructed Decoration" instead of "Decorated Construction" being regarded apparently as a cardinal virtue and one of the leading canons of architectural art in San Francisco. Even in many of our recent structures in which the materials partake of a substantial character and the mass and lines have been otherwise treated with dignity and propriety, the superimposition of false bearings and the misuse of materials has been altogether disastrous to all truly artistic values in the composition. But not alone in the houses we live in but in the garments we wear, the pictures we buy, and the books we read, is the regenerating influence of *principle* needed to rectify our taste and improve our moral sense.

The paltry "decoration" of our houses is too often paralleled in the puffing, paint and powder of our female friends and acquaintances and both in the shallow mockery of our religion, which seems in its most notable developments amongst us, for the most part, to glorify the *apparent*, whilst almost utterly ignoring the *real*.

The works of Richardson embraced every variety of structure from the humble cottage and railway side station to the stately church; the massive Court House and Town Hall as well as the ponderous warehouses and in all, in different degrees, his leading principles are found embodied in mechanical adaptation, beauty of design and truthful expression of purpose and appropriate treatment of material.

In the Pittsburg Court House and jail, and the great Marshal Field warehouse of Chicago, Richardson himself thought he had touched the highest point of his ideal, and the latter clearly formulates in its great arches and their horizontal and vertical divisions, the peculiar features of the style which obtains in the most notable of the great structures of the present time devoted to mercantile or commercial purposes. Many will give the palm of excellence to his exquisite library buildings, so many of which were carried into execution, and all of which are unique in their way, and certainly never excelled in their unity, originality and beauty of design and detail, and perfect fitness of adaptation to the purposes for which they are intended.

Trinity Church, Boston, the first example of the peculiar style which at once became the favorite vehicle of his artistic taste should not, in our opinion, be considered, though it often is, the best or greatest example of his genius. Externally, though very fine in conception and execution, it is accompanied by some rather unnecessary adjuncts, which somewhat detract from the more solid and dignified features of the design. Internally it is for the most part simulated construction, and to the true artist unworthy of its reputation and of its designer. It should be said however that Richardson himself defended it as being an intended sham, and to that extent a truthful structure, a logic seemingly worthy of a better cause.

In his dealings with his pupils, Richardson was accustomed to throw as much as possible the burden of the responsibility of design upon them, thus early developing their powers, arousing their ambition and making them feel the importance of the work committed to them; in this way it was that he succeeded in uniting all with whom he came in contact with himself in the effort to improve and to perfect such work as was placed in their hands. A true co-operation of the noblest sort, a co-operation of art workers for art's sake, striving to embody in lasting forms and living principles, the useful, the beautiful and the true.

Note.—The peculiar expressions "technical," "æsthetic" and "phonetic" were first employed, in the particular connections indicated above, by Ferguson, in the revised edition of his "History of Architecture," published about twenty years since. It is intended to further develop the subject in a future paper on another occasion.

Alameda 'Encinal."

We are pleased to record the most convincing evidence upon the prosperity of a town that can be chronicled by any one living outside of the place to be noticed. The *Encinal* has been published for twenty years and the name of its editor is a synonym all over the State for genial character, and also as the exponent *par excellence* of editorial courtesies. Alameda is outgrowing itself and its inhabitants are no longer satisfied with a weekly paper. So our good friend Krauth comes out with the *Semi-Weekly Encinal*. We hope he will soon be able to change it to a daily. As an exponent of bright local news, with not a word but can be read by our children, the *Semi-Weekly Encinal* stands without a peer in the State. The best sign of a go-ahead place is the increase of its newspapers, or having those already established appear oftener than once a week.

Notes on Painting.

The best time to paint the outside of a house is early in the winter, or in spring, when the air is cold and no dust is flying.

Knots in boards may be killed before painting by several methods. The surest and best, in fine work, is to cover the knot with an oil size and lay silver leaf over it. Glue size, mixed with red lead, or gum shellac dissolved in alcohol and mixed with red lead, or gutta percha dissolved in ether, will satisfactorily cover knots not exposed to sunshine. The heat of the sun draws the pitch in the knot to the surface, through the paint.

If woods to be painted are soiled by smoke or grease, those parts are to be washed with a solution of saltpeter in water, or with very thin lime whitewash. If soap-suds are used to wash of the smoke or grease, they should be thoroughly rinsed with clean water, or the paint will not harden.

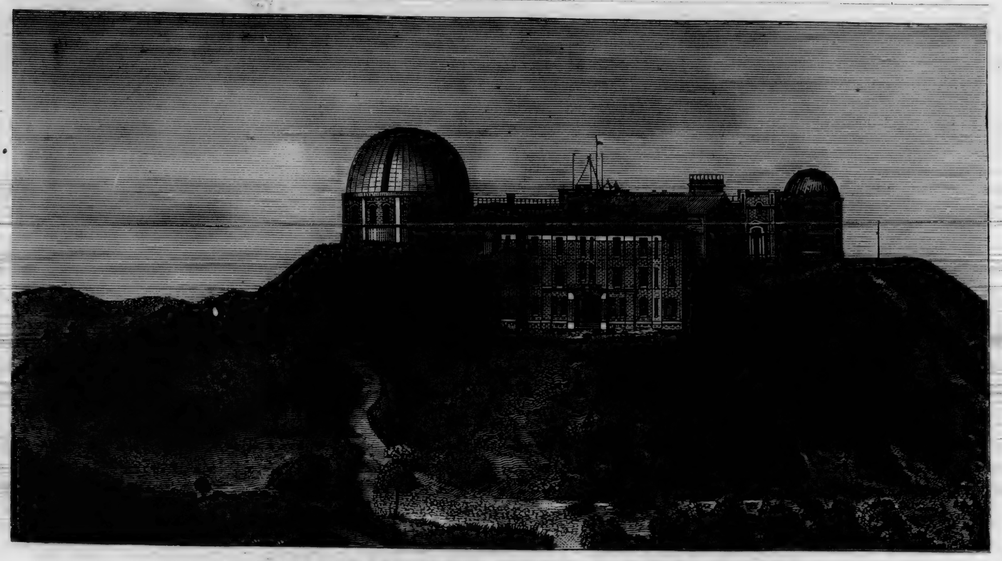
The first, second, and third coats of paint, on the outsides of buildings, should be prepared by mixing the white lead with boiled linseed oil, and allowing each coat to dry hard before applying the next.

PRICE OF LUMBER.

Price of lumber is still on the downward grade. It can be bought for $18 per M for rough lumber.

Shingles have also declined 25 cents per M.

At $18 per M the price is just to the millmen and low enough to consumers.



MT. HAMILTON, SANTA CLARA COUNTY, CALIFORNIA—THE SITE OF THE GREAT LICK TELESCOPE.

Berlin, Sept. 1, 1888.

Editor Architect and Building News.—

Dear Sir: It may be of interest to some of the readers of your valuable journal to know a few observations taken by a Californian while journeying through Europe—of the great variety of buildings and their furnishings, etc. We wrote you last from London, where we took steamer for Christiana (three days' journey). The first thing which pleased us, on our arrival, was the massive stone docks, which are similar to those at Liverpool, but not so extensive; next the streets, which were well-paved with hewn stone and cobbles. Most of the streets are very narrow and crooked, and the sidewalks are so narrow in some places that one is obliged to step into the gutter to allow another to pass. The main thoroughfare leading up to the palace is broad and straight and pleasant to ride upon. Owing to the narrowness of the sidewalks, the people are obliged to walk in the streets. This is not so bad, as the streets are well paved and always kept clean. The first thing which the eye of a mechanic lights upon is the buildings—how they are built and the materials of which they are constructed. One thing impresses itself upon your mind right away, and that is, the Norge people build to stay; all of their buildings have a solid, substantial look, if they are not all of that style which we of the nineteenth century enjoy seeing. Most of the buildings are of brick, then covered with a coat of cement, and subsequently covered in imitation of various stones. Others are built of granite and sandstone, and all the roofs are either slate or tiles, the latter being most used. Among the most conspicuous buildings here which we visited are the Palace, Houses of Parliament, University Buildings, Victoria Apartments, Akers Gaden and the Cathedral, the dome of which was very odd indeed, being a combination of the Gothic and old oriental Mosque. In the afternoon we took a ride down through the Fgords to King Oscar's Castle, a beautiful structure of solid masonry, with twisted tower. We were shown all through the various apartments, and then on top, where we had an extended view of the surrounding country and could see over the land and water for miles and miles. Sometimes, when it is clear, you can see down through the Fgords as far as—the "*moon*." We also visited several buildings in course of construction and found them putting in 14x14 inch hewed pine for sub-sills with 12x12 inch girders framed together strongly with 4x14 inch floor joists, all hewed and mortised and tenoned together—this was for an ordinary dwelling—and the roof put together in the same style, having timbers in the plates and rafters heavier than those which we in California put into foundations. And they go on this principle all the way through; even the locks and keys on the doors are as large as those of St. Peter's, and they still cling to the old brass knockers on the doors in place of our electric bells. We saw men hauling granite for a building coming down a steep hill with no breaks for their wagons. I expected to see the whole business roll on to the horses before they got to the foot.

After spending two delightful days here, we went to Stockholm, which is sometimes called the Venice of the North. It is certainly very beautiful, both for what nature and man have done for it. Mr. Werner Cronquist, Chemist for the Royal Navy, took your correspondent around the city and showed him the sights, which were many, and he took pride in them, I was convinced, as he pointed them out to me. Here we have the solid granite docks and bridges that characterize all these cities which I have visited. We see many long blocks of beautiful buildings, built of brick and stone, which will compare favorably with those of any city in the world. We see here that the later styles prevail, making a striking contrast with the city just left. Such a variety of modern architecture one is surprised and pleased to see. The new St. Johanses Church, now being built, is a monster structure, and will be very beautiful when complete. Architect Moller is a man of large experience and has designed some of the finest buildings here. The Church of the Kings is the first I have ever seen with a cast-iron spire and complete spear scroll work. It looks oriental, indeed.

On Sunday I attended the sacred concert given in the new German church, which is a solid granite edifice. The heavy stone columns through the center are six feet in diameter. Some of the most beautiful stained glass memorial windows made are in this church. The choir and organ loft and also the work around the altar is very richly carved and gilded. The pulpit is black and white marble, and was made in 1660. It was transferred from the old church to the new, and is a very pretty work of art. The largest telephone station in the world is located here—so I am told. Certainly the beautiful building, the immense tower, and the myriads of wires running hither and thither would indicate as much. I see they use here a preparation for coating brick buildings cemented, which makes them look like various kinds of marble. They use a scaffold such as I never saw in America in putting it on. It is a box 5x5 feet that holds two men. This is held in position by an immense pole 8x8 feet and 80 feet long, running through the center like a gauge on end, with a rope and racket attachment to hold it in place. It is certainly a novel scaffold. I notice that women are employed on many of the larger buildings to carry brick and wait on the men. They can run up and down five and six-story scaffolds as nimbly as the men. Among the prominent buildings we visited here are Drottingholm, Royal Castle (Tessin artchitect), Catarina lift building. The Polytechnical High School (Eddsord architect), Grand Hotel, Germania and Reidberg are large and commodious. The Royal Opera House and the Queen's Palace are solid granite structures. But the people must not be overlooked. They are just what they appear to be—kind, gentlemanly and generous-hearted, and know how to entertain strangers. I speak from experience.

Yours truly,

E. C. Gilbert.

Practical, Plane and Solid Geometry.

BY ARTHUR SEYMOUR JENNINGS.

Prepared especially for the ARCHITECT AND BUILDING NEWS. (Copyrighted.)

CONSIDERING that everything made by man is of geometrical form, it would appear that a more or less perfect knowledge of geometry should be possessed by everyone. To the mechanical draftsman, the subject is essential and especially that branch which relates to solid geometry and projection, while to the mechanic a knowledge of it forms, almost invariably, a means to the end of advancement. The artisan in many trades who understands geometry, is he who becomes foreman or superintendent. This is especially the case in the building and engineering industries where the operations from beginning to end depend upon the application of geometrical principles Hence, the civil engineer and the architect find it necessary to gain a knowledge of the subject, while those working under their directions—the builders, carpenters, masons and other mechanics—must be cognizant with it in order that they may be enabled to read the plans and drawings drawn out for their guidance The land surveyor is simply one who is versed in geometry and its application to the measurements of the earth's superficies. Measuration is a science which depends upon a knowledge of geometry and arithmetic for its solution.

The wide usefulness of the subject has had the effect of producing a deal of literature on the subject. For the most part, such books as exist are either too elementary or too advanced for the man of average intelligence; they are either more suitable for the school room than the practical man or else are so far advanced as to be without the scope of a person of ordinary "school education." So far as it is possible within these pages, it is proposed to give a series of articles which shall form the basis of an extended study in this important subject. A solution of the more elementary problems will not be given unless they are not generally known, but sufficient reference to and explanation of them will be made to enable those readers who may not be already familiar with them to obtain their solution from sources. Particularly in connection with projection, it is hoped that architectural draftsmen and others may find the benefit from studying—not merely reading— this series.

At the risk of a charge of advertising, the author will, where occasion requires, make mention of either firms or books which, from his personal knowledge, he deems likely to be of assistance to the reader. The object of the paper is simply to assist the student in acquiring this knowledge, and with that end he invites criticisms or questions addressed to the editor and will always be pleased to render whatever assistance he can in this connection

INSTRUMENTS.

The student of geometry will need a number of instruments in order that he may work out the various problems which are given. These must consist of, at least, a compass with pen and pencil points, a pair of dividers and a right line or drawing pen. Drawing boards, triangles, pencils, paper, rubber and thumb tacks will also be needed. Considering that sets of instruments may be had from 25 cents up to $300, it will be seen that a description of them would occupy too much space to give here. The student is advised to obtain the catalogues of the various firms of mathematical instrument makers which will be sent free of charge to any one who mentions this paper. In most of the large cities are found dealers, or makers, who publish catalogues and it will be useful to give one or two names here for reference. Kauffel & Esser, Fulton street, New York; Queen & Co., Chestnut street, Philadelphia and W. Stanley, Norway Junction, London. Eng., are among the chief firms, each of which will be found of much value and interest.

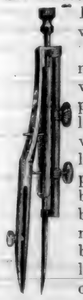


Fig. 1.—Compass for describing minute circles.

Among the less known of mathematical instruments may be mentioned the compass illustrated in Fig. 1 which is employed for describing minute circles. The principle difference between this and other compasses lies in the fact that the pen works on a vertical rod which is held stationery. Pens for making dotted lines up to recent date usually consisted of wheels placed between the nibs of an ordinary right line pen, but they were very far from satisfactory. Probably the best dotting instrument is that shown in Fig. 2 which not only is adaptable to any description of dotted line but does its work clearly and quickly. To change the length or description of the dots, the wheel B is taken out and another one is inserted. It is found of considerable service to have at hand a curve which may be used in describing ornamental work and a large number of different curves are manufactured in paper, hard rubber and wood for the purpose. These however, are to some extent unsatisfactory inasmuch as a great number of them will be required in setting out the work in an ordinary office. To meet the difficulty an instrument has been introduced, consisting of a flexible edge connected by a strip of pure drawn lead and it may be readily adjusted to any curve. One of the most difficult things to do in mechanical drawing is to draw a number of parallel lines at equal distance apart and it is required so often that several instruments for the purpose have formed the subject of patents in recent years. Among these may be mentioned Harden's section liner which is adapted for use on both sections and cylindrical work. Bergen's section liner in Fig. 3 is a very serviceable instrument of the same class while another is the "Universal Ruler," shown in Fig 4. An entirely new description of form in mathematical instruments has lately been introduced into this country from Germany. They are constructed mainly in cylindrical form and in strength and convenience are claimed to exceed those of the old style. Having possessed himself of the suitable instrument the student will now proceed to study scales.

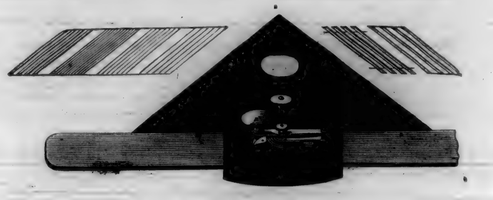


Fig. 3.—Bergen's Section Liner.

SCALES.—A scale drawing intended to represent some object such as part of a portion of mechanism, etc., may be full sized or it may be larger or smaller. In the last two cases it is said to be drawn to scale. In the erection of an ordinary building some drawing (termed details or detail drawings) are full size and the majority on a scale of about a quarter of an inch to one foot. The fraction which exists between a drawing and the object which it represents is termed the representative fraction because it represents the fraction or proportion between the drawing and the object. Thus in a scale of an inch to a foot one inch represents 12 inches and the representative fraction is therefore 1-12. The construction of a plain scale must be very accurate and as it

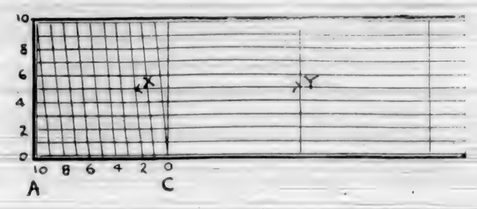


Fig. 5.—The Diagonal Scale.

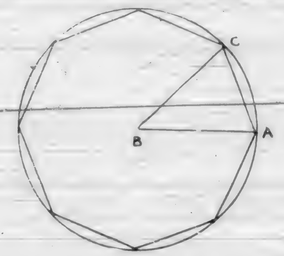


Fig. 6.—Construction of Polygon in circumscribing circle.

involves considerable time and care to make, it is advisable that scales should be purchased ready made. These are made on wood, ivory and paper. The last are not at all reliable. The student will do well to make himself thoroughly acquainted with scales and should make for himself several until he is able to produce a result essentially accurate.

The construction and use of a diagonal scale does not seem to be so generally known as it might be, considering its efficiency. Its use is to give minute measurements such for example as one hundreth part of an inch. The principle upon which it is constructed will be clear on reference to Fig 5. A B is divided into inches the first inch A C is divided into tenths as indicated by the figures placed against the divisions. To obtain the hundreth part of an inch, that is, the tenth part of the smaller divisions, lines are drawn diagonally, being divided up by horizontal lines into ten equal parts. It will be seen that if the diagonal line slope to the left 1 10th of an inch that the horizontal lines will divide that distance up into ten parts, giving the hundreth part of an inch. For example, the distance from X to Y in the figure will be 1.25 inches; that is, one inch, two tenths and five hundreths. It will be obvious that the most minute measurements by this system may be easily obtained and their utility in setting out on a small scale is very considerable.

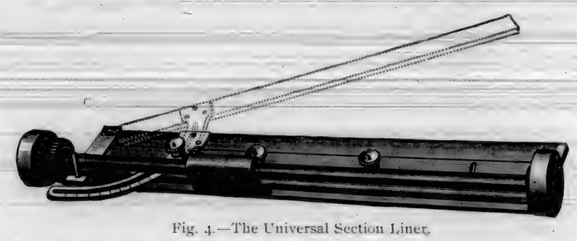


Fig. 4.—The Universal Section Liner.

ELEMENTARY PROBLEMS.

We may here pause to advise the student who is unfamiliar with the methods, to learn how to work out the following problems: Divide a line into equal parts or proportionally, making angles with compass only; bisecting angles and lines; erecting perpendiculars; polygons, triangles, squares and rectangles in circles.

POLYGONS.—The polygon is a figure having more than four sides and angles. When the sides are equal in length it is said to be a regular polygon, and when of unequal length an irregular polygon. The construction of the latter depends upon the length of lines and angles being given. Regular polygons, however may be constructed in a variety of ways. The geometrical methods are given in the books and are not within the scope of these papers. A quick way which is not generally known is by means of the protractor and is as follows: *First.* When the circle is given, divide 360 by the number of sides in the required polygon. Draw the circle shown in fig. 6 and a radius, making an angle with the first equal to that obtained by dividing as just mentioned. Thus suppose that it is required to draw an octagon or eight-sided figure in the circle A B: 360 divided by 8 equals 45, set up for the angle, 45 degrees, A B C, join A C, which is one side of the required polygon. Considering that all the sides are of equal length, the distance A C will step round the circle eight times as required. *Second.* When the length of side is given set out the one side E F fig. 7, then work out the following sum:

$$\frac{(N-2)\times 90}{N}$$

In this formula N equals the number of sides in the required polygon. Now take the angle so obtained and set it up at E and F respectively, and where the two lines meet at G, stick in the compass and with radius G F describe a circle. The line E F will now step round exactly the number of times required. For example, suppose it is required to draw a pentagon or five sided figure, N in this case equals 5, therefore 5 divided by 2 equals 3 times 90 equals 270 divided by 5 equals 54. The angles, of course may be either set up by means of a protractor or by the scale of chords. This method of constructing polygons is an exceptionally quick one, and with a little care is very accurate, Another way to do the same thing is by an instrument known as the sector, an explanation of which will be given in our next paper. *To be continued.*

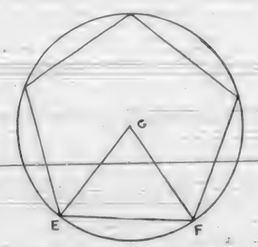


Fig. 7.—Construction of Polygon when one side is given.

Fig. 2.—Patent Dotting Instrument.

ODD FACTS ABOUT BUILDINGS.

The Definitions Used by Insurance Companies.

WHAT is a building, anyhow?

A reporter was securing some facts about insurance, and was surprised to find that a fishing scow comes under that heading, while a shanty does not always.

"That depends upon circumstances. Under the rules governing insurance companies a building is described briefly as follows:

"'A building or 'house' 'is an edifice erected by art, composed of stone, brick, wood or other proper substance, fixed upon or over the soil, and designed for use in the position in which it is fixed.'

"A policy upon a 'building' simply, without qualifications, will cover only the building as therein described. But the insurance will not include the contents, nor extend to the occupancy of the premises beyond that described in the policy.

"If the word building be qualified by additional words, as 'sawmill buildings,' it would then include everything appurtenant and necessary to fit it for occupany as a sawmill, and carry with it the right to be used for such purposes.

"Fishing Scows are Buildings—When it is proved that they are used and occupied during the fishing season as dwellings and places of business, and after the fishing season as residence on land.

"A Shanty Not a Building—When used for storing tools, but not used for a workshop.

"Stories of a Building—Where the several stories of a building were owned by separate parties, it was held that such owners of distinct buildings, the one situated over the others, and the owner of the upper story must keep the roof in repair at his own expense; and he cannot recover from the owners of the stories below any portion of such expense, although the repairs were to protect the property of such owners."

—"Gilbertson's Old Method" Roofing Tin has been specified by the Architect of the new B. & O. Depot at Smithfield street. One thing certain, the coming generation are sure of a good roof from rain and storm while waiting for trains at the B. & O.—*The Builders' Gazette, Pittsburg, Pa.*, Aug. 15, 1888.

PLUMBING AND DRAINAGE.

Rules and Regulations adopted July 19th, 1888, by the Board of Health, City and County of San Francisco, to take effect immediately

ORDER NO. 1,982.

Providing for the protection of the Public health, and requiring Plumbers to register their names and addresses at the Health Office, and comply with regulations of the Board of Health in reference to the drainage and plumbing of buildings.

The People of the City and County of San Francisco do ordain as follows:

[Plumbers to Register at Health Office.]

SECTION 1. Every master and journeyman plumber, carrying on his trade in this city and county, shall, under such regulations and rules as the Board of Health of said city and county shall prescribe (not in conflict with general laws), register his name and address at the Health Office of said city and county. And after the establishment of such rules and regulations, it shall not be lawful for any person to carry on the trade of plumbing either as a master or journeyman plumber, or otherwise, unless his name and address be registered as above provided.

[List of Registered Plumbers to be Published in yearly Report of Health Officer.]

SECTION 2. A list of the registered plumbers shall be published in the yearly report of the Health Officer or Board of Health.

[Penalty.]

SECTION 3. The drainage and plumbing of all buildings, both public and private, hereafter erected in said city and county shall be executed in accordance with plans previously approved in writing by the Board of Health of said city and county; and suitable drawings and descriptions of the said drainage and plumbing shall, in each case, be submitted to the Board of Health and placed on file in the Health Office.

[Drawings of Drainage and Plumbing to be filed.]

The said Board of Health is also authorized to receive and place on file drawings and descriptions of the drainage and plumbing of buildings erected prior to the passage of this Order.

[Penalty.]

SECTION 4. Any person violating any of the provisions of this Order shall be deemed guilty of a misdemeanor and upon conviction shall be punished accordingly.

In Board of Supervisors, San Francisco, May 28, 1888.

After having been published five successive days, according to law, taken up and passed by the following vote:

Ayes—Supervisors Curran, McDonald, Boyd, Pescia, Bush, Burns, Hawkins, Knorp, Heyer, Lambert, Joost, Morton.

JNO. A. RUSSELL, Clerk.

Approved, San Francisco, May 20, 1888.

E. B. POND,

Mayor and ex-officio President Board of Supervisors.

In pursuance of Order 1,982 of the Hon. Board of Supervisors, "providing for the protection of the public health and requiring plumbers to register their names at the Health Office and comply with regulations of the Board of Health in reference to the drainage and plumbing of buildings approved May 29, 1888," the Board of Health for the City and County of San Francisco, have adopted July 19, 1888, the following Rules and Regulations, to take effect immediately:

1. All material must be of good quality and free from defect. The work must be executed in a thorough and workmanlike manner.

2. The arrangement of soil and waste pipes must be as direct as possible.

3. Every house or building must be connected with the street sewer by a cast-iron or iron-stone pipe extending out to the line of the street, and in the case of buildings erected on the line of street, said cast-iron pipe shall extend three feet beyond the front walls or any area wall. From the points above designated to the street sewer, the drain shall be continued either by the above mentioned cast-iron pipe or by a vitrified iron-stone pipe laid at a uniform grade from the street sewer to a point of juncture with the cast-iron pipe. All joints on said iron-stone pipe shall be made with Portland cement, and each joint of pipe when laid must be properly cleaned on the inside by a suitable scraper before the succeeding pipe is put in place. All joints on a cast-iron pipe shall be made with a suitable packing of hemp or oakum, and run full with molten lead and properly caulked.

4. Every house or building hereafter erected must have the house drain constructed of cast-iron where it lies under the building; but when the house drain is outside the building lines, or where there is an open space under the house of four (4) feet clear in hight, it may be of iron-stone pipe. The house drain must have a fall of at least one-quarter of an inch to the foot; it should run along the cellar wall where practicable, or if laid under the lower floor of a building should be hung in iron straps securely fastened to the floor joists; it should be laid in as straight a line as possible. All changes in direction must be made in curved pipes and all connections with Y branches and one-eighth bends, with a trap placed under the sidewalk. The trap must be provided with a fresh-air inlet on the house side of the water-seal, of at least four inches in diameter, leading to the outer air. No brick, sheet metal or earthenware flue shall be used as a sewer ventilator, nor shall any chimney flue be used for this purpose. No T's to be used except in places where otherwise not practicable.

5. Every soil pipe shall be of cast-iron; waste pipe shall be of cast-iron, wrought-iron or lead.

6. All cast or wrought-iron pipe and fittings for waste, vent and soil pipe must be coated both inside and outside with coal-tar pitch, applied hot, or some other equivalent substance.

7. All iron soil or waste pipe, before being coverd up, must have all openings stopped, and filled with water and be allowed to stand until inspected and approved. All connections of lead with iron pipe must be made with a brass ferrule of the same size as the lead pipe, and caulked into the iron pipe and connected to the lead pipe by a wiped joint. All connections of lead pipe should be wiped joints.

8. Every water-closet, sink, basin, bath or set of wash-trays or other vessel connected with the drain pipes, must be separately and effectively trapped. The traps must be placed as near the fixtures as practicable.

9. Traps must be protected from syphonage by special air-pipes of lead, wrought iron or cast iron, not less than the size of waste pipes, and, if to supply air to traps of water closets, not less than two inches in diameter. These pipes must extend two feet above the highest point of roof or coping, or they may be branched into the soil pipe three feet above the highest fixture; they may be combined by branching together those which serve several traps. These air pipes must always have a continuous slope, to avoid collecting water by condensation. When the trap of any fixture is set more than two feet from the vertical line of pipe, a return connection must in all cases be provided.

10. Every safe under a basin, bath, urinal, water-closet, tank or other fixture, must be drained by a special pipe of lead or wrought-iron, not directly connected with any soil, waste-pipe, drain or sewer, but made to discharge outside the house.

11. Rain-water leaders must never be used as soil, waste or vent pipes, nor shall any soil, waste or vent pipes be used as a rain-water leader. All leaders from points below main roof must discharge into open trapped hoppers, on the surface of the ground.

12. No steam exhaust will be allowed to connect with any drain, soil or waste pipe.

13. All waste pipes from all interior plumbing, exclusive of water-closets, shall discharge into an open trapped hopper, except rooms which contain a water-closet, or where a building covers the entire width of the lot of ground.

14. Every line of waste and soil pipe must extend full bore to the ridge of the roof, or two (2) feet above the fire walls. When not more than one water-closet on the basement of first floor of a building connects with a line of soil pipes, an air pipe of cast or wrought-iron two (2) inches in diameter, extending to the ridge of the roof, or two feet above fire-walls, may be used.

15. All leaders, soil, waste, air and drainpipes inside of buildings before being covered up, must have all openings stopped up and be filled with water. The said test shall be made in the presence of the Inspector of Plumbing, and if satisfactory, he shall issue a proper certificate. Notice must be given to the Inspector when the work is sufficiently advanced for inspection.

16. All iron-stone pipe house drains, under houses, shall, after being laid, be filled with water and allowed to remain uncovered until inspected by the Plumbing Inspector of the Board of Health. When cast iron or iron-stone pipe is specified in the foregoing rules and regulations, if desired, wrought-iron pipe of standard steam thickness may be used, provided that the fittings are so constructed as to form a uniform bore with the pipe, without burrs or recesses.

17. No opening shall be provided in the sewer pipe of any building, for the purpose of receiving the surface drainage of the cellar, unless special permission is granted; and any opening so made must be immediately and permanently closed when directed by this department.

18. When a building is moved from one part of the city to another, or when an addition is made to a building, the plumbing rules and regulations adopted by the Board shall be followed.

19. On and after the first day of August, 1888, all plumbers doing business in the City and County of San Francisco, shall register, pursuant to the provision of Order 1,982 of the Board of Supervisors, approved, May 29th, 1888, at the office of the Board of Health.

20. Every master plumber, before he shall be allowed to be registered, shall give a bond to the State of California in the sum of five hundred dollars with two good and sufficient sureties, for the faithful discharge of his duties as plumber; which said bond shall be approved by and filed with the Board of Health.

21. All applications for registration as master or journeyman plumber shall be made by the party desirous of being registered; and said application shall be subscribed and sworn to by the party making the said application, on blanks to be provided by the Secretary of the Board of Health.

22. There shall be appointed by the Board of Health an Inspector of Plumbing and Drainage. He shall take and subscribe to an oath that he will faithfully perform the duties of his office, and shall, before entering upon his duties, execute a bond to the City and County of San Francisco, in the sum of five thousand dollars, with two good and sufficient sureties, conditioned for the faithful performance of the duties of his office, and for the benefit of persons aggrieved by his acts or neglect. Said bond shall be approved by and filed with the Board of Health.

23. The salary of the Inspector shall be fixed at one hundred and twenty-five dollars per month.

24. There shall be appointed by the Board of Health an Assistant Inspector of Plumbing and Drainage, to act under the orders of the Inspector of Plumbing and Drainage, and assist him in the fulfillment of his duties.

"SECTION 25. It shall not be lawful for any person to carry on business or labor as a master or journeyman plumber, in the City and County of San Francisco, until he shall have obtained from the Board of Health of said city and county a license authorizing him to carry on business or labor as such mechanic. A license so to do shall be issued only after a satisfactory examination by the Board of each applicant upon his qualification to conduct such business, or to so labor. All applications for license, and all licenses issued, shall state the name in full, age, nativity, and place of residence of the applicant or person so licensed. It shall be the duty of the Secretary of the Board of Health to keep a record of all such licenses issued, together with an alphabetical index of the same."

DUTIES OF INSPECTOR.

First. He shall be in attendance at the Health Office between the hours of 8.30 and 9.30 A. M. and 4 and 5 P. M., to receive plans of proposed plumbing and drainage, and to make appointments for the inspection of work in the course of construction.

Second. He shall number and file all plans and specifications accepted, and record the names of the owner and architect, and plumber, and location of work.

Third. He shall, upon being notified, examine all plumbing work before the same is covered up and concealed, and, if found to be in accordance with the Rules of the Board of Health, upon presentation of an accurate plan and specification of same by the plumber, shall issue a certificate to that effect. If, on examination of said work, he finds any violation of the rules of the Board of Health, he shall report the same to the Health Officer, with a note explaining the necessary corrections, and have it altered accordingly. Upon completion of any plumbing work he shall examine the same, and, if found to be in accordance with the Rules of the Board of Health, and the plans and specifications filed, he shall issue a final certificate.

Fourth. He must make a monthly report to the Board of Health of the number of plans and specifications received; the number approved and rejected; also stating the number of first and final examinations made, and where and by whom the ruby have been violated, and such other matter as may be requiredles the Board of Health

BOUND VOLUMES FOR 1888.

Owing to the demand for back numbers of this journal, the number of bound volumes we will have for purchasers in December will be very limited. Those desiring the same should engage them in advance. The price will be the same as for preceeding years, $2.50 each.

Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
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"Alameda."—A Beautiful Country Home.

NOW IS THE TIME TO SUBSCRIBE.

Remaining numbers of this year given free to all new subscribers for 1889.

IN JANUARY, 1889, WE BEGIN THE

TENTH VOLUME

OF THE

California Architect and Building News

TERMS,

TWO DOLLARS PER ANNUM.

Office: 240 MONTGOMERY STREET, SAN FRANCISCO, CAL.

Well up Heavenward.—28 Stories.

SCARCELY a day passes that does not bring to light some wonderful or strange proposition or development, and no man knoweth what to morrow may bring forth.

The evolutions in all directions are ceaseless, rapid, and often stupendous and grand. There is to-day before the world of mankind, very many proposed or recently accomplished results which to have been suggested fifty years ago, would have subjected the parties advancing the ideas, to the suspicion of absolute lunacy, or serious mental derangement.

The latest in the building line is a proposition to erect a building in Minneapolis, Minn., *twenty-eight stories high*—four times the number of stories contained in the Palace Hotel in San Francisco, which when built, was considered a monster edifice. But with an addition to the Palace of the character suggested by the latest conceit—twenty-eight stories—the building, which when built, was in fact the largest hotel edifice in the world, would appear as but little more than an annex for kitchen purposes, dormitories for servants, chambermaids, porters and hired help.

Without discussing the merits or feasibility of the projected high edifice, it must be admitted that the designer's notions were very elevated, and that nine-tenths of the people of the United States will at first sight condemn the aspiring latitude of the architect in his attempt to utilize space so high above the level of terra firma. But it is a question whether this latest architectural adventure is any more startling and scare-crowish to the people of the present day than would have been the proposition to erect ten, twelve and thirteen story structures, made to the grandsires of those who have since conceived and completed buildings in New York, Chicago, Boston and others of the older and the newer cities now assuming great commercial and business importance in parts of the continent which, but a generation or two ago, was known as the wild West, and the hunting ground for buffaloes and the home of the red man of the forest—buildings quadrupling the limits of height practiced in the earlier years of our nation's history.

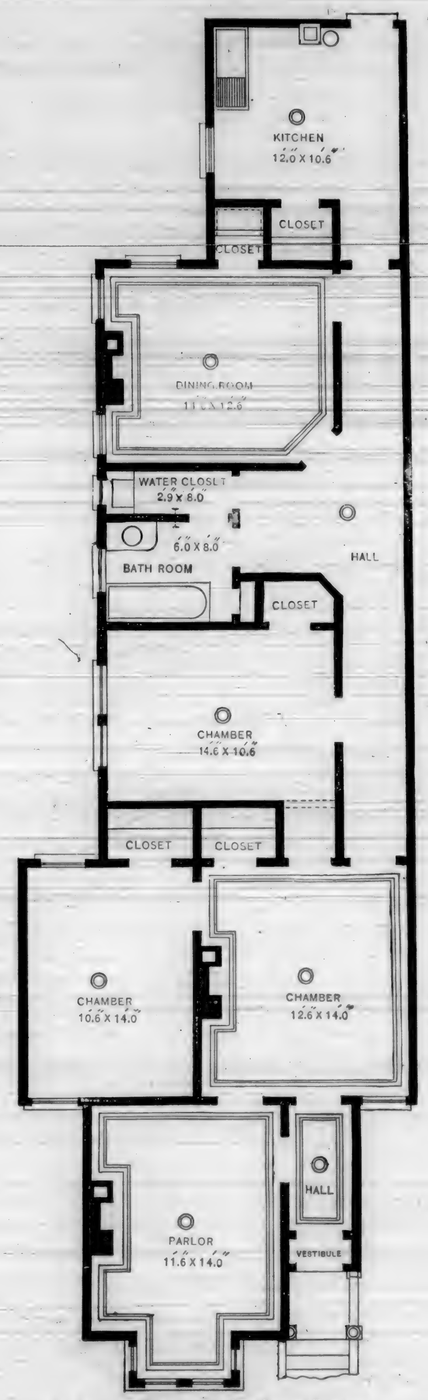
Even the immortal "Father of his country," if at the time he was quartered at the lower end of Broadway, N. Y., within sight of the Battery, opposite Bowling Green, in a building then of the larger type—where he was near being made a prisoner of war—been told that on that very site, before the year 1885, there would be a building erected twelve stories in height, and conveniently and comfortably occupied in all its stories, he would have laughed to scorn the folly of the presumptious man who would have dared to predict such a result. Yet it is to-day an accomplished fact, and the "Washington Building" stands just there, as one of the magnificent structures of the commercial metropolis of America. Arguing from these premises, is it not possible that infants, if not well grown lads, or even young men of the present era, may yet see or participate in the erection of buildings even as high as twenty-eight stories? It is far-reaching toward the clouds, but other things seemingly as unreasonable a quarter of a century ago, are now demonstrated facts, and the science of architecture and building may yet achieve results not yet grasped, and the "mad men's" projects of to-day may be among the recognized utilities of the future.

Newspaper editors and correspondents may dip their pens deep into ink and write up fierce denunciations, nineteen-twentieths of business committees resist for the present, all such mad-architectural libertinism, and laws even be passed prohibiting such construction; still the evolutions will roll on, and in time buildings aproximating if not exceeding twenty-eight stories may no more be a questionable proposition, then are the numerous ten to thirteen story buildings of to-day, which are to be seen in all the progressive and great cities outside of San Francisco.

A SERIES OF "GEM" COTTAGES.

Next issue we will commence in this journal a series of "Gem" cottages. They will be prepared expressly for us by A. W. Putnam, a draughtsman recognized by all who know him, as possessing rare abilities as an original designer.

Now is the time to subscribe. Remaining numbers of this year given free to all new subscriber. for 1889.



A Studied Plan for a One-Story Cottage.

There is no Paper or Journal on the Pacific Coast that pretends to give a Full Report of Building News, *except the*

CALIFORNIA

Architect and Building News.

CITY BUILDING NEWS.

Bush, west of Pierce, three two-story frame buildings; owner, Pardon A. Cook; architect. Wm. H. Wharff; contractor, O. E. White; amount, $7,531; signed, September 14th; filed, September 15th; limit, 67 days.

Payments: framed, $1,400; brown coated, $1,400; white coated, $1,400; completed, $1,131; $1,900, 35 days.

Pine street, N. 520, repairs. Owner, Kong Chow Association; architect, Townsend & Wyneken; contractor, Rhody Ringrose; amount, $3,019; sureties, Wm. P. Dougherty and H. M. Peterson, $5,000; signed, September 12th; filed, September 15th; limit, 35 days.

Payments: completed, $2,264; $755, 35 days.

Page, southeast of Webster, two story frame building. Owner, Chas. B. Perkins; architect, R. H. White; contractor, Jas. Geary; amount, $3,850; sureties, C. S. Holmes & W. A. Meeker; signed, September 18th; filed, September 22d, limit, 90 days.

Payments: framed, $775; brown coated, $700; white coated, $700; completed, $700; $975, 35 days.

Eddy street No. 1,916, additions, etc. Owner, P. A. Fortier, architect, P. A. Fortier; contractor, Wheeler & Burdick; amount $3,150; sureties, A. W. Starbird; signed, September 19th, filed, September 22d; limit, 100 days.

Payments: studded, $800; brown coated, $800; white coated, $749; $801, 35 days.

Golden Gate Ave. and Polk, tin and galvanized iron work. Owner, H. Keenan; architect, C. J. I. Devlin; contractor, Jos. Forderer; amount, $1,340; signed, August 20th; filed, September 21st.

75 per cent as work progresses; balance, 35 days.

Eddy street, between Jones and Leavenworth. Alterations. Owner, Annie K. Botsford; architect, T. J. Welsh; contractor, G. W. Hansbrough; amount, $14,265; sureties, John F. Taylor, J. M. Manning; signed, September 14th; filed, September 17th; limit, 120 days.

Payments: framed, $2,500; brown coated, $2,500; completed, $5,565; $3,700, 35 days.

Powell, between Post and Sutter, frame building. Owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractor, Wm. Langstaff; amount, $7,390; sureties, E. P. Latson, F. H. Rosenbaum; signed, September 18th; filed, September 19th; limit, 70 days.

Payments; brick work of basement up, $1,200; framed, $1,200; brown coated, $1,600 ready to paint, $1,400; completed, $140; $1,850, 35 days.

Eddy street. No. 326, plumbing and contractor. Owner, G. W. Hansbrough; architect, T. J. Welsh; contractor, E. Kraus; amount, $1,820; signed, September 20th; filed, September 21st

Plumbing, $455; brown mortar on, $455; tubs and bowls set, $455; completed, $455; balance, 35 days.

Twenty-fifth, between Bryant and York, two-story frame building. Owner, F. Dooly; architect, M. J. Welch; contractor, R. Doyle & Son; amount, $1,860; sureties, John McGuire, J. Wagner, $1,860; signed, September 18th; filed, September 19th; limit, 65 days.

Payments: framed, $500; brown coated, $600; completed, $745; $615, 35 days.

Bush street, No. 220 to 226, alterations. Owner, Estate of C. D. O'Sullivan; architect, C. J. I. Devlin; contractor, C. P. and G. H. Moore, amount, $5,259; sureties, C. S. Holmes, F. Joost, $5,000; signed, September 12th; filed, September 19th; limit, 45 days.

Payments: iron girders, $1,000; brown coated, $1,800; completed, $1,144; $1,315, 35 days,

Francisco, west of Stockton, building; Owner, Annie Hare, contractor, R. Doyle & Son; amount, $2,460; sureties, J. B. Coffin, Jno. McCarthy; signed, September 11th; filed. September 22d; limit, 70 days.

Payments: framed, $465; 1st coat of mortar is on, $465; completed, $465; $465, 35 days.

Turk, east of Franklin, frame building. Owner, J. Brown; architect, Salfield & Kohlberg; contractor, H. Rohling; amount, $6,050; sureties, J. J. McKinnon and F. Joost, $6,050; signed, September 11th; filed, September 13th; limit, 3 months.

Payments: framed, $1,550; partitions set, $1,000; brown coated, $1,000; completed, $1,000; $1,500, 35 days or bills paid.

O'Farrell east of Laguna, building December 1st. Owner, Winifred & Margaret Gallagher; architect, J. J. Clark; contractor, Jno. G. Adams; amount, $3,500, signed, September 15; filed, September 20.

75 per cent as work progresses; balance, 35 days.

Bush street, No. 226, cast iron work. Owner, Estate of C. D. O'Sullivan; architect. C. J. I. Devlin; contractor, J. Hendy Machine Works; amount, $2,650; sureties, A. R. Wells, Jas. Patterson, $2,000; limit, 40 days.

Payments: completed, $1,975; $675, 35 days.

Russ street, No. 22, raise and move. Owner, A. and S. Simon; contractor, A. C. Rogers; amount. $2,400; signed, August 4th; filed, September 13th.

Payments: payment as work progresses.

Howard street and Tenth, wrought-iron work. Owner, Omnibus Cable Company; architect, Percy & Hamilton; contractor. C. Nutting & Son; amount, $16,350; sureties, P. Crichton, Wm. Cronan, $5000; signed, September 13; filed, September 20; limit, 110 days.

75 per cent on 1st Saturday of month as the work progresses; balance 35 days.

Howard street and Tenth, cast iron work Owner, Omnibus Cable Company; architect, Percy & Hamilton; contractor, O'Connell & Lewis; amount $11,145; sureties, Robt. Mitchell, J Mahony, $4,000: signed. September 13; filed, September 20; limit, 100 days

75 per cent on 1st, Saturday of month as work progresses; balance, 35 days.

Howard street and Tenth, artificial stone work. Owner, Omnibus Cable Company; architect, Percy & Hamilton; contractor, G. Goodman; amount, $4,680; sureties, Robert Mitchell, J. Mahony, $2,000; signed, September 13; filed, September 20; 75 per cent on 1st Saturday of month as work progresses, balance, 35 days.

Howard street and Tenth, stone work. Owner, Omnibus Cable Company, architect, Percy & Hamilton; contractor, Degan & Orford: amount, $15,728; sureties, F. E. Knowles, Wm. Mathews, $5,000; signed, September 13; filed. September 21, limit, 125 days.

75 per cent on 1st Saturday of month as work progresses; balance, 35 days.

Howard street and Tenth, brick work engine house. Owner, Omnibus Cable Company; architect, Percy & Hamilton; contractor. W. Burden; amount, 25,150; sureties, Robert Mitchell, C. A. Warren, $10,000; signed, September 13; filed, September 20th; limit, 140 days.

75 per cent on 1st Saturday of month as work progresses; balance, 35 days.

Howard street and Tenth, carpenter, plumbing, and painting. Owner, Omnibus Cable Company; architect, Percy & Hamilton; contractor, Thomas H. Day; amount, $28,200; sureties, J. F. Kennedy, and B. Joost; $10,000; signed, September 13; filed, September, 20; limit, 80 days.

75 per cent on 1st Saturday of month as work progresses; balance, 35 days.

Brannan, north west side First, one-story and basement, wine warehouse. Owner, Warehouse Land and Improvement Company; contractor, Richardson & Gale. amount, $39,500; sureties, Schulze & Meeker, E. O. & J. G. Denning, $13,200, signed, September 14; filed, September 21; limit, 120 days.

Payments: area walls built, $7,800; side walk, iron and first joists in $6,600; brick work to under side, of ceiling, joists done, $3,850; fire walls built, roof done, tin and skylights, $4,675; completed, $445, 35 days.

Kisling, between 11th and 12th streets, frame building. Owner, Owen Carroll; architect, M. J. Welsh, contractor, T. Sullivan; amount, $3,787; sureties, W. Thyarks, B. Joost; signed, September 15th; filed, September 18th; limit, 70 days.

Payments: framed, $946.76; brown coated, $946.75; completed, $946.75; $946.75, 35 days

Oak and Broderick, two-story frame building. Owner, C. Sancken; architects, Copeland & Banks; contractor, Jno. Adams; amount, $3,482; surety, B. Joost; signed, September 19; filed, September 22; limit, 120 days.

Payments: $800, framed, $1,200. brown coated; $607, completed; $975, balance, 35 days.

Fourteenth between Howard and Shotwell, two-story flat. Owner, Geo. Heyle; architect, Geo. Houston; contractor. Geo. Houston; amount, $2,790, signed, September 17; filed, September 20; limit, 80 days; Payments: $690; shingled, $700; brown coated, $700; windows in, $700, 35 days.

Stewart, south of Market, three-story, basement brick. Owner, Gualala Mill Company; architect, C. I. Havens; contractor, Mahoney Bros.; amount, $30,353; surety, C. S. Holmes; signed, September 18; filed, September 20; limit, 125 days.

75 per cent as work progresses; balance, 35 days.

Francisco west of Kearny, foundry and pattern shop. Owner, Joshua Hendy; architect, R. Chartrey; contractor, Thomas H. Day; amount, $8,493; sureties, J. F Kennedy, F. P. Lawtson; signed. September 18; filed, September 19; limit, 90 days.

75 per cent on 1st of month as work progresses; balance, 35 days.

Van Ness and McAllister, alterations, plumbing, etc. Owner, John DeWitt Allen; architect, George Voelken; contractor, John Doherty; amount, $1,825, signed, September 4th; filed, September, 15th; limit, 40 days.

Payments: pipes in, $900; completed, $468; $457, 35 days.

Hampshire, between 24th and 25th, building December 15th. Owner, Anton King; architect, H. Geilfus: contractor, J. F. Logan: amount, $3,493; signed, September 15th; filed, September 15th.

Payments: framed, $500; partitioned, $500; brown coated, yard in, $550: inside finish on, $550; completed, $500; $893, 35 days.

Jackson, east of Pierce, carpenter work. Owner, Robert Bruce; contractor, Wm. F. Kern; architect, Wm. F. Smith; amount, $10,025; surety, O. W. Nordwell, signed, July 14; filed, September 12, limit, four months.

Payment: four equal payments as work progresses of $1,875: balance, 35 days.

Golden Gate Ave. between Hyde and Larkin, two-story frame, stable. Owner. W. H. Carpenter & Son; architect, Wm. H. Armitage; contractor, Mead & Kennedy; amount, $3,800; surety, J. P. McMurray $2,000; signed, September 4; filed, September 12; limit, 60 days.

Payments: framed, $750, brown coated, $750; white coaed $600; 35 days.

Bush street. No. 226, stair work. Owner, Estate of C. D. O'Sullivan; architect, C. J. I. Devlin; contractors, J. R. Drew, F. McLaughlin; amount, $1,180; sureties, H. C. Gray and C. C. Terrill. $1 000, signed, September 5; filed, September 19; limit, 35 days.

Payment: treads and risers in place, $450; completed, $435; $295, 35 days.

Sanchez, between Sixteenth and Seventeenth, two-story frame building. Owner, Jas. Warren; architect, Casper Zwierlein; Contractor, Casper Zwierlein; amount, $2,645; sureties, J. F. Kennedy; signed, September 14; filed, September 14; limit, 80 days.

Payments: framed, $600; brown coated, $800; completed, $645; balance 35 days.

Main, between Mission and Howard, two story frame building. Owner, Geo. H. Mixer; architect, Geo. H. Mixer; contractor, Jno. G. Day; amount, $4,500; signed, September 13; filed, September 14; limit, 21 days.

Payments: framed, $1,650; battened, $1650, completed, $1.200, balance 35 days.

Waller near Buchanan, two story basement frame. Owner, Louisa Otto and Gottlob A. Mauerhaus; architect——: contractor, Rountree Bros.; cost, $4,400; signed, Sept. 20, 1888; filed, Sept. 28, 1888; limit, 90 days; sureties, Jno. Coop and F. R. Latson; amount of bond, $4,000.

1st payment, when framed, $800; 2d, when enclosed, $800; 3d, when brown coated, $800; 4th, when completed, $800; 5th, usual 35 days, $200.

728 Fulton, building. Owner, Margaret McGinney; contractor, Geo. M. Salsbury; cost, $1,800; signed, September 21st, 1888; filed, September 25th; limit, December 1st.

1st payment, when framed, $450; 2d, building enclosed, $450; 3d, when brown coated, $450: balance, usual 35 days.

Oak, near Gough, building. Owner, Jno. Madden; architect, R. Warren; contractor, Charles Coady; $1,275; limit, November 20th, 1888; signed, September 18th; filed, September 26th.

1st payment, when ready to paint, $425; 2d, carpenter work done, $425; 3d, usual 35 days, $425.

215 Fell, in rear, frame shed. Owner, A. Larfargue; architect, B. E. Henricksen. contractor, Moore Bros.; cost, $1,445; limit, October 29th; signed, September 22d; filed September 24th.

1st payment, when building is completed, $1,085; balance, usual 35 days, $360.

Stewart, between Mission and Howard, one-story brick. Owner, S. Harris; architect, J. Marquis; contractor, R. Parker; cost, $2,700; limit, 63 days; signed, September 26th; filed, September 27th

1st payment, when walls are up, $1,600; 2d, when completed, $1,000; 3d, and balance, usual 35 days, $700.

Waller, near Webster, one-story frame. Owner, Jno. Michel; architect, John & Zimmerman; contractor, J. Klein; cost, $2,587; signed, September 25th; filed, September 27th; limit, December 8th.

1st payment, when framed, $600; 2d, when rough coat is on, $800; 3d, when ready to paint, $537; balance, usual 35 days, $650.

Filbert, near Jones, two-story and basement frame. Owner, Fred. Todt; architect, John & Zimmerman; contractor, A. Rohling; cost, $3,900; limit, December 15th; signed, September 12th; filed, September 24th; sureties, J. J. McKinnon and F. Joost.

Fulton, near Franklin, two-story frame and basement. Owner, T. Kronenberg; architect, John & Zimmerman; contractor, Fuchs & Bucher; cost, $8,096; limit, January 2d; signed, September 13th; filed, September 24th; sureties, W. Hume & Kroenecke.

Fuller, near First avenue, frame attic and basement. Owner, Sophie Henicke; architect, H. T. Bestor; contracter, R. P. Traxler; $2,660; signed, September 26th; filed, September 27th; limit, 90 days.

1st payment, when framed, $400; 2d, when rough coat is on, $550; 3d, when windows are in, $550; 4th, when completed, $490; balance, usual 35 days, $670; surety, C. A. Malm; amount of bond, $900.

Castro, between 16th and 17th, building. Owner, Wm. J. McAllup; contractor and builder, J. A. Shepherd; cost, $3,700; signed, Sept. 27, 1888; filed, Sept. 27 1888; limit, Jan. 1, 1889.

1st payment, when framed, $920; 2d, when brown mortared, $950: 3d, when completed, $950; 4th and balance, usual 35 days, $950.

Eddy, between Polk and Van Ness avenue, frame building, painting contract. Owner, Geo. Haas; architect, J. H. Littlefield; contracter, Jos. Larsen; cost, $720; signed, September 26th; filed, September 29th; limit, 16 days.

Payment, 75 per cent. as work progresses

Eddy, between Polk and Van Ness avenue, plumbing contract. Owner, Geo. Haas, architect, J. H. Littlefield; contractor, Sweeny & Kearns; cost, $900; signed, September 26th; filed, September 29th; limit, 12 days.

Payments, 75 per cent. as work progresses.

Twenty-sixth and Valencia, plumbing. Owner, A. E. Hecht; architect, H. C. Macy; contractors, Duffy Bros.: cost, $1,770; limit, Nov. 10, 1888; signed, Sept. 16, 1888; filed, Sept. 27, 1888.

When completed, $1,770.

Church, between 23d and 24th, one-story cottage. Owner, Geo. A. Rice; architect, Schmidt & Shea; contractor, Martin & Maguire; cost, $2200; limit, 90 days; signed, September 21st: filed, September 25th; surety, F. P. Latson.

1st payment, when building is framed, $400; 2d, when brown coated, $400; 3d, when white coated, $400: 4th, when completed $400; 5th, usual 35 days, $600.

Elm Ave., between Van Ness and Franklin, building. Owner, Martin O'Dea; architect, Chas. I. Havens: contractor, Wm. Pluns; cost, $5,870; signed, September 26th; filed, September 28th; limit, 90 days; sureties, F. & B. Joost.

1st payment, framed, $1,000; 2d, brown coated, $1,000; 3d, hard finished and outside primed, $1,000; 4th, completed, $1,170; 5th, usual 35 days, $1,700.

Hartford, near 19th, building. Owner, M. Dolan; architect, J. J. Clark; contractor, R. O. Chandler; cost, $3,140; limit, 90 days; signed, September 22d; filed, September 28th; sureties, E. Aigeltinger and C. A. Bennet.

1st, framed, $750; 2d, brown coated, $750; 3d, inside finish on, $750; 4th, balance 35 days, $890.

Sonoma, between Utah and Nebraska, one story car house and stable. Owner, Omnibus Cable Company; contractor, H. A. Conrad; cost, $6,665; limit, 30 days; signed, September 29th; filed, October 1st; Payments, 75 per cent as work progresses.

Green near Laguna, one-story and basement frame. Owner, Mary Coghlan; architect, John & Zimmerman; contractor, Reichley & Vierhus; cost, $1,900; limit, December 8th; signed, September 24th; filed, September 24th; surety, F. Joost.

1st payment, when frame is up, $500; 2d, when rough coat is on, $425; 3d, inside ready to paint, $500; balance, usual 35 days, $475.

Eddy, between Polk and Van Ness avenue, frame building. Owner, George Haas; architect, J. H. Littlefield, contractor, Jas. Logan; cost, $9,378.

Payments at the rate of 75 per cent as work progresses; balance, usual 35 day

Linden Ave. in rear of 510 Fell, stable. J. Silverstein; architect, Townsend & Wyneken; contractor, R. Parker; cost, $1,200; limit, five weeks; signed, September 29th; filed, October 1st.

1st payment, foundations in $300; 2d, framed and roofed, $300; 3d, completed, $300, January 18, 1889.

Nineteenth, between Church and Sanchez frame building. Owner, Bridget Murphy; contractor, R. Sinnot; cost, $2,000; signed, September 17th; filed, September 29th; limit, 75 days; surety, H. C. Smith.

1st payment, framed $500; 2d, brown coated, $500; 3d, inside ready to grain, $500; 4th, usual 35 days, $500.

Twenty-eighth, between Church and Sanchez frame building. Owner, J. Sullivan; architect, M. J. Welsh; contractor, K. Thaller; cost, $1,700; signed, September 29th; filed, October 1st; limit, 65 days; sureties, C. Ewing and A. Black.

1st payment, roof on, $300; 2d, brown coated, $300; 3d, completed, $400; 4th, balance 35 days, $700.

Mission and Sullivan alley, three-story basement building. Owner, W. A. Aldrich; contractor, Richardson & Gale; cost, $9,000; limit, 60 days; signed, September 20th; filed, October 5th.

Broderick, between Hayes and Fell, two-story and basement frame. Owner, E. W. Hartmann; architect, John & Zimmerman; contractor, J. G. Adams; cost, $3,999; limit, January 1st, 1889; signed, September 28th; filed, October 6th.

1st payment, when frames are up, $800; 2d, when building is enclosed, floors laid, partitions set, rough mortar on, $1,200; 3d, when inside finish is ready for painter, $1,000; 4th, after acceptance or releases given or usual 35 days, $999.

Eighteenth near Sanchez, additions. Owner, Fleicher; cost, $800.

Walla and Steiner, two-story frame. Owner, R. Reiman; architect, A. H. Bailey, Jr.; contractor, A. H. Bailey, Jr.; cost, $3,000; limit, Dec. 15, 1888; signed, Sept. 15, 1888; filed, Oct. 4, 1888.

1st payment, when frame is up and building enclosed, $1,100; 2d, when hard finished, $1,000; balance at the completion of the building and the owner satisfied that all bills are paid.

Broderick, between Sutter and Bush, two-story frame. Owner, F. Leszynsky; architect, Wm. H. Armitage; contractor, Kincaid & Thompson; cost, $3,000; limit, 70 days; signed, Sept. 18, 1888; filed, Oct. 5, 1888.

1st payment, rough frame up, $600; 2d, brown mortar on, $600; 3d, white coat on, $450; 4th, finished and accepted, $600; 5th, 35 days, or on production of receipted bills, $750.

Scott near McAllister, one-story frame and basement. Owner, J. S. Antonelli; architect, J. Gash; contractor, John McCann; cost, $2,500; limit, 60 days; signed, Sept. 29; filed, Oct. 3.

1st payment, when framing, rustic and roof boards are on, $500; 2d, when brown coat of mortar is on, $500; 3d, when white coat of mortar is on, $500; 4th, when all inside work is completed and work accepted, $375; 5th, 35 days after work is accepted, $625.

Sacramento, between Larkin and Polk, two-story frame. Owner, L. A. Berteling; architect, M. J. Welsh; contractor, H. A. Conrad; cost, $4,800; limit, 70 days; signed, Oct. 3; filed, Oct. 6, 1888.

1st payment, when frame is up, $1,200; 2d, when brown coated, $1,200; 3d, when finished and accepted, $1,200; 5th, usual 35 days, $1,200.

Fourteenth near Noe, additions; cost, $1,500.

Grove near Lyon, one-story frame; cost, $1,500.

Noe near Fourteenth, two-story frame. Owner, J. Stelling; cost, $1,000.

Page near Schrader. Owner, Cook; builder, G. G. Gillespie; cost, $2,000.

Sanchez near Eighteenth, one-story frame. Owner and builder, A. Klahn; cost, $2,000.

Taylor near California, repairs; cost, $800.

Octavia and Vallejo, four two-story frames. Owner and builder, W. F. Lewis; cost, $15,000.

Spear near Howard, one-story frame. Owner, H. B. Schindler; cost, $1,500.

Spear corner Mission, repairs. Owner, Schwerin; cost, $1,500.

COUNTRY BUILDING NEWS.

LOS ANGELES.

TO BE ERECTED IMMEDIATELY.

J. B. Lankershim, three-story brick, Sixth and Front streets; two double houses Sixth and Front street.

J. F. Smith, lodging house, Olive and Fifth streets.

R. H. Leonard, engine house, Pine and Hill streets, and twenty-seven houses to cost when completed about $500,000.

SAN JOSE.

A builder's contract has been filed in the Auditor's office between Jesse J. Hill, contractor, and Mrs. J. C. Martin for the construction of a two-story brick building on the east side of Second street between Santa Clara and San Fernando streets, consideration $25,588.

Another contract has been filed between E. Strauss and Robert Summers, contractor, for the brick addition of a second story to a building on Second street; consideration $5,187; to be completed on the 15th of December.

SAN DIEGO.

The plans of the new Consolidated National bank building are now almost completed in Comstock & Trotsche's office. Two stories will be added to the present building, and the whole structure will be remodeled. When completed it will be 50 x 90 feet in size and four stories in hight, with a basement. Substantial materials will be used throughout, and in appearance the building will be one of the most elaborate and imposing structures in the city. There will be an elevator and all modern improvements. On the Fifth street front there will be a very elaborate ornamentation of terra cotta tiling and other stone. The main entrance, on G street, will be very wide and imposing in appearence. The change in the arrangement of the banking room is almost completed. Bids are now being taken for the excavating and stone and iron work, and orders are being prepared, for such materials as will have to be imported. The work of construction will begin soon.

No bids have been received for the work on the Pauly-Gassen block, to be erected on the corner of Fourth and E streets. The work of preparing bids is necessarily slow becaue of the immense size of the structure. The bids are expected in a few days, however, and shortly hereafter the work of construction will begin.

Comstock & Trotsche have prepared plans for a neat two-story, ten room cottage, to be erected on K street, between Twenty-second and Twenty-third. D. W. Strong is the owner.

The United Presbyterians have had plans prepared for a new church building to be erected in Sherman's addition. Mr. Schroeder is the architect. The design is said to be one of the finest in the city, in some respects the very finest. The entire structure will cost about $15,000. At present it is only proposed to build the lecture-room, at a cost of about $2,500. This will be built so that the main building can be added to it later. Its size will be 27 x 53 feet. Rev. R. G. Wallace is pastor of this congregation.

During the last thirty days Building Inspector Thielen has granted permits for the erection of twenty-eight buildings, the cost of which will be $681,035. The following is a complete list of the permits granted:

BUILDING PERMITS.

E. F. French, two-story frame dwelling, lot K, block 33, Middletown; $2,500.

A. G. Nason, one-story five-room dwelling, Horton's addition; $1,310.

Henry Timken, two-story and basement frame dwelling, Horton's addition; $10,000,

Joseph Horpey, one-story brick store, Horton's addition; $2,500.

Mrs. Emma J. Koehler, one story five-room dwelling, Horton's addition; $1,000.

Comstock & Trotsche, one-story frame schoolhouse, Mission Valley; $1,300.

F. S. Jennings, two-story frame dwelling, New Roseville; $3,000.

George H. Crippen, two-story frame dwelling, New Roseville; $3,000.

F. E. Johnson, superintendent of the college of arts of university of Southern California on campus on University Heights; $600,000.

B. Barnes, two-story frame dwelling, Horton's addition; $2,500.

H. E. Fellow, two-story frame dwelling Horton's addition; $3,000.

W. B. Woodward, two-story frame dwelling and barn, Horton's addition; $5,000.

Central Market Company, two story brick store and offices, 50x200 feet, Horton's addition; $16,000.

John Allyn, three-story brick building, 50x100 feet, Horton's addition; $16,000.

Rev. R. G. Wallace, frame church, Sherman's addition; $2,500.

RIVERSIDE.

The contract for building the residence of F. T. Field has been let to L. C. Waldman for $1,219. Work will be commenced at once.

SAN BERNARDINO.

Judge Rolfe will build an $8,000 house. Goff & Leyfe will prepare plans.

SACRAMENTO.

E. A. Bovyer has the contract to erect State Printing office warehouses, $8,464.

TACOMA, W. T.

Architect C. N. Daniels has charge of A. Parker's brick building, W. M. Masterton is the contractor. Cost $11,000.

DISINCORPORATING.

The Pine Manufacturing Company has applied to the Superior Court to be judicially disincorporated. The company dates as a corporation from May 31, 1883. It started with a capital stock of $200,000, in 2,000 shares, of which 1,755 shares have been issued. At a recent meeting of the stockholders, it was resolved by a vote of 1,000 shares to disincorporate. The petition sets forth that all liabilities have been satisfied. The present Directors are: E. B. Dean, W. J. Adams, G. W. Watson, A. D. Moore, C. S. Holmes, E. W. Bushnell, E. M. Harrick, Benjamin Pendleton, J. Knowland, A. A. Jackson and W. H. Talbot.

List of Members of the Builders' Association of California

330 PINE STREET, ROOMS 11 & 12.

Ackerman, C. H.,	215 Kearny.
Adams, J. G.,	407 Broderick.
Anderson Bros.,	1209 Market.
Bateman Bros.,	S. W. Post and Scott.
Binet, Jos. L.,	325 Fair Oaks.
Blake, John,	1138 17th.
Bray, Henry T.,	1133 Shotwell.
Brennan Bros.,	618 Eddy.
Bruce, John,	2407½ Howard.
Buckley, Frank,	1111 Deviasdero.
Burpee & Hudson,	836 29th street Oakland.
Burrell, A.,	22 California.
Chisholm, Chris	330 Pine.
Chisholm, Dan,	110 Chattanooga.
Chrichton, P.,	109 Baker, bet Page Oak.
Christy, Chas.,	828 Kirkham Oakland.
Classen, J. C.,	232 Francisco.
Commary, Wm. T.,	804 Hayes.
Conrad, H. A.,	625 California.
Chandler, R. O.,	1210 Pierce.
Day, J. G.	San Diego.
Day, Thos. H.,	1012 Devisadero.
Doyle, R. and Son,	2810 Howard.
Dryer, Bernard,	4 Collingwood.
Dunn, J. J.,	615 Jessie.
Dunshee, C. E.,	417 Ridley.
Edwards, E. W.,	116 Langton.
Elam, Thomas,	511 Sanchez.
Ellis, B. F.	999 Chestnut.
Farrell & Bell,	828 Union.
Fish, J. W.,	836 Valley.
Fitzpatrick, A. G.,	411 Twenty-second.
Fletcher, W. M.,	Los Angeles.
Geary, James,	2324 Sutter.
Gillespie, G. G.,	1503 Devisadero.
Gonyeau, J. B.,	33 Hardy.
Gorman, M. J.,	527 Octavia.
Grant, John T.,	22 Turk.
Gray & Stover,	1310 21st.
Greene, E. B.,	34 Hawthorne.
Greene, S. T.,	San Diego.
Griffin, P.,	20 Russ.
Hoffmann, Victor Jr.,	515½ 4th.
Houston, Geo.,	2068 Market.
Hatch, H. E.,	1717 Chaste, Oakland.
Hurlbut, R. P.,	115 California avenue.
Irwin, James,	908 16th.
Ingerson & Gore,	971 Broadway, Oakland.
Jackson, A.,	12 Middle.
Keenan, Hugh,	219 Scott.
Kent, S. H.	711 Leavenworth.
Kern, F. W.,	118 Fair Oaks.
Kincaid & Thompson,	730 Seventeenth.
Klahn, Aug.,	5 Chenery.
Klatt, F.,	814 Twenty-first.
Klein, Jacob, 24	Lilly avenue.
Kreger, Wm. B.,	801 Guerrero.
Lang, Geo. R., E. 14th St. & 14th Ave.,	Oakland.
Leonard, Jos. A.,	Alameda.
Langstaff, Wm.,	617 Jessie.
Lynch, M. C.,	28 Stanley Place.
Mahony Bros.,	307 Van Ness.
Maher, J. W.,	105 Precita avenue.
MacDonald, Allen,	1303 Buchanan.
Martin & Maguire,	133 Gough.
McCann, Richard,	217 Waller.
McElroy, A.,	373 Jessie.
McInerny, James,	Hancock and Noe.
McKay, Jas. H.,	124 Main.
Mead, W. H.,	246 Minna.
Mecredy Bros,	Church, bet 17th and 18th.
Miller, Adam, 23d and Bryant,	516 Kearney.
Moffit, Thos.,	Victoria.
Moore Bros.,	252 Octavia and 1 Russ.
Norton, A.,	1331 Ellis.
Parker, R.,	527 Grove.
Plums, Wm.,	3109 Sacramento.
Quinn, Charles,	133 Oak.
Rebman, J.,	Los Angeles.
Reichley & Vierhus,	1910 Market.
Riddell, Thos. C.,	16 Twelfth.
Robertson, John,	San Rafael.
Rohling, Henry,	14 Collingwood.
Rountree Bros.,	919½ Oak.
Sanches, R. P.,	653 Capp.
Steinman, F. V.,	423 Bush.
Simpson, R. F., 326 Telegraph Ave.,	Oakland.
Sinnott, Richard,	1321 Guerrero.
Smilie, Robt., 1125 E. Third Av.	East Oakland.
Smith, James W.,	1220 Eddy.
Sullivan, Timothy,	20 Laskie.
Taubman & Armstrong,	3109 Mission.
Terrill, Chas. C.,	617 Seventeenth.
Thompson & Moar,	338 Golden Gate Av.
Townsend, H.,	Alameda.
Waterbury, C. S.,	1322 Scott.
Wharff, Wm. H.,	Green and Laguna.
White, O. E.,	879 Seventeenth.
Wilcox, J. R.,	608 Willow Av.
Williams, F. A.,	545 Natoma.
Willis, A. A.,	30 Diamond.
Worden, S. G.,	1013 Valencia.
Zwierlein & Pavel,	421 Bush.

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ARCHITECTS

Have promised, with the new year, to send us each month an article, and, where necessary, illustrations for same.

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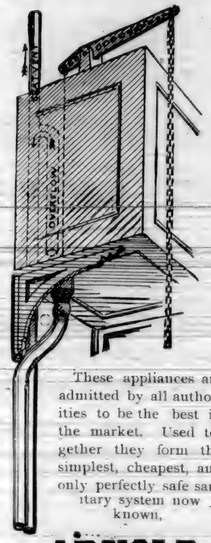
Carpenters of the Bible.

Though the trade is not definitely mentioned in Scripture prior to the time of Noah, yet it is clear that carpentering work had been effected centuries before. Noah could not have constructed the ark of gopher wood and made it so correct as to dimensions; he could not have joined the pieces together; he could not have formed a window and door such as would open and close, without some knowledge of carpentering and some acquaintance with the tools of a carpenter. Moreover the tools must have been in existence and in use prior to this time, which of course suggests that carpentering must have been practiced in the patriarchial times. Amid all the changes which occur in the history of varied handicraft, it is interesting to find that the same trade implements as are used to-day were in full use in the childhood of the world. The carpenter about to begin work selects a piece of timber which he calls a plank, or a slightly thinner piece which he calls a board. Such are the phrases used concerning the tabernacle and the temple. God said, "Thou shalt make boards for the Tabernacle of shittim wood. Ten cubits shall be the length of a board and a cubit and a half shall be the breadth of one board." Then in the first book of Kings we find Solomon built the walls of the temple with "boards of cedar," and covered the floor with "planks of fir." In order to shape the plank or board, the carpenter uses a saw; and such a tool was known to and employed by the workers in the early times, for we read of the "hewed stones" being "sawed with saws" for the foundation of Solomon's temple. To fashion the wood according to the needed purpose, the carpenter must have at hand his rule, his line, his plane and his compass. And so Isaiah the prophet says: "The carpenter stretches out his rule; he fitteth it straight and he marketh it out with a line; he fitteth it with planes and he marketh it out with a compass." Very often the carpenter has to join various pieces of wood by what he terms a mortise and tenon, that is to say, the mortise is a hollow place or socket in one piece of timber, into which the tenon or projecting piece, cut to exact measurement in the other piece, is intended to fit. But those are God-used terms. The Almighty, in giving the Israelites full directions for the contruction of the Tabernacle, said: "Two tenons shall there be in one board, set in order one against another; thus thou shalt make for all the boards of the Tabernacle. And thou shall make forty sockets of silver under the twenty boards, two sockets under one board for its two tenons and two sockets under another board for its two tenons."—*Wood Worker.*

INDUSTRY.

John Richards has started a new journal devoted to science, mechanic art and the industrial interests of the Pacific Coast. Its pages are well illustrated with all the various patterns of machinery, and in this branch it is the only journal published on the coast. All the illustrations are made by an improved process and show very distinctly all the various details. Editorially, it excels in its particular line, any of our contemporaries this side of Chicago. It is published at the low price of $1.50 per annum. Address Industrial Publishing Co., 40 California street.



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("SANITAS" BATH-TUB and PANTRY-SINK on same principle as Basin.)

"SANITAS" TRAP OPENED.

These appliances are admitted by all authorities to be the best in the market. Used together they form the simplest, cheapest, and only perfectly safe sanitary system now known.

The Sanitas Trap whether vented or unvented, has shown itself when properly set to be capable of resisting indefinitely, siphonage, back-pressure, and all other adverse influences met with in plumbing.

The "Sanitas" Basin flushes out the pipes and keeps them clean.

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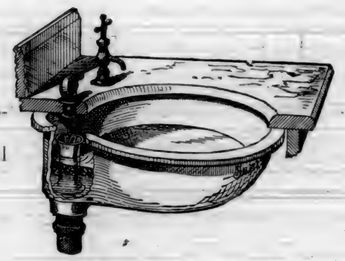
SOLE AGENTS

FOR CALIFORNIA.

Architects, Builders and the Public generally, are invited to call and inspect the same.

THE "SANITAS" WATER-CLOSET.



THE "SANITAS" WASH-BASIN.

McCLELLAN

Anti-Siphon Trap Vent.

SAFEST and MOST-ECONOMICAL

Device for Venting Sewer-Gas Traps.

Can be attached to any Trap at Less than Half the Cost of back-air pipes.

Approved by

ARCHITECTS, MASTER PLUMBERS AND HEALTH AUTHORITIES.

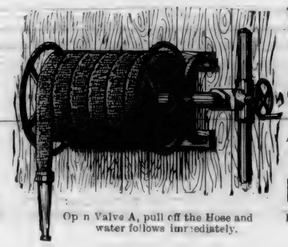
Manufactured by the

DU BOIS MAN'F'G CO.

Manufacturers of

The Celebrated Du Bois Lead Trap.

For Sale by all Jobbers in Plumbers' Supplies, of whom Circulars may be obtained



Open Valve A, pull off the Hose and water follows immediately.

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222 & 224 MARKET ST., SAN FRANCISCO.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOLUME IX — ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. — NUMBER 11

NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Official Organ of the San Francisco Chapter American Institute of Architects.

TERMS PER ANNUM, - - - - $2.00 IN ADVANCE

Published on the Fifteenth of each Month.

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SAN FRANCISCO, NOV. 15, 1888.

Should Editors Charge for Information?

A lawyer, when asked to plead a cause, demands his fee before he opens his persuasive mouth. You may hang and go to the naughty one before he will give you his legal service gratis. If one desires to know what investments are good and likely to be profitable, the broker who advises him is quite sure to charge a commission for making the purchase. Why, then, should an editor be expected to advocate all sorts of public projects *pro bona publico*? The contractors for improvements make money out of them. Why should they not pay the editors who present their arguments to the public? It is not considered derogatory for the highest lawyer in the land to appear before the city council and advocate the granting of a franchise; but the editor who charges money for doing the same thing is assailed with cries of a "subsidized press." We are not saying that the cry is unjust, but we do ask where the difference is between that which the lawyer is praised for doing and that for which the editor is denounced. The man from whom the lawyer asks a fee proceeds to draw his check; the man from whom the editor asks pay cries "blackmail." Yet both do the selfsame thing. Why is there one code for the Bar and another for the Press?—*Sel.*

San Francisco Chapter American Institute of Architects.

The regular meetings of the Chapter were held on November 2d and 9th, President, G. H. Sanders in the Chair.

Present: Sanders, Cuthbertson, Wolfe, J. E; Laver, C. J. Bestor, Daley, Gash, Pissis, Moore, Percy, Curtis, Whittemore, Wright, Wolfe, G. H.

C. H. Hasty was elected a student member.

Report was received from committee to whom was referred the communication from the New City Hall Commissioners. It was as follows:

To the San Francisco Chapter of the American Institute of Architects:—Your Committee appointed at the last regular meeting to consider the resolutions of the New City Hall Commissioners in reference to a new design for the proposed tower, beg leave to report as follows:

GENTLEMEN:—In accepting the difficult task of reporting on the proposed tower of the New City Hall, it was not expected that the Chapter of Architects would be called upon immediately afterwards to give its opinion on a sketch which purports to be the expression of the ideas suggested by our report.

We believe that we had examined the whole matter thoroughly and that we had covered every point in question. It would not be advisable for us to pass judgment on the sketch submitted, because the problem admits of very many solutions which come into the province of the architect to determine.

We still hold the opinion that it would be better and more practical to erect the tower in the form which seems naturally to be indicated by the circular foundations which are to support it, and although as we have before stated, we admit the possibility of constructing under the existing conditions the square tower to an indefinite height, and notwithstanding we might be disposed to admire it as an engineering feat, we feel, that good architecture is more interested in that which is most appropriate and true, both in intent and construction.

Respectfully submitted,

ALBERT PISSIS,
JAMES E. WOLFE,
W. J. CUTHBERTSON,
JOHN WRIGHT,
Committee.

After a lengthy discussion, the report was unanimously adopted. It was also ordered that a copy of same be sent to City Hall Commissioners signed by the President and Secretary.

The President stated that two weeks ago, a meeting was held by the students to consider the advisability of organizing an association distinct from the Chapter. Said association to be composed entirely of students and draughtsmen. Details were discussed and a plan of operations decided upon. Another meeting will soon be held.

Proposition was received from C. Schulze to become a fellow member.

Acknowledgment of Courtesies Rendered.

We have received from the editor of *Building*, published in New York city, the advance sheets containing the full account of the proceedings of the late meeting of the *American Institute of Architects*. We regret our inability to more than give but a reminder that such has been received. Those of our architects who would be pleased to read the full report, can not do better than to send after a copy of *Building* containing the proceedings of the Institute.

We are contemplating a large increase in the number of pages in this journal in our January issue; then we will be able to give all such reports in full.

We want 500 more subscribers in order to do so. Will you kindly help us with your subscription?

An Extra Edition.

For the past two months we have largely increased the number of our monthly issue. In December we guarantee to print 5,000 extra copies, which will be sent to parties all over the Coast who are interested in building matters.

THE CITY HALL TOWER.

This bone of contention has been hushed for the time being, in the great political strifes and huzzas that have ruled the hour during the past month. The recently prepared plan of circular tower submitted to the Commissioners, was sent to the Chapter of Architects for its judgment thereon. But for like reasons the committee from the Chapter to whom the matter was referred have not hurried up their report, but will likely submit the same before this appears in print. It is to be regretted that this feature of the City Hall should have drifted off into a sort of separate affair from the general construction, to meet the conflicts and antagonisms that have ensued by reason of its semi-isolation. Had the issues all been covered by the original plans, so as not to admit the cavellings and questions that have arisen through it having been made to assume an individual position, it would have been a great relief to the architect, as then his defense would have been impregnable in carrying out just what the original plans indicated. As far as present circular constructions go to establish anything, it is that of a circular tower, and the issues that have caused so much angry discussion and personalities, and such intense annoyance to Mr. Laver, rests in the suggestion of a square tower upon a circular base. Had the square proposition been provided for and prevailed from the foundation and upheld by the original plans, the Chapter of Architects if called upon could then consistently have sustained its erection, leaving the height as the only questionable issue, which, if it had been referred to the Chapter, would likely have been acquiessed in as practically possible, or perhaps recommended as proper and feasible. The architectural effect of the square construction received favorable notice in the first report from the Chapter, and all other things being equal, it is not at all likely that the Chapter would have suggested anything not in harmony with the square tower proposition.

FOUNDATIONS IN INTERIOR TOWNS.

Woodland, Yolo Co., Cal.

Editor California Architect:

It is a very common occurrence in interior towns to see what was intended to be a real good substantial brick building settle and crack after a few years standing, sometimes enough to render it insecure. Of course it must be caused by an insecure foundation. Will the Architect or some of its contributors please answer the following? What would be the best foundation for brick buildings on the alluvial soil of the California valleys, consisting generally of a light sandy loam from, say, five to twelve feet deep, resting on a gravel bed, where water is generally found as soon as the gravel is reached, sometimes before? Where concrete is used in foundations on such a bottom, what are the proper proportions of concrete, sand and coarse gravel? Can a reliable concrete be made by using the gravel as it comes from the bed of a creek ranging all the way from fine sand to gravel stones as large as ducks eggs and continually changing the proportions of coarse to fine? Builder.

The answers to the above are as follows: The principal cause of buildings settling and cracking, both in interior towns and elsewhere is, that the foundations are too limited in spread—*i. e.*—the width of footings are not made broad enough to carry the weight of construction placed upon them. As to how wide they should be, there is no rule that will apply in all cases. The architect or builder must satisfy himself as to the nature and character of the formation of the ground, and determine the necessities of the case by calculation and good judgment. The footings that would be ample in one case, may be entirely insufficient in another. Where the formation is a rock bed, footings of any size is immaterial, as no width of same can add to the permanancy of the natural base. Then as departure from this occurs, the deficiencies in the solidity of the substratas must be provided for by suitable sized footings and foundations. The erection of a brick building upon the waters of the Bay of San Francisco, is possible provided a float of sufficient capacity is provided; hence the possibilities run all the way from the hardest of known formations—rock, to the least resistant—water. The interims between these extremes are so diversified, that no general rule can apply.

It is safe to say that in nearly every case of settlement and cracking, the defect might have been avoided by broader and better foundation work. This proposition is clearly illustrated in numerous foundations in San Francisco, where planking of sufficient extent has been placed on soft mud, twenty to seventy-five or more feet in depth, and but little or no settling occurred; while if there had been lack of spread of foundations, the reverse would have been the case.

As to "what would be the best foundation for brick buildings on alluvial soil, etc., there can be nothing better than brick, provided sufficient spread is observed in the footings, and the "off sets" not made too large. Properly composed concrete is also good, with the above "if." The proportions of cement and gravel used in concrete work varies according to circumstances and the judgment of the architect, from one to six for very good work, and one to eight in cases where stronger work than those proportions will make, are not necessary. The latter is more the rule than the former. While the "gravel from creek beds, ranging all the way from stones as large as ducks eggs to fine sand," may be utilized, the freer from fine sand the better, and the rougher the gravel the better will the work be. Coarse sand and rough gravel, such as broken granite or rock makes by far the stronger concrete.

Another difficulty oftens intervenes, where the conditions restrict the construction so that no footings can be placed beyond the plumb lines of the wall, making it imperative to work the projection all on one side. Sometimes coterminous owners refuse one another the privilege of lapping the lines of their lots with the footings. In everyone of such cases where the ground is not entirely reliable, or there is not counter balancing constructions on the adjoining lot, sinkage and cracking is almost certain.

THE BUNDY RADIATORS.

Notice of Change of Place of Business.

After an occupancy of years in the present location, the agent of the "Bundy Radiator" was compelled to hunt up larger headquarters; and not only was the press of business so great as to compel the change to be made, but it also necessitated the taking of a partner to attend to the numerous orders pouring in from all quarters. For a great many years Mr. C. D. Harvey has been alone fighting his way upward and onward, first with the old Hot Water System of Heating that bears his name, but lately as agent of the Celebrated "Bundy Steam and Hot Water Radiators."

In order to thoroughly introduce the Radiators in every part of the country this side of the Rocky Mountains, Mr. Harvey has associated himself with W. H. H. Graves, and hereafter the firm name will be Harvey & Graves.

They have secured quarters in the store immediately opposite the old place, and hereafter all orders may be sent to No. 29 New Montgomery street, corner Jessie. Being in one corner of the Grand Hotel, and immediately opposite Wells, Fargo & Co.'s new building, the situation could not be improved.

Here the firm will have displayed a magnificent selection of Harvey hot water radiators and boilers, and Bundy's direct steam or hot water radiators, Bundy's Triumph, for steam or hot water, the Bundy Elite, for hot water or steam, and the Bundy corner direct, column direct, circular direct, angle indirect, horizontal indirect, and Climax indirect radiators. Also, the Bundy hot-closet, dining room radiator, the latter a most useful and highly ornamental contrivance for disseminating warmth throughout the dining room, while at the same time affording a very convenient mode of securing an equable degree of heat for meats, vegetables and other food which may be placed within it.

The new firm will be pleased to have all interested to call and examine their manufactures, and will prove to all the decided superiority of their productions.

HARVEY & GRAVES,
29 New Montgomery Street.

Messrs. E. C. Stearns & Co., of Syracuse, N. Y., report a very gratifying increase in their export trade during the past four months, and mention that the outlook for the balance of the year is very favorable.

Among others, they mention recent shipments of the celebrated "Silent" Saw Vises, Wood Clamps, etc., to Glasgow; Bench Drills to Northampton, England, and Aspinwall, Panama, and to the United States of Columbia.

The New Town of Newman and its Building Prospects.

Among the many towns located and laid out by surveys in this State during the past decade, there are few, if any, whose initial prospects have been brighter or more promising than the town of Newman, Stanislaus Co.

Up to April of the present year, the site of the town was a field of growing alfalfa, without the least sign of community life. On the 25th of that month, the first auction sale of lots occurred, and the prices obtained at once established the high favor in which the prospective town was held.

Since then Mr. S. Newman—Sol. Wangenheim & Co.—have erected a brick building 50x115 feet, including the private office construction at the rear. The building is two stories high, besides a splendid cellar 50x100 feet, 9 feet high in the clear. The store is handsomely fitted with shelves, counters, and all the adjuncts necessary for the transaction of a general merchandise business, comprehending all manner of goods, wares, implements, etc., required in all the various departments of field, farm and domestic life. This, the pioneer store of the new town, will compare favorably in external and internal appearances and completeness of appointments, with the finest, outside the commercial cities of the State, and very much surpassing the best in most of the older inland towns, having all the advantages of an assured, established future, and lying upon the main lines of railroad transit.

Messrs. A. Cahen & Son have also about completed a one-story brick store, 50x80 feet, with a fine cellar, for the transaction of a general merchandise business. Although not so large as that of Mr. Newman's, it will hold rank with any similar size structure of like character in the State, and the firm will enter into fearless competition for the trade of the valley.

Besides these, there are some fifty other stores, shops, cottages and dwellings erected, and the busy hands of mechanics are daily employed in the continued erection of others, so that within one year from the first cry of "going"—"going"—"gone," there will be one hundred or more constructions erected upon the alfalfa field of six months ago. In addition to all this, the erection of a fine hotel, a church, schoolhouse and society hall is engrossing general attention, and in all probability will be well under way, if not completed, by the next annual celebration of our nation's anniversary day.

The location of the town has been judiciously selected in the "west side" of the San Joaquin Valley, 3 miles westerly from the old point of interest and business—Hill's Ferry, which is entirely absorbed by the new town—37 miles southeast from Tracy on the main line of the S. P. overland, and 120 miles from San Francisco. At present a branch of the S. P. R. R. terminates at Newman with large depot facilities and with surveys and road bed a long distance beyond this point, looking to the conceded fact that as soon as practical, the iron horse of the S. P. overland will speed its way across the continent through the town of Newman.

Its prestige as the pioneer town of the "West Side," establishes for it a future that cannot be compromised by any competing town that may be laid out on the same line, as ere another move shall have been made in town sites, Newman, with its many natural advantages and resources will have secured a permanency that cannot be easily shaken; while the enterprise of its citizens, the liberal investments made in lots and buildings by far-seeing and intelligent men, will establish it as the metropolis town of the valley, and a principal shipping point for grain, fruits and other products of the soil, and wool, cattle, sheep, hogs, etc., raised in the valley by the thousands.

The present magnificent irrigating canal of seventy miles in length, running down the valley, with others now contemplated nearer the foot hills, and the inexhaustible supply of artesian well water that can be reached at a depth of twenty-five to seventy-five feet everywhere, with possible repetition of flowing wells such as that now supplying the R. R. works, fixes the destinies of this section for water beyond the caprice of light rains and dry seasons.

Another material feature of interest is found in the fact that the large land owners are seriously considering the advisability of dividing up their thousands of acres, and founding "colonies" which has been so successfully done in other parts of the state, which will gather in near proximity to the new town, almost as many families as there are at present individuals within the same compass, so that from any point of view, Newman and its environments are bright with excellent prospects for the near future and for all time.

COLLAPSE IN LUMBER.

The collapse in lumber is instructive as showing the normal evolution of the trust system. When the southern boom led to an enormous increase in the demand for lumber, some eighteen months ago, a number of lumber companies and individuals engaged in the lumber business formed a combination, or as we should say now, a trust, to regulate production and fix a cast-iron schedule of prices. The scheme was at first highly successful. The boom at the south was so vigorous that people seemed to care little what they paid for lumber so long as they got it, and for several months lumber sold on the basis of $22.50 for rough boards. The trust seemed so strong that its promoters actually incorporated it. It was to be a joy forever.

After a time, the demand for land began to fall off, and the inquiry for lumber for building purposes grew less furious. The trust found the demand for its goods becoming slack. Prices were marked down to the parity of $20 for rough boards. As usually happens when markets decline, accusations of cheating began to be bandied among the members of the trust. Quarrels broke out, and so much dissension ensued that, some weeks ago, an application was made to dissolve the corporation. This seems to have been regarded as a signal that every company must take care of itself, and cutting became the order of the day. The trust found itself undersold all round. This went on until ately when the trust accepted the situation, offered cargoes at $14, and, it is said, actually made sales at $12.50. A general *sauve qui pent* ensued.

Members of the trust assure us that the panic is a mere trick, and that when certain jarring elements have been reconciled the old prices will be restored and the compact will be found as ironclad as ever. But this is not the way the thing usually works. There is a law which governs these matters. First, competition, leading to cut-throat wars; then, combination and extortionate prices; then collapse of the combination, resulting from a reduced demand and treachery among the confederates; and then, open competition again, which is regulated by the extinction of the feeblest among the competitors. It works in a circle, and seldom varies from the regular programme.

That California has been injured by the operations of the lumber trust is too plain to need demonstration. It is very difficult to say what is the normal cost of rough lumber in this market. Dealers are going round declaring that $15 is less than the cost of production. But people rarely know how cheaply they can produce till they try. Some of the companies may perhaps be unable to produce lumber for less than $15, but others again, managed with more skill, may make a profit by turning out rough boards at $12.50. At any rate, it will be well for them to see what they can do. The cheaper lumber can be bought the more houses and barns will be built, and the more fences put up. Any combination which tends to increase the cost of building is detrimental to the public interest, and its collapse should be a matter of general congratulation.

Well-Earned Laurels.

For many years the "Garland Sewer Gas Trap" has been before the public. With each succeeding year the confidence of the public has been strengthened as to its true merits, and to-day it is acknowledged as the one in most general use. No better evidence of its efficiency can be had than that contained in the following:

To All Whom it May Concern:—About four years ago I had one of the "Garland Traps" put in my office, where it has been in constant use and has given entire satisfaction. I was greatly annoyed by both sewer gas and back water until I had this trap put in, since which time there has been no trouble whatever. I consider my case a particularly *severe test case* of the *superiority* of this trap, and after using it four years, heartily endorse it as the only good and reliable trap in the market.

Dr. C. O. Dean,
126 Kearny St., S. F.

Many of the leading architects of the city specify these traps to the exclusion of every other make. The Oakland Board of Health give it a strong recommendation.

Remember, the "Garland Trap" is warranted as a perfect preventive of sewer gas.

Gem Cottage No. 1.

THE accompanying illustrations represent the first of a series of cottages designed to meet the increasing popular demand for "Artistic homes" at a moderate outlay of capital.

It shall be my aim in these studies, while keeping in mind the chief *desideratum* sought after by that class of readers of the ARCHITECT whom I seek to aid in the perplexing problem of rearing tasteful homes at a minimum cost, to not lose sight of the fact that with the proper application of those scientific principles upon which rests the art of architecture, viz: strength, utility and beauty, there may be combined a structure both practical inexpensive and graceful in appearance. The manifest appreciation of good design by the great mass of people is both a recognized and gratifying fact among the architectural profession, and no where is their tact and ingenuity more taxed than in the production of a moderate priced dwelling combining all the requisites which their esthetic tastes would dictate.

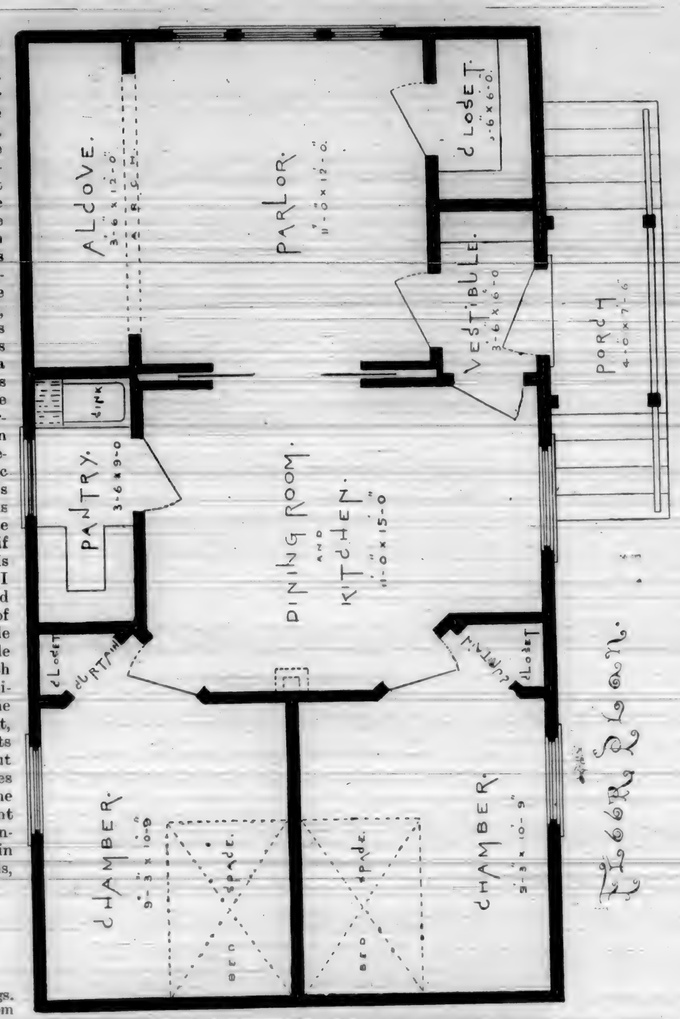
The country is flooded with cheap so-called architectural publications, whose pages are filled with gaudily colored chromoes purporting to be the "Beau Ideal" of architectural loveliness, while combining solid practical construction, but a close scrutiny of general arrangements and proposed manner of construction combined with a very "brief study" of that mysterious "edict," the "specification," from which no deviation must be made to accomplish the "grand whole," cause from over the face of a legitimate limb of the profession a deep blush combined with a smile of pity and derision.

The Gem Cottage No. 1 is designed for a one-story structure to be erected on a narrow city or village lot, being but twenty feet in width, exclusive of veranda. The entrance is placed in its present position that access to the interior may be direct with as little consumption of room as possible. The door is of liberal size with the upper panel glazed with some neat pattern of figured glass to give light to the vestibule, also over which is placed a transom for ventilation. Entrance may be had from the vestibule into both parlor and living room with ample space provided for a hat rack. The parlor is furnished with an abundance of light and ventilation from the triplet window, over which is a designed transom to be in ornamental glass of tasteful pattern and which may be hung to open if so desired.

The alcove may be very prettily draped, wherein may be located the piano or if needful a folding bed perchance the command to be "fruitful and multiply" has been strictly adhered to. If the family be small the folding doors can be pushed completely back and the opening tastefully draped with some inexpensive material which will add a feeling of grace and comfort not otherwise attainable. The main living room is of liberal size and well lighted from a large window, while over each single door in the building has been placed a transom for ventilation and to give symmetry to the whole. Instead of a brick chimney as shown, terra cotta may be substituted which will reduce cost and be quite as good, the same in either case resting on brackets thirty inches below ceiling line. The pantry is provided with ample light and with all necessary shelving under which can be arranged flour chest drawers, etc., as taste would dictate. The sink is located herein that it may be as much secluded from view as possible, however, in the most convenient position withal. The two chambers are each provided with a closet and for the door is substituted drapery, which both economizes space and lends a tasteful appearance. In regard to construction if erected in a cold climate, would advise first to sheath the exterior with

matched material over which place a good quantity of felt paper covering same with first quality lap siding, the bill of quantities however, include only drop siding or more commonly designated "rustic," the usual material employed in California for that purpose. The floor is to be double the first, being of surfaced parallel material, over which lay one of first quality, soft pine, as the rooms will be presumably all carpeted and tacks may be much more easily removed from such material than from the customary pines used for that purpose. I would suggest a layer of abestos paper between the floors, but not the common building paper, from the fact that it soon molds and rots from the water leaking through the cracks if often scrubbed. I would suggest a neat pilaster finish with corner blocks and plinths something after the East-lake style. In the matter of painting, particular good taste should be exercised in the selection of colors, as a vast deal depends on harmony in procuring an artistic and pleasing effect in a building of this character, and three shades with judicious handling could be used to good purpose on the exterior, not forgetting the roof if it be only in the line of economy, as it is a great protection to the shingles. I would suggest that the interior be finished with hard oil in natural wood, be it of proper quality, as it is the most durable finish and may be cleaned with little trouble and will usually harmonize with almost any interior decoration or furniture. In the quality of material, the adage that the best is always the cheapest, is particularly true in reference to paints and oils, as the difference in cost is but slight. The appended bill of quantities will be found ample to complete the building properly, and from the present price of material and labor in San Francisco, this cottage can be completed in first-class style, using only good materials, for not to exceed $1,000.

A. W. PUTNAM.



Bill of Materials.

16 feet of chimney, 4x12 inch flue.
22 8 inch brick piers with 16-inch footings.
40 2x8 inch joist, 20 feet long, also from which will be formed sills.
148 2x4 inch studding, 14 feet long, for exterior and wall plates.
100 2x4 inch studding, 12 feet long, for interior.
30 2x4 inch studding, 24 feet long, for ceiling joist.
36 2x4 inch studding, 16 feet long, for rafters.
1,200 feet of rough lumber for roof boarding.
12,000 shingles. 750 feet surfaced lumber for 1st floor.
900 feet matched flooring.
310 feet beaded ceiling. 1,800 feet rustic.
150 feet lineal 4½ inch crown moulding.
150 feet lineal 4x⅞ inch facia. 150 feet lineal, 2-inch bed moulding.
30 feet lineal, 2½ inch ridge roll.
250 ⅞x12 inch dressed lumber for cornice.
100 feet lineal, ⅞x5 inches, for corner boards.
155 feet lineal, 1¼x8 inches, dressed for water table and door casing.
175 feet lineal, ⅞x5 inches, dressed for lower base and ridge boards.
2 chamfered posts, 4x4 inches, 10 feet long for veranda.
2 chamfered ½ posts, 10 feet long for veranda.
50 feet, 1¼x12 inches, for versnda treads.
35 feet, ⅞x7 inches, for veranda risers.
100 feet lumber for gable and veranda finish.
150 feet lumber for pantry and closet shelving, drawers, etc.
3 window frames, 2 feet 9½ inches by 7 feet 1 inch.
1 window frame, 3 feet 4 inches by 7 feet 1 inch.
1 mullion window frame, 7 feet by 8 feet 5 inches.
280 feet of dressed lumber for above frames.
1 exterior door frame, 2 feet 10 inches by 7 feet, 20-inch transom.
6 interior door frames, 2 feet 8 inches by 7 feet, 16-inch transom.
1 interior sliding door frame, 5 feet 6 inches by 9 feet.
210 feet 1⅛ inch material for above frames.
1 exterior door, 2 feet 10 inches by 7 feet, 1¾ inch, upper panel glazed.
6 interior doors 2 feet 8 inches by 7 feet, 1⅜ inch.
1 pair sliding doors, 2 feet 9 inches by 9 feet, 1¾ inch, all above 6 panels P. G
6 interior transoms, glazed, 21 oz glass, 16x32 inches.
1 exterior transom, glazed, 21 oz glass, 20x34 inches.
3 pairs sash, 1¾ inches, glazed, 21 oz glass, 2 feet 9⅝ inches, by 7 feet 1 inch.
1 pair sash, 1¾ inches, glazed, 21 oz glass, 3 feet 4 inches by 7 feet 1 inch.
1 pair sash, 1¾ inches, glazed, 21 oz glass, 3 feet 4 inches by 6 feet 5 inches.
2 pairs sash, 1¾ inches, glazed, 21 oz glass, 1 foot 2 inches by 6 feet 5 inches.
2 mullion transom sash, glazed, with ornamental glass, 1 foot 2 inches by 1 foot 8 inches.
1 mullion transom sash, glazed, with ornamental glass, 1 foot 8 inches by 3 feet 4 inches.
614 feet readed casing, ⅞x6 inches.
255 feet 10 inch moulded base.
255 feet lineal, quarter round at base.
10 feet seasoned oak for threshold exterior door and drip board capping sink.
54 corner blocks. 42 plinth blocks.
7 pairs Hill's sliding blinds, four fold.
1 enameled steel sink, 16x24 inches. 95 fat shingle gutter.
32 sheets 4-lb sheet lead for capping windows and flashing chimney.
450 lbs nails.
1 mortice lock, night lock attachment exterior door.
6 mortice locks.
7 pair 4½ inch loose pin butts.
Trimmings for sliding doors, flush finger pulls, lock, etc.
1 set Ives' sliding door hangers. 7 pair transom centers.
7 sets Woolensack transom lifts. 7 sash locks, Ives' patent.
14 flush sash lifts. 28 sash weights.
175 feet Silver Lake sash cord.
7 rubber tipped door stops. 2½ dozen coat hooks.
1 spring catch for sink door. 8 flush drawer pulls.
355 yards exterior painting, 445 yards plastering.

Practical Plane and Solid Geometry.

II.

BY ARTHUR SEYMOUR JENNINGS.

Written especially for the California Architect and Building News.

(Copyright.)

THE Sector.—This is an instrument, which although familiar in appearance, is not generally valued for practical use. The general form of the instrument is shown in figure (1) and consists essentially of a rule having marked upon it a number of scales radiating to a common centre. These lines have their uses in the solution of various problems relating to trigonometry. The ordinary draftsman, however, will only have occasion to use two of them, namely those marked respectfully (L) and (POL). The line marked (L) is called the line of lines and is used to determine the length of the fourth proportional to three given lines. The manner in which this is done will be understood on reference to figure (1) which represents the sector having marked upon it the two lines in question. The

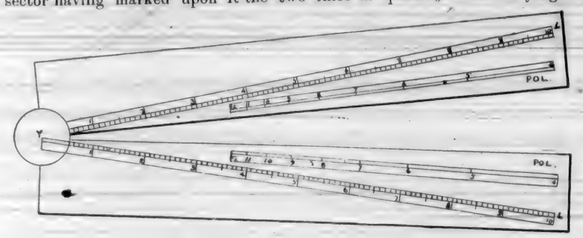


Fig. 1. The Sector.

length of the first line which we will call A is taken in a pair of dividers, and the sector is opened so that the distance from points marked LL is exactly equal to this distance. Now, without altering the sector take the length of the second line (B) in the dividers and measure across from one line to another finding the exact length from any figure on one leg to the same figure on the other. Suppose this to occur at the figure 7. The legs of the

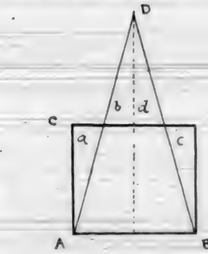


Fig. 4. Srosceles Triangle and Rectangle of Equal Area.

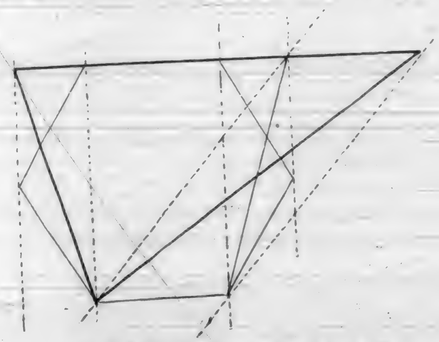


Fig. 3. Hexagon and Triangle of Equal Area.

sector are now altered until the distance between the points LL is equal to the length of the third lines (C). The fourth proportional required is ascertained in the case given by measuring from figures 7 to 7 under the new position of the instrument.

Perhaps a more useful purpose of the sector is in the construction of polygons which were referred to in our last paper. When the circumscribing circle is given the sector is opened until the distance upon the line marked (POL) from the figure 10 to 10 exactly equals the radius and the length of the side of polygon is found by measuring from any figure on one leg to the corresponding figure on the other. The figure must, in every case, correspond with the number of sides in the required polygon. To illustrate the use in this case the octagon in the last paper was drawn, and it will be found that when the distance on the sector from the points 10 to C is equal to the radius of the circumscribed circle, that the length of the line AB is precisely the same as the distance between the points marked 8 and 8 on the sector.

The student having mastered the use of this instrument will do well to learn the solution of problems relating to the construction of triangles and regular polygons from given data.

Areas of Plane Figures.—There are few more important problems in practical geometry than those relating to the areas of plane figures, for not only are they of much service in the carrying out of ordinary work, but upon them depends to a great

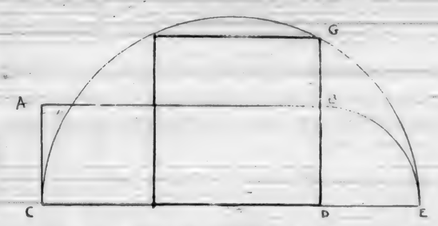


Fig. 7. Square and Rectangle of Equal Area.

extent the solution of many problems of particular interest. We will first consider the construction of different geometrical figures of equal area, thus, for example to make a triangle equal in area to a polygon or a square, to a given rectangle or rhomboid. The outline ABCD figure (2) represents a certain area and it is desired to find a triangle of equal area. By area, of course, is meant superfices, that is so many square inches or feet. The student may appreciate the qualities of area by supposing that the lines ABCD shown in figure (2) confine a number of small shot which are placed within them in such a way that, although they completely cover the area, no one shot rests upon another. It will be seen that if we change the form of the figure and get as a result an equal covering of the space confined by the shot, that the area will be the same. Our immediate object now is to find a triangle of equal area to the outline ABCD. This problem depends for its solution upon the 35th and 36th propositions of Euclid, book (I) which say that parallelograms and triangles upon the same or equal bases and between the same parallels are equal in area. If we draw a line through DB in figure (2) shown dotted, it will cut off from the main outline, the triangle ABD. Now, by the proposition just given, any triangle upon the base BD and between the same parallels will be of equal area. We therefore draw a line through A parallel to BD and extend the line DC to E, drawing a second line back to B which gives us the triangle EBC, equal in area to the four-sided figure ABCD.

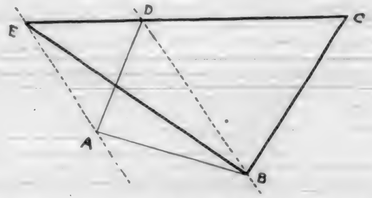


Fig. 2. Reduction of Four-sided Figure to Triangle.

That the areas are equal is proven by the fact that the triangle EBD is equal to the triangle ABD.

We have dwelt upon the solution of this particular problem, not so much because it is very difficult in the case before us, so much as because it is necessary in working out a large number of other problems. By it any figure bounded by right lines may be reduced to a triangle of equal area, and the method is exactly the same as that described, excepting that triangles are cut off

piece by piece, until the outline is reduced to its required form. Figure (3) shows a hexagon, represented in thin lines, reduced to the triangle represented in thick lines by means of the parallels shown dotted.

Having obtained a triangle equal in area to any given figure, we now go a step further and find a rectangle equal to a triangle. This is simple. A line is raised at each end of the base of the triangle and line drawn parallel to the base through a point exactly half way up the perpendicular height of the triangle. The application of this solution is shown in figeres 4, 5 and 6, as applied to isosceles, scalene and a right angle triangle respectively. Referring to figure (4) it will be plain that the rectangle ABCD is equal to the triangle EBD because the triangular space a is equal to b and c is equal to d.

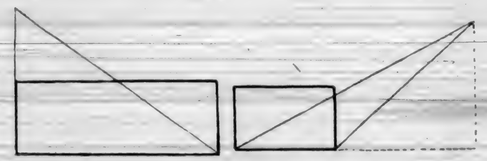


Fig. 6. Rightangle Triangle and Rectangle.

Fig. 5. Scalene Triangle and Rectangle.

To obtain a square equal in area to a rectangle, we proceed as follows.—Draw a rectangle as that shown in figure (7) marked ABCD. Extend the line CD indefinitely. With centre D radius DB describe an acre cutting this line in E. Now bisect the line CE in the point F, and with radius FE describe a semicircle: Extend the line DB until it reaches the arc at G when GD will be one side of the square, equal in area to the rectangle ABCD, and the construction of a square is, of course, simple. We have now shown how any figure bounded by right lines may be reduced in form, first to a triangle, then to a rectangle and then to a square of equal area. In our next paper we will give further problems on this interesting branch of practical geometry.

(To be continued.)

Building in the City of Mexico.

A PAPER was recently read on this subject, before the Washington Chapter of American Institute of Architects, from which we make these interesting extracts:

Picturesque effects in architectural compositions are not much appreciated in so absorbingly picturesque a country as Mexico. Though the ornamentation often partakes of the *bizarre*, the general dispositions in the city work accentuate repose and harmony, and despise little tricks for producing sensational effects.

The building stones of Mexico City, the art, industrial and commercial center of the republic, are of trachytic origin, *i. e.* species of lava composed of vitrious feldspar in the body. All these materials have very little transverse strength, and are mostly used in short pieces. An ordinary window-sill is composed of two or three pieces, and all lintels are formed of straight arches.

The bricks or "ladrillos" are 12x6x4 inches and cost about eighteen dollars per thousand. For whole walls they are very rarely used; face bricks are not seen, and the characteristic brick-architecture does not exist.

Not much is to be said of the wood-work in the better class of houses in Mexico. There is plenty of lumber in the country, but it grows in lumber belts, difficult of access and hundreds of miles distant from each other. Cheap means of communication are not developed, since the entire table-land is deficient in navigable rivers or canals. Even the Rio Grande is navigable for not more than one hundred miles up the coast, and so are the comparatively few other rivers.

The floors of the buildings are laid similar to ours; their roofs are flat, and constructed by counter-ceiling or sheathing the rafters. On the boards a compacted layer of stiff clay, about seven inches thick, is put, and upon this bricks are laid in, and grouted with mortar. The brick pavement is banked up slanting against the side walls, so as to form easily a water-tight joint. This mode of construction would not prove water-tight in cases where the rafters are partly supported by interior partitions of wood, which shrink, compress and hence result in fissures and cracks, such as destroy the rigidity of the heavy covering materials.

In the huge bull-rings and similar structures, sound and strong construction lumber is observed; but whilst ebony, rosewood, mahogany, cedar and ironwood (*lignum vitae*) are important staples for export from the lower country along the coast, a medium class of lumber for interior finish in buildings is evidently scarce. The heavy, molded and carved entrance doors of first-class buildings show very inferior material. Hardwood finish is very rarely applied; fine yellow pine and hard-wood partitions in stores are even imported from New Orleans. In the old houses, including even the National palaces, only the side walls are plastered; for even all flat ceilings muslin is tightly stretched under the floor-joists and carefully decorated, so as not to betray its flimsy origin. This is most likely a tradition which has out-lived the adobe house, with its clay roof, which was liable to leak if not frequently inspected. The arched ceilings of the churches, of course, were always plastered, and in costlier modern houses plastered ceilings are seen also.

Our general contractors are not known in Mexico. There is a class of men called masters. Whoever has any work to do engages the services of a master, and on Saturday he hands to the owner a pay-roll of the mechanics and laborers, bills for material bought, etc., for settlement.

In enterprises of more importance architects are engaged who then employ the master and become responsible for him and his doings.

Those members of our trades-unions who are jealous of our work performed by machinery could, with profit to themselves, observe the workings of a system and country where machines do but exceptionally compete with handwork, and note rates of wages obtained under such circumstances in Mexico City.

Foreman of masons gets $1.25 for a day of nine hours, and works along with his gang.

Stonemasons or bricklayers get 75 cents for a day of nine hours.

Hod-carriers get 44 cents for a day of nine hours.

Laborers get 31 to 37 cents for a day of nine hours.

These wages are paid in silver coin, of which a dollar, or "peso" is worth about 75 cents of our coin, which is based upon a gold standard.

Little activity prevails at present in the erection of new public buildings, since there is still a liberal supply of abandoned deserted and confiscated convents, which are reconstructed for secular purposes, a process in the course of which many odd features have to be improvised from sheer necessity.

The Royal Sliding Door Hanger.

The "Royal," illustrated in this issue, is a new Sliding Door Hanger, just introduced in the market by E. C. Stearns & Co., Syracuse, N. Y. This novel device for hanging doors properly belongs to the class of anti-fraction or rider bar hangers.

Pertaining to the "Royal" are these especially commendable features: The wheels have no flanges which would cut and wear the wood track, but are made with a broad flat face. The axles and rider bar are constructed of round steel. The pins whereon the hanger slides, which permit perpendicular adjustment, are of flat steel, allowing a reduction in width of a casing to a minimum. It is secured by screws to the top edge of the door, which dispenses with any cutting or fitting in order to accommodate the adjusting screw.

The addition of the new "Royal" to the extensive line of hangers hitherto offered by E. C. Stearns & Co. gives a completeness to their variety, which, always being in stock, must prove equal to any and every demand of the trade.

A MODEL FIRE ENGINE HOUSE.

We give in this issue perspective and floor plans of a fire engine house designed by Chas. E. Leeds & Co., architects, of New York City.

It is adapted for many of the small towns and villages throughout the country, and will be found suitable for an engine, hook and ladder, hose or chemical company. The beauty and appropriateness of the design we feel will be appreciated at once by our readers and be adopted as the model fire engine house, for it seems to us that when the cost for building such a structure as shown is taken into consideration, it will be a very difficult matter to design so handsome and complete a building for the purpose intended without increasing the cost very much more than the figures estimated by the architect for the design in question.

The design as shown is for a building 20 feet in width by 40 feet in depth, two stories in height, ground excavated under entire building. The dimensions as given may of course be varied materially to suit individual wants. For instance, there may be a demand for a building to accommodate a hook and ladder truck, the sitting room on first floor in this case could be dispensed with without in any manner affecting any of the other general arrangements. Again, if it was desired to afford accommodations for hook and ladder and engine side by side, the additional width can readily be secured without disturbing any other feature. In some cases the upper floor may have to be left unfinished or it may be necessary to devote the entire floor to sleeping accommodations. The library in that case being used as the officers' quarters, and has a desk and one of the new "America" Mantel Folding Beds; or again, where a steam fire engine is used it may be deemed advisable to devote the rear portion of the first floor to stable purposes. A variety of instances for individual uses will undoubtedly present themselves to our readers, and we might say here that the architects would be glad to correspond with any parties seriously considering the erection of a fire building, and will be pleased to give further information when desired.

When the engine house is to be used for a steam fire engine and it is desired to keep the water hot in the boiler of the engine, the Silsby Combined Engine House and Fire Engine Heater is to be used—with this apparatus the water can be kept hot in the boiler and the house also heated by means of steam heat. There is but one fire to be looked after and it can be placed on the same floor with the engine or in the cellar if preferred. It is automatic in every respect, and any desired pressure can be maintained in the engine boiler, from boiling point up to twenty-five pounds of steam.

The general arrangement as given below has been carefully studied, and the result we can say is a great success. On the first floor is the apparatus room having closets, desk and two wash basins, and in the rear of it a sitting or meeting room connected by sliding doors, cut glass panels with representations of emblems of the fire department. Sitting room to have one of Fuller & Warren Co.'s "Splendid" fire-place heaters connected with registers in the library and parlor. Dumb waiter on this floor to be 4x2, and of Tilman's Anti-Friction pattern.

For houses built in places where a fire alarm telegraph is in use a switch-board is supplied and placed over the desk in the engine room and connected with the electrical apparatus on said board by a Standard underground cable, same as used in the cities of New York, Philadelphia and Washington. Over the desk in this room is placed an Edson Pressure Recording Guage connected with the street water mains.

In front of the building is the hose drying tower, entered by a door from the street, making it unnecessary to drag the wet and dirty hose into the engine house—the hose being raised to the top of the tower by firemen standing in the street. In addition to the large double doors in front is a small door connecting with vestibule, from which there is an entrance to the apparatus room and also to the second story.

The second story consists of a parlor or billiard room, library and bath room, all well lighted. Bath room to be fitted with bath tub. Water closet to be McShane's "Royal" closet with cherry seat and copper lined tank complete. The water closet on first floor to be McShane's "Gem" closet complete with ash paneled copper lined tank. Drainage to consist of a 4 inch drainage system screwed together complete in place, as manufactured by the Durham House Drainage Company of New York. The wrought iron drain to be run four feet outside foundation wall.

Extending above the roof is a bell-tower so arranged as to give out the full tone of the bell when struck. The balcony in front with gable finish above crowned by a flag staff add much to the handsome appearance of the front.

The basement has a kitchen and workshop in the rear and a cellar in front. Kitchen to have a Fuller & Warren Co.'s No. 85 Diamond Range. Two McShane's No. 6 Crown Laundry Tubs, ash top, with painted iron standards and front strips. Workshop to have one of Gunn's tool cabinet work benches made by the Miller's Falls Company.

Chimney to be built as shown, all joints to be well filled. Parts exposed to view to be faced with selected hard brick, chimney to be capped with blue stone in one piece with flue openings cut out.

All timber to be of good sound spruce, first and second tier of floor beams to be 3x8, placed 16 inches from centers. Rafters 2x6, placed 12 inch on centers; sills, posts, plates and ties 4x7; door and window studs of hemlock 3x4; door studs to be doubled; all partitions throughout to be 2x4 hemlock 16 inches on centers. Both tiers of floor beams to be well bridged.

The outside studding after covering with double ply "Sanitary Parchment" to be finished with Northrop & Co.'s sheet iron siding applied direct to studding; inside of wall to be filled with Terra Cotta Lumber, all partitions to be same material covered with Straw Lumber, joints to be covered with 2-inch moulding. All ceilings to be of Northrop & Co.'s sheet iron, as shown and according to details; roof to be covered with Northrop & Co.'s sheet iron roofing.

Floors throughout to be laid with first quality 1 1-8 inch thick mill worked white pine floor plank, not to exceed over 5 inches wide with close joints.

Interior door and window architraves to be 5 inches wide of moulded plaster finish with base and corner blocks. All interior doors to have Hermacite door knobs and escrutcheons.

All windows to trim to floor with moulded panel backs under sills. All windows to be fitted with Willer's sliding blinds of the latest pattern with bronze hardware. Sashes to be operated with Pullman sash balances instead of weights and to be secured by the Timby burglar proof fasteners. Sashes throughout to be 2 inches thick; glass throughout to be first quality American sheet glass. Halls on first and second stories, and library and parlor to be wainscoted with "Lincrusta Walton" as shown and according to details.

Exterior to be painted with H. W. John's Liquid Paint. Interior with H. W. John's Abestos Fire Proof Paint.

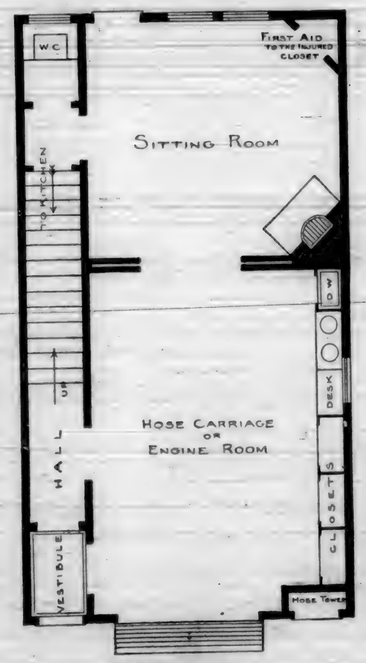
All doors to be double faced, outside double doors to be 2½ inches thick; all others 1½ inch thick; outside double doors to be provided with "Garden City" engine house spring hinges, especially constructed for throwing the doors open.

All doors to have heavy mortise locks of Niles' patent. Sliding doors to be hung on Warner's hangers. Closets to be supplied with Jayne & Crosby's new departure wardrobe hooks.

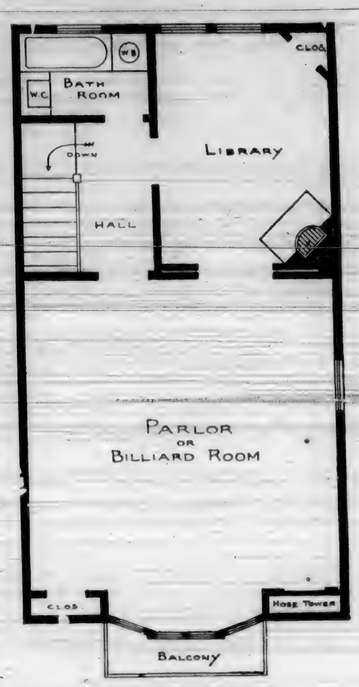
Stairs from first to second floors, with 1¼ stringers and treads, and ⅞ risers, treads to be of yellow pine; stairs to have 3x4 hand rail and 2-inch turn ballusters, all to be of nicely grained ash.

In front of the building, to be used when the large double doors are open, is provided a Bostwick folding gate.

Bell tower to have one of Miller's steel amalgam bells, No. 8, 710 pounds, with tolling attachment and rigged so that it can be rung from the inside of house or from the street.



PLAN OF FIRST FLOOR.



PLAN OF SECOND FLOOR.

Gas fixtures in most prominent places and where mostly used to have the Matchless gas burners, and to be connected with the front door so as to be automatically lighted on opening the same. Mantels in sitting room and library to be E. J. Johnson's emblematical slate mantels.

By the use of the iron sidings, ceiling and roofing and Terra Cotta Lumber in side walls and partitions, a building can be constructed that will not be as liable to take fire from outside sources as the ordinary brick or frame building.

Building complete as shown will cost about two thousand dollars—if without tower two hundred dollars less, and if of only one story about one thousand dollars.

[N. B. These prices are those for which the building can be erected in New York City. They are not applicable to San Francisco. Cost here would be about double those given.

Ed. Architect.]

The Lumbermen of the United States.

In the *Northwestern Lumberman* of October 20th appears a list of those engaged in the manufacture or handling of lumber in the states of Kentucky and West Virginia. The list includes owners and operators of saw, shingle, stave and heading, and planing mills, sash and door factories and box factories; also the names of all wholesale, retail and commission dealers in lumber, timber and logs. By a convenient system of reference marks the above classification is indicated; and also in case of mills and factories the approximate daily capacity, the power used and whether or not dry kiln and logging railways are employed. The *Lumberman*, which is published at Chicago, promises to continue the publication of these valuable lists in regular issues of the paper until inside of a year the round of the United States shall be made. This is a bold and costly undertaking and should be appreciated by all interested in any way in the lumber industry of the country.

In next issue we will present No 2 of the series of Gem Cottages These unique designs are prepared especially for this journal and it is our intention to copyright the same.

ART, AND THE NEW BUILDING ERA.

THE recent material fall in the price of lumber is giving a fresh impulse to building. In the suburban districts and in the country generally wood will be employed in the construction of dwellings and other edifices for a long time to come. It will hold the first place in this respect, because it is a cheaper and more satisfactory material. Nine-tenths of those who build are not concerned so much about permanence as about an immediate improvement. The material can be put upon the ground quickly. The carpenters run up the frame and cover it; the planing-mill men cut out the window and door-frames and the "ornamental" work. The masons make a short job of the foundations, chimneys and such plastering as is required. The man, under pressure, has a house built for him in from sixty to ninety days. He is pleased with this rapidity of execution. In a single week the frame of a house will be set up and covered. If the average citizen in town or country wants a house at all, he wants it very much. He will frequently pay a premium for rapid construction. He may not get the best results. But the immediate want is met and that generally takes the precedence of all considerations of permanence.

Structures less than twenty years old are frequently moved on to cheaper lots in the suburbs. They have had their day, or, rather, have served the temporary purpose of the original owner. The house which fills the blank will be more elaborate. But some day, if it is not burned, the same fate may overtake it. This is one of the few countries of the world where dwellings may be seen every month in this process of transition. The old anti-Revolutionary houses of the Eastern States could not be moved. They had immense oak frames and were anchored with great stone chimneys on foundations planted in the cellars. But in these days, houses travel along some of the streets with chimneys upright and with hardly a fracture of the stuccoed walls.

A better art has been applied to the construction of modern wooden houses. This is especially noted in suburban districts. At points where the lines of the city become obscure and the country begins, rural taste has been applied to house construction. If it is not always the best, it is a great improvement over the dreary box-like structures which for a time prevailed. Just now the tendency is to push the picturesque in suburban construction to extremes. The tameness of uniformity is well broken up. Something of dignity and repose are sacrificed in the numerous angles, gables, facades, porticos and trimmings. There are "fads" in picturesque construction and painting. A few years ago nearly all the new suburban houses in some districts went into half mourning—that is, they were painted in sombre lead color, in which lamp black or some kindred pigment had the first place. This tone suggested grief, sorrow, disappointment, clouds charged with the coming storm. It went out of favor because it was never supported by the canons of good taste. A soft cream color had preceded the half mourning. It harmonized well with the clays found everywhere, and with the creamy tones of much of the sandstone which was being uncovered in many parts of the State. Then came a season of terra cotta reds and pink browns.

"John," said a Quaker to his son, who was sporting a flamingo vest, "what is the color of that waistcoat thou hast on?" "That," said young hopeful, "is a kind of fiery drab." Some of the colors now applied externally to suburban dwellings range from dull terra cotta to "fiery drab." The last extreme is not good. A house should not suggest a volcano or the danger of a sudden burst of flame. Violent or inflammatory colors never suggest repose. There has been one positive gain in art applied to house construction in this; paint applied to interiors has been very much restricted. In many houses of recent construction, not one-eighth of the interior has been touched with a paint-brush. The tones of native woods are superior to anything which can be done in pigments.

But the most striking evidence of the new building era is seen in the stone fronts now given to some of the most costly buildings in the city. Enough has been accomplished in this direction to make it certain that stone is hereafter to be used for such purposes in this city very extensively. These creamy sand-stones abound in many places within fifty to seventy-five miles of the city. The material is easily cut out and worked into all the shapes required by the architect. These sand-stones shade off into rich browns and drabs. There is enough of this material within reasonable distance to build a large city—more than will be required for all building purposes during the next half century. The granite is a little more remote. But it goes well with the new era of construction that there has recently been discovered an unlimited wealth of the best material which has ever entered into the construction of modern cities.

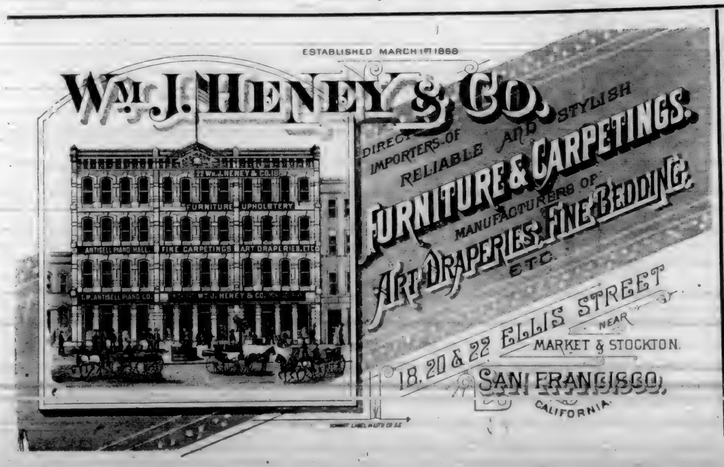
School House Ventilation.

One of the most difficult problems presented to the architect in the erection of school buildings, is the subject of ventilation. To prepare vents for the ingress of pure air and the egress of foul air without creating a draught, and causing an incessant coughing among the scholars, is a problem, the solution of which has caused much study. Happily, the system devised by Mr. P. Abrahamson of this city, remedies the difficulty mentioned. In the Kate and Fillmore streets public school—lately finished—his system has been given a perfect trial. The Board of Education, the architect, teachers, scholars, all are delighted with the successful results. In five other school buildings has the system been introduced and such is its success that the Masonic Halls in Woodland and Napa, the Orphan Asylum at San Rafael and many of our most prominent interior buildings are supplied with the ABRAHAMSON VENTILATOR, and one and all unite in praising its merits as the best known system of ventilation yet introduced.

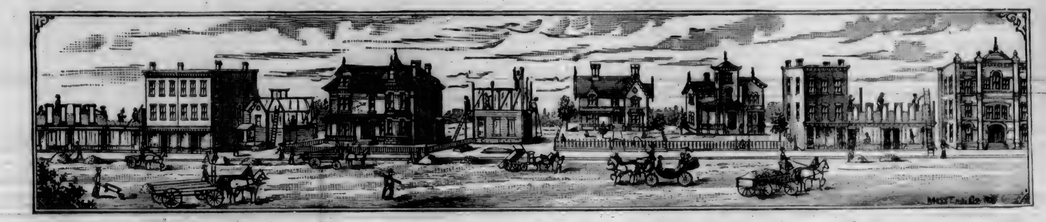
A Decision of Importance to Owners of Houses.

A few weeks ago Attorneys Nagle & Nagle brought suit in the Superior Court for Olive J. Wickes against Catharine Chenot to abate a water nuisance and to recover damages. Plaintiff is the owner of the house and lot 917 Valencia street, and the defendant owns a house and lot adjoining. The eaves of the latter house project some six inches over plantiff's land and the rain water therefrom was the nuisance complained of.

Judge Wallace filed a decree in the case to-day, ordering the defendant to abate the nuisance and to remove all projections over and upon plaintiff's premises. H. Eichoff, attorney for the defendant, pleaded the statute of limitations, because the action was not sooner brought. Judge Wallace held that the statute of limitations did not apply, for the reason that plaintiff is entitled to undisturbed possession of her property. The defendant was further perpetually enjoined from constructing a roof, gutter, eaves, trough or other projections over or upon plaintiff's land, and to construct her house so that rain water will not flow from the roof upon plaintiff's land.



Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50



CITY BUILDING NEWS.

There is no Paper or Journal on the Pacific Coast that pretends to give a Full Report of Building News, *except the*

CALIFORNIA

Architect and Building News.

Army Avenue near Dolores, six one-story frame. Owner and builder, J. C. Weir; cost, $12,000.

Beaver near Noe, two story frame. Owner, F. D. Bouvard; contractor, Hyde; cost, $4,500.

Beaver near Noe, two-story frame. Owner, A. H. Flood; days' work; cost, $5,500.

Baker near Haight, additions. Owner, Mrs. Von Noble; contractor, E. Watts; cost, $1,500.

Capp near 25th, two two-story frame; cost, $4,500.

Capp near 21st, two-story frame. Owner, J. W. Salter; architect, H. Geilfus; contractor, F. Klatt; cost, $3,225; signed, Nov. 1; filed, Nov. 3; limit, 80 days.

Payment, framed, $483; partitioned, $483; brown coat, $483; inside finished, $483; completed, $483; balance, $810, 35 days.

Collingwood near 19th, one-story frame. Owner, Bateman; cost, $1,700.

California, between Laguna and Octavia, two-story frame. Owner, W. E. Brown; contractor, Knight & Littlefield; architect, J. C. Matthews & Co.; cost, $7,994; signed, October 8, 1888; filed, October 11, 1888; limit, February 15, 1889.

1st: 75 per cent. as work progresses; 2d, usual 35 days, balance.

Clay, between Webster and Buchanan, two two-story frame. Owner and builder, Chas. Hinkle; cost, $12,000.

Clay, No. 1213, additions. Cost, $1,000.

Devisdaero and Sutter, two-story frame. Owner, A. Kopankiewig; architect, H. Geilfuss; contractor, Jno. Bruce; cost, $2,228; limit, 65 days; signed, Oct. 12, 1888; filed Oct. 15, 1888.

1st payment, partitions set, $415; 2d, yard work done, $415; 3d, inside finish on, $425; 4th, completed, $425; 5th, usual 35 days, $558.

E. Scott, st. building. Owner, D. Saunderson; architect, R. K. Daley; contractors, Martin & Maguire; cost, $3,450; limit, Jan. 18, 1889; signed, Oct. 15, 1888; filed, Oct. 16, 1888; sureties, J. W. Weason.

1st payment, sheathing done, $862 50; 2d, brown coated, $550; 3d, completed, $862 50; 4th, usual 35 days, $862 50.

Ellis and Jones, painting. Owner, Mrs. A. C. Luhrs; architect, Pissis & Moore; contractor, Lynch & Armstrong; cost, $1,549; limit 130 days; signed, October 18th; filed, October 23d.

1st payment, half done, $600; 2d, completed, $549; 3d, usual 35 days, $400.

Ellis and Jones, plumbing etc. Owner, Mrs. A. E. Luhrs; architect, Pissis and Moore; contractor, Sweeney & Kearns; cost, $2,274; limit, 130 days; signed, October 18th; filed, October 23d.

1st payment, rough pipes in, $900; 2d, completed, $800; 3d, usual 35 days, $574.

Ellis and Jones, carpenter work for residence. Owner, Mrs. A. E. Luhrs; architect, Pissis & Moore; contractor, Moore Bros.; cost, $33,400; limit, 130 days; signed, October 18th; filed, October 23d; sureties, C. F. Holmes, F. Joost; bond, $8,000

1st payment, brick foundation, $4,000; 2d, framed, $5,000; 3d, first plaster on, $5,000; 4th, inside plastered, $5,000; 5th, ready to paint, $5,000; 6th, completed, $1,000; 7th, usual 35 days, $8,400.

Ellis, corner Devisadero, 1½-story additions; owner, Morse & Co.; cost, $800.

Elgin Park near Herrman, two-story frame. Owner, B. Joost; contractor, McCann & Riddell; cost, $4,500.

Fourteenth and Harrison streets, two-story frame. Owner, Henry Meyer; architect, Salfield & Kohlberg; contractor, Fuchs & Bucher; cost, $5,150; signed, October 5th; filed, October 13th; limit, 90 days; sureties, C. Rohrbacher and M. Schawb; amount of bond, $5,000.

1st payment, frame completed $1,500; 2d, when rough coat of mortar is on, $1,200; 3d, when completed, $1,300; 4th, balance usual 35 days, $1,150.

Folsom near Second, grading. Owner, Boyd & Davis; architect, J. M. Curtis; contractor, J. Kelso; cost, $15,500; signed, October 10th; filed, October 11th; limit, February 1st; sureties, John Daly and Abner Doble; amount of bond, $8,000.

1st payment, when half finished, one-fourth; 2d, when three-quarters finished, one-fourth; 3d, when completed, one-fourth; balance, usual 35 days.

Ful on, near Broderick, one-story frame. Owner and builder, J. Elliott; cost, $1,000.

Folsom, corner 26th, improvements. Contractor, J. Haaf; cost, $800.

Fourteenth near Sanchez; two-story frame, Owner, Hannah Maharan; architect, R. H. White; contractor, Rountree Bros.; cost, $4,500.

Fillmore near Pacific, additions. Owner, J. T. Trainer; architects, Percy & Hamilton; days' work; cost, $1,500.

Fulton between Webster and Fillmore, two-story frame. Owner, Mrs. J. F. O'Neil; architect, Thos. Welsh; contractor, C. Laherty; amount, $4,400; surety, Mrs. A. J. Hansen; filed, October 30th; signed, October 29th; limit, 100 days.

Payments: enclosed, $1,100; brown mortar on, $1,100; completed $1,100; $1,100 35 days.

Fourteenth and Sanchez, two-story frame. Owner, Hannah Maharan; architect, R. H. White; contractor, Rountree Bros.; cost, $4,300; limit, 90 days; signed October 24th, filed, October 25th; sureties, F. P. Latson, W. A. Meeker.

1st payment, roofed, $900; 2d, brown coated, $800; 3d, inside primed, $700; 4th, completed, $815; 5th usual 35 days, $1,085.

Fifteenth near Market, additions; cost, $600.

Fourteenth near Market, two-story frame; cost, $600.

Guerrero and Thirteenth, additions. Owner, Marie P. Comte; contractor, I. Wells; cost, $1,350; signed, October 9th; filed, October 11th; limit, November 20th.

1st payment, when roof is completed, $500; 2d, when building is completed, $350; 3d, usual 35 days, $500.

Golden Gate Ave. and Baker, two-story frame. Owner, L. G. Schord; architect, E. E. Henricksen; contractor Moore Bros. cost, $3,700; signed, October 5th, filed, October 11th; limit 70 days; securities, J. W. Fountain, F. Joost; amount of bond, $3,700.

1st payment, roofed, $694; 2d, outside finish on, $694; 3d, sashes hung, $694; 4th, trimmings on, $694; 5th, usual 35 days, $924.

Guerrero, between 17th and 18th, building. Owner, Thos. McNulty; architect, M. J. Welsh; contractors Veitch & McDonald; cost, $4,200; limit 80 days; signed, Oct. 23d; filed, October 25th; sureties, Smith & Kelly, Hare & Co., bond, $4,000.

1st payment, framed, $1,000; 2d, brown coated, $1,000; 3d, completed, $1,000; 4th, usual 35 days, $1,200.

Grand Hotel, artificial stone tiles. Owner, Estate of Wm. Sharon; contractor, P. H. Jackson & Co., $5,341; signed, August 28th; filed, October 22d.

Payment: 75 per cent. as work progresses balance, usual 35 days.

Guerrero, between 17th and 18th, two-story frame. Owner, Thomas McNulty; architect, M. J. Welsh; contractor, Veitch & McDonald; cost, $4,500.

Hickory Avenue and Webster street, two-story frame. Architect, J. T. Kidd; contractor, Kincaid & Thompson; cost, $4,000; limit, 130 days; signed, October 12th; filed, October 16th; sureties, J. F. Kennedy.

1st payment, framed, $750; 2d, ready to plaster, $750; 3d, sashes glazed, $750; 4th, completed, $750; 5th, usual 35 days, $1,000.

Henry, near Castro, one-story frame. Owner, W. White; cost, $1,500.

Hayes near Webster, two-story frame; architect and builder, G. Knopf; cost, $3,500.

Harrison, between 4th and 5th; grading, stone work, etc. Owner, Chas. Harley; architect, Armitage; contractor, Jacob Haaf; cost, $2,375; signed, October 18th; filed, October 25th.

Payments: 75 per cent. as work progresses.

Howard and Washington avenue, painting. Owner, Gesellschaft Teutonia; architect, Geilfuss; contractor, John Quadt; cost, $1,100; limit, 15 days after carpenter work is done; signed, August 16th; filed, October 15th

1st payment, 75 per cent. as work progresses; 2d, balance, usual 35 days.

Howard and 10th, excavation and brick work, etc. Owner, Omnibus Cable Co., architects, Percy & Hamilton; contractor, Wilson Burden; cost, $14,500; limit, 60 days; signed, October 25th; filed, October 27th; sureties, C. A. Warren, Robert Mitchell. bond, $15,000.

Payments: 75 per cent on 1st each month as work progresses; balance, usual 35 days.

Howard between 24th and 25th, two-story and basement. Owner, James and Anne Renwick; architect, John Gash; contractor, Allen McDonald; cost, $3,850; limit, 90 days; signed, October 12th; filed, October 17th; sureties, F. P. Latson, M. O'Hare.

1st payment, boarded, $500; 2d, brown coated, $600; 3d, white coated, $500; 4th, wainscoted, $600; 5th, completed, $687.50; 6th, usual 35 days, $962.50.

Herrman and Elgin Park, four two-story frame. Owner, B. Joost; contractor, McCann & Riddell; cost, $18,000.

Jessie, between 18th and 19th, building. Owner, Wm. Kennedy; architect, M. J. Welsh; contractor, F. Nelson; cost, $1,500; signed, October 10th; filed, October 11th; limit, 65 days; sureties, Jno. Nelson and Wm. C. Hamerton.

1st payment, roofed, $300; 2d, first coat mortar on, $400; 3d, completed, $100; 4th, usual 35 days, $400.

Kearny and Geary, marble and tile work. Owner, M. H. De Young; architect, Burnham & Root; contractor, Wm. Black; cost, $21,700; limit, October 1, 1889; signed, October 24, 1888; filed, October 24, 1888.

Payments: 75 per cent. as work progresses; balance in usual 35 days.

Kearny and Geary, fire roofing. Owner, M. H. De Young; architect, Burnham & Root; contractor, Gladding, McBean & Co; cost, $36,500; limit, 60 days; signed, October 24; filed, October 24.

Payments: 75 per cent. as work progresses; balance, usual 35 days.

Kearny and Geary, plumbing, etc. Owner, M. H. De Young; architect, Burnham & Root; contractor, Duffy Bros; cost, $16,750; limit, 60 days after plastering; signed, October 24th; filed, October 24th.

Payments, 75 per cent. as work progresses on 27th of each month; balance, usual 35 days.

Kearny and Geary, mason work on granite building. Owner, M. H. De Young; architect, Burnham & Root; contractor, John McCarthy; cost, $55,000; limit, 180 days; signed, October 24th; filed, October 24th.

Payment: 75 per cent. as work progresses; balance, usual 35 days.

Kearny and Geary, terra cotta work. Owner, M. H. De Young; architect, Burnham & Root; contractor, Gladding, McBean & Co., cost, $10,500; limit, six days after mason done; signed, October 24; filed, October 24th.

Payments: 75 per cent as work progresses; balance, usual 35 days.

Kentucky, between Solano and Butte, building. Owner, Robert Day; architect, T. J. Welsh; contractor, C. E. Dunshee; cost, $1,500; limit, 45 days; signed, October 16th; filed, October 16th.

1st payment, brown coated, $550; 2d, completed, $550; 3d, usual 35 days, $440.

Liberty and Guerrero, two cottages. Owner, D. W. Parkhurst; architect, A. J. Barnett; contractor, Brennan Bros; amount, $9,100; signed, November 1; filed, Nov. 3d; sureties J. J. McKinnon, F. P. Latson; limit 100 days.

Payments: 75 per cent. as work progresses; balance 35 days.

Laidley and Bartlett, one story frame. Owner, Kate Drachbar; architect, G. H. Miller; contractor, H. Rohling: cost, $1575; signed, October 24th; filed, October 29th; sureties, J. J. McKinnon, F. Joost; limit. 60 days.

Payments. framed $375; brown mortar on, $350; complete, $450; balance, $400 usual 35 days.

Lloyd near Scott, one-story frame. Owner, Michael McGurk; cost, $1,000.

Lyon, corner Geary, one-story additions. Owner, Walsh; contractor, M. J. Eagan; cost, $3,000.

Lily Avenue near Gough, additions; cost, $1,500.

Larkin, between Fulton and Ash avenue; five-story stone and brick building. Owner, Alvinza Hayward; architects, Percy & Hamilton; masons, Richardson & Gale; carpenters, Gray & Stover: plumbers, Duffy Bros.; plasterer, Dunlop; cost, $150,000.

Market, corner 16th, additions to Trinity M. E. Church; cost, $1,000.

Main between Howard and Mission, brick building. Owner, Whyte & DeRome; architect, Pissis & Moore; contractor, E. R. Shain; amount, $12,520; signed, October 25th; filed, November 3d; sureties, J. G. Davis, F. Williams; limit, 80 days.

Payments: foundations in, $1,500; walls to 1st ceiling, $2,500; walls to roof trusses, $2,300; roofed and floored, $2,000; completed, $1,090; balance $3,130, 35 days.

Main and Howard, mason work for foundry. Contractor, J. Wagner; architect, Wm. F. Smith; owner, Marshutz & Cantrell; cost, $5,111; signed, October 15th; filed, October 20th.

Payments: three payments of $1,244; balance in usual 35 days.

Main and Howard, carpenter work. Owner, Marshutz & Cantrell; architect, Wm. F. Smith; contractor, F. W. Kern; cost, $4,530; limit, 60 days; signed, October 15th; filed, October 20th; surety. O. W. Nordwell.

Payments: two equal payments; 25 per cent on or before 35 days.

McAllister and Webster, alterations, etc. Owner, Peter Dean; architect, J. E. Wolfe; contractor, S. Buzzell; cost, $2,578; limit, December 22d; signed, October 15th; filed, October 18th; sureties, Jno. Tuttle; bond, $1,000.

1st payment, underpinned, $600; 2d, roofed, $400; 3d, brown coated, $500; 4th, completed, $433; 5th, usual 35 days, $645.

512 Pine, alterations to roof. Owner, Kong Chong Asssociation; contractor, R. Ringrose; cost, $460; signed, October 10th; filed, October 25th.

1st payment, materials delivered, $300; 2d, completed, $160.

Pine and Octavia streets, plumbing, etc., Owner, S. Wenban; contractor, R. Rice; architect, Pissis & Moore; cost, $2,095; signed, October 5th; filed, October, 11th; limit, 100 days.

1st payment, rough pipes in, $870; 2d, when completed, $700; 3d, usual 35 days, $525.

Pine and Octavia streets, painting. Owner, S. Wenban; contractor, Lynch & Armstrong; architect, Pissis & Moore; cost, $1,117; signed, October, 5th, 1888; filed, October 11th, 1888; limit, 100 days.

1st payment, half done, $400; 2d, completed, $430; 3d, usual, 35 days, $287.

Post near Baker, three one-story frame; Owner, Chris. Buckley; architect, A. Laver; contractor, J. J. Dunn; cost, $8,000.

Sutter, bet. Powell and Mason, barn. Owner, Abbie M. Parrott; architect, Pissis & Moore; contractor, Wm. Langstaff; cost, $5,750; limit, 70 days; signed, October 22d filed, October 26th; sureties, F. H. Rosenbaum; F. P. Latson

1st payment, brick foundation in, $1,000; 2d, framed $1000; 3d, brown coat $1000; 4th, ready to paint, $1000; 5th, completed $300; 6th, usual 35 days, $1,450.

Stevenson, bet. First and Second. Owner, Wm. Sharp; architect, Wm. F. Smith; contractor C. K. Worrell; cost, $5,899; limit, 70 days; signed, October 12th; filed, October 16th; sureties, B. M. and G. McBean.

3 equal payments, $1,474.50; balance on or before 35 days after date.

Sevenson, between First and Second, carpenter work. Owner, Wm. Sharp; architect, Wm. F. Smith; contractor, F. W. Kern; cost, $2,680; limit, 70 days; signed, October 12th; filed, October 16th; sureties O. W. Wordell.

1st payment, 1st floor joists, $1,000; 2d, completed, $1000; 3d, balance, usual 35 days.

Shotwell, between 17th and 18th, two-story frame. Owner, D. Nichols; architect and contractor, Geo. J. Doering; amount, $3,200; signed, October 20th; filed, October 30th.

Payments: framed, $700; roofed, $700; brown mortar on, $700; completed, $700; balance $400, usual 35 days.

Seventeenth between Howard and Mission, one-story frame. Owner, J. J. Cochran; architectand contractor, P. Lynch; amount, $1,747; signed, October 23; filed, November 2d; limit, 70 days.

Payments: one-fourth when framed; one-fourth brown coated; one-fourth completed; one-fourth, 35 days.

Sutter and Buchanan, two flats. Owner, Sarah Sherman; architect, J. H. Littlefield; contractor, Moore Bros; cost, $5,688; limit, March 10th, 1889; signed, October 26th; filed, October 29th; sureties, J. F. Kennedy, F. Joost.

Payments: 37 per cent. as work progresses; 63 per cent. on completion if no liens.

G. V. Daniels has painting contract on above; amount $474. Fritz & Kean has plumbing contract; amount, $678.

Schrader near Page, two two-story frame. Owner, M. Joost; contractor, Hinkle Bros; cost, $7,500.

Sanchez near 25th, two two-story frame. Owner and builder, F. C. Kleebauer; cost, $5,500.

Sanchez, corner 26th, additions; cost, $600.

Sanchez near 23d, additions; cost, $1,600.

Twenty-third and Castro streets, two-story frame. Owner, Hannah M. Roberts; architect, W. H. Armitage; contractor, Gray & Stover; cost, $3,400; signed, September 28th; filed, October 12th; limit, 90 days; sureties, J. Wagner and J. F. Kennedy; amount of bond, $3,000.

1st payment, framed, $850; 2d, brown coated, $850; 3d, completed, $850; 4th, usual 35 days, $850.

Twenty-fourth and Castro, one-story frame. Owner, Fannie S. Downing; architect, A. Klahn; contractor, August Klahn; cost, $2,890; limit, 90 days; signed, October 26th; filed, October 26th.

1st payment, framed, $950; 2d, brown coated, $950; 3d, completed and bills paid, $990.

Twenty-third and Chattanooga, one-story. Owner, J. M. Matthews and wife; architect, Chas. R. Wilson; contractor, John Wilson; cost, $2,792; limit, 75 days; signed, October 26th; filed, October 26th.

1st payment, framed, $698; 2d, brown coated, $698; 3d, completed, $698; 4th, usual 35 days, $698.

Twenty-second between Harrison and Alabama, building. Owner, Catharine McCoy; contractor, C. F. Cody; architect. M. J. Welsh; cost, $3,800; signed, October 8th; filed, October 11th; limit, 70 days; security, F. P. Latson.

1st payment, roofed, $950; 2d, first coat of mortar on, $950; 3d, completed, $950; 4th, usual 35 days, $950.

Union and Polk streets, one-story frame. Owner, D. C. Delaney; architect, B. E. Henricksen; contractor, Robt. Curry; cost, $1,630; signed, October 11th; filed, October 13th; limit, 60 days; sureties, F. L. Rosecrans & D. Dodge; amount of bond, $1,630.

1st payment, rustic on and roofed, $305; 2d, when rough coat is on, $305; 3d, sash hung, $305; 4th, trimmings on, $305; 5th, balance usual 35 days, $410.

Vallejo and Jones, three one-story frame. Owner, David P. Marshall; architect, Wooster; contractor, J. B. Gonyeau; amount, $7,920; surety, C. Hansen; signed October 24th; filed, November 1; limit, 90 days.

Payments: framed, $1,980; mortar on, $1,980; completed, $1,980; balance, $1,980 35 days.

Van Ness Ave. and McAllister streets, plastering. Owner, John de W. Allen; cost, $2,000; signed, October 8th, filed, October 11th; limit, 30 days.

1st payment, brown mortared, $800; 2d, when completed, $700; 3d, usual 35 days, $500.

Webster and Haight, building. Owner, A. N. Levy; architect, A. J. Barnett; contractor, Rountree Bros.; cost, $5,575; limit, 120 days; signed, October 16th, filed, October 20th; sureties, Thos Richardson, John Coot; bond; $3,000.

1st payment, roofed, $1,300; 2d, brown coated, $1,000; 3d, white coated, $700; 4th, completed, $1,175; 5th, usual 35 days, $1,400.

Washington and Webster, eight two-story frame. Owner and builder, Chas. Hinkle; cost $50,000.

Sixteenth near Market, additions; cost, $1,500.

Sixteenth near Castro, two-story frame. Owner, W. Carver; contractor, Hyde; cost, $4,500.

COUNTRY BUILDING NEWS.

OAKLAND.

P. J. Nelson has the contract for the erection of a house on Lincoln street, near Campbell for $2,575.

W. H. Weilbye has nearly completed a two-story frame building for J. C. Wills, which will cost $2,300.

W. P. Veitch is building for C. H. P. Meyer a two-story frame house on Tenth street, near Brush.

J. McDonald is having a one-story addition built upon his Oakland residence by J. A. Boynton. The cost will be $1,000.

T. McGauley is building a $1,435 cottage for M. Connolly on Isabella street.

L. Long has the contract for the Centennial Methodist Episcopal Church on Ninth and Chester streets. The contract price is $5,667.

Pierce & Rush are building for T. P. Sheller a residence on Piedmont avenue, near Moss avenue, that will cost $2,445.

Smith & Lake have the contract for the new residence of E. C. Loftus on Magnolia street, near Tenth. The cost will be $3,450.

Adolph Frankee has built on the south side of Elm street, between Telegraph avenue and Grove street, a handsome residence for himself at a cost of about $10,000.

W. W. Camron is erecting for Mrs. Warner a seven room cottage on Caledonia avenue, near Telegraph avenue, at a cost of $4,500.

P. J. Brophy has under-way a cottage on Magnolia street, near Tenth.

A. W. Pattiana & Co. are building a two-story house on McPherson street

P. Wensore has in course of construction two cottages on Tenth street, near Adeline.

Pierce & Rost are putting up for rent ten cottages on Poplar street, near Eighteenth.

John Kizer is erecting for himself a new cottage on Fifth street, between Webster and Harrison streets.

H. Direchson is erecting a cottage on Fortieth and Adeline streets.

Park Fellows has begun the erection of a large two-story house on Webster, near Merrimac street.

W. H. Weilbye has three modern cottages building on West street, near Thirty-ninth street.

EAST OAKLAND.

A. W. Pattiani & Co. have the contract for building for W. Murdock a residence on Seventh avenue near East Fourteenth street, to cost $2,059.

Tooling & Moore are building for S. D. Wright a cottage on Twelfth avenue, near East Fourteenth street, for $4,949. C. Mau is the architect.

J. R. Sheehan is having a residence built in East Oakland. J. A. Eastman is the contractor, and the price without painting or mantles is $1,210. J. J. and T. D. Newsom are the architects.

Mr. Vincent is erecting two cottages for rent on Park avenue, near the cotton mills.

ALAMEDA.

Work has been commenced upon a residence for Charles I. Hermann, on Alameda avenue, between Chestnut and Willow streets. It will be two stories in height. The cost will be about $4,500. J. A. Leonard is the architect.

J. B. Coggswell has contracted to build for Julius Generlich and Charles Clundt four one-story cottages on the north side of Versailles avenue between Morse and Central avenue. Cost, $5,800.

FORT BRAGG.

Chas. A. Page, who has recently returned from a trip through Mendocino county, reports everything booming at Fort Bragg. A lumber mill employing five hundred men will soon be in operation there. New houses are being erected in every direction and the prospects of the town are good.

LIVERMORE.

All the carpenters are very busy at present.

John Beck is improving his property by the addition of a large stable.

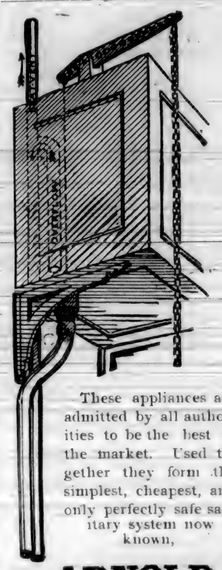
The contract for the erection of Philip Anspacher's new cottage, corner of L street and Cottage avenue, has been let to Captain A. J. Palmer of this place.

BERKELEY.

Professor Rising is having a foundation laid under his house on Alston way.

W. D. Matthews of San Francisco has made preparations to erect, for rental, a small cottage on Sixth street and Bancroft way.

A. H. Broad is at work on plans for a theater which he proposes to build in the town in the near future.



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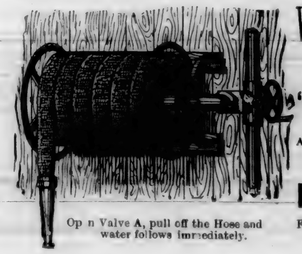

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Hurlbut, R. P.,	115 California avenue.
Irwin, James,	908 16th.
Ingerson & Gore,	971 Broadway, Oakland.
Jackson, A.,	12 Middle.
Keenan, Hugh,	219 Scott.
Kent, S. H.	711 Leavenworth.
Kern, F. W.,	118 Fair Oaks.
Kincaid & Thompson,	730 Seventeenth.
Klahn, Aug.,	5 Chenery.
Klatt, F.,	814 Twenty-first.
Klein, Jacob, 24	Lilly avenue.
Kreger, Wm. B.,	801 Guerrero.
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Langstaff, Wm.,	617 Jessie.
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McKay, Jas. H.,	124 Main
Mead, W. H.,	246 Minna
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Moffit, Thos.,	Victoria
Moore Bros.,	252 Octavia and 1 Russ
Norton, A.,	1331 Ellis
Parker, R.,	527 Grove
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Riddell, Thos. C.,	16 Twelfth
Robertson, John,	San Rafael
Rohling, Henry,	14 Collingwood
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Townsend, H.,	Alameda
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White, O. E.,	879 Seventeenth
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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

VOLUME IX ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 12

NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Office, 240 Montgomery St., San Francisco.

Official Organ of the San Francisco Chapter American Institute of Architects.

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Pages on Cover and on page preceding reading matter, are subject to special rates.

SAN FRANCISCO, DEC. 15, 1888.

THE FUTURE OF THIS JOURNRL.

A Great Change to be Effected.

IT is with emotions of greatest pleasure that we make the announcement that from and after the first of January, 1889, this journal, with all its interests, will pass into the hands and under the control of the *San Francisco Architectural Publishing Company*, composed of practicing architects, representing nearly every prominent and influential firm in the city of San Francisco, and a few others identified in the building interests. This is a consummation of pleasing character to its founder and present proprietor, who has long desired to place this monument of his untiring energies, zeal and unceasing efforts in a position to secure its future against all the contingencies and vicissitudes of uncertain individual life, and place it in position, so that its future will be assured, its present enviable standing not only maintained, but increased and enlarged, until it shall become a journal of superior excellence and unlimited influence.

That such is its destiny is rendered certain by the unquestionable representative and influential character and standing of the men who will hereafter guide, direct and control its management. This result is not a mere financial speculation, but the outgrowth of a general conviction on the part of the architects in San Francisco, that a class journal published in the interests of the profession is a necessity upon this coast, and that its place of publication should be in the metropolis city of California. Hitherto the interests have been in individual hands, and many indeed have been the trials and difficulties attending its publication. The currents of jealousy and envy have whirled fiercely around it, and oppositions interposed that have had no foundation in fact. Still it has, without fear or favor in any direction, combatted the elements of discouragements, and pursued the even tenor of its way during its ten years of life, with the hope and expectation that time would bring the gratifying reward of present consummations.

The consolidation of its interests in a joint stock company, in which so many of the leading men of the profession have become identified, will relieve it of all the drawbacks of the past, and place it before its subscription and advertising patrons and the public, as the exponent of views, opinions, theories and principles entertained by the representative class of architects in San Francisco, as all former distinctive individuality will terminate in a management that cannot reasonably be charged with personal business motives in its publication.

Many, instead of one pen and brain will fulminate the contents of its columns, and from the combined intelligence of the many who will hereafter participate in providing its reading matter, its patrons may reasonably anticipate that articles of great interest, worth and merit will from month to month appear, and intellectual reports upon a thousand subjects—architectural, scientific and mechanical, be placed before its readers. Its illustration department will be greatly improved and diversified by original sketches from local practicing architects, draughtsmen and students, and a general knowledge of its passing to a management against which no shadow of personal interest can lie, members of the profession and students in all parts of the state, will most assuredly add to the number of illustrations, representing the localities in which they operate: so that in short space of time this journal will be sought for, both for its intelligent reading contents, and the commendable character of its plates and pictures. The arrangements necessary to effect all this, will, of course, require a little time to perfect, but under the assurances of what is to come, every one in any way interested in architectural building and mechanical sciences generally, and owners of real estate, should at once recognize this new movement, designed as it is, to meet the requirements of the times upon this coast more amply than they have been met, by all those who have not added their name to the subscription list of this journal. No class journal upon the Pacific coast has been more favored than this, as an advertising medium, nor any that has returned better results to its advertising patrons; and this, too, under an exclusive rule of permitting scarcely a single advertisement not specially associated with architecture, building and house furnishing. Hundreds of advertisements of patented things, schemes and devices, have been rejected, although tempting prices for space have been offered, and it is fair to presume that the columns of this journal will always be held exclusive to the producers of, and dealers in materials and products legitimately within the scope special to its character and purposes. Hence it should become the great medium through which sales and purchases of all building materials and house furnishing goods should be sought; and being so, is a strong reason why every one interested in real estate should become *paying*, not *sponging* subscribers—the latter seeking dilligently and perusing attentively each month's issue at the expense of others who pay for what they read. This journal, like all others, has suffered from this cause. Men possessed of large property, while voluntarily complimenting us in our publication work have exposed their meanness and injustice by confessing: "I like your book, and go to my architect's (or friend's) every month to read it." Let this end with the new arrangement. If the journal is worth reading, it is worth paying for, and shame, if not a sense of justice, should deter this class from continuing the habit of appropriating to themselves that which is not theirs by any right of purchase or fairness.

The new management will, from time to time, as the work becomes familiar and better understood, introduce improvements and organize systems and methods that will make the CALIFORNIA ARCHITECT AND BUILDING NEWS equal to any other class journal published in the United States.

IMPORTANT TO OWNERS AND CONTRACTORS.

Building Contracts.

Judge Hunt's Recent Decision.

A decision of interest to building contractors and men furnishing material was lately rendered by Judge Hunt in the case of John R. Kelly vs. S. Daus. The action was by sub-contractors and men furnishing building material to enforce their liens. It appears that Daus contracted with F. C. Adams to erect a dwelling. The work was begun at about 7 o'clock in the morning of August 1st, but the contract for the erection of the building was not filed in the Recorder's office until a little after 11 o'clock of that day. The law provides that contracts of this character, where the amount to be paid exceeds $1,000, must be filed in the Recorder's office before the work is commenced. In this case the contract referred to certain plans and specifications which were made a part thereof. But the plans and specifications were not filed in the Recorder's office with the contract.

Judge Hunt said the Supreme Court recently held that unless the plans and specifications are filed with the contract the law is not complied with, and the sub-contractors and material men may enforce their liens for the amounts due them against the owner of the building, notwithstanding he may have paid the contractor the full amount of the contract price.

Judge Hunt stated that he was constrained to follow this decision of the Supreme Court and would accordingly hold that the owner of the building was liable to the sub-contractors and material men for the amount of their demands. He further held that when either party to the building contract file the same on the day the work is commenced the law is substantially complied with, as the law never regards fractions of a day except where the priority of liens is involved, or questions arise under the Registry law.

Judgment was rendered in favor of plaintiff for $691, although there was but $332 due on the contract.

[Legal text in full of the Supreme Court decision referred to above.]

HOLLAND vs. WILSON. (No. 12,078.)

Supreme Court of California, June 7, 1888.

Mechanics' Liens.—Filing Claim.—Specifications Referred to in Contract.

Under a contract to erect a building "conformable to the drawings and specifications made" the drawings and specifications are a part of the contract, and should be filed under Code Civil Proc., Cal., Section 1183, regarding mechanics, liens, providing that "all such contracts shall be * * * * filed in the office of the County Recorder."

Pleading—Answer—Sufficiency of Averments.

In an answer for work and materials furnished for the erection of a building, where defendant sets up a special contract for its erection according to certain plans and specifications, an averment in the answer as to filing the contract in the Recorder's office, that the said agreement was filed in the office of the County Recorder, as required by Code Civil Proc. Cal., Sec. 1183, is not an averment that the plans and specifications were filed.

In Bank—Appeal from Superior Court, San Diego County; John D. Works, Judge.

This was an action by J. C. Holland against Warren Wilson on the common counts for work and materials furnished by the plaintiff to the defendant. The defendant, in the third paragraph of his answer, set forth a special contract, made a part of the answer, and alleged non-performance thereof by plaintiff, to defendant's damage. The special contract provided, among other things, that the plaintiff should erect the building, conformable to the drawings and specifications made by C. E. Sanger, and signed by the parties, within the time aforesaid, in a good workmanlike and substantial manner, to the satisfaction and under the direction of the said C. E. Sanger, architect, * * * and also shall and will find and provide such good, proper and sufficient materials, of all kinds whatsoever, as shall be proper and sufficient for completing and finishing all the said brick-laying and plastering and other works of said building mentioned in the brick-layer's specifications." Code Civil Proc. Cal., Sec. 1183, regarding the liens of mechanics and others upon real property, provides, as to contracts between the owner of the land and his contractor, that "all such contracts shall be in writing when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and shall, before the work is commenced, be filed in the office of the County Recorder of the county, or city and county, where the property is situated, who shall receive one dollar for such filing; otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner and they shall have a lien for the value thereof." The answer of defendant regarding the filing alleged "that before the work therein mentioned was commenced, to wit, on or about the 5th day of March, A. D. 1886, the said agreement was filed in the office of the County Recorder of San Diego county, State of California, in the county where the said property is situated." The plaintiff demurred to the third paragraph and the demurrer was sustained. Trial was had with jury waived, and judgment was entered for the plaintiff, from which the defendant appeals.

M. A. Luce, for appellant; Collier & Collier for respondent.

Thornton J.—We think the Court below ruled correctly in sustaining the demurrer to the portion of the answer numbered 3. The "plans and specifications" referred to in the agreement were a part of the contract, and should have been filed in the Recorder's office, under Sec. 1183, Code Civil Proc. The averment as to filing is insufficient in failing to show that the plans and specifications were filed. Judgment affirmed.

We concur—Searls, C. J.; Sharpstein, J.; McFarland, J.; McKinstry, J.; Patterson, J.

Sec. 1183 of the Civil Code referred to in Supreme Court decision:

Section 1. Section one thousand one hundred and eighty-three of the Code of Civil Procedure is hereby amended so as to read as follows:

1183. Mechanics, material men, contractors, sub-contractors, artisans, architects, machinists, builders, miners, and all persons and laborers of every class, performing labor upon or furnishing materials to be used in the construction, alteration, or repair, either in whole or in part, of any building, wharf, bridge, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure, shall have a lien upon the property upon which they have bestowed labor, or furnished materials, for the value of such labor done and materials furnished, whether at the instance of the owner, or of any other person acting by his authority, or under him, as contractor or otherwise; and any person who performs labor upon any mining claim or claims, has a lien upon the same, and the works owned and used by the owners for reducing the ores from such mining claim or claims, for the work or labor done, or materials furnished by each respectively, whether done or furnished at the instance of the owner of the building or other improvement, or his agent; and every contractor, sub-contractor, architect, builder, or other person having charge of any mining, or of the construction, alteration, or repair, either in whole or in part, of any building or other improvement, as aforesaid, shall be held to be the agent of the owner, for purposes of this chapter. In case of a contract for the work between the owner and his contractor, the lien shall extend to the entire contract price, and such contract shall operate as a lien in favor of all persons except the contractor, to the extent of the whole contract price; and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing, when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and shall, before the work is commenced, be filed in the office of the County Recorder of the county, or city and county, where the property is situated, who shall receive one dollar for such filing; otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

Sec. 2. Section one thousand one hundred and eighty-four of the Code of Civil Procedure is hereby amended so as to read as follows:

1184. No part of the contract price shall, by the terms of any such contract, be made payable, nor shall the same, or any part thereof, be paid in advance of the commencement of the work; but the contract price shall, by the terms of the contract, be made payable in installments, at specified times, after the commencement of the work, or on the completion of specified portions of the work, or on the completion of the whole work; *provided*, that at least twenty-five per cent of the whole contract price shall be made payable at least thirty-five days after the final completion of the work and contract. No payment made prior to the time when the same is due under the terms and conditions of the contract, shall be valid for the purpose of defeating, diminishing, or discharging any lien in favor of any person, except the contractor, but as to such liens, such payment shall be deemed as if not made, and shall be applicable to such liens, notwithstanding the contractor to whom it was paid may thereafter abandon his contract, or be or become indebted to the owner in any amount, for damages or otherwise, for non-performance of his contract or otherwise. As to all liens, except that of the contractor, the whole contract price shall be payable in money, and shall not be diminished by any prior or subsequent indebtedness, offset, or counter-claim in favor of the owner and against the contractor; no alteration of any such contract shall effect any lien acquired under the provisions of this chapter. All such contract and alterations thereof as do not conform substantially to the provisions of this section shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case the labor done and materials furnished by all persons, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof. Any of the persons mentioned in section eleven hundred and eighty-three, except the contractor, may, at any time, give to the owner a written notice that they have performed labor or furnished materials, or both, to the contractor, or other person acting by authority of the owner, or that they have agreed to do so, stating in general terms the kind of labor and materials, and the name of the person to or for whom the same was done or furnished, or both, and the amount in value, as near as may be, of that already done or furnished, or both, and of the whole agreed to be done or furnished, or both. Such notice may be given by delivering the same to the owner personally, or by leaving it at his residence or place of business, with some person in charge; or by delivering it to his architects, or leaving it at their residence or place of business, with some person in charge; or by posting it in a conspicuous place upon the mining claim, building, wharf, ditch, flume, aqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure. No such notice shall be invalid by reason of any defect of form; *provided*, it is sufficient to inform the owner of the substantial matters herein provided for. Upon such notice being given, it shall be the duty of the owner to, and he shall, withhold from his contractor, or from any other person acting under such owner, and to whom by said notice the said labor or materials, or both, have been furnished or agreed to be furnished, all money due or that may become due to such contractor, or other person, or sufficient of such money to answer such claim, and any lien that may be filed therefor, for record, under this chapter, including costs and counsel fees provided for in this chapter, until such notice is by writing withdrawn; and all money paid thereafter by the owner to the contractor, or such other person, while such notice is in force, shall, for the purposes of all liens of all persons, except that of the contractor, be deemed a payment prior to the time the same was due, within the meaning of and subject to the provisions of this section.

SAN FRANCISCO CHAPTER AMERICAN INSTITUTE OF ARCHITECTS.

An Important Meeting.

The Chapter held its regular meeting on Friday evening, Dec. 7th, Vice President W. P. Moore in the Chair.

Present: W. P. Moore, A. Pissis, E. Kollofrath, J. M. Curtis, J. J. Clark, W. J. Cuthbertson, J. E. Wolfe, H. T. Bestor, G. H. Sanders, Seth Babson, John Gash, C. H. Hasty, G. H. Wolfe.

Henry A. Schulze was elected a member as Fellow.

The following communication was received from the Architectural League:

San Francisco, December 1, 1888.

To the Officers and Members of the San Francisco Chapter, American Institute of Architects:

Gentlemen:—At a meeting of the San Francisco Architectural League, held on December 1, 1888, it was resolved "to petition the members of the San Francisco Chapter, American Institute of Architects, acting as principals, to close their offices on Saturday at 3 P. M. that the draughtsmen and students working in their offices, may participate in the classes now being organized for Saturday afternoon by the League," viz: water colors, mathematics and building construction.

Hoping you will consider this petition favorably, we are, gentlemen,

Respectfully yours,

S. W. Hemenway, Secretary. Geo. M. Sanders, President.

J. F. Wieland.
A. Borradaile.
L. D. Drane.
L. S. Stone.
R. M. Turner.
Board of Directors.

An animated discussion ensued in regard to the request made in said communication.

Mr. Cuthbertson offered the following motion:—That a resolution be adopted by this Chapter, that the Architects of the Chapter close their various offices at 3 P. M. in accordance with the communication read. Seconded.

Mr. Babson moved to amend the motion as follows:—That all draughtsmen and students be permitted to leave the various offices of members of the Chapter, at 3 P. M. on Saturday afternoon for the purpose of attending the classes being formed by the Architectural League to give instruction in water colors, mathematics and building construction.

J. E. Wolfe was heartily in favor of the movement provided the students would embrace the opportunity offered to attend the classes and not spend the time in going fishing or other amusements.

To which Mr. Cuthbertson replied that he was as much in favor of, and thought architects were as much entitled to rest as lawyers, even if fishing excursions were organized. If the law was general, architects would take pride in closing at the hour named.

Mr. Sanders said that the opportunity should be given to all to join to attend the classes, or else it would be of little use to start the same. He read articles from the By-Laws about being adopted by the League. (By-Laws will be published in full when adopted. Ed.)

The amendment was then put by the Chair and carried. The original motion as amended was then carried by a decided majority.

A vote of thanks was tendered the retiring Treasurer, J. J. Clark, for the able and courteous manner he attended his duties during the term,

The following communication was received from the "Builders' Association."

San Francisco, December 7, 1888.

To the San Francisco Chapter of the American Institute of Architects.

Gentlemen:—I am requested to ask you to appoint a committee of three to confer with a similar committee from this Association in regard to drafting a memorandum to be filed as a record in the Recorders' office in connection with contracts, etc. Said memorandum to be paid for and printed by this Association.

Hoping to hear from you at an early date in regard to the above,

I remain yours, etc.,

J. W. Maher, Secretary.

On motion the same was referred to a committee consisting of Fellows Babson, Wolfe J. E., and Cuthbertson.

Mr. Bestor thought it would be well for the Chapter to appoint a committee to act with similar committees from the Builders' Association and the Lumbermen's Association and endeavor to obtain needed changes in the Lien Law.

An active discussion was then indulged in regarding the Lien Law. The committee above named was granted power, in addition to their other duties, to bring up the subject of the Lien Law before the committee of the Builders' Association.

A communication was received from M. A. Edwards in regard to the late competition for statuary mentioned in the Lick Trust, etc. The Secretary was instructed to answer the same by quotations from the By-laws.

Several copies of the proceedings of the 21st Convention of the American Institute of Architects were distributed to the members present, the same having been forwarded by A. J. Bloor of that society. Adjourned.

THE COURTS TO DECIDE A MIXED PROBLEM,

Question of Responsibility.

When the First National Bank of San Francisco began the work of constructing its new building on the northwest corner of Bush and Sansome streets, notice was given to A. Avillegra, the owner of the brick building adjoining on the north side, of intention to excavate to the depth of fourteen feet for a foundation for the bank building and for him to secure his building from falling into the excavation. Mr. Avillegra paid no attention to the notice and the bank was compelled, for self-protection, to provide at its own expense against danger from the adjoining building. Lloyd & Wood on behalf of the bank, have instituted suit to recover $1,400 from Avillegra the amount expended to prevent his building from falling. This is a question of interest to contractors and property owners.

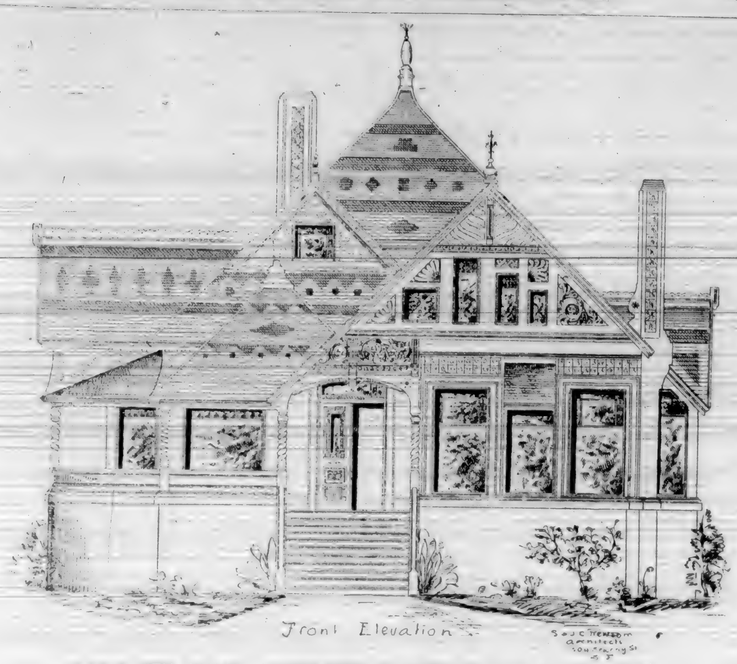
FIRST NATIONAL BANK BUILDING.

Description of the Structure.

The corner-stone of the First National Bank building on the northwest corner of Sansome and Bush streets, was laid on Nov. 20th. The building site is 46 feet 6 inches by 67 feet, corner Sansome and Bush, having on its rear a street 20 feet wide. The building will be six stories in height, in addition to the basement, which is eleven feet high, and will be partly arranged for the purposes of a safe deposit vault. The bank will occupy the first story and will be elegantly fitted up with plate glass and burnished brass, polished and carved mahogany, with tile floors and tasteful fresco decorations.

The five upper stories will be divided into offices and made accessible by an elevator and stairway rising from the Sansome street entrance. The exterior of the building will be constructed of pressed brick and Fresno granite (the lately discovered and beautiful stone from the San Joaquin valley). The basement and principal story will be wholly of this material, and the upper stories are designed with such an admixture of the two materials as to bring out the beauties of each. The first story is arranged with a series of semi-circular arches on short coupled columns, with heavily molded bases and richly carved caps. The entrance is composed of a projecting porch with appropriate insignia, comprising two large bears, an eagle and a boldly carved and inscribed shield.

This building promises to be an architectural ornament to San Francisco. Messrs. Wright & Sanders are the architects.

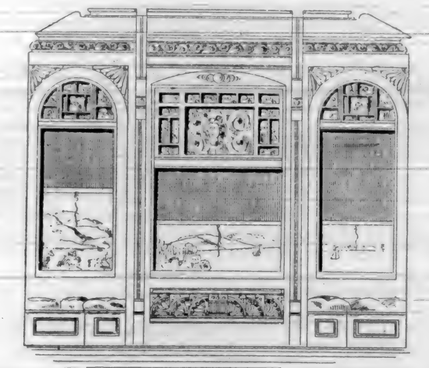


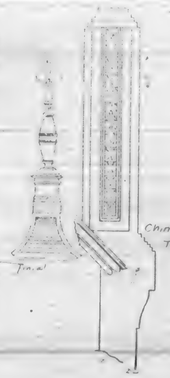
"TIA JUANA"—A PICTURESQUE HOME. (Cost, about $5,000).

The accompanying illustrations were furnished us by the courtesy of Mr. S. Newsom, whose office is in the Phelan Block, this city. The outside appearance well deserves its name of "Picturesque." The plan will be found very complete in its various appointments, some new features being introduced not generally found in a one-story house. The sizes of the rooms are very distinctly marked, so that an extended review of them is not necessary. Price for which same can be erected is in the neighborhood of $5,000.

A GRAND SUCCESS FOR 1889.

The movement in favor of making this journal second to none in the United States has met with the most favorable approbation of members of the architectural profession. **THIRTY-THREE (33) ARCHITECTS HAVE SIGNED FOR SHARES FOR STOCK IN THE COMPANY NOW IN PROCESS OF FORMATION,** and which in the future will control the destinies of the California Architect. The January number, 1889, will be especially interesting and will mark a decided change in the general appearance. **NOW IS THE TIME TO SUBSCRIBE.** Forward $2.00 immediately for one year's subscription. We place our circulation for December, 1889, at **FOUR THOUSAND.** Every effort will be made to reach, if not exceed, that figure. The Library and Reading-room will form an important feature under the new management, and visiting architects are cordially invited to call. Full particulars in January issue of the location of the new offices.





A Reprint from January, 1880.

Believing a well and ably conducted journal, devoted to Architectural, Mechanical, Sanitary, Scientific and other kindred matters and subjects, to be a necessity in this city, the California Architect and Building Review, published by the San Francisco Architectural Publishing Company, supplies a long-existing want on this Coast. We therefore pledge our cordial sympathies personally, and hope that the enterprise will receive kindly recognition and liberal support from all Architects and Builders on the Pacific Coast, and from the public generally.

David Farquharson,	B. McDougal & Son,
Wright & Sanders,	Wm. Mooser,
S. H. Williams,	Wm. Curlett,
Thos. J. Welsh,	H. T. Bestor,
P. Huerne,	Meeker & Banks,
John Marquis,	W. C. Hoagland,
P. J. O'Connor,	S. & J. C. Newsom,
Theo. A. Eisen,	B. Henrickson,

John A. Remer.

THE NEW REGIME.

"California Architect Publishing Company."

We now definitely announce that about all the stock in this Company is about taken. No announcement has heretofore been made in this Journal that any change has been contemplated. But our old motto, adopted in 1879, has ever been before us—"Upward and Onward."

When the idea was first broached of placing this Journal under the control of a company composed principally of Architects, those consulted were at once convinced of the feasibility of the plan and many were eager to take immediate steps to perfect an organization.

But we "made haste slowly." We thoroughly canvassed the situation and a copy of the following circular was mailed to each Architect in the city and immediate vicinity:

"California Architect Publishing Company."

That the publication of a Journal devoted to the interests of Architects and builders on the Pacific Coast is an important measure, is too self-evident to require the support of argument.

So far, in the history of California, the necessity for such a journal has been met only in the publication of the "California Architect and Building News."

That Journal, however, has hitherto been an individual enterprise, edited and managed by one still practicing the profession of Architect, and therefore has not received that undivided and united support that would flow to a Journal entirely free from all personal and professional entanglements.

In order to establish a Journal which shall be the exponent of the ideas of architects and builders in general, it is proposed to form a

JOINT STOCK COMPANY.

The purpose of the Company being, to purchase the entire plant of the California Architect and Building News, including the good-will, subscription and advertising books, all amounts due on same at time of transfer, all bound volumes and back numbers, electro and stereo plates, all books kept on sale, and all other property or things connected with or used in the publication of said Journal.

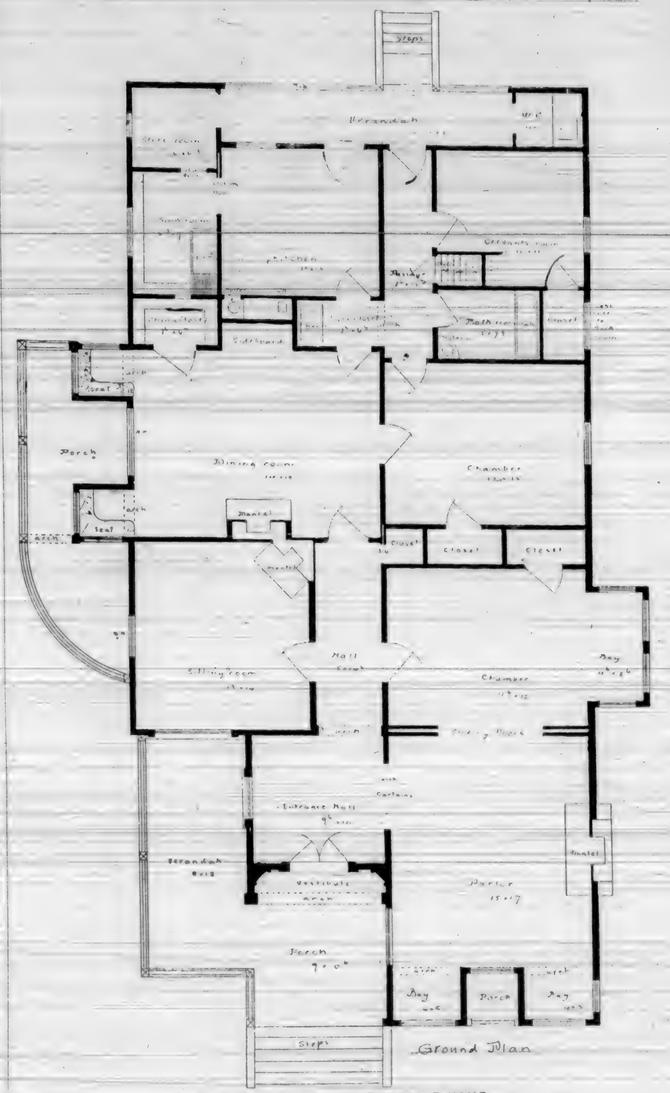
The value of 150 shares will be used to make such purchase, while that of the remaining 50 shares will remain to the credit of the Company as a working capital.

The California Architect is absolutely free from all indebtedness.

When the design of the Company was thoroughly understood, subscriptions at once commenced. Messrs. Pissis & Moore were the first ones to sign with 10 shares. In rapid succession came A. Laver, Wright & Sanders, T. J. Welsh, Curlett & Cuthbertson, J. C. Cebrian, W. Mooser, G. E. Voelkel, R. H. Daley, Chas. Mau, of Oakland, Reid Bros., of San Diego, H. T. Bestor, H. D. Mitchell, M. J. Welsh, S. Hatfield, B. McDougall, J. Gash, C. R. Wilson, R. H. White, E. Kollofrath, Seth Babson, John Newsom, Walter J. Matthews of Oakland, Theo. Lenzen of San Jose.

A few firms directly connected with the architectural interests have also signed for shares.

It will readily be seen that the whole management of the new organization is in the hands of the representative architects of the city and coast.



PLAN OF "TIA JUANA" PICTURESQUE HOME.

DESIGN OF THE NEW COMPANY.

The main design is to create a still more social feeling among the Architects than has heretofore existed; to provide a large, well-furnished room for the use of the "Chapter of Architects;" to have said room so that it can be of practical use to the new organization of students and draughtsmen—the "Architectural League;" to have a complete file of papers, architectural and mechanical, for the use of those visiting the rooms; to found a library for general reference; in short, to advance the interests of the architectural profession generally, and by the instruction received by the students through the classes now formed, to fit them in the future, to be competent to worthily succeed those who are now studying tomake this city the architectural pride of the continent.

A CHAPTER LIBRARY AND READING ROOM.

This has been the first consideration in making a change. Several Eastern firms will send books for the nucleus of a library. Many have been promised by resident architects and others, and it is but reasonable to suppose that by the close of 1889, the library will contain several hundred books.

DESIGN FOR A COUNTRY HOTEL. G. BEHRND, Architect.

Ninth Building and Improvement Annual for Woodland and Yolo County.

Editor of the California Architect and Building News of San Francisco, California:

Dear Sir:—Again we ask for space in your valuable columns to present a modest statement of the year's building and improvement for our city and county. And while it has not been what we wish it had, it presents an improvement over last year.

We will not attempt to discuss the cause or effect but state the facts as we understand them. Lumber has been too high, money too scarce, and the people would not build; having these three factors established we approximate the basis of our annual prosperity in moderate and careful investments.

The amount of capital annually expended naturally divides itself in three classes viz:

Private residences and individual investments report for this year, $232,355.

Stock companies and improvement corporations, $105,500.

Public enterprises including church and school expenditures, $54,500.

Special mention of some the most important included in our city and county list may be of interest to those desiring to know the progress of this locality. Woodland Street Railroad Co., $11,000; Woodland Water Co., $3,000; Woodland Improvement Co., $5,000; Woodland Ice Factory, $27,500; Woodland Woolen Mills Co., $50,000; Yolo Brewery (Improvement) of Woodland Co., $13,500; Yolo Land and Improvement Co. of Woodland, $2,500; six Steam Raisin Drying and Packing Establishments, aggregate value, $22,000; Christian Church of Woodland total investment $20,000; Baptist Church and Parsonage, total expense, $3,000; Hall of Records, $28,500. Private residences and investments too numerous to mention, vary from $1,000 to $15,500. A large majority of the private residences present unmistakable evidence of architectural refinement and wealth. The following summary will substantially set forth the twelve months' enterprise of city and county:

WOODLAND CITY.		SUMMARY FOR 1888.	YOLO COUNTY.	
NO.	VALUE.	DESCRIPTION OF IMPROVEMENTS AND INVESTMENTS.	NO.	VALUE.
33	62,100	Frame Dwellings	13	$ 44,300
12	16,500	Frame Improvements, principally Dwellings	9	10,500
16	13,500	Frame Carriage Houses and Barns	7	5,700
6	35,255	Frame Buildings for Manufacturing Purposes	2	3,500
2	63,000	Brick Buildings for Manufacturing Purposes		
7	13,000	Brick Stores and other Business Places	4	9,500
3	13'000	Frame Steam Raisin Drying Establishment	3	9,000
3	9,000	Improvement Companies Expenditures		
2	23,000	Brick and Frame Churches and Improvements		
1	11,000	Street Rail Road Co., Rail Road Depots	1	4,000
1	3,000	Water Works Co. Irrigating Works	1	2,000
		Frame and Iron Warehouses	2	3,500
2	29,500	Hall of Record and Justice Court Improvements		
1	2,500	Brick Dwellings	2	3,000
1	2,500	Newspapers and Printing Offices		
90	$296,855	Total No. and Value City and County	44	$ 95,500

Woodland and surroundings contributed to the above: Ninety buildings and improvements, valued at $296,855; Yolo County, forty four building, valued at $95,500. We must here mention that the county list is much below the actual amount, not having time to canvass the entire territory. This is conclusive by the excess as shown in the tax list, which is for improvements for 1888, $474,161 more than 1887, or $81,806 more than the whole amount of the above report. Final aggregate for city and county, 134 buildings and improvements, estimated value, $392,355.

While the average for this year for each engagement is $2,928, the next highest average being for 1884, $2,702, it will also be seen by the following statistics that the aggregate amount, $392,355, has only once in nine years been higher; with this encouraging item in view, the most sanguine should be satisfied.

For comparison we present a recapitulation of the annual statistics for the past nine years, from 1880 to 1888 inclusive, presenting the number of buildings, aggregate amount of capital, average value, largest single engagement and number of buildings under course of construction at the close of the year, but included in this list:

Year.	No. of Engagements	Aggregate Value.	Average Value.	Largest Single Engagement.	No. Build'g in constr. l'n at close year.
1880	54	$126,730	$2,346	$28,000	2
1881	59	140,640	2,382	34,580	4
1882	71	169,950	2,393	15,500	1
1883	84	204,519	2,434	52,000	7
1884	132	359,594	2,702	28,000	5
1885	224	606,182	2,461	25,000	11
1886	172	280,595	1,993	22,000	10
1887	92	203,116	2,208	30,000	9
1888	134	392,355	2,928	50,000	14
Total	1,023	$2,483,685	$2,423		

The preceding statement presents the fact that 114 buildings have been the average number erected for the past nine years; average value, $2,423 each; total amount, $2,483,685. Competent judges estimate that the next nine years will more than double the above statement.

The foregoing facts are unmistakable evidence of substantial thrift and prosperity, and it is a noteworthy truth that the better class of all who contemplate building secure first the architect, and take no chances on hap-hazard principles.

The ultimate benefits and reward of any enterprise hinges firmly on the favorable starting; and to end well, it is essential to start on an intelligent foundation. If any person would avail themselves of the noble art of building, let them accept profitable hints and suggestions as set forth in the California Architect and Building News or of those skilled in the business, and secure a presentable exterior appearance with convenient and comfortable interior arrangements, and then let us look carefully at every part and allow only the best to become a part, from the lowest foundation stone to the highest finial top, remembering that every error or defect in material or workmanship will eventually find its corresponding impress on the beauty and solidity of the edifice. As a rule we too often accept the apparent and entirely ignore the real and its most important mechanical adaptations; in this way many splendid appearing buildings are splendid shams, and while we are forced to acknowledge that decorative ornamental construction is no doubt the essence of much that is beautiful and pleasing in architecture, but like other goods things this too may be overdone. Now at this most important point the service of the skilled artisan becomes indispensable; he is required to stand abreast the times, remove obstacles, equalize and adjust harmony, combine mind and matter, vanquish all difficulties, in fact he must always stand the same energetic, ingenious, ambitious and invincible being, whose intellect cannot be confined, and whose energy the whole world is inadequate. No labor wearies his industries; no obstacle arrests his onward career. Over difficulties of land and water, heat and cold, wet and dry, materials of every description, requiring all the combined forces to subdue and utilize, this conquerer moves on steady as the footsteps of time. In what limit of space shall this man of the present age find rest in the completion of his ever improving progress; and how can we determine the ultimate result that marks the desires of the onward march of the architect of the nineteenth century. This query can only be answered by those who enter this busy arena after we have been laid aside and forgotten. Carefully considering all of this, our true object and mission should be to pervade our entire surroundings with a diffusion of useful and industrial arts, desiring to produce unity and magnify individual cleverness, by accumulating knowledge of our own avocation, whereby we may all be better, greater, and wiser, securing a competency worthy of future emulation.

Accept our thanks for many courtesies shown in the columns of the California Architect and Building News during the past year. Trusting you may receive the liberal patronage of the public, which you so well deserve, we remain,

Respectfully yours,

Gilbert & Sons.

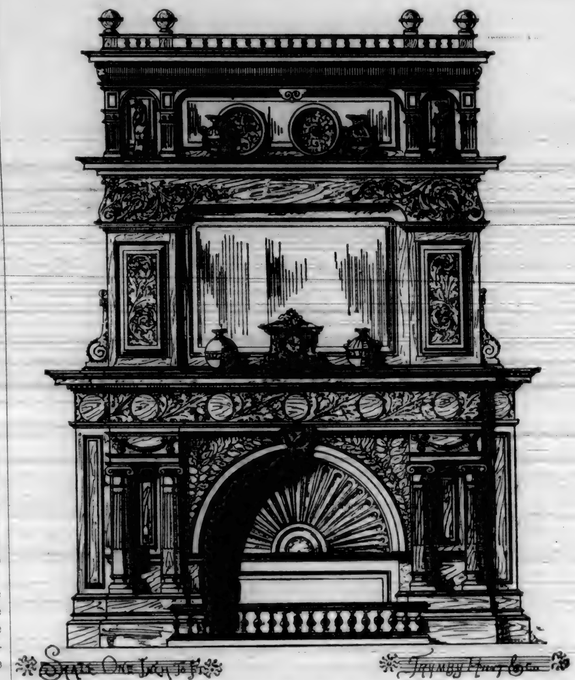
Woodland, Dec. 5, 1888.

Correcting an Error. Wasters vs. Primers.

In our issue of May 15th last, we published a letter from Merchant & Co., manufacturers and importers of the "Camaret" brand of Tin Plates. Unintentionally we made a blunder and we desire to publicly correct the same. In the letter as printed will be found the following:—"but when we assert that *ninety seven* per cent. of the roofers (as far as our own city is concerned) who upon receiving a contract will buy and put on wasters instead of primes, we state only a fact, and the advantage in specifying our brands will readily be seen by those wanting to secure only the best."

Instead of 97 per cent as above, it should be *fifty-seven* per cent. The first intimation of the blunder came from Portland, Or., and on examining original correspondence, we soon discovered that wrong figures had been used. To make sure, we wrote to Merchant & Co., Philadelphia. In their answer they were pleased that the blunder should have been noticed by friends in Oregon and they assure us that 57 per cent. was the figure that should have been used.

We sincerely hope that this correction will be noticed by a large proportion of those who read the original letter as the mistake will naturally cause some to pick to pieces a letter that otherwise contained a large fund of information in regard to one of the best brands of Tin Plate now in the market.



DESIGN FOR A MANTEL.

ARCHITECTURAL LEAGUE.

This interesting branch of the architectural profession has about completed its work of organization, and while its members seem to be deeply interested in its present and future success, there are some who enter upon the work with an enthusiasm and energy that presages results destined to be of inestimable benefit to the young men of San Francisco who have adopted the architectural profession as the sphere in which they propose to develope their talents, and qualify themselves to stand among the active and progressive men of the age, as masters of architecture, as far as mastery can be attained by the human mind during the short limit of human life. It is well and pleasing to every practicing architect who wishes well for the profession, to see the students organizing for mutual benefit. The man who is so far fossilated as not to understand and realize the great fact that there is power and profit in intelligent organization for right and good purposes, is to be pitied. The young gentlemen of the League have the best wishes, and at any time can command the services of any liberal-minded member of the profession in any reasonable way calculated to aid and assist them. Diligent office study and application is of the highest importance, but in this new relationship much will be learned and gained that would be but slowly and tediously acquired by the routine of office experiences. We say to young men, work together in union and true friendship, helping each other, in doing which the helper is benefited and mutual advantages gained.

MR. PERCY'S LECTURE.

On the evening of the 5th inst. Mr. Percy entertained the League and such members of the profession as were present, by a lecture on practical questions in construction. A most profitable hour was thus spent, and it is safe to say that every student present received information upon mechanical propositions that will be of lasting advantage in his future career. The principles of compression, tensile and sheering strains, strength and stresses, and important principles in construction were reviewed at considerable length, and was listened to attentively by the young men present.

The Architectural League is composed of draughtsmen and students connected with the various architects' offices. The officers are as follows: President, Geo. H. Sanders; Vice-President, L. S. Stone; Secretary, S. W. Hemenway; Treasurer, L. D. Deane; Trustees, J. F. Wieland, Aug. Borradaile, R. M. Turner, S. W. Hemenway, L. S. Stone, G. H. Sanders.

No Plans of Buildings Will be Furnished from the Office of this Journal.

We propose to use our best efforts to place before our readers the latest items and examples of architectural beauty as they are exemplified in this city. We do NOT propose, however, to furnish from this office, in any shape, plans or details, except as they are given in these pages, as exponents of the ideas of those contributing the same. Every inquiry received will be immediately handed to the party whose design may have called forth such notice. This rule will be strictly enforced.

Our Book Department for 1889.

We intend next year to keep a large stock of books on hand to meet the wants of architects, students, draughtsmen and mechanics. Great care will be used in their selection, and they will, in every case, be sold at publisher's prices.

A Reading Room for Architects, Students and Draughtsmen.

The new office of this Journal will be fitted up especially with the object of providing a reading room for all those engaged in, or connected with the architectural profession. Complete files will be kept of all the leading architectural and mechanical papers published in the United States, Canada and England, also catalogues, etc., of all firms connected with the building interests. All interested are cordially invited to step in and make themselves at home.

Practical, Plane and Solid Geometry.

III

BY ARTHUR SEYMOUR JENNINGS.

AREAS CONTINUED.

IN a previous paper it was endeavored to show the method by which any figure bounded by right angles might be reduced successively to a triangle, a rectangle and a square of equal area. The relative areas of squares should be thoroughly mastered at this point by the student. It is often required in practice to obtain a square containing a certain number of square inches. When the figure has a square root, as for instance, 4 or 9, all that is required is to set out the side of the

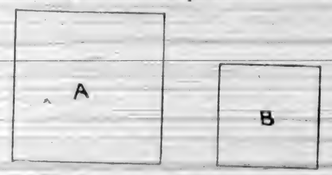


Fig. 1. Illustrating the area of squares.

square equal in length to the square root, 2 and 3 respectively, for, of course, a square of two inch side contains four square inches, and one of three inch side, nine square inches and so on. But where the number is a surd and has no square root the side of square may be obtained geometrically without difficulty. At this point it will be convenient to find one square equal in area

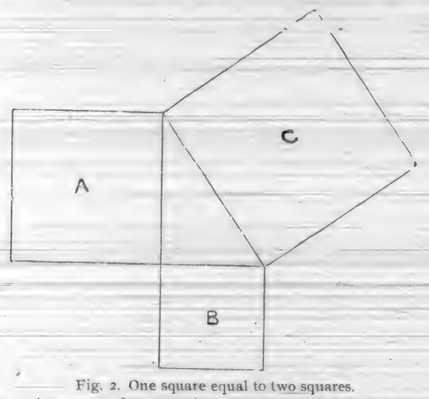


Fig. 2. One square equal to two squares.

to two given ones, for example, we wish to find a square equal in area to the squares A and B Fig. 1. This problem bears directly upon Proposition 47 of the First Book of Euclid. Draw a right angle and upon one side of it set off the side of the square A and upon the other the side of the square B.

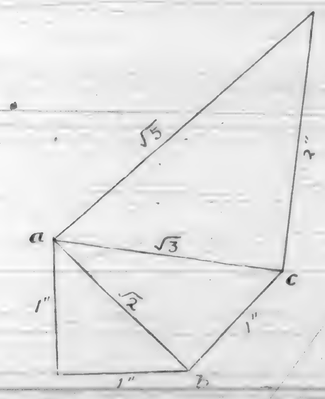


Fig. 3. The geometrical construction of the square root.

Now draw a hypothenuse forming a right angle-triangle. The square erected upon that hypothenuse will be equal in area to the squares upon the two other sides. Referring to Fig. 2 the squares marked A and B respectively which correspond with the squares in Fig. 1 are equal in area to the square marked C.

The practical application of this problem is clear. Supposing it is wished to obtain a square containing five square inches. If the square A be made of two inch side it will contain four inches and if the square B is of one inch side then the square upon the hypothenuse contains an area equal to the two together, viz:—five square inches.

To show geometrically the square root of any surd, say of 2, 3, 5, 6, etc., the same principle is adopted. Taking an inch as the standard unit set out a right angle and upon each side mark off one inch at a and b as shown in Fig. 3. Then the hypothenuse a. b. is the square root of two, or in other words the side of a square containing two square inches. So by setting off a line one inch long at right angles to a. b. at c and drawing another hypothenuse we have the square root of 3. The same means may be used indefinitely. Thus we have the square root of 5 and so on.

Other Useful Problems.

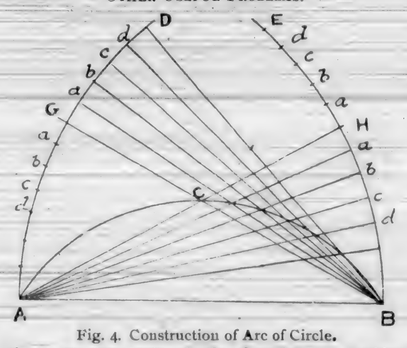


Fig. 4. Construction of Arc of Circle.

In the every day work of the draughtsman problems not infrequently arise which cannot be solved by the ordinary methods. For example, it is often required to set out the arc of a circle, say for the curve of an arch, when the rise is so small that the centre of the circle is practically inaccessible. In such cases the following method will be found to answer the purpose. Let A. B., Fig. 4, represent the span of the required arch, and C the rise. Join A. B. C. forming an isosceles triangle. Now with radius A. B. describe from A B respectively the arcs A. D. and B. E. Extend the lines A. C. and B. C. to meet the arcs at G and H. Now from G and from H set off with the dividers a number of equal divisions in both directions as at a, b, c, d, etc. Draw lines back to A and B respectively and where these

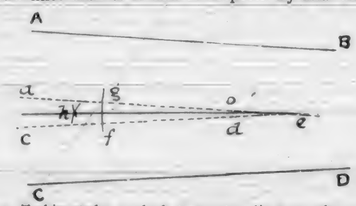


Fig. 5. To bisect the angle between two lines nearly parallel.

lines intersect we have points in the required curve. Notice that the lines above G intersect with those below H. The construction will be clear on careful examination of Fig. 4 and the completion of the curve is effected by drawing by free hand the required curve through the points so obtained. For the sake of clearness the construction of only one-half of the curve has been shown. It will be understood that the method may be employed whenever the three points A B C are not in a straight line.

When two lines are inclined it is a very simple matter to draw a third one to bisect the angle which would be formed if they were produced. When, however, the lines are nearly parallel this cannot be conveniently done, and a different method becomes necessary. Let A. B., C. D., Fig. 5 be two lines nearly parallel, and it be required to draw a third line between them that will bisect the angle. Draw the lines a. b., c. d., (shown dotted) parallel respectively to A B and C D and in any convenient position so that they intersect as in the point e. Now bisect the angle between them by the usual method, viz: from e describe any arc f. g. and from f and g describe two other arcs intersecting at h. A line drawn through h and e will bisect the angle g. e. f. and hence the angle formed by the lines A. B. and C. D. if produced as was required.

(To be continued.)

THE LUMBER INDUSTRY.

Seven Large Merchant Sawmills at Seattle.

Sawing Capacity of More Than Half a Million Feet Per Day——The Leading Item of Local Manufacture.

THE amount of lumber required in a new and rapidly growing city like Seattle is something amazing, and it is only when one takes the trouble to investigate the matter and ascertain the facts, that a due and realizing sense of magnitude of the demand can be arrived at. A reporter of the *Post-Intelligencer* was yesterday detailed to work on this subject and to get these facts and his report is given below. Like everything else pertaining to the progress of this fair city, it will be found very interesting reading.

There are seven sawmills in active operation in Seattle at this time, namely: The Stetson & Post mill, the Commercial, the Oregon Improvement Company's mill, the Hall & Paulson mill, the Western mill, Newell's, and the Lady Washington mill.

STETSON & POST'S MILL.

Is situated at the foot of Commercial street, and together with the sash and door factory and the lumber yard occupies an entire block. Eighty-five men are employed in the sawmill and lumber yard. The daily cut of lumber at the mill is on an average of about 70,000 feet.

In the sash and door factory and planing mill 35 hands are employed, and they work 12½ hours per day, 10 hours being a day's work, and the men are of course, paid accordingly. Their line of manufacture comprises mouldings and casings, all sorts of house furnishing brackets, etc. This firm has orders for the work on several big jobs, such as the Boston Improvement Company's two new buildings on Second and Columbia streets and the Occidental hotel. The business done during the past four months, more especially in the factory far exceeds anything ever done by the firm during any past corresponding period. Last year the mill cut between sixteen and seventeen million feet of lumber, and the total sales amount to $296,516.25. A new boiler and engine have recently been put in, and half a dozen new planers, together with new sash and door machinery, is on the way from the east.

THE COMMERCIAL MILL COMPANY'S PLANT

Is situated on the water front, between Marion and Columbia streets. It comprises a saw and planing mill, sash and door factory and box factory. The number of men employed is 104, of whom 24 work at night in the saw mill. Forty-eight men work in the mill, 28 in the sash and door factory, and four in the box factory. The quantity of lumber cut daily is from 50,000 to 70,000 feet, most of which is for home consumption. The box factory is vainly endeavoring to keep up with the demand for boxes required for crackers, soap, medicine and mineral waters.

THE OREGON IMPROVEMENT COMPANY'S MILL

Is situated on South Sound street, at the Columbia and Puget Sound Railroad Company's wharf. The number of men employed is fifty and the daily cut of lumber runs from 40,000 to 50,000 feet. The mill began operations only about six months ago, and such has been the increase of business that the company have been obliged to keep on increasing their capacity right along. In a month or two they expect to have their sash and door factory in operation. Their lumber is used largely at the company's mines at Newcastle and Franklin; but a very considerable quantity of it, perhaps the most of it, is ordered for building purposes in this city.

THE HALL & PAULSON MILL

At the head of the bay, cuts an average of about 12,000 feet per day. An important part of their company's business is the manufacture of shingles. About fifteen men are employed at the mill.

THE WESTERN MILL

Is at Lake Union, and cuts about 40,000 feet of lumber each day. It is all used in or near Seattle. The number of men employed is about fifty on an average.

The Lake Washington mill, known as Phinney's mill has a capacity of 15,000 to 20,000 feet per day, and like all of the others, its product is chiefly used here at home. Twenty to twenty-five men are on the pay roll.

NEWELL'S MILL,

At South Seattle, employs thirteen men, counting those engaged in getting out the logs. The mill has a daily capacity of 12,000 feet, the daily cut ranging from 5,000 up to the latter figure. In connection with the mill is a chair factory, of small scope at present, but which bids fair to develop into a big business before long. The legs of these are of maple, the rungs of ash. About 100 chairs per month are turned out. They are all shipped to Stockton, California, where seats of rawhide are put into them, and they are sold at a handsome profit. Adjoining the present mill, Mr. Newell has about completed the erection of a larger and better mill, one which will be capable of producing a daily output of 25,000 or 30,000 feet.

THE LUMBER INDUSTRY IN GENERAL.

In addition to these mills, most of which are occupied in supplying Seattle's insatiate demands for lumber, there are several outside mills, situated on the Sound, at distances of three, ten and thirty miles—which are sending lumber to this city. Then the Blackman Brothers, of Snohomish, and a mill at Tumwater ship, about 25,000 feet to this city daily. The Puget Mill Company and the Coleman mill at Cedar Mountain (on the line of the Columbia and Puget Sound railroad) are also shipping lumber to this point every day.

A number of additional mills, new ones, either now in process of erection or soon to be erected, will materially help to solve the present difficulty of obtaining a full and prompt supply of lumber. The Port Blakely mill, situated at Port Blakely, ten miles from this city, across the Sound, was totally destroyed by fire two or three months ago. A new mill with a daily capacity of 40,000 is, and has been for two months past, engaged in cutting lumber for the company's new mill, which, when completed, will be not only the largest mill on Puget Sound, but in the world. The main building will be 101x500 feet in length, and the boiler room about 60x100 feet. The latter will contain two nests of eight boilers each, and will be supplied with the latest and best machinery. The mill will have a daily 10-hour capacity of 250,000 feet, or 400,000 when run night and day, as it certainly will be for some time at least. Another large mill about to be erected at West Seattle, opposite the city, by the Satsop Railroad Company, will have a capacity of 150,000 feet per day.

The Yesler Wood, Coal and Lumber Company will soon have a mill in operation on Union Bay, four miles from the heart of the city. Its capacity will be 60,000 feet per day of ten hours. The machinery has already been ordered, including an engine of 148 horse power which Moran Brothers, of this city, are now building.

THE FREMOMT MILLING COMPANY

Is another new saw mill corporation that will proceed to business forthwith, a site having been obtained and the ground broken on the shore of Lake Union. Its capacity will be identical with that of the new Yesler mill just mentioned.

While on this subject of mills and lumber it is proper to add that there are several furniture factories and planing mills in this city which deserve at least passing mention. The Hall & Paulson Furniture Company is one of these. Their manufactory is at the foot of Commercial street, directly opposite the Stetson & Post Mill. They employ 25 men, and have all they can possibly do supplying orders for all kinds of furniture, bank fittings, saloon fixtures, house finishing, etc. Their goods are chiefly bought by city people, the remainder going to other towns on the Sound.

THE MECHANICS' MILL

Is another of these. It is on Yesler's wharf, near the foot of Mill street. They run a sash and door factory and a planing mill. They also do business as contractors and builders. In the mill proper there are 37 hands employed, and as many more on outside work that they have contracted for. The old mill, which was burned last December, gave employment to but 20 men; now, it will be perceived, they have nearly double that number. They pay from $1,000 to $1,200 per week in wages.

The Lake Union Furniture Company, which occupies the upper story of the Western mill at Lake Union have from 25 to 30 men in their employ at the factory and at their city salesroom. They find a ready market for all their wares.

The Eclipse planing mill is a new concern, started a few weeks ago, at the foot of Commercial street, adjoining Hall & Paulson's mill. They operate with a limited force at present—five men. They will soon, doubtless, be enlarging their premises and increasing their force, too.

The wages paid to the men in these factories varies all the way from $2 and $2.25 per day for helpers to $3.50 to $4 and even $4.50 per day for skilled mechanics.—*Seattle Post Intelligencer.*

PRACTICAL PAPER HANGING.

THE following upon this timely topic is from one of our contemporaries. It says: "The primary essential to commence a job of paper hanging is to have the tools. Any 'Jack' can work with a full set of tools, but it takes a good mechanic to work with poor ones. The best tools are the cheapest in the outcome and are the most satisfactory.

"An eight or ten inch bristle smoothing brush, a six to eight inch paste brush, a fourteen to sixteen inch pair of shears, a paper knife, seam roller, smoothing roller for borders and decorations, a straight-edge, plumb-bob, chalk line, paste pail, size kettle, paper boards, trestles and step ladder, these are the necessary tools for general work, though it is necessary to save time and trouble to have besides these tools a good sized kalsomine brush and a double width putty knife.

The next we need to proceed with is a bucket of paste. Use flour paste, except on very rare occasions when the tints are very delicate. The best patent flour is the most adhesive, and retains its consistency much better than starch.

Take a common patent pail and put in one-half gallon of flour. Stir in enough cold water to mix a flour batter; work out all the lumps thoroughly; have ready three gallons of absolutely boiling water, and stir this until you have enough to cook it. Now pour a little cold water over the top to prevent skinning over until you are ready to use it. You can thin it down at pleasure.

If the paper put on is not a metallic ground put in four or five ounces of alum in the paste. This will prevent its turning sour and hasten drying. Should the paper be metallic, use a little carbolic acid in place of alum, as alum is liable to turn gilt dark.

If the room you are going to paper is a hard finish, and not very badly smoked up, all that is necessary to prepare the walls is to brush them with a broom. Should they be smoked and dirty, it is best to go over them with a weak solution of glue and alum. If the walls have been papered before it is necessary to go over them again with a putty knife and cut the old paper off, pull out all nails, and with some plaster of Paris mixed with paste heal all the bad places.

If the walls have been whitewashed, doctor them with a strong solution of vinegar. Having the walls ready, lay a roll of paper on the boards, and with your straight-edge, which should be six feet long, measure the height to where the border will come and about an inch below the baseboards, and cut the strips off. Match the next strip to the top of the previous one and cut enough strips to cover the room.

To ascertain the number of strips required, take a roll of paper and count the number around the room. Now turn the paper over if you have trimmed it; put the trimmed edges towards you and pull the first over, so that it covers the other strips. This is to prevent the paste from forming on the trimmed edge and making bad work.

Some paper-hangers never trim the paper till after it is pasted. This procedure has some good features and some bad ones, which we will not discuss here. Beginners will find it better to have the paper trimmed beforehand. Commence at one end of the room and hang the slips as nearly perpendicular as you can.

Always brush the paper from the centre down and at either side. If you have wrinkles in the paper pull it off to where the wrinkle is and brush it out from the centre. Run the shears along the paper at the top of baseboards, and cut off nice and even. Never allow the paper to look haggled or uneven around the base, and cut it close down, but not overlapping.

When you come to an opening let the paper overlap, and trim with the paper knife as you work a saw. You will next need short strips, but do not run them beyond the opening unless the piece cut out of the other side will fill up the opposite; rather lap back again to be sure of a perfect match.

When you come to a corner, never lap the paper around it unless the space is very narrow. Fold up the strips at both ends measure the distance with your ruled shears, lay the straight edge on the paper, mark the distance just a little beyond the corner, and cut. In this manner you will always have corners that will be square and stay in position.

Use the same roller, and roll the seams nicely as you go. Cut the border in such lengths as can be easily reached to put on, paste and double up at both ends, so that the lines meet exactly, and cut."

Regarding the Inadequate Remuneration of American Architects.

New York, October 6, 1888.

Sir:—Mr. Henry Rutgers Marshall is quite right in saying, that five per cent. on cost should be considered the minimum for an architect's services. Of course he means a competent architect. I have held that ground for years, and have repeatedly, in court, testified my understanding that the rates recommended by the American Institute of Architects are minimum rates. But if (as Mr. Philbrick says in the same column) only one out of fifty students in the Massachusetts Institute of Technology—or about one a year during the last twenty years—takes or has taken the full architectural course (which may be considered a tolerable equivalent for the old time three years' training in the office of a practitioner) what guarantee has the public that they will get the worth of even the minimum?

Mr. Marshall is also measurably right in saying that the remedy for the evils he deprecates lies in the hands of architics themselves. But what is more important than anything else for ameliorative purposes is that architects throughout the land should present a united front against Philistinism. Every architectural society in the country, large or small, well-known or obscure, has based itself on the Institute schedule. Now let them be co-ordinated on other points and they have the future to themselves.

A. J. Bloor.

Please forward your subscription immediately for 1889. We promise for the new year a journal of greater excellence than we have as yet produced. Direct to present office until notified of the change in location.

Old Homes Made New	50
The Suburban Cottage	1 50
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Plumbing, Appliances	1 50

Annual Building Summary.

The number of new buildings, and the value of the same, for each month of the present year, is clearly shown in the accompanying table:

FOR FIRST SIX MONTHS.

	No	Frame Buildings Value.	No	Brick Buildings Value.	No	Repairs Value.	Total No	Total Cost.
January	60	$190,200	4	$279,000	13	$29,100	77	$498,300
February	51	186,500	2	258,000	8	18,200	61	462,700
March	36	147,200	1	10,000	8	31,600	45	188,800
April	56	284,950	5	44,300	13	29,100	74	358,350
May	55	269,600	10	331,520	14	37,300	79	638,400
June	72	396,750	9	84,400	20	92,100	101	573,270
Total	330	1,475,200	31	1,007,220	76	237,400	437	2,719,820

FOR SECOND SIX MONTHS.

	No	Frame Buildings Value.	No	Brick Buildings Value.	No	Repairs Value.	Total No	Total Cost.
July	50	305,600	5	410,000	16	$107,400	71	$823,000
August	46	206,000	6	236,000	27	108,300	79	550,300
September	68	424,200	4	97,000	19	37,600	91	424,200
October	47	179,100	6	192,000	10	49,100	63	420,200
November	70	305,400	7	544,000	14	17,000	91	826,400
December	48	203,500	3	90,000	8	12,200	59	305,700
Total	329	1,623,800	31	1,569,000	94	331,600	454	3,349,800

This making a grand total for the year of

659 frame buildings, value	$3,099,000
62 brick buildings, value	2,576,220
170 additions, etc., value	569,000
891 Grand total, value	$6,244,220

COMPARISON.

The number of building engagements, and their value, since 1880, are as follows:

1880—	397 engagements, value	$1,754,435
1881—	533 " "	3,790,732
1882—	785 " "	3,896,212
1883—	803 " "	5,261,689
1884—	1,127 " "	6,202,807
1885—	1,457 " "	7,043,999
1886—	1,148 " "	6,401,669
1887—	1,093 " "	6,605,054
1888—	891 " "	6,244,220

The year 1888 has about closed, and as compared with its predecessor, most certainly is a very gratifying one, as far as building activities are concerned. Since the bonanza year of 1885 the number of new improvements has steadily declined. The value of the buildings, however, has been exceeded by only three years since 1880. This is owing to the several large buildings that have been started in the past few months, among which are the Chronicle Building, the new engine house for the Howard Street road, Hayward's Tenement Building and others.

In general—Business in building circles is fairly active. Mechanics of all kinds are here in abundance. Wages for masons are steady. Carpenters' wages are weak, owing to the great number of men who have come here from the southern part of the State. The price of lumber is about $14 per M rough, with the advantages in favor of buyer. Poor draughtsmen are here in abundance, good ones scarce. Prospects were never better for a large building movement next year.

CITY BUILDING NEWS.

There is no Paper or Journal on the Pacific Coast that pretends to give a Full Report of Building News, *except the*

CALIFORNIA

Architect and Building News.

Alemany near 17th street, two-story frame. Owner, G. Larsen; cost, $1,800.

Bartlett near 25th, additions. Owners, Robinson; cost $500.

Brannan near 5th, two-story frame. Cost, $1,200.

Collingwood near 17th, additions. Cost, $700.

Clay and Laguna, painting; owner, Jno. A. Hooper; architects, J. C. Mathews & Son; contractor, Geo. Eggers; cost, $1,337.90; signed, Nov. 27th; filed, Nov. 30th.

75 per cent as work progresses; balance, 35 days.

Dolores, near 23d, frame building. Owner, Jas. Thorn; architect, R. Warren; contractor, Rich. Mowry; cost, $2,780; signed, Nov. 26, 1888; filed, Nov. 27, 1888; limit, May 1, 1889; surety, J. J. McKinnon; amount of bond, $2,780.

1st payment, when ready for mortar, $1,000; 2d, when trimmings are on, $900; 3d, the usual 35 days.

Eddy and Franklin, residence. Owner, G. Palache; architect, Pissis & Moore; contractor, A. McElroy; cost, $14,695; signed, November 8th; filed, November 23d; limit, 200 days.

1st payment, $1,500; foundations in, $2,000; framed, $2,000; brown coated, $2,000; inside plastered, $2,000; ready to paint, $1,500; completed, $3,605, 35 days.

Eddy and Franklin, plumbing. Owner, G. Palache; architect, Pissis & Moore; contractor, Fritz & Kean; cost, $1,094; signed, November 8th; filed, November 23d.

1st payment, $400; roof work done, $400; completed, $294, 35 days.

Fulton between Buchanan and Webster, carpenter work. Owner, National Brewing Co.; architect, W. Winterhalter; contractor, F. Weinohl; cost, $4,200; sureties, Martin Bahrt, L. Heydmaher; signed, October 25th; filed, November 21st.

1st payment, $1,000; floor joist laid, $1,000; roofed, $1,000; floored, $1,200, 35 days.

Fulton and Scott, two-story frame building. Owner, Lulu C. Robinson; architect, J. C. Robinson; contractor, J. B. Gonyeau; cost, $5,000; sureties, F. P. Latson, C. Hauson, $2,000; signed October 15th; filed, November 21st; limit, 90 days.

1st payment, $1,667; brown coated, $1,666; completed, $1,667, 35 days.

Fulton, between Buchanan and Webster, brick work. Owner, National Brewing Co.; architect, W. Winterhalter; contractor, McGowan & Butler; cost, $19,750; signed, Oct. 6th; filed, Nov. 21st; sureties, C. S. Holmes, J. G. Seibert; limit, 100 days.

1st payment, $7,000, ready for 1st floor beams; $4,750, ready for 2d story beams; $3,000, walls up to top floor beams; $5,000, 35 days.

Fulton, between Buchanan and Webster, iron work. Owner, National Brewing Co.; architect, W. Winterhalter, contractors, Sims & Morris; cost, $13,540; sureties, J. W. Farren, J. W. Sims; signed, Oct. 6th; filed, Nov. 21st; limit, 60 days:

1st payment, $6,000, steel beams ready; $3,000, 1st tier girders and beams laid; $2,000, 2d tier girders laid; $2,540, 35 days.

Folsom and 16th, frame building. Owner, Jno. Ward; architect, M. Welsh; contractor, J. F. Logan; cost, $4,300; signed, Nov. 19th; filed, Nov. 20th; limit, Feb. 19, 1889.

1st payment, $1,000, framed; $800, window frames set; $800, brown coated; $800, standing finish on; $900, 35 days, or all bills paid.

Folsom, W. 12, frame building. Owner, Kate McDaffe; architect, Geo. M. Salsbury; contractor, Geo. M. Salsbury; cost, $5,300; signed, Nov. 23, 1888; filed, Nov. 28, 1888. limit, 90 days; sureties, Wm. S. Jordan, L. A. Ackman; amount of bond, $5,300.

1st payment, $1,325, framed; $1 325, enclosed, $1,325; rough plastered; $1,325, 36 days after

Folsom, between 9th and 10th, two-story frame; Owner, John Ward; architect, M. J. Welsh; contractor, J. F. Logan; cost, $4,500.

Florida between 24th and 25th, one-story frame. Owner, E. A. Jungbluth; architect, J. Gash; contractor, G. D. Nagle; cost, $3,000.

Golden Gate Ave., near Willard, one-story frame. Owner, George Keck; architect, L. Hippely; contractor, R. Parker; cost, $1,750.

Grove, near Van Ness avenue, three two-story frames. Owner, John McGuire; architect, B. J. Clinch; contractors, Doyle & Sons; cost, $9,000.

Golden Gate Ave. and Jones, four-story and basement, brick. Owner, Lizzie W. Moffatt; architect, Geo. Moffatt; contractor, Chas. C. Terrill; cost, $53,975; sureties, Chas. C. Havens, F. and B. Joost; signed, November 8th; filed, November 13th; limit, 160 days.

1st payment, 75 per cent. as work progresses on 15th of each month. Balance, 35 days.

Greenwich and Van Ness Avenue, move, repair and build. Owner, Jno. McGuire; architect, B. J. Clinch; contractor, R. Doyle & Son; cost, $8,448; sureties, Jno. McCarthy, J. Wagner, $5,000; signed, October 29th; filed, November 17th; limit, February 10th, 1889.

1st payment, $2,000; enclosed, $2,000; brown coated, $2,300; completed, $2,148, 36 days.

Geary street No. 807, additional story. Cost, $2,500.

Hayes and Laguna, three-story frame building. Owner, Judah Boas; architect, Chas. R. Wilson; contractor, Wm. T. Commary; cost, $7,000; sureties, F. P. Latson, P. L. Archibald, $4,000; signed, November 1st; filed, November 23d; limit, 90 days.

1st payment, $1,750; framed, $1,750; brown coated, $1,750; completed, $1,750, 35 days.

Haight and Steiner, building. Owner, Leon di Nola; architect, Wm. Mooser; contractor, Kincaid & Thompson; cost, $7,500; sureties, J. F. Kennedy, F. P. Latson; signed, Nov. 19th; filed, Nov. 20th; limit, 110 days.

1st payment, 75 per cent as work progresses; balance, 35 days.

Haight near Pierce, two-story frame. Owner, L. Friedlander; architect, P. S. Barber; contractor S. C. Buzzell; cost, $4,500.

Howard, near 22d, alterations. Owner, A. C. Heister; architect, Chas. I. Havens; contractor, Wm. T. Commary; cost, $3,081; signed, Nov. 27th; filed, Dec. 1st; limit, 65 days.

1st payment, $700, enclosed; $700; window frames set; $800, completed; $881, 35 days.

Howard, near 22d, additions. Owner, A. C. Heister; architect, C. I. Havens; contractor, W. T. Commary; cost, $3,500.

Jones and Turk, four-story frame building. Owner, Emma F. Van Winkle; architect, A. J. Barnett; contractor, A. G. Fitzpatrick; cost, $11,455; sureties, Chas. F. Doe; signed, November 20th, filed, November 23d; limit, 130 days.

1st payment, $2,000; roof boards on, $3,000; brown coated, $2,000; finish on, $1,590; completed, $2,865, 35 days.

Kearny and Geary, carpenter work. Owner, M. H. De Young; architects, Burnham & Root; contractor, P. Crichton; cost, $41,500; signed, Sept. 27th; filed, Nov. 19th; limit, 60 days.

1st payment, 75 per cent as work progresses, on 15th of each month; balance 35 days.

Kearny and Geary, metal work. Owner, M. H. De Young; architects, Burnham & Root; contractor, J. F. Forderer; cost, $5,930; signed, Sept. 27th; filed, Nov. 19th; limit, Sept. 1, 1889.

1st payment, 75 per cent when half completed; balance on completion.

Leavenworth and Clay, two flats. Owner, Isaac L. Hoffman; architect, Chas. R. Wilson; contractor, F. V. Steinman; cost, $6,950 sureties, F. P. Latson, Lewis & Swift, $4,000; signed, November 22d; filed, November 23d limit, 100 days.

1st payment, $1,737.50; enclosed, $1,737.50; brown coated, $1,737.50; completed, $1,737.50, 35 days.

Michigan and Napa, building. Owner, P. McCormick; architect, Jno. J. Clark; contractor, T. Sullivan; cost, $7,572; sureties, T. Sullivan, Sr., B. Joost, $6,000; signed October 31st; filed, November 21st; limit, 100 days.

1st payment, $1,500; brick work done, $1,500; enclosed, $1,500; brown coated, $1,500; inside finish on, $1,572, 35 days.

Market and Ridley, five one-story frames. Owner, Mrs. Bertha J. Fisher; architect, C. I. Havens; contractor, Doyle & Son; cost, $5,000.

Ninth and Tehama, three-story frame. Owner, P. Kelly; architect, T. J. Welsh; contractor, C. E. Dunshee; cost, $5,000; sureties, Geo. F. Shaw, J. F. Kennedy, $4,000; signed, November 22d; filed November 24th; limit, three months.

1st payment, $1,250; framed, $1,250; brown coated, $1,250; completed, $1,250, 35 days.

Noe and Henry, three-story frame. Owner, Mrs. Emily Cadwell; contractor, F. Emil Newbauer; cost, $8,000.

Ninth, between Harrison and Bryant, two-story frame. Owner, C. Darsey; architect, M. J. Welsh; contractor, J. O'Connell; cost, $3,500.

Noe, between Hill and 21st, excavations. Owner, Geo. D. Shadburne et al; contractor, F. Leffler; cost, $2,600; signed, Nov. 30th; filed, Dec. 1st.

Prosper, near 17th, one-story frame. Owner, Merrell; contractor, Matthews; cost, $2,000.

Pond and Prosper, two cottages. Owner, I. L. Merrell; architect, I. L. Merrell; contractor, Samuel D. Mathews; cost, $4,015; signed, November 10th; filed, November 12th; limit, January 15th, 1889.

1st payment, $1,000; chimneys up, $1,000; enclosed, $1,000; first coat plaster, $1,015, completed.

Post and Baker, three cottages. Owner, Christopher A. Buckley; architect, A. Laver; contractor, J. J. Dunn; cost, $7,200; signed, Sept. 28th; filed, Nov. 28th; limit, 75 days; sureties, C. S. Holmes, B. Joost.

1st payment, $1,800, framed; $1,800, brown coated; $1,800, completed.

Prosper near 17th, one-story frame. Owner, James Condon; superintendent, C. Christy; cost, $1,800.

Pond near 17th, two-story frame. Owner and builder, White; cost $4,500.

Pond and Prosper streets, two cottages. Owner, J. L. Merrell; contractor, S. D. Matthews; cost, $4,500.

Seventeenth near Castro, two-story frame. Owner, Kimball; contractor, B. Dryer; cost, $7,000.

Seventeenth near Castro, one-story frame. Owner, Harrington; contractor, Conlan; cost, $1,500.

Seventeenth and Noe, Congregational Church. day work; cost $5,000.

Stockton and Chestnut, two-story and basement frame. Owner, L. M. Juhl; contractor, Jno. C. Classen; cost, $4,375; sureties, Chas. F. Doe, Chas. Lackeman; signed, November 14th; filed, November 22d; limit, 75 days.

1st payment, $1,000; enclosed, $1,000; brown coated, $1,000; completed, $1,275, 35 days.

Stockton and Emma, three-story and basement brick. Owner, Mrs. B. Turre; architect, Chas. R. Wilson; contractor, Jas. Geary; cost, $9,050; signed, November 20th; filed, November 21st; limit, 131 days.

1st payment, $400; graded, $1,500; first-story walls up, $1,500; third-story walls up, $2,000; brown coated, $1,387.50; completed, $2,262 50. 35 days.

Stevenson between 19th and 20th, two-story frame. Owner, D. Finnegan; architect, M. J. Welsh; contractor, A. S. Cook; cost, $1,600,

Twenty-Fourth, near Noe, two-story frame. Owner, Caroline Hoehn; contractor, A. Klahn; cost, $2,900.

Taylor, near Clay, two-story frame. Owner, Mrs. Sarah Rankin; contractor, G. M. Salisbury; cost, $3,200.

Twenty-third near Bartlett, additions. Cost $1,000.

Third near Jessie, alterations. Cost, $800.

Turk near Larkin, three flats and two stores. Owner, Kate Morton; architect, H. C. Macy; contractor, Anderson Bros.; cost, $7,957; sureties, Kennedy & Shaw, $6,000; signed, November 5th; filed, November 15th; limit, 90 days.

1st payment, $1,000; framed, $1,000; brown mortared, $1,000; white mortared, $1,000; sashes in, $1,967.75; completed, $1,989.25, 35 days.

Valencia and 19th, four-story frame and brick basement. Owner, Wm. Hillenbran and P. Klose; architect, Salfield & Kohlberg; contractor, B. Dryer; signed, April 19th; filed, November 22d; limit, September 1st.

1st payment, $3,000; third floor joists up, $2,800; frame work done, $3,000; partitions set, $3,000; brown coated $3,000; white coated, $4,000; completed, $6,000, 35 days.

Waller, between Fillmore and Steiner, alterations. Owner, Henry Meade; architect, Caspar Zwierlein; cost, $1,935; signed, Dec. 1st; filed, Dec. 1st; limit, 60 days.

1st payment, $500, enclosed; $500, brown coated; $500 completed; $435, 35 days.

Vallejo between Van Ness and Franklin, two-story frame. Owner, J. Creenin; architect, W. Mooser; contractor, S. H. Kent; cost, $15,000.

COUNTRY BUILDING NEWS.

ALAMEDA.

Thomas I. Pyne is building a two-story dwelling, corner of Chestnut street and San Jose avenue. It will cost about $3,500.

Herman Hashagen is building a cottage on McPherson street. It will cost about $1,700.

Mrs S. B. McKee, of Oakland, is building a two-story residence on Chestnut street, corner of Clinton avenue.

D. McKinnon is building a two-story house on Park street, near the bay. It will cost about $4,000.

J. B. Cogswell has the contract for the erection of four one-story cottages on Versailles avenue, near Central avenue for J. Generlich and C. Clanet. The cost of the row will be $5,800.

C. M. Mason has the contract for erecting a frame house for C. McKee on Chestnut street, near Clinton avenue, to cost $3,100. A. C. Lutgens is the architect.

The vestry of Christ Church has agreed upon a plan for a new Church building, to be erected on the lot recently purchased on the corner of Santa Clara avenue and Grant street. It is to be of Romanesque style of architecture, and will cost, together with its furnishings, $15,000.

BERKELEY.

C. R. Lord will commence the erection very soon of a residence on Channing way and Shattuck avenue.

Joe Newell has purchased a lot, and will soon build a house on Addison street near Tenth.

C. R. Lord is building for J. F. Kelly a residence on the Barker tract, to cost $3,850.

Lord & Boynton have the contract for a residence for H. S. Thompson at Peralta Park, to cost $2,786.

C. R. Lord is building for W. Patterson a cottage for $2,560.

EAST OAKLAND.

Voice & McKenzie have the contract for the new Methodist Episcopal Church of East Oakland, which is being erected on the corner of Eighth avenue and East Seventeenth street. The contract price, which does not include heating, glass or seating, is $19,969, to be made in five payments. The limit for completion of the work is March 25, 1889.

W. W. Crafs is erecting for M. Cullen a cottage on East Fourteenth street, to cost $1,771.61.

OAKLAND BUILDINGS.

P. F. Nelson has contracted with Mrs. Sonnikson to build her a $1,500 residence in this city.

Herbert & McLeod have the contract for a building for W. H. Martin in this city, to cost $2,457. W. Kirk is the architect.

W. N. Concannon has the contract to erect a cottage for L. Friedman on the corner of Jefferson and Ninth streets in this city. C. Mau is the architect. The contract price is $1,740.

W. T. Veitch has in course of construction a two-story frame cottage for M. Sisson on Myrtle street near Eighteenth. The cost will be $3,000

W. H. Weilbye is erecting three five-room cottages on West street near Thirty-ninth.

V. H. Metcalf is building a $2,500 addition to his residence on the Coll Deane tract.

Four flats, to cost $1,000, are being erected for Paul Lohse, at the corner of Thirteenth and Harrison streets.

J. N. Knowles, of Fifteenth and Jackson streets, will make a $7,000 addition to his residence.

An addition costing $4,000 is being put on the residence of W. H. Harvies on Jackson street near Eighteenth.

Paul Lohse is building a fine residence on Webster street near Eighteenth, which will cost $9,000.

F. A. McFaul, of Joliet, Ill., has purchased 100 feet of land on Delger street, on which he will erect three houses.

Mrs. Blake, of Albion street, has just had completed, at a cost of $4,000, a fine eight-room dwelling. Mr. Weilbye is the contractor.

A. J. Snyder is building a five-room cottage on the south side of Twentieth street, which will cost about $2,000.

A. McFall will build three six-room cottages on Twentieth street, between Telegraph and San Pablo avenues.

A two-story six-room flat will be erected at the corner of Brush and Seventeenth streets, by contractor Weilbye for Mrs. Howard, at a cost of $5,000.

The same lady will also build a seven-room house on Seventeenth, near Brush street, costing $3,000, and will have an eight-room house remodeled to the extent of $1,200.

Mrs. E. S. Goodrich is having a nine-room two-story residence erected on Telegraph avenue, near Hobart street, by W. H. Weilbye.

Contractor Weilbye is erecting on Sutter street, near San Pablo avenue, an eight-room two-story dwelling for Mr. Wills. It will cost $3,000.

BUSY AT WORK.

The location for the Hall of Records presents the most busy appearance of any place in Woodland. About sixteen hands are at work under the direction of Mr. Fulton, foreman. Mr. J. G. Day, contractor of San Francisco, is exercising a general supervision over the work. The foundation is being made strong and solid with concrete, with which the excavations are filled, and which rises about one foot above the ground. The Hall will be one of the most substantial structures in this portion of the state.

A BIG INDUSTRY.

The Extensive Lumber Output of the Various Mills in San Bernardino County.

A reporter of the *Index*, who is always on the alert for items of interest concerning San Bernardino county, had his attention drawn to the immense amount of lumber that is being hauled into town from off the mountains, and determined to ascertain from those who were posted just how many mills were running, and about how many thousand feet have been cut this season. After considerable running around it was ascertained that there were some eight mills in operation, and that their total output this season would aggregate 7,410,000 feet. The following are the mills now in operation, and the number of feet of lumber cut by each of them:

F. L. Talmage	1,060,000
Flemming & Co.	1,400,000
John Hook	1,050,000
Tyler Bros	900,000
Somers	600,000
Van Slyke	1,000,000
Gurney	1,000,000
Mountain Mill	400,000
Total	7,410,000

This is no small output for a county that is known as the banner orange-growing section of the state, and with third bring a great deal of capital into the county. It will also serve to keep the prices down so that almost anybody who so desires can save rent by owning their own homes.

The productions of San Bernardino county have never been half written up nor their extent told, and eastern capital that is now wending its way westward will eagerly grasp all such productions, and it behooves our people to be on hand to show and explain what boundless resources there are in San Bernardino county, and not to make set speeches on the town lot craze, for that business for making a fortune has been exploded.

THE NEW COAST LINE.

About 1,800 Men Hard at Work There.

The Southern Pacific evidently means business on its new coast line and additions are being made daily to the working force engaged in closing up the gap between Templeton and Ellwood. About 1,800 men are now at work and have graded and laid track to seven miles south of Templeton. Five hundred laborers are working on the 4,000 foot tunnels that will have to be encountered to San Luis Obispo, and this piece of work will probably occupy about a year. From San Luis Obispo to Ellwood the Southern Pacific will probably run around the Santa Ynez, but this all means heavy work, and it looks as if it will be about three years before the first train makes the through trip from Los Angeles to San Francisco over the new road.

WINTERS, YOLO CO.,

On August 16th last, more than half of the business portion of town was destroyed by fire. The owners of the burnt district wisely determined to rebuild same with brick structures Brick, however, were a scarce article and proceedings were delayed until they could be made.

C. Koske is having erected a one-story brick building to cost $2,500. J. E. McFall being the contractor. J. H. Fenly & Co. are also putting up a $2,500 brick building, A. Ritchie being the architect and builder. Several other buildings will soon be started.

THE SAN FRANCISCO BRIDGE COMPANY GETS A SMALL CONTRACT IN SAN JOSE.

At the session of the Board of Supervisors last week bids were opened for the construction of a bridge across the Capitancellos creek, on the Almaden road, as follows: C. E. Berry, $1,375; Pacific Bridge Company, $1,095; San Francisco Bridge Company, $943.

The contract was awarded to the latter company and their bond placed at $500.

SAN JOSE.

Mr. Lux is having a house built to cost $1,000 Mr. D. Green is the contractor. Also a barn to cost about $3,200. Mr. Lewis is the contractor, Theo. Lenzen is the architect. Michael Sullivan is having a one-story cottage built in East San Jose, contractor, J. E. Clinton; Architect, J. O. McKee; cost, $2,200; Mrs. H. P. Burt a cottage on Sixth street. A. J. McIlwain, contractor; J. L. Bothwell, architect; cost, $2,600. Mrs. C. J. Martin three-story brick on Second street. J. J. Hill, contractor; Theo. Lenzen, architect; cost, $25,000. James Phelan three-story brick on First street. A. J. McIlwain, contractor; J. Lenzen and Son, architect; cost, $35,000. Mrs. S. L. Winchester is having her house remodeled after plans by J. O. McKee. J. B. Wolfe is the contractor; cost, about $6,000. Mr. S. N. Johnston a two-story dwelling house on Eighth street. Built by day's work. Estimated cost about $5,000; J. O. McKee, architect. Mr. Close a two-story house on Eighth street. Fuller & Lashbrooks, contractors and cost, $3,700. Mrs. Parkinson a two-story cottage on Eighth street. Plans by Newsom; cost about $3,500. Several new houses are in course of erection around town that are being built by contractors who furnish their own plans. The City Hall is gradually nearing completion, and it is an ornament to the town. The Hotel Vendome is not completed as yet and is dragging along slowly. Van Dalsen has a large crew at work on the new asylum buildings, and is pushing the work rapidly.

Yours Truly,

J. L. BOTHWELL.

COUNTRY BUILDING ACTIVITIES.

With the exception of the southern part of the State, building activities are generally progressive. From present appearances, the district from Modesto to Fresno promises to be more than usually lively next year. Late advices from San Bernardino, Los Angeles and San Diego represent that the present setback is but temporary, and that next year will witness a renewal of the erection of edifices and dwellings, that gave the southern counties the name in past two years of the most active building section of the United States. Oakland and Alameda exceeded last year in the value of new buildings erected. Sacramento, Stockton and immediate vicinity thereto have reason to be proud of the energy shown by their residents in beautifying the various localities. To Napa and Sonoma Valleys have been added scores of beautiful homes, while wineries and other large buildings have been placed where necessities demanded. North of Marysville the opening of the Oregon Railroad has caused hundreds of new buildings to be added to the various towns along the line. Generally the year has been a good one and promises for the future are especially brilliant.

NORTHERN and SOUTHERN CALIFORNIA.

A residence of thirty-seven years in this state gives us a right to our opinion in regard to dividing this glorious state.

We are for California, one and indivisible, now and forever. Always the grand and matchless State of California.

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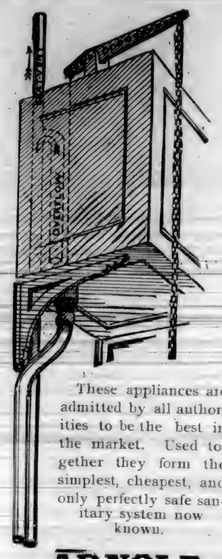

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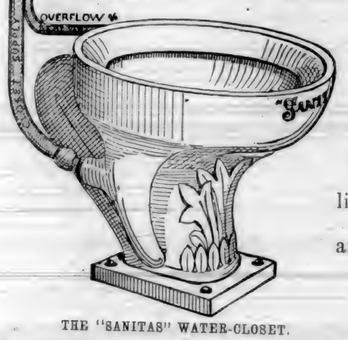

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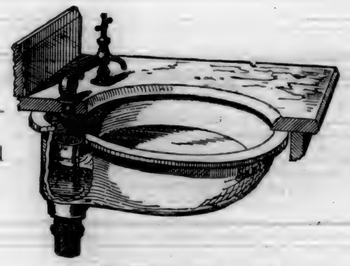
Architects, Builders and the Public generally, are invited to call and inspect the same.



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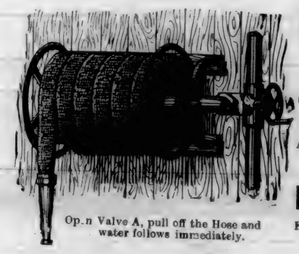

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DATE 1889

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The * California * Architect * and * Building * News

VOLUME 10. ENTERED AT POST-OFFICE, SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1878. NUMBER 1.

NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Office, 408 California St., San Francisco.

(Next to the Bank of California.)

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Spaces on Cover and on page preceding reading matter are subject to special rates.

SAN FRANCISCO, JAN. 15, 1889.

CALIFORNIA ARCHITECT PUBLISHING COMPANY NOW HAS CONTROL OF THIS JOURNAL.

A meeting of the Stockholders of the above named Company was held on January 14, 1889; the following named architects were unanimously elected as Directors of the Company:

ALBERT PISSIS, W. P. MOORE,
H. T. BESTOR, W. J. MATTHEWS,
OLIVER EVERETT, R. H. WHITE,
W. J. CUTHBERTSON.

Articles of Incorporation have been prepared, and as soon as returned from the Secretary of State, permanent officers will be elected and the Company's organization completed.

Rooms have been secured at 408 California St., next to the Bank of California.

Direct all communications in future to the above address, as all subsequent issues will be issued from the new offices.

VALEDICTORY.

In parting from this journal as its original founder and sole proprietor, I feel it due to my many personal friends and a generous public who have so well and nobly assisted me by subscription and advertising patronage, to thank them sincerely and truly for every favor received. In a remarkable degree, this journal has come up to its present enviable position "through great tribulation." Its initiatory issue appearing at a time memorable in the history of the State, when all financial and building interests were demoralized, and a terribly bad condition of things generally prevailing—times when no one but a bold and determined man or a simpleton would have dared to hazard the risks attending the undertaking, as all the conditions, monetary and business, were depressed and confused, and a feeling of uncertainty overhanging and enshrouding every interest of the State.

But with faith and hope that days of prosperity would return, and the shadows disappear, the monthly succeeded the quarterly of 1879, and from then until now, it has not failed to make its monthly appearance regularly.

Up to the birth of this pioneer architectural journal on this coast, there had been none devoted exclusively to the architectural and building interests, and scarce ever before had illustrations and cuts of buildings been seen in journals printed in California, and the number of class journals published in the United States was far less than now, and by no means equal in character and influence with those of the present day: But following the advent of this journal, the number increased rapidly until nearly every city in the Union of any considerable importance, is now represented by a class journal. Many have come to the surface only to perish and disappear after a brief period, under the weight of cumulative difficulties, which must be met in all such undertakings.

The prophets of ten years ago predicted a like result for this journal, and limited its life to a few months, or at farthest one year. But ten years have passed, and still it lives and prospers, and at the end of a full decade, instead of expiring, it reaches out into a larger field of operation, and calls to its sanctum sanctorium a host of competent and energetic men, whose names alone, as interested parties, give assurance that its future will be well sustained, and its influence and usefulness become an indispensable factor in architectural and building matters.

Again, to my numerous friends I return thanks for every favor received, and to those who—perhaps following a common law or instinct of their nature—have indulged in unkind if not vicious expression, charging purposes entirely the opposite of those which induced the founding of this journal, and to the fullest of possibilities, misjudging and misrepresenting the acts and efforts of its proprietor—I have no harsh replies to make, being entirely compensated and satisfied by and with the innumerable kind words and favors received from a host of generous, fair minded and honorable patrons and friends. And now, as with this issue all personal control of this journal on my part merges into one composed of many intelligent and honorable brother architects, and others who will guide its future, I ask that my friends one and all continue their hearty support, and extend to the new management, advertising and subscription support, equal or greater than that which has been so generously and liberally extended to the journal under my personal management during all the years of its existence.

Sincerely to all,

JAMES E. WOLFE.

With this issue we begin the Tenth Volume of this Journal. It is the only one printed this side of the Rocky Mountains in the interest of Architects and Builders.

PLATE 2.—SEE "OUR ILLUSTRATIONS."

CERTAIN architects, in a place which we will not mention, were instructed to make plans and specifications for a house, to cost a certain sum, and to contain accommodations which could not possibly be provided for that sum. As we all know, this method of giving incompatible directions is very popular among clients, who are thereby enabled, whatever the architect may do for them, to resist paying his bill, if they happen to be so inclined, on the ground that he disobeyed some of the instructions, which he was, of course, obliged to do in carrying out the others; and, like the rest of us, the architects in question devoted themselves diligently to finding out what their patron really wanted. This was a house costing considerably more than the proposed sum as they told him. Bids were obtained, the lowest of which was more than the client wished to spend, so he himself took the lowest in hand, and with him modified the drawings and specifications so as to bring the cost of the building within his means. The architects were informed of this agreement, and requested to draw up contracts in accordance with it, which they did. When the outside of the house was done, the contractor notified the owner to send some one to paint it, as the painting was not included in the specifications or in his contract. The owner, as usual, proceeded to the architects, and demanded that as they had forgotten to mention the painting in their specifications, they should pay for it themselves, which they declined to do. As it happened, their side of the case was complicated by the fact that they had inserted a clause at the end of their specifications, reciting that "all work necessary to the complete finish of the building should be done by the contractor without extra charge, whether specially described in the specification or not." The other builders who had estimated on the house told them that under this clause they had included the painting in their estimate, and the contractor told them that he should charge no more for painting the house at the stage where it had already arrived than if he had included it in his original estimate, so, as far as their work was concerned, they could not see how the owner had suffered any damage by the omission. As to the point whether the contractor, under the saving clause in the specification, was bound to do the painting, they took legal advice in the owner's interest, and learned, what architects who depend upon blanket clauses should remember, that such a stipulation is with difficulty applied with special sorts of work not expressly mentioned in the specification, and there was no probability that it could be stretched to cover the painting of a house. Apparently, the owner also took legal advice as to his claim on the architects, for he abandoned it, and paid for the painting himself, as he would unquestionably have been compelled to do if he had been so foolish as to carry the dispute into court. The law is perfectly well settled that the omission of anything from a contract or specification, by an oversight of the architect, renders him liable, at worst, only for the difference between the cost of doing it after the discovery of the omission, and what it would cost to do it if it had been originally included in the specification or contract. In most cases this difference is nothing, and there is, therefore, no damage to be claimed; and even if there should be a real difference, and corresponding damage, the architect would not have to bear it unless the omission showed lack of reasonable care and skill. It should be remembered that the architect does not guarantee that his specifications are either full or accurate. "Heaven forbid," said the Lord Chancellor of England, "that a lawyer should be expected to know all the law," and an architect is no more to be expected to remember every item about a building, in writing his specification, than his counsel is to know all the law. If he makes glaring mistakes, such as architects of good ordinary skill and dilligence would not make he is liable for any damage that his employer may suffer in consequence, but that is the extent of his liability. The idea that an architect gives a guaranty to an indefinite amount with everything that he does or says, however hastily, is much favored by the persons who look on all business transactions as traps, by which weak or unwary people are to be caught and fleeced, but has no sanction in the courts.

ON the contrary, a case recently decided on appeal in England has established the rule that even a quantity-surveyor is not responsible for the correctness of his quantities. In the case in question, a quantity-surveyor was employed to take out the quantities for a certain building, from the plans and specifications, and the tenders for the work were based on these quantities. It is the custom in England for the bidder whose tender is accepted to pay the surveyor's fee, and on the completion of the contract the surveyor, who had not been able to get his money before, brought suit against the contractor for it. The contractor refused to pay, setting up a counter-claim that, on account of the inaccuracy of the quantities, which were less in several instances than the actual amount of work required he was obliged to do more work than he had estimated upon, and had suffered much damage in consequence. There was apparently, reason to suppose that the contractor's claim was well founded, but both the lower court and the court of appeal refused even to listen to the evidence which he offered. They admitted the surveyor's witnesses, to prove that the custom was for the contractor to pay for the quantities, but barred out the counter-claim entirely, on the ground that the law was established that a quantity-surveyor did not guarantee his work, and evidence to prove its inaccuracy could not be admitted. It is true that the English architectural journals comment rather severely on this decision, and quote another, where an owner recovered damages from a surveyor who made his quantities too large, and thereby unduly enhanced the contract price; but the decision shows that if a surveyor, on whose data are based the contractor's figures, is not liable for mistakes in them, it would be preposterous to try to make an architect suffer for not being infallible and omniscient, where no damage could be shown to have resulted from his errors or oversights.—*American Architect.*

Our Illustrations.

Plates 2 and 14 represent new ideas of capitals to be worked in stone.

Plate 3 is self explanatory. This engraving was prepared expressly for this journal, and shows to advantage the skill secured by our modern engravers.

Plate 5. This is a beautiful example of a modern design in street architecture in San Francisco. There are a great many designs of similar character in various parts of the city, but the one shown may be taken as a fair representative of buildings costing about $5,000.

Plates 6 and 7 were furnished us as a fair example of the difference between the "Old Colonial" style and a modern design for country dwellings. This only as far as the exterior is concerned. In either case the interiors are of modern construction.

Plates 8 and 9 represent the plan and elevation of a very conveniently arranged country or suburban dwelling. It was designed by Sam'l Newsom. Sizes of the rooms are very distinctly given, and all the appointments are clearly shown. It can be built for about $6,000.

Plates 4, 10, 11, 12 and 13 were designed expressly for this journal by C. Bryant Schaefer. Plates 10 and 11 will bear special study.

With each succeeding number will be noted a general improvement in the character of our illustrations. We certainly take pride in presenting the present issue, believing that it far excels any preceeding number of any similar class journal published this side of Chicago.

Now is the time to subscribe. Send us $2.00 and we will send you this journal for one year.

THERE is a peculiarity about the building business that is foreign to all other enterprises. San Francisco and the other cities on this coast have been built at a heavy loss to their contracting mechanics, their employers and material men. This condition of circumstances is partly owing to the constant incoming of new men—new contractors, who are bound to make a start in business. "To make a spoon or spoil a horn," having everything to gain and little to lose, they underbid older and more cautious men. There is sometimes an idea among those new comers that our old contractors are fogies, and behind the times, and if the old men can make both ends meet the new hands can certainly get rich at the same prices, as they consider themselves sharper, can figure and manipulate closer, and have greater energy. Thus it is that prices are constantly being cut so that as I remarked at the commencement of this article, the cities have been built up at a loss to the mechanic, etc.

The trouble is in the number of contractors, and the severe competition, in addition to that caused by men not capable of making a correct estimate, or of successfully conducting the works after they secure the job

A great source of trouble, and that which to a large extent makes the other difficulties possible is that great protector of the mechanics and material men—the Mechanics' Lien law, which gives the impecunious contractor the right to use the credit or property of the owner as security to his employees and material men. As the law requires that claims for labor and material must be paid out of the money coming to the contractor before any outsider can attach or secure any of said money for any other debts of the contractor. This enables inexperienced men without credit or other capital to enter the building market in competition with those having ample experience, credit and money, to the great injury of the latter. It is hardly possible to select five men from the building business, to make an estimate on the cost of a building without at least one making a mistake that will bring his estimate away below the others, and so low that he will fail to make a profit. Of course when the contractor loses the owner gains, provided he does not, at the same time, secure a series of law suits, and be obliged at the end to pay out more than if he had accepted one of the other bids. In nine cases out of ten, the owner, who is taking estimates, will insist in having those of one or two contractors, who have been recommended to him as low bidders, trusting to luck to get through without trouble, or considering themselves secure if the low bidder will give a bond signed by John Smith or some other person whose property is as easily identified as the above name. If the lien law did not apply to any other than the original contractor, the principal part of the difficulties in connection with the building trades would soon cease, as only those having money of their own or good credit would be in competition with each other, and would be careful to have enough for their work to avoid loss. All creditors would have the right to attach money due to contractors for debts due on other works, as well as on the works then under contract. This would place contractors on the same footing as merchants, and those who had secured good reputation for ability, reliability and honesty would be able to secure reasonable profits on their work. There would be less than one half the competition between contractors that there is now.

There is no good reason why intelligent, skillful and solvent contractors should not make a profit of from eight to ten per cent on their contracts.

Now, is there any reason why owners should not be willing to pay such prices as will give a profit on works done for them?

The main trouble originates in the unfair advantage taken of the Mechanics' Lien law, that great protector of the workingman.

Yours truly, Boreas.

That 28-Story Building.

A few months ago we called attention to a 28-story building, designed by a Minneapolis architect. Inference was made that a style peculiar to himself was intended by the party referred to. At last accounts, the architect has backed squarely and completly down, and if report be true, has intimated that the plan was meant only for illustrative purposes. He seems however to have complete confidence in the practibility of such a building, but so far has not been able to induce capitalists to invest in the scheme. But few architects have succeeded in obtaining as much free advertising as the one referred to, and we doubt if it has been of much advantage to increase the number of his clients.

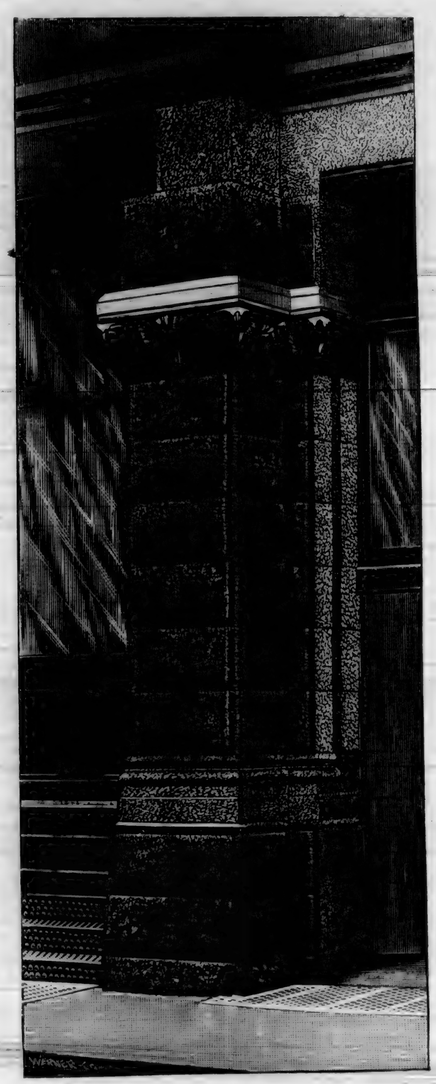

PLATE 3.—SEE "OUR ILLUSTRATIONS."

The difference between building in America and in some of the older parts of the world is illustrated by an item that is at present making the rounds of the English papers. Some 16 years since a town-house waa built at Rochdale, at a cost of $150,000. Recently the town council have discovered that the building at present requires thorough re-roofing and other expensive repairs. Such occurrences as this in America, at least in many portions of this country, would pass almost without notice being accepted as the natural order of affairs, but on the other side of the water it seems things are different. One of the aldermen, on the occasion named, took the opportunity to denounce the contractors of the building, stating that they had scamped the work in every possible way, and measures by which they might be punished were seriously considered. The item in question concludes that it is monstrous that a town-hall which was erected at so great an expense should require repairs after only 16 years.

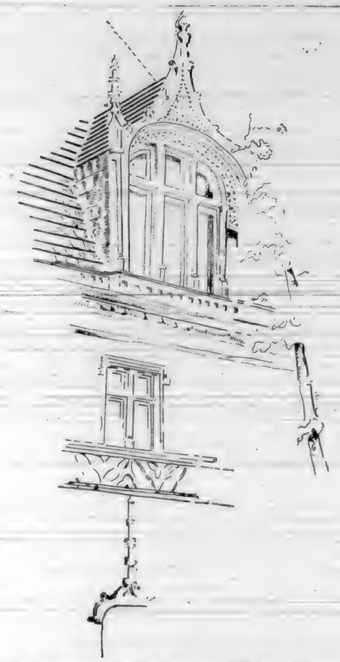

PLATE 4—SEE "OUR ILLUSTRATIONS."

AS THE NORTHWESTERN "LUMBERMAN" VIEWS THE SUBJECT.

The Future of Oregon Lumber.

AN Oregon paper points out in a timely manner the opportunities now before the lumber manufacturers and dealers of that state. Until the development of enlarged demand from eastern sources of consumption, Oregon labored under disadvantages, and does still, but there is a prospect that her lumbermen will be able to hold their own in the future.

Outside of the demand noted, Oregon, for a long time, had little but a local market for her lumber product. California, and especially San Francisco, secured nearly all the domestic and foreign trade on account of the situation and generally superior advantages. The combination by coast lumbermen aided them in making the most of their opportunities. Nearly all the Oregon lumber which went to supply an export demand was handled by California dealers under a sort of sufferance, so it is said. Actual competition would scarcely be permitted. It is claimed also that Oregon lumber has been purposely maligned to prevent its coming extensively to the front. It has been given out that Columbia river lumber—a distinction applying to all the product from Astoria to Portland—was of inferior quality, yet, according to the allegations, the California dealers would fill orders with it for Puget Sound lumber.

But Oregon's natural field of traffic lies to the east, and with respect to that she may be quite independent of California or the sound, unless the railroads see fit to discriminate unfairly in making rates. There is no doubt as good timber growing in Oregon as in Washington, and there is much virgin forest in the state. It is believed that the Oregon lumbermen will be able to hold the trade they have worked up with the east against all competition. A market has been found for Oregon fir, commonly known as pine, at Denver, Salt Lake, Omaha and other important points, and to a limited extent, in Chicago.

The greater demand is for heavy timber for railroad and structural purposes. Its strength is its cardinal virtue as a light wood. Although it bears some resemblance to white pine, is does not correspond to it, or equal it, in certain respects, but it adapted to heavy dimension and wide lumber. Oregon cedar shingles are also in demand.

One thing in favor of an increase in the demand for Oregon or other coast lumber is the fact that the decrease of white pine stumpage and its upward tendency point to a rise in the price of the lumber manufactured from it, while the extension of manufacturing operations on the coast, the building of larger and better equipped mills, logging roads, etc., would tend to cheapen rather than to enhance the price of lumber there produced; and as the trade with the east advances into greater importance to the railroads as a means of revenue they are certain to adapt rates to the emergency in a manner to develop the valued traffic.

One mill at Portland is now running night and day on eastern orders, and various others have been kept busy. The timber resources of Oregon are approximately inexhaustible. No one can conjecture how many billion feet of untouched stumpage the state contains, hence the lumber industry there has a long lease upon an existence which, it is hoped, will be prosperous. The Oregon manufacturers, it may be observed, will do well to study the situation and profit by the lessons learned in other timber regions where lumbermen have injured their profits and opportunities by over production and unwise moves of one kind and another.

LOOSE SCREWS.

BY UNCLE PETER.

ONE of the correspondents in the October number of *The Wood Worker* says "when you hear a planing mill owner say our planing machines do not pay their way, you may be sure there is a screw loose somewhere." Now I know this is true and it is generally not much trouble to find which screw it is, if they only look for it in the right place, and when they do find it the best way is to either tighten it up, and then if it don't hold put another in its place that will hold.

I once went into the office of a certain mill and the proprietor said to me the same thing. He said he did not know just what the trouble was; he thought there must be a screw loose somewhere as there was something broke down about half of the time, and between stoppages and repair bills the profits of the mill were all eaten up, besides he did not get out half the work that he ought to. He said he wished I would look it over and see if I could find out what the trouble was. I knew the mill was nearly new and that the machinery was nearly all first-class when it was put in, and there was no good reason why it should not turn out just as much good work as any mill.

The mill was located about a quarter of a mile from the office, and as the proprietor only went over twice a day the whole management was left to the foreman. In the afternoon about four o'clock I went to the mill, and after marching through shavings nearly up to my knees, I came up to a machine standing still, while the young man who had charge of it was grinding a set of knives upon a grindstone that was neither round, oval or three-square. I asked him why he didn't turn off his grindstone. He said he didn't have time. I then inquired for the foreman. He said he guessed I would find him over across the way in the saloon, as that was where he generally hung out "when he ain't here." I went over to the saloon and found him sitting at a table with a glass of beer in front of him, and judging from his appearance I concluded that the cares and anxieties of the planing mill across the street did not weigh very heavily upon his mind.

He went over to the mill with me and complained about this thing and that, and according to his notion there was nothing right in the whole mill. I begun to think so too, but not from the same causes that he laid it to. The tool room was enough to make a man sick to look at, broken knives, banged-up cutterheads and such stuff was scattered in all directions. I thought to myself that a beer saloon, no matter how well it was conducted, was a mighty poor place to run a planing mill.

In the morning I called on the proprietor again at his office. I learned that he was in the habit of going to the mill at nine o'clock in the morning and three in the afternoon, and spending about half an hour each time. When he asked me if I had found out what the matter was I told him I thought I had, but would rather he would find it out himself if he choose to do so. I suggested to him that he go over at his regular time in the morning, and then go back again in a couple of hours, and he would find where the screw was loose without my telling him. He said he would do so and I left. I found out afterwards that he did not only find out which screw was loose, but that he replaced it with one that would hold without any help from a screw-driver, and although it took considerable money to put the machinery in good running order, it is kept so now, and every man attends to his own part of the work, and the mill is now making money.—*Wood-Worker*

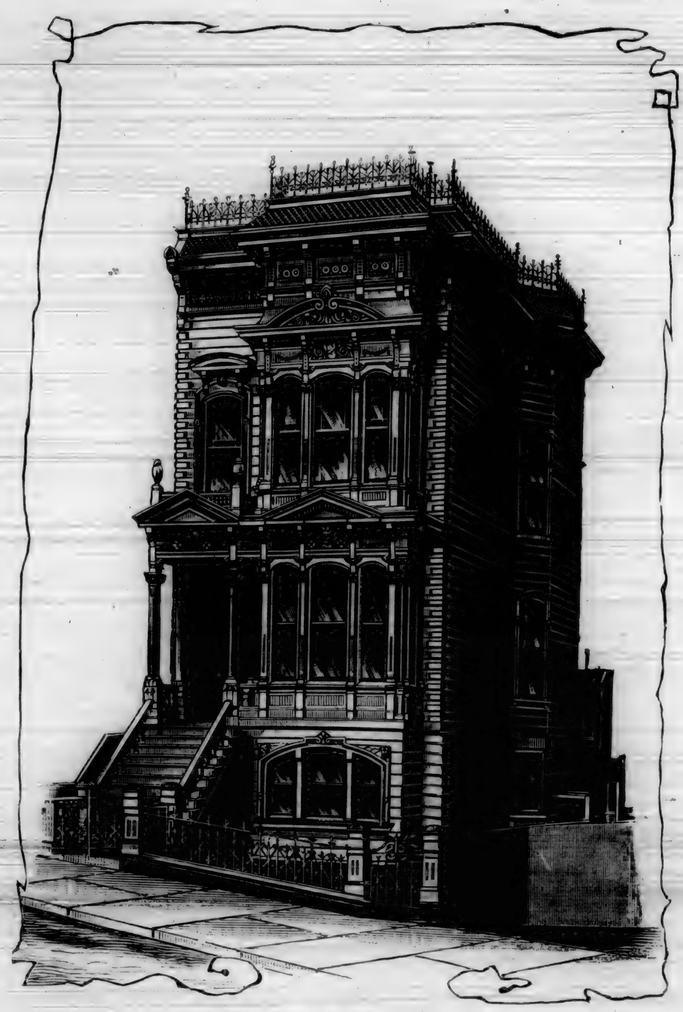

PLATE 5.—SIDE HILL RESIDENCE.
See "Our Illustrations."

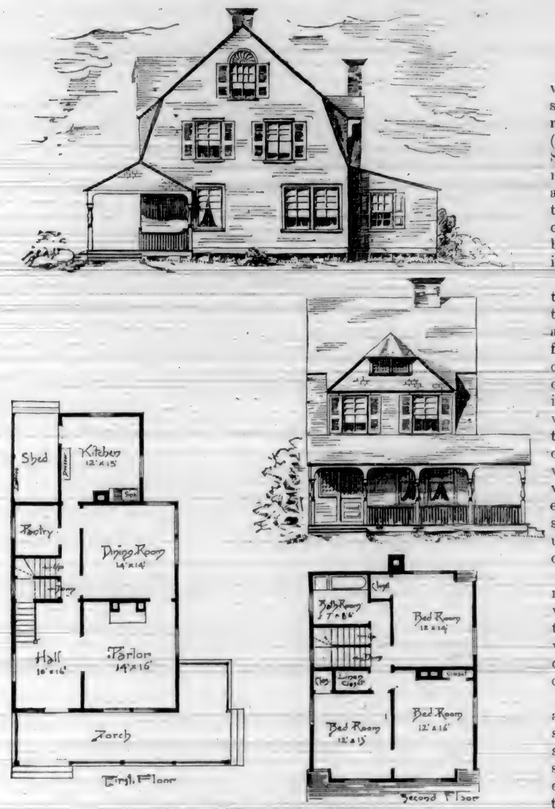

PLATE 6.—"COLONIAL COTTAGE."
See "Our Illustrations."

A Model Kitchen.

It is possible nowadays, says an authority, by spending money lavishly, so to build a kitchen that the most ingenious of servants cannot keep it otherwise than clean. One need not waste upon her unappreciative soul the costly tiles with which one lines the bath room; but may substitute for them the glazed bricks that are as highly polished, and that will make the floor, the chimney, the walls, if desired, and even the ceiling, as easy to clean as a breakfast plate. Once built, no whitewasher and no painter would be needed for such a room, no smoke need cling to its walls for an instant, and no odor of cooking would be perceptible in it, even if it were used for generations. And the temperature of such a room need not reach the great height unavoidable with plastered walls, which permit the warmth of the chimney to be perceptible through their surface, and thus both the good health and good temper of the cook would be maintained. As for coloring such a kitchen may be precisely what one pleases, for the bricks are made in all hues, and they may be laid in patterns or in wide surfaces of one tint from floor to ceiling. Lastly, as such a room would be fireproof, a sliding or swinging iron door would so isolate it that no kerosene-quickened fire and no careless upsetting of lard could bring destruction to the room itself of which a little water would not clear it.

Lumber buyer to inspector—"Is this car of lumber of uniform length and thickness?"—Inspector—"I can answer as regards length, but cannot as to thickness."—Lumber buyer—What about the lengths?—Inspector to buyer—"Uniform, sir at one end."

Trap Seal Protection.

Paterson, N. J., October 25th.

To the Editor.—As you have invited further discussion of the very important subject of trap seal protection, I beg leave to submit the results of my experience and observation in that direction. The experiments submitted by your correspondent (Mr. Putnam) in your issue of September 1, demonstrate that an S trap of ordinary depth of seal, if vented to the roof, will, when not used, lose its seal by evaporation in from nine to eleven days, and that a similar trap, unvented but open at both ends, as is the case in practice, will lose not exceeding one-thirty-second to one-sixteenth of an inch in ten days. Accepting these data to be correct, the conclusion is inevitable that venting to the roof is indeed a most untrustworthy practice.

But these experiments equally demonstrate that if the conditions of an invented trap as regards evaporation can be maintained, and at the same time the seal of the trap be protected against siphonage, then the simple S trap of easy curves and uniform calibre is incomparably better than any other. Siphonage can only be prevented in this form of trap by the free admission of air on the sewer side of the seal whenever a partial vacuum is formed in the pipe. This is now sought to be secured by back vent-pipes to the roof, but with disastrous results to the seal on the trap, by evaporation when not in use. But if the admission of air is limited by an automatic device, to the requisites to prevent siphonage, then, during periods of disuse the conditions would be identical with those of an unvented trap, so far as evaporation is concerned. Hence an ordinary S trap vented by such a device, would not lose its seal by evaporation, when not used, in less than from eight to sixteen months, if Mr. Putnam's observations are founded on correct data.

The want of such an appliance has long been recognized, and numerous attempts have been made to produce a device that would successfully meet this requirement. One of the first of these that came to public notice, operated by means of a hinged valve, with depending edges which dipped into a shallow channel of water, while others relied upon the accuracy of mechanical closures of various forms, but alike failed of success.

The latest appliance devised for this purpose, "the McClellan anti-siphon trap vent" is now too well-known to require description, and, unlike its predecessors, has proved a practical success. It performs all the useful purposes sought to be secured by back-vent pipes, and avoids the evils their use entails. It also obviates any apparent necessity for resorting to the so-called non-siphoning traps, all of which acquire their non-siphoning qualities at the cost of cleanliness, since all such traps have greatly enlarged cavities, which gradually fill up with decomposing filth.

I have, during the past two and a half years, specified this vent in many houses in this city and vicinity, and always with entire satisfaction to myself and patrons. Respectfully,

M. Houman.

Bent Wood.

We have all seen the beautiful Austrian bent wood chairs and furniture, which owe their popularity, perhaps, as much to their charming design as to their strength and durability; and n ost of have had some curiousity to know how they were made. The *Revue Industrielle* explains the matter, at least so far as the processes could be observed at the industrial exhibition at Buda-Pesth. Within a few years the methods of treating the wood have been improved, and the application of the material much extended; carriage wheels, for instance, having their rims made of a single piece of ash or oak, bent to a circle, with great advantage in point of strength and cheapness over those made with fellies sawed in small sections out of straight pieces of wood. The material to be bent is, for furniture, usually red beech, which grows very abundantly in the Hungarian forests. The timber is sawed into strips one and one-half to two inches square, according to the work for which it is intended, and then in a lathe into smooth, round rods. These rods are placed in an air-tight case, where they are exposed for fifteen minutes to the action of superheated steam. They are then so soft and pliable as to be easily bent by hand, and are in this condition fitted to iron patterns, well-secured, and left to dry. The drying takes from two to eight days, according to the size of the piece. When it is complete, the wood is detached from the pattern and is ready to be joined with other pieces, varnished, polished, and sent out in the shape of finished furniture.

The Owner's Acceptance of a Building.

December 21, 1888.

To the Editors of the American Architect:—

I would like to have some information in regard to taking possession of a building. A contractor had plans drawn for a private schoolhouse, with residence, and took the contract. It being in another town, he put there a foreman to attend to it, and build in accordance to plans and specifications (the other party had also a set of plans), the party representing the owner sent from time to time parties to inspect building, making changes, the owner calling there also several times, also making changes. The local builders made complaints to the owner, but on examination they were not verified: the owner made no complaints during the work.

Finally the owner was notified by contractor that the building was completed, and to call and accept it. The owner called, moved in, and did not object, and lives in the building. I understand three-fourths of contract has been paid, but he refuses to pay any more. I am called in as an expert, but I am under the impression that after having been there himself, and having had other parties there to inspect work, and taking the keys without any objection, that he formally accepted the work and has to pay balance due to contractor. After having taken possession, he made all kinds of changes, without notifying contractor, and wants me to charge it to contractor's account.

By letting me know the customary rules, or referring me to similar cases, you will confer upon me a great favor.

I am yours respectfully, Subscriber.

[The law is well settled that the owner does not accept a building by taking the keys and living in it, nor does he thereby waive in the slightest degree his right to have the contract fulfilled to the letter before he pays the contractor. His visits to the building while in progress do not alter the contract, or put him under any obligation to accept work not in accordance with it; and if he orders changes at those visits, he only makes himself liable to pay a reasonable price for them, if they increase the actual cost of doing the work. Whether, after moving into the house, he can have changes made by other parties without notifying the original contractor, and charge them to the contractor's account, is a different matter. If the changes are altogether outside the contract, he is, of course, not entitled to make the contractor pay for them. If they were necessary in order to bring the building into conformity with the contract, he ought to have notified the contractor that they were required, and have given him reasonable opportunity for making them himself, before employing other persons to make them; and it has been held abroad that where this notice was not given the contractor was not liable for any part of the expense. Aside from legal technicalities, however, it would probably be fair to both parties to have the contractor pay what it would have cost him to make the work conform to the contract, as nearly as can be estimated, and let the owner pay whatever it actually costs beyond this.—*Eds. American Architect.*]

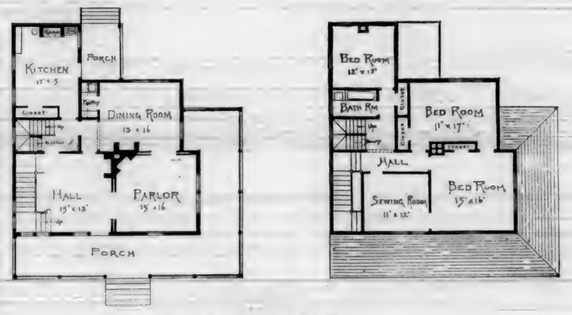

PLATE 7.—A COUNTRY HOME.
See "Our Illustrations."

Wasted Energy.

It is a fact pretty well known that a very liberal percentage of the total inventive genius of the country is expended in inventing things not needed, nor likely to be needed. Before going about inventing something it is wise to use diligence in the direction of finding out whether there is likely to be a demand for it. Mere ingenuity to devise, unless well balanced, is quite likely to go astray. When some mechanical arrangement is found in use—some old-time affair that readily shows inherent defects in some of its operations—before spending much time in arranging to supplant it, it is wise to consider all the reasons why it has remained in use. Perhaps a little time spent in reflection and study may save a good deal of time and money. If the arrangement referred to is something in common use, the probabilities are that a good many men have seen its defects, and puzzled themselves over replacing it, hence it is not wise to believe that the first thing thought of is going to accomplish the purpose. The very thing looked upon as a defect may have an important bearing in permitting the accomplishment of some other end, and may be one of the inevitable imperfections submitted to in preference to a more important defect.—*American Machinist.*

"We often see two young men start out in life with apparent equal advantages; one makes a success and the other a failure. A perfect index of the cause, and usually the cause itself, is that one thinks of his work and the other of his wages." We find this in an exchange. There is lots of truth in it.

New Publications.

Notes on the Art of House Planning. By C. Francis Osborne, Architect, Assistant Professor of Architecture in the Cornell University. Cloth. Published by William T. Comstock. Price $1.

This little work will be found to be of great value to draughtsmen. It embodies a portion of the notes used by the author with his class in architecture at Cornell. The author, finding that they had apparently encouraged the cultivation of a field practically untouched as to detail, issued the notes in book form as a stimulus to the younger generation of architects to embody in their work the principles of good planning. The introductory chapter deals with the general subject of planning, which is described as the act of so shaping and disposing the various interior divisions of a building that it shall best serve the use of the occupants for whom it is designed. In this book only the simplest elements are set forth, as to extend the investigation of the subject would tend to defeat the purpose of the author. Illustrations are freely employed throughout the pages and greatly assist the reader in grasping the author's ideas. The author tells how to proceed in laying out the plans for a house, dwells upon the skeleton or outline and presents a chapter upon the entrance, which he considers as composed of three parts, the porch, vestibule and the entrance hall. Chapters are also presented devoted to the dining-room, drawing-room and parlor, library, kitchen, billiard-room, and bed-room floor.

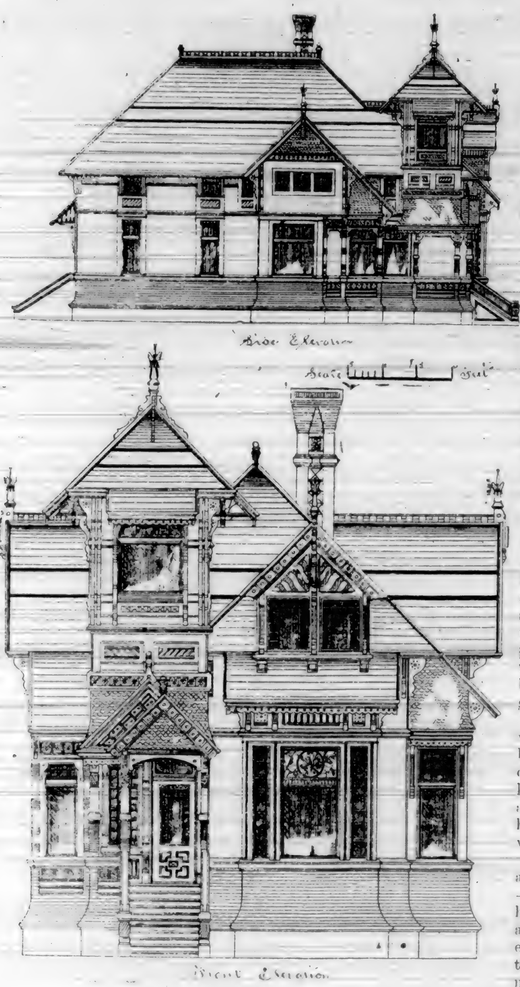

PLATE 8.—"ALHAMBRA COTTAGE."
See "Our Illustrations."

Building Activity in Jerusalem.

Jerusalem, writes a correspondent resident in that city, is steadily increasing in size, building operations being actively carried on in spite of the circumstance that most of the town is situated on barren rock, and has neither commerce nor industry to boast of. Everywhere and continually new buildings are springing up, whilst new parks, public institutions and churches are improving formerly desolate spots. New large dwelling houses are constantly being built by wealthy Jews, but the barrack-like, one-storied appearance of these structures is far from adding to the beauty of the city. The Rothschilds are building a new hospital on the Hill of God's Peace, and close by an Armenian Church is in course of erection. The Russians, too, are busy building—as for instance, a consulate, a church a hospital, and residence for their pilgrims. Close to this hospital, a handsome residence for German pilgrims has just been finished. On the Olive Mountain the Russians have also built a look-out tower, whence a splendid view is obtained of the neighboring country. Some Greeks are building cafes and bazaars, and Armenian shops.

Intermediate Numbers of the California Architect.

It will be the study of the new management to make this Journal so complete in its various appointments, that it will be sought after by every one connected with the building interests. If sufficient encouragement is received, we will issue Intermediate Numbers, giving a complete list of building operations all over the Coast. This can only be done by the support of those interested. In order to make it a success, additional subscribers and advertisers must be secured. Those noticing this article who are willing to forward the movement will please correspond with the Manager at the office of this journal.

Durable Damp-Courses.

THE matter of the durability of damp-courses was investigated last month in one of the courts of the London suburbs, through the prosecution of a builder, at the instance of the Wanstead Local Board on the information of Mr. J. T. Bressey, its surveyor, "for that he, on November 9, was in High street, Wanstead, erecting a new building, 'the wall thereof being without a proper damp course of sheet-lead, asphalt or slates laid in cement or other durable material, impervious to moisture,' contrary to the by-laws of the Local Board and contrary to the statute in such case made and provided."

It appeared in the testimony that the defendant had used Anderson's asphaltic felt, which, according to the statement of Professor A. H. Allen, President of the Society of Public Analysts, contained 54 per cent. of coal-tar oil, 28 per cent. of fibre and 18 per cent. of sand. Each grain of sand was unalterably durable, but he would only treat the sand used here as an accessory. Practically, there was two-thirds of pitch to one-third of fibre, and in use the fibre prevented spreading of the pitch. This material had been specified to be used by the architect on account of its flexibility. He used it for one reason—because of the possibility of settlements, which could not be guaranteed against.

Mr. Bressey, the surveyor, said, that within his experience, walls with a damp-course did occasionally subside; they were liable to a slight settlement. In his district slates were used for damp courses, two layers of slate in cement. There was first a layer of cement, then slates, a layer of cement, then slates, and another layer of cement sandwiched in fact. If a wall subsided he acknowledged the slates would crack at that particular place, while Anderson's substance was pliable.

Professor Allen caused some amusement by his statement that, as to the durability of the felt, "he could only speak by analogy—that he had not lived long enough to be able to testify as to how long it would last. It was principally composed of pitch, and the Egyptian mummies were preserved in pitch." In cross-examination, he, however, admitted that the pitch used for the Egyptian mummies was not an artificial pitch; it was a natural asphalte. He said Watts' "Dictionary of Chemistry" was an admirable compilation, but its definition of asphalt did not fit in with his asphaltic felt. That referred to natural asphalt.

The case was dismissed, but without costs against the Local Board, as the Bench thought it had acted in perfectly good faith. The surveyor of the Local Board does not appear to have had the experience of the Metropolitan Board of Works in mind as they endorse the use of a bitumen damp-course, consisting of heavy burlap or bagging impregnated and coated with bitumen (natural asphalt without any admixture of coal-tar), which has the merit of yielding, without cracking, in case of settlements, which often occur where the foundations are built on different conditions of subsoil.—Building.

To know the resistance which a piece of timber offers to any force tending to change its form, is one of the most important species of knowledge that a carpenter has to acquire.

Cracks in floors, around the skirting board or other parts of a room, may be neatly and permanently filled by thoroughly soaking newspapers in paste made of one pound of flour, three quarts of water and a tablespoonful of alum, thoroughly boiled and mixed. The mixture will be about as thick as putty, and should be forced in the cracks with a bent knife or other handy tool. When dry, it will be harder than the boards.

Building by Contract.

WE frequently hear complaints made by parties having houses built by contract that the work is poorly done, that it is not executed according to the specifications, etc., etc. The complainant says that the builder has cheated him, not only in the quality of the materials employed, but in the manner in which the work was done. Too often this is true, and the grumbler has good cause for his fault finding. But there are usually two sides to a question, and we will give the builder a chance to defend himself before we condemn him altogether.

He will probably argue that he must live, that competition is sharp, that he is anxious to secure the job, and therefore gave a low figure, which would barely bring him the wages of an ordinary workman, leaving himself no margin for incidentals, unforseen accidents or expenses. He will plead in his defense that he was unfortunate in being obliged to buy his lumber at its highest price, and various other causes have conspired to place him in an embarrassing position. His only remedy lay in either "skinning" the proprietor or going on and completing the building at a loss. He thought of his family, consisting of a wife and several small children, and decided in favor of the "skinning" process. It was not honorable, perhaps, but would it be "honorable" to let his family suffer for the necessaries of life? Much can be said on both sides of this question. There are many honorable contractors who fulfill their obligations to the letter whether they make or lose by the operation. There are many people who are bound to find fault in any case, and would grumble and pick flaws in the work even if the builder had done a first-class job and found himself several hundred dollars short as a reward therefor.

There is, perhaps, one man in a hundred who would put his hand in his pocket and reimburse the builder when he was convinced that he had lost money in his house or building. It is barely possible that there is one such man in a hundred who possesses such a sense of justice, and has a conscience and a heart. But as a rule the proprietor who finds that he has saved money at the expense of his builder considers it a reason for self-congratulation, and does not concern himself to "put himself in his place," or to waste any sympathy upon him or his family.

We would suggest that those who find the contract system unsatisfactory go back to the more primitive method of day's work and have their work done by the day. The usual custom in day's work is for the master builder to charge a certain sum for himself and so much for each man employed on the building a certain percentage of which goes into the builder's pocket and constitutes his profits. Another plan has recently been tried which has proved a success, and seems to be more satisfactory to all parties concerned. This plan allows good wages for the builder and men employed upon the building, and the builder receives in addition a percentage on all material used, which secures to him a fair and sure profit. He can work, therefore, with a good heart and a full stomach, and has no motive for doing poor work or cheating his employer in any way. It seems to us that for the cheaper class of buildings, at least, this method of doing business offers a reliable and sure preventive against all the evils, resulting from the contract system.—*Architectural Era.*

The Uses of the Trade Paper.

The uses of a technical paper to the mechanic are multifarious. It affords him access to current news of interest in his trade, keeping him well informed respecting the latest improvements in machines and processes; it puts old things in a new dress, presenting the familiar facts under such various aspects as to stimulate his thoughts with the surprise of discovering that there should be so much that he never dreamed of in what he supposed he knew all about; it explains the why and wherefore of doing this, that and t'other in his daily workshop practice, and thus, unconsciously to himself, trains him to the habit of investigation, which is the most valuable service of all. It is this discipline of the mind, derived from the habit of thinking and investigating, that fits the reading mechanic to take the lead of his fellow workmen. It is the reading workman who makes the inventor, and to this class, whose mental training is largely obtained from the technical journals., that we owe much of the progress in the mechanic arts.—*The Manufacturer and Builder.*

PLATE 9.—PLAN OF "ALHAMBRA COTTAGE."

Brick Supply.

The number of brick on hand for early building operations is small, with an active demand, and prices higher than they have been within the past year.

The brick-making facilities of the State have been largely increased over those of five years ago, but still the stock carried over to meet the early trade is light, and the market is likely to be "close run" for those of good quality before the spring supply of new bricks can be got to market.

The brick manufacturers will, of course, be stimulated by the excellent outlook, to get to work at the earliest practical moment, and fire up their kilns with as little delay as possible, to meet the demand in prospect, which undoubtedly will be equal to the supply, however large.

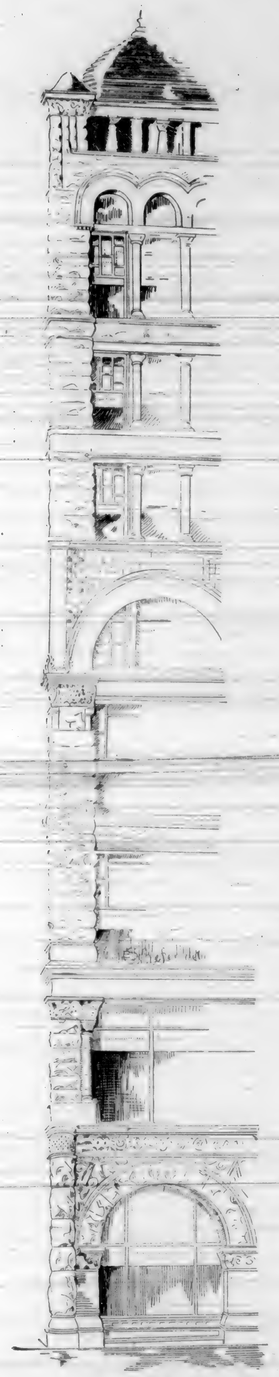

PLATE 10.
SEE OUR ILLUSTRATIONS.

This is the Only Journal Published on the Pacific Coast in the Interests of Architects and Builders.

When this Journal was started in 1879, a rule was made as follows: Advertisements alone inserted that refer to materials used in the construction and furnishing of houses, and to matters and trades belonging to the building interest. No others received." This rule has generally been strictly observed, and only advertisements of the character mentioned will be accepted. Our rates are as low as any other class Journal printed in the country—that is, of equal circulation We respectfully solicit your patronage, and, at all times, we are ready to do what we can to assist those who may advertise in this Journal.

Our Summary of Building News.

For the present year, we have made extra arrangements for procuring building news from all portions of the State. Architects from every part of the Coast, have sent us letters, containing assurances of good will, and welcoming the grand change made in the management of this Journal. They feel now, that they have a means of communicating their ideas of building improvements to the public generally, and they willingly will do their part to make this department of the California Architect, a grand success.

Our New Head-Quarters.

After an occupancy of ten years in the set of offices to which all our patrons have addressed us during the history of this Journal, increasing business has compelled us to secure more commodious rooms. A better location could not be found than the one we have selected. Situated on California street, next to the Bank of California, they are in the very heart of our commercial, insurance and banking interests.

We have secured a suite of four rooms, abundantly supplied with light, and having the advantage of the sun's rays in every room. The first two rooms—in size, 15 feet 6 inches by 36 feet will be used as an office and reading room. It is also intended for the use of the Chapter of Architects, and will be peculiarly fitted for holding the Architectural High Jinks on a Saturday afternoon. In fact, that was one of the reasons for securing such spacious rooms as ample accommodations are found for the "Social Tea" of the entire Profession on Saturday afternoons, after the fashion of those held in New York, Boston, etc.

Two rooms, 16x34 feet will be used by the "Architectural League." This is an association formed of draughtsmen and students connected with the various architects' offices. By a vote of the "Chapter of Architects," all draughtsmen and students are allowed to leave their offices at 3 P. M. on Saturday afternoon for the purpose of attending the instruction classes under the direction of G. H. Sanders and Albert Pissis.

It will be seen that the entire Architectural Associations of this city are thus congregated in the one set of offices. The prominent feature of the whole project is to establish a

READING ROOM AND LIBRARY,

Which shall be always open to those engaged in the architectural profession, including architects, draughtsmen, students, etc.

VISITORS ARE ALWAYS WELCOME.

Visitors from the country will receive a hearty welcome. It will take a few weeks to furnish offices in the manner intended, and to arrange our files of papers, periodicals, etc., but we will make you feel at home should you favor us with a call.

Architectural Reading Rooms.

In connection with this office, will be found an elegantly appointed reading room. Files of the following named will be always on hand: "American Architect and Building News, "American Builder," "Architectural Era," "American Machinist," "Builder and Woodworker," "Brick, Tile and Metal Review," "Building," "Carpentry and Building," "Clay Worker," "Canadian Architect," "Hydraulic and Sanitary Plumber," "Inland Architect" "Lumber World," "Manufacturer and Builder," "Northwestern Lumberman," "National Builder," "Sanitary Engineer," "Scientific American," "Sanitary News," "Painter's Magazine," "Western Architect," and a great many others. These rooms are open to all who may favor us with a call. We will be pleased at all times to be favored with a visit from those interested in building matters.

San Francisco Chapter, A. I. A.

The regular monthly meeting of the Chapter was held on January 4th, Vice-President W. P. Moore in the chair.

Further time was granted to the Committee appointed to confer with a Committee from the Builder's Association in reference to a form of "Memoranda of Contract" to be filed in the Recorder's office.

Resignation of A. Laver was received. Referred to the President and Vice President for consideration.

PLATE 11.—A STUDY IN THE "OLD COLONIAL" STYLE.
See "Our Illustrations."
Sketch prepared for this Journal by C. Bryant Schaefer.

Hints to Mechanics.

FIND out everything about your business that you can. Read, if you can, all the building papers and books on architecture, the building trades and all kindred subjects. Study, and think over what you read.

A good carpenter should have a fair theoretical knowledge of stone masonry, brick-laying, plastering, plumbing, gas-fitting, tinning, painting and slating.

The more he knows of these subjects the more he is worth to his employer and to himself.

The reason is obvious.

System in doing work holds the same relation to good workmanship that "cleanliness does to godliness"—therefore, whatever you do, use some system in doing it.

In hanging doors or sashes, have one regular rule for doing the work.

Be sure the rule is a good one, then stick to it.

If you have the control, see that all doors in each story are the same size, or as many as possible.

Much time and labor may be saved by attention to these small matters.

For example, in hanging a number of doors which are of the same size, the time expended upon measuring the correct position of the hinges may be saved in a very simple manner, which is as follows: Take a lath and mark upon it top and bottom, the exact position where the hinges should come; drive in at these marks sharp pointed brads, and you have a gauge which may be used in hanging all doors of the same size. In using it all that is necessary is to place it against the edge of the door with the top of the lath on the level with the top of the door, give it a sharp tap of the hand, when the brads will mark the exact position of the hinges. The same gauge lath may be used in marking out the position of the hinges of the style of the door frame, excepting that a nail should be driven in the bottom of it, so that there may be sufficient room left at the bottom to allow for the proper play of the door; the use of a gauge lath in the case referred to, is an example of its use. It is of equal utility in hanging many other pieces, such for instance, as inside and outside blinds, shutters, etc.—*Building.*

Building.

THE object of bridging floors is not only to prevent the joists overturning, but it is principally to distribute the weight resting directly on joists immediately supporting it, thus considerably stiffening the floor as a whole. The pieces of timber of which the bridging is composed may, and do, act either as ties or struts, according to the manner in which the load is centered; and in case of a moving load, as of a person passing over the floor, will act alternately as ties and struts in gradual succession. The strutting being placed obliquely to the joist, the strain is practically neither that of a direct tie nor of a direct strut; that is neither simple compression nor simple tension in either case, but is in both modified by a cross strain. There is some tendency of the joists to turn over, which augments the cross strain, so that of the three strains, the cross strain is of most importance.

Now, it is a very well known rule that the strength of a beam or piece of timber subjected to a cross strain is directly as its breadth and as the square of its depth; and it will be obvious therefore, that the system of placing the bridging with its greatest size vertically, is the proper one and is a good deal stronger than the system usually employed. In the first system, the bridging is reversed alternately, so that the pieces may butt against the joists at points directly opposite one another, which tends to further strengthen and stiffen the floor.—*National Builder.*

An attractive catalogue is a handsome addition to a library. To an architect, manufacturer's catalogues are a necessity. We have just received a beautifully illustrated work, from the well-known house of Henry Huber & Co., of 81 Beekman street, New York, containing over 200 pages of engravings, illustrating wash basins, water closets, urinals, hoppers and everything else pertaining to the plumbing trade. Architects or plumbers who have not received a copy should address as above.

Always keep a can of varnish well corked, but airing it for fifteen minutes before using. When a can is first opened it is a good plan to leave the cork out over night.

PLATE 12—SEE "OUR ILLUSTRATIONS."

Applicable to San Francisco.

A St. Louis boss plasterer, who has grown gray in the service, in speaking of present day methods of contract letting by the lowest bidder system, said that mistakes in figuring accounted for most of the financial miseries of building mechanics. Said he:

"As a class we are not collegiate graduates, and can handle men and materials much better than a problem in algebra or even the simpler mathematical calculations which seem of late years to be the great essential to our success. No wonder builders without strong backing go to the wall with their hands full of work, and that the mechanic's lien has become a very natural consequence of the errors, misunderstanding and complications which the present system of bidding creates. We are asked to figure on the plastering work of buildings every day, and it would sometimes puzzle a Philadelphia lawyer to get at the true cost of work. The mechanic estimates after his own fashion, and often comes out of the contract poorer than when he began. No wonder so many are tempted to do slipshod work when the owner obtains much more than he pays for. The same is true of all the mechanical trades connected with building, and the liability to make error generally accounts for at least half the difference between the highest and lowest bidder. Sometimes it is the error of the former, sometimes of the latter. One builder in this city, noted for the care and closeness of his estimates, once forgot a little item which cost him nearly $5,000. He had cause to remember it afterwards. The instance serves to show why the quality of work in these days has deteriorated, as some allege.

"Before the war plastering work was taken by the square yard. The architect of course knew the surface to be covered, and could make almost an exact calculation as to cost. He employed a competent man who had the incentive to do good work, knowing that he was sure of a living price. There was not the risk of making errors that distinguishes the present system. It is now a free-for-all race, and the one in first gets left financially in a very large proportion of cases."

A French exchange gives us a new plan for deadening floors without loading the planks. Fill the empty parts between the joiner works with liquid lime thickened with chloride of zinc. This will prevent noise, fire, vermin, and the house will be rendered healthy. Workmen using this preparation should wear guarded spectacles, and wash their hands well after the work is completed.

PRACTICAL HINTS TO CARPENTERS.

BY OWEN B. MAGINNIS.

ONE of the most important and too often neglected things in setting jambs, is to block behind the jambs for the screws of the hinges. In rebated jambs this blocking is indispensable; so measure down about 6 inches from the head and 9 inches from the floor, and nail in a 4-inch pine block on the stud, behind the jambs, to secure the screws. Builders should watch sub-contractors in this small matter, as the screws pull out when they have no thickness to hold to.

If the casing have a beaded or moulded edge without corner blocks, the top corners should be mitred with a mitre jack made in the following manner:—Take a piece of 1¼ inch stuff an inch or so wider than the width of the casing, about 2 feet 6 inches long, nail a *fence* or piece of ⅝-inch strip on both edges, rising above the surface the thickness of the casing. Now take a bevel, set it exactly, *not nearly*, but exactly, to an angle of 45 degrees, or from 3 to 5 inches on the steel square, (reverse the bevel to see if the angle be true) and mark two reverse mitres across the edge of the ⅝ strips, and the surface of the bottom or wide piece and over one edge the edge which has the short corners of the bevels. Saw deep enough into the wide piece on this marked edge, to cut through the bead or moulding on the casing, when it is placed between the fences against the one which is sawn into. After putting the casing in its place and marking the top corner with a knife, the casing is placed against the fence with the mark exactly at the saw cut, and having the saw outside the mark, so as to slightly leave it on the stuff—the mitre can be readily and instantly sawn without using a bevel or a templace, which are inaccurate and unmechanical. The bottom end must fit tightly down on the upper end of the case block; if not then the end must be scribed to the block with the compasses before mitreing.

All casings ought to be level across the face, so that when a straight edge is placed across the opening, it will touch all their surfaces. The head should also be straight with the stiles, and all the mitres and joints tight and well nailed. All mouldings and back bands can be mitred and nailed on when the above is done, and the mitres will come tight.

In setting back window jambs, or on those window frames which have outside blinds with a panel back below the sill, the following is the best way to proceed: First, cut with a chisel on a straight line, the groove (where it stops against the sides) out of the frame casing, both top and bottom, on both right and left casing, and clean all the mortar and dirt out of the plowing. Now take the short rebated jamb for the head, and getting upon a high horse, place it with its rebated tongue on the head groove, and mark exactly, with a sharp knife, the inside corner on the left and right hand groove. Square these marks over the face and lay out a dado ⅜ wide towards each end. Dado this laying out ⅜ deep. Next take the right and left jamb and square one end of each in pairs. Lay out a tongue ⅜ wide from these square ends and ⅜ thick, gauged from the faces. Cut these tongues out and run a rebate—plane shaving of the back side of the tongues of the head jamb and sides, and take an arris of the face side. This will let the tongue go easily into the grooves in the frame. Next, nail the head on the sides, keeping the front edges flush, and break off the over length of tongue on the head piece. Set the tongues of the jambs in the frame grooves, and drive the jambs in till they sound solid. Use a block, so as not to bruise the edge in driving. When they are in solid, mark the groove at the sill, and see if the jambs are not too wide for the plaster; if they are, the over wood must be sawn or planed off until they come flush with the plaster. Take the jambs down when this is done, and lay out a ⅜ dado from the groove mark. This dado is to receive the foot-head. Then take the foot-head, cut it to the length of the dados of the head, and allow ⅜ for a tongue on each end. Work these tongues on ⅜ deep, and nip the foot-head to the width of the jambs. Ease the tongue as well as the jambs, and nail the head side and foot-head together afterwards, set them up in their place, and when they are driven home, toe-nail them into the casing.—*Canadian Architect.*

To clean paint off windows, dissolve some soda in very hot water and wash them with it using a soft flannel. It will entirely remove the paint.

LIVING UP TO SPECIFICATIONS.

FOR several years past we have been urging upon the roofers the advantage of better roofing material and more accurate roofing specifications. It has been largely due to *The Metal Worker* that guaranteed roofing plates have been brought into the market, and it is also to be credited to our efforts that certain plates have been stamped with brand and gauge mark in order to make guarantees effective. Our voice has also been heard to a greater or less extent in urging architects to be definite in their descriptions of the kind of material that is to be employed in their roofs. We have at least helped to make it possible for them to specify good plates and to know that they obtain what they specify. In all respects we have thrown our influence in favor of the best materials, the best workmanship and the best roofs. In this we have helped the tin-roofing trade out of the hole in which it was struggling some time since and put it upon solid ground again.

With the advent of guaranteed plates tin roofers have found themselves held down by specifications which are difficult to avoid, and to comply with which leaves them no chance for anything else than an honest profit. It is not strange, therefore, that we hear in various parts of the country of efforts being made by those who are not content with legitimate profits to have specifications changed. We hear of tinners making strenuous efforts to have one other plate substituted for the one that is specified by the architect, going so far in some cases as to pledge their own reputation as practical men that the second plate is quite as good as the first, if not superior to it, and asserting that a better roof will result from such a substitution than from allowing the architect to have his own way. The object of this, of course, is to make a profit, for no one would go quite so far from disinterested motives. Now, at this time we do not propose to enter into the merits of such pleas for substitution, nor the qualities of the different plates that may be employed; occasionally architects may make mistakes, but for the most part they know what they are doing. What we want to talk about is the bad policy of substitution, for we believe it a suicidal policy, one that is ruinous to the business. Whatever may be the chance profit to be got out of a job in which a change of plates is made, the interests of the roofer in the long run are upon the side of having good plates specified and the specifications strictly adhered to. Changes beget changes, and the habit once established there is no stopping it. Therefore we caution all roofers who desire to see their trade prosperous in the best sense of the word, and who are anxious to give their clients the best possible roofs, to take the stand that specifications must be adhered to, regardless. Do not attempt to change a specification after it is made, but rather spend your strength with the architect to have the specification at the outset prepared according to your judgment in a way to secure the very best roof.

The short-sighted policy of having specifications changed, in order to secure a profit in the plates at the expense of the roof, must be manifest to any one upon a moment's consideration. It is a game that two or more can play at as well as one. If Brown, for example, objects to the specifications branded "A" and desires to substitute plate branded "B," he must remember that Smith, his competitor, by the very fact of his success in obtaining changes, has a strong argument to plead for the substitution of plates branded "C," or "D," or "E," and so it goes on, every change making it surer that the roof will be poorer. Are any of the roofers among our readers forgetful of the condition of the roofing trade a few years since, when decent roofing plates were not in the market and when good tin roofs could not be had, no matter what price was offered for them? Have they forgotten the demoralized condition of the tin-roofing trade growing out of the large use of wildcat brands, and plates, even with makers' brands upon them, that were so flimsy and so ill adapted to the purpose as to amount practically to no roof at all? Have they forgotten the time when the roofs were a reproach and a by-word, and when no one would have a tin roof who had any respect for himself or the building to which it was to be applied? Such things existed only a few years since over a large portion of the country, and the change for the better, which has taken place in the interval, has been brought about simply by making definite specifications possible—specifications which cannot be easily avoided, by dishonest competitors. Therefore, we say again it is to the interest of all honest roofers to see that specifications are lived up to and not allowed to be broken down by substitutions even in those cases where the substitutions are advantageous. Never mind how irksome the contract may be, follow the specifications literally when the job comes to you, and insist that the specification is also literally followed when the job goes to your competitor. If the idea of changes in specifications is once allowed to become dominant in the trade, the last safeguard in the tin-roofing business will be taken away and the trade will reach a condition ten times worse than that from which it was rescued only a few years ago.—*Metal Roofer.*

PLATE 13.—SEE "OUR ILLUSTRATIONS."

Law Affecting Architects.

A person following the occupation of forming plans, drawings and specifications for building purposes, representing himself as an architect, is presumed in law, not only as being such, but to be learned in the profession.

If there is any obscurity in the drawings and specifications, the contractor should apply to the architect for directions to be liable for the consequences.

There is no fixed rule in as to compensation of architects in the United States.

The architect's contract does not survive to his representative. So, if there is a contract to complete certain work for a certain sum, the representative of a deceased architect cannot recover for the part performance.

In competitions it should always be made clearly understood that the drawings, etc., are subject to approval, for otherwise, the party receiving them will be liable for their value whether used or not.

An architect has not the right to substitute another person in his stead.

If the architect fraudulently or capriciously refuses to give proper certificates when required, the builder may maintain an action for specific performance against the architect for damages. —*The Law of Building.*

Salt in Glue. Carpenters have found a special use for salt. In heating glue the addition of salt to the water in the outer kettle raises the boiling point, and thus keeps the glue in the inner kettle at a higher temperature.

PLATE 14.—SEE "OUR ILLUSTRATIONS."

Byrkit's Patent Sheathing Lath.

WHEN a man begins to raise up a family, one of the things most talked about in the family circle is the desire to own a "home," in which is pictured out happiness and comfort the two most important things in life. A lot in a desirable location is selected, and the consultations and advice of architects and builders are sought after, and with the assistance of friends the plan of the house is decided upon, and the home commences to grow. The work is pushed forward rapidly, and the architecture, both outside and inside, is pleasing to the eye, and new features are added and improvements in various things are put into the house: but one of the most important things remains just the same that it has for the last fifty years, and that is the way the house is lathed and plastered. The family move into their new house, which they think is a perfect model of elegance and convenience, and they commence to get settled and live as only those can who have a "home of their own." About this time the house begins to settle, the corners open, the walls crack all up, and they find it impossible to keep warm, or heat the house as it should be, without keeping the stoves or furnace red hot, and even then the cold is penetrating every crevice, making the "home" anything but pleasant. They begin to wonder what is the matter, and why their house is in this condition, for they have expended from five to ten thousand dollars in its construction. The whole secret can be easily explained. They had used the common lath, which adds very little warmth to a house; when, if they had used Byrkit's Sheathing Lath, it would have been very different. It makes every building stronger and warmer, and ties it together so the house can't possibly open or the walls crack so as to loosen the mortar when it settles. The house can be heated and made comfortable with a saving of at least ten per cent in fuel. If this is so, then why is it not an advantage for every one who builds a "home" to use Byrkit's Sheathing Lath? It is always well to remember that there has been improvements in the art of building in every other branch but lathing and plastering.

John F. Byxbee, 104 Market street, is the agent in this city for the lath referred to; samples may be seen in his office and any information will be cheerfully furnished.

The Teredo.

AN article in the *Atlanta Constitution* upon the teredo, the salt water borer, which honeycombs ship timber, piles or any wooden structures exposed to its attacks, is full of interest. Its habitat, it is stated, was originally in the tropic seas, but it was readily carried in the timber of vessels into North American or European waters. It will bore through a piece of timber until it becomes a mere shell and collapses under the weight it supports. A peculiarity of the teredo is that it bores and feeds itself with what is regarded as its foot, while at the opposite end it has two heads. It is difficult to understand where this seemingly frail creature gets its astonishing power. While the interior of the timber is filled with perforations running with the length and intersecting each other in various ways, no holes appear upon the circumference except very small ones, while those inside are from one-fourth to five-eighths of an inch in diameter. The question naturally arises, how does the teredo get in, and does it ever make its exit? The explanation is that when young and small the borers fasten themselves to a round and generally new pile by means of a suction apparatus in their heads, and bore inwardly with the foot until only the head remains outside. Then they fasten themselves to the very edge and bore and grow. Entering at an aperture of the diameter of a darning needle, they work away until they fill a channel an inch across. The worm usually reaches a length of from one to three feet, but is said to attain a diameter of two inches and a length of fifteen feet on the Pacific Coast, although so far as is known its only food is the sawdust it makes. It is told that instead of crawling inward and onward as their burrowings lengthen, the borers simply grow in due proportion, the head remaining in its place. Their size thus increased, and the log once consumed and broken off, they fall a prey to the fish. The teredo lives and dies with his log. It never attacks floating timber, but a ship riding at anchor with her timbers unprotected by metal sheathings is easy prey, and soon destroyed. Wharves are often sunk by the destruction of supporting timbers by the teredo. The good it accomplishes is by boring into and disentegrating sunken wrecks, timbers and other obstructions in harbors, dangerous to navigation. So far the most successful defence against the teredo is the creosoting treatment for timber.

Bound Volumes of this Journal.

Bound volumes of 1888 are already very scarce. It was only by a careful canvass among our subscribers that we succeeded in obtaining enough of missing numbers to enable us to put together in a bound volume, the complete numbers of the year. We have but Twenty left. These will be disposed of to those who may favor us with an an order, at the rate of $2.50 each volume.

We also have a few volumes remaining of previous years. These will be mailed to any address upon the receipt of $2.50 each year, from and including 1888.

Notice of Removal of Office.

This journal, with all its appurtenances, has removed to the spacious and elegant rooms, No. 408 California street, next to the bank of California.

Old Homes Made New	50
The Suburban Cottage	1 50
Homes for the People	2 00
Leffel's House Plans	2 00
Water Closets	1 00
Sewer Gas	1 25
Steam Engine Catechism	1 00
Builder's Guide	2 00
Cozy Homes	25
How to Paint	1 00
Cutting Tools	1 50
Universal Assistant	2 50
Rural Architecture	1 50
Wonders of Art	1 25
Grimshaw on Saws	4 00
Dwellings, Reed	3 00
Plumbing, Appliances	1 50

In this and succeeding issues we intend to devote considerable space to information in connection with buildings from every portion of the coast.

Only reliable news will be found in this column. Our custom has been for the past ten years, to furnish only data which could be relied upon. We will not publish rumors of "THIS AND THAT IS GOING ON" unless we are reasonably assured that such is truly the case. In all cases we will file our authority for any statements made in this column. No doubt mistakes will sometimes occur, but these we intend to be a rare exception to our rule of reliable news.

We desire the co-operation of country editors and mechanics to this department of this journal. By spreading the news of building engagement in your part of the country, you enhance the value of your section by proclaiming it a go-ahead community.

Architects should also notify us of "plans to figure on;" we do not charge anything for the insertion of such notices. Remember this journal is in the TENTH YEAR of its existence, and is the only journal published this side of the Rocky Mountains in the interest of Architects, Contractors and Material Men, and the only one endorsed by the San Francisco Chapter of Architects.

CITY BUILDING NEWS.

Broadway, near Van Ness avenue, two-story additions, cost $2,000.

Bonita, near Polk, additions. Cost, $600.

Bush, between Kearny and Montgomery, alterations to theater building; architect, F. E. Wilcox; contractor, Ingerson & Gore; cost, $10,000.

Broadway, near Taylor, two-story frame. Owner, Josephine Ream; contractor, G. M. Salsbury; cost, $2,500.

Bryant and 4th, stables. Owner, Spring Valley Water Co.; architect, Clinton Day; contractor, Robert Higgins and C. L. Lods; cost, $17,000; signed, December, 6th, 1888; filed, December 11, 1888; limit, 120 days.
Payments: floored, masonry to second story, $4,000; ready for roof timbers, $5,000; completed, $3,500; $5,000, 35 days.

Bush, between Montgomery and Kearny, alterations to Bush Street Theater. Owner, M. B. Leavitt; architect, Fred E. Wilcox; contractor, Ingerson & Gore; cost, $4,800; signed, Jan. 2, 1889; filed, Jan. 3, 1889; limit, Jan. 26, 1889.
Payments, $3,200; completed, $1,600, 35 days.
Total cost of improvements will be about $10,000.

Broadway and Taylor, building. Owner, Josephine Recum; contractor, Geo. M. Salsbury; cost, $2,300; signed, Dec. 12, 1888; filed, Dec. 20; limit, 90 days.
Payments, $575, framed; $575, enclosed; $575, rough plastered; $575, completed.

Church, near 23d, additions; cost, $1,000.

Commercial and Davis, building. Owner, Armour Packing Co.; architect, Chas. I. Havens; contractor, J. Haaf; cost, $4,000; sureties, Geo. Goodman and T. W. Kipinger; signed, Dec. 18, 1888; filed, Dec. 20; limit, 40 days.
Payments, $1,000, first story joists on; $1,000, roof rafters on; $1,000, completed; $1,000.

Eighteenth, corner Clara, two-story frame; Owner, A. Wagner; contractor, A. Disher; cost, $2,700.

Fiberl, near Polk, additions. Cost, $800.

Fillmore and Waller, additions. Owner-Mr. Meade; contractor, Zwierlein; cost, $2,000.

Fifteenth, near Castro, cottage. Owner, Sophronia W. Bunker; architect, Wm. F. Smith; contractor, W. N. Concanon; cost, $2,273; sureties, Franklin P. Bull, Wm. H. Judd; signed, Dec. 28, 1888; filed, Jan. 4, 1889; limit, 90 days.
Payments, $568 25, framed; $568 25, brown coated; $568 25, completed; $568 25, 35 days.

Fillmore and Kate, three-story frame. Owner, Wm Lageman and wife; architect, H. Geilfuss; contractor, F. Klatt; cost, $6,200; sureties, C. Dix, $2,000; signed, Dec. 8, 1888; filed, Dec. 18, 1888.
Payments, $775, framed; $775, roofed; $775, partitions set; $775, brown coated; $775, inside finish on; $775, completed; $1,550, 35 days.

Front and Sacramento, alterations. Owner, Mrs. A. E. Luhrs; architect, Pissis & Moore; contractor, Cal. Art. Stone Co.; cost, $1,450; signed, December 6th; filed, December 12th.
Payments: completed, $1,085; $365, 35 days.

Front and Sacramento, alterations, etc. Owner, Mrs. A. E. Luhrs; architect, Pissis & Moore; contractor, Riley and Loane; cost, $1,513.50; limit, 30 days; signed, December 6th; filed, December 10th.
Payments: completed, $1,100; $413.50, 35 days.

Grove and Laguna, two-story frame. Owner, J. T. Fitzhenry; architect, M. J. Welsh; contractor, R. Parker; cost, $3,300; signed, Jan. 2, 1889; filed, Jan. 5, 1889; limit, 80 days.
Payments, $825, framed; $825, brown coated; $825, completed; $825, 35 days.

Guerrero and 15th, two-story frame. Owner Arthur P. and Chas. S. Booth; contractor J. H. Thom Wohrden; cost, $3,750; limit, 80 days; signed, Dec. 10, 1888; filed, Dec. 10, 1888.
Payments, $950, roof boarded; $900, sashes hung, etc.; $950, painted; $950, 35 days.

Golden Gate Avenue, between Lyon and Lott, to build complete. Owner, Steven D. Chincovich; architect, H. D. Mitchell; contractor, Thos. H. Corcoran; cost, $2,800; sureties, C. Carpy and C. V. Hartmann; signed, Nov. 22, 1888; file l, Dec. 26, 1888.
Payments, $700, basement completed; $700, enclosed and all frames set; $700, inside completed; $700, 35 days.

Howard, between 22d and 23d, additions. Cost, $2,500.

Haight and Webster, three-story frame. Owner, Mrs. J. Twohey; architect, A. J. Barnett; contractor, McCann & Riddell; cost, $6,500; sureties, Fabian Joost; signed, Jan. 2, 1889; filed, Jan. 5, 1889; limit, four months.
Payments, $1,200, roof boards on; $1,200, brown coated; $1,200, outside finish on; $1,275, completed; $1,625, 35 days.

Harrison between 25th and 26th, one-story frame. Owner, C. Neilsen; architect, M. J. Welsh; contractor, J. T. O'Brien; cost, $1,700; sureties, Daniel Kearny; H. J. McMurray, $1,700; signed, December 4th, 1888; filed, December 12th, 1888; limit, 75 days.
Payments: roofed, $400; brown coated, $400; completed, $400; $500, 35 days.

Howard, No. 1626, alterations, additions, etc. Owner, J. Foeningsen; architects, John & Zimmerman; contractor, B. Pfarrar; cost, $2,000; signed, Nov. 24, 1888; filed, Dec. 28, 1888; limit, Feb. 15, 1889.
Payments, $500, enclosed; $500, rough mortared; $500, accepted; balance, 35 days.

Hayes, Fell, Scott and Devisadero streets, one single, one double house and one stable. Owner, John Cooney; architect, John J. Clark; contractor, John G. Adams; cost, $11,248; sureties, S. H. Harmon and Behrend Joost, $10,000; signed, Dec. 22, 1888; filed, Dec. 22, 1888; limit, 125 days.
Payments, $2,500, stable completed and frame work done; $2,500, brown coated; $3,000, finished; completed, $3,248.

Jackson and Broderick, frame dwelling. Owner, Geo. Wise; architect, Townsend & Wyneken; contractor, M. C. Lynch; cost, $3,012; signed, Dec. 24, 1888; filed, Dec. 24, 1888; limit, April 1, 1889.
Payments, $753, roof boarded; $753, brown mortared; $753, inside trimmed; balance, 35 days.

Larkin, corner Filbert, two-story frame. Owner, Mrs. Labbee; contractors, J. R. Chapman & Sons; cost $4,000.

Larkin, near Greenwich, one-story frame. Owner, Mrs. M. Loveland; contractor, M. Shea; cost, $2,500.

Lyon and Grove, building. Owner, Mary Whelan; architect, John J. Clark; contractor, D. Chisholm; cost, $3,950; sureties, F. Joost, $3,000; signed, Dec. 17, 1888; filed, Dec. 21, 1888; limit, 90 days.
Payments, $850, framed; $850, brown mortared; $850, inside finish complete; $1,400, 35 days.

Market and Guerrero, two-story frame. Owner, J. Harrington; contractor, J. Phinn; cost, $5,000.

Mission, between 4th and 5th, brick building. Owner, F. W. Zehtuss; architects, Pissis & Moore; contractor, E. R. Shain; cost, $9,020; sureties, J. Y. Davis, H. Remillard; signed, Nov. 30, 1888; filed, Dec. 26, 1888; limit 70 days.
Payments, $1,700, brickwork is ready for first floor joists; $1,700, brick work is ready for third-floor joists; $1,700, brick work is ready for roof timber; $1,600, completed; $2,320, 35 days.

Nineteenth and Santa Clara avenue, two-story dwelling. Owner, Adam Wagner; architect, Adam Wagner; contractor, August Disher; cost, $2,400; sureties, Patrick Gorman and H. B. Schindler; signed, Dec. 4, 1888; filed, Dec. 10, 1888; limit, 90 days.
Payments, $500, roofed; $600, brown coated; $700, completed; $600, 35 days.

Noe and Ridley, one-story frame. Owner, Kelly; contractor, G. Dorning; cost, $1,200.

New City Hall, additions, etc., to New City Hall. Work preparatory to erecting two new wings. Architect, A. Laver; contractor, Antonelli; cost, $46,000.

Octavia, near Vallejo, four frame buildings. Owner and builder, W. F. Lewis. Total cost, $25,000.

Oak and Clayton street, one-story frame. Owner, William J. Wisler; architect, John T. Kidd; contractor, Geo. R. Lang; cost, $2,650; signed, Nov. 10, 1888; filed, Dec. 29, 1888; limit, 190 days.
Payments, $993 50, partitions set and lathed; $993 50, completed; $663, 35 days.

Oak and Broderick, excavating, etc. Owner, Omnibus Cable Co.; architects, Percy and Hamilton; contractor, C. A. Warren; cost, $9,025; sureties, Peter Crichton, R. Remillard; signed, Dec. 6, 1888; filed, Dec. 11, 1888; limit, 50 days.
Payments, 75 per cent as work progresses; balance 35 days.

Pierce, between Eddy and Ellis, improvements. Owner, J. D. O'Benck; cost, $2,000.

Pine and Steiner, additions; cost, $500.

Pacific and Steiner, two-story frame. Owner, John J. Wells; architect, Chas. I. Havens, contractor, John G. Adams; cost, $9,100; sureties, E. N. Harman and F. Joost; signed, Dec. 1, 1888; filed, Dec. 17; limit, 100 days.
Payments, $1,650, framed; $1,650, brown coated; $1,650, hard finished; $1,670, completed; $2,500, 35 days.

Page and Buchanan, building. Owner, P. B. Cornwall; architect, Clinton Day; contractor, R. P. Hurlbut; cost, $13,900; signed, December 8th; filed, December 11th; limit, June 1, 1889.
Payments: ready to shingle, $2,900; 1st mortar on, $2,500; plastered, $2,515; completed, $2,500; $3,385, 35 days.

Post and Kearny, iron work. Owner, James Stanton; architect, H. Geilfus; contractor, P. H. Jackson & Co.; cost, $2,070; signed, Dec. 8, 1888; filed, Jan. 2, 1889.
Payments, 75 per cent of value of work performed as work progresses; balance, 25 per cent, 35 days.

Post and Kearny, elevator. Owner, Roos Bros.; architect, Henry Geilfuss; contractor, A. J. McNicoll & Co.; cost, $2,500; limit, Feb. 20, 1889.
Payments, $1,250, completed; $1,250, 35 days

Page and Octavia, two-story frame. Owner, Mary Humphrey; architect, John T. Kidd; contractors, Kincaid & Thompson; cost, $4,735; signed, Nov. 21, 1888; filed, Dec. 29, 1888; limit, 110 days.
Payments, $887, ready for roof boards; $887, partitions set; $440, brown coated; $440, trimmed; $457, completed; $1,624, 35 days.

Sanchez and Hancock, one-story frame. Contractors, T. Elam, R. Miller; cost, $2,195; limit, 75 days.
Payments, $540, framed; $540, brown coated; , completed; $575, 35 days.

Post and Kearny, brick, carpenter work and alterations. Owner, James Stanton; architect, Henry Geilfuss; contractor, Wm. Commary; cost, $2,822; signed, Dec. 8, 1888; filed, Jan 2, 1889.

Payments, 75 per cent of the estimated value of work performed as work progresses; balance, 25 per cent, to be paid, 35 days.

Shrader and Haight, two-story building. Owner, Andrew Weber; architects, John & Zimmerman; contractor, Jacob Klein; cost, $3,800; signed, Dec. 15, 1888; filed, Jan. 2, 1889; limit, April 15, 1889.
Payments, $500, framed; $800, partitions set; $800, outside finish on; $700, accepted; $1,000, 35 days.

Sutter, No. 919 (in rear) two-story frame. Owner, Laurence Koebelin; contractor, F. W. Kern; cost, $3,240; sureties, F. Joost & O. Warderell; signed, Jan. 2, 1889; filed, Jan. 4, 1889; limit, 90 days.
Payments, $800, roofed; $800, brown coated; $800, ready to paint; $840, 35 days.

St. John and 13th, one-story frame. Owner, Dennis O'Leary; architect, James H. Humphrey; contractor, T. R. Bassett; cost, $1,125; sureties, Thos. Learned, $500; limit, March 1, 1889.
Payments, $281 25, enclosed; $281 25, brown coated; $281 25, completed; $281 25, 35 days.

Sutter, between Powell and Mason, Art. stone carriage way. Owner, Abby M. Parrott; architects, Pissis & Moore; contractor, Geo. Goodman; cost, $1,991; signed, Dec. 12, 1888; filled, Dec. 20, 1888; limit, 30 days.
Payments, $691, work half done; $800, completed; $500, 35 days.

Sutter and Lyon, two-story frame. Owner, Uriah Wallace; architect, S. Hatfield; contractor, A. A. Willis; cost, $2,740; sureties, B. Joost; signed, December 7th, 1888; filed, December 12th, 1888; limit, 90 days.
Payments: roofed, $600; brown coated, $485; plastered, $485; completed, $485; $685, 35 days.

Sutter and Powell, raise and move. Owner, Thos. D. Dennigan; architect, R. H. Daley; contractor, Wm. T. Commary; cost, $14,574; signed, December 11th; filed, December 12th; limit, May 1st, 1889.
Payments: moved, $500; graded, $800; brick work half done, $1,300; brick work done, $1,400; framed, $2,476; brown coated, $2,476; white coated, $989; completed, $989; $3,644, 36 days.

Second and Folsom, brick building. Owner, Boyd & Davis; architect, J. M. Curtis; contractor, Chas. C. Terrill; cost, $67,000; sureties, B. Joost and J. Kennedy, $25,000; signed, December 10th; filed, December 11th.
Payments: 75 per cent as work progresses; balance, 35 days.

Sanchez and Hancock, one-story frame. Owner, R. Miller; contractor, R. Elam; cost, $2,200.

Seventeenth, near Noe, one-story frame. Owner, G. Weber; cost, $2,000.

Twenty-Fourth and Shotwell, frame building. Owner, Val. Meinberger; architect, S. Hatfield; contractor, Thos. A. Moar; cost, $4,050; signed, Dec. 20, 1888; filed, Dec. 22, 1888; limit, 110 days.
Payments, $800 50, roof boarded; $745, brown coated; $745, outside finished, except lower story; $745, completed; $1,012 50, 35 days.

Union, between Steiner and Pierce, one-story building. Owner, C. H. Waterman; architect, Wm. Mooser; contractor, Geo. H. Walker; cost, $2,650; signed, Dec. 17, 1888; filed, Dec. 19th; limit, March 1, 1889.
Payments, $850, framed; $850, brown coated; $950 completed.

Van Ness, corner Clay, additions to St. Luke's church; architects, Curlett & Cuthbertson; cost, $1,500.

Vallejo, near Van Ness, two-story frame. Owner, J. McDonald; architect, J. Chadwick; contractor, T. Evans; cost, $5,000.

Vallejo, near Union, two-story frame. Owner and builder, Con. Murphy; cost, $6,000.

Vallejo, near Van Ness, additional story. Owner, H. Evans; contractor, Chadwick; cost, $3,000.

Van Ness Avenue and Pacific street, alterations. Owner, Amelia W. Coffin; architect, John T. Kidd; contractor, Bateman & Bros.; cost, $5,515; sureties, A. D. Moore and H. C. Smith; signed, Dec. 20, 1888; filed, Jan. 5, 1889; limit, 125 days.
Payments, $1,000, framed; $1,025, sashes in, and glazed; $1,000, white coated; $1,100, ready to paint; $1,390, 35 days.

Webster and Waller, two-story frame. Owner, James Williamson; architect, A. J. Barnett; contractor, Kincaid & Thompson; cost, $4,289; sureties, Frank P. Latson, $2,500; signed, Dec. 14, 1888; filed, Dec. 17, 1888; limit, 75 days.
Payments, $600, roof boards on; $1,100, brown coated; $1,214, completed; $1,075, 35 days.

Waller and Steiner, four flats. Owner, Alex. Thain, et al; architects, Donovan & Williams; contractor, Jos. Donovan, et al; cost, $5,855; signed, Dec. 14, 1888; filed, Jan. 2, 1889; limit, April 30, 1889.
Payments, $1,200, framed; $1,200, brown mortar on; $1,200, standing finish on; $1,200, completed; $1,050, 35 days.

Washington, between Laguna and Buchanan, two-story dwelling. Owner, F. Du B. Green; architect, J. C. Mathews & Son; contractors, Knight & Littlefield; cost, $5,337; signed, Nov. 20, 1888; filed, Dec. 29, 1888; limit, April 15, 1889.
Payments, 75 per cent of value of work performed and material used, to be paid from time to time as work progresses; balance, 25 per cent, 35 days after completion.

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SAN FRANCISCO, CAL.

The * California * Architect * and * Building * News

VOLUME 10. ENTERED AT POST-OFFICE SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 2.

NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Office, 408 California St., San Francisco.

(Next to the Bank of California.)

Official Organ of the San Francisco Chapter American Institute of Architects.

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When money is sent for subscriptions, the receipt of a copy of this Journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

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Spaces on Cover and on page preceding reading matter are subject to special rates.

SAN FRANCISCO, FEB. 15, 1889.

CALIFORNIA ARCHITECT PUBLISHING COMPANY NOW HAS CONTROL OF THIS JOURNAL.

Articles of Incorporation of the above named Company have been received from the Secretary of State, and as soon as the By-Laws are prepared permanent officers will be elected.

Following are the Trustees named in the Incorporation papers to hold office for the first year:

ALBERT PISSIS, W. P. MOORE,
H. T. BESTOR, W. G. MATTHEWS,
OLIVER EVERETT, R. H. WHITE,
W. J. CUTHBERTSON.

Mr. Seth Babson has been intrusted with the duty of preparing the By-Laws.

Permanent rooms have been engaged at No. 408 California street, next to the Bank of California.

Direct all communications in future to the above address, as all business connected with the journal will be there transacted.

Secretary's office hours, 9 A. M. to 4 P. M.

NEW HEADQUARTERS.

Meeting of the San Francisco Chapter of Architects.

FOR the first time in the history of the State, those representing the Architectural Profession can lay the claim of possessing one of the neatest meeting rooms in the country. On the evening of February 1st the initial gathering was held. Many of those present were in the rooms for the first time, and uttered words of praise at the taste displayed in the selection of the carpets, chandeliers, chairs, etc. The main office is 16x36 feet in size, amply provided with light, and being on the sunny side of the street is warm enough without the necessity of keeping up a fire all day. In the rear of the main office are two large rooms, having conveniences of sun, light and water. A better location could not have been selected.

All Architects are invited to call and examine our rooms. Those from the country are cordially welcome.

S. F. CHAPTER, A. I. A.

The following members were present: G. H. Sanders, W. P. Moore, O. Everett, H. T. Bestor, J. E. Wolfe, Seth Babson, R. H. Daley, John Wright, W. H. Cuthbertson, J. M. Curtis, C. O. Laver, C. H. Hasty, J. Gash, G. H. Wolfe.

President G. H. Sanders occupied the Chair.

Report was received from the Committee appointed to confer with a like Committee from the Builders' Association, to prepare a proper form for a *Memorandum of Contract* to be filed in Recorder's office.

The Chairman, Seth Babson, presented proof copies of the form as prepared, to each member of the Chapter. Following is the document in full:

Memorandum of a Contract,

Made in writing, and executed and subscribed by the parties, at the City and County of San Francisco, the.....day of..... 18

FIRST.—The names of all the parties to said contract are .....who is designated therein as the Owner, and..... who is designated therein as the Contractor.

SECOND.—The property to be affected by said contract is situated in the City and County of San Francisco, State of California and is particularly described as follows, to wit: Commencing at a point on the .....line of.....street, distant .....feet.....from the.....of..... street, thence..... to the point of commencement.

THIRD.—The general character of the work to be done under said contract is as follows, to wit: The said..... as Contractor, agrees with the said..... as Owner, to furnish the necessary labor and materials, including tools, implements and appliances required in the execution of ..... in a workmanlike manner, in conformity with the plans, drawings and specifications for the same, made by.....the authorized architect employed by the owner, and which are signed by the parties hereto, and are to be kept and remain in the office of said architect, subject to the inspection of the parties hereto and others concerned in said erection.

FOURTH.—The total amount to be paid under said contract is the sum of.....Dollars, in U. S. Gold Coin, which sum is to be paid to the said contractor by the said owner in partial payments.

FIFTH.—The amounts of all partial payments, together with the times when such payments shall be due and payable, are as follows, to wit:.....

After a discussion, indulged in by all present, the form was unanimously endorsed by the Chapter.

A Committee of two—Wright and Daley—were appointed by the Chapter, to confer with the California Architectural Publishing Co., for the purpose of engaging the offices under control of the latter, as a permanent meeting room for the Chapter.

SKETCH OF AN OLD HOME.

Draughtsmen and Students.

Please Notice—It is our intention, in the near future, to issue an edition of the California Architect solely in the interests of draughtsmen and students. All the illustrations will be prepared by them and as far as possible all articles or communications will have their endorsement.

To do so, however, the parties mentioned should at once take hold of the matter in earnest and endeavor to show their friends and the public generally, the great improvement they have made in their studies.

Increasing Building Activities in the City.

No more conclusive and satisfactory proof as to the growth and prosperity of San Francisco, and the increase of its population could be desired than the fact that during each successive year of the present decade, thousands of houses for private residences and tenement purposes have been erected, and still the demand keeps pace with the supply. Within the last five years, especially, the building activities have been great, and at times many entertained and express the idea that "the thing is being overdone," and some even hesitate to improve their real estate, fearing a collapse, or the possession of houses without tenants. But the sequel proves that all such prognostication and fears were unsubstantially based, and that instead of a surplus of vacant houses, there are but few unoccupied, and those seeking desirable residences have to hunt long and diligently to find them—all of which goes to prove that San Francisco is boldly marching on in the race for city greatness, with every probability that ere the present century ends, her registers in every line of prosperity will be enviable in the highest degree; and with the limitations and disadvantages of issolation from the vast eastern centers of commercial and business life considered, her standing among the great and progressive cities of the continent will bear honorable comparison with but very few of those specially favored as to location and surroundings leading.

ARCHITECTS GENERALLY BUSY.

In further proof of all this, and that the present equals any period in the past in brilliant prospects, is the fact that the architects in San Francisco, with scarce an exception, are full of work, and every draughtsman worthy the name employed, so that the architectural forces in the city are at their best, preparing plans for early commencement, which also means that contractors and mechanics are destined to have their hands full at an early day, with the further probability that during the season the supply of skilled labor will be inadequate to the demand, and that the rates of wages will rule high, particularly in special departments. In this respect San Francisco is at a disadvantage, as compared with cities beyond the Rocky Mountains, where exegencies in the labor mart can easily be met by supplies from neighboring cities of a few hours' or days' ride by cars, at slight cost. But the barrier of two or three thousand miles' distance, and the earnings of a half month for fares across the continent, is not so easily overcome, and is likely, as it has done in seasons past, to render it impossible for contractors to fill up with qualified help. And this difficulty is more formidable, from the further fact that in Oakland, San Jose, Los Angeles, and the cities and towns of the state, generally, a similar degree of building activities prevail, so that from no quarter can increase of the working forces be expected.

LARGE BUILDINGS.

Present prospects are by no means confined to residence property, but extend to brick and stone structures, many of them of pretentous magnitude, and all of them requiring a large force of workmen.

In addition to those commenced, the *Chronicle* building, perhaps leading in cost and number of stories, the Bank building, corner of Bush and Sansome streets, the several fine structures under way on Market street, and in other parts of the city, there are a number of others contemplated, for which plans are made, or being made, which will require many millions of brick, and thousands of tons of stone and iron in their construction.

All this means more than employment for those who perform the work of construction, as the materials used in building will require the labor of other thousands to produce and manufacture into desired forms and shapes, and the employment of large capital in the various productions.

The iron from its ores, the wood from the trees of the forests, the bricks from the clay, the rock from its everlasting bed, the paint, glass, tin, lime, cement, the silver, trap, nickel and all other classes of material require busy hands to make them ready for building purposes. So that activity in building operations means prosperity in a thousand directions, and general prosperity in the counties in which they exist, following the direct line of involvements, and beyond these is the other essental fact, that by the successes and prosperities in life, the money with which to build is acquired; and the fact that so many building improvements are in progress or contemplated, is evidence that the people of this state, in a large measure, have been and are successful in their financial operations, the proof of which is clearly set up by the extensive activities prevailing throughout this city and state.

But, it may be asked, is this condition of things likely to continue? From all the evidences in sight, and all reasonable deductions, there can be but one answer—yes. With the steady increase in population that has been going on, and the fact that the results noticed are altogether the outgrowth of a solid, regular business condition of things, unaffected to any extent by stock or other bubble inflations, gives reasonable assurance that there is and will be permanency in the advances this city and state is now making, and that future years will prove the most sanguine expectations of the present well founded.

Thanks Will be Extended for a Prompt Settlement of Accounts.

All our patrons who are in arrears will kindly oblige by immediately forwarding the amount due. We promise the Architect will far surpass its previous appearance. In order to continue improvements, the subscriptions due should be immediately paid. Remember change of offices to 408 California street, next to Bank of California.

Architects are complaining of scarcity of good draughtsmen. When the boom broke in Los Angeles and vicinity, scores of draughtsmen were thrown out of employment. They naturally came to this city. Those who really possessed the proper qualifications secured situations. But many were totally incompetent and have wandered from place to place, condemning in the meanwhile, the inability of our architects to recognize their superior talent. Time has thinned out of the ranks of these would be architectural foreman, they, for the greater part, having taken up some other occupation. Competent draughtsmen can generally find employment at good wages, and only those thoroughly qualified should think of making a home in this city.

To drive rats and mice away from a building, make a strong solution of oxalic acid and soak newspapers in it until they are in a pulpy condition; cram this into the holes through which the rats or mice pass, and they will get such sore mouths and feet that they will give the holes a wide berth.

PISSIS & MOORE, Architects

A Supreme Court Decision of Great Interest to Contractors.

IN BANK.

[Filed December 8, 1888.]

RENTON, HOLMES & Co. vs. GEORGE MONNIER. } No. 11,344.

It appears from the record in this case that on the 14th day of April, 1882, the defendant entered into a written contract with one Valentine H. Harding, to construct for him a building on Howard street, in the city of San Francisco, for the sum of $8,957, to be paid in installments as the work progressed, and the first payment of $1,000 to be made when the frame was up to the second-story floor, including the second-story floor joists and frame of sidewalk.

It was provided that the building should be constructed "according and conformable to the drawings and specifications made by William Mooser, architect," and "in a good workmanlike and substantial manner, to the satisfaction and under the direction of the said William Mooser, the duly authorized architect, to be testified by a writing or certificate" under his hand.

The payments were to be made by defendant to Harding, his executors, administrators, or assigns, "provided that in each case a certificate be obtained and signed by the said William Mooser, architect, that said works have been done in the most substantial and faithful workmanlike manner, to the approval and full satisfaction of said architect."

On the 15th of April, 1882, Harding assigned to the plaintiffs the several payments to be made to him under the contract, by a written assignment which directed the architect to deliver to plaintiffs the certificates, and directed the defendant to pay to plaintiffs the several payments as they should fall due.

The contractor commenced his work and the first payment of $1,000 became due on the 29th of April, 1882. On that day the architect gave his certificate to Harding, and thedefendant paid him the $1,000, and subsequently refused to again pay the money to the plaintiffs.

The plaintiffs claimed that defendant had notice of the assignment and wrongfully paid the $1,000 to Harding, and they brought this action to recover the same.

The case was tried by a jury and the verdict and judgment were in favor of defendant. The plaintiffs moved for a new trial, which was denied, and then appealed from the judgment and order.

The principal question is: Did the defendant have notice of the assignment before he paid the money? If he did, the ptaintiffs were entitled to recover, and if not, they could not maintain their action.

It was proved that notice of the assignment was given to the architect on or about the 21st of April, and it is claimed for the appellants that this was constructive notice to the defendant and conclusively settled the question. Whether this claim is well founded or not depenes upon the extent and character of the architect's agency. The rule is well settled "that notice to an agent of facts arising from or connected with the subject matter of the agency, is constructive notice to the principal, when the notice comes to the agent while he is concerned for the principal and in the conrse of the very transaction." (Bierce vs. Red Bluff Hotel Co., 31 Cal , 165). But notice to an agent of facts not arising from or connected with the subject matter of his agency is not notice to the principal, unless actually communicated to him.

Agencies are general or special, and an agent has such authority as the principal, actually or ostensibly, confers upon him. (Civil Code, Sec. 2,315). In this case it is not claimed that the architect had any other authority than that expressly conferred upon him by the written contract for the construction of the building. That authority was: *First*—To see that the building was constructed according to the drawings and specifications in a good, workmanlike and substantial manner, and to testify in writing to that effect. *Second*—As the work progressed and payments became due, to sign and issue certificates that the work had been done in the most substantial and faithful workmanlike manner, to his approval and full satisfaction. *Third*—To decide any dispute which might arise respecting the true construction or meaning of the drawings or specifications.

The foregoing are all the powers delegated to the architect, and as to these powers the plaintiffs were fully advised.

The defendant reserved to himself the duty of making the payments, and it was a matter that in no way concerned the architect when or to whom the payments should be made. This being so, we are unable to see how it can be satd that the assignment was a fact "arising from or connected wrth the subject matter of the agency"; and in our opinion the instruction, requested by the defendant upon this subject, stated the law correctly and was properly given to the jury.

It was claimed by the plaintiffs at the trial that defendant had actual notice of the assignment before he paid the money, and in support of this claim one Bibb was called as a witness, and testified that he was the agent of plaintiffs, and that on the 25th of April he went to the defendant's saloon and exhibited and read to him the written assignment. On the other hand, it was claimed by defendant that no notice of the assignment was given or attempted to be given to him until the first day of May; and in support of this claim defendant was called as a witness, and testified that at the time he paid the money to Harding, neither Bibb nor any one else had informed him that the payments had been assigned, and that Bibb did not call upon him and exhibit the written assignment until the first day of May; that when Bibb called he exhibited a paper and asked witness to sign it, and he declined to do so; that he was a Frenchman and did not read or write English or understand what the paper meant, and so informed Bibb at the time; that he asked Bibb to come back when his clerk was in, and Bibb then went away.

At the conclusion of the testimony the Court, at the request of plaintiffs, instructed the jury that if the defendant had notice of the assignment to plaintiffs before or at the time he paid the $1,000 to Harding, then the verdict should be in their favor; and that a verbal notice of the assignment was all the law required. Afterwards an instruction reading as follows was given for defendant: "The defendant in this action is not liable to plaintiffs, if you find from the evidence that, at the time he paid the said sum of $1,000, involved in this action, to Valentine H. Harding, he had no notice that said Harding had assigned such payment to the plaintiffs. And notice given, in order to be effectual should be sufficient, precise and complete enough to put the defendant fully on his guard as to the fact of such assignment, and he should have understood it."

It is added for appellants that the last part of this instruction was misleading and erroneous, because it, in effect, told the jury that notice of the assignment would be ineffectual unless the defendant *understood* it, and it was sufficient to put him *fully* on his guard, thereby withdrawing from the jury the full consideration of the evidence upon the issues on which they were to pass. And in support of this position council cite Perkins vs. Eckert (55 Cal., 404.)

But it should be observed that each party to a lawsuit is entitled to have the law given to the jury, which is applicable to this theory of the case, and the testimony of his own witnesses. The Court acted upon this rule, and gave to the jury all of the instructions asked by the plaintiffs. The defendant's theory was that no notice of the assignment was given or attempted to be given to him until after he paid the money to Harding, and there being a sharp conflict of the evidence upon this question, that if notice was given it was ineffectual, because he did not understand it or know what it meant. Now, whether notice was given or not, and if given, whether defendant understood it, and it was sufficient to put him on his guard, or in the language of the code, to put a prudent man upon inquiry (Civil Code, Sec. 19), were questions of fact for the jury, and the instruction was evidently given to meet the defendant's theory of the case. Possibly the part of the instruction complained of might have been more happily written; but the question is, was it applicable to the facts proved by defendant, and did it state correct propositions of law.

Suppose a similar notice should be given to one who neither reads, writes, speaks nor understands the English language, would the notice be effectual and an instruction like that given here be erroneous? Evidently not. And yet we fail to see how the fact that defendant understood and spoke the English language to a limited extent can make any difference. If he did not understand what was read or said to him by the plaintiff's agent, and so informed the agent at the time, then the latter should have left with him a copy of the assignment, or should have returned for further explanation when the defendant's clerk was in. The case of Perkins vs. Eckert, *supra*, is not in point. In that case the question was whether a bill of sale was an absolute one, or was given as security, and an instruction was given which, in effect, told the jury that if plaintiffs understood it to be taken as security, and the defendants did not so understand it, they must find it to be an absolute sale. The instruction was held by this Court to be erroneous because it "withdrew from the jury the full consideration of the evidence upon the issue on which they were to pass."

In our opinion, under all the circumstances shown, the instruction stated the law correctly and was properly given to the jury.

When C. S. Holmes, one of the plaintiffs, was upon the witness-stand, counsel for defendant asked him, "What was the object and purpose of this assignment to you?" The question was objected to on the ground that it was immaterial and irrelevant, and that the terms of a written instrument could not be varied by parol testimony. Counsel for defendant replied that they did not wish to vary the terms of the instrument, but to show all the facts and circumstances surrounding the transaction. The Court then overruled the objection, and the witness answered that the contractor was a stranger to him and that he had procured bondsmen for him and did not want the money to go into his hands; that the assignment was made to secure his firm as against the bond and everything pertaining to the construction of the building. And he added that his firm advanced to Harding $165, before he received payment of the $1000, and that Harding repaid the money on the 2d of May. We see no error in the ruling. A contract may be explained by reference to the circumstances under which it was made (Civil Code, Sec. 1,647), and the testimony had some tendency to show that plaintiffs had such confidence in Harding that they may not have attempted to give notice of the assignment to defendant until the time named by him.

There is nothing in the next point made that the Court erred in permitting defendant's counsel to show that Harding borrowed money from the plaintiffs and repaid it. Holmes testified to the borrowing and repayment of the money without being asked to do so, and without objection from either side.

If it was error to admit in evidence the letter written by Holmes to Harding on the 16th of May, 1882, in reference to the disposition of all moneys which might come into plaintiff's hands under the assignment, the error was cured by instruction No. 3, which was given to the jury at the request of the plaintiffs.

The last point made by appellants is that the Court erred in allowing counsel for defendant to read in evidence the deposition of Valentine H. Harding, because there was no sufficient showing that he was out of the jurisdiction of the Court. The showing that Harding was out of the State probably might have been made somewhat fuller and more conclusive, but we think it sufficient to admit his deposition.

After carefully going over the whole record we find nothing calling for a reversal of the judgment, and therefore advise that the judgment and order denying a new trial be affirmed.

BELCHER, C. C.

We concur:
FOOTE, C.,
LAYNE, C.

BY THE COURT.

For the reasons given in the foregoing opinion the judgment and order denying a new trial are affirmed.

THE second design in the series of "Gem Cottages," which the accompanying cut illustrates, is, although somewhat larger, similar in appearance to that of number one. The general proportions are retained that it may conform to the same conditions and also in the line of economy; as a departure from the square or oblong to that of an irregular outline necessitates the forming of hips and valleys, hence a p oportionate increase in cost. Cottage No. 2 has all the requisites necessary to a complete moderate-priced home, including bath-room, grate in parlor, etc.

The principal entrance is into a hall of liberal size, from which access can be had into four of the six rooms comprising the main compartments and supplied with an abundance of light and ventilation by a large transom over the door, whose upper panel will be glazed with some neat pattern of figured frosted glass.

The parlor has ample room proportionate to a dwelling of this character and provided with ample light through the triplet windows, the smaller ones being designed with a transom over to be glazed in ornamented glass. The mantel may be of slate in imitation of marble, or if extreme economy be studied some tasteful pattern in cast iron could be substituted.

The bath-room, although somewhat unusually located, need be in no way objectional in that regard if the plumbing is of good quality and the room rightly kept, and both should have proper attention in those matters under all circumstances. This room should be wainscotted five feet high, finishing with a neat cap.

The chambers are both well provided with light and ventilation, each having a closet making them desirable rooms.

The dining-room is of liberal size with ample light furnished by the mullion window and can be, if so desired, provided with a china closet by substituting the cupboard in kitchen, where shown with doors opening on a counter shelf in dining-room three feet from floor, under which drawers for linen can be arranged. The kitchen is a desirable room with door at rear leading to back yard. The sink will rest on turned legs, leaving the space beneath open, which will allow the same to be kept clean and wholesome, rather than being cased up as usual, affording a receptacle for filth as is too often the case.

The pantry should be provided with not less than five rows of shelves, under which can be arranged flour chests, cupboards for kitchen utensils, etc. In the matter of construction the building should rest on brick piers extending into the ground below frost. The floors should be doubled, the first being of surfaced material over which lay one of matched soft pine, blind nailed, excepting in kitchen which should be of thoroughly seasoned Oregon pine, dressed smooth after laying and kept well oiled.

In a cold climate to assure warmth, would suggest a layer of asbestos paper between the floors; however, in no case the common building paper, as the leaking of water through the cracks produces a continuous damp floor and soon mould and rot away.

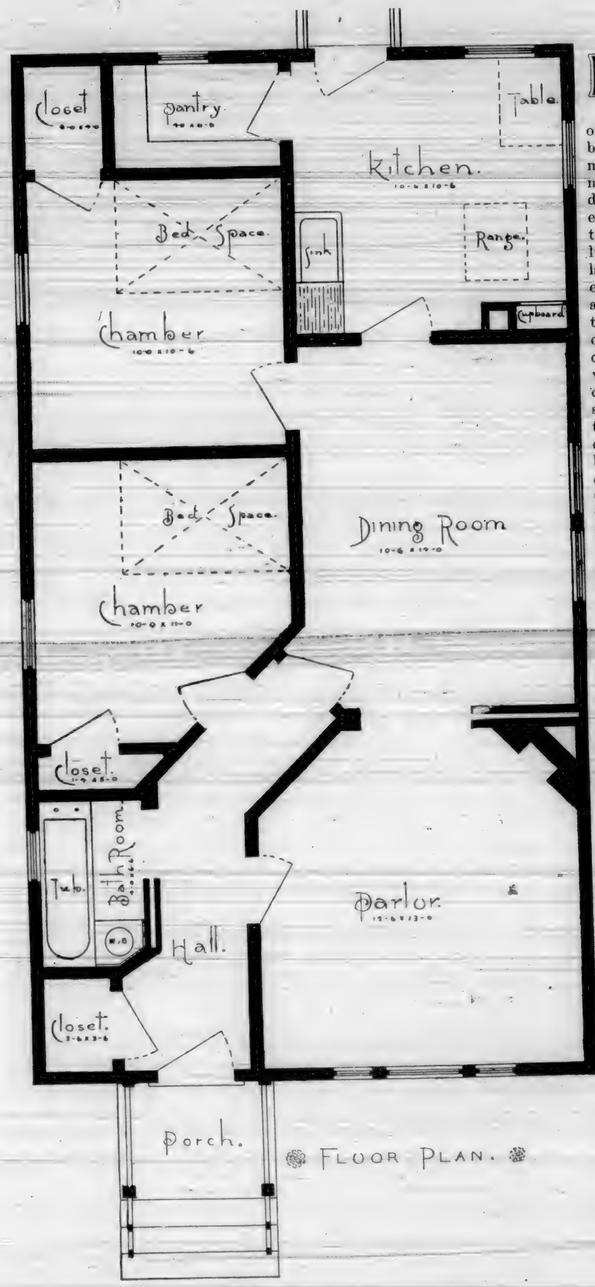
The kitchen should be wainscotted three feet high and over sink five feet to protect the plaster. The brick work for kitchen chimney should start thirty inches below ceiling line, resting on a solid bearing furnished by the uprights forming the side of cupboard. The brick work for mantel should start at a point below frost, resting on a footing of ample size, as suggested by the nature of the soil, and terminate four feet above floor line, the brest being formed by furring with studding to ceiling, care being taken to allow a space of at least two inches between the wood work and brick to guard against the possibility of fire. The interior should be finished in some of the modern styles of pilaster finish with a neat pattern of corner and plinth blocks. Transoms should be provided over all chamber, hall and outside doors to insure good ventilation, excepting however, the small sliding door into the bath room. Willler's sliding blinds are a good substitute for the common inside blind and much to be preferred; however, the English Venetian blind in the writer's opinion is still better.

The exterior, including roof, should be painted with at least two coats best lead and oil in two colors using only first-class material, as it is by far the cheapest. In reference to the interior would recommend a natural wood finish in hard oil, as it is the most durable, easily cleaned and no more expensive than a good job of painting. The cottage can be completed in a modern manner, using only the best materials and workmanship, at present prices in San Francisco, for a sum not to exceed $1800.

A. W. PUTNAM.

Draughtsmen and Students

Should bear in mind that we will soon issue an edition solely in their interests. Inform us at once if it is your intention to contribute either an article or a sketch.



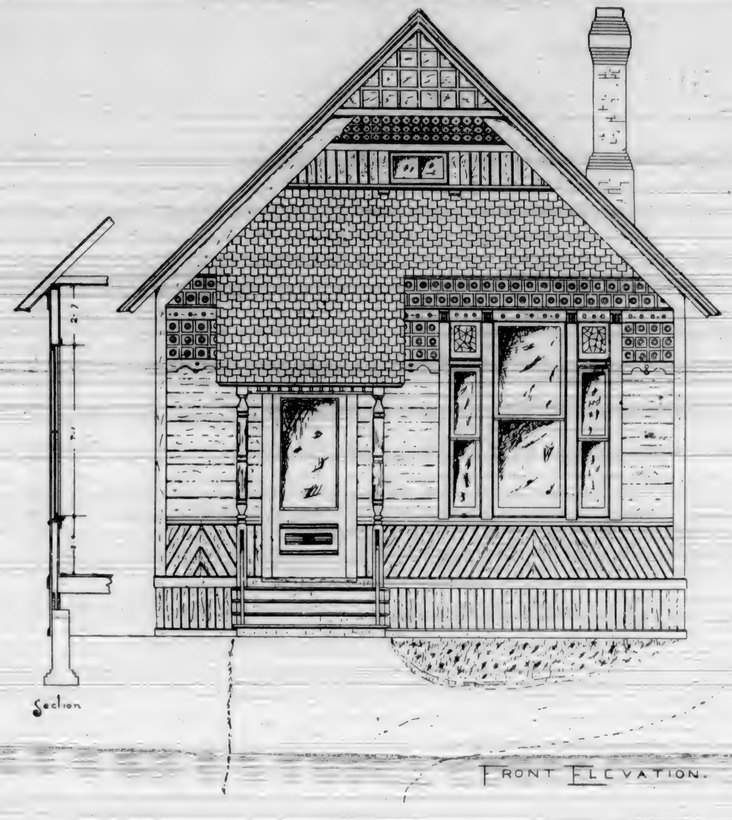
FLOOR PLAN.

EXPENSES OF ARCHITECTS.

FROM an article entitled "Are we Just to Our Architects," from the January *Century*, we quote as follows: "A doctor may manage a very large practice with a "plant" consisting of a small office, a brougham, a single assistant and a boy to open his door. A lawyer's outlay need not be much greater. But what are an architect's needs? It may seem very simple work to the public merely to design a building on paper, and 'merely' to supervise its erection by contractors who 'do all the real work.' But to design a building means to prepare, not only the little sketches and plans a client sees, but very many large scale drawings, requiring much time for their elaboration, and not only artistic reflection, but long and complicated mathematical and pecuniary calculations too. And to supervise construction means frequent and extended visits from the architect or some competent assistant. All this implies very large and well-lighted and very expensive offices, a numerous corps of assistants, some of whom must be men of great skill and long experience, and constant journeys, often to very distant spots. Every one knows the immense commissions Mr. Richardson received; but who remembers that he had more than a score of artists in his employ and took monthly journeys to Washington and Chicago? All architects must bear such burdens, but they fall much more heavily upon the American than the foreign practitioner. Rents are enormously high with us; the intense competition of Europe sends an established architect pupils who are willing to pay large premiums, while here salaries must be given from the start and must rapidly increase if good men are to be retained; and there is of course no comparison between the cost of journeys in France or England and those in our wide-spread territory. There are other facts which make an artist's task much harder here than in Europe and which tend to perpetuate the public feeling of distrust, but we merely wish at this moment to lay stress upon the fact that even the largest commissions on the most expensive class of buildings bring him a reward so disproportionate to that secured by an equal amount and quality of labor in other professions, that he may rank himself with the clergymen as among the least well-paid of our professional men."

A New Padlock.—Among the novelties put on the English market is a new padlock called the swivel, the object of which is to simplify the operation of locking. The swivel is reversible, so that the shackle can be opened from either side. A further advantage in the new lock is that owing to there being no open space by the shackle, moisture is effectually excluded. Another English manufacturer is putting up sash cord in boxes, which have an opening in front, through which the end of the cord passes. This system is referred to as largely adopted by other English manufacturers, and is said to be far preferable to the old method of doing up goods in hanks.

Probably the oldest timber in the world which has been subjected to the use of man is that found in the ancient temple of Egypt, in connection with some work which is known to be at least 4,000 years old. This, the only wood used in the construction of the temple is in the form of ties, holding the end of one stone to another. When two blocks were laid in place an excavation about an inch deep was made in each block, in which a tie shaped like an hour glass was driven, it is therefore, very difficult to force any stone from its position. The ties appear to have been of the timarisk or Shittim wood, of which the Ark was constructed.



FRONT ELEVATION.

The Relationship of Architecture to the Arts and Crafts.

THE arts and crafts in this country suffer, at the moment, from over-much professional jurisdiction; the public taste is being formed to accept the productions of a few self-constituted "masters" as the highest efforts of high art; the craftsman as a rule is well paid; and a fair day's skillful work for a fair day's adequate pay is what should be, without any question whatever, demanded and insisted upon.

As regards these professors, every credit must be given them for their honest endeavors in art education, but we absolutely deny that either an artist or a craftsman can be turned out of their schools fitted for the work at the office, the studio, or the building The requisite knowledge for the practice of the Arts and Crafts must be obtained after leaving the schools.

As regards the decorative arts, some of these professors appear to think that it is only necessary for them and a chosen few to meet in a room and declare themselves to be "Masters in the Arts," and thenceforth they are Masters.. In visiting their work I am not to criticize, I am to fall down and worship the golden image which they have set up. Who is Mr. Professor, that he claims an exclusive right in forming opinions on decorations and drawings? He may be, from his own point of view, a very great and distinguished artist—we will assume that he is—all we can say is that we are ignorant of the fact; and he may rest assured that if he were to write a thousand volumes and paint a thousand advertisements proclaiming himself a master whose opinions on art are not to be questioned, the effect upon educated men would be *nil*. When such a one had seen, analyzed, and thought over his works, he should say that they were good, bad, or indifferent, according to the lights of himself, not of those of Mr. Professor. Architects do not profess to be able to execute terra cottas, or to paint ceilings and vases; they do not claim the power to paint an easel picture better than a professional artist, nor to model a figure better than a sculptor; but they do claim the right to form their own opinions on questions relating to the fine arts without the benefit of a consultation with any decorative artist. To be sure the architect will find quite enough to do as regards the building proper, and the consideration and control of the high art accessories, without attempting himself to absolutely draw with his own hand, color with his own brush, and model with his own fingers those high art accessories. The architect's position is to design his building with beauty and build with truth—he is to lay down and apportion the parts to receive the designs of the sculptor, the painter, and the decorator—he is to review those designs, and to be able to pronounce upon them with wisdom and ability—he is to be, as it were, in consultation at all times with those artists, so as to produce that grand whole, that complete conception which is in his mind, and in his alone, but which is quite impossible that he can produce without the aid of specialists he is bound to consult and to work with. There is not, or ever will be, so much spare time left to the real architect that he can afford to fritter it away in silly drawings for silly women—let him leave table covers and curtains to those who know a great deal more about them and the proper designing of them; don't let us have too much of this taking Village Smith by the hand, and telling him that he is another Huntingdon Shaw, only he doesn't know it. Don't let us have too many grotesques and label them angels; but let us, on the contrary, while supporting in every way original talent and real art, crush this everlasting and sickening cry of—"We are a few superior artists; we are far, far removed from the common herd, and, although you may not think so, we really are great masters; for have we not ourselves declared it?"—William Woodward, A. R. I. B. A.

Cast iron weighs per cubic inch, .2603 pounds: u
bers, one-fourth of a pound to the cubic inch.

Inadequency of Architects Compensation.

THE inadequency of the compensation received by architects for making plans, specifications, etc., for dwelling houses, and supervising the work, furnishes a fruitful theme for consideration. People do not, as a general thing, appreciate the amount of labor required in the preparation and completion of a set of plans, specifications, details, etc., for an ordinary dwelling house. The reason of this is found in the fact that most people have little or no means of knowing the inside history of the preliminary work which has to be done and the time which has to be spent before the real work of preparing plans can be fairly begun. Even those who build are usually so absorbed in the interest and pleasure of building that they do not stop to consider how much they are receiving for the small sum usually charged for the architect's services.

Perhaps, therefore, a simple outline sketch, showing the manner in which a dwelling house, costing anywhere from five to ten thousand dollars, is generally evolved, from the first step to its completion and acceptance by the owner, may assist the layman to understand what it actually cost the architect in time and labor to prepare and supervise such a set of plans, specifications, etc.

This picture will be drawn from the architect,s point of view, and will therefore present a side little known to the public.

The client enters the office of the architect, full to overflowing of that all-absorbing topic—housebuilding, and, after the brief civilities of the day are over, informs him that he contemplates building a house for himself and family, and would like to talk about plans. He then usually produces a diagram showing the number and approximate arrangement of the rooms he would like, and proceeds to inform the architect what he wants, what he don't want, and how he wants it done. As soon as the client pauses for a moment, to catch his breath, the architect asks the question which has been trembling on his lips for the last half hour—"how much money are you willing to put into your house?" Almost invariably the client's reply to this simple question demonstrates the fact that what he wants and what he is willing to pay for do not agree, and the architect's first duty is to convince him of the fact. After an hour or two the interview terminates with a promise by the architect to make preliminary sketches and to guarantee satisfaction to the client. This latter promise is not always easily fulfilled, for sometimes a client proves difficult to please, but usually he is reasonable, and the architect succeeds, in time, in designing something which suits his client exactly. But he has merely found out what he really wants, and must now proceed to embody the same in the plans and specifications. Much time has already been spent in this preliminary work; perhaps half a dozen different sketches have been made, the client has visited the architect ten or a dozen times, sometimes bringing his wife and several other members of his family, and occasionally monopolizing a whole morning of the architect's valuable time, while important letters lay piled upon his desk requiring his personal attention, and requesting an immediate response, and several builders and contractors waited impatiently in another room for an interview regarding work already under contract or about to be let. By the time the house is completed some forty or more detail drawings may have been made, besides fifteen or twenty scale drawings and about forty visits made to the premises to see that the work was being executed according to the plans and specifications.

But this is not all; every office should have duplicate drawings for the purpose of reference. The plumber and the furnace man must have duplicates of such portions of the plans as relate to their respective departments, and if the work is let out in several separate contracts each contractor requires a duplicate for his own personal information. The architect is the first one to do any work on the house and the last one with whom the owner settles. The house may be six months or a year in building. In the meantime there are running expenses of the office to be paid, such as rent, draughtsmen's salaries, drawing materials, etc., to say nothing of incidentals.

Thus it will be seen that taking a five-thousand dollar dwelling house at the schedula price of five per cent., the architect is very inadequately paid for his services. In fact no architect can pay expenses on dwelling house work alone even at five per cent., but when he is compelled to take such work at three per cent., as many are, he finds to his sorrow that it is a losing business. But as the grocer keeps sugar to accommodate his customers, even though he sometimes loses money on it, so the architect must do dwelling house work, even though he does it at a loss, depending on the heavy jobs he may chance to get to help balance his exchequer.—*Architectural Era.*

The foregoing remarks from the *Architectural Era* represent fairly the circumstances under which architects prepare plan, and the manner in which they are remunerated. Many architects in this city do not receive the *true value* of their servicess owing to the limit of professional charges being placed at five per cent. Take, for instance, the case of an owner who is erecting a fine dwelling with all modern conveniences, at the extreme westerly limit of the Pacific Hights. The cost thereof may be in the neighborhood of $8000. The architect's commission is $400. Compare the work outlined in the article above with the amount noted. Add the forty or more trips to the locality mentioned, and what profit does the architect have for his time and talents. The hints given should be carefully noted by owners, and they should take pride in seeing that those who studied long and earnestly to make plans for a comfortable home, should be remunerated in a manner befitting their professional calling.

Pay Day and Welcome.

Subscribers to this Journal should bear in mind that the annual pay time of a large number of subscriptions has rolled around, and is now due and payable. All are earnestly requested to call at once and settle arrearages, and renew for 1889, and thus express such

A HEARTY WELCOME

To the new management as will assure it of undivided support from the members of the architectural profession, and every contractor, builder, material man, and of all classes and callings, engaged in works connected with building construction. Owners of property, those engaged in house furnishing, furniture, carpets or in any way identified or interested in housework should give both advertising and subscription support, as more than ever, this journal will become the great channel through which all important reliable business information and facts will flow.

Under a New Management.

This journal is now under the control of the "Architect Publishing Company." All accounts due are payable to the company, at their new offices, 408 California street, rooms 14, 15, 16 and 17.

All who intend to build a home for themselves should fully realize the importance of first knowing just what can be done with a given amount of money, in the building, furnishing and beautifying their buildings and grounds, so that when the whole is finished, they can truly say it is simply complete.

It has been found that steel mixed with twenty-four per cent of manganese becomes non-magnetic.

"Soaking" in the fire causes steel to become "dry" and brittle, and does it very great injury.

CHEAP LUMBER AND BUILDING.

WE took occasion, in a late issue, to allude to the rivalry that is being waged between our manufacturers of lumber and the damaging effect it is having on that interest, deprecating the same as tending to a useless waste of our own timber resources, besides being otherwise lacking in business sense. From the consequent cheapness of lumber there is resulting, however, some benefits to the community at large, albeit at the expense of the lumbermen themselves. The cheapness of this article has greatly stimulated building and other improvements involving a large use of lumber.

There is said to be in this city a greater number of dwelling-houses in course of erection at this time than ever before, the same being true of many other towns in the State, both interior and coastwise, except, perhaps, in the southern tier of counties, where the building "boom" has somewhat abated.

Aside from the houses being built, an unusually large number of contracts have been entered into for the erection of others to be put up during the coming spring and summer. Many business places, some of them large and costly structures, are also being built both here and elsewhere, their erection being prompted, in part at least, by the same consideration. Cheap lumber is not therefore, one of those ill winds that blows nobody any good.

It may in the end even work to the advantage of the lumbermen themselves, the impetus so given to building creating such a demand for their, product as will, through the depletion of stocks, force up the price of that commodity.

It is surprising the effect that a drop of a few dollars per thousand in the cost of lumber has on the owners of real estate, causing them everywhere to be seized with a desire for improving their property. The cost of labor and other materials may remain as high as ever, and even be advanced, yet this is all lost sight of in view of the lessened cost of this one article.

While the lumber question is one of moment with all real estate owners, it undoubtedly weighs most with small holders, the owners of only two or three lots, or perhaps merely a homestead, on which they make haste to build when the cost of this one item drops a little below the ordinary standard. That this view of the situation is correct is obvious from the improvements going on in the outskirts of the city of San Francisco. Visiting that quarter of the city we see hundreds of small houses being built, the most of them evidently intended for occupancy by the owners. But beside this class of tenements, which are apt to be widely scattered, there are others put up in long rows designed for rent, the possessions of larger real estate proprietors.

One going into the Western Addition, and seeing there so many houses being built, gets the impression that this suburb is forging ahead at a specially rapid rate. If he visit the southern part of the town, he is in like manner led away with the idea that this section is meeting with an abnormal growth. Out along the old Mission and the old San Bruno roads building enterprise is undergoing a wonderful expansion, as well as along both sides of the Potrero, lying off in that direction. Even up the sides and over the tops of the high hills occupying the southwestern part of the city, improvements are creeping, showing that these less desirable localities are already in request, with the prospect of becoming densely populated in the near future.

By reason of this large consumption of lumber, it is to be hoped that the manufacturers of that article will, through improved prices, find some compensation for the meagre returns they are now realizing from the products of their business.

The above from *Wood and Iron*, of this city, expresses the true state of the lumber market. We take pleasure in printing the article, as it coincides with many of the ideas advanced by the California Architect. *"It is surprising the effect that a drop of a few dollars per thousand in the cost of lumber has upon the owners of real estate."* Friend Everett, we cordially agree with you and beg to welcome you to our fold. Time over and again have we advanced that same proposition, and the same number of times have we been combatted, Friend Everett, taking the stand that a few dollars per thousand, more or less, did not or would not affect the price of building. It is not only the price of the rough lumber used, but the mill men make a vast difference on their bids, owing to the high value of surfaced lumber. This journal has always taken the stand that $22.50 was too high for lumber, while $12 or $13 per M, was a ruinously low figure. We believe that $18 is a fair price to consumers and manufacturers, and an earnest endeavor should be made to maintain the price of lumber at that figure.

FULL OF PROMISE.

The years since 1880 have been periods of gratifying and increasing prosperities in California, in all departments of building, commercial and business enterprises, checked only for a limited time by an occasional "dry season;"—some portions of the State "booming" to the utmost extent of possibilities, stimulated by every art and device known to those handling and manipulating property interests, while San Francisco and other cities, towns and sections have glided along in the even tenor of their ways, stimulated, growing and prospering alone upon the solid merits of the realities within their respective boundaries.

Such has been the state of facts particularly in the building interests. The building statistics from time to time appearing in this journal show the approximate, but not the ultimate, amount of investments, as often as the sum of contracts decided upon the commencement of operations, and upon which such statistics are based, are considerably increased before completion, by extras which in some cases amount to a considerable percentage on the sum of original contracts.

But viewing prospective results for current year from present datas the generally expressed prediction is that 1889 will be one of the exceptionally good years in this State. Everybody who can control their finances to that end, expresses the determination to build, and ere the summer months roll around, every building operative from architect to sewer-layer will have ample employment, with the very certain probability that the supply of labor in many of the departments, especially skilled mechanics, will be short of the demand. Hence, advance in the rates of wages in some lines may reasonably be anticipated, and those who commence later in the season may expect to pay higher prices than those who at the present time have their plans prepared and in the market for bids. Notwithstanding the large number of tenement houses erected each succeeding year, there are few desirable habitations to rent, and as fast as new ones are completed tenants are found to occupy them, thus evidencing the fact that those who have property to improve, and money to invest, run no risk in planting their surplus or available coin in building improvements, particularly at the present low price of lumber materials.

Plate Glass Making.—This is now an extensive industry in this country. The principal works are at New Albany, Indiana, where 1,500,000 square feet is made annually. Nearly as much is made at St. Louis, Mo., and a works at Pittsburg, Pa., turns out 360,000 square feet each year. The total is 3,000,000 square feet, or 568 acres of plate glass ground true and polished. No enormous plates, such as were exhibited at the Centennial exposition by French makers have been produced and are not required. Plate glass of unusual dimensions is a luxury, and posses no merit or advantage corresponding to its great cost. The value increases as the square of the area.

The manufacturers of perforated seats have combined. Their object can be seen through.

Testing Foundations.

ANY resistance of the soil to pressure or great loads is generally left to be determined by experience. In the erection of the weighty and lofty structures on the Champ de Mars in Paris, in connection with the forthcoming exhibition, experiments have been conducted with this object in view for the purpose of determining the size of foundations. The method adopted was to level a large surface of ground and place four rectangular blocks of cast iron, 1 foot, 8 inches square, so disposed as to form the corners of a square, the distance apart being 11 feet, 8 inches from center to center. These blocks were bridged by girders of T irons, and these were then loaded with the same until a total weight of 143,923 pounds was reached, when a settlement occurred. The pressure on the ground was 7.311 tons per square foot. During the night the settlement was increased about three-quarters of an inch. The load was increased next day to 209,776 pounds, when some of the corner blocks had sunk out of sight, leaving the girders on the surface of the soil. It was found by these experiments that the soil was capable of resisting a load equivalent to 5.43 tons per square foot. When the load reached 7.31 tons, settlement took place, and the ground was incapable of supporting a load of 8.14 tons per square foot. In heavy structures a weight of 8 tons per square foot is not unusual; several chimneys at Birmingham and St. Rollox, at Glasgow, exceed this amount of stress. St. Peter's at Rome bears a weight under the dome of nearly 15 tons per square foot, and it is estimated that the piers carrying the dome of St. Paul's, London, bear a weight per foot at the base of 17.705 tons per square foot. The very inadequate data furnished in books makes it necessary for the architect and engineer to make experiments when any heavy or lofty structure has to be supported. How many of the central towers and spires of our cathedrals have failed it would be impossible to say, though the examples of Chichester and Ely ought to be warnings. —*London Building News.*

State Rights For Sale.

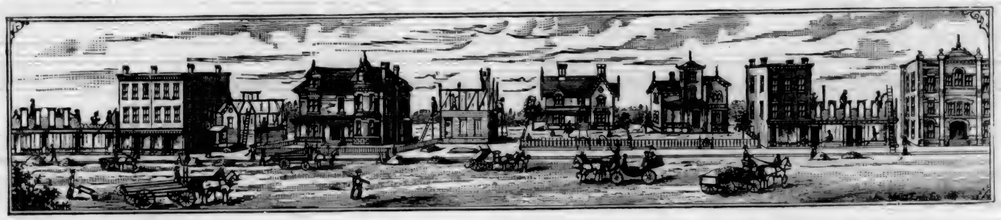
State rights, or the entire Pacific Slope, for sale, at bottom prices, of the best and most effective weather strips. Patent February 4, 1888. Excel all others for preventing air, dirt, water or snow from entering houses at the sides, top and bottom of doors and windows. No rattling of windows. No rubber or felt to loosen its elastic, but life-lasting symmetry in shape, with concave and convex interlock forming close joints. For prices, circulars and samples, address with stamp, E. P. Burcaw & Co., Hazelton, Pa.

Draughtsman's Situation Wanted.

Situation as draughtsman in an architect's office, by a young man about twenty-one years of age, who has served his time at the carpenter's trade, and has a good knowledge of framework construction. Has had no actual experience in office work, but can make plans, elevations and ordinary working drawings. Can also draw in plain perspective, and has a general idea of detailing. Wages not so much of an object as a good place, with a chance to work up. Can give references as to character and habits.

Address, this office.

In planning a large edifice particular attention must be paid to the situation of the stairs, so as to give the most convenient and easy access to the several rooms.



CITY BUILDING NEWS.

Broadway and Scott, two-story frame. Owner, A. Bouvier; architect, F. Wilcox; contractor, R. Smilie; cost, $5,500.

Buchanan, near Union, two-story stable; cost, $600.

Broadway and Scott, two-story and basement frame. Owner, Alfred Bouvier; architect, Fred. E. Wilcox; contractor, Robert Smilie; amount, $4,242; limit, 120 days; filed, January 17; signed, December 11. Payments, $1,200 framed; $1,200 plastered; $781.50 completed; $1,060.50 35 days.

Bartlett and 22d. Owner, F. L. Turpin; architect, Geo. A. Bordwell; contractor, R. P. Waddell; amount, $3,912; limit, June 1; filed, Jan. 23; signed, Jan. 21. Payments, $590, framed; $590, brown coated; $590, white coated; $597, completed; $790, 35 days after.

Bush, between Kearney and Dupont, stone work. Owner, Kate M. MacDonough; architects, J. M. Wood; contractor, O. E. Brady; amount, $14,500; limit, 60 days; filed, Jan. 22; signed, Nov. 8, 1888. Payment, 75 per cent work done, etc., on first Tuesday of each month; balance, 35 days after completion.

Brannan, near First. Owners, Warehouse Land and Improvement Co.; architects, Schulze & Meeker; contractors, Gray Bros., Artificial Stone Co.; amount, $2,472; sureties, C. A. Warren and F. S. S. Buckingham, $900; limit, 30 days. Pavement of one story and basement of warehouse, $618; 11,735 square feet are laid; $618, 23,470 square feet are laid; $618, completed; $618, 35 days.

Church, between Twenth-third and Twenty-fourth, carpentering. Owner, Frank Girot; architects, Schulze & Meeker; contractor, Jacob Klein; amount, $4,812.50; sureties, C. S. Holmes and F. Joost, $1,600; limit, 90 days; filed, Jan. 30; signed, Jan. 26. Payments, $608.50, framed; $1,000, partition studs up; $1,000, white coated; $1,000 completed; $1,204, 35 days.

Chestnut, near Larkin, improvements; cost, $500.

Central Ave., near California, two-story frame. Owner, Mr. Green; contractor, F. Weineohl; cost, $4,500.

Caroline, near Howard, two-story frame. Owner and builder, Chas. Warren; cost, $1,200.

Derisadero and Pacific, dwelling. Owner, A. D. Moore; architect, Clinton Day; contractor, Peter Crichton; amount, $14,200; limit, June 1; filed, Jan. 7; signed, Dec. 29. Payments, $4,000, ready to paint; $4,000, stairs and ready to paint; $2,650, completed; $3,500, 35 days.

Ellis, near Broderick, one-story frame. Owner, Mr. Green; contractor, Deane; cost, $2,000.

Eddy, near Boderick, two-story frame. Owner, Mr. Fortjee; contractors, Wheeler & Burdick; cost, $4,500.

Eighth, between Market and Mission. Owner, Manning; cost, $2,500.

Fifteenth and Noe, two-story frame. Owner, Robt. Acton; architect, R. H. White; contractors, Rountree Bros.; amount, $4,325; sureties, J. F. Kennedy and L. B. Doe; limit, 90 days; filed, Feb. 2; signed, Jan. 31. Payments, $900, roof boards on; $800, rough mortared; $700, finished up; $825, completed; $1,100, 35 days.

Frederick, near Second, additions; cost, $1,000.

Fourteenth, near Howard, two-story frame. Owner, L. Dumas; architect, J. Behrens; cost, $3,500.

Fourteenth Ave., between N street and Railroad avenue, one-story frame and basement building. Owner, Christian Hoerner; architect, D. Dodge; contractor, J. P. Rines; amount, $1,200; filed, Jan. 22; signed, Dec. 27, 1888. Payments, $250, framed; $250, covered; $300, brown mortared; $400, 10 days.

Gough, between Vallejo and Green, two-story frame. Owner, Annie Cassell; architect, W. H. Wharff; cost, $4,500.

Green, between Gough and Octavia, 2 two-story frames Owner, architect and builder; cost, $6,000.

Geary, near Gough, one-story frame. Owner, Crandall.

Geary, No. 428, moving and alterations. Owner, John Michel; architects, John & Zimmermann; contractors, Schutt & Krecker; amount, $3,995; limit, April 1; filed, January 17, signed, January 17th. Payments, $1,100 sidewalk walls completed; $995 brown mortared; $900 accepted; balance, 35 days.

Harrison and Fourth, two-story frame; 4 flats. Owner, F. E. Hesthall; architect, Geo. E. Voelkel, contractor John McKay; amount $5,100; sureties, Frank P. Latson and J. F. Kennedy, $5,000; limit, 3 months; filed, January 17; signed, January 7. Payments, $500 enclosed; $825 first coat plastering on; $1,300 second coat plastering on; $1,200 accepted; $1,275 35 days.

Henry between Sanchez and Noe, one-story frame. Owner, Winifred Ford; architect, J. C. Brown; contractor, J. C. Brown; amount, $1,250; sureties, Jno. O. Doane; filed, January 10; signed, January 8. Payments, $400 roof boards on; $500 plumbing done; $350 completed.

Howard, corner Fourteenth, one-story additions. Owner, L. Dumas; cost, $2,000.

Henry, between Sanchez and Noe, one-story frame. Owner, Mrs. G. W. Ford; contractor, J. C. Brown; cost, $1,500.

Howard, between Seventh and Eighth; frame. Owner, Thos. Brannan; architect, Wm. Mooser; contractor, C. A. Laherty; amount, $6,400; sureties, ehrend Joost and, John Rogers; limit, 100 days; filed, Jan. 29; signed, 25. Payments, 75 per cent as work progresses; balance, 25 per cent, 35 days after completion, receipted bills being produced.

Jackson and Devisadero, dwelling; owner, Annie M. Healy; architect, T. J. Welsh; contractor, James W. Smith; amount, $3,455; limit, three months; filed, Jan. 9; signed, Jan. 7. Payments, $800, framed; $800, brown coated; $900, finished; balance, 35 days.

Julian Ave., near 15th, additions; cost, $600.

Jackson and Buchannan, two-story frame. Owner, R. C. Foute; architect, Geo. A. Bordwell; contractor, R. P. Waddell; amount, $3,495; limit, May 1; filed, Jan. 31; signed, Jan. 29. Payments, $870, rustic on; $880, plastered; $870, completed; $875, 35 days.

Kearny and Geary, build vaults. Owner, M. H. de Young; architects, Burnham & Root; contractors, Wilshire Safe & Scale Co.; amount, $3,600; limit, Oct. 1. filed, Jan. 7; signed, Jan. 5. Payments, 75 per cent of labor and material to be paid for at end of each month, and balance, 25 per cent, 36 days after completion.

Kearny and Geary, painting and glazing. Owner, M. H. de Young; architects, Burnham & Root; contractor, H. J. Milligan; amount, $13,622.50; limit, 10 days after carpenter work is done; filed, Jan. 7; signed, Oct. 15. Payments, 75 per cent, to be paid in amounts proportionate to work done; balance, 25 per cent 36 days after completion and acceptance.

Kearney and Geary, brown sandstone. Owner, M. H. de Young; architects, Burnham & Root; contractors, McLellan, McGowan & Butler; amount, $14,500; limit, March 22, 1889; filed, Jan. 22; signed, Dec. 22, 1888. 75 per cent to be paid monthly, according to work done; balance, 25 per cent, 36 days after completion.

Kearny and Geary, plastering. Owner, M. H. de Young; architects, Burnham & Root; contractors, Boland Bros.; amount, $6,995; limit, 60 days; filed, Jan. 22; signed, Oct. 9, 1888. Payments, 75 per cent, payable on 1st and 15th each month in installments proportioned to work done; balance, 25 per cent after completion and acceptance.

Larkin between Greenwich and Filbert, cottage. Owner, Mary T. Loveland; contractor, M. Shea; amount, $2,100; sureties, J. W. Wesson; limit, 90 days; filed, January 9; signed, January 3d. Payments, $400 framed; $400 brown coated; $400 inside finish on; $375 completed; $525 35 days.

Market, corner City Hall avenue, finish basement. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, E. L. Ransome; amount, $7,650; limit 40 days; filed, Jan. 22; signed, Jan. 19. Payments, 75 per cent of value of work done, to be paid as contractor may desire; balance, 35 days after completion.

Market, between City Hall avenue and Jones, four-story brick building. Owner, G. G. Burnett; architect, J. E. Wolfe; contractor, J. J. Conrad, for brick, stone and iron work; amount, $14,740; limit, May 4, 1889; filed, Jan. 24; signed, Jan. 19. 1st payment, to be made when brick work is completed; 2d, when brick work is completed for 2d tier joists; 3d, when brick work is completed for 3d tier joists; 4th, when brick work is completed for 4th tier joists; 5th, when brick work is ready for ceiling, equal to 75 per cent of value of material used; balance, 25 per cent after completion and acceptance.

Market, between City Hall avenue and Jones, 50x100. Owner, G. G. Burnett; architect, James E. Wolfe; contractors, Bateman Bros.; amount, $15,475; limit, 5 months; filed, Jan. 26; signed, Jan. 19; 75 per cent of value of labor performed, etc., in periods 20 days; 25 per cent 35 days after.

Market, between City Hall avenue and Jones, carpentering, four-story brick building. Owner, Margaret Lynch; architect, James E. Wolfe; contractors, Bateman Bros; amount, $6,940; limit, 5 months; filed, Jan. 26; signed, Jan. 19. Payments, 75 per cent to be paid every 21 days; balance, 25 per cent when completed.

Market and City Hall avenue, four-story brick building. Owner, Margaret Lynch; architect, James E. Wolfe; contractor, J. J. Conrad; amount, $9,441; limit, May 4, 1889; filed, Jan. 26; signed, Jan. 19. 1st payment, brick work ready for main floor joists; 2d, ready for 2d floor joists; 3d, ready for 3d floor joists; 4th, ready for 4th floor joists; 5th, ready to receive ceiling joists, 4th story; each payment equal to 75 per cent work done, etc.; balance, 25 per cent, 35 days.

Main and Howard, carpentry. Owner, Est. Geo. H. Dana; architects, Pissis & Moore; contractor, J. Wissinger; amount, $9,480; limit, 40 days; filed, Jan. 25; signed, Jan. 24. Payments, tin and hardware, $1,500; 2d floor joists in, $1,500; all roof trusses are in place, $2,000; roof, timbers and floors laid, $2,100; completed, $2,380, 35 days.

McAllister and Scott, brick and carpenter work, etc., 4 two-story and basement frame buildings. Owners, G. M. Perine and Wallace T. James; architects, John & Zimmerman; contractor, W. M. Fletcher; amount, $17,000; limit, May 1; filed, January 11; signed, January 8. Payments, $3,000 framed; $3,000 partition set; $3,750 rough plastered; $3,000 accepted; balance, 35 days.

McAllister, between Scott and Pierce, four two-story frames. Owners, G. M. Perine, et al; architects, John & Zimmerman; contractor, W. M. Fletcher; amount, $17,000; sureties, J. F. Kennedy; limit, May 1, 1889; filed, Jan. 28; signed, Jan. 8. Payments, $3,000, framed; $3,000, partitions set; $3,700, outside finish on; $3,000, accepted; $4,250, 35 days.

McAllister and Scott, plumbing. Owners, G. M. Perine and Wallace T. James; architects, John & Zimmerman; contractors, S. Ickelheimer & Bro.; amount, $2,069; filed, January 11; signed, January 11. Payments, $700 first certificate delivered; $869 all certificates; balance, 35 days.

McAllister, between Scott and Pierce, gas-fitting. Owners, G. M. Perine, et al; architects, John & Zimmerman; contractor, S. Ickelheimer Bros.; amount, $2,069; sureties, Pauline Ickelheimer; limit, April 15; filed, Jan. 28; signed, Dec. 28. Payments, $700, first certificate delivered; $869, accepted; $500, 35 days.

McAllister, between Scott & Pierce, painting. Owners, G. M. Perine, et al; architects, John & Zimmerman; contractor, J. Cooney; amount, $1,195; sureties, John G. Adams; limit, May 1; filed, Jan. 28; signed, Jan. 11. Payments, $400, inside finish ready to grain; $395, accepted; $400, 35 days.

Mission street and Sullivan alley, three-story and basement brick building. Owner, W. A. Aldrich; contractors, Richardson & Gale; amount, $16,485; sureties, Frank Williams and Oscar Lewis, $16,000; limit, 60 days; filed, January 16; signed, January 2. Payments, on 25th of each month owner will pay 75 per cent. of estimated value of work done; balance, 25 per cent.

Main and Howard, three-story brick building. Owner, Est. Geo. H. Dana; architects, Pissis & Moore; contractor, E. R. Shain; amount, $15,554; limit, 80 days; filed, January 16; signed, January 16. Payments, $2,500 concrete is completed; $2,000 walls are up to 1st story ceiling; $2,500 walls are up to 2d story ceiling; $2,000 walls are ready for roof trusses; $2,500 when completed; $4,044 35 days.

Mission, near 14th, two-story frame. Owner, A. S. Perly; day work; cost, $6,000.

Mission, corner 14th, additions; cost, $1,000.

Mission, near 15th, additions; cost, $1,200.

Mason, No. 803, alterations. Owner, Richard Valentine; architects, Salfield & Kohlberg; contractor, Henry Rohling; amount, $2,475; sureties, F. Joost, $2,475; limit, two months; filed, Feb. 1; signed, Jan. 21. Payments, $900, roof on; $925, completed; $650, 35 days.

Noe and Ridley, two-story frame. Owner, Jane Noonan; architects, Copeland & Banks; contractor, Thos. D. Jones; amount, $3,550; limit, April 1; filed, January 12; signed, December 24. Payments, $800 framed; $1,050 brown coated; $800 completed; $900.35 days.

O'Farrell and Octavia. Owners, Young Women's Christian Association; architects, Wright & Saunders; contractors, Kincaid & Thompson; amount, $20,497; limit, July 1; filed, Jan. 9; signed, Jan. 1. Payments, installments on 1st day of each month, as work progresses, to value 75 per cent, and balance, 35 days.

Oak and Broderick, concrete, pumping and excavating. Owner, Omnibus Cable Co.; architects, Percy & Hamilton; contractor, E. L. Ransome; amount, $6,100; sureties, S. B. Cushing and A. A Wigmore, $2,500; limit, 35 days; filed, January 12th; signed, January 11. Payments of 75 per cent. on first Saturday of each month; balance, 25 per cent.

Oak and Broderick, cast and wrought iron work. Owner, Omnibus Cable Co.; architects, Percy & Hamilton; contractors, O'Connell & Lewis; amount, $13,000; sureties, Robt. Mitchell and D. F. N. Little, $5,000; limit, as fast as possible; filed, January 12; signed, January 11. Payments on first Saturday of each month of 75 per cent.; balance, 25 per cent. after completion.

Oak and Broderick, carpenter work, painting, plumbing, plastering, etc. Owner, Omnibus Cable Co.; architects, Percy & Hamilton; contractor, O. E. White; amount, $21,470; sureties, Charles F. Doe and Frank P. Latson, $7,000; limit, 20 days after brick work is done; filed, January 12; signed, January 11. Payments on first Saturday of each month of 75 per cent. of value of work done; balance, 25 per cent. after completion.

Oak and Broderick, brick and stone work. Owner, Omnibus Cable Co.; architects, Percy & Hamilton; contractors, McGowan & Butler; amount, $34,300; sureties, C. S. Holmes and W. P. Dougherty, $12,000; limit, 50 days; filed, January 12; signed, January 11. Payments of 75 per cent. on first Saturday of each month; balance, 25 per cent. after completion.

Oak and ———, two-story frame. Owner, A. Foreman, Jr.; architect, G. G. Gillespie; contractor, G. G. Gillespie; amount, $3,200; limit, 80 days; filed, January 10; signed, January 10. Payments, $600 framed; $600 brown mortared; $600 white mortared; $600 completed; $800 35 days.

Oak and Broderick, plumbing. Contractor, O. E. White; sub-contractor, Thos. Clark & Sons; amount, $1,900; limit, 15 days; filed, January 15; signed, January 15. Payments, 75 per cent. of value of work done, etc., to be paid in installments the 1st Saturday of each month; balance, 25 per cent. 35 days.

Oak and Broderick, roofing and galvanized iron work. Architects, Percy & Hamilton; contractor, O. E. White; sub-contractor, W. S. Snook & Son; amount, $6,785; limit, 25 days; filed, Jan. 15; signed, Jan. 12. Payments in installments on first Saturday of each month as work progresses, of 75 per cent of value of work done, etc.; balance, 25 per cent, 35 days.

Pacific and Steiner, plumbing. Owner, J. J. Wells; architect, Chas. I. Havens; contractor, Wm. F. Wilson; amount, $1,180; sureties, H. W. Smith and Jas. J. Colvin; filed, January 11; signed, January 10. Payments, $400 rough pipes in; $480 completed; $300 35 days.

Parker Ave., near Point Lobos, one-story frame. Owner, John Ogilvie; architect, D. F. McGraw; contractor, D. F. McGraw; amount, $1,500; limit, April 1; filed, January 19; signed, January 7. Payments, $500 when brown mortared; $500 outside work done $500 completed.

Parker Ave., near Point Lobos avenue, one-stoty frame. Owner, Geo. Wright, architect, D. F. McGraw; contractor, D. F. McGraw; amount, $1,500; limit April 1; filed, January 19; signed, January 7. Payments, $500 when brown mortared; $500 when outside work done; $500 completed.

Pine, between Lyon and Central avenue, dwelling and stable. Owner, Fred'k Rakeman; architect, Townsend & Wyneken; contractor, Wm. Linden; amount, $2,800; limit, 120 days; filed, Jan. 15; signed, Jan. 9. Payments, $560, framed; $560, enclosed; $560, 1st coat paint; $560, completed; $560, 35 days.

Page, between Gough and Octavia, building. Owner, James Reily; sureties, W. A. Meeker; architects, Jno. J. Clarke; contractor, W. Linden; amount, $5,300; limit, 120 days; filed, Jan. 22; signed, Jan. 10. Payments, $1,000, framed; $1,000, enclosed; $1,000, brown coated; $1,000, inside finish complete; $1,300, 35 days after.

Page and Scott, three-story frame. Owner, Jos. Hess; architect, H. Geilfuss; contractor, H. J. Weiss; amount, $7,168; filed, Jan. 7; signed, Jan. 2. Payments, $900, framed; $900, roofed; $900 partitions set; $900, brown coated; $900, white coated; $868, completed; $1,800, 35 days.

Pacific, near Larkin, improvements, $1,000.

Sutter, near Powell, brick and stone works. Owner, Wm. T. Commary; architect, Robt. H. Daley; contractor, Geo. D. Nagle; amount, $2,700; limit, 30 days; filed, Jan. 15; signed, Dec. 8. Payments, 75 per cent as work progresses; balance, 25 per cent, 35 days.

Scott and Post, frame building. Owner and architect, T. J. Welsh; sureties, Frank P. Latson and J. J. McKinnon; $4,000; contractors, Brennan Bros.; amount, $4,540; limit, 90 days; filed, Jan. 25; signed, Jan. 19. Payments, brick and carpenter work for frame building; $1,000, framed; $1,000, brown mortar on; $1,000, accepted; $1,540, 35 days after.

Stockton, between Ellis and O'Farrell, five-story and attic brick building. Owners, E. D. Keyes, Marianna C. Loughsborough and F. George; architect, Chas. Geddes; carpenter, A. Miller, $47,700; mason, J. McCarthy, $36,232; iron, O'Connell & Lewis, $9,500; plumbing, Shephard Bros., $7,696; Gal. iron, Conlin & Roberts, $9,580; glass, Whittier & Fuller, $3,575; painting, Downing, $3,000; wrought iron, Ralston, $7,388; stone, R. A. Lewis, $1,548.

Sutter, near Webster, additions; cost, $600.

Sacramento, near Larkin, two-story frame. Owner and builder, R. Grier; cost, $4,500.

Twenty-third and Dolores, painting. Owner, N. J. Stone; architects, Percy & Hamilton; contractor, F. S. Poland; amount, $1,260; limit, as soon as possible; filed, Jan. 31; signed, Jan. 22. Payments, installments of 75 per cent, on first Saturday of each month, as work progresses; balance, 25 per cent, after completion.

Turk, between Laguna and Buchanan, three-story frame. Owner, Wilhemina Hess; architect, Bernard Dryer; contractor, Bernard Dryer; amount, $5,690; limit, May 10; filed, Feb. 2; signed, Feb. 1. Payments, $1,500, framed; $1,200, brown coated; $1,500, white coated; $1,490, 35 days.

Twenty-third and Alabama, two-story frame and moving stable. Owner, Jos. M. Schulz; architect, H. Geilfuss; contractors, Gray & Stover; amount, $3,625; filed, Feb. 2; signed, Jan. 30. Payments, $905, framed; $905, white coated; $905, completed; $910, 35 days.

Treat Av., between Twenty-fifth and Twenty-sixth, two-story and basement building. Owner, Wm. Ferris; architect, Geo. Houston; contractor, Geo. Houston; amount, $2,690; limit, 90 days; filed, January 19; signed, January 11. Payments, $500 rustic on; $500 brown coated; $500 white coated; $500 completed. $690 35 days.

Twenty-third and Dolores, carpenter work. Owner, N. J. Stone; architects, Percy & Hamilton; contractor, F. W. Kern; amount, $13,490; limit, 90 days; filed, Jan. 24; signed Jan. 22. Payments, carpenter work in installments, on first Saturday each month, of 75 per cent as work progresses; balance, 25 per cent 35 days after completion.

Twenty-third and Dolores, plastering and deafening. Owner, N. J. Stone; architects, Percy & Hamilton; contractor, J. L. Crichton; amount, $1,697; limit, when building is ready; filed, Jan. 24; signed, Jan. 22. Payment in installments, on first Saturday of each month, of 75 per cent, as work progresses; balance, 25 per cent, 35 days after completion.

Twenty-third and Dolores, brick and artificial stone work. Owner, J. N. Stone; architects, Percy & Hamilton; contractor, J. Wagner; amount, $2,545; limit, 25 days; filed, Jan. 24; signed, Jan. 22. Payments in installments on first Saturday each month, 75 per cent as work progresses; balance, 25 per cent, 35 days after completion.

Twenty-third and Dolores, plumbing and sewerage. Owner, N. J. Stone; architects, Percy & Hamilton; contractors, Shepard Bros.; amount, $2,128; filed, Jan. 24; signed, Jan. 22. Payments, installments on 1st Saturday of each month, of 75 per cent as work progresses; balance, 25 per cent 35 days after completion.

Twenty-fourth and Dolores, two-story frame. Owner Geo. I. Mouck; architect and contractor, Geo. Houston; amount, $2,818; limit, 100 days; filed Jan. 14; signed, Dec. 31. Payments, $703, shingled; $705, brown mortared; $705, doors and windows in; $705, 35 days.

Twenty-second, between Fair Oaks and Guerrero, double frame building. Owner, James C. Blair, et al; architect, Henry T. Bestor; contractor, R. Doyle & Son; amount, $2,889; sureties, C. H. Castle and John McCarty, $1,500; limit, 70 days; filed, Jan. 15; signed, Jan. 14. Payments, $450, rustic on; $600, brown mortared; $600, white mortared; $514, completed; $725, 35 days.

Union, between Filmore and Steiner, two-story frame. Owner, Mr. Harper; contractor, R. Brotherton; cost, $3,000.

Union, near Buchanan, one-story addition; cost, $1,200.

Union and Fillmore, two-story frame. Owner, A. Postel; architect, B. E. Henrickson; contractor, Robt. Currie; amount $3,420; sureties, Frank P. Latson and John J. Cooney, $3,400; limit, 65 days; filed, Jan. 25; signed, Jan. 19. Payments, $640, roofed; $640 outside finish on; $640, sashes glazed and hung; $640, trimmings on; $860, 35 days after.

Valencia, near 25th, one-story frame; cost, $800.

Vernon Place and Third, two-story frame. Owner, John Demartini; architect, Geo. E. Voelkel; contractors, C. F. Robertson and Fritz Roettger; amount, $2,254; sureties, J. W. Wesson; limit, 60 days; filed, January 12; signed, January 5. Payments, $300 enclosed; $500 first plastered; $800 completed; $564 35 days.

NEW CITY HALL CONTRACT.

The bids for constructing the plinth course of the McAllister street wings for the construction of an elevator in the Larkin-street wing, and finishing five rooms in the main building are as follows:

PLINTH COURSE.	Small Wing.	Large Wing.
M. J. Healey & Co	$7,939	$8,411
McGowan & Butler	8,800	9,100
Anton III & Doe	7,038	7,380
F. E. Knowles & Co	11 750	11,750

FINISHING ROOMS.	
J. Kemp & Co	$9,980
F. A. Williams	5,995
McCann & Riddl	5,690
McGowan & Butler	7,710
Antonelli & Doe	6,500

CONSTRUCTION OF ELEVATOR.	
A. J. McNicoll	$4,500
W. T. Garratt & Co	5,049
W. H. Birch & Co	4,830
W. H. Birch & Co	4,695
W. H. Birch & Co	5,550
W. H. Birch & Co	3,976

All the bidders will be required to produce samples of the stone to be used in construction.

COUNTRY BUILDING NEWS.

THE LOS ANGELES BUILDING.

Bids Opened by the Supervising Architect at Washington.

WASHINGTON, Feb. 5.—Bids for the construction of the new public building at Los Angeles were opened at the office of the Supervising Architect to-day. Bids from Los Angeles were received as follows: John Hanlon, $150,000; Fletcher & Smith, $163,566; F. E. Green, $181,360; McNally & McCormack, $199,700. From Washington, D. C.—Holtzelaw Bros., $126,365; McCarty & Baldwin, $132,000; Lane & Malone, $141,956; Bright & Humphrey, $148,637; James H. Coster, of Baltimore, $130,8 7; J. L. Garing & Son, of Detroit, $134,000.

F. W. KRELING & SONS,

Manufacturers of Elegant

PARLOR and CHAMBER SETS,

DINING-ROOM, BANK AND OFFICE FURNITURE,

WOOD MANTELS AND INTERIORS,

Rich Upholstery, Draperies, Bedding, Etc.

SOLE OWNERS OF THE

SQUARE & OCTAGON TURNING MACHINES,

For Balusters, Newel Posts, Etc., Etc.,

WAREROOMS: 534 and 536 MARKET STREET. Telephone 3192.

FACTORY: 319-328 GUERRERO STREET. Telephone 6113.

SAN FRANCISCO, CAL.

The California Architect and Building News

VOLUME 10. ENTERED AT POST-OFFICE SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 3.

NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Office, 408 California St., San Francisco.

(Next to the Bank of California.)

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Published on the Fifteenth of each Month.

When money is sent for subscriptions, the receipt of a copy of this Journal is an acknowledgment that it has been received. Unless requested we do not send receipts.

OUR ADVERTISING RATES.

SPACE.	1 MONTH.	3 MONTHS.	6 MONTHS.	12 MONTHS.
1 Inch,	$ 1 50	$ 4 00	$ 7 50	$ 13 00
3 Inch,	4 00	10 00	18 00	35 00
6 Inch,	7 50	18 00	32 00	60 00
1 Column,	12 50	35 00	65 00	125 00
¼ Page,	11 00	30 00	57 50	105 00
½ Page,	20 00	57 50	105 00	200 00
¾ Page,	30 00	80 00	150 00	275 00
1 Page,	40 00	110 00	200 00	350 00

Full-page advertisements inserted among reading matter, fifty per cent extra on above rates.

Specially attractive advertisements, without extra cost, will be set up in the finest style where the advertiser furnishes cuts.

CASH MUST ACCOMPANY ALL ORDERS FOR ADS.

ADVERTISEMENTS ALONE INSERTED THAT REFER TO MATERIALS USED IN THE CONSTRUCTION AND FURNISHING OF HOUSES, AND TO MATTERS AND TRADES BELONGING TO THE BUILDING INTEREST.

NO OTHERS RECEIVED.

PARTICULAR NOTICE.—Each advertising page contains three columns, each of which is about two and a half inches wide. One inch means one inch in depth by two and a half inches in width.

Spaces on Cover and on page preceding reading matter are subject to special rates.

SAN FRANCISCO, MARCH 15, 1889.

San Francisco Chapter, American Institute of Architects.

Since the Chapter secured rooms under their own control, the meetings have been better attended than at any previous time in its history. At the first gathering held in the new quarters, there were seventeen members present; at the last one held on March 1, after the regular business was disposed of, the members indulged in an all around conversation that was greatly enjoyed by those present.

Chas. Mau, of Oakland, was unanimously elected a member as Fellow.

Messrs. Babson, Daley and Cuthbertson were appointed a committee to revise the By Laws and present the same to the Chapter for consideration.

The following resolution was adopted. That it is the sense of this meeting that a prize be offered for the best design for a book case, for the use of the Chapter.

Under the new Regime.

The stockholders of the ARCHITECTURAL PUBLISHING COMPANY met last Tuesday and formally adopted the By-Laws previously presented for their consideration. The election of Directors immediately followed and the following were declared elected for the first year:

W. P. MOORE. W. J. CUTHBERTSON.
E. J. MOLERA. A. PISSIS.
S. BABSON. H. T. BESTOR.
O. EVERETT.

Subsequently the Directors met and elected the following named as officers:

PRESIDENT, - - - - W. P. MOORE.
VICE-PRESIDENT, - - - W. J. CUTHBERTSON.
TREASURER, - - - - S. BABSON.
SECRETARY, - - - - O. EVERETT.

For the present, the business management will remain the same as usual. All the officers elected are well known in the architectural profession and their names guarantee that the CALIFORNIA ARCHITECT will show a decided improvement in every department, over those of previous issues.

The success of the Journal since moving into their new quarters, has been somewhat remarkable. Scores of new names have been added to our subscription lists. The advertising pages tell their own story. Our illustrations are far superior to those we have hitherto presented. The paper used in printing was imported solely for our own use. Our offices are beautifully furnished. List of exchanges include all the prominent ones in the U. S. The reading room will be supplied with all the latest works on architecture and kindred sciences. All our friends are invited to call and examine the new Architectural Headquarters in the building, 408 California street, next to the Bank of California.

Premium for a Design for Book Case.

At the last meeting of the Chapter of Architects, it was decided to offer a premium for the best design for a book case for the new rooms of the Chapter. The prizes will be announced in our next issue.

Draughtsmen and Students Edition.

We would like to hear from more of our students in architects' offices in the country. Those in the city have expressed a great willingness to do all they can towards presenting an edition that will justly represent the progress made by them since adopting their profession. We want the country well represented. The edition will be solely in the interests of draughtsmen and students.

The Hibernia Bank Competition.

Architects generally are satisfied with the awards made in the Hibernia Bank competition. Architects from different sections of the east entered the competition. A large number of our local talent prepared plans for same. The result is as follows:

First premium, Pissis & Moore. These gentlemen prepare all plans, have the superintendency of the buildings, etc.

Second Premium, $1,000 awarded to Schmidt & Shea.

Third premium, $500 awarded to T. J. Welsh.

One noticeable feature in the competition should be mentioned, viz. the generalgood feeling that prevailde among the contestants. There was no sign of jealousy shown. The fact that Eastern firms were preparing plans, only stirred our own architects to greater exertions, and had the prizes been won by our friends on the other side of the Rockies, they would have received hearty congratulations from their professional brethren in this city.

The building contemplated will be one of the finest in the city, and, when fully completed, will not have cost much less than $400,000.

Filing and Abstracting Contracts.

Between the legal requirement that all building contracts in excess of $1,000 shall be filed with the County Recorder to insure their validity and force, and the stealing thereof from the official files, there is but little difference in a moral aspect of the case. Both are wrongful acts, and neither is defensible by the logic of reason, right or justice.

When, a short time since, it became known that one or more—and how many more has not been made known—of contracts, filed in compliance with the requirements of a form of lien law found upon the statute book of this State, had been carried away without permission—*i. e.*, stolen from the office of the County Recorder—the question became general as to the reasons why they were taken, and the motives that influenced the theft. The *special* reasons and motives that actuated in each case are the secret of the stealer alone; but it is very transparent that the motives were dishonest and corrupt, and the purpose in view to gain some point of advantage not possible under the rightful order of things, and which could be secured only by the removal and virtual destruction of the legal, written testimony; or a spirit of malice and spite toward one or both of the parties to the contract missing might have led some one to pocket the papers, not for any pecuniary advantage to the party, but with the intent to make trouble between others. Very many additional possible and probable suggestions might be added, but they are immaterial as to the facts of the case.

But the affair serves to illustrate one of the numerous beauties of the lien law in this State, which requires that *only building contracts*, when in excess of $1,000, shall be filed in the County Recorder's office to save them from being "*wholly void*"—a proposition as devoid of reason and fair dealing as it is of merit and soundness. Still, such is the law on the statute books, although both State and National constitution declare that no law shall ever be passed by any State Legislature "impairing the obligations of contract." But the law making Solons of Californians who aided in formulating and passing the present lien law, among its numerous other unjust and oppressive provisions, injected the filing idea as a mild but decidedly effective means of nullifying constitutional restrictions upon the points in issue, beside which its supreme *special* character renders it unconstitutional and void.

Quarterly Summary of Building Operations.

But once, since records have been kept, has the summary for the present first quarter of the year been exceeded in value, and then only by the bonanza year of 1885. The comparison stands for the first quarter of each year, as per table:

Year.	Engagements.	Value.
1885	288	$2,069,261
1886	252	1,359,532
1887	191	1,209,100
1888	173	1,049,800
1889	238	1,874,600

For the present quarter the summary shows:

Month.	Brick.	Value.	Frame.	Value.	Alterations.	Value.	Total.	Value.
January	4	$131,000	64	$420,200	16	$93,500	84	$ 420,200
February	9.	832,000	49	218,600	13	26,900	71	1,077,500
March	4	63,000	69	287,000	10	26,900	83	376,900
Totals	17	$1,026,000	182	$925,800	39	$147,300	238	$1,874,600

In above we have allowed $450,000 as the cost of the new *Chronicle* building. The numerous large buildings to be erected will make the summary of this year equal to or surpass that of 1885. The Academy of Science building, the Hibernia Bank, the Parrott building, the Olympic Club edifice, etc., are all costly buildings, the value of the four mentioned being well on to one and a half millions of dollars.

Owners are to be congratulated on the present prices of building materials. Several of the leading lumbermen have assured us that the large prices asked last year for lumber will not be reached this year. They seem determined to have a market in San Francisco, irrespective of any country demands.

On the whole, prospects never looked better for an active season than they do at present.

IRON SHUTTERS AND FIRES.

FIRE and water calls attention again to the discussion which has been going on in the newspapers about the value of iron shutters in protecting buildings from the effects of conflagrations outside of them, and makes some very timely remarks on the subject. The history of the curious case in New York, where a building considered nearly fireproof was destroyed, with its contents, because the firemen found it for a long time impossible to open the iron shutters, or break through the brick roof, so as to throw water on the blazing goods inside, has been copied into nearly all the daily journals in this country, and many foreign ones, and, with their usual celerity in reasoning from the smallest possible number of facts, the newspaper theorists have decided that buildings would be better off without any shutters at all, and there is some danger that they may persuade owners of store property in some cases to refuse to use them. It ought to be needless to say that this would be a grave misfortune, and the underwriters' associations should be on their guard against the dissemination of such notions. Of course, the real object of shutters is to keep fire on the outside from entering a building, and they accomplish this object a hundred times for every time that they prevent firemen from reaching a blaze inside the building so protected. Moreover, there is no necessity for fastening iron shutters in such a way as to keep firemen from opening them from the outside. In New York where burglars are more dreaded than fire, as there is no insurance against their ravages, outside shutters are usually firmly secured on the inside, but in Chicago, if we are not mistaken, it is the rule to arrange the shutters so that all of them can be opened from the outside, and in many places one window in each story is protected by shutters so arranged. One of the best shutters we have seen is a patented one, which fastens on the inside, with a latch hooking over a bar, in the usual way, but has on the outside a plate, connected with a small lever passing through the shutter, by which the latch can be lifted. The plate protects the small opening through which the lever passes, and is so arranged that by directing a powerful stream of water upon it, from a fire engine or hydrant, the lever is moved, lifting the latch, and allowing the shutters to swing open, which they do under the pressure of light springs. A shutter of this sort is as safe against fire as anything that can be made, yet it can be opened in a moment from the street by the firemen without requiring ladders, which can hardly be used if a fire is raging on the opposite side of the street, or after the flames have burst out of the lower windows of the building to be dealt with.

Draughtsmen and Students' Edition.

We have received a fine collection of drawings from a student in the Livermore Valley, and they will appear in the edition which we will present, illustrating the progress of our draughtsmen and students. We hope to have at least, the studies of young men from twenty-five different offices. On our part, we will take extra care in having the cuts (illustrating the drawings) of a superior character. Please send word to this office in regard to your furnishing drawings.

Our Illustrations.

The engraving on page thirty-three represents an elevation of a tall building similar in design to many of those being erected in the East.

"Precita" and "Tiburon" were kindly furnished us by Mr. S. Newsom, architect, of this city.

By the first of April, it is now officially reported, that wonderful creation the Eiffel Tower at Paris will have reached its full height and been entirely completed. At present it stands 825 feet high and weighs 7800 tons, and there remain but 800 tons to be added. The committee has selected three different models of lifts. Two lifts will go up to the first platform, two others to the second, and another lift will move between the second and the third platform in a vertical line. The whole trip up will take five minutes, and the cages will be able to take up 750 persons an hour to enjoy the novel and magnificent panorama spread before them from a height of close to 1,000 feet. The building of this novel structure was a tremendous undertaking; it remains to be seen whether or not it will, as has been predicted by some, turn out simply a costly curiosity of a day.

A Man in the Kitchen.

NO man worthy of the name, permits his wife, or any woman in the house, to perform the heavy drudgery of carrying coal and wood, caring for furnaces and stoves, moving stoves or heavy furniture, beating carpets, and so on. But this not need not be the limit of a man's usefulness about the house. There is no good reason why a man should not be able to broil a steak, boil or bake potatoes, cook an egg, make coffee or tea, and prepare other articles of food should an emergency arise to make it desirable (and such emergencies do often arise); and do it, too, without turning the kitchen and dining-room topsy-turvy in the operation. Some men can, and do, accomplish such work, and even make biscuits, griddle cakes, and the like. A woman whose husband is in the habit of "taking hold" when needed in housework, has been heard to say that she would rather have him to depend on in case of indisposition, or other emergency, than any girl that could be hired. He does not interfere when there is no cause for it, but he saves labor for his wife and expense for himself, and he is not at all ashamed of doing it, nor afraid to undertake it. No man need be; rather any man should be ashamed of unwillingness, and should regret inability to perform any ordinary household task on occasion.—*Good Housekeeping.*

Preliminary Announcement—Mechanics' Institute Fair.

The Board of Trustees of the Mechanics' Institute announce that the Twenty-fourth Industrial Exposition will open at the Pavilion on Larkin street on Tuesday, August 27th, 1889, and close Saturday evening, October 5th, 1889, and respectfully solicit contributions in every Department of Invention, Industry, Art, and the natural resources of this Coast.

Medals of gold, silver and bronze, with an elegant engraved diploma, will be awarded to such articles as may be found to merit special distinction, and competent jurors will be appointed to examine and report on the same, unless the owner shall, at the time of their reception give notice that they are for exhibition only.

The Department of Machinery will be enlarged and specially prepared for machinery in motion, for which ample steam and power will be furnished, including water.

By the easy approaches to the building, heavy goods can be conveniently handled, while all contributions can be quickly and inexpensively placed.

The Art Department will be specially attractive in oil and water color paintings, black and white, sculpture and photography.

A Musical Programme will be rendered each afternoon and evening by an orchestra of fifty eminent performers.

At night the building will be brilliantly illuminated with gas and electricity, and at all times everything possible will be done by the management for the comfort and convenience of visitors.

Inventors of new machinery or appliances will find this a rare opportunity to bring their improvements before the public for approval or sale.

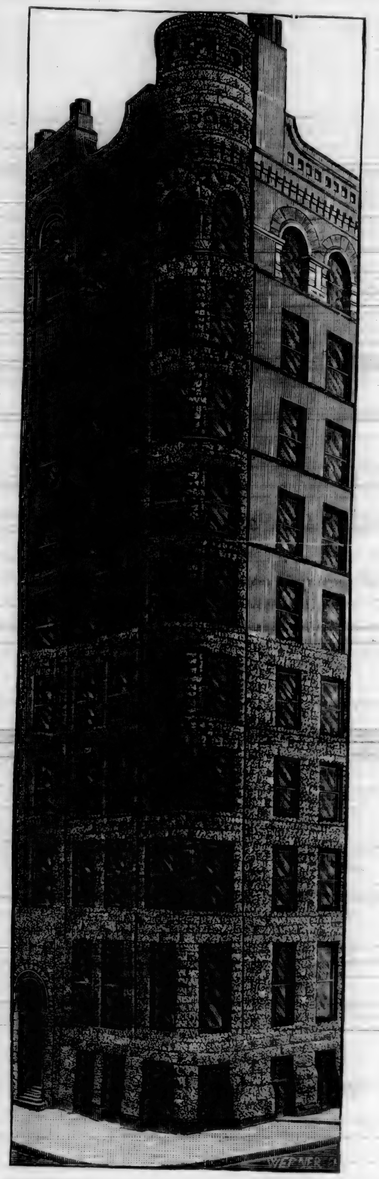
The value and advantages of these Fairs of the Mechanics' Institute to the Community and State is now unquestioned, as they disseminate information, and bring to the eyes and judgment of visitors the advancement, superiority and variety of the manufactures and products produced here.

A vast influx of desirable immigration may be expected to this State in the near future, owing to the great efforts lately made to illustrate our natural advantages, and the eyes and hearts of thousands of our fellow men eastward are longing for the west, and when they arrive, naturally go to these Expositions to examine for themselves what has been done and judge what may be accomplished.

You are earnestly requested to give the matter attention, as the managers greatly desire an exhibit from you this year. Aside from direct personal benefit, any one who places or exhibits specimens of his or her handiwork, does something that tends to establish an enlightened and prosperous population, extend practical knowledge, excite emulation, and add something to the greatness of the State, and benefit to the community.

A carefully revised Premium List is being prepared, and, with the Rules and Regulations, will be ready for distribution at an early day.

Any desired information will be promptly sent or given on application to the Assistant Secretary, No. 31 Post street



In our January issue we inadvertently made use of a wrong word in our description of the cuts presented. Only a word, and yet it caused quite a misunderstanding. We said, "the cuts were *designed* by C. Bryant Schaefer. We should have said *sketched* instead of *designed*. Plate 11, illustrating the "Old Colonial Style" was prepared by Mr. Schaefer expressly for the California Architect. The others, for which credit is given to the gentleman named, should have read—sketched from the originals for presentation in this Journal. We are exceedingly sorry for the blunder made, and cheerfully, as far as in our power, release the gentleman named from any complicity in the matter. It was solely and wholly our own fault.

"TIBURON." Front Elevation of a One Story Cottage.

Present State of the Lumber Trade.

Building in the city is more than fairly active for this season of the year. As a rule, activities in the building line in the various counties of the State are in a forward condition. While the erection of buildings in the southern part of the State received a severe set back last year, we are pleased to note there is a partial recovery and many new engagements are being made.

The price of lumber has been raised and we now quote rough pine $16 per M; 1x6 flooring $28 per M; 1x4 flooring $30 per M; rustic No. 1, $35 per M; surfaced, No. 1, $30; rough redwood $18 per M.

The above rates are none too high. This journal has always advocated the price of $18 per M, as being a just and equitable one to mill men and those who use their manufactures. Even this price may be subject to a small advance during the very busy parts of the year, when wages are abnormally high in all branches of trade.

But we will enter our protest against the unusual high standard of rates adopted last year being again enacted the present season. Should another boom strike any portion of the State, and the residents thereof desire an unusual quantity of lumber in an unusual short time, we are perfectly willing that they be permitted to pay for such unusual quantity. As the demand, however, in this city is a steady one, we think prices ought to correspond, and we see of no reason why the prices of lumber should vary to any considerable extent from those quoted above.

Ventilation of Public Buildings.

The question of ventilation has always been a serious one with architects. No matter how cold it may be, a proper amount of fresh air is absolutely necessary. The colder it is, the more fires it is necessary to have, and the more demand is made on the oxygen in the air in the room. So in a school house; hundreds of little bodies must have air to breathe, and yet must not have that air introduced in such a manner as to cause sneezing fits, colds in the heads, and all those little ills that come to those who sit in a draught. ABRAHAMSON'S VENTILATORS are the one thing needfull to remedy the above defect. By their use, one can sit in a room, and no matter how loud the winds may howl, can breathe all the fresh air necessary, with no danger of catching cold. Try them in one window and you would soon order your whole house to be thoroughly equipped with them throughout.

New Plans Adopted.

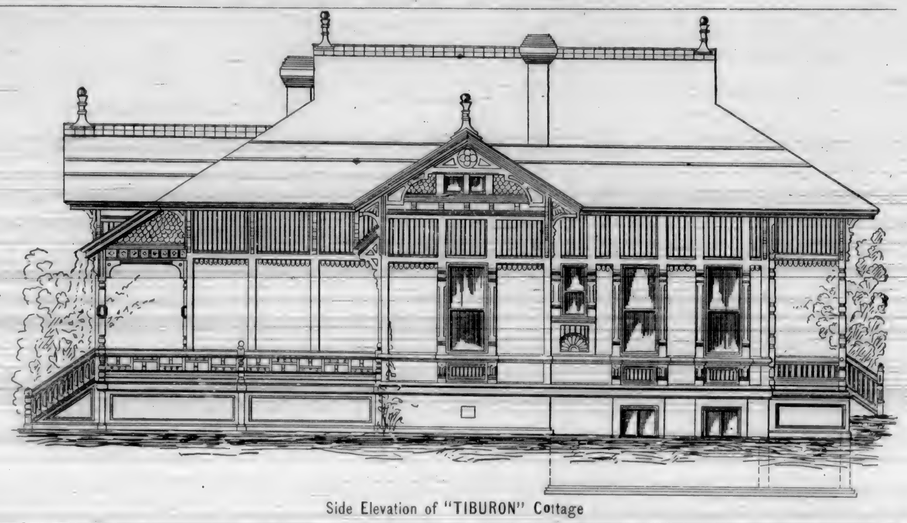
The Trustees of the Lick Baths have accepted plans for a building prepared by architects Wright & Sanders to be erected on the lot corner of Howard and Tenth streets. This lot is 113 x220, and cost $38,000.

The new building will cover a portion of the lot, having a frontage of seventy-six feet and a depth of 220 feet, leaving the remainder of the lot for the present unoccupied. The designs show a one-story stone building, with a dividing hall near the Howard street end of the lot. In the rear of the building there will be a high tank tower, and still further to the rear of the lot an engine-house and chimney. There will at present be only tub baths, the idea being at a later period to build a plunge bath on the remaining portion of the lot. On the right and left of the wide entrance, waiting rooms are to be provided, and behind them the baths. The remaining length of the hall between the two sets of baths will be divided into laundry and drying rooms, as well as a kitchen and apartment for attendants. The new structure will be perfectly fire-proof, the bath-tub walls being built of cement bricks, and the floors tiled throughout.

Admission of Air to Rooms.

AIR should be introduced and removed at those parts of the room where it would not cause a sensible draught. Air flowing against the body at, or even somewhat above the temperature of the air of the room will cause an inconvenient draft, from the fact that, as it removes the moisture of the body, it causes evaporation or a sensation of cold. Air should never, as a rule, be introduced at or close to the floor level. The opening would be liable to be fouled with sweepings and dirt. The air unless very much above the temperature of the air of the room, would produce a sensation of cold to the feet. It may be regarded as an axiom in ventilating and warming that the feet should be kept warm and the head kept cool.

The orifices at which air is admitted should be above the level of the heads of persons occupying the room. The current of inflowing air should be directed toward the ceiling, and should either be as much subdivided as possible by means of numerous orifices, or be admitted through conical openings, with the smaller opening toward the outer air and the larger openings toward the room, by which means the air of the entering current is very rapidly dispersed. Air admitted near the ceiling very soon ceases to exist as a distinct current, and will be found at a very short distance from the inlet to have mingled with the general mass of the air, and to have attained the temperature of the room, partly owing to the larger mass of air in the room with which the inflowing current mingles, partly to the action of gravity in cases where the inflowing air is colder than the air in the room.



Side Elevation of "TIBURON" Cottage

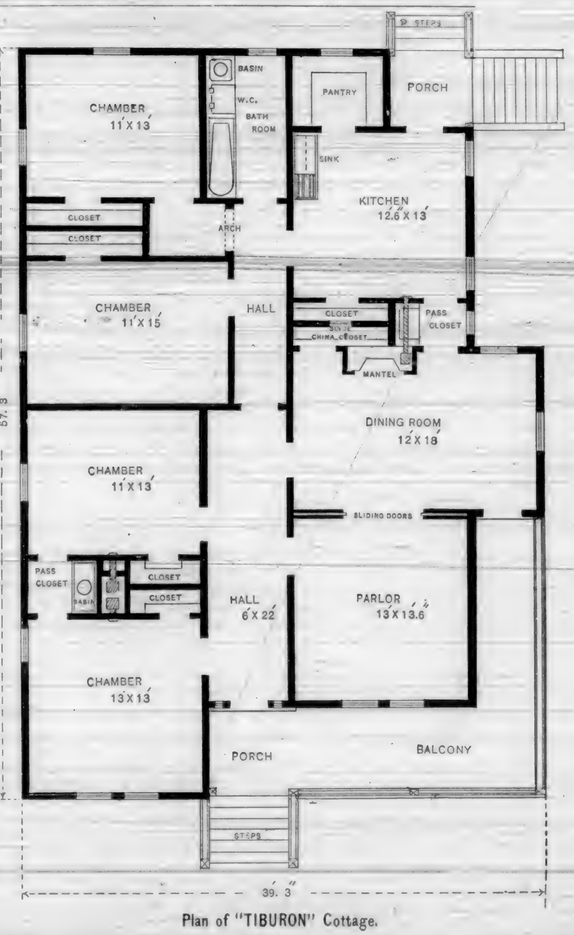
The Lumber Dealers' Exchange.

In 1881, the California Lumber Exchange was organized by the Retailers of lumber in San Francisco. Its fortunes were varied, as the lumber trade has varied in the years past, and when the fall in prices last fall startled the whole community the California Lumber Exchange disbanded, and became a thing of the past. But the dealers in lumber did not despair, and in October last the Lumber Dealers' Exchange was organized, and the following firms became members: Blyth & Trott, Mission and Spear streets; Kennedy & Shaw Lumber Co., 840 Fourth street; Christienson & Lord, 24 Tenth street; Doe, Chas. F. & Co., Spear and Howard street; Engle & Son, Fillmore street wharf; Humboldt Lumber & Mill Co., 727 Bryant street; Hooper, C. A. & Co., Fourth and Channel streets; Hill & Co., 237 Berry street; Harris & Jones, 838 Bryant street; Kruse, J. H., Mission and Shotwell streets; Kentfield, J. & Co., 318 Stuart; Kelly, Hare & Co., Eleventh and Railroad avenue; Lewis & Swift, 215 Spear street; Little & Knowles Lumber Co., Mission and Main streets; C. E. Pillsbury, 2735 Mission street; Morrison, G. H., 575 Brannan street; Preston & McKinnon, Pier No. 5, Steuart street; S. H. Harmon Lumber Co., 316 Steuart street; Pattridge R. K., 128 Steuart street; Starbird & Goldstone, 101 Market street; Simpson Lumber Co., 48 Market street; Smith, G. F. & Co., Pier No. 9, Steuart street; San Francisco Lumber Co., Pier No. 12, Steuart street; Wesson, J. W., Pier No. 19, Steuart street; Asmussen Geo., 2813 Mission street; Slade S. E. & Co., Pier No. 14. Steuart street. At their first meeting, Col. W. C. Little was elected President; R. K. Pattridge Vice-President; J. J. McKinnon, Treasurer, and F. E. Preble, Secretary.

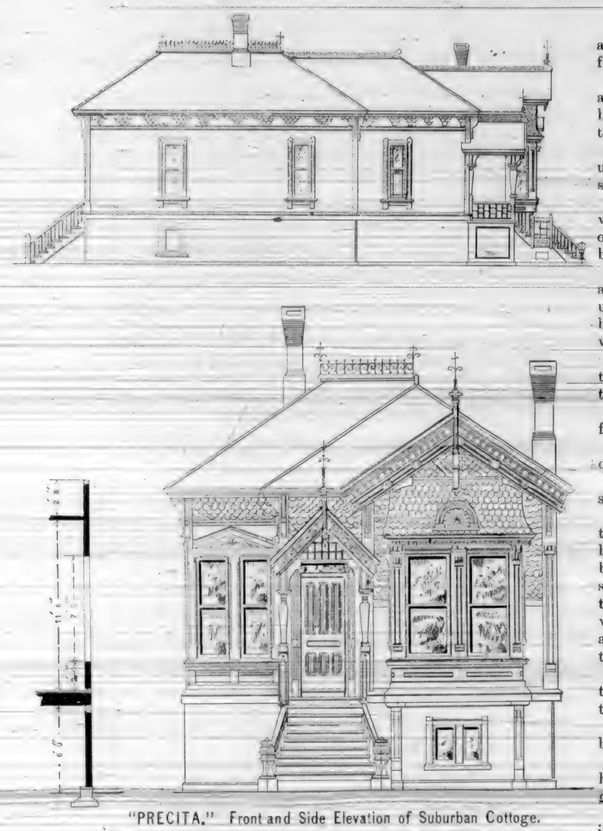
This association consists of the largest and most extensive dealers on the coast and the capital represented extends into the millions.

Brick Residences Should be Painted.

Statistics show that people live longer in brick houses than in stone, and that wooden houses are the healthiest. This suggests the idea of using paint on masonry. An authority states that a hundred years ago it was fashionable to paint brick buildings white, and many charming old structures remain to attest the value of the coat of paint in preserving the masonry, and its pleasant, homelike effect is a foil to the vines and shrubs with which even city houses are now commonly adorned. If it should prove, as might be easilyascertained, that the painted brick houses preserve their inhabitants more effectually from sickness and premature death than the unpainted ones, it would be worth while to revive the ancient fashion, and with our greater resources in the way of materials and ideas, exterior coloring might become as important an accessory to the architecture of the twentieth century as it was to that of the twelfth or thirteenth.



Plan of "TIBURON" Cottage.



"PRECITA." Front and Side Elevation of Suburban Cottage.

Photography in the Draughting Room.

H. T. Bestor.

No. 1.

THE time is not far distant when every well appointed architectural draughting room will have a full apparatus and facilities for the reproduction of drawings by the aid of photography.

Some of the processes in use are comparatively inexpensive and easily worked; the more complicated formulas being more economical than the old method of tracing.

Singular as it may seem, the first attempts to utilize the action of light in the formation of pictures was for the purpose of making copies of line drawings and writings.

It was not long before the possibilities of the art had become so extended that the experimentalists of that period diverged into two main lines or branches, each with a definite object in view.

One set of experimentalists followed the original course, and endeavored to perfect the methods for the reproduction of drawings, more especially for the purposes of the engraver and etcher.

The result being that almost every class of engraving has profited by the use of the art.

The other branch of experimentalists worked with the desire to produce and fix the pictures from nature with all the gradations of light and shade, and to print the same, retaining the delicate half lights and shades.

That this was also successful may be seen in portraiture and views.

The "blue print" and some other process for making duplicate drawings, lay dormant for thirty or more years and then resumed.

In certain instances where processes were declared of no practical utility, they have been improved upon and made practical.

In some of the methods in use, the operator can procure paper already prepared, which is very convenient, but it is often useful to know how to prepare it when required.

Some of the processes tried during the earlier periods of the art as curiosities, are now being revised and experimented with by capable persons, and one in particular, the platinum, may be the process of the future.

Nearly all photographic formulas and instructions are based upon the supposition that the reader has already attained to some knowledge of the supject.

The object of these articles will be for the instruction of those who do not know. Even at the risk of being tedious the various manipulations and modifications required for office work will be described in detail.

Not a ray of sunlight can fall without modifying the structure and properties of the substances exposed to its action, and under certain conditions appears to impart to bodies some power by which they more readily enter into chemical combination with others.

Surfaces prepared in a manner to hasten their mutual reactions under the influence of light are termed sensitive or sensitized.

The science and art of photography deals with such changes for the production of pictures.

Such being the case, we will first consider the light, its quality and intensity being of the utmost importance.

The theory of optics will be considered only in relation to the subject before us.

The theory is that the blue or violet, and of the spectrum has the most intense actinic influence, a red or even a yellow light being used to light the "dark room," with the introduction of bromide, sensitive surfaces it was found that the yellow did not sufficiently retrain the actinic rays, and red lights were substituted for the yellow. Recently surfaces have been prepared, which are senstive to the influence of both yellow and red rays, as red light does not afford the necessary protection, the question remains unanswered, how to light the dark room?

Heat hastens chemical action, therefore, it is not improbable that the red or heat rays assist in the chemical reactions under the influence of light.

Some have advised that the printing should be done under blue glass—no particular advantage appears by so doing.

For camera work and for printing, where the more delicate half lights and shades are to be brought out, the light may be graded to suit the work in hand.

For most printing from line drawings, a full strong sunlight is best, and in all cases the rays of light should strike the glass penpendicular to its face.

When the drawing is made upon paper, the light will work under the lines and mar the effect, more especially when the light falls obliquely upon the glass.

For blue prints, the best effects are produced by strong, direct sunlight, when the drawing is made upon paper unprepared. Indirect light is unreliable, when the drawing is on linen, or on paper made very translucent; an indirect light, as from the sky in an atea may give fair results.

When such conditions exist, or when any combination of circumstances interfere with the direct rays of the sun, a series of experiments should be made, noting the time of day, appearance of the sky, whether clear or cloudy, how the light appears upon any surface which may reflect upon the work, noting at the same time the material upon which the drawing is made.

These experiments should be noted in a small book kept for the purpose, and hanging against the wall near the printing window.

In experiments to ascertain the proper time of exposure for printing, the following method will be found useful:

Take strips of the different materials used for the drawings, and make a few lines upon the face with the same ink as is used for the drawing; put these strips in the printing frame properly, set to strips of sensitive paper as used; expose in whatever light available, say, five minutes, then cover a portion of each strip with a heavy cardboard; expose five minutes longer, then slide the cardboard so as to cover another portion; continue these partial exposures till half an hour or so has passed; then remove from the frame, wash and fix.

It will be seen at once, what exposure to make, under existing circumstances.

If the chloro bromide process is worked, diffused light is to be preferred; in fact, it requires a few seconds only by gaslight.

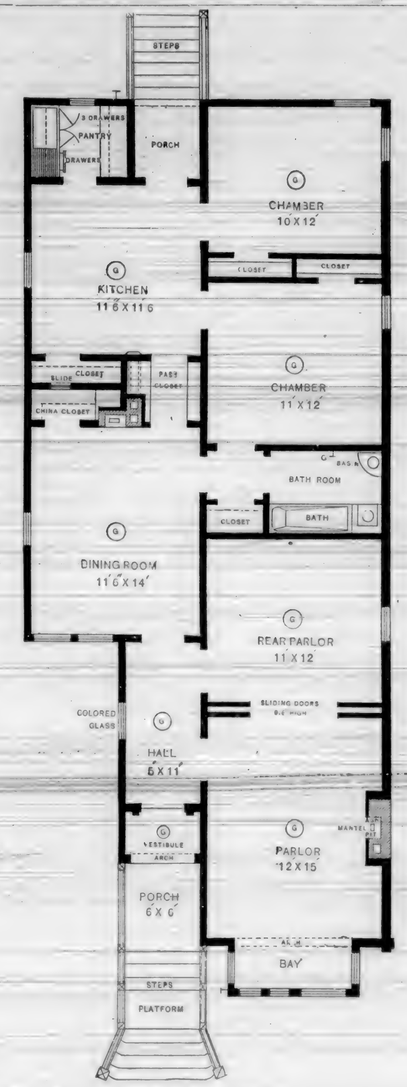
It will be seen by the foregoing remarks, that whatever the conditions may be as regards light, some process can be worked even with gas or candle light.

Architecture as a Profession.

ONLY eagles and reptiles can attain to very high places, was the epigram of the witty Frenchwoman who in her day was also confronted with the idea contained in the saying, "There is plenty of room at the top." This, says the *Building Budget*, is perhaps the most grimly oracular remark ever uttered and misunderstood by the young, in whose bright lexicon there is no such word as fail, and has undoubtedly caused more heart breakings over misapplied lives than can be even approximately estimated. All professions are crowded with men, who dazzled by the prizes of wealth and fame, gained sometimes at a sacrifice of everything that makes life enjoyable, still struggle blindly on, though every one but themselves can see that they are forever doomed to disappointment. The only profession, if it may be so called, in which a man at once realizes his unfitness is that of the prize fighter. In this country there is one frequent cause of failure, viz., the short time which is requisite for a man to obtain a smattering of law, medicine, architecture, etc., so that a young man is everything by turns and nothing long, and after spending considerable good material, say for an architect, and just as he is really becoming of some use, thinks that the law or medicine is his forte or else thinks himself capable of setting up as a full-fledged architect, to the damage of the profession in general.

A youth wishing to become an architect in England has first to find a vacancy for an articled pupil in the office of some first-class architect, to whom his parents and guardians pay a premium, sometimes as high as five thousand dollars, and agree that the boy shall do all that may be considered as lawfully pertaining to the business of an architect, at the command of his employer, for the space of five years, frequently without any compensation whatever, excepting the use of the library, etc., found in all the important offices. During this time he has to support and clothe himself in the manner becoming a professional man, and accustom himself to doing whatever he is told without question. Knowing that at the end of his term he will have invested five of the most valuable years of his life, as well as several thousand dollars, he is naturally impelled to be diligent and to profit all he can by what he sees, hears, and reads—knowing that, if he does not, he will never reimburse himself for his outlay, and also that he cannot enter any other profession except at an equal expense of time and money, and that after a few years he will be considered to old to begin anything. This system has its advantages as well as its disadvantages. One advantage is that it renders a parent very careful to find out as far as possible if the bent of the boy is well defined, otherwise, at the end of the time, it will be so much thrown away.

The disadvantage is that an idle pupil who does not care to improve his opportunities goes away at the end of his apprenticeship, and throws, to a certain extent, discredit upon the office where he was supposed to have studied. English architects have become so impressed with this fact that many of them openly advocate the entire abolition of articled pupils, and prefer the encouragement of technical schools, where the old motto over the college door will be strictly enforced, "Learn or depart." America, in this respect, as in many others, has the advantage of profiting by the experience of the old world, and, never having adopted the articled clerk system, now that it has proved unsatisfactory after years of trial, can, untrammeled by tradition, bend her attention to fostering those very technical schools which she already possesses, and which are advocated as a remedy for the evils of the older system by those who were once its strongest supporters.



Plan of "PRECITA."

Hints to Mechanics.

In hanging a number of doors which are of the same size, the time expended upon measuring the correct position of the hinges may be saved in a very simple manner, which is as follows: Take a lath and mark upon the top and bottom, the exact position where the hinges should come; drive in at these marks sharp pointed brads, and you have a guage which may oe used in hanging all doors of the same size. In using it all that is necessary is to place it against the edge of the door with the top of the lathe on the level with the top of the door, give it a sharp tap of the hand, when the brads will mark the exact position of the hinges. The same guage lath may be used in marking out the position of the hinges of the style of the door frame, excepting that a nail should be driven in the bottom of it, so that there may be sufficient room left at the bottom to allow proper play of the door; the use of a guage lath in the case referred to, is an example of its use. It is of equal utility in hanging many other pieces, such for instance, as inside and outside blinds, shutters, etc.

Highly Interesting.

"A Tin Roof" is the title of a little book just issued by Messrs. Merchant & Co., 517 Arch street, Philadelphia. The purpose of the publication is to supply to builders, architects and the general public some exact information as to the best methods of constructing a tin roof and as to the right materials to be used to secure satisfactory and permanent results. We especially recommend the book, which is intended for gratuitous distribution, to mill owners. They are very apt to entrust the matter of roofing wholly to builders and they usually know really very little about the character of the tin used or the excellence or defectiveness of the job. This pamphlet will help them to protect their interests. It is very explicit, perfectly comprehensible, and we think wholly trustworthy. It is quite profusely illustrated and the cuts indicate processes of applying tin roofing which insure excellence.

Why Two Saws That Are Alike do not Always Run Alike.

BY "SUPERINTENDENT."

TAKE two saws from the same maker that are alike in size, gauge, speed, feed and hammering, and running in the same kind of timber. One saw works well when often the other will not work at all. They, being alike, should certainly run near enough alike that neither should be condemned. What can be the trouble? To take the theory of some saw makers, we cannot get out of the trouble, they claiming that no two saws can be made to run alike, same size, etc. We take it for granted that they allow us the discrimination, or the assertion would not be made; so where we find that two saws do not run alike, there is a vast difference in the saws somewhere. When we take into consideration temper, teeth, etc., we find often why two saws made to run alike do not. We hear a great deal said about more teeth, theories being set forth claiming the more teeth the saw has, the more feed it can stand, and make better lumber. To show how a great many are thus deceived when certain conditions are not considered. I know of a man who has a good mill, making good lumber, running on four-inch feed in pine. This idea of teeth struck him and he concluded to increase his capacity by adding more teeth. He made four allowance in his estimation of how much more he could cut, and so he cut this allowance in half. He was running fifty teeth in his saw, but concluded to order ninety teeth. He ordered of the same saw maker, and the saw came, hammered to speed. It was tried. It would'nt go straight. Several trials were made, but the saw heated so badly on the rim that it was impossible to run it. So it was sent back to the saw maker and he could'nt tell why the saw did not go. The trouble was the saw had too many teeth, and the feed (four-inch) was not sufficient for each tooth to cut a chip but cut, or rather scraped the dust so fine that it escaped on each side of the throat of the teeth, and binding between saw and board, heated the saw. If the saw could have had the feed increased to eight inches it would have worked well. Both saws were alike. One run well; the other would not run at all. But, says one, they were not alike, one having forty teeth more than the other. We will then take them of the same number of teeth, speed, feed, gauge, timber, etc., hammered alike, and yet, one saw will run well and the other will not, one being of a milder temper than the other. The mild temper is soon condemned, the higher temper running well. The trouble is this: The mild temper expands more from centrifugal force, and from the start it is weaker on the rim and soon lets down; the higher temper remaining more firm, has slightly changed in its adjustment. The other is laid aside or sent back to the saw maker. The mill man is impressed that saw making is a kind of guess work, and that occasionally they make a good one. I am not claiming the high temper to be the best of the two.

When certain things are taken into consideration, the milder temper might have suited him best; speed might have been high enough to crack the higher temper, then the milder temper would have been the best saw. Two saws can be made to run exactly alike even when there is a slight difference in the temper. There are saw makers that claim to make saws to run alike, and so they do.

This little difference in temper is considered something, and the saw is hammered a little more open, and when a man jumps up twice as many teeth on the same saw, the saw maker notifies him that the saw will not work satisfactorily and explains why; and if a saw is sent to him he does not blame the saw maker if it does not go right.

There can be a little more deviation to this teeth business when a man is sawing soft timber, but in hard wood the teeth are confined to a limit.—*W. W. Mechanic.*

An American machinist, who went to Japan to put up some machinery, says that the Japanese are excellent workmen and only too faithful copyist. One of them made a pully pattern from a drawing; and to make sure of having it a solid pulley the draftsman made a waved line over the center line in the drawing, to indicate, of course, that it was erased. What does the Japanese workman do but make a special saw to cut the pulley in two parts, exactly as indicated by the waved line!

The Relation of Owners and Builders to Plumbing.

A. D. KEARNS, a St. Louis plumber, has addressed some very sound remarks to one of the city papers, which will make good reading outside of St. Louis, and we take the liberty of reproducing them:

"In order to bring before the public some of the evils that are present at all times with us, it often becomes necessary to open up matters of a personal nature, and ill feelings arise in consequence; yet, the opinion of all, individually and collectively, to a generous, democratic mind, should not encounter this biased feeling, where the object to be attained is for the good of the public, and for the advancement of the city's interests. Although it is a fact that one of the greatest sources of danger from our house drains is by bad workmanship, yet, too often is our worthy plumber censured and condemned for bad work when the real cause of the trouble is found in badly-constructed appliances and poorly-made pipes, which are forced into the market by unscrupulous dealers and jobbers.

"The allied interests of the dealer and plumber have of late years affected a wonderful combination throughout the United States, and so carefully are the lines drawn that this 'combine' works very advantageously for the people in many ways. Still, competition, sharp and unscrupulous, has been the means of forcing strict honesty out of the market, and we find miserable substitutes for what once were reliable and perfect appliance. It is to the use of such goods that our poorer people owe so much misery and sorrow.

"That the manufactnrers of such goods are not wholly to blame for the deplorable state of such things can be argued from the fact that our wealthy capitalists and our builders, in the endeavor to cheapen their work, often neglect the needs of the plumbing system, put more money into embellishments that 'catch' the eye of the ignorant.

"This same cause of complaint can be charged to many of our best architects, and too often it has been said of our noble homes that 'they are beautiful sepulchres.' Why this condition of things should go on is a question of serious importance to us all. To whom is the blame due?

"The public need homes. Knowing this, capitalists, in the hope of gain erect these homes. Should not these wealthy speculators be responsible for the construction of the houses they build? It would appear so.

"The difference in the cost of a good system of plumbing, with safe, reliable appliances and materials is not very greatly in excess of a like system with poor fixtures and poor piping. The work of the plumber is precisely the same. In the end the poorer materials will cost far more than the good ones, for repairs are always necessary, while a perfect system, with good care, will last as long as the house of which it is a part.

"The remedy, then, of our trouble lies with the owners and builders of our homes, and it becomes their duty and is to their benefit to make our houses what they should be—safe, secure, and clean in so far as they are able. In return for money spent in a good, safe plumbing system, it is not extravagant to say such good results will come by reason of our healthier, happy homes, that the time is not far off when cheap, miserable, filth-retaining appliances, now so generally used, will be discarded.

"Our capitalists, householders and our builders should take all possible precautions and care with the house drain. The material for piping should be extra heavy cast-iron piping, free from defects such as sand-holes or improper casting. The whole piping system should be carefully tested by the hydraulic or water test, and inspected carefully in every part to note the minature leaks that sometimes escape notice. The appliances such as closets, basins, etc., should be of earthenware, and free from all concealed and filth collecting parts. Each fixture should have a trap which should be self-cleaning and non-siphonable. All outlets from sink, basin or closets should be so constructed that the waste-pipe be filled "full bore" while in operation in order to insure thorough flushing. The entire system must be simple, well at top and bottom, and when all the fixtures have been attached the peppermint test will show the merits or demerits of the joints.

"Thus, with conscientious builders and careful plumbers the house-drainage system will soon prove a more profitable investment to the householder and owner, and in return for the money spent will come clean, well-ventilated and happy homes not only to the poor and lowly, but to the rich and prosperous, who now suffer like the poor from old and wretched appliances."

THE "WILLER" SLIDING BLINDS.

THE "Willer" Sliding Blinds, manufactured by William Willer, Milwaukee, Wis., have been in the market but a few years, but in that short period they have become so generally known amongst architects, builders, and the building public in general, that a detailed description of them here is unnecessary. The catalogue shows some 20 different classes or 20 distinctly different ways of arranging these blinds in the windows. For illustration we select Class E, this class being universally used for buildings of medium cost, on account of its simple construction and moderate price. This class consists of three separate sections of blinds, covering the entire window, and running in a guideway containing three grooves, one for each section of blind, all within the space of the window-opening, no pockets being employed at the bottom or top of the window.

Class E. Three Sections to the Window. No Pockets.

The other classes in the cat alogue show windows fitted with blinds of two, four and six sections, without pockets and with pockets at either the bottom, top or both ends of the window.

The "Willer" Blinds have rolling slats of a new construction throughout all sections, or in as many divisions of the blinds as may be desired; the springs are of the latest pattern, and the only springs adapted to hold the blinds in place. The blinds are handsomely trimmed with full sets of hardware, finger-plates, drop-handles and lifts, in Berlin or Genuine Bronze. Each set of blinds is finished complete, varnished, rubbed and polished as desired, and when fitted to the window is ready for use.

The "Willer" Blinds on account of their superior quality and merit, and their adaptability to windows of every description, have been selected in preference to all others and accorded the first rank in all parts of the country. They are now being placed in the residence of the widow of the late Emil Schandein, Vice-President of the Philip Best Brewing Co., of Milwaukee, erected at a cost of over $300,000. Mr. Schandein had examined all forms of Inside Blinds, and had given these the preference over all the others.

A public school house in Denver, Col., has lately been fitted with these blinds, the total order for the purpose amounting to nearly $6,000.

Exact Reproduction of the Willer Exhibit at Cincinnati, 1888, taken from a Photograph.

As a further attest to the superior quality of these blinds over all others, the firm has been awarded the Bronze Medal at the late Centennial Exposition, held in Cincinnati, July to November, 1888. This Bronze Medal is the *highest* and the *only* award, made to any exhibitor of Sliding Blinds, and although there were others on exhibition, none of these has received any award, diploma or medal whatever. In their report the jury said: "awarded on account of excellent workmanship," etc. We print herewith an illustration of the Willer exhibit at the above Exposition, taken from a photograph; also a fac simile of the medal.

The firm employ a force of 150 men, of whom 110 are employed exclusively in the manufacture of these blinds. Their sales of their blinds for 1888 amount to over $100,000. The blinds are in use in all parts of the country, from Maine to California and Manitoba to Texas. Over $10,000 worth have been sold in Canada alone.

The firm will send their No. 8 Catalogue of 1888, free of charge to any architect or builder, etc., upon application.

They have now in press their new catalogue of 1889–1890, which will be issued about May, 1889, and from an advance description we have received from the same, it will be the most artistic and complete catalogue of its kind in the country.

They also make a specialty of fine stair work, of which line they will issue a separate catalogue in the spring.

Mr. Willer is introducing these blinds all over the Pacific Coast, and hundreds of owners can testify to their merits. Mr. G. H. Van Houten has the agency for Oregon; A. W. Young that of Sacramento and northern cities of California; S. E. Baur in Seattle, W. T.; D. D. McDougall in Spokane Falls, W. T. For the present all information for this City can be obtained at the office of this Journal.

Does it Pay to Own a Home?

A GREAT many people go on year after year renting a house in which to live and bring up their families. They move from place to place as the whim siezes them, and of real home life in its best sense, they know nothing. They do not stay long enough in any house to "take root." There are none of the hallowed associations about their domiciles which hang about the "old homestead," and so they go through life, wandering from house to house, and never finding a home until they reach that narrow house which becomes their final resting place.

Ask such a man as this why he does not buy a place and settle down, and he will reply, "Oh, it dosen't pay to own a house in the city." And no amount of persuasion can induce him to change his views. He urges the bugbear of taxes and insurance as a reason for not investing in a home, seemingly oblivious of the fact that his landlord has to pay all these expenses from his rental and still make a comfortable profit.

If the housekeeper would only look into the matter a little more closely, he would quickly ascertain that the only true economy lay in owning his own home. Aside from all the associations connected with the home, it is a money making proposition for a man of family to own his roof-tree.

The average business man who lives in a good locality must pay anywhere from $50 to $100 a month rent for a comfortable house. Say that he pays $75 a month. That means an outlay of $900 a year, or 10 per cent. on an investment of $9,000. Every one who rents knows very well that few homes built for renting cost more than half that sum. In the course of ten years the renter will have paid out $9,000 and have nothing to show for it but a pile of landlord's receipts. In twenty years (and many a man in this city has stood a drain of this size for longer than that,) he will have paid out over $18,000, with nothing to show for it. And that by no means represents the whole truth. The man, who ten years ago, undertook to buy a house and lot in a good locality worth at that time $9,000, finds himself to-day, with a property rising, worth from two to four times as much.

The man who exercises common prudence in purchasing a home in San Francisco will not only save the amount which he would have paid out for rent, but in the course of ten years his property will have increased in value by at least as much more.

In the meantime the expense for repairs, taxes and insurance will not possibly have been in the aggregate as much as one-fourth of the amount that would have been paid for rentals.

The home buyer thus, aside from mere considerations of sentiment (which are not to be overlooked by any means,) will find that in buying a home he not only does a really economical thing, but puts himself in a position to reap a large profit where otherwise there would have been a total loss.

The experience of home buyers in San Francisco abundantly bears out this assertion.

Loggers' Fare in the Woods.

The first requisite necessary to obtain all the work from men of which they are capable, when working in the woods, is to provide an abundance of well cooked food. Second: to provide ample and comfortable sleeping accommodations. Without these two necessities, no man can do a full day's work satisfactory either to himself or his employee. When a man eats a hearty breakfast after a night's restful sleep, he enters upon his day's duties feeling fresh and satisfied, and is ambitious to do his share. Having performed all that is required of him during working hours, he naturally feels like having a rest. By giving the sleeping quarters a home-like appearance, furnishing late papers and magazines, providing a large stove by which the house can be kept warm, many of the visits to the tavern by the cross-roads will be dispensed with. Men who work must have recreation, and when it is provided for in the camp, the small expense attending the same will be more than returned by the extra work done by the men.

We do not think that in any part of the country, men in logging camps are better provided for than they are on this Coast. Manufacturers of lumber vie with each other in having their camp called the model camp. In fact, some of them induce their men to build their own houses near the scene of their daily labor. A school teacher attends to the education of the children. Religious services are held weekly. A doctor is located near by, whose services are gratiously given to those who work in the camp, the "boss" paying him a stated monthly salary so as to have a physician always near.

All in all, the men who work in the woods on the Pacific Coast are as well fed and as comfortably housed as any working at the same occupation in any part of the globe.

Our Reading Room.

One and all are perfectly welcome to our reading room. We will be pleased to have you call and look over our exchanges. Rooms open from 9 A. M. to 4 P. M.

Our Exchanges.

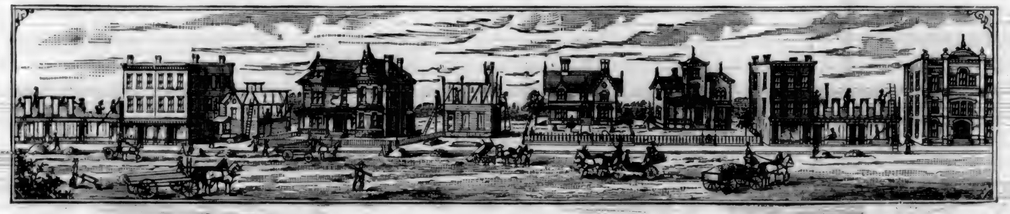
We have added to our office a laige Exchange rack, to which any one, whether they subscribe or not, can have free access. We will be pleased to have you call, as the office is open from 9 A. M. till 4 P. M.

Manufacturer and Builder.—This Journal is printed at 83 Nassau street, New York; it is one of the best of its character published. Lately, many new improvements have been made. The new design for the title page is very attractive, We have published many articles taken from its columns, and have always been pleased to credit the Journal from which they were taken.

Brother Gerard, we wish you success, and only hope that soon a ton of paper will be necessary for each issue.

The Art Age.—The February number of this Journal presents a pen and ink supplement, entitled: "An Autumn Morning" by Bruce Crane. In addition, there are many designs given of buildings, notably that of the Grolier Club, Chas. W. Romeyn & Co., Architects. The price is but $2.50 per year.

Canadian Architect.—Our friends across the line are determined not to be outdone, and so present a Journal as well edited and illustratrd as many of those in the United States. We heartily congratulate the editor on the greatly improved appearance of his Journal.



CITY BUILDING NEWS.

Bay and Mason, three-story frame. Owner, Henry Wreden; architect, Henry Geilfuss; contractor, F. Klatt; amount, $6,930; signed, February 9; filed, Februarv 14. Payments: Framed, $860; roofed, $860; partitions set, $860; brown coated, $860; white coated, $860; completed, $860; $1,770, 35 days.

Bartlett, near Twenty-Third, repairs. Owner, Hannah Armstrong; architect, M. J. Welsh; contractor, F. Sullivan; cost, $4,350; signed, Feb. 27; filed, Feb. 27; limit, 70 days; $1,087,50 framed; $1,087,50 brown mortar; $1,087,50 finished; $1,087,50, 35 days.

Bluxome between Eourth and Fifth carpenter work for two-story brick warehouse. Owner, Mrs. M. F. S. Searles; architects, Schulze & Meeker; contractor, Thomas H. Day; cost, $7,560; signed, Jan. 28; filed, Feb. 7; sureties, C. S. Holmes and C. Hanson; $2,500 limit; April 15, 1889; $2,000 gallery joists and second story joists are in position; $2,116 roof is on and tinned; $1,548 completed; $1,890, 35 days.

Bluxome between Fourth and Fifth, brick and iron work. Owner, Mrs. M. F. S. Searles; architects, Schulze & Meeker; contractor, Edwin R. Shain; cost, $5,999; signed, Jan. 28; filed, Feb. 7; sureties, P. Degan and W. C. Dougherty $2,000; limit May 1, 1889; $1,772 brick done to underside of second story joists, $1,128 brick done to underside of ceiling, $1,599 completed, $1,500, 35 days.

Bush and Sansome, plumbing; Owner, First National Bank; architect, Wright & Sanders; contractor, Fritz & Kean; amount, $5,050; signed, January 30, filed, February 14, limit, May 30, 1889. Payments: Installments on first day of each month to value of 75 per cent; balance, 35 days.

Bush street, Nos. 224 and 226, additions. Owner, estate, C. D. O'Sullivan; architects, Chas. J. I. Devlin; amount, $1,845; signed, Feb. 19; filed, Feb. 21; limit, 30 days; 75 per cent. as work progresses; balance, 25 per cent. when completed.

Buchanan, near Turk, two-story frame; Owner, C. Whelton; architect, M. J. Welsh, contractor, R. Parker; cost, $3,500; signed. March 1; filed March 1; limit 70 days; $875 framed; $875 brown coated; $875 finished; $875, 35 days.

Bartlett near Twenty-First, two-story frame, Owner, J. W. Williams; architect, M. J. Welsh; contractor, M. C. Lynch; cost $3,775; signed, Feb. 20; filed, Feb. 23; limit, 65 days; framed. $943.75; brown coated, $943,75; completed, $943.75; 35 days.

Castro corner Nineteenth, addition. Owner, George Dawson; contractor, M. Sherman; cost, $2,500.

Collingwood and Seventeenth, two two-story frames. Owner, Mr. Gimble; contractor, B. Dryer; cost $6,000.

Collingwood between Eighteennth and Nineteenth, four one-story frames. Owner, Mr. Schrieber; contractors, Spellman & Son; cost, $4,000.

California and Octavia, carpenter work. Owner, Clinton Jones; architect, J. H. Littlefield; contractor, R. P. Hurlbut; amount, $21,500; signed, February 5; filed, February 13; sureties, F. Joost and J. F. Kennedy; limit, June 25, 1889. Payments: 75 per cent. from time to time as work progresses; balance, 25 per cent. in 35 days.

California and Octavia, painting. Owner, Clinton Jones; architect, J. H. Littlefield; contractor, James Larsen, amount, $1,635; signed, February 5; filed, February 13; surety G. Ammerup; limit, without delay. Payments: 75 per cent as work progresses; balance, 25 per cent in 36 days.

California and Octavia, plumbing etc. Owner, Clinton Jones; architeet, J. H Littlefield; contractor, Fritz & Kean; amount, $2,360; signed, February 5; filed, February 13; sureties, Wm. Little; limit, without delay. Payments: Sewerage completed, $885; completed, $885, $590, 36 days.

California and Gough, two-story building. Owner, Daniel Meyer; architect, Jacob Lenzen & Son; contractor, Peter Crichton; amount, $19,800; sureties, C. S. Holmes and C. Hanson, $5,000; filed, February 5; signed, January 31; limit, six months. Payments: First story and joists are on, $3,000; framed, $3,000; roof completed, $3,000; brown coated, $3,000; completed, $3,000; $4,800, 35 days.

Capp, near Twenty-Fourth, one-story building. Owner, Marie S. C. Hundt; architect, S. G. Worden; contractor, S. G. Worden; amount, $1,660; signed, Feb. 9; filed, Feb. 16; $160 chimneys built; $400 floors; laid $400 completed, $400 35 days.

California and Octavia, excavations and brick work of six dwellings. Owner, Clinton Jones; architect, J. H. Littlefield; contractor, James O'Sullivan; amount, $2,675; signed, January 5; filed, February 13; sureties John Hammond; limit, without delay. Payments: 75 per cent. from time to time as work progresses; balance, 25 per cent, 36 days.

Devisadero, near Ridley, two story frame. Owner, H. E. F. Williams; architect, M. J. Welsh; contractor, A. J. Ahren; amount, $3,808; signed, Feb. 20; filed, Feb. 21; limit, 90 days; $952 framed; $952 brown coated; $952 completed; $952 35 days.

Devisadero, near Ridley, two-story frame. Owner, H. E. F. Williams; architect, M. J; Welsh; contractor, A. J. Ahern; cost, $3,880. signed, Feb. 20; filed, Feb. 28; sureties, W. A. Meeker, $1,000; limit 90 days; $970 framed; $970 brown mortar; $970 finished; $970, 35 days.

Elgin Park, near Ridley, two-story and basement frame. Owner, Wm. Becker; architect, Bernard Dreyer; cost, $3,300; signed, March 2; filed, March 2, limit, June 1, 1889; framed, $825; brown mortar, $825; white mortar; $825, 35 days.

Ellis street, No. 321, without delay, plastering. Owner, Wm. Wolfe; architects, Salfield & Kohlberg; contractors, C. C. Morehouse; amount, $1,175; signed, Feb. 6; filed, Feb. 11; sureties, John T. Grant, $1,175; $500 brown coated; $375 completed; $300 35 days.

Eight and Clementina. Owner, Leopold Jusic and wife; architect, O. E. White; contractor, O. E. White; cost, $4,459; signed, Feb. 4; filed, Feb. 7; sureties, Chas. F. and Frank P. Doe $2,000; limit 60 days; $1,000 enclosed; $1,344 brown coated; $1,000 completed; $1,115, 35 days.

Eighteenth, near Dolores, two-story building. Owner, Michl. Kane; architect, Chas. J. Devlin; contractor, A. A. Willis; cost, $4,340, signed, Feb. 21; filed, Feb. 25; sureties, C. S. Holmes and Behrend Joost; $3,000 limit, 90 days; $600 framed; $600 roofed; $640 brown coated; $500 plastered; $700 ready to paint; $215 completed; $1,085, 35 days.

Eureka near Eighteenth, one-story frame. Julius Haug; contractor, August Discher; amount, $1,500; signed, February 15; filed February 21; limit, 90 days. Payments: Framed, $375; first coat of plaster on, $375; completed, $375; $375, 35 days.

Ellis, No. 321, without delay. excavations. Owner, Wm. Wolfe; architects, Salfield & Kohlberg; contractor, Patrick Fitzsimmons; amount, $695; signed, February 8; filed, February 13. Payments: Foundations in, $300; completed $395.

Ellis, No. 321, carpenter work. Owner, Wm. Wolfe; architects, Salfield & Kohlberg; contractor, Henry Rohling; amount, $6,450; signed, February 8; filed, February 13; sureties, J. J. McKinnon and F. Joost; limit, 90 days. Payments: Framed, $700; roofed, $1,200; inside finish on $1,100; completed, $1,830; $1,620, 35 days.

Ellis street, No. 321, plumbing, etc. Owner, Wm. Wolfe; architects, Salfield & Kohlberg; contractors, L. Ickelheimer & Bros; amount, $1,175; signed, Feb. 9; filed, Feb. 13: limit, without delay; $400 rough work done; $475 completed; $300 35 days.

Fulton and Scott, building. Owner, W. Westerfeld; architect, H. Geilfuss; contractors, Schmitt & Krecker; cost, $9,985; signed, Feb. 25; filed, Feb. 26; $1,250 framed; $1,250 roofed; $1,250 partitions set; $1,250 outside finish is on; $1,250 inside finish is on; $1,235 completed; $2,500, 35 days.

Fifteenth, near Church, one-story frame. Owner, Wm. Nicol; architect, H. T. Bestor; contractor, Wm. J. Peters; amount, $1,800; signed, Feb. 15; filed, Feb. 15; $300 rustic on; $300 brown coated; $400 glass and sash on; $350 completed; $450, 35 days.

Folsom, between Tenth and Eleventh, three-story frame. Owner, Cal. Medical College Building Association; architect, John J. Clark; contractor, R. O. Chandler; cost, $11,995; signed, Feb 9; filed, March 1; limit, 120 days; $2,375 framed; $2,375 partitions set; $2,370 inside finish is complete; $4,875, 35 days.

Filbert near Powell, frame building. Owner, Carlo Casassa; architect, Wm. Mooser; contractor, G. Damkroeger; amount, $4,100; signed, Feb. 8; filed, Feb. 11; sureties, Herman Mattern and W. J. Trott; limit, 90 days; 75 per cent. as work progresses; balance, 25 per cent., 35 days after.

Geary and Kearny, May 28, 1889. Constructional iron work. Owner, M. H. DeYoung; architects, Burnham & Root; contractors, Dearborn, Foundry Co; amount, $63,000; signed Nov. 26; filed, Feb. 11; sureties, Christopher & Ed. Christy; 75 per cent. payable up to completion of work in proportional payments the 25th of each month, according to amount of work done.

Golden Gate Avenue and Lyon street, frame dwelling. Owner, R. L. Conn; architect, S. Hatfield; contractors, Farnum & Thornton; cost, $2,400; signed, Feb. 6; filed, Feb. 9; limit, 81 days; $550 roof boarded; $415 brown coated; $415 windows in; $420 finished; $600, 35 days.

Green, between Webster and Buchanan, two-story frame. Owner, Edward J. Duffield; architects, Copeland & Banks; contractor, John A. Shepard; cost, $4,906; signed, Feb. 28; filed March 1; sureties, T. H. Jones and J. P. Shepard; limit, 90 days; $1,000 fram d; $1,000 brown coated; $682 white coated; $1,000 completed; $1,224, 35 days.

Haight corner Webster, three-story frame. Owner, John Cordes; architect, B. E. Henriksen; contractors, Rountree Bros; amount, $7,755; sureties, Thos. Richardson, John Coop; signed, February 16; filed, February 19. Payments: roofed, $1,454; outside finish on, $1,454; sashes glazed and hung, $1,454; trimmings on, $1,454; $1,939, 35 days.

Harrison and Fifth, stable. Owner, J. L. Moody, architect; Chas. I. Havens; contractor, F. W. Kern; cost, $5,295; signed, Feb. 26; filed Feb. 27; sureties, Behrend Joost and O. W. Nordwell; limit, 40 days; $1,000 roof rafters on; $1,200 roof complete; $1,595 completed; $1,500, 35 days.

Howard, near Fourteenth, alterations, etc. Owner, L. Dumas; architect, M. J. Welsh; contractor, C. E. Dunshee; amount, $1,691; signed, Jan. 31; filed, Feb. 11; limit, 40 days; $600 rustic on; $600 ready to plaster; $491, completed.

Henry, between Noe and Ridley, additions. Owner and builder, P. N. Williams; cost, $2,000.

Henry between Noe and Ridley, one-story cottage. Owner, Mrs. Ford; contractor, Mr. Brown; cost, $1,300.

Jackson, near Fillmore, building. Owner Katie Jacobs, et al; architects, Salfield & Kolberg; Contractor, John T. Grant; amount, $5,087; signed, Jan 20; filed, Feb. 13; sureties, C. S. Holmes & C. Hanson; $5,000 limit, 90 days; $800 framed; $1,000 roof on; $1,000 brown coated; $1,287 35 days.

Jackson, near Mason, two-story frame. Owner, M. Hartmann; architect, Henry Geilfuss; contractor, L. M. Weissmann; amount, $3,050; signed, Jan. 28; filed, Feb. 14; $450 framed; $450 partitions set; $450 brown coated; $450 white coated; completed, $765 35 days.

Jones and Pleasant, frame building. Owner, George Whittell; architect, Clinton Day; contractor, C. A. Parker; cost $4,475; signed, Feb. 1; filed, Feb. 8; $900 ready to shingle; $800 brown coated; $800 stairs ready for painter; $856 completed; $1,119, 35 days.

Kearny and Post, shelving, glazing, etc. for store. Owners, Roos Bros; architect, Henry Geilfuss; contractor, George R. Bowles; amount, $2,250; signed, Feb. 8; filed Feb. 15; $1,687 50 set up; $562 50 35 days.

Lyon, near Grove, two-story frame. Owner, Julia A. Campbell, architect, Chas. I. Havens; contractor, John G. Adams; cost, $3,929; signed, Feb. 25; filed, Feb. 27; sureties, S. H. Harmon and F. Joost; limit, 90 days; $700 enclosed; $700 brown coated; $750 outside primed; $779 completed; $1,000, 35 days.

Liberty, near Guerrero, two-story frame. Owner, D. W. Parkhurst; architect, A. J. Barnett; contractor, Brennan Bros.; cost, $5,800; signed, Feb. 4; filed, Feb. 28; sureties, Frank P. Latson and Martin Connor, $3,000; limit 90 days. Payments to be made as work progresses, at the rate of 75 per cent. of value of work done, balance 35 days after.

Market, between Ninth and Tenth, repairs. Owner, Mrs. M. F. S. Searles; architects, Schulze & Meeker; contractor, John T. Grant; cost, $2,800; signed, Feb. 2; filed, Feb. 9; $1,000 boiler house is built and main building roofed and tinned; $1,100 completed; $700, 35 days.

Market cor Gough, repairs. Owners, Will & Finck; cost, $1,200.

Mission, near Thirteenth, two-story frame. cost; $1,800.

Market, near Noe, two-story frame. Owner, Dennis H. Boyle; architect, A. J. Barnett; contractors. G. W. Farnum and R. R. Thornton; cost $3,660; signed, March 1; filed March 1; sureties, Hugh B. Jones and Matthew Harris, $2,000; limit, 60 days; $800 main roof on; $945 brown coated; $1,000 completed; $915, 35 days.

Market near Fourth, concrete work. Owner, California Academy of Science; architect, Percy & Hamilton; contractor, George Goodman; amount, $3,294; sureties, Jeremiah Mahoney and Calvin Nutting; signed, February 2; filed, Feb.2; limit, 30 days. 75 per cent. on first Saturday of each month as work progresses; balance, 25 per cent., 35 days.

McAllister near Lott, two-story frame. Owner, Ed. E. Cook; architect, Wm. H. Wharff; contractor, F. A. Williams; amount, $4,739; signed, Feb. 21; filed, Feb. 21; limit, 90 days; sureties, H. C. Smith, $2,000; $700 framed; $700 enclosed; $700 brown coated; $700 outside carpenter work done; $754 completed, $1,185; 35 days.

McAllister, near Gough, two-story frame and barn in rear. Owner, G. Ammerup; architect, H. Geilfuss; contractors, Von Borstel & Conrad; amount, $5,350; signed, Feb. 18; filed, Feb. 19; $800 framed; $800 floor laid; outside finish on $800; inside finish on $800; completed, $1,350; 35 days.

New City Hall contracts for the plinth course let to Antonelli & Doe. Value, 14,500; for finishing rooms, to McCann & Riddle; cost, 5,700.

Nebraska near Sonoma, altering cottage and building new one. Owner, Henry Kohler; contractor, Thomas F. Mitchell; amount, $1,914; signed, Feb. 18; filed, Feb. 19; $638 old house is raised and frame of new one up; $800 brown coated; completed, $634.

Oak and Franklin, three-story building. Owner, John F. Schroeder; architect, H. D. Mitchell; contractor, Richard Sinnott; amount, $12,300; signed, February 11; filed, February 12; sureties, H. C. Smith and W. J. Adams. Payments: First floor, $2,000. rustic on, $2,000; outside frames set, $2,500; framed, $2,500; 2,300, 35 days. Limit, June 15, 1889.

Powell, near California, additions, cost, $500.

Pond, between Sixteenth and Seventeenth, two-story frame. Owner, Wm. Schottler; contractor, C. H. Murasky; cost, $2,800.

Plymouth avenue, near Patton street, one-story frame. Owner, Mrs. M. K. O'Brien; architect, M. J. Welsh; contractors, L. Cuneo & Co; amount, $1,725; signed, Feb. 13; filed, Feb. 14; limit, 70 days; $400 roofed; $400 brown mortar on; $400 completed; $525 35 days.

Point Lobos Ave. and Tenth avenue, two-story frame and barn in rear. Owner, Chas Callahan; architect, C. I. Havens; contractors, Chas. Johnson and R. J. Andrew; amount, $4,400; signed, February 6; filed, February 19; sureties, A. F. Johnson and Geo. A. Hartman; limit, 112 days. Payments: framed, $800; brown coated, $800; outside primed, $800; completed, $900; $1,100, 35 days.

Pacific, between Gough and Octavia, two-story building; Owner, Alice and Edith Hastings; architects, Percy & Hamilton; contractor, J. C. Bateman et al; amount, $6,997; signed, February 1; filed, February 5; limit, 10½ months. Payments: 75 per cent. on first Saturday of each month, of the value of work done; balance, 25 per cent, 35 days.

Sanchez and Ridley, two-story frame. Owner, D. McSweeney; architect, A. H. Daley; contractor, N. R. Ellis; cost, $4,000.

Sixteenth, between Noe and Castro, two-story frame. Owner and builder, Mr. Hyde; cost, $4,500.

Sixteenth, between Noe and Castro, two-story frame. Owner and builder, Martin Dempsey; cost, $5,000.

Sixteenth, between Noe and Castro, two-story frame. Owner and builder, Mr. Smith; cost, $4,000.

Second corner Frederick, three one-story and one two-story frames. Owner, R. Hughes; day work; cost, $5,000.

South Park between Second and Third, three-story frame. Owner, Henry Joost; architect, Casper Zinierlein; contractor, Casper Zinierlein; cost, $7,635; signed, Feb. 5; filed, Feb. 9; sureties, J. F. Kennedy; limit, 90 days; $1,500 enclosed; $1,500 brown mortar; $1,500 white mortar; $1,225 completed; $1,910, 35 days.

Seventeenth near Pond, one-story frame. Owner Mr. Henry; contractor, A. J. McKee; cost, $1,700.

Stockton, near Sacramento, brick building, May 1, 1889. Owner, James Goetz; contractor, Rhody Ringross; architect, T. J. Welsh; amount, $10,000; signed, Feb. 20; filed, Feb. 20; sureties, W. P. Doherty and Charles L. Hinckle; $2,500 basement is built, $2,500 columns set; $2,500, 3d story is up and joists set; $2,500 completed; $3,775 35 days.

Sacramento, near Lyon, two-story frame. Owner, B. B. Dobbas; architects, B. McDougall & Son; contractors, P. J. and M. Brannan; cost, $5,500; signed, Feb. 9; filed, Feb. 9; $960 frame up; $900 floors laid, etc; $1,000 brown coated, etc; $1,325 completed; $1,375, 36 days.

San Jose avenue and Army street, grading and brick work. Owner, F. Kaufman; architects, Townsend & Wyneken; contractor, I. H. Wilson; amount, $1,550; signed, Feb. 9; filed, Feb. 11; limit, 35 days; $500 raised; $600 brick work done; $390 35 days.

Steiner and Sacramento, building. Owner, Georgette Bitter; architect, Wm. Mooser; contractor, J. H. McKay; amount, $3,350; signed, Feb. 2; filed Feb. 12; sureties, E. Depiere; limit, 90 days; 75 per cent. as work progresses; balance, 25 per cent. 35 days.

Seventeenth, between Mission and Howard, two-story building. Owner, Jacques Puchen; architect, Wm. Mooser; contraetor, J. J. Lunn; amount, $3,837; sureties, Behrend Joost, C. S. Holmes; signed, January 31st; filed, February 5th; limit, 90 days; Payments: 75 per cent. as work progresses; balance, 25 per cent. 35 days.

Twenty-Eight, near Church, one-story frame. Owner, G. Rolando; cost, $800.

Twenty-Eight, near Church, two one-story frames. Owner and builder, R. Bergfield; cost, $3,600.

Twenty-Eighth, near Church, one-story frame. Owner, Winder; contractor, K. Taylor; cost, $1,800.

Twenty-Second, near Fair Oaks, double tenement, frame. Owner, James C. Blair, et al; architect, H. F. Bestor; contractors, Doyle & Son; amount, $2,950; signed, Feb. 14; filed, Feb. 16; $475 rustic on; $600 brown coated; $610 doors, sashes and glass in; $525 completed; $740, 35 days.

Tehama, between Fifth and Sixth, additions. Owner, Caroline K. Bowes; architect, R. H. White; contractors, Moore Bros.; amount, $1865; signed, February 11; filed, Feb. 13; limit, 60 days. Payments: Ready to lath, $700; white coated, $600; completed, $565.

Twenty-Fourth street, between San Jose and Guerrero street, May 1, 1889, two-story frame. Owner, Charles Thompson and wife; contractor, Christian Peterson; architect, Christian Peterson; amount, $2,850; signed, Feb. 20; filed, Feb. 20; $550 foundation in $600 framed; $600 partitions set; $600 primed on outside; $500 completed.

Texas, between Solano and Mariposa, two-story frame and basement building. Owner, J. Gardiner; architect, Wm. Fyffe; contractor, John M. Robertson, et. al.; amount, $2,600; signed, January 27; filed, February 2. No payment given.

Third and Stevenson, two-story and basement, brick. Owner, G. W. Beckh; architects, Schmidt & Shea; contractor, Chas. H. Ackerson; cost, $20,850; signed, March 1; filed, March 2; sureties, C. Hanson and C. S. Holmes; limit, 100 days; $10,000 ready for roofing; $5,600 completed; $5,250, 35 days.

Vienna and Naples, two-story frame stable. Owner, Wm. G. Loeme; architect, Emil John; contractor, Adam Miller; cost, $5,300; signed, Feb. 25; filed, March 2; limit, May 1, 1889; framed $100; outside boarded, $1,000; upper floors are laid $975; finished, 1,000; $1,325, 35 days.

Washington and Baker, two-story frame. Owner, H. C. Firebaugh; architect, J. E. Kraft; contractor, W. Plums; amount, $6,700; sureties, D. Wormser and F. Joost; signed, February 4, filed, February 5; limit, 105 days. Payments: Roof on, $1525; brown coated, $1,500; completed, $2,000; $1,675, 35 days.

AN ENGINEER'S SUIT

His Claim for Inspecting the Plans of the City Hall Commission.

Calvin Brown has commenced an action against the New City Hall Commissioners to recover the sum of $1,900, which he claims is due him for services rendered the city. The complaint sets forth that the plaintiff is a civil engineer, and was employed under a resolution adopted by the Commission in August, 1888, to make a scientific examination of the plans proposed for the new main tower, and the foundations of the McAllister street wings. He alleges that he performed the work and furnished the Commission with his views. He now asks for payment for his time and labor.

CURTIS vs. BENNETT.

A complaint filed in the Superior Court by John M. Curtis, sets forth that complainant and A. A. Bennett, on the 15th of February, 1883, formed a partnership for two years, as architects, under the firm name of Curtis & Bennett; that during the existence of said partnership they drew plans and specifications for a court house and jail to be erected at Eureka, Humboldt county, under a contract with the Supervisors of that county, for a remuneration of 5 per cent on the contract price for buildings, less $400 paid on adoption of plans and specifications. The architects superintended the work on the building until October, 1885, when Bennett, as Curtis alleges, assumed the entire superintendence of the work without the consent of Curtis. The firm partnership was dissolved on the 15th of February, 1885, and their business affairs were settled between them, except the Eureka contract. The contract price of this work was $141,580, and it is charged that Bennett received $7,079, of which he paid Curtis $448, instead of one-half, which he claims to be entitled to. Curtis prays for an accounting and judgment for the amount found to be due him.

OAKLAND AND VICINITY.

Oakland mechanics are busy, and although the price of lumber has advanced slightly it is still within bounds, and sales are larger than ever.

The number of houses built since the opening of the year is 130. Not including the cost of the several large business blocks now building, the cost of new structures will aggregate $430,000. At the present rate of growth Oakland will see an accession of fully 1,000 homes during the year, at a cost of nearly three million of dollars. From the bay to the foothills the signs of improvements are visible. The cottage predominates in numbers, and is an indication of ownership. Probably a larger proportion of the population of Oakland own homes than that of any city of like size in the United States. This evidence of thrift and prosperity is gratifying. Oakland will have a population of 100,000 by the year 1893. And this growth is mainly due to the ease with which homes are secured, by reason of the moderate rates for real estate and the facilities for purchase on the installment plan given by builders and dealers.

A larger number of contracts has been made and is being let or considered than in any previous first two months of the year in the history of Oakland. All mechanical branches are active, while the recent rains give great encouragement to hopes for a prosperous year in agricultural matters. Cities and towns will share in the prosperity.

W. T. Veitch states that he has a large amount of work in view and that the growth of Oakland is more steady and healthy than that of towns he has visited, where spasmodic increase was followed by a corresponding depression.

Mrs. T. B. Simpson is building a modern residence of eleven rooms on the northwest corner of Telegraph and Simpson avenues. Twohig & Moore, contractors; Charles Mau, architect. The cost will be $6,000.

A cottage of seven rooms, costing about $2,000 is going up on Seventh and Alice streets. It is for the Kreyenhagen estate, and W. N. Concannon is the contractor.

A. P. Patridge is building an eight room residence on Ninth street, between Chester and Center streets, to cost $2,000.

Mr. Edwards is building two cottages, one to cost $2,500, the other $2,000, on Tenth street, between Magnolia and Union.

J. N. Paul is building a cottage of six rooms on Jones street, between Telegraph and San Pablo avenues, to cost $1,500. McCracken, contractor.

V. W. Gaskill is building two cottages on Twenty-seventh street, near Grove, each to cost $1,800.

F. W. KRELING & SONS,

Manufacturers of Elegant

PARLOR and CHAMBER SETS,

DINING-ROOM, BANK AND OFFICE FURNITURE,

WOOD MANTELS AND INTERIORS,

Rich Upholstery, Draperies, Bedding, Etc.

SOLE OWNERS OF THE

SQUARE & OCTAGON TURNING MACHINES,

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SAN FRANCICO, CAL.

The California Architect and Building News

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NOW IN ITS TENTH YEAR!

THE

California Architect and Building News.

ESTABLISHED JANUARY, 1879.

Office, 408 California St., San Francisco.
(Next to the Bank of California.)

Official Organ of the San Francisco Chapter American Institute of Architects.

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Spaces on Cover and on page preceding reading matter are subject to special rates.

SAN FRANCISCO, APRIL 15, 1889.

On Wednesday, May 1st, 1889, at the regular monthly meeting of the San Francisco Architectural League, an interesting stereopticon exhibition on "Scenes through Italy," will be delivered by Frank Shea, Esq., architect.

San Francisco Chapter American Institute of Architects.

Never, since the first formation of the Chapter, has there been such a meeting of architects and students, as was witnessed on the evening of April 5th, at the new rooms 408 California street. In addition to a large percentage of the membership of the Chapter, many of the students of the Architectural League, and several draughtsmen from the various offices were in attendance.

George E. Voelkel was proposed for membership as a Fellow. Referred to Committee, Percy, Babson and Pissis.

Mr. Bestor remarked that E. J. Molera could not be present owing to unavoidable detainance, but it was the desire of the latter named to request the Mechanics' Institute to have at their next exhibition and to offer premiums for the best exhibit of building materials. In order to properly have the matter come before that Institution, it was proposed to have a committee appointed by the Chapter to confer with committees from other associations and decide on some course of action. He would, therefore, make a motion to that effect. Committee appointed, Bestor and Percy. The communication from the Builders' Association in regard to the appointment of a committee on "Legislation" was favorably received and on motion S. Babson and J. E. Wolfe were appointed as such Committee. Mr. Sanders then began the reading of a most interesting paper on the subject, the "Age of Iron." The speaker gradually traced the different formations, through the various geological periods; from the mine to the foundry; from the manufactory to the bridge and building where the material was to be used. The whole paper was beautifully illustrated by dissolving views. The views of various bridges throughout the world was the most complete ever seen in the city. Beginning with the massive structures of ages past, the various developments in construction were successfully shown, until the modern iron bridge with its long spans, its light and airy grandeur combined with wonderful strength, was shown in all its grandeur. All the details of construction were successfully pictured on the canvas. Turning from the subject of bridges, the speaker portrayed the uses of iron in the construction of roofs.

The lecture was listened to with profound attention, and the beautiful illustrations brought forth murmers of applause. At its close, the speaker was tendered a vote of thanks by the Chapter and the paper was ordered printed in full in the California Architect.

Many of those present were in the new rooms for the first time and expressed themselves as well pleased with the arrangements. It is already necessary to enlarge the meeting room and a further space of sixteen feet will be added, making the room sixteen feet wide by fifty-four feet in length. This will be ample for some years to come. Students' room is also on the same floor.

The next meeting will be held on Friday, May 3d. Visiting architects are always welcome to the rooms and to the meeting of the Chapter.

Venice and Rome.

Lecture Delivered by Miss Jewett, Before the San Francisco Architectural League.

The regular monthly meeting of the league was held Wednesday evening, April 3, 1889, at their rooms, 408 California Street, with Vice-President J. F. Wieland in the chair, and eighteen members present. Messrs. Smith, O'Brien and Wetmore elected members, and Messrs. Bugbee, Larsen and Pass were proposed as members of the league.

After the business of the evening was completed a very interesting lecture on "Venice and Rome" was delivered by Miss F. Jewett, the well known High School teacher, who was introduced to the league by President Louis Stone.

Miss Jewett, who recently returned from Europe, described her impressions of Venice and Rome very clearly. Her remarks were illustrated by a very fine collection of large photographs, which added greatly to the interest of her hearers.

In entering Venice, you arrive by train, in the northwestern part of the city, and are taken by gondoliers through the Grand Canal, which passes southeasterly through the city, and is two miles long, and varies from forty to sixty yards in width. She spoke of the luxuriousness of the gondolas, which glide along so quickly, and with so little apparent motion that it seems to go by magic. Especially is the feeling intensified as the gondolier stands behind the passengers, and one does not see the actua

motive power. The lady described the "Rialto Bridge," and "Bridge of Sighs," which span the Grand Canal in single arches, and are entirely built of marble. She was greatly impressed with St. Mark's Church, with the beautiful Mosaic work, of which there is 47,000 square feet in the building, and of the magnificent effect of the afternoon sun upon the gilding, and the rich mosaic work in the spandrils of the arches. The Doge's Palace and Palace of Desdemona were also described, with their beautiful gothic tracery, and immense variety of carved capitals, every one being different. A large number of photographs of the Campanile, Doge's and Desdemona's palaces, St. Mark's Church, the many bridges and other points of interest were passed around among the members, who manifested great interest, and asked many questions. From Venice, Miss Jewett carried her audience to Rome.

Rome is entirely surrounded by a wall fifty feet high and eighteen feet wide, which is complete and in excellent condition. Miss Jewett, in describing the "Strangers' quarter" in Rome, said that the streets of that part reminded her of the new portion of New York City, as there are many five-story apartment houses of modern construction, of much the same appearance. She described the monastery of the Capuchin monks, and exhibited a photograph of the interior, showing the walls and ceilings decorated with skulls, vertebrae and other parts of the bodies of monks who died there.

From describing Rome generally, she came to the center of attraction, the great church of St. Peter's and the Vatican. She was one of the 90,000 people who occupied St. Peter's during the Pope's jubilee, last June. At the jubilee, invitations were issued only to fill the nave and the transepts, or 120,000 people could have been placed in the body of the church. She spoke of the great size of the Vatican, with its 13,000 rooms, and vast retinue of servants.

The splendid photographs of the St. Peter's, Arch of Constantine, the Roman Forum, Colosseum, the many temples, statuary and fountains, were especially interesting to the league.

At the conclusion of the lecture a vote of thanks was tendered Miss Jewett for her kindness in consenting to lecture before the league.

On the 17th of this month there will be a lecture delivered on "Chemistry," by Mr. D. C. Stone, who will illustrate his subject with a number of experiments.

The following is a list of the San Francisco Architectural League's membership and its officers:

MEMBERS.

Lionel D. Deane, Geo. H. Sanders, Augustus Borradaile, J. F. Wieland, Geo. P. Wetmore, Obert F. Simpson, Joseph W. Rowell, Samuel Benson, Sylvester W. Hemenway, C. Herbert Hasty, Victor Monet, Carl Hilpisch, F. Rabin, R. M. Turner, Smith O'Brien, W. C. Mahoney, Louis Stone, Alfred Owen, J. Brady, M. G. O'Brien, H. J. Van Vlack.

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Louis Stone, President; J. Farley Wieland, Vice-President; Lionel D. Deane, Treasurer; S. W. Hemenway, Secretary; William Shea, Augustus Borradaile, R. M. Turner.

SEMI-ANNUAL COMPETITION

.....OF THE.....

San Francisco Architectural League.

Open to all draughtsmen and students in City of San Francisco. Subject, "Town Library," with requirements as follows: Entrance Hall, Library proper to accommodate 20,000 volumes, Librarian's and Reference rooms, Newspaper and Periodical room, Ladies' and Gent's Toilets. Location—Center of square. Material—Stone, Brick or Terra Cotta.

All drawings are to be designated by motto and accompanied by letter with name of competitor. They must be sent to S. W. Hemenway, Secretary of the League, room 6, 418 California Street, not later than May 14, 1889.

A committee of three prominent architects will be appointed by the League to decide the competition.

First prize, gold medal; second prize, silver medal.

S. W. Hemenway, Secretary. Louis Stone, President.

An Examination for Architects.

It would seem needless, after the experiences of the last few years, to urge upon our lawmakers the necessity of an examination for architects. I am not pleading for the "regulars," neither am I opposing the "quacks," but as an architect, looking after the interests of my clients and the public welfare, I must advocate measures which, in my opinion, will tend to remove the cause of many building disasters.

Our profession is made up of three distinct elements: First, students from technical institutions; second, students from the offices of architects; third, those who have "picked up" the business. Of the first element—technical students—there are two classes: those who have taken the regular four-year course, and others who have been put through by telegraph in two years. Although the number of practicing architects who have taken the four-year course is small, they exert an elevating influence upon the profession, and such a course will be the rule instead of the exception in a few years. The two-year course of the "specials" does them no harm, and when supplemented by a few years in the office of a skilled architect, they become sufficiently familiar with the profession to practice without injurious results.

Those composing the second element who have been fortunate enough to get a liberal education, and have made themselves familiar with the standard architectural work, have an aptitude for the work, and who have been connected with an architect for three or more years, have thus far proven the most successful architects. Aided by able and intelligent papers like the *American* and California Architect, these architects have brought the standard of the profession to its present elevation, and are working hand in hand with the institute graduates to raise it still higher, and at the same time are educating the public to understand the difference between good taste and abortiveness.

The third element, those who have "picked up" the business, have shown excellent judgment in choosing something to "pick up;" they display commendable ambition in seeking to elevate themselves by their own bootstraps. They certainly are not to be blamed for wishing to ally themselves with a profession, the members of which prosper only as their fellow men prosper, and the history of which is the world's history. But have the public no rights in the matter? Are important questions of construction and design to be intrusted to those who, like Miss Wozenham's relatives, have "failed in pick?"

We can liken the standard of architecture to that of literature, and the public will say, "All books can be published, why cannot all styles of buildings be erected?" But the public cannot be compelled to read all the vicious or absurd works which get into print; but we are absolutely obliged to look upon abortions in architecture, because they surround us on every side. Yet this is, perhaps, the least of the evils resulting from "picking up" the business.

That many human lives have been sacrificed because of ignorance of the principles of construction, who can deny? That today many important buildings are being erected in a manner discreditable to this age, and false in nearly every principle of construction, is a fact, which, if the matter is honestly investigated, must be acknowledged. True, our building laws are good, and our inspectors intelligent and watchful; but a skillful and conscientious architect is better than both put together.

Light, heat, and air, upon the proper distribution of which every human being is dependent, are all utterly ignored by this "picking-up" genius in architecture, as he goes blundering through the world, making life shorter and more disagreeable by his ignorance of the principles of the profession upon which he wished to grow financially fat. But, it will be asked, may not some of the first two elements be also incompetent? Are they as likely to be? And will not the examination be a fair test of the abilities of all?

We need an examination for architects. The first element does not object to it, the second will welcome it, and the public safety requires that no one ignorant of the principles of construction should be allowed to construct. W. H. M.

We are in receipt of the advertisement of the Dunning Boiler which appears on page three, with a very suggestive motto which is strikingly peculiar, as we do not know of any other steam heating boiler having such an established record. The motto is "The sun never sets upon the Dunning Boiler because it is in use all over the world." Read advertisement and apply for catalogue with full information as to its merits.

OUR ILLUSTRATIONS

The California Hotel and Theater.

THE California Hotel and Theatre Building, situated on Bush street near Kearny in San Francisco, will be one of its *representative* structures and in fact may be put down as the first strictly modern hotel and theatre building in this city. As the accompanying cut in this month's issue of the Architect indicates the style of architecture, of the front is in the modern Romanesque and the object of the architect has evidently been to produce a building which would attract notice more on account of its dignity, lines of proportion and symetry, rather than the elaboration of ornament and the crowding the front with projecting excressences so common to San Francisco architecture. The two lower stories of the front are of rock faced Arizona brown stone. Above that point the remaining stories are in red pressed brick and red terra cotta. A description of arrangement of the front would hardly be necessary as the accompanying cut gives a perfect idea of the front when finished, but it might be well to state that the arches at main entrance to theatre and at the hotel entrance are richly carved. The interior of the hotel, as well as the entrance to the theatre will be finished in the romanesque school of architecture. The interior of the theatre in the East Indian. The hotel will be supplied with every adjunct of a strictly modern and first class hotel. It will be heated by steam and lighted throughout by the incandescent electric light. In general arrangement and finish the hotel will be second to none in this country, and San Francisco can not only speak with pride of the elegant cuisine of its restaurants as it is noted for this, but will soon be able to boast of a cafe whose surroundings will aid its patrons to a better enjoyment of the good things served. Regarding the theatre, one of its most important features is the absolute safety to its patrons. It stands by itself detached from any other building, with exits and iron stairways on all sides. It has four independent exits on each floor from the auditorium and two from the stage, the aggregate width of exits being seventy-four feet. Next to the question of safety to patrons is the one of perfect lines of vision and on this point it can be definitely stated that there is not a single seat even in the back of Proscenium boxes, that do not command a view of the entire stage. The question of ventilation has been thoroughly considered, and the architect guarantees a change of air in the house every fifteen minutes, and says that the question of accoustics has given him no une siness as he has built nearly fifty theatres and holds the indorsements of the most prominent stars of the profession, regarding the perfection of the accoustic of every theatre. The stage is fitted with every modern appliance and it will be supplied with an equipment of scenery unexcelled for variety and modern effects by any theatre in the eastern metropolitan cities. The comforts of the profession has not been neglected, as an addition has been added to the building which is devoted to their use, furnishing fifteen dressing rooms, each having a window opening on to the open court and supplied with hot and cold water, marble make-up stands, etc., with toilet room on each story of addition. There are also commodious scene rooms, property rooms, etc., a carpenter shop sixty feet long disconnected from the stage.

The entire theatre is supplied with the Barnes Automatic Fire Extinguishers and with stand pipes and thirteen hose reels in plain sight and so distributed through the auditorium and stage, and adjusted that an incipient fire could be extinguished instantly without the aid of the fire department. To operate this apparatus there will be at all times in the building during an entertainment, firemen detailed by the fire warden. The theatre will be supplied with ladies' retiring and toilet rooms, and gents' smoking and toilet rooms. The opera chairs, carpets and draperies were designed expressly for this house and everything in the line of architectural design, decorations and furnishings will be thoroughly East Indian. The entire building will be practically fire proof. The building is being erected by Mrs. Kate M. McDonough who left with her family for Europe before it was commenced and whose interests are represented by her attorney, Mr. E. F. Preston of this city. The architecture and superintendence of the work was entrusted to Mr. J. M. Wood of Chicago, upon the recommendation of Messrs. Booth & Barrett, the eminent artists who will dedicate the theatre on the evening of the 13th of May, 1889, and there is no doubt but that it will be one of the greatest events in the history of San Francisco. Mr. Wood is now building the Benhawk theatre of Los Angeles, California. The Loring of Riverside, California. The Tacoma theatre of Tacoma, W. T., and is completing plans for an elegant theatre and business block at Portland, Oregon. A magnificent theatre and bachelor apartment building at Denver, Colorado and a hotel and theatre at Lincoln, Nebraska.

CUT-STONE WORK.

The stone of which the front is being built came from Flagstaff, Arizona, and is of beautiful reddish brown color, of a very dense nature and has the property of withstanding the most intense heat. It can be quarried to any size or dimension required for any ordinary purpose. Blocks have been taken out 20 feet long, 10 feet thick and 15 feet broad. Were it necessary to order larger stone, the only drawback would be the means of transportation, as the average railway car only carry a specified weight. The new Court House, now being built by O. E. Brady in Los Angeles, will have two stories of this stone, also the new Post Office in the southern metropolis, as well as numerous other buildings. Since the introduction of the stone about one year ago, the demand for it has steadily increased, until now the proprietors find it onerous to fill the many orders. The stone is handled in this part of the state by O. E. Brady, the gentleman who has put up the cut stone work of our present sketch and from the quality of work performed by Mr. Brady, the fact is evident, that he will be able to point with pride, in the future, to the new California theatre and hotel.

IRON WORK.

The iron work of the California Hotel and Theatre was furnished by the Joshua Hendy Machine Works. Our description of this massive structure would be incomplete without reference being made to the heavy cast iron columns, girders and stairs which form so important a part, and add strength to the building.

This work was performed under a contract with the Joshua Handy Machine Works, of Nos. 39 to 51 Fremont street, this city, in which corporation the City Iron Works have been merged, and this capacious and admirably arranged foundry is now situated at, and has recently been erected on the block bounded by Kearney, Bay, Dupont and Francisco streets, and where they are prepared to furnish architectural iron work, and light and heavy castings of every description. And the character of the work supplied for the use of this building attests their ability in this department.

INTERIOR WOOD WORK.

The interior wood work for this elegant structure is being manufactured by the well known firm of F. W. Kreling & Sons, 532 to 536 Market street, from designs furnished by J. M. Wood, the architect, and abound with beautiful ideas. The main entrance will be one of the features, with red oak finishes, beautifully carved. The doors will have elegantly stained glass in upper panels, the lower ones being of metal.

Removal Notices.

Chas. J. I. Devlin has moved from 330 Pine street to 240 Montgomery street. The new offices are very handsome in their appointments.

Chas. Geddes has moved from 528 California street to 415 Montgomery street.

Reid Bros, formerly of San Diego, and architects of the Coronado Beach Hotel, have opened an office in the McCreery Building, 213 Sansome street.

John W. Curtis, so long at 528 California street, has moved to the Thurlow Block, 126 Kearny street.

M. T. Welsh has moved his office to the corner of Market street and City Hall avenue.

Under a New Management.

This journal is now under the control of the "Architect Publishing Company." All accounts due are payable to the company, at their new offices, 408 California street, rooms 14, 15, 16 and 17.

Iron Beam and Girder Connection.

THE strength and safe bearing loads that rolled iron and steel beams will bear, in the tables of our text-books, are based on loads evenly applied, either upon their top, or equally on each side, as in the support of brick or other arches, so that all the resisting parts of the beam are uniformly employed in support of the load.

Fig. 4b

In figure 3, the beams *d and d1* form a girder, each bears its proportion of the load of beam *c* on its top, and the compressive and tensile resisting parts of each beam are equally employed in the manner intended in the tables of strengths and safe-bearing loads of beams; deviate from these direct applications and the beams will fail to sustain the loads given in the text-books.

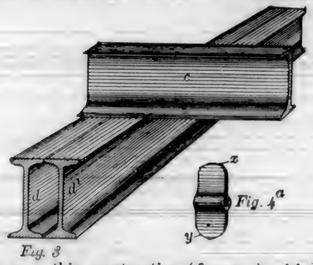


Fig. 3

Fig. 4a

In many cases this construction (*figure 3*), with the beam upon the top of the girders is not admittable for want of room, as for the support of vault roofs under sidewalks, floors of buildings and the like, to meet this requirement the faulty construction shown in figure 4 is frequently used.

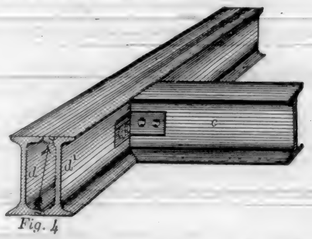


Fig. 4

In figure 4, the beams *d and d1* form the girder, and sustain the load of the end of beam *c*, but each beam of the girder is engaged quite differently than in figure 3 as hereafter explained, and it is questionable if the two are much or any stronger than *if the girder was but a single beam with the load on its top.* In this figure the single beam *d1* of the girder supports the weight of the end of the beam *c*, and to the *disadvantage of its strength upon one side*, and that upon a single bottom flange. The diaphragm *4a*. when in place, fits between the beams of the girder, and is employed as explained in the next section as a medium to *transmit the strength of beam d* to its companion beam *d1* which carries the load of the end of beam *c*.

The deflection of the beam d' from carrying the load *c* independently considered, is not directly in a downward direction, but inclines towards the side load it is carrying.

Downward deflection is resisted on the opposite side of the beam to the load, by a diagonal upward resistance or pressure from the bevel top edge *x* of the diaphragm *4a* when in place by pressing under the flange *x* of the beam. This pressure is impelled by the bottom of the diaphragm at *y* resting upon the single bottom flange *y* of the companion beam *d*.

The direction of this assisting diagonal upward force is indicated by the arrow in figure 4, and tends to further distress the already burdened beam *d1* by *forcing it abnormally* and straining it across the web.

With two solid beams of timber this severe application of the load on one side would not have the same effect.

The treatment of the loaded beam d, figure 4 may be compared to the man shown in figure *4b* carrying a heavy load in one hand sufficient for two men, bending him over in the direction of the load, and his companion assisting him (an equivalent to beam *d*) by forcing up his shoulder opposite the load, further contributing to double up the loaded man in the direction of the load.

The strength of the assisting beam *d* considered independently, loaded as it is upon the single flange *y* and upon one side, cannot be much in excess of one-half its normal strength when loaded properly on its top as in figure 3. *Therefore, the strength of the two beams d and d1 forming the girder in figure 4, may be considered not greater than a single beam girder properly loaded.*

One instance of this faulty construction is in the girder beams supporting the vault roof and sidewalk of buildings No. 309 to 317 Market street, this city, beam *d1* of the girder is deflected more than its companion beam *d* from carrying beam *c* with the incumbent vault-roof and sidewalk,and the deflection of *d1* varies in proportion as the sidewalk is loaded, causing it to leak between the beams of the girder whenever it rains.

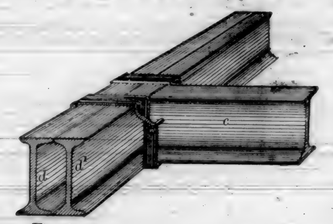


Fig. 5

Figure 5 is the same construction as figure 4, but an effort is made to remedy the fault by using a bridle or stirrup iron, one end of which is secured to the back of beam *d*, and passing over the tops of beams *d* and *d1* and down, receiyes and supports the end of beam *c*. The diaphragm *4a* is used between the girder beams with the result as described in figure 4.

The supporting value of this stirrup iron in addition to that shown and described for figure 4, is *only* what weight it will take to bend two strap irons, each a half or five-eights inch in thickness, across the edge of beam *d*, if for a 10½ inch beam would be at a leverage of 4½ inches the width of *d1*. This will not exceed 250 or 300 pounds. Figure 6 shows the stirrup iron bent from the load.

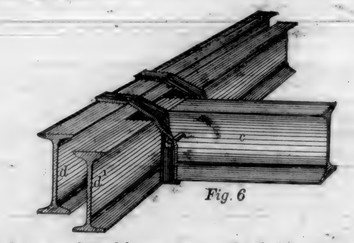


Fig. 6

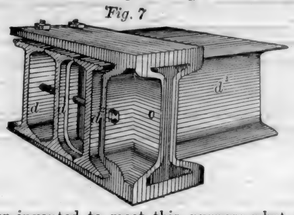
Rolled iron and steel beams are costly, their top and bottom flanges are adjusted to resist compressive force and tensile strain, and are connected by a thin web; with the load applied

in a direct manner they fulfill the intention for which they are proportioned, but deviate from it, and their strength is diminished in proportion to the treatment, and largely in cases of figures 4 and 5. This has been the writer's experience in testing over 700 iron beams and girders by weight and hydraulic pressure for the Department of Buildings of New York City.

The strength of any construction is that of its weakest part. It is evident if the top and bottom flanges at the end of beam *c* (with the web between them cut away) extended above and beneath the beams of the girder, and were bolted to each other at the back, and the junctions of the flanges to the main part of the beam was of increased thickness to provide against any possible bending, as in figure *6 a*, when employed, it would be the same as if the entire beam *c* laid on top of the girder beams, as in figure *3*.

It is evident if the top and bottom flanges at the end of beam *c* (with the rib between *them cut away*) extended above and beneath the beams of the grider, and were bolted to each other at the back, and the junctions of the flanges to the main part of the beam was of increased thickness to provide against any possible bending as in figure *6a*, when employed it would be the same as if the entire beam *c* laid on top of the grider beam as in figure *3*

Fig. 7



The writer invented to meet this purpose what is shown in figure 7, a heavy cast iron shoe, *which is rigidly secured to the end of beam c, and becomes an extended part of it*, with heavy top and bottom tongues or flanges (equivalent to the top and bottom flanges of beam *c*, with the web between cut away, as described for figure *6 a*). These project over the top and bottom of the beams of the girder and are bolted to each other at the extremity. These two flanges are equal to the single top flange of beam *c*, of a combined thickness of both. These combined tongues or flanges bolted to each other from their thickness, width and shortness of span are rigid against bending, and are fully equal as if beam *c* rested on top of all the beams of the girder, as in figure *3*.

This met the problem.

The great weight of the cast iron shoe (to be consistent in strength with remaining part of beam *c*) with the bolts, are fully 200 pounds. This, together with the expense of punching holes in the beams, makes them so costly as to forbid their general use in competition with the cheap and frail constructions before described. But they are in use in several prominent buildings in San Francisco.

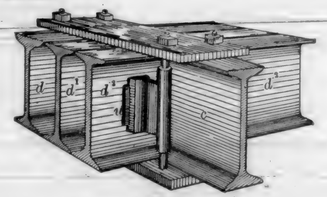


Fig 8

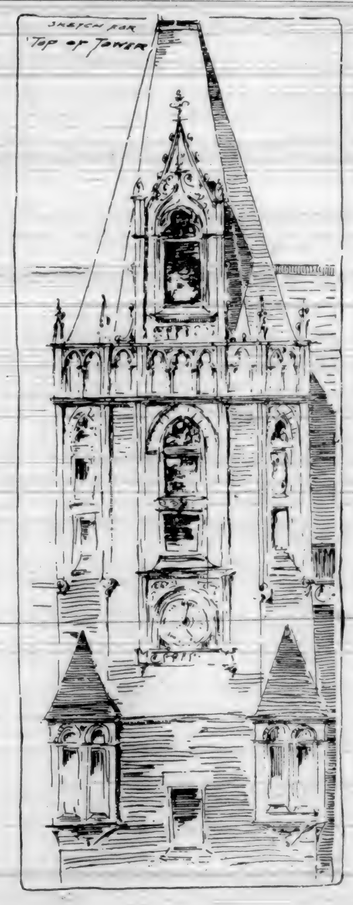
The writer afterward devised to meet the demand for a cheaper article, a wrought iron shoe, as shown in figure *8*, composed of two heavy wrought iron plates, equivalent to the two tongues or flanges described before for figure 7, of a combined thickness of 1¾ inches; these are clamped to the end of beam *c* and to the beams of the girder by heavy bolts and nuts, holding all the beams as if in a vise.

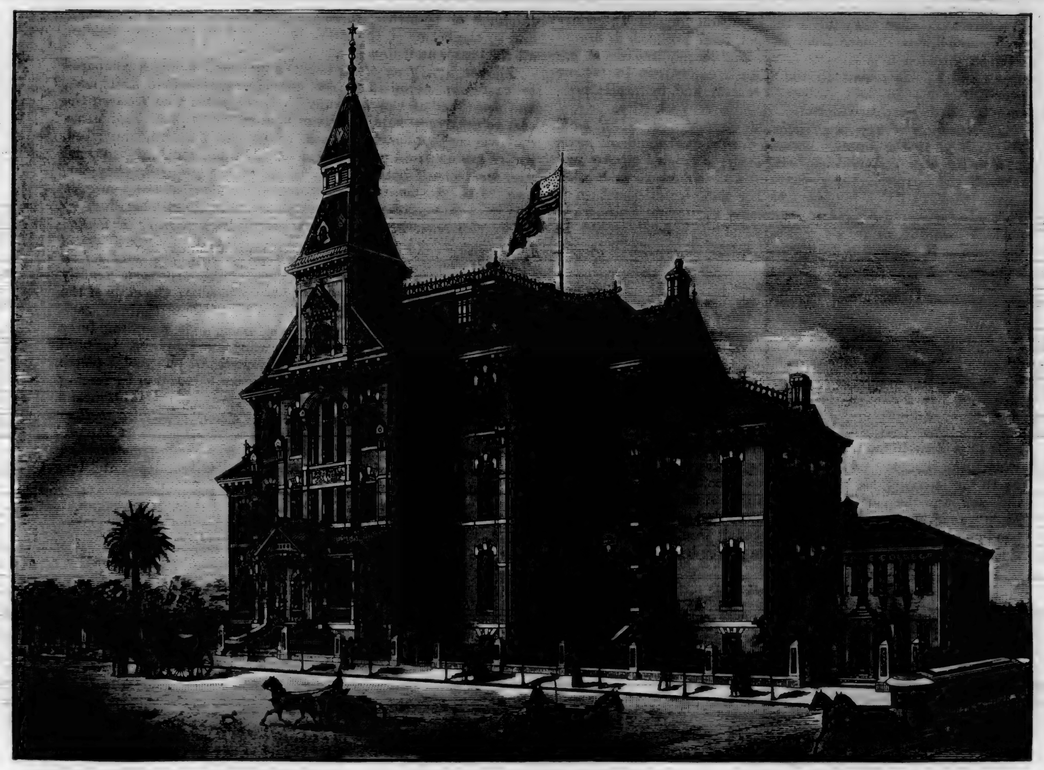
The wrought iron plates being of increased strength compared to cast iron, permitted a considerable reduction in thickness, and were then of equal strength. This construction reduced the cost to nearly one-half of those of figure 7, and at a slight increase cost over the common deceptive as to strength of the kind described. These wrought iron plates are of considerable width, and extend over the top and bottom of the beams of the girder, be they one, two three or more beams (three are shown in the figure *8*), and from their thickness and width are rigid against bending.

By this construction, none of the beams require drilling, punching, or other workmanship, but may be delivered direct from the Rolling Mill to the building or structure, and set in place, and the wrought iron plates and bolts are then readily adjusted. The end of the beam *c*, and also where the ends of the beams of the girder meet, is where they abut against each other, are so tightly clamped as to be immovable, a pulling force of tons makes no impression, requiring no fishplates to bind the ends of the beams together. In addition, the wedge pieces *u u* clamp the beams of the girder in a cross direction by forcing them over against the resisting bolts at the back. By this means *the beams of the girder are clamped transversely as well as vertically.*

Figure *1* shows the application to the best vault construction, in so far as it is all of wrought iron, and is of less depth and less cost than cast iron of equal strength.

P. H. JACKSON.





The Cogswell Technical School, San Francisco. CHAS. GEDDES, Architect.

Dr. H. D. Cogswell and Caroline E. Cogswell on March 21, 1887, executed a trust deed, setting apart certain real property to establish and endow the Cogswell Polytechnic College. The trust deeds declare the object of the college is to give the boys and the girls of the state of California a practical training in the mechanical arts and other industries.

The college is not designed to teach trades, but to fully prepare the student to enter successfully upon any line of work. The aim is to fully develop the boy and the girl, mentally, morally and physically, thereby producing self-reliant and self-helpful men and women.

This college affords students an opportunity to continue their literary, scientific and mathematical studies and at the same time, to receive a thorough training in the industrial arts.

Dr. H. D. Cogswell thus describes the importance of manual training:

"The education that does not prepare one to intelligently direct his labor is not worthy of a moment's consideration. Most of our boys and girls have no occupation, and are not prepared, to intelligently learn one, when they leave school. They have a certain kind of learning, but no capacity for work. The *new* education, demanded by the necessities of the nineteenth century calls for the training of the eye and the hand, and stamps such a training as being just as important as the study of language, science or mathematics."

COURSE OF INSTRUCTION.

The course of instruction covers a period of four years. In addition to a thorough course in principles of construction and the literature of the various languages, applied mathematics, applied science, chemistry, phonography, telegraphy, and other branches, the following will show the advantages to be derived by students of the two sexes:

For boys only, a course in mechanical art, including free-hand and mechanical drawing, carpentering, wood turning, wood carving, pattern making, iron turning, iron finishing, iron forging, iron moulding, copper and brass work, and a thorough course in the principles of machine construction.

For girls only, a course in industrial art, including clay moulding, drawing, designing, interior decoration, china painting, wood carving, metal work, plain and ornamental needle work.

THE OBJECTS OF THE SCHOOL

Are best told in the words of James G. Kennedy. "The theory on which the school is based is that education should correspond to the spirit of the people. That is, in an agricultural district it should be agricultural; in manufacturing and commercial districts it should pertain to manufacturing and to commerce, so that when a boy goes out he may have not only something to do, but be recognized as a superior workman, having intelligence outside of his practical knowledge of the use of tools. For boys we have first, a wood laboratory where they will learn to make all kinds of joints and everything else a carpenter can learn. Second, is an iron shop; third, a forging shop; fourth, a foundry; fifth, assaying laboratory.

"The girls learn first clay modeling—the basis for all kinds of modeling of brackets, chandeliers, etc. Second is drawing, third designing, fourth china painting, fifth *repousse* work—hammering out brass, gold, silver and copperwork—sixth wood carving, seventh plain and ornamental sewing. Cooking may come later, but thus far no provision has been made for it. That is merely an outline of the manual work. Of course while the pupils are pursuing their course in handicraft, they are also learning English and either Latin, French, German or Spanish, applied mathematics, etc. We will teach on the principle that it does not take a boy as long to learn the principles of physics and chemistry while working at the bench as it does to teach him the theory without the practice. We will waste no time on the study of English, but we will study English, spelling, grammar and rhetoric daily with our history or other subjects. It is my hobby that those branches which we use every time we read or talk or write should be inseparably interwoven into all other studies. It will be the teaching of the future. In future there will be no such thing as a sepapate hour devoted to spelling, one to grammar, one to composition, but all will come in with the study of history or any other branches wherein are to be found words and ideas new to the pupils. These boys will go hence with more sound practical English, grammar, higher mathematics, chemistry, physics (besides a trade they can follow) than any boy graduated from the San Francisco High School. Mind you, I don't say that when they begin they will be as rapid workmen as those who have devoted all their lives to work and work only. But after a little practice they will not only become as rapid in the accomplishment of their work but will be more valuable employes from their knowledge of the relationship their special work bears to other work in the shop. They will be superior in many other ways. I have spoken to leading founders and builders and they encourage me by promising to give the graduates of the college a fair trial after graduation. That is all I shall ask. I know that with but few exceptions the graduates of the Cogswell Polytechnical College will be acceptable in any industry they are taught."

The college buildings are on the southeast corner of Twenty-sixth and Folsom streets, and the main building faces on Twenty-sixth street. The lot fronts 245 feet on Folsom street and 182 feet on Twenty-sixth. The building is three stories in height and from its imposing and substantial appearance is the most notable structure in the southwestern portion of the city. It is seventy-one feet in width by eighty-five feet in depth, not including the projections. On each side is a wing two stories in height, each 35x40 feet. The building is surmounted with a metal roof with handsome cresting on the ridges. In front a high tower rises to the height of 127 feet, the apex topped with a revolving crystal star set in a copper pinnacle. On the face of the tower, above the third-story line, is the dial of a clock, and still lower down the name of the college. The main entrance is spacious and surrounded with a wide porch. On each side of the door is a niche for the placing of pieces of statuary. There are also two side entrances, one for boys and the other for girls. The main entrance porch is approached by a flight of stone steps. The main hallway is ten feet in width, and it opens into a cross-hallway twelve feet wide, which crosses the building from end to end. From the cross-hall stairways lead to the second story; stairs also lead to the stage at the rear and to the front of the assembly hall, in the story above. It will thus be seen that the means of egress are unusually excellent there being three wide doorways from the ground floor to the street and two from the second story to the assembly hall. There are to be ten class-rooms, each 28x30 feet, four to be on the main floor and the other six to be on the second story. Two classrooms are already ready. On the first floor also are the offices of the President and Secretary, a reception parlor, a library 16x28 feet, and a museum 20x28 feet, besides a number of dressing and toilet rooms. A spacious assembly hall occupies the entire third story. It is 68x70 feet in size, and will have a seating capacity for 1,000. It will be used for the delivery of scientific and other lectures in connection with the regular courses of study in the school. This hall will eventually be handsomely furnished and provided with a stage, with all the necessary adjuncts for completeness. All the rooms are well lighted and every appliance known to modern skill is introduced to make ventilation perfect. They are lighted with electricity, and electric bells and speaking-tubes are run throughout the structure.

A short distance in the rear of the main edifice is another building in which the shops and laboratories are fitted up. It faces the north and is 152 feet in length by 40 feet wide and two stories in height. The ground floor is devoted exclusively to iron work, both designing and molding, having departments for filing, fitting and chipping. A laboratory is established in a room 35x40 feet and fitted with all the essentials for thorough instruction in polishing, fitting and setting up of various pieces and descriptions of machinery. A machine tool laboratory is 40x40 feet in size and completely equipped with iron laths, a drillpress, planers and rollers, by the aid of which pupils will be instructed in the arts of turning, drilling and planing iron so that they will be qualified to construct tools and small pieces of machinery. A forging furnace and laboratory have also been established and occupy a space 40x40 feet. The founding laboratory will be 35x40 feet in size, and contain a smelting furnace and other necessary appliances.

The second floor will be devoted to the chemical, wood and physical departments. The carpentry department is 40x35 feet, and supplied with an extensive assortment of tools. A wood-turning factory is 40x40 feet, and supplied with lathes, a planer, a circular-saw, a bandsaw, a mortise-machine, a molder and several other machines. The remaining space on the floor will be at the disposal of the physical and chemical departments. One room, 20x20 feet in size, is fitted up with shelving inclosed in a glass front, where all the philosophical apparatus will be kept that is used in experiments in chemistry and physical instruction. The furnaces in connection with this department are in the adjoining room, 40x50 feet in size.

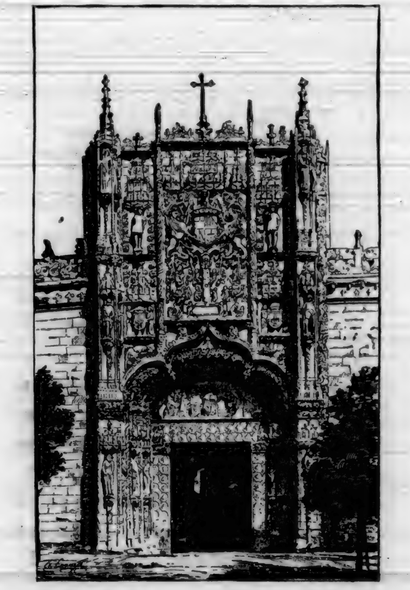
GIRLS' DEPARTMENT.

The department for instruction of girls will be fully as complete in detail as that for the boys. Here instruction will be given in wood and metal carving, sewing, cutting and fitting, as well as other mechanical studies. In the basement are well-lighted lunchrooms for the boys and girls; also rooms for the janitors and others who will reside permanently on the premises. There is also some additional space which may be utilized for classrooms or shops that may hereafter be required or found desirable. All the departments of machinery will receive motive power from a seventy-five horse power horizontal engine, which, together with the boilers, will be of the most approved pattern.

We intend to give the whole subject for which this college is founded, a thorough examination, and will report from time to time, the success, attending the efforts of those who are so nobly endeavoring to prepare the youth of both sexes to be worthy of the future government of the country's affairs.

CORPS OF TEACHERS.

The following named are those selected to preside over the various departments: James G. Kennedy, President; Mrs. Mary E. Arnold, Vice President and Superintendent of Girls' Department: Mr. A. T. Bruegel, M. E. Professor of Mathematics, Mr. Harold Howard, Professor of Modern Languages; Miss M. Van Vleck, M. I. A., Teacher of Industrial Art in Girls' Department; Miss Francis Hotchkinson, Teacher of English; Mr. J. M. Stockman, Teacher of Woodwork. Mr. G. A. Merrill, B. S., Prof. Sciences.



Good Hardware.

WE are pleased to notice an increased demand for good hardware for public buildings and residences on this coast. For the past few years there has been but little attention given to this feature of building—there being so little said in the specifications regarding it. The builder has had but little difficulty in finding locks, etc., good enough to meet the demands of his contract, his greatest difficulty has been to find them cheap enough, as for instance the architect specifies, "Mass face locks," the builder can buy them for $3 00 to $3 50 per dozen. Now any one with the average amount of common sense knows that 25 or 30 cents will not buy a lock fit to put into a door. Yet this has been one of the best markets in the United States for that class of house hardware. But property owners from past experience are becoming convinced of the importance of using a higher grade, not only of locks but of "Butts Knobs," and see that constitutes the interior hardware of a building and are treating it as they do any other feature of the structure by going personally and informing themselves in regard to the points of excellence and durability of the different styles and manufactures.

Dunham, Carrigan & Hayden Co. are taking the lead in the matter of urging the use of better goods. They have fitted up a "Bronze sample room," furnished in panels of polished woods representing the products of all parts of the world, particularly California. It would be difficult to find a more beautiful or extensive display of native woods than that which they have introduced into their room.

On these panels they have exhibited a complete line of Hopkins & Dickinson Manufacturing Co's newest designs of bronze hardware, the prominent styles "Colonial," "Grecian" rope molding, "Fluted," French" and "Italian Renaissance" are very handsome, and mark the best? of an entirely new idea in the adaptation of interior hardware to the style of architecture and inside finish, harmony and contrast, as to color, size, shape, etc. All these are shown in "Bronze," "Oxidized Silver," "Antique Brass," "Steel," "Old Copper" and "Bower Barff."

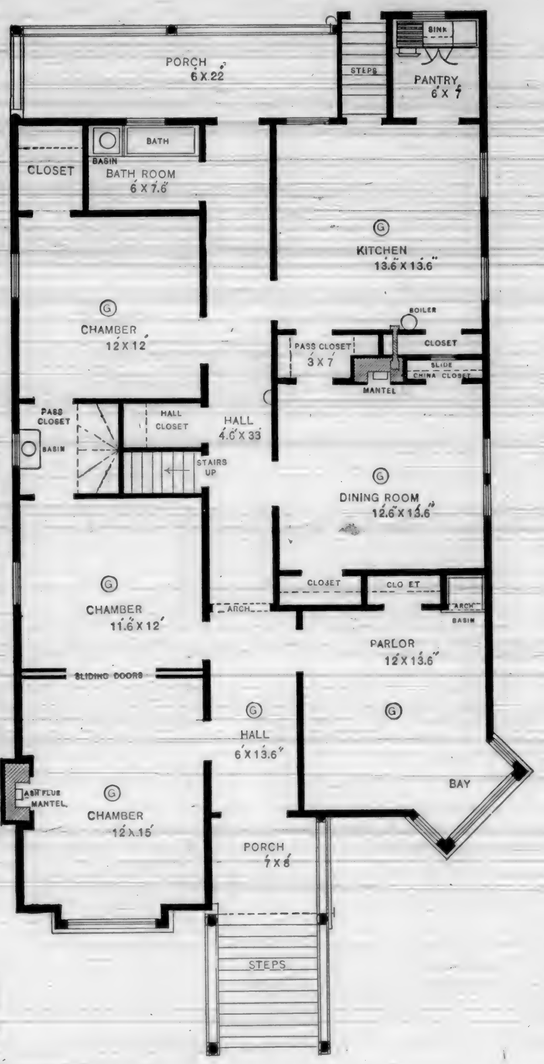
This room is fitted up extensively for the use of architects and builders who desire to take their patrons there and make selections or obtain ideas, and for those building or contemplating building. The room is always open to such, and so valuable an assistance as this to a proper choice of one of the most important features of building ought to be appreciated, and we are sure will.

Among the latest important inventions we notice Hopkins & Dickinson Manufacturing Co's new "office door cylinder locks," with the key above the knob, making key entrance easy. The key is very small and convenient to carry. These features, combined with the strength and durability of the lock, renders it most desirable for office buildings. Another fine thing is their new "hotel communicating door lock," hand made, and of the best quality.

Dunham, Carrigan & Hayden Co. cordially invite all who are interested in building to visit this department, assuring them that all specialties and novelties in their line will be exhibited in the most practical manner possible.

The Iron Age.

The paper read before the San Francisco Chapter, A. I. A., by G. H. Sanders, was ordered printed in full in the California Architect. The utmost dispatch was used in preparing the engravings, but, although we delayed publication for a few days of this issue, we found it impossible to present the paper in the artistic manner desired. So, reluctantly, we are compelled to delay the printing the "Iron Age" until our next issue. It will be the best illustrated article that has ever appeared in this Journal.



Plan of "Rio Dell Cottage."

The MAY NUMBER of this Journal will be the best illustrated issue ever presented.

SUBSCRIBE NOW.

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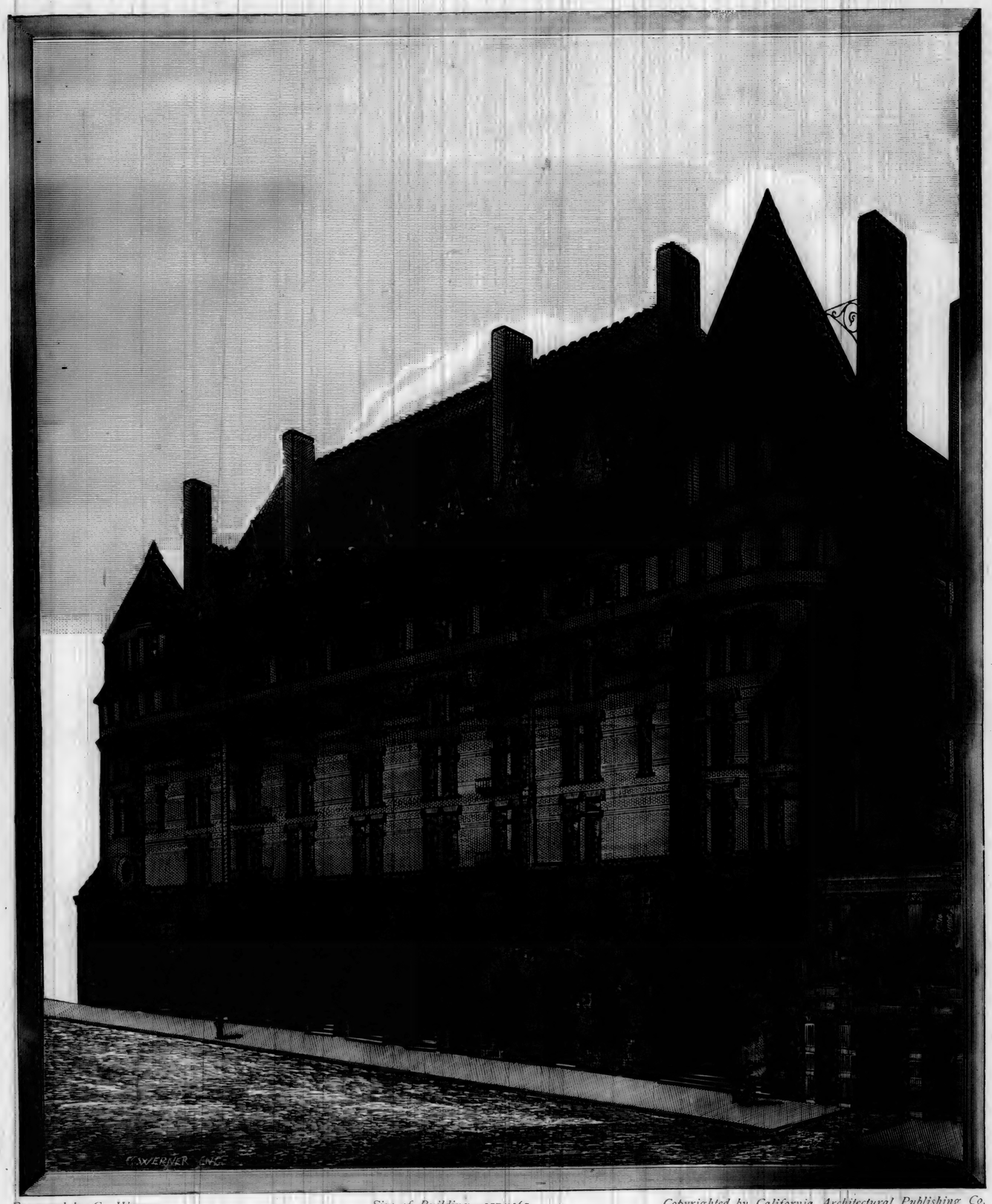
Elevation and Details of "Rio Dell Cottage."

For Plan, See Inside Page.



Engraved by G. Werner. *Size of Building—157x165.* *Copyrighted by California Architectural Publishing Co.*

THE NEW CALIFORNIA THEATRE AND HOTEL.

Architect—J. M. WOOD, Chicago.

Owner, MRS. KATE M. McDONOUGH. *Interior Wood Work furnished by KRELING & SONS.*

Iron Work furnished by JOSHUA HENDY MACHINE WORKS.

Terra Cotta Work furnished by GLADDING, McBEAN & CO. *Cut Stone furnished by O. E. BRADY*

Electroliers furnished by California Gas Fixture Co.

"Root" Boilers furnished by Geo. H. TAY & CO. *Plaster Decorations furnished by KELLETT & McMURRAY.*

MATHER ELECTRIC CO. furnish the Electric Light Plant.

Decorations furnished by SPIERLING & LINDEN. *Plumbing Work by DAVID BUSH.*

C. F. WEBER & CO. furnish Opera Chairs and Brass Work.

W. J. SLOANE & CO. supply the Carpets, Draperies and Furniture. *Wrought Iron Work by W. J. BRADY.*

Established Jan. 1879. *Incorporated Jan. 1889.*

THE

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New Era in Redwood Lumbering.

AN experiment was tried at Balcom & Gibbard's Excelsior mill a short time ago, the result of which is certain to bring about a new era in the manufacture of redwood lumber. The subject of kin-dried redwood for long shipments by rail has been a matter of discussion for a long time, and various projects, more or less expensive and extensive have been formulated, but not put to working test. The most practical idea heretofore was the maintenance of great lumberyards in the southern end of the state, where the lumber was to be season dried, but this incurred the keeping up of immense stocks, the cost of handling several times and consequent waste; but the project was never extensively entered into. The experiment we refer to will displace all former projects. For the requirements of their factory, Messrs. Balcom & Gibbard have set up a dryer, and a short time ago they placed in the dryer a thousand feet of redwood, fresh from the saw, some of it sawed from sunken logs, and turned on a blast of 220 degrees heat. The object was to test the resistance of redwood against checking by a high degree of heat. The blast was kept up 58 hours, and the lumber was taken out in 72 hours time, the brightest and cleanest redwood that was ever seen, without the slightest suspicion of a check. The lumber upon being placed in the dryer weighed 3,580 pounds, and upon coming out weighed 1,922 pounds, 1,658 pounds of moisture, or nearly one-half of the weight of lumber had been dried out in a little over two days, leaving the lumber in a perfect state as to brightness and grain. It is true that the practice of dryiug shingles for transportation has obtained for some time past, but now the movement toward kiln-dried lumber is likely to become general, and the operation will just about double the chances for railroad shipments, and the cost for drying is reckoned at from 50 cents to $1,00 per 1,000 feet. The Excelsior Redwood Company has already received dryers, double and single, to the extent of nine rooms, which are to be set up at once, and which will be equal to nearly one-half the output of the mill. Other mills are following in the same line. Thus it being worked another revolution in the manufacture and shipment of redwood lumber which can never be applied to other timber in so successful a manner, for the same degree of heat applied to any other kind of lumber than redwood would check or warp it entirely out of recognition. This preparation of redwood will open to it many new avenues to profitable markets.—*Eureka Watchman.*

"PICTURESQUE CALIFORNIA HOMES."

A large work containing numerous designs of California Country Architecture.

Price, - - - - $3.50

San Francisco Will Manufacture Saw Mill Machinery.

The "Vulcan" Foundry of this city is enlarging its base of operations and is reaching out to control its share of the manufacture of lumber machinery.

The Sanhedrin Mill & Lumber Company have recently contracted with the Vulcan Iron Works for the machinery for their new saw mill to cut about 50,000 feet of lumber per day; and have also selected a 60-inch heavy "Vulcan" Gang Edger, a set of heavy "Vulcan" Fractional Screw Head Blocks, also an 8x10, "Campbell" Steam Feed.

There is no reason why the "Vulcan" and the other foundries, should not absolutely control the manufacture of saw mill machinery on this coast. We propose to do what we can to this end

"From East to West."

We have received from Samuel Cabot of Boston, a copy of his book of sketches as above entitled. It contains beautiful designs of architecture as exemplified principally by New York and Boston talent. The names are given on each sketch shown, and certainly they embrace those who stand at the head of their profession. All the houses shown have been actually stained with creosote stains, manufactured by Mr. Cabot. The effect is very pleasing. Mr. Cabot proposes to thoroughly introduce these stains on this coast and has appointed T. J. Bass & Co. as his agents. Mr. Cabot proposes to print new editions of this work every few months and we can safely say that California will be represented in the next edition.

To stain brick red, melt one ounce of glue in a gallon of water; then add a piece of alum as large as an egg, one-half pound of Venetian red and one pound of Spanish brown; redness or darkness is increased by using more red or brown. For coloring black, heat the brick and dip in fluid asphaltum or in hot linseed oil and asphalt.

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H. MAACK, Principal.

CITY BUILDING NEWS.

Alabama near Twenty-fifth alterations, for owner, Ed. F. Drew; architets, M. J. Welsh; cost, $,1626; signed, March 6; filed, March 7; limit, 70 days; $400 framed; $400 brown coated; $400 completed; $426, 35 days.

Bluxome near Sixth, one-story brick warehouse. Owner, Thos Magee; architect, Chas. I. Havens; contractor, Wm. M. Fletcher; cost, $10,050; signed, March 4; filed, March 6; sureties, J. F. Kennedy; limit, 40 days; $3,050 walls ready for rafters; $4,000 completed; $3,000, 35 days.

Buchanan and O'Farrell, three-story frame; Owner, Robt. Lorentz; architect, W. Winterhalter; contractors, Borstel and Conrad; cost, $7,995; signed March 1; filed, March 5; sureties, Chas. F. and Frank P. Doe; limit, 90 days; $2,000 framed; $1,995 roofed; $2,000 completed; $2,000, 35 days.

Broderick near Hayes, two-story frame. Owner, Nancy C. Lehman; architect, Geo. Houston; contractor, Geo. Houston; cost, $3,000; signed, Feb. 27; filed, March 4; limit, 100 days; $750 shingles on; $750 brown coated; $750 doors and windows in; $750, 35 days.

Broadway near Leavenworth, tenement; owner, Bridget Fitzgerald; architect, Sam'l. Newsom; contractor, John Doherty; cost, $2,500; signed, March 19; filed, March 20; $375 framed; $375 roofed; $375 white mortar; $375 outside primed; $375 completed; $625, 35 days.

Broderick, near Washington, two-story and basement, frame. Owner, R. W. Hill, architects, Percy & Hamilton, contractor, R. O. Chandler, amount, $5,079, signed, March 18, filed, March 25, limit, 90 days, first Saturday of each month 75 per cent. of value of work done, balance, 25 per cent., 35 days.

Broadway near Pierce, two-story frame. Owner, Fred. E. Sharkey; architects, J. J. and T. D. Newsom; contractor, A. E. Aldridge; cost, $3,500; signed, March 6; filed, March 9; sureties, Harry Downey, John Felix and F. C. Eisen; $1,000 limit, 110 days; $500 framed; $800 outside work done; $600 plastered; $655 completed; $895, 36 days.

Broderick, near Fourteenth, frame. Owner, E. G. Cook; architect, John Marquis; contractor, Richard Mowry; amount, $4,500; signed, March 26; filed March 29; $843 chimneys up; $843 ready to lath; $843 outside finish on; $843 completed; $1,128, 35 days.

Block 595, Western Addition, fence, grand stand, band stand. Owner, John F. Bragg; contractor, Alex J. Wheeler; amount, $2,700; sureties, Lewis B. Haines and Frank Gardiner; signed, March 28; filed, March 30; limit, April 15, '89; April 6, '89, $75; April 13, '89, $675; April 16, '89, $675; May 16, '89, $675.

California near Larkin, carpenter work for three-story frame. Owner, C. Franzoe; architect, Wm. Mooser; contractor, G. Damkroeger; cost, $3,875; signed, March 15; filed, March 16; sureties, H. Mattern and W. J. Trott, $2,000; limit, 90 days; 75 per cent. of work done, balance 25 per cent. 35 days after.

Castro, north of Fifteenth, two-story frame. Owner, Wm. Buescher; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, $3,705; signed, April 1; filed, April 3. limit, June 20, '89; $926 25 framed; $926 25 brown mortared; $926 25 white mortared; $926 25, 35 days.

Clinton, near Bryant, alterations. etc. Owner, Mrs. F. P. Perry; architect, John J. Clark; contractor J. McCarthy; amount, $2,675; sureties, Blythe and Trott and John Coop, $2,600; signed, March 29; filed March 30; limit, 60 days; $600 enclosed; $600 brown mortared; $600 inside finished; $875, 35 days.

California and Front, artificial stone work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, Geo. Goodman; cost, $1,425; signed March 1; filed March 7; sureties, Jno. J. Mahoney and Calvin Nutting $1,425; limit without delay; 75 per cent. as work progresses; balance 35 days.

Devisadero near Washington, plumbing. Owner, Mrs. M. A. Rainey; architect, T. J. Welsh; contractors, Fritz & Kean; cost, $1,350; signed, March 4; filed, March 5; $475 rough if finished; $475 finished; 400, 35 days.

Devisadero near Washington, four frames. Owner, Mrs. M. A. Rainey; architect, T. J. Welsh; contractor, John Blake; cost, $14,284; signed, Feb. 26; filed, March 5; limit, 90 days; $2,500 first story joists up; $2,500 framed; $2,200 brown mortar; $1,250 white mortar; $1,250 completed; $4,284, 35 days.

Dale Place, near Golden Gate Avenue, three-story frame. Owner, C. T. A. Langerman; architect, A. J. Barnett; contractors, C. N. Smith and Wm. J. Simon; cost, $3,358; signed, March 12; filed, March 15; sureties, Wm. Simon, $2,000; limit, 90 days; $800 roof boards on; $850 front finish on; $868 completed; $840, 35 days.

Devisadero, between Hayes and Fell, two-story double flat. Owner, A. L. Edwards; architects, J. C. Matthews & Son; contractors, Maloney & Shay; cost, $3,953; signed, March 11; filed. March 14; limit, June 1, '89; 75 per cent. from time to time as work progresses, balance, 30 days after.

Devisadero near Hayes, two-story frame. Owner, Jas. Weba: architect, M. J. Welsh; contractor, J. H. McKay; cost, $3,840; signed, March 18; filed, March 20; $960 framed; $960 brown mortar; $960 finished; $960, 35 days.

Devisadero near Ridley, two-story frame. Owner, Marion O. Hall; architects, Huerne & Everett; contractor, John Martin; cost, $3,825; signed, March 20; filed, March 21; sureties, Frank P. Latson and Ja's. W. Wesson, $3,825; $956,25 sheathed roof; $956,25 brown mortar; $956,25 completed; $956,25, 35 days.

Dolores, between Fifteenth and Sixteenth, two-story frame. Owner, J. M. Peoples; contractor Geo. Houston; cost, $3,123; signed, March 27; filed, April 2; $775 shingled; $775 brown mortared; $775 windows in place; $798, 35 days.

Dupont, north of San Francisco, two-story frame. Owner, L. Malatesta; architect, Wm. Mooser; contractor, E. Idraigero; cost, $3,170; signed, March 30; filed, April, 5; sureties, J Peralto and D. Perrago, $1,600; limit, 75 days; 75 per cent. as work is done; balance, 25 per cent. 35 days.

Ellis and Jones, plumbing. Owner, Mrs. A. E. Luhrs; architects, Pissis & Moore; contractors, Sweeney & Kearns; cost, $1,100; signed, March 7; filed, March 8; $400 rough work done; $425 completed; $275, 35 days.

Ellis and Jones, additions, etc. Owner, Mrs. A. E. Luhrs; architects, Pissis & Moore; contractors, Moore Bros., cost, $10,900; signed, March 7; filed, March 8; $1,500 foundations up; $1,500 framed; $1,500 first plaster; $1,500 interior plastered; $1,500 ready to paint; $500 accepted; $2,900, 35 days.

Eddy and Laguna, two-story frame. Owner, August Koerber; architect, H. Geilfuss; contractors, Von Borstel & Conrad; cost, $4,695; signed, March 20; filed, March 23; limit, 80 days; $820 framed; $900 partitions set; $900 white coated; $900 completed; $1,175, 35 days.

Erie, south of Mission, three two-story frames. Owner, Wm. Ede; architect, A. J. Barnett; contractor, O. E. White; cost, $6,000; signed, March 28; filed, April 4; surety, Chas. F. Doe, $3,000; limit, three months after foundation walls are completed; $1,500 main roof on; $1,500, outside finish on; $1,500, completed; $1,500, 35 days.

Fair Oaks, south of Twenty-second, building. Owner, L. J. Evans; architect, S. Hatfield; contractor, P. F. Lynch; cost, $4,418; signed, April 1; filed, April 2; surety, W. J. Adams $3,000; limit, 70 days; $913 50, roof on; $800 floors laid; $800, plastering finished; $800, completed; $1,105 50, 35 days.

Front, corner California, painting. Owner, Moses Rosenbaum; architect, Salfield and Kohlberg; contractor, J. F. Sullivan; cost, $840; signed, March 1; filed, April 4; sureties, Thos. Winters and P. M. Wellon $840. 75 per cent. as work progresses, in monthly payments; balance, 25 per cent., 35 days.

Front, corner California, terra cotta work. Owner, Moses Rosenbaum; architect, Salfield and Kohlberg; contractors, Gladding, McBean & Co.; cost $750; signed, March 9; filed, April 4; limit, without delay; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

Front and California, glazing, etc. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, F. H. Rosenbaum & Co; cost, $2,125; signed, March 6; filed, March 7; limit without delay; 75 per cent. when glass is set and accepted; balance 25 per cent. 35 days.

Front and California, plastering. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, C. C. Moorehouse; cost, $2,340; signed, March 1; filed, March 7; sureties, John Tuttle, $2,340; limit without delay; $1,150 brown coated, $600 accepted; $590, 35 days.

Front and California, sewerage and plumbing. Owner, Moses Rosenbaum; architects. Salfield & Kohlberg; contractors, Fritz & Kean; cost, $2,000; signed, March 1; filed, March 7; limit without delay; $1,000 rough plumbing in; $500 accepted; $500, 35 days.

Front and California. galvanized iron and tinning. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, Jos. Porderer; cost, $1,125; signed, March 1; filed March 7; 75 per cent. of work progresses; balance, 35 days.

Front and California, cast and wrought iron work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, Phoenix Iron Works; cost, $2,110; signed, March 1; filed, March 7; limit without delay; 75 per cent. as work progresses; balance, 25 per cent. 35 days.

Front and California, cut stone work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, McGowan & Butler, et al; cost, $12,750; signed, March 6; filed March 7; sureties, C. A. Warren and C. S. Holmes $12,750; limit without delay; 75 per cent. as work progresses; balance 35 days; payments on 1st of each month.

Front and California, carpenter work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, A. Jackson; cost, $10,000; signed, Feb. 28; filed, March 7; sureties, Chas. & Frank P. Doe $10,500; 75 per cent. as work progresses on 1st of each month; balance 25 per cent., 35 days.

Front and California, moving old building and brick work for new one. Owner, Moses Rosenbaum; arcbitects, Salfield & Kohlberg; contractor, John McCarthy; cost, $13,475; signed, Feb. 2 ; filed, March 7; sureties, Richard J. McCann and Thos. C. Riddell $13,275; limit, 100 days; 75 per cent. on completion of each story; 25 per cent., 35 days

Fillmore and Germania, two-story frames; Owner, Mrs. A. C. Stohlmann; architect, E. John; contractors, Von Borstel & Conrad; cost, $4,794; signed, March 15; filed, March 18; $1,000 framed; $1,500 rough mortared; $1095,50 accepted; $1198,50, 35 days.

Fell and Broderick, two-story and basement frame. Owner, B. E. Henriksen; architect, B. E. Henriksen; contractor, Robt. Currie; cost, $5,600; signed, March 21; filed, March 21; $1,050 roofed; $1,050 brown coated; $1,050 white coated; $1,050 trimmings on; $1,400; 35 days.

Golden Gate Avenue, near Lyon, frame dwelling. Owner, Mac. C. Madden; architect, T. J. Welsh; contractor, C. E. Dunshee; cost, $3,800; signed, March 13; filed, March 14; limit, 90 days; $315 framed; $2,000 white coated; $500 completed; $985, 35 days after.

Golden Gate Avenue near Jones, alterations in four brick buildings now being erected. Owner, Lizzie W. Mofatt; architect, Chas. I. Havens; contractor, Chas. C. Terril; cost, $10,667.50; signed, March 16; filed, March 18; installments on 15th of each month in sums of 75 per cent., balance, 35 days.

Howard, near Twentieth, building. Owner, Sarah Miller; architect, T. J. Welsh; contractor, James McInerney; amount, $5,195; surety, J. J. McKinnon $3,000; signed, March 26; filed, March 29; limit, 90 days; $974 framed; $974 brown mortared; $974 white mortared; $974 finished; $1,299, 35 days.

Howard, corner Mary, building. Owner; James L. Fallon; architect, John J. Clark; contractor, John G. Adams; amount, $7,950, sureties, E. W. Hannon and Fabian Joost; $7000; signed March 5; filed March 28, limit, 100 days; $1,980 framed; $1,980 brown mortared; $1,980 inside finished; $2,010, 35 days.

Hayes, near Broderick, building. Owner C. B. Hawley; architect, Charles I. Havens; contractor, Dan Chisholm; amount, $7,799; signed, March 25; filed, March 28; $1,299 enclosed; $1,500 brown mortared; $1,500 hard finished; $1,500 completed; $2,000, 35 days.

Hermann. near Jessie, three-story frame. Owner, Christina Miller; architect, A. J. Barnett; contractor, Brennan Bros.; amount, $5,660; sureties, J. J. McKinnon and D. J. Preston, $3,000; signed March 25; filed March 28; limit, 100 days; $1,160 roof on; $1,000 brown mortared; $1,000 outside finished; $1,000 completed; $1,500, 35 days.

Howard and East, foundation for road bed, Owners, Omnibus Cable Co; architect, Engineer of Co; cost, $2,050; signed, March 8; filed, March 11; limit, 30 days; 75 per cent. as work progresses, balance 25 per cent., 35 days after.

Henry near Noe, building. Owner, P. Conlin; architect. T. J. Welsh; contractor, James McInerny, cost, $2.000; signed, March 11; filed, March 15; sureties, P. F. Ward and J. J. McKinnon, $1,500; $500 framed; $500 brown mortar; $500 completed; $500, 35 days after.

Haight, between Steiner and Pierce, three-story frame. Owner, August Kenerleber, et al; architect, R. Zimmermann; contractor Adam Miller; cost, $5,100; signed, March 2 filed, March 19; $1,000 framed; $1,000 enclosed; $1,000 rough mortared; $1,000 completed; $1,100, 35 days.

Haight near Gough, addition for a market. Owner, A. P. Hotaling; architect, Wm. Mooser; contractors, Norton & Perry; cost, $3,250; signed, March 21; filed, March 23; limit, 70 days; 75 per cent. as work progresses, balance 25 per cent., 35 days.

Howard, Nos. 1713, 1715, 1719, brick foundations. Owner, James Phelan; architect; Jno. Marquis; contractor, Martin Fennel; cost. $1,845; signed March 23; filed, March 23; limit, 50 days; $354 No. 1719, finished; $343, 1717 finished, $343, 1715 finished; $343, 1713 finished; $452, 35 days.

Henry near Sanchez, two-story frame. Owner, Henry Harms; architect, J. E. Krafft; contractor, J. W. Smith; cost, $3,157; signed, March 6; filed, March 9; limit, 70 days; $750 enclosed; $750 brown mortared; $857 completed; $800, 35 days.

Hayes near Gough, building. Owner, Philip Pasener; architects, Salfield & Kohlberg; contractors, Martin & Maguire; cost, $6,000; signed, March 15, filed, March 18; sureties, Frank P. Latson and J. W. Welsh $6,000; limit, 100 days; $1,000 framed; $1,000 brown mortared; $1,000 inside finished; $1,500 accepted; $1,500, 35 days.

Hayes near Buchanan, two-flats. Owners, John Boyd and wife; architects, Donovan & Williams; contractors, Donovan & Williams; cost, $4,625; signed, Feb. 26; filed, March 7; sureties, Preston & McKinnon, $2,000; limit, July 1, '89; $1,000 enclosed; $800 brown coated; $600 white coated; $1,025 completed; $1,200, 35 days.

Haight, west of Steiner, two-story frame. Owner, Jos Bock; architect, A. J. Barnett; contractor, Rountree Bros.; cost, $6,700; signed, April 2; filed, April 4; sureties, Behrend Joost and W. A. Meeker $3,500; limit, 100 days; $1 525, roofed; $1,000 brown coated; $1,500 white coated; $1,000, completed; $1,675, 35 days.

Haight corner of Laguna, two story frame. Owner, Gustave F. Schmidt and wife; architect, Wm. T. Commary; contractor, Wm. T. Commary; cost, $7,870; signed, April 1; filed, April 5; $1,900, framed; $1,400, sashes fitted; $1,200, basement done; $1,042, ready to paint; $360, completed; $1,968, 35 days.

Howard, north of Fifteenth, three story frame. Owner, F. G. Gerhard; architect, Henry Geilfuss; contractor, H. J. Weiss; cost, $3,857, signed, April 4; filed, April 6; $600, roofed; $600 partitions set; $657, completed; $2,000, 35 days.

Haight, between Scott and Devisadero, two-story frame. Owner, Jos. M. Kane; architects, Schmidt & Shea; contractor, Wm. Pluns; cost $4,700; signed, April 4; filed, April 6; sureties, F. and B. Joost; $800 rustic on; $900 rough plumbing in; $900 hard finished; 900 completed; $1,200, 35 days.

Jackson, corner Broderick, carpenter work. Owner, J. Dupuy; architect, Wm. Mooser; contractor, M. C. Lynch; cost, $3,500; signed, April 3; filed, April 4; sureties, John Lewis and P. Swift; $2,000; $2,000 third story joists laid; $2,000 iron work on; $2,000 yard work finished; $2,098 ready to paint; $2,700, 35 days.

Jackson, near Webster, brick and carpenter work. Owner, Carl Walliser; architect, Wm. Mooser; contractor, Geo. J. Doering, amount, $3,083 signed, March 23, filed March 25, limit, 100 days, 75 per cent. as work progresses, balance, San Jose and vicinity. [From our Special Correspondent.] 25 per cent., 35 days.

Jackson near Laguna, building. Owner, Mrs. W. F. DeForest; architect, Samuel Newsom; contractor, George R. Lang; cost, $5,650; signed, March 18; filed, March 20; $350 framed; $500 roofed; $1,000 white mortared; $1,000 outside primed; $1,200 completed; $1,600, 35 days.

Laguna and Washington, building. Owner, Matilda L. Castle; architect. W. J. Mathews; contractors, Knight & Littlefield; cost, $10,194; signed, March 6; filed, March 19; limit, July 10, '89; 75 per cent. as work progresses, balance 25 per cent. 35 days.

Laussat, between Fillmore and Steiner, two-story building. Owner, M. McIntyre; architect, Wm. Mooser; contractor, D. Chisholm; cost, $2,000; signed, March 11; filed, March 13; sureties, F. Joost; limit, 60 days; 75 per cent. in proportion to work done, balance, 25 per cent., 35 days after.

Leavenworth near Clay, three-story frame. Owner, Isaac L. Hofmann; architects, C. R; & J. M. Wilson; contractor, F. V. Steinman. cost, $8,400; signed; March 7; filed, March 7; $2,000 framed; $1,000 enclosed; $1,000 brown coated; $1,000 white coated; $1,300 completed; $2,100, 35 days.

Lafayette, south of Minna, three-story frame. Owner, Jos. A. Cruza; architect, H. Geilfuss; contractor, John Foster; cost, $5,500; signed, March 19; filed April 5; sureties. John Smith and Wm. Swift, $3,000; $1,100 framed; $1,000 brown coated; $1,000 white coated; $1,000 completed; $1,400, 35 days.

McAllister near Lyon, building. Owner-F. P. Adams; architect, B. E. Henriksen; contractor, Louis Helbing; cost, $4,100; signed, March 21; filed, March 21; $768 roofed; $769, brown coated; $769 white coated; $769 trimmings on; $1,025, 35 days.

Market, northeast City Hall avenue, plumbing. Owner, Margaret Lynch; architect, Jas. E. Wolfe; contractor, E. Wolfe; cost, $1,040; signed, March 22; filed, April 2; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

Market, northeast City Hall avenue, plumbing. Owner, G. G. Burnett; architect, Jas. E. Wolfe; contractor, E. Wolfe; cost, $1,875; signed, March 22; filed, April 2; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

McAllister, east Scott, two-story frame. Owner, H. W. Frank; architect, Charles I. Havens; contractor, John G. Adams; cost, $5,725; signed, April 2; filed, April 3; $1,000 enclosed; $1,000 brown coated; $1,000 hard finished; $1,225 completed; $1,500, 35 days.

Market, between Sixth and Seventh, elevator work for foundation. Owner, Joseph Rosenthal; arctitects, Salfield & Kohlberg; contractors, Wm. H. Birch & Co.; cost, $5,300; signed, January 28; filed, April 4; 40 per cent. of work accomplished at end of each month; balance, 35 days.

Ninth and Harrison, three-story frame. Owner, Michael Bohanan; architect, T. J. Welsh; contractor, James F. Logan; cost, $5,387; signed, March 8; filed, March 11; limit, 90 days; $996 framed; $996 brown mortared; $996 white mortared; $999 finished; $1,400, 35 days.

No. 2615 California street, additions. Owner, E. A. Selfridge; architects, Schulze & Meeker; contractor, Wm. Winnie; cost, $2,270; signed, March 28; filed, April 1; sureties, Nathan Rosenberg and V. Z. Horton, $750; limit, June 15, '89; $900 roofed; $802 completec; $568, 35 days.

No. 1516, Twenty-Fourth, alterations. Owner, Susie Solomon; architect, James H. Humphreys; contractors, Lehnhard & Jeffrey; cost, $1,900; signed, March 2; filed, March 5; sureties, Isidore Asch and Niehaus Bros. & Co. $1,900; limit, May 2, '89; $475 floors laid; $475 brown coated; $475 completed; $475; 35 days.

O'Farrell, corner Buchanan, painting. Owner, Robert Lorentz; architect, W. Winterhalter; contractor, Frederick Schaefer; amount, $680; signed, March 23; filed, March 29; limit, 12 days; $180 outside two coats and roof, one coat; $320 completed; $180, 35 days.

O'Farrell and Leavenworth, alterations, etc. Owner, Wm. Schehr; contractor, G. W. Hansbrough; cost, $4,200; signed, March 8; filed, March 9; sureties, W Edwards and Jno. F. Taylor; $1,000 framed; $1,000 brown mortar. $1,000 white mortar; $1,200 completed.

Post, corner Jones, plumbing, etc. Owner, Thomas Lundy; architect, T. J. Welsh; contractor, R. Vance; amount, $1,389; signed, March 30; filed, March 30; $600 pipes in; $389 completed; $400, 35 days.

Post, near Polk, building. Owner, L. Kutner; architect, W. H. Armitage; contractor; J. W. Wissinger; amount, $4,975: sureties, Reese Llewellyn, $4,000; signed, March 13; filed March 29; limit, 100 days; $1,200 framed, $1,200 brown mortared; $1,200 completed, $1,375, 35 days.

Page, near Fillmore, brick and carpenter work. Owner, J. G. Bloomer; architect, James E. Wolfe; contractor, John J. Dunn; amount, $3,772, surety, C. S. Holmes, $1,000: signed, March 21, filed, March 28, $820 framed, $720 brown mortared, $720 standing finish; $569 completed $943, 35 days.

Pine near Baker, one-story frame. Owner S. P. Taylor and wife; architect, G. G. Gilles; pie; contractor, G. G. Gillespie; cost, $2,400-signed, March 4; filed. March 6; $450 framed, $450 brown coated; $450 white coated; $450 completed; $600, 35 days.

Post, between Hyde and Larkin, brick and carpenter work. Owner, Bernard Miller; architects, Salfield & Kohlberg; contractors, Fuchs & Bucher; cost, $8,494; signed, March 12; filed, March 18; sureties, G. H. Woerz and M. Schwab, $8,494; limit, 100 days; $1,500 framed; $1,000 roofed; $1,500 brown mortar; $1,000 doors hung; $1,344 accepted; $2,150, 35 days.

Post, between Hyde and Larkin, plumbing, etc. Owner, Bernard Miller; architects, Salfield & Kohlberg; contractors, Sam'l. Inkelheimer & Bro.; cost, $657; signed, March 12; filed, March 18; $300 when rough work is done; $375. 35 days after.

Pine, east Lyon, building. Owner, Anna R. McPhee; architect, S. Hatfield; contractor, Allan McDonald; cost, $3,785; signed, March 30; filed April 2; sureties, Frank P. Latson and J. J. McKinnon $2,500; limit, 69 days; $800 roof on; $679 first coat of mortar on, etc.; $679 windows in; $680 completed; $947, 35 days.

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FIRE BRICK AND FIRE CLAY.
106 MARKET STREET,
San Francisco.

Broderick, near Fourteenth, frame. Owner, E. G. Cook; architect, John Marquis; contractor, Richard Mowry; amount, $4,500; signed, March 26; filed March 29; $843 chimneys up; $843 ready to lath; $843 outside finish on; $843 completed; $1,128, 35 days.

Block 595, Western Addition, fence, grand stand, band stand. Owner, John F. Bragg; contractor, Alex J. Wheeler; amount, $2,700; sureties, Lewis B. Haines and Frank Gardiner; signed, March 28; filed, March 30; limit, April 15, '89; April 6, '89, $75; April 13, '89, $675; April 16, '89, $675; May 16, '89, $675.

California near Larkin, carpenter work for three-story frame. Owner, C. Franzoe; architect, Wm. Mooser; contractor, G. Damkroeger; cost, $3,875; signed, March 15; filed, March 16; sureties, H. Mattern and W. J. Trott, $2,000; limit, 90 days; 75 per cent. of work done, balance 25 per cent. 35 days after.

Castro, north of Fifteenth, two-story frame. Owner, Wm. Buescher; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, $3,795; signed, April 1; filed, April 3. limit, June 20, '89; $926 25 framed; $926 25 brown mortared; $926 25 white mortared; $926 25, 35 days.

Clinton, near Bryant, alterations. etc. Owner, Mrs. F. P. Perry; architect, John J. Clark; contractor J. McCarthy; amount, $2,675; sureties, Blythe and Trott and John Coop, $2,600; signed, March 29; filed March 30; limit, 60 days; $600 enclosed; $600 brown mortared; $600 inside finished; $875, 35 days.

California and Front, artificial stone work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, Geo. Goodman; cost, $1,425; signed March 1; filed March 7; sureties, Jno. J. Mahoney and Calvin Nutting $1,425; limit without delay; 75 per cent. as work progresses; balance 35 days.

Devisadero near Washington, plumbing. Owner, Mrs. M. A. Rainey; architect, T. J. Welsh; contractors, Fritz & Kean; cost, $1,350; signed, March 4; filed, March 5; $475 rough if finished; $475 finished; 400, 35 days.

Devisadero near Washington, four frames. Owner, Mrs. M. A. Rainey; architect, T. J. Welsh; contractor, John Blake; cost, $14,284; signed, Feb. 26; filed, March 5; limit, 90 days; $2,500 first story joists up; $2,500 framed; $2,200 brown mortar; $1,250 white mortar; $1,250 completed; $4,284, 35 days.

Dale Place, near Golden Gate Avenue, three-story frame. Owner, C. T. A. Langerman; architect, A. J. Barnett; contractors, C. N. Smith and Wm. J. Simon; cost, $3,358; signed, March 12; filed, March 15; sureties, Wm. Simon, $2,000; limit, 90 days; $800 roof boards on; $850 front finish on; $868 completed; $840, 35 days.

Devisadero, between Hayes and Fell, two-story double flat. Owner, A. L. Edwards; architects, J. C. Matthews & Son; contractors, Maloney & Shay; cost, $3,953; signed, March 11; filed March 14; limit, June 1, '89; 75 per cent. from time to time as work progresses, balance, 30 days after.

Devisadero near Hayes, two-story frame. Owner, Jas. Weba: architect, M. J. Welsh; contractor, J. H. McKay; cost, $3,840; signed, March 18; filed, March 20; $960 framed; $960 brown mortar; $960 finished; $960, 35 days.

Devisadero near Ridley, two-story frame. Owner, Marion O. Hall; architects, Huerne & Everett; contractor, John Martin; cost, $3,825; signed, March 20; filed, March 21; sureties, Frank P. Latson and Ja's. W. Wesson, $3,825; $956,25 sheathed roof; $956,25 brown mortar; $956,25 completed; $956,25, 35 days.

Dolores, between Fifteenth and Sixteenth, two-story frame. Owner, J. M. Peoples; contractor Geo. Houston; cost, $3,123; signed, March 27; filed, April 2; $775 shingled; $775 brown mortared; $775 windows in place; $798, 35 days.

Dupont, north of San Francisco, two-story frame. Owner, L. Malatesta; architect, Wm. Mooser; contractor, E. Idralgero; cost, $3,170; signed, March 30; filed, April, 5; sureties, J Peralto and D. Perrago, $1,600; limit, 75 days; 75 per cent. as work is done; balance, 25 per cent. 35 days.

Ellis and Jones, plumbing. Owner, Mrs. A. E. Lulrs; architects, Pissis & Moore; contractors, Sweeney & Kearns; cost, $1,100; signed, March 7; filed, March 8; $400 rough work done; $425 completed; $275, 35 days.

Ellis and Jones, additions, etc. Owner, Mrs. A. E. Luhrs; architects, Pissis & Moore; contractors, Moore Bros., cost, $10,900; signed, March 7; filed, March 8; $1,500 foundations up; $1,500 framed; $1,500 first plaster; $1,500 interior plastered; $1,500 ready to paint; $500 accepted; $2,900, 35 days.

Eddy and Laguna, two-story frame. Owner, August Koerber; architect, H. Geilfuss; contractors, Von Borstel & Conrad; cost, $4,695; signed, March 20; filed, March 23; limit, 80 days; $820 framed; $900 partitions set; $900 white coated; $900 completed; $1,175, 35 days.

Erie, south of Mission, three two-story frames. Owner, Wm. Ede; architect, A. J. Barnett; contractor, O. E. White; cost, $6,000; signed, March 28; filed, April 4; surety, Chas. F. Doe, $3,000; limit, three months after foundation walls are completed; $1,500 main roof on; $1,500, outside finish on; $1,500, completed; $1,500, 35 days.

Fair Oaks, south of Twenty-second, building. Owner, L. J. Evans; architect, S. Hatfield; contractor, P. F. Lynch; cost, $4,418; signed, April 1; filed, April 2; surety, W. J. Adams $3,000; limit, 70 days; $913 50, roof on; $800 floors laid; $800, plastering finished; $800, completed; $1,105 50, 35 days.

Front, corner California, painting. Owner, Moses Rosenbaum; architect, Salfield and Kohlberg; contractor, J. F. Sullivan; cost, $840; signed, March 1; filed, April 4; sureties, Thos. Winters and P. M. Wellon $840. 75 per cent. as work progresses, in monthly payments; balance, 25 per cent., 35 days.

Front, corner California, terra cotta work. Owner, Moses Rosenbaum; architect, Salfield and Kohlberg; contractors, Gladding, McBean & Co.; cost $750; signed, March 9; filed, April 4; limit, without delay; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

Front and California, glazing, etc. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, P. H. Rosenbaum & Co; cost, $2,125; signed, March 6; filed, March 7; limit without delay; 75 per cent. when glass is set and accepted; balance 25 per cent. 35 days.

Front and California, plastering. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, C. C. Moorehouse; cost, $2,340; signed, March 1; filed, March 7; sureties, John Tuttle, $2,340; limit without delay; $1,150 brown coated, $600 accepted; $590, 35 days.

Front and California, sewerage and plumbing. Owner, Moses Rosenbaum; architects. Salfield & Kohlberg; contractors, Pritz & Kean; cost, $2,000; signed, March 1; filed, March 7; limit without delay; $1,000 rough plumbing in; $500 accepted; $500, 35 days.

Front and California. galvanized iron and tinning. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, Jos. Forderer; cost, $1,125; signed, March 1; filed March 7; 75 per cent. of work progresses; balance, 35 days.

Front and California, cast and wrought iron work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, Phoenix Iron Works; cost, $2,110; signed, March 1; filed, March 7; limit without delay; 75 per cent. as work progresses; balance, 25 per cent. 35 days.

Front and California, cut stone work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractors, McGowan & Butler, et al; cost, $12,750; signed, March 6; filed March 7; sureties, C. A. Warren and C. S. Holmes $12,750; limit without delay; 75 per cent. as work progresses; balance 35 days; payments on 1st of each month.

Front and California, carpenter work. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, A. Jackson; cost, $10,000; signed, Feb. 28; filed, March 7; sureties, Chas. & Frank P. Doe $10,500; 75 per cent. as work progresses on 1st of each month; balance 25 per cent., 35 days.

Front and California, moving old building and brick work for new one. Owner, Moses Rosenbaum; architects, Salfield & Kohlberg; contractor, John McCarthy; cost, $13,475; signed, Feb. 2 ; filed, March 7; sureties, Richard J. McCann and Thos. C. Riddell $13,275; limit, 100 days; 75 per cent. on completion of each story; 25 per cent., 35 days

Fillmore and Germania, two-story frames; Owner, Mrs. A. C. Stohlmann; architect, E. John; contractors, Von Borstel & Conrad; cost, $4,794; signed, March 15; filed, March 18; $1,000 framed; $1,500 rough mortared; $1095,50 accepted; $1198,50, 35 days.

Fell and Broderick, two-story and basement frame. Owner, B. E. Henriksen; architect, B. E. Henriksen; contractor, Robt. Currie; cost, $5,600; signed, March 21; filed, March 21; $1,050 roofed; $1,050 brown coated; $1,050 white coated; $1,050 trimmings on; $1,400; 35 days.

Golden Gate Avenue, near Lyon, frame dwelling. Owner, Mac. C. Madden; architect, T. J. Welsh; contractor, C. E. Dunshee; cost, $3,800; signed, March 13; filed, March 14; limit, 90 days; $315 framed; $2,000 white coated; $500 completed; $985, 35 days after.

Golden Gate Avenue near Jones, alterations in four brick buildings now being erected. Owner, Lizzie W. Mofatt; architect, Chas. I. Havens; contractor, Chas. C. Terril; cost, $10,667,50; signed, March 16; filed, March 18; installments on 15th of each month in sums of 75 per cent., balance, 35 days.

Howard, near Twentieth, building. Owner, Sarah Miller; architect, T. J. Welsh; contractor, James McInerney; amount, $5,195; surety, J. J. McKinnon $3,000; signed, March 26; filed, March 29; limit, 90 days; $974 framed; $974 brown mortared; $974 white mortared; $974 finished; $1,299, 35 days.

Howard, corner Mary, building. Owner; James L. Fallon; architect, John J. Clark; contractor, John G. Adams; amount, $7,950. sureties, E. W. Hannon and Fabian Joost; $7000; signed March 5; filed March 28, limit, 100 days; $1,980 framed; $1,980 brown mortared; $1,980 inside finished; $2,010, 35 days.

Hayes, near Broderick, building. Owner C. B. Hawley; architect, Charles I. Havens; contractor, Dan Chisholm; amount, $7,799; signed, March 25; filed, March 28; $1,299 enclosed; $1,500 brown mortared; $1:500 hard finished; $1,500 completed; $2,000, 35 days.

Hermann, near Jessie, three-story frame. Owner, Christina Miller; architect, A. J. Barnett; contractor, Brennan Bros.; amount, $5,660; sureties, J. J. McKinnon and D. J. Preston, $3,000; signed March 25; filed March 28; limit, 100 days; $1,160 roof on; $1,000 brown mortared; $1,000 outside finished; $1,000 completed; $1,500, 35 days.

Howard and East, foundation for road bed, Owners, Omnibus Cable Co; architect, Engineer of Co; cost, $2,050; signed, March 8; filed, March 11; limit, 30 days; 75 per cent. as work progresses, balance 25 per cent., 35 days after.

Henry near Noe, building. Owner, P. Conlin; architect. T. J. Welsh; contractor, James McInerny, cost, $2,000; signed, March 11; filed, March 15; sureties, P. F. Ward and J. J. McKinnon, $1,500; $500 framed; $500 brown mortar; $500 completed; $300, 35 days after.

Haight, between Steiner and Pierce, three-story frame. Owner, August Kenerleber, et al; architect, R. Zimmermann; contractor Adam Miller; cost, $5,100; signed, March 2 filed, March 19; $1,000 framed; $1,000 enclosed; $1,000 rough mortared; $1,000 completed; $1,100, 35 days.

Haight near Gough, addition for a market. Owner, A. P. Hotaling; architect, Wm. Mooser; contractors, Norton & Perry; cost, $3,250; signed, March 21; filed, March 23; limit, 70 days; 75 per cent. as work progresses, balance 25 per cent., 35 days.

Howard. Nos. 1713, 1715, 1719, brick foundations. Owner, James Phelan; architect; Jno. Marquis; contractor, Martin Fennel; cost. $1,845; signed March 23; filed, March 23; limit, 50 days; $354 No. 1719, finished; $343, 1717 finished, $343, 1715 finished; $343, 1713 finished; $462, 35 days.

Henry near Sanchez, two-story frame. Owner, Henry Harms; architect, J. E. Krafft; contractor, J. W. Smith; cost, $3,157; signed, March 6; filed, March 9; limit, 70 days; $750 enclosed; $750 brown mortared; $857 completed; $800, 35 days.

Hayes near Gough, building. Owner, Philip Pasener; architects, Salfield & Kohlberg; contractors, Martin & Maguire; cost, $6,000; signed, March 15, filed, March 18; sureties, Frank P. Latson and J. W. Welsh $6,000; limit, 100 days; $1,000 framed; $1,000 brown mortared; $1,000 inside finished; $1,500 accepted; $1,500, 35 days.

Hayes near Buchanan, two-flats. Owners, John Boyd and wife; architects, Donovan & Williams; contractors, Donovan & Williams; cost, $4,625; signed, Feb. 26; filed, March 7; sureties, Preston & McKinnon, $2,000; limit, July 1, '89; $1,000 enclosed; $800 brown coated; $600 white coated; $1,025 completed; $1,200, 35 days.

Haight, west of Steiner, two-story frame. Owner, Jos Bock; architect, A. J. Barnett; contractor, Rountree Bros.; cost, $6,700; signed, April 2; filed, April 4; sureties, Behrend Joost and W. A. Meeker $3,500; limit, 100 days; $1,525, roofed; $1,000 brown coated; $1,500 white coated; $1,000, completed; $1,675, 35 days.

Haight corner of Laguna, two-story frame. Owner, Gustave F. Schmidt and wife: architect, Wm. T. Commary; contractor, Wm. T. Commary; cost, $7,870; signed, April 1; filed, April 5; $1,900, framed; $1,400, sashes fitted; $1,200, basement done; $1,042, ready to paint; $360, completed; $1,968, 35 days.

Howard, north of Fifteenth, three story frame. Owner, F. G. Gerhard; architect, Henry Geilfuss; contractor, H. J. Weiss; cost, $3,857, signed, April 4; filed, April 6; $600, roofed; $600 partitions set; $657, completed; $2,000, 35 days.

Haight, between Scott and Devisadero, two-story frame. Owner, Jos. M. Kane; architects, Schmidt & Shea; contractor, Wm. Pluns; cost $4,700; signed, April 4; filed, April 6; sureties, F. and B. Joost; $800 rustic on; $900 rough plumbing in; $900 hard finished; 900 completed; $1,200, 35 days.

Jackson, corner Broderick, carpenter work. Owner, J. Dupuy; architect, Wm. Mooser; contractor, M. C. Lynch; cost, $3,500; signed, April 3; filed, April 4; sureties, John Lewis and P. Swift; $2,000; $2,000 third story joists laid; $2,000 iron work on; $2,000 yard work finished; $2,098 ready to paint; $2,700, 35 days.

Jackson, near Webster, brick and carpenter work. Owner, Carl Walliser; architect, Wm. Mooser; contractor, Geo. J. Doering, amount, $3,083 signed, March 23, filed March 25, limit, 100 days, 75 per cent. as work progresses, balance, San Jose and vicinity. [From our Special Correspondent.] 25 per cent., 35 days.

Jackson near Laguna, building. Owner, Mrs. W. F. DeForest; architect, Samuel Newsom; contractor, George R. Lang; cost, $5,650; signed, March 18; filed, March 20; $350 framed; $500 roofed; $1,000 white mortared; $1,000 outside primed; $1,200 completed; $1,600, 35 days.

Laguna and Washington, building. Owner, Matilda L. Castle; architect W. J. Mathews; contractors, Knight & Littlefield; cost, $10,194; signed, March 6; filed, March 19; limit, July 10, '89; 75 per cent. as work progresses, balance 25 per cent. 35 days.

Laussat, between Fillmore and Steiner, two-story building. Owner, M. McIntyre; architect, Wm. Mooser; contractor, D. Chisholm; cost, $2,000; signed, March 11; filed, March 13; sureties, F. Joost; limit, 60 days; 75 per cent. in proportion to work done, balance, 25 per cent., 35 days after.

Leavenworth near Clay, three-story frame. Owner, Isaac L. Hofmann; architects, C. R. & J. M. Wilson; contractor, F. V. Steinman, cost, $8,400; signed, March 7; filed, March 7; $2,000 framed; $1,000 enclosed; $1,000 brown coated; $1,000 white coated; $1,300 completed; $2,100, 35 days.

Lafayette, south of Minna, three-story frame. Owner, Jos. A. Cruza; architect, H. Geilfuss; contractor, John Foster; cost, $5,500; signed, March 19; filed April 5; sureties, John Smith and Wm. Swift, $3,000; $1,100 framed; $1,000 brown coated; $1,000 white coated; $1,000 completed; $1,400, 35 days.

McAllister near Lyon, building. Owner-F. P. Adams; architect, B. E. Henriksen; contractor, Louis Helbing: cost, $4,100; signed, March 21; filed, March 21; $768 roofed; $769, brown coated; $769 white coated; $769 trimmings on; $1,025, 35 days.

Market, northeast City Hall avenue, plumbing. Owner, Margaret Lynch; architect, Jas. E. Wolfe; contractor, E. Wolfe; cost, $1,040; signed, March 22; filed, April 2; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

Market, northeast City Hall avenue, plumbing. Owner, G. G. Burnett; architect, Jas. E. Wolfe; contractor, E. Wolfe; cost, $1,875; signed, March 22; filed, April 2; 75 per cent. as work progresses; balance, 25 per cent., 35 days.

McAllister, east Scott, two-story frame. Owner, H. W. Frank; architect, Charles I. Havens; contractor, John G. Adams; cost, $5,725; signed, April 2; filed, April 3; $1,000 enclosed; $1,000 brown coated; $1,000 hard finished; $1,225 completed; $1,500, 35 days.

Market, between Sixth and Seventh, elevator work for foundation. Owner, Joseph Rosenthal; arctitects, Salfield & Kohlberg; contractors, Wm. H. Birch & Co.; cost, $5,300; signed, January 28; filed, April 4; 40 per cent. of work accomplished at end of each month; balance, 35 days.

Ninth and Harrison, three-story frame. Owner, Michael Bohanan; architect, T. J. Welsh; contractor, James F. Logan; cost, $5,387; signed, March 8; filed, March 11; limit, 90 days; $996 framed; $996 brown mortared; $996 white mortared; $999 finished; $1,400, 35 days.

No. 2615 California street, additions. Owner, E. A. Selfridge; architects, Schulze & Meeker; contractor, Wm. Winnie; cost, $2,270; signed, March 28; filed, April 1; sureties, Nathan Rosenberg and V. Z. Horton, $750; limit, June 15, '89; $900 roofed; $802 completed; $568, 35 days.

No. 1516, Twenty-Fourth, alterations. Owner, Susie Solomon; architect, James H. Humphreys; contractors, Lehnhard & Jeffrey; cost, $1,900; signed, March 2; filed, March 5; sureties, Isidore Asch and Niehaus Bros. & Co. $1,900; limit, May 2, '89; $475 floors laid; $475 brown coated; $475 completed; $475; 35 days.

O'Farrell, corner Buchanan, painting. Owner, Robert Lorentz; architect, W. Winterhalter; contractor, Frederick Schaefer; amount, $680; signed, March 23; filed, March 29; limit, 12 days; $180 outside two coats and roof, one coat; $320 completed; $180, 35 days.

O'Farrell and Leavenworth, alterations, etc. Owner, Wm. Schehr; contractor, G. W. Hansbrough; cost, $4,200; signed, March 8; filed, March 9; sureties, W Edwards and Jno. F. Taylor; $1,000 framed; $1,000 brown mortar. $1,000 white mortar; $1,200 completed.

Post, corner Jones, plumbing, etc. Owner, Thomas Lundy; architect, T. J. Welsh; contractor, R. Vance; amount, $1,389; signed, March 30; filed, March 30; $600 pipes in; $389 completed; $400, 35 days.

Post, near Polk, building. Owner, L. Kutner; architect, W. H. Armitage; contractor; J. W. Wissinger; amount, $4,975: sureties, Reese Llewellyn, $4,000; signed, March 13; filed March 29; limit, 100 days; $1,200 framed, $1,200 brown mortared; $1,200 completed, $1,375, 35 days.

Page, near Fillmore, brick and carpenter work. Owner, J. G. Bloomer; architect, James E. Wolfe; contractor, John J. Dunn; amount, $3,772, surety, C. S. Holmes, $1,000: signed, March 21, filed, March 28, $820 framed, $720 brown mortared, $720 standing finish: $569 completed $943, 35 days.

Pine near Baker, one-story frame. Owner S. P. Taylor and wife; architect, G. G. Gilles; pie; contractor, G. G. Gillespie; cost, $2,400-signed, March 4; filed. March 6; $450 framed, $450 brown coated; $450 white coated; $450 completed; $600, 35 days.

Post, between Hyde and Larkin, brick and carpenter work. Owner, Bernard Miller; architects, Salfield & Kohlberg; contractors, Fuchs & Bucher; cost, $8,494; signed, March 12; filed, March 18; sureties, G. H. Woerz and M. Schwab, $8,494; limit, 100 days; $1,500 framed; $1,000 roofed; $1,500 brown mortar; $1,000 doors hung; $1,344 accepted; $2,150, 35 days.

Post, between Hyde and Larkin, plumbing, etc. Owner, Bernard Miller; architects, Salfield & Kohlberg; contractors, Sam'l. Inkelheimer & Bro.; cost, $657; signed, March 12; filed, March 18; $300 when rough work is done; $375, 35 days after.

Pine, east Lyon, building. Owner, Anna R. McPhee; architect, S. Hatfield; contractor, Allan McDonald; cost, $3,785; signed, March 30; filed April 2; sureties, Frank P. Latson and J. J. McKinnon $2,500; limit, 69 days; $800 roof on; $679 first coat of mortar on, etc.; $679 windows in; $680 completed; $947, 35 days.

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Post, corner Jones, brick, iron and carpenter work, etc. Owner, Thomas Lundy; architect, T. J. Welsh; contractor, George W. Hansbrough; amount, $20,900; sureties. J. M. Manning and J. F. Taylor, $10,000; signed, March 26; filed, March 28; $3,000 first-story joists are on; $3,000 framed; $3,000 brown mortared; $3,675 white mortared; $3,000 completed; $5,225, 35 days.

Sutter street, No. 1321, additions. Owner, Mary L. Zimmerman; architects, Schmidt & Shea; contractor, Wm. Pluns; cost, $7,740; signed, April 4; filed, April 6, sureties, F. Joost and D. Woerner, limit, 130 days; $1,240 enclosed, $1,500 brown coated, $1,500 hard finished, $1,500 completed, $2,000. 35 days.

Sacramento, near Steiner, two-story frame, Owner, Mary F. Kennedy; architect, J. A. Shepard; contractor, J. P. Shepard; amount, $4,785; signed, March 29; filed, March 30; limit, 90 days; $1,185 enclosed, $1,200; brown mortared; $1,200; completed $1,200. 35 days.

Second and Folsom. iron and tin work, etc. Owners, Boyd & Davis; architect, Jno. M. Curtis; contractors, Conlin & Roberts; cost, $6,763; signed, March 14; filed, March 21; sureties, Jeremiah Mahony and Oscar Lewis, $2,500; 25 per cent. half done; completed, 50 per cent., balance 35 days, $350 for extras.

Shotwell and Twenty-Fifth, two cottages. Owner, Emma L. Dick; architect, C. E. Dunshee; contractor, C. E. Dunshee; cost, $4,950; signed, March 7; filed, March 7; limit, 60 days; $1,237,50 chimneys built; $1,237,50 1st coat of plastering on; $1,237,50 2d coat of plastering on; $1,237,50, 35 days.

Sanchez, between Sixteenth and Seventeenth, two-story dwelling. Owner, J. Jensen; architect, Geo. Houston; contractor, Geo. Houston; cost, $2,894; signed, March 5; filed, March 6; limit, 100 days; $721 shingled; $721 brown mortar; $722 white mortar; $730, 35 days.

Spear, between Market and Mission, piling and capping for building. Owner, Teresa Casserly; architects, Percy & Hamilton; contractors, Mahoney Bros.; cost, $6,750; signed, March 18; filed, March 23; limit, 90 days; 75 per cent. 1st Saturday of each month as work progresses, balance 25 per cent. 35 days, also $30 for each pile driven.

Scott and Page, one-story frame. Owner, Mrs. M. Grant; architect, Chas. I. Havens; contractors, R. Doyle & Son; cost, $1,689; signed, March 11; filed, March 13; limit. 60 days; $500 roof on; $689 completed; $500, 35 days after.

Seventeenth, east Noe, carpenter work. Owner, J. D. Jacobs, architect, Jas. E. Wolfe, contractor, J. J. Dunn, cost, $4,490; signed, April 4, filed, April 6, $600 rafters on, $650 partitions set; $750 brown mortared, $700 white mortared, $665 completed, $1,125, 35 days.

Twentieth, between Dolores and Guerrero, two-story. Owner, H. H. Birkholm; architect, Chas. S. Shaner; contractor, A. A. Willis; cost, $5,445; signed, March 15; filed, March 18; sureties, F. Joost and C. S. Holmes; limit, July 15, '89; $1,000 brick work done; $1,020 chimneys built; $1,020 brown mortar; $1,043,75 ready to paint; $1,361,25, 36 days.

Turk near Franklin, four two-story and basement frames. Owner, James H. Garrett; architect, R. H. White; contractor, Jas. R. Wilcox; cost, $18,000; signed, March 11; filed, March 19; sureties, A. W. Starbord, $5,000; $2,700 first floor of joists on; $2,700 enclosed; $2,700 brown mortar; $2,700 staining finish on; $2,700 completed; $4,500, 35 days.

Twenty-Fourth near Howard, building. Owner, Jno. McPherson; architect, T. J. Welsh; contractor, Ferd. Klatt; cost, $2,540; signed, March 12; filed, March 16; $1,000 framed; $1,000 brown mortared; $1,000 white mortared; $1,200 completed; $1,340, 35 days after.

Twenty-Fourth corner Bryant, one-story frame and stable. Owner, Geo. Wallenrod; architect, H. Geilfuss; contractor, J. F. Logan. cost, 4,275; signed, April 5; filed, April 6; $800 roofed; $800 outside done; $800 inside done; $800 completed; $1,073, 35 days.

Third corner Harrison, iron work, tiles, etc; Owner, Jno. Van Bergen; architect, H. Geilfuss; contractors, P. H. Jackson & Co, cost, $6,498; signed, April 4; filed, April 6; 75 per cent. as work is performed, balance, 25 per cent., 35 days.

Third corner Harrison, excavations, brick and stone work. Owner, Jno. Van Bergen; architect, H. Geilfuss; contractor, Jno. McCarthy; cost, 18,961; signed, April 4; filed, April 6; $3,550 basement walls up; $3,550 first story walls up; $3,550 third story walls up; $3,550 fire walls topped; $4,750, 35 days.

Third cor Harrison, plumbing. Owner, Jno. Van Bergan; architect, H. Geilfuss; contractor, S. Ickelheimer & Bro.; cost, $1,359; signed, April 4; filed, April 6; $519 pipes in; $500 completed; $340, 35 days.

Third corner Harrison, plastering, etc. Owner Jno. Van Bergen; architect, H. Geilfuss; contractor, M. Kiernan, cost, $1,985; signed, April 4; filed, April 6; $750 brown coated; $735 white coated; $500, 35 days.

Third corner Harrison, carpenter work. Owner, Jno. Van Bergen; architect, H. Geilfuss; contractor, M. C. Lynch; cost, $10,798; signed, April 4; filed, April 6; $2,000 third story joists laid; $2,000 iron work on; $2,000 yard work finished; $2,098 ready to paint; $2,700, 35 days.

Third corner Harrison, artificial stone. Owner, Jno. Van Bergen; architect, H. Geilfuss; contractor, H. M. Peterson & Co.; cost, $1,200; signed, April 4; filed, April 6; $400 cellar work yard done; $500 side walks done.

Vallejo east of Buchanan, two-story frame. Owner, C. P. L. Leichter; architect, H. Geilfuss; contractor, Shutt & Krecker; cost, $4,485; signed, April 2; filed, April 4; $840 framed; $840 partitions set; $840 outside finished; $840 completed; $1,125, 35 days.

Vallejo near Buchanan, frame. Owner, Laura L. Clapp; architect, Clinton Day; contractors, Ingerson & Gore; cost, $6,350; signed, March 23; filed, March 23; $1,500 chimneys built; $1,700 brown coated; $1,562 ready to paint; $1,585, 35 days.

Waller near Devisadero, two-story frame. Owner, E. W. Hyde; architect, B. E. Henriksen; contractor, Daniel Reynolds; cost, $3,200; signed, March 7; filed, March 8; $600 roofed; $600 outside finish; $600 sashes, glazed and hung; $600 trimmings on; $800, 35 days.

10 Buildings. Owner, Jos. F. Twist, architect. Wm. F. Lewis, contractor, Wm. F. Lewis. cost. $8,250, signed, March 21, filed, April 2, limit, June 15, '89, $500 at beginning of contract, $5,250 during work, $2,500 when completed, to be secured by mortgage.

Retail Price List of Lumber.

PINE, FIR AND SPRUCE.

	Per 1,000 ft.
Rough Pine, m'cantable to 40 ft inclusive.	$19 00
" " " 41 to 50 " "	20 00
" " " 51 to 60 " "	22 00
" " " 61 to 70 " "	26 00
" " " 1X3, fencing	21 00
" " " 1X4, "	20 00
" " 1X3, 1X4 and 1X6, odd lengths	18 00
" " second quality	16 00
" " selected	23 00
" " clear except for flooring	30 00
" " " for flooring less than flooring	1 00
Clear V. G. No. 1 Flooring, when ordered, extra	5 00
Fire Wood	10 00
Dressed Pine, flooring, No. 1, 1X6	31 00
" " " 1X4	33 00
" " " 1¼ x 4, 1¼ x 6 and odd sizes	36 00
" " " all sizes, No. 2	26 00
" " Stepping, No. 1	43 00
" " " 2	33 00
Ship Timber & Pl'k. rough selected	26 00
" "selec'd pl'nd, 1 sd | av	28 00
" " " " 2 " | 40ft	30 00
" " " " 3 " |	32 00
" " " " 4 " |	34 00
Deck Plank, rough |	34 00
" " dressed | average 35 feet	39 00
Pickets, rough, B. M.	19 00
" ½x1½ "—4 ft. long, per M	5 50
" ½x1½ "—4½ ft. long	6 00
" ½x1½ "—5 ft. long	7 00
" ½x1½ "—6 ft. long	8 50
" ½x1½ "—7 ft. long	10 00
" ½x1½ "—8 ft. long	11 50
Furring, 1X2, per lineal ft	01
Lath, 1¼ 4 ft. per M	2 75
" 1½ 4 ft. "	3 00
Spruce, rough "	19 00
" dressed, shelving	36 00
" " ½ inch	36 00
" clear	33 00
Rough dunnage, delivered	20 00

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SAN FRANCISCO, CAL.

The California Architect and Building News

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NOW IN ITS TENTH YEAR.

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THE

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Vice-President, - - - *W. J. CUTHBERTSON.*
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TERMS, PER ANNUM, - - - - $2.00 IN ADVANCE

ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, MAY 15, 1889.

The Whereabouts of Clarance E. Lane.

Should this meet the eye of any one knowing the address of a party going by above name, they will confer a favor by sending information to this office. He is a draughtsman and claims to have worked for Burnham & Root of Chicago. We simply caution every one against said party. His fare was paid to Seattle to enter a good office. On the morning of the day the steamer sailed he feloniously obtained the return of the money on his ticket and has departed for some place unknown. Country Editors and others will confer a favor by noticing the above in their respective Journals.

Our Student's and Draughtsman's Edition.

Interested parties are not giving the attention they should to preparing sketches for our student's and draughtsmen's edition. Many promised to "do what they could," but so far, have failed to make their efforts known at this office. We trust that each and every one who intends to furnish sketches or write an article, will notify us at once, so that we may know what to depend upon.

INTERESTING TO AMERICAN ARCHITECTS.

Public Companies and the N. S. W. Institute of Architects.

The extent to which architects, especially when members of any recognized institute, may enter into commercial companies has always been a vexed point and has been interpreted in all sorts of ways on different occasions. There can be little doubt that the canon of professional etiquette, which, in the words of the N. S. W. Institute rules, prohibits an architect from having "any interest or participation in any trade contract or materials supplied at any works the execution of which he may be engaged to superintend" is on the whole a desirable restriction, provided its scope is not interpreted too narrowly. An architect is essentially in a position of trust as regards his client's interests, and, while on the one hand it is desirable that temptation should not be needlessly put in his way it is absurd that on the other he should be absolutely prohibited from investing his money in any enterprise simply because its products might be used in some building in which he was employed. Such a rule strictly interpreted would materially narrow the field of investment open to the professional man, and would at once place beyond his reach all concerns with regard to which he might naturally be expected from his training to have the most perfect knowledge. Such a case has, however, recently emerged in the mother colony where the names of two well-known architects, members of the Institute, appear on the directorate in the prospectus of a limited liability company now being floated to acquire the business of a well known wholesale iron merchant in Sydney—and the fact has we understand been brought under the notice of the Secretary of that Institute. The odd thing about the matter is that one of these architects has since then notified his resignation of membership. This we think, is a pity, as it would have been of much interest to the members of the profession here if some official deliverances could be had, as to what would constitute an infringement of the declaration from which we have quoted, and which each "Fellow" on his election is required to sign. The matter is really one of great importance to their honor, and some definition of the kind we have indicated is greatly wanted.

The above is taken from the *Building and Engineering Journal* of Sydney. The same question has often been discussed before the various Chapters of the American Institute. We trust the leading members of the profession will ventilate their views on the subject matter through the columns of this Journal.

Uniform Size of Brick.

The Legislative Committee on uniform size of brick, appointed by the National Association of Builders, presented a report in which they recommended the following as a standard size to be adopted for bricks:

For common building brick, 8¼ inches x 4 inches x 2¼ inches.
For pressed brick, 8⅜ inches x 4 inches x 2⅜ inches.

After considerable discussion, the report was referred back to the Committee. The hitch seemed to occur on the word "uniform," some of the members claiming that it should be "standard." Also that the size of pressed brick should be 8¼ instead of that given in report. The subject will be considered at the next annual Convention.

In the mean while, we will be pleased to receive communications from our own manufacturers on a "standard" size for brick.

First-Class Draughtsmen Wanted.

If there are any first-class draughtsmen who are out of employment, they will confer a favor by notifying the manager of this Journal. Several good men can readily be placed in good situations.

DESIGN FOR A COUNTRY DWELLING—O. EVERETT, ARCHITECT.

Again Worthy of Notice.

We have called attention several times to the increasing demand for "Abrahamson's Ventilators." This demand has now become very general in its character, and to prove it, we present a list of the new buildings in which these ventilators will be placed.

The following contracts have been made with W. W. Montague & Co., for P. Abrahamson's New Patent Ventilator, for January and February, 1889.

St. Vincent Orphan Asylum, San Rafael, 63 ventilators; The Catholic Convent, San Rafael, 93 ventilators; Centennial Presbyterian Church, Fruitvale, 15 ventilators; Bank and Club Rooms, Sacramento, 24 ventilators: Perralto Park Hotel, Berkeley, 161 ventilators; Hotel Chico. 30 ventilators: San Jose School House, 24 ventilators; Old City Hall, San Jose; Hall of Records, Woodland, 31 ventilators; Union Insurance Company, San Francisco; Francis Smith, Beale street; The New Bank, corner Sansome and Sutter streets, 15 ventilators; Fresno Jail, 20 ventilators.

RESIDENCES.

Mr. A. N. Levy, Webster street; Mr. Kronenberg, Fulton between Gough and Franklin; Mr. Henry, San Jose; Mr. Nicoll, Manager of Bohemian Club; W. Crocker, corner California and Jones; Palace Hotel Dining rooms and other apartments; Youth's Directory, Howard, between Fifteenth and Sixteenth.

The following buildings are out for bids and Abrahamson's Ventilators are specified:

Public School House, Pleasanton California; Daniel Meyers, California street; The New Olympic Club Building; California Theatre and Hotel, Bush street; "Chronicle" building, Market and Kearny streets.

The above will clearly prove the remarks first made, that their use is *very* general.

Going to the Shop for Solder.

Editors California Architect: Will you kindly allow a lady subscriber to give a few hints in regard to plumbers and their way of "passing time." A short time ago, I had occasion to have a set of wash trays placed in my laundry. I called upon the nearest plumber to obtain an estimate. Instead of being at my place at the appointed time, it was two hours after, before he came. With the usual "plumbers soft solder," he, by his suave talk convinced me that it would be far more economical for me to have it done by day's work, as contract profits would not in that case be figured in the total. Much against my inward convictions, I allowed him to do the work on the basis of doing it as cheaply as possible. Shortly after a wagon drove up with all the materials; the charcoal fire was lighted, the irons placed therein and all apparently ready for work, when in stentorian tones the boss yelled, "Jack, you got the solder?" "Didn't fetch any," Jack replied. And so Jack had to trot down blocks away for solder. When poor Jack returned, it was discovered that no rosin was to be found, and another trip to the shop was necessary. Four times was it found a necessity for some one to go to the shop for solder. I say solder, because I *do* know the name of that article, mainly from that kind so often used by smoothly spoken plumbers. When the plumber was through his work, it required the strong arm of my gardener with a spade to scrape off the solder drops all over my floor. And the bill—well it was just $30, almost double what I had calculated. If I hire a carpenter, he can bring to my house the requisite tools and materials for completing any work he undertakes. Why, then, cannot a plumber do the same, without it being found necessary to send to the shop several times for solder?

Mrs.———

THE IRON AGE.

Paper Read Before the San Francisco Chapter, American Institute of Architects.

BY G. H. SANDERS, F. A. I. A.

Gentlemen, Fellows and Associates of the San Francisco Chapter of the A. I. A.:

Poem and Legend, Fable and Myth glow with the lustre of the Golden Age; every nation with a history, written or unwritten, has a background of romance which owes its brightness to the same luminous source.

The writings of the poets and moralists of Greece and Rome, through which the threads of authentic history have come down to us, draw their inspiration from a far away time, which, like the lingering afterglow of a glorious summer's day, tells of an era when the world was young, and mankind lived in simplicity and innocence, and enjoyed a happy immunity from the incumbrances and inconveniences of the, perhaps, overwrought civilization of their and our day.

Both Hesiod and Ovid, describe not only a golden, but a silver, a bronze and an iron age, the former interposing the heroic age between the bronze and the iron. The first four are also mentioned as forming constituent parts of the great image of Nebuchadnezzar's vision as recorded in Daniel—one of the Prophetical books of the Hebrew Scriptures. The mythology of the ancients as well as the clay records of Assyria, are replete with allusions more or less definite, to the same wondrous epoch, as well as to the degeneracy of the succeeding ages.

But authentic or fabulous as these witnesses may be, in the Genetic record alone do we find a coherent, if only figurative account of a condition of things, which could rationally afford an adequate foundation for the all pervading idea of the golden age. We shall return to the subject in our concluding remarks, and will for the present merely state, that of the four ages above recognized, the last has commonly been conceded to be the peculiar heritage of men of the present day.

THE AGE OF IRON.

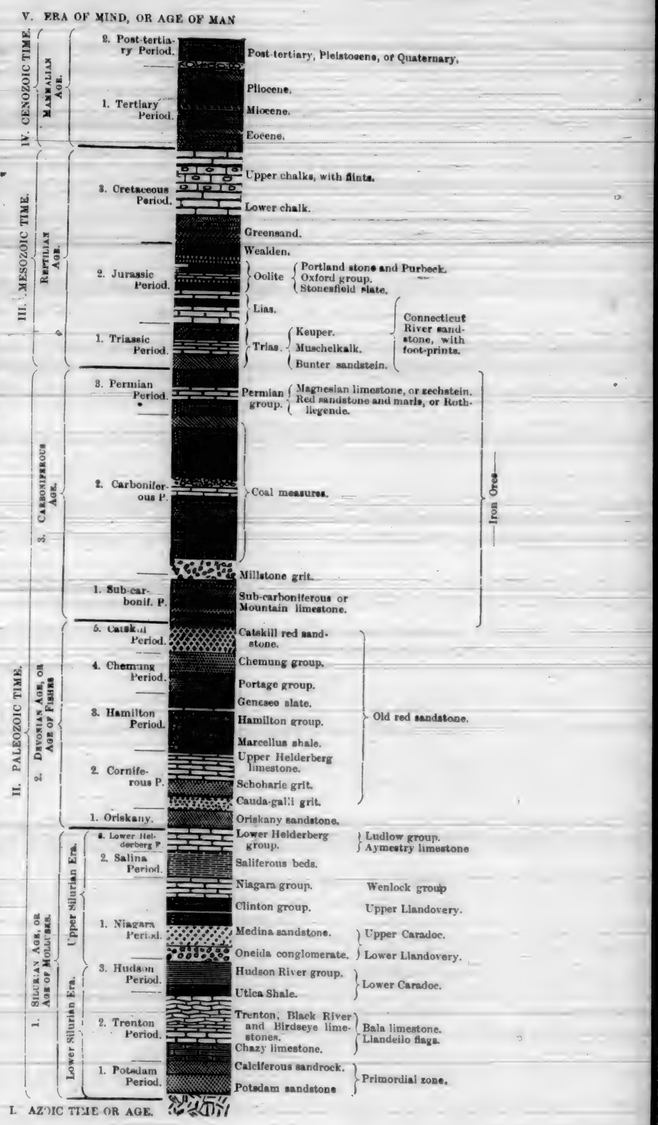
But it is not the "Iron Age," of which we wish now to speak so much as the "Age of Iron," a much more definite and easily apprehended, if less comprehensive idea, than that indicated by the former term, which indeed may be taken to include the whole range of the philosophy, sciences, arts and morals—nay, even the religion of the times, with all their respective concomitants and accessories which together make up the life of the man of the nineteenth century.

But putting aside for the present the uncertain traditions, and the myths and allegories of the days of old, the scientific explorer of our times has collected, classified, and arranged in orderly sequence, the evidences of at least three ages, neither fabulous nor figurative, which have prevailed in former times. These are known as the stone, the bronze, and our own iron age, from the material which was most generally employed during the respective periods in the ordinary implements of utility and defense, all the stages of which may be found practically existing amongst various barbarous nations of our own day and generation.

This brings us face to face with our subject proper, and the chief element of its title, viz.: Iron.

This is a substance of such world wide utility that it is apt to appear impossible to dispense with it. This, however, is disapproved by the history of past times as well as by the known conditions of many peoples and tribes of the present day, though their position and status, indeed, may be said to be measured by the degree of their knowledge and appreciation of this significant material.

To fully comprehend the true position of iron in the scale of life, we must glance at its position in the scale of creation. Accepting as such the accompanying Geological section of the shell or crust of the earth, we will ask your attention to a brief examination of its component parts and the manner of their formation—the accompanying section (1) (from Geological Section in Webster's Dictionary), which is generally taken to represent a total thickness of about thirty miles, is just about the 330th



part of the diameter of the earth, or about the comparative thickness of an ordinary egg shell.

The entire internal body of the earth has been supposed to be a molten mass, and to properly understand this we must begin at the beginning, and the beginning in this case is

GREAT NEBULA IN ORION.

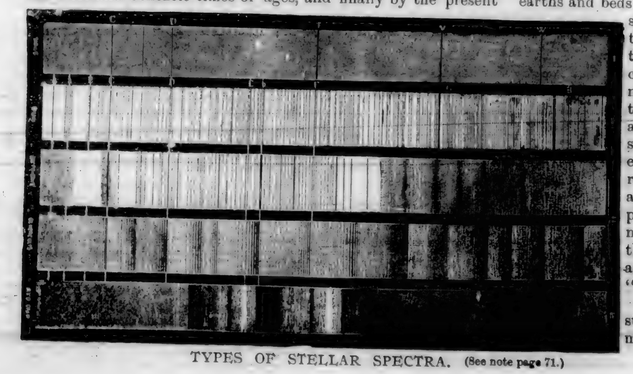
"NEBULAE."

In (No. 2, we have a representation of the great nebula in Orion, one of the most astonishing of all the star clusters in the heavens, combined as it is with clouds of incandescent hydrogen, which, by aid of the solar spectrum, indicate by the various absorption bands the presence of a number of terrestrial substances, among which those of hydrogen and the metals predominate.

The latest accepted theory in regard to these mysterious accumulations of aerial substances, appears to be as follows: As the vast masses of hydrogenous drift called nebulæ, revealed by powerful telescopes in the fathomless depths of the heavenly spaces, are caught here and there in the eddies arising from the inevitable friction resulting from ethereal motion, aggregations of condensation naturally occur, and in the vast sweep of inconceivable ages, under the influence of all pervading Law, universes of harmoniously balanced solar, planetary and lunar systems, with all their necessary and appropriate accompaniments, come into being. The diagonal of centrifugal and centripetal forces which have arisen in the case of each initial eddy, establishes a center of gravitational energy, which becomes in time a sun, and the sun in the progressive evolution of being, becomes in turn an earth, and by successive condensations and depositions of the fiery gases in the form of more and more solid materials, an orb, capable of receiving and sustaining life, slowly emerges from the womb of creation, and a world of life is born. The first rain drop which reaches the cooled surface of a new born world marks an epoch. The last that ever falls on the same earth marks another. Between them lies the history of the life of that world!

The condensation and deposition of material at first ethereal, then gaseous, then aqueous, necessarily include phenomena impossible to describe because incapable of being seen by any other faculty than that of imagination. It can only be said that what does occur must have taken place in the case of our earth in the order here represented. (No. 1.)

First: The igneous or primary rocks of the Azoic age with only the outer rim of which we can ever become acquainted; then depositions of materials caused by erosion in the earliest seas form vast strata which underlie all others and have solidified into the rocks of the second or Paleozoic series, succeeded by the Mesozoic and Cenozoic times or ages, and finally by the present time or age, known as the age of mind, or of man.



TYPES OF STELLAR SPECTRA. (See note page 71.)

The second or Paleozoic series of times or ages are divided into three great epochs, viz.: The Silurian age or age of Mollusks; the Devonian age or age of fishes, and the Carboniferous age, or age of plants; while the Mesozoic corresponds to the single age of reptiles, and the Cenozoic to the Mammalian age. All these enormous periods are divided and subdivided again and again, so that every strata has its place in the vast whole in such a way as to be readily recognizable, if not by its intrinsic characteristics, it may still be identified by those of its neighbors above and below. But of the whole, it is with the upper third of the second or Paleozoic time, called the Carboniferous age, that we have to do. The included strata are known as the coal measures, and contains a well most of the workable beds of iron ore. Associated with the coal measures also are vast strata of limestones, including the sub-carboniferous or mountain limestones, and superimposed beds of magnesian limestones—the former indispensable as fluxes, and the latter, recently found to be equally valuable as a means of purifying the ore from the phosphorous and sulphur often contained in the coal used in the process of converting the iron into steel. The iron ores also, which are principally worked, have themselves been largely the result of plant growth, as by the process of absorption of metalic vapors from the atmosphere by the vegetation, and the setting free of the mineral thus held in combination by the decay of root fibres, etc., the oxidized metal has been carried down and caught in the subjacent sandstones and clay stone rocks, and so has formed the ferrugenous earths and beds known as Iron stone, Haemetite, etc. We thus see in the very center of the scale, associated with the great belt of the coal measures, evidences of a time or age of extraordinary plant growth and of conditions of solar, aqueous and atmospherical phenomena unprecedented in the life of our planet; a time or age of light and heat storage, and of strength and energy storage, and of such other peculiar and suggestive combinations as to justify to some extent the claims of these same code measures as the real bona fide iron age afterall; or at least it would appear that by the, shall we not say, Providential provisions of the law of natural selection, all the necessary elements have been brought together for the development of this present existing wonderful age or time, which all are ready to recognize as the "Age of Iron."

The qualities of cast and wrought iron and steel are so well known as scarcely to need mention, except for the sake of reference hereafter.

Fusibility, density and inflexibility in the case of cast iron, and malleability, ductility and elasticity in the case of wrought iron or steel generally cover their respective characteristics and constitute their valuable properties. Transverse strength and resistance to crushing in the case of cast iron, and of shearing in the case of wrought iron as well as the still more valuable capacity to resist tensile strains in the case of the latter substance, are in every way enhanced in cast and wrought steel, and still other valuable properties in what is known as malleable cast iron. The Bessemer and other processes of converting pig iron into steel, or, still better, directly from the ore, by forcing a blast of atmospheric air through the molten mass of metal in a crucible, has added so enormously to the availability of steel as a lighter, stronger, and more reliable substitute for ordinary iron, for almost all purposes for which the latter has hitherto been used, as almost to constitute as great a possible development in manufactures and means of ultimating great enterprises, as the invention of the steam engine itself.

THE APPLICATION OF IRON.

But passing from this phase of the subject to the application of iron in the arts of construction, we will note its progress as an agent in the accomplishment of some of the great enterprises of the century.

When James Watts was chided by his parents for wasting his time watching the action of steam on the tea kettle lid, they little knew the tremendous revolution in the condition of the world that the boy was destined to bring about—neither more nor less than the virtual inception of the age of iron, and thereby the amelioration of the condition, and, shall we not say final civilization of the habitable world, in a way unattainable by any other means. The invention of the steam engine has led to the extension of manufactures; the conquest of the ocean by the construction of vessels of steel, rivalling in dimensions the famous Ark of old; the extension of the land by the drainage of vast areas of bog, marsh, fen, and lake; the cutting of canals, and the connection of oceans by water-ways like great rivers; the covering of continents with net works of steel rails; the prospective belting of the world by means of telegraphic cables; the conversion of our streets into checkerboards of cable cars, our business houses into "cloud capped towers" indestructable by fire; and the spanning of great rivers and arms of the sea by enormous structures in the form of bridges, before which the mightiest works of the ancients fade into dolls' houses, and the very loftiest of which we have any positive knowledge, are dwarfed into pigmies in the presence of the Eiffel tower.

BRIDGES.

LONDON OLD BRIDGE

The first illustrations to which we will ask your attention are a number of bridges. These useful structures have, in all ages, taxed the ingenuity of engineers to construct, and may be said to have been a most important means of education, in enabling him to surmount difficulties and achieve success in almost every direction in which his energies have been exerted. The first structure represented on this slide is Old London Bridge. This is a striking example of the cumbrous obstructiveness not unusual in the methods of the past. It was begun in 1178, by Peter of Cole Church, and was thirty-three years in building Often covered with large and picturesque masses of wooden buildings which were as often destroyed by fire—the main structure appears to have remained until the beginning of this century, essentially as it was built. The next illustration, which is New London Bridge, was designed by Mr. George Rennie, and built by his brother, Sir John. This a beautiful structure; having spans of 152 feet, and twenty-nine foot rise of arch, replaced the old bridge which was removed to make way for it.

LONDON NEW BRIDGE.

Waterloo Bridge was erected in 1817, and is of a similar character to the preceding, being constructed of stone in many arches, of less span, but in a wider part of the river. See next illustration.

But the next example is altogether different in material, if not in form. Until recent years, stone, brick or timber was the material almost always employed in the construction of bridges; but late in the last century cast iron began to be employed, and the specimen here shown—Southwark Bridge over the Thames, 240 foot in span of arch, is not regarded as a success, in view of the material used, as it is unnecessarily heavy and expensive.

WATERLOO BRIDGE.

The next specimen here shown, the Menai Suspension Bridge, indicates a great advance in the right direction. The use of chains or links and wire cables on the suspension principle began to be quite usual before this structure was commenced by Telford in 1819. It is 570 feet span, and has a versed sine of forty-three feet for the curve of the Catenary.

This form of bridge, however, was not at this time found suitable for railways. The objection raised on account of vibration has been obviated by the principle introduced in the next example, known as the Britannia Tubular Bridge, designed and built by Robert Stephenson in 1845. It shows a

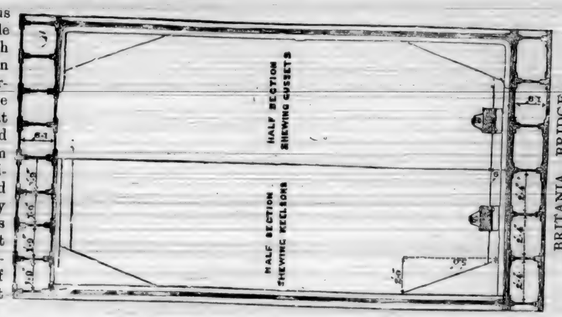
SOUTHWARK BRIDGE

complete revolution in the construction of bridges, which has led to vast results. This bridge consists of two independent wrought iron tubular beams 1511 feet long, each 15 feet wide and 23 feet high at ends, and 30 feet in center. The central pier is 230 feet high, and the two center spans are 460 feet each. The land spans on each side are 230 feet each in length. The top and bottom flanges of these immense girder tubes are cellular in construction, and the floor and ceiling are strengthened by keelsons and gussets, and the side plates are strengthened by T irons inside and out. This bridge, however, in this peculiar form has only once been repeated in the Victoria Bridge over the River St. Lawrence, in Canada which is 7,000 feet in length, and whose spans are almost equal to those of the Britannia Bridge. The mode of construction, the methods of floating the tubes into

position and raising them into their places by hydraulic pressure, and the final triumphant success of both these undertakings, together with the interesting incidents and imminent risks to which both were subject, owing to the dangerous conditions attending their construction, has almost the interest of a romance, and has raised both these enterprises, together with the name of their designer, into a prominence which can never be lost. Nevertheless, it is certain that they are never likely to be

MENAI SUSPENSION BRIDGE.

repeated, since more economical and advantageous forms of construction have arisen from the principle which they inaugurated, one type of which is the high level bridge at Newcastle. This is a combination known as the bow string girder, an open tube carried on a cast iron arch and wrought iron tie (see plan and elevation) presenting an appearance of great lightness and beauty, and being more economical, and avoiding the disadvantages of the close tunnel form so objectionable in such long structures as the Britannia and Victoria Bridges, which shut out light and air, and thefine scenery which such situations usually present; but even this form of the tubular bridge is unnecessarily expensive, and the experiment is not likely to be again made. It was simply a combination of the *truss* with the *arch* and *tube*, both of which latter are wholly dispensed with in the next



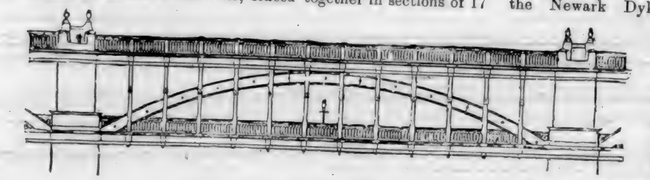
BRITANIA BRIDGE.
(Crop Section of Tubular Girder.)

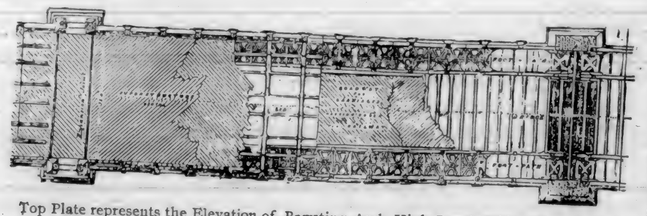
BRITANIA TUBULAR BRIDGE.

example, shown in elevation and section, which is the Newark Dyke Bridge, Cubitt Engineer, erected in 1853. It is the first, and a fine specimen of the Warren girder; and on account of its economy of construction and freedom from any unnecessary accessories, is a very frequent mode of truss construction, especially in America, in wood and iron, or both.

HIGH LEVEL BRIDGE AT NEWCASTLE.

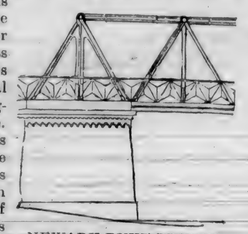
The next example is the Crumlin Viaduct, which shows another fine truss on the same principle. It consists of 10 spans of 100 to 150 feet, and is carried on piers formed of hollow cast iron columns, 12 inches in diameter, braced together in sections of 17 feet each in length. The trusses are of wrought iron, and are 14 feet 6 inches in depth. The roadway is carried on the upper string of this example, but placed on the lower string of the Newark Dyke Bridge. The next example, is the Saltash Bridge, which was erected by Brunell. It is known by the name of "Fish" girder, on account of the construction of the truss which is formed by reversed segments of circles of cast and wrought iron plating connected by vertical and diagonal bracing to which the roadway is suspended. It is, however, less economical than the forms of girders founded on the Warren type, and so has had no children. The next example, shows an example of a *wrought iron* arch bridge over the Rhine at Coblentz. But it is of no greater span, nor so economical in construction as the preceeding forms of girders, and hence cannot compete with then in universal adoption. The next example, shows the Fink type of truss. In this girder each division comprises a separate and distinct truss, all combined in one by the boom or horizontal tie which supports the roadway of the structure. It is composed wholly of vertical cast iron struts, inclined wrought iron braces, and one horizontal tie. It is a worthy competitor of the Warren girder as regards economy, but is less pleasing in form.



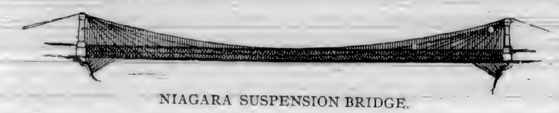


Top Plate represents the Elevation of Bowsting Arch High Level Bridge New Castle.
Lower Plate is the plan of High Level Bridge, New Castle.

The Niagara Suspension Bridge, is the next example. It crosses the Niagara River some distance below the falls at a height of 245 feet above the water by a single span of 821 feet, 6 inches. The main structure is a hollow rectangular box. The steam cars traverse the upper surface, while the carriages pass through the tube. The walls are formed of double vertical timbers with wrought iron diagonal bars crossing between them. The railway or upper floor is carried by two wire cables, while the carriage way or lower floor is carried by two others, four in all. The total sectional area of iron is 241½ square inches. This bridge was commenced in 1852, and open for traffic in 1855. It was designed and built by Roebling, and cost £80,000. The use of the two cables of different versed sines has been criticised as a defect in the principle of this bridge.



NEWARK DYKE BRIDGE.



NIAGARA SUSPENSION BRIDGE.

In this mode of construction the *tube* and the *truss* have been combined with the *suspension* principle, as introduced above, showing the progressive development of the idea of adaptation of means to ends, which is so markably a characteristic of the present age, and the drawing attention to which is one of the chief objects of this paper, especially in connection with the

FINK TRUSS.

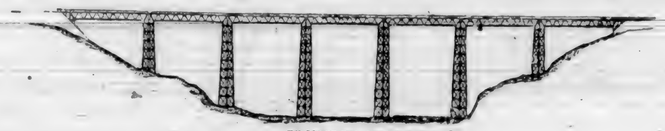
development of the same principle in architecture. The next examples of *Arch and Girder* construction, the first in America, and the other in France, show characteristic methods of spanning great spaces by permanent structures on sound principles.

The St. Louis and Illinois Bridge, over the Mississippi, is a fine example of metal arch construction. It is in three spans, the center 520 feet, side spans502 feet wide respectively, and presents a novelty in bridge building. The spans of the arches are among the widest of the kind in the world. The rise of the center arch is 47½ feet. Captain Eads was the engineer, and he must be credited with having designed and erected one of the finest bridges of any age. Each span consists of four double ribs of steel tubing, 18 inches diameter, bolted together and braced laterally and connected by wrought iron couplings, which were found better for the purpose than steel. The tubular ribs are in sections 12 to 13 feet long, and from 1¼ to 2⅛ inches in thickness. It is designed to carry a double railway below, and foot passengers above.

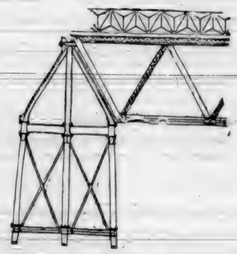
The next example, showsthe great Garabit Viaduct, lately erected by Mr. Eiffel. It is a combination of a wrought iron lattice arch carrying a lattice trussed girder. It is of great height, 640 feet span, and a very masterly work. It was built by means of suspension cables, very much on the same principle, but by different methods to that adopted in the fourth bridge shortly to be noticed, viz., without scaffolding.

ARCH BRIDGE AT COBLENTZ.

The Brooklyn Bridge, of which I here produce an illustration, is the next great work to notice. It is 1,900 feet between supports, with piers 320 feet high, and is 250 feet above the



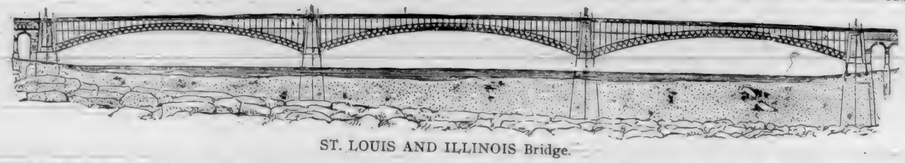
CRUMLIN VIADUCT.



PART OF CRUMLIN VIADUCT.

East River. It is a mighty structure, and a during and wonderful achievement. It also is a combination of tubular truss to secure lateral stiffness, with suspension cables as supporting agents. Cable cars, carriage roads and foot passenger ways are provided, and the whole constitutes one of the greatest of the many magnificent undertakings brought to a successful accomplishment in recent years.

The Firth of Forth Cantilever Bridge is another structure of immense proportions, and of great complexity, being a combination of wrought iron arch-tubes, vertical and inclined tubular

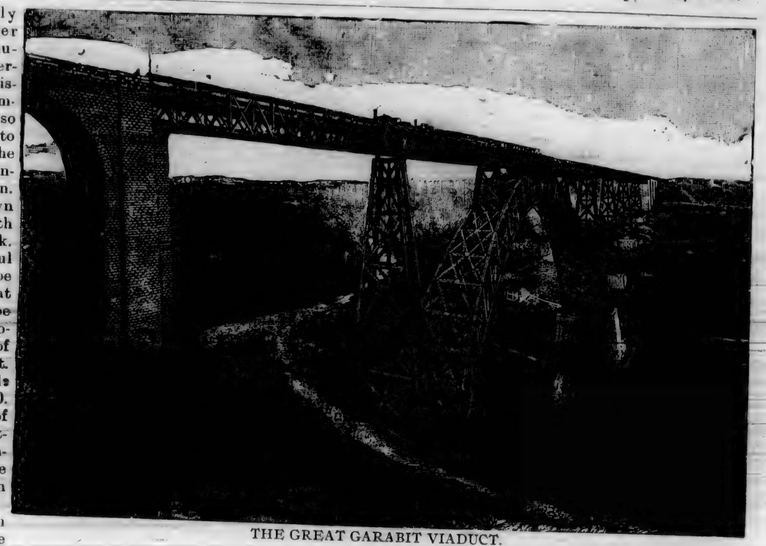


ST. LOUIS AND ILLINOIS Bridge.

columns or posts, inclined inward, double suspension bearings latticed together, and great latticed catenaries supporting a continuous box girder-tube which passes through the whole, carrying the railway track. The span is 1,710 feet, besides the side approaches. It is constructed on the stable equlibrium principle, and is wholly built of steel without scaffolding. It is without question the most stupendous structure of the kind in the world, and will scarcely be blown down like the Tay Bridge, in 1886. The above structure is a combination of arch and catenary; with the lattice principle. It is constructed by building out piece by piece from each side of the central supporting piers. It in fact provides its own scaffolding, and grows by gradual accretion of balanced parts as a tree does, and on the same principle, thus indicating a closer and closer return to nature by man as he

siduously studies her divinely economic processes, or rather those of the divinely infinite Author of *him* and *her*. Nevertheless, the apparent striking disporportion between means employed and ends subserved is so manifest in this structure as to suggest grave doubts as to the soundness of some of the principles of design employed therein.

The next example here shown you is the proposed great North River Bridge at New York. This enormous but beautiful structureasit as designed, will be fully twice as large as the great Brooklyn Bridge. It is to be 2,820 feet span between supports. The towers will be of steel, and 620 feet in height. It will cost $40,000,000, while the former cost only $5,000,000. The bridge itself is formed of latticed girders carried on latticed cables. The whole promises to be the grandest single span structure that has yet been conceived.



THE GREAT GARABIT VIADUCT.

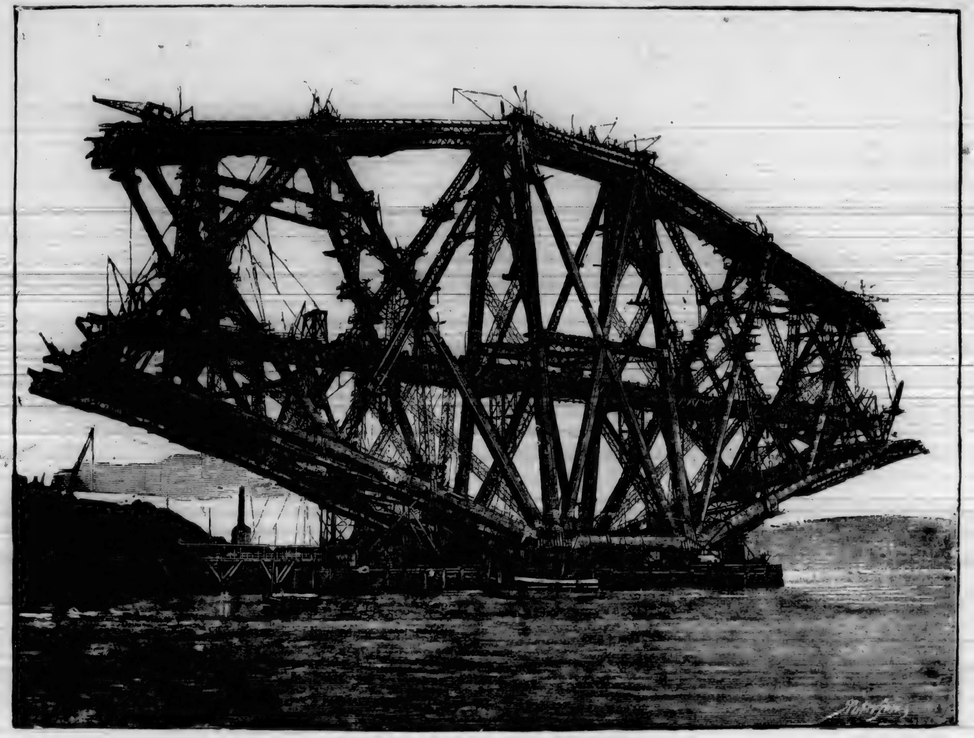
It will be seen that in each of the above structures, while the technical, the utilitarian, the objective qualifications have in every case almost wholly governed the design, the result has also partaken of the higher æsthetic ornamental and artistic qualities in a remarkable degree. From the straight simple bar-like effect of the Britannia Bridge, imposing from its magnitude and simplicity, to the great, sweeping curve of the catenaries of the proposed North River bridge, each design has presented features and combinations of features clearly expressed and resulting in a peculiar beauty which no mere architectural accessory could in any way produce. Not one of these designs depends for its effectiveness on any purely architectural detail as usually understood, but it is due entirely to the proper distribution of parts in the most efficient way that could, at the time, be reasoned out for the proper attainment of the object in hand. This we have to insist on again and again. It is the ironrule which can never be broken without departing from true principle, and with unhappy results to the beauty of the structure concerned, from the designing of the simplest moulding to the construction of a cathedral, the erection of abridge, or the building of a ship. It is the one paramount law in Art and Science, as imperative in such an apparently variable and volatile thing as a lady's bonnet, as in the construction of that useful, beautiful and significant thing, the steam engine.

To evince the truth of this proposition we will present one more well known, nay, perhaps, in past times, somewhat hackneyed example, to close this series of illustrations of the very imperfect remarks to which you have so kindly and forebearingly listened. I allude to the one great, significant, and really original building of the centuryh. The conception of no professional architect, for no architect out of 245 who competed for it, proved equal to the task: of no builder, for none were found in the length and breadth of England who could suggest such a structure; but of a mere gardener, a constructor of green houses;—I allude of course, to the Great Exhibition Building of 1851. Truly great it was, and greatest, even, it will remain, until once again the exigencies of the occasion shall override mere precedent, and some future gardener shall produce as glorious a flower from as small a seed, simply by yielding unquestioning obedience to the needs of the occasion, unfettered by rule or any existing order of things which could in any way interfere with or encumber *pure utility*. The design sprang into being, and the world of that day was both astonished and delighted. It is said that when all the designs for the Great Exhibition of '51 had been received, classified and inspected, and the commissioners, rejecting them all, had concocted one of their own, apparently as unsuitable for the purpose, as any one of them all, Joseph Paxton, chief gardener to the Duke of Devonshire, sat down in his office and in half an hour sketched out his design for the proposed building on a sheet of foolscap. Submitting his idea to one of the Commissioners, he was encouraged to perfect it. The design was published and received the unanimous approval of the nation. The contractors, Fox & Henderson, in one week prepared drawings and estimates, and in four months from that date, 18 acres were covered with glass and iron in a structure, the quiet beauty, majestic simplicity, and the unapproached convenience of which has been from that day to this, absolutely unrivalled in buildings of the kind. Every building of the sort since designed, has had accessories of various kinds breaking up its mass by useless excrescences and architectural developments, until the fantastic structures have finally lost every characteristic which made the original design great. The accompaning views, show plan, elevations, and interior view and a few details.

FIRTH OF FOTH CANTILEVER BRIDGE.

The account of the designing, and construction of this building, reads like a fairy tale, in harmony with the fairy like structure which was the charming result.

Mr. Henderson, who made every important drawing with his own hand, working 18 hours a day for seven



FIRTH OF FORTH CANTILEVER BRIDGE.

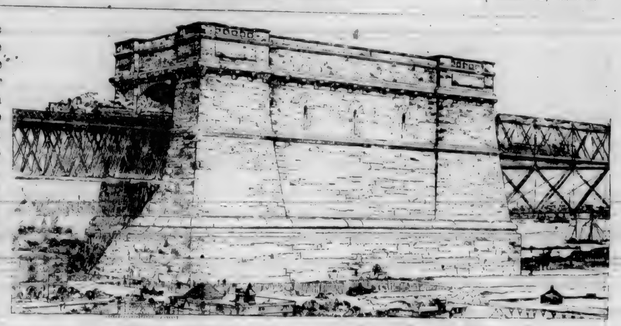
weeks, says in a speech made about that time, that hundreds of tons of glass were provided, of an unprecedented size; thousands of columns, hundreds of girders 34 miles of guttering pipes connecting the columns, which conveyed the rain water to the ground, 205 miles of sash bars, and more than 1,000,000 feet of flooring, were produced by the various firms engaged in the work, in the short space of time which was allowed to execute it. The setting out of the structure, the placing of the base blocks on concrete filled into holes dug in the ground, the raising of the columns, the lifting of the girders and keying them into their proper places in the structure, etc., proceeded with unexampled accuracy and rapidity, and, the first of its kind, and unique in the history of great expositions, the building was ready on the day when the contract expired. This was due to the entire simplicity and reduplication of every part of the structure, which again was due to the harmony of scale, which in this structure, as in the Parthenon and a few others, is perhaps after all, the most noticeable feature in the building.

Contemplating the excellent qualities exhibited by this great structure, which at the time of its erection, challenged the admiration of men of taste and judgment throughout the world, and in fact, elevated it to a level with the greatest edifices ever conceived by man, it is evident that it in no way differs in kind from any one of the great engineering works to which your attention has been directed above.

NORTH RIVER BRIDGE.

Adaptation of means to ends and that alone, in it, as in them, constitutes and includes all of its qualifications, and in this as in them, it is especially to be remarked that there is nothing imitated. No attempt is made to transfer to one material the appearance or proportions appropriate to another. On the contrary, each material is in its turn treated on its own merits, and hence its value is thereby enhanced in proportion. It is just as though the whole structure to its minutest part, was represented by two sets of figures, indicating in the first place the intrinsic value, in the other the value in application, and that both sets of figures in every case, were identical. In how many structures of the kind, erected before or since, can this be said to have been attained. In other words, that every material throughout the structure should be so applied as to attain the greatest measure of utility it is capable of, with the least expenditure of material compatible with safety, and with the best artistic effect. Would it be by adopting the forms and construction appropriate to some other and very different materials? to make iron resemble stone, for instance, or wood iron or vice versa? It is evident that there must be in such a case a great and useless waste of labor as

well as material, in other words, that the intrinsic and economical values would fail to agree. Note the admirable way in which every part of the above great building is adapted to every other part! The way in which the columns rise from ground to roof line, representing every one of the direct lines of support throughout. The way in which the connecting girders and filling in pieces are keyed rather than bolted into their places, and how directly and *easily* every part does its duty, and how by the proportioning of material to strength and position, such a degree of aerial elegance is attained that it may, perhaps, best be compared to the delicate twigs and branches of a tree divested of its leaves, whose dainty pencilings tax the skill of the artist fitly to represent. When in the full glory of its utility, it overflowed with a profusion of fabrics and materials, and objects of beauty and use from every quarter of the globe, it was like the same tree in full bloom, glowing with verdure, with color and with fruit.

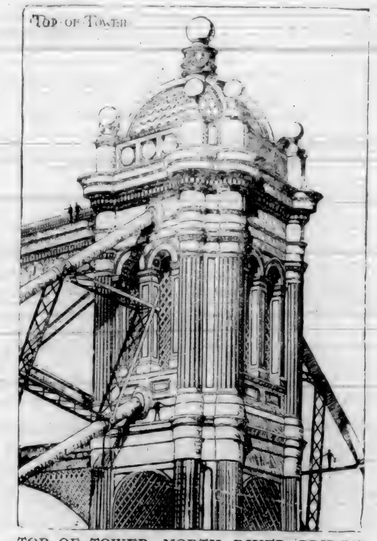


APPROACHES TO THE NORTH RIVER BRIDGE.

It seems at this point permissible to consider, as a comparative test of the proper treatment of other materials, some of the recognized qualities and properties of Iron. Whether as wrought or cast iron, or in the form of that now abundant material, wrought and cast steel, innumerable tests and experiments have settled to so large an extent the available qualities of all these substances that there is no particular need of dilating upon that subject further than may suffice to note some of the ways in which they may be better used and less abused. In the first place it must not be forgotten that all materials, without exception, are subject to change, that no material, whatever its form or qualities, is free from the liability to alter its shape; and that therefore when a perfectly spherical cast iron ball rests upon its side, it is no longer spherical, it is really oblate. That a piece of cast iron ten inches square in section and a standard foot in length, if placed resting on its extremities, is no longer a standard foot in length, and that when a great weight is placed unsymmetrically on any form of support, that support will be acted on unsymmetrically and will change its form, and the arrangement of all its molecules in the effort to adjust itself to the conditions thereby imposed upon it, which in construction means a great deal, involving as it does under given conditions the theory of re-crystallization, etc.

We are accustomed to suppose that our friends, the engineers, are the men above all others who are used to taking account of the minute changes in the form and direction of the substances and forces with which they have to deal.

But architects are expected to abolish all such changes, and to produce a structure of variable materials absolutely fixed in form for ever; at least so one would suppose from the sort of criticism to which they are at times subjected. But it is to be feared that they themselves are chiefly responsible for the inappropriate use too often made of materials, and the untoward results which frequently occur. Uniformity of material means uniformity of action in the changes which those materials inevitably undergo under the influence of temperature and strain. Some of the ways in which iron should not be used, we beg now to note.



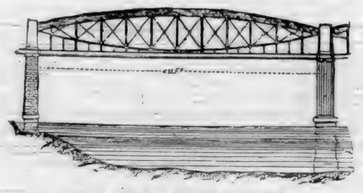
TOP OF TOWER, NORTH RIVER BRIDGE.

First: No great strain ought at any time to be thrown in an unsymmetrical manner on any unsymmetrical section of cross iron. This means an unequivocal condemnation of *brackets*. The extent to which that mode of employing cast iron is used, is remarkable

CAST IRON BRIDGE AT CRAIGELLACHIE.

when the treacherous nature of the material so used is so well known.

To founders and machinists who are well and practically acquainted with the behavior of cast iron under strain and temperature, there is nothing more objectionable than a large extent of *cross iron*, as it is called. They refuse to trust to it under any circumstances and yet we find in all the published examples an almost unlimited use of this objectionable and dangerous feature. Smooth, round columns of cast iron of small diameter, are set upon end and a number of brackets are projected from them at a sharp angle at cap and base plate, bearing heavy loads of beams and arches and this for many stories in height. Such an accident as occurred in the Owens Building, at Chicago, or an unsuspected flaw in one of the brackets or any other adequate reason, causing the snapping of one small section, may possibly occasion in a moment the destruction of a large building, hundreds of lives and much valuable property. Is this either wise or necessary? Can bad construction ever be necessary? Is it scientific? Is it artistic? That few authen-



SPAN OF SALTASH BRIDGE.

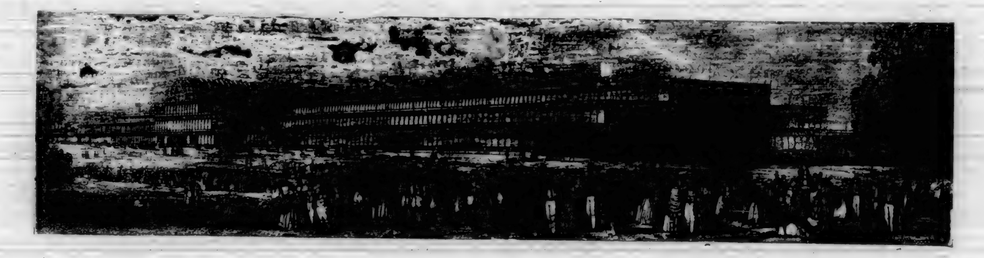
tic cases of failure of this kind can be referred to is no argument in favor of the practice. Is it not something which may occur under any sudden shock? The fall of comparatively few degrees of temperature, in view of the great inequality between bracket and shaft, must cause unequal strains in both. A settlement causing undue strain on any one part, or a local *rise* of temperature, or some stress occasioned by any one of a hundred different causes, may ultimate the conditions which may bring about a failure such as I have

BROOKLYN BRIDGE, NEW YORK.

indicated. Another wrong use of the material is indicated in the ordinary form of cast iron girder in which the upper flange is arched. This is an altogether mistaken idea, and an utterly fallacious, improper, and unscientific use of material. In the girder here shown the lower flange is straight; the shortest distance between the two ends, in the upper flange, the distance is the greatest that can be found between the two ends. In shrinking flange (A) occupying more length, shrinks more and flange (B) being shorter, shrinks less, in proportion; consequently there is an internal strain set up between the top and bottom flanges and brought to bear upon the web, which added to the weight that the girder is supposed to bear, greatly lessens its effective strength, if as in large girders of this form, (a frequent result,) it does not occasion their destruction. This is one of the principal reasons why such cast iron girders frequently snap, even before being placed in the building. The ordinary form of the rolled girder, indicates also the best general form for a cast iron girder under ordinary circumstances. Parallel flanges, the upper one-half the width and thickness of the lower, with square or inclined skewbacks at the end, indicate generally the best practical form for cast iron girders of short span.

The latticed girders used in the great exhibition building (20), were in every respect admirably adapted to the purpose for which they were intended; and either as stiffeners for the nave columns, in which position, of course, they were much lighter, or as the bearers of the gallery floors, they were found in every respect equal to their work.

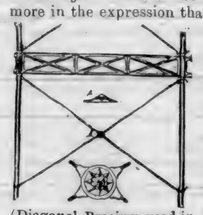
Before closing these perhaps too lengthy remarks, I will venture to indicate a few ways in which it may be found advantageous to use cast iron. Describe a circle in a square, and fill



LONDON EXHIBITION BUILDING OF 1851.

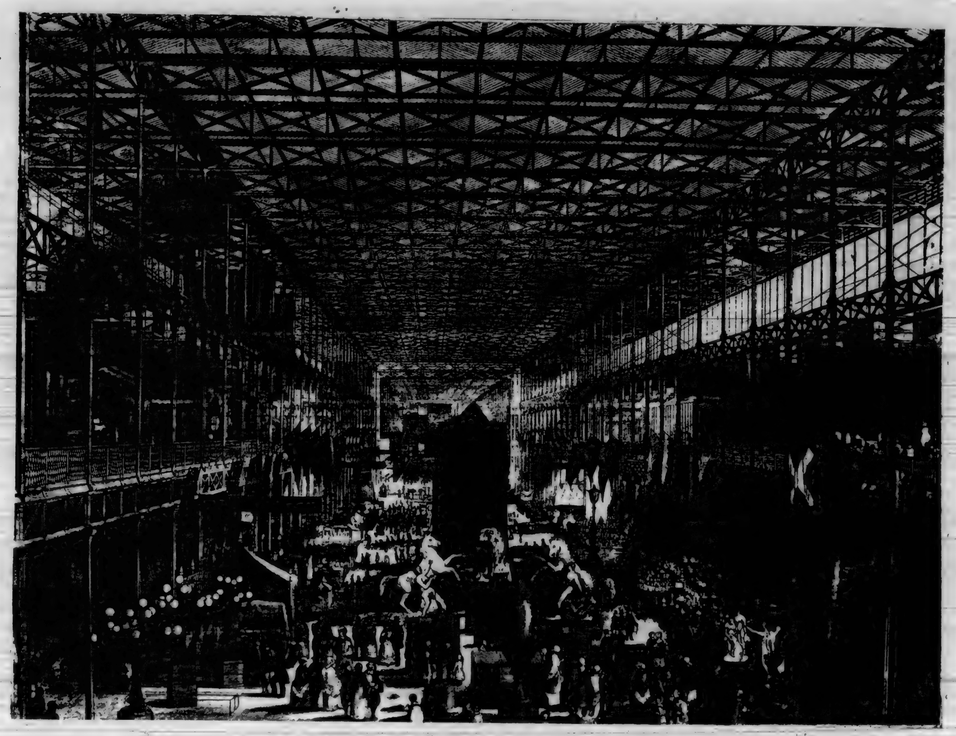
still further to increase the availability of iron as a building material.

And now a few words on the real subject of this paper, the "*Iron Age.*" Does it not occur to thinking people that there is more in the expression than is represented by the use of a single material, however useful it may be, and however varied its employment? That is why the expression was transposed in the former part of this paper as better expressing the uses and capabilities of the material itself. But in deriving a lesson from the foregoing, if lesson there be, it is necessary to revert to the broader term and the idea of the ages, and in this case, not only the scientific idea, *the age of iron*, or the esthetic idea, *the age of brass*,



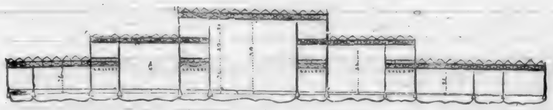
(Diagonal Bracing used in above building)

in the angles of the square with other squares; apply the thickness of one of the small squares round the circle internally, and you have the section of a cast iron column of any diameter, and any length within the prescribed limits of 30 diameters. In elevation, place the flanges diagonally (as they are drawn) to the length of the super imposed girders. Grow the flanges out into brackets of moderate projections and cast a plate of equal thickness on top, and the cap is formed. A greater projection and a proportionately larger plate forms the base. If supporting a great weight, such as a basement column, separate the base, and form circular flanges between the angle ribs, on shaft and base section, and bolt the two together. To adjust wrought I beams to this form of columns continued one or more stories in height; cut away the flanges of beams next the columns on each side (using coupled beams) and fit the same to flanges of columns, and bolt diaphram plates between those on each side of column. In this way a perfectly immovable system of columns and girders is found,



INTERIOR VIEW GREAT LONDON EXHIBITION BUILDING.

symmetrical in bearing, and adjusted to the required conditions throughout. The brackets are simply extensions of the ribs, and there is *no initial point of fracture*, and the girders, on account of being firmly held at each end, will bear double the weight of unfixed girders. If it is desired to fireproof these columns and girders, the shafts and brackets are admirably adapted thereto. One other suggestion and I will conclude this section. The subject of *Tempering* is one which does not seem to have attracted the attention of constructionists to any large extent up to the present time. A gentleman of my acquaintance in Ontario, Canada, some years ago, patented a carriage spring of peculiar merit. Instead of being made of several laminæ of thin steel, secured with rivets or loops, it was made solid, ogival in form, and tempered in an oven. The reason why springs had never been made solid before was because it was not easy to give equal temper throughout the thick and thin parts. This was secured by means of an oven of a peculiar kind. The ogival form of thespring causes the bearing to be *shortened with the increase of load*. Why is not this a principle which might be taken advantage of in designing cast or wrought steel lattice girders, and why should they not be tempered? The tempering alone, the gentleman informed me, added 300 per cent. to the strength of the springs.



VERTICAL SECTION, EXHIBITION BUILDING.

The lately invented method of rendering iron unoxidizable, known as the "Bower-Barf" process, by which a film of carbonate of iron is formed on the surface of the metal, seems calculated or even the intellectual and rational idea, *the age of silver*, but the far, higher and nobler idea by which for wood we bring *iron*, and for iron *brass*, and for brass we bring *silver*, and for silver *gold*, so that all the ages are found to be for all times and for all occasions, provided only we choose so to have it. For all materials, all things, all occasions, nay, the world itself, is naught and practially vanishes like the baseless fabric of a dream, but for the *mind of man*, his understanding of *truth*, and his desire for *good*. Without this *silver* and this *gold*, he sinks to a level with the dust from whence he rose. With this he rises into an image of his Maker, the one only and absolute impersonation of that law which is the same for the dew drop as for the world. For the created as for the creator; for the rational, thinking, willing, acting human embodiment as for the divine, and omnipotent, omnipresent and omniscient Love, Wisdom and Life from whence and by which all things live and move and have their being.

The following paragraph was unintentionally omitted in connection with the cut "Types of Stellar Spectra," on page 63:

In the accompanying bands of "Fraunhofers'" lines are seen the distinctive spectra of Sirius (the nearest fixed star) the Sun and other stars in which not only the lines of hydrogen, iron and magnesium are distinguishable, but those of a great variety of mineral salts and other substances. Thus presaging not only the compositions of the planets and our own earth, but our own bodies as well; and by analogy of natural conditions to spiritual causes, therein may also be seen reflected the based elements of our *minds*—which, in turn, are but the organized forms of the *organizing principles* which primarily exist in the great First Cause of all.

Which finds expression in devotion to the ineffably spiritual principle of essential goodness as to *quality*, and resulting truth of corresponding *form* in men and things.

In the matter of the illustrations we are indebted to the courtesy of the *Century Company*, the *Scientific American* and others who have kindly allowed us the privileges of their publications.]

San Francisco Architectural League.

The regular monthly meeting of the San Francisco Architectural League, was held at its rooms, 408 California street, on Wednesday evening, May 1st, with twenty-five members and fifteen visitors present.

An interesting lecture and stereopticon exhibition was given, by Frank T. Shea, Esq., on "Scenes through Italy," which occupied the entire evening.

Special business meeting of the League, was held May 8th, with twelve members present, President Stone in the chair. The minutes of the last meeting were read and approved. Committee on Investigations reported favorably in the cases of Messrs. Larsen, Bugbee and Parr, as senior members and the gentlemen were duly elected.

Communication from G. H. Wolfe was placed on file. Mr. Deane moved to suspend the rules; motion carried. Amendments were made to Article 1, Section 1.—to read as follows: The Board of Directors shall organize immediately after their election by the selection of a President, Vice-President, Recording and Financial Secretary, and Treasurer. Amendment was carried. Article 7, Section 3.—to read as follows: The secretary shall keep the minutes of the League, attend to all correspondence, preserve a register of all members and report semi-annually.

Article 7, Section 4.—The financial secretary shall preserve a register of all members, collect and pay to treasurer all money due to and received by the League.

Article 2, Section 4.—Application for membership, for either senior or junior shall be accompanied by drawing in either pen or pencil, and on the favorable report of the Investigating Committee, the Board of Directors shall decide whether the applicant shall be admitted as a senior or junior member.

Article 8, Section 1.—That monthly dues for all members of the League be 50 cents.

The reports of the Treasurer and Secretary were read and referred to the Board of Directors.

It was moved and seconded that all the seniors be nominated as Board of Directors; carried.

The exhibition of the drawings for library completion, will be held Wednesday eve, May 29th, 1889.

A class in "Water Colors" will be organized under the auspices of the League, with Lionel D. Deane as instructor, for Saturday afternoon from 3:30 to 5 P. M., at the rooms 408 California street. Application to be sent to the secretary.

In examining late improvements in bath room appliances, our attention has particularly been called to the Star Metal Cored Rubber Stopper, a cut of which appears above.

These stoppers were introduced about twenty years ago, by the Wm. Powell Co. of Cincinnati, Ohio. The first ones manufactured hardly gave satisfaction. Now, however, they present a stopper perfect in all its appearances. The metal core is completely enveloped in a rubber casing, the core extending up into the neck, thereby preventing any strain on the rubber and its weight is sufficient to prevent it floating from its socket.

The sole manufacturers of these stoppers is the Wm. Powell Co., 50 Plum St., Cincinnati, Ohio. A letter addressed to them will receive prompt attention.

$500 for a $3,000,000 Plan.

The "Best Plan" is wanted for a $3,000,000 Capitol building for Salt Lake City. For the same, the Board of Commissioners through their Secretary, Geo. E. Blair, offer the munificent sum of $500.

Where "Old Style" May be Found.

The N. & G. Taylor Co., have established agencies in this city, in Portland, Oregon, Los Angeles and in Seattle, W. T. By a reference to their ad on page 2 of cover, the address of each will be found. The "Old Style" of tin plate is being extensively used all over the coast.

It is better to oil floors than to paint them—a monthly rubbing will make them as good as new.

CITY BUILDING NEWS.

Avery, between Geary and Post. Owner, Jane Broudero; architect, G. M. Saulsbury; contractor, G. M. Salsbury; cost, 1,950; signed, April 22; filed, April 23; sureties, D. Dodge and A. J. Gendavi; limit, August 1, '89; $650, windows in; $650, completed; $650, 35 days.

Army, corner San Jose Ave., cottage. Owner, F. Kaufmann; architects, Townsend & Wyneken; contractors, Gray & Stover; cost, $8,360; signed, April 8; filed, April 17; limit, July 15, '89; $3,135, ready to lath; $3,135, inside work done; $2,090, 35 days.

Albion Ave., near Sixteenth, three-story frame. Owner, Marie Schath et al.; architect, A. J. Barnett; contractor, Wm. Linden; cost, $4,375; signed, April 27; filed, May 1; sureties, W. A. Meeker, $2,500; limit, 100 days; $900, roofed; $800, brown coated; $800, white coated; $775, completed; $1,100, thirty-five days.

Buchanan near Union, two story frame. Owner, P. Johnson; contractor, McGinnes; cost, $4,000.

Buchanan near Turk, three story frame. Owner, Samuel Wilson; architect, Alex. R. Pfarrer; contractor, B. Pfaffer; cost, $5,850; signed, April 26; filed, April 27; $1,450, framed; $1,400, brown coated; $1,500, completed; $1,500, 35 days.

Broadway and Buchanan. Owner, Mary G. O'Kane; architect, Sam'l Newsom; contractors, Anderson Bros.; cost, $8,075; signed, April 27; filed, April 27; surety, J. Kennedy, $3,000; $1,211.25, framed; $1,211.25, roof on; $1,211.25, white mortared; $1,211.25, outside primed; $1,211.25, completed; $2,018.75, 35 days.

Broderick and Eddy, two two-story and basement frame. Owner, Isabel Durney; architect, R. H. White; contractor, D. H. Matherson; cost, $4,750; signed, April 29; filed, May 2; sureties, Preston and McKinnon, $4,000; limit, 90 days; $890, chimneys built; $890, brown coated; $890, outside primed; $890, completed; $1,190, 35 days.

Buchanan corner O'Farrell, plumbing, etc. Owner, Robt. Lorentz; architect, W. Winterhalter; contractors, Thos. Clark & Sons; cost, $768; signed, April 5, filed, April 8; $300 Inspector's certificate shown; $468 completed.

Bush corner Sansome, Hydraulic elevator. Owner, First National Bank, S. F.; architects, Wright & Saunders; contractors, W. H. Birch & Co.; cost, $4,525; signed, March 28; filed, April 9; limit, June 28, 1889; 75 per cent. in installments on the first of each month as work progresses; balance, 25 per cent. 35 days.

Broadway and Taylor, move old and build new house. Owner, F. A. Lasell; contractor, Geo. M. Salsbury; cost, $2,946; filed, May 3; limit, August 1, '89; $200, old house removed; $746, framed; $700, brown coated; $1,300, August 3, '89.

Buchanan, between Union and Filbert, one story cottage. Owner, Leopold Bauer; architect, Wm. Schrof; contractor, S. G. Rienacker; cost, $1,780; signed, May 3; filed, May 3; surety, Jacob Hoeges; limit, July 4, '89; $440, roof boards on; $440, brown coated; $440, first coat paint on; $160, completed; balance when receipts for labor are shown.

Block bounded by Vienna and Naples streets, and Russia and France avenues. cottage. Owner, Wm. G. Loewe; architect, Emil John; contractor, Adam Miller; cost, $2,500; signed, May 1; filed, May 1; limit, July 1, 1889; $875, rough mortared; $1,000, accepted; $625, thirty-five days.

Clay corner Buchanan, six two story frames. Owner and builder, Wm. Hinkle; cost, $30.000.

California Avenue near Powell Avenue, two story frame. Owner and builder, Frichette; cost, $3,500.

Clementina and Fourth, alterations. Owner, Wm. Gaffney; architect, M. J. Welsh; contractor, J. O'Connell; cost, $2,150; signed, April 8; filed, April 18; $500, framed; $600, first coat mortar on; $500 completed; $550, 35 days.

Clementina, between First and Second, brick building. Owner, Dickman, Jones Co.; architects, Pissis & Moore; contractors, Riley & Loane; cost, $8,300; signed, April 18; filed, April 20; $2,000, ready for second story joists; $2,000, ready for roof timbers; $2,000 completed; $2,300, 35 days.

Castro and Sixteenth, two story building; Owner, Mrs. F. J. Andrews; contractor and architect, Albert Cooke; cost, $3,800; signed, April 4; filed, April 9, 75 per cent. of work done as work progresses; balance, 25 per cent. 35 days.

1418 California, additions, etc. Owner, Wm. M. Dye; architects, J. J. & T. D. Newsom; contractors, Moore Bros.; cost, $3,150; signed, April 3; filed, April 10; limit, 90 days; $1,000, roof work up; $681, mortar on; $681, completed; $788, 35 days.

Diamond and Nineteenth, to build. Owner, J. C. Kent; architect, S. Hatfield; contractor, A. A. Willis; cost, $2,150; signed, April 13; filed, April 25; limit, 60 days; $412.50, roof boards on; $400, window frames in; $400, plastering done; $400, completed; $537.50, 35 days.

Derisadero corner Sutter, to build. Owner, J. Murray; architects, Copeland & Banks; contractor, G. Healing; cost, $4,216; signed, April 13; filed April 16; sureties, J. Healing and G. Shankland; limit, 100 days; $400, old building completed; $900 framed; $1,000, brown coated; $862 completed; $1,054, 35 days.

Dolores, between Twenty-third and Twenty-fourth, three two story flats. Owner, Mrs. M. A. Smith; architects, Percy & Hamilton; contractor, F. W. Kern; cost, $11,702; signed, April 9; filed, April 18; Sureties, O. W. Nordwell and F. Joost, $5,000; 75 per cent. of work done on first Saturday of each month; balance, 35 days.

Dolores and Liberty, two story dwelling. Owner, Edgar W. Briggs; architect, S. Hatfield; contractor, Jos. W. Reid; cost, $2,230; signed, March 4; filed, April 10; sureties, J. Macowsky and Adolph Schwerin, $1,500; $500, roof boards on; $390, floors laid; $390, yard done; $392.50, completed; $557.50, 35 days.

Eighteenth corner Sanchez, two story frame. Owner, Henry Tietjen; architect, H. Geilfuss; contractor, Schutt & Krecker; cost, $8,410; signed, April 27; filed, April 27; $1,260, framed; $1,260, partitions set; $1,260, outside work done; $1,260 outside finith on; $1,260, completed, $2,110, 35 days.

Ellis, between Fillmore and Steiner, carpenter work. Owners, Main & Winchester; architect, Chas. Geddes; contractor, J. T. Grant; cost, $17,365; signed, April 17; filed, April 20; surety, C. Hanson; limit, 4 months and 10 days; $3,000, frame up; $3,024, ready for plastering; $3,500, all finish on; $3,500 completed; $4,341, 35 days.

Ellis, between Fillmore and Steiner, painting. Owners, Main & Winchester; architect, C. Geddes; contractor, Thos. Downing; cost, $1,380; signed April 17; filed, April 20; surety, L. Hartter; August 20, '89; $450 ready for graining; $485, completed; $345, 35 days.

Ellis, between Fillmore and Steiner, plumbing. Owners, Main & Winchester; architect, C. Geddes; contractor, R. A. Vance; cost, $1,500; signed, April 17; filed, April 20; surety, G. R. Lang; limit, August 1, '89; $500, sewerage; $400, sewers connected; $225, completed; $375, 35 days.

Erie near Mission, three two story frames. Owner, Wm. Ede; architect, A. J. Barnett; contractor, O. E. White; cost, $6,500.

Fifteenth and Castro, to build. Owner, C. Lynch; architect, M. J. Welsh; contractors, Grant & Hopkins; cost, $3,375; signed, April 23; filed, April 25; $843.75, framed; $843,75, brown coated; $843.75, completed; $843;75, 35 days.

Folsom corner Juniper Avenue, plumbing, etc. Owner, Charles Bogan; architect, Jas. P. Chadwick; contractor, H. Williamson; cost, $1,145; signed, April 3; filed, April 29; limit, July 15, '89; at end of each month 75 per cent. of work done, paid; balance when completed.

Folsom corner Juniper Avenue, carpenter work, etc. Owner, Charles Bogan; architect, J. A. Chadwick; contractor, G. H. Walker; cost, $9,200; signed, April 3; filed, April 29; sureties, Irvine Graham and Casper Dix, $2,500; limit, July 15, '89; $1,840 framed; $1,840, roofed; $1,840, brown coated; $1,840, first coat paint on; $1,840, completed.

Fulsom corner Juniper Avenue, brick work. Owner, C. Bogan; architect; J. P. Chadwick; contractor, R. Ringrose; cost, $1,245; signed, April 3; filed, April 29; limit, July 15, '89; 75 per cent paid at end of each week of work done; balance when completed.

Front corner California, excavations, pile driving, etc. Owner, M. Rosenbaum; architects, Salfield & Kohlburg; contractors, B. McMahon & Son; cost, $27.50 per pile; signed, April 25; filed, May 3; Sureties, C. S. Holmes and W. J. Adams, $5.000; limit, 45 days; payment made when completed and accepted.

Fulton, corner Fillmore, two story frame. Owner, Henry Hume; architect, R. Zimmerman; contractor, F. Weinoehl; cost, $3,945; signed, April 8; filed, April 15; $1,000, framed; $960, rough plastered; $1,000, accepted; $985, 35 days.

Fremont and Folsom, frame. Owner, F. A. Robins; architects, Pissis & Moore; contractor, S. C. Buzzell; cost, $5,418; signed, April 13; filed, April 17; $1,000, brick work done; $1,000, framed; $1,000 enclosed; $1,063, completed; $1,355, 35 days.

Fillmore and Pacific, dwelling. Owner, Isabella Mayers; architect, Samuel Newsom; contractor, W. H. Wickersham; cost, $5,285; signed, April 16; filed, April 19; surety, C. S. Holmes, $2,000; 75 per cent of work done on first of each month; balance, 35 days.

Green, near Buchanan, one story frame. Owner, Augusta G. Crosby; architect, W. H. Wharff; contractors, Farrell & Bell; cost, $4,500.

Geary corner Kearny, ornamental iron work. Owner, M. H. DeYoung; arcnitects, Burnham & Root; contractors, Winslow Bros. Co.; cost, $13,150; signed, April 2; filed, April 16; 75 per cent. of work performed to be paid on 10th of each month.

Guerrero and Twenty-second, to build. Owner, Mary Fogarty; architect, M. J. Welsh; contractor, R. Parker; cost, $4,400; signed, April, 16; filed, April 17; $700, framed; $1,200, brown mortared; $1,250, completed; $1,250, 35 days.

Guerrero and Twenty-fourth, two story frame. Owner, B. H. Schenhoff; architect, A. J. Barnett; contractor, Timothy Sullivan; cost, $5,884; signed, April 16; filed, April 18; surety, B. Joost, $3,000; limit, 100 days; $1,213 roofed; $1,100, brown coated; $1,100, outside finish on; $1,471, 35 days.

Guerrero, between Seventeenth and Eighteenth, to build. Owner, Louis Schloh; architect, F. Koldenstrodt; contractors, Tegeler & Muller; cost, $5,800; signed, April 9, filed, April 9; limit, 3 months; $1,750, framed; $1,750, first coat plastering on; $1,800, completed; $500, 35 days.

Golden Gate Avenue, near Jones, freight elevator. Owner, Lizzie H. Moffatt; contractors, A. J. McNicolls & Co.; cost, $1,150; signed, April 9; filed, April 11.

Guerrero and Twenty-third, two story. Owner H. Minderman; architect, H. Geilfuss; contractors, Tegeler & Muller; cost, $3,785; signed, April 8; filed, April 13; $475, framed; $475 roofed; $475 partitions set; $475, outside work done; $475, inside work done; $460, completed; $950, 35 days.

Howard corner Fourteenth, two story building. Owner, Mrs. E. L. Miller; architect and contractor, M. Wm. Kain; cost, $5,000; signed, April 22; filed, April 25; limit, August 1, '89; $1,250, framed; $1,250, brown mortared; $1,250, white mortared; $1,250 finished.

Howard corner Fourteenth, two story frame. Owner, D. Sullivan; architects, Schmidt & Shea; contractor, J. F. Logan; cost, $8,493; signed, April 26; filed, April 27; sureties, B. Joost and W. Thyarks; limit, 90 days; $1,500, framed; $1,600, plumbing in; $1,600, outside primed; $1,600, completed; $2,193, 35 days.

Haight, between Steiner and Pierce. Owner, Aug. Kenerleber et al.; architect, R. Zimerman; contractor, Adam Miller; cost, $1,050; signed, April 26; filed, April 27; $300, rough mortared; $400 accepted; $260, together with last payment of contract.

Howard, corner Tenth, Hydraulic Ram Elevator. Owner, Omnibus Cable Co.; contractors, Cahill & Hall; cost, $4,275; signed, April 6; filed, April 8; limit, 60 days; one-half when work is completed; balance, 35 days.

Jackson near Fillmore, additions. Cost, $600.

Jackson corner Baker, additions. Owner, and builder, W. F. Lewis; cost, $2,000.

Jackson and Franklin, two story frame. Owner, J. C. Franks; architect, J. E. Krafft; contractor, J. H. McKay; cost, $8,275; signed, April 19; filed, April 23; sureties, Jno. F. Kennedy and Geo. T. Shaw, $4,000; limit, four months; $2,000, rafters on; $2,000, brown mortar on; $2,275, completed; $2,000, 35 days.

Jasper Place and Union street, three story frame. Owners, C. Rondinotto, et al.; architects, Townsend & Wyneken; contractor, O. E. White; cost, $5,253; signed, April 26; Filed, April 27; $1,200, roof boarded; $1,300, first mortar on; $1,438, sashing done; $1,315, 35 days.

Jackson, between Scott and Devisadero, frame. Owner, Jos K. Parker; architects, Pissis & Moore; contractor, Jas. Geary; cost, $5,320; signed, May 1; filed, May 1; sureties, W. A. Meeker, $2,500; $1,000, framed; $1,000, brown coated; $1,000, interior plastered; $990, completed; $1,330, thirty-five days.

Lyon and Geary, dwelling. Owner, Margaret S. Clapp; architect, J. Hatfield; contractors, Plumber & Martin; cost, $2,350; signed, April 23; filed, April 24; surety, Frederick Kalbfleisch, $1,500; $550, roof boards on; $404, first coat plaster on; $404, windows in; $404, completed; $587.50, 35 days.

Lapidge and Nineteenth, two-story frame. Owner, Thomas Gardner; architect, M. J. Welsh; contractor, J. O'Connel; cost, $2,000. signed, April 17; filed, April 25; $400, framed; $533.33⅓ brown mortared; $533.33⅓, completed; $533.33⅓, 35 days.

Leavenworth, near Pacific, building. Owner, John Devery et al.; architect, G. H. Miller; contractor, John Dyar; cost, $3,720; signed, May 2; filed, May 2; sureties, Joseph Peers and John Willis, $2,500; limit, ninety days; $600, rough frame up; $700, roof on; $700, white coated; $790, completed; $930, thirty-five days.

Mason and Sutter, three-story frame. Owner, Ellen L. Hayward; architects, C. R. & J. M. Wilson; contractor, Jas Geary; cost, $6,865; signed, April 22; filed, April 22; $1,025; second story joists on; $1,030, roof on, $1,030, brown coated; $1,030, white coated; $1,030, completed; $1,720, 35 days.

Mariposa corner Florida, building. Owner, G. S. Ashmead; architect, T. J. Welsh; contractor, B. Horn; cost, $6,800; signed, April 24; filed, April 27; sureties, T. Downing and E. M. Harmon, $4,000; limit, 90 days; $600, first story joists on; $675, framed; $1,275, brown coated; $1,275, white coated; $1,275, accepted; $1,700, 35 days.

Market, between Fourth and Fifth, concrete work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $14,300; signed, April 15; filed, April 20; sureties, E. G. Stetson and A. A. Wigmore, $7,000; 75 per cent. of work done to be paid on first Monday of each month; balance, 35 days.

Masonic Avenue and Geary, one story cottage. Owners Mr. and Mrs Shoop; architect, G. G. Gillespie; contractor, G. G. Gillespie; cost, $1,200; signed, April 2; filed, April 20; $225, framed; $225 brown mortared; $225, white mortared; $225, completed; $300, 35 days.

Market between Fourth and Fifth, carpenter work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractor, W. M. Fletcher; cost, $49,772; signed, April 9; filed April 20; sureties, F. Joost and J. F. Kennedy, $20,000; limit, 90 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Minna, corner Seventh, alterations, etc. Owner, M. Foley; architect, J. J. Clark; contractor, C. Quinn; cost, $3,000; signed, April 9; filed April 11; surety, John McGuire, $3,000; limit, 30 days; $1,000, one-half brick work done; $1,000 brick work completed; $1,000 35 days.

Market, between Fourth and Fifth, brick work. Owner, California Academy of Science; architects, Percy & Hamilton; contractor, John McCarthy; cost, $36,884; signed, April 2; filed, April 11; sureties, Willis E. Davis and Theo. W. Peterson, $12,000; limit, 200 days; 75 per cent. on first Monday in each month as work progresses; balance, 25 per cent. after completion.

Market, between Fourth and Fifth, granite work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, M. J. Healy & Co.; cost $17,200; signed, April 9; filed, April 20; sureties, Wm. Mathews and Wm. R. Morton, $10,000; limiit, 90 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, wrought iron work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, Rix & Firth; cost, $12,375; signed, April 9; filed, April, 20; sureties, Howard Havens and Abner Doble, $5,000; Limit, 90 days; 75 per cent; of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, plumbing. Owner, California Academy of Science, architects, Percy & Hamilton; contractors. Duffy Bros.; cost, $15,326; signed, April 15; filed, April 20; sureties, J. Mahony and Robt; Mitchell, $7,000: 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Market, between Fourth and Fifth, cast iron work. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractors, O'Connell & Lewis; cost, $18,900; signed, April 9; filed, April 20; sureties, J. J. Mahony and Abner Doble, $10,000; limit, 60 days; 75 per cent of work done to be paid on first Monday of each month; balance, 35 days.

Nineteenth and Dolores, three story frame. Owners, Jules Wolf and wife; architects, Huerne & Everett; contractor, F. Buckley; cost, $4,800; signed, April 11; filed, April 13; $1,200, roof sheathed; $1,200, brown coated; $1,200, completed; $1,200, 35 days.

Noe and Fourteenth, two story. Owner, Kate W. Cook; architects, C. H. & J. M. Wilson; contractor, F. V. Aiken; cost, $3,360; signed, April 15; filed, April 20; $915, inclosed; $915, brown mortared; $915, completed; $915, 35 days.

Natoma, near Lafayette, to build. Owner, Margaret McCormack; architect, C. V. Pierce; contractor, C. Peterson; cost, $3,425; signed, April 29; filed, May 1; sureties, F. P. Latson and A. W. Starbird; limit, ninety days; $856.25, roof on; $856.25, outside finish on; $856.25, completed; $856.25, thirty-five days.

Ninth corner Stevenson, additions. Owner, R. Flaherty; architects, B. McDougall & Son; contractor, J. H. McKay; cost, $5,470; signed, April 6, filed, April 8; sureties, J. F. Kennedy and L. B. Doe, $3,600; limit, June 30, '89; $750, chimneys to top of walls; $900, chimneys toped out; $1,100 brown coated; $1,320 completed; $1,400 36 days.

Oak and Laguna, to build. Owner, Mrs. H. K. Barr; architect, T. J. Welsh; contractor, M. J. Gorman; cost, $5,098; signed, April 15; filed, April 16; sureties, Duffy Bros. and J. Mahony, $2,500; $1,232, studding up; $1,232, brown coated; $1,234, completed; $1,400, 35 days.

Octavia corner Sutter, four story frame. Owner, James G. Fair; architects, Schultze & Meeker; contractor, J. T. Grant; cost, $39,339; signed, April 16; filed, April 17, sureties, C. Hanson and W. J. Adams; $13,000; limit, November 1, '89; 75 per cent. on first of each month as work progresses; balance, 35 days.

Octavia near Vallejo, three frame dwellings. Owner and builder, W. F. Lewis; cost of each, respectively, is $4,500, $6,500, $4,000; total, $15,000.

Prospect Avenue, corner Powell Avenue, three one story frames. Owner and builder, F. Nelson; cost, $5,000.

Pacific, between Jones and Leavenworth, three story frame. Owner, Herman Wrede; architect, Emil John; contractor, S. Wray; cost, $4,592; signed, April 22; filed, April 23; limit, August 1, '89; $800, framed; $800, partitious set; $800, outside finished; $1,044, accepted; $1,148, 35 days.

Pennsylvania Ave., between Solano and Butte, two story flat. Owner, Thos. Murphy; architects, Schmidt & Shea; contractor, G. I. Doering; cost, $2,700; signed, April 9, filed, April 22; surety, J. Ahlbach; limit, 65 days from May 13; $500, enclosed; $500, brown coated; $500, hard finished; $500, completed; $700, 35 days.

Polk near Sacramento, additions; cost, $800.

Pine corner Touchard, two story dwelling. Owner, M. P. Jones; architect, Wm. J. Mathews; contractors, Maloney & Shay; cost, $10,297; signed, April 15; filed, April 19; limit, October 1, '89; 75 per cent to be paid as work progresses; balance, 35 days.

Stewart and Market, artificial stone sidewalks. Owner, Gualala Mill Co.; architect, C. I. Havens; contractors, Gray Bros.; cost, $1,502; signed, April 22; filed, April 23; $700, work in basement finished; $802, completed.

Rhode Island corner Yolo, one story. Owner, J. Barduhn; architect, J. T. Hogan; contractor, J. W. Mader; cost, $1,360; signed, April 17; filed, April 19; limit, June 5, '80; $250, framed; $260, rough plumbing done; $255, hard finished; $255, completed; $340, 35 days.

Seventeenth and Dolores, two story frame. Owner, P. J. Dwyer; architect, M. J. Welsh; contractor, R. Parker; cost, $3,550; signed, April 8; filed, April 10; $887.50, framed; $887.50, brown coated; $887.50, completed; $887.50, 35 days.

Sutter, Lots 1526 and 1528, retaining walls. Owner, M. S. Lowenthal; architect, Fred E. Wilcox; contractor, John Kelso; cost, $4,094; signed, April 11; filed, April 11; limit, 30 days; $3,070.50, completed; $1,023.50, 35 days.

Sacramento, corner Scott, two story frame. Owner, Jas. M. Wright; architect, W. F. Lewis; contractor, Wm. F. Lewis; cost, $6,400; signed, March 9, filed, April 15; limit, July 19, '89; $5,000 to be paid during progress of building, and $1,400 when completed.

Sutter, near Scott, build complete. Owner, Joseph Hauxmann; architect, G. H. Miller; contractor, Jas. Geary; cost, $2,755; signed, May 1; filed, May 4; sureties, C. S. Holmes and Thos. Richardson, $2,000; limit, ninety days; $600, framed; $500, plumbing done; $500, primed; $466, completed, $689, thirty-five days.

Seventeenth Avenue corner N, ten one story frames. Owner, J. Twist; architect and builder, W. F. Lewis; cost, $8,500.

Sansome and Halleck, alterations. Contractor, Haneke; cost, $2,500.

Tenth corner Stevenson, two story and basement frame. Owner, P. Brady; day work; cost, $7,000.

Twenty-Sixth, between Mission and Howard, two frames. Owner, G. F. Dallinge; architect, J. Trownson; contractor, S. C. Kronnick; cost, $3,700; signed, April 16; filed, April 16; limit, 90 days; $3,700, to be paid when building is completed.

Twelfth and Howard, to build. Owner, Daniel O'Connor; architect, M. J. Welsh; contractor, M. J. Scott; cost, $3,350; signed, April 17; filed, April 18; $837.50, framed; $837.50, brown coated; $837.50, completed; $837.50, 35 days.

Twenty-First, near Guerrero, two-story frame. Owner, Amandus F. Schumacher; architect, C. I. Havens; contractor, C. E. Dunshee; cost, $5,290; signed, May 2; filed, May 4; $900 inclosed; $1,000, pipes in; $1,000, hard finish on; $1,000, completed; $1,390, thirty-five days.

Thirtieth corner Church, alterations, etc. Owner, Geo. H. H. Patterson; architect, E. C. Warden; cost, $2,500; signed, April 27; filed, May 1; $600, hall partitioned off; $600, brown mortar on; $700, completed; $600, 35 days.

Third, corner Stevenson, brick work. Owner, C. H. Ackerson; architects, Schmidt & Shea; contractors, Peacock & Butcher; cost, $7,250; signed, April 8; filed, April 8; $3,500 ready for roofing; $1,800, completed; $1,950, 35 days.

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San Francisco.

Twenty-fourth, corner Shotwell, two story frame. Cost, $1,200.

Tilden and Castro, two story flat. Owner, J. V. DeLaveaga; architects, Schmidt & Shea; contractors, R. Doyle & Son; cost, $3,874; signed, April 22; filed, April 24; sureties, R. McCann and J. McCarthy; limit, 90 days; $725, enclosed; $725, plumbing in; $725, outside primed; $725, completed; $974, 35 days.

Thirteenth and Folsom, three story frame. Owner, Mrs. D. E. Keeks; architect, M. J. Welsh; contractor, Jas. Finn; cost, $3,780; sighed, April 3; filed, April 10; $945, framed; $945, brown coated; $945 completed; $945, 35 days.

Van Ness Avenue, corner Geary, additions. Owner, Sam Hart; architects, Schmidt & Shea; contractor, Wm. Pluns; cost, $16,250; signed, April 10; filed, April 12; sureties, F. Joost and D. Woerner; limit, 90 days, $5,000, enclosed; $3,000, brown coated; $3,000, hard finished; $3,000, completed; $4,250, 35 days.

Valencia, and Twenty-fifth; to build complete. Owner, John Dreamer; architect, M. J. Welsh; contractor, M. C. Lynch; cost, $4,250; signed, April 26; filed, May 3; $1,000, framed; $1,000, brown mortared; $1,000, completed; $1,250, thirty-five days.

COUNTRY BUILDING NEWS.

OAKLAND.

The average cost of the new dwelling houses now building in Oakland is much greater than in former years. In 1876 the average cost of some 900 houses erected was $870. In 1877, 655 houses were built, averaging about $950 each. This was the period of small, illy constructed, cheap dwellings, without modern conveniences, and built without reference to sanitary regulations, which did not exist officially at that time. Each succeeding year has shown a higher average in cost and more artistic architecture, until at the present time a gratifying showing can be made. The fifty-four new dwellings noticed in this semi-monthly TRIBUNE report are building at a cost of $146,400, an average of $2,710 each. In all cases the figures given have been obtained from the owner, contractor, or agent, and represent the contract price, not including extras.

The number of buildings detailed in the report embracing the latter half of March is fifty-four; cost, $146,400. Previously reported since January 1st, 165, cost, $524,600. Aggregate to March 31st, 219; cost, $671,000.

Under the heading of "Oakland Enterprise Abroad" THE TRIBUNE has often had occasion to mention the achievements of our local builders, but until now the pleasure of announcing the fact that an Oakland firm is building an entire town has not been accorded. El Verano is the first town to be built on its pristine development entirely by Oakland enterprise. A handsome business block of brick costing $10,000, a store, a restaurant and twenty-five dwellings, all supplied with modern conveniences, are in course of construction for the Sonoma Valley Improvement Co. at El Verano by A. W. Pattiani & Co., who are pushing the work as fast as possible. When it becomes known that Oakland builders are doing the lion's share of work for the interior, our planing mills, hardware stores, and all branches of trade concomitant with building enterprises, will flourish in a manner that cannot fail to gratify our local pride as well as add to the wealth of the city.

L. Dresco is building a six-room cottage on the south side of Eighteenth street, between Castro and Brush, at a cost of $2,000. H. Adams is the contractor.

E. Hook has commenced a first-class modern residence of eight rooms on the southeast corner of Eleventh and Jackson streets, to cost $4,000. W. N. Concannon is the contractor.

We particularly note that people seem to be inclined to build better houses and leave behind the cheap style of improvement, recognizing the fact that Oakland must become a great city, and that it must be built up with a view to a grand future and its requiremenrs in regard to stability of structure, combined with beauty and good taste.

Sanitary Inspector Snook says that requirements for inspection of new premises is much greater than ever before, and that the class of work going on is superior to that of former years, beyond comparison.

Among the more prominent buildings shortly to be commenced are the Unitarian Church edifice, which will rank among the best of the many fine church buildings of Oakland. The Young Men's Christian Associafion building, to cost $30,000 to $40,000, and a large and costly business block by J. W. Mackay. the only survivor of the bonanza kings.

BENICIA IMPROVEMENTS.

Our old friend. the *New Era* sends us the following as a summary of improvements in and around Benicia.

Bank of Vacaville, cost	- - - - -	$ 3,700
Hotel at Elmira	" - - - - -	7,000
" " Suisun	" - - - - -	17,500
Residence of J. Cohn, Suisun	- - -	2,500
" of A. W. Howe, Benicia	-	1,800
" of J. L. Innes, "	-	1,650
" of J. A. Smith "	-	1,800
" of G. R. Duval, "	-	2,000
" of T. B. Montgomery "	-	4,000

The Benicia Planing mill is doing most of the above. J. B. McKenzie is the owner. S. Brooks is foreman. O. H. Butler attends to the brickwork. L. K. Risley the plastering. Beardslee & Johnson the painting.

SAN JOSE.

FROM OUR SPECIAL CORRESPONDENT.

Two two story frame dwellings, Fifth near San Salvador street. Mrs. Steiger, owner; J. Lenzen & Son, architects; F. Davis, contractor; cost, $5,200.

Two story frame dwelling, San Carlos near Fourth street. Mrs. Auzerais, owner; Theo. Lenzen, architect; R. Summers, contractor; cost, $6,000.

Two story frame dwelling, corner Fourth and Empire streets. L. Auzerais, owner; Theo; Lenzen, architect; J. D. Stewart, contractor. cost, $5,500.

One story cottage, Delmas avenue, B. Campen, owner; Shottenhamer, contractor; cost, $1,600.

Cottage on San Carlos street. E. L. Ford, owner; Keast, contractor; cost, $2,000.

Two story dwelling, San Carlos near Delmas avenue Mr. Ouer, owner; Shotenhamer, contractor; cost, $2,100.

One story cottage, San Fernando near the Guadulupe. Mrs. Penchard, owner; J. Lenzen & Son, architects; A. C. Bates, contractor; cost, $2,800.

Two story dwelling, Willow street. Mr. Theurkauf, owner; Theo. Lentz, architect; cost, $7,000.

Two story dwelling near junction of First and Second. Mr. Becker, owner; J. Lenzen & Son, architects; cost, $4,000.

Two story dwelling, Vine and Park avenues. Otto Ziegler, owner; Theo. Lenzen, architect; cost, $3,800.

ALAMEDA.

Mr. Capp is having a six-room cottage built by Contractor Hamilton on the property lately purchased by him at the corner of Pacific avenue and Chestnut street. As soon as the plastering is finished he will commence the erection of a similar building next to it. Each of the houses will cost about $3,500.

SANTA ROSA.

Vandle & Glynn are about to erect a large machine shop.

A. C. Means is building an addition to his school house.

COLFAX.

It is understood that a large hotel will be erected at this place. The owner is Mrs. M. J. Lawrence of Downieville.

SACRAMENTO.

The Capitol Hotel will be reconstructed on first floor. Stores will be fitted up at a cost of $8,000. E. A. Bovyer superintends the alterations.

SAN RAFAEL.

A club house will be erected in connection with Hotel Rafael at a cost of $7,500. Curlett & Cuthbertson are the architects, and J. Blake the contractor.

LOS ANGELES.

N. W. Stowell has accepted plans for a $25,000 building to be erected on Spring street.

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SAN FRANCISCO, CAL.

The California Architect and Building News

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ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, JUNE 15, 1889.

AN architect's suit was recently decided in the Supreme Court of Massachusetts—according to the *American Architect*—which has a certain interest. The architect of a hotel in Boston sued the owner for something over $25,000 for services in preparing plans and superintendence of the building. The defendants claimed that the architect agreed to render the necessary services for three and one-half per cent. on the cost of the building. This was $414,000, so that his commission amounted to $14,000, of which they had paid him $8,000, and were ready to pay the balance. The architect admitted the agreement to accept three and one-half per cent commission, but claimed additional compensation for extra services, etc. Evidence was brought as to the skill and reputation of the architect, and the auditor who first heard the case awarded him about $8,500. The case was again tried before a jury, which brought in a verdict for $13,000 for the architect. This, added to the $8,000 previously received on account, is about five per cent. on the total cost of the building, so that the jury seems to have taken the view that five per cent. on the cost is about what the architect ought to have for such work, and that if he was foolish enough not to come to a clear understanding with his clients, in the first place, about what he was to do and what he was to be paid for doing it, he deserved to lose the small compensation which he might have earned by extra work.

IS it not about time for our architects to seriously consider the necessity of appointing a "Clerk of Works," the salary of the same to be paid by the owner. This city is rapidly growing and to properly superintend a house in course of construction way out on Pacific or Sunset Hights, really requires more time than is warranted by the usual fee of 5 per cent.

Subscription price of this Journal is $2 00 per year. Examine the Contents of this Issue and see if it is not worthy of your support.

RECENT law cases make it very evident, that architects are made the butt of some people who would put them to any amount of trouble and expense, without offering to remunerate them; why the impression should have got about as it has done, that these gentlemen will design buildings for the pleasure of doing the work and that payment of fees is only conditional upon its suiting the convenience of the client to to go on with the building, it is hard to say, but some of our most influential public companies and associations have set such an example and the terms of competition are assuming less favorable form.

WE commence with this issue a series of Artotypes of lately completed buildings. For richness of design, the one in the present issue will compare favorably with those printed in any other journal in the country.

THE Legislature of the State of Texas has passed a law requiring all architects to obtain a certificate before being allowed to practice their profession. Architects from other States who have been in the habit of preparing plans for clients in Texas, will do well to heed one of the rules laid down, viz., that persons practicing without a certificate should be denied the assistance of the courts in collecting payment for their services. We know architects in this State who have prepared plans for acceptance in the State named, and in future they must bear the above regulations in mind.

IT is about time that the Chapter of Architects, and all kindred associations, protest vigorously against another abuse that has gradually been growing on this coast. We refer to the fact that the supervision of the building work must not be placed in the hands of any other than the successful competitor.

WHY are the "good old times" of our forefathers being revived in the "new-fangled notions" that are now being used in the furnishing of houses of the present day? Look at pictures of the hallways as designed centuries ago and compare them with those of to-day. We find the same roomy landings where one can rest before finishing the flight; the large open fire-place, with its garniture of brass andirons, etc.; the old corner clock—all these revived in the hallways of to-day. Is the architecture of our forefathers to be revived in the present generation, and are we to come to the conclusion that, after all, the styles of those of the long ago were not only superior in general arrangement, but were also more conducive to health?

THE recent offer of a neighboring territory to pay $500 for the *best plan* for a $3,000,000 Capitol building, is one that should not be regarded by any member of the architectural profession on the Pacific slope.

A PROMINENT architect in Los Angeles addressed a communication to the Chapter of Architects in this city in regard to the establishing of a branch of the Western Association of Architects on this Coast. This journal would like to see all the various architectural associations united in one grand organization, with branches of the same in every prominent city.

WE notice that the California style of framing dwellings is being generally adopted through the eastern states. At first, such framing was done as a matter of expediency, but a test of over forty years proves it fully equal in lasting qualities to the old-fashioned mortise and tenon.

Plastering and Stucco Work.

Paper read by James John, Esq., before the National Association of Builders.

Mr. President and Gentlemen of the Convention—It has been my privilege to be selected to read you a brief paper on the subject of Plastering and Stucco Work. I have seen fit to diverge to a slight extent from the text as laid down by endeavoring to embrace the whole matter in the word "plaster." I will therefore read you what I have, with the idea that plaster will comprehend the whole of it.

It has been the fate of this simple, durable, and inexpensive material to escape the assaults which every good thing in this world must encounter at one time or at another. It has been called unclean, but it is not so of itself. Like many another wholesome and useful medium, it can be so ill-made and be so indifferently applied as to offer to dirt and insects abiding-places, due to the perverted ingenuity of man, not to any inherent defects of itself. In spite of all that has been said against it, it remains the universal lining for dwellings throughout the civilized world. Wealth may incase walls and ceilings in decorative woods and metals, but for the mass of mankind plaster must continue to be the simplest, cleanest, least costly, and most enduring finish for homes. The health of the vast majority of mankind is therefore largely dependent upon the materials used in its mixture and the manner of application.

It is undeniable that the custom that obtained some years ago of applying plaster into highly ornate designs was, for domestic purposes, unsanitary. The foliated, convoluted, and otherwise multiform designs which used to be spread out upon ceilings, in cornices, or special pieces are gradually passing out of use. Their innumerable crevices served only as receptacles of dirt in which the deposits were continuous.

The ornamental uses of plaster having been reduced by good sense and good taste, it remains still the most vigorous, as it is the oldest, vehicle for carrying down to generation after generation the masterpieces of art with which the golden age of sculpture enriched the human race. Humble as its components are, common and cheap as it seems besides marble, and paltry when compared with the metals that have to a considerable degree taken its place for reproductive uses, it *still* preserves the plastic art, and enables youth to contemplate antiquity in its noblest achievements. To-day plaster is revolutionizing industrial art; for us, and, in all probability, for those who are to come after us, plaster, lowly and cheap, but docile and durable, is the connecting agent with this greatest of men's indorsements in the past.

Plaster thus employed in duplicating great works of marble, iron, and bronze is to-day extending the finest industries, modern and ancient. The erection of the new museums in England, near the great manufacturing centres, would be next to useless were not plaster available for distributing fac-similes of the works, whose grandeur has made the name of Greece imperishable, and whose usefulness in development and the study of form, for all arts, is acknowledged to be unequalled. So potent is this simple medium, therefore, that it serves to-day as effectually as marble itself for the perpetuation of fine art; and by its endless variations of models, copied from every other material known in history, it is the supreme teacher of design. The reproduction of classic works at Kensington, and their dissemination throughout the provinces of the United Kingdom, have had the effect of making France fear for her supremacy in fine industrial productions. The important part that plaster thus plays in the Old World it will continue to play in the New. Wherever art places its altar, plaster will be there as its handmaid; and, though it may be abused by carelessness and calumniated by more pretentious rivals, it must remain the most faithful friend of progress in taste, science, decoration, usefulness, and economy.

Noble and varied as may be the uses to which plaster has and may be applied, I regret to say that the art of applying the same as an avocation for the lining of dwellings is to-day so remunerative to the artisan that it *almost* ceases to enlist the skill and intelligence that the art should command. This is due mainly to the want of appreciation by the architect and owner, whose only thoughts are for a semblance, for the time being, and are tempted by the questionable economy of saving a few dollars into letting contracts to men of no mechanical standing. It is hoped and expected that through the influence of the National Association of Builders and the intercourse its executive officers may have with the reputable architects of the country, the day is not far distant when it will be required of the artisan in the various branches pertaining to buildings to arm himself with a proper and authoritative testimonial giving proof that he *is skilled* in his art, and thus separate the wheat from the chaff, the former be recognized and the latter find its level.

It is a well-known fact that plaster on a ceiling surface in the event of fire will detain it for a long time, *providing* any means have been taken *when* applied to secure it under such circumstances, and, were these means more generally employed, *millions* of dollars would be saved to this country annually.

As the fire-proof construction is the exception, and as wood construction must predominate for years to come, therefore attention should be given to make the latter structure more fire-resisting.

During the last twenty years I have devoted much thought to this subject, and some of the devices I have had in that direction I have sought to secure by letters patent, and strange to say, came in conflict with an English patent in the archives at Washington bearing date 1797. The device then discovered has been slumbering there nearly one hundred years, and *to day* I know of nothing *more economical or effectual* to secure plaster in position in the event of fire than the same device. It is simply a wire netting, as used to-day for a foundation, but, as there described, placed over the bottom surface of the plaster and then securely stapled to the furring or joists, and afterwards the finishing coat of plaster applied over the surface. And as most every mechanic has at some time or other taken out a patent or applied for one, it may be interesting to you to hear the language that Edmund Cartright (as that was the name of the applicant) used in paying due deference to his Soverign Lord.

After describing his invention in substantially the same language that obtains in patents of the present day, he closes thus:—

"In witness whereof, I, the said Edmund Cartright have hereunto set my hand and seal this eight day of November in the thirty-eighth year of the reign of our Sovereign Lord George the Third by the grace of God, of Great Britain, France and Ireland, King, Defender of the Faith, and so forth, and in the year of our Lord One Thousand Seven Hundred and Ninety Seven."

"EDMUND CARTRIGHT."

Expansion of Timber due to the Absorption of Water.

BY PROF. DE VOLSON WOOD.

It is stated by some writers upon the properties of building materials that timber shrinks but little in the direction of its fibers from being thoroughly dried, or expands but little in the same direction from the adsorption of moisture; but the amount of these changes was not given in any work that I examined. Desiring to get some definite knowledge upon this subject, I caused to be prepared some pieces of pine, oak, and chestnut. The pieces selected were from lumber fairly seasoned, and were afterwards kept in a dry room for three weeks before any measurments were made. The pieces were straight-grained, free from knots or other defects.

In order to secure accurate measurements, brass pins were driven near the edges and ends, opposite to each other, and a fine mark made in each. The measurements were made to the nearest half-hundredth of an inch. The pieces were about five-eights of an inch thick, thirty-six inches long, and five and one-eighth inches wide.

After the first measurements were made, the pieces were put into a vessel of water and allowed to remain there thirty-seven days, at the end of which time they were measured again. The measurements were made on one side only. The following are the mean of the results:

Specimen.	Pine.	Oak.	Chestnut.
Initial length, inches	35.505	35.572	35.582
Final length, "	35.622	35.602	35.640
Elongation, "	0.017	0.030	0.058
Per cent of elongation	0.05	0.085	0.16
TRANSVERSE MEASUREMENTS.			
Initial width, inches	4.470	4.464	4.481
Final " "	4.586	4.620	4.645
Expansion, "	0.116	0.156	0.164
Per cent of expansion	2.6	3.5	3.6
Rate of lateral expansion / Rate of elongation	= 53	41	22½

It will be seen that the chestnut expanded laterally and longitudinally more than the oak or pine, that the rate of longitudinal, expansion was about three times that of the pine, and the lateral expansion was about one and four-tenths that of the pine. The expansion in the direction of the fibers was larger than I antiicipated, especially in the oak and chestnut.—*Scientific American.*

Semi-Annual Summary of Building Operations.

The present season has been a most prosperous one among architects and builders. In order that a full comparison may bo made with former years, we present in full the building operations for the first six months of the year:

Month.	Brick	Value	Frame	Value	Alterations	Value	Total	Value .....
January	4	$131,000	64	$420,200	16	$93,500	84	$420,200
February	9	832,000	49	218,600	13	26,900	71	1,077,500
March	4	63,000	69	287,000	10	26,900	83	376,900
April	4	128,000	82	357,400	11	51,200	97	536,600
May	3	190,000	85	405,300	11	45,450	99	640,750
June	2	47,500	87	527,200	23	59,500	112	634,200
Totals	26	$1,391,500	436	$2,215,700	84	$303,400	546	$3,910,600

In comparison with the record of former years for the first six months of the year, the summary is as follows:

1885—754	building engagements ..... value	$4,267,375
1886—670	" " ..... "	2,486,633
1887—516	" " ..... "	3,269,914
1888—437	" " ..... "	2,719,820
1889—546	" " ..... "	3,910,600

Academy of Architecture.

California is, as yet, too young a state to have an academy where architecture and building can be taught in all the various branches. In order that our young men may possess themselves of information in regard to the above named studies, they must need look to the older and more populous states. The nearest academy which, at present, we can call to mind, is situated in St. Louis, Mo., H. Maack being the Principal.

If anyone is engaged in a building trade, wants to prepare himself technically to fill a position above his fellow-workmen in the shortest possible time and for the least amount of money, then he should immediately enter this institute.

A skillful master-builder is expected to be master of not only his *own* trade, but should have sufficient knowledge of all the other building trades to enable him to judge justly of their requirements and to arrange their work to the best advantage.

As this is essential in working out plans and estimates of new buildings, as well as of repairs, and for appraising buildings already erected, it follows that it is necessary for the scholar to participate in the instruction in *all* the branches taken up in the respective classes, but the trade to which the scholar belongs may receive particular consideration.

A full course in this institute will consist of three terms of twelve weeks each, the regular winter course commences on the first Monday in December and closes at the end of February. But for those that want to complete their study without interruption, a special course will be opened both in September and March.

Address the Principal for further information at his academy, 3066 Ninth street, St. Louis.

Painting Wood.

One coat of paint takes twenty pounds of lead and four gallons of oil per one hundred square yards; the second coat forty pounds of lead and four gallons of oil; the third, the same as the second—say one hundred pounds lead and sixteen gallons of oil per one hundred square yards for three coats.

One gallon of priming color covers		50	square yards.
"	white zinc	" 50	"
"	white lead paint	" 44	"
"	lead color	" 50	"
"	black paint	" 50	"
"	stone color	" 44	"
"	yellow paint	" 44	"
"	blue color	" 45	"
"	green paint	" 45	"
"	bright emerald	" 25	"
"	bronze green	" 75	"

Our "Artotype."

The building which we illustrate in this number is the new mansion of Mr. and Mrs. W. H. Crocker, on the corner of Jones and California streets, next to Mrs. Chas. Crocker's residence.

It is one of the most important residences that has of late been erected. The design embraces more originality than is usually observed in such dwellings, inasmuch that it combines six different materials in its exterior, without detracting from the unity of the whole design.

The portion of the first story, window sills of the first story, quoins, and large front arched porch guarded by griffins, is composed of blue sandstone from a San Francisco quarry, laid up in Cyclopean style,, a style not often seen on this coast.

The remainder of first story and in some places to the second story window sills is built of pressed brick laid in red mortar, with terra cotta bands of string courses.

The superstructure is covered with shingles coated with Rosenberg's "Elastica" Varnish No. 1, and as near as possible left in the natural redwood color, except the gables which are finished in pebbled plaster on iron laths.

The tall stone chimneys and large circular tower form striking features of the outside. Finally the roof is of green slate with terra cotta hip moulds and iron rails.

The architects, Messrs. Curlett & Cuthbertson, have been ably seconded in their efforts to produce a beautiful creation by the several artists and artificers who have materialized it, and who are therefore, worthy of mention here. O. E. Brady performed all the stone and brick work——Mahoney Bros., the carpenter and joiner work——W. Cronin, the slate roofing——Duffey Bros., the plumbing and sewering——Fraser & Keefe, the polishing——John Mallon, the glazing——J. C. Jung, the ironwork ——Henry Fisher, the plastering——Gladding, McBean & Co., the terra cotta——Geo. Goodman, the artificial stone work—— Mitchell & Halbach, the interior decorating——The Electric Development Co., the electrical plant——Most of the interior cabinet work and finish was done by Plum & Co., and the Oakland Planing Mills.

The interior is finished in several varieties of hardwood, the main feature being the two-story hall and staircase in the centre of the building finished with Byzantine Dome and Arcade.

Owners' Acceptance of a Building.

The law is well settled that the owner does not accept a building by taking the keys and living in it, nor does he thereby waive in the slightest degree his right to have the contract fulfilled to the letter before he pays the contractor. His visits to the building while in progress do not alter the contract or put him under any obligations to accept work not in accordance with it; and if he orders changes at those visits, he only makes himself liable to pay a reasonable price for them, if they increase the actual cost of doing the work. Whether, after moving into the house, he can have changes made by other parties, without notifying the original contractor, and charge them to the contractor's account, is a a different matter. If the changes are altogether outside the contract, he is, of course, not entitled to make the contractor pay for them. If they were necessary in order to bring the building into conformity with the contract, he ought to have notified the contractor that they were required, and have given him reasonable opportunity for making them himself, before employing other persons to make them; and it has been held abroad that where this notice was not given, the contractor was not liable for any part of the expense. Aside from legal technicalities, however, it would probably be fair to both parties to have the contractor pay what it would have cost him to make the work conform to the contracts as nearly as this can be estimated, and let the owner pay whatever it actually cost beyond this.

An Extra Issue.

In July we will issue an extra edition of 3,000 copies. It will be the best illustrated of any issue yet presented. Sample copies are 20 cents each. Stamps of the smaller denominations will be received.

Design for a Country Dwelling.

The plan given was specially designed for a side hill residence. For this purpose all four sides are so finished that, no matter from what point the house may be viewed, it will present a finished appearance, the rear elevation being very picturesque. There is no attempt to elaborate finishes, the intent being to show a well constructed and carefully arranged country home.

In the basement will be found a commodious kitchen, servant's room and store room. The front part is left unfinished, but should the nature of the ground allow it, the space could be nicely utilized for a billiard room, or, if necessary, a children's play room.

On main floor are the parlor, dining-room and library. The bay window in dining-room is nicely arranged for an observation room. A dumb waiter connects with the kitchen, thus doing away with all smell and smoke from that place.

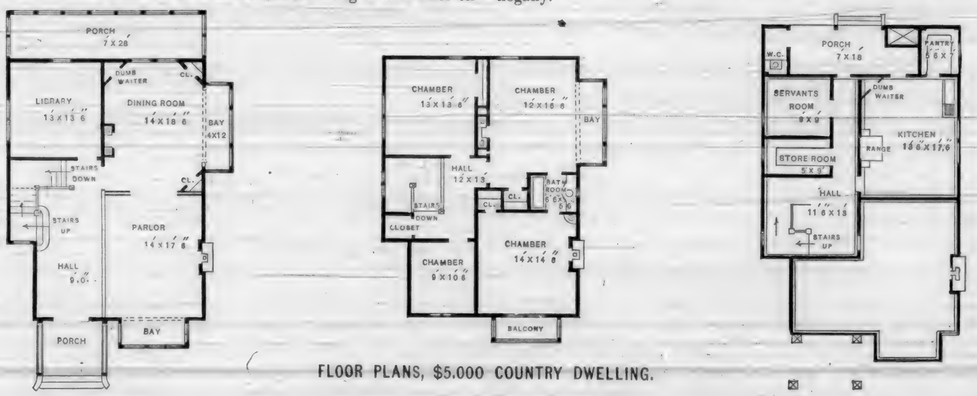
There are four chambers and bath-room on second floor, with ample closet room in each apartment. As shown, the house can be built for $5,000. The design was prepared by Mr. S. Newsom of this city.

FRONT ELEVATION, $5,000 COUNTRY DWELLING.

Honest House Finish.

The prevailing fashion or style for the past few years has been to stain interior woodwork almost exclusively, until those engaged in building have become thoroughly surfeited with the cheap imitation of mahogany that one sees on every hand. The uninitiated call it a "cherry" stain. Cherry, in its natural color, it should be understood, is a very light colored wood, of a warm yellowish shade. It is often treated with a red stain, to produce an imitation of antique mahogany, until people have come to believe that this is the natural color of the wood. To attempt to stain a soft wood to imitate cherry is utter nonsense. If there is any imitation about it, it is imitaton of mahogany, and an attempt at imitation of that grandest of woods by staining whitewood or pine will deceive nobody. Stain is a sham, every time. There seems to be some excuse for using a dark filler on oak finish, or a red one on mahogany to give them an antique appearance, but even this is a "sham."

Why not be honest in regard to the finish of your house, as well as in your business affairs? Common white pine, when finished in shellac, in its own inimitable color, is far richer than any imitation that can be produced by stains. Whitewood, poplar, cypress and even hemlock, are handsome woods, when properly treated, in their natural color, and improve with age, yet when stained look decidedly cheap and distasteful. Graining is another common subterfuge, and nothing but a cheat, for it certainly is not in the power of man to imitate nature's great handiwork so finely as to deceive, and if it should so result it would be a barefaced lie. If one doesn't like natural finish on the cheaper woods, and cannot afford hard woods, then why not paint? That certainly is honest. Let pine be pine, and cherry what it is, but don't try to make honest pine masquerade as mahogany.



FLOOR PLANS, $5.000 COUNTRY DWELLING.

SIDE ELEVATION, $5,000 COUNTRY DWELLING.

A Model Kitchen.

IT DID NOT COST VERY MUCH, BUT IS A MARVEL OF CONVENIENCE.

HERE is a unique kitchen, worthy of description: It is not large, having been built to fit a very little woman. The pantry is to the rear of it, the dining room to the right, the hall in the front, and all out doors to the left, though it stands on a narrow city lot. The kitchen projects beyond the hall, giving room for a door in front, and there is a second door in the front, leading to back porch and garden. The range chimney stands against the outer wall, and from door to door in summer the breeze blows perpetually past it. There are windows according to circumstances, some high, some low, some big, some little, some in the upper panels of the doors.

The temple of the household gods is finished entirely in wood, for æsthetic reasons quite as much as utilitarian. Wood finish means that not an inch of plaster appears. Ceiling, walls and floor are all of delightfully polished yellow pine. The casings of doors and windows are flat for ease of washing, and all the joints are as tight as tight can be. The work was done slowly and carefully under the supervision of the presiding genius. While the wood work, perfectly plain, as befits a kitchen, makes a really beautiful apartment, the veinings of the wood, the rich coloring, and the lingering forest odor suggest pleasant thoughts, and typify the home refinement of the lady who joyfully gives bread to her house, rather than the drudgery of menial toil so often put forward in its place.

The laundry tubs and sink are of solid white porcelain. But the wonderful economies of space, and numerous step-saving devices are the features of the place. There are slides from the pantry to the dining room sideboard. There are shelves in the triangular space over the cellar stairs. There is a table which pulls out of nowhere, just opposite the range and vanishes into thin air when the cooking is done. There are flour bins which swing out into the room when wanted, and push in flush with the wall again. When the mistress of the establishment wishes to put anything "down cellar," she doesn't go down herself, though the stairs are of gentle slope and easy of access. She touches a mysterious lever with her hand or foot, and up comes a section of the kitchen floor, bringing with it a series of shelves. Disposing the various articles thereon, she reverses the lever, and down goes the whole thing. The floor is as solid as ever, and the shelves are hanging in the dry, cool air of the cellar.

Costly? Not at all. Economy and convenience were the prime considerations. The house was built by an artist, who planned first the kitchen—his wife's workshop—then the studio—his own—and let the rest of the house group itself round these two. The kitchen cost no more in money than the most dingy type of city basement, and its owners call it worth all that it cost of ingenuity.

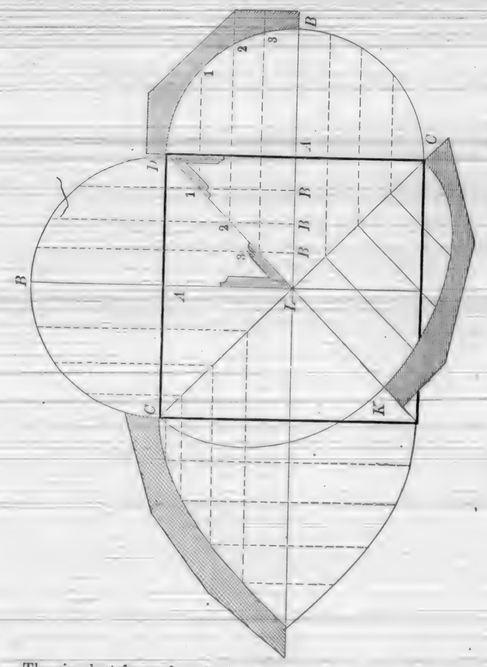
Sawdust is being used by some builders for mortar instead of sand. It is said to answer well, as it is one-half lighter than sand; it has some advantages when used on ceilings. Mortar made of quicklime and sawdust, mixed with cement, does well for brick or stone work.

Groins.

BY OWEN B. MAGINNIS.

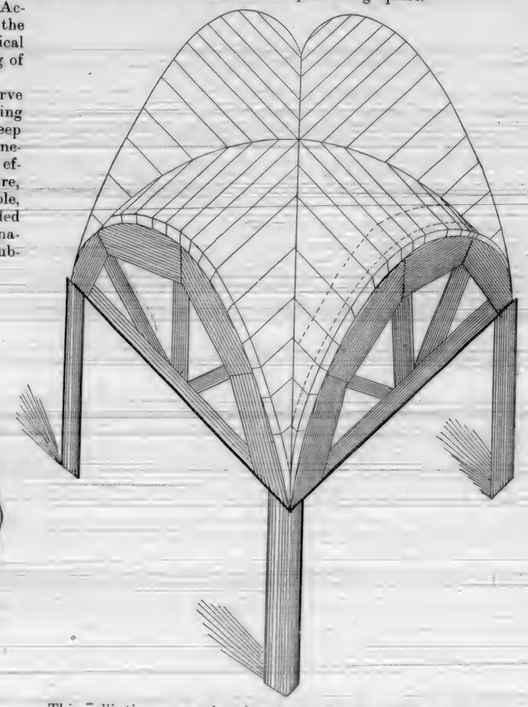
The prevailing of inclination of the present age of industrial science tending towards the simplyfying of all mechanical rules, with a view to their direct application in practice, is gradually bringing them within the scope of ordinary intelligence. Actuated by this object, the writer has endeavored to modify the existing methods put forward by our more eminent mechanical writers, for the construction of wooden groins or the centering of stone or brick groins.

Groin, as defined by architectural authorities, is the curve formed by the intersection of two arches, hence a groined ceiling or vault consists of a number interpenetrating vaults or deep arches, forming a proportionate number of groins as they penetrate each other. There are many different kinds of these effective details, employed in the higher branches of architecture, especially in ecclesiastical, where they are almost indispensible, except in those which admit of timbered roofs or are intended plastered for frescoing. In the hope that the following explanations will benefit those whose line of work may take in this subject, they are submitted for application.

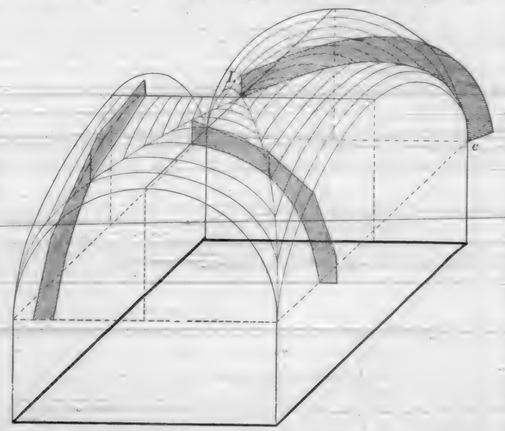


The simplest form of groin in general use in domestic architecture, is known as the barrel cylindo or cylindrical vault and formed by two semi-circular vaults passing through each other at right angles as shown at figure 1 and figure 2.

In figure 1, on the centre lines AB, continued outside the plan which is a square give the radii of the arch. The seat of the groin is the diagonal, over which the intersection of the vaults or groin will stand when found, and in position, or in other words the groin is formed by the revolution of two halves of the square which turn on the axis or centre lines and in their revolution while passing through each other intersect each other in a curve which is termed a groin, this can be easily seen by referring to figure 2, which represents a complete centre for a brick or stone groined ceiling. To construct this groin for lath and plaster, proceed as follows: Describe the semi-circles, CBD. CBD. divide the diameters, or side of the plan into any number of equal parts, in this case eight, and draw lines from these division parallel to centre lines AB, and perpendicular to diameters or sides of the plan, till they cut the semi-circle, continue them down till they meet the diagonals, at the points. Where they intersect the diagonals, raise up square lines and set off on them the heights which measure from the diameter to the circumference on the semi-circle. The curve traced through these points will be the outline of the curve of the groin, and a semi ellipse, as it is the section found by cutting the cylinder on a mitre or angle of 45 degrees, the plan being square.



This elliptic curve is the form of the groin and the sweeps for the ceiling can be cut to it as shown in figure 1. CK which will sit over CL, its seat. Its exact position is seen at figure 3. CL and those for the vault can be cut as DB, figure 1, two of each kind being necessary to complete the curves.



These are the principle curves to be gained, and the jacks or subordinate sweeps follow. As they are of the same outline curvature, their lengths can be obtained in this way.

If a ridge or centre piece be inserted, necessary when the groined vault is of large area, they will each measure from the groined ribs, to the ridge or center piece and can be easily found on the figure 1, as IB on the semi-circle will stand over BI on the plan, B2 on semi-circle will stand over B2 on plan, and so on to the center, against the diagonal piece cut like CK.

The top cut will be cut square and plumb as at B and the bottom end will be cut plumb vertically and on the angle shown by the level at D. The jack ribs shown here are for the left side of the angle and but similar pieces cut on the reverse angle, must be cut for the opposite side. Bevel at L, figure 1, shows cut of top end of center rib and they are shown in position at figure, where they continued down to the spring line to represent how these sweeps can be cut the full length, afterwards resawn for their different places. If the centerpiece be not inserted, the sweeps reach from diagonal to diagonal and are nailed against them. These plans should be laid on a drawing board or floor and all the cuts made from them.

Time Servers.

HOW many men there are, holding good paying positions as journeymen, who are really of no value unless kept constantly under the eye of the foreman or their employer! They are simply time servers, who take no interest in the business they represent beyond the actual time necessary to count them a day's work. They work when closely watched because they are obliged to, not from any motive of honor or interest in the business.

What can be expected of such workmen but that they will shirk their work and idle their time at every opportunity?

If you cannot give your employer your full time for which he pays, and take some interest in his business, you had better leave him at once. To this he is entitled, and has a right to expect it of you.

If your mind is not upon your work, you cannot expect to accomplish it with any degree of satisfaction to your employer or credit to yourself.

In going about from one shop to another it is a very easy matter to pick out the time servers. Upon the slightest pretext they drop their work to talk or look about, and are always ready to get out of the door the moment the clock strikes six, and their example is very rapidly followed by the apprentice or younger workmen. They have to be constantly watched, and this fact, being known to the firm, is not long in having its results.

Employers are more generally knowing to the habits and qualities of the men they employ then the men often realize, and they invariably know who are the time servers among them, so that when there comes a convenient opportunity or a lull in business, these are the first to be discharged.

It pays to be faithful and do your best at all times, and more especially when your employer is not watching. If you must idle away time, do it when he is about, but don't dishonor yourself or betray his confidence by taking advantage of his absence.

This is one of the worst features of our American system. It is an example which is set by the older men, and which is readily adopted by apprentices, and it is the exception rather than the rule that we find a young man who is sufficiently interested in his own welfare and his employer's as well to give his full time and attention to his work. Those who do this are sure of success, and it is from among such that have risen those men whose names are written upon the pages of history as having made their mark in the world, and left behind not only pleasant recollections, but a shining example that is worthy of a careful imitation.—*Sel.*

THE E. D. Albro Co., Cincinnati, Ohio, manufacturers of veneers and thin lumber, report: We have a steady demand this seasoned for our products. Builders and contractors appreciate well season lumber for inside finish, and the quartered sawed oak and light colored woods are being more called for. We have a full line of all kinds, including white walnut, (called butternut,) cherry, quartered oak, white maple, white ash, and mahogany.

Prima vera, or white mahogany, is rapidly coming into favor. This is a beautiful light gold color, and finished like satin wood, which gives a warmth and tone unexcelled by any other woods. They have a full stock of hardwoods of all thicknesses and kinds.

The True Test of the Value of Employes' Services.

THE very fact that a man enters a shop and there toils for the allotted number of hours makes it possible to settle his wages by the standard of another man performing a like service; but when the service rendered is the product of earnest thought and study, when the reaults of mental activity are thrown into the balance, combined with muscular exertion and mere routine work, then the reward can only be measured by the profit therefrom that insures to the employer, and the actual value of the service rendered is increased or diminished by the amount of knowledge, skill or energy with which the work is done. These qualities of mind, skill and diligence united are always necessary to enable any man to succeed in his vocation, and a man's advance above his competitors depends upon the magnitude and force of these qualities.

There must be in the highest order of service this trinity, executive ability, self reliance and originality, the power of planning. These three must co-exist to produce the highest order of merit, and to secure the greatest reward. For men may have skill, execution and ability within the limits of their assigned duties who have neither self-reliance or inventive powers, that enables them to succeed when thrown upon their own resources and outside of their regular work. A man may be a first-class man to carry out details, and work a plan with precision and correctness, and yet he may be an inglorious failure when in the position of chief director of the work of others.

Not only must a man be able to do work himself, but he must be able to plan for others and keep them profitably at work. He must have a quick eye for details, and a broad mind for generalities. He must be practical, and bring all general facts and truths in reference to the business under consideration for the accomplishment of his purpose.

He who realizes these truths, and acts upon them, will, if he has ability, climb to the top of the ladder, and will never have any questions raised as to the amount of his wages, because by his work he fixes the only standard by which his services are measured, and their value is ascertained by their product to his employer.—*Wood and Iron.*

Awkward Mechanics.

MECHANICS are often addicted to what can only be called awkwardness. In getting at a new or strange piece of work, some men make so much fuss, and appear to such poor advantage, that surprise is expressed that such an incompetent man should be employed. Most of this awkwardness, or "fumbling," could well be avoided by the man if he would only see himself as others see him. His attention is too much taken up by some detail of the matter, and he does not comprehend the whole amount of his work. A thorough mechanic gives a thing a thorough thinking over before he proceeds to execute any work. If the awkward mechanic would learn to think more, he would appear to much greater advantage, and would be worth more money to his employer.—*Man and Builder.*

New Cottage Homes and Details.

In this new work, the first copies of which have just been received, the authors——Palliser, Palliser & Co.——claim that all designs are new and original, and have never been produced before in any other architectural work. In a careful study of the book, we find that the California method of framing has been selected, it being much preferable to the old principles, which were to use large timbers and cut them all to pieces by mortising and notching down to levels.

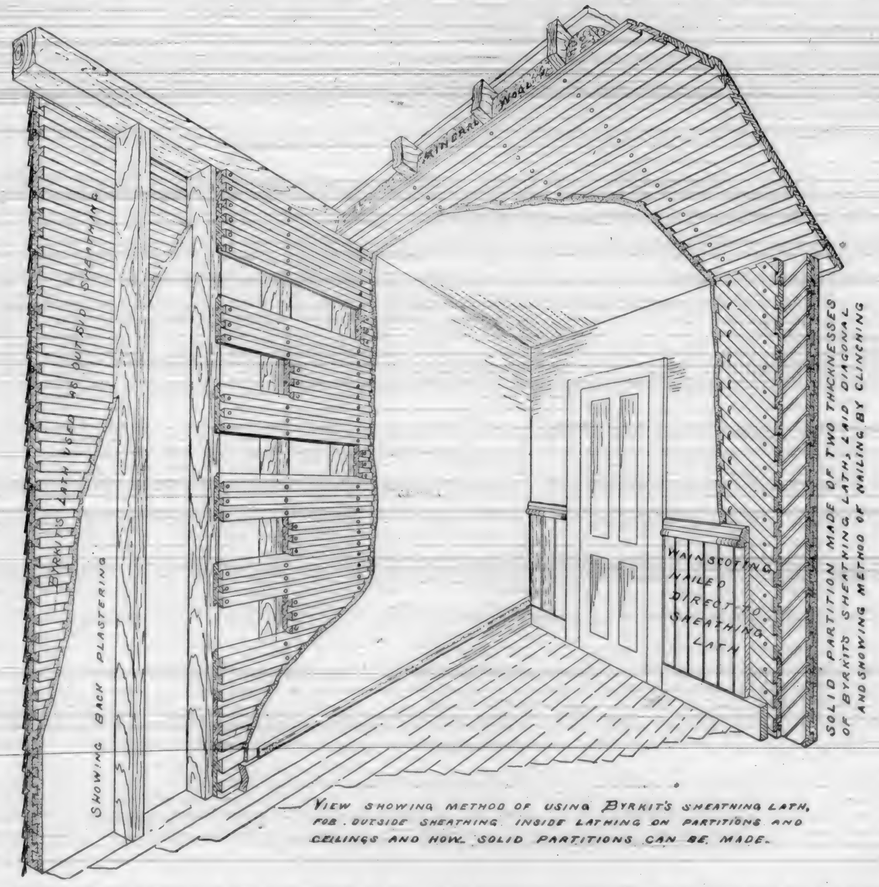
We commend the authors for one statement made in the "Prefatory." The cost of the buildings are all given, but the amount stated only holds good when plans are used, prepared by them. Fluctuations in prices of material and labor in various sections are freely acknowledged, and no one can guard against the same. The prices given are those for which the house can be honestly built, with prices of materials as they are generally quoted at time of issue.

Printed by Palliser, Palliser & Co., of New York and for sale at this office. Large work containing 250 designs, with numerous details, price $4 00.

Method of Applying the Byrkit Sheathing Lath.

THE Byrkit Sheathing lath has proved within the last four years, its staple qualities, and the fact that its use has been each year many times increased in quantity by all who have used it before, is a most certain indication of its superior merit. It requires but an examination by an expert in building, to immediately comprehend its practical value. The trials of house-builders have been largely increased by the unstaple methods of old-time lathing. Notwithstanding the many devices of breaking joints, doubling studding, vertical lathing on the solid, hoop lathing, etc., still corners and angles of rooms have universally exhibited a weakness in construction, indicated by broken plastering. The Byrkit lath makes it possible to construct a building *practically solid*, substantially, frost-proof and effectively fire-proof, since the system of construction possible by the use of the Byrkit lath, produces a building impossible to quickly destroy by fire, and such a building will rate by insurance companies, with the buildings of mill construction, or the slow burning construction. By referring to illustration No. 1, it will be seen that the exterior walls can be sheathed with this lath, with the keyed groove facing inwards, so while the exterior of a frame building can be finished with siding, shingles or slate, the inward face can receive a rough coat of "back plaster." Again, the interior face of outside studs can be lathed, plastered and finished upon what might be called (for the service it does in this respect), as an *inside* sheathing. The old system of construction involves an outside common sheathing, *extra* furring for back plastering, and finally a coat of lath and plaster, on the inside, which fails to add increased substantial strength to the frame as the Byrkit lath does. That which is so valuable for vertical construction, is equally good for the horizontal lines of floors. Drawing No. 1 illustrates the use of this lath for ceiling purposes, which, when once laid upon the ceiling, it is like the side walls, one homogeneous surface, greatly adding to the strength of the floors, instead as a deadweight suspended from the joists.

Diagram No. 2 illustrates the method of bracing and interlocking the angles of a room. No. 3 shows the possible use of the Byrkit lath for bracing long suspended partitions. While it is acting as counter braces on the principle of a truss, it is also serviceable for plastering upon. No. 4 indicates the use of Byrkit lath as a roof board, the keyed groove facing inward the same as the sheathing, and permitting at slight expense the finishing of an attic as a habitable room. Many houses have their exterior finished in half timbered and masonry work; for such a purpose the Byrkit lath is invaluable. Illustration No. 5 will give the reader a suggestion of its possibilities in this direction.



VIEW SHOWING METHOD OF USING BYRKIT'S SHEATHING LATH, FOR OUTSIDE SHEATHING, INSIDE LATHING ON PARTITIONS AND CEILINGS AND HOW SOLID PARTITIONS CAN BE MADE.

An intelligent architect can devise more uses for the material than here described, and he will find the lath is capable of solving more than one tough problem. One such example will be given here. Every architect knows the value of an inch, more or less, in planning within a limited space, studding having been placed the two-inch way, in many instances, to gain room. Now, here is a material that permits of doing away with studding entirely in such particulars. Take the Byrkit lath, double it, placing it back to back, making each piece cross the other at an angle of about 45 degrees, and nail together. When completed, this partition will be a solid two-inch partition, plastered on each face, and stiffer than any stud partition set the two-inch way—since it is one solid wall through and through from face to face of plastering. Owing to the fact that many are not familiar with the material, they have over-estimated its cost, and hence, while well impressed with its merits, they have failed to use it, since they have been misinformed regarding its expense. The actual

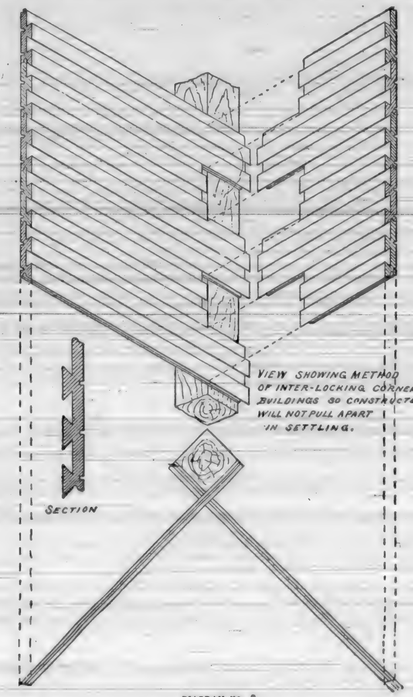
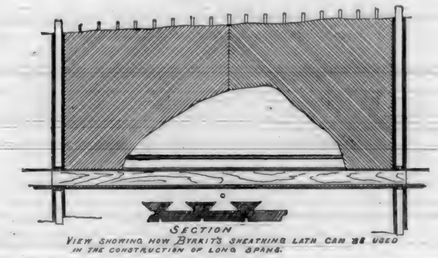


DIAGRAM NO. 2.

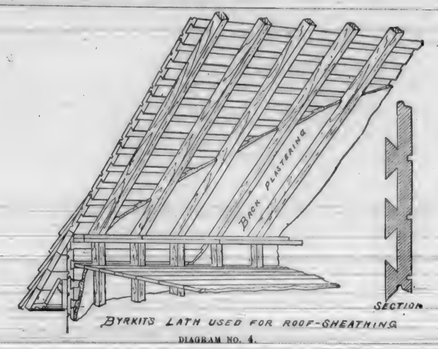
cost of plastering with this material is not exceeding 40 cents per yard. Ordinary plastering costs about 28 cents, but with ordinary plastering it must not be forgotten that extra material for sheathing, back plastering, etc., must be furnsihed, while the Byrkit lath covers all these requirements. The oft-repeated inquiry, "will it crack?" is caused from the long-time sad experience of old-style plastering. Accordingly, those who are unfamiliar with the principle of construction with this lath, are naturally critical. It has now been used on thousands of buildings in the Eastern States, and has stood the test in many of over five years, and it can be thoroughly demonstrated that *it will not crack the plastering*.



VIEW SHOWING HOW BYRKIT'S SHEATHING LATH CAN BE USED IN THE CONSTRUCTION OF LONG SPANS.

DIAGRAM NO. 3.

NOTE—The grooves at the back of sheathing shown by sections above are for the purpose of preventing cracking of plaster when the sheathing shrinks in dying.



BYRKITS LATH USED FOR ROOF-SHEATHING.

DIAGRAM NO. 4.

TESTIMONIALS.

AKRON, O., Sept. 22, 1888.

GENTLEMEN:—It is with confidence that we bear testimony to the advantages and advisability of using Byrkit's Sheathing Lath for all buildings, the advantages of which are set forth in your claims, all of which we have found by experience to be as represented, and shall not hesitate in the future to use same in the buildings under our charge. We have placed it in the O'Neil & Dyer Block in this city, and also used it extensively in the County Infirmary. Have also specified it for the M. E. Church, East Oakland, Cal., and other churches. Our Mr. Kramer has it in his own residence. Very respectfully yours,

WEARY & KRAMER, Architects.

CHICAGO, ILL., Oct. 7, 1887.

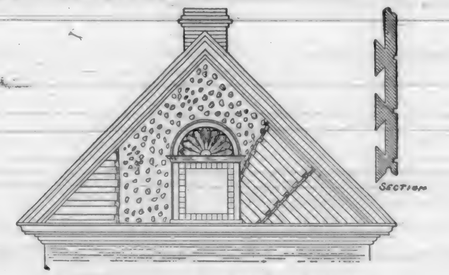
We have specified and used the Byrkit Sheathing Lath in several buildings which we have erected, and we are well pleased with it and recommend others to try it.

FLANDERS & ZIMMERMAN, Architects,
228 La Salle Street, Chicago.

AND MANY OTHER TESTIMONIALS.

The Byrkit Sheathing Lath has recently been introduced on this coast, and wherever used has given satisfaction. It appears to be a decided improvement on the old style of sheathing and lathing. It is designed to be placed on the inner face of the wall studding, using the ordinary lath on partitions. In some instances, as in the case of Geo. W. Percy, Esq., architect of this city, it has been specified to be used throughout the entire residence, no other lath being used. Among the buildings now erected on this coast, in which the Byrkit lath has been used, the following may be particularly mentioned: Eight avenue M. E. Church, Oakland; J. C. McMullin, Esq., residence, Highland Park, Oakland; Thos. Gardiner, Highland Park, Oakland. A barn has been built by Mr. Byxbee on the corner of 19th avenue and 17th streets, Oakland, using the lath on the outside, placing thereon a coat of cement lined off to represent blocks of stone. It has a very solid, as well as pleasing appearance.

Mr. John F. Byxbee, of 42 Market street, room 2, in this city is the manufacturer and Agent on this coast. By addressing him a note, you will obtain circulars, testimonials, etc., giving full particulars in regard to the Lath.



BYRKIT'S SHEATHING LATH USED FOR GABLES.

DIAGRAM NO. 5.

The Pacific Land, Loan and Building Company.

SAN FRANCISCO, CAL.

The Pacific Land and Loan Company is organized and operated upon the same general principle that lies at the foundation of all building, loan, protective and credit societies, unions and associations. It has all the desirable features of these organizations and possesses some which are not common to them.

GENERAL PLAN.

These Companies are corporations organized and operated under the laws of their locality. They issue stock of a stated par value which any one may purchase, and the holder pays upon the stock a certain monthly sum. The money thus accumulated in a Loan Fund is at once loaned out on real estate security and the profits arising from the investment, and from all other sources, together with the monthly payments (except a small amount which goes into the expense fund), are placed to the credit of the stock. These profits are periodically apportioned and credited by the Board of Directors. With the Pacific Land and Loan Company it is done every three months. Whenever the amounts thus placed to the credit of the stock equal its par value, it is said to "mature," and upon its surrender the holder is paid such amount by the Company. In addition to this the holder of stock may borrow money from the Company if he chooses to do so, re-paying the same in monthly installments.

SPECIAL FEATURES.

Organizations of this character have been universally successful in bringing handsome profits to their stockholders, and at the same time afforded them a safe place of deposit of surplus earnings or of making loans for business requirements. The Pacific Land and Loan Company has sources of security, and profit and special advantages to stockholders, not enjoyed by others. Its large resources, the fact of its doinga national, instead of merely a local business; its system of fines from delinquent stockho'ders; its lapses of forfeiture to the common benefit; its economy of investing its loan fund, and the small amount allowed to go into the expense fund and consequent economy of management, will cause its stock to mature in about five years, while from seven to ten years are required in the ordinary local Building and Loan Associations to reach the same result.

Moreover, under the loan system of the Pacific Land and Loan Company, the borrower gets his money in advance of his savings, by paying a small monthly interest and premium, has the use of the same before he accumulates it. The immediate and continued use of the money enables the borrower to gain more than he would have to pay for the use of the same. The non-borrower simply contributes his regular installments, and waits until his shares mature and he receives at least one hundred dollars for each.

BONDS.

The Secretary and the Treasurer are each under bonds in the sum of Twenty Thousand Dollars, for the honest and faithful performance of their duties.

COST.

For each One Hundred Dollar share of stock a first payment of two dollars must be paid to the Company or to its representative or agent when making the application for stock. After that, monthly installments of seventy cents on each one hundred dollar share must be sent to the home office, or paid to a legally authorized collecting agent. The first monthly installment will be due and payable one month after the date of the certificate of stock, and subsequent installments monthly, thereafter, until the stock matures.

PAYMENTS IN ADVANCE.

Any stockholder may deposit with the Company a sum of money for the payment of monthly installments as they fall due. The Company will receipt for the money, apply it in payment of the installments, and notify the stockholder when the sum is exhausted. Interest will be allowed on all such deposits at the rate of five per cent. per annum on the unused portions.

PAID UP STOCK.

Any stockholder may, after making the first payment, pay to the Company the sum of fifty dollars per share in lieu of all monthly payments. The Company will receipt for the money and will credit the stock thus paid up with the payments of monthly installments up to the time of its maturity.

FINES AND FORFEITURES.

If monthly installments are not paid up when due, fines will be assessed as follows: Ten cents per share for the first month of delinquency; twenty cents for the second, and thirty cents for the third.

If, after the assessment of the last fine, or fine of thirty cents for the third month's delinquency in payment of monthly installments, any stockholder remains delinquent in the payment of such installments or of any fines, for one month, then the stock upon which the monthly installments or fines remain so unpaid, if less than twenty-four monthly installments have been paid thereon, shall lapse and be forfeited to, and become the property of the Company. No notice of such lapse or forfeiture will be given to the stockholder and no sale of the stock will be made, but the stock will re-vest in the Company by virtue of the contract between the Company and the stockholder.

Lapses and forfeitures form an important factor in all institutions that depend upon periodical payments for their support. In most companies a stockholder's failure to make payments when due, works injury to the Company and thus to the other stockholders. With the Pacific Land and Loan Company, the result is directly the reverse. Failure to make payments when due results in fines, and continued failure works forfeiture. The fines, if paid, operate as a profit, and if not paid, the prior payments thereby forfeited become a profit. Either one or the other goes to the credit of the Company, thus hastening the date of maturity of other shares, and diminishing the number of payments required of those who continue to the end. At the same time the Company is relieved of its obligation to pay the forfeited shares.

NON-FORFEITABLE STOCK.

After twenty-four monthly payments have been made on stock it shall no longer be forfeitable for non-payment of mouthly installments; but the failure of a stockholder who is not a borrower to make payments on his stock for four months will be construed as an application for withdrawal, and thereupon the Company shall retire said stock, and the stockholder shall be entitled to all the rights of and subject to all the conditions imposed upon a withdrawing stockholder.

WITHDRAWAL.

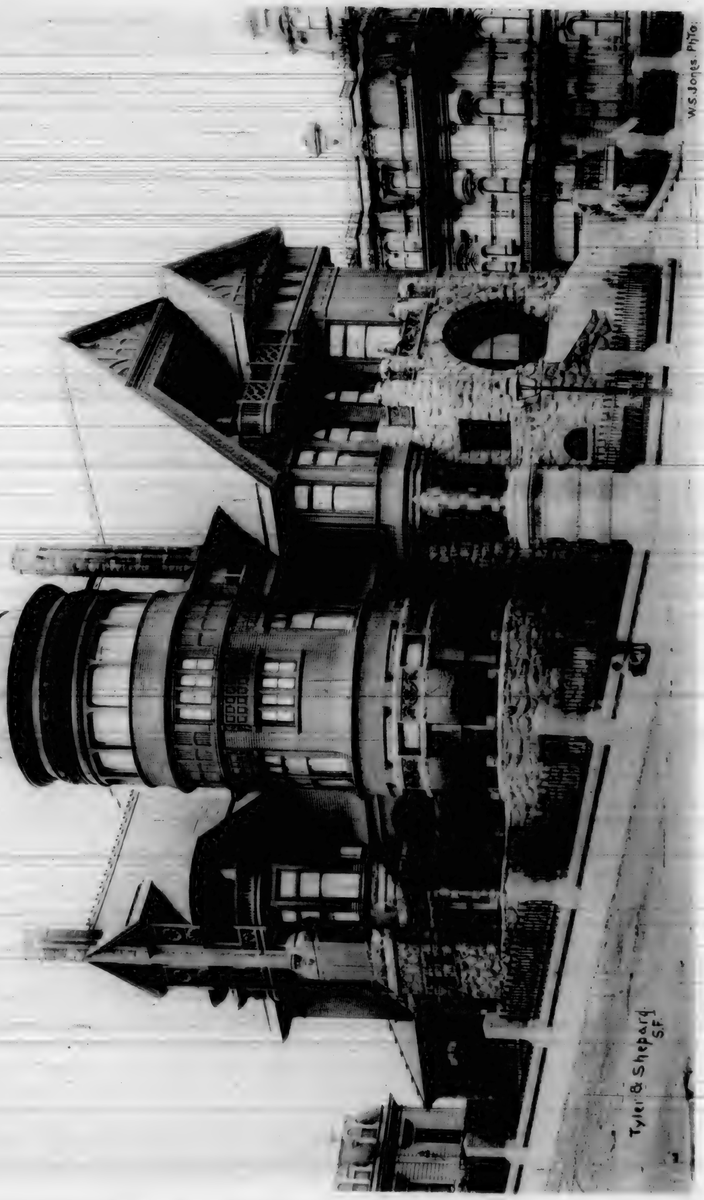
Any stockholder who has made twenty-four monthly payments on his stock and is not a borrower from the Company may withdraw from the Company, and upon such withdrawal shall receive a sum equal to the total sum paid from his monthly installments into the Loan Fund, with six per cent. interest per annum thereon, from the time of payment of such sums into the Loan Fund to the date of application for withdrawal.

TRANSFERS.

Any stockholder may assign his shares, providing said shares are in good standing and no loan has been obtained by the holder, by filling out the assignment on the back of the shares, and having the same witnessed and forwarded to the home office with fifty cents for approval and transfer. No assignment of shares will be valid unless the approval of the Secretary is endorsed thereon. If a loan has been obtained by a stockholder who desires to assign his shares, said shares cannot be assigned unless the mortgage property is also sold to the same party, or the mortgage paid off.

LOANS.

The monthly installment, together with all fines, interest, premiums, and profits from every source whatever, except the first payment, constitute the Loan Fund. The money of this fund is loaned at six per cent. interest per annum, and a premium of seven per cent. Loans can only be made to stockholders, unless there is a surplus on hand unapplied for by stockholders. All loans must be secured by first mortgage on real estate, and no loan shall exceed fifty per cent. of the actual cash value of the security given, except where the money loaned is used for the erection of a building upon the premises mortgaged. No loan of a less sum than two hundred dollars will be made. To entitle a stockholder to a loan he must hold stock the face value of which, at least, equals the loan applied for, and at least four monthly



Residence of W. H. Crocker, Esq.
CURLETT & CUTHBERTSON, Architects.

installments must have been paid thereon, either regularly as they fall due or in advance at his option. Applications for loans must be made directly to the Company and not through any agent thereof, and upon blanks furnished by the Company.

If the loan is desired to enable the borrower to erect a building on the real estate given as security, he may receive more than fifty per cent. of the value of the security, upon giving bond to the Company that the loan will be used for that purpose, and also a bond against mechanics' or other leins.

Interest and premiums are payable monthly at the time of paying monthly installments. Applicants for loans are required to furnish an abstract of title of the property offered as security and to advance ten dollars on attorney's fees for examination of title. No commissions are charged but the borrower pays all expenses. Improved property must be insured and the policy assigned to the Company when the mortgage is made or insurance is effected. Loans may be paid at any time upon giving thirty days' notice and the mortgage will thereupon be cancelled.

ILLUSTRATION.

Showing the costs and profits to be derived by the non-borrower of ten shares, or $1,000 worth of stock in five years, the estimated time of maturity of shares.

RECEIPTS.

Cash paid at maturity of stock	$1,000 00

EXPENDITURES.

Admission fee on ten shares, at $2.00 per share	$ 20 00	
Monthly installments on ten shares, at 70 cts. per share, amounting to $7.00 per month for 5 years	420 00	
At the time of maturity of shares there will be deducted for cancellation	3 00	
Total amount invested by a non-borrower, holding ten shares, amounting to $1,000.		$443 00
Thus at the expiration of five years, the non-borrower has made a handsome profit, amounting to		557 00

ILLUSTRATION.

Showing the result to a borrower of one thousand dollars, the borrower having been a stockholder for four months and owning ten shares of stocks.

EXPENDITURES.

First payment at $2.00 per share	$ 20 00
Four monthly installments at 70 cts. per share each	28 00

MONTHLY PAYMENTS.

Installment	$ 7 00
Interest on $1,000 @ 6 per cent	5 00
Premium on $1,000 @ 6 per cent	5 83
Total	$17 83

FIFTY-SIX MONTHLY PAYMENTS.

At $17.83 each	$998 48	
Cancellation fee	3 00	
Total		$1,049 48

RECEIPTS.

Cash, face value of stock upon maturity	1,000 00
Balance	$ 49 48

In other words, the borrower has paid less than fifty dollars for the use of one thousand dollars for five years, or less than one per cent per annum.

As showing how the system operates with each class, the following illustrations are instructive and suggestive.

ILLUSTRATION.

Showing the result to a borrower who builds him a home, borrower receiving $1500 and owning fifteen shares of stock.

BENEFITS.

*House is worth money it cost	$1,500 00
Fifty-six months' rent at $16	896 00
Total	$2,396 00

EXPENDITURES.

First payment, 15 shares, at $2 00 per share	$ 30 00		
Four monthly installments, before loan is effected, at $10 50	42 00		
Monthly payment after loan is effected :			
Installment	$10 50		
Interest	7 50		
Premium	8 75		
Total for one month, $26 75			
For fifty-six monthly payments		1,498 00	
Cancellation fee		3 00	$1,673 00
Benefits to the builder exceeds the costs			$823 00

The mortgage of $1500 is now due, but the stock has matured, is worth $1500 and will cancel the debt.

HOW TO REMIT.

Remittances may be sent to the Secretary at the home office by post office orders, express orders, drafts or registered letters.

SPECIAL NOTICE.

No representative or agent of the Pacific Land and Loan Company has power to waive or alter any of the conditions or terms expressed in the certificate of shares or to make any different or further contracts than set forth in the printed literature issued by the Company, or to give any receipt for money that shall bind the Company, except as herein provided ; and further, the Pacific Land and Loan Company will not be responsible for any bills contracted by any person claiming to be a representative of this Company, unless express authority in writing is given him by the Secretary. All negotiations regarding loans must be made with the home office. Agents have no authority respecting them.

Should you desire to become a stockholder, and there is no representative of the Company in your place, send for a blank application, fill it out yourself, sign your name and have it witnessed, then forward it, with first payment, to the Secretary, and you will receive your certificate of shares by return mail.

For further information address :

THE PACIFIC LAND AND LOAN COMPANY,

San Francisco, Cal.

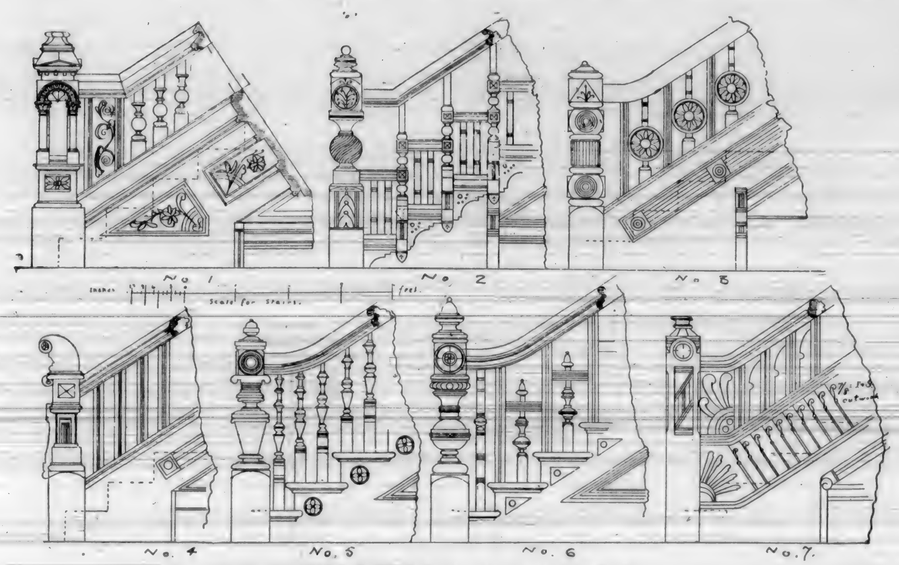
OFFICERS.

WM. J. WILSEY,	PRESIDENT.
L. W. HOWE,	VICE PRESIDENT.
S. C. HARGREAVES,	SECRETARY.
R. H. ORTON,	TREASURER.
SAMUEL M. SHORTRIDGE,	ATTORNEY.
CHARLES E. GUNN,	ASS'T ATTORNEY.

DIRECTORS.

WM. J. WILSEY,	San Francisco, Cal.
L. W. HOWE,	San Francisco, Cal.
S. C. HARGREAVES,	San Francisco, Cal.
SAMUEL M. SHORTRIDGE,	San Francisco, Cal.
CHARLES E. GUNN,	San Francisco, Cal.

*In almost any locality property will increase in value so as to offset necessary repairs.



DESIGNS FOR NEWELLS AND BALUSTERS.

Just and Proper Methods Which Should be Observed by all Contractors in Their Relations to Each Other in Estimating.

Rights of Sub-bidders at the hands of General Contractor.—A principal contractor having been awarded a contract involving subcontracts, his estimate having been based upon sub-estimates, which he has solicited, should award the said subcontracts to the lowest bidders, and should notify the sub-bidders that their estimates have been accepted or rejected as soon as the contract has been awarded to him.

The fact that such sub-bids were received by the principal contractor, previous to the submission of his estimate, should be conclusive evidence that they were used by him.

Unsolicited Bids.—Should a principal contractor receive a sub-estimate unsolicited, he should not be considered under obligation to use the said bid, even if it be the lowest; but he must not reveal the bid, nor use it in any way to influence any other party.

Sub estimates in Architect's Office.—Subcontractors should avoid leaving their estimates in architect's offices when they are received there simply as an accommodation to and for the information of principal contractors. By such action there is danger that bids may become known to competing subcontractors before estimates are closed.

Danger Behind the Boards.

In many old country houses there are wide-mouthed, discarded fire-places that have been walled in temporarily or permanently, not with brick and mortar, but with boards. The droppings of soot and ashes from the flues of the chimney throat soon accumulate in a combustible heap on the old hearth, liable, any hour, when there is fire in any stove leading into the flue, to ignite by a falling spark or cinder and set fire to this wooden partition of a perhaps unused room, and the press has another mysterious incendiarism to report.

The only safe way is to brick such fire-places, or, if this is impracticable, and the old hearthstone is to be spared for occasional warming, its fire-board should often be removed and its walls and base stones brushed clean of soot and dust filled ashes, that are so readily ignited, else, some night may find your home cremated.

Get Some Tools.

A workman without tools is virtually a cipher. Like a cipher he must depend upon his neighbor for value, for standing alone, he is worthless. Mechanics do not need as many tools now as they did in the days of all hand work. Macinery has changed all that, but machinery will never allow a mechanic to dispense with his monkey-wrench, hammer and box full of small tools.

A mechanic needs no better recommendation than a good chest of tools, well worn and in shape. They tell more plainly than any written "character" what the man is. He may tell you one thing, and yet be another; but a look into his tool chest betray him. A man who has worked long enough at certain work to be able to call himself skilled therein, should have acquired all the tools necessary, and a man who claims many years' experience, yet can show but few or inferior tools, should be looked at closely before his statements are received.

Many a young man is working at the carpenter's, machinist's or millwright's trade who has not acquired a fair set of tools. The best way for such men is to buy one tool every week, or more if their wages will permit. Another way is to lay aside so much money from each week's wages for books, papers and tools. Divide equally between books and tools, make a list of what is needed, then purchase the first on the list, as soon as the allotted cash amounts to the requisite sum.

But a very few years of this practice will be necessary before the young man has a good kit of tools and a nice little library. Another thing, too, he will have: He will have a habit of saving a little money, and the habit will outlast his tools.—*Manufacturer and Builder.*

ACADEMY
.....OF.....
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3066 South Ninth Street,
ST. LOUIS, MO.
An Institute for Theoretical and Practical Education for Building Tradesmen. Completed within three courses. Terms begin September, December and March. Students may enter in any one of these terms. The Academy will always assist its graduates in obtaining positions as Draughtsmen, Superintendents, Foremen, etc. Send for Prospectus.
H. MAACK, Principal.

CITY BUILDING NEWS.

Burnham near 25th, two-story frame. Owner, Aushek; cost, 1,600,

Dolores corner 24th, two-story frame. Owner and builder, W. W. de Winton; cost, 4,000.

Filbert near Dupont, two-story frame and alterations to three old frames. Owner, G. Musante; architect, W. Mooser; contractor, G. Rocca; cost, 9,000.

Fourth and Minna, three-story and basement brick. Owner, M. A. Hampton; architect, C. J. I. Devlin; carpenters, Moore Bros, 9,376; masons, Richardson & Gale, 8,566; wrought iron. Rix & Firth, 2,820; plastering, P. B. Downing, 1,325; cast iron work, O'Connell & Lewis, 4,200; tinning, etc.. Conlin & Roberts, 2,725. plumbing, Fritz & Kean, 1,384, total cost will be about 35,000.

Haight near Lyon, two-story frame. Owner and builder, A. H. Bailey; cost, 18,000.

Jones near Bush, two-story frame Owner, L. A. Berteling; architect, M. J. Welsh; contractor, R. Parker; cost, 8,500.

Pacific, No. 1338. alterations. Owner, Thos. Kennedy; architect, W. H. Armitage; contractor, J. W. Sims; cost, 2,800.

Stevenson near 20th, additions Owner, Robison; contractor, Wilberg; cost, 1,200.

Shotwell near 25th, three two-story frame. Owner and builder, P. Haver; cost, 7,000.

Steiner and Jackson, two-story frame. Owner, A. P. Redding, architect, Chas. Man; contractors, Herbst & McLeod; cost, 10,000.

Stanyan corner Waller, one-story frame; cost, 2,000.

Valencia, between 21st and 22d, three-story frame. Owner and builder, Mr. Partridge; cost, 9,000.

Western Addition, block 198, two-story frame. Owner, John Ryan; architects. Schmidt & Shea; contractor, S. J. Wilkens, cost, 3,200.

The above too late for Classification.

Adair St., flat and stable. Owner, Wm. Gercke; architect, Jos. Kennedy; contractor, Jos. Kennedy; amount, $2,120; limit, 70 days, signed, May 27; filed May 29; $550 framed; $500 roof on; $600 standing; finished, $470 completed.

Broderick, near Washington, cottage. Owner, H. Summerhayes; architect, H. J. Summerhayes, contractor, J. B. Gonyean; amount, 2,759; signed, May 28; filed June 1, 689 ready for shingling; 690 brown coated; 690 completed; 690, 35 days.

Buchanan, near Post, additional story. Owner, E. Durbrow; contractor F. A. Williams; cost 2,750.

Clay and Buchanan, painting etc. Owner Mrs. E. B. Hopkins; architects J. C. Mathews & Son, contractor, Geo. Eggers, amount 1,118; signed May 16; filed May 20; 75 per cent. of value of material used, and labor performed, balance 35 days.

Capp corner 24th, three two-story frame. Owner and builder A. Klahn; cost 5,000.

Castro and 16th, two-story flat. Owner Dennis Barry; architects, Townsend & Wyneken, contractor, G. W. Farnum; amount, 4,850; sureties, Harris & Jones; 2,500; signed, May 24; filed May 24; 1,000 framed; 900 ready for plaster; 800 one-half outside work is done; 900 outside doors hung; 1,250, 35 days.

California, between Mason and Taylor, two-story frame. Owner E. B. Pond; architects Mathew & Son; contractor W. F. Judson; cost 16,500.

Cole, between Haight and Page, six two-story frames. Owner and builder, Robert Cranston; cost 54,000.

Church and 30th, additions. Owner Captain Patterson; builder E. C. Worden, cost 2,000.

Dore and Bryant, to build. Owner, L. Cuneo & Co; architect, M. J. Welsh; contractor, C. Daly; amount, $2,500; $625 framed: $625 brown coated; $625 completed; $625, 35 days; signed May 6; filed May 6.

Ellis and Franklin, plastering of three houses. Owner, Antonio B. Gonzalez; architect, J. Marquis; contractor, J. O'Brien; amount, $1,845; signed May 10; filed May 17; $600 brown mortared; $400 arches finished; $345 completed; $500, 35 days.

Elizabeth, between Noe and Castro, move and alter. Owner, James McLaughlin; contractor, W. G. Jeffrey; amount, 1,550; signed, May 6, filed, May 13; 50 per cent. of material and labor as work progresses; 25 per cent. on completion; balance, 35 days.

Ellis and Franklin, mason work. Owner, Antonio B. Gonzales; architect, John Marquis; contractor D. Jordan; amount 1,450; signed May 10, filed May 11, 525 area walls built: 525 chimneys and fence walls built; 400, 35 days.

Ellis and Franklin, carpenter work. Three frame buildings. Owner, Antonio B. Gonzales: architect, John Marquis; contractor Moore Bros; amount 10,987; signed May 10; filed May 11; 1,944 rustic on; 1,944 stairs up; etc., 1,944 glazed etc.; 1,200 ready for painters; 1,155 completed; 2,800, 35 days.

Ellis and Franklin, plumbing. Owner, Antonio B. Gonzales; architect John Marquis; contractor, Wm. S. Snook & Son; amount 1,046; signed May 10, filed May 11.

Ellis near Gough, preliminary contract. Owner, J. J. Rauer; contractor J. F. Eaton; cost 2,700.

Folsom street and Juniper Avenue, to build. Owner, Chas. Bogan; architect, J. P. Chadwick; contractor, Geo. H. Walker; amount, 9,900; sureties, Irvine Graham and Caspar Dix, 2,500; limit, August 15, '89, signed, May 26; filed, May 31; 1,840 framed; 1,840 floored; 1,840 brown coated; 1,840 one coat of paint on; 2,540, 36 days.

Fillmore, corner Germania, two story frame. Owner, Fred Hueber; architect, W. Schrof; contractor A. Norton; cost 4,800.

Francisco and Kearny, warehouse. Owner Joshua Hendy; architect, John H. Hendy; contractor, Thos. H. Day; amount, 4,035; signed, May 4; filed May 17; 75 per cent. of value work performed on 1st of each month, balance 35 days.

Fair Oaks, between 21st and 22nd, two-story frame. Owner, Thos. P. Stoney, architects, Copeland & Banks; contractor, O. E. White; amount, $6,200; sureties, Chas. F. Doe and John T. Adcock; limit, 100 days; signed, May 24; filed, May 28, $1,500 enclosed; $2,000 outside finish on; $1,150 completed; $1,550, 35 days.

Fillmore and Germania, two-story house. Owner, Frederick Huber; architect, Wm. Schrof; contractor Albert Norton; amount 4,325; sureties F. Joost: limit August 17, '89; signed May 18; filed May 21; 850 chimney built; 850 outside finish on; 850 ready to paint, 850 fences and iron railings up; 1,085, 35 days.

Fell corner Devisadero, three-story frame. Owner J. B. Messing; architect W. Winterhalter, contractors Van Borstel & Conrad, cost 10,500.

Guerrero, between 25th and 26th, to build two flats. Owner, Adelia G. Tindermann; architect, Geo. Houston; contractor, Geo. Houston; amount, 3,840; limit, 100 days; signed, April 29; filed, May 17; 960 enclosed, 960 brown mortar is on; 960 white mortar is on, etc.; 960, 35 days.

Golden Gate Avenue and Webster, three-story frame. Owner, A. Lemaire; architect, H. Geilfuss; contractor, L. M. Weissman; amount, $9,445; signed, May 6; filed May 7; $1,180 framed: $1,180 roofed; $1,180 partitions set; $1,180 brown coated; $1,180 inside finish is on; $1,180 completed; $2,365, 35 days.

Golden Gate Avenue, near Laguna, three-story frame. Owner J. H. Curley; architect C. I. Havens; contractor P. Crichton; cost 7,500.

Green near Laguna, two-story frame. Owner E. L. Wagner; architect R. P. Waddell; contractor A. G. Vollmar; cost 6,000.

Golden Gate avenue, between Hyde and Larkin, six, two-story frames. Owner, James Shea, architect, C. J. I. Devlin; contractor, C. P. & G. H. Moore; amount, 9,186; sureties, C. S. Holmes and F. Joost, 5,000; limit, 90 days; signed May 13; filed, May 13; 900 foundation done; 1,200 framed; 1,800 brown mortared; 1,200 plastered; 1,200 ready for painting; 2,300, 35 days.

Golden Gate avenue, east Devisadero, two-story frame. Owner, David Irwin; architect, Emil John; contractor, Adam Miller; amount, 4,800; limit, Aug. 15, '89; signed, May 10; filed, May 14; 1,000 framed, 1,400 rough mortar is on; 1,200 accepted; 1,200, 35 days.

Golden Gate Avenue and Laguna, three-story frame. Owner, Jno. H. Curley; architect, Chas. I. Havens, contractor P. Crichton; amount, 7,000; signed May 6; filed May 9; 1,300 enclosed; 1,300 brown mortared; 1,300 hard finished; etc, 1,350 completed. 1,750; 35 days.

Howard, Nos. 1703, 1705, 1707, 1709 and 1711 and 207, 209, 211, 213 13th street, brick foundations and repairs. Owner, James Phelan; architect, John Marquis; contractor, Martin Fennel; amount, 4,500; signed, May 15; filed, May 16; 1,650 Howard street houses are finished; 1,650, all accepted; 1,200, 35 days.

Howard and 23d, one three-story and one 2-story frame. Owner, John H. Rosenbohm; architect, Chas. I. Havens; contractor, C. Zwierlein; amount, $9,600; signed, May 2; filed, May 7; $1,800 enclosed; $1,800 outside finish, $1,800 outside mill work on; $1,800 completed, 2,400, 35 days.

Howard and Seventh, three-story frame. Owner, John Wallace; architect. M. J. Welsh; contractor, Hugh McCracken; amount, 6,531; signed, May 9; filed May 16; 1,632 75 framed, 1,632 75 brown mortared, 1,632 75 completed; 1,632 75, 35 days.

Howard and 10th, plumbing, etc. Owner, estate, James Lick; architects, Wright & Sanders, contractor, Wm. F. Wilson; amount, 12,487; signed, May 6; filed, May 25; 75 per cent. on first day of each month as work progresses, balance, 35 days.

Howard, No. 822, 824, 826, 828, 830, and 832, alterations, etc. Owner, John F. Boyd; contractor, Alexander J. Wheeler; amount, $26,564 50; limit, September 10, '89; signed, May 24; filed, May 31; $1,300 ready to raise; $1,500 foundations laid to cellar walls; $2,500 first tier of joists on; $2,500 chimney up, $4,364 brown coated, etc; $5,800 completed; $6,600 50, 36 days.

Howard and Erie, three-story frame. Owner James Buchanan; architect S. Hatfield; daywork, cost 7,000.

Jupiter and Bryant, two-story frame. Owner, Maurice Healy; architect, M. J. Welsh; contractor, Thos. F. Mitchell; amount, $2,340; signed, May 7; filed, May 8; $585 framed; $585 brown mortared; $585 completed; $585, 35 days.

Laguna, between Pine and Bush, two-story frame and basement. Owner, C. Wrights; architect, H. D. Mitchell; contractor, J. B. Gonyeau; amount, 2,480; limit, three months; signed, May 11; filed, May 13; 600 framed; 600 brown coated; 700 accepted; balance, 35 days.

Laguna, near Hayes, build brick foundation. Owner, Mrs. L. A. Mowry; architect, James E. Wolfe; contractor, R. Parker; amount, 1,075, signed, May 28; filed, May 31; 75 per cent. of value of work done, balance, 35 days.

Manitoba near Vazoo, two-story frame. Owner D. W. Irwin; contractor F. Bohnenberg, cost 3,500.

Mississippi, 150 south Butte, to build. Owner, John T. Cairns; architects, Townsend & Wyneken; contractor, R. O. Davis; amount, 2,944; signed, May 14; filed, May 15; 400 enclosed; 700 brown mortared on; 700 sash hung, etc.; 408 completed; 736, 35 days.

McAllister, west Pierce, two frames. Owner, J. B. Caritey and wife; architect, Wm. Mooser; contractor, Geo. W. Farnum; amount, 11,650; signed, May 21; filed, May 23; 1,747 50 first tier of joists on, 1,747 50 roof on; 1,747 50 brown coated; 1,747 50 glazed, etc; 1,747 50 completed; 2,912 50, 35 days.

McAllister, west Pierce, plumbing, etc. Owner, J. B. Caritey and wife; architect, Wm. Mooser, contractor, Thos. Clark & Son; amount, 1,050; signed, May 22; filed, May 23; 75 per cent. on first day of each month as work progresses; balance, 35 days.

Minna and 6th, to build. Owner, A. Cassini; architect, T. J. Welsh; contractor, Wm. Dorgen; amount, $1,900; sureties, John Gleeson $1,000; signed April 29; filed May 7; $700 brown coated; $700 completed; $500, 35 days.

Minnesota, between Solano and Butte, two-story frame. Owner, Margaret Lovett: architects, Schmidt & Shea; contractor, Geo. J. Doering; amonnt 3,300; sureties, Jacob Ahlbach; limit 90 days; signed May 21; filed May 27; 618 enclosed; 618 brown coated, 618 hard finished; 618 completed, 828, 35 days.

Noe and Ford, two-story frame. Owner, Roger Waters; architect, M. J. Welsh; contractor, E. W. Hyde, amount, 3,600; signed, May 14; filed, May 15; 900 framed; 900 exterior finish is on; 900 completed; 900, 35 days.

Noe corner Ford, two-story frame. Owner, R. Waters; architect, M. J. Welsh; contractor E. W. Hyde; cost 4,000.

Page and Lyon, two-story and basement house. Owner, J. B. Martin; architect, J. J. Clark; contractor, White Bros; amount $3,730; sureties, T. M. McLachlan and Geo. T. Shaw, $3,730; signed May 16; filed May 18; $900 framed; $900 brown mortar is on; $900 inside finished; $1,030, 35 days.

Polk and California, alterations. Owner, Mary A. Grant; architects, Pissis & Moore; contractor, T. Hock; amount, $2,175; signed, May 22; filed May 28, $1,000, brickwork is completed; $630, completed; $545, 35 days.

Pine and Webster, alterations, etc. Owner, John J. Rohrbach; architect, Chas. I. Havens; contractor, R. Doyle & Son; amount, 2,399; signed, May 8; filed, May 9; 599 enclosed; 600 outside finished; 600 completed; 600, 35 days.

Post and Buchanan, frame building. Owner, Regina Mitchell et al; architects Salfield & Kohlberg; contractor, Rohling & Crawford; amount 3,600; sureties, F. Joost and J. J. McKinnon; 3,600, limit 65 days; 900 framed; 900 brown coated; 900 completed; 900, 35 days; signed, May 4; filed May 9.

Pine, between Webster and Buchanan, two-story frame. Owner M. W. Murry; architects Copeland & Banks; contractor J. Geary; cost, 8,000.

Pierce corner Pine, building for Old Ladies' Home. Owner Mary Ann Crocker; architect A. Page Brown; contractors Mahoney Bros; cost 115,000.

Sanchez and 16th, two-story frame. Owner, L. C. Dibert; architect, C. Zwierlein; contractor, C. Zwierlein; amount, $3,300, sureties, J. F. Kennedy and L. B. Doe, $3,000; signed, April 29; filed, May 7; $1,000 enclosed; $1,475 completed; $825, 35 days.

Steiner and Pacific, two-story dwelling; Owner, Mrs. N. G. Kittle: architect, J. C. Mathews & Son; contractor, W. Winnie, amount, $8,178; limit Oct. 1, '89; signed May 15; filed May 17; 75 per cent. of material used and labor done as work progresses, balance, 35 days.

Seventeenth and Sanchez, two-story frame. Owner, C. H. G. Wiebusch; architect, Bernard Dreyer; contractor Bernard Dreyer; amount, $4,400; limit, Aug. 10, '89; signed, May 13; filed, May 15; $1,000 framed; $1,200 brown mortared; 1,100 white mortared, 1,100, 35 days.

Scott and Bush, two-story frame. Owner, E. Rattigan; architects, Copeland & Banks; contractor, W. E. B. Stiles; amount, $2055. sureties, G. D. Nagle and E. Phillips, $1,000, limit, 60 days; signed, May 27: filed, May 28; bills to be paid weekly as work done and materials used; bal., completed.

Seventeenth and Mission, two-story and alter three-story. Owner, Gustave Hueter; architect, H. Geilfuss; contractor, F. W. Kern, amount, 6,800; signed, May 21; filed, May 28; 1,100 framed; 1,000 partitions set; 1,000 outside finish on; 1,000 inside finish on, 1,000 completed; 1,700, 35 days.

Stanyan, near Grattan, two-story frame. Owner, D. L. Westover: architect, McDougall & Son, contractor, J. R. McLean; amount, $5,200; limit, 92 days; signed May 29; filed, June 1; $500 chimneys up; $700 ready for shingling; $750 floors laid; 950 white coated; 900 completed; 1,400, 36 days.

Stockton, near Chestnut, one-story frame. Owner, A. J. Garibaldi; architect, Wm. Mooser, contractor, John Bruce; amount, 3,500; sureties, John S. Morgan and Henry C. Robinson, 2,000; limit, 70 days; signed, May 21; filed, June 1; 75 per cent. of value paid as work is done, balance, 25 per cent., 35 days.

Stevenson, south Herman, to build. Owner, Mrs. H. A. O'Brien; architect, T. J. Welsh; contractor, H. A. Conrad; amount, 2,895; signed, May 21; filed, May 22; 650 framed; 650 brown mortared; 700 completed; 895, 35 days.

Seventh and Howard, to raise, etc. Owner, G. F. W. Fahrenkrug; architects, Huerne & Everett; contractor, Jacob Beck; amount, 2,400, signed, May 8; filed, May 9; 600 brick work done; 1,200 completed; 600, 35 days.

Sanchez cor 17th, two-story frame. Owner C. H. J. Wilbusch; contractor B. Dryer; cost 5,000.

Stanyan corner Waller, one-story frame. cost, 2000.

Taylor Place, to build. Owner, Mrs. M. Gorman; architect. W. H. Bayless; contractors, Mulford & Rodgers; amount, 1,875; sureties, J. C. Rodgers and W. H. Barton; limit, 85 days; signed, May 7; filed, May 14; 300 framed; 500 first coat of plastering is on; balance at completion.

Tenth and Howard, wrought and cast iron work. Owner, estate, James Lick; architects, Wright & Sanders, contractor, Rix & Firth; amount, 5,500; signed, May 6; filed, May 28; 75 per cent. paid on first of each month, balance, 35 days.

Treat avenue and 26th, alterations, etc. Owner, Wm. F. Klein; architect Chas. I. Havens; contractor R. P. Traxler; amount, 2,475; signed May 23; filed May 27; 550 water pipes in; 550 outsid finished; 600 completed; 575, 35 days.

Tennessee and Butte, move and alter. Owner, Herbert Crapo; architects, Townsend & Wyneken, contractor, R O. Davis; amount 1,275; signed May 10; filed May 11; 200 moved; 450 studded up; 300 completed; 325, 35 days.

Third and Everett, alterations, cost 600.

Van Ness Avenue and O'Farrell, iron lathing for R. C. Cathedral. Owner, P. W. Riordan; architect, T. J. Welsh; contractor, M. J. Donovan; amount, $3,175; signed, May 4; filed, May 29, 75 per cent. on value of work done, balance, 35 days.

Van Ness Avenue and O'Farrell, plastering. Owner, P. W. Riorden; architect, T. J. Welsh; contractor, Thos. Winters, amount, $9,300; sureties, Richard Doyle and Richard McCann; signed, May 13; filed May 29; 75 per cent. on value of work done, balance, 35 day.

Van Ness Avenue and O'Farrell, heating with hot water, R. C. Cathedral. Owner, P. W. Riorden; architect, T. J. Welsh, contractor, Duffy Bros; amount, $3,950; sureties, O. E. Brady and Peter Crichton; signed May 29; filed, May 29, paid on completion and satisfactory test of work.

Van Ness Avenue and O'Farrell, plumbing and gas fitting for R. C. Cathedral. Owner, P. W. Riorden; architect, T. J. Welsh; contractor, Wm. J. Nelson, amount. $1,798; sureties, $1,000; signed, May 9; filed May 29; $899 work is roughed in; $400 completed, $499, 35 days.

Valencia and Herman, to build. Owner, M. A. Mercer; architect, T. J. Welsh; contractor, R. Doyle & Son; amount, $5,969; sureties, P. F. Ward and T. Winters, $3,000; signed, May 1; filed, May 7; $1,489 framed; $1,489 brown mortared; $1,849 completed; $1,502, 35 days.

Vallejo, west Gough, two-story frame. Owner, G. T. Bigelow; architects, Percy & Hamilton; contractor, J. B. Gonyean; amount, 5,800; signed, May 17; filed, May 21; 75 per cent. of value work done, first Saturday of each month; balance, 35 days.

Waller and Germania, one building on Waller and one on Germania. Owner, Chas. Maxwell and wife; architect, John Gash; contractor, Jessie Rickard; amount, 6,650; sureties, Michael Casey & J. A. C. Macdonald, 2,000; signed, May 13; filed, May 15; 832 tin roof on; 832 brown coated; 832 brown coated and sash in; 832 two coats paint on; 832 50 complete; 827 complete and accepted, 1,662 50, 35 days.

Waller, near Devisadero, two story frame. Owner Louis Friedlander; architect P. S. Barber; contractor E. W. Hyde; cost 5,000;

COUNTRY BUILDING NEWS.

LOS ANGELES.

The only way to realize how Los Angeles is growing is to take a ride through the city and its suburbs and note the number of buildings that are in course of construction. Residences of all sorts and descriptions, from the palatial abode of the millionaire to the less pretentious domicile of the breadwinner, are going up by the hundred, and in spite of the vast number of business places already thrown open, there are those who can foresee that the supply is, by no means, equal to the coming demand, and are acting accordingly. Among the additions to the city that are in contemplation is a two-story brick building on the north east corner of Third and Spring streets, the size to be 140x192 feet. The estimated cost of the project is $45,000.

NEW BRICK BLOCKS.

It is stated on good authority that the residence of Mr. J. A. Graves, on the corner of Third and Fort streets, will be moved, and that in its place a handsome business block will be built. It will be of brick and four stories in height.

Two new blocks are contemplated near the cable engine house, in East Los Angeles, and they will be commenced very shortly.

A Main street architect reports that he has plans for four business blocks, which will be commenced in about six weeks. Two of these are on Main street, one on Los Angeles street, and the other on Spring street.

BUILDING NOTES.

The excavations for the foundations of the J. M. Griffith building, on Fort street, is about completed. This building is to be five stories in height, and will cover an area of 120 feet on Fort street by 150 in depth.

The foundations for the building to be occupied by the Los Angeles Athletic Club, on Spring street, near Third are being put in.

Mr. O. W. Childe is about to make extensive additions to his residence on Main street. The plans are in the hands of Mr. Hass, the architect, and the additions will cost, when completed, in the neighborhood of $15,000.

A contract has been completed between W. H. Jay, of Glendale, and J. A. Murphy and H. E Dillon, of this city, to, on or before the 17th of July, 1889, erect and finish the building to be known as the West Vernon School house. The cost of the structure will be $2,190.

OAKLAND.

One of the most conspicuous and handsome houses in this city is being put up on the east side of Harrison street, south of Durant, by Toohig & Moore, for D. Edward Collins. The house is after plans prepared by Charles Mau. The house is of two stories, with attic and basement. The cost of the building complete will not be far from $14,000.

The same builders have under way a two story flat of twelve rooms on Webster street near Fourteenth for a Mrs. Mour, to cost about $6,000.

On Ninth street between Harrison and Alice streets L. H. Levy is erecting a double two story flat of six rooms in each flat or twenty-four in all. The building is of substantial modern construction and cost about $7,000.

A handsome two story modern house of two stories with nine rooms, bay windows, and all conveniences is being erected on the west side of Harrison street, near Durant by Mrs. J. W. Koland of which W. H. Weilbye is the architect and contractor. The cost of the improvement is about $4,500.

At the southwest corner of Seventh and Alice street a two story house of twelve rooms is being put up for Josephine Nolan by Hugh McCracken, to cost $2,500. The same contractor has recently completed a cottage on the opposite side of Alice street for Jeremiah Casey, at a cost of $1,900.

Contractor S. J. Shelper is erecting a handsome two story tenement house of eighteen rooms for J. C. Adriance on the corner of Sixth and Madison streets for $5,000.

E. L. G. Steele has had some extensive repairing and improving done to his house on the corner of Sixth and Jackson streets. He is now having a stable erected on the lot immediately adjoining his house. Con Cannon is the contractor.

S. R. Andrews is erecting two cottages of five rooms each on Madison between Fifth and Sixth streets. The cost will be $1,500 each.

A neat little cottage of five rooms is being erected by J. H. Babcock on Fourth street between Oak and Madison. The cost will be about $1,000.

On Third street between Jackson and Madison, the house of Mr. Lewis which has been raised is being improved with an additional story beneath. Contractor Louis Macomber is doing the work.

Louis Macomber is erecting a cottage of five rooms on Third and Alice streets for Mrs. Lizzie Honohan. The cost is $1,750.

J. A. Easton has contracted to erect a building for J. Nelson, to cost $1,800.

A. S. Barney has contracted with F. J. Farnham to erect a building on Oakland avenue, near Vernon street, to cost $2,600.

Smith & Lake are building a double flat on Nineteenth and Brush streets for J. Hayes, after plans by W. H. Weilbye.

W. H. Weilbye has prepared plans and is putting up a handsome two-story house for Ex-County Clerk Andy Ryder at Loomis, Placer county, where he will make his home.

Toohig & Moore are building a two-story house for Mr. Murry on the corner of Twenty-eight and Myrtle streets to contain seven rooms and cost about $5,000.

Mrs. J. W. Roland is putting up a two-story flat on the west side of Chestnut street near Tenth of modern design and containing five and six rooms each. W. H. Weilbye is the architect and builder and the cost will be about $5,000.

The cottage of Mrs. Hinkling on Campbell street, between Seward and Taylor streets, is being remodeled and an addition built at a cost of about $900. I. H. Underwood is doing the work.

Mahoney & Shay are the contractors for a seven room basememt cottage being erected to the order of Dr. R. E. Cole on Union street, near Tenth, to cost about $2,500.

On the west side of Union street, between Tenth & Twelfth streets, W. H. Martin is building for himself two modern two story houses of eight rooms, to cost $2,800 apiece.

The new residence of W. H. Sigourney on Third avenue and East Fourteenth street is built by W. H. Weilbye, after plans of his own, and will cost when completed about $10,000.

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Jesse Rickard has contracted with Josephine, wife of R. Mastick, to erect a building on lot 77, Encinal Park tract, Alameda, for $3,050.

W. H. Weilbye is building a barn 30x49 with a 15 foot shed, on Broadway near Durant, for Whittier, Fuller & Co., to cost about $1,000.

SAN DIEGO.

The subjoined list of buildings is only a partial one, and represents only the more important building enterprises, still it foots up a total of some $200,000. This does not include the new opera house nor the changes in the Consolidated bank building, besides many other structures, now planned, but not yet in course of construction.

About two months ago the excavation made for a building over a year ago on the corner of Fourth and E streets, began to look as though something was to be done towards erecting a structure there. The plans were made and work was soon commenced. The building is now up to the second story, as far as it will be built at present. Messrs. Pauly & Gassen are owners, and expect to expend $65,000 in the construction. McDougal & Sons are the architects, and J. C. Sloan has the contract for the work.

The foundation was laid this week on Sixteenth and N streets for a warehouse 50x90 feet, and two stories in height. It is a frame structure, costing, perhaps, $5,000. It is being built by Captain Sherman, and is to be used in connection with the San Diego, Cuyamaca and Eastern railroad freight depot. It will probably be covered with corrugated iron, and will be finished in about two months.

B. R. Arnold has a two-story brick building in course of construction on his lot on the north-east corner of Fifth and K streets. The building will cost in the neighborhood of $12,000.

Monday morning work will be commenced on the Backesto block, on Fourth and H streets. It will be two stories and basement, built entirely of brick. W. F. Fitzpatrick has the contract. The building will cost about $25,000. J. P. Backesto, of San Jose, is the owner.

The two new school buildings are going rapidly forward. On the one on Twenty-fourth and K streets about fifty men are employed, and it is all inclosed. The roof is partly on, and the plumbers are at work in the basement. The one on Sixth and B streets is only up to the second story, but the work is being pushed, and both will be completed in time for the September term. They are both built on nearly the same plan, Comstack & Trotsche being the architects and J. P. McCormick the contractor. The total cost, furnished, will be in the neighborhood of $30,000.

Mrs. Parker has laid the foundation for a two-story frame dwelling at the corner of Union and Albatross streets. The estimated cost is $5,000.

In the early part of next month Judge Pierce will commence work on his residence on Florence Heights. It will be a one story frame structure, to cost $3,000.

Many private dwellings are receiving alterations and additions amounting to from $200 to $1,000, so that builders are kept in a reasonable amount of work.

FULTON.

Calvin Osborne is erecting a commodious dwelling.

SAN LEANDRO.

A contract has been placed on record between F. I Williams and Rev. John McEvoy for the erection of an addition to the convent in San Leandro to cost $5,530.

SAN JOSE.

[From our Special Correspondent.]

First, between San Antonio and San Fernando, two-story brick and sandstone business block. Owner C. Doerr, architects J. Lenzen & Son, contractor J. H. Kohlhauer, cost 20,000.

First, between Santa Clara and San Fernando, three-story brick and sandstone business block. Owner Mrs. Knox Goodrich, architect G. W. Page, contractor for carpenter work, R. Summers. 4,860, contractor for brickwork, W. J. Wolcott, 3777, total cost 8,637.

Brown, corner Delmas Avenue, one and one-half story cottage. Owner S. H. Leach, architect J. O. McKee, contractor A. J. McIlvain, cost 2,000.

Fountain Alley, additions to building, Owner L. Archer, architects, J. Lenzen & Son, contractor F. Davis, cost 2,521.

Crittenden, near St. John, one-story cottage. Owner H. Prindle, architect J. O. McKee, contractor J. E. Clinton, cost 1200.

Second near Santa Clara, additions to M. E. Church. Owner M. E. Church, architects Lenzen & Son, contractors Mabury & Phillips, cost 4,636.

Tenth and San Antonio, one-story cottage. Owner J. R. Patton, architect J. O. McKee, contractor J. J. Hill, cost 3,000.

Seventh near Keys, two-story dwelling. Owner J. B. Wyatt, architects J. Lenzen & Son, contractor A. Kelsey, cost 3,000.

ALAMEDA.

A modern $3,125 cottage house will soon be erected for Mary C. Lewis on Verdi street, near Santa Clara avenue.

SANTA ROSA.

A brick addition to the building occupied by P. H. Kroncke, of the Santa Rosa Planing Mills, is being put up, 40x61 feet, one-story high.

HAYWARDS.

Daniel Luce, of Haywards, is about to erect a $12,000 brick block on B street in that town.

Mr. Hackett will commence the erection this week of a $1,500 barn for Dr. Du Bois on his place on Haywards avenue.

Mr. Hackett has secured the contract for building another $2,000 cottage on the corner of Hayes and Ward streets for Dr. Du Bois. The work will be pushed, as the cottage has already been spoken for.

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SAN FRANCISCO, CAL.

The California Architect and Building News

VOLUME 10. ENTERED AT POST-OFFICE SAN FRANCISCO, AS SECOND-CLASS MAIL MATTER. ESTABLISHED JANUARY, 1879. NUMBER 7.

Official Organ of the San Francisco Chapter, American Institute of Architects.

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ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, JULY 15, 1889.

FOR some time, the question has been agitated in regard to the consolidation of the American Institute of Architects and the Western Association of Architects. To decide the question, a vote was taken simultaneously in New York and Chicago. Even the most sanguine friends of consolidation did not fortell the unanimity with which the project would be received. In the American Institute, but nine negative votes were recorded. In the Western Association a still more positive vote was polled. Out of a total of 265 votes there were but *three* against the proposition. We do not know by what name the new organization will be known; the *National Association of Architects* has been suggested. The old name of the *American Institute* is dear to scores on this coast and we should like to see it retained. San Francisco has one of the largest Chapters, in point of numbers, in the Union, and one and all of its members wish a long and happy life to the new organization.

WHILE our city savants are considering the subject of *durable* pavements, they should also consider the hygienic qualities of the materials used. In 1878, over 12,000 people died in New Orleans from yellow fever, and it is stated as a fact, that a large proportion of that number contracted the disease from the germs held by the absorbent pavements in use at that time in the city. Where asphalt is used, there are no crevices to hold dirt. In cobble stone pavements especially, there are innumerable crevices which hold the dust and other organic matter, in summer and pollute the air by its exhalations in damp weather. Another fact should be seriously considered. Stone pavements as ordinarily laid absorb this organic matter, which, festering in the earth, becomes a breeder of disease. There is a serious question for all City Councils to consider besides the one of a few dollars difference in cost, and that is, what pavement is the best, in a hygienic sense, for the welfare of our people?

A RECENT decision in a New York Court of Appeals, would lead to curious results if our own Judges should decide the same way. The Judge declared "that a stable, however well it may be built, is a nuisance in the vicinity of handsome residences, and that an action can be brought to have it removed." In this city, most of the fine dwellings have a stable in close proximity thereto and are regarded as valuable adjuncts. We think, however, that in the decision, reference was only made to livery stables or the immense buildings used by the Car Companies for their stock. It would be difficult to control Californians in the selection of a site for a stable, as some of the finest ones are located in the midst of various districts devoted to artistic dwellings.

DURING the six months ending June 30, 1889, there was received in this city 134, 352, 727 feet of pine lumber and 94, 400, 715 feet of red wood lumber. Of shingles, the number is 52, 294, 325, while the figures 13, 232, 100, represent the number of laths. In connection with the spruce, laurel, ash, maple and oak sent to this city, the grand total number of feet received is 230,000,000. This is the largest amount ever received for a similar period in the history of the city.

WHILE the above is true in regard to the *amount* of lumber received, it must be allowed that many previous similar periods have been much more satisfactory as regards business. Prices are reasonably low, yet a very large quantity of lumber is piled up in our lumber yards awaiting purchasers. The late disastrous fires in Seattle and other towns, will, for the purpose of rebuilding, draw from those who supply this city, many millions of feet, that would otherwise be added to our already extensive stock on hand.

EXPORTS of lumber are not as large as usual so far this year being, to the date given, but 6,744,901. The largest amount for a single year was that of 1882, when the total reached 22,094,393 feet. In 1888 the amount was 21,600,015, while the former year exceeded the latter in number of feet, the *value* of the shipments of the latter year was greater by about $100,000, showing that a finer grade of lumber was exported.

SUB-CONTRACTORS and contractors should take notice of the following provision in the new lien law of Ohio: "Any contractor or sub-contractor, who shall purchase materials on credit, and represent at time of purchase that the same are to be used in a designated building or other improvement, and shall thereafter use, or cause to be used, the said materials in the construction of any building or improvements other than that designated, without the written consent of the person of whom the materials were purchased, with intent to defraud such person, shall be deemed guilty of a misdemeanor, and on conviction, shall be punished by a fine not exceeding five hundred dollars."

IN another section a good point is represented which declares "that every person for whose immediate use, enjoyment or benefit, any building erection or improvement shall be made, shall under this Act, be included in the words owner or proprietor."

AMERICAN elevators, so far, seem to have the preference in European cities. Per example, two of those in use in the Eiffel tower are of American manufacture, the other two being French. While the speed of the latter is 200 feet a minute, the former is just double or 400 feet a minute. Thus, the products of American genius are gradually being introduced throughout Europe. In connection with above we may add, that in comparison with this country, the elevator is but little used in the continent of Europe.

A PRINCIPAL contractor should have a list of selected subcontractors, on whom he is satisfied he can rely both for good work and for its prompt execution, and such only should he ask for bids. He knows that there are subcontractors whose offers would involve him in loss, no matter how low their estimates might be. When a mason is carrying up the walls of a building, and is compelled to stop work and discharge his men in the midst of their operations for the want of cut stone or of iron or other work, delayed through the want of executive efficiency on the part of the subcontractors for such part of the work, he not only experiences a loss of temper but also a considerable amount of his anticipated profits. The architect is also considerably chagrined to find the progress of the work thus brought to a sudden stop, and comes to the conclusion that he is also materially interested in the proper selection of the subcontractors. He, therefore, evinces a certain amount of reasonable concern, when the principal contract is awarded, as to who are to be the subcontractors, and thus there is established an interested relation also between the subcontractor and the architect. Fortunately for the latter the former knows that it is necessary for his work to pass the inspection of the architect and to meet with his approval before it will be accepted by the principal contractor.

ONE important measure was introduced at the late meeting of the National Associations of Builders. Briefly stated it is as follows: On certain work contractors are required, when submitting estimates or closing contracts, to furnish bonds, and, in order to comply, are obliged to ask friends to become responsible for them. This necessity is always an embarrassing one, and while, on the one hand, the contractor feels very delicate about asking the accommodation, on the other hand his friends consent with great reluctance. The suggestion referred to is that a bureau or department of the National Association be established, which may furnish such bonds under proper conditions and for a satisfactory consideration. The committee appointed, reported favorably in regard to the suggestion offered and recommended that steps be taken to establish such a bureau. The matter will be discussed in full at the next Annual Convention.

WHEN the trades unions set up their rules limiting the number of apprentices to be taught their trade in any shop, they did it for the purpose of preventing the market being over-stocked with skilled labor and the consequent reduction of wages from an over supply. Contrary to expectations the rule has not worked as intended. Skilled workmen in every branch of mechanical trades are more numerous than ever. Those who are the most injured by the rule, are the sons of Americans, who are virtually prohibited from learning their father's trade. Our employers are constantly obtaining skilled labor from Europe, who take the places that should be filled by our own children. Is it any wonder that we see so many young men drifting around our streets, when they are actually debarred from entering our workshops and learning a legitimate trade.

THERE appears to be such a thing as a diagnosis of disease in wood and the botanical physicians profess to know that it may be contagious or sporadic. Dry rot is called contagious and it is said that the germ of that disease may be communicated to sound wood by tools which have been at work in diseased. It is thought possible that the theory accounts for many incomprehensible breakages of timber. The suggestion is that sound lumber should not be cut with the same saw, without cleaning, that has passed through stuff affected by dry rot.

FIRE crackers have caused a loss during the past five years of over $2,000,000. Pennsylvania seems to have suffered the most. It is a noticeable fact, that fires started from fire crackers exploding, have a small average loss. In this city of wooden buildings, too much care cannot be exercised in preventing conflagrations, and it is an open question if some other more appropriate way cannot be devised for our youth of both sexes to celebrate the noisy Fourth than by the heathenish way of exploding fire crackers. Fireworks can be tolerated, but the dangerous Chinese bombs, double heads and fire crackers should be suppressed.

How to Teach Boys to Become Bricklayers.

THE following practical remarks were delivered by President Stevens at the late annual Convention of the National Association of Builders:

I have my ideas on the above subject, and I will express them to you. You want to know how we would teach a boy to be a bricklayer in our school. First, I would have a lecturer to teach him by lecture all that could be taught him in regard to his business, or the materials connected with it; for instance, I would have the lecturer tell the boy what sand is made of and all about sand; I would have him tell the class what lime is made of and how it is made; I would have him tell the class what bricks are made of and how they are made; I would have him tell them all about cement and explain to them its nature and combination. By the time the boy was through with those lectures he would know why you could not make mortar,—I am an iron man, and I do not know much about bricklaying, but I will tell you all I know about it,—the boy would then know why you could not make mortar out of ashes and lime, or out of loam and lime. He would know why you had to use gravel and why you had to use sand.

After the boys have been taught to that extent, I would have them taken to a limekiln and let them have an object lesson,—let them see how it was done. I would have them taken another day to a brickyard, and let them see how bricks are made. I would have them taken to one of our terra-cotta establishments, and let them see how terra cotta is made. I would suppose then, so far as that was concerned, the boys' education was completed theoretically.

Now comes the question, "What shall we do with them?" I would have then a first class journeyman mechanic, a journeyman bricklayer,—such a man as you would make one of your foremen to take charge of your buildings,—and I would have him take these boys, a class of say six or eight, or ten, and say to them, "Boys, you have been told by your professor how mortar is made; now I am going to show you." Then he would call up his laborer, and say, "Here, Billy, bring so many bushels of lime, and so many bushels of sand;" and he would bring them and put them down on the ground. Then the teacher would tell them "Now, when you put water on this lime, it slacks it. Now, we are going to put water on this lime and we will see it slack." Then we would mix that up, and it would make mortar, and he would be talking to them, and all the time they would be seeing. That finished, he would say to the boys, "The first thing you have to learn is how to use a trowel. Here are the trowels. Now, William, you put a shovelful of mortar on each one of those boards, and each one of you boys take a trowel, and I will show you how to spread this cement and mix the mortar," and keep the boys practicing at that, and say, "George, that ain't the way; do it this way." They would soon learn how.

The next day he would come there, and say, "Boys, I am going to build a wall for you, and I want you to see how I do it." He would dig out, and commence to lay it out, and talk to the boys as he went on; "Boys, we spread our mortar this way; we take our bricks this way; this is the way we put a leader; we run up three courses here and three courses there, and we use this plumb-bob to see that it is plumb, and then we strain a line over this way and lay a number of bricks in proportion. That is the way we will do it." Then we would tell the boys how he was going to strike the joints. He would build that wall with those boys looking at him. "Do you understand that, boys?" "Yes." Then he would say, "William, have this wall torn down and everything cleaned up. Now, boys; to-morrow morning we will go to work;" and the next morning he would say to the boys, "I want each one of you to lay out a wall as I did yesterday. You saw me do it, and I want you to do it." They would start in, and he would watch them. "John, don't pick up your bricks that way, this is the way. Bill, you are not doing as I showed you, run that corner up and run this up. George, that is not the way to hold the plumb-bob, hold it this way, and strike your joints this way."

Do you think those boys would learn anything? I think in six months' time I would have pretty good bricklayers out of those boys. After I had taught them how to put a wall up, I would take them on pressed brick-work, and I would teach them how to run arches; and I think those boys would learn more under six months' instruction of that kind than they would in six years in your building with nobody to tell them, and left just to pick up what they could.

SKETCH FOR A COUNTRY DWELLING. M. G. BUGBEE, ARCHITECT.

OUR New City Hall has been the subject of much inquiry among many of those who have watched its gradual advancement in regard to the money so far spent in its construction. We are able to give full particulars in regard to the same, which should be kept for reference.

The New City Hall to June 30, 1889, has cost $3,750,106 59 and there should be added to this and deducted from the balance in the Treasury, for payments to fall due on existing contracts, the sum of $29,653 73, and the total cost to date will reach $3,779,760 32. The estimated amount to complete the New City Hall, without considering the cost of a mansard roof, but finish the two McAllister street wings, the basement and unfinished rooms in the main building on the upper floors, lay out the walks and grounds, erect all proposed granite steps and fences, and build a suitable main tower, will amount to $1,000,000 additional and absorb the balance unexpended June 30, 1889, together with the levy for this and most of that alowed as the limit for the next two fiscal years. This will make the New City Hall cost, when finished complete, without the mansard roof, about $4,780,000, and take until the latter part of 1892.

On February 2, 1874 over fifteen years ago, architects David Farquharson and John P. Gaynor submitted a report to the Board of Supervisors containing a detailed estimate of the cost to that date and the amount required to finish the building as above, without the mansard roof. They reported: * * * "The total cost of the building would be the sum of $4,854,060," which is not very far out of the way, as appears at this date.

TO calculate the number of shingles for a roof, ascertain the number of square feet and multiply by 9 if shingles are laid 4 inches to the weather, by 8 if laid 4½ inches, and 7⅕ if laid 5 inches. The length of rafter of one-third pitch is equal to three-fifths of width of building, adding projection.

IF our architects should adopt the above absurd rule, how long would it be before the profession would be classed among the "Lost arts." When the sewing machine was introduced what a hubbub was raised that it would cause thousands of women to be thrown out on the charities of the cold world. In early days flooring was worked by hand, and a tough job it was was too. When a machine was made through which thousands of feet could be run in a day, a universal howl was made that the bread and butter was to be taken from thousands of men. Same way in regard to molding machines, mortise and tenon machines, by which it is possible to make hundreds of doors in a single day. Shingle machines caused a universal growl among the craft. In fact, every improvement in machinery was received by a howl from those whom the old fashioned ways supported. Reference is only made to these few facts to show how differently the situation is to-day from the "good old times." Give our own boys a chance to learn a trade, and with their natural abilities, they would soon outstrip the imported men, rendering it unnecessary to send abroad for the very skill that lies dormant in our midst.

Business Changes.

E. J. Weston has opened an office at 873½ Market street and will in future devote his whole attention to his profession as an architect.

John & Balcynski have gone into partnership and secured offices on the corner of Grant avenue and Geary street.

M. G. Bugbee is nicely located at 330 Pine street.

Shingles, Hips and Valleys.

SHINGLES in valleys and on hips last longer when laid with their grain running in the same direction as that of the hip or valley. When they are cut on the angle, the end wood absorbs water and hastens rot, whereas the straight, close running grain of the wood rejects the moisture more, and leaves the shingles more durable. Few carpenters can now be found, except among the older hands, who are familiar with this mode of shingling, as it is really a very old, yet excellent one, and yet comparatively simple, involving little more time than the later and inferior method. All that is necessary, is to taper the shingles so that they radiate as it were from the angle of the hip or valley to straight joint square to the eave. Combs on ridges are scarcely to be recommended, but if they must be employed for the sake of economy, are best run up on that side on which the angle of the rain in that latitude usually falls. Tongued and grooved ridge boards are an improvement on the comb, that is, if the joint is well bedded with white lead. Wooden ridge rolls are better still, and the best of all is the galvanized iron cresting. Rolls and ridge boards should be well nailed through the shingles and into rafters, and not to the shingles only. Hip shingles should be cut with the saw to make a straight job and not hewn with the hatchet, and properly overlapped.

Another Question of Law.

THE *American Architect* has another question of law propounded by a subscriber as follows:

A builds a block of tenement houses and employs B, an architect, to prepare plans, let and superintend the works, C is contractor and D a sub-contractor. The specification has this clause in it: "The contractor or his sub-contractors, and his and their workmen, must agree (and this writing is the agreement) that they shall remove from the building any work or material not in accordance with the plans, details, elevations and specifications. And they must agree that the opinion and decision of the architect is binding to them, as well as it is to the proprietor." The sub-controctor D signs a contract with the main contractor C to the same effect, that is, that the opinion and decision of the architect is binding to all, etc.

The specification further reads, that it must not be understood that the sub-contractors will receive certificates direct from the superintendent. The main or principal contractor only will receive these, assigned for the special benefit of the sub-contractor.

Now, D, the sub-contractor, quarrels with C, the main contractor, as to certain works to be done and which he (D) tries to avoid; finally he is compelled to do them, and gives final receipt for all his work, including all disputed matters. A day after D, the sub-contractor, calls on the architect with a bill of extras, one-fourth of which the architect acknowledges as correct, and three-fourths as incorrect, and then, because the architect refuses to agree upon the whole, D sues the principal, A, for a number of items and damages in which all the disputed matters settled with the main contractor, C, figure again.

The question before the architect, B, is this:

Question.—1. Shall the specifications and contract stand good before the law where it says that the main contractor shall only get certificates to be assigned to the sub-contractor?

2: Shall the agreement of A with the main contractor and his sub-contractor, "that the opinion and decision of the architect is binding to them, as well as to the proprietor," remain valid in law?

As you have a legal gentleman attached to your editorial staff, we will be pleased to see the *American Architect's* answer to these questions, as it is a matter in which every citizen making a contract for a building is interested.

Respectfully yours, V. & S.

Answer.—We do not find anything in the contracts and other facts referred to in the above communication to prevent D, the sub-contractor, from collecting his claim from A, the owner, providing he can satisfy a jury that the work which he claims as an extra was ordered by the owner or by the architect, and, in the latter case, that the architect has authority to give the order. The terms of the contract and the fact that there was any contract at all between the plaintiff in the action and the principal contractor, would have nothing to do with the case except as evidence tending to rebut the plaintiff's claim that the work in question was done under contract between him and the owner. The decision, however, in such cases is always with the jury; a written contract between the plaintiff and some third party is evidence merely and not conclusive; and if the jury believes that the owner and plaintiff entered into a separate and distinct arrangement for the work in question they will find for the plaintiff.

The clause in the sub-contract subjecting all matters of dispute to the decision of the architect would have no binding force in any action between one of the parties to this contract and a third party. The owner not being a party to the contract could take no advantage of the clause.

Whether the receipt given by the sub-contractor to the main contractor covered the work in question would also be a question for the jury; if the work was outside the sub-contract and undertaken under a direct arrangement with the owner, of course a receipt given to the main contractor would not bar the sub-contractor from recovering the price agreed upon with the owner.

We are therefore compelled to answer both of the questions which our correspondent puts at the end of his communication in the negative; that is to say, the specifications and contract would not "stand good before the law," nor would the decision of the architect be binding, at least in the sense which our correspondent means. This whole question, like most of the disputes that are continually arising in the building trade, is one of fact simply; and the best way to avoid them is for the architect not to get a general authority from the owner to order extras, but whenever anything is needed, that is not in the contract, to make a new formal contract in writing, either with the main contractor or some other person.—*American Builder*

A Painter and the Architect.

A GOOD deal of attention has been directed of late to the relationship which exists between the painter and the painter and the architect. The subject has been discussed at length in our columns, and was debated at several of the painters' conventions lately held.

A careful study of all the opinions advanced shows that, while the trouble may be attributed to a variety of causes, the peculiar position which the painter occupies as sub-contractor is largely responsible for it. There are drawbacks attendant on the position of all sub-contractors, as they are dependent more or less upon the completeness of the work of those who have gone before them. The painter's lot, however, is hardest of any for it is the painter who has to make good the work of all the others.

As a business man a contractor carefully estimates the work he is to perform, and gives in his price accordingly. But how is a painter to allow for the work he may or may not have to do in filling open joints and making good the resinous and shaky timber?

Of course the architect should not pass such defects; but if he does, the painter has no remedy. As a fact, the architect or superintendent does not scrutinize the work in progress with such minuteness as he does at its completion, and thus is the poor painter made the scapegoat.

One way out of the difficulty would be for the painter to insist upon the insertion of a clause in his contract that all work delivered to him should be in proper condition. A remedy is certainly worth trying for.—*House Painting*.

Architectural Picture-Making with Pen and Ink.

BY B. LINFOOT. PUBLISHED BY THE OLD ELOR COMPANY.

This work is intended to convey to the architect and student, the manner in which a building may be portrayed on paper so as to convey to the mind of him who is about to build, that the bright jaunty free hand sketch shown, will when finished in the reality, be just what is wanted. Some men will spend months looking for a desirable location for building; when found, an architect is selected to prepare the plan. May be he gets a sketch of a very good house, but in such hard straight-lines, that it produces on the client a feeling of disappointment, and frequently of abandonment. In this work, the architect is shown how to keep the enthusiasm of his client alive and active, by submitting sketches of his contemplated work and surroundings, To the student, the illustrations termed "Sky Suggestions," are worth careful study. They will show what few lines are absolutely necessary to form a picture.

The book is handsomely illustrated with 32 large plates in size 12x18 inches. We will have copies of this work on sale, which will be furnished at publishers price, $4.

The Children's Home at the Park

The accompanying engraving fitly represents the new play house for children, which has lately been finished, and is now one of the features of Golden Gate Park. Messrs. Percy and Hamilton were the architects. The view presented is a very good one, and gives an adequate idea of the structure without an extended description.

An Apology—Academy of Science Building.

For the past two months, our engraver has been at work on a fine cut of the Academy of Science Building. The engraving was finished and was in the hands of the party who runs the ruling machine, to put on the border, etc. By one of those unaccountable accidents which sometimes happens, the block broke into a dozen pieces, and of course was rendered utterly useless. Immediate measures were taken to reproduce the engraving, but they were unavailing to have the same ready for this issue. It was a grevious disappointment to the manager as well as to hundreds who had engaged copies as a souvenir, for the ceremonies of laying the corner stone on the 12th of July.

A Tin Roof.

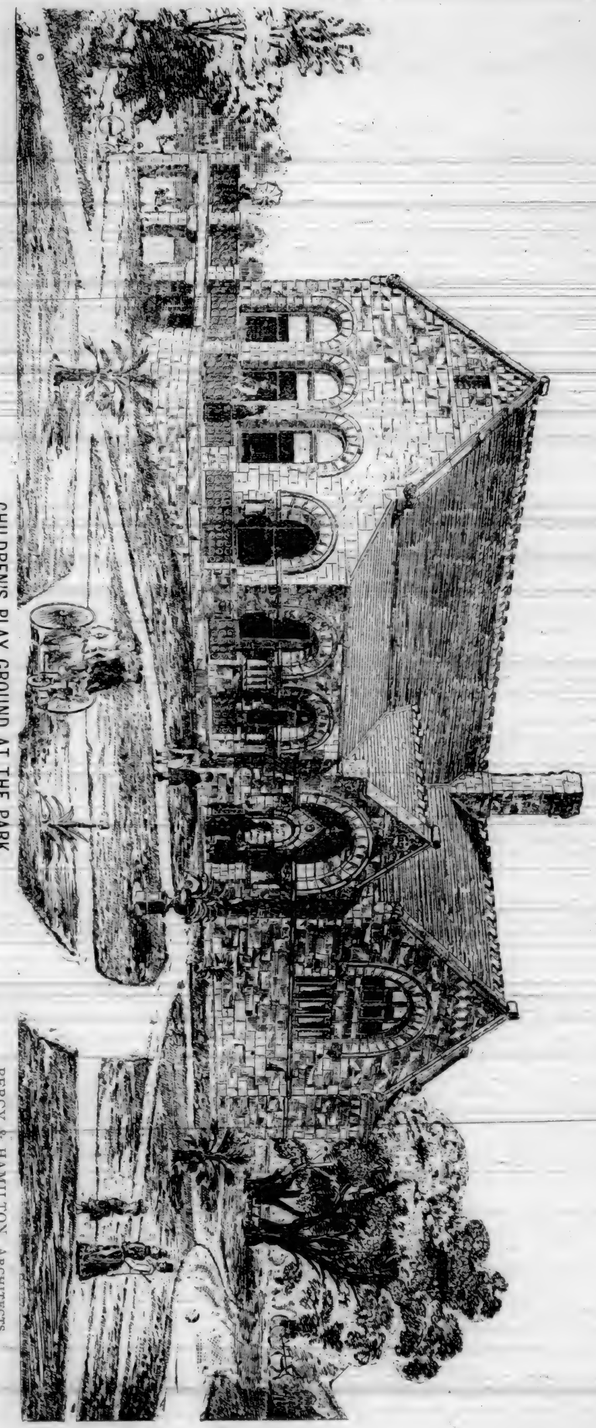
Messrs. Merchant & Co., have just issued a book entitled "A Tin Roof." It is a neat, handsomely bound volume and will be sent free to all applying for the same to Merchant and Co., Philadelphia. It is very instructive in regard to the best methods of laying tin plates, and although it is not egotistically written, still it does convince its readers that the plates manufactured by Merchant & Co., are among the best in the market. Architects especially should see that the above mentioned book is in their reference list.

Palliser's American Architect.

Messrs. Palliser have taken a new departure in their publication department and now issue a quarterly number, giving 100 pages of designs and plans for every description of a country dwelling. These quarterly parts begin with April 1889, and are sold at $1 00 each. The subscription price is $4 00 per year. They are in paper covers, but may also be had in cloth covers at $2.00 each.

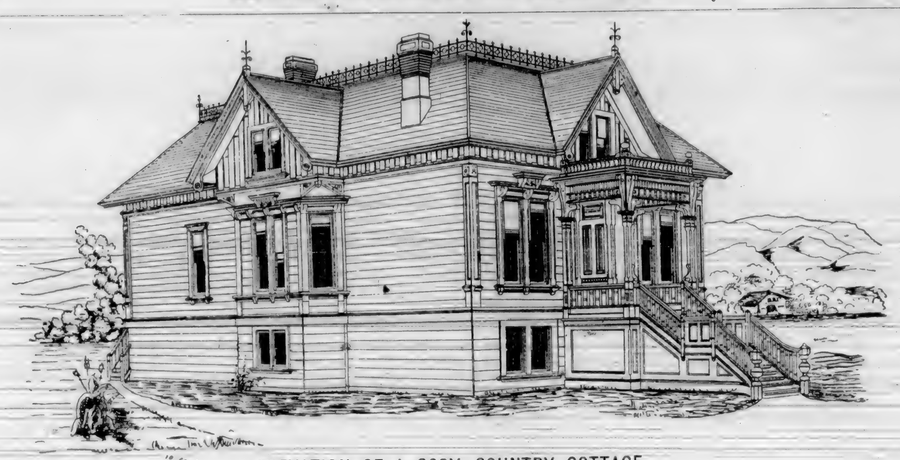
Mechanics' Institute Fair.

Several times we have called the attention of our mechanics to the necessity of having an exhibit of mechanical skill at the next fair of the Mechanics' Institute. We have been spoken to in regard to the matter more than once. A committee has been appointed by the Chapter of Architects in regard to a similar matter, and information can be obtained through either G. W. Percy or H. T. Bestor.



CHILDREN'S PLAY GROUND AT THE PARK.

PERCY & HAMILTON, ARCHITECTS.



ELEVATION OF A COSY COUNTRY COTTAGE.

Brick Piers.

THE only way to build a good and substantial pier of brick is to lay each course the full size of the pier, and not to, as if often done in this city, build up the outer four inches of the pier seven or eight courses high and afterward fill in the interior, as it is impossible to get proper bed or bond; brick of the hardest possible quality only should be used where heavy weights have to be borne. Avoid bats and use as little mortar as is necessary to get solid work. Make the size of piers so that whole brick can be used to obtain proper bond; tamp each brick after it is laid in position with a hammer or brick.

In small piers lay the brick on a bed of mortar and flush up solidly every course; in larger piers make a joint or rub on the bed and lay headers every fourth course. If bond stones are to be inserted the joints should not be too tight, say from three-fourths to an inch in thickness, the larger the pier the larger the joint, and bedded high in the middle, and in no case on the outer edges of the pier only. Use cement in all mortar in connection with lime, and wet the brick in all cases where there is not any danger from frost; where iron plates or cols set on bond stones, the plate should cover the bond stone as nearly as possible. The present custom of laying brick in dead walls gives one the impression that the quantity of work done is of far more importance than quality. The only way to obtain good solid brick walling is to either flush the joints solid with mortar every course, or make a shove joint; the former method takes too much time, and the latter is rarely done except in very heavy work.

The custom generally adopted is to spread the mortar on the brick (a portion only of which gets in the joints) and lay the brick on top, each succeeding course being bedded in mortar, but the longitudinal and cross joints are only partially filled. Grouting with cement mortar every two courses in height might be adopted for basements and first stories of buildings where unusual strength is required. Full headers for face brick are better than clipping and should be specified for all heavy buildings. The face brick are often built up fifteen or twenty courses high before the backing up is done, and thus the wall is never well bonded and sufficiently tied together.—*Building Budget.*

Sad as well as pleasing duties have to be met in the publication of a Journal, and to us, a notice of the death of Mr. Andrew Carrigan, of the Dunham, Carrigan & Hayden Co., who lately passed away is a truly sad one. During many years of business intercourse, his kindness of heart and nature, combined with strict business qualities, manifested themselves in numerous ways, and his loss cannot be other than a severe one—not only to those dear to him by the sacred ties of love, but to the firm of which he was an honored member, and the host of attachees and business and personal friends, who will miss him from their circle.

What Becomes of Our Saws.

IT is estimated that there are about 400,000 carpenters and joiners in the United States, and when we know the Disstons, of Philadelphia, employ 2,100 hands and turn out four hundred dozen saws a day, we are in a quandary to know what becomes of all the saws. True, there are about 150,000 people employed in the furniture trades, and perhaps 75,000 more as wheelwrights and millwrights, but, all who would be likely to use saws will not figure up more than one million; and suppose that each one of these workers should make use of five saws—say one rip-saw, one crosscut, one panel saw, one tenon and one compass—this would need about 5,000,000 saws to suit the wants of the workmen in the United States; but this does not cover the whole ground, for every house should contain at least two or three saws—a cut-off saw, a butcher's saw and a hack saw—thus swelling the needs to at least another million. Then there are the blacksmiths, the machinists, the plumbers, and a host of others who work in metals who require hack-saws and wood-saws of various kinds, which will probably foot up another million. There are also the gardeners, the saw mill men, the surgeons, the ship-builders and many other people who must have saws, and who probably require one million, so that it will not be stretching the matter at all if we say in round numbers it requires about ten million saws, of all sorts, to satisfy the needs of the 65,000,000 of people in these United States. So that after all, the 4,800 saws turned out daily by the Disstons do not do much more than make up for wear, breakages, losses and the new conditions that crop up with each new day.—*The Builder and Wood-Worker.*

New Work on Hand-Railing.

Nonpareil System of Hand-Railing. By John V. H. Secor, 5½x8½ inches. 78 pages. 157 line engravings. Bound in cloth. Price, post paid, $2.

Mr. Secor is a practical stair-builder of many years' experience, and has put into the little book on hand-railing, which he has just issued an exposition of those principles which he has long employed in his own work. The learner is led step by step from the simplest problem encountered in stair-building to those of the most complex character. The work is preceded by a glossary and is supplemented by a very complete index. A leading feature of the book is the method of ascertaining the length of the mold. The system of bevels presented is also simple and of universal application. The book is adapted to the needs of any one in the line of joinery who desires molds for any kind of stairs that may have been constructed. The cuts and text are placed side by side, and in all respects the book is arranged in a way to be attractive to the reader and useful to the student.

Nashville's Estimating Rules.

THE rules under which estimates in the building trades will hereafter be submitted in Nashville, Tenn., are given below as an example of the effect of concerted action in the direction of uniformity:

1. General drawings, when offered for final or competitive estimates, should be presented on a scale not less than one-eighth of an inch to the foot, and details not less than three-fourths of an inch to the foot. These should be done in ink or by some process that will not fade or obliterate, and be complete in all parts. Specifications should also be presented in ink.

2. The specifications, figured drawings, and details should be taken as the guide for estimating, and all demands made by the specifications or said drawings should be covered in the estimates offered, unless objection be made thereto in writing when the estimate is submitted.

3. Specifications should be plain and definite, and everything required in the various branches of work should be mentioned, described and grouped under appropriate headings—each trade to itself.

4. When the specifications require goods of a certain manufacturer, or material of a certain quality, the name and catalogue number of such manufacturer's goods, and the trade mark of such material, should be mentioned in the section to which such goods or materials belong.

5. Bills of quantities should be left to the intelligence of the contractor, and shall not be required of the architect.

6. Contractors should be responsible to each other for work damaged during the erection of the building.

7. When the contractor for the whole is to be restricted as to whom he shall employ as sub-contractors, that fact should be named in the specifications.

8. Contracts should be closed at some stated time, and no estimate should be considered if received after that time has expired.

9. Contracts should be awarded within ten days from the time of closing estimates.

10. Architects should invite to bid on the work only those from whom they desire an estimate on that particular job.

11. All bids received from those not invited should be excluded.

12. No contractor should make an estimate in an architect's office unless invited to do so.

13. When a contract involves the taking down or using the material of an old building, it should be fully set forth in the specifications.

14. No bids should be exhibited or made known by either architect, owner, or principal contractor before the time for closing estimates on the job.

15. No contractor should be allowed to alter or amend his bid after the time of closing estimates.

16. Contractors should decline to give estimates in the aggregate when bids are being received under the separate heads. Sub-contractors should also decline to give the architect or owner an estimate for his branch of the work when bids are being received for the work as a whole.

17. When the contract is to be completed within a certain time, that fact should be mentioned in the specifications, giving the date; and if a penalty for non-completion by the specified time is to be exacted it should be so stated.

18. The bidder to whom a contract is awarded should be required to sign a contract and furnish bond or withdraw his estimate.

19. The principal contractor should pay the sub-contractor in the same manner that the sub-contractor receives his estimates from the architect, when the work is let separately, to wit: 75 per cent. as his work progresses, and a final payment when his branch of the work is completed satisfactorily.—*Sanitary News.*

PLAN FOR A COSY COUNTRY COTTAGE.

A Cosy Country Home.

The above plan, with the elevation on opposite page, will, in furnished in the reality as shown by the engravings, be a more than ordinary cosy home. There is no attempt at elaboration in the elevation. Neatness has been the esential requirement. The plan meets all the requirements of a moderate sized family. If desirable a fine billiard room can be made in front part of basement. S. C. Newsom is the architect who has kindly furnished us the design.

Subscription price of this Journal is $2.00 per year. Examine the Contents of this Issue and see if it is not worthy of your support.

On Cutting Rebate.

BY DAVID DENNING.

IF the question, what kind of plane should be used to form rebates or rabbets with? were asked of two men, both workers in wood, but one of them a carpenter and the other a cabinet maker, the answers would probably differ. The carpenter would probably say a fillister, the cabinet maker a rabbet plane; perhaps going a step further, each would say the other was making a mistake. The inference which might naturally occur to the mind of the non-technical from such different opinions would be that either tool might be used, or that neither of the men knew what he is talking about. Parodoxical as it may seem, both these inferences are correct, for either the rabbet plane or the fillister may be used in making any ordinary rebate, and the man stating that one or otner tool should be used exclusively, could certainly know very little of the work to be done by the other.

How then does it happen, it may be fairly and properly asked, that two men, both presumably skilful in their own departments of joinery, one the cabinet making and the other the building, use different tools to effect the same result? The answer is simply because each finds the tool he advocates is the best for his own purposes. Ask a cabinet maker why he prefers a rabbet plane, and he will at once say that it is better for the comparatively small work he is generally employed in making. It is to the fillister what the smoothing is to the jack plane. Even the toiner will at once acknowledge that if a finely-finished rebate is wanted, the rabbet plane may be used with advantage, but only after the fillister has done its share of the work. The cabinet maker, on the other hand, will object to using the fillister at all, unless, indeed, on exceptional pieces of work or from personal idiosyncrasy. He will state that any advantages which may exist in the fillister are rendered useless from the account of labor required to force the cutter in front of the iron through hard wood—a piece of Spanish mahogany, for example. He is not far wrong, for though it would be incorrect to say that a rabbet could not be cut with a fillister—the side fillister in ordinary cases preferably—in hard wood no sensible man would voluntarily choose the tool which induces the greatest amount of fatigue when another would answer his purpose as well or better. In soft wood, such as the builder mostly uses, the fillister cuts well enough.

But, says this individual, only just look at the convenience of being able to "set" the fillister to any gauge, and the fence to serve as a guide; the rabbet plane is destitute of these, and with it the work cannot be so well done. What is there to keep the plane straight?

Well, skill assuredly counts for a good deal. If a man has been in the habit of working without a fence, he does not feel the need of it so much as another who has been trained to depend on it. Of course, a line to work must be marked in some way, with an ordinary gauge, for instance, or, where extreme accuracy is not required, by drawing with a pencil. Careful manipulation does the rest. As for the actual details, such as the mode of holding the plane and the use of accessory tools, they vary. One man will use the plough to form a groove to the required depth, another will be content with cutting gauge and chisel to remove a little of the waste wood before taking up the rabbet plane, while a third will simply rely on his fingers. Each, if he be intolerant of other ideas than his own, will claim his own method as the best, and doubtless it will be for him; but if he be a man of liberal mind he will at once say that there is no absolute best, and that it altogether depends on the custom of the worker.

It is rarely indeed that a good practical artisan, who has arrived at the years of discretion, has not found out which is the most convenient way for himself personally to use the ordinary tools of his craft. He may go to the length of telling youngsters who ask him which way he finds best, or even in friendly chat will discuss with others equally as competent as himself the pros and cons of various methods, but as for saying that every other but his own must be wrong—well, to do so would not reflect credit on his intelligence, but it might, and very likely would, be very strong presumptive evidence that his work would be that of a "duffer." Not that even such workers are not useul sometimes, so if any of them read these lines, and feel inclinod to take umbrage, perphaps they will kindly remember that the word is used in a Pickwickian sense, and that they are frequently to be relied on for doing whatever they have been accustomed to do—turning the grindstone, for instance, to the entire satisfaction of all concerned.

But, it may be inquired, do no workers fall into bad habits in their methods? do they invariably choose the best for their particuiar purpose? To answer this fully it would be necessary to consider many points in detail; but without by any means suggesting that absolute perfection exists in any workshop, professional or amateur, it may safely be conceded that most mechanics have a very fair idea of what suits them best. The cabinet maker and the carpenter can therefore very well agree to differ on cutting rabbets and the proper tools to use, remembering that to find fault with each other simply shows imperfect knowledge of the requirements of both trades, however competent one may be to express an opinion about his own. "Eh, mon, it's a graat peety that we canna a' think alike; but ah'll no change ma ain opeenion for that o' ony ither body." "Ma ain opeenion" is that it is at any rate rash to condemn other methods of tools if we do not know the reasons for them being used; and that occasionally, very occasionally, the least little bit of toleration of other people's mode of working might be better than done at all, or wholesale condemnation.—*American Workman.*

Builder's Association.

The Builder's Association have elected the following named to serve as officers for the ensuing term: President, S. H. Kent; Vice-President, M. C. Lynch; Recording Secretary, A. Jackson; Treasurer, W. B. Kreger; Executive Committee, J. Mahoney, C. C. Terrill, J. R. Wilcox, J. J. Dunn, R. K. Anderson, A. Norton, C. E. Dunshee, Financial Secretary, Louis Albert Larsen.

New Sheathing Lath.

Since the publication in our last issue of the method of placing the Byrkit Lath in position, we have received several inquiries in regard to the same. Architect Percy is using it in his fine $12,000 house which he is now having erected on Contra Costas fair shores. Full particulars may be had by addressing John F. Byxbee, No. 42 Market street.

Metrical Measures.

This term means a system by tenths, the same as we employ in computing common numbers, carrying one for every ten, or transferring from one division to another whenever ten, or a unit of the next higher division is reached. The metrical system means simply the application to lengths, volumes, weights, areas, and so on; the same rules we use in abstract numbers, and is only common sense applied to practical use; no matter if it is opposed by some people who rank high as those of judgment and learning.

This division of measures and weights into metrical or decimal units was first done in France, to the great credit of that nation, who are the "classifiers" of the world. An old European adage says: "The German people deduce, or draw conclusions, the French 'classify' and the English 'apply.'" This does not however, apply to the metrical system, the inception of which, as well as classification and application came from France.

Nearly all the countries of Europe, except England, have adopted decimal divisions, or the French metrical system. In the United States metrical divisions are legalized, but owing to English influence, some commercial reasons, and the opposition of people who do not "think," the system has made but little progress. In some cases we have been compelled to adopt it. The coinage of the country is decimally divided, so also are inches, because the absurd binary division into halves, quarters, eighths, sixteenths, and so on, while convenient enough for working purposes, does not answer at all for computation. The multiples for our lineal measure are independent of fractional quantities, 12, 3, 5½, 40 and 8, representing inches, feet, rods, furlongs and miles. In adding up lengths there has to be a distinct column for each of these divisions, and we first carry 1 in 12, then 1 in 3, next 1 in 5½, then 1 in 40. Could anything be more absurd? This is the "compound" addition and multiplication of our school books.

English money has to be written in three columns, each with a sign over it to indicateits place as pounds, shillings, and pence. The multiples are 4, 12, and 20, not counting farthings, four of which make a penny, but people's patience breaks down at farthings, and three columns only are used. Comparing this with dollars, cents and mills, or as we should say, dollars, dimes, cents and mills, the advantage will be seen. We set down a row of figures thus: $12345, it means "money;" the dollar sign qualifies all. If one figure is pointed off it becomes dimes, if two are pointed off they become cents, or dimes and cents. To divide by 10 we point off one figure; to divide by 100, two figures, and the sum, let it be what it will, is treated just the same as common numbers and decimals.

In the French metrical system there are employed short terms indicating the division as follows: *Milli*, 1000th part; *Centi*, 100th part; *Deci*, 10th part; *Deka*, 10 times; *Hekto*, 100 times; *Kilo*, 1000 times. The first three are below unity. Adding *Meter* to the term above, we have *Millimeter*, *Centimeter*, *Decimeter*, *Dekameter*, *Hektometer*, and *Kilometer*. These are the terms for measures of length, and take the following form:

Kilometer.	Hectometer.	Dekameter.	One. Meter.	Decimeter.	Centimeter.	Millimeter.
1000	100	10	1.	1.	.01	.001

To compare with this we will arrange a foot, the common British and American unit, in the same manner.

Mile.	Rod.	Yard.	Foot.	Yard.	Rod.	Mile.
5280	16½	3	1	.333	.0606	.00018

The utter absurdity of such a notion is apparent on its face, and no one attempts to defend it on other grounds than present expediency.

The London *Engineer* says such notation is "like a language," turns English measures into metrical to show it does not produce even fractions, with other "balderdash" not worth while to repeat. Mr. Coleman Sellers, of Philadelphia, is a champion of the English system, and among other commercial arguments against the metrical system, says machine patterns would be lost. Granting this to be true, which it is not, it would be much the same to say canal boats and stage coaches will be lost by building railways, hence railways should not be built. There are no scientific arguments worth repeating.

Our remarks and illustrations thus far relate to linear measures alone. The same thing, only in an aggravated degree, applies to other measures. Weight, volume and area are the same, a jumble throughout. The bushel is an illustration. There are nearly as many "bushels" as there are states in the Union California has happily got rid of this nuisance, and computes in most cases by quantities decimally divided.

We are not arguing for the immediate adoption of a decimal or metrical system, but to urge the readers of Industry, especially the younger ones, to learn the method and prepare for its adoption which is sure to come in future. There is a vast difference between admitting and understanding the results of a new thing, and adopting it.

National jealousy, we suspect, lies at the bottom of British opposition to metrical measures, and may have something to do with the matter here, but common sense should teach that science and learning have nothing to do with national lines, and opposition on such grounds is mere bigotry. At least one half the scientific literature of our time is written in metrical quantities, and not to be familiar with the method is a great impediment to understanding, practice and progress in those countries where metrical divisions are employed.—*Industry.*

Wastes of Society.

Fresh air is something which God has se' great value upon, but which most men think little of. In this is the heritage of health.

Architects seldom find an Owner of a Dwelling, who is willing to live, as God meant he should, by breathing *Fresh Air*, all for the sake of saving a few dollars, which ought to be expended in providing for Ventilation. Men of wealth pay more attention to the architecture and adornment of their homes, than to *proper ventilation.*

There is nothing more poisonous than the effluvia and exhalations that proceed from man.

In a close room where a family is assembled, they will, in twenty minutes, breathe the air over *once*—in another twenty minutes they will have breathed it *twice*—in another twenty minutes three times, and by that time every person in that room will have inhaled the effluvia from every other person in the room.

What wonder then that our streets are filled with wan-visaged men, women and children.

It is really lamentable to see people slowly and surely undermining their health, by persisting in building houses, without providing for *ventilation without draughts* (which can be had by the expenditure of a few dollars,) and thus sacrificing the greatest blessing heaven bestows upon man—by persisting in no ventilation or ventilation from Open Windows.

The Homes of the Rich and Poor alike should be ventilated by Abrahamson's Patent Ventilator without draughts.

NATURAL GAS seems to partake, at least, of one of the qualities of the manufactured article. A plumber in the city of Indianapolis went hunting for a natural-gas leak with a lighted lantern. He found the place. Result—he had a large funeral, and some contractor will soon have the job of rebuilding the house in which the leak was located.

Modern Rural Homes.

A handsomely printed book, 7x11 inches, containing fifty-four plates of original designs in the latest modern architectural styles. The elevations are very picturesque. The book has been carefully prepared and is well worth the price set upon it, viz., $2.

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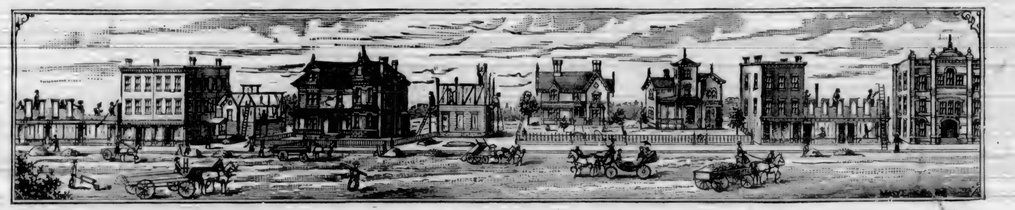

CITY BUILDING NEWS.

Alabama and Twentieth, one-story frame. Owner, P. Burns; architect, T. J. Welsh; contractor, G. Knopf; amount, $1,690; sureties, Charles Willhams & F. Kinkaid, $1,000; limit, September 1, 1889; $600, brown mortared; $500, completed; $690, 35 days; signed, June 18; filed, June 19.

Broadway and Clay, brick and carpenter work. Owner, W. S. Rainey; architect, T. J. Welsh; contractor, Blake & Powers; amount, $21,252; sureties, P. P. Riordan & J. J. McKinnon, $10,000; signed, June 17; filed, June 24; limit, 4 months; $3,000, foundation in; $4,000 exterior studding up; $5,000, brown mortared; $4,000, white mortared; $3,590, completed; $6,340, 35 days.

Bush street, No. 1715, additions. Owner, S. Waugenheim; architect, J. E. Wolfe; contractor, E. S. Libby; cost, $1,500.

Burnam near Twenty Fifth, two-story frame. Owner, Mr. Aulshek; cost, $1,600.

Buchanan near Haight. Additions to Protestant Orphan Asylum; contractor, G. H. Walker; cost, $2,500.

Broadway near Larkin. Additions; cost, $600.

Battery near California. Repairs to burned building; cost, $2,500.

Brannan, between Second and Third, move, etc. Owner, Jame. N. Killup; architect, J. M. Curtis; contractor, Wm. McDonald; amount, $8,045; limit, 70 days; signed, June 11; filed, June 15; 75 per cent, as work progresses; balance, 35 days.

Broadway near Franklin, three-story frame. Owner, Gustavius L. Spear; architects, Huerne & Everett; contractor, James Campbell; cost, $3,000.

Broadway, No. 327, two-story building. Owner, Mr. Checchezola; contractor, A. C. Rogers; amount, $1,900; signed, 26 June; filed, June 26; payments made as needed, balance when completed.

Broadway and Franklin, three-story frame. Owner, Gustavus L. Spear; architects, Huerne & Everett; contractor, James Campbell; cost, $4,595; signed, June 24; filed, July 1, $1,148.75; sheathed; $1,148.75, brown coated; $1,148.75, completed; $1,148.75, 35 days.

Capp and Twenty-Third, two-story frame. Owner, Isabella McCormick; architect, John J. Geary; contractor, Richard Doyle & Son; amount, $2,398; sureties P. F. Ward and Thos. Winters. $2 000; signed, June 24; filed, June 25; $700 brick work complete; $300 brown mortared; $740 inside finish done; balance, 35 days.

Clay, near Scott, building. Owner, Victor R. Ullman; architects, Salfield & Kohlberg; contractor, Wm. Plume; amount, $4,300, limit, 90 days; $1,100, framed; $600, brown coated; $500, white coated; $1,200, completed; $1,100, 35 days; signed, June 4; filed, June 4.

Clay, near Scott, painting, etc. Owner, Victor R. Ullman; architects, Salfield & Kohlberg; contractor, George Besthorn; amount, $290; $100, ready for grainer; $100, completed; $95, 35 days; signed, June 6; filed, June 6.

Connecticut and Napa, one story cottage. Owner, John Cullinane; architect, T. F. Mitchell; contractor, Timothy Sullivan; amount, $1,150; sureties, F. Joost and W. Thyark, limit 60 days; signed June 12 filed June 13. $287.50 framed; $287.50 brown mortared; $287.50 accepted; $287 50, 35 days.

California and Kearny, brick and iron building. Owner, F. G. Merchant; architect, Clinton Day; contractor, Peter Crichton; amount, $24,070; signed, June 27; filed, June 27; $5,500 walls up to second story; $4,000 walls up to third story; $4,500 brown mortared; $2,000 white mortared; $2,050 completed; calance, 35 days.

Clinton Park and Guerrero, two houses. Owner, Henry Hoffman; architect, Geo. Houston; contractor, Geo. Houston; amount, $5,870; limit, 100 days; signed, June 26; filed, June 26; $1,465 enclosed; $1,465 brown coated; $1,465 white coated; $1,475, 35 days.

California and Baker, carpenter work. Owner, Francis Crofts; architect, A. J. Barnett; contractor, C. N. Smith, amount, $4,340; surety, Frank P. Latson, $2000; limit, 90 days; signed, June 14; filed, June 18; $1,100, roof boards on; $500 brown coated; $900, white coated; $755 completed; $1,086, 35 days.

Clay, between Cherry and First, two-story dwelling. Owner, Thomas Langford; architect, John Gash; contractor, Jesse Rickard; amount, $3,290; signed, April 25, filed, June 29; $400 shingled; $400 brown mortared; $400 windows in; $400 two coats of paint on; $400 completed; $437 accepted; $813, 35 days.

California near Gough, two-story frame. Owner, B. A. Becker; architect, W. Mooser; contractors, Norton & Perry; cost, $14,000.

California and Gough, to build. Owner, B. A. Becker; architect, Wm. Mooser; contractors, Norton & Perry; amount, $9,500; sureties, A. W. Starbird and R. Goldstone, $5,500; signed, June 10; filed, June 11; 75 per cent. of work done, balance 35 days.

Clay near Scott, plumbing, etc. Owner, Victor R Ullman; architects, Salfield & Kohlberg; contractor, Fritz & Kean; amount, $368; signed, June 4; filed, June 6; $150 rough work is in, $218 completed.

Devisadero and Geary, three-story frame. Owner, John Friesenhausen; architect, Emil John; contractor, F. Kretzer; amount, $4,400; signed, June 13, filed, June 14; $800 framed; $800 partitions set in; $800 white coated; $900 accepted; $1,100, 35 days.

Douglas and Eighteenth, one-story frame. Owner, Jos. Oswald; contractor, August Disher; amount, $2,050; signed, June 18; filed, June 18; $500, framed; $500, first coat of plaster in; $500, completed, $550, 35 days.

Devisadero and Clay, alterations. Owner, Max Ordenstein; architect, J. Gash; contractor, G. Griffin; cost, $1,550; signed, June 18; filed, July 3; $600, ready to plaster; $400, plumbing done; $250, completed; $400, 35 days.

Dolores and Sixteenth, brick and carpenter work. Owner, P. W. Riordan; architect, T. J. Welsh; contractors, Blake & Powers; cost, $8,093; sureties, J. F. Lynch and T. J. Ford, $4,000; limit, 90 days; signed, June 17; filed July 2; $2,000, framed; $2,000, brown mortared; $2,000, white mortared; $2,093, 35 days.

Ellis and Franklin, two three-story flats. Owner, A. F. Knorp; architect, Emil John; contractor, Daniel Chisholm; amount, $12,900; signed, June 8; filed, June 12; $2,000 framed; $2,000 partitions set; $3,000 outside finish on, $2,675 accepted, $3,225, 35 days.

Ellis near Franklin, two, three-story frames. Owner, A. F. Knorp; architect, E. John; contractor, D. Chisholm; cost, $17,000.

Ellis near Mason; brick, stone and iron work for a five story brick and frame. Owner, C. M. Mason; architect, H. T. Beaton; contractor, John Wagner; amount, $6,947; signed, June 22; filed, June 26; 75 per cent. of value of work done as work progresses, balance of 25 per cent. 35 days.

Ellis and Franklin, plumbing and gasfitting. Owner, A. F. Knorp; architect, Emil John; contractors, Thos. Clark & Son; amount, $1,468; signed June 8; filed June 12; $500, rough work delivered, $600; accepted; $368, 35 days.

Ellis and Franklin, plastering. Owner, A. F. Knorp; architect, Emil John; contractors, Huntemann & Harper; amount, $1,799; signed June 8; filed June 12; $875 rough mortar on; $975 white mortar on; $475 white mortar on; $449, 35 days.

Ellis and Willow avenue, 2 three-story frames. Owner, A. F. Knorp; architect, Emil John; contractors, John Quadt; amount, $1,075; signed, June 8; filed, June 14; $400, ready for graining; $400; accepted; $275, 35 days.

Ellis near Mason, three-story frame building and basement. Owner, H. Matthews; architect, H. T. Beaton; contractor, C. E. Mason; amount, $25,330; signed, June 24; filed, June 25; $2,500 brick walls up; $4,800 framed; $2,800, floors laid; $3,800 brown mortared; $3,500, white mortared; $3,590 completed; $6,340, 35 days.

Folsom and Second, elevator work. Owner, Boyd & Davis, architect, J. M. Curtis; contractor, Cahill & Hall; amount, $4,045; limit, 90 days; signed, May 21; filed, June 12; $500 elevators are sunk full depths; $550 casings and elevator heads are in and guide posts up; $550 ready to deliver, balance, 35 days.

Fillmore and Broadway, additions. Owner, G. R. Sanderson; architect, H. D. Mitchell; days work; cost, $4,000.

Fell and Devisadero, plumbing, etc. Owner, J. B Mersing; architect, W. Winterhalter; contractor, John Bohn; amount, $825; $400, rough pipes in; $425, completed, signed, June 4, filed, June 4.

Fifth near Harrison, additional story; cost, $850.

Fourth corner Minna, three-story and basement, brick. Owner, M. A. Hampton; architect, G. A. L. Devlin; carpenters, Moore Bros; masons, Richardson & Gale; cost, $35,000.

Green, between Buchanan and Webster, to build complete. Owner, Harry W. Tuckey; architect, S. W. Hemenway; contractor, John Dyar; amount, $3,260; sureties, Jos. Peers and J. Muller, $800; limit, 161 days; signed, May 23; filed, June 26; 75 per cent on first day of each month, balance, 35 days.

Geary and Laguna, four frames. Owner, I. R. Hall; architect, Geo. E. Voelkel; contractor, F. Klatt; amount, $25,000; sureties, F. Joost and George T. Shaw, $25,000; signed, June 6; filed June 27; $2,000 first story joists on; $2,000 enclosed; $2,000 first coat of plaster on; $2,000 outside finish on; $2,000 second coat of plaster on; $3,000 ready to paint; $2,000 accepted; $10,000, 35 days.

Gough and Clay, to build. Owner, C. A. Belden; architects, T. C. Mathews & Son; contractor, R. P. Hurlburt; amount, $10,500; signed, June 6; filed June 12; $1,575, one-fifth done; $1,575, two-fifths done; $1,575, three-fifths done; $1,575, four-fifths done; $1,575 completed; $2,625, 35 days.

Gough near Clay, two-story frame. Owner, C. A. Belden; architect, W. J. Mathews; contractor, R. P. Hurlbut; cost, $12,000.

Golden Gate avenue and Webster street, three-story frame. Owner, Geo. Schaefer; architect, H. Geilfuss; contractor, L. M. Weismann; cost, $11,695; signed, July 2; filed, July 3; $1,4 0, framed; $1,450, roofed; $1,450, partitions set; $1,450, brown coated, etc.; $1,450, inside finish is on; $1,450, completed; $2,925, 35 days.

Golden Gate avenue and Lott street, two-story frame. Owner, Wm. Stafford; architect, John J. Clark; contractor, R. R. Thornton; cost, $3,454; limit 60 days; sureties, Harris & Jones, $2,578; signed, June 28; filed, July 2; $600, framed; $600, brown coated; $600, inside finish done; $654, 35 days.

Green and Fillmore, carpenter work, etc. Owner, Emma V. Foote; architect, Samuel Newsom; contractor, R. M. Murray; cost, $7,550; signed, June 26; filed, July 3; $1,132.50, framed; $1,132.50, roofed; $1,132.50, brown coated; $1,132.50, outside primed; $1,132.50, completed; $1,887.50, 35 days.

Howard near Fourteenth, two-story frame. Owner, M. J. Kain; cost, $5,000.

Hayes street, No. 714, additions Owner, C. Klopstock; architect, Curlett & Cuthbertson; contractor, Ingerson & Gore; amount, $2,550; signed, June 14; filed June 18; 75 per cent to be paid according as work is done, balance, 35 days.

Howard and Tenth, two tanks in Engine house. Owner, Omnibus Cable Company; contractor, J. C. Lamson; amount, $822; limit, August 1, 1889; signed, June, 15; filed, June 18; 75 per cent on completion, balance 35 days.

Hickory avenue, between Laguna and Octavia, frame building. Owner, J. W. Sims; architect, W. R. Sims; contractor, Henry Eide buttle; amount, $1,615; limit, July 1 '89; signed, April 24; filed, June 29. $200 rustic on; $100 brown coat d; $175 windows hung, etc., balance completed, also weekly payments $3 00 per day for each man on the work, until completed.

Hermann and Webster; two-story frame. Owner, Jacob Dobbelnar; architect, A. J. Barnett; contractor, John Ferness; amount, $3,788; surety, Frank P. Latson, $2,000; limit, 5 months; $741, roof boards on; $700, brown coated; $700, white coated; $700, completed; $947, 35 days; signed, June 1; filed, June 3.

Howard and Tenth, painting and glazing. Owner, Estate James Lick; architects, Wright and Sanders; contractors, Fraser & Keefe; amount, $2,495.75; 75 per cent. to be paid on first day of each month as work progresses; balance, 35 days; signed, May 6; filed, June 3.

Howard, between Fourth and Fifth, plumbing, etc. Owner J. F. Boyd; contractor, C. K. Cushman; amount, $2,375; $393.75, pipes in; $593.75 rough plumbing in; $593.75, finished; $593.75, 35 days; signed, May 28; filed, June 4.

Howard and Seventeenth, three-story frame. Owner, Wm. Doyle; architect M. J. Welsh; contractor, John Robertson; cost, $4,300; signed, July 29; filed, July 3; $1,000, framed; $1,100, brown mortared; $1,100, completed; $1,100 35 days.

Howard near Shotwell, twostory frame. Owner, F. W. Bunge; architect, H. Geilfuss; contractor, H. J. Weiss; amount, $8,195; signed, June 28; filed, June 28; $775 framed; $775 roofed; $775 partitioned; $1,275 outside completed; $1,275 inside finish on; $1,270 completed; $2,050, 35 days.

Larkin and Filbert, two two-story frames. Owner, Peter Scully; architect, Schmidt & Shea; contractor, John F. O'Brien; amount, $7,175; sureties, J. Peaco & Geo. O. Conrad; limit, 100 days; signed, June, 21; filed, June 22; $1,345, framed; 1,345, rough plumbing in; $1,345, primed; $1,345, completed; $1,795, 35 days.

Leavenworth near Jackson, brick and carpenter work. Owner, James P. Dunne; architect, A. J. Barnett; contractor, Richard McCann; amount, $8,460; sureties, Behrend Joost, $4 0 0; limit, 150 days; signed, June 22; filed, June 26; $2,000 roof boards on; $1,000 brown coated; $1,500 white coated; $1,000 outside finish up; $845 completed; $2,115, 35 days.

Leavenworth near Jackson, plumbing, etc. Owner, James P. Dunne; architect, A. J. Barnett; contractor, Fritz & Kean; amount, $1,067; limit, 110 days; signed, June 22; filed, June 28; $500 rough work done; $269 completed; $268, 35 days.

Lyon street, near Golden Gate avenue, one-story frame Owner, Chas. C. Morris; architect, R. O. Chandler; contractor, R. O. Chandler; amount, $2,200; signed, June 12; filed, June 14; $500 framed; $600 partitions set; $500 white coated; $600, 35 days.

Laguna, between Fell and Hayes, two, two-story frames; Owner, Mr. Winkelmann; contractor, M. Gorman; cost, $5,500.

Laguna and Linden avenue, three-story frame. Owners, H. Winkleman and wife; contractor, M. J. Gorman; amount, $5,293; signed June 14; filed, June 15; $1,000, framed; $1,000, brown coated and roof is on; $973, white coated; $1,000 completed; $1,320, 35 days.

Leavenworth and Turk, to build. Owner, Mrs. A. A. Smith; architect, Wm. Mooser; contractor, J. J. Dunn; amount, $2,900; surety, F. Joost; limit, 90 days; signed, June 14; filed June 14; 75 per cent. work done; balance, 25 per cent. 35 days.

Lott and Golden Gate avenue, cottage. Owner, H Clancy; contractor, A. McDonald; cost, $1,830; limit, 90 days; signed; July 1; filed, July 3; $800, framed, $360, ready to lath; $500, brown coated; $400, white coated; $330, completed.

Market between Fourth and Fifth, galvanized iron work. Owner, California Academy of Sciences; Architect, Percy & Hamilton; contractor, Wm. Cronon; amount, $5,170; sureties, Calvi Nutting and Jere Mahony; $2,500; signed, June 7; filed, June 21; 75 per cent of value of work done on first Monday in each month, balance 35 days.

Market between Fourth and Fifth, painting etc. Owner, California Academy of Science; architect, Percy & Hamilton; contractor, Paul Agnis; amount $3,750; sureties, G. Amrup, Hunter Bros. & Company, $2,000; signed, June 7; filed, June 21; 75 per cent of value of work done on first Monday in each month, balance 35 days.

Montgomery and Commercial streets, concrete work. Owner, Daily Examiner Publishing Company; architect, J. Marquis; contractor, Geo. Goodman; amount, $1,615; signed, June 17; filed, June 18; $1,000, when finished, 615 35 days.

McAllister and Laguna, two, three-story flats. Owner, John Ewing; architect, Emil John; contractor, Tegeler & Muller; amount, $8,989; signed, June 3; filed June 12; $9,000 framed; $3,000 rough mortared, $8,989, 35 days.

McAllister near Laguna, three, two-story frames. Owner, J. Ewing; architect, E. John; contractors, Tegeler & Muller; cost, $10,000.

McAllister and Polk, excavation and stone work. Owner, J. B. Gonyean; architect, Wm. Mooser; contractor, Chatain & Gilletti; amount, $7,000; signed, June 14; filed, June 24; 75 per cent of value of work done subject to main contract.

Mission corner Ninth, one, two-story frame on Mission near Ninth and one on Ninth near Mission. Owner, Milbrae Dairy Co; cost, $5,000.

McAllister near Lyon, additions. Owner, F. P. Adams; architect, B. E. Henriksen; contractor, L. Helbing; cost, $2,600.

Minnesota, between Solano and Butte, two-story frame. Owner, P brick Dixon; architect, Schmidt & Shea; contractor, Geo. J. Doering; amount, $3,400; limit, 90 days; signed, June 24; filed, June 29; $618 enclosed; $618 brown coated; $618 hard finished; $618 completed; $928, 35 days.

McAllister and Lyon, repairs, etc. Owner, Frank P. Adams; architect, B. E. Henriken; contractor, Louis Helbing; amount, $1,612; signed, June 15; filed June 17; $770 roofing and siding on; $770, outside finished; $72, sashes glazed and hung.

McAllister and Polk, carpenter work. Owner, A. P. Hotaling; architect, Wm. Mooser; contractor, J. B. Gonyean; amount, $89,965; sureties, C. A. & G. W. Hooper, $20,000; signed, June 18; filed, June 17; $6,000, first story joists on; $6000, enclosed; $6000, rear platforms up; $6000, sashes hung etc; $6000, completed; $9,965, 35 days.

McAllister and Polk, plumbing, etc. Owner, A. P. Hotaling; architect Wm. Mooser; contractor, John H. Lane; amount, $2,800; sureties, J. Meyers & Mrs. L. B. McKeever, $1,500; signed, June 13; filed, June 17; $1,000 wastes and drains in; $900, completed; $900, 35 days.

McAllister and Polk, painting, etc. Owner, A. P. Hotaling; architect, Wm. Mooser; contractor, Henry Wagner; amount, $1,900; surety, Jacob Weise, $1000; signed, June 13; filed, June 17; 75 per cent as work progresses, balance when completed.

Main, near Howard, excavating, brick work and sewer. Owner, S Mathews; contractor, J. McCarthy; amount, $2,300, limit, 40 days; signed, June 24; filed, June 25; 75 per cent. as work progresses; balance, 35 days.

Mission between Eighteenth and Nineteenth, one-story building. Owner, C. Gerdes; architect, W. H. Armitage; contractor, F. V. Steinman; amount, $1,600; surety, Frank P. Latson, $1,000; limit, 60 days; signed, June 18, filed, June 25; $400, framed; $400 brown coated; $400 completed; $400, 35 days.

Natoma, between Lafayette and Eleventh, one-story frame. Owner, Dennis Sweeney; architect, C. Peterson; contractor, C. Peterson; amount, $1,125; limit, 60 days; signed, June 25; filed, June 29; $281.25 chimney up; $281.25 brown mortar on; $281.25 completed; $281.25 bills paid.

Oak and Octavia, two-story frame. Owner, Peter Craven; architect, M. J. Welsh; contractor, Rufus Parker; amount, $4,270; signed, June 10; filed, June 12; $892.50 framed; $892.50 outside finish on; $892.50 completed; $892.50, 35 days.

Oak near Octavia, two-story frame. Owner, Peter Craven; architect, M. J. Welsh; contractor, R. Parker; cost, $4,200.

Octavia and Sutter, plumbing. Owner, James G. Fair; architects, Schulze & Meeker; contractors, Fritz & Kean; amount, $6,200; surety, John J Mahoney, $2 500; limit, Nov. 1, 1889; signed, June 10; filed, June 15; first day of each month 75 per cent., as work progresses; balance, 35 days.

Pacific, between Leavenworth and Hyde, alterations. Owner, Thomas Kennedy; architect, W. H. Armitage; contractor, J. W. Sims; cost, $2,800.

Pacific, between Montgomery and Sansome, reconstruction of engine house. Owner city of San Francisco; contractors, McCann and Riddell; cost $8,500.

Parker Avenue near Fulton street, two-story frame. Owner, J. D. Wilson; architect H. T Beaton; contractor, R. P. Traxler; amount, $3,450; limit, Oct. 1, '89; signed, June 26 filed, June 27; $850 rustic on first story; $730 brown, coated; $730 white coated; $850 completed; $870, 35 days.

Pierce near Page, mill work. Owner, R. H. White; subcontractors, F. V. Steinman and Michael McCloskey; amount, $1 600; signed, June 24; filed, June 27; 75 per cent. of value of work as is delivered, balance, 25 per cent, 35 days.

Pierce and Page, two two-story frames. Owner, Michael McCloskey; architect, R. H. White; contractor, F. V. Steinman; amount, $8,905; sureties, Frank P. Latson & John Deiner, $7000; limit, 90 days; signed, June 17; filed, June 19; $1,100, framed; $800 framed; $1,887 50; brown coated; $1,087 50 standing finish is on; $1,700, completed; $2,230, 35 days.

Polk and Washington, three tenements and two stores. Owner, Alexander Ferrari; architect, Wm. H. Wharff; contractor, Hiram E. Hatch; amount, $6,500; sureties, A. D. Moore $2000; limit, September, 1, 1889; signed, June 3; filed, June 17; $975, brick work completed; $975, framed; $975, enclosed; $975 white mortared; $975, completed; $975, 35 days.

Pacific street, No. 1338, alterations, etc. Owner, Thos. Kennedy; architect, W. H. Armitage; contractor, J. W. Simms; amount, $2,550; sureties, Dennis Jordan; limit, 80 days; signed, June 6; filed, June 8; 75 per cent. as work progresses, balance 35 days.

Pacific and Pierce, two-story frame. Owner, Simon Anspacher; architect, Samuel Newsom; contractor, George R. Lang; amount, $7,550; surety, Frank P. Latson; limit, 120 days; signed, June, 14; filed, June, 19; $1,132 50 frame up; $1,132 50; roof on; $1,132 50, brown mortared; $1,132 50, outside primed; $1,132 50, completed; $1887 50, 35 days.

Post and Pierce, two-story building. Owner, Daniel Cutter; architects, John & Balerzynski; contractor, D. G. Chisholm; signed, July 1; filed, July 2; cost, $4,100; $800, framed; $1,200 outside finished, $1,075, completed; $1,025, 35 days.

Sutter and Lyon, two-story frame and alter old one. Owner, Annie R. McN. Kavanagh; architect, S. Hatfield; contractor, R. P. Sanchez; amount, $2,700; surety, J Wagner, $1,560; signed, June 14; filed, June 15; $800, framed; $475, roof tight, etc.; $475, plastered; $475, completed; $675, 35 days.

Scott and Devisadero, two-story house. Owner, A. T. Tillsok; contractor, Frank P. Adams; cost, $2,550; limit, 90 days signed July 3; filed, July 5; payments as per agreement with Fidelity Loan Association.

Sixteenth and Noe, frame. Owner, W. P. Higginbotham; architect, J. Marquis; contractor, E. W. Hyde; amount, $1,970; signed, June 24; filed, June 25; $925, framed; $925 ready to lathe; $925, outside finish on; $925, completed; $1,270, 35 days.

Sacramento and Parker, alterations etc.; Owner, E. A. Bruguiere; architect, Pissis & Moore; contractor, Wm. Langstaff; amount, $3 100; signed, June 18; filed, June 22; $700 framed, $700 plastered, $900, completed, $800, 35 days.

Stevenson near Twentieth, additions. Owner, Mr. Robinson contractor, Mr. Wilberg; cost, $1,200

Shotwell near Twenty-Fifth, three, two-story frames. Owner, and builder, P. Haver; cost, $7,000.

Sacramento between Polk and Van Ness Avenue, one-story cottage. Owner, J. Cazeaux; architect, Townsend Wyneken; contractor, Plummer & Martin; amount, $1 50; signed, June 19; filed, June 21; $460, enclosed; $460 first coat of mortar is on, etc; $460, second coat of mortar is on; $470, 35 days.

Stockton, between Ellis and O'Farrell, plastering. Owner, Adam Miller; architect, Chas. Geddes; contractor, Thos. Mannix; amount, $10,000; limit, 5 months; signed, May 23; filed, June 28; $5,000 brown mortared; $2,500 plastered; $2,500, 35 days.

Sutter and Pierce, three frames. Owner, Wm. Campbell; architects, Pissis & Moore; contractor, J. B. Cogswell; amount, $12,000; signed, June 25; filed, June 28; $2,000 framed; $2,500 brown mortared; $2,500 plastered; $2,400 completed; $3,000, 35 days.

Seventh Avenue, near J. street, to build complete. Owner, T. O'Brien; architect, M. J. Welsh; contractor, J. B. Gonyean; amount, $3,000; signed, June 24; filed, June 26; $750 framed; $750 brown coated; $750 completed; $750, 35 days.

Steiner and Jackson, to build. Owner, Albert P. Redding; architect, Chas. Mau; contractor, Herbst & McLeod; amount, $9,150; limit, Nov. 1, '89; signed, June 1; filed, June 7; $2,287 50, 4 of work is done; $2,287 50, 4 of work is done, $2,287 50 completed; $2,287 50, 35 days.

Stevenson and Twentieth, additional two-story frame to building. Owner, Walter T. Robinson; architect, Edward Wilberz; contractor, Edward Wilberg; amount, $1,100; surety, Edwin Lord, $1,100; limit, 35 days; signed, June 4; filed, June 18; $250 roofs are completed; $250, outside finish on etc.; $300, completed; $300, 35 days

Twelfth near Howard, two-story frame. Owner, Mr. Clark. cost, $1,600.

Twenty-Fourth, east of Howard, additional story; cost $1,200.

Twenty-Fourth, west of Howard, additional story; cost, $3,000.

Twenty-Third near Harrison, one-story frame; cost $800.

Valencia and Twenty-second, three-story frame. Owner, Mrs. D. M. Klumpke; architects, B. McDougall & Son; contractor, A Jackson; cost, $15,984, signed; June 29; filed, July 3, $6,000 framed; $2,000, main cornice up, etc.; $1,500, floors laid, etc.; $1,500, brown coated; $2,032, 35 days.

Vallejo and Van Ness avenue, three-story frame. Owner, Jacob Happersberger; architect, H. Geilfuss; contractor, L. M. Weismann; cost, $1,795; signed, July 1; filed July 3; $620, framed; $720, partitions set; $620, brown coated; $720, white coated; $716, completed; $1,200, 35 days.

Van Ness Avenue and Post street, Iron work. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Enterprise Iron Works; Amount, $418; sureties, James Aitken, L. S. Kincaid & Gor.; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses; balance, 36 days.

Van Ness Avenue and Post street, cast iron work of Club house. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Joshua Hendy Machine Works; amount, $365; signed, June 17; filed, June 22.

Van Ness Avenue & Post street, stone work. Owner, Concordia Club; architect, J. H. Littlefield; contractor, O. E. Sravy; amount, $2,500; sureties Jere Mahony & Robert Mitchell; limit, 40 days; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post street, plumbing. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Samuel Ickelheimer; amount, $1,850; sureties, S. Feder & L. A. Levy; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post, plastering. Owner, Concordia Club; architect, J. H. Littlefield; contractor, C. W. Watson; amount, $7,000; sureties, M. Nunan & Samuel Kellett; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post street, metal and slating. Owner, Concordia Club; architect, J. H. Littlefield; contractor, J. & F. Forderer; amount, $4,397; sureties, John Stehle & J. A. Morrow; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post street, concrete. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Chatain & Gilletti; amount, $616; sureties, Dyguiss Bros. & J. S. Taylor; limit, 12 days; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post, brick work. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Geo. D. Magle; amount, $24,650; sureties, C. A. Warren, D. Corkery, W. C. Dougherty; limit, October, 1, 1889; signed, June 17, filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Van Ness Avenue and Post street, carpenter work. Owner, Concordia Club; architect, J. H. Littlefield; contractor, Moore Bros.; amount, $50,367; sureties, Behrend Joost & C. S. Haines; limit, 90 days; signed, June 17; filed, June 22; 75 per cent of value of work done as it progresses, balance 36 days.

Western Addition, lot 4, block 198, to build. Owner, John Ryan, architects, Schmidt & Shea; contractor, S. J. Wilkens; amount, $5,000; sureties, Daniel Hutchinson and Chas. Verm, $1,500; limit, Aug. 15, '89; signed, June; filed June 6; $300 roofed; $600 brown coated; $600 white coated; $600 finished, $600 accepted.

Waller and Broderick, frame. Owner, Frances M. S. Knife; architects, Pissis & Moore; contractor, Wm. Langstaff; amount, $4,815; signed, June 12; filed, June 13; $800 framed $800 brown mortared; $800 interior plastered; $800 ready to paint; $410 completed; $1,205, 35 days.

Waverly Place and Sacramento street; grading. Owner, Jos. Goetz; ar hitect, T. J. Welsh; contractor, Hugh Flinn; cost, $2,115; limit, 30 days; signed, July 1; filed, July 2; $1,515, accepted; $600, 35 days.

COUNTRY BUILDING NEWS.

SEATTLE.

The work of rebuilding is pushed with energy. We are indebted to the *Post Intelligencer* for the report of work now in progress.

McNaught Bros., have engaged architect Boone, to prepare plans for a brick building to be erected by them on their property in the south east corner of Jackson and South Sixth streets. The ground floor will be divided into five stores with entrance on Jackson street. The three upper floors will be cut up in flats, and rented for tenement purposes. The building will be erected of brick, iron and stone, and work will begin as soon as plans are completed.

Mr. Sanderson is having plans drawns for a building to be erected on his property on Yesler avenue, between Commercial and South Second street. The building will be three stories high with basement. Work will commence on excavation for the basement at once.

Mr. J. Kenyon states that he will erect a brick building on his property on Commercial street, between Washington and Main. He will probably be joined by Messrs. McNaught and W. H. Maud, who own adjoining property.

The Gordon Hardware Company is preparing to go ahead with the construction of its building on its old site on Front street.

T. R. Hill has a force of men excavating on the site of the Oakland lodging house, on Commercial street, near Main. It is his purpose to erect a three-story brick, as soon as street lines and grade elevations are established by the council.

Mr. Chris Sherman will build on his property, situated on the northeast corner of Front and Cherry streets, as soon as the debris can be removed and the excavations made. The building will be built of brick, iron, stone and terra cotta, and will be a model structure. The dimensions are 60x120 and it will be three stories in height. The lower floor will divided into two stores.

Fisher, the architect, has about completed the plans, and the building will be completed inside of four months. The estimated cost is $30,000.

Architect Boone has completed plans for a frame building to be erected on the south side of Washington street, between South Sixth and Seventh streets, by Mr. S. Baxter. The building will be 60x120 feet in dimensions, and four stories in height. There will be three stores on the ground floor. The three upper floors will be divided into sixty rooms, for tenement purposes. Plans are also completed for a building identically the same in proportion, and to be used for the same purpose, which will be erected by Mr. S. Baxter on the east side of Front street, between Virginia and Lenora streets. These buildings will be put up at once.

The excavations for the Guy C. Phinney building on the northeast corner of Front and Seneca streets, are completed, and work on the building will commence to-day.

Architect Boone is preparing plans for rebuilding the Wah Chung building, situated on the north, east corner of South Third and Washington streets. The dimensions of the building as it formerly stood, were 60x45 feet. It will now cover 60x111 feet of ground and will be as originally, two stories high with a basement.

Whittier, Fuller & Co., will erect a building to cost $75,000.

On corner of Cherry and Third, Mr. Dexter Horner will ereet a four story brick building. Architect Boone has the plans about ready for same. Cost, $90,000.

Judge J. R. Lewis will erect a $20,000 building on Front street. Architect Nestor is preparing plans.

Engle & McElroy will have a $25.000 building erected from plans prepared by architect Nestor.

Architect E. H. Fisher is preparing plans for a four-story building for Mrs. L. A. Starr.

G. W. Young will erect a $10,000 building, the plans of which are being prepared by architect Nestor.

A Catholic church will be built ata cost of $25,000. Branigan and Ryan have the contract.

Architect Larkin has plans ready for a $6,000 building, for Mrs. M. A. Foster.

Architect Thomas will soon let contract for three houses for Mr. Glenn. They will cost $9,000.

SAN JOSE.

J. Lensen & Son are preparing plans for a three story brick and stone building for C. T. Ryland.

Two-story brick and frame business block. San Antonio between Third and Second streets. F. H. Trope, owner; J. Lenzen & Son, architects; Fuller & Cross, contractor; cost, $5800

One-story cottage in the Devendorf Addition. C. Warfield, owner; F. Davis, contractor; cost, $1710.

Two-story dwelling on the Davis tract. Prof. Cox, owner; Hazard & Lyth, contractors; cost, $2000.

Cottage in the Willows. Mr. Fleming, owner; Shottenhamer, contractor; cost, $2200.

Additions to a dwelling on Third street. Mr. McCabe, owner; J. Lenzen & Son, architects. J. D. Stewart, contractor; cost, $1200.

Dwelling on Fourth near Jackson street. A. Berryessa, owner; J. Lenzen & Son, architects; A. C. Bates, contractor; cost, $1100.

Dwelling house on Willow street. Mr. Ross, owner; Shottenhamer, contractor; cost, $1800.

Dwelling house on Vine street. M. Lenzen, owner; J. Lenzen & Son, architects; E. A. Van Dalsem, contractor; cost, $3000.

Two-story dwelling, Fifth near San Salvador street. Mrs. Burdett, owner; W. S. Boyles, contractor, cost, $3500.

Dwelling house corner Fourth and Reed streets. O. L. Bennett, owner; built by day work; cost, $3500.

ALAMEDA.

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C. K. Kirby, architect, of Fresno, has plans finished for a block of stores for Lawrence Barrett.

HAYWARDS.

Daniel Luce is having erected a two-story brick building.

SANTA ROSA.

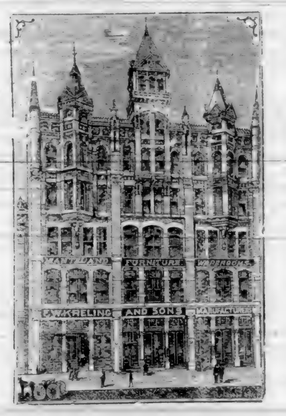
Mrs. Geo. Kennedy is having a residence built near town. Kuykendall & Melson are the contractors.

BERKELEY.

A. H. Broad has been awarded a contract for building two residences.

W. W. Redrow will have erected for himself a $5,000 dwelling.

REYNOLDS & ADAMS,
547 Brannan Street,
Hardwood Flooring,
Parquetry Floors,
Wood Carpets,
—AND—
ENGLISH TILE FLOORS.
—o—
Designs and Estimates furnished on application.



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SAN FRANCISCO, CAL.

The * California * Architect * and * Building * News

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Official Organ of the San Francisco Chapter, American Institute of Architects.

NOW IN ITS TENTH YEAR.

Established Jan. 1879. *Incorporated Jan. 1889.*

THE
California Architect & Building News
—PUBLISHED BY THE—
California Architectural Publishing Co.

Office, 408 California St. * * Next to the Bank of California

PUBLISHED ON THE 15th DAY OF EACH MONTH.

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ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, AUGUST 15, 1889.

IT is not often that trade journals pay attention to matters entirely out of the line for which said journals were established. In the issue of July 27th, of the *American Architect*, will be found a very able editorial in regard to the late trouble in this City between the Musician's Union and the Military Authorities. It says:—"The Trades Union in San Francisco came into a collision with a force which they will probably find less amiable and easy of circumvention than the civil law. The 4th of July Committee offered $6 00 per day for each musician, instead of $8 00, the amount paid on previous occasions. The Musician's Union thereupon issued orders that none of its members be allowed to play on that day. It happened, however, that among the musicians who were expected to take part, were the members of the three regimental bands, who, although they belonged to the Musician's Union, were regular enlisted men in their several regiments of militia. Upon their failure to appear for duty, the colonels of their regiments took up the code of militia regulations to inquire into the duty, of enlisted musicians. As the officers concisely put the case "If some new-military body has more power over any part of the military force stationed in San Francisco than the commander-in-chief, it is a better time to learn it now than to wait till an emergency arises, and they or other similar societies array themselves against the law and the officers appointed to administer the same." The *American Architect* thinks a salutary example should be made of the first offenders for so gross a military fault.

(The findings of the Court Martial were very much in keeping with the spirit of the above extract, as the leaders were dishonorably discharged and a fine imposed besides. Appeal, however, is being prepared for executive clemency.—Editor *California Architect.*)

VALUE of sunshine.—A physician in New York reports, that during an epidemic of diphtheria in that city, there were five times as many cases on the shady side of the street as on the sunny side.

COMPETITION in laying artificial stone pavements has brought about the usual result. Low prices means the use of poor materials, not only in pavements, but in every thing else. Years ago, when cement sidewalks were first laid, people were slow to believe that they would last a quarter of a century and show but little wear from the thousands passing over them. Yet, there are pavements that have been used half of that time, on one of the most traveled portions of Kearney street, and the noticeable wear would not average an eighth of an inch. At that time, we believe, the price was about twenty cents per square foot. Numerous patents were taken out for various ways of laying the artificial stone pavement, and then the competition began. The price was reduced to 15 cents; then by one half of a cent at a time, down to 13 cts. This price was regarded as the very lowest that it was possible to lay a pavement. But still competition cut under that figure and walks have been laid as low as 10 cents a square foot. One enterprising individual on Market street, just below Sixth, used ashes instead of gravel in making the concrete bed. With a great flourish he proclaimed that his patent excelled them all, and $20,000 was wanted for the same for this city alone. It was but a few months after being laid, that the utter worthlessness of ashes instead of gravel was thoroughly proven, and a short time ago, it was necessary to replace the sidewalk entirely. It is so every time. Grind the price down to 10 cents, and you will have a 10 cent sidewalk. All over the city, sidewalks are crumbling to pieces that have been laid but a short time, many of them less than a year; while those put down by such men as Geo. Goodman, E. L. Ransome and a few others, have stood the test of more than 10 years, and the walks are as good to-day as when first laid. If property owners would consider that there is but $20 difference between a first class job and a 10 cent sidewalk, that one will last an ordinary lifetime, and the other but a few years, surely it would seem that no hesitation should be shown in choosing the better article. It is absolutely impossible to lay a good pavement at 10 cents, or even 12 cents, per square foot, and use gravel and cement as they should be used. Note how the cheap walks are laid. Gravel is used in the proportion of 1 part gravel and about 2 parts of earthy matter, the presence of which utterly precludes a good concrete for the foundation. Even with this cheap mixture, the contractor seeks to get off by making it not over an inch and a half in thickness. On top of this, a mixture of sand and cement is placed, and then the top is merely washed with a thin coating of cement. In one year the sidewalk is useless and people begin to condemn the cement sidewalk. Let owners figure on 15 cents per square foot for their pavements, give the laying of them to responsible parties only, and our word for it, they will never regret the difference in cost.

SO far the proceedings of the International Congress of Architects, whose sessions were held in Paris, commencing June 17, do not amount to much. A paper was read by M. de Baudot, the subject of which was "Teaching of Architecture." The views taken by the speaker, according to the *American Architect*, were unfavorable to the system pursued at the Ecole des Beaux-Arts, and he argued very effectively in favor of a more practical training for young architects, which should remove from them the reproach of being able only to make handsome water-color drawings. After the paper was read, considerable discussion ensued, the opponents of M. de Baudot's views being in a decided majority. By a little sharp practice, the Convention finally dodged the issue with great discretion, by adopting a resolution to refer the matter to the next Convention which is not likely to be held for another ten years, at least.

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San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the Chapter was held in their rooms, 408 California St., on Friday, August 2d. W. P. Moore occupied the chair. There was a very good attendance of the members.

The following named were nominated for officers for the ensuing term: President, Seth Babson; Vice-President, G. W. Percy, W. J. Cuthbertson, W. P. Moore; Secretary, O. Everett; Treasurer, J. M. Curtis; Trustees, Wright, Pissis, Percy, Gash, Bestor, Moore.

Applications for membership were received from D. L. Williams and F. Williams, both of Portland, Oregon.

An amendment was offered to the By-Laws by which the night of meeting is to be changed to the second Friday of the month.

The members of the Technical Society were invited in from their meeting room to listen to a paper read by John Gash, entitled, "The Stone Age." The paper was well received by those present, and an interesting discussion ensued in regard to stone and the causes that lead to its deterioration.

The thanks of the Chapter were extended to the speaker for his able address.

The Mechanics' Fair.

ARRANGEMENTS are in active progress for the opening of the Mechanics' Fair on the 27th of the present month. It will last to October 5th. From the extent of the preparations made, the next exhibit will be superior to any its predecessors. We are in hopes that the exhibit of building materials, finished as well as raw materials, will be such as to command the attention of strangers. We understand the Chapter of Architects have a committee on this subject, who are working harmoniously with committees from other associations, and we trust their efforts will be successful. Especially is it desired to have a complete line of building stone from the various quarries all over the coast. These should be accompanied by a certificate of chemical analysis from some well known assayer or chemist. Mechanics should show what they can do and the one who produces the longest thick shaving, and the longest thin shaving should each be entitled to a medal. We will give our customary review of all articles connected with the building interests.

A Dwelling House Elevator.

VERY few people like to climb stairs. If such a thing were possible and practical as an elevator in an ordinary private house, costing to erect and operate not so much as to put it beyond the means of an average house-owner, it would undoubtedly be a boon. A Berlin inventor has proposed a plan of "a simple and inexpensive elevator for private dwellings," which is worthy of mention. It is on the principle of the inclined railway, and the motive power is furnished by the city water, which is applied in the cellar; each flight has its separate chair, so that, for example, one person can ascend from the first to the second story while another is on his way from the second to the third, or still another is descending from the fifth to the fourth. The chair, being only the width of a human body, requires but little space, and still leaves a free passage for any who wishes to walk up or down, instead of riding. It is set in motion by a simple pressure upon one of its arms, while after it has been used it slides back to the bottom step, its descent being regulated in such a manner that the carrying of a passenger is a matter of entire safety. The motive power is, of course, more or less expensive, according to the cost of water, this being, it is stated, in Berlin at the rate of a little more than one-tenth of a cent only for each trip.

They have a fire-brick trust in England. And yet Englishmen call this country the land of monopolies and trusts. Those who live in glass houses should not throw fire bricks.—*Western Architect and Building News.*

Away From Home for News.

AN extract from the *North-Western Lumberman* will be interesting reading to those on this coast connected with the interests represented. Truly we have to go away from home for news, but, in this case, the *news* is a series of mistakes:

"Pacific coast lumbermen have been behind the times in some respects, but they are beginning to adopt improved methods, and from now on they will doubtless manufacture and sell lumber to better advantage. The band saw is being established in that region, and the dry kiln is making its way. It seems singular that coast lumbermen should be so slow to adopt improvements demonstrated to be of great value in other parts of the country; but it is a fact that strong pressure was required to get the band saw introduced in the manufacture of redwood and fir lumber, and it is of comparatively recent date that the feasibility of drying redwood was recognized. About a year ago a few kilns were put in at Stockton, San Jose and other points, and a few months ago the first one was put in at San Francisco. Now they are going in quite numerously through California, Washington and Oregon. The advent of lumbermen from fields east of the coast has resulted in various innovations in operations, and continued improvements and increased energy may be looked for."

Etching Saw Blades.—Please inform me how saw manufacturers do fancy etching on the sides of steel saws? How could I put on a lion's head, with my name around the same?—B. A., Toronto, Ont.

Answer.—Saw manufacturers have the design and lettering engraved first on a copper plate by a competent engraver, by usual methods. This is done so as to read the same as the finished saw in appearance (not reversed, as printing-plates are done.) One or more impressions are then taken on a copper-plate press, with an ink that has had added to it some bitumen, or acid-resisting resin with beeswax. These impressions should be made on a thin, even paper, and the ink is afterwards transferred from this print on to a polished steel plate. Diluted nitric acid being put on the steel, the general surface is etched away, so that the letters and ornamentation stand up in relief instead of being sunk, as they are in the copper plate. The steel plate is then cleaned off, and is printed from in like manner to produce impressions for transferring to the saws. These impressions have the letters and ornamentation *white* on a black ground. If several impressions of the copper plate are transferred to the steel plate side by side, and etched, then each sheet printed from the steel plate will supply several transfers, when cut apart, for use on as many saws, thus economizing labor very considerably. If any of the transfers on steel or saw should be incomplete—not thoroughly protecting the surface, some asphaltum varnish, or shellac varnish with a little lampblack in it, can be applied with a camel's hair brush to the bare parts, to make them safe. The transfers on the saws are then etched, though not so deep as the first transfer on the plate, and the result is a duplicate of the original copper plate, with black letters, etc. Care must be taken to neutralize any traces of acid remaining on the saws when they are cleaned off, to prevent rusting after they are laid away. If this inquirer desires to decorate but one saw for himself, he must use ordinary methods of engraving. Cover the saw with an asphaltum varnish, draw through that with a steel point, or etching needle, the design he wishes, and then apply diluted nitric acid (acid, 1 part; water 4 parts) with a feather or camel's-hair brush until the design is etched black enough to suit him; wash off with water, then with turpentine, and lastly with soda solution. He will probably find it difficult to draw his lines just as he wishes them over the course grinding of the surface of the saw. —*Manufacturer and Builder.*

Architectural Picture-Making with Pen and Ink.

This book is handsomely illustrated with 32 large plates in size 12 x 18 inches. We have copies of this work on sale, which will be furnished at publishers price, $4.

Palliser's Quarterly for one year in conjunction with the California Architect, Price for the two $4.

DESIGN FOR CITY DWELLING—Huerne & Everett, Architects.

COUNTRY BUILDING NEWS.

SEATTLE.

The work of rebuilding is pushed with energy. We are indebted to the *Post Intelligencer* for the report of work now in progress.

McNaught Bros., have engaged architect Boone, to prepare plans for a brick building to be erected by them on their property in the south east corner of Jackson and South Sixth streets. The ground floor will be divided into five stores with entrance on Jackson street. The three upper floors will be cut up in flats, and rented for tenement purposes. The building will be erected of brick, iron and stone, and work will begin as soon as plans are completed.

Mr. Sanderson is having plans drawns for a building to be erected on his property on Yesler avenue, between Commercial and South Second street. The building will be three stories high with basement. Work will commence on excavation for the basement at once.

Mr. J. Kenyon states that he will erect a brick building on his property on Commercial street, between Washington and Main. He will probably be joined by Messrs. McNaught and W. H. Maud, who own adjoining property.

The Gordon Hardware Company is preparing to go ahead with the construction of its building on its old site on Front street.

T. R. Hill has a force of men excavating on the site of the Oakland lodging house, on Commercial street, near Main. It is his purpose to erect a three-story brick, as soon as street lines and grade elevations are established by the council.

Mr. Chris Sherman will build on his property, situated on the northeast corner of Front and Cherry streets, as soon as the debris can be removed and the excavations made. The building will be built of brick, iron, stone and terra cotta, and will be a model structure. The dimensions are 60x120 and it will be three stories in height. The lower floor will divided into two stores.

Fisher, the architect, has about completed the plans, and the building will be completed inside of four months. The estimated cost is $30,000.

Architect Boone has completed plans for a frame building to be erected on the south side of Washington street, between South Sixth and Seventh streets, by Mr. S. Baxter. The building will be 60x120 feet in dimensions, and four stories in height. There will be three stores on the ground floor. The three upper floors will be divided into sixty rooms, for tenement purposes. Plans are also completed for a building identically the same in proportion, and to be used for the same purpose, which will be erected by Mr. S. Baxter on the east side of Front street, between Virginia and Lenora streets. These buildings will be put up at once.

The excavations for the Guy C. Phinney building on the northeast corner of Front and Seneca streets, are completed, and work on the building will commence to-day.

Architect Boone is preparing plans for rebuilding the Wah Chung building, situated on the north, east corner of South Third and Washington streets. The dimensions of the building as it formerly stood, were 60x45 feet. It will now cover 60x111 feet of ground and will be as originally, two stories high with a basement.

Whittier, Fuller & Co., will erect a building to cost $75,000.

On corner of Cherry and Third, Mr. Dexter Horner will ereet a four story brick building. Architect Boone has the plans about ready for same. Cost, $90,000.

Judge J. R. Lewis will erect a $20,000 building on Front street. Architect Nestor is preparing plans.

Engle & McElroy will have a $25.000 building erected from plans prepared by architect Nestor.

Architect E. H. Fisher is preparing plans for a four-story building for Mrs. L. A. Starr.

G. W. Young will erect a $10,000 building, the plans of which are being prepared by architect Nestor.

A Catholic church will be built ata cost of $25,000. Branigan and Ryan have the contract.

Architect Larkin has plans ready for a $6,000 building, for Mrs. M. A. Foster.

Architect Thomas will soon let contract for three houses for Mr. Glenn. They will cost $9,000.

SAN JOSE

J. Lensen & Son are preparing story brick and stone building

Two-story brick and frame bu Antonio between Third and Seco Trope, owner; J. Lenzen & Son, & Cross, contractor; cost, $5800

One-story cottage in the De C. Warfield, owner; F. Davis, $1710.

Two-story dwelling on the I Cox, owner; Hazard & Lyth, $2000.

Cottage in the Willows. Mr. Shottenhamer, contractor; cost,

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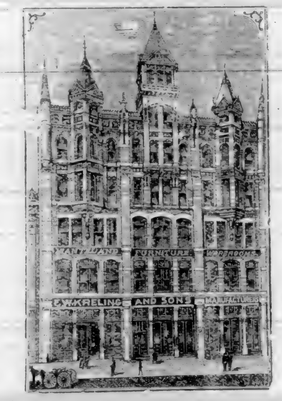

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IRREGULAR PAGINATION

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Whittier, Fuller & Co., will erect a building to cost $75,000.

On corner of Cherry and Third, Mr. Dexter Horner will ereet a four story brick building. Architect Boone has the plans about ready for same. Cost, $90,000.

Judge J. R. Lewis will erect a $20,000 building on Front street. Architect Nestor is preparing plans.

Engle & McElroy will have a $25,000 building erected from plans prepared by architect Nestor.

Architect E. H. Fisher is preparing plans for a four-story building for Mrs. L. A. Starr.

G. W. Young will erect a $10,000 building, the plans of which are being prepared by architect Nestor.

A Catholic church will be built ata cost of $25,000. Branigan and Ryan have the contract.

Architect Larkin has plans ready for a $6,000 building, for Mrs. M. A. Foster.

Architect Thomas will soon let contract for three houses for Mr. Glenn. They will cost $9,000.

SAN JOSE.

J. Lensen & Son are preparing plans for a three story brick and stone building for C. T. Ryland.

Two-story brick and frame business block. San Antonio between Third and Second streets. F. H. Trope, owner; J. Lenzen & Son, architects; Fuller & Cross, contractor; cost, $5800

One story cottage in the Devendorf Addition. C. Warfield, owner; F. Davis, contractor; cost, $1710.

Two-story dwelling on the Davis tract. Prof. Cox, owner; Hazard & Lyth, contractors; cost, $2000.

Cottage in the Willows. Mr. Fleming, owner; Shottenhamer, contractor; cost, $2200.

Additions to a dwelling on Third street. Mr. McCabe, owner; J. Lenzen & Son, architects. J. D. Stewart, contractor; cost, $1200.

Dwelling on Fourth near Jackson street. A. Berryessa, owner; J. Lenzen & Son, architects; A. C. Bates, contractor; cost, $1100.

Dwelling house on Willow street. Mr. Ross, owner; Shottenhamer, contractor; cost, $1800.

Dwelling house on Vine street. M. Lenzen, owner; J. Lenzen & Son, architects; E. A. Van Dalsem, contractor; cost, $3000.

Two-story dwelling, Fifth near San Salvador street. Mrs. Burdett, owner: W. S. Boyles, contractor, cost, $3500.

Dwelling house corner Fourth and Reed streets. O. L. Bennett, owner; built by day work; cost, $3500.

ALAMEDA.

J. A. Leonard will erect three more dwellings on corner of Chestnut and Encinal avenue.

R. W. Mastick has let contract for a $4000 house to be built on St. Charles street.

Senator Stewart will build on Blanding avenue near Willow street.

Eugene J. Bates will build on San Antonio avenue. Pattiani & Co., have the contract.

MARYSVILLE.

Miss A. B. Karr, is having built by days work, a large double house to cost about $8000. S. Hatfield, of San Francisco, prepared the plans.

HOPLAND.

Mr. Thatcher intends to erect a $10,000 hotel. I. J. Ludwig of Santa Rosa has the contract.

PETALUMA.

Mr. Perry is having a neat house erected in the eastern portion of town.

YOUNTVILLE.

A $5000 hospital building will be erected. J. Morton of Calistoga has the contract.

SACRAMENTO.

It is understood that the firm of Lubin & Weinstock will erect a five story brick building.

PORTERVILLE.

C. K. Kirby, architect, of Fresno, has plans finished for a block of stores for Lawrence Barrett.

HAYWARDS.

Daniel Luce is having erected a two-story brick building.

SANTA ROSA.

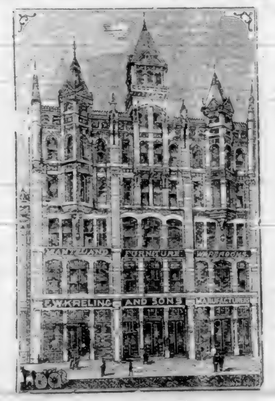
Mrs. Geo. Kennedy is having a residence built near town. Kuykendall & Melson are the contractors.

BERKELEY.

A. H. Broad has been awarded a contract for building two residences.

W. W. Rednow will have erected for himself a $5,000 dwelling.

REYNOLDS & ADAMS,
547 Brannan Street,
Hardwood Flooring,
Parquetry Floors,
Wood Carpets,
—AND—
ENGLISH TILE FLOORS.
—o—
Designs and Estimates furnished on application.



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SAN FRANCISCO, CAL.

The * California * Architect * and * Building * News

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ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, AUGUST 15, 1889.

IT is not often that trade journals pay attention to matters entirely out of the line for which said journals were established. In the issue of July 27th, of the *American Architect*, will be found a very able editorial in regard to the late trouble in this City between the Musician's Union and the Military Authorities. It says:—"The Trades Union in San Francisco came into a collision with a force which they will probably find less amiable and easy of circumvention than the civil law. The 4th of July Committee offered $6 00 per day for each musician, instead of $8 00, the amount paid on previous occasions. The Musician's Union thereupon issued orders that none of its members be allowed to play on that day. It happened, however, that among the musicians who were expected to take part, were the members of the three regimental bands, who, although they belonged to the Musician's Union, were regular enlisted men in their several regiments of militia. Upon their failure to appear for duty, the colonels of their regiments took up the code of militia regulations to inquire into the duty, of enlisted musicians. As the officers concisely put the case "If some new-military body has more power over any part of the military force stationed in San Francisco than the commander-in-chief, it is a better time to learn it now than to wait till an emergency" arises, and they or other similar societies array themselves against the law and the officers appointed to administer the same." The *American Architect* thinks a salutary example should be made of the first offenders for so gross a military fault.

(The findings of the Court Martial were very much in keeping with the spirit of the above extract, as the leaders were dishonorably discharged and a fine imposed besides. Appeal, however, is being prepared for executive clemency.—Editor *California Architect.*)

VALUE of sunshine.—A physician in New York reports, that during an epidemic of diphtheria in that city, there were five times as many cases on the shady side of the street as on the sunny side.

COMPETITION in laying artificial stone pavements has brought about the usual result. Low prices means the use of poor materials, not only in pavements, but in every thing else. Years ago, when cement sidewalks were first laid, people were slow to believe that they would last a quarter of a century and show but little wear from the thousands passing over them. Yet, there are pavements that have been used half of that time, on one of the most traveled portions of Kearney street, and the noticeable wear would not average an eighth of an inch. At that time, we believe, the price was about twenty cents per square foot. Numerous patents were taken out for various ways of laying the artificial stone pavement, and then the competition began. The price was reduced to 15 cents: then by one half of a cent at a time, down to 13 cts. This price was regarded as the very lowest that it was possible to lay a pavement. But still competition cut under that figure and walks have been laid as low as 10 cents a square foot. One enterprising individual on Market street, just below Sixth, used ashes instead of gravel in making the concrete bed. With a great flourish he proclaimed that his patent excelled them all, and $20,000 was wanted for the same for this city alone. It was but a few months after being laid, that the utter worthlessness of ashes instead of gravel was thoroughly proven, and a short time ago, it was necessary to replace the sidewalk entirely. It is so every time. Grind the price down to 10 cents, and you will have a 10 cent sidewalk. All over the city, sidewalks are crumbling to pieces that have been laid but a short time, many of them less than a year; while those put down by such men as Geo. Goodman, E. L. Ransome and a few others, have stood the test of more than 10 years, and the walks are as good to-day as when first laid. If property owners would consider that there is but $20 difference between a first class job and a 10 cent sidewalk, that one will last an ordinary lifetime, and the other but a few years, surely it would seem that no hesitation should be shown in choosing the better article. It is absolutely impossible to lay a good pavement at 10 cents, or even 12 cents, per square foot, and use gravel and cement as they should be used. Note how the cheap walks are laid. Gravel is used in the proportion of 1 part gravel and about 2 parts of earthy matter, the presence of which utterly precludes a good concrete for the foundation. Even with this cheap mixture, the contractor seeks to get off by making it not over an inch and a half in thickness. On top of this, a mixture of sand and cement is placed, and then the top is merely washed with a thin coating of cement. In one year the sidewalk is useless and people begin to condemn the cement sidewalk. Let owners figure on 15 cents per square foot for their pavements, give the laying of them to responsible parties only, and our word for it, they will never regret the difference in cost.

SO far the proceedings of the International Congress of Architects, whose sessions were held in Paris, commencing June 17, do not amount to much. A paper was read by M. de Baudot, the subject of which was "Teaching of Architecture." The views taken by the speaker, according to the *American Architect*, were unfavorable to the system pursued at the Ecole des Beaux-Arts, and he argued very effectively in favor of a more practical training for young architects, which should remove from them the reproach of being able only to make handsome water-color drawings. After the paper was read, considerable discussion ensued, the opponents of M. de Baudot's views being in a decided majority. By a little sharp practice, the Convention finally dodged the issue with great discretion, by adopting a resolution to refer the matter to the next Convention which is not likely to be held for another ten years, at least.

The only other matter of professional interest, was that of requiring architects to pass an examination and receive a diploma before allowing them to practice. Arguments, pro and con, were freely indulged in, and the Convention dodged the issue in the same manner as above.

San Francisco Chapter American Institute of Architects.

The regular monthly meeting of the Chapter was held in their rooms, 408 California St., on Friday, August 2d. W. P. Moore occupied the chair. There was a very good attendance of the members.

The following named were nominated for officers for the ensuing term: President, Seth Babson; Vice-President, G. W. Percy, W. J. Cuthbertson, W. P. Moore; Secretary, O. Everett; Treasurer, J. M. Curtis; Trustees, Wright, Pissis, Percy, Gash, Bestor, Moore.

Applications for membership were received from D. L. Williams and F. Williams, both of Portland, Oregon.

An amendment was offered to the By-Laws by which the night of meeting is to be changed to the second Friday of the month.

The members of the Technical Society were invited in from their meeting room to listen to a paper read by John Gash, entitled, "The Stone Age." The paper was well received by those present, and an interesting discussion ensued in regard to stone and the causes that lead to its deterioration.

The thanks of the Chapter were extended to the speaker for his able address.

The Mechanics' Fair.

ARRANGEMENTS are in active progress for the opening of the Mechanics' Fair on the 27th of the present month. It will last to October 5th. From the extent of the preparations made, the next exhibit will be superior to any its predecessors. We are in hopes that the exhibit of building materials, finished as well as raw materials, will be such as to command the attention of strangers. We understand the Chapter of Architects have a committee on this subject, who are working harmoniously with committees from other associations, and we trust their efforts will be successful. Especially is it desired to have a complete line of building stone from the various quarries all over the coast. These should be accompanied by a certificate of chemical analysis from some well known assayer or chemist. Mechanics should show what they can do and the one who produces the longest thick shaving, and the longest thin shaving should each be entitled to a medal. We will give our customary review of all articles connected with the building interests.

A Dwelling House Elevator.

VERY few people like to climb stairs. If such a thing were possible and practical as an elevator in an ordinary private house, costing to erect and operate not so much as to put it beyond the means of an average house-owner, it would undoubtedly be a boon. A Berlin inventor has proposed a plan of "a simple and inexpensive elevator for private dwellings," which is worthy of mention. It is on the principle of the inclined railway, and the motive power is furnished by the city water, which is applied in the cellar; each flight has its separate chair, so that, for example, one person can ascend from the first to the second story while another is on his way from the second to the third, or still another is descending from the fifth to the fourth. The chair, being only the width of a human body, requires but little space, and still leaves a free passage for any who wishes to walk up or down, instead of riding. It is set in motion by a simple pressure upon one of its arms, while after it has been used it slides back to the bottom step, its descent being regulated in such a manner that the carrying of a passenger is a matter of entire safety. The motive power is, of course, more or less expensive, according to the cost of water, this being, it is stated, in Berlin at the rate of a little more than one-tenth of a cent only for each trip.

They have a fire-brick trust in England. And yet Englishmen call this country the land of monopolies and trusts. Those who live in glass houses should not throw fire bricks.—*Western Architect and Building News.*

Away From Home for News.

AN extract from the *North-Western Lumberman* will be interesting reading to those on this coast connected with the interests represented. Truly we have to go away from home for news, but, in this case, the *news* is a series of mistakes:

"Pacific coast lumbermen have been behind the times in some respects, but they are beginning to adopt improved methods, and from now on they will doubtless manufacture and sell lumber to better advantage. The band saw is being established in that region, and the dry kiln is making its way. It seems singular that coast lumbermen should be so slow to adopt improvements demonstrated to be of great value in other parts of the country; but it is a fact that strong pressure was required to get the band saw introduced in the manufacture of redwood and fir lumber, and it is of comparatively recent date that the feasibility of drying redwood was recognized. About a year ago a few kilns were put in at Stockton, San Jose and other points, and a few months ago the first one was put in at San Francisco. Now they are going in quite numerously through California, Washington and Oregon. The advent of lumbermen from fields east of the coast has resulted in various innovations in operations, and continued improvements and increased energy may be looked for."

Etching Saw Blades.—Please inform me how saw manufacturers do fancy etching on the sides of steel saws? How could I put on a lion's head, with my name around the same?—B. A., Toronto, Ont.

Answer. Saw manufacturers have the design and lettering engraved first on a copper plate by a competent engraver, by usual methods. This is done so as to read the same as the finished saw in appearance (not reversed, as printing-plates are done.) One or more impressions are then taken on a copper-plate press, with an ink that has had added to it some bitumen, or acid-resisting resin with beeswax. These impressions should be made on a thin, even paper, and the ink is afterwards transferred from this print on to a polished steel plate. Diluted nitric acid being put on the steel, the general surface is etched away, so that the letters and ornamentation stand up in relief instead of being sunk, as they are in the copper plate. The steel plate is then cleaned off, and is printed from in like manner to produce impressions for transferring to the saws. These impressions have the letters and ornamentation *white* on a black ground. If several impressions of the copper plate are transferred to the steel plate side by side, and etched, then each sheet printed from the steel plate will supply several transfers, when cut apart, for use on as many saws, thus economizing labor very considerably. If any of the transfers on steel or saw should be incomplete—not thoroughly protecting the surface, some asphaltum varnish, or shellac varnish with a little lampblack in it, can be applied with a camel's hair brush to the bare parts, to make them safe. The transfers on the saws are then etched, though not so deep as the first transfer on the plate, and the result is a duplicate of the original copper plate, with black letters, etc. Care must be taken to neutralize any traces of acid remaining on the saws when they are cleaned off, to prevent rusting after they are laid away. If this inquirer desires to decorate but one saw for himself, he must use ordinary methods of engraving. Cover the saw with an asphaltum varnish, draw through that with a steel point, or etching needle, the design he wishes, and then apply diluted nitric acid (acid, 1 part; water 4 parts) with a feather or camel's-hair brush until the design is etched black enough to suit him; wash off with water, then with turpentine, and lastly with soda solution. He will probably find it difficult to draw his lines just as he wishes them over the coarse grinding of the surface of the saw. —*Manufacturer and Builder.*

Architectural Picture-Making with Pen and Ink.

This book is handsomely illustrated with 32 large plates in size 12 x 18 inches. We have copies of this work on sale, which will be furnished at publishers price, $4.

Palliser's Quarterly for one year in conjunction with the California Architect, Price for the two $4.

DESIGN FOR CITY DWELLING—Huerne & Everett, Architects.

A Tin Roof.

After the brand of tin has been selected for a roof, there yet remains the question of how it shall be worked by the tinner in forming the roof. Two leading styles of tin roofs are recognized. One of these is known as "Flat Seam," or "Flat Lock," roofing, and the other is designated by such terms as "Standing Seam," or "Standing Groove," roofing. These two styles are not necessarily in competition with each other, for one of them is particularly adapted to flat or level roofs, while the other is better for use on roofs having a considerable pitch. In some parts of the country, tinners do not seem to be acquainted with standing seam roofs at all, and use the flat seam on all occasions.

Flat seam roofs are laid by locking the sheets together on all four edges alike, and soldering, the result being one huge sheet covering the entire surface of the roof. As the sheets are laid, they are securely fastened to the roof by nailing through them under the edges turned up for the locks, or preferably by the use

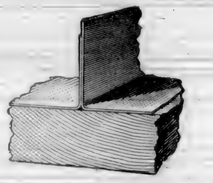


Fig. 4.—Edges of sheets turned up—first operation in laying a Standing Seam Roof.

of flat cleats. After laying, the seams are pounded flat and soldered. Such a roof is best for flat surfaces, but where a pitch of a half inch to the foot, or greater, can be obtained, better results are secured by laying the roof standing seam, which is illustrated in detail.

Standing seam roof is variously laid, and in the space of this pamphlet we can do no more than indicate the more common methods, and illustrate one of them. The sheets are first joined in the shop in long lengths by locking and soldering well on the upper side. The long strips are then rolled up and taken to the building. The strips are placed up and down the roof, and are united at their edges by the kind of joints that give the name to the style of roofing, namely standing seams. The construction of these joints is illustrated in figures 4, 5, 6, 7. Either of the sizes of sheets before mentioned may be used in a standing seam roof, and each of them may be worked in either of two ways; that is, either the wide or narrow way. Probably the larger number of standing seam rods, the country over, are laid the 20-

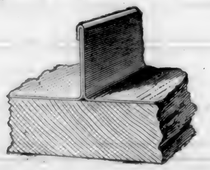


Fig. 5.—The high edge bent over the lower the second operation.

inch way of the sheets whichever size of plate is used. Different roofers prefer different methods, and in all cases more depends upon the intelligence with which the work is done than upon which way of the sheet the roof is laid, or of the size of the sheets. In the same way the height of the standing seam varies from $\frac{3}{4}$ of an inch minimum to $1\frac{1}{2}$ inches maximum. In the diagrams which we have introduced in this connection, we have employed the size of seams to which a large majority of tinners are accustomed to work.

STANDING SEAM ROOFS: 14x20 PLATES.

Many roofers claim that a better roof can be made of 14 x 20 plates than of 20 x 28. It costs a little more to lay a roof of the 14 x 20 size than it does of the 20 x 28 size, owing to the greater number of seams. In our estimation locality or custom has much to do with the use of the two different sizes. The 14 x 20 plates can be used for standing seam roofs in two ways. The more desirable way is by laying the sheets the 14 inch way, as illustrated in Fig. 1.

Using the tin in the manner shown in Fig. 1, as compared with the plan of working the sheets the other way about, requires more cleats and nails, as well as labor. The figures in the engraving represent the net surface of each sheet when laid the 14-inch way, and finished with a standing seam 1 inch in height. The cross locks are calculated $\frac{5}{8}$ of an inch wide.

PUTTING TIN TOGETHER.

Figure 2 shows how the sheets are formed and put together in lengths preparatory to laying them on the roof.

STANDING SEAM ROOF, 20 X 28 PLATES.

Figure 3 shows the appearance of a Standing Seam Roof laid, of 20 x 28 sheets, and represents the net surface of each sheet when laid the 20-inch way.

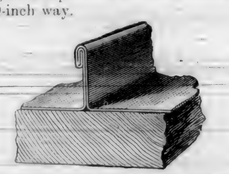


Fig. 6.—The top turned over the second time forming the double seam.

If two roofers figure to lay a roof of 20 x 28, and one lays it the 20-inch way he cannot lay it as cheaply as the one who would lay it the 28-inch way. But the 20-inch way makes the *better roof*.

ADVANTAGES OF A STANDING SEAM ROOF.

Where there is enough slope or fall to the roof, we recommend that the standing seam be used, and the same run down as far as within 5 inches of the level of the gutter water line, and that the cross seams be well soldered.

The advantage to be derived from the standing seam is an allowance for a greater amount of expansion and contraction than from the flat seam; as flat seams being soldered, make the entire roof practically a solid sheet.

We show in Figs. 4 to 7, inclusive, the method of making a standing seam. Fig. 4 shows sheets formed, or the edges turned up; Fig. 5 shows the first seam turned; Fig. 6 shows the seams double-locked and closed, and Fig. 7 shows the seams double-lock, closed, with paper under a standing seam roof, also showing cleat in finished seam.

CLEATS FOR A STANDING SEAM ROOF

Are made of tin about $1\frac{1}{2}$ wide by $4\frac{1}{2}$ long, and they should be placed at intervals of not more than 14 inches, and should always be used of style as shown in Fig. 8.

Two good sized barbed wire nails should be used for holding the cleat in place. Nailing through a single thickness of tin is not enough to hold the work in place. —Always cover the heads of the nails and prevent them coming in contact with the roof covering. These considerations give rise to the form of cleat illustrated in Figs. 8 and 9.

Empire Sheathing paper under a flat or standing seam tin roof, as under all metal roofs, is an advantage. Fig. 7 illustrates the

Fig. 7.—Paper under a Standing Seam Roof; also showing cleat in finished seam.

combination, and also shows the form of cleat illustrated in Figs. 8 and 9 in position.

GUTTERS.

Have the tin carefully put together, and the seams well soldered. Have the strips well cleated to the boards, and see that the gutters run up high enough to be above the water line. For gutters we recommend the IX thickness.

FIRE WALLS.

Have the Fire-Walls thoroughly covered with tin, which should be strapped or fastened to the walls every twelve inches.

SOLDERING.

We recommend the use of Rosin only as a flux in soldering,

and after soldering all Rosin should be carefully cleaned from the surface, otherwise it will appear after roof is painted." Half and Half" solder (a mixture of half tin and half lead) is the quality most suitable for roofing purposes.

100 square feet standing seam roofing should not take less than 3 pounds solder; 100 square feet flat seam roofing requires 7 pounds solder, which amount should be rigidly insisted upon to properly solder roof.

PAINTING THE ROOF.

The best paint for the purpose is composed of:—

7 pounds Prince's Metallic Paint, dry.
1 gallon Pure Linseed Oil ($\frac{1}{2}$ Boiled and $\frac{1}{2}$ raw.

The above amount will cover 500 square feet.

The substitution of Benzine or Fish Oils for the Pure Linseed Oil should not be allowed.

The roof will last longer and be less liable to rust if painted on the under surface before laying, and should be so painted in every instance. It should also have two coats of paint on upper side as soon as the roof is laid and soldered. It is a good plan to put one layer of Empire Sheathing paper under the tin to serve

Fig. 8.—Cleat with double nailing flange and cap.

as a cushion for same, and to deaden the noise made by the rain falling on the tin. This also prevents the annoyance of condensation on the under side, which frequently causes such a drip as to make it appear that the roof leaks.

A year after the first painting the roof should be painted again, and then a good roof will only require painting once in five years.

THE NUMBER OF SQUARE FEET A BOX OF ROOFING TIN WILL COVER.

For flat seam Roofing, using 1-2 inch locks, a box 14x20 size will cover about 192 square feet and for standing seam, using 3-8-inch locks, and turning 1 1-4 and 1 1-2 inches edges, making one inch standing seams, it will lay about 168 square feet.

For flat seam roofing, using 1-2-inch locks, a box of 28x20 size will cover about 399 square feet and for standing seam, using $\frac{3}{8}$-inch locks and turning $1\frac{1}{4}$ and 1 1-2 inches edges, making 1-inch standing seams, it will lay about 365 square feet.

Every box of roofing plates (IC or IX 14x20 or 20x28 sizes) contains 112 sheets.

Fig. 9.—Same cleat, with cap covering the nail heads.

SUGGESTIONS TO THOSE SPECIFYING TIN ROOFING.

In view of the foregoing, we would suggest to architects desiring to specify the best roofing tin and selecting our guaranteed brands, that the following precautions be taken in the wording of their specifications:

1st. That the name of the brand be written down in full, "Gilbertson's Old Method" or "Merchant's Roofing" or "Camaret."

2d. Every sheet to be stamped not only with the name of the brand, but also the thickness to be used—IC or IX.

If either of the above-named brands be used as a standard, and a cheaper brand be inserted in the same specification, there is, of course, little or no chance of our plates being used. Furthermore, after a specification has been so written as to allow inferior brands to be used—and very possibly the imperfect or waster sheets of same—and the roof commences to leak or show defects (as it would undoubtedly do in a short time), the specification is looked up, and our brands are condemned, when, in fact, they have never been used upon the roof in question.

We are prepared to prove that we were the first to introduce guaranteed plates and stamp every sheet with the name of the brand and thickness; and having also done away with the imperfect or waster sheets to further protect architects who wish to specify, and property owners who want to use the best, we feel that we have a right, under these circumstances, to ask that our guaranteed brands shall not be specified along with other brands in the market, which are inferior in quality, coating, weight and assortment.

We are at all times ready to afford any further information desired on this subject.

Samples of our "Gilbertson's Old Method" and "Merchant's Roofing" and "Camaret" brands of guaranteed Roofing Plates mailed on application. Merchant & CO., Philadelphia.

Mothers as Wage-Earners.

FOR years the world has been on a moral crusade against the employment of children in mines and factories, while the far greater evils that result from the mothers going out as wage-earners have attracted comparatively very little attention. Labor, within certain limits, is good for the child, giving it a wholesome moral discipline, and training it for the business by which it it is to earn its livelihood; but when a married woman has to neglect her natural duties for the responsibilities that properly belong to the other sex, it is time for humanity to protest in the name of her offspring. No one individual can fulfill satisfactorily the double or, I should say, the triple function of bearing and rearing children, and providing for their maintenance. I am a laboring woman myself, and have met with some success as a bread-winner; and I know the conditions of performing this function satisfactorily are quite incompatible with those arduous and important duties which make such heavy demands upon every conscientious mother, especially among the poor. In the homes of the very poor there are no hired servants to keep the household machinery running smoothly while the mistress is away. The wife of the laboring man is frequently cook, nurse, house-maid, laundress—all in one; and if she must go out as a bread-winner besides, what is to prevent the domestic engine from running off the track and getting itself hopelessly ditched?

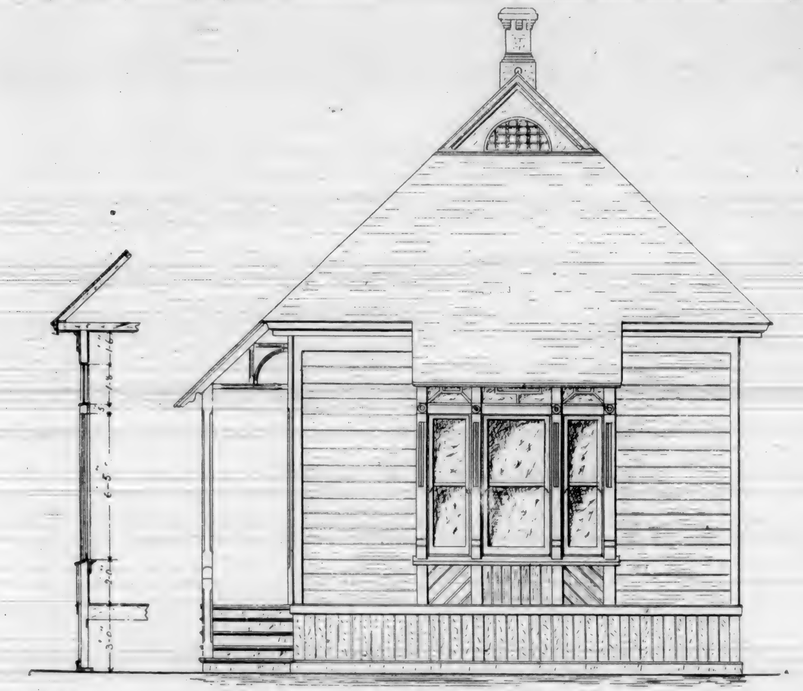
Of the two evils, if both are evils, I am persuaded that it is better that the child should go out to labor than the mother. Liberty, uncurbed by the check-rein of parental restraint, is a more than doubtful blessing for the loss of which the child that takes its mother's place in the shop or the mill is more than compensated by the advantage of having her care at home.—*Eliza F. Andrews.*

A Good Thing for Boys.

MANUAL training is one of the few good things that are good for everybody. It is good for the rich boy, to teach him respect for the dignity of beautiful work.

It is good for the poor boy, to increase his facility for handling tools, if tools prove to be the things he must handle for a living afterward. It is good for the bookish boy, to draw him away from his books. But, most of all, it is good for the non-bookish boy; it shows him that there is something that he can do well. The boy utterly unable, even if he were studious, to keep up in book knowledge and percentage with the brighter boys, becomes discouraged, dull and moody. Let him go to the work-room for an hour, and find that he can make a box or plane a rough piece of board as well as the brighter scholar, yes, very likely better than his brighter neighbor, and you have given him an impulse of self-respect that is of untold benefit to him when he goes back to his studies. He will be a brighter and better boy for finding out something that he can do well. Mind you, it is plaining the board in the presence of other boys who can no longer look down upon him when they see how well he can plane. He might go home after school and plane a board in the bosom of his family, or go to an evening school to learn to plane, without a quarter part, nay, without any of the invaluable effects upon his manhood that it will have to let him plane side by side with those who in mental attainments may be his superiors.—*Selected.*

We will send Palliser's Quarterly for one year (price $3.00) and the California Architect (price $2.00)—the two for $4.00.



A NEAT COTTAGE—Plan on Opposite Page.

Decomposition of Stone.

DR G. W. HAWES, in a report to the United States Government says: There are many more factors which determine the value of stone for purposes of construction than are often considered in the elementary treatises upon this subject, and the rules laid down are often determined by the local circumstances. A more extensive study of building stones frequently vitiates the rules which apply in limited areas. It is, for example, stated that, in order to determine whether a stone will withstand the action of the weather, one should visit the quarry and observe whether the ledges that have been exposed to the weather are deeply corroded, or whether these old surfaces are still fresh. This is not a fair criterion, because the applicability of such a test is modified by geological phenomena. North of the glacial limit, all the products of decomposition have been planed away and deposited as drift formation over the length and breadth of the land. The rocks are therefore in general, quite fresh in appearance, and possess but a slight depth of cad or worthless rock. The same classes of rock, however in the South are covered with the rotten products resulting from long ages of atmospheric action. They may be rotten to great depths, and the removal of the worthless rock is often difficult. This is due to the circumstances that no agencies have here operated to scrape off and remove the loose material from their surfaces in recent geological time.

There are other peculiarities of decomposition regarding which too absolute rules have been laid down. Pyrites is considered to be the enemy of the quarryman and constructor, as it decomposes with ease, and stains and discolors the rock. But here, too, there are features which very seriously modify the effect of this decomposing substance. Pyrites, in sharp, well defined crystals, sometimes decomposes with great difficulty. If a crystal or grain of pyrites is embodied in soft, porous, light colored sandstones, like those which come from Ohio, its presence will with certainty soon demonstrate itself by the black spot which will form about in the porous stone, and which will permanently disfigure and mar its beauty. If the same grain of pyrites is situated in a very hard, compact, non-absorbent stone, the constituent minerals of which are not rifted or cracked, this grain of pyrites may decompose and the products be washed away, leaving the stone untarnished.

Again, some of the constitutional elements of rocks are so frequently found in a decomposed condition that they are considered to be deleterious, when present in large quantity, on account of their well-known tendency to decompose. For example, olivine indicates a very marked tendency to decompose, as indicated by the vast accumulations of serpentine, which are so frequently found to be a result of its decompositions; but the circumstances which in past time has brought about this decomposition may have been very different from those which indicate that it will decompose under the present influences. We wish to bring prominently forward that we consider that a decision as to the probable action of the agents producing decomposition in rocks should be largely dependent upon careful microscopic examination of the structure of the rock. Our experience has demonstrated that a rock of a given character, as regards ultimate composition and mineral constituents, may be easily affected by the weather if its constituent minerals, as indicated by their microscopic structure, are so fractured that they are laid open to atmospheric agencies through rifts, no matter how small, while the same stone, with the same constituent minerals are sound, whole. and impermeable, as indicated by the microscopic structure.

In the old world, where immense cathedrals, planned long ago, have been in the process of construction for hundreds of years, it has not been uncommon to see portions of the building fall into decay before the structure was finished, and the process of restoration often consumes large sums of money while the process of construction is yet going on. It thus very frequently happen that a variety of stones is used in the construction of the same building, because in this process of construction experience is gained indicating inapplicabilty of the stone used for durable structures. In this case it is experience alone which finally dictates the most suitable material, and even to this day, here in America, there is no other criterion to apply to a building stone save the test of experience; and the result is that buildings can be pointed to which, like those old, immense structures before referred to, are already crumbling while yet in the process of construction.

Colors of Stone in Building.

A STUDENT of architecture in Boston, went to the professor of architecture in the Institute of Technology in that city and said: "Why is it that the new cathedral on Washington street has such a pale sallow look?"

"That is it," he said, "it is pale and sallow. The stone is of a grey color, not very light, neither very dark. The trimmings are of a whitish cast. Still there is not a great distinction between the two. This fact, as much as anything else, has to do with the failure on this great building."

The buildings of this country do not compare in artistic elegance with those of France or Germany. The reason is not on account of the amount of money expended, but is rather because of the lack of education of our architects. The mercantile rather than the artistic instincts are developed in a member of this profession. Not but that the artistic element is present to a certain extent, but so much of the business success of an architect is dependent upon his trade instincts that it often happens that the artistic development suffers through an enlargement of the importance of the business feature. Thus is it that very little attention has been paid to the proper blending and selection of color in building. Especially is this true where the color selections are depended upon the arrangement of materials as they naturally exist. This same grey stone that is used in the cathedral in Boston has been used successfully elsewhere through a different arrangement of color. The trimmings in some cases have been of brownstone, the grey of the body being affected advantageously thereby, and the brownstone itself being enriched by its contrast with the body color. This same greystone has been successfully used with buff Amherst sandstone and Nova Scotia stone. The result of the use of these warm tinted materials is that an agreeable contrast is afforded between the grey body stone and that of the trimming. The warmth of the trimming stone is emphasized by the cold grey tints of the main structure, and the latter is brought into agreeable effect through its association with other material. In one instance there is the neutral body and the enriched tone of the trimmings. It makes the difference between a building which is weak and flat in appearance and one which is vigorous, imposing and artistic.

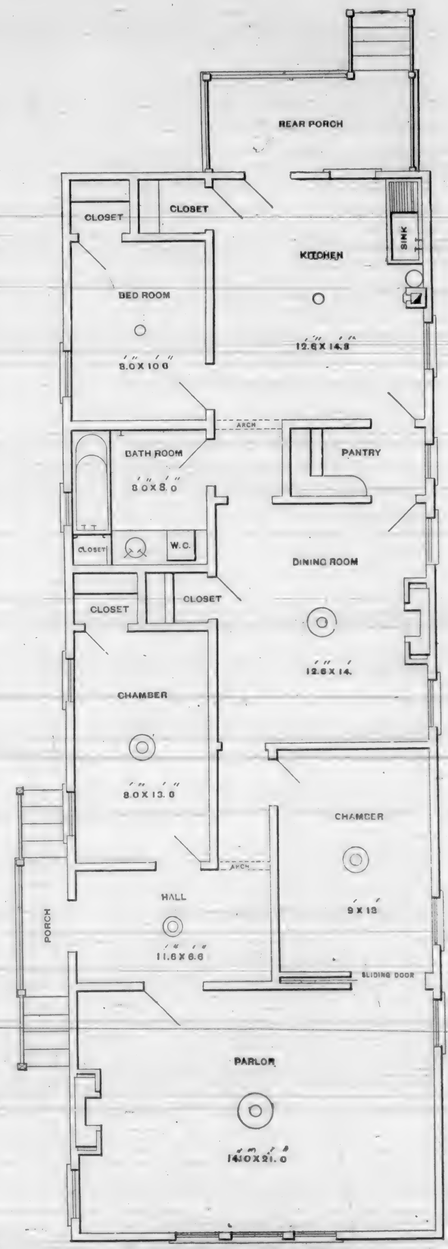
The union of brownstone trimmings with the grey granite body was a favorite combination with Mr. Richardson. He used it in the libraries at North Easton, Quincy and Woburn. Also in the city hall at Albany. It is much better to use a single tint of stone than two cold colors one of which will emphasize the weakness of the other. In the court-house at Pittsburgh, and the Chamber of Commerce at Cincinnati, grey stone is used exclusively, and the result is highly satisfactory. Relief is afforded by the carving and the recesses in the openings and by moldings, decorative and otherwise.—*Stone.*

A new building law in force at Berlin requires the submission of the plans of every building to the Government. Only two-thirds of the lot can be used for the building, which must not be higher than the width of the street. The stairs must be of stone. After the building has been finished it must lie idle for six months to let the walls dry. Then the health officer inspects the structure and decides how many people may sleep in each room.

Measuring Brickwork.

PROBABLY the best way to measure brickwork, in the opinion of an American writer, is by the dimensions. The unit of measurement in this case is not important. The cubic foot or yard is employed to some extent, but. the perch of 25 cubic feet and the superficial rod in brickwork one brick thick are often used. Unfortunately the term "rod" has no very definite significance. Two hundred and seventy-two and a half feet super, and one and a half bricks thick, 16½ feet square or 27½ square feet and one brick thick, 16½ square feet and 63 square feet, are all termed "rods." Under these circumstances it would probably be of advantage if the cubic foot or yard could be made, the standard unit of measurement for brickwork throughout the country.

It may be added that the number of bricks contained in any piece of built brickwork may be approximately ascertained by deducting one-tenth for the volume of mortar.



PLAN OF A NEAT COTTAGE.

☞ Note our offer for books in connection with California Architect—See page 115.

Remarkable Discoveries in Egypt.

The two large July gatherings held in London, England, by the Victoria Institute are considered to have been of much importance. The President, Sir G. G. Stokes, Bart., President of the Royal Society took the chair at both, and on each occasion the members crowded the large hall engaged to the doors. At the first meeting, Professor Sayce's account of his examination of the library brought by Amenophis III. from Assyria to Egypt 34 centuries ago, was given. The Lord Chancellor delivered an eloquent speech on the occasion, and M. Naville, the discoverer of Succoth-Pithom, Bubastis, and other places of great historical importance in Egypt, characterised the discovery described by Professor Sayce as one of the most important, and perhaps really the most important, of this century; and the Victoria Institute's members were not slow in recognising the value of their fellow-member's work. At the second meeting, the members assembled to welcome M. Naville on his arrival in England after his discovery of the site of Bubastis, and his exploration thereof. The business of this meeting was commenced by the election, as members, of several who had applied to join the Institute as supporters, including His Excellency Count Bernstorff, and several Australian and American associates, after which M. Naville himself described his own discoveries at Bubastis, for the first time in England,—his last visit to England having been previous to those discoveries. The Society of Arts have most kindly placed their apparatus at the disposal of the Victoria Institute, he showed, by lime-light, the photographs he had made on the spot.

M. Naville commenced by quoting the phophecy of Ezekiel against Egypt, because it contained the names of the leading buried cities, the recovery of the records of which he is so desirous to obtain; and here we may be permitted to digress for a moment to call attention to the fact that the authoress of the last published work in regard to the East declares that prophecy had not been fulfilled according to the prophet's words. Strange that the greatest and most successful Egyptian explorer of modern times should go to this very prophecy for light, to enable him to find that which others had failed to discover! Taking the last city named, he described how he found Pibsseth-Bubastis, how each day's excavating work brought him new relics, new inscriptions: how he found Rameses II., in the 19th dynasty, had as usual, blotted out the names of previous Pharaohs, and put his own name on everything, even on the statue of a Pharaoh of the 4th dynasty; and how, by careful comparison, aided by the fact that Rameses II. had not been quite thorough in his appropriations, he had discovered which Pharaoh of the 4th dynasty the statue represented. He came to the conclusion that Bubastis was founded at least as early as in the reign of Cheops, between whom and Pepi, of whose influence there were traces, 500 years intervened, 800 years after there was a transformation of the city in the 12th dynasty; in the 14th dynasty there was the invasion of the Hyksos or shepherds, who, from the statues of great beauty found, and from other evidences, must have been a highly cultivated people, who, he considered, must have come from Mesopotamia. Dr. Virchow considered that their monuments represented Turanians, and Professor Flower considered them to represent people of a Turanian or Mongoloid type, but that did not mean that the population itself was Turanian. Their worship and language was of a Semitic type, but the statues of their kings showed that they were not Semites. M. Naville added: "It was then what it is still now; and I believe that the conquest of Egypt by the Hyksos is not unlike what would happen at the present day if the population of Mesopotamia overran the valley of the Nile; you would have masses, in great majority of Semitic race, speaking a Semitic language, having a Semitic religion, and being under the command of Turks, who are not Semites but Turanians."

M. Naville, having referred to the head of a Hyksos King, which he had sent to the British Museum, added that he had found two statues of Apepi, the Pharaoh of Joseph, and inscriptions in regard to the Pharaoh of the Exodus, and many others of high interest. But it would be impossible to refer to the mine of interesting matter in this paper, and we can only congratulate the members of the Victoria Institute on possessing it: it is certainly worth the whole year's subscription to possess this one paper. M. Naville, in concluding, said: "I cannot dwell at great length here on the events of the Exodus, yet I should like to mention that the successive discoveries made in the Delta have had the result of making the sacred narrative more comprehensible in many points, and in one especially in showing that the distances were much shorter than was generally thought. I consider, for instance, it important to have established that Bubastis was a very large city, and a favorite resort of the king and his family. It is quite possible that, at the time when the events preceding the Exodus took place, the king was at Bubastis, not at Tanis, as we generally believed."

Sir George Stokes, Bart., having conveyed the thanks of the members to M. Naville, a short discussion took place, during which Captain Francis Petrie, the Honorary Secretary, pointed out that what Professor Sayce's paper has done as regards Assyrian and Babylonian history, M. Naville's had done as regards Egyptian history. They were papers advancing the practical work of the Institute in investigating philosophical and scientific questions, especially any questions used by those who unhappily sought to attack the Bible in the name of Science; and both would appear in the Journal, which would be presented at the Institute's Rooms, 1A, Adelphi Terrace, to all members and associates who were now on the list, or who might apply to join after the 10th of July. The President, members and associates then adjourned to the Museum, where refreshments were served.

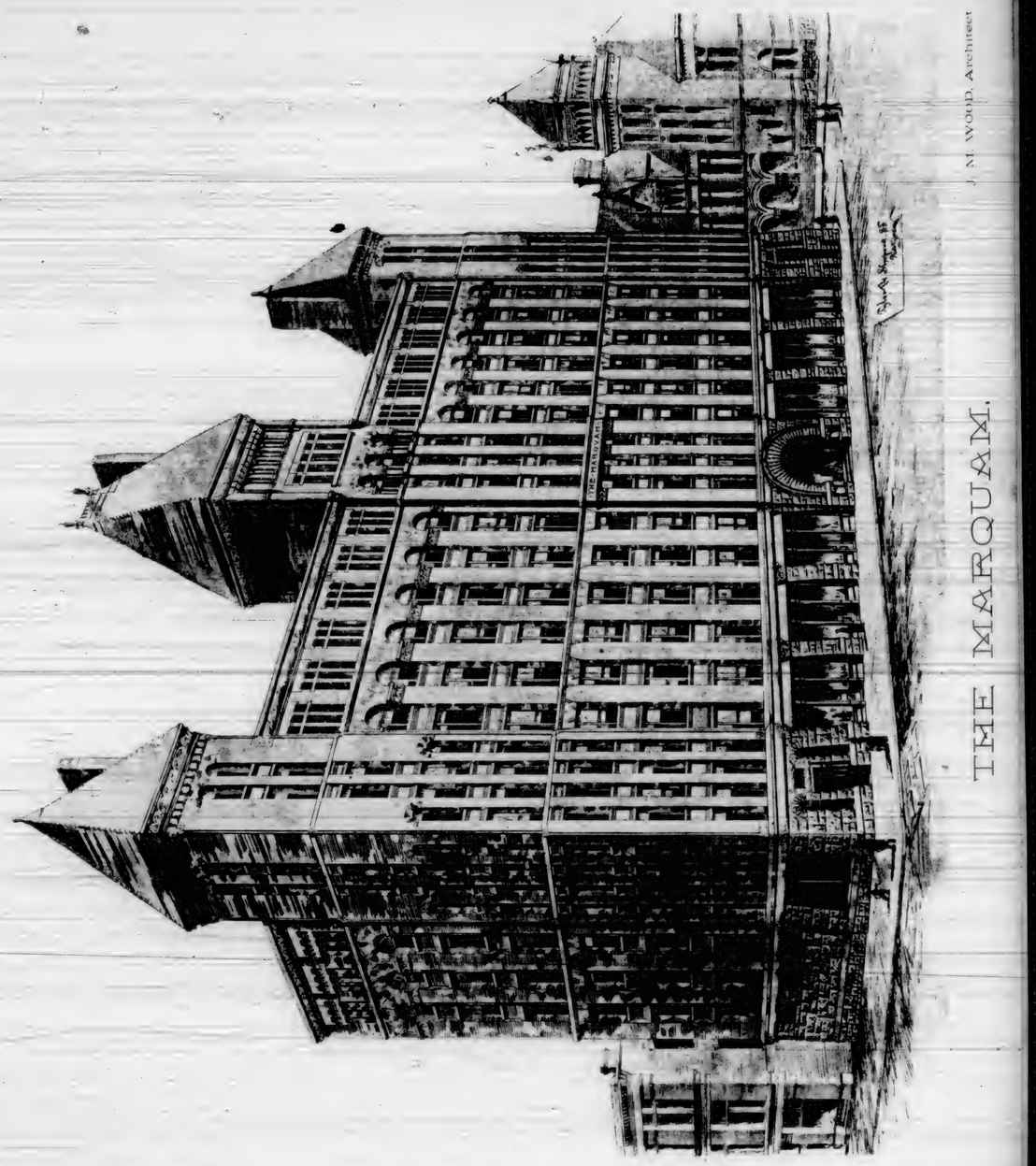
To Keep Iron Pipes From Rusting.

A SIMPLE and economical way of tarring sheet iron pipes to keep them from rusting is the following, suggested by a correspondent of the *Gas Light Journal*: The sections as made should be coated with coal tar and then filled with light wood shaving, and the latter set on fire. It is declared that the effect of this treatment will be to render the iron practically proof against rust for an indefinite period, rendering future painting unnecessary. In proof of this assertion the writer cites the example of a chimney of sheet iron erected in 1866, and which, through being treated as he describes, is as bright and sound to-day as when erected, though it has never had a brushful of paint applied to it since. It is suggested that by strongly heating the iron after the tar is laid on the outside, the latter is literally burnt into the metal, closing the pores and rendering it rust proof in a far more complete manner than if the tar itself was first made hot and applied to cold iron, according to the usual practice. It is important, of course, that the iron should not be made too hot, or kept hot for too long a time, lest the tar should be burnt off. Hence the direction for the use of light shavings instead of any other means of heating.

Don't Neglect The Plumbing.

A writer in the *Sanitary Engineer* says: At this season of the year it is usual for the man of the house to walk and carry himself with modest mien; if, under other circumstances, he might be bold enough to have something to say upon domestic affairs or utter a word of advice, he will find silence to be golden at the present; and why? Because for the last month house-cleaning has taken possession of what was once home; painters, calciminers, carpet-beaters, scrub-women, etc., jostle him rudely and look upon him with superb disdain as he meekly goes and comes. His wife, the partner of his joys and sorrows, seems a changed being, as, with a towel for headgear, she issues her imperious edicts. This is well, and in a sanitary point of view, much of it is necessary and beneficial; but usually it is but seldom that any thought is given to the plumbing or sewerage of the house. The plumbing, Tennyson's book is expected to run on forever. New curtains must be had, furniture upholstered, new carpets purchased, but not one thought is given the faithful servant that brings to the room the luxury of hot and cold water, the ever-ready basin, sink, bath, or closet—a luxury to the householder when in good health, a necessity when sick. The plumbing is left year after year without examination, repairs grudgingly allowed or not made at all, and this man who pays more for the carpet for the parlor than the origina' plumbing of his building cost, will be first to bewail the cost of needed repair. It never occurs to him that closets, traps, and waste-pipes, no matter how well adapted for the work, will in time need cleansing. Sewer connections may be broken by settling of the building, and that abomination authorized by the law and maintained by ignorance and incapacity, the disease breeder, the enlarged slop-pail in the yard, called the catch-basin, generating and belching forth the gases arising from its gathered filth—that needs cleansing, and needs it often.

It should be the mission of plumbers' associations to educate the people in this direction. The press will aid them. Here is work for their sanitary committees. The field is before them. Let this city take the lead.



Treatment of Ceilings.

The ceiling is perhaps the part of an apartment that calls most loudly for decoration, and no architectural feature is more susceptible of it, where it might be introduced with more effect, or give more pleasure to the inmate; yet this feature we almost invariably neglect. We naturally look up for beauty; however lovely the earth, the sky, both night and day, presents us with greater charms; we are cheered in our outdoor hours by its ever-changing picture, for which a flat white plane is a miserable substitute in our indoor life. To houses of the very highest class these remarks will apply, for it is a feature which has not had its due proportion of attention, in point of decoration, in any class of buildings, from the cottage to the palace. There certainly can be no more fitting place for decoration in the habitation of a being created upright. Can inconsistency be more extreme than that presented by thousands of apartments, where a rich, elaborately decorated carpet is under the feet, and a plain, dead, flat ceiling above? In the interior of Arabian buildings the ornaments almost invariably become richer, more delicate and minute, as their height from the floor increases, and the most exquisite productions of the artist are lavished on the ceiling. With respect to the form, the curve is at all times preferable to the flat, though the latter by various means is capable of great beauty also. No very great additional height is required in order to have a curved ceiling, as, whether coved or segmental, the rise need not be very great. For rooms of great pretension there is no form more noble and natural than the vault and dome, particularly the latter, whether hemispherical or segmental, as far as it suits the plan or can be adopted by pendentives or otherwise. It is the best substitute for the blue vault of the sky, the starry concave of the heavens. It was a fine idea of the builders of the mosque of St. Sophia at Constantinople —a conception in advance of ours—to make the curve of its dome so flat that it should seem to correspond with that of the sky, and be a portion of the firmament. We want an enlarged, improved, enriched, and at the same time inexpensive system of interior decoration, for domestic and ecclesiastical, commercial and other buildings, in our Anglo-Classic styles.

For churches, collegiate and other buildings in the Pointed style, we have examples in our cathedrals and other buildings, which prove that the genius of interior decoration was once among us, as well as the taste to employ it. At Henry the Seventh and King's College Chapels; the oratory at Beauchamp Chapel; the Temple Church; Wolsey's Hall, Hampton Court; Christ Church Hall, Oxford; Westminster Hall, and others, we have ceilings and roofs that might vie with any that Europe could show. For assistance in evolving a system of Classic decorations we might look to some parts of the Continent. Exterior decorations there has sometimes probably been carried too far, a few Continental edifices exhibiting ornaments so minute and fragile as to seem at least unfit for exposure to the weather in any climate. But this could not be said of interiors. The Moorish or Morisco-Spanish architecture suggests to us what richness might be produced by very simple means; their icicle pendents, inlays, and casings, and purely geometrical and imaginative ornaments, are very effective, and with them they often produce greater results than we, with all nature to imitate, have attained to. But the art of interior decoration was better understood and more successfully practiced in the great age of modern art in Italy, and indeed throughout the Middle Ages than at present in any country. We never had any decoration, to be compared with the mural and fresco paintings of the Italians, and there is probability in the supposition that their system was obtained from remains of the ancients, which time or violence has not spared to us. Beside the curved and richly emblazoned ceilings produced by the Italians, and the pictorial embellishment of their wals, ours might symbolize poverty itself. The ceilngs of the principal apartments of a Roman, Genoese, Venetian or Florentine palace were considered as most important features, and on their design and execution the highest talent was employed. In ecclesiastical buildings the contrast with ours would be still greater. Whilst the interior of the churches of Italy glow with every rich hue of the marble quarry, and are virtually galleries of art, what is the aspect of ours?—*London Architect.*

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In our list below will be found the names of books on architectural and mechanical subjects, the prices of which have been greatly reduced if taken in connection with the CALIFORNIA ARCHITECT. Old subscribers will be given the books at a large discount, so that they may feel that no favoritism is shown. It will be noticed that some of the books are given free to new subscribers.

	Price of Book.	With *Cal. Architect.*
Mechanics' Geometry	$5 00	$5 75
Monckton's National Carpenter	5 00	5 75
Cottages	1 00	2 40
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Burns' Ornamental Drawing	1 00	2 40
Manual of Drawing for Carpenters	3 00	4 00
Steam Engine Catechism	1 00	2 40
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Modern Low-Cost Houses	50	2 00
A Cosy Home	25	2 00
California Picturesque Architecture, No. 1	3 00	4 00
California Picturesque Architecture, No. 2	3 50	4 25
The Artisan	5 00	5 75

The following are justly recognized as standard publications. Some of them are perfectly new works, but we make the same general reduction:

	Price of Book.	With *Cal. Architect.*
Tredgold's Carpentry	$7 50	$8 25
Building Construction, 3 vols	14 00	14 75
Picture-Making with Pen and Ink	4 00	5 25
New American Architecture (Palliser's)	4 00	5 25
Palliser's New Quarterly, per year	3 00	4 00

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PLASTERING by a new process of hardening so as to make it available for the construction of floors in place of wood, has been brought before the French Academy of Science by M. Jute, says an exchange. A mixture of six quarts of plaster of good quality and one part of finely sifted, recently slaked white lime is employed like ordinary plaster. After it has become thoroughly dry, the object manufactured from it is saturated with a solution any sulphate whatever whose base is precipitated in an insoluble form by lime. The sulphate especially recommended for the purpose are those of iron and zinc. In order to obtain the maximum of hardness and tenacity it is necessary to temper the limed plaster well in as brief a space of time as possible, and with no more water than is strictly necessary.

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CITY BUILDING NEWS.

Ashbury near Franklin, two-story frame. Owner, E. N. Harmon; architect, Cupeland and Pierce; contractor, J. G. Adams; cost, $6,585; signed, July 12; filed, July 15; limit, 90 days; cost, $1,200 framed; $1,900 outside finish on; $1,085 completed; $1,400, 35 days.

Bryant avenue near Twenty-fifth street, two one-story frames; Architects, Salfield and Kohlberg; contractor, Tho. Elam; $6,500.

Broderick and Clay, plumbing, etc. Owner, W. S. Rainey; architect, T. J. Welsh; contractor, W. F. Wilson; cost, $1,498; signed, June 17; filed, July 9; $500, roughed on; $398, completed; $400, 35 days.

Broderick and Clay, painting, etc. Owner, W. S. Rainey; architect, T. J. Welsh; contractor, M. J. Donovan; cost, $1,200; signed, June 17; filed, July 9; $300, primed; $300, first coat of varnish is on; $300, exterior is second coated; $300, 35 days.

Bryant near Decatur, two-story frame. Owner, T Derham; architect. M. J. Welsh; contractor, Aug. Discher; cost, $4,750; signed, July 17; filed, July 18; $925, framed; $925 brown coated; $925 completed; $975 35 days.

Brannan near Third, three-story frame.. Owner, A. W. Mogenstern; architect, H. Geilfuss; contractor, H. J. Knapp; cost, $6,150; signed, July 25; filed, July 27; $660 basement walls up; $660 framed; $660 roofed; $660 partitions set; $660 brown mortared; $660 white mortared. $650 completed; $1,540. 35 days.

Bay near Powell, carpenter work. Owner, Britton & Rey; architect, H. C. Macy; contractor, Jas. M. Kelley; cost, $13,196; signed, July 17; filed, July 19; 75 per cent. as work progresses, balance, 35 days when completed.

Broderick near Hayes, to build. Owner, Pauline Fahey; architects, Salfield & Kohlberg; contractor, R. H. Ely; cost, $1,580; sureties, Bennett Bros. and J. T. C sgrove; $1,000; signed, July 12; filed, July 22; limit, 60 days; $580 brown coated; $600 completed; $400, 35 days.

Bay near Powell, brick-work etc. Owners Britton and Rey; architect, H. C. Macy; contractor, Geo. D. Nagle; cost $3,014; signed, July 15; filed, July 19; 75 p r cent. as work progresses; balance, 25 per cent when completed.

Bryant near Twenty-fifth, to build. Owner, Mary Grotheer; architects, Salfield & Kohlberg; contractor, Thos. Elam; cost, $5,100; sureties, Chas F. Doe and W. A. Meeker; $2,100; signed, July 30; filed, August 1; limit, 60 days; $1,400 framed; $1,900 partitions set; $1,225 completed; $1,275, 35 days.

Capp near Twenty-second, shooting. Owner, R. P. Sanchez $800.

Clay and Leavenworth, two, two-story frames. Owner, Jos. Wolf; architects, John & Balrzynski; contractor, F. V. Steinmann; cost, $10,550; signed, July 22; filed, July 24; $2,000 framed; $2,000 partitions set; $2,000 outside finished; $1,912 50 completed; $4,637 50, 35 days.

Clay and Leavenworth, plastering. Owner, Jos. Wolf; architects, John & Bairznski; contractor, Arthur O'Brien; cost, $1,195; signed, July 22; filed, July 24; $500 rough mortared; $400 white mortared; $295, 35 days.

Clipper near Sanchez, one story frame. Owner, P. A. McDonald; architect, M. J. Welsh; contractor C. Peterson; cost; $1,400; signed, July 16; filed, July 17; $350 framed; $350 brown coated; $350 completed; $50, 35 days.

Clay near Polk. Additions. Cost, $1,200.

Castro and Eighteenth, five frame buildings. Owner, W. Fredricks; architect, W. Mooser; contractors, Plumm & Martin; cost, $18,500.

Clay and Leavenworth, plumbing, etc. Owner, Jos Wolf; architects, Jonn & Balrzynski; contractor, Louis Huf; schmidt & Bros; cost, $1,320; signed, July 22; filed, July 24; $850 rough work is done, $440 accepted, $330, 35 days.

Castro and 18th, five frames. Owner, M. Frerichs; architect; Wm. Mooser; contractors, Plumm r & Martin; cost, $17,500; sureties, Frederick Kniffl ich, $10,000; signed, July 24; filed, July 24; 75 per cent. as work progresses, balance, 35 days.

Castro and Twenty-fifth streets, alterations; Owner, John H. Delamore; architect, Townsend & Wyneken; contractor, P. J. Collins & Son; cost, $1,272; signed, July 16; filed, July 19; $354 brown coated; $300 most outside done; $300 completed; $318 36 days.

Ellis near Mason, plumbing etc. Owner, H. Matthews architect, H. T. Bestor; contractor, John T. Gray; cost, $2,175; signed, July 31; filed, August 2; $900 rough work in $725 completed; $850 35 days.

Eddy and Van Ness avenue, plumbing, etc. Owner, Isabella M. Kane; architects, Schulze & Meeker; contractor, Wm. F. Wilson; cost, $8,947; sureties, G. P. Ayers and James Conlin. $1,500; signed, July 17; filed, July 20; limit, Dec. 11, '89; $1,500 rough pipes in; $1,457 completed; $990, 35 days.

Ellis and Webster, three, two-story frames. Owner, Lang Bros; architects, John & Balrzynski; contractor, Wm. Plume; cost, $10,250; signed, July 23; filed, July 24; $2,000 framed; $2,000 partitions set; $1,700 outside on; $2,000 accepted; $2,550, 35 days.

Ellis near Webster, plumbing, etc. Owner, Lang Bros. architects, John & Balrzynski; contractor, F. Koch; cost, $1,200; $450 rough work is in; $450 accepted, $300, 35 days.

Ellis and Polk streets, building. Owner, Wm. John; architects, John & E lrzynski; contractor, F. W. Kern; cost, $6,900; signed, July 17; filed, July 17; $1,000 framed; $1,500 partitions set; $1,175 outside finish on; $1,500 ready for painting; $1,725, 35 days

E. one-half lot 25 block 27 Fairmount Homestead Association, one-story building. Owner, Frank T. Barris; architect; T. F. Mitchell; contractor, Thos. F. Mitchell; cost, $1,440, signed, July 6; filed, July 10; limit, September, 15; $360 framed; $360 brown coated; $360 completed; $360 35 days

Eighteenth, near Guerrero, one-story frame. Owner, J s. F. Schuppert; architect, A. C. Lutgens; contractor, Jos Kennedy; cost, $2,910; signed, July 11; filed, July 12; limit, sixty-eight days; $600, roof ready to board; $960, first coat of plaster is on; $400, second coat of plaster is on; $682.50, completed; $727.50, thirty-five days.

Eleventh, near Harrison, one-story building. Owner, Hanna Doyle; architect and contractor, Thos. F. Mitchell; cost, $1,359; signed, July 6; filed, July 10; limit, Sept. 15, 1889; $337.50, framed; $337.50, brown coated; $337.50, accepted; $337.50, 35 days.

Ellen near Scott, alterations, etc. Owner, Kate King; architect, M. J. Welsh; contractor, E. Stroth; cost, $2,950; signed, July 25; filed July 30; $737 50 first story framed; $737 50 brown coated; $737 50 completed; $737 50, 35 days.

Eddy and Van Ness avenue, five two, and one three-story frames. Owner, Isabella M. Kane; architects, Schulze & Meeker; contractor, Fred. E. Libby; cost, $30,897 75; sureties, C. C. Rohlffe and C. A. Warren, $11,000; signed, July 9; filed, July 20; limit, Dec. 1, '89; $3,615 rough framed; $3,000 floors laid etc; $9,675 outside done; $4,010 25 second coat plaster; $5,348 completed; $7,724 50, 35 days.

Ellis, near Franklin, three-story frame. Owner, Albert Knorp; architects, John & Balrzynski; contractor, Dan Chisholm; cost, $5,200; signed, July 8; filed, July 9; $1,000, framed; $1,000, floors laid, etc.; $1,000, white coated; $900, accepted; $1,300, 35 days.

Folsom and Twelfth, three-story frame. Owner, Bernard S hmidt; architects, John & Balrzynski; contractor, F. W. Kern; cost, $6,140; signed, July 9; filed, July 9; $1,000, framed; $1,200, floors laid, etc.; $1,200, outside finish on; $1,295, accepted; $1,585, 35 days.

Filbe t, near Mason, brick and carpenter work. Owner, W. Block; architects, Salfield & Kohlberg; contractor, Louis Weisman; cost, $5,900; sureties, John Diemer and John Staude, $5,900; signed, June 26; filed, July 9, limit, 65 days; $1,500, framed; $1,400, brown coated; $1,500, completed; $1,500, thirty-five days.

Filbert, near Mason, plumbing, etc. Owner, W. Block; architects, Salfield & Kohlberg; contractor, Thos. Clark & Sons; cost, $660, signed, June 28; filed, July 9; $300, rough work done; $385, completed.

Filbert, near Mason, painting, etc. Owner, W. Block; architects, Salfield & Kohlberg; contractor, J. A. Kemp; cost, $486; signed, June 28; filed, July 9; limit. 14 days; $250, two coats of paint are on; $235, completed.

Filbert near Dupont, to build a frame and a tering three frame buildings. Owner, G Torre et. al.; architect, Wm. Mooser; contractor, J. B. Cavaglia; cost, $8,500; sureties, G. Rocca and G. Cappeser, $5,000; signed, July 15; filed, July 16; 75 per cent as work progresses; balance, 35 days.

Fleury near Noe, three-story frame. Owner, Karl Clundt; architect, Caspar Zwierlein; contractor, Caspar Zwierlein; cost, $8,000; signed, July 22; filed, July 30; $1,250 enclosed; $1,250 brown coated; $1,250 white coated; $1,250 completed; $3,000, 35 days.

Fourteenth corner Harrison, repairs to three two-story frames Owner, B. Leddy; day's work, $2,500.

Folsom and Twelfth streets, two-story frame. Owner, Henry Meyer; architect, A. C. Lutgens; contractor, Arthur J. Ahern; cost, $4,000; sureties, Wm. A. Meeker, $3,000; signed, July 18; filed, July 19; limit, 80 d ys; $700, framed; $750 first mortar; $750 second mortar; $800, completed; $1,000 35 days.

Guerrero and 24th, alterations, etc. Owner, F. M. Bryne; architect, B. K. Henriken; contractor, A. C. Hussey; cost, $1,600; signed, July 16; filed, July 23; $300 lathed; $450 sashes hung; $450 tr mmings hung; $400, 35 days.

Guerrero near Fourteenth street, two two-story frames. Owner, Charlotte A. Lynch; architect, A. J. Barnet; contractors, Brennan Bros.; cost, $4,867; sureties, Frank P. Latson & J. J. McKinnon, $5,000; signed, July 18; filed, July 19; limit, 90 days; $2,250, roof boards on; $2,000, brown coated; $2,000, first floor is on; $1,000, completed; $2,417, 35 days.

Grove near Lyon, two flats. Owner, Chas. P. Ingram; architects, Donovan & Williams; contractor, Donovan & Williams; cost, $3,420; signed, July 9; filed, July 17; limit, October 15; $950 framed; $850 brown coated; $850 completed; $870 35 days.

Geary near Laguna, painting, etc. Owner, I. R. Hall; architect, Geo. E. Voelkel; contractor, F. Klatt; cost, $1,600; signed, July 1; filed, July 18; $200 first coat; $300 varnished; $300 inside done; $200 completed; $600 35 days

Greene between Webster and Fillmore, to build. Owner, Barclay Henley; architect, Samuel Newsom; contractor, R. M. Murray; cost, $7,225; signed, May 29; filed, July 15; $4,083 75 framed; $1,083 75 roofed; $1,083 75 brown coated; $1083 75 outside primed; $1,083 75 completed; $1806 25, 35 days.

Guerrero corner Twenty-fourth, two two-story frames. Owner, Hoffman; builder, Geo. Houson, $6,000.

Geary street, Nos. 21, 23, 25, alterations etc. Owner, Andrew M. Davis; architect, Copeland & Pie ce; contractors, Richson & Gale; cost, $1,640; signed, August 2; filed, August 2; limit, 40 days; 75 per cent. as work progresses, balance, 35 days.

Grove near Baker, two-story frame. Owner, Mrs. Stapleton, builder, Geo Houston, $3,000.

Grove near Baker, to build. Owner, Josephine Stapleton; architect, Geo. Houston; contractor, Geo. Houston; cost, $2,685; signed, July 31; filed, July 31; limit, 100 days; $660 shingled; $660 brown coated; $680 white coated; $685 35 days.

Howard Court near Howard, two story frame. Owner, John F. Boyd; architect, B. McDougall & Son; contractor, P. Griffin; cost, $3,194; signed, July 17; filed, July 19; $500 chimneys to top; $550 chimneys topped etc,; $794 brown coated; $550 completed; $800 36 days.

Hampshire corner Twenty-fourth, eight two-story frames (16 flats). Owner and builder, J. G. Weir, $25,000.

Hayes between Gough and Octavia, plumbing etc. Owner, Albert Abrams; architect, Salfield & Kohlberg; contractor, S. Ickelheimer & Bro.; cost, $770; signed, July 31; filed, August 2; $300 rough plumbing in; $270 accepted; $200, 35 days.

Hayes near Webster, building. Owner, John W. Reid; architect, Geo. A Bordwell; contractor, A. Guilbert; cost, $4,000; signed, August 3; filed, August 3; $750 rustic on; $750 brown coated; $750 white coated; $750 completed; $1,000 35 days.

Hayes near Gough, to build Owner, Albert Abrams and Wife; architect, Salfield & Kohlberg; contractor, C. L. B. Jones; cost, $7,777; sureties, C. H. Stafford & J. J. Mc Kinnon, $7,775; signed, July 31; filed, August 1; limit, 100 days; $830 ready for first floor; $1,500 framed; $2,000 brown coated; $1,500 completed; $1,945, 35 days.

Howard near Twenty-first additions. Cost, $600

Howard near Twentieth, additions. cost, $800.

Harrison near Sixth, alterations etc, Owner, Frank Meyers; architect, A. J. Barnett; contractor, J. W. Mayder; cost, $3,100; sureties, Hugh R. Jones & Matthew Harris $1,500; signed, July 16; filed, July 17; 75 per cent. as work progresses; balance, 35 days.

Jersey and Douglass, two-story frame. Owner, Michael Welsh; architect, A. C. Lutgens; contractor, Wm. G. Aickley; cost, $1,470; sureties, Wm. C. Sickley and Jason Springer, $1,000; signed, July 20; filed, July 22; limit, 60 days; $225 roof boards on; $400 first coat of plaster on $477 50 completed; $367 50, 35 days.

Jones near Bush, building. Owner, C. T Sanders; architect, Chas. I. Havens; contractor, John Finnes; cost, $9,150; signed, July 24; filed July 27; $1,700 framed; $1,700 brown coated; $1,700 hard finished on; $1,750 completed; $2,300, 35 days.

Kearny and Washington, excavating, etc. Owner, Louis Schultz; architects, Wm. Mooser; contractor, L. B. Sibly; cost, $2,700; sureties, N. T. Smith and Martin Martin; $1,700; signed, July 10; filed, July 15; 75 per cent as work progresses; balance 35.

Kearny near Washington, concrete cement, etc. Owner, Louis Schultz; architect, Wm. Mooser; contractor, Chain & Gilette; cost, $6,370; sureties, C. Franzoi and W E Davis, $3,500; signed, July 10; filed, July 16; 75 per cent. as work progresses, balance 25 per cent. 35 days.

Lapidge street, three-story frame. Owner, Paolo Arata; architect, Curlett & Cuthbertson; contractor, L. Cuneo; cost, $4,500; signed, July 17; filed, July 19; 75 per cent as work progresses; balance, 35 days.

Larkin near Geary, brickwork etc. Owner, Samuel Brodek architect, Salfield & Kohlberg; contractor, Jacob Wagener; cost, $3,700; sureties, J. McInerey and R. Doyle, $3,700; signed, July 8; filed, July 16; limit, 80 days; $1,500 basement walls up; $1,200 completed; $1,000 35 days.

Lott near Fulton, building. Owner Thos. McGilvery; architect, E. Worden; contractors, Worden & Virgin; cost, $1,650; sureties, J. F. Kennedy and A. J. Turner, $600; limit, September 1, '89signed, June 29; filed, July 17; $415 rustic on; $415 windows hung; $416 completed; $415 35 days.

Larkin, between Geary and O'Farrell, carpenter work. etc. Owner, Samuel Brodek; architects, Salfield & Kohlberg; contractor, Thos. H. Day; cost, $13,987 50; sureties, Otto H. Greenwald, $3,500; signed, July 20; filed, July 29; limit, 90 days; $2,500 framed; $2,000 enclosed; $1,500 partitions set; $15.00 doors hung; $2,987 50 accepted; $55,000, 35 days.

Larkin, between Geary and O'Farrell, painting. Owner, Samuel Brodek; architects, Salfield & Kohlberg, contractors, Commary & McDonald; cost, $1,460; sureties, S. H. Brown, $1,460; signed, July 24; filed, July 29; $450 painted; $645 completed; $365, 35 days.

Merchant near Montgomery, brick and iron work. Owner, Henry Winter; architects, Pissis & Moore; contractor, Geo. D. Nagle; cost, $18,800; signed, July 24; filed, July 27; $2,000 ready first story joists; $3,500 ready second story joists, $3,500 ready fourth story joists; $3,500 completion of walls; $1,500 completed; $4,800, 35 days.

Merchant near Montgomery, carpenter work. Owner, Henry Winter; architects, Pissis & Moore; contractor, S. H. Kent; cost, $12,500; signed, July 24; filed, July 27; $1,500 second story joists are on; $1,500 fourth story joists are on; $3,000 floors laid; $3,000 completed; $8,200, 35 days.

Maple near California, additions, etc. Owner, Hospital for Children's Training School; architects, B. Mc Dougall & Son; contractor, A. Jackson; cost, $20,300; signed, July 26; filed, July 26; $2,000 brick work in; $3,000 roof boarded; $3,000 window frames set; $3,000 brown coated; $3,000 white coated; $1,225 completed; $5,075, 36 days.

Market, between Jones street and City Hall avenue, two one-story brick buildings. Owners, L. & M. Sachs; architects, Schmidt & Shea; contractor, R. Ringrose; cost, $7,000; sureties, W. Plume and D. Corkery; limit, sixty-five days; signed, July 19; filed, July 12; $1,750, rafters up; $1,750 brown coated; $1,750, completed; $1,750, thirty-five days.

McAllister and Jones, concrete foundation. Owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractors, Chatain & Gillette; cost, $6,000; signed, July 1; filed, July 11; $2,000, one-half of the work is done $2,500, completed; $1,500, thirty-five days.

Minna and 6th, to build. Owner, Mary E. Von Schroder architect, T. J. Welsh; contractor, J. F. Logan; cost, $36,897; sureties, Behrend Jonat and E. H. Warren, $18,000; signed, July 13; filed, July 22; 75 per cent. of work done, balance, 35 days.

Market, No. 718, 720, 722. Owner, A. M. Davis; architects, Copeland & Pierce; contractor, Geo. Richardson; cost, $14,810; sureties, E. O. and H. V. Deming; signed, July 19; filed, July 20; limit, 40 days; 75 per cent. as to the value of work done, balance, 35 days.

McLea's Court, No. 10, alterations etc. Owner, Aug. Vetter; architect, John & Balrznski; cost, $1,450; signed, July 15; filed, July 17; $400 framed; $300 rough mortared; $387 50 inside ready to paint; $362 50, 35 days.

McAllister, near Polk, excavating, etc. Owner, A. P. Rotaling; architect, Wm. Mooser; contractor, C. A. Warren; cost, $2,200; signed, June 15; filed, July 11; limit, twenty-four days; 75 per cent. to be paid as work progresses; balance, thirty-five days.

Market street, No. 1823, 1825, alterations. Owner, Mrs. M. F. S. Searles; architects, Schulze & Meeker; contractor; Richardson & Gale; cost, $4,004 25; sureties, E. O. and H. V. Deming, $4,100; signed, July 24; filed, July 29; limit, 40 days; $3,040 25 completed; $1,014, 35 days.

Montgomery near Merchant, stone work. Owner, Pacific Stone Company, ar hitects, Pissis & Moore; contractor, Geo. D. Nagle; cost, $ signed, July 29; filed, August 1; 75 per cent. as work progresses; balance, 25 per cent, 35 days.

Mission near Seventh, additions. Owner, Jonas, $800.

Mason near Eddy, repairs. Owner Prior; $880.

Nineteenth near Stevenson, additions, $800.

Norfolk between Eleventh and Twelfth, one-story frame. Owner, Doyle; contractor, Mitchell, $2,200.

Oak near Scott, frame. Owner, Jno. F. W. Postel; architect, H. Geilfuss; contractor, Rountree Bros.; cost, $3,100; signed, July 30; filed, August 1; $1,000 framed; $1 000 roofed; $1,000 partitions set; $1,000 brown coated; $1,000 inside finish on; $1,075 completed; $2,025, 35 days.

Octavia, between Grove and Birch, two-story frame. Owner, N. Brands; architects, Kenitz r & Kollofrath; contractor, A. McKay; cost, $2,200; sureties, H. C. Bennett and Thos. Clark & Sons, $2,200; signed, July 15; filed, July 29; limit, Nov. 1, '89; $810 first story joists up; $600 framed, $700 roofed; $700 ready to paint; $750 completed; $1,100, 35 days.

Oak between Pierce and Scott, four two-story frame. Owners, and builders, Rountree Bros; cost, $20,000.

Pine near Franklin, alterations, etc. Owner, H. L. Simon; architects, Pissis & Moore; contractor, James Geary; cost, $1,015; signed, July 29; filed, July 30; $400 rough mortared; $360 completed; $255, 35 days.

Plumbing. Owner, Boyd and Davis; architect, J. M. Curtis contractor, Wm. F. Wilson; cost, $2,950; signed, July 24, filed, July 25; limit, 5 days, 75 per cent. as work progresses, balance 35 days.

Pleasant near Jones, to build. Owner, John Dunn; architect, Salfield & Kohlberg; contractor, Chas. L. Jones; cost, $4,170; surety, J. W. Wesin, $4,170; signed, July 30; filed, August 1; limit, 70 days; $1,000 framed; $1,000 partitions set; $1,100 completed; $1,070 35 days.

Quinn near Valencia, additions. Owner, T. J. Murphy; contractor, R. P. Sanchez, cost, $850.

Sacramento near Broderick, to build. Owner, Emilie L. Pfaff; architects, Salfield & Kohlberg; contractor, Louis M. Weismann; cost, $5,000; sureties, John Staude and J hn Diemer, $5,000; signed, July 13; filed, July 24; limit, 75 days; $1,000 framed; $1,250, enclosed; $1,250 completed; $1,250, 35 days.

Sutter, No. 1321, painting. Owner, Marr Zimmerman; architects, Schmidt & Shea; contractors, Commary & McDonald; $1,310; signed, July 3; filed, July 10; 75 per cent, cent. as work progresses; balance, thirty-five days after.

Sansome, between Broadway and Vallejo, frame. Owner A Paladini; architects, Pissis & Moore; contractor, J. W Wissinger; cost, $4,950; signed, July 9; filed, July 10; $1,200, framed; $1,250, enclosed; $1,250, completed; $1,350; 35 days.

Steiner, near Fulton, two two-stories and alterations. Owner Richard Flaherty; architects, B. McDougall & Son; cost, $8,600; signed, July 8; filed, July 9; $1,500, framed; $1,500 roof boarded, etc.; $1,900, brown coated, etc.; $1,500, completed; $3,200, 35 days.

Sutter and Octavia, frame. Owner, Catharine M. Bee, architect, J. Marquis; contractor, J. B. Cogswell; cost, $11,250; signed, July 12; filed, July 15; $1,300 sheathing on; $2 320 outside frames set; $2,062 outside finish en etc; $2,064 completed; $3,000 35 days.

Steiner near Geary, three-story frame. Owner, Julia Fitzpatrick; architect, A. J. Barnett; contractor, Wm. Linden; cost, $5,516; sureties, Behrend and Thos. Learned, $3,000; signed, July 26; filed, July 29; limit, 90 days; $1,136 rough boards on; $1,000 brown coated; $1,000 first floor is on; $1,000 completed; $1,380, 35 days.

Six flats. Owner, Mrs R. J. Graham; architect, J. M. Curtis; contractor, R. P. Sanchez; cost, $6,975; sureties, Frank P. Doe and J. Wagner, $5,000; signed, July 12; filed, July 23, limit, 60 days; 75 per cent. as work progresses, balance, 35 days

Sansome between Pine and Bush, alterations. Owner, Col. Eyres; architects, Wright and Sanders, $20,000.

Sanchez between Fourteenth and Ridley, two-story frame. Owner, Mary E. Blake; architect, John M. Robertson; contractor, John M. Robertson; cost, $2,900; signed, August 1; filed, August 2; limit 80 days; $750 framed, $750 brown coated; $700 white coated; $700 completed.

Sixth avenue between K and L, one-story frame. Owner, Mr. Lampkey; contractor, Ward & Glackin, $1,500.

Twentieth, No. 445, alterations. Owner, Jerome Walsh; architect, Thomas O'Neil; contractor, Thomas O'Neil; cost, $1,150; signed, July 22; filed, July 29; limit, Sept. 22, '89 $400 enclosed; $400 brown mortared; $350 completed.

Twelfth near Folsom, two-story frame. Owner, H. Mein; contractor, A. Heron, $4,500.

Twenty-fourth near Howard, improvements. Owner, G. Pulchon; contractor, J. A. Dyer; cost, $3,500.

Twenty-second near Alabama, additions. Cost $1,000.

Twenty-fourth corner of Bryant avenue, additions. Cost, $600.

Turk, between Van Ness avenue and Franklin street, alterations, etc. Owner, Martin O'Dea; architect, Chas. I. Havens; contractor, Wm. Little; cost, $1,732; signed, July 11; filed, July 12; $600, brown mortar on; $682, completed; $450, thirty-five days.

To build a well. Owner, Boyd and Davis; architect, John M Curtis; contractor, Richard Trevaskis; cost, no price except ng so much per foot; signed, July 5; filed, July 8; first 50 feet, $6 00 per foot; second 50 feet, $3 00 per foot; third, $10; fourth, $12; fifth, $15; sixth, $15; next 100 feet $6; 125 feet $7. 150 feet of tunnel, $8 per foot, 200 feet $10, 250 feet $12, 300 feet $12.

Union between Octavia and Laguna, three-story frame. Owner, Louis C. Winkelman; architect, Shea & Shea; contractor, J W. Brodt; cost, $4,731; sureties, Patrick O'Connor and Albert Washburn; signed, July 15; filed, July 18; limit, 90 days; $885, enclosed; $888 brown coated; $888 hard finished; $888 completed; $1,179, 35 days.

Valencia near 22d, alterations. Owner, Mrs. D. M. Klempke; architects, B. Mc Dougall & Son; contractor, A. Klingenberg; cost, $7,574; signed, July 18; filed, July 25; $800 moved in position; $8 0 chimneys to top, etc; $1,380 50 framed; $1,500 floors laid; $1,500 completed; $1,893 50, 35 days.

Valencia near 18th, brick work. Owner, John J. Crowley; architect, John F. Kidd; contractor, James O. Sullivan; cost, $1,023; signed, July 25; filed, July 27; $560 walls up; $207 accepted; $256, 35 days.

Valencia near 18th, three-story frame. Owner, John J. Crowley; architect, John F. Kidd; contractor, John Doy e & Son; cost, $5,450; signed, July 25; filed, July 27; $1,000 framed; $900 partitions set, etc; $1,000 white coated, etc; $750 ready for paint; $800 completed, balance 35 days.

Valencia near Seventeenth, to build Owner, Thos F. Murray; architect, M. J. Welsh; contractor, J. H. McKay; cost, $12,152; signed, July 29; filed; July 30; $3,038 framed; $3,038 first coat of mortar is on; $3,038 completed; $3,038 35 days.

Valencia between Eighteenth and Nineteenth, additions, $800.

Valley and San Jose road, two-story frame. Owner, J. D. Rohrs; architect, H Geilfuss; contractors, Schutt & Kreckor; cost, $3,495; signed, July 10; filed, July 11; $82, framed; $924 partitions set; $624 outside work done, $52 inside finish on; $524 completed; $875 35 days.

Van Ness avenue and O'Farrell street, stone and iron work. Owner, P. W. Riordan; architect, T. J. Welsh; contractors, McGowan & Butler; cost, $21,400; sureties, C. A. Warren and D. Corkery, $10,000; signed, June 28; filed, July 9; 75 per cent. of value of work done as work progresses; balance, thirty-five days.

Webster near Grove, to build. Owner, Mrs. K. A. Adam; architect, T. J. Welsh; contractor, Allan MacDonald; cost, $4,425; sureties, Frank P. Latson and J. J. McKinnon, signed, July 25; filed, July 29; $1,000 framed; $1,000 brown coated; $1,225 completed; $1,200, 35 days.

Wall near Webster, two story frame. Owner, Henry Waas; architect, W. Winterhalter; contractors, Vegeler & Muller; cost, $2,485; sureties, Louis Schloh and J. F. Ortvster $2000; signed, June 26; filed, July 17; limit, 66 days; $600 roofed; 600 outside finished; $600 completed; $685 in 35 days.

Waller near Webster to build. Owner, F. D. Meyers; architect, A. J. Barnett; contractor, Wm. Linden; cost, $5,146; sureties, Frank P. Latson and L. T. Lewis $3,000; signed, July 29; filed July 31; limit. 125 days; $1,256 ro f boards on; $1,000 brown coated; $800 white coated; $800 completed; 1,200, 35 days.

Polo corner Iowa, additions, contractors, Ward & Glackin $500.

York near Twenty-fourth, two-story frame. Owner, Thos. Wright; contractor, Geo. Houston; cost, $2,200.

York, between 23d and 24th, to build. Owner, W. S. Wright architect, Geo. Houston; contractor, Geo. Houston; cost $1,815; signed, July 24; filed, July 25; limit, 80 days; $45 shingled; $454 brown coated; $454 windows in place; $454; 35 days.

York and Twenty-second, one-story building. Owner, Chas. Haves; architect, M. J. Welsh; contractors, L. Cuneo & Co.; cost, $1,090; signed, July 9; filed, July 10; $272.50, framed; $272 50, brown coated; $272.50, completed; $272.50, 35 days.

COUNTRY BUILDING NEWS.

SAN JOSE.

(Special to this Journal.)

Two-story frame building, corner Bassett and Old Market streets. Owner, J. Thwaits; contractor, F. Davis; cost, $4,000.

Cottage on Julian near Autumn. Owner, D. Noble; contractor, R. Summers; cost, $2,000,

Cottage on Seventh near Empire. Owner, E. A. Edson, built by days work; cost, $1,200.

Brick warehouse on San Pedro. Owner, William Buckley; contractor, R. Summers, cost, $4,000.

Dwelling on Eighth near San Fernando. Owner, A. Greenberg; architects, J. Lenzen & Son; contractor, A. C. Bates; cost, $3,250.

Fire engine house on South First. Owner, City of San Jose; architect, Theo. Lenzen; contractors, Mabury & Phillips; cost, $6,500.

One-story cottage on St. John near 14th. Owner, R. D. Pease; architect, J. O. Mekee; contractor, W. S. Boules; cost $2,293.

One-story cottage in the Baltz Subdivision. Owner, Nancy Benjamin; contractor, J. S. Wheeler; cost, $1,200.

Three-story business block on Second near Santa Clara. Owner, L. Archer; architects, J. Lenzen & Son; contractor, R. Summers, cost, $28,356.

Cottage on Auzerais avenue near First. Owner, J. J. Southeimer; architects, J. Lenzen & Son; contractor, J. J. Hill; cost, $1,850.

Two-story dwelling on Newhall. Owner, Mrs. M. M. Ayers; contractor, R. Summers; cost, $2,500.

Cottage on the Red Letter Tract. Owner, G. Perez; contractor, J. S. Wheeler; cost, $1,415.

One story cottage on Ninth near San Salvador. Owner, Misses Farney; architect, G. W. Page; contractor, P. R. Wells; cost, $2,000.

Los Gatos M. E. Church. Architect, G. W. Page; contractor, J. J. Hill; cost, $6,000.

Three story stone business block on First street. Owner, C. T. Ryland; architect, J. Lenzen & Son; contractor, R. Summers; cost, $40,000.

Three two-story and basement flats on Third street. Owner, Mrs. Reinhardt; architect, J. O. Mc Kee; contractor, A. Kelsey; cost, $15,850.

Two-story frame dwelling on Schiele avenue. Owner, J. A. Percy; contractor, G. W. Cadwell; cost, $2,500.

Six room cottage on San Augustine street. Owner, Hannah Prindiville; contractor, G. W. Gore; cost, $1,600.

Conservatory of Music and Chapel on the grounds of the University of the Pacific. Architect, Newsom; contractor, P. R. Wells; cost, $30,000.

Livery stable on the corner of Bassett and old Market street. Owner, M. M. Tinknam; architect, J. O. McKee; contractor, A. Kelsey; cost, $4,000.

Six room cottage on Seventh street. Owner and builder, E. A. Van Dalsem; plans furnished by J. L. Bothwell; cost, $2,400.

OAKLAND AND VICINITY.

A two-story frame business block is being put up at the northwest corner of San Pablo avenue and Isabella streets. The building is being erected by G. C. Campbell for S. Dewing and will cost $6,000.

W. G. McGinty and others have contracted with Jane E. Johnson to do the carpenter work on lots 16 and 17, Johnson tract Oakland, for $6,638 and W. B. Merrill to do the brick work on the same for $940.

G. N. Quinn has contracted with J. A. Remmel to erect a building on lot 11, Hirschfeld tract, Alameda, for $1,367.

Peter Peterson is the contractor for a building to be erected at the southeast corner of Alcatraz avenue and Adeline street for C. J. Dwyer to cost $4,550.

Thomas J. Pyne has agreed to erect a building for Ruth R Albrecht on lots, 7 and 8 west one-half of block M, Oak Park, Alameda for $3,970.

Geo. A. Bensemore is erecting for J. A. Remmel a building on East Choate street, near Railroad avenue, Alameda, to cost $2,000.

A contract has been recorded for R. M. Bryant with John Acheson to erect a building on the south side of University avenue, between Oxford and Shattuck avenues, Berkley, to cost $2,875.

On Market street, opposite Milton a six room cottage put up by H. E. Jones to cost about $1,900. A duplicate is being built by the same contractor on Thirtieth street, just east of San Pablo for C. Becker. A five room cottage is being erected by Mr. Jones on Thirty-first street near West, for a Mr. Reiley, residing near Martinez, to cost about $1,700.

John McLeon has just completed a cottage of seven rooms on the south side of Milton street near Market, to cost about $2,200.

P. F. Nelson is putting up a five room and basement cottage on the east side of Myrtle near Twenty sixth, for A. Rankin to cost about $1,500.

F. K. Shattuck has decided to tear down his old brick building on the south-west corner of Eighth street and Broadway early next spring, and he will erect a handsome modern building, at least three stories high, that will throw the Delger building in the shade. Mr. Shattuck is improving all his property, and is making many improvements in Oakland.

Buck & Judkins have contracted with Nettie Fife to erect a building on the corner of Eleventh avenue and East Sixteenth street, to cost $2,350.

Dr. W. C. Harrington has begun the erection of a handsome modern two-story residence on the northeast corner of Twenty-first street and Tenth Avenue. Robert Smillie is the contractor and the cost will be about $5,000.

It is reported that the Judson Iron Works will be extended. A twenty-four inch bar mill will be erected. This establishment will have the largest capacity of any on the coast.

It is stated on good authority that M. B. Curtis is soon to build a large business block on the corner of San Pablo and University avenues.

E. L. Clifton, who purchased two of the Wood's lots from Scotchler & Gottshall, is erecting thereon a $2,500 cottage.

F. C. Brougher has contracted to erect a building on the southeast side of Fifteenth street, between Seventh and Eighth avenues, for Mrs. Mary B. Watson, the price named being $1,550.

The contract for the erection of the new school building has been awarded to Thomas Downing of Mission San Jose, who has just completed the Warm Springs building. Contract price, $4,300 for main building; out-buildings, $95. Work will be commenced at once, and the contract calls for the completion of the house by October 10.

SAN JOSE.

J. D. Stewart has contracted to improve the residence of Frank Lacoste, on North Third street, for the sum of $3,675. Theodore Lensen is the architect.

Proctor Wells' contract for building the Conservatory of Music, Chapel, Library and Art Gallery, at the University of the Pacific, was filed in the Recorder's office Wednesday. The price is $28,490 and the building is to be completed by December 31, 1889, under a penalty of $5 a day.

A contract between James Farney and Proctor Wells was filed in the Recorder's office Wednesday, wherein the latter agrees to build for the former on the northwest corner of Ninth and San Salvador streets on or before October 1, 1889, a frame dwelling to cost, $2,752.

ALAMEDA.

Chas. Cuneo is having built a five room cottage on Benton street.

Mr. Hamilton will erect a large dwelling on Pacific avenue.

SANTA ROSA.

Col. McDonald is having erected a cottage on Mc Donald avenue.

Simpson & Roberts are erecting a factory building.

UKIAH.

Livernash & Dowling are having erected four brick stores. T. J. Ludwig is doing the work.

CAMP TAYLOR.

Jos. F. Bertrand is building a large hotel near this place. Wm. Schrof of San Francisco is the architect. It is being built by days work under the superintendency of Mr. Anderson and will cost nearly $8,000.

MODESTO.

Contract let to J. P. Allen for the erection of the M. E. Church. Amount $7,000; B. F Price of Philadelphia is the architect.

Carpenters not Wanted.

Since the great Seattle fire, this office has received numerous letters from carpenters inquiring as to the chance for work up north. The following from the "Post Intelligencer" will give ample information.

Carpenter work in Seattle, since the fire, has not been sufficient to supply the demand made by that class of mechanics. Great numbers of them have come here in anticipation of immediately rebuilding another wooden city, and are now disappointed. Work in that line began to cease within one week after the conflagration because the wood structures for tents and tent-roofs were all finished within that time. Just as this work was completed, and before any new and substantial wooden structures had been commenced, steamers came in from San Francisco, laden with hundreds of carpenters. They also flocked hitherward from the east, as far as Maine and Massachusetts, only to discover that work here in their line was at a temporary stand still, lasting for weeks, and which even now is not sufficiently active to give employment to all these throngs that still continue to come. The condition as above stated being apparent, several builders, contractors and carpenters were called upon, for more specific information on the subject. Mr. Henry Jones, contractor, said:

"I never was in a town where more carpenters applied for work within a given time. Since the fire I have had from forty to fifty new applicants each day present themselves for employment. About fifty came up from San Francisco on the last steamer, but others also came from Minneapolis, Chicago and Milwaukee. I have had as many as fifteen apply to me within half an hour."

"It will require from thirty to ninety days for builders to complete plans, get stone basements in and blocks under way so as to require carpenters and several other classes of skilled mechanics. The rush of carpenters is premature. Mechanics should have more sense than to over-run a city on the very heels of a fire."

A. Paulsen, another contractor said:

"About fifty new carpenters every day call on me for work. Some of them appear to be willing to work for any wages; but I have no work for them, and if I had, I want men who stick up for their wages. I think that not more than one half of these floating men are carpenters, although they claim to be such. Besides, it is strange that the city should be so over-run with new carpenters when the proposition is to build the new business portion with brick and iron. More than 1,000 carpenters have come here since the fire."

"It is not carpenters that we require for handling the rough lumber in building new wharves and docks. It is an old saying that a 'hatchet and saw and one day's work on scantling makes some carpenters.'"

Owen Thomas, a builder, being called upon, said: "There are too many in the city who pretend to be carpenters, but not enough mechanics. A man carrying tools, and a carpenter, are often horses of different colors. I suppose this fire will make 5,000 new carpenters. It is said that the building of the Coronado, at San Diego, made more men carpenters than the building of the Palace at San Francisco, which made many thousand. Perhaps the day is past for men to learn their trades as they used to do. Applications made on me last week for carpenter work, would average fifty a day. I hired many during the week and discharged about as many as I hired.

The way I have, from experience, found it to be, carpenters on the Pacific coast have more activity and energy in them than those from the east; but at most we have to hire them as they are and discharge them as we find them to be."

Mr. F. M. Wooderman who is constructing buildings at Gilman's wharf, says he has a daily average of forty carpenters, applying for work.

Mr. George Costen, was then called upon. He said: "The membership of the Seattle Carpenters' Union is steadily increasing, it being numerically stronger than any other labor organization in the city. We are willing and able to supply contractors with good carpenters, according to the nine-hour agreement entered into last spring by and between the union and contractors. Our organization is to assist good carpenters in getting employment and to prevent the incompetent from competing in our work. I think that local contractors should make a distinction in giving work to resident mechanics rather than those who come here among the floating population; and this will be the result if the building inspector requires good workmen, as well as good work in the buildings.

About one third of our capable carpenters are thrown out of work here by reason of the presence of poor ones, that continue to come. Shortly after the fire some unscrupulous contractor, recently from the east, published a notice in the Chicago *Inter-Ocean*, stating that 4,000 carpenters were wanted at Seattle. While they might help a contractor to get work done cheaply, it works an injury to the resident mechanics. Out of the 1,500 carpenters now in this city, not over 35 per cent. are employed. Of these, there are probably 500 who are poor workmen. Wages is $3 60 per day. Notwithstanding the influx, the best policy is to employ good men at nine hours and good wages.

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SAN FRANCISCO, CAL.

The * California * Architect * and * Building * News.

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SAN FRANCISCO, SEPTEMBER 15, 1889.

MR. George H. Wolfe, having no further connection with this journal, correspondents will in future please address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

IN the January number of this journal the announcement was made that a change in ownership had been made and that henceforth it would be managed by a company. This arrangement was satisfactory to some for the following reasons, as stated at the time.

"The publication of a journal devoted to the interests of architects and builders on the Pacific Coast is an important measure and is too self-evident to require the support of argument.

So far, in the history of California, the necessity for such a journal has been met only in the publication of the CALIFORNIA ARCHITECT AND BUILDING NEWS.

That journal, however, has hitherto been an individual enterprise, edited and managed by one still practicing the profession of architect, and therefore has not received that undivided and united support that would flow to a journal entirely free from all personal and professional entanglements."

Since January the journal has been under the management of an individual and has not dropped its personal character as was expected, neither has it assumed the tone which was hoped by many that it would take. It has been more of an advertising sheet than a medium of thought or intelligence.

With this number the architects themselves take control and will strive to make it a worthy organ of a great profession, to which all of the members, whether in this city, in Oregon, or elsewhere on the Pacific Coast, are invited to contribute any item on any subject relating to architecture or building.

Of this number we shall not say more than to ask your indulgence for any imperfections that may appear.

THE regular monthly meeeting of the San Francisco Chapter A. I. A. was held on Friday evening, September 6th In the neighborhood of a dozen members were present. Messrs. Franklin Williams and D. L. Williams of Portland were elected fellow members. The amendment to the by-laws, changing the evening for the regular meeting from the first to the second Friday in the month, was carried. The election of officers was postponed for two weeks, to which time the meeting adjourned in the hopes of having a more numerous attendance.

THE trustees of the Lick fund advertised about two years ago for competitive designs for the statuary provided for in Mr. Lick's bequests, to be erected in this city, to commemorate the early epochs in the history of the State. The proposed monument was to be well worth $100,000, and the premiums offered by the trustees were the execution of the work to the first competitor, $500 to the second, and $300 to the third.

Some twenty-five designs were submitted, but after many months delay the trustees have finally decided that none of the projects were appropriate for the purpose, and have now instituted a second competition, selecting the names of four firms and individuals, who are to submit designs and models of the same, for which the trustees agree to pay each competitor the sum of $750.

We are glad to see that the Lick trustees have learned through the failure of their first competition, that to secure a design on which sufficient time and study have been bestowed to obtain a satisfactory result, it is necessary to assure the designer adequate compensation for that time and study.

It is very evident that a premium not commensurate with the importance of the project will tend to attract designs, whose artistic merit correspond rather to the amount of the premiums offered than to the importance of the proposed work, for no artist or architect of standing is desirous of risking his time, which is money, on such an uncertain proposition as the ordinary competition.

It goes without argument, however, that where designs are called for, and the results do not come up to expectations, it is not right to refuse to pay the proffered prizes to those whose trust in the faith of the management was sufficient to lead them to enter the race.

In this connection we deem it appropriate, and of interest to our readers, to publish the following schedule of terms adopted by the American Institute of Architects nearly twenty years ago, and we desire to urge the justice and equity of the principles involved upon the consideration of public and private societies, and individuals who may in the future invite our brethren to enter into honorable competition.

Schedule of terms regulating open and close competitions for architectural works, adopted by the American Institute of Architects in convention assembled, November 8th and 9th, 1870, and recommended to all architects building committees and proprietors throughout the country.

1. The instructions must not require more drawings or estimates than are necessary in order clearly to explain the design, and should require that all the designs submitted be drawn to a uniform scale, which must be clearly defined, and that all perspectives required to be drawn to the same scale as the geometrical drawings, and on a plane at the corner of the building nearest the point of sight; a deviation from which will cause their rejection.

2. In case the amount to be expended is limited, the instructions must state that an excess of ten per cent on the expense of executing any design, over and above the sum mentioned, will exclude it from competition, the amount of expense to be determined by the professional experts in the jury; and in case the amount to be expended is not fixed, then the competitor may use his own discretion as to the costliness of the design which he makes.

3. A design will be excluded from the competition, if sent in after the stated period, and if it contains deviations from the instructions. If, from any of the above reasons, all submitted designs are rejected, then the jury is bound to publish the reasons which led to its verdict.

4. The period given for preparing the design must be long enough, not only for perfecting it and preparing the necessary drawings, but must make some allowance for the ordinary occupations of competitors. An explicit statement must be given as to the time when the decision on the merits of the designs is to be rendered, and that all designs shall be returned to their authors. An architect's drawings are his own private property, unless paid for, in which case they are for the sole use and benefit of his client; but the actual drawings still belong to the architect who made them.

5. The designs should be submitted to a jury of experts, whose decision is to be final. One half of the jury should be architects, and in the case of an open competition for a public building, it should be selected by the building committee or owner. The jury must be named in the instructions which the committee shall have sanctioned before publication. No person can be competent to serve as juror who submits a design, or is in any way interested in any design submitted, or who has not renounced all intention of participating in the execution of the work.

6. All designs submitted, in open competition for public buildings, should be publicly exhibited two weeks before the decision is made.

7. In the case of open competitions the first premium must not be less than the amount which the architect would have received had there been no competition, and at least an e ual amount should be divided among the other competitors, according to the merits of the designs submitted.

8. It is recommended that, in close competitions, wherein the number of competitors is limited, a sum equal to the full value of one design be divided equally among the authors of all except the premiated design, which shall be compensated for as provided in the last preceding rule.

9. The instructions must state that in case the building is erected after any of the designs submitted in competition, it must be given in charge of the author of the first premiated design, who is to be employed at the usual compensation; and if any other designs, or parts of designs, are used, it can be done only with the consent of their authors: and they must be compensated for the full value of the designs or parts of designs used, irrespective of the premiums that may have been awarded.

10. The premiums must be awarded, under all circumstances, for the designs which may have been admitted in competition.

11. It is recommended that, in the schemes of competition, it shall be provided that the names of the competitors shall not be known to the jury.

Academy of Sciences.

The engraving of the new building for the California Academy of Sciences which appears in this issue of the Architect was to have been printed with the August number, but by the carelessness of a work-man the cut was destroyed, and the view which is now inserted has been made the second time. This view represents the front of the new California Academy of Sciences Building now in course of construction on Market street, between Fourth and Fifth. It has been prepared with great care from drawings made by Messrs. Percy and Hamilton, constructing architects.

The structure to which this front belongs, will be one of the finest and most substantial in the city. It nearly covers the whole of a trapezoid, the two parallel sides of which measure respectively 275 and 195 feet; the side at right angles which fronts on Market street, being 80 feet. It will cost over $300,000 and it will be built of the best stone, brick, iron and other materials to be found in the market.

The building is divided into two different structures; one facing on Market street, covering an area of about 80x86 feet, being a commercial block; the other is devoted to the rooms of the Academy. The former is seven stories high, the Academy six. Between the two structures there is a court 80x27 feet.

The California Academy of Sciences was organized on April 4, 1853. None of the charter members are now alive. It had a very precarious existence for a great many years; and had not the late philanthropist James Lick so munificently endowed it, first with the lot on Market street, valued at over $300,000 and afterwards with one half of the residue of his valuable estate, which will nearly reach half a million dollars, it is doubtful if the Academy of Sciences could have for many years moved from the dilapidated building where it is now located, where a gradual deterioration is going on in everything combined in a building so thoroughly saturated with water as that building is, where dampness constantly sweats from its walls, where moisture constantly burdens the atmosphere and where moss and mould and mildew lurk in every crack and cranny of the building attacking and damaging every perishable thing therein contained. The occupation of the building by those whose business constantly calls them there is only rendered tolerable by constant fires in the stove all the year around.

Fortunately due to the generosity of Mr. Lick and the energy of the present Board of Trustees, in the course of the next year the quarters of the Academy will be in one of the best buildings erected for that purpose in America.

The former Board of Trustees were averse to incurring a large debt in order to improve the valuable lot owned by the Academy on Market street, but the present Board thinks it is poor policy to allow the collections to go to ruin for lack of proper rooms and deprive the members of the Academy of suitable lecture rooms, library, museum and other departments of such an institution; besides losing the handsome revenue derived from the rental of the commercial block so advantageously situated as the one owned by the society.

At the begining of last year the President of the Board of Trustees and the prudential committee reported to the Academy the intention of the Board of Trustees to improve as soon as possible the property on Market street. The Council of the Academy and the Academy in one of its meetings passed resolutions indorsing the resolution of the Board of Trustees. Satisfactory arrangements having been made by which the Lick State Trustees would advance to the Academy of Sciences all the necessary funds to erect the contemplated building, steps were taken at once to carry out the project.

In May of last year a circular was sent to many architects inviting them to present plans for an Academy of Sciences building to conform with certain specified requirements. The firms of J. M. Curtis, W. F. Smith, Percy & Hamilton, Salfield & Kohlberg and J. J. & T. D. Newsom responded to the invitation and offered plans which were opened on June 18, 1888.

It was found that all the plans, though meritorious and conscientiously executed did not answer the requirements of the Academy and it was resolved by the Board of Trustees to accept them all but adopt none.

The order in which the plans were accepted was: First, those of J. M. Curtis; second, W. F. Smith's; third, Percy & Hamilton's; fourth, Salfield & Kohlberg's; and fifth, J. J. & J. D. Newsom's.

A committee composed of Messrs. Davis and Molera of the Board of Trustees and Dr. Harkness, president of the Academy was appointed to take from the plans submitted those features best adopted to the needs of the Academy and supplement them with those they themselves might suggest. Also to recommend who among the competing architects should be appointed supervising architect.

After many consultations the Committee prepared the general plans. Mr. Davis made the plans for the Commercial building, Dr. Harkness the distribution of rooms for the Academy, and Mr. Molera the fronts of the building and the general plans. These plans were agreed to and submitted by all the members of the Committee. They differed, however, in the appointment of the supervising architect. Mr. Davis recommending Mr. Curtis while Messrs. Harkness and Molera recommended the firm of Percy and Hamilton.

The Board of Trustees adopted the recommendation of the majority and Messrs. Percy & Hamilton were appointed the architects "to prepare the necessary drawings and specifications to erect the Academy's building and take the general plans prepared by the committee on plans, composed by Messrs. Molera Davis and Harkness as the basis of their operations."

The general plans have been changed in many particulars, specially the front of the building The late Mr. Lick in his deed of the Market street property and subsequently on the deed of trust, expressed his desire that the Academy's building should be of a classical design. In deference to that wish and according to their own ideas the committee designed the front of the Academy with classical elements. The architects have changed it for a front on the so-called Romanesque style, the reasons for the changes are that it is difficult to design buildings of more than two or three stories high with classical lines. For an Academy of Sciences, it would have been better to adopt a classical front than one in a style the best recommendation of which being its novelty. That buildings with classical orders and several stories high can be built with handsome fronts is numerously exemplified both in Europe and in this country, and conspicuously so in the recently completed Drexel building in New York ten stories high, which is one of the grandest and and handsomest buildings in America. However, the Academy of Sciences front is a fine one and in combination with the splendid materials used in its construction, will do credit both to the Association and the architects.

E. N. SHAW, in an article published in the *Architect* (a London periodical) says the contents of a building have undoubtedly much to do with its safety or danger, but in estimating the whole risk, the materials of which the building is constructed must never be put out of consideration. Every building cannot be erected with brick column and groined arches, but there is a vast range between these and the miserable cast iron pots too commonly to be seen, many of which have been put in without having been tested for strength even at the ordinary temperature of the atmosphere, much less at that of a fire. The following illustration may be given of a fact well-known to all firemen of experience, but seldom proved by demonstration for those not specially interested.

A fire occurred in a warehouse of enormous proportions and raged with great fury for five hours, at the end of which time it was extinguished, and a very large proportion of the building and its contents saved. The warehouse was constructed of brick walls; it had wooden floors supported on wooden beams, which in their turn were carried on wooden story posts about 12 inches thick, and, although serious damage was done, not one portion of the heavy wood-work was destroyed. After the fire, the proprietors allowed the chief of the fire brigade to remove one of the story posts, with a section of the beams and other parts surrounding it above and below.

This post had been subjected to the full action of the fire during the whole of its duration, as already mentioned, or, making full allowance for everything, including the delay of the fire attacking the particular spot on which it stood, and the time at which the cooling process commenced, certainly not less than four and a half hours. As large quantities of water had been used, and it was probable that every thing had been saturated, the wood was carefully dried before a strong fire until not a trace of moisture remained in it. It was then set on end in an open yard, exactly as it had stood in the warehouse, with the pedestal underneath, the cap above, and the beam across the cap, more than a ton of shavings, light wood and heavy wood were placed around it, and after the whole heap was saturated with petroleum, a light was applied to it, and after this, large quantities of petroleum and turpentine were pumped on it. At the end of two and a half hours the post, beam and other parts were withdrawn from the fire, and within a few minutes from the time they were withdrawn they ceased to burn. A few feet were then sawn off horizontally, at that part which had suffered most from the flames, and afterward the same piece was split longitudinally with steel wedges, in order to examine its condition.

The post was of pitch pine, about the most inflammable wood known, and yet after exposure for seven hours to fire, the fury of which could not be exceeded except in blast furnaces, it contained within a quantity of perfectly uninjured and apparently fresh wood, probably capable of supporting the whole weight the original post was designed to carry. Immediately after the saw cut, and again after the cleating with steel wedges, the centre was carefully examined, and found to be just perceptibly warm to the touch, but nothing more, thus proving that the fibre, in which the strength lay, was quite uninjured.

A new work has been laid on our table entitled: A Manual of Machine Construction for Engineers, Draughtsmen and Mechanics, by John Richards, Esq. The summary of contents are: Machine Design, The Transmission of Power, Steam Machinery, Hydraulics, Process and Properties, Tables and Memoranda. It is well illustrated with clean cut drawings of machinery on a large scale, and contains tables and formulæ seldom found in technical works, the use of which will greatly lighten the office labor of the engineer. It is bound in strong, flexible covers and so arranged that it can be used with one hand while working with the other. Publisher's price, $5.00.

AT the recent meeting of the National Electric Light Association at Niagara Falls, considerable time was taken up by the reading of papers and the discussions of the requirements for buildings intended for this purpose. Mr. M. D. Law read a paper, giving his view of certain necessary details for a model building, which should be of brick or stone, substantial, and not more than two stories in height, and as near fire-proof as possible. The boiler room should be located on the ground floor with plenty of ventilation, and the fire room cool and comfortable. It being necessary to keep engines, shafting and dynamos as cool as possible good ventilation should be provided therefore. The dynamo room should be directly over the shafting lines, well lighted and the ventilation perfect. The roof should be constructed without intermediate posts or supports, and of sufficient height and strength to support an overhead track, so that dynamos or armatures can be hoisted and carried over the ones that may be running. A cupola should be provided with window ventilators extending the full length of the two sides, and so arranged as to be under the control of the machine man; the line wires being run from this cupola as required. A store room of good size should be provided and fitted up with closets, drawers and shelves. The workshop should be suitable for lathe and benches.

Mr. G. T. Henthorn gave a detailed description of a new station building at Providence, R. I.

Those wishing to continue the subject will find a full description in the issue of August 17th of the *Western Electrician* of Chicago.

The Kearny street property owners and business men have petitioned the Board of Supervisors to have that street paved with bituminous rock. The Street Committee of the Board has approved the petition and ordered specifications for the work to be prepared. The laying of this pavement on one of our principal streets will be a long step in the right direction, for besides the advantage of noiselessness this pavement requires but a fraction of the traction power necessary on the uneven cobbles and basalt blocks with which our main business streets are now disfigured.

In new apartments. The Technical Society and the Astronomical Society of the Pacific Coast have rented the large rooms adjoining the offices of this Journal. These spacious rooms are light, airy and convenient, and will be open at all times of the day to the membership of these societies. We congratulate them on their new departure and welcome them to all the benefits.

Magnitude in Architecture.

MAGNITUDE is the great object and result of design, and this quality is only to be attained by the fine adjustment of relative proportions in magnitude and order. Architecture (says Aristotle) consists in magnitude and order. The works of man, compared with those of Nature, display our insignificance. The Pyramids, seen in the clear sky of Egypt, or St. Peter's at Rome, are proverbially disappointing to the first gaze of the beholder; it is only after he has instituted comparisons and measurements that he becomes sensible of the greatness of these human efforts—and his memory will supply him with many instances in which objects of inferior dimensions have surpassed them in impression of magnitude upon his mind. It is plain, therefore, that art alone can produce the full effect of magnitude, and to this the architect should direct all his skill; the ancients will be found consummate masters in this as well as in every other department of our art. It is, indeed, a fine art which enables the accomplished artist to raise ideas of magnitude and grandeur of composition on a piece of paper no bigger than your hand; while a less able one will cover a vast canvas without executing any comparable notions. Worthy of all inquiry and solicitude is such an art, for is the whole art of design and proportion. Pliny cities a statue of Hercules, so small that it might be lifted by the hand, which, however, conveyed more grandeur, magnitude and strength to the mind of the observer than a Colossus would have done. How great must have been the science of the master! And if, with such small means, he could effect the mind with these impressions, how great the economy of cost and material to the employer!—C. R. Cockerel, in *The Architect*.

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Since January the journal has been under the management of an individual and has not dropped its personal character as was expected, neither has it assumed the tone which was hoped by many that it would take. It has been more of an advertising sheet than a medium of thought or intelligence.

With this number the architects themselves take control and will strive to make it a worthy organ of a great profession, to which all of the members, whether in this city, in Oregon, or elsewhere on the Pacific Coast, are invited to contribute any item on any subject relating to architecture or building.

Of this number we shall not say more than to ask your indulgence for any imperfections that may appear.

THE regular monthly meeeting of the San Francisco Chapter A. I. A. was held on Friday evening, September 6th In the neighborhood of a dozen members were present. Messrs. Franklin Williams and D. L. Williams of Portland were elected fellow members. The amendment to the by-laws, changing the evening for the regular meeting from the first to the second Friday in the month, was carried. The election of officers was ed for two weeks, to which time the meeting adjourned opes of having a more numerous attendance.

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Carpenters not Wanted.

Since the great Seattle fire, this office has received numerous letters from carpenters inquiring as to the chance for work up north. The following from the "Post Intelligencer" will give ample information.

Carpenter work in Seattle, since the fire, has not been sufficient to supply the demand made by that class of mechanics. Great numbers of them have come here in anticipation of immediately rebuilding another wooden city, and are now disappointed. Work in that line began to cease within one week after the conflagration because the wood structures for tents and tent-roofs were all finished within that time. Just as this work was completed, and before any new and substantial wooden structures had been commenced, steamers came in from San Francisco, laden with hundreds of carpenters. They also flocked hitherward from the east, as far as Maine and Massachusetts, only to discover that work here in their line was at a temporary stand-still, lasting for weeks, and which even now is not sufficiently active to give employment to all these throngs that still continue to come. The condition as above stated being apparent, several builders, contractors and carpenters were called upon, for more specific information on the subject. Mr. Henry Jones, contractor, said:

"I never was in a town where more carpenters applied for work within a given time. Since the fire I have had from forty to fifty new applicants each day present themselves for employment. About fifty came up from San Francisco on the last steamer, but others also came from Minneapolis, Chicago and Milwaukee. I have had as many as fifteen apply to me within half an hour."

"It will require from thirty to ninety days for builders to complete plans, get stone basements in and blocks under way so as to require carpenters and several other classes of skilled mechanics. The rush of carpenters is premature. Mechanics should have more sense than to over-run a city on the very heels of a fire."

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The way I have, from experience, found it to be, carpenters on the Pacific coast have more activity and energy in them than those from the east; but at most we have to hire them as they are and discharge them as we find them to be."

Mr. F. M. Wooderman who is constructing buildings at Gilman's wharf, says he has a daily average of forty carpenters, applying for work.

Mr. George Costen, was then called upon. He said: "The membership of the Seattle Carpenters' Union is steadily increasing, it being numerically stronger than any other labor organization in the city. We are willing and able to supply contractors with good carpenters, according to the nine-hour agreement entered into last spring by and between the union and contractors. Our organization is to assist good carpenters in getting employment and to prevent the incompetent from competing in our work. I think that local contractors should make a distinction in giving work to resident mechanics rather than those who come here among the floating population; and this will be the result if the building inspector requires good workmen, as well as good work in the buildings.

About one-third of our capable carpenters are thrown out of work here by reason of the presence of poor ones, that continue to come. Shortly after the fire some unscrupulous contractor, recently from the east, published a notice in the Chicago *Inter-Ocean*, stating that 4,000 carpenters were wanted at Seattle. While they might help a contractor to get work done cheaply, it works an injury to the resident mechanics. Out of the 1,500 carpenters now in this city, not over 35 per cent. are employed. Of these, there are probably 500 who are poor workmen. Wages is $3 60 per day. Notwithstanding the influx, the best policy is to employ good men at nine hours and good wages.

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TERMS, PER ANNUM, - - - - $2.00 IN ADVANCE

ADVERTISING RATES FURNISHED ON APPLICATION.

SAN FRANCISCO, SEPTEMBER 15, 1889.

MR. George H. Wolfe, having no further connection with this journal, correspondents will in future please address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

IN the January number of this journal the announcement was made that a change in ownership had been made and that henceforth it would be managed by a company. This arrangement was satisfactory to some for the following reasons, as stated at the time.

"The publication of a journal devoted to the interests of architects and builders on the Pacific Coast is an important measure and is too self-evident to require the support of argument.

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THE trustees of the Lick fund advertised about two years ago for competitive designs for the statuary provided for in Mr. Lick's bequests, to be erected in this city, to commemorate the early epochs in the history of the State. The proposed monument was to be well worth $100,000, and the premiums offered by the trustees were the execution of the work to the first competitor, $500 to the second, and $300 to the third.

Some twenty-five designs were submitted, but after many months delay the trustees have finally decided that none of the projects were appropriate for the purpose, and have now instituted a second competition, selecting the names of four firms and individuals, who are to submit designs and models of the same, for which the trustees agree to pay each competitor the sum of $750.

We are glad to see that the Lick trustees have learned through the failure of their first competition, that to secure a design on which sufficient time and study have been bestowed to obtain a satisfactory result, it is necessary to assure the designer adequate compensation for that time and study.

It is very evident that a premium not commensurate with the importance of the project will tend to attract designs, whose artistic merit correspond rather to the amount of the premiums offered than to the importance of the proposed work, for no artist or architect of standing is desirous of risking his time, which is money, on such an uncertain proposition as the ordinary competition.

It goes without argument, however, that where designs are called for, and the results do not come up to expectations, it is not right to refuse to pay the proffered prizes to those whose trust in the faith of the management was sufficient to lead them to enter the race.

In this connection we deem it appropriate, and of interest to our readers, to publish the following schedule of terms adopted by the American Institute of Architects nearly twenty years ago, and we desire to urge the justice and equity of the principles involved upon the consideration of public and private societies, and individuals who may in the future invite our brethren to enter into honorable competition.

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3. A design will be excluded from the competition, if sent in after the stated period, and if it contains deviations from the instructions. If, from any of the above reasons, all submitted designs are rejected, then the jury is bound to publish the reasons which led to its verdict.

4. The period given for preparing the design must be long enough, not only for perfecting it and preparing the necessary drawings, but must make some allowance for the ordinary occupations of competitors. An explicit statement must be given as to the time when the decision on the merits of the designs is to be rendered, and that all designs shall be returned to their authors. An architect's drawings are his own private property, unless paid for, in which case they are for the sole use and benefit of his client; but the actual drawings still belong to the architect who made them.

5. The designs should be submitted to a jury of experts, whose decision is to be final. One half of the jury should be architects, and in the case of an open competition for a public building, it should be selected by the building committee or owner. The jury must be named in the instructions which the committee shall have sanctioned before publication. No person can be competent to serve as juror who submits a design, or is in any way interested in any design submitted, or who has not renounced all intention of participating in the execution of the work.

6. All designs submitted, in open competition for public buildings, should be publicly exhibited two weeks before the decision is made.

7. In the case of open competitions the first premium must not be less than the amount which the architect would have received had there been no competition, and at least an equal amount should be divided among the other competitors, according to the merits of the designs submitted.

8. It is recommended that, in close competitions, wherein the number of competitors is limited, a sum equal to the full value of one design be divided equally among the authors of all except the premiated design, which shall be compensated for as provided in the last preceding rule.

9. The instructions must state that in case the building is erected after any of the designs submitted in competition, it must be given in charge of the author of the first premiated design, who is to be employed at the usual compensation; and if any other designs, or parts of designs, are used, it can be done only with the consent of their authors; and they must be compensated for the full value of the designs or parts of designs used, irrespective of the premiums that may have been awarded.

10. The premiums must be awarded, under all circumstances, for the designs which may have been admitted in competition.

11. It is recommended that, in the schemes of competition, it shall be provided that the names of the competitors shall not be known to the jury.

Academy of Sciences.

The engraving of the new building for the California Academy of Sciences which appears in this issue of the Architect was to have been printed with the August number, but by the carelessness of a work-man the cut was destroyed, and the view which is now inserted has been made the second time. This view represents the front of the new California Academy of Sciences Building now in course of construction on Market street, between Fourth and Fifth. It has been prepared with great care from drawings made by Messrs. Percy and Hamilton, constructing architects.

The structure to which this front belongs, will be one of the finest and most substantial in the city. It nearly covers the whole of a trapezoid, the two parallel sides of which measure respectively 275 and 195 feet; the side at right angles which fronts on Market street, being 80 feet. It will cost over $300,000 and it will be built of the best stone, brick, iron and other materials to be found in the market.

The building is divided into two different structures; one facing on Market street, covering an area of about 80x86 feet, being a commercial block; the other is devoted to the rooms of the Academy. The former is seven stories high, the Academy six. Between the two structures there is a court 80x27 feet.

The California Academy of Sciences was organized on April 4, 1853. None of the charter members are now alive. It had a very precarious existence for a great many years; and had not the late philanthropist James Lick so munificently endowed it, first with the lot on Market street, valued at over $300,000 and afterwards with one half of the residue of his valuable estate, which will nearly reach half a million dollars, it is doubtful if the Academy of Sciences could have for many years moved from the dilapidated building where it is now located, where a gradual deterioration is going on in everything combined in a building so thoroughly saturated with water as that building is, where dampness constantly sweats from its walls, where moisture constantly burdens the atmosphere and where moss and mould and mildew lurk in every crack and cranny of the building attacking and damaging every perishable thing therein contained. The occupation of the building by those whose business constantly calls them there is only rendered tolerable by constant fires in the stove all the year around.

Fortunately due to the generosity of Mr. Lick and the energy of the present Board of Trustees, in the course of the next year the quarters of the Academy will be in one of the best buildings erected for that purpose in America.

The former Board of Trustees were averse to incurring a large debt in order to improve the valuable lot owned by the Academy on Market street, but the present Board thinks it is poor policy to allow the collections to go to ruin for lack of proper rooms and deprive the members of the Academy of suitable lecture rooms, library, museum and other departments of such an institution; besides losing the handsome revenue derived from the rental of the commercial block so advantageously situated as the one owned by the society.

At the begining of last year the President of the Board of Trustees and the prudential committee reported to the Academy the intention of the Board of Trustees to improve as soon as possible the property on Market street. The Council of the Academy and the Academy in one of its meetings passed resolutions indorsing the resolution of the Board of Trustees. Satisfactory arrangements having been made by which the Lick State Trustees would advance to the Academy of Sciences all the necessary funds to erect the contemplated building, steps were taken at once to carry out the project.

In May of last year a circular was sent to many architects inviting them to present plans for an Academy of Sciences building to conform with certain specified requirements. The firms of J. M. Curtis, W. F. Smith, Percy & Hamilton, Salfield & Kohlberg and J. J. & T. D. Newsom responded to the invitation and offered plans which were opened on June 18, 1888.

It was found that all the plans, though meritorious and conscientiously executed did not answer the requirements of the Academy and it was resolved by the Board of Trustees to accept them all but adopt none.

The order in which the plans were accepted was: First, those of J. M. Curtis; second, W. F. Smith's; third, Percy & Hamilton's; fourth, Salfield & Kohlberg's; and fifth, J. J. & J. D. Newsom's.

A committee composed of Messrs. Davis and Molera of the Board of Trustees and Dr. Harkness, president of the Academy was appointed to take from the plans submitted those features best adopted to the needs of the Academy and supplement them with those they themselves might suggest. Also to recommend who among the competing architects should be appointed supervising architect.

After many consultations the Committee prepared the general plans. Mr. Davis made the plans for the Commercial building, Dr. Harkness the distribution of rooms for the Academy, and Mr. Molera the fronts of the building and the general plans. These plans were agreed to and submitted by all the members of the Committee. They differed, however, in the appointment of the supervising architect. Mr. Davis recommending Mr. Curtis while Messrs. Harkness and Molera recommended the firm of Percy and Hamilton.

The Board of Trustees adopted the recommendation of the majority and Messrs. Percy & Hamilton were appointed the architects "to prepare the necessary drawings and specifications to erect the Academy's building and take the general plans prepared by the committee on plans, composed by Messrs. Molera Davis and Harkness as the basis of their operations."

The general plans have been changed in many particulars, specially the front of the building. The late Mr. Lick in his deed of the Market street property, and subsequently on the deed of trust, expressed his desire that the Academy's building should be of a classical design. In deference to that wish and according to their own ideas the committee designed the front of the Academy with classical elements. The architects have changed it for a front on the so-called Romanesque style, the reasons for the changes are that it is difficult to design buildings of more than two or three stories high with classical lines. For an Academy of Sciences, it would have been better to adopt a classical front than one in a style the best recommendation of which being its novelty. That buildings with classical orders and several stories high can be built with handsome fronts is numerously exemplified both in Europe and in this country, and conspicuously so in the recently completed Drexel building in New York ten stories high, which is one of the grandest and and handsomest buildings in America. However, the Academy of Sciences front is a fine one and in combination with the splendid materials used in its construction, will do credit both to the Association and the architects.

E. N. SHAW, in an article published in the *Architect* (a London periodical) says the contents of a building have undoubtedly much to do with its safety or danger, but in estimating the whole risk, the materials of which the building is constructed must never be put out of consideration. Every building cannot be erected with brick column and groined arches, but there is a vast range between these and the miserable cast iron pots too commonly to be seen, many of which have been put in without having been tested for strength even at the ordinary temperature of the atmosphere, much less at that of a fire. The following illustration may be given of a fact well-known to all firemen of experience, but seldom proved by demonstration for those not specially interested.

A fire occurred in a warehouse of enormous proportions and raged with great fury for five hours, at the end of which time it was extinguished, and a very large proportion of the building and its contents saved. The warehouse was constructed of brick walls; it had wooden floors supported on wooden beams, which in their turn were carried on wooden story posts about 12 inches thick, and, although serious damage was done, not one portion of the heavy wood-work was destroyed. After the fire, the proprietors allowed the chief of the fire brigade to remove one of the story posts, with a section of the beams and other parts surrounding it above and below.

This post had been subjected to the full action of the fire during the whole of its duration, as already mentioned, or, making full allowance for everything, including the delay of the fire attacking the particular spot on which it stood, and the time at which the cooling process commenced, certainly not less than four and a half hours. As large quantities of water had been used, and it was probable that every thing had been saturated, the wood was carefully dried before a strong fire until not a trace of moisture remained in it. It was then set on end in an open yard, exactly as it had stood in the warehouse, with the pedestal underneath, the cap above, and the beam across the cap, more than a ton of shavings, light wood and heavy wood were placed around it, and after the whole heap was saturated with petroleum, a light was applied to it, and after this, large quantities of petroleum and turpentine were pumped on it. At the end of two and a half hours the post, beam and other parts were withdrawn from the fire, and within a few minutes from the time they were withdrawn they ceased to burn. A few feet were then sawn off horizontally, at that part which had suffered most from the flames, and afterward the same piece was split longitudinally with steel wedges, in order to examine its condition.

The post was of pitch pine, about the most inflammable wood known, and yet after exposure for seven hours to fire, the fury of which could not be exceeded except in blast furnaces, it contained within a quantity of perfectly uninjured and apparently fresh wood, probably capable of supporting the whole weight the original post was designed to carry. Immediately after the saw cut, and again after the cleating with steel wedges, the centre was carefully examined, and found to be just perceptibly warm to the touch, but nothing more, thus proving that the fibre, in which the strength lay, was quite uninjured.

A new work has been laid on our table entitled: A Manual of Machine Construction for Engineers, Draughtsmen and Mechanics, by John Richards, Esq. The summary of contents are: Machine Design, The Transmission of Power, Steam Machinery, Hydraulics, Process and Properties, Tables and Memoranda. It is well illustrated with clean cut drawings of machinery on a large scale, and contains tables and formulæ seldom found in technical works, the use of which will greatly lighten the office labor of the engineer. It is bound in strong, flexible covers and so arranged that it can be used with one hand while working with the other. Publisher's price, $5.00.

AT the recent meeting of the National Electric Light Association at Niagara Falls, considerable time was taken up by the reading of papers and the discussions of the requirements for buildings intended for this purpose. Mr. M. D. Law read a paper, giving his view of certain necessary details for a model building, which should be of brick or stone, substantial, and not more than two stories in height, and as near fire-proof as possible. The boiler room should be located on the ground floor with plenty of ventilation, and the fire room cool and comfortable. It being necessary to keep engines, shafting and dynamos as cool as possible good ventilation should be provided therefore. The dynamo room should be directly over the shafting lines, well lighted and the ventilation perfect. The roof should be constructed without intermediate posts or supports, and of sufficient height and strength to support an overhead track, so that dynamos or armatures can be hoisted and carried over the ones that may be running. A cupola should be provided with window ventilators extending the full length of the two sides, and so arranged as to be under the control of the machine man; the line wires being run from this cupola as required. A store room of good size should be provided and fitted up with closets, drawers and shelves. The workshop should be suitable for lathe and benches.

Mr. G. T. Henthorn gave a detailed description of a new station building at Providence, R. I.

Those wishing to continue the subject will find a full description in the issue of August 17th of the *Western Electrician* of Chicago.

The Kearny street property owners and business men have petitioned the Board of Supervisors to have that street paved with bituminous rock. The Street Committee of the Board has approved the petition and ordered specifications for the work to be prepared. The laying of this pavement on one of our principal streets will be a long step in the right direction, for besides the advantage of noiselessness this pavement requires but a fraction of the traction power necessary on the uneven cobbles and basalt blocks with which our main business streets are now disfigured.

In new apartments. The Technical Society and the Astronomical Society of the Pacific Coast have rented the large rooms adjoining the offices of this Journal. These spacious rooms are light, airy and convenient, and will be open at all times of the day to the membership of these societies. We congratulate them on their new departure and welcome them to all the benefits.

Magnitude in Architecture.

MAGNITUDE is the great object and result of design, and this quality is only to be attained by the fine adjustment of relative proportions in magnitude and order. Architecture (says Aristotle) consists in magnitude and order. The works of man, compared with those of Nature, display our insignificance. The Pyramids, seen in the clear sky of Egypt, or St. Peter's at Rome, are proverbially disappointing to the first gaze of the beholder; it is only after he has instituted comparisons and measurements that he becomes sensible of the greatness of these human efforts—and his memory will supply him with many instances in which objects of inferior dimensions have surpassed them in impression of magnitude upon his mind. It is plain, therefore, that art alone can produce the full effect of magnitude, and to this the architect should direct all his skill; the ancients will be found consummate masters in this as well as in every other department of our art. It is, indeed, a fine art which enables the accomplished artist to raise ideas of magnitude and grandeur of composition on a piece of paper no bigger than your hand; while a less able one will cover a vast canvas without executing any comparable notions. Worthy of all inquiry and solicitude is such an art, for is the whole art of design and proportion. Pliny cities a statue of Hercules, so small that it might be lifted by the hand, which, however, conveyed more grandeur, magnitude and strength to the mind of the observer than a Colossus would have done. How great must have been the science of the master! And if, with such small means, he could effect the mind with these impressions, how great the economy of cost and material to the employer!—C. R. Cockerel, in *The Architect*.

Treatment of Ceilings.

THE ceiling is perhaps the part of an apartment that calls most loudly for decoration, and no architectural feature is more susceptible of it, where it might be introduced with more effect or give more pleasure to the inmate; yet this feature we almost invariably neglect. We naturally look up for beauty; however lovely the earth the sky both night and day presents us with greater charms; we are cheered in our outdoor hours by its ever changing picture, for which a flat white plane is a miserable substitute in our indoor life. To houses of the very highest class these remarks will apply, for it is a feature which has not had its due proportion of attention in point of decoration in any class of buildings, from the cottage to the palace. There certainly can be no more fitting place for decoration in the habitation of a being created upright. Can inconsistency be more extreme than that presented by thousands of apartments where a rich, elaborately decorated carpet is under the feet, and a plain, dead, flat ceiling above? In the interior of Arabian buildings the ornaments almost invariably become richer, more delicate and minute, as their height from the floor increases, and the most exquisite productions of the artist are lavished on the ceiling. With respect to the form the curve is at all times preferable to the flat, though the latter by various means is capable of great beauty also. No very great additional height is required in order to have a curved ceiling, as whether coved or segmental the rise need not be very great. For rooms of great pretension there is no form more noble and natural than the vault and dome, particularly the latter, whether hemispherical or segmental, as far as it suits the plan or can be adapted by pendentives or otherwise. It is the best substitute for the blue vault of the sky, the starry concave of the heavens. It was a fine idea of the builders of the mosque of St. Sophia at Constantinople — a conception in advance of ours—to make the curve of its dome so flat that it should seem to correspond with that of the sky, and be a portion of the firmament. We want an enlarged, improved, enriched, and at the same time inexpensive system of interior decoration, for domestic and ecclesiastical, commercial and other buildings, in our Anglo-Classic styles. For churches, collegiate and other buildings in the Pointed style, we have examples in our cathedrals and other buildings, which prove that the genius of interior decoration was once among us, as well as the taste to employ it. At Henry the Seventh and King's College Chapels; the oratory at Beauchamp Chapel; the Temple Church; Wolsey's Hall, Hampton Court; Christ Church Hall, Oxford; Westminster Hall, and others, we have ceilings and roofs that might vie with any that Europe could show. For assistance in evolving a system of Classic decoration we might look to some parts of the Continent. Exterior decoration there has sometimes probably been carried too far, a few Continental edifices exhibiting ornaments so minute and fragile as to seem at least unfit for exposure to the weather in any climate. But this could not be said of interiors. The Moorish or Morisco-Spanish architecture suggests to us what richness might be produced by very simple means; their icicle pendents, inlays and casings, and purely geometrical and imaginative ornaments, are very effective, and with them they often produced greater results than we, with all nature to imitate, have attained to. But the art of interior decoration was better understood and more successfully practiced in the great age of modern art in Italy, and indeed throughout the Middle Ages, than at present in any country. We never had any decoration to be compared with the mural and fresco paintings of the Italians, and there is probability in the supposition that their system was obtained from remains of the ancients, which time or violence has not spared to us. Beside the curved and richly emblazoned ceilings produced by the Italians, and the pictorial embellishment of their walls, ours might symbolize poverty itself. The ceilings of the principal apartments of a Roman, Genoese, Venetian or Florentine palace were considered as most important features, and on their designs and executions the highest talent was employed. In ecclesiastical buildings the contrast with ours would be still greater. Whilst the interior of the churches of Italy glow with every rich hue of the marble quarry, and are virtually galleries of art, what is the aspect of ours?—*London Architect.*

The September number of the "*House Painting and Decorating,*" a monthly publication comes to us in a wonderfully improved appearance. We commend all our patrons to subscribe at $1 00 a year. Address 1130, 35th street, Philadelphia.

Architectural and Mechanical Works.

In our list below will be found the names of books on architectural and mechanical subjects, the prices of which have been greatly reduced if taken in connection with the California Architect Old subscribers will be given the books at a large discount, so that they may feel that no favoritism is shown. It will be noticed that some of the books are given free to new subscribers.

	Price of Book.	With *Cal. Architect.*
Mechanics' Geometry	$5 00	$5 57
Monckton's National Carpenter	5 00	5 75
Cottages	1 00	5 40
Shavings and Saw Dust	1 50	2 75
Moore's General Assistant	2 50	2 25
Plaster and Plastering	1 00	3 40
Hand-Book of Legendary Art	3 00	2 75
Manual for Furniture Men	1 00	3 40
Water Closets	1 50	2 40
Cutting Tools	1 50	2 00
Sewer Gas and Its Dangers	1 25	3 50
Handrailing and Staircasing	1 25	2 75
Sloan's American Houses	1 50	2 75
Amateur Mechanic's Workshop	1 50	2 00
American Cottage Builder	3 50	3 00
Wheeler's Rural Homes	1 50	4 00
Burns' Ornamental Drawing	1 00	3 40
Manual of Drawing for Carpenters	3 00	2 00
Steam Engine Catechism	1 00	4 40
Grimshaw on Saws	4 00	2 75
Modern Low-Cost Houses	50	4 00
A Cosy Home	25	2 00
California Picturesque Architecture, No. 1	3 00	4 00
California Picturesque Architecture, No. 2	3 50	4 25
The Artisan	5 00	5 75

The following are justly recognized as standard publications. Some of them are perfectly new works, but we make the same general reduction:

	Price of Book.	With *Cal. Architect.*
Tredgold's Carpentry	$ 7 50	$ 8 25
Building Construction, 3 vols., Smiths	14 00	14 75
Picture-Making with Pen and Ink	4 00	5 25
New Cottage Homes and Details (Palliser's)	4 00	5 25
Palliser's New Quarterly, per year	3 00	4 00

We can furnish any book printed at publishers' prices, and will send all books free by either mail or express.

High Houses in London.

A proposal to restrict the height of houses in London has been brought before Parliament by Mr. Whitmore, M. P. The scheme makes a distinction between streets less than sixty feet in width and those of greater width. In the former streets buildings are allowed to be erected up to sixty feet in height, but no more, except in the case of churches or chapels. Where the street or place is wider than sixty feet, the height of the building must not exceed the width of the street or place. If, however, the consent of the county council be obtained, this height may be exceeded. And, without such consent, the height of any building so erected may not be at any time subsequently increased so as to exceed the width of the street. It is made the duty of the district surveyor of the county council to inform the Home Secretary of any building intended to be erected contravening the provisions of the bill. The main object of the bill is to give to the county council powers to restrict the excessive height of buildings in existing streets in London. The county council has such powers in the case of new streets; but in the case of existing streets it is said that neither the county council nor any government department has any power to restrict the height of buildings.—*London Times.*

We notice an article on slow burning construction in the September number of the *Overland Monthly* by M. J. Bugbee of this city, which advocates an entire change in the building of houses. Mr. Bugbee contends that a radical improvement can be made by architects and builders in the erection of buildings which will make them almost fireproof, while the cost of the method will be increased not more than 8 per cent above the present rates.

THE New York *Times* publishes a long and earnest editorial about the new Municipal Court building for that city, expressing the opinion that a building erected in accordance with the selected design will be "discreditable to the city and to the commissioners who authorized its selection." That the idea of matching the architects against each other to see who would do it for the smallest percentage on the cost put the city in an "undignified and ridiculous position," and that the best way would be to appoint a new jury of real experts to examine all the designs over again, and if it should find that the one selected was really the best, to get up a new competition which would attract men capable of making better ones. Of course it is very unlikely that this advice will be followed, particularly as the commissioners have already bound the city to the architects whom they have selected by a contract which it would be a costly and difficult undertaking to break; and we cannot but regret that the *Times* should not have expressed its very judicious views before, not after the competition was decided. If a few daily papers so able and influential as the *Times* would come to the aid of the technical press in helping people to understand, before important competitions, the conditions which all architects of character consider essential to a fair contest, and the reasonableness and moderation of these requirements, the disgusts, disappointments and losses which attend nearly every public competition might be saved. The conditions are very simple. Nothing more is needed than to engage that the work shall be carried out, or if not, that a suitable compensation shall be paid the architect selected for the first place; that if it is carried out the author of the most meritorious design shall be employed to execute it at the customary commission of 5 per cent on the cost; that the award shall be made under the advice of one or more architects known to the profession as competent judges; and that time enough shall be allowed for men actively employed in other work to prepare, and carefully study, drawings, the nature of which shall be exactly stated in the programme. The original invitation of the Sinking Fund Commissioners allowed a very short time, about seven weeks, we think, for the preparation of a design which could not be properly studied under about as many months by an architect in ordinary practice, and no promise was made that experts would be employed to pass upon the merits of the designs. The consequence was that most architects of standing, after reading the programme, threw it into the waste-basket, where the programmes of public competition generally go in good offices, and for the same reasons; and the field was left, as it usually is, to the few people who are willing to do themselves the injustice of getting up a crude, hasty sketch, and committing it to fortune, without any assurance that it will be fairly judged.—*American Architect.*

Flash-light photography is being used by the sanitary inspectors of New York to obtain graphic pictures of the overcrowded condition of the tenement houses of that city.

Cabots' Creosote Shingle Stains on Redwood.

"The use of Cabot's Creosote Shingle Stains in California is on the increase. We note that they have been recently used on the hotel Vendome at San Jose, and on Judge Venves residence at Los Gatos. In both of these cases they were used on redwood, and the architects, Jacob Lenzen & Son, San Jose, and the painters J. P. Jarman & Co. of the same city, write that they give perfect satisfaction, and that they cheerfully recommend them for similar work."

At the time the consolidation of the American Institute of Architects and the Western Association was decided on, the executive officers of the two bodies were instructed to meet, choose the time and place, and call a joint convention. There has been great delay in the matter, from the fact that differences of opinion exist as to the best place for the convention to meet. The secretary of the Institute advocates Washington, for the reason that it is neutral ground, while the president of the Western Association favors some city that is the center of the great business and commercial interests.

Straightening Walls of Buildings.

THE weight of the roof of the large gallery of the Conservatoire de Arts et Metiers pressed the sides outward so as to endanger the building, and it was requisite to find means by which the wall should be propped so as to sustain the roof. M. Molard contrived the following ingenious plan for that purpose: A series of strong iron bars were carried across the building from wall to wall, passing through holes in the walls, and were secured by nuts on the outside. In this state they would have been sufficient to have prevented the further separation of the walls by the weight of the roof, but it was desirable to restore the walls to their original state by drawing them together. This was affected in the following manner: Alternate bars were heated by lamps fixed beneath them. They expanded, and consequently the nuts, which were previously in contact with the walls, were no longer so. These nuts were then screwed up so as to be in close contact with the walls. The lamps were withdrawn and the bars allowed to cool. In cooling they gradually contracted and resumed their former dimensions, consequently the nuts, pressing against the walls, drew them together through a space equal to that through which they had been screwed up. Meanwhile the intermediate bars were heated and expanded and the nuts screwed up as before. The lamps being again withdrawn, they contracted in cooling and the walls were further drawn together. This process was continually repeated, until at length the walls were restored to their perpendicular position. The gallery may still be seen with the bars extending across it and binding together its walls.

CITY BUILDING NEWS.

Broadway bet. Pierce and Scott. Owner, Wm. Thomas; architect, Wm. F. Smith; contractor, G. V. Hussey; cost, $3,851; sureties, Frank P. Latson and J. H. Wilson; filed Aug. 12; signed Aug. 2; limit, 4 months; to build $725.75; framed $795.75; covered in $725.75; plastered $725.75; completed $988, 35 days.

Brannan bet. Fifth and Sixth. Owner, Hermann Zweig; architect, W. Winterhalter; contractors, Brennan & Fladung; cost, $3,360; sureties, O'Connell & Lewis, $3,000; filed Aug. 13; signed Aug. 12; limits, 35 days; additions to South Park Malt house $300; first story up $800; third story up $800; completed $360, 35 days.

Broadway and Pierce. Owner, Julius Weber; architects, Percy & Hamilton; contractor, J. B Gonyean; cost, $3,145; sureties, C. A. and Geo. W. Hooper, $2,500; filed, Aug. 21; signed, Aug. 15; limit, 90 days; 2-story frame; 75 per cent as work progresses on first Saturday of each month; balance, 35 days.

Brannan, bet. Fifth and Sixth, South Park Malt House. Owner, Herman Zweig; architect, W. Winterhalter; contractor, W. Hurve; cost, $2,115; sureties, David Werner and Otto Fauss; filed Aug. 19; signed Aug. 12; limit 42 days; alterations; $500 to be fed; $500 tinning done; $500 completed; $515 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; arcsitect, Wm. F. Smith; contractor, J. H. Wilson; cost, $18 400; surety, Willis H. Davis; filed Aug. 22; signed Aug. 13; limit 6 months; mason work, $1,750 graded; $4,250 first floor joist on; $8,650 second floor joists on; $3,650 roofed; $500 tiled; $4,600 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractors, Duffy Bros.; cost, $1,990; filed Aug. 22; signed Aug. 13; limit six months; plumbing; $1,000 rough work is tested; $400 completed; $490 35 days,

Church and Twenty-first. Owner, S. Slemmer; architect, Wm. Mooser; contractor, Wm. S. Lott et als; cost $4,000; sureties, J. E. Wells and Jos. Paudler, $2,200; filed Aug. 30; signed Aug. 28; limit 70 days; to build; $750 framed; $750 ready for lathing; $750 rear platform up; $750 completed; $1,000 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, S. H. Kent; cost, $9,675; surety, Edward P. Blake; filed Aug. 22; signed Aug. 13; limit six months; carpenter work, $1,000 second story joists on; $2,000 roof is tinned; $1,500 ready for plaster; $2,956 completed; $2,419 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. Smith; contractors, O'Connell & Lewis; cost, $6,000; surety, Jeremiah Mahony; filed Aug. 22; signed Aug. 13; limit six months; cast iron; $2,250 basement column cast; $2,250 first story columns set; $1,500 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractors, Bigelow & Little; cost, $,876; surety, Oscar Lewis; filed Aug. 22; signed Aug. 13; limit six months; iron and Hyatt lights for sidewalk; $1,150 iron beams all set; $1,757 Hyatt lights completed; 6963 35 days.

City Hall and Park avenue. Owner, Geo. T. Marye, Jr.; architect, Wm. F. Smith; contractor, C. C. Morehouse; cost, $1,622; sureties, Jno. Tuttle; filed Aug. 22; signed Aug. 13; limit six months; plastering; $800 brown coated; $400 completed; $422 35 days.

Clay, bet. Powell and Mason. Owner, C. Colette; architect, W. H. Armitage; contractor, Francis Buckley; cost, $5,800; surety, L. A. Maison, $5,000; filed Aug 10; signed Aug. 5; limit 75 days; 3 story frame; $1,450 framed; $1,450 brown coated; $1,450 completed; $1,450 35 days.

Dale Place and Golden Gate Ave. Owner, Andrew Heneberry; architect, A. J. Barrett; contractor, C. N. Smith; cost, $2,360; surety, Frank P. Latson, $1,000; filed Aug. 5; signed Aug. 1; limit, 60 days; alterations, etc., 75 per cent to be paid as work progresses, bal. 35 days.

Devisadero and Haight. Owner, Anita Fallon; architect, Fred E. Wilcox; contractor, John H. McKay; cost, $8,620; sureties, Frank P. Latson and Geo. T. Shaw, $4,310; filed, Aug. 21; signed Aug. 19; 3-story building; $2,155 framed; $2,155 brown coated; $2,155 completed; $2,155 35 days.

Eighteenth and Noe. Owners, Annie Loy and husband; architect, Frederick Miller; contractor, Wm. McPhee; cost, $2,600; filed Aug. 16, signed Aug. 14; limit, 70 days; building $600; enclosed $2,000, 35 days.

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractor, James Geary; cost, $9,375; filed Aug. 7; signed Aug. 6; brick and carpenter work for a 1-story frame $1,000; first story joists on $1,200; roof on $1 200; brown coated $1,831; white coated $1,800, completed—

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractor, R. A. Vance; cost, $1,140; filed Aug. 7; signed Aug. 6; plumbing, etc. $570; rough work in $285; accepted $285, 35 days.

Ellis and Gough. Owner, Jacob J. Rauer; architects, Chas. R. and John M. Wilson; contractors, Chattain & Gillett; cost, $2,245; filed Aug. 7; signed Aug. 3; cement work, 75 per cent as work progresses, bal. 35 days.

Front and Vallejo. Owner, Mrs. E. B. Sanborn; architects, Wright & Sanders; contractor, John S. Mackay; cost, $17,653; filed Aug. 13; signed Aug. 12; brick building and construction of iron safe, 75 per cent of work done, bal. 35 days.

Fourth and Bluxome. Owner, Peter A. Smith; architect, T. J. Welsh; contractor, John J. Dunn; cost, $5,977; sureties, Behrend Joost and W. A. Messer, $3,000; filed Aug. 10; signed Aug. 5; limit 77 days; carpenter work; $1,400 framed; $2,400 brown mortared; $1,6 0 completed; $1,577 35 days.

Fulton and Buchanan. Owner, N. B. Manville; architect; N. B. Manville; contractor, I. F. Klenck; cost, $1,875; filed Aug. 15; signed Aug. 13; limit, 2 months and 20 days; 2-story building $450; framed $465; plastered $475; completed $485, 35 days.

Fair Oaks bet. Twenty-third and Twenty-fourth. Owner; Jos. Perri; architect, T. F. Mitchell; contractor, Thos. F. Mitchell; cost, $2,980; filed Aug. 3; signed Aug. 3; limit, 70 days; 2-story frame $745; framed $745; brown mortared $745; completed $745, 35 days.

Franklin and Ellis. Owner, Academy of Sacred Heart; architect, Chas. J. I. Devlin; contractor, John Massey; cost, $4,650; sureties, J. J. and James McKinnon, $2,500; filed Aug. 22; signed Aug. 20; limit 60 days; 2-story frame; $750 second story joists on; $1,000 roofed; $1,725 completed $1,175 35 days.

Folsom and Seventh. Owner, Thos. Brady; architect, M. J. Welsh; contractor, Ivory Wells et al; cost, $1,700; filed Aug. 23; signed Aug. 21; alterations; $400 framed; $450 brown coated; $450 completed; $400 35 days.

Folsom and Twenty-sixth. Owner, Jos. Blass; contractor, G. Pavel; cost, $8,360; filed Aug. 23; signed Aug. 10; limit 90 days; 2-story frame; $1,000 framed; $1,000 brown coated; $1,000 completed.

Fulton and Octavia. Owner, John McCarthy; architect, S. Hatfield; contractor, Geo. W. Farnum; cost, $3,495; sureties, F. Joost and Matt Lassell, $4,000; filed Aug. 8; signed Aug. 7; 3-story tenement; $1,000 framed; $1,500 chimneys up; $1,400 wind ws in; $1,495.25 comp eted; $1,795 35 days.

Fell and Laguna. Owner, Robert Layng; contractor, Geo. W. Saulsbury; cost, $2,476; sureties, Daniel Dodge and Edward P. Blakely; filed Aug. 9; signed July 27; limit, Oct. 15, '89; to build; $686.50 framed; $685.50 enclosed; $686.50 brown coated; $686.50 35 days.

Folsom, bet. Twelfth and Thirteenth. Mrs. B. Feldmann; architects, Townsend & Wyneken; contractors, Gray & Stove; cost, $4,244; surety, Louis Mandlebaum, $2,000; filed July 19; signed July 12; limit 90 days; to build; $2,144 outside two-thirds done; $2,100 35 days.

Greenwich and Fillmore. Owner, Peter Magnussen; architects, John & Balczynski; contractors, Chas. Johnson et al; cost, $2,700; filed Aug. 20; signed Aug. 16; 2-story frame; $500 framed; $800 rough mortared; $795 accepted; $675 35 days.

Grove, bet. Franklin and Gough. Owners, Schuseler Bros.; architect, H. C. Macy; contractors, White Bros.; cost, $5,600; surety, F. Joost, $2,500; filed Aug. 20; signed Aug. 19; limit Oct. 2; '89; carpenter work: 75 per cent as work progresses; bal. 35 days.

Grove and Franklin. Owner, Jane Bosby; architect, Chas. J. I. Devlin; contractor, W. B. Anderson et al.; cost, $5,087; sureties, J. F. Kennedy and Geo. T. Shaw, $4,000; filed Aug. 12; signed Aug. 7; 3-story frame $300; framed $600; roof completed $1,000; brown coated $750; exterior mill work completed $900; ready to paint $850; completed $1,287, 35 days.

Hickory and Van Ness Ave. Owner, Emily L. Squire; architect, A. J. Barrett; contractor, L. D. Frichette; cost, $2,700; surety F. G. Norman, $1,000; filed Aug. 6; signed Aug. 2; limit, 75 days; 2-story frame $700; roof boards on $850; brown coated $675; completed $675, 35 days.

Hayes and Octavia. Owner, O. H. Hunt; architect, A. C. Lutgens; contractor, S. H. Kent; cost 8,299; sureties, E. M. Herrick and Frank P. Latson, $5,000; filed Aug. 13; signed Aug. 8; limits, 95 days; 3 story frame $1,000; first story joists up $1,300; enclosed $1,300; rough plumbing done $1,200; outside work done $1,424.25; completed $2,074.75; 35 days.

Hayes and Gough. Owner, Albert Abrams, et al.; architects, Salfield & Kohlberg; contractors, Fuchs & Bucher; cost, $8,612; sureties, H. Niemann and H. Schlesselmann, $8,612; filed Aug. 8; signed Aug. 6; alterations, etc. $1,250; first joists up $1,000; framed $2,000; brown coated $1,000; doors hung $1,299; completed $2,153, 35 days.

Hayes and Webster. Owner, P. Hurley; architect, W. H. Armitage; contractor, C. A. Laherty; cost, $3,690; sureties, J. McGuire and O. H. Greenwald, $3,000; filed Aug. 25; signed Aug. 22; limit 60 days; 2-story frame $922.50 framed; $922.50 brown coated; $922.50 completed; $922.50 35 days.

Howard and Sixth. Owner, H. Comaherns; architect, H. Geilfuss; contractor, J. W. Smith; cost, $5,375; filed Aug. 16; signed Aug. 14; 3-story frame $800; framed $800; partitions set $800; outside work done $800; inside finished $800; completed $1,345, 35 days.

Howard and Twenty-fifth. Owner, Geo. L. Payne; architect, M. J. Lynch; contractor, M. C. Lynch; cost, $4,966; filed Aug. 4; signed Aug. 7; to build $1,241.50; framed $1,241.50; rough mortared $1,241.50, completed $1,141.50, 35 days.

Herman and Stevenson. Owner, Mrs. M. A. Mercer; architect, T. J. Welsh; contractors, R. Doyle & Son; cost, $5,989; sureties, Thos. Winters and P. F. Ward, $3,000; filed Aug. 22; signed Aug. 16; $1,400 framed; $1,400 framed; $1,400 brown mortared; $1,500 completed; $1,689 35 days.

Jersey and Noe. Owner, F. Mundwyler; architect, A. Klahn; contractor; A. Klahn; cost, $3,150; filed Aug. 12; signed Aug. 12; 2-story flat $775; boarded $775; brown-mortared $775; completed $825, 35 days.

Jones and Bush. Owner, C. F. Sanders; architect, Chas. I. Haven; contractor, Wm. F. Wilson; cost, $1,097; filed Aug. 6; signed July 29; plumbing, etc., $400; rough pipes in $417; completed $280, 35 days.

Kearney and Washington. Owner, Louis Schultz; architect, Wm. Mooser; contractor, Crawford Ferris; cost, $18,400; sureties, C. A. Warren and J. O. Button, $12,000; filed Aug. 30; signed Aug. 10; limit 11 days; brick and stone work; 75 per cent as work progresses; bal. 32 days.

Kearney. Owner, Louis Schultz; architect, Wm. Mooser; contractor, Joshua Hendy Machine Works; cost, $18,740; filed Aug. 30; signed Aug. 14; wrought and cast iron work; 75 per cent as work progresses; bal. 35 days.

Kearney and Washington. Owner, Louis Schultz; architect, Wm. Mooser, contractor, J. W. Wisninger; cost, $37,500; sureties, C. C. Rodiffs and E. M. Herrick, $20,000; filed Aug. 30; signed Aug 28; carpenter work, etc.; 75 per cent as work progresses; bal. 35 days.

Kearny and Washington. Owner, Louis Schultz; architect, Wm. Mooser; contractor, J. W. Wisninger; cost, $37,500; sureties, C. C. Rodiffs and E. M. Herrick; $20,000; filed Aug. 30; signed Aug 28; carpenter work, etc.; 75 per cent as work progresses; bal. 35 days.

Larkin bet. Geary and O'Farrell. Owner, Samuel Brodek; architects, Salfield & Kohlberg; contractor, H. Williamson; cost, $1,532; security, Thos. Holms, $1,532; filed Aug. 6; signed July 19; plumbing, etc. $800; rough plumbing in $800; completed $432, 35 days.

Larkin bet. Geary and O'Farrell. Owner, Samuel Brodek; architect, Salfield & Kohlberg; contractor, Chas. Dunlap; cost, $2,275; surety, Henry S. Gray, $2,275; filed Aug. 6; signed Aug. 2; plastering $1,000; brown coated $705; completed $570, 35 days.

Lafayette, bet. Mission and Howard. Owners, Bernard Dowd and wife; rchitects, Townsend & Wyneken; contractor, A. C. Rogers; cost, $1,550; surety T. Richards n, $1,500; filed Aug 2; sign d Aug. 3; alterations, etc.; $500 enclosed, etc.; $400 floors laid, etc.; $415 accepted; $385 35 days.

Montgomery ave and Jackson St. Owner, John B. Magendie; architects, Huerne & Everett; contractors, Martin Fennell & Son; cost, $3,330; surety, Matthew Nunan, $3,000; filed Aug. 12; signed Aug. 12; $3,195 brick side walls are completed, etc.; completed, $3,32.50, 35 days.

Miles court and California street. Owner, Cephas Turner; architect, S. Hatfield; contractor, Allan McDonald; cost, $2,250; sureties, F. Atherolte and Alex. MacDonald, $1,500; filed Aug. 21; signed Aug. 17; 2-story frame; $420 framed; $420 brown mortared; $420 outside finished, etc., $ 27.50 completed; $562.50 35 days.

Market bet. Fourth and Fifth streets. Owner, California Academy of Sciences; architects, Percy & Hamilton; contractor, O. E. Brady; cost, $19,500; sureties, Robert Mitchell and Jeremiah Mahony, $7,000; filed Aug. 26; signed May 21; limit 100 days sandsto e work; 75 per cent as work progresses on fi st Monday of each month; bal. 35 days.

McAllister and Baker. Owner, Chas J. Rosenthal; architect, R. H. White; contractor, Wm Langstaff; cost, $8,580; sureties, Frank P. Latson and F. H. Rosenbaum, $6 000; filed Aug. 24; signed Aug. 22; 3-story frame; $1,347 fr med; $1,272 enclosed; $1,272 brown coated; $1,272 standing finish on; $1,272 completed; $2,145 35 days.

No. 1366 Greenwich. Owner, F. Koenig; contractor, G. T. Knopf; cost, $1,600; filed Aug. 12; signed Aug. 7; to build $600; brown coated $600; completed $400, 35 days.

N. E. Jones and E lis. Owner, Chas. Neff; architect, Wm. Mooser; contractor, J. J. Dunn; cost, $5,125; sureties, Behrend Joost and W. A. Meeker, $3,000; filed Aug. 16; signed Aug. 12; limit, 75 days; to build, 75 per cent as work progresses, bal. 35 days.

N. Twenty-fourth and Tea t Ave, Ow er, O. F. Von Rhein; architect, H. Geilfuss; contractor; J. W. Smith; cost, $5,995; filed Aug. 16; signed Aug. 12; 2-story frame $873; framed $873; par itions set $873; outside done $73; inside done $873; completed $1,590, 35 days.

N. Pacific and Scott. Owner, J. S. Bunnell; architects, J. C. Matthews & Son; contractor, W. Winnie; cost, $4,960; filed Aug. 17; signed Aug. 14; to build $1,240; one-third of work done $1,240; two-thirds of work done $1,240; completed $1,240, 35 days.

Nos. 638 and 640 Mission. Owner, Frederick Hufschmidt; architect, R. Zimmerman; contractor, Riley & Loane; cost, $3,200 filed Aug. 6; signed July 27; alterations $2,400; completed $800, 35 days.

Natoma and Lafayette. Owner, Philipp J. Stolz; architect, John Foster; contractor, John Foster; cost, $5,750; sureties, P. Swift and J. Smith; filed Aug. 22; signed Aug. 21; limit, 90 days; 2-story frame: $1,000 framed; $1,000 enclosed; $1,000 brown coated; $1,300 completed; $1,450 35 days.

No 310 Page. Owner, Edwin Wendele; architect, John J. Clark; contractor, John G. Adams; cost, $5,450; sureties, S. Harmon and F. Joost, $5,000; filed Aug. 27; signed Aug. 23; alterations; $1,500 enclosed; $1,000 brown mortared; $1,500 inside finish on; $1,450 35 days.

Oak and Buchanan. Owner, Catharine Holton; architects, Huerne & Everett; contractor, James Campbell; cost, $3,920; sur ty, J. W. Starbird, $3,000; filed, Aug. 21; sign d Aug. 19; 2-story frame; $980 framed; $980 brown coated; $980 completed; $980 35 days.

Turk and Franklin. Owner, Patrick Muldoon; architects, Huerne & Everett; contractor, James Campbell; cost, $4,875; surety, A. W. Starbird, $3,000; filed, Aug. 21; signed Aug. 19; 2-story frame; $1,218.75 enclosed; $1,218.75 brown coated; $1,218,75 completed; $1,218.75 35 days.

Pacific bet. Buchanan and Webster. Owner, Mrs. M W. Lux; architect, Samuel Newson; contractor, Geo. R. Lang; cost, $1,775; filed Aug. 15; signed Aug. 14; limit, 40 days, alterations, etc., 75 per cent as work progresses, bal. 35 days.

Pacific and Pierce. Owner, Ella J. Yates; architect, Samuel Newson; contractor, Geo. R. Lang; cost, $3,056.50; sureties, A. Kendall and Robt. A. Vance, $10,000; filed Aug. 10; signed Aug. 10; limit 110 days; 2-story frame; $1,208.50 foundation in; $1,208.50 roof on; $1,208.50 brown mortared; $1,208.50 outside finished; $1,208.50 competed; $2,014.50 35 days.

Pacific and Steiner. Owner, James Stewart; architect, Wm. F. Smith; contractor, W. N; Concannon; cost, $6,545; filed Aug. 27; signed Aug, 24; to build; $1,636.25 framed; $1,636.25 ready for plastering; $1,636.25 completed; $1,536 25 35 days.

Polk and Filbert. Owner, Louis Schneider; architect, Wm. H. Wharff; contractor, John T. Hayes; cost, $4,404; sureties, E. J. Reynolds and D. S. Cartwright, $2,500; filed Aug. 30; signed Aug. 27; limit 70 days; 2-story frame; $600 roof shingled; $600 brown coated; $600 white coated; $900 completed; $1,104 35 days.

Page and Baker. Owner, Frank A. Lux; architect, H. Geilfuss; contractors, White Bros.; cost, $5,875; filed Aug. 19; signed Aug. 15; 2-story frame; $880 framed; $880 roofed; $880 partitioned; $880 inside finish on; $880 completed; $1,476 35 days.

S. Sutter and Octavia. Owner, Thos. W. Boyd; architect, J. M. Curtis, contractor, James Geary; cost, $7,675; surety, R. L. Taylor and Geo. W. Watson, $5,000; filed Aug. 16; signed Aug. 13; building 75 per cent as work progresses, bal. 35 days.

S. Sutter and Octavia. Owner, India L. Willis; architect, John M. Curtis; contractor, James Geary; cost, $7,790; sureties, R. L. Taylor, $5,000; filed Aug. 16; signed Aug. 13; to build, 75 per cent as work progresses, bal. 35 days.

S. Hlight and Pierce. Owner, Maurice Blass; architect, A. J. Barnet; contractors, Hou tree Bros.; cost, $5,700; surety, F. Joost, $3,000; filed Aug. 16; signed Aug. 13; limit, 90 days; 2 story frame $1,200; roo boards on $1,000; brown coated $1,075; white coated, etc., $1,000; complete $1,425, 35 days.

Sacramento bet. Polk St. and Van Ness Ave. Owner, J. Caz aux; architect, Townsend & Wyneken; contractor, A. H. Plummer; cost, $4,300; filed Aug. 5; signed July 31; to build $4,000; framed $1,100; brown coated $1,100; white coated $1,100, 35 days.

Stemer, near Walter. Owner, Hans Baon; architect, R. H. White; contractor, Wm. Plum; cost, $4,990; sureties, Behrend Joost and David Woerner, $3,000; filed, Aug. 20; signed, Aug. 15; limit, 90 days; 2-st ry frame; $900 framed; $603 frame set; $663 brown coated; $692 standing finish on; $692 completed; $1,250 35 days.

Sixth and Minna. Owner, Mary E. Von Schroder; architect, T. J. Welsh; contractors, D fty Bros.; cost, $4,562; filed, Aug. 21; signed, Aug. 23; plumbing, etc.; $2,000 rough work in; $1,362 completed; $1,200 35 days.

Steuart and Mission. Owners, Fred rick Wilde et al; architects, Wilk & Spear; contractor, G. G. Gillespie; $5,100; sureties, W. J. Adams and Edw rd P. Blake, $2,000; 2-story brick; $900 first floor joists on; $956.25 s cond floor joists on; $956.25 enclosed; $956 25 comp eted; $1,275 35 days.

Stuart and Mission. Owner, G. G. Gillespie; a chitect, Wild & Spear; contractor, J. J. Conrad; cost, $3,000; filed Aug. 23; signed Aug. 23; brick work; $562 first floor joists on; $5 2 second fl or joists on; $562 enclosed; $554 completed; $750 35 days.

Sacramento street and Waverly pl ce. Owner, Jos. Goetz; architect, T. J. Welsh; contractor, S. H. Kent; cost, $9,000; sureties, R. L. Taylor and Geo. W. Watson, $5,000; filed Aug. 24; sig ed Aug. 23; limit, 60 days; $1,600 second story joists on; $1 600 fourth story; $1,600 floors laid; $1,9 0 completed; $2,250 35 days.

Sansome s d Union. Owners, Haw meyers & Elder; architect, R. H. Sprague; contractors, Mahoney Bros.; cost, $75,207; filed Aug. 27; signed Aug. 27; to build; 75 per cent of value of work during progress; bal. 35 days.

Steiner and Fell. Owner, James Scohie; contractor, W. J. Burt; cost, $1,500; filed Aug. 31; signed Aug. 26; limit 30 days; to remove house known as Irvine residence; to be paid upon completion.

Scott and Oak. Owner, Louis Muller; architect H. Geilfuss. contractor, M. C. Lynch; cost, $2,194; filed 19; signed Aug. 19; 1-story frame; $820 framed; $824 complet d; $560 35 days.

Sheridan and West Ninth. Owner, J. W. Crowe; architect, M. J. Welsh; contractors, R. Doyle & Son; cost, $2,289; filed Aug. 10; signed Aug. 7; to build; $572.25 framed; $572.25 brown mortared; $572.25 completed; $572.25 35 days.

Turk and Buchanan. Owner, Gabriel Abraham; architect, A. J. Barnett; contractors, Roundtree Bros.; cost, $4,920; surety, Behrend Joost, $2,500; filed Aug. 30; signed Aug. 24; limit 90 days; 2-story building; $1,000 roof boards on; $1,000 brown coated; $800 white coated; $800 completed; $1,230 35 days.

Twenty-fourth. Owner, J. H. Leonard; architect, John T. Hogan; contractor, Chas. S. Hale; cost, $2,700; sureties, M. M. Travers and John Payne, $1,000; filed Aug. 17; signed Aug. 16; 2-story frame $506; framed $506; rough plumbing done $506; mortared $507; accepted $675, 35 days.

Twenty-third and Guerrero. Owner, P. R. Lynch; architect Shea & Shea; contractor, Richard Sinnot; cost, $24,556; sureties, A. D. Moore and W. J. Adams; filed Aug. 6; signed Aug 3; limit, 8 months; frame church $1,500; floor joists set $3,300; framed $3,300; rustic on $3,300; brown coated $3,300; primed $3,600; completed $6,256; 45 days.

Twentieth and Capp. Owner, John Reid; architect, Chas. I. Havens; contractor, C. E. Dunshee; cost, $3,815; filed Aug. 10; signed Aug. 8; 2-story frame; $900 boarding on; $900 shingled; $900 outside mill work done; $910 completed; $1,205 35 days.

Van Ness ave. and O'Farrell. Owner, P. W. Riordan; architect, T. J. Welsh; contractors, Mahony Bros.; cost, $51,900; filed Aug. 14; signed Aug. 13; carpenter work, etc., 75 per cent as work progresses, bal. 35 days.

Waverly Place and Sacramento St. Owner, Joseph Goetz; architect, T. J. Welsh; contractors, Daniel J. Brennan et al; cost, $11,495; sureties, P. Degan and R. Brennan, $5,000; filed Aug. 12; signed Aug. 9; $2,000; basement walls built $2,500; first story is built and iron set $1,500; second story is built $1,200; third story is built 1,425; accepted $2,870, 35 days.

W. Shotwell and Eighteenth. Owner, Wm. Perkins; architect, R. H. White; contractor, E. W. Hyde; cost, $4,900; sureties, P. Swift and Frank P. Latson, $3,000; filed Aug. 17; signed Aug. 13; limit, 90 days; 3-story frame $900, framed $887.50; frames set $687.50, brown coated $687.50; standing finish on $687.50; completed $1,250, 35 days.

Webster, bet. Waller and Herman. Owner, Mrs. I. Peterson; architect, Geo Holding; contractor, Geo. Holding; cost, $3,000; filed Aug. 27; signed Aug. 27; limit 75 days; 2-story building; 75 per cent as work is done; bal. 35 days.

Webster, bet. Waller and Herman. Owner, Mrs. H. E. Olsen; architect, Geo. Holding; contractor, Geo. Holding; cost, $3,000; filed Aug. 27; signed Aug. 27; limit 75 days; 2 story building; 75 per cent as work is done; bal. 35 days.

COUNTRY BUILDING NEWS.

(Special to this Journal.)

OAKLAND AND VICINITY.

Cameron an cDonald, four cottages on Nineteenth street, Brush, total cost $12,000.

D. C. Scanlan, two six room cottages on Jones street, cost each, $1,200.

Fred Geother, cottage on Kirkham, near Seventh, cost $1,200.

Eight cottages, six rooms, begun on the Herzog Tract.

Wm. R. Batter, two new houses at Newbury Station.

W. T. Keith, large warehouse, East Fourteenth street.

Carl Wilson, two-story frame on Twenty-first, near Filbert, cost $3,000.

Stockton & Murray, cottage six rooms for W. W. Mann, on Linden street, near Twenty-first, cost $2,000.

Goff, six room cottge on Filbert, near Twenty-first, $2,800.

J. J. Kane, cottage for Nicholas Dolan, Fourteenth street and Fifteenth avenue, cost $3,500.

James Brougher, cottage, East Sixteenth street, near Eighth avenue, cost $1,500.

J. F. Forderer is having a $1,000 addition built to his house on Regent street, between Encinal and San Jose avenues, Alameda.

Wm. Wyber has taken the contract to erect a building for N. Reinecker, on his lot on the northeast corner of High street and Encinal avenue, Alameda. It will be one-story, 36x48 feet, and will be divided into two stores.

Jas. K. Lynch has let the contract for the erection of a two-story dwelling house on Sherman street, Alameda. The contract price is $2,788.

The United States Government has let the contract for building a light-house at the entrance to Oakland Creek, and the work will commence at once. The last Congress appropriated $5,000 for the purpose, and McMahon & Son got the contract. The light will be of the fifth or sixth class, which is considered ample for the purpose.

John Vreece, Temescal, cottage on Clairmont avenue.

McAuley, cottage, Grove street, near Thirty-eighth street, cost $1,200.

M. C. Freezy, two story frame, College street, Berkeley.

Congregational Church room to be erected at Mission, San Jose, cost 1,800.

H. Westdrop, cottage, East Sixteenth street, cost $1,500,

A. C. Powell, cottage, East Sixteenth street, cost $1,800.

Geo. W. Watson, cottage, Eighth avenue, near Nineteeth street, cost $2,600.

Frank Loveland, cottage, Twenty-third avenue and Twenty-first street, cost $1,800.

Warren Olney, cottage, Twenty-second avenue and Fifteenth street, cost $3,600.

Thomas Toole, two story frame, Thirteenth avenue and Fifteenth street, cost $3,000.

Mrs. Envich, cottage, Fourteenth avenue, near Pourteenth street, cost $1,800.

John Sheehan, cottage, Ninth avenue, near Fourteenth street, cost $1,500.

A. W. Buffett is building a $1,400 cottage on Fortieth street, near Grove.

B. S. Jamieson, eight room cottage, Nineteenth street near Adeline, cost $3,700.

Rev. Dr. Merrill, five room cottage on Twenty-first street near Adeline, cost $1,800.

J. N. Dunster, cottage, 835 Peralto street, cost $1,400.

B. Disabilla, cottage, Forty-fifth street.

John Caddigan, cottage, Eighth avenue, cost $1,410.

F. Boehmer, soon to be erected, three story brick building, Park street, Alameda.

Edward Clark, Niles, cottage, architect W. H. Weilbye, cost $3,000.

Contractor Adams, six room cottage, Magnolia above Fifteenth street.

Howard, cottage, Temescal, cost $1,250.

Welsh Tract, San Leandro. Owner, Manuel T. Souza; architect, F. J. Williams; contractor, F. J. Williams; cost, $1,425; filed, Aug. 6; Payments, 60 days; cottage, $356 25; framed, $356 25; brown mortared, $356 25; completed, $356 25, 35 days.

Institution for Deaf, Dumb and Blind at Berkeley. Owner, J. H. McKay; architect, Wright & Sanders; contractor, Dennis Jordan; cost, $24,300; filed, Aug. 23; Payments 100 days; stone, granite and brick work; 75 per cent. of amount at time said Mackay receives his payment from the State: Note—This contract is assigned.

Encinal Ave., near Post St., Alameda. Owner, John J. Boyle; architect, Wright & Sanders; contractor, Julius A. Remmel; cost, $1,207; filed, Aug. 19; Payments, the contractor herein, Dennis ordan, to J. F. Kennedy.

Morton and San Antonio Avenue, Alameda. Owner, Louis F. Geissler; architect, A. W. Pattiani; contractor, A. W. Pattiani & Co; cost, $3,594; filed, August 16; Payments cottage; $400 brown mortar on; $400 completed; $407, 35 days.

Eighth avenue, between E. 14th and E. 15th streets, East Oakland. Owner, Mrs. S. E. Holyer; architect, R. Gray Prise; contractor, William Jess; cost, $2,925; filed, Aug. 5; Payments Nov. 1, 1889; two-story frame; $731 25 enclosed; $731 25 floor laid; $731 25 window frames in. $731 25, 35 days.

Encinal avenue and Post street, Alameda. Owner, F. Marcuse; architect, A. Steubigt; contractor, J. H. Young, cost, 2,000; filed, August 6; Payments October 3, 1889; $500 framed; $500 chimneys built; $500 brown mortared; $500, 35 days.

Willow, near R. R. avenue, Alameda. Owner, Wm. Muller; architect, Fred. P. Fischer; contractor, D. Staub & Son; cost, $2,460; filed August 6; Payments, 90 days; $922 50 framed; $922 50 plastered; $615 completed.

Willow, near R. R. avenue, Alameda. Owner, E. Clark; architect, W. H. Weilbye; contractor, C. E. Dennett; cost, $2,175; filed, August 9; Payments, November 15, 1889; one story frame; $543 75 framed; $543 75 enclosed; $543 75 completed; $543 75, 35 days.

23d avenue and E. 15th street, East Oakland. Owner, Emile Kissling; architect, J. C. Mathews & Son; contractor, H. A. Johnson; cost, $2,173; filed, August 9; Payments, cottage; $250 framed; $500 window frames in; $300 outside painted; $613, completed.

8th avenue, between 18th and 17th streets, East Oakland. Owner, Geo. W. Watson; architect, J. & T. D. Newsom; contractor, J. A. Eastman; cost, $2,600; filed, August 12; signed, August 10.

3d and Louisa streets, Oakland. Owner, Richard Marshall; architect, Speck & Mauer; contractor, Patrick J. Brophy; cost, $1,900; filed August 13; signed, August 6.

Alameda avenue and Willow street, Alameda. Owner, Emilie K. Read and Franklin Read; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; cost, $3,274; filed, Aug. 14; signed, August 5.

JOHN H. WISE, President. H. T. SCOTT, Vice-President. CHAS. H. FROST, General Manager. C. S. PREBLE, Secretary.

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SEND FOR CATALOGUE.

Bancroft Way and Dana street, Berkeley. Owner, Chas. D. Allen; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; cost, $5,532; filed, August 14; signed, August 12.

Adeline Tract, Oakland, Tp. Owner, Mathew Lee; architect, A. W. Pattiani & Co; contractor, W. R. Batten; cost, $1,600; filed, August 15; signed, August 14.

Hirschfeld Tract, Alameda. Owner, H. Forsyth and W. C. Forsyth; architect, A. W. Pattiani; contractor, John J. Boyle; cost, $1,200; filed, August 16; signed, August 14.

San Jose avenue and Chestnut street, Alameda. Owner, Fannie R. Morton; architect, A. W. Pattiani & Co; contractor, A. W. Pattiani & Co; cost, $2,976; filed, August 16; signed, August 14.

Durant avenue and Dana street, Berkeley. Owner, Chas. D. Allen; architect. A. W. Pattiani & Co; contractor, A. W. Pattiani & Co; cost, $3,532; filed, August 16; signed, August 16.

SAN JOSE AND VICINITY.

Residence for Mr. Tillotson, at Berryessa; $4,000.

Residence for Joseph Holland, at Evergreen; W. J. Wolf contractor; $3,000.

Residence for James Farney, on Ninth street; P. R. Wells, contractor; Garden City Mill Work; $3,000.

Mrs. Knox Goodrich, building on First street; R. Summers, contractor for wood work, and W. J. Wolcott for brick work; $10,000.

Dr. Urquhart, residence; C. R. Scammon, contractor; $4,500.

Contractor Hazzard is erecting a five room cottage on Vine street for A. Perry, at a cost of 1,000; also a five room house for Mr. Wright on Minor avenue.

A cottage of five rooms for Frank Lyth; cost $1,500; Ira G. Hazzard contractor.

A six room dwelling for Edward B. Lewis; cost $1,800; Hazzard contractor.

H. H. Farnham is erecting a five room cottage at a cost of $1,200.

J. Slarbore has finished a cottage which cost $1,000.

A house of four rooms is being erected by T. S. Lane at a cost of $900.

A cottage to cost $1,000 is being built for O. P. Cash by Ira G. Hazzard the contractor.

A cottage of four rooms is being built by Mr. Churchill; cost $1,100; Hazzard contractor.

Robert Piggott has contracted to build for William Matthews a one-story frame building on the northwest corner of the Alameda and Autumn street for $6,180.

Residence for James Wyatt, South Seventh street; J. Lenzen & Son, architects; A. Kelsey, contractor; $4,000.

Cottage for Mr. Groves on Hamilton avenue; Frank Davis, contractor; mill plans; $1,800.

Cottage for Mr. Miller on Delmas avenue; Frank Davis, contractor; $1,600.

Cottage for Mrs. Lowe on Little Market street; Frank Davis, contractor; $1,500.

Residence for Frank Davis, North Third street; day work, mill plans; $2,400.

Improvements on First Methodist Church; J. Lenzen & Son, architects; Mr. Phillips, contractor; $6,000.

Residence for C. P. Pauley on the corner of Empire and Tenth; day work, mill plans; $1,500.

Improvements on residence of Mrs. Murphy. Columbet on Fourth street; J. Lenzen & Son architects; day work done by A. C. Bates; $1,000;

Residence for J. Columbet on Fifth street $3,000.

The Hayes residence at Edenville, G. W. Page architect, to be built by day work at an estimates cost of $75,000.

Cottage for J. Jacks on Tenth street, from plans made in the mill; J. J. Hill contractor; $2,000.

Two cottages for J. R. Johnson, from mill plans; day work; $2,500 each.

A cottage on North Fourth street near Empire, J. N. Stevenson, contractor and architect; $2,000.

A winery for Mr. Blennike on the Stevens creek road, by day work; $3,000.

Cottage for J. K. Smith, on Marliere street; Ira Hazzard contractor; $1,200.

Cottage for C. Ballinghall, on Willow street; day work; $1,000.

Residence for Tom Hughes, on Thirteenth street; day work; $1,000.

Residence on San Fernando street near the bridge; J. A. Crawford builder; $1,000.

Residence on Villa avenue, D. D. Briggs contractor; $1,500.

Cottage for M. A. Brown; cost $1,200; Hazzard contractor.

Cottage of four rooms for Dr. Rappe; $1,500.

J. B. Capp is having a ten room house placed on his lots at a cost of $5,000; Hazzard contractor.

A $3,000 cottage for Benjamin Rordeau is to be erected by Mr. Hazzard.

W. E. Woods is having built a five room cottage; cost $1,200; Hazzard contractor.

An eight room house is being built for M. A. Wischaar at a cost of about $2,500.

O. O. Noble is having a six room cottage built at a cost of $1,300; Hazzard contractor.

C. A. Blewitt is having a five room cottage built at a cost of about $1,100; Hazzard contractor.

Contractor Hazzard also begun yesterday on a handsome six room cottage corner of First and Floyd street:, which is to cost $2,500.

Harry Keist is having a five room cottage built at a cost of $1,000.

Mr. Souders, the owner of the Water Works, is also building a cottage to cost about $1,000.

SANTA ROSA.

Contractor J. R. Melson commenced the erection of a dwelling for D. Hodgson on Slater street.

T. J. Ludwig has commenced the completion of the brick block on Fourth street.

GRASS VALLEY.

S. T. Best's new dwelling house on Race street, near Auburn, is approaching completion. It will be neat architecturally as well as conveniently arranged.

Lumber for a residence for John Polkinghorn was hauled to-day to the Conaway tract on Race street.

Bennetts is building an addition to his dwelling corner School and Walsh streets.

Contractor I. T. Walker is making rapid progress with the large building he is putting up at the corner of Mill and Neal streets.

REYNOLDS & ADAMS,

547 Brannan Street,

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Wood Carpets,

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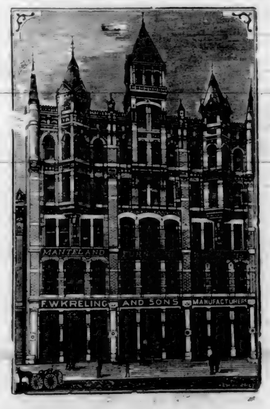

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SAN FRANCISCO, CAL.

Architecture.

In architecture, an art in which nothing but brains can excel, an art which requires years of study, an art which has no standard of grace but which is directly dependent on utility, an art whose creations derive a part at least of their majesty by mere sizes, our city can boast of many talented men, men who have lent to the city of to-day their creative talents and in the handsome, massive and magnificent buildings which line our streets,and in the palatial residences in every section we see evidences of their skill which would reflect credit on any city in the country.

From the low frame buildings of 1849, of any style and built of any kind of material, the advance has been rapid and steady

One frame or flimsy brick building after another has been replaced by handsome, substantial structures until the city to-day presents as handsome an appearance as any city in the country. Every section of the country has its peculiarities and the architecture of each portion generally conforms to the climate, and the individuality of its people.

In San Francisco where sunlight is so essential to the comfort of a building, and where precaution must be taken against earthquakes, as against cyclones, snow and severe winters in other sections of the country, our local architects have mastered and overcome the difficulties attending and are certainly through their long experience and study in overcoming them, better fitted to draw plans and design buildings of a first-class nature than those of more eastern points, for this section. Evidences of their skill to erect first-class fireproof and earthquake proof buildings are every where apparent in this city and throughout the state, and many of our architects would attain prominence in any city in the country.

As in architecture, so in building,material has there been a decided improvement and except in rare instances do we find the old frame being put up instead of a brick or stone building with possibly the exception of residences.

The time has gone by when a property owner covered his lots with badly designed and badly constructed buildings provided he could fill them with tenants. He to-day has his buildings constructed in accordance with the most approved principles of modern architecture uses the best and most improved building material and he finds when his building is complete he can obtain tenants much more quickly and his building commands a much higher rental than the old and illy constructed buildings of former years. While the old-fashioned buildings are in many cases unoccupied, the buildings erected within the past few years with every modern convenience and built on the newest and approved plans of architecture are filled with first-class tenants and in many instances rented before entirely completed. In this issue,a number of illustrations are given of buildings erected by some of our leading architects, accompanied by a short biography.

These building show the various types of architecture of the city, in public buildings, residences and business blocks, each of them being models of their kind.

Percy and Hamilton.

G. W. Percy was born at Bath, Maine, July 5th, 1847. Having completed his education, in 1866 he entered the office of F. H. Fassett, architect, at Portland, Maine, after the great fire which had destroyed that city. Remaining there three years he removed to California in September, 1850, and located at Stockton where he practiced his profession until April, 1872, when he went to Chicago and entered into the employ of J. M. Van Osdell & Co., architects, of that city. He servad with them during the busy years of rebuilding Chicago's burnt district until May, 1873, when he went to Boston, serving as Superintendent of Construction for Bradlee & Winslow.

In September, 1875, he returned to California and opened an office in this city, doing business alone until January, 1880, when he entered into partnership with F. F. Hamilton under the present firm name.

F F. Hamilton was born in Addison Maine, in 1851. He studied his profession under Professor Hammitt Billings, a prominent architect of Boston, entering his office in 1867, and also served with several other prominent architects of that city until 1872 when he formed a partnership with J. B. Samuels, the firm being J. B. Samuels and F. F. Hamilton. They were the architects for several prominent buildings and erected numerous churches in Boston and vicinity. In September, 1875, he came to California and located in this city, being employed upon the new City Hall for three years. In 1878 he took a trip East, returning here again in 1879, and in 1880 formed the present partnership.

Among the prominent buildings erected by this firm are the State Insane Asylum Buildings at Stockton, Masonic Hall, Sperry Flouring Mill, Crown Flour Mills, all at Stockton. The Academy of Sciences (illustrated in this number), the Children's Play House at Golden Gate Park, new First Unitarian Church, corner of Franklin and Geary, Hayward's Apartment House on Larkin street, opposite the new City Hall, Hayward's Block on Sutter above Kearny, the Omnibus Cable Co.'s new car house corner Tenth and Howard, the engine house of the same company on Oak and Broadway, the largest of its character in this city, the buildings of the California Electric Light Company on Townsend and Clarence place and on Stevenson street; the Cunningham Building corner of Second and Stevenson, A. Hayward's magnificent residence at San Mateo, and numerous others in this city and different parts of the State.

Wm. Mooser.

The subject of this article is one of the oldest and best known architects in San Francisco.

He is a native of Switzerland, but came to California at the age of twenty years, arriving here in 1854. One of his first ventures in this country was his employment at the Navy Yard, in designing naval structures, and he has ever since been connected with the building interests of this city, Sacramento and Virginia City, at which latter city he erected the first brick buildings of any importance, such as the M. E. Church, Medine's Block, Wood & Wilson's and Wells, Fargo & Co., buildings.

From Virginia City, Mr. Mooser came back to San Francisco where he has been established ever since and in which place he has erected a large number of private and public buildings. In 1861, he with several other architects founded the San Francisco Architectural Society, and he is to day with the exception of one, the only charter member still actively engaged in the profession. Some of the most important buildings erected under his supervision, are as follows; The Metropolitan Temple, illustrated in this number, K. of P. and Pioneer buildings and Veranda Block, now in course of construction.

At Rutherford station, Mr. Mooser displayed his ability in constructing the famous cellars for The "Inglenook" Vineyard, for G. Niebaum, they being the first of their kind on the Pacific coast constructed almost entirely of concrete.

A. J. Barnett

Was born in St. Louis, Missouri, in 1853, and learned his profession with his father, G. R. Barnett, a prominent architect of St. Louis. He first came to this city in 1874, practiced here awhile, and then went to Chicago, being there associated with A. H. Piquenard, returning to his native city in 1882. He entered into partnership with his father, the firm becoming Barnett & Son, and while there was the architect for several prominent buildings. Finding the western country a better field for his talents he left for Portland, Oregon, and finally came to this city in 1883, since which time he has practiced here continually.

Among the many buildings built by him we mention the following: Oriel block, corner Market and Franklin; Green Valley Stables on Mission and Fifth, the largest livery stable in the city; the residences of Frank P. Dow, Laguna and California; F. T. Black, corner Page and Webster; E. W. Joy, Van Ness Avenue; E. Goggin, Van Ness and Jackson; Simons, Jacobs & Co.'s block a Merced, Cal.; a number of flats for D. W. Parkhurst; the Van Winkle lodging house, corner Turk and Jones; two residences for James P. Dunn at Leavenworth and Jackson; and the Oriel row of thirteen houses on Haight between Webster and Buchanan, of which we give an illustration. This row of houses has the distinctive architectural feature of each house differing from the other in design, no two being alike, the whole still harmonizing, and differ from most houses in not having the long flight of stairs so prevalent here. Each is an e even-room house, and so arranged as to admit the sun in all the principal rooms. The row is a very handsome one, and reflects great credit on Mr. Barnett's abilities as an architect.

John M. Curtis,

The well-known architect, was born in 1852 at Warsaw, Illinois. At an early age he was left an orphan and thrown upon his own resources. He evinced great mechanical genius and entered into service with Bent & Garrity, builders and contractors, of St. Louis, Mo, After serving with them he entered the office of Mitchell & Brady, architects, of St. Louis, and studied the profes-

sion of architecture, remaining there until 1874, when he came to California and located in this city where he has remained in active practice ever since.

While he has been here, he has been closely identified as superintendant, builder, and assistant or chief architect of a great number of our largest and finest buildings.

He was assistant architect of the Baldwin Hotel and Theatre; supervising architect of the new City Hall and architect of the Santa Rosa, Sonoma county, Court House; the Mutual Relief building of Petaluma; Santa Cruz county buildings and jail; Wells & Fargo's new building on Folsom near Serond street; the handsome new winery erected by Boyd & Davis, to be occupied by Kohler & Frohling (illustrated in this number) and many other prominent buildings and residences of this city and surroundnig points.

He is a member of the San Francisco Chapter American Institute of Architects, Treasurer of the Pacific Coast Chapter of American Institute, member of the Technical Society of the Pacific Coast, and has gained a high reputation in his chosen profession.

Salfield & Kohlberg.

David Salfield was born at Keysboard, Illinois, in 1861. When but six years of age he removed with his parents to Germany and received his education in that country. He studied his profession in the various architectural schools of Germany, and in 1880 came to California locating in San Francisco. He served as draughtsman for four years with several architects of this city and then formed a partnership with Emil John, the firm becoming Salfield & John which lasted one year. He then practiced alone a year when the present partnership was formed.

Herman Kohlberg was born at Beverungen, Westphalia, Germany, in 1855. After graduating at the High school of Lippstadt, Westphalia, he attended the Polytechnical High school of Brunswick, near Hanover, taking a three years course. He practiced his profession for several years in southern Germany until 1882 in which year he came to the United States. He served in New York city for one year and then came to this city in 1883.

For two years he held business connections with several architects of this city and in 1885 formed the present partnership with D. Salfield. The firm are the architects for quite a number of fine buildings, notable among which are the following: Rosenthal building, of which an illustration is given in this number, the Rosenbaum building, corner of California and Front streets, Hackmeier's Hotel, J. Carstensen's building, 29th and Dolores, Simon Siegel's row of dwellings, five residences for James B. Hall, a fine business building for G. Woerz on Geary street, business house for A. Marx, Klose & Hillenbrand's Hotel, on Valencia street, B. Miller's flats on Post near Larkin, Victor R. Ulman's residence on Clay street, business house and flats for Dr. Abrams on Hayes street and others in various parts of the city. They received the premium for the design of the Court House at Stockton and are the architects for the jail in that city.

Charles I. Havens

Was born on Long Island, N. Y., in 1849, and came to California in 1856, locating in San Francisco. He entered the office of S. C. Bugbee & Son in 1864 and learned the profession of architecture, serving as draughtsman with them for five years. After that he was connected with John P. Gaynor two years and was with P. R. Schmitd for nine years more, entering into partnership with him in 1881, the firm becoming Schmidt & Havens, which continued for five years. During this time they erected numerous prominent buildings in this city and different portions of the State, among which were The Fulton, corner of Fulton and Larkin streets, The Longworth on Geary, the Haines' residence at San Mateo, the De Lavega residence, Geary street, D. N. Walters' residence, corner Sacramento street and Van Ness avenue, and others

On January 1st, 1886, he commenced business for himself, since which time he has been practicing alone.

He has been the architect of some of our largest and most prominent buildings, notable among which are the following: The Carroll block, on Turk and Laguna, costing $45,000; the Hayward residence, corner of Baker and Hayes streets, $25,000; the Gualala Mill Co. building on Steuart street, running through to East street, south of Market, $45,000; H. C. Talbot's residence at San Leandro, $30,000: the Golden Gate Livery Stable, on Golden Gate avenue (illustrated in this number), $80,000; J. J. Wells' residence, corner of Pacific and Steiner streets; Palmer block, on Mission, between Eleventh and Twelfth streets, $25,000; and numerons others of like character.

He is a member of the San Francisco Chapter, American Institute of Architects, and ranks among the highest in the profession.

Henry Geilfuss

Was born in Thurin, Germany, in 1850, and studied his profession in Erfurt, Weimar and Berlin in the different architectural schools of those cities. While in Berlin and Schlessing he practiced his profession principally under railroad officials in constructing bridges and heavy masonry, thus seeing considerable work and thoroughly preparing him for his future career. In 1876 he left his native country, arriving in this city in the same year, where he has been in active practice ever since, working as draughtsman the first two years. Since he has been in business for himself he has been the architect for some of the best buildings erected here. Among the most prominent are the following: Kohler & Van Bergen's Winery on 3d street between Brannan and Townsend, the Wm. Tell House, Bush steet; the U. S. Brewery; the Zwieg residence, corner of Howard and 23d streets; Vanlag residence on Howard, between 16th and 17th; W. Westerfelt residence, Fulton and Scott streets; John Cook's, Howard, between 20th and 21st; Sam. Steiner's residence on Eddy, between Franklin and Gough; the three-story brick building for stores and lodgings for John Van Bergen, corner 3d and Harrison which we illustrate, and many others.

Reid Bros.

Have been located in this city but a short time and consequently have not been identified with her architectural development. They have an enviable reputation in Chicago, Evansville and San Diego, where they have erected numerous buildings which reflect great credit upon their ability as architects.

The Coronado Hotel at Coronado Beach, which is illustrated in this number, is a monument to their architectural ability and is acknowledged as one of the finest hotels in the country.

Slate.

The material to be used for the roofs of buildings is an important item in their construction, as regards durability and resistance to fire.

Slate is gradually and deservedly taking precedence over all other materials for roofing purposes, as it will generally outlast the life of any building; it never requires painting, is a perfect resistance to fire, is storm proof, and imparts much warmth to any building covered with it.

The first cost is only nominally greater than shingles or other destructible material used, and it will outlast any other material fifty to one hundred years, being almost indestructable.

Another advantage of slate roofing is its handsome appearance, as noticed on the fine buildings in eastern cities, where it is almost universally used, besides requiring no painting or repairs, as a roof constructed of slate lasts for years, and therefore is far more economical in the end than the use of material formerly in vogue here.

The California Slate Company, whose offices are located at No. 9 Mission street, are prepared to furnish a superior quality of slate for roofing purposes in any quantities to suit.

Their quarries are located in El Dorado county, and expert architects pronounce the quality second to none, and generally better than any produced in the eastern states or Europe.

They are enabled to furnish any sizes that may be required of an average thickness of three-eighths of an inch. The color is a rich blue black, of fine grain and unusually smooth surface, which imparts to any building a graceful and handsome appearance.

Besides roofing this slate can be used for mantles, sidewalk tiles and general building purposes, and can be quarried large and thick enough for billiard table tops. It admits of a fine polish, and is withal a valuable addition to our building material.

Samples of this company's product can be seen at the Mechanics' Institute Fair, and at their office No. 9 Mission street, and parties contemplating building will do well to inspect this material, as they will be convinced of its superiority for roofing purposes.

THE photo-engravings used in illustrating this number were made by the Globe Photo-Engraving Co., 419 Sacramento street. This is a new concern and is doing some excellent work.

Premises at Second & Folsom Streets.

JOHN M. CURTIS, ARCHITECT.

Furniture, Carpets and Upholstery.

The question how to furnish a house after it leaves the architect's or builder's hands is an all importrnt one. What kind of carpets are suitable for this room, and what color or pattern for that; what style of furniture for the parlor, bedroom, library, dining room. etc.; and the kind of draperies, decorations, etc., suitable for each separate room.

The furniture and carpets of to-day differ very materially from the kind in use here in our early history. Then the plain sanded or plain board floor was the only carpet, and the furniture of the very cheapest kind. With the advance of civilization and the rapid growth of this city in wealth and refinement came the demand for the luxuries of eastern cities, and we find to-day as elegantly furnished mansions, supplied by the merchant firms in our midst, as in any city in the country. It is no longer necessary to send to the eastern points for the latest designs in carpets, furniture or upholstery, for our own dealers in these lines carry as large and complete stocks of such goods as any similar houses in the east.

The styles in furniture change with every year, each era having some particular fancy, thus the designs are continuously changing from the heavy massive pieces of former years to the elaborately carved, and then again to the delicately fashioned style of a century or so ago.

The furniture of to-day is of a severe and austere pattern, differing entirely from the ornamental and elaborate designs formerly in vogue, making quite a radical change, and withal has an elegant, substantial and luxuriant appearance.

As in design so does the style in the woods change, and the most fashionable and latest to-day is furniture of oak or antique oak, although the rich mahogany cherry and walnut are still called for. So in carpets, window shades, draperies and other decorations, each season brings new changes and designs, and richer material requiring the ingenuity and experienced taste of the artist to decide which is the most suitable for the correct furnishing of the several rooms. In eastern cities the furnishing of a modern residence is given into the hands of some well-known furnisher, who has *carte blanche* to use his skill and artistic taste in the complete furnishing of the parlors, library, bedrooms, dining rooms, etc., with some passing suggestions from the owner, and invariably when complete the house is better furnished, everything harmonizing more than it the different furnishings and decorations were supplied by so many different firms.

Such a firm carrying a stock of goods to furnish a house complete is the well known firm of W. & J. Sloane & Co., 641 to 647 Market street. The structure occupied by them is one of our modern business buildings, equipped with every convenience and arranged so as to display their elegant stock to the best advantage.

Their stock of furniture in parlor, bedroom, library and dining-room sets is varied and handsome, every factory in the country being placed under requisition and their choicest productions chosen. The firm aims always to have the very latest and newest designs in the market, and are giving our residents here the most modern goods as soon as produced in eastern points. They also manufacture furniture to order and furnish original designs.

In carpets their stook is also most complete, embracing English and American Wiltons, Axminsters and other kinds of all grades, from the cheapest to the most expensive. W. & J. Sloane & Co. are sole agents for Alex. Smith & Son's Co. of Yonkers, N. Y., American Moquettes. These carpets for beauty of design and durability cannot be excelled by any fabric, and are superior to many imported articles of a similar kind. In window shades, curtains, tapestries and upholstery goods the house has a most elegant selection of every shade and design; all departments in charge of experienced artists. The firm have furnished many of our leading residences and hotels, among which are the following:

The Palace Hotel furnished by them when opened with carpets throughout, the Baldwin Hotel and Theatre, the new California Theatre, the Hotel Del Monte with carpets and upholstery, and all the carpets for the Hotel Rafael, and the Stanford house at Palo Alto.

The firm always aim to give their patrons the very best and latest things in the market, and have won an enviable reputation in their particular line.

The attention of the public is called to the fine exhibit of the firm at the Mechanics' fair, where three interiors of parlor, dining-room and chamber are shown.

Lumber and Building Materials.

The resources of the Pacific Coast in lumber are almost inexhaustible, for nearly all the varieties of wood grow throughout the different sections of the country, so that taken as a whole this quarter of the United States certainly is better supplied with lumber for the various uses than any other portion of the land. Lumber forms an important factor in the building interest, for no building is erected except that lumber enters into the construction in some form or other.

The lumber to be used in a building shou'd be, first of all, of good quality and well seasoned. Certainly no State in this country has finer qualities of lumber or a climate better adapted to the thorough seasoning of it than our own State of California.

Of the different kinds of lumber, redwood, of course, is more commonly used than any other. Our redwood forests are the wonder of the world, and millions of feet are annually cut for this and other markets. It certainly is the best building material of wood we have; and, besides its other numerous good qualities it burns slower than most any wood used in the construction of houses, necessarily making it a very valuable item in the erection of fronts of buildings, since its slowness to burn is the protection from fire.

It is also used for inside finish of buildings, admitting of ornamentation and polish for doors, panel work, wainscoting and other uses throughout the building.

Sugar pine on account of its scarcity in comparison with redwood—white pine, yellow pine, etc., is the highest price lumber for building material. It is stronger than redwood, has a fine grain, is free from pitch, and is used principally for doors, blinds, sash, etc.

The Curly and Burhl redwoods are two of the handsomest woods of our native forests, and are growing more and more popular, not only here but in Eastern and even foreign markets.

The curly redwood is obtained when milling, from the stump or first log in the tree, and runs from three to fifteen feet in diameter. It admits of high polish and has a very beautiful grain, curly as the name indicates, showing the tracery of fern leaves and heads of animals. This wood is being extensieely used for interior finish, for panels in doors, counter tops, table tops, and all kinds of bedroom and parlor furniture.

Burhl redwood comes in round or oval pieces, from two to three feet in diameter, and is also a valuable addition to our fancy woods.

A firm making a specialty of this kind of lumber is Starbird & Goldstone, located on the corner of Market and Spear streets. This company was established in 1872 and has been prominently identified with the lumber and building interests of our city ever since. They are wholesale and retail dealers in all kinds of lumber and building materials, making a specialty of sugar pine and also of Curly and Buhrhl redwood for Eastern shipment. Besides these they carry a full and complete stock of building material, such as lath, shingles, etc., and dry dunnage for ships.

They solicit the trade of the builders of this city and the coast, and ship largely to Eastern and foreign points.

They have supplied a large number of houses with their lumber and have lately shipped 75,000 feet to Liverpool and 50,000 feet to London of Curly redwood and Burhl, which are prized very highly there and are rapidly superceding other fancy woods. In this city these woods have been used quite frequently in some of our prominent residences, notably in W. T. Coleman's, corner of Fillmore and Pacific streets, for panneling in the halls and library.

Owners and contractors would do well to make a more liberal use of these handsome native woods in the finish of their own buildings than they have heretofore—thereby encouraging our home industries in this branch of industry as well as in others.

Hoop Clamps for Large Tanks.

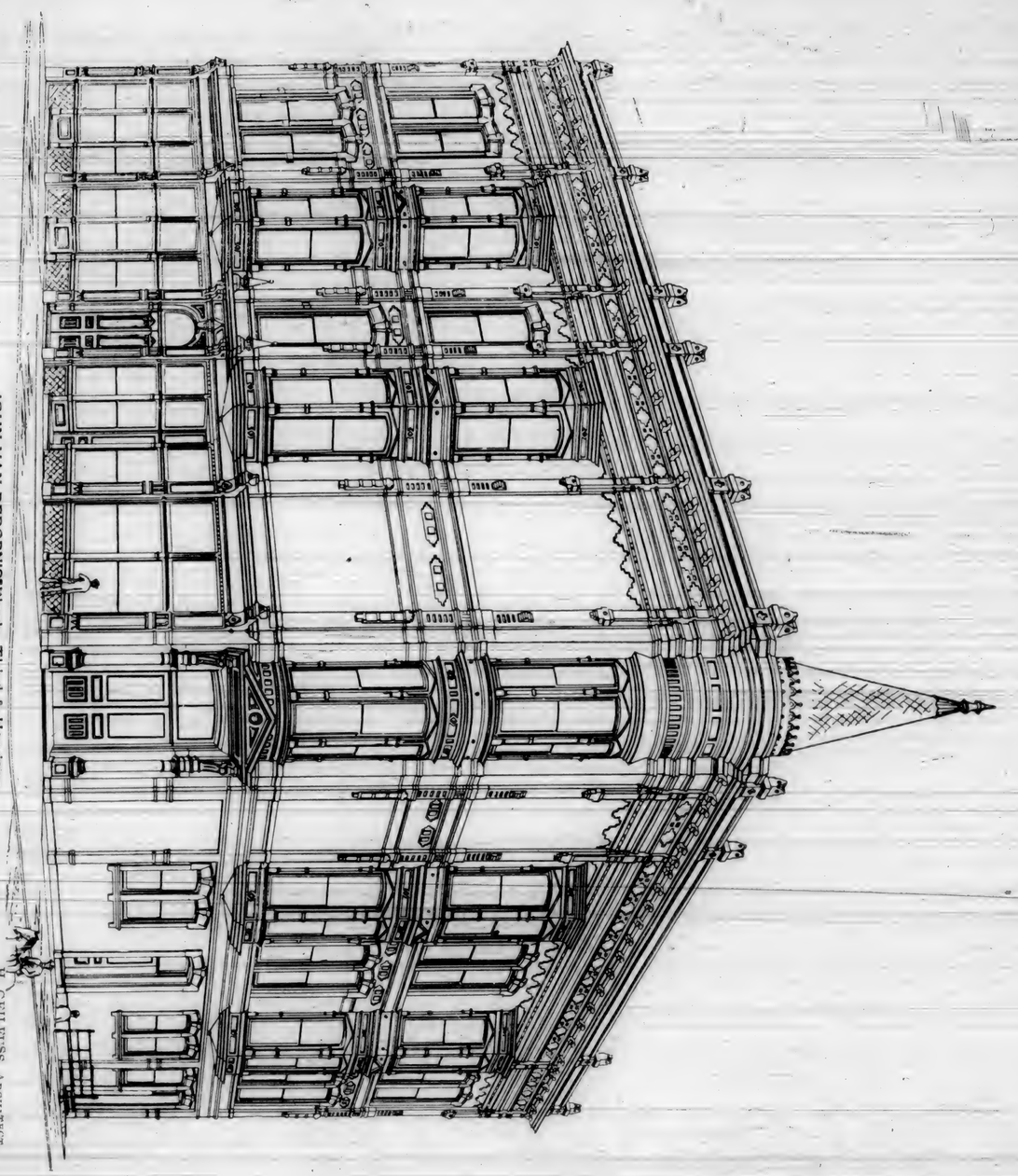
The invention of Mr. Asa R. Wells, which is illustrated in this number, supplies a great want, particularly in dry and hot climates; where shrinkage of lumber is considerable.

No devise heretofore in use for tightening hoops has been satisfactory, for the reason that the draft was not straight and therefore not direct on the hoops.

The advantage of a clamp hoop over a riveted hoop, particularly in heavy bands for large tank work, must be apparent to all.

To tighten a riveted hoop requires tools, scaffolding and capable men. It also mars the paint and injures the iron. To tighten with a clamp, working freely, requires simply a ladder and a wrench in the hands of anybody.

Mechanically considered, the device may be described as a right and left draw buckle, acting on ball and socket joints. It therefore works equally free, powerfully and effectually on long or short draft and on large or small circles. Practically considered, this device has proved a great success. By its use Wells, Russell & Co. have set up some tanks as large as 36 feet in diameter, which are perfectly water-tight.



JOHN VAN BERGEN'S Block—Third & Harrison.

H. GEILFUSS, ARCHITECT.

Window Glass.

One of the most important items which enters into the construction of a building is glass, both plain and ornamental, and consequently in the letting out of contracts builders should certainly see that the very best kind obtainable is to be used. Nothing adds so much to the appearance of a building as clear, transparent window glass, and tenants certainly appreciate rooms which have windows of clear and perfect glass. The facilities for obtaining the best glass manufactured, are as great in this city as in any city in the country, and there is therefore no excuse for not taking advantage of the opportunity offered and using first-class material, which is certainly the most economical in the end.

The establishment of Fr. H. Rosenbaum is one of the oldest and most reliable in the city in this branch of manufacture, having been established in 1862, being then located on Sacramento street near Front. In 1864 he removed to Battery street near Washington, but quarters being too small another removal was made in 1868 to his present location, 567 Market street.

The premises occupied consist of three floors 30x170 feet in dimensions, with an additional warehouse on Stevenson street in the rear 50x100 feet.

A large and complete stock is constantly carried, consisting of French, German and English plate glass, window glass, mirrors and looking glass plates, rough plates for sidewalks, corrugated glass for skylights, colored, enameled, cathedral and prismatic glass in all desired sizes.

On the second floor is located the factory, which some six months ago was enlarged and thoroughly equipped with the latest and most improved machinery for silvering, beveling, ornamental cutting, grinding, embossing and crystallizing glass.

Skilled mechanics are employed in all the various departments, and orders are filled promptly and on very short notice. Estimates are furnished on all contracts on parlor and bar room mirrors of all kinds.

Among the prominent buildings furnished by this house we mention the following, which give evidence of artistic and first-class workmanship:

The First National Bank building, with crystallized, beveled and ornamental glass; the Meyer residence, California and Gough streets; A. D. Moore's residence, Pacific avenue and Deviseadero street; J. A. Hooper's residence, Laguna and Washington streets; the Mareschal Neil House, corner Ellis and Jones streets; the Collins residence, corner Alice and Durant, Oakland; A. D. French's residence, East Oakland, Mr. Hanson's residence, Redwood City; M. Rosenbaum's building, now in course of construction, corner of California and Front; the Bancroft History building, Market street, McDonough Block in Oakland: Capt. Niebaum's villa in Inglewood, Napa county, and many others.

Mirrors from this establishment adorn the walls of some of our most pallatial homes, and massive plate glass windows which add so much to attractiveness of stores owe their introduction in a great measure to the enterprise of this pushing firm.

Wire and Iron Fencing and Ornamental Work.

Wire and iron are rapidly superceding wood in most cases where used for ornamental purposes, such as fencing, railing, roof cresting, etc. The uses wire and iron can be put to are innumerable, and from being the more durable admits of more ornamentation than wood for the purposes used. Wire and iron are used for fencing, for houses, stair railing, divisions, floor rails, desk and counter railings, panels of elevators, elevator guards, skylight guards, for protection against fire and breakage of glass, for the covering of basement windows, gallery fencing, stores and other numerous uses.

Wire fencing, and more especially iron fencing, is rapidly taking the place of the old wooden fencing formerly used, and is a vast improvement. It is highly ornamental and durable, being almost indestructable and the more economical.

In iron fencing there are constantly new designs being manufactured, the variety being without limit, as the wire can be twisted by the new machinery now in use into any shape or design imaginable

The wire works of D. D. Wass, 141 and 143 First street, are the largest in this line on the coast and were established in 1884. The works have been enlarged to accommodate Mr. Wass' increased business and are thoroughly equipped with all modern appliances and machinery for the manufacture of his various specialties and products, besides constantly supplied with new machinery as the occasion demands. He gives employment to a large force of hands and is prepared to manufacture on short notice all kinds of wrought iron and wire fencing, roof crestings and finials, wire window guards, gates, skylight guard work, desk, counter, bank and office railing, ornamental brass work, gas-pipe rail, show window fixtures, coal and sand screens, founders' riddles, spark guards and fenders, and also light ornamental wrought iron work.

He also makes a specialty of all kinds of artistic brass and nickel-plated work in the shape of gates and wickets. Mr. Wass has filled a large number of contracts and furnished the wire and ornamental iron work on a great number of buildings in this city and in various parts of the State. He has just finished all the wire work on the new cruiser "Charleston," consisting of some 300 mess and clothes lockers, wired the same vessel for an electric bell system, furnished the wire work for the bank of Hanford, Cal., consisting of counter railings, wickets, partition work, doors, etc., also the elevator work in the Walters' building, Sullivan estate building on Bush street, Huntington & Hopkins building, Golden Rule Bazaar, and has the contract for furnishing the new Asylum building at Agnews with wire window guards, besides other numerous and extensive contracts.

Parties desiring work of this nature will do well to call upon D. D. Wass and examine the class of work turned out in his establishment.

Hot Water Heating.

The old idea that we need no artificial heat in our houses in California has long since been exploded, and it is no longer a question of *shall we heat*, but now shall we heat our houses. The open grate or fireplace, the store and hot air furnace systems have long been used on this coast. Laterly the steam and hot water systems have been conspicuously brought forward and are becoming more popular and general in their use. For private residences the hot water is the best, giving a mild equiable temperature superior to the stove hot air furnace or the steam systems; and where it has been properly constructed, for comfort, economy and healthfulness, it has no equal. Two things are requisite herein to its success:

First—The apparatus must be adapted to the wants of this coast, and herein the fuel, the water and climate must be considered.

Second—The system requires more care, judgment and skill in its construction to ensure success than either of the other systems, for unless the circulation be perfect and the distribution well balanced the system will be faulty and undesirable, the heat slow and unequally distributed, and the consumption of fuel unnecessarily increased.

This skill and judgment is obtained only by experience. The principle of the hot water circulation is entirely unlike that of steam. Neither the steam fitter, the plumber, nor the hot air furnace men have any practical experience adapting them for this work. *It is a trade by itself*, and the plumber or hot air furnace agent who contracts to put up a hot water apparatus generally experiments at the expense of the owner of the building.

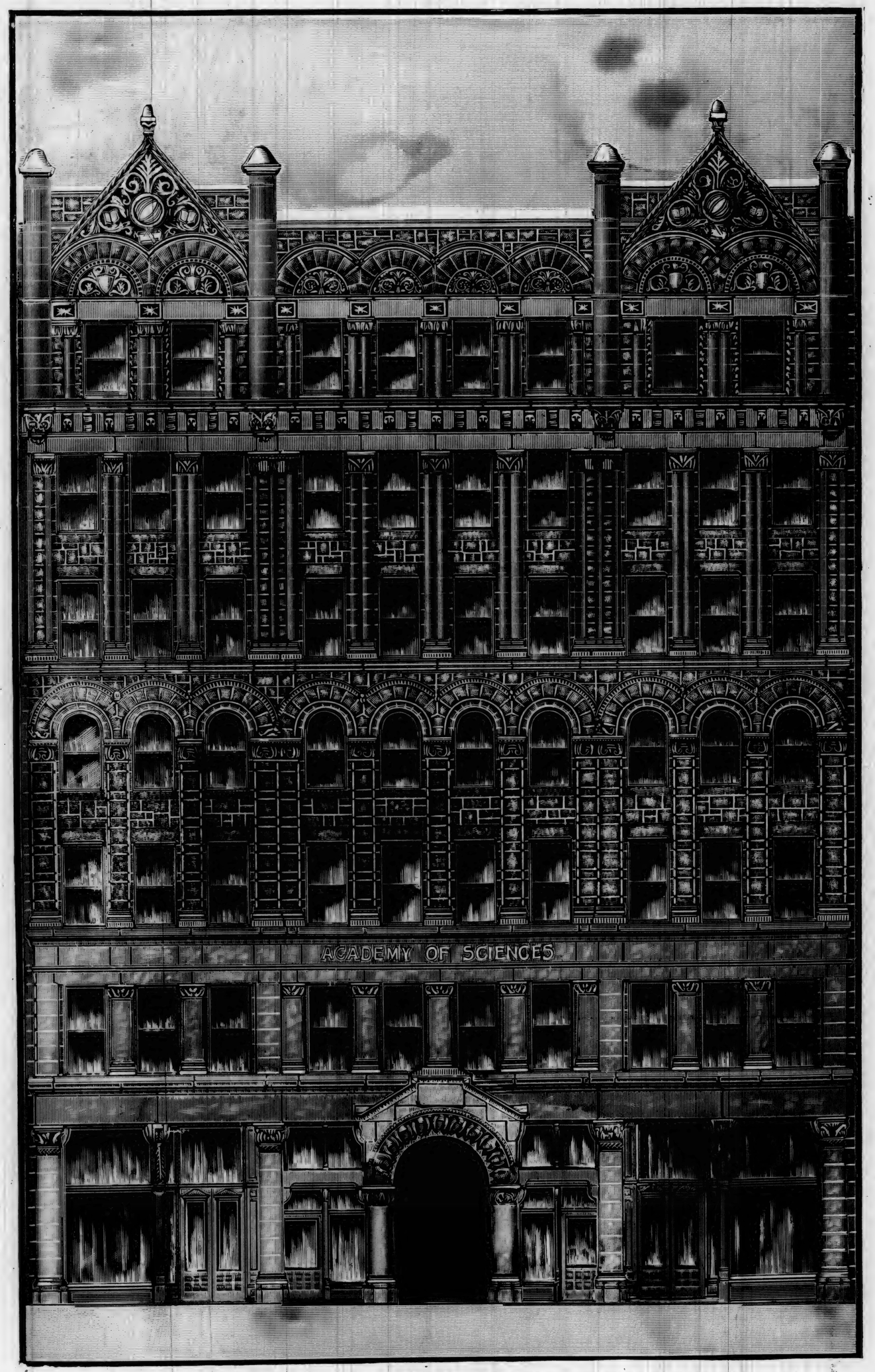
The hot water system was introduced on this coast eleven years ago by C. D. Harvey, who brought from the eastern states the latest and most desirable appliances then in use for the hot water warming of houses.

It soon became apparent that the different climate of the Pacific coast, the different fuel and the different surroundings required a different form from those used in the eastern states, where continuous and strong fires are maintained from early fall until late spring.

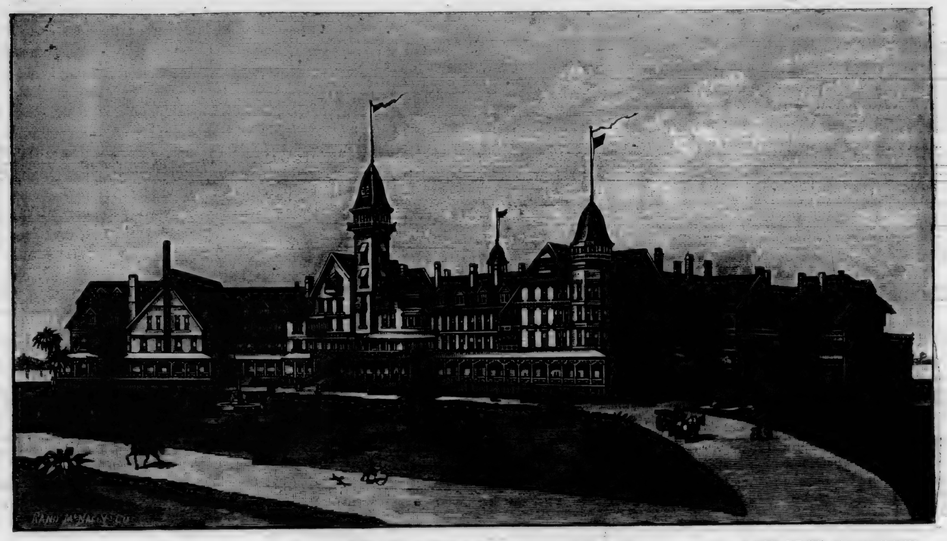
The hard coal burners were illy adapted to the soft bituminous coal used here, and the impure water of San Francisco and Oakland required a different construction of heater. Eleven years of practical labor and observation in this work has enabled the industrious inventor to detect and obviate many of the objectionable features of the eastern apparatus for our California trade, and in the face of strong competition to establish another local industry on our coast.

The reputation of the *Harvey hot water heater* was no sooner established than the eastern houses flooded the market with their same discarded goods, operating through local agents who have recently, and with little or no experience in this system except such as has been acquired in the general plumbing trade, become the advocates of the hot water system.

The first heater introduced by Mr. Harvey was formed by a series of flat cast iron plates, or water chambers, placed horizontally over the fire-box in stacks, around and through which the fire passed in its course to the chimney.



THE NEW BUILDING FOR THE CALIFORNIA ACADEMY OF SCIENCES, SAN FRANCISCO, CAL.
PERCY & HAMILTON, ARCHITECTS.



Hotel Del Coronado, Coronado Beach. REID BROS. ARCHITECTS.

This was economical in fuel, quick to heat and satisfactory for the first few months. Soon however the *sediment* from the water was deposited within these sections, making the fire less effective and the deposit increasing. The lower section nearest the fire cracked or burned out after three or four years' service, so their removal became a necessity.

Next the form of the casting from a flat to a curved surface was adopted, using return flues and providing for the deposit of sediment below the direct fire surface.

This form lasted longer, but the same results followed though less frequent. It was therefore apparent that the cast iron surfaces could not be relied upon, where the heating and cooling of the surfaces followed in such frequent succession as in our climate. The iron becoming crystalized was bound sooner or later to crack.

Next the tubular heater, constructed of two-inch wrought iron pipe, containing a smaller pipe inside to secure a circulation, was used. By this heater the tendency to crack was obviated, but the deposit of sediment and the increased friction retarding the circulation between the two pipes, after a short trial, stamped this as only a partial success.

Three years of experience and study have demonstrated that the successful hot water heater for the Pacific Coast must be accessable in all its parts, within the water chambers as well as upon the few surfaces outside. The removal of the sediment inside the heater is quite as important as the cleaning of the soot from the outside surface. While both are non-conductors of heat and cause a needless waste of fuel, the sediment will cause the cast iron to crack and the wrought iron to burn out and will also retard the circulation by causing unnecessary friction within the pipes and chambers.

All the different forms of heater above described, or heaters constructed upon similar plans, are extensively advertised on this coast by Eastern houses through local agents with no practical experience with these goods.

The flat cast iron sections or stacks over the fire-box, as well as the telescoped pipe heaters in their various forms, will all repeat the same results over again and the purchasers will pay for the experiment while the agents, unconcerned and unconscious of the inevitable result, continues to advocate, advertise and sell the same.

"Where ignorance is bliss 'tis folly to be wise," especially if the purchaser pays the price and the agent pockets the profit.

The hot water system is undoubtedly superior to any other if properly constructed, and no greater mistake can be made than to suppose that a plumber or other pipe fitter can satisfactorily plan and construct this work, relying upon Eastern appliances and Eastern plans where practical experience is lacking.

Mr. Harvey has invented and manufactures a wrought iron tubular heater so constructed that every part inside and outside can be reached and cleaned, and any tube can be removed and replaced with a new one without disconnecting the heater or disturbing the brick work or sending to the factory for a duplicate section in case of a crack or defect, as would be necessary with an Eastern heater. Mr. Harvey has also the exclusive agency for the celebrated Bundy Hot Water and Steam Radiator, including the New Elite, which he uses in his local business or furnishes to the trade. This radiator is used more extensively than any other, over 11,000,000 square feet now being in use, and are made in a greater variety of forms than any other manufactured.

Mr. Harvey is doing exclusively a hot water and steam heater business, using the best material, the latest devises and doing only first class work which his eleven years experience will corroborate. His connection with the Griffling Iron Co., the largest manufacturing firm of hot water and steam heating radiators in the United States, ensuring him the latest, best and most improved appliances from the East in connection with his own inventions here.

Elevators.

The building of elevators has shown as much progress and improvement as any other of the conveniences of the modern building of to day, and a building without a first-class elevator is as much a novelty as one in former years was with one. The old rope hand hoist first in use, gave way to the friction clutch hand hoist, which is still in use in some buildings for freight purposes, but is being replaced by the more modern elevators now being almost universally erected in all first-class buildings.

In passenger elevators, the old style horizontal cylinder hoist has many disadvantages and is a very dangerous machine. It has a large and small drum and a coil continually revolving around two small drums, causing it to crack and break, and of a necessity the cage must fall, depending entirely upon what precaution is taken to prevent or stop its rapid descent.

Another disadvantage in these elevators has been to use only one main rope for the cage and two or more drum ropes. This machine, which is called a pull machine, is so constructed that the water enters on the rod side of the piston, which makes it very dangerous, for should the piston rod corrode from the action of the water, or become fractured by use, which often happens, the cage drops and endangers life and limb. There can be no question, that as compared with other large cities in this country, we are behind the times in making compulsory provisions for the safety of our citizens, and steps should be taken to compel the use of the best and most improved appliances in elevators that insure absolute safety to our citizens.

Undoubtedly the safest protection against accident is the Safety Air Cushion and Air Brake attachment supplied by the Ellithorpe Air Brake Company, of which the firm of Wm. H. Birch & Co., 119 Beale street, of this city, are the sole agents and manufacturers on this coast.

This air cushion, which can be built in in any elevator now in use, is simplicity itself; there is absolutely nothing to get out of order or to cause death or accident through inattention or neglect; there are no springs to rust or wheels to oil or other contrivance to manipulate. The cushion has been tested all over he country, both intentionally and unintentionally, and never when the cab has been started, even from the top of the highest buildings, has an egg been broken, a glass of water spilled or the smallest damage happened. This air cushion is not a contrivance to stop the cab in transit. If the cable breaks or the cab starts on its fearful fall, it is allowed to go, but as it approaches the bottom it is gradually and safely brought to a halt by a scientific application of air caused by its own velocity, and this without jar or commotion of any kind.

The two safety devices known as the Ellithorpe Air Brake and the Ellithorpe Air Cushion have stood the tests of hundreds of the most severe and practical trials, and in no single instance have they failed to operate successfully. The air brake is simple and easily applied. It operates upon a different principle from the air cushion. The air brake while operated by means of compressed air prevents the cab from falling more than a few feet, stopping it gradually without the slightest concussion, the effect produced being precisely the same as applying the Westinghouse brake to a train of cars while under a high rate of speed.

There can no longer be any excuse for loss of life from the falling of elevator cabs, for it has been fully and practically demonstrated that either the air cushion or air brake will effectually remedy this great danger.

Wm. H. Birch & Co., 119 Beale street, the agents for this important invention, have placed them in the following buildings: The Pacific Union Club, the Hillsdale house on Sixth and Jessie, two in the Rosenthal building on Market street, the Marechal Neil house corner Ellis and Jones, First National Bank building, New City Hall, this city, and the Fresno Savings and Loan Society building, Fresno, all of which have been placed since November last and successfully dropped. The latest trial was in the Pleasanton Hotel where the apparatus was tested in the presence of all the guests, the cage having been dropped ninety-four feet; and also the New City Hall elevator in the presence of the mayor of the city and other officials.

Patent Chimneys.

The kind of chimneys to be used, in the construction of a building, is and should be an important item with the architect, contractor or owner of the building to be erected for upon it depends to a great extent the security of the building from fire and withal the comfort of the tenant.

Great improvements have been made in the building of chimneys. The old style brick ones which were brought up from the basement to the roof have been supplanted by the introduction of the patent modern ones which are now used almost exclusively in all modern buildings.

J. Browell, No. 727 Montgomery street, is the owner and patentee of Browell's Patent Chimneys, which have been endorsed by the Board of Supervisors and approved and recommended by the Fire Wardens, Insurance Companies and leading architects throughout the state generally.

This chimney is constructed on the inside of terra cotta of the very finest fire clay, and has an outside lining of galvanized iron with an air space from the bottom to the top above the roof, while most other patent chimneys are perforated with holes, thereby sending all the hot air though the building, having no escape above the roof, thus making them a veritable hot air bed and consequently very dangerons.

In former years the pipe manufactured was of inferior quality, but now through years of experiments and experience, this inferiority has been overcome. The pipe used by Mr. Browell in the construction of his patent chimney is made of the very best terra cotta and is perfect in every respect, both as regards to safety from fire and to strength and lightness.

His chimney can be placed in any part of the house or attached to the outside of any building, being fastened to the building by means of iron rods or straps making them perfectly straight. The bands which are put around the meeting ends of the sections of pipe are carefully filled with cement on other fireproof substances, thereby making the chimney absolutely safe and there has never been an instance of fire through means of defective flues where his chimneys have been in use. These chimneys are also constructed in such a manner, that they can be readily used as heaters and ventilators and are unquestionably superior to anything of the kind invented in the United States. They are the only chimneys in which bands and fillings can be used to make a smoke and air tight joint, and in which iron rods or straps can be used for fastening the chimney to a building, all others being infringments.

Mr. Browell is the patentee of five patents covering every improvement that can be made and the chimneys he is now using upon the various buildings in this city and vicinity are as near perfect as can be made. They can be shipped to any part of the country and put into position by any mechanic. Owners of builders should see to it that in specificatlons of their buildings, Browell's chimneys are specified and used,

In many instances where the Browell chimney is called for in the specifications, a cheaper and inferior chimney is often substituted and architects or owners should investigate more closely into such matters and see that the Browell chimneys are used in every instance. It would also be to the interest of the insurance companies to pay some attention to the kind of chimneys used on buildings upon which risks are taken.

While probably more expensive than other chimneys they are much cheaper in the end and save considerable future repairs and trouble.

These chimneys are in use upon the principal buildings of this city and vicinity, prominent among which are the residences of M. Hopkins, Senator Stanford, W. H. Crocker, the London and Paris Bank building, the Harbor Commissioners offices on the wharves, and are now being used upon the building erected by Henry Matthews, on Ellis, between Paul and Mason streets.

Artificial Stone Pavements.

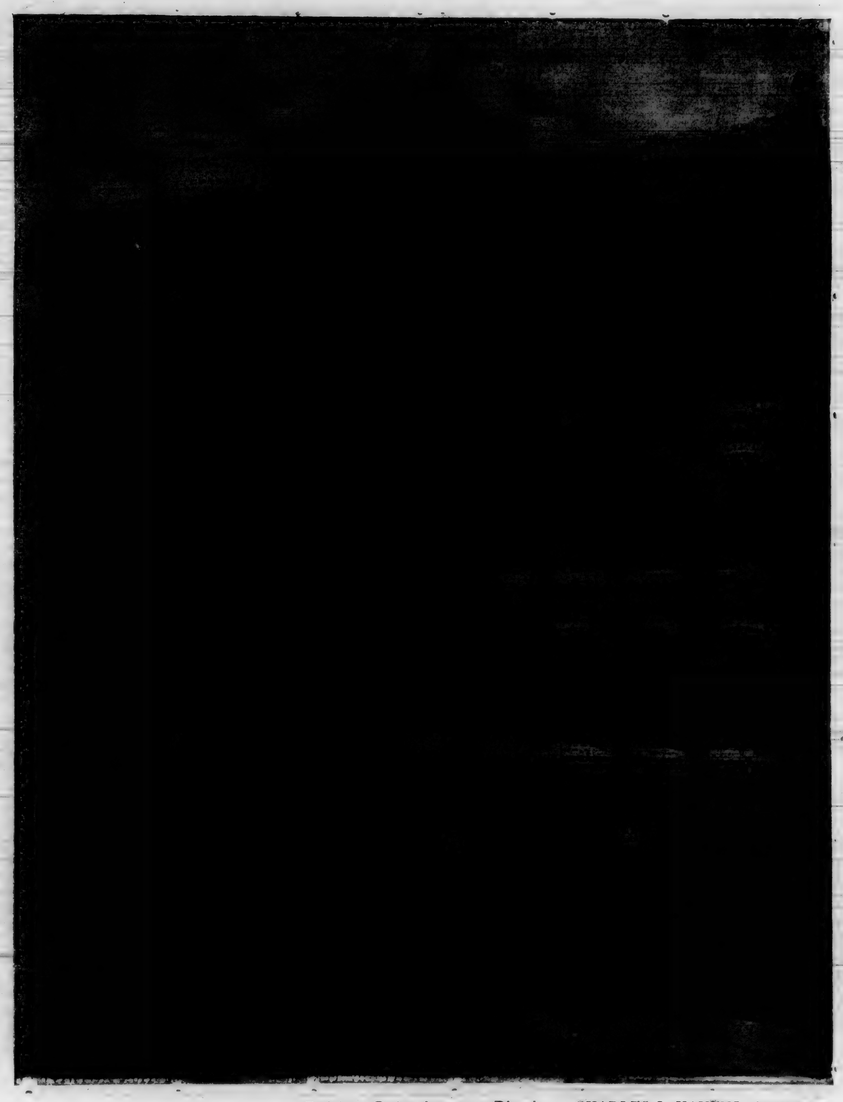
In keeping with the general advance and progress of architecture has been the improvements of our streets and sidewalks.

From the time of uneven, unsightly decaying planks, with projecting nails, to the era of brick pavements covered with soft composition of almost as uneven and unsightly appearance as the former, to the handsome, hard and durable artificial stone pavements of the present day, our city has shown a gradual and steady advance.

A handsome modern sidewalk in front of a structure is as necessary to its general appearance as its interior finish, and owners of buildings, in order to add to the value of the same, can no more neglect this important feature than any other which goes towards adding to the comfort of its tenants.

No material for sidewalks is equal to first-class, well laid artificial stone. It is smooth, clean, hard and durable and the cheapest and most economical in the end, for when laid by honest and experienced contractors it will last a lifetime.

Low prices mean the use of poor materials, not only in pavements, but in everything else.



Golden Gate Avenue Block. CHARLES I. HAVENS, ARCHITECT.

When the Schillenger patent expired several years ago numerous parties rushed in with little or no knowledge of the business and took contracts to lay artificial stone pavements at almost any price they could get, and the natural consequence was that numerous property owners jumped at the chance of saving a few dollars and accepted their bids. The result is that these sidewalks are crumbling to pieces, many of which have been laid less than a year, while those laid by first class firms have stood the test of over ten years, the walks being as good as when first laid.

If property owners would consider that there is at the utmost but $20 difference between a first class job and a ten cent sidewalk, one lasting an ordinary lifetime and the other but a few years, surely there should be no hesitancy in choosing the better. It is wise to learn from others' mistakes, and the teachings from this experience is that a first class artificial stone sidewalk is undoubtedly the best and cheapest in the end, and the employment of only skilled and responsible contractors, whose work has shown its merit, should be given the contracts for laying the same. Let owners give the laying of sidewalks to responsible parties only and they will never regret the difference in cost.

Among the first class concerns engaged in this interest is the Gray Bros.' Artificial Stone Paving Co., established in 1881 and incorporated in 1889, with offices at 316 Montgromery street, this city, and branch offices at No. 1 South Fort street, Los Angeles, and 1506 Park street, Alameda. They have laid some of the best and handsomest sidewalks in the city and besides take contracts for concrete foundation work of all descriptions. They use none but the very best material, employing none but skilled and experienced workmen, of whom they have upwards of 150.

They import the very best cement direct from England and Germany and own their own vessels which transports the immense amounts of gravel used from the various beaches. All of their work is guaranteed for ten years and they do nothing but first class, honest and durable work. Among the numerous pavements laid by them are the walks of the Grand Hotel, those corner of California and Kearney streets, Bush and Montgomery, five blocks on Van Ness avenue, between Golden Gate avenue and Vallejo, the Nightengale Block on Haight street, around the residences of P. B. Coggswell, A. D. Moore, F. A. French, and numerous others in this city. Among their large contracts was $187,000 worth of work in Santa Monica, Colton and Riverside and five miles of walks in Alameda and San Rafael.

A BUILDING has just been completed in Columbus, Ohio, in which a novel and beautiful feature in architecture has been introduced. The front of the building has a medallion formed of pressed brick, the face chipped off, giving a surface that resembles rough-faced red sandstone. The brick, while equal in appearance to stone, will retain its beauty longer, as stone grows darker with time. Many architects and builders who have visited the building, express great admiration of the effect.

Pressed Brick and Terra Cotta.

While building has progressed rapidly on this coast during the last twenty years, it has been with an eye more to the immediate than future service.

The necessity of providing for a rapidly increasing population too often results in the construction of the cheapest structures possible, with an appearance of solidity which is merely a veneer of zinz and paint. But with an increase of wealth and in emulation of older cities, the more thoughtful and the really more economical of our people are impressed with the more enduring qualities of architectural construction. The architecture of a city usually corresponds with the character of its inhabitants.

There must necessarily be progression or decay and there is as much progression in the art of making bricks and terra cotta and in the style of them for building purposes as in anything else in the building interest.

The sun-dried adobes have given way to the common burned brick and they still are the cheapest and most durable of building material.

But the finish of the common brick is not as acceptible to the artistic sense as it might be and to cover its defects this city has covered the fronts of its buildings with mud in the vain attempt to make them resemble stone.

There has been some good excuse for this as the fine finished brick, such as Philadelphia, Baltimore and St. Louis produces have been too expensive to use on account of high freights, etc., and the material produced on this coast, heretofore, has been of a much inferior grade.

Matters are changing here now, new manufactories are in operations and builders need no longer send east for their fine pressed brick and terra cotta as these articles can now be obtained in better quality and at much cheaper rates at their doors.

The Union Pressed Brick & Terra Cotta Co., have just completed large and extensive works at Vallejo, with their general offices located in the Flood Building, room 31, in this city, and are turning out some of the finest work ever produced in America.

This material must be seen to be appreciated as nothing approaching it has been used in this city. The brick is being used in the Concordia Club building and is called for in the specifications of other buildings in the course of construction.

The machinery adopted by this company is of the latest improved patterns, which facilitates the making of brick and terra cotta of the finest quality at the lowest cost. The material used in the manufacture is free from alkali in any form and produces an article, which for color, uniformity of size, texture and strength is not excelled, if indeed equalled, in the world. The brick is of a deep rich, red color, with smooth, almost polished surface, firmer than granite, so homogeneous that it is easily cut, and so hard that it withstands a pressure of 16,000 pounds to the square inch. The terra cotta is of the same shade as the brick, and when struck with a hammer rings like steel. The modeling, which is done by one of the foremost artists in America, is beautiful in design and magnificent in execution. The excellence of the production of this company will be their chief advertisement, and the buiders of this coast are to be congratulated upon being able to procure such beautiful and durable material.

Fire Protection.

Protection against fire is and should be the first consideration of every owner and tenant of a building, and every precaution should be taken to use such contrivances as will extinguish fire in its incipiency with the least damage to building or stock.

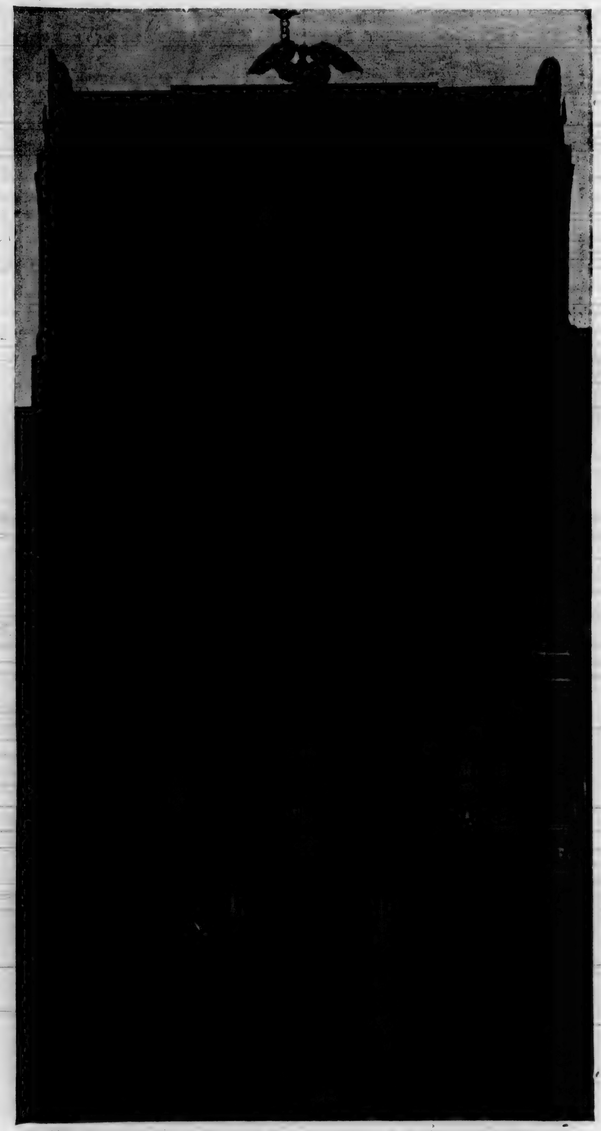
A piece of fire apparatus should be perfect in all its parts and if any part be defective the whole is defective. It should be simple in construction without any parts to get out of order and be ready for use at a seconds' notice. Such an apparatus meeting all these requirements is the "Paragon Hose Reel," of which W. T. Y. Schenck, 222 and 224 Market St., is the inventor and manufacturer.

This reel is designed for use in warehouses, public buildings, mills, manufactories, hotels, etc., and especially in buildings where there are times when only a watchman or a few persons are about. Quick and sure work is an absolute and fully recognized necessity for all inside fire protection; and by actual and repeated experiments by green hands, with this reel and hose, water has been turned on, 100 feet of hose pulled off, and a stream of water put on a fire in thirty seconds. It is permanently fastened to the wall, out of the way, supported by suitable brackets, and connected directly with the supply pipe through a hollow journal and packed joint, which allows the water to pass freely into the hose being connected to the hollow journal inside the reel and reeled up.

Upon the discovery of a fire the party present quickly turns on the water by the valve attached to the reel, takes the hose pipe and runs off towards the fire, the hose running off the reel freely, without a twist or kink, and the water following immediately, thus saving the very valuable time usually lost in straightening out the kinks and twists in the hose and in going back and turning the water on. This reel and hose are acknowledged by the Insurance Union to be the most perfect inside fire protection it is possible to procure and they so take them into consideration in fixing insurance rates.

The Paragon Hose reel is equipped with the Eureka Mill cotton hose, which does not deteriorate with age, does not break in the kinks, does not burst and is *always* reliable. It does not burn or melt when in close proximity to a flame or heat, nor break up in extreme cold weather as does rubber hose, but stands an immense pressure and any climate.

It is also fitted with the "Ne-Plus" full water couplings, which give full water way, are easily opened and do not leak. The value of this coupling will be seen when we remember that the ordinary coupling goes only two thirds of the capacity of the hose so that the hose used is equal, almost to a size larger hose than as ordinarily fitted. The Paragon Hose Reel has proved efficient in many instances and saved hundreds of thousands of dollars in many buildings where in use. A partial list of buildings, hotels, mills, factories, residences, warehouses, etc., where this most efficient apparatus is in use is appended: Firemen's Fund Insurance Co., Union Iron Works, Risdon Iron & Locomotive Works, H. S. Crocker & Co., American Biscuit Co., Schmidt Label & Lithographing Co., Rix & Firth, Phoenix Iron Works, Wells, Fargo Building, Market St. Cable R. R. Co., California Electric Light Co., S. P.



Rosenthal Building, Market St. SALFIELD & KOHLBERG. ARCHITECTS.

Co's General Offices, S. P. Co's Passenger Depot and Freight Sheds, The Oriel, The Pleasanton, California Theatre, San Francisco Laundry, 85, in the Hotel Coronado, Los Angeles in Bryson & Bonebrake block, Los Angeles Theatre, Kerckhoff, Cuzner M. & L. Co., at Fresno, Hughes Hotel and Fresno National Banks, 14 in the State Insane Asylum at Stockton, 44 at the Hotel Del Monte, Monterey, 12 at the Hotel El Carmelo, Pacific Grove, in the State Capitol Building at Sacramento, at the Soldiers' Home, Santa Monica, besides numerous buildings in Nevada, Washington, Arizona, Idaho, British Columbia, Alaska, Hawaiian Islands and Central America, where they have done good service and received high testimonials.

Hardwood Lumber.

The interior finish of buildings is to-day one of the first features considered by those who contemplate building first-class modern office buildings or houses for themselves. There are many things to consider in interior decorations and finish of buildings.

In office buildings, banks, theaters, hotels and other public buildings it is certainly to the interest of owners to use such finish as will attract the attention of tenants or visitors, thereby enhancing the value from various standpoints.

In residences it is highly important that the surroundings should be pleasing, which cannot be realized unless there is harmony in those things which the eye must see—and the decorations and interior finish should be suitable for the respective rooms.

Nothing admits of a handsomer finish in buildings than the use of hardwoods, be they either mahogany, oak, ash, black walnut, cherry or maple, according to the taste of the owner, each of which admit of a high finish or elaborate carving. Besides the fine finish and elegant appearance the use of hardwood lends to the interior decoration of a building, is the solidity of appearance, elegance and durability that make it the most economical and cheapest in the end.

Formerly hardwoods were used only for furniture, fixtures, etc., but of later years it is entering largely into the interior finish of our best buildings and residences and is rapidly gaining favor and should be more universally and generally used for this purpose. Among the prominent firms identified with this interest is that of John Wigmore & Son, whose yards are located at 129 to 147 Spear street and 26 to 28 Howard street, with a branch establishment at Los Angeles.

They are wholesale and retail dealers in hardwood lumber and timber, Mahogany, Black Walnut, Quartered Oak, Plain Oaks, both red and white, Ash, Cherry, Spanish Cedar, Maple, Whitewood, Prima Vera; newel posts, balusters and rail stocks and all kinds of plain and fancy veneers and fancy woods.

Among buildings recently erected for which they have furnished hardwood lumber are the following: Mrs. Porter Ashe's residence on Van Ness avenue; W. H. Crocker's residence, A. D. Moore's, the Flood mansion, The California Theatre vestibule, the New *Chronicle* building, and many others of the principal residences and business blocks in this city and vicicinity.

Messrs. Wigmore keep in stock both at their yards in this city and at their branch in Los Angeles a full and complete stock of hardwoods and are prepard to furnish any quantity desired to builders or the trade.

Cooking Ranges.

An important adjunct and convenience to the modern residence and an important feature in the equipment of a hotel or restaurant is a first-class and reliable cooking range.

As great an improvement and ingenuity in this particular industry has been shown by manufacturers as in any other of the interests identified with buildings of the present age.

The French range of former years was more of an experiment and to-day has reached a degree of perfection equalled by few of ourmodern conveniences and is vastly superior to the old style range and common cooking stove. No really first-class residence, restaurant or hotel is complete without a range, and owners of buildings, or architects should specify the construction of a range in connection with the other conveniences of the building to be erected.

The superiority of a range over a stove is its cleanliness, firstly in regard to cooking utensils and secondly in the saving of labor in polishing the range, it being built entirely of brick, the top being the only part to be polished.

The John G. Ils & Co., French cooking range, now on the market and manufactured by them exclusively, is the very latest and most improved range and is the result of their experience of over thirty years in this particular branch of business.

Their range is built on a brick foundation on the floor of the kitchen or cuisine, the iron front frame and oven being filled and built in with the brick work, which is built around it forming the flues, the top of the range is then placed upon the frame, the entire range con plete, forming a stationary fixture. The castings of their ranges are made of a superior iron imported for their especial purpose and cast in their own foundry uuder the personal supervision of Mr. John G. Ils. Their ranges are erected with the greatest of care in order to insure the greatest wear and tear, and obviate the necessity of numerous repairs so prevalent with most ranges and stoves.

Besides the conveniences of these ranges for baking and cooking is the saving of fuel, for being set and built in brick, the fire once started, the heat is retained for hours.

These ranges are so constructed that the hot water back for the heating of water can be arranged so as to heat any amount desired for the largest dwelling, and they also retain the heat longer than the ordinary range. They are built in various sizes to suit, from 3½ foot one oven range to a 13 foot four oven range, operated by one fire place.

In eastern cities the range is always specified in the building of houses and builders and owners of buildings should see that their ranges are properly constructed.

The firm of John G. Ils & Co., was originally established in 1850 by John G. Ills, and conducted by him until March 1889, when upon his death he was succeeded by his son, the present proprietor.

The warerooms and factory, 814 and 816 Kearny street, have recently been enlarged to meet the requirements of their rapidly increasing business to almost double their former size, where a full and complete stock of all the necessary parts for all kinds of of brick set furnaces and bake ovens is carried, besides stoves, tinware and kitchen outfits.

They are also proprietors of the Jackson Foundry located in the rear of their warerooms, where they make fine castings of all kinds.

Among the numerous hotels, restaurants and residences supplied with the John G. Ils & Co., French cooking ranges the following are mentioned:

The Baldwin, Occidental, Lick, Russ, Pleasanton and Silver State, the Merchant's Club, Pacific, Union Club, Bohemian Club, The Maison Riche, Marchand's, Vienna Model and all the Southern Pacific Railroad eating houses and principal hotels on the Pacific coast, also in the Christian Brothers, New St. Mary's College, Protestant Orphan Asylum, Old Ladies' Home and all the city, county and state institutions.

Some of the residences supplied with this superior cooking range are Charles Crocker, Senator Stanford's, Hopkins, Flood Mansion, Parrott, Palache, Daniel Meyer, Lilienthal, Walter, D. Samuels, H. Liebes, Capt. C. J. Harrison, Saucelito, and many others.

The Dyckerhoff Portland Cement.

When the Dyckrhoff Portland Cement Works were established at Amoenburg, near Biebrick and Mainz, on the Rhein, Germany, about twenty-seven years ago, it was then (as it always will be) the fixed purpose of Messrs. Dyckerhoff & Sons to produce a Portland Cement superior to any other, one of never failing quality, which will always permit its excellent properties to be utilized to the fullest extent with the utmost confidence in always producing the same results when employed under the same conditions.

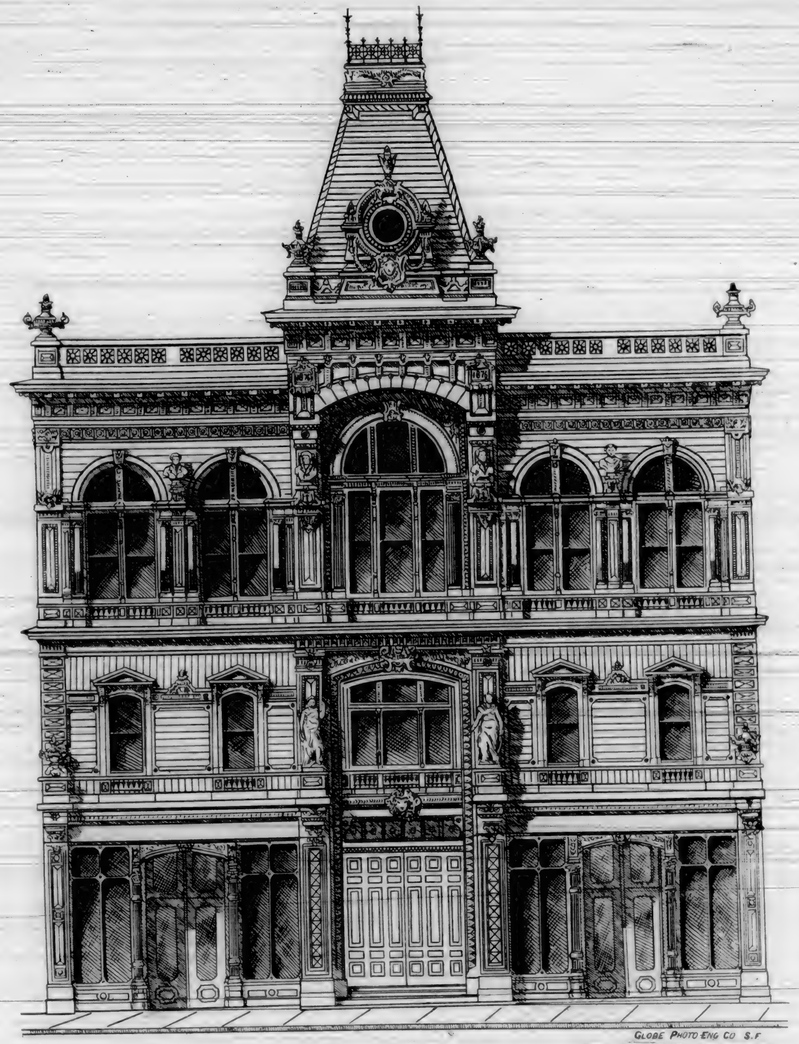
Aided by the natural advantages of excellent raw material close at hand, the adoption of al scientific and mechanic.l inventions and improvements, and with the constant and ever watchful supervision of all the details of manufacture, they have accomplished their purpose.

The high opinion in which their Cement is held everywhere, and the steady growth of their works to a present annual capacity of about 700,000 barrels, are eloquent testimonials of the extraordinary merits of this Cement.

Though the seller of any brand of Portland Cement, as well as of any other merchandise, may claim his brand to be the best (without which claim he would very likely not succeed at all), it is of the utmost importance that architects and engineers, as as well as masons and other consumers, should not permit any Portland Cement to be used unless they are fully satisfied that its quality is perfectly reliable and that its reputation for strength and uniformity is well established.

No Portland Cement should be considered *good enough, or answer the purposes*, unless it is the very best obtainable. In the absence of a simple and practical system of tests careful inquiry should be made as to which brand enjoys the highest reputation for excellence of strength and uniformity, and only such should be specified or employed.

The quality of the Dyckerhoff Portland Cement is unrivaled by any other. It is of



Metropolitan Temple. WM. MOOSER, ARCHITECT.

correct chemical composition, perfectly well burnt and very finely ground, and as the system of appliances of every stage of its manufacture is so complete, its strength, fineness and other properties are invariably the same.

The extraordinary fineness of the Dyckerhoff Portland Cement is a very important advantage.

Cement serves the purpose of covering and binding together grains of sand, etc. The finer cement is ground the larger will be the quantity of sand which a given quantity of cement can cover and intimately bind together. This explains the fact that the extraordinary and uniform fineness of the Dyckerhoff Portland Cement will permit the addition of 25 to 50 per cent. more sand than any other well known but generally much coarser brands of Portland Cement.

Its slow setting is another advantage of great importance, as it gives ample time for the proper preparation of the mortar. The hardening proceeds slowly at first but surely, and advancing in age, the material obtains increasing strength, as tests even after two years have shown. Most brands of Portland Cement will attain a certain degree of hardness, but this is not the only property required of a good Portland Cement. Many brands, owing to the imperfection of their composition or manufacture, will not stand the test of time and are subject to contraction or expansion in volume to the great injury of the work in which they may have been used. The Dyckerhoff Works, however, have succeeded in producing the strongest cement known, unalterably in volume, not liable to crack, and of a uniform and never varying quality.

THE PACKAGES

weigh 400 pounds gross and 375 pounds net each. The barrels are made at the cement works, of well seasoned wood, excellent heads and hoops, lined with tar paper to prevent the effects of moisture, and the workmanship is so perfect that they will bear the rough handling occasioned by repeated transportation without loss by breakage or sifting. The cost of these excellent packages is naturally greater than that of the packages in which most brands are being shipped, but the advantage to the dealer and consumer in receiving good packages and full weight, as against a shortage of from 3 to 5 per cent., which most brands suffer by reason of inferior packing, is of great importance.

The Dyckerhoff Cement weighs 113 pounds the U. S. bushel.

THE PRICE.

By reason of the great care bestowed upon the manufacture as well as upon the packages, its cost is naturally somewhat higher than that of most brands less carefully made, but the vastness of the quantity annually produced has lessened the difference in the selling price as against that of inferior brands to a mere trifle.

Inasmuch, however, as the consumer gets full weight and the extraordinary quality of the Dyckerhoff brand permits an unusually large addition of sand (25 to 50 per cent. more than other brands), it is not only the best and most reliable, but also the cheapest brand in the market.

The theory of some contractors, that for work to be done at a low figure they must necessarily use a low-priced cement is most erroneous. On the contrary, they ought to use the very best cement, without regards to its being a little higher in price. Careful consumers have long ago discovered that they can add enough more sand to do with 400 barrels of Dyckerhoff the same volume of work for which 500 barrels of an inferior Portland Cement would be required, and besides the great economy in cost they have the satisfaction of knowing, nay the guarantee of producing good and durable work, which with an irregular and inferior cement is always more or less doubtful.

The employment of low-priced Portland Cements to secure cheap work often results in serious defects or the ruin of the work after a short time, with consequent loss to owner or contractor. Many times the work must be done over again with the inferior cement, at first rejected, thereby doubling the expense of the job. By resisting the temptation of low-priced cements such losses can easily be guarded against.

The objects for which *Portland Cement may* be used are many, and constantly new applications are given to it; where formerly other materials were employed, *Portland Cement Mortar* is used for brick and stone masonry above and underground, for plastering fronts and brick houses, cellar walls, cisterns, for laying tiles, etc.

Portland Cement Concrete, composed of Portland Cement, sand and gravel or broken stone is employed for foundations and the construction of walls of buildings, foundations for heavy machinery, for foundations of asphalt and tile pavements, for abutments and roadways of bridges, in the construction of fortifications, piers, docks and river embankments, cable roads, gas tanks, aqueducts, water reservoirs, sewers, cisterns, etc.; in the manufacture of sewer pipe, ornamental vases, statuary, marbleized mantels and building stone.

Artificial Stone made from Portland Cement, is employed for paving sidewalks, garden walks, play grounds of school houses, corridors in hotels and theaters, railway stations and railway platforms, for fire and waterproof flooring in factories and foundries, breweries, malthouses, refineries, stables, engine houses, cellars, etc., and is much preferred to natural stone. Being applied in plastic state, any shape, the largest slabs, smoothest surfaces and closest joints can be produced.

Recently in a number of warehouses, breweries, etc., floors have been constructed of concrete arches resting on iron beams, with a smooth surface for the floor of the upper story, which proved stronger, more serviceable and cheaper than floors constructed of brick arches with a cement or asphalt surface for the floor above.

Directions for the employment of Portland Cement, preparation of Portland Cement *mortar*, of Portland Cement *concrete* and *artificial stone pavements for walks* and *flooring* are contained in our special pamphlet.

Numerous testimonials from architects, engineers, contractors and builders residing in the principal cities of the United States are also contained in our pamphlet and will be submitted to all interested parties when called for. The principal architects and builders in this city who have employed and used the Dyckerhoff Portland Cement in the erection of buildings here are:

Messrs. Percy & Hamilton, architects for the Academy of Sciences Building, the Alonzo Hayward Building.

Messrs. Pissis & Moore, architects for the Hibernia Bank Building.

J. K. Littlefield, Esq., architect, for the Concordia Club Building.

Henry Geilfuss, Esq., architect for floors and the erection of several brewery buildings and many private buildings.

Messrs. Wright & Sanders, architects for the State Asylum Buildings at Berkeley.

George Schussler, Engineer Spring Valley Water Works.

Kenitzer & Kollofrath, architects.

George Goodman, Artificial Stone Manufacturer.

Schulze & Meeker, architects.

Chatain & Gilletti, Artificial Stone, Mosaic and Concrete.

Ransome & Cushing, Concrete and Artificial Stone.

P. H. Jackson & Co., Manufacturers of Artificial Stone, Iron Vault Lights, etc.

Hugo Visher, engineer.

Marsden Manson, C. E., Chief Engineer State Harbor Commissioners, and many others.

For any other reliable information regarding the Dyckerhoff Portland Cement, cards and pamphlets, can be procured of the agents in this city, 314 Sacramento street, where samples of the cement made here and in Europe, together with briquettes in different forms can be seen and examined.

MESSRS. CHAS. DUISENBERG & CO., in San Francisco, 314 Sacramento street, below Battery, are the sole agents for the Pacific Coast.

Patent Water Closets.

If there is any one thing above another which should attract the close scrutiny and attention of the owner or builder it is the sanitary arrangements and appliances used in the building.

Nothing has a greater influence upon the health and comfort of the tenant than the sanitary arrangement, and more particularly upon the kind of water closet used.

The most natural and safest way to dispose of soil matter is to pour it out. The most simple, effective and common sense closet should be used, one with no complicated parts to get out of order, no noisy or uncertain action, no hidden or inaccessible receptacle for the accumulation of filth and the generation of deadly gasses and disease germs. Diptheria, typhoid, scarlet fever and numerous kindred diseases are in most cases traceable to defective water closets, and it is certainly to the interests of owners to use such closets as will prevent these gases escaping throughout the house endangering life and health and making the house lived in a veritable disease breeding machine.

Among the various water closets in use here in this city and on the coast, none stand higher than the Golden Gate Plug Closet, invented and manufactured by Joseph Budde, No. 43 Fremont street.

This closet is the very best of the kind so far constructed, and has the following advantages:

1st. It has a simple, strong valve, suitable for any pressure.

2d. It has a real sanitary overflow, a copper float attached to a bell of the same metal resting on the face of the brass overflow pipe, and operated by the rising of the water in the closet above its level, thus absolutely preventing any escape of sewer gas,

The Oriel Row, on Haight Street.

A. J. BARNETT, ARCHITECT.

even the closets being without water. No house supplied with these closets is troubled with sewer gas or other gaseous smells, and it is certainly the cheapest and best in the end to place such a closet in the building than to use inferior or poorer ones.

The establishment of Mr. Budde's is the largest of the kind on the coast, his closets being shipped throughout this entire section. He has every facility for filling all orders and contracts on the very shortest notice, his works being equipped with all modern machinery necessary for the conduct of his business. He has received several medals from the California State Agricultural Society, for the Golden Gate Plug Water Closet, it having been pronounced the best by competent judges and is in use in the buildings of the Sharon estate, in Bancroft's History building, 19 closets, Baldwin's building, occupied by Keane Bros. and Pinkiert, Market St., 10 closets, Chas. M. Plum & Co., Market St., 8 closets, Panorama building, 8 closets, New and Old City Hall, 14 closets, Liebes Bros. & Co., 4 closets, Grand Hotel, Lick House, Windsor Hotel, Nucleus, Hackmeier and other hotels, James C. Flood building, Abner Doble, Hinkle Houses, 30 closets, Hebrew Church, corner California and Stockton streets, Brooklyn Presbyterian Church, East Oakland and many others.

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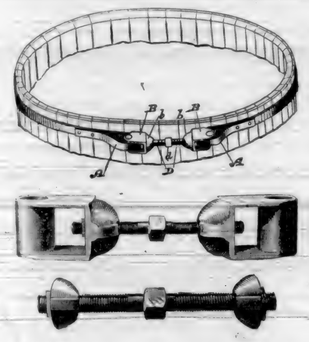

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MR. George H. Wolfe, having no further connection with this journal, correspondents will in future please address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

THE Consolidated Convention, which is to meet in Cincinnati on November 20th, will be of very considerable interest to architects. Of course we on the Pacific coast do not care much as to where the home office shall be. If they adopt the itinerant plan of changing it every year it may be our pleasure to see the headquarters in San Francisco for one year at least. We will pass that subject and only refer to the work which has been mapped out for it in advance. We understand that the following matters will come before the Convention: How shall the new institution be governed? Shall the profession be legalized, and applicants be examined for admission? Then there is the important matter of competition for public work. The Convention can do no better work than by formulating some plan by which competitions in future for government building and any public work shall not be open to persons whose qualifications to compete have not been passed upon, or whose greatest genius may be in their power to influence committees.

It is not to be dreamed that this convention will set all things at rest for all time, but we desire to see a code of laws established that will place the architects on a higher plane with the people than heretofore occupied by them. We expect eventually that architects will have the same legal standing that physicians and lawyers have.

THE adjourned meeting of the San Francisco Chapter, A. I. A., was held Friday evening, September 20th. The business before the meeting was the election of officers for the coming year, and the balloting resulted in the choice of the following: President, Seth Babson; Vice-President, W. P. Moore; Secretary, Oliver Everett; Treasurer, John M. Curtis.

After business had been disposed of, matters of current interest to the profession were brought up and discussed at length.

SELECTING the site for the Custom House and Appraisers' stores at Bowling Green is the most interesting event of the week architecturally. Government buildings in general are not matters of any special importance to architects, as they have heretofore been simply ground out of the Treasury. But under so capable a Supervising Architect as Mr. Windrim, we shall hope for better things. Recognizing the utter impossibility under the restrictions imposed by his position of his personally designing such a structure, we should be glad to see him inaugurate a change in the conduct of this important Government building by obtaining from Congress the authorization to offer to American architects a model competition. His experience in the practice of his profession would enable him to block out a competition that would attract the best talent. Then the site offers the opportunity of the generation for an imposing structure, whether viewed by sea or land, one that would impress every stranger on his first sight of our city.

The above editorial taken from *Building* advocates a change in the method of obtaining designs for government buildings, and the proposed change is one that we would most heartily endorse, and that would meet with the unqualified approval of the profession in general.

While undoubtedly many very meritorious buildings now are designed in the office of the Supervising Architect of the Treasury, it is sincerely hoped that Mr. Windrim whose abilities as an architect and whose interest in the welfare of the profession are well known, will consider the matter seriously enough to give it a trial.

Is it not reasonable to suppose that local architects familiar with the methods of construction most in vogue by the builders of their locality, more acquainted with the requirements necessary to make the structure harmonize with its surroundings, more interested in the erection of a striking monument, and ambitious to gain the distinction that comes from success in a public competition, should design a more noble structure than an architect (no matter how capable he may be) employed at a salary by the government, and who has no greater personal interest in his work than the reward of an approving conscience?

Owing to the changing methods of construction, and the enlarged number and variety of materials at the disposal of the designer of to-day, architecture is now passing through a period of evolution, that presents infinite and unparalelled opportunities for the display of originality in design, and the adaption of material to circumstances; and it seems to us but fit that our public buildings should be the medium of record of the best ideas of our foremost architects.

Our country is certainly rich enough not to look at the cost of obtaining the best possible designs and should follow the lead of the most advanced of European nations (notably France) among them by giving substantial encouragement and aid to the progress of the arts of civilization, and what art among them all is more worthy the aid and support of an enlightened government than the art of architecture!

The question is one of special interest to us at the present time, as our new post office building has become such an absolute necessity that some definite action cannot long be deferred, and what could be more appropriate than that it should embody the conceptions of some of our architects, of whom there are many worthy and capable of erecting a structure at once an ornament to the city and a credit to themselves.

Undoubtedly the change from the present method of proceeding would occasion difficulties at first and disarrange to a certain extent the present method, but the advantages to be gained would, we think, amply compensate for any trouble it would cause.

As an exemplification of the present method, take the Appraiser's, building in this city. The structure is substantial, and no doubt well adapted for the purpose, yet who will claim for it the least pretension to architectural beauty.

It is not necessary that the external finish of a building should be elaborate to produce an imposing effect, for skillful massing will produce almost as striking effects without as with the aid of ornamentation, and we venture to assert that a much more attractive building could in this instance have been produced at a very little greater expense, a building that would have been emblematic of the aims and purposes it serves, and typical of the people in whose midst and for whose use and convenience it was constructed.

WE PUBLISH in another column the experience of several English towns in the use of salt water for sprinkling streets and flushing sewers. The claim that salt water is more effective than fresh, for street sprinkling is undoubtedly well founded, owing to the well known affinity of moisture for salt, which would tend to prevent the rapid evaporation of the water. One of the objections urged against the use of salt water for sprinkling is that the dust arising from streets that have been repeatedly watered is so strongly impregnated with salt as to become injurious.

A. W. VON SCHMIDT has made a proposition on behalf of himself and partners, known as the Lake Tahoe and San Francisco Water Works, to furnish San Francisco with water from Lake Tahoe, to the extent of thirty to sixty million gallons of water daily. The proposition is a good one, as the people are longing for the fulfillment of a dream which has haunted their waking hours for years; but will any sane man think it will be realized just now? We think not. Mr. Von Schmidt says it will cost $15,000,000, and that the city should pay for it and become the owner. That is another good idea, but our "lawmakers," who never get up to the top story of a reasonable thought, will not permit Spring Valley to be flooded out with 60,000,000 gallons daily of pure crystal water from the mountains. You will never drink of Tahoe as long as there is any Spring Valley or Alameda County pasture drainage to give. Von Schmidt says Tahoe can supply 135,000,000 gallons daily, and not be lowered a foot in a year. Just think of it—and keep on in your reverie. You will have Tahoe nightmare and Spring Valley jimjams a great many times before your disgusted stomach is soothed and cooled by the transparent liquid from the Sierra mountain-sides. We wish Mr. Von Schmidt God speed in his undertaking, but the side doors and open hatchways of law and politics are so numerous that his scheme will probably be lost sight of, though the thought will still be sweet in the memory of his friends.

We again invite all architects or persons interested in architecture to visit our rooms and take advantage of the numerous publications on our tables.

TO THE fraternity of architects in California, Oregon, Washington and elsewhere on the Pacific Coast, we send this greeting: This journal being owned and published by many architects, there is no longer any personality about it—it is *of* all and *for* all. We have fitted up the apartments at 408 California street, San Francisco, in such a manner that we are not ashamed to invite you to visit us. We extend to you all a cordial invitation to call at our rooms and partake of the benefits. Should any of you desire to make our rooms a place of appointment to meet business men, do so; that is what they are for. Here you will find all the current literature of our profession, and we will always be cheerful in rendering you any assistance. If there is any information we can furnish you by letter, do not fail to write us, for we shall be pleased to serve you.

TO OUR SUBSCRIBERS we wish to say this: We desire to present you a journal of which you may be pleased to speak in complimentary terms, and as you pay your $2 each year consider that you have received more than your money's worth. That is our ambition and our purpose. To do this will take time, and your further assistance during the coming year. We shall furnish you with more and better representations of buildings and other architecture of importance, but do not expect to get fairly into line until our January, 1890, number. To this end we ask your encouragement by continuing your own subscriptions and getting your neighbors to do likewise.

ONE word to our advertising friends who have patronized this journal so faithfully in the past—Remember that it is under the direct control of architects, and is to be sustained by them. It is subscribed for by architects, contractors and builders, and will be distributed to and among that profession and calling throughout this Coast. We do not ask you to advertise unless you think it may benefit you—do not do so for "sweet charity's sake," but send us your advertisement in a business like manner, expecting to be pecuniarly rewarded through the circulation of the journal. Keep your wares directly before the people who use them and you will sell them.

CLASS journals are a necessity. In these days of rush and push it becomes important to have some method, or confusion, waste of time and energy will follow. Merchants locate their stores among others of the same class, professional men congregate in nearly the same locality, while bankers and insurance men select another spot, leaving the lumber and machine interests to go off by themselves. It is thus with newspapers and journals — the field is divided, each plowing in his own quarter and each reaping his own harvest. We were prompted to this thought by looking over our city files and seeing *Industry*, conducted by John Richards, a man not unknown to the scientific world; *Wood and Iron*, under the able management of Samuel Everett; *Pacific Lumberman, Contractor and Electrician*, guided by the skillful hands of W. L. and H. D. Peet; the patriarch of all, Dewey's *Mining and Scientific Press*, and our youngest contemporary, *Smith & Young's Building Advertiser*. Each has his work to do, and each is doing it well.

A few days ago a mass of brick work over the entrance of a Court room in the Old City Hall, was precipitated to the floor, owing to the breaking of the rotten wooden lintel that supported it. Fortunately nobody was injured.

Use of Salt Water in Cities and Towns.

An enormous saving in water would be effected if sea water were used in all cases where fresh water is not absolutely indispensable, and especially for such purposes as the flushing of sewers and the watering of streets. The advantages to be derived from sea water for such municipal purposes as the above have frequently struck engineers, and are set forth in a paper read by Mr. S. H. Terry before the Civil and Mechanical Engineers' Society. There have not been wanting schemes for supplying sea water even to inland towns, but hitherto it has been objected that sea water, though so abundant, was an expensive commodity to supply to towns, and it has even been asserted that the effect of sea water, on pavements for instance, was anything but beneficial. These ideas, however, have now been exploded.

A gallon of sea water contains about 2,500 grains of saline matter, of which about 1,890 grains are common salt—chloride of sodium—the remaining 610 grains being composed of other salts; and it is due to the deliquescent character of one of these salts, chloride of magnesium, that any material having once been moistened by sea water, remains moist for a considerable period. But, after storms, there is also present in sea water taken from near the shore in the vicinity of weed covered rocks, a considerable amount of organic matter from the destruction of seaweed, and the consequent mixture of its glutinous sap with the water. It is believed that it is to this glutinous material that the formation and endurance of the bubbles of sea scum, which occasionally, in gales, are driven some distance inland, is due. As, roughly speaking, about eighty pounds' weight of various salts are present in every water cart containing 224 gallons—one ton—of sea water, it will be seen that much material, which may or may not be injurious, is, in the course of a few weeks, spread over the streets of a town by the water-cart. This fact had created a feeling that the use of sea water for streets might not be without its dangers, and Mr. E. Buckham, M. Inst. C. E., Borough Engineer of Ipswich, was so much impressed with it that he instituted inquiries on the subject, and requested information from the engineers of thirty-five coast towns which had used sea water for watering the streets. Twenty-three of the engineers written to replied that they were no longer using sea water, as they had no works for that purpose; twelve stated that they were using sea water, some with suitable works, and some by merely filling the carts by hand; and two that they were about to have works.

The engineers of two towns; Ramsgate and Folkestone, spoke adversely of sea water, and stated that it destroyed all kinds of road material except wood. Some advised its use for sewer flushing, if a sufficient volume was employed; others, again, were of opinion that sea water tended to produce gas when brought into contact with sewage, and should not be used for sewer flushing except in large volumes. But it is probable that sea water only produces objectionable effects in sewers when these are particularly foul, and the influx of sea water stirs up the decomposing matter deposited in them. With regard to the efficiency of sea water as a means of preventing dust on roads formed of flint, gravel or granite, the testimony of those who have used it is almost entirely in its favor. Indeed, the Borough engineer of Berwick-on-Tweed goes so far as to say that persons having control of street-watering should use sea water, where it can be had, for reasons of economy, as well as for the comfort of the inhabitants. In his district he finds that one cart of sea-water is equal to two carts of fresh water, and gives more lasting and beneficial results. He states that the macadamized roads that are watered with salt water are a pleasure to drive upon in the summer season, as compared with those watered with fresh water, and they never seem to have a loose stone upon them.

In answer to Mr. Buckham's question, whether sea water occasions any offensive decay of street refuse, and if so, whether this is greater than would be occasioned by rain or fresh water, the pithy reply was; "No; when the scavenging of the town has been properly attended to." Without enumerating all the favorable answers that were received, it will suffice to state that the following important seaside resorts reported in favor of sea water: Portsmouth, Tynemouth, Great Grimsby, Great Yarmouth, Hastings and Littlehampton. Hastings, which has a population of 42,258, and a rateable value of £309,219, has erected extensixe works at a cost of £9,000 for sea-watering, which means a charge of about 3*d* per head of the population, or ½*d* on the rateable value. Great Yarmouth, with a population of 46,159, and a rateable value of £133,658, has completed works for salt-watering at a cost of £4,500. Here an 8-horse-power Otto Crossley gas engine has been erected, with a 12-inch pump, engine-house, tower and tank, containing 22,000 gallons, settling-tank and suction-pipe, fixed to the jetty. There are about 9,000 yards of main, ranging from eight feet to three inches, cast-iron socketed pipes, lead jointed, forty stand-posts, twelve automatic flushing siphons — 'ield's — each connected to tanks holding 2,000 gallons of sewer ..shing.

The total expenses, including interest and capital, repayment of loan in twenty years, depreciation of wages, gas, oil, etc., are under £500 per annum. For this amount some 30,000,000 gallons are raised forty-four feet at a cost of 4*d* per 1,000 gallons. Of this volume about 5,000,000 gallons are used for street-watering, and 25,000,000 gallons for sewer-flushing. Before these works were constructed, the cost of water for street watering alone was £404 on an average of each seven years, ending 1883. In 1885 it was as much as £552. To keep the automatic tanks of the size mentioned properly going the cost would have been £700 per annum. The charge for water at Yarmouth at that time was one shilling per 1,000 gallons. The cost of watering for street watering and sewer-flushing, including all items mentioned above, is less than three pence per head per annum, and sometimes under one penny in the pound. At Gosport a similar experiment has been made, with highly satisfactory results. The facts speak eloquently for themselves, and require no further comment. In some cases, however, the water companies offer a very strenuous opposition to the introduction of sea water, and Mr. Terry instances the case of Kirkhallerton, near Redcar, on the Yorkshire coast, where a very neat scheme was got out for the supply of sea water for street-watering, and it was also intended to supply sea water for bathers to the houses, and but for this intention the scheme would probably have been carried. The law here stepped in, and showed that inasmuch as the district was within the limits of supply of the Stockton and Middlesbrough Waterworks, a loan for such works of proposed supply would be illegal.

The discussion which followed Mr. Terry's paper was nearly all in favor of sea water. Its employment for the watering of streets, at any rate, is a perfectly practicable idea, and one that can be adopted with economy and success. The increasing size of our towns makes adequate supply of water annually a question of greater and greater difficulty, especially when we remember that with the spread of the scientific spirit of the age cleanliness may be said to be advancing at quite an alarming ratio, and that the demands made on our water-supply for municipal purposes are growing almost daily. In London this is felt very appreciably, and it would be interesting to see an experiment tried on a large scale of flushing our enormous sewers, and watering our interminable streets with sea water. For this purpose London is more favorably situated than any other capital in Europe almost, Constantinople and Lisbon perhaps alone excepted. At any rate, there is a strong feeling that something must be done, and that speedily, and Mr. Terry's paper may, therefore, be received as containing what, at least, appears to be a very practical suggestion, and possessing, moreover, the merit of being, as far as we know, the first attempt to bring together in an accessible form all the *pros* and *cons*, and experience and practice connected with the subject. The moderate cost of the pipes necessary for supplying even a large town places the proposal very easily within the reach of realization.—*Engineering*.

The Grant Monument Committee of New York find it impossible to get its members together to consider the designs that were invited nearly two years ago.

The newspapers of other cities are casting slurs on New York for its dilatory proceedings in this matter, and point to Chicago, where a handsome monument to the memory of our famous general has not only been projected but executed as well. However, we are in no position to cast a stone at Yew York, for we also are to have a monument some of these days, (though to commemorate a different event) for which the late Mr. Lick most generously provided funds, yet we are no further on the road to its realization, than is New York with its Grant monument.

We are always pleased to see a member of the Technical or Astronomical Society of the Pacific walk into their rooms adjoining the apartments of this journal. They are always open, and heaps of information lie there, subject to inspection.

Chapter Meeting.

The regular monthly meeting of the San Francisco Chapter, A. I. A. was held Friday evening Oct. 11th.

There were present Messrs. Saunders, Babson, Pissis, Percy, J. E. Wolfe, Curtis, Gash, G. H. Wolfe, Bestor and Everett.

The principal business of the evening was the installation of the officers elected at the previous meeting. The retiring officers were tendered a vote of thanks for their past services and the incoming officers duly installed. J. B. Whittemore was elected an honorary member.

The speeches of the retiring and incoming presidents were ordered printed in full in the official organ of the Chapter.

Owing to lack of space in this issue they will appear in our next number.

Headquarters Cincinnati Architectural Club,
Cincinnati, October 7, 1889.

Editor California Architect and Building News—Dear Sir: I herewith send you copies of circulars, etc., issued in connection with the National Exhibition of Architectural Drawings and Sketches to be held in this city in November next and contemporaneously with the Joint Convention of the American Institute and Western Association of Architects. The distance that is between us makes it somewhat difficult to create an interest in an undertaking of this kind among our local architects and designers. However, if such a thing were possible it must come through the efforts of the architectural press and so to you we would intrust the task of wakening up your professional men to attempt at collecting an exhibit for the occasion. As you will see by our circular, we have tried to reduce the trouble and expense to our contributors to a minimum. We have arranged to bear cost of transportation both ways, to insure drawings, etc. while in our possession, and to take every care of contributions while in our charge; all this only leaves to shippers the trouble of packing and delivering into the charge of an express company

I would like very much to write directly to some of your prominent architects and draughtsmen, and so if you would kindly send me a few such names I would take much pleasure in sending them direct invitations to contribute. I hope you may be able to do something for us. We are receiving notifications from almost every other part of the country and so we are naturally anxious to complete the representation by having something sent us from California. Our eastern cities will be well represented, and so far we have received assurances from Chicago, Minneapolis, St. Paul and Denver.

Yours very truly,
G. W. E. Field
Pres. C. A. C.

This exhibition will embrace the work of all Sketch Clubs and prominent draughtsmen in America and Canada. The following statement is made:

Works Exhibited.—Water color studies, India ink, pen and ink sketches, perspectives.

When to send,—*All* exhibits must be in Cincinnati by not later than Nov. 10th.

How to send.—All sketches must be properly packed, and sent by express.

Prizes,—Hinkle Gold Medal, (A. Howard Hinkle, Esq.,) for best exhibit of club work. Anderson Silver Medal, (Larz Anderson, Esq.,) for best individual work among club members. The Builder's Exchange will offer a medal for best Water Color perspective.

Jury.—Three prominent architects will act in this capacity.

Time and Place.—The exhibition opens Nov. 10th, continuing one week, and will be held in Pike's Opera House.

Further information will be cheerfully given, and all letters of inquiry are to be addressed to John Zettle, Secretary, Room 81, 227 Main street, Cincinnati.

The above communication was received at the last minute before going to press. Though the time is short, we hope the architects of this coast will not neglect this opportunity to contribute and make a creditable display at the exhibition.—[Editor.]

North-Western Lumberman—The mammoth Pacific Coast edition of this Journal, for Sept. covering one hundred and forty pages of reading matter and advertising has been laid on our table. It is full of lumber matters foreign and local, and under the management of that worthy jounalist J. B. Judson, of Chicago may be pronounced a success. Terms, $4.00 yearly

Our Illustrations.

The new management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication. Drawings should be made with perfectly black lines on a smooth white surface. The merits of all designs submitted will be passed on by the Board of Directors, and those chosen will be published in the journal without charge. All drawings will be returned to their authors, who must bear express charges both ways.

Page 134—Residence designed by T. H. Cole, a Los Angeles Architect.

Page 130—Residence erected on Scott street San Francisco, and designed by Wilcox, architect.

The plan and elevation of the Hibernia Savings and Loan Society's new bank building, now in course of construction on the northwest corner of McAllister and Jones street, Messrs. Pissis and Moore, architects.

The building will be entirely detached, and will be constructed of granite, gray for the portion below the watertable, and white Rocklin granite for the superstructure.

On the corner facing Market street will be the domed rotunda leading to the banking rooms situated on Jones street, and the rooms of the officers of the bank in the first story, and to the attorney's office on the second story of the McAllister street front.

The banking room will be 68 feet square and the full heighth of the building. The ceiling will be panneled and the center portion will have a domed ceiling light. The banking room will have in addition to the main entrance in the rotunda, a separate entrance with lobby on the upper end of the Jones street front.

At rear of banking room will be the vaults, one burglar proof and two fire proof, each to be 8x28 feet. There will be a basement under the whole structure 12 feet high.

The building will be completely fire proof. The total cost including vaults and fixtures will be about $400,000.

PERSONALS.

Charles D. Austin, "resident" architect of the Leland Stanford, Jr. University, visited the apartments of this journal a few days since.

Hans L. Schultz, civil engineer and naval architect of Philadelphia, who has concluded to make San Francisco his home, paid us a visit.

We have been pleased to find several situations for draughtsmen this month.

Burglars attempted to effect an entrance to the residence of brother B. E. Henrikson, one evening when he and his wife were attending the fair. The burglers were captured while trying to escape.

The new Chronicle building has now reached its full heighth. Mechanics are at work on the main cornices and tower.

K. Shimoda, a young Japanese architect from Tokio with the intention of learning American style of building is in town and visited our sanctum and desires a position in some local office.

Mr. E. J. Weston, the well-known architect of this city has gone to Puget Sound on business relating to the profession. He may decide to locate there permanently.

Those of our subscribers desiring the books mentioned in this journal, or any other architectural work, can have the same supplied through this office. Please make a note of this.

There is nothing like holding up your assertions with "facts." When a man or a firm can do that, all controversy as to his or their position must end. We are led up to this thought by the evidence placed before us in a new book just published by N. G. Taylor & Co., Philadelphia, as to the standing of their "Old Style" tin plate. They prove that they have laid the "Old Style" tin on 5,000 buildings, and that 50,000,000 square feet have been used without a single complaint. Such "positive proof" as they present will not go unheeded. "Facts" are stubborn things.

We solicit from architects throughout the Coast items of interest to the profession or the public. Our columns are open to the profession, and if thereby we can help them, or add to our usefulness, shall be doubly pleased. Remember that this is an architects' journal, and if you want to know what is going on here give us a chance to tell what is being done where you are.

Put the Wires Underground.

The National Association of Fire Engineers at Kansas city adopted resolutions concerning electric wires: We quote in part the conclusion.

Resolved,—That we earnestly call upon all municipal and legislative bodies, and urge the necessity of suitable legislation etc.

Resolved,—That we emphatically assert that the only safe method for currents is underground, and place our unequivocal condemnation on all overhead or suspended wires, etc.

It is said Chicago has 3,200 arc lights and every inch of the wire connecting these lights is underground. The potentiality of the current is 3,500 volts, and they work all right. It may cost more, but it is safe.

Validity of Contracts.

In the suit of Thomas Richardson vs. The College of Notre Dame, the annexed opinion was recently filed by Judge Spencer.

This is an action by the assignee of one Binet to recover the unpaid balance of the contract price for the erection of certain buildings for the defendant and for the value of extra work.

It is alleged in the complaint that on the 6th day of April, 1888, said Binet entered into a written contract with the defendant for the construction of certain buildings for the latter on its lands at Santa Clara, California.

That said contract was fully performed, the structure therein provided to be erected was completed by said Binet and accepted by defendant on the 29th of November, 1888.

That there is yet an unpaid balance of the contract price of $4,300.

That said written contract nor any memorandum thereof was never recorded in the office of the Recorder of the county where said premises are situated.

That no mechanics' or contractors' lien upon the property upon which said buildings were erected has ever been filed and the time for the filing of said lien has expired.

It is further averred that the contractor, Binet, did certain extra work on said buildings, at the instance of defendant, of the value of $1,170, which remains unpaid, and that no lien has ever been filed in relation thereto.

The prayer is for a money judgment for the sum due on the contract and the value of the extra work.

The complaint is demurred to on the ground that it does not state facts sufficient to constitute a cause of action, and the specific point urged in support of the demurrer is that by the Amendment of March 15, 1887, to Section 1183, C. C. P., the contract sued on is void, and that no action can be maintained thereon.

The provision referred to in the cited section is as follows: "In case of a contract between the reputed owner and his contractor, the lien shall extend to the entire contract price, and such contract shall operate as a lien in favor of all persons except the contractor to the extent of the whole contract price, and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing when the amount agreed to be paid thereunder exceeds $1,000, and shall be subscribed by the parties thereto, and the said contract, or a memorandum thereof. * * * shall, before the work is commenced, be filed in the office of the County Recorder of the county or city and county, where the property is situated, * * * otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto."

If our attention be exclusively confined to the provisions cited, and no regard paid to the context or subject matter of the legislation therein dealt with, the question presented would be of easy solution in favor of the demurrant. But in the same chapter a subsequent section is found, which provides that "nothing contained in this chapter shall be construed to impair or affect the right of any person to whom any debt may be due for work done or materials furnished to maintain a personal action to recover said debt against the person liable therefor." Section 1197.

This section has remained substantially the same since the adoption of the codes, with the exception that the original section in addition authorized the issuance of an attachment, notwithstanding the existing lien and without impairing it.

It is insisted on behalf of the defendant that the provisions of the two sections are inconsistent with each other, and so wholly irreconcilable that they cannot stand together and both be given effect; and that section 1183, as amended, being the later enactment (the first amendment, containing the nullifying provision, was passed March 18, 1885,) repeals by implication the original Section 1197 and its amendment of March 24, 1874.

On the other hand the plaintiff contends that:

First—Section 1197, being the higher number, must prevail over the lower numbered Section 1183, in conformity with the rule prescribed in Section 4484 of the Political Code, and

Second—That the entire Chapter 2 of Title IV., in which the several provisions under consideration are found, deals exclusively with the subject of mechanics' liens and their enforcement, and that the proper construction to be given to the language found in Section 1183 is that the contract "shall be wholly void", as the basis of a lien "and no recovery shall be had thereon" in an action to enforce a lien.

In support of this contention he calls attention to the headnotes to the chapter in question and insists that the entire scope of the chapter is in relation to liens, and cites decisions by the Supreme Courts of this and other States to the effect that the title of an act, although no part of the body, may be referred to as tending to explain the intention when the language is doubtful, and that the headnotes to subdivisions of an act indicating the particular subjects treated of in the several chapters are entitled to even more consideration for that purpose. (Barnes vs. Jones, 51 Cal. 306; ex-parte Koser, 60 Cal., 198.)

The headnotes of this chapter indicate that it is devoted to "Liens of Mechanics and Others Upon Real Property,' and the whole scheme and spirit of the entire chapter is manifestly devoted to that subject, but a careful perusal of all its provisions clearly demonstrates that the Legislature was specially solicitous in the first instance to protect sub-contractors, laborers and material men who might be employed by or furnish materials at the instance of the original contractor, and as one of the means for affording them protection against the fraud or negligent conduct of both the contractor and the owner, provision was made for giving at least constructive notice of the terms of the contract by requiring it to be in writing and placed of record.

This requirement is reasonable and just and in order to make such provision effective it is competent for the Legislature to provide such penalty for its non-observance as it may deem proper, including that of declaring the contract void and prohibiting any recovery upon it.

It further occurs to me that construction contended for by the plaintiff is insufficient to satisfy all of the conditions in which the parties would be placed thereby.

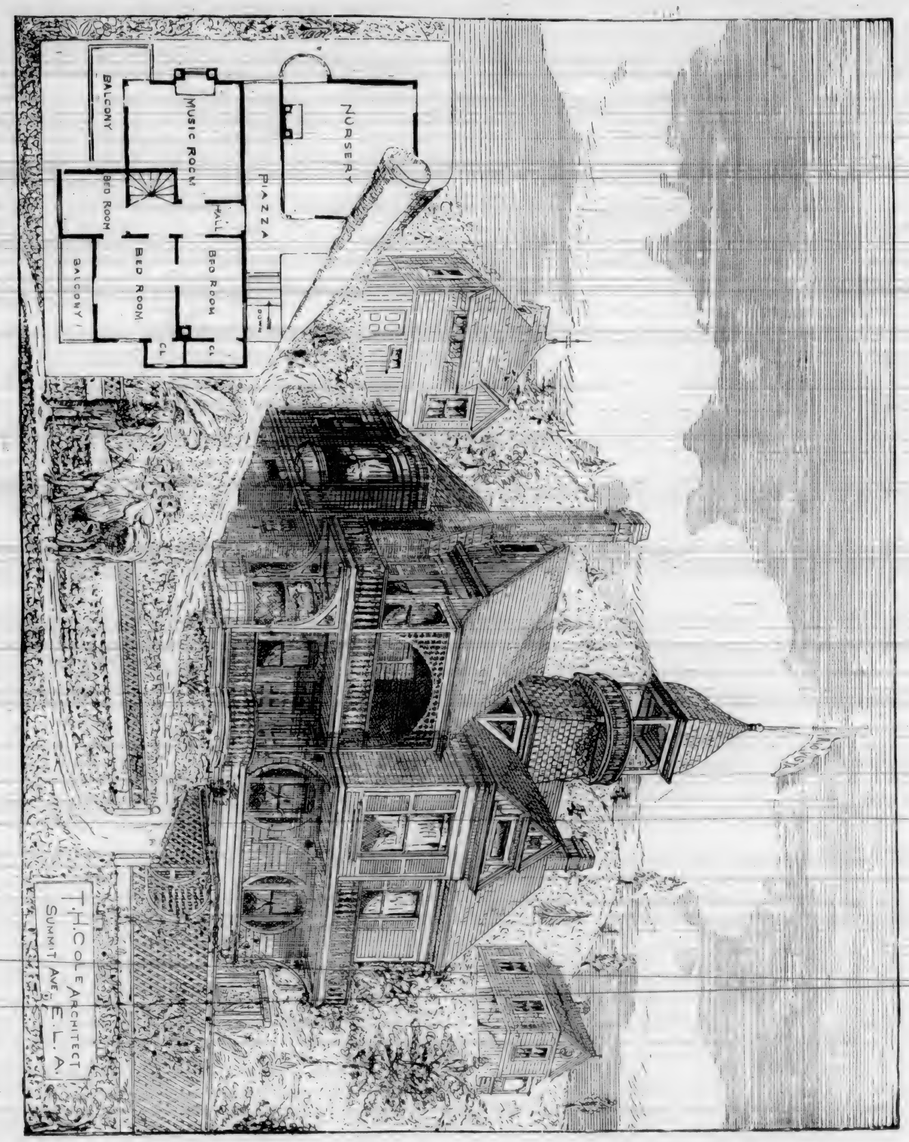
If the provision was that the contract should not be enforced against the owner, it might possibly be harmonized with the construction contended for by the plaintiff, but the declaration is that "No recovery shall be had thereon by either party thereto." That is, that not only the contractor shall not recover the contract price but the owner shall not be allowed to recover thereon for any damages he may sustain by reason of a breach on the part of the contractor.

It will be further observed that, pursuing the controlling idea, the Code provides that notwithstanding the fact that the contract was made void for failure to record it, the subcontractors, material, men, etc., are protected by allowing them to treat the derelict owner as their employer in place of the contractor who may have in fact employed them, and then give them a lien upon the property for the work preformed by them.

The right to thus hold and enforce liens by material men against the premises was recognized in the case of the Giant Powder Co vs. San Diego Flume Co., 20 Pacific Reporter, 420, a and it may not be improper to advert to the fact that Justice Thornton in delivering the opinion of the court in that case, in speaking of the effect of the failure to record the contract, says: "The section of the Statues which declares such contracts wholly void, declares how far it is void" citing Section 1138. "The statute only declares the contract void as detween the parties to it."

Although the rights of the contractor and owner as between themselves were not the subject of direct inquiry in that case, yet the validity of the contract was collaterally in question and a necessary subject for consideration, for if the coutract had been held valid and enforceable no question could have arisen as to the rights of the material men thereunder in their dealings with the contractor.

I do not deem it necessary to consider the question whether or not Section 1197 supercedes Section 1183, for the reason that



I am of the opinion that the two sections can be harmonized and stand together.

As I have already indicated, Section 1183 should be construed as declaring that the unrecorded contract is absolulely void. Being void, it creates no liability, no debt or other obligation, it is *nudem pactum*.

Section 1197 speaks of a debt due for work done or material furnished and declares that "Nothing contained in this chapter shall be construed to impair or affect the right" to maintain an action to recover such debt.

But it is obvious that if the contract and its performance does not create a debt, we must look elsewhere for the subject of the action preserved by the last cited section.

This I think, is readily found in the implied agreement arising from the performance of the labor by the builder or so-called contractor, and the acceptance of such labor by the owner.

I think it is reasonable and just to hold that the contract being void and not enforcible by either party, that there should be no obstiacle to the operation of the implied contract to pay; not a specific sum for a specified labor, but to pay the reasonable value of the services rendered by one party and accepted and enjoyed by the other.

I am therefore of the opinion that the second count which sets forth a claim for extra work, outside the written contract, and seeks to recover the reasonable value thereof, states a good cause of action, and that the demurrer thereto should be overruled.

For the reasons already indicated, I think the demurrer to the first count should be sustained, and it is so ordered, with leave to plaintiff to amend his complaint and count on a *quantim meruit* for the labor performed in the erection of the buildings if he shall so elect.

The Annual Meeting of the Stockholders of the California Architectural Publishing Company will be held in the rooms of the company at No. 408 California street on Tuesday, November 5th, 1889, at 10 A. M., to hear the report of officers, elect directors for the ensuiug year and transact such other business as may properly come before the meeting.

W. P. Moore, President. Oliver Everett, Secretary.

San Francisco, Cal., Oct. 12, 1889.

WASHINGTON ITEMS.

On account of the heavy rain on the latter days of September, the brickyards of Washington Territory are quite all shut down and the making of bricks cannot be commenced until near May 1st, 1890. The price offered now for bricks, is now about $14, and a manufacturer near Seattle refused $14 for 200,000 although he had 2,500,000 on hand, but he needed those for contracts made in Seattle at less prices.

Already 1,000,000 bricks have been used on the new Denny hotel in the basement, and 2,000,000 more will be required. The basement walls of this hotel, if placed in a straight line, it is said, would reach nearly a mile in length.

The Rainer hotel at Seattle is nearly roofed in, and Diller's hotel is up to the first story.

At Ellensbrugh, eighty-four new brick stores are going up and a stone banking house.

Speaking of brick, we understand several of the manufacturers will put in dry kilns before the next season commences so that nature may not compel them to stop on October 1st, of every year.

The Builders Material Company, is putting a new pressed brick machine on Vashon Island, which will turn out 20,000 bricks a day and they have a plain brick machine already in operation

Building in Seattle and Spokane is going on at a lively rate, some 600 to 800 dwellings being in construction at the present time at Seattle. These houses will cost all the way from $1,000 to $2,000, and seldom over $4,000,

We would infer from the newspapers of Seattle that the architects who competed for the plans of a new courthouse for King county were not fully alive to the peculiar necessities of such an institution, and that a Board of Commissioners had been found up there who knew just what King county wanted. Something like sixteen plans were submited in competition with estimated cost running from $175,000 to $200,000 and all were rejected—rejected because the plans were not suitable for King county. The motion to reject was certainly not very complimentary to the architects engaged, but then, the Board may have desired to show what they know about architecture.

Query: Is it possible that sixteen different architects, or firms, were each and all so deficient in the knowledge of what was required of them that it takes the plans of the sixteen to make an acceptable design.

We think this emphasizes what we have sometimes said, that it would be far better to place the acceptance or rejection of designs for public work in the hands of a competient committee of duly qualified architects. When this shall be the rule there will be a great advance in these buildings.

As a result, architect W. A. Ritchie is set to work making plans from the rejected "Greek" plans, changing it from a two-story and basement to a three story and basement building. The appearance of the new courthouse will suggest the Ionic style as intended. The basement will be of cut stone and the first and second stories of brick with stone trimmings. Seattle is looking forward to an imposing structure, that will be known the moment you look at it, and be taken for a real genuine courthouse as well as one that will not burn up on the slightest provocation.

REVIEWS.

We have received from Wm. T. Comstock, Part IX of his architectural studies, (city houses). This number illustrates the best designes submitted in a competition given by *Building*, for the planing of a home for a professional *literateur*, and contains several excellent solutions of the problem. Price, one dollar, postage paid.

The Brickmaker a semi monthly publication at Chicago. Price, $1 per year. As the name indicates, its columns will be entirely in the interest of the brickmaker and his bricks. In this connection we notice one very sensible article on the "Nomenclature of Bricks" and the suggestion that the matter be settled at the convention to be held in Philadelphia next December.

The Canadian *Architect and Builder* publishes a very caustic criticism on the "abuse" of the inverted arch. The criticism, though written in an "inverted" style of composition, is nevertheless effective in pointing out the possible failure of such an arch when not constructed on scientific principles, and the supervising architect is not fully alive to the importance of its use.

Preliminary Notice.

The joint Convention of the American Institute of Architects will be held in Cincinnati, opening on Wednesday, 20th of November next, at 10 A. M.

The annual reports to and of each organization shall be read, and the Constitution and By-laws recommended for the reorganized Institute by the joint Committee on Consolidation, appointed by the two bodies, will be submitted for the final action necessary to consummate unification.

This will be followed by the reading and discussson of professional papers.

An exhibition of architectural illustrations, under the direction of the Cincinnati Architectural Club, will occur simultaneously with the Convention, viz: Tuesday, November 19th, to which all the members of both existing organizations are cordially invited.

Before the close of the convention, opportunities will be afforded for the inspection of the prominent and interesting structures of the city, finished or in process of erection.

Members of either existing organization, having communications or papers of interest to the professsion, which they propose to submit to the joint Convention, should forward them to the appropriate Secretary before the 1st November ensuing.

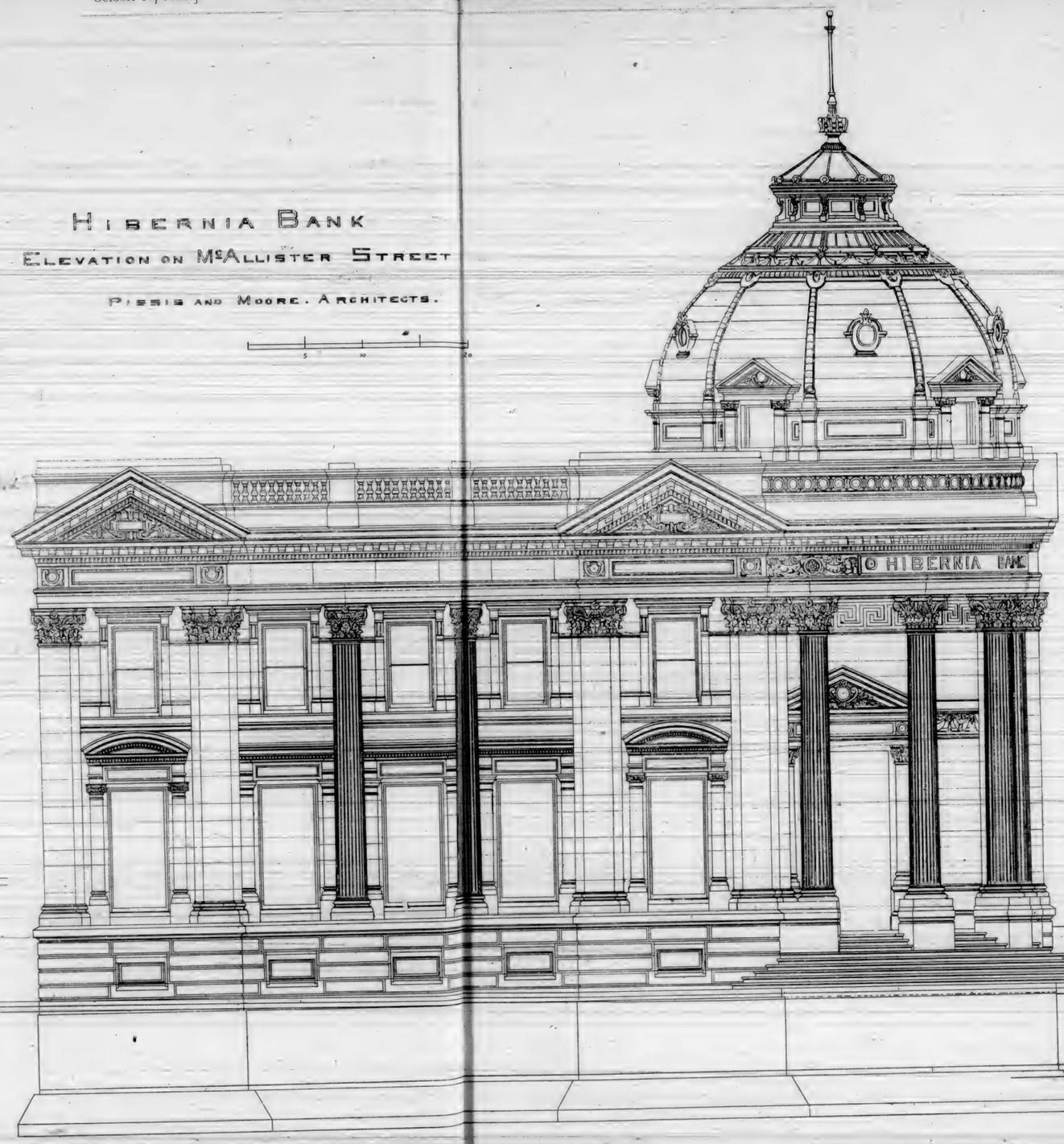
Full particulars will be forwarded, in due course, to the members, alike of the existing Western Association of Architects and American Institute of Architects.

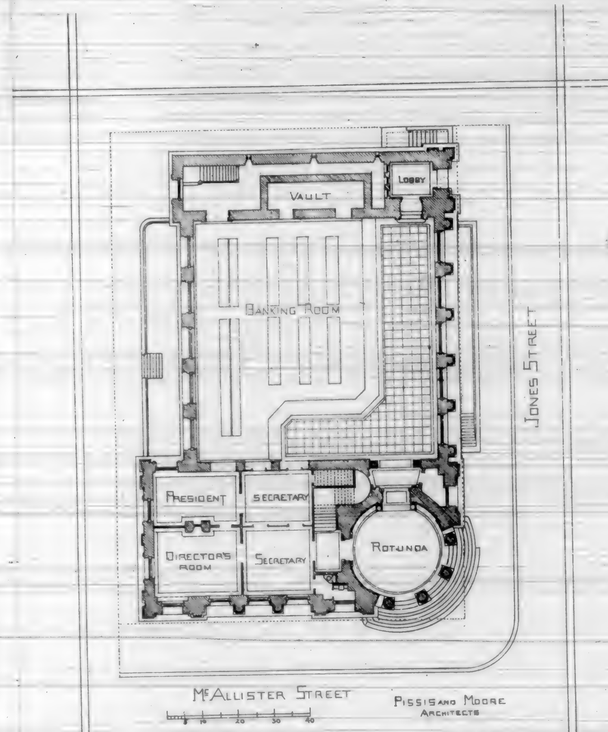
Joint Committee of Arrangements: E. H. Kendall, Chas. Crapsey, N. S. Patton, Secretary W. A. A., 44 Montauk Block, Chicago. A. J. Bloor, Secretary A. I. A., 18 Broadway, N. Y. September 19th, 1889.

HIBERNIA BANK

ELEVATION ON McALLISTER STREET

PISSIS AND MOORE. ARCHITECTS.



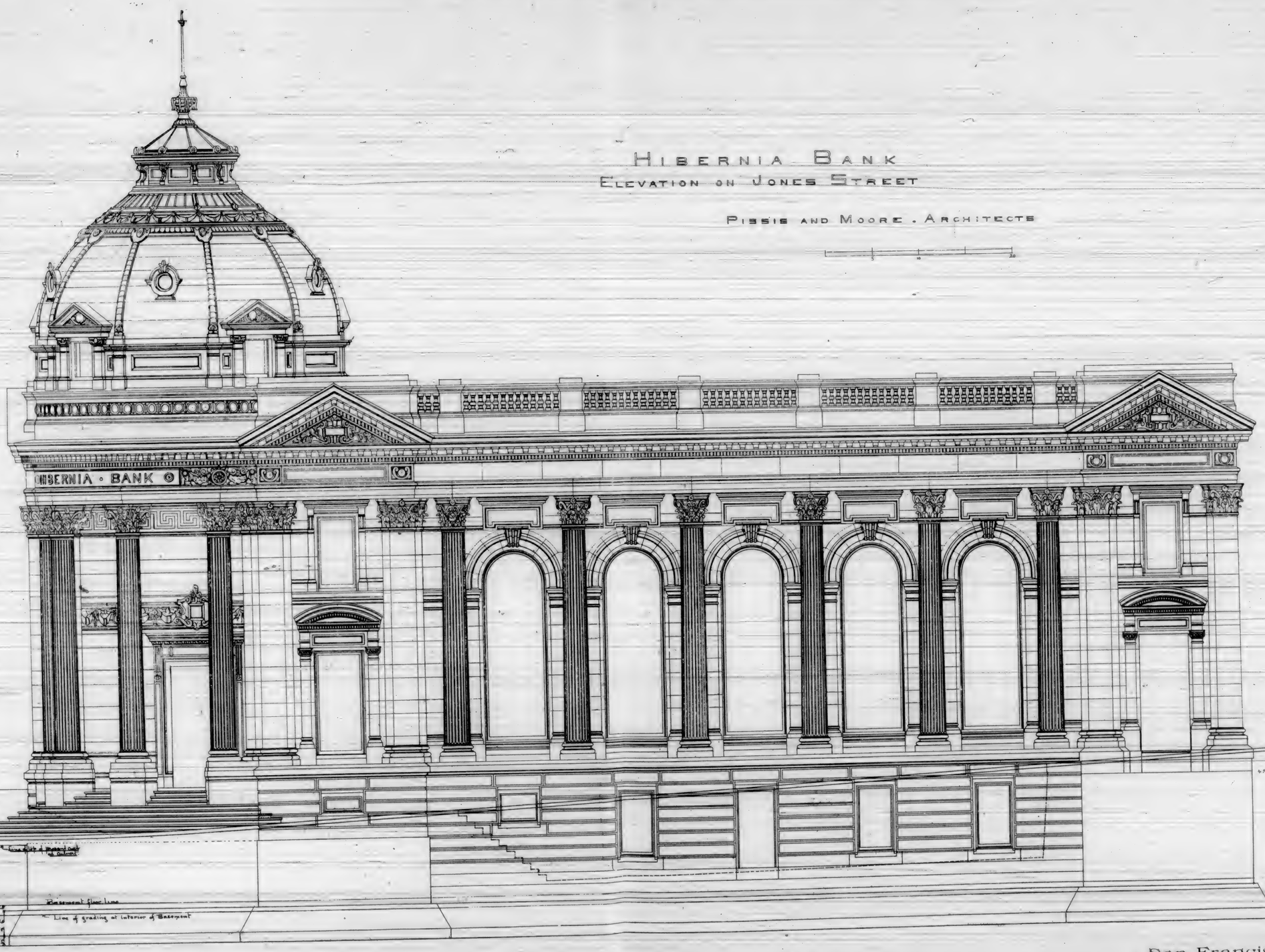


San Francisco, Cal.

HIBERNIA BANK

ELEVATION ON JONES STREET

PISSIS AND MOORE . ARCHITECTS



San Francisco, Cal.

CITY BUILDING NEWS.

Austin and Gough. Owner, Alice Kennedy; architect, James E. Wolfe; contractors, Gray & Stover; signed September 26; filed September 27; cost, $6 600; grading, artificial Stone pavement; payments, $1,600, piers are done; $275, completed; $ 25, 35 days.

Broderick, between Haight and Waller. Owner, W. E. Dennison; contractor, F. W. Kern; surety, Behrend Joost; signed Sept. 18; filed Sept. 20; cost, $4,855 100 days; 2-story frame; payments, $1,200 ready for lathing; $1 200 hard finished; $1,200, completed; $1,255, 35 days.

Broadway and Gough. Owner, Amelia L. Leszynsky; architect, J. Marquis; contractor, C. Coady; signed Sept. 12; filed Sept. 21; cost, $4,525; to build; payments, $600, framed; $800, floors laid; $800, brown-coated; $1,075, completed, $1,150, 35 days.

Bush and Baker. Owner, Chas. W. Kenitzer; architect, Kenitzer & Kellofrath; contractor, A. Miller; sureties, Chas. F. Dee and John C. Roberts, $3,000; signed September 24; filed, September 26; cost, $6,650; December 20, 1889. Two-story frame; payments, $1,000 framed; $2,000, roofed; $1,600 ready to paint; $400, completed; $1,650, 35 days.

Broderick and Haight. Owner, Wm. W. Bishop; architects, Townsend and Wyneken; contractor, R. O. Chandler; signed, September 24; filed September 26; cost, $5,477; painting; payments, $500, outside first coat and inside second coat is on; $500, outside second coat and inside last coat is on; $750, accepted.

Brine, between Howard and Folsom. Owner, John Wyhs and wife; architect, Fred Weinoehl; contractor Fred Weinoehl; signed, Sept. 4; filed, Sept. 4; cost, $3,950, 90 days, carpenter work; payments, $600 framed; $800 under roof, etc; $400 brown mortared; $700 white mortared; $560 50 completed; $987 50, 35 days.

Bluxome, between Fourth and Fifth. Owner, Mrs. M. F. S. Searles; architects, Schulze & Meeker; contractor, John T. Grant; cost, $1,175; signed, September 7; filed, September 11; 25 days complete a stable; payments, $881, completed; $294, 35 days.

Clara Lane, bet. Bush and Butte. Owner, F. Lemme; architect, P. R. Schmidt; contractor C. Chisholm; sureties, James Conlin and J. J. McKinnon; signed, Sept. 28; filed, Sept 30; cost, $11,700; 95 days, 3-story brick; $2,200 second story joists laid; $2,200 topped; $2,200 basement floor laid; $2,100 completed; $3,000, 32 days.

California and Broderick. Owner, Mrs. H. B. Healey; architect, C. C. Morehouse; contractor, James Campbell; signed Sept. 30; filed Oct. 5; cost, $4,290; Jan. 1, '90; to build; payments, $900, roof-boards on; $1,020, sash es set; $1,250, completed; $1,060, 35 days.

Clay and Hyde. Owner, Martha McL. Ewer; architect, Clinton Day; contractor, George V. Hussey; signed Oct. 1; filed Oct. 2; cost, $7,900; to build; $1,100 sheathed; $1,400 chimneys built; $900, prime coat of paint on; $1,000, inside ready for painter; $1,525, completed; $1,975, 35 days.

Clinton Park and Dolores street. Owners, Henry Pregge and wife; architect, Bernard Dreyer; contractor, Bernard Dreyer signed Oct. 1; filed Oct. 2; cost, $5,500; 90 days; 2-story frame; payments, $1,375, framed; $1,375, brown mortar on. $1,375, white mortar on; $1,375, completed.

Church and Army. Owner, F. F. Speckman; architects, John & Bolczynski; contractors, Schutt & Krecker; signed Sept. 28; filed Oct. 2; cost, $4,665; 2-story frame and stable; payments, $800, framed; $800, partitions set; $1,000, outside finish on; $900, inside ready to paint; $1,165, 35 days.

Cor Baker and Vallejo. Owner, H. R. Hopps; contractor, J. A. Rommel; sureties, F. and M. Marcuse, $1,500; signed, Aug. 29; filed Sept. 14; cost, $2,250; Jan. 15, '90; to build; payments, $462 50, framed; $462 50, brown coated; $562 50 completed; $562 50, 35 days.

Capp, between 22d and 23d. Owner, Mary E. Von Schroder architect T. J. Welch; contractors, Brennan & Fladung, signed September 27th; filed September 28; cost $6,100; 24 days; payments Painting, &c; 75 per cent. as work progresses balance.

Clayton, near Page. Owner, Frederick Bryan and wife; architects, John T. Kidd; contractor; John Bruce; signed, Sept. 4; filed, Sept. 4; cost, $4,145, 70 days payments, $900 framed; $500 plastered; $300 white coated, etc; $209 completed; $538, 35 days.

Church near 21st. Owner, S Stemmer; architect, Wm. Mooser; contractor, A. C. Rogers; sureties, C. S. Holmes and H. C. Simmers, $2,500; signed September 14; filed, September 23; cost, $3,900; frame building; payments, 75 per cent as work progresses; balance, 35 days.

Eddy, bet. Fillmore and Steiner. Owner, S. F. Laundry Assn; architect, Percy & Hamilton; contractor, Richardson & Gale; signed, Sept. 26; filed, Oct. 1; cost, $1,795; chimney 100 feet high; 75 per cent. on completion; bal. 35 days.

Ellis and Levenworth. Owner, A. C. Heinken; architects, Townsend & Wyneken; contractors, The Grey A. S. P. Co.; signed, September 24; filed September 26; cost, $2,500; two dwellings; payments, $900, enclosed; $1,000, water pipes in; $1,000 inside hard finished; $1,000, completed; $1,300, 35 days.

Ellis and Polk. Owner, P M. Flood, architect, Wm. F. Smith; contractor, F. W. Kerr; cost $6,880; signed Sept. 4; filed Sept. 13; $1,290 framed; $1,290 ready for plastering, $1,290 ready for painting; $1,290 completed; $1,720, 35 days.

Eddy and Larkin. Owner; Sacred Heart College; architects, John J. Clark; contractor, George Goodman; signed, Aug. 22; filed, Aug. 31; cost, $200, artificial stone sidewalk, etc; payments, 75 per cent. as work progresses, balance, 35 days.

Eddy and Lagunt. Owner, Maurice Getz; architect; John Gash; contractors, Rohlings & Crawford; sureties, F. Joost and Humboldt Mill Co.; cost, $7,660; signed Sept. 6; filed Sept. 11; two houses; payments, $1,500 frame 1; $1,000 brown mortared; $1,100 white mortared; $1,110 outside finish on; $1,100 completed; $1,990, 35 days.

Eighteenth street, near Clover Alley Owner, Johanne Petsch contractor, J. C. Brown; signed, Sept. 7; filed, Sept. 7 cost, $1,010; payments, $250 framed; $300 all frames set $250 white coat plaster; $210 completed.

Fourth and Townsend. Owner, Mary K. Knoll; architect, M. J. Walsh; contractor, M. C. Lynch; signed, Sept. 19; filed, Sept. 30; cost, $13,858; to build; $3,464 50 roofed; $3,464 50 first coat of mortar is on; $3,464 50 completed; $3,464 50, 35 days.

Folsom and Caroline. Owner, John Tamoung; architects, Townsend & Wyneken; contractors C. A. Naherty; cost, $3,780; signed Sept. 11; filed Sept. 12; 3-story frame; payments, $1,400 framed; $1,780 brown-coated; $1,700 white-coated; $1,700 completed; $2,200, 35 days.

Folsom near 11th. Owner, Chas. Bogan; architect, James P. Chadwick; contractor, Mayler & Green; sureties, Matthew Harris and Hugh B. Jones $4,000; signed, September 23; filed, September 24; cost, $6,700; 90 days, four flats; $1,256 25, roofed; $1,256.25, brown coated; $1,256.25, outside finish on; $1,256,25, completed; $1,675, 30 days.

15th, near Castro Owner, John Dolan; contractor, A. J. McKee; signed, Aug. 15; filed, Sept. 4; cost, $2,400, Nov. 20, '89, two story house; payments, $700 inclosed; $700 brown coated; $1 000 completed.

Folsom and 23d. Owner, P. H. Bielenberg; architect, W. Winterhalter; contractor, George W. Farnum; sureties, F. Joost and W. Thyarks; cost, $5,600; signed Sept. 18; filed Sept. 18; 90 days; 2-story frame; payments, $1,200 enclosed; $1,000 brown-mortared; $1,000 hard finish on; $1,000 completed; $1,400, 35 days.

Folsom, corner of 2nd and Dow Place. Owners, Boyd & Davis; architect. Jno. M. Curtis; contractor, H. W. Hannemann; sureties, Chas. Schroth and M. Shotwell. $7,000; signed, Sept mber 26; filed September 28; cost, $4,988; to build; payments, 75 per cent. as work progress; balance, 35 days.

Folsom, between 13th and 14th. Owner, Geo. Schafer; contractor, F. L. Hanson; signed Sept. 13; filed Sept. 17; cost, $7,375; two 2-story frames; payments, $1,500 framed; $1,000 enclosed; $1,500 rough mortared; $1,875 white mortared-$2,000, 35 days.

Greenwich and Taylor. Owner, Maria San Pedro; architect B. E. Henriksen; contractor, Robert Currie; signed Sept 16; filed Sept. 17; cost, $9,400; three 2-story frames; payments, $1,705 roofed; $1,705 brown coated; $1,705 white-coated; $1,705 trimming on; $2,280, 35 days.

Geary and Octavia. Owner, Francisca E. de Los M de Smith; contractor, Geo. E. Voelke; contractor, F. Klatt; sureties, Behrend Joost and J. F. Kennedy; $8,000; signed Sept. 14; filed Sept. 19; cost, $11,340; 2-story frame; payments, $500 first-story joists are on; $1,700, plumbing done; $2,500 brown coated; $2,50 second coat of plaster is on; $1,205 accepted; $2,840, 35 days.

Geary and Devisadero. Owner, August Brune; architect, Emil John; contractors, Schutt & Krecker; cost, $4321; signed Sept. 6; filed Sept. 10; 2-story frame; $800 framed; $ 00 enclosed; $800 white coated, $921 completed; $1,100, 35 days.

Green and Octavia. Owner, C. M. Symonds; architect, S. C. Warden; contractor, R. Rechenbach; et al; sureties, A. Turner and Fridolin Ott, $2 000; signed, Sept. 7; filed, Aug. 31; cost, $2 142, Nov. 14, '89—To Build; payments, $500 enclosed; $500 brown coated; $500 completed; $642, 35 days.

Harrison, between 23d and 24th. Owner, L. M. Kennedy; contractor, F. Nelson; signed, Sept. 4; filed, Sept. 5; cost, $1,180, one-story cottage; $700 first coat of mortar is on; $980, 35 days.

Hayes, between Gough and Octavia. Owner, G. Hildebrandt; architect, G. Hildebrandt; contractor, Chas. Quinn; signed, Sept. 4; filed, Sept. 4; cost, $5,950, 100 days, three-story frame; payments, $1,850 brick work done; $1,850, brown coated; $1,850 white coated; $1,900 completed; $2,500, 35 days.

Howard, between 22nd and 23d. Owner, Mary E. Von Schroeder; architect, T. J. Welch; contractor, James Meinery; sureties, Preston & McKinnon, $25,000; signed Sept. 14; filed Sept. 17; cost, $76,887; 5 months; brick and carpenter work for two 3-story buildings; payments, 75 per cent. monthly as work progresses, balance, 35 days.

Howard, between 22nd and 23d. Owner, Mary E. Von Schroeder; architect, T. J. Welch; contractors, Duffy Bros.; sureties, Wm. Cronan and M. H. De Young, $5,000; signed Sept. 14; filed Sept. 17; cost, $16,275; plumbing and gas fitting; payments, 75 per cent. per month as work progresses; balance, 35 days.

Howard, between 22nd and 23d. Owner, Mary E. Von Schroeder; architect, T. J. Welch; contractor, James W. Smith; sureties, John Coop and B. Joost, $25,000; signed Sept. 14; filed Sept. 17; cost, $64,477; 5 months; plastering and electric work; payments monthly, 75 per cent. of value of work done; balance, 35 days.

Howard, between 22nd and 23d. Owner, Mary E. Von Schroeder; architect, T. J. Welch; contractor, Wm. Cronan; sureties, Geo. Duffy and W. H. Mahoney, $1,500; signed Sept. 14; filed Sept. 17; cost, $8,995; tin work; payments, 75 per cent. as work progresses; balance, 35 days.

Howard, between 22nd and 23d. Owner, Mary E. Von Schroeder; architect, T. J. Welch; contractor, Bernard Bradley; surety, A. Bernard, $2,500; signed Sept. 14; filed Sept. 17; cost, $10,290; painting and varnishing; payments, 75 per cent. as work progresses; balance, 35 days.

Hyde, between Green and Union. Owner, Julius Kanngeser; architect, Geo. R. Bowles; contractor, Geo. R. Bowles; signed Sept. 18; filed Sept. 19; cost, $3,100; 2-story house; payments, $600 framed; $600 ready for lathing; $600 plastered; $600, ready for painting; $700, completed.

Hermann and Webster. Owner, Mathias Jobst; architect, R. Zimmerman; contractors, Fuchs and Bucher; signed Oct. 1; filed Oct. 1; cost, $7,593; Jan. 15, '90; 2-story frame; payments, $1,425, framed; $1,425, partitions set; $1,425, ready for painting; $1,425, accepted; $1,893, 35 days.

Howard, bet. 3d and 4th. Owner, Mary J. Morrow; architect, W. H. Armitage; contractor, Jas. R. Whalen, signed Oct. 1; filed Oct. 1; cost, $5,500; 80 days; 3-story frame; payments, $1,000 framed; $1,125, brown-coated; $1 000, white-coated; $1,000 completed; $1,375, 35 days.

Hermann street, and Elgin Park, Owner, Emil Woenne; architect, R. Zimmermann; contractor, Brennan & Flanning; signed, September 18; filed, September 25; cost, $1,650; brickwork for four 3-story frames; $650 foundation in; $650, chimney tops set; $800, 35 days.

Hermann street near Elgin Park. Owner, Emil Woenne; architect, R. Zimmermann; contractor, F. V. Steinmann; signed Septmber 18; filed September 25; cost, $19,400; brick and carpenter work; four 3-story frames; $1,000 first floor joists laid; $1,000 first story frame up; $1,000 second and third story frames up; $1,000.

Herrmann street, near Elgin Park. Owner, Emil Woenne; architect, R. Zimmermann; contractor, Chas. M. Dupew; signed September 18; filed September 25; cost, $4,250; roofed; $1,500 floors laid; $2,400 outside finish on; $2,000, glazed, etc.; $2,000 accepted; $5,500, 35 days.

Herrmann street, near Elgin Park. Owner, Emil Woenne; architect, R. Zimmermann; contractor, Louis Hufschmidt & Bros.; signed September 18; filed September 25; cost, $2,162; mill work; $800 outside finish is on; $800 inside finish is on; $800 blinds hung; $800 accepted; $1,050, 35 days.

Herrmann street near Elgin Park. Owner, Emil Woenne; architect R. Zimmerman; contractor, August Fick; signed September 18; filed September 25; cost, $1,750; plumbing, etc.; $800, first certificate is delivered, $800, second certificate is delivered; $662 accepted.

Howard near 17th. Owner, Ulrich Remensperger; architect, W. Winterholter; contractor, Th o Von Borstel; sureties, F. Joost and D. Woerner, signed, Sept 28; filed, Sept. 4; cost, $3 140; payments, $1,200 enclosed; $1,200 brown coated; $1,000 hard finish is on; $1 200 completed; $1,640, 35 days,

Ivy avenue, between Buchanan and Webster, Owner, F. Siefke; architect, P R. Schmidt; contractor, J. O'Connell; sureties, J W. Leahy and J. Molony; signed, September 16; filed, September 25; cost, $3,700; 80 days; two-story frame; payments, $925, rough plumbing done; $925 hard finished; $925 completed; $925, 35 days.

Jackson and Larkin. Owner, Mary H. Barrington; architect, Geo. Barrington; contractor, James C. Bassett; sureties, A. Kendall and James I McKinnon, $3,000; signed, Sept 6; filed, Sept. 7; cost, $5,700, 90 days to build; payments, $1 068 75 framed; $1,068 75 brown coated; $1,068 75 outside is painted; $1,068 75 completed; $1,426, 35 days.

Kearny and Pine. Owner, Moses Rosenbaum; architect, Saifield and Kohlberg; contractor, Richardson & Gale; signed, Aug. 29; filed, Sept. 4; cost $2,500. 90 days, carpenter work; payments, $2,500 completed,

Kearny and Washington. Owner, Louis Achultz; architect, Wm. Mooser; contractor, Wm. H. Birch & Co; signed September 6; filed September 23; cost, $1,720; elevator; payments, 75 per cent as work is done; balance, 35 days.

Laguna and Lombard. Owner, G. Filippelli; architect, Emile Depierre; contractor, J. G. Chase; surety, A. Bennett, $800; signed September 21; filed September 23; cost, $1,585; 60 days frame building; payments, 75 per cent. as work progresses; bal nce, 35 days.

Lyon near McAllister. Owner, Adolph Goehring; architect, John & Balrzynski; contractor, Fuchs & Bucher; signed, Sept. 2; filed, Sept. 4; cost, $4,000, two cottages; payments, $800 framed; $600 inclosed, etc; $800 white coated; $800 completed; $1,000, 35 days.

Larkin and Pine. Owner, A. Browning; architects, Kenitzer & Kolofrath; contractor, C. F. Ruppell; sureties, Christian Helwig and William Mueke, $5,000; signed Sept. 30; filed Oct. 4; cost, $9,922; Jan. 30, '90; two 2-story frames; payments, $1,500, framed; $1,500, roofed; $1,500, first coat of plaster is on; $1,200, plastering finished; $1,742, completed; $2,480, 35 days.

Maple and California. Owner, Childrens' Hospital; architects, B. McDougall & Son; contractor, A. Jackson; signed Oct. 2; filed Oct. 2; cost $5,075; 1-story frame; payments, $1,000, brown mortar on; $556.25, completed; $618.75, 35 days.

Main, bet. Mission and Howard. Owner, The Pelton Water Wheel Co; architect, Percy & Hamilton; contractors, Ransome & Cushing; signed, Sept. 27; filed, Sept. 30; cost, $7.0; concrete work, 75 per cent. as work progresses; bal. on completion.

McAllister, between Fillmore and Steiner. Owner, E. F. Baruth; architect, P. R. Schmidt; contractor, A. McKay; sureties, Henry Goetze and C. A. Bennett; signed Sept. 18 filed Sept. 19; cost, $6,200; Dec. 14, '89; 2-story frame; payments, $1,150, framed; $1,150, rough plumbing in; $1,150 hard finished; $1,200, completed; $1,550, 35 days.

McAllister and Jones. Owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, O. E. Brady; cost, $177,009; signed Aug. 31; filed Sept. 13; stone work of new bank building; payments in installments on the 1st and 15th of month as work progresses, in sums equal to 75 per cent of work done; balance, 25 per cent. when work is completed

Mason. Owner, E. Betger; architect, E. Betger; contractor, J. P. Hansen; signed Aug. 13; filed Sept 14; cost, $1,800; 60 days; to build; payments, $450 framed; $400 first cost of plaster is on; $500 completed; $450, 35 days.

Natoma, between 11th and 12th. Owner, Wm. Schehr and wife; contractor, A. C. Rogers; sureties C. S. Holmes, $2 000; signed, Sept. 5; filed, Sept. 6; cost, $4,500, three-story frame; payments, $1 000 framed; $1,000 brown coated, $1,000 hard finish is on; $1,000, 35 days.

Owner, S. S. & N. P. R'way Co.; contractors, Hinckl y, Spiers & Hayes; cost, $79,000; signed Sept. 5, filed Sept. 10; 9 month2; machinery for steamer; payments, 75 per cent. to be paid as work is done; balance, 25 per cent., 35 days after completion.

Owner, S, F. & N. P. R'way Co.; contractors, Dickey Bros.; cost, $15,250; signed Sept. 5; filed Sept. 10; 6 months to build steamer; payments, 20 per cent. boat is in frame; 20 per cent, keels on, etc.; 20 per c nt deck is in, 15 p r cent ock is laid. 25 per cent, 35 days.

Oak, between Franklin and Gough. Owner, F. Hofleng architect, P. R. Schmidt; contractor, Wm. T. Commery; sureties, E. H. Greenwald and M. Cohen; signed Sept. 10; filed Sept. 20; cost, $23,886; 120 days; 3-story f ame; payments, $2,836, first story up; $8,000, enclosed; $3,000; ready to lath; $3,000, brown-coated; $3,000, hard-finished; $3,000, completed; $6,000, 35 days.

Oak and Steiner. Owner, P. Tillaux; architect, M. J. Welch; contractor, R. Perker; cost, $4,350; signed Sept. 12; filed Sept. 12; to build; payments, $1,087.50 framed; $1,087.50 brown mortar is on; $1,087.50 completed; $1,087.50, 35 days.

Owner, John Talfourd; contractors, Mullins Bros.; sureties, ames Alexander $950; signed Sept. 26; filed Oct. 5; cost, $950; Nov. 28, '89; additions; payments, $350, framed; $250, plastered; balance in installments of $30 until all payments are made.

Page near Pierce. Owner, John H. Brundings; arch tect, Chas. I. Hav ns; contractor, F. W. Kern; signed, September 24; filed September 26; cost, $5,200; 2-story frame; payments 25 per cent. framed; partitions set; 25 per cent. inside finish complete; 25 per cent., 35 days.

Page, near Scott. Owner, Robert V. Lucy; architects, John & Bolczynski; contractors White Bros.; signed Sept. 13; filed Sept. 17; cost; $5,360; 3-story frame; payments, $1,200 framed; $1,500 rough mortared; $1,320 completed; $1,340, 35 days.

Pot and Octavia. Owner, W. H. Adams; architect, Wm. H. Armitage; contractor, O. E. White; sureties, Chas. F. and Frank P. Doe, $10,060; cost, $13,000; signed Sept. 3; filed Sept., 11; 100 days, two 2-story frames; payments, $4,540 framed; $2,500 brown-coated; $2,250 white-coated; $2,500 finished; $3,250, 35 days.

Perrin and Steiner. Owner, Mary F. Kennedy; contractor, J. P. Shepard; signed, Sept. 3; filed Sept. 4; cost $2 400; 75 days, to build; $800 enclosed; $600 brown mortared; $000 completed; $600, 35 days.

Pacific and Octavia. Owner, B. J. Hoffarker; architect, John & Balrzynski; contractor, Wm. Pinns; signed, Aug. 31; filed, Sept. 4; cost $8 970; payments; $2,000 framed; $1,500 enclosed; $1,500 white coated; $1,720 completed, $2 250, 35 days.

Page near Scott. Owner, J. Peterson; architect, R. H. White; contractor, W. Pluns; sureties, F. Joost and D. Woerner, $4,000; signed, Sept. 4; filed, Sept. 5; cost, $5,690, 90 days; $900 framed; $700 enclos d; $700 brown coated; $800 standing finish is on; $590 completed; $2,000, 35 days.

Pacific, near Steiner. Owner, James Stewart; architect, Wm. F. Smith; contractor, Richard Rice; signed Oct 7; filed Oct. 2; cost, $2,565; plumbing, payments, $960.50, rough plumbing in; $960.50, c mp leted; $944, 35 days.

Prosper near 16th. Owner, Bruna Aschile; contractor, L. Cuneo, et al; signed, Sept. 27; filed, Sept. 30; cost, $1,675; 1-st ry frame; $418 75 framed; $418 75 brown coated; $418 75 finished; $418 75 35 days.

Pacific, near Steiner. Owner, James Stewart; architect, Wm F. Smith; contractor, E. W Kern; signed Oct. 1; filed Oct. 2; cost, $19,270; three dwellings; payments, $2,890 50, framed; $2,890 50, shingled; $2,890.50, brown-coated; 2,890.50, sta ding finish is up; $2,890.50, completed; $1,817 50, 35 days

Pacific and Laguna. Owner, D. F. Walker; architect, Wm. F. Smith; contractor, James H. O'Brien; signed Oct. 2; filed Oct. 2; cost, $1 790; 25 days; grading a lot; payments, first payment, $671.25; second, $671.25; third, $447.50.

Pine and Devisadero. Owner, W. C. Hildebrandt; architects, J. J. and T. D. Newsom; contractor, F. C. Adams; sureties, Wm. Van Noorden and M. P. Flow , $4,000; signed Oct. 1; filed Oct 3; cost, $4 958, Jan. 1, '89; to build; payments, $929.50, framed; $929.50, chimneys built, etc.; $800 stable built, etc.; $1,059, completed; balance, 35 days.

Hitch & Folsom. Owner, G. Mounicot; contractor, A. McKay; sureties, A. J. Turner & Fa Gill, $2,000; cost, $4,000; signed Sept. 11; filed Sept. 12; N v. 1, '90; 2-story frame; payments, $900 first floor of joists are on; $800 framed; $800 brown-coated; $800 ready to paint; $600 completed; $1,000, 35 days.

Seventh and King. Owner, Eagle Oil Refining Co.; contractors, Riley & Loane; signed, Sept. 13; filed Sept. 14; cost $1,500; 15 days; warehouse; payments, $1,125 completed; $375, 9o days.

Sixth and Stevenson. Owner, Ma garetha Schewrdt; contractor, J. S. Ecker; signed, Sept. 14; filed Sept. 16; cost, $1,025; foundation wall; payments, the first two payments as work progresses; bala ce when completed.

Stenart & Mission. Owner, Ernest Brand; architect, H. Geilfuss; contractors, Schutt & Krec er; cost, $9,983; signed Sept. 7; filed Sept. 11; 3-story brick; payments, $1280 first-st ry joists laid; $1,870 fire walls topped; $1,870 brown coated; $1,873 completed; $2,500, 35 days.

Sanchez and 16th. Owner, Hannah Donlan; architect, Patrick Dolan; contractor, Rohling & Crawford; cost, $4,825; signed Sept. 10; filed Sept. 11; 90 days; 3-story frame, payments, $900 framed; $900 ready for plastering; $900 windows in; $950 completed; $1,225, 35 days.

Sixteenth & Sanchez; Owner, D. Meyer; architect, Geo. E. Voelkel; contractor, F. Klatt; sureties, F. Joost and George T. Shiw, $8,000; cost, $8,800; signed Sept. 2; filed Sept. 11; 3-story frame; $1,000 framed; $1,000 first plastered; $1,500 plastered; $1,800 second coat of paint is on; $900 a cepted; $2,100, 35 days.

Scott and Vallejo. Owner, Stanley Forbes; architect, Fred E. Wilcox; contractor, Lord & Boynton; signed; Sept 4; filed Sept 5; cost, $4,775, to build; payments, $1,200 framed; $1,200 brown coated; $1,181 25 completed; $1,193-75, 35 days.

Steuart and Mission. Owner, J. O'Sullivan; architect, H. Geilfuss; contractors, Schutt & Krecker; cost, $4,383; signed Sept. 7; filed sept. 13; excavation, brick and stonework; payme nts, $1,400 first-story joists are laid; $1,400 fire walls are topped out; $485 completed; $1,100, 35 days.

Sixth and Berry. Owners, Pacific Woodware and Cooperage Co.; architect, James E. Wolfe; contractor, L. D. Frichette; signed Oct. 1; filed Oct. 2; cost, $5,575; to build new, and raise and remove old buildings; payments, 75 per cent. as work progresses; balance, 35 days.

Second Ave., bet. Pt. Lobos Ave. and A street. Owner, Wm Ensbury; architect, Chas. J. I. Devli ; contractor, Thos. Elam; sureties, W. A. Meeker and Fr nk P. Doe, $1,000; signed, Aug. 21; filed Oct. 1; cost, $1,600; 60 days, 1-st ry f ame; $250 framed; $65 roof complete; $400 completed; $405, 35 days.

Shotwell and 21st. Owner, Wilhelmina H. Becker; architect, M. J. Walsh; contractor, R. O. Davis; signed Sept. 26; filed Oct. 1; cost, $3,950; to build; payments, $987.50, framed; $987.50, brown-coated; $987.50, completed; $987.50, 35 days.

Shotwell, near 14th. Owner, J. W. Stanley; architect, M J. Walsh; contractor, Ovid Brault; signed Sept. 28; filed Oct. 1; cost, $3,235; to build; payme ts, $808.75, framed; $808.75 brown-coated; $808.75, completed; $808.75, 35 d ys.

Twenty-first and Valencia. Owner, E. A. Schumacher; architect, Chas. I. Havens; contractor, C. E Dunshee, signed Oct. 3; filed Oct. 3; cost, $4,890; 2-story frame; payments, $900, enclosed; $900, brown-coated, etc.; $900, hard finished; $965, completed; $1,225, 35 days.

Tennessee near Butte Owner, David Brady; architect, M. J. Welsh; contractor, R. O. Davis; signed, Sept. 2; filed, Sept 7; cost, $1,257, additional story; payments, $314 36 framed; $314 25 brown mortared; $314 25 completed; $214, 25, 35 days.

Vallejo, near Buchanan. Owner, P. M. Mawk; contractor, J. A. Owen; signed Aug. 13; filed Oct. 2; cost, $1,040 to grade a 50-vara lot; payments, 1-3 of tot l sum upon completion of 1-3 of the work; 1-3 upon completion of 2-3 of the work; balance on completion.

Vallejo and Webster. Owner, E. H. Moore; architect. Copeland & Pierce; contractor, Healing & Kretzel; sureties, John Murray and Ja e Healing; signed, Aug 29; filed, Sept. 6; cost, $5,462, 100 days, two-story frame; payments, $6,000 brick work done; $5,000 fram d; $1,000 brown coated; $700 white coated; $896 50 completed; $1 865 50, 35 days.

Vallejo, 158, near Polk. Owner, Thomas Y. Knipe; architect, B. E. Henriksen; contractor, R. R. Thornton; sureties, Harris & Jones, $1,500; signed, Sept. 8; filed. Sept. 6; cost, $6,000, two-story frame; payments, $1,125 rough plumbing done; $1,125 br wn co ted; $1,125 white coated; $1,125 varnishing completed; $1,500, 35 days.

Vallejo near Buchanan. Owner, F. W. Kern; architect, H. Geilfuss; contractor, Fred'd Wagner; signed September 18; filed September 23; cost, $1,768; brick work; payments, $450, framed; $458, chimneys topped out; $800, 35 days.

Vallejo and Buchanan. Owner, Cæsar Bertheau; architect, H. Geilfuss; contractor, F. W. Ker ; sign d Sept 18; filed Sept. 21; cost $7,400. payments, $1,110, frame; $1,110 floors laid; $1,110, brown-coated. $1,110, white-co ted; $1,110, ready for painting; $1,850, 35 days.

Vallejo and Sansome. Owner, Ann Price; architect, John T. Kidd; contractor, C. Peterson; sureties, Frank P. Latson and A. W. Starbird; cost, $2,580; signed Sept 11; filed Sept. 13; 2-story frame; payments, $600 framed; $600 brown-coated; $400 white-coated; $395 complete l; $645, 35 days.

Valencia and 25th. Owner, O. F. Von Rhein; architect, H. Geilfuss; contractor, F. W. Kern; signed, Sept. 3; filed, 4; cost, $6,240, 30 days, alterations; payments, $936 framed; $936 enclosed; $936 brown coated; $936 white coated; $936 completed; $1,560, 35 days.

Washington and Broderick. Owner, Julia R. Eastman, architect, John T. Kidd; contractor, C. Peterson; sureties, Starbird & Goldstone and F. P. Latson; signed, Sept. 4; filed, sept. 6; cost, $9,560, 100 days; payments, $865 framed; $700 brown coated; $600 white co ted; $697 c mpleted; $888, 35 days.

Waller and Broderick. Owner, W. A. Von der Nienberg; architect, M. J. Welch; contractor, J. F. Logan; signed Sept. 14; fil d Sept. 18; cost, $4,026; to build; payments, $1,000 framed; $1,000 brown mortar is on; $1,026, completed; $1,000, 35 days.

Washington and Baker. Owner, Genevieve Bancroft et al; architect, Sam'l Newsom; contractor, W. H. Wickersham; sureties, C. S. Holmes and Frank P. Latson, $4,000; signed Sept. 14; filed Sept. 19; cost, $8,620; 3-story frame; payments, 75 per cent. on the 16th of each month as work progresses; bal nce, 35 days.

COUNTRY BUILDING NEWS.

(Special to this Journal.)

OAKLAND AND VICINITY.

Lot 4. Levy W. Brk. Tp. Owner, Miranda Kimball, architect, C. K. Hill & Co.; contractor, Norman R. Turner; sureties, Wood and M. L. Broadwell, $1,250; signed, September 30; filed September 30; cost, $2,615; December 15, 1889, 2-story frame; payments, 75 per cent. as work progresses every two weeks; remaining 25 per cent. 35 days after completion.

Pacific avenue, between Oak and Walnut street, Alameda. Owner, Mrs. Henrietta Brand; architect, Chas. S. Shaner; conractor, D. S. Brehaut and J. C. Diamond; sureties, Huber Crowe, J. R. Bigles and J. H. Cory, $3,00; signed Oct. 5th; 105 days; payments $1,275 sheathing on; $1,275, roof on; $1,275 brown mortar on; $1,275, painted; $1,700, 35 days.

Owner, William H. McDonald; contractor, Oakland Iron Works; signed October, 5; filed October 5; cost, $3,500; November 1, '89; foundry and machine shop and water tank; $2,000; completed; $1,500, 35 days.

Lot 10, Block I, 50 Associates Tract, East Oakland; owner, Samuel Rawson; architect, A. R. Denke; contractor, J. H. Styles; signed, September 17th; filed, September 20th, cost, $2,400; December 31, '89, cottage; payments, $600, framed; $600, brown mortar on; $600, completed; $600, 35 days.

Southwest corner of Tenth and Chestnut streets, Oakland; owner, Charles T. Rodolph; architect, H. H. Adams; contractor, H. H. Adams; signed, September 18th; filed, September 20th; cost, $2,900; December 18, '89; two-story frame; payments, $580, roof on; $580, brown mortar on; $580, white mortar , on $580; completed; $580, 35 days.

Park street, Alameda, owner, George L. Lewis; architect, A. R. Denke; contractor, J. H Young; signed, September 19th; filed, September 21st; cost, $3,675; December 24, '88, two-story frame; payments, $500, framed; $400, shingled; $900, two coats of plaster on; $900, finished; $975, 35 days.

Lot 5, Peralta Park, Oakland Township, owner; Miss Anita Fallon; architect, Fred E. Wilcox, contractors, Lord & Boynton; signed, September 17th; filed, September 21st; cost, 3,500; two-story frame; payments, $875, frame; $875, first coat of mortar on; $875, completed; $875, 35 days.

Lot 5, Block B, 50 Asso. W., East Oakland; owner, John Nelson; architect, Fred E. Wilcox; contractor, J. A. Eastman; signed, September 17th; filed, September 23d; cost, $1,375; 50 days; frame; payments, $343, closed in; $343, brown mortar on; $343, white coat on; $346, 25 days.

Railroad avenue, Alameda; owner, Mrs. Mary White; architect, G. A. Benseman; contractor, G. A. Benseman; signed, September 4th. filed, September 23d; cost, $1,000; 75 days payments; $400, frame up; $400, brown mortar on; $400, completed; $400, 35 days.

Lots 8, 9, 10, Block M, Kennedy, W. Knowles and Potter Subdivisions; owner, Mrs. Jane and L. J. Rector; architect, G. A. Benseman; contractor, J. A. Eastman, signed, September 23d; filed, September 23d; cost, $1,400; November 9, '89, one-story frame; payments, $350, enclosed; $350, brown mortar on; $350 completed; $350, 35 days.

Twenty-third avenue, between East Fifteenth and East Sixteenth streets, East Oakland; owner, Alexander McBain; architect, G. A. Benseman; contractor, J. A. Eastman; signed, September 23d; cost, $2,050; November 15, '89; payments, $1,500, completed; $515, 35 days.

Clinton avenue, near Grand street, Alameda; owner, A. Dalton Harrison; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; signed, September 17th; filed, September 27th; cost, $2,060; payments, $550, chimney built; $500; brown mortar on; $495, completed; $515, 35 days.

Bancroft Way, near Anderson street, Berkeley; owner, M. E. Rickard; architect, A. W. Pattiani & Co.; contractor, A. W. Pattiani & Co.; signed, September 21st; filed, September 27th; cost, $3,267; payments, $900, chimney built; $900, brown mortar on; $650, completed; $817, 35 days.

Eighth avenue, in Block 119, East Oakland; owner, Henry Saxtorph; architect, T. R. Goth; contractors, B. D. Thurston and T. R. Goth; signed, September 30th; filed, September 27th; cost, $3,132; payments, December 19, '89, $783, roof on; $783, brown mortar on; $783, white mortar on; $783, completed; $783, 35 days.

Corner Main and C streets, Haywards; owner, Native Sons' Hall Association; architects, Shea & Shea; contractor, John A. Hoar; sureties, D. Peatdorf and Fred Fallen; signed September 18th; filed September 21st; cost, 13,033; four months; payments, $1,200, first story joists in place; $1,144, frame up; $2,144, rustic on; $2,144, brown mortar on; $2,146, completed; $3,260, 35 days.

Schilber, between Railroad avenue and Pacific avenues, Alameda; owner, A. Roundy; architect, Charles S. Shaner; contractor, G. A. Benseman; Sureties, ————; Signed, September 16th, Filed; September 18th; cost, $2,437; 105 days; three cottages; payments, $1,359 25, sheating on; $1,359 25, brown mortar on; $1,359 25, completed; $1,359 25, 36 days.

Southwest corner of Eleventh and Castro streets, Oakland; owner, L. H. Long; architect, Salsfield & Kohlberg; contractors, Marius Jonas and Wolf Drossener; sureties, John W. Armstrong, $4,000; signed, September 18th; filed, September 19th; cost, $9,496; 110 days; $1,000 framed; $1,500 floors laid; $1,500 brown mortar on; $1,322 doors hung; $1,500 completed; $2,274, 35 days.

Park street, Alameda; owner, Wm. McFarland Greer; architect, A. R. Denke; contractor, A. R. Denke; signed, September 11th; filed, September 20th; cost, $2,308; November 10, '89; one-story frame. $600; enclosed, $600; plastered, $508; finished, $600; 35 days.

Claremont avenue; owner, John Hoppe; architect, Chas. Mau; contractor, W. N. Concannon; cost, $6,150; signed, August 28th; filed September 2d; 125 days; payments—$1,537.50, $\frac{1}{4}$ material furnished and $\frac{1}{4}$ work done; $2,537.50, $\frac{3}{4}$ material furnished and $\frac{3}{4}$ work done; $3,537.50, completed, $4,537.50, 35 days.

Lots 13 and 14, Block "C," Berkeley Homestead; owner, Jeanie S. Campbell; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,850; signed, August 29th; filed, September 3d; 60 days; one-story frame; payments $800, chimney built; $700, brown mortar on; $635, completed; $715, 35 days.

Dwight Way, Berkeley; owner, Jos. M. McNamara; architect, George A. Embury; contractor, George A. Embury; cost, $1,150; signed, September 4th; filed, September 4th; September 3, '89; payments—75 per cent. as work progresses, viz.: 25 per cent., frame up; 25 per cent., inclosed; 25 per cent., completed; 25 per cent., 53 days.

Sixteenth street, near Telegraph avenue; owner, Edward A. Bushnell; architect, Chas. Mau; contractor, Wm. McDonald; cost, $2,630; signed, September 4th; filed, September 10th; November 1, 1889; one stoty cottage; payments—$657.50, $\frac{1}{4}$ material furnished and $\frac{1}{4}$ work done; $657.50, $\frac{3}{4}$ material furnished and $\frac{3}{4}$ work done; $657.50, completed; $657.50, 35 days.

Railroad avenue, between Walnut and Willow; owner, Chas. Lauberheimer; architect, Fred P. Fischer; contractors, D. Straub & Son; cost, $3,320; signed, September 5th; filed, September 10th; payments—$900, frame up; $900, brown mortar on; $690, plastered; $830, completed.

Berkeley; owners, J. F. and C. M. Luttrell; architect, Ira L. Boynton; contractors, Lord & Boynton; cost, $2,000; signed, August 28th; filed, September 2d; December 1, 1889; payments—$500, frame up; $500, brown mortar on; $500, completed; $500, 35 days.

Butler avenue, Klinknerville Tract; owner, C. A. Klinkner; architects, John J. & Thomas D. Newsom; contractor, Thos. H. Bassett; cost, $2,070; signed, September 5th; filed, September 10th; payments—$500, frame up; $500, framed; $500, completed; $570, 35 days.

Dublin; owner, John Green; architect, John J. Clark; contractor, Wm. Dahl; sureties, N. McConaghy, $4,000; cost, $4,341; signed, September 5th; filed, September 10th; three months; payments—$1,075, inclosed; $1,075, brown mortar on; $1,075, completed; $1,116, 35 days.

Hirschfield Tract; owner, J. A. Remmel; architect, John J. Boyle; contractor, John J. Boyle; sureties, H. M. Weed and Alex. Johnson, $1,000; cost, $1,650; signed, August 19th; filed, September 12th; January 1, 1889; payments—$550, brown coated; $550, completed; $550, 35 days.

Block "B," Mastick Prop.; owner, Mrs. Diederike Kuh; architect and contractor, H. M. Allen; cost, $1,500; signed, September 12th; filed, September 12th; 100 days; payments—$500, building inclosed; $1,000 on March 1, 1890.

Bancroft Way, near Audubon B.; owner, Edward J. Wickson; architects, Schulze & Meeker; contractor, Robert Smilie; sureties, Alex. Campbell and P. H. McGrew, $1,850; cost, $5,550; signed, September 6th; filed, September 14th; December 31, 1889; payments—$650, frame up; $1,170, ready for lathing; $1,171, first coat of mortar on; $1,171, completed; $1,388, 35 days.

Fourth avenue, near Eleventh street; owner, Levens N. Cobbledick; architects, John J. and T. D. Newsom; contractor, W. N. Concannon; cost, $1,865; signed, August 4th; filed, August 26th; October 20, 1889; one story frame; payments —$466.25, frame up; $466.25, brown mortar on; $466.25, completed; $466.25, 35 days.

Ward avenue, San Leandro; owner, A. D. Cary; architect, Chas. Mau; contractor, Myron H. Hackett; cost, $3,190; signed; August 26th; filed. August 26th; November 30, 1889; payments, $797.30, $\frac{1}{4}$ material furnished and and $\frac{1}{4}$ work done; $797.50, $\frac{3}{4}$ material furnished and $\frac{3}{4}$ work done; $797.20, 35 days after completion.

King's avenue, Alameda; owner, James R. Lynch; architect, George A. Bodwell; contractor, W. G. Reese; cost, $2,788; signed, August 27th; filed, August 27th; payments—$697, frame up; $697, plaster on; $697, finished; $697, 35 days.

Block A, Adeline tract, O. Tp; owner, W. H Goddard; architect and contractor, W. R. Battan; cost, $1600; signed August 27; filed August 27; one-story cottage; $400 frame up; $400 brown mortared; $400 completed; $400, 35 days.

East Twenty-first street and Twelfth avenue; owner, S. H. Nourse; architects, J. J. and T. D. Newsom; contractor, Thos. H. Bassett; surety; M. L. Broadwell, $1500; cost, $3500; signed August 27; filed August 30; December 1, 1889; payments, $500 frame up; $500 chimney built; $500 plumbing done; $500 plastering done; $624 completed; $876, 35 days.

Block "C," Patterson Hd., Berkeley Tp.; owner, C. Thompson and W. S. Thompson; architect, J. D. Sprague; contractor, J. D. Sprague; cost, $3,500; signed, August 27; filed August 29; two dwelling houses; payments, 1-3, ready for plastering 1-3, plastering completed, 1-3, completed and accepted.

LOS GATOS.

Queen Anne residence for C. A. Bronaugh of Los Gatos. C. F. Scammon is the contractor and the cost will he about $2,000.

LOS ANGELES.

Residence. E. F. C. Klokke, owner; architect, J. C. Newsom; cost, $8,000.

Brick building. C. Raphael, owner; architect, R. B. Young; cost, $18,000.

Residences. N. & C. Jacoby, owners; A. M. Edelman, architect; $8,500 each.

Three-story brick. Owner, E. McLaughlin; architect, F. J. Capitam.

Brick building. Owner, Martin Anderson, architect, ——; cost, $22,506.

Residence. Owner, L. J. Rose; architects, Curlett, Eisen & Cuthbertson; cost, $60,000.

Lodging house. A. M. Hough, owner; architects, Doane & Slocum; cost, $17,000.

Zahn Block. Plans by W. O. Merithew; probable cost, $150,000.

Brick building. Owner, Martin Anderson; architect, J. Lyfert, cost, $80,000.

Residence. J. Schlessinger, owner; A. M. Edelman, architect; cost, $4,000.

Residence. C. H. Sessions, owner; architect, J. C. Newsom; cost, $8,000.

Residence. M. Hughes, owner; Curlett, Eisen & Cuthbertson, architects; cost, $8,000.

Residence. W. H. Rodes, owner; Doane & Slocum, architects; cost, $3,000.

Residence. Owner, F. Bates; architects, Doane & Slocum. Also warehouse; Baker & Myers; cost, $8,000.

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Residence. M. W. Connor, owner; architect, J. J. Newsom; cost, $25,000. Same architect—residence; E. Hildreth; owner, cost, $14,000. M. Ruddick, owner; cost, $12,000. Brick house; E. Chauvin, owner; cost, $18,000. Geo. Shatte, owner; cost; $30,000. J. Brian; cost of additions, $26,000.

MISCELLANEOUS.—Congregational Church; cost, $13,500. A. M. Rawson; Brick building; cost, $10,000. Lutheran Church; cost, $12,000. Residence; A. Wartz; cost, $3,000. Cottage; E. A. Miller; $5,000. Cottage; E. C. Hodgman; cost, $3,000. Brick stores; S. Hellman, owner; cost, $7,700. Brick building; Maria Howes; cost, $10,000. G. Kneckt; residence; cost, $6,260. H. Lindley; brick dwelling; $5,750. G. C. Perrett; brick building; cost, $15,500. Franklin Block; cost, $19,900. Presbyterian Church, to cost $5,000. Orphan asylum; cost, $125,000. W. H. Joy; block; $8,000.

Courthouse. Architects, Curlett, Eisen & Cuthbertson; cost, $410,000. Same architects have Garvey Block; cost, $65,000. Residence for Wm. Curlett; $8,000, and Cable Co.'s engine-house, finished; cost, $195,000.

LORIN.

Mark Ashley, residence, Ashbury avenue. On Mason street, eight-room cottage. Pattiani & Co., three cottages on Newbury Tract.

NEWBURY.

L. E. White, four frame dwellings on Ward street.

SAN LUIS OBISPO.

Residence, near Oso Flaco. Owner, Mr. Fox; contractor, Smith.

PASO ROBLES.

Two warehouses—one by the Southern Pacific Mill Co., and the other by the Grangers. Also a new hotel.

WARM SPRINGS.

J. L. Beard, additions to winery. S. Peaison, residence, soon to be finished.

LIVERMORE.

A. Weymouth, brick work finished, two-story frame on Chestnut street.

AGNEWS.

R. Summers, contractor with trustees Agnews Insane Asylum, to erect administration building and ward building No. 3.

TEMESCAL.

Block of stores on Telegraph avenue, terminus of car stables.

STOCKTON.

Central M. E. Church; contractor, Robt. Powell; cost, $50,120.

PLEASANTON.

Mr. S. E. Jackson is building a new house on his recently purchased property of A. W. Brodt.

SANTA CLARA.

John Dibble has secured the contract for putting the roofing on the large winery at Lawrence. It will require sixty-three sheets of tin, being 101x63 feet.

SAN JOSE.

Two cottages on Fox avenue for Mrs. R. G. Woods; architect, J. O. McKee; cost, $1500.

Two-story residence on Second near Empire street; architect, J. O. McKee; contractors, Irish & West; cost, $4000.

Modern cottage for Mrs. Cordell on Delmas avenue; contractor, Ed Basse; architect, J. O. McKee; cost, $1400.

Modern cottage on Seventh street for S. N. Johnston; architect, J. O. McKee; cost, $2000.

Two-story residence for Professor Allen near Wrights station; day's work; architect, J. O. Mckee; cost, $2500,

Cottage for X. E. Burns on San Francisco road; architect, J. O. McKee; cost, $2000.

Cottage on Ninth and San Carlos streets for James Farney; contractor, P. R. Wells; architect, G. W. Page; cost, $3000.

Cottage, corner of Sixteenth and St. John streets, for R. D. Pease; W. S. Boyles, contractor: J. O. McKee, architect; cost, $3,500.

Livery stable for M. M. Tinkham on Bassett street; J. O. McKee, architect; Mr. Kelsey, contractor; cost, $4,000.

Emanuel Baptist Church, corner of East and Crandall streets; H. T. Hite, architect and contro; cost, $1,700.

Cottage for E. B. Saunders on Cottage Grove Tract; cost, $1,200.

Cottage for S. L. Nugent on Cottage Grove Tract; cost, $1,500.

Fifty modern cottages on Cottage Grove Tract; I. G. Hazzard contractor and architect; average cost, $1,500.

Cottage for Jay K. Smith on Prevost street; I. G. Hazzard architect and contractor; cost, $1,300.

Two-story cottage on the Stevens' Creek road for S. A. Mattson; J. O. McKee architect; H. Kuler contractor; cost, $30 0.

Two-story residence for Ed Younger on North First street; B. H. Vincent architect and contractor; cost, $3500.

The Archer building on Second, near Santa Clara street; R. M. Summers contractor; Jacob Lenzen & Son architects; cost, $20,000.

The New Franklin Engine House; Theodore Lenzen architect; Mabury & Phillips contractors; cost, $7000

Two-story residence for W. W. Collins on Second street; J. M. Ware contractor and architect; cost, $3700.

Modern cottage on William, west of Market street; J. S. Wheeler, architect and contractor; cost, $1600.

Cottage on South Eleventh street, near San Carlos street; J. H. Lenzen & Son architects; J. E. Forgrave contractor; cost, $1800.

Ryland building on South First street; J. Lenzen & Son architects; R. Summers contractor; cost, $40,000.

Bank of Hollister building, in Hollister; J. Lenzen & Son architects; Jacob Dorne contractor; cost, $20,000.

Cottage for Mr. Neale on South Tenth street; Frank Davis contractor; mill plans; cost, $2200.

Cottage for J. E. Harris on Thirteenth, near St. James street; E. A. Van Dalsem contractor; mill plans; cost, $1500.

Cottage for Chan Chan on San Fernando near River street; A. C. Bates contractor; mill plans; cost, $1300.

Two-story residence on North Second street for Dr. Pratt; Irish & West contractors; J. O. McKee architect; cost, $4000.

Cottage for J. Colombet on Sixth street near St. John; contractors, Talbot & Scherracke; architect, J. O. McKee; cost, $3000.

Brick building for C. S. Crydenwise on Fountain alley; H. Clifton contractor; J. O. McKee architect; cost, $5500.

Cottage on Second street, near Hensely avenue for W. Judah; day's work; J. O. McKee, architect; cost, $2800

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MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

AN IMPORTANT extension of the fire limits is under consideration by the Board of Supervisors. The changes, as proposed, enlarge the limits to include the business portion of Hayes Valley, besides other blocks nearer town.

The change is not viewed with favor by the property-owners in the limits affected, judging by the number of protests that have been made to the committee. This is a case, however, where the public good takes precedence over private interests, and the property-owners should take the matter as philosophically as possible.

The blocks in the proposed new limit are mostly pretty well covered with frame buildings, and the owners claim that if they had to rebuild they could not afford to put up brick buildings, and that consequently their property would depreciate in value.

Now, it seems to us that in case a building, in close proximity to other buildings, is burned, that the new building erected to replace the one destroyed should be so constructed as to give some sort of protection to its neighbors, which were undoubtedly jeopardized by its destruction.

The fire commissioners are acting for the good of the city in urging the adoption of this new ordinance. It is particularly necessary to have as many protections and barriers as possible against the spread of a conflagration that is particularly liable to spread in a city of frame buildings, such as ours, where the fire department, according to the repeated warnings of Chief Scannell, is not kept up to the requirement of the increasing demands on its service.

THE REGULAR monthly meeting of the San Francisco Chapter of the A. I. A. was held on the evening of November 8th. The routine business of the society was transacted. A paper on the "Architecture of Japan" will be read at the next regular meeting, Friday evening December 13th, by a young Japaneese architect, Mr. K. Shimoda. Interesting photographs and drawings of Japanese constructions designed by Mr. Shimoda will be exhibited in illustration of the paper. All members of the profession whether connected with the chapter, or not, are cordially invited to be present.

WE ARE in receipt of the journal of the Royal Institute of British Architects, September 26, 1889, and also the Kalendar of that body for 1889–90.

The editor in his "notes" commenting on various architectural publications that appear at the Royal Institute compliments this journal for the "rapid strides it has made in the path of improvement." Under the same heading it advances an idea which is worthy of consideration by architects on this coast, and that is: "There is no better form of profitable advertisement than the reading room table in the library of the Royal Institute of British Architects."

The application of this apparent truism is that the rooms of the San Francisco Chapter of the A. I. A. might be made the depository of all the leading publications useful to the profession—while the same rooms could be made a place of general resort to compare ideas or mould public sentiment. Let us ask a question. Is there a body of men in our community who by a combined and energetic move in the line of public improvements sanitary measures, and the general beautification of this city could do more than the architects? Can you suggest who it would be?

The merchant has his Chamber of Commerce—the grain man his Exchange—the stock men, their Board—the laboring men have their various unions, clubs and exchanges—and yet, the men who are determining the character of our public works seem to be shy of forming a "Board" or place of general meeting.

There never was a better opportunity than now, and there is no fitter place than the rooms of this journal. Here the Technical society, the Astronomical society, and the San Francisco Chapter of A. I. A. all hold their meetings. Here can be gathered all the current literature desired by the profession—and further than that, this journal is the organ for the whole body of the profession and its columns are open for their communications. Shall we have an architectural Board, reading room, and exchange?

THE ANNUAL ADDRESS

Delivered by President Sanders before the San Francisco Chapter of the American Institute of Architects at the monthly meeting, October 11, 1889.

Gentlemen: Leaving to my successor, Mr. Babson, the pleasing task of portraying the future, I will merely take a brief backward glance at the past two years, which seem to call for some remark, as presenting matter for reflection, and which I will endeavor to state in the following cursory observations:

The first point to which I wish to draw your attention is the generally thriving condition of the architectural art throughout this continent, and particularly within the bounds of the United States. Indeed, it may, perhaps, be truly said to be, practically, almost confined to this country; for while the broad area of the dominion of Canada exhibits much sympathetic interest in the progress of architecture, and is making commendable efforts to hold up her end of the plank, yet it must be confessed it is, after all, pretty much as she receives the sun's rays in winter. She is on the northern rim of the temperate zone of the art, and must be looked upon as a truly sturdy dwarf, rather than as a well-grown and developing tree, such as the art presents in appearance within the bounds of the Union. Southward, again, in Mexico, for instance, I should conclude that the torrid zone began to get the best of it, and that the capabilities of the art are at the present time undeveloped from precisely opposite causes; nature there does too much instead of too little, and the rational incitament to progress in the arts is the lacking element, instead of that arising from the overbalancing conditions of natural obstacles to advancement, as in the North.

A rapid run through the principal cities of the Northern States and Canada, last year, made this condition of things so far apparent to me, as the eloquent records of the truly magnificent publications of the *American Architect* and the *Inland Architect* indicate, unequalled as they are, so far as I am aware, by any similar journals in the world—a notable fact on which American architects are to be congratulated. The same fact is also made apparent by the flourishing condition of the two great professional societies which have sprung into life in this country, which are now betrothed and soon to celebrate their nuptials in a union as notable as it is auspicious; a union, indeed, not of contending factions, but of bosom friends—of complementary parts of one great whole—of Eastern delicacy and refinement with Western energy and independence! Long may the union of the Institute and the Western Association continue, and firmly may it be cemented, and a glorious family of subordinate Chapters and Associations may they raise, and as the result thereof, may there also be a development, not of a single style, but many; as many as the States; aye, if you will, as many as the counties, cities, towns, and even villages, throughout this broad land! For I hold that art is as various as the rational human mind from which it springs, and which is, in its turn, born of the breath of that Divine power which breathes the universe into existence, and which, while it leaves its impress in some peculiar beauty on each created object throughout the stupendous whole, will undoubtedly, through the mediumship of intelligent human efforts, stamp a reflection of his own individual image on every work of man.

And here it is in order to remark that, in point of fact, the profession of architecture in America seems really to have only practically come into existence as such, during the past century.

In the early years of this republic, when the Capitol at Washington was designed, it must not be forgotten that the first adopted scheme was not that of an architect, but a physician; and it would seem that most of the old colonial buildings were erected, not by architects, *as such*, so much as by the local builder, mason or carpenter, as the case might be. These men seemed to be content with producing very excellent work in its way, and to have been only careful to follow in the footsteps of their predecessors from the parent soil. Nevertheless, a careful examination of old colonial architecture unmistakably indicates an individuality not recognizable in any particular trans-Atlantic style that I am acquainted with, though generally allied to those which came into vogue during the Hanoverian era in England.

A stroll through Germantown, in the neighborhood of Philadelphia, and in the older streets of New York, seems to make this to me quite apparent; the variations and differentiations which can be seen in the delicate and very carefully executed designs of the various structures remaining, are confined within very narrow limits indeed. When professional architects of any note became known as such, and the profession began to be recognized, apart from the practical builder-architects above alluded to, may be difficult to determine, but the rise of the profession, in America, would seem to date from a period subsequent to that time. At all events, the formation of the Institute and the publication of the *American Architect* undoubtedly had great influence in giving an impetus and a dignity to the calling, which nothing else could have accomplished so speedily or so well.

The respectable position and progressive condition of the art of architecture in America at the present time, is also undoubtedly due in great measure, to the active and organized efforts of European schools to establish correct principles of study and practice on their side of the ocean.

Following the great Renaissance wave, which, after sweeping before it the effete and corrupt remnants of the glorious vernacular of the middle ages itself broke in shattered ruins on the rock-bound shore of artistic debasement—came that great movement, the Gothic revival. The "Battle of the Styles" followed speedily; then the Queen Anne question, the Eastlake craze, and, later still, the Romanesque development supervened, the most important of them all, in this country, at least, and is probably the only one likely to leave any visible solid results, in an artistic sense, behind.

In California we have only begun to join in the race, and it behooves us to cautiously examine, and carefully to weigh the principles of design offered for our imitation and adoption by our eastern brethren. For though we may indeed receive much benefit by judicious observation from their example and experience, it is rather by suggestion of fresh developments than by servile imitation of any style or styles of art, however intrinsically good they may be in themselves, that any advance can be made or that the peculiar adaption of means to ends may be brought about, by which the "personal equation" can be realized in our municipal, state and national art. The tendency to coalesce indicated by the union of the two bodies into which the profession has hitherto been divided, is one also to which we should give a good heed. The formation during the past four years of an architectural league in the Eastern and Middle States, and the effort to organize a body of the same kind in San Francisco, is an indication that the motion to combine among the seniors has not been without its effect on their subordinates. If guided by judgment, pursued with perseverance, and followed up by study and effort, which alone constitutes the real value of such an organization, it cannot be doubted that great good may be effected by the movement.

Some years ago, it was determined by the San Francisco Chapter to inaugurate regular classes for the benefit of the young men who might be attached to the offices of architects connected with the Chapter, either as articled pupils or as employees This was effected in an imperfect way by the establishment of three classes, one in geometry, Mr. John Gash teacher; one in practical architecture, Mr. Albert Pissis, teacher, and one in freehand drawing, under the present incumbent. In due time also a class for the study of French was inaugurated with good results while it lasted. These classes for a time were quite successful and a large amount of work was turned out of more or less merit. Some competitions were arranged, prizes given, and much interest was manifested, both by principals and pupils in the progress of the school; by degrees, however, interest flagged, one class after another was dropped, and at last only the drawing class remained. This has been maintained under varying circumstances, and with some unavoidable interruptions, to the present time, with the exception of a short interval during which the class was given up in favor of those established by the Architectural League. This organization was formed on similar principals to those existing in eastern cities; but the classes, only two of which were organized, have been given up and the Chapter class has been resumed and is now beginning to assume somewhat of its former aspect. If the other classes could be also resumed, there is no reason why they might not be as successful as ever. What is lacking is first, interest and assistance on the part of the Chapter; second, attendance of the Chapter's students whom the members of the Chapter should encourage in joining; third, voluntary teachers in mathematics, architecture and construction. During the short time at the command of the one teacher on one evening of the week, it is out of the question to conduct more than one class. The work of the class is to draw from flat studies and models in charcoal and crayon, and from natural foliage in color, and to sketch from nature on Saturday afternoons, hitherto once a month. Were the Chapter to take the interest they once did, in these classes, by offering premiums in competition, and opening the pages of their journal for the publication of the successful designs, etc., there is every reason to suppose that they would prove of great use to the young generation of architects now growing up in our midst.

It was proposed early in the year that an exhibition should be held in connection with a reception. Were something of the kind to be inaugurated, it is probable that fresh interest in the Chapter would be excited and an influx of new membership would immediately ensue.

During the past year the Chapter has engaged rooms of its own and is now no longer indebted to another society for the use of their apartments, and we feel it incumbent upon us to acknowledge the many favors and the great kindness shown us by the San Francisco Art Association.

The movement to purchase the The California Architect and Building News from its original founder and publisher, James E. Wolfe, Esq., and the formation by members of the profession, of the corporation who now own it, is one altogether in the right direction, and cannot fail to greatly add to its influence and to a reflex advantage to the profession in California.

If properly supported, energetically conducted, and perseveringly pushed up to the highest state of mechanical and artistic perfection, not only may a successful and distinctive journal be inaugurated among us, but the reactionary effect upon our professional community could hardly be estimated at its true value.

The modern development of architectural study and practice in America, and to some extent throughout the world, indicates the slow but sure establishment of true principles, and a knowledge of design which will doubtless result in an individualizing of a variety of styles, having a common basis of utility, beauty and truth, which will find its adaption in every direction and every country with the happiest effects. But the future and its developments I beg to leave with the best of wishes to my worthy successor. With these few words, thanking you earnestly in my own and fellow officers, names, for your cordial co-operation in the past, and bespeaking the same for our successors in the future, I beg leave to introduce our next president, Mr. Seth Babson.

THE INAUGURAL ADDRESS

Of Mr. Babson, President of the San Francisco Chapter A. I. A, delivered on the Evening of October 11, 1889.

Gentlemen and Members of the Chapter.

I thank you for the honor bestowed in selecting me as your presiding officer for the coming year. Gratifying as may be the feeling, with regard to your preferment, it is not unaccompanied with a certain degree of solicitude that all of your expectations may be realized.

I shall rely upon your good sense and magnanimity, to assist in preserving the honor and standing, and increasing the influence the Chapter has obtained under the management of our worthy past President, his able Vice assistant and their predecessors. We should ever keep in mind the objects stated in article II of our Constitution which reads as follows: "To unite in fellowship the architects of the Pacific Coast, encourage, promote and sustain professional standing, dignity and harmony, to stimulate friendly intercourse, and to combine in efforts for the promotion of the artistic, scientific, and practical proficiencies in the profession. * * * * * *"

Separated as we are from the great centers of the eastern population, we miss that attrition of thought and sentiment, the leaders of the profession enjoy in thickly settled communities of long standing. We miss their charming display of art treasure and their wealthy patrons, whose influences develop into life and intense activity the sleeping resources of the American genius. But notwithstanding our isolation, thrown more upon native ingenuity and a cosmopolitan taste, a type of architecture has been developed essentially characteristic of the wants and tastes of the coast.

The Chapter and its work are evidences of the efforts the Pacific Coast architect has made to lift the profession to a higher plane of excellence and usefulness, and to-day it is looked upon as a nucleus by many of its members, around which happier sentiments will gather, and from which a loftier ambition may reach out for distinction and honor.

The coming year should be one of increased interest for old and new members of our profession. The fact that the parent organization, The American Institute of Architects and the Western Association of Architects, are to unite their fortunes for the formation of a grand head family to lead the profession onward, will be hailed with delight by every lover of his profession. This means a more rapid stride towards a national style of architecture, a higher standard of practice among its votaries, and a quickening of the ambition of the architect to improve the grand opportunities of the age. For within its fostering circle will be gathered the learned professor of architecture as well as the most able and boldest of the creators of those magnificent modern structures now completed, and in course of construction, adorning the great cities of the country.

All honor to those of our predecessors, and present members, who have so faithfully sustained this organization through all these many years of existence. And to those who have made it a part of their professional duty to inculcate correct principles of drawing and a pure taste for architecture among the students and draughtsmen employed in the various offices of the city, by sustaining classes which are open to all connected with the Chapter, a great measure of praise is due. Their reward is to be found in the position many of the former students now occupy as active members of the profession.

It is hoped that all the recipients of this free-class training will show their appreciation of these advantages by their assistance in perpetuating and sustaining the good work for the benefit of their successors. There can be no honorable practicing member who has at heart the well-being of his fellow men who is not solicitous for the advancement of his profession beyond its present status, both with regard to honor, and its qualifications for creating a higher and more beautiful type of architecture.

To create a beautiful design is to add to the sum of human happiness, through the exercise of the higher faculties of our being

With the growing facilities for education and culture the human mind is pushing onward with rapid strides to satisfy its longings, with but an imperfect equipment for the struggle. In an address by Professor Comfort, before the Western New York State Association of Architects, a short time since, the Professor says: "I only repeat to you what I have often stated to the students of our university, that, in my opinion, you represent the most rising and important profession, the one which offers the most promising and attractive opportunities to young men of talent in our land." In no other profession is there so limited a number who are fully qualified to meet the great demands of the country, or, indeed, the present generation of its patrons.

But a new period is upon the world. In the future the architect in America must have an extensive scholastic training before entering upon the practical work of his profession. It is to this new period in architecture which is pressing rapidly upon the country, to which I refer in calling architecture the most inviting profession to young men of talent in our land. * * *

Through the influence and power of the vast expenditures of money to replace the burnt cities of Boston and Chicago, architecture has sprung with a giant leap into a condition of life challenging attention and demanding study and training on the part of its votaries to retain their leadership and satisfy the demands for higher attainments.

To guide the profession to a higher condition of excellence and honor will require the united efforts of the most practical and the most accomplished architects of the present generation. With especial force will these remarks apply to the western portion of our country, toward which population is advancing with unprecedented strides. Whatever can be done to develop a correct taste and produce a higher standard for the architect should receive the best efforts of the members of this Chapter. To do this, a little self denial must be practiced and more service thrown into the scale of honor and public good.

The owners of the Palace Hotel have on foot a project to rearrange the first story with a view to improve the general disposition of the rooms. One of the main objects in view is to secure more sunlight for the parlors. Architect Wood has the project under consideration.

Vodge's Architects' and Builders' Pocket Companion and Price Book. 368 pages; full bound, $2.00; cloth, $1.50.

Bricks, Tiles, Terra Cotta, etc.: A practical treatise on same by Charles Thomas Davis. Second edition; 217 engravings; 1 volume, $8.00; cloth, 501 pages, $5.00.

Front Elevation

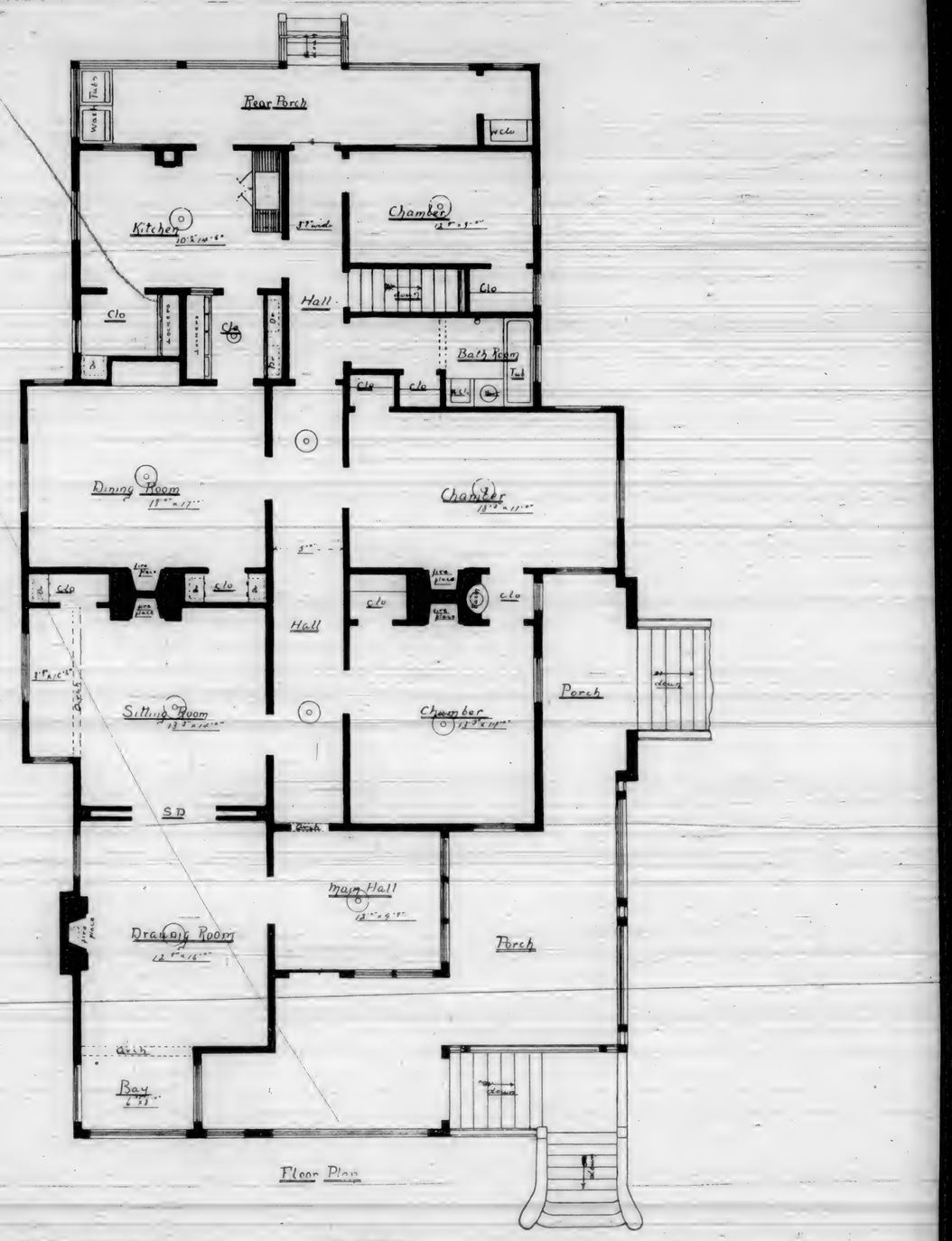
PLATE 1. SAMUEL NEWSON, ARCHITECT

NEXT to the education of the school and college, there is nothing more beneficial to the student than travel abroad. And we do not mean to be understood as limiting our remarks to the student who has just left college, but would include all people of intelligence who have not yet gone too far down on the shady side of life. The representatives of any business or profession who would not be benefited by travel in foreign lands are few or none. We are all apt to settle down into narrow grooves and to create for ourselves a little world of our own, beyond which we so seldom look, that we begin to believe that our own selfish and narrow interests are the only ones of any importance. But when we once "tear ourselves away" from this rut into which we have unconsciously fallen and travel in other lands with open eyes and receptive mind our ideas of life are enlarged, our store of knowledge increased, and we lose sight of our own petty cares in the new interest awakened within us by a view of the varied and wonderful industries and enterprises in the great world around us; we return to our business or profession with broader views of life and a precious store of valuable information for the entertainment of our friends and our own personal profit. Among all professions none, probably, receive more benefit from an extended course of travel abroad, than the architect and artist. To the architect the prospect of a tour in foreign lands opens up a delightful visit of grand possibilities. What may he not accomplish after he has studied the works of the great minds on other shores, looked upon the ruins of ancient Greece and Rome, and visited the cradle of architecture still watched over by the silent and inscrutable Sphinx in Egypt. The very thoughts of it fires his imagination and thrills every fibre of his being with the keenest anticipations of of pleasure. A trip abroad is the architect's opportunity, and dull must be he who does not avail himself of all the advantages it affords; especiaially when at present the other attractions are heightened by the Paris Exposition. The International Congress of Architects which was held at the same place lately was an event of great interest, and attracted representatives of the profession from various countries throughout the world. When shall we attain a position in the architectural world which will warrant us in holding an International Congress of Architects and inviting our foreign brothers to the United States? It is just possible that they might even now be able to learn something of us in regard to the interior domestic arrangements of our dwellings, methods of heating, and many of the mechanical devices and inventions which enter into our buildings and constitute our "modern improvements." Notwithstanding the fact that we have no ancient ruins nor old historical associations to attract the travelers from foreign lands we may certainly lay claim to some advantages over our brothers in the old world.—*Architectural Era.*

In this connection we notice that some of our architectural exchanges, and particularly the *Building and Engineering Journal*, of Australia, are urging that "some vigorous efforts should be made to secure for young students of ability and promise the benefits of travel." by the establishment of traveling scholarships. Here is an opportunity for the Chapter of A. T. A. to instigate a movement in the right direction for the encouragement of the young.—[Editor.

OBITUARY.

WE REGRET to chronicle the death of Michael Joseph Kelly, who was one of the prominent contractors and builders of this city, and who had charge of erecting many large buildings.



SAMUEL NEWSOM, ARCHITECT. PLATE 2.

WASHINGTON NEWS.

Seattle is to have a new opera house, the cost of which including the site for same will be quite $300,000. Competition will be advertised for so that all the architects of the country will have a chance. The promoters of this enterprise are Thomas Ewing, John Leary and others. Geo. F. Fry also intends to erect within a year one of the finest opera houses on the Pacific Coast. It will be L-shaped 75x180x120 feet, three stories in height and constructed of brick, iron and stone. Seattle's new court house is to be one of the best buildings in the Northwest. Architect Ritchi has submitted the revised plans which show a building with a frontage of 195 feet and a depth of 125 feet, while rising high above the roof is an immense octagon tower 100 feet higher than the roof and 160 feet from the ground. Architect W. E. Boone has finished the plans for Dexter Harton's immense building on corner Second and Cherry streets. This structure in connection with the one adjoining will be known as the "Seattle Block." Size of the new portion will be 120x108 feet, six stories in height, and built of stone and brick. Cost of the new building $200,000. John Leary has just received from Comstock & Trotsche the plans of his new five story hotel to be erected on Marion street, of brick, stone and terra cotta; cost of building $60,000. The foundation for J. M. Colman's immense block is completed at a cost it is said of over $40,000. The building itself will only be finished to the second window and temporarily roofed in for the winter. The Hotel Rainer is completed and this is the way they figure the time and labor on it. 3,500 days work all told, and distributed as follows: carpenters, 1,800 days; masons, 500 days; painters, 300 days; electricians, 100 days; steam heaters, 156 days and the balance common labor. The time actually consumed was two months, so say Larimer & Waite, the contractors. Architect Boone also awarded the bids for Mrs. L. M. Starr's new seven story building on the site

It would be simply impossible to name all the substantial improvements going on in Seattle at the present time. To use the language of the Seattle *Post-Intellingineer* it "would take thirty days to complete such a record." This is the way they sum it up: Front street—Busy workmen building big blocks on both borders. Commercial street—little space that is not occupied by solid buildings. South Second street—The clang of the trowel heard on every hand. South Third street—Structures crowded along the limit of the limits of the fire district. Second street—many splendid structures rising to lofty heights. Third street—Dexter Horton's massive block on Third street is being roofed. There is no retreat from the sound of the hammer, the rattle of the saw, the clang of the trowel and the click of the stone chisel

Port Townsend is talking about a $150,000 hotel, and J. E. Clark, Frank A. Bartell and R. B. Hill have been appointed a committee by the Chamber of Commerce to work the matter into shape.

Ellensburg has completed work on 75 storerooms, some of which are three-story buildings and mostly finished in brick and stone. It is expected that as many more will be completed in the next sixty days.

Hoquain on Gray's Harbor is having a boom and money is being spent on public improvements, wharves and stores in a manner that indicate great confidence in the future.

At Puyallup, C. T. Uhlmannn of Tacoma, has purchased a tract of land for $10,000 and is to erect a meat packing establishment to cost $40,000.

Cosmopolis is advancing to the front with rapid strides and bidding for public attention, Already a handsome City Hall has been erected—a day dock is to be built—and new mills and shops are going up—verily the great Northwest is waking up.

CORRESPONDENCE.

Mr. R. H. Daley submits for publication the following invitation of which he was the recipient as a sample of the kind that are too frequently made to induce Architects to risk time and money to enter a wild-goose-chase. The italics are ours.

Mr. Daley's reply to the invitation was brief, and intimated that he did not enter architectural competitions on the terms offered.

Office of the
Masonic Hall Association of Alameda,
Dated, Alameda, Oct. 29, 1889.

R. H. Daley, Architect: The Board of Directors of the above mentioned association hereby advertise for plans and specifications in detail for the erection of a three-story brick and stone building with basement, on the south-west corner of Park street and Alameda avenue, in the city of Alameda. Said building to occupy about sixty feet on Park street and one hundred feet on Alameda avenue. All plans to be drawn to one-fourth inch scale. *The Board reserves the right to reject any and all plans and specifications presented for adoption in reply to this advertisement, and* no compensation *will be allowed to any architect whose plans and specifications may be rejected.*

Plans and specifications presented for adoption under this advertisement will be received in the office of said Association, Bank of Alameda, on or before November 23, 1889.

For further information apply to A. Gewer, 323 Front street, San Francisco, and Wm. O. Dickson, P. O. Box 36, Alameda.

A. Gewer, Pres.
Wm. O. Dickson, Sec.

Please notify the undersigned of your intentions in this matter. Details at my office A. Gewer.

MECHANICS' LIENS.

Another Point Decided by the Supreme Court—Material Men May Recover From the Owner on an Unrecorded Contract.

The Supreme Court has decided a case which is of great importance to owners. The suit was that of Kellogg et al. vs. Howes et al., appealed from the Superior Court of Los Angeles county.

The action was brought by the plaintiffs as material men, laborers and sub-contractors against the defendants to enforce a lien for material furnished and for labor done in the construction of a dwelling. The defendant, Howes, was the owner of the real estate, and contracted with his co-defendants to construct the building, and the latter contracted with the plaintiffs for the labor and material done and furnished by them.

The contract between the owner and his co-defendants was not filed for record as provided by the Civil Code. The owner had paid the contractor the greater portion of the contract price, but when suit was brought had not a sufficient amount of the contract price remaining to satisfy the claims of plaintiff, though before the contractor had been paid there was more than enough to satisfy such claim. Judgment passed for the plaintiffs for the full amount of their claims, and the defendant Howes appealed.

The question on appeal was whether or not a material man or sub-contractor can recover beyond the amount unpaid by the owner to the original contractor on the contract where it has not been recorded, and where no personal notice has been given by such material man or sub-contractor to the owner to withhold the payments due such contractor, the material man and sub-contractor having actual notice that there was such a contract.

The Court, after reviewing the cases on that subject, decided that the material men and sub-contractors under the circumstances named can recover for the full amount of their claims, even though it exceeds the amount of the contract price remaining in the hands of the owner unpaid; and it is no answer for the owner to say that it works a hardship or injustice on him. As the contract between him and the main contractor is not filed as required by statute, it is wholly void, and the material men and sub-contractors should proceed to enforce their lien as if no contract existed. The judgment and order of the lower Court in favor of the plaintiffs were accordingly affirmed.

Our Illustrations.

Plates 1, 2 and 3 show the plan and elevations of a residence designed by Samuel Newsom, architect.

Plates 4 and 5, a residence erected by Seth Babson, architect.

Our double plate No. 6 is the perspective view of a commodious country residence designed for D. Freeman, Esq. by Messrs. Curlett, Eisen & Cuthbertson, architects of Los Angeles, Cal.

Building Supplement and Trade Reviews.

VOLUME 10. NOVEMBER 15, 1889. NUMBER 11.

The Ideal Sash Pulley.

The accompanying cut shows the No. 21 Ideal sash pulley manufactured by the Stover Manufacturing Co., Freeport, Ill., who claim for it several points of excellence not to be found in any other make. The pulley wheel has a cone axle cast to it, under a new process, which it is claimed by the manufacturers greatly enhance the working qualities.

1st. In point of accuracy.
2d. In the matter of durability and light running.
3d. Renders it perfectly noiseless inoperation.

The bearings in case are made wit hreference to the cone shaped axle of pulley and when put to actual use, the weight and sash weight applied to the sash cord running over the pulley wheel causes it to run to a center or midway between the two sides of case, thus relieving it from contact with sides of case and overcoming the fric tion and noise.

This company makes various styles of cone axle bearing sash pulleys together with a line of builders' hardware, which are already very popular with the trade. The pulley shown in this connection is more particularly adapted for the mill trade, as it is readily applied with mortising machines such as are in general use, or may be applied by hand in the usual way. The company will on application send sample free with catalogue illustrating the different style soft goods manufactured by them.

N. & G. Taylor Company.

In our last issue we should have stated that the firm of N. & G. Taylor, now N. & G. Taylor Co., was established in 1810, and it sold what is now known as the Taylor "Old Style" brand of roofing tin as early as 1830. The manufacture at that time was necessarily crude. A sheet of 10x14 bright tin was dipped by hand in a bath of molten lead, but the result was the best roofing tin that ever had been or has been made, its utility being demonstrated after forty years of use. About 1873 N. & G. Taylor Co. entered into an arrangement with Leach, Flower & Co., of Neath, Wales, the makers of the finest plates known for deep stamping, for the production of what, having regard to the beginning, was now called the "Old Style," these words being selected as a brand which had never been used before. Among the prominent buildings covered with this tin may be mentioned the Government Printing House at Washington, National Soldiers' Home, Los Angeles, and Independence Hall, Philadelphia.

A subscription to the Architect *now* will entitle you to the November and December numbers of this year free. Only $2 per year, and each number will contain a representation of some important public or private work.

Architectural and Mechanical Works.

In our list below will be found the names of books on architectural and mechanical subjects, the prices of which have been greatly reduced if taken in connection with the California Architect Old subscribers will be given the books at a large discount, so that they may feel that no favoritism is shown. It will be noticed that some of the books are given free to new subscribers.

	Price of Book.	With *Cal. Architect.*
Mechanics' Geometry	$5 00	$5 57
Monckton's National Carpenter	5 00	5 75
Cottages	1 00	5 40
Shavings and Saw Dust	1 50	2 75
Moore's General Assistant	2 50	2 25
Plaster and Plastering	1 00	3 40
Hand-Book of Legendary Art	3 00	2 75
Manual for Furniture Men	1 00	3 40
Water Closets	1 50	2 40
Cutting Tools	1 50	2 00
Sewer Gas and Its Dangers	1 25	3 50
Handrailing and Staircasing	1 25	2 75
Sloan's American Houses	1 50	2 75
Amateur Mechanic's Workshop	1 50	2 00
American Cottage Builder	3 50	3 00
Wheeler's Rural Homes	1 50	4 00
Burns' Ornamental Drawing	1 00	3 40
Manual of Drawing for Carpenters	3 00	2 00
Steam Engine Catechism	1 00	4 40
Grimshaw on Saws	4 00	2 75
Modern Low-Cost Houses	50	4 00
A Cosy Home	25	2 00
California Picturesque Architecture, No. 1	3 00	4 00
California Picturesque Architecture, No. 2	3 50	4 25
The Artisan	5 00	5 75

The following are justly recognized as standard publications. Some of them are perfectly new works, but we make the same general reduction:

	Price of Book.	With *Cal. Architect.*
Tredgold's Carpentry	$ 7 50	$ 8 25
Building Construction, 3 vols., Smiths	14 00	14 75
Picture Making with Pen and Ink	4 00	5 25
New Cottage Homes and Details (Palliser's)	4 00	5 25
Palliser's New Quarterly, per year	3 00	4 00

We can furnish any book printed at publishers' prices, and will send all books free by either mail or express.

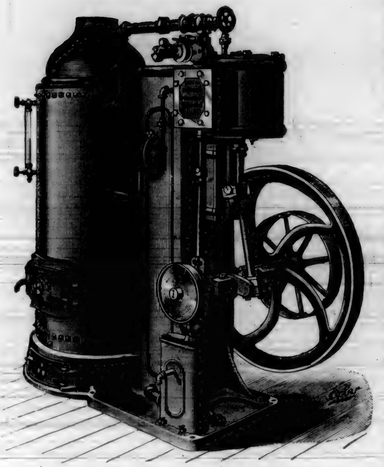
A Treatise on Masonry Construction.—This work is the out-growth of the authors own class room and nearly all the matter is believed to be entirely new. The suggestions in the book are from practical masons and engineers. The structures illustrated are actual ones, and the illustrations all from well authenticated copies of working drawings.

Although the book has been arranged for architectural and engineering students, it will still be useful for a man of experience.

Contents: Materials and method of testing strength, etc.; combinations of material, composition, etc.; *Foundation*—testing the bearing power of soil, etc; *Masonry Structure*—stability against sliding, over-turning, crushing, etc. Complete in one volume of about 500 pages, with 125 illustrations and eight or ten folding plates. By Ira O. Baker, C. E., 8 vo., cloth, $5 00.

For sale by John Wiley & Sons, 15 Astor Place, N. Y.

Examples of American Domestic Architecture: By John Calvin Stevens and Albert Winslow Coff. 60 full-page plates, etc. One large quarto oblong volume; cloth; $10.00.



WILLARD CONDENSING ENGINE.

The extensive sale of gas engines and hot-air engines, notwithstanding the high cost of the engines, and of gas, reveals the very general demand for an engine of small power, say 2 to 4 H. P., for the use of small industries, which shall be *perfectly safe*, and the manufacturers of the Willard Condensing Engine (of which we give an illustration), who have been engaged in the manufacture of small engines of various types for the past ten years, believe that, in this new engine, which they have now put upon the market for the first time, they offer a motor which possesses all the advantages of other motors of this class, and is free from the structural faults that exist in some of the other machines. The manufacturers claim that the cost of fuel will not exceed one per cent per horse-power per hour that it requires no watching; does not increase the rate of insurance, can be safely managed by a person having no knowledge of engines, and that it is absolutely safe under every and all circumstances, and cannot be exploded, because there can be be no steam pressure whatever.

The manufacturers, in putting this engine upon the market, desire to impress upon the public the fact that it is not a hot air engine or a kerosene oil engine or a gas engine, but it is a condensing engine using a small quantity of steam at less than one pound pressure, burning wood or coal, and is perfectly simple and reliable; making no noise or objectionable smell.

A full descriptive circular with illustrations and prices can be obtained by addressing Chas. P. Willard & Co., 236 Randolph St., Chicago.

Cincinnati Corrugating Co.

The Cincinnati Corrugating Company has recently established new rolling mills and factories at Piqua, Ohio, a thriving manufacturing city about eighty miles north of Cincinnati. The company's latest catalogue reads as follows: "In our new location, we have the most modern rolling mills, operated by natural gas and under our sole control; the most improved processes of annealing, forming, galvanizing and painting our iron and steel sheets; machinery for grinding and mixing our paints; ample buildings and grounds, comprising fourteen acres for extending any buildings made necessary by the development of our specialties, as well as good railroad connections for obtaining the lowest freight rates." The catalogue further contains illustrations of corrugated arches, curved roofs, corrugated buildings, elevator sheets, iron frames, lathes, metallic paint shutters, etc., besides giving invaluable information upon the subject. The edition consists of 10,000 copies, is copyrighted and should be in the hands of everyone interested in the building trade.

Merchant & Co.

We are always pleased to congratulate our business friends on any sign of growing prosperity, or to mention a fact which would seem to bring them into a prominent position in the country. How many of us will think during the next few years that possibly every penny or nickel that jingles in his pocket passed through the factories of Merchant & Co. Most people think their "tin" comes from the mint, but where did the mint get it? From Merchant & Co.!

The well-known firm of Merchant & Co., Philadelphia, has just closed a contract with the United States government to furnish the Mints with 100,000 pounds copper blanks for making pennies, and 50,000 pounds nickel blanks for coining five cent pieces.

CITY BUILDING NEWS.

Bartlett near Twenty-fifth, 2d story to chapel. Owners, Bethany Church; architect, Seth Babson; contractors, Worden & Virgin; cost, $1,75b; signed Oct. 25; filed Oct. 29; payments, enclosed and roof shingled, $413; interior plaster; first coat $413; porches built second coat plaster on $413; interior finish completed $413; painting complete $413; complet'd, 35 days $689.

Block X, San Miguel Rancho, cottage. Owner, James Whittaker; contractor Geo. Doverig; time 45 days; signed Oct. 39; filed Nov. 4; cost $1,400; payments enclosed $350; brown coated $350; completed $350; 35 days $400.

Buchanan and Pacific, alterations. Owner M. Esberg; contractor Wm. Plums; cost $2,575; payments work half completed $900; accepted $100; 35 days $675.

Buchanan street and Hickay avenue, two-story frame. Owner John Beamish; architect J. F. Wolfe; contractor Patrick Lynch; cost $1,800; signed Oct. 28; filed Nov. 7; payments frame up to 2d floor $550; brown mortared $400; completed $400; 35 days $450.

Broderick and Haight; frame. Owner, Ross Radjesky; architect, Samuel Newsom; contractor, R. W. Murray; cost, $9,440; signed Oct. 22; filed Oct. 23; payments, on 22nd of each month note, 75 per cent. of work done; balance, 35 days after completion.

Buchanan, between Pacific and Webster; additions to two-story frame. Owner, Sarah Kahn, architect, John Gash; contractor, Alex L. Campbell; cost, $3,495; filed Oct. 22; payments, excavation brickwork building in place, and floor joists of new part laid, $700; brown-coat mortar on, $480; outside finished, $480; all inside finish done, $480; work completed, $481; 35 days after, $874.

Camp and 24th; two-story frame, four flats. Owner, Thomas Neary; contractor, Caspar Zwierlein; cost, $5,200; signed Sept 25; filed Oct. 15; payments, frame up, enclosed, $1,000; brown-mortared, $1,000; mortar on, mill work up, $900; completed, $1,000; 35 days, $1,300.

California and Devisidero; double frames and addition. Owner, Hugh Magorty; contractor, Geo. M. Salsbury; cost, $6,000; signed, October 18; filed October 4; time, 90 days; payments, frame up, $1,500; enclosed, $1,500; brown coat on $1,500; 35 days after completion $1,500.

California and Taylor; bulkhead walls. Owner, Gustav Sutro; architects, Percy & Hamilton; contractors, Chatain & Giletti; cost, $625; signed October 25; filed October 29; payments, 75 per cent. as work is done; 35 days after completed balance of 25 per cent.

Devisadero and Haight, completion fourth story of building now in course of erection. Owner, Anita Fallon; architect, Fred. E. Wilcox; contractor, J. H. McKay; cost, $1,600; signed Oct. 24; filed Oct. 30; payments, brown coat mortar on $600; completed $300; 35 days, $400.

Dolores street; frame dwelling. Owner, William G. Dobson; architect, William Mowser; contractor, J. R. Wheler; cost, $6,392; signed Oct. 12; filed Oct. 19; payments, at rate of 75 per cent. as work is up; balance, 35 days after completion.

Elisl and Leavenworth; three-story frame. Owner, A. C. Henrieken; architects, Townsend & Wyneken; cost, $8,550; signed Nov. 4; filed Nov. 6; payments, enclosed, $800; ready for lathing, $1 600; brown coated, $1,000; sash hung, $1,000; white coat on, $1,000; completed, $1,000; 35 days, $2,150.

Folsom and Eleventh; three-story frame. Owner, James Scrober; architect, Geo. H. Miller; contractor, Ferdinand Wagner; cost, $1,115; signed Oct. 22; filed Oct. 22; time, 90 days; payments, chimney-work completed and work done, $1,115.

Fire avenue near Clement street; cottage. Owners, James Murphy et al; contractor, C. E. Dunsher; cost, $1,600; signed Nov. 1; filed Nov. 2; payments, rustic on, $500; first coat plaster on $500; completed, $300; 12 months, $300, at $25 per month; interest, 8 per cent.

Fillmore and Oak streets; frame building. Owner, P. H Livingston; architect, Wm. Mooser; contractor, J. J. Dunn; sureties, Behrend Joost and F. A. Meeker; cost, $2,998; signed Oct. 10; filed Oct. 19; payments; rate of 75 per cent. as work is done; balance, 25 per cent., 35 days after completion.

Florida and 24th; two-story factory, well and engine, including basement. Owners, D. Block & Co.; architects, J. G. and J. N. Day; cost, $14,500; contractor, P. S. Schmidt; signed Oct. 19; filed Oct. 21; time, 50 days; payments, four installments as work progresses, 75 per cent. on work done; balance, 25 per cent, 35 days after completion.

Franklin near Broadway; frame. Owner, Mrs Bertha Greenberg; architects, Pissis & Moore; contractor, J. R. Wheeler; cost $6,200; signed October 17; filed October 29; payments, frame up, $1,200; first coat plaster on, $1,200; interior plaster on $1,000; ready for painter, $1,000; accepted, $250; 35 days, $1,550.

Folsom and Eleventh; plumbing, gas fitting, etc., on the same three-story building. Owner, James Scrobie; architect, Geo. H. Miller; contractors, Thos. Clark & Sons; cost, $3,688; signed October 16; filed October 16; time, 90 days; payments, rough work in, $1,000; completed, $1,288; 35 days, $840.

Grove and Van Ness Avenue, alterations and construction two frame stories. Owner, Isaac Harris; architect, Geo. E. Voelkel; contractor, Max Gartenberg; cost, $9,060; signed Oct. 26, filed Oct. 28; payments, rate of on $2,000; plaster finished $2,500; completed $2,295; 35 days, $2,265.

Guerrero and Fifteenth; two adjoining two-story frames. Owner, Jeremiah Geary; architect, A. J. Barnett; contractors, Brennan Bros.; cost, $7,850; signed, October 17; filed, October 19; time, 90 days; payments, 75 per cent as work progresses, on the first and third Mondays of the month; balance, 35 days after completion.

Grove near Polk, three-story frame. Owner, Louis Leiser; architect Henry Geilfus; contractor, Tegeler & Miller; cost $5,825; signed and filed Oct. 28; payments, frame up $850; enclosed $850; brown coated $850; inside finish $850; accepted $850; 35 days $1,475

Grove, near Polk; two story frame. Owner, N. McConaghey; architect, Chas. Mau; contractor, Tegeler & Muller; cost, $7,900; signed and filed Nov. 1; payments, $1,975 as each ¼ is completed; balance, $1,975, 35 days after completion.

Hollis, between Ellis and O'Farrell, three-story flats. Owner, W. F. Peabody; architects, Ashton & Stone; contractor, Ira Fancher; cost $8,827; signed Oct. 18; filed Oct. 28; sureties, H. Williamson, O. D Baldwin, Behrend Joost; payments, frame up 25 per cent enclosed and brown coat on; 25 per cent. completed; 25 per cent. balance, 25 per cent. 35 days.

Harrison and Main, frame. Owner, David Woerner; architect, W. Winterhalter; contractor, Chas. W. Kinsman; cost $1,880; time 20 days; payments, frame ready for corrugated iron sheeting $600; accepted $760; 35 days, $500.

Howard near Twenty-fifth, alterations and additions. Owner, John Meagher; architect, Chas. I. Havens; contractor; James Maguire; cost, $2,500; signed Oct. 25; filed Oct. 28, payments, enclosed and brown mortar on, $600; finish up $600; accepted $650; 35 days, $650.

Herman street and Elgin Park, plastering, etc. Owner E. Woesne; architect R. Zimmerman; contractor W. C. Watson; cost $2,650; signed Nov. 4; filed Nov. 5; payments brown coat on $1,000; finished $950.

Harrison and 7th; frame. Owner, Edmund Neacy; architect, M. J. Welsh; contractor, A. J. Ahern; cost, $2,285; signed Oct. 21; filed Oct. 22; payments, frame up, $563.75; brown mortar on, $563.75; completed, $563.75; 35 days, $563.75.

Howard street; three-story frame. Owner Morris Stockwitz; architect, M. J. Welsh; contractor, A. C. Rogers; cost, $5,100; signed October 23; filed October 24; payments, frame up, $1,020; brown mortared, $1,020; finishing coat on, $1,020; completed, $1,020; 35 days, $1,020.

Ivy and Gough, two-story frame. Owner Mrs. Timothy Donighue; architect A. J. Barnett; contractor Thos. Riddell; time 100 days; cost $8,000; signed Nov. 1; filed Nov. 4; payments 75 per cent. as work progresses, balance 35 days completed.

Jansen and Greenwich; frame tenement. Owner, Mrs. Fannie Day; architects, Pissis & Moore; contractor, J. W. Winninger; cost, $2,950; signed Oct. 16; filed Oct. 17; payments, frame up, $550; first coat plaster on, $550; plastering finished, $550; completed, $550; 35 days, $750.

Lyon near Washington, frame. Owner, Mrs. M. F. Grant; architects, Pissis & Moore; contractor, S. H. Kent; cost, $8,000; signed, Oct. 11; filed, Oct. 16; payments, frame up, $1,500; plaster, first coat on, $1,500; interior plaster on, $1,500; work ready for painter, $1,250; completed, $500, 35 days, $2,000.

Laguna bet Pine and Bush Sts., 15 two story hounses, Owner and Builder William Hinkle Total Costs $75,000 Frame up Nov. 15th

Leavenworth and Broadway; 2 story frame. Owner, Mrs. M. White; architect and contractor, G. T. Knopf. cost, $2 770; signed Nov. 2; filed Nov. 7; payments, frame up, $1,000; completed, $1,100; 35 days, $770.

Minna and Ninth; 4-story frame. Owner, R. R. Hinds; architects, Ashton & Stone; contractor, W. M. Fletcher; cost, $9,960; signed and filed Nov. 4; payments, frame up, $1,893.45; enclosed, $1,893.45; brown-coated, $1,893.45; accepted, $1,893.45; balance in 35 days.

Minna and Fifth, four-story frame. Owner, R. R. Hines; architect, Ashton & Stone; contractor, W. M. Fletcher; cost $10,745; signed and filed Nov. 4; payments, frame up $2,868.25; brown coat on $2,014; white coat on $2,014 65; completed $2,014 65; balance 35 days.

FRONT ELEVATION.

SETH BABSON

ARCHITECT.

Residence at Inglewood
for
D. Freeman Esq.
Curlett Tiers & Cuthberton
Architects Los Angeles

T. D. Hudson. del.

Plate No. 6.

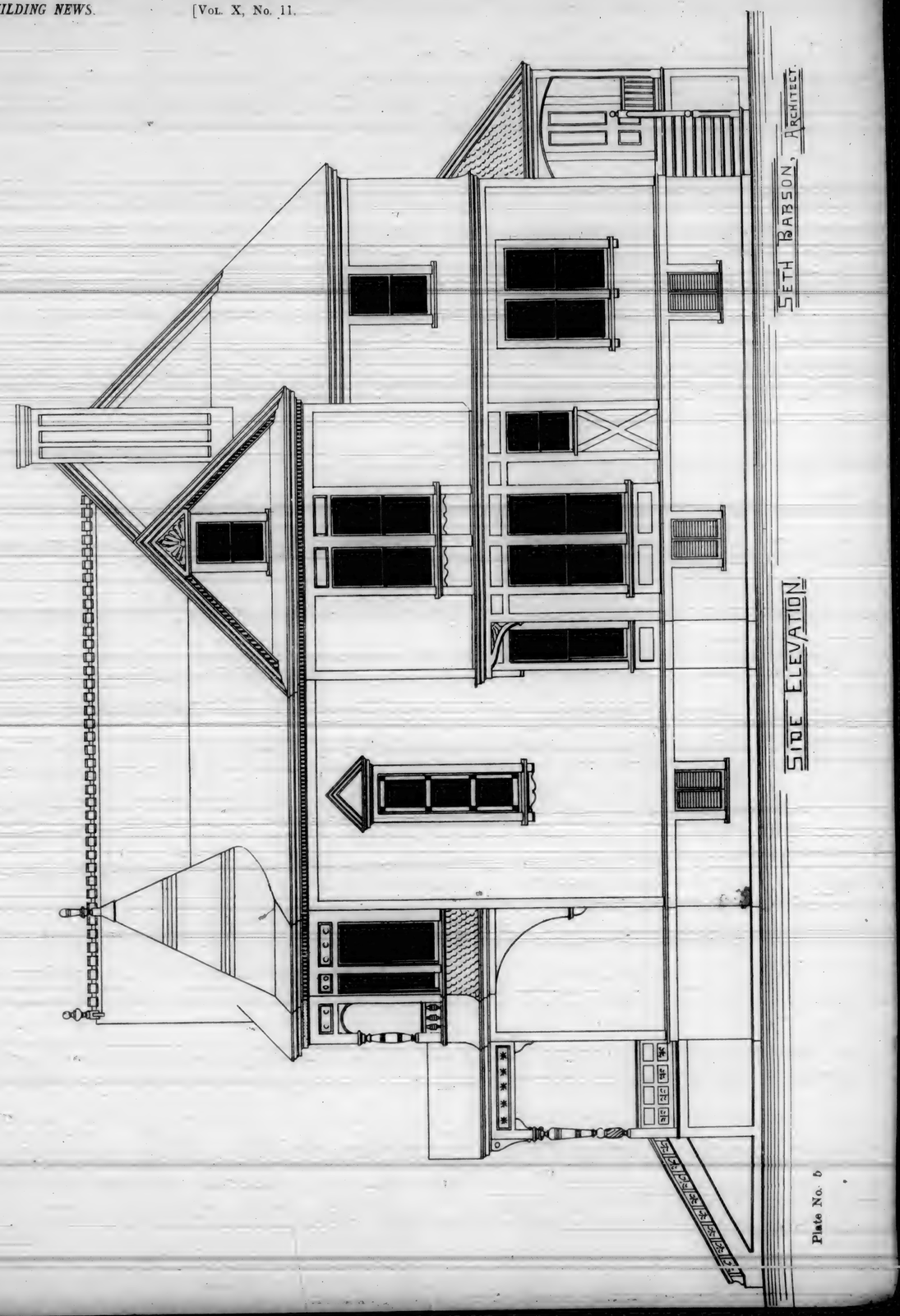


Plate No. 6

Mission and First, five-story frame gas and plumbing work. Owner J. Frandenstein; architect P. R. Schmidt; contractors Duffy Bros.; cost $1,175; signed Nov. 4; filed Nov. 6.

Market between 4th and 5th, California Academy of Sciences with California marble and building stone Co.; architects Percy & Hamilton; cost $28,000; sure ies O. T. Dyer and J. A. Brennan, $15,000; 75 per cent as work progresses balance 35 days from final completion; paym nts made on 1st of each month.

McLea C urt and Ninth street; two-story frame. Owner, Magdalena Messner; architects, John & Balzynski; contractor, Jacob Klein; cost, $5,200; signed Nov. 6; filed Nov. 8; payments, frame up, $1 000; enclosed, $800; outside finish, $2,100; accepted, $800; 35 days, $1,300.

Masonic and McAllister; two-story frame. Owner, Jacob Schlosser; architect, R. Zimmermann; co tractor, K. Thaler; cost, $7,600; signed Oct. 16; filed Oct. 23; payme ts, all frames up, $1,400; roof on, floor laid, building enclosed, $1,400; rough co t mortar on, $1,400; accepted by architect $1,425; 35 ays after completion, $1,875.

Ninth near Market, one-story frame. Owner, R. P. Doolan; architects F. D. Doolan; contractor, John McCleary; cost, $2,550; roofed and tinned $800; brown coat on $800; accepted $950.

Ninth near Market, three-story frame. Owner, T. Doolan; architect, F. D. Doolan; contractor, R. P. Doolan; cost, $16,090; payments, 75 per cent. as work progresses, balance on completion.

Natoma and Seventh, three-st ry frame. Owner M. B. Gevy; architect John Gash; contr ctor John Martin; cost $2,750; signed Nov. 8; filed Nov. 9; payments brown coat $500; white coated $500; painted $800; completed $500; 35 days $887 50.

Natoma, No. 1023, alterations. Owner, Margaret McCormick; architect, John T. Kidi; contractor, Chris Peterson; sure ties, Frank P. Latson and A. W. Starbird; cost, $2,300; signed and filed Nov. 2; payments, additions complete, $435; complete inside, $435; white-coated, $435; complete, $420; 35 days, $575.

O'Farrell, No. 235; alterations, etc. Owner, F. A. Paddock, contractor, Geo. Houston; time, 90 days; cost, $4,272; signed Nov. 2; filed Nov. 8; payments, ready for rustic $1,000; brown coat on, $1,000; doors and windows in, $1,000; 35 days completed, $1,275.

Oak near Webster, two-st ry frame. Owner Mrs. M. M. Latson; architects Percy & Hamilton; contr ctor O. E. White; time 100 days; cost $12,000; signed and filed Nov. 7; payments 75 per cent. as work progresses; balance 35 days after completion.

O'Farrell and Laguna streets; frame. Owner Fred L. Fr sel; architect, T. J. Welch; contractor, J. J. Dunn; co $12,493; signed Nov. 4; filed Nov. 8; payments, frats and joints are on $1,800; studding up $1,800; cornice up, $1.80 brown mortar on, $1,000; white coat on, $800; complete $1,800; 35 days, $2,493.

Page, between Devisi lero and Broderick, two-story frame. Owner, Margaret Nolan; architects Shea & Shea; contractor, Richard Sinnott; sure ties, C. S. Holmes and W. J. Adams; cost $5,600; signed Oct. 15, filed Oct. 23; time 90 days; payments, frame up $1,050; brown coated $1,050; outside primed $1,050; 35 days, $1,050.

Pacific and Steiner; carpenter work, Owner Mrs. N. Kittle, architect, W. J. Matthews; contractor, J. B Gunyra; cost, $1,425; signed Oct. 21; filed Nov 2; payments, one-half work completed, $534; completed, $534; 35 days, $857.

Pond, between 16th and 17th streets; two-story flats. Owner, Mrs. D. Van Iderstine; contractor, O. E. White; cost, $3,050; signed Oct. 17; filed Oct. 18; time, 68 days; payments, brown mortar on, $1,000; completed, $1,250; 35 days after acceptance, $800.

Park avenue. Alterations to hospital; D. Buckley, contractor; Huerne & Everett, architect; cost, about $6,000.

Post and Octavia; frame. Owner, Joseph Foheim; architect, John Marquis; contractor, J. H. Makay; c st, $5,400; signed October 21; filed October 24; payments, frame up, $1,000; ready to lath, $1,000; outside finished, $1,000; 35 days after completion, $1,350.

Seventeenth near Noe, frame. Owner, O. M and Margaret Dunston; architect and contractor, Augustus Kollner; cost, $1,890; filed, Oct. 16; time, Jan. 11, 90; payments, frame raised and chimney built $350; enclosed and shingled, etc., $350; first coat plaster on and plumbing done, $400; 30 days after finished $400.

Sanchez and Army; frame flats. Owner, Henry Nelson; contractor, C. Peterson; cost, $1,250; time, 40 days; payments, frame up, $312 50; brown-mortared, $312.50; completed, $312.50; balance, $312.50, 35 days, filed Oct. 15.

Steiner, between Clay and Sacramento; changes and additions. Owner, George E. Brooke; architects, Townsend & Wyenken; contractor, John Thompson; sureties, W. Weldon and H. Weldon; cost, $1,575; signed Oct. 17; filed Oct. 21; payments, frame up $400; enclosed, $250; completed, $250; accepted, $282; 35 days, $392.

Stevenson and Will a avenue, frame. Owner, Lily L. Ramsome; architect J. C. Chadwick; contractors, Blanchard & Lane; cost, $4,800; signed and filed October 16; tim., 75 days; payments, frame up, $900; brown mortar on, $900; outside finish on, $800; completed, $900; 35 days, $1,200

Stewart between Mission and Howard; brick building. Owner, C. F. Jones; architects, Townsend and Wyeken; contractor, J. O'Sullivan; cost, $4,300; signed October 22; filed October 26; payments, walls up to grade, first floor beams on, $1,075; walls up, roof and first coat of mortar on, $1,075; accepted, $1,075; 35 days, $1,075.

Turk near Laguna; three-story frame. Owner, Mrs. Lizzie Lobree; architects, Chas. R. and J. M. Wilson; contractor, Henry Rohlig; cost, $5,400; signed October 25; filed October 26; payments, rough frames up, $1,000; brown mortar on, $1 000; white plaster on, $1,000; accepted, $1,500; 35 days $1,550.

Third, near Howard, additions and alterations. Owner, M. Borgan; contr ctor, G. W. Hand; cost, $850; signed Oct. 9; filed Oct. 28; payments, weekly payments $85; balance on completion.

Twenty-Third near Alabama, two-story frame. Owner James Ribby; architect John J. Clark; contractor Thos. F. Mitchell; cost $3,200; signed and filed Nov. 4; payments frame $800; brown mortered $800; inside finish $800; balance 35 days after completion.

Turk and Pierce streets; two-story frame. Owner, Mrs. J. Webster; architect, John J. Clark; contractor, B. Planer & Son; cost, $2,800; signed Oct. 17; filed Oct. 19; time, 90 days; payments, frame work up, $500; brown coat complete, $500; doors hung, inside finished, $400; 60 days after completion, $1,700.

Taylor street, No. 106; alterations frame building. Owner, M. Englander & Son; architects Kenitzer and Kollofrath; contractor, E. R. Shain; cost, $2,522; signed October 23; filed October 25; payments, brickwork done, and first and second story floor joists set, $900; completed $992; balance, 35 days, $630.

Twenty-second and Guerrero; two-story frame. Owner, M. M. Donovan; contractor, C. E. Dunshie; cost, $3,000; signed Oct. 21; filed Oct. 22; payments, frame up, $750; plaster on, $750; carpenter work complete, ready for painter, $750; 35 days after completion, $750.

Union Place and Green; four frames. Owners, E. Rave zani and G. Gagliadini; architects, Townsend and Wynken; contractors, G. B Cavaglia and P. Antonelli; cost, $6,400; signed October 3; filed October 24; payments, frame up, enclosed and roofed in, $1,600; first coat of mortar on $1,600; second coat of mortar and sash hung, $1,600; 35 days after completion, $1,600.

Vallejo, between Montgomery and Kearney, frame. Owner, A. Glover; architects, Townsend and Wyneken; contractor, John Doherty; cost $2,617; signed Oct. 26; filed Oct. 30; payments, frame up and roof on $800; outside done $800; accepted $762; 35 days, $855.

Van Ness Avenue and Grove street, alterations. Owner Isen Harris; architect Geo. E. Voelkel; contractor R. R. Thornton; cost $13,705; signed Nov. 7; filed Nov. 9; payments rafters on $750; roof on $1,000; brown mortar on $1,400; glazing done $1,200; inside and outside finish done $2,000; completed $3,925; 35 days $3,430.

Van Ness avenue and Jackson street; frame. Owner, L. Weibon; architects, Pissis & Moore; contractor, J. B. Cogswell; cost, $27,100; signed Oct. 23; filed Oct 28; payments, ready for first-story floor joists; $1,500; frame up, $3,500; enclosed and roofed, $3,000; first coat plaster on, $3,000; interior plaster finished, $3,000; work ready for painter, $6,000; completed, $1,000; 35 days, $7,100.

Webster, near Grove; frame. Owner, Michael McCoy; architect, T. J Welsh; contractor, G. T. Kropf; time, 90 days; sureties for $3,000, J. Wagner and C. Williams; cost, $5,300; filed October 25; payments, frame up, $1,300; brown mortar on, $1,300; accepted, $1 300; 35 days $1,400.

Washington, between Devisadero and Broderick, additions to two-story frame. Owner, David Woerner; architect, W. Winterhalter; contractor, Wm. Plume; cost $2,240; signed Oct. 17; filed Oct. 21; time 55 days; payments, brick work done $600; outside finish done $500; accepted $540; 35 days, $800.

COUNTRY BUILDING NEWS

OAKLAND.

Curtis, near Twentieth street; 2-story frame. Owner, E. C. Veeder; contractor, H. H. Adams; cost, $2,550; signed and filed Oct. 30; payments, enclosed, $500; plumbing done, $500; outside finished, $500; painted, $500; 35 days, $650.

Oakland avenue and Orange street; 2-story frame. Owner, George C. Perkins; architect, W J. Mathews; contractor, W. N. Concannon; cost, $17,000; signed Oct. 25; filed Oct. 30; payments, 1-5 work complete, $2,563; 2-5 complete, $2,563; 3-5 complete, $2,563; 4-5 complete, $2,563; complete, $2,563; 35 days, $4,275.

Tenth street, near Broadway; 3-story brick. Owner, Pres. Board of Theological Seminary; architect, W. J. Mathews; contractor W. Winnie; cost, $6,045; signed Nov. 1; filed Nov. 2; payments, 1-4 completed, $1,134; 1-2 completed, $1,134; 3-4 completed, $1,134; completed, $1,134; 35 days, $1,512.

Fifteenth street, between 10th and 11th avenues, flats. Owner, T. A. Downing; architect, R. Grey Frise; contractor, George Gale; cost, $5,745; signed Oct. 18; filed Oct. 23; time, Jan. 20, 1890, payments, enclosed, $1,436 25; brown mortar on, $1,436 25; windows in, $1,436.25; completed 35 days, $1,436.25.

Clay and 12th streets; iron and slate work. Owners, Y. M. C. Association; architect, G. A. Bordwell; contractors, Conlen & Roberts; cost, $2,315; signed Oct. 17; filed Oct. 23; payments, $1,735, completed; $580, 35 days.

Oakland View Hall; frame. Owner, John O. Cadman; contractors, A. W. Pattuni & Co.; cost, $3,482; signed Oct. 12; filed Oct. 24; time, Jan. 12, 1890; payments, chimney built, $1,000; exterior primed, $800; completed, $811; 35 days, $871.

JOHN H. WISE, *President.* H. T. SCOTT, *Vice-President.* CHAS. H. FROST *General Manager.* C. S. PREBLE. *Secretary.*

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ALSO RED, BROWN AND BLACK MORTAR.

SEND FOR CATALOGUE.

Adeline and 19th streets; 2-story frame. Owner, A. Fletcher; architects, G. K. Hill & Co.; contractor, P. F. Nelson; cost, $2,382; Jan. 1, 1890; signed Oct. 23; filed Oct. 24; payments, foundation done, $500; brown mortar on, $600; completed, $689; 35 days, $596.

Tenth street, near Broadway; brickwork. Owner, Pacific Theological Seminary; architect, W. J. Matthews; cost, $17.30 per thousand rough bricks; $30 per thousand pressed brick; on stone work $2.75; and 25 cents per foot for furnishing and setting terra cotta flue linings; signed Oct. 21; filed Oct 24; time, 12 days from commencement; payments, 75 per cent. as work progresses; balance, 35 days.

Brush and 13th streets. Owner, Bertha I. Foote; architect, W. J. Matthews; contractors, Ingerson & Gore; cost, $1,500; payments, ¼ work completed, $362.50; completed, $562.50; 35 days, $575.

Clay and Twelfth streets; plumbing. Owner, Y. M. C. A.; architect, Geo. A. Bordwell; contractor, H. Maddern; cost, $1,795; signed and filed October 15; payments, rough work $675; finished, $670; 35 days $450.

Block M. Fifty Associates Track; cottage; Owner, Ludi G. Jeffries; architect, C. K. Hill, superintendent, James E. White; contractor, H. M. Kirkwood; surety, W. S. Biglow $450; signed October 14; filed October 16; cost, $1,700; time, 90 days; payments, frame up, $800; plaster on, $500; completed, $390; 35 days, $400.

Jackson north of Twelfth; dwelling. Owner, Edwin Goodall; architect, W. J. Mathews; contractors, Pierer & Ruch; time, 130 days; signed October 4; filed October 18; cost, $12,859; payments, for each 1-7 of the work completed, $1,378; balance, 35 days, $3,213.

Two story frame. Owner, Chas. Jacobs; architect W. H. Weihye; contractor, Wm. H. Griffith; cost, $4,250; signed October 15; filed October 19; time to February 1, 1890; payments, brick work done, $1,000; enclosed, $1,150; completed, $1,100; 35 days. $1,100.

BERKELEY.

Dwight Way, near Fremont; 2-story frame. Owner, A T. Eggleston; contractors, Higginson, Davisson & Co.; cost, $2,069.50; signed Oct. 19; filed Oct. 29; payments, enclosed, $413.90; brown mortar on, $517.37; ready for paint, $517.37; 35 days, $255.

MISSION SAN JOSE.

Addition to Catholic church. T. Carraber; architect, T. J. Welch; contractor, Frank Davis; cost, $1,094; signed and filed Oct. 28; payments, completed. $794; 35 days, $300.

NEVADA CITY,

Gehrig's brewery to be rebuilt; stone work completed; roof of corrugated iron; cost, $11,000. other roofs in the city will be covered in the same manner.

ALAMEDA.

St. Charles street, near Central avenue; frame dwelling. Owner, Mrs. M. H. Pennell; contractors, George N. Quinn & Co.; cost, $1,355; signed Oct. 10; filed Oct. 30; payments, frame up, $250; enclosed, $250; brown mortar on, $350; completed, $250; 35 days $255.

Encinal avenue, between Walnut and Oak streets; cottage. Owner, John Brick; architect, John Stubight; contractors, Miller & Conant; cost, $1,830; signed and filed Oct. 31; payments, frame up, $100; chimneys built, $440; ready for casing, $572.50; 35 days, $477.50,

Frame. Owner, Williams; contractors, Geo. N. Quinn & Co., cost, $1,650; signed and filed October 14; payments, frame up, $250; inclosed, $150; brown mortar on, $320; completed $500; 35 days $300. Another frame. Owner, Halsey; same contract.

Block 17 Ala. Park Homestead; two-story frame. Owner, Henrietta E. Culver; architect, Schuler & Meeker; contractor, Wm. Winnie; sureties, O. Rosenberg and R. Jones; cost, $2,986; signed October 19; filed October 23; time, to January 19, 1890; payments, framed, $410; ready for plaster, $468.50; first coat of paint on outside, $550; completed $708; 35 days $750.

SEBASTOPOL.

Frame dwelling. Owner, George Allen; builder, T. O. Coon.

LOS GILICOS.

School house soon to be erected.

SANTA ROSA.

Ludwig's Addition; frame dwelling; $2,000.

The Grand Hotel is being altered and additions made.

Morgan street; two frame dwellings; architect and builder, T. J. Ludwig.

Plans for the Presbyterian Church have been prepared by T. J. Ludwig, architect.

Petaluma road; frame. Owner, J. F. O'Connor; Same locality, frame dwelling and barn; owner, Dr. R. P. Smith; contractor, J. H. Hayden.

GLEN ELLEN.

Frame; owner, W. Gordenkoa; contractor, John Rains.

LIVERMORE.

Tasajera Valley; additions. Owner, S. Williams; contractors, A. Weymouth and John McIver.

Aug. Harms is building an addition to his house and otherwise improving the same. L. M. Lyster is doing the work.

SACRAMENTO.

The Sacramento Foresters are reported to be considering the proposition of erecting a $50,000 hall at an early date.

NOVATO.

J. M. Kill, a Petaluma builder, has taken a contract to construct a Catholic church at Novato. The contract price is $8,200.

GEORGETOWN.

The building of A. A. Francis is having additions and improvements made; also a building by C. Hotchkiss. Several new cottages are being built; carpenters are in demand.

MODESTO.

Corner of F and Tenth streets, a two story brick building. Builder, Curtis. Brown; contractor, W. E. Hook.

SANTA CRUZ.

A. J. Meany of Merced, has been awarded the contract for building the new county jail, cost, $24,884.

PLACERVILLE.

Garden Valley; building. Owner J. W. D. Phillip, lumber on hand.

SAN LEANDRO.

San Joaquin avenue. James Quinn, owner, two cottages about to be erected.

HAYWARDS.

Winton Road, two story residence; owner, John Foster, cost, $3,000.

Alameda add

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Hardwood Flooring,

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SAN FRANCISCO, CAL

REVIEWS.

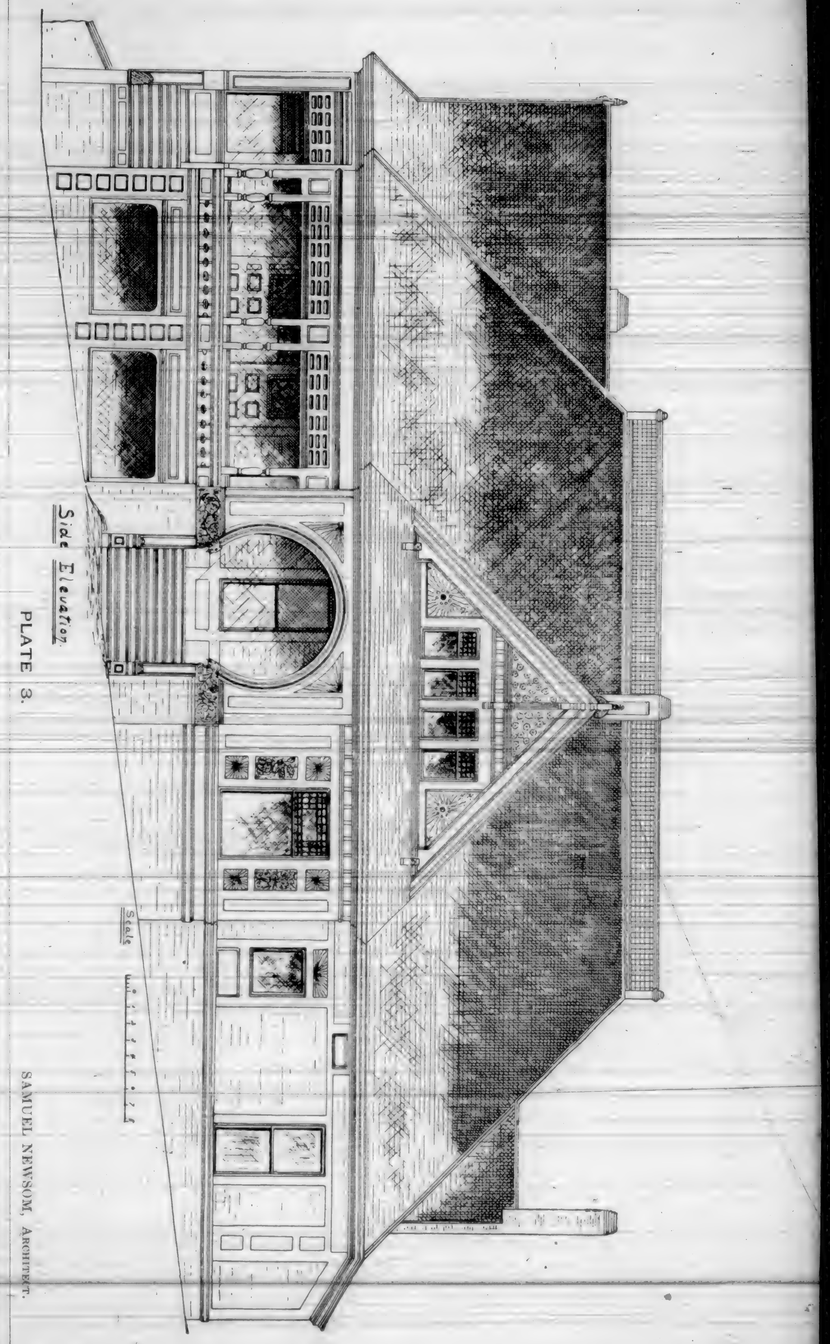
Revista dos Constructores, a journal published at Rio de Janeiro, has been received at this office. It is full of valuable reading and statistics of Brazilian matters.

Cutting & Delaney of Buffalo, N. Y., have recently published an artistically arranged little book entitled "Decorator's Lattice." It is bound in paper covers and is full of valuable information upon the subject of decoration, displaying as its chief feature about one hundred and seventy illustrations of decorative designs, many of which cover the full page. The price is 25 cents.

The *Scientific American* of September 28th gives an account and also a view of the method used at Ocean Grove on the New Jersey Coast for pumping salt water by means of the ocean waves. The contrivance is simple enough, and it is said that 40,000 gallons are pumped daily for street sprinkling purposes. If would only be necessary to increase the pumps and reservoirs to obtain any desired amount of water.

General Specifications of Highway Bridges of Iron and Steel," by J. L. Waddell, Consulting Engineer, Kansas City, Mo., price, 25 cents, is now in its second edition, and somewhat enlarged in size. The object of the pamphlet, as stated by the author, "is to bring about a reform in present methods of designing, letting and manufacturing bridges," but he seems to think that any reformation among country commissioners is almost impossible. To use his own language, "any reform through men who are entirely ignorant of the first principles of bridge building, or even the necessity of perfectly safe structures," can not be expected.

Perspective; "A Series of Elementary Lectures by Ada Cone, late Instructor in Massachusetts State Art School; supervisor of drawing in Concord, N. H., public schools and Lecturer on industrial art to Teachers Institute; Pupil Museum of Fine Arts, Boston. For sale by W. T. Comstock, New York. A 12mo. volume, price $1.00. Sent by mail, free of postage, to any part of the world." The author has improved the opportunity of filling a gap that has long been felt in the line of text books on perspective. It is quite evident from the manner in which the subject is treated that the author has made herself a companion among the students in their desperate struggles to untangle the confused snarls of perspective lines. She has found a way by which all extraneous thoughts and works are pushed aside from the work in hand. Not a letter, line or word in her little treatise that is not necessary, or that can be dispensed with. Her experience seems to have impressed upon her the importance of right words and lines, used sparingly, using only those having a direct bearing on the lesson before her. The work will be found of great value to young teachers who have not had sufficient mathematical training to enable them to grasp the instructions given in many of the text books now in use. The student without the assistance of a teacher will find in it sufficient encouragement to attract him to its study until he shall have mastered the elementary principles, which acquisition will give him a foretaste of its utility and beauty. We commend the work to all who wish to economize in time and labor in the attempt to master the elements of perspective.



Technology Architectural Review—We have had the first numbers of volume two of this excellent journal placed on our table. We cannot speak too highly of it in commending it to the younger members of the fraternity. Each number seems to give the results of first and second "mention" in their monthly competitions, and on plates that are deserving of preservation. It affords us pleasure to quote from their circular.

The *Review* is issued from the Architectural Department of the Massachusetts Institute of Technology eight times a year. Eight numbers constitute a volume. Its size is eleven by fourteen inches; the text is bound with the covers and the illustrations are infolded. The plates are photographic reproductions from original drawings, printed upon very heavy stock. At least four gelatine, or heliogravure plates will accompany each number. The *Review* is protected and mailed flat.

Subscriptions, $3 per volume; to be paid in advance.

Specimen copies, 50 cents each.

CURRENT PUBLICATIONS.

The *Building and Engineering Journal* of Australia and New Zealand for September 7th, contains the following articles: "Australian Building and Bush Work" by Fred Harrison, M. R. V. I. A. "The Source of the Under Ground Water in the Western Districts of N. S. Wales," by H. C. Russell, F. R. S., before the R. S. N. S. W.; also an account of the Royal Institute of Architects' annual dinner, containing much valuable information upon the issue of the day; illustrations. "Proposed Front Elevation of New Zealand and South Seas Exhibition, 1889-90." "Measured drawing of the Treasury Buildings," Hobart Tasmania and "competition drawings for a Village club, by members of the Builders' and Engineers' Designing club." For September 21st: "Some Suggestions for Economical Interior Decorations," by R. Gordan Hyndman, A. R. V. I. A., "Stress Diagrams of Solid Structures," "Study on Unity of Design, in planning New Towns and Suburbs," "The Operation of Power Companies and Power Transmission by Compressed Air; "illustrations a sketch from a colored drawing by Kenwood & Kerle architects, Sydney for a proposed hotel at Wollongong, New South Wales, also a design for a suburban residence by Chas. A. Ogg.

National Builder of Washington for October 12, contains: "Defective Plumbing in Old Houses," by E. J. Hannan. Including October 5th, the illustrations have been notably valuable, namely, Canterbury Cathedral, from the S. E., with towers, and Stratford-on-Avon, showing Guild Hall and Shakespeare's Gramma School.

November 2nd, John Ruskin on "Decorative Art" Illustrations, Outer Court of Trinity College, Cambridge, England.

The Builder and Woodworker for October, contains an article of importance on "Carpentry and Joinery," which has extended through several numbers back; chapter X has for its subject, "Battening and Grounding." For November, among the illustrations, first prize design, SchoolHouse Competition, by the New York State Educational Department.

The Woodworker for October, publishes several articles of value. "Theory and Practice as Applied to Mechanics," by Mr. C. R. Tomkins, M. E., "Building and Repairing," by Mr J. T. Langdon, and "Factory Fires" by Mr. George Fisher.

Building for October 12th, contains the following: "Sun Dried Bricks," by E. A. Gardner: "Mill Flooring," and an "Account of the Convention of the Western New York State Association." Illustrations, design of New York State club, in competition, subject, "A Well House in the Country," by Mr. C. H. Dash; competition drawings of the Building Sketch Club (third competition) subject, "Pair of Semi-Detached Houses on Suburban Lot," by W. S. Aldrich, of Portland, Me.; for October 19th, "Disasterous Effect of Spontaneous Combustion," "Steam Plants, for Isolated Electric Light Plants," "Change of Internal Structure in Iron," and "Artistic Use of the Imagination." Among the illustrations, design for residence in Building Sketch Club competition, by "Jersey Lightning" William H. Orchard, Rochester New York. For October 26th, "Criminal Court Plans" "Forest Fires," "Experiments Upon the Transmission of Power by Compressed Air, in Paris" by Mr. Alexander B. W. Kennedy, F. R. S., before the Mechanical Science Section of the British Association at New Castle, September 11th. Among the illustrations competitive design for semi-detached houses, on a suburban lot, by John W. Lees, St. Louis, Mo., showing perspective elevation and plans. November 2nd, Sir Christopher Wren and his architecture from a lecture by Prof J. Rogers Smith University College London.

The American Architect for October 5th contains the following: "Berlin Dwelling Houses," "The Problems of Concentrated Residences," "The Theory of mouldings and old Colonial Work of Virgina and and Maryland." Illustrations: competitive design for the Cathedral of St. John, the Divine New York, by Messrs. Carrere and Hastings, architects. Also designs for same by F. P. Chandler, architect, and W. S. Fraser, architect This competition has brought forth remarkable drawings. For October 12th, "The Restoration of the Ducal Palace, Venice," "London's water supply," "The Grant Monument Competition" and "Equestrian Monuments." For October 19th, "Safe Buildings," "Letters" from Canada, Australia, Paris, Washington and Chicago. Illustration, competitive design for cathedral of St. John the Divine, New York, by R. W. Gibson, architect, also by Messrs. Cope & Stewardson and Peabody & Stearns. October 26th, "Equestrian Monuments" (Joan of Arc,) designs for the Hinkle gold medal. November 2d, "Jean Paul Aube," "The Responsibility of Architects," "Baths for the People,". Notes on competitive designs for the Cathedral of St. John the Divine. Illustrations for which are furnished by H. M. Congdon, architect, New York.

The Inland Architect for October contains articles upon the following subjects: "The Art Exhibition at the Chicago Exposition, Notes and observations" by H. C. Payne; "The Artistic Use of the Imagination," by Louis H. Sullivan, architect; "How shall we Build," by J. C. Yost, architect; "Sketching on the Continent," and "Rules and Regulations Governing the Drainage and Plumbing of New Buildings in Chicago;" For illustrations: "Ranch House" by Wilson, Marble & Lampson, architects; Chicago, Illinois, residence at Rochester, New York by Otto Block, Architect; St. Louis residence by C. C. Helmer, architect; Trinity Episcopal Church, Michigan City, Indiana, by Henry F. Starbuck, architect; Chicago Tenement Block, by G. W. and F. D. Orff, architects; Minneapolis, Minn. Country Residence, Grape Creek, Illinois, by Irving K. and Allen L. Pond, architects; Chicago, Illinois, thirteen story office building by J. M. Van Osdel & Co., architects; and an office building by Mason & Rice, architects, Detroit.

The Sanitary News for October 19th contains articles upon "Management of Garbage in Large Cities," "Household Sanitation," and "Purification of Sewage by Electrolosis," giving a synopsis of a paper upon that subject read by W. Webber before the British Association, demonstrating the destructive power of electricity upon sewage matter. October 26th, "Steam Plant for Isolated Electric Light Plants," by Prof. J. W. Sweet of Rochester City, before the Convention of the State Association of Architects at Syracuse, N. Y.

Scientific American for October contains designs of the memorial monument of the battle of Langside, A. Skirring, architect; Winn Memorial Public Library Massachusetts, H. H. Richardson, architect; New Court House and Post Office, New Bedford, Massachusetts. The Mexican Pavilion at the Paris Exhibition and the Fitzwilliam Museum, classic design, Cambridge, by George Basier, architect; November, "Cathedral of Seville," with illustration; "Strength of Stone Masonry" by Prof. I. O. Baker, Illinois in *Stone* and "The Amines Process of Sewage Purification," from *Iron*. Among the illustrations; New Post Office and Court House, Asheville, N. C Christ Church, East Orange, N. Y.

The Western Architect of Denver presents a special edition for October with an increased number of designs handsomely produced. Contents: "Removal of Garbage," "Arches," by Mr. Ben Pitman, "Architecture of New Mexico," by Alexeris Comparet, "Asphalt" and "Asphalt Again," from a Paris correspondent. Illustrations: Some Denver Doorways, viz I, Masonic Temple; II, Denver High School: III, Trinity Church: IV, Kittridge Building; V, Church at Santa Cruz, (three hundred years old) and a Denver residence by R. S. Roeschlaub, architect.

The Engineering and Building Record for October 5th contains a continued article on "Pavements and Street Railroads," illustrations perspectives, plans and erections, pumping station, Wakefield R. I. Water Works, William Kent, architect; Woonsocket, R. I. for October 12th an exhaustive and valuable article on the "Forth Bridge," illustrated by Benjamin Baker, (abstract of an address before the British Association,) also article on the "Removal of Rock under Water without Explosives" by Fred Lobnitz, Associate M. Institute C. E; October 19th, presents a brilliant scarlet cover quite a contrast to its pale-faced contemporaries with an increased number of pages and containing "Electric Light Wire Problem in New York," "Thames River Bridge," and "Kanawha River Bridge," and the "Water Supply for the Paris Exposition." For October 26th, "Manchester Ship Canal," "Inspection of Cements," by F. Collingwood, Mem. Am. Society C. E., and "Sewerage and Land Drainage." For November 2d, "The Girard Hydraulic Railway Exhibited at the Paris Exposition." Explaining the method af propulsion and its adaptability to common usage. Diagram and statistics for proposed English Channel Bridge and "Building Construction Details," (Machinery Hall Paris.)

Carpentry and Building for October presents "Effects of Time on Slack Lime" by M. Faraday; "Masonry" (continued from July); an extensive correspondence from all over the country, and an extended criticism on "Graphics, or the Art of Calculation by Drawing Lines, Applied Especially to Mechanical Engineering," by Robert H. Smith.

The Northwestern Architect for October contains "Venetian Glassmakers" and "Stained Glass," from *Le Semaine des Constructeurs*, and "Building Stones of the Northwest." Among the illustrations is the residence of S. C. Gale, Minneapolis, L. S. Buffington, architect.

American Builder, Nov. 15, contains "Joints and Fastenings in Carpentry" and an article on "Masonry."

Journal of Proceedings, October 24, contains "Presidential Address of Mr. T. Mellard Reade, F. G. S., before the Liverpool Society, subject, 'Architecture, Ancient and Modern;'" "Scottish Architecture," by J. Alfred Gotch; "The Building of Blenheim," by Wyat Papworth, and Mr. Leonard Stoker's address before the Architectural Association, a paper filled with interesting matter for the profession.

Brickmaker for November: "Aluminum Street Paving Bricks;" 'Brick Burning with Coal Fuel."

BUILDING-LOAN NEWS.

Under this heading we propose from time to time to give some facts regarding these associations which are doing so much towards making homes for our people. Considerable attention is being directed at present to the new institutions being started in other parts of the country calling themselves "Nationals," "Americans," or some other over-spreading name, and inviting investments in their shares from every section. Our advice to our readers is to go "slow". The promises which these associations make are encouraging, and the temptation to invest is strong, but, let us stop and think awhile before sending the money to Minnesota or New York to be invested by strangers in strange ways. We say strangers, because we are advocating the support of local institutions, where the money is loaned by those we know, *to* those we know, and upon property we can see and value *ourselves* any day. There is no myth or mystery in any respect about our home societies! In this issue we shall only mention a few of our local societies and give their assets at date of their last loan statements, viz:

HOME SEC.,	Oakland,	incorp'd	1875,	loans & other assets,	$433,303
Union - -	S. Fran.,	"	1881,	" " "	351,304
Occidental - -	"	"	1885,	" " "	315,064
Citizens' - -	"	"	1885,	" " "	242,706
Homest'd L'n.	Berkeley,	"	1885,	" " "	110,047
Home Mut.,	S. Fran.,	"	1885,	" " "	89,188
Commercial,	"	"	1886,	" " "	44,533
W. Oakland,	Oakland,	"	1875,	" " "	186,940
S. F. Mut L'n,	S. Fran.,	"	1882,	" " "	393,717
Ital. & Swiss,	"	"	1887,	" " "	76,769
S. F. & Oak.,	"	"	18 9,	" " "	26,967

"The average number of shareholders in an association who are able to procure loans is found to be about one in four. Complaints frequently reach us that agents of certain national associations have represented that the number of shareholders who will receive loans is much larger than this. In fact, they are said to hold out to every subscriber the hope of obtaining a loan. We are satisfied ourselves, that their representations are not authorized. * * * * They use too much rose color in painting the prospects to new members."—*Building and Loan News.*

There are about sixty local associations in New York City, and say, forty in Brooklyn.

Ohio has organized a Building Association League, and California will follow her example in the coming spring.

New Hampshire has enacted the following amendment to Chapter 93, Laws of 1887: Section 1—Every building and loan association shall pay annually a tax of one per cent upon the whole amount paid upon its stock of shares which are in force, and no other tax shall be assessed on said stock or shares or against the holders on account thereof. Section 2 — Building and loan associations shall be under the supervision of the bank commissioners.

E. B. Rambo, president of the Citizens Building Loan in an article published with the secretary's quarterly report of that society makes this statement regarding the so-called "Nationals" Of all dues paid in, *twenty cents* with each dollar, or 16⅔ per cent, likewise, goes to their officers for *expenses*. Thus an enormous fund is collected for the benefit of these gentlemen, not the member's property at all. Had our Association collected such sums, a fund of over $50,000 would have been distributed to officers only."

A preliminary meeting of The League of General Building and Loan Associations of the United States was held at Chicago July 25th, E. Summers was chosen secretary *pro tem*. Articles of Association were adopted, officers elected, and committees appointed to serve until November 13th, when a permanent organization will be effected. The following are the officers elected:

M. D. Miller, St. Paul, Minn., president; J. V. Ryan, Memphis, Tenn., vice president; Owen Scott, Bloomington, Ill., secretary; T. J. Bunn, Bloomington, Ill., treasurer. The associations represented may be stated thus—three "Americans" two "Interstates"—two "Nationals"—one "International"—and one "North American". The secretary was instructed to communicate with those not present and urge their attendance on November 13th.

Retail Price List of Lumber.

PINE, FIR AND SPRUCE.

	Per 1,000 ft.
Rough Pine, m'cantable to 40 ft inclusive,	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	23 00
" " " 61 to 70 " "	27 00
" " " 1X3, fencing	22 00
" " " 1X4, "	21 00
" " 1X3, 1X4 and 1X6, odd lengths	19 00
" " seconds quality	17 00
" " selected	25 00
" " clear except for flooring	31 00
" " " for flooring less than flooring	1 00
Clear V. G. No. 1 Flooring, when ordered, extra	5 00
Fire Wood	11 00
Dressed Pine, flooring, No. 1, 1X6	32 00
" " " 1X4	34 00
" " " 1¼ x 4, 1¼ x 6 and odd sizes	37 00
" " " all sizes, No. 2	27 00
" " Stepping, No. 1	43 00
" " " " 2	33 00
Ship Timber & Pl'k, rough selected	27 00
" " selec'd pl'nd, 1 sd	av 29 00
" " " " 2 "	40ft 31 00
" " " " 3 "	33 50
" " " " 4 "	35 00
Deck Plank, rough	35 00
" " dressed } average 35 feet	40 00
Pickets, rough, B. M.	20 00
" ½x1½ "—4 ft. long, per M	5 00
" ½x1½ "—4½ ft. long	6 00
" ½x1½ "—5 ft. long	7 00
" ½x1½ "—6 ft. long	8 50
" ½x1½ "—7 ft. long	10 00
" ½x1½ "—8 ft. long	11 50
Furring, 1X2 per lineal ft.	10
Lath, 1¼ 4 ft. per M	2 75
" 1½ 4 ft. "	3 00
Spruce, rough "	19 00
Spuce, dressed, shelving	36 00
" " ½ inch	36 00
" clear	33 00
Rough dunnage, delivered	20 00

REDWOOD.

Rough Redwood, menchantable	19 00
" " second quality	16 00
" " selected	25 00
" " clear	34 00
Dressed " merchantable boards	21 00
" " ½ inch surfaced	31 00
" " No. 1 do	34 00
" " No. 2 do	25 00
" " T & G, 1X6, 12 ft. and over, No. 1	34 00
" " " other sizes, No. 1	37 50
" " " 7 to 11, No. 1	25 00
" " " under 7 "	22 00
" " Rustic, No. 1	35 00
" " " " 2	31 00
" " T&G b'ded 12 ft. and over, No. 1	34 00
" " " other sizes, No. 1	37 50
" " " 7 to 11 "	25 00
" " " under 7 "	22 00
" " Sliding, ½ inch	25 00
Casing Stock, 1, 1¼ and 1½ Rough 7 to 11	25 00
" " 1X3, 4X6, Clear, under 7	22 00
Tank Stock, 2 and 3 inches, clear, (surfaced or rough,) under 12 ft	27 00
Pickets, (fancy), 4 ft., B M	25 00
" (rough, pointed), B M	18 00
" (" square), B M	16 00
Battens, ½x3 per lineal ft	01
Shingles per M	2 25
" fancy "	3 50
Posts, split	17
Shakes, split per M	11 00
" sawed "	13 00

Lumber delivered on board cars will be charged $1 per M extra. Lumber delivered along side of vessel or wharf, 50 cents per M extra. Scale of credit not to exceed 60 days without interest being added.

Tongued and grooved beaded on two sides $2 50 extra.

The contract for the construction of the Colorado Mineral Palace at Pueblo, Colorado, has been awarded. The architecture will be Egyptian in style. The building will cost over $250,000, and will be one of the largest and handsomest in the West. It will be devoted to a permanent exhibit of gems and mineral specimens, not only from the mines of Colorado, but from all over the world.

The Board of Supervisors of Santa Rosa have resolved to build a $40,000 jail.

With this number a change is made in the form of the *Building News*, by the addition of a *Trade Review*. This department, in time, will be enlarged upon, as well as other features of the journal.

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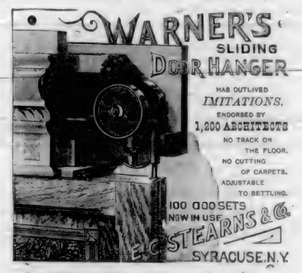

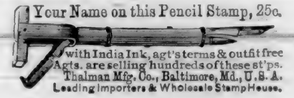

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Mr. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

THE regular monthly meeting of the San Francisco Chapter, A. I. A., was held Friday evening, December 13th. The members present were Messrs. Babson, Sanders, Curtis, Percy, Pissis, Mau, Cuthbertson, Whittemore, Daley, Bestor and Everett.

Architects Farrell, of Tacoma, Bugbee and Capelletti of this city were present as guests, besides Messrs. Gilbert, senior and junior of Woodland, Blum, Wetmore and other gentlemen interested in the subject of the paper to be read.

An offer of the *California Architect and Building News*, to donate to the Chapter such of the exchanges of the past year as it might select to have bound, the volumes to become a part of the Chapter's library, was received and accepted.

Mr. Shimoda read an interesting paper on the "Architecture of Japan," past and present, tracing its growth from the earliest ages. Many carefully drawn designs and photographs of Japanese buildings were shown to the appreciative audience.

Mr. Shimoda was tendered the thanks of the meeting.

Mr. Sanders stated that the members of the class under his instructions were preparing original designs of a simple subject, to show their skill in treating it, and suggested that the Chapter encourage their exertions by offering a prize for the best design, and an honorable mention for the second. The suggestion was acted on favorably.

The Executive Committee was instructed to make arrangements for the first annual banquet to be given under the auspices of the Chapter.

The meeting then adjourned.

WE publish in the present number President Carlin's annual address before the Western Association of Architects, and President's Hunt's, before the American Institute of Architects. These addresses should be read attentively by every Architect in the country.

The position these gentlemen occupy, in relation to the profession, enable them to speak intelligently in regard to matters most vital for the advancement of the influence and professional standing of members of the profession.

CAPT. A. H. NICHOLS, of the American ship St. Mark, died at the receiving hospital on November 28th ult., from injuries received from falling into the basement of the building now in course of erection on the corner of Park and City Hall Avenues, the contractor having neglected to enclose the building with a fence as required by the city ordinance. One dark evening, Capt. Nichols, while walking past this place, was unfortunate enough to fall into the unguarded excavation, and was so seriously injured that he died the next day as above.

In another column we chronicle a decision by the Supreme Court awarding damages for injuries received under somewhat similar circumstances. We do not know of any adequate compensation that the courts could award for loss of life. But we do know that we have laws, which if *enforced* would prevent such accidents, and officials whom we pay *to see that the same are enforced*. It seems to us that the officer whose duty it was in this instance to see the law properly carried out should be found, and discharged for incompetency, if not otherwise punished for derelection of duty.

THE Fire Department Committee of the Board of Supervisors has made a serious mistake in deciding not to recommend an extension of the fire limits. The reason alleged is that the lots on Minna, Jessie, Everett, Natoma, and other small streets within the proposed boundaries, are mostly owned by poor people, and that it would be unjust to compel them to put up brick or stone buildings. The extension would not have interferred with any buildings already in existence. Nobody would have been compelled to tear down his home and put up a fireproof one in its place. The effect of the order would have been merely to prevent the construction of any more wooden houses in the future.

Chief Scannell was right when he said that there should be a hundred blocks instead of forty in the new map, and that the refusal to extend the limits would be responsible some day for a fire that would wipe the whole southern part of the city out of existence. The poor people there are more interested than any other class in the community in preventing such a calamity, for they are the least able to bear the loss. And aside from that the whole city has rights which even poverty must respect. Public safety is the first consideration, and whether a man be poor or rich he must contrive to accommodate himself to that. It may be that we shall need a Chicago fire to teach us that a great city cannot afford to risk its existence to save a few lot-

owners the difference in cost between wood and brick, but when it comes, the new San Francisco that will rise from the ashes will have mastered the lesson.

The Fire Department Committee should reconsider its action. At least it should give the public what it offered to give Chief Scannell. The Chief, with natural impatience, refused to accept any further deductions from his original plan, but the people would rather have some protection than none.

The above, from the *Examiner*, takes the precise view of the case that we set forth in our last number. Since then Boston has suffered a loss of 10,000,000 by fire, and her neighbor, Lynn, has lost its business center from the same cause. San Francisco's turn has not yet come, but when it does we may desire to follow the advice given many years ago by *Frederick Law Olmstead*, who, in a report to the Committee on Outside Lands of the Board of Supervisors, had the foresight to recommend the city be divided into sections separated by broad boulevards, from 500 to 1000 feet in width. Though we did not adopt the sensible suggestions made by *Mr. Olmstead*, it is not too late to urge upon all growing cities and towns the wisdom of thus protecting themselves against the spread of a conflagration. By proper selection and planting of trees and the larger shrubbery, these wide streets or avenues become beautiful driveway sand parks for the comfort and enjoyment of citizens, and add much more than their cost to the beauty and attractiveness of the city so adorned.

PIECE WORK.

San Francisco, Dec. 6th, 1889.

To the Editor of the California Architect and Building News:

Dear Sir.—We, the members of Union 22 of Brotherhood of Carpenters and Joiners of America, desire to present for your consideration certain facts pertaining to *subletting* of carpenter work or *piece work* as it is called. From long experience we have attained a knowledge of the injustice and injury this practice causes to all parties concerned. We ask an opportunity to bring this matter directly before those most interested, viz.: the architects, owners and reputable contractors. It may not be generally known that there is a class of men, calling themselves carpenters, who are unprincipled, and unskilled, who are unable to do a good day's work, and consequently unable to obtain steady employment at regular wages. These men resort to piece work for a living, depending on their ability to slight work to make up for their lack of skill. Their methods are various, and we will describe them more fully if you will grant us the opportunity. We are happy to say that the better class of contractors do not as a rule find it to their interest to employ these incompetent mechanics.

Hoping you may be able to assist us in this fight for better work, we remain,

Yours respectfully,

Union 22,
Brotherhood of Carpenters of America.

We understand this matter has been brought before the Builders Association of California, and a communication on the same subject sent to the San Francisco chapter of the American Institute of Architects. The matter is one of considerable importance to architects and owners as well as the carpenters, and we shall be pleased to do anything in our power to expose the slipshod methods of work shown by this communication to exist.—Ed.]

PLANS FOR THE MECHANICS' INSTITUTE.

At the last meeting of the Directors of the Mechanics' Institute, two reports were submitted on the advisability of permanently improving their property bounded by Hayes, Larkin, Grove and Polk Streets.

The report signed by David Farquharson recommended the erection, where the Pavilion now stands, of a Library building entirely detached from all stores, devoted exclusively to the use of the Library, and that the property on Hayes Street be leased on graduated building leases for twenty years.

President Kerr recommended the construction of a four-story fire-proof building on Hayes Street, with stores for business purposes on the first floor, rooms for the Library on the second, reading and chess rooms and lecture halls on the third, and class rooms, etc., on the fourth floor. Either of the proposed improvements would cost in the neighborhood of five hundred thousand dollars.

It is probable that Architects will be invited to submit plans in competition, as Mr. Farquharson recommended offering the sum of five thousand dollars in premiums for sketch designs.

MR. R. M. HUNT'S ADDRESS.

before the American Institute of Architects.

Fellows and Associates of the A. I. A.:

Thirty-two years ago a few architects convened in the city of New York for the purpose of considering the expediency of organizing a professional society, the object of which, as set forth in the constitution, was to unite in fellowship the architects of this continent and to combine their efforts so as to properly promote the artistic, scientific and practical efficiency of the profession. This resulted in a constitution adopted in February, 1857, and incorporated in March of the same year, as the American Institute of Architects. The continual and rapid growth of the requirements of civilization, the immense distance between the great business centers of the East and West, made it advisable to establish Chapters as integral portions of the Institute, and in order to compensate for these and other difficulties, the federal system of local organizations was adopted in 1867 as the best method of reaching directly the necessities of the profession throughout the country.

To-day, when the Twenty-third Convention of the American Institute of Architects meets at Cincinnati, the full force of the original intention of the founders is impressive with a great significance. The Institute and its younger brother, the Western Association, stretch out their hands in fraternal greeting, as they meet to effect the unification of the two great architectural associations of the United States and to consider the carefully prepared report of the special committee on consolidation, which has been published in advance, that each member present might bring the result of his deliberations to bear upon the discussion of the best method to accomplish the end in view.

The Institute depends upon the Chapters for its very life blood, and could not exist any more than the body without its members, if the Chapters were not alive and active. Chapters should therefore be strong in membership and earnest in work, perfecting every suggestion for the advancement of the profession, considering and futhering all educational and helpful methods, and bringing to the conventions of the Institute all matters accomplished and under consideration that may be of interest to the profession at large.

The practicing architect, from the very diversity of his duties and requirements, gains largely by constant intercourse with his confrères. The interchange of ideas and personal experience are of inestimable benefit to him, and consequently to his clients; in fact, it should be the self-protective duty of every architect to belong to one of the Chapters. I would here suggest that too often young men, fresh from study, in the fire of ambitious enthusiasm, but yet untaught by stern lessons of experience, are eager to establish new leagues, associations, societies and clubs, rather than affiliate with established institutions, and reap the profit of proved effort.

A little reflection would teach them that the older institutions have formulated those rules and regulations, those principles of art and practice, which have elevated the profession in America to its present honorable standing. That through the insistent and persistent course of the Institute, for the rights, for the dignity, and for the position of architecture as a fine art, so long ignored in this country, they have through precedents created for them, been spared some fierce contests.

Let them rather profit by the paternal care of the Institute, as their advisor and advocate, stretching forth with the strength and vigor of new inspirations to reach the ideals of its standards, taking for their underlying principle mutual assistance and coöperation in the more familiar intercourse of the Chapters.

The report of the Special Committee on Consolidation is so wisely considered and so admirably expressed that it leaves nothing for me to say, beyond words of commendation, and to impress upon you that the earnest efforts of these gentlemen in thus providing for the merging of the two great architectural associations of our country into a common Institute is not a funeral dirge to "ring out the old and ring in the new," but a refrain, ancient as history, and strong as truth, "Union is force."

PRESIDENT CARLIN'S ADDRESS BEFORE THE WESTERN ASSOCIATION OF ARCHITECTS.

Gentlemen of the Western Association of Architects:

The position in which I find myself placed by your votes of one year ago has, among its other duties, laid upon me the responsibility of addressing you to-day,—a duty which I approach with mingled feelings of pride and regret. When I think of the standing and dignity of my predecessors, a feeling of great timidity, in venturing upon the task, tempers whatever pride and enthusiasm I might have entertained, and I feel entirely unable to say what would be the most fitting words on this occasion.

I do not need to tell you that this is the last meeting of the Western Association of Architects in its present form, or to rehearse to you the causes which have contributed to the movement of which this convention is the culmination. The origin of the two bodies which meet here to-day to complete the consolidation of their interests and future usefulness, as well as the good work which they have accomplished, are matters of history, and familiar to nearly all of their members.

The work of the joint committee, composed of members from both bodies, is represented by the draft of the Constitution and By-Laws which has been accepted by the letter ballot, and which will come up for discussion and amendment before its final adoption. Although it has been thought advisable to retain the name and continue the corporate existence of the American Institute of Architects, which is known and respected in every civilized country of the globe, it has also been thought best to radically change the methods of conducting the business, and to borrow largely from the Constitution and By-Laws of the Western Association. The strictly democratic form of government which has been so successfully demonstrated in the latter, has been retained, and the new Association will be formed on an even basis, and absolutely with but one grade of membership, except that natural leveling which does not depend on the votes of any board or body, and which is free and open to all.

Neither has it been deemed advisable to provide for any system of representation, but rather to throw open the doors of our conventions to all members, on an even footing, having every one who does attend, feel that as far as to his vote and right to be heard, he is the peer to any one present, thus stimulating and encouraging the attendance instead of the reverse; and it is in a great measure to the interest felt in the attendance of our annual meetings that our influence for good in the future is to come, for we must make membership seem valuable to the average architect, or he will not desire or consummate it, and our strength lies largely in numbers and in spreading our influence over as large an area, and into as many localities and offices as possible, while the annual conventions and standard of membership should by all means be kept up to the highest point of interest and usefulness.

But it is not to the annual conventions that we must look for the greatest results of the Association in the future. For some portions we must look to the City and State Associations, who can organize and carry onward their work in the several branches, using the annual convention as a place for renewing old friendships and making new acquaintances, for viewing the works of our confreres under most favorable circumstances, but mainly for the reception of reports from the various local organizations, and for discussing and mapping out the line of policy to be pursued for the coming year.

Although we have done good work in the past, there is much that remains to be done to place architecture where it rightly belongs,—at the head of all learned and scientific professions,—and to bring it before the public in its proper light. This can only be obtained through a proper education, first of ourselves, second of the general public. We need to cultivate our relations with each other, and to establish a code of professional ethics which shall embrace the proper relations to be established, not only between the architects who may have business dealings together, but also between the architect and client, and which shall partake of a legal statute, in so far as the duties and responsibilities of an architect extends when engaged in carrying out the orders and ideas of his employers, as to what should be expected of him in the discharge of his duties as expressed in our schedules. There is a fruitful field before us in this direction, and one which should claim our best efforts and attention.

We have before us, in the line of improving, the present system of designing our government buildings, and in this we cannot hope to accomplish the needed reform until we are able to impress upon the public mind some of the principles which should govern the carrying out of such undertakings, and bring those in authority to see the manifest advantages which would be the result of placing the designing of buildings intended for different portions of the country, and covering the widest range of materials and uses, in the hands of professional men who are constantly dealing with the same factors and conditions in their every-day work.

We should have a better understanding on the subject of competitions, and in this need the public should be brought to see the matter in a different light than the one generally accepted. In other words, we must respect ourselves, before we can expect others to respect us.

A great deal might be said in favor of a bureau of legal intelligence, which should include the best attainable talent, to be retained as a sort of district attorney for the whole association, to assist in defining and establishing the rights of the members who most stood in need of such service, and should also include the collecting and compiling of all matters of legal record pertaining to building interests; and the value of such an adjunct becomes apparent when we attempt to find a legal authority who is at all familiar with such matters.

This much of our work, and many other subjects which might be brought forward, must, if undertaken at all, be done by the National Association. The variots State Associations will each have their individual interests to foster and improve, and it is largely through these that we must look for improvement in the matters of legislation. Especially will this be true of the measures designed to legalize and license the practice of the profession. One of the principal difficulties to be encountered in this direction is the fact that the general public, even including our lawyers, legislators, and members of other professions, have never given any thought to the matter, or, at most, have supposed that there was some sort of law or regulation on the subject. The investigation of the subject in the State of New York has developed the fact that the matter only needs to be brought to the attention of our public men, and before the press, to receive their hearty and unqualified endorsement and support, and it is considered probable that such a bill will be passed by the next Legislature. If every State Association will accomplish this result, it will have justified its existence.

There are other reforms (if I may be allowed the expression) which we, as a profession, stand in need of. We need better methods of testing the various materials and appliances of which our buildings are composed, and one whose endorsement should mean something more than those with which we are usually flooded, and which should stand for the professional brother a. the word or letter from a well-known authority on the subjects We also need a better plan of education for our draughtsmen than that which is within the reach of the average student in an architect's office. It is of infinitely more importance that they should be able to detail a window frame or other portion of a building in such manner as to admit of its proper construction and service, as that they could correctly compute the quantities and dimensions of a building and make complete bills of material, than that they should design a Greek god in solid bronze (made of galvanized iron) to adorn the facade of a city front, or that they should be able to construct (on paper) some of those wonderful creations which are intended to be perpetuated for all time in hemlock scantlings and shingles.

It is to the work of city Associations and individual members of the profession that we must look for the initiative in this direction. There is much which can be done by concert of action, through local committees, lectures, readings, etc., similar to the law schools which have been established in some of our cities, but the greatest field open to us in accomplishing the desired reforms, is through the medium of the press. We, as a profession, do not write and talk about the subjects with which we are most familiar. An interesting article can always be written by a person who has given his subject much thought and investigation. When the physician, chemist, or other professional student

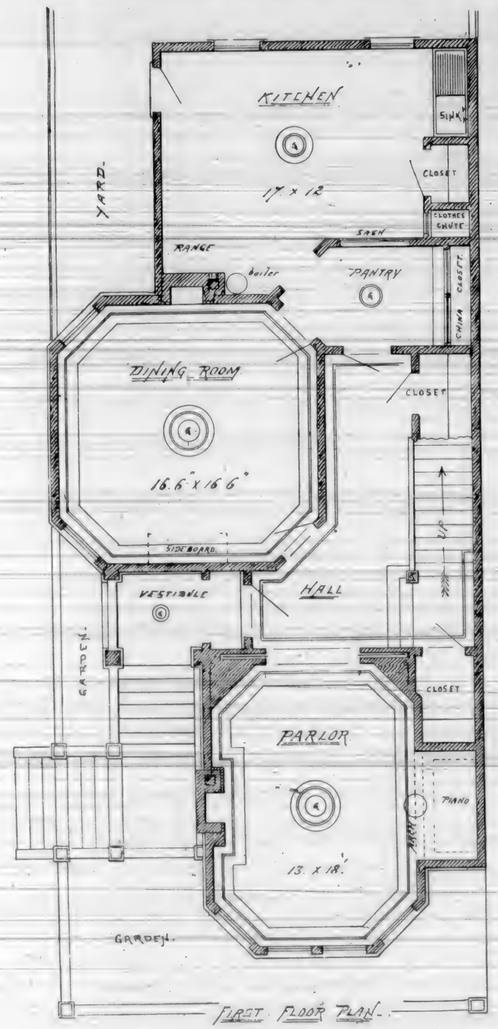


Plate No. 1.

makes an important discovery, or comes across anything unusual in the course of his daily practice, he at once either writes the matter up for the journals, or makes it the subject of a lecture before a class of students.

When we think that there is no more interesting subject to the average citizen than that of a building, and that outside of the publication of the exteriors and occasional plans of important or interesting buildings, often accompanied by a description written by a reporter, whose knowledge of the subject was confined to "splendid proportions", "stately magnificence", and kindred phrases, how little we are able to read on the subject that treats of the work of to-day.

Why should we not have lecture courses for the improvement of general knowledge on the subject, and to which the draughtsmen of the various localities should be especially invited, as well or better than many of the similar entertainments, so-called, with which the halls of our cities are filled. We must take the initiative in this matter if anything is to be accomplished, and not only throhgh the committees which may be appointed, but also through the individual work of members, either working singly or in groups, self-appointed, to carry the good work forward to a successful termination. The time and energy so spent cannot be counted lost, even though the results are not immediately apparent. The recluse who shuts himself up with his work and his books, or the man who devotes his whole thought and attention to his own special work without paying attention to what is being done around him, can never hope to attain the eminence of the man who constantly circulates among his fellows in the same line, who is as ready to give as to receive a good suggestion, for it is an additional fact that the teacher is as much benefitted as the pupil. Much more might be said in support of the theory, but this paper has already far exceeded the limits laid down.

We know that there are many among you who have thought it unwise to consummate the union between the two bodies about to be joined in wedlock, but thought that this Association was sufficient unto itself; although holding these opinions, were willing to be governed by the majority, and lend all possible assistance to the success of the plan if adopted. It is earnestly hoped that the step which has been taken will never be regretted by any of you. If the same earnestness and vigor which has characterized your work in this Association be carried forward and made a part of the new institution, The Western Association of Architects has justified its comparatively brief existence.

The American Institute of Architects, which is to be formed to-day from the members of the former bodies, is coming into existence under most auspicious circumstances, representing as it does a county rich in possibilities; in prosperous circumstances; at peace with all the world; just awakening to the fact that its cities need rebuilding on a better plan, and with more enduring materials and increased facilities for comfort and usefulness; about welcoming to its shores the representatives of all nations to inspect a World's Fair, which will, without doubt, surpass in extent and magnificence any previous undertaking, and which will be located at Buffalo, half way between New York and Chicago. The future of this Association none can fortell; it is the largest and most powerful body of architects on the face of the globe; its sphere of usefulness unlimited. It seems possible for it to mould the future of the profession in this country like a mass of clay, and by taking advantage of the opportunities before it, and by profiting by the experiences of the past, the architects of the next decade might be said to have the world at their feet. —*From the Building Budget.*

THE CONSOLIDATION CONVENTION AT CINCINNATI.

The consolidation of the W. A. A. with the A. I. A. was consumated on the 20th of November, Richard M. Hunt acting temporary Chairman. On the 21st the following named officers were elected. (*From the American Architect and Building News.*)

President, Richard M. Hunt, of New York; *First Vice-president*, W. W. Carlin, of Buffalo; *Second Vice-president*, J. W. McLaughlin, of Cincinnati; *Secretary*, John W. Root, of Chicago; *Treasurer*, S. A. Treat, of Chicago.

Directors for three years: Edward H. Kendall, of New York; Chas. A. Cummings, of Boston; Dankmar Adler, of Chicago; Henry Van Brunt, of Kansas City; Jas G. Cutler, of Rochester; C. E. Illsley, of St. Louis; E. T. Littell, of New York; Jas. H. Windrim, of Philadelphia.

Directors for two years: R. S. Peabody, of Boston; R. W. Gibson, of New York; W. W. Clay, of Chicago; Stanford White, of New York; C. A. Coolidge, of Boston; W. H. Hayes, of Minneapolis; O. P. Hatfield, of New York; W. R. Briggs, of Bridgeport.

Directors for one year: T. P. Chandler, of Philadelphia; Adolf Cluss, of Washington; J. C. Stevens, of Portland; C. F. Schweinfurth, of Cleveland; Sydney Smith, of Omaha; G. W. Lloyd, of Detroit; W. C. Smith, of Nashville; A. C. Bruce, of Atlanta.

Building Supplement and Trade Reviews.

VOLUME 10. DECEMBER 15, 1889. NUMBER 12.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the year about to close:

FOR FIRST SIX MONTHS.

	No.	Frame Buildings Value.	No.	Brick Buildings Value.	No.	Additions & Repairs Value.	Total No.	Total Cost.
January	47	$195,199	2	$ 76,020	23	$163,361	72	$434,580
February	53	233,065	5	271,831	9	27,642	67	532,538
March	68	308,936	2	119,403	12	24,465	82	452,804
April	77	345,967	5	112,818	15	53,225	97	512,010
May	96	396,172	2	193,457	21	58,855	113	648,484
June	78	557,435	2	36,210	29	54,726	108	648,371
Total	413	$2,036,774	18	$809,739	109	$382,274	540	$3,228,787

FOR SECOND SIX MONTHS.

	No.	Frame Buildings Value.	No.	Brick Buildings Value.	No.	Additions & Repairs Value.	Total No.	Total Cost.
July	82	$389,788	4	$168,235	43	$186,936	129	$744,959
August	88	473,592	3	94,770	17	82,337	108	650,699
September	63	306,003	3	228,815	7	20,977	73	555,795
October	91	446,892	4	381,710	8	13,592	103	842,194
November	71	359,345	1	32,300	12	45,774	84	437,419
December	33	182,247	3	297,760	8	23,965	44	503,972
Total	428	$2,157,867	18	$1,203,590	95	$373,581	541	$3,735,038
Grand Total	841	$4,194,641	36	$2,073,329	204	$755,855	1,081	$6,963,825

This statement has been made up from the files of the Architect and we should bear in mind that in addition to this, there must have been many improvements not noted through the records. We should estimate such improvements at not less than $500,000 in the whole city, making a grand total of say, $7,5000,000 for the year, being in excess of even 1885 in the value, though far behind in the number of the buildings.

We will give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements, value	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—1,127		" "	6,202,807
1885—1,457		" "	7,043,999
1886—1,148		" "	6,401,669
1887—1,093		" "	6,605,054
1888—	891	" "	6,244,220

NOTICE TO CONTRACTORS.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 16th day of January, 1890, for all the labor and materials required to construct and complete the wharf, boat-house, barracks, hospital, disinfecting apparatus, etc., for the United States Quarantine Station, Angel Island, San Francisco, Cal., in accordance with the drawings and specifications, copies of which may be had on application at this office and the office of Surgeon P. H. Bailhache, United States Marine Hospital Service, San Francisco, Cal. Each bid must be accompanied by a certified check for $500.

The Department will reject all bids received after the time fixed for opening the same; also, bids which do not comply strictly with all the requirements of this invitation.

Jas. H. Windrim,
Supervising Architect.

December 5, 1889.

REVIEWS.

N. W. Ayers & Sons' American Newpaper Annual for 1889 has been laid upon our table full of a carefully prepared list of all newspapers and periodicals published in the United States and Canada.

It enumerates the various press and editorial associations and their officers, contains a list of all newspapers inserting advertisements, and a complete list of all the religious, agricultural, medical, commercial, scientific, educational, and other class publications.

It gives the population of every state, territory, county and county-seat, city and town, it gives the number of votes polled in each state, territory and county by either of the parties, and on the whole is an exhaustive work worth every dime of its cost to any advertiser of note, and full of valuable information to all. Price $5.00, carriage paid.

WOODLAND.

Tenth Annual Report of Building and Improvements in Woodland and Yolo County, summarizing the kind, number and cost of the various structures for the last twelve months, as furnished the "Architect," by Gilbert & Sons of Woodland.

Summary for 1889.	Woodland City.		Yolo County.	
Description of Improvements and Investments.	No.	Value.	No.	Value.
Frame Dwellings	31	$68,350	27	$32,550
Brick Dwellings	4	6,500		
Frame and Brick Additions and Improvem'ts.	16	22,380	3	1,600
Frame Stores and Hotels			4	10,000
Brick Stores and Hotels	14	22,500	5	57,500
Brick Hotels			2	50,000
Frame Barns and Carriage Houses	18	15,050	26	28,350
Frame Warehouses and Storage Buildings	3	1,213	6	9,250
Iron Warehouses and Storage Buildings	3	3,000	2	2,000
Buildings for Manufacturing purposes	7	19,250	1	1,500
School Houses and Public Buildings	2	16,735	1	1,122
Water Works, Wind Mills & Irrigating Estab.	3	3,000	7	11,200
Raisin Dryers and Packing Houses	2	1,200		
New Bridges, Improvements and R. R. Build'gs			5	63,750
Total No. and Value for City and County	103	$179,178	89	$268,822

Woodland and suburbs have contributed to the above one hundred and three buildings and improvements, valued at $179-178; Yolo County, eighty-nine, valued at $268,822, making a final aggregate for City and County of one hundred and ninety-two buildings and improvements, estimated value at $448,000.

Below we give the figures for the previous nine years.

Year.	No. of Engagem'ts.	Aggregate Value.	Average Value.	Largest Single Engagement.	No. Build'g in constr'n at close year.
1880	54	$126,730	$2,346	$28,000	2
1881	59	140,640	2,382	34,580	4
1882	71	169,950	2,393	15,500	1
1883	84	204,519	2,434	52,000	7
1884	133	359,594	2,702	28,000	5
1885	224	606,182	2,461	25,000	11
1886	172	280,555	1,953	22,000	10
1887	92	203,116	2,208	30,000	9
1888	134	392,355	2,928	50,000	14
Total	1,023	$2,483,685	$2,423		

The architects, contractors and all interested in the building trade are invited to send building information from the section of the country they represent. We report all the recorded building news of San Francisco and Alameda counties, and for the future intend to make a thorough report from every town on the coast and interior. The index for 1889 will be out in January.

Binders for temporary use can be obtained at this office, not only for the CALIFORNIA ARCHITECT, but any other journal. For prices see our advertisement on page XI.

Our book trade is enormous. Order through us.

CITY BUILDING NEWS.

Army and Castro. 1-story frame; owner, E. A. Anthony: architect, T. J. Welsh; contractor, R. Doyle & Son; cost, $2,294; signed, Nov. 13; filed, Nov. 14; payments, $850, brown coated, $869, completed; $575, 35 days.

Broderick and Eddy. 2-story cottage; owner, Adolph Myer; architects, John and Balczyniski; cost, $2,850; signed, Nov. 13; filed, Nov. 14; payments, $700, framed; $750, rough mortar on; $700, ready to paint inside; $700, 35 days.

Bryant, Nos. 855 and 861. Brick underpinning, 4-story frame; owner, H. Royer; architect, R. Zimmerman; contractors, Brennan & Fluding; cost, $1,090; signed, Dec. 6; filed, Dec. 7; payments, $110, brick work done; $110, accepted; $270, 35 days.

Bryant and Fillmore. Alterations; time, Feb. 1, 1890; owner, M. Leavenutitt; architects, Wright & Sanders; contractors, Farrell & Bell; signed, Nov. 26; filed, Dec. 5; cost, $4,316; 75 per cent. as work progresses; balance, 35 days.

Broderick and Jackson. To build; owner, Julia L. Maris; architect, M. G. Bughee; contractor, R. O. Chandler; cost, $2,390; signed and filed, Nov. 12; payments, $600, enclosed; $600, brown coated; $600 accepted; $590, 35 days.

Bartlett between 22nd and 23rd. Building; owner, Emanuel Baptist Church; architect Chas. Geddes; contractor, Wm. Linden; surety, W. A. Mecker; cost, $17,000; signed, Nov. 8; filed, Nov. 12; time, June 15, 1890; payments, $1,000, frame to 1st floor; $1,750, roof boarded; $2,000, ready for lathing; $3,000, windows in; $3,000, paint on outside; $2,009, completed; $1,250, 35 days.

Ellis and Gough. Improvements, cottage; owner, J. J. Lauer; architects, C. R. & J. M. Wilson; contractors, Joseph Kemp & Co.; cost, $8,340; signed, Nov. 12; filed, Nov. 15; payments, 75 per cent. as work progresses; balance, 35 days after completion.

Everett near Third. 3-story frame and 2-story rear frame; owner, Eliza Boum; architects, Townsend and Wyneken; contractor, J. W. Wissenger; cost, $10,909; signed, Nov. 23; filed, Nov. 25; payments, $2,175, roof tinned; $2,000, brown coated; $2,000, sash hung; $2,900 completed; $2,725, 35 days.

Ellis near Leavenworth. Excavating and grading; owner, Johann A. Schmidt; architect, Julius E. Krafft; contractors, Frank Simonart, et al; sureties, E. Higettinger and James McCoy; cost, $1,040; signed, Nov. 22; filed, Nov. 26; time, March 1, '90; payments, $900, ½ done; $480, completed; $260, 35 days.

Ellis and Gough. Painting; owner, Jos. Kemp & Co.; architects, C. R. and J. M. Wilson; contractors, Frasen & Keeffe; cost, $1,250; signed, Nov. 19; filed, Nov. 20; payments, 75 per cent. as work progresses; balance, 35 days completed.

Fulton near Lyon. 2-story frame; owner and architect, Ernst Klein; contractor, J. A. Ehmann; sureties, A. D. Klein, C. Rohrbomby and F. Kronenberg; cost, $4,800; signed, Nov. 7; filed, Nov. 14; payments, $1,200, brown coated; $1,200, hard finish; $1,200, completed; $1,200, 35 days.

Fell and Steiner. 15 days; owner, James Scrobie; architect, Geo. H. Miller; contractor, Wm. Dunbar; signed and filed, Dec. 5; cost, $929; payments, $500, basement and cellars walls done; $429, completed.

Fulton and Polk. 2-story frame; owner, J. Dollard; architect, M. J. Welsh; contractor, R. O. Davis; cost, $2,300; signed, Dec. 3; filed, Dec. 5; payments, $575, framed; $575, brown mortar on; $575, completed; balance, 35 days.

Folsom and Seventh. Alterations; owner, Eugene Mercier; architect, Emile Depierre; contractor, J. J. Dunn; sureties, C. S. Holmes and F. Joest, $2,000; cost, $3,525; signed and filed, Nov. 26; payments, 75 per cent. as work progresses; balance, 35 days accepted.

Folsom and Eleventh. 3-story frame; owner, James Scrobie; architect, Geo. H. Miller; contractor, William May; sureties, R. McCann and Wm. Dunbar; cost, $2,450; signed, Nov. 19; filed, Nov. 21; time, 90 days; payments, 75 per cent. as work progresses; balance, 35 days.

Guerrero and Seventeenth. 2-story frame; owner, Fannie A. Gunn; architect, A. J. Barnett; contractor, A. Jackson; surety, Chas. F. Doe, $2,000; signed, Nov. 12; filed, Nov. 13; cost, $4,126; time, 90 days; payments, $994, roof boards on; $700, brown c ated; $700 white coated; $700, completed; $1,032, 35 days.

Golden Gate Park. Stable; owner, Golden Gate Park Co.; architects, Percy & Hamilton; contractors, J. G. and T. N. Day; time, 50 days; cost, $3,975; signed, Nov. 15; filed, Nov. 20; payments, 75 per cent. as work progresses; balance, 35 days.

Geary and Broderick. Alterations; owner, Walter D. Scott; architect, M. J. Welsh; contractors, Ivory Wells, et al.; cost, $3,800; signed and filed, Nov. 21; payments, $950, framed; $950, brown coated; $950, completed; $950, 35 days.

Hollis near Ellis. To build; owner, W. F. Peabody; architects, Ashton & Stone; contractor, Ira Fancher; cost, $4,066; signed, Nov. 11; filed, Nov. 26; payments, 25 per cent. framed; 25 per cent. closed; balance, completed.

Howard and Seventeenth. 2-story frame; owner, M. Balcyzuski; architects, John & Balcyznski; contractors, Schutt & Krecker; cost, $1,500; signed and filed, Nov. 21; payments, $1,125, roof on; $1,125, enclosed; $1,125, accepted; $1,125, 35 days.

Mason and Ellis. Building; owner, Mrs. E. H. Conly; architect, John Gash; contractor, J. Oak; signed and filed, Nov. 16; cost, $20,850; payments, $5,000, brick work done; $5,000, brown coated; $5,000, white coated; $5,137.50, completed; $6,712.50, 35 days.

Market near Fourth. Plastering, etc.; owner, Cal. Acad. Sciences; architects, Percy & Hamilton; contractor, Chas. Dunlap; L. E. Wyneken and James Treadwell, sureties for $10,000; cost, $19,400; signed, Nov. 5; filed, Nov. 18; time, 2 months after roof is on; payments, 75 percent, as work progresses, first Monday of each month; balance, 35 days.

Montgomery Avenue, Nos. 513-515-517. Alterations and improvements; running through to improvements on Green street; Mrs. Strauss owner; James E. Wolfe, architect; L. D. Frichette, contractor; cost about, $1,200; days work.

Mission and First. Wrought iron work for 5-story brick; owner, T. H. Day; architect, P. R. Schmidt; contractors, O'Connell & Lewis; cost, $8,762; signed, Oct. 8; filed, Nov. 21; time, 60 days; payments, 75 per cent. as work progresses; balance, 35 days. Cast iron work; contractors, Sims & Morris; payments, same; time, 40 days; cost, $8,288.

McAllister and Larkin. Stone, brick, and carpenter work; owner, J. P. Hale; architect, T. J. Welsh; contractor, J. G. and T. N. Day; sureties, B. Joost and J. H. Kennedy, $50,000; time, Sept. 30, 1890; cost, $168,500; signed, Nov. 21, filed Nov. 23; payments, monthly, 75 per cent, as work progresses; balance, 35 days.

Natoma and Howard Court. Eight tenement houses; owner, John H. Boyd; architect, B. McDougal & Son; contractor, John H. McKay; cost, $12,469; signed, Nov. 21; filed, Nov. 22; payments, $2,400, roofs on; $3,209, brown coated; $3,609, completed; $3,251, 35 days.

Octavia and O'Farrell. Painting; owner, J. Boas; architects, Salfield & Kohlberg; contractors, M. Cohen & Co.; cost, $926; signed, Nov. 8; filed, Nov. 13; payments, $200, primed; $500, completed; $226, 35 days; glazing, contractor, Morris Zacharias, cost, $775; payments, $350, white glass set; $425 accepted; plastering, C. C. Morehouse contractor; cost, $1,490; John Tuttle surety, $1,490; payments, $600, brown coated; $490 accepted; $400, 35 days; plumbing, Sam'l Eckelheimer & Bro., contractors; cost, $1,000; payments, $400, rough work in; $350, completed; $250, 35 days; carpenter work, W. Flinn, contractor; cost, $11,450; sureties, David Woerner and F. Joost, $10,000; payments, $2,000, enclosed; $2,000, partitions set, etc.; $2,000, ready to paint; $2,680, completed; $2,860, 35 days; brick work, Valdemar Tarp, contractor; sureties, Sacramento Transfer Co. and E. L. Snell, $1,894; cost, $1,894; payments, $300, excavation done; $300, bulkheads done; $694 accepted.

Oak and Broderick. 2-story frame; owner, Elizabeth F. Lord; architect, W. H. Armitage; contractor, O. E. White; sureties, Frank P. Latson and L. P. Lewis; $5,000, signed, Nov. 25; filed, Nov. 26; cost, $6,777; time, 90 days; payments, $1,800, roof on; $1,482, white coated; $1,800, completed; $1,695; 35 days.

O'Farrell, between Mason and Powell. 4-story basement building; owner, H. W. Heath; architect and contractor, J. Gash; cost, $16,141; signed and filed, Nov. 18; payments, $2,000, brick work done; $2,000, brown coated; $2,000, white coated; $2,000, doors and windows hung; $2,000, outside finish on; $2,105, completed; $4,036, 35 days.

Pine and Kearney. 3-story basement, brick; owner, S. P. Blumenberg; architect, Fred E. Wilcox; contractor, Geo. W. Spencer; cost, $5,200; signed and filed, Nov. 13; payments, $500, concrete footing in; $600, ready for 1st story joists; $400, sidewalk arches completed; $700, ready for 2nd story joists; $700, ready for 3rd; $1,000, completed; $1,300, 35 days.

Pine, No. 2806. Time, March 15, 1890; owner, Mary Sexton; architect, W. H. Sorrell; contractor, W. H. Derworth; sureties, James Young & A. W. Sorrell, $7,000; cost, $7,000; filed, Dec. 3; payments; $1,400, foundation done; $1,400, framed; $1,400, first coat mortar on; $1,400, second coat on; $1,400, completed.

Pine near Kearny. Rebuild wall; owners, Kong Chow Association; surety, J. F. Kennedy; contractor, G. W. Spencer; cost, $1,500; time 30 days, filed, Dec. 2.

Ridley and Guerrero. Time, 60 days; owner, Frederick Pretorious; architect, W. Winterhalter; sureties, A. Hindriehs & A. B. Stumpf; cost, $2,852; payments, $800, floor laid; $600, rough coat plastering on; $700, completed; $752, 35 days; signed, Nov. 3; filed, Dec. 4.

Sacramento and Drumm. Piling, capping, etc.; owner Mahony Bros.; architects, Ashton & Stone; contractor, J. P. Sheldon; cost, $27 per pile; signed, Nov. 18; filed, Nov. 26; payments, 75 per cent. as work progresses; balance, 35 days after completion.

Sutter and Taylor. 3-story frame; owner, Isabella Levy; architects, Kenitzer & Kollofrath; contractors, C. F. Ruppel; sureties, Ch. Helwig and W. Mieche, $6,000; signed, Nov. 5; filed, Nov. 6; cost, $11,168; payments, $1,500, framed; $2,000, roof enclosed; $1,500, first coat plaster on; $1,500, plastered; $1,878, completed; $2,790, 35 days; time, 110 days.

Sutter and Taylor. 3-story frame; owner, W. H. Williams; architects, Kenitzer & Kollofrath; cost, $1,094; signed and filed, Dec. 7; payments, $450, brick foundation, walls up; $374, brick work done; $270, 35 days.

Stockton and Vallejo. Basement, walls, chimneys, etc.; owner, R. R. Hind; architects, Ashton & Stone; contractor, Crawford Ferris; cost, $3,600; signed, Nov. 11; filed, Nov. 26; payments, 75 per cent. as work progresses.

Spofford and Washington. Alterations; owner, Wong Loy Yee; architect, A. J. Barnett; contractors, H. T. Bray, et al; sureties, Thos. Flynn and J. J. Sullivan, $1,000; cost, $2,363; time, 60 days; signed, Nov. 12; filed, Nov. 20; payments, 75 per cent. as work progresses, first and third Mondays of month; balance, 35 days completed.

Shotwell and Twenty-fourth. 2-story frame; owner, John Hiller; contractor, Bernard Dreyer; cost, $7,600; time, 105 days; signed, Nov. 18; filed, Nov. 20; payments, $1,900, framed; $1,900, brown coated; $1,900, white coated; $1,900, 35 days.

Taylor near O'Farrell. 4-story building; owner, Mrs. E. H. Conly; architect, John Gash; contractor, L. Cohane; cost, $36,556; signed and filed, Nov. 16; payments, $7,000, brick work done; $7,000, brown coat on; $7,000 white coated; $6,417, completed; $9,139, 35 days.

Taylor near O'Farrell. 4-story building; owner, Mrs. E. H. Conly; architect, John Gash; contractor, L. Cohane; signed and filed, Nov. 16; cost, $33,950; payments, $6,000; brick work done; $6,000, brown coat on; $6,000, white coat on; $7,462.50, completed; $8,487.50, 35 days.

Turk and Laguna. 3-story flats; owner, A. Legallet; architect, T. J. Welsh; contractor, James C. Bassett; cost, $15,500; signed, Nov. 22; filed, Nov. 25; payments, $1,937, foundation in; $1,937, frame up; $1,937, frame enclosed; $1,937, brown coated; $1,937, white coated; $1,940, completed; $3,875, 35 days.

Union, No. 907. Alterations; owner, W. J. Hermann; architect, Geo. H. Miller; sureties, Vennekohe Bros. and H. Tietjen; contractor, Henry Jensen; cost, $2,900; signed and filed, Nov. 25; payments, $600, framed; $500, stairs up; $525, window frames in; $350, completed; $725, 25 days.

Vallejo and Van Ness Ave. 2-story frame; owner, Rose Wangenheim; architects, Huerne & Evcrett; contractor, James Campbell; cost, $5,774; sureties, A. W. Starbird and G. W. Goldstone, $5,000; signed, Nov. 12; filed, Nov. 14; payments, $1,443.50, sheathed; $1,443.50, brown coated; $1,443.50, completed; $1,443.50, 35 days.

Valparaiso and Taylor. 2-story frame; owner, Catherine Peter; architect, Wm. Schrof; contractor, Albert Norton; surety, Fabian Joost; cost, $2,400; signed and filed, Dec. 2; payments, $600, roof on; $600, outside finish on; $600, first coat paint on; $600, 35 days.

Van Ness and Post. Electrical works; owner, Concordia Club; architect, J. H. Littlefield; contractors, Cal. Electrical Works; sureties, F. C. Stover and J. R. Spring; cost, $2,084; payments, 75 per cent. as work progresses; balance, 35 days.

Waverly Place near Sacramento. Lathing and plastering; 4-story brick; owner, Jos. Goetz; architect, T. J. Welsh; signed, Nov. 16; filed Nov. 22; contractor, Thos. Winter; cost, $3,370; payments, 75 per cent. as work progresses.

Washington and Walnut. 2-story dwelling; owner, J. T. Rogers; architect, Geo. A. Bordwell; contractor, L. C. Judkins; cost, $5,693; signed, Nov. 12; filed, Nov. 13, payments, $1,000, roof on; $887.12½, plaster done; $887.12½, completed; $924.75, 35 days.

3-story building; owner, H. W. Heath; architect, John Gash; contractor, J. Oak; cost, $16,141; signed and filed, Nov. 16; payments, $2,000, brick work done; $2,000, brown coated; $2,000, white coated; $2,000, windows hung; $2,000, outside finish complete; $2,105, completed; $4,036, 35 days.

SAN JOSE.

Addition to schoolhouse on Santa Clara street. Contractor, J. D. Stewart; cost, $5,454; time, Feb. 1, 1890.

W. S. Boyles to erect for Charles M. Schiele, on Schiele avenue, near Stockton avenue, on or before Feb. 1, 1890, a six-room cottage for $1,500.

J. D. Stewart to erect a two-story brick building for A. Vatuone, on Market street, between Santa Clara and St. John, on or before Feb. 15, 1890, for $2,697.

J. S. Wheeler to erect for Mr. and Mrs. Lewis Schoen, on South Fifth street, near Santa Clara, a two-story eight-room house, to cost $1,690; time, March 20, 1890.

Wilcox & Scott to build for Mrs. Adele Lefranc, cor. Market and Balbach streets, a cottage to cost $1,160, to be completed on or before Jan. 5, 1890.

LOS ANGELES.

B. P. Hutchinson, dwelling. Shaw street, east of Main street, $1,000.

Frank E. Walsh, dwelling. Adams street, between Maple and Main streets, $2,000.

Mrs. F. C. Howe, dwelling. Lot 2, block 61, Hancock survey, $500.

Mrs. E. T. McGinnis, dwelling. Lot 8, Longstreet tract, $5,000.

Lindley & Jones, market and armory. Fort street, between Sixth and Seventh, $60,000.

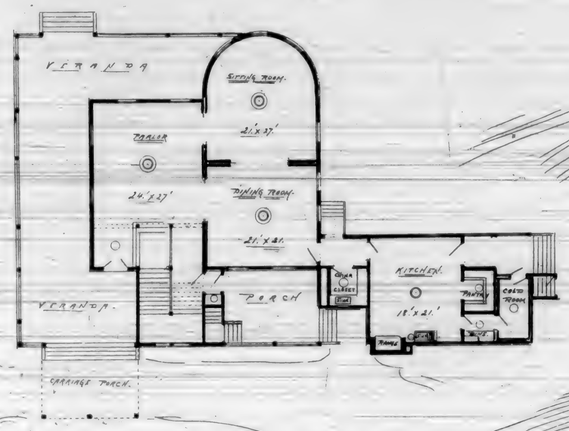
C. B. Woodhead, stable. Between Buena Vista and Upper Main streets, $300.

E. W. J. Scott, dwelling. Whittier street, between Ninth and Lincoln streets, $1,000.

Emma Phlager, stable. No. 8 Lincoln street, $100.

ELEVATION.

HUERNE & EVERETT



RESIDENCE to be erected in the SANDWICH ISLANDS,

Designed by

H. T. BESTOR. ARCHITECT.

PLATE No 4.

MAIN ENTRANCE
to the
COOPER MEDICAL COLLEGE

WRIGHT & SANDERS,
ARCHITECTS.

PLATE No. 5.

Me Wo. store. No. 10 Juan street, $850.

M. P. Beck, dwelling. Corner Eleventh and Sentous, $300.

Ole Hall, dwelling. Kelley street, $660.

Edward Hildreth, stable. No. 245 South Hope street, $675.

Total, $72,435.

Fred Hanlman, dwelling. Adams street, between Main and Grand avenue, $2,500.

W. W. Holcom, dwelling. Rodney street, between Los Angeles and Main streets, $900.

Dennis Henness, store. No. 609 Grand avenue, $1,200.

Guadalupe Perez and others, brick store. Spring street, between Second and Third streets, $10,000.

William Wright, dwelling. Flower street, near Washington street, $2,500.

S. M. Cool, stores and dwelling. Corner Jefferson and Wesley avenues, $6,375.

M. J. Rich, dwelling. Workman street, near Downey avenue. $500.

E. Pinney, dwelling. Corner Mignonette and Beaudry streets, $800.

P. H. Bodkin, dwelling. Corner Adams and Trinity streets, $1,000.

J. S. Shellert, dwelling. Eleventh street, between Main and Hill streets, $5,000.

Orphans' Home. Boyle Heights, $117,000.

J. Thompson, addition to store. No 26 East First street, $80.

M. A. Whissen, repairs to residence. No. 339 Figueroa street, $500.

John Schurer, dwelling. No. 515 Macy street, $2,500.

Aggregate value of improvements, $223,500.

ALHAMBRA. (Los Angeles.)

Two new frames are being erected.

LIVERMORE.

Mr. J. Johnson is building an addition, 20x30 feet, to his hotel property, on Main street.

Newton Gray is building an addition to his residence, cor. Fourth and K streets.

STOCKTON.

Residence. N. C. Hilke, owner; cost, $3,000. Public school; cost, $15,000. Store; owner, Dr. Walter Todd; cost, $10,000. Residence; owner, Alex. Galls; cost, $3,500. Residence; owner, Frank Berwick; cost, $28,000. Building; owner, Chas. Christian; cost, $80,000. Residence; owner, Wm Smith; cost, $4,000. Architect, Chas. Beasley.

MERCED.

Residence. Owner, J. K. Laws; cost, $8,000; architect, Chas. Beasley.

OAKDALE.

Hotel. John Hubble, owner; cost, $10,900. Residence; owner, A. T. Stewart; cost, $35,000. Architect, Chas. Beasley.

EUREKA.

First Congregational church. Cost of church without seating, or heating furnaces, $13,000; architect, James E. Wolfe.

SAN LEANDRO.

Hayward Avenue. Two dwellings; owner, Mrs. J. G Hall; contractors, Quigley & Kilgore; time, Jan. 15, '90; cost, $3,400; signed, Nov. 16; filed, Nov. 29; payments, $1,000, materials on ground; $1,000, foundation done; $550, plastering done; $850, 35 days.

KLINKNERVILLE.

Idaho and Butler. 1-story cottage; owner, C. A. Klinkner; architects, J. J. and T. D. Newsom; contractors, Sturgeon & Son; cost, $3,600; signed, Dec. 5; filed, Dec. 7; payments, $440, frame up, roof on; $440, shingled, rustic and chimney built; $440, rough plumbing done, brown mortared and first coat of paint outside; $440, plastered and second coat of paint; $940, completed; $900, 35 days.

ALAMEDA.

Paru near San Antonio Avenue. 2-story frame; owner, Albert Victors; contractor, A. R. Denker; cost, $3,800; signed, Nov. 27; filed, Dec. 4; payments, $800, frame up; $1,000, first coat of plaster on; $1,000, finished; $1,000, 35 days.

OAKLAND.

Twenty-sixth Avenue, between East Ninth and Tenth streets. 2-story frame; owner, C. B Rice; contractor, Wm. F. Wise; cost, $2,000; signed, Oct. 28; filed, Nov. 21; time, Jan., '90; payments, $50 monthly; balance, mortgage.

Washington and Twelfth. Lathing brick building; owner, M. K. Blake; architect, W. J. Matthews; contractors, Bradley & Sturrock; cost, $4,600; signed, Nov. 20; filed, Nov. 22; payments, $1,000, lathed; $1,000, brown coated; $1,450, white coated; $1,150, 35 days.

Piedmont. Painting; owner, C. W. Randall; architect, Chas. Mau; contractors, Sloan & Brown; signed and filed, Nov. 18; cost, $450; quarterly payments, ending 35 days after completion; Interior painting; contractors, Doody & Hooley; signed and filed, Nov. 29; cost, $600; payments, one-fourth, varnish on; one-half, completed; balence, 35 days.

Bray Tract, Brooklyn Tp. Dwelling; owner, P. H. Blake; architect, S. Hatfield; contractors, A. B. Moody & O. F. Hunt; cost, $1,700; signed, Nov. 29; filed, Nov. 30; payments, $318.75, shingled; same, window frames set; same, plastering done; same, completed; $428, 35 days.

Block 45, Clinton. Frame; owner, B. J. Richter; contractors, Deike & Enos; cost, $2,112.50; signed, Nov. 4; filed, Nov. 25; time, Feb., '90; payments, one-third, enclosed; one-third, first coat of plaster on; one-third, completed.

Market and Fourteenth. Additions; owner, W. S. Pogue; architect, Wm. Kirk; sureties, Al. Wood and Mrs. C. E. Clement, $2,000; contractor, E. S. Fisher; cost, $3,088.50; signed, Nov. 11; filed, Nov 26; payments, 75 per cent. as work progresses.

Leonard Tract. Lot 6, block B; owner, Mrs. Margaret Dunn; contractors, Higgins, Davisson & Co.; cost, $2,425; signed, Nov 25; filed, Nov. 26; payments, $606.25, frame up; same, enclosed and shingled; same, brown mortared; same, 35 days completed; time, 12 weeks.

PLEASANTON.

Extensive repairs are being made on the residence of Count Valensin.

MISSION. (San Jose.)

P. McKenna is building a large twelve-roomed house on his ranch, near Mission Peak. T. H. Downie is the contractor.

GOLDEN GATE.

G. Paladeau will build a house at a cost of $3,500.

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408 California Street.

Plaster and Plastering, Hodgson	$1.00
Stair Building Made Easy, Hodgson	1.00
Manual for Furniture Men, John Phin	1.00
Water Closets, Glenn Brown	1.00
Hand Railing and Stair Casing, Creswell	1.50
American Stair Builders' Guide, Gould	2.50
Shavings and Sawdust, Kane	1.50
Public Buildings, Bicknell	2.50
Artisan, Riddell	5.00
Mechanics' Geometry, Riddell	4.00
Lessons in Carpentry by Slide Rule, Riddell	3.00
Modern Low Cost Houses, Shoppell	.50
Monckton's Practical Geometry	1.00
Manual of Industrial Drawing for Carpenters, Decker	2.00
Steam Engine Catechism, Grimshaw	1.00
Supplement to Same, Grimshaw	1.00
Grimshaw on Saws, Grimshaw	4.00
Principle of House Drainage, Putnam	1.00
Drawing for Stone Mason, Davidson	1.50
Practical Prospective, Davidson	1.50
Cutting Tools, Smith	1.50
Sewer Gas and Its Dangers, Brown	1.25
Lumberman's Handbook, Judson	2.00
Appleton's Home Garden, Church	.60
Legendry and Mythological Art, Clements	3.00
Picturesque California Homes, Newsom, Cloth	3.50
Picturesque California Homes, Newsom Paper	3.00
Painter's Foreman, Shephard	.50
Cottages, Gerard	1.00
Moor's Universal Assistant	2.50
Drawings for Carpenters and Joiners, Davidson	1.75
Monckton's Carpenter and Joiner	5.00
American Cottage Builder, Bullock	3.50
American Houses, Sloane	1.50
Builders' Companion, Smeaton	1.50
Paper Hangers' Companion, Smith	1.00
Architectural Designs and Book of Ornamental Drawings, Burns	1.00
Treatise on Acoustics, Sallzer's	2.00
National Carpenter and Joiner, Monckton	5.00
Vodge's Pocket Companion, Full Bound	2.00
" " " Muslin	1.50
Kidder's Architects and Builders, Pocket Book	3.50
Sensible Low Cost Modern Houses	1.00
Copley's Alphabet	3.00
Woodward's Graperies	
Cottages and Farm Houses, Woodward	1.00
Country Homes, Woodward	1.50
Rural Homes, Wheeler	1.50
Steel Square, and Its Uses, Hodgson	1.00
Perspective Cone	1.00
Masonry Construction, Baker	5.00
Manual of Machine Construction, Richards	5.00
Wright's Perspective	3.00

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tion to this journal for one year, if sent direct to this office, will entitle the subscriber to a rebate of $1.00 on any one of these works.

ANY book not on above list we can supply at regular rates.

A perfect model of the "Monarch" Bear has been presented to our Editor by R. Schmid, the sculptor, studio 17 Ridley St. It is a remarkable figure as it quietly lies on our table in plastic form and though labelled the "Monarch," we "bar" in mind there is no harm in it.

THE NORRIS PULLEY.

The desire to draw the attention of our many subscribers to the advertisement of the Norris Pulley page V.

The Pulley you can readily see is the only pulley made that does not depend upon the screws to hold it in the frame. The pin being back of the bevel on lower end of Pulley causes the weight of both sash and weight to pull back, therefore the more weight the more firmly the pulley imbeds itself in the frame.

Norris & Co. manufacture the largest variety of pulleys of any firm in the country, Their business extends all over the United States. They are the oldest or one of the oldest hardware houses in the country.

In the last few years the majority of the fine buildings erected have the Norris Pulley in the frames. The architects and builders generally concede that the Norris Pulley is the best on the market, their pulleys range in price from 15 cents to $60 per dozen, and they make pulleys with ¾-in. to 4-in. wheels. All their pulleys are numbered, and as the number designates the size and quality, always in ordering mention the number.

Norris Pulleys can be had of any responsible hardware house in the United States or Canada, or you can address C. Sidney Norris & Co., Baltimore, Md.

Architects wishing catalogues and samples will receive same free of cost.

CABOT'S BRICK PRESERVATIVE.

The sandstone in the New California Theatre building has been treated to a coat of Cabot's Brick Preservative, which has water-proofed and hardened the stone. While it does not appear to have changed the natural color of the stone any more than water would, it leaves no trace of gloss or gum.

Retail Price List of Lumber.

PINE, FIR AND SPRUCE.

		Per 1,000 ft.
Rough Pine, m'cantable to 40 ft, inclusive		$20 00
" " " 41 to 50 " "		21 00
" " " 51 to 60 " "		23 00
" " " 61 to 70 " "		27 00
" " " 1x3, fencing		22 00
" " " 1x4, "		21 00
" " 1x3, 1x4 and 1x6, odd lengths.		19 00
" " second quality		17 00
" " selected		25 00
" " clear except for flooring		31 00
" " " for flooring less than flooring		1 00
Clear V. G. No. 1 Flooring, when ordered, extra		5 00
Fire Wood		11 00
Dressed Pine, flooring. No. 1, 1x6		32 00
" " " 1x4		34 00
" " 1¼ x 4, 1¼ x 6 and odd sizes		37 00
" " " all sizes, No. 2		27 00
" " Stepping, No. 1		43 00
" " " 2		33 00
Ship Timber & Pl'd., rough selected		27 00
" " selec'd pl.nd, 1 sd	aver.	29 00
" " " " 2 "	40 ft	31 00
" " " " 3 "		33 50
" " " " 4 "		35 00
Deck Plank, rough		35 00
" " dressed	average 35 feet	40 00
Pickets, rough, B. M		20 00
" ½x1½ "—4 ft. long	per M.	5 00
" ½x1½ "—4½ ft. long		6 00
" ½x1½ "—5 ft. long		7 00
" ½x1½ "—6 ft. long		8 50
" ½x1½ "—7 ft. long		10 00
" ½x1½ "—8 ft. long		11 50
Furring, 1x2	per lineal ft	1 00
Lath, 1½ 4 ft	per M	2 75
" 1½ 4 ft	"	3 00
Spruce, rough		19 00
" dressed, shelving		36 00
" " ⅞ inch		36 00
" clear		33 00
Rough dunnage, delivered		20 00

REDWOOD.

Rough Redwood, merchantable	19 00
" " second quality	16 00
" " selected	25 00
" " clear	34 00
Dressed " merchantable boards	21 00
" " ⅞ inch surfaced	31 00
" " No. 1 do	34 00
" " No. 2 do	25 00
" " T & G, 1x6, 12 ft. and over, No. 1	34 00
" " other sizes, No. 1	37 50
" " 7 to 11, No. 1	25 00
" " under 7 "	22 00
" " Rustic, No. 1	35 00
" " " 2	31 00
" " T & G b'ded 12 ft. and over, No. 1	34 00
" " other sizes, No. 1	37 50
" " 7 to 11, "	25 00
" " under 7 "	22 00
" " Sliding, ¾ inch	25 00
Casing Stock, 1, 1¼ and 1½ Rough, 7 to 11	25 00
" " 1x3, 4x6, Clear, under 7	22 00
Tank Stock, 2 and 3 inches, clear, (surfaced or rough,) under 12 feet	27 00
Pickets, (fancy), 4 ft., B M	25 00
" (rough, pointed), B M	18 00
" (" square), B M	16 00
Battens, ½x3 per lineal ft	01
Shingles per M	2 25
" fancy "	3 50
Posts, split	15
Shakes, split per M	11 00
" sawed "	13 00

Lumber delivered on board cars will be charged $1 per M extra. Lumber delivered along side of vessel or wharf, 50 cents per M extra. Scale of credit not to exceed 60 days without interest being added.

Tongued and grooved beaded on two sides $2.50 extra.

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SAN FRANCISCO, CAL.

Mr. Bloor received a complimentary vote of twenty-two for the office of Secretary, and the convention also offered to him and to Mr. Hatfield votes of thanks for the faithful and disinterested manner in which they had so long discharged the duties of Secretary and Treasurer of the original Institute.

The committee, which had had in charge the consideration of the important question of the employment of a clerk-of-works, was continued and enlarged, and instructed to report at the next convention.

A new committee was appointed to consider how the members of State Associations and Chapters, who were not already members of the Institute, might become so with as little delay as posssible. A committee on professional ethics was also appointed.

The Secretary was then instructed to prepare and distribute to such journals as he might select, such synopsis of the proceedings as was desirable to place before the profession in advance of the publication of the annual "*Proceedings.*" A member suggested that this was hardly necessary, inasmuch as several professional journals were represented at the convention by reporters, and they would probably publish at once full reports of the proceedings. This, however, seemed hardly to be satisfactory to some of the members, and the instructions were unchanged.

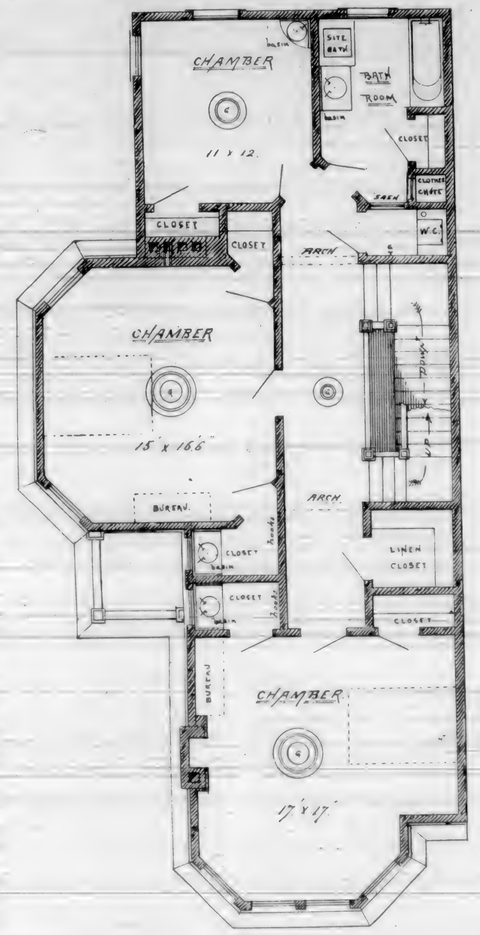
The question of publication having been broached, Mr. Gibson, of New York, said that inasmuch as the *American Architect* had always been the official journal of the American Institute of Architects for purposes of publication, he would suggest that this connection would be continued. As the suggestion at once brought out a protest from different parts of the room, and it so appeared that the members did not care to discriminate for or against any of the architectural journals now published, the suggestion was withdrawn.

During the discussion of the question of annual dues, considerable stress was laid on the injustice of expecting unpaid officials to incur the expenses of attending the necessary directors' meetings and the annual conventions, and it was the hope of those who urged the larger annual due that in this way might be obtained a sum which could be drawn on for a part of, if not all, these burdensome expenses. [The matter of lightening the expenses of the Executive Committee was, we believe, left to the discretion of the directors]. At this stage of proceedings the same matter came up in broader fashion in the shape of a proposition that it should be part of the directors' duties to consider and report whether it were not feasible to devise a practicable method by which the expenses of the members attending the convention might be equalized. As this is an obviously simple thing to accomplish by computing the mileage of those who signify their intention of attending and then assessing the amount equally on all such members, it may be hoped that a step will soon be taken which will make these annual meetings larger and really more representative of the whole country. A delegation could under such conditions afford to come from San Francisco even, while the Eastern men would not be materially affected by the small addition to their own individual expenses. It was, really, of all the suggestions made during the entire convention, the one best worth the making.

Letters were read from the Mayor, Board of Trade, architects and other bodies in Denver inviting the Institute to hold its next convention in that city, but the invitation, as the site was already decided on, was declined with thanks.

The last important act of the meeting was taken by Mr. Brown, of Washington, who offered as an amendment to the constitution, to be acted on next year, a resolution that each Chapter of the Institute might send to the annual convention a member or delegation entitled to cast a vote on all questions equal in amount to the full membership of such Chapter. In other words, the matter of representation by proxy, which we have advocated, is now properly brought before the Institute for consideration, and when one looks back on the business which was actually transacted during the convention, it is discovered that the greater part of the business either was actually done or could have been as well done by small committees whose action would naturally give much more satisfaction if it were taken with the advice and consent of their fellows, who had delegated to them full power to act than ever can the action of individual members, whose presence on a committee hinges on the accident of their happening to be at a convention, where the president's eye chances to fall upon them.

After this as no further business offered, the convention adjourned, subject to the call of the directors.



SECOND FLOOR PLAN.

PLATE NO. 2.

Official Report of the First Meeting of the Board of Directors of the American Institute of Architects, Cincinnati, Nov. 21st, 1889.

Minutes—

The following members were present, President Hunt being in the chair: Messieurs,

Briggs	Gibson	McLaughlin
Bruce	Hunt	Root
Carlin	Illsley	Smith
Cutler	Kendall	Treat
Cummings	Littell	

The following gentlemen were elected as members of the Executive Committee, of which the President, Secretary and Treasurer are ex-officio members: Kendall of New York, three years; Adler of Chicago, three years; Gibson of New York, two years; Carlin of Buffalo, one year.

Mr. Cummings reported on behalf of committee on relations between chapters and the associations as follows:

"At the recent convention of the American Institute of Architects, the undersigned were appointed a committee to consider whether any method could be adopted by which the complication at present thought to exist in the relations of chapters and individuals as to the membership of the American Institute of Architects could be removed.

The committee have carefully considered that subject, and have found themselves confronted by difficulties so great as to prove insurmountable by any wisdom which the committee can apply to them.

The committee recognize fully the desirability of providing that every fellow of the Institute shall be also a member of some one of the local societies organized as chapters. In no other way can the Institute be so well assured of the fitness of a candidate for membership as by his being certified to be a member in good standing of one of the chapters. And the fact of all the fellows of the Institute being at the same time members of the chapters tends to confirm the solidarity of the chapters with the Institute, which is so eminently to be desired.

But, on the other hand, there are doubtless many cases in which an architect residing in a town where no local chapter exists, where the nearest chapter may be located at a distance of hundreds of miles, may desire to become a member of the Institute. He may be in every respect qualified to become a useful member of the Institute, and to receive both pleasure and profit from his association with it. To refuse his admission except on condition of his joining a chapter, perhaps in another State, with which he has no natural affiliations, with the members with which he has no acquaintance, seems a measure hardly less than tyrannical.

The committee confess themselves unable to see any method by which the difficulty can be overcome, and they therefore ask respectfully to be excused from further consideration of the subject, and to recommend it to the wisdom and judgment of the Board of Directors."

For the committee. CHAS. A. CUMMINGS, *Chairman.*

Cincinnati, November 21, 1889.

Mr. Littell moved:

That the full powers of the Board of Directors, not expressly reserved in Article VIII, Section 2 of the By-Laws be rested in the Executive Committee, subject to the obligation to report to the Board, from time to time, when called upon to do so.

Motion carried.

Mr. Gibson moved:

That the Executive Committee shall hold quarterly meetings and other meetings at the call of the President, when the Secretary shall report to him a necessity for the same, or when three members of the Committee shall request him to call such meetings for special business.

Motion carried.

Mr. Cutler moved:

"That in the event of inability to attend a meeting of the Executive Committee, the member so prevented from being present shall notify the Secretary, who shall thereupon, if deemed expedient, notify a director, who attending the meeting shall have full power to act as substitute."

Motion carried.

Mr. Gibson moved:

"That it shall be the duty of the Secretary to notify members of the Executive Committee of any meeting, ten days in advance of such meeting, and members shall at once reply stating their intention or inability to attend.

Motion carried.

Mr. Briggs moved:

"That the following form of ballot be used in the election of members:

OFFICE OF SECRETARY, A. I. A.

.....18

DEAR SIR,—Please vote by striking out the alternative word under the heading "vote," and return the sheet to me at your earliest convenience.

VOTE.	APPLICANT.		LAY INDORSERS.			INDORSING MEMBERS.	
	Name.	Address.	Name.	Occupation.	Address.	Name.	Address.
No. Yes.							
No. Yes.							

.....*Secretary A. I. A.*

Motion carried.

Mr. Carlin moved:

That the Secretary shall enclose with each ballot for membership, a stamped envelope addressed to himself with the words "Ballot for Membership" printed on the outside.

Motion passed.

Mr. Gibson moved:

"That it shall be the duty of the Secretary to notify each candidate for membership of the result of the letter ballot, and enclose a copy of the constitution and by-laws and direct his attention to Article VII, Section 1 of the by-laws and to notify the Treasurer of the new membership election."

Motion carried.

Mr. Gibson moved:

"That the question referred to in Article X of the by-laws be referred to a special committee to be appointed by the chair and to report at or before the next quarterly meeting of the Executive Committee:

Motion carried.

Mr. Briggs moved:

"That a committee of education be appointed by the chair."

Motion carried.

The following committee was appointed: Messrs. Russell Sturges, professor pro tem., Columbia College; Wm. R. Ware, professor architecture, Columbia College; T. Clifford Ricker, professor architecture, Champaign, Ill.; T. M. Clark, Massachusetts Institute of Technology, Boston.

Mr. Kendall moved:

That the Board of Directors now proceed to nominate substitutes for such of its members as were to-day elected and who may be unable to serve, and that such nominees be substituted in the order of nomination.

Motion carried.

The following gentlemen were nominated:

1. Alfred Stone,
2. Levi T. Scofield,
3. W. N. Poindexter,
4. J. W. Yost,
5. E. C. Cabot,
6. G. W. Rapp,
7. W. S. Wicks,
8. N. S. Patton,
9. W. G. Preston,
10. A. S. Bloor,
11. E. J. Nickerson.

The motion of Mr. Glenn Brown presented to the convention and referred to the Board of Directors was tabled.

The resolution related to new sections to be added to the by-laws after Section 1 in Article II.

Mr. Briggs moved:

"That the schedule of charges adopted by the American Institute of Architects and the Western Association of Architects in 1884 be reaffirmed by the American Institute of Architects and printed as an appendix to the constitution and by-laws, and also in the form of a circular with the words "minimum" prefixed before "charges." And if the circular be issued to non-members it shall be plainly marked in large red letters "ISSUED TO NON-MEMBERS OF THE INSTITUTE" printed diagonally across its face.

Adjourned. JOHN W. ROOT,
Secretary.

THE ASTRONOMICAL SOCIETY OF THE PACIFIC.

The object of the Society is to bring together in cordial cooperation the amateur and professional astronomers of the Pacific Coast. Three meetings a year are held in San Francisco at the rooms of the Society, 408 California street; and three meetings are held at the Lick Observatory, Mt. Hamilton, where an opportunity is afforded to the members to see and use the instruments at the Observatory. The yearly dues are five dollars. There is no initiation fee. Any person who takes an interest in astronomy is eligible for membership. Communications addressed to 408 California street will receive attention.

TECHNICAL SOCIETY OF THE PACIFIC COAST.

The Technical Society of the Pacific Coast has for its object the professional improvement of its members, the encouragement of social intercourse among men of practical science, and the establishment of a central point of reference and union for its members. All persons who are engaged professionally in the practical application of science are eligible for admission into the Society. Application for admission must be endorsed by three members of the Society. The entrance fee is five dollars, and yearly dues are twelve dollars for resident members, and six dollars for non-resident members. The meetings are held monthly at the rooms of the Society, 408 California street, where all communications should be addressed.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

This Association holds monthly meetings on the second Friday of each month at their rooms, 408 California street. Fellow membership is confined to architects in the regular practice of the profession, who have been established in business not less than one year previous to their application for membership. The objects of the society are to unite in fellowship the architects of the Pacific Coast, promote and sustain their professional standing and dignity, and increase the artistic, scientific and practical proficiencies of the profession.

The Initiation fee is six dollars and the yearly dues six dollars.

BILL TO REGULATE THE PRACTICE OF ARCHITECTURE IN THE STATE OF NEW YORK.

SECTION 1. No person shall practice architecture in this State who shall not have attained the age of twenty-one years, and that hereafter no person shall pursue the business or profession of architecture in this State, except in accordance with the rules and regulations herein described.

SEC. 2. There shall be established and created in and for the State of New York a board of architects, constituted as follows: One member from the faculty of Columbia College, one from the faculty of Cornell University, two from the Western New York State Association of Architects, and two from the New York Chapter of the American Institute of Architects.

Within sixty days after the passage of this act, the presidents and secretaries shall call meetings of the members of these associations, and at such meetings there shall be designated by ballot four from the Western New York State Association of Architects, and four from the New York Chapter of the American Institute of Architects, all reputable architects doing business within the said State of New York, each of whom shall have had not less than ten years' experience as a practical architect. Notice of such designation and the names of the parties so designated shall then be filed with the governor of the State of New York, and from the persons so designated and from the faculties of the colleges hereinbefore named, and within thirty days from the date of filing the names he shall appoint the members of the board of architects as hereinbefore provided. The members of the board appointed under this section shall hold office, for the term of one, two, three, four, five and six years, respectively, and until their successors shall have been duly appointed and qualified. The architectural societies hereinbefore mentioned shall hereafter designate three reputable registered architects doing business within the State of New York, from which number the governor shall fill the vacancy annually occurring. In case of death, resignation, or removal from the State of any member of the board before the expiration of his term of office, the remaining surviving members of the board shall fill the vacancy from the list of names last submitted, and the person so appointed shall be a member of the board for the remainder of the term of his predecessor.

SEC. 3. Manner of organization, etc.

SEC. 4. Time of meetings—and the board to examine all persons applying for examination, and grant licenses to all persons entitled to same.

SEC. 5. No person shall practice the profession or pursue the business of an architect without a license from the board of architects. Any person desiring to pursue such occupation shall apply to the board for license, and thereupon the board at some regular or special meeting shall proceed to examine the applicant as to his qualifications, with special reference to the construction of buildings, strength of materials, laws of sanitation as applied to buildings, and the ability of the applicant to make practical application of such knowledge in the ordinary professional work of an architect. If such examination is satisfactory to a majority of the board, a license shall be issued to the applicant under the seal of the board, authorizing him to practice the profession of architecture within the limits of this State. All licenses to architects shall be recorded in a book provided for the purpose by the clerk of the county in which the applicant resides.

All persons who shall be at the date of the passage of this act engaged in the practice of the profession in this State, shall be entitled to a license without examination on the payment of a fee of $5.

SEC. 6. All licenses shall be subject to revocation by the board. * * * * * No license shall be revoked except by the unanimous vote of all the members.

SEC. 7. If any person shall pursue the business or occupation of architecture in this State, or shall advertise or put out any sign, advertisement or cards designating himself as an architect, without first obtaining a license therefor in accordance with the provisions of this act, he shall be deemed guilty of a misdemeanor, and upon conviction, he shall be fined not less than $100 nor more than $500. No person shall be entitled to a license as an architect who is directly or indirectly concerned in any contract for work or materials in connection with the building business, but nothing herein contained shall be construed to prevent any person in this State from planning or supervising the erection of his own building, nor shall the provisions of this act apply to architects from other States who may desire to compete for some special building, public or private, and who may visit the State in person for such special purpose, nor shall it apply to students or employés of licensed architects within this State acting for and by the authority of such licensed architects.

SEC. 8. Fee for such license shall be $20. * * * All expenses of board to be reported to the Governor of the State.

The above is a copy of the bill which some of the architects of New York State are desirous should become a law. We publish it and leave the matter for our architects to discuss.—ED.

HE KNEW IT ALL.

The builders tell a rather interesting story of a Buffalo capitalist who was pretty summarily taken down for trying to set himself up as the end of all things in whatever he undertook. No matter what was on foot, if he went into it he must have all the say and nobody else was allowed even a side remark. Not long ago he built a fine brick house. In this undertaking, as in all others, he was boss and all hands, dictating to builders, architects and all without the slightest hesitation. At last they grew very tired of the browbeating they had to stand and let him have his way whether it was right or wrong. The house was finished and shortly afterward the owner set about building furnace fires to test his heating apparatus, when behold, there wasn't a chimney in the house!—*Ex.*

THE RESPONSIBILITY OF ARCHITECTS.

THE committee of the Western Association of Architects at its last annual convention reported as follows on the liability of architects according to a number of decisions recently rendered:

"*First Case.*—An architect in this city had charge of the erection of a house for a widow. The contracts had been let to a carpenter in one. It provided the architect to be umpire, and payments were to be made on his certificate. Specifications provided a 'first-class job.' Through neglect of the architect, the work was carried out poorly, extremely poorly in many respects, so that the widow refused to pay the final certificate. The case went into Court, and the judge decided that the widow was bound to pay the architect's certificate, just or unjust, and that if she had any case at all she might bring suit against the architect. So she did, and recovered $800, which was paid by the architect.

"*Second Case.*—A widow erected a mansion under the charge of an architect. She had difficulty in obtaining the plans. Her directions as to changes were not heeded, and she became frightened enough to consult a lawyer. A private superintendent was employed. The architect was notified in writing as to changes being required here and there, and as to work being carried out carelessly. The house was completed and every certificate was paid, since it would have been useless to contest the payment of any of them. There was no evidence as to fraud, though such there was undoubtedly committed. The widow then sued the architect and recovered judgment for $4,500, which remained final.

"*Third Case.*—A citizen erected a block of houses during the winter. The architect neglected to provide means for keeping out the frost, and allowed the mason to build dwarf walls upon the frozen ground. Through this the building became to a considerable extent damaged, and the owner brought suit. The first verdict obtained was $1,400 against the architect, who appealed and received, incidently so, as it would appear, an order for a new trial. The case was thereupon tried again in another Court, and verdict was obtained against the architect for $1,900. The case had been tried more effectively, and the facts brought to the understanding of the jury.

"In all these cases the specifications had a preamble in which the architect was declared to be, in so many words, sole arbiter. Doubtless there are many more similar cases on record.

"In case an architect should not thus expressly declare himself to be sole arbiter, he would not be excused, but held under the rule of established custom. If, however, an architect expressly declares that he is not arbiter, and had nothing to say and to rule, he could, of course, not be held liable. But would not his position be simply pitiable? No respectable architect would like to be under such predicament.

"Every architect should be fully aware that his profession is one that may entangle him in scores of liabilities, and he should prepare himself accordingly. He 'professes' to know, and ought to know. He stands on the same legal ground with every other professional practitioner, with this difference: that his malpractice is far more clearly and positively established than is the case in any other profession. The preacher has nothing to fear on this score. Little more has the land agent. Slightly more still the doctor and the lawyer, but nearest to the architect comes the operating surgeon. Many law-suits have established the certainty of severe consequences to the course of the surgical operator upon human bodies when he commits a blunder or even an error.

"There is nothing more certain than that in all cases the architect is legally and pecuniarily liable for every blunder by him committed, or under him, through the agency of any of his employes. The responsibility on this account is far-reaching, and surpasses that existing with any other profession."

Our space does not permit us to quote further from this valuable report, so full of hints to the careless. The inference to be gained is, that the cautious, prudent architect will so word his certificates that he will not take *all* the responsibility, but he may express it "as his opinion" or "in his judgment" the work has been done according to contract.

Subscribe for the CALIFORNIA ARCHITECT, $2.00 per year.

NOTES AND COMMENTS.

A handsome model of the grizzly bear "*Monarch*" adorns our editorial table. The cast was presented by sculptor R. Schmid, and represents the great animal crouching with one paw on a shield bearing the Coat of Arms of the State of California. The modeling is excellent, full of life and a credit to its author.

The nine-story *Chronicle* building is now nearing completion. As the *Chronicle's* great rival, the *Examiner* seeks to "double discount" any enterprise exhibited by its contemporaries, *it* now makes the announcement that it intends to erect a building. It is safe to say that the *Examiner* will do what it says; and the new structure will astonish the natives—will be a veritable "monarch" among our buildings.

Senator Fair it is reported intends to spend $200,000 in adding two or three stories to the Lick House. A Chicago architect has been consulted, though work on the building will not be commenced before next spring.

Read our list of books for sale and notice that a subscription to this journal for one year will entitle you to a rebate on purchase price of a book if sent direct to this office.

Draughtsmen out of employment will do well to leave their address at this office.

It is reported that the obelisk in Central Park, New York City, is in danger of being seriously injured by disintegration. It has been scaling off ever since it was brought to this country, and there is great danger that within a few years the hieroglyphics will be entirely obliterated. The obelisk was coated with paraffine a few years ago, but the remedy did not prove effective. The Park Board will make another effort to preserve this monument, and in order to ascertain what is best to be done, have appointed a committee of professors to examine the stone and report as soon as possible, as to its condition with particular reference to its preservation.

The stone is a native of a climate of an equable temperature, and evidently its health can not stand the shock of repeated changes from intense heat in summer to equally great cold in winter. We would recommend that the obelisk continue its journey westward and take up permanent quarters in Golden Gate Park where it would, we have no doubt, receive a cordial welcome from the monuments to other celebrities, which have long enjoyed the mildness of our glorious climate with never a complaint about the night air.—Ed.

The profession has heretofore had so little political significance that it has been hard to enlist our daily press in any measure of professional interest. In fact, the tendency has been to ignore the architect—"*Building.*" [To a certain extent this has been true, but we note a change in public sentiment in this direction.—Ed.]

In medicine and law both, the public is protected—the one profession involving life, the other property, while in architecture, involving both life and property no legal restriction is imposed and any ignorant trickster may open an office and victimize the public.—"*Building.*"

The question of licensing architects so as to have a check on gross inefficiency is a wise step, but how incomplete a step it is without throwing a like protection about the enlightened competent mechanic and contractor.—"*Building.*"

Advertisements on buildings should be taxed in the ratio of their obtrusiveness. A constituted authority should be appointed, to whom individuals feeling aggrieved could refer any act of vandalism upon artistic propriety or educated public taste.—*English Exchange.*

While such restrictions might be tolerated in England, we very much fear no such sweeping regulations could be put in force in this country, though occasionally we have known an owner to appreciate the architects case in producing a handsome edifice, by restricting the size and location of his tenant's signs.—Ed.]

Mr. Charles Follen McKim, senior member of the firm of McKim, Mead & White of New York has put $20,000 into the hands of Professor Ware of the Architectural Department of Columbia University to be used by the trustees as a perpetual maintenance of a traveling scholarship or fellowship to that university. With the traveling scholarship already founded through Mr. Schermerhorn and the McKim benefaction, Columbia University will be by far the best endowed in the Architectural Department of any school in the country. Some day California will be heard from through her generous benefactors, but the thought has not quite ripened yet.

The panorama of the Battle of Gettysburg painted by E. J. Austen, and several European artists, now on exhibition at Tenth and Market Streets, is a remarkably vivid representation of an exciting battle; the subject chosen for representation is of great interest to all Americans, and has been handled in a truly masterly manner.

The project to change the grade of Market Street from Valencia to Fifteenth Street, which it was proposed some time ago has been revived and brought before the public again, by an application to the Board of Supervisors. It is proposed to lower the grade at the highest point, twenty-six feet (from sixty feet to seventy-five feet) and by raising the grade in the low portion beyond the cut, to make an easy ascent and by this means induce the business of the street to extend itself along Market instead of branching off up Valencia Street.

In the appeal case of Robert Barton vs. Contractor McDonald for damages for personal injuries caused by falling into an unguarded hole on East street, the Supreme Court has affirmed the decision of the lower Court in favor of plaintiff Barton.

The decision holds that when the condition of a public street is made dangerous by a contractor in repairing the same, he shall erect and maintain around the dangerous spots a good and substantial barrier, and for failure to do so he is guilty of negligence.

The *American Architect* makes the following sensible suggestion to architects: "Of course in regard to many building matters it is necessary to follow the advice and direction of ladies, but keeping in mind feminine amiability, which may at a moment's notice forget all promises, directions, etc., the prudent architect will provide himself with memoranda in the good wife's handwriting, that he may have recourse to it if necessary to establish his claim."

The cause of the above advice grows out of a suit by Architect Manly N. Cutter against Mr. Morris, a gentleman of wealth in New York City. The case may be summed up like this. Mr. Morris engaged Mr. Cutter to build an extension to his house—a room in which a person addicted to snoring could sleep without disturbing the whole house. Mr. Morris then went to Florida and expected to find on his return the work completed for five thousand dollars.

What was his astonishment on his return to find the change had already cost twelve thousand dollars and that fifteen thousand more would be required to finish according to the designs suggested by his wife during his absence.

Mr. Morris sued the architect for sixteen thousand dollars' damages—but the suit was thrown out of court, and Mr. Cutter's suit on his bill was entertained though it took years to get judgment. Mr. Morris, like other rich men, took advantage of his wealth and had the case carried to the Court of Appeals, which has just ordered a new trial.

OUR ILLUSTRATIONS.

Plates No. 1, 2 and 3 show the plans and elevation of a small residence intended for a corner lot—Huerne & Everett, architects.

Double plate No. 4 a residence designed by H. T. Bestor, architect, to be erected at the Sandwich Islands. Wide verandas and projecting cornices shade the building and protect it from the heat of the tropical sun. A feature which might be oftener employed here to advantage, where space is obtainable, is the location of the kitchen and its appurtenances in a separate building.

Plate No. 5 shows the main entrance to Cooper Medical College, corner of Sacramento and Webster Streets in this city, of which Messrs. Wright & Sanders are the architects. It is the first of a series of views we propose to publish from time to time, of the entrances to some of our public and private buildings.

SCHOOL-ROOM SPACE.

Mr. Courthope Bowen, an Englishman whose opinions on the proper size and arrangement of school rooms are received with great respect in his own country, recently made the following statement as to what, in his judgment, might be regarded as a fairly good schoolroom: Taking, for instance, a room 14 feet high, fairly ventilated and always well aired at recess, two-thirds of the floor space should be assigned to the scholars and their desks and the other third should be kept for the teacher, blackboards, etc. With single desks, 22 inches should be allowed from side to side, and 3 feet from back to front for each scholar. The passages need not be more than 18 inches for those running from back to front, and 1 foot for those running from side to side. In such arrangement, counting the passages, each scholar has (without reckoning the share of the space allotted to the teacher) a trifle more than 40 inches from side to side, and just 4 feet from back to front. In a room 25 feet by 20 feet the floor space for scholars' desks will be 16 feet by 20 feet, with 4 feet from back to front per row, and accommodation is provided for 20 scholars. The whole floor space is 500 square feet, and the cubic contents of the room 7,000 cubic feet, with 20 square feet and 280 cubic feet per person.—*Ex.*

CURRENT PUBLICATIONS.

American Architect, November 16th, contains: "Filtration at the Experimental Station in Lawrence," "The Sulphur Mines of Sicily," and "Columbus" (a pilgrimage to Palos) by Fred A. Ober. November 23rd, Convention Western Association Architect. November 30th, Cincinnati Exhibition, Report of Recent Conventions; Illustrations, Courthouse, Savannah, Ga., Wm. G. Preston, architect, Boston, Mass.

Building, November 16th, contains: "Notes on Estimating," David W. King; "Sir Christopher Wren and His Architecture," and illustrations of Madison Square Gardens, McKim, Mead & White, architects, New York; also design for Cathedral St. John the Divine, New York, J. Roth, architect. November 23rd, "The Electric Motor for Domestic Purposes," H. P. Prindle; "The Barye Exhibition," and design of Covered Well III mentioned in competition, New York Sketch Club. November 30th, Proceedings' Convention, A. I. A. Design for Iowa Soldiers' Monument, A. E. Davis, architect, Mott Haven, New York City.

Inland Architect, November, "Romanesque Architecture" (Baptisteries or Rural and Mortuary Chapels), "Steam Plant for Isolated Electric Light Plants." Illustrations, Monadnk Office Building, sixteen stories high, Burnham & Root, architects, Chicago.

Engineering and Building Record, November 16th, "Suspension of Hot Water Transmission Through Streets," "Pavement Specifications, "The Prall System," "Public Heating Schemes," "The Proposed Channel Bridge" illustrated. November 23rd, "Filtering Experiments by the Massachusetts State Board of Health." Nov. 30th, "How to Use Steam Expansively in Direct Acting Steam Pumps," J. F. Holloway before the A. S. of M. E. "Hot Water Heating," and full account of the convention of architects.

Journal of Proceedings, (R. I. B. A. organ) November 7th, contains: "The President's Address," Mr. Alfred Waterhouse, R. A.; a most valuable and complete discourse upon the architectural necessities of the present time, also "Angles and Terminal Features," F. T. Bagallay.

Painters' Magazine, November, "Relief Work in House Decorations," "Painting in this Country," "Ancient Process of Painting," "Decrative Treatment of Doors," "Wall and Ceiling Designs," "Modes of Mural Decoration," "Modern Methods in Decoration."

Sanitary News, November 16th, "Certain Provisions of Continental Legislation Concerning Food Adulteration," "The Amines Process of Sewerage Treatment," R. Godfrey; "The Responsibility of Architects." November 23rd, "Contamination of Drinking Water by Lead," Sinclair White, M. D.; "Licensing Architects." November 30th, "Kitchen Drainage in Philadelphia," "How to Have a House Built."

The Architects', Builders' and Hardware Journal of Atlanta, Ga., has made its first appearance, for December, edited by Thos. H. Morgan, and presenting a creditable showing for Southern enterprise in this its first number It contains three photo-litho. plates of prominent buildings; notably, the Confederate Veterans' Home, Atlanta, Ga., Bruce & Morgan, architects. It should receive the hearty support of the section it represents.

The Western Architect and Builder of Cincinnati, November, publishes a short illustrated article on "Tenement Reform."

National Builder Chicago, November, "Mortars and Concretes of Antiquity and Modern Times," Adolph Cluss, architect; "The Art of Drawing."

The Journal of Building, Pittsburg, Pa., has appeared in its initial number. We wish it success. It is published semi-monthly; price until February 1, 1890 being $1.00 per annum, regular price $2.00.

Brickmaker, November 15th, "Petroleum as a Fuel."

American Engineer, November 20th, "Marine Engineering upon the Mississippi," "Dr. Joule, the Discoverer of Mechanical Equivalent of Heat."

Ye American Builder, December, "Classification of Joints," "Masonry," "Hip and Valley Roofs," "Stairs of a County House," "Strains in Trusses."

Northwestern Architect, November, is devoted wholly to the Consolidated Convention except an article entitled "Evaporation of Water in Traps," Glenn Brown; illustrations: Apartment House, Minneapolis by G. W. and F. D. Orff, architects.

Canadian Architect for November contains: "The Relation of an Architect towards Contractors," G. F. Stalker.

Architectural Era, November, "Canterbury Catheidral," "Byzantine Architecture." Illustrations: The Schermerhoen, H. J. Hardenberg, architect.

Western Architect, Denver, November, "Development of Form as an Expression of Beauty, Shown in Traditional Types and Styles of Construction and Decoration," "The Manufacture of Brick." Illustrations: Design for Cathedral, Salt Lake, M. D. Kern, architect.

Fire and Water, November 16th, Description, illustrated, of the Madison (Wis.) Water Works. November 23rd, "To Reduce the Fire Loss in Manufactories."

Clay Worker, November, "What Clay Has Done for History," "Brick Making and Burning."

American Machinist, November 21st, "Force, Motion and Work," "Practical Drawing," J. G. A. Meyers.

The Mechanical News, November 15th, "Electricity in the Engine Room," James F. Hobart.

Scientific American, December, designs and description of the New Bourse, Paris, M. Berteault, architect.

House Painter and Decorator, November, "The History of House Painting," "The Suggestive in Decorative Art."

Northwestern Mechanic, November, "Vibration in Buildings," "Petroleum as Fuel," "Electricy in the Engine Room."

The Builder and Woodworker, December, "Door Frames."

HAS OUR ARCHITECTURE A NAME?

No building ever produced would have been pure architecture in the eyes of any preceding age. Whatever in it was novelty would have been regarded as an innovation and in bad taste.

The complaint that when we vary from historic precedent we will have no suitable *name* for our architecture—will not be able to call it Doric or Romanesque or Saracenic, or by some other well-known name, is a complaint that means nothing. No style ever produced had any name until the title was given afterward.

Had anyone asked the architect of the Parthenon what style he was building in, or had anyone called upon Waynflete, as the Cathedral of Winchester rose above the ground, and asked him what style he was building it in, what would have been the answers? The work of neither one could be named by any historic title. So that if we are able at this time to say whether our designs are Romanesque, Syrian or Byzantine, it constitutes no reason why the design may not be good, but if it were exactly in imitation of the art of a thousand or two thousand years ago that would necessarily render it objectionable.

To attempt to make a building, erected for modern uses, in this country, look as though it had been built by the Greeks or Romans two thousand years ago is folly. A man who complains of a design because it uses *some* of the elements of Greek or Gothic, without using all of them, and because it uses some elements the Greek or Medieval architects did not use, might with equal propriety have condemned the design for the Parthenon because it was not a counterpart of the cave of Ben Hassan.

This is our lesson, that we shall do the best we can from all that we know. Be independent enough to use our knowledge of history and historic work, combined with whatever we can invent, beautifying each production to the limit of our ability, serving each purpose of the building as best we are able, and letting the name for our architecture be assigned by future generations.—*From a paper read by J. W. Yost, architect, before the Ohio Architects at Dayton.*

"Hints on House Building" by Robert Grimshaw.—A new book just published for the benefit of those who contemplate building dwelling houses. Almost everything is suggested that need be thought of for those who desire to know beforehand the kind of house they should build, how, and where to locate it. Read it and you will be told in a unique and pleasing manner how to build. Price 50 cents. Sold by Practical Publishing Co., 21 Park Row, New York.

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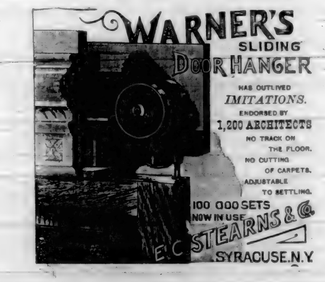

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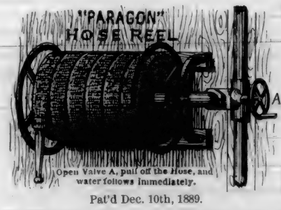

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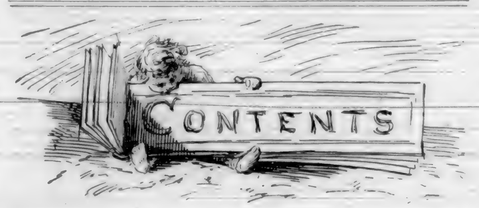

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

TECHNICAL SOCIETY, meets first Friday of each month at 408 California Street.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday evening, January 10th. The regular business of the Association was transacted.

Mr. Sanders, the teacher of the class in drawing, reported on the work done and progress made by his class during the year just past, and made an interesting exhibit of the work done by his pupils. The designs gotten up in competition for the prize offered by the Chapter, were shown, and received much well deserved commendation, for they gave evidence of careful study and were very neatly executed.

Mr. Sanders stated that arrangements had been finally made to establish the class in Mathematics, and gave notice to would-be students to meet Monday evening at his office to decide on the evening and hour of meetings.

WITH this number we begin our Eleventh Volume. After ten years of progress and improvement, we enter on the work of the coming months, determined to make the pages more interesting and the illustrations superior to whatever has gone before.

The outlook is promising. Work the past year has been plentiful and the prospects for a busy and prosperous year to come could not be better. With good crops for our farmers, plenty of work for mechanics and a generous patronage for the CALIFORNIA ARCHITECT AND BUILDING NEWS we, each and all, can enjoy the benefits of our honest labor.

The older cities and towns are making up to the requirements of the times, and many of them are asking for the more spacious modern public building. New towns are starting up all over the coast, peopled mostly with a cultivated and energetic class who have come to stay, if we may judge by the tasteful and home-like appearance of their villas and cottages, while active preparations are being made for a greatly increased number of this kind of improvements.

The large tracts of our best lands held under Mexican grants have in many instances been divided into farms, and sold to actual settlers, which necessitate commodious and modern farm buildings in place of those required for extensive cattle ranges.

The fact that all the Eastern lines of railroads must make this Coast the outlet for their trade, will have an important influence on the permanence, capacity and convenience of the business structures that may hereafter be erected; already the ground is broken for several, and others will follow in the early spring.

The people have come to the conclusion that better facilities must be furnished for pure water supply, and for protection against fires, and many large blocks of capital are finding their way into such enterprises which will require suitable buildings, and engineering works.

Many new projects and industries are coming to the front,

many of the older ones are being extended or improved upon, and almost without exception the buildings and plants hereafter erected must be of the most modern type. To these structures, together with residences and buildings, a large share of the attention of the Architect can be profitably directed.

The indications for a period of general prosperity have given an impetus to the various industries furnishing materials; new brick-making establishments have entered the field and the older ones have extended their facilities. Improved fire-proof constructive tiles and terra-cotta are obtainable. Our granite quarries can now supply any color, stone from black to white (including mottled, red, and gray) and any size up to 25 or 30 feet. Many new marble quarries have recently been opened, and marble from jet black to spotless white can be supplied of large sizes. The available sand stones running through all the various shades of red, blue, yellow and nearly white, and slate from native quarries are now obtainable in the market.

The great forests of redwood, pine, fir, cypress, cedar and many of the ornamental woods are being worked into practical shape for the market with an increased energy. The great natural asphaltum mines in the Southern section of the State are being worked by more powerful companies, the natural oil wells are receiving their share of attention, and the recent strikes of natural gas in various localities, having taken the "croakers" by surprise, the possibilities being beyond computation, prosperity seems reasonably assured, and the prospect opens up a wide field for technical knowledge and artistic design which can be used advantageously for the public good, and in our next December number we hope to chronicle the fulfilment of these splendid promises.

One word more, it is hoped that the architects throughout the Pacific Coast will take a personal and individual interest in the success of this journal; encourage it by practical suggestions and contributions, and bear in mind that its columns are always open for the discussion of subjects of interest to the profession, or tending to the advancement of its standing and influence.

We publish in this number, the paper read before the December meeting of the San Francisco Chapter of the American Institute of Architects, by Mr. K. Shimoda, a member of the Japanese Institute of Architects, and of the Penitentiary Association of Japan.

The paper was illustrated with many photographs of Japanese scenery and colored drawings of carving and decorative design, which unfortunately cannot be properly reproduced in the space at our disposal.

Mr. Shimoda described in an interesting manner, the construction of a Japanese hut and a Japanese palace of thirty centuries ago, and thence traced step by step the improvements that have resulted in the typical Japanese architecture of the present time.

Though Mr. Shimoda very modestly disclaimed, in quaint expressions, any wisdom of his own, he strenuously insisted that his countrymen should have the credit of producing an entirely original style of architecture, the result of the evolution of ideas not borrowed, but entirely distinct from the works of any other nation.

Mr. Shimoda is now studying the methods of this country, previous to visiting other nations still more distant from his native land, and learning the uses and relative importance of the methods of construction, and the ever increasing number and variety of materials employed in the erection of our buildings; the object in view being the instruction of his countrymen in the manner and customs of the outside world. He proposes to make something of a stay in this city, and to become better acquainted with our language and habits, when he will visit the art centers of the world to continue his observations and studies. We bespeak for Mr. Shimoda friendly greeting and assistance from the profession wherever he may stop on his tour.

We notice the formation of the Golden Gate Improvement Club, composed of property owners north of Golden Gate park and westerly from Scott street to the ocean beach. We would suggest that a strip of land, at least the width of Fulton or D street, be taken along the full length of the northerly side of the park, making the street double width for the whole distance; that a first-class sidewalk twenty or twenty-five feet in width be constructed on the park side of the street, thus forming a wide promenade three miles in length; the ocean breezes coming through the park furnishing pure air in such abundance as to place beyond comparison with that of any other city.

As a matter of convenience for the public, no one particular car line should have a monopoly, but, with such increased width all the main lines centering on that side of the park should have the right of way along the whole length, so that visitors may alight at any desired point.

While the cause, effect and results of the late Boston fire are being investigated for the purpose of fixing the origin, loss and, if possible, teaching us safer modes of constructions, it may not be out of place to make a few statements as gleaned from our exchanges.

The *cause* appears to have been from the falling of an electric light wire upon a wire used for transmitting electric-clock signals and with which the building first destroyed was amply supplied. That seems to have been the cause of the fire, the effect we know, and the result of the investigation, if fastened upon the companies interested, is an important one. In twenty minutes from the sounding of the first alarm, the building first attacked by the fire, six stories in height and built of granite, brick and iron, was a mass of smoldering ruins in its own basement.

If as a *result* of this latest conflagration, *anything* shall have been taught us regarding the proper construction of buildings or the best means to stay the progress of a great fire—to say nothing of the *cause*—we may be truly thankful for the lesson. In any city where there are narrow streets—high buildings with immense, unprotected plate-glass windows—telephone and electric wires placed without proper inspection—and a water supply that loses its power as an extinguisher at the third story, we may rest assured that the necessary elements of a conflagration are only waiting for a *cause*.

The latest information of an electric-light wire fire, comes to us under date of 8th inst. from St. Louis, when the Western Union office was burned out. *Cause:* (we quote from the dispatches)

A network of wires led into the building by way of the roof. The storm of yesterday loaded these down with a heavy coating of ice, and yesterday and last night many breaks occurred. This morning a wire leading to the basement came in contact with a broken electric-light wire, at once setting the building on fire. *Result*: Many narrow escapes from death, and the building destroyed.

That we legally allow the *cause* for fires to be over our heads, in our houses, and under our feet, is a matter that must sooner or later provoke action as to the responsibility of these companies, who are jeopardizing our lives and property.

Referring to the foregoing we present a condensation of the law of July 27, 1859, governing the height of buildings in Paris.

CONDENSATION OF THE LAW OF JULY 27, 1859, REGULATING THE HEIGHT OF BUILDINGS IN PARIS.

The height of buildings fronting on public street is determined by the legal width of such streets and is measured at the centre of the building, beginning at the sidewalk level and including all entablatures, attics and other features built on the line of the front wall.

This height may not exceed 11.70m. [38.37 ft.] on streets less than 7.80m. [25.58 ft.] wide.

14.60m. [47.88 ft.] on streets between 7.80m. and 9.75m. [25.58 ft. and 31.98 ft.] in width.

17.55m. [57.56 ft.] on streets 9.75m. [25.58 ft.] wide and over.

On streets 20m. [65.60 ft.] wide and over. the height may be carried to 20m. [65.60 ft.] but in no case shall the building contain more than six stories including the entresol.

The height of the ridge above the cornice shall not exceed half the depth of the building, including the cornice projection.

The profile of the roof on the street side shall not pass beyond a line running at 45° from the outside of the cornice.

On boulevards, quais, public squares and streets not less than 15m. [49.20 ft.] in width, and also in interior courts this line of 45° may be replaced with an arc having a radius not greater than half the depth of the building, but the projection of the cornice shall not fall within this arc.

Chimneys shall not penetrate the roof at less than 1.50m. [4.89 ft.] from the line of face nor rise more than .60m. [1.96 ft.] above the ridge.

The front wall of Dormer's shall be at least .30m. [.98 ft.] back of the face of main wall, and the entire structure of the dormer should not rise more than 3m. [9.84 ft.] above the base of the roof. Their width shall not exceed 1.50m. [4.92 ft.] The walls of dormers must be parallel with one another and the distance between them must be at least 1.50m. [4.92] whatever the width of the dormers may be. A second range of dormers may be employed if kept within the prescribed profile.

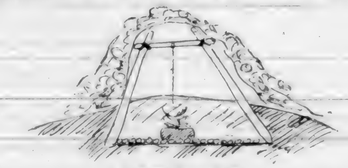
The minimum height of a story shall be 2.60m. [8.52 ft.].

The projection of a cornice shall not exceed the thickness of the wall at its summit.

We are pleased to second the suggestion of the *Inland* that the first work to be accomplished by the Consolidated Convention of Architects, shall be toward the establishment of a legal status for architects—in fact, we have in the columns of this journal already mentioned the matter. To bring about this result there must be action—harmonious, united, and *followed* to a conclusion. This must come from the profession itself, and there should be no wasting of words, or personal bickerings over the subject. It is a fact not generally considered—and not to be wondered at—that the standing of an architect in this country—professionally speaking—has not been determined.

It is true, that "by their works ye shall know them"—but the same may be quoted concerning the lawyer and physician, who are, by our laws, legalized, and have thereby a social and a professional standing in the community. We commend this subject to our leading architects that preliminary action may be taken at once.

AN OUTLINE OF JAPANESE ARCHITECTURE.*



An Early Japanese Hut.

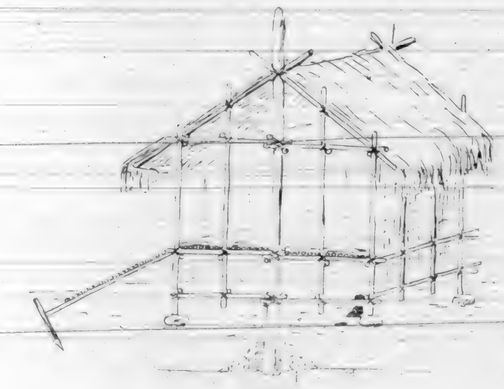
Gentlemen:—I am very much pleased to come face to face with you, here, as an honorary member of the most celebrated Institute in this civilized nation, by the most obliging introduction of Mr. Sanders, although I am a young architect from Japan.

Since I am a member of the Japanese Institute of Architects and also of the Penitentiary Association of Japan, I have engaged to report every interesting note, and every advantageous method, to our membership. Although, I am one of the scientists of Japan, here, I am simply a young boy; now, if I explain any scientific theory before you, it would be just the same as to lecture "gravitation law" before Sir Isaac Newton; and if I report some practical result to you, it would be just the same as if a child should advise its parents not to fall into the ditch. Then there is nothing to speak before you about the facts in the civilized world; but fortunately, I have one subject, "The outline of Japanese Architecture in the past and the present," which is not yet well known to other civilized nations; and although it may interest, it will not increase your scientific or artistic ideas directly; however, I think, in some cases it will be a good thing for architects to know all about the physical phenomena and building styles of every nation of the world. I am very sorry that I have had no higher education in writing and oratory, like the politicians and lawyers, and it will be difficult for you to understand my broken English, yet, if you please, I hope you will excuse me if I speak a few words more. From the science of astronomy we know of the Nebular theory, which theory treats of the special elements of the heavenly bodies, or present universe, after variation took place. The earth is said to have been spilt out as a small portion from the central and main nebular mass, and revolves around that mass by regular attraction without change; and the constitution of the earth is composed of sixty-eight or commonly sixty-three elements, as are all other planets, for their origin is the same. Those planets which were small in size when spilt out from the main nebular mass, are said to be solidified more easily than large masses; and the formation of the stone and iron periods and even the sulphuric acid and coal periods, through which the earth has passed, might be supposed to be the same in other planets, but there never has been any communication from them to the earth, except broken meteors, which suspended in the atmosphere of the earth, being cast from other planets when the earth moves through the fixed path and across between several planets in June, July, August and September, especially when it comes to the atmosphere of the earth, is great velocity and friction produced and it is heated and falls down upon the ground as a ball of fire. Although we may analyze and examine the meteor, chemically or physically, we are unable to know the social condition of other planets, and of course we cannot judge of its social customs and building styles, since the meteor is not news or a record of the social degree of the other planets. In the next step, the science of geology tells us about the formation and life of the small and hard earth, which has been solidified from a liquid state, at a great depth from the surface of the earth, and after many millions of years have elapsed, we are now of a moderate size and active human kind not so fat nor slender, and quite different from all other animals in all respects; but I cannot tell you how the inhabitants of the other planets, of the same origin, are formed. Surely, an opportunity to communicate the same has not been granted except theoretically, as I said before; then all the artificial works of the earth, such as buildings, must have been originated by human kind of the earth without any aid from others. Well, about the view of the new science of anthropology, Prof. Agassiz expressed the doctrine of polygency, or the assertion that there are eight centers of human tribes on the earth; but Mr. Darwin advanced the theory of only one center, or one origin on the earth; those who believe in monogency or the essential specific unity of the human species, have long warred with each other without satisfactory results. As you know, many authors investigated eagerly the skin, hair, eyes, voice, trunk, extremities, skull, stature, proportion, weight and strength, after collecting and classifying several kinds of fossils and ancient tools for working, from every part of the world; I prefer the former, or the theory of polygency, as a more scientific theory than the latter, by the aid of architecture and archæology. I am sure it is not difficult to theorize and judge from the imperishable relics of the stone period, which we obtain from the ground, but ages before history or even tradition began, it can be shown that man lived on the earth; and human remains are found associated with the fossil relics of animals now extinct and belonging to a period of probably 50,000 or 100,000 years ago. Sir John Lubbock, our greatest authority on the subject of anthropology, thinks man existed during the Miocene period; and the other day it was reported that bones taken from the undisturbed caves in Miocene rocks on the Mediterranean coast, had carved on them figures of prehistoric animals.

*A paper read before the San Francisco Chapter of the American Institute of Architects, December, 1889 by Mr. K. Shimoda, member of the the Japanese Institute of Architects and of the Penitentiary Association of Japan.

The earliest architecture of which we have any record, is that of Egypt. It is the best constructed and best preserved of all ancient styles, and it is very remarkable that the oldest specimens remaining are the most perfect. We have no means afforded us by which we can trace the origin and development of architecture, in the oldest cradle of the art, but we can well imagine that a long period must have elapsed before the mechanical skill was developed which the execution of these great works displays. The well known pyramids, which are situated near Memphis, in lower Egypt on the western banks of the Nile and close to the margin of the desert, are the oldest existing specimens of human architecture; but a telegraph engineer, who repaired the cable in the Atlantic ocean last year, reported many immense works of the stone period, discovered by him at a great depth; this will be explained reasonably as the origin of the Egyptian architecture.

Thus, we suppose that the earth has undergone many great changes since its formation, and we may consider Egyptian art to be a recent work, if we compare the stone period with the birth of the earth. In the twelfth century B. C., an essentially brilliant period in Egypt, there existed the first famous stone work, the pyramid of Ghezh. About that period, in Japan, the first work was done, a palace was built for the ancestor of the Emperor. Its construction is scarcely known. Thus, by collecting several kinds of records and pictures, at first it was necessary to dig the ground till they reached a large stone or rock stratum, and standing a large log upon this foundation, which they called "the heavenly column", and the bottom of the column was to be hardened with stone or gravel; all other smaller columns for compartments were built radiating towards the heavenly column and they were tied with a strong rope, without using any metallic fastenings, such as nails. Its floor consisted of a range of small logs and its roof was covered with branches and bark; it was a rule to make the floor very high, or about eight feet above the ground, but it was not for the purpose of avoiding moisture but it enabled them to look at the noble and



bright sun. They respected the sun as a heavenly superior, and consequently, they were pleased to attend constantly from morning until evening, a much longer time than the common people or cave dwellers did. In such circumstances the common people continued for a long time to live in caves, working in the daytime as hunters, fishers and agriculturists, and sleeping in caves at night. From about the sixth century, B. C., the palace building came to be advanced in its construction and appearance—metallic fastenings were used to combine timbers. Planks for floors were selected to be as thick and broad as possible. The roof was covered with bark and sawn boards of timber upon the framing of small timbers, and care was taken to build so as to resist the wind; even common people began to build a log hut within the caves, but gradually they *elevated* the *floor*, and at last they made the floor on the ground out of the caves.

In Japan there are many stone quarries, containing Plutonic and volcanic stone, together with many great tracts covered with wood fit for building purposes, tools, furniture, etc. However, the ancient Japanese could not have been strong enough to work at stone hewing, therefore there was no stone work like there was in ancient Egypt, although it is one of the oldest countries. All houses which were made of timber and bark, as bird nests, were always destroyed by violent storms and destructive earthquakes. I am sure that the first step of the Japanese architecture, as bird nests, was not introduced from other foreign countries, while after many years have passed, some parts of Indian and Chinese architecture are said to be imported. We can easily explain that the origin of Japanese architecture was independent, or in other words, the original Japanese tribe was not derived from that of China by anthropology, archæology, or architectural styles. But after several years had elapsed, social phenomena was introduced little by little; while the quality of the brain of the Japanese is just opposite to that of the Chinese. The Chinese are so slow that they do not think about improvement, while the Japanese are so active that they improve as quickly as possible; and not only their strength and voice, but their skull is much different in form and proportion. Consequently, though Japanese architecture resembles the Chinese, its origin is not the same, for Japanese architecture is original.

As you know, architecture is divided into two parts: one, being original architecture and the other copied architecture. The ancient Assyrian low-relief and bas-relief are put on very thick walls (15 or 16 feet thick) but not the same plane. This is considered to be an imitation of the Egyptian architecture; hence the style is called copied architecture, and among the low and bas-reliefs, rivers, trees, groups of prisoners, battles, the King in his chariot, etc., are the subjects of representation; but the material is different from that of the Egyptian architecture. Painting is just the same, and especially the King in his chariot is sculptured and painted both on the walls of Egypt and Assyria. As the fundamental rule of the art, we must not care to imitate the figures exactly or to resemble very justly its nature. The original Japanese pictures are said to be conventional representations, while the foreign pictures are naturalistic representations, and Egyptian pictures indicated roughly its condition and were conventional representations. At present, Japanese conventional pictures are approved by some foreign artists. In Japan, less than a century ago, there was no one who had any mathematical ideas or notion of mechanics. Again, even the ancient Egyptians built edifices triangular in form, which were assumed to be firmly fixed according to mechanical theory, while the edifices of Japan are always rectilineal and not in a state of equilibrium, as it changes to the form of a rhombus by wind pressure, and it inclines to the form of the letter M by the weight of snow. A triangular frame is stiff and diverges all of the pressure and weight to all directions, as that of an arch. In these points, we may say that Japanese architecture took a dark way far from all scientific and mechanical ideas, and a long period was spent, like bird architecture, without any favorable progress. In the year A. D. 720, they invented a kind of tile in order to protect the roof from wind. At the same time they discovered some materials from rock to paint timber, and they began to build stores to keep their precious goods, detached from their residences. In A. D. 794, there was a very strong and magnificent palace built at the capital Kyoto. At the next instance, a regulation was established to make many city improvements; then powerful persons and rich men built their houses newly and closely, but the number of great fires increased and

they were obliged to think about the preservation from fire, and they began to coat the reed or bamboo framed partition with slimy earth. In the beginning of the eighth century they invented plaster, which was composed of lime, sand, straw, weeds and water; and they used to coat two or three feet thick for the outside of stores and three or four inches for dwelling houses, as they thought this was the best material to resist fire. They conceived some faint idea of technic principles, but still there was no perfect building accomplished with the technic principles, æsthetic principle and phonetic adjuncts. They had no idea how to fulfill the union of all technic principles, such as mass, stability, durability, material, construction, warming, ventilation, lighting, proportion, form and ornament.

Architecture as a technic art, is practical in the same progressive principle, as all its sister arts. It is hardly as individual as music, because its forms and colors are permanent and capable of being repeated, with such improvements as each experiment suggests, in every subsequent building, but when it attempts the phonetic form of utterance, these are seldom so absolutely integral that they cannot be separated from the building and judge of a part. A Greek temple or a mediæval cathedral without painting and sculpture, may be poor and inanimate but still so

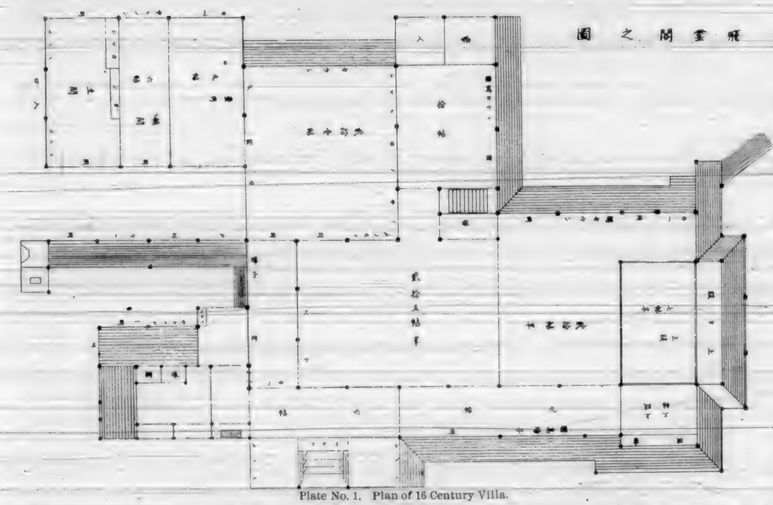


Plate No. 1. Plan of 16 Century Villa.

beautiful in its form, so grand in its mass and so imposing in its durability, that in its technic, æsthetic form alone, it may command our admiration, more perhaps than any other work of human hands except, of course, as said before, the highest intellectual form of phonetic art. In 1316 a very large edifice was built as a Public Library, to accomodate several hundred people. In 1397, a rich and powerful nobleman built a golden villa, finishing all parts with a thin gold coating. In 1587, a celebrated strong castle was built at Osaka, and it still remains there. In 1629, a great civil engineering work, or a long canal of about thirty miles, was constructed to convey pure water to the present capital, Tokio. This work gives a great happiness to the citizens, and some European engineers approve of it justly as a scientific idea. In 1650, a most splendid temple was built in Nickko. Its degree of painting and sculpture is so excellent that we cannot find such fine art in any other place; the building materials are said to have been sent from several parts of the country, and its construction appears to be extraordinarily complicated. Especially, the five-storied tower is considered to be constructed scientifically. It has a fine foundation, the large central post resting on a large granite stone mass and is balanced but not fixed rigidly. This is the most costly building in Japan. The number of gates and temples at Nickko is about twenty, and the annual number of visitors exceeds 100,000.

In 1790, a great building was erected as a seminary. In 1852, a massive and strong fortification was built in the Gulf of Tokio.

The Japanese took pleasure in building temples and churches, and in ornamenting them with painting and sculpture. Year by year they increase in number. At present the number of temples exceeds a third of a million, and there are about 72,000 churches. They appear to understand a great and noble want in human nature, "the love of beauty."

Generally, architectural style is influenced by many reasons, namely:

1st. By material.
2nd. By climate.
3rd. By natural character.
4th. By natural growth.
5th. By fashion.
6th. By conquest.
7th. By commerce, and
8th, or lastly, by alliance.

In 1860, as soon as the port of Yokohama, Japan, was unlocked for commerce with other civilized nations, bricks began to be manufactured—cement being imported. Stores and houses of brick became fashionable. So, suddenly, was architecture introduced and the port of Yokohama changed month by month to foreign styles, and at present about one-third of the buildings are of foreign styles. In 1868, the Emperor moved into the new castle at the present capital, Tokio, from the old capital, Kyoto. In 1873 there was a great fire in Tokio, and the castle was destroyed. Brick buildings were introduced in Tokio from Yokohama, and the central part of the Kyobashi district is occupied with foreign brick buildings; beside those, twenty private residences and seventy public buildings are built now.

As I told you, the progress of architecture was very slow until the Japanese began the business of commerce with the Americans and Europeans, who informed us of scientific theories and interesting practices, and at present every matter is going on at the full speed of progress. Thus, the length of railways exceeds 1,400 miles, the length of telegraph lines is about 70,000 miles; letters through the post office amount to 120,000,000; number of ships, above 500 tons, is 69; and a half ton of gold, 3 tons of silver, 1 ton of copper, 2 tons of iron, a quarter of a ton of lead and 1,000 tons of coal were obtained from the several mining districts; but the number of mining districts will increase from the influence of earthquakes, which cause physical and chemical communication between the elements by cracking the interior beds of the earth. The number of prisons was 195, and the number of prisoners 72,000; number of schools was 25,000, and the number of students was 3,000,000 last year.

There will be a summary description of Japanese architecture. Electrical and civil engineering works of America are already introduced in Japan but architectural designing, which gives a

great influence to social progress, has not yet been introduced, although some ornamental styles and constructions have been introduced from Europe, and building expenditure being too dear for Japanese and it is not yet in fashion; hence, I have an idea to introduce only the plan for room accommodations at first, which is a good way to teach formal manners, or civilized customs of living and to wash away the native habits. In Japan, two-thirds of the total number of inhabitants live very miserably in only one or two rooms, which are used as sitting, working, dining, sleeping and cooking rooms; and, moreover, the ceilings of the rooms are only 6 or 7 feet above the floor.

The plan of civilized living and business is the most important to introduce, because the architectural style of the rich American is very unsuitable for the poor people in Japan. (I should like to study some method of building to resist earthquakes, as they are very frequent in Japan.) My purpose is to obtain the best plan of civilized living and business. With this simple but important object, I am about to spend my young life in Europe and America, for five years or more. My object in thus addressing you is only my desire to get your good advice relating to the plan.

NOTES & COMMENTS.

A committee of the Brickmakers Convention held lately in Philadelphia, recommended that the standard size of a good, hard, common brick be $8\frac{1}{4}$x4x2$\frac{3}{4}$ inches; that the standard size of a pressed brick be $8\frac{3}{8}$x4$\frac{1}{8}$x2$\frac{3}{8}$ inches. The statement was made by one member and denied by another, that a hard, burnt brick would take up more water than a salmon brick. Which statement is correct?

As many persons, nowadays dabble more or less with outdoor photography, the following information has an especial interest at this time of the year, and may account for many failures and disappointments where a different result was expected. At Berlin, Bunsen found that the chemical power of light, from noon to evening, varied at different seasons of the year as follows, expressed in degrees:

	12-	1-	2-	3-	4-	5-	6-	7–8 hour.
June 20,	35–	38–	38–	37–	35–	35–	24–	14–6 degree.
Dec. 21,	20–	18–	15–	9–	0			"

This shows a weak, actinic action during the winter season.

Judging by the aptness of the following clipping from Bill Nye's weekly letter, he must have had the streets of San Francisco in mind,—he says:—

"Show me the nation that has asphaltum pavements and honored wives and mothers, and I will show you the nation that thinks and progresses; show me the people who try to do business over cobble stones and woo their wives in the tumult of a stone paved street and I will show you a people who cannot think unless they have a roll of cotton in each ear."

The recent great fire in Boston is believed to have been caused by the falling of an electric-light wire, which thus came in contact with a wire used in transmitting electric-clock signals. There exists in Massachusetts a special statute providing that railway companies shall pay all damages occasioned by fires kindled by sparks from their locomotives, and under this statute the Fitchburg Railroad Company has just been obliged to pay two hundred and fifty thousand dollars for loss and damages caused by a spark. *The American Architect and Building News* makes the sensible suggestion that the statute might be extended to make electric-light companies similarly responsible for damage caused by their wires.

The rotary steam plow lately tested in the presence of several prominent Southern Pacific officials, showed a highly satisfactory result, clearing a quarter of a mile of track near Truckee of a depth of sixteen feet of snow, in the space of forty minutes.

It is hoped this experience will do away with the necessity of maintaining the forty miles of snow sheds now protecting the track of the Central Pacific Railroad, where it crosses the summit of the Sierras. Although the existing sheds will be allowed to remain until destroyed by fire or become dangerous through old age, their ultimate removal will be a boon to the traveler who desires to enjoy the wonderful scenery of these mountains, now hidden from his view in so tantalizing a manner.

The sheds as they now exist were erected at an expense of two million dollars, contain sixty-five million feet of lumber, and have cost large sums for maintainance and repairs.

Edward Atkinson has a very interesting letter in the *American Architect* of Dec. 21st. on the Boston Fire, which is intended to enlighten the public mind on the matter of "slow burning" buildings. It had been intimated that the well-known Ames building in that city—the second to succumb to the fire—was of slow burning construction. This Mr. Atkinson denies and says it was not "any sort" of a slow burning building. He then proceeds to tell how he would erect a building under conditions like the Ames', making it a "slow" burner, and a safe-guard to the neighborhood.

Mr. Atkinson charges owners and occupants of new buildings with caring more for meretricious art than their own or the public safety. He says commercial buildings may be constructed consistently with the rules of safety—at as low a cost, if not lower, than the sums which have been expended in the construction of conspicuous examples of *combustible* architecture. "It is doubtless desirable that art should be a principal motive in architecture; but is not art misplaced when applied in such buildings as the Ames building under the conditions of the surrounding neighborhood; was not Hunt's genius misapplied when he put his pictures upon the unstable walls of the Capitol of Albany."

PERSONAL.

Mr. Seth Babson has removed his office from the Phelan Building to 408 California St., same location as the office of this journal.

Mr. A. C. Lutgens has removed his office from 121 Post St., to 935 Market St.

Mr. W. W. Goodrich late of Oakland has located in Atlanta, Ga. We notice his article in the *Architects', Builders' and Hardware Journal* upon "Sanitation."

ILLUSTRATIONS

Plate No. 1 shows the plan of a Japanese country villa of the sixteenth century and on Plate No. 2 will be found the elevation of this villa, and also the plan, elevation and section of a summer house in the style of a century later; they are to illustrate the paper on Japanese architecture by Mr. Shimoda. In our next number we will produce the drawings of a temple and the details of its construction.

Plates Nos. 3, 4, 5 and 6 illustrate very fully a handsome residence designed by Samuel Newsom, architect.

In our next number we will produce the drawings of a temple and the details of its construction.

木子清敬君報

飛雲閣之圖

Country Villa. (Time of 16th Century.)

Summer House.
Time of 17th Century

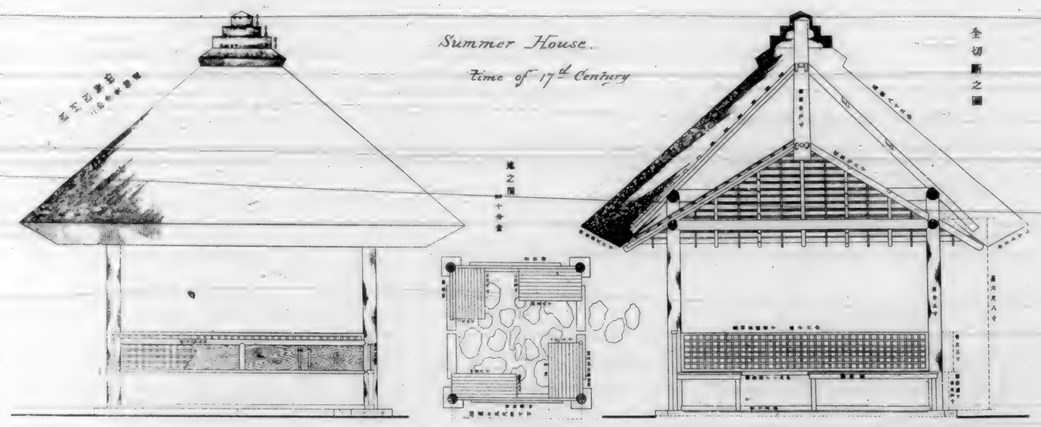
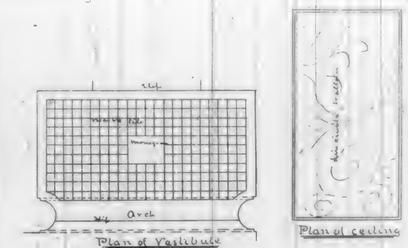
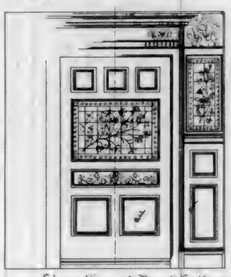
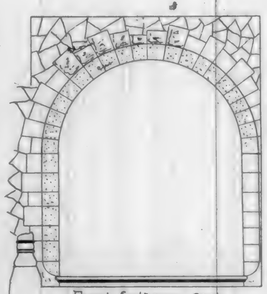


PLATE No 2







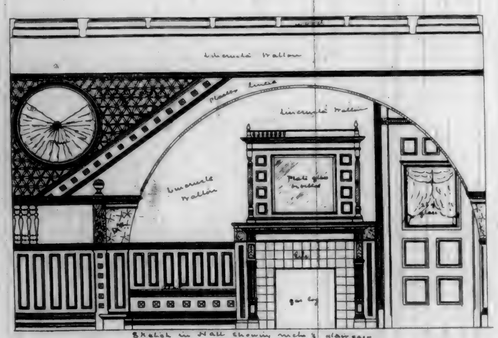
Scale ¾" to the foot

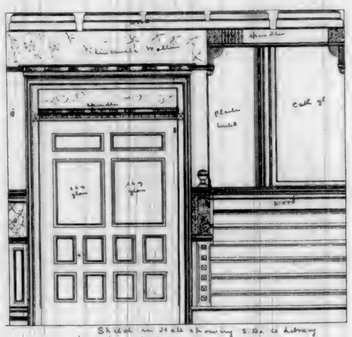
FRONT ELEVATION

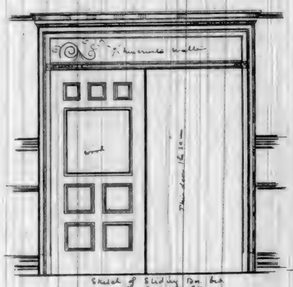
Scale, ½" to the foot

Samil Newsom
Architect
Rm 318 Phelan Blg
S. F. Cala

PLATE No 3.







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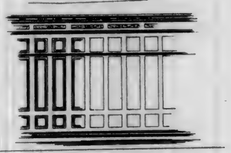
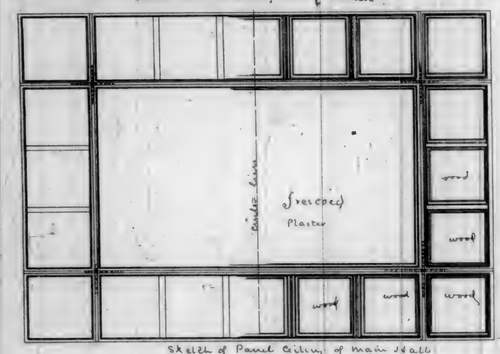
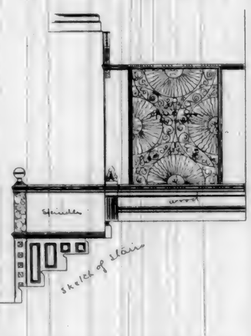
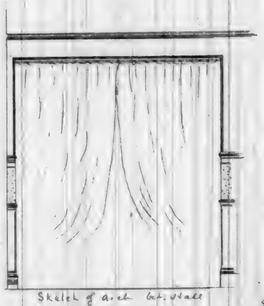
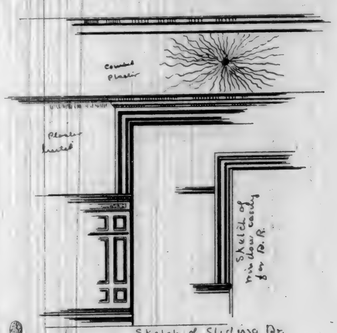
January 1890.

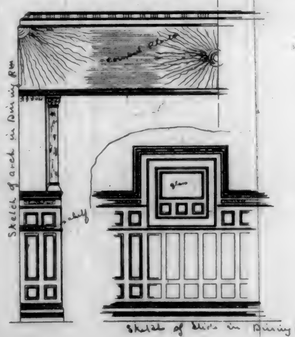


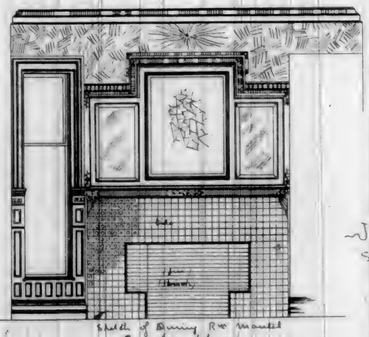


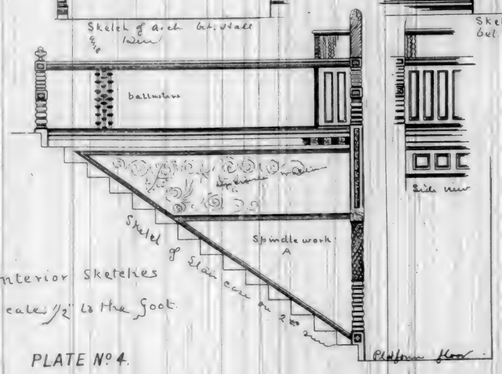










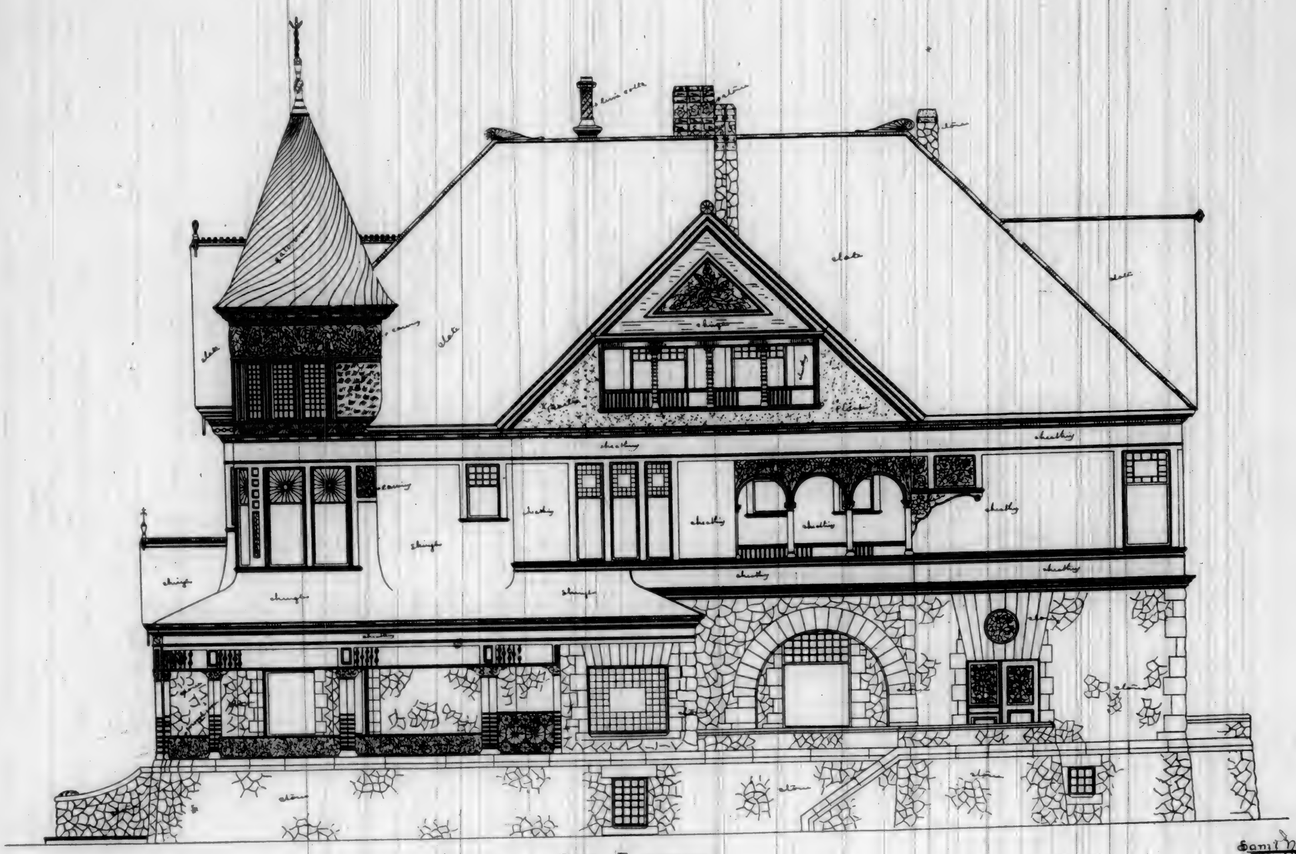


Interior Sketches
Scale ½" to the foot

Sketch of cove over main staircase

Samil Newsom
Architect
Rm 318 Phelan Blg
S. F. Cala

PLATE No 4.



SIDE ELEVATION

Scale: ¼" to the foot.

PLATE Nº 5.

Sam'l Newsom
Architect
Rm 318 Phelan Blg
S. F. Cala

MECHANICS' LIENS DECISION.

ARCHITECT VS. OWNER.

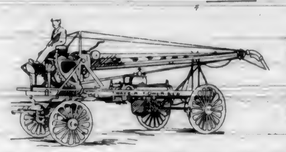
R. B. Young, an architect of Los Angeles, recently recovered judgment for services rendered in erecting a building for F. C. Howes of that city. After the completion of the building mechanics' liens were filed on the property and the owner considering the architect responsible for their payment refused to pay him a portion of his fees corresponding to the amount of the liens. In making the charge to the jury Judge Wade spoke as follows upon points interesting to architects:

The matter for you to consider in this connection is: First, what kind or class of a building was the plaintiff instructed by the defendant to prepare plans and specifications for. This you must determine from the evidence. Second, was the work as superintended and directed by the plaintiff done according to those plans and specifications when they were prepared. If they were not prepared as directed by defendant—that is, if the plans and specifications for the building were not for such a building as defendant wanted then plaintiff has been negligent or remiss in his duty. This would be a good defense to his action to recover the value of his services; and it also would support the defendant's first cause of action set out in the cross complaint, in so far as defendant was damaged by any failure of duty by plaintiff on that account. If, on the other hand, you find that plaintiff did prepare the plans and specifications for a building such as he was directed to prepare by defendant, of the class of building and kind of building that defendant wanted, but that in superintending the construction of it he was so careless and negligent as to suffer improper materials or improper workmanship to enter into the building, whereby it was damaged and rendered less valuable than it otherwise would have been if done according to the plans and specifications—in other words, if he failed to superintend and direct the construction of the building according to the plans and specifications, then that would be negligence on his part for which the defendant could recover the amount that defendant would be damaged by such failure.

The next thing for you to take into consideration is defendant's second cause of action, set out in his cross complaint. That is, that plaintiff undertook and agreed as a part of his employment as architect for the construction of the building on Main and Upper Main street, to prepare and file for record the two contracts or either of the contracts. Now, it is the primary duty of either the owner of the building or the party with whom he contracts as principal contractor, to file the contract, if in writing, and if the amount is over $1,000 it is required to be in writing, and it is the duty of either one, and of one as much as the other, to file this contract for record; that is, it is the duty of the owner of the building (in this case Mr. Howes) or the contractor (in this case Mr. Lane). It was the duty of either one or the other, and as much the duty of one as the other to file the instrument for record. The reason is this: That in the event of its not being filed for record it becomes void and neither party to the contract—that is, in this case, neither Howes or Lane could recover anything on the contract. Lane could not recover for the work done and material furnished by him from Howes; nor could Howes recover from Lane for any failure on his part to carry out the contract according to its terms and conditions. In order that it might have become the duty of the architect in this case to file this contract, it should appear from the evidence either that he expressly agreed with the defendant to file it for record, or that he promised under such circumstances to file the instrument for record, and that Mr. Howes relied upon him, and was unable under the circumstances to do so, or prevented by the plaintiff's undertaking that duty from doing it himself, or you would have to find from the evidence that that was a part of the necessary duty of the architect of the building to file a contract of this kind for record. There is absolutely no evidence upon the later point in this case—no evidence or any testimony tending to prove any such duty as being necessarily incumbent upon the architect by virtue of his calling. It is not sufficient for this purpose to prove merely that it was the custom or the habit of the plaintiff to file such contracts when they were left with him, unless you further find from the evidence that he had communicated a knowledge of that custom aud habit to the defendant in such a way as to induce the defendant to rely upon his doing it, and by such reliance being prevented from doing it himself.

If a contract of this kind is not filed for record, it becomes void as between the original contractor and the owner of the building and material-men—that is, men furnishing the material for the building and laborers and sub-contractors performing work on the building. The contract should be filed for record before the building is commenced or it is void. If this contract is not filed for record, the laborers and material-men and the sub-contractors may treat the owner precisely as though they had contracted originally with him, and hold the property liable to them for the whole amount of material furnished and the labor performed by them independent of the amount agreed upon in the contract, although it amounts in the aggregate to a great deal more than originally contracted for.

SAN FRANCISCO'S NEW WATER TOWER.



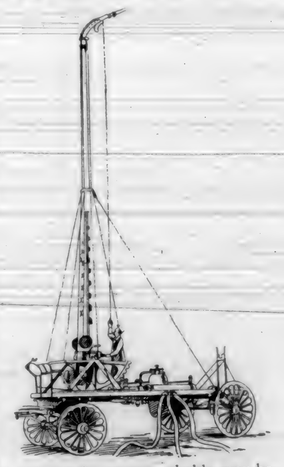
Few people who have read the demand of the Fire Department for a "water-tower" know what such a machine is, and its efficacy.

The Hale water-tower ordered by the Supervisors will cost $4,000 and will be ready for delivery in this city in ninety days, being the third machine built by the manufacturers.

It consists of a strong oak framework, mounted on wheels, carrying an iron frame with an extending telescopic tube, through which passes the hose conducting the water from the supply to and through the pipe to the top end or nozzle. The tube, which in the instance of the tower ordered for this city is fifty-five feet in elevation, is raised to the perpendicular by charging a small chemical engine which is a portion of the machinery. This engine has a lifting power of from 10,000 to 20,000 pounds.

On the end of the tower is a small turn-table, revolved by gearing, and attached to this are two wrought-iron arms which are connected with a nozzle two inches in diameter. The turn-table is operated by a cast steel rod running to the base of the tower, turned by a small wheel, and this directs the stream in any direction desired.

The raising of the tower is controlled by a wire cable and snubbing block in connection with the power used by the engine.



On both sides of the machine at the bottom are Siamese connections capable of being coupled to six hose lines, which, in their turn, are connected with the ordinary fire engines. The engines pump into the tower at the same time and the united stream issues from the nozzle at the top of the tower with tremendous force.

At a test at Detroit recently two engines supplied the water through four lines of hose at a pressure of 265 pounds, and the water was thrown from the nozzle a distance of 320 feet perpendicularly, or high enough to be thrown over the highest building in that city.

The benefits of the tower are many. A building heavily charged with smoke and utterly unapproachable may be flooded from across the street. It is useful in lumber-yard fires and will wet an area of 400 feet in diameter at one setting. It requires but two men to work it and may be used at such a distance from a fire as to be free from the danger of falling walls.—*S. F. Examiner*, January 2, 1890.

The recent destruction by fire of the Girls' High School is another evidence of the danger of so many large frame buildings crowded together in our large city.

PROFESSIONAL CONQUEST.*

There is a field for professional conquest in view. Its acquirement will be fraught with perplexities and difficulties. Its occupation is imperative, if the architecture of this country shall soon be up to a creditable standard of merit. The building enterprises of the country, so far as all work of a public character is concerned, are in the hands of, and directed by persons who have no special qualifications to determine either what should be built, or how it should be done. When a building is to be erected, instead of its being the custom to have it controlled by architects of the country, or by some persons skilled in building matters, it is usually put in the hands of a board or committee from which all architects are carefully excluded.

To introduce a different practice, and by this means make it possible to eliminate the faulty, systematize, harmonize and improve upon the meritorious in our public architecture, is a field for professional conquest. It is a field worthy of our best efforts to control. It can be gained only by sacrifices commensuate with the importance of the expected result.

Designs for buildings are secured either by competition or otherwise. For the present and likely for many years of the future, a considerable share of our public buildings will begin their career through competition of one kind or another. As now conducted competitions are not only not conducive to the highest achievement in the architectural sense, but are an incubus upon the profession. The excuse for keeping up the practice is two-fold: first, to give everybody a chance, to afford the younger members of the profession opportunities to measure arms with those of greater experience and reputation: second, to obtain for a given building the best possible design. As to the first, the profession will not object to a decrease in the number and an elevation of their standard. As to the second, conducted as they are, the object sought is not attained. The chance to select a better design than any given one obtained without competition, is lost by reason of the fact that the average commission which makes the selection is not qualified to determine which design should be selected. I speak, of course, of the great number of competitors which constitute the rule, not of the few exceptions where experts are called in and designs submitted under a nom-de-plume. I think it is fair to say, as a rule, that if the best design in a given lot submitted be adopted, it is an accident rather than a likelihood. The buildings for which designs are obtained by giving commissions direct, to a certain extent escape objectionable results of competitions inasmuch as there is usually free and full interchange of thought between the architect and those in charge, and by means of this, the architect has a more favorable opportunity to control the whole character of the enterprise than where its general outlines have been made up as a target for the competing designers to shoot at.

The whole system of placing the management and direction of our buildings in the hands of persons who possess no special qualifications for it, whether they obtain designs by competition or otherwise, is a mistake. It is a wrong against the public itself, which we are professionally bound to right as soon as we can reach the ear of those who control such matters. The average board or commission is made up of intelligent men in other lines of vocation, and if called upon to decide anything in relation to their own business could do so with a fair prospect of having it properly and correctly done. But when a plan for a building comes before them, no one of an average board can tell whether a building erected after the plan would please him or whether it ought to please him. No one of them could tell whether it is probably the best thing which can be done or not, —and no one could tell, if it was the price of his eternal salvation, whether a building erected after the plans under examination, would stand up or fall down. To say that this is ridiculous is to characterize it in terms entirely too mild. What commission anywhere without legal talent would undertake to decide a question of law? What board without obtaining a physician would be willing to decide a question of medical jurisprudence? What commission without a musician, would undertake to decide whether a piece of music had been rendered perfectly or not?

What man anywhere would be willing to either give or accept such authority, and with it the responsibility in any of these matters? How different the whole face of affairs when you come to the subject of architecture. The public believes it necessary to grant, and those selected think it proper to accept, such responsibility. The result is what would be inevitable if the same lack of business sense should be exercised in any other direction. If you answer that these boards either by competition or otherwise, engage an architect, and trust to him and depend on his ability and judgment, then I will ask you, what is the use of the Board? Why interest a commission with something everybody knows it knows nothing about, instead of putting it in the hands of people who could reasonably be expected to understand what was before them? If there is any use of having anybody but the architect to rule over the matter there is use in having somebody who can be an aid to him instead of a hindrance. If, in order to have done the best thing which can be done, it is necessary to procure assistance for the architect, it is certainly proper to have such assistance possessed of some idea of what should be done, and what a given plan and specification will bring out when carried into execution.

It may be claimed that the architect does control the whole matter so far as the builder is concerned, that the board or committee is only expected to attend to the formalities and the business part of the work. I dare say that in some few instances this is true. If it was always true, one of the objections to the present system would be removed, such cases are rarities, by no means the rule, when the architect is left free to use his best judgment in all things pertaining to the building. If in all cases of competition the designs were selected by a board of competent experts, and where an architect is employed his design should be his own, not that which will please the committee, much of the harm would be avoided. But even then, the benefit of intelligent counsel and advice which would be valuable to the greatest architect in the country and still more valuable to the younger members of the profession—would be lost. No man anywhere is so omniscient that his work would not be better for the criticism of a board of men of his *own* profession, even though something less than himself in ability. This would be gained under the system I suggest. Upon the other hand the work of the weakest member of the profession is not likely to be improved by the suggestions of the average board. This contrast measures the difference between the present system and the state of affairs after this field shall be won. Again, in the last twenty years much has been done to unshackle the hand of the designers, but this same unloosing of bands turns him into a field chaotic with historic design which is to supplement and guide his invention in the work of the future.

One of us gleans from fields of certain ideas; another, other ideas; another, still other ideas, each following a tangent for himself; some learning better than others, but nobody learning so much as all.

If we are to have a national style these lines of divergence must be brought to a parallel; the simply odd, the uselessly picturesque, the servility of copyism and the sterility of unstudied crudeness, from the work of each, such must be excluded.

Our work must tend toward a crystallization of the best to be found or invented. If this be true I know of no one thing which would be a more potent agency in its accomplishment than the adoption of this plan.

The use of boards instead of individual experts and counsellors will broaden criticism, give decisions a greater weight of authority and rid them of any supposed bias in favor of, or against any particular style.

The one great fact that the final authority as to what shall be done on our public-building enterprises is left to such persons as now control them, accounts to a very large extent for the blunders committed and accounts for the fact that the grade of our public architecture is not up to what it should be. So long as it remains in such hands it can never occupy that position in relation to the architecture of other countries to which it is entitled. I take it as indisputable in the interest of our profession —the interest of architecture of the country and the interest of the general public that a great change is desirable in this whole matter. But how can it be brought about? All may recognize that we are in the woods, but who knows of a pathway that leads to the sunshine? All can recognize the great work to be done, but who is able to cope with difficulties we shall encounter in doing it? The present system is strongly entrenched in public favor. No matter how willing a public official may be to acknowledge his inability, he is immediately offended if some one suggests that a professional adviser be called in, and if he should even consent to that, he is quite sure to have it understood that it is only *advice* and not final *judgment* which he accepts.

An architect going into competition will ordinarily greatly jeopardize his chance of success by mentioning to a member of the board the fact that he would be glad to see the designs submitted to a board of experts for decision. There is much more than merely the question of deciding which of a given number of plans shall be accepted which should not be in the hands of boards without education in matters of architecture. The control and management of the entire enterprise, everything that is included in the words "How to build, when to build, what to build," should be left to the control of the profession entirely, not merely submitted to them for advice and clerical services. The idea of an architect preparing plans for a commission of architects and submitting plans in competition for a board of architects to decide upon, may be a new idea, but it is a good one nevertheless.

If an important building enterprise, it is necessary to have an architect of skill and ability, it is by no means improper to have the value of his services supplemented by the advice of men who know as much about what is to be done as he does. It is written that "In a multitude of counsel there is wisdom," and matters of architecture were not excepted from the law. When we undertake to improve upon the present practice we are at once confronted with difficulties.

The matter of expense must be taken into account, boards of professional men who make their living by their calling are not likely to render services such as described, without just compensation. The public is just beginning to appreciate the fact that the five per cent. paid for the service of an architect is money well expended, but it will take some little time to bring the public to believe, that two or three per cent more can be paid out to advantage in securing the service of such boards as I have described. We must establish the fact that this additional expenditure is, after all, a great economy, before the public will be likely to accept it. That it will result in not only bettering the architecture but actually saving money, is as clear as anything need be, when all the facts are considered. It will, however, take some money out of public officials who heretofore have acted in charge of building matters, and they will seriously object to having it done.

I see, however, no insurmountable difficulties in either of these directions. We have brought the public up to believe, and that within the space of a few years, that their interests are best subserved by employing a competent architect, even in small enterprises, and in less time we could demonstrate the economy of the practice I have suggested, and through the pocket-nerve of the public, could compel officials to accept the situation. There are, of course, boards in charge of new buildings who render their services, such as they are, without hope of financial reward, but even then it would be entirely within the range of possibility, even probability, that a board of competent persons could save in the actual cost of the building, to say nothing of its value when once erected, much more than the probable two per cent., which their services would cost. But how are such boards to be found? Who is to select them and who shall be ready to serve when requested? At first the question seems difficult, and, in the present state of our profession, next to impossible, to answer. But we are not at a "stand still." Every demand for such service would in a few years be abundantly met. If you ask me now to name the persons who shall serve in this capacity, I am not able to answer you. I think it must be frankly admitted that at this time there is no set of men specially qualified for and desiring to hold such situations, but open the way for such work and the time will be short until the supply will be equal to all demands. It will be impossible now to lay out any plan for carrying these ideas into effect which shall not have to be altered to meet future requirements as experience develops them. I think no man is wise enough now to foresee all the difficulties, which might arise in undertaking to substitute professional for non-professional authorities in building matters. Judging by the experience of the past it will be some years before we could perfectly carry out the reform. But we are growing in that direction.

I know that we have no national style of architecture, no complete harmonizing of views as to what direction the detail in our design should take. I know we have had too little personal affiliation with, and too little friendship for each other, particularly in the newer portions of the country. I know we are unmerciful critics of each other's work—of everything not in accordance with our individual ideas or the vogue of the time. But for all that we are fast becoming less biased in our judgment and more reasonable in our treatment of each other and of each other's work. We are rapidly approaching a toleration of differences of opinion. We are speedily coming to realize the fact that if we have no respect for each other and the work of each other, the general public will have still less for all of us. Some of us may not take kindly to criticism; others may be disposed to resent the criticism of a professional board as an intrusion upon the "sanctum sanctorum" of the designer. Some of us may prefer to be allowed to convince an ignorant committee of the superiority of our ideas, some of us may not think any one else ought to have the impudence to make a suggestion in regard to what we have in hand, but all these cases will be rare, and as criticism becomes more intelligent and the members of the profession are brought up to entertain a better feeling for each other, they will practically disappear. As we become better educated and more skillful in our own work, we will be still more able to recognize merit in the work of our brethren. When we shall possess sufficient professional patriotism to see our highest personal advantages in the greatest possible improvement in the architecture of our country, a foundation will be laid upon which we can build our work and ourselves up to the standard of the old masters.

* A paper read by J. W. Yost, architect, Columbus, Ohio, before the Convention of the American Institute of Architects, at Cincinnati, Nov. 21, 1889.

A Treatise on Masonry Construction containing materials and methods of testing strength, etc., *Combination of Materials* —composition, etc., *Foundations*—Testing the bearing of soils, etc., *Masonry Structure*—Stability against sliding, overturning, crushing, etc., etc., complete in one volume of 500 pages, with 125 illustrations and eight or ten folding plate, by Ira O. Baker, C. E.; 8vo. cloth, $5.00.

This work is the outgrowth of the author's own class-room, and is now published with the belief that it will benefit others. A careful review of this book gives evidence that it should be in the hands of *all* who are interested in masonry construction. [If the parties engaged in constructing the caisson at the foot of Market Street had known more of the contents of this work, they would not have blundered as they have done. Ed.] A large amount of practical details are presented and all the data have been verified. The work has been divided into four parts, viz: Description and characteristics of the materials, Methods of preparing and using materials, Foundation, and Masonry structures, and contains six plates, giving detailed plans of Caisson Havre de Grace Bridge and of various arch, semi-circular and segmental arches, etc.

If you are searching for the best work on masonry construction, order this publication of John Wiley & Sons, 15 Astor Place, New York.

Knowing that those who desire to obtain the most important articles upon the leading topics relating to architectural pursuits read this column in order to know what periodicals to purchase it has seemed expedient to continue it.

American Architect, Dec. 7th, "Sanitary Disposition of the Dead," "A System of Concentrated Residences," "Domes and Towers." Dec. 14th "Mills and Mill Engineering." Dec. 21, "Is Mexico's Greatest Painting a Titian?" Dec. 28th, Letters from Different Cities of the World. Jan. 4, "Architecture in Brooklyn, "The Structure of Sandstone as Affecting Architectural and Engineering Works," "The Apartment House," "The Barye Exhibition."

Building, Dec. 7, "The Hundred Masterpieces." Dec. 14, Willard Architectural Commission. Dec. 21, "Unsanitary Buildings of Suburban London, "False Economy for the Health Department;" Building Sketch Club Competition No. 4. Dec. 28, "Angular and Terminal Features." A change of name takes place with the number of January 7, and that which bore the name of *Building* is now *Architecture and Building*. Contents: "Architectural By-ways," Architectural League Exhibition, "Architectural Engineering."

Inland Architect, December, "Romanesque Architecture," "Developement of Architectural Style," "Architecture in the West."

Canadian Architect, December, "Convention Ontario Association of Architects."

Architectural Era, December, "Romanesque Architecture," "Licensing Architect," etc.

The Engineering and Building Record, Dec. 14, "Mills and Mill Engineering," "Evaporation of Water in Traps." Dec. 21, "Caloric and Dynamic Investigations," "Erection St. Paul Bridge" (illustrated). Dec. 28, "Bridgeport Macadam Roads." Jan. 4, "Wiring Buildings for the Electric Light," "Much Money in Bath Rooms," "Mistake of Sometimes Accepting Lowest Bid."

Architects, Builders and Hardware Journal, Atlanta, Ga., "Letters on Architecture," "Sanitation" and "Ventilation."

THE AMERICAN STYLE.

The December *Atlantic Monthly* contains from the pen of architect Henry Van Brunt of Kansas City, one of the ablest articles on *American* architecture we have ever had the pleasure to peruse. It should be published in full, but our space does not permit. The article is calculated to outline to the reader the much talked of "*American*" style of architecture yet to come.

The writer says:

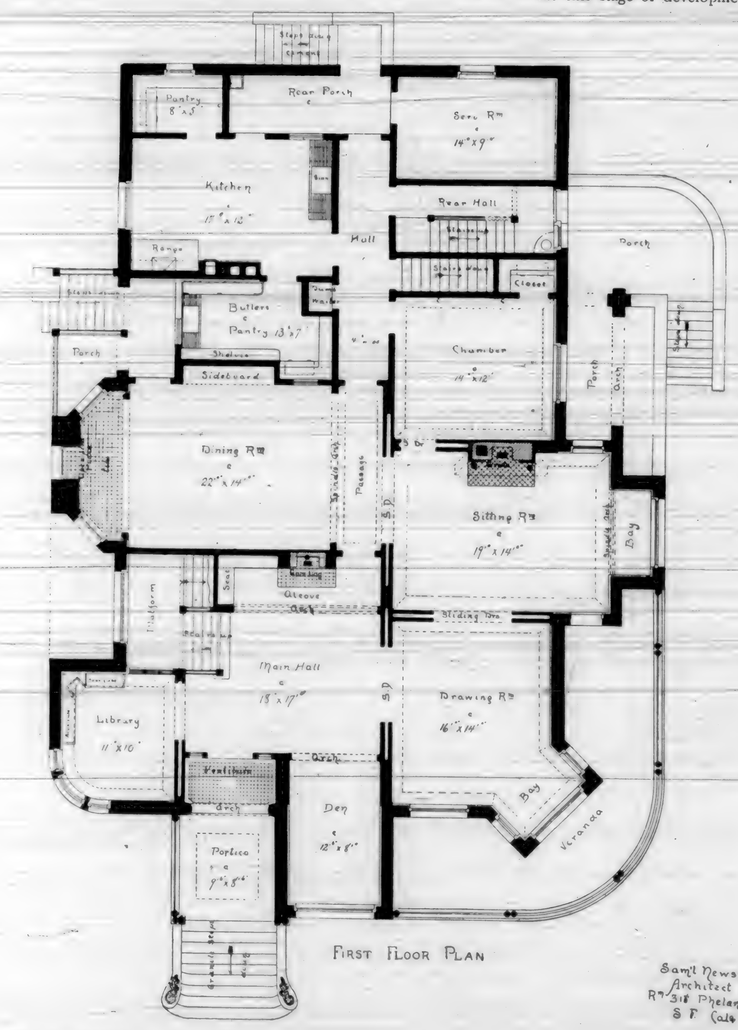
"Civilization is advancing into the West like a brimming and irresistable tide that knows no ebb. It has planted cities and established civil order upon virgin soil in less than thirty days, and the first settlers are comfortably housed in a week. The first business structures have value only as make-shifts. * * *

"At this stage of development, the natural desire of every citizen to own property of the best possible appearance, at the lowest possible cost, leads to what may be called an architecture of pretense—an architecture to appear *better than it is*. This style of architecture has met for years, and will meet probably for many more, all the practical requirements, and has flattered the crude artistic aspirations of a prosperous people. It must therefore be respectfully considered as, at present, the *vernacular* art of the country. Nowhere else in the civilized world can be found anything like it. It is peculiar. It is ours."

"I have called this an architecture of pretense because of its ambition and its desire to make a vain show with small means. The facility with which wood and galvanized iron may be molded, painted and sanded to imitate stone or other nobler materials, makes this baleful process possible. The *vernacular* style has still undisputed sway, and in the hands of uneducated builders plays with these dangerously facile materials such fantastic tricks before high Heaven as make the angels weep.

* * * *

After a few years the paint wears off, the wooden sham begins to decay, and the galvanized iron to betray its hollow mockeries. The *vernacular* style has within itself the seeds of its own dissolution.



FIRST FLOOR PLAN

Plate No. 6.

BUILDING LAWS IN NEW YORK CITY.

It is proposed to revise the Building Laws regulating constructions in New York City and a public invitation has been extended to all interested persons to submit suggestions for modifications. The following is an extract from *Building:*

One of the ideas advanced, which will meet with the hearty approval of every architect doing business in the city, was that the Building Department should be made independent of the Fire Department. There is too much politics to the square inch in that department for the healthy transaction of business. The Superintendent of buildings should be a civil engineer by training and education, thoroughly versed in architectural engineering, but he should have in his department a Deputy Chief Superintendent, whose training and education had been that of an architect; in other words, to decide any questions under the Building Law, requires a man, or two men of the very highest order of scientific and artistic attainments. No architect should be obliged to sacrifice some architectural feature of vast importance to his design, simply because it does not conform to the antiquated requirements of a building law, which was devised and drawn up at a time when there was no demand for such design, and, secondly, be interpreted to-day by men who do not know what architectural design is. It actually needs two highly trained orders of intelligence to administer the present law in a spirit of fairness to the architect and safety to the public.

It is quite true that no law can be passed that will cover every point that arises, as new ideas in the shape of not only new materials, but new methods of construction are being continually advanced by architects, engineers and builders. More discretionary power should be left with the Superintendent than is now left to the Board of Examiners. * * * * *

In view of the many inconsistencies of the present law, and the impossibility of amending them without producing more misunderstanding and confusion than now exists, it would appear that the wisest thing to do would be to have a committee appointed from the American Institute of Architects, the Master Builders' Association, the Institute of Civil Engineers, Mechanical Engineers, Electrical Engineers, the Master Plumbers' Association, the Board of Underwriters, the Real Estate Board, the Board of Health, and the present Building Bureau, to draft a new set of laws and petition the Legislature to enact them, and abolish the old. A committee from these bodies would produce something clear, tangible and worthy of confidence.

IMPORTANCE OF VENTILATION.

In order to enjoy life and health, it is necessary to eat pure wholesome food, and drink pure water—it is of still greater importance to *breathe fresh air.*

In fact few realize its vital importance: for while life can be supported for days without food and drink, a few minutes without air is fatal. How quick the death resulting from a failure in the supply of oxygen to the lungs was clearly shown last month by the death of two unfortunate gentlemen who lost their lives by venturing into the hold of the ship *Durham*, and the very narrow escape of their companion.

People who are most careful in the selection of their food are not always as thoughtful in regard to the air they breathe, though the latter point is not a whit less important than the former.

The following extract is from a letter written by a local physician to the editor of an evening paper:

"It is indeed time that the people should arouse themselves and be made aware that a large amount of sickness is entirely avoidable if people would live in houses that were properly ventilated. I am fully satisfied that the average rate of mortality would be materially decreased if there were a law which required and compelled the adequate and proper ventilation of our schools, public assembly halls and churches."

The Doctor's views are correct, and as "an ounce of prevention is worth a pound of cure", let the people look to it that they get an abundance of fresh air. It will make them healthier, happier and more rugged than those who are forced to inhale impure air, or that long confined in close rooms. Let them see that the chambers they sleep in and the rooms they work in are properly ventilated, and ventilated in such a manner as not to need constant attention to prevent draughts and currents of cold air, though means, of course, should be provided to regulate the amount of new air requisite, which will vary with the number of occupants and other causes. How many lives lost through carelessness in shutting off the gas might have been saved had the room been so ventilated as to remove the dangerous gas and substitute a supply of air.

PAINTER.—Thoroughly competent, accustomed to management of men, desires to *take charge of Painting for large Builder or Architect.* Address PAINTER, "Architect" Office.

CITY BUILDING NEWS.

Bluxome and Fifth. Brick and carpenter work for brick warehouse; owner, Mary E. Von Schroeder; architect, T. J. WELSH; contractor, Thos. H. Day; signed, Dec. 14; filed, Dec. 20; cost, $10,700; time, 72 days; payments, 75 per cent. monthly as work progresses; balance, 35 days. Tinning and galvanizing; time, 15 days; contractor, Wm. Cronan; filed, Dec. 20; cost, $3,196; surety for $1 500, Geo. Duffy. Grading and brick work; sub-contractors for Thos. H. Day, Riley & Loane; filed, Dec. 21; cost, $9,700; payments, same as other contracts.

Buchanan and Vallejo. To build except plumbing; owner, H. F. Woods; architect, Wm. F. Smith; contractor, W. N. Concannon; signed, Dec. 19; filed, Dec. 21; cost, $7,080; payments, $1,327.50, framed; $1,327.50, ready to lath; $1,327.50, plaster on; $1,327.50, completed; $1,770, 35 days.

Buchanan and Broadway. Plumbing and gasfitting, five houses; owner, John Hincke; contractor, Geo. Humphreys; signed, Dec. 14; filed, Dec. 17; cost, $2,350; payments, $587, first three houses roofed in; $587.50, remaining houses roofed in; $587.50, first three houses completed; balance, 35 days.

Castro and Jersey. Six-room dwelling; owner, J. A. Remmel; architect, M. A. Stenbilt; contractor, John J. Boyle; sureties, H. R. Lewis and R. Harvey, $2,000; cost, $2,000; signed, Dec. 17; filed, Dec. 21; payments, $750, brown coated; $750, completed; $500, 35 days.

Douglas and Twenty-fifth. 1-story frame; owner, Sarah Zammett; architect, T. W. McKee; contractors, M. Caikley, et al; cost, $1,200; signed, Dec. 10; filed, Dec. 13; payments, $275, enclosed; $275, brown mortared; $300, completed; $350, 35 days.

Front and California. Passenger elevator; owner, Moses Rosenbaum; contractors, W. H. Birch & Co.; cost, $3,-825; time, Feb. 1, '90; signed, Dec. 10; payments, 75 per cent. as work progresses; balance, 35 days.

Gough, between Post and Sutter. Brick, carpenter work, etc.; owner, Samuel Weitz; architects, Salfield & Kohlberg; contractors, Fuchs & Bucher; sureties, F. Krueckel and G. H. Woerz, $9,400; signed, Dec. 6; filed, Dec. 17; cost, $9,400; time, 110 days; payments, $1,000, basement up; $2,000, enclosed; $2,000, partitions set; $2,050, accepted; $2,350, 35 or 60 days. Plumbing, gasfitting, etc.; contractors, S. Ickelheimer & Bros.; signed, Dec. 16; filed, Dec. 17; cost, $820; payments, $400, gasfitting done; $210, accepted; $205, 60 days. Painting and graining; contractor, Otto Schultz; cost, $525; signed and filed, Dec. 17; payments, $200, paint ready to grain; $175, accepted; $150, 60 days.

Grove and Van Ness Avenue. Plumbing, etc.; owner, Isaac Harris; contractor, R. R. Thornton; cost, $1,275; signed and filed, Dec. 24; paymenis, $400, brown mortared; $400, white mortar on; $475, completed.

Guerrero, between 24th and 25th. To build; time, Jan. 20, '90; owner, Ann Smith; contractors, Glover & Jones; sureties, S. E. Slade and C. A. Thayer, $400; signed, Nov. 29; filed, Dec. 17; cost, $1,375; payments, $900, first floor joints on; $250, enclosed; $269, brown coated; $200, plaster finished; $256, completed and bills paid, or 35 days.

Guerrero Fifthteenth. 2-story frame; owner, Nicholas Fuchs; architect, Henry Geilfuss; contractors, Tegeler & Mullen; cost, $6,346; payments, $966, framed; $966, partitions set; $966, brown coated; $966, white coated; $966, completed; $1,616, 35 days.

Guerrero and Twentieth. Grading; owner, D. W. Parkhurst; architect, A. J. Barnett; signed, Dec. 11; filed, Dec. 17; cost, $2,447.16; payments, 75 per cent. as work progresses at 42 per cent. per cubic foot, nothing for filling; balance, 35 days.

Powell and Price. To build; owner, Paolo Bacigalupi; architects, Salfield & Kohlberg; sureties, A. W. Starbird and Frank P. Latson, $6,800; signed, Dec. 13; filed, Dec. 17; cost, $6,800; payments, $1,200, frame up; $1,000, partitions set; $1,200, brown coated; $1,700, completed; $1,700, 35 days.

Jackson and Kearney. Alterations; owner, G. Dussol; architects, Pissis & Moore; contractors, Richardson & Gale; signed, Dec. 14; filed, Dec. 16; cost, $3,190 payments, $500; $700 with work done; $500, Jan. 1, 1890; $500, Feb. 1, 1890; $500, March 1, 1890; $500, April 1, 1890; balance, May 1, 1890.

Jackson and Devisadero. Frame; owner, A. E. Buckingham; architect, M. G. Bugbee; contractors, Ingerson & Gove; signed, Dec. 14; filed, Dec. 16; cost, $3,200; payments, $600, enclosed; $500, brown coated; $500, accepted; $900, 35 days.

Jackson between Webster and Fillmore. To build; time, 40 days; owners, Katie and Sarah Jacobs; architects, Salfield & Kohlberg; contractor, John T. Grant; signed, Dec. 11; filed, Dec. 17; cost, $1,340; payments, $1,000, completed; $340, 35 days.

Jackson and Van Ness Avenue. Plumbing, sewers, etc.; owner, Simon Wenban; architects, Pissis & Moore; contractors, Duffy Bros.; signed, Dec. 16; filed, Dec. 18; cost, $4,421; payments 75 per cent. as work progresses; balance, 35 days.

Market, Golden Gate Avenue, Taylor street. Grading, excavating, etc.; owner, Jas. A. Donohoe; architect, A. Page Brown; contractor, L. B. Sibley; signed and filed, Dec. 17; cost, $2,350; payments, installments, 1st and 15th of each month as work progresses; balance, 35 days.

Oak and Broderick. 2-story frame; owner, H. G. Wilson; architect, M. J. Welsh; contractor, L. Lariver; cost, $3,700; signed, Dec. 16; filed, Dec. 18; payments, $925, framed; $925, brown coated; $925, completed; $925, 35 days.

O'Farrell and Octavia. Alterations, etc.; owner, S. S. Smith; contractors, B. Pfarrer & Son; cost, $1,300; signed and filed Dec. 10; payments, $500, moved; $475 completed; balance, 35 days.

Pine and Jones. 3-story building; owner, Mrs. I. S. Allen; architect, Fred E. Wilcox; contractor, David Perry; sureties, W. B. Hill, $6,000; signed, Dec. 4; filed, Dec. 9; cost, $12,060; time, May 7, '90; payments, 75 per cent. as work progresses; balance, 35 days Party of second part to accept as part of last payment, lot N. Green street, near Hyde; amount to be allowed, $1,500.

Polk near Fulton. Raising and altering; owner, Delia Hasty; architect, M. J. Welsh; contractors, R. Doyle & Son; cost, $2,749; payments, $667, framed; $687, brown coated; $687, combleted; balance, 35 days; signed, Dec. 5; filed, Dec. 9.

Post and Baker. 2-story and basement framed; owner, Henrietta Fink; architects, John & Balczynski; contractor, F. L. Hansen; cost, $3,025; signed, Dec. 6; filed, Dec. 10; payments, $600, framed; $800, outside finish ready; $857, inside finish ready for painting; $760, 35 days.

Pine and Devisadero. 3-story frame; owner, Jos. Flatz; architects, John & Balczyniski; contractor, F. L. Hansen; cost, $4,350; signed, Nov. 27; filed, Dec. 11; payments, $400, framed; $800, roof on; $800, rough mortar on; $800, inside ready for painting; $1,100, 35 days.

Post and Taylor. 3-story frame; owner, John C. Coleman; architect, Geo. E. Voelkel; contractors, Jones & Glover; signed, Nov. 23; filed, Dec. 24; cost, $7,100; payments $400, frame up; $600, roof finned; $1,000, outside finish on; $625, plaster finished; $1,280, inside finish on; $1,500, completed; $1,775, 35 days.

Sacramento and Davis. Piling and capping; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor S. F. Contracting Co.; cost, $15,300; signed, Dec. 12; filed, Dec. 23; payments, 75 per cent. on 1st and 15th of each month; balance, 35 days. Brick work; contractor, John McCarthy; cost, $31,225; signed and filed, Dec. 23; payments, on 1st of every month, of 75 per cent. work done; balance, 35 days. Carpenter work. Contractor, W. M. Fletcher; signed and filed, Dec. 23; cost, $26,140; payments, on 1st of month of 75 per cent. work done; balance, 35 days.

Stockton and Vallejo. Owner, Robt. R. Hind; architects, Ashton & Stone; contractors, Faucher & Conner; signed and filed, Dec. 12; cost, $28,000 payments, 75 per cent. as work progresses; balance, 35 days.

Sutter and Taylor. Plumbing, etc.; owner, Isabella Levy; architects, Kenitzer & Kollofrath; contractor, R. A. Nunez; cost, $994; signed and filed, Dec. 13; surety, Joseph Budde; payments, $546, pipes in; $400, completed; $224, 35 days.

Sutter and Taylor. Brick work for 4-story frame; owner, Geo. Chisnore; architects, Chas. R. & J. M. Wilson; contractors, Breman & Flading; cost, $2,218; signed, Dec. 20; filed, Dec. 27; payments, $1,000, foundation walls up; $400, chimneys up; $168, completed; balance, 35 days. Carpenter work. Contractor, Winslow Hull; cost, $11,360; payments, 75 per cent. as work progresses; balance, 35 days. Plumbing and gasfitting, etc.; contractors, Sweeney & Kearns; cost, $1,797; payments, $675, rough work on; $672, completed; $450, 35 days. Lathing and plastering. Contractor, Alexander Neil; the cost, $1,686; payments, $618, brown coated; $618, completed; $412, 35 days.

Sutter and Taylor. Painting; owner, Isabella Levy; architects; Kenitzer & Kollofrath; contractors, Lynch & Armstrong; signed and filed, Dec. 17; cost, $785; surety, M. Nunan, $600; payments, $300, completed; $185, 35 days.

Washington near Steiner. 2-story frame; owner, Wm. Craig; architect, Chas. I. Havens; contractor, John Furness; signed, Dec. 8; filed, Dec. 26; cost, $6,870; payments, $1,250, rough frame up; $1,250, brown coated; $1,250; hard finished; $1,100, completed; $1,720, 35 days.

Washington and Kearny. Painting; owner, Louis Schultz; architect, Wm. Mooser; contractor, John S. Mellon; signed, Dec. 11; filed, Dec. 17; cost, $2,700; payments, 75 per cent. as work progresses; balance, 35 days.

Filling in earth; time, 60 days; owners, Boyd & Davis; architect, J. M. Curtis; contractor, Geo. Goodman; sureties, J. N. Taylor & Jeremiah Mahoney, $5,000; signed, Dec. 4; filed, Dec. 24; cost, $9,000; payments, 75 per cent. as work progresses; balance, 35 days.

Ellis from corner Powell to Buchanan and Post. Moving, etc.; 3-story house; owner, Fannie White; Architects, H. McDougal & Son; contractors, John Davis & Sons; signed, Dec. 21; filed, Dec. 30; cost, $1,200; payments, 75 per cent as work progresses; balance, 35 days.

Laguna and Turk. Plumbing, gasfitting; 3-story building; owner A. Legallet; architect, T. J. Welsh; contractors, Ford Bros.; signed and filed, Jan. 2; cost, $1,450; payments, $545, rough pipe in; $545, completed; $360, 35 days.

Linden Ave., No. 212. Alterations; owner, Mrs. E. Goldberg; contractor, John Martin; signed, Dec. 30; filed, Dec. 31; cost, $2,250; payments, $450, ready to lath; $450, brown coated; $450, while coated; $450, finished; $450, 35 days.

Lott and Golden Gate Ave. 2-story frame; owner, D. Gerken; architect, S. Hatfield; contractor, A. H. Plummer; sureties, Blyth & Trott, $3,000; signed, Jan. 9; filed, Jan. 4; cost, $4,95.; payments, $600, frame up; $1,039, rustic on; first coat plaster on; $1,039, plaster done; first coat paint on; $1,041.25, accepted; $1,239.75, 35 days.

Steiner and Germania. To build; owner, Mary E. Empey; contractor, John Foster; sureties, P. Swift and J. Smith, $3,000; signed, Dec. 24; filed, Dec. 30; time, March 10, '90; cost, $1,400; payments, $900, frame up; $900, brown coated; $600, plaster finished; $700, completed; $1,100, 35 days.

Twentieth and Hampshire. 2-story frame; owner, John M. Anderson; architects, John & Balczyniski; contractor, Henry Munster; signed and filed Jan. 2; cost, $4,942; payments; $1,000, frame up; $800; enclosed; —— partitions set; $800, rough mortar on; $1,042, accepted; $1,300, 35 days.

York and Twenty-Second. 2-story frame; owner, W. H. Bonge; architect, F. Koltenstedt; contractors, Tegeler & Muller; signed and filed Dec. 31; cost, $5,100; payments, $990, brick work done, chimneys up; $750, frame up, etc.; $750, brown coated; $750, white coated; $950, completed; $1,500, 35 days.

Quincy and California. Additions; owner, Henry Calliesius; architect, Emile Dejuerre; contractor, J. C. Glasson; signed and filed Dec. 31; cost, $750; payments, 75 per cent, as work progresses; balance, 35 days.

ALAMEDA.

Chestnut and Central Avenue. Owner, G. T. Watterson architect, J. Marquis; contractor, G. Richley; cost, $3,500; signed, Dec. 11; filed, Dec. 12; payments, $400, roof boards on; $700, partitions set; $700, brown mortar on; $800, finished; $900, 35 days.

Percy Tract, block A. 2-story frame; owner, N. L. Freese; contractors, Higgins, Davisson & Co.; signed, Dec. 16; filed, Dec. 20; cost, 2,300; payments, $675, enclosed; $375, brown mortared; $575, completed; $575, 35 days.

Santa Clara Avenue and Prospect street. Double dwelling; time, 105 days from Jan. 1, '90; owner, Michael Kane; architect, Chas. L. Shaner; contractors, J. J. Boyle and H. M. Wood; sureties, J. A. Remmel and Robert Harvey; $2,000; cost, $4,292; signed and filed, Dec. 18; payments, $1,073, rafters on; $1,073; window frames in; $1,073, brown mortar on; $1,073, completed.

Taylor and Page Tract. Dwelling; owner, J. A. Remmel; contractor, R. Gillis; sureties, Angus McRaithem and Wm. Behrens, $2,000; signed, Dec. 17; filed, Dec. 19; cost, $2,000; payments, $750, brown mortared; $750, completed; balance, 35 days.

Railroad Avenue, between Walnut and Willow. Frame; owner, Chas. Laubenheimer; architect, Fred P. Fisher; contractors, D. Straub & Son; signed, Sept. 5; filed, Dec. 26; cost, $3,230; time, 120 days; payments, $900, frame up; $900, brown mortar on; $900, inside finish done; $830, completed.

FRESNO.

In summing up the statement of the amount of building as given by the *Fresno Daily Morning Republican* as an accurate record of the large buildings erected there, we find that $850,500 has been spent upon 32 buildings during the year; $278,000 upon 7 now in the course of construction; and already $137,000 to be expended upon 5 projected buildings, making the total amount for Fresno, 44; costing, $1,265,500. This is for large buildings only, bringing the average cost to more than $25,000 for each building erected.

STOCKTON.

Bids for the school house at Stockton were rejected as being too high. Seven bids were made ranging in amounts from $13,430 to $17,979.

SAN RAFAEL.

Hotel Rafael is having an addition of forty rooms built.

LOS ANGELES.

Building during the past year has reached into the millions, showing that business is still brisk and the building interests extending. The statement of the *Herald* for 1889 gives Los Angeles $4,134,459.

The Supervisors of Sutter Co. have adopted the plans of Curlett & Cuthbertsen for their new Record Hall at Yuba City.

OAKLAND.

The steady growth of building in Oakland, though not figuring up into as many millions as some other cities on the Pacific Coast, is a good sign of prosperity. *The Tribune* and *Enquirer* give the following approximate figures upon the subject:

1887	$1,250,000
1888	1,500,000
1889	1,460,000

These figures are taken from the Plumber's reports, and of necessity are incomplete.

Eddy street, No. 288 Two houses; owners, G. Tomascovic and John Turchan; contractor, R. Gillis; cost, $900; signed, Nov. 30; filed, Dec. 10; payments, $450, shingles on; $450, completed.

Jefferson, near Second. 2-story barn and shed; owners, Oakland Iron Works; contractors, Newman & Paddock; cost, $2,0; payments, $50, rustic on; balance, completed.

East Fourteenth and Park streets. Frame; owner, Oscar Derby; architect, Clinton Day; signed Dec. 14; filed, Dec. 18; cost, $10,469; payment - $1,500, sheathed; $2,200, brown mortar on; $1,400, exterior finished; $1,200, doors and windows hung; $1,551, completed; $2,618, 35 days.

BUILDING NEWS FROM THE GREAT NORTHWEST.

The history of building in Washington for the year 1889 is one that can hardly find a parallel in the annals of the country, and especially so if we take into account the remote situation of her towns and cities from the source of supply for the materials needed.

We quote from the *Seattle Post-Intelligencer*:

IN	NUMBER.	VALUE OR COST.
Seattle.	**3,465.**	**$13,547,979**

"In addition to the above, there has been expended on buildings in the burnt district $1,831,100. These figures are astounding but they are absolutely correct."

Tacoma.	**1,367.**	**$6,000,000**

In this number, there is 3,049 feet of brick business blocks: 3 buildings with 175 feet front, 6 stories high, 2 buildings, 175 feet front, 5 stories high, and 7 buildings, 675 feet front, 4 stories high.

Spokane.		

Five hundred (since the fire) costing $5,200,000, and mostly for business purposes.

Ellensburg.	**35** new brick. (since the fire July 4th.)	

Before the fire this young city had a frontage of 1,468 feet brick to brick buildings, which has now been increased to 3,650 feet.

Port Townsend.	——	**$1,100,000**

This does not include the $250,000 appropriated by Congress for the Custom House now being constructed.

Whatcom.

Three hundred business and residence houses, besides various mills and factories.

Schome.

Three hundred business and residence houses, to which may be added a bank and a school house.

North Yakima.

Two hundred and three residences and business houses, including 9 brick buildings, costing $178,000.

Snohomish.

One hundred residence and business houses, costing $130,000, besides various manufacturing building in and about Snohomish, to the value of over $430,000.

Vancouver.

Has recovered from the fire of last June, and the year 1890 will find the burnt district covered with new brick structures.

PORTLAND, OREGON.

A Brick Manufactory is being erected by the Pacific Metal Works, cost $7,000.

JOHN H. WISE, President. H. T. SCOTT, Vice-President. CHAS. H. FROST, General Manager. C. S. PREBLE, Secretary

UNION PRESSED BRICK & TERRA COTTA CO.

Works: Vallejo, California. General Office: Room 31, Flood Building, San Francisco, Cal.

—— MANUFACTURE THE FINEST QUALITY OF ——

Plain, - Moulded - and - Ornamental - Pressed - Brick,

ARCHITECTURAL TERRA COTTA,

FIRE PROOFING, PAVING TILE,

Also Red, Brown and Black Mortar.

—— SEND FOR CATALOGUE ——

TRADE SUPPLEMENT.

VOLUME 11. JANUARY 18, 1890. NUMBER 1.

BUSINESS MOSAICS.

THE DUNHAM, CARRIGAN & HAYDEN Co., Nos. 17 and 19 Beale street, and 18 to 24 Main street, have an immense stock of Builders Hardware, every conceivable article, almost, in the hardware line is obtainable at their establishment, from the plainest to the highest grade of bronze art-ware.

THE WEST COAST FURNITURE CO., 432 and 434 Fourth street, commence the year with a new assortment of fine Furniture, Wooden-mantles, etc., of the latest designs and styles of finish.

THE VULCAN IRON WORKS, Nos. 135 to 145 Fremont street, are prepared to furnish castings of all manner of constructive iron works. These Works are well known for the finely finished ornamental cast iron work of their manufacture.

W. T. Y. SCHENCK, of Nos. 222 and 224 Market street, secured a patent upon his Paragon Hose Reel and all its improvements. This reel which has been fully recognized as a valuable aid in preventing the spread of fire, has been recently improved so that the reel swings around in such manner as to adjust itself to the direction of the line of hose when run off. In either form, the strain of the bearings is confined to bracketed joinings, thus leaving the water pipe and valve free from such strain.

ONE OF THE OLDEST PIONEERS and veteran cement workers in this city is George Goodman of 307 Montgomery street, the name is synonymous with good materials and good work, and further, he is not afraid to stamp his name on it, either.

The Norton Door Check is in use all over the country. It is placed in the most prominent buildings in this city and shows its usefulness to thousands daily by its easy shutting of the opened door. Frank D. Morrell, the agent for this Door Check, says that he is receiving orders from all points on the Coast for more of them. Wherever the Norton Door Check goes, there it stays, with very little need of repairing, for very frequently they last six or seven years without the least appearance of disorder.

In the case of the Pacific Rolling Mill Co. vs. the Telegraph Hill Railroad to recover $2,788 for material furnished, Judge Lawler decided in favor of the plaintiffs. The case has been for a number of years before the Supreme Court having been originally filed in 1884. The Pacific Rolling Mill Co. is one of the oldest established corporations upon the coast and its specialty is the manufacturing of railroad and merchant iron, rolled beams, cast steel castings, etc. Their main office is 202 Market street, San Francisco.

AN IMPROVED HOSE REEL.

Attention is called to the card of Chapman's Empire Hose Reel, which appears for the first time in this issue. Although a comparatively new invention, the superior mechanical construction of this device, its handsome appearance and improved method of connection with the stand-pipe have secured for it the favorable consideration of some of our most prominent builders, and already a considerable number have been placed in position in this city and elsewhere. With this reel the hose is attached to a hollow axle at a point between the wheels, much in the same way as in the old reels, but one of the principal features of the Empire and a point of superiority which is at once apparent to the mechanical mind is the connection of this axle with the stand-pipe by a revolving water-tight stuffing box which is situated entirely outside the supporting end brackets. This method of construction not only prevents the weight of reel and hose bearing upon the packing of the stuffing box, but secures another most important point, namely—the reel may be attached to the stand-pipe in an upright position, so that when placed in closets or out-of-the-way corners the hose may be pulled off readily to right or left with even more facility than is possible with a swinging reel.

The Empire is manufactured by Mr. R. S. Chapman, a gentleman of practical experience pertaining to fire prevention and extinction; he having been, until recently, for a number of years connected with the San Francisco Fire Underwriters Inspection Bureau in the capacity of insurance surveyor.

Two very superior brands of rubber-lined cotton hose are used by the manufacturer in equipping this reel. The first in point of excellence is the "Treated Safety Mill Hose," manufactured by the Fabric Fire Hose Company, of New York. This hose is balanced woven upon circular looms, which insures uniformity of tension when under pressure and securing great strength with comparatively light weight. In addition, each thread before woven is treated with a preparation of wax and gum which renders the fabric mildew and rot proof. The Treated Safety Mill also has an absolutely smooth water-way, an important item in getting an effective stream where the hydrant pressure is moderate. The other grade of hose is known as the "Empire Mill." This is a strong, serviceable white cotton hose with a pure para rubber lining, and is guaranteed to be the equal in appearance, durability and strength of any mill hose offered on the Coast. Parties interested are cordially invited to call at 18 California street, where one of the reels may be seen in actual working connection with the water main.

FIRE PROTECTION.

The amount of building done in Seattle, Spokane Falls and other parts of the Northwest during the past year only proves the great resources of the Pacific Coast. Recent fires in the East show that brick, concrete and terra cotta, while not fire proof, stand the test of fire better than any other material. Still different clay produces different grades of brick, some inferior and others of the best quality. Recently works have been established at Vallejo which have produced clay unexcelled anywhere on the coast. These yards are owned by the Union Pressed Brick and Terra Cotta Company who are daily shipping to Seattle and other northern points many carloads of pressed brick. Their terra cotta trade with northern cities is also very great. At the present time the company is turning out splendid stained mortars which are being shipped all over the state. Among the prominent builders who are using the company's brick mortars and terra cotta, W. Z. Price has contracted with the company for material for his new villa at Redwood City. In San Jose this companys pressed brick is being used in the new four-story Porter Hotel, Clarence O. Arey, architect.

THE WATER CLOSETS manufactured by Joseph Budde, No. 43 Fremont street, grow in favor as the years pass on, for the simple reason that he uses the best of materials, adding from time to time, such improvements as may be required to meet the demands of the advance in sanitary science.

Retail Price List of Lumber.

PINE, FIR AND SPRUCE.

	Per 1,000 ft.
Rough Pine, m'cantable to 40 ft, inclusive	$20 00
" " " 41 to 50 " "	21 00
" " " 51 to 60 " "	23 00
" " " 61 to 70 " "	27 00
" " " 1x3, fencing	22 00
" " " 1x4, "	21 00
" " 1x3, 1x4 and 1x6, odd lengths	19 00
" " second quality	17 00
" " selected	25 00
" " clear except for flooring	31 00
" " " for flooring less than flooring	1 00
Clear V. G. No. 1 Flooring, when ordered, extra	5 00
Fire Wood	11 00
Dressed Pine, flooring. No. 1, 1x6	32 00
" " " 1x4	34 00
" " 1¼ x 4, 1¼ x 6 and odd sizes	37 00
" " " all sizes, No. 2	27 00
" " Stepping, No. 1	43 00
" " " " 2	33 00
Ship Timber & Pl'd., rough selected	27 00
" " selec'd pl.nd, 1 sd } average	29 00
" " " " 2 " } 40 ft	31 00
" " " " 3 " }	33 50
" " " " 4 " }	35 00
Deck Plank, rough }	35 00
" " dressed } average 35 feet	40 00

WASTES OF SOCIETY.

Fresh Air is something which God has set great value upon, but which most men think little of. In this is the heritage of health.

Very few Buildings or dwellings are suitable to live in from want of proper ventilation.

The unfortunate Architect seldom finds an Owner of a Dwelling, who is willing to live as God meant he should, by breathing *Fresh Air*, all for the sake of saving a few dollars, which ought to be expended in providing for ventilation. Men of wealth pay more attention to the architecture and adornment of their homes, than to *proper ventilation*. Their homes indeed look beautiful from without, but within, they are filled, not with dead men, women and children, but with *dead breaths* of their occupants. These homes are literally dens of poison!

There is nothing more poisonous than the effluvia and exhalations that proceed from man.

In a close room, where a family is assembled, they will, in twenty minutes, breathe the air over *once*—in another twenty minutes three times, and by that time every person in the room will have inhaled the effluvia of every other person in the room.

What wonder that our streets are filled with wan-visaged men, women and children!

It is really lamentable to see people, slowly and surely undermining their health, by persisting in building houses, without providing for *ventilation without draughts* (which can be had by the expenditure of a few dollars,) and thus sacrificing the greatest blessing heaven bestows upon man—by persisting in no ventilation or ventilation from Open Windows.

The Homes of the Rich and Poor alike should be ventilated by

Abrahamson's Patent Ventilator without draughts.

The following is one of the thousand testimonials written:—

SUPT. OF COMMON SCHOOLS.

SAN FRANCISCO, NOV. 9th, 1889.

PETER ABRAHAMSON, Esq.—Dear Sir: Allow me to say that I have, not only in my own house, but in six of the Public Schools of this city, had abundant opportunity to witness the excellent effect of your perfect ventilator. I have it in my sleeping room, and in my study room, and having experienced the great benefit resulting from having it, I would not be without it. If people could be made aware of its advantages, I feel sure, that you would not be able to supply the demand. Had I the power, I would have it placed in every window and wall in our schools, believing that such action would conduce more to the preservation of the health of the children and of the teachers than anything else that could be done. We must heartily recommend it to all.

Very respectfully and thankfully yours,

J. W. ANDERSON, 3014 Sixteenth St.,
Supt. Common Schools.

W. W. MONTAGUE & CO., Agts., San Francisco.

Pickets, rough, B. M			20 00
"	4x1½ " —4 ft. long	per M..	5 00
"	4x1½ " —4½ ft. long	"	6 00
"	4x1½ " —5 ft. long	"	7 00
"	4x1½ " —6 ft. long	"	8 50
"	4x1½ " —7 ft. long	"	10 00
"	4x1½ " —8 ft. long	"	11 50
Furring, 1x2		per lineal ft	1 00
Lath, 1½ 4 ft.		per M..	2 75
" 1½ 4 ft.		" ..	3 00
Spruce, rough		" ..	19 00
"	dressed, shelving	" ..	36 00
"	¾ inch	" ..	36 00
"	clear	" ..	33 00
Rough dunnage, delivered		" ..	20 00
	REDWOOD.		
Rough Redwood, merchantable			19 00
" "	second quality		16 00
" "	selected		25 00
" "	clear		34 00
Dressed "	merchantable boards		24 00
" "	¾ inch surfaced		31 00
" "	No. 1 do		34 00
" "	No. 2 do		25 00
" "	T & G, 1x6, 12 ft. and over, No. 1		34 00
" "	" other sizes, No. 1		37 50
" "	" 7 to 11, No. 1		25 00
" "	" under 7 "		22 00
" "	Rustic, No. 1		35 00
" "	" " 2		31 00
" "	T & G B'dd 12 ft. and over, No. 1		34 00
" "	" other sizes, No. 1		37 50
" "	" 7 to 11, "		25 00
" "	" under 7 "		22 00
" "	Sliding, ½ inch		25 00
Casing Stock, 1, 1¼ and 1½ Rough, 7 to 11			25 00
" "	1x3, 4x6, Clear, under 7		22 00
Tank Stock, 2 and 3 inches, clear, (surfaced			
" "	or rough,) under 12 feet		27 00
Pickets, (fancy), 4 ft., B M			25 00
"	(rough, pointed), B M		18 00
"	(" square), B M		16 00
Battens, 4x3		per lineal ft	01
Shingles		per M	2 25
"	fancy	"	3 50
Posts, split			15
Shakes, split		per M	11 00
"	sawed	"	13 00

Lumber delivered on board cars will be charged $1 per M extra. Lumber delivered along side of vessel or wharf, 50 cents per M extra. Scale of credit not to exceed 60 days without interest being added.

Tongued and grooved beaded on two sides $2.50 extra.

Reynolds & Adams

547 Brannan Street,

Hardwood Flooring,

Parquetry Floors,

Wood Carpets,

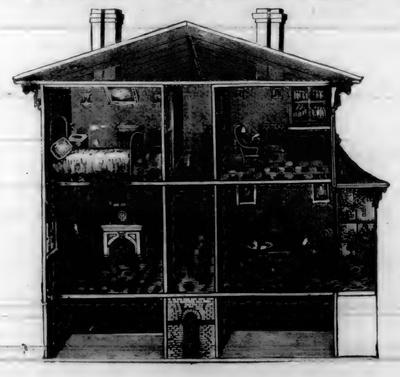
—AND—

ENGLISH TILE FLOORS.

DESIGNS AND ESTIMATES FURNISHED ON APPLICATION.

THE E. D. ALBRO CO.
IMPORTERS OF MAHOGANY
MANUFACTURERS OF HARDWOOD LUMBER AND VENEERS
DOMESTIC & FOREIGN OF EVERY DESCRIPTION.
FULL LINE OF SEASONED STOCK MILLS CINCINNATI-OHIO

Hot Water AND Steam Heating



For all Classes of Buildings.

I have introduced this system in over 400 houses on this Coast where it is now in operation. All work Guaranteed.

Sole Manufacturer of

HARVEY'S HOT WATER RADIATOR AND BOILER.

Sole Agent for

BUNDY'S PATENT STEAM AND HOT WATER RADIATOR.

Also Agent for

Gold's Improved Sectional Boiler for Low Pressure Steam

Office, 28 New Montgomery St., under Palace Hotel

Illustrated Circulars furnished on application.

C. D. HARVEY.

List of Members of the Builders' Association of California.

330 PINE STREET, ROOMS 11 & 12.

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Ackerson, C. H.	328 Kearny
Adams, J. G.	407 Broderick
Anderson Bros.	1209 Market
Bassett, J. C.	765 29th street Oakland
Bateman Bros.	S. W. Post and Scott
Binet, Jos. L.	325 Fair Oaks
Blake, John	1138 17th
Bowles, G. R.	306 O'Farrell
Brennan Bros.	618 Eddy
Burpee & Judson	836 29th street Oakland
Campbell, James	920 Golden Gate Ave
Campbell, Alex. J.	330 Pine
Chisholm, Chris	330 Pine
Chisholm, Dan	110 Chattanooga
Crichton, F.	109 Baker, bet Page and Oak
Christy, Chas	828 Kirkham Oakland
Classen, J. C.	232 Francisco
Coady, Chas	2927 Mission
Cogswell, J. B.	Alameda
Collins, P. J. & Son	534 Fifteenth
Commary, Wm. T.	1129 Market
Conrad, H. A.	625 California
Chandler, R. O.	1210 Pierce
Currie, Robt.	1308 Grove.
Day, J. G.	717 Franklin
Day, Thos. H.	1012 Devisadero
Davis, R. O.	322 Penn Ave
Discher, Aug.	230½ Langton
Doyle, R. & Son	2810 Howard
Dreyer, Bernard	4 Collingwood
Dunn, J. J.	615 Jessie
Dunshee, C. E.	417 Ridley
Elam, Thomas	511 Sanchez
Ellis, B. F.	Fresno, Cal
Fancher & Cannon	1931 Jessie
Farrell & Bell	1810 Green
Fish, J. W.	826 Valley
Fitzpatrick, A. G.	411 Twenty-second
Fletcher, W. M.	607 Broderick
Furness, John	8 Steiner
Geary, James	2324 Sutter
Gillespie, G. G.	1503 Devisadero
Gonyeau Bros.	124 Seventh Ave
Gorman, M. J.	527 Octavia
Grant, John T.	420 Bartlett
Gray & Stover	1310 Twenty-first
Greene, S. T.	919 Webster
Green, C. B.	34 Hawthorne
Griffin, P. F.	310 Fell
Hansen, F. L.	1125 Treat Ave
Hoffman, Victor, Jr.	515½ Fourth
Houston, Geo.	512 Haight
Hutch, H. E.	1717 Chase, Oakland
Huribut, R. P.	339, 341 Brannan
Hyde, E. W.	330½ Sanchez
Irwin, James	908 Sixteenth
Ingerson & Gore	971 Broadway, Oakland
Jackson, A.	12 Middle
Keenan, Hugh	219 Scott
Kent, S. H.	711 Leavenworth
Kennedy, Joseph	1634 Eddy
Kern, F. W.	118 Fair Oaks
Klahn, Aug.	5 Chenery
Klatt, F.	314 Twenty-first
Klein, Jacob	24 Lilly Ave
Kreger, Wm. B.	801 Guerrero
Laherty, C. A.	515 Sixth
Lang, Geo. R.	E. 14th St. and 14th Ave., Oakland
Langstaff, Wm	617 Jessie
Leonard, Jos. A.	Alameda
Linden, Wm	312 Vicksburg
Logan, J. F.	922 Minna
Lynch, M. C.	28 Stanley Place
Lynch, Patrick F.	328 Fell
Mahony Bros.	307 Van Ness
Maher, J. W.	105 Precita Ave
MacDonald, Allen	1303 Buchanan
Martin & Maguire	133 Gough
Martin, P. G.	811 Shotwell
Mason, C. M.	235 Seventh
Mayder, J. W.	1035 Market
McCann & Riddell	330 Pine
McElroy, A.	724 McAllister
McInerny, James	Hancock and Noe
McKay, Jas. H.	2408 Washington
Mecredy Bros.	Church, bet 17 and 18th
Miller, Adam	297 Linden Ave
Moore Bros.	1331 Ellis
Norton, A.	616 California
Norton & Perry	527 Grove
Parker, R.	West End P. O., Alameda
Peterson, Chris.	3109 Sacramento
Pluns, Wm.	415 Oak
Plummer, A. H.	133 Oak
Quinn, Charles	28 Pearl
Reichley & Vierhus	116 Jones
Robertson, C. F.	434 Minna
Robertson, John M.	961 Folsom
Rohling, Henry	Palmer, opp. Sanchez
Rountree Bros.	919½ Cap
Sanchez, R. P.	653 Cap
Steinman, F. V.	30 9th
Simpson, R. F.	326 Telegraph Ave., Oakland
Sinnott, Richard	1321 Guerrero
Smilie, Robt.	1125 E. Third Ave., East Oakland
Smith, Chas. N.	20 Lynch
Smith, James W.	1220 Eddy
Sullivan, Timothy	20 Laskie
Tegeler & Muller	715 Eighteenth
Terrill, Chas. C.	617 Seventeenth
Thaler, K.	18 Sharon
Thompson, H. C.	1103½ 17th
Thornton, R. R.	26 Montgomery
Von Borstel, Theo.	1730 Golden Gate Ave
Wells & Joslin	1642 Mission
Whalen, J. R.	518 Van Ness Ave
Wharff, Wm. H.	Green and Laguna
Wheeler, Alex. J.	Ninth Ave., near California
White, O. E.	879 Seventeenth
White Bros.	1208 Page
Wickersham, W. H.	1125 York
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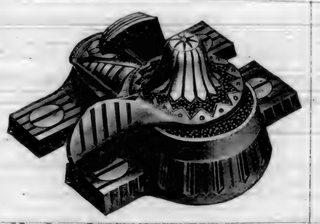

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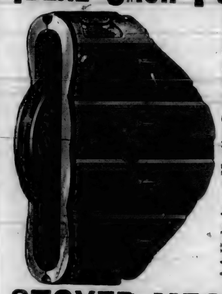

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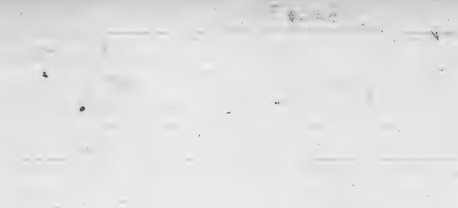

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

TECHNICAL SOCIETY, meets first Friday of each month at 408 California Street.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday evening, February 14th. Reports were received from the Trustees, the Executive Committee, and several special Committees. Following is the report of the Committee on awarding the prize offered by the Chapter to the students in the drawing class.

"In November last it was determined by the Chapter to inaugurate a competition for the benefit of the Chapter's classes, and in pursuance thereof a prize of ten dollars (to be expended in books) was offered for the best design—with honorable mentions for second and third designs—in the order of their merit. Messrs. Pissis, Cuthbertson and Sanders were appointed a Committee on awards. The work of the class for the preceding year was also to receive the attention of the Committee. The designs were to be handed in at the first meeting of the Chapter in January, and the award to be announced at next meeting in February. In pursuance of the above, the designs were duely received and your Committee have made the following awards."

First prize to Mr. Sam C. Benson for panel of vine leaves, unsymmetrically arranged and flatly treated, the leaves completely fill the panel, and all carved out of the solid. It is adaptable for various purposes of both internal and external wood work, and is notable for care in execution, and practical character of design, though it is not without faults; among which may be mentioned as the most noticeable, the spot caused by the massing of a single bunch of grapes unsymmetrically in the midst of a flat area of leaves. Had the bunch of grapes been more broken up, with others appearing in the other parts of the field, the effect of the panel would have been greatly improved.

The honor of first mention is awarded to Mr. Joseph Rowell and Mr. Van Vlack for their respective designs. The first, for thistles filling a spandrel, exhibiting considerable originality in design, but unfinished and crude in treatment, the lines being stiff and the foliage wanting in conventional adaptation to material. The second, a symmetrical arrangement of vine, graceful and careful in arrangement, very neatly executed, but wanting in originality of design, are judged by the Committee to be equal in merit.

The flat studies were also examined. First mention being awarded to Mr. Van Vlack, on account of the number and general excellence of his studies. Second mention is awarded to Mr. Rowell for the same reason in a less eminent degree."

Messrs. Carstensen, Pries and O'Connor, a joint committee from numbers 15 and 25 of the International Furniture Worker's Union of North America, and the Wood Carver's Association appeared before the Chapter and presented the following communication:

To the San Francisco Chapter A. I. A.:

GENTLEMEN—We, on behalf of the Furniture Workers and Wood Carvers respectfully present to you the desire of those Trades we represent, to secure as far as possible, to the mechanics of this city, the inside finishing and fitting up of the buildings constructed in this city. We believe it is not neces-

sary to argue upon the desirability of this work being done at home, for as we are raising our families here and form a part of this community, the wages we receive for our labor are thus returned to the general circulation. If the work on which we depend for our support goes to other cities, how are we to exist here? Believing that you are in sympathy with us, more particularly now that many of our men are idle, we would ask you to use your great influence to keep the work of this city, in this city.

Very respectfully, the joint committee,

HENRY CARSTENSEN,
Secretary.

The President in reply to the communication assured the committee that the members of the Chapter were well aware of the desirability of retaining as far as possible all such work for our own mechanics, and would do all in their power to further that end. After transacting the other business of the Society, the meeting adjourned.

THERE is probably no large city in the United States so poorly represented in the matter of public buildings as the city of San Francisco. With a tumble down Post Office, an insecure jail, and an uncompleted City Hall, the citizens truly have little to be proud of, but if they can live on hope for an indefinite number of years to come, they may yet have their dreams of progress and improvement realized. Fair progress is being made with the New City Hall. There is some possibility if not probability of a *lot* being purchased as a site for a new post office, and when the jail shall no longer afford storage room for the unfortunates now overcrowded in its unhealthy cells, the authorities will per force be obliged to take some action towards providing fitting accommodations, so that when a chinaman is arrested for violating the cubic air law, he will not be incarcerated in a cell affording him still less of the blessed air than he obtained in his own stifling bunk in an underground hole in the Chinese quarter.

The recent burning of the Girls High School may not be an unmixed evil. The Board of Education propose to replace the burned building which was a frame structure, with a fire proof building of substantial construction and artistic appearance, and if it teaches the lesson that it is true economy to build substantially it will be worth the present loss incurred.

THE LATE GENERAL VALLEJO.

General Mariano Guadalupe Vallejo, died on the 18th of January in Sonoma at the age of 81 years, surrounded by nearly all the members of his numerous family. General Vallejo was a pioneer among pioneers, and the most distinguished native Californian. He had occupied the most prominent positions, having been Governor of California during the Mexican rule and State Senator during the present government. He was a high minded, honorable gentleman, with fine taste and considerable learning, which, considering the difficulties in obtaining books and the means of education in early days, was really remarkable. His hospitality, liberality and progressive ideas were proverbial. Every visitor at his home was welcome at all times, and with true Spanish hospitality, could stay as long as he desired. Many instances are related when he made presents to people of thousands of acres of land. He gave Andreas Hoepner, a Russian gentleman, a ranch of over 4,000 acres for teaching music to his children. The General inherited from his ancestors great talent for construction; the standard author in mathematics in Spain, in the beginning of this century, was a Vallejo. His father, Don Ignacio Vallejo, one of the original settlers in California who came with Father Junipero Serra, was an engineer and built many of the presidios and irrigating works at the time of the Missions. He at one time projected, and proposed to the authorities of Monterey, the conduction of water to that city from the river Carmel. That project has been carried out by the Pacific Improvement Company, at an expense of half a million dollars. The father of General Vallejo estimated the cost at $10,000, by employing the Mission Indians. General Vallejo was the founder of Sonoma; he built the first structures in that place, consisting of his residence, officers' quarters, barracks, and the church. We give a drawing representing them as they existed before 1848, from a description and sketch by the General's son, Dr. Vallejo. The capital of California was at one time, the city of Vallejo founded by the General; he projected and partly built at his own cost all the State buildings, but the removal of the capital to Sacramento, prevented him from finishing them. With the death of General Vallejo, the State has lost one of her prominent men and the best authority in historical facts in California.

E. J. MOLERA.

BUILDING BY E. J. LENNOX, ARCHITECT, IN *Canadian Architect*.

DAMAGE TO ADJOINING STRUCTURES FROM HEAVY BUILDINGS.

With the increasing size and weight of modern office buildings there come not only serious problems of safe and economical construction, but the still more difficult question of how to prevent damage to adjoining structures, not merely from undermining of foundations which can be avoided by suitable underpining, but from the actual compression of the soil.

If anyone will take the trouble to examine the old and comparatively light buildings alongside of which some high and heavy structure has recently been erected, the chances are that he will find the old buildings more or less damaged by their new neighbor, and cracked walls and sills, and especially cracked lintels over the nearest windows, will show that the old wall next the more recent structure has been carried bodily downward. As before intimated the settlement in most cases is not caused by any defect in or injury to the foundation of the old building, but by the fact that the heavier structure has compressed the soil and taken the lighter one down with it.

As the evil is progressive, increasing as the new building goes up, and for some time after it is finished, it cannot be provided against once for all, but the remedy must be progressive also, and the only way to prevent the injury is to keep the old wall wedged or screwed up while the new one goes down. The only instance we know of where this has been done is in the case of a large building now being erected in Chicago, where the soil is so compressible that such a building is expected to settle three or four inches during construction, and where one fine tall building has had one corner carried down four or five inches by a heavier building alongside, with the result of very badly cracking the older structure from top to bottom through the nearest line of windows. To avoid such a disaster the wall of the old building some seven stories high, next which the new building just mentioned is being put up, is temporarily supported on screws, and is by them kept slightly above its normal position so as to allow for settlement between times. These screws will support the old wall for some six months after the new building is finished, and until all settlement is over. With a less compressible soil, or a lighter building, perhaps iron counter-wedges between stout bearing stones would give sufficient lift, and could be left in when the new building was completed.—*The Engineering and Building Record.*

THE STRUCTURE OF SANDSTONE.

Read before the Liverpool Architectural Society, by Mr. T. Mellard Reade.

Sandstones, or, in masons' language, "freestones," from the freedom with which most of them are worked when freshly taken from the quarry, are plastic or sedimentary rocks. That is, they are composed of separate particles which have once existed as sand, like that we see on our own shores, or in the sand dunes of Hoylake or Crosby. Sandstones are usually more or less laminated, and are stronger to transverse stress at right-angles to their natural bedding than in any other direction, a fact recognized in every architect's specification, which states "all stones must be laid on their natural bed," a direction that unfortunately sometimes begins and ends in the specification. The cause of the superior strength is not, however, generally understood.

I have devoted some considerable time to an investigation of the internal structure of sandstones, which I have communicated from time to time to various scientific societies and publications, and will now briefly explain in a manner I judge will be most likely to interest architects and engineers. The particles or grains of which the rock is built up are of various forms and sizes, from a thoroughly rounded grain, almost like shot, to a broken and jagged structure, and to others possessing crystalline faces. These grains, most of them possessing a longer axis, have been rolled backward and forward by the tides or river-currents. The larger grains naturally lie on their sides when freshly deposited, with their axes in the plane of bedding; the smaller and more rounded particles naturally tend to occupy the interstices between the others, and in this way rude divisional planes, or laminations are formed. Each layer forms a sort of course like coursed-rubble in a wall, and by the necessities of deposition a certain rude geometric arrangement results, by which the particles of the future rock overlap each other, and thereby gain what is known to architects as bond.

But, so far, this is only like "dry walling," the mass wants cementing together to make it solid. The cementing process happens in this way in our rocks, which are almost purely silicious: Water containing a minute quantity of carbonic acid in solution, which most rain-water does, especially when it comes into contact with decaying vegetation, has the power of dissolving silica to a slight extent. This is proved in various ways, and is shown in the fact that all river water contains more or less silica in solution.

The circulation of water through the sand deposit of which our rocks are made dissolves part of the grains, and the silica taken up is redeposited on others. I cannot explain the chemical reaction that produces this deposition, but that it takes place in the rock during some period of its history is certain. I exhibit a quartzite pebble taken from the triassic sandstone at Stanlow Point, which, as can be easily seen, was at one time worn perfectly smooth by attrition and long-continued wear, for the quartzite is very hard. Upon this worn surface you will see spangles and facets which reflect the light, and on closer inspection it will be evident that they are crystals of quartz that have been deposited upon the surface of the worn pebble after it became finally inclosed in the rock.

A microscopic examination of the granules of the rock itself will show that many of them have had crystalline quartz deposited upon their surfaces, and in some cases rounded grains have in this way become almost perfect crystals.

An examination of the best sandstones for building purposes shows that they possess more of these crystalline particles than the inferior ones, and a good silicious sandstone shows its good quality by a fresh fracture sparkling in the sun. In addition to these crystalline deposits of silica I believe it exists also as a cement which binds the particles together when in contact.

It certainly is, however, with this secondary silica that the original sand has become a building stone, and the particles have become interlaced and bound together. Thus, in building parlance, the grains are the rubble of the wall, the currents the quarrymen, masons and laborers, and the silicious infiltration the mortar.

It is a remarkable fact that most of the pebbles included in the red rocks are quartzites, or indurated silicious sandstones; and, as showing that their solidity and hardness are due only to a further continuation of the deposit of silica in the interstices, it has been proved that the purple quartzites are purple only by reason of the original coloration of the grains which have been inclosed between the original grains and the secondary silica.

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IRREGULAR PAGINATION

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SAN FRANCISCO, CAL.

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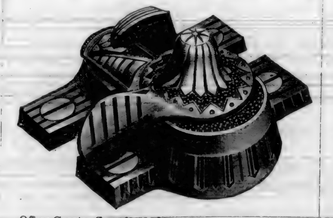

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"In November last it was determined by the Chapter to inaugurate a competition for the benefit of the Chapter's classes, and in pursuance thereof a prize of ten dollars (to be expended in books) was offered for the best design—with honorable mentions for second and third designs—in the order of their merit. Messrs. Pissis, Cuthbertson and Sanders were appointed a Committee on awards. The work of the class for the preceding year was also to receive the attention of the Committee. The designs were to be handed in at the first meeting of the Chapter in January, and the award to be announced at next meeting in February. In pursuance of the above, the designs were duely received and your Committee have made the following awards."

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sary to argue upon the desirability of this work being done at home, for as we are raising our families here and form a part of this community, the wages we receive for our labor are thus returned to the general circulation. If the work on which we depend for our support goes to other cities, how are we to exist here? Believing that you are in sympathy with us, more particularly now that many of our men are idle, we would ask you to use your great influence to keep the work of this city, in this city.

Very respectfully, the joint committee,

HENRY CARSTENSEN,
Secretary.

The President in reply to the communication assured the committee that the members of the Chapter were well aware of the desirability of retaining as far as possible all such work for our own mechanics, and would do all in their power to further that end. After transacting the other business of the Society, the meeting adjourned.

THERE is probably no large city in the United States so poorly represented in the matter of public buildings as the city of San Francisco. With a tumble down Post Office, an insecure jail, and an uncompleted City Hall, the citizens truly have little to be proud of, but if they can live on hope for an indefinite number of years to come, they may yet have their dreams of progress and improvement realized. Fair progress is being made with the New City Hall. There is some possibility if not probability of a *lot* being purchased as a site for a new post office, and when the jail shall no longer afford storage room for the unfortunates now overcrowded in its unhealthy cells, the authorities will per force be obliged to take some action towards providing fitting accommodations, so that when a chinaman is arrested for violating the cubic air law, he will not be incarcerated in a cell affording him still less of the blessed air than he obtained in his own stifling bunk in an underground hole in the Chinese quarter.

The recent burning of the Girls High School may not be an unmixed evil. The Board of Education propose to replace the burned building which was a frame structure, with a fire proof building of substantial construction and artistic appearance, and if it teaches the lesson that it is true economy to build substantially it will be worth the present loss incurred.

THE LATE GENERAL VALLEJO.

General Mariano Guadalupe Vallejo, died on the 18th of January in Sonoma at the age of 81 years, surrounded by nearly all the members of his numerous family. General Vallejo was a pioneer among pioneers, and the most distinguished native Californian. He had occupied the most prominent positions, having been Governor of California during the Mexican rule and State Senator during the present government. He was a high minded, honorable gentleman, with fine taste and considerable learning, which, considering the difficulties in obtaining books and the means of education in early days, was really remarkable. His hospitality, liberality and progressive ideas were proverbial. Every visitor at his home was welcome at all times, and with true Spanish hospitality, could stay as long as he desired. Many instances are related when he made presents to people of thousands of acres of land. He gave Andreas Hoepner, a Russian gentleman, a ranch of over 4,000 acres for teaching music to his children. The General inherited from his ancestors great talent for construction; the standard author in mathematics in Spain, in the beginning of this century, was a Vallejo. His father, Don Ignacio Vallejo, one of the original settlers in California who came with Father Junipero Serra, was an engineer and built many of the presidios and irrigating works at the time of the Missions. He at one time projected, and proposed to the authorities of Monterey, the conduction of water to that city from the river Carmel. That project has been carried out by the Pacific Improvement Company, at an expense of half a million dollars. The father of General Vallejo estimated the cost at $10,000, by employing the Mission Indians. General Vallejo was the founder of Sonoma; he built the first structures in that place, consisting of his residence, officers' quarters, barracks, and the church. We give a drawing representing them as they existed before 1848, from a description and sketch by the General's son, Dr. Vallejo. The capital of California was at one time, the city of Vallejo founded by the General; he projected and partly built at his own cost all the State buildings, but the removal of the capital to Sacramento, prevented him from finishing them. With the death of General Vallejo, the State has lost one of her prominent men and the best authority in historical facts in California.

E. J. MOLERA.

BUILDING BY E. J. LENNOX, ARCHITECT, IN *Canadian Architect*.

DAMAGE TO ADJOINING STRUCTURES FROM HEAVY BUILDINGS.

With the increasing size and weight of modern office buildings there come not only serious problems of safe and economical construction, but the still more difficult question of how to prevent damage to adjoining structures, not merely from undermining of foundations which can be avoided by suitable underpining, but from the actual compression of the soil.

If anyone will take the trouble to examine the old and comparatively light buildings alongside of which some high and heavy structure has recently been erected, the chances are that he will find the old buildings more or less damaged by their new neighbor, and cracked walls and sills, and especially cracked lintels over the nearest windows, will show that the old wall next the more recent structure has been carried bodily downward. As before intimated the settlement in most cases is not caused by any defect in or injury to the foundation of the old building, but by the fact that the heavier structure has compressed the soil and taken the lighter one down with it.

As the evil is progressive, increasing as the new building goes up, and for some time after it is finished, it cannot be provided against once for all, but the remedy must be progressive also, and the only way to prevent the injury is to keep the old wall wedged or screwed up while the new one goes down. The only instance we know of where this has been done is in the case of a large building now being erected in Chicago, where the soil is so compressible that such a building is expected to settle three or four inches during construction, and where one fine tall building has had one corner carried down four or five inches by a heavier building alongside, with the result of very badly cracking the older structure from top to bottom through the nearest line of windows. To avoid such a disaster the wall of the old building some seven stories high, next which the new building just mentioned is being put up, is temporarily supported on screws, and is by them kept slightly above its normal position so as to allow for settlement between times. These screws will support the old wall for some six months after the new building is finished, and until all settlement is over. With a less compressible soil, or a lighter building, perhaps iron counter-wedges between stout bearing stones would give sufficient lift, and could be left in when the new building was completed.—*The Engineering and Building Record*.

THE STRUCTURE OF SANDSTONE.

Read before the Liverpool Architectural Society, by Mr. T. Mellard Reade.

Sandstones, or, in masons' language, "freestones," from the freedom with which most of them are worked when freshly taken from the quarry, are plastic or sedimentary rocks. That is, they are composed of separate particles which have once existed as sand, like that we see on our own shores, or in the sand dunes of Hoylake or Crosby. Sandstones are usually more or less laminated, and are stronger to transverse stress at right-angles to their natural bedding than in any other direction, a fact recognized in every architect's specification, which states "all stones must be laid on their natural bed," a direction that unfortunately sometimes begins and ends in the specification. The cause of the superior strength is not, however, generally understood.

I have devoted some considerable time to an investigation of the internal structure of sandstones, which I have communicated from time to time to various scientific societies and publications, and will now briefly explain in a manner I judge will be most likely to interest architects and engineers. The particles or grains of which the rock is built up are of various forms and sizes, from a thoroughly rounded grain, almost like shot, to a broken and jagged structure, and to others possessing crystalline faces. These grains, most of them possessing a longer axis, have been rolled backward and forward by the tides or river-currents. The larger grains naturally lie on their sides when freshly deposited, with their axes in the plane of bedding; the smaller and more rounded particles naturally tend to occupy the interstices between the others, and in this way rude divisional planes, or laminations are formed. Each layer forms a sort of course like coursed-rubble in a wall, and by the necessities of deposition a certain rude geometric arrangement results, by which the particles of the future rock overlap each other, and thereby gain what is known to architects as bond.

But, so far, this is only like "dry walling," the mass wants cementing together to make it solid. The cementing process happens in this way in our rocks, which are almost purely silicious: Water containing a minute quantity of carbonic acid in solution, which most rain-water does, especially when it comes into contact with decaying vegetation, has the power of dissolving silica to a slight extent. This is proved in various ways, and is shown in the fact that all river water contains more or less silica in solution.

The circulation of water through the sand deposit of which our rocks are made dissolves part of the grains, and the silica taken up is redeposited on others. I cannot explain the chemical reaction that produces this deposition, but that it takes place in the rock during some period of its history is certain. I exhibit a quartzite pebble taken from the triassic sandstone at Stanlow Point, which, as can be easily seen, was at one time worn perfectly smooth by attrition and long-continued wear, for the quartzite is very hard. Upon this worn surface you will see spangles and facets which reflect the light, and on closer inspection it will be evident that they are crystals of quartz that have been deposited upon the surface of the worn pebble after it became finally inclosed in the rock.

A microscopic examination of the granules of the rock itself will show that many of them have had crystalline quartz deposited upon their surfaces, and in some cases rounded grains have in this way become almost perfect crystals.

An examination of the best sandstones for building purposes shows that they possess more of these crystalline particles than the inferior ones, and a good silicious sandstone shows its good quality by a fresh fracture sparkling in the sun. In addition to these crystalline deposits of silica I believe it exists also as a cement which binds the particles together when in contact.

It certainly is, however, with this secondary silica that the original sand has become a building stone, and the particles have become interlaced and bound together. Thus, in building parlance, the grains are the rubble of the wall, the currents the quarrymen, masons and laborers, and the silicious infiltration the mortar.

It is a remarkable fact that most of the pebbles included in the red rocks are quartzites, or indurated silicious sandstones; and, as showing that their solidity and hardness are due only to a further continuation of the deposit of silica in the interstices, it has been proved that the purple quartzites are purple only by reason of the original coloration of the grains which have been inclosed between the original grains and the secondary silica.

Yellow sandstone is colored also by iron, and I have frequently seen the red sandstone shading off to yellow without any division whatever. The various shades and tints of sandstone are necessarily due to the coloration of the individual grains.

Most of you will, no doubt, have observed the sort of marbling or grain upon the stone of our old buildings, such as the town hall, which I believe was obtained from quarries occupying the site of the St. James cemetery. This is due to what is called current bedding; that is to say, the grains have been arranged along oblique lines and curves instead of in parallel laminæ. This stone, which is geologically equivalent to the Storeton stone, and of the same nature, has stood very well. Some of the Storeton stone, if free from clay galls, although very soft when quarried, becomes hardened by exposure, and will stand the weather much better than a harder and more pretentious material.

The rocky substratum of a district can be well seen in its ancient buildings, for in old times carriage was so important an item that the old builders could not go far for their stone; hence we see that the old churches of part of Lancashire and most of Cheshire, and a large portion of Shropshire, are of red sandstone. Some of it has stood very well, while some has decayed into shapeless masses. There is a tendency to exfoliate parallel to the exposed or worked surface, in all stones, irrespective of the way of the bed, but more so where the stone is set upon edge, or at right angles, to its quarry bed. It is interesting and peculiar to see in some of the old buildings erected with pebbly sandstone how the white quartz pebbles stand out from the surface like warts. This is due to the greater indestructibility of the quartz pebbles, and the weathering away, or denudation, of the sandstone face.

Before leaving the subject of local sandstone it will be necessary to refer to one quality they have which is of excellent utility as regards the storage of water, but which is a decided disadvantage in building stone—that is, their porosity. I have proved by actual experiment that a cubic foot of Runcorn stone will take up three quarts of water by capilarity, and that it is possible to make a syphon of solid sandstone which will empty a vessel of water into another vessel with capilarity alone. This shows the absolute necessity of damp-proof courses, not only in the main walls of buildings of stone, but even in fence walls, for the continual sucking up of moisure from the earth, and its evaporation at the surface of the stone, make it rapidly decay. I think I could show you this fact in almost any stone building in Liverpool or elsewhere the stone is in direct connection with the earth. It also shows the necessity of taking care that no stones go through the wall to the interior surface, and of precautions, for backing up stone walls with less porous materials, or the introduction of a cavity. If you could suppose such a sandstone wall 40 feet long, 20 feet high and 1 foot 6 inches thick fully saturated, it would hold almost a ton of water. Of course, it never would be fully saturated, because of the evaporation from the surfaces, but with a southwest aspect, and very wet weather, it might become half saturated. But what does evaporation mean? It means the loss of so much heat and the burning of so much coal to supply its place. From this it will be seen that a pure sandstone wall is a thing to be avoided.

The subject is so wide a one that I have felt compelled to restrict my remarks to local sandstones, but the general principles of structure apply to all sandstones alike.

It is difficult by written description to tell you how to select a good stone, but one essential is that there shall be a good deposition of secondary quartz, as shown by the crystalline sparkling on the freshly fractured surface.

It must also be free from very decided laminations, for these constitute planes of weakness and are often indications of the deposition of varying materials, or the same material in various grades of fineness. It must also not be full of argillaceous and iron-oxide infillings. It should possess a homogeneous texture. The best way to study building stones is to study them in old buildings, for nature has then dissected their weaknesses.—*Stone.*

The *Boston Transcript* applauds the idea of having an architect's name conspicuosly placed on the building he has designed. It would save so much time to persons who purpose to build in making up a list of architects to be avoided.—Ex.

El Refugio, Mexico, Jan. 5th, 1890.

To the Editor of the
California Architect and Building News—

Dear Sir:—As I promised you before leaving San Francisco for a year's stay in Mexico, I have made notes of such of my observations as I think will be most likely to interest the subscribers to your journal, and take this opportunity to send them by a courier who leaves to-day. I will not bore you with a description of the journey, more than to say it occupied nearly two weeks, the last hundred and forty miles being done on mule's backs over the roughest kind of mountains, and along trails where a mis-step would have been fatal.

I enclose several photographs of the scenery in this vicinity, and of the towns and villages on the route. The cathedral appears to be the principal architectural feature of the towns. It is said to be a fact that when the cathedral at Chihuahua was built, about one hundred and fifty years ago, that no staging or scaffolding of any description was used, but as the walls were

CATHEDRAL.

built up, the interior of the church was filled with earth, which was also banked up on the outside of the walls to a corresponding height, and only removed upon the completion of the building.

I noticed in passing through Chihuahua that the poles for scaffolding purposes were made of small sticks bound together with rawhide, so spliced that from short pieces a scantling was formed answering for a three-story building. The window openings in a Government building under construction, instead of being temporarily closed with boards or cloth as is customary with us, were built up with adobes.

The towns and villages we passed through on our way to this place looked (at first sight) like huge brickyards with the kilns unburnt (all the buildings being of adobe.)

The general plan of the dwelling houses is a square with only one opening on one side, with a central court yard from which

TOWN OF JESUS MARIA, CHIHUAHUA, MEXICO.

doors open into the rooms. No windows are considered necessary. This may have been originally designed as a protection against the Indians, (at one time very troublesome) but is now doubtless continued from habit. The sameness in the appearance of these dwellings is very monotonous. The roofs are almost flat and are covered with mud, though this method of roofing seems strange at first sight, yet you must consider that mud is plentiful and wood and timber very scarce in many parts of Mexico, and the people very lazy; in fact most of the work is done by peons, or what were peons before the law set them free. But as most of them don't know they have been liberated, they go on working for their employers as before, earning two or three bits a day, and always in debt to their employers. The Indians who carry our mail are paid only three bits a day, and their position is no sinecure either, as they have to traverse on foot a distance of one hundred and forty miles in two days—yet they are a contented lot notwithstanding, and if they earned more would only gamble it away, and be no better off. All their desires are fulfilled if they get plenty of beans to eat, a few rags to wear, a blanket to sleep in, and firearms for their personal use.

I received the sample copy of the journal you sent me and congratulate you on the improvement you have made in its appearance since the new management took control.

We had a new cable for the mine sent us last month and it came in on a mule train as do all our supplies. Much difficulty is experienced with loads like this, however, and the *modus operandi* is quite curious. To begin with as much of the rope is coiled on the back of the first mule as he can carry, a loop of ten feet or so is then left slack and the cable then coiled to form the load of the mule following, and this proceeding is followed until the entire cable is loaded, when the train starts off on a journey of several day's duration. As a man is required for each mule the expense of transportation by this method is necessarily considerable. The cost in this instance amounted to five hundred dollars.

With best wishes for the continued success of your journal,

I remain, Yours very truly,

ALEX. H. EVERETT.

ECONOMY IN THE USE OF STEEL IN BUILDING CONSTRUCTION.*

By W. L. B. Jenney, Architect.

Fireproof work has become the rule rather than the exception in all important buildings. Our cities are growing rapidly, land in business centers becoming more and more valuable, and as a necessary consequence the buildings are built higher and higher.

Chicago has a very wise law, namely, that all buildings over 100 feet high shall be fireproof.

No hotel, theater, or apartment house can be popular unless fireproof. Any business man would think himself inexcusably careless if he left a thousand-dollar bond over night in other than a fireproof vault, and yet we trust our greatest treasures, our wives and children, in very combustible buildings, and ourselves are often away on business for weeks at a time. Too many sad examples are recorded of the folly of such risks. It is pleasing to see that at length the importance of fireproof dwellings has come well to the front and is meeting with universal endorsement.

*A few paragraphs on this subject having appeared anonymously in the Chicago *Tribune*, and, as such an article, to be of value, must have the stamp of authority, Mr. Jenney has, at our request, reviewed and enlarged it.—Editors Inland Architect.

This extended use of iron in building, at a time when other demands are fully equal to the average, has advanced the price of raw material and encouraged the "combination" to advance the price of beams three-tenths cents per pound.

Evidently, it becomes the duty of the architect to study how he may economize and produce the desired results at least expense. An opportunity is offered in the use of steel instead of iron.

The I-beam is the important factor in fireproof construction. When we consider that the ultimate tensile strength of iron beams is but 48,000 to 52,000 pounds per square inch of sectional area, while that of steel is from 63,000 to 70,000, it is easy to see that if the section of the beam is such as to give the greatest practical value to the metal used, there is a saving in the weight of metal by the use of steel instead of iron, amounting to one-quarter or even one-third.

As the price per pound is the same for steel and for iron beams the saving in money is enormous. For example, I have under construction a building which will require $250,000 worth of steel beams. Should iron beams be used, it would add at least $50,000 to the cost, with no advantage, but rather with the disadvantage of the additional load on the columns and foundations. To effect this saving, the architect must base his calculations on a tensile strength of say, 60,000 pounds per square inch, and must be sure he obtains it in the steel.

To be certain of getting this result, the specifications must not only demand it, but also that test bars be taken from each "blow" or charge of the converter and tested in the presence of an agent appointed by the architect; and that no beams will be received unless up to the required strength. That it is not difficult to obtain this strength is seen from the "test sheets," showing the testing of 276 "blows" of the converters at the mills, made by an engineer from my office. Of the 276 tests only thirty are below 64,000 pounds and the lowest is 61,500.

As the quality of the steel improves these figures enlarge. I think that even now we might insist upon a minimum tensile strength of 64,000 pounds per square inch, without any increase in the cost to the consumer.

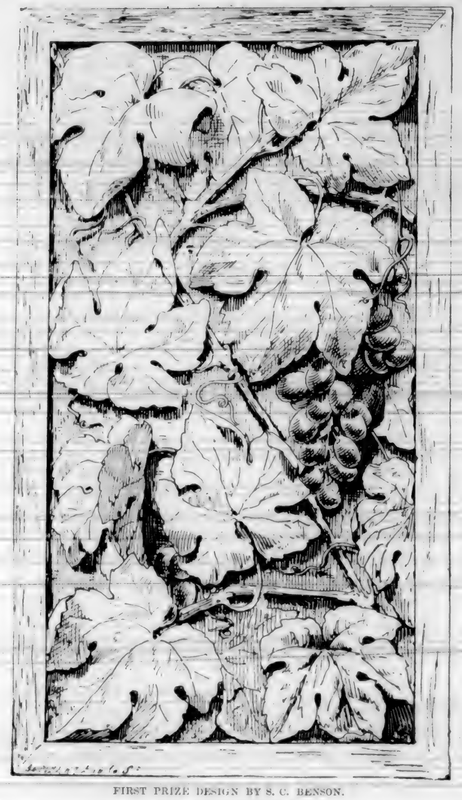
There are other tests required, for example, to insure that the beams shall not take a permanent set if moderately overloaded; that the beams can be punched without splintering and bent without breaking. After all the physical tests are satisfactory, the beams must be inspected for surface defects, and none but perfectly rolled, straight beams must be received.

It is true that such careful, thorough inspection is expensive to the architect, but the saving is so great that there is no other detail in an architect's practice by which he can save so much money for his client, and it should never be neglected.

There has been so much discussion of late as to the relative value of rolled steel columns and cast-iron columns. In bridges the cast-iron has entirely passed out of use. In a building to be filled with heavy running machinery, the architect should insist upon rolled steel columns, but for an office building, a store, or a warehouse, when the load is steady, it becomes a question of cost.

For cast-iron columns the architect must insist that from each heat of the cupola two test bars be cast, each of which is tested by placing it on supports and loading in the center with a weight proportionate to the size of the bar and the distance between points of support. Should the bars break, the metal is inferior and not acceptable. Each column should be drilled in two directions for measuring the thickness of metal, and then careful examination made for surface defects. Cast-iron has the disadvantage of being liable to internal defects that the most rigid inspection might fail to detect, and consequently the columns are made heavier than otherwise would be necessary. Even with the disadvantage of greater weight, the "proposals" for furnishing cast-iron columns are at present usually less than for rolled steel. To avoid the uncertainty which forces the architect to specify cast-iron columns one-quarter heavier than he otherwise would do, some of the leading foundries are now considering the policy of adding to their plant a large testing machine, in which each column may be tested up to double the load which it is calculated to bear. Any foundry that has such a machine can command the best work at the highest price, for it will save to the owner twenty-five per cent. at least in weight of metal now considered necessary for safety.

These are but a small portion of the engineering features that the demand for tall, expensive, fireproof buildings has introduced into a Chicago architect's office.—*Inland Architect.*



FIRST PRIZE DESIGN BY S. C. BENSON.

CO-OPERATION IN ENGLAND.

The question of *how* to keep the man, or men, who act in a subordinate capacity seldom enters into the calculations of the head of any enterprise, whether mercantile, professional, or mechanical. There are however, some exceptions to this, as to every statement that may be made. We sometimes hear of a business house or financial institution giving its employees a stated share of the profits should there be any. We now hear from England that the building firm of Peto Bros. have been awarded a large contract on a public building, and will take this opportunity to try the effect of profit-sharing with their men. They make the announcement through a circular, that it will only apply to this contract, but if it works well, will extend to future cases.

The agreement will be to divide one quarter of the net profits among the men when the building is done and the accounts settled as a bonus above their wages in proportion to the wages they have earned. The conditions under which each man is entitled to his share are that he shall have worked long enough on the contract to have earned five pounds, at the regular rate of wages; that he shall not have neglected his duty, or misconducted himself or wasted his time, or in other ways have acted so as to diminish the profits of the contract, or injure the reputation of the firm for good and honest work; and, that he shall not have engaged in any strike for shorter hours, or for wages above the schedule of wages which prevailed at the time the contract was made, and upon which the contract was based. That the workmen may assure themselves of the fairness with which the division is carried out they are invited by the circular to send a representative to watch the making up of the accounts by the auditor of the firm, and to sign the balance sheet. In order to identify the claimants every man must obtain a printed ticket from the time-keeper, on beginning his work, countersigned by the foreman, and noting the day and hour when his employment commenced, with his name, number and wages. This is to be again signed and countersigned when he leaves, and must be produced to secure a share in the dividend. What will be the effect of this innovation among the laboring element of England is, as yet, problematical. The trade-unions of that country may not take kindly to permitting some of their fellows doing as they please and thus bring about a contest that may try the executive ability of Messrs. Peto to cope with.

W. C. Prime, L. L. D. has made some interesting figures as to how much of the earth's surface would be required, in one section to properly bury all the men, women and children who have died since the creation. He says: The population of the earth is about 1,500,000,000. Suppose the human race to have existed for 6000 years and to have been always as great as now. In 6000 years you have sixty centuries and 180 generations, each a generation of 1,500,000,000. Now lay out a cemetery for one generation giving each man, woman and child five feet by two, or ten square feet. That gives a graveyard of 15,000,000,000 square feet and as a square mile contains 25,000,000,000 square feet, you want a graveyard not less than fifty five miles long by ten wide for one generation. Multiply this by your 180 generations, and get a strip of land 1800 miles by 55 wide, or a graveyard for the deaths of 6000 years. On that basis of figuring Texas contains ground enough for the burials of the 6000 years that are past and the 6000 years to come. But some one says the race of man has been on earth 100,000 years. Suppose it to be true and suppose the population to have been always as now. We have provided for 6000 years, and now want figures for seventeen times as many years. That is, you want 1,700,000 square miles or a spot 1700 miles long and 1000 miles wide. It would be only a *part* of the United States, and it is safe to say, that had the human race been in existence 100,000 years, a separate grave could be provided for each individual in the land east of the Mississippi River.

We illustrate this month a country residence from the designs of F. Lobdell architect, of Los Gatos.

An example of Japanese architecture promised in our last number to accompany the paper of Mr. Shimoda.

And on the double plate several interesting drawings descriptive of the new Auditorium Building designed and erected by architects, Alder and Sullivan.

Two fire places and mantels are being designed by Curlett & Cuthbertson for the rooms of the Sutter Club now being finished in the New California State Bank Building at Sacramento. The lower portions are of red stone and the upper of hard woods.

Our double plate shows some interesting drawings of the celebrated Anditorium Building lately completed in Chicago. the architects, Messrs. Adler and Sullivan have designed and constructed a building, that is not only a credit to themselves, but to the profession in America as well. From the foundation to the finishing, the various requirements of strength, durability, utility and fitness have been carefully studied and provided for. The following facts are compiled from the Daily Inter Ocean, which contained a long and interesting description of the building. The building has a frontage of 162 feet on Wabash Avenue, 362 feet on Congress street and 187.6 feet on Michigan Avenue, covering on area of 62,000 square feet.

The foundations consist of a four foot base of concrete, resting on a floor or platform of pine lumber.

Seventeen million bricks enter into the walls of the building, which are faced with Maine granite and buff Bedford stone.

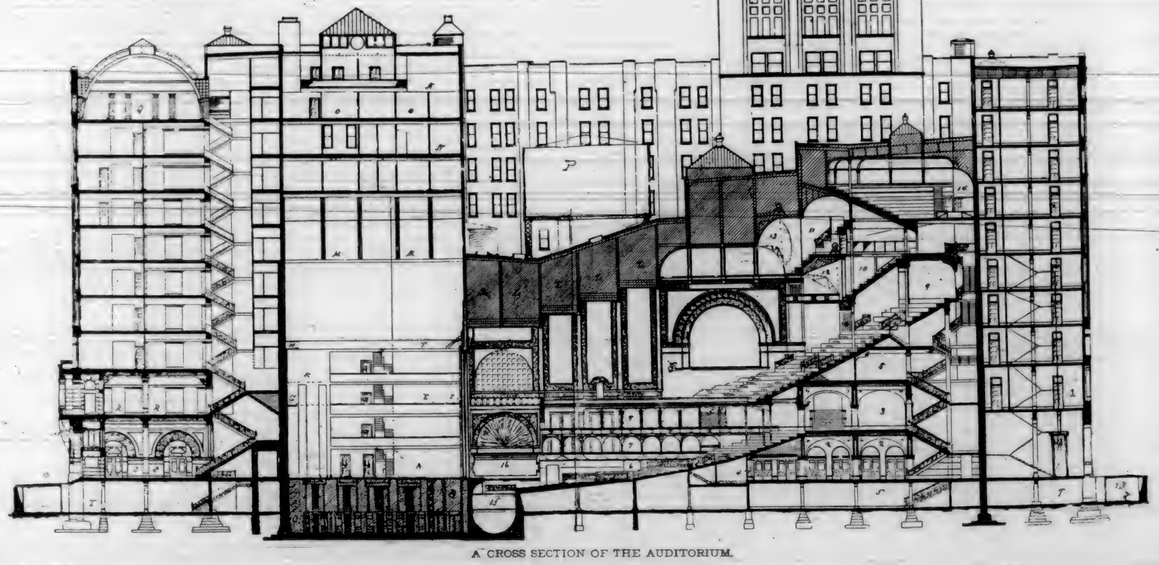
There are eleven dynamos, eleven boilers, twenty-one pumping engines, and thirteen elevators; ten thousand electric lights, two hundred and thirty miles of electric wires and cables; over twenty-five miles of gas and water pipe; over fifty thousand

THE PROSCENIUM ARCH.

THE CHICAGO AUDITORIUM.

ADLER & SULLIVAN, ARCHITECTS.

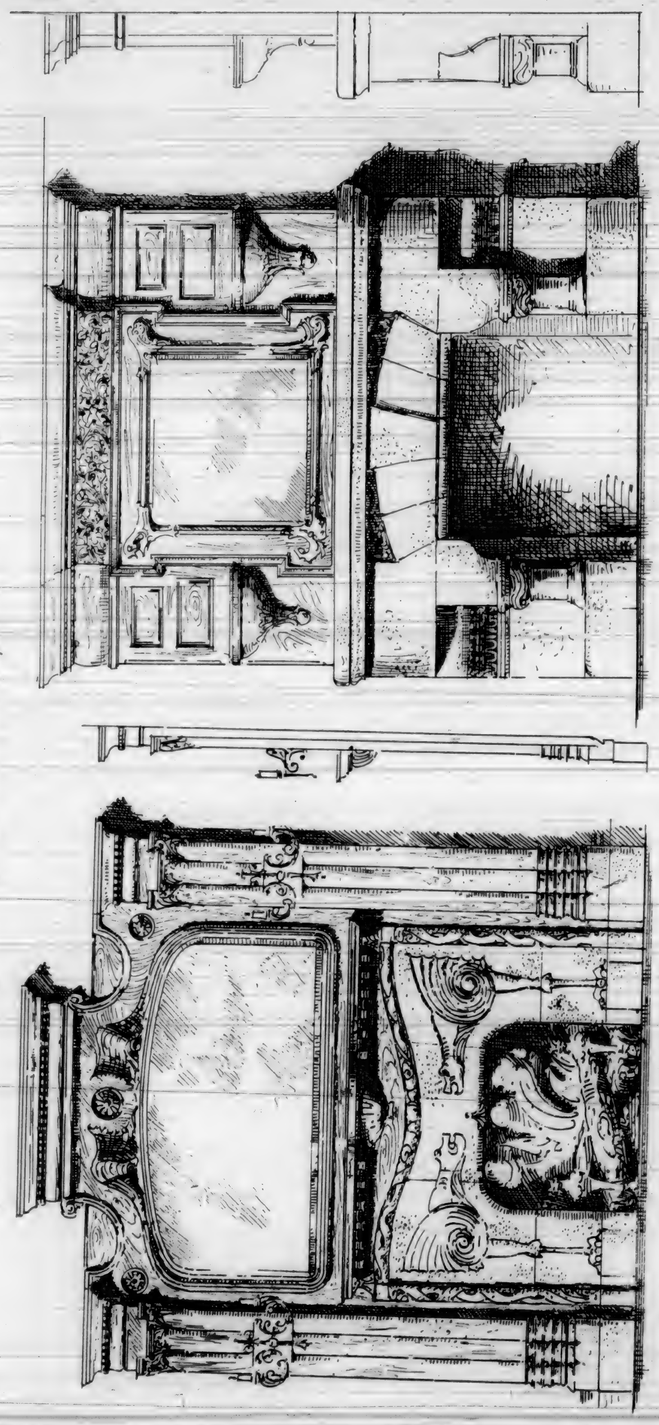
1—Office.
2—Main Entrance to Auditorium and Vestibule.
3—Main Foyer.
4—Cloak Rooms.
5—Smoking Rooms.
6—Parquette.
7—Boxes.
8, 9—Balcony Foyers.
10—Second Balcony.
11—Gallery.
12, 13—False Ceilings cutting off Gallery and Family Circle.
14—Recital Hall.
15—Orchestra Pit.
16—Organ.
17—Lantern and Signal Service.
18—Tower.
19—Ladies' Parlor.
A—Stage.
B—Intermediate Stage.
C—Hydraulic Stage.
D—Dressing Rooms.
E, F—Fly Galleries.
G—Paint Bridge.
H, I—Bridges Across Stage.
K—Store Room.
L—Property Room.
M—Rigging Loft.
N—Servants' Rooms.
O—Hotel Kitchen.
P—Hotel Banquet Hall.
Q—Hotel Dining Room.
R—Hotel Parlors.
S—Hotel Offices.
T—Engine Room.
U—Pumps.



A CROSS SECTION OF THE AUDITORIUM.

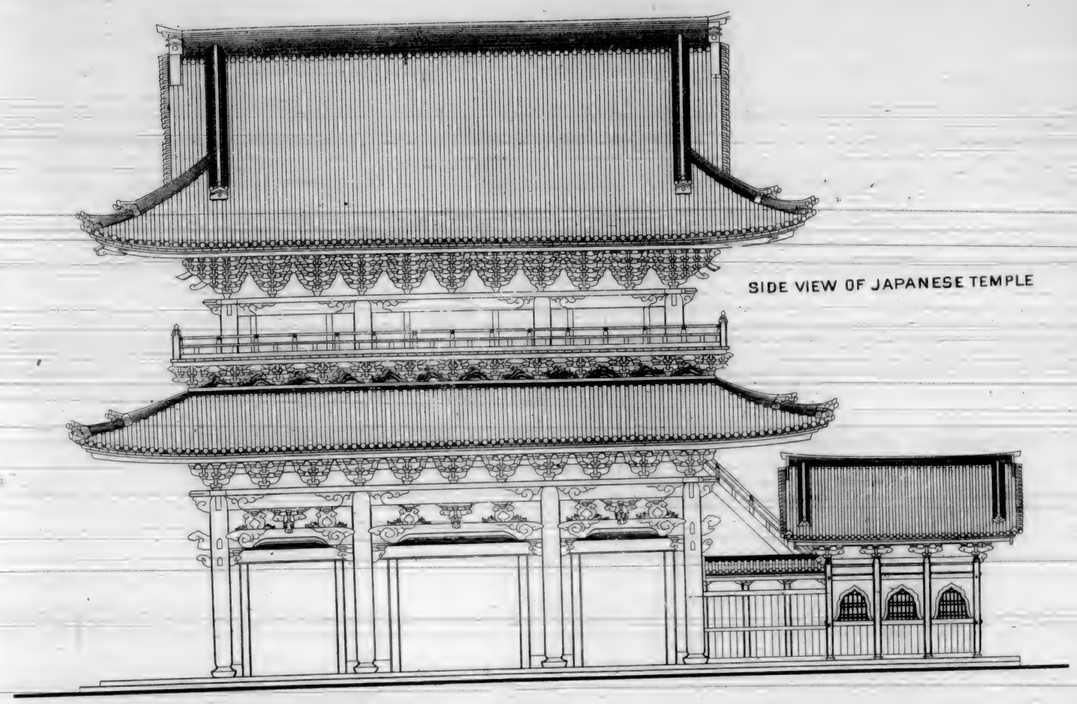
MANTELS FOR THE SUTTER CLUB · SACRAMENTO.

Curlett & Cuthbertson · Architects.

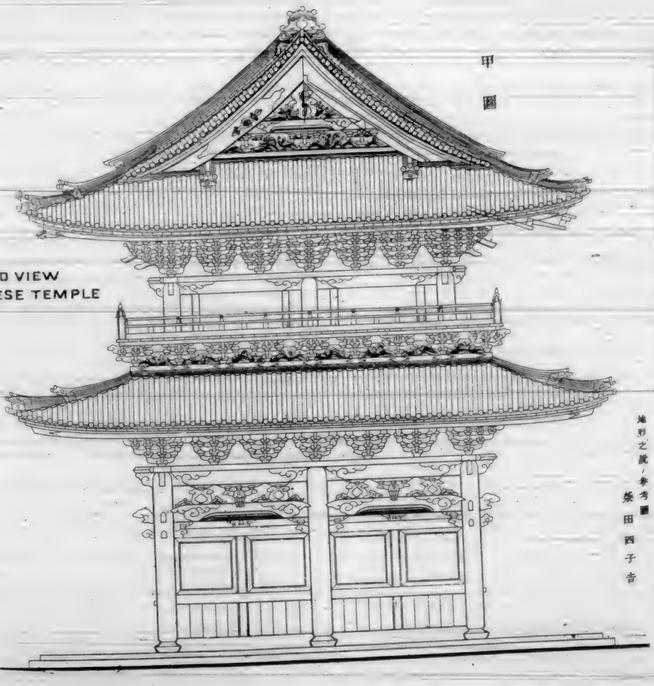


LIBRARY

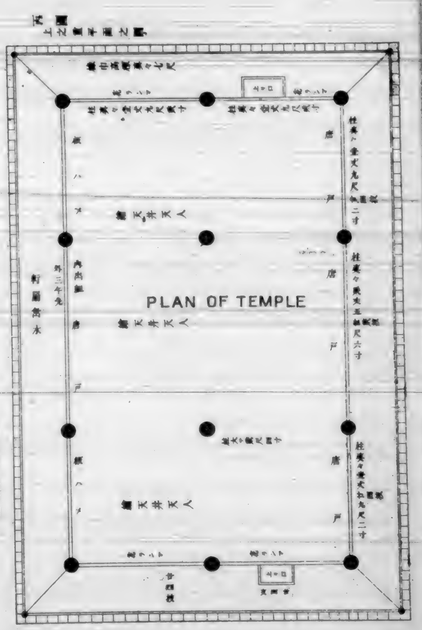
PARLOR



SIDE VIEW OF JAPANESE TEMPLE



END VIEW
OF JAPANESE TEMPLE



PLAN OF TEMPLE

square feet of Italian marble mosaic floors, containing over fifty million separate pieces of marble.

The cost of the building with its equipments, etc., reached nearly three million dollars.

The office portion of the building is located in the ten stories fronting on Wabash Avenue, and is reached by a broad flight of marble and iron steps, and three elevators. There are one hundred and twenty-six offices finished in antique oak.

The hotel occupies the ten stories on Michigan Avenue and Congress street fronts, and has four hundred rooms.

The entrance to the theatre is from Congress street. Its high arched ceiling studded with electric lights, and supported by massive pillars of porphory, its inlaid mosaic floor, its graceful box offices of bronze, its marble walls of scintilating colors contrasting with the polish of the mahogany trimmings, make a scene to vie with Aladdin's palace.

The seating capacity of the various portions of the theatre are as follows: Balcony, 1432; Family circle, 437; Gallery, 526; Parquet, 1442; 40 Boxes, 200. Total, 4037.

PROTECTING ELECTRIC WIRES.

The rules of the Boston Manufacturers Mutual Fire Insurance Company for guarding insured property against the hazard of stray currents of electricity generated outside of mill yards are as follows:

First—No foreign wires of any kind shall be attached to buildings insured by this company for the purpose of carrying electric currents across the yard to any point.

Second—All electric wires which may be required by the insured shall enter the premises at one point near the headquarters of the nightwatchman, where they can be kept under supervision; each of said wires shall be guarded by a protector against strong currents, operating by opening the circuit, and by a lightning arrester.

Third—Such protectors against strong currents shall be located in a dry, accessible place inside the building, and as near the point of entrance of wires as possible, and shall be without ground connection; such protectors shall be mounted on non-combustible and insulated supports, which shall be provided with a receptacle for the burning or melted parts of such apparatus.

Fourth—The lightning arresters on all wires must be placed between the protector against strong currents and the electrical portion of the apparatus within the building to which such wires are connected. No ground wires for such lightning arrester shall be attached to gas pipes within the premises of the insured.

Fifth—All electric wires which may enter the premises of the insured must be insulated between the line wire on the insulator attached to the buildings outside and the protecting device within with the best quality of waterproof insulation. Moreover, such wires must enter at a distance of not less than three (3) inches from any other wire or any conducting material.

Sixth—If any wires carrying high tension or strong currents are to be carried over or under other wires on the property of the insured they shall be attached to poles so near to each other, with one wire so far above the other that if a break should occur the pendant wire between these poles may not be long enough to come in contact with the wire below, or, if not carried on poles, these wires shall be so placed or protected with guard wires as to render a contact between different wires impossible.

Seventh—If the high and low tension systems are in use in the same yard, even when developed within the works, the wires must be kept separate, and so wide apart that no contact or cross arc can be made.—*Fire and Water.*

ANNUAL MEETING OF THE CALIFORNIA ELECTRICAL SOCIETY.

The annual meeting of the California Electrical Society was held at their rooms the 3d instant. By the reports of the officers for last year, the Society is in a good financial condition. The following named officers were elected for the ensuing year: N. S. Keith, President; Orion Brooks, Vice-President; W. W. Wight, Secretary; W. Hanscom Jr., Treasurer, and Edward Roe, H. T. Bestor and A. W. Smith as the three other members of the executive committee. On account of their aid in the science of electricity the following named gentlemen were proposed and unanimously elected honorary members of the Society: A. G. Davis of Baltimore, G. H. Pride of New York, and P. B. Cornwall, L. L. Baker and Alvinza Hayward of this city.

THE MYSTERY OF THE SPHINX.

BY CHARLES S. ROBINSON, D. D., LL.D.

At the foot of the pyramids of Ghizeh, immediately below one who is sitting up on the ledges, there rises out of the verdureless sands, confronting the observer like a statue which looks toward him but not at him, one of the most singular creatures that ever the art of sculpture has given to the ages. A fantastic imagination of some forgotten artist has planted there in the desert an image with one of the oddest heads and one of the awkwardest bodies that can be conceived.

This is what has been known as the Great Sphinx. It is massively constructed, and carved with admirable ingenuity, but no line of any style of beauty has it anywhere to exhibit. The ears are enormous, and disreputably long; the nose is gone beyond criticism; the mouth is now ragged, thick-lipped, and uncouth; the beard is boorish; the open eyes stare blankly into space; the wig bags flatly and flaringly out on either side; the chin has lost half of its stony hair and all of its ancient semblance of dignity; the face was formerly painted, but the red color has been washed off by the sand-showers on the weather side. Altogether the structure seems pretty much gone under the effects of age and decrepitude, and has quite the look of a used-up heathen idol.

And still all tourists agree that there remains a tranquil majesty in the mien of it, which every one would recognize the moment his eyes caught a glimpse of the forehead aloft in the air. Even the fastidious Dean Stanley appears to have considered it "a giant representative of royalty." And he further pronounces that "it fitly guards the greatest of royal sepulchers." So finally he offers his testimony that "with its half-human, half-animal form, it is the best welcome and the best farewell to the history and to the religion of Egypt."

There it stands very quietly; and everybody must be allowed, with due charity, to cherish his own opinion. Coarse in its construction as a work of art, stiff and clumsy in every lineament, it is yet able, as the notebooks of a thousand visitors testify, to impress the souls of Eastern travelers with the vague sense of its greatness. It is better seen from below. The first sight of it, when caught as a part of that matchless landscape displayed from the top of the Great Pyramid, inevitably belittles and dwarfs its proportions. It looks grandest of all from the long and winding approach of the old path. Most persons know that the general figure is of a colossal form, sculptured roughly from the cliff on which it reclines; indeed, it is a lofty rock cut into a symbolic shape representing a lion lying down, with the face of a human being, erect above the forepaws,—a brute's body with a man's head and neck. The body seems to lie reclining at length in the sand; the head is poised finely, with noble features; the figure stands more than fifty feet high, and once had a royal helmet above; the stone is nummulitic, full of millions of minute marine shells, thus showing that years ago this part of the plain lay under the waters of the distant sea.

The entire effect is much lowered because of the overpowering achievement of size in the pyramids close by. Harriet Martineau has an amusing account of her eager anticipation as she went forth upon these excursions around Cairo. Always she said to herself, "Whatever else my eyes will see, they will see the Sphinx." But when she rode up toward the Great Pyramid she was so absorbed that she missed the sight altogether of this idol, and thought afterwards it had been only a heap of rock piled up there amid the interminable sands of the desert. But an attentive contemplation of it subsequently enabled her to reach, and even retain, her former enthusiasm. She says it made her half afraid of it. She noticed particularly that they had placed a man "sitting in a fold of the Sphinx's neck, as a fly might settle on a horse's mane; in that crease he reposed, while far over his head extended the vast pent-house of the jaw, and above that the dressed hair upon either side of the face, each bunch of it a mass of stone which might crush a dwelling-house; so life-like, so huge, so monstrous,—it is really fearful. The full gaze and stony calm of its attitude almost turn one to stone."

It is likely, however, that the Sphinx owes much of its singular impressiveness to the sense of mystery which for generations has inexplicably surrounded it. It is, perhaps, the most written-up and advertised curiosity in the East. Poetry and legend, painting and etching, have vied with each other in throwing a glamor around this forlorn idealization of mythology. The Bedouin say that there are spirits who in the night-time visit the Sphinx. One wears the form of a giant man; the other, that

of a beautiful boy. These move together, and may be detected by the smell of the incense which, as they burn it under the nostril of the idol, floats all through the neighboring air. It is dangerous to interrupt them in their worship at twilight, and hence no Arab child ventures out there after dark among the mysterious tombs in the ledges. The wild sons of the desert call this Sphinx *Abu'l Hol*, "The Father of Terror," and they keep shy of all contact with it.

Besides this, there is the nurses' story of Rhodopis, the maiden who, when she grew old, bewitched people that passed. In her childhood, however, she was a sweet little girl; and one day, when she was bathing away down by the great sea, an eagle bore off her shoe, and took it over the Libyan sands, clear to Memphis. There she suddenly dropped it upon the lap of the king of Egypt as he sat at judgment. And the shoe fell so strangely, and it was such a small and delicate shoe, and the beautiful embroidery upon it was so dainty, that messengers were sent over the whole land to find the owner. They caught the fleeing damsel down in Naucratis, and she was brought to the palace. Then the king married her. And when she died he built the third pyramid for her monument, even though some said she was a witch; he said she was only a beauty.

Beyond these fanciful legends there always remained the fact, everywhere admitted, that nobody knew what this Sphinx was, or who built it, or when it first saw the light, or what it was for any way. It appeared so different from everything else, that the best scholars shrank back from giving an opinion. The name of sphinx was applied to it only from some supposed resemblance which the figure had to what used to be pictured in the Greek mythology. Indeed, it has often been thought that the Egyptian term took its origin a thousand or two years after a new race of conquerors overthrew the ancient dynasties. The kings were dead and forgotten who caused these vast figures to be fashioned there in the temples, and the temples were long in ruins before the name of Sphinx was applied to their work. And it may be that it was just that sense of inexplicableness in mythology which fixed the title here.

In the Greek fable we are told that there was once a monster who was born the direful daughter of Typhon and Chimæra. She had the body of a lion, with its breast, feet, and tail, but the face and head of a female, and the wings of a bird. She was sent by Mars to avenge the death of his son, the dragon slain by Cadmus, and by Juno sent to Dionysus' city to ravage the territory of Thebes. She had been taught to make riddles by the Muses, and one of these she offered on the Phicean Hill: "What creature is that which has one voice, is four-footed, two-footed, and at last three-footed?" Those who could not answer she devoured, and the whole land fell into awful fear. The oracle told every one who asked for help from the gods that Thebes could not be freed until some one should solve the Sphinx's riddle. Finally Creon, who, at the time, was king, lost his son, seeing him devoured by the monster. A proclamation followed, that whoever should answer the Sphinx should be the king of Thebes and have the monarch's sister Jocasta for his wife. Œdipus then came from Corinth into Egypt, and at once answered the enigma. "Man," he said, "is the animal which has but one voice; in his infancy he is four-footed, for he creeps on his hands and feet; but he goes on two feet when he is grown, and, when old, he carries a staff for his help." Then the Sphinx, conquered, flung herself down and died.

This was the Grecian story, but it had no connection with the Egyptian theology, and the Sphinx at Ghizeh was in its place a thousand years before the Greeks came to reign in the land of the Pharohs. It is useless to wander around among the scholars. They differ with each other, and sometimes grow fierce. Mariette says the idol belongs away back in the fourth dynasty; Cheops (who is supposed to have erected in the oldest times the Great Pyramid) found it dilapidated, and gave it a new life with some needed repairs, and so immortalized his name. Then comes Brugsch Bey, saying that this statement of Mariette "bears a lie on the face of it." And Piazzi Smyth actually grows spiteful at these efforts to bring the image any more into notice; he declares that this mutilated object is only an image of superstition, fairly obscene with its idolatrous impiety, unfit to be in the neighborhood of the pyramid or associated with its name. His language grows almost amusing in its explosion of petulant temper: "That wretched Sphinx, I repeat, need be no more referred to again by any Christian man, woman, or child, looking for instruction to the Rock of Ages alone," thus he concludes.

There is no necessity now, certainly, for further keeping up the sense of mystery which has had so much to do with the fame of this image. For everything which any one wants to learn, is told us by George Ebers, and Miss Edwards adds the latest confirmation. The sand, which covered all the front of the idol, has been excavated; something looking like a temple or votive chapel was found just between the paws the lion extends along the face of the rock; statues of King Khafra, three in number, one of which is now in the Bulak Museum, were standing quietly waiting to be dug up and to tell their story. The making of this rock into a figure of a deity was begun by Cheops; it was finished under the direction of King Chefren; and it was dedicated to Harmachis, the God of the Rising Sun. This is learned from a large tablet covered with hieroglyphics which was found fixed upon the breast of the animal down beneath the sands of the ages. There used to be an altar in one of the chambers, and this was so located that the sweet savor of a sacrifice might most easily be supposed to reach the god's nostrils.

That is to say, there is no longer any mystery of the Sphinx; it represents a transformation of the deity Horus, so an inscription discovered lately at Edfu relates; the god, in order to vanquish Typhon, the evil spirit, took the shape of a human-headed lion, thus he arose upon the imagination of those ancient idolaters in the remote past for their worship. Hence the Sphinx was the colossal embodiment of Egyptian idolatry at its highest power and basest degredation. The sun-god was not equal to his own defenses, and the structure lies in ruins. A strange sort of beauty must once have graced it as a thing of art; but the Mamelukes used the big head for a target when they practiced their artillery in shooting. That was what broke the nose and tore fragment after fragment out of the wig and the beard and the chin. Then the open desert invited the winds to come and bury the enclosure below; and so the old battered creature gazes out across the ages, lonely and lost in its vain attempt to summon its friends for rescue, with the far-off look of a deserted monarch. And so Egypt stands crownless to-day; the obelisks, the pyramids, the sphinxes—all are desolate. They lingeringly proclaim their own humiliation before their conqueror. And that was what the Lord said by his prophet in his Word: "He shall break the images of Beth-shemish that is in the land of Egypt; and the houses of the gods of the Egyptians shall he burn with fire." This was what the sad Jeremiah wrote while he was an exile in that country; his eyes had to bear the pain of sights he saw, but he hoped on and kept the faith.

It seems to me, that, if I were asked to offer a convincing proof of the certain fulfillment of Divine prophecy, I should be willing just to rest my case upon the picture which is here suggested. Could Jehovah, the living and true God, show more conspicuously the depth of the contempt and derision in which he holds these idols of the ancient mythologists of Egypt, than by exhibiting them in this plight of ruinous dilapidation? There they stand, battered and deserted, amid the rifled graves of their forgotten priests. Imagine the scene with the infidel and alien race of Mamelukes training their guns upon the temples where the Pharaohs worshiped their highest deities with incense and the bodies of beasts, and laughing with jeers of applause and congratulations whenever a better shot than usual shows by the little cloud of dust in the air that the cannon-ball nipped on the nostril of the Sphinx.—*Sunday School Times.*

STUDENT'S COLUMN.

Relief (re-leef), Rilievo (ré-le-á-vo). The projecture or prominence of a figure above or beyond the ground or plane on which it is formed.

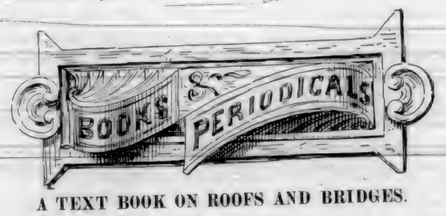
Relief is of three kinds, namely, low relief or bas relief (bä-re-leef); bass relief (bás-re-leef); basso rilievo when the figures do not stand out far from the plane on which they are formed, as in medals, festoons, foliage, etc.; demi relief, demi rilievo, when one half of the figure rises from the plane; mezzorilievo (met-*or*-med-zo-re-le-á-vo), a middle degree of relief in figures between high and low relief; high relief, alto relievo or alto rilievo the projection of a figure half or more, as when a figure stands completely out from the ground, being attached to it in only a few places.

Intaglio (in-täl-yo) is a figure cut into a material, as a seal, matrix, or the like, so as to form a depression or hollow.

PERSONAL.

John McArthur, Jr., the well-known architect of Philadelphia, is dead. Mr. McArthur has held high positions during his lifetime, having been architect for the War Department during the war. His greatest work, however, is the Philadelphia City Hall, now in the course of erection, and which has already cost $14,000,000.

I. K. Pond, of Pond Bros., Architects, Chicago, has come to this Coast on a pleasure trip.



A TEXT BOOK ON ROOFS AND BRIDGES.

PART II—GRAPHIC STATICS.

—BY—

Prof. Mansfield Merriman and Henry S. Jacoby.

The above is the title of a new book just issued by John Wiley and Son, New York, 15 Astor Place. It treats of the *Analysis of Stresses* by graphic methods, together with additional matter so as to form a tolerably complete treatise on Graphic Statics, as applied to the discussion of common roofs and bridges. Abbreviated methods are employed in calculating wind stresses.

A novel feature of the book is that every other leaf is a blank, and of a suitable quality of paper, upon which drawings can be made, and new problems worked out with the assistance of given problems on the adjacent leaves. It is a text book that will be of great value in an Architect's or Engineer's library.

American Architect, Jan. 11, "Civil and Domestic Architecture," "Loss of Power by Radiation of Heat," "The Cost of a Small Museum," "The Ideal Disposition of the Dead," "Electricity's Victims in Europe," "Methods of Reducing the Fire Loss." Jan. 25, "The Art of the Vikings," Architectural Shades and Shadows, "Prehistoric Ruins and Works of Art at Yucatan."

Architecture and Building, Jan. 18, "Electric Motor for Domestic Purposes," "Hot Water Heating." Jan. 25, "Comparative Cost of Electric Lighting," "Notes on Estimating." Feb. 1, "Notes on Surface Drainage," "An Architectural Musuem and Library," "Stray Thoughts for Young Architects."

Inland Architect, January, "Vaulted Churches in Romanesque Architecture," "Development of Architectural Style," "Economy in the Use of Steel in Building Construction."

Architectural Era, January, "The General Character of Romanesque Architecture."

Canadian Architect, January, "Office Management and Routine," "Architecture without Decoration."

Northwestern Architect, January, "The Reduction of Fire Loss."

Journal of Proceedings, (R. I. B. A. organ) "Paris Plasterers, "Height of Buildings," "Westminster Abbey," "Architectural Education."

The Engineering and Building Record, Jan. 11, "The Organization of an Architect's Office," "Improving Country Roads," "Wiring Buildings for the Electric Light." January 25, "Hydraulic Power in London," "Mills and Mill Engineering," "Recent Progress in Sinking Deep Foundations for Engineering Works." Feb. 1, "Government Action as to Accepting the Lowest Bid." "Experiments Relating to Hydraulics of Fire Streams," "A Report on Waste Water."

Sanitary News, Feb. 1, "Building in Other Conntries," "Fire Proof Buildings."

The *Western Architect and Builder* of Denver has begun the publication of a four page weekly supplement.

Architects, Builders and Hardware Journal, Atlanta, Ga., January, "Iron Houses," "Poisonous Gases," "Does it pay to employ an architect?"

Manufacturer & Builder, New York, January, "Suggestion for World's Fair" 1892 illustrated, "The Linotype," "Buerenstock Cable road, Switzerland," "Effect of Vibration on a building."

NOTES & COMMENTS.

Supervisor Bingham proposes an ordinance removing the Chinese quarter to the Potrero.

About $2,000,000 is the value of the lumber trade of Portland, Or. and vicinity.

It is estimated that the Southern Pacific Railroad Co. lost over one and one-quarter million dollars by the recent storm in the mountains.

The Saw Mills in the Puget Sound region are said to have a total capacity for 1,000,000,000 feet of lumber per year, of which the output is about 750,000,000 feet.

In a certain locality in Boston $2,000,000 is estimated to have been spent upon buildings all situated within a radius of one quarter of a mile.

In the suit of Pissis & Moore against Dr. J. H. Stallard, the Justice Court decided in favor of the plaintiffs, notwithstanding the contract had not been recorded.

Washington State has an increasing industry in the cedar shingle manufacture, which amounted to nine million shingles for the past year at a valuation of over two and one quarter million of dollars.

The Illinois State Chapter, A. I. A., has been formed by a consolidation of the Chicago Chapter, A. I. A., with the Illinois State Association of Architects. A committee was appointed to consider the rental of a room at $1,000 per year, on the third floor of the Art Institute. It was decided to make the annual dues of the new body not less than $15 per annum.

The contractor or builder should never prepare the drawings and specifications. *He is on the other side of the case.* A learned judge once said that "a contractor preparing the drawings and specifications of work that he is to perform for a party who has little or no technical knowledge of the subject, is like the opposing lawyer preparing both sides of the case." However honest he may be, such a lawyer and such a contractor will give his own side the advantage.—*Ex.*

The Senate will probably appropriate the following amounts for public buildings: Oakland, Cal., $300,000; Cheyenne, Wyoming, $150,000; Helena, Mont., $150,000; Salt Lake City, Utah, $500,000; Stockton, Cal., $85,000; Mammoth Hot Springs, Yellowstone National Park, $10,000; Portland, Or., $500,000; Virginia City, Nev., $75,000; Hastings, Neb., $150,000; The Dalles, Or., $100,000; Salem, Or., $100,000; Reno, Nev., $75,000; San Diego, Cal., $300,000.

Statistics recently tabulated show that there was consumed during the past year of clay products in building in twelve of the leading cities, the following number of brick: New York City, 1,000,000,000; Chicago, 440,000,000; Philadelphia, 300,000,000; Boston, 150,000,000; St. Louis, 200,000,000: Washington, 125,000,000; Cincinnati, 100,000,000; Cleveland, 84,000,000; Omaha, 80,000,000; Pittsburg, 80,000,000; New Orleans, 36,000,000; Indianapolis, 35,000,000; making a total for these cities of 2,730,000,000, which merely hints at the enormous consumption in the country at large.—*Ex.*

Governor Hill, of New York, in a recent message to the legislature, suggested that in view of the unsatisfactory condition of the county roads, the State should construct in every county two roads intersecting each other in about the center of the county, connecting with similar roads in the adjoining counties and so form a system of State roads to be kept in repair at the expense of the State. The advantage to be gained would be convenient means of communication between different parts of the State, whether near or far. If this idea is carried out successfully in New York there will be an excellent precedent for other States to follow, and thus make public highways over the length and breadth of the nation.

A project is on foot to build a large salt water bathing establishment on the northwest corner of Sutter and Stockton streets; the water will come direct from the ocean, through several miles of pipe; the building will be a handsome structure, containing, besides a large number of single bath-rooms, one large plunge bath 50x100 lined with marble and two smaller plunge baths for private clubs whose membership will be limited to two hundred. One club being composed of ladies, and the other of gentlemen. Mr. Wm. Greer Harrison is at the head of the enterprise; the company has its office at 305 California street, and is known as the Pacific Ocean Bathing Corporation. Such an enterprise should be made a very profitable one—at present would-be bathers have long distances to go to enjoy the pleasures of a swim in salt water, and yet there are many who put up with the discomforts of a long ride and the consequent loss of time, for the sake of the pleasure they take in a dip.

M. Pechard, the French chemist, has discovered a new substance, called "oxalomolybdic acid," being composed of oxalic and molybdic acids. The crystals of this new acid can be kept unchanged both in light and darkness, but soon become blue if moistened and placed in the sun. When it is used upon paper it will not appear distinct unless put under the strongest sunlight, which turns it to a deep blue. However, this only happens when the solution is spread over some surface, as in the bottle it remains unchanged. To use it for photographic purposes, dip a sheet of paper into a saturated solution, dry in the dark, and then expose behind a common photographic negative for about ten minutes, when a very sharp blue print is obtained. If placed in contact with water, the color immediately disappears, thus allowing one to write upon a piece wholly exposed to the sunlight with a pen dipped in water; but heat this blue print once, and it turns a jet black, which water cannot change.

The American Fine Arts Society has been organized with a capital stock of $50,000, besides which a gift fund was raised of upwards of $30,000, now reported to have reached $200,000, contributed chiefly by Cornelius Vanderbilt, George Vanderbilt, C. T. Barney, John D. Rockfeller, Robt. Gorlet, Henry G. Marquand and John D. Archibald. The Architectural League, Art Students' League, Society of American Artists, New York Art Guild and Society of Painters in Pastel, have united with the organization. A building is to be erected in New York soon in which exhibitions can be held and the study of Art pursued.

"The formation of this powerful union", the committee having the matter in charge announces, "is doubtless the most important step yet taken in the establishment of a true school of American Art. It will correspond to the Ecole des Beaux Art in Paris. It brings together no less than three hundred artists and architects of merit and as many more ambitious students. This Union is destined to become the Art power of the country.

Plans have been drawn for another suspension bridge across the Hudson, at a point where the river is narrowest, between Hoboken and Fourteenth streets, New York. Gustav Lindenthal is said to be the projector of the work, which is to be carried out by the North River Bridge Company, of which Jordan L. Mott, of the Mott Iron Works, New York, W. A. and W. F. Roebling, the famous bridge builders, are amongst the principal incorporators. The bridge is to have but a single span, 2,850 feet in length, thus outstretching the much talked-of English Channel bridge, whose longest span will be only 1,700 feet. To place a pier in the center of the river would incur a greater expense than a single span, as it is two hundred feet down to rock formation. The bridge will be 150 feet above the river and will be constructed of open hearth steel wire. The Brooklyn bridge was built with crucible steel wire that cost eight cents a pound, while the material now to be used is estimated at half that price. There will be six railroad tracks crossing, and the length of time taken to build is computed at not more than seven years, unless delayed by legal proceedings.

WARFARE ON OAK TREES.

"The world seems to have waged a special warfare upon oak trees," says a St. Louis man. "Before iron ships were built, and that was only twelve years ago, oak was the only thing used. When this drain ceased oak came into demand for furniture, and it is almost as expensive now as black walnut. No one feels the growing scarcity of oak like the tanner, and the substitution of all sorts of chemical agencies leads up to the inquiry as to whether other vegetable products cannot be found to fill the place of oak bark. The wattle, a tree of Australian growth, has been found to contain from twenty-six to thirty per cent. of tannic acid. Experiments have been made on the Pacific Slope, where the wattle readily grows, and in a bath of liquor, acid was made from it in forty-seven days, whereas in liquor made from Santa Cruz oak, the best to be found in all the Pacific States, the time required is from seventy-five to eighty days. The wattle will readily grow on the treeless plains of Texas, New Mexico and Arizona, the bark of which ought to yield five dollars per acre, counting the fuel as nothing."—*Invention.*

CAUSE OF THE TRACY FIRE.

Result of Building-Inspector Entwisle's Investigation.

Complying with your order to make an examination to ascertain, if possible, the origin of the fire in the building, 1634 I street northwest, owned and occupied by the Hon. B. F. Tracy, I have the honor to report that I have made a thorough examination of the building, and it is evident from the condition of the house that the fire first started on the west side of the front parlor on the main first floor, and its rapid progress was no doubt caused by the fire getting behind the wall paneling. The room was lined its entire height with panel work on all the walls, leaving small chambers through which the fire passed around the entire room and through the floor to the second story. It also passed out into the hall and by currents rapidly up the stairway, cutting off all chance of escape from the upper floors. The building was heated by low pressure steam, on the indirect system, and in tracing the supply to the different localities of coils and coil chambers there is no evidence that the fire originated from the heating apparatus or from any chimney flue, but immediately under the point where the fire started there was situated in the basement a pump run by a Bunsen gas-burner, and it is possible that this may have been out of order, allowing the gas to escape to the room above, and the fire started by an explosion of gas. This building was erected in 1876, and there is evidence that it was carefully and safely constructed. An addition was made during last season on the east side, and the mansard roof removed from the front and the front all carried up. This last portion is damaged principally by smoke and water; nor was the basement of the old portion burned; the fire starting on the floor above, but that was greatly damaged by water. I cannot positively decide the origin of the fire, but the escape of gas and the explosion of gas seem the most probable cause.—*National Builder.*

ADOBE HOUSES IN LOUISIANA.

The following description of building the old style adobe houses in Louisiana when that peculiar style of architecture was a necessity, will be found interesting: Friends and neighbors were invited in sufficient number with ample refreshments made and provided. A place was selected convenient to the building with loamy soil suitable for brick, and a hole was dug of sufficient size for the quantity of material required. This, after deep spading, was watered to the consistency of brick mortar. Then green moss, of which a sufficient pile had been provided beforehand, was spread like a gray blanket over the mortar bed, when a certain number of men, barefooted, with trousers rolled up above their knees, tramped the circle, crushing in the moss to the bottom of the loose earth. Then came another layer of moss and another tramping and so repeated till the pit was full to the top of adobe—moss and clay. This material was then pulled out by blankets or sections as it was tramped in and taken to the building already completed except the wall or weather boarding for which this mixture was the substitute. In sections of country where there was no Spanish moss, prairie grass or hay was used as a poor substitute. Beginning at the sill they went up, firmly driving sticks nearly horizontal between the studding about every six inches, to hold the mortar to its place, and when finished, these sticks were in the center of the wall. This, when half dry, was shaved off with a sharp spade and left to dry, and when well whitewashed made a solid and pretty wall, cool in summer and warm in winter.—*The Journal of Building.*

CITY BUILDING NEWS.

Buchanan and Washington. Owner, Isaac Strassburger; architect, SAM'L NEWSOM; contractor, Geo. R. Lang; surety, Frank P. Latson, $4,000; cost, $13,500; signed, Jan. 28; filed, Jan. 31; payments, 75 per cent. on 1st and 15th of each month as work progresses, balance 35 days.

Buchanan and Geary. Carpenter work; owners, Miss B. K. Dunne, et al; architect, CHAS. J. I. DEVLIN; contractors, John Blake, et al sureties, J. Sullivan and J. T. Lynch, $1,500; cost, $2,554; signed, Jan. 9; filed, Jan. 13; time, 6 weeks; payments, 75 per cent, as work progresses, balance 35 days; artificial stone work, contractor, Geo. Goodman; surety, Geo. Richardson, $1,000; cost, $1,575; filed, Jan. 13; payments, same as above.

Bush and Lyon. Frame cottage; owner, W. I. Morgan; architect, M. J. BUGBEE; contractor, A. J. Wheeler; cost, $1,821; signed, Jan. 13; filed, Jan. 14; payments, $456, enclosed; $456, brown coated; $456, accepted; $456, 35 days,

Buchanan and Washington. To build; owner, Isaac Straburger; architect, Samuel Newsom; contractor, Geo. R. Lang; cost, $10,350; surety, F. Latson. $4,000; signed and filed, Feb. 12.

California, between Stockton and Powell. Dwelling; owner, F. Hess; architects, Townsend & Wyneken; contractor, R. O. Chandler; signed, Jan. 8; filed, Jan. 18, cost, $5,097; payments, $950, framed; $950, enclosed; $950, trimmed, etc.; $962, completed; $1,275, 35 days.

Clara Avenue and Seventeenth street. Cottage; owner, P. W. Braas; contractor, Gustave Pavel; cost, $1,688; signed and filed, Jan. 29; payments, $300, mortar on; $600, completed; $588, 35 days.

Clayton, near Page. 2-story frame; owner, Henrietta Maynard; architect, SAMUEL NEWSOM; signed, Jan. 18; filed, Jan. 28; cost, $4,300; payments, 75 per cent. on the 1st and 15th of each month, as work progresses; balance, 35 days.

Devisadero and Waller. 2-story frame; owner, Annie Green; architects, Shea & Shea; contractor, J. B. Taubman; sureties, F. G. Norman & J. Beaumant; signed, Jan. 9; filed, Jan. 14; cost, $5,460; payments, $1,023, enclosed; $1,024, rough plumbing in; $1,024, outside primed; $1,024, completed; $1,365, 35 days.

Devisadero near Clay. 2-story frame; owner, Mrs. E. M. Carter; contractors, John B. Gonyeau Bros. architects; sureties, G. W. and C. A. Hooper, $4,000; signed, Jan. 14; filed Jan. 16; cost, $11,800; time, 110 days; payments, $2,950, frame set up, etc.; $2,950, brown coated; $2,950, finished; $2,950, 35 days.

Dolores and Nineteenth. To build; owner, S. Hortop; architect, S. HATFIELD; contractor, C. Peterson; sureties, A. W. Starbird and W. Bennett, $2,000; signed, Jan. 20; filed, Jan. 22; cost, $3,600; payments, $666; roof boarded, $668; first coat mortar on, $666; plastered, windows in, $700, completed; $900, 35 days.

Douglas Street. 2-story frame; owner, Bridget Carr; architect, T. W. McKee; contractors, W. C. Aickley, et al; signed, Jan 25; filed, Jan. 27; cost, $1,600; time, 60 days; payments $500; ready to be enclosed; $200, brown coated and floor laid; $500, windows hung; $300, completed; $100, 35 days.

Ellis and Powell. Owner, Edward Auzerais; architects, PISSIS & MOORE; signed, Jan. 13; filed, Jan. 16; payments, 75 per cent. on the 1st and 15th of each month as work progresses; balance, 35 days. Carpenter work, J. W. Wissenger; cost, $20,885. Brick and stone work, Richardson & Gale; cost, $20,900. Wrought-iron work, Bigelow & Little; cost, $1,462. Cast-iron work, O'Connell & Lewis; cost, $2,560. Plumbing and gasfitting, Fritz & Kean; cost, $2,574. Painting, J. St. Denis & Co.; cost, $1,423. Total cost, $52,686.

Geary and Gough. Interior additions to church; owner, First Lutheran Church; architect, Samuel Newsom; contractors, Fink & Schindler; cost, $2,025; signed and filed, Feb. 12.

Harrison and Eleventh. Alterations; owner, James Moran; architect, W. H. ARMITAGE; contractor, S. T. Green; surety, Frank P. Latson; signed, Jan. 18; filed, Jan. 28; cost, $2,625; time, 60 days; payments, 75 per cent. as work progresses; balance, 35 days.

Laurel Hill Cemetery. Mausoleum; owner, James L. Flood; architect, Wm. Patton; contractors, Patrick Deegan, et al; signed, Dec. 5; filed, Jan. 21; cost, $66,700; payments, 75 per cent. as work progresses; balance, 35 days.

Lyons and Washington. 2-story frame; owner, Perry Stinson; architect, P. R. Schmidt; contractor, J. O'Connell; signed, Jan. 15; filed, Jan. 21; cost, $2,100; time, 90 days; payments, $575, enclosed; $575, brown coated, etc.; $575, hard finished, etc.; $575, completed; $900, 35 days

McAllister and Webster. Two houses; owner, Elizabeth Gluck; architects, John & Balczynski; contractor, Adam Miller; signed, Jan. 20; filed, Jan. 23; cost, $14,200; payments, $3,000, frames up; $2,500, enclosed; $2,500, rough mortar on; $2,650, ready for paint; $3,550, 35 days.

McAllister and Larkin. Cast-iron work for 5-story brick; owners, J. G. and T. N. Day; architect, T. J. WELSH; signed, Dec. 2; filed, Jan. 13; cost, $9,300; payments, 75 per cent. as work progresses; balance, 35 days.

Pierce and Fell. To build; owner, C. Westphal; architect, H. GEILFUSS; contractor, John F. O'Brien; signed, Jan. 20; filed, Jan. 23; cost, $3,770; payments, $865, frame up; $865, enclosed; $865, brown coated; $ 65, white coated; $865, completed; $1,445, 35 days.

Pine and Polk. To build; owner, John Hemphill; architects, B. McDOUGALL & SON; contractor, John H. McKay; signed, Jan. 9; filed, Jan. 20; cost, $14,400; payments, $1,800; excavating done, etc.; $2,000, ready for second tier of joists; $1,800, roof boarded; $1,200, brown coated; $1,200, sash glazed and hung; $2,800, completed; $3,600, 35 days.

Pine, between Franklin and Gough. Frame dwelling; owner, G. M. Davis; architect, W. O. Banks; contractor, J. G Adams; sureties, F. Joost and S. H. Harmon; signed, Jan. 22; filed, Jan 29; cost, $8,870; time, 130 days; payments, $1,500, first story joists in position; $2,640, brown coated; $2,500, completed; $2,229, 35 days; Another dwelling, costing $8,660; same description in other respects; payments, $1,500, first story joists in position; $2,490, brown coated; $2,500, completed; $2,170, 35 days.

Pine and Polk. To build; owner, J. J. Conrad; architects, B. McDougald & Son; contractor, J. H. McKay; cost, $4,680; signed, Feb. 10; filed, Feb. 13.

Pine and Kearney. Carpenter work; owner, S. P. Blumenberg; architect, Fred E. Wilcox; contractor, N. C. Post; cost, $1,250; payments, 75 per cent. as work progresses; balance, 35 days.

Stockton and O'Farrell. To build; owner, Schiever Levy; architects, Schulze & Meeker; contractors, McGowan & Butler; cost, $20,500; signed, Jan. 22; filed, Jan. 23; time, July 15, '90; payments, 75 per cent. as work progresses; balance, 35 days.

Stockton and Vallejo. To build; owner, Robert R. Hind; architects, Ashton & Stone; payments, 75 per cent. as work progresses; ballance, 35 days; filed, Jan. 14; contractors, Faucher & Connor for brickwork, etc.; cost, $24,900, with F. Joost and O. H. Greenwald, $10,000; Henry Williamson for plumbing, gasfitting, etc.; cost, $3,028; the Gray A. S. P. Company for patent stone walks; cost, $1,100; E. J. Mosley for painting; cost, $1,625.

Scott and Vallejo. To build; owner, R. K. Palache: architects, Smith & Freeman; contractor, R. P. Sanchez, signed, Jan. 20; filed, Jan. 21; cost, $4,595; payments, $500; second story joists on: $1,100, covered in; $803.25, plastered; $973, completed; $1,128.75, 35 days. Plumbing, Duffy Bros.; filed, Jan. 23; cost, $522; payments, $195, rough plumbing in: $195, completed; $132, 35 days.

Scott and Jackson. Foundation etc.; owner, Albert Gallatine; architect, Clinton Day; contractor, John McCarthy; cost, $18,984; signed, Feb. 10; filed, Feb. 13; time, Aug. 31, '90; payments, $6,000, brickwork ready to build; $5,000, to second floor joists; $3,215, completed; balance, 35 days.

Taylor, No. 1517. Repairing, except plumbing, etc.; owner, Martha Scooffy; contractor, Wm. Berry; signed, Jan. 10; filed, Jan. 17; cost, $1,037; payment when completed; time, 35 days.

Townsend near Second. To build; owner, John G. Adams; architect, CHAS. I. HAVENS; contractor, Jos. Moore; signed, Jan. 21; filed, Jan. 27; cost, $6,468; payments, $1,600, rough frame up; $1,600, enclosed; $1,618, completed; $1,650, 35 days.

Van Ness Avenue and O'Farrell. Mill work and inside finish; owners, Mahoney Bros.; architect, T. J. WELSH; contractors, P. A. Buell & Co.; signed, Jan. 28; filed, Jan. 30; cost, $15,000; payments, 25 per cent. as work progresses; balance, 35 days.

Van Ness Avenue and O'Farrell. Stairwork and steps; owners, Mahoney Bros.; architect, T. J. WELSH; contractors, Drew & McLaughlin; signed, Jan. 22; filed, Jan. 24; cost, $6,000; payments, 75 per cent. on the 1st and 15th of each month, as work progresses; balance, 35 days.

Waller and Octavia. Completion of 2-story frame; owner, Pauline D. Skadberg; architect, M. J. WELSH; contractor, August Deischer; signed, Jan. 29; filed, Jan. 31; cost, $1,275; payments, $425, brown mortar on; $425, completed; $425, 35 days.

Washington, between Polk and Van Ness Avenue. Brickwork; owner, Clark Blethen; architects, Percy & Hamilton; signed, Jan. 20; filed, Jan. 25; cost, $1,450; payments, 75 per cent. on the first Saturday night of each month; balance, 35 days. Carpenter work, same as above, except contractor is J. B. Gonyeau, and cost, $5,781.

Oakland.

Market and Twelfth. High School; owner, City of Oakland; architect, W. J. Mathews; contractor, Robt. Smillie; signed, Jan. 11; filed, Jan. 14; cost, $14,385; payments, $2,157.75, as one-fifth of the work is completed.

Chestnut and Tenth. 2-story frame; owner, Chas. Young; architect, Chas. Mau; contractor, M. Jackson; signed, Jan. 15; filed, Jan. 16; cost, $2,161; payments, $840.25, as one-third of the material is furnished and work done.

Tenth Avenue, between 17th and 18th streets. Cottage; owner, Edward Dolan; architect, Thos. McGauley; signed and filed, Jan. 20; cost, $1,680; time, seven weeks from date.

Washington and Twelfth. Painting; owner, M. K. Blake; architect, W. J. Mathews; contractor, Al. Wood; cost, $1,125; payments, 75 per cent. as work progresses; balance, 35 days.

Cypress and Sixteenth. To raise building; time, 60 days; owner, Sallusch Scheyer; contractor, J. C. Johnson; cost, $1,890; signed, Jan. 23; filed, Jan. 30; payments, $700, rustic on; $650, first coat of mortar on; $450, 35 days.

Webster and Fourteenth. To build; time, 45 days; owner, Mrs. E. E. White; architects, J. J. and T. D. Newsom; contractors, Wm. Sturgeon & Son; cost, $3,600; payments, $700, rustic on; $900, floors laid; $1,000, completed; $900, 35 days.

Alameda.

Encinal Avenue and Morton street. To build; owner, Frederick Wild; contractors, A. W. Pattiani & Co.; cost, $4,190; time, April 15 '90; signed, Jan. 9; filed, Jan 13; payments, $900, chimneys built; $800, exterior primed; $600, completed; $890, 35 days.

Encinal Avenue and Morton street. 1-story frame; owner, L. W. Sanborn; contractor, A. R. Benke; signed, Jan. 27; filed, Jan. 28; cost, $3,900; payments, $800, roof on; $1,000, windows fitted; $1,000, 35 days; time, May 1, '90.

Union and San Antonio. To build; owner, A. W. Fink; contractors, A. W. Pattiani & Co.; cost, $4,145; signed, Jan. 29; filed, Feb. 1; time, May 1, '90; payments, $1,300, chimneys built; $1,100, brown mortar on; $820, when completed; $1,125, 35 days.

Fresno.

F. Banta has been awarded the contract for an engine house to cost $5,170.

Santa Rosa.

T. J. Furbee has drawn plans for a $13,000 church on Mendocino street.

Antioch.

A new school house to cost $11,740, contractor J. B. McKenzie of Benecia.

San Rafael.

Hotel Rafael property, three cottages; contractor, C. Chisholm; cost, $15,500; and tower, cost, $6,000. Residence, costing $5,600, for L. Gerstle.

Livermore.

M Street. Cottage; owner, Wm. Thorn; contractors, Palmer, Hunter, Taylor & Wilder. Second and K streets. Cottage; owner, Joseph Fletcher. Arroyo Valle. Building; owner, J. C. Keene.

Oregon.

W. J. Snodgrass is building a $20,000 planing mill of three stories at Oro Dell near La Grande. Also at the latter place it is reported plans for 50,000 three-story brick hotel soon to be built.

Washington.

Plans and specifications for a three-story building in Cosmopolis to cost $40,000 have been drawn.

Whatcom Court house designs have been submitted. The cost of the building which is to be of brick, will be $65,000.

Seattle is to have a shoe factory costing $100,000. W. J. Ilman, of Boston, is the projector.

TACOMA.

Five-story brick warehouse. Owner, F. S. Harman & Co.; architects, Farrell and Darmer; cost, $20,000.

Building. Owner, M. J. Cogswell; architect, S. Bertelson; cost, $6,000.

Residence. Owner, F. Dittmore; architects, Farrell and Darmer.

C. Langlois is drawing plans for the National Bank of Commerce, of a six-story brick and stone building to cost $100,000.

Montana.

Supervising Architect Bell of Washington, has written to Postmaster Curtis, for information concerning the needs of Helena's Government officials, with the idea of drawings up plans for a public building.

Los Angeles.

Alpine Plaster and Cement Company, wooden building, corner Alameda and Washington streets, $20,000.

W. S. Reevis, frame dwelling, Water street, between Reservoir and McDuff streets, $1,316.

Pierre Nicholas, brick store and rooms above, northeast corner Marchessault and New High streets, $5,000.

Mrs. Jennie Harbert, frame store with rooms above, Hain street, near Thirty-third street, $1,000.

Mrs. Sallie Harkness, frame building, Adams street, lot 1, St. James Park tract, $5,500.

Mrs. J. C. McMenomy, frame dwelling, 741 Hill street, $4,600.

State of California, frame gymnasium, Normal school grounds, $9,500.

K. Messer, brick store, corner Rose and First streets, $1,000.

W. C. Furrey, frame dwelling, corner Orange and Farragut streets, $4,000.

City of Los Angeles, two-room frame school house, corner Pritchard and Flora streets, $2,900.

City of Los Angeles, two-room frame school house, corner Swain street and Griffin avenue, $2,900.

City of Los Angeles, four-room frame school house, corner Vignes and Thomas streets, $8,508.

City of Los Angeles, four-room frame school house, Beaudry street, $8,508.

City of Los Angeles, eight-room frame school house, Sixteenth street, $13,997.

City of Los Angeles, eight-room frame school house, corner Ninth street and Stanford avenue, $13,997.

City of Los Angeles, two-room frame school house, First and Savannah streets, $3,495.

City of Los Angeles, four-room frame school house, Conwell and Grant avenues, $7,750.

City of Los Angeles, four-room frame school house, Collado street, $8,989.

City of Los Angeles, four-room frame school house, corner Alpine street, $9,393.

City of Los Angeles, brick high school building, Castelar street, $59,300.

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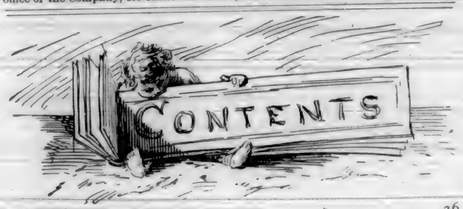

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN W. CURTIS, Treas.

TECHNICAL SOCIETY, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

AT a special meeting of the SAN FRANCISCO CHAPTER OF A. I. A. held Feb. 28th, a committee was appointed to confer with the Directors of the Mechanics' Institute, concerning the proposed improvements to their property.

The regular meeting of the Chapter was held on the 14th of March, at which the usual routine of business was transacted.

At a regular meeting of the Technical Society of the Pacific Coast an interesting paper was read by Otto von Gelden on the history and construction of the Dry Dock at Mare Island, near San Francisco. The character of the ground, the construction of coffer dam adopted to carry the excavation some 35 feet below low water mark and the system of piling was fully described. The "gravity" mixer for concrete work was illustrated by drawing and the method of working described. The masterly economy of political engineering was lightly touched upon; one instance, a synopsis of which may be stated thus, "the powers that were" sent out a number of gun powder pile drivers, one of which cost some $1700 and a royalty of $3000 paid for the privilege of using it. A twelve horse power steam engine with steam up was kept in position in order to raise the piston when the powder failed in its work. About five per cent. of the piles were driven with this wonderful machine. The work was begun in 1873, is not yet finished, and up to the present time has cost two and three quarter million of dollars. The discussion on the ubjects was continued till next meeting. An agent from an eastern manufacturing house, exhibited improved instruments for engineers, surveyors and architects. The level had an improved arrangement for detaching and re-adjusting the level to swivel stand. The transits shown had improved side standards whereby increased strength was gained; and more firmness given to the pivots of the tube, the scale on the circle being cut a short distance back from the edge and a vernier arranged for reading same; by this arrangement the scale will remain legible for a longer period than if cut to the edge. The regulating screws are worked by yokes against all movable joints which reduces the inaccuracy by wear to a minimum. A new form of draughtsman's scales was shown, and will soon be placed in the market, which consists of a layer of white celluloid let into the common wooden rule, thereby making a scale equal to one of ivory at a slight cost over one of wood.

THE proposition laid before the Mechanics' Institute to offer prizes for a scheme of utilizing this property commends itself as a sensible method of arriving at the best solution of the problem which stares the Institute Directors in the face. When this has been thus settled upon, definite instructions could be formulated for the guidance of architects to enter the final competition. Unless these definite instructions are given a great waste of work will be the result, as a good design in every other way through failure to fit in with the scheme of the Directors may be laid aside to the loss both of the public and the architect involved.

We are afraid that public spirit alone will not suffice to bring the best talent to bear upon this question and a stimulus of a money reward is required. And money spent upon this object

would very likely have the effect of saving a vast amount in the future.

The problem before the Institute seems to resolve itself into which of the following propositions, among others, would be most conducive to the welfare of the Institute and at the same time to the welfare of the citizens of San Francisco, its constitutents.

1st. The removal of the Fair building to Folsom St., selling the Library building on Post St., and erecting a new Library building and hall on Larkin St. property with or without stores attached.

2nd. Selling both the present building and the Folsom St. property and concentrating both the Exhibition Hall and the Library upon the Larkin St. property again with or without stores.

There are other plans than these that may commend themselves, but these two seem the principal ones under consideration.

Now, sketch plans say to a scale of 20 feet to 1 inch showing what could be done with the different pieces of property to the best advantage would without doubt be an immense help to the arrival at some good result, and lead to a great deal better understanding by the Directors of their position. Such a proposition deserves very serious consideration on their part before rejection.

CHICAGO appears to have distanced all competitors in the race for the World's Fair, and we tender our congratulations. Chicago is a representative American city, full of energy, push, and if you will, of *cheek*. With the well known business activity of her citizens, it is a foregone conclusion that she will do every thing possible to make the important event an entire and complete success.

New York lost her chance through an unfortunate combination of circumstances and naturally feels pretty sore over the matter, and is somewhat disposed to say disagreeable things about her fortunate rival. However, she will have to take her loss philosophically and after she has had a little time to get over her disappointment will doubtless join the procession and give as much aid as she would expect to receive had the conditions been reversed.

THE *Canadian Architect* expresses the hope that the bill respecting the practice of architecture in the province of Ontario will become a law. It provides that before any man can be registered as a qualified architect, he must pass such examinations as may from time to time be determined on as sufficient to ensure his having a fair knowledge of architecture in all its branches. It is designed to give the public information as to the qualifications of the men they employ, so that if they choose to employ incompetent persons or none at all, they will only have themselves to blame for faulty construction or defective bnildings.

It then goes on to say:

It will be argued that the object of this Act is to make the profession of architecture a close profession, solely to the benefit of its members and not necessarily for the benefit of the public, and that the public does not desire that such a Bill should pass. There is nothing in the Bill constituting the profession of architecture a close profession, but even if there were, we maintain that the public has shown in many ways that none but qualified men should be allowed to practice as architects. The newspapers, as representing the public, are always complaining of defects in buildings, resulting, as they maintain, from the ignorance of architects. Well, if there is this ignorance on the part of some architects, something should be done to weed the ignorant out of the profession and leave only the intelligent, as it would appear that the public is not capable of selecting the competent from the incompetent, or such mistakes would not occur, since there are qualified men, though not in such numbers as the unqualified. Unless there is a standard, the competent man cannot say to the incompetent one that he is not a properly qualified architect, and that he should not claim to be an architect, as he injures the standing of the profession and calls down upon it the condemnation of the public. If he did, he would only be laughed at for his impertinence.

Architects, in submitting this Bill to the Legislative Assembly of Ontario, are only doing the work that the public should perform for itself. In nearly every case where a building has been found to be defective in any particular, the press has laid the blame on the profession as a body. If every case of failure were investigated, it would be found that the mistakes were owing to the engagement of an ignoraut man, who had no right by training or natural ability to assume the duties of an architect, as well as to the fact that the public is unable to distinguish between the competent and incompetent. It certainly is not fair to blame a profession as a body for the errors of individuals who have no standing with the profession. These men claim to be of the profession, the public accepts their statements, employs them, finds them incompetent, and forthwith condemns the profession as a body as if there were no competent men in it, but that all were like those men whose statements they are so ready to accept. The Bill of Registration, if passed, will remedy this state of affairs, unsatisfactory alike to the profession and the public. The man who employs a registered architect will have some guarantee that he has a reasonable knowledge of his business, that is, after the Bill has been in force a few years—for as all men now professing to be architects will be entitled to be registered, it will require time for those among them who are incompetent to pass out of sight. If the profession asked the Legislature to pass an Act which would make it unlawful for any but a registered architect to practice architecture, and which would not allow anyone to erect a building except he employed a registered architect, there would be more than ample grounds for the throwing out of the Bill. The profession cannot gain anything from the passing of the Bill except in an indirect way. The men who are now practicing will in the course of a few years have to contend with young men who will have had the advantage of a thorough and systematic training. Our best men will feel the competition of these young men, and the inferior men must suffer materially. Yet in spite of such facts, nearly all the architects now practicing in this province are united in asking for the passing of this Act.

Some may imagine that this movement for the incorporation of the profession of architecture is local and recent in its character. Such is not the case. The question has been more or less before the profession for the last twenty-five years, since the Royal Institute of British Architects made a movement toward that end a quarter of a century ago. During the last three or four years the movement in Great Britain has assumed a definite form, and a Bill was submitted to the House of Commons in 1888, which, however, was withdrawn at that time, owing to the opposition of the Royal Institute of British Architects and the Civil Engineers, but submitted again in 1889 in a revised form. There is no doubt but that it will eventually pass. In some of the Australian colonies the matter has been taken in hand, and a Bill to incorporate the architects of these colonies is now under discussion. In the United States, Bills have already been submitted to some of the State Legislatures, and advanced several stages; and in many of the other States Bills are under preparation for submission to the Legislature. It will thus be seen that this movement is not a new or sudden one. It is rather an old one which has slowly gathered force until Acts of incorporation are now being asked for in all quarters of the world for the proper and equitable acknowledgement of the profession of architecture, in order that the public may be protected from loss of life and money through the ignorance of many supposed qualified practitioners. The membershlp of the Ontario Association of Architects includes 92 per cent. of all men now practicing architecture in this province, and when those who have applied for admittance to the Association are received, the percentage will be 97. The movement has received the full and hearty support of the medical profession in Great Britain. Medical men are brought into contact with the ill effects of bad building, drainage, etc., and knowing the results, are only too anxious to aid in securing such legislation as will remedy an evil which has caused many deaths, much sickness, and heavy pecuniary losses.—*The Canadian Architect and Builder.*

THE GIRALDA IN THE SPANISH CITY OF SEVILLE.

THE GIRALDI.

This famous belfry tower was built in 1196, as a minaret of a Mohammedan mosque. It displays the architectural characteristics of the Moorish people at the time they occupied the southern provinces of Spain. It now forms a portion of the Catholic cathedral. The tower is fifty feet square at its base, and is three hundred and fifty feet high.

There are records that on the present site there was once a heathen temple, erected by the Carthagenians, which the Romans afterwards appropriated to their own worship, and in turn were dispossessed by the Moors.

It is a curious reflection, that in the course of time and the unforeseen changes it brings, the present occupants may, perhaps, be forced in their turn to vacate in favor of still other beliefs.

VIBRATION IN BUILDINGS.

One of the most perplexing problems that confronts the engineer, is the vibration in buildings caused by running machinery Westinghouse, Church, Kerr & Co. of New York, being frequently called on to locate Westinghouse engines on the upper floors of buildings, have had a wide experience in this line, and have given the subject much thought. In determining these questions, they say the character of the building, the ground on which it rests, the weight, power and speed of engines, are all factors which must be considered, some of which are very indefinite, or at least their effect is hard to predetermine, combined with which is the very important influence, namely, the relation which the speed of the engine bears to the natural time of vibration of the floor beams. It is evident that if the slight motion which every engine has is exactly in time with the natural vibration of the floor beam, each pulsation of the engine will increase the scope of the vibration of the floor, resulting in a most disastrous shaking, while if the pulsations of the engine are in discord with the floor, comparative quiet will exist. As floor beams are usually long, and their time of vibration correspondingly long, it is usually found that a fast running engine will give less of its vibration to the floor beams than a slow running one. It is also worthy of note that the vibrations of a fast running engine are more numerous and less forcible, hence easier resisted by the mass of the floor.

An interesting example of preventing vibration by discord was shown in the case of a Westinghouse 10 H. P. engine which, on an upper story of a silverware manufactory created such a commotion as to rattle the silverware on the shelves 100 feet distant. A change of 25 revolutions in the speed, which change was in the direction of increasing the speed, entirely stopped the vibrations. A most interesting work of this nature, also, is in the great coffee house of Arbuckle Bros. in Brooklyn, where two Westinghouse engines of 125 H. P. each and one of 45 H. P. are located on the fifth floor. These engines were erected on the heavy floor timbers, the floor boards being cut away and extra timbers being inserted between the joints. Across the timbers were placed oak stringers, which latter have been seasoning since the war in some unfinished vessels in the Brooklyn Navy Yard. On these the engines were mounted with plain fly wheels, and experiments were conducted to determine the speed at which it would be best to run. It was found that at 204 revolutions the vibration was at the minimum and was very slight, being as little as that caused by any of the ordinary driven machinery. The speed was therefore fixed at this point, and the wheels then made to give the proper belt speed.

The erection of engines as large as this on upper floors is somewhat novel, and should only be undertaken with full consideration of the surrounding conditions and with engines which are completely balanced.

Most of the old houses on both sides of the Tiber, at Rome, have been removed, fine embarkments of masonry have been erected, slightly deepening and widening the river to an average width of sixty-five yards, and on top of the embankments, on both sides, esplanades are formed as on the Thames embankment at London. One of the new bridges crossing the stream is thirteen yards wide, and near it at either end, stand new buildings seven stories high, completely shutting out the views of the Janiculum and San Pietro hills.

The Romans well understood the necessity of protecting from dust the materials with which they made their mortar; its importance is not sufficiently realized by the builders of to-day, as workmen may often be seen mixing mortar and concrete from materials that have been emptied in piles on a dusty street. More care should be taken by those who desire to get the best results at the least expense.

Washington, Feb. 24.—Secretary Windom has awarded to the Hall Safe and Lock Company of Cincinnati a contract for constructing steel-lined vaults, including two doors, in the Mint building at San Francisco, at their bid of $23,936.

The successful design in the competition for the Prudential Insurance Building at Newark, N. J., was submitted by Mr. George B. Post, architect, of New York. There were five invited competitors.

THE MACHINERY HALL, PARIS EXHIBITION.

Of the splendid series of buildings which formed the great Exhibition of last year, the Machinery Hall was undoubtedly the most magnificent in conception and scale. The architect and engineer specially charged with the design of this immense structure, were M. Dutert and M. Contamin respectively, and the confidence placed in their ability was fully justified by the universal admiration accorded to their great work.

The hall is 1,381 ft. long and 490 ft. wide, inside dimensions, and is divided into one great central nave 375 ft. wide in the clear, and 151 ft. 6 in. high to the ridge of its roof, with an aisle each side 57 ft. 6 in. wide, having a gallery floor over of the same width at 26 ft. 3 in. above the ground level. There are nineteen bays in the length of the hall, viz:—1 bay at each end of 83 ft. 1 in., 1 center bay of 86 ft. 8 in., and 16 intermediate bays of 70 ft. 6½ in.

The side galleries are covered by a series of roofs, one to each bay, which have their ridges at right angles to the axis of the building, and stop against the vertical sides of the center nave just below its eaves, showing a series of low-pitched and slightly curved gables on the lateral facades of the hall. The construction of these side galleries and their roofs, though exceedingly well designed, offers nothing of exceptional interest for our consideration.

It is otherwise with the roof over the great central nave, and a brief description of its principal constructive features, together with a summary of the mechanical principles on which its stability and strength depend, may be of interest as a record, however insufficient, of this remarkable work.

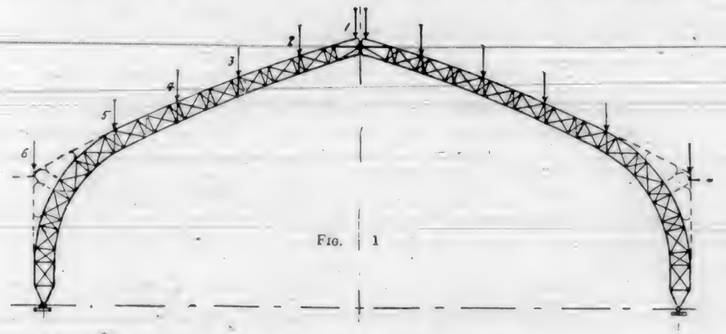


FIG. 1

The roof is carried by eighteen arched principals, at the distances apart above given, and two end principals of exactly similar appearance, but altered scantlings, which are the upper members of the glazed screens forming the end facades of the hall. The arched principals carry on each side the center line five ranges of longitudinal girders or main purlins placed vertically; those nearest the center on each side are only 3 ft. 10 in. apart, and carry a ridge gangway; the other ranges are spaced at a uniform distance apart of 35 ft. 2 in.

Three ranges of intermediate rafters are carried by the main purlins in each bay, following the lightly curved outline of the roof, and these rafters carry thirty ranges of secondary purlins on each side the center line, running continuously over intermediate rafters and main principals, the secondary purlins in their turn carrying the sash bars and light wood framing for the glass and zinc roofing. Each end bay is braced against wind pressure by a system of diagonal tie-rods, extending from the ridge to the gutter on each side.

The four longitudinal bays on each side the ridge between the outer main purlins are glazed in the center seventeen bays of the roof, the lower part on each side in those bays and the whole of each end bay being covered with zinc on boarding and having an inner boarded ceiling.

The sash bars are 2″ by 2″ by $\frac{3}{16}$″ ⊥ iron 6 ft. 6 in. long, resting at each end on the secondary purlins, and fixed to them by cold riveting. They are spaced 1′ 8½″ centers for 20″ glass, and overlap at the lower ends 7 in. The secondary purlins are formed of channel iron 5⅝ in. by 1¾ in., with a 2½ in. by 1¾ in. by $\frac{1}{8}$ in. ⊥ iron riveted on the back to take upper ends of sash bars, the lower ends of same resting on the top of the channel iron. The intermediate rafters are of riveted I section, web 15¾ in. deep by ¼ in., and four ⊥ irons 2.8 in. by 2.8 in. by 0.28 in. They are not continuous, but fit in between the top flanges of the main purlins, and fix to curved plate and angle iron gussets attached to the vertical web members of the latter.

The main purlins connecting the principals are lattice girders with N bracing, and are 6 ft. deep in the middle, becoming slightly deeper towards the ends; the top boom is level, and the lower boom falls from each side center of span, meeting the arched principal at each end with a bold curve. The booms are each formed of a vertical web 14 in. deep by 0.28 in., two angle-irons 2.8 in. by 2.8 in. by 0.28 in., and one flange plate 12 in. by 0.28 in. The lattice bracing consists of diagonal flat bar ties and vertical struts of double T iron. These girders are not radial to the roof line, but are vertical, this being the best arrangement for purlin girders of long span.

Each arched principal consists of two great curved rafters, pivoted at the springings and summit, forming a "three-hinged arch": (see fig. 1). This arrangement allows free movement under temperature changes without strain to the structure, the center rising or falling freely with a slight rotation of the semi-arches about the pivots. A range of temperature of 100° Fahr. corresponds to a difference in level of 2⅞ in. at the center pivot, and a horizontal movement of $\frac{3}{16}$ in. on each side at the level of the side gallery roof ridges, which last amount is small enough to be taken up by the elasticity of the gallery structure. The calculations of the stresses occurring in the principals are also much simplified by the triple articulation, since the forces acting upon each part are definite in direction and point of application. The main dimensions of the arched principals are as follows:—

Spans between centers of pivots at springings 363 ft.; rise to center of pivot at summit 147 ft.; depth of arched rib at springing 12 ft. 1½ in., diminishing to 9 ft. 10 in. at the summit, where the two semi-arches abut against the center pivot. The springing pivots are turned steel pins 20¾ in. diameter, and 4 ft. 4 in. long, enclosed by cast-iron bedplates, having almost complete semi-cylindrical journals, the upper bedplate being bolted to the foot of the rib, and the lower one to a foundation plate which is secured to the foundation block by long bolts. The pivot at the summit is a turned steel pin, 14 in. diameter, and 2 ft. 4 in. long, similarly enclosed by cast-iron journals, each forming an almost complete semicircle, but with a slight space between their faces at top and bottom on the vertical center line to allow of the very small rotation accompanying vertical movement of the summit.

The section of the arched rib is that of a girder with trough booms facing each other, "see figure 2" and connected by St. Andrew's Cross web bracing with radiating struts, which divide the rib into alternately long and short panels. This peculiar panel division was devised to suit the spacing of the main purlin girders, each of which fixes to one of the diagonal bars crossing a short panel, actually vertical. Each boom consists of two side plates 17¾ in. deep by 0.35 in., placed 16 in. apart, a continuous flange-plate 30 in. wide by 0.28 in.; and four angle-irons connecting these plates 4 in. by 4 in. by 0.4 in. The single flange-plate, 0.28 in. thick, extends from end to end of each boom, but they are largely increased in

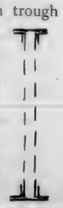


FIG. 2

strength towards the haunches by a number of additional plates of varying length, which are stopped off in order towards the springing and summit. The flange-plates at the greatest section of the lower boom or intrados, occuring opposite the center of outer spandrel, are 1 inner plate of 0.28 in., 4 inner plates of 0.32 in., and 1 outer plate of 0.4 in. It is the same for the up- [illegible] except that the outer flange-plate is re- [illegible]

A large part of our extensive river front, bridges, and viaducts, as well as many of our streets, are now lighted with electricity generated by the city at its own plant. The wires, lamps, and entire paraphernalia are owned by the city, free from any sort of control by private corporations. The system is being rapidly extended so as to embrace the whole city. It is the intention ultimately to make connection with stores, factories, and residences, so as to supply light for private consumption.

In our last issue we published several articles and portions of articles, taken from our exchanges, and by oversight neglected to give the proper credit to which they were entitled. We will consider it a favor if each subscriber will make the necessary corrections in the March number under the uncredited articles as follows:—

The article under the heading of "The Machinery Hall, Paris Exhibition," was an extract from a paper contributed to the *Journal of Proceedings of The Royal Institute of British Architects*, by Henry Reilly, Assoc. M. Inst. C. E. For "St. Louis City Hall Competition" we are indebted to the *Building Trades Journal*, of that city.

THE MACHINERY HALL, PARIS EXHIBITION.

Of the splendid series of buildings which formed the great Exhibition of last year, the Machinery Hall was undoubtedly the most magnificent in conception and scale. The architect and engineer specially charged with the design of this immense structure, were M. Dutert and M. Contamin, [illegible]

of the channel iron. The intermediate rafters are of riveted I section, web 15¾ in. deep by ¼ in., and four L irons 2.8 in. by 2.8 in. by 0.28 in. They are not continuous, but fit in between the top flanges of the main purlins, and fix to curved plate and angle iron gussets attached to the vertical web members of the latter.

[redacted]

There is an excellent article in *The Architect and Contract* on "Office Management and Routine," by R. W. Gambi Bonsfield.

The Northwestern Architect and Improvement Record for Marc publishes the second Royal Academy Lecture of this season o "Roman Architecture," by Prof. George Aithchinson, A. R. A

Volume 1, Number 1 of *The Architectural and Buildin Monthly*, is the first issue of a new monthly published by A. J Bicknell, New York.

CITY BU

strength towards the haunches by a number of additional plates of varying length, which are stopped off in order towards the springing and summit. The flange-plates at the greatest section of the lower boom or intrados, occuring opposite the center of outer spandrel, are 1 inner plate of 0.28 in., 4 inner plates of 0.32 in., and 1 outer plate of 0.4 in. It is the same for the upper boom or extrados, except that the outer flange-plate is replaced by two angle-irons 4.4 in. by 4.4 in. by 0.44 in., which connect the spandrel webs to the principal.

The radiating struts fit in between the side plates of the boom, and between the outer purlins marked (5) on the figure [fig. 1], consists of a web 15.2 in. by 0.28 in., and 4 angle-irons 3.2 in. by 2.4 in. by 0.28 in. The diagonals are attached to the inner and outer faces alternately of the boom side-plates. Between purlins (5) they consist of four angle-irons only 3.2 by 2.4 in. by 0.28 in. Beyond purlins (5), the angle-irons in struts and diagonals become 2.8 in. by 2.8 by 0.28 in., and flange-plates are added 7.87 in. by 0.28 in.

The lower end of each semi-arch is made of almost triangular form, being narrowed down from 12 ft. at the foot of the lowest bay to 4 ft. at the cast-iron bearing-plate resting on the springing pivot, while the flanges are at the same time widened out to 4 ft.; it has two solid webs with thickening plates, which are reinforced by a diaphragm and gusset plates, with inside and outside angle-irons. The upper ends of the semi-arches are provided with two diagonal struts, formed of plates and angle-irons, which converge to the center pivot and take up the resultant thrust passing through it; these ends have a curved shape between the inner and outer booms, and are stiffened by webs, to which are fixed the ends of the center pair of main purlins, forming here the ridge girders. These girders are connected together opposite to each intermediate rafter by gussets of plate and angle-iron, between which a plate of lead, ⅝ in. thick, is placed, and which yields sufficiently to allow the slight motion due to temperature changes.

The straight sides of the angle spandrel are of the same trough shape as the main booms before described, and of the same scantlings, with the single outside plate 30 in. by 0.28 in. The side-plates are cut so as to form openings of bold curved outline, and between them are fixed radiating members which carry on the lines of the radial struts in the principal, and are of similar construction.

In the plane of the vertical back of spandrel, which is that of the outer enclosure to the center nave, the arched principals are connected together by a series of latticed arches, semicircular on the soffit except in the center bay, and of which the extrados repeats the slightly pointed and curved outline of the side gallery roofs. Uprights in the spandrels of these arches support a continuous purlin girder, which carry the outer ends of all the intermediate rafters of the main roof and also its outside gutters. The principals are further connected by a range of lattice girders carrying the floor and forming the front of the side galleries.

The material employed in the main roof was almost entirely steel, specified to have a breaking tensile strength of 28 tons per sq. in., and a tensile limit of elasticity of 15¼ tons per sq. in.; also that at fracture a reduction of sectional area not less than 45 per cent. should take place, with an extension of at least 24 per cent.

Each ordinary main principal rafter weighed 196 tons, and each end principal rafter 240 tons, the ten main purlins in each bay weighed 42 tons, and the intermediate rafters, minor purlins, and sash-bars had per bay the total weight of 62 tons. The weight of material in the center roof framing per square foot of area covered was 22½ lbs.

MUNICIPAL OWNERSHIP OF ELECTRIC LIGHTS.

Chicago is now engaged in establishing a Municipal Electric Light System. It is an undertaking directly in line with Nationalism. The work has progressed far enough to demonstrate itself a "sure thing," both as to saving money for the people and as a blessing to humanity. It therefore finds hearty endorsement, save only by our Gas Trust and private Electric Light corporations.

A large part of our extensive river front, bridges, and viaducts, as well as many of our streets, are now lighted with electricity generated by the city at its own plant. The wires, lamps, and entire paraphernalia are owned by the city, free from any sort of control by private corporations. The system is being rapidly extended so as to embrace the whole city. It is the intention ultimately to make connection with stores, factories, and residences, so as to supply light for private consumption.

How did we succeed in getting such a work established without being headed off by private monopoly? Through a beginning so small as not to attract special notice! To our faithful servant, Mr. John P. Barrett, City Electrician, are we chiefly indebted for our good fortune. Some two and a half years ago, as Superintendent of City Telegraph Department, Mr. Barrett asked the City Council for a small appropriation with which to experiment in lighting the river front by electricity. About twelve thousand dollars was granted him. With this he purchased a small outfit, and commenced operations in an abandoned Fire Engine House belonging to the city. He laid his wires in the ground, from the first, and started a few lamps on the river front and at certain bridges. The effect was *truly* electric. The dark narrow river, dangerous alike to passing vessels and such people as were belated along its wharves, became like day, and safety was vouchsafed to all within the rays of these lamps. This small venture gave wonderful satisfaction, and the next year, a larger appropriation was voted with which to extend it, and try the lighting of a few streets. Mr. Barrett made the most of his opportunity, and the city's electric lamps soon became noticable on prominent corners.

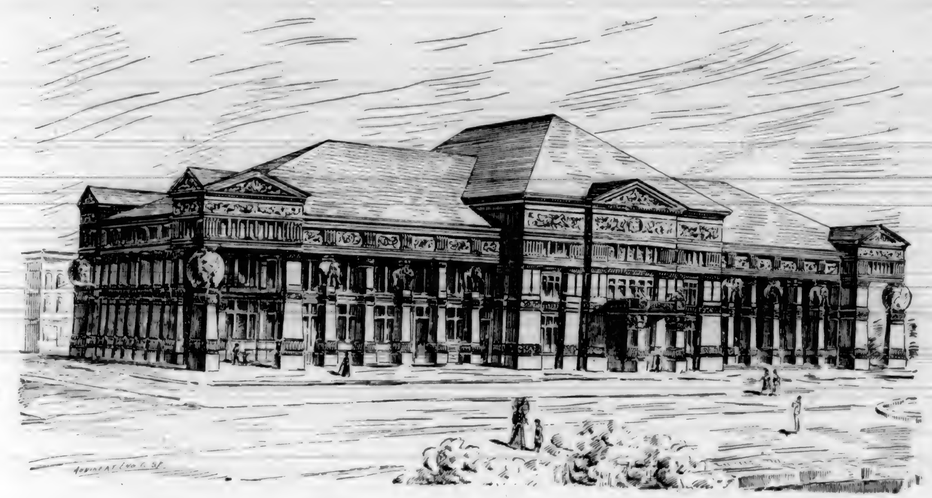
As these increased in number, the councilmen from wards not thus lighted, began importuning Mr. B. for an extension of the service to their wards. They would say to him, "My constituency are observing your electric lights down town, and, as tax-payers, want to know why they can't have the same thing out their way; what's the reason you can't run your wires out to our ward and give *us* the benefit too? To which it gave Mr. B. great pleasure to reply, "that is exactly what I propose to do, just as fast as you gentlemen will vote me the money to do it with." With the "Constituency" thus aroused and making demands, there was little disposition to refuse Mr. Barrett's request for a larger appropriation; in fact a vote against it would be political suicide.

During 1889, there was appropriated for this service, two hundred and seventy thousand dollars ($270,000.) A large part of this sum is being expended in the building of three very substantial plants in as many divisions of the city. These will be completed and running by March 1st, next. In addition, a system of trunk lines is being rapidly extended throughout these districts, the wires being laid under ground. At present the city is operating 310 lamps. By March next 500 more will be added. March 1891 will see another 1000 added, making about 1800 in all. By March 1892, there will be in operation 2500, sufficient to light every street which is now lighted by gas. Chicago will be able to present to its visitors from all over the world in 1892, a sight to be found no where else,—a great city entirely lighted by electricity, the service performed by itself.

The present cost per lamp per night, according to the city electrician's last report, is about nineteen (19) cents. With the new plants in operation, the cost will be reduced to about (50) fifty dollars per lamp per year. St. Louis considers herself fortunate in contracting with a private corporation to supply city electric lighting at $80 per lamp per year, an advance of sixty per cent. over Chicago's cost.

We now pay our Gas Trust the modest sum of six hundred thousand dollars ($600,000) per year for lighting our streets. Our 25,000 electric lamps at $50 each will do it for $125,000,—and, as Mr. Barrett says,—give us forty times the light. The same authority says that the private consumers of the city electricty will pay less than for monopoly gas, and the city still have a profit on the business. In fact, he expects that after a time, the city profit on private consumption, will pay the expense of city lighting, and thus the city save the whole $600,000 per year now paid the gas trust.

Thus is Chicago publishing to the world, in the universal language of dollars and cents, *how much* better and cheaper the people can perform their own service, than they can get it done by farming it out.—*The Nationalist.*



COLORADO MINERAL PALACE.—O. BULOW, ARCHITECT.

We present above the design for a mineral palace to be erected at Puebla, Colorado; the cut is made from the drawings of the architect, Mr. O. Bulow, whose project was chosen from among a number submitted in competition.

The description of the building is as follows, and embodies some very unique and pleasing ideas. The plan is a parallelogram, 333 feet long by 164 feet wide. The main entrance admits the visitor to the central chamber, circular in form, 100 feet in diameter and 70 feet to the apex of the dome which surmounts it, and which is flanked by two smaller apartments, each 75 feet in diameter, of similar finish and design.

It is intended to make the building a permanent exhibit of the various minerals, ores and building stones of Colorado and elsewhere, by so using them that they form a part of the construction itself, instead of being displayed in the usual manner. The various quarries will be each represented by one or more columns or pilasters of the particular variety of marble, granite or sandstone they produce, and the effect secured by the contrasting colors can be rendered very striking, if the designer exercises good judgment in massing his colors—though of course such conglomeration would be inadmissable under ordinary circumstances.

Different mines will contribute specimens of their ores with which to adorn the walls, arches and ceilings, which will contrast handsomely with sparkling galena quartz and pyrite, mica, agate and feldspar. In the center of the middle dome will be a prismatic fountain, modeled after that of the Paris Exhibition. The roof will be covered with burnished copper.

The style of architecture employed is Egyptian, with some details modified to meet particular requirements.

COURT DECISIONS.

Judge Van Reynegom has reversed the judgment of the Justice's Court in a suit brought by the Fire Wardens against Samuel Hancock, for violating that section of the Fire Laws requiring light shafts in all buildings to be lathed with iron lahts previous to being plastered. Hancock was convicted, and fined fifty dollars for having failed to cover the framing in the light shafts at 414 Ellis street, in conformity with the iron laths called for. In the appeal, Judge Van Reynegom, in summing up, said there was no proof that a light shaft or well, according to the meaning of the term, was on the premises; that the ordinance fails to define what constitutes a light shaft, but he presumed it must mean a well-like structure, extending from a skylight to its base, for the purpose of giving light; that as the premises in question had no enclosed shaft, but merely a hand railing running around the hole, and as architects had testified that there was no light shaft in the building, for these reasons he reversed the judgment of the lower court.

While admitting the power of the Board of Supervisors to pass such an ordinance, the Judge declared it had not legally exercised its powers in the present instance.

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhereto contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

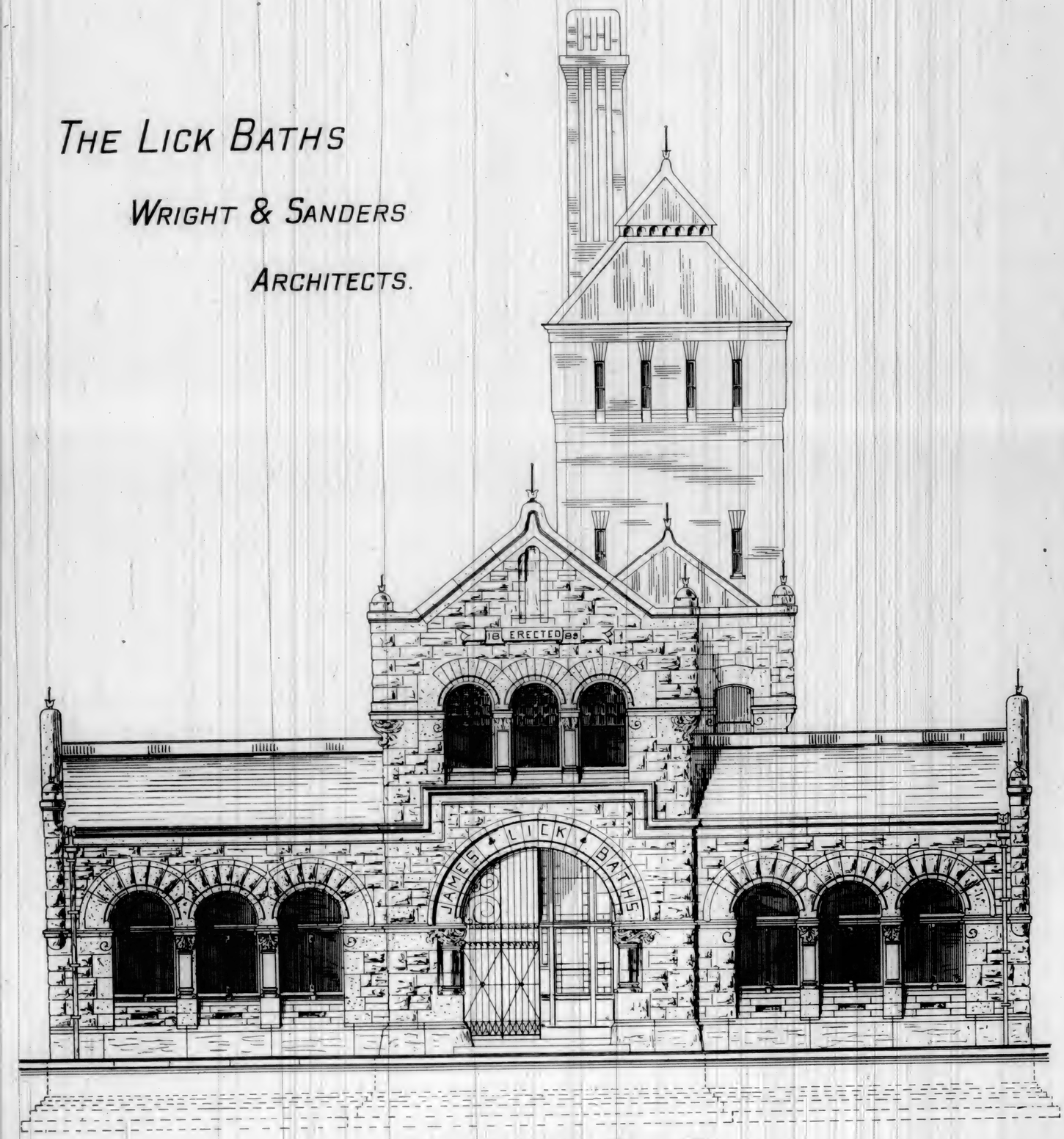
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Our lithographs this month show a residence designed by Architect Young of Los Angeles, and the Lick Free Baths by Messrs. Wright and Sanders of this city. The other designs are described in the text.

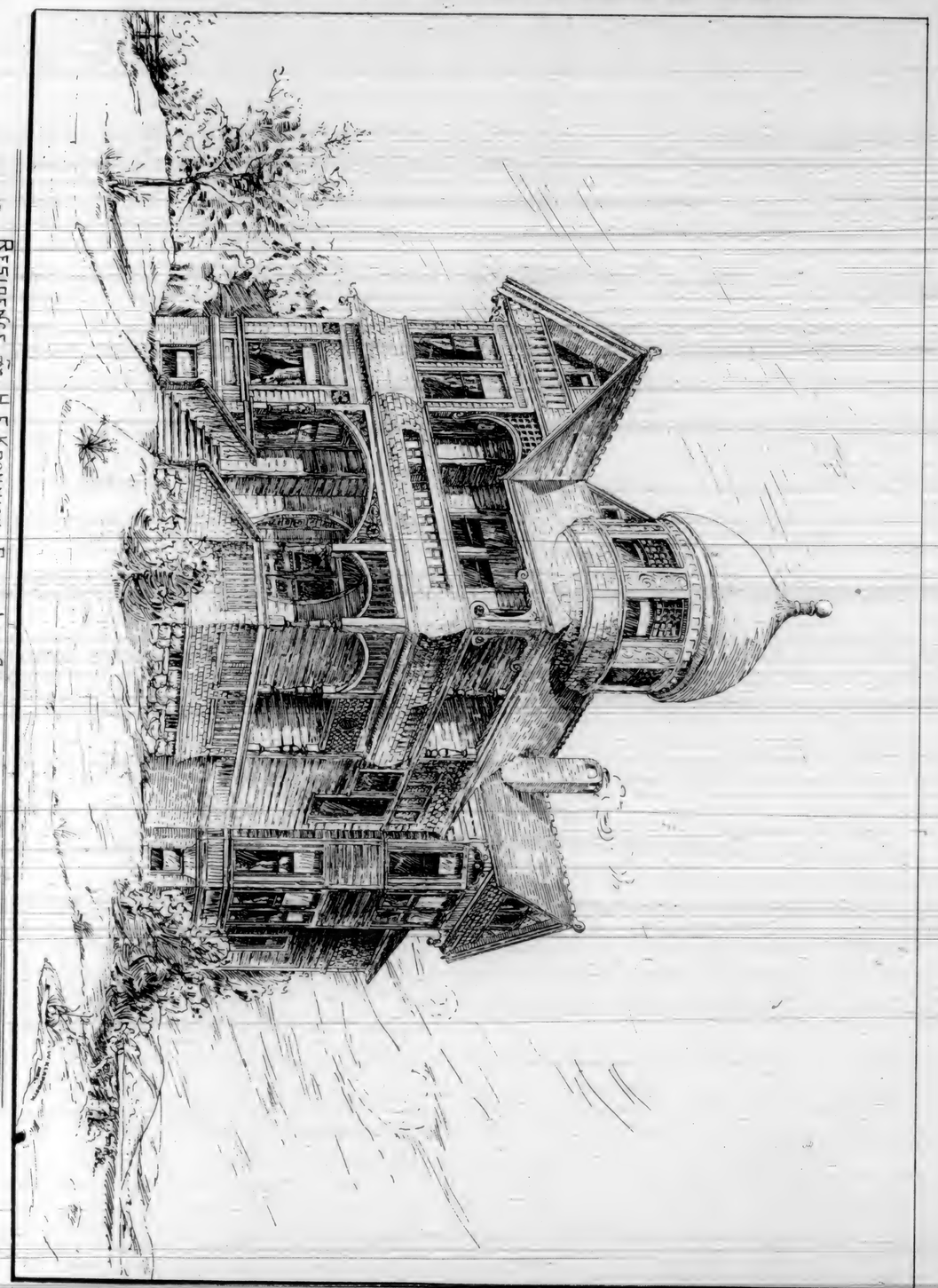
THE LICK BATHS

WRIGHT & SANDERS

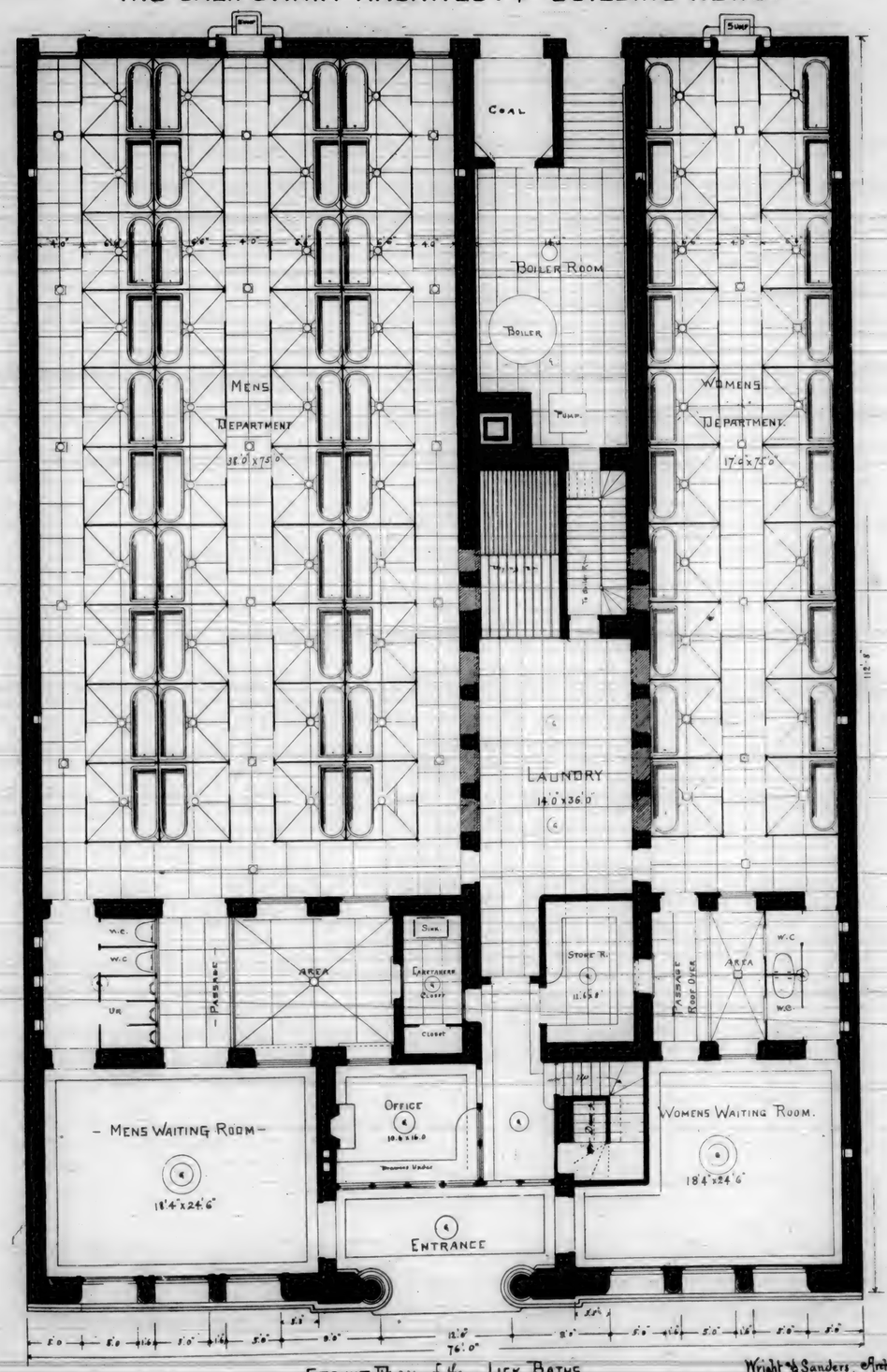
ARCHITECTS.



FRONT ELEVATION ON TENTH ST.



RESIDENCE OF H. E. KRONNICK ESQ. LOS ANGELES, CAL. R. B. YOUNG, ARCHT.



GROUND PLAN of the LICK BATHS Wright & Sanders, Architects.

ST. LOUIS CITY HALL COMPETITION.

The competition for furnishing plans for the new City Hall for St. Louis has at last been decided. The Board of Commissioners held a meeting, at which it was agreed that the three plans marked "Unity," "Pro Patria" and "St. Louis," were especialiy worthy of notice. These designs were put into the hands of Architect James McGrath, of this city, with instructions to report upon the comparative cost of each at the present ruling prices of material and labor. Mr. McGrath reports that this duty has been especially arduous, as the plans were not accompanied with sufficient data on which to make a ready estimate, although the code particularly provided for detailed specifications on which to found a basis of estimate. For this reason the work was delayed.

The City Hall Commissioners met on the 14th inst., in the Mayor's office, Mayor Noonan presiding. All the members were present, and Mr. McGrath was on hand to give an opinion as to the cost of constructing the buildings provided for in the several sets of plans considered the best. Mr. McGrath did not make a formal report, but gave his reasons as to why the set termed "St. Louis, 1892," should be selected. Such a building as would be erected in the event of the adoption of the plans, it was argued, would not exceed the appropriation in point of cost, and would be acceptable in every particular for a model City Hall. The matter was further discussed and the commission then, by a unanimous vote, adopted these plans. It was not known when this action was taken who submitted the plans. When it was adopted, the envelope containing the name of the architect was opened, and it was then ascertained that Eckel & Mann, of St. Joseph, Mo., were the lucky competitors for the first prize, which is $5,000, with privilege of superintending construction.

The five consolation prizes of $1,000 each were then awarded as follows: "Pro Patria," by Sidel, Ginssort & Ginder, of Birmingham, Ala.; "Faith," Carreve & Hastings, New York; "Civic," E. T. Fassett and A. J. Russell, Kansas City; "Star and Crescent," W. H. Dennis, Minneapolis, Minn.; "Unity," James & James, New York.

The high standing of the expert selected is a guarantee that his decision was impartial and his estimates approximately correct. He was prominently mentioned, four years since, in connection with the office of Supervising Architect of the Treasury, and is well known throughout the country.

Mr. McGrath states that the work represented by the 37 plans is worth in the neighborhood of $40,000, and yet the competition has been one of the fairest conducted of late years in this country.

DESCRIPTION OF PREMIUM DESIGNS.

St. Louis, 1892.

This plan received the $5,000 prize. The design is in the Norman-French style of the Fourteenth century and is very handsome and elaborate. Ample provision is made for lighting all the departments. The halls of legislation and the Treasurer's office are given positions of architectural importance, but the latter is unduly prominent externally, while the former are externally diminished in importance by the bays that flank them. The exterior is consequently less expressive than in some of the other designs. It lacks repose and simplicity, being greatly injured by the two bays just mentioned. The main entrance is hardly adequate, but the main hall, the double staircase and the elevators are very happily combined. The stairs, main corridors and offices vary in this respect from admirable to poor. The material will consist of Missouri granite, rock face and St. Louis pressed brick. The dormers and cornices to be composed of terra cotta with finials and crestings of copper. Roof to be covered with copper and slate. The building to be thoroughly fireproof. The floors of the main halls, public spaces and rooms and the wainscoting to be of marble of various hues. The stair cases to be also of marble and stone. The estimated cost of this building is $1,100,000. The architects, Eckel & Mann, of St. Joseph, have been notified to come to St. Louis to confer with the board regarding necessary changes.

PRO PATRIA.

This design was drawn by Sidel, Ginssort & Ginder, of Birmingham, Ala. It was rated by Prof. Ware as the best of the thirty-seven submitted. It is certainly a beautiful design in the Gothic style, but its great comparative cost rendered it unavailable. Mr. McGrath thought that it could not be built for less than $2,000,000.

UNITY.

The claim for this building made by its architect is that it is useful and within the limits of cost. The architectural plan is the peculiar American development of the Romanesque. The details of the design are calculated to withstand the action of dirt and soot. The plan assumes the form of a parallelogram with a large court in the center, lighting the halls, corridors and staircases. There are four principal entrances, those on the east and west wings being covered. A grand staircase leads primarily to the Council and House of Delegates. The cost was estimated by the expert at $2,000,000.

STAR AND CRESCENT.

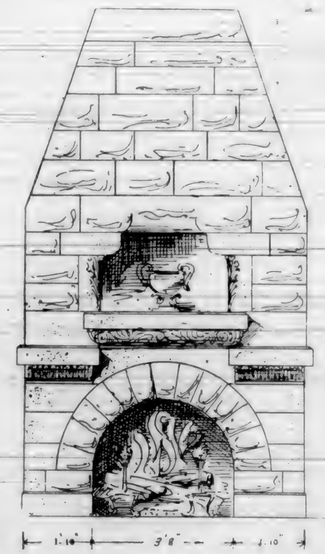
By W. H. Dennis, of Minneapolis. Classic in design, with very ample provisions for light and entrance. This would have made a very imposing building, surmounted with corner and central towers. The specifications provided for the use of saw-dust instead of sand in the plastering.

CIVIC.

By E. T. Fassett and A. J. Russell, of Kansas City. Very handsome, and apparently in full accord with code of competition. Very convenient arrangement of legislative and business departments.

FAITH.

By Carreve & Hastings, New York. Deserving of special mention. Style, French Romanesque, with a few early Gothic features. Thoroughly fire-proof. Ample light and air. Whole building in exact conformity with instructions.



MANTLE IN STONE, FOR THE SUTTER CLUB.
CURLETT AND CUTHBERTSON,
ARCHITECTS.

Most of the architects of Great Britain have signed an agreement not to compete for any building if their designs are to be submitted to anyone for decision who is not an architect known to the profession.

IN THE "VERNACULAR."

The question is often propounded by the inquiring American, Why it is that America is without a distinct American style? Many remarkable attempts have been made to answer this inquiry. Some have even gone so far as to call the attention of explorers and other scientifically inclined minds to the wonderful structures reared by the mound-builders; others have risked life or limb in vain attempts to fathom the mysteries of the cave-dwellers in the wild cañons of Colorado. Others, again, have not hesitated to declare that the Incas have left monumental remains of a long lost art that any nation might be proud of. In fact, archæology itself has been appealed to and invoked to restore to us evidences of a great bygone American architecture, but in vain. The restless American eye has turned itself inward at last, and revealed an astonishing discovery—a style so rich in its decorative emblazonry as to astonish even the learned beholder, displaying to the thoughtful student such a wealth of encrusted enrichments as no Etruscan artificer ever dreamed of. The manifestations of this style are so peculiar and so striking that to understand the meaning of their story needs an erudition that is profundity itself. To see this style developed in its pristine beauty and unrivaled freshness, it is necessary to take a train to any far inland town, particularly if it be near a planing mill. The first glimpse one gets of a dwelling in this style is, of course, the general outline. What this is it would be indeed difficult to say. The sky-line is such a zig-zag contour, with pro-Norman feeling here, unmistakable Queen-Anneism there, Cinquecento yonder, Neo-Grec farther on, that where to begin and where to end is puzzling; but finally the eye itself, after wandering about the maze of sub-roofs, dormers, peaks, turrets, spires, campaniles, light-house bell-towers, smokers' snuggeries, and other quaint modern devices, lights upon the entrance-porch, or verandah, or piazza, or porto-cochere, or Dutch stoop, or reminiscence of Cluny, and is delighted to find—just as expected—that this porch, or stoop, or what-not, is tacked on to the building like a dog-kennel or chicken coop. This feature is noted and commented upon with peculiar satisfaction, for it is one of the unmistakable evolutions of modern architectural progress, and by the one-and-a-half-per-cent. men is styled a "cute" innovation.

What the most marked characteristics of this style are, not to make a long story too short, it would be equally difficult to say, "but there is one thing I hav' notiss," as Mr. Cable's famous creole Narcisse says, and that is the jumble of roofs just cited, the unaccountable corners, angles and elbows of the elevations, the "quaint" (?) breaks in the cornice, the snow traps on all parts of the house and the elaborate schemes of ornamentation offered.

The porch posts, for example, are arranged into compound columns of the most striking orders; one column consists of drum upon drum without base, plinth or capital, the more shown the richer the order. The entablature itself exhibits in a striking degree the triumphs of the modern jig-saw, and the cornice itself is modillioned and encrusted with mouldings to such an extent that one finds it difficult even to count them.

Some one has said that it is to the window we must look for evidence of a new style. Whenever the form of the window, its arrangement or its grouping, has been crystallized into permanent usage, then the world has become enriched by a new style. Applying this dicta to the scene of our investigations, we discover this; in the new style it is the custom to have but one window to a room, and that must be broad and low, and have its upper sash filled with encrusted glass—encrustations still wherever one may look for them—so, we suppose, that the inhabitants thereof cannot see thereout. Some mean and envious and unsuccessful architect has bitterly called this style the "barnacle style," and this outrageous person has gone so far as to divide this style into two groups, one in which the buildings arrange themselves on account of their size, being too great for their purpose, and the other on account of their dimensions being too small for the people who occupy them. But this arrangement and arraignment may, we assure our readers, be passed by with contempt and disdain. The style we have only briefly glanced at is very different from this. We are not responsible for its name; we do not know who is; but the name has passed into history—it fits the architecture as a glove does the hand, and it is needless to say the style of house we refer to is built in the popular "Vernacular."—*Architecture and Building.*

PAINT AND VARNISH BLISTERING AND ITS PREVENTION.

The question of blistered paint or varnish is a very vexed one. It has caused much anxiety and perplexity, and any amount of hard and unjust abuse, simply because it is invariably attributed to the use of inferior materials or "bad paint," as the phrase goes. Those, however, who have had long practical experience, and who have thought the matter well out, will not have the slightest hesitation in saying that it is nothing of the kind, an expression I may, perhaps, before I finish, be able to justify.

I was called in only the other day to examine and pass judgment upon the external painting of a bank, near Manchester. The work was done by a very respectable firm some time ago, and portions of it were fouud to be very much blistered, the lower part of the entrance or vestibule door (which was partly shaded by a lead covered roof) in particular; and to such an extent was this the case that for about eighteen inches from the floor it was a mass of blisters, and from that point upward a beautiful piece of work, as level and smooth as a polished plate. Bad paint or varnish, I think, could not be the cause of this; if so, why was it not blistered all over? How, then, was it to be accounted for? Simply this; the sun's rays striking the door at an angle of about forty-five degrees caused the mischief. This was explained to the manager, and he expressed himself perfectly satisfied on that point; but at the same time made the remark that there were no blisters on the same door when done three years ago. Quite likely, but from experience I find that the more paint or varnish the more blistering, hence the necessity of removing the old paint or varnish before applying the new. The more scientific question may arise, "Why does the action of a moderate degree of heat on the surface of paint or varnish cause blistering?" Because almost every kind of wood, more particularly white and yellow pine, being soft, contain, to a more or less extent, air and moisture, and, as a rule, immediately on leaving the joiner's hands, is painted with a coat of oil priming. Then begins the mischief; coat upon coat of paint follows in rapid succession, until this waterproofing and air-tight process is completed. Kept in the shade, the work is everything that could be desired, and nobody grumbles. No sooner, however, is it exposed to the rays of the sun, than the surface becomes heated (the more so if the paint is dark in color), the air and moisture underneath are expanded, steam generated, and in its effort to escape raises or upheaves the air and water-tight coatings in the form of blisters. Invariably the reputation of the painter is damaged in proportion to the exposure of his work to the destructive power of the sun, an agency over which he has not the slightest control.

Now in the case of iron or other metallic substances being painted, I have stated that soft woods under paint or varnish are more liable to blister than the hard or close-grained qualities, which partake more of the nature of iron and other metallic substances, and which, irrespective of quantity and quality of paint or varnish, or however much exposed to the sun, are seldom if ever found to be blistered. Why? Because the non-absorbent nature of the metals precludes the possibility of air or moisture entering into their composition, hence the absence of blisters as compared with the softer kinds of timber. Then, again, we have internal blistered paint, which in some instances differs in appearance from that already described, being more like heavily embossed leather. It is often deeply furrowed into patches, resemblng in appearance the skin of a crocodile, and in many cases it is drawn into lumps as large and not unlike the form of split peas. This kind of damaged work is from the same cause, and results from long-continued exposure to the sun's rays, which, when reflected or focussed through glass, are much more powerful and destructive in their action on paint on that account. This kind of damaged work is chiefly to be found on the fronts of shutters exposed to the sun in the hottest part of the day, but never on the soffits or other interal or external portions of the painted or varnished wood work, entirely shaded or otherwise protected from the sun.

There is yet, however, another kind of blistering which may be occasionally met with, and in places, too, upon which the sun may never shine. This we find to be the case on newly-plastered walls having been oil-painted too soon, and also in places where old plastered or painted walls have been saturated with water through the bursting of pipes and other accidental causes. Nevertheless, the same influences have been at work, though more unequally combined, or, in other words, less heat on the one side and more water on the other, with the hermetic film of dried paint or varnish between.

It will, I think, be seen from my line of argument, anent the question of blistering, that practical prevention in the case of oil paint or varnish is almost impossible, and could only be accomplished—first, by the use of white paint only, the destructive power of the sun upon dark surfaces having little or no effect upon white; second, by extracting the air and moisture effectually from the finished wood work in a heated chamber, and, on the instant, coated over with linseed oil priming; third, by complete protection from the sun; fourth, by stopping the sun from shining, which, I think all will agree, would be the greatest impossibility of all.—JAMES RENWICK, in *The National Builder.*

WASHINGTON'S BIRTH-DAY.

Architecture and Building, commenting on the anniversary of Washington's birthday, says:

The grave of Washington's mother is without a monument, and the money for the Washington Memorial Arch comes in but slowly, although the design has been accepted with universal approval. One magnificent edifice we may consider a memorial of the great statesman—the Capitol at Washington—the site of which was selected by President Washington in 1791. A plan was prepared by Dr. William Thornton, of Pennsylvania, and, after material changes, it was approved by Washington and submitted to Stephen Hallet, a French architect, to whom was entrusted its execution. On September 18, 1793, the corner-stone of the edifice (southeast corner) was laid by Brother George Washington, assisted by the Worshipful Masters and Free Masons of the surrounding cities, and the military and a large number of people. The silver plate deposited in the cavity of the stone bore the following inscription: "This south-east corner-stone of the Capitol of the United States of America, in the City of Washington, was laid on the 18th day of September, 1793, in the thirteenth year of American Independence, in the first year of the second term of the Presidency of George Washington, whose virtues in the civil administration of his country have been as conspicuous and beneficial as his military valor and prudence have been useful in establishing her liberties, and in the year of Masonry 5793, by the President of the United States, in concert with the Grand Lodge of Maryland, several lodges under its jurisdiction, and Lodge No. 22, from Alexandria, Virginia. Thomas Johnson, David Stewart and Daniel Carroll, Commissioners; Joseph Clarke, R. W. G. M. P. T.; James Hoban and Stephen Hallet, Architects; Collin Williamson, M. Mason." It may be interesting to note here the other architects employed on the erection of the Capitol: In 1803 R. H. Latrobe was appointed architect; in 1818 Charles Bulfinch had charge of the work, and in 1851 Thomas U. Walter's plans for the extension were accepted. It is stated that the cost of the Capitol has been less than that of the Court House in our City Hall Park! being estimated at $13,000,000.

NOTES & COMMENTS.

The new company that is to supply East St. Louis with gas is to receive 50 cents per thousand.

We regret to chronicle the death of architect Geo. H. Miller, whose office was in the Flood Building.

Owing to complications arising from the death of Mr. Gray, of Gray & Stover, the firm has assigned the contracts it had on hand at the time of Mr. Gray's death, to be completed by the assignees.

We see that the French authorities have issued an order directing the secretary and others connected with collapse of the copper syndicate to be handed over to the correctional police to be dealt with.

There is now being erected a skating rink in Paris, covering a plot of ground about 300 feet in diameter. The ice will be made artificially. Would not such a rink pay in San Francisco?

The Boston Architectural Club proposes to hold an exhibition of architectural work, beginning May 12th, and continuing three weeks. Contributions should be sent in not later than April 15th. R. C. Sturgis is the Secretary of the club.

Doe Brothers, sash and blind manufacturers at 44 Market street, San Francisco, are about to construct a six-story building on the gore lot bounded by Market, Hayes and Larkin streets. A theater, second only in capacity to the Grand Opera House, and of most modern style, will occupy a portion of the buiiding.

The National University of Chicago has arranged for a National Circulating Library of 20,000 volumes, to aid in its University Extension work, modeled after the English system. The The volumes will be sent by mail from Maine to Texas. It will supply a long felt want. To cover expenses, catalogues are sent only on receipt of ten cents. Address 147 Throop street, Chicago, Illinois.

Los Angeles gets her additional appropriation of $370,000 for the enlargement of the postoffice building. This was a necessary step to insure a suitable Federal building for the city. It is to be hoped that this money will be available at an early day, and that work on the structure will soon be resumed. The coming summer may be a quiet one in business, and the employment of mechanics and laborers on this building will help out materially.

Wm. Ward, an architect of Salt Lake City, suggests that future competitions require drawings to be made to a scale much smaller than that usually employed, say 20 or 25 feet to the inch, such drawings to be made with black ink *only*, and any drawings submitted larger than called for to be reduced by photography to the standard scale before being compared with the other designs. This would save competitors much labor in making elaborate drawings and allow many sets of drawings to be examined and compared at the same time.

Four women were engaged last week working as bricklayers on a building corner of Montgomery avenue, Dupont street and Hinckley alley. All the four were dressed in men's clothes, and though not very competent workmen toiled very faithfully and hard. The occasion of the work was the order of the Street Superintendent that a brick foundation should be built under the wooden house on the corner. Although willing the women were not skillful, and yesterday regular male brick-layers were called in to take down what the women had built, and construct the foundation in a proper manner. It is stated that one of the women insisted on doing the work herself and superintending the job.

The report of the Grand Jury shows that a new county jail is an imperative necessity. The present one is neither safe nor comfortable. The property of the people of this city has been pretty severely taxed the past year, but we do not know that this fact has anything to do with the obligation of the people to maintain safe and healthful public buildings. If the people cannot find some way to elect men to responsible offices who will not waste a third or more of our municipal revenues, they must stand the consequences of their own incapacity. But the small taxpayer, who has just succeeded in getting together the heavy tax of last year, will be inclined to ask himself why, with all these taxes, the city is in need of so many things. It is not only the County Jail, but the school-houses, the Police and Fire departments which are kept in a state of inefficiency by the lack of conveniences which are supplied in other cities with less revenue than we provide.

The American Architect and Building News has the usual quantity of interesting matter.

In the *Architectural Era* for February will be found a continuation of *Good Things Gleaned from Different Eras of Architecture.*

Our esteemed contemporary and near neighbor, *Industry*, will soon have to increase the number of its advertising pages. No better proof could be had of its success.

Architecture and Building under its new name, presents an improved appearance. Its issue of February 15 concludes an article on *The Influence of Materials on the Development of Architecture.*

The Engineering and Building Record for February 15, contains a plan and description of the office of Shepley, Rutan & Coolidge, architects, of Boston, and an interesting account of how these gentlemen conduct their extensive practice.

The National University of Chicago announces a new Spanish Grammar in preparation. It is by Prof. Schele de Vere of the University of Virginia, is written on a novel plan, and will form one of the "University" series of text books.

The February number of *The National Builder* contains, part V of Adolph Cluss' article on *Mortars and Concretes of Antiquity and Modern Times*, describing the manufacture of Portland cement and the chemical actions of its component parts also.

An article by James Renwick, on *Paint and Varnish Blistering and Its Prevention*, and installments of the articles on *Ventilation of Sewers*, and *The Art of Drawing.*

The *Building Budget* for January contains translation of *Viollet le Duc's Dictionnaire Raisonee de l'architecture* and an interesting article on *Adoban Architecture by Andre Matteson*, and proportion in Doric architecture by *Prof. A. Thiersch*, translated by *Prof. N. Clifford Ricker*, also the proceedings of the joint meeting of the Chicago Chapter, A. I. A., and the Illinois State Association of Architects, at which their consolidation was effected.

The February number of the *Western Architect and Building News* is one of the two *special numbers* issued during the year, and is thoroughly deserving of *special* mention. The gelatine plates are as near perfection as choice of subjects, and skill in this process of reproduction combined can attain. The most interesting plates are a general view of the Chicago Auditorium Building, Adler & Sullivan, architects, an interior of the Kansas Senate Chamber, L. M. Wood, architect, a residence designed by John J. Huddart, architect, and a perspective view of the Peoples' National Bank Building by F. E. Edbrooke & Co., architects.

The National Magazine for March, contains the continuation of an interesting article by Prof. Schele de Vere of the University of Virginia, entitled *How We Write*, giving many curious historical facts. Rev. J. C. Quinn, L. L. D., contributes *Biblical Literature.* F. W. Harkins, Chancellor of the National University of Chicago, describes the workings of the *National Circulating Library* of 20,000 volumes and the new non-resident courses of study of the University. A timely article on the University Extension system of England is by Rev. C. C. Willett, Ph. B. The ladies will be particularly interested in the new Woman's Institute and a unique plan, here described.

Published on the 1st of each month at 147 Throop street, Chicago, Ill. Sample Copy, 10 cents.

THE LICK BATHS.

We are enabled to present to our readers this month through the kindness of the architects, Messrs. Wright & Sanders, the design for the Lick Free Baths now being erected on Tenth street near Howard street, in this city.

The deed of trust, executed by the late James Lick, providing for the construction and perpetual maintenance of free public baths in this city, reads as follows:

"And in further trust to expend the sum of one hundred and fifty thousand dollars under direction of H. M. Newhall, Ira P. Rankin, Dr. J. D. B. Stillman and John O. Earl and the survivors of them, in the erection and maintenance in the city of San Francisco of free baths, the site or sites therefore to be acquired and held by the persons last named and the survivors in trust forever to maintain such baths for the free use of the public under proper and reasonable regulation, said baths to be erected as soon as practicable to raise the money after the money has been provided to erect said telescope."

The building has now been in course of construction for several months past, and is so far advanced as to afford the observer a good idea of the handsome appearance it will present when completed. The facade has a frontage of 76 feet and the material employed is San Jose sandstone, very effectively treated. The main entrance is in the center, and opens into a spacious vestibule, flanked by separate waiting rooms for men and women. There are forty separate bath rooms in the men's department, and half that number in the women's; each room is furnished with an enameled iron bath tub, and the whole well lighted by large skylights.

Tanks for hot and cold water are located in the tower, which is situated near the center of the building.

Apartments have been provided for the employees in the second story, and every convenience provided for the work they will be called on to perform,

Following that which we have written relative to the *Lick Baths*, we learn that the *Joshua Hendy Machine Works*, whose place of business is at No. 54 Fremont Street, this city, furnished the boiler, engine and all of the necessary shafting, pulleys, etc., connected therewith and as well the *Laundry Machinery* from the Pacific Laundry Machinery Company.

This Laundry Machinery comprises hot and cold water tanks having a capacity of 10,000 gallons each, and the further assessories of a washing machine, mangler, centrifugal hydro-extractor, soap tanks, etc.

The drying room is to be specially constructed of iron upon plans and specifications prepared by the manager of the Pacific Laundry Machinery Company, the office of which is at No. 51 Fremont Street, this city.

Mr. Jos. F. Forderer, 226 Mission street, is doing the galvanized iron and slate work. The front roofs are covered with California slate, the rear ones being of corrugated iron. The skylights are built with the Forderer patent, of which Mr. Forderer is the patentee. Persons contemplating building should call on Mr. Forderer and inspect his skylight, as it has many advantages over other styles. The partitions in the bathing department are all built of galvanized iron. Mr. Forderer is well known to the building community and the public in general, as doing nothing but first-class work in his line of business, and having acquired an enviable distinction will always endeavor to maintain it.

The plumbing in this establishment is, as its name implies of great importance and the work therefore was to be done in the most approved sanitary manner, and with the lastest and best plumbing appliances as well as to have it durable. Mr. W. F Wilson, whose place of business is at 204 Stockton street in this city, was therefore choosen by the architects and the trustees for the Lick Baths, to perform this branch of the building, and who has spared no time or trouble to make the plumbing in this building, a credit to those who entrusted him with this work as well as to himself. The drainage pipes are of extra heavy cast iron, and so arranged under the cement floor that any part of it can be cleaned or flushed at any time, these drain pipes empty into large cast iron tanks specially designed for this building by Mr. Wilson, and by this means making it impossible for sewer gas to enter the building. As an extra precaution, the drains are constructed in such a manner, that there is a constant circulation of air passing through these pipes from rear to front of building.

The traps for bath-tubs, catch-basins or floor strainers are of a unique pattern as are also the waste and supply fixtures to the bath-tubs. A marked feature in this plumbing is the absence of lead pipes, no lead pipe of any kind to be used in the connection of any part of the plumbing in the Bath House, all material being extra heavy, strong, cast iron, or heavy brass, thereby avoiding the risk of having any part of the plumbing damaged by carelessness or intent; the bath tubs, made of solid porcelain, are 2½ inches thick and weigh each about 800 lbs. Each tub is set and connected in such a manner that it can be uncoupled and removed without interfering with any other part of the plumbing,—the supply to the bath-tubs are taken from two large tanks situated in tank-tower, and consist of galvanized iron pipes 4 inches in diameter, and sufficiently large to fill each tub in about 2 minutes. A large and commodious room is fitted up for gentlemen with a combination needle and shower bath something entirely new, and will be enjoyed by those who know the benefit of such a luxury, the plumbing in lavatories and toilet rooms are in keeping with the work in the bath-rooms. The water-closets are of the latest approved pattern, with a large square opening and are known as the *Pedestal Syphonia*, each water-closet is furnished with an antique oak seat and cistern and is automatic in action, the urinals are of petroleum, the floors, sides and back of which are of California slate, the supply to each through an automatic periodical flushing cistern.

J. Steuart Mackay, whose office is No. 330 Sutter Street, room 3, has the contract for the performance of the carpenter work. Mr. Mackay is a well known builder of long standing in the community, and has erected many prominent buildings in and around this city. Being a thorough man of business as well as a competent mechanic, attentive to his work, and careful to fulfil all agreements to the satisfaction of his clients; it may be stated without hesitation that he will take particular pride in carrying out this important contract, in such a manner as to reflect credit on himself and the architects who designed the work.

Messrs. W. W. Montague & Co., of 309 and 317 Market street, have the contract for the tile work and their name is a sufficient guarantee that the work will be done in an artistic manner and the material will be of the best.

The offices and waiting rooms are wainscoted with English glazed tile in light cream with a Grecian border in colors, and the floors and halls of the rooms are laid with encaustic tileing in mosaic designs and colors. The walls of the main bath rooms are all wainscoted with English cream colored tile from floor to ceiling with a Tennessee marble base running all around.

The plastering has been let to Mr. Charles Dunlop, who is an experienced man in his line of business, and as the result of his knowledge and ability, he secures a great deal of the best work in the city. His headquarters are at 330 Pine street, at the Builders' Exchange. Among the prominent buildings lately plastered by Mr. Dunlop, may be mentioned the First National Bank, corner of Sansome and Bush streets, and the Strathmore Apartment House on Larkin street. He has also contracted to do nearly twenty thousand dollars worth of work for the new building now being erected for the California Academy of Science on Market street.

Messrs. Fraser & Keefe, the well known painters of 317 Sutter street, whose exhibit at the last Mechanics' Fair attracted such universal attention, have the contract for the painting and glass work. The work done by these gentlemen speaks for itself. By a long series of experiments they have discovered certain methods of treating natural woods so as to bring out the beauties of the natural grain, and persons wishing to have this kind of work done in a first-class manner, would do well to call and examine specimens of wood so finished, which can be seen at their place of business, 317 Sutter street, between Grant avenue and Stockton street.

Mr. George Goodman, of 307 Montgomery street, has the contract for the foundation and artificial stone work. As the foundation of a building designed to stand for any length of time is of the first importance, it is essential that the composition be the best and that the mixing be done in a thorough manner; his name is a guarantee that the requirements called for has been fulfilled. The sidewalk will be laid with artificial stone, of which he is the patentee and manufacturer. Mr. Goodman has had many years of experience in this business, and does nothing but first-class work.

CITY BUILDING NEWS.

Alpine and Fourteenth. 3-story; owner, D. Swannack; architects, Townsend & Wyncken; contractor, D. Currie; cost, $5,494; signed, Feb. 19; filed, Feb. 19; payments: $600, main floor beams are on; $400, framed: $1,168 ready for lathing; $1,000 work is up and primed; $500, white coat of mortar is on; $500, inside is trimmed; $1,366, 35 days.

Bryant and Third. Concrete cementing and excavating; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, Chattain Gilletti; cost, $20,500; time, 68 days; sureties, Byron Diggins & Diggin Bros., $13,000; filed, Feb. 25; signed, Feb. 24; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Brick work; owner, E. G. Lyons & Co.; architect, Wm. Mooser; contractor, J. W. Wissinger; cost, $24,850; sureties, C. C. Rohlffs and D. Dodge, $16,000; filed, Feb. 25; signed, Feb. 21; payments, 75 per cent. of value of work done; balance, 35 days.

Bryant and Third. Stone and plastering; owner, E. G. Lyons & Co., architect, Wm. Mooser; contractor, Jno. McCarthy; cost, $13,284; time, 60 days; sureties, J. F. Logan and T. W. Peterson; signed, Feb. 21; filed, Feb. 25; payments, 75 per cent. of value of work done; balance, 35 days.

Church, between Ridley and Fourteenth streets. Owner, Ann Shattuck; architect, T. J. Welch; contractor, Jas. Campbell; sureties, A. W. Starbird and J. B. Goldstone, $5,000; time, 3 months; signed, Feb. 24; filed, Feb. 28; payments, $1,925, enclosed: $1,925, brown coated; $1,925, completed; $1,925, 35 days.

Chattanooga and Twenty-Fourth. Frame building; owner, Robt. McElroy; architect, J. Marquis; contractor, David Perrey; cost, $2,225; signed, March 4; filed, March 4; payments, $350, chimneys are up; $400, building is ready to lath; $400, brown coat of mortar is on; $315, completdd; $360, 35 days.

Drumm and Sacramento. Carpenter work; owners, Mahony Bros.; architects, Ashton & Stone; contractor, John Trotter; sureties, John F. Kennedy and Geo. T. Shaw, $2,000; cost, $5,559; signed, Feb. 27; filed, Feb. 28; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

Ellis and Franklin. Frame building; owner, Henry Payot; architect, Wm. Mooser; contractor, M. C. Lynch; cost, $5,362; sureties, Henry Blythe and J. T. Trott, $3,000; signed, Feb. 13; filed, Feb. 18; time, 75 days; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Buchanan. Painting and graining; owners, Morris Brinn and Philip Flatlow; architects, Salfield & Kolberg; contractor, J. A. Mohr; cost, $850; signed, Feb. 17; filed, Feb. 17; payments, $300, outside has two coats; $325, accepted; $225, 35 days.

Eleventh and Folsom. To complete building; owner, Jas. Scobie; architect, Oliver Everett; contractor, Cook Stover; sureties, Jno. Wagner & Chas. Dunlop; filed, Feb. 19; signed, Feb. 19.

Ellis between Polk and Van Ness Avenue. 3-story frame; owner, A. Pauba; architects, Kenitzer & Kollofrath; contractors, Shutt & Kreker; sureties, T. Hock and J. C. Jensen, $8,000; cost, $9,257; time, May 31, '90; signed, Feb. 18; filed, Feb. 19; payments, $1,500, frame is up; $1,200, roofed; $1,500, first coat of plaster is on; $1,200, plastered; $1,457, entire work is completed. $2,700, 35 days;

Ellis and Buchanan. Carpenter work; owner, Morris Brinn & Philip Flatlow; architect, Salfield & Kohlberg; contractor, H. Holzenberg; sureties, J. F. Kennedy and Geo. T. Shaw, $13,000; cost, $13,000; signed, Feb. 7; filed, Feb. 17; payments, $1,000, up to second floor; $2,000, framed; $2,000, partitions set; $2,000, doors and windows hung; $2,750, accepted; $3,250, 35 days

Ellis and Buchanan. Plumbing, etc.; owner, Morris Brinn & Philip Flatlow; architect, Salfield & Kolberg; contractor, Sam'l Ickelheimer; cost, $1,550; signed, Feb. 7; filed, Feb. 17; payments, $500, rough work is in; $650, accepted; $400, 35 days.

Ellis & Buchanan. Plastering; owners, Morris Brinn & Ph. Flatow; architect, S. V. Kohlberg; contractors, Brennan & Fraser; cost, $1,569; signed, Feb. 24; filed, Feb. 28; payments, $600, brown coat is on; $869, plastering is finished; $400, 35 days.

Ellis and Leavenworth. 3-story frame; owner, Chas. Meyer; architects, John & Balczynski; contractor, Wm. Pluns; cost, $13,640; signed, March 1; filed, March 3, payments, $2,500, frame; $2,500, partitions are set; $2,500, outside finish is on; $2,-780, inside finish is on; $3,410, 35 days.

Ellis and Franklin. Plumbing, etc.; owner, Joseph Getz; architect, Wm. Mooser contractors, Thos. Clark & Son; cost, $1,100; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Leavenworth. Concrete work; owner, Johann A. Schmidt; architect, Julius E. Kraft; contractors, Ransome & Cushing; sureties, C. E. Greene and F. M. Smith, $3,000; cost, $4,173; signed March 1; filed March 3; payments, $1,400, all walls are up to one-half height; $1,723, completed; $1,150, 35 days.

Ellis and Franklin. Carpenter work; owner, Jos. Getz; architect, Wm. Mooser; contractor, J. R. Whalen; sureties, O. H. Greenwald and J. Levi, $9,000; cost, $13,482; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance, 25 per cent., 35 days.

Ellis and Franklin. Artificial stone work; owner, Jos. Getz; architect, Wm. Mooser; contractor, Geo. Goodman; cost, $835.50; signed, March 5; filed, March 7; payments, 75 per cent. of value of work done; balance when completed.

Grove and Shrader. One-story cottage and 2-story stable; cost, $4,000; owner, John Hasshagen; contractors, Droge & Munster; time, 100 days; signed, Feb. 24; filed, Feb. 28; payments, $750, rough frames are up; $750, brown coated; $750, outside finish on; $750, accepted; $1,000, 35 days.

Grove and Lott. Frame building; owner, Chas. G. Gebhardt; architect, Edward Burns; contractor, Jas. J. Mauseau; sureties, Jas. Greig and Ed. P. Blake, $1,800; cost, $3,500; time, 75 days; signed, Feb. 17; filed, Feb. 28; payments, $750, rough frame is bridged and braced; $800, rough plumbing done; $1,100, completed; $940, 35 days.

Golden Gate Ave. between Baker and Lyon. Frame; owner, Henry Osbourne; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost, $8,000; time, 90 days; signed, March 5; filed, March 7; payments, $2,000, framed; $2,000, brown coat of mortar is on; $2,000, white coat of mortar is on; $2,000, 35 days.

Hyde and Vallejo. Alterations, etc. Owner, Mrs. Duffy; architect, J. F. Hayes; contractor, J. F. Hayes; cost, $340; signed, Feb. 17; filed, Feb. 18; payments, $100, roof of old house is shingled; $60, floor is laid; $100, brown mortar is on; $100 complete; $180, 35 days.

Harrison and Sixth. 3-story building; owner, J. Verdenhalven; architect, Henry Geilfuss; contractor, Henry Minster; cost, $3,475; signed, Feb. 28; filed, March 1; payments, $650, framed; $650, partitions are set; $650, finish completed; $655, completed; $870, 35 days.

Hardy and Kearny. Cast-iron work; owner, G. T. Watterson; architect, J. Marquis; contractors, O'Connell & Lewis; cost, $6,745; signed, Feb. 28; filed, March 3; payments, $1,700, third story joists are on E. ⅓ of building; $800, third story joists are on W. ⅓ of building; $1,660, completed; $1,745, 35 days.

Howard and Eighteenth. 3-story frame; owner, Wm. Perkins; architects, R. H. & R. White; contractors, H. O. Noyes & E. W. Hyde; cost, $6,657.50; signed, March 1; filed, March 1; payments, $887.50, roof boards are on; $1,000, rear frames are up; $1,100, brown coat of mortar is on; $1,000, standing finish is on; $1,000, completed; $1,670, 35 days.

Hardy Place and Kearny. Carpenter work; cost, $11,325; owner, Chas. Schroth; architect, J. Marquis; contractor, J. R. Wilcox; signed, Feb. 25; filed, Feb. 27; payments, $2,800, roof joists and boards are on; $2,800, building ready to lath; $2,850 accepted; $2,975, 35 days.

Hardy Place and Kearny street. Grading, excavating, brickwork, iron work, etc; cost, $32,005; owner, Chas Schroth; architect, J. Marquis; contractor, Geo. T. Matterson; filed, Feb. 27; signed, Feb. 25; payments, $2,000 E½ of basement is up; $5,500, third story joists are on E½; $2,000, W½ of basement is up; $5,500, joists are on third story; $2,000, fifth story floor joists are on; $6,950, brick work is all finished.

Howard and Capp. Cost, $3,260; owner, Mary E. Von Shroeder; architect, T. J. Welch; contractor, Gray Bros., A. S. P. Co; filed, Feb. 26; signed, Feb. 16; payments, 75 per cent. of value of work done; balance, 35 days.

Howard and Tenth. Machine work; cost, $6,965.

Hardy and Kearny. Stone-work; owner, G. T. Watterson; architect, J. Marquis; contractors, F. E. Knowles & Co.; cost, $2,960; signed, Feb. 28; filed, March 3; payments, $500, third-story joists are on E ½ of building; $700, third-story joists are on W of ½ building; $1,000, completed; $760, 35 days.

Hardy and Kearny. Wrought-iron and steel work; owner, G. T. Watterson; architect, J. Marquis; contractors, C. Nutting & Son; cost, $3,000; signed, Feb. 28; filed, March 3; payments, $1,700, third-story joists are on E. ⅓ of building; $800, third-story joists are on W. ⅓ of building; $650, completed; $750, 35 days.

Jackson and Scott. Owner, Albert Gallatin; architect, Clinton Day; contractor, John T. Grant; cost, $37,591; time, 5 months; signed, March 5; filed, March 7; payments, $4,500, roof is ready for slating; $9,000, prime coat of paint on; $10,500, all inside finish is on; $4,194, completed; $9,397, 35 days.

Laguna and Pacific Avenue. Carpentry work of seven houses; owner, D. F. Walker; architect, Wm. F. Smith; contractor, F. W. Kearn; cost, $36,500; signed, Feb. 15; filed, Feb. 19; payments, $6,483.75, framed; $6,483 75, ready for plaster; $6,483.75, standing finish is on; $6,483.75, completed; $9,125, 35 days.

Larkin street wing of New City Hall. Brick work, etc. Owners, Hughes & Foster; architect, W. Patton; contractor, J. Wagner; cost, $4,000; signed, Feb. 14; filed, Feb. 18; time, 3 months; payments, 75 per cent. of value of work done as it progresses; balance, 35 days.

McAllister and 1st Avenue. 1-story and basement; cost, $1,350; owner, Mrs. Limmermann; architect, P. R. Schmidt; contractors, Droge & Munster; time, April 18, 1890; filed, Feb. 27; signed, Feb. 24; payments, $350, frame is up; $350, roof is on; $350, outside finish is on; $350, finished.

Market and Golden Gate Avenue. Brick-work; owner, Joseph Donohue; architect, A. Page Brown; contractors, Richardson & Gale; cost, $39,260; signed, March 5; filed, March 4; payments, 75 per cent. of value on work done on the first Friday of each month; balance, 35 days.

Nineteenth and Fair Oaks streets. 2-story frame; owner, Jno. Roberts; architect, Chas. Shaner; contractor, Chas. H. Foster; surety, J. Pierce and E. B. Dunning, $1,200; cost, $2,460; time, 105 days; signed, Feb. 14; filed, Feb. 17; payments, $300, frame is up; $400, cornice on; $400, stairs up; $350, brown mortar on; $395, windows are in; $675, 36 days.

New City Hall. Plumbing and gas fitting; contractors, Lawton & Britt; owners, Hughes & Foster; cost, $2,789; signed, Feb. 11; filed, Feb. 18; payments, 75 per cent. of value of work done; balance, 35 days.

Oak & Devisadero. Three 2-story frames; owner, Charles C. McDougall; architect B. McDougall & Son; contractor, John H. McKay; cost $8,000; signed, March 1 filed, March 1; payments, $1,400, framed; $1,400, brown coated of mortar is on; $1,400, one cont of paint is on; $1,500, completed; $2,000, 35 days.

Oak and Devisadero. 2-story frame; owner, M. J. Sahlein and wife; architect, B. McDougall & Son; contractor, Alex. J. Wheeler; cost, $6,200; signed, March 1; filed, March 1; payments, $500, basement story up; $600, framed; $600, roof tinned; $600, inside stairs up; $600, brown mortared; $600, white mortared; $700, completed; $2,000, 36 days.

Polk, between Hayes and Fell. 3-story frame; owner, Mrs. M. Ivine; architect, P. R. Schmidt; contractor, Wm. T. Commary; sureties, C. G. Greenwald and G. Kurster, $8,050; signed Jan. 28; filed, Feb 15; cost, $8,050; time, 100 days; payments, $1,500, rough frame up; $1,500, brown mortar on; $1,500, hard finish on $1,500, completed; $2,050, 35 days.

Page and Ashbury. Two frame stable; owner, J. L. White; architect, A. J. Barnett; contractor, Rountree Bros.; surety, F. Joost, $5,500; cost, $6,875; time, 75 days; signed, Feb. 15; filed, Feb. 18; payments, $1,500 roof boards are on; $1,000 brown mortar on; $1,650, white mortar on; $1,000, completed; $1,725, 35 days.

Post and Devisadero. Two-story frame; owner, Jos. Robinson; architect, C. Zwierlein; contractor, C. Zwierlein; surety, F. Joost, $2,000; cost, $37,500; signed, March 4; filed, March 7; payments, $700, framed; $700, brown coat of mortar is on; $700, outside mill finish is on; $700, completed; $940, 35 days.

Point Lobos and Eighth Avenue. Two-story frame building; owner, C. Giese; contractors, Schultz & Meeker; surety, T. C. Jensen, $4,000; cost, $4,000; time, 65 days; signed, March 4; filed, March 5; payments, $900, roof is boarded; $1,000, brown coat of mortar is on; $1,000, accepted; $1,100, 35 days.

Shotwell and Twenty-third. Additions, etc.; owner, A. Schaar; architect, J. E Kraft; contractor, Wm. Paterson; surety, Chas. H. Ackerson; cost, $3,250; signed, Feb. 18; filed, Feb. 19; payments, $725, roofed; $700, all interior finish on; $1,000 when completed; $825, 35 days.

Scott and Sutter. Plumbing, etc.; owner, Geo. Hageman; architect, Chas. I. Havens; contractor, G. C. Sweeney; cost, $2,147; signed, March 6; filed, March 8; payments, $750, all rough pipes are in; $797, completed; $600, 35 days.

Scott and Sutter. Brick-work, carpenter work, etc.; owner, G. Hageman; architect. Chas. Havens; contractor, F. W. Kern; cost, $18,890; signed, March 6; filed, March 8; payments, $5,500, diagonal boarding is on; $5,500, outside finish is on; $3,500, outside mill work is all on; $3,690, completed; $4,800, 35 days.

Sanchez and Twenty-sixth. Seven 5-room cottages; owner, Louis Landler; architect, J. E. Loomer; contractor, J. E. Loomer; cost, $9,450; time, 5 months; signed, March 7; filed, March 8; payments, $3,150, roofed; $3,150, brown coat of mortar is on; $3,150, 35 days.

Scott and Ellis. Alterations and additions; owner, Chas. Meyer; architects, John & Balczynski; contractor, Wm Plunz; cost $2,275; signed, March 1; filed, March 3; payments, $1,700; underpinning of old house done; $575, 35 days.

Shotwell, between Twenty-third and Twenty-fourth. Frame building; owner, Mrs. H. C. Adams; architect, M. G. Bugbee; contractor, R. O. Chandler; cost, $2,625; signed, Feb. 18; filed, Feb. 18; payments, $656.50 enclosed; $656.50 brown mortar on; $656.50 accepted; $656.50 35 days.

Scott and Sutter. Painting, etc.; owner, Geo. Hageman; architect. Chas. I. Havens; contractor, Jos. Thomas; cost, $1,365; signed, March 6; filed, March 8; payments, $500, inside is second coated; $315, all work is completed; $350, 35 days.

Van Ness Avenue and O'Farrell. Decorating, etc.; owner, P. W. Riordan; architect, T. J. Welch; contractor, Moretti & Trezzini; cost, $6,500; signed, Feb. 20; filed, Feb. 20; payments, monthly, 75 per cent. of value of work done; balance, 35 days.

Van Ness Avenue and Myrtle. Four-story frame building and alterations; owner, L. A. Levy; architect, P. R. Schmidt; contractor, J. F. Logan; sureties, C. Greenwald and I. Levi, $63,300; cost, $63,300; time, Nov. 1, '90; signed, March 3; filed, March 4; payments, $6,000, second-story joists are laid; $6,000, rafters on; $6,000, roofed; $6,000, ready for plaster; $6,000, brown coat of mortar on; $6,000, hard finished; $6,000, standing finish is up; $5,475, completed; $158.25, 35 days.

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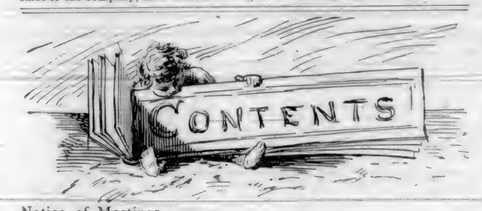

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on Friday evening, April 11th. President Babson in the chair. M. G. Bugbee desired to be advanced to fellow membership. The Committee on binding exchanges made their report and were discharged. It is hoped that the volumes (nearly a dozen in all) will form the nucleus for a valuable architectural library for the use of members of the Chapter and students of the Chapter's classes.

The proceedings of the New York Chapter at their last regular and special meeting were received, and the Secretary ordered to suitably acknowledge the courtesy.

The documents in relation to the Aug. Laver and City Hall case were received from Mr. Root, the Secretary of the A. I. A., and referred to a committee to formulate a suitable reply.

A committee of three was appointed to revise the constitution and by-laws of the Chapter, and make them conform to the requirements of the new constitution of the American Institute of Architects.

Mr. Sanders, the teacher of the class in architectural drawing, presented several drawings by his pupils, on the subject of a design for a frieze.

An interesting subject was broached by Mr. Sanders who suggested the formation, by the architects, of a joint stock company to erect a building designed for the accommodation of scientific, artistic and kindred societies, and to serve as a headquarters for associations of a like nature.

The matter will be discussed more in detail at the next meeting, and if decided to be advisable and practicable, there appears to be a likelihood of the idea taking definite shape.

THE regular monthly meeting of the Technical Society of the Pacific Coast was held Friday evening, April 4th. A communication was read from the American Society of Engineers, requesting the society to make certain tests at the Bear Valley arch dam, when the newer and higher dam relieves the present structure of the pressure it sustains.

It is hoped that by making such observations, valuable information may be obtained on the elasticity of masonry, as such an opportunity may never occur again. A committee consisting of Messrs. E. J. Molera, R. E. Browne, Prof. F. Soulè, and Luther Wagoner was appointed to take charge of the matter, and to request the co-operation of Messrs. A. Lietz and Joseph Sala, as scientific experts.

The paper of the evening was then read by Randell Hunt, C. E., on "Coffer Dams" treating also of the construction of open caissons.

Mr. Wagoner then explained some experiments he had made on stretching steel bars beyond the limit of their elastic strength.

RETAIL LUMBER DEALERS PROTECTIVE ASSOCIATION.

THE retail lumber dealers of this State, have organized an association to protect their business against the encroachments of the manufacturers of and wholesale dealers in lumber, and to enforce the principle that the wholesale and retail are separate branches of the trade, and that no wholesale dealer should violate the established usages by encroaching on the prerogatives of the retail dealers by selling to consumers.

About seventy-five delegates were present at the meeting which was held at the Chamber of Commerce on April 9th, and they represented about four-fifths of the retail dealers of the State.

A. W. Starbird of San Francisco was elected chairman, and Henry Rogers of Oakland as Secretary with Edward Raum as Assistant Secretary.

A constitution and by-laws were adopted; the most important section, provides that whenever any wholesale dealer or manufacturer or their agents shall sell to any person not a regular dealer, or to any lumber-dealer, not a member of the association, upon information lodged by any member doing business in that district, the Secretary shall notify such manufacturer or wholesale dealer who made such shipment, that he has a claim of 10 per cent of the value at retail rates prevailing at point of destination of such sale against him for such shipment. In the event of such wholesale dealer defying the Secretary or Board of Directors, the list of those with whom the association may trade will not include his name, and any member then dealing with him will be expelled from the association.

Provision is made against making any such complaint on account of lumber sold to original manufacturers, or wholesale dealers in their legitimate business, or steam railroads operated by locomotives.

Section 7 states that it is contrary to the spirit of the organization for one retailer to ship lumber into the territory of any other retailer, both being members of the association, at less than the rates established by the retailer for that territory, providing said rates are not higher than the established retail rates at the main point of supplies for that territory, with freight added.

After the adoption of the by-laws the election of Directors was proceeded with. Messrs. George W. Hooper, George H. Payne and S. L. Richards were elected to serve one year, representing respectively San Francisco, Alameda County and Sacramento. The three elected to serve a term of two years were J. F. Kennedy of San Francisco, William Dougherty of San Jose and A. Powell of Alameda County. For the three-year term Colonel W. C. Little, S. H. Harmon, representing San Francisco, and H. G. Stephenson representing Los Angeles, were elected.

The Directors will hold weekly meetings to carry out the objects of the association.

PROPER HABITATIONS FOR ALL.

ALTHOUGH the well-to-do mechanics and tradesmen have ample house accommodation at present, yet we see signs here, as the city of San Francisco grows and assimilates itself more and more to the old cities of the country east of the Rockies, of a growing lack of accommodation for purposes of habitation for the poor, and those unfortunate enough to be in the ranks of those who lack the power of being successful.

This matter will have to be grappled with here, as it has already been found necessary to grapple with it in London, and other overcrowded cities of the old world.

The abstract justice of the duty of those supplying their quota of labor for the common good, to supply themselves with proper habitations, is now pretty well conceded. A state of society failing to do this has already been condemned by many of our deepest thinkers. It seems hopeless however to leave the matter in the hands of capitalists, for although taking London as an example, a number of paying investments of this kind have been made, it is as but a drop in a bucket of water. Capitalists would rather put their money in a more speculative and presumably a better paying investment. There is no doubt that any effective work done in this line must be done by the collective efforts of the citizens working through the municipality. It seems also to be the *duty* of such, in view of the bad effect of unhealthy and unsanitary homes upon the character and morals of its citizens.

Though this may seem a bold suggestion at first, yet everything points in every direction to collective effort in all departments of social life; and it will be the way also in that of providing homes for its constituents.

The best way of dealing with the problem of such an important social question, will not be further entered into here; but left for the working out of our readers.

THE GRANT MONUMENT.

TWO years or more ago the Grant Monument Association of New York, invited artists, architects and sculptors to submit competitive designs for the memorial to be erected in honor of General Grant. Apparently the prizes offered were not large enough to tempt a competent artist, architect or sculptor to devote the time and study necessary to involve a suitable and appropriate project, as out of the seventy or eighty designs delivered to the Committee, not one was deemed by experts, to possess sufficient merit to warrant its adoption.

It is to be hoped that some day Committees, and the public in general, will become sufficiently educated to perceive that it is folly to expect to obtain first-class material by offering third rate inducements.

We are pleased to see that other than architectural journals are aware of the futility of such proceedings, and quote the following from *Harper's Weekly* upon the subject in question:

The Grant Monument Committee has learned by experience what it should not have needed experience to learn, that the masters in the plastic arts do not enter into competition for such work. The reasons for this fact are many and various, but the fact is unquestionable. It is certainly to be expected that the reputation of an artist will be as serviceable to him as that of a man of science or of the learned professions. If a mining company wishes to have the quality and character of its ores determined, it applies to an expert whose distinction is due to his proved ability. If a Committee wishes a statue, or a portrait, or a monument, application to an expert would seem to be equally natural.

The preparation of designs for such a work as the Grant memorial involves a great deal of time and money. The masters in the art are not obliged to depend upon the chance of approval of their designs. They can use their time for labors which are sure to bring a return. If therefore, a Committee should ask a service of them which would be properly reimbursed, if it were only the preparation of designs, the masters, or at least some of them, would be glad to do that work as they would do any other. In this way designs of the proper character could be procured.

This course need not exclude a competition of such others than recognized chiefs as might be willing to try for a prize and an opportunity. The triumph would be greater if achieved in comparison with the works of men of established name. If, however, such men should decline to take any part short of the execution of the work, the result would be either an original selection among acknowledged masters, or among such as were willing to compete. In the case in question we understand that the Committee was advised to invite what was practically such a mixed paid and unpaid competition as we have mentioned, but decided to take the course which has failed to lead to the result desired, none of the designs being satisfactory. The Committee will do well to hasten slowly in the completion of a work so important.

EXAMPLE OF FRENCH GOTHIC.

SUGAR AND MORTAR.

SOME time ago the statement that the mixture of a small quantity of sugar with mortar greatly improved the latter, excited the risible faculties of the building fraternity. The notion was regarded as too ridiculous for serious consideration. There is, however, reason to believe that the addition of saccharine matter to mortar is an extremely valuable discovery. In the first place, it enables bricklaying to be carried on in the frosty weather.

About two pounds of coarse brown sugar to a bushel of lime and two bushels of good sand will supply the proportions for a mortar that will resist frost admirably. It is claimed, however, that in addition to this advantage, mortar with sugar mixed in it is vastly superior to mortar without it. It sets as hard as cement very soon, makes the brickwork extremely strong and quite effective when used with dry bricks. For indoor plastering, also, saccharated mortar sets hard quickly. When portions of the same wall have been covered in one part with sugared and in another with unsugared mortar, the latter has ripped up directly when a nail was run over it, months after the former had become as hard as stone. Much interest is taken in the matter by Mr. Crampton, of Cranleigh, Guilford, and he reports some interesting experiments. He points out that if sugar be added to mortar that is already made, it will render it too thin.

Strong sugared water dissolves lime, in the same way that water dissolves sugar. It is therefore necessary to dissolve the sugar in water first, and then add the sugared water to the lime, slowly and cautiously. The mortar should be as stiff as it can be used. For lime washing, one pound of sugar to sixteen gallons of water will make it adhere splendidly. Drops of whitewash made with water so mixed, if they fall on the floor or window, or any iron plate, cannot be washed off. They stick like enamel, and have to be scraped off. Evidently, sugar is not such an absurd thing to mix with lime as the practical man thought. —*The Manufacturer and Builder.*

SANITATION.

There is no doubt that the science of sanitation, as applied to the different features of building, is so far advanced that those professionally interested are possessed of sufficient knowledge to render building secure from unhealthfulness. The question now is how shall the public be educated up to an intelligent appreciation of this knowledge so that they may understand the importance and value of its great offices? There are many people unable to appreciate sanitation in their homes simply because they have not been made acquainted with it. All ventilation or no ventilation, and all drainage or no drainage is the same to them, and they sit in rooms filled with foul air or sewer gas with indifference. They have not been taught otherwise, and need from some source the knowledge that will teach them the value of healthful homes.—*Exchange.*

NEW YORK CHAPTER, A. I. A.

NEW YORK Chapter A. I. A. The regular meeting was held on March 12th. The most important subject brought before the meeting was the proposed "Act to regulate the practice of Architecture within the State of New York."

After a general debate and thorough discussion of the matter from all points of view, the following resolutions were adopted:

Resolved, That the New York Chapter A. I. A., is glad to give its support to the proposed bill before the Legislature of the State of New York, entitled "An Act to regulate the practice of Architecture," but strongly and unanimously urges the suggestion that the proposed provisions in relation to the appointment, as commissioners, of collegiate professors of architecture be changed, so as to provide for the appointment of one professor of architecture for two years, alternately from Cornell University and Columbia College.

Resolved,—That the Chapter is also of opinion that to induce commissioners to act, it will be necessary to provide that they receive a mileage for travel done in the performance of their duties under the proposed act.

The gist of the bill above referred to is contained in our December number, 1889.—[Ed. Cal. Architect.

A SPECIAL meeting was held at the quarters of the Chapter, in the Welles Building, 18 Broadway, New York, on Wednesday, March 26th, 1890, at 3 P. M., President Littell in the chair.

The President stated that the meeting had been called to consider an important subject presented to the Chapter by the Department of Architecture of the Brooklyn Institute, through Messrs. Upjohn and Dickson, Fellows A. I. A., and members of the Brooklyn organization, and of a Special Committee thereof having the subject in charge.

The Secretary then read the following communication from the Department of Architecture, Brooklyn Institute:

DEPARTMENT OF ARCHITECTURE, BROOKLYN INSTITUTE.

At a meeting of the Department of Architecture of the Brooklyn Institute, March 19, 1890, the following preamble and resolutions were adopted:

Whereas, An act has been introduced in the Assembly of the Legislature of this State, and referred to the Committee of Ways and Means, which reads as follows, to wit:

AN ACT FIXING THE SALARY OF THE COMMISSIONER OF THE CAPITOL.

The salary of the Capitol Commissioner is hereby fixed at ten thousand dollars per annum. And it shall be his duty, whenever requested by the proper authorities, to furnish plans and specifications for all public buildings belonging to the State, and to render such services as may be required, without further compensation.

This act shall take effect immediately.

Resolved, That in the judgment of this Department of Architecture of the Brooklyn Institute, the passage of such an act, which is substantially the creation of office of State Architect, will be detrimental to the interests of the people, and the promotion of architecture by preventing free and open competition.

We are therefore opposed to the office of State Architect as not in accord with the culture of the times and the liberality of our institutions, which call for the highest excellence obtainable—the best from the best.

Resolved, That feeling confident we voice every architectural institution in the land, we would respectfully urge that the plans for all public buildings—Federal or State—be given out among our architects for competition, who shall be compensated therefor, and that none but architects be selected to pass judgment upon the architectural merits of such plans.

In thus protesting against the creation of a Government or State Architect, we do so not believing it possible for any individual to possess originality sufficient which, in the designing of a number of public buildings, will not wane into more or less commonplaceness.

Neither do we favor any individual's peculiar standard of architecture, or interference with, or biasing of, that novelty and attractiveness which is rapidly giving American buildings a prestige.

While thus opposing the office of State Architect, we most respectfully suggest this substitute:

That upon the recommendations to the Governor of the State, or the insertion of the names in the act, of three or five architects, from any institution recognized among the profession as authority in architecture, they be appointed and constitute an Advisory Board, having the management of the competition, subject to the rules of said institutions, and of the building until completed, being paid per session for their services; the architects successful in the competition to receive the customary fee, to be accountable to the Advisory Board, which in its turn reports to the State authorities.

A. J. Bloor, Secretary.

THE ARTIST, BY M. F. EHRMANN.

THOMAS POPE'S FLYING BRIDGE.

AN INCIDENT OF ANCIENT HISTORY REVIVED.

We presented in our impression of February an illustration, with suitable description, of a proposed suspension bridge across the East River at Blackwells's Island, which had been seriously contemplated over fifty years ago. The designer of this ambitious project had worked out the details most carefully, and the failure to execute the work cannot be attributed to any defect in these, but rather, as appears most reasonable to assume, to the magnitude of the undertaking; for the structure proposed, for that time, would have exceeded in proportions all others of its class, then existing, as much as the great Forth bridge to-day exceeds all others.

As we have dipped a little into history to revive the memory of one bridge project almost forgotten, it will be pardonable to supplement our article of last month with the description of another yet more ancient, and greatly surpassing the first in boldness of design and originality.

In a now somewhat scarce book (found to-day only in a few public and private libraries), by Thomas Pope, published in 1811, with the title "A Treatise on Bridge Architecture, in which the Superior Advantages of the Flying Pendant-Lever Bridge are fully Proved," etc., the author describes a method of constructing a timber or iron bridge, "with a single arc, on the principle of the lever." The plan described is identical in principle with what is now designated the canti-lever. This fact is all the more interesting to us, since this particular type of bridge structure is generally believed to be of comparatively recent origin, and to have originated with American bridge builders.

Notable examples of this form of bridge architecture, are, in this country, the great steel railway bridge recently built over the Niagara River a short distance below the falls; and, in Europe, the greatest of all bridge structures, the great steel bridge over the Firth of Forth in Scotland.

In view of the publication of Thomas Pope's plan for a "flying bridge," and which clearly describes the principle of construction now called the canti-lever— that is, a bridge in which the superstructure is formed of projecting beams, or levers, fixed at one end to the abutements or piers, and free at the other end—the best that can be said in behalf of the claims of the present generation of bridge builders, is, that it is a revival of an old idea, and that this revival is due principally to American engineers, who were the first to appreciate its merits, and who have adopted the system successfully in the cases of a number of important structures.

To return now to the project of Thomas Pope. From the work above quoted, we learn that he prepared detailed plans and estimates for the construction of a timber bridge, on the canti-lever system, across the East River at New York, and that he constructed a model to illustrate the practicability of his ideas. In his treatise there occurs, in a foot-note, the following reference to this model: "It was built to illustrate a bridge suitable to span the East River at New York with a single arc, the chord of which would be 1,800 feet; the altitude, or versed sine, 223 feet. The abutements were built in the form of so many warehouses, and the whole was erected on a scale of three-eighths of an inch to one foot; the length of the model of half the bridge, in real measure, was nearly 50 feet. The weight borne at one time by the unsupported arm of this diminutive model since finished, has been ten tons, and has astonished the mind of every beholder." From this description, the reader will be able to appreciate the completeness with which Pope had grasped the fundamental principles of the canti-lever system of bridge construction.

The accompanying illustrations—one showing one-half of the structure, to illustrate the self-supporting nature of the lever arm, and the other the completed structure spanning the river with a single arc—speak for themselves. They are reproduced from the frontispiece of Pope's treatise. This notable project, while it challenges our admiration for the boldness of the author's design and the clearness of his perceptions, at the same time calls forth regrets that it was advanced at a time when men were unprepared to entertain it. The project, considering the time and circumstances in which it was put forth, cannot fail to excite the profound interest of the engineer.—*Manufacturer and Builder.*

THREE PUBLIC COMPETITIONS.

The *Cosmopolitan* magazine offers $600 in three prizes of $200 each for the best competition designs on the following subjects: Public Baths, Public Laundries, and Tenement House Co-operative Kitchens.

The Committee of Award is as follows: Richard M. Hunt, President of the American Institute of Architects, Richard L. Hoxie, United States Corps of Engineers, Albert T. D'Oench, ex-Superintendent of the N. Y. City Department of Building, Seth Low, President of Columbia College, Cornelius Vanderbilt and the editor of the *Cosmopolitan*.

The successful drawings are to become the property of the *Cosmopolitan*, and the right to first publish any drawing to rest exclusively with the *Cosmopolitan*, any competitor to submit, if he wishes, drawings for any one, two, or all the prizes, the following programme to apply to each competitor:

Each competitor is required to exhibit two sheets of drawings, one to contain the ground plan, front elevation, and section, with such other drawings as may be necessary to explain the design and construction, all drawn to a scale of one-sixteenth of an inch to the foot, and one to exhibit a perspective view of the whole, drawn to a scale of one-eighth of an inch to the foot.

The plan and elevation sheet to be finished in line with India ink and lining pen; no brush work on this sheet, except in blocking in openings and sections. No shadows are to be cast. The perspective sheet to be rendered at will.

Each sheet to be cut to the uniform size of 24"x32", and to be white card or Bristol board or Whatman paper, mounted on a stretcher. No colored borders, frames, or glazing will be allowed.

Each sheet must be distinguished by a motto or cipher. A sealed envelope bearing the same motto or cipher must contain the name and full address, and must be mailed to the *Cosmopolitan* Magazine Architects' Competition, Madison Square, New York, on or before May 10th, 1890. Drawings are to be delivered flat, carriage paid, at the same time and place. They will be returned at the close of the competition, at the expense of the contributor.

SPECIFICATIONS FOR PUBLIC BATHS COMPETITION.

The drawings shall exhibit a public bath constructed of stone, iron, or equally enduring material.

The structure is to be located on a plot with light on two sides, not exceeding 200x200 feet, any part or all of which may be utilized, and provision to be made for baths in both summer and winter, adapted to the necessities of both sexes in a population of not less than 100,000 people. A letter of explanation must be submitted with the drawings, setting forth the probable cost of maintenance, the number of attendants needed, and any details not apparent in the drawings, but the price of a single bath should not exceed seven cents. The practicable nature of any plan of operation will be considered in determining the award.

SPECIFICATIONS FOR PUBLIC LAUNDRIES COMPETITION.

The drawings shall exhibit a laundry interior for the requirements of one hundred and fifty families of five each.

The floor space shall not exceed 100x25 feet. Written explanations on separate sheets may accompany the drawings.

SPECIFICATIONS FOR TENEMENT HOUSE CO-OPERATIVE KITCHEN COMPETITION.

The drawings shall exhibit a kitchen interior for the requirements of twenty families of five each.

The floor space shall not exceed 50x25 feet. Written explanations on separate sheets may accompany the drawings.

The three subjects are all of a practical nature, and it is more

than possible that by bringing the advantages of co-operative kitchens to the attention of the public, it may be the means of their adoption in future tenement buildings.

The necessity of public baths is quite apparent without calling particular attention to them. There is no doubt that such baths would be liberally patronized. The Lick Free Public Baths, (illustrated in our March number) and which are now approaching completion in this city, will afford an excellent illustration

THE GOLDSMITH, BY M. F. ERHMANN.

of the practical workings of the system. It is to be hoped that after the *Cosmopolitan* has obtained the best plan for this purpose, it will be able to go a step farther and transform the design into a reality. As all large cities now maintain public parks for the enjoyment of their citizens, and public libraries for their use, why should not public baths be instituted and maintained at the public expense?—[*Ed. California Architect.*

A NOVEL use of electricity, and one that will revolutionize the present methods of warming houses, if it can be successfully carried out, is that of heating dwelling houses electrically, without the use of any hot substance. It is claimed that wall paper can be made in such a way that the passage of currents of low electro-motive force will heat it moderately warm to the touch and diffuse throughout the room an agreeable temperature. —*Exchange.*

PERSONALS.

After many years active service as Architect of the Fire Department, P. J. O'Connor has retired. Architect Frank T. Shea has been appointed to the position thus made vacant.

Architect Maxwell G. Bugbee has removed his offices from 330 Pine street to larger and more convenient quarters at No. 419 California street, where he will be pleased to receive his friends and clients.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhereto contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth, white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The handsome interior which we present this month, was designed by B. McDougall & Son, architects, and was one of the drawings illustrating their competitive design for the Olympic Club's proposed new building.

The Fiske building, shown in our lithographs is from a pen and ink drawing by the architect, Harold D. Mitchell, of San Francisco. The building is situated on the southwest corner of Mariposa and J streets, in Fresno, and is owned by J. B. Fiske, who has shown both his enterprise, and his faith in the future and progress of Fresno, by erecting this business block, which it is claimed, is second to none there in solidity of construction and convenience of arrangement.

The style chosen by the architect, is English Renaissance. The roofs and pediments are clearly defined, and present an effective sky line, while the clock tower on the corner of the building makes a very effective feature. The building covers a lot seventy feet by one hundred and fifty, and is four stories in height, besides basement and attic; the basement is nine feet high, fitted up for office purposes, and reached from the sidewalk by flights of wide stone steps, the intermediate openings being utilized for light and ventilation.

The interior of the upper stories has been arranged to conform with the latest ideas concerning suites and offices, each having separate entrances from the halls, yet so arranged as to allow communication if necessary from one to the other.

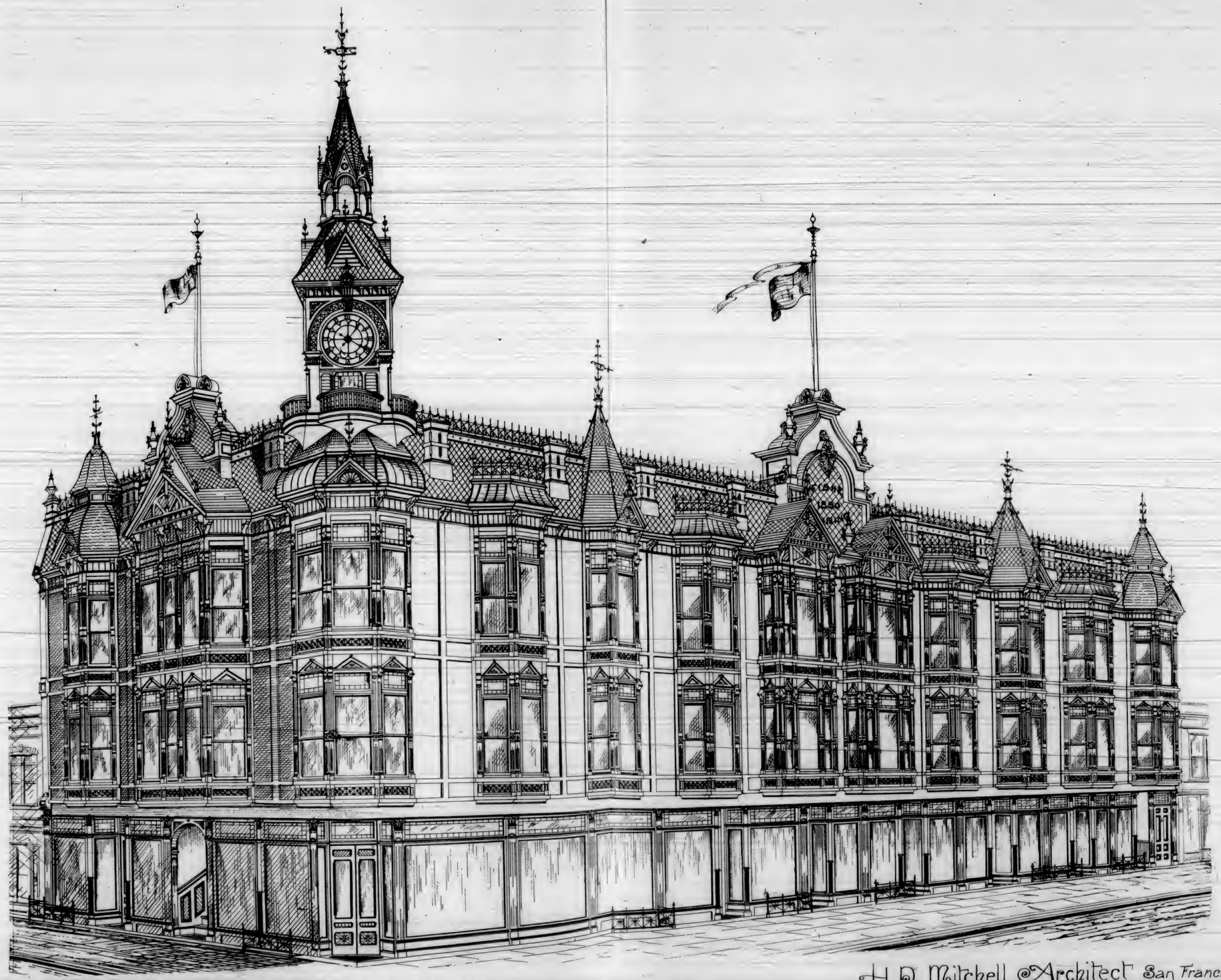
The two main staircases and the interior finish, are of hard wood; the janitors' quarters, lavatories, etc., being finished in cedar and prima vera.

The hardware throughout is of the latest designs in oxidized iron and bronze.

The mantels are all of native California woods, and were made from special designs by the architect. English encaustic tiling form the hearths.

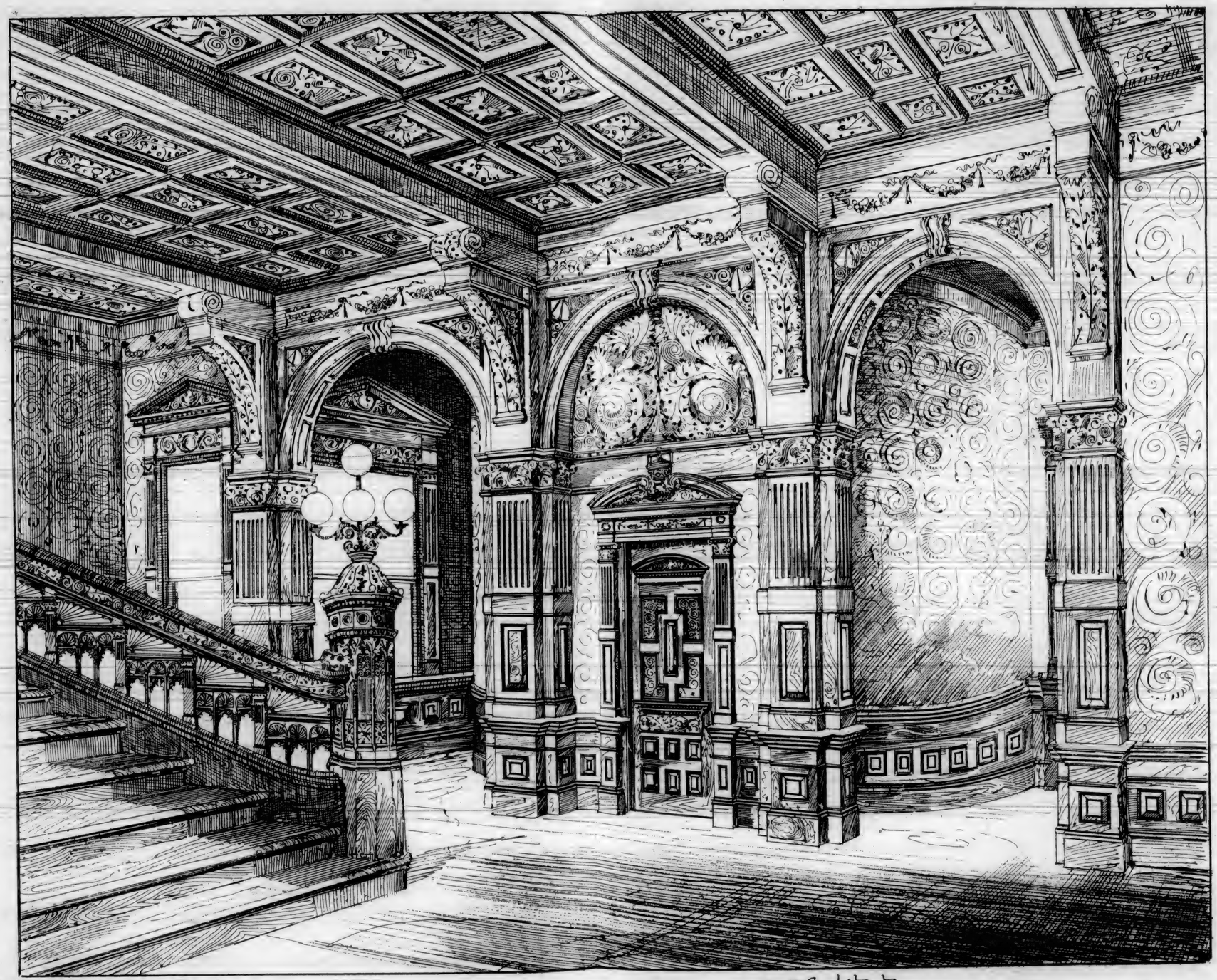
All the latest modern conveniences, such as sliding blinds, electric gas lighting and bell work, polished plate glass, etc., have been liberally supplied. The exterior walls are finished with pressed brick and terra cotta trimmings, with cornices and bay windows of galvanized iron.

The roof of the main building is terraced, and forms a promenade that will be enjoyed during the summer as a delightful retreat from the dust and heat in the streets below.



The Fiske Building Fresno, Cal.

H. D. Mitchell Architect San Francisco



Submitted in Competition for the Olympic Club Building. Interior Hall. Architects D. McDougall & Son. San Francisco.

ESTIMATES AND ESTIMATING.

In the course of preparation of every set of drawings that are to be executed, a stage is reached where it becomes necessary to receive from contractors estimates of cost. In no part of the work undertaken by an architect is there so much misunderstanding, confusion, and mystery as in the matter of obtaining estimates. A would-be client approaches an architect, states his wants, outlines his own plans and explains himself in the fullest manner of which he is capable; as every architect is aware, such first ideas are apt to be hazy and nebulous. Finally a plan is evolved, and then the question of cost is considered. Without a moment's preparation, an architect is expected to state within a small margin how much such a plan will cost. Here is where the first misapprehension comes in. Of all the difficult things to decide about a new building, the question of cost is the most uncertain. For this condition there are many things to be considered.

First, very few builders will take up a set of plans and conscientiously figure out the quantities and foot up the items one by one, indifferent to the total until the summing up. It is admitted that the quantity of material to be used within a narrow margin is a fixed unit for the plan given; the uncertainty is in the amount of labor involved in the execution.

Second, few builders have taken the time and the study required to prepare complete sets of time cards, and consequently the element of the amount of labor involved is an unknowable factor.

Third, many builders figure by analogy on the last job which they have done, if it be similar in character to the new one which is proposed. This method is purely a chance one; it contains nothing of a reliable character as a basis of comparison, owing again to the uncertainty as to labor.

Again, many builders figure by the cubic contents of the proposed new building, allowing a certain margin for waste. This method needs a vast amount of data, carefully arranged and classified as to character and finish, as to time employed in erection, and prices of labor during periods of construction, to make it applicable with any degree of security to new work. This method is that which is pursued mostly by architects themselves, and there are some men in the profession who have spent years in acquiring data which can be used for such purposes.

Another method has been proposed, and that is to endeavor to classify every portion of a house in such a manner that a price per square inch, or square foot, or foot run may be obtained. This method involves, as all other methods, the amount of average time employed to do any given piece of work. For example, how few men are there who could from reliable data furnish the cost of a square foot of ordinary stained pine wainscotting, plainly furnished, without a foot of running mouldings, the same with mouldings, the same with various kinds of finish, etc.? But all this, and in fact everything that goes into the house, could be ciphered down with a very small amount of mathematical labor if it were known just how much time it occupied to make, set and finish such and such a piece of work. It is true there is some margin of difference as to the amount of time required to any given piece of work. The average of that time is what is wanted. There must be a summary of this kind for information prepared for American work, before any order or system shall be evolved from the present confused state of estimating. Builders themselves need this kind of knowledge more than anybody else, and next to them, the architects.—*Architecture and Building.*

ELASTICITY AND STRENGTH OF WOOD.

The hardwoods of which frame work and carriage parts are made, possess different qualities. A piece of ash one inch square, one foot long, secured at one end, will break under a weight, attached to the other end, of 168 pounds, while a piece of hickory of same size and under same conditions, will break under a weight of 250 pounds. The ash, however, will deflect but two and five-tenths inches, while the hickory will deflect eight inches, making the value for general use nearly equal, say 55 pounds, of ash and hickory, that being what each will support without deflecting enough to prevent straightening when the weight is removed. Locust breaks at 295 pounds, but resists deflection up to 80 pounds. Maple breaks at 202, but resists deflection up to 65 pounds. White oak breaks under 230 pounds, but deflects at 50 pounds. Elm breaks at 140. and and deflects at 40 pounds, and yet it is next to hickory and maple in resistance to crushing weight on end. These facts, the results of scientific tests, teach a practical lesson that should be heeded by every wood-worker. They teach that where elasticity is desirable, then the woods that will deflect the most without breaking are the most valuable; but where great strength and rigidity are required, then the woods that are the slowest to deflect, even though they will break under less pressure, are the best.—*The Wood-worker.*

THE POTTER, BY M. F. ERHMANN.

THE ORIGIN OF GRANITE.

GEO. F. HARRIS, F. G. S.

Possibly no geologist could be more anxious to account for the origin of granite than are many of the quarrymen and masons who blast and work the material. They always listen with the greatest attention to anything that may be said on the subject, and most of them have their own ideas respecting it. Several of them are quite prepared to believe that granite is of igneous origin, but the majority do not clearly understand the fact from which such a conclusion is drawn. A certain section believes that the long feldspar crystals are the remains of fossils; whilst another is of opinion that granites are as regularly stratified as the aqueous deposits are. All of them know of the existence of other rocks than granite, perhaps, in their immediate

vicinity; but the relations existing between the granite and those rocks very few people seem to recognize.

When the various points are carefully considered, we think that there cannot be the slightest doubt that the evidence is overwhelming in favor of the view that the greater part of granites were once in a molten condition. Taking that afforded by the veins, it is quite clear that the granitic matter must in the majority of cases have existed in a highly plastic condition. From the thoroughly crystalline state of the material and from the fact that when examined by the microscope many of the crystals contain fluids which could not have been formed unless under the influence of great pressure we are led to the conclusion that all such highly crystalline rocks have been formed at a considerable depth from the surface of the earth, that being the only place where such enormous pressure could have been exerted. Now, everybody knows that moving pressure causes heat, and the enormous pressure exerted by the overlying rocks, side-tresses and thrusts in mountain regions, would therefore result in tremendous heat at no very great depth within certain parts of the earth's crust. This heat would be sufficient to melt any known rock, and that it actually does melt is proved by the gradual alternation by heat exemplified in many of the rocks, the upper portions of which have been denuded or worn away and which are thus bared and raised to the surface for our examination. These rocks, as we have before stated, are known as metamorphic, and it has been demonstrated that there is a very gradual passage from certain of them through gneiss to granite; and we must therefore conclude that granite, in the vast majority of cases, is the result of extreme metamorphism by heat, and that it has therefore been, once at least, in a molten condition.

We will pause for a moment to consider the meaning of the words "Molten condition." Although we have stated that at certain depths within the crust of the earth the heat resulting from moving pressure exerted by superincumbent rocks would be sufficient to melt any known rock, we should have added, if this rock existed at the surface of the earth.

Now, we have shown that the metamorphism and ultimate fusion of rocks was dependent upon the condition that they existed not at the surface of the earth, but at some distance within the earth's crust. Therefore we have no right to assume that rocks would actually melt when not situated at the surface. But the only thing which prevents them from becoming liquid is the weight of the superincumbent mass of rocks; in other words, the principal thing which caused them, in most cases, to become highly heated is the very same agent which deters them from becoming liquid. We therefore are led to see that rocks can exist in a highly heated condition in a solid form, and even when they, under the ordinary conditions prevailing at the earth's surface, would melt.

Such rocks are described by Professor Judd, F. R. S., who clearly explains this point, as being in a potentially liquid condition. If by reason of earthquake action or othewise, this superincumbent pressure be suddenly released, the potentially liquid mass would fly to the actual liquid form, and would burst through the rocks immediately above it, sending veins branching in every direction. Perchance some of these veins, bursting along the lines of least resistence, would reach the surface of the earth, and we should then get a volcano. The same acute observer mentioned above has demonstrated that the acid lavas (those which have a large portion of silica in them), when traced downwards, will be found to have proceeded from granite and granite rocks. The lavas under consideration are very frequently of identical chemical composition with the granites, and the only difference between them is their respective minerals and states of crystallization. The granites, as we have before mentioned, are thoroughly crystalline; there is no glassylooking cementing material binding the crystals together, but the lavas, on the contrary, contain a very large proportion of this glassy cement, and are not, therefore, thoroughly crystalline in structure.

Further, Professor Judd and other geologists have shown that the amount of glassy material present in an igneous rock is in inverse proportion to the amount of pressure under which it consolidated. For example, if it consolidated at the surface of the earth (and so under very little pressure) it would cool quickly, and there would be a greater proportion of glassy matter between its crystals than if it consolidated more slowly some distance down the throat of the volcano, and there would be still less of the material as the granite was approached. The glassy groundmass would gradually assume a crystalline structure, and would pass from cryptocrystalline through microcrystalline to thoroughly crystalline, or granite state of crystallization.

We have now shown that a rock which is indubitably in a molten condition, inasmuch as it is found exuding in that state from a modern volcano, can be traced downwards to granite. What greater proof of the once molten condition of the granite is needed? Surely the evidence is overwhelming enough to convince the greatest skeptic on the point. Of course nobody has actually descended the neck of a volcano to ascertain these things. It is all worked out by observation on denuded volcanoes, which have long since ceased to emit lavas, being now extinct; on the phenomena exhibited by the veins of granite, and on the invariable alteration of the rocks surrounding the granite. Denudation, or the action of the atmosphere, etc., in weathering or wearing down rocks, has been the greatest assistant in enabling us to solve the problem. There is no rock in existence which successfully resists the denuding agents for any great length of time. Our building stones are weathered, no matter how well they may be selected. Even granite itself, hard though it may be, is worn away in time; and nobody would pretend to dispute this fact who has seen the many feet in depth of rotten granite which exists at the surface in many granite districts.

We would desire to be clear in connecting acid lavas with granites. Having seen that in time all rocks may be disintegrated, we can trace by means of a volcano, dissected in this way by the weather, the rocks from the crater downwards. We may find in one region the lava of the crater and a small portion of the neck of the ancient volcano leading down from it. We carefully collect specimens of the rock from the crater and the different levels in the neck, and if the section be sufficiently large, we shall observe that the rock at the lower levels of the neck is slightly more crystalline in character than the lava in the old crater. Then we go on to another section, it may be in another district, and succeed in discovering a rock exactly like the more crystalline form from the lower portion of the volcanic neck. Tracing this rock downwards, we find that as we get to its lower part it gets indubitably more and more crystalline. Another section may, perhaps, present us with the more crystalline rock last alluded to and on following this up we find that it leads us to a granite vein, maybe one of the elvans, and so on to the main mass of the granite. The connection of the lava with the granite would thus be proved.

We see, therefore, that although there is plenty of granite now at the surface of the earth, it once existed a few thousand feet below, and it has been brought to the position in which we now find it, partly by the wearing away of the rocks which were above it, and partly by the irruptive nature of the material itself when in the molten condition. Such operations would take thousands of years to carry into effect, but then geologic time is practically infinite. Reverting to the order of sequence of the aqueous rocks, we may mention that, taking the whole world, exceedingly few granites are of Tertiary age, and even these are confined to the earlier periods of it; the majority are of Primary (or Paleozoic) age, or Archaean. This is just as it should be, for of course the longer the rocks have been in existence the greater chance they have had of being largely denuded. Granites are being formed below us at the present time, but it will be in the exceedingly remote future before the rocks overlying them will be worn down, and they will thus be brought to the light of day. Granite would not be formed at such great depth from the surface of the earth in mountainous regions as in the less corrugated portions of the crust, for the enormous lateral pressure exerted in the formation of the mountain ranges would raise the temperature sufficiently to melt rocks comparatively nearer the surface. This is how it is that granites so frequently occur along the lines of very much denuded ancient mountain chains.

It was not so very long ago that geologists universally believed that all granites were older than any of the aqueous rocks, but it is now proved, as we have stated, that they may be of any age, except the most recent geologic periods. At the same time the granites of several areas are unquestionably among the oldest rocks in existence, and in many such cases it is exceedingly doubtful whether they are the products of extreme metamorphism caused in the way we have attempted to explain, or simply the cooling, at great depths, of portions of the original molten crust of the earth.

STONE.

NOTES & COMMENTS.

Santa Rosa is to have an improvement society.

A brick-yard is talked of at Sebastopol this season.

The entire expenditure for the Forth Bridge foot up about sixteen and a quarter million dollars.

A building syndicate and trust company is projected in Philadelphia for the purpose of carrying on large building interests.

The city and county attorney reports to the Board of Supervisors that in his opinion, the city will be responsible for damage to private property resulting from raising or lowering the grade of its streets.

Every architect who has charge of important constructions, should have photographs of the work taken at frequent intervals. They will serve a variety of useful purposes, besides forming an interesting record of the execution of the work.

San Diego has 39 miles of graded streets, 22 miles of street railroad, 58 miles of motor railway extending to the suberbs in every direction, 47 miles of sewer system, and a complete system of water works. It is now proposed to build a seawall for the water front.

For interior plumbers work which may be exposed, brass pipes and fittings should be substituted for lead or iron. A kitchen fitted with exposed polished brass or plated pipes forms a beautiful effect. Iron pipes treated by the Bower-Barff process would be suitable for such work.

The iron railing and fence now surrounding the Plaza, on Kearny street, is to be removed according to an order passed by the Board of Supervisors, March 31st. This work was done some thirty-six years ago, when labor and materials were high, as may be seen from the fact that the cost was $45,000.

A dispatch from New York, states that a hole has been accidently burned through the roof of the caisson of the hugh North River Tunnel and caused the flooding of the tunnel. Engines are unable to expel the water. The accident reaches the magnitude of a disaster, and it appears that a new start will have to be made from the New York end, which would cause the loss of the work of years.

We think that building in cities, with a few exceptions, are built too light. * * * * European cities, * * * do not suffer by fire to any extent. This is due to heavier and better constructed buildings, that are preserved and carried out substantially over the whole of the closely built parts, and fires, when they occur, are always localized, even with the comparatively inefficient fire departments common in the best cities in Europe.—*Stone.*

At a recent meeting of the Fire Committee of the Board of Supervisors, it was decided to report in favor of changing the ordinance governing fire escapes, so that in every building erected hereafter four or more stories in height, there shall be metallic ladders or fire escapes with balconies and railing to extend in front of and communicating with one window in each story, extending from the first story to the upper stories and four feet above the roof.

It is probable that the Grant Monument Committe of New York will arrange for another competition in hopes of obtaining a design more satisfactory than any submitted in the first competition. If they should decide to institute another competition, it is to be hoped they will take professional advice in framing the invitation, and make the terms such that men of established reputation will be willing to devote their time to producing a creditable design.

A farmer read in an agricultural journal: "A side window in a stable makes a horse's eyes weak on that side; a window in front hurts his eyes by the glare; a window behind him makes him squint-eyed; a window on a diagonal line makes him shy when he travels, and a stable without windows makes him blind." The farmer has written to the editor of the agricultural paper, asking what effect a window without a stable would have on his horse's eyes.—*N. Y. Ledger.*

In our last issue we published several articles and portions of articles, taken from our exchanges, and by oversight neglected to give the proper credit to which they were entitled. We will consider it a favor if each subscriber will make the necessary corrections in the March number under the uncredited articles as follows:—

The article under the heading of "The Machinery Hall, Paris Exhibition," was an extract from a paper contributed to the *Journal of Proceedings of The Royal Institute of British Architects*, by Henry Reilly, Assoc. M. Inst. C. E. For "St. Louis City Hall Competition" we are indebted to the *Building Trades Journal*, of that city.

It is reported that the statue of liberty on Bedloe's Island, in New York Bay, is slowly sinking. The fact has been suspected for some time past, and an examination recently made by practical engineers, confirms the belief and shows that the statue is lower than when erected.

Though Bedloe's Island is rock and was supposed to be as firm a foundation as could be obtained, it now appears that it was the extreme edge of an enormous shelf, underneath which is a bed of quicksand. The immense weight of the solid stone and concrete pedestal undoubtedly broke off the portion of the rock on which it rests, and it is now thought to be slowly but surely settling out of sight.

The monument to the memory of James W. Marshall, the first discoverer of gold in California, will be unveiled within the course of a month. The monument was erected by the State, at a cost of five thousand dollars, and will be placed in the lot where the body of Mr. Marshall is interred. This memorial consists of a bronze statute, eleven feet in height, resting on a granite base thirty feet high. The commissioners who have charge of the matter, desire the ceremonies on the occasion to be memorable, and have invited all the societies of the Pioneers of California, and the Grand and Subordinate Parlors of the Native Sons of the Golden West, to be present in a body or send delegates to suitably represent them.

The Master House Painters' and Decorators' Association of the United States recently held a convention at Detroit, Michigan, and adopted the following resolutions:—

Whereas, The fact that architects do not usually specify the sizes of glass is a source of much inconvenience and loss to master painters.

Resolved, That the Master House Painters' and Decorators' Association of the United States of America, in convention assembled, do earnestly and respectfully request architects in future to specify the sizes of glass, and that the secretary be requested to forward a copy of this resolution under the seal of the Association to the American Institute of Architects.

There are many little points of difference in the customs of architects and builders in the Eastern States and those on this Coast. The above resolution illustrates one of them. In the Eastern States it is customary to have the glazing done by the painter; here it is usually sub-let by the contractor, to some one making a specialty of glazing, consequently it would be of no particular benefit to the painter to have the sizes of glass specified. The sizes of the sashes are marked however, and also the number of panes to each sash, so the contractor is enabled to ascertain the amount of glass required.—[Ed. California Architect.]

Architecture and Building for March continues its articles on architectural design, by Prof. A. D. F. Hamlin; also a paper by Francis Osbourne on "A Course of Reading in Architecture," and a paper on "Architectural Effect in Cities," read before the Art Congress at Edinburgh by Mr. H. H. Statham.

There is an excellent article in *The Architect and Contractor* on "Office Management and Routine," by R. W. Gambier Bonsfield.

The Northwestern Architect and Improvement Record for March publishes the second Royal Academy Lecture of this season on "Roman Architecture," by Prof. George Aithchinson, A. R. A.

Volume I, Number I of *The Architectural and Building Monthly*, is the first issue of a new monthly published by A. J. Bicknell, New York.

The National Builder for April continues the articles on *Mortars and Concretes of Antiquity and Modern Times, and on The Art of Drawing.*

The Inland Architect for March contains plans and descriptions of some of the competition designs for the St. Louis City Hall, and some editorial remarks on competitions in general and this one in particular.

A correspondent write us for information as to where certain court decisions can be found bearing on the legal responsibility of parties inviting architects to furnish competition plans for buildings, the erection of which had not been fully determined upon, or the erection of which might be finally abandoned. If any of our readers can give the desired information such will be received with thanks.—*Ed. California Architect.*

CITY BUILDING NEWS.

Ashbury and Frederick. Frame building and stable; owner, P. A. McDonald; architect, E. Depierre; contractor, John O'Brien; cost, $8,500; signed, April 2, filed, April 4; payments, 75 per cent. of value of work done; balance, 35 days.

Bush and Jones. Four-story building; owners, J. Flinn and wife; architect, D. De Shutt; contractor, W. Langstaff; cost, $13,000; time, 120 days; signed, March 26; filed, March 27; payments, $4,000, first tier of joists are set; $2,000, framed; $3,100, brown coated; $1,650, outside finish on; $2,000, completed; $3,250.

Broderick and Washington. Two-story frame; owner, W. A. Shaw; architect, A. J. Barnett; contractor, J. A. Shepherd; cost, $4,500; signed, March 26; filed, March 27; payments, $1,000, enclosed; $1,000, brown coated; $500, white coated; $1,000, completed; $1,000, 35 days.

Broadway and Mason. One-story Chapel; owner, A. M. Santandrew; architects, Shea & Shea; contractors, Binet & Maxwell; sureties, O. H. Greenwald and J. Lewis, $8,500; cost, $8,500; signed, March 8; filed, March 13; payments, $656, frame is up; $656, rough casted; $656, sand finish is on; $657, completed; $650, 35 days.

Baker and Washington. Two-story frame; owner, Jno. Reilly; architect, B. Dreyer, contractor, B. Dreyer; cost, $3,550; time, 90 days; signed, March 10; filed, March 10; payments, $887.50, framed; $887.50, brown mortared; $887.50, white mortared; $887.50, 35 days.

Bartlett and Twenty-First. 2-story stable; owner, Chas Kratz; architect, H. Geilfuss; contractor, F. L. Hansen; cost, $1,250; signed, March 12; filed, March 13; payments, $450, roofed; $485, completed; $315, 35 days.

Bush and Pierce. Three frame dwellings; owner, Wm. Campbell; architects, Pissis & Moore; contractor, Jas. Geary; cost, $12,650; signed, Feb. 20; filed, March 29; payments, $2,000, framed, $2,500, first coat of plaster on, $2,500, interior plastering done, $2,000, completed; $3,650, 35 days.

Broadway and Franklin. Owner, L. Hirsch; architect, Salfield & Kohlberg; contractor, J. J. Dunn; sureties, W. A Meeker and F. Joost, $6,295; cost, $6,295; signed, March 17; filed, March 24; payments, $1,000, framed; $1,000, enclosed; $1,000, brown coated; $720, doors hung; $1,000, accepted; $1,575, 35 days.

Camp and Albion Ave. Frame building; owner, J. L. Reinhardt; architect, Salfield & Kohlberg; contractors, Jos. L. Rinet & Thos. Maxwell; sureties, J. Levi & M. Brown, $4,395; cost, $4,395; signed, March 19; filed, March 21; payments, $1,100, framed; $1,095, white coat of plaster is on; $1,100, completed; $1,100, 35 days.

California and Helen. 2-story; owner, A. Burmeister; architect, W. O. Banks; contractor, Geo. H. Walker; sureties, C. Dix and J. Graham; cost, $3,295; time, 90 days; signed, March 29; filed, April 5; payments, $600, framed; $1,300, brown coated; $800, completed; $895, 35 days.

California and Leavenworth. Two-story building; owner, J. H. C. Prien; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $10,888; signed, March 27; filed, March 27; payments, $2,000, framed; $2,000, floors in; $2,000, rough mortared; $2,166, inside finish is on; $2,722, completed; $1,722, 35 days.

Camp and Albion Ave. Two-story frame; owner, Daniel Riley; contractor, Wm. Linden; surety, P. Swift, $3,000; cost, $4,885; time, 90 days; signed, March 21; filed, March 21; payments, $1,221, framed; $1,221, brown mortar on; $1,221, completed; $1 222, 35 days.

California, bet. Baker and Lyon. Two-story frame; owner, Jas. K. Keynedy; contractor, J. A. Shepherd; cost, $5,150; time, 90 days; signed March 7; filed, March 19; payments, $1000, enclosed; $1000, brown coat of mortar on; $1000, white coat on; $1,000, completed; $1,150, 35 days.

Central Ave. and Washington. Owner, W. R. Hearst; architect, J. J. Clark; contractor, R. V. Hurlbut; sureties, I. Levi and D. H. Bibb; cost, $4,000; time, June 15, 1890; signed, March 25; filed, March 29; payments, $1,000, brick-work done; $600, enclosed; $600, brown coated; $800, inside finish completed; $1,000, 45 days.

Columbia and Twenty-second. Three-story frame; owner, J. P. L. Doody; architect, A. J. Barnett; contractor, O. Brault; surety, T Richardson, $1,500; cost, $8,325; time, 80 days; signed, April 1; filed, April 2; payments, $800, roof boards on; $830, brown coated; $860, completed; $835, 35 days.

Capp and Sixteenth. Frame; owner, M. P. Bolger; architect, M. J. Welch; contractors, Courser & Kemble; cost, $1,847; signed, March 31; filed, April 1; payments, $461.75, framed; $461 75, brown coated; $461.75, completed; $461.75, 35 days.

California and Octavia. Plumbing; owners, J. Baumgarten and M. L. Cahn; architects, Curlett & Cuthbertson; contractors, S. Ickelheimer & Bro.; cost, $1,990, signed, March 27; filed, March 31; payments, 75 per cent. of value of work done; balance, 35 days.

California and Octavia. Three two-story houses; owners, J. Baumgarten and M. L. Cahn; architects, Curlett & Cuthbertson; contractor, W. Linden; cost, $18,590, signed, March 28; filed, March 31; payments, 75 per cent. of value of work done; balance, 35 days.

Devisadero and Sutter. One-story frame; owner, H. Lohmann; architect, A. Smith; contractor, G. G. Gillespie; cost, $1,700; signed, March 25; filed, March 26; payments, $425, framed; $425, outside finish on; $425, standing finish on, $425, 35 days.

Devisadero and Broderick. Two-story building; owner, Mary Talbot; architect, W. O. Banks; contractor, R. P. Hurlburt; sureties, O. H. Greenwald and I. Levi, $5,300; cost, $5,300; time, 100 days; signed, March 10; filed, March 15; payments, $1,000, framed; $1,900, brown coated; $1,000, completed; $1,400, 35 days.

Eighth and Bryant. Carpenter work; owner, S. M. Blumenberg; architect, Fred E. Wilcox; contractors, Mullins Bros.; cost, $2,456; signed, April 3; filed, April 4; payments, 75 per cent. of amount as work progresses; 25 per cent., 35 days;

Ellis and Laguna. owner, Mrs. J. Joel; architects, John & Balcynski; contractor, A. Miller; cost, $5,132; signed, March 25; filed, April 2; payments, $1,000, framed; $1,000, enclosed; $1,000, rough mortared; $847.50, inside finish on; $1,282.50, 35 days.

Elizabeth and Noe. Owner, C. Fitzgerald; architect, J. J. Clark; contractors, Mullins Bros.; sureties, T. Lerter and H. Magill, $1,200; cost, $1,635; signed, March 26; filed, March 27; payments, $400, framed; $400, brown coated; $400, completed; $435, 35 days.

Ellis and Leavenworth. Plumbing; owner, J. Schmidt; architect, J. E. Kraft; contractor, R. Rice; sureties, R. Dalziel and S. R. Ellert, $4,000; cost, $7,280; signed, March 29; filed, April, 2; payments, 75 per cent. of value of work done; balance 35 days.

Ellis and Leavenworth. Carpenter work; owner, J. Schmidt; architect, J. E. Kraft; contractor, C. H. Ackerson; sureties, W. J. Adams and C. S. Holmes, $12,000; cost, $15,000; signed, March 29; filed, April 2; payments, 75 per cent. of value of work done; balance, 35 days.

Ellis and Leavenworth. Brick work, etc.; owner, J. Schmidt; architect, J. E. Kraft; contractor, Brennan & Flading; sureties, P Degan and R. Brennan, $4,000; cost, $7,250; signed, March, 31; filed, April 2, payments, 75 per cent. of value of work done: balance, 35 days.

Eighth and Bryant. Owner, Chas. Vocke; architect, W. H. Bayless; contractor, F. L. Hansen; sureties, W. A. Meeker and B. Joost, $4,000; cost, $4,500; signed, April 1; filed, April 1; payments, $840, floor joists are on; $840, roof on; $840, first coat of plastering; $840, ready for painter; $1,140, 35 days.

Front and Oregon. Piling, capping, iron-dogs, bolts, pumping, etc.; owner, Jas. G. Fair; architects, Schulze & Meeker; contractor, Cal. Bridge Co.; cost, $7,820; signed, April 2; filed, April 4; payments, 1st. of each month, 75 per cent., of value of work done; balance, 35 days.

Front and Oregon. Grading, brick-work, stone-work, etc.; owner, J. G. Fair; architects, Schulze & Meeker; contractor, John McCarthy; cost, $16,784; signed, April 2; filed, April 4; payments, 1st. of each month, 75 per cent. of value of work done; balance, 35 days.

Fulton and Scott. Two-story frame; owner, J. M. Caldwell; architect, S. Hatfield; contractor, A. MacDonald; sureties, F. Atzeroth and W. J. Thomas, $3,000; cost, $4,870; signed, March 31; filed, April 2; payments, $658, roof boarded; $688, mortared; $858, fences up; $838, completed; $1,117.50, 35 days.

Fell and Jackson. Three-story building; owner, Chas. F. MacDermot; architect, John Gash; contractor, Jno. H. McKay; cost, $37,600; signed, March, 8; filed March 8; payments, $6,500, lumber on the ground; $3,600, roof is boarded; $3,600, roof is tinned; $3,000, outside finish is on; $3,600, all standing finish is on; $3,600, two coats of paint; $6,700, completed; $9,400, 35 days.

Filbert, bet. Leavenworth and Hyde. 2-story frame; owner, D. M. Shafer; architect, Edward Burns; contractor, J. Dyar; cost, $3,450; signed, March 19; filed, March 19; payments, $900, framed; $900, first coat of mortar is on; $900, white coat on; $750; completed.

Folsom and 22nd, Alterations; owner, M. Alpers; architect, M. J. Welch; contractor, Jno. O. Donald; cost, $1,635; signed, March 10; filed, March 31; payments, $300, framed; $300, brown coated; $300, completed; $435, 35 days.

Geary and Buchanan. Four 2-story buildings; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, C. J. Devlin; contractors, John Blake and Daniel Powers; sureties, J. J. McKinnon and F. Joost, $10,000; cost, $5,456; time, 30 days; signed, March 26; filed, April 5; payments, $750, chimney up; $324, completed; $859, 35 days.

Geary and Buchanan. Carpenter work; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, C. J. Devlin; contractors, John Blake and Daniel Powers; sureties; J. J. McKinnon and F. Joost, $10,000; cost, $15,456; time, 100 days; signed, March 26; filed, April 5; payments, $1,000; framed, $2,000; enclosed, $2,500; first coated, $3,000; plastered, $2,500; ready for paint; $592, completed, $3,864, 35 days.

Geary and Buchanan. Brick-work; owners, Miss B. K. Dunne and Mrs. M. P. Rucker; architect, C. J. Devlin; contractor, V. Fitzsimon; sureties, C. A. Warren and J. McCormick, $1,000; cost, $1,433; time, 30 days; signed, March 31; filed, April 5; payments, $750, chimneys up; $324, accepted; $359, 35 days.

Geary and Laguna. Owner, C. Keefe; architect, J. J. Clark; contractor, P. Maloney; sureties, J. H. Troyand N. Donan, $5,000; cost, $6,164, time, 100 days; signed, March 14; filed, March 28; payments, $1,200, foundations are in; $1,000, framed; $1,200, brown coated; $1,200, completed; $1,650, 35 days.

Grove and Franklin. Alterations, etc.; owner, G. Buchholz; architect, H. Geilfuss; contractors, Pfaff Bros.; cost, $1,495; signed, March 26; filed, March 28; payments, $560, brown coated; $560, completed; $375, 35 days.

Geary and Buchanan. Plumbing; owner, B. K. Dunne, et al; architect, C. J. Devlin; contractor, Chas. Anderson; sureties, P. McCarthy and A. J. Wheeler, $1000; cost, $1,094; time, 70 days; signed, March 26; filed, April 4; payments, $450, rough plumbing in; $370, completed; $271, 35 days.

Golden Gate Ave. and Laguna. Three three-story frames; owner, Mrs. M. Frederick; architect, P. R. Schmidt; contractor, McCann & Riddell; cost, $24,600; signed, April 2; filed, April 3; payments, $5,600, framed $3,600, ready for plastering; $3,600, brown coated; $4000, hard finished; $3,600, completed; $6,200, 35 days.

Grove and Franklin. Alterations; owner, G. Buchholz; architect, H. Geilfuss; contractors, Pfaff Bros.; cost, $1,495; signed, March 25; filed, March 28; payments, $560, brown coated; $560, completed; $375, 35 days.

Guerrero, bet. Duncan and 28th. Two-story frame building; owner, L. G. Flanagan; architect, T. J. Welch; contractors, R. Doyle & Son; sureties, Anthony Quill and P. F. Ward, $4,500; cost, $6,589; time, 90 days; signed, March 12; filed, March 14; payments, $1,045, enclosed; $1,645, brown coated; $1,649, finished and completed; $1,650, 35 days.

Golden Gate Ave and Laguna. Owner, M. Heubger; contractor, R. O. Chandler; sureties, B. Joost and E. Aigettinger, $2,000; cost, $4,295; signed, March 28; filed, March 31; payments, 25 per cent., framed; 25 per cent., brown mortared; 25 per cent., completed; 25 per cent., 35 days.

Guerrero and Fourteenth. Three-story frame; owner, P. J. Melia; architect, M. J. Welch; contractor, M. Walsh; cost, $6,260; signed, March 13; filed, March 17; payments, $1,315, framed; $1,315, brown coated; $1,315, completed; $1,315, 35 days.

Greenwich, between Fillmore and Steiner. Two-story frame; owners, I Burton and wife; architect, H. J. Simpson; contractors, C. W. Caldwell and J. D. Davis; cost, $2,800; time, 6 months; signed, Feb. 17; filed, March 17; payments, $700, enclosed; $650, brown coat of mortar is on; $650, hard finished; $800, completed.

Hayes and Buchanan. Additions and alterations; owners, A. Fuller and husband; contractors, Wm. J. Field & Geo. Lack; cost, $2,450; time, 12 weeks; signed, March 11; filed, March 11; payments, $600, frame is up; $600, plumbing is done; $600, completed; $650, 35 days.

Haight and Steiner. Three-story dwelling; owner, Louis Freidlander; architect, P. S. Barber; contractor, H. Rohling; sureties, Preston & McKinnon R. Joost, $5,500; signed, March 13; filed, March 13; payments, $1,000, building is enclosed; $1000, brown mortar is on; $1000, white plaster is on; $1,125, building is completed; $1,325, 35 days.

Haight, between Octavia and Laguna. Three-story building; owner, F. McMorey; architect, T. J. Welch; contractor, M. J. Gorman; sureties, T. J. Ford and J. Maloney, $4,000; cost, $4,250; time, 80 days; signed, March 28; filed, April 1; payments, $1,063, enclosed; $1,063, brown coated; $1,064, completed; $1,060, 35 days.

Jones and McAllister. Vault, doors and vaults; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, Hall's Safe and Lock Co; cost, $22,752; time, 10 months; signed, Dec. 6; filed, March 27; payments, $11,376, burglar vault is put together; $5,688, completed; $5,688, 35 days.

Jersey and Sanchez. Frame; owner, J. L. Mundwyler; contractor, A. Kallin; cost, $5,950; signed, March 21; filed, March 31, payments, $1,450, framed; $1,450, brown coated; $1,450, white coated; $1,600, 35 days.

Jersey and Diamond. Cottage; owner, Wm. N. Barousfeuther; architect, A. Stenbiht; contractor, G. Pheby; cost, $1,050; signed, March 10; filed, March 10; payments, $25, framed; $260, ready for lathing; $260, brown coat of mortar is on; $270, 35 days.

Jackson and Van Ness Ave. Painting, etc.; owner, S. Wenban; architects, Pissis & Moore; contractors, J. St. Denis & Co; cost, $2,725; signed, March 17; filed, March 20; payments on first and fifteenth of each month; 75 per cent of value of work done; balance, 35 days.

Jackson and Van Ness Ave. Hot water and heating apparatus; owner, S. Wenban; architects, Pissis and Moore; contractor, Harvey Heating Co. cost, $1,225; signed, March 17; filed, March 20; payments, $612.50; pipes and heater are in; $906.25, completed; $906 25, 35 days.

Kearny and Sutter. Sidewalk; owner, B. H. Lichtenstein; architect, Wm. Mooser; contractors, Ransome & Cushing; sureties, T. M. White and C. E. Greene, $700; cost, $1,147; signed, March 10; filed, March 22; payments, 75 per cent. of value of work done; balance, 35 days.

Leavenworth and Vallejo. Two story frame; owner, M. White; architect, Chas M Rousseau; contractor, M. W. Green; sureties. Harris and Jones, $2,000; cost, $3,000; signed, April 4; filed, April 5; payments, $562.50, roofed; $562 50, brown coated; $562.50, white coated; $562.50, completed; $750, 35 days.

Lott and Fulton. Three-story frame; owner, Wm. Helbing; contractor, Louis Helbing; cost, $3,250, time, 75 days; filed, March 24; payments, $800, framed; $825, brown coated; $825, plastered; $800, 35 days.

Langton, bet. Folsom and Harrison. frame; owner, T. C. Van Bibber; architects, Macy Jordan & Lyon; contractor, B. R. Bankins; surety, L. E, Emanuel, $2,000; cost, $2,975; signed, March 26; filed, March 27; payments, $575, framed; $575, partitions are set; $575, brown coated; $575, completed; $675, 35 days.

Laussat and Steiner. Owner, G. Depaoli; architect, Jos. H. Humphreys; contractors, Forrigiamo & Co.; sureties, A. Daneri and V. Ravenna, $1,500; cost, $2,270; signed, March 11; filed, March 14; payments, $565, building is ready for shingling; $565, brown coat of mortar is on; $565, completed; $575, 35 days.

Merchant and Montgomery. Alterations; owner, Henry Winter; architects, Pissis & Moore; contractor, S. H. Kent; cost, $8,000; signed, April 3; filed, April 4; payments, $2,000, brown coated; $2,000, plastered; $2,000, completed; $2,0 0, 35 days.

Miles Ct. and California. Plumbing; owner, F. Mitchell; architect, S. Hatfield; contractor, H. Williamson; cost, $750; time, 98 days; signed, March 25; filed March 24; payments, $300, rough plumbing in; $375, completed; $75, 35 days.

Miles Court and California. Painting; owner, F. Mitchell; architect, S. Hatfield; contractor, Jas. Larsen; cost, $115; time, 98 days; signed, March 24; filed, March 25; payments, $75, first coat on; $75, inside ready for graining; $75, finished; $75, 35 days.

Miles Court and California. Two-story frame; owner, Mrs. F. Mitchell; architect, S. Hatfield; contractor, Jobe Hatfield; cost, $4,024, signed, March 24; filed, March 25; payments, $739, framed; $740, first coat of plaster on; $739, white coated; $800, completed, $1,006, 35 days.

Miles Court and California. Brick work; owner, F. Mitchell; architect, S. Hatfield; contractor, W. H. Williams; cost, $415; time, 30 days; signed March 24; filed, March 25; payments, $170, foundation is up; $170, chimneys are completed; $275, 35 days.

Market bet. 6th and 7th. Brick, stone and cast iron work; owner, H. J. Meyer; architects, Kenitzer & Kollofrath; contractor, Jno. McCarthy, sureties, C. Lewis and J. Mahoney, $12,500; cost, $25,714; time, August, 15, '90; signed, March 10; filed, March 10; payments, $4,500, basement walls are up; $8,000, second story walls are up; $6,700, fire walls are finished; $6,514, 35 days.

Minna and Sixth. Alterations, etc.; owner, P. Feeney; architect, Jno. T. Hogan; contractors, Kitchen & Daley; sureties, L Albert and W. W. Davis, $800; cost, $1,200; signed, March 10; filed, March 11; payments, $300, rustic is on; $300, rough plumbing is done; $300, building is completed; $300, 35 days.

Market and Sixth. Brick work, granite, etc.; owner, A. Vetter; architect, R. Zimmerman; contractor, J. McCarthy; cost, $21,000; time, Sept. 1, '90; signed, March 13; filed, March 18; payments, $3,500, basement walls are up; $3,500, first story walls are up; $3,000, third story walls are up; $3,000, fifth story joists are up; $2,750, completed; $5,220, 35 days.

Market and Sixth. Carpenter work; owner, A. Vetter; architect, R. Zimmerman; contractor, A. Miller; cost, $15,500; time, 60 days; signed, March 13; filed, March 18; payments, $2,000, third story joists are set; $3,000, roof boards are on; $4,000, tin and galvanized iron work is finished; $2,625, completed; $8,875, 35 days.

Market and Sixth. Plastering, etc., owner, A. Vetter; architect, R. Zimmerman; contractor, W. C. Watson; cost, $1,450; signed, March 13; filed, March 18; payments, $800, brown coated; $380, white coat of mort r is on; $500, accepted; $350, 35 days.

Market, bet. 6th and 7th. Carpenter work, etc.; owner, H. J. Meyer; architects, Kenitzer & Kollofrath; contractor, A. Miller; sureties, F. Doe and J. C. Roberts, $7,000; cost, $14,690; time, 60 days; signed March 10; filed, March 10, payments, $2,500, fourth-story joists are in; $4,000, first coat of brown mortar is on.

Market and Sixth St. Plumbing, etc.; owner, A. Vetter; contractor, W F. Wilson; architect, R. Zimmerman; cost, $1,115; signed, March 13; filed, March 18; payments, $400, rough work is done; $400, second certificate is delivered; $315, accepted.

Octavia and Hickory Ave. Owner, J. H. Holm; architect, W. H. Bayless; contractor, W. E. B. Stiles; sureties, W. Dickts and P. Gillogley, $5,500; cost, $5,500; signed, April 3; filed, April 4; payments, $700, cellar up; $500, framed; $950, first coated; $800, white coated; $895, 35 days.

O'Farrell and Stockton. Plumbing; owner, S. Levy; architects, Schulze & Mecker; contractors, Duffey Bros.; cost, $6,110; signed, March 13; filed, March 28; payments, 1st. of each month in sums equal to 75 per cent. of value of work done; balance, 35 days.

Owner, J. M. Caldwell; architect, R. H. Daley; contractors, Barbee & Fryer; cost, $1,925; time, 60 days; signed, March 31; filed, April 2; payments, $300, framed; $300, brown coated; $300 sashes in; $300, completed; $495, 35 days.

Octavia and Geary. 2-story frame; owner, J. Schroeder; architects, John & Balczynski; contractors, Schutt & Kreker; cost, $7,185; signed, March 22; filed, March 22, payments, $1,500, framed; $1,000, partitions set; $1,500, outside finish on; $1,385, inside finish on; $1,800, 35 days.

O'Farrell and Stockton. Plumbing; owner, Mrs. S. Levy; architects, Schulze and Mecker; contractors, Duffey Bros.; cost, $6,110; signed, March 13; filed, March 28; payments, 1st. of each month, in sums equal to 75 per cent. of value of work done; balance, 35 days.

Oak, between Webster and Fillmore. Building of two flats; owner, E. Newman; contractor, G. Houston; cost, $4,075; time, 100 days; signed, March 14; filed, March 15; payments, $1,000, rustic is on.

O'Farrell and Mason. Carpenter work; owner, H. W. Heath; architects, Percy & Hamilton; contractor, J. C. Gibson; cost, $8,219; signed, Feb. 26; filed, March 31; payments, 75 per cent. of value of work done, on first Saturday of each month; balance, 35 days.

O'Farrel and Mason. Mason work; owner, H. W. Heath; architects, Percy & Hamilton; contractors, Richardson & Gale; cost, $3,125; time, 20 days; signed, March 26; filed, March 31; payments, first Saturday of each month in sums equal to 75 per cent. of value of work done; balance, 35 days.

Pacific Ave. and Laguna. 2-story frame; owner, J. Cooper; contractor, W. H. Wickersham; sureties, C. S. Holmes and T. P. Latson, $1,300; cost, $4,080; time, 90 days; signed, March 25; filed, March 26; payments, $1,000, framed; $1,000, white coated; $1,000, comple ed; $1,020, 35 days.

Page and Franklin. Frame; owner, M. McShall; architect, Wm. Mooser; contractor, J. J. Dunn; sureties, B. Joost and H. A. Meeker, $4,800; cost, $7,500; signed March 12; filed, March 25; payments, 75 per cent. of value of work done; balance, 35 da s.

Pacific Avenue and Octavia. Two-story frame; owner, Abe Seeligsohn; architect, M. G. Bugbee; contractor, S. C. Buzzell; cost, $4,500; signed, March 25; filed, March 25; payments, $1,125, enclosed; $1,125, brown coated; $1,125, accepted; $1,125, 35 days.

Pine and Kearny. Brick and iron work; owner, S. P. Blumenberg; architect, Fred E. Wilcox; contractor, Geo. W. Spencer; cost, $1,000, signed, March 26; filed, March 31; payments, 75 per cent. of the amount of work progresses; 25 per cent., 35 days.

Pierce and Hayght. Two-story frame; owners, J. W. Riley and wife; architects, R. H and R. White; contractor, A. G. Johnson; sureties, Dickens, Hobart & Gellogley, $3,000; cost, $4,080; time, 100 days; signed, March 14; filed, March 17; payments, $800, roof boards on; $800, ready for brown coat; $955, standing finish on; $955, completed; $1,170, 35 days.

Sutter and Steiner. Two-story; owner, D. McDonald; architect, T. J. Welch; contractor, E. McElroy; sureties, B. and F. Joost, $3,000; time, 75 days; signed, March 29; filed, April 3; payments, $1,125, framed; $1,125, brown coated; $1,125, completed; $1,125, 35 days.

Sutter and Webster. 2-story frame; owner, A. Getz; architect, J. Gash; contractor, S. C. Buzzell; cost, $6,600; signed, March 20; payments, $825, framed; $825, brown coated; $825, white coated; $825, wainscoting on; $825, second coat of paint on; $825, completed; $1,650, 35 days.

Sutter and Leavenworth. Plastering, owner, M. A. Wightman; architect, Chas. R. Wilson; contractor, Chas. Dunlap; cost, $1,350; signed, March 27; filed, March 31; payments, $506.25, brown coated; $506.25, white coated; $337.50, 35 days.

Sutter and Leavenworth. Plumbing, etc.; owner, M. A. Wightman; architect, Chas. R. Wilson; contractor, R. A. Vance; cost, $1,350; signed, March 27; filed, March 31; payments, $468.75, rough work in; $468.75, completed; $912.50, 35 days.

Sutter and Leavenworth. Carpenter work, owner, M. A. Wightman; architect, Chas. R. Wilson; contractor, Wm. Knowles; cost, $9,196; signed, March 27; filed, March 31; payments, $2,000, framed; $1,295, roof tinned; $1,642.50, front outside finish on; $1,969.50, completed; $2,299, 35 days.

Sutter and Leavenworth. Brick work; owner, M. A. Wightman; architect, Chas. R. Wilson; contractors, T. Hock & Son; cost, $1,100; signed, March 27; filed, March 31; payments, $425, foundations up; $400, compie ed; $275, 35 days.

Seventh Ave. and A. Owner, C. A. Maguire; architect, H. D. Mitchell; contractor, G. J. Turner; cost, $1,050; signed, March 7; filed, March 15; payments, $350, framed; $350, completed; $350, 35 days.

Seventeenth and Castro: Two-story frame; owner, E. M. Doyle; architect, M. J. Welch; contractor, M. Rohling; cost, $3,966; signed, March 17; filed, March 20; payments, $991.50, framed; $991.50, brown coated; $991 50, completed; $991.50, 35 days.

Turk and Laguna. Three-story; owner, F. G. Branchi; contractors, L. Cuneo and G. Casarette; sureties, B. Novetta and Pietro Costa, $4,400; cost, $4,400; signed, March 31; filed, April 2; payments, $1,100, framed; $1,100, brown coated; $1,100, completed; $1,100, 35 days.

Taylor and Sutter. Four-story building; owner, John Good; architects, John & Balcynski; contractor, Wm. Pluns; cost, $15,915; signed, March 29; filed, April 2; payments, $3,000, framed; $3,000, enclosed; $3,000 rough mortared; $2,915, ready for painting; $4,000, 35 days.

Tennessee, between Sierra and Nevada. Owner, Wm. Hurley; contractor, J. Glackin; cost, $950; time, May 15, '90; filed, March 15; payments, $250, roofed; $250, brown mortar is on; $250, finished; $200, 35 days.

Tehama and Fifth. 2-story frame; owner, M. Greene et al; architects, R. H. and R. White; contractors, White Bros; surety, F. Joost, $3,000; cost, $1,284; time, 75 days; signed, March 12; filed, March 18; payments, $750; framed; $900, ready for mortar; $659, standing finish on; $900, completed; $1,075, 35 days.

Turk and Laguna. 3-story building; owner, Geo. Smidt; architect, R. Zimmerman; contractor, Adam Miller; cost, $7,550; signed, March 15; filed, March 18; payments, $1,400, framed; $1,400, enclosed; $1,400, brown mortared; $1,450, accepted; $1,900, 35 days.

Union and Polk. 3-story frame; owner, E. Villemeur; contractor, Jno. Paul Moran; cost, $3,705; signed, March 13; filed, March 15; payments, $500, enclosed; $400, brown coated; $600, outside primed; $780, inside ready for painting; $499, completed; $926, 35 days.

Vallejo and Stockton. 3-story frame; owner, Mrs. M. B. Godkin; architect, H. Gelfuss; contractor, C. E. Dunshee; cost, $4,191; signed, April 2; filed, April 4; payments, $628, framed; $628, enclosed; $628, brown mortared; $628, white coated; $628, completed; $1,051, 35 days.

Vallejo and Stockton. 3-story frame; owner, C. Hussenburg; architect; H. Gelfuss; contractor, C. E. Dunshee; cost, $4,191; signed, April 2; filed, April 4; payments, $628, framed; $628, partitions in; $628, brown coated; $628, white coated, $628, completed; $1,051, 35 days.

Valparaiso and Taylor. Two-story; owner, E. Buchel; architect, Wm. Schrof; contractor, A. Norton; cost, $2,685; signed, April 2; filed, April 4; payments, $670, chimneys up; $670, brown coated; $670, first coat of paint on; $675, 35 days.

Vallejo and White. Four two-story buildings; owner, F. Siebrecht; architects, Kenitzer & Kollofrath; contractor, A. Miller; sureties, H. Dahler and C. F. Doe, $10,000; cost, $11,200; time, July 19, '90; signed, March 25; filed, March 26; payments, $2,500, roofed; $2,000, first coat of plaster on; $2,000, ready for paint; $1,900, completed; $2,800, 35 days.

Van Ness Ave. and Myrtle. Plumbing; owner, L. A. Levy; architect, P. R. Schmidt; contractor, S. Ickelheimer; cost, $1,700; signed, March 26; filed, March 26; payments, $1,625, all pipes are in; $1,625, two-thirds of vessels are set; $1,625, completed; ——, 35 days.

Valencia and 24th. Plumbing, etc.; owner, J. Taubman; architect; J. C. Newsom; contractors, Nunam & Gordon; cost, $1,980; signed, March 8; filed, March 1; payments, 75 per cent of value of work done; balance, 35 days.

Van Ness Ave. and Myrtle. Hotel; owner, L. A. Levy; architect, P. R. Schmidt; contractor, F. A. Logan; cost, $63,300; signed, March 17; filed, March 18; payments, $6,000, second story flooring joists are on: $6,000, framed; $6,000, roofed; $6,000, main cornice on.

Van Ness Ave. and Jackson. 3-story building; owners, West School Company; architect C. K. Kirby Jr.; contractor, W. T. Commary; cost, $16,236; signed, March 17; filed, March 18; payments, $2,000, brick walls are up; $2,000, second and third story floor joists are on; $2,000, exterior finish on; $1,500, lathing completed; $2,000, plastering completed; $2,677, completed; $3,059, 35 days; $1,000, six months after completion.

Valencia and Twentieth. Three-story frame; owner, D. Harner; architects, R. Doyle & Son; contractor, T. J. Welch; sureties, John McCarthy and B. Joost, $10,000; cost, $11,749; signed, March 28; filed, April 1; payments, 75 per cent. of value of work done; balance, 35 days.

Van Ness Ave. and O'Farrell. Fixtures; owner, P. W. Riordan; contractors, Thos. Day & Co.; cost, $2,664; time, July 1, 1890; signed, March 4; filed, March 18.

Webster and Hickory Ave. 2-story frame; owner, C. Mausshardt; architect, Winterhalter; contractor, T. Von Borstel; sureties, W. Plagemann and U. Remensperger, $2,000; cost, $2,275; time, 60 days; signed, March 10; filed, March 19; payments, $800, enclosed; $800, outside finish on. $800, completed; $975, 35 days.

Washington and Laguna. Stone and brick residence; owner, Henry J. Crocker; architect, Frank Freeman of New York; contractors, Richardson & Gale; cost, $45,000; time, Jan. 1, 1891; signed, March 12; filed, March 14; payments to be made on the first day of each month, in sums equal to 75 per cent. of value of work done; balance, 35 days.

Washington street, Block 814. Frame; owner, B. E. Stevens; contractor, L. C. Judkins; cost, $1,900; time, June 1, '90; signed, March 19; filed, March 20; payments, $475, framed; $475, first coat of mortar on; $475, completed; $475, 35 days.

Washington and Laguna. Wrought iron work; owner, H. J. Crocker; architects, Schultz & Meeker; contractor, H. Ralston; cost, $910; time, January 1, '91; signed, March 19; filed, March 25; payments, installments on first day of each month in sums equal to 75 per cent of value of work done; balance, 35 days.

Willard and Carl. Owner, Geo. A. Rankin; architect, P. R. Schmidt; contractors, Arthur & Aldridge; cost, $8,947; signed, March 21; filed, March, 26; payments, $740, enclosed; $740, brown coated; $740, inside finish up; $737, completed; $990, 35 days.

Washington, bet. Leavenworth and Hyde. Alterations, etc.; owner, John F. Cline; architect, W. O. Banks; contractors, Douglass & Velphs; sureties, E. Ratigan & H. Magorty, $2,173; cost, $2,173; time, 90 days, signed, March 13; filed, March 20; payments, $500, partitions set; $629, outside finish on; $500, completed; $544, 35 days.

York and Twenty-fifth. Cottage; owner, M. Dougherty; contractor, A. Klahn; cost, $1,486; signed, March 12; filed; March 13; payments, $400, framed; $500, brown coat of mortar is on; $150, completed; $350, 35 days.

1419 Scott St. Alterations; owner, Chas. Sicklan; contractor, G. G. Gillespie; cost, $1,500; signed, April 3; filed, April 4; payments, $375, white coated; $375, completed; $375, 35 days.

319 and 321 Pine St. Plumbing, etc.; owner, Jas. G. Fair; architects, Schulze & Meeker; contractor, Wm. F. Wilson; cost, $2,628; filed, March 31; signed, April 4; payments, 1st. of each month, 75 per cent. of value of work done; balance, 35 days.

329 and 321 Pine. Alterations; owner, Jas. G. Fair; architects, Schultz & Meeker; contractor, P. G. Martin; cost, $7,973; time, May 15, '90; signed, March 24; filed, March 25; payments, first day of each month in sums equal to 75 per cent of value of work done; balance, 35 days.

743, 745, 747 Tehama St. Alterations; owner, Edward Hogan; architect, Chas. J. Devlin; contractors, J. Blake and D. Powers; sureties, J. Fitzpatrick and R. E. Eckler, $2,500; cost, $3,550; time, 70 days; signed, March 17; filed, March 18; payments, $500, foundation is completed; $750, ready for plastering; $1,000, ready for paint; $400; completed; $900, 35 days.

729 Hayes St. Alterations; owner, J. Feeney; architect, J. T. Hogan; contractors, Kitchen & Daley; sureties, L. Albert and L. Swanson, $250; cost, $540; signed, March 26; filed, March 28; payments, $135, framed; $135, brown coated; $135, accepted, 35 days.

Oakland.

Eighth St. Tract. Two-story frame; owners, John and Mary Dalton; architects, Townsend & Wyenken; contractor, W. Matthews; cost, $2,250; signed, March 14; filed, March 28; payments, $500, roofed; $500, brown coated; $500, completed; $750, 35 days.

Myrtle and Tenth. Owner, H. S. Crane; architect, Samuel Newsom; contractor, L. H. Long; cost, $8,850; signed, March 27; filed, March 28; payments, 75 per cent of value of work done; 25 per cent., 35 days.

Linden and Sixteenth. Two-story frame; owner, T. P. Strong; contractor, D. C. Scanlan; cost, $3,441; signed, March 26; filed, March 26; payments, $2,000, enclosed; $1,441, 35 days.

Eighteenth and Adeline. Two-story frame; owner, E. Meese; architect, C. Mau; contractor, P. F. Nelson; cost, $3,143; signed, March 24; filed, March 25; payments, $785, one-third material furnished and one-third work completed; $785, two-thirds material furnished and two-thirds work done; $785, completed; $788, 35 days.

Fifth Ave., between Seventh and Eighth. Two cottages; owner, E. Dolan; contractor, J. C. Bassett; cost, $3,800; time, 8 weeks; signed, March 22; filed, March 24; payments, $950, brick work done; $950, brown mortared; $950, completed; $950, 35 days.

Twelfth and Clay. Dwelling house; owner, R. E. Cole; architect, Wm. Kirk; contractor, J. G. Pearce; cost, $5,337; signed, March 10; filed, March 10; payments, $1,384.25, brick-work is completed; $1,384.25, second coat of plaster is on; $1,384.25, completed; $1,384.25, 35 days.

Block 2256, Valdez Tract. One and a half frame cottage; owner, J. H. Kercheval; architects, Schulze & Meeker; contractors, F. W. Knight and C. A. Littlefield; cost, $2,815; time, June 14, '90; signed, March 13; filed, March 15; payments, $880, frame up; $650, ready for lathing; $500, first coat paint on; $681, completed; $704, 35 days.

Clinton Block, bounded by 9th and 10th Avenues, and 15th and 16th streets. Additions to Franklin School; owner, City of Oakland; architect, W. J. Mathews; contractor, H. E. Jones; cost, $4,614; signed, March 14; filed, March 17; payments, $865.12, one-fourth completed; $865.12, one-half completed; $865.13, three-fourths completed; $865.13, completed; $153.50, 35 days.

Twenty-fifth and Telegraph Ave. owner, H. F. Hampel; contractor, P. F. Nelson; cost, $1,475; time, June 15, '90; signed, March 25; filed, March 26; payments, $550, brick work done; $300, enclosed; $256, inside finish on; $369, 35 days.

Alameda.

Two one-story cottages; owner, A. Rouncey; contractor, R. Gillis; cost, $2,525; signed, March 12; filed, March 14; payments, $650, frame up; $750, brown mortar on; $625, completed; $600, 35 days after.

Encinal. Two one-story cottages; owner, Mrs. Jennie Shannon; contractor, R. Gillis; cost, $2,412; time, 90 days; signed, March 5; filed, March 10; payments, $912, ready for rustic; $700, brown coated; $600, completed; $600, 35 days,

Santa Clara Ave. Two-story frame; owner G. H. Waggoner; architect, Chas. S. Shaner; contractors, D. S. Bichant and J. C. Diamond; cost, $4,650; signed, March 10; filed, March 11; payments, $872, sheathing on; $872, floors laid; $872, window frames are in; $871.50, front window frames are up; $1,162.50, 35 days.

Berkeley.

Dana street. One and a half story cottage; owner, C. L. Huggins; contractors, Loyd & Boynton; cost, $2,085; signed, March 7; filed, March 12; payments, $520, frame up; $520, brown mortar on; $520, completed; $525, 35 days after.

Livermore.

Addition to the Hinton cottage. Wm. Sanderson, contractor.

Addition to Jenkins Hotel. Messrs. Thomas & Budworth, contractors.

Additions to the Beach cottage.

New tank house and stable for A. B. Henderson.

New eight-room cottage. Cost, $5,000; to be built for A. B. Henderson.

JOHN H. WISE, President. H. T. SCOTT, Vice-President. CHAS. H. FROST, General Manager. C. S. PREBLE, Secretary

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at 408 California Street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at 408 California Street.
John Richards, Pres. Prof. Frank Soulé, Vice-Pres.
Otto Von Geldern, Sec. Jas. Spiers, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held in their rooms Friday evening, May 9th.

Architect M. G. Bugbee was elected to fellow membership. Architect Frank Shea made application to become a fellow member. The application took the usual course and was referred to the Investigating Committee.

The report of the Committee on revision of Constitution and By-laws, to bring them into harmony with the Institute, was laid before the meeting, and the proposed changes discussed at length. Action will be taken at a future meeting.

The report of the Committee appointed at the last meeting to prepare a suitable defense of the action of the Chapter in accepting the invitation of the City Hall Commissioners to investigate and report on the proposed New City Hall tower, was presented to the Chapter, unanimously adopted and the Secretary ordered to send the same to the Secretary of the American Institute.

The Committee named to decide on the Order of Merit of the drawings submitted in the last monthly competition of the A. I. A. Sketch Club reported that the honor of first mention was given to S. C. Benson, second mention to C. A. Meussdorffer and third mention to Frank Holland. The drawings in the May competition on the subject of a country stable, were inspected by the members present, and the same Committee continued to pass on the respective merits of the drawings submitted. Mr. Sanders, the teacher of the Chapter's class in design, reports that an increased interest is being taken in the work by members of the class, and desires to call the attention of all students in Architects' offices, and extend a cordial invitation to them to join the class.

The class is open to any student in the office of any member of the Chapter, and any further information will be given upon application to Mr. Sanders or to the Secretary of the Chapter.

THE LABOR QUESTION.

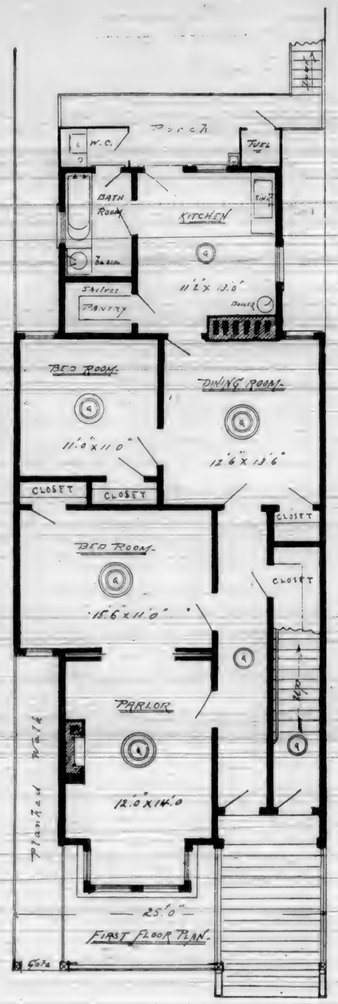
ON the all absorbing labor topic of the day the *The Canadian Architect* has the following:—A solution of the problems in connection with the adjustment of wages must be recognized as being as difficult as those pertaining to the science of political economy, and a solution which every one will accept as correct and satisfactory may be considered to be well nigh impossible, but some plan for the avoidance of these periodical convulsions in our industrial life we believe must and will be found, however slow its development may be. What we would propose and appeal most earnestly to every man to strive for, is some arrangement of the present difficulties that will set and keep the wheels and machinery moving until the happy condition shall have been brought about when these disputes will be a thing of the past. To that end, and as meeting the immediate necessities of the case we would suggest for the consideration of labor union men,

master builders and every business man in Toronto, that a committee be appointed, to sit as a Board of Arbitration between the building trades and the employers for the city of Toronto, this committee to settle the present difficulty and decide what shall be the standard of wages for the years 1890 and 1891 and the same committee to remain organized for two years and readjust the scale of wages for the years 1892 and 1893 reporting its decision of the same to the Trades' Union and Master Builders' Association on or before January 1, 1892, the same course to be pursued biennially thereafter. The membership of this Board of Arbitration should be one delegate from each branch of the building trades and one from the Building Laborers' Union, one delegate from each branch of the Master Builders' Association, and an equal number of architects, to be delegated by the Ontario Association of Architects, making in all about 25 members. Let this board establish its own rules of procedure, except that the vote of a majority of all its members should decide any question under consideration. After settlement of the questions now in dispute, they would be prepared to receive information or complaints tending to furnish light needed for the next biennial regulation of prices. After that, a new selection of delegates could be made every two years. We believe that the Trades Unions, Master Builders and public generally could and would have confidence in such a body, and that it could be made successful not only as a regulator of wage rates, but could also be made a sort of Court of Appeal for the settlement of any differences now usually ending in a strike. The trades and masters would be evenly balanced and no doubt prepared to protect their respective interests, and the position of mediators would devolve upon the architects. We feel sure that the Master Builders would be satisfied to place themselves in the hands of such a Board and we can see no reason why the Trades Unions should not have all necessary confidence in its fairness and intelligence.

Contractors are constantly placing themselves in the hands of architects in a way that involves large interests, and they know that every true architect will endeavor to see that they as well as the proprietor, get fair play. Surely the workmen ought to be ready to have as much confidence as their employers in the reasonableness of the architects. This is one of several apparently feasible plans, which might be suggested for the adjustment of such disputes. For instance, three Superior Court judges might constitute a Board of Arbitration to whom each party to the dispute would state their case and in accordance with whose ruling on all the points submitted, the difficulty would be settled.—*The Canadian Architect and Builder.*

THE SITUATION.

NEARLY every city in the country is in a state of ferment regarding the eight hour question. Particularly is this true of trades connected with building. The labor organizations, so far as can be perceived, have no very well defined plan of operations. The result of the conference of the Executive Council of the American Federation of Labor, held in New York on March 18th, must be rather disappointing to the various trades which expected the central organizations to manage the details of the fight. According to the telegraph report, this burden has been placed upon the local societies in the various cities, and with them is left the privilege to do as they please regarding the subject of hours and wages. We believe this decision will be fatal to the success of the eight hour movement, as employers are not liable to make any concessions while their competitors in other cities continue to do business under the old conditions. Perhaps in some trades a temporary local advantage will be gained, but unless the change becomes general, the laws governing trade will soon enforce an observance of the old standard.—*Building Trade Journal.*



Plan for flats. H. T. Bestor, Architect.

MONEY STIPULATIONS IN CONTRACTS.

AT THE present time there is considerable discussion among architects and builders as to the proper method of providing stipulated amounts in contracts for various purposes.

For example, plumbers are urging architects, wherever opportunity offers, of wording a specification in such a manner that certain fixtures shall not cost less than a certain specified amount, after naming general typical features that are recognized as desirable in goods of the same class.

This is a very convenient method of procrastination, and the too-busy architect sometimes succumbs to the temptation of being indefinite. For to be definite is to be particular and signifies thought and selection, and both require an expenditure of time which is not always available.

The stipulation clause is generally put in itself with wide possibilities as to construction, and the wider the door is left open for differences of opinion, the greater are the difficulties which surround the practice. Some clauses call for so much hardware to cost such a sum; this may seem definite enough at first sight, but in reality it is often wide of the architects' intentions. It may be his intentions are that the cost named shall be the net cost to the contractor, the latter on the other hand maintaining that, as he is obliged to handle the goods and make the purchases and invest his capital for the benefit of the owner, he should, therefore, be reimbursed for his trouble. It may be just in many cases that he should receive some compensation for such a service, but the whole difficulty of the matter is in the lack, in the first place, of a proper understanding of each other's position. The specification should either say net cost to the builder, or wholesale price, or list price less trade discount, or so much profit allowance to the builder, the latter can adjust his bid to the conditions proposed. To leave the matter until it is time to settle up, is, to say the least, gross carelessness on the architect's part, and stupidity on that of the builder.—*Architecture and Building.*

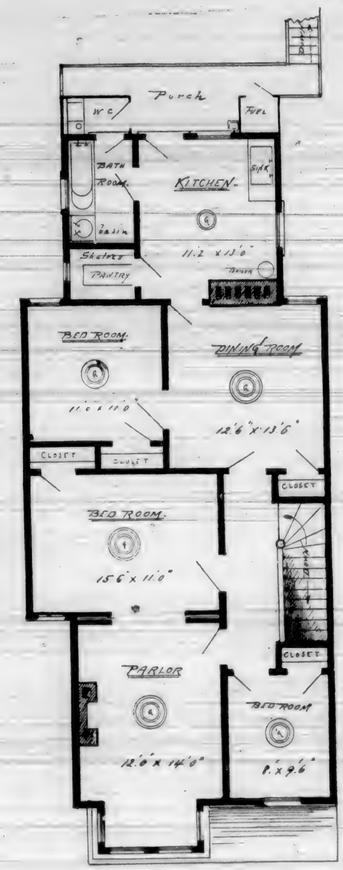
THE VENTILATION OF SCHOOLS.

IN November last, Professor Carnelley (professor of chemistry, Aberdeen University) delivered an address under the auspices of the Aberdeen branch of the Educational Institute on "The Sanitary Condition of Our Schools." Professor Pirie presided, and there was a large attendance. Professor Carnelley spoke more particularly of the air of schools. After showing how important good air was to health, he went on to speak of the great necessity there was for improvement in this direction, in so far as schools are concerned. He referred with satisfaction to the position Aberdeen occupied in having, in proportion to population, introduced the mechanical system of ventilation in more schools than any other town in the country. Aberdeen had introduced the system in four schools; and in the whole of England and Scotland there were only seventeen schools ventilated. In almost all schools the cubic space was far too little, and ventilation was deficient. It was necessary that ample cubic space should be provided, because if the space were small, the amount of ventilation that would be required would have the effect of creating draughts, which might be more injurious than impure air. The older the school was the more micro-organisms there were; and the younger children, the less carbolic acid and the more germs. Boys made the air of the school much more impure than the girls.

As to what to do to render the air better, he said he had visited, eighteen months ago, 150 schools with 110,000 scholars, and had received details regarding 173 other schools with 165,000 scholars, and he had come to the conclusion that mechanical ventilation should be adapted in all new schools.

It gave much greater purity to the air, and it was much more independent of the weather than any other means of ventilation. There was a more equal distribution of the hot and the fresh air. Mechanical ventilation was very effective in diminishing the micro-organisms, and it reduced the draughts to a minimum. It was far more conducive to health and comfort, and it was a factor in increasing the power of teaching and learning. The cost of such a system in a school for 1,000 scholars was £40 per annum.

At the close Professor Carnelley was cordially thanked for his address.—*The Builder.*



Plan for flats. H. T. Bestor.

The following statistics are taken from the *San Francisco Journal of Commerce*. The Real Estate sales in San Francisco for the past four years have been as follows:

1889	6,736	sales	$32,768,969 00
1888	5,356	sales	24,744,479 00
1887	4,998	sales	20,745,079 00
1886	3,101	sales	15,119,760 00

The year 1889 shows more than double the year 1886.

During the year 1889 the new vessels built on the Pacific Coast and registered at the port of San Francisco was 7,144 net tonnage.

The lumber receipts at the port of San Francisco for the three preceding years was, in feet, board measure:

	1889.	1888.	1887.
Pine	301,894,864	268,286,418	209,908,981
Redwood	161,258,329	138,235,710	118,693,590
Shingles, M.	113,375,200	144,336,900	59,689,702

Receipts for California Lime for 1889 have been 129,463 bbls.

A NEW WHITE HOUSE.

The Committee on Public Buildings and Grounds of the Senate have been invited to visit the Executive Mansion to examine its condition with a view to repairs and to enable Mrs. Harrison to state her ideas with reference to the extension of the building. The theory of Mrs. Harrison's design, which has been carried out in the plans which an architect of this city has made under her direction, is the preservation of the original building intact, the addition on the east and west respectively of counterparts of the original structure in general architectural style, their connection with the main edifice by a colonade range, and the extension on the south of a wide conservatory or winter garden, with a central rotunda or palm house, the entire series of structures forming the four sides of an inner park. The original building is to be devoted exclusively to the uses of an Executive residence. On the west is the official wing, approached from the Departments of State, War and Navy, and arranged on the floor with a diplomatic audience room and anterooms for guests at receptions. The connecting range or statuary hall forms the way to the main building, where the President and wife receive. The second floor of this wing contains the office of the President, the Executive library and cabinet, the private secretary's and clerks' rooms. From the main building toward the east another broad passage similar to that on the west opens into the public wing, containing the gallery of paintings and treasures of art and history. This wing will be open to visitors. The conservatories on the south form not only a scene of tropical beauty in winter, when social gayeties are at their height, but a grand promenade back to the entrance and to the anterooms, thus obviating the crowding which occurs in great throngs of people.

The outer measurement of this architectural rectangle of edifices is 427 feet from east to west, and 350 feet from north to south. The inner court or park, 250 feet square, is to be turfed and arranged in parterres, with a grand allegorical fountain in the center, commemorating the discovery of America in 1492, the laying of the corner stone of the Executive Mansion in 1792, and the triumph of free institutions in 1892. The fountain will represent the landing of Columbus and his officers on the October morning of 1492 from the Santa Maria, Pinta and Nina, with the island of Guanahani in the distance. Subsidiary figures will represent the different ages of exploration, colonization, independence and national progress. This piece would not only be an effective feature in the artistic entirety of the Executive residence, but would serve as a memorial of Columbus's discovery of the New World and the laying of the corner stone of the official home of the Presidents of the American Republic, the former on October 12, 1492, and the latter on October 13, 1792. The fountain would have attachments of light and colors by night.

The advantage of this comprehensive plan is a symmetrical addition to the building. The construction of the conservatories on the south admits sunshine, winter warmth and summer breezes into each of the buildings without obstruction. The view from the windows is also unbroken. The court affords private grounds for the President's family, and on a certain day of the week may be thrown open to the public, with music and the fountains playing. The cost is estimated at $700,000, with such additional expenditures as may be allowed for elaboration of details, erection of terraces and embellishment of the grounds. The staircases would be of marble, with onyx trimmings. The connecting galleries are set apart for statuary halls, with statues of Lincoln and Grant as central figures. The rotundas of the stair halls of the wings are arranged for statues of Washington and Jackson. The entire additions might be completed by October, 1892, as a commemoration of the discovery of America and laying of the corner stone of the original mansion, thus constituting a suitable memorial of those historic events at the national capital.—*Architecture and Building.*

WHICH PART OF THE TREE IS STRONGEST?

"It is by no means rare," says the proprietor of a large physical laboratory for builders and prospective owners of buildings, "to have joists, plates, sills and other important pieces tested, in order that the size and kind for prospective uses may be determined." Why not? Is it not of much greater importance that the strength of materials entering into the construction of factory, store or dwelling be as accurately determined and well known as those out of which cars, bridges, and crossties are built? Proprietors of extensive car works, railroad and construction companies have the strength of materials known before a blow is struck, by which means enough and no more is used to sustain the strains to which the materials are to be subjected; but an architect and builder who makes a specialty of such knowledge, is extremely difficult to find in this, and, we presume, in any other city on the American continent.

This leads to the question, strength considered, of the relative merits of certain portions of a tree. It might be supposed, inasmuch as every layer from the central pith to the bark is in a different stage of perfection, the innermost or earliest formed being the most matured, would naturally be the strongest; but practical tests, made on the most modern and accurate testing machines, demonstrate that this is only true up to a certain period of growth. The greatest strength and toughness lies near the most recently formed heartwood, or that part the nearest to the sapwood. For this reason alone, to say nothing of many other peculiarities that will be enumerated at another time, it becomes a matter of the greatest importance in the selection of timber or lumber for special purposes, requiring great strength and toughness, to have as little sapwood as possible, and as little pitch.

With practical tests already made, this leads to the conclusion that timber or lumber for these special purposes, where the above properties are required, should be cut as near the sapwood as the timber will allow, for it should be remembered that the tree does not cease growing when it comes to maturity. As long as the tree is alive it continues to increase in bulk by the addition of the annual layer, but when maturity is once passed, each succeeding year produces a certain degree of deterioration. This decay appears in various stages, and generally exhibits in the first instance, either a white or a yellowish color at the butt or root end of the stem. If white, the decay is often very slight, and does not appear more than a few feet up at most, but if a yellowish red in color, it is not infrequently of a most serious character. Again, if the affected parts have assumed a decidedly red tinge, the tree is said to be foxy, and scarcely fit for any purpose, as the decay will be found to permeate a greater portion of the entire tree.

A more advanced stage of deterioration is that which may be described as a drying up or wasting away of the wood layers surrounding the pith. This forms a hollow, first at the butt, and then spreads upward, gradually increasing in size as the tree gets older, while this defect may eventually reach into the very branches.

Trees are most valuable as yielding the largest amount of good timber just prior to their reaching maturity, which is indicated by the topmost branches and branchlets becoming stunted and presenting a scraggy appearance. If, therefore, we wish to select a prime, healthy tree for felling, we must select one having an abundance of young shoots, and the topmost branches of which look vigorous, strong, pointed and healthy, this being the most certain evidence that the tree has not exhausted all the vegetable food within reach of its roots; in other words, that the tree has not passed its maturity.

Whenever there is the unmistakable evidences of permanent decay in a tree, the most economical thing to do is to cut it down, convert such parts as will answer the purpose into lumber, and use the balance for such purposes as do not require strength, durability, or staying properties. The size of any tree cannot be taken as a criterion of the tree's maturity by any means, there being unlimited growth if the roots can find food to sustain and extend the formation fabric.—*The Wood-Worker.*

STONE CUT WITH WIRE.

A NEW INVENTION USED IN FRENCH QUARRIES.

A NEW plan of cutting stone by means of wire cord has been adopted in many European quarters, says a writer in *Science.* While retaining sand as the cutting agent, M. Paulin Gay of Marseilles has succeeded in applying it by mechanical means, and as continuously as the sand blast and band saw, with both of which appliances his system—that of the "helicoidal wire cord"—has considerable analogy. An engine puts in motion a continuous wire cord (varying from five to seven thirty-seconds of an inch in diameter, according to the work), composed of three mild steel wires twisted at a certain pitch, that found to give the best results in practice, at a speed of from fifteen to seventeen feet per second, the higher speed being adopted for the smaller diameter.

Elevation of flats. H. T. Bestor, Architect.

POPULAR IGNORANCE ON A COMMON SUBJECT.

SOME twelve or fourteen years ago, one of the editors of this journal was the spectator of a scene on one of the smaller streets, which it was the custom at that time to plank instead of pave.

An excited woman was vigorously berating the contractor for endeavoring to lay some planks in front of her property that were not entirely free from knots. The contractor in vain endeavored to convince her that no fraud was proposed, but the woman insisted on her right to have clear timber.

One of her neighbors, an old country man, after the squabble had subsided, quietly went up to the contractor and privately offered him a small sum to pick out all the planks that showed small knot, and have them laid opposite his sidewalk. Of course the reason was plain:—the knots and the wood surrounding them being much harder would wear a correspondingly longer time, and would not be worn out until the straight grained wood was splintered and destroyed. The result confirmed the old fellow's shrewdness, as the woman had to repair her part of the street long before her more far-sighted neighbor.

DRESSING A STONE.

THE method of dressing a stone has an important bearing upon its durability. As a rule it may be set down that the less jar from heavy pounding the surface is subjected to the better; this for the reason that constant impact of the blows tends to destroy the adhesive or cohesive power of the grains, and thus renders the stone more susceptible to atmospheric influences. It is stated by Mr. Batchen that some of the dolomites used in Chicago, although apparently perfectly sound when quarried, shortly showed a tendency to scale on exposure.

On examination it appears that in dressing these surfaces were both ax and bush—hammered, the implements used weighing from eight to twelve pounds, and capable of striking blows not less than 150 to 200 pounds. The effect of these heavy blows was to "stun" the surfaces for the depth of from one-sixteenth to one-eigth, or even one-fourth of an inch, and on exposure scaling resulted, leaving them ragged and unsightly. Sawn surfaces of the same stone, on the contrary, do not usually show the slightest tendency to scale.

Results such as these are what one is naturally led to expect, but further experiments are necessary before it will answer to speak too positively regarding the merits or demerits of various kinds of finish. With compact crystalline rocks like the granites and diabases it would seem probable that rock-faced work, untouched by chisel or hammer, would prove most durable, since the crystalline facets thus exposed are best fitted to shed moisture and the natural adhesion of the grains has not been disturbed.

With the softer and more absorbent stones on the other hand, the rock surface from its irregularity and roughness is more susceptible to the attacks of moisture and atmospheric acids, and hence would probably be found less durable, although from its roughness at the start any disintegration is less noticeable than on finely-finished work. With such stones a smoothly-sawn or polished surface seems best adapted to our variable climate.—*Stone.*

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

One of our lithographs this month illustrates a ten class school building erected at Eureka, Humboldt county, from the drawings of the architect, Jas. E. Wolfe.

The other double plate shows the elevation of the General Keyes Building on Stockton and O'Farrell streets, in this city. This building, of which a more extended notice appears elsewhere, was designed by architect Chas. Geddes under whose supervision the building was erected.

The plans and elevation of a two-story flat, were designed by H. T. Bestor, architect, and are intended for use on a lot having a frontage of twenty-five feet.

The monument to Paul Baudry in Pere la Chase cemetery, Paris, was designed by architect Ambroise Baudry, his brother, who superintended its erection; the figures were executed by Antonin Mercie, and the bust by Paul Dubois. Paul Baudry stood high in his art. One of the latest and greatest of his works is *la glorification de la loi.*

NOTES & COMMENTS.

Postmaster Bryan has notified the public that he will not collect other than first class matter left at letter boxes.

It is estimated that the Mills Building in New York city, which cost between three and four million dollars, pays him nearly 6 per cent.

Senator Stanford proposes to donate 200 acres of land in the vicinity of the Twin Peaks for use as a public park, provided Market street is extended to reach the locality.

The interior of the St. Ignatius church on Hayes street is to be decorated at an expense of $25,000. Moretti and Trezini are the artists who have the work in charge.

The monument to Marshall, the discoverer of gold in California, was recently unveiled according to programme. The monument was designed and erected by sculptor Marion F. Wells.

D. O. Mills is in the city, and it is rumored thinks of improving his property on the northeast corner of Montgomery and Bush streets, by erecting a nine-story building somewhat similar to Mills Building in New York city.

According to the editor of *Stone* the best pavement for streets upon which there is a heavy traffic, is granite or sandstone; and that for residence streets asphalt is the thing, it being understood that the durability of any good pavement depends on its having a proper foundation.

The Board of Education has selected the Scott street lot for the new Girls' High School, and the Board of Supervisors have approved the selection. Architect T. J. Welsh has been requested to prepare plans for a brick and stone structure containing sixteen class rooms and an assembly room.

The Carpenters' Union held a very successful and enjoyable picnic on May 1st. The boats were crowded with the men and their friends, who enjoyed thoroughly the unusual holiday which broke so pleasantly the monotony of their daily toils. The various games were well contested, and many valuable and useful prizes were distributed to the successful competitors.

A handsome building has been erected near the Trocadero Palace, in Paris, for the reception of a collection of idols and other objects of worship procured and arranged by M. Guimet. Here will be exhibited divinities worshiped by the inhabitants of the pagan and uncivilized countries of the world from the early ages down to the present time. A curious collection they will be, and an interesting study as well.

The Illinois Chapter A. I. A., has assumed the control of the permanent exhibit of building materials. The enterprise was established some five years ago at Chicago, by H. L. Gay, who has conducted it since. The task assumed by the Illinois Chapter is one of no small magnitude, and is a departure from established precedents which may give rise to unfavorable criticism. We wish the enterprise may be as successful as its warmest advocates can expect.

On the 17th of April Judge Hoge gave judgment for the defendants in the case of Calvin Brown, C. E., against the City and County of San Francisco; Mr. Brown desired to collect for services rendered in investigating and reporting on the proposed new tower for the City Hall. The defense was that the services had been requested and rendered on the assumption that Mr. Brown as a public spirited citizen would be pleased to render such services gratuitously. The Judge took that view of the case in spite of Mr. Brown's assertions to the contrary.

PERSONAL.

Architect G. W. Percy is in the East on a trip combining business and pleasure.

Monument to Paul Baudry.

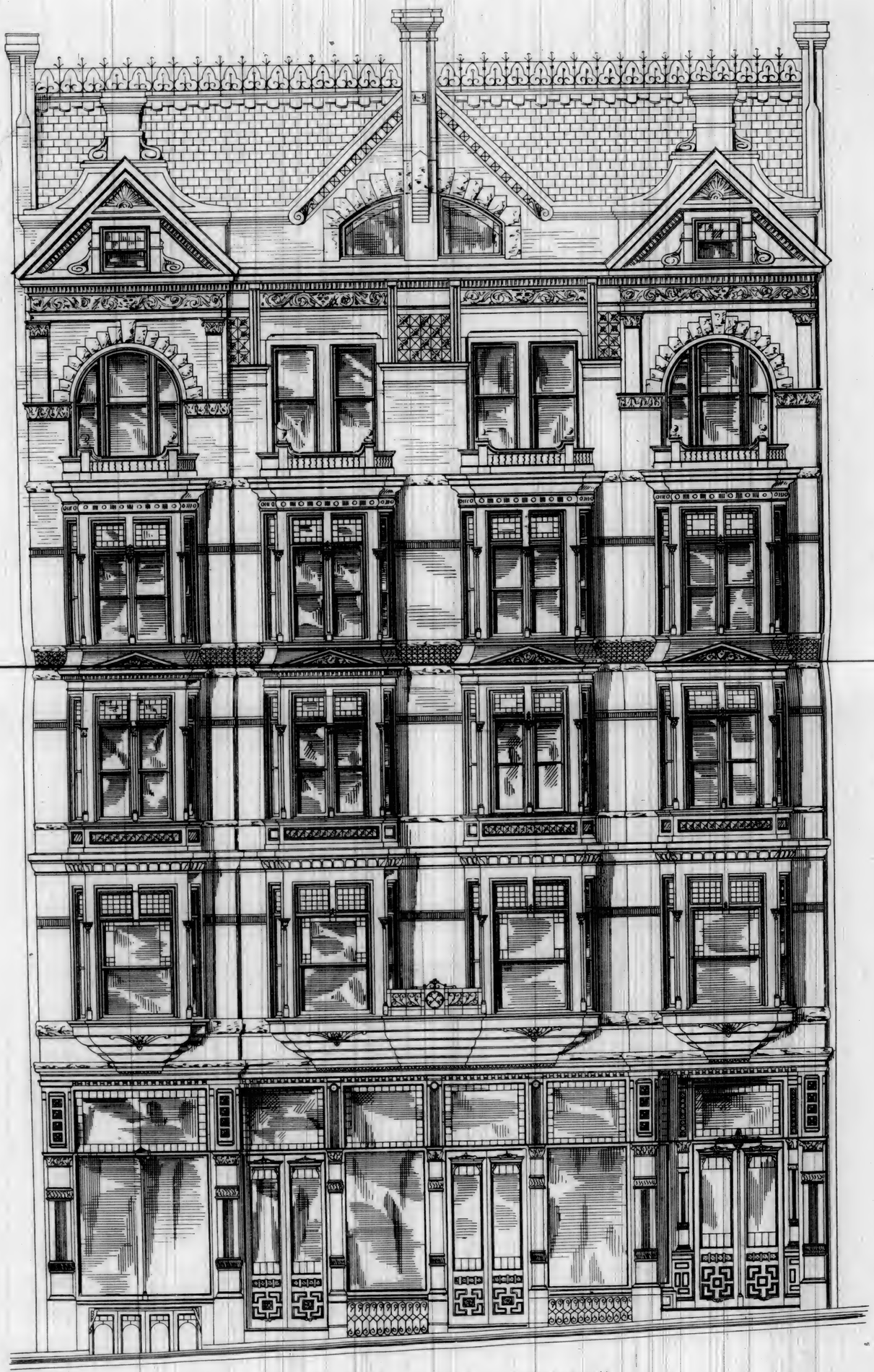
SPONTANEOUS IGNITION.

AN English authority says: "When oxide of iron is placed in contact with wood excluded from the atmosphere, and aided by a slightly increased temperature, the oxide parts with its oxygen and is converted into very finely divided particles of metallic iron having such an affinity for oxygen that, when afterward exposed to the action of the atmosphere from any cause, oxygen is absorbed so rapidly that these particles become red hot, and if in sufficient quantity will produce a temperature far beyond the ignitable part of dry timber. Whenever iron pipes are employed for circulation of any heated medium (whether hot water, hot air or steam), and wherever the pipes are allowed to become rusty, and are also in close contact with wood, it is only necessary to suppose that under these circumstances the finely divided particles of metallic iron become exposed to the action of the atmosphere (and this may occur from the mere expansion or contraction of the pipes) in order to account for many of the fires which periodically take place at the commencement of the winter season."

It is very difficult to get persons to believe that there is any danger arising from the contact of steam pipes with wood, notwithstanding that there have been well-attested cases of fire originating from this cause.

The fire at the Washington residence of Secretary Tracy, was ascribed to the burning off of the felt insulation, allowing the heating pipes to come in contact with the wood work.

The increased use of steam for heating purposes makes a close study of the subject of spontaneous ignition imperative, particularly on the part of furnace builders.—*Building Trade Journal.*



THE GENERAL KEYES BUILDING.

STOCKTON AND O'FARRELL STS.

CHAS GEDDES
ARCHITECT.

JAS. E. WOLFE ARCHITECT.

A TEN CLASS SCHOOL BUILDING, EUREKA, HUMBOLDT CO. CAL.

Residence on Lyon Street, between Clay and Washington.

PISSIS & MOORE, Architects.

THE CITY RESIDENCE.

ITS DESIGN AND CONSTRUCTION.

—BY—

W. B. TUTHILL, A. M. ARCHITECT,

AUTHOR OF "PRACTICAL LESSONS IN ARCHITECTURAL DRAWING," "THE SUBURBAN COTTAGE," AND EDITOR OF *Interiors and Interior Details*.

NEW YORK—Wm. T. Comstock, 23 Warren street.

The above is a new book we have just received; in it the author treats in a clear manner of the arrangement of the Dwelling House, the Tenement House and the Apartment House, and continuing, explains in detail the construction of each building from the foundation to the roof, and gives lucid descriptions of the methods employed by the various mechanics and points out what should be avoided as well as the best methods to employ.

The price is $2.50, sent by mail free of postage to any part of the world.

The Engineering and Building Record presents another of its competitive designs for a pumping station and water tower.

Architecture and Building for April 26, give drawings and descriptions of three kinds of trusses used in the roof of the amphitheater of the Madison Square Garden.

The American Architect and Building News devotes considerable space to articles on religious architecture of antiquity.

The Building Budget continues its translation of *Viollet-le-Duc's* description of mediæval construction, and gives several cuts of modern residences.

The Canadian Architect contains a paper read before the Architectural Sketch Club, by R. W. Gambier, Bonsfield, entitled "Notes on the Connection Between the Different Styles of Gothic."

The Inland Architect for April contains Chapters XIII and XIV of Romanesque Architecture, a paper on Colonial Architecture by C. Bryant Schaefer, Water Color Study as applied to Architecture, and the New Constitution and By-laws of the Illinois Chapter, A. I. A.

The second number of *The Architectural and Building Monthly* contains a variety of plans, elevations and details of residences and other buildings.

The April number of *The Architectural Era* contains, under the head of "Mediæval Architecture," a description of Notre Dame Cathedral.

The *National Builder* for May continues the papers on "Mortars and Cements," by Adolph Cluss, besides giving the usual number of illustrations.

In the April number of the *Sanitary News* is an article by A. Arnold Clark, M. D., explaining how the dread disease, consumption, is spread, and the necessity of disinfecting the sputa of consumptives.

Number 6 of Volume 2 of the *Technology Architectural Review* has been received. It contains an article by Henry Van Brunt on "The Power of Simplicity" that deserves the careful study of thoughtful architects and designers. He concludes as follows:

"Let us never sacrifice a condition of use in order to accommodate a theory of design. Let the work develop under our hands from construction to beauty, as a flower from its roots, never grafting upon it a thought or motif which is not derived from its essential conditions of structure, suggesting by its material, or symbolic of its uses, remembering always that, as a general rule in architectural compositions, severity leads to strength and refinement, and prodigality to weakness and vulgarity. Thus shall we gain for the work of our hands the respect of practical men, and at last rehabiliate architecture as a living art.

A single graduating class from a good school of architecture, if loyal to this principle of "divine simplicity," never losing sight of it in all they may have to do in design, but never permitting it to degenerate into poverty and baldness, would animate our art with the breath of new life and confirm the movement of reform, which is already feeling its way; it would only need genius behind this loyalty to make a revolution. If it were my privilege and high function to be a teacher of architecture, the words I have written, advocating the largest knowledge of historical forms, and wise reserve and self-denial in the use of them, would be the last upon my lips as I sent forth my pupils into the world of action."

THE GENERAL KEYES BUILDING.

One of the handsomest buildings of its kind lately completed in this city, is the General Keyes building, an L-shaped structure having equal frontage on Stockton and O'Farrell streets.

The architect, Chas. Geddes, whose office is at No. 415 Montgomery street, has successfully designed a convenient and well arranged building, with fronts of pressed brick and stone trimmings, and has provided for all the modern conveniences so essential in a building of the kind.

The upper floors are devoted to hotel purposes, and have been leased for ten years to Mr. A. Wilkins, the well-known proprietor of the Cliff House. A portion of the ground floor on Stockton street has been fitted up as a café and billiard hall, with oyster and supper rooms.

It will be of interest to our many readers to know something of the various mechanics whose well directed exertions have resulted in the building shown in our double plate.

CONCRETE WORK.

George Goodman of 307 Montgomery Street contracted for and laid the concrete foundations, the basement floors, the subpavement and back areas aud sidewalks on both streets, as well as the foundations for all the machinery in the building. Mr. Goodman's work is of the highest standard and for that reason he leads all others in his line of business. He uses the Schillinger patent which has been tried and tested; and he has had so much experience in the use of cement that he thoroughly understands its manipulation and can guarantee the best results.

BRICK AND STONE WORK.

All the brick-work and stone-work, including the two fine pressed-brick fronts, with terra cotta and red sandstone trimmings, was executed by John McCarthy, one of the best-known building contractors in the city. His work speaks for itself, and no better evidence of the high esteem in which he is held can be cited than the fact that he is the principal contractor on such large structures as the *Chronicle* building and the new Academy of Sciences building and others.

CARPENTER WORK.

Adam Miller, whose office is at 516 Kearny street, superintended the carpenter work. Mr. Miller is a well-known builder of this city, and has erected many prominent buildings, one of which is the new Wells-Fargo Building. Being a thorough business man as well as a competent mechanic, attentive to his work, and always being careful to fulfill his agreements, he has carried out this contract in such a manner as to reflect credit on himself and the architect.

ARCHITECTURAL IRON WORK.

The firm of O'Connell & Lewis furnished and set all the cast iron work used in the construction of the premises, and did it in their usual workmanlike manner. These gentlemen have been established in business here for many years and are justly proud of the uniformly excellent quality of the work they have turned out, and in no part of a building is it more imperative to have the best of mateaials employed than in those parts of the construction that furnish the strength necessary to carry the weight of the building itself and of its contents. Any flaw or imperfection in a casting is a defect that may lead to serious danger to the future safety of a building, consequently the importance of obtaining only the best class of work can be readily perceived.

ILLUMINATING AND TILING.

P. H. Jackson, 228 and 230 First street, furnished and set the sidewalk lights. Mr. Jackson is the agent for many patents covering important points in reflecting lenses and in the construction of iron work and illuminating grates for all purposes. Mr. Jackson is an expert on all iron construction, having had

many years experience in New York City, where he was actively connected with the department of public works. He is frequently consulted where any doubt exists as to the safest and most economical methods of employing cast and wrought iron, and his opinion always carries the weight to which it is entitled. Mr. Jackson lately served with two prominent architects on a committee appointed by the New City Hall Commissioners to examine and report on the subject of the girders now being designed for use in the New City Hall.

ELEVATORS.

This building is furnished with two Patent Ellithorpe Air Brake, and Air Cushion, passenger elevators.

They are superior to any in use, from the fact that they run smoothly, and noislessly, and the absolute safety obtained by the application of the air brake, which is attached to the cage, and will stop a falling cage within five feet, without jar or damage to either cage or occupants.

Also the air cushion, which is built in the basement sufficiently strong to stand the strain should the cage fall from any floor, in case all other safety appliances fail the air cushion is always there, and never fails.

W. H. Birch & Co., 119 Beale St., the builders of these patents have tested these, and all others, 14 in number, built on this coast, by hoisting the cage to the top floor, disconnecting the ropes and air brake safety, suspending the cage by a Manilla rope and after placing eggs and several glasses of water in the cage (and in some instances human beings) the Manilla rope was cut, and the cage fell with frightful velocity in the air cushion at the bottom of the shaft, in no case was there an egg broken, a drop of water spilled or a person injured in the slightest degree.

MARBLE AND TILE WORK.

The marbelized iron mantels throughout the building were put in by W. W. Montague & Co. of Market street. They are handsome and serviceable, and in the latest designs. All the beautifully tiled vestibules and entrances of the building on both streets were laid by the same firm. They are in graceful patterns of caustics tiles. One of the handsomest pieces of majolica and enameled tile work in the city is the beautiful fountain set up by the firm in the cate.

ORNAMENTAL IRON WORK.

The contract for the ornamental iron work was let to Mr. H. Ralston of 151 and 153 Beale Street. In a building of this kind there is a great deal of wrought iron work such as iron beams, iron railings, strong tie bolts, crestings and wrought finials including the iron sidewalk beams on both frontages as well as numerous bolts, bars and smaller articles of iron all being tested before using. Mr. Ralston employs only first-class workmen and personally superintends all his work; thereby being greatly sought after by builders having large structures to build.

STAIRS.

All the stairs, consisting of two main flights clear from the ground floor to the top story, two series of rear stairs, the basement stairs and a short flight leading from the O'Farrell Street entrance to the cafe down into the billiard hall, were put in by A. I. Sanborn of Mission and Fremont Streets. The treads and stringers are of pine; the newels, rails, and balusters being of oak. The light wells of each story are also finished with oak rails and balusters, and have paneled pine faces.

PLUMBING.

A very important part of the building is the plumbing and ventilation. Shepard Bros. of 526 California street, the oldest plumbing firm in the city, were intrusted with the contract for this work. Amounting to $9,240.

The bath-tubs are Eastern enamel selected especially for this building with combination showers. The latrines and closets are of porcelain, and patent lip with self-closing automatic faucets. Heavy 4-inch iron pipes are run to each floor strong enough to withstand the strain of an engine pumping under the sidewalk with sufficient force to send water through every floor, back and front and to the roof. There is a system of valves for water so that it can be used separately, cut off or as a whole. The washstands are of marble fitted up with Fuller's No 3 filtering faucets. There are 14 gas meters in the building and by means of a distributor can be concentrated as in the system of valves. The Shepard Bros. are well-known as doing nothing but first-class work, thereby giving entire satisfaction to all their patrons.

ARTISTIC GLASS.

Mr. John Mallon, of the Pacific Glass Staining and Embossing Works, did the glass cutting and bending in this building. He is a pioneer in his business, and any work done by him is of first quality. Mr. Mallon has the contract for the Memorial window in the St. Paul's Church at Sacramento for the late Leland Stanford, Jr., which, for beauty of design and finish, equals if not surpasses anything of its kind in the United States. His Cutting Works are at 19 Fremont street, and his Stained Glass Works are at 1213 and 1215 Howard street.

PAINTING.

Mr. Thomas Downing, the pioneer painter, No. 613 Mission street near Second, was selected to the painting and gilding. Nothing improves a building so well as to have it properly painted and the materials used must be of the best to stand wear. Mr. Downing's name is a sufficient guarantee that this contract has been fulfilled carefully as he is known never to slight work that he has anything to do with. Many of the finest buildings in this city attest his skill and artistic ability. Person having any business in his line would do well to call on him before letting out their work elsewhere.

HOSE REELS.

Chapman's Empire hose reels have been liberally supplied, twelve of these important protectors against fire having been located where they will be easy of access and so arranged as to be effectively employed should occasion require. The usefulness and convenience of these hose reels cannot be over estimated, and Wm. Chapman, 18 California street, who, by the way, was formerly Fire Inspector of the Board of Underwriters, is only too pleased to explain the advantages of being able to control an instantaneous supply of water at the moment of its greatest efficiency, that is to say, when a fire has just started and before it has had time to become a resistless conflagration. All that is necessary to do to obtain a supply from one of these reels is to turn the valve and unroll the hose, and a stream of water follows.

CAFE AND BILLIARD HALL.

Mr. A. Wilkins, proprietor of the Cliff House, has leased this fine building for a period of ten years and has succeeded in finding tenants for the two rooming houses and the stores beneath them.

The lower portion of the building on Stockton street, with an entrance also from O'Farrell street, will be used as a cafe, billiard hall, ladies and gentlemen's oyster and supper rooms and a grill room. The entire building is lighted by electricity and is the first building in this city lighted by an electric plant on the premises.

The billiard hall is handsomely fitted up and no expense has been spared to make it the finest one here. An elegant feature of the cafe is a fountain lighted by electricity set round with plants and ferns with prismatic colors thrown on the spraying waters. Mr. Wilkins has been a resident here for twenty-six years and having had so long an experience knows exactly how to meet the wants of his patrons.

PIANO WAREROOMS.

The Hemme & Long Piano Company, an old and well-known established firm of which J. B. Curtis is the Secretary, having been in business here for the last fifteen years, occupy one of the stores on the O'Farrell Street side, the number of which is 107. This company has a large factory at 1643 Polk Street corner of Clay and have a capital stock of $100,000. Their warerooms are at all times supplied with instruments of their own manufacture, which are conceded to be second to none in tone, brilliancy, durability and excellence of finish. They are sold at medium prices on easy installments and warranted for six years. Persons in want of a fine instrument should call at Hemme & Long's.

1020 Oak Street, Oakland, Cal., April 24, 1890.

The letter following speaks for itself:

Mr. Charles Geddes.

Dear Sir:—I de ire to say something to those who have assisted me in the construction of the building on Stockton and O'Farrell streets, of which I am the principal owner.

You, as architect, with the aid of your able draftsman, Mr. B. Wood, are the sole authors of the plan of the building. The lightness and beauty of the exterior every passer can judge. As to the interior, it is acknowledged by the lessee and the occupants to be admirable; the lighting, ventilation, and drainage seem to be perfect. A flue is found wherever one is needed. The pipe shaft, 8 feet square, in the center of the building to receive all down pipes, both of roof, water and plumbing supplies, etc., enclosed in brick walls, running from basement to roof without cover, to give ventilation and access to all pipes at pleasure, is in my mind one of the best features of the building. And last but not least, the cost of the building has not exceeded my estimate. I now cheerfully recommend you to any person who intends to construct a large building.

Yours truly,

E. D. Keyes.

THE architect's work, while the largest importance and most enduring of all artistic efforts, with the exception of a few solitary instances, does not perpetuate his name. As to the design of our City Hall, one of the most artistic buildings of this city, there seems to be some doubt as to who is the architect; at least, authorities differ.

In a few public buildings there is a tablet set up, giving the architect, the engineer, the contractors, and perhaps the committee having it in charge. In a picture the artist writes his name in the corner, and the owner sets a higher value on the work according as the name is one of note. If architecture is, as we believe, the fruit of artistic conceptions, why not allow the artistic architect the privilege of writing his name in some corner tablet? Would not the fact of this record being put on his work make him more earnest in his efforts to make the work in accord with his highest conceptions?—while the name of a reputable architect would be, to a certain extent, a voucher for the character of the building. One of the unsatisfactory features of the present method is in visiting new localities and inquiring as to the architect of attractive buildings; very frequently no one can inform you. The name of the designer is forgotten almost as soon as the plans have left his hands; whereas a modest record on an appropriate tablet would be a credit both to the architect and the building, and would often be convenient in later years in seeking the original designs, should alterations be desired.—*Architecture and Building.*

CITY BUILDING NEWS.

Baker and Jefferson. Two-story frame; owner, W. T. Commary; architect, P. R. Schmidt; contractor, J. A. Kretschmar; cost, $5,624; signed, April 10; filed, April 11; payments, $1,959, framed; $1,050, brown coated; $1,050, hard finished; $1,050, completed; $1,421, 35 days.

Baker and Turk. Cottage; owner, T. Tobin; architect, W. H. Lillie; contractor, M. J. Scott; sureties, J. Young and J. Molhen, $800; cost, $1,655; singed, March 8; filed, March 10; paymen s on first and fifteenth day of each month in sums equal to 75 per cent of value of work done; balance 35 days.

Broadway and Larkin. Two-story building; owner, J. W. Kentzel; architects, Shea & Shea; contractor, P. Griffin; sureties, W. J. Adams and A. D. Moore. $4,100; cost, $4,199; signed, April 12, filed, April 14; payments, $785, framed; $785, brown coated; $786, hard finished; $786, completed; 1948, 35 days.

Bush between Polk and Van Ness. Three-story frame; owner, J. Schweitzer; architect, Kenitzer Kollofrath; contractor, M. J. Gorman; cost, $8,823; time, August 26, '90; signed, April 14; filed, April 15; payments, $1,000, framed; $1,500, enclosed, $1,200, first coat of plastering is on; $1,200, plastered; $1,723, completed; $2,200, 35 days.

Baker and Jackson. Additions; owner, J. Urback; contractor, S. A. Nagel; cost, $2,000; time, 65 days; signed, April 2, filed, April 15; payments, $500, foundations in; $500, brown coated; $500, accepted; $500, 35 days.

Brick and carpenter work. Owner, Dr. C. Kleineberg; architects, Salfield & Kohlberg; contractor, E. C. Worden; sureties, L. T. Lewis and L. B. Doe. $6,467; cost, $8,167; signed, April 7; filed, April 16; payments, $1,000, floored; $1,640, completed; $867, 35 days.

Buchanan and Gilbert. Two story; owner, V. N. Drouet; contractor, A. N. Nelson; cost, $6,720; time, June 30, 1890; signed, April 23 1; filed, April 24th; payments, $6 0, framed; $700, brown mortared; $743, waite coated; $300, completed; $1,000, 35 days.

Baker and Bush. Two-story frame; owner, T. Brady; architect, M. J. Welch; contractor, Ivory Wells and H. S. Joslin; cost, $3,640; signed, April 21st; filed, April 28th; payments, $912.50, framed; $912.50, brown mortared; $912.50, completed; $912.50, 35 days.

Bush Street, 1613. Owner, H. M. Herriman; architect, C. Geddes; contractor, C. E. Dunchee; time, 53 days; filed, April 30, 1890; payments, none specified.

Building on City Hall Avenue. Sidewalk; light work; owner, Mr. Marye; architect, Smith & Freeman; contractors, Bigelow & Little; cost, $1,850; signed, April 10th; filed, May 2nd; payments, 75 per cent. to be paid as work progresses; 25 per cent. 35 days.

Clinton and Brannan. Two-story frame; owner, M. Frederick; architect, P. R. Schmidt; contractor, F. W. Kern; cost, $3,880; signed, April 5th; filed, April 9th; payments, $890, framed; $700, brown coated; $700, hard finished; $700, completed; $990, 35 days.

Clay and Baker. Alterations; owner, Mrs. A. Smith; architect, M. G. Bugbee; contractor, A. Nelson; cost, $2,925; signed, April 23d; filed, April 23d; payments, $731.25, framed; $731.25, brown coated; $731.25, accepted; $731.25, 35 days.

Castro, between 18th and 19th. Frame; owner, A. Hauffe and wife; contractor, J. C. Brown; signed, April 17; filed, April 21; payments, $250, foundations laid; $500, framed; $600, brown coated; $400, completed.

Clay and Broderick. Alterations, etc.; owner, Mrs. R. Levy; architects, A. J. and T. D. Newsom; contractor, W. G. Miller; cost, $2,3 0; signed, April 29; filed, April 2+; payments, $387, brick work done; $387, brown mortared; $388, completed; $388, 35 days.

California and Polk. Three-story building; owner, P. Clement; architect, C. M. Rossetti; contractors, J. E. Kennedy and H. Hodgkins; cost, $7,150; signed, April 3; filed, May 1; payments, $1,000, framed; $1,000, brown coated; $1,290, white coated; $1,860, 35 days.

Douglas and Eighteenth. Two-story frame; owner, J. Woods; architect, J. J. Clark; contractor, M. J. Egan; surety, S. H. Harmon, $3,500; cost, $4,048; time, 90 days; signed, April 23; filed, April 26; payments, $771, framed; $771. brown coated; $771, completed; balance, 35 days.

Dore and Harrison. Carpenter work; owners, F. Nelson and wife; contractors, Mullins Bros. cost, $1,257; time, July 2, '90; signed, April 21; filed, April 22; payments, $300, framed; $300, brown mortared; $357, finished; $300, 35 days.

Decatur street, off Bryant. Alterations; owners, T. Mulhern and wife; contractors, Mullins Bros.; surety, T. Mullins, Sr., $850; cost, $994; signed, April 28; filed, May 2; payments, $150, brick work done; $240, framed; $350, plastered; $254, completed.

Eighth and Minna. Two-story building; owner, C. Ryan; architect, J. J. Clark; contractor, C. N. Smith; sureties, H. Blythe, W. J. Trott and F. Jost. $6,000; cost, $6,700; filed, April 26; payments, $1,256.25, framed; $1,256.25, enclosed; $1,256.25, brown mortared; $1,256.25, inside finish completed; balance, 35 days.

Ellis and Powell. Painting, etc.; owner, C. Mangels; architect, H. Geilfuss; contractor, A. Eick; cost, $2,330; signed, April 9; filed, April 10; payments, first of each month, 75 per cent. of value of work done; balance, 35 days.

Ellis and Powell. Lathing, etc.; owner, C. Mangels; architect, H. Geilfuss; contractor, A. O'Brien; cost, $7,444; signed, April 9; filed, April 10; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Ellis and Powell. Patent light iron doors sills, etc.; owner, R. Llewellyn; architect, H Geilfuss; contractors, P. H. Jackson & Co.; cost, $1,549; signed, April 9; filed, April 10; payments, fifth day of each month, 75 per cent. of value of work done; balance, 35 days.

Eureka and Seventeenth. Two-story; owner, F. Garrissere; contractor, B. Dreyer; cost, $4,700; signed, April 5; filed, April 7; payments, $1,175, framed; $1,175, brown coated; $1,175, white mortared; $1,175, 35 days.

Ellis and Powell. Wrought iron and steel work; owner, R. Llewellyn; architect, H. Geilfuss; contractors, Todt, Bass & Co.; cost, $4,988; signed, April 9, filed, April 18; payments, 75 per cent. of work performed; 25 per cent., 35 days.

Ellis and Powell. Stone work; owners, Riley & Loane; architect, H. Geilfuss; contractors, Mentone, Stone & Co.; cost, $4,750; signed, April 9; filed, April 18; payments, $1,600, basement walls built; $600, third floor joists laid; $650, fourth story floor joists laid; $700, fifth story floor joists laid; $1,200, 35 days.

Ellis & Powell. Plumbing, etc.; owner, C. Mangels; architect, H Geilfuss; contractor, S. Ickelheimer; cost, $10,350; signed, April 9; filed, April 10; payments, first of each month, 75 per cent. of value of work done; balance, 35 days.

Ellis and Powell. Cast and wrought iron; owner, C. Mangels; architect, H. Geilfuss; contractor, Reese Llewellyn; cost, $17,890; signed, April 9; filed, April 10; payments, first of each month, 75 per cent. of value of work done; balance, 35 days

Ellis and Powell. Carpenter Work; owner, C. Mangels; architect, H. Geilfuss; contractor, F. W. Kern; cost, $22,800; signed, April 9; filed, April 10; payments, $5,514, fourth-story floor joists are laid; $5,514, roofed; $5,514, floors laid; $5,514, ready for lathing; $5,514, standing finish on; $5,514, inside finish on; $5,516, completed; $8,200, 35 days.

Ellis and Powell. Six-story brick; owner, C. Mangels; architect, H. Geilfuss; contractors, Riley & Loane; cost, $24,200; signed, April 9; filed, April 10; payments, $2,991, basement walls laid; $2,991, second-story floors laid; $2,991, third story floors laid; $2,991, fourth-story floors laid; $2,991, fifth-story floors laid; $2,990, fire walls topped out; $6,050, 35 days after brick work is laid; $300, 35 days.

Front and Oregon. Carpenter work; owner, Jas. G. Fair; architect, Schultz & Meeker; contractor J. S. McKay; cost, $8,395; signed, April 8; filed, April 12; payments, first of each month, 75 per cent. of value of work done; balance, 35 days.

Folsom and Fourth. Alterations; owner, P. G. Lompo; architect, G. E. Voelkel; contractor, F. Klatt; cost, $9,965; signed, April 21st; filed, April 21st; payments, $1,000; moved back, $1,000; enclosed, $1,200; first coated, $1,200; second coated, $1,250; doors hung, $1,623; accepted, $2,492, 35 days.

First and Harrison Three-story frame; owner, G. W. Ahrens; architect, H. Geilfuss; contractor, F. Klatt; cost, $5,855; signed, April 19; filed, April 23; payment, $875, framed; $875 enclosed; $875, brown mortared; $875, outside finish on; $875, completed; $1,469, 35 days.

Fourteenth and Noe. Two story; owner, Joost & Van Glash; architect, C. R. and J. M. Wilson; contractor, A. McKay; cost, $4,090; signed, April 10; filed, April 12; payments, $600, framed; $600, enclosed; $600, brown coated; $600, white coated; $938, 35 days.

Fourteenth and Howard. Owner, I. Gutte; architect, Kenitzen & Kollofratte; contractors, Schutt & Krecker; surety, T. C. Jensen and T. Hock, $8,000; cost, $10,545; signed, April 15; filed, April 16; payments, $1,200, framed; $1,500, endorsed; $1,200, brown coated; $1,800, plastered; $2,215, completed; $2,630, 35 days.

Florida and Butte. Alterations, etc.; owner, M. Feahy; architect, W. Nichol; contractor, J. F. McLaughlin; cost, $1,800; signed, April 11; filed, April 14; payments, $200, raised; $250, partitions set; $350, brown coated; $200, white coated, $350, finished; $450, 35 days.

Front and Oregon. Art stone work; owner, J. G. Fair; architects, Schultz & Meeker; contractor, George Goodman; cost, $2,146; signed, April 9; filed, April 12, payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Painting; owner, J. G. Fair; architect, Schulze & Meeker; contractor, Fraser & Keefe; cost, $775; signed, April 9; filed, April 12; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Plumbing; owner, J. G. Fair; architect, Schulze & Meeker; contractor, W. S. Snook & Co.; cost, $874; signed, April 9; filed, April 12; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Tinsmith's work; owner, J. G. Fair; architect, Schulze & Meeker; contractor, J. F. Forderer; cost, $498; signed, April 9; filed, April 12; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Elevator; owner, J. G. Fair; architect, Schulze & Meeker; contractor, Cahill and Hall; cost, $1,020; signed, April 4; filed, April 12; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Wrought iron work; owner, J. G. Fair; architect, Schulze & Meeker; contractor, Western Iron Works; cost, 2,100; signed, April 10; filed, April 12; payments, first day of each month, 75 per cent. of value of work done; balance, 35 days.

Front and Oregon. Cast iron; owner, J. G. Fair; architects, Schulze & Meeker; contractor, McCormick; cost, $1,865; signed, April 8; filed, April, 12. payments, first day of each month, 75 per cent. of value of work done; balance 35 days.

Grove and Lott. Three-story frame; owner, J. and L. Hirch; architects, Salfield & Kohlberg; contractor, T. W. Ward; sureties, A. E. and W. Dickens. $6,000; cost, $6,700; signed, March 3; filed, April 8; payments, $1,000, framed; $1,200, brown coated; $1,000 doors hung; $1,825, accepted; $1,675, 35 days.

Grand Ave. and Mission. Two-story; owner, E. Preston; architects, Percy & Hamilton; contractor, G. Bowser; cost, $3,090; time, 75 days; signed, April 7; filed, April 7; payments, $200, basement in; $550, enclosed; $750, brown coated; $750, completed; $750, 35 days.

Gough and Green. Two-story; owner, F. Remshkolb; architects, John & Balczynski; contractor, G. Weismann; cost, $5,187; signed, April 12; filed, April 12; payments, $1,000, framed; $900, enclosed; $987, white coated; $1,000, accepted; $1,300, 35 days.

Guerrero between 17th and 18th. Alterations; owner, E. Knox; architects, Townsend & Wyneken; contractor, G. Houston; cost, $3,638; time, 90 days; signed, April 10; filed, April 11; payments, $900, rustic on; $900, brown coated; $900, white coated; $938, 35 days.

Gough and Hayes. To raise house. Owner, B. Daniels; contractor, P. Gleason; cost, $300; signed, April 22; filed, April 24; payments, 75 per cent as work progresses; 25 per cent when completed.

Gough and Hayes. Grading. Owner, B. Daniels; contractor, Hogan & Burris; cost, $400; signed, April 22; filed, April 24; payments, 75 per cent as work progresses; 25 per cent when completed.

Gough and Hayes. Brick-work; owner, B. Daniels; contractor, J. O. Sullivan; cost, $1,320; signed, April 22; filed, April 24; payments, 75 per cent. as work progresses; 25 per cent. when completed.

Guerrero and Seventeenth. Two-story frame; owner, F. McGee; architect, A. J. Barnett; contractor, Tegeler & Muller; sureties, L. Schloh and W. H. Bowe; $2,500; time, 90 days; signed, April 3; filed, May 1; payments, $1,000, roofed; $1,330, brown mortared; $1,330, completed; $1,225, 35 days.

Greenwich and Baker. Two-story frame; owner, G. F. Nelson; contractor, J. McConaghy; cost, $1,600; signed, April 21; filed, April 30; payments, $400, framed; $400, brown mortared; $400, completed; $400, 35 days.

Howard and Second. Brick and iron; owner, F. C. Janssen; architect, H. Geilfuss; contractors, Brennan & Sladung; cost, $10,898; signed, April 3; filed, April 10; payments, $2,724, granite set; $2,724, second story walls ready for joists; $2,725, brick-work done; $2,725, 35 days.

Howard and Second. Carpenter work; owner, F. C. Janssen; architect, H. Geilfuss; contractor, Paff Bros.; cost, $11,000; signed, April 3; filed, April 10; payments, $1,650; roofed; $1,650; lathed; $1,650, brown mortared; $1,650, white coated; $1,650, completed; $2,750, 35 days.

Hayes, between Buchanan and Webster. Two-story; owner, C. M. Gable; architect, J. E. Kraft; contractor, W. W. Ackerson; sureties, J. Greig and E. P. Blake, $3,000; cost, $6,315; signed, March 29; filed, April 10; payments, $1,885, enclosed; $1,750 brown coated; $1,250, accepted; $1,630, 35 days.

Harrison and Ninth. Owner, J. McElearney; architect, M. J. Welch; contractor, C. A. Lafferty; cost, $10,000; signed, April 12; filed, April 14; payments, $1,875, framed; $1,875, brown coated; $1,875, exterior finish on; $1,875, completed; $2,500, 35 days.

Hayes and Webster. Three-story frame; owner, S. Mier; architect, A. J. Barnett; contractor, Brennan Bros.; sureties, J. J. McKinnon and P. F. Latson, $1,000; cost, $8,400; signed, April 17; filed, April 18; payments, $600, first floor joists on; $1,000, framed; $1,000, brown coated; $1,600, white coated; $2,100, completed; $2,100, 35 days.

Hayes and Broderick. Three-story frame; owner, J. L. Franklin; architect, M. J. Welch; contractors, O. Brault and J. Miron; cost, $7,340; signed, April 17; filed, April 19; payments, $1,376.25, framed; $1,376.25, brown mortared; $1,376.25, exterior finish up; $1,376.25, completed; $1,835, 35 days.

Howard and 23rd. Three-story frame; owner, Mrs. M. Engel; architect, H. Geilfuss; contractor, T. L. Hansen; cost, $5,800; signed, April 23; filed, April 22; payments, $795, framed; $795, enclosed; $795, brown coated; $795, white coated; $795, complete l; $1,325, 35 days.

Henry and Sanchez. Two frame buildings; owner, W. Brown; contractor, W. W. Redmall; sureties, D. Dodge and J. Springer & Co.; $6,850; cost, $6,850; time, 65 days; signed, April 26; filed, April 28; payments, $1,500, roofed; $1,500, brown coated; $2,000, completed; $1,850, 35 days.

Hardie Place and Kearney. Plumbing; owner, C. Schroth; architect, J. Marquis; contractors, Fritz and Kean; cost, $2,200; signed, April 21; filed, April 23; payments, $800, pipes laid; $850, accepted; $550, 35 days.

Hartford, between 19th and 20th. Frame; owner, L. Lander; contractor, W. P. Clark; cost, $2,100; signed, April 25; filed, April 30th; payments, $700, framed; $700, brown coated; $700, 35 days.

Hollis, between O'Farrell and Ellis. Alterations; owner, P. Beanston; architects, Townsend & Wyneken; contractors, M. H. and M. Berry; sureties, P. Gilloughly and B. Hobart; cost, $2,000; time, 90 days; signed, April 7; filed, April 30; payments, $400, frame is up; $313, first coat of mortar in on; $400, first coat of paint on; 400, completed; $387, 35 days.

Howard and Fifth. Three-story frame; owner, B. F. Butler; architects, J. J. and T. D. Newsom; contractors, C. Plainer and R. R. Thornton; cost, $21,450; time, 100 days; signed, April 29; filed, April 30; payments, $2,146, brick-work done; $2,146, ready for first coat of plaster; $2,146, plastered; $2,149, completed; $1,840, 35 days.

Haight and Devisadero. Two-story frame; owner, C. L. Moxley; architect, A. J. Barnett; contractor, T. Morris; sureties, R. Llewellyn and L. T. Lewis, $3,500; cost, $6,972; time, 90 days; signed, April 29; filed, May 2; payments, $1,232, framed; $1,232, brown coated; $1,232, white coated; $1,232, completed; $1,644, 35 days.

Henry and Sanchez. Alterations; owner, D. Davalle; architect, C. M. Rousseau; contractor, E. Pmasso; cost, $1,050; signed, April 26; filed, May 5; payments, $300, brick; $250, brown coated; $250, finished; $250, 35 days.

Jersey and Noe. Frame; owner, J. W. Lunny; contractor, B. Duffy; cost, $1,200; signed, April 17; filed, April 22; payments, $300, framed, $300, brown coated; $300, completed; $300, 35 days.

Lott and Fulton. Two-story frame; owner, G. H. Fredrich; architect, W. H. Armitage; contractor, D. Chaisholm; sureties, Humboldt Lumber & Mill Co., and C. S. Holmes, $3,000; cost, $3,500; signed, April 23; filed, May 3; payments, $900, framed; $900, brown coated; $900, completed; $900, 35 days.

Larkin between Sacramento and California. Two-story frame; owner, F. Grasshoff; architects, Kenitzer & Kollofrath; contractors, W. Plums; surety, F. Joost and D. Woerner, $2,000; cost, $2,470; signed, April 21; filed April 24; payment, $400, framed; $400, enclosed; $500, plastered; $555, accepted; $615, 35 days.

Laguna and Post. Residence; owner, P. Stern; architects, Salfield & Kohlberg; contractor, H. Rohling; surety, B. Joost and H. L. Mill Co., $6,000; cost, $6,300; signed, April 7; filed, April 11; payments, $1,000 framed; $1,000, brown coated; $1,000, doors hung; $1,790, accepted; $1,600, 35 days.

Layfayette and Natoma. Carpenter and brick work; owner, Wm. Halhan; architect, M. J. Welch; contractor, A. Bischer; cost, $6,200; signed, April 10; filed, April 12; payments, $1,162, framed; $1,162, brown coated; $1,162 exterior finish up; $1,162, completed; $1,550, 35 days.

Mission and Eighth. Alterations; owner, J. Bock; architect, A. J. Barnett; contractor, T. Sullivan; surety, F. Joost, $1,500; cost, $3,780; time, 57 days; signed, April 22; filed, April 23; payments, $500, ready for first floor joists; $835, lathed; $700, plastered; $800, completed; $915, 35 days.

McAllister and Broderick. Owner, E. Armes; architect, J. J. Clark; contractor, P. Maloney; surety, S. Cartwright, $2,000; cost, $2,725; signed, April 14; filed, April 19; payments, $500, framed; $500, enclosed; $500, inside finish on; $943, completed; $682, 35 days.

Mission Street, 1119 and 1119½. Three-story frame; owner, Mrs. M. Porter; architect, Kenitzer & Kollofrath; contractor, W. Plums; surety, F. Joost and D. Woerner, $4,000; cost, $6,720; time, August 15, 1890; signed, April 29; filed, April 24; payments, $1,800, framed; $1,600 brown coated; $1,660, completed; $1,720, 35 days.

McAllister and Jones. Steel beams; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, Calvin Cutting & Son; cost, $1,800; signed, March 26; filed, April 12; payments, $1,400, entire completion of contract; $490, 35 days.

McAllister and Jones. The steel floor beams, etc., for first floor; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractors, Calvin Cutting & Son; cost, $1,840; signed, March 26; filed, April 12; payments, $3,680, completed; $1,210 35 days.

McAllister and Jones. Cast iron columns for first-story; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, R. Llewellyn; cost, $600; signed, March 26; filed, April 12; payments, when work is completed.

North Broadway. Three-story frame; owners, Mrs. M. Gumasso and Mr. & Mrs. Devote; architect, C. M. Rousseau; contractors, J. Salanave & Co.; sureties, Harris & Jones and H. B. Jones, $4,100; signed, April 14; filed, April 16; payments, $615, brick work done; $615, roofed; $615, brown coated; $615, finishing coat on; $615, accepted; $1,025, 35 days.

North Haight, owner, Mrs. C. Shaw; architect, J. M. Curtis; contractor, J. Geary; sureties, W. J. Adams and C. S. Holmes, $5,000; cost, $6,275; time, three months; signed, April 12; filed, April 17; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

N. E. cor. Battery and Commercial. Alterations; owner, H. F. Woods; architect, S. Hatfield; contractor, W. J. Thomson; cost, $1,101.50; signed, April 26; filed, April 30; payments, 75 per cent as work progresses; 25 per cent., completed.

N. E. cor. Battery and Commercial. Alterations; owner, H. F. Woods; architect, S. Hatfield; contractor, J. Smith; cost, $612; signed, April 26; filed, April 30; payments, 75 per cent. as work progresses; 25 per cent., completed.

N. E. cor. Battery and Commercial. Fitting up saloon and bar; owner, Capt. W. A. Belts, contractor, W. J. Thomson; cost, $2,178; signed, April 17; filed, April 30; payments, 75 per cent. as work progresses; 25 per cent., completed,

N. E. cor. Twenty-third and Fair Oak. Two-story frame; owner, J. Cronoque; architects, Shea & Shea; contractor, R. Sumott; sureties, W. J. Adams and C. S. Holmes; cost, $7,326; signed, April 28; filed, April 30; payments, $1,168, framed; $1,101, brown coated; $1,1-4, hard finished; $1,104, inside grained; $1,104, completed; $1,840, 35 days.

Nineteenth and Shotwell. Two-story building; owner, S. Booth; contractor, A. S. Cook; cost, $9,850; signed, April 30; filed, May 2; payments, $1,375, framed; $1,375, brown coated; $1,375, accepted; $1,425, 35 days.

O'Farrell and Gough. Frame; owner, A. Galland; architect, J. Maguire; contractor, C. Condy; cost, $6,200; signed, April 16; filed, April 18; payments, $800, roofed; $1,000, ready for lath; $1,150, brown coated; $1,650, accepted; $1,600, 35 days.

O'Farrell and Gough. Owner, A. Gallana; architect, J. Marquis; contractor, Chas. Coady; filed, April 18.

Oak and Shrader. Two-story frame; owner, E. Keil; architect, A. C. Lutgens; contractor, J. F. O'Brien; surety, W. Dickins and P. Gillngley, $6,500; cost, $8,300; signed, April 17; filed, April 19; payments, $1,000, framed; $1,000, floored; $1,200, first coated; $1,500, second coated; $1,562.50, completed; $2,087.50, 35 days.

Oak bet. Broderick and Baker. Two-story frame; owner, C. Sancken; architect, W. O. Banks; contractors, Droge & Minister; surety, J. Hassagen and W. A. Meeker; cost, $2,218; time, 90 days; signed, April 16; filed, April 21; payments, $800, framed; $800, brown coated; $618, accepted; $600, 35 days.

Pacific Avenue and Broderick. Owner, N. Luning; architect, C. Day; contractor, H. Lukes; surety, R. Higgins and C. Davis, $3,357; cost, $10,100; signed, April 10; filed, April 11; payments, none specified.

Pennsylvania bet. Mariposa and Solana. Frame; owner, J. B. Headstorm; contractor, R. O. Davis; surety, Kelley, Hardy & Co., $2,000; cost, $2,750; filed, April 28; payments, $687.50, framed; $687.50, brown mortared; $687.50, accepted; $687.50, 35 days.

Pacific bet. Devisadero and Broderick. Two-story house; owner, Mrs. M. McEvoy; architect, J. J. Clark; contractor, J. G. Adams; surety, H. S. Harmon, $9,000; cost, $9,183; signed, April 19; filed, April 12; payments, $2,600, framed; $2,600; brown coated; $1,683, inside finish on; $2,300, 35 days.

Post and Stockton. Carpenter work, etc.; owner, L. and M. Sachs; architect, P. R. Schmidt; contractor, R. M. Cann; cost, $5,860; signed, April 22; filed, April 25; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Pacific Avenue and Laguna. Plumbing; owner, D. F. Walker; architects, Smith & Freeman; contractors, Duffy Bros.; cost, $1,150; filled, April 11; payments, $550, rough work is tested; $300, completed; $300, 35 days.

Pacific Avenue and Laguna. Carpenter work; owner, D. F. Walker; architects, Smith & Freeman; contractor, F. W. Kern; cost, $7,830; signed, April 8; filed, April 8th; payments, $1,468, framed; $1,468, enclosed; $1,468, plastered; $1,468, finished up; $1,985, 35 days.

Santa Clara and Mississippi. Alterations; owner, C. O'Neil; architect, A. J. Barnett, contractor, K. Thaler; surety, E. Duggan, $300; cost $300; time, 15 days; signed, April 4; filed, April 8; payments, $300, completed; $135, 35 days.

Seventeenth and Sanchez. Two-story building; owner, J. O'Connor; architect, A. J. Barnett; contractors, Crawford & Meade; surety, J. W. Wesson, $1,000; cost, $1,925; time, 60 days; signed, April 5; filed, April 7; payments, $400, framed; $.00, brown coated; $340, completed; $485, 35 days.

Second Ave. and Clement. Two-story frame; owner, M. H. Landers; contractor, A. Jackson; cost, $1,788; signed, April 28; filed, April 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

S. E. corner of Twentieth and Howard. Carpenter and brick work; owner, A. Waldenmeier; architects, Salfield & Kohlberg; contractors, Fuchs & Bucher; sureties, H. Neiman and P. Herrick, $12,500; cost, $12,520; signed, April 8; filed, April 11; payments, $1,800, first floor joists on; $2,000, framed; $2,000, brown coated; $1,800, ready for painting; $1,770, finished; $3,150, 35 days.

South Algina. Walls, roofing and flooring; owner, N. F. Patterson; contractor, Henry Jacks; sureties, W. W. Watson and H. Kerman, $2 0; cost, $1,943; signed, April 17; filed, April 18. payments, $485.75, framed; $485.75, plastered, $971.50, 35 days.

Sutter and Broderick. Two-story frame; owner, H. F. Gasque; architects, John and Balczynski; contractor, S. Wray; cost, $5,169; signed, April 19; filed, April 21; payments, $1,000, framed; $1,000, enclosed; $900, rough mortared; $969, ready for painting; $1,300 35 days

Sutter between Devisadero and Broderick. Frame; owner, B Diggins; contractor, J. A. Shepherd; cost, $4,775; time, 35 days; signed, April 21; filed, April 22; payments, $1,140, enclosed; $1,140, brown mortared; $1,140, completed; $1,155, 35 days.

Tenth and Folsom. Owner, T. Bryan; architect, A. Drucker; contractor, F. Roetiger; surety, J. W. Wesson, $1,500; cost, $1,930; signed, April 4; filed, April 9; payments, $500, enclosed; $500, brown coated; $500, completed; $430, 35 days.

Twentieth and Howard. Painting; owner, A. Waldenmerer; architects, Salfield & Kohlberg; contractor, J. C. Lohmeyer; cost, $785; signed April 12; filed, April 15; payments, $400, ready for graining; $385, accepted.

Twentieth and Howard. Plumbing and etc.; owner, A. Waldenmerer; architects, Salfield & Kohlberg; contractor, H. Williams; cost, $1,110; signed; April 8; filed, April 16; payments, $500, rough work in; $310, accepted; $300, 35 days.

Treat Ave. and Twenty-fifth. One-story frame; owner, J. Gallagher; architect, M. J. Welch, contractor, H. Rohling; cost, $1,700; signed, April 21; filed, April 26; payments, $425, framed; $425, brown coated; $425, completed; 425, 35 days.

Twenty-third, between Valencia and Guerrero. One-story frame; owner, J. McCarthy; contractor, G. J. Doering; cost, $1,600; filed, April 19; payments, $425, enclosed; $425, brown mortared; $525, white coated; $325, 35 days.

Treat Ave. and Twenty-first St. Two-story frame; owner, M. Gille; architect, H. Geilfuss; contractor, F. L. Hansen; cost, $4,090; signed, April 21; filed, April 22; payments, $615, framed; $615, enclosed; $615, brown coated; $615, white coated; $615, completed; $1,015, 35 days.

Twenty-second and Dolores. Two-story frame; owner, E. Patton; architect, M. J. Welch; contractor, J. O. Connell; cost, $4,042; signed, April 21; filed, April 30; payments, $1,010.60, framed; $1,010.60, brown mortared; $1,010.70, completed; $1,010.60, 35 days.

Union and Buchanan. Frame; owner, R. Malone; architect, M. G. Bugbee; contractors, Wilson & Johnson; cost, $2,988; signed, April 21; filed, April 22; payments, $746.25, framed; $746.25, brown coated; $746.25, accepted; $746.25, 35 days.

Union and Dupont. Three-story frame; owner, G. Ferres; architects, Townsend & Wyenken; contractor, K. C. Gardner; cost, $8,3-0; signed, April 29; filed, April 30; payments, $700, framed; $900, brown mortared; $910, white coated; $840, 35 days.

Union and Mason. Three-story frame; owner, A. Decourtieux; contractor, H. Lehouse; cost, $5,850; time, 4 months; signed, May 1; filed, May 2; payments, $1,500, roofed; $600, brown coated; $500, white coated, $1,460.50, completed; $1,487.50, 35 days.

Van Ness Ave. and Myrtle Ave. Painting, etc.; owner, L. A. Levy; architect, P. R. Schmidt; contractor, W. Armstrong; cost, $3,277; signed, April 19; filed, May 2; payments, 75 per cent of the value of the work done; balance, 35 days.

Valencia and 24th. Plastering; owner, J. Taubman; architect, J. C. Newsom; contractor, J. F. Morgan; cost, $1,77-; signed April 14; filed, April 15; payments, 75 per cent of work done; balance 35 days.

Van Ness Ave. and Pine. Three-story brick and frame dwelling; owner, A. S. Baldwin; architect, J. C. Newsom; contractor, R. M. Murray; cost, $18,887; signed, April 11; filed, April 25; payments, 75 per cent as work progresses; 25 per cent, 35 days after completion; mantels are specified, $50 each set; art glass; $3 per foot; centers, 75 cents each.

Van Ness Ave., 1909. Porch; owner, J. T. Haviland; architects, J. J. and T. D. Newsom; contractor, Regan & Oxford; cost, $ 175; time, 75 days; signed, April 3; filed, April 25; payments, 75 per cent as work progresses; 25 per cent 35 days.

Van Ness Ave and Fell. Alterations; owner, G. Bovo; architect, Wm. Mooser; contractor, J. R. Whalen; sureties, O. H. Greenwald and A. Heilbourner; cost, $8,780; time, 90 days; signed, April 25; filed, May 1; payments 75 per cent of value of work done; balance, 35 days.

Vallejo and Mason. Two tenement houses. Owner, A. F. O'Connell; architect, B. J. Clinch; contractor T. R. Bassett; sureties, M. J. Wrin and F. D. Bassett, $6,000; cost, $6,000; signed, April 25; filed, May 1; payments $1,500, enclosed; $1,500, plastered; $1,500 completed; $1,500, 35 days.

Washington between Leavenworth and Hyde. Additions; owner, J. F. Clunie, architect, W. O. Banks; contractors, Douglass and Velps; sureties, H. Magority and E. Fatigan, et al; cost, $1,525; time, 70 days; signed, April 8; filed, April 10; payments, $400, joists laid; $350, rough coated; $375, completed; $400, 35 days.

Wayland and San Bruno Ave. Six room dwelling house; owner, Thos. King; contractor, W. J. B. Warner; cost, $1,425; time, 70 days; signed, April 4; filed, April 7; payments, ¼ framed; ¼ brown coated; ¼ outside finish on; ¼ 35 days.

Webster between Geary and O'Farrell. Plumbing; owner, H. B. Hunt; architect, W. H. Armitage; contractor, J. Doherty; cost, $1,450; signed, April 10; filed April 19; payments, $750, rough work in; $437.50, finished; $562.50, 35 days.

Webster between Geary and O'Farrell. Three-story frame; owner, H. B. Hunt; architect, W. H. Armitage; contractor, D. Perry; sureties, A. Washburn and H. Robinson, $5,000; cost, $12,665; time, August 10; signed, April 10; filed, April 19; payments, $3,000, framed; $2,500, brown coated; $1,500, white coated; $2,465, accepted; $8,200, 35 days.

Alameda.

Central Avenue and Paru. Alterations; owner, Mrs. A. J. Nahl; contractor, C. H. Foster; surety, J. Pierce and J. C. Jamisson, $1,000; cost, $2,700; time, 90 days; signed, April 24th; filed, April 24th; payments, $600, floored; $700, ready for lathing; $400, brown mortared; $425, one coat of paint on; $675, completed.

Clinton between Willow and Walnut. One-story frame; owner, R. W. Graff; architect, I. A. Boynton; contractor, Lord & Boynton; cost, $1,250; time, June 20, 1890; signed, April 18th; filed, April 24th; payments, $300, framed; $300, brown coated; $325, finished; $325, 35 days.

Lafayette Street and Encinal Avenue. Owner, C. A. Wright; contractor, A. W. Pattiani & Co.; cost, $2,550; signed, April 24; filed, April 4th; payments, $800, chimney built; $600, brown mortared; $500, completed; $650, 35 days.

S. E. cor. of Union and Encinal Avenue. Dwelling; owner, M. Hely; contractor, A. W. Pattiani; cost, $2,882; time, July 4, 1890; signed, April 5th; filed, April 9th; payments, $900 chimney built; $700, brown mortared; $560, completed; $722, 35 days.

Lafayette and Encinal Avenue. Two-story frame; owner, E. G. Schonwasser contractor, A. W. Pattiani; cost, $2,857; signed, April 7th; filed, April 9th; payments $840, chimney built; $700, brown mortared; $600, completed; $717, 35 days.

Benton Street and Central Avenue. Two story; owner, H. Mohns; contractor, A. W. Pattiani; cost, $2,500; signed, April 8th; filed, April 9th; payments, $800, chimney built; $600, brown mortared; $475, completed; $625, 35 days.

Lot 8, Block 22; owner, B. C. Bates; contractor, T. I. Pyne; cost, $5,250; time, August 20, 1890; signed, April 12th; filed, April 15th; payments, $500, framed; $1,250, first coat of plaster on; $762.50, plastered; $1,425, completed; $1,312.50, 35 days.

Schiller and Santa Clara Avenue. Two-story frame; owner, Mrs. C. C. Young; architect, A. Steinbilt; contractor, R. Gillis; cost, $3,000; time, 90 days; signed, April 2nd; filed, April 17th; payments, $750, framed; $750, ready for lathing; $750, hard finished; $750, 35 days.

Sherman and Kings Ave. Owner, Mrs. M. M. Soule, architect, Geo. A. Bordwell; contractor, J. J. Boyle; cost, $2,405; time, July 23, '90; signed, April 23; filed, April 29; payments, $601, framed; $601, ready for plastering; $601, completed; $602, 35 days.

Chestnut and Pacific Ave. One-story frame; owner, L. A. Groom; contractor, R. Gillis; cost, $1,383; time, 90 days; signed, April 14; filed, April 28; payments, $345, framed; $346, brown coated; $346, completed; $346, 35 days.

San Pablo and Bon Ten Aves. Two-story frame; owner, F. R. Neidt; contractors, F. M. Crame and G. Hoguet; cost, $2,400; signed, April 19; filed, April 25; payments, $800, enclosed; $800, completed; $800, 35 days.

Tenth Ave. and Twentieth street. Owner, J. R. Davis; contractor, G. W. Flick; cost, $3 500; time, August 1, '90; signed, April 19; filed, May 1; payments, $875, framed; $8.5, first coat of mortar on; $875, completed; $875, 35 days.

Sixth Ave. and Ninth street. Owner, A. S. Maxwell; architect, A. W. Smith; contractor, Wm. McDonald; cost, $2,470; time, July 4, '90; signed, May 2; filed, May 2; payments, ¼, roof on; ¼, white coated; ¾, completed; ¼, 36 days.

Owner, Mrs. M. Ball; architect, J. S. White; contractor, N. Ball; cost, $1,600; time, July 15, '90; signed, May 2; filed, May 2, payments, $400, framed; $400, ready for plastering; $400, outside finished; $400, completed.

Owner, B. Jacobs. Architect, F. M. Cramer; contractor, H. N. Richardson; sureties, H. N. Richardson and R. B. Chisholm, $2,000; cost, $5,096; time, August 1, '90; signed, April 24; filed, May 24; payments, $1,096, framed; $1,000, ready for plastering; $1,000, plastered; $2,000, completed.

Berkeley.

College Ave. and Dwight Way. Owner, O. J. Bettis; architect, G. A. Embury; contractor, Higgins, Davison & Co.; cost, $2,100; time, July 7th, 1890; signed, April 22; filed, April 23; payments, $525, framed; $525, rough coated; $525, completed; balance; 35 days.

City of Niles.

Frame. Owner, E. S. Denison; contractor, L. R. Olive; surety, B. C. Gadsby and H. Foster, $1,000; cost, $1,500; time, July 15, 1890; signed, April 7; filed, April 19; payments, $450, lumber and mill work on site; $250, chimneys built; $250, brown mortared; $175, completed; $375, 35 days.

Oakland.

Elm and Telegraph Aves. Two-story frame; owner, M. M. Dunn; architect, Chas. Mau; contractor, Higgins, Davison & Co; cost, $3,500; signed, April 26; filed, April 26; payments, $875, ¼ completed; $875, ¾ completed; $875, completed; balance, 35 days.

N. E. cor. West and 35th streets. Two-story frame; owner, P. A. Garvin; architect, Chas. Mau; contractor, Cameron and McDonald; cost, $3,370; signed, April 25; filed, April 28; payments, $842.50, ¼ material furnished and ¼ of work completed; $842.50, ¾ material furnished and ¾ of work completed; $842.50 when work is completed; balance 35 days.

Peralta street. One-story frame; owner, F. Lewis; contractor, R. Gillis; cost, $1,295; time, 90 days; signed April 29; filed, April 29; payments, $350, framed; $350, brown coated; $350, completed; $245, 35 days.

Additions, etc. Owner, The West Oakland Home; architect, Wm. Kirk; contractor, Herbst & McCleod; cost, $2,130; signed, April 19; filed, April 19; payments, $2,032, framed; $2,032, first coat of plaster on; $2,033, completed; $2,033, 35 days.

Eighteenth and Myrtle streets. Owner, A. R. Knoll; architect, E. S. Fisher; contractor, Rueh & Pierce; cost, $4,000; time, 90 days; signed, April 14; filed, April 15; payments, $2,000, brown mortar on; $200, finished.

Adeline street. Two-story frame; owner, C. Wiedersheim; contractor, Herbert Kendall & Co.; cost, $2,425; time, 75 days; signed, April 14; filed, April 14; payments, $500, foundation laid; $500, shingled; $500, brown mortared; $500, putty coat on; ——— completed.

S. W. corner Thirteenth and Alice Sts. Owner, G. Miller; architect, S. Newsom; contractor, W. T Veitch; cost, $7,600; signed, March 22; filed, April 12; payments on the first and fifteenth day of each month, at the rate of 75 per cent. of value of work done; balance, 25 per cent., 35 days.

Madison and Seventh Sts. Cottage; owner, F. E. Brangs; architects, Townsend & Wyneken; contractor, W. Matthews; cost, $1,530; signed, March 26; filed, April 10; payments, $500, roof on; $530, completed; $500, 35 days.

Poplar and Fourteenth Sts. Two-story frame; owner, Geo. Smith; architect, Chas. Mau; contractor, J. H. Fones; cost, $1,622; signed, April 9; filed, April 10; payments, $1,173, one-third work done; $1,173, two-thirds work done; $1,173, completed; $1,173, 35 days.

Klinkler and San Pablo Ave. Owner, E. F. Murphy; contractor, A. W. Pattiani; cost, $2,554; signed, April 8; filed, April 9; payments, 750, chimneys built; $650, brown mortar on; $514, completed; $640, 35 days.

Isabella St. One-story cottage; owner, S. Palinbaum; contractor, A. J. McKee; cost, $2,561; signed, April 8; filed, April 9; payments, $80, roof on; $800, brown mortared; $961, completed.

Twenty-eighth and West Sts. Addition of six rooms to Durant School; owner, City of Oakland; architect, W. J. Matthews; contractors, C. L. Crisman and H. T. Brown; cost, $12,174; signed, April 8th; filed, April 9; payments, $2,282.62, one-fourth of work completed; $2,282.62, one-half of work completed; $2,282.62, three-fourths of work completed; $3,043.50, 35 days.

Two-story frame; owner, Mrs. H. B. Abbott; contractor, J. H. Fones; cost, $1,045; time, 30 days; signed, March 29, filed, April 8; payments, $261.25, framed; $261.25, brown mortared, $261.25, completed; $261.25, 35 days.

Lot 8, Block E. Cottage; owner, J. Ryder; contractor, W. A. Powell; cost, $1,390; time, June 15, 1890; signed, March 31; filed, March 31; payments, $325, framed; $325, roofed; $325, plastered; $325, 35 days.

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— SEND FOR CATALOGUE —

EXAMPLE OF A

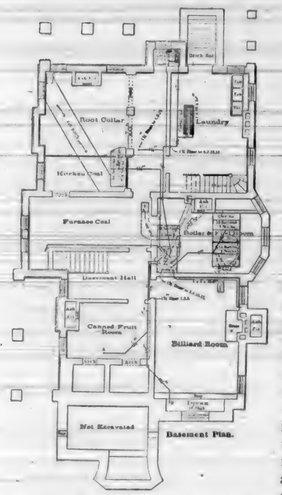
HOT WATER HEATING JOB

—DONE IN THE RESIDENCE OF—

JEREMIAH DWYER, Esq., President of the Michigan Stove Co., Jefferson Avenue, Detroit, by the

DETROIT HEATING AND LIGHTING CO., DETROIT, MICH.

(From the *American Artisan*, Nov. 9, 1889.)

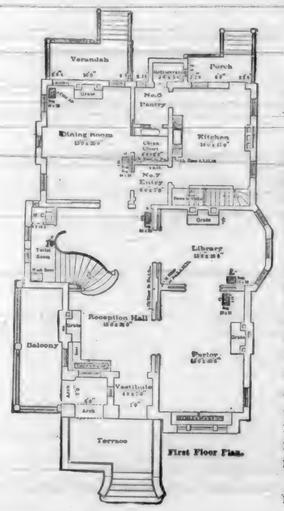


Basement Plan.

In a recent issue of the *American Artisan*—that of October 26—we gave an extended account of the hot water method of heating, advocated by our friends of the Detroit Heating and Lighting Company, together with a minute description of the admirable Bolton Heater, whereby they carry it into effect.

We desire to let our readers judge of systems and inventions by ascertainable facts, and so, to give them a fair chance on the heating system under notice, and this from the features of a demonstrated success, we now furnish an account—with explicit plans—of its application in the private residence of a gentleman who may be named as one of the largest stove manufacturers in the world, and therefore a most competent judge in the selection of appliances of this very kind. We allude to Jeremiah Dwyer, the well known President of the Michigan Stove Company, of Detroit, whose house, which is located on Jefferson Avenue, is a handsome brick structure with elaborately carved red sandstone trimmings, the general effect being very rich and pleasing. It is one of the most striking of the many new and costly residences on this fine street, and one of the most elaborately and tastefully furnished houses in the Northwest.

Mr. Dwyer, as a stove man "from way back," looked with suspicion on the new-fangled device for warming houses, but after a great deal of consideration and, as he says, in a recent letter, "after much consultation with his associates," he decided to put in hot water, and we may say he is most enthusiastic over the result of this experiment.



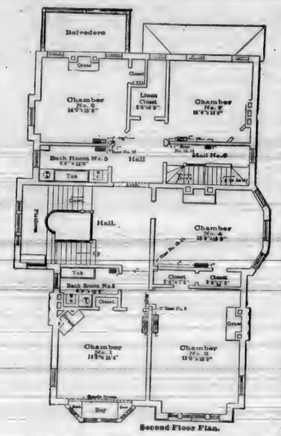
First Floor Plan.

The heater used is a No. 7, two-fire-pot Bolton, located in the "boiler room" in the basement, as shown on plans.

In the basement the only rooms heated are the billiard room, in which there is a coil on the wall; and the laundry and a closet, heated by coils suspended from the ceiling.

The cold-room in the basement receives air from out of doors, which is passed over the indirect radiators and warmed on its way to the registers in the first floor. The air-supply can be regulated according to the weather outside, but always affords an ample supply of fresh, pure air to the rooms above.

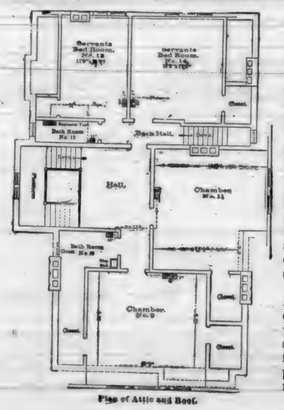
On the first floor the radiation is almost entirely indirect, the warmed air being admitted through electro-bronze registers of Moorish design. The direct radiation on this floor consists of two coils placed under the window seats of the reception hall and parlor. That in the parlor, on account of the lowness of the window seat, had to be sunk several inches below the level of the floor. Both coils are concealed by antique brass screens.



The second and third floors are heated by direct radiation. In the bath-room on the third floor is the expansion tank, which is always open to the atmosphere, so that there is never any pressure upon the pipes, except the weight of the water which they contain, and therefore no possibility of explosion.

The plans show the location of all registers and radiators, as well as of the pipes leading to them. The risers are marked with their diameters, and with numbers indicating the radiators which they supply. Lines of exposed pipe are shown by solid lines leading from the heater, and dotted lines show where concealed supply pipes are run under the floor. Only the flow pipes are given, as the return pipes are run, in every case, parallel and close to the flow pipes. The whole constitutes the perfection of a first-class heating apparatus, highly effective and economical in its operation, and is an interesting example of the methods of modern hot water engineers.

The apparatus for this work is, as above stated, the well-known Bolton Heater, which has such an excellent record for long and creditable service in the climates of Winnipeg and Montreal. In this country it is manufactured by the Detroit Heating and Lighting Company, and has rapidly attained a wonderful popularity. As a further indication of the extent of the Company's operations, it may be stated that among their many contracts they are now putting one of their heaters into the Washington residence of Senator McMillan; one in the remodeled residence of ex-Mayor Wm. G. Thompson, of Detroit, where a $50,000 fire was recently caused by a defective heating apparatus; one in the Whitney National Bank at New Orleans; one in the residence of Mr. Jarvis Richards, President of the First National Bank at Chadron, Neb.; and one in the residence of W. W. Spalding, of Duluth, Minn. This also shows the wonderful adaptability of this system of heating to all ranges of climates, from the blizzard region of the Northwest down to the shelterless Western plains and the stormy Southern gulf.



OFFICE OF
THE MICHIGAN STOVE CO.

DETROIT, Apr. 22, '89.

Detroit Heating & Lighting Co.

DEAR SIRS—Replying to your favor of recent date, asking my opinion in regard to your Bolton Patent Hot Water Heater, which you put in my new house last fall, would say that it was only after considerable thought by my associates and self on the subject of heating and ventilation that we concluded that hot water was the best artificial heat, if the system of circulation and workmanship was properly done.

Your Heater, I consider A1, and your system of circulation and workmanship is well done, and every way satisfactory to myself and family, and I take great pleasure in making this statement. Yours respectfully,

JEREMIAH DWYER.

The California Architect and Building News.

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½ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.

JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular monthly meeting of the Technical Society of the Pacific Coast was held Friday evening, June 6th. A paper on logarithms was read and illustrated by Prof. R. Stringer of the University of Berkeley.

C. D. Harvey of this city exhibited samples of a new style of coupling for water and steam pipes. These couplings are made with shoulders on the inside to form a smooth flush surface on the inside of the pipe to prevent eddies in the flow of water or steam through the pipes.

At the next meeting the electrical storage company will exhibit the working of their apparatus.

P. J. Flynn, C. E., will read a paper on open drainage.

The society is now in a very satisfactory condition, and is constantly initiating members from all over the Coast.

THE regular monthly meeting of the San Francisco Chapter A. I. A., was held Friday evening June 13th. President Babson in the chair.

Architect Frank Shea was unanimously elected a fellow member.

An application was received from Herbert G. Lowry to become a student member, referred to a committee consisting of Cuthbertson, Sanders and Everett.

The committee appointed at a former meeting to procure papers to be read and subjects to be discussed by the Chapter reported that a syllabus had been prepared, and that the subject of the paper for the July meeting will be *The Scroll, the Star and the City*, by W. J. Cuthbertson. Other papers will be announced in the order in which they will be presented, and notice given in these columns previous to the meetings.

The committee appointed to decide on the merits of the drawings in the competitions of the A. I. A. Sketch Club reported first mention to S. C. Benson, second to H. J. Van Vlack, third to J. W. Rowell. Report accepted and committee discharged. A new committee consisting of Bugbee and Bestor was appointed to adjudge the mentions in this July competition on the subject of a wrought iron gate.

Mr. Sanders read the following paper elaborating an idea advanced by him at a previous meeting, looking to the erection of a commodious building for the accomodation of artistic and professional kindred societies.

MR. PRESIDENT AND GENTLEMEN: The subject of a "Home for the Professional Artisans," if such a term is admissible has, for many years past, in one form or another engaged the professional mind. If I err not the Grand Opera House was at one time intended as such a home.

Preceding that I remember early in the 70's, some scheme looking in the same direction, and only a few years since Col. Mitchell of the Ichi Ban interested the late Charles Crocker in a scheme which was brought to within an ace of realization, looking to a home for the Art Society as well as musicians, painters, architects and other allied professionals. This scheme included a small but very carefully arranged Opera House in the programme, and it was perhaps well that it was not finally consummated, as under the circumstances the whole enterprise would have been very likely to come to grief.

But aside from all previous schemes the object of the present paper is briefly to examine a few of the reasons for supposing that were a scheme of the sort realized under favorable conditions it might possibly be a success.

In the first place—beginning with our own profession—among the seventy or more architects, styled and self-styled, as well as recognized by the profession generally as entitled to that honorable designation, may we not reckon on at least one-third of them as properly embraced in the latter category and who could be regarded as *reliable* for proposed tenants? Then among the artists similarly classified, may not a similar proportion be found even if the members may not be represented as more than half as large. Then there are the engineers, a body of men second to none in respectability and solidity; then there are the engravers, photographers and others less intimately allied with the artistic professions and not forgetting the vigorous cult of sculptors and the ubiquitous and versatile decorators, carvers, professional house furnishers, etc., far too numerous to mention specificially. In view of all these different classes as constituency, is it not just within the possibility of fact that there may be in the neighborhood of one hundred good and true men in the professions allied to the arts of design, who could be reckoned on as a permanent corps of tenants for a building devoted to, and constituting a home for the Muses.

In connection with such a home, constituting an essential part of it should be an auditorium of moderate capacity so designed as to be appropriate, not only for lectures and public exhibitions, but as well capable of being used as a concert room though this should be regarded rather as a subordinate than as a primal qualification; and merely for the purpose of making the room remunerative when unused for other and more specially artistic purposes of a graphic character. One of these would be the holding of art exhibitions and for art auctions and sales, photographic exhibition and for the School of Design, for which also properly arranged class rooms, art rooms, life school and gallery would constitute a prime feature. Then the series of *artist's studios*, should be so arranged as to form *a suite* connected with one another at pleasure as well as with the art rooms of the school. The architect's ateliers should form another series similarly connected with a small gallery which could be devoted to the exhibition of competition drawings—or with the gallery of the hall itself and so on throughout the building, all being arranged with special regard to the needs of each class of tenants so as to render it as it were a sort of "*sine que non*" an absolute necessity for one who wished in any way to be in the *Swim*.

Then occupying the street levels should be arranged stores especially adapted to the exhibition and sale of artistic goods. Such stores as those of Shreves', Nathans', Colonel Andrews' Diamond Palace and others of like nature. Vickerys' Etchings, Rare books, and art stores proper, of which Morris & Kennedy's remains, I believe, now the sole representative, of those in which an art gallery is combined with the store proper.

Such a building could easily be made to occupy a corner 50 vara, and if furnished with wide entrances, elevators and all modern appliances and carried at say from five to eight stories in height could hardly fail, it would seem, to prove successful. Such a project brought in a practical way to the notice of some capitalist of ample means should readily meet with his approval and support.

After transacting the routine business the meeting adjourned.

A. I. A. SKETCH CLUB.

THE A. I. A. Sketch Club which was formally organized May 13, 1890 with twelve members on the roll, held their regular monthly meeting on Thursday evening June 12th, in the rooms of the San Francisco Chapter A. I. A.

Three applications were received for membership.

The June competition on the subject of a *Wrought Iron Gate* was closed and the snbject chosen for the July competition was *A Hall Clock*.

The officers of the Club are R. H. Wetmore, Jr., President; S. C. Benson, Vice-President and H. J. Van Vlack, Secretary and Treasurer.

All communications are to be addressed to the Secretary, room 94, Flood Building.

RULES AND REGULATIONS
OF THE
A. I. A. SKETCH CLUB,
OF
SAN FRANCISCO, CAL.

ARTICLE I.

NAME AND OBJECTS.

1. The name of this organization shall be the A. I. A. Sketch Club, of San Francisco, California.

2. The object of this Club is to promote the professional knowledge of its members, and to facilitate their intercourse and good fellowship.

ARTICLE II.

OFFICERS.

1. The officers of the Club shall consist of three members of the Club, elected at the annual meeting, namely: President, Vice-President, and Secretary and Treasurer.

ARTICLE III.

MEMBERSHIP AND BALLOTING.

1. The membership to consist of students only, employed in the offices of members of the San Francisco Chapter of the American Institute of Architects.

2. Persons desirous of becoming members may be proposed in writing by one member of the Club in good standing, and if no objection is made, referred to the Investigating Committee appointed by the President, and if favorably reported on by said committee, may then be ballotted for at next regular meeting.

Two black balls will reject such membership; application can not be renewed for a period of three months.

ARTICLE IV.

RECEIPTS AND DISBURSEMENTS.

1. The initiation fee to be $1.00 and the monthly dues $.25 payable in advance to the Treasurer of the Club.

Members delinquent in dues at the time of the annual meeting will be dropped from the roll.

2. Expenses to be paid by vote of the Club.

ARTICLE V.

MEETINGS.

1. Regular monthly meeting to be held the Thursday preceding the second Friday in each month, for the transaction of all business and for lectures, etc., which may be arranged for said meetings.

2. The annual meeting to be held on the Wednesday preceding the second Friday in December.

3. The exhibition to be held one week following.

4. Special meetings called by President attested by Secretary.

ARTICLE VI.

COMMITTEES.

1. Auditing and Investigating Committees to consist of two members each appointed by the President.

They shall report in writing on such business that they perform, at the regular meeting following their appointment.

2. The President may appoint committees from time to time as may be found necessary.

ARTICLE VII.

AMENDMENTS.

These rules may be amended by a two-thirds vote of the members voting at a regular meeting, such amendment having been proposed in writing, at a previous regular meeting.

ARTICLE VIII.

QUORUM.

1. A quorum in the Club to consist of one-third of the members on the roll in good standing.

2. Any member who absents himself from all the class and business meetings of any month without notification to the Secretary shall be dropped from the roll.

ARTICLE IX.

COMPETITIONS.

1. To be held monthly upon such subjects as shall be decided by the Club, monthly.

All drawings to be delivered flat and in non de plume to the Secretary on or before the evening of the regular monthly meeting.

ARTICLE X.

Any Parliamentary question which may arise, not covered by these rules, will be decided in accordance with Roberts' Rules of Order.

ARTICLE XI.

1. Every member of this Club shall sign a manuscript copy of these rules and regulations.

AMENDMENT TO THE FIRE ORDERS.

A subscriber asks for information concerning the recently enacted orders relating to fire escapes and metallic stand pipe. Following is the full text of the new order and the date of its passage:

ORDER NO. 2203.

Amendatory of Section 18, Order 1917, to define the fire limits of the city and county of San Francisco, and making regulations concerning the erection and use of buildings in said city and county.

The people of the city and county of San Francisco do ordain as follows:

Section 18 of Order 1917 is hereby amended to read as follows:

[FIRE ESCAPES, STAND PIPES, IRON DOORS AND SHUTTERS.]

SECTION 18. Every building occupied above the second floor from the level of the street by two or more families, and every building occupied as a tenement, boarding or lodging house, or for a factory, mill or manufactory, or for offices or workshop, in which persons are employed above the second floor, and every school building more than two stories in height, shall be provided with suitable facilities for escape in case of fire, to be kept in good repair at all times and free from all obstructions, and sufficient for the safe egress, in case of fire, of all the persons usually employed in or frequenting the building.

Every building hereafter erected of four or more stories in height in the city and county of San Francisco shall be provided with one or more metallic ladders or fire escapes, with balconies and railings to extend in front of and to communicate with one window in each story, extending from the first story to upper stories of such buildings, to four feet above the roof.

They shall be of such location and numbers and of such material and construction as the Board of Fire Wardens of the city and county of San Francisco may determine. After such determination shall have been made, as aforesaid, any member of the said Board of Fire Wardens may, at any time, by a notice in writing served on the owner, agent or lessee, of any such building, by leaving with such owner, agent or lessee, or at his, or her, or their residence, or place of business, a copy of such notice, to cause such metallic ladder or fire escape to be placed upon such building, within thirty days of serving such notice.

Provided, however, that all buildings more than two stories in height used for manufacturing purposes shall have one metallic ladder or fire escape for every twenty-five persons or less employed above the second floor. In case such owner, agent, lessee, or either of them, so served with the notice aforesaid shall not, within thirty days after the service of such notice upon him or them, place or cause to be placed such metallic ladder or fire escape upon such building as required by this section and the terms of such notice, he shall be subject to a fine of not less than twenty-five dollars or more than five hundred dollars. And to a further fine of fifty dollars for each week of such neglect to comply with such notice after the expiration of the said thirty days.

Every building of four stories or more in height situated in the city and county of San Francisco shall have a four-inch metallic stand pipe outside the front wall, extending from four feet above the line of the sidewalk to four feet above the roof, and at each story there shall be proper branches with gate valves, and there shall be a siamese inlet four feet above the line of sidewalk, and a siamese outlet at the end of pipe over the roof, with gate valves attached, all to be made of proper dimensions to connect with the hose used by the Fire Department. All valves to open and close as the Chief of the Fire Department may determine.

All owners, occupants or the person or persons having control of any building on which iron shutters are placed shall leave all such iron shutters above the first story opened, and fitted so as the firemen can readily close them when needed to protect the building from fire. All iron doors and shutters to openings on the first story of any building shall be hung on hinges, and the locks shall be so arranged as to admit of easy destruction by the Fire Department or Fire Patrol; provided, that all iron doors or shutters shall be securely fastened in the wall or be hung to an iron frame. This shall apply to all iron doors or shutters in the front, on the sides or in the rear of a building, and in no case shall all the iron doors and shutters of a building be fastened from the inside, but at least one of such doors in the front, on the side and in the rear shall be fastened with a lock as above described.

No gratings or bars of iron, wood, brass or other material shall be either temporarily or permanently placed, fixed, built or maintained in the walls or framework of any brick, stone or wooden building in this city and county, in the basement, or in any story or portion of any story of any building, or in the openings made for affording access or exit to or from any building, or in any space or opening for affording light or air, or in any opening made in any building for doors, windows or other purpose, without permission of the Board of Supervisors.

In Board of Supervisors, San Francisco, April 7, 1890.

After having been published five successive days, according to law, taken up and passed by the following vote:

Ayes—Supervisors Bingham, Wright, Boyd, Pescia, Bush, Ellert, Wheelan, Pilster, Kingwell.

Absent—Supervisors Becker, Barry, Noble.

JNO. A. RUSSELL, Clerk.

Approved, San Francisco, April 16, 1890.

E. B. POND,
Mayor and ex-officio President Board of Supervisors.

WE would call the attention of our readers to the vast field covered by advertisers in this journal. Any person desiring to know about the newest and latest improvements and inventions relating to building and construction and the materials and process employed, and where to go to procure the best goods of standard makers, has only turn to the index of our advertisers and read the matter therein contained to find information that no end of personal correspondence would be required to collect.

The majority of architects consign a circular to the waste basket as soon as received, often without troubling themselves to remove the contents from its envelope. We know from long experience that when they desire information on any particular subject, they turn to their trade journal, and in its well arranged columns find the particular circular they want, properly indexed and accessible at a moment's notice, which is a great convenience and saving of valuable time, as a busy architect cannot well spare the time to hunt through piles of circulars in search of a certain one, which perhaps has not been kept after all.

The moral of this is to advertise where it will do the most good and receive the most attention, and we will say that space in our columns is becoming more and more sought after by shrewd business men, who are not slow to recognize the truth of this proposition when placed before them.

The fact that our advertising columns are becoming more and more crowded with interesting matter and will soon have to again be increased in number, is one that should be considered by every firm or individual who has articles to introduce to public attention and who wishes to do so in the most direct and economical manner.

THE San Francisco Art Association desires to call the attention of the public in general, and of all those desirous of obtaining an art education, to the opportunity afforded by the California School of Design.

This Association has rooms at 430 Pine Street, that are large and perfectly adapted for the purposes they serve. There are three sessions yearly, each term three months in length, beginning on the first Mondays in January, May and September of each year.

There is at present a new arrangement in force designed for the benefit of teachers in the public schools, who may attend the Saturday class throughout the year.

TESTS OF BUILDING STONES.

IN THE course of an exhaustive paper on this subject, Mr. Maddell describes in their proper order the various tests to which building stones are usually subjected:

1. The soda test.—In order to obtain satisfactory results from this test, at least eighteen cubes of each kind of stone to be tested would be required. They should be either 2-inch or 2½-inch cubes—probably the former would be better—as the 3-inch cubes are rather bulky. Six cubes should be thoroughly dried, then broken in a testing machine so as to obtain an average resistance to crushing. If the stone be of uniform quality, these six specimens would give a fair average, provided that the manner of manipulation in the machine were uniform, as it should invariably be; but if the quality vary decidedly in the different specimens, the number of the latter, both treated and untreated, should be increased.

The remaining twelve or more specimens of each kind of stone, after being distinctly marked, should be boiled twice a day for an hour at a time in a concentrated solution of sulphate of soda for fifteen days, at the end of which time the specimens should be tested, the boiling process being continued on the remaining process fifteen days longer. Before crushing, each treated specimen should be thoroughly dried.

To dry the stone, first keep them in a warm place for two days, then just before testing, place them in an open air bath for two hours, so as to drive off any moisture that may have been absorbed. Of course, if the specimens can be kept in a warm place until ready to put in a testing machine, the use of the air bath can be dispensed with. The main object should be to have all the specimens tested exactly alike.

There should be not less than three different kinds of stone represented in this test in order to obtain comparative results; and the more that is known concerning the qualities of the reference stones, in respect to their action when in actual use, the better.

One might suppose at first thought that the greater porosity of the stone, the greater the effect of the crystalization, but such is not the case; for if the pores were large and constituted a large portion of the mass, there might be room for the crystals to form without displacing any particle of the stone. The writer is led to conclude that such may be the case by the fact that the sulphate of soda manipulation appeared to have no deteriorating effect on Warrensburg sandstone, which is very porous in comparison with limestone.

2nd. The freezing test.—Judging by the experiences obtained in making this series of tests, the conclusion has been reached that the employment of a freezing mixture is practically useless for various reasons. First, if special arrangements be not made to prevent radiation, it will be found impracticable to obtain the lowest possible temperature that can be produced from the mixture, and even if it could be reached, it could not be retained for more than a few minutes at a time. Again, a long continued alternation of freezing and thawing is necessary to produce any appreciable effect; and as the process is both tedious and expensive it would be better to employ a simpler and more effective one.

The method of conducting the test referred to would be as follows:

At least eighteen 2-inch cubes of each kind of stone to be tested would be prepared, one-third of the number being broken after a thorough drying in order to determine the crushing resistance of the untreated stones. Two or more flat wooden boxes with covers, divided into cubic compartments to contain the specimens would be prepared, provision being made to draw off all the water that might otherwise collect in the boxes. Each specimen before being placed in its compartment, would be accurately measured and weighed, after being thoroughly dried.

The boxes, when filled, would be covered and locked; then about the beginning of cold weather would be sent to a reliable person in some cold climate for manipulation. This would consist in first soaking the stones in water, then alternately freezing and thawing them daily throughout the entire winter, one box being drained before freezing, and the other being frozen in a pan of water. At the end of the winter the boxes of specimens would be returned, then each stone, after thorough drying, would be weighed and crushed, thus determining the loss of both strength and weight due to the treatment.

3rd. Absorption test.—This, although a very useful and satisfactory test, should not be considered a conclusive one in respect to the suitability of a stone for building purposes; for it is possible that a stone which absorbs but little water may deteriorate more quickly than another stone that absorbs considerably more water.

4th. Fire test.—This is a good test, but as in the last case, is not conclusive; for a stone that will stand it is very probably good for building purposes, while one that fails under it may or may not be unfit for the same. It is possible that if a more moderate heat were to be employed than that used in making the tests just described, the results would be more distinctive and satisfactory. It would be well to the effect of repeated heating and sudden coolings, the temperature employed being constant, continuing the tests until all the specimens be rendered worthless, and noting how each specimen bears the treatment.

5th. Abrasion test.—No more impartial or convincing test than this could be devised, for the specimens of various kinds of stone are all treated at the same time and are subjected to exactly the same conditions. The results show indubitably the order in which the various stones resist abrasion combined with impact, such as that to which bridges and piers are subjected by floating ice and trees. It is barely possible, though, that after a number of years in actual use in bridges and piers, the stones, when subjected to this test, would indicate a different order of resistance.

For abrasion pure and simple without impact, a grindstone test would be conclusive. In this each specimen should be held by a constant pressure for a certain time, against a grindstone run at a uniform velocity by machinery. Then, if the specimens be of exactly the same dimensions, the percentages of weight lost by the grinding will indicate the order of resistance.

6th. Crushing test.—This, the most common of all tests, for stone, cannot always be relied upon to give even comparative results, unless all the tests considered, were made in precisely the same manner. The time element is the most important factor, because a specimen when tested rapidly, may indicate a greater strength than it would if tested slowly. Then again, it is a matter of judgment as to the exact period of the test, when the specimen may be said to fail the kind of crushion employed (or substance interposed between the specimen and the machine) will materially affect the result. Lead, which was commonly employed a short time ago, has fallen into disuse. Its effect appears to be a splitting of the stone, caused by flowing of metal into the irregularities of the compressed surfaces, tbus indicating a lower resistance than would otherwise be developed. A thin layer of plaster of paris gives the best and most uniform results; nevertheless the water used in mixing it acts as a disturbing element by soaking into the stone when squeezed out of the plaster by the pressure. Pieces of blotting paper placed between the stone and the plaster of paris reduce the effect of this disturbing element.

As a rule it requires more tests than are ordinarily made upon any one kind of stone, to determine its average resistance to crushing, as even the most homogeneous appearing stones vary materially in strength when subjected to this test. Again, the dryness of a specimen will effect its crushing strength. Each kind of stone should be tested when both are thoroughly dry, and when saturated, and enough specimens should be broken in each case to determine a reliable average.

A knowledge of pressure a stone will bear when thoroughly soaked in water, is very desirable for an engineer, when dealing with masonry below water line.

7th. Specific gravity test.—The making of this test is a comparatively simple matter, especially as no extreme accuracy is required. It will suffice to measure carefully all the dimensions of a number of cubes, and to weigh the latter without drying them; the weight per cubic foot will be found to vary from one to three pounds on each side of the average, the amount of variation depending upon the homogeneity of the stone, a small variation being a good characteristic, in that it indicates uniformity of composition.

8th. Microscopic test.—This test, which, as applied to building stone is quite new, is said by good authority to be the best of all tests for stone. It requires to be made by one who is a specialist in both lithology and microscopy.—*Stone.*

THE sensation of the past few days in building circles, is the discovery that portions of the walks and piers of the McAllister Street wing of the New City Hall have been stuffed with rubbish, instead of being the solid, massive masonry they appear to be, and were supposed to be by the public and the City Hall Commissioners. The newspapers have made much of the affair, and given the impression that the contractors would have benefitted largely by the frauds, had they not been discovered.

The contractors claim that the inferior work was done by a single vicious mechanic, who attempted to blackmail them, and being unsuccessful, vented his spite by informing the authorities of the poor work done.

The expert appointed to examine the whole work, reports that by taking down and rebuilding certain piers and arches the injured portions can be put in proper condition to safely carry the weights they were designed to support.

It would appear to a casual observer, that a deliberate attempt at a fraud of this nature would be unsuccessful from the fact that so many men must of necessity be aware of the doings, as to render it impossible to keep the matter secret. Such does not appear to be the case, however, as others besides the mechanics employed on the job claim to have been aware of the state of things, but did not concern themselves sufficiently to take the trouble to inform the proper officials, and it remained for a discharged mason to bring the affair to light.

WHERE is now every probability that Market Street will be extended in a straight line to the Pacific Ocean.

It will be a most important improvement, and by giving access to a large tract of land at present quite inaccessible, cannot help but be of great benefit to the property in the locality it opens up.

MODELS of the four competitive designs for the City Hall statuary to beerected by the Lick Trustees, have been submitted. This is the second attempt at securing a competitive design worthy of execution; the first resulted in a fiasco, as is usually the case when a building committee, public officials, or private individuals attempt to secure *something* for *nothing*.

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Through the kindness of architect T. J. Welsh, we are enabled to give the plan and elevations of the New Supreme Court building, which is now being erected on the northwest corner of McAllister and Larkin streets. J. P. Hale is the owner.

The building fronts 120 feet on Larkin and 137 ft. 6 in. on McAllister street and is five stories in height besides the attic story. The fifth story and the attic will be used by the Supreme Court. The other stories will be utilized for office purposes, and the first floor for stores.

The materials employed are concrete, brick, and iron; the fronts are of pressed and stock brick, granite, San José sandstone and terra cotta. The building will have all modern improvements, and will cost about two hundred and fifty thousand dollars.

The perspective drawing of St. John's Church is from the designs of the architect E. A. Coxhead, The church will be erected near Valencia and Fifteenth streets in this City.

DRAWINGS FOR REPRODUCTION.

Architecture and Building for May 31, gives some excellent advice to draughtsmen and designers, on the requirements of drawings designed for reproduction, which we reproduce below:—

The art of drawing for reproduction like every kindred art has been steadily advancing. We have been repeatedly asked to indicate the principles upon which such work is done. Most of the drawings which are reproduced in our plates are very much larger in the original than in the reproduction, this fact necessitates a study of the effect of reduction upon the reproduced design.

Some draughtsman imagine that the larger the drawing and the blacker it is the better will be the reproduction, but the results are sometimes sadly disappointing. When a drawing is on a large scale, the light lines are reduced in width to such an extent as to appear to be mere scratches on the paper. If a drawing be on paper larger than 21in.x32in. all the lines should be course or heavy, widely spaced, for a fine line would simply be reduced out of sight, or lines too near together would be blurred into a confused mass of inkness. Some of our finest draughtsmen endeavor, to get in an effect of perspective distance by means of lines of uneven intensity, beginning with great firmness and depth of black and fading or vanishing into a thin gray line. This method may be well enough for a design in a pictorial sense, but if it is to be reproduced the thin gray line becomes a series of straggling dots, and as a consequence, have no visible expression. There are, of course, exceptions to this general statement. Some of our readers who have had the pleasure of seeing the original pen-and-ink sketches of Mr. E. A. Abby or Mr. J. C. Stevens, will recognize the distinction we have in mind. These men have had many imitators, but few have been successful. An analysis of their work will show that no matter how finely drawn their lines may be they are firmly drawn, with a touch that is as bold or vigorous as it is delicate, and that their meaning has been thought out before being drawn, and because the delicate, beautiful pen work tells its story so well is only another proof that in art nothing is impossible. This method, however, is so exceedingly difficult, it is a method that is naturally so innate in the man's sense of touch that we feel it is a touch which cannot be acquired, and we cannot urge its cultivation for reproductive purposes. No matter how artistically shaded and cleverly rendered a drawing may be, if there is any trickiness in the apparent effect of the original, the camera catches the deception and exposes it in the reproduction. Cross-hatching in an architectural perspective becomes under reproduction a mere succession of blots run together, and give an effect of slovenliness.

Photo engraving and photo lithography are coldly mechanical processes, and permit of fine effects only by a studied gradation in width of line. As to the printing, every full, clear line printed has the same intensity, if apparently the intensity varies it is because the line has been weakly drawn. If contrast of light and dark are wanted in a reproduction the effect can be obtained only by a nicely calculated spacing and thickening of the line on the original; it cannot be produced by a variation in the intensity of color, of say two or more lines of equal thickness. In such an event the reproduction appears spotty or thin. If bright lights are wanted they can be obtained only by leaving the paper perfectly bare of lines at the points that the brightness is wanted. In our issue of May 10, a cottage at Baychester illustrates how very clearly and how strongly a drawing may be rendered to bring out an effect of vivacity and vigor. It will be no-

ticed that some of the lines on the roof appear to be weak and faint. This may be due to an oily surface on the paper at that point, causing it to refuse the ink, or it may have been due to too light a touch or lack of firmness in drawing the lines. On the roof of the porch the same defect is observable, but outside of that the drawing is clearly and firmly rendered, and tells its story in the best manner possible. One of the great difficulties to be overcome in drawing for publication is to obtain good ink and good paper. If the ink be too thin and flowing, it leaves a weak line on the paper that in its turn is weakened by reproduction. If the paper is bibulous it absorbs a portion of the ink into its pores, spreads it out and blurs the line. The ink should not be thick, otherwise it will be impossible to obtain a fine line. The best paper in the world to draw a perspective on is a hard surfaced bristol board: next to that is a hard finished bond paper. Tracing cloth will not take ink well on either glazed or dull side, and should not be used for perspectives that are to be reproduced. Lately we have seen a very fine French parchment, which has been imported by some of our Western architects, that takes the ink in an exquisite manner, and which is capable of receiving a hard rubbing without the destruction of its texture. The principal features to secure are: first, clearness of line at every point; second, brightness of effect by judicious disposition of the shades and shadows; third, a clear understanding of the effect desired, accompanied by a firm and bold rendering; and fourth, avoid delicacy of treatment, as it is apt to degenerate into a weak, unpictorial drawing.—*Architecture and Building.*

We give elsewhere the rules and regulations of the A. I. A. Sketch Club, organized under the auspices of the San Francisco Chapter A. I. A. The subject of their first competition was the decoration of a frieze and the three designs adjudged to be the best are given in the order of their mention, on our first page of lithographs. We regret that the second design could not be well reproduced as drawn, as it exhibited very careful draftsmanship and was shaded to perfection, but was not suited for reproduction by photo lithography, aud so we were compelled to render it in line, which does not do justice to the work on the original. (In another column we give a description of some of the requirements of drawings designed for reproduction taken from *Architecture and Building*, and would call the attention of all draftsmen to the article, who have work of this description, as containing many valuable hints.

(This journal is not responsible for the opinions of its correspondents.)

THE LELAND STANFORD JR. UNIVERSITY VIEWED IN AN ARTISTIC AND UTILITARIAN LIGHT.

To Editor California Architect:

Sir:—The Leland Stanford Jr. University has progressed sufficiently now for us to judge somewhat of its appearance and fitness for its purposes.

The first thing that strikes one as one approaches is the effect of its being in a basin—being a low one-story building adds to the low effect—however, being a quadrangular building it would be no doubt awkward to build it on the slope of the hill at its back, although the first impression is considerably marred by its depression. Getting nearer the effect is better, especially when one gets into the quadrangle where the arcaded cloisters cannot but be effective in any case. The detail of the caps of the columns, however, is very poor, no life or vigor exhibited in the carving. The plan is excellent and the one-story arrangement as a college ought to be. The two deep stone transom bars at each window is a serious objection in respect to cutting off the light, and it is an open question whether there will be sufficient light in the center of the class rooms for work. Light is life and should not be sacrificed to monumental effects.

Coming to the residence building we find a different principle permeating it, and many stories predominate instead of one. We fail to find the *raison d'etre* of a five-story dormitory building in juxtaposition to a one-story class room building. It seems very ill-advised to put a building of so many stories up where there is so much ground to build upon, and unnecessary stairs, especially as the stairs have not an easy step. The ceilings of the studies and bedrooms are also altogether too low for California, being only 9 feet high in the upper stories.

These defects are excusable in the case of Eastern architects, but would not be tolerated in California ones. Those that come to live here, in a few years get, as it were, acclimatized, and then put up fine and suitable buildings. Until such time it is well not to experiment with exotic designs, especially for permanent public and monumental buildings.

In effect again the large five-story building completely dwarfs what should be the most important building, viz., the college proper, and the glaring monotonous color of the stone used does not add to its beauty.

The roof tiles being very thin do not look substantial enough for the substructure—the old fashioned thick pan tiles would have, no doubt, been more suitable, although heavier.

Yours, etc.,

Stroller.

Seattle, Wash., May 10th.

California Architect and Building News:

Gentlemen:—I would be much pleased if you would insert an item in your paper for your advertisers to mail me their circulars and price lists. Yours very truly,

W. Luff Meredith.

Miss Minerva Parker, we believe, is the only woman in America actually practicing the profession of Architecture. Her office is at 14 South Broad street, Philadelphia. She proposes for the present to confine herself to domestic architecture, and has already satisfactorily designed and executed a number of residences and dwellings. Though she encountered many difficulties in obtaining the necessary knowledge, training and experience required to establish herself in business yet she has found her sex to be no obstacle to her advancement, and has received words of encouragement both from members of the profession and the public. A preliminary sketch for a cottage designed by Miss Parker appears in the May number of the *Journal of Building.*

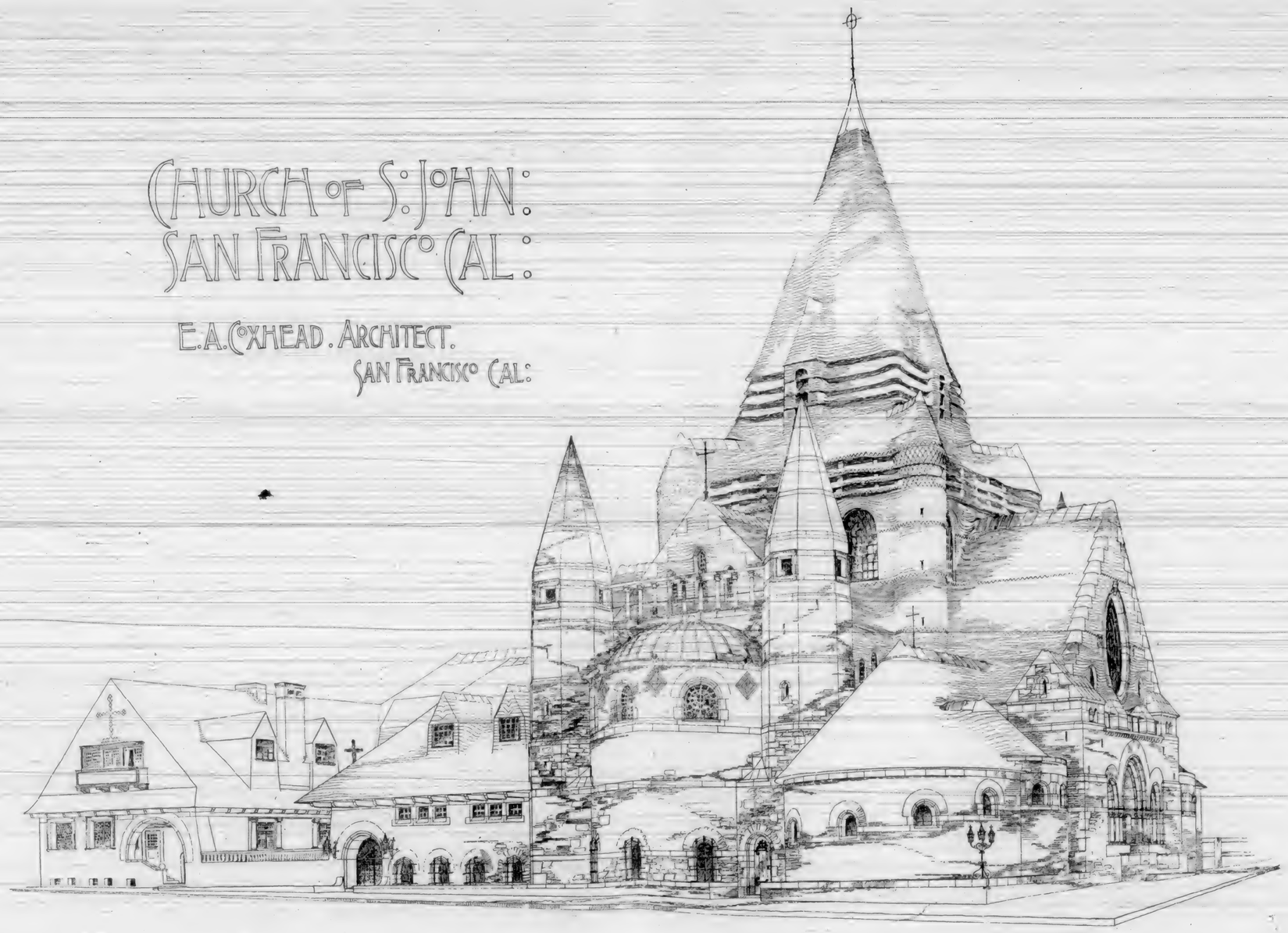
The Pittsburgh Master Plasterers Association have established the following schedule of prices for the year 1890:

Common plaster, 32 cents per yard; adamant plaster, 50 cents per yard; wire lething, 65 cents per yard; running cornices, 25 cents per foot; cementing, one coat, 75 cents per yard.

Fire and Water for May 31st, contains the proceedings of the tenth annual convention of the American Water-Works Association. Among other valuable and interesting papers read and discussed was one by Mr. Le Conte on "Contamination of waters in certain storage reservoirs on the Pacific Coast and the palliatives resorted to." He describes in detail the causes of the putrefaction of vegetable and animal matter, contained in reservoirs during the summer months, and suggests methods of purifying the stored waters and preventing contamination.

CHURCH OF S: JOHN:
SAN FRANCISCO CAL:

E.A. COXHEAD. ARCHITECT.
SAN FRANCISCO CAL:



ELEVATION ON McALLISTER ST

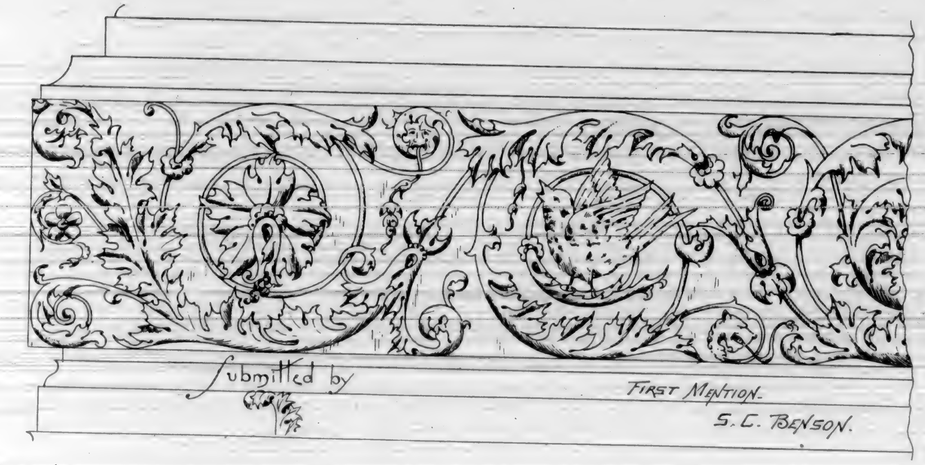
SCALE, EIGHT FEET TO ONE INCH

SUPREME COURT BUILDING

ELEVATION ON LARKIN ST.

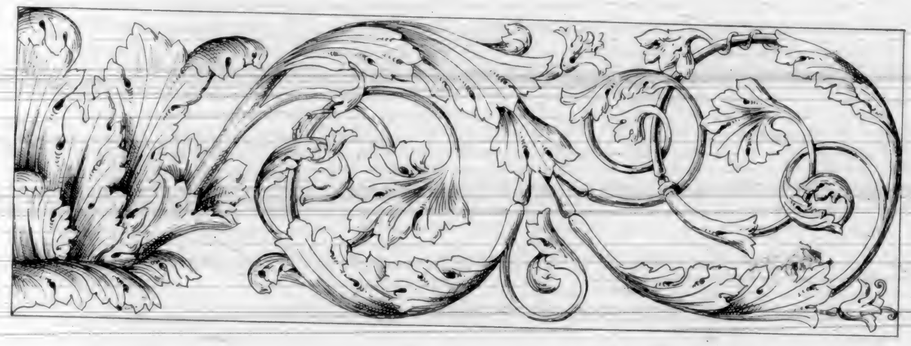
SUPREME COURT BUILDING.

T. J. WELSH, ARCHITECT.
ROOM 95, FLOOD BLDG.
SAN FRANCISCO.

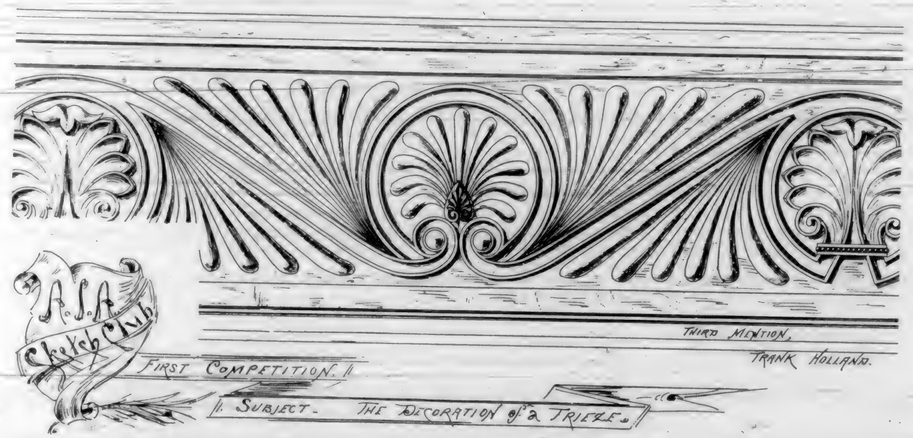


Submitted by

FIRST MENTION.
S. C. BENSON.



SECOND MENTION. C. A. MEUSSDORFFER.

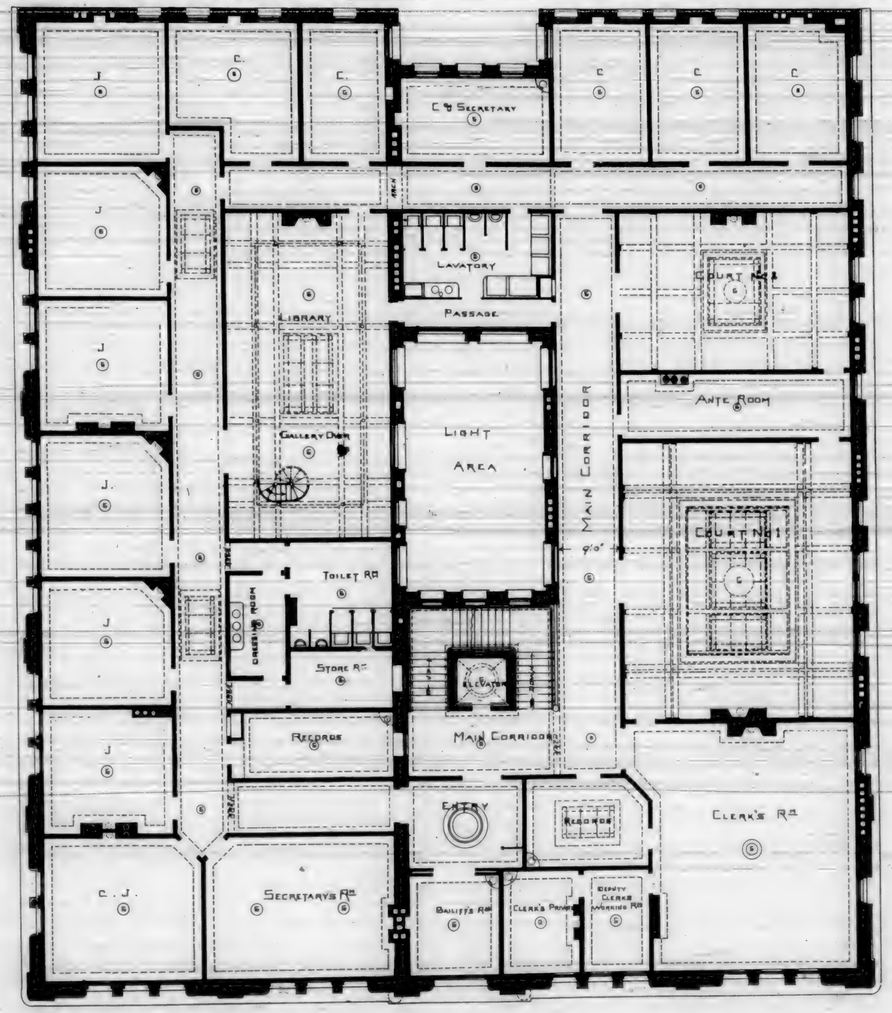


A. I. A. Sketch Club

FIRST COMPETITION. II

SUBJECT. THE DECORATION of a FRIEZE.

THIRD MENTION.
FRANK HOLLAND.



SUPREME COURT BUILDING.
N.W. CORNER OF LARKIN & McALLISTER Sts

FIFTH FLOOR PLAN.

T. J. WELSH, ARCHITECT.
95 FLOOD BUILDING.

THE ENGINEERING AND BUILDING RECORD in its issue of May 31st has a paper by J. Nelson Tubbs on a method to be employed in determining an equitable schedule of water rates for cities and towns.

HOUSE PAINTING AND DECORATING is endeavoring to get Congress to pass a law making it a misdemeanor to falsely label any pigment or oil. We hope it will succeed. If consumers wish to use impure materials they are at liberty to do so, but they should not be deceived into buying adulterated stock under the impression that it contains nothing but pure ingredients.

THE SANITARY PLUMBER suggests that as subway tunnels will become a necessity in the near future for such cities as New York, that the proper authorities should take time by the forelock, and by investigating the subject from all points, ascertain the best form, the proper size, and all other necessary information as will enable them to decide intelligently when the time comes for a decision.

ARCHITECTURE AND BUILDING of May 10 contains the designs for the Grand Stand at Monmouth Park, N. J. There is some dispute as to who is entitled to the credit of designing the large projecting roof, as well as who originally supplied the idea, several parties claiming credit therefor. The articles on Roman Architecture by Prof. Atchison are continued.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

The first six months of this year has not been as prosperous as the indications at the beginning of the year promised. Many of the larger contracts of contemplated improvements having been postponed or altogether abandoned for reasons well understood. By a comparison with former years the contracts filed foot up less than for last year.

	Brick Building.			Frame Building.			Alterations & Ad'tions			Total Value.
	No. of Bld'g.	No. of Contr't.	Value.	No. of Bld'g.	No. of Contr't.	Value.	No. of Bld'g.	No. of Contr't.	Value.	
January	3	10	$102,754	21	83	$158,555	8	9	$20,479	33 52	$281,779
February	5	18	261,945	48	54	266,317	6	6	24,723	60 78	552,985
March	5	15	192,120	38	44	318,906	5	5	15,675	48 64	526,701
April	5	16	282,372	81	103	548,456	10	10	30,516	96 129	811,344
May	3	25	161,468	64	72	366,845	18	19	45,516	85 116	574,959
June	10	17	136,027	74	83	443,871	11	12	64,192	95 117	644,090
Total	31	101	$1,086,686	326	589	$2,102,950	58	66	$204,831	417 556	$3,393,858

To this amount the further sum of $400,000 should be added for work done where no contracts have been filed, which would increase the sum total to $3,793,858.

1885—754	contracts.....	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858

CITY BUILDING NEWS.

Brick work. Owner, Easton, Eldridge & Co.; architect, P. R. Schmidt; contractor, Richard McCann; cost, $4,440; signed, May 22; filed, May 24; payments first and fifteenth day of each month.

Broderick and Oak. Two-story frame; owner, Julia S. Cohn; architect, M. J. Welch; contractor, S. Sarivee; sureties, C. G. Butler and H. Ramillard, $3,000; cost, $3,900; signed May 9; filed, May 13; payments, $975, framed; $975, brown mortared; $975, completed; $973, 35 days.

Bush and Fillmore. Alterations; owner, Jas. Boyd; architect, M. J. Welch; contractor, J. E. McDonald; sureties, J. H. Kruse and J. Rothman, $4,000; cost, $4,090; signed, May 7; filed, May 9; payments, $570, first floor joists set, $500, brown mortared; $1,000, white mortared; $1,000, completed; $1,090, 35 days.

Brannan and Second. Brick and wrought iron work; owner, J. R. Tobin; architects, Huerne & Everett; contractor, Geo. D. Nagle; cost, $3,980; signed May 3; filed, May 5; payments, $1,000, basement walls up; $1,985, completed; $995, 35 days.

Brannan and Second. Carpenter work; owner, J. R. Tobin; architects, Huerne & Everett; contractor, F. Buckley; cost, $9,000; signed, May 3; filed, May 5; payments, $2,250, roofed; $2,250, brown coated; $2,250, completed; $2,250, 35 days.

Bush and Laguna. Two-story building; owner, S. Baker; architect, John Gash; contractor, A. L. Campbell; cost, $7,050; signed, May 31; filed, June 2; payments, $881, brick work done; $881, brown coated; $881, white coated; $881, doors and windows hung; $882.50, completed; $1,762.50, 35 days.

Bush and Central Ave. Two-story frame building; owner, Will Dodson; architect, A. Smith; contractor, G. G. Gillespie; cost, $2,950; signed, May 27; filed, June 6; payments, $553, framed; $553, brown coated; $553, white coated; $553, completed; $738, 35 days.

Clayton between Page and Oak. One-story dwelling; owner, F. Bryan and wife; contractor, H. Lehouse; cost, 90 days; signed, May 25; filed, May 27; payments, $800, framed: $700, brown mortared; $784, completed.

Castro and Sixteenth. Owner, F. Likens; contractor, Barrbee & Fryer; sureties, A. Christensen and E. Lord; cost, $3,444; time, 75 days; signed, May 30; filed, May 30; payments, $645 75, chimneys up; $645.75, floors laid; $647.75, brown coated; $647.75; completed; $867, 35 days.

Clara Ave. and Eighteenth street. Two-story frame; owner, Wm. Menser; contractor, Jas. Campbell; cost, $1300; time, 40 days; signed, May 20; filed, May 21; payments, $487.50, brown coated; $487.50, finished; $324; 35 days.

Castro between 14th and 15th. Frame; owner, Jno. McDonnell; contractor, S. D. Matthews; sureties, J. W. Wesson and Chas. Matthews, $4,400; cost, $4,400; signed, May 22; filed, May 23; payments, $1,000, framed; $1,000, window and door frames set; $1,500, completed; $900, 35 days.

Clement and Eighth Ave. Carpenter work; owner, Wm. N. Baronsfeather; architect, A. Steubibi; contractor, Cook and Wry; surety, Thos. Richardson, $1,000; cost, $1,950; time, 20 days; signed, May 12; filed, May 13; payments, $475, framed; $475, lathed; $500, white coated; $500, 35 days.

Diamond street. Carpenper work; owner, J. C. Scott; contractor, Jos. W. Fish; sureties, Blyth & Trott; cost, $1,360; time, 60 days; signed, May 5; filed, May 8; payments, $500, brown coated; $300, white coated; $220, accepted; balance, 35 days.

Devisadero and Oak. Two-story frame buildings; owner, J. Lutgens; architects, John and Balezynski; contractor, F. W. Kern; cost, $11,740; signed, June 3; filed, June 3; payments, $2,200, framed; $2,200, enclosed; $2,200, rough mortared; $2,200, ready for painting; $2,940, 35 days.

Devisadero and Oak. Brick and stone work; owner, J. Lutgens; architects, John & Balezynski; contractor, F. Wagner; cost, $2,289; signed, June 3; filed, June 3; payments, $1,200, foundation laid; $510, granite work done; $575, 35 days.

Ellis and Pierce. Carpenter work, etc.; owner, A. Summerfield; architects, Salfield & Kohlberg; contractor, Thos. Elain; surety, Chas. F. Doe and W. F. Meeker, $3,000; cost, $4,950; signed, April 29; filed, May 5; payments, $1,000, framed; $1,000, brown coated; $1,000, doors hung; $10, accepted; $1,240, 35 days.

325 Ellis Street. Alterations; owner, J. Ross; contractors, White Bros.; surety, F. Joost, $2,584; cost, $2,584; time, 60 days; signed, May 13; filed, May 13; payments, $1,200, third story ready for lathing; $784, completed; $2,484, 35 days.

Eddy and Levenworth. Two-story frame; owner, J. Molony; architect, M. J. Welch; contractor, J. Bruce; surety, Robt. Oxford and H. Williamson, $3,000; cost, $3,250; signed, May 7; filed, May 12; payments, $812.50, framed; $812.50, brown mortared; $812.50, completed; $812.50, 35 days.

Eddy and Franklin. Frame; owner, S. Goldstein; architect, Wm. Mooser; contractor, M. C Lynch; surety, J. H. Kruse and C. E. Gillon, $6 000; cost, $10,372; time, 150 days; signed, May 17; filed, May 20; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Ellis and Pierce, Plumbing, etc.; owner, A. Summerfield; architects, Salfield & Kohlberg; contractors, S. Ochelheimer & Bro.; cost, $471; signed, April 26; filed, May 5; payments, $200, rough work; $151, finished; $120, 35 days.

Eighth and Mission. Owner, A. W. Manning; contractor R.R Rankins; cost, $8,000; signed, May 3; filed, May 5; payments, $500, foundations laid; $1,375, framed; $1,375, fronts in; $1,375, brown coated; $1,375, accepted; $1,375, 35 days.

Eddy and Franklin. Brick and iron work; owner, M. C. Lynch; architect, William Mooser; contractor, J. F. Wagner; cost, $1,393; signed, May 28; filed, May 28; payments, 75 per cent. of work done; balance, 35 days.

Fell and Laguna. Two-story frame; owner, Mary Berges; contractors, J. W. Mayden and G. W. Langhead; surety, F. T. Norman, $1500; cost, $3,500; time, 70 days; signed, May 19; filed, May 21; payments, $657, framed; $659, rooted; $656, brown coated; $656, finished; $875, 35 days.

Flint Tract. Four room cottage; owner, C. C. Bohnbacher; architects, Salsfield & Kohlberg; contractor, Jacob Klein; cost, $1,030; signed, May 3; filed, May 8; payments, $400, enclosed; $370, accepted; $260, 35 days.

Fell and Laguna. A frame; owner, H. Donnelly; architect, Wm. Mooser; contractor, W. H. Wickersham; sureties, D. F. Lewis and C. F. Holmes; cost, $6,200; time, 80 days; signed, May 23; filed, May 26; payments, 75 per cent as work progresses, 25 per cent, 35 days.

761 and 765 Folsom street. Brickwork; owner, P. G. Somps; architect, Geo. E. Voelkel; contractor, F. Hatt; cost, $1,032; signed, May 15; filed, May 23; payments, $765, second payment on contract is due; $265, third payment on contract is due as specified.

Folsom and Fifth. Two-story frame; owner, J. Canepa; architect, M. J. Welch; contractor, E. Piscasso; surety, A. J. Turner; cost, $1400; signed, May 14; filed, May 14; payments, $350, framed; $350, brown mortared; $350, completed; $350, 35 days.

Folsom and Second. Stable; owner Wells, Fargo & Co.; contractor, D. G. Crisholm; sureties, P. Connolly and Thos. Downing, $15,000; cost, $30,960; signed, April 21; filed, May 15; payments, 75 per cent. as work progresses; balance, 40 days.

Folsom and Moss. Two two-story frame buildings; owner, J. Eagan; architect, M. J. Welch; contractor, Brennan Bros.; cost, $5,310; signed, June 2; filed, June 5; payments, $1,327.50, framed; $1,327.50, brown mortared; $1,327.50, completed; $1,327.50, 35 days.

Guerrero and Twenty-fifth. Two-story frame; owner, M. Kinnery; architect, M. J. Welch; contractor, Sandy Gillogby; sureties, C. S. Holmes and Geo. Gillogby, $4,000; cost, $4,570; signed, May 13; filed, May 15; payments, $1,142.50, framed; $1,142.50, brown mortared; $1,142.50, completed; $1,142.50, 35 days.

Grove Street. Two-story building; owner, John Tyler; architect, Allen Decair; contractor, A. J. Belcher; surety, D. McMillion, $2,000; cost, $5,100; signed, May 20; filed, May 21; payments, $1,080, framed; $1,080, brown mortared; $1,080, outside finish; $1,080, accepted; $1,080, 35 days.

Geary and Larkin. Plastering, owner, J. Schleicher; architects, John & Balczynski; contractor, A. O'Brien; cost, $1,884; signed, May 6; filed, May 6; payments, $700, rough coated; $700, white coated; $484, 35 days.

Geary and Larkin. Plumbing; owner, J. Schleicher; architects, John & Balczynski; contractors, Fritz & Kean; cost, $1,297; signed, May 6; filed, May 6; payments, $472, rough work done; $500, completed; $325, 35 days.

Geary and Larkin. Two three-story frames; owner, J. Schleicher; architects, John & Balczynski; contractor, F. W. Kern; cost, $10,590; signed, May 6; filed, May 6; payments, $2,000 framed; $2,000, enclosed; $1,940, brown mortared; $2,000, ready for painting; $2,650, 35 days.

Harrison and Ninth. Three-story frame; owner, Jas. McElearney; architect, M. J. Welch; contractor, C. A. Laherty; cost, $8,125; time, 67 days; signed, May 22; filed, May 24; payments, $1,875, brown coated; $1,87-, exterior finish on; $1,875, completed; $2,500, 75 days.

Howard and Fourth. Four-story brick; owners, Lenormand Bros.; architects, Huene & Everett; contractors, Richardson & Gall; cost, $20,747; signed, May 8; filed, May 9; payments, $9,000, first floor joists in place; $8,112, thi d floor joists in place; $8,112, roof tinned; $3,112, brown plastered; $3,112, accepted; $5,187, 33 days.

Henry and Sanchez. Alterations; owner, D. Davalle; architect, C. M. Rossean; contractor, E. Recasse; cost, $1,650; signed, April 23; filed, May 5; payments, $900, brick work done; $250, brown coated; $250, finished; $2.0, 32 days.

Howard and Fifth. Plumbing; owner, P. F. Butler; architects, John J. & T. D. Newcom; contractors, Ford Bros.; cost, $1,250; signed, May 6; filed, May 7; payments, $468.75 rough work done; $468.75, completed; $312.50, 25 days.

Harrison and Spear. Brick work; owners, Peacock and Beeks; architect, Chas. I. Havens; contractor, Mahoney Bros.; cost, $15,750; signed May 22; filed, May 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Jackson and Devisadero. Two-story frame; owner, J. C. Franks; architect, J. E. Knuft; contractor, R. O. Chandler; sureties, A. D. Moore & W. J. Adams, $4,000; cost, $10,300; time, 130 days; signed, May 22; filed, May 26; payments, $1,700, framed; $2,000, brown coated; $2,000, plastering finished; $2,000, accepted; $2,600, 35 days.

Jessie and Herman. Frame building; owner, Margaret Gray; architect, H. T. Bestor; contractor, J. Foster; sureties, J. Stolze and D. Bercirck, $2,000; cost, 4,450; filed, May 26; 90 payments, $600, framed; $650, roofed; $1,000, brown coated; $650 white coated; $650, accepted; $1,200, 35 days.

Jackson and Buchannan. School House; owner, Jane Boltt; contractor, F. Van Acker; cost, $1,500; signed, May 28; filed, June 2; payments, $500, framed; $675, accepted; $375, 35 days.

Kearny, between Post and Geary. Alterations; owner, Mrs. Annie Roullier; architects, Pissis & More; contractor, J. B. Cogswell; cost, $3,350; signed May 28; filed, May 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Lyon Street, owner, Hattie Griffin; architect, W. F. Lowell; contractor, W. A. Van Devort; sureties, D. S. Cartwright and Jas. Young, $3,000; cost, $3,750; signed, Apr 1 29; filed, May 24; payments, $562.50, first story joists are in place; $262.50, enclosed; $262.50, brown mortared; $262.50, white coated; $262.50, finished; $937.50, 35 days.

Lyon and California. Two-story building; owner, J. Deely; architect, P. R. Schmidt; contractor, W. A. Von Dervort; cost, $4,465; signed, May 8; filed, May 9; payments, $825, enclosed; $825, brown coated; $825, hard finished; $1,165, 35 days.

Laguna and Turk. Three-story frame; owner, John B. Clot; contractor, C. Ziverlein; cost, $6,500; signed, May 10; filed, May 15; paym nts, $1,200, framed; $1,200, brown coated; $1,200, white coated; $1,275, completed; $1,625, 35 days.

Leavenworth and Lombard. Three-story frame building; owner, L. Marsch; architect, R. Zimmerman; contractor, G. T. Knopf; cost, $4,250; signed, June 2; filed, June 3; payments, $1,000, framed; $1,000, brown coated; $1,100, completed; $1,060, 35 days.

Lott, between Grove and Hayes. Owner, Henry Fiala; contractor, B. K. Alberston; cost, $1,400; signed, April 29; filed, May 5; payments, $300, roofed; $200, brown mortared; $200, white coated; $300, finished; $400, 35 days.

Minnesota and Napa. Nine one-story cottages; owner, J. O. Rees; contractor, R. O. Davis; cost, $7 335; time, 90 days; signed, May 13; filed, May 13; payments, $1,467, raised; $1,467, ready for plaster; $1,467, brown mortared; $1,467, white mortared; $1,467, completed.

2023 **Mission** street. Owner, Annie Woods; architect, J. M. Curtis; contractor, Paterson & Ackerson; sureties, C. H. Ackerson and Geo. H. Hoppe, $8,000; cost, $7,777; time, Sept. 18, '90; signed, May 20; filed, May 22; payments, 75 per cent as work progresses; 25 per cent 35 days after completion.

Montgomery Ave. between Filbert and Greenwich streets. Sidewalks; owner, B. Dimartini & A. Demartini; architect, E Depierre; contractor, L. Capurro; sureties, G. B. Cavagha and A. Craviotto, $1,150; cost $1,150; signed, May 17; filed, May 17; payments, $ 00, iron work delivered on premises; $400, curb set, $450, completed.

McAllister and Polk. Grading and brick work; owner, Mrs. A. G. Townsend; architect, M. H Armitage; contractor, Jas. O'Sullivan; sureties, J. O'Sullivan and C. A. Warren, $,550; cost, $1 550; signed April 25; filed, May 9; payments, $800, basement walls ready for plates; $300, finished; $389, 35 days.

McAllister and Lott. Two-story frame; owner, F. Mahoney; contractor, T. Sullivan; sureties, T. Sullivan and F. Joost, 1,500; cost, $2,800; time, 60 days; signed, May 8; filed, May 9; payments, $450, framed; $400, enclosed; $450, brown mortared; $400, white coated; $400, finished; $700, 35 days.

Market and Golden Gate Ave. Plumbing and etc.; owner, Jas. A. Donohoe; architect, A. P. Brown; contractors, Duffy Bros.; cost, $,250; signed, April 28; filed, May 7; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Moss and Howard. Alterations and additions; owner, J. J. Hintz; architect, W. H. Armitage; contractor, F. V. Steinmann; sureties, F. P. Lutson and P. Swift, $2,000; signed, May 21; filed, May 26; payments, $5 0, enclosed; $500, brown coated; $500, completed; $500, 35 days.

Natoma and Russ. Three-story frame; owner, W. Zenler; architect, A. C. Lutgens; contractor, Tegeler & Muller; surety, L. Schlop and H. Schroder, $8,000; cost, $11,700; signed, May 29; filed, May 29; payments, $800, first-story joists are on; $1,200, framed; $1,600, enclosed; $2,000, brown coated, $1,200, white coated; $1,975, completed; $2,925, 35 days.

Nineteenth and Pt. Lobos Ave. One-story frame; owner, T. J. Barnett; contractor, P. Pfarrer and Son; cost, $2,000; signed, May 7; filed, May 28; payments, $400, roof is on; $1,600, completed.

Ninth and Sheridan. Two-story frame; owner, E. McLaughlin; architect, Shea & Shea; contractor, A. Discher; surety, B. Joost; cost, $2,550; signed, May 22; filed, June 3; payments, $497, framed; $497, brown coated; $497, hard finished; $497; completed; $662, 35 days.

Noe and Twenty-ninth. Carpenter work; owner, Jas. McCormack; contractor, Nelson & Hamerton; cost, $1,520; signed, May 5; filed, May 5; payments, ¼ enclosed; ¼, brown mortared; ¼, completed; ¾, 35 days.

Oak and Webster. Plumbing; owners, I. Lacher and M. Weidenrich; architect, Chas. I. Havens; contractors, Ford Bros.; cost, $1,050; signed, May 13; filed, May 14; payments, $350, pipes in; $400, finished; $300, 35 days.

Oak and Webster. Two-story frame; owner, M. DeWitt; architects, R. H. and R. White; contractor, Jno. Furness; sureties, F. Joost and Jas. Lesl, $5,000; cost, $7,058; signed May 24; filed, May 29; payments, $1,100, roofed; $1,200, ready for brown coat; $1,308, standing finish on; $1,575, completed; $1,775, 35 days.

Oak and Webster. Two two-story frames; owners, I. Lacher and M. Weidenrich; architect, Chas. I. Havens; contractor, Jno. Furness; cost, $10,000; signed, May 10; filed, May 12; payments, $1,800, diagonal boarding on; $1,900, brown coated; $1,900, outside mill work up; $1,900, completed; $2,500, 35 days.

Oak and Webster. Two-story building; owner, J. H. Von Arhnden; architect, Chas. I. Havens; contractor, Jno. Furness; cost, $3,325; signed, May 8; filed, May 10; payments, $775, framed; $1,000, brown mortared; $1,000, hard finished; $1,000, completed; $1,350, 35 days.

Oak and Fillmore. Two-story frame; owner, J. O. Noonan; architect, A. J. Barnett; contractor, P. F. Lynch; sureties, W. J. Adams and C. S. Holmes, $2,000; cost, $4,149; time, 90 days; signed, May 23; filed, May 26; payments, $775, roof boards on; $775, brown coated; $775, white coated; $781, completed; $1,040, 35 days.

O'Farrell and Fillmore. Two two-story buildings; owner, M. Kochman; architect, M. J. Welch; contractor, G W. Handsbrough; sureties, J. F. Taylor and J. M. Manning; cost, 13,000; signed, June 3; filed, June 4; payments, $2,437.50, framed; $2,437.50, brown mortared; $2,437.50, exterior finish is up; $2,437.50, completed; $3,250, 35 days.

Oak and Ashbury. Two-story frame; owner, W. I. Morgan; architect, J. C. Newsom; contractors, F. A. Blanchard and W. E Lane; sureties, Blyth & Trott and F. Joost; cost, $4,292; signed, May 15; filed, May 16; payments, $1,073, framed; $1,073, brown mortared; $1,073, accepted; $1,073, 35 days.

O'Farrell, bet. Hyde and Larkin. Two-story, and one-story in rear; owner, J. H. McInnes; architect, W. O. Banks; contractor, M. Grossmat.ns; cost, $5,510; time, 90 days; signed, April 30; filed, May 19; payments, $1,200, framed; $1,500, brown coated; $1,410, completed; $1,400, 35 days.

Powell and Eddy. Brick and stonework; owner, Schwartz, Bros; architect, P. R. Schmiddt; contractor, P. Rimarowre; cost, $30,500; signed, May 24; filed, May 24; payments, first and fifteenth days each month.

Powell and Eddy. Excavating and grading; owners, I. and J. Schwartz; architect, P. R. Schmidt; contractor, C. A. Warren; cost, $1497; signed, May 7; filed, May 8; payments, 75 per cent as work progresses; 25 per cent, 35 days.

319 and 321 Pine. Steam heating; owner, James G. Fair; architects, Schulze & Meeker; contractors, Lawton & Birtt; cost, $1594; signed, May 16; filed, May 16; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Powell and Sacramento. Grading and excavating; owner, V. Menesine; architects, C. R. and James M Wilson; contractors, Geo. Duncan & H. McClure; cost, $3600; signed, May 27; filed, May 28; payments, 75 per cent as work progresses; bal. accepted.

Polk and Union. Two-story frame; owner, J. Coakley; architects, Shea & Shea; contractor, R. Guninott; surety, P. F. Latsen; cost, $3495; signed, May 25; filed, May 29; payments, $655, framed; $655 brown mortared; $655, hard finished; $655, completed; $875, 35 days.

Post and Stockton. Brick work, stone work, cast iron work; owner, L. and M. Sachs, architect, P. R. Schmidt; contractor, R. Ringrose; cost, $7,950; signed, May 22; filed, May 29; payments, on first and fifteenth day of each month.

Pacific and Mason. Three-story frame building; owner, M. Travers and wife; architect, C. M. Rossean; contractor, E. Picasse; surety, A. T. Turner and B. S. McFarland, $4,000; cost, $4,685; signed, May 31; filed, June 2; payments, $842; first floor on; $852, enclosed; $852, brown coated; $852, white coated; $854, accepted; $1,423, 35 days.

Page and Laguna. Two-story frame; owner, Elisa Robinson; contractor, Charles Quinn; cost, $5,000; signed, May 12; filed, May 13; payments, 75 per cent. of value of work done; balance, 35 days.

315 and 317 Pine. Alterations; owner, Jas. G. Fair; architect, Schulze & Meeker; contractors, Similie Bros.; cost, $9,469; time, July 1, 1891; signed, May 7; filed, May 13; payments, first of each month in sums equal to 75 per cent. of value of work done; balance, 35 days.

315 and 317 Pine. Alterations; owner, Jas. G. Fair; architects, Schulze & Meeker; contractor, Gus V. Daniels; cost, $890; time, July 15, 1890; signed, May 7; filed, May 14; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

315 and 317 Pine. Piling, capping, etc.; owner, Jas. G. Fair; architects, Schulze & Meeker; contractor, California Bridge Co.; cost, $3,890; time, July 1, 1890; signed, May 7; filed, May 14; payments, first of each month 75 per cent. of value of work done; balance, 35 days.

Pacific and Front. Plumbing; owner, Jas. G. Fair; architects, Schulze & Meeker; contractors, Wm. Snook & Son; cost, $2,324; filed, July 1, 1890; signed, May 7; filed, May 14; payments, first of each month as work progresses, 75 per cent. of value of work done; balance, 35 days.

Pacific and Front. Carpenter work; owner, Jas. G. Fair; architect, Schulze & Meeker; contractor, A. Jackson; cost, $24,000; signed, May 9; filed, May 14; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

315 and 317 Pine. Plumbing; owner, Jas. G. Fair; architects, Schulze & Meeker; contractors, W. T. S. Snook & Son; cost, $890; time, July 1, 1890; signed, May 14; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

13 Summer street. Alterations; owner, C. Kinsman; architect, John F. Hogan; contractor, Scott & McNeil; cost, $850; signed, June 2; filed, June 3; payments, $212.50, lowered; $212.50, brown coated; $212.50, excepted; $212.50, 35 days.

Sutter and Broderick. Two-story frame; owner, C. A. Buckley; architect, P. R. Schmidt; contractor, R. O. Chandler; cost, $1,070; signed, May 1; filed, May 12; payments, $925, framed; $925, brown coated; $925, hard finished; $925; accepted; $1,270, 35 days.

15 Summer St. Alterations; owner, Catherine Kinsman; architect, John F. Hogan; contractor, M. C. Scott; cost, $850; signed, May 15; filed, May 19; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Second, between Bryant and Brannan. Two-story building; owner, Annie Woods; architect, W. C. Jordan; contractor, Geo. Healing; surety, J. Healing, $1,000; cost, $1,310; signed, May 15; filed, May 22; payments, $360, framed; $250, brown mortared; $250, inside finished; $182.50, completed; $327.50, 35 days.

61 Shipley St. Alterations; owner, Robt. Wilson; contractors, Mullins Bros.; cost, $1,205; filed, May 28; payments, $2 0, house raised; $300, framed; $290, inside finish on; $174 completed.

Sanchez and Sixteenth. Two-story; owner, W. N. Baronsfeather; architect, A. Stenbiht; contractor, R. Gillis; cost, $9,850; time, 90 days; signed, May 27; filed, May 28; payments, $2,450, rafters on; $2,450, lathed; $2,450, white finish on the wall; $2,500, 35 days.

Sutter and Octavia. Brick work; owner, Jas. G. Fair; architect, Schulze & Meeker; contractor, John T. Grant; cost, $2,992; signed, May 21; filed, May 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Stockton and Union. Two-story frame; owner, Italian Bersaglieol, Mutual B. Society; contractor, J. G. Adams; cost, $26,840; signed, May 27; filed, May 29; payments, $4000, second story joists up; $4000, framed; $4420 brown coated; $4420, completed; $10,000, 35 days.

Scott and Oak. Two-story building; owner, W. L. Eaton; architect, J. Maguire; contractor, G. Rickley; cost, $3,815; signed, May 28; filed, May 29; payments, $800, framed; $960, roofed; $1000, brown mortared; $1055, accepted.

Scott and Ellis. Two-story frame building; owner, E. W. Cavanagh; architect, J. J. O'Brien; sureties, W. Dikens and P. Gilloghy, $3000; cost, $3575; signed: May 22; filed, June 3; payments, $858, framed: $859, brown mortared; $858, completed: $1000, 35 days.

Sherman and Eighteenth. Two-story dwelling; owner, S. Blank; contractor, J. E. Loomer; cost, $2200; time, 90 days; signed, May 6; filed, June 4; payments, $700, euclosed; $700, brown coatad; $800, 35 days.

Second and Brannan. Brick work; owner, R. J. Tobin; architects, Huerne & Everett; contractor, Geo. D Nagle; cost, $3980; filed, June 5; payments, three-fourths of said contract price as work progresses; one-fourth, 35 days.

Treat Ave. and Twenty first. Two-story frame; owner, K. Scherstein; architect, H. Geilfuss; contractor, F. L. Hansen; cost, $4,300; signed, May 7; filed, May 8; payments, $658, frame is up; $658, enclosed; $658, brown coated; $658, white coated; $658, accepted; $1,10 0, 35 days.

Twentieth and Capp. Two-story frame; owner, J. Glavin; architect, M. J. Welch; contractor, J Bruce; sureties, Robert Oxford and H. Williamson, $3 000; cost, $3,475; signed, May 7; filed May 12; payments, $668 50, framed; $668.50, brown coated; $668.50, completed; $668.50, 35 days.

Taylor and Union. Two-story frame; owner, Mary Clausman; architect, Chas. M. Rossean; contractor, J. Salamac; sureties, Harris & Jones, $3,000; cost, $4,140; signed, May 21; filed, May 24; payments, $350, first story joists are on; $427, enclosed; $776, brown coated; $776, white coated; $776, accepted; $1,035, 35 days.

Taylor and Golden Gate Ave. Terra Cotta work; owner, Jos. A. Donohoe. architect, A. P. Brown; contractors. Gladding, McBean & Co.; cost, $9,499; signed, March 29; filed, May 6; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Twelfth and Folsom. Two buildings; owner, B. Kavanaugh; architects, Jordan & Lyons; contractor, R. O. Rankins; cost, $7,220; signed, May 24; filed, May 27; payments, $850, old building is placed on new foundations; $850, old building is completed; $1,100, new building framed; $1,100, partitions set; $1,100, brown coated; $1,400, completed; $1,820, 36 days.

Twelfth, bet. Howard and Folsom. Double tenement house; owner, P. C. Lynch; architect, W. O. Banks; contractor, A. McDonald; sureties, F. P. Latson and J. J. McKinnon; cost, $4,760; time, 90 days; signed, May 28; filed, June 2; payments, $900, rustic on; $1,000, brown coated; $700, white coated; $966, completed; $1,200, 35 days.

1122 Treat Ave. Owner, J. Granville; contractor, A. DeLair; surety, G. M. Slyler, $300; cost, $1,200; filed, May 31; payments, $300, enclosed; $300, brown mortared; $300, completed; $300, 35 days.

Union bet. Larkin and Polk. Two-story frame; owner, L. J. Nevers; architect, Wm. Armitage; contractor, J. Dyar; surety, J. Willis and A. Hinds, $6,000; cost, $3,845; signed, April 24; filed, May 24; paymen s, $900, framed; $900, brown coated; $925, accepted; $920, 35 days.

Van Ness Avenue and Pine Street. Plumbing; owner, A. S. Baldwin; architect, J. C. Newsom; contractor, Wm. F. Wilson; cost, $2,485; signed, April 15; filed, May 20; payments, 50 per cent. of value of work done as work progresses; 50 per cent. 35 days.

Washington and Laguna. Two-story brick; owner, Henry J. Crocker; architect, Frank Freeman; contractor, Thos. H. Day; signed, May 16; filed, May 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Webster and Herrman. Three-story frame; owner, Mrs. M. McCullock; architect, P. R. Schmidt; contractor, R. O. Chandler; cost, $6,991; signed, May 17; filed, May 20; payments, $1,235, framed; $1,235, brown coated; $1,235, hard finished; $1,235, accepted; $1,650, 35 days.

Washington and Baker. Carpenter work; owner, A. Scheier; architect, Harold D. Mitchell; contractor, W. A. Van Dervort; surety, O. H. Greenwald and D. H. Bibb, $5,000; cost, $6,300; signed, May 24; filed, May 28; payments, $930, first story joists in; $930, framed; $930, brown coated; $930, sand finish on; $990, accepted; $1,550, 35 days.

Webster and Hayes. Carpenter work; owner, J. B. Shannon; architect, M. J. Welch; contractor, J. O. Connell; cost, $7,985; signed, May 3; filed, May 6; payments, $1,497.75, framed; $1,497, brown mortared; $1,497, exterior finish up; $1,996, 35 days.

Washington and Baker. Owner, A. Silverstein and wife; architect, H. D. Mitchell; contractor, W. A. Van Devort; surety, O. H. Greenwald and D. H. Bibb, $5,000; cost, $6,300; signed, May 24; filed, May 26; payments, $930, first story floor joists in place; $930, enclosed; $930, brown coated; $930, white coated; $930, accepted; $1,550, 35 days.

Washington and Steiner. Alterations and additions; owner, J. H. Meredith; architect, Chas. I. Havens; contractor, J. Furness; cost, $1,260; signed, June 3; filed, June 5; payments, $450, first coat of plaster is on; $460, entire work is finished; $350, 35 days.

York and Twenty-second. Plastering; owner, H. Ricke; contractor, Schultz & Curry; cost, $1,890; signed, May 14; filed, May 15; payments, $500, rustic on; $450, first coat of plaster on; $450, completed; $850, 35 days.

Oakland.

Mortuary Vault in St. Mary's Cemetery. Owner, Mrs. Annie McMenamin; architect, Chas. J. Devlin; contractor, D. Dwyer; cost, $1,728; time, 10 weeks; signed, May 12; filed, May 13; payments, to be paid 35 days after the entire work is completed.

Alameda and Oak streets. Two-story brick; owner, The Masonic Association of Alameda; architect, Chas. Man; contractor, J. H. Corey; cost, $31,250; signed, May 8; filed, May 9; payments, $5,814, ready for second story joists; $5,812, roofed; $5,812, brown coated; $5,812 completed; balance, 35 days.

Thirteenth and Twenty-third streets. Two-story; owner, J. Gillian; architect, R. G. Frise; contractor, J. C. Nelson; cost, $2,400; time, July 10, '90; signed, May 5; filed, May 7; payments $700, enclosed without rustic; $700, brown coated; $700, outside finish on; $700, 35 days.

Owner, First Unitarian Church of Oakland; architect, W. J. Matthews; contractor, F. W. Knight and Chas. Littlefield; cost, $17,973; signed, May 5; filed, May 19; payments, $2,695.65, two-fifths completed; $2,695.80, three-fifths completed; $2,695.95, four-fifths completed; $2,695.95, completed; $4,493.25, 35 days.

St. Charles and Railroad Ave. Cottage; owner, M. De Witt, architect, A. Stenbiht; contractor, G. A. Benseman; cost, $1,590 50; signed, May 18; filed, May 27; payments, $900, framed; $900, brown mortared $992, completed; $998, 35 days.

Isabella St. Owner, J. G. Brand; contractar, J. W. Brougham; cost, $1,620; signed, May 12; filed, May 19; payments, $450, ready for first coat of plaster; $850, ready for second coat of plaster; balance, 35 days.

Owner, J. A. Remmel; contractor, R. Gillis; surety, Wm. Dannheim and Thomas P. Frost, $6,000; cost, $6,975; time, 90 days; signed, May 20; filed, May 27; payments, $1,743.75, framed; $1,743.75, brown coated; $1,747.75, completed; $1,747.75, 35 days.

Lafayette and Railroad Ave. G. T. Wright; contractor, A. W ; cost, $2473; signed, May 26; filed, May 29; payments, 700 chimneys built; $650, brown mortar on; $600, completed; $623, 35 days.

Telegrapy Ave. and Twenty-sixth streets. Two-story frame; owner, J. Hutchison; architect, Wm. Kiok; contractors, J. E. Blethen and G. M. Walker; cost, $4296; signed, May 29; filed; May 29; payments, $1074, framed; $1074, first coat of plaster; $1074, completed; $1074, 35 days.

Haven and Peralta streets. Owner, James Holmes; contractors, H. Burns & F. J. Maurer; cost, $2,973; signed, May 2; filed, May 7; payments, $735, one-third built; $735, two-thirds built; $735, completed; bal, 35 days.

Adeline and Eighth. Two-story frame; owner, R. Abbey; architect, Wm. Kirk; contractor, P. F. Nelson; cost, $5,172; signed, May 15; filed, May 15; payments, $1,293, frame up and brick work done; $1,293, enclosed, window frames set and first coat plaster on; $1,293, completed; $1,293, 35 days.

Third Ave. and Twelfth street. Two-story frame; owner, J. P. Rynders; architect, Chas. Man; contractors, Trohig & Moore; cost, $7,824; signed, June 2; filed, June 4; payments, $1,956, ½ work, completed; $1,956, ½ work completed; $1,956, completed; $1,956, 35 days.

Dayton Ave. and Paret street. Owner, J. H. Bullock; architects, Townsend & Wyneken; contractor, N. M. Kirkwood; cost, $5,145; signed, May 28; filed, June 2; payments, $1 000, roofed sheathed; $1,400, brown coated; $1,458, completed; $1 287, 35 days.

East Oakland, between Fifth and Sixth Aves., Nineteenth and Twentieth streets. Additions; owner, B. M. Wakerly; architects J. J. & T. D. Newsom; contractor, Wm. G. Miller; sureties, J. Gregory and J. Ferguson; cost, $4,000; signed, May 15; filed, May 15; payments, $1,000, frame up and roof finished; $1,000, outside fin sh in place; $1,000, completed; $1,000, 36 days.

Alameda.

One-story frame; owner, Mrs. L. Rumel; architect, Chas. S. Shauer; contractor, D. S. Brehaut and J. Diamond; cost, $2,730; signed, May 24; filed, May 28; payments, $683.75, sheathing on; $683.75, brown mortared; $683.75, wood work done; $683.75, 36 days.

Owner, W. C. Rarig; contractors, Cameron & McDonald; cost, $3,000; filed, May 6; signed, May 28; payments, $750, framed; $750, brown mortared; $750, plaster completed; $750, 10 days.

Encinal Avenue and Union. Two story frame; owner, John Mutton; contractors, A. W. Pattiani & Co.; cost, $2,620; signed, May 17; filed, May 21; payments, $750, chimney built; $700, interior primed; $540, completed; $660, 35 days.

N. W. cor. Central Avenue and Lafayette Street. Frame; owner, F. W. Van Sicklen; architect, Clinton Day; contractor, C. A. Parker; cost, $1,684; signed, May 14; filed, May 21; payments, $2,000, roof sheathed; $2,500, interior ready for painter; $2,100, windows hung; $2,500, ready for painter; $548, completed; balance, 35 days.

Encinal Ave. and Pave St. Two-story frame; owner H. Molms; contractor, A. W. Pattiani; cost, $2,640; signed, May 7; filed, May 9; payments, $660, chimney on; $660, exterior finished; $460, completed; $660 35 days.

Grand Ave. and Webster St. Two story; owner, E. T. Miller; architect, R. G. Frise; contractors, Toohig & Moore; cost, $7,524; signed, May 9; filed, May 9; payments, $1,881, roofed; $1,881, plumbing done; $1,881, inside finish on; $1,881, 35 days.

Berkeley.

Scenic Tract. One and one half story; owners, Phelps & Richards; contractor, Ira A. Boynton; cost, $2 000; signed, May 19; filed, May 21; payments, $500, framed; $600, brown mortared; $500, completed; $500, 35 days.

Piedmont Park.

Two-story frame; owner, J. B. Richardson; architects, Schulze & Meeker; contractor, W. N. Concannon; cost, $4,792; signed, June 6; filed, June 6; payments, $900, chimney built; $1,300, coat of paint on outside; $1,394, completed; $1,198, 35 days.

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BUSINESS MOSAICS.

IMPROVEMENT OF BUSINESS PROPERTY.

Property is valuable, relatively, as it becomes available for business purposes—therefore, any improvement in arrangement or construction that may add to its utility for such purpose is desirable from an architectural point of view; and when we take into consideration the increased revenue from buildings erected with abundance of light, room and air for portions heretofore unused, the advantage to owners of such property is apparent. The cantilever and arch principal as applied to the construction of sidewalks or vault coverings, by Mr. P. H. Jackson of this city, is an improvement of this kind, and should be looked into carefully by everyone who may be interested in the subject. By an inspection of the advertisement on another page, the form of construction is shown. This method of building the arch and sidewalk in combination allows about six inches additional height in the basement under the sidewalk. This is an important feature, especially in the portions of the city where the streets are low and every additional inch for height of basement is a consideration. Where brick arches are used in the usual way, the under side of the arch requires a finish by plastering, cementing or painting, while by the improved method of Mr. Jackson, the finish is included in the construction, and where the imbedded tensile rods are used, the the supporting beam may be moulded in any form desired. The forming of a separate joint between the key arch and cantilever abutments allows a very considerable margin for any unequal strains, caused by variations in the expansion and contraction under special conditions, and which may be liable to occur from unequal settlement. Arches formed in this manner are better adapted for the insertion of elevator and man-hole openings, as the frames for such can be solidly imbedded in the material of the arch.

In addition to the improved arch for sidewalks, etc., the manner of furnishing an increased amount of daylight is worthy of special mention. For a distance of a few feet next the building is placed a platform, either level with the sidewalk or raised one or more steps and formed of iron frame work set with *Hyatt's Patent Reflectors* to direct the daylight into the basement in any direction. At the line of the building the bearing beam for the support of the inner end of the light tiling is set at sufficient height to allow no projection of the beam below the light tiling. By this arrangement the reflected light is not obstructed in its diffusion throughout the upper portion of the space, while in the basement along under the front wall, the supporting pillars and columns of the building are the only obstructions to light, all supports for sidewalk at this line being left out.

At the line joining the illuminating tiling and sidewalk, Mr. Jackson has introduced a method which is a great improvement over the old way of continuing the sidewalk beams to the building line, as it was found that a very considerable portion of the oblique rays of light were obstructed by these beams. By the improved method, the ends of the sidewalk beams are connected with iron beams laid parallel with the line of building, and supported upon iron columns of size and strength to support sidewalk only, and the connecting line between the sidewalk and the illuminating tiling is made over this beam. It can readily be seen that by this form of construction the least possible obstruction is presented for the diffusion of light to the back portions of the basement.

The illuminating tiles are formed with an even upper surface of glass lenses of various forms and set in artificial stone with an iron base plate.

The form of arch construction under consideration need not necessarily be used for sidewalks only, the principle of construction being correct, it follows that floors or coverings of any kind of vault work, where strength, lightness and fire-proof qualities are wanted, this method offers many advantages, and we hope our readers will investigate for themselves by sending to Mr. P. H. Jackson, 228 and 230 First street, this city.

The Stover Manufacturing Co. of Freeport, Ills., notifies the trade that the prices heretofore in force have been revised for Common Sense, Empire and Ideal Sash Pulleys. Send for discount list.

The raising and moving of frame buildings is of such common occurrence as to pass without particular attention, but when we come to brick buildings complications ensue which requires more than ordinary apparatus and of sufficient strength and adaptability for the purpose. The ability of the person having charge of such work should be above the average. In this connection we wish to call particular attention to Mr. Kelleher, 101-103 Juniper street, who has had an extended experience in such heavy work.

When you see any fashionable whim in house building or decorating which you think you want, look in the California Architect and Building News, and see who supplies such articles. The advertising columns are as useful as the reading columns to the wise.

The improvement in closet fixtures, from a sanitary view, has been great. Yet the best is none too good. This fact has been fully realized by the veteran closet manufacturer, Joseph Budde, 43 Fremont street, who presents in this issue improved models for this class of fixtures combining the utmost safety with artistic forms.

Persons looking for ready worked materials of wood should examine the list of materials as published on our advertising page, supplies ready for use by the Excelsior Redwood Co., C. A. Hooper & Co., corner of Fourth and Channel streets, this city. This company also furnishes ready made houses which can be put up in a few hours' time. Many of those houses have been shipped to adjacent countries where they have given entire satisfaction.

Hill's Patent Inside Sliding Window Blinds have become such a necessity that no building with any pretentions to present requirements is complete without them. A perfect sun-shade having stationary or rolling slats, perfect adaptation and adjustment, easily removed for cleaning and as easily replaced. No tearing of curtains and no danger to hinges on account of projecting finish around windows. Try them and you will have no other. Manufactured by Edw. B. Hindes & Co., 411 Mission street.

During a short trip through the country we noticed a larger proportion than formerly of the warehouses and farm buildings in course of erection were being covered on sides and roof with Corrugated iron, thereby reducing the fire risks materially and to the manifest benefit of the owner. Corrugating Co. of Piqua, Ohio, manufacture and furnish this material of almost any size, and with their improved lap joint is superior to that of other makes. This material can be obtained in this city of Dunham, Carrigan & Hayden Co., 17 and 19 Beale street, 18 to 24 Main street, and of W. W. Montague & Co., 309 to 317 Market street.

While reading ancient history the student should give careful attention to the case of Samson and his method of advertising. In his first attempt he took two "solid columns" which brought a house and several thousand people to him.

R. Schmid, the sculptor, 17 Ridley street, has some important work on hand. Mr. Schmid is the sculptor who modeled the "Grizzly Bear" that adorns our editorial table.

Occasionally the architect comes in contact with a contractor who for "ways that are dark and tricks that are vain," resemble the "heathen Chinee." It is related that a well know member of the old school of Toronto architects once proved himself more than a match for a contractor of the class to which we have referred. The contractor was engaged in the erection of a large building under the architect's supervision. The latter, while paying a visit of inspection one morning observed a pile of soft bricks, and having called the contractors attention to them, told him that they must not be allowed to go into the building. The contractor professed surprise that such inferior material should have been delivered to him, and declared that he would have the manufacturer cart them back to the yard again. The architect said no more, but went and stationed himself at the upper window of an empty warehouse near by, from which he could command a view of the operations of the contractor and his employees. He saw the pile of soft bricks gradually disappear and take its place in the construction of an inner wall. The operation occupied a large portion of the day, but he remained patiently at his post until it was finished. Then he went to the contractor and told him in somewhat forcible language what he had seen, and ordered him to set to work and undo what he had done and build the wall of proper material. *The Canadian Architect and Builder.*

Where is the man who does not like to have the latest and most approved articles used in construction of his building. The advertising department of this journal acquaints one not only with the new and hitherto unknown methods, but how to apply old and tried appliances to new conditions.

A new door check has been lately introduced by Messrs. Weatherly & Jardine, No. 135 Market street. See their advertisement in another column. The adjustment of these instruments is so perfect and the door works so easily that the temptation is strong to reopen the door in order to observe more particularly the movement. At least, such is the case with the one on our office door, receiving additional praise at opening and closing.

Cement Bricks have been made in this city for some time; those already used being of such excellent quality a general demand has been the result, to meet, which, the Pacific Tile & Brick Co., have erected extensive works supplied with the latest improved machinery at 108 Utah street, where pressed cement bricks are made in all colors and shades according to formulas used by this company.

E. G. Bossi & Co., 612 Post street, are engaged on some sgraffito and fresco work, which will be more fully described in a future number.

Attention has lately turned in the direction of a more extended use of Plaster of Paris in the finish of interiors. The carrying of tons of water into a building to be dried out through saturation and evaporation seems absurd when compared with Plaster of Paris, where the water enters more fully into the hardening process. Our Pioneer—the Golden Gate Plaster Mills of Lucas & Company, 215 and 217 Main street, will probably give especial attention to the subject, so that before long slowly setting plaster will form a portion of all wall finish.

O. E. BRADY,

Mason and Builder,

Room 11, Box 22. 314 Montgomery St. } S. F.
822 Valencia St. }

FORT & TEMPLE, LOS ANGELES.

Seeger & Guernsey's Cyclopædia of
THE MANUFACTURES AND PRODUCTS OF THE UNITED STATES.
comprises Every Article made in this Country—Indexed and Classified—and under each article the names and addresses of
THE BEST MANUFACTURERS.
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INDISPENSABLE
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LYON MANUFACTURING CO.,

SENT IMMEDIATELY TO ANY ADDRESS ON RECEIPT OF PRICE, $15.00

59 FIFTH AVE., NEW YORK CITY.

Sole Agents.

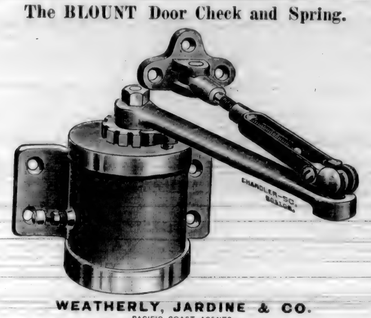
The water closet is one of the most important fixtures in a house, and should receive careful consideration. In this connection we would call attention to the Pacific Water Closet Works of W. T. Rustemeyer & Co., 215 Mission street.

Chapman's Empire Hose Reel is being used generally in new buildings. Having so many good points it becomes a great favorite wherever tried.

Persons having old buildings to be taken down or removed would do well to call on Barnard & Williams, 713 Stockton street. This firm will contract for the taking down of old buildings. They also deal in old or second hand building materials.

The Manly Manufacturing Co., of Dalton, Georgia, has lately increased their facilities for the manufacture of artistic and structural iron work for buildings. This company was, until recently, in business in Philadelphia, but decided to remove to Dalton, Georgia, where the raw materials could be furnished at the least possible cost, consequently, and with apparent reason that they can supply the finished work at correspondingly low cost.

The BLOUNT Door Check and Spring.



A perfect mechanical device with parts so arranged that all friction or wear is reduced to a minimum.

It is free from packing friction, and the frequent repairs required on all door springs using leather packing.

It will work equally well in cold or warm weather, adjusting itself to all changes of temperature.

The regulating thumb screw on side of cylinder quickly adjusts the check to slow or rapid closing of the door.

A novel feature of this door check is the ready adjustment of the spring power by turning the ratchet on upper cylinder cap, for which a wrench is furnished.

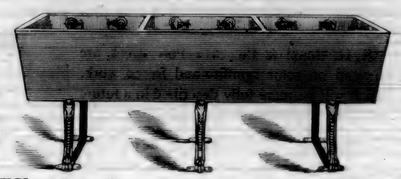
The arms are connected by a ball joint, which prevents the check from binding in case the door sags or swings out of line.

It is the best and cheapest check on the market, and everyone is guaranteed.

Agents wanted in all the large towns in Oregon and Washington.

WEATHERLY, JARDINE & CO.
PACIFIC COAST AGENTS.
132 Market Street, - - San Francisco, Cal.

THE PACIFIC LAUNDRY TRAY.



These Trays are the most economical in the market, they are manufactured in the most careful manner, all in one piece, of the best Portland Cement and Crushed Granite, and neatly capped with metal.

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1219 Market St., - - San Francisco, - - California.

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Importers - of - Metals, - Stoves - and - Ranges,

MANN'S PATENT CHIMNEYS.

SANITARY PLUMBING AND GAS FITTING,

306 SUTTER STREET, - - SAN FRANCISCO, CAL.

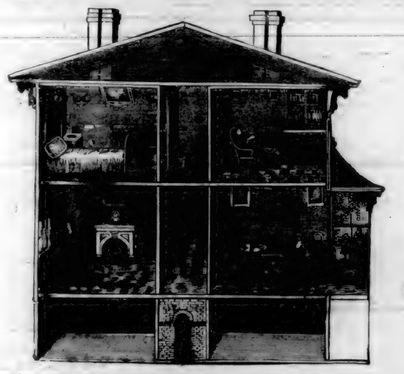
TELEPHONE No. 675.

MANN'S PATENT EARTHQUAKE AND FIRE-PROOF CHIMNEYS are the safest and best in use. The leading Architects specify them. We guarantee any Chimney of our make to draw and work. We use the best of material, and all chimneys put up in a workmanlike manner.

SCHUSTER BROS., MANUFACTURERS.

306 Sutter Street, - - - San Francisco, Cal.

Hot Water AND Steam Heating



For all Classes of Buildings.

I have introduced this system in over 400 houses on this Coast where it is now in operation. All work Guaranteed.

Sole Manufacturer of

HARVEY'S HOT WATER RADIATOR AND BOILER.

Sole Agent for

BUNDY'S PATENT STEAM AND HOT WATER RADIATOR.

Also Agent for

Gold's Improved Sectional Boiler for Low Pressure Steam

Office, 28 New Montgomery St., under Palace Hotel

Illustrated Circulars furnished on application.

C. D. HARVEY.

The California Architect and Building News.

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408 CALIFORNIA STREET, SAN FRANCISCO, CAL.

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6 Inch	7 50	18 00	32 00	60 00
1 Column	12 50	35 00	65 00	125 00
¼ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at 408 California Street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John W. Curtiss, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at 408 California Street.
John Richards, Pres. Prof. Frank Soulé, Vice-Pres.
Otto Von Geldern, Sec. Jas. Spiers, Treas.

SAN FRANCISCO CHAPTER, A. I. A.

The regular meeting of the Chapter was held July 11, President S. Babson in the chair and H. T. Bestor, Secretary *pro tem.*

After reading of minutes and the usual routine of business had been finished, the President introduced Mr. Cuthbertson who interested his audience by the reading of a paper entitled *The Scroll, the Star and the City.*

The paper was replete with fresh thought and originality, and was listened to with marked attention. On motion it was ordered printed in the next issue of the California Architect.

The committee to whom was referred the *Sketch Club* competition for gates reported:

S. C. Benson, first mention; H. J. Van Black, second; J. N. Rowell, third; C. A. Meussdorffer, fourth; and Max Rosenberg, fifth mention.

Drawing of the July competition for a hall clock was then opened for inspection and referred to a committee to report at the next regular meeting.

H. G. Lowry was elected as a student member.

A. I. A. SKETCH CLUB.

REGULAR meeting of the A. I. A. Sketch Club held July July 10, 1890. Applications of Mr. C. E. M. Hubbell and Herbert G. Lowry for membership were received and referred to the Investigation Committee.

Four designs were submitted in competition from the members, the subject being a *Hall Clock.* The competition for August to be *A Country Chapel*, seating capacity 150; scale, ⅛ inch to 1 foot. General conditions required. Plan, elevation and perspective, on sheets 15x24, rendered in pen and ink.

The Club is about to form classes for water color painting and modelling.

THE regular monthly meeting of the Technical Society of the Pacific Coast was held Wednesday evening July 9th. A paper on open channels was presented by P. J. Flynn, C. E.

B. McIntire, C. E. who is at present connected with the Vulcan Iron Works of this city, read a paper on Ropeway Construction. The ropeway described and illustrated was for the conveyance of freight for a mine in Mexico. The line was about two miles long with a fall of about fifteen hundred feet to the mile, the load being conveyed to the lower end and worked by gravity.

LEGAL INFORMATION.

With the present issue under the heading of Court Decisions, we commence furnishing our readers with abstracts from decisions rendered by the Supreme Courts of the different States, selecting such as may have special reference to the building interest on this coast.

As there are many parallel cases constantly arising in all parts of the country, the knowledge of such decisions may lighten the burden of care that often weighs heavily upon the busy architect, contractor or investor, and may assist him in shunning complications that may arise in his business relations.

THE promised *grand exposé* of rotten work in the New City Hall walls, in place of developing into the big scandal the daily papers have endeavored to make of it, has collapsed into a comparatively insignificant affair. Experts calculate that the contractors would have profited to the extent of one hundred dollars, had the poor filling not been detected and replaced with solid masonry. As the contract amounts to over eighty thousand dollars, it will be seen that the fraud does not compare in magnitude with what the public had been lead to expect, though the consequences might have been disastrous had it not been discovered.

The matter is now passing from public attention, and will soon be forgotten. We would like, however, to say a word about the injustice of one of the commissioners, who endeavored, at a meeting of the Board, to saddle on the architect the blame for not detecting the inferior work when it was being done.

To begin with, an architect's duties are many and various; he must be capable of conceiving and designing a complicated structure, of combining the various qualities of usefulness, fitness and economy into a perfect whole, he must have the faculty of so expressing his thoughts, that his drawings and specifications are as clearly understood by the workman as by himself, so that the work of each mechanic shall fit into the work of every other mechanic, as one stone fits into a mosaic, and becomes a part of the whole design. He must so handle his materials that no portion of the building be needlessly strong, to entail needless expense; neither should he err on the other side, lest his work lack the necessary stability. He must exercise a general control over the entire work, see that it progresses smoothly and harmoniously and without needless delays, must hold himself in readiness for consultation with his clients, and render decisions on a thousand and one subjects; how many, few but an architect can realize.

Now it is obvious that any man, endeavoring conscientiously to fulfill these numerous duties, cannot give his entire time to one, except by entirely neglecting the rest; for this reason, it is clearly and distinctly provided in the schedule of charges and definition of an architect's duties, adopted by the American Institute of Architects, that in all works of importance where the services and personal attention of a superintendent are required at all times, that such a superintendent or *clerk of works* shall be appointed, subject to the approval of the architect. It is the duty of such a person to be the right hand of an architect, to understand his work, and see that his orders are obeyed.

The case at our City Hall is a point in question; the architect, not being able to devote his whole time exclusively to superintending the details of construction, (which properly belongs to the foreman and the superintendent) trusted, as he had a right to do, to the faithfulness of the superintendent, and the architect was entirely justified in relying on the vigilance of the man whose *sole* duty was to see to the proper performance of the work. If a man devoting his entire time to watching the mechanics, could be imposed on, how could the blame for it be justly thrown upon the architect? We maintain that it would be quite as consistent to accuse the commissioner of direlection of duty, as for him to accuse the architect.

The Commissioner in question is paid by the city to see that it is not swindled; it is through no vigilance of the Commissioner that the city has escaped being swindled.

It is astonishing in what different lights an architect is regarded, before being engaged, and when carrying out his duties; in the former case a client thinks that all he has to do is to make a few drawings and write a little description of them; in the latter case, he must be infallible, must not make a slip, must not omit to mention every nail, must settle disputes between unreasonable beings to satisfy both parties, must be professor, lawyer and judge, and to crown all, a detective skillful enough to discover every defect that a dishonest contractor or workman may use every effort to conceal!

BRICK pavements for streets of cities and towns have many good qualities to recommend them to consideration. In this city some years ago, a system of brick paving was tried which seemed to promise superior results. As then put down, the brick were dipped in hot asphaltum and set on edge over a layer of sand. It seems as if an improved pavement could be made by this system in connection with other late improvements. Such, for instance, as a heavy bed of concrete, overlaid with bricks set in either cement or asphaltum; and in the outlying streets having light travel the upper surface could be coated with asphaltum.

Recent improvements in the manufacture of bricks, whereby various chemical substances are introduced in a manner to form soft, hard, very hard, or colored bricks suitable for any purpose intended renders it a comparatively easy matter for the manufacturer to furnish paving bricks of any degree of hardness or of any form desired. We believe it would be well for interested parties to look into this matter thoroughly, as brick or tile is destined to be the coming pavement in the near future.

THE SCROLL, THE STAR AND THE CITY.

A paper read before the San Francisco Chapter of the American Institute of Architects, Friday evening, July 11th, 1890, by W. J. Cuthbertson

It seems to me that an architect's life is not one adapted to lend aid to the getting up of a good logical and well arranged paper. So many well ordered and methodical arrangements have to be made all the time by him in properly conducting his profession in its multifarious branches and ramifications, that when it comes to doing that which is not absolutely necessary for its proper conduct, he feels, if I may judge from my own case, like I should imagine a lemon feels when squeezed of all its juice—squeezed of all the method and rules in him.

Naturally then one feels like taking a reckless plunge from the hard and fast methods of ones professional life and revelling in artistic literary abandon. This may account for the unsequentiality of this paper and the ramblingness of its remarks and thougnts.

I think myself peculiarly happy in being permitted to address the architects and through them and their organ, the citizens of San Francisco on the subjects of what constitutes a beautiful and well laid out town, which is really the subject matter of this.

Among all the cities in the world, San Francisco presents as great advantages for the display of noble building and arrangement as any other, and therefore on the other hand sustains most injury in the erection of common place and unworthy buildings and bad arrangements of laying out.

We ought to be all proud of the city, and are, counting out a few carpers and cappers, who intrude their jeers at our city in the public prints, comparing it and its building unfavorably with the monstrosities met with east of the Rockies, which I think is not only uncalled for but untrue, for this city can hold its own with any other in America in its architectures. However the duties which ought to justify this pride have been wofully neglected, and instead of building up a city as nature evidently intended, we proceed to attempt to improve upon nature, and "improve" her beauties from the face of the earth. She has given us the makings of a fair and beautiful city and we must remember that we did not raise our mountains nor shape our shores aud islands, and therefore have no right to destroy that which we can never create, and scar up the earth's surface as we have been doing heretofore to fit it to our surveyors' grades and for the ignoble purposes of a selfish commerce and it will be one of our objects to-night to find out a system by which this destructive labor may be done away with.

Any system however leading to this goal will meet with tremendous opposition as it is one of the customs of society, that any thing leading to destruction will receive immediate and energetic support while anything leading to construction or non-destruction will receive but very apathetic notice.

The order for a new destructive agent such as a new ironclad cruiser will be received with congratulations and acclaim and we will employ our government willingly to attend to this, why not rather employ it in making vessels of peace for carrying articles of utility to our people; a much less expensive proceeding, although having far more beneficial results.

Why do we set our Government to do precisely the work from which there is no return, the making of engines of war and the collection of taxes and the making of laws. Let us have our wars and laws made by contract, the same system under which the rest of our business is now being carried on and then let the Government devote itself to some useful and productive occupation, such as providing for the necessary wants of the people, under the same conditions as it as present devotes itself to the destructive part.

And coming down to our municipal government, why not instruct it to save the destructive and useless labor of digging and carrying ground from one place to the other, destroying our grand look-outs and effacing the other beauties, within the confines of our city.

Give them true work to do—to prevent the destruction of our light and the destruction of our air and our watercourses.

Land, Light and Air, the three elemental necessities of our existence, all being destroyed every day in one shape or another and the terrible work being applauded by the people and done by their appointed agents.

Hear what a teacher saith on this point: "To the Persian, the Greek and the Christian, the sense of the power of the God of Light has been one and the same. That power is not merely in teaching or protecting, but in the enforcement of purity of body, and of equity or justice in the heart; and this observe, not *heavenly* purity, nor *final* justice, but here and now actual purity in the midst of the world's foulness, practical justice in the midst of the world's iniquity.

"And the *physical* strength of the organ of sight, the *physical* purity of the flesh, the *actual* love of sweet light and stainless color, are the necessary signs, real, inevitable and visible of the prevailing presence, with any nation, or in any house, of the light that lighteth every man that cometh into the world."

Now, if we don't have an ordinance passed pretty soon limiting the light of buildings where will that light be? Those working in lower stories will become moles rather than men, is that a consummation to be wished. And if we do not leave our natural watersheds as they are giving cleansing and scouring power to the water, and have our sewers put in by day labor under direct control of the government instead of by contract what will become of our purity. And if we do not prevent one landowner using the light area provided by another adjoining owner and compel him to make an area of his own, we have not practical justice, and the light is not in us. Therefore should we agitate for an order compelling the making a certain area of yard room proportionate to the size of the house or premises.

And in the urging of some such practical work I think it is one of the missions of the Chapter of Architects to engage and the duty of the representatives of the citizens to carry out.

We have plenty of ground in this peninsula and there is no other reason for covering up every inch of land and preventing free circulation of air and light except greed. This I hope is considered a vice by all present. You cannot surely call it a virtue or morality to debar even one human being from the proper use of the elements for the purpose of being able to say that one has more pieces of paper supposed to represent coins or even more of the pretty little golden baubles themselves, than your neighbor; yet this is done when we send men into cellars and other unhealthy and overcrowded places to work.

Therefore I say, let us dot this broad peninsula of ours over with no monstrous tall buildings, but trust to the nobler essences of form and color rather than to that of brute size so to form an unique city to which the residents of all other cities where their denizens have to crane their necks backward to see the strip of sky between the gloomy enclosing walls may come to be refreshed and recuperated.

(*To be continued.*)

PERSONALS.

D. H. Burnham of the firm of Burnham & Root, Chicago, has been in town this month on business connected with D. O. Mills' proposed building on Bush street.

W. J. Cuthbertson has withdrawn from the firm of Curlett & Cuthbertson, and has associated himself with Mr. Mooser; the office of the new firm is in the St. Ann's Building, corner of Eddy and Powell streets.

A JUDGMENT FOR MR. SMITHMEYER.

Judge Nott delivered the opinion of the Court of Claims this week in the Smithmeyer case, rendering judgment for the plaintiffs for $48,000. This case was for compensation for services of the plaintiffs, Smithmeyer & Pelz, of this city, as architects of the Congregational Library Building. In 1873 they submitted plans for that structure to the joint commission, which were accepted, and for which they were paid $1,500. For several years they were engaged in the preparation of details and the examination of almost innumerable other plans that were submitted, but received no compensation. Smithmeyer, during this period, made a trip to Europe and studied various libraries and afterwards made a report to the commission. In 1886 he was appointed for the building at an annual salary of $5,000 and Pelz, his partner, was made chief draughtman at $3,000 a year. Smithmeyer held this possession for two years, and Pelz is still in the service. The court went upon the theory that the claimants were entitled to recompense for the service rendered during the period when the commission was examining plans, but the question was on the basis of the recovery. The plaintiffs alleged a right to recover on the total cost of the building as finally planned which, it is estimated, will be about $7,000,000. This would give them $175,000 as their fees as architects, using the ordinary rule of 2½ per cent. Judge Nott indicated by his remarks that he believed that the claimants should recover in a liberal measure, but that upon a vote being taken he had been overruled by a majority of the court. He said that it was his opinion that claimant's fee should be calculated upon the basis of their original estimate of the cost of the building, or $5,580,000, which would give them about $135,000. The court decided, however, that inasmuch as the plaintiffs had finally accepted salaries in lieu of their regular fees at architect's rates their compensation should be in the same measure as the compensation, and, counting the period of six years when they worked without recompense at the rate of $8,000 a year the aggregate of their joint salaries, judgment was rendered for $48,000. The case will be appealed to the Supreme Court.—*Architecture and Building.*

COURT DECISIONS RELATING TO BUILDING CONTRACTS.

ARBITRATION CLAUSE IN BUILDING CONTRACT.

Where a building contract provides that any dispute as to the meaning or scope of the specifications shall be decided by the architect, and that any dispute as to the value of the work omitted by the contractor shall be submitted to arbitration, a claim for work done under the contract, where the only defense is that the work was not properly done, need not be submitted to arbitration. Where the contractor used his best ability and effort to comply with a contract, and the other party retains and receives the benefit of his labor and materials, the fact that the work has not been fully performed and has not been well done, is only a defense to the extent of the damages caused thereby.

Gallagher v. Sharpless, Supreme Court of Pennsylvania, 19 At. Rep. 491.

CANCELLATION OF BUILDING CONTRACT FOR INCOMPETENCY.

Where a contract for the erection of a building provides that the contractor shall erect the building in the best, most substantial and workmanlike manner, and authorizes the owner to terminate it if the work is not done in accordance with the terms, the owner is justified in terminating the contract on account of the incompetency of the contractor and his workmen by reason of ignorance and dissipation. In an action by the contractor for damages sustained by the termination of the contract, recovery was sought for extra work not called for by the specifications, and it is held that if the cost of completing the building was less than the contract price, the contractor is entitled to recover for such extra work, but if the completion of the building was greater than the contract price and the value of the work, he is not.

Rector v. McDermott, Supreme Court of Arkansas, 13 S. W. Rep. 334.

FAILURE TO DELIVER MATERIALS CONTRACTED FOR.

Failure to deliver materials for the completion of a building within a reasonable time, no time being specified for their delivery, entitles the owner of the building to recover damages to the extent of a reasonable rental value of the building during the time occupied by its completion being delayed by such failure to deliver goods..

Scribner v. Jacobs, Supreme Court of New York, 9 N. Y. Supp. 856.

LIEN LAW PRECEDENT.

The Supreme Court of Pennsylvania recently decided in two seperate cases that a sub-contractor engaged in the erection of a building has no lien against the building if the contract between the owner and principal contractor proves that the building should be delivered free of liens. All contracts contain that proviso, but heretofore it was not supposed that it effected sub-contractors and material men, who are not parties to the contract and whose lien is given to them by statute as an extraordinary remedy. This interpretation of the law practically wipes out the Mechanics' lien law, which has been in operation since 1866, and makes all people who do work on or furnish material for a new building look to the principal contractor alone for their money. Under the old ruling a dishonest contractor could under bid all competitors, do part of the work, draw about half the money and then refuse to pay the men. With the fear of a lien hanging over his property the owner was compelled to pay the men, although he had already paid the contractor.—*Architecture and Building.*

BUILDING CONTRACTS.

THE LOWEST BIDDER.

We find in *The American Contractor*, under the heading "Contracts for Public Work," an article as applicable to private contracts as to public, stating facts which, if all who build would heed, would add much to the character, stability and comfort of our homes and business blocks, and peace to the minds and money to the pockets of their often distracted owners, as well as wealth and reputation to the architect who, too often, is responsible for all the trouble. Would do away with Buddenseiks and their flimsy, tumble down fire traps, and leave no employment for the self-styled "architect" and "wood butcher," who prey upon the public under the name of the "lowest bidder."

The man who builds, too often acquires his only building experience as his structure progresses, which experience rolls up upon him for years after his architect and builder are paid. With inexplicable short sightedness, considering his own ignorance of the subject, how often he turns to and trusts, not the man whose work shows his architectural ability, but the sign "Architect." How shamefully often, too, with short sightedness as great, do we find architects of real ability, prostituting their profession in their desire for business, betraying the trust of their patrons, robbing the building of all strength and comfort; letting the contracts to "the lowest bidder," some journeyman tramp with no money, no credit, no honor and no knowledge of his business, whose only thought is how he may "skin" the job with possible profit to himself. This is of yearly occurrence all over our country as all who come in contact with the subject know, and know as well, that we have architects who value their reputation; and builders, lumber dealers and mill workers, who will furnish only honest work and material whether or not they are "the lowest bidders."

The American Contractor says: "Practically all the work on public improvements or the contract to furnish supplies for same is let to the parties or firms offering to do the work or furnish the required supplies for the least amount of money. In other words it is the almost universal rule or custom to let 'to the lowest responsible bidder' all work and contracts to supply material, whether for national, state, county or municipal use. And on first view this seems to be the fairest possible means and calculated to give the greatest satisfaction to all. And this was no doubt the fact when first adopted. Without entering into the merits and demerits of this plan or calling attention to its frequent abuses, as we may find occasion at a future time to do, we wish herein to draw attention to the frequent losses resulting from a too rigid adherence to the rule of letting to the 'lowest responsible bidder.' If the parties letting the contract always had the prescience and judgment to correctly interpret that phrase, 'the lowest bidder,' well and good, but as a matter of fact it is only a question of figures. A's bid is $31,500, B's $29,900, C's $27,320. Of course the contract goes to C if he is responsible and presumably able to do what he agrees to do. And yet it is quite possible that B's bid or A's is in reality the lowest bid.

"Not long since a prominent government official accepted the proposal of a bidder whose bid was a round ten thousand dollars higher than the 'lowest bidder,' and several leading technical journals, commenting on the fact, hailed the 'new departure' as a change in the right direction, for considering the comparative quality of the materials and the repute of the bidders the higher bid was clearly the most advantageous to the government. And we have yet to learn of the success of the lawsuit threatened by the 'lowest bidder.'

In this age of multifarious shams and adulterations, and of multiplicity of things of similar name, grade and apparent quality, one cannot expect to obtain always the material desired by securing bids in open competition based on general specifications and given to the 'lowest bidder.'

"As an instance, we noticed in the specifications for a large building not long since, 'blue Bedford stone of uniform color, cut, etc.'

"In bidding on this, what a fine chance the 'lowest bidder' has! He can put in a surface stone, or qualities that will pass inspection, but in reality be much inferior to what is desired, and so make up on the low bid. But sooner or later the price must be paid by the latter. The repairs necessitated on account of the inferior quality will more than make up what was saved on the lower bid; and, in addition, the building is less durable and gives no satisfaction to the owners.

"When a firm has built up a reputation for honest work and care in carrying out their contracts according to the spirit of the requirements, that reputation ought to stand for something, and it would be extremely rare if the bid of such a firm, as the world now is, should be the lowest one. The nation, the state, the municipality are prosperous and, like the prosperous individual, are entitled to receive the best and receive it at the lowest price. But when, in construction of public works, the contracts are given to the parties who offer to do the work for the least amount of money, they do neither receive the best nor receive it for the least money, as is a matter of notorious comment. And while a change in the manner of awarding contracts or deciding which is the 'lowest bid' may not eliminate the evils or prove a panacea, it is quite evident that the present system can be revised with benefit to the public."

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The Engine House designed by architects Shea & Shea, is proposed to be erected to house the new water tower.

The lot chosen for the purpose is the vacant space belonging to the city at the junction of Market and Bush streets.

A good deal of opposition to the project has been made by some of our citizens, who think the space should be devoted solely to monumental purposes.

The New City Hall, Omaha, which we publish this month, was designed by architects Fowler & Beindorff. We are under obligations which we desire to acknowledge to the Omaha Engraving Company for the cut.

The first and second mention designs in the competition of the A. I. A. Sketch Club, drawn by S. C. Benson and H. J. Van Vlack respectively, are given in this issue—the third mention was awarded to Jos. W. Rowell. The subject was a country stable costing $5.000.

BOOKS & PERIODICALS.

ARCHITECTURAL EXHIBIT.

CINCINNATI, 1889.

Selections from National Exhibition of architectural drawings and sketches, held at Cincinnati November, 1889, under auspices of Cincinnati Architectural Club.

This collection partakes somewhat of a national character, and compared with all previous exhibitions, is suggestive of the rapid strides the student of architecture is making in originality of design and in the use of his pen. It contains fifty sketches, all reproduced from photographs on very fine paper, and will make a valuable addition to any library; the price being but $1.00.

A NEW WORK ON THE STEEL SQUARE.

The Second Part of "*The Steel Square and its Uses*," just issued by the Industrial Publication Co., by *Fred T. Hodgson*.

The Second Part is not in any sense a substitute for the First Part, which still remains what it always has been—a necessity to every intelligent workman. But it is an extension and enlargement of the First, giving new problems, new methods and new wrinkles for shortening work and increasing the accuracy of the workman. It is illustrated in the same handsome manner which characterized the First Part, to which it forms a companion volume.

With these two volumes in his possession, the workman has at command the entire mathematics of construction, and is prepared to lay out any piece of work more easily, quickly and accurately than it can be done by any other method.

Price, handsomely bound in extra cloth, $1.00. Sent to any address post paid. For sale by the California Architectural Publishing Co.

The July number of *Stone* is full of good things for those interested in stone construction. Among the contents are the following interesting subjects treated: "The Natural Development of Architecture," "Notes on Quarrying," "Stone and Marble in Colorado," "Symbols of Art," "The Great Ice Invasion" and "Trade Schools." In the August number we are promised illustrations of the designs offered in prize competition by the publishers of *Stone*.

The June numbers of *Architecture and Building* are full of well-timed and excellent articles, and a spicy criticism on Prof. Atchison's paper, entitled "Roman Architecture," by Max Schropp, architect. Also excellent illustrations in the way of pen sketches and architectural details.

The Manufacturer and Builder for June concludes a valuable article on "Testing Building Stones," written by George P. Merrill.

House Painting and Decorating is full of good articles as usual.

The Engineering and Building Record for June 28, has an illustrated article on "The Proposed Plan of Sewerage and Paving in Duluth," that is well worth reading by those interested in the subjects.

The Inland Architect publishes a paper read by John W. Root, before the architectural class of the Art Institute, Chicago, and entitled "A great Architectural Problem." Mr. Root treats exhaustively of the requirements, construction and design of modern office buildings, and describes in a clear and entertaining manner the subject of their foundations and their requirements in the clay soil of Chicago.

Carpentry and Building for June comes out with on increased number of pages of text and advertisements, and is full of valuable articles.

The Architectural Era prints as usual, newsy letters from various cities, besides several fine illustrations.

The American Architect.—The June numbers of this popular journal are crowded with the best of reading matter. The paper entitled "Byzantine Architecture in the East" is continued. As this is a transalation from a French work of high standing, it will be of great value to the English reading student of architecture. Taken together with the illustrations, which are considerable in number and remarkable for their variety, they form quite a volume for one month's production.

Among our foreign exchanges for this year is *Decoration-Motive* from Leipzig containing plans of panels and ceilings and full size illustrations for wall and ceiling decoration, edited by Richard Hess, decorator, Leipzig.

NOTES & COMMENTS.

Files may be cleaned and sharpened by electricity. The files being immersed in water which is decomposed by a current of electricity, the oxygen acting upon the cuttings of the file, while the hydrogen bubbles protect the edges of the teeth.

On examination of the eyes of a number of persons, it was found that seven out of eleven had stronger light in one eye than the other—two out of five had one eye out of line—four out of nine were color blind in some degree, and only one out of twelve had good sight in all respects.

This may account for some of the barbarous forms set up and called architectural beauties.—Ed.

Large quantities of lumber are being sent East, from Tacoma.

The Tacoma mill recently cut a clear timber piece 134 feet long, 24 inches wide and 18 inches thick, and contained nearly 5000 feet of lumber, board measure.

A perambulating apiary (a house for bees) is one of the late inovations in California. The hives for the bees are placed on a platform mounted on wheels, and moved from the lower regions, to higher elevations as the season advances and the blossoms appear.

Several capitalists are preparing to build near this city a million dollar slaughter, packing and cold storage house combined.

Many perishable articles may be preserved indefinitely by the electrical deposition of metal such as silver, copper, nickel, etc. A fresh egg coated with silver by this process became a work of art, which when broken after a year's time was found as fresh as when first laid. Meat, cheese or fruits may be preserved by this process. The ancient goose that lays the golden eggs could, perhaps, be embalmed in this manner and continue the deposition of golden eggs till further improvement shall render the process unnecessary.

The Chinese, who do everything in the opposite manner from the rest of the world, reflect the honor due to an illustrious name, back to the ancestors of that name, instead of to its posterity; thus showing they have a better sense of the fitness of things than we have, with all our boasted superiority.

The Supreme Court has rendered a decision in the case against the Hibernia Savings and Loan Society, charged with obstructing Olive Avenue, a small street running from Larkin to Polk streets, between Ellis and O'Farrell. The Bank claimed the street was not public property, but belonged to the Bank. The lower court decided that the street in question had been properly dedicated to public use, and this decision was sustained.

Through the exertions of Mrs. Leland Stanford, a marble monument is soon to be erected on the beach at Monterey, close to the shore, and on the same spot where Junipero Serra, the Franciscan friar, first set foot in California, in the year 1770.

Mrs. Stanford conceived the idea some months ago, and at once took steps to have her idea realized. The work is being performed by a San Jose firm, and will cost $5,000.

THE GENESIS OF ARCHITECTURE.

The following is an extract from a lecture by Louis H. Gibson, formerly editor of *Stone*, delivered some time since in Indianapolis:

One can write the history of earlier building operations without the aid of facts. We know what they must have been. In a hilly country, people found it convenient to build caves. This suggested the necessity for a porch, constructed of small tree trunks or supports, and a covering of boughs or twigs above; in a timbered country, huts with forked corner posts, and timbers reaching from corner to corner, and upper covering of slender pieces interwoven with branches and covered with leaves, and a side covering of natural and simple material. It is easy to imagine that at first only a door is required, and that afterwards a little opening was made for the purpose of securing additional light, and in that way the window idea had its early development. The first houses of this kind probably had only one room—the cooking was done outside the door. After this a crude fireplace was substituted on the inside as being the first thought which had to do with the convenience of the housewife. The development of the Ionic capital had its germ in the simplest kind of wooden construction. There was a post and on top of it a head, the ends of which were rounded off, and finally scrolled in little, and there was the thought which developed the Ionic order. That which followed was a mere matter of detail. The development of the Doric order was even more homely. An expanded cap to give more breath-bearing surface to the girders which went across it and column—itself a tree trunk.

The general forms of construction in architecture are simple enough. The vertical supports, which may be a tree, or a post, or a brick wall, or one of the granite or other stone, a horizontal support or lintel, which may be the limb of a tree or a trunk that is heavier, or a piece of stone. The tree may be left with its bark on, or it may be smooth in its form, as at the present time. The granite or the stone may be natural or it may be polished and elaborately decorated.

The *idea* of the vertical or horizontal supports are the same under any circumstances. This kind of construction is the same the world over. Everything else is a detail. We now have every form which has to do with architectural construction excepting the arch, and in the architectural histories we have discoursed on the origin of the arch, the time when it was first used, and when different kinds of arches were regularly recognized and adapted by the builders and architects of the world. In truth the arch had its origin in the upheavals of the earth. The primitive man no doubt saw it when he excavated his cave. He no doubt found it in the openings to natural caves which stood there before him, and he was able to imitate it. He piled up some stones, and, as he covered the opening, he allowed them to approach one another slightly in the center, and he dropped another one in between and he had an arch. It was taught to him by what was immediately before him. In a constructive sense we have before us all that relates to architecture. All was developed long ago; no one knew when, probably as soon as some one was sufficiently educated to want to get in out of the rain or sun.

Here we have all the constructive forms of building. We may consider the general principles leading to the development of architecture in the same way that we have the constructive features. Some barbarian built a shed and under the protection of its roof and its rude walls he enjoyed some of the luxuries of living, and his mind looked a little from the mere desire to get in out of the rain. He hung the skin of an animal on the wall to get it out of the way. This was a very ordinary housekeeping incident. It was a move in the right direction, however; it was the beginning, which led to taking things off the floor. After a time the cooking utensils found a place in some more desirable locality. This was development; it wasn't art. It was simply the beginning of the movement in that direction. He is thinking of higher things than the mere act of keeping warm. His horizon enlarges. He goes out into the forest in search of food and kills a large and powerful animal. He hangs its skin on the wall of the house, partially for the purpose of assisting in its preservation, and otherwise that his neighbor may see what he has done, in order that his neighbor may see what a great hunter is the householder. Here is the development of his pride. The placing of the skin on the wall in this way is the expression of an idea. It beautifies the house; it is *almost* art. His mind is growing; he trims the loose bark off the beams; he sees something in the grain of the wood that looks like an animal—possibly its head; he accentuates the lines and thus decorates his house; he is a sculptor, an architect; and thus his mind moves on, in time he develops a second Michael Angelo. It takes a few thousand years, but time doesn't count; it is the result. He is the father of the architect of a Greek temple.—*Stone.*

ELECTRICITY USED FOR GENERATING STEAM.

Machinery for generating steam by electricity has been set up here and zealously guarded, but a reporter managed to get into the room in which the plant is located and guarded, and this is what he found:

To a battery of two 20-horse tubuler boilers, a 10-horse engine and boiler is temporarily connected to heat the water in them; steam is raised in a small boiler, and a dynamo used to produce electricity.

The flues in the large boiler are filled with asbestos, the ends are connected with the dynamo, and the passage of the electricity through the asbestos heats it to an intense degree, causing a rapid raising of steam. When the required pressure in the large boiler has been attached, the engine driving the dynamo is attached to the large boiler, and the work goes on as before.

In this way it is claimed that but 25 per cent. of the power of the large boilers will be required to permit 40-horse power, leaving three-fourths of the power to be applied to other purposes. It is claimed that the power can be applied in this manner to any required amount. The 40-horse power could be used after starting to start up a 160-horse power and keep it moving without any cost whatever outside of keeping up the machinery.

This is the first instance on record where power could be increased; nature has always worked the other way and demanded that a stronger should work the weaker, as the 40-horse power to drive 10, and if this proves a success, as is claimed, the company have the biggest discovery ever made in America that will rank next to steam power itself.—*New Orleans Times Democrat.*

ELECTRICITY DIRECT FROM HEAT.

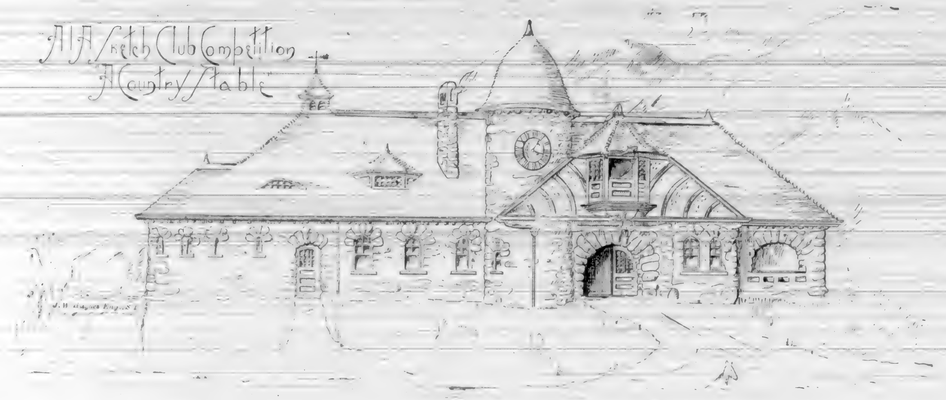
A dispatch from Hartford, Conn., June 2, makes the following remarkable statement: "The conversion of heat directly into electricity without the intervention of steam boilers, engines, or dynamos, is said to have been accomplished by a young Maine inventor, H. B. Cox. His experiments have proved so successful as to lead Boston and Hartford capitalists to organize a company with a capital of $1,000,000 to put the discovery into practical operation. If the claim of Mr. Cox prove true the value of his discovery is enormous, but as yet the experiments have been only on a small scale. His method of changing heat to electricity is as simple as the changing of water to steam, the current coming right direct from the glowing coals of a furnace without the aid of any machine. No power has ever been discovered that is half so cheap as would be electricity obtained by this process. He has experimented with a furness at his home, using a number of electric lights, and it now remains to be seen whether his experiments will hold on a large scale. His discovery would multiply by three at least the effective value of every ton of fuel used for generating power. —*Sanitary News.*

THE PRODUCTION OF CHEAP DESIGNS.

The efforts on the part of building committees to cut down fees of architects results in the erection of unstudied designs. The architect gives as little as he can for the little that he is offered, and thus gets even with his employers. The architect who takes a pride in doing his work as thoroughly as he can, and who devotes much time to the study of it in all its details, cannot compete with the man who is content to impose upon the community his first conception in an exceedingly crude form.—*The Canadian Architect.*

OMAHA CITY HALL.

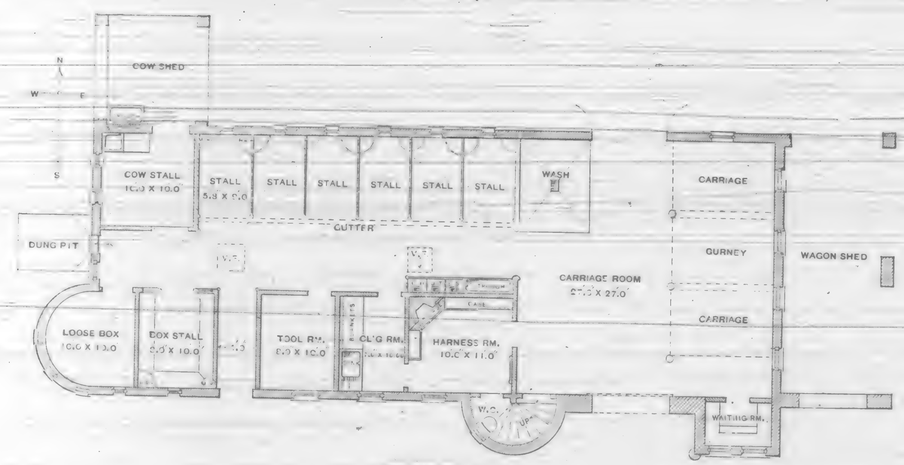
FOWLER & BEINDORFF, Architects.



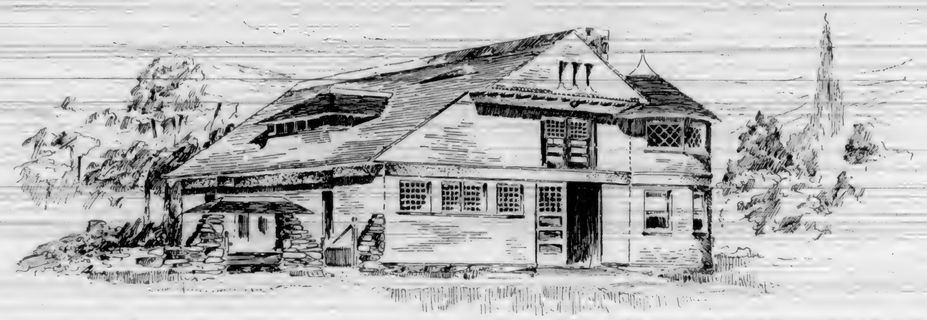
ELEVATION.

1st MENTION

By S. C. BENSON.



GROUND PLAN.

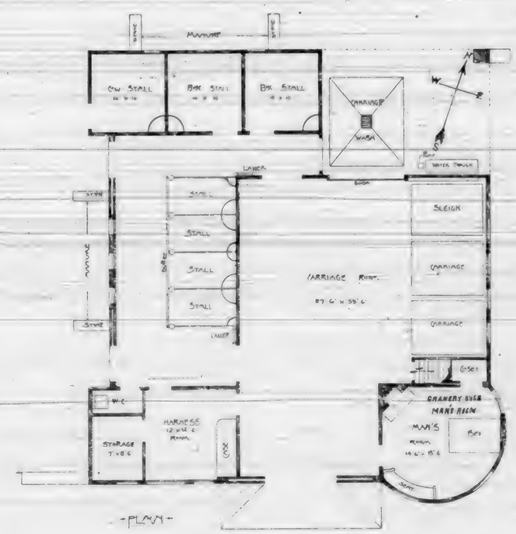


PERSPECTIVE VIEW OF STABLE.

2nd MENTION.

By H. J. VAN VLACK.

A. I. A. SKETCH CLUB COMPETITION FOR A COUNTRY STABLE.



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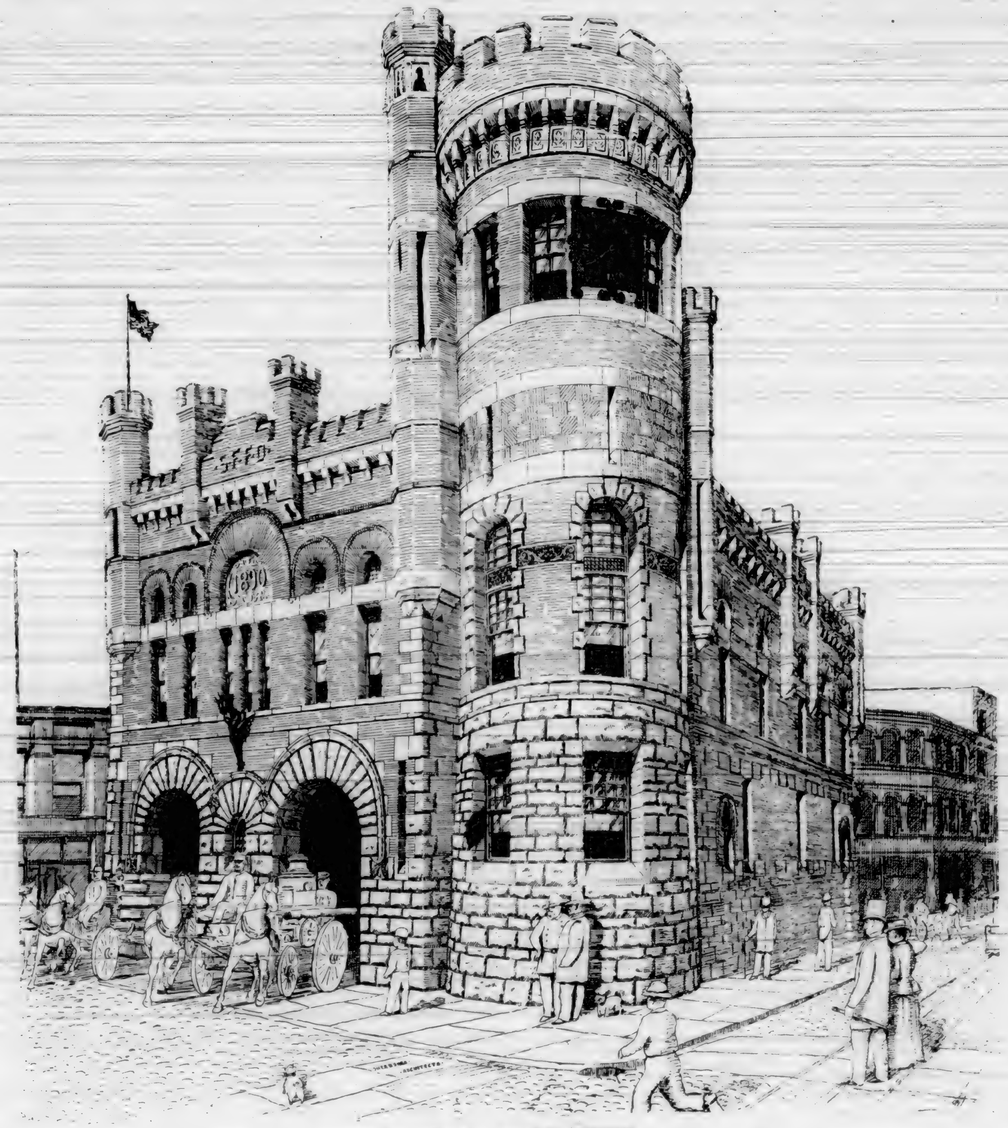

PROPOSED ENGINE HOUSE

For the San Francisco Fire Department.

SHEA & SHEA, Architects.

STRANGE USES OF PAPER.

PAPER is now made to serve for steel and iron. When strong fiber is used, it can be made into a substance so hard that it can scarcely be scratched. Railroad car wheels are made of it more durable than iron. A store in Atlanta, Georgia, has been built entirely of paper. The rafters, weather-boards, roof, and flooring are all made of thick, compressed paper boards, impervious to water. On account of the surface of the paper being smooth and hard, it cannot catch on fire as easily as a wooden building. It is found warm in cold, and cold in hot weather. The Breslau fire-proof chimney has demonstrated that cooking and heating stoves, bathtubs and pots, when annealed by a process that renders it fire-proof, became more lasting than iron that will not burn out. Cracks in floors around the skirting board, or other parts of a room, may be neatly filled by thoroughly soaking the newspaper in paste made as thick as putty and forced into the cracks with a paste knife. It will soon harden and can be painted. Black walnut picture frames are made of paper and so colored that no one can tell them from the original wood.

A paper piano has lately been exhibited in Paris. The entire case is made of compressed paper, to which is given a hard surface and a cream white, brilliant polish. The legs and sides are ornamented with arabesques and floral designs. The exterior, and as much of the interior as can be seen when the instrument is open, are covered with wreaths and medallions painted in minature. An Italian monk has succeeded in constructing an organ where pipes are made of paper pulp. It has 1400 pipes of various sizes.

The American Cotton Seed Oil Trust are now running a mill for making paper from the hulls remaining after all the oil has been squeezed out of the cotton seed. They are contemplating an erection of a 100-ton mill for the same purpose. These hulls have heretofore been considered worthless. It has so far proved so successful that the trust propose erecting mills at different points in the cotton raising country. Of course, this will somewhat revolutionize the paper trade.

A new mill for the manufacture of paper from moss has been recently established in Sweden. Paper of different thickness and pasteboard made of it have already been shown, the latter even in sheets three-quarters of an inch thick. It is as hard as wood, and can be easily painted and polished. It has all the good qualities, but none of the defects, of wood. The pasteboard can be used for door and window frames, architectural ornaments and all kinds of furniture. The ceiling of the Assembly Chamber, at Albany, N. Y., is made of papier mache. It is a model of its kind, and appears so like marble as to deceive the most expert eye. The latest idea is to use paper instead of wood for lead pencils, by using a patent preparation by which it can be cut as easily as the softest wood.—*The World's Progress.*

WHO ARE THE PUPILS IN THE TRAINING SCHOOLS.

THE statement is made that the sons of professional men are in the majority in the Philadelphia Public Manual Training School. It is surprising to learn that while the children of artisans are striving to get into the ranks of the struggling and poorly-paid professions, the children of professional men are taking to mechanical pursuits. Prof. William L. Sayre, the principal of the school at Seventeenth and Wood Streets, states; "It is a curious fact that of the boys now in training-school and learning the use of chisels and hammers and laths, fully three-fourths are the sons of professional and business men. We have many sons of doctors and ministers and lawyers." Of the seventy-seven occupations recorded of parents of boys now in the middle class, fifty-four are those of professional or business men and twenty-three those of men engaged in other pursuits, of whom only fourteen are artisans.—*National Builder.*

The Central Pacific R. R. Co. are pushing the repairs on the snowsheds which were damaged by the severe storms of last season.

THE ARAB HOUSE.

The term "Arab," in its application to the domestic architecture of Egypt, as well as the vast region which extends from the borders of Tripoli to the Atlantic Ocean, is misleading. It is a question whether the distinctive features, so familiar to us in every town and village from the banks of the Nile westward, do not represent a reflux of the arts of the Moors rather than the outgrowth of any civilization that can be traced as of Arab descent. The Arabs, as a distinct race, have been at all times nomadic, living in tents, a people without emulation, and possessing none of the qualifications for advancement in the ways of civilization. The Moors, on the contrary, or, more properly speaking, the inhabitants of Mauritania, were not only a people of culture, living in towns, and encouraging art, science, and literature, but they attained a high degree of splendor, and a place in history almost as marked as that of the Romans. The fusion of the conquering Arabs with the inhabitants of Mauritania in the twelfth century, and the spread of a mixed population as far eastward as the banks of the Nile, have given rise to a prevailing idea that we are indebted to the Arab rather than to the Moor for some of the most charming features in ornamental art that have ever appeared in any country. In the planning of ordinary dwelling-houses neither race displayed much skill or originality, but were content to follow the methods of the Romans in all that appertained to their domestic arrangements. So strong is the influence of tradition in this one particular that if a native architect of the present day were asked to design, unfettered, a dwelling of ordinary pretensions, the result would have been equally satisfactory to a citizen of the Empire in the time of Augustus.—*The R. I. B. A. Journal.*

SCHOOL OF ARCHITECTURE AT THE UNIVERSITY OF PENNSYLVANIA.

The University of Pennsylvania proposes establishing an Architectural department. Three meetings have already been held to discuss the matter, and although the exact scope of the school has not yet been decided on, it has been determined to make it as broad as possible. The advice and assistance of several leading architects have been asked and promised to Provost Pepper.

The new study will form one of the features of the Towne Scientific School, and an effort will be made to have practical lectures delivered by the leading architects, and their criticism of the work of the students will also be asked. In some respects the method of work will be similar to that pursued at the law school, the students being registered as draughtsmen in the office of architects and going out to the university for the lectures. A museum will be established, containing casts of details and other helps to practical work, and an effort will be made to gather together a complete library. Degrees will be conferred.

Heretofore architecture has been studied in a subordinate way at the university as part of the course of civil engineering, but it has never as yet been made a special feature of the university work. The oldest and one of the best known architectural schools in this country is that of the Institute of Technology in Boston. The course there is four years. Afterward a department was estabilsed at Columbia College, New York, and also at the schools of Mines, in New York, and a great deal of thought is given to the subject in both institutes. A chair is also supported at Yale, Cornell and some other well-known colleges.—*Architecture and Building.*

OBITUARY.

On Saturday, June 21st, John Cochran died at his residence 419 Hyde street. Mr. Cochran arrived here in '49, and has been prominently connected with the building interests of this coast. He was in his seventy-third year.

CITY BUILDING NEWS.

Bryant near Fourth. Three-story frame; owner, A. Patieclli; architect, M. J. Welch; contractors, S. Cuneo and G. Casaretto; cost, $1,500; signed, June 24; filed, June 25; payments, $1,136.75, framed; $1,136.85, brown coated; $1,136.85, completed; $1,136.85. 35 days.

Battery cor. Bush. Alterations; owner, L. and M. Sachs; contractor, R. McCann; cost, $1,771; signed, May 31; filed, June 9; payments, $1,328.25, when accepted: $142.75, 35 days.

Block bounded by Noe, Castro, Twenty-eighth and Twenty-ninth; cementing; owner, J. Carroll; architect, J. J. Mahoney; contractor, W. C. Watson; cost, $1,650; signed, June 14; filed, June 17; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Baker near Pine. Two-story frame; owner, C. Hirsch; architects, John & Balczynski; contractors, Wells & Joslin; cost, $3,945; signed, June 11; filed, June 19; payments, $800, framed; $700, partitions set; $700, white coated; $745, completed; $1,000, 35 days.

Castro near Alvarado. Two-story frame; owner, M. G. Wheeler; contractor, F. E. Wharff; cost, $3800; signed, June 19; filed, July 5; payments, frame is completed dark coat of plaster is on; 35 days; in four equal payments.

Clement near Third Avenue. Frame; owner, J. R. Bielly; contractor, C. H. Norton; cost, $2,257; time, 60 days; signed, June 9; filed, June 9; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Devisadero near Bush. Brick and carpenter work; owner, W. A. Abrams; architects, Salfield & Kohlberg; contractor, A. C. Soule; surety, W. J. Adams and C. S. Holmes, $4,000; cost, $8,857; time, 90 days; filed, June 16; payments, $1,000, framed; $1,000, enclosed; $1,000, doors hung; $2,857, accepted.

Ellis near Taylor. Alterations; owner, L. Schussler; architects, Salfield & Kohlberg; contractor, A. Bischer; cost, $2,050; time, 60 days; signed, June 13; filed, June 20; payments, $750, framed; $450, white coated; $400, accepted; $550, 35 days.

Fulton near Broderick. One-story cottage; owner, N. J. Adams and wife; architect L. J. Welch; contractors, Patterson & Ackerson; cost, $2,800; signed, June 12; filed, June 21; payments, $1,000, ready for plastering; $1,100, completed; $700, 35 days.

Golden Gate Ave. near Willard. Frame cottage; owner, H. M. Wooley; architect, M. G. Bugbee; contractor, A. C. Soule; cost, $2,000; signed, June 21; filed, June 23; payments, $300, framed; $500, brown coated; $400, accepted; $800, 35 days.

216 and 218 Grove. Alterations; owner, J. Levy; architect, J. H. Littlefield; contractor, H. A. Johnson; cost, $1,275; time, 65 days; signed, May 11; filed, June 14; payments, 75 per cent. of work done; balance, 35 days.

Hayes near Devisadero. Carpenter work; owner, Miss A. Wynne; architects, Hueme and Everett; contractor, F. J. Fernhof; surety, H. Hyde, $5,000; cost, $5,780; signed, June 24; filed, June 26; payments, $1,445, enclosed; $1,445, brown mortared; $1,445, completed; $1,445, 35 days.

Jones near Geary. Additions; owner, T. J. Moynihan; architect, T. J. Welch; contractor, A. Jackson; cost, $2,800; signed, May 9; filed, June 11; payments, $800, roofed; $700, second coat of plaster on; $1,270; completed; $800, 35 days.

Jackson near Gough. Dwelling house; owner, A. St. J. Bowie; architect, S. Newsom; contractor, Geo. R. Lang; surety, F. P. Latson, $4,000; cost, $10,625; signed, May 29; filed, July 3rd; payments, on first and fifteenth day of each month at the rate of 75 per cent. of value of work done; balance, 35 days.

Larkin near Pacific. Owner, Geo. W. Duffield; contractor, James Bruce; sureties, Blythe and Trott and B. Joest; cost, $4,850; time, 120 days; signed, May 10; filed, May 10; payments, $1,200, framed; $1,200, enclosed; $1,200, completed; $1,200, 35 days.

Larkin St. Owners, Jno R. Fairchild and wife; sureties, Blythe and Trott and B. Joest; cost, $4,910; time, 120 days; signed, May 3; filed, May 10; payments, $1,200, framed; $1,200, brown mortared; $1,200, completed; $1,310, 35 days.

Larkin, Hayes and Market. Brick work; owner, B. and J. S. Doe; architect, J. H. Littlefield; contractors, Shain & Hoffman; cost, $51,970; signed, June 13; filed, June 21; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

McAllister near Baker. Two-story and basement; owner, P. Claudius; architect, R. Zimmermann; contractor, S. T. Crawford; cost, $2,755; time, September 24; signed, June 24; filed, June 24; payments, $600, framed; $800, plastered; $741.25, accepted; $713.75, 35 days.

Market near Montgomery. Brick work, etc; owner, Crocker Estate Co; contractor, P. Mitchell; cost, $104,800; signed, April 12; filed, June 21; payments, 75 per cent. on first and fifteenth day of each month as work progresses; 25 per cent., 35 days.

Market near Montgomery. Owner, Crocker Estate Co; architect, A. Page Brown; contractors, P. Degan & O. P. Brady; cost, $ 18,900; signed, April 12; filed, June 24; payments, 75 per cent. on first and fifteenth day of each month as work progresses.

Minnesota near Sierra. One-story and rough basement; Owner, M. Haskins; contractor, R. O. Davis; cost, $1,400; time, 65 days; signed, July 1; filed, July 2; payments, $650; stubbing are up; $850, brown mortared; $850, white coated; $550, completed.

Minnesota between Solano and Butte. Not specified; owner, J. O'Donnel; cost, $2550; filed, June 7; payments, $900, rustic on; $500, brown mortared; $800, white coated; $550, finished.

Market near Montgomery. Iron and steel work; owner, Crocker Estate Co; architect, A. Page Brown; contractors, Rix & Firth; cost, $163,900; signed, April 28; filed, June 28; payments, installments of 75 per cent. on the first of each month as work progresses; 25 per cent., 35 days.

923, 925 and 927½ Market street. Repairing; owner, J. P. Hale; contractor, J. M. Day; cost, $1,520; signed, June 21; filed, June 25; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Meany near Noe. One-story frame; owner, C. M. Page; architect, J. C. Newsom; contractors, Blanchard & Lane; cost, $17,000; signed, June 11; filed June 13; payments, first and fifteenth day of each month.

Minna near Fifth. Three-story frame; owner, R. Carson; architect, J. M. Welch; contractor, M. Walsh; cost, $6200; signed, June, 11; filed June 15; payments, $1822-50, framed; $1322.50, brown mortared; $1322-50, completed; $1322.50, 35 days.

Noe near Henry. Two-story frame; owner, J. O'Brien; architect, H. Geilfuss; contractor, R. Thaler; cost, $7,900; signed, May 11; filed, June 12; payments, $1,180, framed; $1,180, enclosed; $1,180, brown coated; $1,180, white coated; $1,180, completed; $2,000, 35 days.

Noe between Fourteenth and Fifteenth. Owner, L. Zeh; architect, W. H. Armitage; contractor, O. E. White; surety, C. F. Doe and J. T. Adcock, $5,000; cost, $9,700; signed, June 10; filed, June 19; payments, $2,000, framed; $2,000, brown coated; $1,275, white coated; $2,000, completed; $2,425, 35 days.

N. E. corner Fourteenth and Noe. Plastering and cementing; owner, Stelling Bros.; architect, R. Zimmerman; contractor, W. C. Watson; cost, $1,535; signed, June 18; filed, June 20; payments, $600, brown coated, $600, white coated; $335, accepted.

N. E. corner Fourteenth and Noe. Three-story frame; owner, Stelling Bros; architect, R. Zimmerman; contractor, Adam Miller; cost, $10,.50; time, Sept. 30, 1890; signed, June 18; filed, June 19; payments, $1,500, framed; $1,500, enclosed; $1,500, partitions set; $1,500, inside finish on; $1,762.50, accepted; $2,587.50, 35 days.

N. E. corner Fourteenth and Noe. Plumbing, etc.; owner, Stelling Bros.; architect, R. Zimmerman; contractor, Oekelheimer Bros.; cost, $1,922; signed, June 18; filed, June 20; payments, $500, rough work is done and first certificate accepted; $500, second certificate is delivered; $322, 35 days.

N. E. corner Green and Webster. A dwelling; owner, M. C. Bateman; architects, Smith & Freeman; contractor, G. Clements; cost, $7,550; signed, June 30; filed, July 1; payments, $1,416.25, framed; $1,416.25, ready for plastering; $1,416.25, sand finish on; $1,000, ready for painters; $416.25, completed; $1,885, 35 days.

N. E. corner Nebraska and Yuba. Two-story frame; owner, M. Windt; architects, R. H. and R. White; contractor, D. H. Matheson; surety, O. J. Preston, $6,000; cost, $8,657; time, 150 days; signed, June 27; filed, July 1; payments, 1,200, roofed; $1,300, brown coated; $1,500, standing finish on; $1,457.50, completed, $2,010, 35 days.

N. E. corner Post and Buchanan. Three-story frame; owner, L. Busenberg; architect, C. I. Harris; contractor, D. Hennessy; cost, $11,573; signed, June 16; filed, June 17; payments, $2,200, framed; $2,100, brown mortared; 12,173, hard finished; $2,200, completed; $3,000, 35 days.

N. E. corner Post and Buchanan. Plumbing and gas fitting; owner, L. Busenberg; architect, Chas. I. Hayens; contractors, Ford Bros.; cost, $1,155; signed, June 18; filed, June 21; payments, $425, all pipes in; $430, completed; $300, 35 days.

N. W. corner Eddy and Warren. Carpenter work, etc.; owner, C. E. Boynton; architect, W. H. Armitage; contractor, J. J. Mausenu; surety, A. J. Gerdan, $5,000; cost, $1,800; signed, June 23; filed, July 1; payments, $1,200, framed; $1,200, brown coated; $1,200, accepted; $1,200, 35 days.

N. W. corner Laguna and Golden Gate Ave., also Clinton, near Brannan. Painting and graining; owner, M. Frederick; architect, P. R. Schmidt; contractors, E. Price & son; cost, $1,775; signed, June 17; filed, June 19; payments, $425, second story ready for graining; $100, completed; $350, third story is primed; $350, ready for grainer; $400, completed; $450, 35 days.

N. W. corner Nebraska and Yuba. Two-story building; owner, M. White; architects, R. H. and R. White; contractor, D T Pierce; cost, $1,400; signed, June 27; filed, July 1; payments, $800, brick foundation laid; $220, completed; $350, 35 days.

N. W. corner Yolo and Nebraska. Three-story frame; owner, J. Kenny; architect, M. J. Welch; contractor, S. Sarivel; cost, $6,541; signed, June 24; filed, June 25; payments, $1,226.55, framed; $1,226.40, brown mortared; $1,226.40, white coated; $1,226.40, completed; $1,835.25, 35 days.

Oak near Fillmore. Two-story frame; owner, J. Urba; architect, M. J. Welch; contractors, Wells and Joslin; cost, $5,350; signed 15; filed, June 16; payments; $1,337.-50, framed; $1,337.50, brown mortared; $1,337.50, completed; $1,337.50, 35 days.

Powell near Ellis. Alterations; owner, Geo. Parker; architect, M. G. Bugbee; contractor, A. Nelson; cost, $1,150; signed, May 10; filed, June 11; payments, $430, brown coated; $400, finished; $200, 35 days.

Powell, between Eddy and Ellis. Bracing up building; owner, E. J. Stoddart; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $1,18.; signed, May 12; filed, June 13; payments, first and fifteenth day of each month.

Richard near South Ave. One-story cottage; owners, G. H. Merchant and wife; architect, T. W. McKee; contractor, H. J. Bennett; cost, $1,400; signed, May 10; filed, June 16; payments, $200, framed; $200, brown mortared; $250, white coated; $350, 35 days.

Russ near Natoma. Plumbing; owner, W. Zeiner; architect, A. C. Lutgens; contractor, John Bohn; sureties, W. Fahrenkrug and J. W. Firsch, $1,000; cost, $1,350; signed, June 4; filed, June 9th; payments, $500, pipes tested; $512.50, completed; $337.50, 35 days.

Ridley near Sanchez. Two-story building; owner, J. A. Letz, contractor, G. Houston; cost, $3,600; time, 100 days; signed, June 12; filed, June 21; payments, $900, rustic on; $900, brown coated; $900, white coated; 906, 35 days.

Ridley near Guerrero. Three-story frame; owner, L. Boyston; architect, A. J. Barnett; contractor, O. Brault; cost, $5,355; time, 80 days; signed, June 18; filed, June 19; payments, $1,000, rustic on; $700, brown coated; $1,314, completed; $1,340, 35 days.

Seventeenth near Dolores. Two-story frame; owner, Edward O'Neil and Wife; architect, Chas. J. Devlin; contractors, T. J. Cook & W. V. Wry; surities, A. D. Moore and C. S. Holmes, $2500; cost, $3200; time, 90 days; signed, April 14; filed, May 10; payments, $900, framed; $400, enclosed; $600, first coat of plaster; $800, ready for paint; $300, completed; $600, 35 days.

Sutter near Scott. Three-story frame; owner, G. Galvin; architect, J. E. Krafo; contractor, E. McElroy; surities, B. Joost and W. Thyarks. $8000; cost, $7300; time, 90 days; signed, May 11; filed, June 14; payments, $1475, enclosed; $2000, brown mortared; $2000, accepted; $1825, 35 days.

Sutter near Broderick. Three-story frame; owner, W. J. Blackman; architect, C. Toff; contractor, W. A. Van Dervourt; surities, I. Levi and O. H. Greenwald, $8000; cost, $6,375; time 120 days; signed, June 13; filed, June, 17; payments, $900, first story joists are in place; $500, enclosed; $955, brown mortared; $1410; white coated; $1410, accepted; $1600, 35 days.

Steiner near Ellis. Three-story frame; owner, S. P. Blumenberg; architect, Fred E. Wilcox; contractor, O. Jensen; cost, $1,962; signed, June 12; filed, June 19; payments, 75 per cent. of the amount due as work progresses; 25 per cent., 35 days.

S. E. corner Fillmore and Wildey Ave. Three-story frame; owner, E. Schmidt; architect, W. H. Wharff; contractor, B. R. Bankins; surities, A. J. Turner, and B. S. McFarland, $10,000; cost, $11,656; time, 120 days; signed, May 12; filed, June 13; payments, $1000, first floor joists on; $1000, framed; $1500, enclosed, brown coated; $1500 plastered; $750, completed; $3,000, 35 days.

S. E. corner Bay and Fillmore. Two-story frame; owner, Cal. Adamant Wall Plaster Co; architect, Mr. Cottrell; contractor, Thos. Day; cost, $5,250; signed, May 10; filed, June 10; payments, 65 per cent. of value of work performed; 25 per cent., 35 days.

S. E. cor. Fillmore and Willey Ave. Grading and brick work; owner, B. R. Rankins; architect, W. H. Wharff; contractors, J. Barry and P. Turner; cost, $1400; signed, filed June 18; June 19; payments, $500, foundation laid; $500, chimneys completed; $400, 36 days.

S. E. corner Beale and Market. Hydraulic Elevaror; owners, Holbrook, Merrill & Stetson; cost, $6,14 ; filed, June 30; payments, 25 per cent. of whole contract shall be paid when completed; 25 per cent., 36 days.

S. E. corner Battery and California. Iron beams and etc; owner, Tallant & Co; architect, Pissis & Moore; contractor, Geo. Goodman; cost, $1890; signed, June 25; filed, June 28; payments, $1490, entire completion of work; $1490, 35 days.

S. E. corner Green and Scott. Frame; owner, H. S. Bridge; architect, Mooser & Cuihbertson; contractor, B. J. Malone; cost, $5900; time, 90 days; signed, June 14; filed, June 17; payments, 75 per cent as work progresses; 25 per cent., 35 days.

S. E. corner Washington and Van Ness. Frame; owner, Jas. Phelan; architect, C. Day; contractors, G. Ingerson & C. Gore; surities, C. Gore and C. Hansen, $8917; cost, $26,750; time, Jan. 15, 1891; signed, June 18; filed, June, 18; payments, $4000, framed; $5500, brown coated; $4500, ready for painting; $6,062, accepted; $6,688, 35 days.

S. W. corner California and Hyde. Carpenter work; owner, California Street R. R. Company; architect, H. C. Macy; contractor, O. E. White: cost, $15,865; filed, June 20; payments, 75 per cent. of work done, on first and fifteenth day of each month.

S. W. corner California and Hyde. Brick and iron work; owner, California Street R. R. Company; architect, H. C. Macy; contractors, McDowan & Butler; cost, $74,200; filed, June 20; payments, 75 per cent. of work done, on first and fifteenth day of each month; balance, 36 days.

S. W. corner Oak and Pierce. Plumbing, etc.; owner, J. H. Schlesselmann; architects, Salfield & Kohlberg; contractor, J. D. Welch; cost, $1,360; signed, June 23; filed, June 26; payments, $520, rough work in; $300, accepted; $340, 35 days.

S. W. corner Howard and Tenth. A new front; owner, Rev. P. Scanlan; architect, T. J. Welch; contractor, A. McDonald; cost, $2,715; signed, June 23; filed, June 24; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

S. W. corner Devisadero and Oak. Two three-story frames; owner, J. Lutgen; architects, John & Balczynski; contractor, C. C. Morehouse; cost, $2,265; signed, June 10; filed, June 19; payments, $1,000, rough mortared; $700, white mortared, $565, 35 days.

1706 Turk street. Alterations; owner, E. N. Murphy; contractor, Jas. B. Wright; cost, $1,800; time, 60 days; signed, June 23; filed, June 25; payments, $900, frame up, etc.; $900, remainder, 35 days.

Treat Ave. between Twentieth and Twenty-first streets. Brick and carpenter work; owner, J. Madden; architect, W. H. Armitage; contractor, J. Campbell; sureties, A. W. Starbird and J. B. Goldstone, $5,000; cost, $7,900; signed, June 13. filed July 3; payments, $1,975, framed; $1,975, brown coated; $1,975, finished; $1,975, 35 days.

Twenty-fourth near Shotwell. Two-story frame; owner, M. Dooney; architect, M. J. Ahern; cost, $3,300; signed, June 10; filed, June 16; payments, $800, framed; $800, brown coated; $800, completed; $800, 35 days.

Thirtieth and Cherry. Carpenter work; owner, A. Michell; architect, F. A. Worden; contractor, E. C. Worden; cost, $1,000; signed, June 19; filed, June 20; payments, $250, partitions set; $250, rough plastered; $250, finished; 200, 35 days.

Van Ness Ave. near Washington St. Brick work; owner, L. Schussler; architect, Salfield & Kohlberg; contractor, A. L. Campbell; cost, $14,000; time, 150 days; signed, June 9; filed, June 9; payments, $2,100, second floor joists are on; $2,100, enclosed; 32,100, partitions set; $2,100, plastered; $2,100, accepted; $3,500, 35 days.

Van Ness Ave. near Washington. Brick work; owner, L. Schussler; architects, Salfield & Kohlberg; contractor, A. L. Campbell; cost, $14,000; time, 130 days; signed, June 9; filed, June 9; payments, $2,100, second floor joists are on.

Van Ness Ave. near Washington. Plumbing and gasfitting; owner, L. Schussler; architects, Salfield & Kohlberg; contractors, S. Ichelheimer & Bro.; cost, $880; signed, June 13; filed, June 20; payments, $330, rough work done; $330, completed; $220, 32 days.

Valencia near Twenty-fourth. Remodelling building; owner, A. B. Winegar; architect, J. C. Newsom; contractor, J. B. Taubman; cost, $3,700; signed, June 14; filed, June 16; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Webster Street. Carpenter work; owner, M. E. C. Logan; contractor, A. Jackson; cost, $3,590; signed, May 12; filed, June 14; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Washington near Buchanan. Owner, D. E. Speyer; architect, S. Newsom; contractor, R. O. Chandler; surety, A. D. Moore and W. J. Adams, $8,000; cost, $7,646; signed, June 17; filed, June 18; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Oakland.

Fitch Tract. Five-room frame cottage; owner, W. N. Baronsfeather; architect, A. Stenbiht; contractor, R. Gillis; cost, $2,400; time, 60 days; signed, June 24; filed, June 25; payments, $450, rustic on; $450, brown mortar on; $450, white mortar on and outside primed; $450, completed; $300, 35 days.

Gaskill Tract. Owner, S. C. Haggerty; contractor, W. Matthews; cost, $1,660; time, 90 days; signed, April 21; filed, June 18; payments, $400, framed; $400, roof complete; $400, completed; $460, 35 days.

Bancroft Way near Union Street. Owner, T. H. and G. D. Penfield; contractor, A. W. Pattiani; cost, $6,290; signed, June 19; filed, June 19;

S. E. corner Castro and Fourteenth. Owner, First Unitarian Church of Oakland; architect, W. J. Matthews; contractor, A. Fitzjohns; signed, June 13; filed, June 16.

N. W. corner Ninth Avenue and Twenty-first Street. Stable; owner, N. E. Craft; contractor, C. Murcell; surety, J. R. Neylan and W. P. Dunshee, $2,000; cost, $4,686; time, 90 days; signed, June 21; filed, June 19; payments, $150, shingled; $600 framed; $1,650 first coat mortar on; $1,190, completed; $1,150, 35 days.

Cable road from Fourteenth and Washington to Sixteenth Street Station. Owner, between Consolidated Piedmont Cable Company and San Francisco Tool Company; cost, $260,000; filed, June 19.

Wood, near 15th. Owner, W. H. Frost; contractor, S. C. Judkins; cost, $1,275; time, eight weeks; signed, June 19; filed, June 20; payments, $300, chimneys up; $300, brown mortared; $300, completed; $——, 35 days.

Peralta Heights. Owner, W. H. Frost; contractors, W. T. Veitch & Co.; cost, $2,600; time, September 30, '90; signed, June 17; filed, June 20; payments, $975, mortared; $975, completed; $650, 35 days.

East Oakland.

N. E. corner Orange Ave. Heights, Blasdell Tract. Owner, S. J. Blasdell; contractors, W. T. Veitch & Co.; cost, $7,500; signed, June 11; filed, June 21; payments, $1,000, framed; $2,000, enclosed; $1,000, brown mortared; $1,500, finish coated; $2,000, 36 days.

Alameda.

Versailles, near Santa Clara Ave. Dwelling house; owner, J. W. Brown; architect, G. A. Bordwell; contractor, J. J. Boyle; cost, $3,160; signed, June 27; filed, June 28; payments, $788, frame up; $790, coat mortar on; $788, completed; $800, 35 days after completion.

Central Ave., near Morton street. Two two-story frames; owner, C. E. Naylor; contractors, A. W. Pattiani & Co.; cost, $5,150; signed, June 26; filed, June 28; payments, $750 on each, shingles on; $600, brown mortared; $575, completed; $650, 35 days.

Mirschfeld Tract. Three houses; owner, F. Marcuse; contractor, R. Gillis; sureties, Wm. Dannheim and T. P. Forst, $5,000; cost, $5,000; signed, June 20; filed, July 2; payments, $750, frames up; $750, brown mortar on; $750, completed; $750, 35 days.

Park Tract. Two-story dwelling; owner, M. A. Kelly; contractors, J. C. Diamond and D. S. Brehant; cost, $2,175; signed, July 2; filed, July 3; payments, $543.75, frame up; $543.75, roof on; $543.75, brown mortared; $543.75, 35 days.

Berkeley.

Haste Street near Shattuck Avenue. Two-story frame; owner, S. H. Richards contractor, I. A. Boynton; cost, $2,090; signed, June 13; filed, June 17.

Druant Avenue between Ellsworth and Fulton Streets. Frame; owner, J. H. Wood; contractor, G. A. Embury; cost, $2,124; time, two months; signed, June 7; filed, June 14; payments, $500, brick work completed; $500, brown mortared; $300, inside finish completed; balance, 35 days.

N. E. corner Hilgard and Emlid Avenues. Owner, J. McCarthy; contractor, I. A. Boynton; cost, $2,242; signed, June 11; filed, June 14; payments, $660, framed; $560, brown mortared; $560, completed; $362, 35 days.

Spruce between Vine and Cedar. Two-story frame; owner, H. C. Pitman; contractors, Higgins, Davisson & Co.; cost, $3,990; time, 90 days after foundation laid; signed, April 14; filed, July 3; payments, $987.50, framed up and rafters on; $968.50, brown mortar on; $987.50, completed; $987.50, 35 days.

College Way near Oxford street. Two two-story frame cottages; owner, G. H. Bew; contractor, O. F. Hunt; cost, $3,512; time, Aug. 23; signed, June 23; filed, June 23; payments, $500 on each when contract is signed; $100, frame up; $200, enclosed; $300, brown mortared; $300, completed; $356 on each after completion.

Golden Gate.

Brick and stone work. Owner, J. H. McMenomy; architect, Laver, Mullany and Laver; contractor, Wm. Dunbar; cost, $880; signed, June 21; filed, July 1; payments, $300, excavation and foundation walls done; balance, completed.

Dwelling house. Owner, J. H. McMenomy; architects, Laver, Mullany & Laver; contractor, L. C. Judkins; sureties, A. L. Pollard, $4,848; cost, $4,858; time, 100 days; signed, June 20; filed, July 1; payments, 75 per cent. on twentieth day of each month of value of work done and materials furnished; 25 per cent., 35 days.

Plumbing. Owner, J. H. McMenomy; architect, Laver, Mullany & Laver; contractors, G. and E. Snook; cost, $450; time, 90 days; signed, June 20; filed, July 1; payments, $150, rough plumbing done; $150, tin work done and leaders in; $150, entire work done.

Livermore.

Frame church. Owner, P. Powers; architect, T. J. Welch; contractor, T. R. Bassett; sureties, J. Horton and G. E. Kennedy, $8,000; cost, $10,000; signed, June 17; filed, June 28; payments, $2,000, walls up; $3,000, roof on and enclosed; 2,850, completed; $2,600, 35 days.

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BUSINESS MOSAICS.

Sanitary science has made wonderful advancement during the last few years, and manufacturers have been quick to endeavor to provide the necessary apparatus. In no other one article has there been such concentrated study to secure the best possible fixture for the purpose as is represented in the modern water-closet. Mr. Joseph Budde, of the northwest corner Mission and First streets, is the leading manufacturer of water-closets on this Coast. For over a quarter of a century the Budde Closet has been the standard closet, and whenever any suggestion for a change for the better either in a sanitary or artistic sense is made, it is at once met by a corresponding improvement by Mr. Budde, until at the present time he has a large array of diplomas and medals from expositions and societies, together with piles of testimonials, all certifying to the superiority of his closets. At certain periods a grand flonrish will be made and a closet with a famous name to back it will be introduced, but after a few weeks' trial is taken out and the standard "Budde" takes its place. The business having attained such proportions that new quarters were required, the manufactory has been removed from 43 Fremont street, the old place to the new pemises, on the northwest corner of Mission and First streets.

Art glass has become one of the necessities of the present day. By no other means can we render such beautiful effects as are produced by the admission of light through a colored medium like glass—the most gorgeous hues of the rainbow of fairy land through the soft twilight to the somb:r tones of night, are all attainable through crystals of various tints and forms, which blend and tone the colors into harmonious pictures, from the ideal high art of the church down through the agricultural, mechanical and civic representations, more or less artistic, as represented by the artist employed. The above remarks have been induced by a recent visit to the art rooms of Thos. C. Butterworth, 15 Polk St., where some ecclesiastical and other art glass was on exhibition, Mr. Butterworth having recently returned from the East and Europe, where he has procured the latest and newest material obtainable for producing the highest class of work in this line.

Fretwork floors of hard wood of various colors are gaining in popularity where good work is desired. The advantages of a smooth hardwood floor is at once apparent, it being easily cleaned, is pleasing to the eye, and its artistic beauty made to harmonize with the room—it is warm and pleasant to tread upon, and is lasting and economical. Messrs Reynolds and Adams at 1237 Market street is the leading firm for this class of work, on account of the good qualities of the workmanship, and artistic ability displayed. They have recently put down 4000 feet of inlaid floors for H. Liebes & Co., Post street.

Cement bricks which are becoming so common in use at this time and taking the place of burned bricks were first patented and manufactured by Mr. Ernest L. Ransom, of this city. After numberless experiments, Mr. Ransom succeeded in making a superior brick of Portland cement and sand, which by the use of coloring material could be turned out bricks of any desired color, size or shape, of even shades or mottled appearance as desired, and of smooth or rough surface. These bricks formed an important addition to the variety of materials for the use of the architect which at once found their position in many novel and interesting features in the artistic attractions for important buildings. Mr. Ransom also invented and manufactured a compound gilder of iron rods and cement stone which is applicable in many situations where natural stone would be impractical. The Cement Brick Company are now manufacturing pressed and moulded bricks of superior quality and of all descriptions under the Ransom patent. New and enlarged works are about completed at the corner of Eighteenth and Folsom streets in this city, which, when completed will be by far the most complete on the Coast, or, in fact, in the country. In the near future they will be prepared for a very heavy increase in the demand for the pressed bricks of this company. The company will soon publish the capacity of the new works.

New articles of hardware are coming into use wherever a want is implied. Messrs. A. B. Cheney & Co., (a new firm) No. 308 Market street, have shown us some improved appliances, especially a spring sash balance with adjustable brake, a door bell which takes up the slack of the wire, also transom regulators, made rights and lefts, all of which present advantages not to be overlooked by those who require the best.

Men of business capacity and character are at a premium.

Tin roofs, "there's nothing like tin for roofs" so says the wise man, and as wisdom comes from experience, we can indorse this statement without any reservation whatever for roofs of moderate pitch. For some twenty-five years or more the N. & G. Taylor Co's brands of tin have been in use on this coast, and have grown in favor with all who have used them. Before that time it was very difficult to detect inferior tin, more especially after being laid, but when the Messrs. Taylor & Co., of Philadelphia, introduced their tin, where each sheet was stamped, it became comparatively easy to detect any deviation from the specification. The tin bearing the trade mark stamp of this company proved uniformly to be of the quality as represented. Persons interested in this matter can send to Messrs. N. & G. Taylor & Co., Philadelphia, for a book called proof positive (free on application) and containing much useful information on the subject. In looking over this book, a person will at once notice the solid business look to the buildings covered with their tin, which argues well for them, as the architects and builders of such class structures would in all probability be competent to select the best in the market. An invitation is extended to everyone interested to send for their new book "How to Secure a Good Tin Roof."

Making use of everything that can be made useful for the intended purpose is economy.

The Vulcan Iron Works at 135 to 145 Fremont street, do all kinds of architectural and ornamental iron work, cable roads and tramways, and ropeways for the conveyance of freight, etc. Mr. McIntire, the engineer who explained the construction and working of a ropeway in Mexico before the Technical Society (see notice of meeting on first page) is at present connected with these works. This company manufacture an improved clip for the attachment of the freight basket to the cable, which reduces the wear on the cable to a minimum. Also many other improvements which those interested should call and examine.

Who, in the early part of the present century, would have thought that at this day the lightning of the heavens would be subdued by man and set in the walls of our houses to furnish a quiet and brilliant light to replace the old-fashioned "tallow dip" of those times, yet such is the case.

Those in want of electric apparatus having superior claims for economical working, should call on W. W. Briggs & Co., electricians, 432 Montgomery street. Also electric bells and enunciators, and all kinds of electric work is furnished and put up complete in the best manner by Messrs. Briggs & Co.

It is an uncontroverted fact that many persons would enjoy their homes more if they would exercise more care in the selection of accessories which make houses more convenient for use and more attractive to the eye. In order to attain this end, scrutinize the advertisements in this number of the California Architect, and if not sufficiently described, write for further information.

Thou shalt not covet thy neighbors goods, without paying for them.

The Detroit Heating and Lighting Company, of Detroit, Mich., manufacture the "Combination" Gas Machine, intended for the lighting of factory or other buildings, in city or country where an independent lighting plant is desirable. This machine presents certain advantages that warrant special consideration by any parties interested. This company also manufacture the Balton Hot Water Heating apparatus which gives an even flow of pure warm air to any portion of the building. Descriptive circulars will be sent on application to the manufacturers.

Architects and Builders' edition, catalogue No. 9, for 1890–91 of the Willer Manufacturing Co., Fourth and Cedar streets, Milwaukee, Wis., has been received. It is a superior sample book and replete with designs as furnished by this company. The frontispiece is a pretty villa in imitation of a water color drawing, followed by a large number of illustrations of inside sliding blinds with details, for which this company is famous throughout the country, and showing the latest improvements; also a representation of sliding screens, and screen doors. This is followed by the stair work and hard work finish department, containing many designs for balusters, newels, rails and stair finish generally. It is a work that has been quite expensive and is a credit to the Willar Company. This catalogue will be sent *free of charge to architects only;* to others a charge of 50 cents in postage stamps, on account of the expensive character of the work. Catalogue No. 10, just issued, will be sent free on request.

NOTICE TO CONTRACTORS.

Proposals will be received at the office of Louis Hyams, city recorder of the city of Salt Lake, Utah territory, up to 12 o'clock M. Monday, the 11th day of August, 1890. Said proposals are for the furnishing of all material and labor for thee rection of a joint city and county building in Salt Lake city. Said proposals to be for the entire building complete, or for the separate parts thereof—(stone and brickwork, cast iron columns, steel beams, etc., hollow tile, fireproofing, plastering, encaustic floor tiling and mosaic floor tiling, and cement work)—all to be in accordance with plans and specifications on file in the office of the architect, C. E. Apponyi, No. 141 Second East street, Salt Lake city, Utah. All bids to be accompanied by a certified check for 2½ per cent. of amount of bid. Said check tobe made payable to George M. Scott, mayor of Salt Lake city, and if the successful bidder to whom the contract is awarded shall fail to enter into a contract within ten days after said award is made to him, and fail to furnish a good and sufficient bond in the sum of 15 per cent. of his bid, the said check to be forfeited to the city and county of Salt Lake, otherwise to be returned. The city and county committee reserve the right to reject any and all bids.

Louis Hyams.
City Recorder.

Salt Lake City, July 9, 1890. *

A Belgian firm has contracted for $3,000,000 worth of iron work to be used in constructing the new court house at Minneapolis, underbidding the manufacturers in this country.

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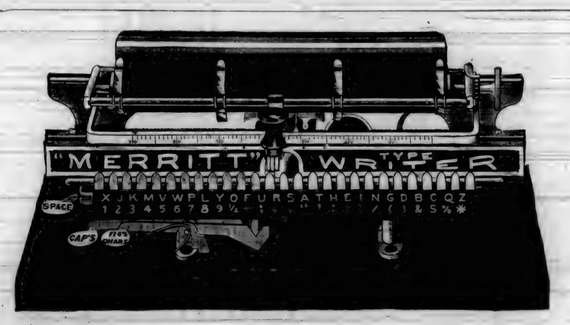

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No. 6048 A Pulley.
Page 12 in 1890 Supplement.
The above cut shows the Norris Pulley as it appears in the frame. This Pulley is made so that the Rope cannot possibly leave the wheel.

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All our Pulleys are numbered, so please order by number, as the number designates size and quality.

Architects wishing a Catalogue and samples will please write us, and we will send same free of cost.

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C. SIDNEY NORRIS & CO.

BALTIMORE, MD.

Samples of our Pulleys can be seen at the office of Weatherly, Jardine & Co., 132 Market Street, San Francisco.

The California Architect and Building News.

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408 CALIFORNIA STREET, SAN FRANCISCO, CAL.

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W. P. Moore, President, - - - Oliver Everett, Secretary.

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Subscription to the Journal, - - $2.00 per Year in Advance.

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1 Inch	$ 1 50	$ 4 00	$ 7 50	$13 00
3 Inch	4 00	10 00	18 00	35 00
6 Inch	7 50	18 00	32 00	60 00
1 Column	12 50	35 00	65 00	125 00
¼ Page	20 00	57 50	105 00	200 00
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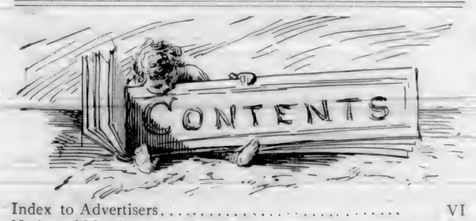

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THE OCTOBER ISSUE.

Our regular October issue will be an unusually large one, and we propose to make it a remarkably interesting and valuable number; the price of single copies of the issue will be fifty cents.

NOTICE.

Mr. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California street, San Francisco, Cal.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at 408 California Street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John W. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at 408 California Street.
John Richards, Pres. Prof. Frank Soulé, Vice-Pres.
Otto Von Geldern, Sec. Jas. Spiers, Treas.

The regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday evening, August 8th.

President Babson in the chair.

Geo. A. Bordwell was elected to fellow membership.

The awards in the monthly competition of the A. I. A. Sketch Club for hall clock were made as follows: H. J. Van Vlack, first mention; S. C. Benson, second; and Jos. W. Rowell, third.

Mr. George H. Sanders entertained the society, and the A. I. A. Sketch Club, (whose members were present by invitation) by an instructive talk on *How to Study Architecture.*

An invitation was extended to Prof. Keith, the electrician, to read a paper before the Chapter explaining the details of electric motors as applied to running elevators.

Several nominations for officers for the coming term were made, and then, owing to the lateness of the hour, the meeting adjourned for two weeks, to complete unfinished business.

The regular monthly meeting of the American Institute of Architects Sketch Club was held on Friday evening, August 8th.

Mr. C. E. W. Hubbell and Herbert Lowery were elected members of the club. The application of Harvey E. Harris for membership was received and referred to the investigating committee.

A communication was received from the Chapter extending to the club a cordial invitation to attend the lecture to be given by M. G. H. Sanders. Moved and seconded that a vote of thanks was tended the Chapter, carried unanimously.

The usual routine of business being transacted the drawings for the August competition (subject, A Country Chapel) were examined by those present. A Yacht Club House was selected as the competition for October. Required plan and perspective rendered in Sepia with a brush. Competition closes October 9th 1890.

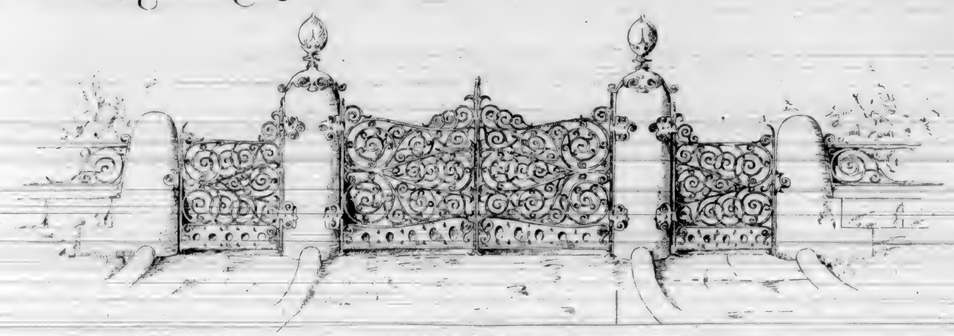
The members then retired to the Chapter rooms to listen to the lecture by Mr. Sanders which was very instructive and which was highly appreciated.

The California Electrical Society held their two last meetings in their new apartments in the Murphy Building. The principal topic under discussion at the first meeting was electrical discharges from clouds. Many useful points were developed in relation to the security afforded buildings by the use of lightning rods. At the second meeting the subject being induction many of the members entered into the discussion. This society is taking in new members at each meeting.

The meeting of the Technical Society of the Pacific Coast was held on August 15th at their rooms, 408 California street. The principal business was the reading of a paper by the President, Mr. John Richards, on "balancing centrifugal pumps." An interesting discussion followed the reading of the paper.

The Amateur Photographic Association gave their eleventh publie entertainment at Pioneer Hall on July 31st. The subject, "Illustrated Chicago" being well represented by the lantern and an explanatory address by the speaker.

A. I. A. Sketch Club Competition.
"Wrought Iron Gate"



WROUGHT IRON GATE.

First Mention. S. C. Benson.

THE SCROLL, THE STAR AND THE CITY.

A paper read before the S. F. Chapter of Architects, July 1890. By W. J. Cuthbertson.

(CONCLUDED.)

Man being a gregarious animal it is necessary that quantities of men should associate together, not only in their business but also in their abiding places; this becomes a habit, and conglomerations of human beings are the consequences. Notwithstanding the periodic outcries of humanitarians, this consolidation of humanity and consequently of its habitations has been going on through the centuries, until we come to the final development of it in our modern city. It is useless to try to stem the course of this natural habit and wish of man, and therefore it becomes necessary for us to mitigate the severity of its consequences, and finally to hit upon a plan by means of which what appears now to be a curse may become a blessing.

In the course of the evolution of the city, we come across quite a number of different types:

1. We have first the African Kraal, simply a crystallized nomadic encampment, the huts thrown together indiscriminately without order and without plan—the Anarchic type—therefore nothing to learn from this.

2. The ordinary nucleus of an inland town has been some stopping place along a main road of travel, which gradually accreted itself, running out small feelers or feeders in all directions, these generally following the cow paths of the adjoining country—which especially for hilly parts will generally be found the most practicable.

The animal kingdom is given to us for an example as well as for other uses, and in this case the bovines teach us by the paths picked out and made by them to reach their pastures, the most expeditious and least wasteful way of doing this. On the slopes of hills we always find them following the contours of the hills and not making any direct ascents or descents unless absolutely necessary, and we may get some idea even from a cow. Another member of the animal kingdom, the spider, may also teach up a lesson in laying out towns and means for communication, who weaves her web in such fashion that the radiating lines allow her to dart out after prey in short order.

In the inorganic world the section of a tree has also the rings and the radiating lines, but the types I have taken are geometrical, one also being celestial and the other gravic.

These figures, the star and the scroll, have been taken as the guiding principle in designing or laying out a town, and their adaptability will be examined after we have considered the modern type of a town patterned after the rectangular, peculiarly American system. In this there is a formality and stiffness which can be called anything but beautiful. But even leaving on one side its artistic incapacity, we find it greatly lacking in that principle which the moderns pride themselves so much on—utilitarianism or practicality. Economy, another science modern society so unjustly plumes itself upon understanding and possessing, is sadly lacking in this plan.

As you are aware in traveling from one point to another in a town laid out in the rectangular plan, you are compelled to travel along two sides of a triangle instead of along its hypothenuse. This waste of time and labor is very apparent when one is traveling in the country, where your journey's end may be seen but a short distance to one side of you, but you are compelled to deviate from the direct line to it until you become abreast of it and then have to turn at right angles within an infinitely small part of a second backward; but ranchers who use the road constantly would rather be inconvenienced that way than have their ranches cut in two, but in towns that objection doesn't hold. In fact, the only mitigating circumstance seems to be that the surveyor's art is made more simple and easy, but the surveying is done only once while the locomotion is continuous.

The before mentioned waste of time and energy is even added to should the town be situated on hilly ground as in San Francisco, where one has to go up and down hill over and over again in a reckless manner to reach a point which may be nearly on the same level with the starting point.

I believe the rectangular type of town has been in use since the days of George Washington, sometimes in a pure state and at other times with sundry modifications made to help a little the inconveniences mentioned above, such as a few radiating lines for main outlets, cutting the rectangular system arbitrarily, or such as that adopted in the eastern one-half of San Francisco of one main artery with blocks at right angles to it on one side and blocks at some other angle on the other.

Taking everything into consideration, I believe we shall find the mapping of the old towns which have grown up like Topsy, haphazard and shiftless, on the lines of the old generally direct ways of travel more convenient at least for purposes of communication than the modern rectangular blocked city. But this type of city being as one might say anarchistic, i. e. put together without any guiding principle or law, it cannot be taken as a pattern throughout, but only so far as it should accidentally coincide with some law of arrangement. But a number of good points can be taken from it.

In applying any of these examples we find that non-elastic rule will not work with advantage, as the contours of the ground, proximity of the seaside harbor, etc., require modification, and therefore what we want is some system that can be easily modified to suit these abnormal conditions, and yet at the same time retain its guiding principle intact. These conditions are fulfilled, I think, in the plan based on the star and scroll forms. However, before we go into any detailed description of this ideal town, I will bring to your notice an existing instance of an adaptation of that plan.

In Barcelona here represented, (see Figure 1) each block forms an irregular octagon, otherwise the plan is based upon the rectangular system. Clipping the corners off in this way eased the inconveniences somewhat of that system, but still leaves the aspect matter untouched. However, the large open spaces at the intersection of the streets,

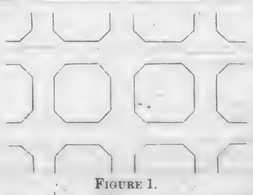
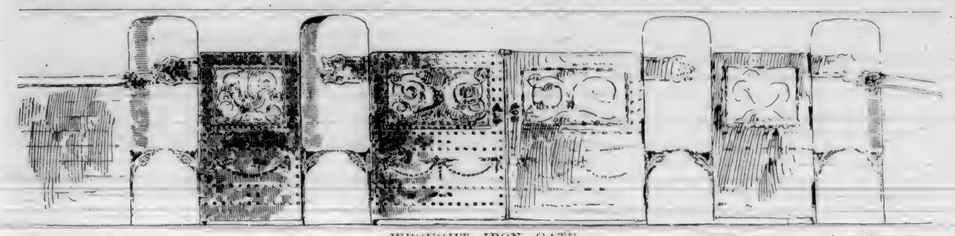


Figure 1.



WROUGHT IRON GATE.

Second Mention. H. J. Van Black.

give plenty of light and air and the chance of getting a partial diagonal.

We will now glance at the objection to the rectangular system, and then see whether we can mend matters by the adoption of the scroll and star.

Take it all in all, I think that a no more objectionable form than the rectangular could be adopted for a city where plenty of space is available. Its adoption, no doubt, is due not by reason of its adaptability for laying off a method of connecting a conglomerated mass of habitations, but by the mania existing about the time of the Revolution, or immediately after, for doing everything by hard and fast rules and regulations. To practical men used to the simple surveying adopted in laying out the virgin lands of the new world, what came to hand so well as the same method for laying off a town. And how methodical, proper and correct it looked on paper—blocks all exactly same size, angles all similar, and those all right. No other system was it possible to introduce into the ruling minds of that period, and when once adopted, the natural inertia of humanity has never thought of change until now, when activity and boldness of intellect and life of artistic sense are the worthy characteristics of the generation and age.

The objections, then, are chiefly these:

1. Monotony of aspect.—The houses of every block facing the same points of the compass as those of the others, there remains no chance of getting variety of sunlight or of wind protection. This is aggravated by the absurd devotion to the cardinal points, causing generally the streets to run notth and south, or east and west; thus giving one-half the houses with one front constantly without sun, and the other half getting the sun on the front and back during his weakest moments; *i. e.*, early and late in the day.

2. Monotony of prospect.—A man has no choice of prospect, the houses all facing the same way, and is debarred from living in a house facing a different way from the general run, and therefore has to put up with the prospect the system turns up and no other.

3. Worst possible means of horizon travel short of going absolutely backwards.—This has been already animadverted upon.

4. Bad means of vertical travel.—The roads being arbitiarily laid out without reference to contours, cannot but necessitate the unnecessary going up in one place to go down in another. This does not apply to a town laid out on a prairie like Chicago—where it is necessary to have tall buildings to know that there is any town there.

These unmitigated obstacles to enjoyable life in a city, lead one to ponder on a means of deliverance, and I suggest the scroll and the star as such; the scroll being almost constantly before an architect's eyes when looking down, and the star being in the same condition nearly half the time when looking up. What more natural than that these forms should suggest themselves?

The scroll, when started from its centre, can be carried out into infinite space, a fit emblem for the capacity for infinite progress in the human soul.

The star, with its rays starting from its centre, likewise shooting out infinitely—a fit companion to the scroll—both typical of infinite progress. Such noble types are worthy of study and worthy of adoption for suitable purposes, and I think you will find them applicable for our present purpose "The mapping or arrangement of human habitations in bulk."

1st. They both have a centre, necessary to communal life as the heart to the body. This centre would be the location for the common meeting hall and municipal buildings—including all the Government buildings—head postoffice, telegraph office, telephones and all other buildings necessary for a proper municipal system. Here would also be the common unsectarian church, opera house, theatres, cafes, etc., and the main distributing stores and hotels for strangers all grouped around this large central space, its nearest representations being the large places in Paris.

2nd. From this central circus, place, or plaza, would radiate in straight lines the roads or rays of the star. These would only be used for purposes of communication, being supplied with cable cars. No residences would be allowed on these avenues, but only local distributing stores, local post and parcel offices, etc., and manufactories, at a decent distance from the centre. At the end of these roads would be the car houses, steam power houses, etc.

3rd. The scroll roadway would be the wide driveway planted with shade and fruit trees and clear from all car tracks, commencing from the centre and running in one curved line to the outskirts of one township to that of the next. This would be the residence street, and as it got out into the suburbs the spaces between the road would widen out, and would be used for the larger residences, gardens, etc.; and as it got still further out from the city, for fields and orchards, until the next township commenced. The large diamond-shaped spaces between the circular townships, would be used for pasturage and for large parks for the recreation of the people.

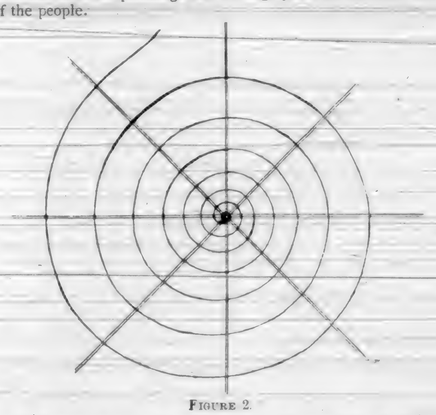


Figure 2.

All the manufactories and warehouses being on the radiating lines, freight would be carried on the cable freight cars, or a special freight cable could be used alongside the passenger one. No residences being on these avenues, the hideous and constant noise attending the running of cable cars would be an undisturbing element, and as the scroll residence road would be paved with bituminus rock or some other quiet-conducive material, peace would reign supreme amongst the domiciles, although the advantages of city life would be so close.

On this road would run a constant succession of Gurney cabs or stages both ways, so that in rainy weather or for old or feeble people, they would carry the inhabitants to the nearest radiating avenue and its cable cars.

Thus every house throughout the whole town and township would be supplied with means of travel from its own doors to any part of the world.

On a plain this system would work to perfection, but on a town of many hills, which concerns us of San Francisco, some modifications would have to be made. In this case the scroll road would not be a true scroll, but would be a continuous

broken curved line following the contour of the hills, giving splendid easy drives, while the radiating avenues would still be continued in straight lines over all obstacles for cable cars. Under this system no scars would be made on earth's breast, but it would be left in its pristine state and the street grader's occupation would be considerably reduced, together with all the squabbles and Commissioners attending the same. By following the contours, big and little, lots would be formed to suit all purchasers.

Each house would have a different aspect and prospect and be got-atable with the least possible expenditure of labor.

The enumeration of the houses could also be carried out to perfection; numbering from the centre outwards, each house would have its own number on the spiral road. The stellar avenues could be numbered in the San Francisco style.

Adaptations of these ideal figures can easily be made when dealing with a town located on the sea coast or harbor, but you will find in all cases that the scroll will answer without any material change.

An approximation to the spiral form is found in the circular or elliptical lines represented in the maps of old European cities, where the enciente of the fortifications gave that form to many of the streets. In this case, however, there is lost the continuous line obtained by the spiral.

Literature not being my profession, any angularities of style as long as they do not interfere with the meaning must be forgiven.

This paper is meant really more to contain hints than anything else, and any objection against this scheme I hope will be freely expressed; for by that means only may these papers be of benefit.

An interesting discussion followed the reading of the paper, which our limited space will not allow of us reporting this time.

LEGAL INFORMATION.

Negligence in Walking Along the Street.—Where one was walking along the street, fell into an area way which was not guarded, nor was there anything to call his attention to it; but could have been seen by looking at it, he was not as a matter of law negligent in not seeing the opening.

Matthews v. City of Cedar Rapids, Supreme Court of Iowa, 45 N. W. Rep. 894.

Goods Satisfactory to Buyer.—When one party agrees to do a thing to the satisfaction of another, and the excellence of the matter is a matter of taste, as a design for a draft, a piece of furniture, or a suit of clothes, the employer may reject it without assigning any reason for his dissatisfaction.

Gray v. Alabama Nat. Bank, City Court of New York, 10 N. Y. Sup. 5.

Building Contract and Subsequent Purchasers.—Plaintiff loaned money upon some buildings in process of erection under a contract that he should be at liberty to foreclose at any time if the completion of the buildings was unreasonably delayed. Such agreement was legal and valid between the parties, and also against all persons who dealt with the property with notice of its existence.

Metropolitan Life Ins. Co. v. Hall, Supreme Court of New York 10 N. Y. Sup. 196.

Joint Building Contract.—When one contracted with an architect to furnish plans for a building, and told him that he and his father-in-law were building it together, and the architect so entered it in his books, the contract is a joint one and the defendant is not liable on a several recovery.

Van Leyen v. Wieford, Supreme Court of Michigan, 45 N. W. Rep. 1116.

Covenant in Deed Controlling the Manner of Erecting Buildings.—Where a parcel of land is subdivided into lots shall be built on a certain line and of a certain height, and the city built on one of the lots contrary to the covenant. It will be liable in damages to a lot-owner whose casement is thus injured.

Ladd v. City of Boston, Supreme Judical Court of Massachusetts, 24 N. E. Rep. 858.

Mooser & Cuthbertson have sent plans down to Guatemala for several two-story dwelling houses to cost about $5000 each. They have also prepared plans for O. T. Davis, Florence, Arizona, for stone, brick and wood ranch house, costing $5000.

NOTICE TO CONTRACTORS.

Sealed proposals will be received at the Office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 10th day of September, 1890, for all the labor and material required for excavation, concrete foundations, stone and brick work of the basement and area walls of the U. S. Post Office, etc., building at Sacramento, Cal., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Sacramento, Cal.

Each bid must be accompanied by a certified check for $500. The Department will reject all bids received after the time fixed for opening the same; also bids which do not comply strictly with all requirements of this invitation.

Proposals must be sealed and endorsed, "Proposal for excavation, concrete foundations, stone and brick work of the basement and area walls of the U. S. Post Office, etc., building at Sacramento, Cal," and address to,

Jas. H. Windrim,
Supervising Architect.

August, 7th, 1890.

The management of this journal desires to extend a cordial invitation to all Architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The double plate shows the accepted design for the new City Hall and Court House, Salt Lake City, from the drawings of the architect, C. E. Apponyi. The fronts are to be of two different kinds of stone, rock-faced, and the construction fire proof throughout.

The artotype of the California State Bank at Sacramento (of which a more extended description appears elsewhere) is to be credited to Curlett & Cuthbertson, architects.

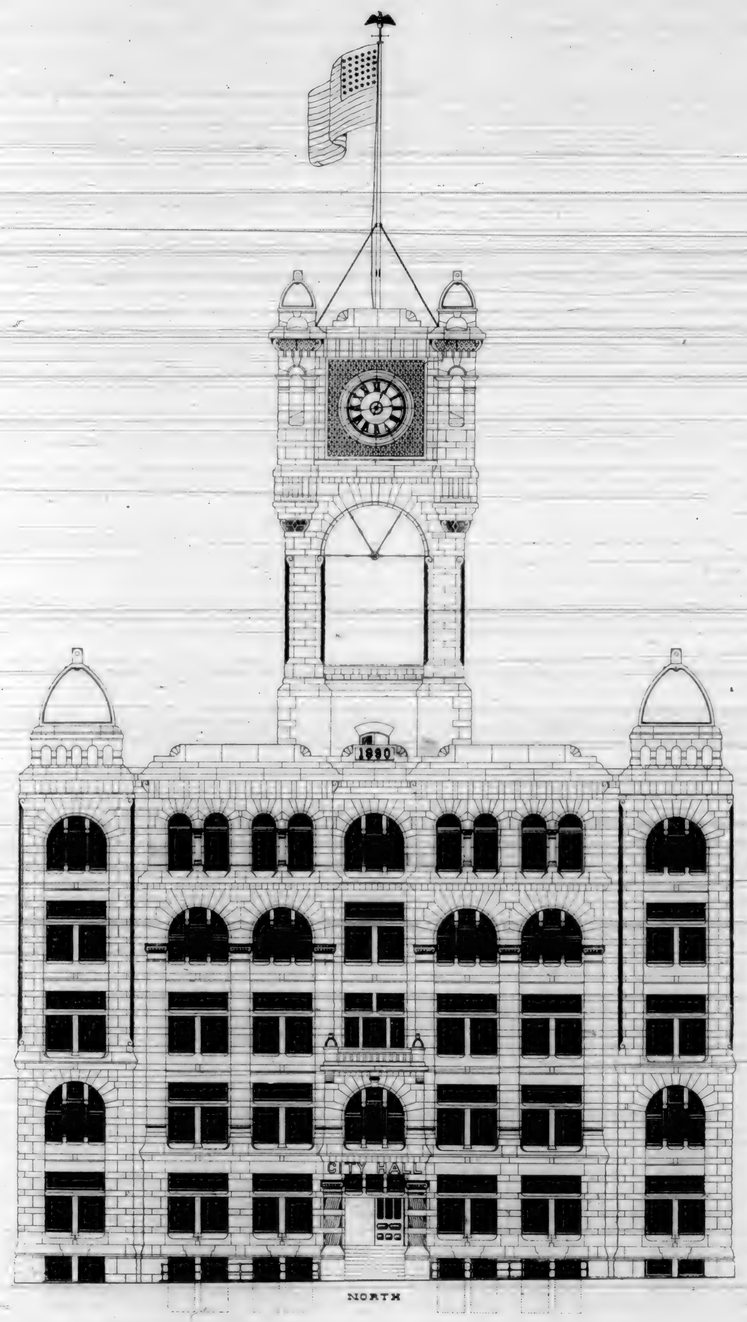
To Editor California Architect:

Sir:—It is too bad that the Supervisors did not heed the protests from all sides against the Bush and Market street engine house; and thus another blunder will be made which will be cursed by our children as much as the present generation curses the short-sightedness of our fathers in covering up with buildings what should have been our City Hall Park, and destroying an approach equal to any in the world.

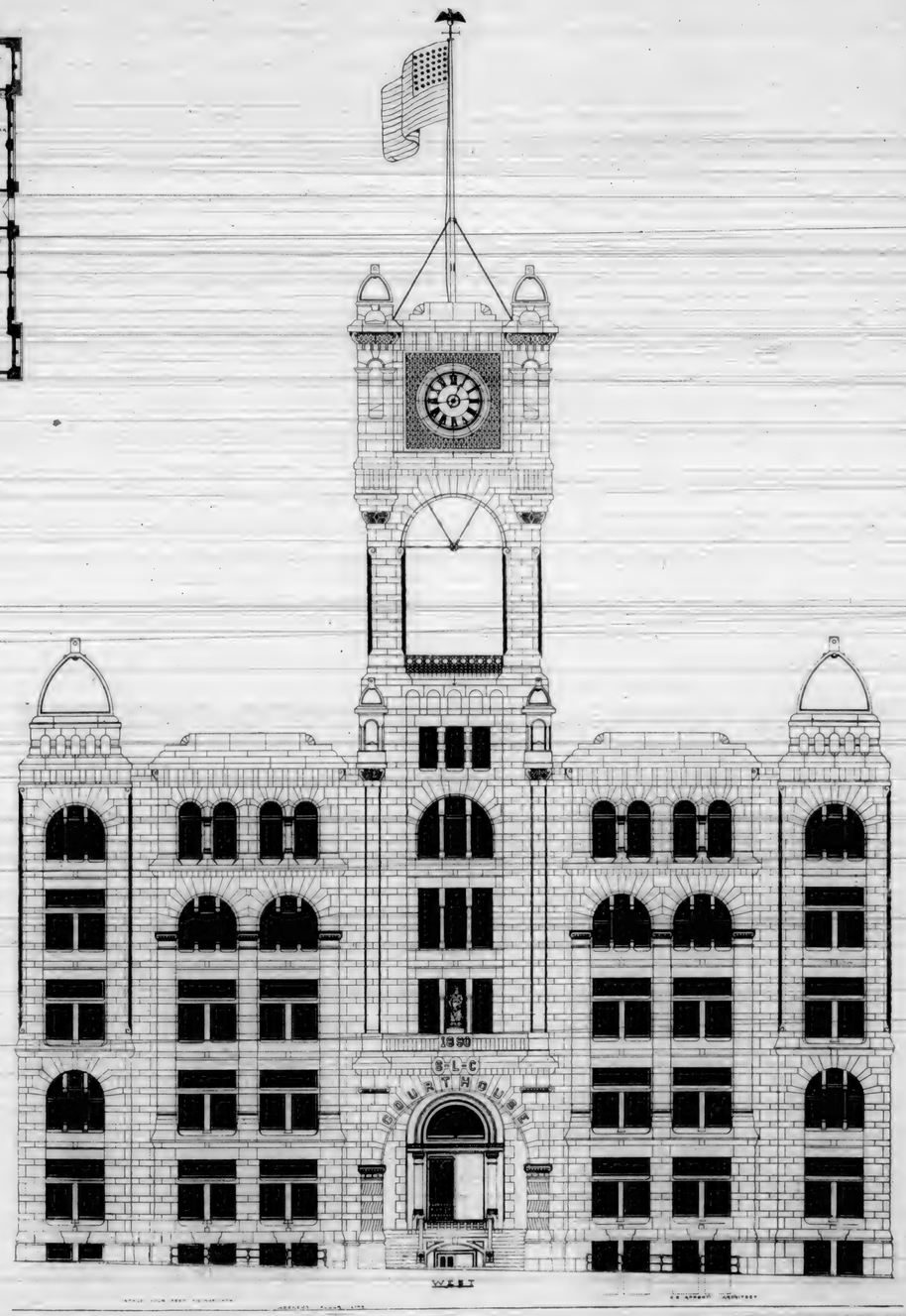
Now another of our few down-town open spaces is gone from us—and what could have been made a delightful little rest with the $25,000 fountain in the centre which our deceased esthetic minded fellow citizen, Merwyn Donahue, had presented to the city for that spot—and a little grateful shade and green around, is now given up to the tender mercies of a fire engine station and its attendant annoyances. A forbidding looking fortress, striking fear into the quailing heart of the incoming stranger, instead of inviting him onward with pleasant attractions to the more pleasurable part of the city.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

GROUND PLAN.



NORTH



WEST

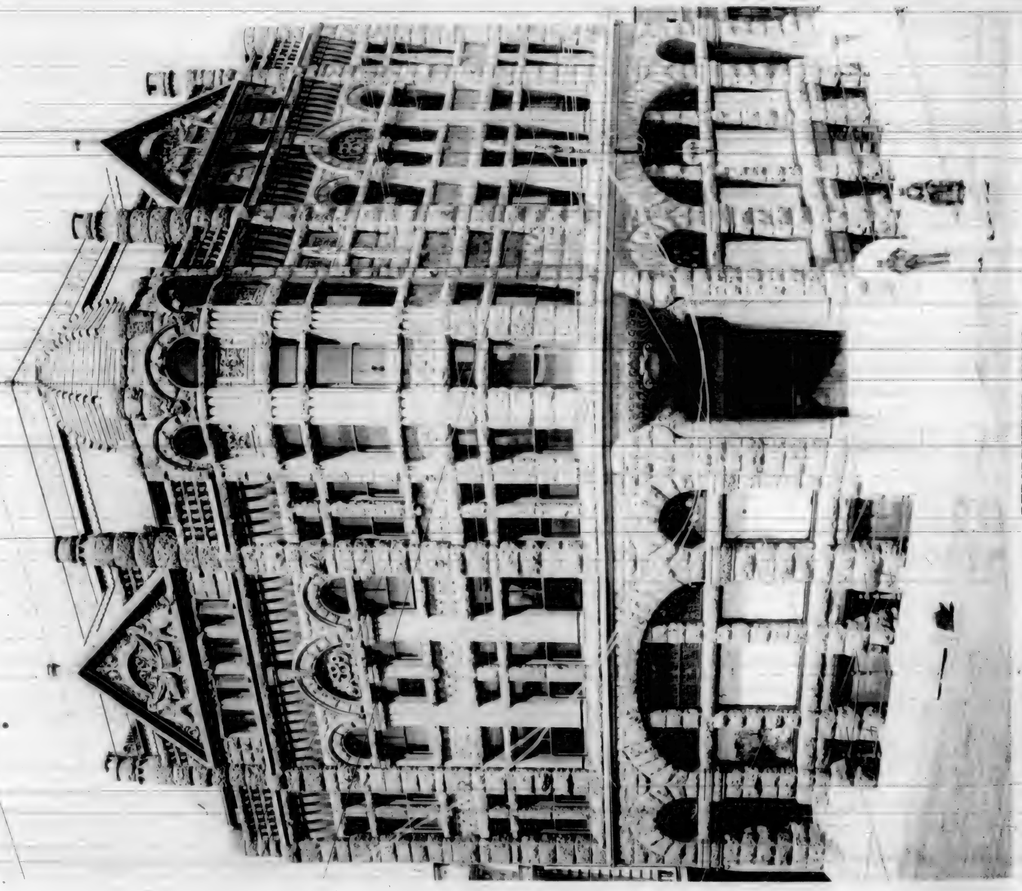
NEW CITY HALL & COURT HOUSE
SALT LAKE CITY.

C.E. APPONYI
ARCHITECT.

CALIFORNIA STATE BANK,

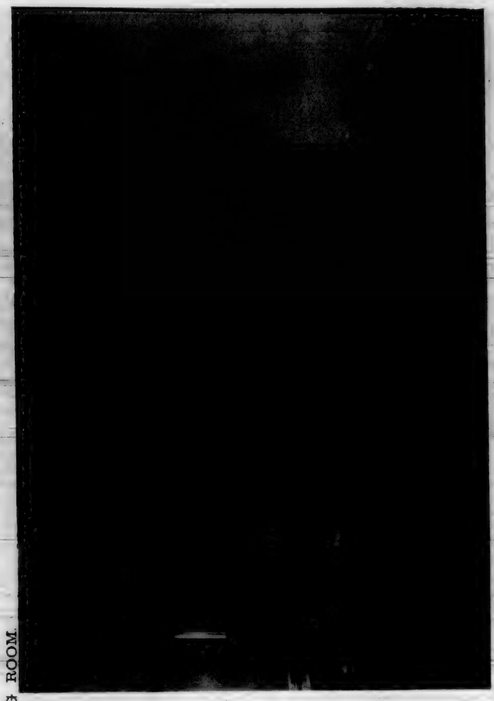
SACRAMENTO, CAL.

HALL.



PERSPECTIVE VIEW.

CURLETT & CUTHBERTSON,
Architects.



BANKING ROOM.

BILLIARD ROOM.

DINING ROOM.

SUTTER CLUB ROOMS.

DESIGN FOR A CHURCH. *From the Canadian Architect.*

But what can be said to our erring municipal authorities, when we find the State looking on with uninterested eyes upon the wanton waste and destruction of the very few redwood groves, those pleasant oases, left to us.

Look at the energy wasted by our State Representatives in pushing lunatic asylum buildings and spending millions thereon, while a paltry $100,000 to condemn and buy up a few of our remaining redwoods for the benefit and recreation of the people, would be met, even if it were possible to get a member bold enough to propose such a thing, with a howl of indignation and ridicule. But the economy of it is palpable, as any one visiting these State groves a few times a year would have no need of brick and mortar lunatic asylums. These trees can never be renewed, and therefore it is even a greater crime to look on supinely while their destruction proceeds than to help in covering our open spaces with fire engine stations, which we can clear away again when we come to our senses.

The national Government, I hope, will reserve parts of the "Giant Forest" in Tulare county for national parks, and I believe are intending to do something of the sort. Let it preserve our giant sequoias and let California attend to our Coast Range redwoods, and posterity will bless us and admire our regard for it.

* * * * * *

While glancing over one of our weeklies lately, I found illustrations of one of our surburban hostelries which has lately been added to, together with the adjacent club house and other adjuncts, with an architect's name attached whom I knew was not the architect of the building. I found out that he was the architect for certain additions made thereto; and it struck me that this inadvertance, no doubt, has left the impression on one who did not know the facts of the case, that this architect was the architect for the entire building illustrated, and not merely for the additions; which was not right, for a professional man, or any other man, for that matter, should be most punctilious in only claiming what is really his. We cannot have too much of the spirit of honesty and justice in this world.

Yours truly, STROLLER.

LIEN LAW.

The Mechanics Lien Law has heretofore been pretty badly tinkered by courts and Legislature, and it seems reserved for the present court to construe an illogical, unreasonable and unjust law in a most unreasonable manner. A decision handed down last week establishes the rule that if a contractor abandons a building for thirty days, the owner becomes liable for the contractors debts. If that be the correct principal of the Lien Law, it ought to be called "An act to discourage the erection of buildings in this State." That is really its true import to-day. It prescribes how a man shall contract for the erection of a building, not only by directing that such contracts shall be in writing, but, further, that nothing but money shall be taken as payment, and that one-fourth of the sum shall not become payable until thirty-five days after the completion, thus depriving persons of the right to make contracts for lawful purposes as they think best, and it punishes owners who contract to the contrary by making them liable for all the debts and dues of the contractor. The whole thing is a job, and an imposition on property-owners. It was railroaded through the Legislature by the lumber ring of this city. Mechanics' lien laws were originally designed to protect mechanics only. Now their operation has been extended to all and everybody who has anything whatever to do with a building. Why should a lumber merchant, who is as fully as able to look after his rights as any other business man, be preferred by law and given security for the material he sells. Other merchants have no protections or liens, nor do they need lien laws. On the other hand, it is a notorious fact that lien laws have made the merchants entitled to their benefits utterly reckless, and that they are responsible for nearly all of the numerous failures which occur among building contractors. Responsible builders are underbid by worthless ones, who are backed by lumbermen, relying in turn entirely on the lien law for their pay. The contractor is always expected to and does fail, and if the latest Supreme Court decision on this subject holds good, the owner would seem to be shorn of all and every protection. The next Legislature should be applied to to reduce the lien business to some reasonable basis again.—*S. F. News Letter.*

THE CALIFORNIA STATE BANK

AT SACRAMENTO, CAL.

We present our readers with this issue a beautiful arto-type view of the exterior of this imposing structure, together with several interior views, and below will be found the names of the persons who have been the leading instruments in the production of this grand display of art and architecture.

FOUNDATION.

The really most important part of the structure of any building, is that of which but little is to be seen after the building has been completed.

Upon foundations, in a great measure, depend the success of the enterprises for improving and beautifying our towns and cities with well constructed and imposing business blocks, bank buildings, manufactories, etc.

If care is taken and taste displayed in the construction of these improvements, the place obtains a character that makes it attractive for both the citizen and visitor. The California Bank Building, now nearly completed in Sacramento, is a structure of the kind above referred to, and the Chatain—Gilette Stone Company are to be credited with giving it a foundation that will ensure the stability of the structure for ages. Their place of business is 1219 Market street, San Francisco.

STONE.

Mr. David O'Neil of 330 Montgomery street furnish stone used on this building. It is from the Ione Quarry in Amador County. It is a red sand stone and a piece being tested by Mr. Irelan of the State Mining Bureau, stood a pressure of 9295 lbs. to the square inch before it crushed. Among the numerous buildings in which it has been used may be mentioned the following: Crocker Building, cor. Washington and Laguna street, San Francisco; Architect Perry's house, Oakland; Methodist Church, Stockton; Church of the Holy Immaculate, corner of 26th and Fair Oak streets. The new engine house, Bush and Market streets, in the Preston Industrial school buildings at Ione and the Jackson Court House erected thirty years ago.

CARPENTER WORK.

Mr. Fletcher, the well-known contractor, whose office is at 330 Pine street, was selected to do the carpenter work, and his name is a sufficient guarantee that the work has been fulfilled to the letter of the contract. He has an extensive business in this city, as well as throughout the State. Among the many fine buildings that attest his skill and workmanship may be mentioned that of Mrs. Parrott's on California street, between Montgomery and Kearny, also another for the same lady on the corner of Davis and Sacramento streets, valued at $26,000, four large buildings from three to five stories in height, for the Pacific Power Co., and many others, including the residences of James Burling, William Burling, Col. E. E. Eyre of San Mateo, and the present residence of M. H. De Young on California street. He is now engaged on the Academy of Science building on Market street, which is a gift from the late James Lick.

STAIRS.

The stairs were constructed by A. I. Sanborn, of Mission & Fremont streets, in this city.

He is one of the pioneers in his line of business, and his work adorns many of the finest houses here and throughout the coast.

The stairs are of Spanish cedar and are eight feet wide. The flight of stairs leading to each floor break into two parts, thus winding about an eight foot well running to the roof, closed in by elegant wood work in oaken balustrades, with carved oaken posts supported by mounted arches and lattice.

HOSE REELS.

The fire protection consists of four of the Schenck's hose reels, which are considered the finest fire protection for the inside of buildings it is possible to procure. Since their introduction some three years ago, hardly a prominent building has been put up but what is provided with them, and the record shows they have put out a large number of fires, and have never yet failed when called upon.

The large hotel at Coronado Beach has 87 of them in service, and 48 have just been placed in the Palace Hotel of this city. Quick and sure work and reliable aparatus is an absolute necessity for all inside fire protection, and these reels give this in perfection.

INLAID FLOOR AND FRET WORK.

The rooms of the Sutter Club have been fitted up in a style of finished elegance befitting the renown of this celebrated association. The floor of the dining room is of ornamental hard wood with wide inlaid border of oak and walnut finished in the most approved manner.

Fret work like inlaid floors has come to be almost a necessity where an attempt is made for ornamentation, it being at once structural, artistic and light, this fact is made apparent in the billiard room where a beautiful panel of intricate fret work has been placed at one end which adds to the general lightness and agreeableness of the room. The work mentioned has been done by Messrs. Reynolds & Adams of 1237 Market street, San Francisco, who are acknowledged to be at the head for the best of this class of work. From the long list of buildings where Messrs. Reynolds & Adams have put inlaid floors and fret work, we select the following: S. Hirsch, Broadway between Van Ness avenue and Franklin streets, S. L. Everett, S. W. Rosenstock and Wm. Friese, Washington and Van Ness avenue, of San Francisco, Governor Geo. C. Perkins and Geo. D. Metcalf, Oakland and A. N. Fink, Washington Market, Alameda.

VAULT WORK.

As one of the first considerations in a bank building are the safes and vaults, an architect cannot be too careful in giving out a contract of this kind so as to be sure that the parties contracting for such work are responsible people. The Hall's Safe and Lock Co., of 609 and 611 Market street, were selected to do this part of the work. There are two vaults, one 8x12 feet, steel lined, burglar and fire-proof, and closed by massive steel lined doors, secured by Hall time locks.

Beneath this main vault, in the basement, is the bank's storage vault, of similar character and size. There are 500 small steel safes for renters, each safe being fitted with the most approved safe deposit locks, with different combinations for each safe. This firm is the leading one of this kind on the Pacific Coast, and their numerous large contracts which they have on hand at the present time, aggregating $150,000, attest this fact.

ART TILE WORK.

The improved methods of fitting up the interiors of buildings for business and domestic purposes is meeting with general favor among all classes, hence the impetus that has been given to the manufacture of fine and artistic goods for that purpose. With this fact staring us in the face, one cannot deny that the esthetic side of the American character is keeping pace with the development of its general nature. Those who have never visited such establishments, would be surprised, on their first visit to such a one as W. W. Montague & Co's., where displays of goods would meet their eyes outstripping almost the highest ideal for interior fittings in the way of fire-place facings of art tile, illustrating in enduring form and color, almost every phase of domestic and civic life. They would there find tiles of the most beautiful patterns of inlaid mosaics, and brass and bronze frames, mountings, and ornaments of beautiful designs and skillful workmanship.

At the New California State Bank, now in course of completion at Sacramento, may be seen evidences of the ability and skill of the above named firm. All tile flooring, grates and fire places, as well as all of the heating and ventilating contrivances were furnished and put in place by this firm. We therefore recommend to persons who contemplate building and completing to the extent illustrated by the above named beautiful building, to call on W. W. Montague, 309 to 317 Market street, San Francisco.

SHEET METAL WORK.

The slate roofing, copper, tin and galvanized iron work on the new bank now nearly completed in Sacramento, was executed by the Eagle Sheet Metal Works located at 1213 and 1215 Market street, San Francisco.

William Cronan, the proprietor of this establishment is an old resident of this state and is well known in the building trades to be one of the foremost workers in sheet metal on this coast. His extensive contracts successfully executed have given him a standing in the building trades that inspires the fullest confidence in his ability and integrity. We commend him to those needing his services in this line.

INTERIOR BANK FITTINGS.

The counters for the Banking department are constructed of solid mahogany, of an unique design, with Tennessee marble base and bevel plate glass guards or screens set in frames of oxidized copper ornamenting the top of the counter. All this work was furnished and put up by Webber & Co., corner of Post and Stockton street, San Francisco.

GLASS AND GLAZING.

The glass and glazing of a building of this class is of the first importance. The large lights require strength and toughness as well as clearness, which in this instance are highly polished plate for the windows, and heavy glass for the dome, over the stairway. Only a firm of large resources could assume the responsibility for such an amount of high grade glass as has been used for this building. With pleasure we note that the pioneer house of the Sullivan, Kelly Company 915 and 919 Second street, Sacramento, furnished and set the glass. This of itself is a sufficient guarantee to note that this portion of the building is as it should be. This old and tried house has occupied a high position for many years on account of the superior quality of their goods, and the fair and equitable manner of dealing with their customers.

ART GLASS.

All this work has been furnished by the well known Pacific Art Glass Works, No. 1211, 1213 and 1215 Howard street, San Francisco. John Mallon, the proprietor of this establishment is now, we believe, the oldest worker in Art Glass on the Pacific Coast.

PLUMBING.

The plumbing in this building was done by Crouch & Lyman whose place of business is at No. 511 J street. They are an old established firm and their work speaks for itself. The edifice is fitted up with combination gas and electric light fixtures throughout. There are twenty-four marble top washstands fitted up with 16-inch bowls and Peck's No. 8 combination faucets, also three enamel bath tubs with faucets similar to washstands. The latrines are Boyle's patent and are set in stalls of Tennessee marble. The water-closets are of a pattern made especially for this enterprising firm. The sanitary appliances as far as drainage is concerned is complete throughout, extra heavy cast iron pipe being used in conjunction with traps and vents. They have the most complete stock of plumbing goods and gas fixtures in Sacramento.

PAINTING.

Messrs. Krebs & Co., the pioneer firm of 626 J street, Sacramento, was selected to do the painting and decorative work. From an artistic point of view they have carefully carried out their contract, the wood for interior rooms being especially selected had to be preserved as far as possible. Messrs. Krebs & Co. have by a series of experiments discovered methods of treating woods so as to give a gloss and finish equal to a piano polish.

They are the recognized leaders in their line of business, and have done work on many fine buildings, such as the State Capitol, Art Gallery, Hall of Records, County Hospital, Odd Fellow's Temple, Masonic Hall, and the residences of Albert Gallatin, the late Charles Crocker, Mrs. E. B. Crocker, Edgar Mills, General Redding and many others.

Being thorough men of business as well as competent mechanics, attentive to their work, and careful to fulfil all agreements to the entire satisfaction of their many patrons.

CITY BUILDING NEWS.

Broadway, between Franklin and Gough. Painting; owner, B. Strauss; architect; C. Geddes; contractor, T. Downing; cost, $570; signed, July 30; filed, August 2; payments, $200, painted outside: $228, completed; $142, 35 days.

Broadway, between Franklin and Gough. Plumbing; owner, B. Strauss; architect, C. Geddes; contractor, W. L. Snook; surety, N. Schwerin; cost, $474; time, Nov. 1, '90; payments, $200, gas and water pipes in; $156, accepted; $118, 35 days.

Broadway, between Franklin and Gough. Brickwork; owner, B. Strauss; architect, Chas. Geddes; contractor, F. L. Hansen; surety, B. Joost; cost, $7,200; time, four months and fifteen days; signed, July 8; filed, August 2; payments, $1,250, graded; $1,000, enclosed; $1,000, brown coated.

Bryant, between Fifth and Sixth. Painting, etc.; owner, La Societe Francisco; architects, Pissis & Moore; contractor, L. Paint; cost, $1,300; signed, July 28; filed, July 29; payments, installments on first and fifteenth day of each month; balance, 35 days.

Bush, near Baker. Two-story frame; owner, T. Ryan; architects, Shea & Shea; contractor, R. Suinott; surety, W. J. Adams; cost, $1,600; signed, July 1; filed, July 9; payments, $600, raised; $600, accepted; $400, 35 days.

California near Kearny. Cast iron work; owner, D. R. Jones; architect, W. H. Armitage; contractor, R. Llewellyn; cost, $1,990; signed, August 1; filed, August 2; payments, 75 per cent. of work done; balance 35 days.

California near Kearny. Wrought iron work; owner, D. R. Jones; architect, W. H. Armitage; contractors, Bigiow and Little; cost, $822; signed, August 1; filed, August 2; payments, $822 entire work is completed.

Chestnut between Stockton and Dupont. Brick foundation; owner, A. E. Bert; contractor, A. Guilbert; cost, $2,000; signed, August 2; filed, August 5; payments, $500, foundation laid; $500, brown coated; $500, front finished; $500, completed.

California near Taylor. Mill work; owner, Mahony Brothers; architect, A. Page Brown; contractors, Miller and Hamilton; cost, $4,650; filed, July 17; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

California near Steiner. Additions; owner, J. S. Franklin; architect, M. J. Welch; contractors, Orid Brault and John Miron; cost, $5,700; filed, July 26; payments, $1,425, framed; $1,425, brown mortared; $1,425 completed; $1,425, 35 days.

Clara, between Fourth and Ritch. Carpenter work; owner, J. Carolan; contractor, Mullins Bros.; surety, R. G. Wilson, $2,000; cost, $2,800; signed, July 28; filed, July 29; payments, $450, brick foundations in; $450, framed; $450, plastered; $450, inside finish on; $1,000, 35 days.

911 and 913 Capp street. Alterations; owner, M. A. Byrne; contractor, E. C. Worden; cost, $1,125; time, 90 days; signed, July 21; filed, July 22; payments, $350, kitchen up; $350, bay windows finished; $143, completed; $282, 35 days.

California, corner Taylor. Marble work; owner, F. M. Wells; architect, A. Page Brown; contractor, California Marble and Building Stone Co.; cost, $1,100; signed, July 8; filed, July 9; payments, first and fifteenth day of each month as work progresses; final payment, 35 days.

Chenery, near 30th. One-story cottage; owner, C. H. Baker; contractor, E. C. Worden; cost, $1,850; time, 90 days; signed, July 8; filed, July 9; payments, $350, framed; $350, rough plaster on; $300, finished; $350, on 10th day of December.

Collingwood, near 18th. Two-story house; owner, L. Blank; contractor, J. E. Loomer; cost, $2,200; signed, July 19; filed, July 29; payments, $700, enclosed; $700, brown coated; $800, accepted.

Douglass near Eighteenth. Owner, J. R. Kull; architects, Cook and Wry; contractor, T. J. Cook; surety, W. J. Adams, $415; cost, $1650; time, 70 days; signed, July 23; filed, July 31; payments, $400 framed; $125, brown mortared; $410, completed; $415, 35 days.

Eddy near Buchanan. Brick work; owner, Mrs. E. Coleman; architects, Salfield and Kohlberg; contractor, H. Holzenberg; sureties, J. F. and H. W. Kennedy $1475; cost, $3600; signed, August 4; filed, August 5; payments, $1000, framed; $1000, enclosed; $1000, brown mortared; $1425, accepted; $1475, 35 days.

Ellis near Powell. Elevators; owner, C. Mangels; architect, H. Geilfuss; contractors, A. J. McNichol & Co.; cost, $3925; signed, July 25; filed, August 6; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Erie near Howard. Frame building; owner, A. Sanderson; architect, J. T. Kidd; contractor, J. J. McKeague; cost, $3300; signed, July 16; filed, July 21; payments, $618, framed; $618, brown mortared; $618, white coated; $621, accepted; $825, 35 days.

Fulton between Welster and Fillmore. Two-story dwelling; owner, C. E. Foye; architect, G. A. Birchell; contractor, A. H. Plummer; cost, $9254; signed, August 1; filed, August 2; payments, $982, framed; $982, ready for plastering; $982, white coated; $982, completed; $1326.25, 35 days.

Franklin near Myrtle Ave. Frame building; owner, J. W. Carmany; architect, J. Marquis; contractors, R. Parker and W. C. Chamberlain; cost, $6000; signed, August 1; filed, August 4, payments, $890, framed; 1000, windows in; $1330, brown coated; $1350, finished; $1500, 35 days.

Fulton near Franklin. Alterations; owner, P. Rohrbacher; architect, H. Geilfuss; contractor, H. Munster; cost, $2250; signed, July 29; filed, 31; payments, first Monday of each month, 75 per cent. of work done; balance, 35 days.

Fair Oak near Twenty sixth. Mission Chapel; owners, F. W. Van Reynegom and F. G. Eichbaum; architect, E. A. Coxhead; contractor, J. Norris; cost, $4100; filed, July 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Fulton near Lyon. One-story frame; owner, R. Dolan; architect, M. J. Welch; contractor, J. J. O'Brien; cost, $1950; signed, June 25; filed, June 30; payments, $850, framed; $850, brown mortared; $850, completed; $900, 35 days.

Greenwich near Fillmore. Two-story tenement; owner, F. Buehu; architect, W. Schrof; contractor, A. Morton; cost $3,100; signed, Aug. 7; filed Aug. 8; payments $775, framed; $775, brown mortared; $775, white plastered; $775, accepted; $775, 35 days.

Greenwich near Larkin. Owner, J. Trohu; contractor, J. Bauman; cost, $1,700; time, 70 days; signed, Aug. 5; filed, Aug. 7; payments, $500, enclosed; $500, brown mortared; $760, 35 days.

Guerrero near 17th. Two-story frame; owner, P. McGlinn; architect, A. J. Barnett; contractor, Tegeler & Muller; surety, H. Schroder & W. H. Bowe, $2,500; cost, $4,660; signed, July 18; filed, July 23; payments, $1,000, roofed; $1,245, brown mortared; $1,145, completed; $1,170, 35 days.

Grove near Broderick. Two-story dwelling and one-story barn; owner, J. G. Doane; architect, C. J. Havens; contractor, White Bros.; cost, $4871; signed, July 8; filed, July 10; payments, $900, enclosed; $900, rough pipes in; $900, outside work is primed; $921, completed; $1,250, 35 days.

Grove near Buchanan. Three-story building; owner, A. McLaughlin; architect, H. Geilfuss; contractor, C. Heppely; cost, $5 2 0; signed, July 29; filed, July 31; payments, $787, framed; $787, partitions set; $787, outside work completed; $787, white coated; $787, completed, $1,315, 35 days

Gough bwt. Bush and Sutter. Alterations; owner, S. Buchanan; architect, H. C. Macy; contractor, J. S. W. Saunders; cost, $2,470; time, Sept. 10, 1890; signed, July 29; filed, July 31; payments, 75 per cent. of work done; balance, 35 days.

24th bwt. Guerrero and Valencia. Alterations; owner, J. H. Grady; architect, A. C. Lutgens; contractor, Jas. McConahey; cost, $2,200; signed, July 29; filed, July 29; payments, $800, framed; $400, brown mortared; $500, white coated; $495, accepted; $856, 35 days.

Owner, J. Bowes; contractor, J. Glachin; cost, $1,250; filed, July 29; payments, $300, rustic on; $900, brown mortared; $350, finished; $300, 35 days.

Grove near Buchanan. Alterations; owner, C. H. Thornton; contractor, L. D. Frichette; cost, $2,050; signed, June 27; filed, June 30; payments, $512.50, raised; $512.50, brown coated; $512.50, completed; $512.50, 35 days.

Howard, near 11th. Three-story building; owner, H. Wilkins; architect, T. J. Welch; contractor, S. H. Kent; cost, $4,500; signed, July 19; filed, July 25; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Hartford, near 19th. Two two-story houses; owner, L. Lander; contractor, J. E. Loomer; cost, $5,000; time, 60 days; signed, July 18; filed, July 24; payments, $1,000, enclosed; $1,000, brown coated; $1,800, completed.

Hyde, between Filbert and Beach. To build road beds; owner, California Street Cable Co.; contractors, Foley & Keenan; cost, $4,00 ; filed, July 8; payments, 75 per cent. of the amount so determined by said Superintendent; 25 per cent. 35 days.

Howard, near 28th. Three-story frame; owner, C. H. Van Orden; architect, C. I. Havens; contractors, R. Doyle & Son; cost, $6,494; signed, July 2; filed, July 7; payments, $1,200, framed; $1,200, brown mortared; $1,200, hard finished; $1,244, finished; $1,650, 35 days.

Jackson, near Powell. Brick and carpenter work; owner, J. Klein; architects, Salfield & Kohlberg; contractors, J. O. and B. Brown; sureties, C. Hauson and R. L. Taylor, $6,700; cost, $6,780; signed, June 28; filed, July 11; payments, $1,250, framed; $1,250, enclosed; $1,250, white coated; $1,250, accepted; $1,700, 35 days.

Julan Avenue, near 15th. Church of St. John; owner, Church of St. John; architect, E. A. Coxhead; contractor, J. Norris; cost, $32,675; signed, July 15; filed, July 29; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Julan Avenue, near 15th. Owner, St. John's Church; architect, E. A. Coxhead; contractor, Union Pressed Brick and Terra Cotta Co.; cost, $6,000; signed, July 15; filed, July 29; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Leavenworth and Ellis. Elevators; owner, J. A. Schmidt; architect, J. E. Kraft; contractors, Cahill & Hall; cost, $2,975; signed, Aug. 6; filed, Aug. 7; payments, 50 per cent. of value of work done; 50 per cent. 35 days.

Larkin, between Ellis and O'Farrell. Owner, P. J. Coffee; architect, Wm. H. Armitage; contractor, H. Keenan; cost, $6,000; signed, July 15; filed, July 31; payments, 75 per cent. of work done; balance, 35 days.

Mount Calvary Cemetery. To build vault; owner, M. Skelly; contractor, E. J. Herrin; cost, $3000; time, November 1, 1890; signed, July 21; filed, July 22; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Mission near Eleventh. Brick work, etc.; owner, H. Wilkins; architect, T. J. Welch; contractor, S. H. Kent; cost, $7800; signed, July 19; filed, July 25; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Sixth. Elevator; owner, A. Vetter; architect, R. Zimmerman; contractor, A. J. McNichol; cost, $2750; signed, July 23; filed, July 24; payments not mentioned.

Market between Fourth and Fifth. Balconies; owner, California Academy of Science; architects, Percy and Hamilton; contractors, Ransom and Cushing; cost, $3750; filed, July 24; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Mission near Tenth. Concrete work; owner, S. H. Kent; architect, T. J. Welch; contractor, D. J. Brennan; cost, $1600; filed, August 7; payments, 75 per cent as work progresses; 25 per cent. 35 days.

Mission between Twenty-fourth and Twenty-fifth. Frame building; owner, A. W. Stone; architects, Pissis and Moore; contractors, Smilie Brothers; cost, $9415; signed, August 2; filed, August 4; payments, $2000, framed, $1500 brown coated; $2900, interior plastered; $1560 completed; $2355, 35 days.

Market bwt. 4th and 5th. Soft wood mill work; owner, W. M. Fletcher; architect, Salfiela and Kohlberg; contractor, P. A. Buell & Co.; cost, $8,000; time, 90 days; filed, July 11; payments, installments before tenth day of each month; 75 per cent. as work progresses; remainder, 35 days.

Minnesota near Sierra. One-story house; owner, M. Haskins; contractor, R. O. Davis cost, $1,400; time, 65 days; filed, July 10; payments, $350, studding up; $350, brown mortared; $350, white plaster is on; $350, completed.

McAllister near Gough. Three-story frame; owner, H. Nieman; contractor, C. Zwierlein; cost, $8,400; signed, July 3; filed, July 8; payments, $1,575, framed; $1,575, white coated; $1,575, completed; $2,100, 35 days.

Market near Fourth. Marble work; owner, F. M. Wells; architect, Percy & Hamilton; contractor, California Marble and Building Stone Company; cost, $1,600; time, 60 days, signed July 8; filed, July 9; payments, first and fifteenth day of each month as work progresses; final payment, 35 days.

Market near Sixth. Carpenter work; owner, A Vetter; architect, R. Zimmerman; contractor, Adam Miller; cost, $3800; signed, July 22; filed, July 24; payments, $2150, floors laid; $2200, inside finish on; $1450, completed.

Market near Sixth. Plumbing; owner, A. Vetter; architect, R. Zimmerman; contractor, W. F. Wilson; cost, $2368; signed, July 21; filed, July 24; payments, $790, rough work done; $790, second certificate delivered; $788, accepted.

Market near Sixth. Plastering; owner, A. Vetter; architect, R. Zimmernrn; contractor, W. C. Watson; cost, $3250; signed, July 21; filed, July 24; payments, $800, first or main contract; $800, second; $873.50, third; $812.50, fourth.

N. E. corner Broadway and Powell. Frame building; owner, J. Dupas; architects, Moosier & Cuthbertson; contractor, J. Dupas; cost, $8,500; signed, July 18; filed, July 22; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. E. corner Noe and 24th. Two flats and one-story frame; owner, J. Attinger; architect, H. D. Mitchell; contractor, J. A. Ehmann; cost, $5,470; signed, July 31; filed, Aug. 1; payments, $1,100, ready for studding; $1,000, enclosed; $1,000, brown coated; $1,000, accepted; $1,370, 35 days.

N. W. corner McAllister and Larkin. Galvanized-iron work; owner, W. Cronan; architect, T. J. Welch; contractor, J. P. Hale; cost, $6,891; signed, July 12; filed, July 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. W. corner Bryant and 11th. Three-story frame; owner, H. M. Butler; architect, J. T. Kidce; contractor, J. P. Whyte; cost, $7,123; signed, July 28; filed, Aug. 2; payments, $1,068, first floor joists in; $1,068, framed; $1,600, glazed; $800, outside work done; $806, completed; $1,781, 35 days.

N. W. corner Jones and McAllister. Brick and cement fillings; owner, Hibernia Loan and Savings Society; architects, Pissis & Moore; contractor, G. D. Nagle; cost, $2,336; signed, July 9; filed, July 9; payments, $895, half done; $900, completed; $600, 35 days.

N. E. corner Hayes and Broderick. Three-story frame building; owner, C. Roller; contractor, B. Dreyer; cost, $9,855; time, 90 days; signed, Aug. 5; filed, Aug. 5; payments, $2,463.75, framed; $2,463.75, enclosed; $2,463.75, plastered; $2,463.75, 35 days.

N. E. corner Fillmore and Filbert. Frame building; owner, C. Dix; architects, Moosier and Cuthbertson; contractors, Wilson and Johnson; cost, $3811; signed, July 21; filed, July 22; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. W. corner Powell and Sacramento. Plumbing; owner, V. Menesini; architects, C. R. and J. M. Wilson; contractor, H. Ernst; cost, $1200; signed, August 5; filed, August 6; payments, $400, rough work in; $500, completed; $300, 35 days.

N. W. corner Powell and Sacramento. Four-story frame; owner, V. Menesini; architects, Chas. R. and J. M. Wilson; coniractors, Childs and Chatham; cost, $13,500; signed, August 1; filed, August 1; payments, $2131, enclosed; $2332, brown mortared; $2331, white mortared; $2331, completed; $3375, 35 days.

N. E. corner Sacramento and Mason. Brick work; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $2,656; signed, July 29; filed, July 30; payments, 75 per cent as work progresses; 25 per cent, 35 days.

N. E. corner Sacramento and Mason Two-story building; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, J. G and J. W. Day; cost, $1,960; signed, Aug. 1; filed, Aug 3; payments, first and fifteenth day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

N. E. corner Van Ness and Myrtle Avenues. Elevators; owner, L. A. Levy; architect, P. R. Schmidt; contractor, Wm. H. Birch & Co.; cost, $2,800; signed, July 22; filed, July 23; payments, installments on first and fifteenth day of each month; balance, 35 days.

O'Farrell near Gough. Two, two-story building; owner, M. Samuel and J. H. Jacobs; architect, A. J. Barnett; contractor, Fancher & Cannor; surety, J. Levy and D. H. Bibb, $3,88?; cost, $15,499; signed, Aug. 5; filed, Aug. 6; payments, $3,374, roof boards on; $2,750, brown coated; $2,750, white coated; $2,750, completed; $3,875, 35 days.

Octavia near Golden Gate Ave. Carpenter work; owner, H. H. Taylor; architect, Pissis and Moore; contractor, A. Jackson; cost, $1,108; signed, Aug. 8; filed, Aug. 8; payments, $1,100, framed; $1,100, enclosed; $1,000, ready for painting; $1,100, completed; $1,108, 35 days.

Octavia near Sutter. Wood work; owner, I. Trumbo; architect, J. J. and T. D. Newsom; contractor, A. Wilkie; cost, $1,425; signed, July 7; filed, July 8; payments, $1,068, when work is completed; $357, 35 days.

Pine near Scott. Brick work; owner, W. E. Stevens; architect, H. M. Munson; contractor, O. E. White; cost, $17,585; signed, July 23; filed July 26; payments, $3300, framed; $3300, brown coated; $3300, white coated; $4,85, completed.

Post and Montgomety. Concrete work; owner, Robert Mitchell; architect, A. Page Brown; contractor, The Gray Bros, A. S. P. Co; cost, $15,500; filed, August 4; payments, 75 per cent of value of work done; 25 per cent, 35 days.

Powell and Union. Three-story building; owner, J. Peralta; architect, C. M. Rosseau; contractors, D. Fraser & M. Yerxa; cost, $8500; signed, July 23; filed, July 24; payments, $1500, concrete work done; $1500, roofed; $1300 brown coated; $1075, white coated; $1000, completed; $2125, 35 days.

Pierce near Eddy. Alterations; owner, M. E. Volz; contractor, M. Plums; cost, $1985; signed, July 21; filed, July 14; payments, $5?0, roofed; $400, outside finish on; $ 85, completed; $500, 35 days

Pine near Scott. Plumbing for four two-story buildings; owner, W. E. Steven?; architect, H. S. Munson; contractor, H. Williamson; cost, $1798; signed, July 23; filed, July 25; payments, $899, rough work done; $449.50, completed; $449.50 35 days.

Pine between Taylor and Jones; alterations; owner, J. W. Steele; architect, Samuel, Newson; contractor, S. H. Laug; cost, $7000; signed, July 10; filed, July 9; payments, $2000, completed; $2500, 35 days.

Pacific near Front. Painting; owner, J. G. Fair; architects, Schulze & Meeker; contractor, F. S. Foland; cost, $1725; time, October 15, 1890; signed, May 9; filed, July 11; payments, on first and fifteenth day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Scott, between McAllister and Fulton. Owner, J. L. Nott; contractor, A. De Lair; cost, $1,580; signed, July 29; filed, July 29; payments, $400, framed; $400, brown mortared; $400, finished; $380, 35 days.

Sanchez, near 30th. Four-room cottage; owner, J. Loeme; contractor, B. Pfarrer & Son; cost, $1,250; signed, July 23; filed, August 2; payments, $625, framed; $625, 25 days.

S. E. corner Stockton and Greenwich. Two-story frame; owner, V. Contradio; architect, C. M. Rosseau; contractor, K. C. Gordon; sureties, Blyth and Trott, $3,000; cost, $3,960; signed, August 2; filed, August 5; payments, $743, enclosed; $743, brown mortared; $743, white coated; $992, completed.

Sanchez, between Sixteenth and Seventeenth. Brick work; owner, F. Kayser; contractor, G. Houston; cost, $4,050; time, 90 days; signed, July 28; filed, July 31; payments, $1,0.0, shingled; $1,000, brown coated; $1,000, white coated; $1,050, 35 days.

Eighteenth, near Sanchez. Two flats; owner, M. Dempsey and wife; contractor, W. W. Redmall; cost, $3,400; time, 75 days; signed, July 26; filed, July 29; payments, $600, roofed; $700, brown coated; $550, white coated; $700, finished; $850, 35 days.

S. E. corner Bush and Van Ness Ave. Brick work, etc.; owner, S. F. Med. and Benevolent Society; architect, J. J. Clark; contractor, J. H. Wilson; surety, R.P. Hurlbut, $1,000; cost, $1,390; signed, July 25; filed, Aug. 4; payments, $600, grading is complete; balance, 35 days.

S. W. corner Davis and Jackson. Brick work, etc.; owner, P. Griffin; architects, B. McDougall & Son; contractors, Martin Fennell & Son; cost, $6,300; signed, July 22; filed, July, 24; payments, $1,300, first payment; $1,300, second; $1,300, third; $725, fourth; $1,575, 35 days.

S. W. corner Fillmore and Post. Alterations; owner, Bear Club; architect, G. H. Wollser; contractor, W. F. J. Plums; cost, $1,190; signed, July 28; filed, July 30; payments, $200, enclosed; $300, exterior finish done; $460, accepted; $290, 35 days.

S. E. corner Hayes and Steiner. Frame building; owner, Mrs. M. Holladay; architects, Moosier & Cuthbertson; contractor, H. Somers; cost, $5,350; signed, June 20; filed, July 12; payments, 75 per cent. of work done, remainder, 35 days.

S. W. corner Van Ness Avenue and California. Mill work; owner, J. C. Johnson; architect, H. C. Macy; contractor, N. Parrish; cost, $5,000; signed, July 23; filed, July 24; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

S. W. corner Fulton and Octavia. Two frame buildings; owner, C. Deloche; architect, E. Depierre; contractor, J. R. Whalen; cost, $17,000; signed, June 30; filed, July 9; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

S. E. corner Ellis and Leavenworth. Painting and wood finishing; owner, J. A. Schmidt; architect, J. E. Kraft; contractor, H. F. Wagner; cost, $3,150; signed, July 29; filed, July 31; payments, 75 per cent. of work done; balance, 35 days.

S. E. corner Bush and Van Ness Avenue. Two-story frame; owner, S. F. Med. and Benevolent Society; architect, J. J. Clark; contractor, P. Maloney; sureties, D S. Cartwright and N. Doran, $7,000; cost, $8,600; signed, July 23; filed, Aug. 4; payments, $1,700, framed; $1,700, enclosed; $1,700, first coat of mortar on; $1,700, inside finish on; balance, 35 days.

Sixth and Minna. Alterations, etc.; owner, J. Molony; architect, M. J. Welch; contractor, D. Currie; cost, $1,868; signed, July 21; filed, July 22; payments, $484.50, framed; $484.50, brown mortared; $484.50 completed; $484.50, 35 days.

Owner, J. Mitchell; contractor, J. E. Loomer; cost, $2700; time, October 30, '90; signed, July 21; filed, July 22; payments, $900, framed; $900 brown mortared; $900, inside finish on; $900, 35 days.

Treat Avenue between 22nd and 23rd. Two flats; owner, J. C. Flood; contractor, E. Wilberg; surities, J. H. Kruze and Wilberg, $3000; cost, $3000; signed, August 1; filed, August 2; payments, $500, foundations laid; $500, enclosed; $500, plastered; $500, completep; $1000, 35 days.

Turk near Steiner. Owner, M. Hart; contractor, A. R. Denke; cost, $5500; time, Oct. 15, '90; signed, July 28; filed, July 29; payments, $600 framed; $600, first coat of plaster is on; $700, 35 days.

Turk near seymour. Carpenter work; owner, J. Siddle; architect, T. J. Welch; contractor, C. P. Marze; cost, $4,250; signed, July 30; filed July 30; payments, $1000, framed; $1000, brown coated; $1,000, accepted; $1250, 35 days.

Third cor. Perry. Walls and etc; owner, W. J. Ramage and Wife; architect, A. C. Lutgens; contractors, Chatain & Gilettl; cost, $2900; signed, July 7; filed, July 8; payments, seventh and twenty-first day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Union, between Laguna and Buchanan. Owner, Mrs. E. H. Coe; architect, A. De Fair; contractors, Smith & Marcham; cost, $6,800; time, Nov. 15, '90. signed, Aug. 6; filed, Aug. 7; payments, $1,360, framed; $1,360, enclosed; $1,360, brown mortared; $1,360, completed; $1,360, 35 days.

Owner, S. M. Hausel. Brick work; contractor, A. N. Nelson; cost, $2,040; signed, July 28; filed, July 29; payments, $340, brick foundations in; $450, brown mortared; $450, white coated; $250, completed; $550, 35 days.

Van Ness Ave. near Market. Artificial stone work; owner, J. Nitingale; architect, A. J. Barnett; contractors, Ransone and Cushing; cost, $2,070; signed, July 1; filed, July 9; payments, 75 per cent of value of work done; 25 per cent, 35 days.

Washington near Laguna. Owner, George Davidson; architects, Duffy Bros; cost, $1,315; time, 120 days; signed, July 21; filed, July 23; payments, $600, rough plumbing done; $386, 35 days.

Webster near O'Farrell. Two-story frame; W. Wrede; architect, C. Devlin; contractor, J. Ahmann; surities, M. Shawl and K. Kronenberg, $3,000; time, 90 days; signed, July 29; filed, July 29; payments, $500, framed; $500, enclosed. $625, first coat of plaster is on; $550, plastered; $880, all wood work; $250, completed; $1125, 35 days.

ALAMEDA.

Regent, near Encinal Avenue; owner, N. Galliani; contractor, R. Gillis; cost, $1,200; time, 90 days; signed, April 7; filed, July 5; payments, $300, brown mortared; $300, white coated; $300, 35 days.

Regent, near San Jose Avenue. Owner, G. Pistolesi; contractor, R. Gillis; cost, $2,000; time, 90 days; signed, April 7; filed, July 5; payments, $500, framed; $500, brown mortared; $500, white mortared; $500, 35 days.

Railroad near San Pablo Avenue. Two-story frame; owner, W. O'Neill; architect, J. J. Clark; contractor, T. R. Bassett; cost, $8,950; signed, July 7; filed, July 9; payments, $2,200, frame up; $2,200, brown mortared; $2,200, inside finish on; $2,350, 35 days.

Encinal Park Tract. Five-room cottage; owner, F Marcuse; contractor, R. Gillis; cost, $1,150; signed, July 8; filed, July 9; payments, $400, brown mortar on; $400, completed; $350, 35 days.

Chestnut, near San Antonio Avenue. Two-story dwelling; owner, W. Hoge; architect, C. S. Shaner; contractor, H. E. Hatch; sureties, A. Kendall and W. H. Wharff, $2,000; cost, $4,330; signed, July 16; filed, July 17; payments, $1,082, shingles on; $1,082, brown mortared; $1,083.50, stairs up; $1,082.50, completed.

Buena Vista Avenue, near Everett street. Five-room cottage; owner, I. W. C. Hegelund; contractor, J. L. Atwood; sureties, J. L. Atwood, H. M. Wood and F. G. L. Lawlor, $800; cost, $1,200; filed, July 31; payments, $800, framed; $800, brown mortared; $500, interior plastering finished; $500, ready for painting; $400, completed; $895, 35 days.

McPherson, near Santa Clara Avenue. One-story frame; owner, D. Graham; contractor, A. R. Denke; cost, $2,360; signed, July 24; filed, July 24; payments, $600, framed; $560, first coat of paint on; $600, completed; $600, 35 days.

BERKELEY.

Janes Tract. Owner, W. G. Sanborn; contractor, Wm. A. Powell; cost, $1,450; time, Nov. 1, '90; signed, July 9; filed, July 10; payments, $362.50, frame up; $362.50 brown mortar on; $362.50, completed; $362.50, 35 days.

Double two-story frame. Owner, M. A. Helpheustine; contractor, John Spencer; cost, $3,900; time, 75 days; signed, July 17; filed, July 17; payments, $1,500, first coat plaster on; $1,400; completed; $1,0.0, 35 days.

Cedar, near Scenic Ave. Owner, G. M. Robertson; architects, Pissis and Moore; contractor, A. H. Broad; cost, $3,445; signed, July 28; filed, July 31; payments, $680, framed; $800, brown mortared; $500, interior plastering is finished; $500, ready for painting; $400, completed; $895, 35 days.

S. E. corner Blake street and Shattuck Ave. Three-story frame; owner, M. Sunrak; contractor, J. Spencer; cost, $2 840; time, 6 weeks; signed, July 31; filed, Aug. 2; payments, $1,000, brown mortared; $840, completed; $1,000, 35 days.

Sherman street, near Berkeley Way. Owner, C. H. Gierrene; architect, R. E. Henrikeen; contractor, L. C. Judkins; cost, $3,250; signed, July 23; filed, July 25; payments, $610, plumbing has been inspected; $610, outside finish is on; $610, sashes glazed and hung; $610 trimmings are on; $810, 35 days.

OAKLAND.

Webster and 10th. Two-story frame; owner, M. Longe; architect, Mooser & Cuthbertson; contractor, J. Schneider; surety, F. Peterson, M. Lemer, P. Caton and C. Kramm, $6,700; cost, $10,500; time, 90 days; signed, Aug. 7; filed, Aug. 8; payments, $1960, first story joists on; $1960, roofed; $1960, plastered; $1995, completed; $2,625, 35 days.

Owner, B. Ghillary; contractor, G. A. Benseman; cost, $3070; time, 90 days; filed, Aug. 6; payments, $768.75, framed; $768.75, brown mortared; $768.75, completed; $768.75, 35 days.

Rowland Tract. Two-story; owner, J. Barne; contractor, O. F. Hunt; cost, $3,000; signed, Aug. 4; filed, Aug. 5; payments, $500, framed; $500, enclosed; $500, brown mortared; $500, completed; $1000, 35 days.

8th near Washington. Owner, E. Hindman; architect, Chas. Mau; contractor, Remillard Brick Co.; cost, $15 000; signed, Aug. 6; filed, Aug. 6; payments, 75 per cent of work done; 25 per cent, 35 days.

N. E. corner Brush and 10th. Owner, C. H. T. Mever; contractor, W. T. Veitch & Co.; cost, $6000; time, Nov 1, 1890; signed, Aug. 2; filed, Aug. 2; payments, $2000, rustic on and roof covered; $1000, 35 days.

Isabella street. Owner, J. G. Brand; contractor, J. W. Baughman; cost, $3,380; signed, Aug. 1; filed, Aug. 2; payments, ¼ shingled; ½ first coat of plaster; balance, 35 days.

Daley's Scenic Park Tract. Owner, W. Mackie; architect, Wm. Moosier, Jr.; contractor, A. H. Broad; cost, $3450; time, 70 days; signed, July 26; filed, July 30; payments made at rate of 75 per cent. of work done; balance 35 days.

Seven-room cottage; owner, J. S. Gilmore; architect, H. Burns; contractor, A. J. McKee; cost, $1900; signed, July 12; filed, July 23; payments, $485, building is one-third built; $485, building is two-thirds built; $485, completed; $485, 35 days

Two-story frame; owner, J. A. Johnson; contractor, G. W. Flick; cost, $6920; signed, July 23; filed, July 24; payments, 1730, framed; $1730, first coat of mortar on; $1730, completed; $1730, 35 days.

N. E. corner Moss Avenue and New Broadway. Owner, Fabiola Hospital Association; architect, W. J. Mathews; contractor, H. E. Jones; cost, $10,200; time, 105 days; signed, July 25; filed, July 25; payments, $1530, one-fifths completed; $1530, two-fifths completed; $1530, three-fifths completed; $1530, four-fifths completed; $1530, completed; $2550, 35 days.

Pagoda Hill near Claremont. Owners, J. D. and H. Boyer; contractor, J. H. Fowes; cost, $3800; signed, July 24; filed, July 25; payments, $800, foundations laid; $800, rough coat of plaster on; $800, plastering is completed; $900, completed;

Temescal Park. Church. Owner, North Temescal Presbyterian Church; contractor, J. Sprague; cost, $1950; signed, July 22; filed, July 22; payments, one-fourth framed, one-half brown mortared, three-fourths inside finish on; balance 35 days.

SEBASTOPOL.

Depot. Owner, Donahue R. R. Co; contractor, J. E. Ludwig; cost, $2,000.

SANTA ROSA.

Livery stable. Owner, G. E. Guerne; contractor, J. Ludwig; cost, $10,000.

Excavating and hauling. Owner, Presbyterian Church; contractor, T. J. Ludwig; cost, $15,000.

WINTERS, YOLO COUNTY.

Cottage. Owner, Mrs. Dexter; cost, $1,200.

Brick residence for P. R. Briggs; cost, $4000.

Hotel De Vilby's. Two-story brick-stone trimmings; architect, A. A. Cook.

Masonic Hall and store. Brick; contractor, A. Ritchie; cost, $5,000.

Cottage. Contractor; A. Richie; cost, $1,600.

Cottage. Owner, Fassett Bros.; contractor, A. Ritchie; cost, $1,500.

Hotel De Vilbss. Owner, J. A. De Vilbss; architect, A. A. Cook; contractor, T. D. Ball; cost, $20,000.

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BUSINESS MOSAICS.

To meet the growing demand created by a stricter interpretation of the Fire Department orders in this city, the Forderer Cornice Works at 224–226 Mission street are constantly receiving new supplies of goods for their works. The name of the proprietor of this establishment stands as a guaranty for the work of the Company, and that the satisfactory manner in which new patrons will find their contracts completed, we are sure will induce them to continue business with them.

We desire to call the attention of the public to the excellent water closets now being manufactured and sold at a very low price by W. J. Rustmeyer & Co., 215 Mission street.

House painting and decoration, both for its preservative nature as well as for decorative considerations, is perhaps the one in which the greatest abuses and frauds are practiced. Therefore care should be taken in selecting the painter, that he have both character and reputation, A combination of such qualifications the public will find in Wm. Armstrong & Son, No. 404 McAllister street.

In letting out your plumbing work invite those who have established reputations for doing good and faithful work. For such call upon Thomas Clark & Sons, No. 611 McAllister street.

The pressure brought upon the public by the increased rates of insurance consequent upon the immense destruction of property by fire, have led the public to adopt less combustible material for the construction of buildings, hence the Iron Lath has been introduced to prevent the spread of fire in interiors. There are several patents for this material now on the market, and one of the best of its kind, probably, is that manufactured and for sale by M. J. Donovan, No. 1171 Market street, San Francisco. There are points of excellence in his which builders and others will do well to examine, which he will take great pleasure in pointing out to those who will make him a call.

Wire Works.—Since the first introduction of wire works and wire wares on this coast, a great improvement has been made, both in style and variety of the goods manufactured, and the ingenuity of the artisan continues to be taxed to produce new articles of usefulness for domestic and building purposes. Persons needing supplies for building purposes, will find a great variety of designs from which to select at C. H. Gruenhagen's San Francisco Wire Works, 669 Mission street.

A few years ago we heard for the first time of the attempt to manufacture gas in small quantities for domestic and commercial purposes. The ideas of safety then required that the crude material from which the gas was to be made must be removed at a distance from the place at which it was to be used. But modern improvements and ingenuity have banished distance for this purpose and gas is now obtained by the use of portable machines located anywhere about the premises. Such machines are now to be had of Jacob Schieber at No. 43 and 45 Stevenson street, San Francisco.

Tanks are now more frequently used for storage of water for domestic purposes than ever. With the abundance of water now known to exist beneath our feet, there is no excuse for the lack of that precious fluid in towns and country places, where there are not public water works. Fulda's Planing Mill makes a specialty of furnishing this article at No. 30 to 40 Spear street, San Francisco.

One of the laws peculiar to the State of Illinois is that pertaining to the line wall, and is the exact opposite of the law in several of the Eastern States.

When an architect commences work on a lot adjoining one on which a building stands, he sends word to the owner of said building that operations are about to be commenced, and warns him to protect his foundations. Should he fail to do so, and because of excavations made for the new building, the whole or a portion of the old one should fall on the lot on which is the building in process of construction, the owner of said lot and building may sue his neighbor for trespassing, and obtain damages as has already been ruled by the Supreme Court. It is a law which amuses and enrages the ordinary property owner, according as he is an active participant in the fray or merely a passive observer.—*American Architect.*

Mann's Patent chimneys as a substitute for brick have long been in the market and are well known among architects, builders and owners, and are acceptable to the insurance companies. With this, patent, marble mantels can be put up in any part of a wooden structure. They have been found to be both earthquake and fire proof. As the inner surface is smooth terra cotta and the joints flush, there is but little chance for lodgment of soot and can therefore be relied upon for a clean current of heated air and smoke, upwards, and down drafts are prevented by the cap surmounting the whole above the roof. This chimney is for sale by Schuster Bros., No. 306 Sutter street, San Francisco.

There seems to be a growing desire for capitalist to invest in tall buildings, as the ground in densely populated cities increases in value. That a greater rate of interest is thereby obtained, is evidently becoming a fact. In connection with this comparatively new mode of utilizing ground values, other important considerations are forced upon the investor's attention; such as safety of construction, and a safe and convenient method of access to the upper stories. To this end the elevator is now engaging the attention of the foremost inventors. Among the many contrivences for this purpose, those embodying the hydraulic principle seem to be the most in favor, and those most used in this city now are manufactured by Wm. H. Birch & Co., who have added as a factor to the safety of their elevator the Ellithorpe Air Brake and Air Cushion. Their place of business is No. 119 Beale street, San Francisco.

Formerly cement pipes were extensively used for sewers and drains, but now the iron stone pipe is manufactured and sold at such low rates that the cement pipe has been driven from the market. The best Vitrified Iron-Stone Pipe can now be found at Tracy Bros. & Co., No. 20 and 22 Eighth street.

Scarcely a day passes that does not bring to light some new invention for utilizing steam as a motor power. To produce steam in the most economical manner is now the study with mechanical engineers. Dundon's San Francisco Boiler Works is now manufacturing a portable boiler that seems to be a favorite among those who need a small amount of power. Call on Mr. Dundon at No. 314–318 Market street and examine his works.

As the season opens the inquiries for the Metallic Lath, manufactured by the Cincinnatti Corrugating Co., of Piqua, Ohio, increase, showing that it is still growing in popularity. It is found in practice that this style of lathing is the most effective as well as the most economical on the market. Especially do contractors and workmen find advantages over all other styles in the matter of putting it on. Its rigidity gives it a great advantage over all other forms of wire cloth. It forms a strong bracing to the building, and can be used over many open spaces where other styles would not be effective. This Lath generally comes in pieces about four inches wide for the narrowest, to about twelve inches wide for the widest. It runs from two to eight feet in length as circumstances require.

By the use of this Lath very smooth and solid walls and ceilings are secured. As there is no shrinkage or expansion there can be no cracks. It can be easily adapted to curved surfaces for such work as groined arches, coves, cornices, etc. It is also the best article for fire-proofing, for covering iron girders, posts and beams. The protection secured by its use is equal to that of tile, while its weight is not over one-eight as much. At the same time it costs only one-fourth as much.

Steam fitters find this Lath specially adapted to their needs, both for covering around registers and about air flues, and for use in partitions. It is extensively employed in covering hot-air pipes and boilers, and is suitable as a base on which to apply plaster-of-paris, adamant, abestos or mortar of any kind. This Lath requires no cross-furring, even with unusually wide spans. It is economical of plaster, and the mortar adheres firmly to the surface. This with the perforations makes a key the strength of which is unequaled. Further, this Lath is the only kind that can be put in place by a workingman alone.

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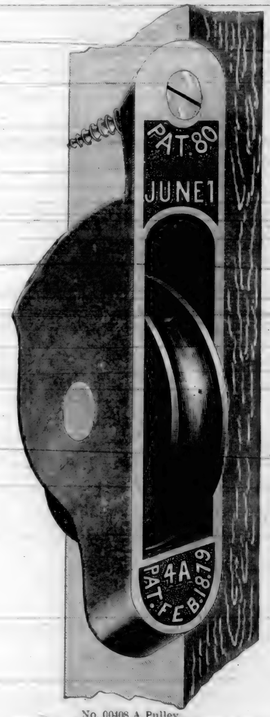

No. 6040S A Pulley.
Page 12 in 1890 Supplement.
The above cut shows the Norris Pulley as it appears in the frame. This Pulley is made so that the Rope cannot possibly leave the wheel.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN W. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE Annual Meeting of the San Francisco Chapter of American Iustitute of Architects was held Friday evening September 12th. The reports of the retiring officers received and the following officers elected to serve the coming year, namely:—

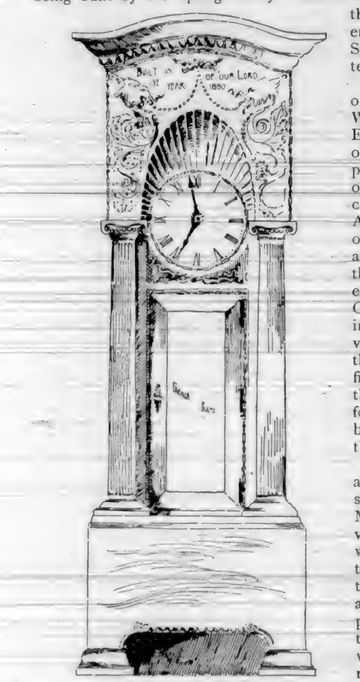
SETH BABSON, Pres. W. J. CUTHBERTSON, Vice Pres.
OLIVER EVERETT, Sec. J. W. CURTISS, Treas.
Trustees, W. P. Moore, G. W. Percy, Geo. H. Landers, Geo. A. Bordwell and E. J. Molera.

THE mentions in the monthly competition of the A. I. A. Sketch Club for August, (the subject, A Hall Clock) were as follows: First mention, S. C. Benson; second; H. J. Van Vlack; third, Hugh H. Hinds; fourth, John Williams.

THE meeting of the Technical Society of the Pacific Coast was held on September 5th, at their rooms 408 California street. The subject being Hydraulic Cements and Concrete by Mr. Calvin Brown, who is well known on this Coast as a very eminent authority, he having designed the extensive dry dock at Mare Island some years ago for the Government, having traveled throughout the Eastern States and Europe to become acquainted with the most approved technical and mechanical requirements for the production of the best possible work in that line, thus, being so thoroughly informed in the details, Mr. Brown's remarks were replete with instructive knowledge and was listened to with attention by those so fortunate as to be present.

AT a recent date the California Camera Club of San Francisco, invited their friends to an exhibition of views of Chicago. These views were prepared and presented by the Chicago Camera Club to represent the early history, and phenominal growth and modern greatness of Chicago. The views shown indicated in a marked degree the taste and judgment of the photographers in order to illustrate the magnitude of the immense structures, where in some instances, the instrument used must have taken in a field of 75 to 80 degrees. The steriopticon (a triplet) worked without a hitch, the slides being brilliantly lighted were clearly represented on the large screen, which was set (which is unusual in lantern exhibitions) so as to give the proper perspective effect. The lecturers voice was heard distinctly in every part of the large hall which was filled even to standing room. Aside from the general pleasure of the exhibition its advantages as an aid to the study of the Architecture of the Country is worthy of note, especially, to those who have not recently visited the more important Eastern cities, such illustrations being full of hints that may be turned to profit by the thoughtful, and in no other way can such realistic scenes be depicted as those by a lantern journey. The Camera Club is in a prosperous condition many of our architectural picturesque camera shooters being members.

WITH the commencement of the next volume of this Journal—1891—we propose to introduce a new heading, the design for which will be subject to competition; particulars in regard to same will appear in the October issue.



S. C. BENSON.—FIRST MENTION.

ALMOST interesting construction, from the point of view of an Architect or an Engineer, is the concrete dam now being built by the Spring Valley Water Company, to replace the present earthen dam at Crystal Springs in San Mateo County.

Upon invitation of President Charles Webb Howard, and Engineer Schussler, of the Water Company, the members of the San Francisco Chapter of the American Institute of Architects, and also the members of the Technical Society of the Pacific Coast, were lately invited to pay a visit of inspection to the works, and some fifty members of these societies were fortunate enough to be able to accept the invitation.

Leaving this city at 8:30, the party soon reached San Mateo, where conveyances were in waiting, and were then driven first to the old earthen dam at Crystal Springs, passing on the way the new structure, which is designed to replace in name and purpose the old dam; the County road will cross the reservoir at this point over a solid fill, which method was chosen on account of its economy, as it will cost but a fraction of what it would have been necessary to expend to bridge the lake, the Supervisors of the County insisting that the road should cross here to avoid a detour of several miles, which would have been necessary if the road followed the banks.

After a short stay at this place, the return was made to the main point of interest, the great concrete dam. An excellent general view of the works was had from the road above, which passes quite close, though a considerable distance had to be traversed before the dam was reached.

Arrived at the point of destination free permission was extended to inspect and question, and free use was made of the opportunity to obtain valuable information, acquired by the experience of carrying out this immense undertaking.

Mr. Schussler kindly explained the many points that would interest the professional men present; the principles underlying the design, the causes that lead to its adoption, the manner of its construction, and the materials and methods employed in the work, were all made clear to an interested audience.

Expressions of praise and admiration at the beauty of the conception, and the substantial manner of its realization, were frequent; and it was enthusiastically declared and unanimously agreed that the solid monolith of concrete now being raised, would be in existence, and serve as a monument to its builders, long after the hills which buttress it on either side, shall have wasted away, and become a part of the level plains below.

After thoroughly inspecting and reinspecting the work, lunch was served, and afterwards toasts, speeches, and a lively interchange of ideas and information were the order of the day, till Mr. Howard gave the word, "All aboard for Belmont, to see the pumping station."

More than one camera recorded some of the many interesting sights of the excursion, and furnished lasting souvenirs of a most enjoyable and instructive occasion, thanks for which are also due to Architect Geo. W. Percy, who, as a Committee on Excursions from the San Francisco Chapter A. I. A. so successfully arranged the affair.

THE boycott against brick manufactured at Verplanck's Point, New York, which we mentioned some time ago, has been carried out by the Union leaders of New York and Brooklyn, and, besides the manufacturers at Verplanck's Point, war has been declared against the Haverstraw brickmakers. The reasons given for the attack are that men are employed who do not belong to the Brick-Moulder's Union, and that wages are paid irregularly. The first, we need not say, ought not to be accepted for a moment as justifying a conspiracy against the manufacturers, but it is probably the only real reason. As the Verplanck's Point and Haverstraw manufacturers make about two-thirds of the brick used in New York, it occurred to them after the boycott had lasted two or three weeks, that they might do a little boycotting on their own accounts, and, after conferring with the other brickmakers who supply the New York market, they came to an agreement that unless the New York Union leaders withdrew, within a week, the order, under which no Union man is allowed to touch a boycotted brick, the combined manufacturers would send no more brick to New York or Brooklyn until the offensive order was cancelled. As it would be impossible, at short notice to bring brick from Philadelphia or Connecticut it would be expensive and inconvenient, this adoption by the brick manufacturers of the same tactics that have been constantly used against them by the Unions for some years past, would result in total abandonment of building operations in the two great cities, and in throwing out of work, for the period which the brick-makers would determine, nearly every member of the affiliated Unions whose leaders play so recklessly with their interests. We trust, for the sake of the mechanics and their families, that the matter will not be allowed to go on so far, but the unexpected turn which the controversy has taken should serve as a warning, that in this country the people who make bricks are just as free and combined for their own protection as those that use them, and that if those who control the immense power of workingmen's associations, chose to use without regard to decency or common-sense, they must not be surprised if any opposing combination should administer to them an occasional dose of their own medicine.—*American Architect.*

ACADEMY, ARCHITECTURE AND ANNUAL ARCHITECTURAL REVIEW. 1890.

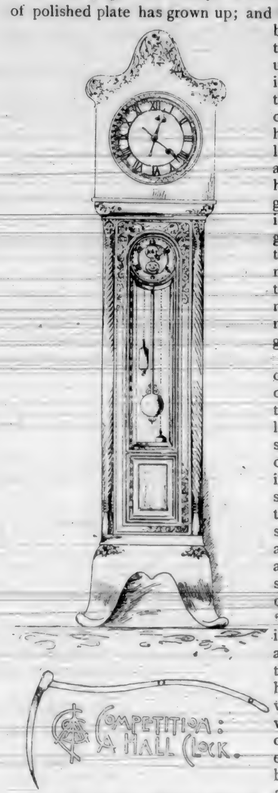
The American Edition of this work for this year is very fine, and should be in the hands of every architect in the country.

The work is edited by Alex. Koch Architect, and contains:—

1st A selection of the most prominent architectural drawings hung at the Royal Academy Exhibition.

2nd A Review of interesting architectural subjects carried out or designed during the last few years.

Mr. William Mueller of 695 Broadway, New York, who is the publisher of the *American Edition*, says, the work presents in a very concise, neat and accomplished form a large amount of matter interesting and valuable to Architects, Draughtsmen, Designers, as well as to students and lovers of art in general. The publisher's price, $1.50 per copy.



H. J. VAN VLACK.—SECOND MENTION.

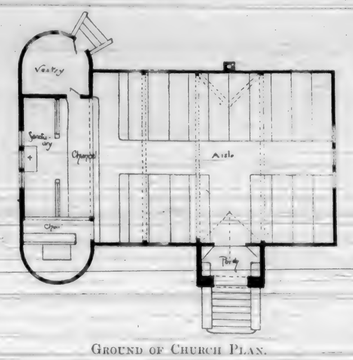
THE future of the glass industry in the United States is encouraging, for it is only since the war that the manufacture of polished plate has grown up; and there are now running, or building, enough furnaces to supply all that will be used in this country. It is within the last ten years that the manufacture of cathedral and rough plate has been thoroughly established, at first disputing and then controlling the home market against England and Belgium. The improvement in window glass has been great, and there are workmen and manufacturers who think they see the rising sun of much better days and a much better American glass.

The concentration of capital in powerful concerns must certainly lead to changes in the system of labor and are bound to insure a more finished product. A new glass recently invented in Germany is said to add marvelously to the power of the microscope. A Yale professor announces the invention of a perfect acromatic telescope lens. Legend tells of a lost invention of "malleable glass." Tiberius is said to have discouraged a genius who found the secret by beheading him, fearing that the innovation would reduce the value of gold. It is also recorded that Cardinal Richelieu was presented with a bust of malleable glass by a chemist, who purposely let it fall into fragments, and mended it before his eyes with a hammer. The inventor was promptly rewarded by perpetual imprisonment, lest his ingenuity would ruin the "vested interests" of French manufactures. But if glass may not ape the metals in malleability it may imitate them in another respect just as important. A more fortunate Frenchman (M. de la Bastie) has within a few years introduced into Europe a transparent glass, which he claims may displace cast iron. If it fulfills his expectations it will mark a new era on glass, and the old adage, "as brittle as glass" will be superceded by a new one, "as tough as glass." By his process railway sleepers, fence posts, drain pipes, tanks, etc., are cast in moulds and so toughened by a bath in oils as to be stronger than iron, though it is much lighter and costing one-third as much. But it is questioned whether his results reach what is claimed for the process. These undeveloped toughening processes augur the most astounding changes in the coming future of glass.

"Glass houses" may become the fashion and we would have to reverse our proverb about them, for they would be bomb-proof. Already transparent glass brick are made.

Extending the possibility of glass a little further, why may we not build the entire structure of glass? The walls might be cemented blocks cast like hewn stone, but it would be translucent and of any color. One could thus inhabit a huge multiform, some of them telescopic bringing distant things near; some with lenses or mirrors guiding the focused sun's heat for culinary purposes; others straining out the light or chemic rays.

Tapestries, furniture and utensils might be made of universal material. The whole would be more enduring than granite. No fire can harm it; lightning will shun it. Such a dream, blossoming from this miraculous substance, may be realized by an Alladin whose lamp is of glass.—*Exchange.*



GROUND OF CHURCH PLAN.

MANY people appear to think that all architects and draughtsmen have to do is to go to their offices at about nine o'clock in the morning and make a few pictures and plans. They seem to regard the work of the architect as little more than a pleasant pastime. This mistake arises from their ignorance of the many and complicated duties and the actual labor, serious thought and study which really belong to the profession of architecture. How little conception to the public has the intense mental strain which the conscientious architect has to endure. When it is considered that the architect has to rack his brains and bring to bear upon each design all his powers of invention in order to produce something new and fresh, and different from all his other efforts; that each design must invariably be drawn over twice, thrice and sometimes half a dozen times before the client's ambitious aspirations and the limit of his pocket book can be reconciled; that when at last this is accomplished and the contract finally signed, scores of working drawings have to be made besides the regular scale of drawings and their duplicates; that all these drawings have to be accurately figured so that every stone, brick and timber will work out right; that the specifications—requiring an amount of writing which would mean a fortune to a lawyer, but which counts little to the architect—have to be carefully written up, it will seem, perhaps, that the office of the architect is no sinecure and that his path is not strewn with roses. Nay! rather it is covered with the thorns and briars of the thousand conflicting fancies, caprices and assumptions of superior knowledge which confront him at every step. But the subject is too deep for us to consider farther at this present writing. We started out to say something on the importance and the necessity of atheletic exercises and games for the architect and his draughtsmen, and if we do not return to our original intention at once it will be like Josh Billings' lecture on milk.

The nature of the work required and the strain upon the nerves and brain demand that the architect shall have some kind of physical exercise every day for an hour or so, which shall in some measure restore his equilibrium; also, he needs a complete change of mental exercise when he leaves his office which shall impart a healthy reaction to his brain and give it a needed rest. Rest does not always mean relaxation, but more often a change of occupation; although a short period of perfect relaxation each day is undoubtedly good for most of us. Ought not a gymnasium to be considered as a necessary part of the equipment of every well regulated office—to be used not only for the benefit of the architect, but for that of his employees? The work is close, confining and wearing to both nerves and brains, and nervous and mental weariness react upon the physical forces, thus affecting the whole being. Let the architect have some hobby—it may be amateur photography, it may be fishing, rowing, riding, literature, art and drama, cycling; in fact, any manly and wholesome amusement which will bring into play an entirely different set of nerves and muscles, and thus rest his tired brain and do him good, and will prove the tonic or sedative which he he needs.—*The Architectural Era.*

San Francisco, Sept. 4th, 1890.

Editor California Architect and Building News—

Dear Sir:—I beg to call the attention of the readers of the Architect to a matter frequently overlooked in providing protection against fire in our new buildings, and which is liable to lead to serious disaster.

In buildings furnished with fire hose, it is frequently found that with 1½ inch hose, (and smaller should not be used) the standpipe is only 1½ inches. At the best a pipe of this size would afford but one good stream, therefore when, in the excitement of a suddenly discovered fire two or more hydrants are opened, it is found that the "protection" is a failure, while the reliance upon the hose has in many cases prevented the keeping in readiness of filled fire pails, the simplest, cheapest, and in inexperienced hands the most effective of fire appliances.

Three inches is quite small enough for a standpipe for effective fire service. In smaller pipes the loss of pressure, principally from friction, is so enormous as to greatly impair the service, and experience shows that to be effective, the capacity of a standpipe must be sufficient to allow for this loss, and also for errors in judgment sure to occur in the hasty use of fire hose in an emergency. Respectfully,

F. H. PORTER,
Chief Inspector.

LEGAL DECISIONS.

Loss of Profits as Damages for Breach of Contract.—When one contracts to do that for another by means of which he is to secure profits which may be ascertained with reasonable certainty, upon breach of the contract without his fault, he may recover such profits, and these may be shown by establishing the cost at which the work could be done, and deducting that from the contract price.

Ennis v. Buckeye Publishing Co., Supreme Court of Minnesota, 46 N. W. Rep. 314.

Recovery of Value of Services Performed.—Where one performs services for another, and for any reason except voluntary abandonment of his contract, fails to comply fully with the terms of the agreement. if the portion of the work which he does is of benefit and value to the one for whom they are done, he may recover their reasonable worth and value less such damage as may have been sustained by reason of the breach of the contract.

Gove v. Island City Mercantile and Milling Co., Supreme Court of Oregon, 24 Pac. Rep. 521.

Extra Work Under Building Contract.—A contractor entered into a contract with a church corporation to erect a church edifice. The contract provided that no extra work should be paid for except upon a certificate of the superintendent and building committee. A sub-contractor did some extra work under the oral direction of a portion of the building committee, for which he seeks to recover. The sub-contractor was chargeable with notice of the provision of the contract and cannot recover in absence of the certificate it called for.

Shaw .v. First Baptist Church of Winona, Supreme Court of Minnesota, 46 N. W. Rep. 146.

Subrogation of Parties.—The defendant corporation entered into a contract with a county to furnish the iron work for a county jail and to become responsible to the other contractor for all delays caused by failure to put the iron work in in time. In an action against it for damages caused by delays, the following rule governs: "When one person, for a valuable consideration, engages with another to do some act for the benefit of a third person, the latter may maintain an action against the former for breach of such engagement."

Grant v. Diebold Safe and Lock Co., Supreme Court of Wisconsin, 45 N. W. Rep. 951.

NOTICE TO CONTRACTORS.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 30th day of September, 1890, for all the labor and materials and putting in place complete the iron columns, iron floor and iron and wood roof construction, terra cotta arches, &c., for the U. S. Custom House, Post Office, &c., building at Port Townsend, Washington, in accordance with the drawings and specifications, copies of which may be had on application at this office or the office of the Superintendent.

Each bid must be accompanied by a certified check for $200.

The Department will reject all bids received after the time herein stated for the opening of the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in an envelope sealed and marked, "Proposals for the Iron Columns, Iron Floor and Iron and Wood Roof construction, Terra Cotta Arches, &c., for the U. S. Custom House, Post Office, &c., at Port Townsend, Washington," and addressed to,

Jas. H. Windrim.
Supervising Architect.

September 1st, 1890.

The residence shown in our lithographs this month was designed by architects Chas. R. and John R. Wilson.

The Country Chapel, at Auburn, is from a perspective drawing furnished us by Mooser & Cuthbertson, architects, and the ground plan on another page shows the arrangement of the interior. The cost of the building will be about $5,000.

The perspective view of the Apartment House is by McDougall & Son.

THE city of Mexico is to have the finest hotel on the American continent. It is to be erected by a syndicate of Mexican capitalists, and its cost at the lowest estimate will exceed $2,000,000. Of that sum the Diaz government will provide $1,000,000 in the form of a subsidy, in addition to granting the free importation of material to be used in the construction. The hotel will be five stories in height, and will contain 400 guest chambers built about a court, the dimensions of which will be 100 by 225 feet. It will be constructed of stone quarried seventy miles from the city of Mexico, and its interior will be arranged on a scale of Oriental magnificence. The floors will be of mosaic marble and the walls inlaid with Mexican onyx, which takes a remarkable polish, while the woodwork will be of cedar, mahogany and rosewood. The entire structure will be absolutely fireproof, and the outside dimensions will be 450 by 452 feet. As an example of the magnificence of the designs it may be stated that it is the intention to expend $35,000 in fitting up the Turkish bath apartments, and the bar and fixtures will require an outlay of $80,000. The rotunda of the hotel will be taken in charge by the federal government, and it is the intention to decorate it with precious stones representing historical subjects. —*Mechanical News.*

CONSTITUTION AND BY-LAWS

—OF—

The San Francisco Chapter

—OF THE—

American Institute of Architects.

CONSTITUTION.

ARTICLE I.

The corporate name of this Society shall be The San Francisco Chapter of the American Institute of Architects.

ARTICLE II.

The objects of the Society are: To unite in fellowship the architects of the Pacific Coast, and to combine their efforts so as to promote the artistic, scientific and practical efficiency of the profession.

ARTICLE III.

Section 1. The membership shall consist of Active, Corresponding, Honorary and Student members.

Sec. 2. The condition of active membership shall be the honorable practice of the profession of architecture in accordance with the Constitution and By-Laws of this Chapter.

Sec. 3. The status of an architect is hereby defined as follows: An architect is a professional person, whose occupation consists in originating and supplying artistic and scientific data preliminary to and in connection with the construction of buildings, their appurtenances and decorations; in supervising the operations of contractors therefor; and in preparing contracts between the proprietors and contractors thereof.

Sec. 4. No member shall accept direct or indirect compensation for services rendered in the practice of his profession, other than the fees received from his client.

ARTICLE IV.

Section 1. The officers of this Chapter shall be as follows: a President, a Vice-President, a Secretary and a Treasurer and a Board of five Trustees.

The first four officers shall constitute an Executive Committee.

Sec. 2. No one shall be eligible to the office of President, unless he be a member in good standing of the American Institute of Architects.

ARTICLE V.

Section 1. The Chapter shall hold an annual meeting for the election of officers, and monthly and special meetings as provided in the By-Laws.

ARTICLE VI.

Section 1. The Constitution may be altered or amended only upon a two-thirds vote of all the active members in good standing, ascertained by a letter ballot, after twenty days written notice to each member.

BY-LAWS.

ARTICLE I.

MEMBERSHIP.

Section 1. Active members shall be practicing architects, whose professional status shall be demonstrated to comply with the constitution, residing in the State of California, or the neighboring States and Territories, who shall have practiced their profession at least one year previous to applying for membership.

Sec. 2. Candidates for active membership shall submit to the Chapter through the Secretary, an application for membership as follows:

To the San Francisco Chapter
of the American Institute of Architects:

My full name is .....

My business address is .....

The name of my firm is .....

I have practiced the profession of architecture for .... years.

The accompanying photographs, numbered respectively 1, 2 and 3, show completed buildings, erected from my plans and under my supervision:

No. 1 is a (here give general description of building).
No. 2 is (ditto).
No. 3 is (ditto).

The accompanying drawings are (here enumerate and describe such drawings as the candidate desires to submit).

We, active members of the San Francisco Chapter, A. I. A., hereby indorse Mr. .....'s application for active membership. We know him personally; we know his work; we believe him to be worthy of membership.

.....

.....

All applications of, and any further information concerning candidates shall be considered confidential by the Executive Committee which shall absolutely reject, or provisionally accept each application, and shall cause the Secretary to send to each active member of the Chapter, the name and address of each candidate provisionally accepted, together with those of their indorsers, with a ballot to be filled out and returned to the Secretary. The ballots to be opened and counted at the first regular meeting of the Chapter, held not less than twenty days after the prescribed notice of such application shall have been sent to each active member by the Secretary. If upon counting the letter ballots received, it is found that three or more ballots have been cast against the admission of any candidate, he shall be declared rejected—otherwise he shall be declared duly elected an active member. Any rejected candidate may make a new application after the expiration of one year.

Sec. 3. Members who have relinquished the practice of the profession, and thereby lost their right to active membership, also foreign architects, civil engineers and other scientific men, as well as amateurs of distinction, may be elected Corresponding or Honorary members of the Chapter, by a majority vote of members present at any regular meeting. Corresponding or Honorary members shall have all the privileges of the Chapter, except that of voting and of holding office.

The membership of any Corresponding or Honorary member residing on this continent, shall cease whenever he engages in the active practice of architecture.

Sec. 4. Student members shall include those who have studied architecture in the office of an active member for a period of at least six months previous to applying for membership.

Sec. 5. All resignations shall be made in writing, and addressed to the Secretary. But a resignation shall not release the member presenting it from any obligation to the Chapter, and all interest in the property of the Chapter of members resigning, or otherwise ceasing to be members, shall be vested in the Chapter.

ARTICLE II.

MEETINGS.

Section 1. The Chapter shall hold annual meetings on the second Friday in September of each year, for the purpose of receiving the annual reports of officers, the election of officers for the ensuing year, and the transaction of such other general business as may be presented.

Sec. 2. The regular meetings of the Chapter shall be held the second Friday in each month.

Sec. 3. Five active members shall constitute a quorum at all regular and special meetings.

Sec. 4. Special meetings of the Chapter may be called by the Secretary whenever the President or Vice-President shall be requested in writing by five active members, setting forth the purposes in full of such meeting; but no other business than that specified in the call, shall be considered at such meeting. The Secretary shall notify all members of such special meetings at least three days prior to the time fixed for said meeting.

ARTICLE III.

NOMINATION AND ELECTION OF OFFICERS.

Section 1. The officers of the Chapter shall be elected by written ballot at the annual meeting in the month of September of each year, and at other times when necessary to fill vacancies occurring from any cause.

Sec. 2. The nominations for annual election of officers shall be made at the regular meeting in the month of August of each year, either by open nominations or through a nominating committee. In either case, the names of the nominees must be presented to the Chapter at the regular meeting next prior to the time fixed for the election of officers, or at a special meeting called as provided in Section 4 of Article II. But under no circumstances shall an election be held at the time and meeting when the nominations are submitted.

Sec. 3. The officers elected as provided in this Article shall enter upon the discharge of their official duties on the evening of their election, *after* the annual reports of the retiring officers shall have been submitted to the Chapter.

Sec. 4. All officers elected as provided in this Article shall hold office for the period of one year, or until their successors are elected; except that should any elected officer fail to discharge the duties of his office satisfactorily to the Chapter, his office may at any time be declared vacant by a majority vote of those present at any regular meeting of the Chapter, and the vacancy then and there filled by nomination and election, provided the Secretary shall have notified the delinquent officer, by personal or postal service, of the intended action at least one month prior to such action being had.

ARTICLE IV.

REPORTS OF OFFICERS.

At the annual meeting in each year, the respective officers of the Chapter shall make a full report in writing of all matters intrusted to their care, custody or control, during the terms of their offices respectively.

ARTICLE V.

DUTIES OF OFFICERS.

Section 1. The President, or, in his absence, the Vice-President, shall preside at all meetings of the Chapter. In the absence of both, a presiding officer shall be chosen *viva voce*.

Sec. 2. It shall be the duty of the presiding officer to preside at all meetings of the Chapter, and preserve order therein; see that the Constitution and By-Laws are properly observed and enforced; that all officers and committees perform their respective duties; appoint all committees not otherwise provided for; have the casting vote in all cases of ties; the right to vote for admission of members and for officers of the Chapter; sign all warrants authorized by the Chapter; and perform such other duties and functions as are laid down in Cushing's Manual for presiding officers.

Sec. 3. The Secretary shall keep a record of the proceedings of the Chapter, and of all matters of which a record shall be deemed advisable by the Chapter; he shall notify members of their election, and provide a registry in which the Constitution and By-Laws are inscribed, and procure the signatures of every member thereto; he shall issue all notices of regular and special meetings, conduct all correspondence subject to the directions of the Executive Committee, and have control of the seal and archives of the Chapter; he shall preserve all documents ordered placed on file, and draw all warrants on the Treasurer (which warrants shall be countersigned by the President) for moneys ordered paid by the Chapter or the Executive Committee.

Sec. 4. The records and correspondence of the Chapter (except in reference to qualification of candidates for membership) shall at all reasonable times be open to the inspection of any member of the Chapter in good standing.

Sec. 5. The Treasurer shall collect all moneys due the Chapter, and disburse the funds only upon warrants duly drawn by order of the Chapter, or the Executive Committee, duly signed by the President and Secretary.

Sec. 6. He shall keep the accounts of the Chapter in books belonging to it, which shall be at all times open to the inspection of the officers; and shall report at every annual meeting, and oftener if required, upon the state of the funds.

Sec. 7. The duties of the Executive Committee shall be to exercise control and supervision over the affairs of the Chapter, provide rooms, make all purchases and contracts not otherwise provided for, but shall not incur any liabilities in excess of the amount of unappropriated funds in the hands of the Treasurer, except by special instructions from the Chapter, and shall perform such other service as may be for the best interests of the Chapter.

Sec. 8. The committee shall make a full written report of its acts and doings at the annual meeting, and whenever required by the Chapter, which reports shall be placed on file and spread in full on the minutes of the meetings.

Sec. 9. The Trustees shall organize as a Board as soon after their election as practicable, by the election of a Chairman and Secretary.

Sec. 10. The duties of said Trustees shall be to take charge of, and hold in trust for the Chapter, all funds over an amount in the hands of the Treasurer necessary to meet the current expenses of the Chapter; all property and valuables which may come into the possession of the Chapter by gift, purchase, transfer or otherwise; deposit all moneys in their possession, belonging to the Chapter, in such bank or savings' institution, as they may deem proper. They shall also make a full written report of their official acts, and the state and condition of the funds, investments and properties of the Chapter at each annual meeting, and whenever required by the Chapter, which reports shall be placed on file and spread in full on the minutes of the meeting. And at the expiration of their term of office, they are to deliver up all moneys, properties and valuables of every nature and kind, together with all books, papers and other things belonging to the Chapter.

Sec. 11. Each Trustee shall give a separate bond for the faithful performance of his duty, in such amount as the Chapter may from time to time require.

ARTICLE VI.

FEES AND DUES—RESIGNATIONS.

Section 1. The admission fee for active membership in this Chapter shall be six dollars, and for student membership, two dollars, which amount shall accompany the application.

Sec. 2. The annual dues for active members shall be six dollars, and for student members two dollars, payable in advance on the first day of September. Members elected during the latter half of the fiscal year shall pay one half the fee for that year.

Sec. 3. No member who shall be over one year in arrears shall be entitled to vote or hold office; but shall be considered as having been suspended and shall only be reinstated upon an affirmative vote of the Chapter, and the payment of all arrearages.

ARTICLE VII.

ORDER OF BUSINESS, AND RULES OF ORDER.

Section 1. 1. Calling the Roll.
2. Reading Minutes of Previous Meeting.
3. Reading Minutes of Special Meeting.
4. Reports of Standing Committees—Executive, Trustees, Finance, etc.
5. Reports of Special Committees.
6. Reports of Committees on Applications for Membership.
7. Balloting on Applications for Membership.
8. Propositions for Membership.
9. Annual Address.
10. Reading Communications.
11. Unfinished business.
12. New Business.
13. Reading of Papers, Debates, Addresses, etc.

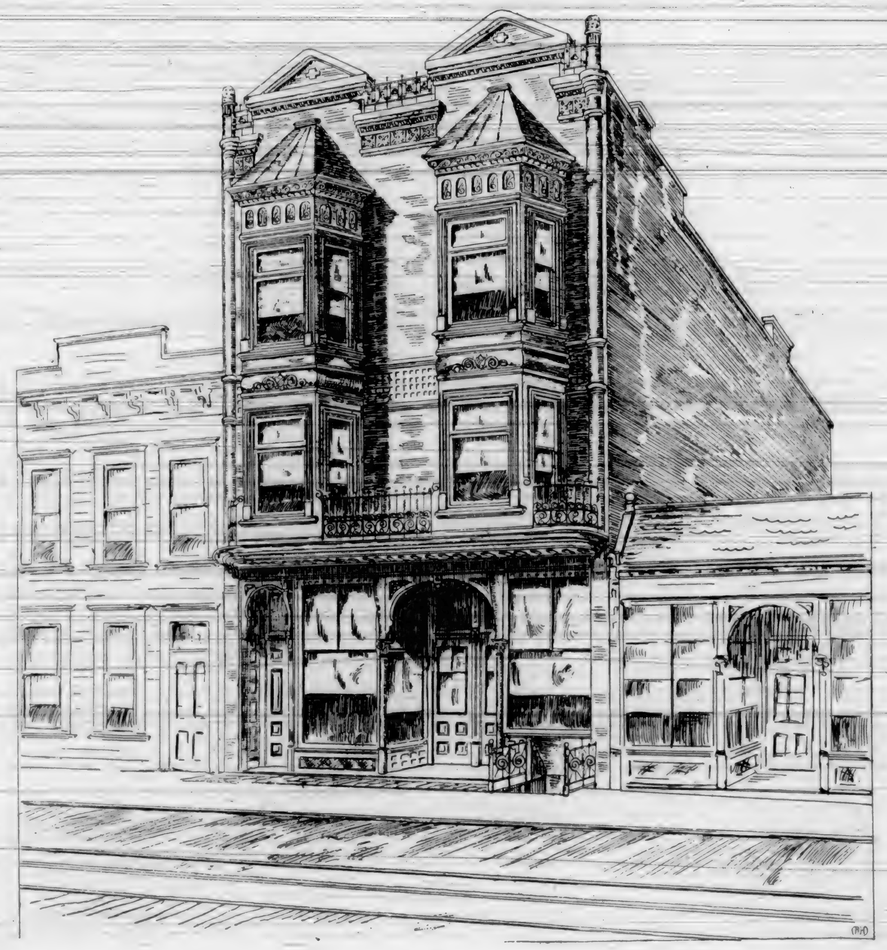
Sec. 2. Rules of Order may be suspended by a majority vote of the members present. But no By-law of this Chapter shall be suspended under any circumstances, except as provided in Article XI.

Sec. 3. At the annual meeting of each year the President, or such other person as he shall designate for the purpose, shall deliver the annual address.

Sec. 4. No motion or resolution shall be debated until it shall have been duly moved and seconded and each speaker shall be confined strictly to the motion under consideration.

SEPT. 1890. VOL. XI, No. 9.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



AN APARTMENT HOUSE.

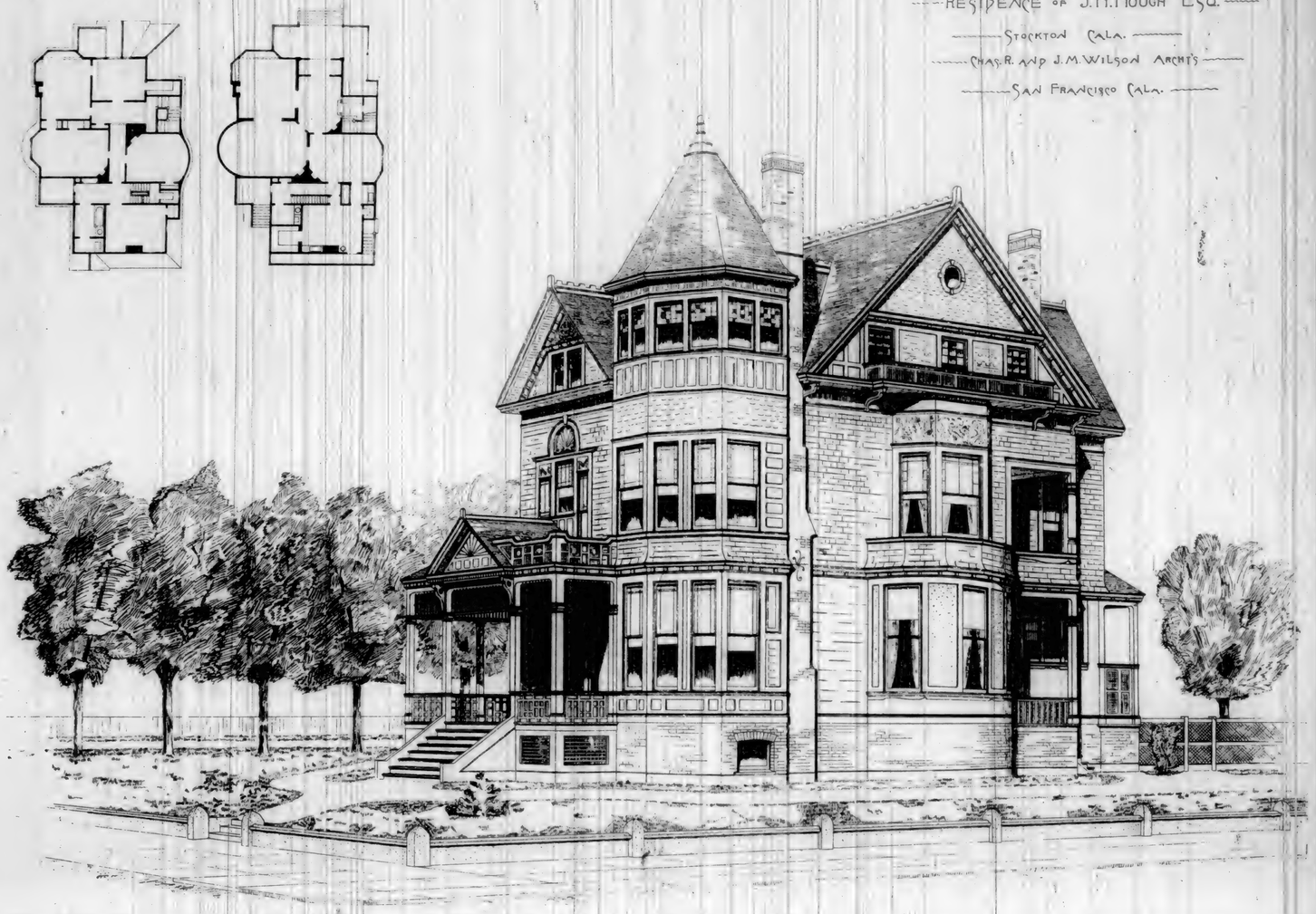
B. McDOUGAL & SON,
ARCHITECTS.

VOL. XI. Nº 9

THE CALIFORNIA ARCHITECT & BUILDING NEWS.

SEPT. 1890.

RESIDENCE OF J. H. HOUGH ESQ.
STOCKTON CALA.
CHAS. R. AND J. M. WILSON ARCHT'S
SAN FRANCISCO CALA.



THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

VOL. XI. Nº 9

THE CALIFORNIA ARCHITECT & BUILDING NEWS.

SEPT. 1890.

EPISCOPAL CHURCH
AUBURN, CAL.

Mooser & Cuthbertson.
Architects.

SEC. 5. No question shall be stated by the Chair unless properly moved and seconded, nor be open for discussion until stated by the presiding officer; and while a motion is pending before the Chapter, the only motions in order shall be:

1. To Lay on the Table.
2. The Previous Question.
3. To Indefinitely Postpone.
4. To Definitely Postpone.
5. To Recommit.
6. To Refer.
7. To Amend.

Each of which shall have precedence in the order in which they are arranged; and the first three shall be decided without debate.

SEC. 6. The previous question shall be put only when demanded by a majority of members present entitled to vote. When so demanded it shall be in the following form: "*Shall the main question now be put?*" If decided affirmatively, the main question shall then be put without further debate.

SEC. 7. An amendment to an amendment shall be in order, and take precedence of the amendment; but a motion to amend an amendment to an amendment shall not be entertained.

SEC. 8. A substitute shall be considered in the light of an amendment, and shall be treated as such. But no substitute or amendment shall be entertained, the object of which shall, in purpose or effect, introduce a subject different from that under consideration.

SEC. 9. The proceedings of the Chapter, not otherwise provided for, shall be governed by the rules and parliamentary usages and practices laid down in "Cushing's Manual."

SEC. 10. Discussions of religious or political subjects shall not be permitted at any meeting of the association.

ARTICLE VIII.

DEPORTMENT AND PRACTICES OF MEMBERS.

SECTION 1. Should any member be reported to the Chapter in writing, by any responsible party, under a properly attested affidavit, as guilty of unprofessional practices or disreputable conduct, calculated to reflect reproach upon the profession and this Chapter, the matter shall be referred to the Executive Committee for investigation; and said Committee shall notify the member so charged, requesting his attendance at a meeting of the Committee appointed for the purpose; and after a full investigation of the charges and facts, the Committee shall have the power to dismiss, or report the case to the Chapter for further action.

SEC. 2. Should the Committee find the charges of sufficient importance to justify action on the part of the Chapter, they shall prepare a statement to that effect, with recommendations as to the proper cause to be pursued.

SEC. 3. Should the charges be sustained, the offending member may be reprimanded by the chair, censured by a vote of the Chapter, or be expelled by two-third vote of the active members present voting in favor thereof, provided that the offending member shall have been notified of the action of the Chapter, and allowed one month to arrange and make his defense.

SEC. 4. A vote involving censure or expulsion shall be decided by ballot. Two-thirds of those present and entitled to vote being necessary in all cases of expulsion.

ARTICLE IX.

SCHEDULE OF MINIMUM CHARGES AND PROFESSIONAL PRACTICE OF ARCHITECTS, AS USUAL AND PROPER.

Adopted by the American Institute of Architects, October 23, 1884.

Adopted by the Western Association of Architects, November 14, 1884.

Re-affirmed by the American Institute of Architects, upon the consolidation of the Western Association of Architects and the American Institute of Architects, November 20, 1889.

For full professional services, (including supervision) five per cent. upon the cost of the work.

In case of the abandonment of the work, the charge for partial services is as follows:

Preliminary studies, one per cent.; preliminary studies, general drawings and specifications, two and one-half per cent; preliminary studies, general drawings, specifications and details, three and one-half per cent.

For work that costs less than $10,000, or for monumental and decorative work and designs for furniture, a special rate in excess of the above.

For alterations and additions, an additional charge to be made for surveys and measurements.

An additional charge to be made for alterations and additions in contracts and plans, which will be valued in proportion to the additional time and services employed.

Necessary traveling expenses to be paid by the client.

Time spent by the architect in visiting for professional consultation and in the accompanying travel, whether by day or night, will be charged for, whether or not any commission, either for office work or supervising work, is given.

The architect's payments are successively due as his work is completed, in the order of the above classifications.

Until an actual estimate is received, the charges are based on the proposed cost of the work, and the payments are received as installments of the entire fee, which is based upon the actual cost.

The architect bases his professional charge upon the entire cost, to the owner of the building, when completed, including all the fixtures necessary to render it fit for occupation, and is entitled to extra compensation for furniture or other articles designed or purchased by the architect.

If any material or work used in the construction of the building be already upon the ground, or come into the possession of the owner without expense to him, the value of said material or work is to be added to the sum actually expended upon the building before the architects' commission is computed.

SUPERVISION OF WORKS.

The supervision or superintendence of an architect (as distinguished from the continuous personal superintendence which may be secured by the employment of a clerk of the works) means snch inspection by the architect or his deputy, of a building or other work in process of erection, completion or alteration as he finds necessary to ascertain whether it is being executed in conformity with his designs and specifications or directions, and to enable him to decide when the successive installments or payments provided for in the contract or agreement are due or payable. He is to determine in constructive emergencies, to order necessary changes, and to define the true intent and meanings of the drawings and specifications, and he has authority to stop the progress of the work and order its removal when not in accordance with them.

CLERK OF THE WORKS.

On buildings where it is deemed necessary to employ a clerk of the works, the remuneration of said clerk is to be paid by the owner or owners, in addition to any commission or fees due to the architect. The selection or dismissal of the clerk of the works is to be subject to the approval of the architect.

EXTRA SERVICES.

Consultation fees for professional advice are to be paid in proportion to the importance of the questions involved, at the discretion of the architect.

None of the charges above enumerated cover professional or legal services connected with negotiations for site, disputed party walls, right of light, measurement of work or services incidental to arrangements consequent upon the failure of contractors during the performance of the work. When such services become necessary, they shall be charged for according to the time and trouble involved.

DRAWINGS AND SPECIFICATIONS.

Drawings and specifications as instruments of service are the property of the architect.

ARTICLE X.

DUTIES AND RIGHTS OF MEMBERS.

SEC. 1. It shall be the duty of all members of this society to aim at excellence in conduct and qualification; to have an eye single to the interests of their employers, and to the advancement of the art; and while, in nature of society and business, each will come into competition with the other, our emulation should be to perform the *best* work, rather than the most of it.

SEC. 2. It shall be the duty of all members of the Chapter to maintain their rightful authority in the direction of all work under their charge, not recognizing the right of interference from any source; and to discourage and discountenance all methods of obtaining professional engagements, not of a worthy and reputable character, and by direct negotiations with the owners or their *legal* agents.

SEC. 3. It shall be the duty of the members of this Chapter to refrain from and discountenance any and all attempts to supplant a fellow-member by proposals abating charges, or by any other violation of the strict rules of right and honorable practice, so as to deprive him of any properly and fairly secured business advantage or engagement.

ARTICLE XI.

AMENDMENTS.

SEC. 1. These by-laws may be amended at any regular meeting of the Association, provided that the proposed amendments shall have been submitted and read at a previous regular meeting, and also a copy thereof in printed form delivered or mailed to each member at least twenty days prior to the date of proposed final action thereon. A two-thirds vote of the members present and entitled to vote shall be necessary to final adoption.

SEC. 2. All amendments adopted as provided in Section 1 shall take effect immediately after adoption, unless otherwise specially provided.

BUSINESS MOSAICS.

We wish to call the attention of our readers to several errors in relation to the names of some of the contractors who were employed in the construction of the California State Bank.

Mr. David O'Neil of 314 Montgomery street, was the contractor for the brick, stone and iron work, and will be pleased to give any information sought for about the stone used in the building.

C. F. Weber & Co., cor. Post and Stockton Sts., agents on the Pacific Coast for A. H. Andrews & Co., Chicago, Ill., were the parties who furnished and put up all the hardwood finish for the interior.

W. M. Fletcher was the contractor for all of the carpenter work, whose office is at 330 Pine Street, San Francisco.

Mr. P. H. Jackson, of No. 228 First street, has recently made some experiments in order to demonstrate the utility of a combination of iron tension rods with concrete work, the lower or tensile portion being formed of iron of special form, and bedded in the concrete mass.

The arches were constructed in three parts, the abutments and haunches each forming about a third, and the center or key portion the remaining one-third, having a clean and separated joint, viz.: not cemented to the haunches. The vertical depth of the abutments and haunches formed the beam, which in this case was 16.0 between supports. In the lower portions of these beams, or haunches, was inserted iron ties and beams to resist the tensile strain, these ties were of the smallest I beams, and bars or ties made of the form advocated by the inventor. As a general rule failures occur because of some unexpected strain or settlement takes place in some portion of the structure. This experiment followed the general rule, and herein lies the especial advantages of the separate key block construction, as through unequal settlement of the supporting walls, which were only temporary, various cross and twisting strains were brought to bear which fractured a portion of the construction, while the separate key stone prevented the fracture extending the full width, and thereby preventing the fall of the loaded platform. The improved tie rod combination proved its superior advantages over all the other forms. Mr. Jackson owns the patents for these improvements which this test has demonstrated to be of great advantage for the purposes intended. The cut on our advertising page shows the construction quite fully.

John Mallon the Pioneer Glass Cutter is still very busy at his old place, 19 Fremont Street, cutting, grinding and engraving glass. If you would like to know how the beautiful plates that ornament the front doors and transoms of our palatial residences of the city are made to tell stories and legends of the past, call and spend an hour at his manufactory and investigate the methods adopted for embellishing the crystal metal.

CITY BUILDING NEWS.

Alabama near 22nd. One-story frame; owner, M. Hayes; contractor, L. J. Arthur; cost $1,770; signed, Aug. 11; filed, Aug. 11; payments, $400; enclosed, $400; brown coated, $475; completed, $450; 35 days.

Buchanan cor. Washington. Brick and concrete work; owner, A. G. Hawes; architect, A. P. Brown; contractor, McGown & Butler; cost, $4,685; time, 60 days; signed, Aug. 20; filed, Aug. 27; payments, 75 per cent. as work progresses, 25 per cent. 35 days.

Broadway between Webster and Fillmore. Two-story frame; owner, A. W. Wilson; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $2,240; signed, Aug. 22; filed, Aug. 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Bush, near Franklin. Owner, A. T. Asher; architects, Jordan & Lyon; contractor, I. E. Alexander; cost, $954; signed, Sept. 1; filed, Sept. 3; payments, $225, house raised; $225, floor laid; $225, completed; $275, 35 days.

Bryant and Rincon Place. Carpenter work; owners, The Sisters of Mercy; architect, C. J. Deylin; contractor, D. Powers; sureties, J. J. McKinnon and B. Joost, $4,000; cost, $15,925; signed, Aug. 28; filed, Sept. 1; payments, 75 per cent. as work progresses; 25 per cent. 35 days.
Mason work. Contractor, D. J. Brennan; sureties, O. E. Brady and R. Brennan, $5,000; cost, $11,978.
Carpenter work. Contractor, D. Powers; sureties, J. J. McKinnon and B. Joost, $1,000; cost, $2,500; time, 60 days.
Wrought iron work. Contractor, Western Iron Works; cost, $1,850.
Tile work. Contractors, McCormac Bros.; cost, $3,074; signed, Aug. 30; filed, Sept. 3.

Block bounded by Van Ness Avenue, Myrtle, Franklin and O'Farrell Sts. Painting and varnishing; owner, P. W. Riordan; architect, T. J. Welch; contractors, Frazer & Keefe; cost, $6,650; signed, Sept. 2; filed, Sept. 6; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Castro near 16th. Two-story building; owner, Miss Gill; contractor, Jas. McConaley; cost, $3,600; signed, Aug. 6; filed, Aug. 12; payments, $675, framed; $675, brown mortared; $675, interior finish done; $675, completed; $900, 35 days.

Collingwood near 17th. One-story frame; owner, C. Kinder; architects, Salfield & Kohlberg; contractor, H. Robling; cost, $1,600; signed, Sept. 5; filed, Sept. 6; payments, $400, framed; $400, brown coated; $400, accepted; $400, 35 days.

Capp near 23rd. Two-story frame; owner, Jas. Benson; architect, J. E. Wolfe; contractor, O. E. White; cost, $4,975; signed, Sept. 1; filed, Sept. 2; payments, $900, roofed; $1,000, brown coated; $1,000, white coated; $830, completed; $1,245, 35 days.

Collingwood near 18th. One-story frame; owner, S. Blank; contractor, J. E. Loomer; cost, $2,000; time, 60 days; signed, Aug. 5; filed, Aug. 14; payments, $666, enclosed; $666, first coat of mortar on; $668, 35 days.

Corner Market and Montgomery; Iron and steel work; owner, Crocker Estate Co.; architect, A. P. Brown; contractors, Rix & Firth; cost, $13,100; signed, July 11; filed, Aug. 27; payments, 75 per cent. as work progresses. Mason work; contractor, R. Mitchell; cost, $8,000; signed, July 11; filed, Aug. 27; payments, same. Terra Cotta work; contractor, Union Pressed Brick and Terra Cotta Co.; cost, $29,100; signed, May 2; filed, Aug. 27; payments, same. Fire proof work; contractors, Gladding, McBean & Co.; cost, $105,750; signed, June 10; filed, Aug. 27; payments, same. Extra Terra Proof work; contractors, Gladding, McBean & Co.; cost, $9,750; signed, July 11; filed, Aug. 27; payments, same.

California near Steiner. Two-story frame; owner, J. S. Franklin; architect, M. J. Welsh; contractor, J. Miron; cost, $6 950; filed, Aug. 20; payments, $1737.50, framed; $1737 50, brown mortared; $1737.50, completed; 1787.50, 35 days.

Devisadero near Page. Three-story frame; owner, T. Frey; architects, John & Balczynski; contractor, T. V. Steinman; cost, $6,195; signed, Aug. 21; filed, Aug. 22; payments, $1.2 0, framed; $1,200, enclosed; $1,200, white coated; $1,045, accepted; $1,550, 35 days.

Ellis near Buchanan. Three-story frame; owner, C. Blach; architects, Salfield & Kohlberg; contractor, Henry Rohling; sureties, Humboldt Lumber Mill Co., and B. Joost, $6,300; cost, $6,300; signed, Aug. 6; filed, Aug. 6; payments, $1,000, framed; $1,000, enclosed; $1,225, white coated; $1,500, accepted; $1,575, 35 days.

Eureka near 21st. One-story frame; owner, E J. Murphy; architect, Jas. Healing; contractor, J. O. Dume; surety, G. Gullogley, $1,000; cost, $1,200; time, 90 days; signed, Aug. 2; filed, Aug. 2; payments, $200; framed, $250; brown coated, $330; completed, $350; 35 days.

Elizabeth near Douglass. One-story frame; owner, J. J. Smith; contractor, A. De Lair; cost, $1,700; filed Aug. 27; payments, $425, framed; $425, brown mortared; $425, finished; $425, 35 days.

Ellis near Buchanan. Painting; owner, C. Blach; architects, Salfield & Kohlberg; contractor, A. F. Mohr; cost, $435; signed, Aug. 19; filed; Aug. 23; payments, $125, framed inside; $200, accepted.

Ellis and Buchanan. Plumbing and gas-fitting; owner, C. Blach; architects, Salfield & Kohlberg; contractor, J. D. Welch; cost, $810; signed, Aug. 15; filed, Aug. 23; payments, $300, rough work in; $300, accepted; $210, 35 days.

Fell, near Webster. Two-story frame; owner, D. Sullivan; architect, P. R. Schmidt; contractor, J. F. O'Brien; cost, $10,700; signed, August 7; filed, August 7; payments, $1,600, enclosed; $1,600, ready for plastering; $1,600, brown coated; $1,600, hard finished; $1,600, accepted; $2,700, 35 days.

Folsom, near Twenty-Fifth. Two-story frame; owner, M. Connelly; architect, J. J. Clark; contractor, D. Chisholm; cost, $5,050; signed, August 12; filed, August 14; payments, $1,150, framed; $1,150, brown mortared; $1,150, painted; balance, 35 days.

Folsom, near Haywood. Two-story frame; owner, T. J. Hurd; architects, John & Balczynski; contractors, Schutt & Kreker; cost, $4,765; signed, Aug. 15; filed, Aug. 18; payments, $900, framed; $800, enclosed; $800, white coated; $965, finished; $1,290, 35 days.

Folsom, near Twentieth. Two-story frame; owner, T. Gillespie; contractor, J. W. Mayder; cost, $3,800; signed, Aug. 20; filed, Aug. 21; payments, $564, framed; $564, enclosed; $564, brown mortared; $564, white coated; $564, finished; $980, 35 days.

Guerrero near 20th. Additions; owner, J. McMullen; architect, S. Newsom; contractor, M. McCorcoran and J. M. Shay; cost, $7,775; signed, Aug. 27; filed, Aug. 27; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Guerrero near Alvarado. Dwelling house; owner, S. B. Fuzckerley; contractor, Geo. Houston; cost, $2950; time, 90 days; signed, July 22; filed, Aug. 12; payments, $739, enclosed; $730, brown mortared; $730, white coated; $740, 35 days.

Howard and Eleventh. Alterations and additions; owner, G. Ralsch; architect, H. Geilfuss; contractor, T. Morris; cost, $1212; signed, Aug. 14; filed, Aug. 18; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Hayes near Fillmore. Two-story frame; owner, P. Gallagher and Wife; architec , C. J. Devlin; contractor, J. A. Ehmann; cost, $3250; time, 90 days; signed, Aug. 21; filed, Aug. 25; payments, $300, framed; $500, roofed; $900, first coat of plaster on; $1000, plastered; $900, wood work finished; $300, completed; $1,350, 35 days.

Hickory near Franklin. Two-story frame; owner, H. Dederky; architect, H. Geilfuss, contractor, L. Arthur; cost, $3240.75; signed, Sept. 3; filed, Sept. 5; payments, $607, framed; $607, lathed; $607, brown mortared; $609, accepted; $810.75, 35 days.

Harrison near 4th. Three-story frame; owner, J. P. Canhape; architect, Chas. M. Rosseau; contractor, A. T. Massa & M. L. Avellono; cost, $3455; signed, Sept. 3; filed, Sept. 5; payments, $863, roofed; $863, white coated; $864, completed; $865, 35 days.

Haight between Webster and Fillmore. Alterations; owner, J. Robinson; architect, H. D. Mitchell; contractor, J. Donovan & E. Williams; cost, $2900; signed, Sept. 3; filed, Sept. 4; payments, $800, house raised and studded; $700, white coated; $675, completed; $725, 35 days.

Hayes near Polk. Brick work; owner, E. Bartlett; architect, J. E. Wolfe; contractor, J. J. Conrad; cost, $1340; signed, Sept. 3; filed, Sept. 3; payments, $750, cellar walls up; $250, completed; $340, 35 days.

Hermann near Buchanan. Two-story frame; owner, A. Moretti; architect, A. J. Barnett; contractor, P. Antonelli; surety, E. Venagha and V. Dorelli, $300; cost, $3250; time, 80 days; signed, Aug. 30; filed, Sept. 2; payments, $1200, roofed; $900, brown coated; $900, white coated; $900, completed; $1350, 35 days.

Harrison near 9th. Three-story frame; owner, Jas. McElearney; contractor, R. Doyle & Son; cost, $9100; time, 90 days; signed, Aug. 30; filed, Sept. 1; payments, $1650, brown mortared; $1650, white mortared; $1650 doors hung; $1660, completed; $2500, 35 days.

Jackson near Devisadero. Two-story frame; owner, W. B. Hickok; architect, M. G. Bugbee; contractor, R. O. Chandler; cost, $4300; signed, Aug. 12; filed, Aug. 12; payments, $1075, framed; $1075, brown coated; $1075 accepted; $1075, 35 days.

Kisling near 12th. Carpenter work; owner, M. Wiseman; architect, S. Hatfield; contractor, A. McDonald; cost, $4,135; time, 90 days; signed, Aug. 30; filed, Sept. 1; payments, 740, framed; $551.25, first coat of mortar is on; $775, white coat of mortar is on; $775, accepted; $1033.75 35 days.

Leavenworth near Clay. Carpenter work; owner, Mrs. W. F. De Forrest; architect, Sam'l Newsom, contractor, G. R. Lang; surety, F. P. Latson, $8,600; cost, $8,600; signed, Aug. 13; filed, Aug. 13; payments

Laguna near Jackson. Additions; owner, R. P. Hastings; architects, B. McDougall & Son; contractor, J. R. McLean; cost, $1,350; time, Oct. 22, '90; signed, Aug. 22; filed, Aug. 23; payments, $300, first tier of joists are in; $300, framed; $412.50, completed; $337.50, 35 days.

Mission, bet. 10th and 11th. Mill work; owner, S. H. Kent; architect, T. J. Welch; contractor, W. J. Thompson; cost, $1,047; filed, Aug. 11; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Missouri near Yolo. One-story frame; owner, H. C. F. Peters; contractors, J. F. Early & D. L. Mitchell; cost, $1,100; signed, Sept. 2; filed, Sept. 4; payments, $300, framed; $200, brown coated; $325, completed; $275, 35 days.

Minnesota near Butte. Brick and carpenter work; owner, Peter Ward; contractor, T. F. Mitchell; surety, J. H. Kruse, $2,600; cost, $2,600; filed, Aug. 13; payments, $665, framed; $665, brown mortared; $665, completed; $665, 35 days.

Market near Golden Gate Ave. Two steam boilers; owner, J. A. Donahue; contractors, Moynilian & Atken; cost, $2,150; time, 36 days; signed, Aug 20; filed, Aug. 26

Mission near 8th. Stable; owners, Swain Bros.; architect, E. R. Swain; contractor, C. C. Terrill; cost, $1,366; signed, Aug. 14; filed, Aug. 18; payments, $1,475, completed; $491.50, 35 days.

Market near Golden Gate Ave. Terra Cotta work; owner, J. A. Donahue; architect, A. Page Brown; contractors, Gladding McBean & Co.; cost, $5,000; signed, Aug. 12; filed, Aug. 18; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

McAllister, bet. Polk and Van Ness Ave. Two-story frame; owner, J. Green; architect, W. H. Armitage; contractor, S. T. Greene; cost, $9,000; signed, Aug. 19; filed, Aug. 23; payments, $1,750, framed; $1,750, brown mortared; $1,750, white coated; $1,500, finished; $2,250, 35 days.

N. W. corner 20th and Stevenson. Alterations; owner, James Colopy; architect, W. H. Bayless; contractor, A. L. Cook; sureties, J. A. Spanier and F. G. Norman, $1,000; cost, $2,900; signed, Aug. 12; filed, Aug. 13; payments, $600, cellar built; $400, first coat of plaster on; balance, 35 days.

N. W. Ringold and Eighth. Alterations; owner, D. O'Brien; architect, J. T. Hogan; contractor, J. J. McNeil; sureties, C. A. Harmon and H. C. Goodridge, $2,500; cost, $865; time, 45 days; signed, Aug. 11; filed, Aug. 13; payments, $290, framed; $216.25, brown coated; $282, accepted; $216.75, 35 days

N. W. corner Montgomery and Sutter. Cast iron and steel work; owner, Clay Street Savings and Loan Society; architects, Wright & Sanders; contractor, Judson Manufacturing Co.; cost, $6,000; signed, Aug. 8; filed, Aug. 15; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. E. corner 26th and Harrison. Additions; owner, J. Ryall; contractor, W. S. Tuttle; cost, $2,530; filed, Aug. 15; payments, $632.50, framed; $632.50, brown mortared; $632.50, completed; $632.50, 35 days.

N. W corner Bryant and Dore. Two-story frame; owner, D. E. Sullivan; architect, M. J. Welch; contractors, Mullins Bros.; cost, $7,200; filed, Aug. 15; payments, $1,800, framed; $1,800, brown motared; $1,800, completed; $1,800, 35 days.

N. W. Washington and Laguna. Copper work; owner, H. J. Crocker; architect, F. Freeman; contractor, J. F. Forderer; cost, $5,277; time, Jan. 1, '91; signed, June 17; filed, Aug. 25; payments, 75 per cent. as work progresses, 25 per cent. 35 days.

N. W. corner Van Ness Ave. and Market. Brick work; owner, J. Nightingale, Jr.; architect, A. J. Barnett; contractor, A. Jackson; cost, $4,500; signed, Aug. 7; filed, Aug. 18; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. E. corner Sacramento and Mason. Two-story frame; owner, E. A. Denicke; architect, P. Schmidt; contractor, W. T. Comnary; cost, $24,524; signed, Aug. 22; filed, Aug. 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

N. W. corner Sutter and Scott. Three-story frame; owner, Wm. Romberg; architects, Salfield & Kohlberg; contractor, E. L. Hansen; cost, $10,150; signed, Aug. 25; filed, Sept. 1; payments, $1,900, framed; $1,910, enclosed; $1,900, brown mortared; $1,900, ready for painting; $2,540, 35 days. Painting and Graining; contractor, E. Schultz; cost, $960; signed, Aug. 28; filed, Sept. 1; payments, $200 framed; $210, completed; $140, 35 days.

N. E. corner Stockton and Lombard. Underpinning of four houses; owner, L. B. & I. B. Joseph; architect, B. J. Cluch; contractor, I. R. Bassett; cost, $2,950; signed, Sept. 5; filed, Sept. 6; payments, $1,100, frame work is completed; $1,100, completed; $750, 35 days.

O'Farrell, near Stockton. Tin work; owner, S. Levy; architects, Schulze & Meeker; contractors, Conlin & Roberts; cost, $1,600; signed, Aug. 1; filed, Aug. 25 payments, 75 per cent. as work progresses.

O'Farrell, near Gough. Plumbing and gas-fitting; owners, M. S. and I. H. Jacobs; architect, A. J. Barnett; contractors, Duffy Bros.; cost, $1,325; signed, Aug. 15; filed, Aug. 27; payments, $662.50, rough work is accepted; $331.25, completed $331,25, 35 days.

Pine near Scott. Painting and graining; owner, W. E. Stevens; architect, H. S. Munson; contractor, J. S. Thomson; cost, $1020; signed, August 23; filed, August 29; payments, $375, outside primed and outside coated; $375, completed; $275, 35 days.

Pine near Steiner. Brick work; owner, A. Rhodes; architect, J. Talbot; contractor, A. C. Soule; cost, $2050; signed, August 8; filed, August 11; payments, 300, framed; $500, enclosed; $350, brown coated; $300, white coated; $230, completed; $520, 35 days.

Page and Lyon, also Pierce between Turk and Eddy. Plumbing; owners, Rountree Brothers; architect, Sam'l Newsom; contractor, G. C. Sweeney; cost, $2,650; signed, August 6; filed, August 12; payments, $1,200, sewers in; $650, completed; $800, 35 days.

Post near Webster. Alterations; owner, F. Kronenberg; architect, R. Zimmerman; contractor, Wm. Pluns; cost, $2220; signed, August 28; filed, September 1; payments, $2000; brown coated; $1915, accepted; $1305, 35 days.

Pine near Franklin. Alterations; owner, J. Getty; architect, C. M. Rosseau; contractor, K. C. Gardner; cost, $2000; signed, August 29; filed, September 3; payments, $500, enclosed; $500, brown coated; $500, completed; $500, 35 days.

Powell near Eddy. Cross wall; owners, Schwartz Brothers; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $5472.40; signed, September 2; filed, September 5; payments, 75 per cent. as the work progresses; 25 per cent. 35 days.

Page and Lyon. Plastering; owners, Rountree Brothers; architect, L. Newsom; contractor, W. C. Watson; cost, $3200; signed, September 3; filed, September 6; payments, 75 per cent. as the work progresses; 25 per cent. 35 days.

Powell near Ellis. Alterations; owner, J. G. Walker; architect, T. J. Welch; contractors, Anderson Bros.; cost, $9,731; time, 100 days; signed, Aug. 13; filed, Aug. 13; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Park Lane Tract. One-story frame; owner, M. Mehach; contractor, G. J. Doering; cost, $1,250; signed, Aug. 27; filed, Aug. 28; payments, $300, framed; $3 0, first coat of plaster is on; $800, finished; $350, 35 days.

Powell near Ellis. Plumbing, gasfitting and sewerage; owner, J. G. Walker; architect, T. J. Welsh; contractors, Fritz & Kean; cost, $1,285; sureties, W. Little and J. G. Gail, $320; signed, Aug. 19; filed, Aug. 19; payments; $428, rough work is on; $428, accepted; $429, 35 days.

Pine and Laguna. Three-story frame; owner, P. Jacobs; architect, J. J. Clark; contractor, F. Maloney; cost, $10,000; time, 110 days; signed, Aug. 15; filed, Aug. 19; payments, $2,500, framed; $2,500, brown coated; $2,500 inside finish on; $2,500, 35 days.

Rausch, bet. Howard and Folsom. Carpenter work; owner, E. M. Frechon; architects, Townsend & Wyneken; contractor, L. Medus; cost, $2,000; time, 66 days; signed, Sept. 4; filed, Sept. 5; payments, $400, house raised; $600, brown mortared; $500, accepted; $500, 35 days.

S. W. corner Church and Hill. Three-story frame; architect, T. J. Wetch; contractor, F. Coghlan; cost, $1189; filed, August 11, payments, 75 per cent. as work progresses; 25 per cent. 35 days.

S. W. corner Twenty-third and Guerrero. Plumbing; owner, Wm. Jones; architects, Shea and Shea; contractors, Fritz and Kean; cost, $230; signed, August 2; filed, September 5; payments, $1000, rough plumbing done; $725, completed; $375, 35 days. Mill work—Contractor, C. M. Dejew; cost, $5682; signed, August 26; filed, September 5; payments, 75 per cent. as work progresses; 25 per cent. 35 days. Plastering—Contractor, T. Bodkins; cost, $2150; signed, August 26; filed, September 5; payments, $1000, brown mortared; $613, completed; $938, 35 days. Painting—Contractor, L. J. Dwyer; cost, $1900; signed, August 23; filed, September 5, payments, 75 per cent. as work progresses.

Sutter near Scott. Plumbing; owner, W. Romberg; architects, Salfield and Kohlberg; contractor, H. Williamson; cost, $1021; signed, September 1; filed, September 5; payments, $300, rough work is in; $265, accepted; $260, 35 days. Plastering—Contractor, F. L. Hansen; cost, $1050; payments, $400, brown coated; $375, white coated; $275, 35 days.

S. W. corner Hyde and Green. Two-story frame; owners, J. L. and J. E. Dugan; architects, Shea and Shea; contractor, A. Discher; cost, $5140; signed, September 1; filed, September 5; payments, $964, rough framed; $964, brown mortared; $964, hard finished; $965, completed; $1285, 35 days.

Sutter near Hyde. Three-story brick stable and residence; owner, L. D. Slocum; architect, A. J. Barnett; contractor, D. T. Pierce; cost, $27000; signed, September 4; filed, September 5; payments, $8000, brick walls are ready to receive second story joists; $5500, completed; $5500, 35 days.

S. W. Devisadero and Waller. Two-story frame; owner, F. D. Marsch; architect, J. Gash; contractor, W. A. Knowles; cost, $4515; signed, August 9; filed, August 12; payments, $564, brick work done; $564, brown coated; $564, white coated; $564, wainscot on; $564, painted; $566, completed; $1129, 35 days.

S. W. corner Eddy and Taylor. Alterations; owner, A. Chavanne; architects, Pissis & Moore; contractors, Gardner & Hydren; cost, $2,664; signed, Aug. 12; filed, Aug. 13; payments, $1,000, brown coated; $998, completed; $666, 35 days.

Scott near Geary. Two-story frame; owner, C. Laner; architect, B. McDougall & Son; contractors, Brennan Bros.; cost, $5,790; time, Dec. 29, '90; signed, Aug. 12; filed, 13; payments, $600, brick foundations in; $980, framed; $900, brown mortared; $1,200, first coat of paint on; $1,492.50, accepted; $1,697.50, 35 days.

Sacramento near Kearny; owner, F. F. Shloss; architects, Salfield & Kohlberg; contractor, J. T. Dunn; sureties, F. Joost and W. A. Meeker, $1,231; cost, $4,924; signed, Aug. 13; filed, Aug. 14; payments, $1,250, floor joists laid; $1,250, roofed; $1,193 completed; $1,231 days, 35 days.

Sheridan near 9th. Two-story building; owner, C. Speckter; architect, A. J. Barnett; contractor, J. Schuller; cost, $4,000; signed, Aug. 15; filed, Aug. 16; payments, $750, roofed; $750, brown coated; $750, white coated; $750, completed; $1,000, 35 days.

Scott, near Pine. Carpenter work; owner, H. H. Morse; architect, J. H. Littlefield; contractor, A. Jackson; cost, $5,727; signed, Aug. 10; filed, Aug. 27; payments, 75 per cent. as work progresses; 25 per cent. 35 days.
Painting. Contractor, Gus V. Daniels; cost, $650; signed, Aug. 18; filed, Aug. 27; payments, same.

S. W. corner Powell and Ellis. Hydraulic Elevator; owner, E. Auzerais; architects, Pissis & Moore; contractors, Cahill & Hall; cost, $2,540; signed, Aug. 14; filed, Aug. 18; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Shotwell, near Twenty-Fourth. Alterations and additions; owner, E. Byrne; contractor, A. J. Ahern; cost, $1,250; time, 60 days; signed, Aug. 15; filed, Aug. 18; payments, $468.75, brown mortared; $468.75, completed; $312.50, 35 days.

S. E. corner 19th and Howard. Two-story frame; owner, J. O'Connor; architect, T. J. Welsh; contractors, R. Doyle & Son; cost, $10,374; sureties, G. C. Sweeney and Thos. Winters, $2,593; signed, Aug. 16; filed, Aug. 19; payments, $2,500, framed; $2,500, brown mortared; $2,500, accepted; $2,874, 35 days.

Sanchez, near 17th. Two-story frame; owner, J. Clark; contractors, Hauser & Maritzen; cost, $4,500; time, 55 days; signed, Aug. 16; filed, Aug. 19; payments, $1,125, enclosed; $1,125, brown coated; $1,125, accepted; $1,125, 35 days;

Scott, near Pine. Brick work; owner, H. H. Morse; architect, J. H. Littlefield; contractor, D. T. Pierce; cost, $850; time, Sept. 2, '90; signed, Aug. 18; filed, Aug. 20; payments, first and fifteenth day of each month.

Sutter, near Sansome. Wrought iron work; owner, A. M. Parrott; architects, Pissis & Moore; contractors, Reese & Llewellyn; cost, $6,400; signed, Aug. 16; filed, Aug. 20; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

1119 Twenty-first. Alterations; owner, J. W. Tully; architect, J. C. Newsom; contractor, J. B. Taubman; cost, $1,125; signed, Aug. 12; filed, Aug. 15; payments, $315, foundations in; $390, partitions up; $500, completed.

Third, bet. Howard and Folsom. Carpenter work; owner, Henry Goldstein; architect, W. H. Armitage; contractor, M. C. Lynch; sureties, J. F. & A. W. Kennedy; $1467.50; cost, $5,870; signed, July 1; filed, Aug. 25; payments, $1,250, framed; $1,250, brown mortared; $1,250, white mortared; $620, completed; $1,500, 35 days.

Turk near Lyon. Two-story frame; owner, M. T. Carroll; architect, J. J. Clark; contractor, W. A. Van Dervort; surety, R. P. Hurlbut, $385; time, 60 days; signed, Aug. 27; filed, Aug. 29; payments, $500, enclosed; $500, inside finish is completed; $500, 35 days.

Turk bet. Pierce and Lott. Brick work; owner, L. M. Weisman; architect, W. H. Armitage; contractor, I. Ewing; cost, $4,270; signed, Aug. 18; filed, Aug. 23; payments, $1,100, framed; $1,100, brown coated; $1,100, accepted; $1,070, 35 days.

Valencia between 27th and 28th. Carpenter work; owner, St. Luke's Hospital; architect, Townsend & Wyneken; contractor, A. H. Plummer; cost, $14886; signed, Sept. 5; filed, Sept. 6; payments, $900, building is raised; $941, brown coated; 29 0, first coat of paint on; $950, accepted; $1247, 35 days.

Webster near Haight. Two-story building; owner, T. W. Tamm; architect, A. J. Barnett; contractor, Donovan & Williams; cost, $1600; time, 40 days; signed, Aug. 9; filed, Aug. 11; payments, $600, brown coated; $900, completed; $400, 35 days.

Webster near Clay. Alterations; owner, M. J. Jones; architect, C Geddes; contractor, C. E. Dunshee; cost, $2881; signed, Sept. 4; filed, Sept. 6; payments, $400, framed; $500, first coat of plaster on; $750, plastered; $511, completed; $720, 35 days.

Wisconsin between Napa and Sierra. Five-room building; owner, J. Duncanson; architect, R. White; contractor, J. Glackin; cost, $2,125; time, Nov. 1, '90; signed, Aug. 11; filed, Aug. 12; payments, $450, rustic on; $450, brown mortared; $400, white coated; $400, finished.

Washington Ave. and Precita Place. Additions; owner, E. Devlin and Wife; contractor, G. M. Saulsbury; cost, $1200; signed, Aug. 6; filed, Aug. 23; payments, $300; raised; $300, brown mortared; $300, completed.

Berkeley.

Shattuck near Lincoln street. Owners, J. K. and S. B. Pierce; architect, A. B. Pierce; contractor, I. A. Boynton; cost, $2250; time, November 15, 1890; signed, August 25; filed, August 28; payments, $800, enclosed; $800, brown mortared; $800, inside ready for paint; $852, 35 days.

Oxford street and Berkeley Way. Owners, S. and R. Greenhood; contractor, W. A. Powell; cost, $2700; time, December 1, 1890; signed, September 2; filed, September 5; payments, $675, roofed; $675, brown mortared; $675, sashes in; $675, 35 days.

Alameda.

Lafayette near Santa Clara Ave. Frame church; owner, Immanuel German Evangelical Lutheran Church; architect, J. E. Kraft; contractors, Herlst & McLeod; cost, $3,192; signed, Aug. 9; filed, Aug. 18; payments, $900, framed; $900, roofed; $1,000, plastered; $1,090 completed; $1,300, 35 days.

Benton Street near Central Ave. Owner, H. Mohns, contractor, A. W. Pattram & Co.; cost, $3,000; signed, Sept. 5; filed, Sept. 6; payments, $950, chimneys built; $650, exterior framed; $650, completed; 750, 35 days.

Oakland.

Market near 19th. Owner, A. Ainsworth; contractor, J. V. Einburg; cost, $3000; time, November 30, 1890; signed, August 23; filed, August 27; payments, $610 cash in hand; $900, framed; $800, plastered; $400, outside painted; balance completed.

N. E. corner 12th Avenue and E. 15th street. Owner, D. S. Carrick; architects, J. J. Newsom; contractor, C. W. Wilkins; cost, $3232; time, 90 days; signed, August 12; filed, August 12; payments, $600, framed; $1016, roof finished; $808, completed; $808, 35 days.

Alice near 11th. Two-story frame; owner Mrs. M. McCourtney; architect, Chas. Mau; contractor, H. Kendall; cost, $407; signed, August 12; filed, August 14; payments, $762, framed; $762, first coated; $762, second coated; $764, completed; $1025, 35 days.

Washington near Eighth. Three-story brick; owner, E. Hindman; architect, Chas. Mau; contractors, W. T. Veitch and Bro.; cost, $14,750; signed, Aug. 14; filed, Aug. 14; payments, 75 per cent. of value of work done; balance, 25 per cent. 35 days.

S. W. cor. 15th and Franklin streets. Two-story frame; owner, L. R. Webster; contractor, C. B. Kimball; cost, $1,400; time, 60 days; signed, Aug. 8; filed, Aug. 15; payments, $1000, framed; $500, enclosed; $800, brown coated; $1000, doors and windows in; $500, painted; $900, 35 days.

N. W. cor. Santa Clara and Bay streets. Owner, the city of Oakland; architect, Wm. Patton; contractors, McDonald & Eggleston; cost, $23,770; signed, Aug. 13; filed, Aug. 15; payments, ¼ framed, ¼ first coated; ¼, second coated; balance, 35 days.

Two-story dwelling. Owner, J. McManus; contractor, B. K. Allen; cost, $4,575; signed, Aug. 15; filed, Aug. 16. payments, $1525, framed; $1525, brown mortared; $1525, 35 days.

Oak near 7th. Two-story building; owner, G. Beckett; architect, R. G. Frise; contractor, H. M. Smith and E. H. Lake; cost, $8150; signed, Aug. 15; filed, Aug. 16; payments, $787.50, framed; $787.50, brown coated; $787.50, windows in; $787.50, 35 days

San Antonio and Chestnut. One-story frame; owner, D. Tiedmann; architect, J. A. Leonard; contractors, Brehant & Diamond; cost, $3,950; signed, Aug. 15; filed, Aug. 16; payments, $950, framed; $1,000, brown coated; $1,000, white coated; $1,000, 35 days.

Two-story frame; owner, M. E. Farren; architect, Charles Mau; contractor, E. D. Bassett; cost, $3,875; time, 95 days; signed, Aug. 6; filed, Aug. 9; payments, $730, framed; $725, first coated; $725, second coated; $725, completed; $970, 35 days.

N. W. corner 5th Ave. and 19th Street. Owner, S. & A. F. Mau; contractor, A. W. Pattram; cost, $8,050; signed, Aug. 27; filed, Aug. 28; payments; $850, chimneys built; $700, exterior primed; $725, completed; $775, 35 days.

Atlantic between Wood and Pine. Owner, M. Heaney; architect, J. Spencer; contractor, R. Langtry; cost, $1,565; time, Nov. 1, '90; signed, Aug. 28; filed, Aug. 29; payments, $500, enclosed; $500, coat paint outside; $565, completed.

Alameda Avenue, near Walnut. Owner, H. Mohns; architect, A. Steinbilt; contractor, A. L. Fell; cost, $962.50; time, 60 days; signed, Aug. 29; filed, Sept. 4; payments, $180, framed; $240, white coated; $301.88, completed; $240.62, 35 days.

Walnut, near Cedar. Owner, C. P. Hoag; architect, R. G. Frise; contractor, A. C. Bryan; cost, $2,653; signed, Sept. 3; filed, Sept. 4; payments, $663.25, enclosed with rustic; $663.25, brown coated; $663.25, building primed; $666.25, 35 days.

N. W. corner Willow and Taylor. Two-story frame; owner, C. J. Bergenson; contractors, A. W. Pattiani & Co.; cost, $3,068; signed Sept. 1; filed, Sept. 5; payments, $850, chimneys built; $800, exterior primed; $650, completed; $768, 35 days.

Fifth Avenue and 15th street. Two-story frame; owner, H. Tubbs; architect, Chas. Mau; contractor, J. Toohig; cost, $8,700; signed, Aug. 29; filed, Aug. 30; payments, $2,175, ⅖ material furnished and ⅖ work done; $2,175, ⅖ material furnished and ⅔ work done; $2,175, completed; $2,175, 35 days.

East Oakland.

Four dwellings. Owner, H. E. Bullock; contractors, Willmore and Richmond; cost, $4,000; time, December 1, 1890; signed, August 11; filed, August 11; payments, $100, ready for plastering; $100, ready for paint; balance, 35 days.

San Leandro.

Wine cellar. Owner, T. H. Ratzan; architect, F. J. Williams; contractor, T. J. Meek; cost, $1500; time, 60 days; signed, August 7; filed, August 11; payments, $375, one-fourth work done; $375, one-half work done; $375, three-fourths work done; $375, 35 days.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN W. CURTIS, Treas

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

ON and after January 1, 1891 the subscription price of this journal will be $3.00 per annum and single numbers 30 cents each.

IN our last issue the 1st mention in the Hall Clock competition should have been credited to H. J. Van Black, and the 2nd mention to S. C. Benson.

A JURY in Judge Hunt's court has given judgment for plaintiff for $250 in a suit brought for $2000 damages for injury to property caused by a quantity of earth sliding from defendant's lot on to plaintiff's premises.

THE mentions in the monthly competition of the A. I. A. Sketch Club for August should have read *A Country Chapel* instead of *A Hall Clock*.

THE regular monthly meeting of the San Francisco Chapter, American Institute of Architects, was held Friday evening, the 10th inst., at their rooms, 408 California Street.

President S. Babson in the chair.

About thirty architects were present, many of whom took an active part in the discussion of the evening.

Three applications were made for membership.

THE regular meeting of the Technical Society of the Pacific Coast was held on October 3d, at their rooms, 408 California street, President Richards in the chair.

The subject was an illustrated paper by Mr. H. C. Behr, on experimental works for metalurgical operations.

THE following is a translation of a review of the tenth volume of the CALIFORNIA ARCHITECT AND BUILDING NEWS, by *Daniel Francken* published in the *L'Emulation* of Bruxelles, the organ of the *Société Centrale D'Architecture De Belgique*. The original of which was sent to us through the kindness of *Paul Saintenoy, Architect* and *Secrétaire Général de la Société d'Archéologie Bruxelles*.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

AT the begining of this century, California was hardly known in Europe, being then a tributary of Spain. It was acquired by the United States of America in 1848, and soon became celebrated by the discovery of its gold mines. The placers worked by new comers rushing thence from all parts of the world, produced untold riches, as much as four hundred millions of francs in one year. The other productions of the soil, silver, borax, sulphur, coal, tin, coal-oil, etc., favored the growth of a new cosmopolitan civilization of considerable extent, which caused the springing up of numerous cities rapidly and richly built. Immense forests producing trees of collossal size, consisting of firs, cedars, pines, etc., thus favoring the construction of frame dwellings by the inhabitants solely in accordance with their fancy, and somewhat in the style in vogue in their country. Hence, fancy and diversity are the chief characteristics of California architecture. Although Sacramento is the capital, San Francisco is the most important city in the State, of which the CALIFORNIA ARCHITECT gives many illustrations. This city is situated on the San Francisco Bay at the

Golden Gate, and is bounded on the west by the Pacific Ocean, and not far away are the mouths of the two great rivers, the Sacramento and the San Joaquin. This city is destined to become one of the principal ports of North America, and has been justly named the "*Queen of the Pacific.*"

The California Architect is a most interesting publication, counting already twelve years of existence, and showing the splendor of that country by means of drawings well executed, of numerous private dwellings, hotels, establishments of public utility, of luxury, of science of art, etc. Certainly in looking over that journal, the text of which is in a language with which I am too imperfectly acquainted, the mixtures or incongruous architecture here somewhat startled me. But from a more extended examination most of the plates that illustrate the journal are very neatly executed, and that notwithstanding the cosmopolitan influence, a very picturesque and most interesting style of architecture has been developed in that new country. In the first place most of the buildings are isolated, the main streets are lined with houses surrounded with gardens and terraces, hence results a perspective view of projecting roofs and walls very pleasing to the eye.

The large constructions, the buildings for revenue, the hotels, &c., are constructed of gigantic proportions. The great aim of the California constructors seems to be to astonish by enormous size, than by artistic refinement. However, certain buildings are very elegant.

The one of Messrs. Salfield & Kohlberg on Market street possesses an *avant corps* which certainly is not wanting in good qualities.

Mr. Mooser, in his Metropolitan Temple, has made a success of the upper portion of his edifice. It is to be regretted that the ground floor, and the first story are treated in a manner too empoverished.

The Hibernia Bank, by Messrs. Pissis & Moore, is conceived in the classic style, and possesses beautiful qualities, and the purity of its lines, prove for its authors, real artistic researches. The dome that crowns the rotunda blends very gracefully with the other portions of the edifice.

Messrs. Pissis & Moore have also erected a building very well proportioned; it seems to represent a private dwelling of a very fine aspect. The perspective drawing shows us the two fronts, one of which, adorned with a portico, decorated with a double arcade, preceded by an exterior stair case with a lateral flight leading to a platform forming a terrace. The second front is flanked with a two-story bay window, on graceful brackets, surmounted by a balcony, covered by a very projecting roof. The two fronts are united by a cut-off corner, ornamented by a story higher than the roof, the ground floor of which forms the principal entrance. This entrance is decorated with a semi-circular arcade resting on isolated columns after the Italian style; the first story is adorned with a handsome bay window supported by a rounded corbel.

Certain villas denote great originality, and I am sure that in execution they produce general effects very pleasing to the eye, built for the most part on an irregular plan, adorned with stairs placed on the exterior, and of large platforms covered with great roofs, of basements constructed of rough stone, they constitute very curious specimens of American architecture. The use of large semicircular arcades, and of certain elements borrowed from the Nations of the Orient, help to add still more to the picturesqueness of the City of San Francisco. Moreover, the joints of the stone work, and the mode of construction, partly sham, the very ingenious use of lumber for framing of certain buildings contribute greatly to the decorative effect of many dwellings. Here and there you find architecture recalling the Middle Ages. A porch of Messrs. Wright & Sanders is interesting, excepting the upper part, where great weight is not very graceful. Let us also call attention to a coquettish chalet of Mr. T. H. Cole, who has conceived the idea of giving to the windows of the ground floor the shape of the circle. The group of buildings by Mr. Barnett on Haight street betrays its English origin. The *Marquam*, by Mr. J. M. Wood, whose dimensions cannot find their counterpart in this country, the principal facade alone, without counting the other two, is pierced with more than two hundred windows.

The residence of Mr. W. H. Crocker erected by Messrs. Curlett & Cuthbertson, offers, although without a very definite style, a very curious *ensemble*, and is most attractive in all its parts. Erected on an enormous stylobate of rough stones, it raises itself gracefully on an irregular plan. The gables of wood are well arranged, and ornamented with balconies, chimneys and bay windows. One of the angles is flanked by a tower, a little massive perhaps, but very originally studied. The principal entrance, preceded by a flight of stone steps of generous dimensions with double ramps, is decorated with a semicircular arch, with the center raised, formed of large rough stones, and resting on sphinxes in repose. The entrance is of colossal aspect, unhappily supporting only a terrace, and has no *raison d'etre.* The balance of the building is of wood. The same plate, due to photography, shows us in the back ground an angle (or corner) of a beautiful specimen of a renaissance building, which I regret, was not reproduced in a complete state in the publication. I conclude this rather long review by congratulating our California *confréres*, and in the name of the *la Société Centrale*, thanking them for the very interesting numbers of their Journal which we have received through their courtesy.

Daniel Francken.

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

San Francisco, Oct. 3rd, 1890.

Editor California Architect and Building News,

Dear Sir:—I beg to call the attention of your readers to the subject of the proper construction of fire-doors and shutters, a matter of vital importance in any fire, and especially so in the sweeping conflagrations which eventually come to all large cities.

Notwithstanding constant agitation of the subject, and the use of illustrated circulars to keep proper construction before the public, it is a fact that the popular idea of a fire-proof door or shutter is still one of iron, presumably because iron is not inflammable. While iron will not burn, it will so warp and twist when exposed to intense heat as to be of little or no use as a protection. So general is the predilection for iron, that frequently before openings are cut between adjoining buildings, it is inserted in the lease that the opening shall be "protected" with a "first-class iron door."

It is a well-established fact that the reliable fire-door or shutter is that made of two thicknesses of matched boards placed crossways and nailed together with iron clinch nails. Covered with tin laid as in roofing so that the nail heads are covered, carefully fitted, and properly hung, using bolts instead of screws in hangers and fastenings, such a door or shutter is invincible. To protect a communication between two buildings, (the weak point in event of a fire in either) such doors should be placed on each side of the wall, the air space between the two being an additional protection.

In making fire-doors or shutters, the standard specifications, should be followed exactly, such deviations as the substitution of iron for tin, in which case the nail heads are exposed and the nails drop out quickly when exposed to fire, or the use of screws instead of bolts in hanging, seriously impairing the efficiency of the protection. It should be remembered that if fire-doors or shutters are ever put to a test it will surely be a severe test, and experience shows that anything less than the best will be found wanting in time of need. The standard fire-door or shutter may have its wood reduced to charcoal by the intense heat, but it will be found to have kept its shape and to have kept out the fire. The cost of such protection is less than that of iron doors.

Respectfully,

F. H. Porter, Chief Inspector.

The management of this journal desires to extend a cordial invitation to all architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE illustrations for this number are, A Perspective View of a Suburban Residence with 1st and 2nd floor plans by Seth Babson, architect.

PERSPECTIVE View and floor plan of a Bank Building suitable for a large city by F. R. Barker, architect.

A FRONT View of the Entrance to the London and San Francisco Bank, S. F. by David Farquharson, architect.

CALIFORNIA VENEERS.

California and the Pacific Coast is noted throughout the world for its wonderful productions, and not the least of these are the ornamental woods suitable for the most delicate effects of the artistic designer in fancy woods, wherever he may be found, whether in the countries of the new or old world. Their beauty is appreciable by all, from the savage to the most cultivated æsthetic taste, their rich tones and ever changing shades cannot fail to bring exclamations of approval. If the wonderful Aladin was now to build his palace the expert sprites would certainly procure their fancy woods from this part of the world.

At the Fair of the Mechanics' Institute, now being held in this city, there is an exhibit of veneers by the California Veneer Works, R. P. Hurlbut, Manager, 539 to 563 Brannan street, this city, which for beauty surpasses the most fairy dreams of the artistic wood worker. Here can be seen our native red wood in all its varied beauty, such as burls, roots, curls, curly bolts, of all shades, mottled, specked, feathery, clouded and sprayed, from the thickness of paper to two inches or more, and showing a combination of rich tones unattainable with any other wood. Here also is shown some artistic furniture and mantels, carved and plain, but all worked in a manner to display the contrast of the different shades and grains of the wood. The finish is varied throughout the large collection of woods exhibited, some showing the natural wood smoothed, but without varnish or polish, others are oil finished, varnished or polished, etc. When we view this suberb display it seems astonishing that eastern architects, designers, and manufacturers of artistic wood work should be so slow to look into the adaptability and beauty of our Pacific Coast woods.

L'UNIQUE,

A NEW ART.

More thought has been given at different periods of civilization to the obtaining of esthetic effects for the interior of residences than, perhaps, any other matter in the history and evolution of architecture, and in our sunny California it is interesting to note the growth of refined taste to which so many of our architects are now called upon to cater. Our State, we consider, is as remarkable for its architectural growth as it is for the enterprise and liberality of our many millionaires. It is suggestive to the ambitious designer, that here in the far West, the elegant portiere has within a decade or so supplanted the miner's gunny sack which once draped the openings of his mountain castle, and that the elegant "modern residence" of the Queen Anne, or other type, has taken the place of the "candle box" style which was once the pride of the "contracting architect, shingler and builder" who furnished "plans," etc., for *glory*, and made the rattle-trap thing cost in extras and repairs twice the amount of his original contract. It is, therefore, encouraging to note architectural advancements made in residences and business structures in both city and country, and, also, a real growing demand among clients for the many modern features which go to make the American home beautiful, "a joy forever." Hence, it is with much pleasure that this journal announces the introduction of a new (and a California) art—L'Unique. It is intended for the decoration of walls, ceilings, cornices, centers, pilasters, columns, arches, etc., and is susceptible of the widest range of unique design, and semi-oriental treatment. Its combination with natural wood finish together with the delicate tones and reflecting lights of art glass, stained and embossed, bring about a union of rich features that make the *ensemble* of a suite of properly furnished rooms an esthetic whole that brings a thrill of pleasure to the tired thought of the business man, or the devotee of society who, when they enter such richly equipped apartments can say, "I'm now at home." L'Unique has to be seen, neither a photograph nor words can make it clearly understood; however, we may mention that the material of its composition is the most durable known to science in the stucco art. It is susceptible of being treated in a variety of sunk, raised, geometrical or conventional figure work, which, when artistically treated in color and bronze, give effects which are decidedly Oriental in their rich character. The art as its name implies is destined, by the cultured hand, to stand alone in kind and excellence. For the housekeeper it has the advantage (although showing a roughened surface,) that it will not absorb dust, for the reason that its composition makes it entirely impervious to moisture, and when finished a coating of material is applied which forms a chemical combination, giving an enameled surface to the work to which the dust will not adhere. It constitutes the richest and most natural background yet brought out for modern furniture, and its assimulation therewith gives the impression that *the room itself* is but a part of the setting. L'Unique bears such a variety of treatment, both in ground work and in the coloring, etc., that no two apartments need be finished alike, and the eye in wandering from room to room meets with a constant yet harmonious change of surface, just decorated enough to be pleasing and appropriate.

The excellent exhibit of a large variety of designs in this art may be seen on the walls of the western end of the promenade adjoining the Art Gallery of the present Fair of the Mechanics' Institute. The inventor and patentee is Mr. T. Tucker, of No. 1816 San Pablo Avenue, Oakland, California. Mr. Tucker has finished and decorated the best apartments of many elegant residences in this style which in most instances has drawn such an influx of visitors as to hinder the workmen so that the admission of visitors was relegated to those most interested.

FIRE APPARATUS.

A fine display of fire hose, hose reels and fire apparatus is made by W. T. Y. Schenck, 222 and 224 Market street, the most noticeable being the Schenck Swinging Hose Reel rated by the Insurance Union to be the most perfect and reliable inside fire protection it is possible to procure. The reel is attached to the wall out of the way and is a very handsome ornament, forty-eight of them being recently placed on the hall walls of the Palace Hotel, and they are specified by the architects to go into all the prominent buildings now being erected.

The house manufactures all kinds of fire apparatus and is the only establishment making a specialty of such work on the coast.

USE OF GAS STOVES.

The fuel and the appliances to be used for cooking and heating for the homes of the period are subjects which are at present receiving a marked degree of attention. To the manufacturing gas companies it is of the first importance, and the manufacturers are concentrating their attention to the practical development of an article that will be satisfactory as an illuminant and at the same time have the requisite qualities for a fuel gas.

Gas stoves for cooking are supplied in various patterns from the single burner to six and eight heating places, having burners ranging from six to twenty feet each per hour. The ranges are in some cases supplied with water backs, the tops may have steel or cast iron plates, and ovens are made close or ventilated that bake quickly and evenly. Nickle plated trimmings and pipes with perfect combinations which regulate the supply of gas. The heating stoves are made plain or rich in design, many showing unique features and ornamented with tile work. With the great variety of stoves made the different systems of burners would naturally follow, thus we find the old and well tried Bunsen principal, and the small, sharp, blue flame distributed over a larger surface, each presenting superior claims for efficiency for special purposes.

After all the experience of recent years there can be no doubt of the superiority of gas over the ordinary fuel for cooking and heating purposes, and as the wants of the consumer become known new appliances will come into use to meet the demand. Among the many advantages of gas over coal are economy, security, convenience, cleanliness, being free from the smoke, ashes, soot and dust nuisance, and in lessening the labor and expense of handling the coal and ashes, also the saving of kindlings. The coming man will be surprised at our patiently enduring the smoke, ashes, soot and dust for so long a time after science had demonstrated the economic methods of gas as fuel. The efficiency of cooking by gas has been demonstrated by recent tests which showed that meat retains its weight and nutrition better when cooked by the gas process than when coal is used. With gas the cooking can be commenced at once while by the coal stove the fire must be made some time before. By the coal stove, food that required two hours and forty minutes from the time of lighting the fire till ready to serve, took only one hour and fifty minutes to do the same work equally well, and when the gas was turned off the expense was stopped, while with the coal stove the remaining charge of unburned coal and heat being lost. By the present neat gas range, which is always ready for instant service, and free from dust, soot, fuel or ashes and the attendant labor therefor, the culinary operations are a pleasure, the heat being so perfectly under control that the most delicious dishes can be prepared, done just to a shade, to suit the most fastidious taste of the discriminating epicure.

The growing demand and increasing use of gas stoves and heaters is of the highest importance to the architect. Naturally any device whereby such a radical change is made in the mode of cooking and heating as that at present taking place by the substitution of the gas system for that heretofore in use, requires special arrangements in the planning of the house in order to meet such improvements in the most complete manner.

TERRA-COTTA.

The history and manufacture of terra-cotta dates from prehistoric time, unglazed pottery of very ancient origin having been found. The potter's wheel and vessels of burnt clay were common articles among the nations that existed more than 4000 years back, and now when we want the most enduring material known we resort to the prehistoric terra-cotta. During the last few years science has greatly assisted the manufacturer so that now, prepared clay having the proper chemical constitutents can be worked for any intended purpose whatever, and colors may be introduced into the plastic mass to give any desired effect, so that this valuable product can be made to harmonize with any other material. It is only within the last few years that wooden framed walls and partitions, have been constructed with fire resisting terra-cotta hollow tiling, in such manner, as to form a complete barrier to the spread of fire. Interior columns, beams and girders encased in terra-cotta, has become so general in use that the fire proof building is the rule rather than the exception. Terra-cotta is more particularly used for the higher class of brick buildings, where more or less ornamental and art work adorns the exterior on account of its durability and fitness for moulded or modeled work of either a structural, ornamental or monumental character. Where exposed to the weather colored stone will fade, grow dull and lose its contrasting effect, while terra-cotta retains its color and gives the combination of tints and shade as originally intended by the designer. At the Mechanics Fair is an extensive and beautiful display of terra-cotta in all its various forms as manufactured by Messrs. Gladding, McBean & Co. 1358-1360 Market street, this city, which is a magnificent testimonial for the high class of the articles manufactured by them. The care and precision observed in working out the constructive details is apparent throughout all the examples. The product from this house may be seen throughout our city, such buildings as the Pioneer Hall, Chronicle Building and many others show to advantage by their use. The modeled work for heads of persons and animals shows a practical art knowledge of such subjects as fitted for special positions to produce the intended effect. Special designs of architects are taken and worked to order for particular purposes.

IMPROVEMENT FOR SASH BALANCE.

One by one the old and cumbersome methods of the past age are being replaced with new and improved appliances whereby the convenience of the household is increased to such an extent as to render life more pleasant for the rich or poor alike. As a troubled state of the mind is not considered beneficial either for health or long life, consequently, any improvement in the construction of buildings, whereby the mind is brought to a condition of calmness and contentment, must necessarily prove beneficial. Who has not heard the remark upon opening or closing a window, "I wish somebody would invent something that will work better than this." Now, just here comes in the California Sash Balance Company, who are prepared to furnish a new device, acting upon an entirely different principal from anything heretofore used for this purpose. This appliance is one of those improvements, that the more it is critically examined, the more apparent are the advantages to be derived from its use. The device is the invention of Dr. Benjamin Marshall, of this city, who has carefully studied out the details to the present practical adaptability for the purpose intended. In this new arrangement, the cords, weights, pulleys, box frames, together with the resultant annoying repairs and expenses are entirely done away with. When designing small brick or terra cotta piers between windows, it often becomes necessary, in order to make room for the boxes for weights, that such piers should be from four to eight inches larger than would be required if no boxes were used, so that with this new balance the piers may be reduced to a size calculated by the designer. The moving power which balances the sash being one or more double spiral springs which are let into the sash in a manner not to weaken the sash. For the lower sash the spring is worked into the lower rail, and for the upper sash into the upper rail. On the outer end of this spring is a cog wheel working against a toothed rack secured to the frame, while in the sash is a sunk turn-key connected with a sliding pin bolt which locks into the cog wheel, thereby locking the cog wheel to the rack, so that either the lower or upper sash can be easily locked in any desired position. In many cases, such as lower story windows, and windows opening on balconies, halls, light corridors, etc., this device is the most applicable of any yet brought forward. The springs are made of the very best spring steel to be had, and worked and tempered especially for this purpose. The tortion of the spring is set to regulate the tension to any weight of sash. The device has the elements of durability and economy, and is easily applied, owing to its simplicity; the windows cannot rattle, and the balance can be regulated to a degree of delicacy hitherto unknown. This invention has been ordered for the following new buildings in course of erection: Crocker Building, D. O. Mills Building, San Bernardino Insane Asylum, and many private residences. A window complete with this arrangement is at present on exhibition at the Fair of the Mechanics' Institute.

DISPLAY OF ORNAMENTAL WOODS.

Among the many interesting displays that meet the eyes of visitors at the Mechanics' Pavilion, there is one, which no doubt, all will examine with surprise, that of the display of ornamental native woods, by A. J. Forbes & Son, 213 Mission St.

That there should be such handsome specimens of ornamental woods obtainable from the common red wood, white cedar, and myrtle,—specimens that rival in beauty the fine woods that are imported from the countries south of us at great expense, is probably known to but few of the observers, and they may take the statement with a great deal of allowance when it is made, that the woods from which these specimens are obtained, are cut up and sold by the car load for fire-wood.

The first and most important on exhibition in its adaptability for construction of cabinet work, is the *Madrone*, this wood has a fine grain, is easily worked, and is very strong. It is unexcelled for the numerous uses to which it can be applied.

Then comes the *Myrtle* a strong and beautiful wood. The exhibitor says, "we have boards forty inches in width perfectly sound." Next in importance in the cabinet-shop is the *Port Orford Cedar*. The specimens on exhibition are probably the finest that have ever been seen, rivaling the famous *Satinwood*. The *Sycamore* is used for flooring and for the manufacture of domestic utensils. The *Nutmeg* wood is extensively used in the northern part of the state. The Red wood specimens are from the most prominent mills on the coast. A burl from C. A. Hooper's mill is, for its size (5 feet, by two feet 6 inches) the most perfect piece of burl that has been seen in this market, nor could it be matched in any country outside of California. Those from Dolbees & Carson, Fort Bragg, and from Capt. C. Nelson's mills and others from Humboldt, Mendocino and Tulare counties are also beautiful specimens of curly *redwood*. These do not comprise all the cabinet woods of the state, but these have all been tested and can be relied upon, and in the skillful hands of A. B. Forbes & Son, can be wrought into household furniture, office and store fittings, and bank decorations that will please and satisfy the most fastidious of tastes. To them we recommend all who are particular in having their work done in the most substantial manner.

BRICK.

The manufacture and use of bricks made of clay, and burnt to a degree of hardness to withstand the weather, and of strength sufficient to sustain the weight of structures erected to a considerable height was known and practiced by the nations of the earliest times. Assyrian, Egyptian and Greek history mentions bricks as a common building material. The ancient cities of Pompeii and Herculaneum were built, mostly, of bricks or tiles made 17 inches long, 11 inches wide, 1¾ inches thick. In the Coliseum at Rome the thickness ranged from 1¼ to 2 inches, and Dutch, French and English 1¾ to 2¼ inches till about the 14th century. At present the American bricks range from 2 to 2½ inches; thus from the experience of centuries in brick making it seems that not more than three to four inches thickness of material should be used to insure a substantial article. The first building erected in America of which we have any account was built on Manhattan Island in 1663, the bricks having been brought from Amsterdam. Many improvements have been made at different times in the art of making bricks so that at this time it has become a science which requires technical knowledge in combination with experience of an advanced order; and machinery of the best kind made expressly for the work in hand. By the old methods of working and molding the clay the bricks were as strong or stronger in the direction of the width as in the length, while by the present method there is formed a kind of grain running lengthways thus making a stronger brick, consequently a stronger wall than if built with the ordinary article. At the Fair of the Mechanics Institute now being held in this city, a splendid array of pressed and moulded bricks and terra-cotta work, made by the Union Pressed Brick and Terra-cotta Co. (whose office is in the Flood Building, this city,) cannot fail to please the architectural and building fraternity. Bricks and tiles are here shown ranging through all shades and tints of color, from light buff to a rich dark chocolate; and Roman tiles of various shades, also some beautiful ornamental terra-cotta, especially a mantle for a fire-place of most delicate carving. All the products from this firm show a close texture and even surfaces, square corners, clean cut moldings, and good color. They make molded bricks of any size, pattern, design, or color, having the faces picked, vermiculated, ribbed, beaded, moulded, and in imitation of any style of face cut stone work. The color of these bricks being permanent, fulfills the requirements of a material having a lasting chromatic effect.

THE GARDNER SASH BALANCE CO.

Have recently placed on the market in this city, their Steel Ribbon and attachments for Sash Balance. This balance presents so many desirable features for practical use that it will well repay any person interested in the subject to investigate the matter for themselves, while they have the present opportunity at the Mechanics Fair, where a window fitted up complete is on exhibition. These attachments consist of a *steel ribbon* passing over flat grooved pulleys, and are secured to the sash and weights by means of brass loops and clasps. These ribbons are manufactured expressly for the purpose from the best crucible steel, and galvanized by a *special process* which effectually prevents them from corroding by dampness or on exposure to the atmosphere.

The attachments are very simple yet *perfect* and every detail has been worked out to render them durable in the highest degree, and not at all likely to get out of order. The friction being reduced to the minimum, the heaviest as well as the lightest windows can be raised or lowered with the greatest ease. It presents a neat appearance and can be painted or stained to harmonize with the wood work of the window. It is now in use in many of the principal business blocks in Chicago, where it is rapidly replacing the old style cords and chains. In Pullman, orders have been issued to change over two thousand houses from the old style to the Gardner system. No specially skilled expert is required in its application, it being an easy matter to change the pullies and attach the new ribbon in place of the old cords. For further information see advertisement on another page. Chas. A. Hare, Pier 5 Stuart street, this city, who is the agent for California, can show many letters of recommendation from architects and others who have used them and express their satisfaction.

ON THE USES OF TILE.

The ornamentation of interiors is constantly becoming more complex and luxurious, especially is this the case in the uses of encaustic and enamel tiles, and their employment in dwellings of even the cheaper grades has developed extraordinarily during recent years.

Nowadays a residence is hardly considered complete without its tiled vestibule in the the various shades of inlaid, intaglio or mosaic flooring tile. There are some very pleasing examples of this kind of work to be found in the floors of some of our principal banks, insurance offices and Cafés.

Tiles are also used to good effect in kitchen and bathroom floors where their employment is at once durable, cleanly and pretty.

Tiles in plain and decorative glazes of highly artistic effects in form and color are now used very extensively in the ornamentation of fire places.

We were lately shown in the tile ware rooms of W. W. Montague & Co. some plastic enamel tiles for hearth and grate decorations. They have lately received some samples of head and full length figure work in the more delicate shades of old rose, amber and onyx, with which some pleasing and artistic effects can be obtained in the facing and paneling of wooden mantels.

The mantels of the present day, made of various kinds of polished wood, with their bevel French glass and majolica and enamel tile and bronzed grates are such a pleasing contrast to those formerly used, that it is no wonder that wood and tiles are entirely superseding the use of marble for this purpose, even in our most unpretentious dwellings.

As a matter of progress, the substitution of tile for wood wainscotting of bathrooms and kitchen sinks, wash stands etc., marks an advance of public taste that is truly gratifying.

Messrs. Montague & Co. have lately tiled some bathrooms in this city that are marvels of elegance, and it is not alone in a matter of beauty that this departure in bathroom wainscotting is desirable, but tile is so much more durable and cleanly than wood, that it is a wonder that their use for this purpose has been so long delayed.

We cannot close this article without referring to some of the very handsome grates and grate trimmings in bronze, nickle and antique brass exhibited by this firm.

CITY BUILDING NEWS.

Buchanaan and Washington. Carpenter work; owner, A. G. Hawes; architect, A. P. Brown; contractor, J. B. Gonyeau; cost, $15,160; time, 6 months; signed, Sept. 11; filed, Sept. 24; payments, 75 per cent as work progresses; 25 per cent, 35 days; Plumbing. Contractor, Duffy Bros; cost, $1,580; signed, Sept. 12; filed, Sept. 24; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Bryant near Sixth. Three-story frame; owner, G. Ruckstetter; architect, C. M. Rousseau; contractors, F. E. Kinnsley & H. Hodgkins; surities, A. T. Hyne and M. McGrevy. $4000; cost, $5,505, signed, Sept. 11; filed, Sept. 15; payments, $1,376, framed; $1,376, brown coated; $1,376, accepted; $1,377, 36 days.

Barker near Turk. Frame building; owner, J. Osen; contractors, Johnson & Crawford; cost, $3,739; time, 70 days; signed, Sept. 19; filed, Sept. 19; payments, $1,246, ready for plastering; $1246.50, completed; $1246, 35 days.

Broadway near Fillmore. Carpenter work; owner, R. W. Wilson; architect; P. R. Schmidt; contractor, T. H. Day; cost, $14,100; signed, Sept. 19; filed, Sept. 20; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

California near Buchanan. Carpenter work; owner, C. Ryan; architect, J. J. Clark; contractor, J. J. Wilson & C. Johnson; cost, $3,850; signed, Sept. 12; filed, Sept. 15; payments, $800, framed; $300, brown mortared; $900, inside finished; $1150, 35 days.

Clay near Lyon. Carpenter work; owner, C. K. Mann; contractor, G. M. Saulsbury; cost, $1130; filed, Sept. 12; payments, $500, enclosed; 1630, 35 days.

California and Devisadero. Alterations; owner, F. P. Hooper; architect, E. Depierre; contractor, Y. Y. Dunn; cost, $8745; signed, Sept. 11; filed, Sept. 13; payments, 75 per cent, as work progresses; 25 per cent. 35 days.

De Long near Frederick. Carpenter work; owner, H. J. Foley; architect, Townsend & Wyneken; contractor, R. O. Chandler; cost, $3062; time, 90 days; signed, Sept. 15; filed, Sept. 16; payments, $765.50, framed; $765.50, brown coated; $765.50, 35 days.

Eureka, bet. 17th and 18th. Carpenter work; owner, L. Wyatt; contrator, B Dreyer; cost, $3000; time, 50 days; signed, Sept. 22; filed, Sept. 24; payments, $750, framed; $750, brown mortared; $750, white coated; $750, 35 days.

Elizabeth near Sanchez. Frame; owner, E. and N. Forrest; contractor, G. M. Saulsbury; cost, $1450; signed, Sept. 16; filed, Sept. 18; payments, $362.50, framed; $362.50, enclosed; $362.50, 35 days.

Fair Oak near 26th. Carpenter work; owner, P. Leugstacken; architects, Salfield & Kohlberg; contractor, L. M. Weismann; cost, $3975; signed, Sept. 23; filed, Sept. 24; payments, $1,400, enclosed; $1,000, white coated; $975, finished; $1000, 35 days.

Folsom near 23rd. Two-story frame; owner, T. R. Curtis; architects, Shea & Shea; contractor, J. M. Brant; cost, $4,528; signed, Sept. 23; filed, Sept. 25; payments, $489, rough framed; $849, brown mortared; $849, hard finished; $849, completed; $1,132, 35 days.

772 and 772½ Folsom. Alterations; owner, E. Robinet; architect, E. Depierre; contractor, R. N. Nelson; surety, Y. Silver; $1,000; cost, $1,150; signed, Sept. 10; filed, Sept. 15; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Filbert near Buchanan. One-story frame; owner, D. Cunningham; contractor, J. T. Hayes; cost, $1,800; filed, Sept. 10; payments, $450, framed; $450, roofed; $450, white coated; $450, accepted.

Guerrero near 24th. Carpenter work; owner, H. G. McVicker; architect, W. J. Matthews; contractor, W. Linden; cost, $5,765; time, 90 days; signed, Sept. 6; filed, Sept. 10; payments, $1080, ¼ of work completed and certified by architect; $1080, ¼ of work done; $1 80, ¼ of work done; $1080, 35 days.

Hawthorn near Folsom. Two-story frame; owner, P. Mulligan; architect, J. T. Hogan; contractor, McNeil & Welden; cost, $3,607; time, 75 days; signed, Sept. 23; filed, Sept. 23; payments, $500, framed; $626.70, brown mortared; $563, white coated; $563, accepted; $755, 35 days.

Harrison near Eleventh. Two-story frame; owner, P. Forsythe; contractor, D. Hartnett; cost, $3800; signed, Sept. 23; filed, Sept. 23; payments, $700, framed; $700, brown coated; $700, white coated; $750, completed; $950, 35 days.

Henry near Noe. Two-story frame; owner, E. J. Tunney; architect, Shea & Shea; contractor, J. Dyar; cost, $4000; signed, Sept. 16; filed, Sept. 23; payments, $750, framed; $750, brown mortared; $750, hard finished; $750, completed; $1000, 35 days.

Harrison near 25th. Two-story frame; owner, J. G. Fitzgerald and Wife; architect, C. J. Devlin; contractor, A. J. Bryan; surety, A. McFayden and J. F. Kennedy; cost, $3900; time, 90 days; signed, Sept. 12; filed, Sept. 13; payments, $800, framed; $400, enclosed; $600, first coated; $900, plastered; $800, wood work is ready; $925, completed; $975, 35 days.

Jones near Lombard Two-story; dwelling; owner, C. T. Laurnger; architect, J. E. Kraft; contractor; R. O. Chandler; cost, $5,598; time, 95 days; signed, Sept. 10; filed, Sept. 12; payments, $1,485, framed; $1500, brown mortared; $1500, finished; $1500, 35 days.

Larkin. Alterations; owner, M. Stern; architect, Kenitzer & Kollofrath; contractor, H. Holzenberg; surities, G. T. Shan and J. H. Kennedy. $1000; cost, $4,375; signed, Sept. 1; filed, Sept. 11; 75 per cent. as work progresses; 25per cent, 35 days.

Market near 7th. Concrete, granite and brickwork; owner, M. J. Lemman; architect, C. I. Havens; contractors, Richardson & Gal; cost, $14,834; signed, Sept. 22; filed, Sept. 23; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

Market and Golden Gate Ave. Lespe stone work; owner, J. A. Donohue; architect, A. Page Brown; contractor, O. E. Brady; cost, $8,649; time, 30 days; signed, Aug. 22; filed, Sept. 15; payments, 75 per cent, as work progresses.

Market and Golden Gate Ave. Mill work; owner, J. A. Donohue; architect, A. Page Brown; contractors, Nilbans, Bros. & Co.; cost, $15,205; signed, Sept. 15; filed, Sept. 16; payments, 75 per cent, as work progresses; 25 per cent, 35 days; stairs; cost, $2900; signed, Sept. 13; filed, Sept. 16; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

Minna near 8th. Three-story frame; owner, G. B. Cordano and J. Casaretto; cost, $5,200; time, 100 days; signed, Sept. 20; filed, Sept. 20; payments, $975, roof boards on; $957, white coated; $975, brown coated; $857, completed; $1300, 35 days.

Mason near Clay. Three-story frame; owner, G. Podesta; architects, Huerne & Everett; contractor, A. Banchero; cost, $6,700; signed, Aug. 30; filed, Sept. 10; payments, $2233, roofed; $2233, completed; $2534.35, 35 days.

Missouri near Yolo. One-story frame; owner, H C. F. Peters; contractors, J. F. Early and D. S. Mitchell; cost, $1,100; signed, Sept. 2; filed, Sept. 11; payments, $300, framed; $200, brown coated; $825, completed; $275, 35 days.

N. W. corner Larkin and Sacramento. Two-story frame; owner, G. W. Harris; architect, P. H. Lawler; contractor, Wm. Lane; cost, $7,53?; signed, Sept. 12; filed, Sept. 22; payments, $1,200, framed; $1,200, brown mortared; $1,200, inside finished; $1,200, completed; $2,390, 35 days.

N. E. corner Eddy and Jones. Carpenter work; owner, Blaine Invincibles; architect, W. O. Banks; contractor, G. W. Walker; surety, I. Graham and W. Cluff; cost, $7,000; signed, Sept. 12; filed, Sept. 15; payments, 75 per cent as work progresses; 25 per cent., 35 days.

N. W. corner Larkin and McAllister. Concrete work; owner, J. P. Hale; architect, T. J. Welch; contractors, Ransome & Cushing; cost, $1,000; signed, Sept. 15; filed, Sept. 15; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

N. W. corner Broderick and Jefferson. One-story frame; owner, E. Krahnan; architect, C. M. Rousseau; contractor, T. Maxwell; surety, D. W. Hink and E. T. Inhans, $300; cost, $1,200; signed, Sept. 12; filed, Sept. 16; payments, $300, roofed; $300, brown coated; $300, completed; $300, 35 days.

N. E. corner Montgomery and Sutter. Owner, J. A. Donohue & Co.; architect, Shea & Shea; contractor, D. O. Sullivan; cost, $2,165; signed, Sept. 3; filed, Sept. 16; payments, 75 per cent as work progresses. 25 per cent, 35 days.

N. E. corner Montgomery and Sutter. Plumbing; owner, J. A. Donohue; architect, Shea & Shea; contractor. R. Rice; cost, $2,485; signed, Sept. 3; filed, Sept. 15; payments, 75 per cent as work progresses; 25 per cent, 35 days.

N. E. corner Page and Schrader. Carpenter work; owner, C. D. Salfield; architect, S. Newsom; contractor, R. O. Chandler; cost, $10,050; signed, Sept. 17; filed, Sept. 18; payments, 75 per cent as work progresses; 25 per cent, 35 days.

N. E. corner Page and Lyon. Painting; owner, Rountree Bros.; architect, S. Newsom; contractor, C. M. Walker; cost, $2,000; signed, Sept. 18; filed, Sept. 19; payments, 75 per cent as work progresses; 25 per cent, 35 days.

N. E. corner Diamond and 18th. One-story frame; owner, C. Richards; architect, J. C. Newsom; contractor, Davis & Smith; cost, $2,285; signed, Aug. 18; filed, Sept. 12; payments, $630, framed; $527, brown mortared; $528, completed; $600, 35 days.

Octavia, bet. McAllister and Fulton. Three-story frame; owner, T. J. Clearly, architect, W. H. Armitage; contractor, Johnson & Crawford; sureties, C. C. Rolliffs and G. Gerdau, $4,000, cost, $5,775; signed, Sept. 10; filed, Sept. 13; payments, $1,000, framed; $1,000, brown coated; $1,000, white coated; $1,330, finished; $1,445, 35 days.

Pine near Webster. Three-story frame; owners, F. D. and E. Meyer; contractor, C. Zwierlein; cost, $7,400; signed, Sept. 20; filed, Sept. 23; payments, $1,387, enclosed; $1,387, brown mortared; $1,387, white coated; $1,287, completed; $1,850, 35 days.

Pine, bet. Laguna and Buchanan. Three-story frame; owner, R. Brown; architect, W. H. Armitage; contractor, S. T. Green; cost, $6,923; signed, Sept. 3; filed, Sept. 15; payments, $1,400, framed; $1,400, brown mortared; $1,000, white coated; $1,390, completed; $1,735, 35 days.

Pacific Ave. near Gough. Carpenter work; owner, B. Levy; architect, W. J. Matthews; contractors, Knight & Littlefield; cost, $11,749; signed, Sept. 3; filed, Sept. 15; payments, $1,762 1-5, completed; $1,762 2-5, completed; $1,762 3-5, completed; $1,762 4-5, completed; $1,762, completed; $2,939, 35 days.

Page near Cole. Frame; owner, A. Thain; contractor, J. W. Ward; cost, $3,300; signed, Sept 19; filed, sept. 19; payments, $600, rustic on; $800, brown mortared; $600, white coated; $575, completed; $825, 35 days.

Church and 15th; Double two-story frame; owner, A. Bonick; contractor, G. T. Knopf; cost, $6,550; signed, sept. 19; filed, Sept. 20; payments, $1,600, framed; $1,600, floors laid; $1,600, completed; $1,750, 35 days.

Perry near Third. Three-story frame; owners, W. J. Ramage and wife; architect, A. C. Lutgens; contractors, Tigeler and Muller; cost, $12,600; signed, Sept. 8; filed, Sept. 12; payments, $2,000, framed; $1,500, enclosed; $1,500, first coated; $2,000, second coated; $2,450, completed; $3,150, 35 days.

Sullivan near Stanyan. One-story dwelling house; owner, C. M. Bandion; contractor, G. Houston; cost, $2824; time, 95 days; signed, Sept. 10; filed, Sept. 15; payments, $679, shingled; $579, brown coated; $579, white coated; $597.35, 35 days.

S. E. cor. Mission and 15th Carpenter work; owner, F. Meyer; architect, C. I. Havens; contractor, T. Maxwell; cost, $1795; signed, Sept. 18; filed, Sept. 25; payments, $350, brown mortared; $745, finished; $500, 35 days.

S. E. cor. Pine and Jones. Three-story brick; owner, I. C. Stump; architect, J. C. Newsom; contractor, R. M. Murray; cost, $45,250; signed, Sept. 13; filed, Sept. 15; payments, $6000, first floor joists in place; $4000, second floor joists in place; $8000, third floor joists in place; $3000, fourth floor joists in place; $4000, roofed; $4000, plumbing in; $3000, brown mortared; $4937.50, completed.

Stockton and Montgomery Ave. Carpenter work; owner, L. Friedman; architect, W. O. Banks; contractor, A. Miller; cost, $2800, time, 35 days; signed, Sept. 16; filed, Sept. 17; payments, $700, roofed; $700, white coated; $700, completed, $700, 35 days.

Scott near Pine. Plumbing; owner, H. H. Morse; architect, J. H. Littlefield; contractors, Fritz & Keau; cost, $648; signed, Aug. 18; filed, Sept. 17; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

Stockton and Montgomery Ave. Concrete and patent work; owner, J. Friedman; architect, W. O. Banks; contractor, Ransome & Cushing; cost, $1,575; time, 60 days; signed, Sept. 4; filed, Sept. 17; payments, $1,175.20, completed; $100, 35 days.

Stockton and Montgomery Ave. Cast and wrought iron work; owner, J. Friedman; architect, W. O. Banks; contractors, O'Connel & Lewis; cost, $2,000; time 40 days; signed, Sept. 4; filed, Sept. 17; payments, $1,500, completed; $500, 35 days.

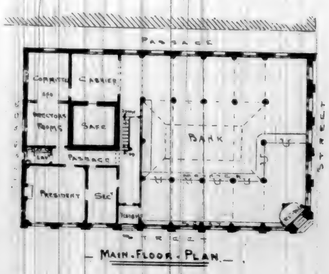
San Jose Road near Prospect Place. Carpenter work; owner, Annie Kiernan; architect, J. J. Clark; contractor, J. Kenealy; cost, $2,150; signed, Sept. 17; filed, Sept. 18; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

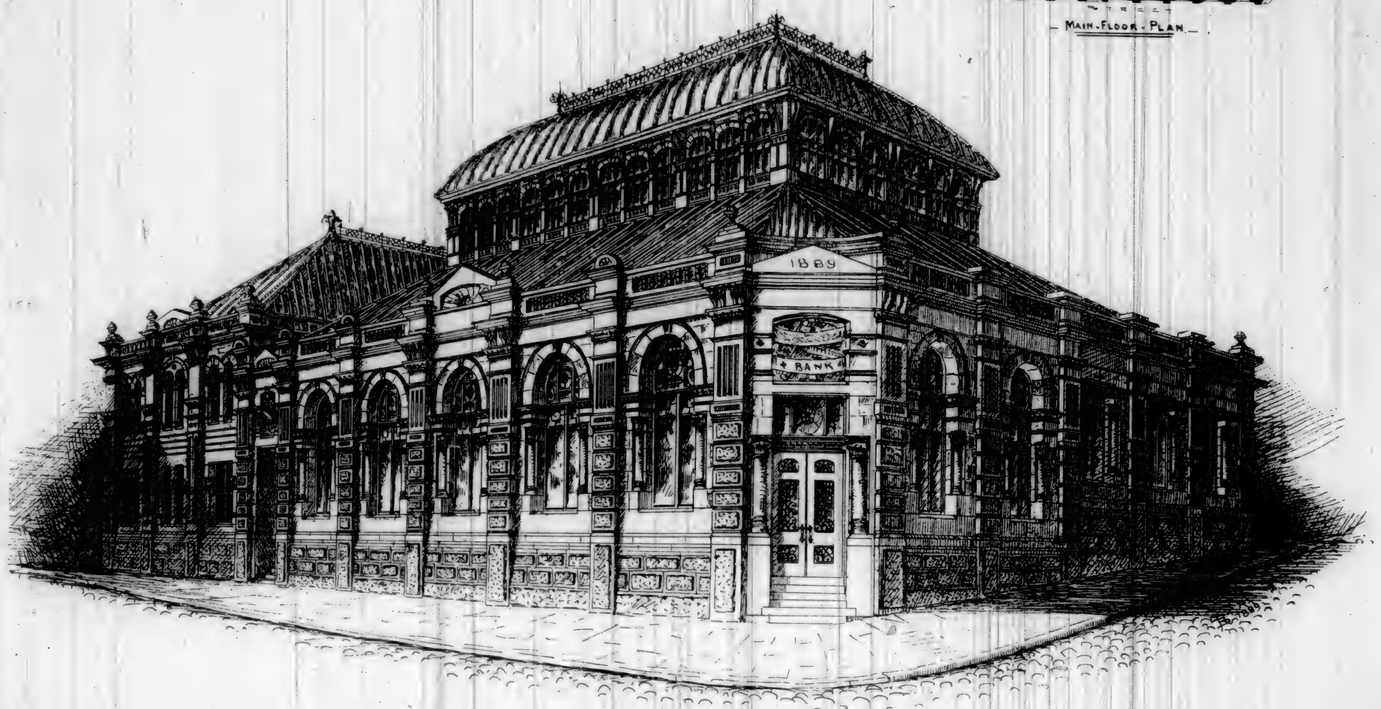
Sutter and Taylor. Brick work; owner, W. Deakin; architects, C. M. and J. M. Wilson; contractor, D. S. Pierce; cost, $2,140; signed, Sept. 20; filed, Sept. 20; payments, $700, foundation walls in; $803, chimneys; $112, accepted; $529, 35 days. Carpenter work; contractor, J. G. Adams; cost, $13,200; payments, $2,500, framed; $2,500, brown coated; $2,500, inside finish on; $346.75, accepted; $2,322.50, 35 days. Plumbing; contractor, R. A. Vance; cost, $1,765; payments, $700, rough work in; $613.75, completed; $171.25, 35 days. Lathing; contractor, C. C. Morehouse; cost, $1,475; payments, $900, brown coated; $500, white coated; $121.25, accepted; $973.75, 35 days.

S. W. corner Scott and Lloyd. Alterations; owner, G. D. O. Neil; contractor, John Foster; cost, $2,175; time, 90 days; filed, Sept. 11; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

S. W. corner Jones and Pine. Painting on two three story frame buildings; owner, P. Johnson; architect, C. I. Havens; contractor, J. Thomson; cost, $1,147; signed, Aug. 19; filed, Sept 11; payments, $400, outside primes and inside second coated; $447, completed; $300, 35 days.

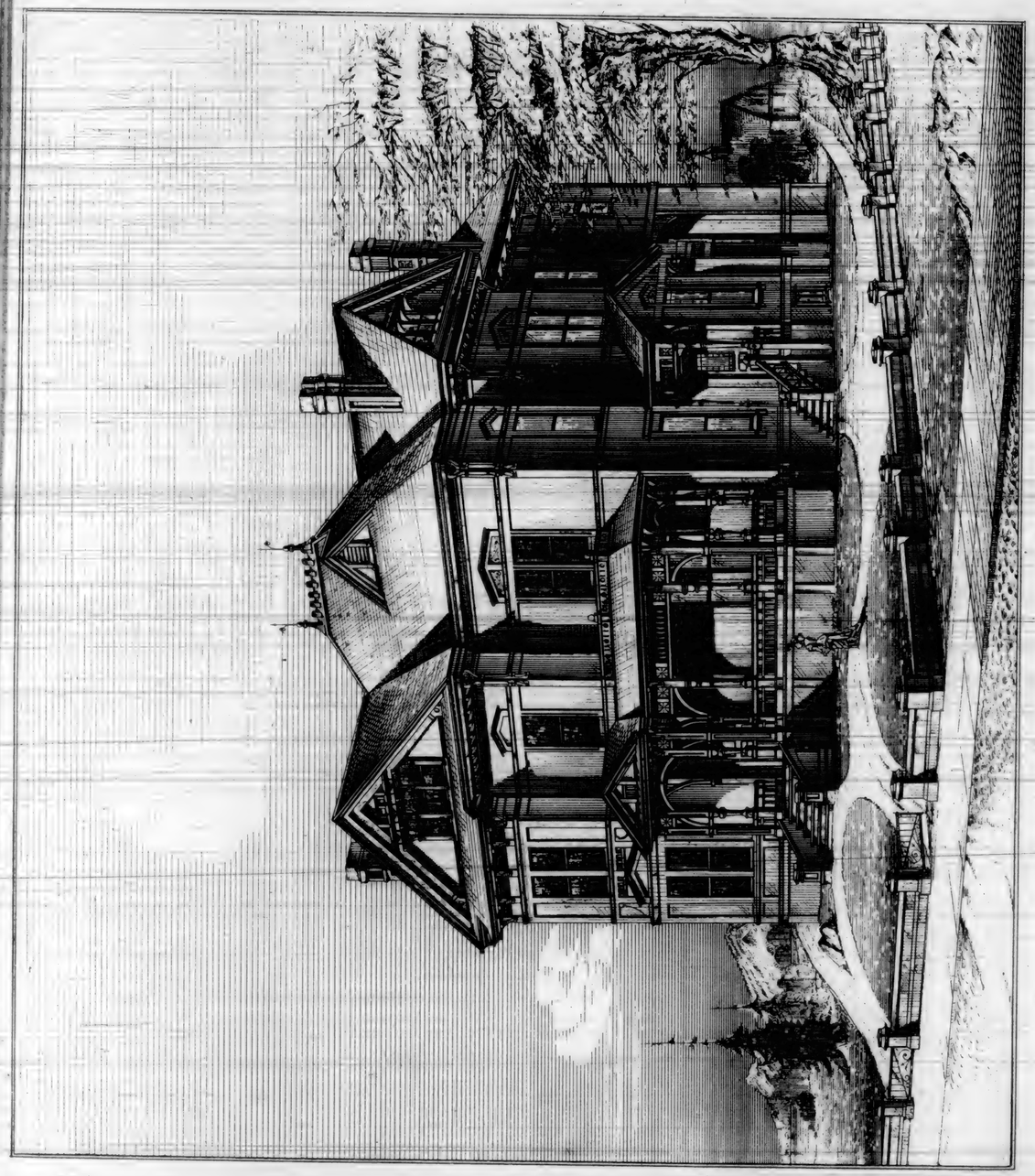
S. W. corner Tennessee and Kentucky. Carpenter work; owner, J. O. Reis; contractor, R. O. Davis; cost, $5,950; signed, Sept. 13; filed, Sept. 13; payments, $1190, studding up; $1190, brown mortared; $1190, completed; $1190, 35 days.



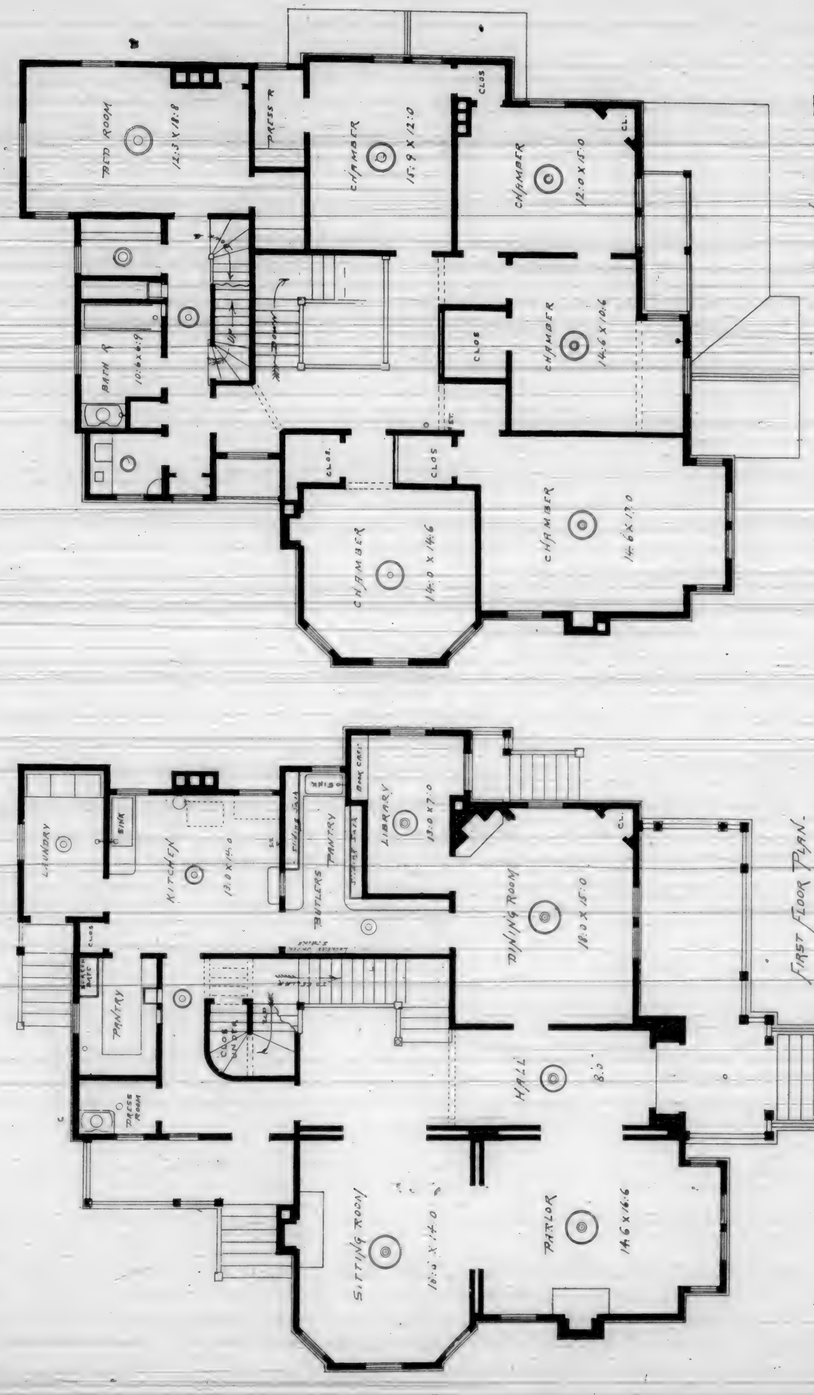


DESIGN FOR A BANK BUILDING.

F.R. BARKER, ARCHITECT
OAKLAND, CAL.



PERSPECTIVE VIEW OF RESIDENCE. SETH BABSON, ARCHITECT.



FLOOR PLANS OF RESIDENCE. SETH BABSON, ARCHITECT.

ENTRANCE TO LONDON & SAN FRANCISCO BANK.

DAVID FARQUHARSON, ARCHITECT.

Treat Ave. near 24th. Two-story frame; owner, F. E. Leidel; architect, John and Balczynski; contractor, J. Wells; cost, $3,840; signed, Sept. 19; filed, Sept. 19; payments, $990, framed; $900, rough mortared; $1,080, completed; $960, 35 days.

Turk bet. Van Ness Ave. and Franklin. Alterations; owner, L. Shoenberg; architect, John & Balczynski; contractor, S. Wray; cost, $1830; signed, Sept. 11; filed, Sept. 12; payments, $600, partitions in; $870, ready for painting; $460, 35 days.

Van Ness Ave. Iron and tin work; owner, J. Nightingale; architect, A. J. Barnett; contractor, W. Cronan; cost, $2349; time, 6 weeks; signed, Sept. 12; filed, Sept. 20; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Webster street, as specified in contract. Brick work; owner, E. Dougherty; architect, Shea & Shea; contractor, M. Fennell & Son; cost, $1,090; signed, Sept. 11; filed, Sept. 15; payments, $390, foundations completed; $300, chimneys completed; $250, 35 days.

Webster street. Three two-story buildings; contractor, A. L. Campbell; cost, $7,786; payments, $1,459, second story joists set; $1,495, rustic on; $1,459, brown mortared; $1,459, completed; $1,350, 35 days. Plumbing; contractor, Fritz & Kean; cost, $1,497; payments, $480, rough plumbing in; $417, completed; $390, 35 days. Lathing and plastering; contractor, T. Bodkin; cost, $1,117; payments, $421, brown mortared; $421, hard finished; $275, 35 days.

Yerba Buena near Sacramento. Two, two-story frames; owner, W. Nielsen; architect, John & Balczynski; contractor, Tegeler & Muller; cost, $6,485; signed, Sept. 15; filed, Sept. 17; payments, $1,200, framed; $1,200 enclosed; $1200, white coated; $1,260, accepted; $1,625, 35 days.

Oakland.

23rd Ave. near 12th street. Two-story frame; owner, Oakland Building and Loan Association; architect, J. Marquis; contractor, J. A. Eastman; cost, $1,997; signed, Sept. 15; filed, Sept. 16; payments, $499.25, floors laid; $499.25, plastered; $499.25, completed; $499.25, 35 days.

Owner, H. A. Harlow; architect, R. J. Roberts; contractor, H. S. Kribbs; cost, $1445; time, 50 days; signed, Sept. 3; filed, Sept. 16; payments, $361.25, rustic on; $361.25, brown coated; $361.25, completed; 3361.25, 35 days.

Henry street, bwt. 5th and 3rd. Cottage; owner, Mary Coleman; contractor, C. Weldon; cost, $999; signed, Sept. 17; filed, Sept. 18; payments, $330, enclosed; $330, plastered; balance 35 days.

Cottage; owner, L. M. Hinne; contractor, W. R. Batten; cost, $2500; signed, Sept. 4; filed, Sept. 15; payments, $600, framed; $600, brown mortared; $600, completed; $700, 35 days.

San Leandro.

Cottage. Owner, W. B. Burling; architects, Moosier & Cuthbertson; contractor, M. H. Hackett; cost, $2000.

JOHN H. WISE, President. H. T. SCOTT, Vice-President. F. L. BLAKE, General Manager. C. S. PREBLE, Secretary

UNION PRESSED BRICK & TERRA COTTA CO.

Works: Vallejo, California. General Office: Room 31, Flood Building, San Francisco, Cal.

o—— MANUFACTURE THE FINEST QUALITY OF ——o

Plain, - Moulded - and - Ornamental - Pressed - Brick

ARCHITECTURAL TERRA COTTA;

FIRE PROOFING, PAVING TILE,

Also Red, Brown and Black Mortar.

— SEND FOR CATALOGUE —

BUSINESS MOSAICS.

In reflecting upon the display of novelty in mechanism and art that challenges the attention of visitors at the Mechanics Fair, one thought is kept uppermost, that the tendency of the age is pressing hard on the inventive faculties of man. With the impetus given to all branches of industry through the influence of collosal fortunes seeking investments, the inventive faculties are kept at a high working pressure: hence the wants of man, in all his various conditions of life are analyzed in the most critical manner, the result of which is, that every want that can be supplied by new inventions is provided for and the condition of the race is accordingly benefitted to that extent.

In passing the San Francisco Gas Light Co's., exhibit our reflections were brought to a practical test. Here we found contrivances for robbing the *luminous fluid* of its heat. That gas could be used for heating purposes with such economy as to compete with the use of coal for the same purpose, is known to but comparatively few persons.

This company gave actual proofs of the utility of coal gas heat for cooking purposes. Through ingenuously contrived burners so arranged to obtain the greatest amount of heat from a given amount of gas, a complete dinner consisting of soup, fish, meats and vegetables, for twelve persons was cooked and served to the guest within sixty minutes from the time the gas was lit in the stove, and less than forty feet of gas being used in the accomplishment of the feat at a cost of less than ten cents. As the production of heat was from the combustion of gas, without contaminating the air with disagreeable odors, without coal or kindling to litter the kitchen apartment. It will be readily seen that this new method of providing the family meals, has superior advantages over the old method. The San Francisco Gas Light Co. are furnishing stoves of various sizes to meet the family requirements, making all the connections free of charge and furnish either separate meters or connections with the house meter. Office and show rooms, second floor, First and Natoma streets.

The hardware firm of Dunham, Carrigan & Hayden Co., representing the HOPKINS & DICKINSON MANUFACTURING CO., of Brooklyn, N. Y., are leaders in artistic house hardware, grilles, ornamental hinge plates, and fancy scroll escutcheon. THE NEW COLUMBIA CYLINDER LOCK, made by the Hopkins & Dickinson Manufacturing Co., is one of the latest triumphs of mechanical skill. The manufacturers claim as points of superiority in their lock over all others:

First.—That the manner of its application to Lock Case is the simplest and most effective in use; from the fact that the Lock Case is provided with a round hole tapering from the inside, and the Cylinder Shell having a corresponding undercut shoulder. By inserting Cylinder through hole in Case, and turning set-screw in face of Lock-front, the Cylinder and Case are interlocked, and thus complete a most effective and durable fastening.

Second.—The key being endbitted, the Tumbler Cells thereof are brought in direct and instant contact with the Tumblers themselves, thus insuring an easy insertion of key, and at the same time preventing unnecessary friction and wear.

Third.—The Cylinder is provided at its rear end with a heavy dog for throwing bolt in Lock Case, which is integral with the Cylinder itself, and therefore can never loosen or get out of order.

Fourth.—Any desired number of Locks can be made to fit one master-key, and as only one Cylinder is required to effect this result, there is no possibility of inserting key in wrong key slot and causing the annoyance incident thereto.

Fifth.—Duplicate Keys cannot be made from numbers, as Cylinders are required to insure a correct fitting, which is a master piece of art and convenience and they cordially invite all who are interested in building to visit their Art Rooms at 17 and 19 Beale street, where they will be sure to get ideas of incalculable value in finishing and decorating their houses.

At the Fair of the Mechanics Institute, some very large amalgam plates for saving the fine gold in mining operations are on exhibition. These large plates were prepared by E. G. Denniston at his plating works 653-655 Mission street, this city, where all kinds of plating is done in the best manner. See advertisement on another page.

Paper covering for walls and floors in the construction of frame buildings is becoming more popular as the desire for elegant interiors increase. By the use of this material, dampness and sudden atmospheric changes are excluded from the interiors, thereby preserving more completely fine furniture, costly pictures and delicate musical instruments from the deteriorating influences of the sudden changes of climate. Heretofore it has been difficult to obtain a good building paper, but we are assured that now this material of an excellent quality can be obtained of the Pacific Roll Paper Company, 30 and 32 First street, San Francisco. Please read their advertisement under the head of *Fay's Patented Waterproof Building Manilla* on Page VI.

Water close's and other Sanitary appliances form such an integral port of the modern dwelling that every person desires to have the best that can be made. Mr. Joseph Budde, who is so well known, for so many years, as the foremost manufacturer in that line, having recently moved to more spacious factory premises on the corner of First and Mission streets, this city, is now turning out a superior quality of work of real artistic merit. For the Palace Hotel he is fitting up his "Supreme wash out closets", fitted with polished antique oak tanks with nickle plated brackets and plated flushing pipes, the seats being of fancy ornamental wood, polished, and fitted with silver dipped trimmings. His new Superb closet, decorated and gilded, is being fitted up, for one of our finest residences, of highly polished toa wood. The Alcazar, Triumph, Ocean Spray, being the most popular for general use. The tanks made at this factory are lined with heavy copper prepared with mirror finish and hard rolled, heavily tinned and polished, and soldered by an improved process whereby the oints are free from the corroding influence of acid, consequently more durable. The valves are of superior quality, of his own make, and work noiselessly, and are tested twice, once before being put on, and again after the closet is finished. The fittings are all of brass dipped and cleaned of all scale or other defects. The metal finishing department is fitted up with the most approved cutting, grinding and polishing machinery. The metal spinning is all done in his own shop. The Pioneer closet of '49 is quite a favorite, and represents the pioneers crossing the plains. He is now preparing a new closet which he designates as the Native California, having all the sterling qualities of the Pioneer with improvements to date. The waste hoppers made by Mr. Budde are of the most approved pattern, easily adjusted and perfectly gas tight. The machiney for these works are specially adapted to the requirements of the trade, and the leading workmen having been such a long time with Mr. Budde insures a first class article in every respect. All the iron work is covered with a chemical preparation which resists rust and adds to the durability. All closets, valves and fittings are tested twice before being shipped from the factory.

Among all the ornamental wrought iron work throughout the city, none are more carefully worked and finished than those manufactured by A. J. Dunbar & Co., 220 Fremont street, this city. Some work recently put up by this firm shows the most intricate interlacing of scroll work, the curves and angles being turned true and regular. This firm also furnishes stirrups, anchors, straps, bond ties, and all other wrought iron work for buildings or other purposes.

N. & G. Taylor Co. send us a specimen of their new business card, which is a novelty in its way. One side represents a miniature sheet of tin with its leaden surface and the *trade mark stamp* in the corner, at the bottom end of the card beneath the sheet of tin is this sentence: *Every sheet of the Genuine OLD STYLE has the above stamp in the corner of each sheet. None is the genuine without it.* N. & G. Taylor Co., Philadelphia. Chicago address, 78-80 Lake Street.

The Blount Door Check and Spring from Weatherly, Jardine & C., 132 Market street, holds its own against all others. To use one is to like it.

The Norris Patent Sash Pulley retains its place at the lead for all qualities that go to make a first class article.

Hill's Patent Inside Sliding Window Blinds, manufactured by E. B. Hindes & Co., 411 Mission street, this city, has become one of the features of the modern dwelling, or in fact for all windows for buildings where any pretense whatever is made towards convenience or style in accordance with the present mode of life. Send for a catalogue and price list.

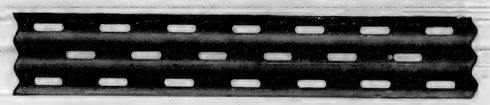
The Cincinnati Corrugating Company, Piqua, Ohio; Corrugated Metallic Lath; Fire Proof; Vermin Proof; Pays for Itself in Three Years, by Saving in Insurance. Nothing spoils the appearance of a new building as quickly as cracked walls and ceilings.

Mortar will not crack on our lath.

Many ingenious efforts have been put forth in the attempt to supply the building trade with an efficient form of Metallic Lathing, but all have resulted in greater or less disappointment, in comparison with the popular *Oval Perforated Lath* we have been manufacturing and selling extensively for several years.

The products of enthusiastic inventors in this direction have been too expensive at the start, not sufficiently practical, and finally their introduction and use, whether by Architect, Builder or Owner, involves too much of a doubtful experiment to bring them into general favor.

Our corrugated Metallic Lathing is far superior to any other form, from the fact that it can be adapted to any kind or shape of surface. It possesses the rigidity which wire lath lacks, requires no stretching, and has ample openings for plaster, as illustrated in this cut.



It should be specially noted that our lath requires no furring, even over unusually long spans; that it is more economical of plaster and can be used over wide spaces than any other style on the market, being effective over 24 inch openings without danger of sagging, and cracking the mortar.

Our lath are being used very extensively in various Government and other large public and private buildings.

We make this Lath usually three corrugations wide, 16, 26, 32, 48, 64, 72, 80, 84 and 96 inches long, but can make up specially, sheets to ten feet long, and four to twelve inches wide.

It may not be generally known but it is never the less true, that the mortar adheres firmly to the *surface* of the Lath. This, with aid of the perforations, makes a perfectly solid key.

Our lath is the only style that can be applied more rapidily than wooden lath, being in large sheets.

No. 27 iron is generally used with corrugations 1½ inches wide, being perforated as shown in the cut.

We ship and quote prices per square yard on No. 27 gauge lath, unpainted and in bundles, unless otherwise requested.

For convenience of customers we put a proportion of short lath with each shipment.

For prices and other particulars, address,

THE CINCINNATI CORRUGATING CO., PIQUA, O.

The Pacific Laundry Tray, manufactured by John Dixon, 1219 Market street, this city, is a most perfect article for use in the laundry. These trays show in a surprising degree to what perfection cement work can be brought by the proper combination. By a method patented by Mr. Dixon the sides, etc, are the same thickness as those made of wood, yet they are stronger and more easily cleaned. Those on exhibition at the Fair should be examined by every architect or other persons interested in such work.

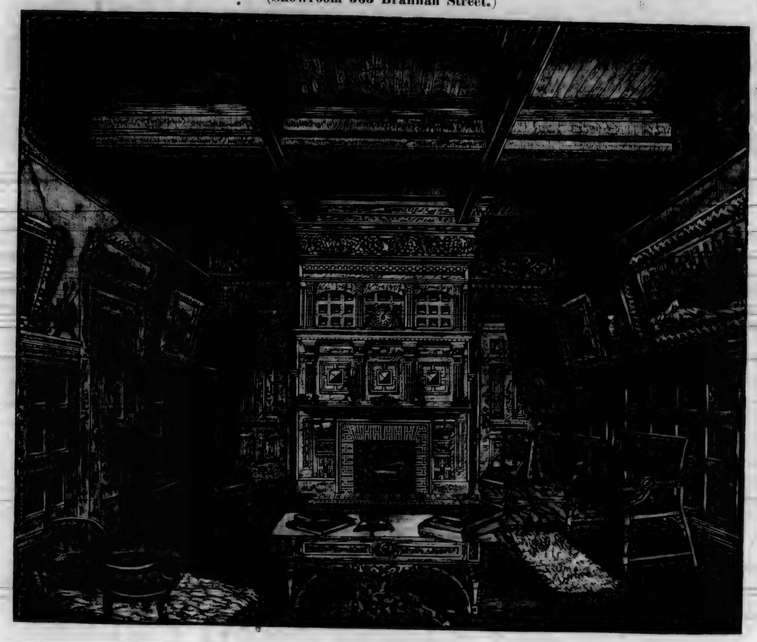
A. B. Cheney & Co. No. 308 Market street, furnish a superior regulator for head lights over doors or swinging sash which will swing the sash outward or inward as desired, made rights and lefts and easily locked in any position.

We desire to call the attention of our patrons to *EDFEWER'S Patent Portland Cement.* This cement comes before the public with recommendations from the highest authority in Germany,—from government officials, whose business it is to examine and pass upon all cements used in government works. Being among the oldest works of the kind in Germany is a sufficient guaranty that its manufactures has been sustained by honest and faithful manipulation of the best of materials, and numerous testimonials to this effect together with tables showing the strength of the cement can be seen at the office of Wm. Wolff & Co., 327 Market st., San Francisco, Cal. This cement no doubt will become one of the most popular brands in this market. (See Advertisement Page XCIII.

THE CALIFORNIA VENEER WORKS.

(Showroom 563 Brannan Street.)

R. P. HURLBUT, Manager.



REDWOOD VENEERS.

	Per foot.
No. 1 Burl 1-16 in. thick 4 feet or less in each piece	8 cents
" " Root " " " "	7 "
" " Curly " " " "	6 "
" " Blister [Piano veneers] 5 ft. 4 in. long	8 "
" " Curly ⅛ in. thick [Door veneers]	10 "
" " Burl per ft. board measure irregular sizes	net 25 "
" " Root " " " "	20 "
" " Curly Bolts " " " "	10 "
" " Curly Redwood lumber 1 in. to 2 in. thick	10 "

563 Brannan Street, San Francisco, Cal.

MAHOGANY,
PRIMAVERA,
and SPANISH CEDAR
VENEERS,
LUMBER and LOGS.
"Send for Sample."

THE GARDNER SASH BALANCE

(PATENTED)

Absolutely the best and most economical Sash Balance in the world.

——THIS IS NOT A SPRING BALANCE.——

It consists of a steel ribbon expressly manufactured for the purpose. It is attached to the sash and weights the same as cord or chain as shown in the cut. It presents a neat appearance and can be painted same color as the wood-work of the window. It cannot get out of order or wear out, and being a perfec balance the heaviest windows can be raised or lowered with the greatest ease. We have it in use in several freight elevator doors.

OFFICE OF
W. L. B. JENNEY, Architect and Landscape Engineer.
Lakeside Building, S. W. cor. Adams & Clark Sts.

W. BYRCE MUNDIE, Architect in charge of office
C. L. MARSH, Business Manager.
Telephone 969.

THE GARDNER SASH BALANCE CO.
311 First National Bank Building.

Chicago, Ill., August 19, 1890.

MAJOR T. H. CAPRON:—

After a careful study of the qualities of your Sash Pulley and Steel Ribbon, and comparing the same with other methods of hanging sash, preference was given to your Pulley and Ribbon for the Sash of the Leiter Building, State, Van Buren and Congress streets. This building is over 460 feet long, eight stories high, and being designed for a retail store or stores, the windows are exceedingly large, mostly from 6 to 8 feet wide, and those of the second story, some 12 feet high. The sashes for such openings require the very best cord and pulleys. Good pulleys can be obtained by paying for them, but I was unable to find as good a pulley as yours at the price you charged us. The question of cord, chain or ribbon is a serious one where windows are as heavy as those at the Leiter Building, and it was only after the most thorough examination, with the assistance of an expert to visit the places where your ribbon was in use, that the question was decided, and the contract was awarded to you. Very respectfully,

(signed) W. L. B. JENNEY, Architect.

IN USE IN THE FOLLOWING BUILDINGS IN CHICAGO.

FIRST NATIONAL BANK.	*J. V. FARWELL'S BUILDINGS.*	*COMMERCIAL NATIONAL BANK.*
NEW DEPOT WISCONSIN CENTRAL R. R.	*ADAMS EXPRESS BUILDING.*	*CAXTON BUILDING.*
AMERICAN EXPRESS BUILDING.	*PONTIAC BUILDING.*	*MONTAUK BLOCK.*
ILL. STEEL CO'S OFFICE, South Chicago.	*OFFICES OF C. B. & Q. R. R.*	*ERIE FLATS.*

Also a large number of others that are in the course of erection.

GARDNER SASH BALANCE CO.

CHAS. A. HARE, Agent for California,

Pier 5, Steuart Street, - - - San Francisco, Cal.

Subscribe for the California Architect and Building News,
$2.00 per year.

GOLD, SILVER AND NICKEL PLATING.

Every Description of Metal Goods Plated.

We manufacture Counter and Window Rails, and Brackets, Window Bars, Door Numbers, and Plates, Etc., Etc.

SAN FRANCISCO PLATING WORKS,

653-655 Mission Street, - - - - San Francisco, Cal.

E. G. DENNISTON, Proprietor.

A. J. DUNBAR & CO.,
Ornamental - Iron - Work,

GENERAL HOUSE-SMITH,

220 Fremont St, - San Francisco.

PACIFIC PLUG CLOSET, WITH TRAP.

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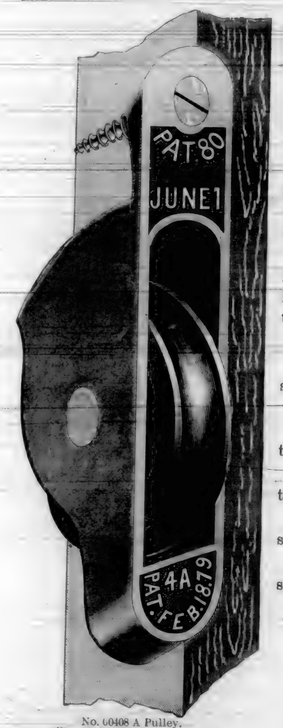

No. 6048 A Pulley.
Page 12 in 1890 Supplement.
The above cut shows the Norris Pulley as it appears in the frame. This Pulley is made so that the Rope cannot possibly leave the wheel.

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The California Architect and Building News.

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The California Architect and Building News.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

ON and after January 1st, 1891, the subscription price of this journal will be $3.00 per annum, and single numbers 30 cents each.

SUBSCRIBERS will please notify us *promptly* of any failure to receive the paper, and also of any change in their address.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects was held at their rooms, 408 California Street, on the 14 inst., the President, Seth Babson, in the chair. The Committee on Library made some suggestions, which were laid over for further consideration.

B. J. Clinch was elected an active member and G. Fauss as a student member.

THE A. I. A. Sketch Club, the membership of which is confined to students in the offices of architects who are members of the Chapter, A. I. A., are now busy arranging for their annual exhibit of the drawings and sketches of the members, which will be held in the rooms of the Chapter, 408 California Street, December 14th, 15th and 16th. All persons who are favorably disposed toward the advancement of our young men in architectural knowledge, are cordially invited by the Club.

THE regular meeting of the Technical Society of the Pacific Coast was held on the 7th inst. at their rooms, 408 California street, President Richards in the chair.

The Secretary of the Academy of Sciences, Prof. F. Gutzkow, explained a new process for the manufacture of chloric magnesia cement by either the single or double burning process. The Professor stated that the raw materials were abundantly distributed throughout this coast. Many specimens were shown of the cement in all its forms, from the natural stone from near this city to the most finished and hardened cement, so white and fine grained as to resemble delicate china ware. This cement is destined to form a modification in our present methods of cement and concrete work.

Mr. H. Vischer explained with the aid of drawings, the intricate mechanism and working of the Thomas Arithmometre, or calculating machine. Mr. Thomas Price of this city is the owner of the machine which was exhibited and operated by H. I. Owens, who worked out in a few seconds' time a long list of intricate problems in multiplication, addition, division, subtraction, decimals, etc., by the turning of a crank.

THE regular meeting of the Electrical Society was held in their rooms on the 3rd inst., Prof. Keith in the chair. The Professor demonstrated on the blackboard the various methods of arc lighting, and showing the advantages of certain positions for the lights where special forms of carbons are used. The change in colors of the lights, both arc and incandescent, when the electric currents are increased or diminished, was explained, also suggesting some valuable hints as regards the lights best adapted for bringing out the full decorative and architectural effects by artificial lighting.

THE Mechanics' Fair of 1890, recently closed, labored under several disadvantages over former years, such as the celebration of Admission Day which just preceded it, and the excitement of election time, which accompanied it. Nevertheless the exhibit was but little, if any, behind those of former years.

In reference to the display of building materials and devices, we have a few words to say, and think the present a good time to say them; and would make these suggestions or propositions for the consideration of the managers of the next exhibition.

In the first place we think it would be a good idea to set apart a separate space to be devoted exclusively to the various articles and materials both crude and manufactured and the different devices used or employed in the construction or adornment of buildings. Thus a person interested in that subject matter, could pursue his investigations without the fatigue and loss of time necessary to hunt up widely separated displays, as was the case this year. We think this would tend to draw out more extensive and more varied exhibits, and attract proportionally more attention from visitors.

Again, while the general opinion is for premiums, yet we think that it might be possible to devise a method whereby the various excellencies, capabilities or qualities of a machine or article should be submitted to a competent committee who should report on the actual facts in relation to the merits of the articles in consideration and on the practical questions of their utility and desirability, thus giving valuable and reliable information to the public, guiding them to what is good, by giving reasons why the introduction of an article could be recommended.

THE Second Annual Convention of the American Institute of Architects was held in Washington, Oct. 22d, 23rd and 24th, 1890. Owing to illness President Hunt was not able to be present, but the address he had prepared was read, and contained much interesting matter. He referred to the methods now employed in designing our national buildings, and made some excellent suggestions concerning the methods that should be employed.

The treasurer reported:

Cash receipts for the year	$4,633
Cash expenditures	3,028
Balance on hand	$1,605

There are twenty-seven Chapters throughout the country with a total membership of over one thousand.

An amendment to the Constitution was adopted, providing that in future no one shall be admitted to fellowship in the American Institute of Architects, unless he be already a member of a Chapter of the Institute, and whose admission is recommended by the officers of his Chapter.

The following officers were elected: President, R. M. Hunt; First Vice-President, W. W. Carlin; Second Vice-President, J. W. McLaughlin; Secretary, John W. Root; Treasurer, S. A. Treat.

The next Convention will be neld in Boston.

WE commence in the present issue the publication of a critical review of The Prang course in Form-Study and Drawing, by Dr. Arnold Dodel, Professor of Botany in the University of Zurich, Switzerland. Mr. Prang's name is a household word among American families, having made himself famous among the children through his beautiful picture cards for holiday gifts. And as many of his friends would like to know what the great teachers in the old world can say about him and his system of teaching, we publish a translation of the above-named review by permission, which we believe will be read with great interest by all those interested in having drawing taught in all the public schools of our country.

INSTRUCTION IN DRAWING.

In Primary and Intermediate Schools in Europe and America. A Critical Review of the Prang Course in Form-study and Drawing.

As in the course of this paper I touch upon an important question of school-teaching—one apparently lying outside my own special field, and it might be objected that I am not competent to deal with it—it seems to me proper to justify myself to the readers of this periodical, and show that I am able to express an opinion upon the past and present methods of instruction in drawing, such as it is not uncalled for at present. I had the misfortune—or the fortune—to pass through schools in my boyhood, the teachers of which not only had no talent of drawing, but also had no idea how to teach it; and who had all arrived at the same conclusion apparently, that it was of little consequence whether it were cultivated or neglected. At my desire, I was given various "studies" and lithographs of all sorts of possible and impossible things, and as soon as I had run through the studies, illustrated calendars, colored landscapes, portraits in magazines, and like, had *their turn*. In the schools for the education of young teachers, the artistic impulses of the pupil were left to be developed by themselves, the teachers here again not being able to draw.

At last I became a teacher, and devoted myself and my pupils to the favorite pursuit of drawing, as far as I understand it. The study of natural science in High School led me to draw somewhat from life. Readiness in mechanical drawing became of use to me, but the power of drawing all real objects was yet to be acquired. Fate led me from the High School to become an instructor in Intermediate Schools, and finally to the chair of botany in the University, where my twenty years of botanical teaching represents as many years of continuous drawing. The favorable recognition which my scientific works have received on account of their so-called artistic illustrations may be considered my justification for speaking upon the subject of drawing even in a council of teachers.

I would not have repeated this story of my development if it were not instructive. We are reminded that not three decades ago the value of drawing was quite underrated even in the most advanced schools of Switzerland. In State examinations, it would happen that a candidate for a teacher's place would be dropped after taking a high rank in drawing, because upon the subject of "religion" he did not pass so well. On the other hand, no one was ever passed by because his drawing was called "bad" when examination in "religion" was marked as "good," the latter being the essential thing, while drawing was of minor consequence.

But the vitally important part to be touched upon, with all who have at heart the interests of school and State, is the fact that all about us—not only in Switzerland, but also in the German Empire and in Austria the same conditions prevail. Drawing is still in many places neglected if not despised. How much talent is thus buried, how many natural powers thus crushed through the school-system itself; how much valuable material lost to the State and society by the nipping frosts of a narrow predogogy! The course of development I have recalled above suggests the importance of drawing as a means of education and preparation for practical life, as well as a source of happiness and as a light to irradiate the hard road of daily life. And here I will state frankly that I believe I should not be today a University professor of botany but for the use I was allowed to make of my power of drawing natural objects artistically, while teaching in public schools and in the laboratory. To-day a thorough teacher, who is able to inspire his pupils with the ambition to do as well as to know, throughout all the departments of natural science, must not be wanting in the power of illustrative drawing. The most perfect oral description of anything seems insufficient beside the ability to demonstrate the same thing, either by way of illustration or experiment. But not only must teachers be able to illustrate pictorially to fulfill their duty, but all men working with material things require this accomplishment. I cannot imagine any such person who does not find himself, in the course of a single year, repeatedly in a position where illustrative drawings of his own becomes almost a necessity. Here we see a reason, on the ground of utility alone, why drawing should be raised from neglect as an incident of education, to the rank of an essential requirement. Another point should be considered apart from utility, which is, its importance as a link in any complete educational system. Whoever learns to draw, learns to observe, to recognize, to see where others preceive nothing, learn nothing—are blind. Such an one receives a mental training, a breadth and acuteness which is an equipment toward a finished organism. I do not hestitate to say, of two men equally cultivated and intellectually gifted, one being able to draw what he sees, and the other not, that they would stand upon an entirely different footing if appearing to give each evidence in court. Both may have been in a railroad accident, escaping injury when the express train ran off the track. Both may have seen the same scene of desolation. One with ready hand makes a sketch on the spot, noting by word and pencil what he sees; while the other can not do so. After a time, both leave the scene of the accident, unequally impressed, therefore unequally reliable in their statements. He who draws makes his with almost absolute certainity, earns the eulogium of the court, and perhaps the gratitude of a man unjustly accused. The other is uncertain in his evidence, because he has seen less accurately and seen *less*. In considering the testimony of both witnesses, the judge will give greater weight to the first, for reasons easily to be understood, and may even rebuke the latter for self-contradiction. Yes, and life itself, the tribunal of success in the struggle for existence, will take on the same attitude as regards these two, one of whom really has one important faculty more than the other. This appears to be only the ability to express some experience pictorially; yet in truth the organs are more acute, more developed, the whole man is superior in skill and executive ability.

Latterly great efforts have been made by leading teachers in all countries favorable to education to elevate intructions in drawing to its right position, both in common and in industrial schools. The increase of commerce and industry, the keen competition in all branches of work, as well as the ever-recurring crisis in the political economy of the nation, have not failed to make increased claims on school education. To this is to be added the knowledge of nature, which, since Darwin's time, has made such progress, and has been carried from scientists to the people by means of popular literature and enlightening influence of the press. The importance of natural science, which has made itself felt in different departments of thought and work, has been seen. The uneducated, finding themselves more and more at a disadvantage, compared with the educated, have desired for their children the acquisitions denied to themselves. Thus in a short time very broad demands have been made upon the common school; essential knowledge must be considered more than ever, and where it was not included in the plan of education, it has in some places been made a part of it. New grafts of cultivated varieties have been inserted in the old organism of the primary school, already heavily weighted; at the same time the sterile branches and exhausting shoots have been suffered to remain. Many things had been learned from Pestalozzi, particularly the development of education through observation. Indeed, it almost seemed as if Froebel was to be the solid corner stone upon which was to be raised a new citadel of knowledge. But what the good, honest men wished and hoped has not been realized. The spiritless routine of the old school was forced into a combination with that of the new. Froebel's idea was in some places caricatured by the "goody" methods of the schools for young children. Instead of cultivating the mind of the child in the natural way by developing the senses, the old dregs of lifeless abstractions were mingled with a little new wine of frivolous observation, and the result was labelled "Froebel's Kindergarten." These offered a fruitful field for religious idealism on the part of the opponents of progress. Among the kindergartens there are, of course, praiseworthy exceptions. I think I am not unjust, however, in saying that at present, in Europe, the "Froebel Kindergartens" do, on the whole, more harm than good. I know that I am not alone in this opinion. Every school of children under twelve years old, where religious instruction and conversation play an important part, and where, therefore, themes are touched upon which demand the mental power of maturity, must be an evil rather than a benefit.

As in the Froebel gardens, so it has happened generally with the recognized primary schools. The general method remained the same. What wonder that the fruit was not in proportion to the hope! Owing to this combination of old and new, the point has been reached where from every little puddle, and from behind every hedge, croaking is heard to the effect that the study of Nature in primary schools must be given up, including the investigation of plants and animals of the earth, and the races of mankind.

"Let us return to cut-and-dry instruction" is the cry. If this state of affairs continues, it will soon be declared, as was said two hundred and forty-five years ago by a certain doctor of Tubingen, in his dissertation, that "among things unbecoming a Christian is the study of the outside world and communion with Nature."

Notwithstanding this backward movement, a larger performance in drawing is now demanded in schools, as may be seen by the following item, which was lately read in all newspapers, and was printed in German official organs:—"Instruction in drawing does not yet receive proper attention, as the teachers lack a correct method, while the directors and superintendents want practical experience and knowledge. Gymnasiums whose obligatory instruction in drawing only extends to the fourth class, inclusively, suffer especially from these draw backs, though the number of teachers who have passed their examination continually increases. However, long experience shows their ability to teach, acquired before, and confirmed by examination, is yet insufficient to attain the best results. A specialist must be appointed to overlook their teaching. The Minister of Public Worship and Instruction has therefore put the question whether it would not be well to recommend regular periodical supervision for this branch of technical education, with an organization like that now existing for superintending gymnastics."

[TO BE CONTINUED.]

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

To Editor California Architect and Building News—

As the Fire Department is now engaged upon the revisal of the present Fire Ordinance, a few word anent the same would not be amiss.

In the first place the cognomen of the law is a misnomer—it treats of not only protection against fire but of the construction of buildings generally, and therefore should be rather called a Building Ordinance than a Fire Ordinance and for the same reason the carrying out of the same should not be vested in the fire department, but in a building department whose deputies should be educated architects and engineers—or as they are called in England surveyors. In London the whole city is districted, and each district is under the control of a district surveyor, who is obliged to pass a strict examination as to his duties before he is eligible, and who is responsible for the proper carrying out of the law in his district. All plans have to receive his approval before being allowed the carrying out. A similar system I believe is in vogue in Boston and New York. Of course, in a comparatively small city like San Francisco, two districts would likely be enough—providing that the surveyors should devote their whole time to the work as should be the case.

A very good feature of the present law is that relating to iron fire escapes on outsides of buirdings. This should by all means be kept, and the requirements will also give architects an opportunity of making interesting an otherwise uninteresting façade. Thus the flat face of the California Theatre building is relieved and helped by the galleries and ladders attached to its front, and no doubt the lank monotonous front of the Chronicle Building might be made interesting in the same manner should the fire department see fit to order ladders on its front.

Again by all means should a law be passed preventing the erection of any building higher than the width of the street upon which it abuts. Lately in London it has been made illegal to build a building vertically higher than 90 feet as there the before mentioned regulations would not work, as some of the roads are over 200 or 300 feet wide, but with our medium size streets such restrictions would be unnecessary.

Ethics teaches us that the health and enjoyment of the com-

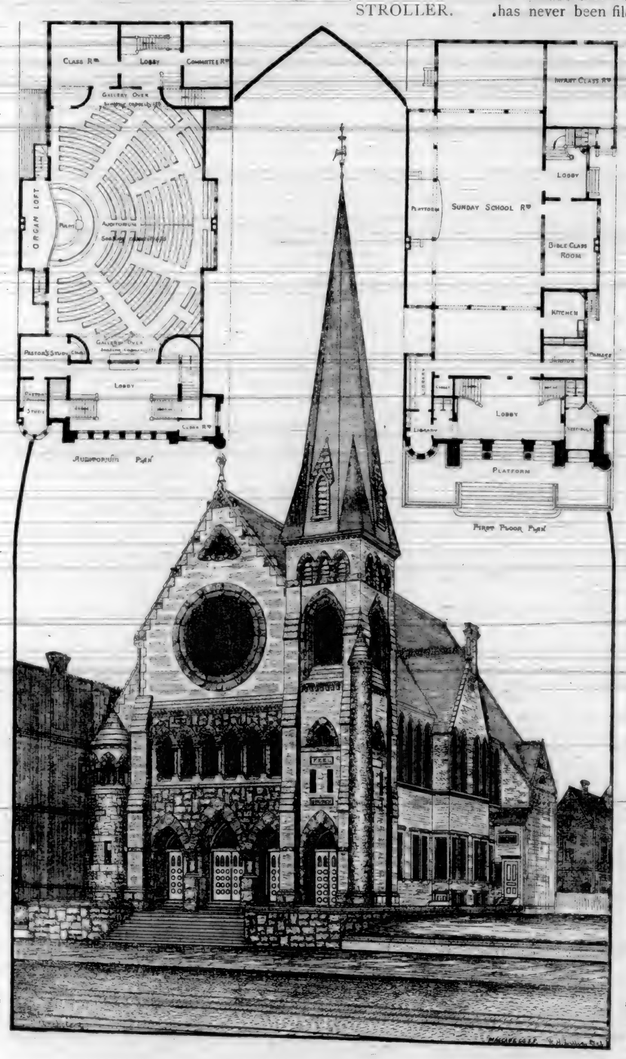
munity must not be sacrificed to the aggrandisement of a few individuals, and any such anarchical state of society that allows this to be done ought to be abolished and some law and order established so that each individual may enjoy God's light and air in fullest possible measure.

Under the same reign of *laissez faire* many passengers on our trains this winter will be and are now being sacrificed by the most horrible of deaths, by the allowance of stoves in cars, in consequence of the little greater expense of adopting some other less dangerous system of heating. The East is waking up a little to this, and the other day one company was fined $7,000.00 for allowing hot stoves in their cars.

A similar bill I hope will be introduced into our next legislature—that is if it should have any time left to look after the interests of the people at large.

Yours etc.,

STROLLER.



FIRST ENGLISH EVANGELICAL LUTHERAN CHURCH.

LEGAL DECISIONS.

Statement for Lien in California.—The California statute relating to mechanics lien provides that every one except the contractor must file a statement of the demand upon which he claims a lien, within thirty days after the completion, and that cessation of work for thirty days, shall be equivalent to completion. A material man must, in order to protect his claim, file a statement within thirty days after the expiration of thirty days, after work is stopped under an uncompleted contract.

Kerchoff-Cuzner M. & L. Co. v. Olmstead, Supreme Court of California, 24 Pac. Rep. 648.

Lien for Materials when Contract not Filed.—When the contract between the owner of a building and the contractor has never been filed for record, a sub-contractor for materials must allege in his complaint, in order to secure a lien, the value of the materials furnished, and the mere allegation of the price which the contractor agreed to pay for them is not sufficient as against the owner. Where materials were furnished at the same time for two buildings being built for one owner by one contractor, the sub-contractor must take his separate lien against each building for the amount furnished therefor, and he will not be allowed to take a joint lien on both buildings for the entire amount.

Booth v. Pendola, Supreme Court of California, 24 Pac. Rep. 714.

Enforcement of Lien Under Broken Contract.—Where it appears in an action by sub-contractors, that the owner broke the contract by refusing to pay the second installment when it was agreed that it should be paid, it is proper to direct a sale of the property for the liens, and that the difference between the amount of the liens and the second installment be paid to the contractor, although the latter had filed no lien.

Thomas v. Sahagan, Supreme Court of New York, 10 N. Y. Supp. 874.

Precautionary Measures Required of Employer.—An employer is bound to provide his employees with a safe place and safe appliances to do the work required of them, but when all the dangers which past experience or the exercise of a proper degree of prudence would lead him to anticipate, have been guarded against, the duty of the employer is fulfilled, and he cannot be held responsible for results which could not naturally be expected to follow from his exactions from the workmen.

Haskins v. Stewart, Supreme Court of New York, 10 N. Y. Supp. 833.

Recovery of Value of Services.—Where one enters upon the performance of services, which, without fault on his part, and by the wrongful act of the other party, he is prevented from completing, he may recover the reasonable worth and value of the work done, without regard to its value to the other party.

Mooney v. York Iron Company, Supreme Court of Michigan, 46 N. W. Rep. 376.

The First English Evangelical Lutheran Church was organized June 18, 1886. The church edifice was begun in 1888, and finished in May, 1890. The exterior is of stone and pressed bricks. The spire is 140 feet in height. The design is by Mr. Samuel Newsum, architect.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Our double plate shows the new synagogue for the congregation Beth Israel, to be erected on the south side of Geary street west of Octavia. The style is an adaptation of the Romanesque. The seating capacity is 900.

The interior galleries will be built around three sides, and will be self-supporting, thus doing away with the necessity for columns.

The schoolrooms and day synagogue are on the street level, and are reached through an arched entrance situated below the principal entrance, which latter is reached by a double flight of steps.

The architect is William Curlett.

The mausoleum, is from the designs of Curlett & Eisen, architects, of Los Angeles.

The design for the new front to the Crystal Bath Building, at North Beach, is by R. H. Daley, architect.

NOTES & COMMENTS.

The site for the Mills building is cleared.

One of the sons of Rev. E. E. Hale is now in Paris, studying architecture.

Gilded wall papers have been relegated to the past, and plain tint papers are again coming into fashion.

A word to the wise.—Our subscription price after the first of January will be three dollars. Up to that date two dollars.

Mayor Pond is after dilatory contractors on New City Hall work. Better late than *never*.

Fewer contracts than usual were filed just about election time. Now the agony is over, let the procession proceed.

The great problem before the world at the present time is how to combine industrial education with mental education.

Electric lights in cakes of artificial ice are to be used the coming winter season for lighting ball or assembly rooms.

Section B of the seawall is well under way, and much preliminary dredging and piling already done.

The Grand Hotel burned on the 3d inst., was built in 1869, at a cost of nearly half a million.

Burnham & Root, of Chicago, have been appointed consulting architects for the World's Fair buildings.

The Lick Free Public Baths, of which we published the plans in our March number of this year, are now open to the public.

We hear we are to have another *esteemed contemporary*, to whom we extend the hand.

The more the merrier.

Our grandfathers can remember when the new postoffice was first proposed; our grandchildren will, we hope and trust, live to see a site selected for it.

A new pipe organ for the foreign church at one of the Hawaiian Islands has been built and placed in position by a San Francisco organ builder.

Architect R. H. Daley has designed a new front to the Crystal Bath Building, one of the oldest salt water bathing establishments in San Francisco.

Seaweed is now made into a tough paper which takes the place of window glass. When colored the effect is similar to stained or painted glass.

An important lawsuit has been instituted at Nebraska City, contributors suiug for a $20,000 bonus given toward the erection of a packing house, which subsequently closed down, contrary to the stipulations.—*Stockton Republican.*

The design selected by the Grant Monument committee of New York, to be erected in Riverside Park, is the work of Mr. John H. Duncan. If erected according to present intentions, it will be a creditable affair.

Many important buildings have been erected during the past year, and their variety of styles and beauty of design, form a pleasing contrast to the old pioneers that still remain. San Francisco will one day be as proud of her architects, as California is of her climate.

The *Drug and Paint Reporter* makes mention of a new product called "mineral india-rubber asphalt," produced from tar. It resembles in appearance asphalt, and is elastic like india-rubber. When reduced nearly half its bulk by heat a hard substance like ebony is produced. It is soluble in naphtha, and is a non-conductor of electricity, and forms a good water proof varnish. It is available for many purposes.

Lord Houghton's Committee on the General Powers' Bill of the County Council recently had under consideration, an important clause providing that no buildings should be erected at a greater height than seventy feet without the consent of the Council. The Committee ultimately decided that the figure should be ninety feet, and two stories above the roof.—*London Dispatch.*

The Corporation of Liverpool constructs its public streets in the best manner. The pavement is not allowed to be disturbed by private parties for any purpose whatever. When it is necessary to take up any portion, the work is done by the Corporation, but at the expense of the interested parties.

If this city required a similar procedure, our streets would remain in better condition.

The last steamer that cleared for the Hawaiian Islands, bore a tribute to the memory of Jules Tavernier, in the shape of a granite monument to be erected over the artist's grave in Honolulu. The monument is of rough granite, about ten feet in height, with a polished panel for the inscription; and it is owing to the generosity of Tavernier's former associates in this city that the idea has been carried into execution.

The Brickmaker tells us how to make a good cement for pointing and mending terra cotta or stone work.

Mix 20 parts of clean river sand, 2 of litharge and 1 of quick lime into a thin putty with linseed oil; if for red terra cotta, color to the desired shade with Venetian red; if buff, with yellow ochre; if brown, with Spanish brown. Enough should be made at one time for the entire work, to avoid different shades. This cement becomes very hard with time.

The architect of the Stockton Courthouse, Mr. Meyer, (of Detroit) and the superintendent of construction, Mr. Woodbridge, appear to be at loggerheads.

The Courthouse is now approaching completion, and the architect announces that he will refuse to accept the building on account of the way in which parts of the work on it have been done. The superintendent, in a cutting reply puplished in the *Stockton Republican*, asserts that the work, when completed, will be properly done according to specifications, and accuses Mr. Meyer of posing, and a desire to enjoy another trip to California at the county's expense.

From the *Hawaiian Gazette* we learn that "throughout the Hawaiian Kingdom, great activity in educational matters have been evident during the past few years. The repair of old school houses and the building of new ones are the order of the day." This indicates that the Hawaiian people are laying a sure foundation to success. The islands are every year becoming more important as a transfer point in the commerce of the Pacific Ocean, on account of their being almost in the direct line of the movements of trade. An English education will enable the growing population to hold their own in their native country.

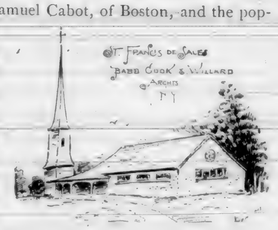
A lift-bridge has been constructed over the Ourcq Canal in Paris to supersede the former swing-bridge. The former bridge afforded a clear width for vessels of 25 feet which has been increased to 50 feet by the latter structure. The new bridge consists of a movable platform, borne by iron girders and suspended at its four corners by strong chains passing over pulleys placed on four cast iron columns, to the ends of which counterpoise weights are attached. The bridge is lifted by two double-acting hydraulic presses; also machinery is provided for raising it by hand power if desired. The length of the bridge is 65 feet by a width of 25 feet, the hollow cast iron columns at the four corners are 25 feet high and 2½ feet diameter, pulleys 8 feet diameter. The weight of the bridge is 241 tons and can be raised 17 feet.

BUSINESS MOSAICS.

In the residence for Mr. John Boas, recently erected on the corner of O'Farrell and Octavia streets in this city, we note some beautiful glass effects manufactured at the art glass works of Messrs. Hopper & Schroder, No. 39½ Fremont street. The front of the dresser in the breakfast room is of cut glass. The door leading from the main hall is ruby, embossed. An art glass window composed of tropical scenery with pillars and arch at side with monogram B on top. This window is 6x10 feet, consequently the subjects are of good size. The front entrance hall is set off to good advantage by art glass doors, and an art glass bay window which gives a particularly fine effect to this portion of the building.

We have lately used some blue print paper from Edward Denny & Co., 418 Montgomery street, which is superior to anything we have heretofore tried. This firm has lately introduced some novelties in draughtsmens materials, which in addition to their already superior stock makes it to the interest of architects and draughtsmen to call on them for anything in their line.

IT is remarkable to notice how extensively shingle work is being used on modern houses, and to see how universally shingle stains are being used for exterior coloring, particularly on the better class of houses, whose owners have a more keen, artistic eye. The pioneer in the manufacture of this sort of coloring was Samuel Cabot, of Boston, and the popularity and success of his Creosote Shingle Stains is due solely to the fact that from the first his material has not been cheapened, no matter what has been the cost of the ingredients, and that no adulterant like kerosene or rosin oil, both of which act solely as a cheapener or adulterant, has been used in its make-up.



The cuts sprinkled through this article are reproductions taken from a book of sketches that is published by the firm, and show actually creosoted in various parts of the country, and we can add, that in nearly all cases the architects are men of the best reputation, who only use the best materials and know the worth of these stains from many actual trials.

So many people hesitate as to what colors their houses shall be painted, have so little idea of what they themselves want, that we think it a good suggestion for them to apply for expert advise, such as this house can and is very willing to give. Therefore we advise you to write to Samuel Cabot, Boston, Mass.

CITY BUILDING NEWS.

Buchanan near Union. Additions: owner, C. E. Thompson; contractors, Wharff & Butler; cost, $1175; time, 54 days; signed, Oct. 1; filed, Oct. 22; payments, $200, enclosed; $200, plaster on; $275, completed; $300, 35 days.

Bay between Mason and Powell. Carpenter work; owner, J. Farnham; architect, R. H. Daley; contractors, J. W. Lancaster & W. J. Nelson; cost, $2255; time, 70 days; signed, Oct. 23; filed, Oct. 25; payments, $593.75 framed; $668.75, cornice on; $893.75, finished; $956.75, 35 days.

Bryant near Ninth. Two-story frame; owner, R. Cunningham; architect, M. J. Welsh; contractor, G. W. Hansbrough; cost, $2100; filed, Oct. 3; payments, $1000, brown mortared; $600, completed; $500, 35 days.

1707 Buchanan. Alterations; owner, E. D. Dubrow; contractor, H. A. Johnson; cost, $1208; time, with all possible haste; signed, Oct. 1; filed, Oct. 2; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Buchanan and Golden Gate Ave. Carpenter work; owner, F Levinson; architects, Salfield & Kohlberg; contractors, Hatch, Dougherty & Co.; sureties, B. A. Chapel, and E. F. Peck, $5000; cost, $6775; signed, Sept. 25; filed, Oct. 2; payments $1000, framed; $1000, enclosed; $1000, brown coated; $1000, doors hung; $1088, accepted; $1635, 35 days.

Bush and Fillmore. Mason, carpenter plastering painting work; owner, J. Stoddard; architect, Wm. Curlett; contractor, D. Perry; cost, $6350; signed, Oct. 16; filed, Oct. 17; payments, 75 per cent. of value of work done; balance, 35 days.

Broadway near Fillmore. Plumbing; owner, A. W. Wilson; architect, P. R. Schmidt; contractor, R. Rice; cost, $1980; signed, Oct. 15; payments, $800, rough pipes and water pipes in; $780, accepted; $400, 35 days.

Broadway near Leavenworth. Two-story frame; owner, Wm. Harrell; architect, C. M. Rousseu; contractor, A. Discher; cost, $3529; signed, Oct. 14; filed, Oct. 15; payments, $662, framed; $662, brown coated; $661, white coated; $661, completed; $883, 35 days.

Battery corner Clay. Alterations; owner, E. W. Nichols; contractor, Thos. Jeal; cost, $1135; signed, Oct. 15; filed, Oct. 15; payments, $300, girders are set; $500; completed; balance, 25 days.

Clay near Broderick. Two-story frame; owner, C. E. Grunsky; contractor, J. A. Shepard; cost, $4,700; time, 90 days; signed, Oct. 23; filed, Oct. 25; payments, $1,175, enclosed; $1,175, white coated; $1,174, completed; balance, 35 days.

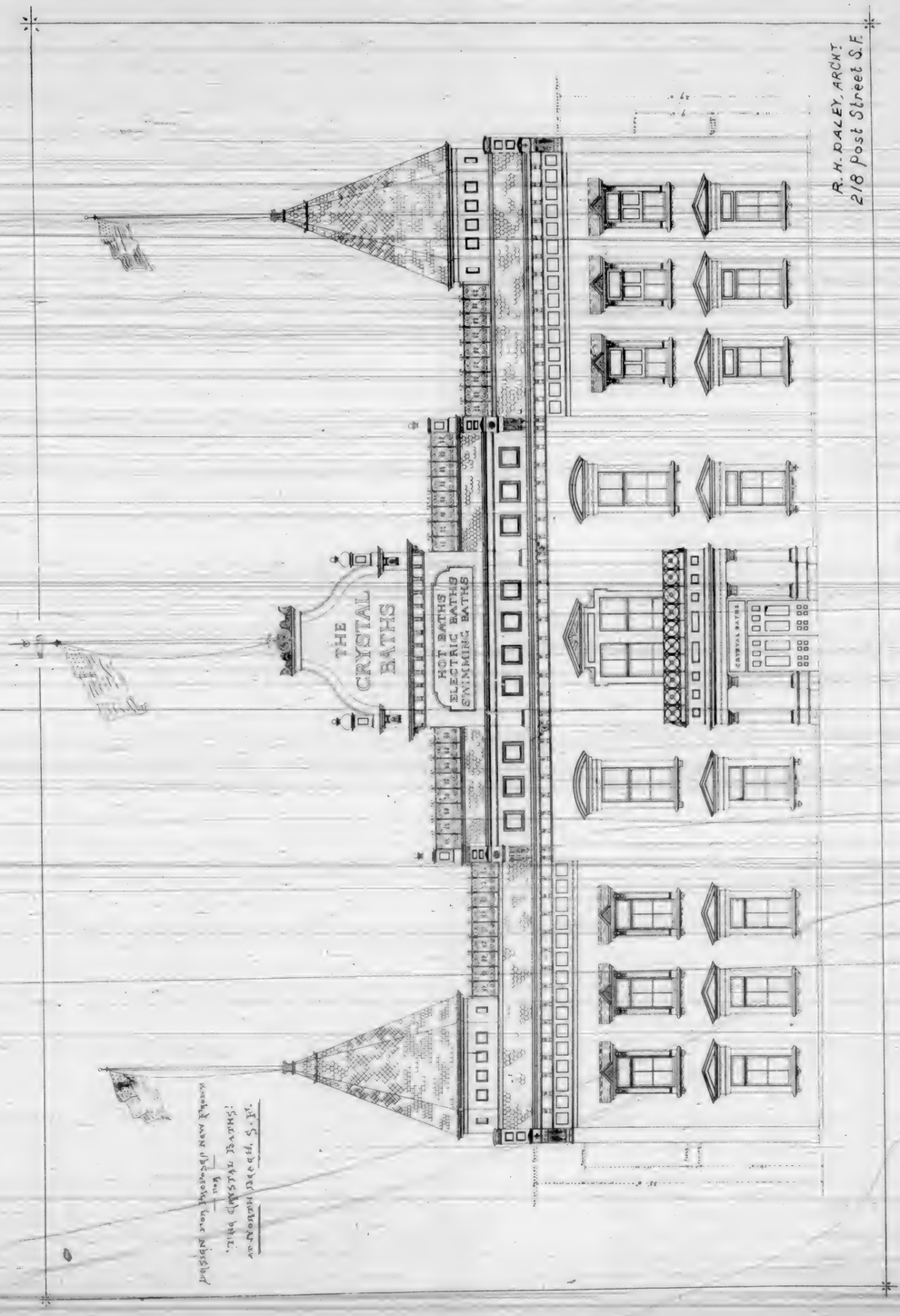
SYNAGOGUE ~ GEARY ST ~ S.F.

William Curlett ARCHITECT. 307 Phelan Building S.F.

Design for the
DRISWALTER MAUSOLEUM

LOS ANGELES - Cal -

Curlett & Eisen - Architects
Los Angeles & San Francisco.



Clover near Leavenworth. Two-story frame; owner, W. J. Murray; architect, C. M. Rosseau; contractor, H. Jensen; cost, $3,500; signed, Oct. 21; filed, Oct. 22; payments, $656, framed; $656, brown coated; $656, white coated; $657 furnished; $875, 35 days.

Clinton near Bryant. Additions; owner, H. Filgate and wife; architect, S. Hatfield; contractor, C. Douglas; cost, $3,231; signed; Oct. 15; filed, Oct. 16; payments, $665, foundations done; $665, brown mortared; $666, white coated; $668, completed; $808, 35 days.

Castro near Clipper. Carpenter work; owner, M. Popper; architect, A. J. Barnett; contractor, A. C. Soule; cost, $6,767; time, 90 days; signed, Sept. 29; filed, Oct. 3; payments, $1,287, roof boards on; $1,260, brown coated; $1,260, white coated; $1,260, completed; $1,700, 35 days.

Clipper near Diamond. Alterations; owner, Wm. Isham and wife; contractor, Wm. Linden; cost, $1,100; signed, Oct. 1; filed, Oct. 2; payments, 75 per cent. as work progresses; 25 per cent. 35 days after completion, except $150, which is to remain one year, secured by owner's note upon completion of work.

Castro near Twenty-fifth. Carpenter work; owner, M. Popper; architect, A. J. Barnett; contractor, A. C. Soule; surety, W. J. Adams & C. S. Holmes, $1,500; cost, $4,706; time, 90 days; signed, Oct. 9; filed, Oct. 9; payments, $1,000, roof boards on; $1,000, brown coated; $1,000, white coated; $1,275, completed; $1,430, 35 days.

S. E. corner Clay and Buchanan. Mill work; owner, Moses Hopkins; architect, W. J. Mathews; contractor, Washington street Planing Mill; cost, $1,150; signed, Oct. 13; filed, Oct. 14; payments, $431.50, ———; $431, completed; $288, 35 days.

Douglass bet. Twentieth and Twenty-first street. Carpenter work; owner, C. E. Olsen; contractors, Hauser & Maritzen; cost, $1,550; time, 44 days; signed, Oct. 3; filed Oct. 3; payments, $385, enclosed; $385 brown mortared; $385, accepted; $396, 35 days.

Eureka near Seventeenth. Carpenter work; owner, Paff Bros.; architect, Gellfuss; contractor, H. Kirchmann; cost, $2,582; signed, Sept. 26; filed, Sept. 30; payments, 484, framed; $484, inside finish on; $485, completed; $646, 35 days.

Elgin Park and Ridley. Two two-story frames. Owner, D. Dryer and wife; contractor, P. E. Dunshee; cost, $3,762; signed, Oct. 6; filed, Oct. 7; payments, $942, framed; $940, plastered; $940, completed; $940, 35 days.

Fulton and Octavia. Carpenter work; owner, M. McGuire; architect, J. J. Clark; contractor, W. A. Van Dervort; sureties, D. H. Bibb and O. H. Greenwald, $2,000; cost, $8,000; time, 110 days; signed, Oct. 7; filed, Oct. 9; payments, $1,500, first-story joists on; $1,500, enclosed; $1,500, brown mortared; $1,500, white coated; balance, 35 days.

Fourth near Mission. Plumbing; owner, Mrs. A. E. Root; architects, Huerne & Everett; contractors, Fritz & Kean; cost, $1,625; signed, Oct 2; filed, Oct. 9; payments, $812.50 rough work in; $406.25, completed; $406.25, 35 days.

Fourth near Mission. Carpenter work; owner, A. E. Root; architect, Huerne & Everett; contractor, H. Holzenberg; surety, J. F. Kennedy and G. T. Shaw, $3,000; cost, $12,087; signed, Sept. 27; filed, Sept. 29; payments, $3,021.75, roof sheathed; $3,021.75, brown mortared; $3,021.75, completed; $3,021.75, 35 days.

Fourth near Mission. Brick work; owner, Mrs. A. E. Root; architect, Huerne & Everett; contractor, Chisholm, surety, T. W. Peterson and C. A. Warren, $1,000; cost, $2,353; signed, Sept. 27; filed, Oct. 6; payments, one half, basement wall in; one-fourth, completed; one fourth, 35 days.

Fourth, near Mission. Iron beams, illuminating tiles and concrete arch sidewalk; owner, Mrs. A. E. Root; architects, Huerne & Everett; contractor, P. H. Jackson & Co.; cost, 1,008; signed, Sept. 29; filed, Oct. 6; payments, $801.42, completed; $267.15, 35 days.

Geary near Octavia. Carpenter work; owner, Congregation Beth Israel; architect, Wm. Curlett; contractor, D. Perry; cost, $18,973; signed, Oct. 23; filed, Oct. 23; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Haight bet. Cole and Schrader. Dwelling of three flats; owner, A. T. N. Peterson; contractor, Geo. Houston; cost, $4,450; time, 90 days; signed, Oct. 2; filed, Oct. 2; payments, $1,110, shingles on; $1,110, brown coated, $1,110, white coated; $1,120, 35 days.

Howard and Fourteenth. Two-story frame; owner, W. H. Torpey; architect, Shea & Shea; contractor, J. T. Moore; cost, $3,850; surety, J. T. Kennedy; signed, Oct. 4; filed, Oct. 9; payments, $660, framed; $660, brown coated; $660, hard finished; $660, completed; $1,250, 35 days.

Harrison near Sixth. Additions; owner, Hannah Lichtenstein; architect, J. E. Wolfe; contractor, R. O. Chandler; sureties, E. Aigeltingen and D. Joost, $825; cost, $3,300; signed, Oct. 8; filed, Oct. 14; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Haight corner Scott. Brick and granite work; owner, F. Fauss; architect, H. Gellfuss; contractors, Ferdinara & Wagner; cost, $2,943; signed, Oct. 15; filed, Oct. 16; payments, $1,208, basement wall are finished; $1,000, chimneys are topped out and flues are set; $735, 35 days. Plumbing; contractor, L. Hufschmidt & Bro; cost, $2,350; payments, $75 per cent. as work progresses; 25 per cent., 35 days. Painting and graining; contractor, F. Schafer; cost, $1,195; payments, 75 per cent. as work progresses; 25 per cent., 35 days;

S. E. corner Haight and Pierce. Two-story dwelling; owner, C. Hennecberry; contractor, G. Houston; cost, $5,500; time, 100 days; signed, Oct. 6; filed, Oct. 7; payments, $1,370, rustic on; $1,370, brown coated; $1,370, white coated; $1,390, 35 days.

Isis near Thirteenth. Two-story frame; owner, J. Collins; architect, M. J. Welsh; contractors, R. Doyle & Son; cost, $2,890; signed, Oct. 22; filed, Oct. 23; payments, $722.50, framed; $722.50, brown mortared; $722.50, completed; $722.50, 35 days.

Ivy Ave. bet. Webster and Buchanan. Two-story building; owner, Jennie McCarl; architects, Townsend & Wynken; contractor, A. H. Plummer; time, 60 days; signed, Oct. 11; filed Oct. 14; payments, $600, frame; $600, brown coated; $700, white coated; $600, 35 days.

Jones and Union. Two two-story cottages; owner, J. F. Fagazi; architect, C. H. and J. M. Wilson; contractor, Childs & Chatham; cost, $4,175; signed, Oct. 6; filed, Oct. 9; payments, $782, framed, enclosed; $783, brown mortared; $782, white plastered; $782, completed; $1,044, 35 days.

Jackson near Scott. Two story frame; owner, W. A. Shaw; contractor, J. A. Shepherd; cost, $6,000; signed, Sept. 29; filed, Oct. 9; payments, $1,500; enclosed; $1,500, brown mortared; $1,500, completed; $1,500, 35 days.

Jersey and Castro. Carpenter work; owner, D. Curley; architect, Townsend & Wyneken; contractor, J. E. Loomer; cost, $2,750; time, 78 days; signed, Oct. 8; filed, Oct. 9; payments, $1,037, enclosed; $1,000, completed; $713, 35 days.

Langton near Harrison. Carpenter work; owner, P. Brady; contractor, Chas. Cody; cost, $1,999; srgned, Oct. 14; filed, Oct. 20; payments, $499, framed; $800, brown mortared; $500, completed; $500, 35 days.

Market and Seventh. Sandstone work for five brick buildings; owner, M. J. Lemman; architect, C. I. Havens; contractor, O. E. Brady; cost, $1,650; signed, Sept. 15; filed, Oct. 8; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Seventh. Terra cotta work for five-story building; owner, M. J. Lemman; architect, R. J. Harris; contractors, Gladding & McBean; cost, $1,900; signed, Oct. 13; filed, Oct. 24; payments, 75 per cent. as work progresses; 25 per cent. 35 days. Wrought iron girders. Contractors, Calvin Nutting & Son; cost, $1,960; signed, Oct. 8; filed, Oct. 24. Iron columns. Contractors, Reese Llewellyn; cost, $9,000; signed, Oct. 16; filed, Oct. 24.

Mission near Eighth. Four-story frame; owner, C. Dietle; architect, H. Geilfuss, contractor, F. W. Kern; cost, $10,990; signed, Oct. 11; filed, Oct. 16; payments, $1,373, framed; $1,373; enclosed; $1,373, lathed; $1,373, brown mortared; $1,373, inside standing finish is on; $1,378, accepted; $2,747, 35 days. Plumbing. Contractors, Fritz & Kean; cost, $1,490; payments, 75 per cent. as work progresses; 25 per cent. 35 days. Stone and iron work. Contractors, Riley & Loane; cost, $4,425; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Ninth. Brick, iron and stone work; owners, Allyne & White; architect, Chas. Geddes; contractor, W. B. Kreger; cost, $34,200; time, 120 days; signed, Oct. 17; filed, Oct. 20; payments, $4,000, sidewalk arches in; $4,500, walls up; $4,000, fourth floor joists secured; $4,000, roofed; $6,000, first coated; $5,000, completed; $8,700, 35 days.

Minna near Third. Carpenter work; owner, Thos. Cordcill; architects, J. J. and T. D. Newsom; contractor, C. M. Cornell; cost, $1,630; signed, Oct. 14; filed, Oct. 21; payments, $560, roof boards on; $560, completed; $530, 35 days.

Mission near Twenty-fourth. Carpenter work; owner, N. Wynne; architect, J. J. Clark contractor, G. J. Doering; cost, $3,500; time, 90 days; signed, Sept. 25; filed Sept. 29; payments, $650, framed; $650, brown mortared; $650, inside finish on; $650, completed; balance, 35 days.

Madison Avenue, near Harrison. Alterations; owner, A. McDermott; architect, M. J. Welsh; contractors, Sandy & Gillogley; cost, $1,300; signed, Sept. 26; filed, Sept. 29; payments, $975, framed; $975, brown mortared; $975, completed; $972, 35 days.

Minnesota and Butte. Two-story building; owner, P. Cronin; architects, Shea & Shea; contractor, S. F. Building and Manufacturing Co.; cost, $3,000; signed, Oct. 3; filed, Oct. 9; payments, $562, framed; $563, brown mortared; $563, hard finished; $563, completed; $750, 35 days.

N. W. corner O'Farrell and Scott. Two-story frame; owner, J. W. Smith; architect, M. J. Welsh; contractor, O. Mulholland; cost, $1,700; signed, Oct. 24; filed, Oct. 25; payments, $1,675, framed; $1,675, brown coated; $1,675, accepted; $1,675, 35 days.

O'Farrell bet. Franklin and Gough. Carpenter work; owner, A. B. Gonzales; architect, J. Marquis; contractor, J. R. Whalen; cost, $9,946; signed, Oct. 1; filed, Oct. 7; payments, $1,200, framed; $1,746, floors laid; $2,000, outside finish on; $2,500, finished; $2,500, 35 days. Brick work; contractor, D. Jordan; cost, $1,080; signed, Oct. 2; filed, Oct. 7; payments, $610, foundations laid; $200, brick work completed; $275, 35 days. Plumbing; contractor, S. Ickelheimer; cost, $1,635; payments, $800 gas and water pipes in; $600, finished; $435, 35 days. Plastering, contractor, C. C. Morehouse; cost, $1,495; payments, $900, brown coated; $595, white coated; $400, 35 days.

Powell near Eddy. Iron work; owner, Schwartz Bros; architect, P. R. Schmidt; contractor, J. G. and I. N. Day; cost, $11,200; signed, Oct. 21; filed, Oct. 25; payments, 75 per cent. as work progresses, 25 per cent., 35 days.

Powell near Sacramento. Brick work for twelve flats; owner, V. Menesini; architect, Chas. S. and J. M. Wilson; contractor, John McCarthy; surety, R. McCann and J. B. M. Phillips, $1,000; cost, $1,875; signed, Oct. 16; filed, Oct. 20; payments, $900, brick foundations in; $300, concrete walls in; $500, chimneys up; $106.25, completed; $168.75, 35 days.

Pacific Ave. bet. Gough and Franklin streets. Frame; owner, I. Liebes; architect, Pissis and Moore; contractor, A. Jackson; cost, $13,500; signed, Oct. 18; filed, Oct 20; payments, $3,000, framed; $2,500, brown coated; $2,000, interior plastered; $2,000, ready for painter; $625, completep; $3,375, 35 days.

Precita Ave. near York. Carpenter work; owner, E. N. Fotrello; contractor, J. O. Dunn; cost, $1350; signed, Sept. 29; filed Oct. 3; payments, $300, enclosed; $425, brown mortared; $425, accepted; $486, 35 days.

Point Lobos Ave. near 4th Ave. One-story and basement; owner, G. Lake; contractor, M. J. Scott; cost, $2300; signed, Oct. 8; filed, Oct. 9; payments $431, brick foundation done; $431, first coated; $431, plastered; $432, completed; $575, 35 days.

Pine and Jones. Elevators; owner, I. C. Stump; architect, J. C. Newsom; contractors, Wm. H. Birch & Co.; cost, $5,741; time, 100 days; signed, Oct. 15; filed, Oct. 18; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Pacific corner Central Ave. Two-story frame; owner, E. T. Sheppard; architect, J. C. Newsom; contractor, W. E. Lane; cost, $1250; signed, Oct. 11; filed, Oct. 13, paymetits, $857, framed; $857, brown coated; $737, standing finish on; $737, completed; $1062, 35 days.

Sacramento near Dupont. Brick work, etc.; owner, Chas. F. McDermott; architect, John Cash; contractor, Geo. D. Nagle; cost, $2,750; signed, Oct. 21; filed, Oct. 21; payments, $500, area brick walls up; $500, walls up; $1,062, completed; $688, 35 days. Three-story frame; contractor, Anderson Bros.; cost, $5,164; signed, Oct. 25, filed, Oct. 25; payments, $1,000, roofed; $1000, plastered; $788, doors and windows hung; $1,966, 35 days.

Shotwell near Twenty-second. Three-story building; owner, Wm. Helbing; contractor, Louis Helbing; cost, $4,250; time, 75 days; signed, Oct. 15; filed, Oct. 14; payments, $1,250, framed; $1,000, brown mortared; $1,000, white coated; $1,000, 35 days.

Stockton near Lombard. Carpenter work; owner, Francisco Arata; architect, Bryan J. Clinch; contractor, T. R. Bassett; cost, $7,890; time, 100 days; signed, Oct. 11; filed, Oct. 13; payments, $1,200, framed; $2,890, brown coated; $1,890, completed; $2,000, 36 days.

Sacramento corner Davis. Plumbing; owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractor, Fritz & Kean; cost, $2,857; signed, Oct. 11; filed, Oct. 13; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Third and Perry. Plumbing; owner, W. J. Ramage and wife; architect, A. C. Lutgens; contractor, G. P. Sweeney; cost, $1,383; signed, Oct. 15; filed, Oct. 18; payments, $400, waste pipes in; $657.25, accepted; $845.75, 35 days

Union near Buchanan. Two-story frame; owner, P. Haui; architects, John & Balczynski; contractors, Schult & Kreker; cost, $3,998; signed, Oct. 6; filed, Oct. 6; payments, $750, framed; $750, enclosed; $750, white coated; $748, finished; $1. 00. 35 days.

Van Ness and O'Farrell. Placing pews in basement of new Roman Catholic Cathedral; owner, P. W. Riordan; architect, T. J. Welsh; contractors, F. W. Kreling & Son; cost, $2,606; time, Dec. 20, '90; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

N. W. corner Vallejo and Fillmore. Alterations; owner, V. Williams; architects, B. McDougall & Son; contractor, J. R. McLean; cost, $1570; signed, Oct. 2; filed, Oct. 3; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Waverly Place near Sacramento street. Brick work; owner, Chin Shin; architect, J. J. Clark; contractor, D. J. Brennan; cost, $11,450; time, 70 days; signed, Oct 2; filed, Oct. 3; payments, $2,000, lot is excavated; $2,000, ready for first floor joists; $2,000, ready for second floor joists; $2,000, completed. Carpenter work; contractor, J. G. Adams; cost, $7,900; payments, $1,990, roofed; $1,990, first coat of mortar on; $1,990, completed; balance, 35 days.

Waverly Place near Sacramento. Stone work; owner, Chin Shin; architect, J. J. Clark; contractor, D. Sheerin; cost, $3,830; time, as soon as practical; signed, Oct. 2; filed, Oct 3; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Waverly Place near Sacramento. Carpenter work; owner, Chin Shin; architect, J. J. Clark; contractor, J. G. Adams; cost, $7,999; time, soon as practicable; signed, Oct. 2; filed, Oct. 3; payments, $1,999, roofed; $1,999, first coat of mortar; $1,990, completed; balance, 35 days.

Oakland.

Mountain View Cemetery. Marble and concrete mausoleum for Chiradelli; — days work; cost, $6,000; architects, Mooser & Cuthbertson.

Albany Hotel on Broadway. Owner, H. D. Bacon; architect, C. Geddes; contractors, L. N. Fletcher & Son; cost, $3025; signed, Oct. 22; filed, Oct 24; payments, $769, brick work done; $769, brown mortared; $500, inside finish on; $500, completed.

Albion street near Telegraph Ave. Owner, C. Bulkley; contractor, A. W. Pattam & Co.; cost, 3736; signed, Oct. 20; filed, Oct. 22; payments, $1059, chimneys built; $850, exterior primed; $817, completed; $939, 35 days.

Ellsworth and Dwightway. Two-story frame; owner, A. E. Jacolson; contractor, John Spencer; cost, $7000; Signed; Oct. 20; filed, Oct. 22; payments, $700, first coat of plaster is on; $600, completed; balance, 35 days.

Five-room cottage. Owner, J. Enos; contractor, T. J. Williams; cost, $1334; time, Nov. 17, '90; signed, Sept. 17; filed, Oct. 21; payments, $333; framed; $333, first coated; $333, completed; $335, 35 days.

Linden near 18th street. One and ½ story cottage; owner, C. P. Dillon; architect, S. E. Fisher, contractors, J. C. Kyle & J. Rutherford; cost, $2722; signed, Oct. 2; filed, Oct 13; payments, ¼ shingled; ¼ windows in; ¼ 31 days.

Lot 19, block 584, per Kellersberger map of Oakland. Owner, M. E. Walker; architect, Henry Clausen; contractor, J. Knott; cost, $2,000; signed, Oct. 15; filed, Oct. 15; payments, $800, framed; $400, brown coated; $500, completed; $500, 35 days.

Lots 4, 5, 6 and 7 Map of the Alden Tract. Two-story frame dwelling and house. Owner, G. E. Brickerhoff; contractor, W. H. Wellbye; cost, $8,800; signed, Oct. 16; filed, Oct. 16; payments, $2,900, roofed; $2,300, plastered; $2,200, completed; $2,200, 35 days.

Madison and Sixth street. Owner, J. C. Adrianec; architect, R. Gray Frisc; contractor, J. C. Adrianec; cost, $2,500; signed, Oct. 17; filed, Oct. 18; payments, $1,942.50, completed, $647.50, 35 days.

Point street near Sixteenth. Owner, H. J. Eaton; contractor, P. F. Nelson; cost $1,925; time, Dec. 15, '90; signed, Oct. 13; filed, Oct. 15; payments, $482, brick work done, $181, first coat of plaster on; $181, completed; $481, 35 days.

San Pablo Ave. near Fifteenth street. Engine House; owner, City of Oakland; architect, W. J. Matthews; contractor, McDonald & Eggleston; signed, Oct. 15; filed, Oct. 25; payments, $2,369, one-fifth completed; $2,369, two-fifths completed; $2,369, three-fifths completed; $2,369, four-fifths completed; $2,369, completed; $2,950, 35 days.

San Jose Ave. near Willow street. Owner, H.P. Moreal; contractor, A. W. Pattani &Co.; cost, $ 565; signed, Oct. 14; filed, Oct. 16; payments, $800, chimneys built; $600, exterior primed; $750, completed, $635, 35 days.

Twentieth street. Owner, L. A. Kennedy; contractor, E. H. Lake; cost, $1,800; time, Jan. 15, '91; signed, Oct. 13; filed, Oct. 15; payments, $450, framed; $450, brown mortared; $450, completed; $450, 35 days.

Webster near Thirteenth. Frame engine house; owner, City of Oakland; contractor, W. J. Kennedy; cost $1,799; signed, Oct. 11; filed, Oct. 14; payments, $1,799, completed.

Walnut steert near Rail Road Ave. One-story and basement; owners, G. B. & M. A. Munn; architect, A Stenbiht; contractor, A. L. Fell; cost, $1100; signed, Oct. 8; filed, Oct. 16; payments $275, framed; $275, white coated; $275, completed; $275, 35 days.

Washington cor. 14th. Owner, W. F. Hamilton; architect, W. J. Mathews; contractor, W. Winnie; cost, $5854; signed, Oct. 15; filed, Oct. 18; payments, $875, one-fifth completed; $875, two-fifths completed; $875, three-fifths completed; $875, four-fifths completed; $875, completed; $1459, 35 days.

One-story cottage; Owner, E. J. Lowza; contractors, Pierce & Ruch; cost, $2092, signed, Sept. 7; filed, Sept. 24; payments, 75 per cent of net cost when enclosed; roofed, shingled and plastered; balance, 35 days.

Alameda.

One-story cottage. Owner, W. T. Smith; contractor, H. S. Kribbs; cost, $1,475; time, 60 days; signed, Sept. 6; filed, Sept. 12; payments, $375, rustic on; $372, brown coated; $350, completed; $375, 35 days.

Two-story. Owner, E. M. Hubbard; architects, Judd, Hawley & Co; contractor, D. Stant and Son; cost, $3,468; time, 90 days; signed, Aug. 14; filed, Sept. 15; payments, $867, chimneys built; $867, ready for plastering; $867, completed; $867; 35 days.

3rd. Ave. near 15th street. Cottage; owner, E. H. Lohman; architect, R. H. Fisher; contractors, Pierce & Ruch; cost, $2,500; time, 75 days; signed, Sept. 11; filed, Sept. 15; payments, $500, framed; $500, shingled; $500, brown mortared; $500, completed; $500, 35 days.

6th. Ave. near 9th. One-story frame; owner, L. Welter; contractor, F. A. Brown cost, $1,475, time, 60 days; signed, Sept. 11; filed, Sept. 12; payments, $368, framed $369, first coat of plaster on; $369, 32 days.

Two-story frame. Owner C. B. Higby; contractor, W. H. Wellby; cost, $3,500; signed Sept. 10, filed, Sept. 11; payments, $875, sheathing on; $875, first coat of plaster is on; $875, first coat of paint is on; $875, 35 days.

One-story frame. Owner, M. La Plant; contractor, A. W. Smith; cost, $1,400; signed, Sept. 10; filed, Sept. 10; payments, $350, rustic on; $350, brown mortared; $350, completed; $350, 35 days.

Railroad Ave. and Bay streets. Owner, W. Austin; contractor, J. Conant; cost $2,556; time, 80 days; signed, Sept. 26; filed, Sept. 27; payments, ¼; framed; ¼ brown mortared; ¼ ready for painting; balance, completed.

Myrtle Ave. near Encinal. Owner, J. Lemon; architects, E. G. Friese & E. H. Lake; cost, $3,680; signed, Sept. 23; filed, Sept. 26; payments, $920, first coat of plaster is on; $920, windows hung; $920, 35 days.

Dana St. near Bancroft Way. Owner, F. F. Weston; contractor, J. H. Jones; cost $1,350; signed, Sept. 20; filed, Sept. 20; payments, $450, outside finished; $450 completed; $450, 35 days.

Central Ave. E. from Bay. Two-story; owner, A. L. Fell; architect, A. Steinbiht; contractor, H. Mohns; cost, $1,657, signed, Sept. 16; filed, Sept. 20; payments, $408.75, rustic is on; 408.75, white coat on; $408.75, completed; $408.75, 35 days.

Two-story dwelling. Owner, A. L. Fell; architect, Steinbiht; contractor, H. Mohnns, cost, $1,535; signed, Sept. 16; filed, Sept. 20; payments, $408.75, rustic on; $408.75, white coated; $408.75, completed; $408.75, 35 days.

Two-story frame. Santa Clara near St. Charles Ave; owner, F. R. de Solano; architect, A. Stenbiht; contractors, A. B. Taylor & Son; cost, $2,625; signed, Sept. 15; filed, Sept. 16; payments, $656, rustic on; $656, white coated; $656, completed; $657, 35 days.

Brooklyn.

Jones Ave. Owner, W. B. Burling; architects, Moosier & Cuthbertson; contractor, M. H. Hackett; cost, $1,740; signed, Sept. 16; filed, Sept. 15; payments, $435, chimneys up; $435, brown coated; $435, completed; $435, 35 days.

Berkeley.

N. W. cor. Vine and Walnut; Owner, T. H. Welch; contractor, G. A. Embury; cost, $2,700; time, Dec. 15, '90; payments, $600, framed; $600, brown mortared; $600, painting; $900, 35 days.

Haight Tract. Alterations; owner, H. D. Bacon; contractor, H. M. Kirkwood, cost, $1,675; time, Nov. 15, '90; payments, $300, moved; $750, completed; $425, 35 days.

N. E. cor. Chestnut and 10th Sts. Owner, A. Felton; contractor, J. H. Fones; cost, $1,425; time, Nov. 1, '90; signed, Sept. 23; filed, Sept. 24; payments, $500, when outside of main house repaired. Additions that are separated and moved. Brick foundation in and rough plumbing done in both houses.

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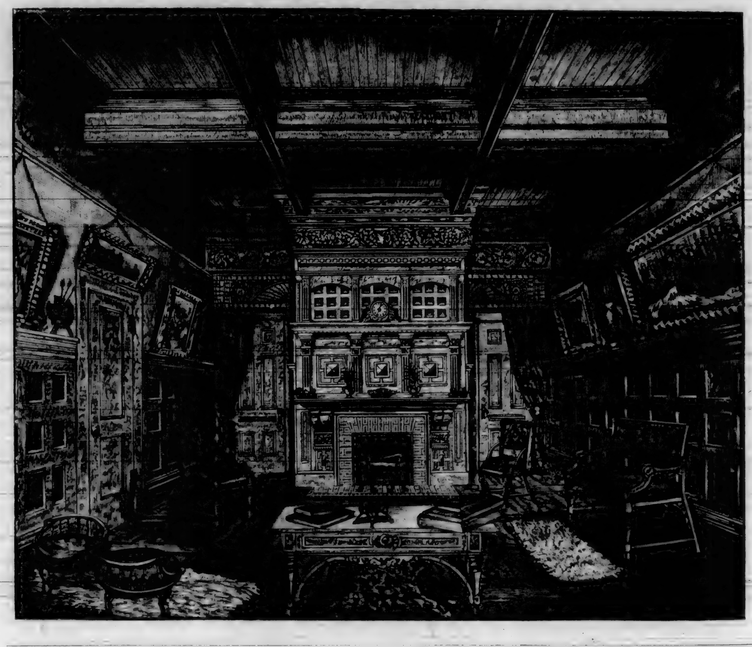

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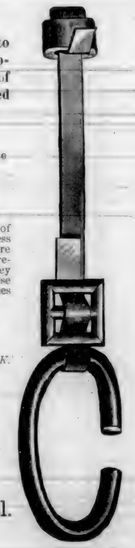

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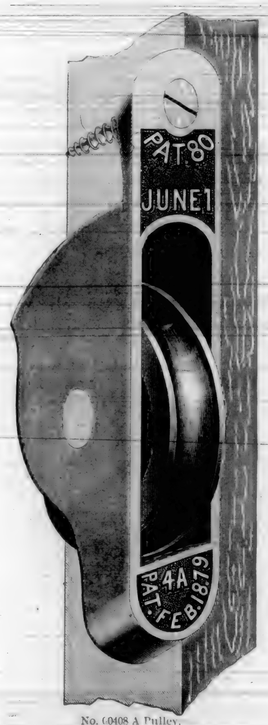

No. 0408 A Pulley.
Page 12 in 1890 supplement.
The above cut shows the Norris Pulley as it appears in the frame. This Pulley is made so that the Rope cannot possibly leave the wheel.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at 408 California Street.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas

Technical Society of the Pacific Coast, meets first Friday of each month at 408 California Street.

John Richards, Pres. Prof. Frank Soulé, Vice-Pres.
Otto Von Geldern, Sec. Jas. Spiers, Treas.

IT is the desire and intention of the Directors to enlarge and improve the paper for the coming year. To do so to any extent, will require the good will and aid of all persons interested in the advancement of the Pacific Coast in this respect. We therefore ask our friends throughout the country to favor us with any news in this line that may come to their knowledge. During the year, we propose to illustrate some of the oldest architecture in the State, and as there are many persons who have a knowledge of these buildings from personal observation, we request them to do us the kindness to send any information that may be of use to the student of the future when all these monuments are gone.

THE daily papers have recently described the over-crowded condition of the County Jail; almost thrice as many inmates as the building was designed to accommodate, jammed into a worn out, tumble down structure, from which a determined criminal could easily escape; nothing like as much air as the cubic air ordinance is supposed to make compulsory; great danger of an epidemic, and no ghost of a probability that anything will be done to remedy these evils.

Really, the citizens of San Francisco have but little right to criticise the Government for dilatory proceedings in erecting a Post-office, when such a disgraceful jail building is in existence.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects was held at their rooms, 408 California street, on the 14th inst., the Vice-President, W. J. Cuthbertson presiding. Jas. W. Reid was elected an active member. Linden Bree a student member.

A. Pissis, J. W. Curtis, and H. T. Bestor were appointed a committee to confer with kindred societies in regard to legislative measures, etc. An invitation was received from Prof. Keith, to the Chapter and its individual members to visit the works of the Electrical Engineering Co., 21 Spear street, to view the materials and the various processes used in the manufacture of the Keith Motor. The "Sketch Club" drawings were received, and awards made.

THE A. I. A. Sketch Club held its regular monthly meeting in the rooms of the Chapter. The following officers were elected for 1891: President, R. H. Wetmore, Jr.; Vice-President, S. C. Benson; Secretary and Treasurer, H. J. Van Vlack. Several applications for membership were received. The subject for the evening was a paper by S. C. Benson on "Architectural Design." "A Wayside Shelter" the competition subject for December were shown. These drawings indicate improvement both in design and draughtsmanship. The annual exhibition of drawings was postponed.

THE subscription of this Journal for the year 1891 is $3.00, payable in advance.

SUBSCRIBERS will please notify us *promptly* of any failure to receive the paper, and also of any change in their address.

THE regular meeting of the Technical Society of the Pacific Coast was held on the 7th inst. at their rooms, 408 California street, President Richards in the chair.

Mr. A Lietz, a manufacturer of mathematical instruments, read an interesting paper on "How to Select a Good Surveying Instrument." He showed by the aid of the microscope the difference between lines properly and improperly cut in the very fine scales for measuring.

Mr. Wagner illustrated a practical method adopted by himself, for correcting a surveying instrument that had been sprung out of true by accident.

INSTRUCTION IN DRAWING.

A Critical Review of the Prang Course in Form-study and Drawing.—Continued from Page 116.

This is the report which comes to us from the "heart" of Europe, from the country which conquered through "the schoolmaster at Shadowa."

As the matter of instruction in drawing has interested me very much for twenty years, I have taken every opportunity to inform myself in regard to it. It has been repeatedly required of me to give lessons in microscopic drawing in the botanic laboratory, and to initiate students of both sexes in its technique; and I may say, after my considerable experience, that a decided advance in the education of the young in this study is evident, though not in a degree to satisfy me with the acquirements of students entering our universities.

I will not omit, in this connection, to allude to a very significant fact, which gave rise to this present dissertation. I have been repeatedly honored by the presence of young students from America, who came to work with me in botanic microscopy for one or more terms. In such cases I observed that the average of students from America drew better than those of Europe of the same age who, coming from the most varied nationalities of the Old World, competed with the young Americans in these practical studies. To this must be added the circumstance that in America, during the last two decades, the technique of reproduction in the case of drawings, water-colors, chromo-lithographs, zincographs, woodcuts, etc., has made more progress than in any other part of the world.

That this state of affairs has been brought about, that it has become possible to-day in the United States for instruction in drawing, and the resulting ability for work in art and scientific technique to surpass similar European effort, is no wonder to him who traces the effect to its natural cause. This is interesting and instructive; then following backward the natural cause of this development, we are brought at last to the fountain-head, the primary school, and gain the conviction that we Europeans have been surpassed by the Americans in their *method of instruction in drawing in the primary and intermediate schools.* It will not be surprising if this vigilant nation finally surpasses us, and also puts us in the shade in the field of artistic painting and sculpture. This I call an enjoyable danger, and greet it in advance in the interest of the general welfare of humanity.

An article in the "Journal of Education", published in Boston (Vol. XXVIII, No. 1), first called my attention to an American method of teaching drawing that obtained there in a short time a leading and almost national influence. There it was stated that "to-day about two millions of pupils are taught by this method, and that the principal teachers and educators of the New World consider it the best and most rational of all." An especial work based on this method was referred to, "Prang's Course of Instruction in Form Study and Drawing," published by the Prang Educational Company, in Boston. I at once ordered the Prang materials for teaching to be sent to me, that I might understand the method by personal study. Having now done so, I am ready to declare that the United States may congratulate themselves upon having created, and put in practice in their schools, a work of such importance. I have no doubt that this is a great pedagogical achievement, of invaluable benefit in possible results, though its educational usefulness can perhaps only be fully appreciated by future generations. A branch of culture heretofore neglected has at a stroke been firmly established in the line of natural methodical progress, and must prove one of the most powerful levers known in the history of educational methods. This important work has been brought about largely by the instrumentality of Louis Prang, a political refugee of '48, who has united German taste for the fine arts and German idealism to American executive power; and it is to him that United States owe in no small degree the development of a course in drawing for public schools that may well engage the attention and excite the envy of European nations.

It is worth while to examine the Prang method closely. It is a systematic course, including all the school years from the first primary class through the intermediate to the high schools. It is so simple and natural a system that it *must* be successful. It is adapted to the plastic child-nature, which needs to be cultivated and developed by parents and teachers to the stature of perfect manhood. It is fitted to the child's senses, which must be trained, and it cannot fail to be a powerful factor in the simultaneous unfolding of the mental powers. It appeals in the first instance to the senses of sight and touch. As the old school method limited itself almost wholly to intellectual training and inward activity, and notwithstanding its definitions and exercises never arrived at the proper use of the essential tools of the mind, and hardly to the observation of the real world, it is not surprising that this old school method, still to be found in most parts of Europe, has not fulfilled, and will not fulfil, the demands of daily life. People have been trying too long "to bridle the horse by the tail." But now comes the Prang method in drawing, which requires as the first condition of education, observation by the hand and eye, feeling and seeing, the exercise and development of the senses of touch and sight; and then as soon as the senses begin to develop thought follows, which finds expression through the naming of objects, through comparing and discriminating, and through modelling, drawing, and verbal descriptions. The Prang method makes necessary the use and study of external objects and models from the very outset. Thus the general character of the first years of study depends upon the necessity of developing ideas of form in the minds of the young pupils from the outset. Later this knowledge of form is carried farther, and this is done in three different directions, which tend toward industrial construction, pictorial representation, and decorative design.

For the better understanding of this new method, nothing seems so desirable as to study it in its beginnings. It is too often forgotten that the pupils in the *elementary classes* are the essential material which every school has to deal with. Here is laid the foundation for the whole superstructure of a thorough all-round school education. One glance at the first year's work according to the Prang method serves to attack and convince us. A little manual, "The Use of Models", is given to the teachers. The sphere, cube, cylinder, various prisms, cone, ellipsoid, ovoid, square pyramid, together with little uniform sticks, are given to the pupil to serve for standards; and it should be noted that these models are used by every pupil as well as by the teachers—that is, each pupil is supplied with them, and they are looked at, handled, modelled in clay, and finally drawn.

These objects are first studied as wholes by being grasped and examined by each and all of the pupils at one time according to the teacher's direction, and then some are modelled in clay by all. After this they are used in building and in arrangements. Their surfaces are studied by each of the scholars in the presence of the others. The different sides or faces of the models are then studied to find the plane geometrical figures. The shapes of these geometric figures are then shown of cardboard, and are studied, and are also used to represent objects and decorative arrangements. Then follows the folding and cutting of paper into different figures. The slender sticks are laid down to represent the outlines of certain forms. When the scholars have thus made themselves familiar with their models, they are shown how to study other objects similar in form and shape.

It will be noted that the scholar's work consists chiefly in cultivating his organs of sense; that perception of form is invariably obtained from models and real life, and not from drawings or copies in the old drawing master's style, and that actual drawing does not begin as an exercise till a clear idea of the form or subject is created in the pupil's mind. The drawing itself is used in the first stage very freely, the pupil not being confused at first with rules, but gradually accustomed to a proper attitude and a correct use of the pencil.

Drawing-books, made of suitable paper, of half quarto size, contain hints for pupils, and these are accompanied by a manual for teachers; and an examination of these and the suggestions they contain must persuade any reasonable person that the principle of gradual progressive development pursued here is the true one, and cannot fail in its results.

From the beginning great stress is laid upon bold, freehand drawing. The advice given for this purpose is intelligible to any one who has ever drawn with a pencil.

The models and objects to be used, as well as the use of them, are unique, and such as have not been seen in Europe. The model being held in the hand of each pupil, the part visible from one point of view is carefully observed, and attention is called to these parts which cannot be seen. The pupils are made to pass the finger along the outer limit of the visible part, the character of this outline or contour being noted, and drawn in the air by a movement of the pupil's hand. After this the drawing is made on paper with a soft pencil. During the first lesson each line to be drawn is preceded by a corresponding preliminary movement.

[TO BE CONTINUED.]

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

To Editor California Architect and Building News:—

Before the Trustees of the Mechanics' Institute make a decision as to their method of procedure in regard to their proposed new buildings, we hope that the following items have received due consideration from them.

In the first place, being a building of a semi-public character—a building which the whole community takes an interest in, and the Institute being founded for the public benefit, they have no light trust thrust upon them, and the best talent ought to be got to carry out the proposed improvements.

This can only be done by inviting sketches from all architects and distributing a liberal sum, say $500, among them to induce the best architects to use their greatest endeavors in producing good designs. A Library Building for the Mechanics' Institute is an interesting enough subject to bring out first class designs, and for such a building we think no doubt architects would be willing enough to allow the good points of any selected plans to be used for the bettering of the one adopted for carrying out, as long as compensation was made for the same and due acknowledgment.

By this means the Trustees would be greatly helped in their endeavors to make the most of the property, and to do what is right by the public.

Secondly. By no means must they allow the spirit of commercialism to overcome them to such an extent as to mix up shops with library.

The Library must be a separate building, altogether from the store and office building, and any such absurd proposition as was made at the last quarterly meeting, of a huge commercial block with the library sandwiched in, as if it were to be considered as rather a nuisance than otherwise, because it brings in no rents, ought to be at once squashed. Let us make no more mistakes such as the Academy of Sciences did when they stowed away their rooms in the rear, and gave no sign of the character of their building on the outside, except a *gilt* sign, which will be only distinguished from the signs of the dentists, lawyers, doctors, tailors, shirtmakers, etc., who will occupy the front rooms, by it being on granite, while theirs will be on glass. This will evermore be a standing disgrace to it; let not the Mechanics' Institute be included under the same obloquy.

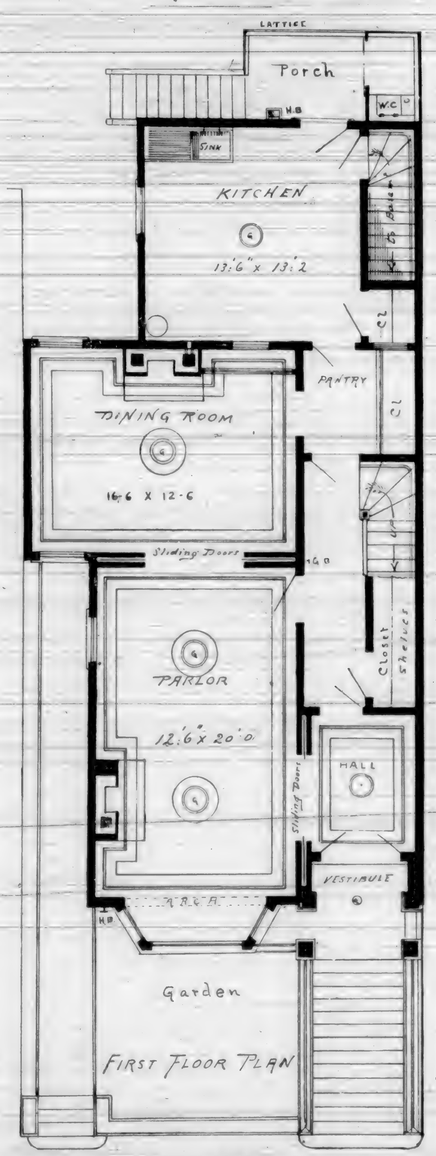
The Library Building should be a fire-proof structure with a space all around it, entirely cutting it off from any other building—say occupying the Grove street side of the Institute lot. The rest of the lot could be leased, or stores built upon it as an entirely separate proposition.

Now this problem is no light one, and all the light which the combined architectural talent of this country can throw upon it will be none too much.

An exception to the general rule is the new Hibernia Bank Building, which for that reason will be a monumental building always worthy of the City, notwithstanding any objections that may be made against its style. We believe, however, that even in that case, the Bank was compelled to put up a building undevoted to trade, by its charter.

Yours etc.,

Stroller.



City Cottage. Huerne & Everett, Architects.

Front View.
City Cottage. Huerne & Everett, Architects.

ILLUSTRATIONS

This city will soon possess a Girls' High School, which will be a model of its kind. It was designed by T. J. Welsh, architect, and will replace the building destroyed by fire some months ago. The site for the new school is the southeast corner of Geary and Scott streets. The building will be three stories in height, besides a high finished basement. The materials employed will be brick, with stone trimmings, and the style, modern Romanesque. The top story is devoted almost exclusively to an Assembly Room, with a stage for exhibition purposes.

The design for a Carriage and Gate Lodge at Pinole, is by Samuel Newsom, architect.

The design for a two-story city cottage is by Huerne & Everett, architects.

We present the following idea as a suggestion for a "cartouch" on a monument in memory of a deceased book-keeper.

"A mercantile firm sent as a floral offering to their deceased book-keeper, a ledger with 'O. K.' inscribed across the open page."

A recent canvass of the New York Board of Health shows that 1,200,000 people—about three-quarters of the population of the city—live in tenement houses.

LEGAL DECISIONS.

Substantial Compliance with Contract.—By the terms of a building contract, the second payment was to be made "when the cornice is set, siding on, and floor laid." Where the question as to whether or not the second payment is due, the fact that a small portion of the siding, which could be put on to a better advantage at a later stage, has been omitted, with the consent of the other party, will not defeat a recovery on the ground that the terms of the contract have not been complied with.

Rogers v. McGuire, Supreme Court of New York, 10 N. Y. Supp. 831.

Appraisal of Value by Insurance Agent.—Where the defense to an action of fire insurance rests upon the allegation that the insured misrepresented the value of the property insured, the fact that the statement of value is largely a matter of opinion, and that the agent of the company has a full view of the property and concurs in the estimate of value made by the insured, binds the company to an acceptance of the estimates, and amounts to a waiver of the misrepresentation if there is any.

Virginia F. & M. Ins. Co. v. Saunders, Supreme Court of Appeals of Virginia, 11 S. E. Rep. 794.

THE case of Smithmeyer & Pelz against United States, to which we have before referred, has been tried and decided by the Court of Claims, and, although the plaintiffs have appealed from the decision to the Supreme Court of the United States the interpretation of the law which the Court of Claims lays down is of extreme importance to architects. According to the printed report of the case, the facts, as found by the court, were that of March, 1873, the Commission of Plans for the proposed Congressional Library building issued an invitation to architects to submit sketches for the building, and offered a prize of fifteen hundred dollars for the one adjusted best by the Commission, one thousand dollars for the second, and five hundred for the third. In response to this invitation, Messrs. Smithmeyer & Pelz submitted a design, in Italian Renaissance style, was adjusted the best, and the first prize was paid to them. Soon afterwards, at the request of the chairman and members of the Committee on the Library, and plaintiffs submitted a new design, involving some changes of the plan and a change in the elevation. Five new drawings were submitted, including a colored prespective, a front elevation and portions of the floor plans. About 1875, at the request of the chairman of the Joint Committee on the Library, the plaintiffs prepared plans on an entirely new basis for a library building in the Gothic style. Seven drawings were made, only four of which were submitted at the request of the chairman, although the designs of the previous year were acceptable to the Committee. About 1877, at the request of the chairman, the plaintiffs made new drawings, using the same general plan as in the previous Gothic design, but fitted to the elevations in the French Renaissance style, and interchanging the first and second stories. At the time of the preparation of these plans, it was thought possible that the building might be placed on Judiciary Square, and the plaintiffs made, by request cross sections of the square showing the buildings, with grades, sewers, etc.

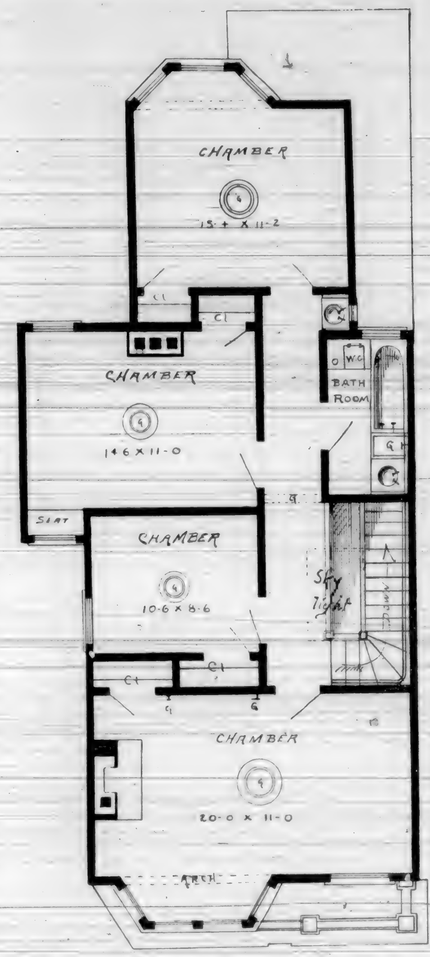
The next whim which seized the committee was to have a design for the building in the Romanesque style, and drawings were made and submitted accordingly. About 1879, the committee had again changed its views and requested the plaintiffs to prepare for a fresh design in the German Renaissance style, embodying all the improvements which had been made by the plaintiffs since the original competition of 1873. These plans, shown by forty finished drawings, were made by the firm of which Mr. Smithmeyer belonged, and submitted and with a slight modification were adopted by Act of Congress, April 15, 1886, and re-adopted by Act of March 2, 1889. This, however, was not all the work that the plaintiffs did in obedience to the whims of Congress. In 1882 at the request of the same committee that ordered the plans of 1880, the plaintiffs remodeled the Gothic designs made several years before and submitted the new drawings, which were adopted by the Senate in a bill which failed to pass the House. Even this was not the end. In 1885 or 1886, the committee asked for new exterior elevations and perspectives, showing the design of 1880 with a more ornate treatment, and these, also, were made and submitted. It may be readily imagined that after 1874, the plaintiffs abandoned nearly all other business to attend to the demands and fancies of the Committee on the Library, and from that time to 1886 they devoted themselves almost exclusively to that work, losing in this way the private business, which as the Court found, they had not regained up to the time of the commencement of the suit; while in 1882, Mr. Smithmeyer, at the request of the committee, traveled through this country and Europe for the purpose of obtaining information about the architecture of the great library of the world.

As our readers know, work has begun on the building from the plaintiff's designs and under their direction, and continued for two years, Mr. Smithmeyer being appointed architect of the building at a salary of five thousand dollars a year, and Mr. Pelz principal draughtman, at a salary of three thousand dollars. In October, 1888, the construction of the building was, by a new Act of Congress, placed under the direction of chief of engineers, with orders to reduce the cost. This he did by the simple process of leaving out a part of it, and summarily dismissed Mr. Smithmeyer, retaining Mr. Pelz, who is still employed.

The claim made by the plaintiffs is for a commission of two and a half per cent. on the estimated cost of the building, amounting to one hundred and seventy-five thousand dollars, in accordance with the schedule of the American Institute of Architects. The Court quotes the schedule and finds that "These are the rates and rules established by the custom and usage of the profession, and are never deviated from by architects in good standing, except under exceptional circumstances, and then only by a special and express contract." It finds further that "The plans under which the building for the library of Congress is being constructed and designed and intended for a monumental building within the meaning of the paragraph of the foregoing schedule, which describes additional rates for such plans," and says that "In a number of the cases the executive brand of the Government has employed architects at the rates prescribed by the foregoing schedule of the American Institute." The Court found that the plaintiffs notified the Chairman of the Joint Committee, previously to 1886, that they intended to charge for their plans, but did not notify Congress of the commission that they intended to charge according to the schedule of the institute.

On this showing, one of the judges is "of the opinion that compensation should be measured by the general rule and usage which govern the compensation of the profession;" that "in legal effect, the claimants proffered their plans to Congress, through the intervention of the Joint Select Committee, for inspection; coupled, nevertheless, with the implied condition that if they were used their services should be paid for as like services are paid for by other persons; that when Congress adopted the design by the Act of 1880, the case reached the condition *Tilly vs. county of Cook;* and that when the defendants proceeded to give effect to the statute by actually using the plans in the erection of a building after their design, the case entered the third stage, in which, as the Supreme Court intimates, the legal liability of the employer at last becomes fixed, and the obligation to pay for the service becomes legally binding." The judge thinks "too, that the decision of the Supreme Court holding that the usage of architects extends to and is binding upon a body-politic erecting a public building *(Tilly vs. county of Cook),* and that it has a recognized and established existence in the District of Columbia *(District of Columbia vs. Cluss, 103 U. S. R., 705)* are authority for holding the usage obligatory upon the Government for a building erected in the city of Washington."

The majority of the judges, however, were of the opinion that the acts of the parties indicated that the services should be estimated according to the rule of *quantum meruit*, and not according to the schedule of charges of the Institute of Architects. Inasmuch as the plaintiffs' "departed from the general rule of architects of measuring their compensation by the customary fees of their profession," and accepted salaries amounting to eight thousand dollars a year, the judges thought that the preceding part of their services "should be estimated according to the same rule which the parties have themselves adopted," and gave the decision of the Court: That the plaintiffs should recover forty-eight thousand dollars, this being approximately equivalent to salaries of eight thousand dollars a year from October, 1874, when the plaintiffs gave up their business to devote themselves to perfecting their plans, to January, 1881, when the plans were submitted to Congress.



Second Floor Plan
City Cottage. Huerne & Everett, Architects.

We shall make no comment on the decision except the obvious one, that if the committee has kept the plaintiffs dancing attendance on them, to the neglect of all their business, for a few years longer, they might have starved them into accepting eight hundred dollars a year salary, instead of eight thousand, and this would then have been the "rule" for computing the value of their professional services in previous years. After an architect has spent fifteen of the best years in his life in trying to please such a committee, and has seen all his private clients leave him, never to return, it is not surprising, that with the prospect of old age and poverty not far away, he should be willing to accept a salary of five thousand dollars a year, rather than get nothing; but the doctrine that one who owes a professional man a large bill for services already rendered, and can keep him out of his money until he is willing to accept a reduced rate for his continued services, is thereupon entitled to scale down the bill

already incurred to the reduced rate is a singular one to be announced by the highest Court but one in the United States.—*The American Architect and Building News.*

COLOR TREATMENT OF INTERIORS.

Nice discrimination will always be called for in the coloring of the rooms with reference to their special character and purpose. The coloring has often more to do with the general effect than the forms of decoration carried out. With cheerfulness or an enlivening tendency must be combined qualities that vary with given rooms. The color most suitable for a parlor is that suggestive of breath, quietude and repose, appearances best secured by the avoidance of a large multitude of details or smaller parts. Consequently a certain degree of simplicity should mark the patterns. Refinement has to be aimed at.

Two parlors open on each other being divided by a portiere hung somewhat low so that the ceiling of either one was visible from the other. The color tint of the separate cellings was strongly contrastive and had an excellent effect. One was of lilac made of blue-black and Indian red, the other a flesh tint made of lakes, carmine and a little blue with some yellow. This of course implied different colored treatment on the walls of the respective rooms. The dado of the former was of cherry wood; the middle space of the wall had a ground of warm orange gray; the ornament consisted of flowers, stems and leaves united in garlands and led over the surface forming capricious divisions; the stem color shades of brown blended into the leaves a mixture of yellow ochre and burnt sienna with a touch of raw umber; the leaf color was mixed from white, chrome green and yellow ochre and a touch of black to subdue. Some of the flowers were carnation color made of scarlet lake and the best and cleanest dry white; others buff color made from white and yellow, and others white. The leaves of the flowers in buff were cold green made from ochre, green and blue, with stems of reddish brown. The frieze consisted of a series of stately hollyhock in reddish purple raising from a mass of cultivated and wild roses and blue forget-me-nots. The ground was a cream white. The color of the cultivated rose was first painted white and afterward glazed over with madder lake; the wild rose was left white with deep yellow and green centre. The green of the leaves and stems was put in different shades so as to give variety and some of the leaves were tipped with pink and red, also upon the coil or undersides. The stiles of the ceiling were flesh color made of lake, carmine and a little blue and some yellow, a faintly tinted ivy plant running in the interstices. Small circles of chocolate color made of red and black were distributed over the ceiling and dotted with old gold.

The parlor with flesh tint on ceiling had dado of maple and the wall had a ground of canary color made of five white and three parts lemon yellow. The middle space of wall was divided off by latticed lines up which a slender creeper made its way, and in the center of each panel was a medallion form filled in with arabesque work in copper colors, of which one part was red, two parts yellow and one black in green color of blue and yellow, in rose color consisting of white mixed with carmine, and some color made of equal parts of yellow umber and red mixed with white, the border showing French gray, citron and willow green. The ceiling had borders of maroon color, three parts of carmine and two of red, filled in with a running design in olive color. The ornament of ceiling consisted of separate scattered flowers of rose color made up of five parts of white and two of carmine.

In the drawing room something of gaiety in the quality of colors never comes amiss. In one of a somewhat stately character lately furnished, olive and blue very suitably predominated, red being only introduced in a very slight degree, as it would otherwise form an inharmonious combination. Gold plays a large part in the enrichment and red simply appears as a fine bordering line to this. But a rich warm brown, which can seldom be omitted in any extensive combination of colors, takes its place, the rest being for the most part broken colors. The frescoed design on the wall, the ground of which is straw color composed of five parts of yellow, two of white and one of red, is a mass of scroll work and leafage tinted in broken colors of medium tone with medallion heads at corners. The frieze consists of series of panels divided off by vases bearing flowers, on which a group of children are disporting themselves. They are in appropriate colors, the ground being white glazing varnish. Beneath all is a band of discs in raised work, these overlapping each other and in oxidized silver. The mode in which the surface is oxidized is as follows: It is first glazed with white shellac varnish and when dry brushed over with a gray color, leaving the color thickest on those portions of background surrounding the raised ornament. The color is now removed from the highest points by rubbing with a soft cloth tightly folded and passing a clean brush over those parts in lower relief that require to be left in half tone. As oxidized silver effects form, a valuable addtiion to mural relief is of importance in producing this metallic effect, that the colors be thickest on those parts of the design thrown most into the shade, and that as in natural oxidation, with its grace with burnished light and softened shadows, the flat surface forming the background should have fewer and more prominent parts of the raised ornament. The woodwork of this room is of enamel white and gold which assorts well with the varied wall colors. The borders of the ceiling are stenciled bronze ornaments of antique design representing open work through which shines a red light tint. Triangular panels in the corner contain large, finely-painted, Ranaissance scrolls. The center is composed of Louis XVI. garlands of flowers beautifully painted. The rest of the surface has a ground of light blue reddish tint and is frescoed with sky effects.—*The Painters' Magazine.*

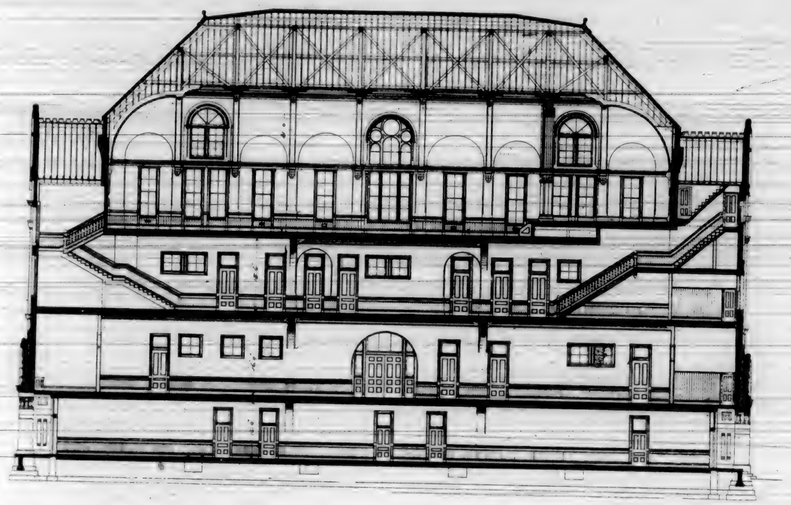
"SELECTED DETAILS OF INTERIOR AND EXTERIOR FINISH, FOR ARCHITECTS, CARPENTERS AND BUILDERS," is the title to a new work from William T. Comstock, New York. This work is of practical utility to persons formulating designs in the later cottage styles. The details are drawn to a scale and take a wide range, treating every part of the house in detail. It contains 32 plates, 14x18 inches.

The Pacific Coast number of the NORTHWESTERN LUMBERMAN for November, published by W. B. Judson, 325 Dearborn street, Chicago, is at hand. It contains a number of articles relating to the timber interests of this coast. It also gives many suggestions as to how the trade of this portion can be increased. It should be in the hands of every one who is engaged in any manner with the lumber trade. The price of the November number is fifty cents.

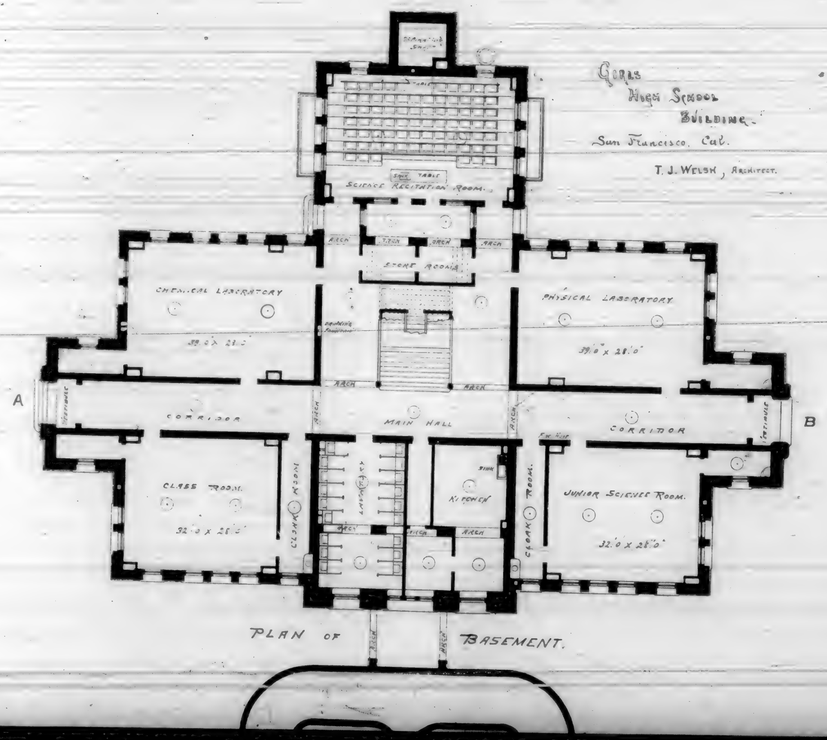
We have received from the Department of State at Washington, a work containing the special reports on FRUIT CULTURE IN FOREIGN COUNTRIES as made by the U. S. Consuls to those countries. The work contains much useful information to those interested, and most especially so to this portion of the United States. We hope soon to hear through the same source an extensive report on the timber and ornamental woods of the various countries where specialties in this line exist.

HOUSE PAINTING AND DECORATING, an excellent monthly magazine published by the House Painting and Decorating Publishing Co. of Philadelphia, has been changed to *Painting and Decorating*. The October number of this work contained a very profusely illustrated article on Stage Painting which should be in the hands of every painter and artist. It is far ahead of anything in that line that we have seen published.

"MODERN BUILDINGS OF CALIFORNIA," by Salfield & Kohlberg, architects of this city, has been brought to our notice. This work is a series of designs by the authors, and is intended to fill a want in the line of published designs, such as the modern flat and other interest paying buildings. The work is quite fully illustrated, some of the plates being artotypes from photographs of buildings actually built. Although the designs are intended, principally, for city buildings, yet they can be used to advantage wherever corner buildings are to be erected, even in the smallest towns. The size of the book is 10½x13½ inches.

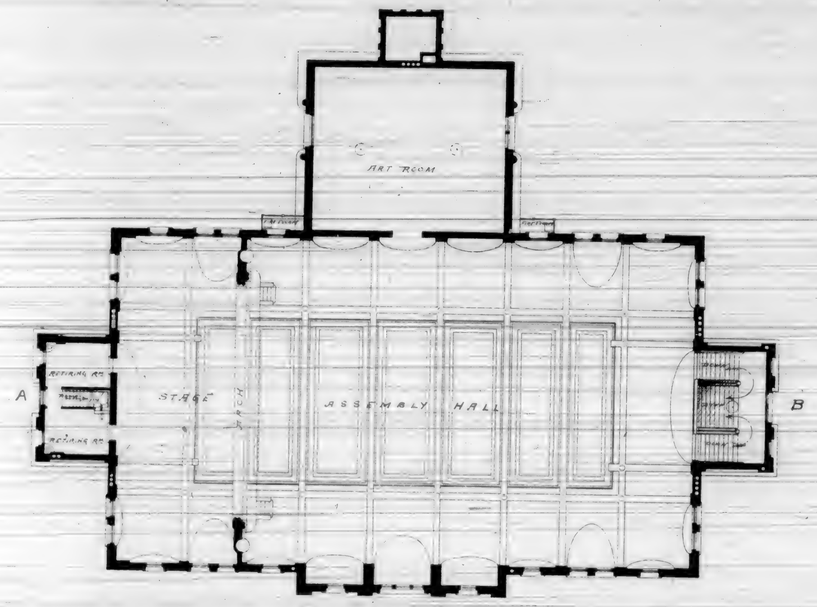


SECTION ON LINE A.B
LOOKING TOWARDS FRONT

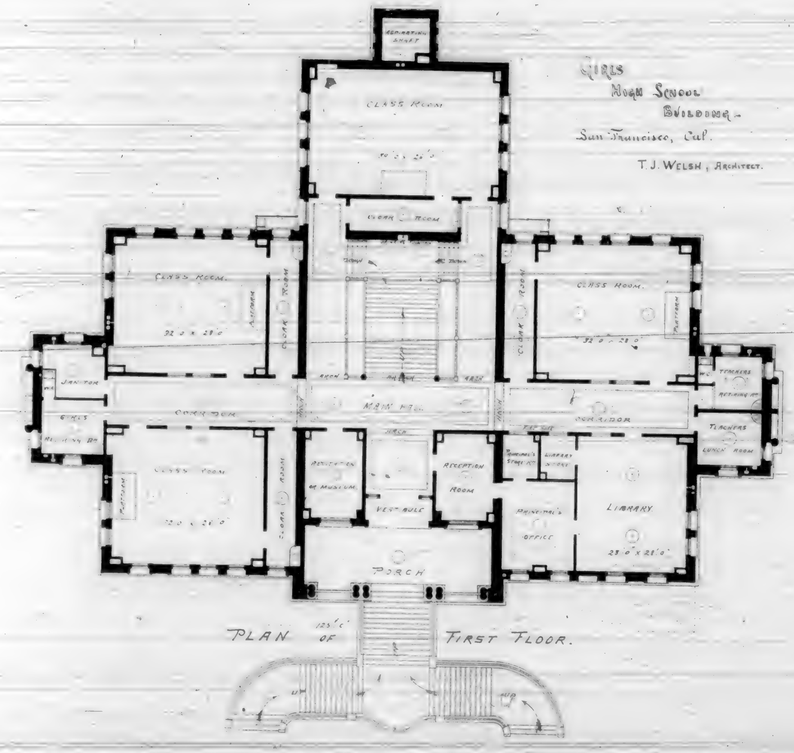


PLAN OF BASEMENT.

Girls
High School
Building.
San Francisco. Cal.
T. J. WELSH, ARCHITECT.



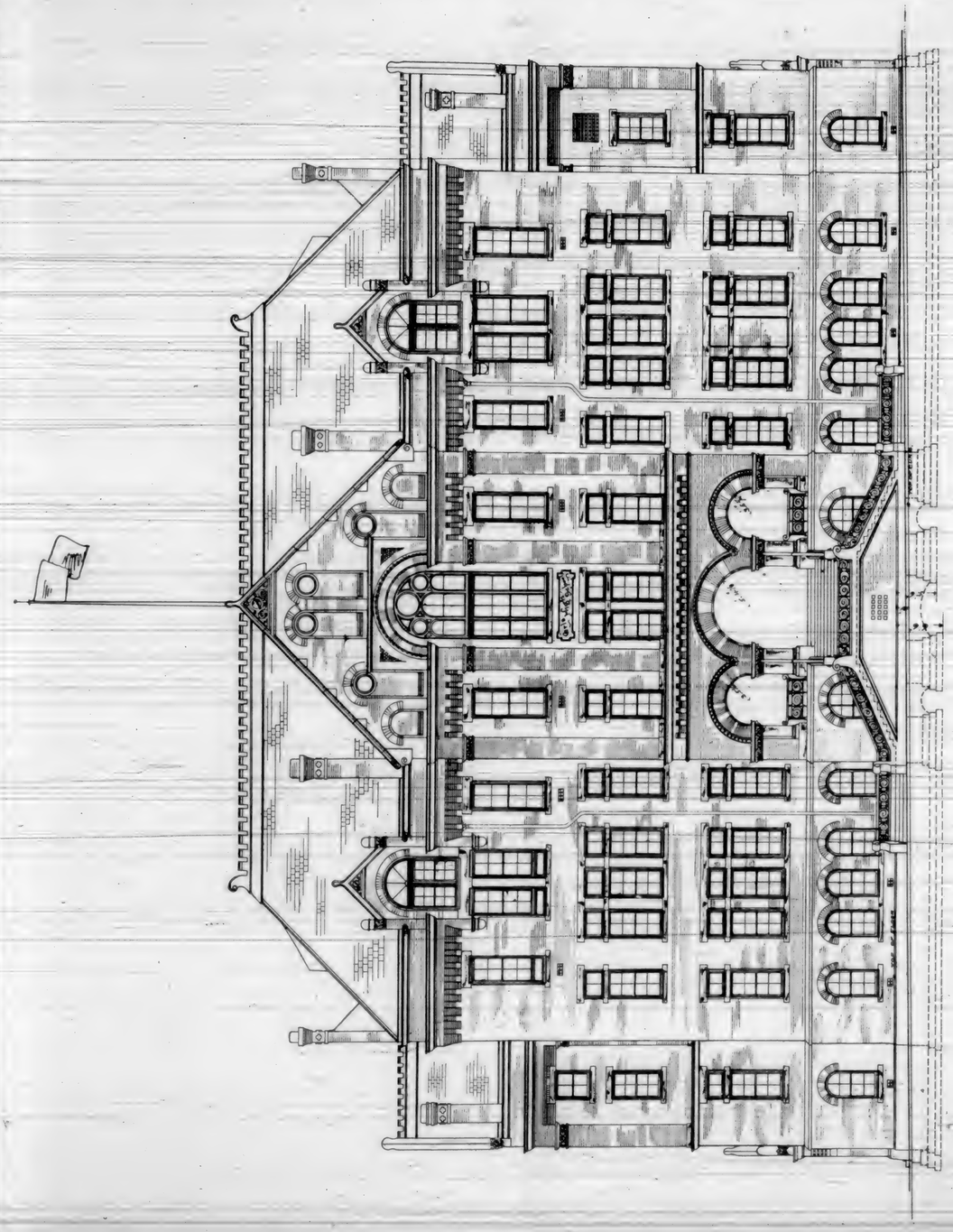
THIRD FLOOR PLAN



PLAN OF FIRST FLOOR.

GIRLS HIGH SCHOOL BUILDING, San Francisco, Cal.
T. J. WELSH, ARCHITECT.

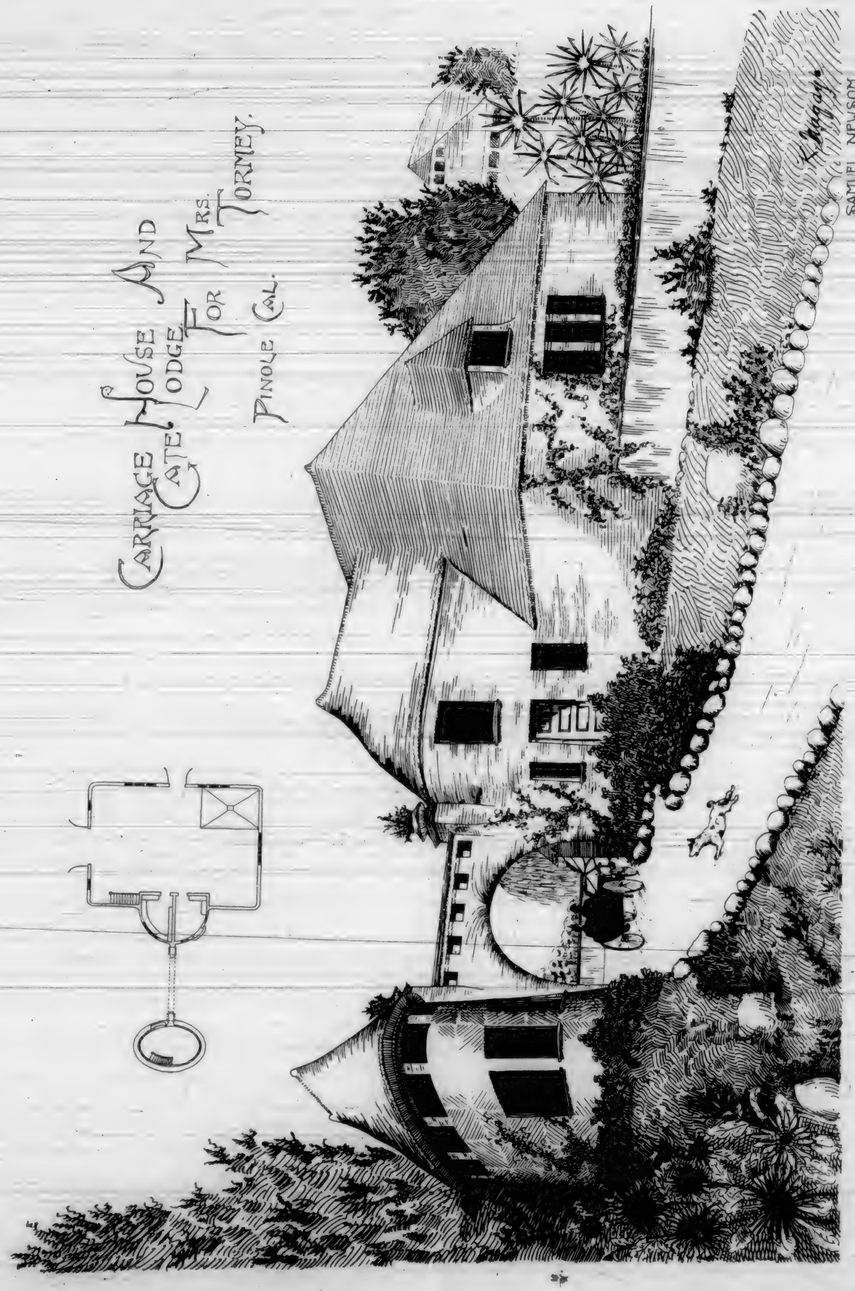
DEC. 1890. VOL. XI. Nº 12.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



GIRLS HIGH SCHOOL BUILDING.
T. J. WELSH ARCHITECT.

FRONT ELEVATION

CARRIAGE HOUSE AND GATE LODGE FOR MRS. TORMEY.
PINOLE CAL.



SAMUEL NEWSOM.
ARCHITECT.
318 PHELAN BLOCK.
S.F. CAL.

We have received the eighth and ninth annual reports, for the years 1889 and 1890, of the STATE MINERALOGIST, WILLIAM IRELAN, JR. These reports contain information of value to any person who may be interested in the subject, as well as to the capitalist who contemplates the establishment of industries where natural mineral deposits become a part of the project.

A NEW BOOK OF DESIGNS by Samuel Newsom,—Architect, 318 Phelan Block, San Francisco,—is just out.. The title is "Some City and Suburban Houses." The book contains a variety of city and country buildings of all kinds. There is something in it that will suit almost anyone. Size of the book, 10½ x 13½ inches.

The MECHANICS' COMPLETE LIBRARY of modern rules, facts, processes, etc., for engineers, mechanics, electricians, etc., is the title of a handy pocket library of 576 pages, 4 by 5½ inches. Published by Laird & Lee, Chicago. This is a handy book and contains much information compiled by Thos. F. Edison, A. M., and Chas. J. Westinghouse. The price of the book is $1.50.

The late catalogue of the *Union Pressed Brick and Terra Cotta Co.* of this city, is a work fit for the drawing room. It is fully illustrated with engravings of ornamental bricks and terra cotta. Also many beautiful designs showing each specialty by itself or in combination.

"BRICKMAKING AND BURNING" is a new and valuable book from T. A. Randall & Co., publishers, Indianapolis, Ind. Price $2.50. The book is 5¼ by 7½ inches, printed on fine heavy paper, handsomely bound, and is of convenient size for the pocket or library. The chapters on the various processes and methods of manufacture are penned in a terse condensed manner by a practical expert, leaving out all unnecessary verbiage yet in no wise restricting the technical and practical part of the work.

The work treats of the different kinds of clay and kilns for burning, the different glazing processes, the various methods of drying, baking and fireing or burning. It also contains many hints to bricklayers, builders, etc.

The author, J. W. Crary, Sr., is a successful brickmaker of upwards of 60 year's experience. In the preface the author says "there are thousands of compilers, but few real authors of books. A compiler may select and arrange matter for a book and make it readable, but of no practical value." In this book the author has worked the most advanced technical knowledge on the subject, with his own long practical experience in a manner which makes a hand book of real merit, and one that should be in the hands of every person in any way engaged in the making or useing of bricks. No architectural library is complete without it.

NOTES & COMMENTS.

The fire limits of San Francisco have been extended.

Work has been begun on the canal and tunnel designed to utilize the water power of Niagara Falls.

"An honest candle power is the noblest work of the electrician."—Healy.

Seattle is now passing through the stage of rotten street planking. Other ancient cities have had the same experience. Seattle has our sympathy, we know how it is ourselves.

The fire escape ordinance of Oakland is to be enforced. It calls for a fire escape to be attached to every building three or more stories in height. The ordinance was passed some eight months ago, but has not, heretofore, been enforced.

Ira O. Baker in the *American Architect* holds that the addition of less than fifty per cent. of Portland cement to common lime mortar decreases the strength of the mortar. We think the experience of builders on this coast will not bear out Mr. Baker's views.

Judge Cullen, of the New York Supreme Court, has decided that the municipal authorities cannot make building regulations that conflict with State Laws—the city ordinances required that 35 per cent. of the ground space of lots for tenement use, should be left vacant for light and air. The State law required only a vacant space of ten feet in the rear of the building.

Zymotic diseases continue to spread in the districts on the other side of the Bay. The Health Officer blames the doctors for not notifying them of cases that are brought to their notice. The doctors blame the Health Officer for not taking the necessary precautional measures. The public blames the authorities all round, while the outside lookers-on blame the public, individually and collectively, for not attending to the proper sanitary condition of their own surroundings.

An ornament when made useful becomes a pleasure.

It is told of a good husband who stayed home evenings to read the paper, and yet had the grievous habit of putting his feet up against the wall, that his wife, after long suffering on account of the disfigured walls, made a fine silk holder for a pair of art worked slippers, which she fastened to the wall as an ornamental covering over the place defaced by the foot marks. The husband, mistaking the meaning, placed his boots in the slippers, thereby holding his feet in place much to his ease, whereupon he praised his wife for her thoughtfulness and ingenuity.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the year about to close:

FOR FIRST SIX MONTHS.

	No. of Bld'g.	No. of Contr't.	Brick Building Value.	No. of Bld'g.	No. of Contr't.	Frame Building Value.	No. of Bld'g.	No. of Contr't.	Alterations & Ad'tions Value.	No. of Bld'g.	No. of Contr't.	Total Value.
January	3	10	$102,754	21	33	$158,555	8	9	$20,479	33	52	$281,779
February	5	18	261,940	48	54	266,017	6	6	24,725	60	78	552,985
March	5	15	192,120	98	44	318,906	5	5	15,575	48	64	526,701
April	5	16	232,372	81	103	548,456	10	10	30,516	96	129	811,344
May	3	25	161,468	64	72	366,845	18	19	48,516	83	116	574,959
June	10	17	136,027	74	83	443,871	11	17	64,192	99	117	644,090
Total	31	101	$1,086,686	326	589	$2,102,950	58	66	$204,831	417	556	$3,393,858

FOR SECOND SIX MONTHS.

	No. of Bld'g.	No. of Contr't.	Brick Building Value.	No. of Bld'g.	No. of Contr't.	Frame Building Value.	No. of Bld'g.	No. of Contr't.	Alterations & Ad'tions Value.	No. of Bld'g.	No. of Contr't.	Total Value.
July	3	6	$329,225	42	59	$389,412	10	12	$27,455	55	71	$746,092
August	2	17	75,516	61	71	349, 71	8	9	24,968	71	97	449,555
Sept	4	15	153,067	55	71	291,457	17	17	58,690	74	103	503,214
Oct	2	8	94,981	41	48	296,394	6	5	13,173	48	61	404,551
Nov	3	9	48,107	39	47	227,780	8	8	11,219	50	64	287,111
Dec	6	24	229,194	60	60	380,325	2	2	7,035	65	85	602,642
Total	20	79	$1,130,101	296	350	$1,844,446	50	53	$142,522	366	481	$3,101,155
G'd Total	51	180	$2,216,787	622	939	$3,947,396	108	119	$347,353	783	1037	$6,495,013

This statement has been made up from the files of the ARCHITECT and we should bear in mind that in addition to this, there must have been many improvements not noted through the records. We should estimate such improvements at not less than $600,000 in the whole city, making a grand total of say, $7,095,013 for the year.

We give the total values and numbers from 1880 so that our readers may make a comparison :

1880—	397	engagements, value	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669
1887—	1,093	" "	6,605,054
1888—	891	" "	6,244,220
1889—	1,081	" "	7,500,000
1890—	1,037	" "	7,095,013

BUSINESS MOSAICS.

"**Procrastination** is the mother of disaster." See to it that your advertisement in the California Architect for the year 1891 shall begin with the January number in order to bring the various articles in your line to the attention of the Architects in time for them to consider the question of their use in the buildings being planned for next season.

Contracts for the iron and steel beams, girders, etc., for the new Mercantile Library building in course of erection in this city, have lately been let to Messrs. P. H. Jackson & Co., the well known expert constructionists in that line. Mr. Jackson has made the constructioned features of iron work a special study for many years, in fact he was engaged in this business in New York when iron was first introduced as an important feature in the construction of buildings in that city.

By bringing the higher technical knowledge of the day to aid an extensive practical experience, he has become a thorough adept, and master of all the details required for such work. Those persons who have the October and November issues of the California Architect will note some of the forms of construction as worked by Mr. Jackson, they having received the endorsement of the best qualified judges in such matters.

"**Shrewd** prophecy is apparent folly."

W. H. Birch & Co., the old and well-known manufacturers of elevators, are running almost to the full capacity of the works. The improvements introduced by them during the past year, has given such satisfaction, that when these become more generally known, increased facilities will be required to supply the demand.

The city authorities being about to extend the fire limits, it would be well for those parties who may be interested in the matter, to look into the merits of the fire-proof iron lath of the Pacific Iron Lath Company.

Plaster of Paris is prepared of the very best quality for any of the various uses to which the material is applied, by our pioneer factory, the "Golden Gate Plaster Mills," of Lucas & Co. of this city. Superior to Eastern plaster.

Santa Cruz Lime from Henry Cowell & Co. yet remains at the head of the list, wherever a thoroughly reliable article of lime is required.

The Pacific Roll Paper Company is receiving daily, favorable accounts from their Waterproof Building paper, Fay's patent. It has given such general satisfaction to those who have used it, that many orders are beings received in advance for the coming season.

"**If** the lion and lamb lie down together, where is the lamb when the lion gets up?"

For ornamental and cut glass, the establishment of James McCarthy has aquired a reputation for beautiful designs, worked with neatness and care. Convince yourself by giving him a call.

For sheet metal roofing and other work, ornamental galvanized iron, cornices, string courses, chimneys, etc., the old establishment of Wm. Cronan holds its own for first class work.

The Architectural Iron Works of O'Connell & Lewis, are turning out some heavy castings for buildings. This firm has fitted up, at a great expense, apparatus for the accurate fitting of columns and other heavy iron work, so as to give the greatest possible strength for bearing constructive weights.

Curious and peculiar articles are made from a plain sheet of metal by August Lutz, the metal-spinner, who deftly moulds the plain metal into beautiful designs in a few seconds. He is an adept at the business. Parties in want of anything in this line will do well to call on him.

F. H. Rosenbaum & Co., so well and favorably known for years, are yet full of life and vigor, and anything in the glass or mirror line, ancient or modern, can be had of their house. When you pass a very large plate glass with an extremely fine polished surface, just set it down as furnished by F. H. Rosenbaum & Co., and you will be pretty certain of being in the right.

"**The** man who in his carelessness
Leaves wide the outer door,
Will find a place some day, I guess,
Where winter rains ne'er roar."

The author of the above lines had never used the "Blount door check."

Among the Iron Works that have become favorites on account of the excellent quality of their work, is the Western Iron Works. These works are the successors to the old firm of Sims & Morris, which is well known throughout the Coast, as the maufacturers of iron and steel, fire and burglar-proof doors, shutters and bank vaults, and in all kinds of girder, beam, and wrought iron work. Jail work a speciality.

The Selby Smelting and Lead Company is one of those manufacturing establishments without which we could hardly get along. The Selby shot tower has been a marked feature in the views of San Francisco, so also the lead work from this establishment has become a standard for full weight and excellent quality.

About this time of the year the fly-screen man says that the winter was invented just to spoil his business and help the coal man out.

Plumbing is one of the departments of a building that requires to be well done. Messrs. Thos. Clark & Sons, make a specialty of fine work. They are at present putting in the plumbing for the building on California near Kearny street, the new engine house, and the additions to St. Mary's Hospital for the Sisters of Mercy, which is proof of their ability when first class work is wanted.

We had occasion lately to visit Edward Denny & Co., where we obtained an excellent tracing parchment paper, also some colored crayons of superior quality; in fact, they keep the best of everything in the draughtsman's line.

The late fire at the Pottery Works of Tracy Bros. & Co., in this city, will delay the output but a short time. This firm had considerable stock on hand at the time of the fire, from which they are filling orders as usual. By the time the next season opens, the rebuilt works will have their large stock replenished.

"**We** have no historical account that logs were ever rafted down the river Styx."

After a redwood tree is cut down, it must be cut up and run down, then worked up and rubbed down in order to get that beautiful effect of lights and shades due to its variously grained and curled wood as seen at the California Veneer Works, R. P. Hurlbut, Manager.

The merits of Dixon's graphite paint as a covering for metallic surfaces has been attested to by a recent change of practice on the part of the Pennsylvania Railroad Company, who have decided to use it upon the iron work of the Jersey City elevated railroad now being erected. This structure is a mile long, and the iron work has a street clearance of thirteen feet. The company have abandoned their practice of using light colored paint upon iron work, as has been their custom, and will coat this great surface with the Joseph Dixon Crucible Company's Silica-Graphite, which, as everybody knows, is made by this old established concern at their works in Jersey City, N. J.—*American Artisan.*

"**The** nail under the hammer. Which nail?"

The extension of the fire limits will necessitate many changes in the old buildings in the districts effected. Many old buildings can be moved and fitted up to last for considerable time, provided they are raised or moved by a careful and experienced person, such as Mr. Kelleher. For raising or holding in place heavy buildings Mr. Kelleher ranks first. His apparatus can be seen daily where heavy buildings are undergoing the renewal process on the business streets.

To the "Women's Rights" advocates we would suggest that a good way to improve a woman's lot is to build a house on it.

Schuster Bros. have been doing an immense business in stoves and ranges during the past season. The improved portable kitchen ranges, as furnished by this firm, is a superior appliance for the kitchen. This firm also manufactures the Mann patent chimneys.

The West Coast Furniture Company, L. & E. Emanuel, proprietors, have made a reputation for first class furniture and fittings for interior work. Many of our best and most artistically finished residences, banks, and business offices, have been done by this firm. At present they are fitting up the latest improved appliances for the manufacture of the newest high grade work for next season.

A. J. Dunbar & Co. are still manufacturing their high grade Ornamental Iron Work. This firm also makes fire escapes, and all kinds of iron work; such as tie rods, anchors, brackets, etc., buildings.

"Willer" Sliding Blinds.

In no department of the much-vaunted progress for which the Nineteenth Century is so justly remarkable, has greater skill and more persistent ingenuity been shown, than in the various "fitments" which in these days form such material factors in the comfort and convenience of the home. A most interesting case in point is furnished by a new Catalogue (No. 9) which has just been issued by The Willer Manufacturing Co., of Milwaukee, Wis.

The Book is most carefully and elaborately got up, contains about 132 pages, and is profusely illustrated. It is principally devoted to the Vertical Sliding Blind, of which this firm make a special line, though they also manufacture every other form of Sliding and Folding Blinds and Screens as now used.

The feature of the Vertical Blind is that it works like an ordinary sash, by sliding up and down in grooved guide-ways fixed for the purpose in the sides of the window space. The Blind is divided into sections, each of which works independently of the other, and any section can be, when necessary, removed from the window or re-adjusted without interfering with the sash or other sections.

For convenience the Blinds are arranged in classes, each comprising some feature wherein it differs from the others. Thus classes "D" and "E" (which are the two kinds most generally used), or also, classes "F" and "G," all show some varying form of adaptation to existing windows; and in each case, the sections slide wholly within the window space, allowing from one-half to three-fourths of the window being closed when desired. Where it is practicable, however, it is usual to arrange for a space above or below the window, into which the sections can be slid, so as to leave the window wholly clear, and classes "A," "B," "C," "H," "J," "O," "Q," "R," "S," and "T," each show difference of arrangement of pocket space, while classes "I," "K," "L," "M," "N," and "P," all show some different, but always ingenious, means of attaining a similar result where circumstances preclude the use of pockets.

ILLUSTRATION OF CLASS "A."

The Blinds are made in every known wood, and are furnished in two grades. A higher quality for Mansions, Public Buildings, etc., and a second quality for those who require a cheaper article, suited to houses of minor importance. In substance and general appearance there is little to choose, the essential difference being that the latter is not finished with such extreme care.

The Catalogue also contains explanatory illustrations of the "Rolling" Slats, and the new method of operating them which this firm have patented. It is very simple and easy, and obviates any necessity for the rod in front, which is, to so many, so highly objectionable.

A charge of 50 cents is made for the Catalogue, (the latter part of which contains a series of original designs for Fine Stair Work), but a smaller Catalogue (No. 10) is intended for gratuitous distribution and will be supplied to any who desire it.

CITY BUILDING NEWS.

Alabama and 24th Sts. Two-story frame; owner, Richard Haynes and wife; architect, Richard Haynes; contractor, Joseph Sullivan; sureties, P. Swift and Wm. Oakley. $1,000; cost, $1,100; signed Nov. 10; filed, Nov. 10; payments, $700, framed; $800, brown mortared; $800, white coated; $800, completed; $1,000, 35 days.

Arkansas near Napa. Two-story frame; owner, Peter J. Smith; architect, James Glackin; contractor, Jas. Glackin; cost, $1,810; signed, Nov. 8; filed, Nov. 10; payments, $350, framed; $350, brown mortared; $350, white coated; $310, finished; $450, 35 days.

Army near Guerrero. Two-story frame; owner, Mrs. E. R. Parsons; contractor, W. Greenwood; cost, $3,320; signed, Nov. 9; filed, Nov. 20; payments, $775, framed; $760, outside finish done; $1,015, completed; $770, 35 days.

Broadway and Scott. Carpenter work, etc; owner, Wm. F. Herrin; archit ct, Julius E. Krafft; contractor, R. O. Chandler; sureties, W. J. Adams and A. D. Moore. $2,875; cost, $11,500; signed, Nov. 8; filed, Nov. 10; payments, $1,000, attic floor joists on; $2,000, window frames set; $2,000, plastered; $3,600, completed; $2,900, 35 days.

Broadway and Scott. Brick building; owner, Wm. F. Herrin; architect, Julius E. Krafft; contractors, Riley & Loane; sureties, C. A. Warren and H. Remillard. $4,000; cost, $10,825; signed, Nov. 8; filed, Nov. 6; payment, $1,500 up to level of basement; $2,000, level of first story; $2,300, up to level of second story; $2,300, finished; $2,725, 35 days.

Broadway and Webster. Residence; owner, Sydney M. Smith; architect, Maxwell G. Bugbee; contractor, R. O. Chandler; cost, $18,150; signed, Oct. 29; filed, Oct. 30; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Broadway and Webster. Stone work; owner, R. O. Chandler; architect, Maxwell G. Bugbee; contractor, David O'Neil; cost, $5,000; signed, Oct. 29; filed, Oct. 30; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Broderick and McAllister. Brick work, carpenter work, etc; owner, John F. Boyd architect, B. McDougall & Son; contractor, A. Jackson; cost, $20,790; signed, Oct. 27; filed, Oct. 28; payments, $2000, first story joists in; $2,000, framed; $3,000, chimneys up; $5,000, white coated; $2,000, inside finish done; $1,590, completed; $5,200, 35 days.

Broadway and Franklin. Seven two-story frames; owner, Thos. I. Bergin; architects, Shea & Shea; contractors, Mahoney, Bros. cost, $62,411; signed, Oct. 27; filed, Oct. 29; payments, 75 per cent as work progresses.

Broadway and Franklin. Brick work on 7 two-story frame buildings; owner, Mahoney Bros; architect, Shea & Shea; contractor, Geo. D. Neagle; cost, $4,600; signed, Nov. 24; filed, Nov. 24; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Broadway near Fillmore. Painting and graining; owner, A. W. Wilson; architect, P. E. Schmidt; contractors, Fraser & Keefe; cost, $1,400; signed, Nov. 21; filed, Nov. 22. payments, 75 per cent as work progresses; 25 per cent, 35 days.

Brannan near Second. Two two-story frames; owner, I. T. Killips; architect, Chas. I. Havens; contractor, Robt. Currie; cost, $7,704; signed, Nov. 25; filed, Nov. 26; payments, $1,426, enclosed; $1,426, brown mortared; $1,426, outside primed; $1,426, completed.

Bryant and Rincon Place. Elevators; owner, The Sisters of Mercy; architect, Chas. J. Devlin; contractor, A. J. McNicoll & Co; sureties, Geo. E. Dow and Martial Hainque, $2,000; cost, $3,250; signed, Oct. 25; filed, Oct. 27; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Chattanooga near Twenty-fourth. One story cottage; owner, Chas. E. Anderson; contractors, McCauley & Smith; cost, $1,600; filed, Nov. 25; architect, Chas. E. Anderson; payments, $400, shingled; $400, brown mortared; $400, completed; $400, 35 days.

Clay near Buchanan. Owner, N. K. Marten; architect, Samuel Newsom; contractor, J. J. Dunn; sureties, B. Joost & C. S. Holmes, $3,200; cost, $9,500; signed, Nov. 24; filed, Nov. 24; payments, first and fifteenth day of each month; balance, 35 days after completion.

Clay near Scott. Two-story frame; owner, Emmeline Bates; architect, Geo. E. Bates; contractor, R. O. Chandler; cost, $5,000; signed, Nov. 6; filed, Nov. 7; payments, 25 per cent, framed; 25 per cent. brown mortared; 25 per cent. completed; 25 per cent, 35 days.

Collingwood near Nineteenth. Two-story frame; owner, Alice Hoey; architect, M. J. Welsh; contractor, D. Currie; cost, $3,618; signed, Nov. 20; filed, Nov. 26; payments, $904.50, framed; $904.50, brown mortared; $904.50, completed; $904.50, 35 days.

Dore near Bryant. Two-story frame; owner, Michael Mullin; architect, M. J. Welsh; contractors, Mullins Bros.; cost, $2,600; signed, Nov. 17; filed, Nov. 18; payments, $650, framed; $650, brown mortared; $650, completed; $650, 35 days.

Douglass near Seventeenth. Fences and outbuildings; owner, Luke Tierney; contractor, Chas. C. Terrill; cost, $3,700; signed, Oct. 27; filed, Oct. 28; payments, $925, brown coated; $925, plastered; $925, completed; $925, 35 days.

Ellis near Powell. Electric wires, &c.; owner, Caus. Mangels; architect, H. Geilfuss; contractors, Parsons Construction Co.; cost, $1,627; signed, Oct. 29; filed, Nov. 5; payments $600, wires all run; $600, completed; $427.25, 35 days.

Fillmore near Herman Two-story frame; owner, M. C. Doyle; architect, A. J. Barnett; contractor, Thos. Morris; sureties, L. T. Lewis and Reese Llewellyn, $2,000; cost, $5,500; signed, Oct. 24; filed, Oct. 29; payments, $1,200, roof boards on; $1,000, brown coated; $925, white coated; $1,000, completed; $1,375, 35 days.

Hampshire street near Twenty-third. Dwelling house; owner, Wm. S. Wright; architect, Geo. Houston; contractor, Geo. Houston; cost, $1,914; filed, Oct. 28; payments, $475, rustic on; $475, brown mortared; $475, white coated; $489, 35 days.

Harrison near Twenty-third. Two-story frame; owner, Dennis Wynne; architect, Dennis Wynne; contractor, Jas. Campbell; cost, $3,790; signed, Oct. 31; filed, Oct. 31; payments, $947.50, framed; $947.50, brown mortared; $947.50, completed; $947.50, 35 days.

Hayes near Lyon. Two-story frame; owner, Miss E. Cooney; architect, W. W. Rednall; contractor, W. W. Rednall; sureties, Jason Springer & Co. and S. E. Slade Lumber Co., $2,000; cost, $4,990; signed, Nov. 5; filed, Nov. 6; payments, $1,245, enclosed; $1,250, brown mortared; $1,250, completed; $1,245, 35 days.

Hill near Noe. Excavating and foundations; owner, Edwin Parish; architect Edwin Parish; contractor, S. C. Buzzell; sureties, David Woemer and James Rowe, $2,000; cost, $2,200; signed, Nov. 6; filed, Nov. 19; payments, $550, foundations built, 550, enclosed; $800, completed; $550, 35 days.

Hoff Ave. near Sixteenth. Alterations and additions; owner, W. E. Leo; contractors, C. W. Wescott & W. Bocard; cost, $2,435; filed, Nov. 29; payments, $608, framed; $608, brown mortared; $608, completed; $611, 35 days.

Howard near Twenty-second. Brick work, etc; two two-story buildings; 6 flats; owner, F. H. Ellis; architect, P. R. Schmidt; contractor, Orrin E. White; cost, $15,000; signed, Nov. 21; filed, Nov. 22; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near Eleventh. Three-story frame; owner, J. B. Shroyer; architect, M. J. Welsh; contractors, Cuneo & Casaretto; cost, $5,900; signed, Nov. 19; filed Nov. 20; payments, $1,475, framed; $1,475, brown mortared; $1,475, completed; $770, 35 days.

Howard near Seventeenth. Carpenter work, etc.; owner, Louis A. Drews; architect, Chas. I. Havens; contractor, John Furness; cost, $2,890; signed, Nov. 18; filed, Nov. 22; payments, $1,200, enclosed; $940, completed; $950, 35 days.

Howard near Eighteenth. Three-story frame; owner, J. G. James; architects, R. H. & R. White; contractor, R. P. Sanchez; surety, W. C. Grass, $2,250; cost, $8,900; signed, Nov. 10; filed, Nov. 11; payments, $1,700, framed; $1,650, brown coated; $1,650, standing finish on; $1,650, completed; $2,250, 35 days.

Jackson near Devisadero. Two-story frame; owner, Wm. Wamkomshi; architects John & Balczynski; contractors, Schutt & Krecker; cost, $5,775; signed, Oct. 30; filed, Nov. 1; payments, $1,000, framed; $1,000, partitions set; $1,000, white coated; $1,350, completed; $1,115, 35 days.

Lake View Track. Dwelling house; owner, F. C. Pagne; architect, C. K. Kirby, Jr.; contractor, F. Vanderveken; cost, $2,400; signed, Nov. 4; filed, Nov 7; payments, $950, framed; $950, outside finish on; $950, brown mortared; $400, plastered; $950, completed; 25 per cent., 35 days.

Lake View Track. Dwelling; owner, Samuel Johnstone; architect C. K. Kirby; contractor, F. Vanderveken; cost, $1,850; signed, Oct. 30; filed, Nov. 1; payments, $250, framed; $250, outside finish done; $250, plumbing done; $250, inside $387.50, completed; $162.50, 35 days.

Lillie Ave. near Octavia. Brick work; owner Jas. Dowling and wife; architect, S. Hatfield; contractor, Allan Macdonald; cost $2,140; signed, Nov. 3; filed, Nov. 12; payments, $456, framed; $456, brown mortared; $456, standing finish on; $466.50, finished; $612.50, 35 days.

Market and City Hall Ave. Carpenter work; owner, H. J. Tehan; contractor, Samuel T. Green; cost, $5,000; signed, Nov. 28; filed, Nov. 28; payments, $1,875, floors laid; $1,875, completed; $1,250, 35 days.

Mason and Sacramento. Plastering; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, Wm. Commary; cost, $800; signed, Oct. 25; filed, Oct. 27; payments, 75 per cent. as the work progresses; 25 per cent., 35 days.

McAllister and Larkin. Plastering; owners, J. G. and L. N. Day; architect, T. J. Welsh; contractor, C. Dunlop; sub-contractor —; cost, $9,000; signed, Oct. 7; filed, Nov. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Merchant, near Sansome. Concrete and artificial stone work; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractors, Ransome & Cushing; cost, $1,150 signed, Nov. 6; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Merchant, near Sansome. Brick, stone and plastering; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, D. J. Brennan; sureties, R. Brennan and D. Corkney, $1,6000; cost, $2,625; signed, Nov. 10; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Merchant, near Sansome. Carpenter work, etc.; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, J. W. Wissinger; surety, Reese Llewellyn, $1,000; signed, Nov. 10; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Mission, near Fourteenth. Carpenter work, etc.; owner, O. W. Wordwell; architects, Gould & Colley; contractors, R. D. Miller & Co.; surety, Daniel Dodge, $5,000; cost, $7,540; filed, Sept. 11; payments, $540, houses moved; $2,300, brick work is completed; $1,000, roofed; $1,000, plastered; $1,000, concrete work done; $1,800, 35 days.

Mission, near Main. One-story building; owner, Bernard Gallagher; architects, Shea & Shea; contractors, Cahill & Hall; cost, $5,500; signed, Nov. 14; filed, Nov. 18; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Napa, near Missouri. Owner, T. J. Dunnigan; contractor, Jas. Glachin; sureties, N. J. Dickens and Ben Hobart, $1,000; cost, $1,400; signed, Nov. 26; filed, Nov. 28; payments, $350, rustic on; $350, brown coated; $350, finished; $350, 35 days.

Noe and Clipper. Carpenter work, etc.; owner, Henry Burner; architects, Percy Hamilton; contractor, Jas. McConahey; cost, $2,875; signed, Oct. 30; filed, Oct. 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Nos. 40, 40½ and 42, Geary street. Owner, Isaac Levy; architects, Kenitzer & Kollofath; contractor, C. F. Ruppel; cost, $4,800; signed, Oct. 29; filed, Nov. 1; payments, $3,450, completed; $1,150, 35 days.

Octavia near Fulton. Mill work; owner, T. J. Cleary; architect, A. Kendall; contractor, A. Kendall; cost, $1,100; signed, Nov. 12; filed, Nov. 15; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

O'Farrell near Stockton. Concrete work, etc.; owner, Sehewn Levy; architect, H. A. Schulze; contractors, Gray Bros.; cost, $2200; signed, Nov. 1; filed, Nov. 7; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

O'Farrell near Laguna. Carpenter work, etc.; owner, Sarah N. Morris; architects, Salfield & Kohlberg; contractor, Henry Kohling; cost, $6,875; signed, Nov. 21; filed, Nov. 24; payments, $1000, framed; $1000, floors laid; $1155, brown coated; $989, doors hung; $1000, accepted; $1720, 35 days.

Pacific and Front. Cast Iron work; owner, Jas. G. Fair; architect, H. A. Shulze; contractors, O'Connell & Lewis; cost, $8,800; signed, Nov. 29; filed, Nov. 29; payments, first day of each month, 75 per cent. of work done; balance, 35 days.

Pacific and Front. Brick and stone work; owner, Jas. G. Fair; architect, Henry A. Shulze; contractor, John McCarthy; cost, $44,884; signed, Nov. 19; filed, Nov. 20; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pacific and Front. Tinsmith work; owner, J. G. Fair; architect, H. A. Shulze; contractor, Jas. F. Forderer; cost, $3,145; signed, Nov. 29; filed, Nov. 29; payments, first day of each month, 75 per cent. of work done; balance, 35 days.

Pacific and Front. Carpenter work; owner, J. G. Fair; architect, H. A. Shulze; contractor, J. S. Mackay; cost, $33,975; signed, Nov. 29; filed. Nov. 29; payments, first day of each month, 75 per cent. of work done; bal. 35 days.

Pacific Avenue near Van Ness Avenue; two-story building; owner, T. J. Friedlander; architect, Julius E. Krafft; contractors, Peterson and Ackerson; sureties, A. D. Moore and C. S. Holmes, $4000; cost, $11,745; signed, November 19; filed. November 21; payments, $1800, framed; $1500, enclosed; $1500, brown mortared; $2000, plastered; $2000, completed; $2945, 35 days.

Pacific Avenue near Van Ness Avenue; plumbing, sewering, etc.; owner, T. J. Friedlander; architect, Julius E. Krafft; contractor, R. Rice; surety, L. R. Ellert, $1000; cost, $1200; signed, November 19; filed, November 21; payments, $300, rough work in; $600, completed; $300, 35 days.

Pacific Avenue and Webster; carpenter work, etc. Owner, J. Eppinger; architect, W. J. Matthews; contractor, R. P. Hurlbut; cost, $16,000; signed, October 27; filed, October 29; Payments, $2400, one-fifth of work completed; $2400, two-fifths of work completed; $2400, three-fifths of work completed; $2400, four-fifths of work completed; $2400, completed; $4000, 35 days.

Pacific Avenue near Webster; frame building; owner, Mrs. T. V. Day; architect, W. W. Rednall; contractor, W. W. Rednall; sureties, S. E. Slade Lumber Co. and Jason Springer, $1500; cost, $4500; signed November 19; filed, November 19; payments, $1445, roofed; $1150, brown coated; $1150, completed; $1147, 35 days.

Pierce near Page, two-story frame; owner, Owen McArdle; contractor, L. J. Arthur; cost, $4180; signed, October 29; filed, October 30; payments, $800, enclosed; $8000, brown mortared; $880, hard finish; $880, completed; $1120, 35 days.

Polk near Golden Gate Avenue, four-story building; owner, Dr. James Healey; architects, Shea & Shea; contractor, M. J. Gorman; sureties, Jeremiah and John Mahoney, $3403; cost, cost, $13,610; signed, November 6; filed, November 7; payments, $2,552, brown mortared; $2552, Hard finished; $2551, completed; $3,403, 35 days.

Powell near Ellis, three story building, plastering; owner, Jas. G. Walker; architect, T. J. Welsh; contractor, Thos. Winters; cost, $1495; signed, October 21; filed, November 5; payments, $560, brown coated; $561, white coated; $374, 35 days.

Powell near Eddy. Electric wires for a four-story brick building; owner, Schwartz; architect P. R. Schmidt; contractor, Geo. L. Henzel; cost, $2350; signed, October 29; filed, October 30; payments, 75 per cent. as work progresses; 25 per cent. in 35 days.

Powell near Eddy, plumbing, etc. Owners, Schwartz Bros.; architect, P. R. Schmidt; contractors, Dufley Bros.; cost, $8400; signed, October 28; filed, October 29; payments 75 per cent. as work progresses; 25 per cent. 35 days.

Powell near Eddy, interior decorations. Owners, Schwartz Bros.; architect, P. R. Schmidt; contractor, August Leitz; cost, $2300; signed. November 5; filed, November 5; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Powell near Sacramento, two three-story buildings Owner, John G. Adams; architects, C. R. and J. M. Wilson; con ractor, V. Menesini; cost, $16,300; signed, October 29; filed, November 12; payments, $3950, framed; $3950, brown coated; $3950, white coated; $3950, completed; $4100, 35 days.

Sacramento and Mason. Plastering, etc.; owner, Wm. T. Commary; architect, P. R. Schmidt; contractor, M. Kierman; cost, $2,080; signed, Oct. 25; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Sacramento and Mason. Painting, etc.; owner, E. A. Denicke; architect, P. R. Schmidt, contractor, J. A. Commary; cost, $1800; signed, Oct. 25; filed, Oct. 27; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Sanchez near 17th. Two-story frame; owner, J. Morrow & wife; architect, Jno. J. Clark; contractors, Sandy & Gillogley; sureties, Geo. Gillogley & Jas. Greig, $1000; cost, $3,400; signed, Nov. 24; filed, Nov. 25; payments, $850, brick work done; $850, brown mortared; $850, completed; $850, 35 days.

Scott near Broadway. Carpenter work, etc.; owner, B. M. Gunn; architect, H. A. Schulze; contractor, P. G. Martin; cost, $6,094; signed, Nov. 5; filed, Nov. 7; payments, 75 per cent. as work progress; 25 per cent., 35 days.

Seventeenth near Castro. Frame; owner, G. M. Veeder; architect, Geo. M. Cook; contractor, Geo. M. Cook; cost, $2,050; signed, Nov. 15; filed, Nov. 15; payments, $450, framed; $400, enclosed; $400, outside work finished; $285, completed; $515, 35 days.

Shotwell near 14th. Two-story frame; owner, Ellen Ryan; contractor, John Miron; cost, $8,800; signed, Oct. 31; filed, Nov. 1; payments, $950, framed; $950, brown mortared; $950, completed; $950, 35 days.

Sixth and Minna. Four-story brick building; owner, Fred W. M. Lange; architect; H. Geilfuss; contractor, Wm. Plums; cost, $10,550; signed, Nov. 29; filed, Nov. 29, payments, 75 per cent. of work done, first and fifteenth day of each month; balance, 35 days.

Turk, near Broderick. Carpenter work, etc.; owner, J. A. Oliver; architect, P. R. Schmidt; contractor, S. H. Kent cost, $10,350; signed, Nov. 7; filed, Nov. 20; payments, 75 per cent. as the work progresses; 25 per cent., 35 days.

Turk, near Broderick. Brick work; owner, J. A. Oliver; architect, P. R. Schmidt; contractor, R. Ringsgrove; cost, $2,244; signed, Nov. 7; filed, Nov. 7; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Twenty-sixth near Dorlores. Floors, roofings and foundations; owner, Geo. F. Reynolds; architect, Geo. F. Reynolds; contractors, Mullins Bros; sureties, O. H. Greenwald and Thos. Mullins, $1500; cost, $1500; signed, Nov. 18; filed, Nov. 22; payments, $375, foundations in; $375 enclosed; $375, completed; $375, 35 days.

Twenty-first near Sanchez. One-story frame; owner, Albert C. Vandenbergh; architect, D. C. Coleman; contractor, Henry Burns; cost, $1400; signed, Nov. 20; filed, Nov. 25; payments, $150, foundations in; $350, enclosed; $250, brown mortared, $300, completed; $350, 36 days.

Valencia near 24th. Carpenter work: owner, F. Grass; architects, Salfield & Kohlberg; contractor, E. C. Worden; cost, $14,000; signed, Nov. 11; filed, Nov. 13; payments, $1500, framed; $1500, enclosed; $1500, brown mortared; $1500, ready for painter; $8000, 35 days.

Van Ness Ave. near Golden Gate Ave. Plumbing and gas fitting; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, W. S. Snook & Son, cost, $3395; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 25 days.

Van Ness Ave. near Golden Gate Ave. Cast iron work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractor, Reese Llewellyn; cost, $2035; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Brick work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, Riley & Loane; cost, $16,900; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Carpenter work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractor, Thos. H. Day; cost, $32,790; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Steel work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, P. H. Jackson & Co.; cost, $5793; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Washington near Broderick. Two-story building; owner, Mrs. Sophia Alexander; architects, Huerne & Everett; contractors, L. N. Fletcher & Son; sureties, J. F. & A. W. Keunedy, $2000; cost, $3596; signed, Nov. 6; filed, Nov. 10; payments, $533, framed; $533, flooring is done; $533, brown mortared; $533, inside finish on; $535, completed; $889, 35 days.

Washington near Kearny. Carpenter work, etc; owner, Julia H. Walter; architects, Salfield & Kohlberg; contractor, Henry Rohling; cost, $2700; signed, Nov. 14; filed, Nov. 19; payments, $600, roofed; $400, ready for plastering; $500, white coated; $500, completed; $700, 35 days.

Oakland and Alameda.

Atherton street near Bandcrof Way, Berkeley. Two-story house; owner, Horace Gushee; architect, R. Gray Frise; contractor, W. S. Wilson; cost, $1794; signed, Nov. 28; filed, Nov. 28; payments, $873.50, enclosed; $873.50, brown coated; $873 50, inside finish on; $873.50, 35 days.

Block B, Northern Extension, Oakland. Two-story frame; owner, Wm. D. & Annie Lythe; architect, W. H. Wellbye; contractor, W. H. Wellbye; cost, $2825; signed, Nov. 5; filed, Nov. 8; payments, $706.25, framed; $706.25, roofed; $705.25, plastered; $706.25, 35 days.

Block 4, Berkeley. Two-story frame: owner, Louis Gottshall; architect, Howard Burns; contractor, H. E. Jones; cost, $9020; filed, Oct. 28; payments, $1860, ¼ built; $1860, ¾ built; $1860, completed; $2480, 35 days.

Buena Vista Ave. near Willow, Alameda. Two-story frame; owner, J. A. Waymire; architects, A. N. Pattiani & Co.; contractor, A. W. Pattiani; cost, $2,943; signed, Nov. 17; filed, Nov. 26; payments, $850, chimney built; $750, brown mortared; $900, completed; $734, 35 days.

Buena Vista Ave. near Willow St. Two-story frame; owner, James A. Waymire; architect, A. W. Pattiani & Co; contractor, A. W. Pattiani & Co; cost, $2,934; signed, Nov. 17; filed, Nov. 21; payments, $850, chimney built; $750, exterior primed; $660, completed; $734, 35 days.

Chestnut near Fourteenth. Two-story building; owner, Sarah E. Jeffery; architect, R. Grey Frise; cost, $3,100; signed, Nov. 7; filed, Nov. 8; payments, $775, rustic on, $775, brown mortared; $775, second coated; $775, 35 days.

Encinal Ave. near Fifteenth, Alameda. Two-story frame; owner, Henry Mohns, architect, A. Stenbidt; contractor, A. L. Fell; cost, $1,785; signed, Nov. 21; filed, Nov. 24; payments, $446.25, framed; $446.25, white coated; $446.25, completed; $446.25, 35 days.

Fifth St. near Taylor Ave. Owner, William Brandt; contractor, Christian Peterson; cost, $2,700; signed, Oct. 28; filed, Nov. 19; payments, $500, brick work done; $500, enclosed; $825, brown mortared, $825, completed; $675, 35 days.

Fourteenth St. near Eighth Ave. One-story cottage; owner, Mrs. E. R. Parsons; architect, J. J. & T. D. Newsom; contractor, Henry Murr; cost, $3,076; signed, Oct. 29; filed Oct 31; payments, $768, roof boards on, etc; $768, outside finish on; $770, completed; $770, 35 days.

Grand Ave. near Webster street, Oakland. Owner, T. H. Minor; architect, W. J. Matthews; contractors, Robt. Smilie and Jas. Smilie cost, $3,570; signed, Nov. 26; filed, Nov. 28; payments, $1,285, one-fifth completed; $1,285, two-fifths completed; $1,285, three-fifths completed; $1,285, four-fifths completed; $1,285, completed; $2,155, 35 days.

Grove and Thirty-sixth St., Oakland. Additions and Alterations; owner, Mrs. Mary Canning; architect, Chas. Man; contractor, W. S. Wilson; cost, $1,728; signed Oct. 30; filed, Nov. 3; payments, $494.50, one-third work done; $494.50, two-thirds done; $494.50, 35 days.

Henry St., Oakland. Owner, John Clonen; architect, Wm. Goodwin; contractor, Hugh McCracken; sureties, Joseph Harris and Fred Mentz, $1,200; cost, $1,765; signed, Oct. 28; filed, Oct. 28; payments, $400, rustic on; $400, first coat plaster on; $500. completed; $465, bal.

High St. near Prospect St., Brooklyn. 1½ story frame; owner, J. R. Talcott; architect, W. H. Wellbye; contractor, W. H. Wellbye; cost, $5,000; signed, Nov. 17; filed, Nov. 24; payments, $1,250, roof on; $1,250, first coat plaster on; $1,250, plastered; $1,250, 35 days.

Linden St., near Thirty-fourth St., Oakland. One-story cottage; owner, Henry Schellhaas; architect, A. Man; contractor, E. H. Lake; cost, $2,300; signed, Nov. 28; filed, Nov. 29; payments, $575, enclosed; $575, brown mortared; $575, completed; $575, 35 days.

Linda Vista Park. Two-story dwelling; owner, O. J. Backus; architect, Geo. A. Budwell; contractor, John J. Boyle; cost, $8,335; signed, Nov. 18; filed, Nov. 19; payments, $850, seamed; $850, plastered; $840, completed; $835, 35 days.

Linda Vista Terrace. Two-story dwelling; owner, Myron T. Holcomb; architect Geo. A. Budwell; contractor, John J. Boyle; cost, $8340; signed, Nov. 17; filed, Nov. 18; payments, $1077; seamed; $1077, plastered; $1078, completed; $835, 35 days.

Lot 28, Block 557. Owner, G. Magerstaedt; architect, Howard Burns; contractor, H. E. Jones; cost, $4540; signed, Nov. 12; filed, Nov. 12; payments, $851.25, ½ completed; $851.25, ½ completed; $1135, 35 days.

Lot 21, Block B, Sather & Robinson. Owner, Mrs. Helena Morgenstern; architect, J. L. Atwood; contractor, L. J. Atwood; cost, $1300; signed, Oct. 27; filed. Oct. 28; payments, $325, framed; $325, brown mortared; $325, completed; $325, 35 days.

Magnolia street near 34th street, Oakland. Chemical Engine House; owner, City of Oakland; architect, W. J. Mathews; contractors, J. C. Kyte & J. Rutherford; cost, $2750; signed, Nov. 20; filed, Nov. 24; payments, $687, ¼ work done; $687, ¾ work done, $687, completed; $689, 35 days.

Owner, Henry D. Bacon; architect, F. P. Bacon; contractor, F. M. McCordy; sureties, S. Walton and T. G. Buttery, $800; cost, $617; signed, Nov. 7; filed, Nov. 20; payments, $150, floor laid; $200, piping connected; $200, completed; $267, 35 days.

Owner, W. F. Lewis; architect, H. P. Barker; contractor, H. P. Barker; cost, $2450; signed, Nov. 17; filed, Nov. 19; Payments $204, ready for plastering; $204, framed; $204, enclosed; $1225.50, completed; $611, 35 days.

R. R. Ave. near Second Ave. One-story frame with basement; owner, F. W. Dietsch; architect, A. R. Denke; contractor, J. P. Fudbury; sureties, J. F. Collins and G. L. Ainsworth; cost, $1,000; signed, Nov. 1; filed, Nov. 7; payments, $300, inflied, etc; $350, completed; $360, 35 days.

San Antonio Ave. near Paru, Alameda. Alterations; owner, Wm. Lawson; architects, Pissis & Moore; contractors, Gardner & Boyde; cost, $1,450; signed, Nov. 26; filed, Nov. 29; payments, 75 per cent of value of work done and materials furnished; 25 per cent., 35 days.

Shephardson Tract. Alameda; owner, John Burke; architect, John Conant; contractor, John Conant; cost, $1,200; signed, Nov. 15; filed, Nov. 22; payments, $400, framed; $400, brown coated; $400, completed.

Summit St. near Prospect Ave. Owner, C. A. Capwell; architect, Maxwell Bugbee; contractor, O. C. Soule; cost, $7,940; signed, Nov. 6; filed, Nov. 6; payments, $987.50, enclosed; $987.50, second coat mortar on; $987.50, completed; $987.50, 35 days.

Tenth Ave. and Twenty-first St., Oakland. Two-story building; owner, Louis S. and W. C. Harrington; architects, J. T. and T. D. Newsom; contractors, Oliver P. Smith and Chas. Murcell; cost, $3,570; signed, Nov. 1; filed, Nov. 6; payments, $890, enclosed with rustic; $890, brown mortared; $890, completed; $900, 36 days.

Twenty-first St. and Twenty-fourth Ave., Oakland. One story cottage; architect, Wm. Crowhurst; contractor, J. W. Whyte; cost, $1,504; filed, Nov. 6; signed, Nov. 6; payments, $376, enclosed; $376, brown mortared; $376, completed; $376.50, 35 days.

Twenty-first near Eighth Ave. One-story cottage; owner, Emily M. Welber; architect, R. Gray Frise; contractor, W. S. Wilson; cost, $1,567; signed, Nov. 1; filed, Nov. 1; payments, $391.75, enclosed with rustic, $391.75, brown coated; $391.75, windows hung; $391.75, 35 days.

Twenty-sixth and Grove St. Owner, Louis Wunn; architect, O. F. Hunt; cost, $900; contractor, Oscar F. Hunt; signed, Oct. 30; filed, Oct. 30; payments, $900, roof on; $900, brown mortared; $900, 35 days.

Vernon Park Track. Two-story dwelling; owner, J. C. Ainsworth; architect, W. J. Mathews; contractor, W. Winnie; cost, $14,069; signed, Nov. 12; filed, Nov. 14; payments, $2113, 1-5 completed; $2113, 2-5 completed; $2113, 3-5 completed; $2113, 4-5 completed; $2113, completed; $3624, 35 days.

Webster near Walnut. Two-story residence; owner, J. L. Wetherbee; architect R. Gray Frise; contractor, H. C. Jones; cost, $3270; signed, Nov. 5; filed, Nov. 6; payments, $817.50, enclosed with rustic; $817.50, first coat plaster on; $817.50 second coat; $817.50, 35 days.

JOHN H. WISE, President. H. T. SCOTT, Vice-President. F. L. BLAKE, General Manager. C. S. PREBLE, Secretary.

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Hampshire street near Twenty-third. Dwelling house; owner, Wm. S. Wright; architect, Geo. Houston; contractor, Geo. Houston; cost, $1,914; filed, Oct. 28; payments, $475, rustic on; $475, brown mortared; $475, white coated; $489, 35 days.

Harrison near Twenty-third. Two-story frame; owner, Dennis Wynne; architect, Dennis Wynne; contractor, Jas. Campbell; cost, $8,799; signed, Oct. 31; filed, Oct. 31; payments, $947.50, framed; $947.50, brown mortared; $947.50, completed; $947.50, 35 days.

Hayes near Lyon. Two-story frame; owner, Miss E. Cooney; architect, W. W. Redmall; contractor, W. W. Redmall; sureties, Jason Springer & Co. and S. E. Slade Lumber Co., $2,000; cost, $4,900; signed, Nov. 5; filed, Nov. 6; payments, $1,245, enclosed; $1,250, brown mortared; $1,250, completed; $1,245, 35 days.

Hill near Noe. Excavating and foundations; owner, Edwin Parish; architect, Edwin Parish; contractor, S. C. Buzzell; sureties, David Woemer and James Rowe, $2,000; cost, $2,200; signed, Nov. 6; filed, Nov. 19; payments, $550, foundations built, 550, enclosed; $850, completed; $550, 35 days

Hoff Ave. near Sixteenth. Alterations and additions; owner, W. E. Leo; contractors, C. W. Wescott & W. Bocard; cost, $2,435; filed, Nov. 29; payments, $808, framed; $808, brown mortared; $808, completed; $611, 35 days.

Howard near Twenty-second. Brick work, etc; two two-story buildings; 6 flats; owner, F. H. Ellis; architect, P. R. Schmidt; contractor, Orrin E. White; cost, $15,000; signed, Nov. 21; filed, Nov. 22; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near Eleventh. Three-story frame; owner, J. B. Shroyier; architect, M. J. Welsh; contractors, Cuneo & Casaretto; cost, $5,900; signed, Nov. 19; filed Nov. 20; payments, $1,475, framed; $1,475, brown mortared; $1,475, completed; $770, 35 days.

Howard near Seventeenth. Carpenter work, etc.; owner, Louis A. Drews; architect, Chas. I. Havens; contractor, John Furness; cost, $2,890; signed, Nov. 18; filed, Nov. 25; payments, $1,200, enclosed; $940, completed; $750, 35 days.

Howard near Eighteenth. Three-story frame; owner, J. G. James; architects, R. H. & R. White; contractor, R. P. Sanchez; surety, W. C. Grass, $2,250; cost, $8,900; signed, Nov. 10; filed, Nov. 11; payments, $1,700, framed; $1,650, brown coated; $1,650, standing finish on; $1,650, completed; $2,250, 35 days.

Jackson near Devisadero. Two-story frame; owner, Wm. Wamkonski; architects John & Balczynski; contractors, Schutt & Krecker; cost, $5,775; signed, Oct. 30; filed, Nov. 1; payments, $1,000, framed; $1,000, partitions set; $1,000, white coated; $1,350, completed; $1,115, 35 days.

Lake View Track. Dwelling house; owner, F. C. Pague; architect, C. K. Kirby, Jr.; contractor, F. Vanderveken; cost, $2,400; signed, Nov. 4; filed, Nov 7; payments, $500, framed; $500, outside finish on; $550, brown mortared; $400, plastered; $550, completed; 25 per cent., 35 days.

Lake View Track. Dwelling; owner, Samuel Johnstone; architect C. K. Kirby; contractor, F. Vanderveken; cost, $1,850; signed, Oct. 30; filed, Nov. 1; payments, $250, framed; $250, outside finish done; $250, plumbing done; $250, inside $387.50, completed; $462.50, 35 days.

Lillie Ave. near Octavia. Brick work; owner Jas. Dowling and wife; architect, S. Hatfield; contractor, Allan Macdonald; cost $2,450; signed, Nov. 8; filed, Nov. 12; payments, $456, framed; $456, brown mortared; $456, standing finish on; $462.50, finished; $612.50, 35 days.

Market and City Hall Ave. Carpenter work; owner, H. J. Tehan; contractor, Samuel T. Green; cost $3,000; signed, Nov. 28; filed, Nov. 28; payments, $1,875, floors laid; $1,875, completed; $1,250, 35 days.

Mason and Sacramento. Plastering; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, Wm. Commary; cost, $800; signed, Oct. 25; filed, Oct. 27; payments, 75 per cent. as the work progresses; 25 per cent., 35 days.

McAllister and Larkin. Plastering; owners, J. G. and L. N. Day; architect, T. J. Welsh; contractor, C. Dunlop; sub-contractor —; cost, $9,000; signed, Oct. 7; filed, Nov. 3; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Merchant, near Sansome. Concrete and artificial stone work; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractors, Ransome & Cushing; cost, $1,150; signed, Nov. 6; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Merchant, near Sansome. Brick, stone and plastering; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, D. J. Brennan; sureties, R. Brennan and D. Corkney, $1,500; cost, $2,625; signed, Nov. 10; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Merchant, near Sansome. Carpenter work, etc.; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, J. W. Wissinger; surety, Reese Llewellyn, $1,000; signed, Nov. 10; filed, Nov. 19; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Mission, near Fourteenth. Carpenter work, etc.; owner, O. W. Wordwell; architects, Gould & Colley; contractors, R. D. Miller & Co.; surety, Daniel Dodge, $5,000; cost, $7,940; filed, Sept. 11; payments, $540, houses moved; $2,200, brick work is completed; $1,000, roofed; $1,000, plastered; $1,000, concrete work done; $1,800, 35 days.

Mission, near Main. One-story building; owner, Bernard Gallagher; architects, Shea & Shea; contractors, Gahill & Hall; cost, $5,500; signed, Nov. 14; filed, Nov. 18; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Napa, near Missouri. Owner, T. J. Dunnigan; contractor, Jas. Glachin; sureties, N. J. Dickens and Ben Hobart, $1,000; cost, $1,400; signed, Nov. 26; filed, Nov. 28; payments, $350, rustic on; $350, brown coated; $350, finished; $350, 35 days.

Noe and Clipper. Carpenter work, etc.; owner, Henry Burner; architects, Percy Hamilton; contractor, Jas. McConahey; cost, $2,875; signed, Oct. 30; filed, Oct. 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Nos. 40, 40½ and 42, Geary street. Owner, Isaac Levy; architects, Kenitzer & Kollofath; contractor, C. F. Ruppel; cost, $4,600; signed, Oct. 29; filed, Nov. 1; payments, $3,450, completed; $1,150, 35 days.

Octavia near Fulton. Mill work; owner, T. J. Cleary; architect, A. Kendall; contractor, A. Kendall; cost, $1,100; signed, Nov. 12; filed, Nov. 15; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

O'Farrell near Stockton. Concrete work, etc.; owner, Schewa Levy; architect, H. A. Schulze; contractors, Gray Bros.; cost, $2200; signed, Nov. 1; filed, Nov. 7; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

O'Farrell near Laguna. Carpenter work, etc.; owner, Sarah N. Morris; architects, Salfield & Kohlberg; contractor, Henry Kohling; cost, $6,875; signed, Nov. 21; filed, Nov. 24; payments, $1000, framed; $1000, floors laid; $1155, brown coated; $900, doors hung; $1000, accepted; $1720, 35 days.

Pacific and Front. Cast Iron work; owner, Jas. G. Fair; architect, H. A. Shulze; contractors, O'Connell & Lewis; cost, $8,800; signed, Nov. 29; filed, Nov. 29; payments, first day of each month, 75 per cent. of work done; balance, 35 days.

Pacific and Front. Brick and stone work; owner, Jas. G. Fair; architect, Henry A. Shulze; contractor, John McCarthy; cost, $44,884; signed, Nov. 19; filed, Nov. 20; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pacific and Front. Tinsmith work; owner, J. G. Fair; architect, H. A. Shulze; contractor, Jas. F. Forderer; cost, $3,145; signed, Nov. 29; filed, Nov. 29; payments, first day of each month, 75 per cent. of work done; balance, 35 days.

Pacific and Front. Carpenter work; owner, J. G. Fair; architect, H. A. Shulze; contractor, J. S. Mackay; cost, $33,975; signed, Nov. 29; filed. Nov. 29; payments, first day of each month, 75 per cent. of work done; bal. 35 days.

Pacific Avenue near Van Ness Avenue; two-story building; owner, T. J. Friedlander; architect, Julius E. Krafft; contractors, Peterson and Ackerson; sureties, A. D. Moore and C. S. Holmes, $4000; cost, $11,745; signed, November 19; filed. November 21; payments, $1800, framed; $1500, enclosed; $1500, brown mortared; $2000, plastered; $2000, completed; $2945, 35 days.

Pacific Avenue near Van Ness Avenue, plumbing, sewering, etc.; owner, T. J. Friedlander; architect, Julius E. Krafft; contractor, R. Rice; surety, L. R. Ellert, $1000; cost, $1200; signed, November 19; filed, November 21; payments, $300, rough work in; $600, completed; $300, 35 days.

Pacific Avenue and Webster; carpenter work, etc. Owner, J. Eppinger; architect, W. J. Matthews; contractor, R. P. Hurlbut; cost, $16,000; signed, October 27; filed, October 29; Payments, $2400, one-fifth of work completed; $2400, two-fifths of work completed; $2400, three-fifths of work completed; $2400, four-fifths of work completed; $2400, completed; $4000, 35 days.

Pacific Avenue near Webster; frame building; owner, Mrs. T. V. Day; architect, W. W. Redmall; contractor, W. W. Redmall; sureties, S. E. Slade Lumber Co. and Jason Springer, $1500; cost, $4,000; signed November 19; filed, November 19; payments, $1445, roofed; $1150, brown coated; $1150, completed; $1147, 35 days.

Pierce near Page, two-story frame; owner, Owen McArdle; contractor, L. J. Arthur; cost, $4480; signed, October 29; filed, October 30; payments, $800, enclosed; $8000, brown mortared; $880, hard finish; $880, completed; $1120, 35 days.

Polk near Golden Gate Avenue, four-story building; owner, Dr. James Healey; architects; Shea & Shea; contractor, M. J. Normani; sureties, Jeremiah and John Mahoney, $3403; cost, cost, $13,610; signed, November 6; filed, November 7; payments, $2,552, brown mortared; $2552, Hard finished; $2551, completed; $3,403, 35 days.

Powell near Ellis, three story building, plastering; owner, Jas. G. Walker; architect, T. J. Welsh; contractor, Thos. Winters; cost, $1495; signed, October 21; filed, November 3; payments, $360, brown coated; $561, white coated; $374, 35 days.

Powell near Eddy. Electric wires for a four-story brick building; owner, Schwartz; architect, P. R. Schm fit; contractor, Geo. L. Henzel; cost, $2350; signed, October 29; filed, October 30; payments, 75 per cent. as work progresses; 25 per cent. in 35 days.

Powell near Eddy, plumbing, etc. Owners, Schwartz Bros.; architect, P. R. Schmidt; contractors, Dudley Bros.; cost, $8400; signed, October 28; filed, October 29; payments 75 per cent. as work progresses; 25 per cent. 35 days

Powell near Eddy, interior decorations. Owners, Schwartz Bros.; architect, P. R. Schmidt; contractor, August Leitz; cost, $2300; signed. November 5; filed, November 5; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Powell near Sacramento, two three-story buildings Owner, John G. Adams; architects, C. R. and J. M. Wilson; con ractor, V. Menesini; cost, $16,800; signed, October 29; filed, November 12; payments, $3050, framed; $3050, brown coated; $3050, white coated; $3050, completed; $4100, 35 days.

Sacramento and Mason. Plastering, etc.; owner, Wm. T. Commary; architect, P. R. Schmidt; contractor, M. Kiernan; cost, $2,085; signed, Oct. 25; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Sacramento and Mason. Painting, etc.; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, J. A. Commary; cost, $1800; signed, Oct. 25; filed, Oct. 27; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Sanchez near 17th. Two-story frame; owner, J. Morrow & wife; architect, Jno. J. Clark; contractors, Sandy & Gillogley; sureties, Geo. Gillogley & Jas. Greig, $1000; cost, $3,400; signed, Nov. 24; filed, Nov. 25; payments, $850, brick work done; $850, brown mortared; $850, completed; $850, 35 days.

Scott near Broadway. Carpenter work, etc.; owner, B. M. Gunn; architect, H. A. Schulze; contractor, P. G. Marlin; cost, $6,994; signed, Nov. 5; filed, Nov. 7; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Seventeenth near Castro. Frame; owner, G. M. Yeeder; architect, Geo. M. Cook; contractor, Geo. M. Cook; cost, $2,050; signed, Nov. 15; filed, Nov. 15; payments, $450, framed; $400, enclosed; $400, outside work finished; $285, completed; $515, 35 days.

Shotwell near 14th. Two-story frame; owner, Ellen Ryan; contractor, John Miron; cost, $3,800; signed, Oct. 31; filed, Nov. 1; payments, $950, framed; $950, brown mortared; $950, completed; $950, 35 days.

Sixth and Minna. Four-story brick building; owner, Fred W. M. Lange; architect; H. Geilfuss; contractor, Wm. Plums; cost, $10,550; signed, Nov. 20; filed, Nov. 20; payments, 75 per cen. of work done, first and fifteenth day of each month; balance, 35 days.

Turk, near Broderick. Carpenter work, etc.; owner, J. A. Oliver; architect, P. R. Schmidt; contractor, S. H. Kent; cost, $10,350; signed, Nov. 7; filed, Nov. 20; payments, 75 per cent. as the work progresses; 25 per cent., 35 days.

Turk, near Broderick. Brick work; owner, J. A. Oliver; architect, P. R. Schmidt; contractor, R. Kinsgrove; cost, $2,244; signed, Nov. 7; filed, Nov. 7; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Twenty-sixth near Dorlores. Floors, roofings and foundations; owner, Geo. F. Reynolds; architect, Geo. F. Reynolds; contractors, Mullins Bros; sureties, O. H. Greenwald and Thos. Mullins, $1500; cost, $4,000; signed, Nov. 18; filed, Nov. 22; payments, $375, foundations in; $375 enclosed; $375, completed; $375, 35 days.

Twenty-first near Sanchez. One-story frame; owner, Albert C. Vandenbergh; architect, D. C. Coleman; contractor, Henry Burns; cost, $1400; signed, Nov. 20; filed, Nov. 25; payments, $150, foundations in; $350, enclosed; $250, brown mortared, $200, completed; $350, 36 days.

Valencia near 24th. Carpenter work; owner, F. Grass; architects, Salfield & Kohlberg; contractor, E. C. Worden; cost, $14,000; signed, Nov. 11; filed, Nov. 13; payments, $1500, framed; $1500, enclosed; $1500, brown mortared; $1500, ready for painter; $8000, 35 days.

Van Ness Ave. near Golden Gate Ave. Plumbing and gas fitting; owners, Mercantile Library Ass'n; architects, Pissis and Moore; contractors, W. S. Snook & Son, cost, $8395; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 25 days.

Van Ness Ave. near Golden Gate Ave. Cast iron work; owners, Mercantile Library Ass'n; architects, Pisses & Moore; contractor, Reese Llewellyn; cost, $2035; signed, Oct. 22; filed, Oct. 28; paymenis, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Brick work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, Riley & Loane; cost, $16,900; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Carpenter work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractor, Thos. H. Day; cost, $32,790; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Van Ness Ave. near Golden Gate Ave. Steel work; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, P. H. Jackson & Co.; cost, $5793; signed, Oct. 22; filed, Oct. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Washington near Broderick. Two-story building; owner, Mrs. Sophia Alexander; architects, Huerne & Everett; contractors, L. N. Fletcher & Son; sureties, J. F. & A. W. Kennedy, $2000; cost, $3556; signed, Nov. 6; filed, Nov. 10; payments, $533, framed; $533, flooring is done; $533, brown mortared; $533, inside finish on; $535, completed; $889, 35 days.

Washington near Kearny. Carpenter work, etc; owner, Julia H. Walter; architects, Salfield & Kohlberg; contractor, Henry Rohling; cost, $2700; signed, Nov. 14; filed, Nov. 19; payments, $600, roofed; $400, ready for plastering; $600, white coated; $500, completed; $700, 35 days.

Oakland and Alameda.

Atherton street near Banderof Way, Berkeley. Two-story house; owner, Horace Gushee; architect, R. Gray Frise; contractor, W. S. Wilson; cost, $3494; signed, Nov. 28; filed, Nov. 28; payments, $873.50, enclosed; $873.50, brown coated; $873 50, inside finish on; $873.50, 35 days.

Block B, Northern Extension, Oakland. Two-story frame; owner, Wm. D. & Annie Lythe; architect, W. H. Wielbye; contractor, W. H. Wielbye; cost, $2825; signed, Nov. 5; filed, Nov. 8; payments, $706.25, framed; $706.25, roofed; $706.25, plastered; $706.25, 35 days.

Block 4, Berkeley. Two-story frame; owner, Louis Gottshall; architect, Howard Burns; contractor, H. E. Jones; cost, $9920; filed, Oct. 28; payments, $1860, ¼ built; $1860, ¼ built; $1860, completed; $2480, 35 days.

Buena Vista Ave. near Willow, Alameda. Two-story frame; owner, J. A. Waymire; architects, A. N. Pattiani & Co.; contractor, A. W. Pattiani; cost, $2943; signed, Nov. 17; filed, Nov. 26; payments, $850, chimney built; $750, brown mortared; $600, completed; $734, 35 days.

Buena Vista Ave. near Willow St. Two-story frame; owner, James A. Waymire; architect, A. W. Pattiani & Co; contractor, A. W. Pattiani & Co; cost, $2,934; signed, Nov. 17; filed, Nov. 21; payments, $850, chimney built; $750, exterior primed; $600, completed; $734, 35 days.

Chestnut near Fourteenth. Two-story building; owner, Sarah E. Jeffery; architect, R. Grey Frise; cost, $3,100; signed, Nov. 7; filed, Nov. 8; payments, $775, rustic on, $775, brown mortared; $775, second coated; $775, 35 days.

Encinal Ave. near Fifteenth, Alameda. Two-story frame; owner, Henry Mohns, architect, A. Stenbidt; contractor, A. L. Fell; cost, $1,785; signed, Nov. 21; filed, Nov. 24; payments, $146.25, framed; $446.25, white coated; $446.25, completed; $446.25, 35 days.

Fifth St. near Taylor Ave. Owner, William Brandt; contractor, Christian Peterson; cost, $2,700; signed, Oct. 28; filed, Nov. 15; payments, $900, brick work done; $500, enclosed; $625, brown mortared, $625, completed; $675, 35 days.

Fourteenth St. near Eighth Ave. One-story cottage; owner, Mrs. E. R. Parsons; architect, J. J. & T. D. Newsom; contractor, Henry Murr; cost, $3,076; signed, Oct. 29; filed Oct 31; payments, $768, roof boards on, etc; $768, outside finish on; $770, completed; $770, 35 days.

Grand Ave, near Webster street, Oakland. Owner, T. H. Minor; architect, W. J. Matthews; contractors, Robt. Smilie and Jas. Smilie; cost, $8,570; signed, Nov. 26; filed, Nov. 28; payments, $1,285, one-fifth payments completed; $1,285, two-fifths completed; $1,285, three-fifths completed; $1,285, four-fifths completed; $1,285, completed; $2,155, 35 days.

Grove and Thirty-sixth St., Oakland. Additions and Alterations; owner, Mrs. Mary Canning; architect, Chas. Man; contractor, W. S. Wilson; cost, $1,728; signed, Oct. 30; filed, Nov. 3; payments, $434.50, one-third work done; $434.50, two-thirds done; $434.50, 35 days.

Henry St., Oakland. Owner, John Clonen; architect, Wm. Goodwin; contractor, Hugh McCracken; sureties, Joseph Harris and Fred Mentz, $1,200; cost, $1,765; signed, Oct. 28; filed, Oct. 29; payments, $400, rustic on; $400, first coat plaster on; $500. completed; $465, bal.

High St. near Prospect St., Brooklyn. 1½ story frame; owner, J. R. Talcott; architect, W. H. Wellbye; contractor, W. H. Wellbye; cost, $5,000; signed, Nov. 17; filed, Nov. 24; payments, $1,250, roof on; $1,250, first coat plaster on; $1,250, plastered; $1,250, 35 days.

Linden St., near Thirty fourth St., Oakland. One-story cottage; owner, Henry Schelhaas; architect, A. Man; contractor, E. H. Lake; cost, $2,300; signed, Nov. 28; filed, Nov. 29; payments, $575, enclosed; $575, brown mortared; $575, completed; $575, 35 days.

Linda Vista Park. Two-story dwelling; owner, O. J. Backus; architect, Geo. A. Budwell; contractor, John J. Boyle; cost, $3,335; signed, Nov. 18; filed, Nov. 19; payments, $830, seamed; $830, plastered; $840, completed; $835, 35 days.

Linda Vista Terrace. Two-story dwelling; owner, Myron T. Holcomb; architect Geo. A. Budwell; contractor, John J. Boyle; cost, $4310; signed, Nov. 17; filed, Nov. 18; payments, $1077, seamed; $1077, plastered, $1078, completed; $835, 35 days.

Lot 28, Block 557. Owner, G. Magerstaedt; architect, Howard Burns; contractor, H. E. Jones; cost, $4540; signed, Nov. 12; filed, Nov. 12; payments, $851.25, ¼ completed; $851.25, ¼ completed; $1135, 35 days.

Lot 21, Block 8, Sather & Robinson. Owner, Mrs. Helena Morgenstern; architect, J. L. Atwood; contractor, L. J. Atwood; cost, $1300; signed, Oct. 27; filed, Oct. 28; payments, $325, framed; $325, brown mortared; $325, completed; $325, 35 days.

Magnolia street near 24th street, Oakland. Chemical Engine House; owner, City of Oakland; architect, W. J. Mathews; contractors, J. C. Kyte & J. Rutherford; cost, $2750; signed, Nov. 20; filed, Nov. 24; payments, $687, ¼ work done; $687, ¼ work done, $687, completed; $689, 35 days.

Owner, Henry D. Bacon; architect, F. P. Bacon; contractor, F. M. McCordy; sureties, S. Walton and T. G. Buttery, $800; cost, $817; signed, Nov. 7; filed, Nov. 20; payments, $190, floor laid; $290, piping connected; $200, completed; $267, 35 days.

Owner, W. F. Lewis; architect, H. P. Barker; contractor; H. P. Barker; cost, $2450; signed, Nov. 17; filed, Nov. 19; Payments, $204, ready for plastering; $204, framed; $204, enclosed; $1225.50, completed; $611, 35 days.

R. R. Ave. near Second Ave. One-story frame with basement; owner, F. W. Dietsch; architect, A. R. Denke; contractor, J. P. Fmbury; sureties, J. F. Collins and G. L. Ainsworth; cost, $1,060; signed, Nov. 1; filed, Nov. 7; payments, $350, lathed, etc; $380, completed; $360, 35 days.

San Antonio Ave. near Park, Alameda. Alterations; owner, Wm. Lawson; architects, Pissis & Moore; contractors, Gardner & Boyde; cost, $1,450; signed, Nov. 26; filed, Nov. 28; payments, 75 per cent of value of work done and materials furnished; 25 per cent., 35 days.

Shepharson Tract. Alameda; owner, John Burke; architect, John Conant; contractor, John Conant; cost, $1,200; signed, Nov. 15; filed, Nov. 22; payments, $400, framed; $400, brown coated; $400, completed.

Summit St. near Prospect Ave. Owner, C. A. Capwell; architect, Maxwell Bugbee; contractor, O. C. Soule; cost, $3,940; signed, Nov. 6; filed, Nov. 6; payments, $987.50, enclosed; $987.50, second coat mortar on; $987.50, completed; $987.50, 35 days.

Tenth Ave. and Twenty-first St., Oakland. Two-story building; owner, Louis S. and W. C. Harrington; architects, J. T. and T. D. Newsom; contractors; Oliver P. Smith and Chas. Murrell; cost, $8,570; signed, Nov. 1; filed, Nov. 6; payments, $890, enclosed with rustic; $890, brown mortared; $890, completed; $900, 36 days.

Twenty-first St. and Twenty-fourth Ave., Oakland. One story cottage; architect, Wm. Crowhurst; contractor, J. W. Whyte; cost, $,1504; filed, Nov. 6; signed, Nov. 6; payments, $376, enclosed; $376, brown mortared; $376, completed; $376.50, 35 days.

Twenty-first near Eighth Ave. One-story cottage; owner, Emily M. Weiber; architect, R. Gray Frise; contractor, W. S. Wilson; cost, $1,567; signed, Nov. 1; filed, Nov. 1; payments, $4 1.75, enclosed with rustic; $391.75, brown coated; $391.75, windows hung; $391.75, 35 days.

Twenty-sixth and Grove St. Owner, Louis Wuns; architect, O. F. Hunt; cost, $900; contractor, Oscar F. Hunt; signed, Oct. 30; filed, Oct. 30; payments, $300, roof on; $300, brown mortared; $300, 35 days.

Vernon Park Track. Two-story dwelling; owner, J. C. Ainsworth; architect, W. J. Mathews; contractor, W. Winnie; cost, $14,089; signed, Nov. 12; filed, Nov. 14; payments, $2113, 1-5 completed; $2113, 2-5 completed; $2113, 3-5 completed; $2113, 4-5 completed; $2113, completed; $3524, 35 days.

Webster near Walnut. Two-story residence; owner, J. L. Wetherbee; architect R. Gray Frise; contractor, H. C. Jones; cost, $8270; signed, Nov. 5; filed, Nov. 6; payments, $817.50, enclosed with rustic; $817.50, first coat plaster on; $817.50 second coat; $817.50, 35 days.

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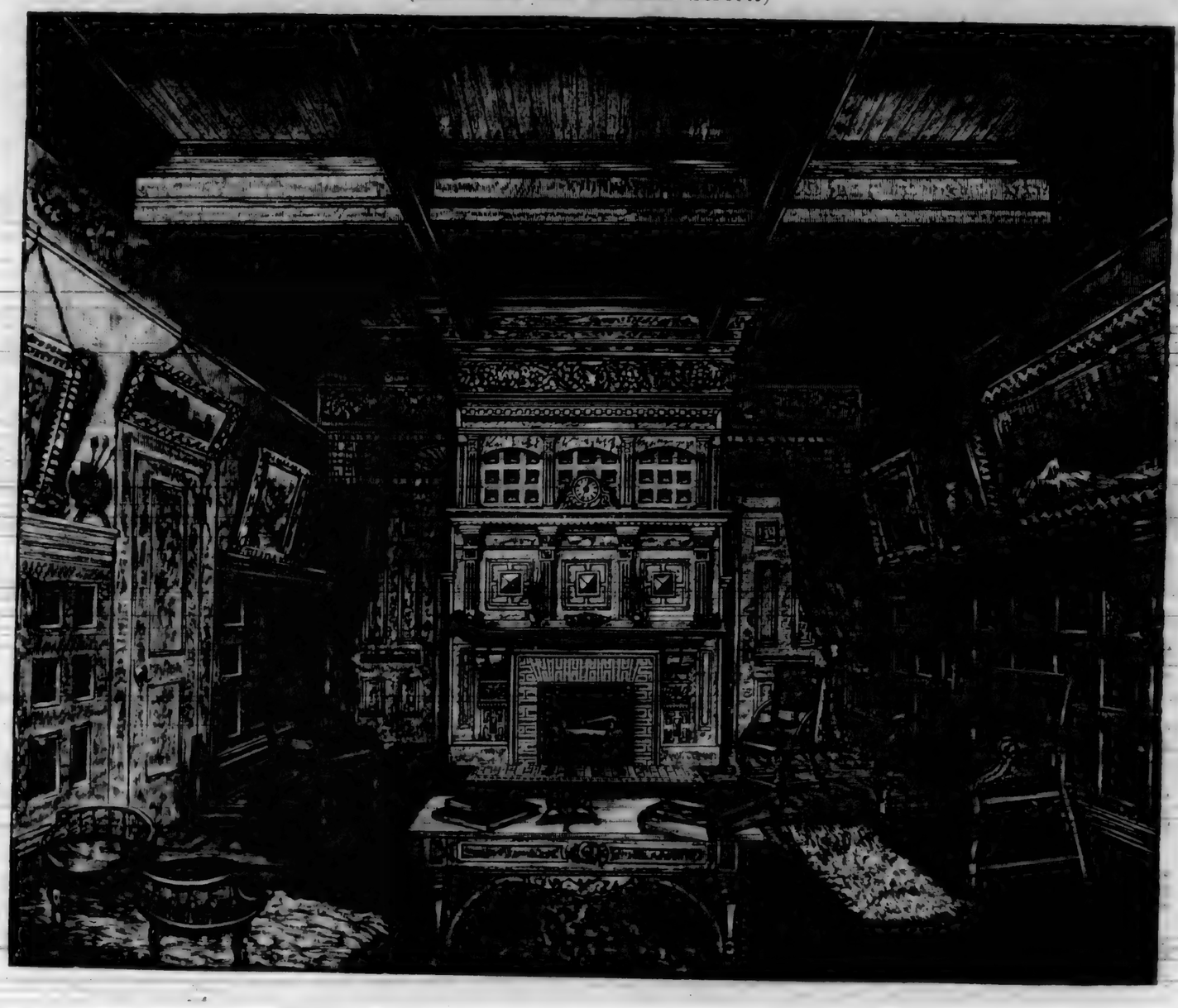

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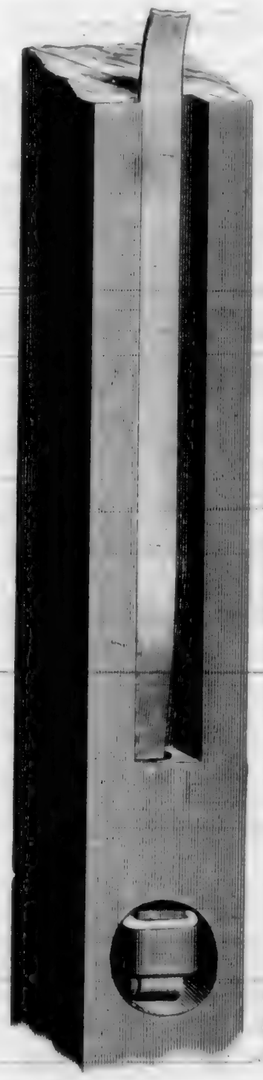

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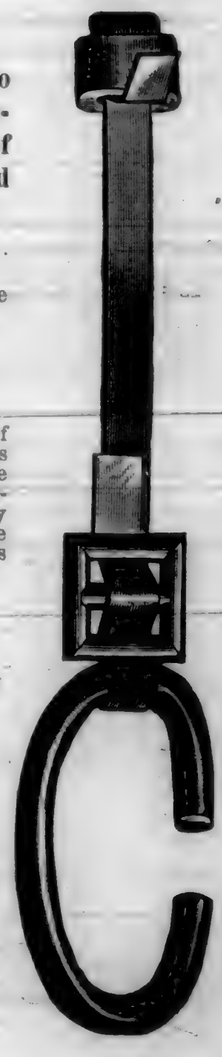

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VOLUME XII

DATE 1891

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ESTABLISHED 1879. INCORPORATED 1889.

NOW IN THE TWELFTH YEAR.

W. P. MOORE, PRESIDENT. OLIVER EVERETT, SECRETARY.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

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NOTICE.

MR. George H. Wolfe, having no further connection with the business of this journal, correspondents will in future address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.

SETH BABSON, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.

JOHN RICHARDS, Pres. PROF. FRANK SOULÉ, Vice-Pres.
OTTO VON GELDERN, Sec. JAS. SPIERS, Treas.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects was held at their rooms, 408 California Street, on the 9th inst., the President, Seth Babson in the chair.

The Committee on Amendments to the Lien Laws made a partial report.

The Students' Sketch Club submitted designs for a mantel, the subject for the regular monthly competition, also designs in accordance with the special competition for a book-case and secretary's desk, for the S. F. Chapter, A. I. A.

Awards were made for a former competition, a "Wayside Shelter". 1st mention to "Wandering draughtsman", submitted by S. C. Benson; 2nd mention, to "Tramp", submitted by C. O. Hilpisch.

The feature of the evening was the reading of a paper on the Poetry of Architecture, by Oliver Everett, which will be found complete on another page.

THE regular meeting of the Technical Society of the Pacific Coast was held on the 2nd inst. at their rooms, 408 California street, President Richards in the chair.

A proposed bill for the licensing of County surveyors was presented and laid over for discussion until next meeting.

R. B. Elder read a paper on Electrical Accumlators and their application.

Any information in regard to membership in this Society can be had on application to the Secretary Otto Von Geldern at their rooms, 408 California street.

THE regular meeting of the Electrical Society was held in their rooms on the 5th inst.

Mr. W. C. Quimby read a paper on Primary Batteries. The subject was treated historically and chemically to a very full extent, describing in detail the different forms of batteries, and the best forms for certain results. Many points desirable, and otherwise, were shown by the apparatus present, and illustrated by the lecturer on the blackboard.

Any information in regard to membership in this Society can be had on application to the office of this Journal.

TECHNICAL SCHOOLS.

On another page will be found a communication on "Technical Schools for Practical Instruction" by T. T. The subject is one of great moment to the people of this country,—particularly so to California and the Pacific slope. We, therefore, invite our readers to an examination of the question as presented by our correspondent, who is a gentleman having a practical knowledge of some of the deficiencies of the present system of education.

In looking around for a remedy, the indications on every hand show a growing interest and appreciation by the public, of a thorough knowledge in those who are to conduct the business of the future, both theoretically and practically; and that with a systematized order of procedure, commencing with the elementary and passing through all the stages of development to the final conclusion of the highest qualifications in the various departments applicable to the practical issues of the day. While many believe that the great mass of the people would derive more benefit from public than from private beneficiary schools, yet, we all note with pride and satisfaction such noble munificent gifts as that of Ex-Gov. Leland Stanford at Palo Alto, where it is intended to carry out on a magnificent scale a system of technical instruction, which shall reach and include the highest practical training of the student.

Whenever any private undertaking is discussed, the question of first importance to those who are to furnish the funds, is, "will it pay, can an adequate return be had for the capital invested." When after investigation the project appears feasible and profitable, capital can be obtained and the work carried to conclusion.

In public works the same question arises and must be met by the same showing of profit to the capitalist, which in such cases are the tax-payers, before the project can be carried out. When several schemes are presented for consideration, the one giving the greatest returns for the capital invested would seem the proper one for adoption. Two propositions present themselves to the people as tax-payers. Under the present system of, we may say, enforced idleness, the excesses of youthful vigor finds an outlet in acts, which, under the laws, are considered as crimes against the welfare of the community; consequently houses of correction, industrial institutions and penitentiaries are built and maintained at a great expense to the tax-payers, for the restraint of the visciousness engendered by reason of misapplied energies. Would it not be of more profit to the tax-payer, and to society at large, if the procedure should be reversed, at least to the extent that we first build the public industrial and educational institutions upon such a broad basis that all growing youth, male or female, may learn some trade or calling whereby they may be enabled to obtain a respectable living and become beneficial members of the community? Such a program carried out, a very small percentage of the population would require to be kept under the restraint at present deemed necessary. We present herewith a few quotations which seem applicable to the proposition, "Education ever strives for advancement; "Ignorance when discontented and active, sinks deeper into obscurity with each movement."

"Education acts with reason." "Ignorance acts with blindness." "Intelligent labor even when discontent, does not seek to destroy that which it has been paid to build up."

"Ignorant and brutish labor when discontent, seeks to destroy that which it has been paid to build."

"Intelligent labor is self-supporting;" Ignorance tenants our jails and reformatories,"

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THE question of sculptor's work on the stone work of buildings, has been brought forward with the suggestion that architects reserve from the stone work, the sculptors work to be let separate, or that the architect should at least choose the modeler and sculptor for such work. In case the architect should state in the specifications, or in any other way select the person who should perform such work, the probabilities are that a higher order of stone work would be developed and noticeable in such architectural finish.

The result of the experience of past ages places the architect in direct communication with the artist performing the work whenever excellence is to be obtained.

PROF. I. O. Baker is reputed as saying that, "Mortar may be made practically non absorbent by the addition of alum and potash soap, about 1 per cent of each. The alum and soap combine and form compounds of alumina and the fatty acids, which are insoluble in water."

In the foregoing statement Prof. Baker has not shown what becomes of the potash, which as we understand the subject, is a soluble compound and an active element for the disintegration of mortars. It is well known that solutions of alum and soap are alternately used on exterior surfaces of walls to prevent the penetration of moisture, but in such cases the alkaline efflorescence being soluble is easily washed out. When the soluble alkali is used in the composition of mortar for the walls, its action becomes more complicated and of more importance than a simple wash for exteriors. In some old walls recently taken down, the mortar was found to be so thoroughly disintegrated that it appeared much like dry sand, which upon testing showed soluble alkaline compounds in the mass of the mortar, more especially in the portions farthest removed from the action of the atmospheric elements and the exterior surfaces.

The subject is one that may be studied with profit from both the practical and theoretical point.

WE have received an invitation to be present at the Formal Opening of the new Builders and Traders Exchange Building at Kansas City, Mo., and we hereby tender to this Association of intelligent builders of a great city, the thanks of the California Architect and Building News, while wishing them the full measure of success they so justly deserve.

As we go to press we regret to chronicle the death of John W. Root, the Consultiug Architect of the World's Fair, of pnuemonia, after a brief illness. Mr. Root, though but thirty-eight years of age, stood at the head of his profession in this city. He was a member of the firm of Burnham & Root, and has been the leader in a movement that since the great fire has put in a permanent form many of the fine buildings that have so added to the reputation of Chicago.

Upon Mr. Root's World's Fair plans the directory was depending in a large measure to make the design of the Exposition an artistic success.

IN accordance with our notice of December, we commence in this issue a description, in detail, of the original plan and mode of construction as adopted by the builders of one of the oldest architectural structures of the coast. These descriptions will be continued from time to time as circumstances will allow. There are many persons who are conversant with the mode of construction of other buildings of this class, therefore, an invitation is hereby extended to such persons to aid in this matter. In the present instance our thanks our due to Mr. D. D. Davisson who has lived there and occupied the building for a period of 40 years.

OLD MISSION CHURCH AT SONOMA, CALIFORNIA.

The date of this old work as given by different authorities appears somewhat at variance. The most recent date represents the building as erected some 75 years ago, while other quite reliable authorities place the date as far back as 150 years. Many peculiarities in the arrangement and details, point strongly to the direct influence of the more ancient date, and more in accordance with what would probably be the pioneer missionaries from some Spanish ship which at about that date anchored in the Bay of San Francisco, and history records a number of such ships. Some peculiarities point to a re-modeling or renovation at about 75 years ago. Special marks of this period indicate the influence of the line of pioneer missionaries from Mexico along through Santa Barbara, Monterey, San Francisco and finally at Sonoma. Many are the legends relating to this ancient mission, and the ritual and customs of the founders and occupants at various times, nearly all of which are without the province of this paper.

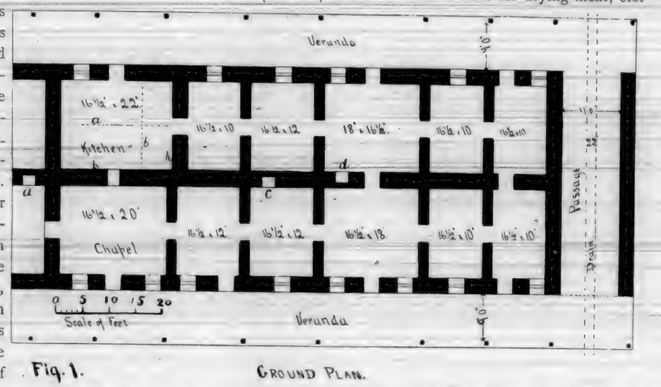


Fig. 1. GROUND PLAN.

The walls are built with adobe bricks or slabs, 11 by 22 inches and 3 inches thick. The joints are laid in clay and chopped straw, the joints being large—ten courses in height to 36 inches. The bricks are laid to bond and when plastered with adobe are about 3 ft. in thickness for outside walls and main longitudinal walls, and 2 ft. for partition walls.

When we speak of adobe bricks or adobe walls it appears such a simple matter that few persons make an investigation of the subject; yet, the more we inquire into the particular qualifications of adobe, the deeper the mystery becomes. Can anyone explain to us why the adobe walls built 75 to 100 years ago withstand the weathering, and are in a better state of preservation than those built 20 years ago? The conviction forces itself upon us, that the builders of these old buildings were possessed of a practical knowledge of the method for working and tempering the material from the beginning to the end of the process for making the adobe bricks or wall slabs, unknown at the present time.

The adobe bricks used in the construction of the walls of this old building were made of the natural soil, which contains in its composition some organic matter and a considerable proportion of the decomposed rocks of the adjacent hills, and is of a clayey nature. When worked to a plastic state with water, and mixed with chopped straw, and dried by a series of processes known to the workers, when built up makes a firm wall of great strength and power of resistance to the weather, the average yearly rainfall being 22 inches.

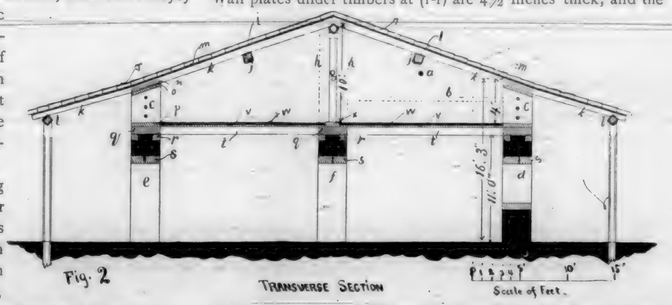


Fig. 2 TRANSVERSE SECTION

The general plan of the building at present standing, was in former times, arranged and partitioned off as shown in the plan Fig. 1. The length is 120 feet by a width of 42, which with the verandas of nine feet each, covers a total width of 60 feet, being one-half the length.

A passage or drive way 11 feet in width, was placed at one end, and the chapel and kitchen at the other end. The intermediate rooms or apartments having connecting door-ways in the interior division walls or partitions of the several apartments.

Windows or openings for light also door ways were placed in the exterior walls, and it will be noticed that the doors are set opposite each other, or in direct lines, either longitudinally or transversely. In the wall dividing the chapel from the kitchen is an opening through the wall 2 feet 3 inches wide and 1 foot 6 inches high, set 4 feet from floor to sill; whatever its purpose, is a subject for conjecture. At (a) is a square recess in the wall 2 feet deep, 2 feet 4 inctes wide and 3 feet high. Its purpose not definately known. At (c) is another recess or locker 2 feet 6 inches wide and 3 feet 6 inches high, set 4 feet above the floor. This locker has doors and shelves and will be described hereinafter. At (d) is a niche for font and formed like (a or c). A drain, built of burned bricks has been lately discovered in the ground through the main passage.

If we now examine the transverse section, Fig. 2, the general features of the construction are apparent. The main story being 11 feet in the clear, and the attic 4 feet at the low parts and 10 feet at the high parts. The three main walls are shown, having doorways at (e and f); and windows at (d).

The main exterior side walls at (e and d) extend to roof, and the center wall (f) to the height of main story with this exception, the two walls, (h h) of kitchen in Fig. 1 and h, Fig. 2 extend to the roof, therefore, the kitchen extends to the full height to the roof. Two poles about 10 inches in diameter were built into the walls and extended across the kitchen at (a and b) in Fig. 1 and at (a and b) in Fig. 2. These were for drying meat, etc.

Windows were placed in the walls of the attic as at (c c) having 3 to 4 inch poles built into the walls as guards.

The timbers (t) for floor of attic were 9 by 9 inches and set 22 inches apart, and extending clear through the walls, over these were laid split and hewn planks (v) 1¾ inches thick and from 11 to 22 inches wide, then over these the finished floor of adobe tiles, (w) 22 by 22 inches, and 3 inches thick. Over the main center wall at (x) is a wooden wall plate 3 by 11 inches, upon which rests the posts (g) supporting roof.

Lintels (s-s) over openings are 7½ inches thick and in two or three pieces in width to correspond with the thickness of the walls. Wall plates under timbers at (r-r) are 4½ inches thick, and the space (q) over walls and between timbers filled in solid. Window sills (p) 3 inches thick. Lintels (o) 3 inches thick, and the space (n) between rafters filled in solid to roof. The rafters (k) are of round poles about 10 inches in diameter at the butt which is placed at the top, and 4 to 6 inches at (l) over veranda posts. (j-j) are strengthening beams 11 by 11 inches; (m) is the brush thatch and (T) the tiles of roof which will be shown more in detail hereafter.

H. T. B.

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

TECHNICAL SCHOOLS FOR PRACTICAL INSTRUCTION.

Mr. Editor:—

Every intelligent reader of The California Architect must appreciate its broad and comprehensive policy in all that pertains to both the architectural, building and manufacturing crafts, and rejoice that it has done such commendable work in giving a higher tone to all that relates to architecture and construction in this city and state.

The science of architecture and construction, the art of design and fabrication being so inter-related, it follows that whatever tends to improve and advance the one must also act for the benefit of the other. Hence, when we speak of the interests, growth and advancement of architecture, it follows that such improvement and advancement is all important to the manufacturer, builder and building trades generally. Thus progress follows for all in proportion to the recognition of both professional and technical principles, and that consequent advance which leaves its impress for the general good. Perhaps this may be said to be an educational work, and that your journal should be proud of the good so far done.

It is the belief that its powerful influence in this line may be still further felt that the writer would dwell on a subject which, if impartially considered will be seen to be of some importance to those mentioned, and at the same time be a matter of vast importance to both our city and state.

San Francisco needs in its midst a public Polytechnic Institute or Technical School of Mechanic Arts. An institute wherein the youth and apprentices of the city may obtain special and practical training in its schools of Design and in the theory and practice of the various Mechanic Arts, and the Lecture Rooms of which would be kept open for the adult public and so foster an appreciative sentiment in all that relates to manufacturers, mechanics, the useful arts, and the grand sciences of engineering and architecture.

This structure should occupy not less than an entire block, and be centrally located. While day classes would be encouraged, the night classes and lectures for our young men and women should be its especial feature. It should be equipped in all its various departments with the most complete educational staff of *practical teachers*, elected from the active professional element, who in business were a practical success.

And its libraries, models, tools and all other requisites of such a practical character that our California apprentices and students in the science and art of design and construction, etc., might soon stand before the world with heads erect, and not be the botches which so many of them are to-day, especially in the building trades.

This institute should be of as easy access by cable lines as the present Mechanics Pavilion. It should be provided with baths and lavatories, so that apprentices coming from the building, foundry, factory or mill, could go direct from their work (if necessary) in his or her work clothes to the lavatory department, enter their numbered box; don his or her bath suit; when through their bath, redress, and then go to the Institute restaurant, and from there while an hour away in the many apprentice club rooms, until the chimes ring out the hour for the students to ascend the many elevators which ply heavenward up a grand ten-story fire-proof structure.

In reading these suggestions it should be borne in mind that San Francisco has a great future; and that it is all important for its well-fare that manufactures of every kind should center about this city. It should also be remembered that manufacturers, builders, foundrymen and others, will find it to their interest to see their apprentices and workmen grow in a thorough knowledge of their art, while a higher character and more manly dignity would obtain in each craft and craftsman.

California has vast undeveloped resources and it is to her commercial interests to see them develop and to have skilled California workmen who in theory and practice will be able to enter new fields for practice and profitable development. Our native sons should in their own state be given the opportunity to become competent to utilize the undeveloped wealth of their own state, and not see its interests drift into the hands of foreign syndicates who will displace them with alien labor.

These institutes of theoretical and practical training are to be found in most of the large cities of Europe, and England, France and Germany, each spend millions annually for their public maintainance. Since their establishment in England alone the social condition of the workers has been vastly improved. Intemperance and vice has decreased, and the social status of the working people generally changed for the better.

It is well known that thousands of our city youth annually come to adult age, and that thousands of them seek and are unable to find employment: in the most cases, for the reason that many San Francisco youths are not the most desirable material for apprentices, and because that their education has been confined to the primary school grades and the still lower grades of our less respectable side-streets, alleys and dens. The writer has been some twenty-five years connectedly with the building trades in this city, and it asked to give his opinion and experience with the San Francisco apprentice, or of the graduated "journey-man apprentice" he would characterize him as a *cigarette smoking botch*, too conceited to learn, and as a working man, too ignorant to recognize his ignorance.

In the absence of any "apprentice law" he runs from one boss to another, and instead of legitimately learning the trade, goes from shop to shop as a "journeyman-apprentice," and steals the trade or the little he knows of it. Hence it is that so many respectable building firms employ none but well-known mechanics and artizans, and refuse to have anything to do with your hoodlum apprentice.

But all this can be remedied. The youth of California are as good as the youth of any country, but they need that special technical training which shall obliterate from their vocabulary the words "chippie" and "cigarette."

It should be remembered that their domestic and social environment, together with a false and precocious idea of *individual liberty independence*, and the fact that a great deal of labor is made repulsive through the greed of many ignorant, and selfish bosses and manufacturers, tends to make our San Francisco youth look repellantly on what should be regarded by all as honorable toil.

In the founding of the Mechanic Art College at Berkeley, the special training of our youth was had in view, but how many students have graduated from either the Mechanic Arts College or the Agricultural College who are to be found *actively employed* either in mechanical or agricultural production.

However the intention of the State was all right, and the idea embodied may be made practical and of great benefit to our State, provided Technical Schools of Design and Mechanic Arts are generally founded *in cities* of a given population, and the proper legal course pursued by which the site, the building and maintainance of such Institutes would be provided for, so as to be for all time public Institutes which would attract to such city or cities, thousands on thousands of well-to-do people who are seeking such localities where their children could receive a practical training, fitting them to become respected and useful factors in the social compact of which it is the high privilege of each American to claim he is a soverign peer.

The writer does not look with favor on those charity institutes founded by individuals who have amassed great wealth. There are many reasons therefore, the principle one is that the State being the conservator of the well being of its members, then all institutes founded for the intellectual and matenial training and discipline of its youth or wards would result in a higher class of wealth producers, whose special training fitted them to develop and utilize other and still other fields of wealth which would bring a greater revenue and a more general prosperity as a result.

Now as all members of the State are supposed to be generally interested in that which tends to develop the wealth and resources of their State, for the reason that the benefit thereof becomes general and reciprocal, then each member of the social compact should be willing to bear his or her share of taxation to see the general prosperity become assured and transmit a legacy of independence to those who followed us.

It may be said that such institutes would cost considerable for their creation and maintainance. Well, would not their maintainance be a better investment of public funds than the appropriations which go to sustain jails and state prisons, and would not the graduates of the institutes suggested give better results for the money invested than the graduates from those latter colleges of crime.

The writer looks on this subject from a cold-blooded business standpoint as well as one of patriotism. He considers it a *good investment* not only for the public but one which every intelligent capitalist and property owner should consider.

The capitalist and manufacturer should know that the cultured and expert wealth producer is by all odds the most desirable and profitable worker in the end, and the property owner should also remember that the anarchist finds his fertile field for devilish mischief in the midst of unskilled ignorance, and boorish brutishness.

If there is any trueism, the capitalist and property owner should remember it is that "The Devil finds work for idle hands to do."

Feeling that I have already occupied much of your valuable space, I beg to suggest in conclusion, Mr. Editor, that this subject in all its bearings is too important to be ignored or overlooked. Its ramifications are too extensive and of such concern to the public weal that it is to be hoped that this journal will lend its broad reaching influence for the successful realization of the work here suggested. T. T.

GAS FOR HEATING.

As the cold weather is now upon us, it seems opportune for the consideration of the problem relating to the use of gas for the heating of apartments.

The obstacles and difficulties to be overcome are many, yet a surprising degree of success has been attained by some of the heaters already in the market, as independent fixtures; and where ordinary intelligence is brought to bear upon their proper use, they seem to give satisfaction. The small minority who cry out against them, will, in most cases continue their use, rather than return to the old system of coal, smoke, soot, dust and ashes.

Such stoves as are now manufactured, present a variety of designs, as well as great ingenuity in the devices for burning the vapor in such a manner as to obtain the most available heat from the least quantity of gas. It was found that a small gas stove which had been in use for some five years, that when the temperature out doors was 45° F., the stove, with a tube from a five foot burner, would raise the temperature of the room to 58°; by closing the holes on the side it was increased to 60°. By placing a sheet-iron cap over the central opening in the top of the stove, it would cause an increase of some 2 to 4 degrees, thus bringing the temperature to 63 or 64 degrees.

Near the stove above mentioned, stood another gas heater of a different pattern, which consumed about three-fourths of the quantity of gas used by the first heater, yet with the same outside temperature, that of the room would be raised to 68 or 70 degrees. These stoves were of ordinary form and set above the floor, leaving a space of a few inches to supply air for the flame. This stratum of cold air is the cause of many of the objections raised against the system.

Some manufacturers have endeavored to overcome this defect, and have succeeded to some extent; but considerable still remains to be done in this direction. It would be desirable in many cases, if architects, when preparing plans, would arrange for gas heaters. This could be done in many ways.

The heat utilized in gas stoves, commences about six inches above the floor, leaving a stratum of cold air in motion for supplying the flame. If a sinkage or well, lined with metal, could be arranged in the floor to a depth of from 12 to 15 inches, and provided with a fresh air pipe from the outside, also a gas pipe with fixtures ready for attachment to the stove, we could then set the stove into this receptacle and attach it to the gas pipe. The cold or fresh air supply will then come through the pipe from the outside, thereby avoiding the draft around the bottom of the stove. The heated air will be thrown out into the room at a lower point than is usual, thus warming the room in a more agreeable manner.

When the stove is not in use a cover could be fitted over the receptacle, which if provided with suitable openings would supply fresh air for ventilation without the annoyance from dust and flies.

With the use of gas it would not be necessary to build large fire places as required for coal, and a much better arrangement could be had by forming a niche or receptacle in the side wall where desired. From this receptacle low down, better, if even with the lower side of the floor timbers, and double line the sides and top with sheet iron, leaving an air space all round of about two to three inches. Bring the gas pipes in through the wall, and provide the burners. The burners should be set as low as possible, if possible at the height of the floor, in order to throw the direct heat of the flame out along the floor surface.

The double walls inclosing the air space saves all the waste heat at the back, warming the air, which may be conducted into the room.

January 6th, 1891.

PROPOSED AMENDMENTS TO THE LIEN LAWS OF THE STATE OF CALIFORNIA,

AS RECOMMENDED BY THE

Joint Committee from the following Associations:

S. F. CHAPTER OF ARCHITECTS, A. I. A.
BUILDERS' ASSOCIATION, MILL MEN'S ASSOCIATION,
BUILDERS' EXCHANGE, LUMBER DEALERS' EXCHANGE.
BUILDERS' PROTECTIVE ASSOCIATION OF OAKLAND.

Amending sections 1183, 1184 and 1187 of the Code of Civil Procedure of the State of California, as amended March 15th, 1887; and section 1195 of the said Code of Civil Procedure, as amended March 18th, 1885, relating to Liens of Mechanics and others.

The people of the State of California, represented in Senate and Assembly, do enact as follows:—

Section 1, section 1183, of the Code of Civil Procedure of the State of California is amended so as to read as follows:—

Sec. 1183. Mechanics, material-men, contractors, sub-contractors, artisans, architects, machinists, builders, miners, and all persons and laborers of every class preforming labor upon or furnishing materials to be used in the construction, alteration, addition to, or repair, either in whole or in part, of any building, wharf, bridge, ditch, flume, acqueduct, tunnel, fence, machinery, railroad, wagon road, or other structure, shall have a lien upon the property upon which they have bestowed labor, or furnished materials, for the value of such labor done and materials furnished, whether at the instance of the owner or of any other person acting by his authority, or under him, as contractor or otherwise; and any person who performs labor in any mining claim or claims has a lien upon the same, and the works owned and used by the owners for reducing the ores from such mining claim or claims, for the work or labor done, or materials furnished by each respectively, whether done or furnished at the instance of the owner of the building or other improvement, or his agent; and every contractor, sub-contractor, architect, builder, or other person having charge of any mining, or of the construction, alteration, addition to or repair, either in whole or in part of any building or other improvement as aforesaid, shall be held to be the agent of the owner, for the purposes of this chapter. In case of a contract for the work, between the reputed owner and his contractor, the lien shall extend to the entire contract price; and such contract shall operate as a lien in favor of all persons, except the contractor, to the extent of the whole contract price, and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor. All such contracts shall be in writing when the amount agreed to be paid thereunder exceeds one thousand dollars, and shall be subscribed by the parties thereto, and the said contract or a memorandum thereof, setting forth the names of all the parties to the contract, a description of the property to be affected thereby, together with a statement of the general character of the work to be done, the total amount to be paid thereunder, and the amounts of all partial payments, together with the times when such payments shall be due and payable, shall, before the work is commenced, be filed in the office of the County Recorder

of the county, or city and county, where the property is situated, who shall receive one dollar for such filing; otherwise they shall be wholly void, and no recovery shall be had thereon by either party thereto; and in such case, the labor done and materials furnished by all persons aforesaid, except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien for the value thereof.

In case a memorandum shall be filed, as herein provided, the same before the filing thereof, shall be endorsed "Memorandum of Contract."

In all cities, cities and counties or incorporated towns, where there exist fire ordinances or municipal law regulating the construction of buildings, all such contracts and every memorandum thereof, before being filed, as herein provided, shall have endorsed thereon, a certificate, signed by the officer or person charged by the Board of Supervisors, City Council or other governing body of such city, city and county or incorporated town with the duty of enforcing said fire ordinance or laws, which said certificate shall state that the plans for the construction of said building, improvement, structure or work mentioned in said contract, fully comply with all the requirements of such fire ordicances or laws.

Said officer, or person giving such certificate, shall be entitled to charge therefor, the sum of $5; in all cases where the contract price mentioned in said contract amounts to $5,000 or less, and fifty cents additional for each $1,000 or fraction thereof in excess of $5,000.

Section II. Section 1184, of the Code of Civil Procedure, of the State of California, is amended so as to read as follows:—

Sec. 1184. No part of the contract price shall, by the terms of any contract, between the owner and his contractor, be made payable, nor shall the same, or any part thereof, be paid in advance of the commencement of the work; but the contract price shall, by the terms of the contract, be made payable in installments, at specified times, after the commencement of the work, or upon the completion of specified portions thereof; provided, that at least twenty-five per cent. of the whole contract price shall be made payable at least fifteen days after the final completion of the contract. No payment made prior to the time when the same is due under the terms and conditions of any such contract shall be valid for the purposes of defeating, diminishing, or discharging any lien in favor of any person except the contractor, but as to such liens, such payment shall be deemed as if not made, and shall be applicable to such liens, notwithstanding, that the contractor to whom it was paid may thereafter abandon his contract, or be or become indebted to the reputed owner in any amount, for damages or otherwise, for non-performance of his contract or otherwise. As to all liens, except that of the contractor, the whole contract price, whatever may be the amount thereof, shall be payable in money, and shall not be diminished by any prior or subsequent indebtedness, offset, or counter-claim in favor of the reputed owner and against the contractor. No alteration of any contract shall affect any lien acquired under the provisions of this chapter. In case any contract and the alteration thereof does not conform substantially to the provisions of this section, the labor done and materials furnished by all persons, except the contractor, shall be deemed to have been done and furnished at the personal instance and request of the person who contracted with the contractor, and they shall have a lien for the value thereof. Any of the persons mentioned in section eleven hundred and eighty-three, except the contractor, may, at any time, give to the reputed ower a written notice that they have performed labor or furnished materials, or both, to the contractor, or other person acting by authority of the reputed owner, or that they have agreed to do so, stating in general terms the kind of labor and materials, and the name of the person to or for whom the same was done or furnished, or both, and the amount in value, as near as may be, of that already done or furnished, or both, and of the whole agreed to be done or furnished, or both. Such notice may be given by delivering the same to the reputed owner personally, or by leaving it at his residence or place of business, with some person in charge: or by delivering it to his architects, or by leaving it at their residence or place of business, with some person in charge: or by posting it in a conspicuous place upon the mining claim, or improvement. No such notice shall be invalid by reason or any defect of form: provided it is sufficient to inform the reputed owner of the substantial matters herein provided for, or to put him upon inquiry as to such matters. Upon such notice being given, it shall be the duty of the person who contracted with the contractor, to, and he shall, with-hold from his contractor, or from any person acting under such reputed owner, and to whom by said notice the said labor or materials, or both have been furnished or agreed to be furnished, sufficient money due or that may become due to such contractor, or other person, to answer such claim and any lien that may be filed therefor, for record under this chapter, including counsel fees, not exceeding one hundred dollars in each case, besides reasonable costs provided for in this chapter.

Section III. Section 1187, of the Code of Civil Procedure, of the State of California, is amended so as to read as follows:—

Sec. 1187 Every original contractor, within sixty days after the completion of his contract, and every person, save the original contractor, claiming the benefit of this chapter, within ten days after the completion of any building, improvement or structure, or after the completion of the alteration, addition to, or repair thereof, or the performance of any labor in a mining claim, must file for record with the county recorder of the county in which such property or some part thereof, is situated, a claim containing a statement of his demand, after deducting all just credits and offsets, with the name of the owner or reputed owner, if known, and also the name of the person by whom he was employed or to whom he furnished the materials, with a statement of the terms, time given, and conditions of his contract, and also a description of the property to be charged with the lien, sufficient for identification, which claim must be verified by the oath of himself or of some other person. The occupation or use of any building, improvement or structure by the owner, his representative, or tenant, or the acceptance by said owner or his agent, of said building, improvement, or structure, shall be deemed conclusive evidence of completion; and cessation from labor for thirty days upon any unfinished building, improvement, or structure, or the alteration, addition to, or repair thereof, shall be deemed equivalent to a completion thereof for all the purposes of this chapter.

In case of completion being established by occupation, or use, or by the cessation of labor for a period of thirty days, as herein provided, all persons, save the original contractor, claiming the benefits of this chapter, may have thirty days from and after the date of such occupaiton or use, or from and after the expiration of thirty days immediately succeeding the cessation of labor, within which to file their claims of lien, as herein provided. And in each case, the owner or person who contracted with the contractor must withold the final payment of twenty-five per cent. of the contract price for thirty-five days after such occupation or use, or after such cessation of labor for a period of thirty days.

The completion of any building, improvement or structure or the completion of any alteration, addition to or repair thereof, or the performance of any labor in any mining claim shall, except when the same is established by the occupation or use thereof, or by the cessation of labor thereon, for a period of thirty days, be evidenced by a certificate of completion, which said cerfiticate shall be signed by the reputed owner, his architect or agent, and shall be filed for record in the County Recorder's office of said county or said city and county, where such property is situated, who shall receive fifty (50) cents for filing and recording the same, and until said certificate is so filed and recorded, said work shall be deemed not to have been completed.

The recorder of the county, or city and county, must record all certificates required by this section in a book kept by him for that purpose, which record must be indexed as deeds and other conveyances are required by law to be indexed.

Section IV. Section 1195, of the Code of Civil Procedure, of the State of California, is amended so as to read as follows:—

Sec. 1195. Any number of persons claiming liens may join in the same action, and when separate actions are commenced, the Court must consolidate them. The Court must also allow, as a part of the costs, the money paid for filing and recording the lien, and reasonable attorney's fees in the Superior and Supreme Courts, such costs and attorney's fees to be allowed to each lien claimant whose lien is established, whether he be plaintiff or defendant, or whether they all join in one action or separate actions are consolidated.

Section V. This act shall take effect and be in force immediately upon its passage.

THE POETRY OF ARCHITECTURE.

A paper read before the San Francisco Chapter of the American Institute of Architects, by Oliver Everett.

To begin my paper with a familiar quotation,

"Architecture is frozen music".

The quotation not only emphasizes the permanency of an architects creation, but, at the same time, warns him to be careful how he sends his work forth, for unfortunately the poor work, as well as the meritorious, is congealed, and the sweetest notes make discord, unless played to the requirements of harmony.

As the purposes of Architecture have varied from the defensive habitations required by the early races, to the devotional structures of Medieval times, and the psosaic and practical buildings of to-day, so have the various forms and expressions resulting therefrom varied, and it is an interesting study to trace this evolution of styles and its development of ideas, and to speculate on the changes yet to be wrought by our posterity.

In passing judgment on the works of the past, the first consideration should be to ascertain how perfectly or imperfectly the needs of the situation were met, and then we may sympathize with the satisfaction experienced by the architect upon the successful realization of his ideal. Unfortunately, however, every architect does not win the applause he considers himself to merit, for the question of individual taste enters largely into the verdict of the public, as well as that of the discriminating critic.

From the mists of antiquity comes the story of the unfortunate architect thrown into space by angry Jove; if this punishment was intended as a mark of professional disapprobation, he must have been guilty of something atrocious.

As this paper is only designed to obtain a few glimpses of architectural achievements from the point of view of the poet, and as the earlier architecture comes from the Orient, suppose we begin by this description of the dwellings of an Indian Prince, written by Sir Edwin Arnold.

The King commanded that there should be built
Three stately houses, one of hewn square beams
With cedar lining, warm for winter days;
One of veined marbles, cool for summer heat;
And one of burned bricks, with blue tiles bedecked,
Pleasant at seed-time, when the champaks bud—
Subha, Suramma, Ramma, were their names.
Delicious gardens round about them bloomed,
Streams wandered wild and musky thickets stretched,
With many a bright pavilion and fair lawn.
* * * * *

and still again as follows:

Stately and beautiful he bade them build, love's prison house,
So that in all the earth no marvel was
Like Vishramvan, the Prince's pleasure-place.
Midway in those wide palace-grounds there rose
A verdant hill whose base Rohini bathed
Murmuring adown from Himalaye's broad feet,
To bear its tribute to Gunga's waves
* * * Fronting this
The builders set the bright pavilion up,
Fair-planted on the terraced hill, with towers
On either flank and pillared cloisters round.
Its beams were carved with stories of old time.
* * * * *
By winding ways of garden and of court
The inner gate was reached, of marble wrought,
White, with pink veins; the lintel lazuli,
The threshold alabaster, and the doors
Sandal wood, cut in pictured panelling;
Whereby to lofty halls and shadowy bowers
Passed the delighted foot, on stately stairs,
Through latticed galleries, 'neath painted roofs
And clustering columns, * * *
But innermost,
Beyond the richness of those hundred halls,
A secret chamber lurked, where skill had spent
All lovely fantasies to lull the mind:
The entrance of it was a cloistered square—
Roofed by the sky, and in the midst a tank
Of milky marble built, and laid with slabs
Of milk white marble; bordered round the tank
And on the steps, and all along the frieze
With tender inlaid work of agate-stones.
Cool as to tread in summer-time on snows
It was to loiter there; sunbeams dropped
Their gold, and, passing into porch and niche,
Softened to shadows, silvery, pale and dim,
As if the very Day paused and grew Eve
In love and silence at that bower's gate;
For there beyond the gate the chamber was,
Beautiful, sweet; a wonder of the world!
Soft light from perfumed lamps through windows fell
Of nakre and stained stars of lucent film,
On golden cloths outspread, and silken beds,
And heavy splendor of the purdah's fringe,
Lifted to take only the loveliest in.
Here, whether it was night or day none knew,
For always streamed that softened light, more bright
Than sunrise, but as tender as the eve's.
* * * * *
And around, the King bade build
A massive wall, and in the wall a gate
With brazen folding doors, which but to roll
Back on their hinges, asked a hundred arms;
And inside this another gate he made,
And yet within another—through the three
Must one pass if he quit that pleasure-house.

Next listen to this description of Milton's in Paradise Lost, of a structure reared by fallen angels:

Anon out of the earth a fabric huge
Rose, like an exhalation, with the sound
Of dulcet symphonies and voices sweet,
Built like a temple, where pilasters round
Were set, and Doric pillars overlaid
With golden architrave; nor did there want
Cornice or frieze with bossy sculptures grav'n;
The roof was fretted gold. Not Babylon,
Nor great Alcairo, such magnificence
Equalled in all their glories, to inshrine
Belus or Serapis their Gods, or seat
Their kings, when Egypt with Assyria strove
In wealth and luxury. Th' ascending pile
Stood, fixt her stately hight, and straight the doors,
Op'ning their brazen folds, discover, wide
Within, her ample spaces, o'er the smooth
And level pavement: from the arched roof,
Pendent by subtle magic, many a row
Of starry lamps and blazing cressets, fed
With naphtha and asphaltus, yielded light
As from a sky. The hasty multitude
Admiring entered, and the work some praise,
And some the Architect: his hand was known
In heaven by many a towered structure high,
Where scepter'd angels held their residence,
And sat as princes; whom the supreme King
Exalted to such power, and gave to rule,
Each in his hierarchy, the orders bright.
Nor was his name unheard or unador'd
In ancient Greece; and in Ausonian land
Men called him Mulciber, and how he fell
From heav'n they fabled, thrown by angry Jove
Sheer o'er the crystal battlements; from morn
To noon he fell, from noon to dewy eve,
A summer's day; and with the setting sun
Dropt from the zenith like a falling star,
On Lemnos th' Ægean isle.

The following is a description by Sir Walter Scott of a rustic retreat in the highlands of Scotland. How different are the methods and materials employed, from those described in the preceding passages.

Here, for retreat in dangerous hour,
Some chief had framed a rustic bower.
It was a lodge of ample size,
But strange of structure and device;
Of such materials as around
The workman's hand had readiest found.
Lopped of their boughs, their hoar trunks bared,
And by the hatchet rudely squared,
To give the walls their destined height,
The sturdy oak and ash unite;
While moss and clay, and leaves combined
To fence each crevice from the wind.
The lighter pine-trees overhead,
Their slender length for rafters spread.
And withered heath and rushes dry
Supplied a russet canopy.
Due westward fronting on the green,
A rural portico was seen,
Aloft on native pillars borne,
Of mountain fir with bark unshorn,
Where Ellen's hand had taught to twine
The ivy and Idean vine.

The following passage from "Marmion" is descriptive of an ancient Saxon monastery as seen from the sea:

As to the port the galley flew,
Higher and higher rose to view
The Castle, with its battled walls,
The ancient monastery's halls,
A solemn, huge, and dark-red pile,
Placed on the margin of the Isle.

In Saxon strength the Abbey frowned,
With massive arches broad and round,
That rose alternate, row and row
On ponderous columns, short and low
Built ere the art was known,
By pointed aisle, and shafted stalk,
The arcades of an alley'd walk,
To emulate in stone.
On the deep walls, the heathen Dane,
Had poured his impious rage in vain;
And needful was such strength to these,
Exposed to the tempestuous seas,
Scourged by the wind's eternal sway,
Open to rovers fierce as they,
Which could twelve hundred years withstand
Winds, waves, and northern pirates' hand.
Not but that portion of the pile,
Rebuilded in a later style,
Showed where the spoiler's hand had been
Not but the wasting sea-breeze keen,
Had worn the pillars carving quaint,
And mouldered in his niche the saint,
And rounded, with consuming power,
The pointed angles of each tower:
Yet still entire the Abbey stood,
Like veteran, worn, but unsubdued.

[TO BE CONTINUED.]

PERSPECTIVE VIEW.

The AMERICAN MACHINIST, N. Y., for December 4th, contains an article on strains on pin and eye for pull rod joints, also one on force, motion and work. Both articles are interesting to those who wish to study constructive details.

The AMERICAN ARTISAN, TINNER and HOUSE FURNISHER, Chicago, for December 13th, has a chapter on the tying of knots, making splices and loops of the most intricate kind. The article is profusely illustrated and should be in the hands of every person in any way interested in making scaffolding, or rigging hoisting apparatus for building operations.

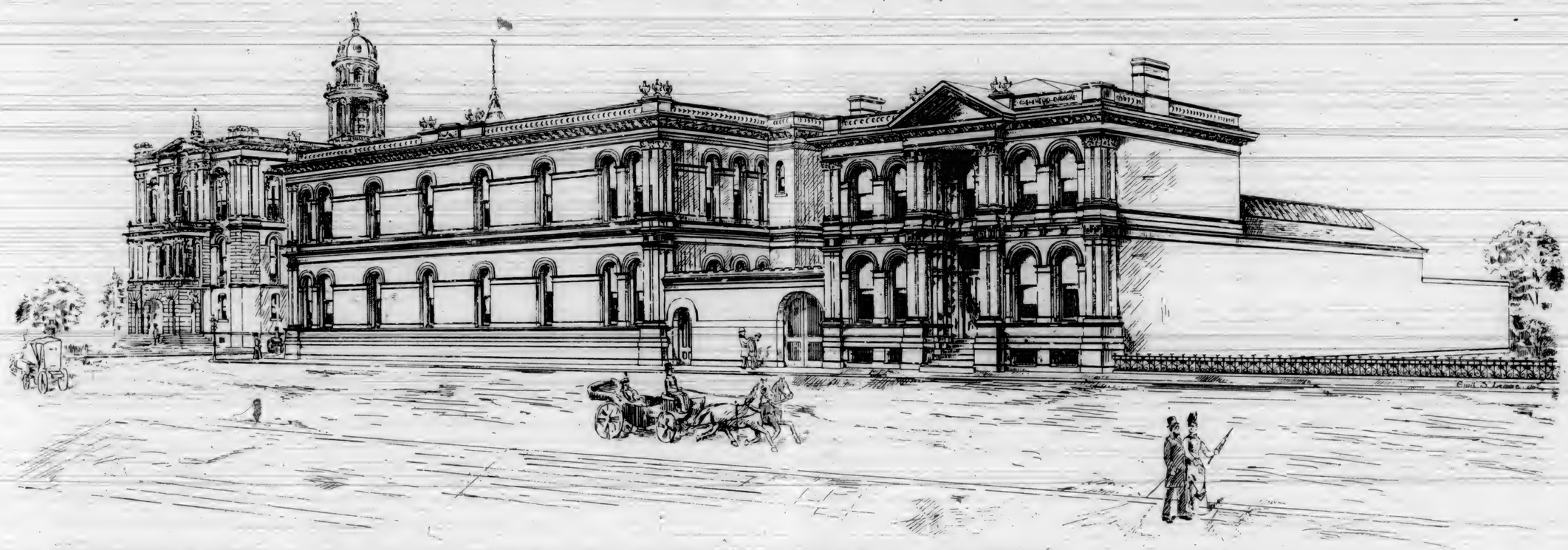
The ENGINEERING RECORD, of December 6, has an illustrated article describing the plumbing for the water supply in the new U. S. war and navy buildings, Washington, D. C., also a description, illustrated, of the steam heating in the Plaza Hotel, N. Y.

PRACTICAL GRAINING is the title of a New Book written by William E. Hall, and published by the House Painting and Decorating Publishing Co., Philadelphia.

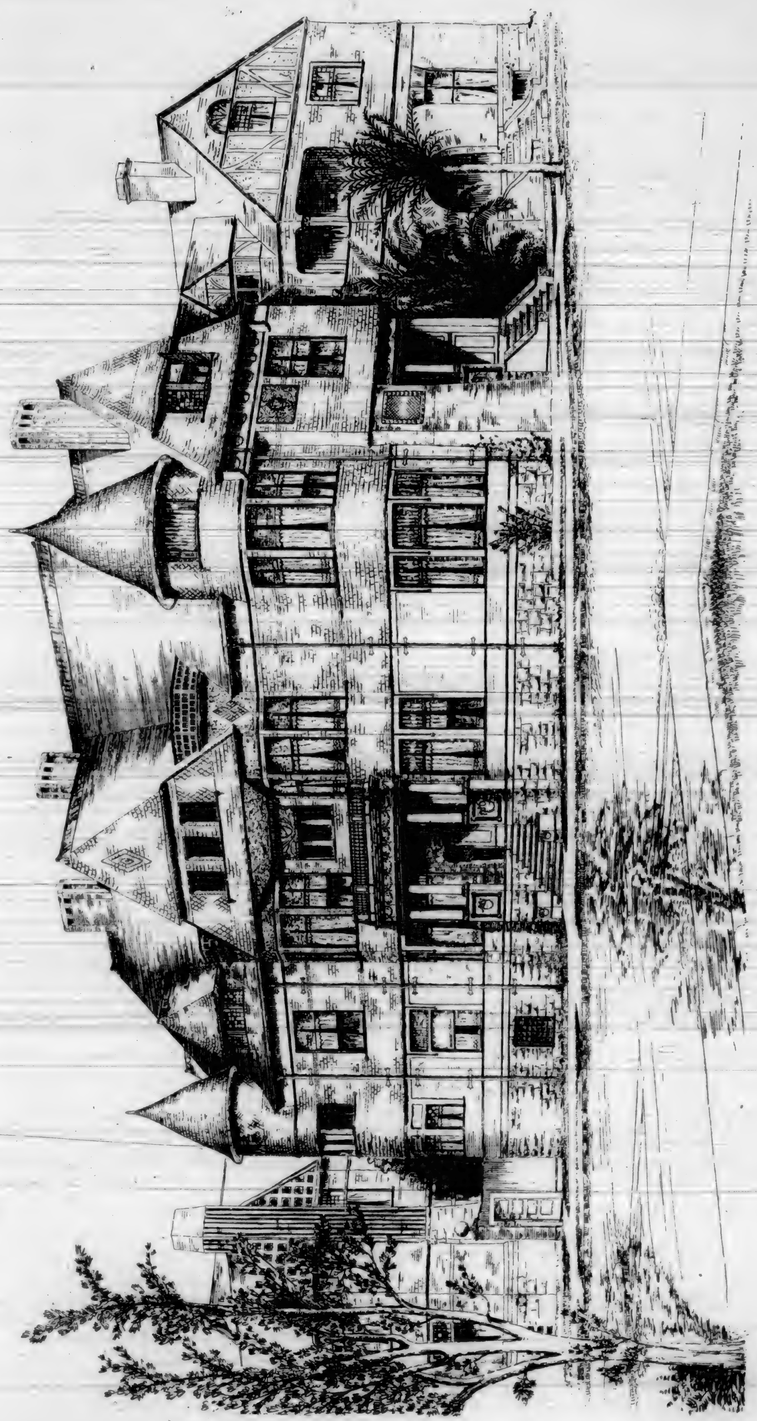
There are some sixty pages of text descriptive of the various materials and processes used by the grainer to imitate natural woods, and the different kinds of brushes, combs, stipples, and other implements, and the methods of manipulating them.

The book is 6x9 inches, profusely illustrated, showing the different stages of the work, with more than forty beautiful colored lithographic plates of the different woods both usual and rare, that the grainer may be called on to imitate.

The book is fully indexed, and deserves to become a standard book of reference on the subject it treats.

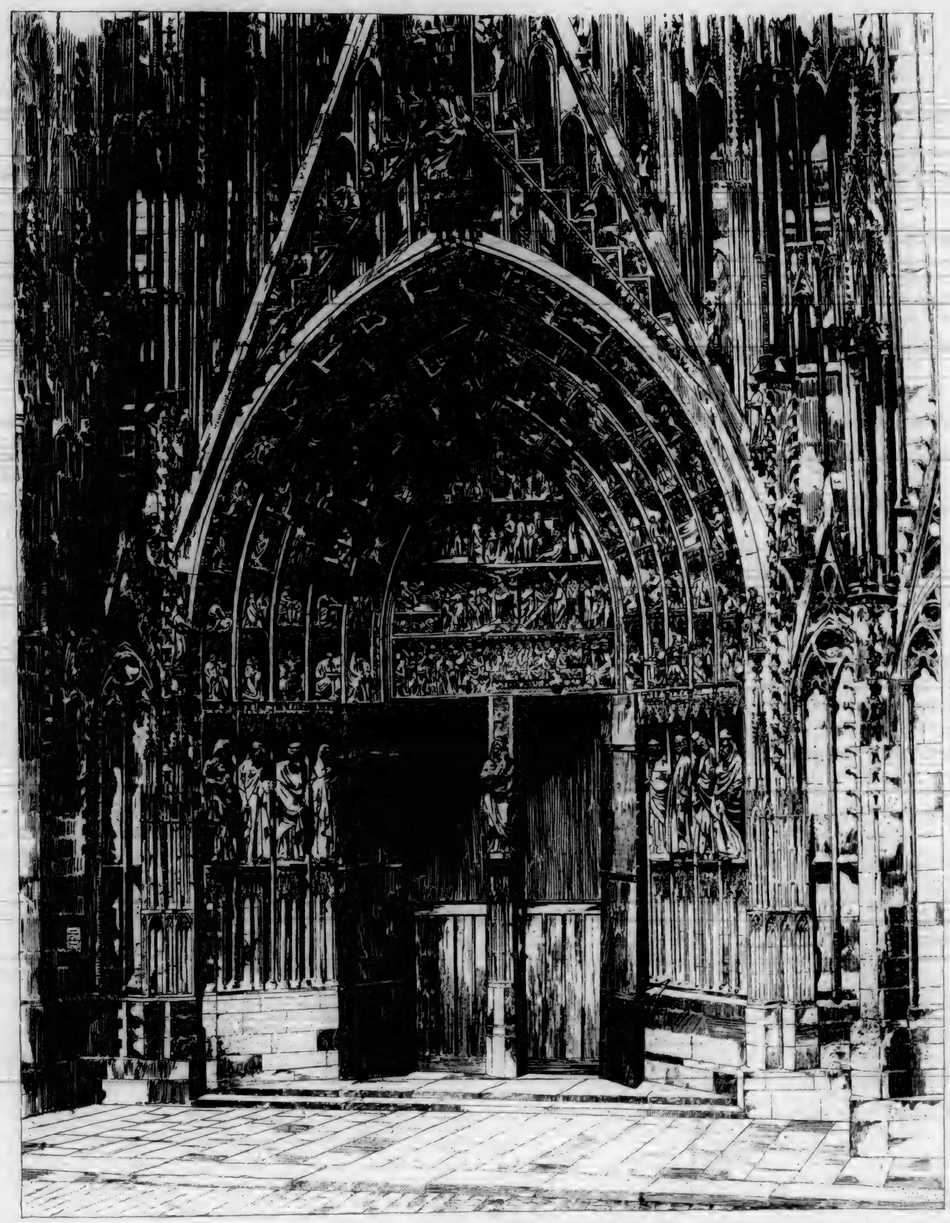


·COURT·HOUSE·HALL·OF·RECORDS·
·AND·COUNTY·JAIL·SANTA·ROSA·CALIFORNIA·
·J·M·CURTIS·ARCHITECT·SAN·FRANCISCO·



RESIDENCE OF Dr. C. D. SALFIELD N.E. CORNER PAGE & SCHRADER STREETS SAN FRANCISCO CALIFORNIA SAMUEL NEWSOM ARCHITECT 415 SIB PHELAN BLOCK SAN FRANCISCO CALIFORNIA.

PLATE No1.



ENTRANCE TO CATHEDRAL OF CHARTRES.

Drawn by S.C. Benson.

PLATE No3.

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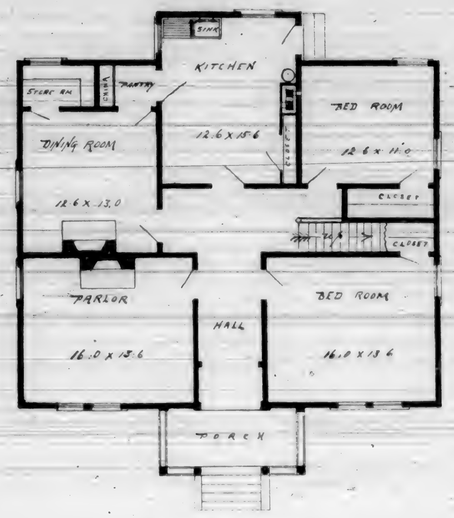


PLAN OF MAIN STORY.

The management of this journal desires to extend a cordial invitation to all architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Plate No. 1 is a design for a residence for Dr. C. D. Salfield, Samuel Newsom, architect.

Plate No. 2 is a design for a Jail at Santa Rosa, Cal., in course of erection, John M. Curtis, architect.

Plate No. 3.—Entrance to Cathedral Chartres, from a pen drawing by S. C. Benson.

The design for a one and a half story cottage was prepared for this Journal. Several bed rooms and store rooms are arranged in the attic story.

THE subscription price of this Journal is $3.00 per annum, and single numbers 30 cents each.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

JUDGMENT IN REPUTED NAME.—Where a man is known by two names, and both are generally used to designate him, a judgment against him under either name is valid, without respect to which is actually his true name.

Isaacs v. Mintz, Supreme Court of New York, 11 N. Y. Supp. 422.

MECHANICS' LIEN FOR UNAUTHORIZED IMPROVEMENT.—The mechanics' lien law makes ample provision for the protection of property from encumbrance by lien for unauthorized improvements, and the establishment of a lien, by a material man, on both the land and building, cannot be barred by the defense that the building was erected by tenants under an agreement that it could be removed by them at the end of the term, unless notice of such agreement was brought home to the lienor before his contract was completed.

West Coast Lumber Co. v. Apfield, Supreme Court of California, 24 Pac. Rep. 993.

CONTRACT BY IMPLICATION.—Where it appears that a person requests prices on goods from another, and where the quotations are furnished asks how soon he could have them delivered, and upon being informed that he could have them right away responds "all right," it is a question for a jury to determine from all the facts, whether or not a contract for the goods was actually entered into, and the finding of a jury that these negotiations constitute a contract is not repugnant to law, and an appeal will be sustained.

Barwick v. Gast Lith. & Eng. Co., Supreme Court of New York, 11 N. Y. Supp. 373.

LIENS IN FAVOR OF CORPORATIONS—ERRONEOUS IN CLAIM.—Where the mechanics' lien statute gives a lien to persons but not to corporations, the benefit of its provisions will nevertheless be extended to commercial corporations furnishing materials or labor; where the statute provides that the statement for lien must show the amount of the demand, less all just credits and offsets, a statement of an amount slightly in excess of the amount proved will not invalidate the lien, if the overcharge appears to have resulted from inadvertence and not through attempt to fraud.

Gaskell v. Beard, Supreme Court of New York, 11 N. Y. Supp. 399.

DAMAGES FOR FAILURE TO DELIVER LUMBER.—Where a contractor for a building enters into a contract with a lumber dealer for the delivery of lumber at a certain time and the lumber is not delivered at the time agreed upon, the contractor is only entitled to recover the difference between the price agreed upon and the price he was obliged to pay for lumber to take its place, but he cannot recover damages resulting from delay of the building unless he shows that he could not obtain lumber elsewhere and that such damages were within the contemplation of the parties.

Eagle Manufacturing Co. v. Andrew, Supreme Court of New York, 11 N. Y. Supp. 334.

MECHANICS' LIEN FOR UNAUTHORIZED IMPROVEMENT OF PROPERTY IN CHANCERY.—Where the guardian of minor children without any authority from the court reconstructs an old and practically valueless building so as to make it productive of an income, those who furnished material for such improvement, though not entitled to a lien under the statute, will as a matter of equity be reimbursed out of the fund which arises from the difference between the rental value of the property before and after the improvement.

Bent v. Barnett, Court of Appeals of Kentucky, 14 S. W. Rep. 596.

DEVIATION FROM SPECIFICATIONS BY CONTRACTOR.—Where the terms of a written building contract provide that the drawings and specifications of the architect are a part of the contract, it is a material and substantial defect in the performance of the contract for the builder, without permission from either the owner or the architect, to construct the rear part of the house five inches lower than the height called for by the specifications, and this is such a failure as will prevent recovery on the contract.

Oberlies v. Bulinger, Supreme Court of New York, 11 N. Y. Supp. 264.

Notes & Comments.

A Mausoleum or Tomb is dead property.—Davisson.

Paper is now made so strong and tough as to be used as a substitute for oil-cloth or lineoleum. The surface is covered with a resisting and ornamental surface the same as oil-cloth.

The death rate among the Indians who aim to live like white people is three times that of those who continue to live a semi-wild life. The Pawnee tribe has lost more men by lung troubles in the last ten years than they lost in battle during the previous thirty.

It is to be hoped that the recommendation of Supervising Architect Windrim, (concurred in by Mr. Windom) that the competitive system of obtaining designs for our public buildings be given a trial, will soon be carried into effect.

The water passing over Niagara Falls is estimated at 270,000 cubic feet per second; consquently the 10,000 cubic feet per second to be utilized by the power canal and tunnel now building would have no perceptible effect on the Falls.

Hard burned bricks reduced to a fine powder, or the finely sifted brick dust from the kilns when mixed with the common lime and sand mortar may be used as a fair substitute for cement in localities where cement is not easily obtained.

"Should 'Owld' acquaintance be forgot?" is an appropriate inscription which appears upon a new card-receiver of silver gilt, immediately above an engraved gamut, the whole being surmounted by two wise-looking owls.—Jewelers' Review.

"This is the Turkish bath-room," said Mr. Cox, as he came to the apartment: "I always made up my mind to introduce one when I built a house of my own."

"But where's the water?" asked the visitor.

"Water? Why, this is a *real* Turkish bath-room! The Turks never bathe, you know!"—Ex.

Tom—"We've got a bay window in our house." Bessie—"So have we. And a balcony." Tom—"Pooh! That's nothing. We have two bathrooms." Bessie—"So have we." Tom—"We've got something you folks haven't. I heard papa tell mamma about it last night." Bessie—"I'll bet we've got some of 'em too. What is it?" Tom—"A defective flue."—Ex.

King Solomon's Temple was begun in the year B. C. 1012, finished in B. C. 1005, and it is thought the Queen of Sheba went to Jerusalem to see King Solomon in the year B. C. 993, twelve years after the dedication of the temple. Concerning this visit "the half has not been told."

We learn from the *Seattle Press* that the School Board of Seattle has resolved to establish a training school in connection with the High School of that city. The basement of the present building is to be fitted for a workshop and supplied with materials, tools, etc. This is intended only as a beginning, to prepare the way to a more extended system.

We are pleased to see that the experiment of the Illinois Chapter, A. I. A., in taking charge of and conducting the Institute of Building Arts, bids fair to be a success. According to the report presented to the Chapter at its annual meeting, the institute has an assured income large enough to more than meet its expenses for the year, and the Chapter hopes, besides making of it a financial success, to have it represent fully the architectural engineering and building branches of science and art.

The Quebec and Ontario Associations of Architects have recommended all members of the two societies to refrain from competing for the Montreal Board of Trade.

They object to the terms of the competition for two reasons, the first being that Canadian architects are discriminated against, in favor of architects resident in the United States; the second, that the amount appropriated for the erection of the building is insufficient.

The Board of Trade refuse to alter the programme.

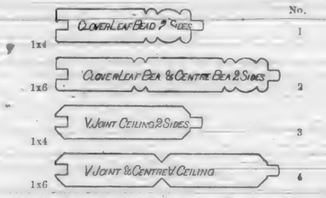
The new hotel to be built at the corner of Fifth avenue and Fifty-ninth street, New York, is to be seventeen stories, or 225 feet high. There is one comfort which the guest assigned to a room on the sixteenth story will have, and that is that the laundry, the starting place of so many a fire, will be above him on the top floor, and not at the bottom of the pile. A contemporary is worrying itself because there are to be no external fire escapes upon the building, but really when it came to a descent of 200 odd feet of iron ladders, we fear that these would hardly prove of great service to the average hotel guest; a big good parachute would seem better adapted to his needs.—Fire and Water.

The bill regulating the sale of paints, white lead, colors, linseed oil, etc. drafted by our contemporary, *Painting and Decorating* of Philadelphia, was on December 5th introduced into the House of Representatives by the Hon. H. H. Bingham and after being read twice was referred to the Committee on Ways & Means and ordered to be printed.

The bill provides that any person who shall sell or offer for sale any package of paint or linseed oil bearing a label which falsely describes its contents shall be guilty of a misdemeanor, punishable by fine and imprisonment. The Hon. A. C. Harmer has the bill in charge and will endeavor to push it to a successful conclusion.

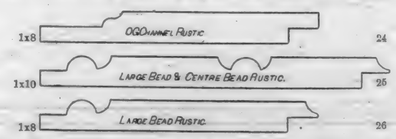
BUSINESS MOSAICS.

Old style plain tongued and grooved, narrow boarding for wainscoting, partitions etc., has become such common materials that boards 4 to 6 inches wide may be had wherever lumber is sold. We are pleased to note that the Excelsior Red-wood Co., C. A. Hooper & Co., have recently made an entirely new departure. Some patterns are kept in stock; others are worked to order.



The clover leaf bead No. 1 and No. 2 worked both sides are carried in stock also, the V bead No. 3 and No. 4, worked one or both sides.

The corrugated bead Nos. 16 and 17, worked both sides for partitions, are run to order at $3.50 per M. more than clover leaf bead, when only one side is worked $2.50 additional.



Outside sheathing, rustic, 8 and 10 inches in width, worked in special patterns as shown in cuts, No. 24, 25 and 26, at same price as regular rustic.—See advertisement for prices.

The California Sash Balance Company appear to be sweeping out all the old appliances for raising and lowering windows with the least possible exertion, and at the same time locking either the upper or lower casement in any position desired. Some of the most prominent buildings in course of erection have been planned with a view to use this appliance. Inventors who may be experimenting on casements that can be opened for cleaning, should examine this sash balance, there being no cords or weights to interfere. Wherever two or more windows are placed side by side, the space between the windows can be reduced to a minimum on account of the absence of weights in the piers. When this article becomes better known, we will be making our book-cases, closets, etc., with the doors to slide up and down in place of their swinging out into the room as is done at present.

Interested parties should inquire into this matter.

Red-wood Veneers, as prepared by the California Veneer Works, are rapidly taking presidence over other veneer work for furniture and ornamental use.—The beautiful effects of the curley and mottled red-wood is not surpassed by any of the tropical woods, while the practical advantages of this material are many. The nature of red-wood is to hold, when glued, with a tenacity unequaled by other woods, and its freedom from shrinkage makes it durable and valuable wood for the cabinet maker. When Eastern manufacturers of artistic and high quality furniture, become better acquainted with the superior quality of California red-wood, and especially such as is selected and turned out by this company, we may expect to see this excellent material in every important decoration where wood is used for decorative affect.

The engraving herewith is a representation of the exterior finish of the office of the company. The effect is more surprising when we view the Log Cabin of 200 years ago—with the beautifully polished red-wood of the interior finish, as used at the present time.

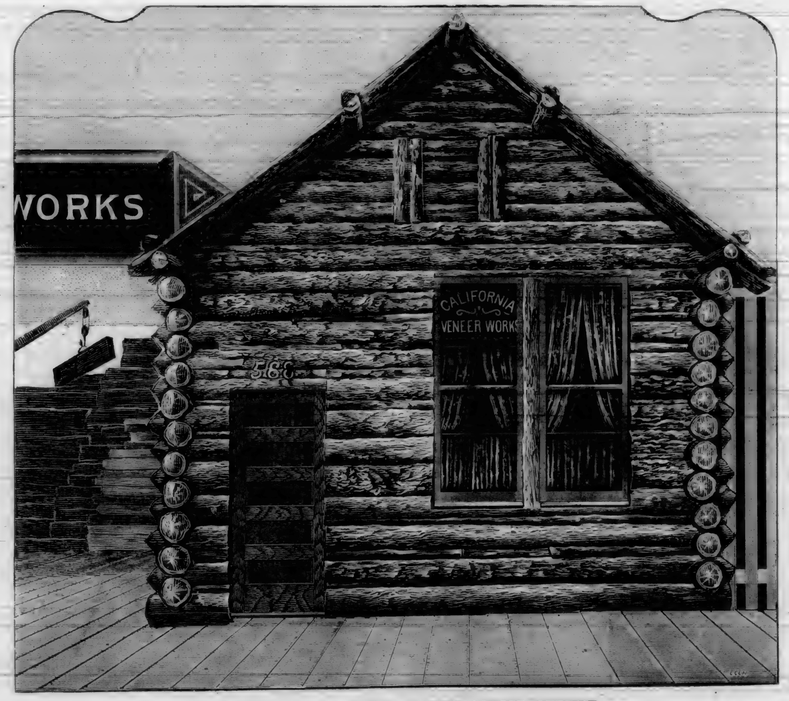
Silver Gray Effects.

The church of The Holy Innocents on Fair Oak street near twenty-seventh, of which we present an illustration, is covered with shingles from the roof to the ground. These are colored with "Cabot's" silver gray, giving a true effect of weathered shingles. It is a well known fact, that neither redwood nor cedar shingles weather to a satisfactory color in this climate, probably on account of the heavy dews and consequent continual dampness of parts of the exterior, that are not directly reached by the sun's rays; however, we wish to call the attention of architects and owners, who are interested in silver gray effects to this church as a sample, and also state that this color is carried in stock in San Francisco, as well as a large variety of the other shades of Cabot's creosote wood preserving stains.

"I have a little ornamental work I should like to submit," said the Carved Design to the Corinthian Temple.

"Thanks," replied the Temple, "but the pressure upon our Columns is so great that we shall have to Decline your Offer."

The scepter of fashion has cast its shadow over the floor areas, and carpets with all their accumulation of filth are being swept out into the dust bins. Paint ascerted its right to the vacant position which was upon investigation declined. The Grand Visier was dispatched at once to the Pacific Paper Roll Company's office for a supply of the ornamental paper floor covering, as furnished by them, and used on all floors when a beautiful and healthful covering is required.



THE CALIFORNIA VENEER WORKS' OFFICE OUTSIDE.

Gas stoves for heating, made in endless variety of patterns can be seen at the show-rooms of the San Francisco Gas Co., cor. of First and Natoma streets. Ornamental grates with imitation log or coal fires and asbestos linings, showing flames sporting like sprites among the rocks and mosses of a cave, and all protected by wire screen from the danger of fire to children's clothing. Open fire moveable stoves from plain to elaborate tile decoration can be seen in operation; also close heaters where the scientific inventor has endeavored to obtain all the heat possible from the least quantity of gas. Cooking stoves and ranges manufactured on the latest improved models, which have given such universal satisfaction wherever used can be obtained at their rooms.

A Grand Bronze Medal was awarded by the 25th Industrial Exhibition of the Mechanic's Institute on the Schenck Swinging Hose Rell. This Reel is one of the most ingenious and perfect of recent inventions, and is made with a special view to simplicity of construction, safety, durability, reliability, and a perfect utilization of the water pressure. The architects appreciate their superiority for inside fire protection, and have specified them in nearly every prominent building now being erected in this city. W. T. Y. Schenck, 222 & 224 Market st. is the inventor and manufacturer.

CITY BUILDING NEWS.

Bay near Powell. Carpenter work; owner, John Farnham; architect, R. H. Daley, contractor, Lancaster & Nelson; cost, $1,401; signed, Dec. 8; filed, Dec. 16; payments, $625, framed; $525, framed, $525, completed; $350, 35 days.

Buchanan and Post. Carpenter work, etc; owners, Emma Voil & Husband; architect, Townsend & Wyneken; contractor, Jas. R. Whalen; sureties, O. H. Greenwald & L. Levi, $2,500; cost, $8,800; signed, Dec. 27; filed, Dec. 29; payments, $1,800 framed; $5,000, accepted; balance, 35 days.

Clay near Broderick. Carpenter work, etc; owner, Geo. E. Ames; architect, W. J. Mathews; contractor, Cuneamon & Shay; cost, $6 658; signed, Dec. 8; filed, Dec. 9; payments, $997, 1-5 completed; $997, 2-5 completed; $997, 3-5 completed; $997, 4-5 completed; $1,665, 35 days.

Cor. Bryant and Rincon Place. Heating system; owner, Sisters of Mercy; architect, Chas. J. Devlin; contractor, J. J. Lawton & Jas. E. Britt; sureties, Jas. W. O'Brien & E. W. Fritz; $1,000; cost, $1,358; signed, Dec. 10; filed, Dec. 12; payments, 75 per cent. as work progresses; 25 per cent., 5 days.

Cor. Bryant and Rincon Place. Painting; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractor, Bernard Bradley; cost, $1695; signed, Dec. 11; filed, Dec. 12; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Bryant and Rincon Place. Tinning & galvanized iron work; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractor, Conlin & Roberts; cost, $1,995; signed, Dec. 5; filed, Dec. 12; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. Bryant and Rincon Place. Plumbing; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractor, Thos. Clark & Sons; sureties, Jas. B. Stetson & G. P. Ayer, 3,000; cost, $3,688; signed, Dec. 5; filed, Dec. 12; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Bryant and Rincon Place. Artificial stone work; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractor, Geo. Goodman; cost, $1,087; signed; Dec. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Bryant and Rincon Place. Plastering; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractor, P. B. Downing; surety, R. Tierman, $2,000; cost, $3,035; signed, Dec. 5; filed, Dec. 13; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Bryant and Rincon Place. Tinning and galvanized iron work; owners, Sisters of Mercy; architect, Chas. J. Devlin; contractors, Conlin & Roberts; cost, $2,128; signed, Dec. 5; filed, Dec. 13; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Cor. Front and Pacific. Wrought iron work; owner, Jas. G. Fair; architect, Henry A. Schulze; contractors, Western Iron Works; cost, $5,-55; signed, Dec. 17; filed, Dec. 30; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Front and Pacific. Painting; owner, Jas. G. Fair; architect, Henry H. Schulze; contractor, Geo. J. Smith; cost, $2,371; signed, Dec. 17; filed, Dec. 30; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Market and City Hall Ave. Plastering; owner, H. J. Techau; architect, H. J. Techau; contractor, M. O'Hare; cost, $1,450; signed, Dec. 3; filed, Dec. 4; payments, $653.75, lathed and brown mortared; $653.75 completed; $862.50, 35 days.

Cor. Mission and 9th. Four-story frame; owner, P. J. McGovern; architect, Townsend & Wyneken; contractor, T. McGovern; cost, $16,000; signed, Dec. 1; filed, Dec. 4; payments, $1,000, framed; $4,000, first mortar on; $4,000, second coat mortar on; $4,000, 35 days.

Cor. O'Farrell and Elwood. Alterations; owner, Alex. McCloud, architect, M. J. Welsh; contractor, Jas. McConahey; cost, $2,180; signed, Nov. 12; filed, Dec. 2; payments, $410, house is raised; $410, enclosed; $410, brown mortared; $405, completed; $545, 35 days.

Cor. Post, Market and Montgomery. Plumbing and gas fitting; owner, Crocker Estate Co.; architect; A. Page Brown; contractors, Duff. Bros.; cost $57,000; signed, Dec. 13; filed, Dec. 20; payments, first day of each month as work progresses; 75 per cent of work done; balance, 35 days.

Cor. Post, Market and Montgomery. Passenger and freight elevators; owner, Crocker Estate Co.; architect, A. Page Brown; contractor, Otis Bros. & Co.; cost, $24,000; signed, Oct.; 9 filed, Dec. 20; payments, ½ on receipt of machinery at Building; balance, 35 days.

Cor. Pine and St. Mary's St. Alterations; owners, T. Emden & L. Raverat; architect, Emile Depierre; Contractor, T. R. Whelan; surety, $350; signed, Dec. 13; filed, Dec. 13; payments, $500, brick work completed; $500, completed; $400, 35 days.

Cor. Pine & Jones. Plumbing, etc; owner R. M. Murray; architect, J. C. Newsom; contractor, R. Rice; cost, $4,750; signed, Dec.; filed, Dec. 8; payments, $1,781.25, rough work in, $1,781.25, completed; $1,187.50, 35 days.

Cor. Pone & Jones. Plastering; owner, R. M. Murray; architect, J. C. Newsom; contractor, Thos. Maunix; cost, $3,950; signed, Nov. 13; filed, Dec. 8; payments, $560, lathed; $1,200, brown coated; $1,262.50, completed; $987.50, 35 days.

Cor Pine and Jones. Brick and tile work; owner, Irvin C. Stump; architect, J. C. Newsom; contractors, Bush & Mallet; cost, $-,200; signed, Dec. 5; filed, Dec. 18; payments, $1,650, when contract is fulfilled; $550, 35 days.

Cor. Treat Ave. and Twenty-fifth. Carpenter-work; owner, J. C. Jens and wife; architect, W. C. Dickerson; contractor, J. C. Weir; cost, $8,800; signed, Dec. 18; filed, Dec. 19; payments, $500, foundation up; $1,500, framed; $1,000, roof tinned; $1,000, partitions set; $1,400, white coated; last payment not made if owner does the painting.

Duncan near Church. One-story and rough basement; owner, Edward Fennell; contractor, Michael Lottus; cost, $1,500; signed, Dec. 31; filed, Dec. 31; payments $500, framed; $625, completed; $375, 35 days.

Folsom near Twentieth. Two-story frame; owner, Jas. Quinn and wife; architect, Chas. J. Devlin; contractor, M. J. Gorman; sureties J. Mahoney and B. Joost, $1,000; cost, $3,890 payments, $300, framed; $650, enclosed; $450, first coat of plaster on; $800, plastered; $700, wood work is done; $715, completed; $975, 35 days.

Folsom near Twentieth. One-story and basement; owner, F. H. Classen; architect, B. A. Brown contractor, J. W. Magder; cost, $3,000; signed, Dec. 1; filed, Dec. 1; payments, $562.50, framed; $562.50, brown coated; $562.50, white coated; $562.50, completed; $750, 35 days.

Fourteenth near Castro. Two-story frame; owner, Mrs. Bertha Munger; architect, J. C. Newsom; contractor, H. Jacks; cost, $3,600; signed, Dec. 30; filed, Jan. 3; payments, $900, framed; $900, brown mortared; $900, completed; $900, 35 days.

Fulton near Polk. Four-story frame; owner, Henry Geilfuss; architect, Henry Geilfuss; contractor, Jos. Bucher; cost, $7,445; signed, Dec. 29; filed, Dec. 30; payments, $1,395, framed; $1,395, enclosed; $1,395, inside finish on; $1,395, completed; $1,885, 35 days.

Golden Gate Park. Bridge cement work; owner, Park Commissioners; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $8,500; signed, Dec. 3; filed, Dec. 9; payments, 75 per cent., as work progresses; 25 per cent., 35 days.

Greenwich near Taylor. Three-story frame; owner, John L. Williams; architect, Chas. M. Ronsseau; contractor, H. C. Gardner; sureties, Blyth & Trott, $2,000; cost, $4,750; signed, Dec. 9; filed, Dec. 10; payments, $890, framed; $890, brown coated; $890, white coated; $890, completed; $1,190, 35 days.

Haight near Devisadero. Carpenter work, etc.; owner, Margaret Greene; architects, R. H. and R. White; contractors, White Bros.; surety, F. Joost, $5,000; cost, $6,924; signed, Dec. 4; filed, Dec. 9; payments, $1,000, framed, $1,375, ready for brown mortar; $1,400, standing finish done; $1,414, completed; $1,735, 35 days.

Hermann near Webster. Carpenter work, etc.; owner, John T. Cosgrove; architect, A. J. Barnett; contractor, A. J. Ahern; cost, $8,200; signed, Dec. 31; filed, Jan. 3; payments, $800, roof boards on; $800, brown coated; $800, completed; $800, 35 days.

Hickory Ave. near Van Ness Ave. One-story frame; owner, Frank Brooke; contractor, Wm. Pluns; cost, $875; signed, Nov. 29; filed, Dec. 1; payments, $875, completed and accepted by the owner.

Howard near Eighteenth. Mill work; owner, P. R. Sanchez; contractors, Miller & Co.; cost, $1,465; signed, Dec. 2; filed, Dec. 2; payments, 35 days after completion.

I st. and Seventh Ave. Hand Ball Court, bulkheads, etc.; owner, Olympic Club; contractors, White Bros.; surety, F. Joost; cost, $4,067; signed, Dec. 29; filed, Dec. 29; payments, 75 per cent., as work progresses; 25 per cent., 35 days.

Kansas near Yolo. One-story frame; owner, Regina Thorne; architect, A. Martin; contractor, A. Martin; cost, $1,590; signed, Dec. 16; filed, Dec. 16; payments, ¼, framed; ¼, mortar on; ¼, completed; $2,000, 35 days.

Market near Sixth. Shelving, store fixtures, etc.; owners, Summerfield & Roman; architects, Jordan & Lyon; contractor, J. S. Sanders; cost, $1,100; signed, Dec. 12; filed, Dec. 15; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Minna near Julia. Carpenter work; owner, Jas. Fitzgerald and wife; architect, Bryan J. Church; contractor, Timothy Sullivan; cost, $6,250; signed, Dec. 8; filed, Dec. 8; payments, $1,050, framed; $1,250, brown mortared; $1,200, white coated; $1,200, completed; $1,000, 35 days.

Mission near Eugenia. Alterations and additions; owner, Philomene Soiselle; contractor, H. L. Joslin; Sureties, J. S. Kruse and F. Joost, $4,000; cost, $4,085; signed, Dec. 1; filed, Dec. 1; payments, $1,020, framed; $1,020, brown mortared; $1,022.50 completed; $1,022, 35 days.

Noe near Eighteenth. Carpenter work, etc.; owner, F. D. Davidson; architects, Gould and Colley; contractor, Wm. McPhee; cost, $2,730; signed, Dec. 3; filed, Dec. 10; payments, $682.50, framed; $682.50, brown coated; $682.50, completed; $682.50, 35 days.

Noe near Fourteenth. One-story frame; owners, German Ben. Society; architect, H. Geilfuss; contractor, Jos. Bucher; cost, $1,059; signed, Dec. 23; filed, Dec. 24; payments, $397, brown mortared; $397, completed; $265, 35 days.

No. 923 Washington st. Carpenter work, etc.; owner, Lucy A. Armstrong; contractor, C. H. Norton; cost, $2,675; signed, Dec 1; filed, Dec. 6; payments, $450, grading done; $350, south walls built; $350, brick work finished; $250, brown mortared; balance, 35 days.

No. 155 Natoma st. Two-story brick building; owner, L. D Frichette; architect, M. P. Shetzel; contractor, D. H. Schriefer; cost, $4,275; signed, Dec. 22; filed, Dec. 22; payments, first and fifteenth day of each month.

No. 155 Natoma. Brick work and repairs for rear house; owner, L. D. Frichetti; architect, M. P. Schetzel; contractor, J. O. Sullivan; cost, $1,125; signed, Dec. 22 filed, Dec. 26; payments, first and fifteenth day of each month.

No. 1717 Van Ness Ave. Alterations; owner, O. H. Greenwald; architect, P. R. Schmidt; contractor, J. H. Wilson; cost, $2,000; signed, Dec. 23; filed, Dec. 29; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

O'Farrell near Powell. Alterations; owner, B. F. Bachman; architect, Huerne & Everett; contractor, F. L. Hansen; surety, B. Joost; cost $2,200; signed, Dec. 18; filed Dec. 19; payments, $550, brown mortared; $1,100 completed; $550, 35 days.

Pacific Ave near Van Ness Ave. Mill work; owners, Patterson & Ackerson; architect, Julius Craft; contractor, A. Kendall; cost, $2,800; signed, Nov. 29; filed, Jan. 2; payments, $400, framed; $475 enclosed; $475, brown coated; $475, plastered; $475, completed; $500, 35 days.

Post near Lyon. Carpenter work, etc; owner, Owen Mulholland; architect, T. J. Welsh; contractor, J. W. Smith, cost $2,100; signed, Dec. 6; filed, Dec. 10; payments, $750, ready for plastering; $825, completed; $525, 35 days.

San Jose Road near 24th. Plumbing and gas fitting for 9 flats; owner, E. C. Worden; architect, Salfield & Kohlberg; contractor, John G. Gallagher; cost, $1,359; signed, Dec. 2; filed, Dec. 4; payments, $500, rough plumbing in; $359 finishing plumbing done; $500, 35 days.

Scot near Broadway. Plumbing, sewering, etc; owner, Benj. M. Gunn; architect, Henry A. Schulze; contractors, Wm. S. Snook & Son; cost, $664; signed, Nov. 29; filed, Dec. 2; payments, 75 per cent. as work progresses.

Sixth near Minna. Three-story frame; owner; Newman Bros. architect, H. Geilfuss; contractor, Jas. F. Logan; cost, $4,498, signed, Dec. 2; filed, Dec. 15, payment, 75 per cent. as work progresses; 25 per cent. 35 days.

Sutter and Leavenworth. Plumbing, etc.; owner, Frederick H. Deakin; architects, Chas. R. and J. M. Wilson; contractors, S. Ickelheimer & Bros.; cost, $1,128; signed, Dec. 29; filed, Dec. 31; payments, $423, rough work in; $423, completed; $282, 35 days.

Sutter and Leavenworth. Carpenter work, etc.; owner, Frederick H. Deakin; architects, Chas. R. and J. M. Wilson; contractors, Ingerson & Gore; cost, $9,180; signed, Dec. 29; filed, Dec. 31; payments, $2,295, framed; $2,295, brown coated; $2,295, completed; $2,295, 35 days.

Sutter near Van Ness Ave. Three-story frame: owner, Alice Hastings; Architects, J. A. Shepard; contractor, W. T. Commary; cost, $8,242; signed, Dec. 15; filed, Dec. 15; payments, $800, enclosed; $800, white coated; $800, completed; $842, 35 days

Sutter near Jones. Two-story frame; owner, Mrs. Bertha Biber; architect, John C. Balczynski; contractor, J. R. Whalen; cost, $8,146; signed, Dec. 15; filed, Dec. 15; payments $2,000, framed; $1,000, enclosed; $1,500, white coated; $1,609.50, completed; $2,036.50, 35 days.

Tehama St. Carpenter work; owner, Jos. Laine; architect, W. H. Bayless; contractor, H. J. Goetzman; cost, $700; signed, Dec. 18; filed, Dec. 29; payments, $100, second floor joists in; $200, roof on; $400, completed.

Townsend near Seventh. Two-story frame; owner, Wisconsin Furniture Co.; architect, Edward Burns; contractor, O E. White; cost, $7,970; signed, Dec. 11; filed, Dec. 17; payments, $3,000, roofed; $2,070, completed; $2,000, 35 days.

Twenty-sixth near Church. One-story cottage; owner, W. F. O'Leary; architect, J. J. Clark; contract r, F. Maloney; sureties, Chas. L. Ingler and H. McCollough; cost, $2,177; signed, Dec. 26; filed, Dec. 30; payments, $1,000, brown mortared; remainder, when accepted by the architect.

Twenty-fifth near Church. Carpenter work; owner, Tim Flynn; architect, A. J. Barnett; contractor, John Blake; cost, $3,000; signed, Dec. 17; filed, Dec. 22; payments, $850, roof boards on; $700, ready for lathing; $700, completed; $750, 35 days.

Union near Larkin. Two-story frame; owner, A. M. Hauser and wife; architect, W. O. Banks; contractor, G. H. Walker; sureties, H. Williamson and I. Graham; cost, $5,000; signed, Dec. 22; filed, Dec. 24; payments, $2,500, outside finished; $1,250, completed. $1,250, 35 days.

Van Ness near Golden Gate Ave. Terra cotta work; owners, Mercantile Library Association; architects, Pissis & Moore; contractors, Gladding, McBean & Co.; cost, $12,500; signed, Oct. 22; filed, Dec. 26; payments, first and fifteenth day of each month, 75 per cent of work done; balance, 35 days.

Van Ness near Golden Gate Ave. Facing brick; owners, Mercantile Library Ass'n; architects, Pissis & Moore; contractors, Union Pressed Brick and Terra Cotta Co.; cost, $6,590; signed, Oct, 22; filed, Dec. 23; payments, first and fifteenth day of each month, 75 per cent of work done, balance, 35 days.

Van Ness near Golden Gate Ave. Painting, etc.; owner, Mercantile Ass'n; architects, Pissis & Moore; contractors, I. St. Dennis & Co.; cost $2,995; signed, Oct 22; filed, Dec. 23; payments, first and fifteenth day of each month, 75 per cent of work done; balance, 35 days.

Alameda County.

Bay St. near Buena Vista Ave. Two-story dwelling; owner, Henry Mohns; architect, A. Stenbiht, contractor, A. L. Fall; cost, $2,000; signed, Dec. 4; filed, Dec. 12; payments, $500, framed; $500, white coated; $500, completed; $500, 35 days.

Bathing Establishment, Oakland. Plumbing work; owner, Piedmont Bath & Power Co.; contractors, Duffey Bros.; cost, $9,800; signed, Nov. 29; filed, Dec. 1; payments, on fifth of each month, 50 per cent. of value of work done and materials furnished; on completion, 25 per cent. of entire price; 25 per cent., 35 days after.

Block U, Vernon Park Tract. Two story stable; owner, H. Ainsworth; architect, W. J. Mathews; contractor, W. Winnie; cost, $6,370; signed, Dec. 11; filed, Dec. 13; payments, $955, 1-5 completed; $955, 2-5 completed; $955 3-5 completed; $955, 4-5 completed; $2955, completed; $1,595, 35 days.

Block 19, Fitch Tract. Two story livery barn; owner, Albert Port, Jr.; architect, J. B. Sprague; contractor, J. B. Sprague; cost, $2,625; signed, Dec. 12; filed, Dec. 13; payments, $650, framed; $650, enclosed; $650, completed; $400, 35 days

Block A, Woolsey Tract, Oakland. One-and-one-half-story, frame; owner, Hugh Forgie; architect, S. Edgar Fisher; contractor, Chas. F. Weldon; cost, $1,900; signed, Dec. 26; filed, Dec. 27; payments, $450, roof on $450, brown mortared; $450, completed; $550, 60 days.

Bray Tract, Brooklyn. Carpenter work, etc; owner, J. H. W. Riley; architect, J. H. W. Riley; contractor, F. A. Brown; cost, $2,975; signed, Dec. 22; filed, Dec. 24; payments, $743.75, enclosed; $743.75, brown mortared; $743.75, completed; $743.75 35 days.

Cor. 12th and Webster, Oakland. Carpenter work, etc.; owner, Geo. F. Marye, Jr.; architect, Geo. H. Flick; contractor, Geo. H. Flick; surety, Geo. Miller; cost, $4,940; signed, Dec 15; filed, Dec. 30; payments, $1,235, walls up; $1,235, roof tinned; $1,235, completed; $1,235, 35 days.

Cor. Central Ave. and Lafayette st., Alameda. Building stable; owner, F. W. Van Sicklen; architect, Clinton Day; contractor, C. A. Parker; cost, $2,645; signed, Dec. 19; filed, Dec. 26; payments, $1,000, roof boards on; $983, completed; $662, 30 days.

Fifteenth st. near Central Ave., Alameda. Two-story frame; owner, Henry Mohns; architect, H. M. Allen; contract, H. M. Allen; cost, $2,540; signed, Dec. 22, filed, Dec. 23; payments, $635, framed; $635, white coated; $635, completed; $635; 35 days.

Grove near 47th st., Oakland. Brick building; owner, Oakland & Berkeley Rapid Transit Co.; architect, Chas. Man; contractors, Herbst & McLeod; cost, $8,929; signed, Dec. 31; filed, Dec. 31; payments, 75 per cent of value of work done, and materials furnished as work progresses, on first and fifteenth day of each month; 25 per cent, 35 days.

Jones st. near San Pablo, Oakland. Two-story flats; owner, Abbie F. Aldrich; architect, R. Gray Frise; contractor, J. C. Nelson; cost, $3,99'; signed, Dec. 29; filed, Dec. 29; payments, $2,392.50, completed; $897.50, 35 days.

Lot No 2, Brooklyn Township. Lathing and plastering; owner, Ruth A. Wellman; architect, Henry A. Schulze; contractor, T. Tucker; cost, $1,385; signed, Dec. 13; filed, Jan. 3; payments, on first of each month as work progresses; 75 per cent. of value of work done and materials furnished, 25 per cent., 35 days.

Lot No. 2, Brooklyn Township. Plumbing, etc; owner, Ruth A. Wellman; architect, Henry A. Schulze; contractors, Wm. & Frederick Snook; cost, $984; signed, Dec. 12; filed, Jan. 3; payments, on first of each month as work progresses; 75 per cent. of value of work done and materials furnished; 25 per cent., 35 days.

McPherson st. near Railroad Ave. Two cottages; owner, James Wall; architect, Geo. H Benjamin contractor, C. A. Brown; cost, $3,080; filed, Dec. 16; payments, $1,000, framed; $1,000, brown mortared; $1,050. 30 days.

Park St., Alameda. Plastering; owner, Carl C. Peterson; architect, Wm. Patton; contractor, Walton & Buttery; cost, $1,130; signed, Dec. 1; filed, Dec. 6; payments, 75 per cent. of work done as it proceeds; balance, 25 per cent., 35 days.

Seventh and Myrtle sts., Oakland. Construction of second-story over building; owner, Wm. Gregory; architects, Willmore & Richmond; contractors, Willmore & Richmond; sureties, C. L. Maxwell and F. Johnson, $2,000; cost, $4,925; signed, Nov. 21; filed, Dec. 6; payments, ⅓, ready for plastering; ⅓ inside painted; ⅓, 35 days.

Thirty-first near Grove. Carpenter work; owner, Nettie R. Gates; architects, A. W. Pattiani & Co; contractors, A. W. Pattiani & Co.; cost, $3,470; signed, Nov. 29; filed, Dec. 1; payments, $500, chimney built; $1,130, brown mortared; $790, completed; $870, 35 days.

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California Street.
SETH BABSON, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at 408 California Street.
JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects was held at their rooms, 408 California Street, on the 13th inst., the President, Seth Babson, in the chair. The Chapter voted to engage rooms at the new building of the Academy of Sciences.

THE Chicago Polytechnic Institute announces the establishment of an Architectural department with both day and evening sessions, the latter to accommodate students who must work during the day. Modeled after the London Polytechnic, this Institute is doing a noteworthy work in practical education, its Trade Schools having proved a boon to many struggling young men. It also maintains a woman's department and furnishes instruction in cooking, millinery and dressmaking. Its work is eminently praiseworthy.

TECHNICAL SCHOOLS.

IN another column will be found the second letter from our Correspondent, T. T., in relation to Technical and Industrial education. At a first view of the situation it would seem as if a state of unrest pervaded the atmosphere of society to such an extent as to be liable at any moment to break out into a chaotic state of bewilderment and destruction; yet, upon investigation it will be seen that this aspect of affairs is the result of separate and individual opinions, where each in his own way is striving for the accomplishment of the same result. We have no record of such a revolution in the previous history of the industrial world, as that occurring at the present time, and brought about by the introduction of methods heretofore unknown. The laborer is being displaced more and more by the use of machinery, which leaves him all the more anxious to reach a higher plane. In all the lines of advancement which have made the last few years phenomenal in science and invention, the important question of special industrial education, which is one of the first to be affected remains the last to be taken up and pushed to completion on a platform broad enough and elastic enough to supply the wants created by the new condition caused by the advancement in other branches of knowledge. In art and handicraft we feel our deficiency, and more especially when we come to compete

with other countries. In machinery and some of the higher scientific attainments, the superior excellence of our products are recognized, but when we come to art and artisan work, the grotesque attempts at copies of the work of other nations, the inferiority of our work is at once apparent, and the evident cause unmistakable. Nations, where technical schools have been established for the education of the manufacturing classes, have reaped advantages in the different markets of the world in proportion to the number of the schools and the practical character of the instruction given. Where exceptions occur and our artisans excel it will, in many instances, be found that such articles owe their superiority to the craftsman who has received his instruction through a special course of training.

There is no reason why our native talent, if placed under proper training, should not surpass that of other countries in this respect as well as in certain other mechanical and scientific lines of action. In order to meet this state of affairs successfully, we must provide schools as guiding avenues to the active growing elements whereby it may be transformed into a cultured handicraft unexcelled by that of any other nation. Ultimate success requires schools of a high order where the senses and powers of the student may be brought to the greater degree of perfection through a thorough system of technical instruction combined with practical work to the end, that he may acquire the skillful use of the implements of his work. The excellence of our work will depend upon the successful combination of all the faculties of heart and ambition to engender a love and persistence in the work,—the thinking and calculating powers for constructive purposes, and the artistic conceptions for the gratification of the sense for the beautiful, which is inherent in every person. It must not be understood that these are all the faculties to be brought into requisition as many others will suggest themselves to the reader. * People know that a beautiful object increases their happiness, consequently an object devoid of that quality disappears in the usual way. The art and technical schools of some of the older eastern states have already had a beneficial influence on the manufacturing interests of those sections of the country. It may be said that our manufactures are not the immediate source of the wealth of the country, yet in order to hold our own market against importations we must, at least, furnish in all respects equal if not better articles than those placed in competition. It must be taken into consideration, the fact that as the nation increases in population, so will the manufactures increase in their relative importance but in a much greater percentage.

In all questions of importance to the welfare of mankind in general, there exists a certain individualism of opinion which especially marks the progressive spirit. The problem has now, however, reached a point where Legislative action should materialize and combine the isolated opinions and knowledge on the subject into one grand whole.

OLD MISSION CHURCH AT SONOMA, CALIFORNIA.

(CONTINUED FROM PAGE 3.)

In the January number of the CALIFORNIA ARCHITECT, the construction of the roof was merely touched upon, but is now continued in detail, in the following description. The rafters (*k*) in Fig. 2, are of round poles, or more properly, small logs about 10 to 11 inches in diameter at the butt end, which is placed at the apex of the roof as at (*A*) Figs. 3, 4 and 5, and lapped passed the adjoining one as in Figs. 3 and 5, and having a notch cut out of each rafter to form a lock where it rests on the longitudinal bearing timber at (*D*.) At (*C*) notches have been cut to receive the ropes for hauling the timber from the forests. A squared bearing timber or ridge pole, 11x11 inches (*D*), is placed longitudinally along the center of the building and rests on the posts as shown in the cuts. Fig. 5 shows the post notched out to receive the ridge bearer (*D*); Fig. 3 shows the end, and Fig. 4 the side of bearer (*D*), where they are jointed over posts. The butt joint of (*D*) being formed irregularly over the post, rests in a notch in the post cap formed to receive it. The posts are 9x9 inches, and the post cap (*a*) is 12 inches wide, 6 inches high, and 32 inches long to extreme points. Beveled wedge pieces (*b*), are placed over (*a*) and at side of (*D*). The different sections of (*D*) were drawn tightly together at the joining by the use of strips of raw-hide (*r*), through notches (*d*). One of these joinings remains complete as shown in Fig. 4, but the leather is very much decayed. These old strips now measure about ¾ inch in width, and some portions still showing the hair. About half way from the wall plate to ridge, is placed a bearing timber 11x11 inches as shown at (*f*) Fig. 2, lashed and bound to each rafter with raw-hide strips. This bearer acts as an equalizer for the different sizes and strengths of the rafters. The whole roof is covered with a layer of brush, ½ to 1 inch twigs, at present about 2½ inches in thickness laid crossing the rafters and at an angle of about 15 degrees with the ridge line. The rafters are set 2 feet 3 inches from centers, and midway between them is placed a pole (*f*) Fig. 4, about 1½ inches in diameter. The thatch is not fastened to the rafters (*A*), but the pole (*f*) is bound to it with raw-hide strips run through the brush of thatch and around (*f*) at a distance of 2 inches apart. The tiles at (*T*) are of burnt clay, set as shown in Fig. 4, each being 20 inches long, 9 inches wide at the wide or lower end, and 7 inches at small or upper end, and ½ to ⅝ inches in thickness. They show no indication of wear or decay. The tiles are not fastened in any manner except by their weight. The veranda at front and rear of the building is 9 feet wide, the posts at the lower end being set in the ground, and the top notched out to receive the bearing timber, as shown in Fig. 5, for roof, the plate being set same as (*D*). The splice for veranda plates is halved with the bearing surface horizontal, and about 14 inches long, and set over posts. The small end of the rafters extend over the veranda portions, and a strip of timber is run along over the ends of rafters at the outer line to receive the tiles, the thatch being stopped off 6 to 8 inches back from the outer line of eaves.

H. T. B.

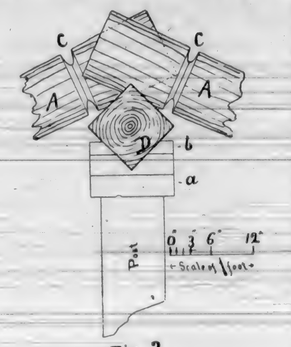


Fig. 3

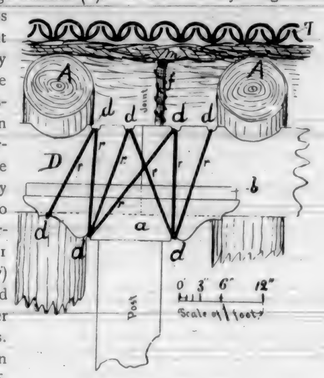


Fig. 4

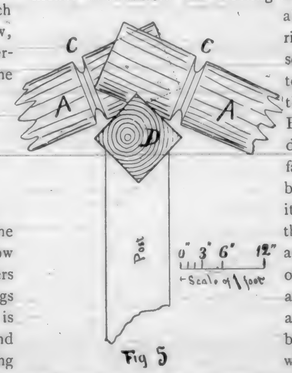


Fig 5

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

TECHNICAL SCHOOLS FOR PRACTICAL INSTRUCTION.

No. 2.

MR. EDITOR:—

The reader in studying the development of our modern economic thought should reflect on the fact that it is essentially the mission of a practical system of education to keep pace with the industrial and creative spirit of the times, and that the most important feature of a useful educational system should be the training of youth to become practically competent to enter en rappore with the technical advance of the age, and thereby not become inexperienced associates and victims of some ranting discordant element, incompetent to make a success of any system which requires industry and discipline.

We must also remark:—There are thousands of wealthy and well meaning people who seem not to recognize the mighty forces at work during the past and present generation, which in the great world of industry have displaced old methods of manual production and which are determining entirely new processes in all manufacturing and productive arts, and which are making unskilled labor less and still less in demand, until to-day seven-tenths of those generally out of employment, belong to the unskilled and uneducated portion of the community, constituting an army of discordant idlers. Hence—in this article, I desire to refer to the marvelous changes which *modern thought*, made manifest in science and invention, has brought about and the nature of which constitutes as a whole a mighty factor either to disintegrate or build society anew upon an illimitable base.

The statesman or the capitalist should reflect that society is being educated by events in spite of itself;—and an enlightened policy would be to enquire into the inevitable tendency of the times. It should be remembered that the soul and spirit of modern civilization is to foster and encourage inquiry and discussion, a fact that even Bismark could not forestall. He who would place a keg of powder over live coals and then *sit on it* to prevent it exploding, would act as sensibly as those who try to summarily stop the expansile action of *the thought of our age*. A wise and contemporaneous policy would suggest an *economic utilization* of the mental and physical forces set in operation by the genius of our time.

We ask the reader to look back in thought but a century ago. See humanity then, and now! Would any sane person ask us to return to the industrial customs or social ethics of that time? Yet dear reader it is for you to remember that ragged genius, and persecuted thought outworking itself in the many fields of discovery and invention, determined the fountain sources of modern wealth which our conscientious syndicate millionaire of to-day determines shall alone flow into his more than capacious maw.

The writer has no sympathy with the prating or with the impractical propositions of those animal jawed, Castle Garden agitators, whose vandal thought aims only at a vulgar leveling down of men of wealth to *their* base.

Nor would he deal with this subject but that he discerns whither the index finger of fate doth point, and it is for that reason I say that the millionaire who refuses to listen to the pulsations of the human soul as now voiced in the aspirations of the great producing masses of our nation, or will not hearken to their actual needs, fails emphatically to comprehend *the genius of our age*, as did the princely, purpled robed prelates of Luthers or Calvins time. By an irrevocable principle of evolution, society is to-day impelled to move along lines of progressive thought and action, the outcome of which in *an economic and equitable* sense, must bear its fruit for human emancipation as did the religious controversy of the 15th and 16th centuries.

Here we would incidentally suggest that where controversalists and statesman have failed, has been in their not comprehending the fact that man being materially and physically a dual being, that no *permanent* reform or progress can obtain until the normal conditions are established, by and through which man (as a physical and spiritual being) may have access to all the *accessories* or means by which the best possibilities of his dual nature may be exercised and unfolded.

But our times are pregnant with a mighty promise! A *new* civilization is about to be born, the symmetry and beauty of which that of all other ages will be as naught.

When we come to consider the marvelous influence of material conditions or *environment* on human character, and their potentiality for good or ill, we will then begin to appreciate their true worth. It is therefore that we now dwell on the fact that the last fifty years has given to the human race more labor-saving devices, and through *steam*, *chemistry*, *electricity* and *metallurgy*, a greater dominion over earth and all else in nature than all the *combined efforts* of the previous civilizations on our planet. And to chemistry (the offspring of alchemy) this is principally due. It especially has enabled the inventor, in every field of useful production, to rise god-like in his comprehension of possibilities within the elemental realm of Nature, and made possible the harnessing of forces to the inventors labor-saving device, or other agent of his will, until to-day the superstitious are left on the one hand in society prone before anti-diluvian shrines of fossilized creed or enervating wealth, while the student of science, on the other hand, stands facing the noon-day sun and even commands his subtile life-building rays do his bidding.

In considering our theme we have to place side by side the work of the alchemist or theologian of the Middle Ages with that of our modern Daltons, Faradays, Huxleys, Tyndales, and Edisons, or Stevensons, Besmers, McCormicks or Ericksons. At the same time we are willing to pay tribute to the aggressive genius of the Luthers and the Voltaires who helped through their work to give even to our times the mental impetus which the intellectual world has to-day acquired.

Thanks to the divine power of thought the age of charms incantations, spells, and anthemas has given way to our age of piston-rods, levers, cams, pullies, cables, furnaces, steam-hammers, and dynamos.

And now let me turn to the every-day side of the subject. It must be remembered that the radical thought of the utilitarian scientist has made possible the revolutionary or aggressive thought of many of the students of sociology; but here let me interject that "the revolutionary thought" of the true sociologist does not necessarily endorse *violence*. The student and thinker is a man of *peace*, while the man of few ideas (being more animal) generally favors *violent* methods, and in expression and action naturally voices a poverty stricken mind:—the outcome of kindred associations and environment. In the digestion of my theme I hold that the thought and inspiration of the grand students of physical nature has made an *intellectual audience* possible for the hypothesis and theories of the best minds in the present economic agitation throughout the world, and as the physical scientist developed the ideas which led to the material advancement of modern civilization, so also another cabal of aggressive thinkers, claiming the attention of the reflecting world as well as the dissatisfied, are endeavoring to prove that law is enforced more frequently to protect dead and senseless property rather than live sentient manhood and womanhood.

It is therefore necessary in the consideration of our subject to refer to the names of Laselle, Marks and Babel in Germany, of Boukanine, Stepniac and Tolstoi in Russia, of Hyndman,

Labouchaire and Davitt in Great Britain, of Swinton, Spies and Bellamy in the United States, as indicating that their agitation is largely the sequence of modern utilitarian development, inquiry and research, and that sociologists like their fellow students in the realm of material science, are operating in a field of discussion and controversy wherein the club of the policeman and the craft of the detective is as sure to fail in this age as did racks, thumbscrews, chains and dungeons in that age of regal and sacred tyranny which sought to stamp out the ever-questioning spirit of the human soul!

They but voice the freedom of thought, let loose by the martyrs of the dark ages, which secured and determined the *untrammeled* thought of our present age;—which in turn has materialized into the ten thousand devices of this pronouncedly progressive labor-saving era, as seen in the many International Expositions of the world. An idea being once recognized can never be "downed" by any method but by meeting your controversalist in the field of debate, and *by methods of logic* determine the value of your opponents propositions. The church, backed by the state, once tried its hand at that business. The record of history in the matter can speak for itself.

In view of the facts herein presented the writer suggests that as Labor and Capital constitute dual factors in the economy of the social compact, some principle of peer-ship should be recognized in the discussion of economic questions now occupying the mind of the world, and not permit under any circumstance, the growth of a rebellious and anarchical spirit especially where mutual interest should teach a modicum of reciprocity and equity.

The possible attrition between labor and capital indicated in this country, by their respective attitudes should be discountenanced by all fair-minded and patriotic citizens. That centralization of capital, and the management of industries on the most extended scheme possible, will continue, no sane man can doubt. Such methods are but contemporaneous with the marvelous growth of our time. The only solution of the trouble lies in regarding labor and capital as dual factors, and that the right of access to the *material means* of life on the part of an American Sovereign precedes all other rights.

In taking a brief retrospect of our theme it is seen that the main difference between barbarism and civilization lies mainly in the fact that cultured or civilized man rises in economic dominion over nature, and so secures an ample sufficiency of all those creature comforts which primitive or semi-civilized man is by the nature of circumstances denied.

In view of this self-evident truth, what are we to say of modern society which permits to thrive in its midst the barbaric forces which beget or determine ignorance and poverty, and the sequence, vice and crimeof the most hidious kind.

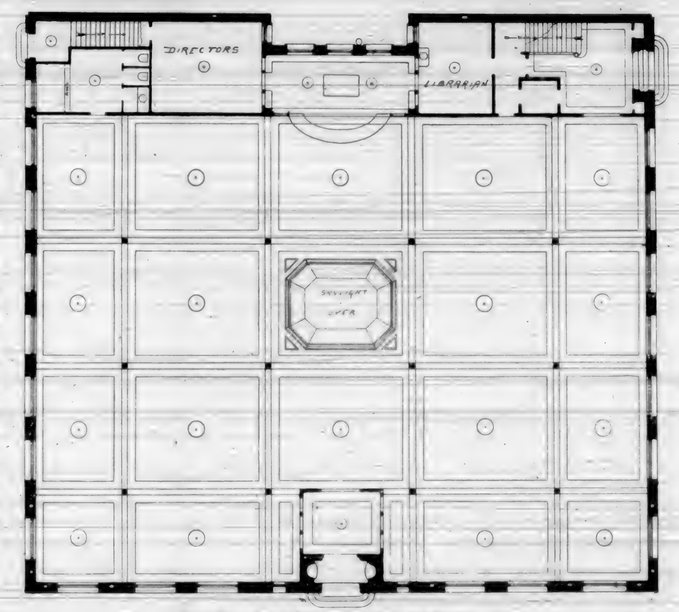
But whatever view the reader may take of the controverse now prevailing between labor and capital, the fact can not by ignored that *unskilled labor* is no longer a desirable factor in any comprehensive scheme of modern economic production.

It is to that end that the writer would dwell on the imperative necessity of Technical Schools of Training for our growing youth, who would then realize that they owed a solemn duty to the State which enabled them to become possessed of that practical knowledge which in turn made self-respecting, useful, law-abiding and wealth-producing citizens. and co-operative factors with capital. It is *incompetent ignorance* which forms the recruiting ground of your disintegrating anarchist.

Viewed from another standpoint the man of property should see to it that the youth of the state are taught the lessons which give that practical knowledge, by which both liberty and happiness may be attained, and which is determined by special training in some of the ten thousand fields of mental and material wealth which modern science and art has opened up; and not permit by an indifferent primary school education, our adult youth to go heedlessly and blindly groping in half-hoodlum fashion, looking like thousands of other incompetents for a job, and in the end to only swell the ranks of those who are through their ignorance more fitted to tear down than to *build up*.

A purely conservative sentiment impels the writer to say that of all people in the community, it should be the duty of our great capitalistic manufacturing and producing classes to immediately see to it, that our youth are given the most approved modern facilities for a thorough technical education in this purely practical and utilitarian age. It is a duty they owe to themselves as tax-payers, property owners and employers; and it is likewise a matter that concerns the public weal in view of the fact that so many rattle-brained and be-fuddled theorists are in the field with their ten thousand economic nostrums, whose cure all virtues are to suddenly make law-abiding citizens of the malcontent and anarchist, and as suddenly bring us face to face with *their* millennium, from which may the Lord in his mercy deliver us.

T. T.



First Floor Plan of Mercantile Library Building.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The entrance of Mr. W. H. Crocker's house, corner of Jones and California streets, being a continual of our Series of Entrances.

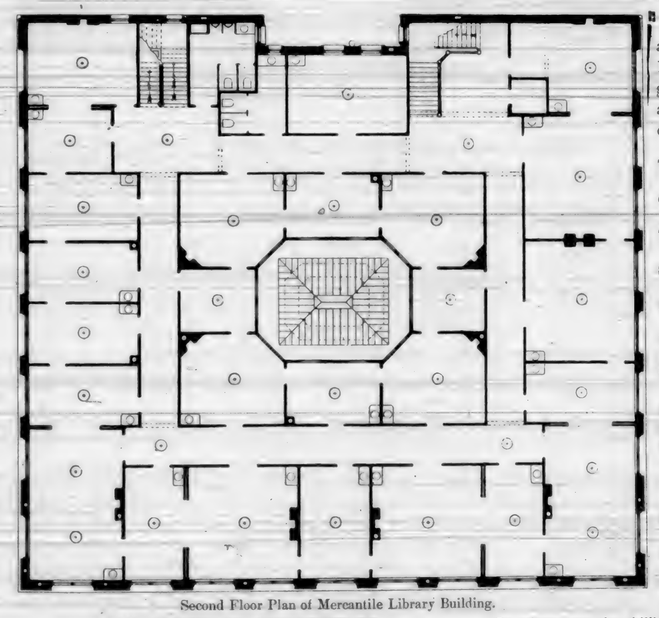
Our double plate, a "Chateau en Espague" is Architect Samuel Newsom's idea of the kind of gubernatorial residence the State should build for our Chief Executive.

We hope that the future will bring a realization of such a public building for the purpose intended.

The new building in which will be housed the Mercantile Library, is now in course of erection in this city, under the supervision of the architects, Messrs. Pissis & Moore.

The library will occupy the entire ground floor, while the second and third stories will be divided up into rooms.

The fronts are to be entirely of pressed brick, and terra cotta trimmings of a buff color.



Second Floor Plan of Mercantile Library Building.

THE POETRY OF ARCHITECTURE.

A paper read before the San Francisco Chapter of the American Institute of Architects, by Oliver Everett.

[CONTINUED FROM LAST NUMBER.]

One more quotation from Scott, as it admirably describes peculiarities of the Gothic style.

By a steel-clenched postern door,
They entered now the chancel tall;
The darkened roof, rose high aloof
On pillars, lofty, and light, and small;
The key stone, that locked each ribbed aisle,
Was a fleur-de-lys, or a quartre-feuille;
The corbells were carved grotesque and grim;
And the pillars, with clustered shafts so trim,
With base and with capital flourished around,
Seemed bundles of lances, which garlands had bound.
* * * * *
The moon on the east oriel shone,
Through slender shafts of shapely stone,
By foliaged tracery combined;
Thou wouldst have thought some fairy's hand,
'Twixt poplars straight, the osier wand,
In many a freakish knot, had twined;
Then framed a spell, when the work was done,
And changed the willow wreaths to stone.

Stepping across the Atlantic we find Longfellow thus describes the homes of Arcadia,

Strongly built were the houses with frames of oak and of hemlock,
Such as the peasants of Normandy, built in the reign of the Henries
Thatched were the roofs, with dormer windows; and the gables projecting
Over the basement below protected and shaded the doorway.

and in the Courtship of Miles Standish, the house of a pilgrim father,

Meanwhile, Alden at home had built him a new habitation,
Solid, substantial, of timber rough hewn from the firs of the forest.
Wooden barred was the door, and the roof was covered with rushes;
Latticed the windows were, and the window panes were of paper,
Oiled to admit the light, while wind and rain were excluded.

In strong contrast to the above simple and homelike architecture we have Meredith's beautiful description of the grandeur of King Solomon's Temple—and the return of the King thereto after dark:

Then the King rose. And lo, it was evening.
And leaning, because he was old,
On the sceptre that, curiously sculptured in ivory garnished with gold,
To others a rod of dominion, to him was a staff for support,
Slow paced he the murmurous pathways where myrtles, in court up to court,
Mixt with roses in garden on garden, were ranged around fountains that fed
With cool music, green odorous twilights: and so, never lifting his head
To look up from the way he walked wearily, he to the House of his Pride
Reascended, and entered.
In cluster, high lamps, spices, odors, each side,
Burning inward and onward, from cinnamon ceilings, down distances vast
Of voluptuous vistas, illumined deep halls through whose silentness passed
King Solomon sighing; where columns colossal stood, gathered in groves
As the trees of the forest in Libanus,—there where the wind as it moves
Whispers, "I, too, am Solomon's servant!"—huge trunks clad in garlands of gold,
On whose tops the skill'd sculptors of Sidon had granted men's gaze to behold
How the phoenix that sits on the cedar's lone summit 'mid fragrance and fire,
Ever dying, and living, hath loaded with splendors her funeral pyre;
How the stork builds her nest on the pine-top; the date from the palm-branch depends;
And the aloe's great blossom bursts, crowning with glory the life that it ends,
And from hall on to hall, in the doors, mute, magnificient slaves, watchful eyed,
Bowed to earth as King Solomon passed them. And passing King Solomon sighed.

And as a work of the imagination purely, there is the building of the Palace of Poseidon, by an English poet.

For him I built a palace underground,
Of iron, black and rough as his own hands.
Deep in the groaning, disembowel'd earth,
The tower-broad pillars and huge stanchions

And slant supporting wedges I set up,
Aided by the Cyclops who obeyed my voice,
Which through the metal fabric rang and peal'd
In orders echoing far like thunder-dreams.
With arches, galleries, and domes all carved,
So that great figures started from the roof
And lofty coignes, or sat and downward gazed
On those who strode below and gazed above—
I filled it; in the center framed a hall:
Central in that, a throne; and for the light
Forged mighty hammers that should rise and fall
On slanted rocks of granite and of flint.
Work'd by a torrent for whose passage down
A chasm I hew'd. And here the god would take
Midst showery sparks and swathes of broad, gold fire
His lone repose, lulled by the sounds he loved;
Or, casting back the hammer-heads till they choked
The water's course, enjoy, if so he wished
Midnight tremendous, silence, and iron sleep.

Now all things considered, I think the architect and the builder, and their mutual creations, have been fairly treated by the poet.

An occasional glimpse of perhaps well deserved sarcasm can nevertheless be found—Byron describes * * *

That Modern Goth, or rather Gothic
Bricklayer of Babel, called an architect,

to whose account possibly may be laid the designing of those

Rich windows that exclude the light
And passages that lead to nothing

mentioned by Grey, or the following still more severe arraignment of a shoddy church by William Allen Butler.

A building there is, well known, I conjecture
To all the admirers of church architecture,
Flaunting and fine, at the top of Broadway,
Cathedral like, gorgeous, and gothic, and gay,
Soaring sublimely, just as it should,
With its turrets of marble, and steeple of wood,
And windows so brilliant and polychromatic,
Through which the light wanders with colors erratic,
While within and without the whole edific glitters
With grandeur in patches, and splendor in fritters,
With its neat iron railing to keep out intruders,
And its parsonage "fixed" in the style of the Tudors,
And a genuine cloister recently added,
Lean red brick and plaster, with white marble padded;
O, who does not know it, the pride of Broadway,
The great architectural pasteboard display!

But when on the contrary, the poet desires to describe in terse language some particular quality or truism, he often succeeds in expressing a volume of meaning in a few well chosen words or a single happy phrase—as for instance Wordsworth's

Spires whose silent fingers point to heaven,

or Pope's description of the just requirements of proportion.

When we view some well proportioned dome
No single parts unequally surprise,
All comes united to the admiring eyes.

What warlike purposes are at once imagined on reading Scott's lines on Norham Castle, where he speaks of

The battled towers, the donjon keep,
The loop-holed grates where captives weep,
The flanking walls that round it sweep.

Pride and presumption are strongly marked in the assertion that

While stands the Colisseum, Rome shall stand,
When falls the Colisseum, Rome shall fall.
And when Rome falls, the world.

As a foretaste of the fate that will ultimately overtake our most ambitious attempts, here is described by Francis de Haes Janvier the site of the ruins of what once had been a Palace.

Where the Palace of the Caesars lies in shapeless fragments rouud—
Once a palace, whose fair columns rose in Majesty sublime,
Now a ruin, crushed and fallen, overcast with weeds and slime—
* * * * * * * * *
Prostrate columns, crumbling arches, tottering walls with ivy grown
Perished pride, and blasted beauty—Time's memorials round me strown.

Longfellow takes a more hopeful and cheering view of the subject and encourages us to exertions, saying—

All are Architects of fate,
Working in these halls of Time,
Some with massive deeds and great,
Some with ornaments of rhyme.

Nothing useless is, or low;
Each thing in its place is best;
And what seems but idle show
Strengthens and supports the rest.

In the elder days of Art,
Builders wrought with greatest care
Each minute and unseen part,
For the Gods see every where.

Let us do our work as well,
Both the unseen and the seen;
Make the house, where Gods may dwell,
Beautiful, entire, and clean.

As an ending to this paper I will read the beautiful description of a true architect's loving enthusiasm, in the Golden Legend—

The Architect built his great heart into these sculptured stones
And with him toiled his children, and their lives
Were builded with his own into the walls
As offerings unto God.

PROPOSED AMENDMENTS TO THE LAWS OF THE STATE OF CALIFORNIA, RELATING TO COTERMINOUS OWNERS,

AS RECOMMENDED BY THE

Joint Committee from the following Associations:

S. F. CHAPTER OF ARCHITECTS, A. I. A.
BUILDERS' ASSOCIATION, MILL MEN'S ASSOCIATION,
BUILDERS' EXCHANGE, LUMBER DEALERS' EXCHANGE,
BUILDERS' PROTECTIVE ASSOCIATION OF OAKLAND.

Amending Section 832 of the Civil Code of the State of California, as amended March 3rd, 1874, relating to excavations made upon lands, and the duty of protecting the lands of coterminous owners.

The people of the State of California, represented in Senate and Assembly, do enact as follows:—

Section I. Section 832 of the Civil Code is hereby amended so as to read as follows:—

Sec. 832. Each coterminous owner is entitled to the lateral and subjacent support which his land receives from the adjoining lands, subject to the right of the owner of adjoining lands, to make proper and usual excavations on the same for the purposes of construction on using ordinary care and skill.

In case such excavation being made, the person causing the same to be made shall first give reasonable notice to the owner of the adjoining land of his intention so to do, and thereafter he shall not be responsible for any damage that may happen to the lands, buildings or other improvements of such adjoining owner by reason of the making of such excavation, provided that he shall have used ordinary care and skill to prevent the same as herein set forth.

In all cities, cities and counties or incorporated towns where there exist ordinances or municipal laws establishing the grades of streets or highways, the exemption from liability of the person causing such excavation to be made as herein provided, shall not extend for a distance of more than fourteen feet below the official grade of the street or highway upon which the lands of such coterminous owners front at the point where such excavation is being made, but thereafter and to whatever distance such excavation may go below fourteen feet beneath such official grade, the person causing such excavation to be made shall take care of and support the land of adjacent owners, together with the buildings or other improvements thereon situated, and shall be liable for any damage or injury that may happen thereof, by reason of the making of such excavation.

Section II. This act shall take effect immediately.

And slant supporting wedges I set up,
Aided by the Cyclops who obeyed my voice,
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With arches, galleries, and domes all carved,
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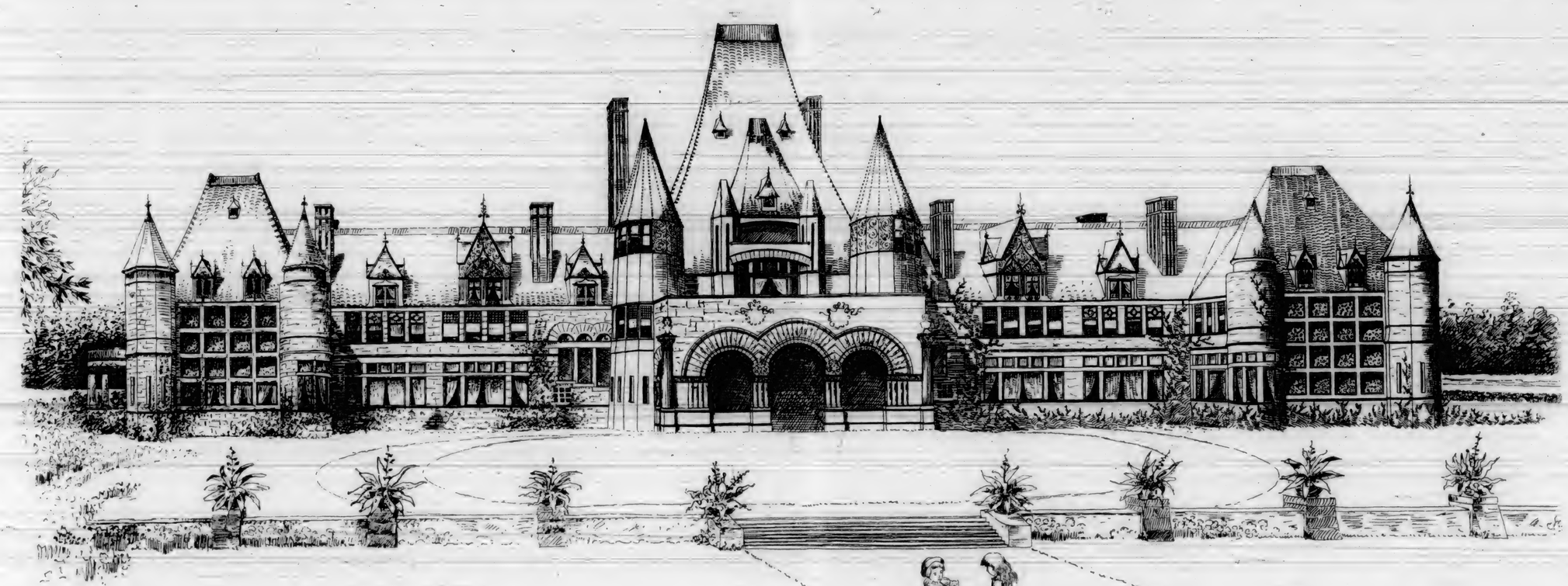
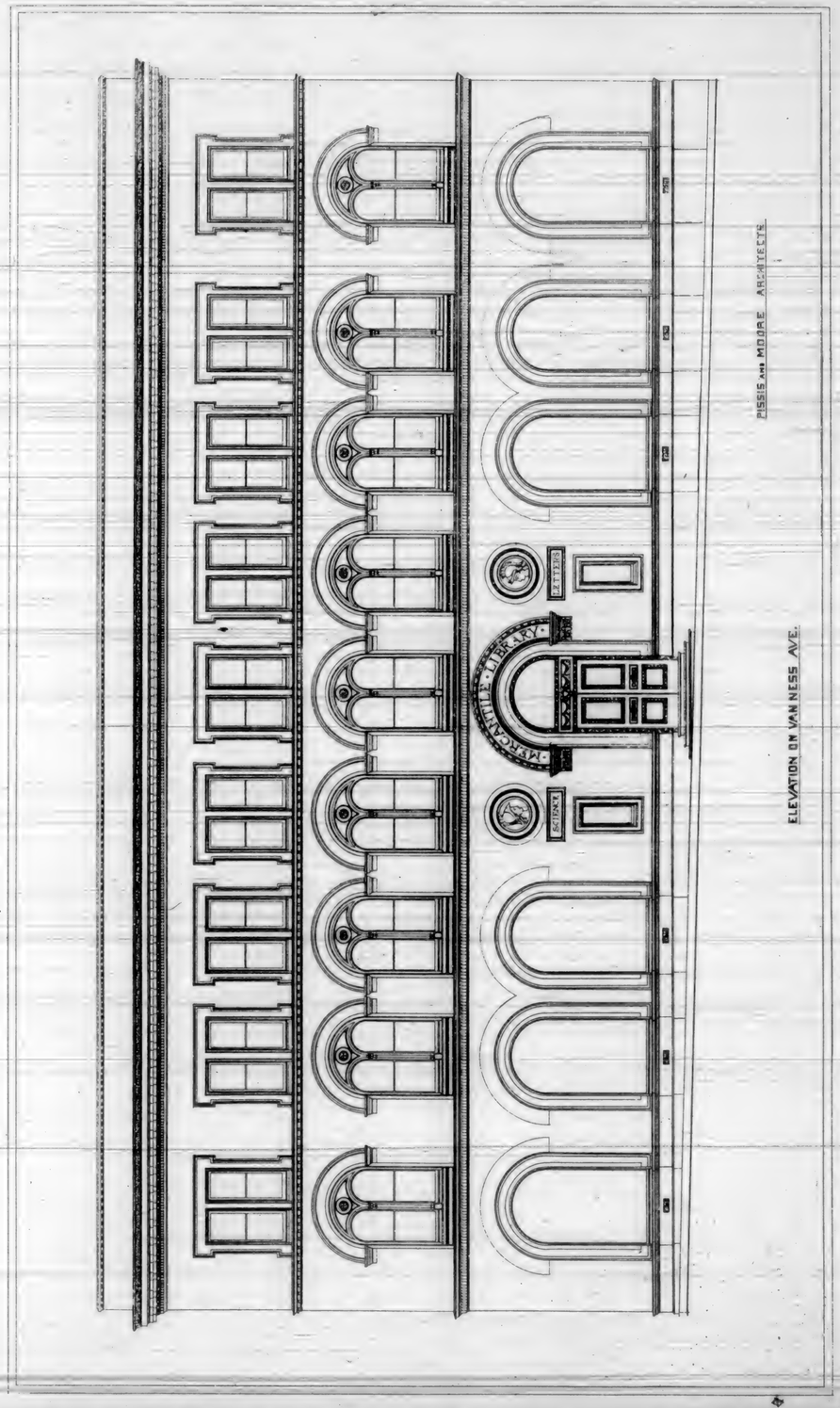
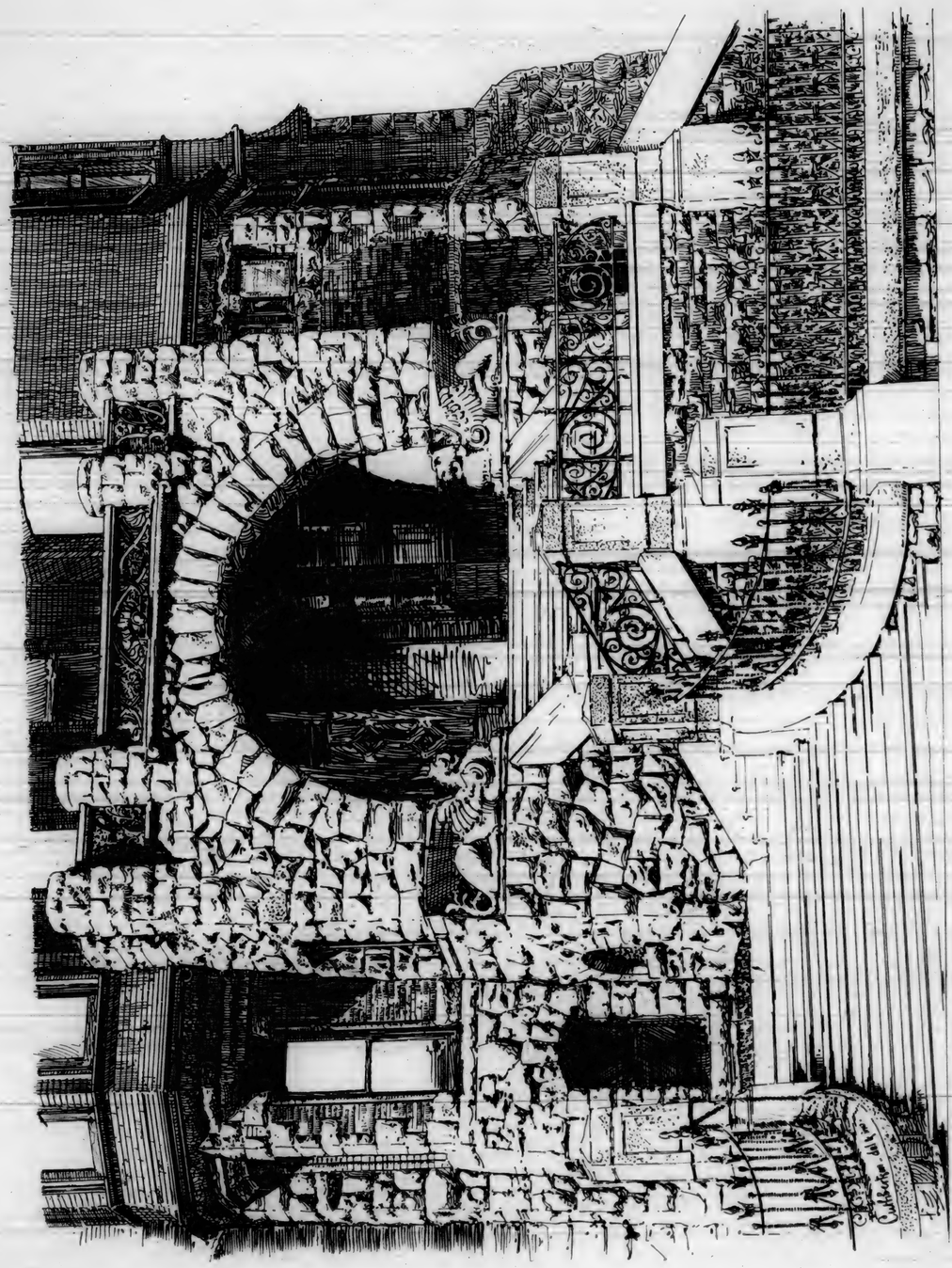


·UN·CHATEAU·EN·ESPAGNE·
OUR·NEW·GOVERNOR'S·HOUSE
AT·SACRAMENTO·CALIFORNIA
BY·SAMEUL·NEWSOM·ARCHITECT
·SAN·FRANCISCO·CALIFOR·



ELEVATION ON VAN NESS AVE.



Entrance To Mr. W. H. Crocker's Residence.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

VARIATION FROM SPECIFICATIONS IN BUILDING CONTRACT.—Where a building contract specifies that the work shall be done according to the plans and specifications which are made a part of the contract, and the contract expressly stipulates that there should be no variation from the plans and specifications without the written consent of the owner, it is a breach of the contract to substitute a certain kind and make of columns which is different from the kind called for by the contract, when it appears that the kind called for could have been procured, although it is shown that those which were used were substantially like those called for by the contract, and equally as good, and where the specifications fix the size of the columns the contractor will not be permitted to show that columns of a different size were more in accord with the contract. In a case of this kind where the contract is in writing and in clear terms a court should construe the contract and instruct the jury what the rights and duties of the parties are, and leave the question of compliance for the determination of the jury.

Lynch v. Paris Lumber and Grain Co., Supreme Court of Texas, 14 S. W. Rep. 701.

CONSIDERATION FOR CONTRACT FOR EXTRA WORK.—Every contract must rest upon and give a sufficient consideration and a promise by a building contractor to put another coat of oil on the inside of a house, made after he had fully complied with his contract, and without any additional consideration, is a mere gratuity; and his failure to put on the additional coat will not preclude him from recovering the full amount due under contract.

Widiman v. Brown, Supreme Court of Michigan, 47 N. W. Rep. 231

REGULATION OF PROJECTING WINDOWS BY LAW.—A city ordinance which prohibits the construction of any "jut or bulk windows" projecting into the street more than twenty-eight inches is a reasonable regulation and is valid, but the explicit prohibition against building a projecting window more than twenty-eight inches carries with it an implied permission to build twenty-eight inches and therefore a window projecting that far and no farther is a lawful structure.

Livingston v. Wolf, Supreme Court of Pennsylvania, 20 At. Rep. 551.

ENFORCEMENT OF PARTY WALL CONTRACT.—A contract was entered into with reference to a party wall, by the terms of which one party agreed to furnish sewer connections for the other building in consideration of the agreement by the other party to close up the windows in the wall upon one years notice and payment by him of his share of the expenses. Notice and tender of such payment was given, but the contract with reference to sewer connections was not complied with, and upon an attempt to enforce the contract to close the windows it is held that this cannot be done until the sewer connections are made, as that was manifestly part of the consideration.

Appeal of Phillips, Supreme Court of Pennsylvania, 20 At. Rep. 426

CONSTRUCTION OF AGREEMENT CONCERNING PARTY WALL.—Where a person purchases a vacant lot, which supports the half of the wall of the building erected on the adjoining lot, and such purchaser is, by the terms of a previous party wall agreement entered into by his grantor, obliged to pay a part of the costs of the wall in order to use it, such agreement and wall constitute an incumbrance. A covenant against incumbrances covers incumbrances unknown to purchaser, as well as those known.

Burr v. Lamaster, Supreme Court of Nebraska, 46 N. W. Rep. 1015.

PARTY WALL BY IMPLICATION.—Where a wall between adjoining houses has for a long term of years been jointly used by the owners of the houses on both sides, it will be adjudged to be a party wall whether it stands equally on both lots or not. A plan made by a witness who identifies it and swears that it is correct may be introduced in evidence to prove the location of the wall.

McVey v. Durkin, Supreme Court of Pennsylvania, 20 At. Rep. 541.

NOTES & COMMENTS.

From the Honolulu Daily Evening Bulletin we clip the following:

IMPORTED PLANS REJECTED.

Mr. H. McIntosh, Superintendent of Public Works, declines to reverse the decision of his predecessor, Mr. W. E. Rowell, in refusing to approve the plans of the projected Central Union Church edifice. The plans of the projected Brewer block extension, by a Boston architect, also fail to pass the Superintendent of Public Works and the Fire Marshall, as they do not come within the requirements of our building and fire laws.

AMERICAN ECONOMIC ASSOCIATION.

ANNOUNCEMENT OF PRIZES FOR ESSAYS ON THE HOUSING OF THE POOR IN AMERICAN CITIES.

Friends of the American Economic Association have contributed five hundred dollars for prizes for the first and second best essays on the "Housing of the Poor in American Cities," the first prize to be three hundred dollars and the second prize two hundred dollars. The essays should describe the actual condition of the dwellings of the poor, especially of the wage-earning classes, a comparison of the present condition with the condition in the past, showing tendency towards improvement or deterioration as the case may be. Voluntary and legislative efforts to improve the dwellings should be treated. The effects of sanitary legislation should be considered, and plans for improvement discussed. It is desired that the limits of private philanthropy and those of legislation and administration should receive attention. While attention is to be confined chiefly to American cities, foreign cities and their experience may be treated, and any lessons derived therefrom pointed out.

The essays should not exceed 25,000 words, and must be in the hands of the Secretary of the Association not later than November 15th, 1891. It is desired, but not required, that they should be type-written. The Association reserve the right of publication and copyright of the successful essays, if it desires to publish them. Other essays will be returned if stamps for postage are sent.

Address all inquiries to

RICHARD T. ELY,
Secretary of the American Economic Association,
Baltimore, Md.

STEEL GIRDERS OF THE NEW CITY HALL.

Some exceptionally heavy girders have been designed for the New City Hall of San Francisco. One of them, a box girder, is now in place in the northwest wing, and is 105 feet long, 5 ft. 1 inch high, and 3 feet wide, and weighs 71 tons; the clear span is 95 feet 6 inches, and the safe load is 228 tons uniformly distributed.

There are three lengths of web plate in the girder, the angle irons are 6″ x 6″ x 1″ and are in two pieces, each 52 feet 6 inches long. The upper flange is composed of three plates having a total thickness of 2½ inches.

Another girder (in course of construction, and which will be the largest one in the building) intended for the northeast wing is 126 feet 9 inches long, with a span of 116 feet 9 inches; 6 ft. 5 inches high, and 3 feet 6 inches wide. The top and bottom plates are made of three plates each, ¾ inch thick, the webs are ¾ inches thick and 6 feet in height.

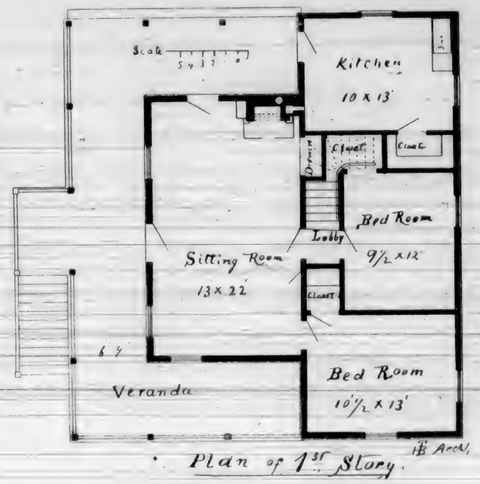
The angle irons, 8 in number, are 6″ x 6″ x ¾″. There are 20 stiffeners and strengthening plates in center of three thicknesses of half inch metal, which is all of open hearth steel. The weight of this girder is 118 tons, and it will carry a safe-load (uniformly distributed) of 310 tons.

These girders have been placed in position under the supervision of the present architect—WM. PATTON.

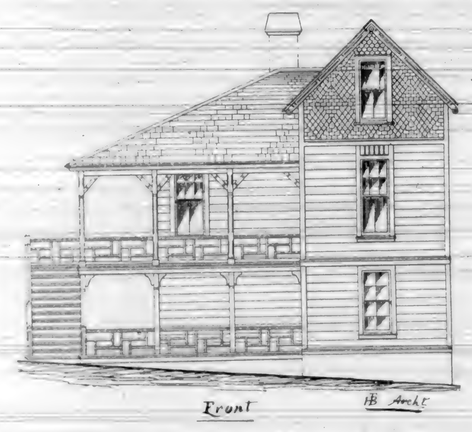
"THE GROVE."

The subject herewith presented is a summer cottage residence erected for Mrs. Dolliver and family, at Larkspur in Marin County, and about twelve miles from San Francisco.

This cottage is built in the midst of the trees and facing the main road on the sloping ground of one of the foot hills at the base of Mt. Tamalpias. The ground rises sufficiently to allow space for a finished room at the front, and a lower balcony, while the ground at the rear is nearly level with the floor of the main story. As this cottage is intended as a summer residence only, the reason is apparent why no door connects the main room with the kitchen, the only passage being by way of the veranda; yet, it is so arranged, that when desired, this portion

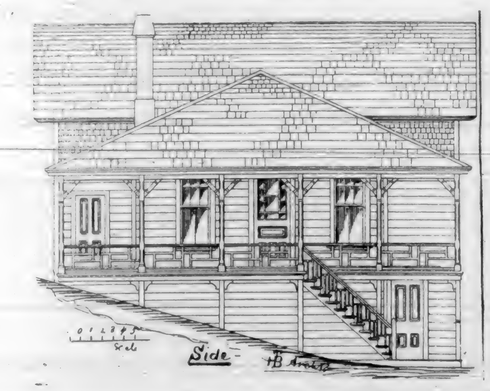


Plan of 1st Story.



can be partitioned off with solid walls, or sashes and doors set with glass, so as to become an inclosed portion of the house. The natural currents of the air during the warmest portion of the day are in the same direction as the veranda at the side, which having no obstruction at the ends admits an agreeable effect from the least movement of the air. The arrangement of the rooms is explained by the aid of the plans. The verandas are light and airy. The roof is shingled, and the exterior of the walls in some portions covered with rustic boarding; in other portions with ornamental shingles. All the exterior and interior finish for the cornices, railings, door and window casings, etc., is so formed that no special mill work should be required. The color of the exterior is worked in warm complementary tints to harmonize with the cool greens of the red wood and oak trees of the back ground.

Plan of 2nd Story



The tower of Babel was built 2247 years B. C.

Cadmus proceeded to Greece in the year 1493 B. C., and built the citadel of Thebes.

In 1222 B. C., the Olympic games were celebrated by Hercules.

The kingdom of Athens ended in the death of Codrus in the year 1070 B. C.

Solomon's temple was dedicated in the year 1004 B. C.

Phidon, king of Argos, is supposed to have invented scales and made measures, and coined silver at Aegina 869 years B. C.

The first coining of silver done at Rome was in the year 269 B. C.

Byzantium was built by a colony of Argives or Athenians in 658 B. C.

The canal between the Nile and the Red Sea was commenced by King Necho in 610 B. C.

On June 9th, 587 B. C., Jerusalem was taken by Nebuchadnezzer, after a siege of 18 months.

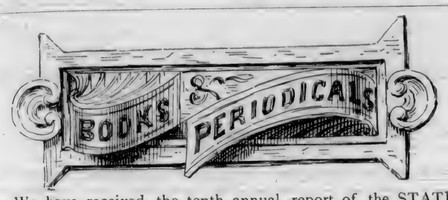
Education was encouraged at Athens, in consequence of which a public library was built in the year 526 B. C.

Sulla conquered Athens in 86 B. C. and sent its valuable libraries to Rome.

In 454 B. C., the Romans sent to Athens for Solon's laws.

In 445 B. C., Herodotus read his history to the council of Athens, and received public honors in the 39th year of his age.

Tyre and Egypt were conquered by the Macedonian prince in the year 332 B. C., and Alexandria was built.



We have received the tenth annual report of the STATE MINERALOGIST, WILLIAM IRELAND, JR. This report, in addition to the reading matter, contains a number of colored maps which show the geological formations of the principal sections of the State. The report contains a large amount of information which is of advantage to the mining and manufacturing interests of the Coast. Public reports of this character, which have been formulated with the care and faithfulness exhibited by Mr. Ireland, are of inestimable value to persons who are engaged in any pursuit where knowledge is required of mineral deposits which may be found in certain localities. We hope the Legislature will make a liberal appropriation for future reports.

The MUNICIPAL REPORTS of SAN FRANCISCO for 1889 and 1890 have been received. The printing and general features of the book are an improvement upon those heretofore received. We would suggest that in future reports, a tabulated statement of accepted streets and sewers, and the kind of sewers, and also a table of established grades would be of great benefit to intending purchasers of property.

The REAL ESTATE AND BUILDING RECORD, of this city, since changing ownership, shows a marked improvement. It has now become a business paper second to none on the coast in its particular field of action.

The INLAND ARCHITECT (of Chicago), for January, has been received, and as usual is replete with good architectural ideas, both in reading and plates; but the most prominent feature is a portrait and a review of the life of the late J. W. Root, of Chicago.

The SCIENTIFIC AMERICAN comes to us with its usual practical information.

PAINTING and DECORATING has a colored plate illustrating exterior decoration.

VICK'S FLORAL GUIDE FOR 1891. No lover of a fine plant or garden can afford to be without a copy. It is an elegant book of over 100 pages 8¼ x 10½ inches, beautiful colored illustrations of Sunrise Amaranthus, Hydrangea and Potatoes. Instructions for planting, cultivating, etc. Full list of everything that can be desired in the way of Vegetable and Flower Seeds, Plants, Bulbs, etc. The novelties have been tested and found worthy of cultivation. We advise our friends to send for Vick's Floral Guide, price only 10 cents, which amount may be deducted from the first order.

BUSINESS MOSAICS.

The coming season will show a more advanced taste in the decorative features of dwellings, than for a like period, during the growth of our city. The new style of plastic art for decorative purposes called L'UNIQUE, has so much to recommend it to favorable consideration, that any residence where an attempt is being made for artistic effect must of necessity use it. It can be made to harmonize with any style of furniture or tapestry fittings. Every person who intends to build, or decorate anew, should not fail to examine its qualification for rich effects. To see it is to use it.

The Pacific Water Closet Works of W. J. Rustemeyer & Co. are producing work that is becoming more and more a staple article of manufacture. Soon after the works were started, it was necessary to enlarge the plant and from present indications, another enlargement will be required in order to supply the market.

We notice some excellent wrought iron work in the form of iron fire escapes. These were made and put up by A. J. Dunbar & Co., 220 Fremont St.

The SAN FRANCISCO GAS LIGHT COMPANY have moved their show rooms from the old stand at First and Natoma street, to new and elegantly furnished show and salesrooms at 16 Post street, where those interested can see the application of gas for heating and cooking in all its different applications. The cut, herewith, represents one of the Co's patent Asbestos Grates as set in mantles. They are arranged to fit any mantle or nich as may be desired. They consume between three and five cents worth of gas per hour. The whole outfit costs $15.00 complete, the Gas Company running all necessary pipes. New buildings should be piped for all fire places or other gas appliances, thus saving future expense and dirt. In ordering, give size of opening top and bottom, and width. Call at 16 Post St., and see them in operation.

Windows, and their necessary adjuncts, are at the present time a matter of consideration for architects when formulating plans for future buildings. The old device of weights and cords has become so firmly established by usage, that by superior merit only can any other appliance be substituted therefor. The Gardner Sash Balance seems to possess all the especial advantages of the weight and pulley system, but the defect of cords is overcome by the use of a steel tape in place of such cords. These tapes are galvanized so as to prevent them from rusting, and are provided with convenient attachments to both sash and weights. They hold the sash in any position, and when raised, the upper sash is held in its place so that the lock will catch. Where a twisted or braided cord is used, the sash will drop a quarter or a half inch—or just sufficient to prevent the sash lock from taking effect.

The uses to which the P and B patent building, sheathing, and lining papers may be put, should be looked into carefully by interested parties. This paper being absolutely waterproof renders it a superior article, and more especially where dampness may be liable to cause trouble. It has no superior as a lining paper used under floors to keep out the moisture from the ground. The paint manufactured by this company has great preservative qualities and is thoroughly waterproof in its nature. It is an excellent paint to use where it is desired to keep wood or stone walls from the absorption of disease germs, or other objectionable matter as in stables, hospitals, graineries, etc. See advertisement on first page.

From Merchant & Co., the well-known tin and sheet metal merchants of Philadelphia, we have received a novel and unique little work called "The Brownies"— being a midsummer night's dream of the details of the process of which this excellent product has been brought to its present state of perfection. Plate No. 1 represents the wierd dance by moonlight, of three fairies over the pond lilies, their eyes showing wonderful powers of penetration as the full light of the idea impelled them forward. Then follows the orders for materials from all parts of the world, the furnaces come next. The three then meet under adverse circumstances, for consultation as to the best means for the continuation of the standard quality and to make further improvements if possible. For this purpose technical schools for the instruction of the operatives appears to have been decided upon, but here they encountered difficulties in the form of bad ventilation, the students become sleepy and utterly incapaciated for study, when the happy thought occurred to use the draught tubes of their furnaces as ventilators, these when improved into the form of "the star ventilator" as manufactured by them, and used for the ventilation of the school room, the changed aspect is at once apparent. From the picture it seems as if the school master could smoke his cigarette without its usual attendent pernicious influence upon the students. From this time forward, the processes used in the manufacture are of an improved order, and the manufacture of brass and copper rolls, tubes, wire, etc., is carried on—Scientific methods are shown for the accurate measurements for the interior and exterior dimensions while forming "seamless drawn tubing." The assorting and storing the finished pipe work is systematically done. The three fairies now have another wierd dance in the factory and by the light of the electric lamp, after which they take their bath amid expressions of pleasure. When all has been cleaned up they find the expenses and profits on the scales are about equally balanced. Here was a pretty state of affairs, an excellent article that every body wanted but the sales just balanced the expense. After a consultation with the printer a printer's dynamo was set up, which motored the coin right into the counting room of the manufacturers to such a degree that new offices and vaults were required for the increased business —see the card of Merchant & Co. on another page.—

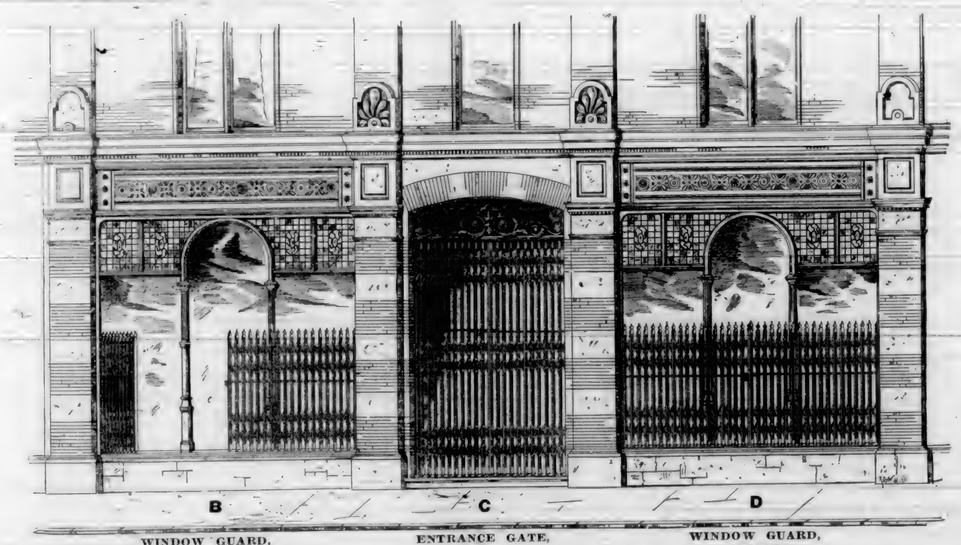
Architects when in want of the best materials and instruments for their use that can be found in the market, should not fail to call on Edward Denny & Co., at 418 Montgomery St., where a full assortment of Draughtsmans' and Artists' supplies may be had "Blue print" papers fresh and reliable.

Lengthening Metallic Beams.—Peter H. Jackson, S. F. No. 444,578. Dated Jan. 13, 1891. The capacity of rolling-mills limits the length of rolled beams and when beams are needed of greater length to span large rooms or other spaces, either a supporting column, pier or post must be used, or if such a support be inadmissible, it is necessary to build up what is known as a "plate" or "box girder" at an increased cost over the rolled beams and with a less reliable strength, on account of its being built of a number of pieces and riveted together. It is important when a number of beams or girders of great length are employed that there should be as little deflection as possible, and this improved construction is designed to increase the strength of the girder at the point where the joint is made.

Lengthening Metallic Beams and Girders.—Peter H. Jackson, S. F. No. 444,579. Dated Jan. 13, 1891. This invention relates to a means for lengthening iron and steel rolled and other metal beams and girders, and strengthening the joint at their abutting ends. It consists of a metallic band or bands inclosing the meeting ends of girders where single beams, or two or more, side by side, or super-posed, are employed, and in connection with these enclosing bands or cheek-pieces or filling pieces, and means for tightening the same between the bands and girders. This invention is especially adapted to rolled beams, which are made in a single piece, but of limited length, and it enables the inventor to substitute this class of beams for what are termed "box girders," which are built of iron plates riveted together so as to make any desired length, but which are to certain weaknesses on account of the rivet holes and their peculiar construction.

Folding Iron Gates and Guards are rapidly replacing the Cumbersom Iron door and Shutter, being more easily handled, are graceful in appearance, afford perfect security, light and ventilation, and occupy a very limited space when open. When used for elevators opening on the street, or for store doors and windows they are a sure safeguard. They can be opened so as to occupy a very small portion of the opening; when turned on a pivot, to swing round against the joint it is still further out of the way; and when not wanted, they may be taken from the hinges and entirely removed. As a protecting screen for windows, they present many features that are improvements over stationary guards—as by opening the screen the window may be cleaned.

By inspecting the cut herewith presented, B, is shown the whole shop front with a part of the front protected by the guard, and a portion with the guard partially opened. C and D show openings wholly protected by the closed folding guards. E. J. Robinson is the selling agent, at No. 79 New Montgomery St. See advertisement on another page.



WINDOW GUARD, PARTIALLY OPEN. ENTRANCE GATE, CLOSED. WINDOW GUARD, CLOSED.

Shingle roofs, when slightly decayed, may be preserved for a considerable time, by the application of Cabot's Creosote stains.

The addition of color to the creosote does not prevent its well known preservative action upon the wood, but will enhance the beauty and artistic effect of that most prominent feature of the building, the roof.

These stains need not be confined to roofs and shingle work alone, but may be used with advantage upon all wood work which is exposed.

Where exposed wood-work has begun to decay, paint confines the elements of decay which may be continued in their active state till the cellular portion of the wood is destroyed. The action of creosote destroys this active element, therefore the life of the wood is prolonged by its use in a much greater degree than where paint is used.

At this time of the year, when Architects are preparing the plans for next season's work, we would call attention to the ELEVATOR works of Wm. H. Birch & Co. These elevators are unexcelled for high speed and safety.

Hardwood Lumber can be had of John Wigmore & Son, 129 to 147 Spear St., S. F. This firm is one of the oldest and most reliable of any that we are acquainted with. While others have apparently dropped behind the times, this old, yet vigorous firm, is growing with the country.

On page iii will be noticed an advertisement for a hot water apparatus to be heated by gas. As this seems to be an article of such wide application on this coast, we call especial attention to it. Throughout the heated term in the rural districts, the air is heated to a high temperature, while the water in the streams is cold. In many instances a water back for heating water is impracticable under the existing condition. To heat water, for a bath, in kettles placed on the kitchen stove is another troublesome proceeding. This apparatus does away with all such methods, as the boiler can be set near the bath tub, and the gas turned on and lighted. In a few moments the tub is supplied with hot water; when finished the gas is turned off, and no further expense is incurred. Where gas stoves are used for cooking purposes, this arrangement may, with advantage, be set up to furnish hot water required for culinary necessities. The water can be fed continuously from the supply through pipes to and from the boiler. In cities and towns where gas is supplied the apparatus is fitted for gas; in districts out of the range of gas supplies, the apparatus is fitted with gasoline appliances.

Wanted to buy.

A portable railway of about 565 yards with cronings and six tipping cars. Address E. J. Meyer, Montgomery, Ala.

CITY BUILDING NEWS.

Broadway near Franklin. Mill work, etc; owner, Mahoney Bros.; architects, Shea & Shea; contractor, City Planing Mill Co.; cost, $4,500; signed, Jan. 7; filed, Jan. 9; payment, 75 per cent as work progresses; 25 per cent, 35 days.

Bryant Ave. near 23d. Frame building; owner, Elizabeth O'Brien; architect, Jno. T. Hogan; contractor, Jos. Donovan; sureties, Peter Gillogley & Geo. Godfrey, $1,500; cost, $3,735; signed, Jan. 14; filed Jan. 15; payments, $700, roofed; $700, front completed; $701.25, completed; $933.75, 35 days.

Capp. St. near 25th. One-story frame; owner, Mrs. C. Vandine; architect, T. J. Hamilton; contractor, T. J. Hamilton; cost, $1,050; filed, Jan. 5; payments, $300, framed; $350, brown mortared; $200 white mortared; $200 completed.

City Hall Ave. and Market St. Carpenter work; owner, R. J. Techan; contractor, Samuel T. Green; cost, $2,000; signed, Jan. 5; filed, Jan. 10; payments, 75 per cent of work done; 25 per cent, 35 days.

Chestnut near Dupont. Carpenter work; owner, Robt. Madsen; architects, B. McDougall & Son; contractor, K. C. Gardiner; cost, $3,100; signed, Jan. 14; filed, Jan. 14; payments, $500, framed; $700, floors laid; $600, white mortared; $525, completed; $775, 35 days.

Clement near 4th Ave. Two-story frame; owner, A. Roething; contractor, J. Schuler; cost, $1,550; signed, Jan. 27; filed, Jan. 28; payments, $400, rustic on; $400, plastered; $350, finished; $400, 35 days.

Cor. Market, Post and Montgomery. Marble work; owner, Crocker Estate Co.; architect, A. Page Brown; contractor, R. C. Fisher & Co; cost, $28,000; signed, Jan. 7; filed, Jan. 30; payments, 60 per cent each shipment from N. Y. upon sight draft when bill of lading & invoice & insurance papers are received; 15 per cent during setting of work; 25 per cent, 35 days.

Cor. Market, Post and Montgomery. Additional Marble work; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, R. C. Fisher & Co.; cost, $17,547; signed, Jan. 15; filed, Jan. 30; payments, 60 per cent each shipment from N. Y. on sight draft when bill of lading & invoice & insurance papers are received; 15 per cent during setting work; 25 per cent, 35 days.

Cor. Merchant & Kearny. Brick, iron work etc.; owner, Wm. A. Piper; architect, John M. Curtis; contractors, Geo. D. Nagle & John Trotter; cost, $17, 240; signed, Jan. 20; filed, Jan. 20; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Cor. Merchant and Kearny. Plumbing etc.; owner, Wm. A. Piper; architect, John M. Curtis; contractor, Henry Williamson; cost, $1,131; signed, Jan. 21; filed. Jan. 23; payments, $565, rough work done; $283, completed; $283, 35 days.

Cor. Mission and Seventh. Five-story brick; owner, Pierre Depuy; architect, C. R. and J. M. Wilson; contractor, Thos. M. McLacklan; sureties, O. H. Greenwald and L. Levi, $40,00; cost, $61,000; signed, Jan. 12; filed, Jan. 12; payments, $9,000, first story joists on; $9,000, third story joists on; $9,000 tin roof on; $9,000, brown-coated; $9,750, completed; $15,250, 35 days.

Cor. Mission and 7th. Artificial stone work; owner, Pierre Depuy; architects, C. R. and J. M. Wilson; contractor, H. M. Paterson; sureties, Henry Pilster and C. R. Eagan, $2,000; cost, $3,656; signed, Jan. 13; filed, Jan. 14; payments, $1,700, foundations in; $1.037.50, completed; $912.50, 35 days.

Cor. Mission and Seventh. Plumbing and gasfitting; owner. Pierre Duprey; architects, C. R. and J. M. Wilson; contractor, H. Williamson; surety, J. H. Keefe, $2,000; cost, $3,994; signed, Jan. 27; filed, Jan. 29; payments, $1,479, rough work in; $1,479, completed; $986, 35 days.

Cor. Mission and Seventh. Elevator, wall and tank work; owner, Pierre Duprey; architects, C. R. and J. M. Wilson; contractor, A. Martinez; sureties, Geo. E. Beilmor and J. A. Bauer, $2,000; cost, $6,11?; signed, Jan. 28; filed. Jan. 29; payments, $800, boiler set; $500, rain casing in; $500, wood work ready for cage; $1,000, pumps set; $1,789, completed; $1,530, 35 days.

Cor. Mission and Seventh. Cement work; owner, Pierre Duprey; architects, C. R. and J. M. Wilson; contractor, Jas. Dunlop; surety, J. Wm. Lucas, $1,000; cost, $2,700; signed, Jan. 15; filed, Jan. 29; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Cor. Webster and Page. Three-story frame; owner, Paul Levy; architect, A. J. Barnett; contractor, Dan Chrisholm; Surety, E. P. Latson, $1,700; cost, $6,570; signed, Jan. 7; filed, Jan. 7; payments, $1,230, roof boards on; $1,230, brown coated; $1,230, white coated; $1,220, completed; $1,650, 35 days.

Diamond near Elizabeth. Two cottages: owner, John Caine; architect, Thos. Elam; contractor, Thos. Elam; cost, $2,948; signed, Jan. 28; filed, Jan. 29; payments, $737, framed; $737, brown mortared; $737, white coated; $737, 35 days.

Eddy near Larkin. Carpenter work etc.; owner, Mrs. M. A. Fumegass; architect, T. J. Welsh; contractor, Wm. Plinn; cost, $6,350; signed, Jan. 6; filed Jan. 10; payments, $1,500, rooted; $1,500, brown mortared; $1,760, ready for painters; $1,590, 35 days.

Eddy near Larkin. Plumbing, gas fitting etc.; owner, Mrs. M. A. Fumegass; architect, T. J. Welsh; contractor, Wm. F. Wilson; cost, $1,000; signed, Jan. 6; filed, Jan. 28; payments, $500, rough work in; $800, accepted.

Ellis near Powell. Artificial stone work; owner, Claus Mangels; architect, H. Geilfuss; contractor, H. Stettin; cost, $1,051; signed, Dec. 17; filed, Jan. 20; payments, first and fifteenth day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Ellis near Powell. Brick and stone work; owner, S. Trowfeld; architects, Salfield & Kohlberg; contractors, Riley & Loane; sureties, H. Remillard & Henry S. Loane, $2,000; cost, $9,987; signed, Jan. 12; filed, Jan. 14; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Ellis near Powell. Concrete work; owner. S. Frowenfeld; architects, Salfield & Kohlberg; contractors, Chatean & Gilletti; sureties, Byron Diggins & J. C. Diggins, $5,800; cost, $5800; igned, Jan. 12; filed, Jan. 12; payments, $?.0, excavated; $2,500, walls up; $1,100, completed; $1,490, 35 days.

Ellis near Powell. Plastering, etc.; owner, J. Frowenfeld; architects, Salfield & Kohlberg; contractor, J. J. Wyatt; sureties, J. S. Hare, D. C. W. Hodgkin, Kelley, Hare & Co., $2,000; cost, $2,800; signed, Jan. 12; filed Jan. 14; payments, $1,000, brown coated; $1,100, accepted; $700, 35 days.

Ellis near Powell. Carpenter work etc.; owner, J. Frowenfeld; architect, Salfield & Kohlberg; contractor, Henry Hoizenberg; sureties, J. F. Kennedy & L. T. Lewis, $2,450; cost, $9,800; signed, Jan. 12; filed, Jan. 14; payments, $500, second joists laid; $500, rooted; $2,000, floored; $2,000, standing trimming on; $2,350, completed; $2,450, 35 days.

Fourteenth near Castro. Two-story frame; owner, Bertha Munger; architect, J. C. Newsom; contractor, H. Jacks; sureties, A. J. Turner and A. L. Collins, $1,500; cost, $3,600; signed, Dec. 30; filed, Jan 10; payments, $900, framed; $900, brown mortared; $900, completed; $900, 35 days.

Fulton near Polk. Plumbing etc.; owner, H. Geilfuss; architect, H. Geilfuss; contractor, H. Williamson; cost, $1,194; signed, Jan. 27; filed, Jan. 29; payments, first day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Green near Laguna. Two-story frame; owner, A. Lynch; architects, J. & T. Newsom; contractor, K. Engvick; surety, C. D. McGowan; cost, $3,350; signed, Jan. 13; filed, Jan. 26; payments, $837.50 framed; $837.50, rough plumbing in; $837.50 completed; $837.50, 35 days.

Green near Laguna. Carpenter work etc.; owner, A. Lynch, architects, J. J. & T. D. Newsom; contractor, K. Engrick; cost, $3,350; signed, Jan. 13; filed, Jan. 13; payments, $837.50, framed; $837.50, plumbing in; $837.50, completed; $837.50, 35 days.

Lyon near Grove. To build; owner, Mary Whalen; architects, Salfield and Kohlberg; contractor, G. G. Gillespie; cost, $1,175; signed, Jan. 13; filed, Jan. 22; payments, $400, brown coated; $200, completed; $575, 35 days.

Market near Golden Gate Ave. Mill work; owner, J. A. Donohoe; architect, A. Page Brown; contractor, A. Wilkie; signed, Jan. 15; filed, Jan. 15; payments, first day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Market near Golden Gate Ave. Extra mill work; owner, J. A. Donohoe; architect A. Page Brown; contractor, A. S. Wilkie; cost, $1,600; signed, Jan. 15; filed, Jan. 19; payments, first day of each month as work progresses; balance, 35 days.

Market near Golden Gate Ave. Sinking a well; owner, J. A. Donohoe; architect, A. Page Brown; contractor, S. H. Allen; cost, $6.50 per lineal foot; signed, Jan. 21; filed, Jan. 21; payments, 75 per cent as work progresses; 25 per cent 35 days.

Market near Golden Gate Ave. Artificial stone work; owner, Jos. A. Donohoe; architect, A. Page Brown; contractors, Gray Bros.; cost, $2,695; signed, Jan. 26; Filed, Jan. 27; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent 35 days.

Market near Golden Gate Ave. Painting etc.; owner, J. A. Donohoe; architect, A. Page Brown; contractors, Fraser and Keefe; cost, $3,271; signed. Jan. 14; filed, Jan. 15; payments, first day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Market and City Hall Ave. Heating pipes; owner, R. J. Techan; architect, R. J. Techan; contractor, Harvey Heating Co.; cost, $1,500; signed, Jan. 2; filed, Jan. 10; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Mission near 10th. Carpenter work; owner, Thos. Doolan; architect, F. T. Daslan; contractor, F. T. Daslan; cost, $10,000; signed, Dec. 10; filed, Jan. 14; payments, $1,500, framed; $1,500, floored; $2,500, outside finish on; $2,250, finished; $2,250, 35 days.

New City Hall. A statue; owner, E. B. Mastick et al.; contractor, F. Harpersberger; cost, $100,000; signed, Jan. 21; filed, Jan. 21; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Nineteenth near Sanchez. Carpenter and brick work; owner, Andrew B. Knox; contractor, A. S. Cook; surety, C. E. Pilsbury, $500; cost, $2,800; signed, Jan. 8; filed, Jan. 9; payments, $700, framed; $700, brown mortared; $600, accepted; $800, 35 days.

Noe and Eighteenth. Carpenter work; owner, J. D. Davidson; architects, Gould and Colley; contractor, Wm. P. McPhee; cost, $2,730; signed, Jan. 20; filed, Jan. 20; payments, $682.50, framed; $682.50, brown coated; $682.50, completed; $682.50, 35 days.

No. 1812 Lyon St. Alterations; owner, A. S. Baker; architects, Gould & Colley; contractors, R. D. Miller & Co.; cost, $1,715; signed, Dec. 12; filed, Jan. 7; payments, $400, house raised; $500 ready for plastering; $400, brown mortared; $415, 35 days.

No. 322 Shotwell St. Alterations; owner, F. Andell; Architect, F. Andell contractor, F. Weinochl, surety, Martin Bahrt, $2,600; cost, $2,600; signed, Jan. 22; filed, Jan. 24; payments, $300, house raised; $400, brown mortared; $600, white coated; $600, completed; $700 35 days.

No. 1351 Post. Alterations and additions; owner, J. Napthtaly; architect, P. R. Schmidt; contractor, J. Furness; surety, E. Joost. $407.75; cost, $1,631; signed, Jan. 26; filed, Jan. 27; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Oak near Broderick. 3 dwelling houses; owner, Mark Levi; architect, Geo. C. Sargent; contractor, Louis Lander; cost, $9,600; signed, Jan. 16; filed, Jan. 16; payments, 75 per cent of value of work done; bal., 35 days.

Oak near Ashbury. 2-story frame; owner, W. A. Johnston, by atty.; architect, W. W. Rednall; sureties, S. E. Slade Lumber Co. & Jason. Springer & Co., $800; cost, $3,312 signed, Jan. 7; filed, Jan. 12; payments, $830, roofed; $830, brown mortared; $800, completed; $802, 35 days.

Pacific near Dupont. Brick building; owner, A. F. O'Connell; contractors, M. Fennell & Son; cost, $2,000; signed, Jan. 14; filed, Jan. 15; payments, $750, ready for ceiling joists; $750, completed; $500, 35 days.

Page near Lott. Carpenter work etc.; owner, Wm. Murasky; architects, Shea & Shea; contractor, J. T. Moore; cost, $4,794; signed, Dec. 29; filed, Jan. 5; payments, $862, framed; $862, brown mortared; $865, hard finished; $803, completed; $1,500, 35 days.

Palace Hotel. Hardwood finish for corridors, stairs etc.; owner, F. G. Newlands, trustee; architect, J. M. Wood; contractor, Carsley & East Manufacturing Co.; cost, $15,175; signed, Jan. 6; filed, Jan. 6; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Pine near Baker. Two 2-story frame; owner, Caroline Hirsch; architect, John Balezynski; contractor, Ivory Wells; cost, $3,850; signed, Jan. 16; filed, Jan. 19; payments, $760, framed; $760, partitions set; $760, white coated; $787.50, completed; $962.50, 35 days.

Sacramento near Spruce. Carpenter work; owner, Geo. Healing; architect, Geo. Healing; contractor, Jas. Healing; cost, $2,500; signed, Jan. 26; filed, Jan. 26; payments, $425, framed; $425, brown mortared; $425, 35 days.

Sacramento near Mason. To build; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, J. H. O'Brien; cost, $8,200; signed, Jan. 12; filed, Jan. 12; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Scott near Waller. Two-story building; owner, Francis O'Neil; architect, John Foster; contractor, John Foster; cost, $7,000, signed, Jan. 26; filed, Jan. 26; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Seventeenth and Harrison. 3-story frame; owner, Mission Pottery Co.; architect, Chas. J. Devlin; contractor, J. F. Logan; sureties, C. A. Warren & Gustav Kartschoke; $1,500; cost, $5,993; signed, Jan. 5; filed, Jan. 6; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Sutter near Fillmore. Frame building; owner, Mrs. Dora Steckler; architect, J. J. Clark; contractor, F. L. Hansen; sureties, Wm. Crocker & Fabian Joost, $1,835; cost, $7,300; signed, Jan 12; filed, Jan. 16; payments, $600, framed; $1,250, floored; $1,250, brown mortared; $1,375, doors hung; $1,000, completed; $1,825, 35 days.

Sutter near Jones. Alterations; owner, C. M. P. Coleman; architect, Clinton Day; contractor, Wm. T. Commary; cost, $13,700; signed, Jan. 21; filed, Jan. 24; payments, $3,000, framed; $3,000, chimneys built; $4,275, completed; $3,425, 35 days.

Sutter near Webster. Two 2-story frames; owner, Mary A. Cotton;, architect, P. R. Schmidt; contractor, J. J. O'Brien; cost, $9,250; signed, Jan. 27; filed, Jan. 28; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Tenth near Folsom. Two-story frame building; owner, Michael Healy; architect, M. J. Welsh; contractors, Cuneo & Casaretto; sureties, F. Rate & A. Cuneo; $1,025, cost, $4,100; signed, Jan. 28; filed, Jan. 29; payments, $1,025, framed; $1,025, brown mortared; $1,025, completed; $1,025, 35 days.

Turk near Broderick. Plumbing and gas fitting; owner, J. A. Oliver; architect, P. R. Schmidt; contractor, R. A. Vance; cost, $1,750; signed, Dec. 23; filed, Jan. 6; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Twenty-second near Noe. Frame building; owner, E. Schwerin Jr.; contractor, Jas. Campbell; sureties, A. W. Starbird & J. B. Goldstein, $1,000; cost, $3,250; payments, $812.50, framed; $812.50, mortared; $812.50, completed; $812.50, 35 days.

Twenty-fourth and Castro. Frame building; owner, Jas. J. Manning; architect, J. J. Clark; contractor, W. Linden; surety, B. Joost, $1,084; cost, $4,338; signed, Dec. 22; filed, Jan. 17; payments, $1,085, brown mortared; $1,085, completed; bal., 35 days.

Twenty-fourth near Howard. 1-story frame; owner, C. A. Barnes; architect, M. J. Welsh; contractors, R. Doyle & Sons; cost, $1,144; signed, Jan. 22; filed. Jan. 23; payments, $582, brown mortared; $271, completed; $291, 35 days.

Willow Ave. near Polk. 2-story; owner, Jacob Haaf; architect, W. Winterhalter; contractor, Schmid & Hoelle; cost, $3,785; signed, Jan. 17; filed, Jan. 19; payments, $1,000, tinned; $785, rough plastered; $1,000, completed; $1,000, 35 days.

Alameda County.

Avery Tract, Berkeley. To build; owner, Henry C. Bascom; architect, A. H. Broad; contractor, A. H. Broad; cost, $3,450; signed, Jan. 12; filed, Jan. 23; payments, $900, framed; $900, brown mortared; $900,completed; $750, 35 days.

Block C, Leonard Tract, Oakland. Dwelling house; owner, John Rose; architect, C. M. Johnson; contractor, C. M. Johnson; cost, $1,450; signed, Jan. 13; filed, Jan. 16; payments, $350, enclosed; $350, brown mortared; $350, completed; $400, 35 days.

Block 16, Butles Tract, Oakland. 1-story cottage; owner, C. H. Klinkner; architects, J. J. & T. D. Newsom; contractor, G. B. Somner; cost, $1,625; signed, Jan. 5; filed, Jan. 8; payments, $400, roof boards on etc.; $400, first coat of mortar on; $418, completed; $407, 35 days.

Buena Vista Ave., Alameda. To build; owner, A. Brand; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,289; signed, Jan. 22; filed, Jan. 23; payments, $650, rustic and roof shingles on and chimney built; $550, window frames set, brown mortar on; $519, completed; $570, 35 days.

Durant Ave. near Choate St. Berkeley. 2-story building; owner, Mrs. Ellen Blood; architect, R. Gray Frise; contractors, Oakland B'ld. & Imp. Co.; cost, $2,700; signed Jan. 24; filed, 24; payments, $675, enclosed; $675, brown mortar on; $675, last coat plaster; $675, 35 days.

Encinal Ave. near Grand St., Alameda. To build; owners, Mrs. M. F. & F. N. Delanoy; architects, A. W. Pattiani & Co.; contractor., A. W. Pattiani & Co.; cost, $2,570; signed, Jan. 23; filed, Jan. 24; payments, $700, floor joists in; $700, rustic and roof shingles on, chimney built; $600, window frames set, brown mortar on; $550, completed; $650, 35 days.

Paradise St. near Felton. Alterations; owner, C. W. Smith; architect, W. H. Lillie; contractor, C. H. Moore; cost, $1,550; signed, Jan. 15; filed, Jan. 15 payments, $500, building moved; $250, brown mortared; $250, completed; $250, 30 days; $300, 60 days.

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

The process of evolution in the domestic architecture of San Francisco, has, from the comparatively short period of the City's existence, taken place much more rapidly than in the older cities of the eastern states.

Though San Francisco could boast of many extensive structures built before the destructive fire that destroyed a large part of the City early in the fifties, we will commence our review by referring to the time shortly after this event, when Russian Hill assumed the lead as the aristocratic residence portion of the city, and the *octogon house*, and its gravel walls, became the rage. From this beginning came the house of many angles, and the celebrated house with sixteen corners, which was still in existence a short time ago. The fashionable quarter however, soon shifted to Rincon Hill, and took the lead with brick residences and swell fronts, in imitation of the same class of buildings in Boston. South Park is still today a practical example of this style of architecture, which brings us up into the sixties—when the dwelling houses became provided with finished basements, more or less below the level of the sidewalk—and square fronts ornamented with long verandas and porches along the front, with large solid square columns.

On account of these verandas depriving the buildings of needful light and sun, and offering too great opportunities for the dust to be deposited in their corners, they were gradually supplanted by bay windows which have been modified and improved till the elaborately finished bay window of to-day resulted, which so completely fills the requirements by furnishing space, sun and view, that there is no doubt it will long continue to occupy its present high place in the opinion of the householder.

As the business part of the City began to encroach on the residence portions, and stores usurped places that should properly have been reserved for residences, the blocks assumed a more or less heterogenous appearance that was not desirable.

To obviate this disagreeable possibility, entire blocks of dwellings were built at one time, and disposed of to purchasers who wished to be assured of their surroundings.

The mistake made by these pioneer inovators, was that their buildings were all alike, and being all cast in the same mould, caused confusion and trouble to the dwellers therein.

It did not require much time, however, for the builders to vary the monotony of a long block by alternating two different designs, which were still further varied by being painted in different colors.

Even this did not prove entirely satisfactory, and now the enterprising builder secures the services of an architect who will design a row of houses, no two of which are alike, and yet not so dissimilar as to lack harmony which should always exist.

We have not touched on the changes in the arrangement and construction of office and business blocks, though they have been even more radical, and in place of the two and three story buildings we used to consider sufficient, we now have arrived at eight and ten story structures, with every prospect of seeing these heights doubled or tripled in the near future.

OLD MISSION CHURCH AT SONOMA, CALIFORNIA.

(CONTINUED FROM PAGE 16.)

The exterior walls show some of the peculiarities of construction of that period. Fig. 6, is the elevation of the rear wall with the veranda removed so as to show the position of the upper windows; Fig. 7, the elevation of the rear, complete; Fig. 8, the elevation of front wall with veranda removed and Fig. 9, the elevation of the front as finished and as it appears at the present date. The large opening, 11 feet wide, at one end

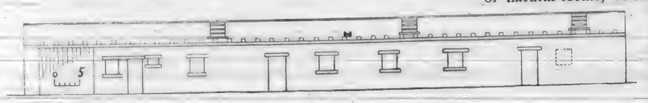

Fig. 6. Rear.

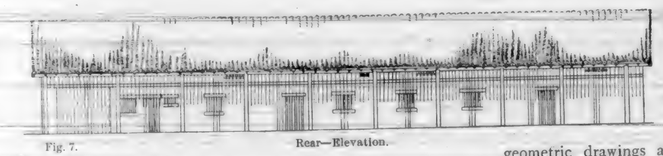

Fig. 7. Rear—Elevation.

can best be located by an inspection of the "plan" Fig. 1. The dotted lines represent former openings for doors or windows and which have at different times been changed or closed. The doorways are about 3½ feet in width by 7 feet in height, and the windows about 2½ feet in width by 4½ feet in height. The frame work for the doors and windows appears to be of more recent work. The sills for the windows are about 4 inches thick by 9 to 11 inches wide, and the lintels for openings for doors and windows, 7 inches thick, and the width of the thickness of wall which is 3 feet, and formed of three to four pieces. There seems to have been no rule for the length of bearings at

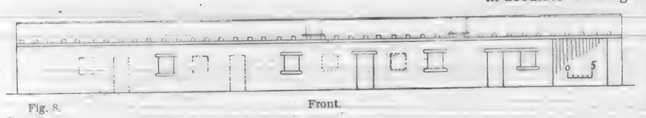

Fig. 8. Front.

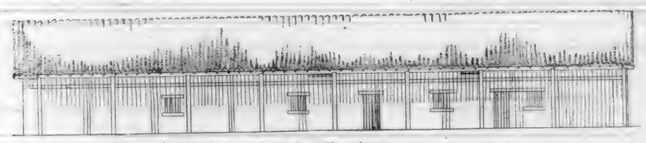

Fig. 9. Front—Elevation.

ends of lintels or sills, as some of them extend 9 to 22 inches, while others extend over two or three openings without a break. At the height of attic floor there are placed in the wall on the interior and exterior, and extending in an unbroken line, a timber or wall plate as shown in Fig. 2 at r and 4½ inches thick. The floor beams bear on the wall plates and extend through the walls. The ends of floor timbers and the wall plates, lintels, etc., are shown on the elevations. Openings were placed where desired and without regard to constructive bearing lines. The small opening at rear of attic was the outlet for the waste conductor from the attic story.

INSTRUCTION IN DRAWING.

A Critical Review of the Prang Course in Form-study and Drawing.—Continued from Page 125, Vol. XI.

Every object used in instruction is a vehicle for exercise in thinking and speaking; and the drawing-lesson is made the means of formal education and culture, drawing being itself a language.

As has been stated, modelling in clay and the shaping of paper into geometric forms are related to this course, being considered important adjuncts, and are indeed the first steps in the direction of manual training. In the third year the sphere, cube, and cylinder are thoroughly reviewed as basis for later instruction, and are treated accordingly, being among the most fundamental of natural forms, referred to continually during the course of the study. Natural objects are considered for representation, as the apple, the toad-stool, the leaf of the plantain; also objects of art, as a cubical basket, a Greek cross, a rectangular paste-board box, etc. In connection with the methodical study and understanding of such objects, instruction is given in the production of running or continuous designs for borders, etc.

In the fourth year the cylinder, four-sided prism, and vase forms are represented. By the use of these models the scholar reviews various geometric figures and different curves. From solids geometric drawings are made, and leaves and other parts of plants are drawn It will be observed that during the first four years of the Prang Course great stress is laid upon developing the observing powers through the study of *things*. This study awakens reflection, or thought, concerning the things observed, and this thought finds expression by means of modelling and drawing by oral expression. The sense of touch also plays its own inportant part in these exercises. In short, all is natural. It is characteristic of this stage that less importance attaches to accuracy of reproduction in drawing than to correct observation.

At the beginning of the fifth year the pupil is familiarized with fundamental forms, and his powers of observation are such that a more accurate study of details begins. From this time drawing becomes of more importance than heretofore as a means of expressing the results of observation, and systematic instruction in accurate drawing follows. The ellipsoid, ovoid, and three-sided prism are now the forms which are to be studied, to succeed those of the previous years. The appearance of cylindric models placed below the level of the eye is attentively studied, and in the line of decoration, rosettes, original arrangement of triangles, and flowers in full face. At this time the scholar is prepared to construct an objeot from a given drawing which contains three views of the object.

In the fifth year the cone and conical objects make their appearance as basic forms, and the study of the appearance of objects — that is, the beginning of perspective — is taken up. The development of ornament from plant forms is continued. After the first three or four years of study we find the power of observation greatly increased through the cultivation of the senses of sight and touch; and rule and compasses being unused, skill in free-hand drawing has been developed.

In the work of the latter school years instruction takes on a more practical form. Three different yet co-related aims are indicated, described in the Prang Course as Construction, Representation, and Decoration. By *Construction* is meant the study of the facts of forms leading to mechanical drawing for practical purposes of construction, and the purely industrial element prevails. Here it is especially interesting to observe how full constructive drawing is built up, or developed, from the study of the separate geometric views of objects begun in the first year. It is only the truth to say that the Prang Course was the first to present this phase of the study in this original and attractive way. It is presupposed that practical working drawings and descriptive geometry will be pursued later on, when a definite knowledge of the facts of form will prove of great importance.

Under the head of *Representation* the Prang Course treats of the principles of perspective and of harmonious grouping of objects. A circumstance which strikes one very agreeably is that at this stage little is said to the theory of perspective, the object of the method being to induce pupils to see perspective themselves, without troublihg themselves too much about the *a priori* theory. Thus by degrees they assimilate, as it were, the substance of the science easily and unconsciously, and can readily fit what is thus acquired to the complete formulated theory at the proper time. This idea may be called a masterly conception; for how many students pass without difficulty a severe examination in theoretical perspective without being able to draw even simple objects in perspective with any degree of correctness.

Under *Decoration* the Prang Course presents the elementary principles which should determine the selection, combination, and idealization of both geometric and natural forms for practical use in the decorative arts. For example, some historical (Gothic and Grecian) forms of ornament are given, and the learner is taught how to use natural objects for the purpose of conventional design according to the principles of aesthetics.

The work of the last school-year is, of course, in advance of the previous study, with the addition of the use of instruments and drawing to scale in the department of practical construction. The authors of the Course observe in their manual that at this point they would gladly introduce the study of light and shade and color, but that the conditions of school education in America will not yet admit of it, though they hope the time is near when they can carry out the fulfilment of their desires in these respects.

If we now consider the Prang Course as a whole, and compare it with corresponding methods provided for teaching drawing in elementary schools in Europe, the great superiority of the Prang Course cannot escape us. It is, in fact, a step in practical pedagogics surpassing anything which has been done in this direction in Europe. Unity, previously wanting, has been given to the study of drawing; and the fundamental principles of constructive, pictorial, and decorative drawing have been presented in their true relations.

It may be asked how it was possible that the comprehensive course we have been describing could have come into such general use and have met with such success in so short a time, as every new method of instruction, to be properly put in practice, cannot be well mastered and understood by teachers. This obstacle Mr. Prang recognized in good time; and after his Course had been approved by the principal educators of the country he set himself to supbly courses of instruction for teachers also. This was to be done by preparing them separately or together, according to circumstances, and to this end normal drawing-classes were established, the instruction being given by correspondence; and experience has proved this to be a practical way of meeting the difficulty beyond all expectation. It is shown that this method of normal instruction has certain advantages which personal instruction lacks. The student is left to depend more upon himself, and is therefore obliged to give his earnest attention and thought to the work in hand. Individuality under such conditions is free to develope its indescribable charm, where otherwise too fixed and formal standards of personal instruction might lead to lifeless uniformity. In short, Prang's Normal Drawing-classes have met with general recognition; and it is stated that nothing that has been done for the development of drawing-instruction in the American schools can show a wider influence or greater success. It may truly be said that The Prang Educational Company, as the originator of this undertaking, must always have the credit of introducing an ethical factor into the system of popular education in America which, without interfering with the practical progress of this sober-minded people, must elevate all its standards, and greatly add to its artistic perception and its aesthetic enjoyment.

Throughout this whole course of instruction, and animating the wise provisions for introducing it into the schools, there is apparent an earnest desire to inspire a love of beauty, and to honestly educate public taste. In this Europe of ours, where for a decade all the nations have been under arms, and technical ability is utilized in perfecting deadly weapons for slaughtering the masses, and milliards are spent for standing armies, and insecurity and poverty benumb whole peoples,—here in Europe there was no place for the work of such a man as Mr. Prang. He was therefore driven from the country of his birth to become a benefactor to the country of his adoption,—a country which goes on developing itself, not only in physical resources, but which is beginning to divert the stream of culture, stagnating in Europe, into the free fields of teeming activity in the new world. To America belongs the future. Soon will the United States surpass us in Art as well as in Science, if we do not arouse ourselves and strive with energy to reform and renew our common-school system, in spite of the depressing and unfavorable conditions and the present political complicationsof the old world.

Without progress and life in our primary and intermediate schools, and higher educational institutions can never prosper.

Therefore will not the whole body of Europeans unite and view these circnmstances, and strive for something similar to that which America is doing in Drawing in her public schools, owing to the wise provisions of Louis Prang? There is yet time, and we may yet be able to look back with pride on what has been accomplished here, in spite of all our difficult and untoward circumstances. There is not a moment to be lost in view of the close rivalry which exists and increases throughout the world. We must rally our forces and strive for something better; something so good that competition need not be feared even from America.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this Coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The design for a City Club House is by Messrs. Mooser & Cuthbertson, Architects.

Our double plate is a block of six dwellings recently erected on the S. E. cor. of Oak and Lyon streets, from designs by W. H. Lillie, Architect for the Rountree Brothers.

MAISON DE CHASSE, ARDENNES.

This engraving herewith is a reproduction from the "Building News," London. The walls are of red bricks, the architranes and cornices are also of brick or terra-cotta. The engraving shows the details of the exterior finish. The size of bricks are 9 courses to 20 inches in height.

The illustrations on pages 28 and 30 of the "Twin Gables" and "Details of Residence" on the corner of California and Laguna streets are sketches from work erected from designs by Clinton Day, Architect.

GETTING THE STRENGTH OF WOOD.

BY W. E. PARTRIDGE.

De Long, in the journal which he kept on the Jeannette expedition, speaks of his ship as being "as strong as wood and iron could make her," and then gives a diagram showing how the ice crushed in parts of her framing. He was honest in his opinion, no doubt, and so have most constructors been, during the last thousand years. But honest opinions do not always make good workmanship. It would seem that we should be familiar enough with the properties of wood to know how to get the greatest amount of strength from it, but unfortunately we are not, excepting perhaps a few of the car builders.

The crushing strength of all wood in common use is several times as great upon the end as upon the side of the grain. This is a fact that every woodworker knows. Carpenters would laugh if one should state the fact to them, and yet from one end of the country to the other, builders and architects act as though they had never heard of it. They act just as De Long did when the strengthening timbers were placed in his ship. They make a strut bear directly upon the side of a timber. The bearing surface of the end comes fair upon the side of the grain. Long before the strut begins to feel the pressure, the side of the timber against which it bears has been crushed out of shape. Most people look at the crushed wood, remark, as did De Long, that the strength of the structure has been reached, and think no more about it. But the full strength of the timber is never brought out in such cases. The strut has not felt its load, while the other member has been crippled or perhaps destroyed. The car-builders, with a sense of the fitness of things, put a shoe upon the strut. Not one of wood which would crush just as soon as the timber it-self, but one of iron. This spreads out the foot of the strut or post, and gives it a large bearing. It is then able to transmit the whole load which it is capable of supporting to the side of the timber against which it rests. If the shoe has been properly proportioned, the strut will be just ready to spring when the shoe is being crushed into the side of the timber. Had this construction been adopted in that famous Jeannette, she would have been a great deal stronger without in the least adding to the quantity of timber in her hull. It would not, of course, have saved her from destruction but she would have been much nearer to the strength which she was supposed to have had.

Everywhere there are structures in which maximum strength of the materials is wanted—structures in which struts of wood or wooden posts bear upon the sides of the other timbers, and bear directly without shoes to spread their bearing surface. By making suitable shoes and enlarging the bearing surface against the side of the grain, the increase of strength can usually be counted upon as double, the size of all the timbers measuring the same.

Some years since, the importance of this was forced upon the attention of the car-builders of the country by a series of experiments. A number of model trusses, representing the sides of freight cars, were tested. It was found that many of the strongest trusses failed with the smallest loads, because the diagonals and posts pulled into the sills and plates, and thus crippled the timbers long before the limit of their strength had been reached. Upon reconstruction with shoes, to give larger bearings to the posts and diagonals, the strength was enormously increased with the same size of timbers, the only increase of weight being the cast-iron shoes. When thus put together, it was found that with a crushing load all parts were ready to give out at the same time. The posts and plates were just ready to buckle and the sills to break. It was an even thing which would go first. In actual practice it was sometimes a post, at other times a sill, and then again, a bolt. In a word, the whole truss was fairly balanced as regards strength in all its parts.

THE MECHANICAL NEWS.

The following is taken from the Northwestern Lumberman.

A REDWOOD EXHIBIT AT CHICAGO.

At the Institute of Building Arts, 65 Washington street, is a redwood exhibit, placed there by E. Spencer Sturges, 153 Washington street, which admirably demonstrates the decorative possibilities of that great California wood. The display consists of various natural specimens of veneer, finished and unfinished, including curly, root, blister and burl redwood. The beauty of the wood is practically shown by two handsome tables and a complete mantel, entirely of redwood, which for elegance could scarcely be exceeded by any wood, mahogany or otherwise. The exhibit is daily examined by a large number of visitors, who come to the institute because of the great variety of things among the building arts there displayed, and architects have taken great interest in the wood. The fact is that very little has ever been done in this city in the way of introducing redwood for the various uses to which it is adapted, and intending consumers are more or less at sea in regard to the practical details of its sale and utilization. A great many inquiries are made respecting the cost of veneers, how they can be supplied, etc., and as to how low wide, clear redwood can be sold, but it often requires a good deal of experimenting and figuring before it can be ascertained whether redwood can be used to advantage.

With the present high price of cherry many regard it feasible to substitute redwood in making counter tops, organs, etc. Architects might be induced to bring it into use for interior finish, and the veneers might be pushed in all sorts of ways, providing, of course, the cost of transportation does not bring the price up too high.

Mr. Sturges reports a great deal of local interest in redwood, but that little is understood about it here, and that California manufacturers have a field for doing a great deal of missionary work in the way of informing the public regarding the adaptability, peculiarities and methods of treatment of redwood.

THE CARAT.

The purity of gold is estimated by an Abyssinian weight called a carat Arabian, quirrat, a bean, the fruit of the carab tree, which is subdivided into four parts called grains. The term carat when applied to gold and silver is not a weight unit, but the mode of expressing the purity or fineness of the metal in twenty-fourths. Thus 18-carat gold is metal in which eighteen parts out of twenty-four (or three-fourths) are pure gold. This method of estimating fineness is traceable from the marc of Europe having been divided into twenty-four real carats or actual weight units. The present method is to estimate fineness in thousand; i. e., gold fine has 250 parts alloy, corresponds to 18 carat gold, three-quarters of the metal being pure gold in each case. Our gold coins are 21.19 carats.—TRADE JOURNAL.

OF PICTURESQUENESS.

The adjective "picturesque" is so often and so confidently applied in praise to buildings, that the endeavor to define wherein the quality exists, or to decide whether it be one that is in itself desirable, and to be sought after in our designs, may appear to many to be a work of supererogation and a waste of time and type. However, other minds, other thoughts; and some time since a well known architectural writer affirmed that the picturesque should not be aimed at in buildings so much as the "architecturesque"—which latter is a word not to be found in Johnson, but meaning apparently nearly the same thing as architectural—and he seemed to think that architecture (or beauty in building) was not only possible without picturesqueness, but that picturesqueness in a building was a foreign element that to some extent warred against and destroyed its architectural character. All nomenclature is conventional; the whole use of words is based on the supposition that men agree to understand thereby things that appear to them alike—feelings they possess in common. And yet (as has been often observed) it is very difficult to ascertain whether any two individuals mean by the use of any given word to describe exactly the same thing; and the more a word relates to that which is aesthetic and abstract the more does this difficulty increase. I believe that I understand by the word picturesque that which most other men understand thereby, but of this neither they nor I can be sure, though the opposite, if it be the case, may be proved; and what I here say of picturesqueness I say of that which I understand by the word.

If we endeavor to define the word "picturesque," we find that its etymological definition of "that peculiar kind of beauty which is agreeable in a picture, whether natural or artificial," does not express the whole idea that it now conveys to our mind. If it did so, the adjective might be as applicable to Murillo's "Madonna" as to his "Boy Catching Fleas," and more so to the subjects of Fra Angelico than to those of Teniers, or (to return to architecture) to the buildings represented by Botticelli, Benozzo, Gozzoli, or Ghirlandajo as to those limned by Prout or Birket Foster. There is no reason why "the peculiar beauty" of St. Paul's or London-bridge should not be "agreeable in a picture," and yet we should hardly apply to them the epithet picturesque. Whereas we might and do apply it to the way in which the spire of St. Martin Ludgate Church breaks up the view of the Cathedral from the foot of the hill. When we speak of the sky-line of a building being picturesque we generally mean that it is broken by jutting gable, dormer, pinnacle, or chimney-shaft; a picturesque plan is one broken by bay-window, recess, oriole, or buttress; a picturesque base-line is that broken by the inequality of the ground. In fact, we find the picturesque in that which is imperfect, incomplete—in the broken.

And, furthermore, a new building can never be so picturesque as an aged one. Even if we dismiss all sense of color from our consideration, and say that lichens and mosses, and other pencillings and adornments of nature, being extraneous to the building, not rightly appertaining thereto, but superadded, should not therefore be admitted, any more than its surroundings, into our consideration of its proper picturesqueness; yet, even then, the broken lines of hog-backed roof, of uneven tiling, and weather-worn stone will still make an old building more picturesque (in the ordinary acceptation of the term) than one that is new. The tatters of the beggar are more picturesque than the broadcloth of the squire. The wrinkles of senility are more picturesque than the bloom and strength of youth.

Picturesqueness, then, would seem to consist in imperfection, and to reach its climax in imperfection showing signs of decay and approaching dissolution.

And yet no one can deny that, in the eyes of most men, this incompleteness—this decay—has (so far as architecture is concerned) a beauty, or rather a loveliness, above that of the utmost perfection and strength. And it is easy to see some reasons why it should be so. Firstly, each man hopes that, after his death, others will think of him, and we think of our fore-runners and preserve their works as an example to our successors to think of us and preserve our works. That this is one main cause of archaeology will be seen when we consider that, were we certain the world would end five years hence, few, if any, would continue their researches into the past, and in the case of these few it would be because such research had become a matter of habit; whereas, if each were only certain that his own individual existence would end in that space of time, few antiquarians would desert their hobby, and it would increase in most men the feeling of love and reverence for the works of those who have preceded them.

But there is another and more direct cause for our partiality towards the imperfect and the worn. We are men conscious of imperfection in ourselves, and we are mortal; and the idea that stone and mortar should be perfect and immortal is repulsive to us. Each man may wish his own work to last, just as each man may wish his own children to outlive him; but this sentiment springs largely from two sources— rivalry with our fellows, envy that the children of others should live, and the works of others last, and ours not do so—and again the desire all men have for anything which they know that they can never possess. We know our works cannot be eternal, nor our descendants immortal, and so we would fain have them so; but put the case that we knew they would be immortal, eternal, and I believe our jealousy of their superior durability would soon turn to a hatred that would cause us to wish their destruction and death.

It would be opening a very wide subject were we to inquire into the cause of the feeling of jealousy or envy. It is sufficient here to state its existence; yet we may mention how that envy is nothing but a natural antipathy and repulsion from that which is unlike ourselves, either in quality or circumstance (which is but a form of quality). It is a sign of spiritual life. The most sensitive and spiritual races have it most. The envy, oftentimes to us apparently causeless, of the Easterns is proverbial.

But here it may be asked, "Did any mortal man ever feel jealous of cathedral or abbey, aqueduct or temple, or even of the Pyramids themselves?" No, for on all these we see the marks of Time's tooth and claw; but among buildings originally equal in beauty and strength we generally like best that which shows most signs of decay; and if it be answered that some of the strongest and oldest buildings are yet most attractive, it may be observed that there is more pleasure in seeing strong than weak things succumb to time, that envy is as much flattered by the slow (and apparently unwilling) decay of the former as by the more rapid and easy destruction of the latter—that it is more grateful to us to see pride and power abased, even if it be but slightly, than humility and weakness crushed into the dust.

But, it will be said, "the sight of Time's ravages on a building is not of itself pleasant to us. Our delight is in nothing where the strength of the wall, the bone and muscle of the masonry, still resists: in fact, it is with the building we sympathize, and not with Time, while we mark the conflict between the two." It is so; but sympathy can only exist between similar natures. Did the building show no signs of decay it would not be like us, and we could not sympathize with it. It is a difficult case even to imagine, for no building could exist without having in it causes of weakness, without showing signs, however minute, of approaching dissolution. Yet the shades of human feeling are so delicate and so complex that it is only by nothing extreme examples that we can judge whereon our ordinary sentiments are based, and the love of picturesqueness is a spiritual and not a mental liking. To build picturesquely the designer need not be intellectual but sensitive; and it is often the weakest characters that are the most sensitive. The love of the picturesque in nature and art is not so often found in the full-blooded and strong as in the consumptive and sickly, for these have most affinity and sympathy with decay and death.

So much for the picturesqueness of age, whereto the picturesqueness of imperfection is nearly akin, both in itself and that it appeals to our sympathy, we might almost say, to our pity. Picturesqueness in a design or new building is generally synonymous with quaintness—that is, if by quaintness we mean, not neatness, nicety, minute elegance of details, but rather oddity, strangeness, the unusual, and unexpected. Quaintness is often only ugliness brought to such a pitch that it becomes amusing. I will instance a case in point. When visiting a gentleman's house in the country a comrade of mine, very fond of the picturesque, whether in nature or art, was much struck with a large zinc chimney cowl of the most wondrously impossible design, and expressed in no measured terms his pleasure at its quaintness. We heard that to cure a smoky chimney the neighboring ironmonger's stock of chimney heads had been ransacked by the master of the house in the hope of finding something that would be at least unobtrusive and not jar with the rest of a very pretty old English mansion. Finding each worse than the other he in

SKETCH OF HALL AND STAIR CASE OF CORNER HOUSE ©

THE NEW ROUNTREE BLOCK
S.E. COR. OF OAK & LYON STS.
ROUNTREE BRO'S BUILDERS
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W. H. LILLIE, ARCH'T.
RM 28-29. ST. ANN'S
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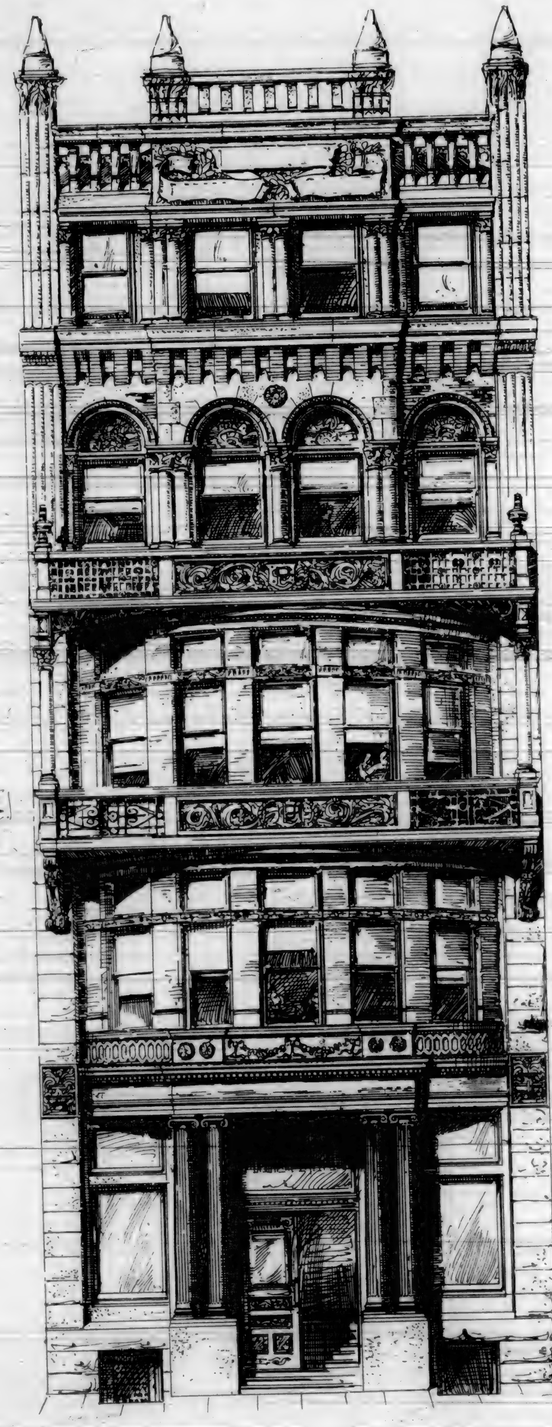
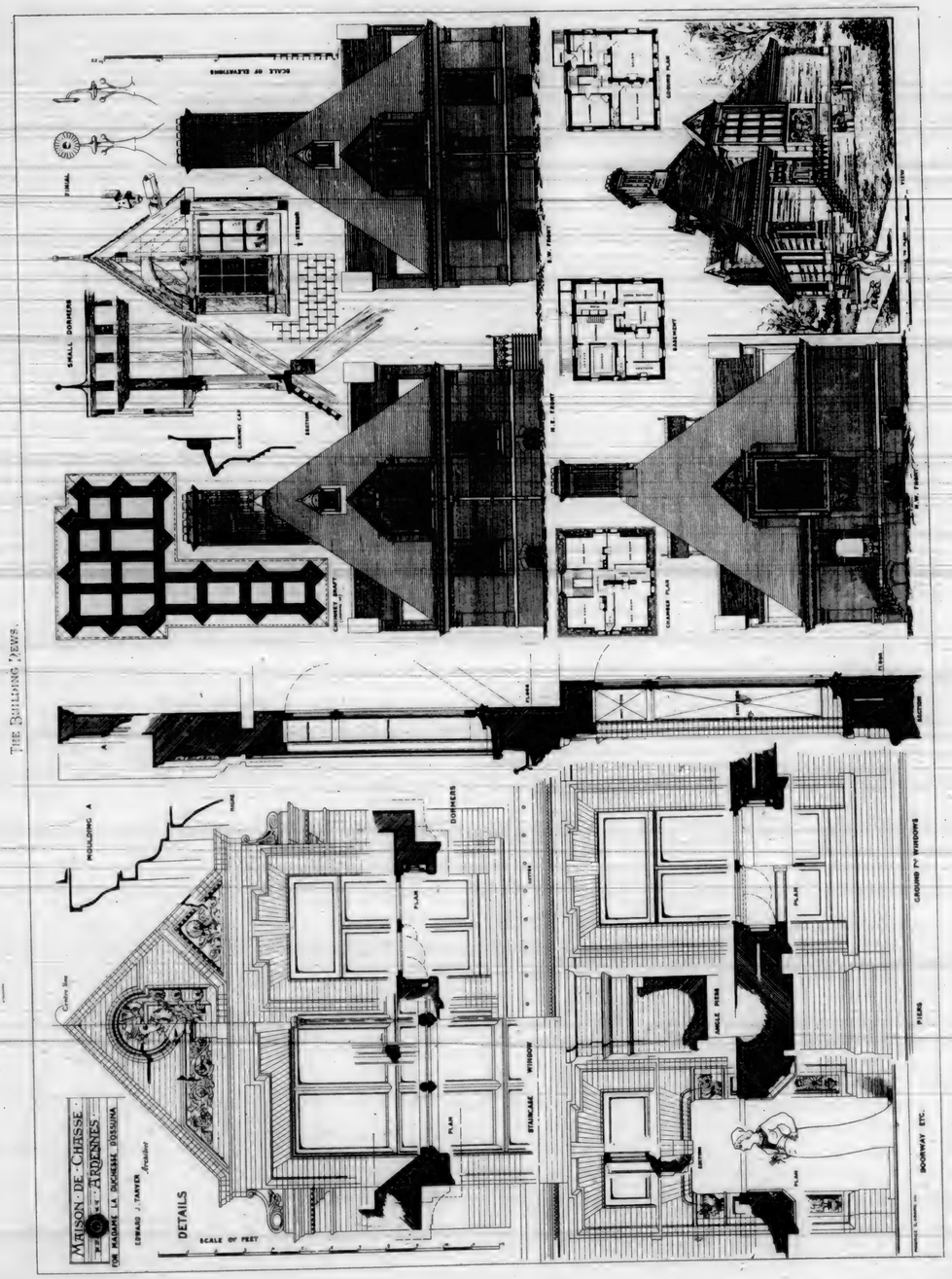
& EDDY STS. S.F. CAL.


DESIGN
FOR A
CITY
CLUB HOUSE
MOOSER
and
CUTHBERTSON
ARCHITECTS S.F.


MAISON DE CHASSE
FOR MADAME LA DUCHESSE DOSSUNA
EDWARD J. HAVER Architect
DETAILS
SCALE OF FEET
DORMERS
WINDOW
STAIRCASE
MANTEL PIERS
DOORWAY ETC.
GROUND PL
BASEMENT
CHAMBER PLAN
SECTION

despair chose the hughest and most hideous, and the result was what we saw—the picturesque.

And if quaintness be not always the same thing as ugliness yet it must always speak of thwarted human effort. At least true quaintness (that which comes unasked) does so. That spurious quaintness that is dragged in by the incompetent designer (pretty much as an incompetent cook might drown with pepper the nauseousness of his viands) speaks rather of a misdirection of human effort. One great reason why works of engineering are generally considered so unpicturesque is, that their authors appear to us to have perfectly succeeded in that which they attempted. Compare the bridge at Charing-cross with that at Albi. What trouble of mind, what anxious contrivance to overcome obstacles the builders of the former may have had, we see not: it only seems to us that they had a work to do and did it. An engineer may appreciate the difficulties they had to meet, and trace the means whereby they met such difficulties, and in his eyes the bridge may look picturesque, though since it is perfectly successful it never can look so to any very great extent, and to most men it is as uninteresting as a bridge can well be. That at Albi has been carried away by the floods of the Tarn I know not how often. The lower parts of the piers are of stone, but the pointed arches above are of brick, evidently built after some destruction of a former stone bridge, with its remains used here and there, and finally the bridge has been widened by throwing segmental arches between the piers outside the other. The result is a building that speaks plainly of a human struggle with the forces of nature. We appreciate the trouble, perplexity, and toil its makers went through. We pity them when we mark how, with bulky pier and heavy buttress, they painfully strove, by piling mass on mass, to withstand that weight of water which, when it rose, was yet too strong for them. We sympathize with them and their work (the more so that the river still flows below and may yet carry it away), and to save ourselves the trouble of defining our feelings we say that the bridge is picturesque. I do not know that it has been ever caricatured by the modern bridge-builder (the public, wisely enough, do not go for their bridges to those who delight in picturesque imperfections and decay); but, were he to copy it, the highest result he could reach would be that of spurious— false picturesque. He would be but calling upon men to sympathize with effort and perplexity he had never felt. Far better he should be true, nor pretend there is a difficulty, when he can, like a cunning spider, throw a suspension bridge (that most unpicturesque of objects) across.

Is picturesqueness, then, never to be aimed at in our designs? To this different men must make different answers. Leaving out of the question those who will reply, "The public like it—we must please our clients—let us put on our hook any bait that will attract moneyed customers and transfer some of their coin to our pockets"—leaving these on one side as animals that will follow any whither let others but show the way,—yet there will still remain a great diversity of opinion whether picturesqueness, even as I have defined it, is to be sought after or not. The feeling "Let us eat and drink, for to-morrow we die," is one that all men feel at times, and with some it is the main rule of life. Of course, in most if not all cases, the desire to be satisfied is something higher than mere bodily hunger or thirst; but, whether it be appetite for learning, fame, riches, power, or any other form of ideal happiness, the thought is still the same: "Let us satisfy such wants as we feel, nor create new wants for ourselves." Such men will naturally say "Let us build the picturesque, for our nature craves for it—it gives us pleasure." But if we consider the main object of our life—the one thing to be lived for—to be not the rendering happy the lives of our fellows while they exist, or the satisfaction of the existing wants of our race, but rather the advancement of that race to a higher level—in other words, the creation and cultivation of other and higher wants than those we now feel—wants which, though we may never be able to satisfy, those that follow us may— if we consider this, and if our main object and endeavor be to do this so far as in us lies in our art and handicraft, we shall (I think) leave on one side all thought of picturesqueness, of imperfection—all appealing to the sympathy of men—all endeavor to make our buildings harmonize with nature's flaws and raggedness (though we ourselves may be unable to help sympathizing with nature, and even liking its imperfections from association, for after all this is the only world we know; and, as Mrs. Croaker observed, "we were never in a pleasanter place.") We shall rather, ever and always, even in the smallest things, aim at a certain nobility and beauty which is very difficult, nay almost impossible, to describe in words, but which we can each more or less imagine—what we call perfection. Neither is it necessary that perfection be more expensive than imperfection. We need not place delicate mouldings or elaborate framework on the doors of pigsties; we know that beauty does not consist in ornament, nor in the absence of ornament, but there is no reason why the designer of a pigstye should not aim at the grand, and not be content with the pretty—why there should not be even in it something of the four-squareness that delighted the Hebrew prophet. The most perfect modern buildings we have are warehouses and such like buildings, whose general design has been kept unbroken for the sake of economy, whereas it is usually considered of the greatest importance in designing a dwelling-house, even though it be but a gate-keeper's lodge, to get it "nicely broken up on plan." Some of the most beautiful old Gothic houses I know are at Cordes; and yet I do not recollect a single buttress to any one of them. Their facades are kept perfectly unbroken, save by doorway, window, and string-course, and appear to have been finished at the top with a straight cornice. They are certainly very beautiful; but such picturesqueness as they possess is a natural consequence of their being built on steeply rising ground, a site for which their designers are not responsible. They are, in fact, too perfect to be picturesque, as I understand the word.

Nor need we think that we are bidding farewell to the picturesque for ever, simply because we desist from seeking it. Our work must yet for many a long day speak of thwarted human effort. We shall not be able to build grandly or beautifully, simply because we desire to do so; but we may reach a higher beauty (or rather, since there is but one abstract beauty, reach nearer to beauty), than if we confine our efforts to designing that which shall only please our fellows, and claim their sympathy. "Who aims the sky shoots higher far than he who aims a tree," but he hits not his mark. And if we aim at perfect beauty it is certain we shall not attain it; but, at the worst, our buildings will have that true picturesqueness that comes when an unattainable ideal is aimed at; and in this they resemble the works of those of old.

Let us dismiss, then, from our designs all that speaks of imperfection, all that hints at future decay. Let us not delight in buttresses—they are at best but confessions of weakness—place no pinnacles upon tower or parapet to break the squareness of their outline against the sky—no spiky finials on gable ends, to look like baby lightning-conductors presenting arms at the clouds. Let breadth, and not break, be our aim. Let there be some repose about our buildings. Amid the feverish restlessness characteristic of nineteenth century life—at least let stone, our future coverlet, speak to us even now of rest.

FRED C. DESHON.

WHO CAN BEST BE SPARED?

Young men, this is the first question your employers ask themselves when business become slack and when it is thought necessary to economize in the matter of salaries. "Who can best be spared?" The barnacles, the shirks, the makeshifts, somebody's proteges, somebody's nephews, and especially somebody's good-for-nothing. Young men, please remember that these are not the ones who are called for when responsible positions are to be filled. Would you like to guage your own future for a position of prominence? Would you like to know the probabilities of your getting such a position? Inquire within! What are you doing to make yourself valuable in the position you now occupy? If you are doing with your might what your hands find to do, the chances are, ten to one, that you will soon become so valuable in that position that you cannot be spared from it; and then, singular, to relate, will be the very time when you will be sought out for promotion to a better place.—PRINTING TIMES AND LITHOGRAPHER.

EDISON'S EXPLANATION OF THE AMPERE AND THE VOLT.

During a recent examination a lawyer put the following question to Thomas A. Edison:

"Explain what is meant by the number of volts in an electric current?" To which he replied:

"I will have to use the analogy of a waterfall to explain. Say we have a current of water and a turbine wheel. If I have a turbine wheel, and allow a thousand gallons per second to fall from a height of one foot on the turbine, I get a certain power, we will say one horse power. Now the one foot of fall will represent one volt of pressure in electricity, and the thousand gallons will represent the ampere or the amount of current. We will call that one ampere. Thus we have a thousand gallons of water or one ampere falling one foot or one volt or under one volt of pressure, and the water working the turbine gives one horse power. If, now, we go a thousand feet high, and take one gallon of water and let it fall on the turbine wheel, we will get the same power as we had before, namely, one horse power. We have got a thousand times less current or less water, and we will have a thousandth of an ampere in place of one ampere, and we will have a thousand volts in place of one volt, and we will have a fall of water a thousand feet as against one foot. Now the fall of water or the height from which it falls is the pressure or volts in electricity, and the amount of water is the amperes. It will be seen that a thousand gallons a minute falling on a man from a height of only one foot would be no danger to the man, and that if we took one gallon and took it up a thousand feet and let it fall down it would crush him. So it is not the quantity or current of water that does the damage, but it is the velocity or the pressure that produces the effect."—*Scientific American.*

Through the kindness of Mr. John M. Curtis, we herewith print the Law relating to party walls, etc., of the the State of Louisiana. It is not presented as a model law, but as hints for the consideration of Architects and Builders, when Laws of this kind are about to be enacted for this State.

STATE LAW OF LOUISIANA.

PARTY WALLS, DITCHES, FENCES, ETC.

SECTION 1

He who first builds in the cities and towns, or their suburbs, of this State, may rest one-half of his wall on the land of his neighbor, provided he builds with stones or bricks, at least as high as the first story, and provided the whole thickness of this wall do not exceed eighteen inches, not including the plastering. But he cannot compel his neighbor to contribute to the raising of this wall.

SECTION 2

If the neighbor be willing to contribute for his half to the building of the wall thus raised, then this wall is a wall in common between the proprietors. The neighbor who has refused to contribute to the raising of this wall preserves still a right of making it a wall in common, by paying to the person who has made the advance, the half of what he has laid out for its construction, according to the rules hereafter established.

SECTION 3

Every wall which is a separation betwixt buildings as high as the upper part of the first story, or betwixt the yard and garden in the cities and towns, and their suburbs, of this State, and even any other enclosure in the fields, shall be presumed to be in common, if there be no title, proof or mark to the contrary.

SECTION 4

The repairs and buildings of walls in common are to be made at the expense of all who have a right to the same, and in proportion to their interests therein.

SECTION 5

Nevertheless every co-proprietor of a wall in common, may be exonerated from contributing to the repairs and rebuilding, by giving up his right of common; provided no building belonging to him be actually supported by the wall thus held in common.

SECTION 6

Every co-proprietor may build against a wall held in common, and cause beams or joists to be placed within two inches of the whole thickness of the wall, saving to the neighbor the right of deminishing with the chisel the length of the beam till it do not exceed the half of the thickness of the wall, in case he himself should wish to fix beams in the same place, or to build a chimney against it.

SECTION 7

Every co-proprietor is at liberty to increase the height of the wall held in common, but he alone is to be at the expense of raising it and of repairing and keeping the part above the height of the wall in common, in good order; and besides he alone is liable for all expense arising from its being raised higher according to its value.

SECTION 8

If the wall held in common cannot support the additional weight of raising it, he who wishes to have it made higher, is bound to rebuild it anew entirely, at his own expense, and the additional thickness must be taken from his property.

A weak wall built by the owner of one lot, along and not over the dividing line between the two lots, may be demolished by the owner of the other lot in order to erect a strong common wall.

SECTION 9

The neighbor who did not contribute to the wall held in common, may cause the raised part to become common, by paying one-half the expense of such raising, and the value of the half of the soil employed for the additional thickness, if there is any.

SECTION 10

Every proprietor adjoining a wall has, in like manner, the right of making it a wall in common, in whole or in part, by reimbursing to the owner of the wall one-half of its value, or the half of the part which he wishes to hold in common, and one-half of the value of the soil upon which the wall is built, if the person who has built the wall has laid the foundation entirely upon his own estate.

SECTION 11

Neither of the two neighbors can make any cavity within the body of the wall held by them in common, nor can he affix to it any work without the consent of the other, or without having, on his refusal, caused the necessary precaution to be used, so that the new work be not an injury to the rights of the other, to be ascertained by persons skilled in building.

SECTION 12

Every one has a right to compel his neighbor within the cities and towns, and their suburbs, of this Statem to contribute to the making and repairing of the fences held in common, by which their houses, yards and gardens are separated, which shall be made in the manner which is or may be prescribed by the regulations of the police on this subject.

And if one of the proprietors has been alone at the expense of making the inclosure held in common, he may compel the other to make it in his town, and the presumption shall be that the inclosure was made by him on whose side it is nailed, unless there exists a voucher or proof to the contrary.

SECTION 13

In the country the common boundary inclosures between two estates are made at the expense of the adjacent estates, if the estates are enclosed; otherwise, the estate which is not inclosed is not bound to contribute to it.

Every fence, which separates rural estates is considered as a boundary inclosure, unless there be but one of the estates inclosed, or unless there be some title or proof to the contrary.

SECTION 14

Every ditch between two estates shall be supposed to be held in common, unless there be a voucher or proof to the contrary.

SECTION 15

A ditch held in common is to be kept at the expense of the two contiguous proprietors.

SECTION 16

Every proprietor in the cities, towns or suburbs of this State, is forbidden to plant on the boundary line which separates his estate from that of his neighbor, trees which may be of any injury whatsoever to his neighbor.

And if his neighbor suffers any damage from them, he can oblige the owner to have them torn up or the branches of them cut off, which extend over his estate.

If the roots only extend themselves on his estate, the neighbor has the right to cut them up himself.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards, Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Murphy Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1:30 P. M.

S. H. Kent, Pres. A. Jackson, Sec.
L. A. Larsen, Clerk.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held in the new rooms, in the Academy of Sciences building.

By invitation, Mr. Wright, a quantity surveyor, explained the customs and usages of his profession as practiced in England, and gave his views as to the desirability of a similar system being adopted by the architects of this city.

THE regular meeting of the Technical Society of the Pacific Coast was held at their rooms, on the 6th inst. The subject for the evening was, "The Modern Theory of Ocean Waves," by Mr. A. W. Stahl, U. S. Navy.

AT the regular meeting of the California Electrical Society held at their rooms on the 16th inst., the subject of transmission of Power by Electricity was discussed. The subject for the next meeting to be held on the 6th of April, will be Sub-Marine Mining by Electricity, by Mr. T. J. Allen.

UNDER the auspices of the Camera Club, a most interesting exhibition of views of the Yosemite Valley, was given on Feb. 26th. The lantern slides were made from photographs taken by the members of the Club. The lecturer gave a very vivid description of the beauties and wonders of the valley, as they were brought successfully before the eyes of the audience. The pictures sharply focused on the screen, frequently elicited applause and commendation, and the Club has reason to be pleased with the satisfaction expressed by its audience. Duplicate views of this series, have been made for exhibition and exchange with other clubs throughout the east and Europe. The Club proposes to give monthly exhibitions, including a complete tour of Europe, and the best work of the eastern societies. A new class of membership has been established by the Club, and known as subscribing members—for fifty cents per month dues, these members are entitled to four tickets to each exhibition.

OBITUARY.

CHARLES H. ACKERSON.

We regret to chronicle the death of Charles H. Ackerson, an old resident and a prominent contractor of this city. He was at one time the Chief Engineer of the San Francisco Fire Department.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Lien Under Separate Contracts Against Same Owner.—The owner of two lots entered into two separate contracts with a builder for the erection of a house upon each. The builder entered into an entire contract with a material-man to furnish material for both. The sub-contractor filed a lien for the whole amount against both houses. Such a statement is invalid as a basis for lien against either lot, as it should have shown the specified facts necessary to give jurisdiction, with reference to each lot separately.

Knauft v. Miller, Supreme Court of Minnesota, 47 N. W. Rep. 313.

Abandonment of Mechanics' Lien.—Where a person who would otherswise be entitled to a mechanics' lien for materials furnished and used in the construction of a building, takes the notes of the owner secured by a chattel mortgage, he waives his lien, and his mortgage is subject to the mechanics' liens filed to secure debts arising out of the construction of the building.

Kendall Mfg. Co. v. Rundel, Supreme Court of Wisconsin, 47 N. W. Rep. 364.

Priority of Mechanics' Lien over Vendors' Lien.—Where a purchaser of real estate takes possession of it before the delivery of the deed, and with the full knowledge of the sellers, cause improvements to be made thereon without objection by the latter, and without notice by the latter to the contractors and material-men of their claim of title, the lien of the material-men and contractors is superior to the vendors lien for purchase price, and will be enforced as against the sellers as well as the purchaser.

Leonard V. Cook, Court of Chancery of New Jersey, 20 At. Rep. 855.

Flowage from Water Spouts.—It constitutes a trespass to so construct a building that the system of water spouts for carrying away the water which falls on the roof is arranged in such a manner that the water collected thereby is discharged upon the land of another.

Conner v. Woodfill, Supreme Court of Indiana, 25 X. X. N. E. Rep. 876.

BUSINESS MOSAICS.

Notice of the removal of the West Coast Wire and Iron Works, Smith and Trowbridge proprietors, from their old quarters 11 Drumm St., to that large and commodious brick building, Nos. 13 and 15 Spear St., near Market St. San Francisco, two blocks from ferry landing, has been received at our office.

This change has been necessitated on account of continuously increasing patronage, their business especially during the year just ended, having entirely out-grown the capacity of the old factory. The new quarters have fully quadruple the manufacturing capacity of the old works. They have greatly improved, and added to the manufacturing plant in every branch of Wire Working with the especial aim of excelling in the manufacture of every product pertaining to the wire working industry. They have also developed and perfected facilities for the manufacture of every description of useful and ornamental Metallic, Scroll and Grill Work, now coming so generally into use by bankers and others fitting out large and elegant offices.

Store Fixtures, Nickel Plated, Polished Brass and Bronzed Iron, will receive careful attention.

The Architectural Iron Works department will be developed and prosecuted more vigorously than heretofore, and will include the manufacture of the usual variety of Builders' Supplies in their line, such as Wrought Iron Fencing and Railing, Fire Escape Balconies and Ladders, Areal Grating and Iron Stairs, Iron Shutters and Doors, Roof Cresting, Finals and Tower Ornaments, also Cemetery and Lawn Furniture.

A Retail Store and Sample Show-room will adjoin the works, and a large stock of every grade of Iron, Steel, Brass and Copper, Wire Cloth and Galvanized Twist Wire-Netting, will be kept constantly on hand to supply the demand of the retail trade.

Furniture should harmonize with the general decorative features of the apartment.

Elegance and beauty of design and workmanship for furniture always commends itself to those who are able to appreciate the better class articles. This fact has been kept in view by the West Coast Furniture Co., L. and E. Emanuel, in their extensive business.

The furniture furnished by this firm for the ordinary rooming house and hotel purpose has a substantial and chaste make up, which is appreciated by the buyer. Their furniture for the better class houses, and the fittings for banks and offices show a high degree of art workmanship, great care being taken in the selection of the shades and grains of the different woods to obtain harmonious effects.

The Western Iron Works has been known for many years as one of the most reliable wrought iron works on the coast.

Their prison work, fire and burglar proof doors, shutters etc., have successfully withstood the test of time; and are at present the representative works in their line.

GALVANIZED VERSUS TINNED SHEETS.

It is an interesting fact just now for purchasers although not probably gratifying to makers of galvanized sheets, that the latter are netting American makers less for guaranteed sheets No. 27 guage than importers are getting for guaranteed brands of terne, or tin, roofing plates.

Galvanized sheets of No. 27 guage also have the advantage of being heavier than terne plates as to the original sheets used, and as to the coating thus rendering them far more substantial and durable.

As galvanized sheets are also much larger in size they are not only much more economical to apply but also far more effective for roofing.

Metal roofers should note this and profit by it, especially for guttering and spouting. Persons interested in metal covering will please note the removal of the offices of THE CINCINNATI CORRUGATING CO. to 89 and 90 Johnston Building, Cincinnati, Ohio, where they will be pleased to give information and estimates on their specialties, Iron and Steel Roofing and Siding, Arches, Lath, etc. Black and Galvanized Iron and Steel Sheets of their own manufacture.

CITY BUILDING NEWS.

Baker near Washington. One-story cottage; owner, N. King; architect, Samuel Newsom; contractors, McMillan & Maurer; cost, $2,750; signed, Jan. 31; filed, Feb. 2; payments, $412, frame up; $412, ready for lathing; $412, brown mortared; $412, plastered; $412, completed; $690, 35 days.

Bay near Mason. Carpenter work; owner, Henry E Bothin; architect, J. Cather Newsom; contractor, M. S. Yerxa; cost, $7,400; signed, Feb. 27; filed March 2; payments, $925, first floor joists in place; $1,500, rough frame up; $1,000, enclosed; $1,500, brown mortar on; $925, accepted; $1,850, 35 days.

Between Ocean View and Lake Merced. Grading; owners, Spring Valley Water Works; contractor, C. A. Warren; cost, 16 cents per. cubic foot; signed, Feb. 14; filed, Feb. 16; payments, 75 per cent as work progresses; 25 per cent 35 days.

Buchanan near Green. Brick work; owner, H W. Muller; architect, S. Hatfield; contractor, Allan Macdonald; cost, $2,425; signed, Feb. 7; filed, Feb. 10; payments, $425 frame up; $475, brown mortar on; $475, plastered; $456, completed; $600, 35 days.

Bush near Taylor. Alterations; owner, Mrs. C. B. Gregory; architect, C. I. Havens; contractor, Thos. Maxwell; cost, $2,862; signed, Feb. 14; filed, Feb. 16; payments, $700, foundation laid; $700, hard finished; $712, completed; $750, 35 days.

Bush near Gough. Additions; owner, Mary Newman; architect, M. Wharff; cost, $7,000; day's work.

Cherebusco near Coso. 1-story cottage. Owner, Martin Spellman; contractor, Jos. H. Millard; cost, $770; signed, Feb. 2; filed, Feb. 7; payments, $250, outside frame up; $320, roof shingled; $200, 35 days.

Columbia near Folsom. 2-story building; owner, Thos. Bertram; architects, Townsend & Wyneken; contractor, C. E. Cody; cost, $2,200; signed, Feb. 5; filed, Feb. 6; payments, $700 when frame is up; $750, 1 coat of paint on; $750, all bills shown receipted.

Cor. Block 35, Mission St. To build; owner, Thos. Magee; architect, C. K. Kirby; contractor, A. L. Campbell; cost, $25,780; signed, Feb. 17; filed, Feb. 17; payments, contractor, A. L. Campbell; cost, $25,780; signed, Feb. 17; filed, Feb. 17; payments, $3,218, brick foundation; $3,218, second story joists in; $3,218, frame up; $3,218, brick foundation; $3,218, second story joists in; $3,218, frame up; $3,218, enclosed; $8,218, exterior finished and brown mortared; $3,222, completed; $6,468, 35 days.

Cor. Chattanooga & 24th. Alterations; owner, Louis F. Dunand; architect, John T. Kilid; contractor, B. J. Malone; sureties, L. T. Lewis and T. Richardson, guaranteed; cost, $2,075; signed, Jan. 26; filed, Feb. 2; payments, $375, house raised; $350, enclosed; $342, brown mortared; $250, completed; $519, 35 days.

Cor. Davis & Sacramento. Repairs; owner, S. Wangenheim; architect, J. E. Wolfe; contractors, Farrell & Bell; cost, $2,100; signed, Feb. 10; filed, Feb. 11; payments, 75 per cent. as work progresses. 25 per cent., 35 days.

Cor. Filbert & Sansome. Brickwork; owner, Kate Johnson; architects, Wright & Sanders; contractors, Riley & Loane; cost, $37,400; signed, Feb. 27; filed, Mar. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Filbert & Sansome. Carpenter Work; owner, Kate Johnson; architects, Wright & Sanders; contractor, J. W. Wissinger; cost, $57,675; signed, Feb. 27; filed, Mar. 5; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Front & Clark. Brickwork; owner, Henry T. Bray; architects, J. J. & T. D. Newsom; contractor, Geo. Neagle; cost, $2,250; signed, Feb. 11; filed, Feb. 12; payments, $900, brick walls up to 3rd story; $825, walls up to roof; $825, finished; $825, completed; $775, 35 days.

Cor. Leavenworth & California. Frame building; owner, Fred Derringer; architect, J. A. Siolu; contractor, Henry Rohling; cost, $4,560; signed, Feb. 12; filed, Feb. 12; payments, $1,140, roof on; $1,140, brown mortar on; $1,140, completed; $1,140, 35 days.

Cor. Market and Second. Plastering; owner, A. C. Hussey; architect, Albion C. Hussey; contractor, John L. Crichton; cost, $6,554; signed, March 4; filed March 5; payments, 25 per cent 1-3 done; 25 per cent 2-3 done; 25 per cent completed; 25 per cent. 35 days.

Cor. Market and City Hall Avenue. Cabinet work; owners, H. J. Techan & Co.; architect, H. J. Techan; contractor, W. B. Valentine; cost, $1,270; signed, Jan. 27; filed, Feb. 6; payments, $1,270, when accepted by owner.

Cor. Market and City Hall Avenue. Painting; owners, H. J. Techan & Co.; architect, H. J. Techan; contractor, John Quadt; cost, $1,200; signed, Jan. 8; filed, Feb. 6; payments, 75 per cent when completed; 25 per cent, 35 days.

Cor. Market and Montgomery. Terra Cotta Work; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, Union Pressed Brick Co.; cost, $26,250; signed, May 2, 1890; filed, Feb. 25.

Cor. Market & Montgomery. Vault Work; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, Hall Safe & Lock Co.; cost, $22,806.50; signed, Jan. 5; filed, Feb. 25.

Cor. Montgomery & Sacramento. Carpenter work; owners, Pacific Mutual Life Insurance Co.; architects, Wright & Sanders; contractors, Day & McLachlan; cost, $29,880; signed, Feb. 17; filed, Feb. 28; payments, 1st day of each month as work progresses; 25 per cent. 35 days.

Cor. Oak & Buchanan. Carpenter work; owner, W. T. Wenzell; architect, Chas. I. Havens; contractor, Robert Currie; cost, $4,559; signed, Feb. 18; filed, Feb. 20; payments, $850, frame up; $850, brown mortar on; $850, hard finish on; $859, accepted; $1,150, 35 days.

Cor. Pacific & Broderick. Heaters; owner, Robert A. McLean; architect, A. Page Brown; contractors, Harvey Heating Co.; cost, $1,450; signed, Feb. 10; filed, Feb. 12; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. Pacific & Octavia; Carpenter work; owner, G. L. Lansing; architects, Smith & Freeman; contractor, S. H. Kent; surety, guaranteed by W. J. Adams; cost, $9,-308; signed, Feb. 6; filed, Feb. 13; payments, $1,699, frame up; $1,200, ready for plaster; $1,200, plastered; $1,500, ready for painters; $800, completed; $2,499, 35 days.

Cor. Page and Gough. Carpenter work; owner, Peter Dean; architect, Max G. Bugbee; contractor, S. G. Buzzell; cost, $14,400; signed, Jan. 13; filed, Feb 4. payments, first day of each month, 75 per cent as work progresses; 25 per cent,; 35 days

Cor. Page and Gough. Brickwork; owner, Peter Dean; architect, Max G. Bugbee; contractor, Wald Tarp; cost, $7,300; signed, Jan. 13; filed, Feb. 4; payments, first day of each month, 75 per cent. as work progresses; 25 per cent, 35 days.

Cor. Potrero Ave. and Twenty-fourth. Two-story building; owner, Nicholas Orlandt; architect, Henry Geilfuss; contractors, Tegeler & Muller; cost, $4,100; signed, Feb. 18; filed, March 4; payments, $769, frame up; $769, brown mortar on; $769, inside finish on; $1,024, 35 days

Cor. Powell & Vallejo. Three stores and Tenements; owner, J. J. Harrigan; architect, Wm. H. Wharff; contractor, Geo. Rickley; surety, F. Joost, $1,975; signed, Feb. 4; filed, Feb. 14; payments, $1000, frame up; $1100, roof tinned; $1100, brown coat on; $1100, white coat on; $159-, completed; $2000, 35 days.

Cor. Powell & Vallejo. Brickwork; owner, J. J. Harrigan; architect, Wm. H. Wharff; contractor, Benj. Turner; surety, Silbey, $400; cost, $1,143; signed, Feb. 4; filed, Feb. 14; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Cor Turk & Hyde. Stone work; owner, D. Van Ness; architect, H. Geilfuss; contractor, J. O. sullivan; cost, $2,438; signed, Feb. 27; filed, Mch. 2; payments, 1st and 15th day of each month, 75 percent as work progresses; 25 per cent. 35 days.

Cor. Twelfth & Kissling. 2-story building; owner, John O'Keefe; architect, S. Hatfield; contractor, Allan Macdonald; cost, $1,900; signed, Feb. 13; filed, Feb. 16; payments, $357, foundation laid; $356, brown mortar on; $356, plastered; $356, completed; $475, 35 days.

Cor. Sixth and Minna. Concrete work; owner, Wm. Pluns; architect, H. Geilfuss; contractors, Chatian Giletti stone Co.; cost, $1,500; signed, Feb. 18; filed, Feb. 26; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Sixteenth and Valencia. Brickwork; owner, G. Campbell; architect, C. R. Kirby; contractor, D. J. Brennan; cost, $2,517; signed, Feb. 24; filed Feb. 25; payments, $1,500, foundation laid; $500, chimneys finished; $517, completed.

Cor. Twenty-fifth and Mission. Three-story frame; owner, Gustave Hueter; architects, John & Balczynski; contractors, Schutt & Kreker; cost, $12,300; signed, Jan. 31; filed, Feb. 2; payments, $2,500, frame up; $2,000, partitions set; $2,000, white coat of plaster on; $2,725, completed; $8,075, 35 days.

Cor. Twenty-fifth and Mission. Brickwork; owner, Gustave Hueter; architects John & Balczynski; contractor, Jacob Wagner; cost, $1,560; signed, Jan. 31; filed, Feb. 2; payments, $700, walls finished; $470, chimneys up. $390, 35 days.

Eddy near Taylor. Brick building; owner, J. A. Bergerot; architects, C. R. & J. M. Wilson; contractor, Jno. McCarthy; sureties, R. McCann & J. P. M. Phillips, $10-000; cost, $20,000; signed, Feb. 4; filed, Feb. 17; payments, $3,000, first-story wall up; $3,000, second-story wall up; $3,000, brick work done; $3,000, iron work done; $3,000, completed; $3,000, 35 days.

Eddy near Taylor. Carpenter work; owner, J. A. Bergerot; architects, C. R. & J. M. Wilson; contractors, Childs & Chatham; sureties, A. E. Fraser and Dina Chatham, $3750; cost, 15,000; signed, Feb 14, filed, Feb. 18; payments, $3000, roof on; $3000, brown mortar on; $3000, inside finish on; $2250, completed; $8750, 35 days.

Ellis near Powell. Steam and Electric Plant; owner, Claus Mangels; architect, H. Geilfuss; contractors, Parsons Construction Co. cost, $6090; signed, Feb. 18; filed, Mch. 4; payments, 75 per cent. as work progresses; 25 per cent 35 days.

Fair Oaks near Twenty-second. 2-story frame; owner, G. M. Lawton; architect, G. M. Lawton; contractor, F. W. Kern; surety, O. W. Nordwell, $837.50; cost, $3,-350; signed Feb. 21; filed, Mch. 2; payments, $837.50, frame up; $837.50, plastered; $837.50, accepted; $837.50, 35 days.

Fell near Polk. Raising and Additions; owner, P. J. McGovern; architects, Town send & Wyneken; contractor, Jas. Campbell; cost, $2700; signed, Feb. 10; filed, Feb. 10; payments, $675, raised and enclosed; $675, plastered; $675, completed; $675, 35 days.

Fifth Ave. To build; owner, Margaret E. Sutherland; contractor, Wm. F. Fetzell; cost, $1594; signed, Feb. 13; filed, Feb. 16; payments, $250, brick walls up; $200, frame up; $450, brown mortar on, $400, plastered; $294, ready for occupancy.

Folsom near Twentieth. Frame building; owner, Josie E. Niven; contractor, Lemuel Arthur; cost, $2100; signed, Feb. 28, filed, Mch. 3; payments, $890, frame up; $800, brown mortar on; $808, hard finish on; $675, completed; $1025, 35 days.

Folsom near Creek Lane. Frame building; owner, Mary A. Sullivan; contractor, H. R. Schmuekert; sureties, P. Smith and P. Amiraux, $6,500; cost, $6,700; signed, Feb. 24; filed, Mch. 2; payments, $1300, frame up; $1300, brown mortar on; $1300, hard finish on; $1020, accepted; $1640, all bills paid.

Franklin near Broadway. Stairs, etc.; owner, Mahony Bros; architects, Shea & Shea; contractor, Henry McMahon; cost, $1997; signed, Feb. 2; filed, Feb. 5; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Front near Clark. Additions; owner, W. C. Hilderbrandt, et al.; architect, J. J. Newsom; contractor, Henry T. Bray; cost, $6796; signed, Feb 4; filed, Feb. 5; payments, $600, frame set; $674, walls up; $674, brick work; $800, cornice work; $674, plumbing in; $600, inside work; $1274, completed; $1700, 35 days.

Gibbs Place near Kearny. Woodwork; owner, Magdalena Ils; contractor, F. Klatt; cost, $5,192; signed, Feb. 17; filed, Feb. 26; payments, $500, second floor joists in; $750, third floor joists in; $1,000, roof on; $1000 brown mortar on; $644, completed; $1,298, 35 days.

Gibbs Place near Kearny. Brickwork etc.; owner, Magdalena Ils; contractor, Riley & Loane; cost, $2,178; signed, Feb. 17; filed, Feb. 26; payments, $650, ready for second floor joists; $650, ready for third story joists; $33335, completed; $545. 35 days

Golden Gate Park, Strawberry Hill. Concrete work; owner, Thos. W. Sweeny; architects, Percy & Hamilton; contractors, Ransom & Cushing; cost, $8,000; signed, Feb. 9; filed, Feb. 10; payments, on the first Saturday of each month 75 per cent. as work progresses; 25 per cent., 35 days.

Green near Buchanan. Repairs; owner, Isaac Hecht; architect, Thos. E. Wilcox contractors, Geo. Davis & Son; sureties, Geo. Davis and A. W. Starbird, $3,775 cost, $3,775; signed, Jan. 10; filed, Feb. 19; payments, $1,500, building in position, $1,331, completed; $943.75, 35 days.

Green near Powell. Two-story frame; owner, Antonio Avanzino; architect, Chas. M. Rosseau; contractor, Emanuel Dalgero; sureties, Jno. and Michael Perata, $4,000; cost, $4,480; Signed, Feb. 18; filed, Feb. 19; payments, $1,120, roof on; $1,120 brown mortar on; $1,120, completed; $1,120, 35 days.

Grove near Octavia. Two-story frame; owner, F. Gusto; architect, W. K. Dobson, contractor, Geo. Eaton; cost, $1,175; signed, Feb. 5; filed, Feb. 5; payments, $375 frame up; $400, second coat of plaster on; $400, 35 days.

Hayes near Fillmore. Three-story frame; owner, Mrs. M. A. Joy; architects, Percy & Hamilton; contractor, Silas Carle; cost, $6,500; signed, Feb. 20; filed, Feb. 25; payments, $2,500, roof on; 2,000, plastered; $2,000, 35 days.

Hickory Ave. near Laguna. One-story frame; owner, Patrick Powell; architect, the owner; contractor, Jas. Campbell; cost, $1,400; signed, Feb. 28; filed, March 4; payments, $325, enclosed; $325, hard finish on; $850, 35 days.

Hickory Ave. near Franklin. Alterations; owner, Mrs. Anna Cordes; architect, S. Hatfield; contractor, E. C. Warden; cost, $1,541; signed, Feb. 2; filed, March 4; payments, $578, ready for lathing; $577.75, completed; $385.25, 35 days.

Jones near Geary. Three story frame; owner, F. B Reynolds; architect, Emile Depierre; contractor, J. J. Dunn; sureties, C. S. Holmes and Behrend Joost, $1,400 cost, $5,600; signed, Feb 19; filed, Feb. 27; payments, $1,100, frame up; $1,100, brown mortar on; $1,000, plastered; $1,000, completed; $1,400, 35 days.

Lake Merced. Grading pumping station. Owners, Spring Valley Waterworks; contractor, C. A. Warren; cost, 16 cents per cubic foot; signed, February 14; filed, February 16; payments, 75 per cent. as work progresses, 25 per cent. 35; days.

Lyon near Grove. Two 2-story frames; owner, Geo. Wittman; architects, Shea & Shea; contractor, Thos. Elam; sureties, C. D. McGowan & Co., and P. G. Norman; cost, $3,400; signed, February 19; filed, February 20; payments, $654, rough frame up; $654, brown mortar on; $654, hard finish on; $655, completed; $873, 35 days.

Market near Montgomery. Carpenter work; owner, Rhody Ringrose; architect, J. C. Newsom; contractor, W. Pluns; cost, $3,450; signed February 4; filed, February 6; payments to be made at stated times.

Market near Montgomery. Brick, stone and terra cotta work; owners, M. J. and F. H. Burke; architect, J. Cather Newsom; contractor, Rhody Ringrose; sureties, O. Lewis and W. Plans, $3,000; cost, $10,970; signed, January 28; filed January 30; payments, $2,000, first floor joists in; $1,245, second floor joists in; $1,245, roof on; $1,245, brown mortared; $1,245, plastered; $1,247 50, completed; $2,742.50, 35 days.

Market near Montgomery. Stone work; owner, Rhody Ringrose; architect, J. Cather Newsom; contractor, Fred Westphal; cost, $1,440; signed, January 30; filed, Feb. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Market near Seventh. Plumbing; owner, Mrs. M. J. Lemmon; architect, C. I. Havens; contractors, Duffy Bros.; cost, $4,000; signed, Feb. 26; filed, Feb. 28; payments, first day of each month, 75 per cent. as the work progresses; 25 per cent, 35 days.

Mission near Tenth. Carpenter work; owner, Allan McDonald; architect, F. T. Doolan; contractor, F. T. Doolan; surety, J. J. McKinnon, $2,087; cost, $8,350; signed, Feb. 20; filed, Feb. 21; payments, $2,087.50, frame up; $2,087.50, brown mortar on; $2,087.50, completed; $2,087.50, 35 days.

No. 110 San Jose Ave. Alterations; owner, John Anderson; architects, Townsend & Wynehen; contractor, S. E. Waldeck; cost, $1,868; signed, Feb. 12; filed, Feb. 13; payments, $450, building raised; $451, brown mortar on; $600, completed; $467, 35 days.

No.'s 117 and 119 California Street. Brickwork; owner, Kingan & Co.; architect, J. M. Curtis; contractor, J. Haaf; surety, M. R. Krigbaum, $4,000; cost, $8,850; signed Feb. 26; filed, March 4; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Oak near Scott. Carpenter work; owner, Emil Quarq; architect, Jas. E. Wolfe; contractor, Carl Stroth; sureties, F. Joost and Wm. Dasmann, $2,500; cost, $5,700; signed, Feb. 4; filed Feb. 7; payments, $775, foundation set; $850, roof completed; $1,000, brown mortar on; $850, white on; $800, completed; $1,425, 35 days.

Oak near Clayton. 2-story frame; owner, N. M. Lund; architects, R. H. & R. White; contractor, Wm. Pluns; sureties, David Wener and F. Joost, $1,100; cost, $4,420, signed, Feb. 21; filed, Feb. 24; payments, $825, frame up; $825, brown mortar on; $825, standing finish on; $825, accepted; $1,120, 35 days.

Pacific Ave. near Central Ave. 2-story frame; owner, E. T. Sheppard; contractor W. E. Lane; cost, $4,250; signed, Feb. 27. filed March 2; payments, $796.25, frame up: $796.25, enclosed; $796 25, brown mortar on; $796.25, completed; $1,065, 35 days.

Park Lane Tract. One-story frame; owner, Hugh Foley; architect, Gust. Pavel; contractor, Gust. Pavel; cost, $1,865; signed, Feb. 28; filed, Feb. 24; payments, $450, frame up; $450, brown mortar on; $480, accepted; $485, 35 days.

Post near Lyon. Two-story dwelling; owner, Jno. Lynott; architect, Jno. Lynott, contractor, Ozias D'Anis; cost, $3,700; signed, Feb. 18; filed. Feb. 18; payments; $800, frame enclosed; $1,000, brown mortar on; $925, completed, $775, 35 days.

Pacific Ave. near Webster. Carpenter work; owner, Althea] Walker; architects, Smith & Freeman; contractor, F. W. Kern; cost, $11,575; signed, Feb. 27; filed March 5; payments, $1,736, frame up; $1,736, enclosed; $1,736, ready for plaster, $1,000, plastered; $1,736, ready for painter; $757, completed; $2,894, 35 days.

Pacific Ave. near Webster. Plumbing; owner, Althea Walker; architects, Smith & Freeman; contractors, Duffy Bros.; cost, $1,875; signed Feb. 27; filed, March 5; payments, $800, rough plumbing in; $656, completed; $469, 35 days.

Page near Gough. Additions to three houses; owner, J. Nikles; architects, Mooser & Cuthbertson; cost, $1,000; days work.

Powell near Sacramento. Plastering; owner, V. Menesini; architects, C. & J. Wilson, contractor, M. Kiernan; cost, $2,800; signed, Feb. 4; filed, Feb. 5; payments; $1,000, brown plaster on; $1,000, white plaster on; $100, completed; $700, 35 days.

Sacramento near Kearney. Brick building; owners, Pierre Gavard and wife; architects, Pissis & Moore; contractor, W. M. Fletcher; cost $7,650; signed Feb. 3; filed, Feb. 11; payments, $1,400, first floor joists in; $1,400, second floor joists in; $1,537 50, roof and brickwork finished; $1,912.50, 35 days.

Sacramento near Kearney. Brickwork; owner, Wm. M. Fletcher; architects, Pissis & Moore; contractor, D. J. Brennan; cost, $2,880; signed, Feb. 6; filed, Feb. 12; payments, $936, first floor joists in; $936, second floor joists in; $936, brickwork completed; $1,070, 35 days.

Seventeenth near Diamond. Two-story dwelling; owner, Wm. Kennedy; architect, M. J. Welsh; contractors, David Cullinane & Bros.; sureties, Harris & Jones, $2,000; cost, $2,175; signed, Jan. 29; filed, Jan. 30; payments, $543.75, frame up; $543.75, brown mortared; $543 75, completed; $543.75, 35 days.

Sixteenth near Sanchez. Three-story building; owner, E. L. Ast; architect, Casper Zwierlein; contractor, Casper Zwierlein; cost, $5,800; signed, Feb. 19; filed Feb. 12; payments, $1,088, frame up; $1,088, brown mortar on; $1,087, white coat on, and outside finish up; $1,087, completed; $1,450, 35 days.

Sixth near Minna. Additions; owner, Jeremiah Mahoney; architect, M. J. Welsh; contractor, D. Currie; cost, $2,195; signed, Feb. 19; filed Feb. 19; payments, $823.25, foundation in; $823, completed; $548,75, 35 days.

Steiner near Haight. One-story frame; owner, Mrs. Margaret Alex; architects, Hucrne & Everett; contractor, Geo. Reichley; surety, Berend Joost, $625; cost, $2,500; signed, Feb. 3; filed, Feb. 4; payments, $625, enclosed; $625, brown mortared; $625, completed; $625, 35 days.

Steiner near Oak. Carpenter work; owner, Fritz Gercke; architect, H. Geilfuss; contractors, Tigeler & Muller; cost, $4,850; signed, Feb. 14; filed, Feb. 16; payments; $1,212, frame up; $1,212, enclosed; $1,212, completed; $1,214, 35 days.

Sutter near Webster. Plumbing, etc.; owner, Mary A. Cotton; architect, P. R. Schmidt; contractors, Duffey Bros.; cost, $1,475; signed, Feb. 3; filed, Feb. 4; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Sutter near Jones. Plastering; owner, Wm. T. Conmary; architect, Clinton Day; contractor, W. T. Houlihan; surety, E. L. Snell; $1,050; cost, $1,050; signed Feb. 25; filed, Feb. 26; payments, $262.50, brown mortar on; $262.50, completed; $263, 35 days.

Thirteenth near Folsom. Two-story frame; owner, Sarah Madden; architects, Shea & Shea; contractor, Jno. O'Brien; cost, $3,000; signed, Feb. 19; filed, Feb. 24; payments, $562, rough frame up; $562, brown mortar on; $563, hard finish on; $563, completed; $750, 35 days.

Twentieth near Capp. Carpenter work; owner, John Reid; architect, Geo. Houston; contractor, Geo. Houston; cost, $1,500; signed, Feb. 27; filed, Feb. 28; payments, $1,120, rustic on; $1,120, brown mortar on; $1,120, plastered; $1,140, 35 days.

Twenty-ninth near Dolores. One-story building; owner, P. Merrill; contractor, Jas. Campbell; cost, $1,785; signed, Jan. 24; filed, Feb. 6; payments, $446.25, roof on; $446.25, brown mortar on; $446.25, completed; $446.25, 35 days.

Twenty-sixth near Alabama. Carpenter work; owner, J. A. Brien; architects, Shea & Shea; contractors, Doyle & Son; cost, $2,794; signed, Feb. 12; filed, Feb. 16; payments, $524, rough frame up; $524, brown mortar on; $524, hard finish on; $523, completed; $699, 35 days.

Twenty-third near Howard. Three-story frame; owner, Maria Fay; contractor, Wm. Helbing; cost, $9,000; signed, March 2; filed, March 4; payments, $2,000, frame up; $2,000, enclosed; $2,000, brown mortar on; $1,500 finished; $1,500, 35 days.

Twenty-third near Castro. Carpenter work; owner, Jos. H. Robinson; architect, A. S. Cook; contractor, A. S. Cook; cost, $5,575; signed, Feb. 28; filed, Feb. 28; payments, $1,350, frame up; $1,350, brown mortar on; $1,350, completed; balance, 35 days.

Vallejo near Franklin. Carpenter work; owner, Mrs. L. Rhoden; architects, Salfield & Kohlberg; contractor, J. Pancher; cost, $7,850; signed, Feb. 28; filed, March 2; payments, $1,000, frame up; $1,000, enclosed; $1,250, brown mortar on; $1,250, doors hung; $1,350, accepted.

Vallejo near Gough. To build; owner, Chas. Meehan; contractor, Jno. Bruce; cost, $6,365; signed, Feb. 2; filed, Feb. 14; payments, $1,400, frame up; $1,600, enclosed; $1,665, plastered; $1,600, completed; $2,100, 35 days.

Waller near Buchanan. Two two-story buildings; owner, Mrs. Ella C. Lumpe; architect, Chas. I. Havens; contractor, C. E. Dunshee; cost, $10,883; signed, Feb. 10; filed, Feb. 13; payments, $2,000, rough frame up; $2,000, brown mortar on; $2,000, hard finished; $2,183; completed; $2,700, 35 days.

Webster near Page. Two story frame; owner, Louis Huhs; architect, M. W. Kain; contractor, M. W. Kain; cost, $6,225; signed, March 3; filed, March 4; payments, $650, brown mortar on; $650, plastered; $650, completed; $625, 35 days.

Alameda County.

Adeline street near Twenty-first, Oakland. Additions; owner, J. P. Irish; architect, Wm. Kirk; contractor, O. R. Margan; cost, $1,425; signed, Feb. 24; filed, Feb. 25; payments, $475, floors laid; $475, completed; $475, 35 days.

Alameda Ave. and Paru street, Alameda. Two-story frame; owner, Henry Mohns; architects, Cary & Johnson; contractors, Marcuse Lesser & Co.; cost, $3,500; signed, Jan. 28; filed, Jan. 29; payments, $875, roof and rustic on; $875, brown mortar on; $875, completed; $875, 35 days.

Alameda County. Seven-room cottage; owner, Carl Engelhardt; architect, A. S. Lorber; contractor, A. S. Lorber; cost, $1,450; signed, Jan. 29; filed, Feb. 2; payments, $362.50, frame enclosed; $362.50, plastered; $362.50, finished; $362.50, 35 days

Alameda Park, Alameda. Two-story frame; owner, Caroline Stephensen; architect, Wm. Patton; contractor, Chas. H. Foster; cost, $7,993; signed, Feb. 17; filed, Feb. 18; payments, $1,000, second floor joists in; $1,000, rustic on; $1,000, brown mortar on; $1,000, plastered; $993, completed; balance, 35 days.

Alfred Barstow Tract, Oakland. Six-room cottage; owner, Bertha Eggers; contractor, John Bauman; cost, $1,870; signed, March 4; filed, March 5; payments, $800, enclosed; balance, 10 days after completion.

Baths, Oakland. Plumbing; owners, Piedmont Bath Co.; contractors, Duffy Bros. cost, $9,800; signed, Nov. 29, 1890; filed, Feb. 7; payments, fifth day of each month 50 per cent. on work done and materials furnished; 25 per cent. completed; balance after completion.

Bay street near Central Ave., Alameda. Two-story cottage; owner, Henry Mohns; architect, A. Siemblth; contractor, A. L. Fells; cost, $1,500; signed, Feb. 4; filed, Feb. 6; payments, $375, frame up; $375, white coat on; $375, completed; $375, 35 days.

Bayo Vista and Oakland Ave., Oakland. To build; owner, J. P. Garlick, architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $4,767; signed, Feb. 17; filed, Feb. 24; payments, $1,200, rustic and shingles on and chimneys built; $1,200, brown mortar on; $1,067, completed; $1,200, 35 days.

roadway near Lincoln Ave., Alameda. Six-room cottage; owner, Frank J. Krauth; architect, C. W. McRhea; contractors, McRhea & McRhea; cost, $2,150; signed, Feb. 21; filed, Feb. 24; payments, $500, frame up; $500, brown mortar on; $500, completed; $650, 35 days.

dway near Ninth, Oakland. Carpenter work, etc.; owner, L. Friedmann; architects, Sulfield & Kohlberg; contractors, Concannon & Shay; cost, $6,235; signed, Feb. 19; filed, Feb. 27; payments, $1,000, roof on; $1,000, floors laid; $1,000, brown mortar on; $675, doors hung; $1,000, completed; $1,560, 35 days.

Broadway near Ninth, Oakland. Brick, stone and terra cotta work; owner, L. Friedmann; architects, Sulfield & Kohlberg; contractor, Alfred W. Burrell; cost, $3,160; signed, Feb. 19; filed, Feb. 27; payments, $750, ready for floor joists; $750, ready for ceiling joists; $860, completed; $860, 35 days.

Broadway near Ninth, Oakland. Cast and wrought iron work; owner, L. Friedmann; architects, Sulfield & Kohlberg; contractors, Judson Manufacturing Co.; cost, $1,362; signed, Feb. 19; filed, Feb. 27; payments, 75 per cent. after columns and girders are set; 25 per cent., 35 days.

Broadway near Ninth, Oakland. Plumbing and gasfitting; owner, L. Friedmann; architects, Sulfield & Kohlberg; contractors, Jeffreys, Mitchell & Co.; cost, $1,200; signed, Feb. 19; filed, Feb. 27; payments, $600, rough work in; $300, completed; $300, 35 days.

Cameron Tract, Brooklyn. Two-story frame; owners, Minna E. Wilson and husband; architect, Geo. A. Bordwell; contractor, C. L. Lombard; cost, $3,940; signed, Feb. 27; filed, Feb. 28; payments, $700, frame up; $650, brown mortor on; $750, plastered; $855, completed; $985, 35 days.

Corner Jackson and Seventh streets, Oakland. Alterations and additions; owner, Charles Purcell; contractors, Bowling & Rettig; cost, $2,075; signed, Feb. 13; filed, Feb. 14; payments, $550, building raised and frame of new story erected; $650 brown mortar on; $500, plaster; $375, 35 days.

Daly's Scenic Park, Berkeley. Two-story frame; owner, H. I. Coon; architects, Huerne & Everett; contractor, Herbert Kendell; cost, $2,715; signed, Feb. 20; filed, Feb. 20; payments, $400, rustic on and roof sheathed; $510, floors laid and roof shingled; $510, brown mortar on; $516.25, completed; $678.75, 35 days.

Eight street near Washington, Oakland. Alterations, etc.; owner, W. J. Dingee; contractors, W. T. Veitch & Co.; cost, $2,300; signed, Feb. 6; filed, Feb. 7; payments, 75 per cent. on the first day of each month as work progresses; 25 per cent., 36 75 days.

Eight Ave. near Eighteenth street, Oakland. Two-story dwelling; owner, Geo. H. Fowler; architect, Geo. W. Flick; contractor, Geo. W. Flick; cost, $2,350; signed, Feb. 27; filed, March 4; payments, $637, frame up; $637, brown mortar on; $637, completed; $639.35 days.

Elevanth Ave. near Clinton Town, Oakland. Three dwellings; owner, Frank Euch; architect, Elmer Childs; contractor, G. H. W. Beike; cost, $7,100; signed, March 5, filed, March 5; payments, $1,350, lumber on ground; $1,887.50, frame up; $1,887.50, brown mortar on; $1,775, 35 days.

Ellis and Mason streets, Oakland. Dwelling and barn; owner, Horace D. Irwin; contractors, Dirchsen & Roust; cost, $3,050; signed, Feb. 7; filed, Feb. 11; payments, $750, enclosed and roof on; $750, hard finish on; $750, completed; $800, 35 days.

Fifth street near Magolia, Oakland. To build; owner, Jas. McLean; architect, Jno. Conant; contractor, Jno. Conant; cost, $1,962; signed, Feb. 7; filed, Feb. 10; payments, $400, frame up; $450, ready for plaster; $400, plastered; $400, building ready for painters; $362, 35 days.

Forty-first street near Grove, Temescal. Two cottages; owner, L. Serda; architect Wm. Kirk; contractor, P. G. MacIntyre; cost, $2,270; signed, March 2; filed, March 2, paymen ts, $600, frames up and brick work done; $300, brown mortar on; $770, completed; $600, 35 days.

Golden Gate Tract, Golden Gate. One-story cottage; owner, Frank Richardson; architect, Lombard; contractors, F. M. Cramer & Co.; cost, $1,700; signed, Feb 16; filed, Feb. 16; payments, one-third, building enclosed and chimneys up; one third, completed; one-third, 35 days.

Hamilton Tract, Oakland. To build; owner, A. Steffanoi; architect, F. C. Bignami; contractor, F. C. Bignami; cost, $1,570; signed, Feb. 28; filed, Feb. 28; payments, $1,142, frame up; $1,142, brown mortar on; $1,145.50, completed; $1,142.50, 35 days.

Jones Street near Telegraph avenue, Oakland. Frame cottage; owner, Minna Frey; architect, Julius Frey; contractor, B. K. Allen; cost, $1,585; signed, Feb. 28; filed, March 2; payments, $600, frame up, roof on; $400, brown mortar on; $685, completed.

Lafayette street near R. R. avenue, Alameda. To build; owner, Geo. T. Wright; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,400; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,400; signed, Feb. 28; filed, March 4; payments, $700, rustic and roof on and chimneys built; $600, brown mortar on; $500, completed; $600, 35 days.

Linda Vista Terrace Tract, Oakland. Grading streets; owner, Chas. Camden; contractor, M. L. Gray; signed, Jan. 28; filed, Feb. 3, payments, 15th and 30th of each month, 75 per cent. of work done; 25 per cent., 35 days.

Linda Vista Terrace, Oakland. Two-story frame dwelling; owner, J. C. Hill; architect, Geo. A. Bordwell; contractors, Knight & Littlefield; cost, $3,125; signed, Feb. 17; filed, Feb. 19; payments, $783, frame raised and secured; $784, plastered; $784, completed; $784, 35 days.

Mountain View Cemetary. Burial vault; owner, Mrs. Hannah Adams; architect, Walter J. Mathews; contractors, Ranson & Cushing; cost, $12,993; signed, Feb. 18; filed, Feb. 20; payments, $1,918, 1-5 work done; $1,918, 2-5 work done; $1,918, 3-5 done; $1,918, 4-5 done; $1,918, completed; $3,293, 35 days.

Myrtle street, Oakland. Two-story building; owner, Ewing Marcuse; architects, Cary & Johnson; contractors, Marcuse, Lesser & Co., cost, $8,500; signed, Feb. 1; filed, Feb. 13; payments, $875, rustic and roof on; $875, brown mortar on; $875, completed; $875, 35 days.

Near San Leandro Lake, Oakland. Construction of a Hyatt Filter Plant; owners, Contra Costa Water Co.; contractors, Hyatt Water Co.; cost, $47,500; signed, Nov. 14, 1890; filed, Feb. 6; payments, ½ from time to time, according to terms expressed in agreement.

Oakland. One-story cottage; owner, Miss Annie E. Son; architect, F. Wells; contractors, Concanon & Shay; cost, $3,600; signed, Feb. 7; filed, Feb. 11; payments, $675, frame up and roof boards on; $675, ready for plastering; $675, plastered; $675, completed; $900, 35 days.

Oak Park, Alameda. To build; owner, Chas. H. Champion; architects, Judd, Hamley & Co.; contractor, John Sath; sureties, S. Stephenson and John H. Banta; cost, $2,000; signed, Feb. 24; filed, Feb. 26; payments, $725, frame up; $725, ready for plaster; $725, first coat of paint; $725, 36 days.

Pacific avenue near Jay, Alameda. Five-room cottage; owner, A. O. Ross; architect, C. H. Hunter; contractor, J. E. Henderlong; cost, $2,100; signed, Feb. 9; filed, Feb. 9; payments, $400, frame up; $400, rustic and frame set; $400, brown mortar on; $375 completed; $525, 35 days.

Regent street, near Central avenue, Alameda. To build; owner, M. S. Taylor; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,834; signed, Feb. 19; filed, Feb. 24; payments, $800, rustic, roof shingles on and chimney built; $700, brown mortar on; $625, completed; $709, 35 days.

Rowland Tract, Oakland. Two-story house; owner, Geo. K. Porterfield; contractor, Chas. W. Bolles; cost, $3,200; signed, Jan. 30; filed, Jan. 30; payments, 1-5, building enclosed; ¼, brown mortar on; ¾, inside ready for painter; balance, 35 days.

San Antonio. To build; owners, Jas. H. and Eliza Shephard; architect, J. A. Eastman; contractor J. A. Eastman; cost, $2,275; signed, Feb. 10; filed, Feb. 11; payments, $568, frame up; $568, brown mortar on; $568, completed; $571, 35 days.

Sherman near King's avenue, Alameda. Two-story frame; owners, Mrs. E. and Wm. Bowers; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,710; signed, Feb. 5; filed, Feb. 9; payments, $1,000, rustic and roof shingles on, and chimney built; $950, window frames set and brown mortar on; $810, completed; $930, 35 days.

Simpson avenue near Telegraph avenue, Oakland. Two-story dwelling; owner, Miss A. M. Hambly; architects, J. C. & E. A. Mathews; contractors Concannon & Shay; cost, $2,465; signed, March 4; filed, March 5; payments, $400, frame up and chimney built; $1,000, brown mortar on; $1,198.75, completed; $866.25, 35 days.

Sixth near Franklin, Oakland. Two-story frame cottages; owner, J. Pantoskey; architect, J. C. S. Whalen; contractor, J. C. S. Whalen; cost, $3,250; signed Feb. 5; filed, Feb. 6; payments, $800, frame up and roof on; $2,450, completed.

Thirteenth avenue near Nineteenth street, Oakland. Two-story frame; owner, Mrs. C. H. Elliott; contractors, Marshall & Liston; cost, $1,925; signed, Jan. 31; filed, Feb. 20; payments, $481.25, frame up; $481.25, brown mortar on; $481.25, completed; $481.25, 35 days.

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NOTICE.

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ASSYRIAN libraries have been discovered in the remains of the ancient city of Ninevah. The books are composed of tablets of clay, on which the characters were finely drawn when the clay was plastic. The pages are numbered, as are the books of to-day. After the tablets are baked they afford an almost imperishable means of communicating knowledge to futurity.

Why not prepare the master-pieces of the literature of to-day in such a manner for deposition in the corner-stones of our public libraries that are yet to be?

THE SENSE OF BEAUTY.

BY CHANNING.

Beauty is an all-pervading presence. It unfolds in the numberless flowers of the spring. It waves in the branches of the trees and the green blades of grass. It haunts the depths of the earth and sea, and gleams out in the hues of the shell and the precious stone. And not only these minute objects, but the ocean, the mountains, the clouds, the Heavens, the stars, the rising and setting sun, all overflow with beauty. The universe is its temple; and those men who are alive to it, cannot lift their eyes without feeling themselves encompassed with it on every side. Now, this beauty is so precious, the enjoyments it gives are so refined and pure, so congenial with our tenderest and noble feelings, and so akin to worship, that it is painful to think of the multitude of men as living in the midst of it, and living almost as blind to it as if, instead of this fair earth and glorious sky, they were tenants of a dungeon. An infinite joy is lost to the world by the want of culture of this spiritual endowment. Suppose that I were to visit a cottage, and to see its walls lined with the choicest pictures of Raphael, and every spare nook filled with statues of the most exquisite workmanship, and that I were to learn that neither man, woman, nor child ever cast an eye at these miracles of art, how should I feel their privation; how should I want to open their eyes and to help them to comprehend and feel the loveliness and grandeur which in vain courted their notice! But every husbandman is living in sight of the works of a diviner Artist; and how much would his existence be elevated, could he see the glory which shines forth in their forms, proportions, and moral expression! I have spoken only of the beauty of nature, but how much of this mysterious charm is found in the elegant arts, and especially in literature? The best books have most beauty. The greatest truths are wronged if not linked with beauty, and they win their way most surely and deeply into the soul when arrayed in this their natural and fit attire. Now, no man receives the true culture of a man, in whom the sensibility to the beautiful is not cherished; and I know of no condition in life from which it should be excluded. Of all luxuries this is the cheapest and most important to those conditions, where coarse labor tends to give a grossness to the mind. From the diffusion of the sense of beauty in ancient Greece, and of the taste for music in modern Germany, we learn that the people at large may partake of refined gratifications, which have hitherto been thought to be necessarily restricted to a few.

OLD MISSION CHURCH AT SONOMA, CALIFORNIA.

(CONTINUED FROM PAGE 27.)

The view here shown represents the building as it appears at the present time, the enclosure fence being omitted. The chapel at the farther end is of later date. The tiles of the roof show displacement at or near the lower portions of the roof, while at the upper portions the tiles remain intact as laid some seventy-five or one hundred years ago. They are without any fastening whatever, being laid on layers of brush as described on page 15. It may be well to suggest that possibly laying the tiles upon an elastic bedding may account for the freedom from breakage after so long a time, while modern tiles set upon a rigid bearing and fastened with cleats, nails, etc., show many fractures after a few years. The timber, boards, etc., were all cut and prepared in the redwood forests about twelve miles distant, and were then dragged upon the ground by the aid of horses, the rider slipping the noose of his lariat in the groove, cut near the butt end of each stick of timber, the other end fastened to the horn of the saddle. This groove is shown in figures 3 and 5, page 15. All the boards, planks, or larger pieces, show the wear on the side in contact with the ground. The larger bearing timbers are hewn to a square form, varying somewhat from a right angle. Planks and boards are hewn to the required thickness—planks one and three-quarter inches, and boards seven-eighths inches in thickness. Throughout the wood work there are no signs that a saw was used in any case, all the timber, planks and boards having been worked with a narrow faced axe, which was used with so much expertness that the planks and boards are quite as evenly worked as if sawed. Some of the boards are sixteen and eighteen feet in length and from eleven to twenty-two inches in breadth. There is no visible sign of such a tool as an auger or other boring instrument in the frame work of doors, all having been done with the axe, and perhaps a chisel may have been used in some cases The iron work for the hinges of doors and some of the small interior closets are of primitive workmanship. The sanitary arrangement and appliances were somewhat crude, but sufficient remains exist to show that this necessary department was not neglected. The first or ground floor being on a level with the ground outside, gutters or open drains (formed of burnt tiles) were run along under the eaves and connected with a covered drain run through the passage or driveway. This drain was eleven inches in depth by a width of twenty-two inches, the bottom formed of two and a half inch, seven by fourteen inch tiles, laid flat, the sides of same tiles on the flat, and four courses high, the top covered with redwood planks about three feet long and three inches thick, mostly decayed. This drain discharged into a large open ditch outside the premises. In the attic near the floor at the rear, a solid log nine inches thick and one foot six inches wide, the upper surface hollowed out to form a waste or soil pipe and run to the gutter at rear. Ventilation was secured by means of open doors and windows, the windows being provided with round, wooden bars three to four inches in diameter, and set horizontally at a distance of from four to six inches apart. In the kitchen or cooking room the fire was built at or near the center of the room. No signs of a chimney or fire place appears in any portion of the building, except one of recent date. The smoke from the kitchen fire found its exit through the barred windows near the roof.

H. T. B.

OLD MISSION CHURCH AT SONOMA, CALIFORNIA.

RADIATION IN ORNAMENT.

In the surface decoration of the Moors all lines flow out of a parent stem; every ornament, however distant, can be traced to its branch and root; they have the happy art of so adapting the ornament to the surface decorated, that the ornament as often appears to have suggested the general form as to have been suggested by it. In all cases, we find the foliage flowing out of a parent stem, and we are never offended, as in modern practice, by the random introduction of an ornament just dotted down, without a reason for its existence. However irregular the space they have to fill, they always commence by dividing it into equal areas, and round these trunk lines they fill in their detail, but invariably return to their parent stem. They appear in this to work by a process analogous to that of nature, as we see in the vine leaf, the object being to distribute the sap from the parent stem to the extremities, it is evident the main stem would divide the leaf as near as may be into equal areas. So again of the minor divisions—each area is again subdivided by intermediate lines, which all follow the same law of equal distribution, even to the most minute filling in of the sap-feeders. The Moors also follow another principle—that of radiation from the parent stem, as we may see in nature with the human hand, or in a chestnut leaf. The Orientals carry out this principle with marvelous perfection; so also did the Greeks in their honeysuckle ornament. And here we may remark a peculiarity of Greek ornament, which appears to follow the principle of the plants of the cactus tribe, where one leaf grows out of another. This is generally the case with Greek ornament. The acanthus leaf-scrolls are a series of leaves growing out one from the other in a continuous line, whilst the Arabian ornaments always grow out of a continuous stem. When styles become debased, neither of these laws are followed, as in Elizabethan ornament, where nothing is continuous, nothing radiates; all is haphazard.

Owen Jones.

A DISCOURSE ON CALCAREOUS HYDRAULIC CEMENTS.

BY CALVIN BROWN, C. E., U. S. N.

Mr. President and Gentlemen:—In accepting the polite invitation of the Executive Committee of your Society to address you on the subject of cements, I felt that in undertaking the task it would not be necessary for me to go into the matter to the full extent of its possible treatment. As engineers and architects, and in reference to the magnitude of its importance, applications in constructive works, all of you must have had considerable acquaintance with it, which supposition prompted me to limit what I ought to say more to my own experience than to attempt to lay before you, except in a very general and brief way, the details of its history, its chemical features and its economics.

Although the history of constructive engineering and architecture is marked by many interesting and even wonderful monuments of human skill, aided by science and genius, it appears to me that this nineteenth century in the discovery and application of hydraulic cements has far outstepped all previous centuries in the masonry of constructive works, taking into the account their utilitarian character, the rapidity of their erection and their comparative cost even, to say nothing of the surmounting of difficulties of location never encountered by the ancient builders. In all these results the application of hydraulic cements has entered, and the modern architect and engineer find in this material an ally whose help remained beyond the reach of their predecessors.

The ancients have been popularly credited with the possesion of superior cements, but as far as can be ascertained from history, and the investigation of their works yet extant, either whole or in ruins, there appears no evidence that their builders used any hydraulic cementing materials, except those found and applied in their natural condition after a simple pulverization, as pozzuolana, trass, etc.; all volcanic products which they mixed with common lime mortar to bestow a more rapid induration upon it and the capacity for hardening in damp situations or under water; they were not aware of, or at least they did not use, hydraulic limestone for the production of cement.

It was not until 1759, when the bold design of erecting a stone lighthouse upon the ocean-girdled Eddystone rock was undertaken by Smeaton, that the discovery was made by this able engineer of the existence of certain peculiar limestones, which, when calcined and pulverized and made into mortar possessed cementing qualities with the important characteristics of setting and hardening under water. His report of this discovery is given in the quaint language of old times: he says these stones after they are burnt and ground "afford a paste which hardens in a few days under water, but in the air they never acquire much solidity." It is reported that Smeaton discovered the causes of hydraulicity in limestones, but I do not remember the explanation he gave of it, but am impressed with the conviction that its complete description was given by very much later investigators. Smeaton used the natural products pozzuolana and trass for his cementing materials, but it is believed that for the strength of his great structure he relied more upon his system of dove-tailing the stoues in the work than upon the cement he put between them, which evidently was applied to bed and perfect their joints and so far prevent the water of the ocean from penetrating the masonry and thus preventing its hydrostatic effects.

It does not appear from any records I have been able to meet that much progress was made in the practical development of calcareous hydraulic cements until about 1780, when Dr. Higgins, of England, published a small treatise on what he called "water cements." If I recollect rightly he used common lime mortar treated with certain materials that conferred slight hydraulicity, such as pounded brick, etc. Sixteen years after this, or in 1796, a quick-setting hydraulic cement, resulting from the ordinary processes of burning and grinding certain limestones, was introduced by Parker, of England, and patented by him; he called this Roman Cement, under which name the article has continued in use down to this day, illustrating the charm of an impressive cognomen.

From the date of Parker's discovery forward, much attention seems to have been given to the search of limestones capable of furnishing a similar material, the general interest therein prompting several savans in England and on the Continent to engage in the work, the most conspicuous among them being the engineer J. L. Vicat, of France, whose elaborate researches commenced about 1812.

Vicat's well known publication shows how exhaustively he pursued his experiments, going into all the details of manufacture, manipulations and application of calcareous mortars, both hydraulic and non-hydraulic. Originally confined to the examination of materials which, taken in their natural state, yielded by the ordinary processes of calcination and pulverizing, cements of various qualities as to their powers of induration and hydraulic energies, his operations finally resulted in the grand discovery that although nature furnished throughout her lithological stores vast deposits of substances that in their natural state would supply a material with hydraulic properties, it was in the power of science to evolve an artificial combination of her various materials that in the highest degree would obviate the uncertainties of these single substances and secure a product at once adapted to all the purposes of the builder. It was well known that no pure limestone or simple carbonate of lime would furnish an hydraulic mortar, and in the fact that impure limestones would furnish such, though in varying degree, lay the hint that Vicat seized upon, namely, to ascertain what was the element or elements that at the same time contaminated the limestone and conferred upon it, upon proper treatment, that wonderful property of plasticity, adhesiveness and hardening under water. Analysis showed that these stones were a mixture in various proportions, of carbonate of lime, alumina, peroxide of iron, silica, etc., wherein lay the principle of hydraulicity, and hence, by an artificial combination of these ingredients, it was possible to manufacture an artificial hydraulic cement whose efficiency as a building material might be uniformly secured beyond any chances involved in the capricious accidents of geological conditions.

Vicat carried out his experiments with a triumphant verification of their prophecy; he found their results like that shown in the natural stone to be double silicate of lime and alumina, with certain traces of other substances whose presence in the composition might not be essential in its general characteristics though probably not impairing them.

I must hurry over the details of the subsequent development of Vicat's discoveries and simply mention that upon his views and experiments, several other eminent chemists and engineers in Europe entered upon similar investigations until almost the whole accessible domain of nature's rocks and earth was ransacked with the purpose of revealing other substances that might supply these invaluable qualities of adhesiveness and hydraulicity in building.

Vicat's system of manufacture of artificial hydraulic cements, or "lime," as he termed it, was soon installed, and in a short time several establishments for the purpose were set in operation. In these primary establishments they made use of quicklime and clay mixed in certain proportions with water into a paste which

was then molded into briquettes, dried, burnt in a kiln and then ground.

It will thus be seen that Vicat's method involved two separate burnings, the first for the production of the quicklime used in the composition instead of carbonate of lime or simple limestone, and the second for the briquettes formed by the combination of quicklime and clay. This system was necessarily attended with considerable expense of fuel, time and labor, but became superseded by the method carried out several years later in England by Mr. Aspdin, who, by calcining a dried mixture of chalk and the mud obtained from a river bed, and afterwards grinding the product, fabricated the now well known Portland Cement. In the meantime other English engineers occupied themselves in experiments with the same materials, but Aspdin appears to have been considered as the inventor of the article under this name, which has been introduced all over the world, and so named from the color of its mortar which resembles that of the stone found in the quarries of Portland, England.

In the interim between Vicat's discovery of natural hydraulic cement and that of the artificial product, and up to within the last few years, the natural cements, more or less, continued to be used; but in Europe especially, and in countries where European builders manage the works, Portland Cement has almost completely displaced them. In the United States, especially in the interior and where it can be cheaply produced, the natural article still holds its use, but it may readily be seen that the Portland, wherever it can be procured, and in consequence of its great superiority must everywhere command the preference of the builder.

Time will not permit me, gentlemen, to extend these remarks to a complete description of the various methods of manufacture in different countries for the production of Portland Cement. I can only mention that the two ingredients of carbonate of lime and clay being almost universally used are found in different forms in the different localities where the article is manufactured. The carbonate of lime in the condition of a very pure and soft chalk, is adopted in England where it abounds. On the continent of Europe chalk is also used where it can be obtained, but very many manufacturers there use a hard limestone either in a state of purity or otherwise. The clay, which besides the alumina, also contains the required elements of silica, iron, etc., is found in varying conditions, either as constituting the beds of salt water streams above low water level, or the soil of marshes, or as banks upon higher grounds.

In England the mixture of these two ingredients is effected by means of a heavy revolving harrow or stirrer operating in a circular tank, or wash mill as it is termed, wherein is placed the requisite quantity of water and a portion of clay as taken from its natural deposit. Into this wash mill, and after being properly pulverized and sifted, the chalk is introduced in right proportion to the clay. The charge of chalk and clay after a complete reduction of all the particles to an impalpable paste of semi-fluid consistency, is conveyed to large receptacles about 60 by 90 feet in dimensions and four feet in depth, and allowed to settle. Charge after charge of the chalk and clay mixture is thus prepared and placed in the receptacle until it is filled, the supernatant water of each layer being previously drained before a fresh one is added. The entire mass in the receptacle is left to acquire by evaporation a certain solidity, like stiff mud, in order that it may be shovelled into wheelbarrows and conveyed to the drying shed where it is spread in a layer of a certain thickness upon iron plates laid over flues, through which heat passes from fire-places, which frequently are coke ovens, and supply the coke for the final calcination in the kilns. When the mixture or raw cement is sufficiently dried, it is broken in convenient pieces as uniform as possible and charged in layers of about four inches thickness into large and lofty kilns; between each layer and below the bottom one is spread a layer of coke of about the same thickness, and when the kiln is fully charged it is fired, the calcination occupying several days. Several days are also required for the cooling of the kiln so that the burnt "clinker," as the cooked cement is called, can be handled and sorted, the properly calcined being separated from the portions that are not so. The selected clinker is then conveyed to the grinding apparatus, ground, and thus converted to powdered cement.

The process just described is termed the wet process, and I believe is exclusively used in England, and possibly to some extent on the Continent, although in the latter country, and especially where hard limestone is employed, the system called the dry process is better adapted to this sort of material. In this system the limestone by grinding is reduced to an impalpable powder, and the clay after being perfectly dried is reduced to the same condition. These two materials are then mixed in the requisite proportion of about 78 per cent. of powdered limestone, when this substance is a pure carbonate, and 22 per cent. of the dry powdered clay, these measures being by weight; they are then introduced to a pug mill with water and then incorporated into a stiff plastic paste, which as it leaves the mill is molded into square and hollow prisms or briquettes of a certain size, which after being dried are calcined, as in the wet process, and then ground.

The perfection of Portland Cement, primarily, of course, depends on the use of the proper materials and the true chemical proportions of the lime and clay in the mixture. If these conditions are not observed good cement is impossible; their intimate mixture, depending upon the fineness of the particles to which they are reduced and the trituration to which they are subjected, is also an indispensable requisite, and lastly its calcination, which must be carried far enough to produce an incipient vitrification or welding together of these ingredients. The grinding of the "clinker," as the result of the burning is termed from its resemblance to the blackish slag or cinder of an iron furnace or forge, is also important, as the degree of fineness of the ground cement affects its practical economies in several particulars, both as to strength and its capacity for sand, etc. Here, gentlemen, is a sample of Portland Cement in the condition of the clinker; you will notice its great specific gravity, scoriaceous texture and blackish color. One would hardly suppose such a substance by simple pulverization could be converted into a cement of such vast and varied utility as experience over the world for more than sixty years has proved it to be. Had the ancient Romans, Greeks, Egyptians, or any other ancient peoples, possessed such a building material, old Vitruvius would have extolled it as the acme of their engineering and architectural triumphs and challenged the efforts of posterity to produce its equal. I must, however, quit these classical contrasts and hasten with the more essential matters.

I have to speak of the operation of burning the raw cement, as involving one of the most important essentials of the integrity of the finished product. This constitutes the most expensive part of the manufacture, besides demanding the most careful attention on the part of the burner. Various forms and systems of kilns have been designed, both of the so-called perpetual and the intermittent sorts, the former being when the fresh charges of raw cement and coke are simultaneously fed to the kiln, as the thoroughly burnt portions are withdrawn, and the latter sort where the charge at once fills the kiln, and is not withdrawn until the whole of it is supposed to be completely calcined. The kilns are of numerous patterns, some of them still used are of fashions employed a century ago for burning quicklime. The so-called Hoffman kiln is an improvement on these antiquated forms, and is extensively operated for both burning bricks and Portland Cement. Into all these kilns the raw cement is charged in either lumps or in briquettes, but a late improved system of burning has been introduced into England by Mr. Ransome, wherein the dried raw cement is reduced to small particles and exposed to heat in such a manner that they are quickly converted to the clinker state, thus saving much of the time occupied by the older methods and facilitating with greater economy the operation of grinding.

Coke is the usual fuel used in burning. Ordinary coal will not answer the purpose, as the sulphur commonly contained in it would combine with the lime of the raw cement and thus tend to the production of a sulphate of lime and consequently of a cement of too rapid setting. For the production of the clinker an intense heat is necessary, which must be carefully regulated, in order that the calcination may be uniform and without overburning or underburning the material, the product in either case resulting in a failure of good cement.

Of the immense variety of purposes to which Portland Cement can be applied it seems almost unnecessary for me to refer to before an audience of architects and engineers. The wonderful characteristics of the material, its crushing and tensile resistances, its plasticity and cohesion in manipulation and adaptation to all sorts of mouldings, even to fine statuary, and its persistent but slow setting induration with its apparently eternal durability,

constitute the perfection of lithological building material both for its cementing bond, for all the various stones and bricks with which it can be used and for making blocks of stone themselves.

In this connection I must speak of the surprising discoveries of M. François Coignet, of France, and his applications of what he calls Béton Aggloméré, a calcareous composition into which besides the sand, enters Portland Cement and hydraulic lime—it is an inexpensive artificial stone and is rapidly becoming used for edificial structures of almost every kind among that scientific and enterprising people. Seventeen years ago I witnessed in that country works of a boldness of design and extent that I could not have supposed to be feasible with a simple combination of mortar and sand. I have brought with me photographic illustrations of an aqueduct of nearly forty miles in length and supplying water to Paris built with this béton, the supporting arches as well as the water pipe itself being monolithically formed with it. I had the good fortune to make the acquaintance of the engineer of this original and magnificent work, and was enabled to visit and inspect it at several points; the arch over the Orleans road, through the Forest of Fontainebleau, which I examined, was about 125 feet span without a joint in its construction. The only materials used in the construction of this aqueduct were Portland Cement in a very small proportion, hydraulic lime and the sand found along the route of the work. Another photograph shows a view of the church at Vesinet, also from foundation to the top of the surmounting cross built of the Coignet Béton. I might, if time permitted, mention other public massive works which I examined in France, all erected by the use of this material.

I have introduced these brief details of the history, manufacture and application of Portland Cement, gentlemen, supposing they might interest such of you as have not had an opportunity of an acquaintance with the subject in these particulars, and that you might find in them a recommendation for the extension of the application of this useful material in your own practice. I have felt obliged to omit many details in this part of my task which, however, you will readily find described in the literature devoted to the subject in French, English and German publications. I will now proceed to state my own experience both in the experimental manufacture and use of this valuable material.

[TO BE CONTINUED.]

A paper read by Calvin Brown, C. E., U. S. N., before the Technical Society of the Pacific Coast, at the September meeting 1890, and republished by permission from the Journal of the transactions of the Technical Society.

Swiss Log Cabin.

THE SWISS LOG-CABIN.

The illustration here presented is a sample of those log buildings to be met with in the Canton of Berne, in Switzerland, and although it differs somewhat in execution from those log-cabins of our own country, it presents, nevertheless, some points which might be made available in such construction. Many gentlemen desirous of introducing this most rustic and very picturesque style for gate lodges, gardener's house, etc., will see that, with a little care in the construction, a very desirable effect may be produced, and that with a liberal use of the saw instead of the axe, our log buildings may be made to present a much more acceptable appearance than they present throughout the country at this day.

This structure here shown is a barn, stable and cow-house, combined. It is comfortable, and very permanent. It will be observed that the logs lie close on each other, instead of leaving openings to be filled in with mud, as is the custom here. These logs are pinned down to each other with stout oak pins at regular intervals along their length, breaking joint alternately, as the layers are placed one upon another. Instead of our *shingling*, the Swiss log-builders lay the roof with boards from pole-plate to eaves, crossing them with lengths of scantling, upon which are laid rocks to secure these in their places. When the rocks are covered with moss the effect is very pretty. And indeed the rustic Swiss throughout presents points of attraction of peculiar grace.

NOTES ON THE BEHAVIOR OF STEEL RODS AT THE ELASTIC LIMIT.

BY LUTHER WAGONER.

In the transactions of the American Society of Civil Engineers, Vol. 3, is an account by Louis Nickerson of the examination of glass beams and rods under stress, by the use of polarized light. The principal fact shown in these experiments is, that the beams or rods are apparently not under uniform stress. In the case of glass rods or columns under stress, certain dark bands, normal to the direction of the force applied, were observed, whose interval of spacing varied with the load.

Mr. Nickerson's idea was that the dark bands were lines of no molecular disturbance, but no theory was presented as to their probable cause.

Having witnessed these experiments, the writer thought a possible explanation of the black bands might be due to interference of wave action; thus, if the present notion of molecular arrangement be correct (i. e., stresses are transmitted by wave action), there might exist nodal points in a rod under stress, where the stresses by interference would be neutralized, and in consequence there would be no change in the diameter. Hence, if a carefully turned and polished metal rod be pulled to a point slightly below the elastic limit, its surface should present a corrugated appearance; and if pulled to a point slightly above the elastic limit, the flow should take place between the nodes, leaving the latter unchanged in diameter.

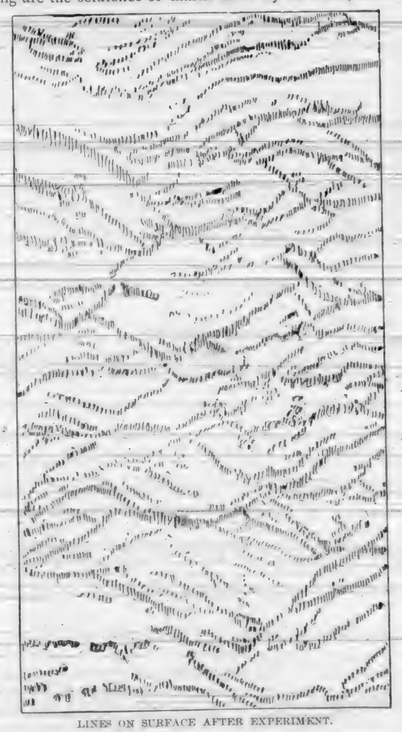
To test the matter, Lieutenant-Commander F. P. Gilmore, U. S. Navy, had prepared a number of rods of rivet steel (open hearth); the rods were twenty inches long, and turned and pol-

ished for a length of twelve inches, the diameter of the turned part ranging from five-eights to one inch.

The rods had an average breaking strength of 55,000 pounds per square inch, and the elastic limit was about 35,000 pounds per square inch. They were pulled in the testing machine at the Union Iron Works.

When nearing the elastic limit a slight difference of diameter could be felt, but this disappeared when the stress was reduced; at the moment of reaching the elastic limit the line of light reflected from the polished surface, which had been narrow and straight, suddenly became irregular and rather sinuous, the corrugations upon the surface being apparent to the touch. To develop these corrugations so that they would be visible at all points upon the surface, the rods were "honed," by carefully drawing a flat hone 1½ inches wide along the bar, thus touching all the high points and leaving the surface in a condition to be easily observed.

The accompanying engraving is an accurate development of the surface of one of the rods, for a longitudinal distance of 5.5 inches, the diameter of which was 0.93 inch; the lines in this drawing are the scratches or marks made by the hone, and also



LINES ON SURFACE AFTER EXPERIMENT.

the high or unaltered parts of the rod where there was little or no flow of metal.

Although somewhat irregular, it will be noticed that there is a general parallelism of the principal lines, and some degree of uniformity of spacing between them, perhaps as close as could be expected from an unannealed rod not perfectly homogeneous.

From the experiments made there is ground for the belief that *homogeneity of the metal will be indicated by the regularity of the lines thus obtained*, as the rods can be honed without removing from the testing machine; the method can be easily applied before testing to destruction, and in this way perhaps an additional test for QUALITY OF MATERIAL may be had.

Additional experiments upon carefully annealed bars appear desirable.

A paper read by LUTHER WAGONER, member of the Technical Society of the Pacific Coast, at the April meeting, 1890 and re-published by permission from the *Journal of the Transactions of the Tec. Society.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

Our double plate is a view of the New Building for the Hibernia Savings and Loan Society in course of erection on the corner of McAllister and Jones Streets in this city; built of granite, the columns are of granite, solid monoliths and fluted. Messers Pissis and Moore are the architects.

The Sea side dwelling, exterior and interior views is from designs by C. Swain, architect.

NOTES & COMMENTS.

A myrtle, even in the desert, remains a myrtle.

The cat and the rat make peace over a carcass.

Truth is heavy, therefore few care to carry it.

The soldiers fight, and the kings are heroes.

In the year 224 B. C., the colossus of Rhodes was thrown down by an earthquake.

Many a colt's skin is fastened to the saddle its mother bears.

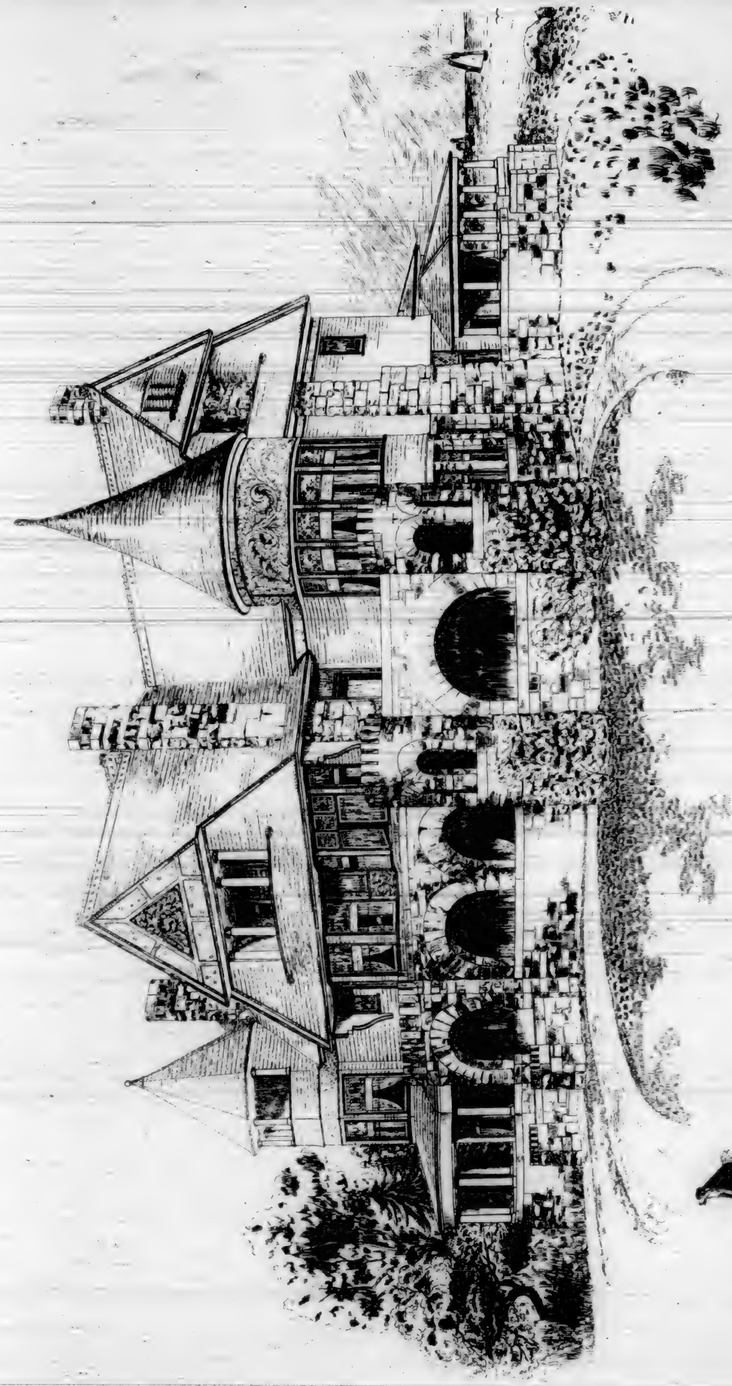
Two pieces of coin in one bag make more noise than a hundred.

A NEW IDEA.—A recent contract provides for street lighting in Paris on a novel plan. Power is distributed by the compressed air system to a great number of small motors, each of which supplies electricity for a small number of lamps.

A photographic journal of 1877 cautions the photo fraternity to beware of a "Yankee trick" that has been played upon the public in relation to photographs taken by a Mr. Muybridge, of California, of the trotting horse "Occident" in one one-thousandth part of a second, and regrets that the horse may accidentally die before these wonderful pictures are placed on exhibition. Now, any boy with a "snap box" can take these wonderful pictures.

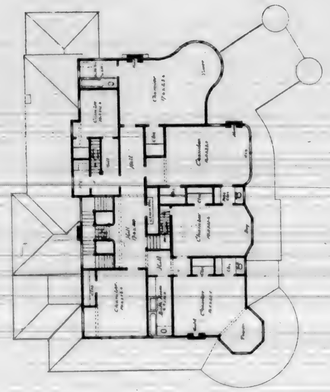
The New Building for
The Hibernia Savings and Loan Society. S.F. Cal.

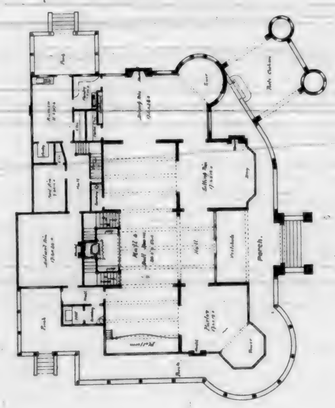
Plassis & Moore Architects.

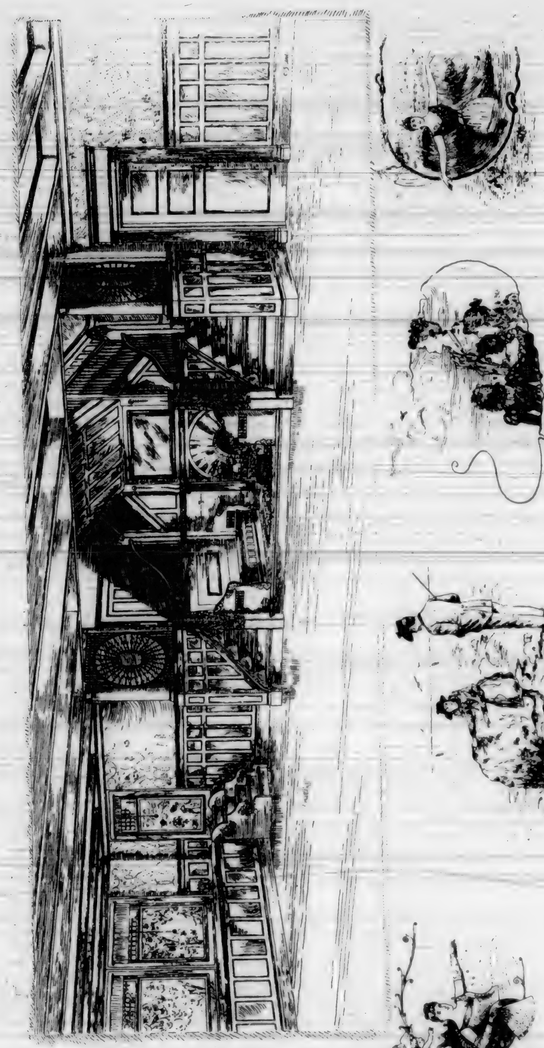


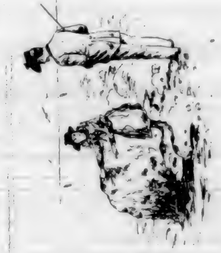
A Seaside Dwelling.
C. Swain. '91.
SAM'L. NEWSOM, ARCH'T.
318 Phelan Bldg. S.F.

APRIL 1891. THE CALIFORNIA ARCHITECT AND BUILDING NEWS. VOL. XII. NO. 4.









A SEASIDE DWELLING.
The elevations
The HALL and IDLE ROOMS.

C. Swain. '91.
with
Saml. Newsom Arch't.
318 Phelan Bldg S.F.

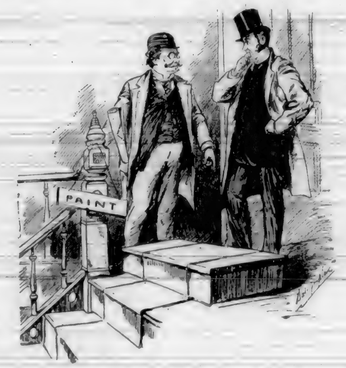
The inhabitants of Mars when looking at this earth probably think that California is the typical "Garden of Eden" they have heard so much about.

In architecture the rear column rarely becomes such a prominent feature as the rear column of the Emin relief expedition.

The camel desired horns and his ears were taken from him.

A prominent timber merchant has had his coat-of-arms painted on the panels of his carriage, with the Latin motto, "*Vidi*," which, by interpretation, is "I saw."

A young mother consults one of her friends upon the profession she ought to give her son. "The child troubles me; he is of a dreamy nature and taken with the ideal." "Make him an architect, my dear madame," replies her friend, "he will then be able to build castles in Spain."—*Ex.*



A LONG FELT FOR WANT.

MR. BILTON *(on the second story)*.—Why have you put that top step of the stairs above the level of the floor?

ARCHITECT.—I thought you wanted all modern improvements. That's the step a fellow always reaches for when he gets to the top of the stairs in the dark.—*Puck.*

First Tramp—If I had my way I'd have 365 national holidays in this year.

Second Tramp—You would, eh? And then there would be one working day in every four years. Oh, you are a nice one, you are! You would make a galley-slave of the poor laboring man, wouldn't you?

MEIGGS' WHARF.

WHAT IS LEFT OF THE OLD STRUCTURE TO BE TORN DOWN.

The old dilapidated wharf at the foot of Powell street known as Meiggs' Wharf, will soon be a thing of the past. The ravages of time have played sad havoc with the old structure, every storm that blew lately taking away pieces of it. What is left of it will be torn down in a few days to make way for the new section of the sea-wall which is advancing with rapid strides. For some years the wharf has only been used by boatmen to hang their boats on.

Meiggs' Wharf was built by Harry Meiggs, and was finished in 1852. In early days it was a great resort for young people, especially on a Sunday, one of the attractions being a menagerie kept there by "Old Warner." The first ship that ever docked there was the clipper ship Andrew Jackson in 1852. The first steamer that docked there was the California, whose advent inaugurated "steamer day." Part of the old wharf was washed away in 1860. It was repaired, and ferry-boats landed there until the year 1874.—*S. F. Call.*

AMERICAN ARTISTS HONORED.

LONDON, March 21.—The American artists in Paris have been officially invited to participate as a distinct body in the coming Berlin Art Exposition. The Americans are the only group of foreign artists who have been thus honored by the authorities at Berlin. After some consultation and deliberation the American artists in Paris, with one or two exceptions, will send specimens of their work to the Berlin exhibition It is expected there will be a total of one hundred pictures by Americans exhibited upon the occasion mentioned.—*Ex.*

PAINTING IN OIL a practical manual for the use of Students. Square 12mo. Cloth, $1.00

The thorough preparation that appears in Miss McLaughlin's writings, and her clear, direct style, have given her a place of distinction among makers of art books. In the present volume, she gives a lucid statement of the scientific theories and facts relative to colors, treating the whole subject broadly, as well as technically. This book is also largely realistic, enlarging on the material side of the subject, the tools which the student should use, and the best method of handling them.

Robert Clarke & Co., Publishers, Cincinnati, Ohio.

PROPOSALS FOR U. S. POST OFFICE AT SACRAMENTO CAL.

TREASURY DEPARTMENT.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C. until 2 o'clock P. M. on the 22nd day of May, 1891, for all the labor and materials required for the stone and brick masonry of the superstructure, the iron work of floors, ceilings and roof construction, roof covering, down and drain pipes, brick and terra cotta floor arches for the U. S. Post Office, &c., Building at Sacramento Cal., in accordance with drawings and specifications, copies of which may be had on application at this office, or the office of the Superintendent at Sacramento, California.

Each bid must be accompanied by a certified check for $500.

The department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for stone and brick masonry of superstructure, iron work of floors, ceilings and roof construction, &c., for the U. S. Post Office, &c. building at Sacramento, California," and addressed to,

H. C. McLEAN,
Acting Supervising Architect.

April, 13, 1891.

OBITUARY.

THOMAS DAY.

We regret to chronicle the death of Mr. Thomas Day. Some thirty years ago Mr. Day was the proprietor of the largest and most complete plumbing establishment in this city, situated on Montgomery street near Jackson. As business extended southwardly, Mr. Day moved to Sutter street where he opened the elegant show rooms bearing his name, and filled with the most artistic and high grade articles in that line to be found in the country. With advancing years the "Thomas Day & Co." was formed, and Mr. Day withdrew from active business.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Murphy Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. Kent, Pres. A. Jackson, Sec.
L. A. Larsen, Clerk.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held in their former rooms at 408 California street, on the 10th inst.

The executive committee was instructed to make arrangements for rooms in the new building of the Academy of Sciences.

THE regular monthly meeting of the "Architectural Sketch Club of San Francisco," was held Tuesday evening March 31st, President Wetmore in the chair.

The election of the Executive Committee took place. The following are the names of the Executive Committee: Chairman, R. H. Wetmore; Secretary, H. J. Van Vlack; Treasurer, C. A. Meussdorffer, and C. O. Hilpisch and S. C. Benson. Mr. M. L. Rosenberg, Edw. G. Duesenberg and E. L. Holmes were elected members of the Club.

At the February meeting of the Club, the name was changed from the "A. I. A. Sketch Club of San Francisco" to "The Architectural Sketch Club of San Francisco."

A very interesting paper was read by Mr. C. A. Meussdorffer on "Architectural Sketching by Students," which excited a spirited discussion by the members present.

There are now on the roll, sixteen members in good standing, and the Club is in a very prosperous state; much good work is being done to advance the professional knowledge of its members and to promote their intercourse and good-fellowship.

THE regular meeting of the Technical Society of the Pacific Coast was held at their rooms, on the 10th inst. The subject for the evening was "Street-paving in San Francisco, its defects and methods suggested for their remedy," by Mr. S. H. Smith.

AT the regular meeting of the California Electrical Society held at their rooms on the 6th inst., the subject for the evening being "Sub-Marine Mining by Electricity," by Mr. T. J. Allen. The author gave much valuable information in regard to mines anchored in channels or entrances to harbors and which may be exploded by means of electricity. The different systems were described and their defects or advantages pointed out.

The United Brotherhood of Carpenters and Joiners of America will hold their tenth annual picnic at Shell Mound Park, on May day.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country

Rights of Sub-Contractors to Mechanics' Liens.—Where a contract to build houses between the owners and principal contractors stipulated that, before the last payment shall be due, the contractors shall furnish releases from all persons having a right of lien against the houses or property on which they are located for any work or materials, sub-contractors were not deprived thereby of their right to file mechanics' liens.

Murphy v. Morton, Supreme Court of Pennsylvania, 20 At. Rep., 1049, (79M).

Provision for Arbitration in Contract.—Where a building contract provides that "any question in regard to the quality or quantity of the work shall be referred to the Superintendent, whose decision shall be final," the contractor cannot recover for a disputed claim under said contract, which he has refused to submit to the Superintendent. Where no exception is taken to the reservation of a point as a question of law, objection thereto cannot be taken on appeal.

Fulton v. Peters, Supreme Court of Pennsylvania, 20 At. Rep., 936.

Validity of Ordinance Creating Fire Limits.—Where the charter of a city provides that the city "shall have power to make regulations for the prevention of accidents by fire, to establish a fire department * * * * * to prevent all possible and proper means, danger or risk of injury, or damages by fire arising from carelessness, negligence, or otherwise, * * * and such other powers and privileges not herein specially enumerated, as are incident to municipal corporations of like character and degree." The city has implied power to pass an ordinance creating fire limits, and prohibiting the erection of wooden buildings therein. An ordinance forbidding the erection of any wooden building within the fire limits as there set out, except by special permission of the council, is valid.

City of Olympia v. Mann, Supreme Court of Washington, 25 Pac. Rep., 337.

Mechanics' Liens for Machinery.—Machinery placed in a building erected for a brewery under a contract with the owner thereof, and necessary for the operation of such brewery, becomes part of the freehold, and falls within the provisions of the mechanics' lien law of New York, giving a lien for erecting, altering or repairing a building, though portions of such machinery are removable. The erection of the machinery was completed, and the engine started on or about June 13th, but the engineer of the contractors remained in charge, making alterations, etc., until June 21st, when it worked satisfactorily, and, at the engineer's request, was accepted June 23rd. A lien filed within ninety days after June 21 was a compliance with the provision of the lien law requiring liens to be filed within 90 days after the completion of the work.

Watts-Campbell Co. v. Yuengling, Court of Appeals of New York, 25 N. E. Rep., 1060.

Usage of Trade in Construing Contracts.—Usage may be used as evidence to interpret a contract, but not to vary or contradict it. Its purpose is to ascertain the intention of the parties where it cannot be ascertained by the terms of the contract. In all contracts as to the subject matter of which known usages prevail, the parties proceed on the tacit assumption of such usages, but commonly reduce into writing the particulars of their agreement, but omit to specify those known usages which are included as of course by mutual understanding. Where in a contract to ascertain the net profits of a firm, it was provided, among other things, that "from the outstanding accounts five per cent. be deducted to cover losses and bad accounts," and it was proper to prove usage of the trade to show in such cases that "outstanding accounts" meant those from which the bad accounts had been segregated and charged to profit and loss.

McCulsky v. Llostermann, Supreme Court of Oregon, 25 Pac. Rep., 366.

BUSINESS MOSAICS.

Many devices have been invented and tried to dispense with the cords and weights in windows, but none were found that would displace, successfully, the old arrangement. Within the last few years innumerable inventors have come forward, each claiming to have the long looked for device that should be practical and durable. At this time it looks as if the secret has been opened, and the problem solved in the form of the California Sash Balance as made by the California Sash Balance Co., of this City.

In this invention no weights or cords are used, but in their place is substituted a coiled spring set in the rail of the sash while in the frame is set a ratchet—and pinion with coggs. The heaviest as well as the lighest sashes are easily raised or lowered by the slightest pressure, and firmly locked, burglar proof, in any desired position by means of the ratchet. Upper or lower sashes are worked equally well. The portions exposed to view are made in any style; and form in themselves a finished appearance. The trimmings do not intefere in any manner with the curtains, blinds, shades or shutters. No boxing for weights is required, as no cords are used. The sash runs can be finished to correspond with the other finish of the apartment.

RICHARDS' TRIPLE PLUNGER PUMP, FOR ELECTRIC MOTORS, GAS ENGINES, ETC.

The first essential quality to be attained in a pump that is to be driven by electricity is freedom from intermittent strains and shocks when running at a suitable speed, so that the resistance to the motor will be constant and not cause fluctuations in the transmission of the power.

The next requisite is to reduce the friction of the moving parts to the minimum, and produce a steady flow of water, thereby lessening its frictional resistance.

The other desirable qualifications are compactness and neatness of design, and a proper arrangement of the working parts, so that they will be easy of access and require but little attention.

It has been demonstrated by experience with many pumps in actual use that the Richards pump as made by W. T. Garratt & Co., and illustrated on page iii, that they combine all of these qualifications and are endorsed in the highest terms by those who have them in use; they have three plungers so that there are three discharges of water at each revolution; the valves and water passages are large allowing a free flow of water, and the connecting rods are long in proportion to the stroke, so that the angular thrust is very little. The end of the crank shaft projects through an oil tight stuffing box and can have any kind of a pulley or gear attached to it.

The moving parts run in oil and water, and require but little attention, in fact it does not require an experienced engineer to run it, but a janitor of a building, or a person of little or no experience can give it all the attention it requires.

They run noiselessly and without jar and this of itself is a very, desirable feature, particularly in an office or appartment building

The friction of the pump is very low, and it is said by some who are using them to be only five per cent, and in one case only two per cent. This of course leaves nearly all the power expended by the motor to be used in the actual work to be performed, and makes it a very economical pump.

They can be driven by electricity. Gas Engines, water wheels or motors, wind mills or any other power that can be obtained, and are capable of performing the highest duty.

Many of them are in use in buildings, for the purpose of raising water to the tanks of roofs for elevator and other uses, and are found to be without a superior for that purpose; but they will also be found to be an efficient and economical pump for mining, irrigating or any other place where a power pump may be desired.

Whosoever seeketh wisdom shall find it by careful attention to the advertisements in the California Architect.

We have received from Messrs., Merchant & Co., the well known dealers in metal roofing plates a beautiful and artistic colored sketch showing the seven greatest engineering achievements of the present century.

Persons in search of a plumber who understands and can do a good job of plumbing, both from a workmanlike and sanitary point of view, should call on Thos. Clark & Sons. See card on page X.

THE PULLMAN SASH BALANCE IS THE BEST. IT BEATS EVERYTHING FOR OLD OR NEW WINDOWS.

What it Is.—It is a compact device for sustaining a window sash by the tension of a carefully tested coiled spring.

What it Saves.—It saves time and money, as by its use, boxes, pockets and dividing strips in frame are rendered unnecessary, and it is much more quickly and easily applied than are the clumsy weights and cords. It saves the trouble and annoyance inseparable from frayed and broken cords and noisy pulleys.

How it Works.—It is guaranteed to balance a sash more perfectly than weights or any other device. It is perfectly noiseless.

Its Durability.—Being constructed of the very best materials and thoroughly put together with the friction of a counterweight overcome, it will last a life time.

Its Adjustability.—The pressure of the tension band on the tape [regulated by the screw in the face plate] adjusts the Balance to the varying weights of sash. This renders it unnecessary to fit a sash tight or loose and prevents a sash from being pushed too violently against the top of the frame.

The Top Balance.—Shown above is for use in places where there is not sufficient room at the side. Its use in mullion windows, as shown in the cut, enables an architect to introduce light where it is the most needed, by reducing the amount of wood. See advertisement.

Hall's Safe and Lock Co., are putting in the Fire and Burglar proof safe and vault work for the new Hibernia Bank building, in course of construction on the corner of McAllister and Jones streets.

The Vulcan Iron Works are supplying the market with a superior make of stable fittings of all kinds. See advertisement on page xiv; also metal weather vanes, finials, and all manner of architectural and ornamental metal work.

The new Hibernia Bank building in course of construction, attracts attention on account of the excellent quality of the granite work. The large columns, each formed of a single piece of granite, are conspicuous features of the facade. The contractor for the granite and brick work is Mr. O. E. Brady.

Hotels that are being fitted up with heating and laundry appliances, of the most modern patterns, and where economy in fuel and attendance is desired, should communicate with Dundon's San Francisco Boiler Works.

The West Coast Wire Works, Messrs. Smith & Trowbridge, stands at the head of the list for thorough, practical work, combined with artistic excellence. Some ornamental wire work recently made by this firm, is second to none in the city, and at prices below Eastern Manufacturers.

The rose grows among thorns. (Latin, cepe sæpe sub sepe crescit.)

Persons in want of gold, silver or nickel plating, should call on E. G. Denniston, 653-655 Mission St.

The Cincinnati Corrugating Co., long and prominently known as manufacturers of high grades of corrugated and other forms of iron and steel sheets for roofing purposes, last year added a galvanizing plant complete, and we are gratified to learn that they have succeeded in establishing for their galvanized sheets the same high reputation previously established for their corrugated and other roofing sheets.

Their plant is well located for shipping. They carry a large and varied stock and are at the head of the list for promptness and excellence in executing orders. Their "Piqua" brand of galvanized sheets compares favorably with any brand in the market.

The cross-cut saw gets dull in spite of its teeth.

Composite Colors.

The effects obtained by these colors, or rather by this method of staining, are much like the effects of watered silk, looking perhaps green in some positions, and then changing into red or brown in another light.

One of the oldest of the Eastern architects declared that no advance in exterior coloring equal to the introduction of exterior staining, over a decade ago on the discovery of the Creosote stains, has been made in the last fifty years. This new discovery, made by the Creosote people, bids fair to make as great a revolution as the original one.

Patent right for sale—Rights for City, County and States for a preparation to prevent efflorescence (saltpetre) on brick buildings. Address for circular and information, American Brick Coating Co., Lincoln Inn Court, Cincinnati, O.

CITY BUILDING NEWS.

Broadway near Franklin. Mill work; owner, Mahoney Bros.; architects, Shea & Shea; contractors, City Planing Mill Co.; cost, $2,650; signed, March 19; filed, March 20; payments, 1st and 15th day of each month 75 per cent of work done; balance, 35 days.

Broadway near Franklin. Painting; owners, Mahoney Bros.; architects, Shea & Shea; contractors, Wm. Armstrong & Son; cost, $2,957; signed, March 24; filed, March 30; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Bush near Jones. To build; owner, A. Mayer; contractor, L. A. Secor; surety, $750; cost, $7,500; signed, March 16; filed, March 16; payments, $1,500, 1st tier of joists on; $1,500 frame up; $1,500, brown mortared, $1,500 completed, $1,500 35 days.

California St., Nos. 2125 & 2127. Carpenter work; owner, Louis Taussig; architects, Salfield & Kohlberg; contractor, Wm. Plums; cost, $1780; signed March, 11; filed, March 13; payments, $1280, completed; $500, 35 days.

California near Buchanan. Carpenter work; owner, Clinton Jones; architect, J. H. Littlefield; contractors, Currie & Loomer; cost, $10,000; signed, March 26; filed, April 3; payments, 15th and 30th of each month, 75 per cent. of value of work done; balance, 25 days.

California near Buchanan. Plumbing; owner, Clinton Jones; architect, J. H. Littlefield; contractors, S. Ickelheimer & Bro.; cost, $1544; signed, March 26; filed, April 3; payments, on 15th and 30th day of each month, 75 per cent. of value of work done; balance, 35 days.

California near Buchanan. Masonry; owner, Clinton Jones; architect, J. H. Littlefield; contractor, Wald Tarp; cost, $-280; signed, March 26; filed, March 27; payments, 75 per cent. as work progresses, on 15th and 30th day of each month; 25 per cent. 35 days.

Castro near 16th. To build; owners, Capt. A. & O. F. Huber; architect, W. H. Lillie; contractor, Arthur C. Soule; surety, $1196; cost, $4784; signed, March 3; filed, March 18; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent, 35 days.

Capp near 23th. To build; owner, Thos. E. Kealey; contractors, Clark & Sons; cost, $3100; signed, March 6; filed, March 7; payments, $-00, frame up; $800, building enclosed; $600, brown mortared; $600, completed; $800, 35 days.

Castro near Beaver. Carpenter work, etc.; owner, Henry E. Holmes; architect, Fred. B. Wood; contractor, C. E. Dunshire; surety, $350; cost, $2200; signed, March 30; filed, March 31; payments, $350, frame up; $350, brown mortared; $350, completed; $350, 35 days.

Castro bet. 19th & 20th. Alterations; owner, Chris. Schmidt; architect, Gust. Pavel; contractor, Gust. Pavel; cost, $1066; signed, March 19; filed, March 19; payments, $401, house raised and brickwork done; $401, front up except stairs; $401, completed; $462, 35 days.

Chestnut near Dupont. To build; owner, Henry Wellman; architect, C. M. Rousseau; contractor, K. C. Gardner; surety, $9000, cost, $4775; signed, March 31; filed, April 1; payments, $1094, frame up; $1094, brown mortared; $1093, building accepted; $1094, 35 days.

Clayton near Page. To build; owner, C. E. Knickerbocker; architect, W. H. Lillie; contractor, H. Kendall; surety, $1560; cost, $2205; signed, March 24; filed, March 28; payments, 1st and 15th day of each month, 75 per cent. of value of work done; balance, 35 days.

Clay near Filmore. To build; owner, Maria Keogh; architects, Shea and Shea; contractor, Dan'l Chrisholm; sureties, Jas. McKinnon, C. G. Athearn, guarantees; cost, $6662; signed, March 4; filed, March 9; payments, $947, rough frame up; $947, brown mortared; $947, hard finished; $948, completed; 1263, 35 days.

Clay near Filmore, Brickwork etc.; owner, Maria Keogh; architects, Shea and Shea; contractor, Rhody Ringrose; cost, $880; signed, March 7; filed, March 11; payments, $322, brick foundations completed; $323, chimneys completed; $215, 35 days.

Clay near Leavenworth. Plastering; owner, Hugh Huddleston; architects, Percy & Hamilton; contractor, Chas. Dunlop; cost, $2360; signed, March 16, filed, March 23; payments, 75 per cent of value of work done; balance 35 days.

Clay near Leavenworth. Plumbing; owner, Hugh Huddleston; architects, Percy & Hamilton; contractors, Duffey Bros.; cost, $3460; signed, March 17; filed, March 23; payments, 75 per cent of value of work done; balance, 35 days.

Clay near Leavenworth. Masonry; owner, Hugh Huddleston; architects, Percy & Hamilton; contractor, David Pierce; cost, $2250; signed, March 18; filed, March 23; payments, 75 per cent of value of work done; 25 per cent, 35 days.

Clay near Leavenworth. Brickwork; owner, Hugh Huddleston; architects, Percy & Hamilton; contractor, Orrin E. White; cost, $17,935; signed, March 16; filed, March 23; payments, 75 per cent of value of work done; balance, 35 days.

Cor. Broadway and Larkin. Plumbing; owner, Golden State Land Co; architects, Geilfuss & Zimmerman; contractor, H. Williamson; cost, $2160; signed, March 13; filed, March 17; payments, 75 per cent as work progresses, 25 per cent 35 days.

Cor. Collingwood and 19th. To build; owner, F. T. Houschildt; architect; Gust. Pavel; cost, $3640; signed, March 16; filed, March 16; payments, $900, frame up; $900, brown mortared; $900 accepted; $940, 35 days.

Cor. Ellis and Powell. Steam boilers; owners, E. E. & S. V. Parsons; architect, H. Geilfuss; contractors, Union Machine Co.; cost, $3900; signed, March 2; filed, March 7; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Cor. Fulton and Broderick. Brickwork etc.; owner, Henry Hilderbrandt; architects, Geilfuss & Zimmerman; contractor, Ferd Klatt; cost, $9865; signed, March 19; filed, March 20; payments, $1396, frame up; $1500, enclosed; $1500, brown mortared; $1500, completed; $2470, 35 days.

Cor. Fell & Steiner. To build; owner, Jas. Scobie; architect, Chas. I. Havens; contractor, Peter Crichton; cost, $14,195; signed, March 14; filed, March 16; payments, $3250, rough frame up; $3250, standing finish on; $3,945, completed; $3750, 35 days.

Cor. Grove & Webster. To build; owner, Jas. Lang; architect, W. H. Armitage; contractor, Jas. McConnihey; cost, $3400; signed, March 19; filed, March 24; payments, $850, rough frame up; $850, brown mortared; $850, completed; $850, 35 days.

Cor. Haight and Devisadero. To build; owner, Dr. F. W. Harris; architect, L. H. Littlefield; contractors, H. A. Johnson & Co; cost, $5900; signed, Feb. 18; filed, March 17; payments, $1800, frame up and roof on; $1500, white coat of plaster on; $1125, completed; $1475, 35 days.

Cor. Haight and Devisadero. To build; owner, Dr. F. W. Harris; architect, L. H. Littlefield; contractors, H. A. Johnson & Co; cost, $5900; signed, Feb. 18; filed, March 17; payments, $1800, frame up and roof on; $1500, white coat of plaster on; $1125, completed; $1475, 35 days.

Cor. Laussat Ave. and Steiner. Alterations, etc.; owner, Louis A. London; architect, W. Winterhalter; contractor, B. Mardin; cost, $1900; signed, March 6; filed, March 7; payments, $500, raised and framework up; $400, outside finish and 1st coat plaster on; $500, completed; $500, 35 days.

Cor. Market & 2nd. Cabinet work; owner, W. J. Sullivan; architect, Chas. I. Havens; contractors, T. W. Kreling & Son; cost, $5600; signed, March 21; filed, March 24; payments to be made on 20th day of each month; 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. Market & 2nd. Plumbing; owner, W. J. Sullivan; architect, Chas. I. Havens; contractors, Duffey Bros.; cost, $1217; signed, March 9; filed, March 16; payments, $450, rough gas and water pipes in; $450, completed; $317, 35 days.

Cor. Mason & Jackson. To build; owner, L. F. Kimball; architects, Shea & Shea; contractor, L. M. Weismann; sureties, J. Doelger and J. Staude, guaranteed; cost, $6375; signed, March 4; filed, March 6; payments, $1195, frame up; $1196, brown mortared; $1195, hard finished; $1196, completed; $1594, 35 days.

Cor. Mason and Sacramento. Brickwork, etc; owner, E. A. Denicke; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $1,666; signed, March 30; filed April 1; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Pine and Devisadero. Plumbing; owner, Frank Maskey; architect, Chas. I. Havens, contractor, H. Williamson; cost, $3,384; signed, March 13; filed March 16; payments, $800, rough gas and water pipes in; $800, bath tubs in; $884 completed; $900, 35 days.

Cor. Pine and Devisadero. Brickwork, etc.; owner, Frank Maskey; architect, Chas. J. Havens; contractor, Jas. McInerny; cost, $22,850; signed March 13; filed March 16; payments, $4,250, brick foundation and frame up; $4,250, brown mortared; $4,250, hard finished; $4 350, completed; $5,750,35 days.

Cor. Pine and Devisadero. Painting etc.; owner, Frank Maskey; architect, Chas. J. Havens; contractors, Swan & Stein; cost, $1,800; signed March 13; filed March 16, payments, $600, inside work 2nd coated and outside 3 coat work 2nd coated; $700, completed; $450, 35 days.

Cor. Pine and Powell. To build; owner, Thos. V. O'Brien; architect, John Gash; contractor, Ira Fancher; cost, $8550; signed, March 16; filed March 16; payments, $1000, frame and brick work done; $1000, brown mortared; $1000, white plastered, $1000 standing finish; $1000, windows hung; $1322, completed; $2228, 35 days.

Cor. Perry and 5th. Alterations; owner, Biaggeo Cirimello; architect; Angelo Banchero; contractor, G. Massoletti; cost, $3890; signed, March 7; filed, March 9; payments, $700, 1st floor joists in; $1000, brown mortared; $690, painting done inside and out; $1,000, 35 days.

Cor. 6th and Minna. Plumbing; owner, Wm. Plums; architects, H. Guilfuss; contractors, Ford Brothers; cost, $1185; signed; Feb. 25; filed, March 11; payments, 75 per cent as work progresses; 25 per cent 35 days.

Cor. Sacramento and Montgomery. Brickwork etc., owner, Pac. Mut. Life Ins. Co.; architects, Wright and Sanders; contractors, McGowan & Butler; cost, $56,000; signed, Feb. 17; filed, March 7; payments, 75 per cent as work progresses; 25 per cent; 35 days.

Cor. Turk and Hyde. Iron beams, etc.; owner, J. O. Sullivan; architect, H. Gellfuss, contractor, P. H. Jackson; cost, $1129; signed, March 10; filed, March 12; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Cor. 5th and Harrison. To build. Owner, Mrs. Rose Byrne; architects, T. J. Welsh; contractors, Brennen Bros.; cost $9,090; signed, March 4; filed March 7; payments, 1st Wednesday of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. 7th and Mission. Brickwork, etc.; owner, T. M. McLachlan; architects, C. R. and J. M. Wilson; contractor, J. J. Conrad; cost, $16,900; signed, Jan. 12th; filed March 6; payments, $4,000, 1st floor joist on; $4,000, 3rd floor joists on; $4,000, roof on; $675, building accepted; $225, 3 days.

Cor. 16th and Valencia. Graining, etc.; owner, A. L. Campbell; architects, C. K. Kirby; contractor, Wm. Winter; cost, $1,550; signed March 4; filed, March 18; payments, $300 when primed; $400 2nd coated; $400 accepted; $450, 35 days.

Cor. 20th and Eureka. To build; owner, David Barry; architect, T. J. Welsh; contractor, P. J. Griffin; surety, $1,213.50; cost, $4,854; signed, April 1; filed April 2; payments, $1,000 frame up; $900, brown mortared; $800, white plastered; $800 accepted; $1,354, 35 days.

Devisadero near Fell. Carpenter work, etc; owner, P. Rothermel; architect, C. M. Rosseau; contractors, I. E. Kingsley, et al.; surety, $3,000 cost, $3,465; signed, March 25; filed March 27; payments, $900, building framed; $800, brown mortared; $800, accepted; $865, 35 days.

Devisadero near Sutter. To build; owner, T. Jacobs; architects, Salfield & Kohlberg; contractors, Wolton & Havard; cost, $1,666; signed March 3, filed, March 11; payments, $750 frame up; $735, enclosed and floors laid; $1,000, brown mortared; $1,000, completed; $1,165, 35 days.

Dolores near 23rd. To build; owner, H. M. Freck; architect, H. M. Freck; contractor, A. Jackson; cost, $2,860; signed, March 21; filed, March 23; payments, $700, foundations laid; $700 floors laid and brown motar on; $737.50, white plastered; $712.50, 35 days.

Eddy bet. Scott and Devisadero. Alterations; owner, J. F. McGinty; architect, C J. Devlin; contractor, John Massey; cost, $1,895; signed, March 5; filed March 11; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Eddy near Taylor. Painting; owner, J. A. Bergerot, et al.; contractor, L. Paint; surety, $500; cost, $1,250; signed March 30; filed March 30.

Eddy near Taylor. Plastering; owner, J. A. Bergerot; contractor, Chas. Dunlap surety, $4,000; cost, $4,000; signed, March 24th; filed, March 30.

Eddy near Taylor. Plumbing; owner, J. A. Bergerot; contractors, Geo. Humphreys; surety, $1,000; cost, $2,795; signed March 30th; filed March 30.

Eleventh near Mission. Carpenter work; owner, Horace B. Sperry; architect, Jas E. Wolfe; contractor, A. Jackson; cost, $5,773; signed, March 14; filed March 17 payments, $1,000, frame up; $1,200, brown mortared; $1,200, white plastered; $928, completed; $1,445, 35 days.

Eleventh st. near Mission. Concrete work; owner, Horace B. Sperry; architect, Jas' E. Wolfe; contractor, Geo. Goodman; cost, $1,866; signed March 14; filed, March 17; payments; 75 per cent. as work progresses; 25 per cent. 35 days.

Fell No. 1310. Alterations; owner, Herman Puckhaber; contractor, Jas. Geary; sureties, $1,000; cost, $2,350; signed, March 9; filed March 19; payments, $520, house raised and frame enclosed; $520 brown mortared; $522,50 completed; $787.50, 35 days.

Fourteenth near Howard. To build; owner, Mary A. Morter; architect, S. Hatfield; contractor, J. T. Moore; cost, $1,200; signed, March 9; filed March 11; payments, $300, ready for lathing; $300, outside finish on; $300, completed; $300, 35 days.

Front and Pacific. Carpenter work; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. B. Cogswell; cost, $23,000; signed, March 23; filed, March 27; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Front near Pacific. Brickwork; owner, Jas. G. Fair; architect, Henry A. Schulze; contractor, John McCarthy; cost, $28,284; signed, March 16; filed, March 16; payments, 75 per cent. as work progresses; 25 per cent., 35 days;

Front near Pacific. Iron work; owner, Jas. G. Fair; architect, Henry A. Schulze; contractors, Calvin Nutting & Son; cost, $7,900; signed March 23d; filed March 27; payments, 1st day of each month, 75 per cent. as work progresses, 25 per cent 35 days.

Fulton near Buchanan. To build; owner, Chas. Friel; architect, W. H. Armitage contractor, J. F. O'Brien; cost, $3,400; signed, March 2; filed March 24; payments $890, rough frame up; $890, brown mortared; $890, completed; $850, 35 days.

Fulton near Buchanan. Brickwork, etc.; owner, Chas. Friel; architect, Wm. H. Armitage; contractor, T. J. O'Brien; sureties: $3,000; cost, $3,400; signed March 2d; filed, March 13; payments, $850, frame up; $850, brown coat on; $850, completed; $850, 35 days.

Geary near Taylor. To build; owner, J. W. Burnham; architect, Jno. Gash; contractor, Patrick Griffin; cost, $6,497; signed, March 30; filed March 31; payments, $1,218, frame up; $1,218, rough plumbing; $1,218, outside mill work; $1,218, completed; $1,625, 35 days.

Golden Gate ave. near Laguna. To build; owner, H. Curley; architect, Wm. Curlett; contractor, P. Crichton; cost, $7,650; signed, April 2; filed, April 3; payments, $1,000, first tier post set; $1,000, frame up; $2,000 partitions set; $737.50, rough plastered $1,000, completed; balance, 35 days.

Golden Gate ave. near Market. Marble work; owner, Jos. A. Donohue; architect, A. Page Brown; contractor, Wm. Black; cost, $1,291; signed March 31; filed April 2; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 35 days.

Harriett near Howard. Alterations; owner, Thomas Simpson; architects, Shea & Shea; contractor, Timothy Sullivan; surety, $406; cost, $1,625; signed March 16; filed, March 23, payments, $406, building raised; $406, white mortared; $406, alterations completed; $406, 35 days.

Henry near Sanchez. To build; owner, Helen Mulcahy; architect, W. W. Rednall; contractor, W. W. Rednall, surety, $650; cost, $3,420; signed, March 31, filed; March 31; payments, $855, building enclosed; $855, brown mortared; $855 completed; $855, 35 days.

Hyde near Greenwich. Mill work; owner, E. P. Gray; architects, J. J. & T. Newsom; contractors, Miller & Co.; cost, $2,125; signed, March 11; filed, March 13 payments, 75 per cent. as work progresses; 25 per cent. 36 days.

Hyde near Greenwich. Plumbing; owner, E. P. Gray; architects, J. J. & T. D. Newson; contractors, Wm. S. Snook & Son; cost, $1,544; signed, March 11; filed, March 13; payments, $600, gas pipes in; $558, completed; $386, 35 days.

Jersey near Castro. To build; owner, John Quinn; architects, Chas. Devlin; contractors, D. & R. Cullinane; surety, $1,000; cost, $1,456; signed March 10; filed, March 12; payments, $350, building enclosed; $350, first coat of plaster on; $350, completed; $375, 35 days.

Jessie bet. 10th and 11th. Carpenter work, etc.; owner, Thos. Doolan; architect, F. T. Doolan; contractor, F. S. Doolan; cost, $8,000; signed, Dec. 10th; filed, March 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Market st. near Golden Gate ave. Storefitting; owners, S. M. Hamburger & Co.; architect, A. Page Brown; contractor, Chas. M. Depew; cost, $2,227; signed, March 10; filed, March 11; payments, $800 half the work done in place; $600, all the work in place; $627, 35 days.

McAllister bet. Hyde and Larkin. Additions; owner, Hugh Dimond; architect, C. J. Devlin; contractor, Jno. Blake; surety, $1,350; cost, $5,578; signed, March 10; filed, March 11; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Minna near Mary. To build; owner, Mrs. M. H. Donahue; contractor, A. Lund; surety, $3,175; cost, $3,139; signed, January 6th; filed, March 31; payments, $600 frame up; $600, brown mortared; $600 interior finish on; $600, finished, accepted; $775, 35 days.

Mission near 25th st. To build; owner, Richard Collins; architects, Huerne & Everett; contractor, Gus Peterson; surety, $2,000, cost, $4,495; signed, March 13; filed, March 14; payments, $1,123.75, frame up; $1,123.75 brown mortared; $1,123.75 completed; $1,123.75, 35 days.

Nineteenth near Stevenson. To build; owner, J. H. Rosewald; architect, Julius E. Kraft; contractor, Jas. McInerny; surety, $750; cost, $2,927; signed, March 13th; filed, March 16; payments, $650, building enclosed, $650, brown mortared; $577, accepted; $750, 35 days.

Oak near Filmore. To build; owner, Mary J. Drury; architect, F. T. Doolan; contractor, Allan Mcdonald; cost, $1,650; signed, March 30; filed, April 1; payments, $760 frame up; $760, brown mortared; $760, white plastered, $760, completed; $1,010, 35 days.

Pacific ave near Franklin. Carpenter work; owner, Joseph Poheim; architect, J. Magnis; contractor, Geo. Richley; cost, $10,550; signed March 12, filed March 13; payments, $1,000 frame up; $2,000 floors laid; $1,500 porches up; $1,800 inside finish done; $1,600, finished; $2,650, 35 days.

Pacific ave. near Franklin. Concrete work; owner, Joseph Poheim; architect, J. Magnis; contractor, Geo. Goodman; cost, $2,400; signed, March 12; filed March 13; payments, $1,050, foundation laid; $750, concrete work finished; $600, 35 days.

Perry near 3d. To build; owner, Margaret Brown; contractor, M. C. Lynch; cost, $5,590; signed March 21; filed, March 25; payments, $1,000, frame up; $1,100 brown mortared; $1,000, white plastered; $1,000, completed; $1,400, 35 days.

Polk near Clay. Concrete work; owner, Marie Snell; architects, Salfield & Kohlberg; contractor, Ira Fancher; surety, $38,500; cost, $38,500; signed, March, 9; filed, March 14th; payments, 75 per cent. as work progresses semi-monthly; 25 per cent. 35 days.

Portions of blocks 167 and 196. Grading, etc.; owner, M. J. Lyon; contractor, E. F. Dennison; cost, $2,230; signed, March 30; filed, March 31; payments, $825, streets and alleys graded; $825, completed; $600, 36 days.

Second near Jessie. Woodwork; owner F. W. Kern; architects, Smith & Freeman; contractors, Riley & Loane; cost, $9,091; signed, March 23; filed, March 28; payments 1st and 15th day of each month; 75 per cent. as work progresses; 25 per cent., 35 days.

Second near Jessie. Carpenter work, etc.; owner, Allyne & White; architects, Smith & Freeman; contractor, F. W. Kern; cost, $15,340; signed, March 23; filed, March 25; payments, $3,500, second story joists on; $2,000 third story on; $2,500 tin roof on; $2,000 floors laid; $1,685, completed; $3,885, 35 days.

Sharon st. between Church and Sanches; to build; owner, Jas. Geary; contractor, Jno. Murphy; surety, $2,000; cost, $8,900; signed March 19; filed, March 23, payments, $15,000 second story joists on, $1,500 enclosed, $1,500, brown mortared; $800, white plaster on; $1,300 completed; $2,200, 35 days.

Silver bet. 2nd and 3rd. To build; owner, T. Clark; architect, T. C. Clark; contractor, G. G. Gillespie; cost, $5,475; signed, April 1; filed, April 1; payments, $1,000 frame up; $1,000, brown mortared; $1,000 white coated; $1,105, completed; $1,370, 35 days

Silver bet. 3rd and 5th. Carpenter work, etc.; owner, Thomas McNamara; architects, J. J. Clark; contractor, Allan Macdonald; cost, $8,600; signed, April 2, filed, March 31; payments, $675, frame up; $675, brown mortared; $675, white plastered; $675, completed; $900, 35 days.

Steiner near Turk. To build; owner, Adolph Lang; architects, Salfield & Kohlberg; contractor, Wm Plums; surety, $1,060; cost, $4,935; signed March 11; filed, March 12; payments, $700, first floor joists in; $700, frame up; $400, floors laid and partitions set; $800, brown mortared; $895, completed; $1,060, 35 days

Steiner near Turk. To build; owner, Louis G. Schmidt; architects, Salfield & Kohlberg; contractor, Wm. Pluns; surety, $1,000; cost, $1,980; signed, March 11; filed, March 14, payments, $700, first floor joists in; $710, frame up; $800, roof and floors laid; $800 brown mortared; $870 completed; $1,000, 36 days.

Steiner near Turk. Painting; owners, Lang & Schmidt; architects, Salfield & Kohlberg; contractors, Hoffman Bros., cost, $365; signed, March 11; filed March 14; payments, $210, first coat of paint; $210, finished; $145, 35 days.

Steiner near Turk. Plumbing; owners, Lang & Schmidt; architects, Salfield & Kohlberg; contractors, Striegel & England; cost, $780; signed, March 11; filed, March 14; payments, $330, rough work in; $250, finished; $200, 35 days.

Steiner bet. Waller and Germania. Carpenter work, etc.; owner, Henry Simpson; architect, J. R. Miller; contractor, J. F. Logan; cost, $2,9 0; signed, March 28; filed, March 30; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Sutter st. Alterations; owner, Mrs. Kate Johnson; architect, Wm. Patton; contractor, Wm. C. Pease; surety, $1,500; cost, $3,150, signed, March 18; filed, March 18; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Sutter near Jones. To build; owner, E. Menesini, et al.; architects, O. R. & J. M. Wilson; contractor, J. R. Whalen; cost, $11,421; signed, March 11; filed, March 12; payments, $2,855.25, frame up; $2,855.25, brown mortared; $2,855.25, completed; $2,855.25, 35 days.

Sutter near Pierce. Brickwork; owner, Constance Roy; architect, Huerne & Everett; contractors, W. S. Nelson & Co., sureties, C. D. & Lee McGowan, $3,000; cost, $-,590; signed, March 31; filed April 3; payments, $1,382.50, ready for shingles; $1,382.50 brown mortared; $1,382.50, completed; $1,382.50, 35 days.

Sutter near Webster. Plastering; owner, J. J. O'Brien, architect; P. R. Schmidt; contractor, W. T. Houlshan & Co.; cost, $1,050; signed March 11; filed, March 13; payments, $500, brown coated; $275, completed; $2 5, 35 days.

Taylor St., No. 1,500. Additions; owner, Catherine Fahey; contractor, Jos. Pattison; cost, $3,655; signed, March 12; filed, March 14; payments, ¼ of contract price, frame up; ¼, 1st coat of plaster; ¼, ready for painting; ¼, 35 days.

Twelfth near Berenice. To build; owner, John A. Hogan; architect, Jno. T. Hogan, contractor, Henry W. Wilden; surety, $1,500; cost, $3,390; filed March 23d; signed, March 27; payments, $634, enclosed; $636, brown mortared; $636, plastering completed; $636, completed; $848, 35 days.

Twenty-fourth near Noe. To build; owner, Wm. Nichol; contractor, J. L. Mc Laughlin; cost, $1,765; signed, March 18; filed, March 19; payments, $400, brick work done; $400, partitions set and building enclosed; $200, brown mortared; $323.75, completed; $441.25, 35 days.

Valley near Church. To build; owner, August Kroeger; architect, W. H. Mead, contractor, W. H. Mead; cost, $1,400; signed, March 10; filed March 7; payments, $800, frame up. $500; brown mortar on; $900, completed; $500, 35 days.

Valencia near 16th. Alterations; owner, Otto Quellmatz; architects, Wm. Schrof; contractor, Henry Weiss; cost, $6,875; signed, March 14; filed, March 16; payments, $1,280, frame up; $1,280, roof of both buildings on; $1,280, white coat of plaster on; $1,280, all exterior and interior finish on; $1,755, 35 days.

Valencia and Mission. To build; owner, H. F. Michaelis; architects, Martens & Coffey; contractors, M. Loftus; cost, $6,150; signed, March 19; filed, March 31; payments, $1,000 frame up and roof boards on; $1,000, ready for plaster; $1,500, hard finished; $1,310, completed; $1,540, 35 days.

Vallejo near Powell. Additions; owner, M. B. Thompson; architects, Wm. H. Wharf; contractor, A. Christensen; sureties, H. Levi, D. H. Bibby; cost, $1,425; signed, March 24; filed, March 22; payments, $966, underpinned; $260, ready for mill work; $300; ready for painter; $995; completed; $360, 35 days.

Washington near Octavia. To build; owner, C. E. Whiting; architect, W. J. Mathews; contractors, Smilie Bros.; cost, $9,745; signed, March 23; filed, March 31; payments, $7,305, work completed; $2,440, 35 days.

Washington st., No. 1,812. Alterations; owner, Wm. Boericke; architects, Polk & Gamble; contractor, J. R. Whalen; cost, $3,150; signed, March 16; filed March 11; payments, $800, brick work, completed; $1,000 enclosed; $1,000, plastering finished; $1,350 completed; $1,300, 35 days.

Waller near Broderick, Carpenter work; owner, John Thode; architects, Martens & Coffey; contractors, Droge & Munster; cost, $6,360; signed, March 13; filed, March 19; payments, $1,400, frame up; $1,200, floors laid and partitions set; $1,000, white mortared; $1,160 completed; $1,600, 35 days.

Waller near Broderick. Brickwork, etc.; owner, John Thode; architects, Martens & Coffey; contractor, Martin, Fennell & Son; cost, $650; signed, March, 13; filed, March 19; payments, $280, foundation walls finished; $200, chimneys finished; $170, 35 days.

York bet. 22rd and 24th. To build; owner, Bessy McDonougnet et al.; architect, Geo. Houston; cost, $2,701; signed, March 25; filed, March 26; payments, $675, roof shingled; $675, brown mortared; $675, white mortared; $676, 35 days.

Alameda County.

Adeline near 32d, Oakland; 1-story and basement; owner, Winnie Calahan; architect, E. A. Van; contractors, E. F. & A. F. Ware; cost, $1,254; signed, March 4; filed, March 11; payments, $400, frame up and roof on; $400, plastering done; $454, 35 days.

Alameda ave. near Grus st., Alameda. 2-story house; owner, Henry Mohns; architects, Cary & Johnson; contractors, Marcuse & Remmel; cost, $1,475; signed, March 25; filed, March 26; payments, $368.75, frame up and roof on; $368.75 brown mortared; $368.75, completed; $368.75, 35 days.

Alameda near Walnut ave, Alameda, two 2-story houses; owner, Henry Mohns; architects, Cary & Johnson; contractors, Marcuse & Remmel; cost, $2,950; signed, March 28; filed, March 27; payments, $737.50, frames up and roofs on; $737.50 brown mortared, $737.50, completed; $737.50, 35 days.

Bay st. near central ave., Alameda. 3 two-story dwelling houses; owner, Henry Mohns; architects, Marcuse & Remmel; contractors, Marcuse & Remmel; cost, $3,000; signed March 7; filed; March 9; payments, $1,000, frames up and roofs on; $1,000; signed March 7; filed; March 9; payments, $1,000, frames up and roofs on; $1,000, each white plastered; $1,000 each building completed. $1,000, 35 days.

Benton st., near Central ave. Alameda. 2-story dwelling; owner, Henry Mohns; architect, A. Steinbiht; contractors, J. R. & S. P. Richart; cost, $2,100; signed, March 2; filed, March 5; payments, $400, frame up and roof on; $800, brown coated; $675, completed; $925; 35 days.

Central ave., near 3d., Alameda. 1-story frame; owner, P. Winter; architect. A. R. Denke; contractor, A. R. Denke; cost, $1,575; signed, March 4. filed, March 9; payments, $560, shingled; $500, completed; $575, 35 days.

Cowland Tract, Oakland. 1-story frame; owner, D W. Pratt; architect, Chas. Mau; contractor, J. B. Spragues cost, $1,762; signed, March 7; filed, March 9; payments, $246.50, brick work done, frame up; $325, roof on and first coat plaster; $325, second coat plaster; $325, completed; $440.50, 35 days.

Curtis st., near Lydia, Oakland. Cottage; owner; Edward Dolan; contractors, McKay & Hill; cost, $1,685; signed, March 26; filed, March 28; payments, $400, chimney built, rustic and shingles on; $400, first coat mortar on; $400, completed; $435, 35 days.

Cor. 20th st. 23d ave., East Oakland. 1-story frame; owner, Mrs. A. C. Whitt; architect, Chas. Mau; contractor, P. F. Nelson; cost, $2,335; signed, March 24; filed, March 24; payments, $435.25, frame up; $438, ready for 1st coat plaster; $488, outside finish completed; $437, building completed; $583.75, 35 days.

Daleys Scenic Park, Berkeley. 1-story frame; owner, Earl H. Webb; architect, B. Summers; contractor, B. Summers; cost, $1,463; signed, March 9; filed, March 12; payments, 450, house enclosed; $400 brown mortared; $215, windows in; $398, 35 days.

Eighteenth st. near Encinal ave., Alameda. 2-story dwelling; owner, Wm. Wilson; architects, Judd, Hamly & Co.; contractor, Geo. A. Benesman: cost, $3,675; signed March 6; filed March 9; payments, $918.75; frame up and roof sheathed; $918.75, enclosed and ready for plastering; $918.75, woodwork done, 1st coat paint; $918.75, 36 days.

Fifteenth st., bet. 3d & 4th aves., East Oakland. Owner, T. P. Schaller; architect, A. Ruch; contractors, Pierce & Ruch; cost, $5,400; signed, Feb. 25, filed, March 6; payments, $1,350, frame up; $1,3 0, enclosed, rough plaster on; $1,350 completed: $1,350, 35 days.

Encinal ave, near Paru st., Alameda. 2-story dwelling; owner, Henry Mohns; architect, A. Steinbiht; contractor, H. M. Finley; cost, $2,220; signed March 13; filed arch 17; payments, $400, frame up; $550, brown coated; $715, completed; $555, 35 days.

Fifty Associates Track, East Oakland. Dwelling house; owner, Lester W. Forsting; architect, John Hodge; contractor, Herman S. Kribbs; cost, $2,422; signed, March 10; filed, March 13; payments, $606.25, frame up and rustic on; $606.25, 1st coat brown mortar; $606.25, completed; $606.25, 35 days.

Gaskill Tract, Oakland. 2 buildings; owner, Henry Mohns; architects, Cary & Johnson; contractors, Marcuse & Remmel; cost, $1,775; signed, March 23d, filed, March 27; payments, $443.75, frames up and roofs on; $443.75, brown mortared; $443.75, completed; $443.75, 35 days.

Klinkner ave., Herzog st., Golden Gate. 2-story frame; owner, C. A. Klinkner; architects, J. J. & Thos. D. Newsom; contractor, Thos. Bassett; cost, $2,025; signed, March 9; filed, March 10; payments, $500; rough frame and rustic on; $500, rough coat plaster; $500, completed; $525, 35 days.

La Margareta Ranch, Livermore. 2-story dwelling; owner, A. B. Henderson; architect, A. B. Henderson; contractor, J. F. Meyers; cost, $3,050; signed, March 7; filed, March 9; payments, $500, frame up and roof sheathed; $700, enclosed and brown mortared; $500, plastering completed; $600, work done; $750, 36 days;

Lot 15, block 132, Oakland City. 2-story flat; owner; Mary Stanton; architect, C. F. Weldon; contractor, C. F. Weldon; cost, $2,175; signed, March 28; filed, March 28; payments, $350, studding up and rustic on; $450, brown mortared; $600, completed; $775, 35 days.

Myrtle st. near 21st, Oakland. 1-story cottage; owner, Catherine Richter; architect, A. W. Smith; contractor, Thos. McGanly; cost, $2,800; signed, March 10; filed, March 11; payments, ¼ frame up and brickwork done; ¼ framed and brown mortared; ¼, completed; balance 30 days.

San Antonio ave. bet. 21st and 22d st., Alameda. Cottage and basement; owner, Francis Lawrence; architect, J. H. Young; contractor, J. H. Young; cost, $1,210; signed, March 5; filed, March 9; payments, $400, frame up and roof on; $400, plaster on and windows in; $410, 35 days.

Strawberry Ck. and Shattuck ave., Alameda. 2-story frame; owner, F. K. Shattuck; architect, W. H. Weilbye; contractor, W. H. Weilbye; cost, $7,700; signed, March 9; filed, March 11; payments, $1,925, frame up and roof on; $1,925, 1st coat paint on; $1,925, plastering completed; $1,925, 35 days.

Tenth ave; near 17th st., East Oakland. 2-story dwelling; owner, H. H. Nagle; architect, Geo. A. Bordwell; contractor, D. S. Brehant; cost, $2,810; signed, March 12; filed, March 19; payments, $700, frame up; $707, plastering done; $700 completed; $703, 35 days.

Thirty-first near Market st., Oakland. 1-story frame and basement; owner, Wm. H. McDonald; architects, C. R. & J. M. Wilson; contractors, Ingerson & Gore; cost, $2,180; signed, March 19; filed, March 20; payments, $545, rough frame up; $545, brown mortared; $545, completed; $545, 35 days.

Twenty-first near Telegraph ave., Oakland. 2-story frame; owner, Susan C. Bruce; architect, Chas. Mau; contractor, Jas. Toohig; cost, $4,443; signed, March 24; filed, March 25; payments, $833, frame up; $833, ready for 1st coat of plaster; $833, 2d coat of plaster on; $833, completed; $1,111, 35 days.

Sonoma. Cottage for C. Aguilon; cost, $2,500; architects, Mooser & Cuthbertson.

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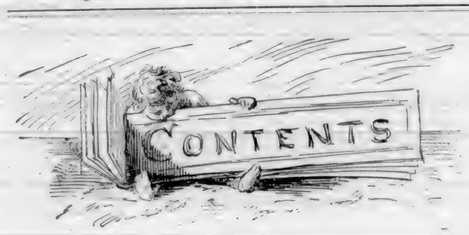

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WITH this May number of the CALIFORNIA ARCHITECT, we commence a series of illustrations and descriptions of the early architecture of this coast, by our special correspondents "Tres." The subject for this issue is the Old Church of the Mission Dolores, at San Francisco. These ancient structures mark the progress of civilization in the earlier periods. It is the intention to continue these representations of the ancient architecture as furnished by our correspondents, as they may journey through California and Mexico.

FROM time to time for a number of years we have been admonished that the old and well tried "Iron" was to be superceeded by the new and untried "Aluminum" but the practical benefits have not been at the present time, so far realized as to replace the other metals. Within a short time experiments have demonstrated that Aluminum when combined with certain other metels forms an alloy which can be rolled into sheets which for lightness, ductility, and durability renders it invaluable for roofing on any place where sheet metal is used. An alloy called Stan-Alumin when rolled into sheets is readily bent and worked into any form; it will not corrode, therefore does not require painting as a protection from the elements.

This material from its durable and other superior qualities is destined in the near future to adapt itself to the requirements of the building trades.

The Master Painters and their employees are endeavoring to effect a more general recognition by the public, of the value of good work and materials, and awaken them to the fact that to obtain the best work, honest and competent men must be employed.

The evil of adulterated and worthless mixtures that are very often palmed off on the ignorant or unsuspicious public, does exist, and in the present effort of the Painters to obtain the aid and assistance of the Architects in securing a high standard of work and material, is worthy of the best help of the Architecural Profession and the public they serve.

An honest painter, using pure stock and not trying to rob his employer by substituting worthless compounds, technically termed *dope*, cannot compete with a dishonest man, and the property owners will find it to their advantage in the end, to support the best class of mechanics, as it is true of this as of almost everything, that *the best is the cheapest*.

We believe the Master Painters and their employees have taken a stand in the right direction. Anything that tends toward a higher standard of excellence for any class of work, must of necessity be of general good to the community.

The Painters should, and probably will be supported by all right thinking men.

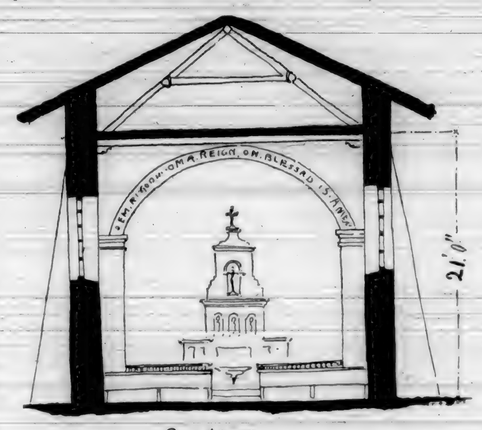
OLD MISSION DOLORES CHURCH, SAN FRANCISCO, CAL.

Of the many Missions scattered up and down the coast of California, the Mission at San Francisco is probably one of the least interesting, especially if looked at from an architectural point of view. If, however, we study it from its historical aspect as marking the most northern limit of civilization as established by the Spaniards on this coast, it at once becomes more interesting. Few indeed were the materials at hand in these early days; and it is well to reflect on the fact, that with no advantages save earnest perseverance these temple builders of a hundred years ago, were able to create that which has made so permanent an impression both on the landscape and history of this western country.

Plan
Mission Dolores.

The Mission Dolores in plan is a paralellogram, 28 x 116 feet and about 22 feet to the eaves, with flat pitch roof covered with pantiles which project some three feet beyond the wall. Exteriorally no attempt whatsoever has been made at architectural effect except at the east front where at the height of the gallery or choir loft a cornice supported by four columns divides the upder from the lower story. Above the vertical lines are maintained in a similar manner by four columns rising to the height of the eaves. In the spaces thus formed by the columns and at the height of the gable are three square openings in which, lashed to wooden cross-beams, hang the church bells. I have not heard their music, but be it harsh or sweet, I doubt not that the sounds of joy or sorrow that their iron tongues have rung out from the ocean to the bay these hundred years, they have brought sweet quietude to many of such who live beneath the shadows of the cross.

The interior is more interesting, for although there are no beautiful traceried windows casting their delicate shadows against a sky of blue and admitting just sufficient of God's perfect sunshine to illuminate without dazzling those who seek for the precious treasure within its walls. These temple builders have signified by their scanty use of light the spirit of the age they live in. An age in which the mysteries of life were rendered more mysterious by looking at them as through a glass darkly, rather than in these modern times closely scrutinizing and endeavoring to analyze the hidden meaning of the old philosophers. A rude segmental arch resting on pilasters projecting about two feet from the wall separates the nave from the chancel, the rear wall of which latter is entirely occupied by the reredos, an elaborate carving in wood, by the early fathers. In six niches, separated from one another by vertical shafts and moulded horizontal bands, stand the images of saints departed, the center niche being occupied by the patron, Saint Francis. To say that these carvings are beautiful, one would have to depend more on his imagination than on his judgment, but remembering the manner in which these beatific characters have been represented on altar and stained glass windows the world over, one is not inclined to be hard on these sculptors, who wrought so diligently to embody the sweet or sad expression of some ideal on this high altar. On each side of the nave and near the chancel arch are two side altars of classic design and apparently of modern construction, for there is an air of machine made mouldings about them that seems to breath of contract-work and strikes. The ceiling of the church is formed of 6x8 beams, spaced about two feet apart—resting at their ends on corbels



Section
Mission Dolores.

and covered over with planks, both beams and spaces being crudely decorated in diagonal bands and triangles in blue, buff, white and brown. There are two reasons, says Ruskin, why they may be considered beautiful; first, because it contains within itself both in mass and form that perfect proportion that brings us pleasure in beholding, and secondly because it is the silent witness that a human soul has labored, joyed and sorrowed and at last triumphed in the production of some thing, which if not beautiful in itself, was at least born of the highest motive, love to our fellow man, and so with our old Mission.—*Tres. San Francisco, May 6, 1891.*

HISTORICAL DEVELOPMENT OF ORNAMENTAL ART.

Dr. Zerffi delivered the first of the ninth series of forty lectures on "The Historical Development of Ornamental Art," in the Lecture Theater, South Kensington Museum, in 1877. After some preliminary remarks the lecturer said that, passing back even to the remotest periods of the development of humanity, we should find certain traces of art expressed as poetry in popular songs, or in attempts at ornamentation, amongst all nations, even during their most primitive savage state. The farther we went back the more closely should we find æsthetical and religious feelings intermingled, so that it was exceedingly difficult to separate art and religion; as we advanced, however, we should find that the necessity for a "division of labor" had made itself felt, and art and religion had not only separated, but even assumed apparently antagonistic positions. This antagonism, however, was merely artificial, and had no lasting vitality. Art and religion were outgrowths of our emotional element, they

were twin-daughters of our higher and most elevated worship of the Creator and His works. The artist worked in absorbing impressions from *without* and reproducing them in new forms from *within*. This process of ideal filtration of the impressions of nature constituted the very essence of art, and transformed a mere *work of imitation* into a *work of art*. This process had to be carried out subject to the rules of taste, and these rules, scientifically systematized constituted æsthetics, for taste was based on the refined, well-trained action of the intellect, stimulated to activity by the imagination. It was impossible to deny that this process had had its historical development, and this development was intimately connected with the gradual progress of human civilization. Many of his (the lecturer's) hearers might possibly still say to themselves, "Of what use can a knowledge of Chinese customs or Greek mythology be to me? So long as I can draw and copy what I see I know as much as I want." If they wished to become mechanical draughtsmen, and not intelligent artists, it was undoubtedly true that they need not know much of Chinese customs to enable them to reproduce Chinese patterns correctly; but if they wished, not merely to reproduce, but to work in the Chinese style, it was essential that they should be able to follow the very mode of thinking of the Chinese artist in order to be able to produce an original Chinese work. Mere imitation, only, then became independent artistic work when such work had grown out of that clear consciousness which stamped a copy of the outward impressions of nature as a product of our inward mental power. The history of art scientifically treated should be as seriously and earnestly studied as the mixing of colors, the drawing of correct outlines, or the general practice of art. History taught us, beyond a doubt, that art had only succeeded in reaching the highest climax of classical or romantic beauty when the technical capacities of the artists were well-balanced by their intellectual powers—when science and taste had combined to guide the merely mechanical in the artists, and had aided them to bring thoughts and ideas into forms. If art did not improve our refined taste for beauty, soften our rude customs, banish vulgarity, and elevate our minds, then, indeed, the study of art would be a mere question of fancy or trade, unworthy the expenditure of physical or mental labor. But an art in which taste tried to grasp the beautiful, and imagination endeavored to give it form, was well worthy of our highest efforts. The ideal of spotless beauty, which should be the aim of art, was not to be found in nature. This did not mean that the elements of beauty were not given us in nature, but the selecting intellect of the artist had to find them, combine, and free them from the accidental, ugly, and grotesque, in order to change the forms given by nature into consciously conceived and created works of art. He (the lecturer) much regretted that he found it necessary, after eight years' teaching, still to remind his hearers that art history and æsthetics were sciences as strictly as botany or chemistry. Like the other sciences, art history and æsthetics were based on observation, on a correct classification of phenomena or facts, and on the careful tracing of certain effects in certain cases. That they allowed a broader range of opinion, and did not apparently directly influence our appetites, the safety of our property, or the material welfare of our body, did not in any way weaken their title to rank as sciences. We were not merely composed of phosphorous, chalk, lime, iron, oxygen, hydrogen, carbon, and—money, but we were endowed with consciousness, which we attained, through ideality, poetry, and art, the most glorious fruits of our intellectual capacity. Poetry and art led us into a world of possibilities and probabilities more beautiful than reality. Supposing that we know all the languages in the world, but were unacquainted with the poetical works of all nations, what dreary philological machines we should be! If reality were our sole end and aim, art would be superfluous; yet art had been practiced by man from the moment he had been able to use his intellectual faculty. Just as the rose had its innate beauty in color and fragrance, so man had his innate power to produce works of intellect and emotion in science and art, united by religion, by faith, and an ever firm belief that the culture of our higher faculties was the most sacred duty of an intellectual being. That mere work could be disregarded in a work of art no one could attempt to assert. It would be as absurd as to seek to give shape to a beautiful creature without using visible materials for its representation. The idea, however, the spirit, the soul, must manifest itself in the work of art as did the Deity in the universe. The beautiful was the representation of the infinite in the finite, and in this in itself lay the close connection between ethics and æsthetics.—*Building News.*

A DISCOURSE ON CALCAREOUS HYDRAULIC CEMENTS.

BY CALVIN BROWN, C. E., U. S. N.

CONTINUED FROM PAGE 42.

My interest in the general subject of hydraulic cement was awakened by my acquaintance with Col. Sylvanus Thayer, of the United States Engineers, in 1840. I think it is to this eminent engineer we are indebted for the extensive introduction into the public works of the United States of this material in the preparation of concrete, although in his time we had only the natural cements of which the "Rosendale" constituted perhaps the most popular brand, the Portland not being then known in this country. I had no opportunity, however, for experimenting in the production of hydraulic cement until I came to California in 1861. The Benicia manufactory was then in operation, being the only one for making hydraulic cement on this Coast, and turning out a natural cement which could be mixed for mortar or otherwise in only small quantities, for use, on account of its rapid setting and hardening. The contrast of this native cement with those of slower induration I had employed in the East, led me to suspect there might, in other localities of the State, be found a substance that would yield a less energetic hydraulic cement. I set about their discovery and collection and subjected various specimens to treatment with varying results.

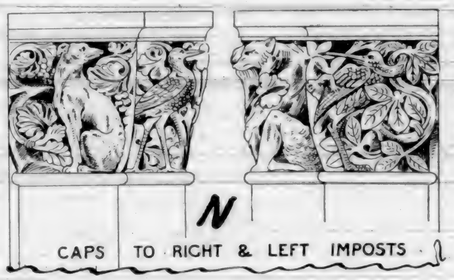
I pursued these investigations for several years, ascertaining that the country abounded with hydraulic limestones, calcareous marls, etc., several of them capable of furnishing cements equal to any then imported article. I also found that several of these limestones would supply, in large quantities, a superior hydraulic lime like the celebrated Theil and Seilly limes so extensively used in Europe and to some extent in the eastern part of the United States. This hydraulic lime as I found it was both of a pure white, like ordinary quicklime and also of a soft buff or cream-color; it will not slack in water like common fat lime and therefore would require grinding for purposes of mortar or other use.

Upon my return from a visit to Europe in 1873, where I had the best opportunities for observing the manufacture and application of Portland Cement, I occupied myself in experiments to determine the resources of this coast in regard to their adaptability to its production, and inquiry about which I had little doubt in consequence of my knowledge of the abundance of natural materials I had previously found here. In these experiments I realized the necessity of a strict observance of the chemical principles involved in the production of the article, and amid the great variety of materials eligible for use, realized the importance of chemical analysis in each case in order to determine their proper combination. Every grade of limestone, from that of almost pure carbonate down to that mixed with various ingredients of alumina, magnesia, silica, iron, etc., I found to exist abundantly in the State; a calcareous tufa was also found in several localities well adapted to the manufacture, and I was also presented with samples of a native carbonate of lime in a pulverulent condition said to exist in abundance in the southern part of the State. Suitable qualities of clay as shown by their analysis, were also found in large deposits, so that the presence of all these native materials gave undoubted assurance as to the feasibility of the desired manufacture.

In my operations, besides a careful observance of the involved chemical conditions, I found actual experience in manipulation to be the only means of acquiring a correct judgment in some of the more critical details in order to obtain satisfactory results. Such practical knowledge cannot be learned from any literature I have come across, nor could I obtain it from my correspondence with foreign manufacturers either in England or in Germany. After many trials, especially in the operation of burning, I succeeded in establishing a process that gave uniform and satisfactory results, and thus demonstrated the certainty of the

native resources of the State for the supply of a superior Portland Cement in all the abundance that its building interests will ever require. By referring to the notes of my operations, I could show you, gentlemen, the record of samples of cement made from California materials that far excelled in tensile strength the average of the reported trials made in foreign countries. I have the record of samples, which, after an immersion in water of 28 days stood a strain of 720, 786, 803, 806, 985, 988 pounds to the square inch, one sample going as high as 1112 pounds to the same area before it broke. All these specimens were subjected to the strains of a perfectly correct and standard testing machine owned by Mr. William Jones of this city, who, with other gentlemen, engineers and architects, were present at the trials. They were prepared from materials found on Mr. Jones' property in Alameda County, where they exist in great abundance.

Referring now to my experience in the application of Portland Cement to constructive works, I must take the occasion to express the obligations I owe to the late General B. S. Alexander, of the U. S. Engineers, for his sound recommendation to me to adopt a concrete in laying the foundation of the Mare Island Dry Dock, upon which I was then engaged. At that time, in 1872, Portland Cement was but little used on this coast; the only hydraulic cement we then, as a rule, employed, was the native Benicia and the imported Rosendale. This dry dock had been designed with a foundation of rubble masonry, in conformity with the usual practice in the buildings of the United States Navy, but subsequently, bearing in mind this able engineer's suggestion, and after seeing the widely extended use of concrete or beton in both foundations and superstructures in Europe, I determined to adopt his recommendation. In my first deposit of concrete to this work, and in the absence of Portland Cement in this market, I was obliged to use the Rosendale and the Benicia manufacture; but one day meeting an acquaintance in this city, who was an importer, I was informed by him that he had several hundred barrels of Portland Cement for which he could not find a purchaser, as nobody seemed to know anything about it, and would I try it. I was glad of this chance for obtaining even so small a quantity as was offered of this superior article, and accordingly procured the authority for its purchase. It was the first I had used on a large work, and proved so eminently superior to anything of the kind I had ever before employed that its preference became an established conclusion. The Government requisitions for it made at a time coeval with its demand for other purposes then about being introduced in this city, soon instituted its regular importation, and the market began to be well supplied.



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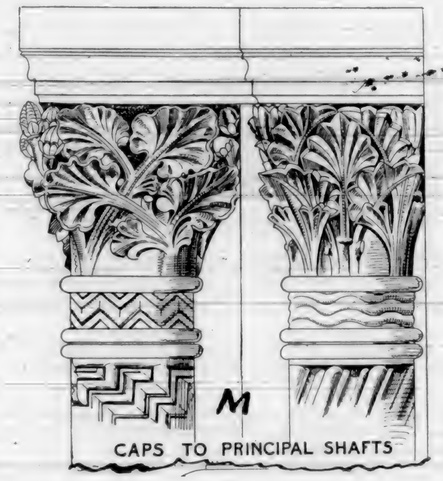
You have lately been favored, gentlemen, with an account and description of the Mare Island Dry Dock, and I need only refer to its concrete foundation for the purpose of illustrating the method of its preparation. The essential features of this operation are the materials employed, their mixture and desposition in the work. Experiments were first made to determine the proportion of the materials, which were a hard and angular broken stone, of quite uniform size, tolerably fine beach gravel, and cement with the water, the object being to find the most economical quatities of these ingredients, especially of the cement, which constituted the most expensive part of the mixture, at the same time the most essential one. It was also desirable to determine what quantity of the aggregate of the materials was necessary to be originally taken in order to make a given bulk in place after ramming, say a cubic yard. Thus, with the broken stone and gravel as the matrix, it was found that 13 measures of the former and fifteen measures of the latter, or in actual quantities say 17½ cubic feet of stone and 20 cubic feet of gravel with 200 pounds of Portland Cement and the water necessary for moistening the mixture, would exactly make one cubic yard in place after ramming. It will be seen in this case that the solidification by ramming was about 72 per cent. of the original uncompacted mass of the ingredients, and that the proportion of the cement in the solid concrete was about one in thirteen, or twelve of the stone and gravel to one of the cement. This concrete as thus prepared and laid in place weighed 144 pounds to the cubic foot, or very near the weight of ordinary well laid rubble masonry; the stone used in the concrete at Mare Island was very solid and heavy. When there was occasion for removing any portion of the concrete for obtaining a bed for the granite superstructure, it was found to be of admirable strength and hardness, requiring powerful efforts with sharp picks and gads for its displacement. It was absolutely impervious to water. Besides broken stone and instead of it, a heavy mixed coarse and fine river gravel of extra sharpness was used, with the economical result of requiring less cement than the combined broken stone and beach gravel—the quantity of gravel thus used in the entire matrix was thirty-one and thirty-two hundredths cubic feet, and of cement 157 pounds for one cubic yard of concrete in place, or about one in seventeen.

The concrete was mixed half a cubic yard at a time by means of its passage through a fall of about 37 feet in a tremie—this convenient apparatus, available wherever a fall can be had for it, is fully represented and explained in the published transactions of your Society, and needs no further account from me. Neither is it necessary for me to describe particularly the operation of depositing the concrete in place, except to imitate one or two precautionary observances, which should be taken in this operation, namely: where masses of concrete are required of considerable depth and are built of successive layers, each layer should have ample time for solid induration before the superincumbent one is added, each layer being kept wet and shielded from a hot sun, as a rapid drying damages the exposed surface by rendering it pulverulent, and thus presenting to the succeeding layer an incoherent film, which prevents the bond that ought to exist in the joints between the two and so throughout the work. To reduce as much as possible, on account of the joints, the number of layers in a deep mass of concrete, and at the same time to effectuate thorough ramming, the thickness of each layer should be regulated to meet those important conditions. We found at Mare Island that a layer of about ten inches thick was most favorable for the effective force of the rammers used on the work—a much thinner layer offering too little resistance for the preventation of a lateral scattering effect of the blow, while in a much thicker layer the force would not act on the lower portions.

Another observance, which seems necessary to intimate, is involved in the use of the water for mixing the concrete. It is to be remembered that the mortar of hydraulic cements is a hydrate, and that its perfect crystallization requires an exact equivalent of its water, any excess being thrown off and any deficiency leaving it devoid of strength from incoherency. Recent investigations in France have shown that the ultimate strength of Portland Cement depends greatly upon the proportion of water used in its conglomerates or when mixed neat. In my own practice in making and testing neat cement, I have used of water from 20 to 33 per cent. by weight of the loose powder, the smaller quantity giving the best results. In preparing concrete my practice was to add only water enough to a little more than moisten the whole mass, so that in ramming a very slight excess would appear upon the rammed surface. The disadvantages of too much water are several. In the first place in the ramming a jelly like mass is produced, rendering proper solidification impossible; in the second place, following of course the first named effect, the porosity of the mass renders it weak and pervious. These precautions are often overlooked by the ordinary users of Portland Cement conglomerates and in its neat applications; impressed with the erroneous notion that a large quantity of water is needed for a strong cement, and not understanding the principle of its crystallization, they literally drown their mixtures, thus placing them beyond proper solidification and rendering them honeycombed and weak. The entire system of mixing the ingredients of a concrete in the practice of certain operators is highly vicious; a pile of broken stone, perhaps, mixed with gravel or sand, or perhaps the gravel or sand alone,

is spread and covered with a quantity of cement, more or less according to the guess of the workman, then turned or shoveled over when dry, and finally is deluged with water squirted through a jet nozzled hose, which forces the cement to the bottom of the mass, where most of it remains, rendering its equal dissemination impossible by any amount of hand shoveling in the effort of mixing. It ought to be obvious to the slightest consideration of the effect of this torrential treatment that the amount of water should be limited and carefully applied by the gentle action of a rose nozzle pipe; in this manner a stronger concrete would be produced and with a less quantity of cement.

In the manufacture of Portland Cement I have mentioned the importance of exact proportions of its ingredients as contained in the lime and clay. I have now to speak of the effects of their disproportions when they vary from certain narrow limits allowable in the preparation of the raw cement. It is evident that any undue excess, especially in the lime or alumina, causes the existence of an element which may not only be superfluous but detrimental; if there be an excess of clay or alumina added in the mixture the product is likely to be a quick-setting cement and deficient in strength. With European engineers one of the tests of Portland Cement governing its acceptance for their works is that it must not set within a given number of hours, except in cases where a rapid set is required, as in water currents. It might seem that the initial setting is an indication of the subsequent hardness and strength of the material, the slow process promising best results in these respects. From certain native limestones abounding in clay, I have made a natural cement whose powder would instantly be converted to a hard stone the instant water touched it—placed under water it would remain for several months in this state, but upon being removed would crack and fall to pieces. An excess of lime in Portland Cement, or lime uncombined, results in a slacking process of this excess, which, taking effect in work built with the material, causes it to swell or "blow," as it is technically called, showing itself in reticulations upon the exposed surfaces and sometimes in cracks throughout. The obvious remedy for this excess of lime is to eliminate its causticity by the process of air slacking, which is done by exposing the cement in powder spread in a moderately thin layer to the air or a few days before it is used. It is the manufacturer's duty to see that this aeration is done before the cement is packed for the market, and honest men of this class will not neglect it. Not fully confiding in the integrity of the entire fraternity of makers, it was the practice at the dry dock works at Mare Island to be certain of this aeration by exposing all purchases of cement to the process described. In illustration of the behavior of an over-limed cement when used too soon after its manufacture, and the remedial effects of aeration, I have to show you this photograph taken of samples of my own preparation.



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CAPS TO PRINCIPAL SHAFTS

I am aware, gentlemen, that I have presented to you but a hasty and crude statement of the subject upon which I was invited to speak; knowing, however, that its more exhaustive treatment has been undertaken by abler hands and expressed in the extensive literature of your respective professions, I was conscious you could avail yourselves of this resource to supply the deficiencies of this brief address. It ought to be a matter of felicitation among you that massive concrete works have already been undertaken in this city, and that one of the members of your Society, and formerly its President, has had the boldness and sound judgment to propose and carry into practical construction an original public structure by the exclusive employment of this material. It is to be hoped that we shall not long be dependent for the supply of Portland Cement upon foreign importation, and that the resources of the State for its manufacture will be appreciated by capitalists and the necessary works for its production be established.

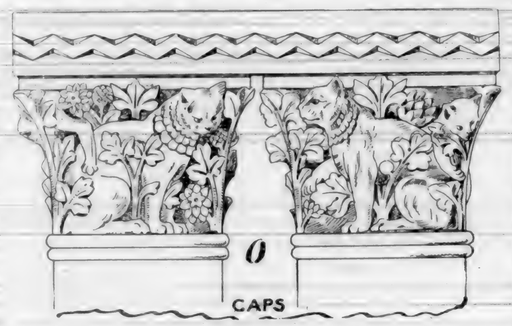
A paper read by Calvin Brown, C. E., U. S. N., before the Technical Society of the Pacific Coast, at the September meeting 1890, and republished by permission from the Journal of the transactions of the Technical Society.

EXPRESSION IN ARCHITECTURE.

It is not unusual to hear a person exclaim, "How heavy that building is, or how light! it is more fit for a prison, or it has the look of a music-hall." Such opinions come from those who are perfectly ignorant of what architecture is, as well as from others critically conversant with the art. However unintelligible the language of architecture may be to the uninitiated, these outer forms of expression are well understood by the majority of them at least. In our times, however, a kind of spurious expression is admitted. Thus we hear of such-and-such a building spoken of as having too much of the club-house character, or as being too like a church, simply from the association accidentally attached to those structures. An able writer on design has well stated this fallacy of confounding the few causes of expression in architecture with association. The ideas of expression which the uninitiated majority—and, indeed, all who are capable of perceiving distinctions—have, are totally different from the ideas which the sentimental study of art invokes. These last are based really on a very superficial study of a few examples without going any deeper. The writer alluded to says: "It is most important for all who attempt to practice or understand this art to be perpetually on their guard against the insidious attacks of this error, the mistaking (*i. e., acquired*) expression for that which is natural, and therefore permanently true. I cannot but consider this the chief source of the acknowledged great utility of travel to the architect. Its use is not to show him much of the world, but to teach him how little of it he has seen. Nothing but the emancipation from narrow local prejudice will set a man thinking and searching in earnest to distinguish what is local and accidental, in beauty and expression, from what is universal and essential." Just now there seems to be a greater prevalence of this false estimate of design, and architects and writers generally appear to fall into the same mistake in distinguishing buildings. It is a species of hypercriticism that has become the bane of *soi-disant* critics, and some amateurs. Is smacks of a meagre acquaintance with a few examples, instead of a generalized study of all styles. Thus the first adverse critics indulged in lampooning porticoes to churches, *because* they were first used in front of heathen temples, as another set stigmatized the earlier works of the Gothicists, forasmuch as they recalled mediæval superstition. It was not uncommon for the critics of forty years ago to apply all sorts of pseudonyms and sobriquets to any buildings that savored too much of some typical or well known example, as if the resemblance detracted from the merit of the composition as a whole. To be brief, we must spurn this kind of comparison if we are to benefit at all in an age essentially eclectic like the present. What matters if a building is adorned with a cupola too much like those which crown the facade of Wilkins' National Gallery? They may look "pepper-casters" upon the aforesaid structure, but it would be unwise, as well as foolish, to denounce the adaptation or even copy of one of them as too much like a pepper-box is it suitably met the conditions of a new structure. To apply this kind of stricture is not at all to the point, however clever and smart

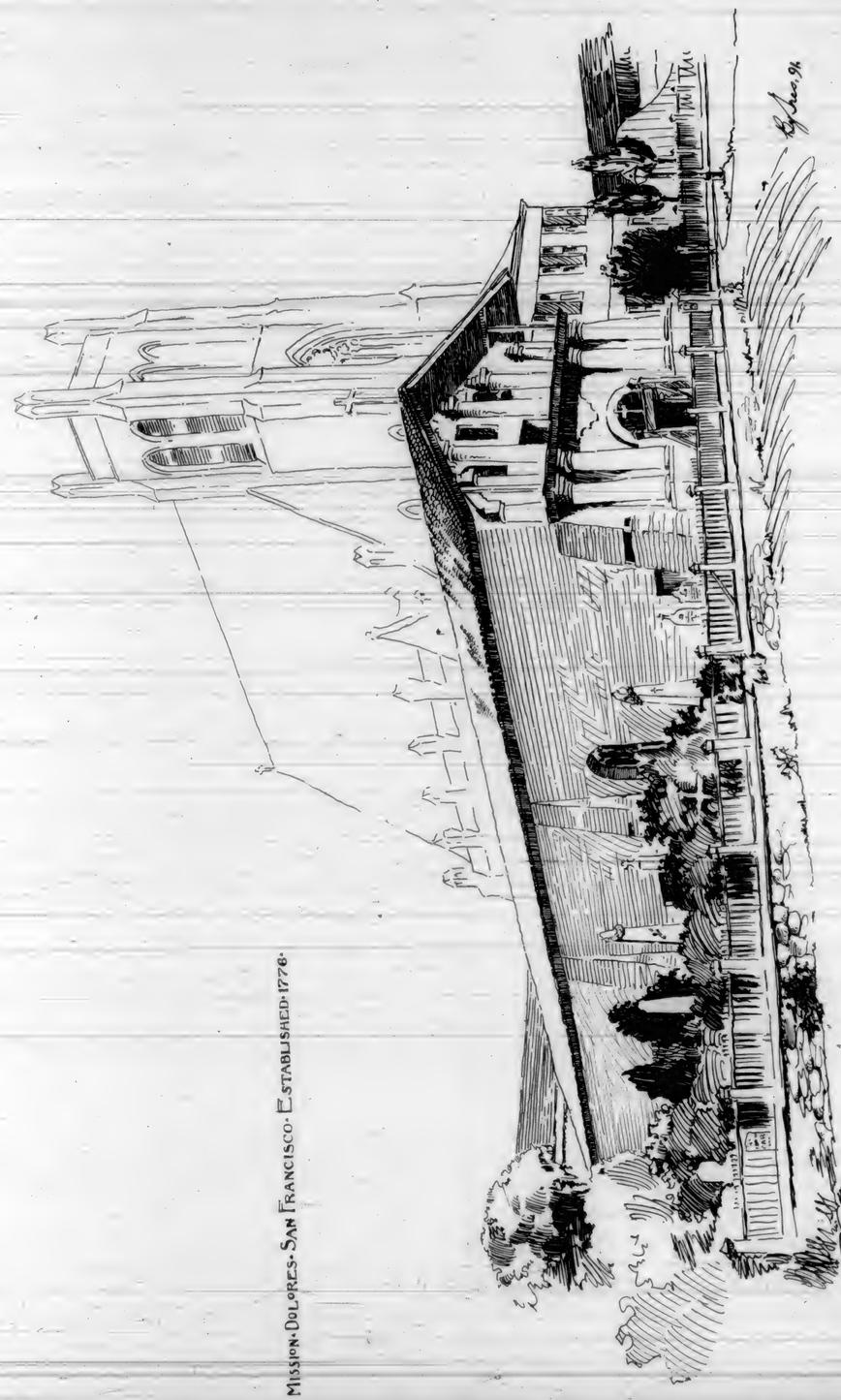
it may appear. Unfortunately art-writers are a little too much addicted to the "sensational," too fond of conjuring up likenesses, however far-fetched, and flavoring their remarks with illustrations and analogies that unfortunately often cut as much one way as another. There is one excuse for this, however: it is an easy way of dealing with a dislike when more substantial reasons cannot be adduced. Architectural or art disquisitions would be sometimes a little wearisome, and too much like theological subtleties, for the easy digestion of most people, if examples were not given; but let them, at least, be well chosen.

Architectural expressions, then, are considerably narrowed when we have struck out these spurious ones—in fact, they cannot for a moment be considered so numerous as the multitudinous wants of all our buildings—that is to say, it would be absurd to suppose there was an expression suitable to each kind of building. If our domestic buildings are sometimes like convents, and occasionally like club-houses, there is nothing to complain of, for individual tastes are equally as diverse. Neither should we be so fastidious as to censure the proclivities of church-builders, who in one instance embodied the extremest sacrificial type of plan, and in another the congregational auditorium. These are differences for which there are ample apologies to be found; and yet in both cases our ideas of true art expression would be shocked if these extreme religionists carried their tenets so far into the fabrics as to violate what would be considered to be proper architectural adaptations in plan or external features. Thus it is possible to admit a certain degree of diversity into our designs, even if we appear to trespass upon the character of other buildings so long as we confine ourselves to justifiable expressions.



Let us here consider for a moment the range of these architectural expressions, and how far we may make them intelligible. Mr. Fergusson, in his "Essay on the Principles of Beauty in Art." divides the arts into five classes: the technic, as carpentry; the technic and æsrhetic, as plain architecture and gastronomy; the technic, æsthetic and phonetic, as sculpture; the æsthetic and phonetic, as poetry; and the phonetic simply, as rhetoric. This ingenious classification embraces all the arts. To the highest class of architecture this author awards equal proportions of the three merits—that is to say, of technic or mechanical merits; æsthetic or those giving pleasure; and phonetic, those capable of telling a tale. But the author says this is only the case when architecture *per se* is connected with sculpture or painting, and the Greek architecture is selected as fulfilling this condition. As justly observed by Mr. Garbett, the system, however ingenious, fails to show in what respect the architect is superior to the picture-frame maker or the cook, and the same writer points to an intermediate kind of expressiveness in architecture—one that is capable of doing more than simply please by exciting different emotions, and yet incapable of speech. This kind of "dumb expression," as he terms it, is common to all the fine arts; we see it in architecture as well as in instrumental music. It is a language common to all the arts of form and sound—it appeals to everybody alike, there can be no ambiguity about it. The pyramids and temples of Egypt convey an impression that cannot be mistaken of one extreme kind, while the aerial fancies of the Arab or the cunning artifice of the Hindoo palace or temple are equally apparent in awakening a different impression. Thus, after looking at the ruins of Karnac, with their massive forms based upon the square and circle, a sense of majesty or solemnity steals over us; not like the impression felt upon viewing a mediaeval cathedral or that awakened by the splendid remains at Delhi. One over-awes by its mass, the other captivates. But we may illustrate three or four well distinguishable expressions of great historic periods. There are those represented by Thebes, Athens, Rome and mediaeval Europe, all well marked—that is, the impressions or feelings they are calculated to convey or arouse apart, from association, are readily defined in language. Thus, awe in the first, majestic repose in the second, grandeur and sumptuousness in the third, and aspiration in the fourth, are well understood sensations, which none but the most deadened to art influences can fail to have experienced. If we inquired we should find the greatest ignoramus was influenced by those works of architecture in the same or nearly in the same degree as the educated, showing that associations have nothing whatever to do with these broad and simple forms of expression. But let us next inquire into some of the sources of these various effects. Unfortunately there have been various deadening influences, such as association and the indiscriminate employment of different styles as the fashion of the day, leads which have dulled our perceptions; and so, if a gentleman wishes to build a country residence any of the styles or expressions we have indicated may be used just as well as any other, regardless of the occupant's tastes and feelings, and at variance with the scenery Expression is not studied by the architect, because his pet style is adopted and carried out in accordance with his own idea—that is to say, if a regular-featured Classic kind of exterior was best adapted it would be ten to one rejected for a broken, picturesque house; and, where irregularity of outline and sharp contrasting features would be a charm, a regular or placid-looking edifice would be designed. Now, the true avocation of an artist, rightly so called, and we presume every architect believes himself to be one, is an ability to convey an impression—not any sort, but the right one in the right place—just as he may use his pencil in conveying an expression of countenance or giving a clear idea of a portrait or a group of figures by a few well understood touches. Above all things an artist, like a rhetorician, should be enabled to convey an impression in the shortest way. He should make the study of form and color or sound, in their various effects upon the eye or ear, and through it to the sympathies and feelings, the great one; he, in fact, should become a physician in the art of allaying and soothing and giving pleasure or excitement to the emotions, or of swaying them in a pleasing manner. If he cannot do this he is no artist, and if he prescribes the wrong style he is unskillful if not an impostor. The alphabet of expression consists of but a few characters. We have rectangular forms, or those in which the horizontal lines are continuous, and the vertical discontinuous, as in the Greek styles of composition. "A severe purity reigns supreme." Such an expression may be found in the Grecian Doric, and it appeals to the soberer qualities of the mind. In the Roman and Palladian we find a milder repose.

The vertical features are more prominent and less massive, the circular and angular features break the extreme simplicity of the Greek composition. Under Scammozi and the Venetian artists we find the curved or circular forms breaking still more into the severe rectangular treatment of the Greeks, as in the Vandramini Palace, Venice. Here the voids encroach largely upon the solids or walls, and if we study the Venetian palaces we shall find the arcade and the fenestration as conspicuous as the solid portions. In the court of the Ducal Palace, and in the earlier semi-Renaissance, a playful picturesqueness prevails. In the first building the introduction of the arch and the paneling of the piers give a light and playful expression to the façades, and this is increased by the admixture of semi-circular and pointed arcades. Again, we have an inviting and extremely elegant expression in the Palladian style, as we see it in the Barbarano Palace at Vicenza, and in the arcaded fronts of the Vicentine basilica. The superimposed orders, so favorite a treatment of Palladio, eminently suggest a festive and domestic expression—one admirably fitted for civic and palatial purposes no less than for buildings destined for music and the drama. Now, in both these extreme expressions of the Classic school, a repose though of different degrees prevails, the features and architectural lines all partaking of a contrast, rather of gradation than of suddenness. The angles, for instance, are generally right angles, or obtuse ones, suggesting ideas of sublimity and



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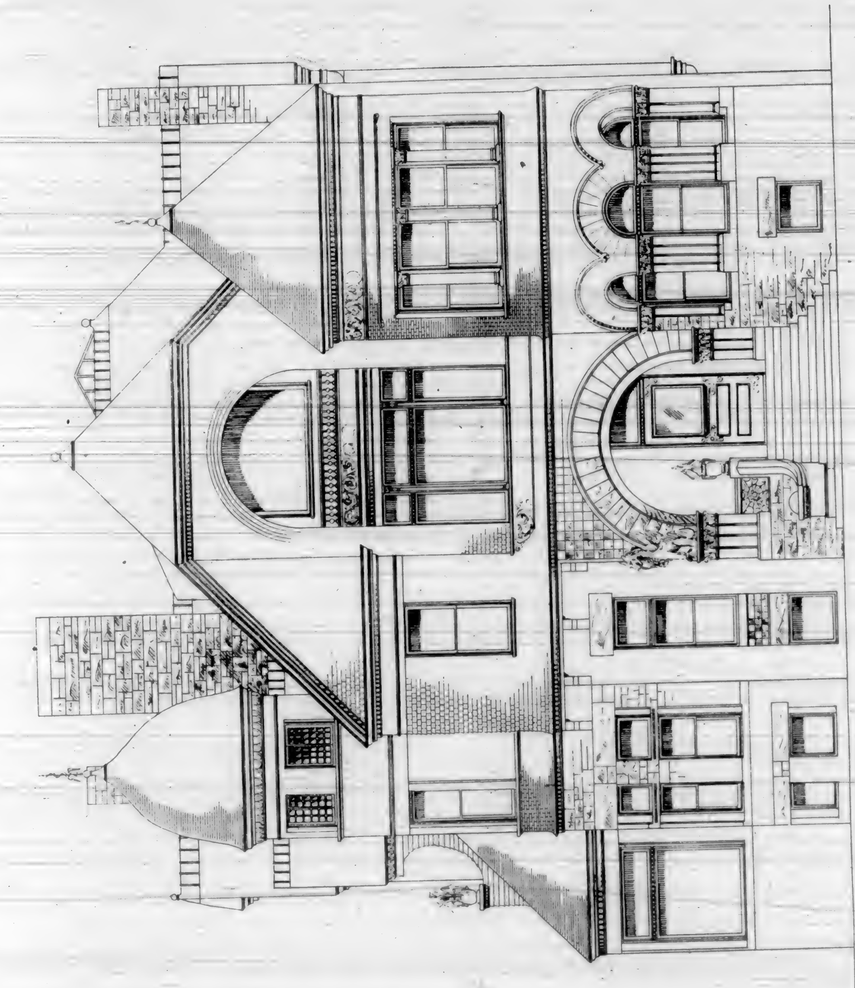

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N. J. Comstock - Architect -

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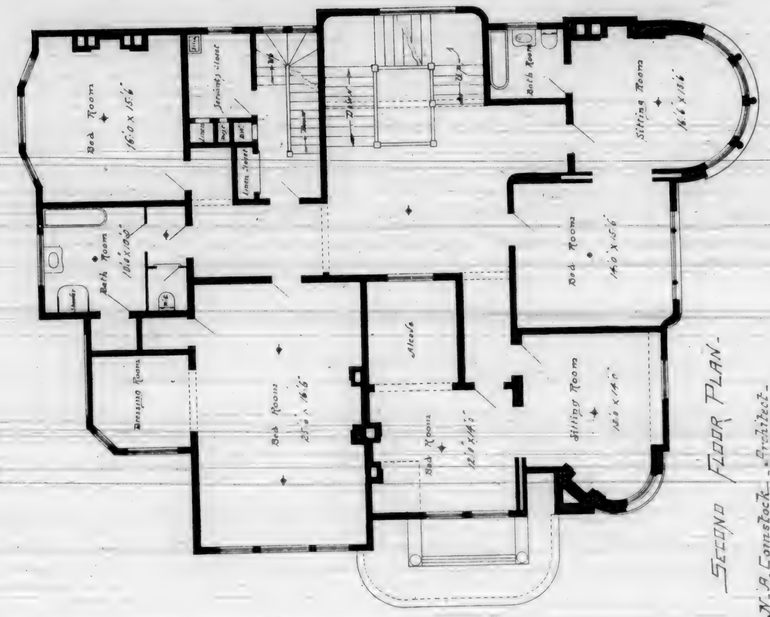
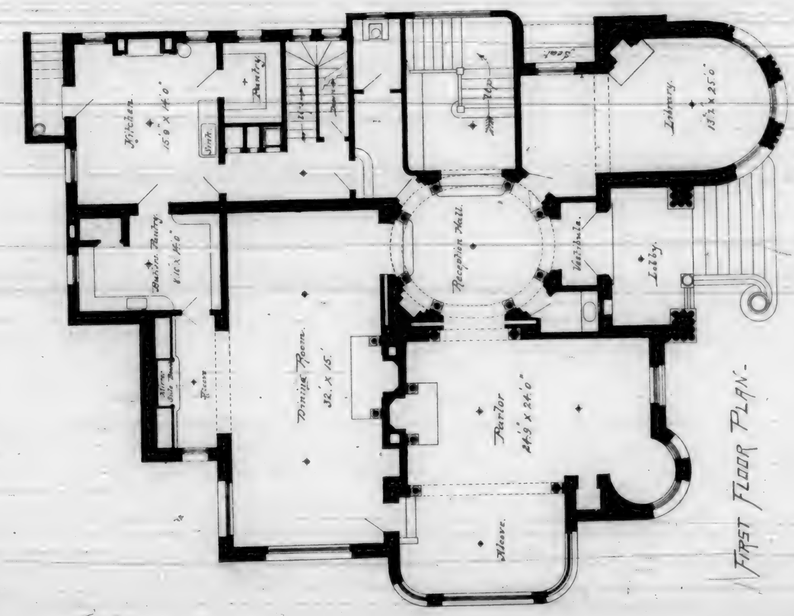


SECOND FLOOR PLAN.

N. J. Comstock - Architect -



FIRST FLOOR PLAN.

BUILDINGS for J.V. O'BRIEN.

N.E. corner of

Fine & Powell Sts.

JOHN GASH,

Architect.

repose rather than energy and unrest as in the Pointed styles. In the latter the forms are more angular, the lines meet at sharper angles, indicating rigidity and energy; thus the vertical features of buttresses and shafts rise uninterruptedly, no horizontal members disconnect them or stop them, as we find in the column and entableture of the Classic orders; the buttresses spring beyond the bounding lines of the building, and terminate in pinnacles, and these converge in their turn to points. Again, in the pointed windows and the spire the same piercing energy or character is seen; their angular apices and points indicate an upward growth—a dynamic rather than static condition; the whole composition, indeed, of such an edifice as Salisbury or Amiens Cathedral is one suggesting energy and force, not repose. We may briefly enumerate a few of the abstract principles upon which architectural expression depends. Alison and other writers on the subject have agreed upon certain kinds of form which suggest ideas to the mind. Thus angular forms and lines express strength, energy and force; the same qualities produce strong contrasts of light and shade on surfaces, and these sharp transitions characterize rocky scenery and Gothic buildings. The contrary kinds of form—those that are curvilinear and winding, and which give rise to gradation of light and shade—indicate delicacy, ease, grace and refinement, and characterize the Italian modes of Classic treatment. The Greek character, as seen in the Greek Doric, shows a combination of these opposite forms; we get the square and circular forms combined as in the Doric order. In the Roman styles the curvilinear and rectilinear are equally blended, producing grandeur and richness of expression; and in the Gothic forms they are again united, though the angular forms are predominant. In one extreme we have contrast, expressive of grandeur, force, and exciting qualities, and in the other extreme of gradation, elegant and soothing qualities. The architect should be master of these combinations, and be able to apply such varieties of form as will best conduce to a particular expression. Unlike painters and sculptors, architects are the professors of abstract design, and, as we have said, should be able to discover the general laws of expression in the same manner as the physicist does with inert matter. Another principle well worth noticing is the proportion of opening to solid wall in our buildings; and we dwell upon it here as it has scarcely been noticed by other writers. We have styles in which the wall is everything, and others in which the openings dominate over the design. In the Greek, the openings were merely apertures compared with the wall; but in the Venetian Italian it becomes a framework only—so extreme is the difference. In the early Gothic the windows were mere piercings and slits in the walls; but in the later Gothic—the Perpendicular, for instance—they occupy by far the largest area, the wall spaces being reduced to attenuated piers or mullions. This principle is indiscriminately applied by architects, as we see in churches. In one, we find all window in the clerestories and aisles; in another all wall space. It is generally an excess of one or the other that is to be condemned. If the admission of light had anything to do with it we would not complain; some architects prefer "a dim religious light," and to this they conform their design. But the principle has a great deal to do with expression also; a windowless building like Newgate prison has a forbidding expression, a repelling character not unsuited in that case; but a building full of windows has an inviting cheerful aspect no one can mistake. The Italian schools illustrate not only the formal principles of expression we have enumerated, but this one of lighting also. Thus, in the Florentine, there is scarcely any arcuation, though the style is astylar; windows bear a small proportion to the wall space, while, in the Venetian schools, arcuated effects are largely used, and the window is an important feature. The Roman holds a kind of intermediate ground between these two. In the Florentine we have almost Doric simplicity and severity in structural features; in the Roman a more varied treatment; and in the Venetian highly broken lines, large windows and picturesque features. As an English style for country residences, and when ample light and cheerful expression are wanted, the Venetian is best suited, and it has been largely adopted by English architects of the Renaissance; for town and civic structures, in which a more severe expression is required, the Florentine or the Roman is better adapted. In the Gothic styles we have quite as large a range to choose from. Of course, in regard to windows, lighting must always be mainly regarded, though these may be expressed variously, and the architect may always give his buildings their own suitable expressions by selecting the proper formal element of those we have referred to.—*London Building News.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

The double plate shows the elevation and plans for a residence on the N. E. corner of California and Webster streets for Mrs. Wieland, from designs by N. A. Comstock, architect.

The design for four dwellings on the N. E. corner of Pine and Powell streets for J. V. O'Brien, is from designs by John Gash, architect.

The Mission Dolores Church is from sketches from our special correspondent, "Tres."

The cuts M, N and O are from the terra cotta capitals from the Museum of Natural History at Kensington, England.

Architectural Iron and Steel, and its application in the construction of buildings is a new work on construction, by Wm. H. Birkmire, and published by John Wiley & Sons, 53 East 10th street, N. Y.

It is a neatly bound book of 200 pages, 6x9 inches, on fine heavy paper and is fully illustrated. The work is intended for those who wish to keep pace with the science of buildings where iron or steel enters into the construction. The tables for reference and formulas have been carefully revised and adapted to this work. It is a book that no architect or builder can afford to be without.

Palliser's Architectural Designs and Details is a book of 90 pages, 10x14 inches, publishhd by Palliser, Palliser & Co., at 24 East 42nd street, N. Y.

This work contains designs for a great variety of buildings, villas, cottages, barns, stables and out houses. Price in paper, $2.00.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Murphy Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. Kent, Pres. P. G. Martin, Vice-Pres.
A. Jackson, Sec'y. Wm. B. Kreger, Treas.
L. A. Larsen, Clerk and Financial Sec'y.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held in their new rooms at the building of the Academy of Sciences, on Market St. on the 8th instant. The Architectural Sketch Club submitted competitive designs for suburban school houses. A committee was appointed to examine same and report at the next meeting of the Chapter. The following communication was received from the Master Painter's Association of San Francisco.

San Francisco, April 30, 1891.

To the San Francisco Chapter of Architects A. I. A.

Gentlemen:—The Master Painter's Association of San Francisco, realizing the absolute necessity that some efficient and adequate means should be adopted calculated to correct a grievous and long existing evil and abuse, hitherto by far to extensively prevailing in the painting trade in this city, by men claiming, but not honoring the name of Master Painters, in the substitution and use of impure and worthless admixture as paint, called by the common name of "dope," which is in no way allied to, nor contains one particle of pure lead and oil paint materials.

We as Master Painters, willing and desirous always to fulfill honorably and squarely the requirements of every specification placed in our hands, ask you gentlemen of the Architectural Profession, and the source through which comes to us the greater number of our contract engagements, that you lend us your aid and assistance in rendering it possible for honestly inclined men to compete squarely for work offered, without being subject to the humiliation of business classification with men possessed of no worthy mechanical principle or ambition.

In the move now being made, the journeymen's organization known as the Brotherhood of Painters and Decorators of America, Union No. 140 & 175 of San Francisco, have taken a worthy and aggressive stand in the matter, and will to the extent of their opportunities, expose and refuse to work for those who use the impure and meritless stuff called "dope" in any of its manifold forms, for it is Hydra headed in that its components are without formula and as varied and vile as the minds that control their manipulations and use.

Hence, if you, gentlemen of the Architectural Profession, standing in your high and honorable position as between the good and the bad, will by your influence and acts, close and lock the door, the key of which is held almost absolutely in your grasp, and shut out from competition on works under you charge, every one who is not beyond all question, honest and honorable in all transactions and where mixtures of paints will not bear the closest scrutiny and analysis.

Be kind enough gentlemen to express to the Master Painter's Association your views upon this to us, and by reasonable presumption to you, most important matter. You want good work, executed with good material, and these you can get only at the hands of good men. Will you aid us?

Awaiting your reply, we remain,

Yours respectfully,

Master Painter's Association of the Pacific Coast.
H. G. Jarman, Sec. E. M. Gallagher, Pres.

After a general exchange of views on the advantages to be derived from a higher standard than that hitherto prevailing for painter's and decorator's work, the action of the Master Painter's Association was considered a material advance in the right direction, and the following resolution was unanimously adopted.

Resolved, That this movement on the part of the Master Painter's Association is approved by the Chapter, and that we as individual members of the Chapter will do all possible to further the aims of the Association.

THE Masters Painter's Association of the Pacific Coast held a special meeting on April 30th, to consider the subject of a more general use of pure material in the painter's and decorator's art. A resolution was adopted and a communication ordered sent to the San Francisco Chapter of Architects requesting the co-operation and assistance of the architectural profession in their efforts to obtain a more general recognizance and appreciation of the benefits to be derived from the use of pure materials.

The following resolutions were also offered and adopted.

Resolved, that the Master Painter's Association of the Pacific Coast, do adopt the "California Architect and Building News," as their Official Organ.

Resolved, That the Secretary be instructed to send to the manager of the California Architect and Building News a copy of all the proceedings of future meetings for publication.

For resolution and communication to S. F. Chapter of Architects, see report of meeting of S. F. Chapter, A. I. A.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Enforcement of Mechanics' Lien.—In an action to foreclose a mechanic's lien for work done and materials furnished under a contract, a counter claim may be set up for damages for omissions and defaults in the performance of the contract. In such a case, a judgement for the damages recovered in another court is conclusive evidence of the amount.

Bulkly v. Healy, Supreme Court of New York, General Term, Second Department, 12. N. Y. Supp. 54. (70-C)

Sale of More Than Debtors Interest under Mechanics Lien.—Where the statute prescribes that only the interest of the person causing the buildings to be erected, or materials to be furnished, shall be subject to the lien therefor, it is error to decree a sale of the whole property under a lien for materials furnished to one in possession under a contract of purchase, without ordering payment of the unpaid purchase price.

Bremen v. Foreman, Supreme Court of Arizona, 24 Pac. Rep. 539. (844.)

Performance and Construction of Contract.—When a contractor in good faith substantially performs a building contract, he can recover on the same, less a just reduction for slight defects or omissions. A provision in a contract that "all flooring to be made smooth and level, and free from knots," means free from all kinds of knots, both hard and soft. The evidence as to the number of knots being conflicting, it was for the jury to determine whether such knotty condition was a trivial or material violation of the contract.

Rust v. Wagner, City Court of Brooklyn, 12 N. Y. S. 2. (1014)

Liability for Falling Buildings.—The owner of a building is responsible for the damage occasioned by its fall, when it is caused by his neglect to properly brace it so as to prevent its fall; but the damage may be reduced according to circumstances if the owner of the thing has exposed it imprudently. When a building threatens ruin, the neighbor has a right of action against the owner to compel him to cause such a building to be demolished or propped up. In the mean time if there be danger of any damage by its fall, he may be authorized to make the necessary works, for which he shall be reimbursed, after the danger shall have been ascertained.

Factors' and Traders' Insurance Co. v. Werlein, Supreme Court of Louisiana, 8 South Rep. 435.

Construction of Building Contract.—A provision in a building contract that "no new work of any description done on the premises, nor work of any kind whatsoever, shall be considered as extras unless a separate estimate, in writing, for the same before it is commenced shall have been submitted by the contractor to the superintendent and proprietor, and their signatures obtained thereto," may be consequently waived by parties by verbal agreement.

The owner of a building is liable for work and materials furnished by the contractor in its construction not called for by the original written contract, where the owner or his authorized agent, by a subsequent oral agreement, promised to pay therefor, or knew that the contractor would charge for the same as extras, and assented thereto or permitted the same without objection. Where a contractor omits to furnish materials called for by his contract, he is liable therefor in damage to the owner. The contract provided for the completion of the buildings by a specified date, "provided there be no interference from labor strikes." The fact that the mechanics quit work upon the building on account of the contractor failing to pay them their wages, as agreed, did not release the contractor from completing the building by the time agreed upon.

McLeon v. Genius, Supreme Court of Nebraska, 47, N. W. Rep. 473. (2244)

BUSINESS MOSAICS.

The Vulcan Iron Works, 135-145 Fremont Street, of this city, are at the present time manufacturing a great variety of work in the line of machinery, such for instance as Corliss steam engines, Meyer cut-off engines, saw mill, mining, cable road, power transmitting, ice and refrigorating machinery. These works also have facilities for light and extra smooth castings, and a large number and variety of patterns for new or repair work.

As the season of the year is upon us when the country residence is in demand, we beg leave to call your attention to Fay's waterproof building manilla as a covering. With it you can build much cheaper than all wood, and it is as suitable for small houses as for large ones. Write to the Company for catalogue and samples.

See advertisement, page vi.

Kitchens at the present time are being fitted up with the latest improvements for the use of gas in lieu of the wood and coal range. Plans are being made by an architect of this city for a residence which when completed will have many novel features. The heaters for all kinds of cooking are arranged along one side of the room which is well lighted; over the cooking appliances a hood and ventilators are arranged for collecting and conveying away the gases generated. Each part of the apparatus is arranged for its special purpose so that it shall not require any surplus heat for heating some deparment that may not be wanted at such times. All waste heat from any or all the heaters is to be conducted to a central point where it is to be utilized for partially heating the water before entering the water heater direct.

This set of apparatus is to be a combination of the cooking and heating appliances as furnished by the San Francisco Gas Company and may be seen at their show rooms No. 16 Post Street.

Stan-Alumin is a new metal or alloy manufactured by the Stan-Alumin Metal Co., of Canton, Ohio. This metal is a com-

bination of Aluminum with other metals, as its name implies, and has such desirable qualities for many purposes as will before long bring it into general use. It is very flexible, and possesses great tensile strength, is easily cut and worked, and does not require painting for protection. We have received a sample of the sheet metal which appears to fulfill all that the company claim for it. This company will furnish pure Aluminum, or Aluminum Alloys. Architects, builders and metal workers should send to this company for catalogue and price list.

We have received from Samuel Cabot, the manufacturer of creosote stains, at Boston, a view of a cottage as it would appear when stained with these stains. As we should naturally suppose with these beautiful stains the effect is harmonious and artistic. Creosote is coming into use as a preservative for wood more extensively as the years go by. When these stains are used the preservative effects of the creosote is utilized and at the same time the beauty of the structure is enhanced.

Chimney cowles of various patterns was recently the subject of experiment at the "Kew Observatory." The results proved that none of them caused a velocity of current exceeding that in an open pipe.

The Gardner steel ribbon and attachments for sash hangings, have recently been used for hanging some heavy vertically sliding doors weighing some 300 lbs. or more. All the methods heretofore used having proved defective, the Gardner appliance was tried with entire satisfaction.

The man who is willing to work and able to reason is too independent to beg others to take care of him. It is only those of weak mental structure and wanting in energy who are unable to take care of themselves. Yet, with this self-confession of inferiority they insist upon entire equality and right to compel the more enterprising and successful to share with them, not on the ground of equal service, but upon that of equal necessity. No one whose efforts bring him a surplus at the end of the year ever turns Socialist. It is the man with the annual deficit that insists upon becoming more worthless and more dependent by having the community take care of him and get any work out of him that they can.—*Brickmaker.*

Tin of American make is about to be introduced to the building trade. The old and well-known house of N. & G. Taylor Co. will in a few weeks at most, be prepared to furnish American tin and Terne plates at their own works in Philadelphia, Pa. The standing and reputation of this firm as furnishing for many years superior grades of roofing tin and sheet metal is a guarantee that the product made under their own immediate supervision will be the best that our advanced state of knowledge and machinery can produce.

Blue prints of large size and superior quality are now made by Edward Denney,& Co., 418 Montgomery street, for architects and civil engineers, from drawings as furnished.

CITY BUILDING NEWS.

Bluxome between Fourth and Fifth. Carpenter work, etc.; owners, Bridge & Beach Manufacturing Co.; architects, Percy & Hamilton; contractor, A. H. Plummer; cost, $5,677; signed, April 14; filed, April 20; payments, first Saturday of each month 75 per cent. as work progresses, 25 per cent. 35 days.

Broadway near Franklin. To build; owner, Winfield W. Coulter; architect A. J. Barnett; contractor, K. Thaler; surety, $1,000; cost; $4,095; signed April 16; filed, April 22; payments, $1,070, frame and roof rafters ready; $1,000, brown mortared; $1,000 completed; $1,025, 35 days.

Broadway near Scott. Brickwork; owner Wm. F. Herrin; architect, Julius E. Kraft; contractor, G. C. Sweeny; surety, $1,000; cost, $2,014; signed April 6; filed; April 20; payments, $700, rough work done; $80 , completed; $515, 35 days.

Bush near Laguna. To build; owner, W. J. Simmons; architect, J. Carther Newsom; contractor, H. Jacks; surety, $4,500; cost, $8,790; signed, April 15; filed April 16; payments, $1,098.75, floor joists in; $1,098.75, rough frame up; $1,098.75, enclosed; $1,098.75, brown mortared; $1,098.75, white coated and outside primed; $1,098.75, accepted; $2,197.50, 35 days.

Bush near Laguna. Painting; owner, M. J Simmons; architect, J. C. Newsom; contractors, Chapman Bros.; cost, $620; signed, April 13; filed, April 17; payments, $270, exterior finished and first coat on interior; $350, completed.

California near Van Ness Avenue. To build; owner, Leon Sloss et al.; architect, Clinton Day; contractor, C. Chisholm; cost, $55,250; signed, April 24; filed, April 25; payments, $9,000, second story joists set; $7,000, brown mortared; $9,000, white plastered; $11,000, standing finish ready for painters; $6,434, completed with 75 per cent. of any extra charges; $13,812, 35 days.

Capp near Twentieth. Brickwork, etc.; owner, W. Z. King; architect, A. J. Bryan; contractors, Bryan & Montgomery; cost, $1,023; signed, March 31; filed, April 4; payments, $250, brick foundations laid; $500, frame up; $500, roof finished; $750, plastering set; $750, plastering finished; $523, completed; $1,000, 35 days.

Capp near Twenty-first. To build; owner, George Christie; architect, H. B. Schomuckert; contractor, H. B. Schomuckert; surety, $6,900; cost, $6,910; signed, April 7; filed, April 8; payments, $1,350, frame up; $1,350, brown mortared; $1,350, white coated; $1,133, accepted; $1,727; evidence given that bills are paid, 35 days.

Church near Twenty-second. To build; owner, B. Cocks; architect, G. A. Birdwell; contractor, J. M. Williston; cost, $8,197; signed, April 15; filed, April 18; payments, $700, frame up; $600, brown mortared; $197, white plastered; $600, completed; $800, 35 days.

Clay between Hyde and Leavenworth. Concrete work; owner, Hugh Huddleston; architects, Percy & Hamilton; contractors, Gray Bros.; cost, $1,087; signed, March 30; filed, April 20; payments, first Saturday of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Clay between Hyde and Leavenworth. Ornamental concrete work; owner, Hugh Huddleston; architects, Percy & Hamilton; contractors, Chatain Giletti Stone Co.; cost, $1,000; signed, March 30; filed, April 20; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Clay between Hyde and Leavenworth. Painting; owner, Hugh Huddleston; architects, Percy & Hamilton; contractor, Paul Agnar; cost, $1,475; signed, April 16; filed, April 20; payments, first Saturday of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Davis and Sacramento. Cement work; owner, Sol Wangenheim; architect, Jas. E. Wolfe; contractor, George Goodman; cost, $3,900; signed, April 14; filed, April 20; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Cor. Devisadero and Waller. To build; owner, Thos. H. Cornish; architects, Currie & Loomer; contractors, Currie & Loomer; cost, $1,99?; signed, April 8; filed, April 15; payments, $500, enclosed; $500, rough mortar on; $500, completed; $499, 35 days.

Cor. Fell and Baker. Carpenter work, etc.; owner, Monroe Greenwood; architect, Fred B. Wood; contractor, George R. Lang; surety, $4,000; cost, $16,000; signed, April 28; filed, April 29; payments, $3,000, frame up; $3,000, brown mortared; $3,000, building finished outside; $3,000, completed; $4,000, 35 days.

Cor. Fell and Baker. Plumbing; owner, Monroe Greenwood; architect, Fred B. Wood; contractor, G. C. Sweeney; cost, $1,500; signed, April 29; filed, May 1; payments, $565, rough work in; $560, completed; $375, 35 days.

Cor. Filbert and Sansome. Iron work; owners, Judson Manufacturing Co.; architects, Wright & Sanders; contractor, J. W. Wissinger; cost, $4,155; signed, April 3; filed, April 14; payments first day of each month 75 per cent. as work progresses.

Cor. Howard and Creek Lane. To build; owner, Mary McCarthy; architect, William Armitage; contractor, J. O'Connell; surety, $700; cost, $2,775; signed, April 29; filed, April 29; payments, $690, when rough frame is up; $690, brown mortared; $690, completed; $706, 35 days.

Cor. Jackson and Mason. To build; owner, John Bullwinkle; architects, John & Balzanski; contractor, Adam Miller; cost, $6,500; signed, April 23; filed, April 24; payments, $1,200, frame up; $1,200, floors laid, partitions set and enclosed; $1,200, white plastered; $1,275; finished; $1,625, 35 days;

Cor. Jones and McAllister. Wrought iron work; owner, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Western Iron Works; cost, $13,725; signed, April 20; filed, April 24; payments first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. Market and Second. Art glass work; owner, Wm. J. Sullivan; architect, Chas. I. Havens; contractor, John Mallon; cost, $1,000; signed, April 13; filed, April 20; payments, $500, entire work finished; $500, 35 days.

Cor. Market and Second. Gas fixtures, etc.; owner, W. J. Sullivan; architect, Chas. Havens; contractors, A. T. Nye & Co.; cost, $1,510; signed, April 28; filed. April 30; payments, $755, completed; $755, 35 days.

Cor. Mission and Seventh. Elevator; owner, Wm. H. Birch & Co.; architects, Wilson & Wilson; contractor, A. Martinez; cost, $1,200; signed, April 6; filed, April 6; payments, 2d certificate for payment due, $360; 4th due, $540; 5th due, $300.

Cor. Montgomery and Sacramento. Marble work, etc.; owner, Pacific Mutual Life Insurance Company; architects, Wright & Sanders; contractors, Mentone Sandstone Co.; cost, $37,000; signed, February 25th; filed, April 30; payments, 75 per cent , as work progresses; 25 per cent. 35 days.

Cor. Olive Avenue and Laguna. Alterations; owner, Jos. Gosling; architect, S. Hatfield; contractor, John Martin; cost, $1,000; signed, April 6; filed, April 6; payments, $250, roofs boarded, inside ready for lathing; $300, plastering finished; $300, completed; $250, 35 days

Cor. Page and Laguna. To build; owner, Rose A. Reid; architect, T. J. Welsh; contractors, Madden & McKay; sureties, J. J. McKinnon and W. H. Emery; cost, $6,800; signed, April 11; filed, April 13; payments, first day of each month, 75 per cent., as work progresses; 25 per cent., 35 days.

Cor. Pierce and Broadway. Carpenter work; owner, Alice N. Towne; architects, Percy & Hamilton; contractor, A. H. Plummer; cost, $3,987; signed, April 14; filed, April 24; payments, first day of each month; 75 per cent., as work progresses; 25 per cent., 35 days

Cor Pierce and McAllister. Alterations; owner, Chas. Goodall; architect, J. Marquis; contractor, J. R. Wilson; cost, $5,000; signed, April 21; filed, April 24; payments, $1,200, additions up, outside finish on, gas and sewer pipes in and work ready for plaster; $2,500, accepted, 35 days after completion

Cor. Pierce and Devisadero. Millwork, etc.; owner, Jas. McInerny; architect, C. I. Havens; contractors, O. N. Young & Co.; cost, $3,225; signed, April 9; filed April 15; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Cor. Pine and Taylor. Alterations; owner, Mrs. Theresa Fair; architect, J. C. Newsom; contractor, Jno. Furness; surety, $7,725; cost, $30,898; signed, April 22; filed April 24; payments, 1st and 15th days of each month, 75 per cent as work progresses, 25 per cent. 35 days.

Cor. Pine and Taylor. Elevator; owner, Theresa Fair; architect, J. C. Newsom contractor, A. J. McNicoll & Co.; cost, $8,325; signed, April 22; filed, April 24; payments, when completed and accepted by architect.

Cor. Pine and Taylor. Painting, etc.; owner, Theresa Fair, architect, J. C. Newsom; contractors, Chapman Bros.; cost, $2,685; signed, April 22; filed, April 27; payments, $500, outside of new building primed; $500, interior has one coat on; $1,013.75, completed; $671.25, 35 days.

Cor. Pine and Taylor. Plumbing; owner, Theresa Fair; architect J. C. Newsom; contractors, M. C. Kean; surety, $3,000; cost, $5,500; signed; April 22; filed, April 24; payments, $2,125, rough work completed; $2,000; when accepted by architect; $1,375, 35 days.

Cor. Post and Hyde. Alterations; owner, Mrs. C. Lauenstein; architects, Kenitzer & Kolhofrath; contractor, Wm. Pluns; cost, $5,595; signed, April 15; filed, April 16; payments, $1,400, roof completed; $1,400 plastering finished; $1,395 completed; $1,400, 35 days.

Cor. Powell and Green. Alterations; owner, Antonio Devoto; architects, Mooser & Cuthbertson; contractors, Cuneo & Cassaretto; surety, $1,400; cost, $5,400; signed, April 27; filed, April 29; payments, $1,350, frame up; $1,350 when brown mortared; $1,350, completed; $1,350, 35 days.

Cor. Shotwell and Twenty second. To build; owner, D. Coffey; architect, T. J. Welsh; contractors, R. Doyle & Son; surety, $1,340; cost, $5,350; signed, April 18; filed, April 21; payments, $1,003, frame up; $1,003, brown mortared; $1,003, white coat finished; $1,003, completed; $1,328, 35 days

Cor. Tennessee and Butte. Cement work, etc.; owner, P. O'Connell; architects, Shea & Shea; contractor, Thos. L. Wand; sureties, R. C. Mattingley and A. Walrath; cost, $2,750; signed, April 21; filed April 24; payments, 75 per cent., as work progresses; 25 per cent., 35 days.

Cor. Washington and Walnut. To build; owner, A. Sharboro; architect, T. J. Welsh, contractor, Chas. L. Lombard; surety, $3,000; cost, $11,500; signed, April 14; filed; contractor, Chas. L. Lombard; surety, $3,000; cost, $11,500; signed, April 14; filed; April 15; payments, first day of each month 75 per cent., as work progresses; 25 per cent., 35 days after completion.

Cor. Washington and Walnut. Cement work, etc.; owner, A. Sharboro; architect, T. J. Welsh; contractors, Chatain & Giletti; surety, $650; cost, $2,200; signed, April 1; filed, April 8; payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days after completion.

Dolores near Valley. Alterations; owner, Karl Koch; architect, F. M. Schweitzer; contractor, F. M. Schweitzer; cost, $2,300; signed, April 11; filed, April 18; payments, $600; raised and sides and rear enclosed; $600, first coat plaster on; $600 completed; $600, 35 days.

Eddy near Devisadero. To build; owner, L. V. Pauluucci; architect, W. H Armitage; contractor, F. V. Steinman; surety, $1,200; cost, $5,388; signed; April 20; filed, April 21; payments, $1,300, rough frame up; $1,400 brown mortared; $1,300, completed; $1 388, 35 days.

Eighteenth near Noe. Carpenter work, etc.; owner, J. D. Davidson; architects, Gould & Colley; contractors, James and William McPhee; surety, $2,550; cost, $2,550; signed, April 28; filed, April 29; payments, $637.50, frame completed; $637.50, brown mortared; $637.50, completed; $637.50, 35 days.

Ellis near Stockton. Alterations; owner, Joel Guadiola; architect, Clinton Day; contractors, Concanon & Shay; cost, $22,000; signed, April 29; filed, May 1; payments, $5,000, store portion completed; $4,000, brown mortared; $5,000, white plastered; $4,500, completed; $5,500, 35 days.

Fillmore near Fulton. Carpenter work, etc.; owner, H. Berker; architects, John & Balczynski; contractor, Wm. Pluns; cost, $8,500; signed, April 16; filed, April 18; payments, $1,000, frames up; $1,500, enclosed and partitions set; $1,600, white plastered; $1,675, completed; $2,125, 35 days.

Franklin between Washington and Jackson. Mill work; owner, W. W. Ackerson; architect, W. Winterhalter; contractors, N. Parrish & Co.; cost, $2,450; signed, April 8; filed, April 9; payments, 75 per cent. of value of work done; balance, 35 days.

Front near Pacific. Iron work; owner, James G. Fair; contractor, Reese Llewellyn; cost, $1,250; signed, March 31; filed, April 21; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Franklin near Washington. To build; owner, Mrs. Sophie Wieland; architect, W. Winterhalter; contractor, W. W. Ackerson; cost, $10,790; signed, April 4; filed, April 6; payments, $2,000, frame up; $2,000, roof finished; $2,000, hard finished; $2,000, completed; $2,790, 35 days.

Franklin near Washington. Brick work; owner, Sophie Wieland; contractor, W. Winterhalter; contractor, Carl Wolff; cost, $1,125; signed, April 7; filed; April 8; payments, $500, foundation walls finished; $625, brickwork done; $500, 35 days.

Fulton near Webster. To build; owner, Theo. Frolich; architects, Z. Geilfuss & Co.; contractors, Templeton & Lord; cost, $3,150; signed, April 10; filed, April 11; payments, $650, frame up; $600, enclosed and partitions set; $600, white coat and inside finish on; $600, accepted by architect; $800, 35 days.

Fulton near Webster. To build; owner, T. P. Meigham; architects, Z. Geilfuss & Co.; contractors, Templeton & Lord; cost, $3,150; signed, April 10; filed, April 11; payments, $650, frame up; $600, enclosed and partitions set; $600, white coat and inside finish on; $600, accepted by architect; $800, 35 days.

Golden Gate Avenue near Steiner. To build; owner, P. F. Nolan; architect, T. J. Welsh; contractor, J. J. Dunn; surety, $2,700; cost, $14,793; signed, April 8; filed, April 15; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Grove near Broderick. To build; owner, Bertha Dale; architect, R. H. White; contractor, F. B. Butterfield; surety, $1,200; cost, $4,604; signed, April 22; filed, April 24; payments, $864, frame up; $863, brown mortared; $863, standing finish on; $863 completed; $1,151, 35 days.

Grove near Lott. To build; owner, Mary Wiesenhaven; architect, N. Comstock; contractors, Kirkwood & Coggins; surety, $1,500; cost, $3,794; signed, March 30; filed, April 4; payments, $600, foundation in; $500, enclosed; $1,000, white coat plaster on; $44, completed; $950, 35 days.

Green near Laguna. Alterations; owner, Mary Coghlan; architect, Wm. H. Wharff; contractor, J. W. Mayder; cost, $1,868; signed, April 14, filed, April 18, payments, $350, brick work done; $350, brown mortared, $350, white plastered; $350, completed; $468, 35 days.

Green near Powell. To build; owner, N. P. Johnson; architect, Chas. M. Rosseau; contractor, Andrew Christensen; surety, $3,000; cost, $3,375; signed, April 8; filed, April 8; payments, $843, frame up; $843, brown mortared; $843, completed; $846; 35 days.

Guerrero near Eighteenth. Alterations; owner, J. E. Richards; architects, Huerne & Everett; contractors, Tegeler & Muller; surety, ?480; cost, $1,925; signed, April 2; filed, April 4; payments, $962.50, brown mortared; $481.25, completed; $481.25, 35 days.

Haight near Broderick. To build; owner, Wm. Jones; contractor, Geo. Houston; cost, $3,914; signed, April 9; filed, April 10; payments, $975, roof shingled; $975, brown mortared; $975, doors and windows hung; $989, 35 days.

Harrison near Fourth. To build; owner, J. P. Canhape; architect, C. M. Rosseau, contractors, Knox & Cook; surety, $1,000; cost, $3,400; signed, April 15; filed, April 16; payments, $850; frame up; $850, brown mortared; $850, accepted; $850; 35 days.

Harrison near Fourth. To build; owner, Mano Dillon; architect, T. J. Welsh; contractor, Jas. McInerny; surety, $3,500; cost, $14,113; signed, April 8; filed, April 10; payments, $3,528.25, frame up; $3,528.25, brown mortared; $3,528.25, completed; $3,528.25, 35 days.

Hyde near Pine. Alterations; owner, Chas. E. Broad; architect, S. Hatfield; contractor, L. T. Moore; cost, $1,091; signed, March 31; filed, April 4; payments, $900, building in position and brickwork in; $300, ready for lathing; $491, completed.

Jessie near Tenth. To build; owner, F. T. Doolan; architect, F. T. Doolan; contractor, Daniel Powers; cost, $4,445; signed, April 4; filed, April 6; payments, $1,111.25, frame up; $1,111.25, brown mortared; $1,111.25, finished; $1,111.25, 35 days.

Jackson near Gough. Grading; owner, N. R. Rideout; architects, Mooser & Cuthbertson; contractors, J. J. O'Connor; cost, 40 cents per yard; signed, April 16; filed, April 29; payments, 65 per cent., when work is completed; 35 per cent., 35 days.

Jackson near Mason. Alterations; owner, Mrs. Roccatagliata; architects, Mooser & Cuthbertson; contractor, Louis M. Weisman; surety, $800; cost, $2,800; signed, April 16; filed, April 21; payments, $720, raised and brick foundation in; $720, brown mortared; $725, completed; $725, 35 days.

Lakeview, lots 29, 30 and 31. To build; owner, Parker & Bane; contractor, C. Barmby; cost, $960; signed, April 20; filed, April 25; payments, $320, outside is primed; $320, painted; $320, completed.

Larkin between Broadway and Vallejo. Painting; owners, Golden State Land Co.; architects, Z. Geilfuss & Co.; contractor, J. M. Sindlinger; cost, $1,965; signed, April 2, filed, April 4, payments, 75 per cent., as work progresses, 1st and 15th days of each month; 25 per cent., 35 days.

Larkin between Broadway and Vallejo. Paper-hanging, etc.; owner, Golden State Land Co.; architects, Z. Geilfuss & Co.; contractor, John Quadt; cost, $1,100; signed, April 11; filed, April 13; payments, 1st and 15th days of each month, 75 per cent. of value of work done; balance, 35 days.

Larkin between Broadway and Vallejo. Shingling; owner, Golden State Land Co.; architects, Z. Geilfuss & Co.; contractor, F. W. Kern; cost, $1,165; signed, April 3; filed, April 4; payments, $865, work finished; $300, 35 days.

Larkin near Chestnut. To build; owner, Jennie S. Prince; architects, J. J. & T. D. Newsom; contractor, W. S. Wilson; cost, $5,290; signed, April 13; filed, April 15; payments, $991, frame up; $991, first coat mortar; $991, plastering finished; $994.50, completed; $1,327. 0; 35 days.

Leavenworth near Lombard. To build; owner, Thomas G. Jacques; architect, A. W. Pattiana & Co.; contractor, A. W. Pattiana & Co.; cost, $2,429; signed, April 16; filed, April 22; payments, $700, roof on and chimney built; $600, brown mortared; $500, completed; $629, 35 days.

Lyon near Fulton. To build; owner, Mary Hawe; architect, Emile Depierre; contractor, Wm. Reese; surety, $3,225; cost, $3,225; signed April 23; filed, April 27; payments, $604, frame up; $604, enclosed; $604, white plastered; $606.50, completed; balance, 35 days after, when receipted bills are shown.

Market near Montgomery Interior finish, etc.; owners, M. J. and F. H. Burke; architect, J. C. Newsom; contractors, F. W. Kreling & Sons; surety, Theo. C. Marceau; cost, $5,750; signed, April 15; filed, April 25; payments first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Powell. Cast-iron work; owner, Annie Donahue; architect, Chas. I. Havens; contractors, O'Connell & Lewis; cost, $20,473; signed, March 26; filed, April 24; payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Powell. Wrought-iron work. owner, Annie Donahue; architect, Chas. I. Havens; contractors, J. K. Firth & Co.; cost, $17,675; signed, March 26; filed, April 24; payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Powell. Sandstone work; owner, Annie Donahue; architect, Chas. I. Havens; contractor, Owen E. Brady; cost, $28,925; signed, April 23; filed, April 24; payments, 15 per cent. when to owners; 65 per cent. as work progresses; 25 per cent. 35 days.

Mason near Pacific. Brickwork, etc.; owner, E. T. Fletcher; architects, Z. Geilfuss and Co.; contractor, Chas. Johnson; cost, $5,52?; signed, April 3; filed, April 4; payments, $828, frame up; $828, enclosed; $828, brown mortared; $828 inside standing finish on; 1828, completed; $1,380, 35 days.

Mission near Ninth. Brickwork; owner, Peter McGovern; architect, J. E. Kraft; contractor, D. J. Brennan; surety, $3,000; cost, $7,300; signed, April 21; filed, April 24; payments, $3,000, basement walls up; $1,475, patent chimneys built; $1,000, completed; $1,825, 35 days.

Noe near Fourteenth. To build; owner, J. C. McGinnis; architect, M. J. Welsh; contractors, Sandy & Gillogley; surety, $2,000; cost, $6,350; signed, April 16; filed, April 16, payments, $1,587, frame up; $1,587, brown mortared; $1,587, completed; $1,589, 35 days.

O'Farrell near Scott. Alterations; owners, Lang Bros.; architects, John & Balczynsky; contractor, Wm. Pluns; cost, $2,670; signed, April 15; filed, April 18; payments, $600, ready for lathing; $700, white plastered; $720, completed; $650, 35 days.

O'Farrell near Webster. Carpenter work, etc.; owner, First New Jerusalem Society; architects, Wright & Sanders; contractor, James Geary; cost, $3,050; signed, March 31; filed, April 4; payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

O'Farrell and Webster. Concrete work; owner, First New Jerusalem Society; architect, George H. Sanders; contractors, Ransome & Cushing; cost, $4,9 0; signed, April 8; filed, April 10, payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Olive avenue near Van Ness. To build; owner, Charles Bogan; architect, John T. Kidd; contractor, George Cannon; cost, $10,635; signed, April 24; filed, April 28; payments, $1,994, frame up; $1,994, brown mortared; $1,994, white plastered; $1,994, completed; $2,659, 36 days.

Pacific avenue near Franklin street. Painting; owner, J. F. Poheim; architect, J. Marquis; contractor, Fred Schaefer; cost, $1,100; signed, March 17; filed, April 21; payments, $200, outside of house and stable painted; $266, inside ready to grain; $334, accepted.

Pacific avenue near Franklin street. Plastering; owner, J. F. Poheim; architect, J. Marquis; contractor, F. A. Sullivan; cost, $1,130; signed, March 22; filed, April 21; payments, $415, brown mortared; $415, plastering finished; $300, 35 days.

Pacific avenue near Franklin street. Plumbing; owner, J. F. Poheim; architect, J. Marquis; contractors, Duffy Bros.; cost, $2,300; signed, March 17; filed, April 21; payments, $7 0, gas and water pipes in; $690, finished; $5?0, 35 days.

Page near Masonic avenue. Brickwork, etc.; owner, John Moore; architects, Shea & Shea; contractor, M. J. Gorman; cost, $1,300; signed, April 21; filed, April 21; payments, $963, rough frame up; $963, brown mortared; $874, completed; $1,500, 35 days.

Page near Webster. To build; owners, Wm. Feehan and wife; contractors, James Finn et al.; surety, $5,000; cost, $8,500; signed, April 7; filed, April 13; payments, $2,500, frame up; $1,475, brown mortared; $1,490, white plastered; $1,490, completed; $2,125, 35 days.

Polk near Clay. Concrete work; owner, Ira. Faucher; architects, Salfield & Kohlberg; contractor, W. R. Patterson; surety, $2,000; cost, $3,480; signed, April 2; filed, April 7; payments, 75 per cent. as work progresses semi-monthly; building complete, 25 per cent.

Post and Mason. To build; owner, Olympic Club; architect, Henry A. Schultze; contractor, J. B. Gonyeau; cost, $47,999; signed, March 18; filed, April 6; payments, first and fifteenth day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Post and Mason. Concrete work; owner, Olympic Club; architect, Henry A. Schultze; contractors, Richardson & Gale; cost, $42,95?; signed, March 18; filed, April 6; payments, first and fifteenth day of each month 75 per cent. as work progresses; 25 per cent. in 35 days.

Post and Mason. Stone work; owner, Olympic Club; architect, Henry A. Schultze; contractor, Jacob Pfeiffer; cost, $7,000; signed, March 18; filed, April 6; payments, first and fifteenth day of each month 75 per cent. as work progresses; 25 per cent. in 35 days.

Point Lobos and Johnson Avenues. To build; owner, Margaret Henderson; architects, R. H. & R. White; contractor, D. B. Monroe; surety, $1,500; cost, $5,847; signed, April 10; filed, April 13; payments, $400, foundation and first floor joists in; $996, building enclosed, roof tinned; $996, ready for brown mortar; $996, std. fin. on; $997, com.

Sacramento between Cherry and First Avenues. To build; owners, Steck & Boge; architect, Geo. Lack; contractors, Field & Lack; surety, $1,000; cost, $1,562; signed, April 20; filed, April 22; payments, $400, frame up; $400. brown mortared; $400, completed; $362, 35 days.

Scott between Geary and O'Farrell. Ironwork, etc.; owner, Wm. B. Glen; **architect**, T. J. Welsh; contractor, Geo. H. Tucker; cost, $3,850; signed, March 30; filed, April 3; payments, 75 per cent., as work progresses; 25 per cent., in 35 days.

Scott near Page. To build; owner, Peter Schlegel; architects, Z. Geilfuss & Co.; contractors, Tegeler & Muller; cost, $6,666; signed, April 2; filed April 4; payments, $995, frame up; $1,000, enclosed and floors laid; $1,000, brown mortared; $1,000, inside st'd finish on; $1,000, completed; $1,665, 35 days.

Shotwell near Twentieth. To build; owner, Samuel Forthmore; architect, Chas. W. Rosseau; contractor, C. C. Dryden; surety, $2,000; cost, $5,270; signed, April 25; filed, April 27; payments, $1,300, frame up; $1,300 brown mortared; $1,300, completed; $1,370, 35 days;

Shotwell near Twenty-fifth. To build; owner, D. M. Dickson; architect, Wm. H. Armitage; contractor, L. M. Weismann; surety, $1,000, cost, $3,689; signed, March 28; filed, April 13; payments, $990, rough frame up; $990, brown mortared; $960, entire work finished; $929, 35 days.

Silver near Third. To build; owners, J. J. Cass and wife; architect, A. Klahn; contractor, A. Klahn; cost, $4,320; signed, April 30; filed, April 30; payments, $1,000, frame up; $1,000, brown mortared; $1,000, finished; $1,320, 35 days.

Sutter, No. 120. Alterations; owner, Mrs. Kate Johnson; architect, Wm. Patton contractor, J. W. Wissinger; surety, $2,150; cost, $8,585; signed, April 13; filed April 14; payments, first day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Sutter near Baker. To build; owner, Geo. W. Mitchell; architect, Geo. W. Mitchell; contractor, Ivory Wells; surety, $625; cost, $2,500; signed, April, 21; filed, April 24; payments, $625, frame up; $625, brown mortared; $625, completed; $625, 35 days.

Sutter near Jones. Plumbing; owners, E. Monesini & Co.; architects, C. R. and J. M. Wilson; contractors, S. Ickelheimer & Bro.; cost, $1,725; signed, April 21; filed, April 24; payments, $646, rough work in; $647, completed; $432, 35 days.

Sutter near Pierce. To build; owner, Wm. Wertsch; architects, Z. Geilfuss & Co.; contractor, Henry Rohling; cost, $6,272; signed, April 17; filed, April 18; payments, $940, frame up; $940, enclosed and partitions set; $940, porch and fence work done; $940, inside standing finish done; $940, completed; $1,572, 35 days.

Sutter between Taylor and Jones. Interior finish; owner University Club; architect, A. Page Brown; contractor, Wm. T. Commary; cost, $4,551.85; signed, April 18; filed, April 21; payments, 75 per cent when work is completed; 25 per cent. 35 days after completion.

Sutter between Taylor and Jones. Painting; owner, University Club; architect, A. Page Brown; contractors, Frazer & Keefe; cost, $1,400; signed, April 20; filed, April 21; payments, on completion of work.

Tenth avenue near Clement street. Carpenter work; owner, E. F. Dennison; architect, Jordan E. Lyon; contractor, J. S. W. Saunders; surety, $1,250; cost, $1,850; signed, April 18; filed, April 22; payments, 75 per cent as work progresses; 25 per cent. 35 days.

Tenth between Howard and Folsom. Alterations; owner, Elizabeth Roche; architect, Bryan J. Clinch; contractor, T. R. Bassett; cost, $2,878; signed, April 4; filed, April 4; payments, $707, frame up; $700, additions completed; $700, completed; $778, 35 days.

Twelfth near Clement. To build; owner, Robert Haslett; architects, Shea & Shea, contractor, R. Sinnott; surety, $675; cost, $2,700; signed, April 22; filed, April 25; payments, $506, frame up; $506, brown mortared; $506, hard finished; $507, completed; $675, 35 days.

Twentieth near Capp. Carpenter work, etc.; owner, G. H. Richards; architect, Charles I. Havens; contractors, Miron & Robertson; cost, $10,000; signed, April 18; filed, April 29; payments, $3,000, rough frame up; $3,000 outside finish up and brown mortared; $3,000, mill work done; $3,000, completed; $4,000, 35 days.

Twentieth near Capp. Painting; owner, G. R. Richards; architect, Charles I. Havens; contractors, Swan & Stein; cost, $1,025; signed, April 17; filed, April 20; payments, $350, inside roof done; $400, completed; $275, 35 days.

Twentieth near Capp. Plumbing, etc.; owner, C. H. Richards; architect, Charles I. Havens; contractor, H. Williamson; cost, $2,074; signed, April 17; filed, April 20; payments, $750, rough gas and water pipes in; $750, completed; $574, 35 days.

Twenty-third near Guerrero. To build; owner, Margaret M. Willis; architect, Wm. H. Armitage; contractor, S. T. Greene; surety, $882; cost, $3,530; signed, April 20; filed, April 21; payments, $880, rough frame up; $880 brown mortared; $880, entire work completed; $890, 35 days.

Twenty-third near Florida. To build; owner, Alex Duffy; architect, Frank Pierce; contractor, Robert Giles; surety, $2,625; cost, $2,625; signed, April 20; filed, April 28; payments, $656.25, frame erected; $656.25, brown mortared; $656.25, inside finish on; $656.25, 35 days.

Twenty-third near Mission. To build; owner, Mrs. C. Warnkee; architect, A. C. Lutgens; contractors, P. Droge et al.; surety, $995; cost, $3,980; signed, April 7, filed, April 9; payments, $746, roof boarded; $746, first coat of plaster; $746; second coat; $747, completed; $995, 35 days.

Warren near Grove. To build; owner, Edwin Liddle; architect, John Hayes; contractor, John Hayes; cost, $1,350; signed, April 25; filed, April 27; payments, $400, building roofed; $400, rough mortared; $550, receipts shown to owner.

Alameda County.

Academy Homestead, Oakland. Cottage; owners, E. Lacazette and wife; architect; J. A. Eastman; contractor, J. A. Eastman; cost, $1,595; signed, April 8; filed, April 8; payments, $395, frame up; $400, brown mortared; $400, completed; $400; 35 days.

Alice and Seventh, Oakland. Two-story frame; owner, Vincent Chlonpek; architect, J. C. Matthews; contractor, J. C. Bassett; cost, $2,260; signed, April 29; filed, April 29; payments, $565, frame up and roof sheathed; $565, first coat mortar and first coat paint; $565, completed; $565, 35 days.

Associates' Tract 50, Oakland. Six-room cottage; owners, Charles H. Blaker and wife; architect, C. W. Coldwell; contractor, C. W. Coldwell; cost, $1,550; signed, April 21; filed, April 23; payments, $400, frame up; $40, first coat mortar; $400, completed; $350, 35 days.

Buena Vista avenue and Oak street, Alameda. Two-story frame; owner, Geo. F. Taylor; architect, C. M. Jenkins; contractor, John Sath, cost, $2,350; signed, April 3; filed, April 4; payments, $587, frame up and rustic on outside walls; $587, enclosed and brown mortared; $587, woodwork done and priming coat paint on; $589, 36 days.

Beuna Vista avenue near Oak street, Alameda. Two-story dwelling; owner, Capt. J. Jensen; architect, Charles H. Shaner; contractor, P. Christensen; cost, $2,095; signed, April 22; filed, April 23; payments, $523.75, frame up and rafters and sheathing on; $523.75, brown mortared; $523.75, ready for painting; $523.75, 36 days after completion.

Blake Tract No. 3, Berkeley. Two-story dwelling; owner, F. E. Armstrong; architect, A. H. Broad; contractor, N. L. Freese; cost, $2,987; signed, April 8; filed, April 9; payments, $746, frame up and enclosed; $746, brown mortared; $746, completed; $749, 35 days.

Blake Tract, Oakland. Dwelling; owner, S. Hoeppersberger; architect, J. J. Rose; contractor, J. J. Rose; cost, $1,510; signed, April 20; filed, April 21; payments, $400, frame up; $310, first coat plaster; $400, completed; $400, 35 days.

Block 57, Town of Niles. Two-story frame; owner, J. J. Martin; architect, J. S. Wellbye; contractor, Robert Irvine; cost, $2,400; signed, April 8; filed, April 17; payments, $600, frame up; $600, first coat plaster; $600 completed; $600, 35 days.

City San Jose, on road to. Additions; owner, Mrs. S. Rainey; architect, T. J. Welsh; contractor, John J. Dunn; sureties, B. Joost and R. L. Taylor; cost, $9,399; signed, April 2; filed, April 10; payments, 75 per cent. of value of material furnished and work done first day of each month; 25 per cent. 35 days.

Cor. Encinal avenue and Paru street, Alameda. Two-story dwelling; owner, L. Van Orden Jr.; architect, G. A. Bordwell; contractor, John J. Boyle; cost, $3,336; signed, April 22; filed, April 23; payments, $834, frame up; $834, plastering done; $834, completed; $834, 35 days.

Cor. Filbert and Seventh, Oakland. Cottage; owner, George Louis Yager; architect, Howard Burns; contractor, Charles W. Ormsby; cost, $1,660; signed, April 20; filed, April 21; payments, $350, frame up; $350, first coat of plaster; $350 second coat plaster and windows in; $350, 10 days.

Cor. Railroad avenue and Nineteenth street, Alameda. Two-story frame; owner, Thomas K. Stauder; architect, Fred. P. Fisher, contractors, D. Straub & Son; sureties, J. M. Robertson and J. Cory; cost, $2,803; signed, April 4; filed, April 9; payments, $675, roof completed; $675, plastering done; $675, completed; $808, 35 days.

Cor. Seventh and Franklin, Oakland. Altering in "Ruedy's Hotel; owner, Henry Ruedy; architect, Julius Frey; contractors, Smith & Lake; cost, $3,200; signed, February 17, filed, April 18; payments, $600, roof raised and enclosed; $600, outside finish done and brown mortared; $600, ready for painting; $600, completed; $800, 35 days.

Eighteenth street near Encinal avenue, Alameda. Two-story house; owner, W. H. Palmer; architect, Charles Shaner; contractors, Brehant & Diamond; sureties, E. B. Dunning et al.; cost, $2,850; signed, April 27; filed, April 28; payments, $600, rough frame up; $600, enclosed; $600, windows in, etc.; $337.50, ready for paint; $712.50, 35 days.

Fifth avenue near Ninth street, Clinton. Two two-story dwellings; owner, O. C. Kirk; architect, F. A. Brown; contractor, F. A. Brown; cost, $5,600; signed, April 18; filed, April 14; payments, $1,400, frame up; $1,400, first coat mortar on; $1,400, completed; $1,400, 35 days.

Mendenhall place, Livermore. One-story brick store; owner, Louis Schaffer; architect, Henry H. Meyers; contractor, J. F. Meyers; cost, $2,125; signed, April 7; filed, April 10; payments, $400, brick on ground and first tier joists on; $400, walls up and second tier on; $400, roof shingled; $850, completed; $575, 36 days.

Mountain View Cemetery. Tomb; owner, estate of S. Merritt; architect, H. P. Merritt; contractor, Knowles & Hosmer; cost, $38,600; signed, April 2; filed, April 13.

Peralta Heights, Oakland. Two-story frame house; owner, Thomas A. Deasy; architect, F. A. Brown; contractor, F. A. Brown; cost, $2,750; signed, April 17; filed, April 20; payments, $687.50, frame up; $687.50, brown mortared; $687,50, completed; $687.50, 35 days.

Prospect avenue, McClure street, Oakland. Two-story dwelling; owner, J. C. Martin; architect, Charles Mau; contractors, P. Ahern & J. Moore; cost, $9,850; signed, April 13; filed, April 14; payments, 75 per cent. value of work done on first day of each month; $2,462.50 balance, 35 days.

San Antonio avenue near Union, Alameda. Two-story dwellings; owner, G. H. Murdock; architect, Geo. A. Bordwell; contractor, J. J. Boyle; cost, $7,940; signed, April 6; filed, April 8; payments, $735, frame up; $735, plastering done; $735, completed; $735, 35 days.

San Leandro road, Fruitvale. Two-story house, 7 rooms; owner, Geo. A. Douglass contractor, Henry C. Barker; cost, $2,200; signed, April 25; filed, April 27; payments, $500, house enclosed; $500, brown mortared; $500, completed; $500, 35 days.

Santa Clara avenue between Fourth and Fifth streets, Alameda. Two-story frame; owner, Carl A. Joseph; architect, A. R. Denke; contractor, A. R. Denke; cost, $2,580; signed, April 8; filed, April 9; payments, $700, frame up; $500, first coat plaster on; $680, completed; $700, 35 days.

Shattuck avenue near Cedar, Berkeley. Two-story dwelling; owners, J. and S. Pierce; contractor, Ira A. Boynton, cost, $3,400; signed, April 14; filed, April 29; payments, $850, frame up and rustic on; $850, outside finish on; $850, inside ready for paint and outside completed; $850, 35 days.

Taylor avenue, McPherson street, Alameda. Two one-story cottages; owner, Henry Mobius; architects, Marcuse & Remmel; contractors, Marcuse & Remmel; cost, $3,000; signed, April 16; filed, April 17; payments, $750, frames up and roof on; $750, white plastered; $750, completed; $750, 35 days.

Telegraph avenue near Twenty-second street, Oakland. To build; owner, B. Wright; architect, Charles Mau; contractors, Concanon & Shay; cost, $14,449; signed, April 14; filed, April 14; payments, $2,709.75, one-quarter materials furnished and one-quarter work done; $2,709, one-half materials furnished and one-half work done; $2,709, three-quarters materials furnished and three-quarters work done; $2,709, completed; $3,612.25, 35 days.

Thirteenth street near Encinal avenue; Alameda. Two-story house; owner, F. H. Patrick; architects, Judd, Hamley & Co.; contractor, John Sath; cost, $3,650; signed, April 29; filed, April 29; payments, $912.50, frame up and sheathing on roof; $912.50, roof shingled and ready for plastering; $912.50, priming coat paint on; $912.50, 36 days.

Twelfth street near West, Oakland. Two-story frame; owner, Mary S. Bartlett; architect, M. S. Libbey; contractor, M. S. Libbey; cost, $4,100; signed, April 11; filed, April 15; payments, $1,025, one-third materials furnished and one-third work done; $1,025, two-thirds furnished and two-thirds work done; $1,025, completed; $1,025; 35 days.

Union near Tenth, Oakland. Three-story frame; owner, Giles H. Gray; architects, J. J. and T. D. Newsom; contractor, Thomas R. Bassett; cost, $11,165; signed, April 11; filed, April 15; payments, $1,395, frame up; $1,395, roof finished; $1,395, floors laid and rough plumbing done; $1,395, first coat plaster and outside primed; $1,395, plumbing and plastering done; $1,398, completed; $2,792, 35 days

View Homestead, Oakland. Two-story dwelling; owner, A. W. Havens; architect, W. J. Mathews; contractor, C. L. Lombard; cost, $4,339; signed, April 8; filed, April 10; payments, $813, one-quarter of work completed; $813, one-half of work completed; $813, three-fourths; $1,087, 35 days.

Villa (2) lots adjoining University. One-story frame; owner, Robert Forbes; architect, Robert Seidel; contractor, Robert Seidel; cost, $1,100; signed, April 22; filed, April 23; payments, $600, brown mortared; $250, completed; $250, 35 days.

Williams street near San Pablo avenue, Oakland. One-story frame; owner, C. Hooley; architect, Charles Mau; contractors, J. Brandin & G. Eber; cost, $1,850; signed, April 27; filed April 28; payments, $550; one-fourth materials furnished and one-fourth work done; $550, one-half furnished and one-half work done; $350, three-fourths furnished and three-fourths work done; $337.50, completed; $462.50, 35 days.

The California Architect and Building News.

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NOW IN THE TWELFTH YEAR.

W. P. MOORE, PRESIDENT. OLIVER EVERETT, SECRETARY.

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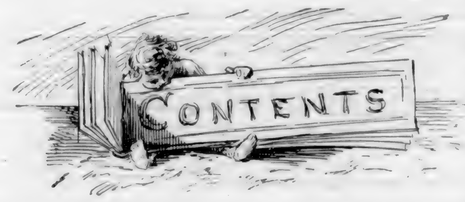

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

THE question of how to dispose of the garbage with the least offense is as yet unsettled. We know of no method adopted which is devoid of objectionable features. The offensive and unhealthy nature of garbage begins as soon as made, and continues with increasing virulence till its final disposal. In most, if not in all Eastern Cities, the garbage is placed in receptacles made of wood, which are at intervals placed on the street to be removed by the scavengers. These receptacles become saturated after a time, with the decaying refuse matter, from which emanate continuously offensive odors and disease-breeding germs.

In San Francisco the usual custom is to have an iron box to receive the refuse of the house. These boxes are placed in basements, back stairs, rear balconies, etc.; and, upon being opened to receive a new deposit, they send off the pent-up fumes of decaying matter. Thus they become reservoirs of decomposing filth, continually generating noxious miasma, and forming a generating center of disease germs to permeate the building. A great portion of the more objectionable material which accumulates in the swill box, can and should be burned in the kitchen range. This course would probably meet the necessities of the case so far as the house alone is concerned.

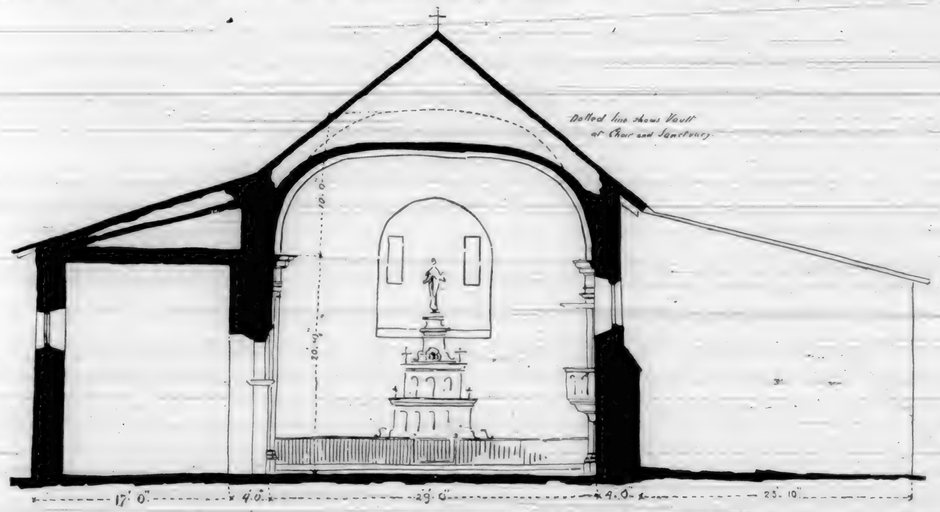
The city ordinance requires the scavengers to have closed tanks on the carts, which is correct as far as it goes; but the tanks and covers are of wood, which, after a time, become saturated and give off offensive odors and putrefying effluvia, which vitiates the air and becomes an active feeder for preventable diseases. The principal dangers which arise from the saturated receptacles on the carts could be overcome, in a measure, by the substitution of iron tanks and covers for those of wood.

While our Public Health Officials have been zealous in their desire to have the owners of property adopt every precaution against danger to health, we feel confident they will see the necessities arising from this most important sanitary requirement and adopt some regulations for securing this essential sanitary provision; and issue some rule for the guidance of persons engaged in the removal of accumulated refuse material, so that it shall cease to become a source of annoyance and danger.

MISSION OF SAN CARLOS DEL CARMELO, CAL.

Over a hundred years have passed since the religous enthusiasm that overflowed its native Spain and filled all Mexico, spreading even as far as Northern California, sank back to the more congenial surroundings of the tropic South, leaving only a few ruins, many names and here and there an existing building to attest the fact that those healers, more skilled than the waters of Bethseda's far famed pool, had labored for the spiritual healing of the brethren in these parts. So in the year of our Lord, 1891, retracing the steps of those pious fathers, steps all but obliterated by time, we come from San Francisco to the Bay of Monterey, and find there, not the mission but only the cross; for although the Mission was established here in 1770 after many fruitless searches for the famous Bay, the building was never erected, and we learn that not satisfied with the site, the Fathers determined after a few months occupancy, to remove about four miles southward to the mouth of the Carmel River. The road now over the hills is an easy one, and in an hour after leaving the town of Monterey, either on foot or on horse, you can stand at the doorway of the old Mission Church stay at Rome, a ten years' preaching in old Mexico, and gathered there their architecture; and so they built, and here in part to-day we still can see how thought and labor formed itself in stone a hundred years ago. History tells us that this Mission of San Carlos was built in the year 1771, but this structure was only of wood and dobe and it was not until some years later, probably fifteen or twenty, that the present stone building was erected. Our sketch is as seen from the east, the most prominent feature being a tower about twenty feet square, in the lower portion of which is the baptistery and above the belfry which has three openings for bells, and at the rear a doorway with stone stairs leading to the ground. The old bells have long since disappeared, and a modern bell claiming to be cast from the old metal of the originals, has taken their place.

From the belfry there was originally a doorway leading to the choir loft, but this is now filled up at the extreme right. Another and smaller tower, with belfry over and circular stone stairs leading to the gallery, encloses the nave or main body of the building, which originally was roofed cylindrically or barrel vaulted as indicated by the facade, the gable over being an addition of recent construction. A classic doorway with shallow pilasters,



·SECTION·

of San Carlos del Carmelo, deep down in a green hollow opening out to meet the sea. From the doorway one look east, and away up the valley, hill ascends behind hill, until the mountain fastnesses shut off all further progress, and the limit of man's wanderings is reached in that direction. To the west a little bay half a mile distant, a rocky headland, a beach of golden sand, and beyond the illimitable ocean, blue almost to painfulness with its intensity. Here on one side the rugged pathway of the mountain, the forest and the glebe, with its hewing of wood and drawing of water; and on the other, the wide, open, tractless sea, across which the imagination may travel at will, reaching far beyond the encircling rim of blue, where sky and ocean seem to meet, into the star world and the depths of heaven, and here an emblem of the work they came to do; they built their watch tower, twixt the sound of merry axe at wood tree ringing, of lowing herds and things natural, and far off depths of sky and ocean blue symbolic of all things most spiritual and made themselves a bridge to join these two.

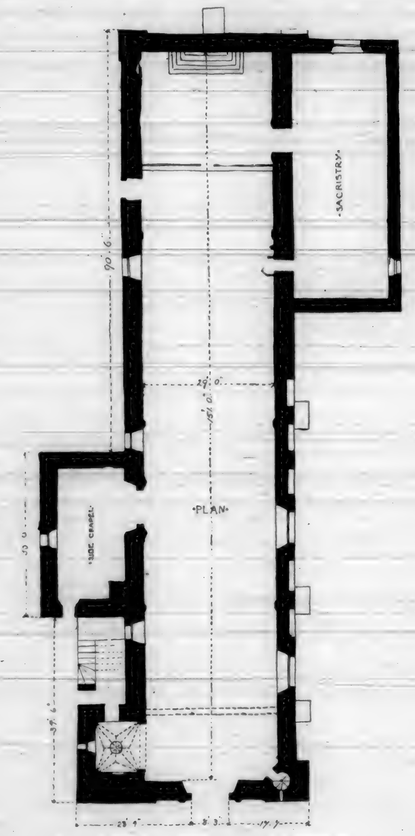
And so these Fathers came, weary and way worn, travel stained, from their native isles of Spain, from college, a short Doric capitals and entablature and a star shaped window over, lighting the gallery, include all that is of interest architecturally outside. The nave walls for the most part are about four feet thick, built of a soft sand stone and covered with stucco, and are strengthened here and there with heavy buttresses stoped off at the top after the manner of Gothic building, showing with other things, that the designers were not altogether consistant in the style adopted.

The principal mouldings, such as the cornice round the tower and above the semi-circular end wall of the nave, the pilasters and arched doorway of the principal entrance, are carved directly on the stone, so also at the cornice and finials of the belfry. The dome apparently is formed of concrete, or, if of stone, it is coated with stucco both inside and out.

The interior was probably never very interesting, but it has become doubly uninteresting by dis-use, and the trimness and neatness of everything proclaims most sorrowfully that the restorer has been at work, that the building has no further use in itself, and that the silent witness of its stones has been greatly marred by an over zeal in endeavoring to assure to posterity the

privilege of studying the thoughts and actions of men long since passed away.

Still the main features of the building are more or less intact and we must try to ignore as much as possible the Portland cement stucco, and yellow paint of vandalism, and report that which if it has not great beauty has at least a history, from that which has neither age nor beauty to commend it to our fancy. The interior consists of a nave 29x151 feet, with no chancel or transept whatsoever, nor line of demarcation dividing the sanctuary from the body of the church. The walls are broken at irregular intervals by pilasters, with capitals and cornice mouldings, which latter runs all around at the springy line of the ceiling. The projection of these pilasters, which is about three

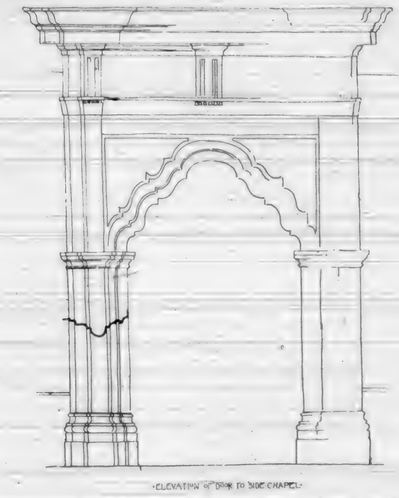


PLAN OF MISSION OF SAN·CARLOS·

inches, is carried across the barrel vaulted ceiling dividing it thus into panels. The walls of the building are peculiar from the fact that at about half their height they curve forward some four or six inches to resist apparently the thrust of the vaulted ceiling. Externally this ceiling was covered over by a tile roof of flat pitch as compared with that shown in the drawing, the ridge coming only to the top of the arch. The nave is lit by five small square windows placed irregularly along the side walls near the cornice, two small embrasures over the altar and the star shaped window before alluded to over the gallery. Attached to the Church is the baptistery, a square room with arched doorway in stone, and vaulted Gothic ceiling springing from three quarter columns at the four angles and forming a groin with moulded ribs. Near the center of the Church and on the left hand side is the chapel of the crucifiction, the doorway of which we give a sketch, near the altar is a segmental arched doorway leading to the vestry. Besides these there is nothing worthy of note.

But again we would bear in mind that it is not so much the intrinsic value of the building, nor its great beauty that make it all that it is of worth, but rather, that as, we hope, looking to the future, we draw inspiration looking to the past. It is the history of a country that gives it the courage to endure and the energy to accomplish, and as we come to-day and weep unseen tears over the decay of old Carmelo, thinking of the unselfish zeal of these pious workers, so would we have in the years to come, that pilgrims from afar way stop for a moment at the buildings on which we have labored, and if they cannot always say this indeed is a thing of beauty they may at least say it was conceived and erected by honest men.

Monterey, June 3, 1891. TRES——.



THE FLY IN THE CATHEDRAL.

A fly, while walking on the dome
Of great St. Peter's Church at Rome,
Exclaimed: "To me this lofty pile
Of stones seems built in wretched style:
I scarce find one smooth place o'er all
The surface of this crooked wall:
Go where I will, I still detect
Some excrescence or some defect."

A spider, from his web o'erhead,
Had heard the critic speak, and said:
"'Tis not for you, poor puny flies,
To judge of things of such a size.
This structure was not raised for you,
But creatures in whose larger view
The workmanship you censure so,
No sign of ruggedness may show;
While they see what you never can,
The beauty of the building's plan."

Thus, often, narrow-minded men
Will judge of things beyond their ken;
They spy slight faults that cannot mar,
But see not where high beauties are.

—*Evans.*

THE construction of the Panama, and later the Nicaragua Canal, has demonstrated the fact that the forests of those sections are comparatively useless as timber for constructive purposes. While it is true that good size mill logs may be cut from some of the valuable hard woods, as mahogany and others of that kind which are more suitable for furniture than for lumber, the great distance between the trees precludes their general use. Thus far both these stupendous engineering works have drawn their timber supplies from the Pacific Coast districts, and as the lines of commerce become more concentrated at these points, the requirements for lumber will increase to such an extent as to become in itself an important line of trade, and more particularly so because, as far as known, the most available source of supply exists in this direction.

Correspondents must not forget to give their names and address, as the editors cannot publish anonymous communications, nor will they hold themselves responsible for opinions expressed by their correspondents.

SALT LAKE CITY.

To the Editor of California Architect,

Dear Sir:

A few impressions of the quondam Mormon Capital would not perhaps be amiss to your readers. The first impression of Salt Lake City, is a city of "magnificent distances," more so even than the city of Washington.

Here we have large blocks swallowing up four San Francisco blocks, all perfectly square, and divided by wide streets, none less than 120 feet wide, nearly all of which are traversed by electric roads running in the centre, and those out of the business centre lined on both sides with trees and running brooks, so that on meeting a friend one has only to step to the curb to listen to his conversation, to the accompaniment of the rippling water and whisperings of the umbrageous canopy, which is a much better position than standing on Market street, amongst the dust and dirt and sun glare. In the evening the effect is still more delightful; the glittering of the moonlight through the trees, the sheen of the same on the passing water etc. transporting one far from the cold fact that one is walking in the midst of a large city. Added to this is the romance attaching to the place, as the seat of the religion of Brigham Young, an experiment in social life which had developed to quite an extent, and still leaves its marks upon the place.

Here we have the rambling house of many doors, suitable for a man of many families, also the capacious grounds, with cottages dotted about around the main residence, when the owner could afford to give each of his families a house of its own, and not depend only on a partition to keep each separate; and dominating all, the fantastic looking Temple, flanked by the wierd looking Tabernacle, monuments to the ability and energy of the Mormons.

The Tabernacle, a place with no windows above the line of entrances yet well lighted, with a smooth surfaced ceiling like the inside half of an egg shell cut horizontally and still in which one can hear a low voice in any part and an organ and choir magnificently.

Leaving the Gentile improvements or otherwise to later on I will dwell upon a few lessons which may be learned I think from the Mormon regime.

The chief one is economy of labor and time. The city is divided into wards of small extent each with its assembly hall, school house, and co-operative store, so that the inhabitants have all their wants supplied right in their midst and no necessity exists of going down town unless for some extra articles which are supplied at Zions great co-operative store, a large room divided by columns into aisles and lighted by skylights.

Multitudinous stores with their attendant wastes of clerks, salesmen, gas, electric lights, and other needless expenses too numerous to mention are thus done away with.

Architectural effects of course can be obtained by this system to a much larger extent also, as all genius, wealth and size can be concentrated to form one magnificent whole, instead of being frittered away into the pettinesses of contending shopkeepers.

In the country also an effect has been obtained which I suppose could not be obtained by any other means than that adopted; the ignorant of northern European countries have been transformed into the landed proprietor and the desert has been changed into the garden.

During the last two years since the Gentile predominence, Salt Lake City has advanced wonderfully in a material sense, a number of fine architectural buildings having been erected which will compare favorably with any city.

A recital of the doings of the convention of Architects who met here about the time of the consideration of the plans for the new City hall and Court house would continue this letter to an indefinite length, so I will have with regret to leave the wit, joviality and general bonhomonie of that convention with its lobby of the brightest intellects of Salt Lake to oblivion; and since the boom is now in abeyance will have myself to stroll back to San Francisco.

Yours truly,
Stroller.

UNIVERSITY OF PENNSYLVANIA.

Through the kindness of H. W. Spangler, U. S. N., of the Department of Mechanical Engineering, of the University of Pennsylvania, we have received the following concise description of certain proposed improvements in that institution.

"In the improvements in contemplation at the University of Pennsylvania, the plans for which are now under way, two of the needs of the University which have lately made themselves strongly felt, will be provided for.

One is the necessity of improving the heating and ventilation of existing buildings and providing for that of new buildings, either in process of construction or to be erected in the immediate future. The other is the need of providing for the growing demands of the Department of Mechanical Engineering. This department, which was established sixteen years ago, grew slowly, though steadily, until within the past three years when the numbers of students began to increase rapidly. Additional facilities were provided, but in the last year the numbers have still further increased, and the Department has found itself greatly hampered for lack of room.

With characteristic energy, the Trustees determined to meet both of these needs at the same time. Heretofore each building has been heated by a separate plant in its basement, and has been lighted by gas. It has been decided to build a central heating station, with a present boiler capacity of 1,200 H. P., from which to heat all the buildings, at present eleven in number. In addition the buildings are to be lighted throughout by electricity, and to be thoroughly ventilated by the use of large ventilating fans in the basement, which are to be driven by steam or electric motors; while the ventilating flues in the old buildings are to be changed to accord with the best modern practice. The engines and dynamos for this purpose are to be placed on the ground floor of a separate building, the two upper floors of which will be used by the Mechanical Engineering Department. These two buildings are so designed that additions may be made to them as need arises. The entire plant is to be put in, not only for the purpose of furnishing light and heat in the most economical manner, but in addition it is designed especially for the purpose of instruction, for which it will at all times be available.

The boiler house will be one hundred feet long and fifty feet wide, and one story high, furnished with a stack of sufficient size for a plant of 1,200 horse power, to provide for future growth of the University. The provision for coal bins, ash vaults and weighing scales will be made in the most complete and convenient manner for the purpose of testing and instruction. The boiler plant (1,200 horse power) will contain examples of the Galloway, return tabular, marine, and sectional boilers, ample in capacity for heating the present buildings, as well as the new Hygiene building, now under construction, and the large dormitory or apartment house, about to be erected. Steam will be generated at 100 pounds, used in the engines, and, when exhausted, will be used for heating, so that the power used in generating electricity for lighting will be obtained at a minimum of cost, and the lighting of the buildings will be very much better than at present. Owing to the configuration of the land, it is possible to get a gravity return of the water from the condensed steam from all the separate buildings to a well in the boiler house, from which it will be pumped into the boilers. The piping between the central station and the several structures will be on the Holly system.

Separated from the boiler house by a distance of fifteen feet is the building for the Mechanical Engineering Department, which will contain in its basement the engine and dynamo room. This building will at present have a length of eighty feet and a width of forty-five feet, with a provision for any desired extension in the future. In the dynamo room will be located two 100 horse power compound engines, and two engines of high speed type, similar to the Porter-Allen, Straight Line, or Armington & Sims. The Corliss engines now in the Department will be removed to this floor, leaving the Porter-Allen engine where it now is, for the purpose of furnishing power to the Mechanical workshops of the Department, which will remain for the present in the basement of the Scientific building. These shops are to be considerably enlarged and improved, so that instructions may be furnished in Carpentry, Wood Turning, Chipping, Filing, Blacksmithing, Pattern Making and Moulding, to fifty students at the same time, if this should be desired.

The electric lighting will be partly on the alternating and partly on the direct current system. Two 500-light 1,000 volts, alternating and four 500-light direct current dynamos are to be employed. As with the boilers and engines, it is proposed to use several types of American machines. The two alternating dynamos will be connected to a separate switch-board, and so arranged as to run either singly or in parallel, or one may be run as a motor; The direct current machines will be compounded, but so arranged that by throwing a switch they become shunt machines. These will also be so connected to their switch-board as to run separately or in multiple. One alternating and one direct machine will be connected by belt to each of the compound engines; the remaining dynamos will be driven each by its separate engine. By this arrangement either dynamo or either engine may at any time of the day be used for experiment or instruction, as is the case with the boilers. This plant, in addition to the machines already belonging to the Department, and including the mortors for driving fans, will be larger and more comprehensive than that of any institution in the country. Students will have actual practice in the handling of the entire apparatus, and will be enabled to obtain a very considerable familiarity with the details and the peculiarities of the systems of the principal American manufacturers. This familiarity is of great value to the student, and can generally be obtained, with much less effort on his part, from the actual working apparatus than from any drawings or description.

All the engines and dynamos will be mounted on very heavy foundations, so as to obviate to the greatest possible extent any jarring of the building. The only shafting in the building will be on the second floor and will be very light, as it is only for furnishing power for testing in the Mechanical Laboratory rooms, which are to be situated on this floor. Recitation rooms, the Department Office and toilet rooms will occupy the remainder of this floor.

On the third floor will be placed a drawing room, recitation room, office and the electrical engineering laboratory, the latter occupying a space of 1,600 square feet. On one wall a special switch-board will be placed, so arranged that any or all of the dynamos can be connected at will with any measuring instrument or apparatus in the laboratory. It will be provided with a photometric room for measurements upon both arc and incandescent lamps, with many different types of which the department is supplied. The apparatus for electrical measurement is already quite extensive, and is continually and rapidly increasing Each student is required to complete quite an extended course in elementary, electrical and magnetic measurements; after which, if he is deemed competent, he will be given facilities for original research, either alone or in company with another student.

An important factor in the instruction of the student is the Department Library. This supplemented by the loans of the officers of the department, contains a large number of the modern works upon mechanical and electrical engineering. It was begun only a short time since, but has grown very much within the past year, and additions will be made as occasion demands. Most of the engineering periodicals are regularly received and kept on file.

The feeder wires both alternating and direct current, which convey the electrical energy from the dynamo room to the various buildings, will be carried underground. The arrangement of the lamps in the buildings will be made by the architects, Wilson Bros, who have also drawn the plans for the entire plant. The plant, when completed, will be under the immediate charge of a superintendent, to whom the officers of the department act as advising and consulting engineers.

It is believed, when the above plans are carried out that the University of Pennsylvania, as regards its Mechanical and Electrical Engineering, will take the front rank amongst educational institutions for the completeness of equipment and facilities for instruction in those branches.

AN ARCHITECT'S DREAM.

Few of us can expect to live in houses built of polished granite, porphyry and jasper, and adorned with precious stones; but we may expect to live in those protected and embellished with enamelled terra-cotta, glass slabs, or glass mosaic, and that our streets may at least present us with a clean, gay and cheerful appearance, even if they do not quite realize M. Charles Garnier's dream of a transformed Paris:

"I imagine the day when the tawny tones of gold will pick out the monuments and construction of our Paris; I imagine the warm and harmonious tones that will tremble under the delighted gaze. One will have renounced those grand straight-lined streets, beautiful, no doubt, but cold and unnatural as the ceremony of a noble dowager. The inflexible Commission of Ways will have its period of reaction, and without anyone being hurt, every one will be allowed to build his house without making it match those of his neighbor; the grounds of cornices will shine with eternal colors, the piers will be enriched with glittering panels, and the gilded friezes will run the whole length of the buildings; the buildings themselves will be clothed in marble and enamel, mosaic will make every one love sparkle and color. This will not be false and petty luxury, it will be opulence, it will be sincerity. The eye, familiarized with all the marvels of tints and splendors of color, will insist that our dress shall be modified and colored in its turn, and the entire city will have an harmonious reflection of silk and gold. But, alas! I look around me. I see a grey and sombre sky; I see newly-painted houses; I see the shadows quite black, that wave in the interminable boulevards; I see, in short, Paris as it is! And from my artist dream I fall again into vulgar reality."

This dream is by no means impossible. When I was at Berlin a good many years ago, I say a mansion that the Italians would call a palace, wholly covered with a facing of compressed tiles in patterns, the dressings of the windows and the oriels wholly composed of Minton's majolica, with a glass mosaic frieze, adorned with subjects in color on a gold ground. I

could not help saying to myself, "Here is a palace adorned with colored materials, all but the mosaic certainly of English manufacture; but we at home have neither the taste nor wit to use them." It is true that most of our majolica leaves much to be desired in beauty of shape, in quality, tone and arrangement of color; but these defects could be amended if there were demand enough for skilful architects, designers and colorists. Enamelled pottery does not do well as a rule with dull granulated surfaces. Even when new it requires a very able architect to use it properly, and in London it becomes staring as the rough material is blackened by soot. Where granulated surfaces must be used, enamelled pottery might still be applied in very small pieces to give value to the colors of the main materials; just as Nature colors a pistil, a stamen, or a spot with one complimentary primary to set off another, or a secondary, or a tertiary.

PROFESSOR G. AITCHISON, A. R. A.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

The first six months of this year has been more prosperous than the indications at the beginning of the year promised. By a comparison with former years the contracts filed foot up more than for last year.

	Brick Building			Frame Building			Alterations & Additions			Total Value.
	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	
Jan'ry	3	10	$ 98,106	30	45	$ 174,294	6	7	$ 14,415	39	62	$ 286,725
Feb'ry	5	21	305,554	33	32	130,664	5	6	23,151	43	59	459,369
March	7	16	221,001	48	58	333,075	13	14	53,586	68	88	607,662
April	8	8	119,192	50	80	372,799	12	14	44,389	65	102	536,381
May	3	14	236,989	49	79	298,794	15	17	100,165	67	110	637,947
June	5	23	211,032	88	123	635,499	16	16	42,358	109	162	888,889
Total	26	92	$1,193,874	298	117	$1,945,034	67	74	$278,065	391	583	$3,416,973

To this amount the further sum of $500,000 should be added for work done where no contracts have been filed, which would increase the sum total to $3,916,973.

1885—754	contracts	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858
1891—583	"	" 3,916,973

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

SETH BABSON, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
C. E. PURINGTON, Sec. W. C. CROSETT, Treas.

BUILDERS' ASSOCIATION OF CALIFORNIA, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. KENT, Pres. P. G. MARTIN, Vice-Pres.
A. JACKSON, Sec'y. WM. B. KREGER, Treas.
L. A. LARSEN, Clerk and Financial Sec'y.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.
E. M. GALLAGHER, PRES. H. G. JARMAN, SEC.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

The illustration for the bank building for the German Savings and Loan Society is from the designs of Messrs. Kennitzer and Kollofrath, architects.

The design for residence to be erected in Tokio, Japan, is by Kanegoro Nagaye, a young Japanese architect of this city.

The Mission of San Carlos is from sketches from our special correspondent, "Tres."

The cuts C and H are from the terra cotta capitals from the Museum of Natural History at Kensington, England.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

MECHANICS' LIEN—FILING ACCOUNT.—Although the mechanics' lien is given on "the building" by Mansf. Dig. Ark., it is not necessary, under an entire contract, to furnish materials for seven houses situated on contingous lots, to file a separate account of the material furnished each house, but the whole seven may be charged with the lien by filing a single account of all the materials furnished.

Tenny v. Sly, Supreme Court of Arkansas, 14 S. W. Rep. 1091.

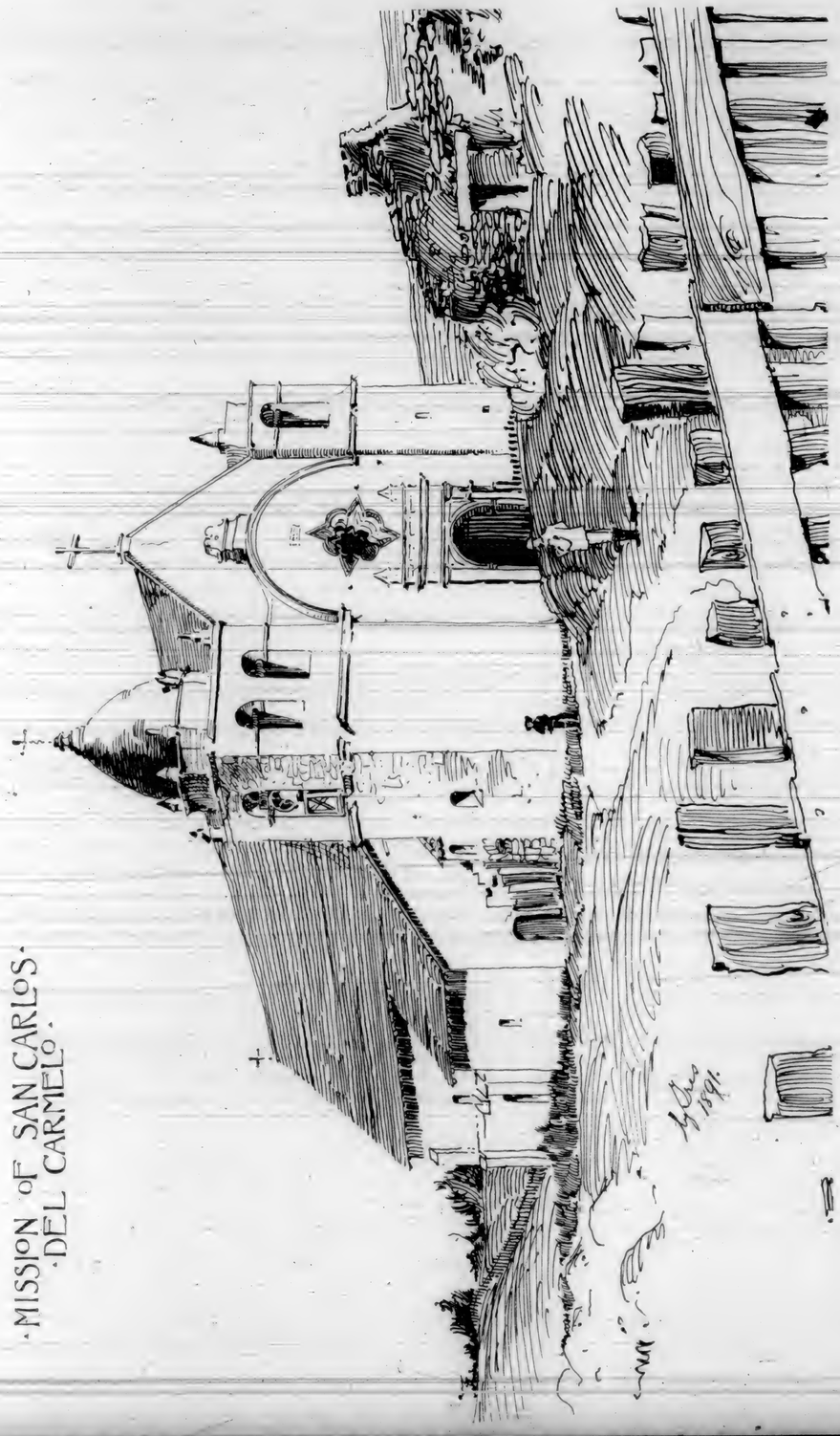
MECHANICS' LIEN ON SEPARATE LOTS.—Under the code of Virginia 1873, which provides that persons "performing labor or furnishing materials for the construction, repair or improvement of any building, or other property, shall have a lien upon such property." A sub-contractor who furnishes materials for the construction of two houses erected under a single contract on lots on opposite sides of the street has a joint lien on both houses and lots for the entire amount of materials furnished for both houses.

Sergeant v Denby, Supreme Court of Appeals of Virginia, 12 S. E. Rep. 402.

MECHANICS' LIEN—FILING LIEN—ACCOUNT.—While material was being supplied from time to time, as needed, for the construction of a building pursuant to a contract not specifying the price, certain material was supplied for the same purpose upon an agreement then made between the same parties specifying the price. So far as concerns the right of lien, the furnishing of all the material may be treated as an entire transaction, and the filing of the lien account within the prescribed time after the last delivery is sufficient.

State Sash & Door Manufg. Co. v. Norwegian Danish Evangelical Augsburg Seminary, Supreme Court of Minnesota, 47 N. W. Rep. 796.

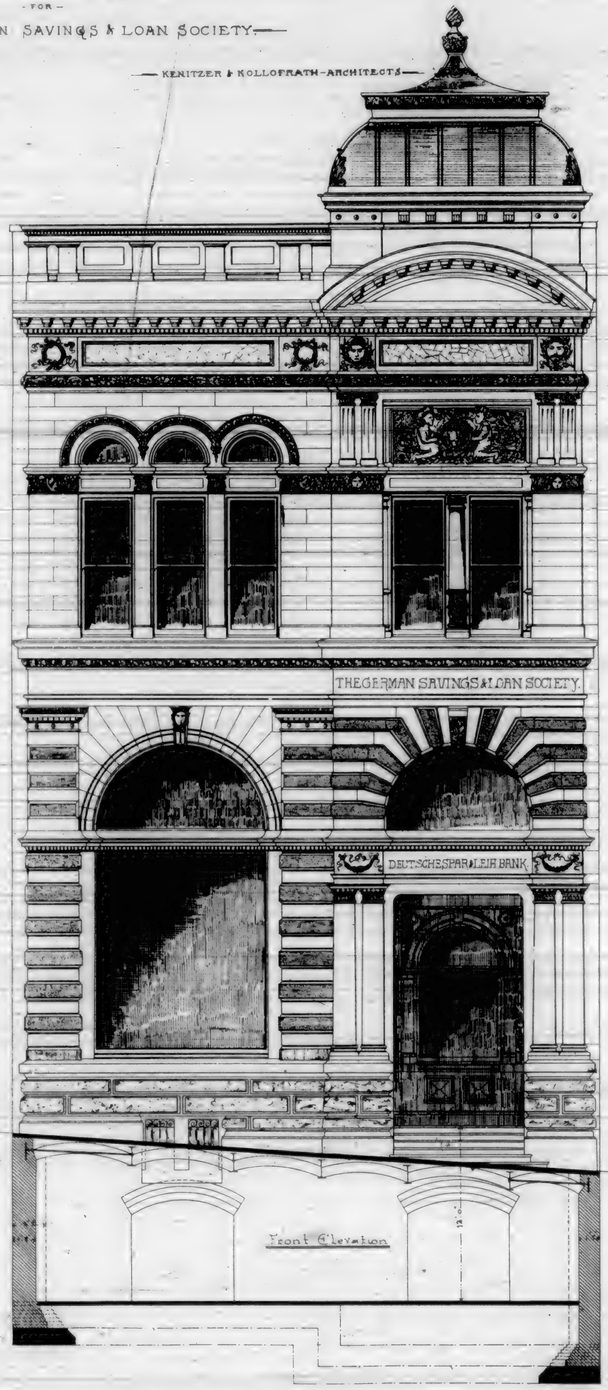
DANGER SIGNALS WHILE CONSTRUCTING BUILDING.— Where a building is in process of construction and it becomes necessary for the contractor to so obstruct the sidewalk as to render it dangerous, if the contractor protects the public by such proper guards and signal lights as will render it possible for persons in the exercise of ordinary care to avoid the danger, the



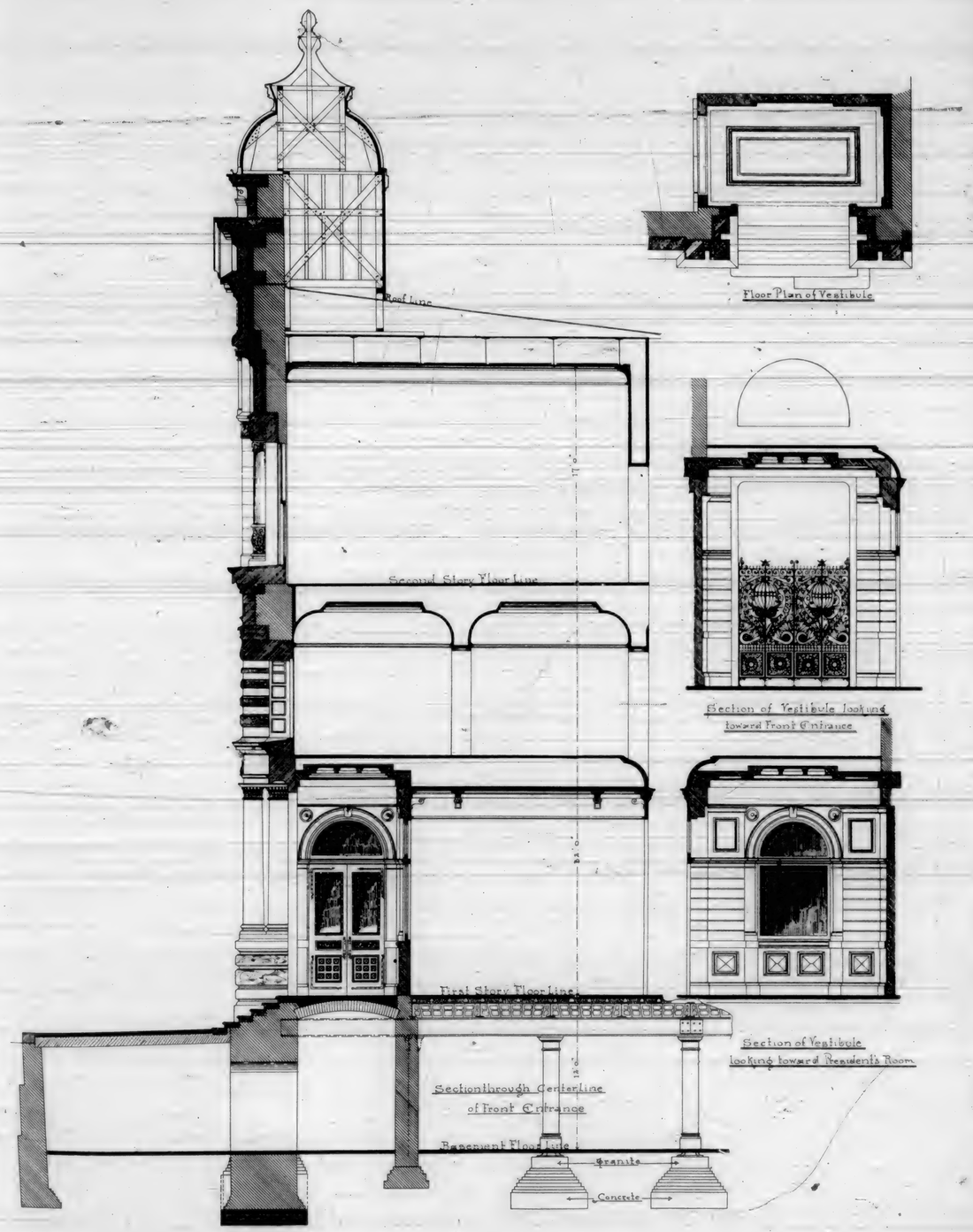
MISSION OF SAN CARLOS
DEL CARMELO.

— BANK BUILDING —
— FOR —
— THE GERMAN SAVINGS & LOAN SOCIETY —

— KENITZER & KOLLOFRATH - ARCHITECTS —



Front Elevation

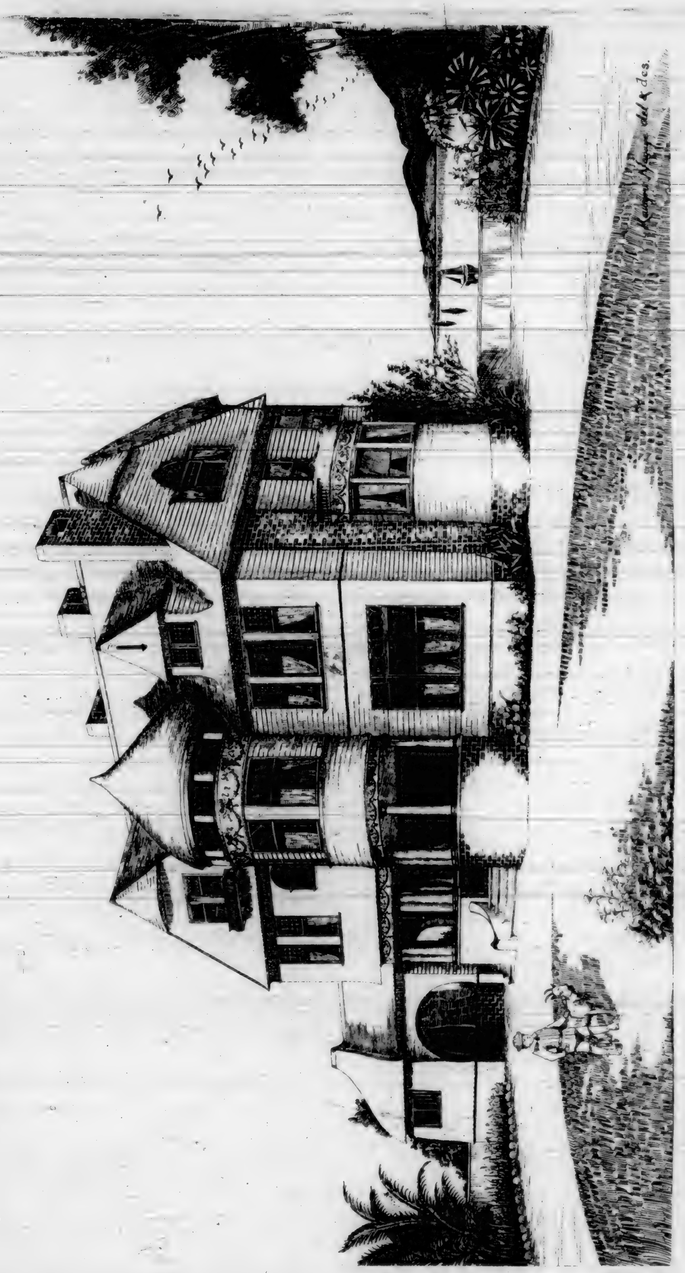


Floor Plan of Vestibule

Section of Vestibule looking toward Front Entrance

Section of Vestibule looking toward President's Room

Section through Center Line of Front Entrance



A RESIDENCE FOR S. PULLESO TO BE ERECTED IN TOKOPAH PARK, SAN JOSE, CAL.
MAGEE WITH MR. SAMUEL HENSON, ARCHITECT.
OFFICE: FIELAN BLK. SAN FRANCISCO, CALIFORNIA.

contractor is exempted from liability and the city has as much right to plead the protection afforded by such signals in defense to an action against it to recover damages for personal injuries, as it would have had, had it placed such guards and signals there itself. The question is as to the sufficiency of the protection, and not as to its authorship.

City of Kansas v. Bermingham, Supreme Court of Kansas, 25 Pac. Rep. 568.

INJURY OF WORKMEN BY DEFECTIVE STAGING.—Several actions by workmen against their employer for injuries received by them from the fall of defective staging were tried together. There was evidence that one of the plaintiffs had said that the fall of the staging was caused by a stone let fall by him and another. This declaration was admissable against him alone, and an instruction that plaintiffs could not recover if the accident was so caused was properly refused. Where the staging itself was defective through defendant's negligence, the fact that the fall of the stone was a contributing cause of the accident will not defeat the workman's recovery.

Dronimie v. Hogan, Supreme Judicial Court of Massachusetts, 26 N. E. Rep. 237.

INJURY OF WORKMAN BY NEGLIGENCE OF FELLOW SERVANT.—Plaintiff was engaged as a mason in constructing the foundation for a machine in defendant's mills. A carpenter had erected a staging near where plaintiff was working for the use of the machinists, and in so doing had used a horse about eight feet high, and had placed a piece of scantling loosely upon its top. After the machinists had finished their work, their foreman directed the staging to be removed, and while the workmen were attempting to lift the horse the scantling fell upon plaintiff's head. It did not appear that the foreman's attention was called to the block on top of the horse. This was sufficient to warrant the court in finding that the injury was caused by the negligence of fellow servants.

Cunningham v. Washington Mills Co., Supreme Judicial Court of Massachusetts, 26 N. E. Rep. 235.

ACTION FOR PRICE OF BUILDING MATERIALS.—Building materials, for the price of which action was brought, were delivered from plaintiff's dock at defendant's house, within sight of the dock, by teamsters, who took receipts for the contents of each load sent. One of the plaintiffs helped unload part of the material and saw other portions of it carried to the house, and there was testimony that the brick delivered there equaled the quantity alleged. Defendant, when informed of the amount of plaintiff's bill, after an interview with his contractor, promised to pay it. This was evidence for the jury of the delivery of the whole bill.

Henderson v. Wasserman, Supreme Court of New York, 13 N. Y. Supp 151.

CONSTRUCTION OF PENALTY CLAUSE.—A building contract provided that, in case of non-completion by a certain time, the builder should pay a certain sum as liquidated damages. After default the parties entered into another contract, providing that, if the buildings were not completed by a certain day, the "sum or penalty" due under the former contract should be a stipulated amount "by way of liquidated damages." After a second default the parties entered into a third contract, which recited that the builder claimed that the "penalty" should not be exacted for a certain reason, and settled all questions between the parties "except the one question of penalty." Under these circumstances, the amount agreed to be paid in case of default was not a penalty, but liquidated damages, from which the builder could not be relieved on the ground that performance was prevented by act of God.

Ward v. Hudson River Bldg. Co., Court of Appeals of New York, 26 N. E. Rep. 256.

LIABILITY FOR DISTURBANCE OF BUILDING.—The owner of two adjoining lots with buildings thereon, part of one of which was occupied by a tenant under a written lease, contracted for the removal of the other building, giving the contractor sole charge of the work and requesting him not to interfere with the walls of the adjoining building. In an action by the tenant against the owner for injuries to his property by the removal of the walls of the other building, leaving part of his premises exposed, it did not appear that the lease contained any covenant to repair or keep in repair the premises, or that the adjacent property should remain in the same condition as at the time of hiring, nor was it claimed that there were any false representations as to the condition of the premises; and the evidence justified a finding that no disturbance of such premises was contemplated by the owner when he made the contract, or was necessarily involved in doing the work under it. There was nothing in this showing to justify a recovery by the tenant from the landlord.

Ratter v. Goerltiz, Common Pleas of New York, 12 N. Y. Supp. 210.

BUSINESS MOSAICS.

The Roche Harbor lime has been used throughout the northerly section of the Pacific Coast for the last nine years, and on account of its superiority has given satisfaction to all parties. The persons interested in the building trade in that section are from all parts of the U. S. and all proclaim it the best they have ever used, and highly praise its many good qualities for plastering, and its extra strength for brick work. At the World's Fair at New Orleans, this lime was awarded the gold medal and first prize. The out put is 450,000 barrels per year. The Kilns are situated at San Juan Island, Puget Sound. The agents are C. L. Dingley & Co. 29 Stewart Street.

Decaying wood is one of the factors in the propagation of disease which has engaged the attention of Sanitarians wherever wood is used, and more especially for this section of the country on account of the general use of wood in the construction of nearly all classes of building. A new material named Carbolineum Avenarius has been introduced through the agents Muecke & Co., 319 California street. It is a preventative of dry-rot or decay, and is proof against fungus on Wood or Stone. It forms an excellent remedy against damp walls. Teredoes, and all sorts of insects or vermin will not attack wood preserved with this preparation. For fence posts, telegraph poles and all wood in any way exposed to the earth or weather when coated with it will last much longer than by any other method.

L'Unique the new Plastic decoration, is leading far ahead of the old plain styles, and houses where any pretention toward artistic effects for the interior decorations are sought for, are the class of buildings where the new style is being adopted.

The Byrkit-Hall Sheathing lath, John F. Byxbee Agent, 42 Market street, is one of those improvements that should not be lightly passed over. The laths are worked out of one by six inch boards, with grooves to receive the plastering. Where used on the inside of exterior walls they form a substitute for the double sheathing. Where extra strength is requisite in walls or partitions these laths may be placed in such positions as to add strength. For walls of stores or store rooms where fixtures or shelving is liable to be put up and taken out, these laths are especially adapted for the purpose.

Builders Hardware of all kinds is kept in stock by the Dunham, Carrigan & Hayden Co. 17-19 Beale street. All the kinds of Bronze and fine grade hardware of the Hopkins & Dickinson Manufacturing Co. can be had at this establishment. Bronze and Artistic hardware is made a special feature and a show room provided for the exhibition of superior qualities of this line of manufacture.

Ornamental wrought iron work for buildings, is one of those departments where good work is especially desired at any time, but all the more important where fire escapes and railings are required for high buildings, and where the full strength may at times be placed on the materials used. Ornamental iron work of the best quality may be had of A. J. Dunbar & Co. general House-Smiths, 220 Fremont street.

The California Sash Balance Co. have recently made very important improvements in their Sash Balance, which cheapens as well as simplifies the application of the device. The Balance is in use in many buildings in this city to the satisfaction of owners and architects. Interested persons are invited to call at the office of the Company 33 and 38 Chronicle Building, where a working model can be seen.

About this season of the year the question of roofs for the new buildings in course of erection is of considerable importance. Where a tin roof is to be used it becomes necessary, if a good roof is wanted, that competent workmen should perform the work. The Forderer Cornice Works 224 and 226 Mission street uses the best of materials, and have thoroughly qualified workmen for any work in their line.

While passing one of our largest buildings in course of erection, we were particularly struck with the excellent quality of the material and workmanship of the wrought iron and girder work. This iron work is being furnished and put up by J. K. Firth & Co. 225 and 229 First street.

A new planing mill has been established on Eighteenth St. between Howard and Folsom, by Geo. Evans & Co.

The California Electrical Works, 35 Market Street, is one of the oldest and most reliable supply depots for Electrical appliances of all kinds. Persons using such apparatus and those who wish to experiment in this direction, would do well to call upon or send to them.

Rapid Contractors and Builders, and indeed all buyers of sheet metal building material, are deeply interested in prompt execution of their specification. They will, therefore, appreciate this, an example of rapidity, which easily beats the record.

Our friends, the Cincinnati Corrugating Co., received on March 23d an order for No. 16 galvanized corrugated arches, which they shipped within 48 hours. The sheets being rolled, annealed, pickled, galvanized, corrugated and curved, and shipped within two days from receipt of the order.

Where promptness is desirable we can recommend the Cincinnati Corrugating Co., for they have experience, energy and unrivalled facilities.

Mr. Oscar S. Levy of 525 and 527 Market street, San Francisco, who is the agent in this city, and carries a heavy stock of all the brands of Merchant & Co's. roofing tin, informs us that he has constantly on hand suffiicient quantities for all requirements in that line, and that reports to the contrary are misleading and calculated to deceive interested parties regarding the true state of the supply.

The old, well tried, and reliable brand of Dyckerhoff, Portland cement, can be had in quantities to suit, of Chas. Duisenberg & Co. at 314 Sacramento street.

Ornamental wire works of all kinds for railings, door and window screens, elevator guard, store door guards, etc., is manufactured by Smith & Trowbridge 13 and 15 Spear Street.

Hotels and country resorts when fitting up their establishments, should make it a point to use Dundon's Patent Economic Boilers if they wish to save expense in fuel and attendance. These boilers are especially useful for heating the bath waters for health establishments.

Pacific water closet works of W. J. Rustemeyer 126 Main St., are making an excellent quality of water closets, either pan, plug or wash out closets. The work of this company is guaranteed for two years.

The Swinging Hose Reel of W. T. Y. Schenck has been put up throughout the Academy of Science Building on Market Street. They make a fine exhibit on each landing and when mounting to the upper floors the effect on the mind is reassuring and pacific.

Tracy Bros. & Co., the well known manufacturers of vitrified iron-stone sewer and water pipes, chimney tops etc., have fully recovered from the effects of the fire some few months ago at their establishment. There was necessarily some inconvenience at first, but at present all departments are in working order, and with new buildings their facilities have been increased to fill all requirements.

Furniture manufactures and others using hardwood finish should look into the subject of using more of our native ornamental woods, and those from Mexico and Central American districts. Dieckman & Co., 114 California street, have recently imported a quantity of Primavera, white mahogany, which can be cut into large or small sizes as desired.

Builders should inspect the price list of C. A. Hooper & Co. on page XIX, as a change has been recently made and the price reduced for some of the articles.

A FEW WORDS ABOUT GRAPHITE PAINT.

The life of an ordinary roof or outside paint runs all the way from two to five years, and it should be of personal interest to many to know of a paint that will resist acids or alkalies and withstand the wear and tear of the elements for 10 or 15 years.

This seems to be a remarkable length of time but the statement is vouched for by well-known people who have used Dixon's Graphite Paint made by the Jos. Dixon Crucible Co., of Jersey City, N. J.

They claim that Graphite Paint is not only durable but handsome and equally useful for all outside wood or metal work where a dark paint can be used.

Wall paper, window shades, Lincrusta Walton, etc, are very important adjuncts for the completion of the building and conduce to its artistic effects. Rooms having forbidding aspects may be made cheerful by agreeably tinted wall paper, and from that on to almost any degree of artistic finish.

Persons in want of this class of materials would do well to call upon or send to the well known paper hanging and frescoing establishment of Jas. Duffy & Co. 811 Market St.

The ACME Instantaneous water heaters of the Chicago Ills. Co., for heating the water for baths and domestic purposes generally are a great improvement over former methods. They can be used with Gas or if gas is not convenient they can be safely used with gasoline. See advertisement on page III.

Builders in want of galvanized sheet iron, should call on W. W. Montague & Co. 309-317 Market St. This firm deals in Mantles, Grates, plain and art tiles, heating apparatus and ranges.

A. Lawson & Co. 334 Geary street recently laid some complicated and artistic parquetry or inlaid floors of hard wood, which for good workmanship and fine finish is of a superior character. Architects and others who want a good job done in this material should try this company.

A New material termed Lucol has been placed on the market. This material is calculated to be used as a substitute for linseed oil. The claims of the manufacturers seems to be substantiated in the trials we have made with it, while in some important particulars it is much superior to linseed oil. See their advertisement on page XIII.

TENDERS TO BE RECEIVED.

Bids are being received for Record Hall for Sutter Co. to be built at Yuba City, also for an eight-roomed school house at Alameda. Plans of both are in the office of the architects Messrs Mooser & Cuthbertson.

CITY BUILDING NEWS.

Angelica near Nineteenth. To build; owner, Aaron Cook; architect Casper Zwierlein; contractor, C. Zwierlein; cost, $3,400; signed, May 6; filed, May 12; payments, $850, enclosed; $851, brown mortared; $850, completed; $850, 35 days.

Brannan near Seventh. Brickwork, etc., owner, J. H. Boekmann; architects, Geilfuss, Zimmerman & Co.; contractor, P. R. Hurlbut; cost, $3,450; signed, June 1; filed, June 3; payments, $1,300, entire frame up; $1,300, completed; $850, 35 days.

Bryant near Second. To build; owner, Ellen F. Powers, architect, C. Zwierlein; contractor, A. MacDonald; surety, $1,374; cost, $5,495; signed, June 2; filed, June 4; payments, $1,031, frame up; $1,030, brown mortared; $1,030, white plastered; $1,374, 35 days.

Bryant Avenue near Twenty-third. To build; owner, John F. Hughes; contractor, Henry W. Weldon; surety, $1,500; cost, $3,102; signed, June 2; filed, June 4; payments, $580, rough frame up; $580, brown mortared; $580, white mortared; $580, completed; $776, 35 days.

Bush near Taylor. To build; owner, J. B. F. Davis; architect, C. I. Havens; contractor, M. J. Gorman; cost, $8,594; signed, April 30; filed, May 6; payments, $1,611, foundation laid and bldg enclosed; $1,611, brown mortared; $1,611, hard finished; $1,611, accepted; $2,150, 35 days after completion.

Bush near Taylor. Plumbing; owner, J. B. F. Davis; architect, Chas. I. Havens; contractor, H. Williamson; cost, $974; signed, April 30; filed, May 6; payments, $364, rough gas and water pipes in; $360, completed; $250, 35 days.

Broderick & Jackson. To build; owner, Hermann Heyneman; architects, Salfield & Kohlberg; contractor, Wilton Havard, cost, $12,750; signed, June 2, filed, June 4; payments, $1,000, concrete ready for sills; $1,000, frame up; $1,000, building enclosed; $1,500, floors laid and partitions set; $1,500, brown coat on; $1,450, standing finish on; $2,100, accepted; $3,200 35 days.

Broderick & Jackson. plumbing, etc.; owner, Hermann Heynemann; architects, Salfield & Kohlberg; contractor, Wm. F. Wilson; cost, $1,490 signed, June 3; filed, June 4; payments, $500, rough work in; $550, accepted; $850, 35 days.

Bryant & Park Avenue. To build; owner, H. Monses, architect, A. Hilderbrand; contractor: L. D. Frichette; surety, $2,500; cost, $3,580; signed, May 5; filed, May 7; payments, $900, frame up; $900, brown mortared; $900, white plastered; $880, completed.

Bush & Sansome. Alterations; owner, Bank of British Columbia; architect, Clinton Day; contractors, Chas. Ingerson, et al; cost, $19,375; signed, May 5; filed May 6; payments, $4,500, brick work, 7 windows and vaults completed; $3,500, plastering completed; $3,500, ready for painter; $3,081, completed; $4,844, 35 days.

Butte & Tennessee. To build; owner, Rev. P. O'Connell; architects, Shea & Shea; contractor, Jas. Glackin; cost, $14,500, signed, May 19; filed, May 21; payments, $2,175, frame up; $2,175, roof on and shingled; $2,175, brown mortared; $2,175, primed; $2,175, accepted; $3,625, 35 days.

California street, No. 2312. Alterations; owner, J. B. Jesserum; architect, Oliver Everett; contractor, J. J. O'Brien; surety, $800; cost, $1,708; signed, May 9; filed, May 11; payments, $884, brown mortared; $442, completed; 1442, 35 days.

California near Mason. Carpenter work and etc.; owner, Marie E. E. Berton: architect, Emelie Depierre; contractor, Jas. Geary; surety, $1,000: cost, $8,850; signed, May 6; filed, May 9; payments, 75 per cent as work progresses; 25 per cent; 35 days.

California near Mason. Concrete work, etc.; owner, Marie E. E. Berton; architect, Emelie Depierre; contractors, Chatain & Giletti; surety, $2,220; cost, $1,300; signed, May 6; filed, May 9; payments, 75 per cent as work progresses; 25 per cent, 35 days.

California near Montgomery. Domed skylights; owner, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractors, Mahony Bros.; surety, $3,000; cost, $6700; signed, May 2; filed, May 14; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

California near Montgomery. Fire-proof work; owner, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractors, Gladding, McBean & Co.; surety, $3,700; cost, $7,459, signed, May 2; filed, May 14; payments 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

California near Montgomery. Granite and marble work; owners, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractors, F. E. Knowles & Co.; surety, $22,000; cost, $45,450; signed, May 2; filed, May 14; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

California near Montgomery. Iron work; owners, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractors, Western Iron Works; surety, $8,500; cost, $17,200; signed, May 2; filed, May 14; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

California near Montgomery. Vaults; owners, German Savings and Loan Society, architects, Kenitzer & Kollofrath; contractors, Hall's Safe & Lock Co.; surety $9,000; cost, $18,161; signed, May 2; filed, May 14; payments, 1st and 15th day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Clara between Third and Fourth. To build; owner, Isabella Goomby; contractor, M. J. Feely; cost, $2,585; signed, June 3; filed, June 4; payments, $646.25, building enclosed; $646.25, brown mortared; $646.25, finished; $646.25, 35 days.

Clay near Filmore. Alterations; owner, Maria Keogh; architects, Shea & Shea; contractor, Daniel Chisholm; guaranteed, by J. J. McKinnon; cost, $1,221; signed, April 28; filed, May 1; payments, $446. building raised, moved and partitions set: $447, entire work completed; $328, 35 days.

California & Hyde. Mill work; owner, J. P. Lysett; architect; J. T. Kidd; contractors, N. Parrish & Co.; cost, $1,600; signed, May 29; filed, June 1; payments, $800, when completed; balance, 35 days after completion.

Clay & Taylor. To build; owner, John Rhode; architect, H. D. Mitchell; contractor, Leonard B. Schmid; surety, $4,000; cost, $5,100; signed, May 13; filed, May 15; payments, $1,200, rough frame up; $1,200, brown mortared; $1,500, accepted by architect; $1,200, 35 days.

Day near Sanchez. To build; owner, Daniel Ward; architect, M. J. Welsh; contractor, Jno. Hayes; surety, $1,000; cost, $1,550; signed, June 1; filed, June 2; payments, $887.50, frame up; $887.50, brown mortared; $887.50, completed; $887.50, 35 days.

Devisadero near O'Farrell. Carpenter work, etc.; owner, Rachel Anexter; contractor, Carman McLarty; cost, $4,000; signed, May 22; filed May 23.

Devisadero, near Pine. Carpenter work; owner, G. M. Davis; architect, W.O. Banks contractor, O. E. White; cost, $8,437; signed, June 1; filed, June 2; payments $4,927, brown mortared; $2,000, completed; $2,110, 35 days.

Devisadero near Wallen. To build; owner, Geo Dengse; architects, C. J. Welsh contractors, Madden & McKay; sureties, J. J. McKinnon and John Dane; cost, $5,700; signed, April 29; filed, May 2; payments, $1,068, frame up; $1,068, brown mortared; $1,068, white plastered; $1,068, accepted; $1,428, 35 days.

Diamond near Nineteenth. To build; owner, Arthur O'Brien; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $3,575; signed, May 6; filed, May 11; payments, $800, frame up; $900, brown mortared; $975, accepted; $900, 35 days.

Dolores near Twenty-sixth. To build; owner, Edward Mitchell; architect, W. H. Armitage; contractor, Louis M. Weissman; cost, $3,500; signed, May 11; filed, May 18; payments, $875, frame up; $875, brown mortared; $875, completed; $875, 35 days.

Dupont near Pine. Alterations; owner, Victor Albouse; architect, Emile Depierre; contractor, Jean Soisnare; surety, $1,000; cost, $1,000; signed, May 15; filed, May 15; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Eddy near Laguna. To build; owner, Adele Joel; architects, John & Balczynski; contractor, Adam Miller; cost, $5,100; signed, May 16; filed May 16; payments, $1,000, frame up; $900, roof on and partitions set; $900, white plastered; $950 completed; $1,250, 35 days.

Elizabeth near Sanchez. To build; owner, Wm. J. O'Shaugnessy; contractor, Jas. A. Shepeley; surety, $2,300; cost, $2,300; signed, May 15; filed; May 16; payments, $975; frame up; $975, rough plastering completed; $975, completed; $975, 35 days.

Ellis St. No. 18. Plumbing; owner, W. A. Concanon, et. al; architect, Clinton Day; contractor, M. C. Kean; cost, $2,350; signed, May 5; filed, May 6; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Ellis St., Nos. 18, 20 and 22. Plastering, etc.; owners, Morehouse & Wood; architect, Clinton Day; contractors, Concanon & Shay; cost, $4,160; signed, May 6; filed, May 11; payments, 25 per cent. as work progresses; 25 per cent., 35 days.

Ellis near Polk. To build; owner, Constant Marchand; architect, Chas. M. Rosseau; contractor, Thos. Maxwell; cost, $4,150; signed, April 27; filed, May 4; payments, $1,000, building roofed; $1,000, brown mortared; $1,100 accepted; $1,050, 35 days.

Ellis near Polk. Alterations; owner, Constant Marchand; architect, C. M. Rosseau, contractor, K. C. Gardner; cost, $4,150; signed May 9, filed, May 11; payments, $1,000, roof on; $1,000, brown mortared; $1,000, accepted; $1,150, 35 days.

Ellis near Powell. Brickwork, etc.; owner, Louis Taussig; architects, Salfield & Kohlberg; contractor, Alfred W. Burrell; cost, $9,195; signed, April 30; filed, May 7; payments, $1,500, basement ready for 1st floor joists; $2,000, walls ready for 3rd floor joists; $1,500, walk ready for fifth floor joists; $1,895, accepted; $2,300, 35 days.

Ellis near Powell. Carpenter work; owner, Louis Taussig; architects, Salfield & Kohlberg; contractor, Alex. L. Campbell; cost, $7,828; signed, April 30; filed, May 7; payments, $1,500 roof on; $1,500 floors laid; $1,000, partitions set; $1,828, completed; $2,000, 35 days.

Ellis near Powell. Plumbing; owner, Louis Taussig; architects, Salfield & Kohlberg; contractor, Samuel Ickelheimer; cost, $1,377; signed, April 30; filed, May 7; payments, $500, rough work in; $527, completed; $350, 35 days.

Ellis near Powell. Stone work; owner, Louis Taussig; architects, Salfield & Kohlberg; contractor; M. J. Healy; cost, $950; signed, April 30; filed, May 7; payments, 75 per cent. as work progresses; 25 per cent., 3 days.

Ellis & Powell. Alterations; owner, F. F. Butler; architects, Shea & Shea; contractors, Martin Fennell & Son; surety, J. W. Smith, et al, guaranteed; cost, $4,000; signed, May 11; filed, May 12; payments, $1,500, excavation and underpinning completed; $1,500, completed; $1,000, 35 days.

Filbert street, No. 931. To build; owner, John Rainsbury; architect, J. G. Brehend; contractors, J. W. Mayder, et. al.; cost, $2,000; signed, April 25; filed, May 2; payments, 1st and 15th day of each month, 75 per cent, as work progresses; 25 per cent., 35 days.

Fillmore near Fulton. Additions, etc.; owners, John Hinkel, et al; architect, B. A. Brown; contractor, S. T. Greene; surety, $475; cost, $1,900; signed, June 2; filed, June 2; payments, 1st day of each month, 75 per cent. as work progresses; 25 per cent, 35 days.

Folsom near Twenty-second. To build; owner, Theresa Braese; architect, L. Arthur; contractor, J. L. Arthur; cost, $1,750; signed, May 29; filed, June 1; payments, $875, house set in position; $875, completed.

Folsom near Twenty-second. To build; owner, Richard Curtis; architect, M. J. Welsh; contractor, Lemuel Arthur; surety, $600; cost, $3,600; signed, May 5; filed, May 5; payments, $900 frame up: $900, brown mortared; $900, completed; $900, 35 days.

Folsom near Twenty-sixth street. Carpenter work, etc.; owner, Henry Mohr; architect, Julius E. Kraft; contractor, M. C. Lynch; surety, $1,381; cost, $5,524; signed, May 20; filed, May 25; payments, $1,175, frame up; $1,500, brown mortared; $1,500, accepted; $1,381, 35 days.

Franklin near Washington. To build; owner, Sophie Wieland; architect, W. Winterhalter; contractor, W. W. Ackerson; cost, $2,510; signed, June 4; filed, June 4; payments, $600, roofs finished; $600, hard finished; $600, completed; $710, 35 days.

Franklin near Washington. Grading; owner, Mrs. Lucy H. Otis; architect, W. Winterhalter; contractors, Richardson & Gale; cost, $1,070; signed, April 20; filed, May 7; payments, $500, work completed; $370, 35 days.

Frederick near Masonic Avenue. Concrete, work, etc.; owner, M. A. Fritz; architect, A. J. Barnett; contractor, W. R. Patterson; cost, $1,145; signed, May 4; filed, May 8; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Front, near Pacific. Painting; owner, Jas. G. Fair; architect, H. A. Schultz; contractor, Elbert Olney; cost, $1,725; signed, April 18; filed, May 16; payments, 75 per cent, as work progresses; 25 per cent, 35 days.

Front near Pacific. Skylights, etc.; owner, Jas. G. Fair; architect, H. A. Schultze; contractor, Jos. F. Forderer; cost, $3,486; signed, April 18; filed, June 2; payments, 1st day of each month, 75 per cent, as work progresses; 25 per cent, 35 days.

Farren Avenue & Ellis. To build; owner, M. Viera; architects, Shea & Shea, contractor, M. J. Gorman; cost, $6,890; signed, May 6; filed, May 7; payments, $1,303, rough frame up and rafters on, $1,303, brown mortared; $1,303, completed $1,738, 35 days.

Fell & Steiner. Plastering, etc.; owner, Jos. Scobie; architect, Chas. I. Havens; contractor, Thos. Mannix; cost, $1,075; signed, May 23; filed, June 3; payments, $375, brown mortared; $400, completed; $300, 35 days.

Fell & Steiner. Plumbing; owner, Jas. Scobie; architect, Chas. Havens; contractors, Duffy Bros.; cost, $2,962; signed, May 5; filed, May 7; payments; $700, rough gas and water pipes in; $700, bath tubs, washstands, etc. in; $812, completed; $750, 35 days.

Filbert & Buchanan. To build; owner, Paul Arata; architects, Mooser & Cuthberson; contractor, J. H. Wharff; surety, $775; cost, $3,100; signed, May 4; filed, May 7; payments, $775, frame up; $775, brown mortared; $775, completed; $775, 35 days.

Folsom & Sixth. Brick work; owner, Geo. H. C. Beckerdorff; architect, J. E. Krafft; contractor, J. J. Conrad; surety, $3,000; cost, $6,100; signed, May 23; filed, May 28; payments, $2,775, basement walls and piers up; $800, patent chimneys built; $1,000, completed; $1,825, 35 days.

Folsom & Sixth. Carpenter work; owner, Geo. H. C. Beckerdorff; architect, J. E. Krafft; contractor, M. C. Lynch; surety, $3,000; cost, $12,555; signed, May 23; filed, May 28; payments, $1,600, entire frame up; $1,800, enclosed; $2,000, brown mortared; $2,000, wainscoting on; $2,000, completed; $3,155, 35 days.

Franklin & O'Farrell. To build; owner, J. J. Prendergast; architect, T. J. Welsh, contractors. Anderson Bros.; surety, $3,750; cost, $16,065; signed, May 26; filed, May 28; payments, 1st day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Franklin & O'Farrell. Iron work, etc.; owner, J. J. Prendergast; architect, T. J. Welsh; contractor, Wm. Cronan; surety, $1,000; cost, $3,399; signed, May 26; filed, May 29; payments, 1st day of each month; 75 per cent as work progresses; 25 per cent, 35 days.

Franklin & O'Farrell. Plumbing; owner, J. J. Prendergast; architect, T. J. Welsh; contractor, W. F. Wilson; cost, $1,760; signed, May 26; filed, May 29; payments, $622.50, work roughed in; $622.50, accepted; $425, 35 days after completion.

Geary street, No. 1314. Alterations; owner, P. N. Aronson; architect, J. Marquis; contractor, Chas. Coady; cost, $1,025; signed, May 5; filed, May 6; payments, $380, frame up, roof boards on, gas and water pipes in; $388, completed; $262, 35 days.

Geary near Franklin. To build; owner, C. Holm; architect, Wm. Schrof; contractor, Albert Norton; surety, $1,750; cost, $7,000. signed, May 28; filed, May 29; payments, $1,310, frame up; $1,310, brown mortared; $1,310, white plastered; $1,310, yards planked and first coat paint on; $1,760, 35 days.

Golden Gate avenue, No. 1229. Alterations; owner, Bernard Sarthou; architect, E. Depierre; contractor, J. H. Mackey; surety, $250; cost, $1,025; signed, June 3; filed, June 3; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Gough near Green. To build; owner, H. N. Thornton; architects, Copeland & Pierce; contractor, Geo. Healing; cost, $3,600; signed, May 5; filed, May 11; payments, $900, frame up and roof on; $900, brown mortared; $900, completed; $900, 35 days.

Gough near Oak. To build; owner, Jno. C. Lutz; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $2,400; signed, May 4; filed, May 5; payments, $600, frame up; $600, white plastered; $600, accepted; $600, 35 days.

Guerrero near Fifteenth. To build; owner, S. Campbell; architect, S. Campbell; contractor, Thos. Elam; cost, $4,600; signed, May 7; filed, May 8; payments, $862.50, frame up and building enclosed; $862.50, brown mortared; $862.50, hard finished; $862.50, completed; $1,150, 35 days.

Guerrero near Twenty-third. To build; owner, P. R. Lynch; contractor, Hugh Foote; surety, John Kelly guaranteed; cost, $5,875; signed, April 24; filed, May 1; payments, $1,401, rough frame up; $1,101, brown mortared; $1,102, hard finished; $1,102, completed; $1,469, 35 days.

Grove near Lyon. To build; owner, B. Yeddy; architect, T. J. Welsh; contractor, P. McDonough, et al; surety, $878; cost, $3,500; signed, May 7; filed, May 7; payments, $655.50, frame up; $655.50, brown mortared; $655 50. white coat plaster on; $655.50, completed, $878, 35 days.

Golden Gate Avenue between Steiner and Pierce. Painting; owner, P. F. Nolan; architect, T. J. Welsh; contractor, M. J. Donovan; surety, $343; cost, $1,365; signed, May 20; filed, May 25; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent 35 days after completion.

Golden Gate Avenue between Steiner and Pierce. Plumbing; owner, P. F. Nolan; architect, T. J. Welsh; contractors, Duffy Bros.; surety, $853; cost, $1,423; signed, May 16; filed, May 25; payments, 75 per cent as work progresses on 25th day of each month; 25 per cent 35 days after completion.

Haight near Scott. To build; owner, Otto Fauss; architects, Geilfuss, Z. & Co.; contractors, Schutt & Krecker, cost, $4,500; signed, May 8; filed, May 8; payments, $680, frame up; $680, enclosed; $680, brown mortared and fence work done; $680, inside studding finish on; $680, completed; $680, 35 days.

Harrison near Fourth. Plumbing; owner, Mrs. Nano Dillon; architect, T. J. Welsh; contractors, Duffy Bros.; surety, $375; cost, $1,500; signed May 16; filed, May 18; payments, $562, rough work done; $562, accepted; $375, 35 days.

Hayes near Baker. To build; owner, T. Heywood; architect, Chas. I. Havens; contractor, Robt. Currie; cost, $4,266; signed, May 1; filed May 4; payments, $766, rough frame up; $800, rough gas and water pipes in; $800, hard finished; $800, completed; $1,100, 35 days.

Hayes near Laguna. Brickwork, etc.; owner, Patrick Donnolly; architect, S. Hatfield; contractor, S. T. Crawford; surety, $1,500; cost, $3,200; signed, May 29; filed, June 1; payments, $600, frame up; $600, brown mortared; $600, plastering finished; $600, completed; $800, 35 days.

Howard street, No. 949. Alterations; owner, Mrs. C. B. Gregory; architect, Chas. I. Havens; contractor, Thos. Maxwell; cost, $1,575; signed, April 22; filed, May 2; payments, $585, enclosed and brown mortared; $585, completed; $405, 35 days.

Howard near Fourth. Carpenter work, etc.; owner, Geo H. Bew; architect, Geo. A. Budwell; contractor, F. L. Hansen; cost, $5,885; signed, May 25; filed, May 29; payments, $1,100, frame raised and secured; $1,100, brown mortared; $1,100, white plastered; $1,100, finished; $1,485, 35 days.

Howard near Fourth. Concrete work; owner, Geo. H. Bew; architect, Geo. A. Budwell; contractors, Chatain & Gilett, cost, $1,860; signed, May 29; filed, May 29; payments, $950, grading done; $450, completed; $460, 35 days.

Howard near Sixth. Alterations; owner, Isadore Fos; architect, E. Depierre; contractor. Thos. Maxwell; surety, $1,300; cost, $5,200; signed, May 29; filed, June 1; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near Sixth. To build; owner, Orlando Bozio; architect, Oliver Everett; contractor, Jas. Cochran; cost, $34,323; signed, May 13; filed, May 18; payments, $5,148.45, basement and area walls in; $5,148.45, frame up; $5,148.45, brown mortared; $5,148.45, inside doors and window casings on; $5,148.45, completed; $8,580.75, 35 days.

Howard near Ninth. To build; owner, Mrs. M. A. Mercer; architect, T. J. Welsh; contractor, J. O'Connell; surety, $1,288; cost, $5,140; signed, May 14; filed, May 25; payments, $963, foundation in; $963, frame up; $963, brown mortared; $963, finished; $1,288, 35 days.

Howard near Twenty-fifth. To build; owner, Edward McGinnis; architect, M. J. Welsh; contractor, T. Sullivan; surety, $1,000; cost, $4,100; signed, May 23; filed May 23 payments, $768.75, frame up; $768.75, brown mortared; $768.75, white mortared; $768.75, completed; $1,025, 35 days.

Howard near Twenty-fifth. To build; owner, Moritz Winter; architect, Chas I. Havens; contractor, F. V. Steinman; cost, $1,300; signed, May 18; filed, May 20; payments, $450, brown mortared; $500, accepted; $350, 35 days.

Hyde near Filbert. To build; owner, Mrs. E. Henry; architect, E. A. Leigh; contractor, Martin Spellman; surety, $3,500; cost, $6,300; signed, May 21; filed, May 22; payments, $900, frame up; $1,600, brown mortared; $1,600, standing finish on; $2,200, accepted.

Haight & Steiner. To build; owner, Mary M. Glein; architects, Townsend & Co.; contractor, M. C. Lynch; surety, $2,500; cost, $10,070; signed, May 15; filed, May 18; payments, $2,500, frame up; $2,500, brown mortared; $1,000, white plastered; $1,570, accepted; $2,500, 35 days.

Jersey near Castro. To build; owner, S. R. Jorgensen; architect, M. J. Welsh; contractor, C. W. Wescott; surety, $1,025; cost, $4,100; signed, May 26; filed, May 27; payments, $768.75, frame up; $768.75, brown mortard; $768.75, white coated; $768.75, completed; $1,025, 35 days.

Jones near Ellis. To build; owner, Mrs. Elizabeth W. Baldwin; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $8,185; signed, May7; filed, May 11; payments, $1,500, frame up; $1,500, enclosed and partitions set; $1,500, white plastered; $1,660, accepted; $2,085, 35 days.

Juniper near Bryant. To build; owner, Mrs. M. Redmond; contractor, Cuneo Cassaretto; surety, $1,500; cost, $2,950; signed, May 5; filed, May 6; payments, $500, frame up; $500, brown mortared; $500 interior finish on; $500, accepted; $950, 35 days.

Jones & Broadway. To build; owner, Fred Bode; architect, Chas. M. Rosseau; contractor, Henry Jensen; cost, $2,760; signed, May 11; filed, May 11; payments, $860, completed; balance paid by morgage due May 21, 1891—$1,900 @ 7 per cenl.

Laguna near California. To build; owner, Alvina P. S. Sherman; architect, Chas. I. Havens; contractor, John Furness; cost, $10,764; signed, May 15; filed, May 19; payments $2,000, rough frame up; $2,000, brown mortared; $2,000, outside mill work on; $2,064, completed; $2,700, 35 days.

Laguna near California. Plumbing; owner, Alvina P. S. Sherman; architect, Chas. I. Havens; contractor, M. C. Kean; cost, $1,100; signed, May 20; filed, June 3; payments, $400, rough gas and water pipes in; $400, completed; $300, 35 days.

Laguna near Haight and Waller. To build; owner, Pacific Laundry Mac. Co.; architect, J. H. Happs; contractor, Thos. Day; cost, $1,295; signed, May 4; filed, May 9; payments, $650, enclosed; balance, 10 days after completion.

Laurel Hill Cemetery. A monument; owner, Sampson Tams; architect, P. Schmid; contractor, Rupert Schmid; cost, $1,500; signed, May 26; filed, May 29; payments, $750, commencement of work; $1,000, plaster cast on colossal figure; $2,000, ornamental lion paws cast; $250, accepted; balance, 35 days.

Lloyd between Scott and Devisadero. To build; owner, John W. Coopage; architects, Murray & Colby; contractor, Edward J. Heenan; surety, $733.50; cost, $2,934; signed, May 11; filed, May 13; payments, $500, frame up; $500, brown mortared; $600, white plastered; $700.50, accepted; $73.350, 35 days.

Lyon near Fell. Carpenter work; owner, Mrs. Eva F. Craig; architects. Pissis & Moore; contractors, Smillie Bros.; cost, $5,900; signed, May 26; filed, June 1; payments, $900, frame up; $900, ready for plaster; $800, ready for painting; $300 completed; $1,000, 35 days.

Lyon near Fulton. To build; owner, Amelia Von Voss; architect, W. W. Redmall; contractor, W. W. Redmall; surety, $800; cost, $3,448; signed, May 13; filed, May 14; payments, $883. building enclosed; $855, brown mortared; $855, completed; $855, 35 days.

Manchester near Stoneman. Carpenter work, etc.; owner, Jas. Daley; architect, W. C. Dickerson; contractor, Jno Kenealy; cost, $1,345; signed, June 4; filed, June 4; payments, $500, rustic on; $500, completed; $345, 35 days.

Market street, No. 915. Brickwork, etc.; owner, G. W. Beckh; architect, P. R. Schmidt; contractor, R. Ringrose; cost, $1,585; signed, May 5; filed, May18; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Market near Powell. Brickwork, etc.; owner, Annie Donohue; architect, Chas. I. Havens; contractors, Richardson & Gale; cost, $40,450; signed, May 20; filed, May, 21; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Market, near Powell. Granite work; owner, Annie Donohue; architect, Chas. I. Havens; contractors, M. J. Healy & Co.; cost, $3,650; signed, April 29; filed, May 8; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Masonic Avenue near Frederick. To build; owner, Sarah M. Morken; architect, W. H. Lillie; contractors, White Bros.; cost, $3,487; signed, May 19; filed, May 20; payments, $523, frame up; $523, enclosed; $523, brown mortared; $523, standing finish on; $523.25, completed; $871.75, 35 days.

Masonic Avenue near Waller. To build; owner, Alex. Rothenstein; contractor, K. C. Gardner; cost, $4,600; surety, $3,500; signed, May 14; filed, May 15.

McAllister near Octavia. Alterations; owner, Chas. Borremans; architect, Chas. M. Rosseau; contractor, K. C. Gardner; surety, $1,500; cost, $2,600; signed, May 5; filed, May 8; payments, $650, roof on; $650, brown mortared; $650, completed; $650, 55 days.

McAllister near Webster. Carpenter work, etc.; owner, Lou W. Shea; architect, Chas. I. Havens; contractor, Peter Crichton; cost, $3,700; signed, May 18; filed, May 29; payments, $900, brown mortared; $900, hard finished and primed; $900, completed; $1,000, 35 days.

Mission near Fifteenth. Brickwork; owner, James Stanton; architect, Julius E. Kraft; contractors, Martin Fennell & Son; cost, $5,100; signed, May 2; filed May 4; payments, $1,400, foundation walls and piers built; $800, walls up to second floor; $800, walls built to full height; 1825, completed; $1,275, 35 days.

Market & Ross Avenue. To build; owner, Mary Pauline Payne; architect, Wm. Curlett; contractor, Peter Crichton; cost, $31,900; signed, June1; filed, June 2; payments, $4,000, basement walls up; $3,000, 1st story timbers and sidewalks are built; $6,000, frame finished; $4,000, 1st coat plaster on; $8,925, plastering finished; $3,000, completed; $7,975, 35 days.

Market, Post & Montgomery. Electric work; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, Edison General Electrical Co.; cost, $5,270; signed, May 9; filed, June 2; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Market, Post & Montgomery. Iron work; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, O'Connell & Lewis; cost, $12,000; signed, May 5; filed, June 2; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Mission & Seventh. Painting, etc.; owner, Pierre Duprey; architects, C. R. & J. Wilson; contractor, L. Paint; cost, $2,700; signed, May 13; filed, May 18; payments, $1,000, ready for graining; $1,000, completed; $700, 35 days.

Mission & Ninth. Carpenter work, etc.; owner, Peter J. McGovern; architect, Julius E. Kraft; contractor, Jas. Campbell; surety, $10,000; cost, $19,600; signed, May 21; filed, May 25; payments, $2,500, frame up; $2,500, enclosed and roof sheathed; $3,000, brown mortared; $3,000, wainscoating; $3,700, accepted; $4,900, 35 days.

Noe near Ridley. To build; owner, Sarah McCullough; architect, J. B. Jardine; contractors, M. Bateman and J. M. Braat; cost, $5,800; signed, May 27; filed, May 29; payments, $1,150, frame up; $1,150, brown mortared; $1,150, white plastered; $1,150, finished; $1,200, 35 days.

Nineteenth & Mission. To build; owner, Elizabeth Borchardt; architect, M. J. Welsh; contractor, M. W. Briggs; surety, $825; cost, $3,300; signed, June 3; filed June 5; payments, $618.75, frame up; $618.75, brown mortared; $618.75, completed; $825, 35 days.

Oak near Fillmore. To build; owner, Albert Hilbert; architects, Geilfuss, Z. & Co.; contractor, Fred Klatt; cost, $6,580; signed, May 12; filed, May 13; payments, $987, frame up; $987, enclosed; $987, brown mortared; $987, standing finish on inside; $987, completed; $1,645, 35 days.

Oak near Franklin. Carpenter work; owner, Wm. Merkelbach; architect, J. J. Clark; contractor, John G. Adams; surety, $750; cost, $3,400; signed, Dec. 13; filed, May 4; payments, $1,100, frame up; $1,100, inside finish completed; balance, 35 days.

O'Farrell near Franklin. To build; owner, John O' Kane; architects, Shea & Shea; contractor, J. R. Whalen; surety, O. H. Greenwald and D. H. Bibb; cost, $6,140; signed, May 5; filed, May 7; payments, $1,143, rough frame up; $1,144, enclosed; $1,144, outside finish on; $1,144, completed; $1,528, 35 days.

O'Farrell near Webster. Carpenter work; owner, new Jerusalem Society; architects, Wright & Sanders; contractors, D. B. Monroe & Co.; cost, $10,725; signed. May 1; filed, May 16; payments, 75 per cent as work progresses; 25 per cent, 35 days.

O'Farrell near Webster. Plumbing, etc.; owner, New Jerusalem Society; architects, Wright & Sanders; contractor, Henry Williamson; cost, $870; signed May 14; filed, May 16; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Olive Avenue near Van Ness. To build; owner, Annie T. McGlennon; architect, John T. Kidd; contractor, George Cannon; cost; $4,165; signed, May 20; filed, May 21; payments, $1041, frame up; $1,041, brown mortared; $1,041, completed; $1,042, 35 days.

Pacific near Fillmore. To build; owner, Mrs. Tillie Mayers; architect, G. G. Gillespie; contractor, G. G. Gillespie; cost, $4,000; signed, May 2; filed, May 4; payments, $750, frame up; $750, brown mortared; $750, white coated; 750, completed; $1,000 35 days.

Pacific near Front. Iron work, etc.; owner, James G. Fair; architect, H. A. Schutze; contractor, Thos. Mannix, cost, $2,080; signed, April 13; filed, May 9; payments, first day of each month, 75 per cent as work progresses; 25 per cent., 35 days.

Pacific near Front. Plumbing; owner, Jas. G. Fair; architect, H. A. Schutze; contractor, S. Ickelheimer; cost; $4,922; signed, April 18; filed, May 9; payments, 1st day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Pacific near Front. Plumbing, etc.; owner, Jas. G. Fair; architect, H. A. Schutze; contractors, W. S. Snook & Son; cost, $3,194; signed, April 18; filed, May 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Pine near Fillmore. To build; owner, A. J. Wilson; architect, W. H. Lillie; contractor, C. W Mitchell; cost, $2,600; signed, May 22; filed, May 23; payments, $650, frame up; $650, brown mortared; $650, completed; $650, 35 days.

Pine near Van Ness Avenue. Carpenter work, etc.; owner, Jas. D. Coulter; architects, J. J. & T. D. Newsom; contractor, K. Thaler; cost, $3,430; signed, June 3; filed, June 3; payments, $634, frame up; $634, enclosed and ready for plaster; $634, wainscoting on; $670, completed; $858, 35 days.

Post street No. 1362. Alterations; owner, A. Roos; architect, P. R. Schmidt; contractor, John Furness; cost, $1,144; signed May 10; filed, May 12; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Post between Franklin and Gough. To build; owner, A. Roos; architect, P. R. Schmidt; contractor, John Furness; cost, $4,400; signed, May 23; filed, May 29; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Post near Gough. To build; owner, Anna A. Cradock; architect, J. E. Kraft; contractor, F. Klatt; surety, $2,270; cost, $9,085; signed, May 22; filed, May 28; payments, $1,310, frame up; $2,000, enclosed; $1,500 plastering finished; $2,000, completed; $2,275, 35 days.

Post near Steiner. Carpenter work, etc.; owner, Francis C. Kaeding; architects, J. M. and C. R. Wilson; contractor, J. R. Whalen; cost, $4,300; signed, May 7; filed, May 7; payments, $800, frame up; $800, brown mortared; $800, white plastered; $825, completed; $1,075, 35 days.

Post near Taylor. To build; owner, L. Plege; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $1,500; signed, May 4; filed, May 5; payments, $750, frame up; $750, completed.

Powell near Ellis. Cast iron work; owner, Louis Taussig; architects, Salfield & Kohlberg; contractors, Todt, Bass & Co.; cost, $2,090; signed, May 20; filed, May 28; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Powell near Greenwich. To build; owner, L. Capurro; architect, Chas. M. Rosseau; contractors, W. L. Nelson & Co.; surety, $709; cost, $1,376; signed, May 11; filed, May 12; payments, $342.50, building roofed; $342.50, brown mortared; $342.50, completed; $342.50, 35 days.

Page & Ashbury. To build; owner, J. E. Krofft; architect, J. E. Krofft; contractors, Brennan Bros.; surety, $1,745; cost, 16,980; signed, May 11; filed, May 12; payments, $1,235, frame up; $2,000, brown mortared; $2,000, completed; $1,745, 35 days.

Pine & Taylor. Plastering, etc.; owner, Mrs. Theresa Fair; architect, J. C. Newson; contractors, McLeod & O'Leary; cost, $5,000; signed, April 22; filed, May 5; payments, $1,500, rough mortared; $750, finished and accepted; $750, 35 days.

Sacramento near Lyon. To build; owner, Mrs. Barbara Jenning; architect, H. C. Macy; contractors, J. B. Eaton, et al; surety, $2,000; cost, $3,800; signed, May 20; filed, May 23; payments, 1st and 15th day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Sanchez near Twenty-third. To build; owner, Samuel Booth, Jr.; architect, Samuel Booth, Jr.; contractor, A. S. Cook; surety, $550; cost, $2,390; signed, May 29; filed, May 29; payments, $350, frame up; $550, brown mortared; $550, accepted; balance, 35 days.

Scott near Pine. To build; owner, Benjamin Meyers; architects, Salfield & Kohlberg; contractors, Paff Bros.; surety, $3,000; cost, $6,900; signed, May 26; filed, May 28; payments, $750, frame up; $750, enclosed; $1,000, brown mortared; $1,000, white plastered; $1,675, accepted; $1,725, 35 days.

Scott near Pine. Plumbing; owner, Benj. Meyers; architects, Salfield & Kohlberg; contractors, Striegel & England; cost, $744; signed, June 3; filed, June 4; payments, $400, rough frame on; $294, accepted; $250, 35 days.

Second Avenue near California Street. To build; owner, Chas. Johnson; architect, C. C. McDougall; contractor, A. Jackson; cost, $1,170; signed, May 23; filed, May 23; payments, $400, frame up; $400, ready for painter; $70, completed; $300, 35 days.

Steiner, between Waller and Haight. To build; owner, Jos. Robinson; architect, F. Hauser; contractor, F. Hauser; surety, $4,000; cost, $4,000; signed, June 4; filed, June 4; payments, $1,100, building enclosed; $1,100, brown mortared; $1,100, accepted; $1,300, 35 days.

Sutter near Broderick. Brickwork, etc; owner, Geo. Bennett; architect, Charles Geddes; contractor, J. J. O'Brien; surety, O. H. Greenwald; cost, $5,645; signed, May 6; filed, May 7; payments, $1,000, brickwork in; $1,000, building ready for brown mortar; $1,250, second coat of mortar; $982, completed; $1,413, 35 days.

Scott & McAllister. Brick work, etc.; owners, Martin Maher, et al.; architect, Chas. J. Devlin; contractors, Martin Fennell & Son; surety, $500; cost, $1,170 signed, May 13; filed, May 14; payments, $600, foundation ready for frame; $270 chimney built; $300, 35 days.

Scott & McAllister. Carpenter work, etc.; owner, Martin Maher, et al; architect, Chas. J. Devlin; contractor, John Massey; surety, $2,000; cost, $7,640; signed, May 12; filed, May 14; payments, $800. frame up; $1,000, building enclosed; $1,300, ready for plaster; $1,500, standing finished up; $800, ready to paint; $300, completed; $1,940, 35 days.

Scott & McAllister. Plumbing; owners, Martin Maher, et al; architect, Chas. J. Devlin; contractor, G. C. Sweeney; cost, $1,172; signed, May 13; filed, May 14; payments, $400, gas and water pipes in; $479, completed; $293, 35 days.

Sanchez & Clipper. To build; owner, J. J. Clifford; architect, J. J. Clark; contractors, R. Doyle & Son; surety, $775; cost, $3,100; signed, May 12; filed, May 16; payments, $750, frame up; $750, brown mortared; $750, completed; balance, 35 days after completion.

Taylor near Bush. Mill work, etc.; owner, M. J. Gorman; architect, Chas. I. Havens; contractor, Martin Croft; cost, $1,430; signed, May 21; filed, June 3; payments, $525, hard finish and outside mill work on; $530, completed; $375, 35 days.

Twentieth near Guerrero. To build; owner, J. J. Downy; architect, Geo. Latrout; contractor, A. S. Cook; surety, $725; cost, $3,000; signed, June 3; filed, June 3; payments, $735, frame up; $725, brown mortared; $725, completed; $725, 35 days.

Twenty-fifth near Sanchez. Alterations; owner, K. Buggo; architect, S. Hatfield; contractor, John A. Ehmann; cost, $1,300; signed, May 26; filed, June 1; payments, $400, house raised and moved; $400, carpenter work done and white plastered; $500, balance to be paid at the rate of $50 per month until paid, commencing September 1st.

Twenty-ninth near Dolores. Carpenter work, etc.; owner, I. L. Salomon; architect, Alex. Hildebrand; contractor, M. Loftus; cost, $2,040; signed, May 4; filed, May 7; payments, $500, frame up; $500, brown mortared; $500, completed; $540, 35 days.

Twenty-sixth & Treat Avenue. Moving and raising; owners, E. Dumontelle and wife; architect, W. C. Dickerson; contractor, Alonzo Martin; cost, $2,875, signed, May 12; filed, May 13; payments, $675, old house moved and raised; $600; brown mortared, $600, completed; $1,000, 35 days.

Vallejo near Franklin. To build; owner, Thos. M. Cluff; contractor, Geo. H. Walker; cost, $8,000; signed, May 7; filed, May 13; payments, $1,500, frame up; $2,500 white plastered; $2,000, completed; $2,000, 35 days.

Vallejo near Powell. To build; owner, B. Mary Thompson; architect, W. H. Wharff; contractors, McComas & Williamson; surety, $400; cost, $1,500, signed, May 13; filed, May 14; payments, $500, building enclosed; $350, plastering completed; $400, accepted; $400, 35 days.

Van Ness Avenue near California. Concrete work; owner, C. Chisholm; architect, Clinton Day; contractors, Chatain & Gillett; cost, $2,172; signed, May. 1; filed, May 4; payments, $543, one of concrete foundations done; $543, other foundation done; $543, completed; $543, 35 days.

Vermont near Yolo. To build; owner, Adolph Schuman; architect, F. C. Arnold; contractor, Jas. McConahey; cost, $1,764; signed, May 1; filed, May 29; payments, $441, frame up; $441, brown mortared; $441, completed; $441, 35 days.

Waller street, No. 222. Alterations; owner, Chas. Taylor; contractors, T. D. Jones, et al; surety, $1,500; cost, $2,300; signed, May 23; filed, June 3; payments, $500 house raised; $500, ready for plaster; $500, white coated; $700, completed.

Waller near Webster. To build; owner, John M. Nolan; architect, A. J. Barnett; contractor, J. Schular; surety, $600; cost, $1,985; signed, May 12; filed, May 14; payments, $ 65, rustic and roof boards on; $490, brown mortared; $490, completed; $490, 35 days.

Walnut near Washington. Plumbing; owner, A. Sharboro; architect, T. J. Welch; contractors, Duffey Bros.; surety, $450; cost, $1,800; signed, April 24, filed, May 18; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Washington near Franklin. Grading; owner, F. Rolding; architect, W. Winterhalter; contractors, Richardson & Gale; cost, $1,600; signed, April 30; filed, May 7; payments, $800, work completed; $800, 35 days.

Washington & Laguna. Hot water heating; owner, Henry J. Crocker; contractors, Lawton & Britt; cost, $1,600; signed, May 21st; filed, June 2; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Washington & Laguna. Sashes, painting, etc.; owner, Henry J. Crocker; contractors, Pottier, Stymies & Co.; cost, $54,000; signed, April 28; filed, June 2; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Webster and Green. To build; owner, J. F. Curtis; architects, R. H. & R. White; contractor, F. B. Butterfield; surety, $1,500; cost, $5,475; signed, May 12; filed, May 14; payments, $1,033, frame up; $1,033, brown mortared; $1,039, standing finish on; $1,000, completed; $1,370, 35 days.

Webster and O'Farrell. To build; owner, C. Gehret; architect, W. H. Armitage; contractor, David Perry; cost, $12,500; signed, May 11; filed, May 18; payments, $3,000, rough frame up; $2,500, brown mortared; $1,875, standing finish on; $2,000, completed; $3,125, 35 days.

Webster and O'Farrell. Painting, etc.; owner, C. Gehret; architect, W. H. Armitage; contractor, H. G. Jarman; cost, $1,135; signed, May 11; filed, May 18; payments, $500, interior primed; $335, completed; $300, 35 days.

Webster and O'Farrell. Plumbing; owner, C. Gehret; architect, W. H. Armitage; contractor, J. D. Welch; cost, $1,690; signed, May 11; filed, May 18; payments, $750, rough work in; $500, finished; $440, 35 days.

Alameda County.

Addison near Grant, Berkeley. Two-story frame; owner, D. J. Black; architect, John Spencer; contractor, John Spencer; cost, $2,117; signed, May 18. filed, May 21; payments, $1,000, brown mortar on; $1,117, completed.

Alameda Ave. near Union street, Alameda. Two-story dwelling; owner, Emma J. Whitney; architect, Chas. S. Shainer; contractor, J. E. Henderlong; cost, $3,300; signed, May 13; filed, May 14; payments, $618, rough frame up, rafters on and shethed; $618, enclosed and ready for plaster; $618, windows in and casings on, $621, ready for painter; $825, 36 days.

Bancroft way & Au'd'bn, Berkeley. Two-story frame; owner, Mrs. A. A. Smith; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.: cost, $4,312; signed, May 12. filed, May 13; payments, $1,200, rustic and roof shingles on and chimney built; $1,100, brown mortared and exterior primed; $932, completed; $1,080, 35 days.

Blake Tract, Berkeley. One-story frame; owner, Mrs. E. Gwynneth; architect, I. A. Boynton; contractor, I. A. Boynton; cost, $1,860; signed, May 18; filed, May 20; payments, $465, frame up; $465, brown mortared; $465, completed; $465, 35 days.

Block B, North Oak Homestead. Two-story frame; owner, Mark Ryan; architect, Howard Burns; contractor, Patrick J. Brophy; cost, $2,370; signed, May 2; filed, May 2; payments, $592.50, frame up; $592.50, enclosed and plastered; $592.50, completed; $592.50, 35 days.

Bowman Tract, Oakland. One-story cottage; owner, Hattie I. Turner; architect, J. V. Emhury; contractor, J. V. Emhury; cost, $1,70[illegible]; signed, June 2; filed, June 3; payments, $425, ½ of work completed; ½ of materials furnished, $425, ½ work done; ½ materials furnished; $425, completed; $425; 35 days.

Castro near Tenth, Oakland. Two-story frame; owner, D. Magnes; architect, Chas. Maul; contractors, Herlst & McLeod; cost, $3,417; signed, May 19; filed, May 19; payments, $1,281, ½ work completed and ½ materials furnished; $1,281, completed; $855, 35 days.

Cedar street near Lookout Place, Berkeley. One-story frame; owner, Geo. Stillfried; architect, Alex. Hildebrand; contractor, Paul Crinnon; cost, $1,800; signed, April 27; filed, May 12; payments, $900, roof on; $500, completed; $900, 35 days.

Center & Chester Block, Oakland. Two 2-story buildings; owner, Geo. Carter; contractor, H. M. Finley; cost, $2,280; signed, May 21; filed, May 21; payments, $400, frame up; $575, brown mortared; $735, white coat on; $570, completed.

Church Tract, Brooklyn Tp. Two-story house; owner, Elizabeth A. Bennet; contractor, H. P. Barker; cost, $2,373; signed, May 29; filed, June 1; payments, $593, frame enclosed and roof on; $593, brown mortar on; $593, completed; $591, 35 pays.

Collins Tract, Oakland. To build; owner, Francis M. Scofield; architect, Leiter & Prugh; contractors, Leiter & Prugh; cost, $1,931; signed, May 22; filed, May 23; payments, $400, roof and rustic on; $400, brown coat mortar on; $480 when completed; $491, 36 days.

Concordia street near Pacific Ave., Alameda. Six-room cottage; owner, John P. Roach; architects, Brehaut & Diamond; contractors, Brehaut & Diamond; cost $2,145, signed, May 23; filed, May 26; payments, $402.25, frame up; $402.25, enclosed and roof on; $402.25, brown mortared; $402.25, completed; $536 25, 35 days

Durant Av. & Tremont, Berkeley. Dwelling house; owner, Henry I. Randall; architect, Henry I. Randall; contractors, F. Esty, et al; cost, $2,800; signed, April 30; filed, May 1; payments, $900, frame up, rustic on and roof shingled; $550, brown mortared; $550, completed; $860, 35 days.

Eleventh street near Kirkham, Oakland. Two 2-story frame flats; owner, Conrad Weller; architect, J. C. S. Whalin; contractor, J. C. S. Whalin; cost, $5,500; signed, April 9; filed, May 8; payments, $1,800, enclosed and roofs on; $1,800, brown mortared; $1,900, completed.

Encinal Park Tract, Alameda. To build; owner, Maria E. Hoy; architect, Fred P. Fisher; contractors, D. Straub & Son; cost, $2,600; signed, May 16; filed, May, 16; payments, $650, frame up; $650, rough plastered; $650, plastering done and inside finish on; $650, 35 days.

Encinal Ave. near Grand street, Alameda. To build; owner, Etta F. Middleton; architect, Fred P. Fischer; contractors, O. Straub & Son; cost, $2,732; signed, May 28; filed, May 28; payments, frame up, 25 per cent; enclosed and mortared, 25 per cent; completed, 25 per cent; balance, 35 days.

Fitch Tract, Alameda. To build; owner, C. W. Petry; architect, A. Petry; contractor, A. Petry; cost, $1,750; signed, May 14; filed, May 29; payments, $600, frame up; $600, ready for plaster; $450, completed.

Fourth street near Oak, Oakland. To build; owner, Chas. Troyer; architect, Elmer Childs; contractors, Marshall & Liston; cost, $1,792; signed, May 28; filed, May 28; payments, $448, frame up and rustic on; 7448, enclosed and first coat plaster on; $448, completed; 7448, 35 days.

Fremont Ave. near Fourteenth, East Oakland. To build; owner, Mrs. G. Daunet; architect, J. Laughland; contractor, J. Laughland; cost, $1,825; signed, May 26; filed, May 27; payments, $455, enclosed; $455, brown mortared; $455, completed; $460, 15 days.

Fourteenth & Center, Oakland. To build; owner, M. Andreano; architect, F. C. Bignami; contractor, F. C. Bignami; cost, $3,200; signed, May 29; filed, June 1 payments, $1,000, frame up; $750, enclosed; $750, completed; balance, 35 days.

Fourteenth & Washington, Oakland. Three-story brick building; owner, John C. Westphal; architect, Chas. Maul; contractors, Remillard Brick Co.; cost, $9,300; signed, June 3; filed, June 4; payments to be made in four equal parts as work proceeds to the value of 75 per cent of the amount of work done; 25 per cent, 35 days.

Fourteenth & Washington, Oakland. Three-story brick building; owner, John C. Westphal; architect, Chas. Maul; contractors, Herbst & McLeod; cost, $17,000; signed, June 2; filed, June 4; payments, $3,187, ¼ work completed and ¼ materials furnished; $3,187, ½ work done and ½ materials furnished; $3,187, ¾ furnished and ¾ work done; $3,189, completed; $4,250, 35 days.

Grand street near Pacific Ave., Alameda. To build; owner, H. P. Mcreal; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $2,500; signed, May 11; filed, May 13; payments, $800, rustic and roof shingles on and chimney built; $600, brown mortared and exterior primed; $470, completed; $630, 35 days.

Grove & Hobart, Oakland. Two-story frame; owner, Rev. T. McSweeney; architect, Chas. J. Devlin; contractor, P. Maloney; cost, $4,275; signed, May 4; filed, May 4; payments, $750, foundation walls and chimneys complete; $1,000, ready for plastering; $1,200, woodwork done and ready to paint; $250, completed; $1,075, 35 days.

Hillegas Tract, Berkeley. Frame dwelling; owner, A. C. Stuart; architects, Pissis & Moore; contractor, A. H. Bread; cost, $3,210; signed, May 21; filed, May 23, payments, $600, frame up; $600, 1st coat plaster on; $600, plastering finished; $600, completed; $810, 35 days.

E 50, Lot 9, Block 21, Berkeley. Frame cottage; owner, Mrs. Mary E. Smith; architect, B. J. S. Cahill; contractor, John Spencer; cost, $2,225; signed, May 6; filed; May 9; payments, 37½ per cent when brown mortared; 37½ per cent when completed; 25 per cent, 35 days.

Lot 36, Block E, Berkeley. To build; owner, Geo. A. Howison; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $4,763; signed, May 7; filed, May 9; payments, $1,900, roof shingled and chimney built; $1,176, brown mortared and exterior primed; $1,100, completed; $1,187, 35 days.

Lot 38, Cogshall Tract, Oakland. Dwelling; owner, Erastus F. Seward; architect H. S. Kribbs; contractor, H. S. Kribbs; cost, $1,375; signed, April, 24; filed, May 1; payments, $343, frame up and rustic on; $343.75, brown mortared; $343.75, completed; $343.75, 35 days.

Louise near Cedar, Berkeley. To build; owner, Mrs. Sarah Stevens; architect, John Conant; contractor, John Conant; cost, $2,312; signed, May 2; filed, May 2; payments, $800, ready for plaster; $800, carpenter work done; $712, completed.

Louisa near Vine, Berkeley. Frame building; owner, Leo A. Brown; architect, Jas. P. Chadwick; contractor, I. A. Boynton; cost, $2,450; signed, May 26; filed, May 27; payments, $610, frame enclosed; $610, brown mortared; $640, completed; $620, 35 days,

Linden & Eighth, Oakland. Two-story frame; owner, F. Richling; architect, Chas. Mau; contractor, Peter F. Nelson; cost, $7,664; signed, May 7; filed, May 11; payments, $1,437, ¼ materials furnished and ¼ work done; $1,437, ⅓ materials furnished and ⅓ work done; $1,437, ¾ material furnished and ¾ work done; $1,437, completed; $1,916, 35 days.

Magnolia betw. Thirty-fourth & Thirty-fifth, Oakland. Cottage; owner, W. H. Cooke; contractors, Leiter & Prugh; cost, $1,256; signed, May 25; filed, May 25; payments, ¼, rustic and shingles on: ¼, brown mortared; ¼, completed; ¼, 36 days.

Ninth Ave. near Sixteenth Street, Oakland. Two-story frame; owner, J. W. McHugh; architect, B. McManus; contractors, Smith & Lake; cost, $3,380; signed, May 19; filed, May 19; payments, $845, frame up and rustic on; $845, 1st coat mortor; $845, completed; $845, 35 days.

Oxford near Cedar. One-story and a half dwelling; owner, S. G. Carruthars; contractor, C. M. Cornell; cost, $2,600; signed, May 20; filed, May 23; payments, ¼, frame up; ¼, brown mortared; ¼, completed; ¼, 35 days.

Pacific Ave. near St. Charles, Alameda. Two-story house; owner, E. A. S. Page; architect, A. Stenbiht; contractors, J. R. & S. P. Richart; cost, $1,800; signed, May 21; filed, May 22; payments, $450, frame up; $450, brown mortared; $450, completed; $450, 35 days.

Pacific Ave; near St. Charles, Alameda. Two-story house; owner, E. A. S. Page; architect, A. Stenbiht; contractors, J. R. & S. P. Richart; cost, $2,300; signed, May 11; filed, May 22; payments, $500, frame up; $500, brown coated; $700, completed; $600, 35 days.

Peralta Heights, East Oakland. Two-story frame; owner, T. M. Humphrey; architect, Chas. L. Havens; contractors, W. A. & W. F. Griffith; cost, $3,060; signed, May 11; filed, May 15; payments, $765, frame up and sheathed; $765, brown mortared; $765, completed; $765, 35 days.

Percy Tract, Berkeley. Two-story frame; owner, A. D. Himmelmann; architect. Louis Stone; contractor, A. C. Bryan; cost, $2,340; signed, May 18; filed, May 18; payments, 75 per cent as work progresses; balance, 25 per cent, 35 days.

Percy Tract, Berkeley. To build; owner, N. L. Freese; architect, F. E. Armstrong contractor, F. E. Armstrong; cost, $2,250; signed, May 16; filed, May 18; payments, $562, enclosed; $562, brown mortared; $562, completed; $564, 35 days.

Poplar between Fourteenth and Fifteenth, Oakland. One story and basement; owner, N. Page; contractor, A. J. McKee; cost, $1,273; signed, May 29; filed, May 29; payments, $476, roof on; $476, plastered; $321, 35 days.

San Leandro Road, Brooklyn Tp. Tank house; owner, Mrs. R. A. Wellman; contractors, Knight & Littlefield; cost, $1,849; signed, May 13; filed, May 29; payments, 75 per cent as work progresses; 25 per cent, 35 days.

San Pablo Avenue near Seventeenth, Oakland. Plumbing; owner, Wm. M. Hatfield; architect, A. Gilbert; contractors, Horgan & Cruz; cost, $1,573; signed, May 15; filed, May 29; payments, 75 per cent as work progresses; balance, 25 per cent, 35 days.

Seventh & Webster, Oakland. Two-story frame; owner, Albert Kayser; architect, Chas. Mau; contractors, Herbst & McLeod; cost, $8,997; signed, May 4; filed, May 4; payments, $750, ¼ materials furnished and ¼ work done; $750, ⅓ furnished and ⅓ work done; $750, ¾ furnished and ¾ work done. $747.75, completed; $999.25, 35 days.

Sea View Tract, Berkeley. Two-story dwelling; owner, A. A. Fink; architect, F. M. Cramer; contractor, F. M. Cramer; cost, $2,210; signed, June 1; filed, June 3; payments $552, building enclosed and chimneys up; $552, brown mortared; $552, completed; $554, 35 days.

Second Avenue near Santa Clara, Alameda. One-story frame; owner, A. H. Smith; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $1,931; signed, May 15; filed, May 28; payments, $650, rustic, roof shingles on and chimney built; $450, window frames set and brown mortared; $431, completed; $500, 35 days.

Shattuck Avenue near Vine Street, Berkeley. Two-story frame; owner, A. Friot; architect, Chas. M. Rosseau; contractor, Wm. Peters; cost, $1,900; signed, May 13; filed, May 18; payments, $475, frame up; $475, brown mortared; $475, completed; $475, 35 days.

Sixteenth Street near Alameda Avenue, Alameda. Two-stery dwelling; owner, Henry Mohns; architect, A. Stenbiht; contractors, Richart & Richart; cost, $2,250; signed, April 24; filed, May 4; payments, $450, frame up and roof on; $600, brown coat finished; $687.50, completed: $562.50, 35 days.

St. Charles street, Alameda. Two-story building; owner, James Pogue; architect, Geo. A. Benseman; contractor, Geo. A. Benseman; cost, $2,410; signed, May 14; filed, May 14; payments, $500, frame up, boarded and rustic on; $500, brown mortared; $700, completed; $710, 35 days.

Town of Niles. Frame church; owner, Rev. T. Carraher; architect, T. J. Welsh contractor, J. L. Weilbye; cost, $3,475; signed, May 9; filed, May 18; payments, $650, foundation laid; $650, frame up; $650, enclosed; $650, completed; $875,35 days.

Tuttle Tract, Oakland. Additions to cottage; owner, W. W. Whitman; architect J. C. Mathews & S'n; contractor, Wm. Dahl; cost, $2,473; signed, May 25; filed, June 2; payments, 75 per cent as work progresses: 25 per cent, 35 days.

Twenty-first street near Telegraph Avenue, Oakland. Two-story frame; owner, Jas. Conlen; architect, Chas. Mau; contractor, Jas. Toohig; cost, $4,019; signed, May 1; filed, May 5; payments, $750, ¼ materials furnished, ¼ work done; $750, ⅓ materials furnished and ⅓ work done; $750, ¾ materials furnished and ¾ work done; $764,25, completed; $1,094.75, 35 days.

Twenty-third Ave. & Seventeenth street, East Oakland. Church building; owner, German M. E. Church; architect, A. Klahn contractor, Alex. Wahlstrom; cost, $2,425, signed, May 6; filed, May 9; payments, $600, frame up; $600; brown mortared and outside done; $600, completed; $625, 35 days.

Webster near Central Avenue, Alameda. Cottage; owner, John Lynch; architect, Wm. Kirk, contractor, Jas. Toohig; cost, $1,675, signed, June 1; filed, June 1; payments, $837, first coat plaster on; $838, 35 days.

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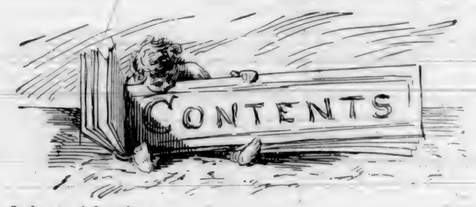

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

AT no former period in the history of San Francisco has there been such a spirit of progress among property holders in the outlying districts as is apparent at the present time. Improvement clubs have been organized in every direction for the purpose of devising methods and directing a concentration of energies for the enhancement of values in the immediate locality of each club.

That many of these associations are moving in the direction to cause great changes in certain districts is evident to anyone who can read the signs of the times.

One of the most prominent schemes and one which will place some of the most desirable residence sites within reach of persons of moderate means is likely before long to shape itself. It is well known, that on account of improper grades for the streets and a consequent defective drainage system, improvements have been retarded in the region lying at the north side of Golden Gate Park, extending from the Park to the Government reservation, and from the cemeteries westerly to the ocean.

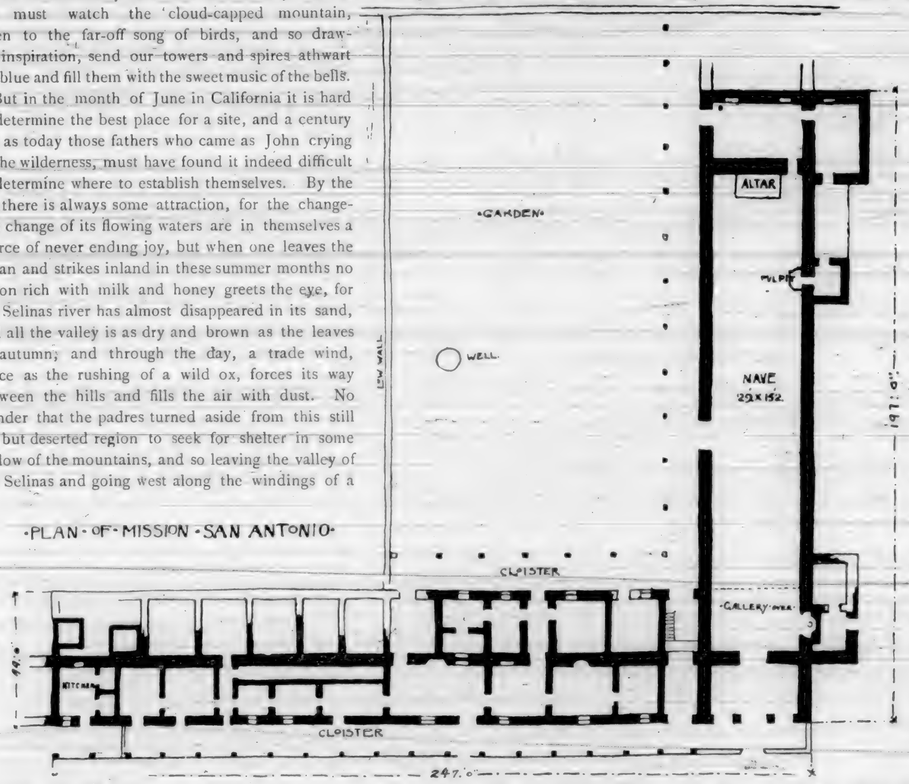
It is now proposed to level off "Lone Mountain" and the hills adjacent, fill in the lower places, and establish new grades for the streets whereby a sanitary drainage system can be formed which will in the years to come make this the most healthy portion of the city. The Park Commissioners have many changes and improvements under consideration which if carried out will give the public additional facilities for visiting and enjoying this favorite resort. On the sloping ground at the southerly side of the park and extending to the ocean, great changes are in contemplation which in conjunction of the extension of Market street in a straight line to the Ocean and the grading down a portion of "Twin Peaks" and the range of hills in that vicinity will make a district which for residence purposes cannot be excelled.

A few years will develop such gigantic changes in the configuration of the surroundings of San Francisco as to astonish the oldest inhabitant.

MISSION OF SAN ANTONIO, CAL.

The missions of California are nothing if they are not picturesque, and they owe it largely to their surroundings and rightly so, for the site of a building is as much part of it as its walls or roof. The building may be the central idea, but the scenery is its back ground and it is because these buildings complete the picture and add to the perfect harmony of their surroundings that we call them picturesque. Climate, with its sunshine or gloomy days, its balmy breezes or raging storm, the roaring of the tall pine trees or the flitting of bright birds from flower to flower, the snow-capped mountain or far-stretching sea, all have their influence upon us, and in no small degree, form part of us; and if we are to express ourselves harmoniously and not discordantly with these things, we must watch the 'cloud-capped mountain, listen to the far-off song of birds, and so drawing inspiration, send our towers and spires athwart the blue and fill them with the sweet music of the bells.

But in the month of June in California it is hard to determine the best place for a site, and a century ago as today those fathers who came as John crying in the wilderness, must have found it indeed difficult to determine where to establish themselves. By the sea there is always some attraction, for the changeless change of its flowing waters are in themselves a source of never ending joy, but when one leaves the ocean and strikes inland in these summer months no cañon rich with milk and honey greets the eye, for the Selinas river has almost disappeared in its sand, and all the valley is as dry and brown as the leaves in autumn; and through the day, a trade wind, fierce as the rushing of a wild ox, forces its way between the hills and fills the air with dust. No wonder that the padres turned aside from this still all but deserted region to seek for shelter in some hollow of the mountains, and so leaving the valley of the Selinas and going west along the windings of a



PLAN OF MISSION SAN ANTONIO

tributary, until within a mile of where the mountains converge and the shallow pools and gentle ripples of the San Antonio give place to the great bolders and rushing waters of a mountain torrent, they, in the year 1771 stayed their wandering, sang their first mass and erected the emblem of their faith. A pretty valley indeed is the San Antonio, far away among the hills, pretty even though without the pale of civilization and the clang of railway engine, and it is as peaceful to-day as it was a century and a half ago, for naught but the ruins of the old mission remain to tell us of the busy hum of human life that once moved to and fro around it. Behind the Mission and against the setting sun rise the mountains, four or five thousand feet and to the east, roll gradually away diminishing it in altitude as they go, till finally they become lost, as the waving of a blue ribbon against the distant sky, and all around the garden wall, the sighing of green willows and the merry laughter of the brook.

I know not to what extent these fathers planed their buildings and drew them with scale and square, but that they must have required a good deal of study we can readily infer. San Antonio is one of the most extensive as may be seen by the plan, and covered with its church, dwellings, outhouses and enclosed garden about an acre of ground. The Mission, as usual, faces the east. On the right in our sketch is the church with its gable end and small belfreys on each side, between this and the main wall a semicircular arched ceiling forms the vestibule. To the left are the priests' quarters with its many arched cloister affording a cool yet airy retreat from the summer's sun.

The foundation walls are for the most part about two feet below the surface and are made of bolders six to twelve inches in diameter cemented together with dobe. The floor of the Mission and dwellings are on about the same level as the ground without. On the top of this masonry foundation rest the bricks of which for the most part the walls are built. These bricks are composed of unburnt clay, mixed with gravel and bound together with straw, and measure 10½ x 10½ inches and 4 inches thick with larger bricks 21 inches long to form bond.

At the joints are imbedded in the mortar small sharp stones to form a key for the plaster finish. The front of the church with its belfreys as well as the piers and arches of the cloister are of red burnt bricks or tiles 9 x 9 inches and 2 inches thick laid with lime mortar, both bricks and mortar being as hard as the best now found in common use. The caps of the piers at the cloister, as well as those at the entrance to the church and

the small cornice at the height of the ceiling in the latter are formed of two courses of moulded bricks a layer and smaller quarter round in combination. The interior of the church is of itself unworthy of mention, consisting simply of four plain walls pierced by four small window openings near the ceiling, and three exits. At one time a flat arch of light lattice work at the height of the ceiling and above the other rail did service as a line of separation between the nave and chancel, but this now with the roof above lie on the floor a complete wreck. Where once the altar stood, a few slight sticks support the solitary figure of the patron saint, who, from his airy position and equally airy costume appears more as if prepared to begin some feat of athleticism than as one chosen to be the patron of a holy mission

The roof as seen by the section consists of a main truss formed of a tie beam 12 x 14 inches, principal rafters 10 inch round poles and king post 8 inches round. The tie beam goes through and projects beyond the walls about 2 feet and has a key piece 4 x 6 inches and 3 feet thick going through it, against which the principal rafters abut. At the top these latter are halved together, and the king post is mortised into the tie and ridge pole, the whole resting on corbels 8 x 12 inches, with moulded ends. These trusses are about 14 feet apart and between them the intermediate beams carrying the ceiling are untrussed. On the top of the principal rafters at the line of the walls and ridge pole, rest purlins 8 inches in diameter, supporting the common or secondary rafters. These latter are about three feet apart and are spanned by light boughs 1½ inches in diameter on which are placed the tiles of the roof. The whole construction is held together by thongs of raw hide, which even after the lapse of a century are still strong enough to resist the full strength of a man. The roof tiles are about 20 inches long, semi-circular in section and taper from 11 inches to 8½, being about 1 inch in thickness, thus allowing them to lap and still retain the same level. They are laid in alternate rows with their convex and concave sides uppermost. The ceiling of the church as seen by the section is slightly arched in straight lines and the projection of the roof members and ceiling joists placed alternately every seven feet divide it into panels. The under side of these ceiling timbers is rudely moulded and between where horizontal, and resting on the top where sloping, the ceiling boards 1¾ x 8 to 14 inches are placed.

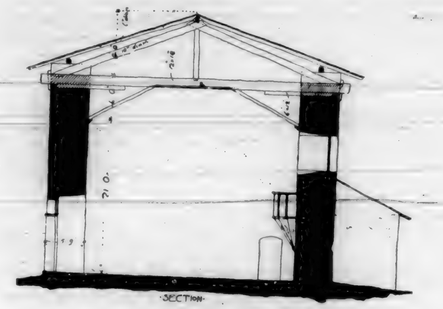
At the east the gallery which as usual is perfectly level is supported by 9 x 10 inch joists resting on corbels and wall plates; a stair from the passage between the church and dwellings reaches the same. The walls of the interior are plastered with white lime mortar, about one-half inch thick and the floor is of red concrete. At one time a baptistery was attached to the building where now in the thickness of the wall stands the font. At the rear is the vestry with its single window high up near the ceiling carrying the same line as those of the church, and on one side within the wall are two cupboards with semicircular heads and folding doors and many rows of shelves, looking dreary and desolate in their array of empty bottles, sad emblem of departed sweetness and of many makings glad of the hearts of men. In the belfrey a single bell yet remains with its rawhide cord attached, ready to the hand of the passing stranger to send as of old its message to the mountain, and on it the inscription

"S. Antonio Ave Maria Purissina, 1799."

In an oak tree, some three miles distant, you will find its mate, but the skepticism of the age has changed the tone of its summons, and no longer does it call to the worship of the perfect man, but rather to the attaining of that knowledge through which all may become perfect. The principal rooms of the dwellings are those facing the east and next to the church, and these have their ceilings of 8 x 10 inch beams, boarded over, their walls plastered and their floors of wood.

In the inferior rooms the floors are laid with red tiles 10½ x 10½ inches and 3 inches thick. The cloister to the south and west has no arches, but consists simply of brick piers and wooden lintels carrying the roof. The garden is enclosed by a dobe wall roofed with tiles, it evidently being found necessary in all cases to prevent the dobe from becoming saturated by rain.

Beneath the wine vats shown on plan is a tunnel, arched with brick, which in some manner I know not how, facilitated the process of wine making, but of its why and wherefore none remain to tell, for no longer do the merry barristers tread the wine press, in the well the frog has made his home, among the



pear and rose trees the gopher has his run, and beneath the northward shadow of the church the heaving turf or timbers crossed; without name, or date, or other token of departed greatness, have naught to tell us of these bye gone times. But it is enough that only a boulder from the creek should mark the spot, for in the old building itself we find the epitaph and though the cross above be silent as the grave beneath the fallen beams and ruined walls of the old Mission speak to us as were we face to face, with those who fashioned the timbers and bound them together after the image of the soul within, a hundred years ago. Tres—1891.

AMERICAN ART FROM AN ENGLISH POINT OF VIEW.

The following remarks, made by Professor Herkomer, an associate member of the English Royal Academy, will be read with interest. They refer to the impressions made upon him when visiting the United States for the purpose of investigating the progress of art on this side of the Atlantic.

Much of the work in the schools of Europe just now, he said, was done by American students. They had the most artistic temperament, they adopted the latest phase of art and they presented a clearer view of the newest craze in European art than could be obtained in Europe itself; but when these artists returned to America their art had a tendency to drift away from them and it was necessary for them to come back to Europe to refresh themselves. They studied mostly in France, Germany and Italy—never in England. The cause of this failure of power was difficult to state. There was something in the atmosphere of the United States which was contrary to the instincts of the painter. It was hard and electric and every object was clearly seen. Light seemed to devour all the half-tones. The portrait of the lady in a black dress and yellow gloves, exhibited in last year's Academy, he had painted in America, but he had almost to exclude light from his studio. Much of his work done

there, he admitted, was hard and edgy until he thus counteracted those failings In addition to the difficulties of light, there was a want of confidence on the part of Americans in their own artists. They declined to encourage American artists until they brought their credentials from the other side. The American who patronized his own painters occupied a unique position. Not ten per cent of the artists resident in the United States got their living by painting alone. They were teachers also.

Prof. Herkomer acknowledged that sculpture and architecture flourished in America. Americans had been able to read the old masters better than we had, particularly through one man, Richardson, who, with his real genius, brought out almost a new kind of work on the old lines. He would rather have architecture right than painting right, and he placed architecture first, then sculpture, and then painting. Architecture was the making of a country. In America men were wishful to have better houses than their fathers and their neighbors, and in time there would be room for pictures by American painters who would have earned reputations. Here the Professor narrated some amusing incidents in connection with his portrait painting experiences. He said the American would be painted naturally and not in attitude, as to which and also in regard to dress there was a great deal of anxiety manifested by sitters in this country. He commended the great pains taken in the preparation and printing of American illustrated books, and in conclusion expressed his belief that, although America would never have any picturesque ruins or history shrouded in mystery, it would be, in his estimation, the leader of all nations in the future in art and in all other things.

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FRIEZES.

We must refer to the differences in mural ceiling designs the circumstance that there are friezes that look well in lighter tints than the wall color; but the general practice is to have the coloring stronger than the latter. One rule applies to either mode, and that is that the forms should be distinct, however vague the general wall design. Where the general hue of the frieze is lighter than the former, a few touches of bright color will often restore a balance. It was a true burst of artistic taste that led to the present depth of friezes instead of scrimping bands. It is here worth noting that the proportions followed by the Romans and illustrated at Pompeii were allotted one part of the height of wall to dado, three parts to the field and one and a half to the frieze, proportions adapted to the heavy Roman architecture. Where the mouldings of a room are unusually heavy, we have known decorators to introduce grey and lightsome friezes of a more than ordinary depth, to lessen the too heavy effect. The fault of dull and dark friezes is being steadily corrected. It is usually better that the field and frieze should not wholly correspond in color, but the ground of frieze may be the same if of a deeper color than the fold.

Beck's Journal of Decorative Art.

ARCHITECTURAL TERRA COTTA AS COMPARED WITH STONE.

BY F. P. MEYENBERG.

Some writers on the application of building materials have the impression that architectural terra cotta can be used in the same sense as stone in construction, substantially as well as ornamentally. This, however, is not a fact, as the following examination of the subject will explain: —

There are tests on record proving that terra cotta will stand an equal crushing strength to any granite, to the square inch in solid material. That cannot be denied; but when we enter into the construction of so-called stone buildings, or application of stone in all its various forms, with the required dimensions as necessary in the use of stone to carry out successful designs and plans prepared to be in harmony with the character and appearance of such construction, then, under the same conditions, terra cotta would be unfit on account of its uncertainty of strength when in large pieces.

Aside from strength in large pieces it can further be said that it is difficult to make it true, once passing its limit of easy manufacture. And then, too, if made beyond its strength appealing feeling, it must be acknowledged that terra cotta bears the impression rather of artistic tone, than the cold cast suggesting strength as conveyed by stone.

In the erection of weighty buildings, where strength in the construction is one of the chief requirements, and the adopted building material stone and bricks, it has been found necessary by experience to limit the dimensions or stone, as the bond must be the same as the height and the length not to exceed six times its height How impractical it would be to attempt such proportions in terra cotta!

In cases where stone appears as trimmings, being a mere veneering of a structure, it does not directly become a part of the carrying capacity of the walls; the bonding or connecting of the stone facing with the brick masonry is mostly by means of iron anchors, permitting a slight separate action of variation in shrinking of brick masonry without materially affecting the position of the stone work. Entering upon the application of architectural terra cotta as a general building material in the sense of using it like stone, in connection with its adaptness, its character actually and sensibly considered as a building material—recognizing the difficulties, expense and imperfectness of solidity experienced in its manufacture,—if the proportions of its economical limits are exceeded, in no cases can large pieces of architectural terra cotta enter upon equal basis as to strength with stone, where terra cotta, like stone, becomes a part of the carrier of the structure itself.

Supposing the corner of a weighty building 150 feet high were laid up with terra cotta hollow quoins 15 inches high. Such height of wall would represent 120 courses of the described quoins and equally as many joints; the same height built up of common bricks would make 720 courses or six times more mortar joints and shrinkage to that of the quoins. It can readily be seen that such uneven shrinkage must be damaging to the lower courses of the terra cotta, as the load of the wall will tear down upon the flimsy (generally only one inch thick) partition or struts of the terra cotta blocks, which might, if bedded solidly against a resisting material, carry a weight of 12,000 lbs. to a square inch, but under the described position. Often only a few pounds pressure will break away the part and cause cracking of the block.

Were it possible and practical, from a manufacturing standpoint, that architectural terra-cotta could be made solid into large blocks, of uniform hardness and free from cracks, that only crushing tests could be taken into account, but as long as transverse strength depending upon numerous imperfections by drying and burning, contracted and damaged struts, is the relied upon agent for safety, terra-cotta will always be faulty whenever used in connection with heavy building materials to be made answerable to bear weight such as would be safe even of very inferior stone work.

Terra-cotta blocks made in small sizes, 4 and 6 in. thick, of which the manufacture is easy, cheap, and without the imperfection caused by unequal drying, producing breaks in every direction, it may be said, can be built up to any height as architects and engineers have deemed it economical and practical for modern conditions and requirements of the most lofty buildings. And, further, in such sizes it can be made and furnished at favorable prices, while in the form of large stone work it would cost much more than granite and failure in its use.—*Brick, Tile and Pottery Gazette.*

PHOTOGRAPHY AS AN EDUCATOR OF ARTISTIC TASTE.

The latest International Annual of Anthony's Photographic Bulletin contains an article by Geo. I. Woolley on photography as an aid to the cultivation of artistic taste, which we herewith present in full.

Amateur photography is usually regarded as of use solely for pleasure; but we find that it is of value in many ways and among these in an educational way. It admits one into many of the secrets of chemical nomenclature, cultivates neatness and care, and develops an enormous fund of patience and perseverence. But besides these things it is of great assistance in the cultivation of an artistic taste.

To the possessor of taste in an artistic line, the world is full of beautiful scenes, not only those which are famed, but multitudes of little nooks and corners often regarded as commonplace. Such scenes, perhaps, as an old hut backed by woods, a little waterfall, a forest road, or a wide sweep of hill and valley dotted with farm houses and specked with grazing cattle. Scenes like these may linger forever in the mind of the artist, while many would pass them and never see their beauty. And then the well-known scenery of the world, the Alps, and in our own country the Yellowstone, how much more keenly does the artist enjoy these things than he who finds nothing pleasing in the scenes which meet him every day! An in an art gallery, how much more does he see in the master pieces of celebrated painters and sculptors!

Aside from contributing so much to a person's enjoyment, an artistic taste is of much practical value. If we are selecting a picture, our taste is in constant requirement; and in decorating, in building houses and in furnishing them, the man with the eye of an artist has infinitely the advantage over one who has not. Indeed, to do these things at all, some taste is required and the more taste one has, the better he can do them.

That photography, if we take it up in the right manner, does contribute to our education in an artistic way, no one who has had any experience will gainsay.

When one has learned to produce a photograph fairely good in mechanical details, he is constantly looking about him, as he walks or rides, for some view which he may take. Many scenes which he has passed unmindful of, a hundred times before, possess a new fascination for him. He grows both observing and discriminating. He sees wherein the beauty of a thing lies, and learns to use his growing taste in the selection of the point of view best adapted to show this beauty.

In order, however, to have photography help us in an artistic way, we must try hard to make our pictures models of artistic beauty. We must not, as so many young photographers do, select a view haphazard; but we must look critically at it, consider whether it will make a good picture, and if we decide that it will, take pains to find the best point from which to take it. It is not within the province of this article to speak of the various rules laid down for the selection of views, the chiaro oscuro, or theory of light and shade, and many other things very puzzling to beginners; but as may be well to say that kind and intelligent criticism may be of great help. If the novice at photography feels that his views are lacking in artistic merit, let him submit them to an artistic friend, or better, get this friend to select some views for him. Then by studying these, he will be much helped in obtaining a good composition.

It is not long since the introduction of amateur photography, and already we find many photographers almost rivaling in their compositions, the views of painters. It is not to be expected that an amateur can attain such proficiency in the selection of views as does the painter; but if he is determined, he may be very successful, and contribute much, not only to his own enjoyment, but to that of others.

MUSICAL REQUIREMENTS IN CHURCHES.

FROM THE R. I. B. A. JOURNAL.

The report of the organists' and architects' joint committee on architectural arrangements affecting the musical requirements in churches is one which it is hoped may prove of interest as well as of value, in hinting at some possible variations in church planning. Though the report may ultimately be issued by the Council of the Institute, they cannot be held responsible for its statements, inasmuch as it contains the combined wisdom of organists as well as architects. The names of those forming the committee have been stated in order that the true value and weight of the report may be recognized, and the opinions expressed therein accepted for what they are worth. The organists engaged on the committee are all distinguished men, of great practical experience, and specially qualified to deal with the musical aspect of the subject in question.. They have from time to time conferred with other eminent organists not on the committee, who have confirmed their opinions and verified their experience.

Many of the conclusions arrived at in the report may occasion some surprise, but it was felt both by the architects and musicians that if there is to be any improvement in the arrangement of churches it must be in the directions indicated. They desired, however, to leave the method of development to the genius of the architect and the enterprise of building committees. Their "Recommendations" have been framed for an ideal church of large dimensions, where there are no restrictions, and

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unlimited funds at the disposal of the fortunate architect. It is obvious, for instance, that only in a church exceeding 150 feet in length could the height be so proportioned as to allow "Recommendation No. 4" to take effect, and ample height is so necessary that the committee consider the roof of the nave and chancel should be continuous. This, the usual "chancel arch" arrangement does not contemplate, and the avoidance, therefore, of the low divisional arch, and the adoption of other methods to mark the division between nave and chancel, is recommended.

The committee have advisedly refrained from giving any definite opinion as to where the organ should be placed, but they were bound to state where, musically, it is found to be most effective; and the fact may serve as a guide to a right decision. The sound, moreover, is best distributed when the organ is placed under the main roof, whether it be at the west end on a "roof-loft" or at the east end, provided the other conditions laid down are also observed. Good examples of organs in these several positions are easily recalled.

Though the result of the deliberations (extending over twelve months) of the joint committee may reverse many of the notions and theories previously held, and appear opposed to accepted methods, yet they hope it may eventuate in evolving new dispositions which will meet modern requirements and, developing

ecclesiastical architecture, break away from mere archæological trammels.—*John Belcher.*

REPORT OF THE COMMITTEE FOR ARCHITECTURAL ARRANGEMENTS AFFECTING MUSICAL REQUIREMENTS IN CHURCHES.

The general provision for the musical arrangements in modern churches has been acknowledged to be unsatisfactory, and the many points upon which there are conflicting opinions or increasing doubts have made it desirable that some definite principles and practical suggestions should be formulated by those competent to deal with the subject.

With this purpose in view, the Council of the College of Organists, as a consequence of Mr. Belcher's excellent paper on the subject of "Musical Requirements in Church Planning," read before the Royal Institute of British Architects, proposed to the council of that body that a committee should be jointly nominated by their respective councils to inquire into and consider the improvements and developments which might be adopted in the future.

The Council of the College of Organists nominated on their part certain Fellows of their College, viz.: Dr. Martin, of St. Paul's Cathedral; Mr. Walter Parratt, of St. George's Chapel, Windsor; Mr. James Higgs and Dr. Turpin. The Council of the Royal Institute of British Architects nominated on their part certain Fellows of their Institute, viz.: Messrs. J. Belcher, R. H. Carpenter, J. D. Sedding, H. Stannus, and H. H. Statham.

The committee added to their number Mr. Somers Clarke, Dr. F. E. Gladstone, and Rev. W. Russell, succentor of St. Paul's Cathedral, as authorities on many points of importance.

The committee have also had the advantage of a conference with Mr. Micklethwaite, and Mr. St. John Hope.

After a careful review of the arrangements which are now usually made for the accommodation of the choir and organ, the committee desire to record the following observations:

(*a*) That the arrangements are generally defective.

(*b*) That there is much misconception as to the best positions for the choir and organ in their relation to each other and the congregation.

(*c*) That the space allowed for the modern organ is often insufficient.

(*d*) That on musical grounds the old position at the west end for both organ and choir is, in general, the best.

(*e*) That although for ritual purposes (following the ancient English Cathedral and Collegiate arrangements) a vested choir is placed in the chancel, yet, that where there is a chancel arch, central lantern, or transepts, the sound becomes intercepted instead of passing into the body of the church; moreover, where the chancel is narrow, antiphonal singing cannot produce its proper effects.

(*f*) That when the placing of the choir in the chancel (according to recent custom) has involved the removal of the organ also, it has usually resulted in cramping the organ within some confined space, or "chamber," by which the tone has been damaged, and its beautiful qualities and real efficiency impaired.

(*g*) That the arrangement alluded to above is not the most advantageous for the support and encouragement of congregational singing.

(*h*) That these defects are more or less the result of adapting new customs and requirements to *old* buildings and are not always to be avoided.

(*i*) That as a result of the general improvement in knowledge and taste, the increased facilities for the musical rendering of the services, and the more frequent bringing together of large bodies of singers and instrumentalists, the provision of better accommodation for them is a problem which must be considered.

AS TO NEW CHURCHES.

The main object of this committee is to promote the improvement and development of the arrangements of *new* churches, and they have taken as their basis the musical requirements of a large town church; these requirements would necessarily be modified for small town or country churches.

There would appear to be but five positions in which the choir can be conveniently placed in a church:

(*1*) At the west end of the nave.

It is commonly admitted by musicians that the most effective position for the organ is at the west end; but this position is not always advisable, if the choir be retained in the chancel.

(*2*) In galleries facing each other in the nave.

The advantages claimed for seating the choir in galleries (similar to the ancient "minstrel galleries") on the north and south sides of the nave are as follows: (*a*) the better support of congregational singing; and (*b*) the opportunities afforded for antiphonal effects.

(*3*) Immediately outside the chancel screen.

(*4*) In the chancel aisles.

(*5*) In the chancel.

With regard to these latter positions, it is advisable, in planning a new building, in order to obtain the openness and space requisite for the sound to reach all parts of the building, that a "chancel arch" should be avoided, and the choir thus placed under the same roof as the congregation. This will enable the clergy as well as the choir to be properly heard.

In churches exceeding 150 feet in internal length the plan of placing the main choir at the west end, and a "ritual choir" in the chancel, may be adopted.

AS TO EXISTING MODERN AND ANCIENT CHURCHES.

In dealing with existing churches, whether ancient or modern, the principles set forth in the "Recommendations" should, as far as possible, be observed; but each case should be individually considered. In those places (for example) when there remain a western organ and gallery of interest, at a distance of not more than fifty feet from the choir seats in the chancel—it is desirable that such should be retained *in situ* and used; and where the distance is more than fifty feet, a small additional eastern organ to support the choir is recommended.

In buildings lacking adequate height, a position should be chosen for the organ which will give the best available space for sound to develop itself above the pipes and to pass into the nave.

The committee have carefully considered and have drawn up principles of the subject before them, and have formulated the following "Recommendations," which have been agreed to by every member.

RECOMMENDATIONS.

No. 1. That the organ and the choir be so placed in the church that they may most effectually assist in the services.

No. 2. That it is essential to acoustic success that in the erection of new churches ample height should be provided for.

No. 3. That in arranging any position for the organ, ample space should be allowed as regards area, "speaking-room," and height.

No. 4. That no "open-flue" pipe should have less than its own speaking length (the speaking length of an "open-flue" pipe is the length from the slit or mouth above the conical foot up to the top of the pipe) above it.

No. 5. That the organ should be concentrated, and not divided into two or more parts at a distance (excepting to place the choir organ in advance of the main instrument in the architectural design of the case.)

No. 6. That the ground space to be provided for an organ, exclusive of engines employed as blowing apparatus, should not be less than 600 superficial feet for an organ of 60 stops, of 310 superficial feet for an organ of 40 stops, and of 180 superficial feet for an organ of 20 stops.

No. 7. That the organ should never be placed in a "chamber," but that the best position for an organ is that which has a sufficiency of open space above it and on three sides, and a solid unpierced wall at the back.

No. 8. That the term "organ place" be adopted, because it is more comprehensive (including gallery, etc.,) and because the term "organ chamber" is misleading, inasmuch as a chamber (or enclosed place) has been determined to be *not* suitable for an organ.

No. 9. That the internal surface of the roof above the organ should not be of wood, but of stone, plaster, or other non-absorbent material.

No. 10. That in order to avoid noise and economize space, the organ "feeders" should be placed at some convenient distance from the organ, and outside the main body of the building.

No. 11 That the air supplied to the "feeders" must be derived directly from the church itself, in order to obtain the same temperature.

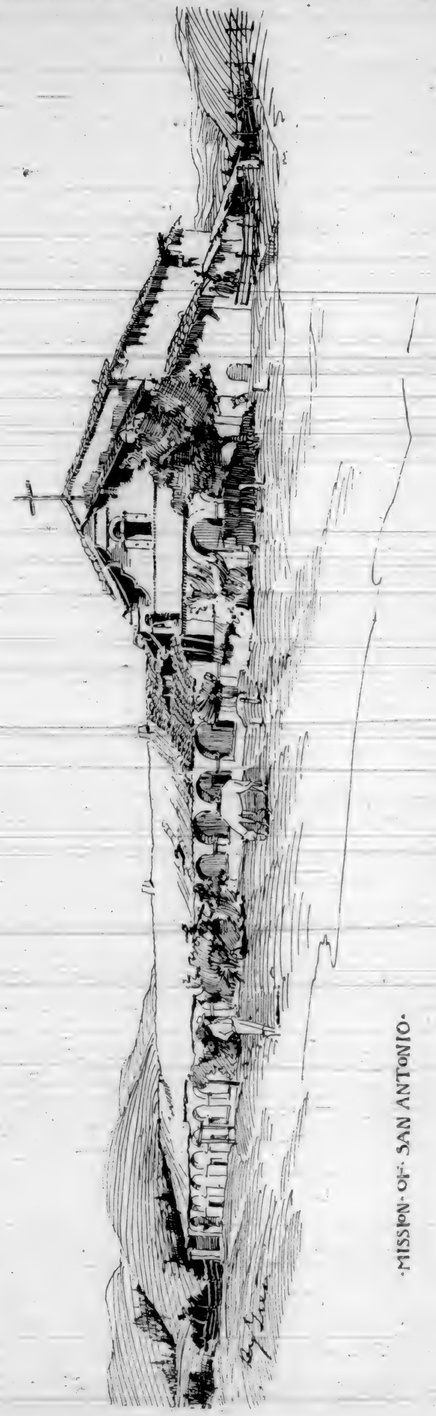
No. 12. That the organ should be placed at a short distance from the choir, and that the best distance is about twenty feet.

No. 13. That the organ should never be placed between the choir and congregation.

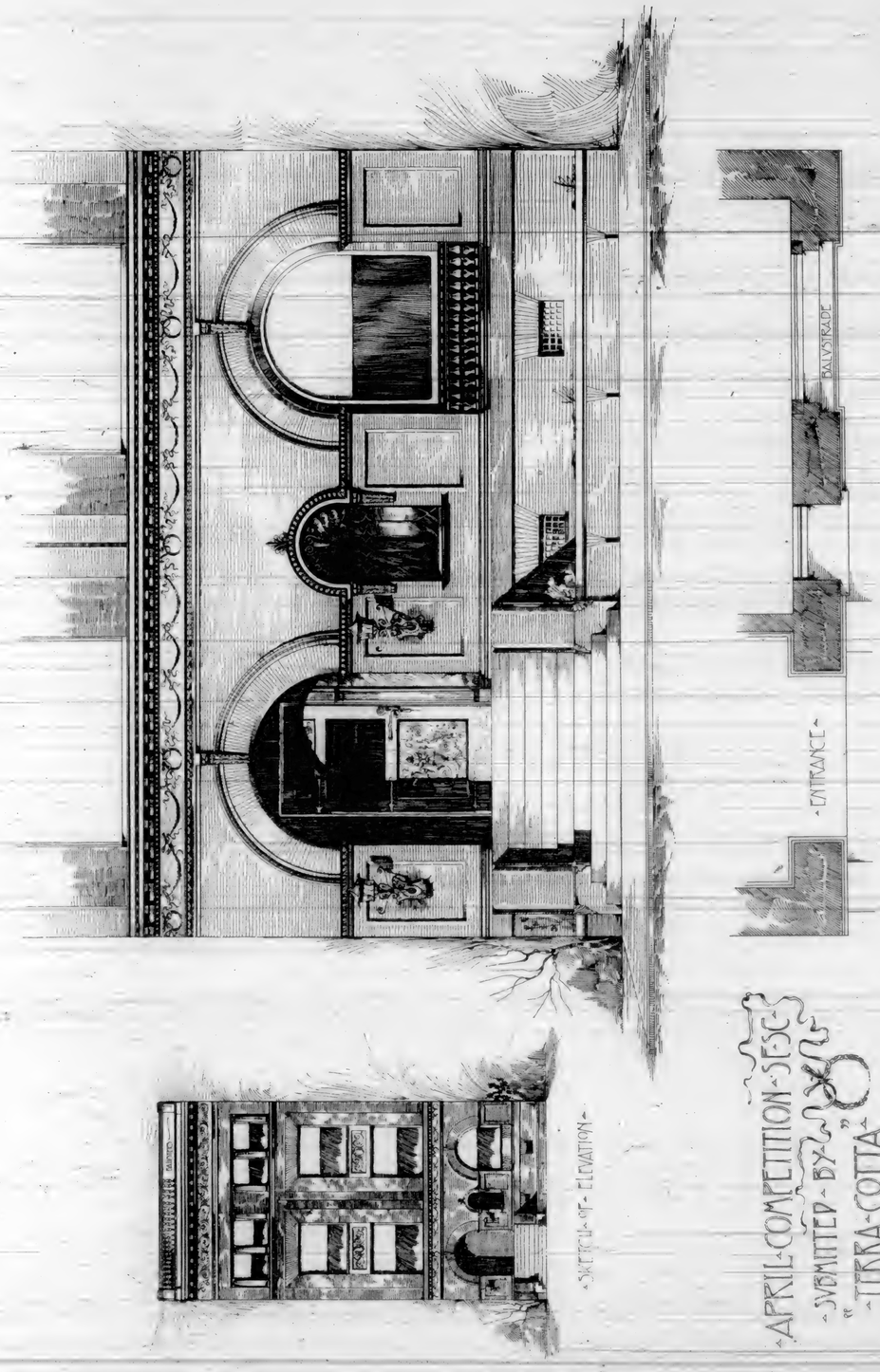
No. 14. That the sound of the organ should not have to pass over one-half of the choir to reach the other.

ADMINISTRATION BUILDING
PRESTON SCHOOL OF INDUSTRY
IONE AMADOR Co. CALIF

HENRY A. SCHULZE ARCHITECT
94 FLOOD BUILDING
SAN FRANCISCO



MISSION OF SAN ANTONIO.



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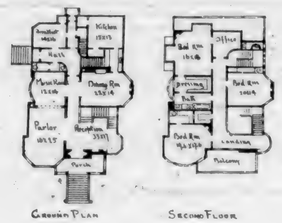
JULY 1891 VOL. XII. NO. 7.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



RESIDENCE OF MRS M. A. FRITZ
ASHBURY HEIGHTS
SAN FRACISCO CAL.
A. J. BARNETT ARCHITECT

No. 15. That when possible the organ should be equidistant from both halves of the choir.

No. 16. That the choir be placed on raised floors, or in low, projecting galleries architecturally treated.

No. 17. That the height of the platform, steps or gallery on which the choir is placed should be regulated by the length of the church.

No. 18. That provision should be made for the accommodation of large bodies of voices for special occasions to be seated in due musical relation to the choir and organ.

No. 19. That it is desirable in churches of adequate size that provision should be made for an orchestra on special occasions.

No. 20. That the orchestra should be in the organ gallery, in front of the organ, or in some similar and approximate position.

The Committee in framing the foregoing "Recommendations" for the guidance of those about to erect large churches, have made them as general and as wide as possible, that the same principles may be followed in the erection of small churches or alterations of ancient ones.

(Signed) F. E. Gladstone, George C. Martin, Walter Parratt, James Higgs, E. H. Turpin, W.. Russell, John Belcher, R. Herbert Carpenter. Somers Clarke, J. D. Sedding, Hugh Stannus, H. H. Statham.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

The double page illustration of the Administration Building for the Preston School of Industry, at Ione, Amador County, California, is from the design of Mr. Henry A. Schulze, Architect, of this City.

The residence for Mrs. M. A. Fritz, on "Ashbury Heights," is from designs by Mr. A. J. Barnett, Architect, of this City.

For the April competition of the San Francisco Sketch Club, "Terra-Cotta" was awarded first mention. This design was submitted by Mr. Wm. H. Topkee.

The cuts J and K are from the terra cotta capitals from the Museum of Natural History at Kensington, England.

BOOKS & PERIODICALS

BITS OF CANTERBURY CATHEDRAL. Drawn by Walter Tallant Owen. 1 vol., 12 plates; size, 6x9½: illuminated boards. Price, $1.00. New York: Wm. T. Comstock, 1891.

The history of Canterbury Cathedral, as well as the variety and beauty of its architecture, renders it one of the most interesting in England. The site upon which the cathedral stands was early consecrated to Christian worship, as there are records showing the existence, in the second century, of a church used by the Roman Christians. From this small beginning grew the present magnificent building. St. Augustine in the sixth century, and Archbishop Cuthbert in the latter part of the eighth, were the earlier builders, and the succeeding ages had the help of Odo, Lanfranc and Anselm in repairing, rebuilding and enlarging.

The styles of the different periods have all had an opportunity for display, and the cathedral to-day exhibits nearly all the classes of Norman architecture, while parts are impressed with the purely English style. It was here that, after the fire in 1174, the pointed arch was first introduced into England, having been employed by certain artists or artificers summoned from France, and here also are seen some of the best and most characteristic forms of purely English window tracery found in the cathedrals of England.

The church formerly was rich in saintly relics, and tragic memories lurk by every arch and column. Many famous tombs still exist, and, although the shrine of Thomas à Becket was destroyed centuries ago, the curious mosaic pavement which led to the shrine still remains, and the stone steps, worn by the knees of countless pilgrims, stand as a monument not only to the martyr but expressive of the religious freedom that followed. The crypt is famous from having been opened by Elizabeth for a refuge from Spanish persecution for French and Flemish Protestants, who, for a long time, carried on silk-weaving there.

It is easy to understand the attraction that this place has for the traveler, be he artist or layman, and this little book is a record of a few things seen and appreciated by Mr. Owen during a brief visit to Canterbury. There is a view of the entire cathedral, and of the separate "bits" that follow a glimpse of the pinnacles through Mercery Lane, and the "Bell Harry," which is the central tower of the cathedral, and so called from a small bell hung in the top. This was formerly the "Angel Steeple," having a gilt figure of an angel crowning it, and is said by Fergusson to be, for poetry of design and beauty of proportion, the best in England, and superior to any of its class to be found elsewhere.

A view of the cloisters, the northwest tower, baptistery, turret on southwest transept, Norman stairway, ruins of old cloisters, and the Prior's gateway, are among the plates. Before each plate is a title page, adorned with some detail of construction, or of some ornament or object in the building. Among these will be found mosaics from the floor, panel from ceiling, wrought iron work, carved woodwork, a chair, a hinge, and the armor of the Black Prince.

Mr. Owen exhibits a fine and discriminating taste in his selection of various subjects for his sketches, and shows his ability as a draughtsman to be of high order. The drawings are well reproduced upon fine paper, and aside from the pleasure to be drawn from a casual inspection, they will be of practical service to those who wish them for a study.

We have received several numbers of an Architectural publication from Tokio, Japan. In comparison with the publications as usually seen the Japanese journal makes a favorable showing. To read the book we must begin at the last page and read towards the front. The latest number contains articles on various subjects, as follows: Japanese Imperial flag; designing of Japanese tea room; on sand stone recently discovered; lesson in shading; Egyptian Architecture; the principle of building in Japan 2000 years ago; New York buildings 1890; fires in theatres 1890, in Europe and America; fires in Tokio; building laws; and marbles in the U. S. We are indebted to Mr. K. Shimoda, a Japanese architect of this city for the translation of contents.

NOTES & COMMENTS.

The wheat field on the Glenn ranch in Colusa County is twenty-six miles in length by twelve miles in breadth. These large tracts of land will before long be cut up into farms of suitable size for families.

Near Hamilton, Washington, there are large timber tracts of "birds eye" maple for suitable size for lumber, and preparations are being made for placing this beautiful variety of hard wood in the market.

MODEL OF STATUE OF "WORLD BUILDING."
Carl Bitter, Sculptor.

At the meeting of the Technical Society of the Pacific Coast held in June, the Hon. Warner Miller, president of the Nicaragua Canal Company, addressed the Society on the subject of the Canal, its history, and the financial difficulties which had been overcome. Commander Taylor of the U. S. Navy gave a technical description of the Engineering features of the work, entering into the details of its construction and manner of working. The remarks were accompanied with maps and diagrams illustrating the methods and progress of the work. On the following day by special invitation of Mr. Adolph Sutro, the Society was entertained at his grounds on Sutro heights which commands a view of the Pacific ocean and the Golden Gate. At this place we viewed the process of raising water without the aid of machinery, from the ocean to a height of fifteen feet to supply three large aquariums with salt water.

After lunch the speeches were rife with technical and engineering points. Mr. Sutro gave an account of the great Sutro tunnel under the gold and silver mines in Nevada and which was carried to a successful termination by himself after having overcome difficulties that seemed insurmountable. Hon. Warner Miller and Commander Taylor addressed the assembly and pointed out many features of resemblance between the great tunnel which had been finished and the Canal which is now under construction.

Mr. Sutro stated that to carry out the great project only three things are necessary, first—plenty of money, second—more money, third—more money. After looking through the grounds the members returned to the city.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. Kent, Pres. P. G. Martin, Vice-Pres.
A. Jackson, Sec'y. Wm. B. Kreger, Treas.
L. A. Larsen, Clerk and Financial Sec'y.

Master Painters' Association of the Pacific Coast.
E. M. Gallagher, Pres. H. G. Jarman, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Refusal of Architects to Issue Certificates.—Where the contract of a builder provides that he shall only be entitled to payment on account of the work thereunder upon the certificate of the architect that the work so far as completed has been done in accordance with the provisions of the contract, the right of the contractor to earned payments cannot be defeated by the mere arbitrary refusal of the architect to issue such certificates. The contractor may recover upon showing that he has so complied with the contract that the architect should have issued the certificates, as the certificates are only intended as an evidence of compliance.

Michoelis vs. Wolf, Supreme Court of Illinois, 26 N. E. Rep. 384. (113—C)

Delay of Building Contract By Owner.—Where a building contract provides for a penalty to be enforced against the contractor for failure to complete the building within a specified time, before the owner can enforce the penalty he must establish the fault of the contractor, and where it appears that something was to be done by the owner which he failed to do, the delay resulting from his failure, he cannot assert the penalty as he, and not the contractor is in fault. Courts look with distrust on penalty clauses, and will avoid them whenever possible.

Huckenstein vs. Kelly & Jones Co., Supreme Court of Pennsylvania, 21 At. Rep. 78. (104—C)

Liability For Safety of Premises.—When the owner of premises which are under his control employs an independent contractor to do the work upon which from its nature is likely to render the premises dangerous to persons who may come upon them by invitation of the owner, the owner, by reason of the contract, is not relieved from the obligation of seeing that due care is used by the contractor to protect such persons. The owner cannot continue to hold out the invitation without being bound to exercise due care in keeping the premises reasonably safe for use according to the invitation. A landlord who contracts with a plumber to perform work requiring excavations about the premises is liable for injuries sustained by a visitor to one of the tenants from falling into an excavation negligently left unguarded by the contractor.

Curtis vs. Kiley, Supreme Judical Court of Massachusetts, 26 N. E. Rep. 421. (146—C)

Liability of Subcontractor For Defective Work.—The owners of a piece of land contracted with a builder to erect a building according to plans and specifications prepared by an architect, and to provide all the materials therefor. They subcontracted with a mason for the mason work and materials. The builder sued them on their contract to recover damages for defective work and materials, including defects in the mason work. They gave the mason notice in writing of the pendency and object of the suit, and requested him to come in and help defend.—He did not unite in the defense of this suit, and plaintiffs defended alone. At the trial, by direction of the court, the jury, by their verdict, specified how much of the damages awarded was for the defects in the mason work, and how much for other work. The builder entered his judgment for the gross amount of damages awarded him, ignoring the special findings of the jury apportioning the damages. The owners not having paid the builder's judgment, bring an action against the mason on his subcontract, in which it is held by the court (1) that the verdict was competent evidence of the special finding of the jury of the amount of damages awarded against the owners for defects in the mason work; (2) that the plaintiffs might maintain this suit, and have damages awarded to them for damages recovered of them for defect in the mason work in builder's suit, without paying the judgment he recovered against them; (3) that the defendant, having notice of that suit, was concluded by the record in that suit with respect to the fact that the mason work was done in compliance with the plans and specifications, and that, in consequence thereof, the damages as found by the jury accrued therefrom, and as to all matters of defense against the demands of the builder that might have been presented in that suit; but (4) that the mason might insist and prove that his contract with the owners did not in that respect embrace the liability the plaintiffs incurred under their contract with the builder, and that the defective workmanship or materials used in the mason work were occasioned by the owner's own acts.

Hoppaugh vs. McGrath, Supreme Court of New Jersey, 21 At. Rep. 106. (370—C)

Liability of Contractor for Safety of Scaffold.—Where a contractor provided his workmen with proper material in sufficient quantities to construct a scaffold to be used in work on which they were engaged for him, he is not liable for damages resulting from an error of judgment by the foreman in selecting a particular piece for a particular place in which it proved to be insufficient, by reason of which the scaffold fell, and a workman was injured.

Ross vs. Walker, Supreme Court of Pennsylvania, 21 At. Rep. 156. (85—C)

Right to Reject Lowest Bid.—Where the statute governing the letting of contracts for public works provides that such contract shall be let to the lowest responsible bidder, and the advertisement for bids reserves the right to accept or reject all bids as the best interests of the city may demand, all the bids may be rejected and another advertisement made, without in any manner incurring any liability to the lowest responsible bidder under the first advertisement.

American Artificial Stone Pavement Co. v. Wagner, Supreme Court of Pennsylvania, 21 At. Rep. 160. (88—C)

Lien on Work Abandoned by Owner.—Where "material" required for the construction or completion of a building is prepared or manufactured therefor by a contractor, in conformity with the terms of a contract between him and the owner, and the work of preparation and furnishing proceeds at the yard or shop of the contractor with the express or implied consent of the owner, such work of preparation and manufacture should be deemed a part of the construction or "furnishing" under the contract, and in such case it is immaterial, as between the parties to the contract, in respect to the contractor's right to a lien, subject to the final completion of the contract, that the work was not done on the premises. And where the work of construction is thus in progress, no loss of lien for what has already been done under the contract is occasioned where the work is stopped or abandoned through the fault of the owner. The purchasers or assignees of the owner, who purchase expressly subject to such claims for liens, will be bound thereby, and stand in his shoes; and if they refuse to permit the contractor to complete the work, he will be entitled to a lien to the extent of the loss sustained.

Howes vs. Reliance Wire-Works Co., Supreme Court of Minnesota, 48 N. W. Rep. 448. (203—C)

BUSINESS MOSAICS.

When thou art the only purchaser then buy; when other buyers are present be thou nobody.

Hardwood lumber for furniture and natural wood finish can be obtained in any quantity to suit, from the E. D. Albro Co., Cincinnati, Ohio This firm has a world wide reputation in that line.

The Pullman Sash Balance is a great improvement over any other spring balance, and is rapidly gaining on the weight and cord system.

The J. L. Mott Iron Works of New York and Chicago, so long known for the excellent quality and finish of any article manufactured by them, have established an office in San Francisco, in the Flood Building on Market street, Room 44.

Gas Fixtures and hardwood mantels in all the latest styles, and in great variety can be seen at the elegant show rooms of the California Gas Fixture Co. 123 Geary street.

We invite the attention of Architects and other interested parties to the *Bostwick Patent* steel lath which is made in a manner to form a firm key for the plastering and without unnecessary waste of material See advertisement.

The Sidney Norris Co. are making special sash pullies for all requirements. These pullies have grooves for ropes, chains, ribbons, or for any other purpose. The quality and finish of these pullies have given universal satisfaction wherever used, and have therefore become the standard pulley.

Belts and Dressings. Belts should be cleaned regularly, and after cleaning, a good belt-dressing should be applied to keep the belt soft and elastic, and cause it to hug the pulley and transmit its greatest power. The use of a good belt-dressing is superior in economy to any other method for correcting a slipping or slightly loose belt. The custom of tightening a belt whenever it slips is not a good one. The belt is liable to be made too tight, which heats the bearings and strains the belt. Great care, however, should be taken in selecting a belt-dressing. Castor oil is an article in very general use, but experts have found that it contains an active acid principle, and is drying in its nature. The use of soap, rosin, tar, etc, cannot too strongly be condemned. They are only temporary stimulants and eventually destroy the belt. A belt-dressing that is guaranteed to prevent slipping, and at the same time to keep the leather soft and elastic, is certainly worthy of careful consideration. Such is Dixon's Belt-Dressing, made and sold by the Jos. Dixon Crucible Co., Jersey City, N. J. There is no trouble in applying it, and all who have used it commend it in the highest terms.

The weakness of thy walls invites the burglar.

TENDERS TO BE RECEIVED.

TREASURY DEPARTMENT.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 23rd day of July 1891, for the labor and materials required for sidewalks, street curbs and gutters, of the approaches to the U. S. Court House, Post Office &c., building at Carson City, Nevada, in accordance with specification and drawing, copies of which may be had on application at this office or the office of the Custodian at Carson City, Nevada.

Each bid must be accompanied by a certified check for $100.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for work on the Approaches to the U. S. Court House; Post Office &c., Building at Carson City, Nevada," and addressed to

W. J. Edbrooke,

June 29, 1891. Supervising Architect.

TREASURY DEPARTMENT.

Sealed proposals will be received at the Office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 28th, day of July, 1891, for all the labor and materials required for the iron stairs, iron work, &c., of elevator shaft, for the U. S. Court House, Post Office, &c., building at Denver, Colo., in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Denver, Colorado.

Each bid must be accompanied by a certified check for $200,00.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for iron stairs, &c., for the U. S. Court House, Post Office &c., building at Denver, Colorado;" and addressed to

W. J. Edbrooke,

July 3, 1891. Supervising Architect.

CITY BUILDING NEWS.

Baker and Grove. To build; owner, Mary J. Raymond; architect, W. H. Lillie; contractor, Geo. R. Lang; cost, $17,000; signed, June 23; filed, June 24; payments, 1st and 15th of each month, 75 per cent as work progresses; 25 per cent 35 days.

Bryant between 23rd and 24th. To build; owner, Eliza Wideman; architect, Geo. Houston; contractor, Geo. Houston; cost, $2,315; signed, June 16; filed, June 17; payments, $755, shingles on; $728, brown mortared; $728, white plastered; $731, 35 days.

Bowie avenue near 11th St. Additions; owner, Mich'l Healy; architect, M. J. Welsh; contractors, Cuneo & Casaretto; cost, $1800; signed, June 23; filed, June 24; payments, $600, brown mortared; $600, completed; $600 35 days.

Buchanan near California. Carpenter work; owner, Katie E. Pelton; architect, John C. Pelton Jr.; contractor, Wm. Little; cost, $1675; signed, June 17; filed, June 22; payments, 1st and 15th day of each month, 75 per cent as work progresses; 25 per cent 35 days.

Bush near Lyon. To build; owner, W. I. Morgan; architect, W. H. Lillie; contractor, Arthur C. Soule; cost, $2050; signed, June 9; filed, June 9; payments, $384, frame up; $384, brown mortared; $384, standing finish on; $384, completed; $514, 35 days.

Bush near Steiner. Alterations; owner Henry Freitag; architects, Geilfuss Z. & Co.; contractor, Henry Rohling, cost, $2368; signed, June 16; filed, June 19; payments 1st and 15th day of each month, 75 per cent as work progresses; 25 per cent. 35 days.

California near Van Ness av. Alterations; owner, Bertha Wolfe; contractor, John J. O'Brien; surety, $600; cost, $1,050; signed, June 17; filed, June 19; payments, $650, brown mortared; $250, completed; $250, 35 days.

Castro, near 21th. To build; owner, Mrs. F. S. Downing; architect, A. Klahn; contractor, H. Klahn; cost, $1,150; signed, June 16; filed, June, 18; payments, $1,150, 35 days after completion.

Clay near Buchanan. Carpenter work, etc.; owner, Chas. L. Watson; architects, Percy & Hamilton; contractors, Smilie Bros; cost, $11,732; signed, June 22; filed, June 26; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Clay near Buchanan. Concrete work, etc.; owner, Chas. L. Watson; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $8,100; signed, June 18; filed, June 26; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Clay and Larkin. Alterations; owner, H. Proll; architect, J. J. Clark; contractor, John T. Hayes; surety, $970; cost, $3,890; signed, June 25; filed, June 30; payments, $800, foundation in; $1,000, brown mortared; $1,000, painting completed.

Devisadero near Pine. Carpenter work; owner, Georgie M. Davis; architect, W. O. Banks; contractor, Herman Hansel; cost, $8,437; signed, June 17; filed, June 17; payments, $4,327, brown mortared; $2,000, completed; $2,110, 35 days.

Devisadero near Sacramento. Carpenter work, etc.; owner, Annie A. Kelly; architect, W. H. Lillie; contractor, White Bros.; cost, $9,550; signed, June 9; filed, June 22; payments, $1,432 5, entire frame up; $1,432 50, enclosed; $1,432 50, brown mortared; $1,432 50, accepted by architect; $2,387 50, 53 days after completion.

Devisadero near Sacramento. Plumbing; owner, Annie A. Kelly; architect, W. H. Lillie; contractor, W. H. Tobin; cost, $1,160; signed, June 9; filed, June 22; payments, $435, pipes laid; $435, work completed; $290, 35 days.

Douglass near 23rd. To build; owner, Nathaniel Burpee; contractor, Wm. Belyea; cost, $2,000; signed, June 23; filed, June 23; payments, $500, frame up and roof ready for shingling; $500, brown mortared; $500, completed; $500, 35 days.

Drumm near Washington. Mason work; owner, F. W. Kerr; architects, Smith & Freeman; contractor, Ferdinand Wagner; cost, $1,348; signed, June 17; filed, June 26; payments, $1,261 2nd story joists on; $1,000, ceiling joists on; $1,000; completed; $1,087, 35 days.

Elm ave near Franklin. Alterations; owner, P. Muldoon; architect, Chas. J. Devlin; contractors, A. Petterson et al; cost, $1,890; signed, June 22; filed, June 23; payments, $756, building raised and moved; $500, brown mortared; $500, ready to paint; $100 completed; $490, 35 days.

Fell and Baker. Painting; owner, Monroe Greenwood; architect, F. B. Wood; contractor, Geo. V. Daniels; cost, $1173; signed, May 25; filed; June 30; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Filbert between Octavia and Laguna. To build; owner, Geo. Werner; architect, H. D. Mitchell; contractor, M. S. Yerxa; cost, $8000; signed, June 10; filed, June 11; payments, $750, foundation joists laid; $1500, frame up and chimneys up; $1200, enclosed and roof on; $1500, rough plumbing and brown mortar on; $1050, completed; $2000, 35 days.

First near Mission. Carpenter work; owner, C. F. Marwedel; architect, J. E. Kraft contractors, Fletcher & Smith; surety, $3000; cost, $8543; signed, June 27; filed, June 30; payments, $1000, roof sheathed and tinned; $1500, plastering finished; $1643, accepted; $1400, 35 days.

First near Mission. Brickwork, etc.; owner, C. F. Marwedel; architect; J. E. Kraft; contractor, D. J. Brennan; surety, $4000; cost, $6854; signed, June 16; filed, June 19; payments, $1500, basement walls and piers for 1st floor are up and joists and sidewalk arches built; $1000, walls to 3rd floor, joists built; $1000, entire walls built; $1600, finished; $1754, 35 days.

Folsom Street, No. 1209. Additions; owner, James S. Coleman; architect, Oliver Everett; contractor, Jno. J. O'Brien; cost, *3234; signed, July 1, filed July 1; payments, $1617, brown mortared; $808.50, completed; $808.50, 35 days.

Folsom and Fifth. To build; owner, R. P. Hind; architect, H. T. Bestor; contractor, W. H. Wickersham; cost, $18670; signed, June 18; filed, June 19; payments, $1200, 2nd floor joists on; $1300, frame up; $2200, roof on and floors laid; $2500, brown mortared; $2200, white mortared; $2500, completed; $3970, 35 days.

Folsom and Sixth. Brickwork, etc.; owner, Geo H. C. Beckerdorf; architect, J. E. Kraft; contractor, Oscar Lewis, et al; surety, $8000; cost, $6169; signed, June 23; filed, June 24; payments, $2775, excavation done and basement walls built; $800, brickwork done and chimneys built; $1000, work finished; $1525, completed.

Folsom and Sixth. Brickwork, etc.; owners, Oscar Lewis et al; architect, J. E. Kraft; contractors, Martin Fennell & Son; surety, $9000; cost, $6160; signed, June 23; filed, June 24; payments, $2775, basement walls built; $800, brickwork and chimneys built; $1000, work finished; $1525, completed.

Folsom near Eleventh. To build; owner, Verein Eintracht; architect, Bernard Dreyer; contractor, Bernard Dreyer; surety, $10,000; cost, $20,963; signed, June 6; filed, June 9; payments, $3960, frame up; $3900, rough mortared; $3900, white plastered; $3900, finished; $3863, 35 days.

Folsom between Eleventh and Twelfth. Plumbing; owner, J. Platz; contractor, Bernard Dreyer; cost, $2080; signed, June 27; filed, June 30.

Francisco and Dupont. To build; owner, Frederico Lavotti; architect, E. Depierre; contractors, W. L. Nelson & Co.; surety, $1000; cost, $2340; signed, June 23; filed, June 25; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Franklin and O'Farrell. Brickwork; owner, W. B. Anderson; architect, T. J. Welsh; contractor, R. Ringrose; cost, $2340; signed; June 6; filed, June 8; payments, $877.50, when one ¼ of contract is completed; $877.50, completed; $585, balance, 35 days after completion.

Franklin near Washington. Painting; owner, Sophie Wieland; architect, W. Winterhalter; contractor, Wm. G. Koch; cost, $1012; signed, June 18; filed, June 26; payments, $350, outside finish and work is painted two coats and ready for graining; $400, accepted; $250, 35 days.

Franklin near Washington. Plumbing; owner, Mrs. Sophie Wieland; architect, W. Winterhalter; contractor, Duffey Bros.; cost, $1440; signed, June 9; filed, June 10; payments, $580, sewerage done and gas and water pipes in; $580, completed; $360, 25 days.

Front near Pacific. Sidewalk elevators; owner, Jas. G. Fair; architect, H. A. Schultze; contractors, Cahill and Hall; cost, $1140; signed, May 26; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Front near Pacific. Sidewalk elevators; owner, Jas. G. Fair; architect, H. A. Schultze; contractors, Cahill and Hall; cost, $1860; signed, May 26; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent, 35 days.

Geary near Octavia. Alterations; owner, G. Kordmeyer; architect, P. L. Schmidt; contractor, J. J. O'Brien; cost, $2,763; signed, June 23; filed, June 24; payments, 75 per cent. as the work progresses; 25 per cent., 35 days.

Geary and Polk. Mason Work etc.; owner, Cora A. Wallace; contractor, D. T. Pierce; surety, $1,000; cost, $3753; signed, June 25; filed, June 26; payments, $2,400, basement finished; $413, brick chimneys finished; $940, 35 days.

Gibbs Place 110 East Kearney. Tinwork etc.; owner, Magdalena Ils; contractor, Wm. Cronan; cost, $1,265; signed, June 19; filed June, 19; payments, $632.50; tinwork and galvanized skylights; $316.25, completed; $316.25, 35 days.

Golden Gate Ave. near Webster. To build; owner, Anton Lemaire; architects, John and Balczynski; contractor, Louis M. Weismann; cost, $5874; signed, June 6; filed, June 6; payments, $1100, frame up: $1100, enclosed and partitions set; $1100, white plastered; $1,100, finished and accepted; $1,474, 35 days.

Golden Gate ave. near Webster. To build; owner, Geo. Schafer; architects, John & Balczynski; contractor, Louis M. Weismann; cost, $5574; signed, June 6; filed, June 6; payments, $1100, frame up; $1100, enclosed and partitions set; $1100, white plastered; $1100, finished and accepted; $1474, 35 days.

Green near Kearny. To build; owner, Chas. Lagrane; architect, C. M. Rousseau; contractor, W. J. Kearns; surety, $2000; cost, $4966; signed, June 11; filed, June 24; payments, $741 20, concrete work done; $741 20, frame up; $741 20, brown mortared; $741.20 white coated; $741 20, completed; $1250, 35 days.

Green near Leavenworth. Mill work etc.; owner, Geo. Simmerton; architect, S. Hatfield; contractor, Chas. Scranton; surety, $4000; cost, $8318; signed, June 10; filed, June 15; payments, $1000, frame up; $1000, roof boards on; $1200, ready for lathing; $1488, roof tinned and outside stairs on; $1600, completed; $2080, 35 days.

Green and Leavenworth. Plumbing; owner, Geo. Summerton; architect, S. Hatfield; contractor, E. Kraus; cost, $1100; signed, June 25; filed, June 30; payments $450, sewers laid; $375, finished; balance, 35 days after completion.

Hayes between Devisadero and Broderick. Carpenter work etc.; owner, Pauline M Steiger; architect, J. R. Miller; contractor, J. F. Logan; cost, $8325; signed, June 23; filed, July 1; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Hill and Sanchez. To build; owner, Albert Bolgz; architect, Albert Bolgz; contractors, G. Patterson et al; cost, $2500; signed, May 28, filed, June 5; payments, $625, frame up; $625, brown mortared and outside finished; $625, completed; $625, 35 days.

Howard St. No. 2132. Carpenter work; owner, Elizabeth Weindorf; architects, Martens & Coffey; contractors, Droge & Munster; cost, $4400; signed, June 15; filed, June 18, payments, $825, 1st story studding set; $825, brown mortared; $827, white mortared; $825, completed; $1100, 35 days.

Howard near 2nd. Brickwork etc.; owners, D. L. Bliss et al; architect, H. A. Schultz; contractors, Shain & Hoffman; cost, $9347; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Cast iron work; owner, D. L. Bliss et al; architect, H. A. Schultze; contractors, O'Connell & Lewis; cost, $1900; signed, May 28; filed, June ; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Mill work etc.; owner, D. L. Bliss et al; architect, H. A. Schultze; contractor, John T. Grant; cost, $7666; signed, May 28; filed, June 9; payments, 1st day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Plumbing; owners, D. L. Bliss et al; architect, H. A. Schultze contractors, Duffey Bros.; cost, $1150; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Skylights etc.; owners, D. L. Bliss et al; architect, H. A. Schultze; contractors, Conlin & Roberts; cost, $1695; signed, May 28; filed, June 9; payments, 1st day of each month, 75 per cent as work progresses; 25 per cent, 35 days.

Howard near 2nd. Wrought iron work; owner, D. L. Bliss et al; architect, H. A. Schultze; contractor; Calvin Nutting; cost, $1,530; signed, May 28; filed June 9; payments, 1st day of each month; 75 per cent. as work progresses; 25 per cent., 35 days.

Howard near 6th. Alterations; owner, Sophie Koester; architect, Bernard Dreyer; contractor, Bernard Dreyer; cost $8,450; signed, June 24; filed, June 24; payments, $2,112.50, partly raised and cellar dug out; $2112.50, ready for plastering; $2112.50, completed; $2112.50, 35 days.

Howard near Sixth. Concrete work, etc.; owner, Jas. Cochran; architect, O. Everett; contractors, Ransome and Cushing; cost, $4,327; signed, May 30; filed, June 16; payments, $1000, basement and walls in; $1,000, side walk arches in; $1,000, completed; $1,327, 35 days.

Howard and Sixth. Mill work etc; owner, Jas. Cochran; architect, O. Everett; contractor, Chas. M. Depew; cost $3890; signed; May 23; filed June 16; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Howard and Sixth. Painting; owner, Jas. Cochran; architect, O. Everett; contractor L. Paint; cost, $1,600; signed, May 30; filed, June 16; payments, $400, 2nd coat paint on; $800, completed; $400, 35 days.

Howard and Sixth. Plastering; owner, Jas. Cochran; architect, O. Everett; contractor, Martin Carrick; cost, $2,550; signed, May 23; filed, June 16; payments, $1,275, brown mortared; $637 50, white coated; $637 50, 35 days.

Howard and Sixth. Plumbing; owner, Jas. Cochran; architect, O. Everett; contractor, G. C. Sweeney; cost, $2,150; signed, May 23; filed, June 16; payments, $1,075, rough work in and tested; $537 50, completed; $537 50, 35 days.

Howard and Sixth. Wrought iron work; owner, Jas. Cochran; architect, O. Everett; contractor, Henry Ralston; cost, $1,800; signed, May 23; filed, June 16; payments $450, sidewalk beams laid; $450, 2nd payment; $450, completed; $450, 35 days.

Howard near Sixteenth. Plastering, etc; owner, Jas. W. Smith; contractors, Houlahan & Smith; cost, $4,086; signed, June 22; filed, June 22; payments, $500, brown mortar on 6 2-story buildings; $1,000, brown mortar on 4 3-story buildings; $500, white coat on 6 2-story buildings; $750, white coat on 4 3-story buildings; $1,336, 35 days.

Howard near Sixteenth. Plumbing; owner, Jas. W. Smith; contractor, G. C. Sweeney; cost, $4,241; signed, June 11; filed, June 11; payments, $2,000, rough work on; $1,200, completed; $1,041, 35 days.

Hyde near Vallejo. Carpenter work; owner, Lizzie R. Bush; architect, Gus. Hult; contractor, C. N. Smith; surety, $750; cost, $2,980; signed, June 4; filed, June 8; payments, $550, frame work up; $550, enclosed and partitions set; $550, brown mortared; $880, 35 days.

Hyde near Vallejo. Carpenter work; owner, Jos. Bush; architect, Gus. Hult; contractor, C. N. Smith; surety, $1,400; cost, $5,493; signed, June 4; filed, June 8; payments, $1,000, frame up; $1,000, enclosed and partitions set; $1,000, brown mortared; $1,000, completed; balance, 35 days.

Jersey near Douglass. To build; owner, Caspar Dietrich; architect, Ernest Nagel, contractor, Ernest Nagel; surety, $600; cost, $1,660; signed, June 9; filed, June 12; payments, $415, frame up; $415, brown mortared; $415, completed; $415, 35 days.

Jones near Sutter. Carpenter work; owner, Moses Hopkins; architect, J. H. Littlefield; contractor, J. F. Logan; cost, $7,763; signed, July 1; filed, July 1; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Jones near Sutter. Plumbing; owner, Moses Hopkins; architect, J. H. Littlefield; contractor, R. A. Vance; cost, $1,075; signed, July 1; filed, July 1; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Larkin near Ellis. To build; owner Caroline Breese; architect H. A. Schultze; contractor, John F. Grant; cost, $5,999; signed, June 9; filed, June 13; payments, 1st day of each month; 75 per cent. as work progresses; 25 per cent., 35 days.

Larkin near Ellis. Plumbing; owner, Caroline Breese; architect, H. A. Schultze; contractor, G. C. Sweeney; cost, $699; signed, June 9; filed, June 13; payments, 1st. day of each month; 75 per cent. as work progresses; 25 per cent., 35 days.

Leavenworth and California. To build; owner, F. Denninger; architect, P. A. Stoil; contractor, Henry Rohling; surety, $675; cost, $2,700; signed, June 10; filed, June 10; payments, $675, ready for lathing; $675, plastering completed; $675, completed, $675, 35 days.

Lot 351, Gift Map. To build; owner, P. C. Francis; architect, William Campbell, contractor, Wm. Campbell; cost, $1,039; signed, June 10; filed, June 15; payments, $200, house roofed and shingled; $300, plastering finished; $530, 35 days.

Lyon St., No. 1910 and 1912. Alterations; owner, L. P. Rixford and wife; contractors, Eaton and Hickman; cost $4,000; signed, June 20; filed, June 24; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Market near 9th. Elevators; owners, Allyne and White; architect, Chas Geddes; contractors, W. H. Birch & Co.; cost, $1919; signed, June 25; filed, June 30; payments, $710, joists are set and sidewalk elevator completed; $700, completed; $479, 35 days.

Market near Jones. Brickwork; owner, H. L. Please; architects, Salfield & Kohlberg; contractor, Wm. Wolf; cost, $1350; signed, June 25; filed, June 26; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Market St. and New Montgomery. Additions; owner, Sharon Estate; architect, A. Page Brown; contractor, Wm. Black; cost, $1765; signed, June 29; filed, June 30; payments, every 2 weeks, 75 per cent of value of work done; 25 per cent, 35 days.

Market and New Montgomery. Alterations; owners, Sharon Estate; architect, A. Page Brown; contractor, R. Herring; cost, $3200; signed, June 20; filed, June 24; payments, $800, when screen and wainscoting for baggage and serving room are completed and ready for painting; $2000, when colonnade and balustrade are set and ready for painting; balance, 35 days.

Market near Taylor. Brick work etc.; owners, Peixotto & Silvermann, contractor, Crawford Ferris; cost, $12,880; signed, June 23; filed, June 26; payments, $1000, walls ready and 1st floor joists on; $2630, ready for 3rd floor joists; $3000, completed; $3250, 35 days.

Mary and Hattie Sts. To build; owner, August Pelzold; architect, C. D. Mitchell; contractor, Frederick Raabe, cost, $3100; signed, June 24; filed, June 26; payments, $775, frame up; $775, brown coat on; $775, accepted; $775, 35 days.

Minnesota and Napa. Carpenter work etc.; owner, John O. Reis; architects, Henriksen & Mahoney; contractor, R. O. Davis; cost, $12,090; signed, June 29; filed, June 30; payments, $2266, rustic and roofing completed; $2266, brown mortared and outside finish on; $2266, white plastered; $2267, completed; $3025, 35 days.

Mission and 9th. Painting etc.; owner, Peter J. McGovern; architect, Julius E. Kraft; contractors, Wm. Armstrong & Son.; surety, $1000, cost, $1275; signed, June 12; filed June 15; payments, $450, when exterior has first coat and interior 2nd coat on; $500, accepted; $325, 35 days.

Mission and 9th. Plumbing; owner, Peter J. McGovern; architect, J. E. Kraft; contractor, G. C. Sweeney; surety, $2000; cost, $2197; signed, June 29, filed, June 30; payments, $647, entire sewering and rough work in; $1000, finish; $550, 35 days.

Mission near 15th. Carpenter work; owner, Jas. Stanton; architect, Julius E. Kraft; contractor, Albert Washburn; surety, $70,000; cost, $18,288; signed, June 4; filed, June 5; payments, $2716, frames up; $3000, enclosed; $3500, ready for lathing; $4500, finished; $4572, 35 days.

Nineteenth near Jessie. Alterations etc.; owner, Otto Fauss; architects, Geilfuss Zimmerman & Co.; contractor, F. W. Kern, cost, $4695; signed, June 5; filed, June 12; payments, 1st and 15th day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Oak near Franklin. To build; owner, Anna Cordes; architect, S. Hatfield; contractor, Jas. Campbell; surety, $1185; cost, $4740; signed, May 29; filed, June 8; payments, $888, frame up; $888, main roof tinned; $888, outside furnished; $891, completed; $1185, 35 days.

O'Farrell and Stockton. Carpenter work; owner, Henry W. Hyman; architect, Chas. Geddes; contractor, F. L. Hansen; cost, $2950; signed, June 16; filed, June 30; payments, $1107, ready to receive laths; $1106, completed; $737, 35 days.

Page between Buchanan and Webster. Mill work, etc; owner, W. W. Ackerson; architects, Martens & Coffey; contractors, N. Parrish & Co.; cost, $1250; signed, June 16; filed, June 16; payments, $312.50, ready for plaster; $312.50, inside finished; $312.50, accepted; $312.50, 35 days.

Page between Buchanan and Webster. Plumbing; owner, Wm. W. Ackerson; architects, Martens & Coffey; contractor, R. Rice; cost, $980; signed, June 24; filed, June 26; payments, $335, rough gas and water pipes in; $490, completed; $245, 35 days.

Pennsylvania Avenue near Sierra. To build; owner, Patrick Rodden; contractor, Thos. Mitchell; surety, $1500; cost, $1500; signed, June 27; filed, June 27; payments, $375, frame up; $375, brown mortared; $375, completed; $375, 35 days.

Pine and Quincy. Alterations; owner, John Ginge; architect, W. Winterhalter; contractor, Adam Miller; cost, $2250; signed, June 25; filed, June 25; payments, $600, frame up; $600, rough plastered; $600, completed; $750, 35 days.

Post near Mason. Cast iron work; owner, Olympic Club; architect, H. A. Schultze; contractors, O'Connell and Lewis; cost, $7770; signed, March 18; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent; 35 days.

Post near Mason. Painting; owner, Olympic Club; architect, H. A. Schultze; contractor, Geo. J. Smith; cost, $3731. signed, March 18; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Post near Mason. Plastering; owner, Olympic Club; architect, H. A. Schultze; contractor, J. R. Tobin; cost, $9253; signed, March 18; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Post near Mason. Wrought iron work; owner, Olympic Club; architect, H. A. Schultze; contractor, Western Iron Works; cost, $8650; signed, March 18; filed, June 6; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Powell and Ellis. Iron work; owner, P. F. Butler; architects, Shea & Shea; contractor, P. H. Jackson; cost, $2666; signed, May 22; filed, May 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Sacramento St., No. 1816. Alterations and additions; owners, Rosa Vogelsdorff; architect, John and Balczynski; contractor, F. W. Kern. cost, $2225; signed, June 11, filed June 12; payments, $875, rough mortared, $875. alterations and additions finished; $575, 35 days.

Sansome near Pine. Carpenter work; owner, Jas. Otis, architects, Smith and Freeman; contractors, Day and McLaughlin; cost, $16,030; signed, June 13; filed, June 29; payments, $1,500, second story floor joists on; $1,500, fourth on; $1,500, sixth on; $1,000, roof completed and tinned; $2,500, ready for plastering; $3,000, ready for painting; $1,085, completed; $4,013, 35 days.

Sansome near Pine. Mason work; owner, James Otis; architects, Smith and Freeman; contractors, Riley and Loane; cost, $29,884; signed, June 16; filed, June 29; payments, $5,000, ready for 1st floor joists; $9,000, ready for 2nd floor joists and beams all set; $1,600, ready for 3rd story joists; $1,600, ready for 4th story joists; $1,600, ready for 5th story joists; $1,600, ready for 6th story joists; $1,400, ready for roof timbers and fire walls set; $613, completed; $7,471, 35 days.

Sansome near Pine. Plastering; owner, Jas. Otis; architects, Smith & Freeman; contractor, C. C. Morehouse; cost, $7,100; signed, June 19; filed, June 29; payments, $2,000, lathed and completed; $1,500, 2nd coat of mortar; $1,500, 3rd coat on; $325, plastering done; $1,775, 35 days.

Sansome near Pine. Plumbing; owner, Jas. Otis, architects, Smith & Freeman; contractors, Duffy Bros.; cost, $1,754; signed, June 13; filed, June 29; payments, $2,000, rough work completed; $1565.20, completed; balance, 35 days.

Shotwell between 19th and 20th. To build; owner, Mary E. Leslie; architect, Wm. Helbing; contractor, Wm. Helbing; cost, $5,000; signed, June 4; filed, June 5; payments, $1,250, enclosed; $1,250, brown mortared; $1,250, white plastered; $1,250, completed.

Sutter between Mason and Taylor. To build; owner, A. L. Bowhay; architect, H. D. Mitchell; contractors; W. J. Field et al.; cost, $1,175; signed, June 15; filed, June 16; payments, $300, brown mortared and brickwerk completed; $300, accepted; $300, 30 days; $275, 30 days after foregoing.

Twentieth st near Treat ave. To build; owner, Minnie Harris; architect, H. A. Schultze; contractor, Wm. Belyea; cost, $2,385; signed, June 22; filed, June 22; payments, 1st and 15th day of each month; 75 per cent. as work progresses; 25 per cent. 35 days.

Twenty-fourth and Potrero ave. To build; owner, John Ribby; architect, T. F. Mitchell; contractor, Thos. F. Mitchell; cost, $6,563; signed, June 15; filed, June 15; payments, paid in installments as directed by owner; balance, 35 days.

Twenty-fourth near Sanchez. To build; owners, Thos. Nannery and wife; architect, M. J. Welsh; contractor, J. A. Shepley; surety, $600; cost, $2,400; signed, June 12; filed, June 12; payments, $600, frame up; $600, brown mortared $600, completed; $600, 35 days.

Twenty-fifth near Castro. To build; owner, Wm. Harris; architect, H. R. Schmuckert; contractor, H. R. Schmuckert; surety, $1,500; cost, $2,250; signed, June 30; filed, June 30; payments, $489, closed in with rustic; $400, brown mortared; $400, white plastered; $400, completed; $561, 35 days.

Union Street. To build; owner, Wm. Fruhling; architect, W. D. Van Siglen; contractor, A. J. McIlvain; cost, $11,140; signed, May 26; filed, June 11; payments $2785, frame up; $2785, brown mortared; $2785, accepted; $2785, 35 days.

Valencia near Twenty-second. To build; owner, H. W. Stevens; architect, A. J. Barnett; contractor, W. N. Briggs; surety, $3500; cost, $11,375; signed, June 4; filed, June 8; payments, $1000, second floor joists on; $1500, rustic and roof boards on; $1500, ready for lathing; $1000, brown mortared; $1000, white plastered; $1000, ready for painting; $1530, completed; $2545, 35 days.

Van Ness between Pine and California. Plastering; owner, C. Chisholm; architect, Clinton Day; contractors, Moorehouse & Wood; cost, $2975; signed, June 10; filed, June 11; payments, $743.25, brown mortared, $743.25, white plastered; $743.25, stairs up and standing finish on; $743.25, 35 days.

Vermont near Santa Clara. To build; owner, J. W. Fanington; architect, John Gash; contractor, W. E. Cummings; cost, $2980; signed, June 25; filed, June 25; payments, $357, building shingled; $357, brown coated; $357, white on and first coat paint on; $357, doors and windows hung; $395, 35 days.

Washington and Laguna. Ornamental work; owner, Henry J. Crocker; architect, H. A. Schultze; contractor, C. F. Schiller; cost, $1965; signed, May 28; filed, June 24; payments, first day of each month, 75 per cent. as work progresses. 25 per cent. 35 days.

Washington and Laguna. Plastering; owner, Henry J. Crocker; architect, H. A. Schultze; contractor, T. Tucker; cost, $8301; signed, June 18; filed, June 24; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Washington near Lyon. To build; owner, Thos. J. Harris; architects, J. J. & T. D. Newsom; contractor, Thos. R. Barrett; cost, $4085; signed, June 4; filed, June 5; payments, $765.75, brickwork and frame up; $765.75, rough plumbing and gas work done; $765.75, plastering finished; $765.75, completed; $1022, 35 days.

Washington Ave. near Howard. Carpenter work, etc; owner, P. McClure; architects, Pissis & Moore; contractor, O. E. White; cost, $5947; signed, May 6; filed, June 5; payments, $1200, frame up; $1000, first coat plaster on; $1000, interior plastering finished; $1000, ready for painting; $247, completed; $1500, 35 days.

Alameda County.

Alama Ave. near Lafayette. Repairs; owners, Son Lanc Insurance Co.; architect, Thos. I. Pyner; contractor, John J. Hoyle; cost, $1,000; signed, June 1; filed, June 5; payments, $350, roof shingled; $400, completed; $250, 35 days.

Arbor near Pacific Ave. Frame Dwelling, owner, C. H. Wall; architect, J. E. Henderlong; contractor, J. E. Henderlong; cost, $1,400; signed, July 1; filed, July 1; payments, $350, frame up; $350, brown mortared; $350, completed; $350, 35 days.

Block 24 of the B. L. T. I. Two story house; owners, John Haberlin and wife; contractors, Thompson, et al; cost $2,400; signed, April 16; filed, June 19; payments, $6,00, frame up; $600 enclosed; $600, brown mortared; $600, completed.

Buena Vista Ave; near Oak, Alameda. Two story frame; owner, Capt. J. Jensen; architect, Chas. S. Schaner; contractor, P. Chrisensen; cost, $2,185, signed, June 5; filed, June 5; payments, $546.25, rough frame up and sheathing on; $546.25, brown mortared; $546.25, woodwork done; $546 25. completed.

Central Ave; near Sherman, Alameda. Two-story frame; owner, Henry Mohns; architect, A. Stenbiht; contractor, J. R. Richart; cost $1,700; signed, May 20; filed, June 12; payments, $425, frame up and roof on; $425, brown mortared; $425, completed; $425, 35 days.

Chester and Center St., Oakland. One-story frame; owner, A. Komstoeft; architect, C. A. Wedgwood; contractor, Heydez Scholz; cost $1,72?; signed, June 3; filed, June 11; payments, $700; lumber and brick work; $500, plastering done; $525,35 days.

Daley's Scenic Park. Berkeley. Frame dwelling; owner, H. N. Loyd; architects, Pissis & Moore; contractors, Gardner & Boyden; cost, $2,6?2; signed, April 26; filed, June 10; payments, $500, frame up; $500, 1st coat plaster; $500, interior plastered; $400, ready for painting; $?2, completed; $660, 35 days.

Dayton near Grand st, Alameda. Two-story frame; owner, Mrs. Mary E. Holt; architects, A. W. Pattiani & Co; contractors, A. W. Pattiani & Co.; cost, $2,362; signed June 11; filed, June 15; payments, $650, rustic and roof shingles on and chimney built; $600, window frames set, brown mortared and exterior primed; $512, completed; $600, 35 days.

Dimond ave, Fruit Vale. Two cottages; owner, W. H. Robinson; architect, D. Cleland; contractor, D. Cleland; cost, $5,300; signed, May 20; filed, June, 20; payments, $1,200, frame up; $1,200. building enclosed; $1,200, brown mortared; $1,700, 35 days.

Eagle ave. near Bay St. Alameda. 8 frame buildings; owner, E. A. S. Page; architects, Cary & Johnson; contractors, Marcuse & remmel; cost, $8000; signed, June 1; filed, June 6; payments, $2000, frames up and roof on, $2000, enclosed and 1st coat plaster on; $2000, completed; $2000, 35 days.

Eighteenth bet. Market and West Oak. 2 one-story cottages; owner, C. H. Cole; architect, B. McManus; contractors, Smith & Lake; cost, $3100; signed, June 23; filed, June 24; payments, $750, brick work done, roof boarded; $750, brown mortared; $750, completed; $850, 35 days,

Ellsworth near Allston, Berkeley. Two 2-story frames; owner, Lizzie K. Hume; architects, Esty, Gilbert, Jewett; contractors, Esty, Gilbert, Jewett; cost, $4900; signed, June 24; filed, June 24; payments, $1225, frames up; $1225, brown mortared; $1225, completed; $1225, 35 days.

Enc. ave. near Chestnut St., Ala. To build; owner, P. W. Bellingall; architect, Walter J. Mathews; contractors, McDonald & Eggleston. cost, $3775; signed, June 8; filed, June 8; payments, $707 50, ¼ work completed; 707 50, ½; $707 50, ¾; $945, 35 days.

Fourth near Brush, Oak. To build; owner, Pat Kelly; Architect, Pat Kelly; contractor, R. M. Murray; cost, $2150; signed, June 23; filed, June 23; payments, $525, frame up; $625, brown mortared; $462 50, completed; $537 50, 35 days.

Grove and 45th Sts., Oakland. Two 1-story frames; owner, Andrew Campbell architect, Rob.t Seidel; contractor, Rob't Seidel; cost, $2750; signed, June 13; filed June 13; payments, $687 50, brown mortar on 1st house; $343 75, 1st house completed; $343 75, 35 days; $687 50, brown mortar on 2nd house; $343 75, 2nd house completed; $343 75, 35 days.

Gunn Tract, Oakland. 2-story dwelling; owner, J. T. Quirk; contractor, J. A. Eastman; cost, $2475; signed, June 12; filed, June 13; payments, $400, frame up; $300, enclosed and roof on; $400, brown mortared; $750, completed; $625, 35 days.

Hobart and Grove St ,Oakland. Concrete work; owner, Rev. Thomas McSweeney; architect, Chas J. Devlin; contractors, Gray Bros.; cost, $4,794; signed, June 6; filed, June 8; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Huntoon Tract, Oakland. Cottage; owners, E. Donnelly and wife. architect, J. V. Embury; contractor, J. V. Embury; cost, $2,800; signed, June 22; filed, June 24; payments, $700, frame up and brickwork done; $700, ready for plaster; $700, completed; $700, 35 days.

Jackson near 7th, Oakland. Alterations and additions; owners F. W. Stromberg; architect, R. G. Frise; contractor, H. M. Smith; cost, $1075; signed, June 27; filed, June 30; payments, $400, inside finish on; $406.25, completed; $268.75, 35 days.

Lafayette and R. R. Ave. One-story frame; owner, Mrs. Margaret Alexander; architect, Oliver Everett; contractors, Brilliant & Diamond; cost, $1567; signed, June 20; filed, June 24; payments, $391, rustic and chimneys built; $391, brown mortared; $391, completed; $394, 35 days.

Lafayette and R. R. Ave. One-story frame; owner, Mrs. Anna M. Smith; architect, Oliver Everett; contractors Brilliant & Diamond; cost, $2340; signed, June 17; filed, June 20; payments, $585, rustic on, building sheathed and chimneys built; $585, brown mortared; $585, completed; $585, 35 days.

Linden street near Thirty-second, Oakland. Frame; owner, Chas. Crowley and wife; architect, B. McManus; contractor, Thos. McGauley; cost, $1450; signed, June 17; filed, June 18; payments, $300, frame up and enclosed; $300, brown coat on and first coat paint outside; $300, completed; $550, 35 days.

Lot 18, Block 27, Oakland. To build; owners, Mrs. Geary et al; architect, John Conant; contractor, John Conant; cost, $1820; signed, June 6; filed, June 6; payments, $455, frame up; $455, brown mortared; $455, plastering done and building ready for finish; $455, when completed,

Magnolia between Third and First. To build; owner, Mrs. B. Sullivan; contractor, M. Laursen; cost, $1525; signed, June 10; filed, June 16; payments, $500, enclosed and ready for lathing; $500, brown mortared and windows and doors in; $525, completed.

McGee Ave. and Addison street, Alameda. To build; owner, Wm. Armstrong; architect, C. Winstanley; contractor, F. E. Armstrong; cost, $1675; signed, June 8; filed, June 9; payments, $500, brown mortared; $500, completed; $675, 35 days.

Mill's College Grounds. Concrete work; owner, Mill's College; architect, Geo. A. Bordwell; contractors, Ransome & Cushing; cost, $12100; signed. June 4; filed, June 9; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Oak between Ninth and Tenth, Oakland. To build; owners, Land & Loan Co.; architect, Chas. Geddes; contractors, E. C. Worden & Son; cost, $3239; signed, June 20; filed, June 24; payments, $1000, first coat mortar and chimneys up; $800, second coat and windows in; $620, completed; $809, 35 days,

Pacific Ave. and Stanton St., Alameda. Two-story frame; owner, H P. Moreal; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co. cost, $2,500; signed, May 27; filed, June 13; payments, $800, rustic and roof shingles on and chimney built; $600, brown mortared; $470, completed; 1630, 35 days.

Park Ave. near San Jose. Alameda. Two-story frame; owner, Ulysses Steadman; architects, Allen and Wrampe; contractors, Allen and Wrampe; cost, $3,000; signed; June 9; filed, June 10; payments, $700 frame up; $700 second coat of plaster; $700, completed; $900, on or before June 1st., 1892.

Peralta Park, Berkeley. Elevator; owner, Mrs. M. B. Curtis; contractors, Cahill & Hall; cost, $1,000; signed, June 18; filed, June 26; payments, $500, 30 days after completed; $500, 90 days.

Poplar near 8th, Oakland. Cottage; owner, J. D. Scott; architect, R. G. Frise; contractor, John Langland; cost, $2,268; signed, June 17; filed, June 24; payments, $567, frame up and enclosed; $567, 1st coat plaster on; $567, 2nd coat on and inside finish on; $567, 35 days.

Santa Clara ave near Union, Ala. 2-story frame; owner, G. W. Shreve; architect A. W. Pattiani; contractor, A. W. Pattiani & Co; cost, $3600; signed, June 6; filed June 10; payments, $1000, rustic and roof shingles on and chimney built; $900, window frames set and brown mortar on; $800, completed: $900,35 days.

Shattuck ave. Dwight wy, Berkeley. 2-story and basement; owners, Stewart & Trowbridge; architect, W. H. Wellbye; contractor, W. H. Wellbye; cost, $20,920; signed, May 26; filed, June 13; payments, $5230, 1st floor joists on; $5230, brick work done and roof on; $5230, plastering done; $5230, 35 days.

Thirteenth ave near 18th E. Oakland. Cottage; owner, Mrs. C. Schnoor; contractor, D. H. Matheson: cost, $1500; signed, June 18; filed, June 18; payments, $375, frame up; $375, 1st coat mortar on; $375, completed; $375, 35 days.

Tremont Ave. and Channing Way. To build; owner, R. R. Swain; contractor, P. Maloney; cost, $8,370; signed, June 2; filed, June 10; payments, $800, frame up; $800, brown mortared; $800, inside completed; balance, 35 days.

Twelfth near Jefferson, Oakland. To build; owner, Hugh Hamilton; architects, Baker & Frise; contractors, Smille & Smilie; cost, $13,570; signed, June 24; filed, June 24; payments, $3,392.50,brick work done; $3,392.50, 1st coat plaster on and outside primed; $3,392.50; 2nd coat painting done; $3,392.50, 35 days.

Twentieth St. Telegraph Ave., Oakland. Two-story frame; owner, B. K. Allen; architect, Chas. Mau; contractor, Fibrish Bros; cost, $2,800; signed, June 10; filed, June 11; payments, $525, ¼ materials furnished, ¼ work done; $525, ¼ furnished and ⅓ done; $525, ¾ furnished and ¾ done; $525, completed; $700, 35 days.

Twenty-third Ave. and 16th St., East Oakland. Additions; owner, J. Belydorn; contractor, John Bauman; cost, $2,425; signed, June 5; filed, June 6; payments $600, frame up; $600, brown mortared; $600, completed; $625, 35 days.

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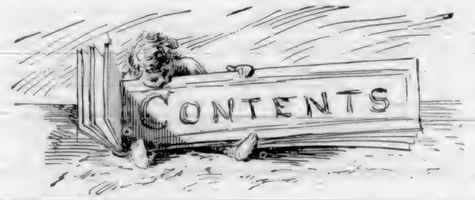

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

THE subject of sewerage for San Francisco is one that demands the serious attention of all citizens. During the winter rains the sewers in the low-lying portions become over-charged and in many instances premises are flooded and goods damaged causing a corresponding pecuniary loss to merchants and an increase in the death rate.

During the dry season the sewers become choked with mud and decaying matter, the water in the catch basins and traps becomes exhausted through evaporation, leaving the effluvia, stench, and disease-breeding atmosphere to be wafted through the streets by the wind. However absent-minded the pedestrian may be at intervals an extra strong whiff of noxious vapor becomes a reminder that a catch basin or man-hole has been placed there as a protection to the health of the residents of that vicinity.

Once or twice in several years the authorities have ordered a few gallons of water to be run into the sewers causing a decided decrease in the death rate. At the present time it would require a limited amount only to flush the catch basin traps. The whole system, if system it may be called, is defective. In many cases the present sewers can, with some slight changes, be made more serviceable. All the newer districts should be sewered in accordance with the most advanced knowledge in sanitary science and arranged upon some definite system. It seems to us that some competent person should be commissioned to arrange a system sufficiently comprehensive to include the whole city—old and new. It seems to us that the person best fitted for the position would be our present City and County Surveyor, Chas. H. Tilton, who, through his long connection with the surveyor's office and knowledge of the streets and grades is thoroughly versed in the existing defects as well as the requirements for the future.

MISSION OF SAN MIGUEL, CAL.

LEAVING the valley of the San Antone and going east we pass through a park-like country thickly studded with live oaks, round and solid looking in their dark green covering, and affording a pleasing contrast to the hot barren back-ground of withered grass; but as we journey forward and approach San Miguel the cool shadows of the oaks become fewer and fewer and further between until every green thing has disappeared and nothing save the sun scorched hills are left, the burning sky above and the parched earth beneath and one longs, as the psalmist of old for rivers of water in a dry place and the shadow of a great rock in a weary land. But one may long in vain, for the curse of God has gone forth over the land, the mighty tempest of his wrath and the flaming fire of his tongue has passed over it so that the grass has withered away and the earth has refused to cloth herself with verdure. Thus as we near the center of the furnace, and the Mission of San Miguel, the heat increases and the beauty of the landscape diminishes, until as we stand by its doorway and beneath the shadow of its old walls we can see naught but barren hills; bear from the depths of their hollows to the last boulder on their summits. Even the river has forsaken its course and now instead of journeying along, ministering sweet refreshment to waving willows and bending

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flags, in far off space it has become so etherealized that from day to day the eye may look in vain for the faintest sign of its heavenward flight on snowy wings, or coming back again to earth. Not, however, with such trifles as a reed shaken by the wind, nor with the vanities of such as cloth themselves in fine linen and purple vestures, nor even with the seductive influences of a sylvan scene did these men of old concern themselves, but rather that they might raise a cry, uplift a cross and sound in these desert places of the earth a song of joy a note of harmony amidst the desolation and discord of mens' minds. Stern characters no doubt were these old friars, and they choose not to remain beneath the vine and fig tree of heredity, tilling where their fathers had tilled before and living in quiet ease and happy luxury, the world unknowing to the world unknown, but rather in the desert where no sower yet had sown nor happy reaper drawn his sickle through, their task was set, to make the wilderness blossom as the rose, and trees to spread their branches out as cedars in far Lebamon. And so as for their heavenward road they choose the narrow way; the rock encumbered path; on earth the mountain gorge and sandy desert track. If not "what sought they thus afar." We are told that in the early days of this Mission there were about 5,000 Indians in the neighborhood and it was for these that in this sun dried valley of the Salinas these fathers built the Mission of San Miguel. Our sketch as seen from the east shows the Mission to be similar in general arrangement to that of San Antone given in a former number, but poorer in architectural features. The plan also is similar, the principal difference being in the placing of the church so much further in advance of the residence portion of the Mission. Originally the building inclosed a quadrangle but most of those at the rear have now disappeared. The interior of the buildings as usual is plastered and in order to form a good key for the mortar, the adobe is grooved diagonally in squares about two feet wide. The interior of the church is perfectly plain, no projections of any sort breaking the uniformity of its four walls, save at the altar where a monstrosity in wood combines the severity of the classic, the savageness of the Egytian and the general ignorance of such as fly too high and like Icarus scorch their wings against the sun and fall to earth. The walls are frescoed to represent a colonade, but the methods of obtaining distance, perspective and depth are so primitive that one cannot get an inch beyond the surface of the adobe wall though far off vistas of fair lands a id sunlit slopes are there intended.

Of the San Luis Obispo Mission we give a perspective as it was about 1875. Almost nothing of the original now remains. The veranda and columns which are the principal features of the building have been torn down and now a wall of rustic with modern doors and windows form the elevation to the street. The church also has been so renovated as to be out of all resemblance to the old structure. For this reason we do not give a plan, but simply show the east front as it was originally. San Luis is about 12 miles from the coast 30 miles from San Miguel and is separated from the latter by a mountain range at the southern foot of which it is situated. Towards the south the country is flat, but is broken by cone-like mountains rising abruptly steep and rugged to a height of several thousand feet above the plain.

But it is no longer the Mission that claims attention here, for the town has grown around and nearly engulfed it and now the stranger may wander half a day before he will discover the old ruin hid away and disguised in its new vesture; and all around the clatter of horsemen and the sound of traffic, the grinding of cart-wheels and the sweet silvery tone of the shining dollar, tell us that the god of our fathers has fallen from his throne and some other ideal has been set thereon. The angelus now peels in vain at eventide for no grateful laborer bends his weary head, to thank the Giver for the sun shine past and ask sweet blessings for the coming night and still repose beneath the twinkling stars.

TRES.

PLUTARCH AND PHIDIAS.

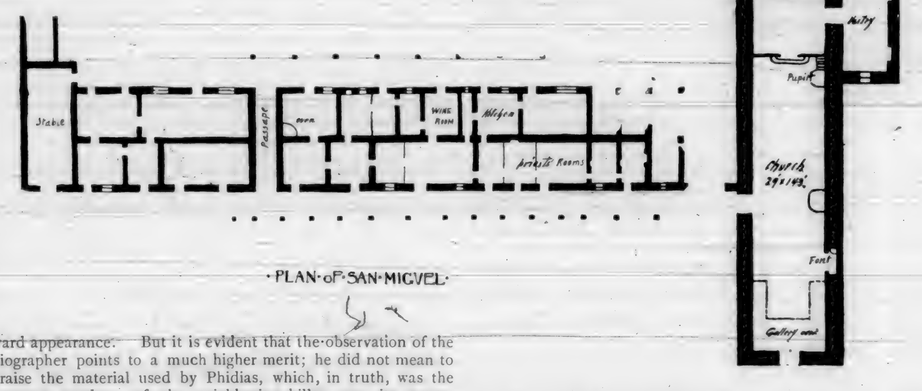
There is a passage in Plutarch's life of Pericles which has never, I think, been fully understood, and has therefore given rise to, or affected in one way or another, the various theories on the ornamental architecture of the Greeks.

The biographer sums up his eulogy on the talents and success of Phidias in embellishing Athens under the direction of Pericles in the following manner. After alluding to the short space of time which, beautiful and perfect as they were, was consumed in the erection of the Parthenon and the Propylæa, he says, "Hence we have the more reason to wonder that the structures raised by Pericles should be built so quickly, and yet built for ages; for as each of them, when finished, had the venerable air of antiquity, so even now they retain the strength and freshness of a modern building. A bloom is diffused over them, which preserves their aspect untarnished by time, as if they were animated with a spirit of perpetual youth and unfading elegance."

This expression has been quoted as a proof that the marble of which these edifices were constructed was capable of resisting the effects of time more than any other material; others, again, make use of it in reply to the assertions which have been made that they were covered more or less with a coating of color, and the several mouldings picked out with various hues of red, blue, yellow and gold; for if this, they say, had been the case, we cannot suppose that such colors could have remained uninjured for six centuries, which must have materially affected the outward appearance. But it is evident that the observation of the biographer points to a much higher merit; he did not mean to praise the material used by Phidias, which, in truth, was the common produce of the neighboring hills; nor its superficial brilliancy; nor the skill of the painter, if this additional decoration had really been employed; nor the mechanical expertness of the artisans; but he gave his willing testimony as a philosopher and as a man of taste who was well acquainted with all the rival edifices of the same nature, which abounded at that time throughout the Roman world, that the buildings of Athens shone pre-eminently above them all by their inimitable beauty and perfection, by the magnificence with which they were designed, as well as by the elegance of their execution; that these eternal monuments of her glory were founded upon the true, universal, and eternal principles of science, order and beauty; that, therefore, as from the first they had no especial character of novelty or extravagance, so to the last would they preserve the *purpureum os* of perpetual youth. The conceptions of genius had discovered the true point where massiveness, harmony and tasteful ornament were happily combined; where every part of the architecture could readily be accounted for on principles of reason and the demands of science; and where the minutest examination contributed only to increase the admiration produced by the first impression.

Plutarch judged of a work of art as Cicero and Quintillian judged of eloquence, that that degree of ornament only was allowable "quod non plus minusve est, quàm decet"—that nothing improper or out of place was ornamental, and that true beauty could never be separated from utility.

W. R. HAMILTON.



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IMPROVEMENTS IN THE NEW YORK QUARANTINE.

We are indebted to the *Sanitarian* of July for the following description of the improvements in the New York quarantine as reported by Dr. William M. Smith, Health Officer of the Port, to be so far advanced as, seemingly, to render the service more facile and more effectual than at any previous period in the history of the establishment.

"The value of this improvement cannot be appreciated except by those who had charge of Hoffman Island while the cholera-infected immigrants were detained there in 1887. The pine floors of the dormitories, embracing an area of 66,856 square feet, on which more than 2000 gallons of a solution of mercuric chloride were used in 1887 to destroy the contagion of cholera, which the floors might otherwise have retained by absorption, have been rendered impervious and non-absorbing by a covering of asphalt.

"The four sections of the south building have been so arranged that the occupants of each section may be isolated from every other section and yet have access to fresh air, dining-tables, and closets.

"The sixty eight metalic bath tubs which are located on one side of the vestibule at each end of the dormitories, are connected with water tanks in the upper part of the buildings. They afford a refreshing contrast to the fifty or more half barrels used for bath tubs on former occasions. The 720 canvas-covered-double-tired-galvanized-iron-folding bunks, which are triced up against the walls and supporting pillars when not in use, will be a great improvement on steerage mattresses laid upon the floors, as they have been in time past. Canvas bottoms laced upon the rails take the place of the vermin-filled mattresses. After use the latter were generally destroyed, on account of the difficulty of cleansing them. The canvas bunks now in use, like the hammock of the sailor, can be quickly removed, folded, cleansed in the disinfecting-room, and when replaced be as good for further use as when new.

"The emergency hospital, consisting of several rooms and twenty beds, which have been arranged above the boiler-room in the old administration building, will supply a much-needed convenience for immigrants who are suddenly taken ill while detained for observation. The rooms are isolated from the superintendant's rooms, although in the same building with them. This hospital affords an agreeable contrast to those improvised in the wash-rooms of the dormitories for the cholera-stricken immigrants of 1887.

"The new two-story administration building, each floor of which has an area of 5559 square feet, has several times during

the past year been tested in respect to its usefulness for which it was intended, and has fully answered the expectations of those who designed it.

"The 1538 steerage passengers that have been under observation at Quarantine during the past year, for fifty-five days in the aggregate, have afforded the occasion of testing to a considerable extent the serviceableness of the improvements made in connection with that building.

"The dining-rooms of this building will seat several hundred passengers; an extensive kitchen is adjacent to the dining-rooms, with range, steam-heated kettles and boilers sufficient to cook for a thousand people. The store-rooms in connection with the kitchen are ample to contain supplies for the same number.

"A large laundry on the same floor, with stationary tubs, each furnished with hot and cold water faucets, cloths racks and steam drying coils supply every needed facility for securing cleanliness. Formerly the sea constituted the immigrants' wash tub and supplied the water, the sea-bathed rocks around the island their wash boards, and the rip-rap walls their drying racks.

"Along the east side of the old, and on the north side of the new administration building, thirty-two wash basins have been provided, each supplied with a cold and hot water faucet, and are supported over wash troughs, that connect with waste pipes; the lids are closed and locked when not in use.

"The annex closets, forty-eight in number, are set over porcelain-lined troughs, which have an incline of one-fourth inch to a foot to the sewer end; when it is necessary to disinfect the dejecta, as it would be if cholera-infected immigrants were under observation, a valve is arranged which will close the opening into the sewer until that object has been effected.

"Experience in the detention of passengers for observation, who have been exposed to some contagious diseases, particularly cholera, shows the necessity for dividing them into groups, having reference to the greater or less extent of their exposure or liability to the disease. This division is of little use if the isolation of the group is not complete under all circumstances. The annex closets in each dormitory accommodate four groups, or the occupants of four sections, each of which is isolated from the others by galvanized iron partitions. Iron reservoirs in the upper part of the dormitory afford an ample supply of sea water for flushing the closets.

"The portable iron partition across the island, from the head of the slip to the rip-rap wall on the east side, is erected midway between the north and south dormitories, which, when necessary, prevents any communication between the occupants of the dormitories. At other times intercourse is uninterrupted between the buildings, by doors at the east and west ends of the partition.

"The need of such an arrangement in 1887, when two steamers were in Quarantine, each with several hundred infected immigrants, compelled the detention of the last arrived steamer for some time, for want of a Quarantine of Observation, to the great discomfort and danger of the passengers, who had already been nineteen days in a crowded steerage. The necessity for the agents of the detained steamer to fulfill their charter obligations finally compelled them to charter a ship and fit it up for the reception of the immigrants on board the steamer, at several thousand dollars expense to the company.

"*The disinfecting plant* is composed wholly of iron and is located in the second story of the new administration building above the boilers and pumps.

"The disinfecting-rooms are made as nearly air-tight as possible. The ceilings and partitions are made of three-sixteenths iron, well lapped and riveted, caulked and thoroughly fitted. The ceiling, floors, and partitions are lined with iron, and with doors of the same in partitions and for shutters to windows. The doors and room are calculated to withstand the pressure of seven and one-half pounds per square inch. The partitions are secured in place by four-inch beams and angle irons, held in place by bolts and rivets bolted to the beams. Each door dividing the sections are hung and set in such a manner as to be perfectly air-tight when closed. The window shutters are made and hung the same as the doors; all have rubber stops.

"One hundred and eight galvanized iron baskets of No. 14 wire and one-inch mesh are in a position for use. Each with sufficient capacity for the baggage of one person or one family; or, more exactly, each basket is six and one-half to four and one-half feet long, frame in wire with stiffening bands. Each series or set of three baskets is suspended and run on the same overhead tracks, so arranged as to slide out their full length.

"Gauges and thermometers are so placed as to indicate the pressures and temperatures of the disinfecting-rooms. For this purpose are used three high ranged thermometers, three vacuum gauges, and three pressure gauges, each having necessary valve and pipe connections with dial boards and fixtures complete.

"A drying-room 109 by 51 feet for baggage and clothing after it is disinfected is connected with the disinfecting chamber by a short hall, in which a small railway and car is to be constructed, to carry the basket from the disinfecting-room to the drying-room.

"*First test of the Steam Disinfecting Plant*—September 19th, 1890—Anthrax bacilli and anthrax spores were used; four gelatine culture tubes of the former and two of the latter were placed in the interior of steerage mattresses; these were rolled up, tied together and put in the baskets of the sections. The vacuum pump was started at 1.24 P. M., the pump exhausting all three sections at the same time. At thirty-five minutes past 1 o'clock the vacuum gauge indicated five pounds pressure. The vacuum pump was then stopped and moist steam introduced into all sections at a steam pressure of 87 pounds. At 2 P. M. the boiler gauge indicated 100 pounds steam. At 1.45 the pyrometer reached 232° Fahr. Moist steam was then shut off, and dry heat maintained for thirty minutes longer.

"The steam pressure within the sections showed that the doors of the middle section were defective in their fastenings.

"A thermometer placed in a mattress and rolled together indicated 228° Fahr.

"Four tubes with live anthrax in gelatine, and two with anthrax spores in the same culture, placed inside of mattresses, rolled and firmly tied together, were entirely sterilized.

"*Second Test*—March 7th, 1891.—The doors that were insufficiently secured on trial September 19th, 1890, having been improved, the disinfecting plant was again tested with boiler pressure at 100 pounds. The three sections were closed and tested at the same time. Anthrax baccilli and spores, each in glass tubes, closed with sterilized cotton, were placed inside of ordinary steerage mattresses, and the mattress rolled up and firmly tied. The same class of germs, anthrax and spores, one culture tube for each, were put in several blankets, such as are commonly used by immigrants in the steerage, and folded so that each tube was wrapped in six or eight thicknesses of blankets. These were placed in the centre of the sections, midway between the heating coils at the end of the sections. A thermometer was hung in the centre of the middle section. Six minutes after the vacuum pump was started the vacuum gauge indicated the desired exhaustion of air from the sections. The vacuum was maintained fifteen minutes, when live steam was introduced at 100 pounds. In one hour and thirty minutes the index hand of the pyrometer gauge of the middle section made connection with the indicator, set at 230° Fahr., and rang the bell in the engineer's room. The steam gauge on the sections indicated two pounds pressure at this time. The low temperature of the iron walls of the sections, and of the brick walls which were in immediate connection with them externally, when steam was introduced, increased the time in reaching 230° of heat fully one-half. Each of the sections have an interior superficial area of 1511 square feet and an aggregate area of 5535 square feet. The iron which encloses this area constitutes a considerable mass of metal to warm up before the heat of the interior can be raised to a disinfecting point. Sections 1 and 3 are end sections; they did not reach a disinfecting heat until one and one-half hours after the middle sections reached 230° Fahr.

"These sections are enclosed on three sides by brick walls and are in close connection with them. For this reason the heat was considerably longer in reaching 220° Fahr. than the middle section was in reaching 230° Fahr.

"The thermometer which hung in the middle of the second section indicated a heat of 230° Fahr. The effect of the brick wall, through which the arm of the pyrometer passes to reach the section, and into which it projects four inches, in lowering the temperature by conduction of heat from that portion of the section in contact with the wall, is shown by the difference in the heat as indicated by the pyrometer (230°) and the thermometer (253°). When the first tests were made and the thermometers were hung by the side of the pyrometer, there was a variation of but one degree in the instruments.

"To secure a disinfecting heat quickly when the sections are cold this trial indicates the necessity of heating the disinfecting chambers by dry heat, long enough before moist steam is admitted for disinfecting, to raise the temperature somewhat of the great mass of iron enclosing the sections and thus to some extent warm the walls adjacent to the sections.

"The following note from the bacteriologist shows that the tests made March 7th were successful in destroying the most resisting disease germs known:

HOAGLAND LABORATORY, BROOKLYN N. Y., March 26, 1891.

"*Dr. William M. Smith, Health Officer, Port of New York, Quarantine, Staten Island.*

"DEAR SIR: As the result of the bacteriological tests of the disinfection plant on Hoffman Island, made September 19th, 1890, and March 7th, 1891, respectively, it gives me pleasure to state that the disinfection was thoroughly effective in each instance, totally destroying the vitality of anthrax, both in dried blood and in old dried-out agar cultures containing an abundance of spores. The control cultures grew in every instance, while those subject to the process were, without exception, killed.

"Yours very truly,

"GEORGE T. KEMP, M. D. PH. D.

"*Associate Director.*"

BLEACHING OF PHOTOGRAPHS FOR THE USE OF PHOTO-ENGRAVERS.

In the preparation of drawings for reproduction by a number of the photo-engraving processes in vogue at the present time, it is a great saving of time to the draughtsman to be able to draw the lines directly upon a photographic picture, the photographic portion being then bleached out leaving the black line of the drawing clearly defined against a white background and which may be used by the photo-engraver the same as an original drawing for that purpose. Many formulas and directions have been published, each and all of which are deficient in some particular. We present the following method by *Prof. Charles Ehrmann, Chautauqua School of Photography*, as given in the latest issue of the *International Annual* of *Anthonys Photographic Bulletin*:

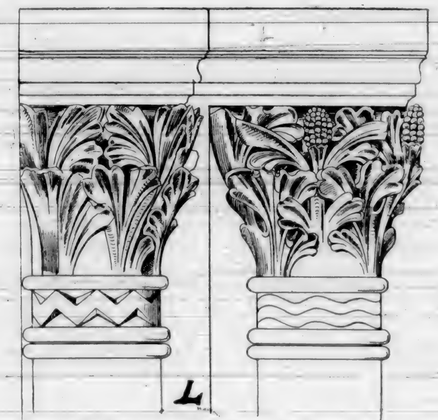
"The silver deposit of photographic prints rendered into line or stipple with pen and ink is preparatory to photo-mechanical reproduction, bleached out with an alcoholic solution of bichloride of mercury, to which the silver yields readily, provided the proof has been fixed in a solution of good hyposulphite of sodium. A mere trace of gold prevents bleaching and the ground will retain a tone of more or less intensity.

Recently I was called upon to bleach a number of very elaborate and costly pictures of that kind, which inadvertently had been subjected to a hypo-solution used previously for the fixing of a whole day's work of gold-toned proofs. The mercury solution preformed its usual work but partially, not sufficient, however, to produce that clear and absolute whiteness necessary to make a sharp and distinct black and white negative.

These prints (twenty or more, probably) had all been subjected to a variety of treatment, and presented, in every instance, a muddy ground. After several unsuccessful experiments to produce the desired effect, I resorted at last to an old and well known remedy to remove silver—that with sodium and potassium cyanide. The latter being but sparingly soluble in alcohol of 95 per cent., made me think first a sufficient amount of it would not be taken up. But I proceeded in the following way to prepare an alcoholic solution carrying the utmost possible amount of cyanide. I made first a saturated aqueous solution, and of it dropped as much into the alcohol as it would bear without forming a deposit. Cyanide being soluble in water in the proportion of 1.5 and the alcohol being of 95 per cent., the alcoholic solution was then one of 1 per cent. After soaking the print first in a weak alcoholic solution of sodium of about the color of sherry wine, it was flooded repeatedly with the cyanide solution. The effect was astonishing, the result perfectly clear and white grounds, without the least deterioration of the draughtsman's work or injury to the sharpness of lines.

Were I to do such work regularly or frequently, I would certainly discard the old mercury method and substitute for it the one above described. Sodium and cyanide destroys the photographic deposit completely, and if the bleached print is washed in several changes of alcohol, it remains white permanently. Chloride and, as has been recently proposed, bromides, change color on exposure to light and if the bleached print is not reproduced immediately, it becomes useless after a time.

The method with sodium may be more costly, on account of the alcohol used for washing the print, but it is safer.



1. CAPS TO PRINCIPAL SHAFTS

STREET PAVING IN SAN FRANCISCO.

THE DEFECTS, AND METHODS SUGGESTED FOR THEIR REMEDY.

By S. HARRISON SMITH, MEM. TECH. SOC. P. C. [Read April 10, 1891.]

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INTRODUCTION.

Perhaps there is at this time no subject (with the exception of sewerage) which calls for more interest and attention from our public generally than that of street paving. For many years back we have been struggling with this problem, under what seems to me to be very unfavorable conditions, and experiment after experiment has been tried with but doubtful success. In fact, in nearly every case such experiments have proved absolute and expensive failures. But the time appears to have arrived when the municipal authorities have concluded to alter these conditions, and careful investigations have been instituted by them in order to obtain the opinion of experts and men of science upon this complex question, so that hereafter such pavements as may be laid shall be of the most lasting material and of the best construction.

It is not intended by the author of this paper to embody therein any scientific or theoretical questions, but to draw out a discussion on purely practical grounds.

In order to consider this subject in the manner proposed by me, it is only necessary to give a short description of what has been done, of what is being done and of what it is proposed to do in this connection, and to make such suggestions as may seem proper.

EXPERIMENTS TRIED IN SAN FRANCISCO DURING THE PAST DECADE.

In 1870 there was a special committee of the Board of Supervisors appointed to examine street pavements, and recommend some class of the same for general adoption. The report of this

committee has been read by me with much interest, and extracts therefrom may be quoted from time to time in this paper. The following named pavements are known to have been tried in San Francisco: Nicholson wood, Stow foundation, ordinary plank, Williams' composite, cobble, basalt block, composite limestone and asphaltum, and bituminous rock. There are many other classes of pavements whose merits have been advocated by their respective inventors or other parties in interest; but one of the objects of this paper being brevity, it has been deemed unnecessary to take notice of any classes of pavements other than those which have been actually experimented with in San Francisco.

NICHOLSON PAVEMENT.

The method of laying this pavement is as follows (the ground upon which it is to be laid having been brought to an even surface of the proper shape): The floor, which consists of pine planks of uniform thickness—generally two inches—is laid lengthwise of the street, covering the entire ground. These planks are covered with tar by means of a broom; they are then turned and tarred on the other side. Then blocks of the same wood six inches long, three inches thick, and eight or ten inches in width, are set lengthwise across the street in rows, each block being well coated with tar before being placed. As each row of blocks is laid, a pine strip six or eight feet long, three inches wide and three-quarters of an inch thick is placed against and nailed to the blocks; then another row of blocks is laid, and so on. This leaves a groove between each row of blocks which is filled with a mixture of heated asphaltum or tar and clean gravel, which while hot is rammed with an iron of suitable thickness to fill the groove. The whole surface is then covered with coal tar, over which is spread a coating of coarse sand or fine gravel.

The special committee appointed by the Board of Supervisors when speaking of this pavement in its report, says: "The Nicholson has proved a failure, principally from the rapid dry rotting of the fir blocks used." "On Bush street, between Powell and Mason, the Nicholson was laid in 1867, and long since it became evident that it must prove an unsatisfactory and expensive pavement. It has been several times repaired, and now," (in 1870), "requires a liberal outlay of the people's money, with the prospect of abandonment ere long." They also found that this pavement swelled during the rainy season to such an extent, as to cause great damage to surrounding improvements. They allowed four years as the limit of its life.

STOW FOUNDATION PAVEMENT.

This pavement when laid is, in appearance, almost identical with the Nicholson, but in fact differs considerably therefrom. The main differences consist in this pavement having no foundation beyond the preparation of the earth into a regular and smooth surface; the blocks being laid directly thereon with the fibers of the wood vertical, and that between each row of blocks, wedges made of boards, about six inches in length and nearly the width of the blocks, are driven some inches below them (the blocks). The remainder of the construction is similar to that of the Nicholson; the space between the blocks being filled with gravel and asphaltum or tar, and the whole surface covered in the same manner as the previously described pavement.

The committee, before referred to, preferred this pavement to the Nicholson, but only estimated its life at from five to six years. The following, taken from its report, may be of interest: "The Stow on Battery, between Vallejo and Green streets, was laid in January, 1869, and has been subjected to the excessively heavy transportation incident to Battery street and the North Point Docks and Warehouses. Your committee has closely watched for evidences of weakness in this pavement at this point, and has failed to discover any under the heaviest loaded trucks." But in spite of this account the pavement has passed into disuse, and we can only judge that a more extended experience showed similar or as great defects as were found in the Nicholson.

ORDINARY PLANK PAVEMENT.

It is hardly necessary to give a detailed description of this class of pavement, as it is familiar to all, having been but recently in general use in our city and in many localities still appearing. It consists of a framework of scantling, upon which redwood planks are nailed. There is little or no pretense at any previous preparation of the surface, or any exact method of construction. The troubles with this pavement are too well known, and its abandonment of too recent date to need further remarks.

WILLIAMS COMPOSITE PAVEMENT.

This pavement is one with a foundation of concrete (Williams called it stone) and a wearing surface of wood, combined by a mixture of asphaltum, and covered by a coating of the same mixed with sand. It was claimed by the inventor that wood pavements perished more from decay at base than from the wear on the surface, and that as the reverse was the case with stone pavements, he had succeeded in solving this great problem. This pavement was only tried in one or two localities, notably New Montgomery street, in front of the Palace Hotel, and on McAllister street. The failure can only be supposed from the abandonment.

COMPOSITE LIMESTONE AND ASPHALT PAVEMENT.

This is a patent pavement just being brought before the notice of the public. It consists of blocks (or bricks) compressed by machinery, composed of an admixture of limestone and Trinidad asphalt; these blocks are laid in rows upon the ground prepared for them; they are then compressed, bringing them to an even and compact surface. A specimen of this pavement can be seen on O'Farrell, at its intersection with Grant Ave. and Market street, which seems to have stood its few years' use tolerably well. It is claimed by the inventors of this pavement, that it can be laid as cheaply as the ordinary bituminous rock.

The remaining pavements are those that are at present being used throughout the city, viz: Cobble, basalt block and bituminous rock. Description of the methods of laying these is unnecessary at the present stage of this paper, as the reference (which is proposed) to the specifications in use by the city, will clearly bring out all points connected therewith.

PAVING SPECIFICATIONS, ETC.

Up to January, 1890, the cobble was about the only class of pavement having any permanent specifications or regulations governing its construction. These regulations simply provided that the stones should be selected, that they should not exceed nine inches, or be less than seven inches in length; that they should be set upright, smaller end down, close together in a bed of good, clean sand, not less than twelve inches deep; that they should be well rammed three times, well watered before the last ramming; then after being swept, the surface should be covered two inches deep with beach gravel or finely broken rock. For the other classes of pavement specifications were made as required.

In June, 1890, the then Board of Supervisors passed an order adopting specifications for all classes of street work, excepting sewers. In these specifications are included among other classes of work, macadamizing, cobble, basalt blocks and bituminous rock pavements.

The first mentioned (macadamizing) it is not thought advisable to notice, as it has never been considered by the author as a pavement. The specifications for cobble are identical with those previously mentioned, thus leaving only the basalt block and bituminous rock specifications to be noticed.

BASALT BLOCK PAVEMENT.

The specifications for this class of work adopted in January, 1890, provide that the roadway shall be excavated fourteen inches below the grade. A bed of concrete is then to be laid six inches in depth, and in the proportions of 1, 2 and 7 of Portland cement, sand and broken stone. Upon this foundation, and bedded in sand, the basalt blocks are set; the regulation size being, depth from seven to eight inches, thickness from three and three-quarters to four and one-half inches, length not less than eight inches. A light coat of beach gravel or finely broken rock is then to be spread over the entire surface, and lightly rammed; the work is then to be inspected by the superintendent, after which more gravel or finely-broken rock is spread over the surface and broomed in, after which it is to be thoroughly rammed, and gravel or finely broken rock spread an inch deep over the entire area.

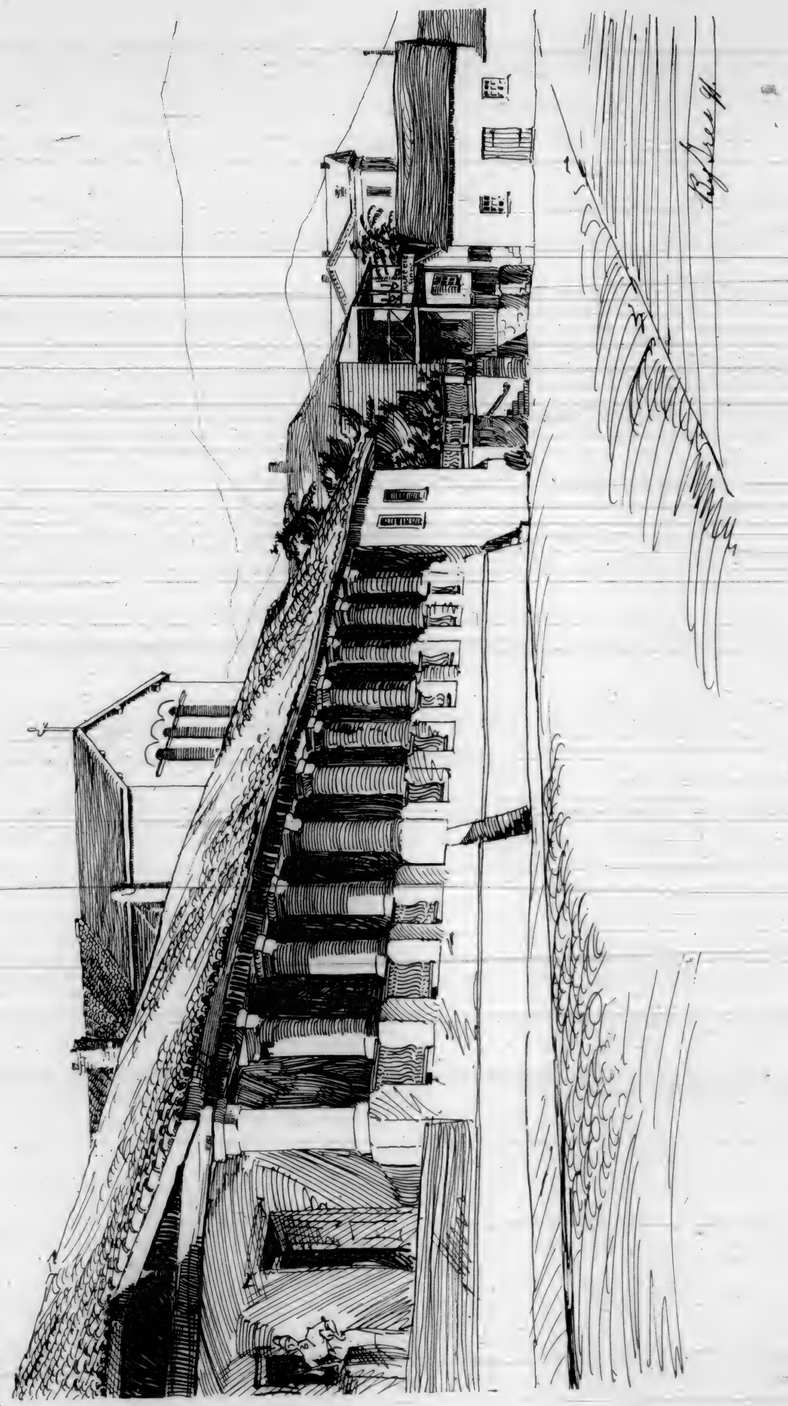
BITUMINOUS ROCK PAVEMENT.

The specifications adopted in 1890 for this class of pavement provide that the roadway shall be excavated eight inches below the grade. Then a concrete foundation of six inches in depth shall be laid, said concrete to be composed of 1, 2 and 7 parts respectively of Portland cement, clean sand and hard rock. On this foundation shall be laid a covering of bituminous rock two inches in depth. They also provide that this rock shall contain

DESIGN FOR MUNICIPAL BUILDINGS.

Mooser & Cuthbertson. Architects

4/5/91.



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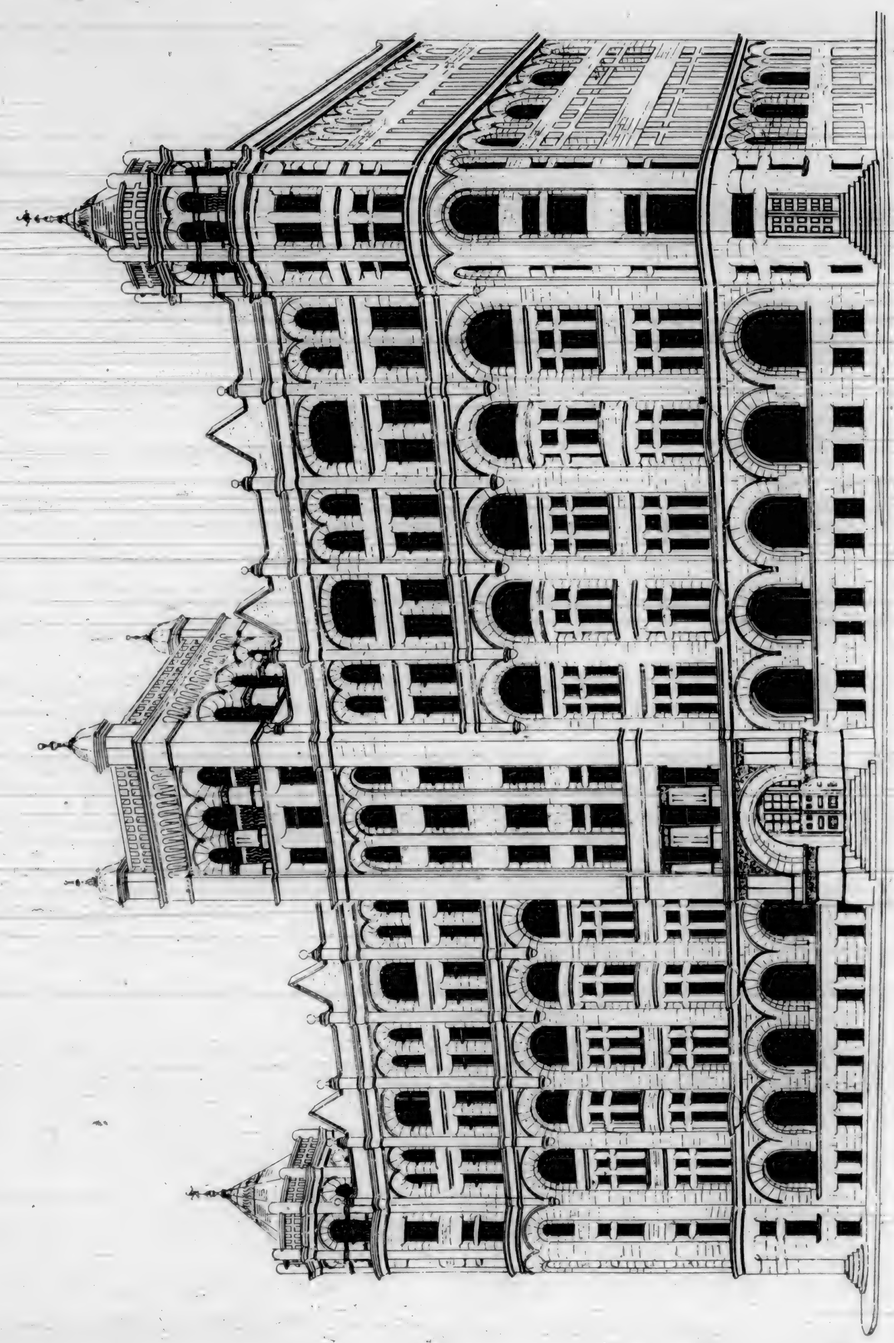

MONTREAL BOARD OF TRADE BUILDING COMPETITION.
DESIGN SUBMITTED BY MR. J. RAWSON GARDINER, MONTREAL.

14 per cent. of bituminous matter. The preparation of this material shall be by means of hot air, hot water or other process, but it shall not be reduced by any process liable to burn it.

In February, 1891, the present Board of Supervisors amended these in so much as to leave out the concrete foundation under the blocks. The dimensions of the blocks were slightly changed to the following width: not less than three and three-quarters or more than four and one-half inches, depth not less than seven or more than seven and one-half inches. The remainder of the specifications were left the same as formerly.

This order embodying these specifications was not signed by the Mayor, but after several consultations held in his office between interested parties and experts, he returned the order, suggesting numerous changes to be made in the specifications for bituminous rock.

The principal suggestions were an increase of one inch in depth of original excavation;

The removal of all decomposed matter and debris;

The testing of the cement;

The restrictions placed upon the quality of stone to be used;

The moistening of the surface of the concrete foundation for seven days;

The increasing of the bituminous rock covering to three inches.

I have hastily reviewed about all the important steps that have been taken in the matter of street paving up to the present time, and it now only remains for me to make the suggestions that seem proper and to draw the conclusions to which the known facts seem to point.

CONCLUSION AND SUGGESTIONS.

As said before in this paper, we in San Francisco have had many expensive and futile experiments in street paving, and it would seem about time that some plan should be adopted for such work by the proper authorities that will insure an economic and durable roadway. There is no doubt but that what would be advisable for one section of our city, would be entirely unfit for others; therefore we have to consider more than one class of pavement. But before any pavement can succeed, it would appear to the author that a proper cross-section should be adopted for the streets which would be based upon the following rules: The crown of the center of the roadway should in no case be much, if any, higher than the curb of the sidewalk and sloping on either side of this center line toward said sidewalk with a curving and ever increasing slope, and regular formed gutter-ways should be planned, sufficient in area to carry off all waters liable to fall on the surface. In considering a roadway, it must strike the most casual observer that there are two qualities (apparently opposed to each other) requisite for the formation of a good pavement; these are solidity or rigidity, for resistance to heavy loads and constant traffic, and elasticity, for the preservation of vehicles and stock.

Until these qualities are combined in their proper proportions no perfect pavement can be obtained. Allowing this as an axiom it may then be assumed that where the wearing surface is rigid, the foundation or bed should be more or less elastic and, conversely, that where the wearing surface is elastic the foundation or bed should be rigid in proportion.

In determining the sections of our city in which either a rigid or elastic wearing surface should govern, it is necessary to consider the amount, weight and rapidity of the traffic prevalent in such sections.

In those portions of our city having a great amount of heavy and slow traffic, such as trucking and general business hauling, the rigid wearing surface is necessary. In our residential districts, where there is little except pleasure driving, the smooth and elastic surface would seem to be the best. But here again comes in another feature, namely, the amount of grade allowable on such smooth surface. It appears to me that six or eight per cent. grades would be the greatest advisable in this climate for such surfaces as bituminous rock or asphaltum; although Eastern experts fix the maximum at considerably less. As a great portion of our residence districts have grades greatly in excess of the above, it would seem that some special class of pavement should be adopted for such cases. This would, however, open up an almost endless field of discussion. I will therefore (in the present paper) simply confine myself to a consideration of the two classes mentioned above.

Of the classes of pavement having rigid wearing surfaces the most prominent are granite and basalt blocks. The former of these is greatly preferred by the author, as in wearing it is not likely to assume a smooth and slippery surface. But the proper rock of this kind is so scarce in this neighborhood that the expense of laying such a pavement would be very great. We can, however, consider these two wearing surfaces as identical with regard to their construction, so, for convenience they will both be considered as basalt, this being the one used with us on account of the expense incurred.

Taking, therefore, basalt blocks as our wearing surface, the author wishes to submit to the Society his suggestions as to the size of blocks and the proper methods of laying the same.

The size of blocks should be as near as practicable: length, seven inches; width, four inches, and depth six inches. They should have rectangular faces, and should be well dressed on all sides; a variation or projection of half an inch is the greatest that should be allowed.

In considering a foundation for this pavement, we have three classes of ground upon which to build, viz: that which has been filled in and is, therefore, liable to settlement; sand, which is shifting and unstable; earth of clay and rock.

Upon the filled-in ground I would suggest two methods: first, to excavate the ground to a depth of eighteen inches, such surface to be brought by rolling or tamping to a curved plane parallel with the proposed finished face; over and in contact with this to be laid a bed of concrete eight inches in thickness, whose tamped and completed surface shall also be parallel to the finished surface of the proposed pavement. Upon this bed of concrete, after it is well set, shall be spread four inches of fine sand, on which the blocks shall be laid at right angles to the street, in courses, each course to break longitudinal joints with the one preceding; fine gravel or coarse sand will then be swept over the surface into the joints, the blocks to be driven to the proper finished contour; after this has been thoroughly done, coal tar shall be poured into all the joints, then a thin layer of gravel should be spread over the entire surface.

The second method spoken of is the substitution of planking for the bed of concrete; in other respects the process and material would be practically the same In places where the foundation is sand, I would excavate to the depth of twenty inches, roll the bed thoroughly, fill in (in place of concrete) with good clayey earth to a depth of twelve inches, more or less, as required to make a surface, which, after being thoroughly watered, rolled and rammed, shall be ten inches below the proposed surface of the roadway; the remainder of the work to be finished as described above.

Where we encounter rock upon, or too near the surface, the roadway should be excavated to a depth of some twelve inches, all inequalities carefully filled in with concrete; then the surface shall be filled in with a bed of good sized gravel, said bed to be three inches deep when rolled; over this spread a bed of sand, also three inches deep when rolled, the setting of the blocks and the remaining processes to be as before.

Of the classes of pavements having what we have termed elastic wearing surfaces, those most in use in the Eastern States are a composition of asphalt with sand and lime (the Trinidad and Cuban asphalts being the ones generally preferred). In Paris they use an asphalt which in its natural state contains a large percentage of lime. In California we use what is known as bituminous rock; this is a natural product, and is mostly composed of sand and volatile oils. It has, however, a small percentage of bituminous matter in its composition. This last mentioned material, owing to its plastic qualities, makes by no means so durable or satisfactory a pavement as the preceding ones. But however these substances may differ in their component parts, the necessary foundations and the methods of laying them are the same, with the exception that where laid in sheets, Trinidad or Cuban asphalt should be from two to three inches in depth; where, as in the case of bituminous rock, nowhere should its depth exceed two inches. The reason for this is due to the plastic qualities of this material; for where exposed to the softening influence of the sun, the greater the depth of any plastic body, the more sensitive it is to unequal compression upon its surface. Asphalt pavements are laid in two forms, sheeting and blocks. These we will consider separately.

Asphalt sheeting should be laid between two or three inches in thickness for Trinidad or Cuban asphalt, and from one and one-half to two inches for bituminous rock, with a base of ce-

ment concrete six inches in depth. Previous to the laying of the concrete-bed, the roadway should be properly prepared as described in the suggestions for other kinds of pavement.

The concrete should then be put in and compressed to a surface exactly parallel to the proposed finished surface of the street, and should be properly covered and protected until set.

Upon this should be spread a thin layer of pure asphalt, and then the wearing surface proper, which should be thoroughly compressed, after which a small quantity of cement should be swept over it, and the surface well rolled.

The gutter-ways should be formed of selected stone blocks laid as headers, which shall form a broken line toothing into the asphalt; the joints of such blocks to be filled with cement or coal tar. Where the street is traversed by a car track, a strip of stone blocks should be laid next to said tract, after the same manner as those forming the gutter-way.

In the classes of asphalt blocks generally used I have little confidence, as they are mostly covered by patents; and so much depends upon the care with which they are manufactured It has been held in some of the Eastern cities where these blocks have been used, that their failure is attributable to experiments in different qualities of asphalt, even when the chemical analysis of these asphalts were almost identical with the best known material. It would seem to the author, however, that there must have been some fault in the method of manufacture.

I understand that it is proposed in this city to lay block asphalt without a foundation. This I think exceedingly ill advised, for if it has any qualities not belonging to other pavements which would render a foundation unnecessary, I fail to see them.

In conclusion, I will state that I have now hurriedly reviewed this subject of street paving, not to its fullest capacity by any means, but to such an extent, I hope, as will bring out such a discussion as the Society may think proper.

I have attempted to show the futility of experimenting with patent pavements. Also to narrow down the advisable classes of pavement for use in this city to two, viz: the granite block for the portions of the city subject to heavy traffic, and the asphalt for those subject to the lighter classes of vehicle. It, therefore, remains only to ask of the Society such comment as its individual members may see fit to make.

An extended discussion followed, which is too lengthy for our columns.

NOTES & COMMENTS.

Europeans and their descendants love retired home life, and we should not neglect the means whereby those homes may be made beautiful. Happy home life presents a more beautiful picture than any public hall.

The artist like the savage goes direct to Nature for his ideas and inspirations.

"Tapestry weaving is older than history, and the tapestry loom, like the ancient potter's wheel, has suffered scarce any alteration since the remotest times."

"Hand-painted interior decorations will always have an excellence of its own unattainable by any machine work, and is therefore more suitable for friezes."

"Nothing is finally successful which does not satisfy the mind as well as the eye."

"In Europe, in the 15th century, the great strength of art lay in its intense devotion to the noble, whether in nature or religion. Men painted from the heart those subjects in which their hearts were absorbed; but by-and-by obstacles intervened in the progress of art, and the energies of the latter were diverted into a wrong channel, bringing on general European degeneration."

On the roof of the Club house of the Manhattan Athletic Club, there is a skating rink covering a surface of about five thousand square feet. The ice is formed four inches in thickness, and the building was designed with the strength necessary to carry this load.

As the roof is over a hundred feet above the street, a fine view is had during the day, and the sport can be enjoyed at night as well, by the light from electric lamps.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Seth Babson, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast; meets first Friday of each month at Academy of Sciences Building.

John Richards Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. Kent, Pres. P. G. Martin, Vice-Pres.
A. Jackson, Sec'y. Wm. B. Kreger, Treas.
L. A. Larsen, Clerk and Financial Sec'y.

Master Painters' Association of the Pacific Coast.
E. M. Gallagher, Pres. H. G. Jarman, Sec.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects, was held Friday evening, August 14, 1891.

Mr. Percy of the trustees, reported that arrangements would probably be made to invite the Chapter to visit, some time in the near future, the works of the Leland Stanford, Jr., University now in progress at Palo Alto.

Nominations of officers for the coming term were made. The election will be held at the annual meeting in the month of September.

A donation was received from the California Architectural Publishing Company of a bound volume of the California Architect of 1890, and from the Technical Society of the Pacific Coast, a Journal of the Transactions of that Society for the first six months of the present year.

THE California Electrical Society held their regular meeting the 17th inst., a full attendance being present. Prof. Keith continued his lecture on the evolution of the Electric Light. The question whether Ladies were eligible for membership was decided in the affirmative by a unanimous vote, and that they would be subject to the rules of the society the same as other members. Any information in regard to the Electrical Society can be had on application to the officers and members, or at the office of this Journal.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

The double page illustration of a design for Municipal Building is from Messrs. Mooser & Cuthbertson, architects of this city.

The Old Mission Church of San Luis Obispo.

Montreal Board of Trade Building from design by Mr. J. Rawson Gardener, architect of Montreal, reproduced by permission from the Canadian architect.

The cut L is from the terra cotta capitals from the Museum of Natural History at Kensington, England.

LEGAL DECISIONS.

Affidavit and Time for Lien.—Where the statutes furnish a form of affidavit for mechanics' and material-men's liens. It must be followed in all matters of substance though the exact language need not be used. If it is required that a lien claim be filed within a specified time after the material is furnished it will not make any difference that a portion of it cost more than the rest, if the materials are all of the same kind and quantity, purchased for and used in the completion of the same building contract. So far as concerns the construction and application of the lien law, the furnishing of all the materials in such a case may properly be deemed to have been substantially continuous and indistinguishable, rather than as independent transactions.

St. P. & M. Brick Co. v. Stout, Supreme Court of Minnesota, 47 N. W. Rep. 974.

Liability of Sureties on Building Contract.—The liability of a surety on a contractors bond is not affected by alterations in the plans, where the original contract provides that the owner may make such alterations as they desire, the same to be agreed upon in writing. Nor is his liability affected by the allowance to the contractor of extra compensation for work called for by the plans and specifications but omitted from the original bid. While any material change in the relation of the parties from that contemplated when the bond was executed, would, without full notice to the surety invalidate the bond, changes of minor details will not have this effect.

Moore v. Fountain, Supreme Court of Mississippi, 8 South, Rep. 509. (123 C)

Negligence with Reference to Elevator.—A Workman was injured in using an elevator in a building in course of construction. There was an elevator completed for use, but when it was out of repair, as was sometimes the case, an uncompleted elevator equipped with a temporary floor was used. It was while using the latter that the accident occurred. The owners of the building are charged with the notice of the fact that it was necessary, from time to time to use the uncompleted, elevator, and are responsible for permitting it to be used without putting it in proper condition.

Ferris v. Aldrich, Supreme Court of New York, 12 N. Y., Supp. 482. (103-C)

Entitled to Protection of Mechanic's Lien.—A statement showing claimants were lumber merchants and that the materials charged consisted of lumber used in building a house, being made out in the usual manner of bills and accounts of lumber is sufficient, for a mechanic's lien. If the original contract was for the materials for the house generally the lien would cover "extras" ordered subsequently. It is not necessary to show an assignment of the account from one person or firm to another where evidence is furnished that the one claiming the lien is successor to the one originally entitled to it. The holder of a mortgage who is a non-resident of the state, cannot when made a party to the suit, plead that time has barred the action as to him. Neither will the borrowing of money by the owner of the soil to pay for it give the holder of a mortgage for the money any right over the persons entitled to the mechanic's lien, that being first acquired.

Wetmore v. Marsh, Supreme Court of Iowa, 47 N. W. (61-C) 51.

BUSINESS MOSAICS.

Cabot's creosote shingle stains have gained in popularity on account of their superior merit as a stain and preservative. The long periods of wet or dry weather being very trying to the ordinary paints, a durable color preservative becomes an artistic necessity.

The Parafine Paint Company has during the past year coated 20,000 piles with their patent P. & B. Teredo-proof preparation.

The office of the California Sash Balance Company has been removed from the Chronicle Building to the business portion of the city, No. 421 California Street.

CITY BUILDING NEWS.

Alabama near 23rd. Alterations; owner, Mary Schulz; architect, M. J. Welsh; contractor, I. Wells; surety, $3 5; cost, $1,300; signed, Aug. 1st.; filed, Aug. 3rd; payments, $325, building ready for plastering; $325, brown mortared; $325, completed; $325, 35 days.

Baker near Washington. To build; owner, Mary E. Dunne; architects, Mooser & Cuthbertson; contract r John Bruce; surety, $1,200; cost, $4,560; signed, June 30; filed, July 20; payments, $855, entire frame up; $855, brown mortared; $855, priming coat of paint on; $855, completed; $1,140, 35 days.

Bannan, bet. Dupont and Stockton. Mill work; owner, K. C. Gardner; architects, Townsend and Wyneken; contractors, N. Fashie & Co.; cost, $1,000; signed, July 27; filed, July 29; payments, $100 on 1st payment of original contract; $450, 2nd; $250, 3rd; $200, two weeks after completion.

Belcher, bet Ridley and 14th. To build; owner, Louis Barnett; architect, Louis Barnett; contractor, Francis M. Schweitzer; cost, $2,660; signed, July 20; filed, July 22; payments, $600, frame up and building enclosed; $600, brown mortared; $700, outside and inside window work completed; $760, 35 days.

Broadway and Gough. Alterations; owner, D. F. Walker; architects, Smith & Freeman; contractor, F. W. Kern; cost, $1,640; signed, July 1; filed, July 9; payments, $1,500, basement studded and completed; $1,800, ready for plastering; $180, completed; $1,160, 35 days.

Broderick near Fulton. To build; owner, Margaret McElroy; architect, John J. Clark; contractors, J. Sandy & Gillogley; surety, $1,000; cost, $4,295; signed, July 7; filed, July 15; payments, $1,000, frame up; $1,000, brown mortared; $1,000, completed; balance, 35 days.

Buchanan St., Nos. 708, 710. Alterations; owner, Annie Buchanan; architect, Wm. H. Armitage; contractor, S. F. Greene; cost, $1,357; signed, July 15; filed, July 15; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Bush St., No. 905. Alterations; owner, Mrs. C. B. Gregory; architect, Chas. I. Havens; contractor, Jas J. O'Brien; cost, $910; signed, July 7; filed, July 31; payments, $910, when entire work is finished, completed and accepted.

Bush St., No. 1719. Carpenter work, etc.; owner, D. Samuels; architect, P. R. Schmidt; contractor, Chas. E. Dunshee; cost, $1,660; signed, July 29; filed, July 30; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Bush St., Nos. 2508, 2510. Alterations; owners, S. Goldstein & Cohn; architect, N. A. Comstock; contractor, Wm. McPhee; surety, $1,000; cost, $3,170; signed, July 14; filed, July 17; payments, $800, building raised and frame up; $800, brown mortar on and rough plumbing done; $770, completed; $800, 35 days.

Bush and Steiner. Brick work, etc.; owner, Rev. J. P. Callaghan; architect, T. J. Welsh; contractors, Butler & McGovern; cost, $15,700; signed, Aug. 5; filed, Aug. 5; payments, 75 per cent. as work progress; 25 per cent., 35 days.

Bush and Steiner. Carpenter and tinning work of towers; owner, Rev. J. P. Callaghan; architect, T. J. Welsh; contractors, John Roberts; cost, $8,480; signed, Aug. 5; filed, Aug. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Bush and Steiner. Plastering; owner, Rev. J. P. Callaghan; architect, T. J. Welsh; contractor, Chas. Dunlop; surety, $1,625; cost, $6,250; signed, Aug. 5; filed, Aug. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Bush and Steiner. Timber for towers; owner, Rev. J. P. Callaghan; architect, T. J. Welsh; contractors, Mahony Bros.; cost, $6,250, signed, Aug. 5; filed, Aug. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Bush and Steiner. Wrought iron work; owner, Rev. J. P. Callaghan; architect, T. J. Welsh; contractor, H. Ralston; surety, $920; cost, $3,695; signed, Aug. 5; filed, Aug. 6; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

California, near Sansome. To remove building, etc.; owner, Mutual Life Ins. Co. of N. Y.; architect, Clinton Day; contractor, Jas. E. Whittier; signed July 27; filed July 30; payments, should said contractor fail to perform contract, he is to pay owner $750, but he shall own all building.

California near Sansome. Fencing, piling, etc.; owners, Mutual Life Ins. Co. of N. Y.; architect, Clinton Day; contractor, Jno. P. Sheldon; cost, $800, and $18.50 for each pile driven, capped, etc.; signed, July 27; filed, July 29; payments, $600, when adjacent walls are shored in; 2nd, payment when ½ of proposed piles are driven, 79 per cent of estimated value; 3rd., completed; 4th., 35 days.

Capp and 23d. Mill work; owner, Howard Street Presbyterian Church; architects, Percy & Hamilton; contractor, W. J. Thompson; cost, $4,930; signed, July 14; filed, July 16; payments, first Saturday of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Castro, near 20th. To build; owner, Mary Withington; contractor, Jas. Campbell; cost, $1,130; signed, July 6; filed, July 6; payments, $1,032.50, frame up and roof sheathed; $1,032.50, brown mortared; $1,032.50, completed; $1,032.50, 35 days.

Church and 17th. Carpenter work, etc.; owner, John Barry; architect, T. J. Welsh; contractor, T. J. Hamilton; surety, $610; cost, $2,440; signed, July 29; filed, July 30; payments, $610, frame up; $610, first coat of plaster; $610, completed; $610, 35 days.

Clay and Laurel. Carpenter work, etc.; owner, Mrs. F. Deuprey; architect, J. C. Newsom; contractor, W. E. Lane; cost, $7,700; signed, July 30; filed, Aug. 3; payments, $1,275, when rough frame is up; $1,500, enclosed; $1,000, brown mortared and rough plumbing done; $1,000 white and last coat of plaster on; $1,000, accepted; $1,925, 35 days.

Clement and 5th Avenue. To build; owner, Richard Wallman; contractor, Fritz Roettger; surety, $3,000; cost, $3,520; signed, July 17; filed, July 18; payments, $660, frame up. $1,090, enclosed and brown mortared; $1,000, completed; $920, 35 days.

De Long Ave. near Waller. To build; owner, John H. Bullock; architect, W. H. Lillie, contractor, W. E. Lane; cost, $4395; signed, July 15; filed, July 17; payments, $1098.75, frame up and enclosed; $1098.75, brown mortared; $1098.75, accepted by owner; $1098.75, 35 days.

Devisadero and Jackson. Brickwork; owner, Chas. J. Wingerter; architect, A. C. Lutgens; contractor, S. Millington; surety, $1500; cost, $2600; signed, July 16; filed, July 17; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

Devisadero and Jackson. Carpenter work; owner, Chas. J. Wingerter; architect, A. C. Lutgens; contractor, Wm. Plums; surety, $3935; cost, $15,740; signed, July 16; filed, July 17; payments, $2361, frame up; $2361, enclosed and roofs shingled; $2361, 1st coat plaster on; $2361, 2nd coat on; $2361, completed; $3935, 35 days.

Devisadero and Jackson. Plumbing, etc.; owner, Chas. J. Wingerter; architect, A. C. Lutgens; contractor, G. C. Sweeney; surety, $1000; cost, $1748; signed, July 30; filed, Aug. 1; payments, $650, rough plumbing done; $661, completed; $437, 35 days.

Dora near Harrison. Carpenter work; owner, Thos. McBride and wife; architect, Jno. J. Clark; contractor, Aug. Discher; cost, $1995; surety, $195; signed, July 14; filed, July 15; payments, $195, frame up; $500, brown mortared; $500, completed; balance, 35 days.

Dorland St. No. 27. Additions; owner, Wm Larkins; architect, John T. Kidd; contractors, Currie & Loomer; cost, $1550; signed, July 7; filed, July 7; payments, $600, brown mortared; $562, accepted by architect; $388, 36 days.

Drumm near Washington. Ca penter work, etc.; owner, F. N. Woods; architects, Smith & Freeman; contractor, F. W. Kern; cost, $10,689; signed, June 9; filed, June 13; payments, $8,000, 2nd story joists on and iron lintels set; $2000, ceiling joists on; $1,500, fire wall completed; $1500, completed; $2670, 35 days.

Drumm near Washington. Concrete work; owner, F. N. Woods; architects, Smith & Freeman; contractor, Thos. L. Wand; cost, $3000; signed, May 18; filed, July 13; payments, $10-0, when foundations are completed; $750, walls up and ready for floor joists; $250, concrete work finished; $1000, to be left as guarantee until such time as it shall be decided that basement is water tight.

Dupont and Chestnut. To build; owner, Luigi Torre et al; architects, Mooser & Cuthbertson; contractor, K. C. Gardner; surety, $1900; cost, $7425; signed, July 17; filed, July 20; payments, $1392, frame up; $1392, enclosed, roof completed and lathed; $1392, plastering finished; $1392, completed; $1857, 35 days.

Dupont, bet. Francis and Bay. To build; owner, J. D. Galloway; contractor, M. S. Yerxa; surety, $800; cost, $1850; signed, July 7; filed, July 18; payments, $800, brick and rough frame up; $400, enclosed and roof on; $500, chimneys built and brown coated; $250, all trimmed; $400, doors and fences built, and building accepted.

Ellis, Nos. 324 and 326. Carpenter work, etc.; owner, Wm. Green; contractor, G. Lack et al; surety, $1,000; cost, $2,100; signed, July 8; filed, July 11; payments, $500, house raised and outside studding on; $500, brown mortared; $600, completed; $500, 35 days.

Ellis, near Larkin. Alterations; owner, Edward Connolly; architects, Shea & Shea; contractor, John T. Grant; cost, $5,777; signed, July 9; filed, July 15; payments, $1,083, rough frame up; $1,083, brown mortared; $1,083, hard finished; $1,083, accepted by architect; $1,445, 35 days.

Eric, near Howard. To build; owner, Henry Helfrich; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $2,695; signed, July 27; filed, July 27; payments, $700, frame up and partitions set; $600, white coated; $720, finished; $675, 35 days.

Fell, near Lott. To build; owner, Mrs. C. H. Lyons; architects, Jordan & Lyon; contractors, White Bros.; surety, $1,100; cost, $4,270; signed, July 11; filed, July 13; payments, first day of each month, 75 per cent. as work progresses, 25 per cent. 35 days.

Fell and Steiner. Granite work, etc.; owner, Jas. Scobie; architect, Chas. I. Havens; contractor, Jas. Rae cost, $2,245; signed, July 29; filed, Aug. 4; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

First, near Mission. Cast iron work; owner, C. F. Marwedel; architect, Julius E. Kraft; contractor, H. Ralston; surety, $1,000; cost, $1,833; signed, Aug. 1; filed, Aug. 5; payments, $800, iron work set to second floor; $572, entire work completed; $460, 35 days.

Fifteenth and Mission. Iron work, etc.; owner, Jas. Stanton; architect, Julius E. Kraft; contractor, Frank De Guerre; surety, $1,000; cost, $1,300; signed, July 17; filed, July 22; payments, $575, roof completed; $200, exterior tin work done; $400, completed; $225, 35 days.

Fifteenth and Mission. Plastering, etc.; owner, Jas. Stanton; architect, Julius E. Kraft; contractor, Thos. Mannix; surety, $3,000; cost, $8,075; signed, July 21; filed, July 27; payments, $1,000, brown mortared; $800, second coat and interior plastered; $800, completed; $775, 35 days.

Fifteenth and Noe. To build; owner, Julia Swanson et al; architects, Townsend & Wyneken; contractor, R. O. Chandler; cost, $6,175; signed, July 14; filed, July 15; payments, $1,500, frame up; $1,500, brown mortared; $1,500, completed; $1,675, 35 days.

Fifteenth near Guerrero. To build; owner, Patrick Reilly; architect, T. W. McKee; contractor, H. O. Noyes; cost, $4,000; signed, July 10; filed, July 20; payments, $750, frame up; $750, ready for plastering; $750, plastered; $750, contract fulfilled; $1,000, 35 days.

Folsom and 6th. Plumbing, etc.; owner, H. C. Beckedorff; architect, Julius E. Kraft; contractor, R. Rice; surety, $1,000; cost, $1,640; signed, July 22; filed, July 24; payments, $600, sewering piping and rough work done; $630, completed; $410, 35 days.

Folsom and Ninth. Carpenter work, etc.; owner, Fred Katz; architect, Henricksen & Mahoney; contractor, T. Hock; surety, $5,000; cost, $5,650; signed, Aug. 1; filed, Aug. 1; payments, $2,100, basement walls complete; $1,135, iron and granite work set; $1,000, completed; $1,415, 35 days.

Folsom, between 20th and 21st. To build; owner, Mrs B. Nunan; contractor, Aug. Lund; cost, $3,000; signed, July 22; filed, July 22; payments, $500, frame up; $500; brown mortared; $500, white plastered; $500, completed; $1,000, 35 days after completion.

Folsom near 22nd. To build; owner, Richard Curtis; architect, M. J. Welsh; contractor, A. S. Cook; surety, $1,048 75; cost, $4,195; signed, July 2; filed, July 3; payments, $1,048 75, frame up; $1,048 75, brown mortared; $1,048 75, completed; $1,048 75, 35 days.

Florida, between 24th and 25th. To build; owner, B. J. McDermott; contractor, Fred. Hauser; surety, $1,000; cost, $1,670; signed, July 10; filed, July 15; payments, $400, enclosed; $400, brown mortared; $400, accepted; $470, 35 days.

Frederick and Masonic Ave. Mill work; owner, M. A. Fritz; architect, A. J. Barnett; contractor, Washington St. Planing Mill; cost, $2,815; signed, July 13; filed, July 18; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Frederick and Masonic Ave. Plastering; owner, M. A. Fritz; architect, A. J. Barnett; contractor, Daniel Leahy; cost, $1,190; signed, July 6; filed, Aug. 6; payments, $600, brown mortared; $260, white plastered; $90, completed; $300, 35 days.

Fulton near Franklin. Carpenter work, etc.; owner, Marcus Schwab; architects, Salfield & Kohlberg; contractor, Joe Fuchs; cost, $8,070; signed, July 6; filed, July 10; payments, $1,500, 2nd floor joists on; $1,500, enclosed, roof on and floors laid; $1,500, brown mortared; $1,570, accepted; $2,000, 35 days.

Fulton near Franklin. Painting; owner, Markus Schwab; architects, Salfield & Kohlberg; contractor, Joe Stroetgen; cost, $869; signed, July 6; filed, July 10; payments, $250, 1st coat paint; $400, accepted; $219, 35 days.

Fulton near Franklin. Plumbing; owner, Markus Schwab; architects, Salfield & Kohlberg; contractors, L. Hufschmidt & Bro.; cost, $1,000; signed, July 6; filed, July 10; payments, $400, rough plumbing done; $350, work done and accepted; $250, 35 days.

Geary and Polk. Carpenter work, etc.; owner, Cora A. Wallace; architects, R. H. & R. White; contractor, David I. Pierce; surety, $10,000; cost, $31,184; signed, July 27; filed, July 27; payments, 1st day of each mouth, 75 per cent. as work progresses; 25 per cent., 35 days.

Geary near Scott. To build; owner, A. Rosenlund; architect, J. Cather Newsom; contractor, W. E. Lane; cost, $5,000; signed, July 7; filed, July 8; payments, $1,250, frame up; $1,250, brown mortared; $1,250, completed; $1,250, 35 days.

Godens St. No. 4. Alterations; owner; Johanna Maher; contractors, Parker and Bane; cost, $1,370; signed, July 11; filed, July 13; payments, $450, enclosed; $450, brown mortared; $470, 35 days.

Gough near Ellis. Carpenter work, etc.; owner, Andrew Bosquet; architects, John & Balczynski; contractors, Schutt & Krecker; cost, $9,245; signed, July 6; filed, July 7; payments, $2,000, frame up; $2,000, rough mortared; $2,745, accepted; $2,500, 35 days.

Golden Gate Ave. near Devisadero. Carpenter work; owner, O. H. Hund; architect, A. C. Lutgens; contractors, Tegeler & Muller; surety, $2,545; cost, $9,380; signed, July 20; filed, July 22; payments, $1,407, frame up; $1,407, roof shingled; $1,407, brown coated; $1,407, white coated; $1,407, completed; $2,345, 35 days.

Green and Leavenworth. Plastering, etc., owner, Geo. Summerton; architect, S. Hatfield; contractors, Henry Egan & Sons; cost, $1,390; signed, June 22; filed, July 2; payments, $600, deafening on and 1st coat mortar is on hand; $442.50, plastering finished; 25 per cent., 35 days.

Guerrero near Hill. Plastering, etc.; owner, C. F. Behrmann; architect, C. F. Behrmann; contractors, J. F. Morgan & Bros.; cost, $1,625; signed, July 8; filed, July 10; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Guerrero near 23rd. To build; owner, Henry A. Dilling; contractor, R. P. Sanches; cost, $3,100; signed, July 25; filed, July 25; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Guerrero near 24th. To build; owner, Mrs. S. Delafield; architect, Chas. I. Havens; contractors, Miron & Robertson; cost, $4,500; signed, Aug. 3; filed, Aug. 4; payments, $825, rough frame up; $825, rough gas and water pipes in; $825, outside primed and inside hard finished; $875, accepted; $1,150, 35 days.

Guy Place, 16. Additions; owner, Mrs. Chas. Meyers; contractor, Chas. A. Duebel; surety, $1,000; cost, $1,650; signed, July 21; filed, Aug. 5; payments, $600, roof on; $600, brown mortared; $450, completed.

Harrison, near Fourth. To build; owner, S. B. Pierce; architect, A. J. Barnett; contractor, W. H. Mead; surety, $1,800; cost, $6,300; signed, July 13; filed, July 18; payments, $1,000, frame up; $1,240, brown mortared; $1,240, white plastered; $1,240, completed; $1,580, 35 days.

Haight, near Pierce. To build; owner, R. D. Cameron; architect, R. D. Cameron; contractor, C. E. Dunshee; cost, $3,018; signed, July 15; filed, July 20; payments, $700, frame up and chimneys built; $1,000, first coat of plaster on; $663, completed; $755, 35 days.

Haight, near Lyon. To build; owner, W. S. McDonald; architects, R. H. and R. White; contractor, Ivory Wells; surety, $1,150; cost, $4,600; signed, Aug. 1; filed, Aug. 3; payments, $800, frame up; $880, brown mortared; $850, standing finish on; $850, completed; $1,150, 35 days.

Hayes, near Steiner. Brickwork; owner, Martin H. Mohrdick; architects, Martens and Coffey; contractor, Edward Fladung; surety, $250; cost, $998; signed, July 2; filed, July 7; payments, $400, foundation walls finished; $348, chimneys finished and brickwork completed; $250, 35 days.

Hayes, near Steiner. Carpenter work, etc.; owner, Martin H. Mohrdick; architects, Martens and Coffey; contractors, Droge & Munster; surety, $2,250; cost, $8,240; signed, July 2; filed, July 6; payments, $1,500, frame up and roof ready for shingles; $1,500, floors laid, ready for plastering; $1,500, white mortared; $1,680, completed; $2,060, 35 days.

Hill, near Church. Carpenter work, etc.; owner, Mary Dent; contractor, August Discher; cost, $1,125; signed, July 10; filed, July 10; payments, $375, frame up; $375, brown coated; $375, completed.

Howard, bet. 6th and 7th. To plumb building; owner, J. Ebert; contractor, Carl Wolff; cost, $400; signed, July 2; filed, July 2; payments, $200, work done and accepted; $200, 35 days.

Howard, near 8th. Alterations and additions; owner, M. T. Turner; architects, Shea & Shea; contractor, R. Stunott; cost, $3,375; signed, June 29; filed, July 29; payments, $632, building raised and frame up; $633, brown mortared; $633, hard finish on; $633, accepted; $844, 35 days.

Howard, near 16th. Painting; owner, J. W. Smith; architect, J. W. Smith; contractor, D. Zelinsky; surety, $600; cost, $1,680; signed, July 20; filed, July 20; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Howard, near 23rd. Carpenter work, etc.; owner, Elizabeth McNeil; architect, M. J. Welsh; contractors, R. Doyle & Son; surety, $1,500; cost, $4,720; signed, July 28; filed, Aug. 3; payments, $886, frame up; $886, brown mortared; $886, white coated; $886, completed; $888.75, 35 days.

Hyde, near Pine. Alterations; owner, Mrs. F. T. Collins; architect, J. C. Newsom; contractor, Peter Jubinville; cost, $2,180; signed, July 30; filed, Aug. 3; payments, first and fifteenth day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Iowa and Yolo. To build; owner, Chas. Ratty; contractor, Thos. F. Mitchell; cost, $1625; signed, July 22; filed, July 24; payments, $400, frame up; $400. brown mortared; $425, completed; $400, 35 days.

Issis and 12th. Alterations; owner, F. C. Droit; architect, M. J. Welsh; contractor, John McDonald; surety, $1600; cost, $1600; signed, July 30; filed, Aug. 1; payments, $400, frame up; $400, brown mortared; $400, completed; $400, 35 days.

Jackson and Broderick. Carpenter work; owner, Herman Heyneman; architects, Salfield & Kohlberg; contractors, Wilton & Havard; surety, $3400; cost, $13,600; signed, July 7; filed, July 10; payments, $750, excavation is completed; $1000, frame up; $1000, enclosed; $1500, floors laid and partitions set; $2 00, brown mortared; $1500, hard finished; $2450, accepted; $3400, 35 days.

Jackson and Broderick. Concrete work; owner, Herman Heyneman; architects, Salfield & Kohlberg; contractor, Carl Griese; surety, $500; cost, $1950; signed, July 16; filed, July 18; payments, $300, basement floors ready for 1st floor joists; $250, basement floor is in; $700, accepted; $500, 35 days.

Jackson near Franklin. Alterations; owner, Paolo De Vecchi; architects, Mooser & Cuthbertson; contractors, Chatain & Gilletti; cost, $1700; signed, July 8; filed, July 13; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Jackson near Scott. Mantel pieces; owner, Albert Gallatin; architect, Clinton Day; contractors, K. Blum et al; cost, $1485; signed, June 15; filed, July 7; payments, $4 5, completed and accepted.

Jones St. No. 417 & 419. Alterations; owner A. Gartenberg; architect, J hn H. McKay; contractor, John H. McKay; cost, $1950; signed, July 13; filed, July 14; payments, $487.50, ready for plastering, $187.50, white coated; $487.50, completed; $487.50, 35 days.

Jones St. No. 417 & 419. Carpenter work, etc.; owner, J. H. McKay; contractor, A. Guntenberg; cost, $1950; signed, July 13; filed, July 13; payments, $487.50, house ready for painting; $487.50, whi e coat of mortar on; $487.50, completed; $487.50, 35 days.

Jones and McAllister. Marble work; owner, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, R. C. Fisher & Co.; cost, $15,000; signed, May 29; filed, July 20; payments, 80 per cent. of the amount of each shipment to be paid on sight draft with bill of lading and invoice papers attached, 15 per cent. during the setting of the work, 25 per cent., 35 days.

Laguna near Greenwich. Carpenter work, etc., owner, A. Mittenberger; architect, C. Winstanley; contractor, Chas. Johnson; c st, $2,067; signed, July 16; filed, July 17; payments, $500, frame up and enclosed; $500, brown mortared; $500, completed; $567, 35 days.

Lott, between Hayes and Fell. To build; owner, M. T. McGrath; architect, ——; contractor, Petterson & Person; surety, $4,000; cost, $1,500; signed, July 13; filed July 13; payments, $600, frame up; $1,225, brown mortared; $1,225, completed; $1,450, 35 days.

Lott, between Hayes and Fell. To build; owner, M. T. McGrath; architect, M. T. McGrath; contractor, G. Peterson et al; surety, $4,000; cost, $4,030; signed, July 21; filed, July 22; payments, $600, frame up; $1,100, brown mortared; $1,100, completed; $1,200, 35 days.

Market, Hayes and Larkin. Galvanized iron bay and orial windows, etc.; owners, B. & J. S. Doe; architect, J. H. Littlefield; contractor, Wm. Cronan; cost, $9,500 for galvanized iron work and so much per sq. ft. for other work; signed, July 31; filed, Aug. 4; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Market near Taylor. Carpenter work, etc ; owners, Piexotto & Silverman, architect, W. O. Banks; contractor, Geo. H. Walker; cost, $14,333; signed, July 7; filed, July 10; payments, $1,000, 1st story joists in place; $1,000, 2nd in place; $1,000, 3rd in place; $4,000, brown mortared; $8,733, completed; $8,600, 35 days.

Mason St., 1812, 1814. Alterations; owner, Lorenz Stodalski; architect, August Lund; contractor, August Lund; surety, $800; cost, $8,000; signed, Aug. 1; filed, Aug. 1; payments, $1,000, house raised; $1,000, brown mortared; $2,000, completed; $1,000, 35 days.

Mason near Jackson. To build; owner, G. C. Kimball; architects, Shea & Shea; contractor, Louis M. Weismann; cost, $5, 00; signed, July 22; filed, July 25; payments, $975, rough frame up; $975, brown mortared; $975, hard finished; $975, completed; $1,300, 35 days.

McAllister and Jones. Plumbing, etc ; owner, Hibernia Savings & Loan Society; architects, Pissis & Moore; contractors, Duffy Bros.; cost, $5,414; signed, Aug. 3; filed, Aug. 6; payments, 1st and 15th day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Natoma near 7th. Alterations; owner, Eugene Sullivan; architect, M. J. Welsh; contractor, C. W. wescott; surety, $612 50; cost, $2,450; signed, July 18; filed, July 18; payments, $612 50, frame up; $612 50, brown mortared; $612 50, completed; $612 50, 35 days.

Ninth near Harrison. To build; owner, Michael Burke; architect, M. J. Welsh; contractor, T. Sullivan; surety, $312 50; cost, $1,250; signed, July 17; filed, July 17; payments, $312 50, frame up; $312 50, brown mortared; $312 50, completed; $312 50, 35 days.

Nineteenth St., No. 611. Additions; owner, Mrs. E. B. Sanger; contractor, N. W. Stecker; cost, $1,200; signed, July 29; filed, July 29; payments, $300, building enclosed; $300, brown mortared; $300, carpenter work finished; $300, 35 days.

Nineteenth, between Collingwood and Castro. To build; owner, Elijah McKnew; architect, Geo. Eaton; contractor, Geo. Eaton; surety, $800; cost, $3,200; signed, July 15; filed, July 25; payments, $800, frame up; $800, brown mortared; $800, completed; $800, 35 days.

Oak near Fillmore. To build; owner, Miss T. Coleman; architects, Shea & Shea; contractor, P. Griffin; cost, $5293; signed, July 18; filed, July 18; payments, $992, rough frame up; $992, brown mortared; $992, hard finished; $993, accepted by architect; $1324, 35 days.

Oak near Laguna. Plastering, etc.; owner, Jas. M. Goewey; architect, P. R. Schmidt; contractor, J. J. O'Brien; cost, $784C; signed, July 29; filed, July 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Oak and Laguna. Plumbing; owner, J. M. Goewey; architect, P. R. Schmidt; contractor, R. A. Vance; cost, $1175; signed, July 29; filed, July 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Oak bet. Laguna & Pape. Carpenter work, etc ; owner, Mary Dowling; contractor, Allan Mcdonald; surety, $ 75; cost, $5550; signed, July 9; filed, July 9; payments, $1042, frame up; $1041, brown mortared; $1041, white plastered; $1041, completed; $1385, 35 days.

Oak near Lott. Carpenter work, etc.; owner, G. H. Holstein; architect, W. H. Lillie; contractor, I. A. Williams; surety, $1037.50; cost, $4150; signed, July 25; filed, July 28; payments, $622 50, entire frame up; $622.50, enclosed; $622.50, brown coated; $622.50, standing finish on; $622.50, completed; $1037.50, 35 days.

O'Farrell near Powell. Concrete work etc.; owner, Pierre Priet; architects, Pissis & Moore; contractors, Ransome & Cushing; cost, $7170; signed July 10; filed, July 10; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Pacific and Montgomery Avenue. Sidewalk; owner, N. Cousin; architects, Mooser & Cuthbertson; contractors, Ransome & Cushing; surety, ——; cost, $2,080; signed, July 14; filed, July 17; payments, $780, beams in place; $780, completed; $520, 35 days.

Page, near Webster. Carpenter work, etc.; owner, Wm. McCracken; architect, W. H. Lillie; contractors, H. M. Kirkwood and Geo. Connor; surety, $1,375; cost, $5,500; signed, July 17; filed, July 22; payments, $825, frame up; $824, enclosed; $825, brown mortared; $825, standing finish on; $825, completed. $1,375, 35 days.

Penna Avenue and Nevada. Carpenter work, etc.; owner, Jeremiah Twomey; architect, Jeremiah Twomey; contractor, Sivert Fossum; surety, ——; cost, $2,187.50; signed; June 25; filed, July 2; payments, $880, frames up and rustic on; $800, brown mortared; $587.50, 35 days.

Pfeiffer, near Dupont. Carpenter work, etc.; owner, Peter Christensen; architect, Andrew Christensen; contractor, A. Christensen; cost, $1,500; signed, July 17; filed, July 20; payments, $375, frame up; $375, brown coat on; $375, completed; $375, 35 days.

Post, Nos. 1706, 1708, 1710. Alterations in rear; owners, F. W. Vale and wife; architects, Townsend & Wyneken; contractor, J. R. Whalen; cost, $1,277; signed, Aug. 3; filed, Aug. 5; payments, whole amount paid when accepted.

Point Lobos Avenue near 12th Avenue. To build; owner, Nellie Craig; architect, A. R. Pfarrer; contractor, R. Pfarrer; cost, $2,800; signed, July 8; filed, July 18; payments, $700, frame up; $700, brown mortared; $700, finish on; $700, 35 days.

Ridley and Elgin Park. Carpenter work, etc., owner, Mrs. J. Lundy; architect T. J. Welsh; contractors, R. Doyle & Son; surety, $1 388; cost, $5,54 ; signed, June 30; filed, July 3; payments, $1,040 25, frame up; $1,040 25, brown mortared; $1,040 25, white coated; $1,040 25, accepted; $1,388, 35 days.

Russ near Folsom. Brickwork, etc.; owner, Catherine Boyer; architect, S. Hatfield; contractor, Jas. A. Shepley; surety, $3,500; cost, $5,680; signed, July 2; filed, July 10; payments, $1,000, frame up and rustic on two sides; $1,100, enclosed and chimneys up; $1,000, windows in and white plastered; $1,160, completed; $1,420, 35 days.

San Jose near 15th. Alterations; owner, Board of Education; architect, Chas. I. Havens; contractor, C. L. Crisman; cost, $7,781; signed, July 15; filed, July 21; payments $1,200, roof raised and outside partitions set; $2,200, hard finished and outside primed; $2,288, completed and accepted; $1,896, 35 days.

Shotwell near 20th. Carpenter work, etc.; owner, J. J. McCormack; contractors, W. A. Griffith & Co.; cost, $3,700; signed, July 3; filed, July 6; payments, $700, frame up; $600, brown mortared chimneys up; $600, mill work done and 1st coat paint on; $800, completed; $1,000, 35 days.

Shotwell, between 24th and 25th. To build; owner, Patrick Donahue; architect, Patrick Donahue; contractor, Wm. Helbing; surety, $2,000; cost, $6,725; signed, July 2; filed, July, 8; payments, $1,600, enclosed and roofed on; $1,600, brown mortared; $1,625, white plastered; $1,150, completed; balance, 35 days.

Sixteenth and Alabama. Carpenter work, etc.; owners, Society for the Prevention of Cruelty to Animals; architects, Townsend & Wyneken; contractor, J. R. Whalen; surety, $1 100; cost, $4,377; signed, July 30; filed, Aug. 3; payments, $800, brickwork up; $700, frame up and chimneys set; $800, enclosed; $977, plumbing done; $1,100, 35 days.

Spear St., Nos. 128, 130. Iron roof, etc.; owner, Henry B. Schindler; architect, Henry B. Schindler; contractor, W. H. Wickersham; cost, $1,200; signed, July 23; filed, July 23; payments, $600, roof on; $300, completed; $300, 35 days.

Spear, between Mission and Howard. Walls, etc; owner, Henry B. Schindler; architect, Henry B. Schindler; contractor, Wald Tarp; cost, $1,500. signed, July 18; filed, Aug. 1; payments, $600, when walls and 1st story completed; $525, brick; work completed; $375, 35 days.

Stockton and Sutter. Carpenter work, etc.; owner, Sam'l Theller; architects, Smith & Freeman; contractor, A. Johnson; cost, $16,955; signed, July 7; filed, July 14; payments, $1,400, 2nd story joists on; $1,700, 4th, on; $2,000, roof completed and tinned; $2,700, ready for plastering; $2,000, panel work completed in four upper floors; $2,600, ready for painter; $916, completed; $1,239, 35 days.

Stockton and Sutter. Painting; owner, Sam'l L. Theller; architects, Smith and Freeman; contractor, G. V. Daniels; cost, $1,567; signed, July —; filed, July 14; payments, $500, when two coats are on; $672, when completed; $395, 35 days.

Stockton and Sutter. Plastering; owner, Sam'l Theller; architects, Smith & Freeman; contractor, Chas. Dunlop; cost, $2,830; signed, July 7; filed, July 14; payments, $1,000, brown mortared; $900, 2nd completed; $290, partitions done and plastering accepted; $720, 35 days.

Stockton and Sutter. Plumbing; owner, Sam'l L. Theller; architects, Smith & Freeman; contractor, Wm. F. Wilson; cost, $1,700; signed, July 8; filed, July 14; payments, $1,500, rough plumbing done; $1,275, completed; $925, 35 days.

Stockton and Sutter. Stone work, etc.; owner, Sam'l Theller; architects, Smith & Freeman; contractor, Crawford Ferris; cost, $22,473; signed, July 7; filed, July 14; payments, $5,000, basement columns set; $2,800, when ready for 2nd story joists; $2,000, ready for 3rd story joists; $2,000, ready for 4th story joists; $2,000, ready for 5th story joists; $1,500, ready for ceiling joists; $500, fire walls topped and completed; $1,034, building completed; $5,619, 35 days.

Stockton and Sutter. Terra Cotta work; owner, Sam'l Theller; architects, Smith & Freeman; contractor, Union Pressed Brick Co.; cost, $3,186; signed, July 8; filed, July 14; payments, $750, terra cotta work is set for lintels; 3rd story windows; $850, when 5th story windows are in; $788, completed; $795, 35 days

Tenth Avenue, near Clement. To build; owner, C. F. Moore; architect, C. F. Moore; contractor, Jas. Campbell; cost, $1,700; signed, July 20; filed, July 22; payments, $637.50, frame up, roof sheathed and brown mortared; $637.50, completed; $425, 35 days.

Treat Avenue, No. 1022. Additions; owner, Thos. Floyd; contractor, T. H. Marshall; cost, $1,435; signed, July 8; filed, July 25; payments, $500, plastering finished; $500, completed; $435, 35 days.

Treat Avenue, near 21st. To build; owner, S. F. Dohmke; contractor, A. Klahn; cost, $3,875; signed, July 14; filed, July 14; payments, $1,000, frame up; $1,000, brown mortared; 1875, building finished; $1,000, 35 days.

Twenty-third and Capp. Brickwork; owner, Howard Street Presbyterian Church; architects, Percy & Hamilton; contractor, Thos. W. Butcher; surety, $2,000; cost, $6,420; signed, July 9; filed, July 14; payments, 75 per cent. as work progresses on first Saturday of each month; 25 per cent. 35 days.

Twenty-third and Capp. Carpenter work; owner, Howard Street Presbyterian Church; architects, Percy & Hamilton; contractor, J. C. Gibson; surety, $5,000; cost, $9,700; signed, July 9; filed, July 14; payments, first Saturday of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Twenty-third and Capp. Painting; owner, Howard Street Presbyterian Church; architects, Percy & Hamilton; contractor, Paul Agmar; cost, $1,200; signed, July 9; filed, July 14; payments, first Saturday of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Twenty-third and Capp. Plastering; owner, Howard Street Presbyterian Church; architects, Percy & Hamilton; contractor, D. O'Sullivan; cost, $1,200; signed, July 9; filed, July 14; payments, first Saturday of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Union between Stockton and Dupont. Carpenter work, etc.; owner, A. Garbini; architects, Townsend & Wyneken; contractor, K. C. Gardner; surety, $2,000; cost, $6500; signed, July 18; filed, July 20; payments, $1500, frame up and chimneys built; $1675, floors laid and building enclosed; $1700, completed; $1625, 35 days.

Vicksburg near Twenty-Third. To build; owner, G. H. Wilson; architect, G. H. Wilson; contractor, Jas. Campbell; cost, $2850; signed, July 6; filed, July 6; payments, $712.50, frame up and roof sheathed; $712.50, brown mortared; $712.50, completed; $712.50, 35 days.

Washington Street, No. 1615. Alterations; owner, A. R. Durbrow; contractor, C. L. Parent, Jr; cost, $1165; signed, June 27; filed, July 13.

To build; owner, Jas. Sullivan; contractor, Chas. Anderson; cost, $3000; signed, July 14; filed, July 16; payments, $750, frame completed; $750, brown coated; $750, building completed; $750, 35 days.

Alameda County.

Beaver Tract, Berkeley. 2-story frame; owner, J. W. Warnick & wife; architect, W. H. Weilbye; contractor, W. H. Weilbye; cost, $1165; signed, July 24; filed, July 25; payments, $1041.25, frame up and roof on; $1041.25, 1st coat plaster on; $1041.25, plastering done; $1041.25, 35 days.

Camden Tract, Oakland. 2-story frame; owner, Jos. M. Harley; architect, Jos. M. Harley; contractor, J. A. Eastman; cost, $1239; signed, July 13; filed, July 14; payments, $500, frame up; $800, completed; $520, 35 days.

Channing Way & Choak St., Berkeley. To build; owner, Mrs. McShane; architects, Estey & Co.; contractor, Fred. J. Maurer; cost, $3975; signed, July 25; filed, July 28; payments, $/4, frame up; $/4, brown mortared; $/4, completed; $/4, 35 days.

Dwight Way, near Audobon St., Berkeley. Cottage; owner, Mrs. E. M. Paget; architects, Polk & Gamble; contractor, R. J. Malone; cost, $2800; signed, July 16; filed, July 17; payments, $600, frame up; $500, ready for lathing; $500, plastering done; $500, completed; $700, 35 days.

Grove St. near 10th. 2-story frame; owner, Mary B. Bartlett; architect & contractor, A. W. Pattiani & Co.; cost, $2600; signed, Aug. 4; filed, Aug. 4; payments, $650, rustic and roof shingles on and chimney built; $650, brown mortared; $550, completed; $650, 35 days.

Hobart & Grove Sts., Oakland. Church; owner, Rev. Thomas McSweeney; architect, Chas. J. Devlin; contractors, Rinaldard Brick Co.; cost, $38,995; signed, July 22; filed, July 22; payments, $5500, ready for floor joists; $8250, ready for sills, etc. $10,000, ready for roof; $7250, completed; $9995, 35 days.

Lot 12. Belleview Tract, Alameda. 2-story dwelling; owner, Mrs. E. A. Pesoli; architect, Geo. A. Bordwell; contractor, J. J. Boyle; cost, $2284; signed, July 16; filed, July 21; payments, $571, frame up; $571, plastering done; $571, completion of house; $571, 35 days.

Louisa St. Berkeley. 2-story frame; owner, Mrs. P. H. Vollmer; architect, W. H. Lillie; contractor, C. W. Mitchell; cost, $2240; signed, Jan. 23; filed, July 27; payments, $550, frame up; $550, brown mortared; $550, completed; $550, 35 days.

Main and Neal Street, Pleasanton. Two-story brick and frame; owner, Druids Hall Association; architect, J. L. Weilbye; contractor, McDonald & Eggleston; cost, $7155; signed, July 23; filed, July 29; payments, $1343, foundations laid, etc.; $1343, roof on, first coat plaster, etc.; $1343, material on ground and second joist in; $1343, completed; $1803, 35 days.

Nell and Park streets, Oakland. Frame building; owner, Mary Suter; architect, Henry Herbst; contractor, Henry Herbst; cost, $1850; signed, July 21; filed, July 22; payments, $462.50, frame up; $462.50, brown mortared; $462.50, completed; $462.50, 35 days.

On road from Oakland to San Jose. Two-story frame; owner, M. W. Dixon; architect, T. J. Welsh; contractor, T. H. Downie; cost, $3700; signed, July 14; filed, July 17; payments, $900, frame up; $900, brown mortared; $900, completed; $1000, 35 days.

Ravenswood near Livermore. To build; owner, C. Buckley; architect, T. J. Welsh; contractor, J. J. Dunn; surety, $1987; cost, $7993; signed, July 30; filed, July 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Santa Clara Avenue near Prospect Place, Alameda. One-story frame; owner, Mrs. Lizzie Walker; architect, A. R. Denke; contractor, A. R. Denke; cost, $2357; signed, July 27; filed, July 28; payments, $500, frame up and rustic on; $500, brown mortared; $500, completed; $940, 30 days; $137, 6 mos. after completion.

Thirteenth Ave. near 12th, E. Oakland. To build; owner, T. F. Whelan; architect, H. J. Murr; contractor, H. J. Murr; cost, $2,200; signed, —; filed, Aug. 5; payments, $575, frames up, brick work done, rustic and roof boards on, etc.; $575, brown mortared; $575, completed; $575, 35 days.

Town of Niles. Frame building; owner, John Astrue; architect; Jas. E. Wolfe; contractor, Thos. Downing; cost, $3,700; signed, July, 8; filed, July 11; payments, $600, frame up; $800, brown mortared; $700, white plastered; $675, completed; $925, 35 days.

Twelfth Ave. near 15th, E. Oakland. Gallery for church; owners, Brooklyn Presbyterian Church; architect, Geo. A. Bordwell; contractor, Ingerson & Gore; cost, $2,707; signed, July 22; filed, July 25; payments, $676, frame up and ready for lathing; $675, ready for painting; $675, completed; $676, 35 days.

Walnut, near Webster. To build; owner, M. L. Cheney; architect, W. J. Mathews; contractor, H. E. Jones; cost, $1,078; signed, Aug. 2; filed, Aug. 4; payments, $/4 of work completed, $764.50; $/4, $764.50; $/4, $764 50; completed, $764.50; $1,020, 35 days.

Walworth Avenue and Bryo Vista Avenue. Two-story frame; owner, Robt. B. Calley; architects and contractors, A. W. Pattiani & Co.; cost, $3,080; signed, July 29; filed, July 29; payments, $800, rustic and roof shingles on and chimney built; $800, window frames set and brown mortar on; $700, completed; $780, 35 days.

Ward, near Fulton—Berkeley. To build; owner, Caesar N. Spiero; architects, Esty & Co.; contractors, F. Esty et al; cost, $1,850; signed, Aug. 1; filed, Aug. 3; payments, $462.50, frame up and building enclosed; $462.50, brown mortared; $462.50, completed; $462.50, 35 days.

YUBA CITY—Record Hall for Sutter County. Stone and Iron; contractors, Swain & Hudson; architects, Mooser & Cuthbertson; cost, $25,000.

TENDERS TO BE RECEIVED.

MARYSVILLE—Plans for additions to the Yuba Co. Court House are ready for estimates. Architects, Mooser & Cuthbertson.

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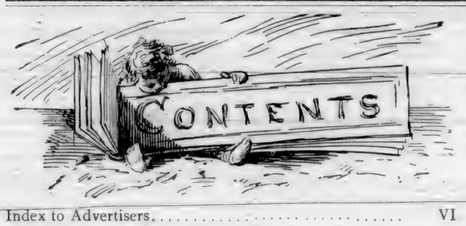

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ELECTRICITY supplies the means, which architects and contractors have neglected, for greatly increasing the economy of building operations.

Manufacturers of dynamos and motors make electric hoists which are reliable and much easier handled than steam hoists; and in all of the larger towns the local electric light and power concerns sell electrical energy from their wires for the purpose of running motors.

An electric hoist is one in which the electric motor replaces the usual steam engine, or hose; or, perhaps, the man at the crank. It requires the minimum of attention. Usually, the electric company furnishes such expert attention as is needed in the person of a man who makes periodical visits to oil and clean.

With the electric hoist there is saved the services of an engineer, and many risks of fire.

We know of but one case in this city where even an attempt has been made to use such a hoist in building; and that was in the erection of the Chronicle building. But the ignorance, disbelief and prejudices of some of the contractors caused its removal before even a test of its capacity.

The public sentiment in relation to the capacities of electric power has changed greatly in the past four years, by reason of the great success of electric motors in running elevators and machinery, as well as street cars and mines and mills. Therefore it would seem that if the electric companies which sell electrical energy would renew their efforts to furnish electric hoists for building purposes, the contractors would be willing to adopt them at rates which would show advantages over those steam, horse, or man hoists.

It is almost needless to speak of the advantages of electrically-operated elevators for permanent passenger and freight uses; for they have been thoroughly demonstrated by several years of success in this and other cities. In these cases the electric motor is used to directly actuate a geared hoist, or indirectly to run a pump to force water to a tank on the roof or against the pressure of an accumulator; from which tank, or accumulator, the water enters the piston, or ram, connected with the elevator cage, at the desired pressure.

Another use for electric power in building is in the various sawing and boring operations of the carpenter and iron-worker on the spot.

Mechanical mixers of mortar and concrete may thus be run; and possibly other procedures may be much expedited by this readily applied power.

THE OLD CHURCH OF MONTEREY AND THE MISSION OF SANT INEZ.

"Tis better to preserve than to destroy."

"Good morning Father Cassinada, we are from Boston, strangers in these parts and have just been examining and admiring your old Mission, and have here(carrying their arms full) a few fragments that we are to take home with us. Our friends in the East will be so interested in seeing some real pieces of stone from the old Missions of California of which we all have heard so much and have learned to appreciate so well." "Certainly ladies, but you have not there enough surely; you have only a few pieces of the mouldings around the tower and some of the carving from the doorway. If you would like to have a piece of the belfry or ornament from the gable I can find you a crow bar in my garden which perhaps will assist you." "No thank you Father we have enough, we have enough."

Easily satisfied, these twin ladies from Boston, satisfied in as much as that they could not carry more. And so whether it be a chip from the cross, a patch from the holy coat, or a few pieces of stone from the old church of Monterey, there seems to be a spirit of appreciation abroad among us that manifests itself in the destroying of the thing admired rather than in the preserving of it in its entirety so that all may enjoy in the beholding. What it is that drives us to do these things it may be hard to determine. Perhaps as in the age of Chivalry, they gave a ring to plight their honor, so in this age of stories of romance that some call lying, we break a fragment off to carry with us as tangible proof of having seen the thing described, something to help authenticate our story; but still more likely let us say, we break the thing admired to keep the piece in happy memory, and as a maiden lays her wedding cake beneath her pillow and dreams of happy love, so do we lay these fragments near us in our waking hours and dream in eastern land, of moonlit skys and mountains of soft blue, all lying tranquil by the western sea. The poet builds his story word by word, and sweet the music of his rithmal tale; but if as sower broadcast o'er the land we strew the words that tell of lonely grief or plighted love sincere; where then the beauty, where the music then. And so the builder rears his thoughts in stone, each stone expressing something of a thought and all the triumph of a human soul; so do not tear them rudely thus apart to place in curio drawer and mantel shelf, but let them still remain till summer suns and winter rains shall crumble all to dust.

This much we ask of those who would destroy by breaking down, but how to tame the vandal that destroys by building up the ruined wall or fallen roof is yet a task more difficult. 'Tis better to preserve than to restore, prevent than cure; but if at any time we are compelled to re-erect, let us do so in a spirit of self abnegation. It is one of the misfortunes that comes to all architects sometime in a life to have to add to, alter, or restore; and although all being fore-warned should be fore-armed against this probability, we find many instances in which a wrong conception seems to prevail as to an architect's duty under such circumstances. During the many years, one might almost say centuries, occupied in the building of some of the Gothic cathedrals different architects were employed from generation to generation till the whole was complete, and thus we find in many cases quite a variety of style yet all are pleasing and harmonious, but we must remember that at the time referred to, these countries had a national architecture as they had also a common religion and although one architect might work 50 years later than his predecessor and have considerable individuality the national style so well expressed the individual that his work was always sympathetic with that which had been done before.

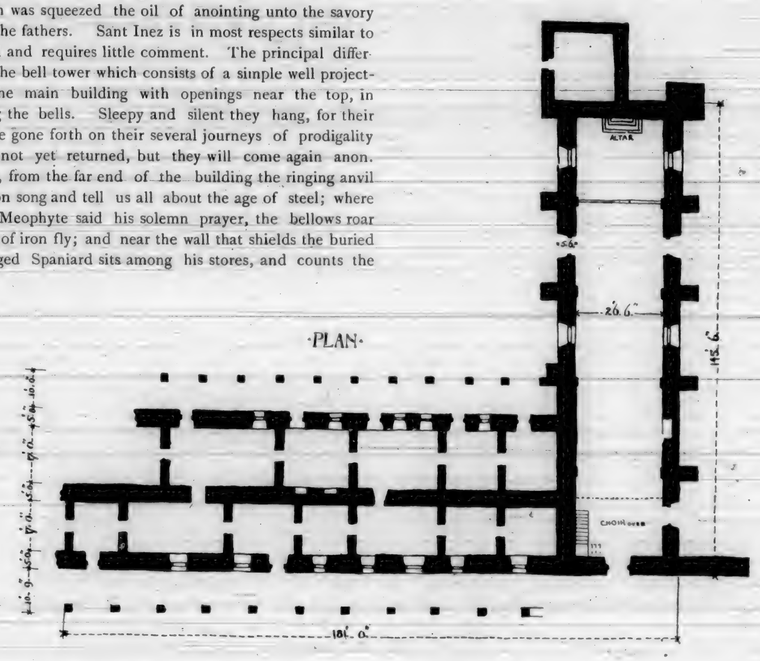
To-day we have no national style of architecture, no common code of ethics, we are in the chaotic stage and are as unstable as the wind that bloweth where it listeth; we copy everything and create nothing. It behoves us therefore in restoring, adding to,or altering, to study carefully what has been done before and to try and preserve to the building throughout the same individuality. Examples of this in harmonious building may be found in a small addition to the Palace Hotel and in the added stories to the Mercantile Library on Pine street. To sacrifice our individuality and simply aim to carry out the design as if under the guidance of the original architect, should be our aim in all such cases. Of course where the addition is large or the alteration is such as to render it independent of the original structure, this argument would not hold. But with the Missions of California both forms of Vandalism have been indulged in, and it is as a remonstrance against further destruction that we offer this protest.

·MISSION· OF ·SANTA NESS·

The church of Monterey given in our sketch, was built for the use of the soldiers stationed at the presidio to guard the missionaries in their work of prosylitizing and colonizing. The walls are of buff colored sandstone and are still in a good state of preservation. The front is probably one of the most architectural of the old Spanish buildings in California. The bell tower still remains as originally designed, despite the tempting offer of the padres crow bar, and we trust that long may the hand of time and the curio gatherers be kept from off it. So also the hand of the architect who sees no architecture but Renaissance no building but Gothic, no orthodoxy but his 'doxy and above all the worker in cement, who would apply his filthy compound to everything as if there were no other material in the wide world so good as his, simply because he is familiar with the one and unfamiliar with the others.

Sant Inez of which is given the plan and perspective view in the text, is situated in one of the most sylvan of California's valleys. Close by, the name of Los Olives proclaims it to be exceedingly fertile and as we drive to the Mission, the stumps of old olive trees with young ones coming up between, reminds us that perhaps a hundred years ago these trees produced the fruit from which was squeezed the oil of anointing unto the savory dishes of the fathers. Sant Inez is in most respects similar to San Miguel and requires little comment. The principal difference is in the bell tower which consists of a simple well projecting from the main building with openings near the top, in which hang the bells. Sleepy and silent they hang, for their spirits have gone forth on their several journeys of prodigality and have not yet returned, but they will come again anon. Meanwhile, from the far end of the building the ringing anvil sings its iron song and tell us all about the age of steel; where once the Meophyte said his solemn prayer, the bellows roar and sparks of iron fly; and near the wall that shields the buried dead, an aged Spaniard sits among his stores, and counts the profit of his daily sale, while from the field where chattering harvester like lightnings flash, quick shears the drooping heads of whitened grain, the laborer returns to eat his mid-day meal, to talk of prices, pools, and freight by rail and think the world encompassed by the hills that close him in, and heaven scarce higher than his shocks of grain, so near the earth his mind.

Tres, 1891.



COLORS AND LIGHT.

A German authority, in referring to the appearance of colors under artificial light, says that in gaslight neutral colors usually appear duller, while bright colors, especially yellow and red, increase in brilliancy. Ruby red and scarlet assume a fiery tone, cherry red is changed to ponceau and the latter into capuchin red; while capuchin red appears orange and orange gold yellow; corn yellow and straw yellow become paler, sulphur yellow has a faded, whitish look, and canary yellow loses its yellow tone and becomes brighter. Salmon rose appears almost white. Purple rose becomes dull, and of all the paler rose colors only solferino becomes brighter. Silver gray becomes brighter and assumes a slight rose cast. It is the only gray which gains in brightness. The blue gray tones, pearl gray mixed with blue or blue gray with pearl, lose both brightness and fire, without, however, becoming unsightly. This is also the case with raven black and all blue shadings.

Pale blue appears gray, sky blue remains blue but loses all lustre, dark blue turns blackish and turquoise becomes dull and watery. Pure yellowish green remains fiery but becomes darker. Apple green changes into emerald. Bluish white becomes unpleasant to the sight and loses its lustre, but yellowish white increases in fire. Pale violet, bluish violet and lilac become opaque and lose all effect. Violet red becomes more fiery, but all other violets lose their tone and appear brown or black.

Maroon, otter marine blue, coffee brown, retain much of their brightness if placed beside each other, and consequently excellent effects may be produced by placing upon paler colors darker shades as coverings, in the form of dots, borders, stripes, or other decorative forms.—*The Hub.*

A RULE AS TO COLOR.

An artist's rule as to color, says a contemporary, is: Choose carefully only those tints of which a duplicate may be found in the hair, the eyes or the complexion. A woman with blue-gray eyes and a thin, neutral-tinted complexion, is never more becomingly dressed than in the blue shades in which gray is mixed, for in these complexions there is a certain delicate blueness. A brunette is never so exquisite as in cream color, for she has reproduced the tinting of her skin in her dress. Put the same dress on a colorless blonde and she will be far from charming, while in gray she would be quite the reverse. The reason is plain—in the blonde's sallowness there are tints of gray, and in the dark woman's pallor there are always yellowish tones, the same as predominate in the cream-colored dress. Women who have rather florid complexions look well in various shades of plum and heliotrope, also certain shades of dove gray, for to a trained eye this color has a tinge of pink which harmonizes with the flesh of the face. Blondes look fairer and younger in dead black, like that of wool goods or velvet, while brunettes require the sheen of satin or gloss of silk in order to wear black to advantage.—*The Hub.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The residence to be erected for Major Mc Laughlin at Santa Cruz is from the design of Mr. Thomas Walsh, architect of this city.

The building is a two story frame with cellar and attic built upon a rubble foundation. The first story contains a large reception hall, parlor, billiard room, den, reception room and dining room. The kitchen is located on line with principal floor and is one story in height, with large ventilator extending through roof in tower shape and is disconnected from dining room by a large pantry containing a fire proof vault and from the front of building by the rear hall a lavatory is placed under main stairs accessible from reception hall, billiard room and west veranda.

The main entrance is located centrally at front of building and a porte-cochere is placed on the east side entering into reception hall. The second story contains five chambers and two bath rooms. The servants' rooms, trunk room etc., are located in attic. The observatory can be entered from the attic and from the upper story of the tower. The building will be thoroughly ventilated and heated with the hot water system.

The light and elegant wire bridge to be erected in Golden Gate Park over a depressed road-way, is from the design of John A. Robling and Sons. The span proper is 60 feet. Total length, 140 feet, width 23 feet, clear between rails. Capacity of bridge, 2450 pounds per lineal foot of bridge.

Cables of galvanized steel wire 2½ inches in diameter saving a breaking strength of 200 tons each.

They are fastened at ends to concrete anchorages in such a manner as to allow for adjustment.

The top of floor will be 17 feet above the driveway and will save a grade of three feet from the center towards the end of bridge.

The floor will consist of 12 inch steel beams suspended from cables by means of iron suspenders, and braced transversely with iron rods.

An iron railing is fastened to these beams rigidly at each side.

The railing will be extraordinarily strong so as to help in distributing concentrated loads, and will be ornamental at the same time. At each end of railing will be an ornamental lamp post.

The bridge is supported by two steel towers, each consisting of eight columns. These latter are framed together in a most substantial manner and the necessary braces and brackets will be of very ornamental design.

The tops of towers will hold suitable flagpoles. The towers will rest on solid concrete piers.

F. A. Koetitze is the engineer.

The old church Monterey is from sketches by Tres, our special correspondent.

The corner in the Dining room is from Clarkson Swain, Architect of this City.

The Ben Lomond Hotel, by S. Newsom Architect, is from a drawing by C. Corrigan.

BOOKS & PERIODICALS

Academy Architecture and Annual Architectural Review for the years 1890 and 1891—7½ by 10 inches—edited by Alex. Koch, architect. Published by special permission and for sale by William Mueller, 695 Broadway, New York, or through this journal. Price, $2.50 per copy. This Review contains a large number (100 or more) reproductions by line or half tone photo-type selections of the most prominent architectural drawings hung at the Royal Academy Exhibition, or the most interesting architectural subjects carried out or designed during the last few years in the principal cities of Europe. The year 1891 is the third issue of this Review, and each issue presents in a concise, neat and applicable form a large amount of matter interesting and valuable to architects, draughtsmen, designers, etc., as well as to students and lovers of art in general. We know of no other book which contains so much useful material to assist the architect compiled in such a condensed form and so easily accessible. This is a work that every architect should have.

The Metal Worker Essays on House Heating. The book contains the principal efforts submitted in the celebrated Metal Worker competitions in house heating. A brief account of these contests is given in the introductory chapter, and the names and addresses of the prize winners are also mentioned.

We are disposed to consider this volume one of the most valuable books extant on house heating, for the reason that it presents the particular ideas of different men who are actively engaged in the work described. It is not a mere theoretical discussion of principles, but instead it contains accounts of how different men would do the same work under like conditions, and also of how the same results may be accomplished by different means. The opportunity of contrasting the several different systems of house heating now in common use which is presented, is not the least important feature of the work. The price is $2.50.

"Hello! Adolphus, what style do you call that new house of yours?"

"I don't know; the architect calls it the Eastern Craze."

"It is not at all beautiful."

"It was not intended to be."

CUPID.

Cupido, a celebrated deity among the ancients, god of love, and love itself. There are different traditions concerning his parents. Cicero mentions three Cupids; one, son of Mercury and Venus; another, son of Mercury and Diana; and the third, of Mars and Venus. Plato mentions two; Hesiod, the most ancient theogonist, speaks only of one, who as he says, was produced at the same time as Chaos and the earth. There are, according to the more received opinions, two Cupids, one of whom is a lively ingenious youth, son of Jupiter and Venus; whilst the other, son of Nox and Erebus, is distinguished by his debauchery and riotous disposition. Cupid is represented as a winged infant, naked, armed with a bow and a quiver full of arrows. On gems, and all other pieces of antiquity, he is represented as amusing himself with some childish diversion. Sometimes he appears driving a hoop, throwing a quoit, playing with a nymph, catching a butterfly, or trying to burn with a torch; at other times he plays upon a horn before his mother, or closely embraces a swan, or with one foot raised in the air, he, in a musing posture, seems to meditate some trick. Sometimes, like a conqueror, he marches triumphantly, with a helmet on his head, a spear on his shoulder, and a buckler on his arm, intimating that even Mars himself owns the superiority of love. His power was generally known by his riding on the back of a lion, or on a dolphin, or breaking to pieces the thunderbolts of Jupiter.

Among the ancients he was worshipped with the same solemnity as his mother Venus, and as his influence was extended over the heavens, the sea and the earth, and even in the empire of the dead, his divinity was universally acknowledged, and vows, prayers and sacrifices were daily offered to him. According to some accounts, the union of Cupid with Chaos gave birth to men, and all the animals that inhabit the earth, and even the gods themselves were offsprings of love, before the foundation of the world. Cupid, like the rest of the gods, assumed different shapes; and we find him in the Æneid putting on, at the request of his mother, the form of Ascanius; and going to Dido's court, where he inspired the queen with love.

NOTES & COMMENTS.

We are indebted to the Pacific Lumberman, and Electrician for the following article which is so much to the point that we reproduce it here:

The *Electrical Review* says the word "electric" is perverted to base uses. "To the uninitiated, the *hoi pollio*, this word carries a world of mysterious, subtle and powerful meaning. We see extensively advertised the merits of electric hair-curlers, electric soap, electric tooth brushes, electric knife sharpeners, and hundreds of others. This is a swindling prostitution of a noble word, to help the sale of articles not connected in any manner with anything electric. The cure for this lies in the education of the public in matters electrical, so that they may know of their own knowledge what to trust, and what to avoid, when they see or read about anything 'electric.'"

We remember a year or two ago, when the California Electric Society was being organized, a notice was put in the different dailies, asking those interested in electrical matters to meet at a certain hall. When the evening came the hall was well filled, but many present looked like cranks that had made their escape from some asylum. They turned out to be "electric doctors," "Electricians," as they called themselves, who had been attracted by the word electrical.

There is another class of men that misuse the word. They are the bell-hangers who advertise themselves as "Electricians."

And lastly we have the men who, having oiled a dynamo for a few months, come out as full fledged "Electrical Engineers" and "Experts."

It is unfortunate that such a good word should be put to such base uses, but so long as the world is filled with fools who believe what they hear, but do not understand, the evil will go on unchecked.

A CITY DWELLER'S WISH.

I love the leaf of the old oak tree,
I love the gum of the spruce,
I love the bark of the hickory,
And I love the maple's juice.

On the walnut's grain I fondly dote,
On the cherry's fruit I'd dine,
And I love to lie in a narrow boat,
And scent the odor of pine.

Ah, me! how I wish some power grand
Would invent some single tree
With all these points well developed, and
Would send that tree to me.

I'd plant it deep in the jardiniere
That stands in this flat of mine;
I'd give it the sweetest, tenderest care,
And water its roots with wine.

—*John Hendrick Bangs, in Harpers.*

The Odd Fellows of Chicago are inspired with the noble ambition to paralyze the foreign visitors to the World's Fair with the biggest and most hideous office building in the world. So they have laid their plans for the construction of what they call a "Temple," in the form of a tobacco warehouse with a sugar refinery and three State Prisons on top of it, the whole surmounted by an insane asylum and capped with a factory chimney with windows in it and a church steeple on top. The entire delirium is to be thirty-four stories high, and the peak of the steeple is to be 556 feet above the ground—just a foot higher, it will be observed, than the Washington Monument. If it were a foot lower the Chicago Odd Fellows would feel that they had lived in vain. When foreigners witness this triumph of American taste they will stop asking why we put a duty on works of art.

San Francisco News Letter.

The new Swimming Baths at Sacramento have been opened. The scheme has been brought to final completion by an association composed of public-spirited residents. The *Sacramento Union* has worked arduously to enlist public enterprise in the work, with the result that the city of Sacramento now has the most complete swimming bath on the Coast. This must be highly gratifying to the *Union*. Many of the interior towns will, in the future, profit by the articles that have heretofore appeared in the columns of that paper on the subject of swimming baths.

The woods chiefly used by the Greeks and Romans were the cedar, ash, oak, yew, lotus, citron and ebony.

There is nothing like experimental facts; they are irresistible when properly conducted, and outweigh mere theories.

Mr. Lovell has entered into a co-partnership with Mr. J. M. Wood. They are the architects for the new theatre at Stockton. Mr. Wood is well and favorably known on this Coast, he having designed the California Theatre in this city, and during the past and present season designed and superintended the extensive alterations of the Palace Hotel.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute Architects, meets second Friday of each month at Academy of Sciences Building.

Geo. H. Sanders, Pres. Oliver Everett, Vice-Pres.
Geo. A. Boardwell, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards, Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. Quimby, Pres. O. Brooks, Vice-Pres.
C. E. Purington, Sec. W. C. Crosett, Treas.

Builders' Association of California, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. Kent, Pres. E. C. Worden, Vice-Pres.
Ira Fancher, Sec'y. Wm. B. Kreger, Treas.
L. A. Larsen, Clerk and Financial Sec'y.

Master Painters' Association of the Pacific Coast.
E. M. Gallagher, Pres. H. G. Jarman, Sec.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday evening, Sept. 11th. Reports for the past year were received from the officers. These reports showed a marked increase of the funds in bank and in the hands of the treasurer. The election of officers resulted in the choice of Geo. H. Sanders, President; Oliver Everett, Vice-President; Geo. A. Boardwell, Secretary, and John M. Curtis, Treasurer, (re-elected.) For Trustees, G. W. Percy, W. J. Cuthbertson, John Wright, H. T. Bestor and Seth Babson. The new officers were installed in their regular places. If the Chapter had some more accessible hall for meetings than at present, there appears no reason why the coming year should not be an active and interesting one for the association.

Lucol as a paint oil has lately come into the market as an entirely new invention calculated to supersede the old linseed oil. Professor A. W. Jackson, Vice-president of the American Lucol Company, at various meetings addressed the Chapter of Architects, the Technical Society, and the Master Painters of this city on the merits and advantages of the new oil. The principal points of advantage in the use of Lucol is summed up in the following notes from the addresses before the societies.

Mr. Jackson stated that Lucol was not introduced as an "adulterant" for linseed, neither was it "just as good," but in all respects better, and that where linseed oil should be used to reduce the Lucol, the linseed oil would occupy the position of an adulterant to the extent of the inferior oil used.

The professor mentioned some twenty or more points of superiority that Lucol possessed over linseed oil as a paint oil.

1st. Color—good and clear.

2d. Smell—not disagreeable, but has the odor of the gum and whatever solvent may be used.

3d. Permanence for the gum, which has been tested for some five years.

4th. Body—good; the gum gives the body, which is dissolved in a volatile solvent, and can be made thick or thin by grading the quantity of each.

5th. Dries quick or slow. By the use of certain light solvents, it can be made to dry quickly, when, if the heavier solvents are used, it becomes a slow dryer. As prepared at the factory, the solvent is graded to the required density to form the drying qualities about the same as linseed oil.

6th. Holding up quality. The body holds the pigment throughout the whole drying process.

7th. Bearing out qualities, viz: Not to sink into the wood, leaving the pigment without a binding material. With this material the solvent may sink into the wood, but the gum retains and holds the pigment in place.

8th. The oil can be made to dry as hard or soft as desired.

9th. The adhering quality of Lucol has proved superior to linseed oil, where painting has been done on adjacent buildings at the same time with both oils.

10th. Thinner. "Turps" or alcohol can be used, but the best thinner to use is the manufactured or prepared oil for this purpose. Petroleum properly distilled, such, for instance, as the best grades of lamp oil, do not deteriorate the Lucol oil, except so far as it thins the oil; therefore it carries less gum per square foot of surface covered. Linseed oil can be used as a thinner if desired.

11th. Effect on pigments. It does not affect the tints of the most delicate colors, and will readily mix with white lead, zinc, or any other pigment.

12th. Gloss—It holds its gloss remarkably well when used at the proper degree of thickness. When much reduced the gloss disappears proportionately within certain limits. From fifteen to twenty per cent. of thinner can be used without diminishing the gloss, but thirty-three per cent. gives an egg-shell gloss, while forty per cent. "flats" it entirely.

13th. Retains the brightness of the tints for a longer time than when linseed oil is used.

14th Quantity of pigment to the gallon of oil is less than other oils, for the reason that the gum of the Lucol being left on the surface, it holds the pigment more in mass, the density being thereby increased.

15th. Freedom in spreading. Where the pigment is mixed in the same proportion of pigment to oil as is usual for linseed oil the Lucol works a little tough, this can be remedied by the addition of the proper thinner.

16th. Blisters less than linseed oil. It has in itself no blistering qualities. Lucol dries from the bottom outward, while linseed oil dries from the outside, forming a skin subject to blisters. It withstands the weather effects of heat and cold without blistering.

17th. Does not crack on account of the elasticity of the gum.

18th. Its washing qualities are of the first order; it behaves differently from linseed oil and is not affected by the use of caustic lyes of the washing solutions.

19th. Wears longer, and does not chalk or peel off; it simply wears out by the natural wear of the elements.

20th. Can be "flatted" by the addition of the thinners before mentioned.

In our next number we shall refer to the subject again; giving something of the constitution of the oil.

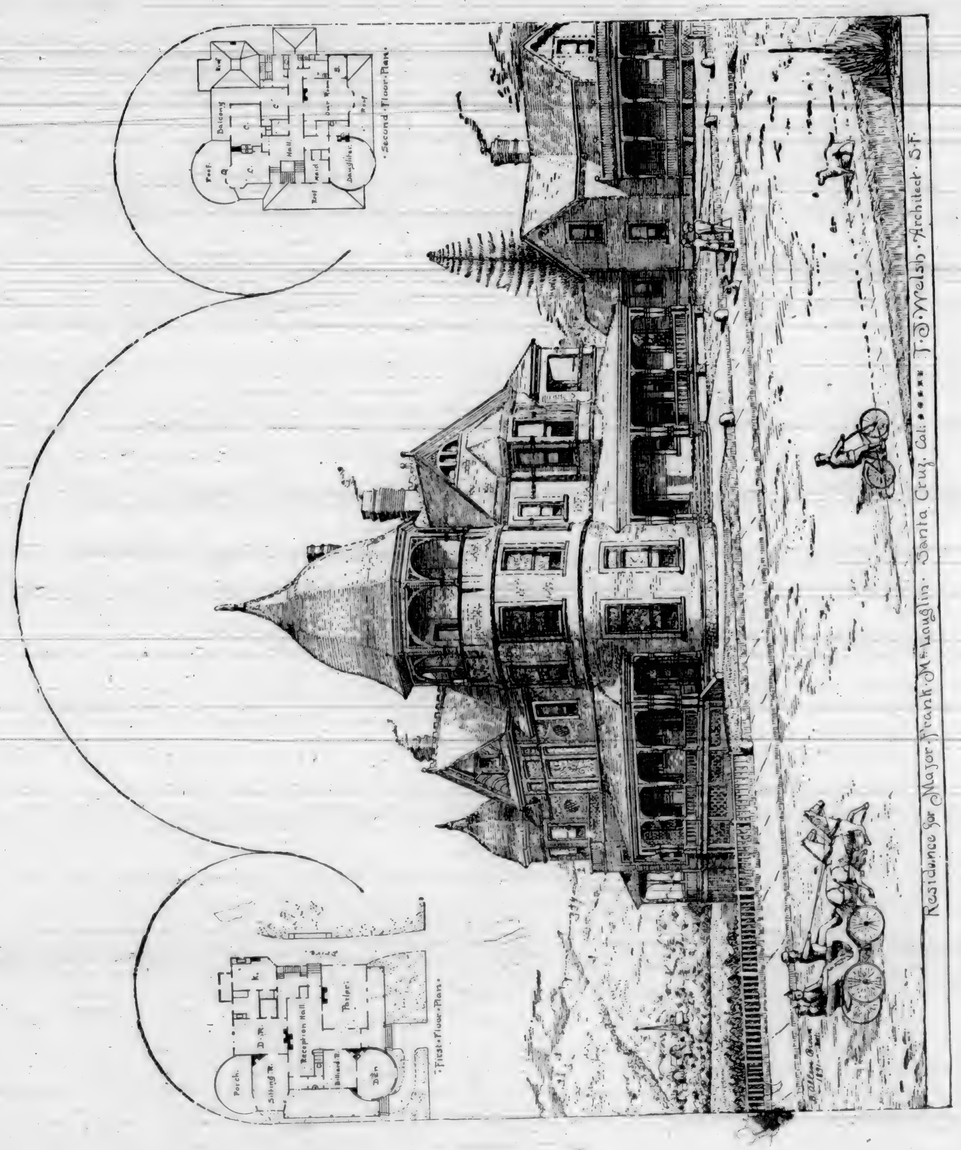
TENDERS TO BE RECEIVED.

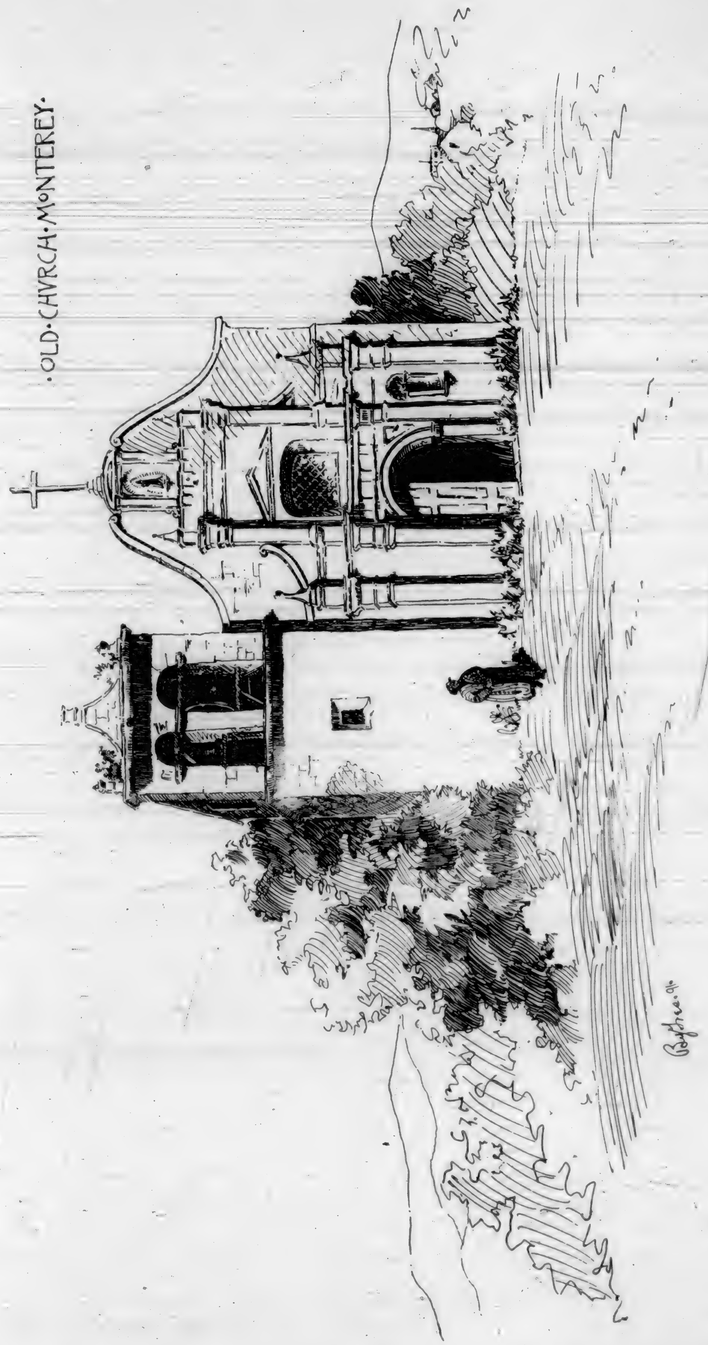
Sealed Proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C. until 2 o'clock P. M. on the 25th day of September, 1891, for all the labor and materials required for the approaches to the U. S. Court House and Post Office building at Statesville, N. C., in accordance with the drawing and specification, copies of which may be had on application at this office or the office of the Superintendent at Statesville, N. C.

Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal.

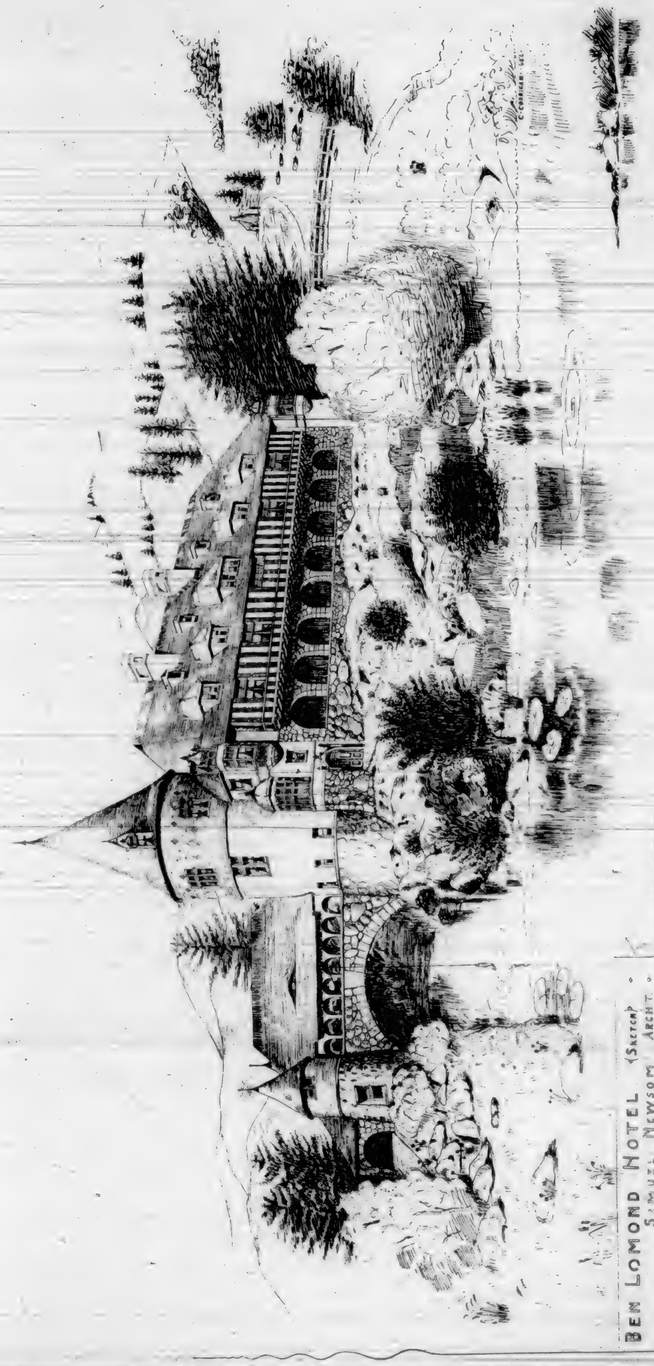
The Department will reject all bids received after the time

SEPTEMBER, 1891. VOL. XII, No. 9.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



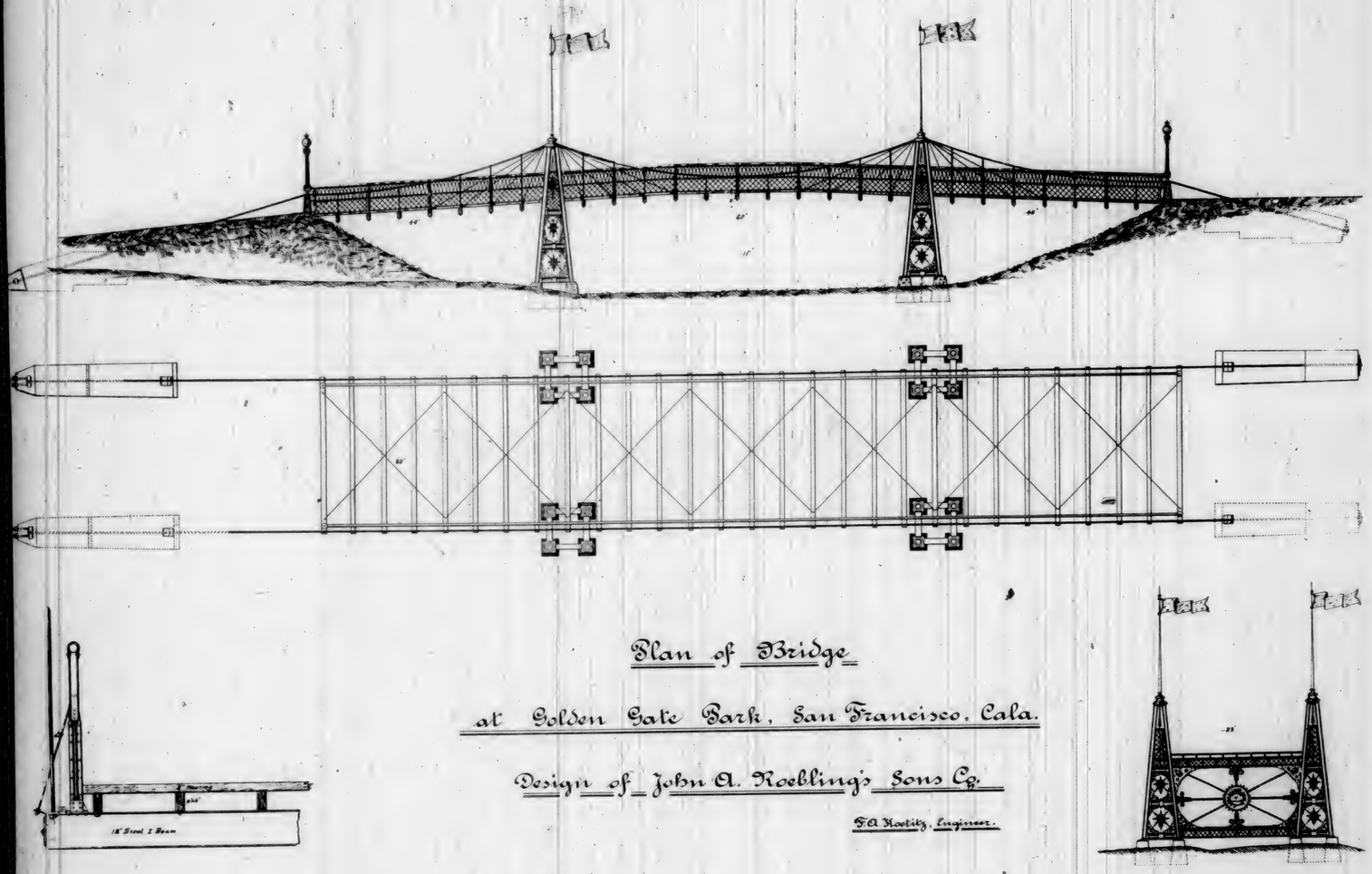


OLD CHURCH MONTEREY



BEN LOMOND HOTEL (Sketch).
SAMUEL NEWSOM ARCHT.

SEPTEMBER 1891 VOL. XII. NO. 9.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



Plan of Bridge

at Golden Gate Park, San Francisco, Cala.

Design of John A. Roebling's Sons Co.

F.A. Koebitz, Engineer.

herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Approaches to the U. S. Court House and Post Office Building, Statesville, N. C." and addressed,

W. J. EDBROOKE,
August 28th, 1891. Supervising Architect.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C. until 2 o'clock P. M. on the 28th day of September, 1891, for all the labor and materials required for the iron stairs, iron works, &c., of elevator shaft, for the U. S. Court House, Post Office, &c., building at Denver, Colo., in accordance with drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at Denver, Colorado.

Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for Iron Stairs, Iron Works, &c., for the U. S. Court House, Post Office, &c., building at Denver, Colo." and addressed to,

W. J. EDBROOKE,
August 27, 1891. Supervising Architect.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C. until 2 o'clock P.M. on the 6th, day of October 1891, for all the labor and materials required and fixing in place to complete the Low-pressure, Return-circulation, Steam Heating, and Ventilating Apparatus, Power Boiler, Pumps, &c., in the U. S. Custom House &c., Building at Galveston, Texas, in accordance with the drawings and specifications, copies of which may be had on applications at this office or the office of the Superintendent at Galveston, Texas.

Bids will also be considered for any other system of heating and ventilating in lieu of the above and parties proposing to supply such must submit with their proposal plans and full specification for same.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements and meaning of this invitation, or for any heating and ventilating apparatus not satisfactory to this Department.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Low-pressure, Return-circulation, Steam Heating and Ventilating Apparatus, (or otherwise, as the case may be) Power Boiler, Pump, &c., for the U, S. Custom House, &c., Building at Galveston, Texas", and addressed to,

W. J. Edbrooke,
Supervising Architect.

BUSINESS MOSAICS.

J. Browell, who has been so long and favorably known as a builder of patent chimneys has an excellent display of his appliances at the Fair of the Mechanics Institute. Mr. Browell's chimneys are constructed in accordance with the most approved scientific knowledge of the day. The method of ventilating the space between the inner and outer pipes reduces the expansion and contraction from the effects of heat and cold—thus forming a chimney having the element of safety in a greater degree than a brick chimney. So far as regards earthquakes and storms, the Browell Chimney is the safest. On soft or "made" ground the liability to cause an unequal settlement is diminished on account of their lighter weight than brick chimneys. These chimneys can be enclosed with walls and plastering, or they can be made quite ornamental as can be seen on some of those on exhibition. Mr. Browell being a practical and observing man, his chimneys are kept up to all the requirements of the times as the best that can be made, not just as good, but the best.

Architects and house-keepers have an excellent opportunity to examine into the merits of gas as it relates to cooking and heating, as exhibited at the exhibition at the Mechanics Fair, by the San Francisco Gas Company. With all the economic features as heretofore used, the present exhibition shows many improvements, more especially in the forms and adaptability to the requirements. The gas is so mixed with air as to make a more perfect combustion consequently a blue, smokeless hot flame with no dirt or soot, and no smell or contamination of the atmosphere of the room. Food cooked by the gas fire is more palatable than when cooked by the coal fire. Open gas fires for heating have already taken the place of many of the old style coal fires with their accompanying dirt, smoke and soot. Almost every house at present building is arranged for gas to be applied for all heating purposes. Bath rooms, sinks, laundry tubs, etc., can now be supplied with small instantaneous water heaters thereby dispensing with the cumbersom boiler as heretofore. All interested persons should examine these stoves and heaters at the Fair or at the Company's show rooms at 16 Post street.

AS TO METALLIC LATH.

The Cincinnati Corrugating Company are to be congratulated on the very large increase in the use of their metallic lath this season. They write us that the building public are now thoroughly aroused to the fact that it is the most effective, practical and satisfactory article of the kind that had ever been placed on the market.

Among the merits of this lath might be mentioned the fact that it is very rigid, yet easily adapted to specially formed surfaces; it is very easily and rapidly applied, while the peculiar formation gives an unequalled bed and key for the mortar.

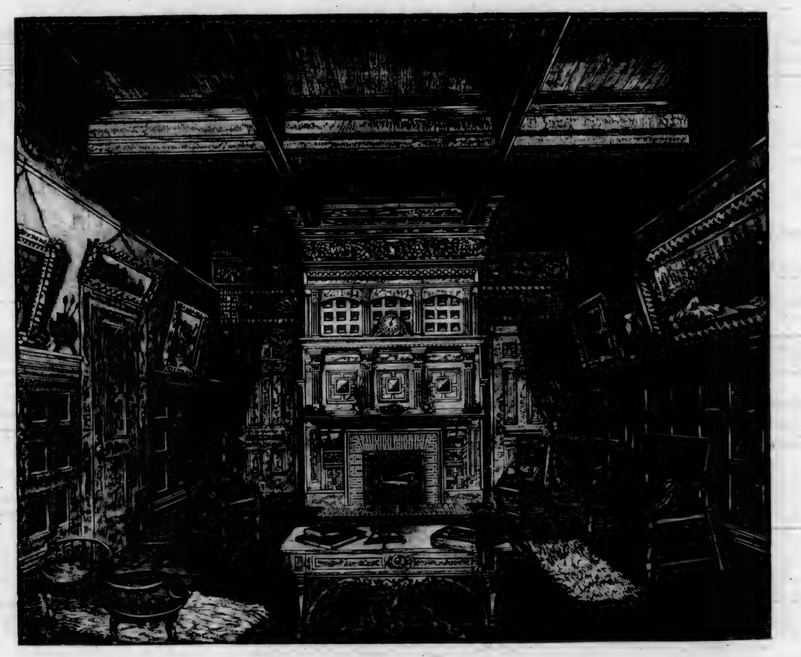
Another point the company call attention to is the great saving in insurance. Recently the underwriters of St. Louis have issued a manifesto on the subject. They say that to be ranked as first-class construction and to get the best rates, iron lath, or an equally good style of construction must be adopted and neither wooden lath nor wooden furring will be admitted. In the case of one large public building recently erected in Cincinnati, the committee decided to use wooden lath on the score of "economy," thus reducing the building to the class known among the insurance men as "ordinary construction." It is estimated that had they used the Corrugating Company's Metallic Lath, as they thought of doing, thus making it class as "superior construction," the saving in insurance in five years would have more than paid the difference.

In addition to the United States Government Building, one of the finest in the country, this lath has been adopted in the construction of the Carew Building, the City Hall, Odd-Fellows Temple and other first-class edifices of Cincinnati.

The Cincinnati Corrugating Company are at all times ready to give information as to this as well as their other products, and will promptly mail samples, estimates, etc. They should be addressed at Piqua, O.

Veneers of California Red Wood have become famous wherever known throughout the world, and the display at the Mechanics Fair of the California Veneer Works, R. P. Hurlbut, Manager, 539 to 563 Brannan street, this city, shows many handsome specimens of this ornamental wood that rival in beauty the fine woods that are imported at great expense. These red wood curls are in all shades from the most delicate pink to the dark hue of mahogany, clouded, undulating and curled, feathery, speckled, sprayed, the markings and shades merging into one another giving a rich harmonious combination of tones which in the hands of the artist and designer is susceptible of being treated in a manner pleasing to a refined taste. The accompanying cut shows the business office of the works on Brannan street, and is entirely fitted up with red wood in great variety of beautiful shades. These works also prepare veneers, lumber or logs of mahogany, primavera and Spanish cedar.

Wire lathing has been steadily growing in public favor since its introduction some years ago. The disadvantages which generally attend new things have been remedied and as at present manufactured the Roebling Standard Fire Proof Wire Lath has no superior in the market. It may be applied to studding or joists and the proper stiffness maintained by the stiffening bars. It can be supplied directly to brick or terra cotta walls and ceilings, without furring, and yet have sufficient air space to prevent dampness. It is easily applied, gives a good key to the mortar and is not subject to damage by reason of the expansion by heat or the contraction by cold. With this lath the plastering fills the space between the wall and wire lath as well as the coating over the face, therefore, the wire cloth is imbedded in the body of the plastering in which form it presents the best fire resisting material for this work to be had.



THE CALIFORNIA VENEER WORKS.

(Showroom 563 Brannan Street.) R. P. HURLBUT, Manager.

If you are inclined to be ill tempered and petulant you want a Blount Door Check. If you are inclined to be careless and inconsiderate about fastening the windows, you want a Giant Sash Lock. Weatherly, Jardine & Co., 132 Market street, are the agents for both of the useful articles mentioned as well as many other improved appliances.

The California Architect and Building News is a practical journal published by an association of architects, and in the interests of architects and others connected with the building trades.

John Mallon, the Pioneer Ornamental Glass Worker, has some beautiful art glass in the exhibition at the Mechanics Fair. The work is of a high grade, the coloring bright and clear and blended for figure work gives the appearance of life itself.

We have lately had some blue prints made by Edward Denny & Co., 418 Montgomery street, which were very fine copies. Mr. Denny also makes black prints that surpass anything yet to be had. This firm has a large stock of architects' and draughtsmens' materials including some late novelties.

A LARGE ELECTRIC GENERATOR.

Our fine illustration is of the 120 h. p. Dynamo built by the Electrical Engineering Co. of San Francisco, for electric power transmission and distribution purposes.

Such dynamos are located at the electric power central station, and are driven by belts from the engine or other course of power. The electricity so generated is conveyed by wires to the electric motors in various localities;—often miles away.

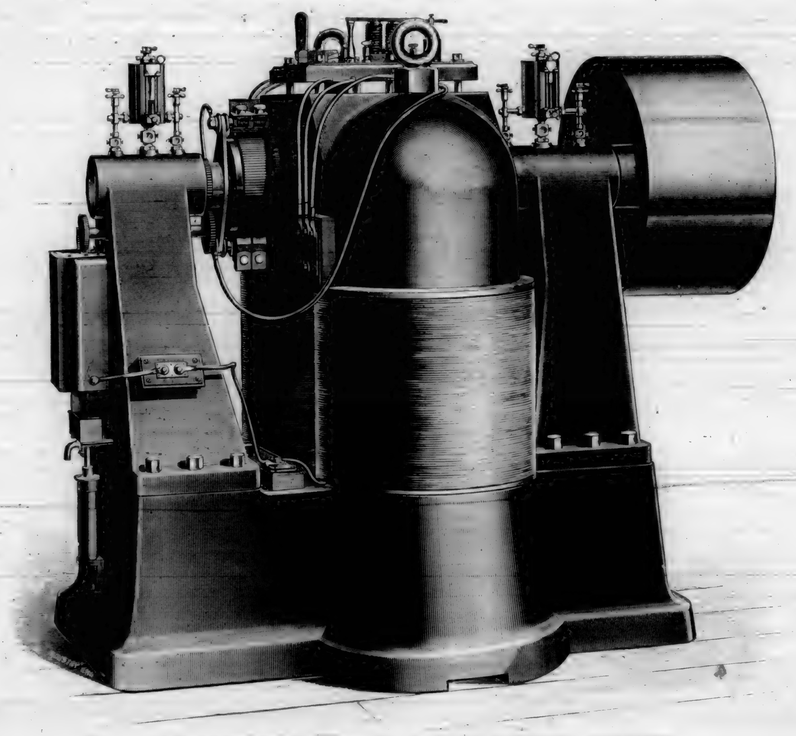
For instance:—The motors exhibited by the Electrical Engineering Co. at the present Mechanics Fair are part of twenty-three upon one electric circuit which is seven miles long.

The Electrical Engineering Co.'s dynamos and motors are made of all sizes and for all purposes which require the generation of electricity and its utilization.

These machines are especially valuable to the architect and builder, on account of the assistance they do and can give in operating their tools and elevators.

The Pullman Sash Balance is one of those especially useful articles that the manufacturers are continually adding from time to time little improvements to their balance which keeps it in advance of all other methods. This balance does not require box frames. A metal tape is used as an attachment to the sash and winds or unwinds on a drum which is moved by the aid of a spring which winds or unwinds as required to balance the sash.

The springs are of the best steel obtainable, and work in steel boxes and frames to avoid the danger of breakage which would exist by the use of cast iron. The tape is not of cotton or iron, but made according to the latest method for Aluminum metal, which promises to surpass all other forms of metal for this purpose, on account of its adaptability to the varying conditions it being strong, tough and pliable, yielding easily to the movement of the pulley. This Pullman spring and tape has been put into a form adapted to use as a door spring which is simple, light, strong and complete.



120 HORSE-POWER DYNAMO FOR ELECTRIC POWER TRANSMISSION.

The Board of Supervisors have purchased 10,000 feet of the "Eureka" Cotton Rubber Lined Fire Hose. Last month they purchased 5,000 feet, and they will probably make another purchase of 5,000 feet in a short time. This hose is of the same construction and manufacture as the well known "Paragon" Cotton Fire Hose, but is heavier and calculated for fire service in the business and manufacturing districts of large cities. W. T. Y. Schenck of this city is the agent for this Coast.

Large silvered amalgam plates 5x8 feet are on exhibition at the Mechanic's Fair. These plates are for saving the fine gold in mining operations, and were manufactured by E. G. Denniston at his plating works 653 and 655 Mission street, this city. It may not be generally known that old plated ware for household use can be replated and made to appear the same and at a price much less than new goods. Mr Denniston makes a specialty of all kinds of plating, either new or old.

CITY BUILDING NEWS.

Alabama near 20th. To build; owner, Ben Schloss; architect, A. J. Barnett; contractor, Frank Williams; surety, $770; cost, $3,240; signed, August 7; filed, Aug. 8; payments $1000, rustic and rough boards on; $760, brown mortared; $700, completed; $830, 35 days.

Beale near Harrison. To complete work on building; owner, Geo. Middlemas; contractor, J. P. Shepard; surety, $3148.50; cost, $3148.50; signed, Aug 6; filed, Aug 7; payments, $629.70, frame up, $629.70, ready for plastering; $629 70, white coated; $629.70, 35 days.

Broadway and Gough. Plumbing; owner, David F. Walker; architects, Smith & Freeman; contractor, Richard Rice; cost, $1010; signed, Aug. 15; filed, Aug. 17; payments, $380, rough plumbing in; $400, completed; $260, 35 days.

Broderick near Pine. To build; owner, Alex. Gibbons; architect, M. J. Welsh; contractor, Michael Walsh; surety, $1860; cost, $7140; signed, Sept. 3; filed, Sept. 3; payments, $1860, frame up; $1860, brown mortared; $1860, completed; $1860, 35 days.

Broderick and 14th. Carpenter work, etc.; owner, Jas. M. Moran; architect, W. H. Lillie; contractor, John H. McKay; surety, $950; cost, $3850; signed, Aug. 14; filed, Aug. 18; payments, $712.50, frame up; $712.50, brown mortared; $712.50, standing finish on; $712.50, completed; $950, 35 days.

Bryant and 3rd. Carpenter work; owner, J. H. A. Kurtz; architect, J. J. Clark; contractor, John G. Adams; cost, $4050; signed, Aug. 10; filed, Aug. 11; payments, $1000, frame up; $1000, brown mortared; $1000, completed; balance, when owner is satisfied.

Bush Between Gough and Octavia. Carpenter work etc.; owner, Annie Brandt; architect, H. C. Maxy; contractor, Jas. O'Brien; surety, $3000; cost, $12000; signed, Aug. 24; filed, Aug. 25; payments 75 per cent. as work progresses; 25 per cent. 35 days.

Bush near Powell. Brick work etc; owner, L. A. Berteling; architects, Copeland and Pierce; contractor, J. Wagner; cost, $5500; signed, Aug. 14; filed, Aug. 24; payments, $1000, excavations completed; $1400, brick work ready for first story joists; $1100, chimneys built; $825, completed; $1375, 35 days.

Bush near Powell. Carpenter work; owner, L. A. Berteling; architects, Copeland and Pierce; contractor, M. C. Lynch; cost, $19400; signed, Aug. 8; filed, Aug. 24; payments, $3500, frame up; $3000, brown coated; $3000, white coated; $3900, ready for painter; $1500, completed; $4850, 35 days.

Bush near Powell. Painting; owner, L. A. Berteling; architects, Copeland and Pierce; contractor, B. Bradley; cost, $1345; signed, Aug. 8; filed, Aug. 24; payments, $300, exterior primed; $800, two coats on exterior and interior; $208, completed; $337, 35 days.

Bush near Powell. Plumbing; owner, L. A. Berteling; architects, Copeland and Pierce; contractor, H. Williamson; cost, $3124; signed, Aug. 8; filed, Aug. 24; payments, $562, rough gas and water pipes in; $1000, plumbing completed; $781, completed; $781, 35 days.

Capital near Sagamore. Carpenter work etc; owner, Jas. J. O'Brien; architect, Jas. E. Schulz; contractor, Jas. E. Schulz; cost, $1290; signed, July '91; filed, Aug. 26; payments, $5.0, frame up and rustic on; $300, brown coated; $300, white coated; $300, 35 days.

Clay near Buchanan. Brick work; owner, Chas. L. Watson; architects, Percy and Hamilton; contractors, Richardson and Gale; cost, $2385; signed, July 9; filed, Aug. 31; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Clay near Buchanan. Cabinet work; owner, Chas. L. Watson; architects, Percy and Hamilton; contractor, C. Boller; cost, $7200; signed, July 15; filed, Aug. 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Clay near Buchanan. Painting; owner, Chas. L. Watson; architects, Percy and Hamilton; contractors, Fraser and Keefe; cost, $1035; signed, July 9; filed, Aug. 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Clay near Buchanan. Plastering etc.; owner, Chas. L. Watson; architects, Percy and Hamilton; contractor, D. O'Sullivan; cost, $1300; signed, July 9; filed, Aug. 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Clay near Buchanan. Plumbing etc.; owner, Chas. L. Watson; architects, Percy and Hamilton; contractor, W. F. Wilson; cost, $2133; signed, July 9; filed, Aug. 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Clay near Filmore. Alterations; owner, Jas. Nordman; architect, J. C. Newsom; contractor, Peter Jubinville; cost, $2227; signed, Aug. 10; filed, Aug. 12; payments, 75 per cent. as work progress; 25 per cent., 35 days.

Clay and Laurel. Sashes, doors etc.; owner, W. E. Lane; architect, J. Cather Newsom; contractor, Golden Gate Plng. Mill; cost, $1220; signed, Aug. 20; filed, Aug. 21; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Connecticut and Colusa. To build; owner, Frederick Hampe; architect, Fred. B. Wood; contractor, A. C. Hansen; cost, $1615; signed, Aug. 12; filed, Aug. 14; payments, $212, brick foundation completed; $600, first coat mortar on; $400, completed; $403, 35 days.

Connecticut near Napa. To build; owner, Martin Leonard, contractor, R. O. Davis; cost, $1650; signed, Aug. 27; filed, Aug. 28; payments, $350, rustic on; $300, brown coated; $300, white coated; $800, completed; $400, 35 days.

Dame, near 30th. To build; owner, Kate Hilton; architect, E. A. Hermann; contractor, Henry A. Muller; cost, $1805; signed, Aug. 21; filed, Aug. 24; payments, $550, rough plumbing done; $350, exterior work completed; $450, completed; $455, 35 days.

Douglass, near 23d. To build; owner, John J. Barry; architect, Henry Kruse; contractor, Henry Kruse, cost, $1600; signed, Aug. 23; filed, Aug 24; payments, $400, frame up; $400, brown coated; $400, completed; $400, 35 days.

Dramont and 19th To build; owner, Pierre Cames; architect, Chas. M. Rosseau; contractor, Louis Medus; surety, $3000; cost, $5500, signed, Aug. 27; filed, Aug. 28; payments, $1378 framed; $1375, brown coated; $1575, completed; $1376, 35 days.

Duncan, between Sanchez and Church. To build; owner, D. H. Foley; architect, Geo. Latrouel; contractor, M. L. Bassett; cost, $1493; signed, Aug. 12; filed, Aug. 17; payments, $500, brown mortared; $500, completed; $493, 35 days.

Eleventh, near Market. Grading, etc. owner, Church of the Advent; architects, Coxhead & Coxhead; contractor, Wald Tarp; surety, $3229; cost, $4305; signed, Aug. 20; filed, Aug. 26; payments, first day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Eleventh, near Market. Terra Cot a work; owner, Church of the Advent; architects, Coxhead & Coxhead; contractors, Union Pressed Brick Co.; cost, $8300; signed, Aug. 18; filed, Aug. 20; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Fifth and Folsom. Plastering; owner, W. H. Wickersham; architect, H. T. Bestor; contractor, King & Richardson; cost, $11 0; signed, Aug. 12; filed, Aug. 13; payments, $500, brown mortared; $325, completed; $275, 35 days.

Fillmore near Grove. Carpenter work; owner, Thos. Molloy; architect, Chas. J. Devlin; contractor, D. Chisholm; surety, $1200; cost, $4790; signed, Aug. 12; filed, Aug. 14; payments, $500, frame up; $500, roof on and enclosed; $75 , ready for plastering; $1000, mill work completed; $840, ready for painting; $1200, 35 days.

Franklin and O'Farrell. Painting; owner, J. J. Pendergrast; architect, T. J. Welsh; contractor, Fraser & Keefe; cost, $1165; signed, Aug. 13; filed, Aug. 18; payments, 1st & 15th day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Frederick & Masonic Ave. Stair work, etc.; owner, M. A. Fritz; architect, A. J. Barnett; contractor, Geo. R. Jesse; cost, $1009; signed, Aug. 19; filed, Sept. 1st; payments, $400, when risers, treads and strings are in; $354, completed, $255, 35 days.

Folsom near First. To build; owner, H. Matthews; architect, H. F. Bestor; contractor, W. H. Wickersham; cost, $6958; signed, Aug. 12; filed, Aug. 14; payments, 800, ready for main joists; $1000, walls ready for second floor joists; $1000, walls ready for ceiling joists; $1200, roof tinned and floors laid; $1220, completed; $1750, 35 days.

Folsom near 9th. To build; owner, Jos. Kelby; architect, P. A. Sioli; contractor, Allen Mac Donald; cost, $6940; signed, Aug. 22; filed, Aug. 22; payments, $1305, frame up; $1300, brown coated; $1300, white coated; $1800, completed; $1735, 35 days.

Geary and Octavia. Alterations and additions; owner, G. Kordmeyer; architect, P. R. Schmidt; contractor, J. J. O'Brien; cost, $2562.50; signed, Aug. 25; filed, Aug. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Geary and Polk. Plumbing, etc.; owner, Cora A. Wallace; architect, R. H. White; contractor, R. A. Vance; surety, $1200; cost, $4770; signed, Aug. 26; filed, Sept. 2; payments, $1785, rough work in; $1785, completed; $1200, 35 days.

Geary near Stockton. To build; owner, Geo. Whittell; architects, Town end & Wyneken; contractor, J. W. Wissinger; cost, $9888, signed, Aug. 31; filed, Aug. 31; payments, $2500; when 2nd story ceiling joists are on; $2500, brown coated; $2416, completed; $2472, 35 days.

Geary near Stockton. Brick and stone work; owner, D. J. Brennan; architects Townsend & Wyneken; contractor. W. J. Wissinger; cost, $3100; signed, Aug. 31; filed, Sept. 2; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Guerrero bet. 17th and 18th. To build; owners, D. J. & H. A. Bassett; architects, Townsend & Wyneken; contractor, L. Arthur; surety, $1500; cost, $3750; signed, Aug. 21; filed, Aug. 22; payments, $1500, fr me up; $2250, 35 days.

Guerrero near 24th. To build; owner, J. O'Reilly; architect, M. J. Welsh; contractor, Richard Sinnott; surety, $800; cost, $3200; signed, Aug 19; filed, Aug. 20; payments, $600; frame up; $600, brown mortared; $600, white coated; $600, completed; $800, 35 days.

Green near Hyde. To build; owner, Peter Scully; architects, Shea & Shea; contractor, C. N. Smith; cost, $4300; signed, Aug. 4; filed, Aug. 7; payments, $806, rough frame up; $806, brown mortared; $806, hard finished; $807, completed; $1075, 35 days.

Green near Octavia. To build; owner, Winfried Jennings; architect, Alfred Gould; contractor, J. W. Hope; surety, $1200; cost, $3530; signed, Aug. 7; filed, Aug 17; payments, $500, foundations laid and lumber on ground; $500, rustic on; $500, ready for plastering; $500, plastering done; $600, inside finish on; $930, 35 days.

Haight, near Devisadero. To build; owner, J. R. Kropp; architect, J. R. Miller; contractor, J. F. Logan; cost, $5450; signed, Aug. 28; filed, Aug. 29; payments, $1021, frame up; $1021, brown coated; $1021, hard finished; $1024.50, completed; $1362 50, 35 days.

Haight, near Scott. Carpenter work, etc.; owner, Wm. Henney; architect, S. Hatfield; contractor, S. H. Kent; cost, $1700; signed, Aug. 24; filed, Aug. 28; payments, $637, first coat of mortar on; $638, completed; $425, 35 days.

Haight, between Steiner and Pierce. To build; owner, John T. Preddy; architect, John T. Preddy; contractor, Geo. Houston; cost, $1975; signed, Aug. 26; filed, Aug. 29; payments, $1000, frame up and rustic on; $1000, brown coated; $1725, completed; $1250, 35 days.

Harrison and 18th. Carpenter work; owner, M. Morgenthau; architects, Kenitzer & Kollofrath; contractors, Farrell & Bell; surety, $1700; cost, $6767; signed, Sept. 1; filed, Sept. 1; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Harrison and 18th. Iron work, etc.; owner, M. Morgenthau; architects, Kenitzer Kollofrath; contractors, Peacock & Butcher; surety, $8000; cost, $12,000; signed, Aug. 29; filed, Aug. 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Hayes and Baker. To build; owner, D. Roth; architects, Townsend & Wyneken; contractor, Geo. R. Lang; cost, $15,000; signed, Aug. 25; filed, Aug. 29; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Hyde, near Broadway. To build; owner, Cornelius Horigan; architects, Shea & Shea; contractor, E. W. Lewis; cost, $61 0; signed, Aug. 5; filed, Aug. 7; payments, $1158, rough frame up; $1158, brown mortared; $1158, hard finished; $1158, completed; $1138, 35 days.

Iowa near Nevada. To build; owner, John Coyle; architect, John Coyle; contractor, Wm. Bocardi; surety, $1000; cost, 1150; signed, Aug. 8; filed, Aug. 13; payments, $300, frame up; $300, brown mortared; $260, completed; $290, 35 days.

Jersey near Noe. To build; owner, Mrs. J. Goldsmith; architects, Townsend & Wyneken; contractor, S. T. Crawford; surety, $1000; cost, $2140; signed, Aug. 17; filed, Aug. 19; payments, $500, frame up; $456, brown mortared; $650, completed; $585, 35 days.

Jones, bet. Lombard & Chestnut. Carpenter work, etc.; owner, John G. Adams; architect, Robt. H. Daley; contractor, J. J. Scott; surety, $1850; cost, $1850; signed, Aug. 25; filed, Aug. 26; payments, $462.50, roof tinned, $462.50, brown coated; $462.50, completed; $462.50, 35 days.

Jones near O'Farrell. To build; owner, Mrs. C. J. Halphen; architects, B. McDougall & Son; contractor, Wm. Sinon; cost, $11,850; signed, Sept. 1; filed, Sept. 2; payments $1000, brick walls up and floor joists on; $2000, rustic on and roof tinned; $2,000, brown coated and gas and water pipes in; $2,500 1st. coat paint on; $1,373, completed; $2,957, 35 days.

Larkin near Bay. To build; owner, Giovanni B. Inguglia; architect, Chas. M. Rousseau; contractor, W. F. Fitzpatrick; surety, $2,000; cost $3,600; signed, Aug. 10; filed, Aug. 11; payments, $900, framed; $900, brown mortared; $900, completed; $900, 35 days.

Leavenworth near Filbert. To build; owner, John Willis; architect, John & Balczynski; contractor, John Wyar; cost, $3,275; signed, Aug. 18; filed, Aug. 18; payments, $800, frame up and partitions set; $800, white plastered; $850, completed; $825, 35 days.

Leavenworth & Washington. To build; owner, Emelia Goldberg; architect, W. H. Lillie; contractor, S. T. Green; cost, $9,000; signed, Sept. 2; filed, Sept. 3; payments, $1,348, frame up; $1,348, enclosed; $1,348, brown mortared; $1,348, standing finish on; $1,348, completed; $2,260, 35 days.

Lyon near Grove. To build; owner, Henry Wetjen; architect, A. Klahn; contractor, A. Klahn; cost, $3515; signed, Aug. 24; filed, Aug 25; payments, $875, frame up; $87 , brown coated, $865, completed; $900, 35 days.

Market street, Palace Hotel. Furniture; owner, Sharon Estate; architect, A. Page Brown; contractors, L. and E. Emanuel, cost, $6500; signed, Aug. 6; filed, Aug. 10; payments, when delivered and accepted by architect.

Market, Post and Montgomery. Marble work etc.; owner, Geo. C. Shreve & Co.; architect, A. Page Brown; contractors, R. C. Fisher & Co.; cost, $6785; signed, Aug. 11; filed, Aug. 12; payments, 60 per cent. on bill of lading; 15 per cent. during setting of work; 25 per cent. 35 days.

Market and 2nd. Elevator work; owner, J. M. Cunningham; contractors, Cahill and Hall; cost, $8200; signed, Sept. 3; filed, Sept. 3; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Mason near Jackson. Carpenter work; owner, N. Max Alder; architects, B. McDougall & Son; cost, $7975; signed, Aug. 21; filed, Aug. 24; payments, $1500, frame up; $1500, brown coated; $1400, standing finish up; $1581.25, completed; $1993.75, 35 days.

Masonic ave, near Geary. To build; owner, Chas. Gardella; contractor, G. G. Gillispie; cost, $2100; signed, Aug. 24; filed, Aug. 25; payments, $393, frame up; $393, brown coated; $393, white coated; $396, completed; $525, 35 days.

McAllister and Jones. Concrete and iron work; owner, Hibernia Savings and Loan Society; architects; Pissis and Moore; contractors, Ransome and Cushing; cost, $1300; signed, Aug. 12; filed, Aug. 13; payments, 1st and 15th day of each month 75 per cent. as work progresses; 25 per cent., 35 days.

McAllister and Jones. Tin and copper roofing; owner, Hibernia S. & L. Society; architects, Pissis and Moore; contractor, John C. Roberts; cost, $4741; signed Aug. 5; filed, Aug. 8; filed Aug. 13 payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

Mission and New Montgomery. Concrete work etc.; owner, Sharon Estate; architect, A. Page Brown; contractors, Mahoney Bros.; cost, $26,826; signed, Aug. 6; filed, Aug. 10; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent., 35 days.

Mission and 7th. Elevator; owner, Pierre Dupuy; architects, C. R. & J. M. Wilson; contractors, Lowe, Cahill and Hall; surety, $2000; cost, $4800; signed, Aug. 29; filed, Aug. 31; payments, $500, woodwork ready to receive cage; $1000, machinery in place; $1789, completed; $1511, 35 days.

Mission and 15th. Painting etc.; owner, Jas. Stanton; architect, Julius E. Kraft; contractor, Thos. Leonard; cost, $1320; signed, Aug. 12; filed, Aug. 15; payments 75 per cent. as work progresses; 25 per cent., 35 days.

Missouri near Yolo. To build; owner, August Stark; architect, F. Schulz; contractor, F. F. Schulz; surety, $500; cost, $1500; signed, Aug. 28; filed, Aug. 29; payments, $500, first coat plaster on; $500, completed; $500, 35 days.

Napa and Kentucky. Carpenter work, etc.; owner, E. A. Bagot; architect, E. A. Bagot; contractor, R. O Davis; cost, $1300; signed, Aug. 20; filed, Aug. 21; payments, $325, house raised and rustic on; $325, brown mortared; $325, completed; $325, 35 days.

Ninth and Folsom. Iron work, etc.; owner, T. Hock; architects, Henricksen et al; contractors, P. H. Jackson & Co.; cost, $1360; signed, Aug. 5; filed, Aug. 15; payments, $500, when second payment of main coniract is received; $500, third payment is received; $360, fourth received.

Nineteenth near Eureka. To build; owner, T. E. Grimes; architect, J. & T. D. Newsom; contractor, W. A. Griffith; cost, $2125; signed, Aug. 12; filed, Aug. 13; payments, $400, frame up, siding and roof boards on and chimneys built; $400, brown mortared and rough plumbing don ; $400, doors hung and 1st coat paint on; $450, completed; $477, 35 days.

Nineteenth and Fair Oaks. To build; owner, Margaret Potter; architects, W. W. Rednall; contractor, W. W. Rednall; surety, $2800; cost, $6200; signed, Aug. 22; filed, Aug. 25; payments, $1000, roof on and enclosed; $2200, completed.

Noe, Ridley, Castro and 14th. Carpenter work, etc.; owner, German Benevolent Society; architect, H. Geilfuss; contractor, F. W. Kern; cost, $5337; signed, Aug. 5; filed, Aug. 11; payments, 1st day of each month 75 per cent as work progresses; 25 per cent., 35 days.

Noe, Ridley, Castro and 14th. Steam boiler; owner, German Benevolent Society; architect, H. Geilfuss; contractors, Hinkley, Spiers & Hayes; cost, $1350; signed, Aug. 5; filed, Aug. 11.

Oak and Scott. Carpenter work, etc.; owner, John Fischer; architect, H. Geilfuss; contractor, F. W. Kern; cost, $14,468; signed, Aug. 18; filed, Aug. 20; payments, $2170, frame up; $2170, enclosed and partitions set; $2170, brown mortared; $2170, standing finish on; $2171, completed; $3617, 35 days

Oak and Scott. Painting; owner, John Fischer; architect, H. Geilfuss; contractor, John Quadt; cost, $1038; signed, Aug. 18; filed, Aug. 20 payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Oak and Scott. Plumbing, etc.; owner, John Fischer; architect, H. Geilfuss; contractors, L. Hufschmidt & Bro.; cost, $397 ; signed, Aug. 18; filed, Aug. 20; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

O'Farrell, near Polk. To build; owner, J. W. Bridgeman; architects, B. McDougall & Son; contractor, A. Jackson; cost, $10,750; signed, Aug. 22; filed, Aug. 24; payments, $1002, walls up and floor joists on; $2000, frame up; $2650, brown mortared; $1661, ready for painters; $750, completed; $2687, 35 days.

Pacific Ave., near Laguna. To build; owner, R. McMurray; architect, ——; contractors, Gardner & Boyden; cost, $12,346; signed, Aug. 3; filed, Aug. 8; payments, $1851, when one fifth is completed; $1851, two-fifths completed; $1851, three-fifths c mpleted; $1851, four-fifths completed; $1851, completed; $3091, 35 days.

Parker Alley, near Dupont. Roofing, etc.; owner, F. J. Sullivan; architect, F. J. Sullivan; contractor, F. V. Acker; cost $1865; signed, Sept. 1; filed, Sept. 1; payments, $467, floors laid; $467, roof on; $466, completed; +465, 35 days.

Park Hill Association, Lot 9 Block A. To build; owner, Edwin V. Atkinson; architect, Edwin V. Atkinson; contractor, T. H. Soule; cost. $2118; signed, Sept. 2; filed, Sept. 3; payments, $150, brickwork completed; $351.50, frame up; $504.50, first coat of plaster on; $504.50, completed; $504.50, 35 days.

Pine Street, No. 2332. Additions; owner, Thos. Kehoe; architects, B. McDougall & Son; contractor, A. Jackson; cost, $8260; signed, Aug. 18; filed, Aug. 20; payments, $1000, old house moved and foundations completed; $1000, frames up and rustic on; $2000, brown coated; $1495, ready for painting; $700, completed; $2065, 35 days.

Pine near Sansome. Brickwork; owner, D. Meyer; architects, Sanfield & Kohlberg; contractor, Riley & Lonne; surety, $3000; cost, $10,629; signed, Aug. 17; filed, Aug. 21; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pine near Sansome. Granite and stone work; owner, Danl. Meyer; architects, Salfield and Kohlberg; contractors, M. J. Healy & Co.; surety, $100 ; cost, $10,970; signed, Aug. 12; filed, Aug. 21; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pine near Sansome. Iron work; owner, D. Meyer; architects, Salfield & Kohlberg; contractor, H. Ralston; surety, $1000; cost, $3897; signed, Aug. 12; filed, Aug. 21; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pine and Taylor. Mantels; owner, John Furness; architect, J. C. Newsom; contractors, Bush & Mallett; cost, $1400; signed, Aug. 15; filed, Aug. 22; payments, $225, parlor mantels set; $825, completed; $350, 35 days.

Pixley and Buchanan. To build; owner, Henry Tegen; architect, Wm. Schrof; contractor, M. S. Yerxa; surety, $950; cost, $4750; signed, Aug. 18; filed, Aug. 20; payments, $800, first floor joists on; $750, enclosed; $950, roof on and rough plumbing done; $400 brown mortared; $500, completed; $950, 35 days.

Pleasant Place near Jones. To build; owner, Henrietta Smith; architect, Harold D. Mitchell; contractor, Leonard B. Schmid; surety, $1000; cost, $3465; signed, Aug. 11; filed, Aug. 12; payments, $960, frame up; $950, brown mortared; $688, completed; $867, 35 days.

Railroad Ave. near 12th Ave. To build; owner, Rosalie Benkelmann; architect, C. E. Dunshee; contractor, C. E. Dunshee; cost, $1550; signed, Aug. 15; filed, Aug. 18; payments, $750, plastered; $250, completed; $550, on the 1st day of Jan. 1892.

Ridley near Church. To build; owner, W. E. & J. Franks; architect, P. R. Schmidt; contractor, W. E. Cummings; cost, $3058; signed, Aug. 20; filed, Aug. 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Sacramento and Yerba Buena Sts. Carpenter work, etc.; owner, Louis Schmidt; architect, W. H. Armitage; contractor, Louis M. Weismann; cost, $6590; signed, Aug. 20; filed, Aug. 31; payments, $1475, frame up; $1200, brown coated; $1000, standing finish on; $1200, completed; $1625, 35 days.

San Jose Ave. near 16th. To build; owner, Geo. S. Payne; architect, M. J. Welsh, contractor, Ivory Wells; surety, $2568; cost, $11475; signed, Sept. 3; filed, Sept. 4; payments, $2151, frame up; $2151, brown coated; $2151, exterior finished; $2153.25, completed; $2868.75, 35 days.

Seventeenth bet. Guerrero and Dolores. To build; owner, Mrs. A. W. Gadsby; architect, F. M. Schweitzer; contractor, F. W. Schweizer; cost, $2820; signed, Aug. 31; filed, Aug. 31; payments, $700, frame up; $700, brown mortared; $700, completed; $750, 35 days.

Shrader, bet. Page and Haight. To build; owner, Jacob Finger; architect, Theo. Lenzen; contractor, F. Weinochl; surety, $3350; cost, $3350; signed, Aug. 10; filed, Aug. 28; payments, $840, building enclosed; $835, brown coated; $835, carpenter work completed; $840, 35 days.

Steiner near Jackson. To build; owner, H. L. Van Wyck; architect, Julius E. Kraft; contractor, R. O. Chandler; surety, $2980; cost, $11,920; signed, Aug. 25; filed, Aug. 28; payments, $1940, roof shingled and chimneys built; $2980, brown coated; $2980, floors laid; $2500, completed; $2980, 35 days.

Stockton St. No. 707. Alterations; owner, W. H. Mead; contractor, Geo. W. Adams; cost, $1700; signed, Aug. 29; filed, Aug 31st.; payments, $100, frame up; $400, brown coated; $500, completed; $400, 35 days.

Stuart near Howard. To build; owner, W. J. Lowry; architects, Kenitzer & Kollofrath; contractor, W. S. Kreger; cost, $6290; signed, Sept. 1; filed, Sept. 1; payments, 1st day of each month 75 per cent as work progresses; 25 per cent. 35 days.

Sunnyside, Block 44. Frame office, boiler house &etc.; owner, S. S. Construction Co.; architect, J. D. Lowndes; contractors, J. G. & T. N. Day; cost, $21,900; signed, Aug. 22; filed, Aug. 24; payments, 75 per cent as work progresses; 25 per cent 35 days.

Sutter & Jones. Brick work etc.; owner, John A. Ehrman; architect, Chas. J. Devlin; contractor, Carl Wolf; cost, $1785; signed, Sept. 1; filed, Sept 2; payments, 500, 1st tier of joists are on; $106, chimneys built; $425, completed; $450, 35 days.

Sutter and Jones. Carpenter work etc.; owner, A. Wolf; architect, Chas. J. Devlin; contractor, J. A. Ehrman; surety, $4000; cost, $15,000; signed, Aug. 18; filed, Aug. 29; payments, $1000, first tier joists on; $1000, third tier joists on; $1000, roof frame on; $1200, building enclosed; $2000, first coat plaster on; $1200, plastering completed; $750, standing finish on; $1350, ready to paint; $500, completed; $5000, six months after completion with interest at 6 per cent.

Sutter and Jones. Painting; owner, A. Wolf; architect, Chas. J. Devlin; contractor, Otto Schulz; surety, $1000; cost, $1575; signed, Aug 21; filed, Aug. 29; payments, $295, primed inside and out; $295, ready for graining; $295, grained; $295, completed; $395, 35 days.

Sutter and Jones. Plumbing; owner, A. Wolf; architect, Chas. J. Devlin; contractors, Thos. Clark & Son; surety, $1000; cost, $2388; signed, Aug. 20; filed, Aug. 29; payments, $800, gas, water and waste pipes in; $990, completed; $598, 35 days.

Sutter near Octavia. Carpenter work etc.; owner, Adolph Boyken; architect, H. Geilfuss; contractors, Schutt & Kreeker; cost, $11,293; signed, Aug. 11; filed, Aug. 14; payments, $2117, frame up; $2117, ready for plastering; $2117, inside standing finish on; $2119, completed; $2825, 35 days.

Sutter near Octavia. Brick work etc; owner, Adolph Boyken; architect, H. Geilfuss; contractor, Ferdinand Wagner; cost, $2279; signed, Aug. 14; filed, Aug. 14; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Sutter near Octavia. Lathing; owner, Adolph Boyken; architect, H. Geilfuss; contractor, Arthur O'Brien; cost, $1040; signed, Aug. 14; filed, Aug. 14; payments, $390, brown mortared; $390, completed; $270, 35 days.

Sutter near Octavia. Painting; owner, Adolph Boyken; architect, H. Geilfuss; contractor, Henry Wagner; cost, $1100; signed, Aug. 14; filed, Aug. 14; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Turk, near Hyde. To build; owner, R. P. Kellogg; contractor, Evan Watts; cost, $18,500; signed, Aug. 18; filed, Aug. 18; payments, 25 per cent., frame up; 25 per cent., brown mortared; 25 per cent., completed; 25 per cent., 35 days.

Turk near Taylor. Additions and alterations; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, A. Jackson; cost, $12 846.91; signed, Aug. 26; filed, Aug. 28; payments, first day of each month 75 per cent. as work progresses; 25 per cent., 35 days.

Twenty-first near Harrison. To build; owner, John Peasly; architect, M. J. Welsh; contractor, John Mann; surety, $2800; cost, $2800; signed, Sept. 1; filed, Sept. 1; payments 8, $700, frame up; $700, brown mortared; $700, completed; $700, 35 days.

Twenty-first and Sanchez. To build; owner, Emma J. Lowell; architects, R. H. and R. White; contractor, John Furness c st, $3950; signed, Aug. 17; filed, Aug. 19; paymcnts, $725, building enclosed; $725, completed; $500, 35 days.

Twenty third near Castro. To build; owner, S. Axlrod; architects, Salfield and Kohlberg; contractor, Henry Rohling; cost, $3650; signed, Aug 20; filed, Aug. 21; payments, $1000, frame up; $750, white coated; $1000, completed; $900, 35 days.

Union near Buchanan. To build; owner, P. A. Johnson; architect, Mooser, & Cuthbertson; contractor, A. J. Mc Elwain; surety, $1100; cost; $4070; signed, Aug. 11; filed, Aug. 12; payments, $1010, frame up; $1020, plastering completed; $1020, completed; $1020, 35 days.

Valencia near 16th. Carpenter work etc.; owner, J. K. Warren; architect, Julius E. Krafft; contract r, John Blake; surety, $2000; cost, $3450; signed, Aug. 24; filed, Aug. 25. payments, $900, frame up and rustic on; $800. ready for lathing; $885, completed: $865, 35 days.

Vallejo near Sansome. To build; owner, Mrs. E. Price; architect, J. T. Kidd; contractor, G. o. Connon; c st, $2190; signed, Aug. 20; filed, Aug. 20; payments, $810, brick walls up and rafters on; $83 26 completed; $948, 35 days.

Washington and Walnut. Carpenter work, etc.; owner, J. F. Plumel; architect, T. J. Welsh; contractors, Currie & Loomer; surety, $423; cost, $1690; signed, Aug. 10; filed, Aug. 13; payments, $633.50, plastered; $633.50; completed; $423, 35 days.

Alameda County.

Addison St. near West street, Berkeley. To build; owner, Nels. P. Jensen; architect, Robert Seidel; contractor, John Person; cost, $1450; signed, Aug. 13; filed, Aug. 13; payments, $500, frame up; $500, plastered; $450, 35 days.

Alameda, Block 92 Stratton's map. School house; owner, City of Alameda; architects, Mooser & Cuthbertson; contractors, Smilie Bros.; cost, $19,487, signed, Aug. 12; filed, Aug. 17; payments, $3650, frame up; $3652, first coat plaster on; $3652, plastering done, windows hung and glazed; $3652, completed; $4872, 35 days.

Bay St. near R. R. Ave., Alameda. To build; owner, W. N. Noy; architect, Howard Burns; contractor, D. Straub; cost, $3590; signed, Aug. —; filed, Aug. 11; payments, $897, frame up and brick work completed; $897, enclosed and plastering on; $897, completed; $899, 35 days.

Bella Vista Park, Lot 8. Two-story frame; owner, E. E. Potter; contractor, J. A. Eastman; cost, $3450; signed, Aug. 18; filed, Aug. 19; payments, $750; frame up, roof on and chimneys built; $800, enclosed and first coat plaster on; $987, completed; $863, 35 days.

Buena Vista Ave. near Oak St. Two-story frame; owner, Capt. J. Jensen; architect, Chas. S. Shaner; contractor, P. Christensen; cost, $2270; signed, Aug. 12; filed, Aug. 14; payments, $567.50, frame up, rafters and sheathing on; $567.50, brown mortared; $567.50, work done and ready for painting; $567.50, 35 days.

Clement Ave near Oak St. Ala. To build; owner, Christian Radsville; architects, J. J. & T. D. Newsom; contractor, Geo. A. Benseman; cost, $2600; signed, Aug. 17; filed, Aug. 18; payments, $800, frame up and roof boarded; $800, brown mortared; $650, completed; $650, 35 days.

Eagle Ave. near Everett St. Ala. Two-story frame; owners, Clement et al; architect, Geo. A. Bordwell; contractor, John J. Boyle; cost, $2290; signed, Aug. 12 filed, Aug. 17; payments, $665, frame up; $595, plastering done; $665, completed $665, 35 days.

Falon St. near 8th. One-story frame; owner, Eugene L. Courtain; architect, Chas Mau contractor, Bandin & Eber; cost, $2000; signed, Aug. 8; filed, Aug. 11; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Fruitvale Ave near Lynde. Two-story frame; owner, F. K. & Mrs. Bechtel; architects, G. H. W. Deike; contractor, G. H. W. Deike; cost, $1765; signed, Aug. 12; filed, Aug. 13; payments, $657.50, enclosed; $657.50, 1st coat plaster on; $450, 35 days.

Grant cor. Central Ave. To build; owner, H. J. Weiss; arch tect, Chas. Mau; contractors, Wo d & Chandler; cost, $1568; signed, Aug. 12; filed, Aug. 12; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Jahn Tract, Lot 20. Two-story frame dwelling; owner, E. J. Bickell; architect, S. Edgar Fisher; contractor, J. B. Sprague; cost, $3475; signed, Aug. 1; filed, Aug. 10; payments, $868.75, frame up; $868.75, enclosed and shingled; $868.75, brown mortared; $868.75, 35 days.

Nevis Tract, Pleasanton. Alterations; owner, T. Caraher; architect, J. L. Weilbye; contractor, J. F. Walton; cost, $1338; signed, Aug. 6; filed, Aug. 17; payments, $334, stagings erected and gallery frame erected; $334, first coat paint on; $334, completed; $336, 35 days.

Oak Park Tract, Alameda. Two-story frame dwelling; owner, Mrs. A. Sohlac; architect, A. R. Denke; contractor, A. R. Denke; cost, $3840; signed, Aug. 10; filed, Aug. 11; payments, $900, frame up and enclosed; $900, plastered; $900, completed; $1140, 35 days.

San Jose ave. near Willow St. To build; owner, George Brown; architect, C. S. Shaner; contractors, Brehaut & Diamond; cost, $4660; signed, Aug. 19; filed, Aug. 20; payments, $873, frame up and roof sheathing on; $873, enclosed, cornice on and window frame in; $873, brown mortared, veraudas and porches up; $876, plastering finished; $1165, completed.

Shattuck ave. near Russell St. Cottage; owner, Robt. F. Ellison, architect, Josiah J. Rose; contractor, Josiah J. Rose; cost, $1960; signed, Aug. 14; filed, Aug. 15; payments, $490, roof on and house enclosed; $490, brown coated; $490, completed; $490, 35 days.

Simpson ave. near Telegraph ave. To build; owner, William H. Johnston; architect, Howard Burns; contractor, H. E. Jones; cost, $2550; signed, Aug. 15; filed, Aug. 15; payments, $637.50; frame up; $637.50, enclosed and plastering on; $637.50, completed; $637.50, 35 days.

Thirty-first St. near Grove, Oakland. Two-story house; owner, R. P. M. Greeley; architect, C. H. Wedgewood; contractor, C. H. Wedgewood; cost, $2170; signed, Aug. 17; filed, Aug. 17; payments, $542.50, frame up & rustic on; $542.50, brown mortared; $542.50, inside finish on & ready for painter; $542.50, 35 days.

Twelfth bet. Clay and Jefferson. Four bake ovens; owner, Hugh Hamilton; contractor, Jacob Bender; cost, $1550 signed, Aug. 8. filed, Aug. 8; payments, 25 per cent, walls up; 25 per cent, floors laid and castings in position; 25 per cent crowns in and chimneys in position; 25 per cent, 30 days.

Union St. near Encinal, Alameda. Two story frame; owner, Mrs. A. O. M. Ruther; architect, A. R. Denke; contractor, A. R. Denke; cost, $4200; signed, Aug. 10; filed, Aug. 11; payments, $700, frame up; $1000, 1st. coat plaster on; $800, 2nd; $800, completed; $900, 35 days.

Washington St. near 10th. To build; owner, Arthur Brown; architect, W. J. Matthews; contractor, W. Winnie; cost, $8290; signed Aug. 4; filed Aug 10; payments, one-fifth of work done $1243; two-fifths $1243; three-fifths, $1243; four-fifths $1243; $1243, completed; $2075, 35 days.

Washington near 16th. To build; owner, Arthur Brown; architect, W. J. Matthews; contractors, Danziel & Moller; cost, $1560; signed, Aug. 17; filed, Aug. 19; payments, $389, one-third work completed; $389, two-thirds completed; $389, completed; $393, 35 days.

Willow and Encinal, Ala. Two-story frame, etc.; owner, John C. Siegfried; architect. Chas. S. Shaner; contractor, C. A. Parker; cost, $3922; signed, Aug. 3; filed, Aug. 7; payments, $980.50, rustic and shingles on stable, etc.; $980.50, new chicken house ready for painter; $980.50, tank frame up and inside work on stable done; $980.50, 35 days.

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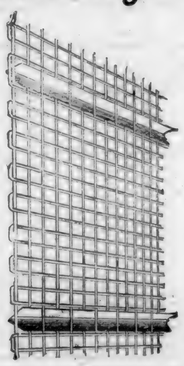

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AND

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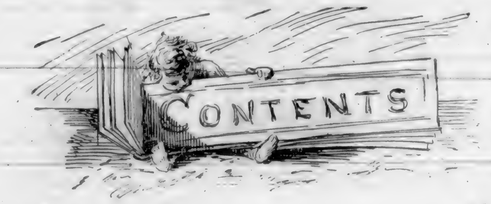
Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.



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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

THE work of restoration of the old Sutter Fort was practically begun at 4 o'clock Tuesday afternoon, Sept. 22nd, 1891, at which hour Geo. Murray, Jr., laid the first adobe brick in the building. Until that time all forces have been concentrated in the laying of a new cement foundation underneath the entire edifice, and in the preparation of adobe brick.

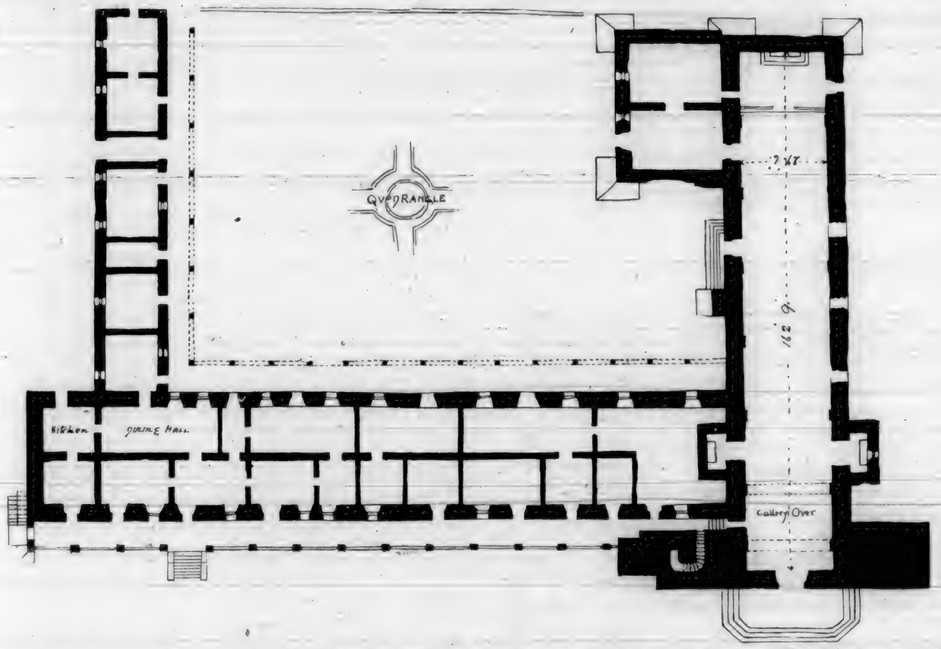
The latter have been made in strict accordance with the best known methods employed by the adobe makers of early times—the mud being well mixed with straw and ground to such consistency as to produce hard and enduring building material.

Governor Markham has evinced much interest in the work, and has given the trustees many valuable suggestions.

THE fuel of the future is a subject that is receiving a marked degree of attention and it cannot be long before gas will entirely supercede solid fuel for household use in all situations where gas can be had.

THE MISSION OF SANTA BARBARA.

Second or third in importance of the twenty-one Missions of California (San Luis Rey being admitted as the first) is Santa Barbara. Situated in the southern part of the State, in the land of the orange blossom and its golden fruit, the town of Santa Barbara stands near the center of a broad rich valley and against the sea. From the place of arrival, be it by water, the iron horse or the more refractory bronco. Ones eye by the general configuration of lines, both as regards the mountains, the direction of the main artery of the town and the parallel projection of the wharf, is naturally lead either directly out to sea, over the blue expanse of ocean to the dim shadows of mysterious island that float as it were in mid air and stand as senteries between the mainland and the far off birth place of winds and waves in the ocean's bosom, or directly inland across the town and its long street, gradually arising as it receeds, till in that border land between the seen and unseen, the eye is arrested by the last recognizable object, it is the Mission Church and its long, low roof of dwellings.

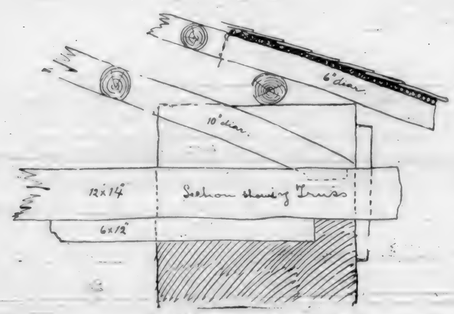


Situated about two miles inland, the Mission commands a magnificent view of the whole country in front of it, and the sea with its many islands beyond; and compels in return the attention of all eyes cast around, whether it be as we stand by the white torrents of ocean as they ceaselessly pour themselves upon the golden sands or where the noiseless breakers of the clouds dash themselves to pieces against the peaks and promontory of the mountain's summit. Santa Barbara was built in 1786 according to the plan of the first floor indicated in the text and has a second floor, used as sleeping apartments over. Originally there was only a veranda over the cloister of the first story, with the roof supported by brick piers carrying the line of those below, but at a later date after the time of the earthquake, repairs being required, the spaces between the piers of the second story veranda were built up save the window openings and the sleeping accommodation of the monks thus increased.

The general plan explains itself, and shows this mission to be as complete in its arrangements as any and more so than most. In front a long cloister of piers and arches of stone affords ample protection from the sun and allows of a comfortable seat in the open air from which to view one of the finest scenes of earth, air and ocean under heaven. Surrounded by the dwellings, store houses and offices, churches, etc., is the quadrangle, laid out as a garden with many paths winding in and out among beautifully arranged shrubs and gay flowers that lift their bright faces to the southern sky and drink continually of its never failing stream of sunshine.

In the center is the old well with a circular wall around to guard it. On two sides of the quadrangle a cloister consisting of brick pier with wooden lintels from pier to pier carrying the rafters on the roof, serves the double purpose of shade for the sun and also allows of the monks passing from cell to cell or to their office in the church under cover. The living apartments as usual are devoid of all that we call beauty and beyond serving as a protection against the heat of day and the cold of night and as a place of silence and secrecy suited to quiet meditation and devout prayer they serve no purpose. But as these were then all the purposes of life, they satisfied well the wants of the builder.

The prominent features of the front elevation of the church as seen in our sketch are a classic pediment or gable carrying the lines of the roof of the nave or church proper. This is supported by six half columns, which rest on pedestals with moulded base and plinth course and are surmounted by Ionic Capitals of rude design. The cornice of the pediment is enriched by a dentil course and below at the frieze a Greek pattern all of somewhat poor proportions. Flanking the central feature on either side, are the bell towers with their three stories and doomed roof so common to the Missions. To reach the tower on the right of our sketch there is an elliptical staircase leading from the cloister and in order to pass from one tower to the other an ingenious arrangement of steps is contrived in the thickness of the wall, immediately behind the pediment. The interior is very similar to those already described. On entering the church you pass beneath the choir, which is supported by two semi-circular Masonry arches spanning the whole width of the nave. The church then from the choir forward is divided into six Bays, by pilasters projecting about six inches from the wall and having a moulded base, a cap rail at the height of the dado and above an Ionic capital; the whole surmounted by a rude dentil cornice, on which rests the ceiling which is perfectly flat, no construction being shown. At either side of the nave near the choir gallery are two side chapels with altars. The reredos as usual has its patron saint perched high up in the center and on each side an embodiment in wood of some fellow martyr, besides two such benefactors painted in their respective niches. Outside the nosing of the stone steps leading to the main entrance attracts our attention on account of its heroic proportions, viz: four inches, the whole rise being twelve inches. It is peculiar to note that the hewn planks forming the ceiling in a number of the Missions are indented at spaces of about half an inch apart with small holes as if struck with the point of a sharp pick. This was done apparently to form a key for the thin coat of white plaster applied as a finish. We give a sketch showing the construction at the foot of the main trusses used in several of the Missions.



SKETCH OF ROOF TRUSS.

The principal rafter, which is round, is morticed into the tie beam, and at the top halved together, with king-post tenoned into both, the whole rest on a corbel, and apparently in order to anchor the walls together, a strong key is driven through the the projecting end of the tie beam, thus securing the wall. No iron nails were used in the construction, even the mouldings of the doors were attached with wooden pins. Referring to things unique in regard to the old Missions, it is interesting to note, that in front of the Mission Church at Monterey, a pavement in the form of a star is composed of round pieces about 12 inches in diameter, of what, at first sight, one might readily mistake for Portland cement, but which, on inquiry, are discovered to be the vertebra of whales. These, so far as is generally known, may be said to be prehistoric, but as history in this case is dependent largely on the oldest retentive memory of the neighborhood, it does not necessarily take us back to the cave dwellers, nor even to that period in the history of California when the cave dwellings of our prehistoric ancestry would have been considered quite comfortable, but somewhere in the vicinity of that region of time past.

TRES. '91.

TRANSITIONAL OR ELIZABETHAN ARCHITECTURE.

From the London "Building News" 1878, we take the following extract from Prof. Barry's lecture at the Royal Academy.

In the Academy lecture Prof, Barry concluded his examination of the principles which underlaid the English architecture of the sixteenth and seventeenth centuries, a type of work which he styles Transitional, for while it clung to Mediævalism in affection for mullions, gables, and general picturesqueness, it aimed at the regularity, measured symmetry, and details of Italian practice. As illustrations he took an early and a late example of Elizabethan—Longleat Hall, Wilts, and Crewe Hall, Cheshire.

Longleat was built, it is believed, betweer. 1567 and 1569, and presumably by one John of Padua, who had been installed by Henry VIII in 1544, into the newly-created office of "Devisor" of his Majesty's buildings. There is much in the design and arrangement of Longleat which shows Italian influences on the design. Thus it is quadrangular on plan, with buildings arranged round inner courts of moderate dimensions. In making the quadrangles but secondary features, Italian precedents were followed, but this mansion differs from them in that the aspect is outward, and the windows are so placed as to command views of the country around. We find in the exterior unmistakable evidence of Italian taste. We have the three orders superimposed: first the Doric, then the Ionic, and, lastly, the Corinthian. The pilasters are well executed, with diameters diminishing from the lower story to the higher. Each order has its appropriate entablature of architrave, frieze and cornice, designed with due subordination of parts; and the whole is crowned by a regular balustrade. The pervading principle of design is horizontalism. There is a central entrance in a symmetrical front, and a very few additions and suppressions would give a complete Italian character to the whole composition. On the other hand, we have the mullioned windows, dear to Mediævalists, and the projections common in Elizabethan work, serving to redeem the front from flatness and insipidity. Taken as a whole, Longleat is one of the most remarkable and beautiful buildings of the period, and the details indicate a purity of taste rarely found. The design is obviously by an architect of taste and refinement, well accustomed to Italian work, and probably acquainted with Italian artists. Crewe Hall is a much later example, but shows some coincidences of principle, mixed with considerable individuality. It was built for Sir Randolph Crewe between 1615 and 1636, and two oil paintings, executed immediately after the completion of the works, enable us to form a clear idea of its original appearance. The out-buildings containing the servants' offices have long since been removed, and a new wing was added a century since to contain these rooms. In 1866 almost every part of the mansion was destroyed by fire, except portions of the dining hall and this comparatively modern wing.

The Hall has been rebuilt with the greatest care, and it is believed all the rooms built by Sir Randolph, and which still exist, present the original appearance, although with less roughness of execution and uncouthness of detail. Looking at the house, as shown in the interesting oil paintings, we find it a square block of 100 feet each way. The minor offices are occupied in small gabled buildings, and there is a walled-in fore court, enclosing a walled terrace in front of the house. Crewe Hall is much smaller and less imposing than Longleat, but there is the same grouping together in one large block, the same projections of bays and oriels, the same wealth of mullioned and transomed windows, and the same horizontal spirit of design. On the other hand, there is a more English feeling pervading this hall. Here, at Crewe, the use of orders and pilasters is confined to the principal entrance, and the gable is retained in a subordinate form in the main building, but freely used in the out buildings, while the red moulded brick chimneys and the mixture of brick and stone in the elevations give a home-like character to the building. Internal lighting is obtained by means of a small central court. The chief feature is the hall, a room of great dignity and importance, marked by the oriel and dais at the upper end, and having an elaborately carved oak screen at the lower end, with the mediæval arrangement of passage and buttery hatch. Close to the hall is the withdrawing room for the family, here traditionally known

as the "carved parlour." The chapel is of small dimensions, and constructed in accordance with precedent, although it stands north and south. Another peculiarity in the internal distribution at Crewe is the introduction of a mezzanine floor. The hall and chapel are lofty apartments, but the rest of the ground story is horizontally bisected by a floor, and on it are the bedrooms and private sitting-rooms, communicating with the end of the chapel furthest from the altar, where this floor forms a gallery, containing the family pew. The part beneath this gallery is screened off as an entrance and ante-chapel, and the servants and others occupied the lower part of the chapel, entering from the open court. The windows of the chapel have arched and trefoiled heads, with Late Tudor cusping, all the other openings into the building being rectangular. The existence of mezzanine floor is masked on the two principal fronts, but on the northern and western fronts it is recognized, and the two stories have separate windows, with distinct sills and heads. Crewe Hall is rich in the possession of one of the finest existing specimens of Transitional staircase. It is a newel staircase, built round a central well-hole, and is of oak, elaborately worked and carved. Excellent in design, and sound in construction, it is very easy and convenient, and occupies but little space, being not more than 24 feet square from wall to wall, while the story itself is 20 feet high. The shortness of the flights and the frequency of landings secure great ease in ascending, and from the compactness of plan no unnecessary distance is traversed. With its handsome newels, carved and panelled, surmounted by quaint animals with heraldic cognisances, its richly wrought balustrade and picturesque arrangement, this staircase is one of the most interesting examples of the 17th century.

Prof. Barry urged young architects to carefully study the planning and design of staircases, for nothing more clearly marked the difference between an architectural composition and a builder's box. This staircase at Crewe led to the great reception-rooms and principal guest chambers. These were all on the first floor and looked outwards, in the English manner. The whole of the northern side was occupied by the usual long gallery. The other apartments were principally sitting-rooms, and were approached through each other. There were a few attics and small bedrooms for servants, but most of the latter must have been accommodated out of the house. The ceilings generally are of elaboration, and in some cases of much beauty; and large curious chimney-pieces reach up to the ceiling. We find in the whole arrangement a highly characteristic amount of domestic comfort. The execution of the ornamental details was good, particularly the carpenter's work; although the sculpture of the human figure was strained and uncouth. Notwithstanding all drawbacks, Crewe Hall was a splendid specimen of the taste of the Transitional epoch—a noble example of the mansion of the old English gentleman. The taste for more formal design which was becoming fashionable not only pervaded the house of the period, but extended to the adjoining grounds, which were laid out in plantations and terraces, gardens of stiff forms and patterns, bowling-greens, and labyrinths and mazes, hedges becoming walls and streams canals, and Nature herself being put to fetters. At Crewe and in most other places the Elizabethan gardens have been replanned, but a very interesting example remains at Levens, in Westmoreland, where the aspect of things has been maintained by the owners without alteration from the time of original foundation of the place.

At the Transitional period in all parts of the country there was displayed a development of a taste for symmetry coupled with lingering attempts to retain the beauty of the past, to combine old and new. A taste for profuse internal decoration prevailed—a decoration not of the true artistic character, which calls for the co-operation of the sister arts of painting and sculpture, but a decoration of masons, plasterers and carpenters, with much striving in the dark, and half realization of good intentions. The walls of rooms were handed over to the carpenter, and he covered them with oak panelling, generally extending from floor to ceiling. In many cases he shared his task with the plasterer, and allowed his comrade space for a deep and elaborate frieze above the panelling. There was frequently much grace and skill in the whole design, both in general composition and disposition of parts, and where scroll-work was employed it had a curious intricacy and a characteristic elaboration.

But the object was to cover the whole surface of the walls with constructed decoration. Nothing was left to the taste of the future occupants; the builders had everything their own way. This taste for profusion of ornament, characteristic of the Elizabethan style, passed away, and was succeeded by the baldness of the Georgian era. Now, indeed, the lecturer remarked, amongst ourselves, the wheel has again turned round, and we hear of "decorative artists," "art manufacturers," and "art workmen" in all directions. Everything must now be reversed. Our ceilings must be black, and our floors white; balusters must be turned upside down; fires placed on the floor; our mahogany sideboards banished, and dressers, borrowed from the kitchen, put in their place.

Plate-glass, we are further told, is not "æsthetic." If it cannot be avoided altogether it must, at least, be degraded into small divisions, separated by clumsy and heavy bars. Better still, if it can be altogether obscured by colored patterns and devices. Cheerfulness and light are beneath the notice of the "artist-decorator," but as a compensation, he will cover every space with daisies and pomegranates, and will perhaps even persuade a whirling flight of birds of paradise to settle in impossible positions on walls, ceilings, shutters and doors. Every space must be decorated and nothing left for repose.

While the Professor would not defend the cold dreariness against which all this was a protest, he could not regard such over-elaboration as a healthy movement. It is, he said, an anachronism inconsistent with the claims of pure art and the simple and refined manners of the best modern life. High class paintings, engravings and sculpture are the true decoration of our dwellings, and no style of architecture can be permanently accepted which does not provide a place for them, and receive them with a hearty welcome.

Electricity and its recent applications by Edward Trevert, and published by the Bubier Publishing Company of Lynn, Mass., and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal. Price $2.00. The size of the book is 5 x 7 inches and 1¼ inches thick. This work forms one of the latest and most practical contributions to electrical science. The subject is treated on the higher progressive plan, yet the illustrations, both cuts and text, are easily understood by any ordinarily intelligent person, and is especially valuable to students and amateurs. The book is divided into twenty chapters—in which are treated electricity and magnetism, voltaic batteries, dynamos, and how to build one, the electric arc, and the arc lamps, electric motors, and how to build one, field magnets, armatures, the telegraph and telephone, electric bells and how made and used, induction coils and how made, the incandescent lamp, mining apparatus, electric railway, welding, plating, gas lighting apparatus, measurement and resistance, and all followed by an illustrated dictionary of electrical terms and phrases, which is of great value at the present time.

John Wiley & Sons, Publishers, have in press, to be issued shortly, a new work on stones for building and decorating, by Geo. P. Merrill, U. S. Museum.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

The old church of the Mission of Santa Barbara is from sketches by "Tres," our special correspondent.

The Residence is from designs by Mr. Samuel Newsom, architect.

NEW JERUSALEM CHURCH.

The New Jerusalem Church, on O'Farrell St., illustrated in our present number is drawing near completion and proves to be a handsome and substantial structure. It in fact consists of a group of buildings, including church, school, and parsonage—the latter detached except in the extreme rear, and the two former closely combined. The church will be comparatively small, accommodating about six hundred people, and with school-house, etc., in proportion thereto.

The buildings occupy a site on the north side of the street, in the middle of the block, 87½ x 137½, and raised about nine feet above the line of the sidewalk. The church is approached by a broad flight of stone steps, and entered by a wide semi-circular doorway, which opens into a roomy vestibule, on one side of which is the pastors' study, and on the other, the principal ascent to the gallery and a door communicating with a public reading-room for the use of the neighborhood. Opposite the entrance are glass doors, leading into the auditorium proper. The auditorium is semi-circular, or rather polygonal, in plan, the seats forming an amphitheater, with the pulpit, platform and recess on one side, and a semi-circular gallery on the other. On each side of the platform are recesses for the vestry and organ chamber, respectively.

Including the latter, the auditoium is sixty-six feet by forty-eight feet, and thirty-eight feet high. It is lighted by means of five double windows below the gallery, and seven windows midway of the roof. Also by a circular domelight in the center of the ceilings and by large windows over the gallery on the south or entrance side, which will be ultimately all filled with cathedral and art glass. The whole of the interior is lined with wood, and the seats and such portions of the interior as are likely to be soiled by contract, are waxed. The materials of interior finish will be redwood and selected Oregon pine. The school-rooms in the rear of the church are entered by a glass door similar to the front entrance, and a vestibule communicating with the outside and containing the Sunday School library, and an additional or escape stairs from the gallery. The school-rooms are arranged with a large room in the center and class and society rooms on each side. When all thrown together by means of folding doors, a hall 60 x 32 is the result, amply sufficient for all purposes of the society, religious as well as social. The parsonage is placed at the south-west corner of the site; the space between the house and church is to be nicely cultivated, and will form a very attractive feature of the arrangement. The parsonage contains about twelve rooms and a garret, and is connected with the church by means of a covered cloister and conservatory, which is later intended to contain potted plants, palms, etc., for the decoration of the church on special occssions. The grounds are open or parked with grassy lawn and margins to the cement sidewalks, but divided from the garden by a light iron railing on top of the bank on which the buildings are placed. The lower part of the church, including the porch, reading-room and the first story of the tower is of freestone in narrow courses, and the upper parts of all the buildings is to be cement stucco—a material not largely used as yet in this country, but extensively employed in the East, and with satisfactory results. The total cost of church organ and furnishing will be about $25,000.

The New Jerusalem Church is from designs by Messrs. Wright and Sanders, Architects.

The vaulted ceiling of the tripple vestibule which forms the entrance to "Somerset House" is a fine example of eighteenth century work. Somerset House was commenced in 1776 and finished in 1790, and was therefore fourteen years building, and during the reign of King George III. The architect was Sir William Chambers, one of the leading architects of that period.

The archway or vestibule shows a refined treatment of Doric. There is no excess of ornamentation to crush the Doric columns. The ceiling arches being divided by flat bands, and not by heavy cross arches. The soffits have large open panels with small mouldings and the ornamentation elegant and devoid of ostentation. In this example it was not a question of quantity, but of quality, and the discrimination shown in the selection of the constructive and ornamental features is evidence of carefu study by the designer. We are indebted to the *Building News*, London, for the illustration.

Rosewood takes it name on account of its fragrance when cut, as well as from its color when finished.

The State of Washington last year produced over 1,200,000,000 feet of lumber at a value of $12,000,000.

In the State of Washington there was lately cut a fir log 32 feet long and 90 inches in diameter.

In Russia laborers receive from $1 to $1.75 per week; average mechanics $2.50 per week, and the highest price paid to carvers, machinists, etc., $3.50 per week.

Coating for Black Board—1 pint of alcohol, 90 per cent.; 2 ounces shel-lac, dissolve and add; 1 ounce best ivory black; ¾ ounce emery flour; 1 ounce ultramarine blue. Put in well stoppered bottle, and shake before using. On account of its volatility alcohol may be added to the mixture as it thickens from evaporation. This preparation contains all the requisite qualities for chalk drawings on a black ground. Apply one coat for old and two or more coats for new work.

The first sun-dial was erected at Rome by Papirius Cudsor in 293 B. C., and the time first divided into hours.

134 years after the introduction of the sun-dial, a water-machine was invented by Scipio Nasica, for the purpose of measuring time.

NORDENSKJOLD RAIDS CLIFF DWELLINGS.—Baron Nordenskjold, of Sweden, who secured permission to visit the cliff dwellings on the reservation near Durange, Colorado, with the understanding that he would neither destroy nor carry away any of the relics went upon the work of general devastation upon arriving there. He has shipped several boxes of relics to New York.

When the baron reached Durange upon his way East he was arrested by a United States marshal, charged with robbery and will be prosecuted to the fullest extent.—*Exchange.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
GEO. A. BOARDWELL, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
C. E. PURINGTON, Sec. W. C. CROSETT, Treas.

BUILDERS' ASSOCIATION OF CALIFORNIA, meets every Monday at 330 Pine Street, Rooms 9–12, at 1.30 P. M.

S. H. KENT, Pres. E. C. WORDEN, Vice-Pres.
IRA FANCHER, Sec'y. WM. B. KREGER, Treas.
L. A. LARSEN, Clerk and Financial Sec'y.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.
E. M. GALLAGHER, PRES. H. G. JARMAN, SEC.

THE members of the San Francisco Chapter of the American Institute of Architects, and the members of the Technichal Society of the Pacific Coast, paid a visit on September 26th to the new buildings, comprising the Girls Dormitory and the Museum at the Leland Stanford, Jr., University at Palo Alto. The visit was made upon the invitation of Messrs. Ransome and Cushing, the contractors for the erection of the buildings.

Concrete formed of broken stone and Portland cement is the material used for the walls, and concrete beams supporting concrete arches being used for floors and roofs. In fact the whole structure is of concrete and glass, with marble floors and stairways. The buildings are receiving the finishing touches and have been erected in an incredibly short time—only a few months—in which to erect and complete these large monolithic stone buildings; had cut stone been used two or three years, at least, would have been required for the same work. After the inspection of the work, the visitors partook of a bounteous colation, followed by speeches from practical men, highly complimentary to the contractors, and especially so to the architects, Messrs. Percy and Hamilton of this city, on account of the courage displayed in breaking away from the older methods and the adoption of a new mode of construction, with such satisfactory results as exhibited in this instance.

In the November number of this Journal, we shall endeavor to give some illustrations of these buildings.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

UNIFORM SPECIFICATION FOR COMPETITIVE BIDDING.—Where the law requires all contracts for public work to be let to the lowest responsible bidder, the same specifications must be submitted to all bidders, as there can be no real competition unless the competing bids are based upon the same data, and a law which requires that plans and specifications and bids for the work shall all be advertised for at the same time, is therefore unconstitutional.

Fones Bros. Hardware Co. v. Erb, Supreme Court of Arkansas, 15 S. W. Rep., 7, (83E).

CONSTRUCTION OF BUILDING CONTRACT.—In an action for breach of building contract which, after specifying by numbers various materials to be used, recited "the above numbers refer to P. Bros.' catalogue," evidence that a certain portion used by the builder, for which the contract called for "No. 47," was substantially like "P No. 47," is admissible, as the contract meant simply that P. Bros.' materials of the specified numbers should be used as models. Where the contract fixed the size of sills on which certain columns were to rest, and did not expressly state the diameter of the base of the columns, evidence by an expert as to the proper diameter of the base of such columns to rest on such sills is admissible. A charge, "in deciding whether or not plaintiff was proceeding with said building in compliance with the contract, * * * there must have been a substantial compliance in every material particular, * * * as called for by a fair, reasonable, and practical construction of the contracts, plans, and specifications taken together, and where there is a conflict in any of these, this should be reconciled in a practical, workmanlike manner, so as to arrive at the fair and reasonable intention of the same," is correct, and does not leave the construction of the written contract to the jury.

Linch vs. Paris Lumber and Grain Elevator Co., Supreme Court of Texas, 15 S. W. Rep., 208.

A BUILDER'S LIEN.—The judgment of the Supreme Court in the Hinckley case will be of interest to those who are engaged in building.

The decision will add to the confusion which prevails in the law concerning building.

In most of the States the rule regarding liens is vigorous. A lien which is not recorded is no lien at all. It is like an unrecorded mortgage, and is of no avail as against an innocent bona-fide purchaser. But in this State, under the decision of the Supreme Court in the Hinckley case, it seems that a sub-contractor can hold a lien on a building without recording it. It is hardly necessary to observe that this ruling will expose house-builders to serious annoyance and, perhaps, loss.

A man may build a house and pay the contractor to the uttermost farthing, yet he has no guarantee that when he tries to sell the house, some purveyor of materials, or some mechanic who has worked on the house will not turn up with a lien, of which he has had no notice and no knowledge. That there should be some devise by which a party seeking to buy a house should be able to ascertain whether or no there is any incumbrance on it.

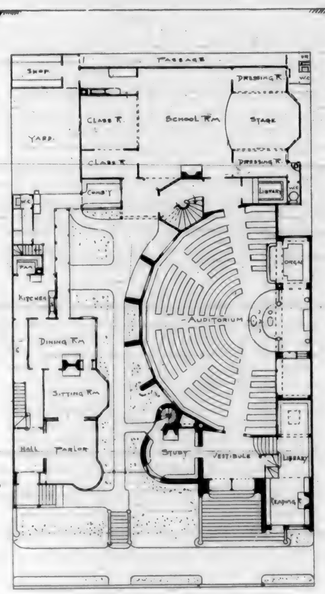
We present the decision in full from the record.

HINCKLEY, ET AL, Appellants, vs. FIELD'S BISCUIT AND CRACKER CO., ET AL, Respondents. 13,230.

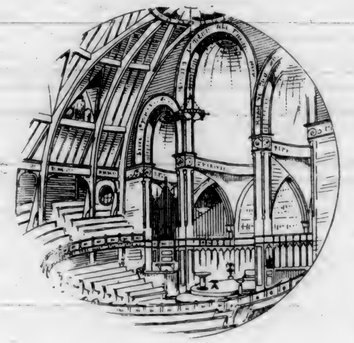
In the Court below a demurrer to the complaint was sustained and judgment thereupon entered in favor of the defendants. The plaintiffs appealed.

The question to be considered here is whether the ruling of the Court in sustaining the demurrer was correct. The demurrer was upon the general ground that the complaint did not state facts sufficient to constitute a cause of action and also for ambiguity.

The allegations of the complaint so far as necessary to be stated, are: That on February 28, 1887, the defendant Field was the owner of record of land upon which stands the building against which it is sought to enforce the lien, but that he held the same in trust for the Field's Biscuit and Cracker Co., a defendant herein; that upon that day said Field entered into



-PLAN-



-INTERIOR VIEW-

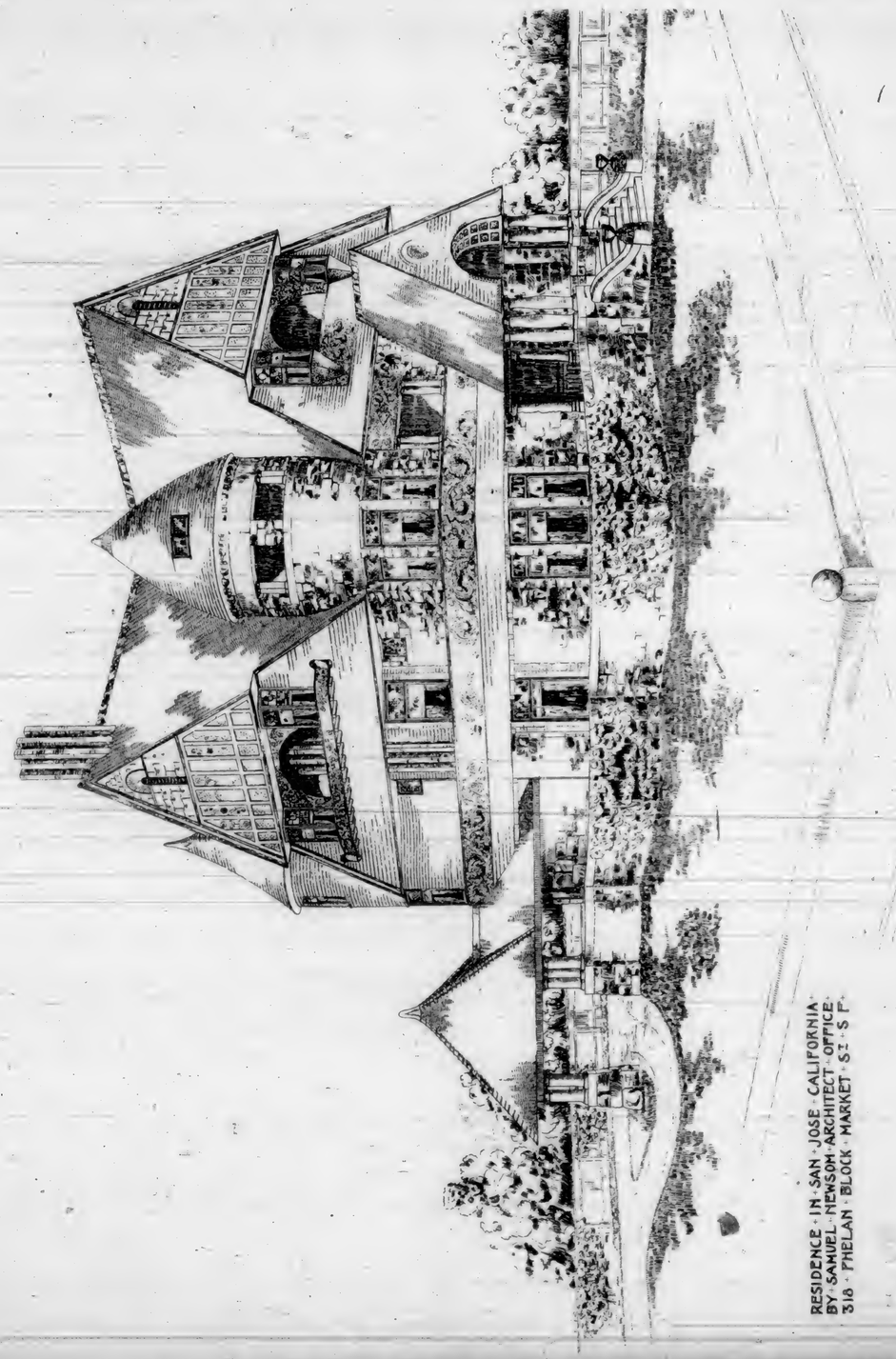
NEW JERUSALEM CHURCH,
O'Farrell St.

Wright & Sanders
Architects
S.F.

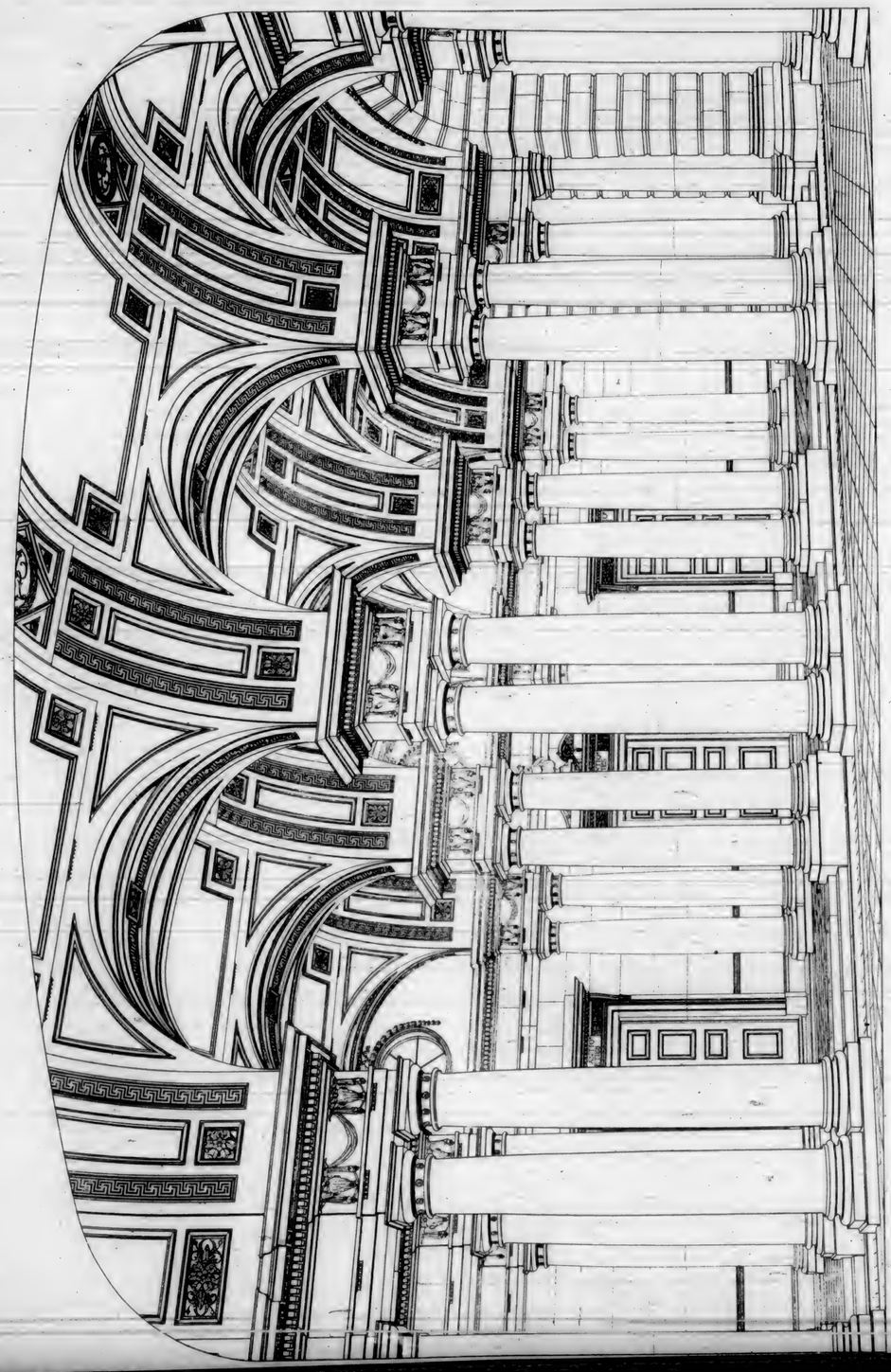
QUADRANGLE · SANTA BARBARA

SANTA BARBARA MISSION

OCTOBER, 1891. VOL. XII. NO. 10.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



RESIDENCE · IN · SAN · JOSE · CALIFORNIA
BY · SAMUEL · NEWSOM · ARCHITECT · OFFICE
318 · PHELAN · BLOCK · MARKET · ST · S · F ·



ENTRANGE VESTIBULE TO SOMERSET HOUSE.

a contract with said Company, whereby in consideration of the issuance to him of eight hundred shares of its capital stock, he agreed to complete and deliver to the Company, equipped and furnished with the latest improvements, a factory to be under his directions, constructed on said land, and as soon as completed, the same, with its appurtenances to be conveyed to it. That immediately after the execution of this contract the Company issued and delivered to Field, eight hundred shares of its capital stock in full payment for said land and for the building and machinery to be constructed thereon by him, and on November 5, 1887, the said Field conveyed to the Company the land and improvements thereon. The complaint further avers that upon April 11, 1887, the said Field "as such contractor of and for the said defendant Field's Biscuit and Cracker Company, employed plaintiffs herein to build, manufacture and construct at their own works, and deliver and put in place upon foundations prepared by said Arthur Field, in said structure, building and factory," a steam plant, consisting of boiler, engine, heater, feed pipes, etc., for the agreed price of $5,600; and that said contract was duly performed by plaintiff. It is not alleged that this contract was recorded, but it is averred that the agreement between Field and the Field's Biscuit and Cracker Company was never recorded.

Plaintiffs' claim of lien was filed for record within the time given by law.

The respondents insist that Field was the owner of the property upon which a lien is claimed, at the time he contracted with the plaintiffs to furnish said factory the steam plant referred to in the complaint, and as the price agreed upon to be paid therefor, exceeded $1,000, and the contract was not recorded; that contract was wholly void under Section 1183 of the Code of Civil Procedure, and no recovery can be had by plaintiffs thereunder.

I. Section 1183 of the Code of Civil Procedure provides that "mechanics, material-men, contractors, sub-contractors, artisans, architects, machinists, etc.," shall have a lien upon the property upon which they have bestowed labor or furnished materials, and "in case of a contract for the work between the reputed owner and his contractor, the lien shall extend to the entire entract price, and such contract shall operate as a lien in favor of all persons except the contractor, to the extent of the whole contract price, and after all such liens are satisfied, then as a lien for any balance of the contract price in favor of the contractor." The Section then provides that all such contracts (that is, those between the owner and his contractor) shall be in writing when the amount agreed to be paid thereunder exceeds $1,000 and before work is commenced thereunder, be filed in the office of the Recorder of the proper county, "otherwise they shall be wholly void and no recovery shall be had thereon by either party thereto."

The position, assumed by respondents, in support of their demurrer, rests upon these two propositions.

1st. That Field was the owner of the building he was constructing, and

2nd. That plaintiffs were contractors in the meaning of Sec. 1183, of the Code of Civil Procedure, and the failure to sustain either is fatal to the judgment appealed from.

We agree with respondents upon the first point that Field was the owner and not a contractor, as that word is used in the section of the code just referred to. His relation to the Fields Biscuit and Cracker Co. was that vendor and that the factory was constructed for himself that he might convey it and the land upon which it stood, in accordance with his agreement to do so. It is very true that the Fields Biscuit and Cracker Co. was the equitable owner, having paid the agreed price therefore, but as the building was erected by its consent, then under agreement that its vendor should retain the legal title until its completion, he was for all practical purposes pertaining to its construction, the owner within the meaning of the law relating to mechanic's liens, and the equitable estate was equally bound with the legal title to satisfy the lien of mechanics, or material-men, growing out of contracts made with him in the construction of the building.

2nd. But assuming this to be so, the question still remains, were the plaintiffs contractors, as that word is used in Sec. 1183 of the Code of Civil Procedure, where it speaks of a "contract for the work between the owner and his contractor." If so, their contract not having been recorded was wholly void, and the demurrer was properly sustained. We are of the opinion, that upon the facts alleged, plaintiffs were not such contractors, but were material men. Although one may furnish materials to be used in the construction of a building under an expressed contract, he does not become a contractor, as that term is used in the law relating to mechanics' liens. That law recognizes a a clear distinction between contractors and sub-contractors, material men and mechanics, and thus different words are used to designate distinct classes of persons. All are referred to being entitled to liens, and the priority of their several liens is declared, and it is quite clear to us that the word contractor in Secs. 1183 and 1184 of the Code of Civil Procedure does not refer to a material-man. The section in requiring the contract "between the owner and his contractor" to be in writing and recorded, has for its object the giving of notice of the terms of the contract to those who may be employed, or furnish materials to the contractor, in the course of its performance, so as to enable them to judge whether the contract price to which they have a right to look for their security, is sufficient for that purpose. But the reason for giving this notice does not apply to the case of one who contracts only to furnish material, as his employees have no lien upon the price which he is to receive therefore, and for that reason the statute does not require that contracts under which materials are furnished shall be in writing and recorded.

And this view of the law is sustained by the reasoning of Mr. Justice Sharpstein, in the case of Sparks vs. Butte County Gravel and Mining Co., 55 Cala., 392, in defining the words "original contracts" as found in Sec. 1187 of the Code of Civil Procedure.

In this case there can be no doubt that the plaintiffs were simply material-men. Under their contract they were to manufacture at their own shop the boiler, engine, heater, feed pipes and necessary attachments, and deliver them finished and complete, and properly set them in the building; but the work done by them on the premises of defendant in placing them in position, was only the completion of their contract to deliver such finished machinery, and did not convert them into contractors for the erection of the factory or any part of it, within the true intent of the statute. The contract was essentially one to furnish material for the factory, and not a building contract.

3rd. What has been said disposes of the second ground of demurrer, to the effect that the contract was void because not complying with Sec. 1184 of the Code of Civil Procedure, as that section only refers to the contract of the contractor.

4th. We do not think the complaint is ambiguous in the respects pointed out by the demurrer.

We are satisfied that the complaint states a cause of action, and if the defendant have any defense to the action it is not disclosed by the complaint. In reaching this conclusion we have not overlooked the fact that the plaintiffs allege in general terms that Field was a contractor and as such contracted with plaintiffs. But the complaint avers specifically all the facts in regard to the ownership of the property and the relations to it of defendant Field and the Field Biscuit and Cracker Co., and the allegations that Field was contractor may be disregarded.

Judgment reversed with direction to overrule the demurrers interposed by defendant.

DE HAVEN, J.

Filed Sept. 10th, 1891.

We concur:

MCFARLAND, J.

SHARPSTEIN, J.

PRIORITY OF LIENS IN CALIFORNIA.—Under the section of the California Code providing that mechanics' liens shall be preferred to any lien that may have attached subsequent to the time when the mater ialswere furnished, materials furnished to a person in possession under a contract of a sale constituting a prior lien to a mortgage subsequently given the seller for the price. Where materials are furnished under a contract, and part of them are procured from another, who refuses to deliver them unless paid for by the contractor, the latter having paid for them, can include their cost in his claim of lien.

Avery v. Clark, Supreme Court of California, 25 Pac. Rep., 919, (112C).

NEGLIGENT EXCAVATION.—Excavation by an owner on his own land adjoining another's building, causing damage, without his knowledge, or previous notice to him, is evidence of want of care in doing the work.

Schultz v. Byers, Court of Errors and Appeals of New Jersey, 22 At. Rep., 514, (45C).

BUSINESS MOSAICS.

The Gardner Sash Balance and Steel Ribbon running on their new pullies attracted marked attention at the late Mechanics' Fair. The four hundred pound elevator door hung with this balance could be easily manipulated by a child. This device is rapidly gaining on the old cord style.

Insulated Electric Wires of all kinds are made by the John A. Roebling's Sons Company of Trenton, N. J., with office and sales room at No. 8 California street, in this City.

The Underwriter's wire is covered with two coatings of insulating material and can be relied upon as proof against accidental fires from unprotected wires. A weather-proof protected wire is furnished that will withstand hard usage where exposed. The compound wire is covered with a superior insulation which allows the wires to be run into buildings without interference with telephone wires. A safety insulated wire is made for inside wiring. Lamp cords, flexible cables, annunciator cables, weather-proof ærial cables, German-silver resistance wire, lead encased wires and cables, are all prepared by these well known manufacturers.

A new iron paint of superior quality and extra heavy body is now being manufactured in this City by the San Francisco Mineral Paint Co., Muecke & Co. Agents, 319 California street. Those who have used it recommend it highly, and prefer it to any other iron paint in the market. It has all the chemical qualities requisite, is ground to an extra fine grade, mixes readily and forms a heavy body when dry.

The Vulcan Iron Works had on exhibition at the late Mechanics' Fair their improved rope tram-way for the conveyance of materials over wide depressions. They also had one of their compact ice machines and cold storage rooms in operation. As these machines can be operated by anyone with such little expense that it would be well for persons interested in such matters to communicate with the above firm at 135 to 145 Fremont street, San Francisco.

The Instantaneous Water Heating Company have lately made an improved water heater of small size only nine inches in diameter and twenty-eight in height, which is set on a neat shelf with gas pipes attached for heating. This heater has been especially designed for the use of dentists and doctors, wash basins, sinks and where a small amount of cooking is done. They are made in various styles from plain to ornamental, plated and finished to make a neat piece of furniture. See advertisement on page iii.

It seems rather queer that an advertisement that runs a long time should be called a *standing* advertisement.

In this issue The J. L. Mott Iron Works show an illustration of one of their double open Lavatories, which is unique in design and appearance and worthy the attention of architects and parties desiring of using first-class material. They are made in various styles and sizes and adapted for either private or public buildings. Mr. M. S. James, their representative for this section, will be pleased to give any information that may be desired in reference to goods made by this well known house.

Patent Earthquake-proof Chimneys as made by Schuster Bros., 306 Sutter street, have long been known as a superior device for forming a fire flue without the use of bricks.

They are also importers and dealers in Metals, Stones and Ranges.

AMERICAN PIG TIN.

The Philadelphia firm of N. & G. Taylor & Co., who have for some time furnished American tin, announces that a shipment of thirty-five tons of American pig tin from mines in San Bernardino County, California, known in this State as the Temescal tin mines, was made on the 12th of August. The Philadelphia firm says that on the receipt of this pig tin it will be able to supply American tin plate made from American materials and by American workmen from start to finish. This is the first shipment from the Temescal mines out of the State, other shipments having gone to San Francisco and been used for making tin pipe and solder. There seems to be a general movement among sheet mill proprietors to transform their works into plants for the production of tin plates. Pig tin of the quality produced at the Temescal mines is all that is now needed to make tin plates a thoroughly American product.

We have received from C. Sidney Norris & Co., of Baltimore, the manufacturers of the well known Norris Patent Sash pulley, a sample of their new aluminum bronze tape for which it is claimed the excellent qualities of strength, pliability, lightness and durability.

The Rischmuller door opener and closer is an improved appliance that presents many desirable features. By the handle of the opener when placed at a distance or on an upper floor, the door can be opened or closed as readily as when worked by the knob on the door; therefore the door is under complete control from any position desired.

It presents a neat appearance, the wires being obscure and so arranged that the door cannot be opened from any other point than the one arranged for.

A full sized working model can be seen at the Plaster and Decorating store of Kellett and McMurray, 28 Ellis street. The price is $15.00. Leave orders with G. Rischmuller, 934 B Capp street, S. F.

On page XII of this paper will be found the advertisement of A. L. Fish, 59 and 61 First street, the agent for the Worthington Pump. These pumps have successfully withstood the test of time and usage. On account of their excellent qualities, many premiums and diplomas from various exhibitions have been awarded to the manufacturers.

The specimen of arch work in Terra-Cotta, from the new "Mills' Building," which was placed on exhibition by Messrs. Gladding, McBean & Co., 1358 & 1360 Market street, this City, shows the delicate modeling and artistic effect of the work from this well known firm.

The Cincinnati Corrugating Co., make the first purely American Terne Plates. The Cincinati Corrugating Co., of Piqua, Ohio, have been considering the manufacture of Terne Plates, or Tinned Roofing Plates, as an adjunct their present large line of Painted Roofing Sheets. In order to satisfy themselves of the adaptability of the steel sheets supplied them by their allied Company, the Piqua Rolling Mill Co., they have recently made a quantity of 14 x 20 terne roofing plates with great success.

This experience demonstrates fully that the quality of the steel plates used for coating meets the highest requirements.

The terne coating, composed of tin and lead, resulted beautifully, equaling in the opinion of experts, in appearance and all other respects, the "Old Style," hand made, ternes hitherto imported from Wales.

Major McKinley will address the citizens of Piqua, Sept. 17th, and the success of The Cincinnati Corrugating Co., has added so much to the enthusiasm of the occasion, that the Executive Committee have ordered 5,000 souvenirs made of Piqua Terne Plate mounted on ribbon badges for distribution.

The souvenirs will be circular in form and have thereon the words, "Ohio Sheet Steel, California Tin, Missouri Lead, Piqua 1891— McKinley and Protection." At the meeting full sized sheets will be conspicuously displayed.

These are the first terne plates in Ohio, and so far as we are advised, the *first purely American terne plates* have been made at Piqua, Ohio. For in their composition not an ounce of foreign material enters—California furnished the pig tin, Missouri the pig lead, and the Bessemer steel used was made at Middleport, Ohio, and rolled by the Piqua Rolling Mill Co.

The Cincinnati Corrugating Co., claim no other merit in this, than that they give to all, the results of their experience—that all that is necessary to test the practicability of making American Tin or Terne Plate, is to make them. Having satisfied themselves on the point of practicability, the next steps will be pursued, as in any other branch of manufacture—to obtain the best facilities for economic manufacture for the regular production of American Terne, or Tinned, Roofing Plates.

The Cooking Range at the new Stanford University was from the firm of John G. Ils & Co., 814 Kearny street. It is of unusual size and especially made for that purpose.

We acknowledge the receipt of a transparent half circle scale of degrees from Merchant & Co., Importers and Dealers in tin plate, metals, etc., Philadelphia.

Creosote Shingle Stains have become a standard preparation throughout all sections of the country as is shown by the following letter from Mr. Samuel Cabot, the inventor and manufacturer.

During the six weeks previous to the 1st of July, our Creosote Shingle Stains received 107 recommendations, and it is curious to note the different sections of the country from which these came. The result shows conclusively that they are actually used in all parts of the country.

The recommendations were received as follows: From the New England States; 13, New York; 21, New Jersey; 8, Pennsylvania; 14, the South; 9, The West, including nearly all the states from Ohio to California; 42.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 30th day of October, 1891, for all the labor and materials required for the cut stone and brick masonry works of the superstructure of the U. S. Court House, Post Office, etc., building at Detroit, Michigan, in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Superintendent at Detroit, Michigan.

Each bid must be accompanied by a certified check for two per cent. of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same, also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for the cut Stone and Brick Masonry Work of the Superstructure of the U. S. Court House, Post Office, &c., Building at Detroit, Mich." and addressed to

W. J. Edbrooke,
October 1, 1891. Supervising Architect.

CITY BUILDING NEWS.

Ashbury, near Frederick. To build; owner, Mrs. Jennie Ashton; architect, Jas. E. Wolfe; contractors, Fletcher & Son; cost, $4440; signed, Sept. 3; filed, Sept. 7; payments, $1000, frame up; $1000, brown mortared; $800, plastering finished; $330, completed; $1110, 35 days.

Baden and Sunnyside. To build; owner, Lena Fischer; architect, ——; contractors, Peterson & Person; cost, $2700; signed, Sept. 30; filed, Oct. 1; payments, $700, lumber delivered; $500, frame up; $500, brown coated; $500, completed; $600, 35 days.

Broderick, near Golden Gate Ave. To build, except plumbing, painting and mantels; owner, Mrs. P. P. Hamilton; architects, Mooser & Cuthbertson; contractor, Wm. Langstaff; surety, $920; cost, $3705; signed, Sept. 19; filed, Sept. 21; payments, $694, entire frame up; $694, first coat mortar on; $694, second coat mortar on; $693, completed; $930, 35 days.

Bryant Ave., between 22nd and 23d Sts. To build; owner, Jas. McLean; architect, H. R. Schmuckert; contractor, H. R. Schmuckert; surety, $1000; cost, $1895; signed, Sept. 4; filed, Sept. 4; payments, $371, rustic on; $350, brown mortared; $350, white plastered; $850, accepted; $474, 35 days.

Bush, between Octavia and Gough. Plumbing, etc.; owner, Annie Brandt; architect, H. C. Macy; contractors, Duffy Bros.; cost, $1950; signed, Sept. 14; filed, Sept. 17; payments, $750, work roughed in; $712.50, work completed; $487.50, 35 days.

California near Kearny. Additions and alterations; owners, Goldberg, Bowen & Co.; architect, C. I. Havens; contractor, J. R. Whalen; cost, $9,380; signed, Sept. 24; filed, Sept. 26; payments, 1st and 15th day of each month, 75 per cent., as work progresses; 25 per cent., 35 days.

California near Steiner. To build; owner, Alex. Berton; architect, Emile Deplerre; contractor, Wm. L. Nelson; surety, $1200; cost, $4475; signed, Sept. 7; filed, Sept. 8; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Camp near Guerrero. Alterations and additions; owner, Jas. Ellison; architect, Jno. T. Kidd; contractors, Le Bourveau Bros.; cost, $1200; signed, Sept. 14; filed, Sept. 16; payments, $350, raised and enclosed; $250, brown mortared; $300, completed; $300, 35 days.

Capp near 18th. Alterations and additions; owner, Hermann Joost; architect, H. Geilfuss; contractors, Schutt & Krecker; cost, $1448; signed, Sept. 16; filed, Sept. 16; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent. 35 days.

Columbia near 23rd. To build; owner, Dan'l Lynch; architect, J. M. McLeod; contractor, J. M. McLeod; cost, $4398; signed, Sept. 15; filed, Sept. 15; payments $807.75, outside frame up; $807.75, brown mortared; $807.75, white plastered; $807.75, completed; $1077, 35 days.

Day, between Church and Sanchez. To build; owner, Chas. Daley; contractor, Jno. L. McLaughlin; cost, $1465; signed, Sept. 21; filed, Sept. 25; payments, $366, rough frame up; $366, enclosed and brown mortar on; $366, completed; $367, 35 days.

Dolores, near 24th. To build; owner, B. P. Grover; architect, H. A. Schulze; contractors, Gardner & Boyden; cost $6684; signed, Sept. 7; filed, Sept. 8; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

W. De Long Ave. To build; owner, Maggie Dessen; architects, Cary & Johnson; contractors, Marcuse & Kenand; cost, $2404; signed, Sept. 22; filed, Sept. 29; payments, $600, frame up; $600, brown mortared; $601, completed; $600, 35 days.

Eighteenth, near Castro. To build; owners, Chas. and Aug. Stolz; architects, Martens & Coffey; contractor, L. Arthur; cost, $4665; signed, Sept. 14; filed, Sept. 15; payments, $1166, stores ready for occupancy; $2922, completed; $1167, 35 days.

Eleventh, near Market. Carpenter work, etc.; owner, Church of Advent; architects, Coxhead & Coxhead; contractor, E. A. Wheeler; surety, $1060; cost, $3339; signed, Sept. 28; filed, Sept. 30; payments, 75 per cent. of value as work progresses; Nov. 2, 1891, 25 per cent. 35 days.

Ellis, near Powell. Cast and wrought iron work; owner, Jacob Frowenfeld; architects, Salfield & Kohlberg; contractor, Joshua Hendy Machine Co.; cost, $3690; signed, Sept. 10; filed, Sept. 21; payments, 75 per cent, as work progresses; 25 per cent. 35 days.

Fair Oak, near 26th St. To build; owner, Jas. Cooney; architect, M. J. Welsh; contractor, T. Sullivan; surety, $835.75; cost, $3343; signed, Sept. 15; filed, Sept. 15; payments, $626.75, frame up; $626.75, brown mortared; $626.75, white coated; $627, completed; $835.75, 35 days.

Fell and Steiner. Graining; owner, J. S. Scobie; architect, Chas. I. Havens; contractors, Fraser & Keefe; cost, $1775; signed, Sept. 3; filed, Sept. 17; payments, $600, all grained and work second coated; $675, accepted; $500, 35 days.

Fell Street—No. 615. Additions and alterations; owner, John Layng; architect, Jno. Marquis; contractor, Robert Currie; cost, $1200; signed, Sept. 21; filed, Sept. 25; payments, $300, frame up, rustic on roof and windows set; $300, brown coated; $300, accepted; $300, 35 days.

Francisco, near Dupont. To build; owner, Mary T. Menton; architect, Chas. M. Rosseau; contractor, Andrew Christensen; cost, $3100; signed, Sept. 14; filed Sept. 22; payments, $775, framed; $775, brown mortared; $775, finished; $775, 35 days.

Franklin and Ellis. Alterations and additions; owner, Academy of Sacred Heart architect, Chas. J. Devlin; contractor, Jas. J. O'Brien; cost, $2130; signed, Sept. 22; filed, Sept. 23; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Fremont near Folsom. To build; owner, J. D. Heins; architect, Chas. A. Duebel; contractor, Chas. A. Duebel; cost, $10500; signed, Sept. 21; filed, Sept. 24; payments, $4000, first floor joists laid; $2,000, second floor joists laid; $1,000, third floor joists on; $1000, fourth floor joists laid; $1000, roof ready; $1000, completed; $500, 35 days.

Geary near Dupont. To build; owner, S. L. Sachs; architects, Salfield & Kohlberg; contractor, A. L. Campbell; cost, $3350; signed, Sept. 16; filed, Sept. 21; payments, $600, roof on; $800, ready for plastering; $500, standing finish accepted; $600, accepted; $850, 35 days.

Geary near Dupont. Brick and stone work, etc.; owner, S. Sachs; architects, Salfield & Kohlberg; contractor, R. Ringrose; cost, $6900; signed, Sept. 15; filed, Sept. 16; payments, 75 per cent, as work progresses; 25 per cent., 35 days.

Green near Pierce. Carpenter work, etc.; owner, E. C. Huff; architect, Fred B. Wood; contractor, Chas. Condy; surety, $660; cost, $2640; signed, Sept. 5; filed, Sept. 10; payments, $360, frame up; $760, brown mortared; $660, completed; $660, 35 days.

Grove and Franklin. To build; owner, Catherine Oliver; architect, T. J. Welsh; contractor, C. L. Lombard; surety, $2994; cost, $11,975; signed, Sept. 28; filed, Sept. 30; payments, $1796.25, foundations in and 1st story joists on; $1796.25, brown mortar on; $1796.25, frame up; $1796.25, white coated; $1796.25, accepted; $2993.75, 35 days.

Grove and Broderick. To build; owner, Wm. Webber; architect, H. Geilfuss; contractor, F. L. Hansen; cost, $7585; signed, Sept. 16; filed, Sept. 16; payments, $1137, frame up; $1137, building enclosed and partitions set; $1137, brown mortared; $1137, white plastered; $1141, completed; $1896, 35 days.

Haight near Baker. To build; owner, Anna V. Wakeman; architects, Townsend & Wyneken; contractor, Orrin E. White; cost, $6285; signed, Sept. 23; filed, Sept. 26; payments, $1400, frame up; $1600, enclosed; $1700, completed; $1585, 35 day.

Hardy near 17th. To build; owners, A. Fow & wife; architect, W. W. Rednall; contractor, W. W. Rednall; surety, $700; cost, $800; signed, Sept. 10; filed, Sept. 14; payments, $800, roof on; $800, brown mortared; $1000, completed.

Harrison bet. First & Essex. To build; owner, Thos. L. Kain; architect, August Lund; contractor, August Lund; surety, $750; cost, $3150; signed, Sept. 3; filed, Sept. 4; payments, $600, building framed; $600, brown mortared; $600, white plastered; $750, 35 days.

Harrison near 6th. To build; owner, H. E. Besthorn; architect, Chas. M. Rossean; contractor, M. S. Yerxa; surety, $3000; cost, $4150; signed, Sept. 23; filed, Sept. 25; payments, $1037, framed; $1037, brown coated; $1037, accepted; $1039, 35 days.

Howard & 23rd. Alterations and additions; owner, Jno. P. Flannery; architect, Chas. I. Havens; contractors, R. Doyle & Son; cost, $6389; signed, Sept. 16; filed, Sept. 17; payments, $1189, old building raised & frame up; $1200, gas & water pipes in & brown mortared; $1200, hard finished; $1200, completed; $1600, 35 days.

Hyde near California. Alterations & additions; owner, Mrs. R. Harris; architect, W. Winterhalter; contractors, Humeston & Page; cost, $1700; signed, Sept. 29; filed, Sept. 30; payments, $900, walls up and enclosed; $375, brown coat on; $400, completed; $425, 35 days.

Jackson near Fillmore. To build; owner, Jacob Frowenfeld; architects, Salfield & Kohlberg; contractor David Perry; cost, $10900; signed, Sept. 17; filed, Sept. 24; payments, $1250, frame up; $1250, enclosed; $1500; brown mortared; $3000, standing finish on; $2175, completed; $2725, 35 days.

Jackson & Devisadero. Painting etc.; owner, Chas. J. Wingerter; architect, A. C. Lutgens; contractor, Henry F. Wagner; cost, $1240; signed, Sept. 19; filed, Sept. 28; payments, $930, work completed; $310, 35 days.

ersey near Sanchez. To build; owner, H. Cunningham; architect, A. Klahn; contractor, A. Klahn; cost, $3485; signed, Sept. 24; filed, Sept. 25; payments, $850, frame up; $850, brown mortared; $850, finished; $935, 35 days

Jones near O'Farrell. Brickwork, etc.; owner, Wm. Sinon; architects, B. McDougall & Son; contractor, T. Hock; cost, $1250; signed, Sept. 3; filed, Sept. 4; payments, $500, brick walls up; $300, second payments; $130, completed.

Jones and McAllister. Heating and ventilating; owner, Hibernia S. & L. Society; architects, Pissis & Moore; contractor, Wm. Cronan cost, $4782; signed, Sept. 4; filed, Sept. 16; payments, 1st. and 15th. day of each month 75 per cent as work progresses; 25 per cent, 35 days.

Market and Rose Ave. Plumbing; owner, Mary Pauline Payne; architect, Wm. Curlett; contractor, Sam'l Ickelheimer; cost, $2785; signed, Sept. 4; filed, Sept. 5; payments, $1000, rough piping in; $1088.75, work finished; $696.25, 35 days.

Mason, near Filbert. To build; owner, Jos. A. Johnson; architect, Jos. A. Johnson; contractor, Wm. Helbing; surety, $1500; cost, $4750; signed, Aug. 17; filed, Sept. 8; payments, $1200, roof on; $1200, brown mortared; $1150, white plastered; $1200, 35 days.

Mason, near Geary. To build; owner, John Murphy; architect, Wm. H. Armitage; contractor, M. C. Lynch; surety, $1250; cost, $5000; signed, Sept. 15; filed, Sept. 16; payments, $1250, rough frame up; $1250, brown mortared; $1250, completed; $1250, 35 days.

Mason, near Sutter. To build; owner, Y. M. Byrne; architects, Henriksen & Mahoney; contractor, Wm. Knowles; surety, $5000; cost, $4,075; signed, Sept. 17; filed, Sept. 19; payments, $765, rustic on and roof covered; $765, brown plaster on; $765, white coated and sashes glazed; $765, varnishing done and trimmings on; $1020, 35 days.

Mason, near Sutter. Concrete work; owner, Y. M. Byrne; architects, Henriksen & Mahoney; contractors, Ransome & Cushing; surety, $1200; cost, $1617; signed, Sept. 18; filed, Sept. 19; payments, $800, walls completed; $407, floors and sidewalks completed; $410, 35 days.

Noe, Ridley, Castro & 14th. Steam heating, etc.; owner, German Benevolent Society; architect, H. Geilfuss; contractor, A. Baumisterger; cost, $3550; signed, Sept. 15; filed, Sept. 17; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

O'Farrell near Powell. To build; owner, Geo. D. Toy; architect, A. J. Barnett; contractor, Wm. Little; surety, $2500; cost, $9665; signed, Sept. 10; filed, Sept. 12; payments, $1400, roof rafters on; $1000, rustic and roof on; $1845, brown mortared; $1500, white plastered; $1500, completed; $2420, 35 days.

O'Farrell near William. Carpenter work, etc.; owner, A. W. Wilson; architect, P. R. schmidt; contractor, T. M. McLachlan; cost, $8740; signed, Sept. 1; filed, Sept. 5; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

O'Neil & Haley Tract, Lots 39 & 40. To build; owner, C. Maginnis; architect, R. O. Davis; contractor, R. O. Davis; cost, $1450; signed, Sept. 22; filed, Sept. 24; payments, $362.50, rustic on; $362.50, brown mortar on; $362.50, completed; $362.50, 35 days.

Pacific near Franklin. To build; owner, Max Davis; architect, M. J. Lyon; contractor, J. S. W. Saunders; surety, $8000; cost, $11875; signed, Sept. 23; filed, Sept. 25; payments, 1st & 15th day of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

Page near Octavia. To build; owner, Marie A. Berker; architects, John & Balczynski; contractor, Wm. Pluns; cost, $6500; signed, Sept. 17; filed, Sept. 19; payments, $1200, frames up; $1200, enclosed & partitions set; $1200, white coated; $1275, completed; $1625, 35 days.

Page near Masonic Ave. To build; owner, John Murphy; architects, Shea & Shea; contractor, Arthur A. Ahern; cost, $4900; signed, Sept. 10; filed, Sept. 11; payments, $918, rough frame up; $919, rough mortared; $919, hard finished; $919, completed; $1225, 35 days.

Page near Webster. To build; owner, Mrs. A. Thompson; contractor, J. P. Hanson; cost, $3900; signed, Sept. 23; filed, Sept. 28; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pine near Sansome. Carpenter work, etc.; owner, Dan Meyer; architects, Salfield & Kohlberg; contractor, A. Jackson; cost, $22,886; signed, Sept. 3; filed, Sept. 8; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Pine near Sansome. Painting, etc.; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, Fraser & Keefe; cost, $2600; signed, Sept. 12; filed, Sept. 24; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pine near Sansome. Pile driving; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, B. McMahon & Son; cost, $26.75 per pile; signed, Sept. 26; filed, October, 1; payments, when completed and accepted.

Pine near Sansome. Plumbing & gas fitting; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, S. Ickelheimer & Bros.; cost, $5681; signed, Sept. 14; filed, Sept. 24; payments, $2100, rough work in; $2138, completed; $1413, 35 days.

Post and Scott. To build; owner, Rebecca M. Davis; architect, W. O. Banks; contractor, O. E. White; cost, $4170; signed, Sept. 21; filed, Sept. 22; payments, $1000, frame up; $1145, brown coated & roof on; $1000, completed; $1025, 35 days.

Quincy St. No. 5. Brick additions; owner, Louis Magnier; architect, Emile Depierre; contractor, Jean Salanare; cost, $11000; signed, Sept. 17; filed, Sept. 21; payments, 75 per cent. as work progesses; 25 per cent., 35 days.

Sanchez near 23rd. Carpenter work, etc.; owner, Jas. T. McInnes et al; architect, Wm. Curlett; contractor, Wm. Linden; cost, $6090; signed, August 24; filed, Sept. 5; payments, 75 per cent. as work progresses; 25 per cent, 35 days.

Sanchez near 26th. To build; owner, Patrick Cleary; architect, M. J. Welsh; contractor, Jas. McConahey; surety, $413.50; cost, $1654; signed, Sept. 7; filed, Sept. 7; payments, $413.50, frame up; $413.50, brown mortared; $413.50, completed; $413.50, 35 days.

Second St. No. 294. To build; owner, Thos Stealey; architect, H. Raleigh; contractor, A. J. Kaisch; cost, $3250; signed, Sept. 7; filed, Sept. 14; payments, $600, roof on and building on 2nd st.; $800, house moved and raised, balance, when completed,

Steiner and Jackson. Sewering, plumbing, etc.; owner, H. L. Van Wyck; architect, Julius E. Kraft; contractor, Wm. F. Wilson; surety, $1000; cost, $2358; signed, Sept. 26; filed, Sept. 28; payments, $758, sewering piping and rough work in; $1000, completed; $600, 35 days

Stockton near Sacramento. To build; owner, Adolphe Mandonnet; architect, Adolphe Mandonnet; contractor, Edward Mandonnet; cost, $4000; signed, Sept. 25; filed; Sept. 26; payments, $1000, frame of 3-story building up; $1000, plastering finished; $500, 3-story building completed; $500, 2-story building frame up; $1000, all completed.

Sunnyside, Block 44. Concrete work; owner, S. S. Construction Co.; architect, Fred Weiler; contractor, J. G. & I. N. Day; cost, $6.75 per cubic foot; signed, Sept. 10; filed, Sept. 12; payments, 1st and 15th day of each month, 75 per cent. as work progresses; 25 per cent., 35 days.

Sutter St. No. 2622. Alterations and additions; owner, Frank Backe and wife; contractor, Geo. W. Hillyer; cost, $2435; signed, Sept. 23; filed, Sept. 24; payments, $400, house raised and lot graded; $700, floors laid in two upper stories; $700, front completed and back porch on; $635, 35 days.

Sutter and Hyde. Alterations and additions; owner, Inez S. Hutton; architects, B. McDougall & Son; contractors, Peterson & Olsen; cost, $3750; signed, Sept. 19; filed, Sept. 19; payments, $600, rough frame up; $1200, brown coated, and ceilings and floors laid; $950, completed; $1000, 35 days.

Sutter and Jones. Alterations and additions; owner, A. Wolff; architect, Chas. J. Devlin; contractor, John A. Ehmann; cost, $1075; signed, Sept. 25; filed, Sept. 25; payments, 75 per cent as work progresses; 25 per cent., 35 days.

Sutter near Leavenworth. Carpenter work etc.; owner, Mrs. C. C. Stevenson; architects, C. R. & J. M. Wilson; contractors, Childs & Chatham; cost, $9000; signed, Sept. 21; filed Sept. 22; payments, $1000, brick foundation in; $1750, rough frame up and roof on; $2000, white coated; $2000, completed; $2250, 35 days.

Sutter and Leavenworth. Plumbing; owner, Mrs. C. C. Stevenson; architects, C. R. & J. M. Wilson; contractor, R. A. Vance; cost, $1357; signed, Sept. 19; filed, Sept. 22; payments; $500, rough work on; $500, completed; $357, 35 days.

Sutter, near Leavenworth. Additions; owner, Wm. M. Hardy; architects, C. R & J. M. Wilson; contractors, Childs & Chatnam; cost, $3500; signed, Sept. 19; filed, Sept. 22; payments, $575, brick work in; $875, rough frame on and roof on; $1175, completed; $875, 35 days.

Sutter, near Leavenworth. To build; owner, Lawrence Koebelin; architects, C. R. & J. M. Wilson; contractor, F. W. Kern; cost, $8050; signed, Sept. 22; filed, Sept. 23; payments, $2012.50, frame up; $2012.50, brown coated; $2012.50, completed; $2012.50, 35 days.

Sutter, near Polk. Additions and alterations; owner, Rebecca Jennings; architects, B. McDougall & Son; contractors, Tegeler & Muller; cost, $3660; signed, Sept. 5; filed, Sept. 5; payments, $900, first tier of joists on; $400, frame up; $500, brown mortar on; $500, white coated; $960, completed; $1600, 35 days.

Sutter, near Polk. Plumbing, etc.; owner, Rebecca Jennings; architects, B. McDougall & Son; contractor, H. Williamson; cost, $1100; signed, Sept. 12; filed, Sept. 14; payments, $500, plumbing roughed in; $325, completed; $275, 35 days.

Sutter, near Taylor. Plumbing; owner, Maria L. Smith; architects, C. R. and J. M. Wilson; contractor, R. A. Vance; cost, $4000; signed, Sept. 5; filed, Sept. 7; payments, $1500, rough work in; $1500, completed; $1000, 35 days.

Taylor near O'Farrell. Carpenter work etc.; owner, Wm. R. Morton; architect, Fred B. Wood; contractor, Chas. W. Kinsman; cost, $3948; signed, Sept. 16; filed, Sept. 24; payments, $1458, frame up; $1500, completed; $990, 35 days.

Tehama near Fourth. To build; owner, Honora Greeley; architect, Oliver Everett; contractor, Aug. Lund; cost, $6379; signed, Sept. 28; filed, Sept. 30; payments, $1000, roof on $1000, entire frame up; $1089.50, brown mortared; $1594.75, completed; $1594.75, 35 days.

Tehama near Fourth. To build; owner, John McShea; architect; Chas. M. Rossean; contractor. John F. O'Brien; surety, $2000; cost, $4650; signed, Sept. 29; filed, Sept. 30; payments, $1162, framed; $1162, brown coated; $1162, completed; $1164, 35 days.

Treat Ave. No. 1106. Additions; owner, Julia Beck; contractor, Geo. L. Marshall: cost, $650; signed, Aug. 21; filed, Sept. 8; payments, $250, building enclosed; $200, brown mortared; $200, completed.

Twenty-third near Church. To build; owner, P. McMurry and wife; architect, Jno. T. Kidd; contractor, Frank Williams; cost, $1375; signed, Sept. 25; filed, Sept. 26; payments, $925, enclosed; $350, white coated; $350, comple.ed; $350, 35 days.

Twenty-sixth, near Cypress. To build; owner, Payne's Bolt Works; architect, M. J. Walsh; contractor, S. D. Matthews; surety, $6666; cost, $6666; signed, Sept. 8; filed, Sept. 10; payments, $1249, frame up; $1249, brown mortared, $1249, entire finish up; $1252.50, completed; $1666.50, 35 days.

Valencia, between 22nd and 23rd. To build; owner, D. S. Prindle; architect, Chas. Geddes; contractor, Carl Stroh; cost, $4399; signed, Sept. 5; filed, Sept. 11; payments, $680, building up and roof boarded; $1000, first coat mortar on; $800, outside coat plaster on; $693, completed; $1097, 35 days.

Valencia and Tiffany Ave. Stone work, etc.; owner, St. Luke's Hospital; architects, Townsend & Wyneken; contractor, J. H. Wilson; surety, $500; cost, $1900; signed, Aug. 31; filed, Sept. 14; payments, $1000, brickwork all on; $900, 35 days.

Vallejo and Van Ness. To build; owners, H. and H. E. Law; architect, Wm. Brown; contractor, R. Ringrose; cost, $7405; signed, Sept. 23; filed, Sept. 25; payments, $1998, basement completed; $1220, completion of first story; $1220, completion of second floor; $1220, completion of third floor; $1852, 35 days.

Vallejo, near Van Ness. To build; owner, Benj. Norris; architect, W. H. Lillie: contractor, W. E. Lane; surety, $1063; cost, $4250; signed, Sept. 17; filed, Sept. 19; payments, $637.40, frame up; $637.40, enclosed; $637.40, brown mortar on; $637.40, standing finish on; $637.40, completed; $1063, 35 days.

Webster, near O'Farrell. To build; owner, Geo. Beanston; architect, T. J. Welsh, contractor, J. J. Dunn; cost, $4194; signed, Sept. 28; filed, Sept. 30; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

ALAMEDA COUNTY.

Adam Wats tract, lot 5, block 798. To build; owner, Samuel Wright; contractors, Luter & Prugh; cost, $998; signed, Aug. 28; filed, Aug. 29; payments, $320, brown mortared; $320, completed; $328, 35 days.

Associates tract, 50, Berkeley. To build; owners, C. A. Walker & wife; architects, Dirchson & Roust; contractors, Dirchson & Roust; surety, $1000; cost, $1635; signed, Sept. 22; filed, Sept. 22; payments, $800, on Nov. 10, 1891; $400, Dec. 15, 1891; $435, 35 days.

Bayo Vista and Wadsworth Ave. Two-story frame; owner, E. M. Hall; architect, Chas. Mau; contractors, G. Baudin & G. Eber; cost, $4100; signed, Sept. 17; filed, Sept. 19; payments, $625, ½ materials furnished and ¼ work completed; $750, ½ furnished and ½ completed; $750, ¾ furnished and ¾ completed; $750, completed; $1025; 35 days.

Blake, near Fulton. To build; owner, C. C. Bruce; architects, A. W. Pattiani & Co.; contractors; A. W. Pattiani & Co.; cost, $3486; signed, Aug. 28; filed, Sept. 2; payments, $950, rustic on, roof shingles on and chimneys built; $950, window frames set; $810, completed; $876, 35 days.

Broadway and 14th sts., Oakland. Brick building; owner, Jos. Macdonough; architects, Mooser & Cuthbertson; contractors, Chatain & Gilletti; surety, $6500; cost, $6900; signed, Sept. 22; filed, Sept. 28; payments, $2000, footings in; $2000, outside walls up; $1175, completed; $1725, 35 days.

Brown, near Grove. Frame cottage; owner, Joseph Reinhart; architect, A. W. Smith; contractor, A. W. Smith; cost, $1250; signed, Sept. 5; filed, Sept. 8; payments, $300, frame up and roof shingled; $300, first coat paint and first coat plaster; $800, completed; $380, 35 days.

Briggs Tract, Lot 5, Block 489, Oakland. To build; owner, Miss Sabina Higgins; architect, John Conant; contractor, Jacob Steinbergh; cost, $1175; signed, Sept. 14; filed, Sept. 15; payments, $293.75, frame up and rustic on; $293.75, brown mortared; $293.75, ready for painting; $293.75, 35 days.

Bryant Tract, Berkeley. To build; owner, C. A. Bailey; architect, A. J. Goetzman; contractor, A. J. Goetzman; cost, $4800; signed, Aug. 22; filed, Aug. 27; payments, $1200, frame up; $1900, plastered; $1200, completed; $1100, fourth payment.

Chapel near Allston, Berkeley. To build; owner, J. C. McMullen; architect, John Hodge; contractors, Durkee & Middlestorb; cost, $3485; signed, Sept. 25; filed, Sept. 28; payments, $871.50, frame up and enclosed; $871.25, plastered; $871.25, completed; $871.25, 35 days.

Daley Scenic Park—Block 15. Frame building; owner, H. Murphy; architects, Maswell and Bugbee; contractor, J. D. Irwin; cost, $1900; signed, Aug. 22; filed, Aug. 22; payments, $475, frame up and enclosed; $475, brown mortared; $476, completed; $475, 35 days.

Durant St. near Ellsworth. Two-story frame; owner, Mrs. M. D. Marsh; architect, Chas. Mau; contractor, Jas. Toohig; cost, $5129; signed, Sept. 1; filed, Sept. 2; payments, $1276; ¼ materials furnished and ⅓ work done, $1276; ⅔ furnished and ⅔ work done, $1276; completed; $1300, 35 days.

Durant Ave. near Fulton, Berkeley. Two-story frame; owner, Mrs. M. D. Marsh; architect, Chas. Mau; contractor, Jas. Toolig; cost, $5129; signed, Aug. 26; filed, Sept. 1; payments, ½ materials furnished and ⅓ work done, $1276; ⅔ materials furnished and ⅔ work done, $1276; completed, $1277; 35 days, $1300.

Eagle Ave. near Chapin. To build; owner, Robert J. Cox; architects, Carey & Johnson; contractors, Marcuse & Remmel; cost, $2900; signed, Aug. 15; filed, Aug. 22; payments, $300, frame up; $500, brown mortared; $500, completed; $500, 35 days

Eagle Ave., near Minturn St. To build; owners, Hanlan & Bacon; architect, F. P. Fisher; contractor, D. Straub & Son; cost, $1800; signed, Aug. 27; filed, Aug. 27; payments, $450, frame up; $450, enclosed and mortar on; $450, plastering finished, sash hung, etc.; $450, 35 days.

Eighth St., near Adel. To build; owner, Nellie F. Gilham; architect, Elmer Childs; contractor, D. Cleland; cost, $4495; signed, Sept. 17; filed, Sept. 18; payments, $1113.75, frame up and rustic on; $1113.75, enclosed and one coat of plaster on; $1113.75, completed; $1113.75, 35 days.

Eighth St., near Chestnut, Oak Tp. Two-story frame; owner, Andrew Rudgear; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $3063; signed, Sept. 19; filed, Sept. 22; payments, $1150, brown mortared; $1160, completed; $773, 35 days.

Elm, near Telegraph Ave., Oakland. To build; owner, J. H. Fairchild; architect, Howard Burns; contractors, Hurd, Parker, et. al; cost, $1942; signed, Sept. 17; filed, Sept. 23; payments, $485, frame up, rafters and sheathing on and chimneys built; $485, enclosed and plastering on; $485, completed; $487, 35 days.

Flint Tract, Lot 1, Block B, Oakland. To build; owner, Helen P. Flint; architect, Wm. H. Weeks; contractor, Wm. H. Weeks; cost, $2148; signed, Sept. 12; filed, Sept. 14; payments, $537, frame up and enclosed; $537, roofed and plastered; $537 completed; $537, 35 days.

Fourteenth near 6th Ave., Oakland. Two-story dwelling; owner, Jesse P. Meehan; architect, J. H. Littlefield; contractors, H. A. Johnson & Co.; cost, $5847; signed, August 26; filed, August 31; Payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Fourteenth near Market, Oakland. Frame building; owner, Mrs. Dora Druhe; architect, has. Mau; contractors, Herbst & McLeod; cost, $4999; signed, Sept. 29; filed, Sept. 30; payments, one-fourth materials furnished one-fourth Work done, $949; one-half done one-half furnished, $950; three-fourths done three-fourths furnished, $950; $900, completed; $1250, 35 days.

High and Encinal Ave., Alameda. To build; owner, Geo. Manley and wife; architects, Carey & Johnston; contractors, Marcuse & Remmel; cost, $5750; signed, Sept. 22; filed, Sept. 23; payments, $1437.50, frame up; $1437.50, brown coated; $1437.50, completed; $1437.50, 35 days.

Hobart and Grove. Brick church structure; owner, Rev. Thos. McSweeny; architect, C. J. Devlin; contractor, Richard Sinnott; cost, $17,000; signed, August 29; filed, Aug. 29; payments, $750, main floor joists on and flooring laid; $1000, aisle window frames etc. set in place; $1500, window frames of choir and transepts set; $3000, frame of main roof on; $2000, roof sheathed; $3500, ready for lathing; $500, completed; $4250, 35 days.

Linda Vista Terrace, Oakland. To build; owner, J. Cather Newsom; architect, J. Cather Newsom; contractor, H.M. Kirkwood; cost, $3045; signed, August 26; filed, Aug. 31; payments, $650, frame up; $650, partitions set; $783.75, inside finish on; $200, completed; $701.25, 25 days.

Linden and 22d. Oakland. Two-story frame; owner, D. N. Aherns; architect, Chas. Mau; contractor, Herbst & McLeod; cost, $5199; signed, Sept. 1; filed, Sept. 2; payments, one-third materials furnished and one-third work done, $1300; two-thirds furnished and two-thirds done, $1300; $1299, completed; $1300, 35 days.

Lot 6, block 45, Oakland. Cottage; owner, Mrs. Maria Larouche; architect, Jno. Conant; contractor, Jacob Steinburgh; cost, $1400; signed, Sept. 28; filed, Sept. 29; payments, $100, frame up; $100, brown mortared; $50 ready for painting; balance when completed.

Morton near Kings Avenue, Alameda. Two story dwelling; owner, Mary F. Barton; architect, Chas. S. Shaner; contractor, G. A. Benseman; cost, $3765; signed, Sept. 26; filed, Sept. 28; payments, $706, frame up and sheathing on main roof; $706, enclosed, etc.; $706, plastering done; $705.75, completed; $941.25, 36 days.

Oak Park Tract, Alameda. Two-story frame; owner, Mrs. I. A. Traveller; architect, A. W. Pattiani; contractor, A. W. Pattiani & Co.; cost, $4659; signed, Sept. 22; filed, Sept 23; payments, $1290, rustic and roof shingles on and chimney built; $1159, window frames set, brown mortared and interior primed; $1050, completed; $1159, 35 days.

Oakland, Lots 6 and 7. To build; owner, E. F. Fernandes; architect, T. J. Welsh; contractor, T. R. Bassett; cost, $6800; signed, Aug. 24; filed, Aug. 25; payments, $1700, foundation laid, first story joists on; $1700, frame up; $1700, brown mortared; $1875, completed; $2325, 35 days.

Oakland Heights, Lot 7. Two-story frame; owner, Mrs. L. W. Coffin; architects, A. W. Pattiani & Co.; contractors, A. W. Pattiani & Co.; cost, $6299; signed, Aug. 22; filed, Aug. 24; payments, $1700, rustic and roof shingles on and chimneys built; $1600, window frames set; $1424, completed; $1575, 35 days.

Oxford street, Berkeley. To build; owner, Mrs. M. C. McCleave; architect, Geo. A. Embury; contractor, G. A. Embury; cost, $2390; signed, Sept. 16; filed, Sept. 17; payments, $597.50, foundation laid and frame up; $597.50, enclosed and brown mortared; $597.50, completed; $597.50, 35 days.

Parsons Tract, G.G. Oakland Tp. Two story frame; owner, Geo. D. Troost; architect, Fred T. Wilcox; contractor, C. L. Lombard; surety, $1200; cost, $4433; signed, Sept. 16; filed, Sept. 21; payments, $1050, roof on and boarded; $1050, outside work done, one coat paint on; $1050, stairs completed, two coats paint on; balance 35 days.

Percy Tract, Lot 4, block A. To build; owner, N. L. Freese; architect, A. H. Broad; contractor, Frank E. Armstrong; cost, $2525; signed, Sept. 2; filed, Sept. 2; payments, $630, frame up and enclosed; $630, brown mortared; $630, completed; $635, 35 days.

Portion block 10, mp. Clinton. To build; owner, Francis E. Williams; architect, A. W. Smith; contractors, McIntyre & Johnson; cost, $2699; signed, Sept. 19; filed, Sept. 19; payments, one-fourth, frame up; one-fourth, brown coated; one-fourth, white plastered; one-fourth, 36 days.

Regent near Calhoun St. Two story frame; owner, Marie H. Collischorn; architect, Otto Collischorn; contractor, Anton S. Lorber; cost, $2284; signed, Aug. 29; filed, Aug. 29; payments, $537 50, frame up and roof enclosed; $537.50, brown mortared; $537.50, completed; $537.50, 35 days.

San Leandro. Alterations; owner, A. Rogers; architect, M. H. Hackett; contractor, M. H. Hackett; cost, $2150; signed, Sept. 22; filed, Sept. 22.

Santa Clara Ave. and 5th st. Two-story dwelling; owners, Aug. Johnston and wife; architect, A. R. Denke; contractor, A. R. Denke; cost, $4400; signed, Sept. 1; filed, Sept. 5; payments, $800, frame up and enclosed; $800, first coat plaster on; $800, second coat plaster on and windows set; $900, completed; $1000, 35 days.

Scenic Ave. near Cedar st., Berkeley. Cottage; owner, B. H. Henderson; architect, R. Gray Frise; contractor, Alex. L. Campbell; cost, $2534; signed, Sept. 8; filed, Sept. 12; payments, $950. frame up, outside on and floors laid; $950.50, completed; $633.50, 35 days.

Simpson Tract, Lot 16—Oakland. Cottage; owner, R. J. Cumisky; architects, Brehant & Diamond; contractors, Brehant & Diamond; cost, $2950; signed, Sept. 10; filed, Sept. 12; payments, $737.50, rough frame up; $737.50, enclosed and frames set; $737.50, white coated; $737.50, 35 days.

Sixteenth and Fourth Avenue. To build; owner, W. L. Bradley; contractors, Smith & Lake; cost, $3560; signed, Aug. 21; filed, Aug. 21; payments, $640, brickwork done, rustic on and roof boarded; $640, brown mortar on and first coat of paint; $640, completed; $640, 35 days.

Steele Tract, Lot 25—Berkeley. One-story cottage; owner, J. H. Robinson; architect, E. H. Priest; contractor, E. H. Priest; cost, $2200; signed, Sept. 11; filed, Sept. 11; payments, $550, frame up; $550, first coat plaster; $550, completed; $550, 35 days.

Thirteenth Avenue near 12th, Oakland. To build; owners, John and Jane Smith; architect, F. J. Farnham; contractor, F. J. Farnham; cost, $2050; signed, Sept. 28; filed; Sept. 30; payments, $500, frame up; $500, rough coat mortar on; $500, completed; $550, 35 days.

Twenty-fourth and Grove. To build; owner, Lucien Brand; architects, Carey and Johnson; contractors, Marquse and Remmel; surety, $3700; cost, $3700; signed, Sept. 1; filed, Sept. 10; payments, $925, frame up and roof on; $926, brown mortared; $925, completed; $925, 35 days.

Villa Avenue Tract, Lot 18, Block 6. Frame building; owner, Stephen Dewing; contractors, Francis and Brown; cost, $1550; signed, Sept. 12; filed, Sept. 12; payments, $400, frame up; $400, enclosed; $400, plastered; $350, completed.

Walnut, corner Rose, Berkeley. To build; owner, James Dempster; architect, E. W. Chamberlain; contractor, Chas. M. Cornell; cost, $1950; signed, Sept. 2; filed, Sept. 14; payments, $500, building covered and chimney built; $500, floor partitions and rough coat mortar on; $500, completed; $450, 35 days.

Watt and Peralta, Oakland. To build; owner, A. A. Denison; architect, W. H. Wellbye; contractor, W. H. Wellbye; cost, $1100; signed, Aug. 18; filed, Aug. 25; payments, $275, frame up and roofon; $275, first coat plaster; $275, plastering done; $275, 35 days.

Watts Tract, Lot 8, block 792. To build; owner, Egr D. and Clara Ivory; architect, Ira A. Boynton; contractor, Ira A. Boynton; cost, $1700; signed, Aug. 26; filed, Sept. 2; payments, $500, frame up, chimney built and lumber on ground; $400, outside finish and brown mortar on; $375, completed; $425, 35 days.

Wellington near Russell, Berkeley. To build; owner, J. Ward Brown; architect, Josiah J. Rose; contractor, Josiah J. Rose; cost, $1950; signed, Sept. 21; filed, Sept. 24; payments, one-third, house up; one-third, completed; balance 35 days.

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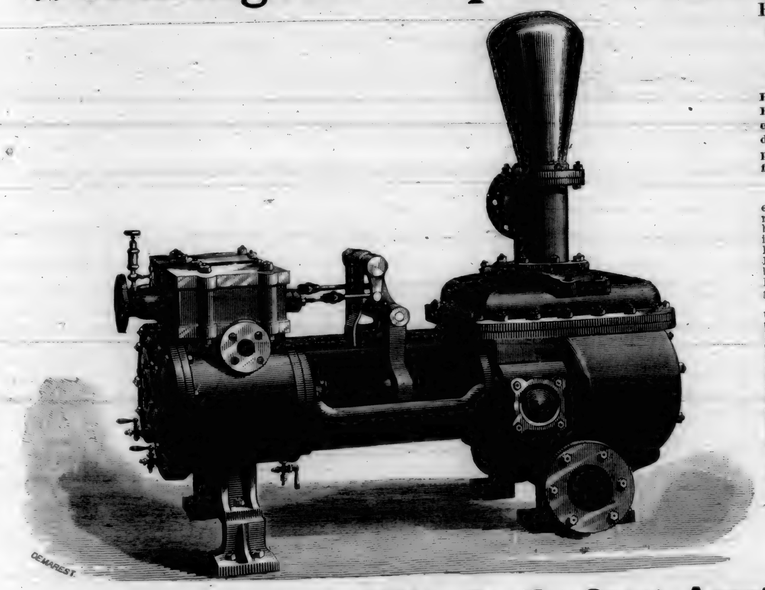

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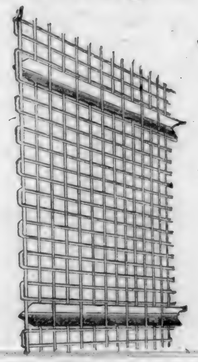

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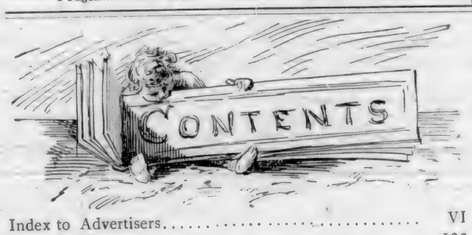

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

THE Post Office site for San Francisco has been selected by the Washington authorities. It has a frontage of 350 feet on Seventh street, by a depth of 325 feet on Mission street, and 325 feet on Stevenson street. The price paid was $1,040,000. Objections have been urged against the location as being too far from the business portion of the City, while the probable majority of the future will think it a tax on their time to pass over a non-business block while in active duty. The strongest protestations are made by persons who have the least business with the Post Office Department. Objection has been made on account of the difficulty to be encountered to obtain a secure foundation, but this is no serious objection, as the public buildings in many of the cities have been built upon ground that presented greater difficulties than our own.

Whatever may be said in reference to the design for the future buildings, we feel assured that Mr. W. J. Edbrook, the present Supervising Architect for the Treasury Department, will design a structure which in architectural importance will accord with commercial importance of the great city that San Francisco is destined to become, as well as the main westerly point in the postal service.

VENTURA MISSION.

Our sketch this month gives two views of the Mission Church of San Buena Ventura, the one as seen from the front, and the other, which is equally interesting, as seen from the rear. In those days when the church was fresh from the hands of the builder it stood no doubt in the fields or rather in the midst of a but slightly cultivated country, but now Ventura is a busy agricultural center, small but active. The view as seen from the front is taken from the main street, on which stands the church near the center of commerce. From behind, the view is very picturesque, combining in one the church with its crowd of lowly dwellings nestling around, beyond the sea and its gliding sails that move to and fro like sea birds, as they skim from wave to wave in search of food, and still further on in the hazy distance, that required to provide the genuine thing, the spaces have been filled with wooden imitations. This does not seem altogether to run in line with the sentiment of truth, which above all a church building should express, but as the average superficial beholder will never connect the untruth of the building with the falsity of the builder, the world at large will not be shocked by such an inconsistency.

To the left of our sketch, as seen from the front, was originally the graveyard. Some years ago in digging the foundations for a proposed addition to the church, many bones were unearthed. It was the custom among the Indians to bury their dead without enclosing them in a coffin, whether from an intuitive wisdom, native to their thoughts, or from pecuniary reasons,

VIEW OF THE MISSION CHURCH OF SAN BUENA VENTURA.

the Santa Barbara Islands, blue and dreamy in their place of silence among the waves. All the air seems laden with sunshine, blue sky above and blue sea beneath, while across the old bell-tower the yellow light of the sun in its southern glory glows as a flame of fire against the deep shadow and dark background of climbing vines and drooping peppers. Nothing now remains of this Mission save the church, but this is in a good state of preservation.

The walls for half their height are built of stone, while the balance is of a dobe. The small bells in the tower are hung so as to swing on iron pivots fixed in the wooden crossbeam, while the large bells are rigid, only their tongs swinging. To add to the apparent wealth of bells in this tower, at a less cost than I know not. To the right, the dwellings and storehouses common to the Missions have entirely disappearred, and in their place stand the comfortable modern dwellings of the parish priest, and around it a trim garden with pleasant shade trees and sweet smelling flowers and all breathing of peace and happiness, but whether it be the crowning feature of the tower that cast its shadow across the light, or only that of the imagination, it stands there still as emblem of that reallty which is ever present with us, even in these most sunlit places of the earth, and no doubt it is much the same to day in this Eden of the south as it was 100 years ago in the days of the Mission's founding, or even in that place of many flowers where the river Euphrates divided its waters.

TRES.

BRICK AND MARBLE IN THE MIDDLE AGES.

From the *London Builder* we take the following article on "Brick and Marble in the Middle Ages," which is as applicable to design at this day as twenty years ago:

The stimulated interest among English architects in that combination of brick with marble in veneered or particoloured designs, which has so largely characterized the architecture of Mediæval Italy, and the avowed interest in which gave rise in great measure to the fancy for chequered and "stripy" brickwork in England, which critics have stigmatized by various contemptuous epithets. We cannot say that the influence of this form of Italian architecture on our own modern practice has been in the main for good. We have imitated mostly the less refined, certainly the less costly forms of it; we have got the brick *without* the marble, for the most part. That the process of marble veneer has not been employed here, at least not in that extensive and wholesale manner in which it is found in Italy, is a matter for congratulation. It is not in the highest sense an architectural form of treatment; it has more of the essence of cabinet work than architecture, and at best is only suited in expression to a climate of mild weather and bright suns. But the adoption of brick and marble in combination might have been very well used here, but has been almost neglected, except in so far as the employment of marble shafts goes. We have, instead of this, in our modern brick architecture, either very raw and crude combinations of strangely colored brick, or we have "stone dressings," in which a dead sandstone surface offers no contrast to the texture of the brick, but rather adds dullness to the whole. Part of the charm of brick and marble combinations consists in the contrast of texture—the smooth, hard marble with the rough brick—and in the delicate tints obtained from the marble. We have a good deal of the material within reach, but itr has not been made the most of, even where expense was no obstacle to any wish or fancy of an architect.

PLAN OF MISSION SAN BUENA VENTURA.

Independently of these more practical considerations, the interest of a comparative study of Italian with Northern Mediæval architecture, is very great, even to those who feel less of positive interest in the style *per se*. The peculiar distinction between the conditions under which the architect worked, and the results he produced in the North and South. The Northern Mediæval architect developed his style away from the reach of the remains of classic architecture, and with no precedents to divert his aim from the one style which he was engaged in almost unconsciously perfecting, without, practically, the knowledge of any other. The Italian was otherwise situated. He worked in a country with a great past, the architectural monuments of which were everywhere around him. And these architectural monuments belonged to a school of constructive design, totally opposed to that which was dominant in Europe in the Middle Ages. They were the monuments and representatives of the great lintel system, which had died out with the decline and fall of the Roman Empire. The new structural form was that of the arch in its entirety, which had only been half accepted by the Roman, in a one-sided and architecturally apologetic manner, but was now to be carried to its utmost development by the Goth, whose influence was to become predominant throughout Europe. But in the midst of this permeation of the arcuated style, there lingered in Italy a constant tendency to a revival of, or return to, the antique forms, the remains of which were so plentiful, and the consequence was not only the existence here and there of groups of artists influenced by some one building of antiquity, which they admired, and were desirous of re-producing in its best features, in their new work; but a general obstacle everywhere tothe frank acceptance of the arcuated style as a system of balanced and buttressed construction. The old classic principle of repose still asserted itself in the Mediæval art of Italy. The buttress was never made a feature in the design, except in the old classic pilaster-like form; the arch was largely used, its pointed form was more or less adopted, though with hesitation, but its external constructive expression was shirked, and the obvious aim was to combine the Gothic arcuated construction with the classic immobility of design and expression; or if this were not the conscious aim, it was the unconscious result of conflicting tastes and associations.

"They ignored, as much as possible, the clear exhibition of the pointed arch, and even when they did use it, not untrequently introduced it in such a way as to show their contempt for it as a feature of construction; employing it often for ornament, and never hesitating to construct it in so faulty a manner, that it required to be held together with iron rods from the very first day of its erection. This fault they often found it absolutely necessary to commit, because they scarcely ever brought themselves to allow the use of buttress; and this reluctance was a remarkable proof of their classic sympathies. Italian architects, then, in never resorting to the buttress, avowed their feeling that a state of perfect rest was the only allowable state for a perfect building, and they preferred almost always to use the arch for its beauty alone, and avowedly not for its constructional value."

From this use of the arch without the buttress grew, thinks Mr. Street, one beauty, the use of the frequent trefoiled arches so common in Italy, and which he regards as having their origin in an attempt to balance the arch by weighing it inwards. As so much depended on these trefoiled arches, "no pains were spared in bringing their outline into the very purest form. To this we owe the absolute perfection which characterizes some of the trefoiled arches in early Italian work." Whether or no this may be attaching a little too much constructive importance to the trefoiled arch, there can be no doubt that to the half-hearted use of the arch referred to, as well as to the lingering of certain reminiscences of classic art, is mainly due to want of unity of design and of entirely satisfactory character in the buildings of Mediæval Italy as compared with the best of Northern Gothic. "You may go to a great English cathedral and find that, from every point of view, inside and outside, every feature is well proportioned to its place, and beautiful in itself, whilst the *tout ensemble* is also perfect in proportion and mass. This can never be said of Italian work. It never produced anything perfect both in detail and in mass, and one always finds it nec-

essary to make excuses for even the best works, such as one never finds necessary, or allows oneself to think of making, for English works. There is something really absurd in comparing even the best of the Italian churches with such cathedrals as Canterbury and Lincoln, so superior are the latter from almost every point of view." Among other reminiscences of classic design with which the Italian architect was haunted was the cornice, which was developed to an extent and with a richness never found in true Gothic work, and the heavy lines of which not only cap the walls horizontally, but are carried up gables and returned round buttresses. Many of these cornices (often brick) are very fine, and not without great effect architecturally; but it is obvious that they clash with the verticality of design which is predominant in true Gothic. The mouldings of the Italian architect are what we should call poor and slight in effect, partly the result of a bright climate where deep cutting is not required to emphasise the shadows; and partly that frequent dealing with marble leads to a love for plain surfaces and sharp angles rather than for deep hollows and rounded angles. The traces of classic influence on the plan, through the basilica form, are everywhere in Italian churches, which thus lack the multiplied outline and internal intricacy of the Northern cathedral; the latter quality being again interfered with by the wide spacing of the points of support by the Italian architect, who thus removed all appearance of mystery, and even destroyed completely the apparent scale of many of the largest structures in this manner. Among peculiarities due to classic influence, the constant use of the detached shaft, and especially its use in couples placed one behind another, so as to ensure lightness in the front view and yet give a full and varied perspective, with ample apparent strength. We quote the following very just remarks in regard to the respective merits of shafts and continuous mouldings :—

"So long as the influence of Lombard and Romanesque art is visible in French, German, and English Gothic, so long the detached shaft was used, and just in proportion as in course of time that influence decreased, so did the frequency of its use decrease. Our 14th and 15th century buildings present nothing in its place but combinations of mouldings, in themselves very beautiful, but by no means so beautiful as to reconcile us to the loss of that which they so entirely supplemented. One consequence of their introduction, to the exclusion of the detached shaft, was, that the art of sculpture deteriorated just in proportion as the art of moulding was developed. There is no place in which architectural sculpture can be more fittingly displayed than in the capital of a column. It is the most convenient, and at the same time the most conspicuous position for it. It is, too, the most important feature in every design in which the detached column is used. The gatherings together of all the arch mouldings into one above the capital, in order that their forces may be collected before being transmitted to the ground, leads naturally to the laying of a special emphasis on this point above all others; and it is one of the strongest among many reasons in favor of the earliest Gothic, and against the latter varieties of the style, that in the former the use of shafts involved the use of forcible and elaborately cut capitals, so that this point might be distinctly marked, whilst in the latter, by the disuse of the shaft and the constant practice of carrying the mouldings of the arch down to the ground without any interruption, it was made as little as possible."

The partiality of the Italian architects for detached shafts is further illustrated, we may observe by the peculiar form of porch, consisting of a canopy supported by shafts generally resting on the backs of animals, which is found so frequently in Italian work. One of these, that of S. Maria Maggiore, Bergamo, forms the frontispiece to the present volume, and is a very good specimen of this elegant type of design, with which however, great fault may doubtless be found if we take it from the standpoint of exact criticism. But there are many such features in architecture, which it would be ill judged to imitate, yet which in their original form and locality are full of an interest partly artistic, partly archeological; we sketch them with a kindly feeling towards the workmen who invented such pretty fancies, and feel satisfied on the whole, that there should be "incorrect" as well as "correct" architectural design in the world, and that artistic invention should never have moved for long in one fixed path, however satisfying it might be to the judgment.

Among other uses of the shaft in Italy, Mr. Street alludes to the cloister of S. Gregorio, Venice, where the shafts support the woodwork in a very picturesque fashion without any arches; in fact, a reminiscence on a small scale of classic construction, only that the lintel is of wood instead of stone. There is among the drawings of French châteaux in the International Exhibition, a similar construction, with admirable effect, in the formation of a recessed gallery under the eaves of the roof, which are carried by shafts in pairs at some distance from one another, supporting what we should now call a "trimmer" at the extremity of the rafters. Constructively, no doubt, wood upon stone shafts is not altogether workmanlike; and we may note this as another instance of that want of homogeneous character in construction and design from which arises much both of the interest and the defect of the Mediæval Italian architecture.

OPTICAL CORRECTION IN DESIGN.

Some striking instances of the importance attached to this kind of refinement by all the leading architects of antiquity are given by Viollet-le-Duc and Barnouf, besides a few English authorities, as J. Pennethorne. Of course Mr. Penrose was the first in this country who published anything definite on the subject, and that gentleman's learned work on "The Entasis, and Other Curved Lines of the Parthenon" (1845), and his "Geometric Lines and Optical Corrections of the Greek Architects" must be acknowledged as clearing up any doubts upon the Greek application of correctional or compensatory curves. Our own journal has also referred to certain effects more or less illusive in respect both of architectural lines and perspective representation; and the "Architectural Dictionary," in its recent part, enters rather fully into the subject, referring to our own pages and other writers. It is well known that St. Peter's at Rome disappoints the spectator who enters it; it looks smaller than he had imagined. This effect has been regarded by some writers as indicating justness of proportion, but by many others as a defect.

The Cathedral of Florence also looks smaller than it really is on account of the largeness of scale of the arches, and as a rule Classic buildings of one order look small when compared with a Gothic cathedral, with its numerous narrow arches and multiplicity of detail. The effect of distance was studied by the Egyptians, as their colossi had sometimes smaller figures near them, in order to increase the effect. Three distinct refinements have been noticed by investigators of the Greek Parthenon,—namely: the entasis; the inclination of the axes of the columns; and the convexity of the stylobate and entablature. Again, Vitruvius mentions that the angle columns were placed closer, and made about a 50th larger than the rest—the inner rows of columns were generally smaller. The flutes were modified in form to give distance; the triglyphs were made to slope to the architrave; the guttæ made conical to appear uniform; and the faces of dentils were made to incline. Chambers, in his "Decorative Part of Civil Architecture," mentions also that, where the parts are far removed from the eye, the due proportions of members have been sacrificed, recourse being had to artifice to produce the desired effect. At St. Peter's this practice is frequent in the cornices and other lofty parts, the vertical faces of which have been modified or omitted. Extraordinary distance has been sometimes obtained by diminishing the width and height of the columns of a colonnade as in the Plazzo Spada. This false kind of perspective was practiced by Serlio and Bernini, the latter of whom, in the Scala Regia at the Vatican, made the side walls approach each other as they rose, the width at the bottom and top being as 5 and 3. The columns, vault, and details all diminish in like proportion. Viollet-le-Duc mentions various peculiarities in the form of mouldings and angle features by which light and shade were made to play an important optical effect. The angle pinnacles of the spire of St. Denis are set to an angle to each face to give apparent rigidity.

M. Daly has also referred in his "Revue d'Architecture" to the accentuation of shadows in mouldings, and it is now understood by all who have studied minutely the best works of the Greeks and artists of the Middle Ages that the deep quirks and throatings found in Greek cornices, capitals, and mouldings had not only a useful but an æsthetic purpose and meaning. They gave dark lines of shadow to relieve and throw into prominence other shadowed parts, while the prominent members caught luminous rays with the like object of intensifying light and shadow and making contrasts more telling. In the design of arches, Alberti and others have given directions to still them when necessary, to clear the imposts. Brewster and J. Carpenter have likewise referred to optical illusions and perspective inversions but, perhaps the most interesting class of illusions to which the architect may profitably direct his attention is caused by the juxtaposition of curved lines in buildings.

The sag of straight tie-rods is well known by architects and can be readily attested; but the junctions of an arch with, its vertical jambs frequently calls for considerable correction to prevent the appearance of spreading. The juxtaposition of vertical and horizontal, with oblique lines, produces an unpleasant effect to the eye, and so also the widths of horizontal and vertical surfaces, though equal, do not appear so. These appearances in the contrastive power of lines are somewhat analogous to the effects produced by placing together certain colors, and as in color decoration it is necessary to produce a balance of primaries or as nearly so as possible, so in designing the architect must seek the causes of illusive appearances and endeavor to remedy the disagreeable effect by corrective means—*London Building News.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways

COURT HOUSE, FRESNO, CAL.

The building, as shown in accompanying design, is shortly to be erected and was recently chosen in competition by the Board of Supervisors.

The central portion of the building, comprising the existing Court House and offices, has been remodeled internally to adapt it to its altered requirements, and to connect it to the new wings on either side; while the front has been entirely changed to harmonize with the general design.

It was desired that the two new wings should each be placed at a distance of twenty feet from the present building and connected by bridges or covered corridors near the center for communication between each part, and this has been done very effectively, both for convenience and appearance; but, to avoid the scattered and isolated appearance that three separate buildings would present, the wings were placed in such a position as to be connected with each other and with the central block by means of the bold front portico, and this, with the alterations to the old building, affected a unison and completeness which could not otherwise have been satisfactorily obtained; while the bridge corridors in the rear form very effective connections, so that from front or rear the buildings have the appearance of one complete and harmonious structure.

The left wing is occupied by two story Hall of Records, Law Library and offices of the County Clerk, etc., and the right wing by the Board of Supervisors' offices, Court and Jury rooms, Judges' chambers, Collector's offices, etc.

Each of the new wings are to be of fire-proof construction and to be erected in the most substantial manner, while the central tower and dome will be of strong timber framing covered with copper and will replace the existing dome, which, with the greatly extended building, would have presented an incongruous and very diminutive appearance.

The building, as a whole, will undoubtedly be of great utility and ornament to the City of Fresno, and one that possibly for very many years will fulfill all the requirements of the authorities and officials, while the Supervisors and the public generally will possess an administrative building of which they may be justly proud, and which will be indubitable evidence of their public spirit and of the progressive and sound growth of their City.

The architect is Mr. William Curlett, of San Francisco, in conjunction with Mr. T. A. Eisen, of Los Angeles, Cal.

The country residence herein illustrated was built for Mr. R. C. Johnson, and is situated at Buena Vista near Sonoma, Cal.

It is a frame structure, consisting of two stories with basement and attic.

The exterior with its broken outline, bay windows, spacious verandas and high tower gives a very pleasing effect and an imposing appearance. From the tower one can obtain a magnificent view of the surrounding country, which abounds in beautiful scenery.

The interior was arranged to meet all the requirements of both convenience and effect. It is finished throughout in red wood, with the exception of the main staircase, the newell, rail and ballusters, which are executed in black walnut. The rooms are all large, light and airy, and are liberally supplied with closets and other necessary accommodations, including an ample number of speaking tubes aud electric bells.

The building was designed and built under the superintendence of B. McDougall & Son, Architects, 330 Pine st., S. F.

NOTES & COMMENTS.

N. S. Keith and the Electrical Engineering company have begun suit in the United States Circuit Court against the Harding Electrical Manufacturing Company for damages at the discretion of the Court, and also costs of suit for an alleged infringement of a patent on a dynamo machine.

Santa Rosa is in need of houses to rent. Desirable places are taken as soon as vacated.

We have received a bound volume of "Painting and Decorating," published by the House Painting and Decorating Publishing Co., of Philadelphia.

Painting and Decorating is an illustrated monthly journal treating on the subjects indicated in the title. Each issue contains articles of value to architects, while to students of architecture or art it is especially useful.

"Stones for Building and Decoration," by George P. Merrill, Curator of Geology in the United States National Museum, illustrated and published by John Wiley & Sons, New York, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal., price $5.00. The size of the obok is 6x9 inches and 1½ inches thick.

This work, as the name indicates, treats of matters of especial interest to the Architect and Engineer. The subject is, however, so handled as to make it of equal value to the Student and Stone-dealer, as well as to all who are interested in the subject either from an economic or a purely scientific standpoint. Though written primarily from an American point of view, it is made to include descriptions of all stones of importance that are to be found in the American market, from whatever source.

The work opens with a brief chapter on the Early History of stone-working in the United States. This is followed in Part I by chapters on the Geographical Distribution of the Minerals, and the Physical and Chemical Properties of such stones as are utilized for general constructive and decorative purposes.

Part II is given up to a systematic description of the rocks, quarries and quarry regions. Each variety of stone is taken up in turn, its composition, origin, structure and general adaptability for any form of work discussed, and the resources of each State and Territory described in alphabetical order. It is believed that there is not a single stone in the United States of more than merely local interest that is not described, or at least referred to, here. The subjects treated are as follows: (1) the Steatites or Soapstones; (2) the Serpentines or Verd-antique Marbles; (3) Gypsum and Alabaster; (4) Limestones and Dolomites, both marbles and the common varieties; (5) the Minor Ornamental Stones; (6) the Granites; (7) the Porphyries or Porphyritic Felsites; (8) the Liparites; (9) the Syenites; (10) the Diabases, Gabbros, Melaphyrs and Basalts; (11) the Diorites and Andesites; (12) the Gneisses and Schists; and (13) the Sandstones, Volcanic Tuffs, and Slates.

Part III treats of the methods of Quarrying and Working; the Machines and Implements used in stone-working; the Weathering of building stones; the Selection of stone for building purposes, and the methods employed for the Protection and Preservation of stone from the ravages of time.

Part IV is made up of Appendices, including extensive Tables showing the qualities of stone as indicated by their crushing strength, weight, ratio of absorption and chemical composition; a short table on the prices of stone and the relative cost of dressing; a list of some of the more important stone buildings in the United States and the dates of their erection; a bibliography of works on building stone and concludes with a glossary of terms.

The work is illustrated with eleven full-page plates, drawn in most cases from photographs taken by the writer and the accuracy of which is therefore beyond question, and eighteen figures in the text.

In putting forward the work the publishers would call attention to the fact that not merely is this the most exhaustive and comprehensive treatise on the subject that has yet appeared in the English language, but it is really the only available treatise on the subject. Until a systematic attempt at ascertaining the resources of the country was inaugurated at Washington, the information necessary for a work of this kind was beyond the reach of any single individual. Mr. Merrill, from his position as Curator of the Geological Department in the National Museum, has had better facilities for gaining an accurate and wide-spread knowledge of the subject than falls to the lot of most men. How well he has improved his opportunities must be learned from an inspection of the work itself.

WORLD'S FAIR NOTES.

From the Department of Fine Arts, World's Columbian Exposition, we have received the following communication, which will be of interest to architects:

Every effort will be made by the Department of fine Arts to give the best possible expression of American Architecture as a Fine Art; but this can only be accomplished in a dignified and comprehensive way by the hearty co-operation of American architects.

It is expected that adequate exhibits of recent architectural progress will be made by foreign countries, and correspondence to that end with foreign societies has already been begun. A special effort is being made to secure from abroad as large collections as possible of reproductions from monumental decorations which, from the character of the materials used, will, in all probability, remain in this country. A rare opportunity for intelligent comparison will thus be afforded, and it is hoped that in this field, where so much has been accomplished on new lines in the last few years, the United States will not fail to take the high rank which she deserves.

It is to be observed that, according to the classification adopted for the Department of Fine Arts, building and construction are not included. These subjects are classed under the heading "Civil Engineering," (in Group 148, Department L—Liberal Arts) as "Constructive Architecture" which (Class 839) includes:

Plans of public buildings for special purposes; large and small dwelling-houses.

Drawings and specifications for foundations, walls, partitions, floors, roofs and stairways.

Estimates of amount and cost of material.

Designs and models of special contrivances for safety, comfort and convenience in the manipulation of elevators, doors, windows, etc.

Working plans for the mason, carpenter and painter--Designs and models of bonds, arches, coping, vaulting, etc.; plastering and construction of partitions; painting and glazing.

Plans of appliances for hoisting, handling and delivering.

Building materials to artisans—Scaffolding and ladders; special scaffolding for handling great weights; portable cranes and power elevators.

Illustrations of the strength of materials.

Plans and sections of special architectural forms—Metallic floor-beams and girders; hollow bricks and other architectural pottery for heating and ventilation; metallic cornice and conduits; shingles and sheathing; glass-roofs, floors and accessories; architectural hardware.

Methods of combining materials.

Protection of foundations, areas, and walls against water.

Working plans for paving and draining.

Any further information desired will be gladly furnished on application to

HALSEY C. IVES,
Chief of the Dep't of Fine Arts,
World's Columbian Exposition.

It is not thought probable, now, that there will be any tower at the World's Fair. The projectors of the most promising tower scheme abandoned it when they found that they would have to take down their tower when the Exposition closed, because the Park Commissioners refused to grant any subsequent use of a site.

ROYAL INSTITUTE OF BRITISH ARCHITECTS * MDCCCXXXIV

FRESNO COURT HOUSE

WILLIAM CURLETT
T. A. EISEN } Architects.

BOARD OF SUPERVISORS.

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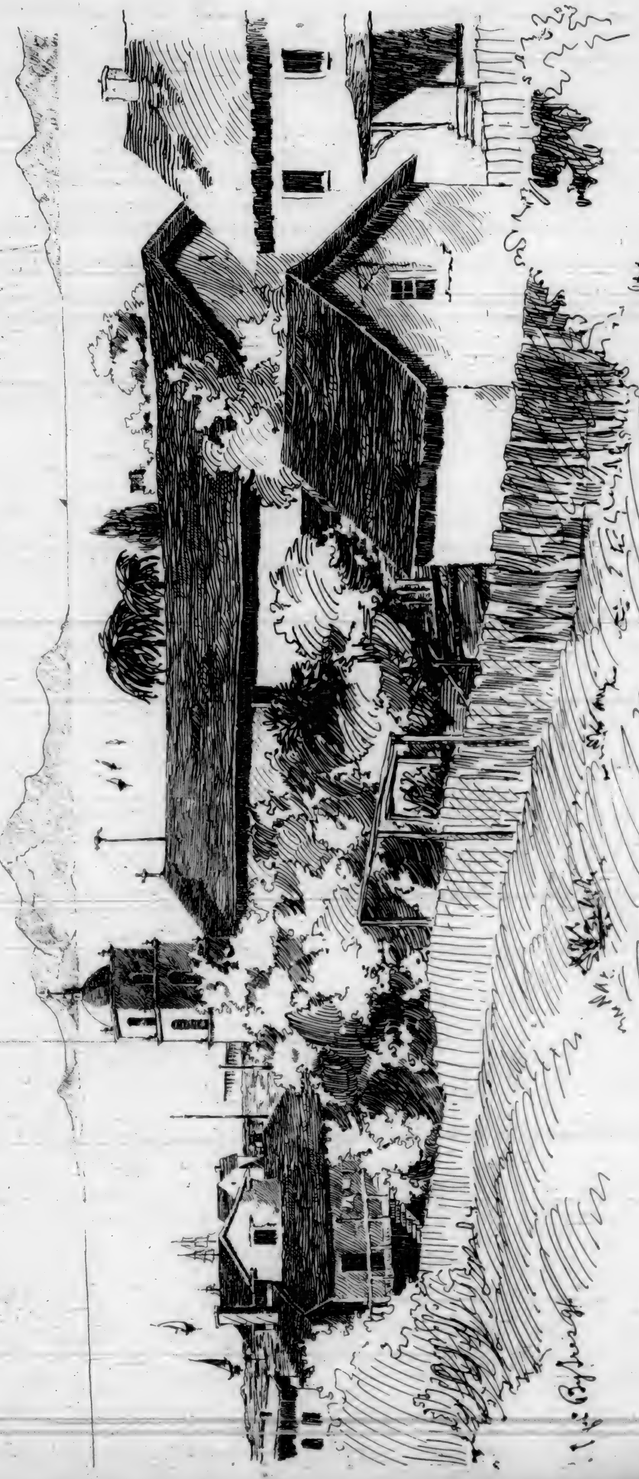
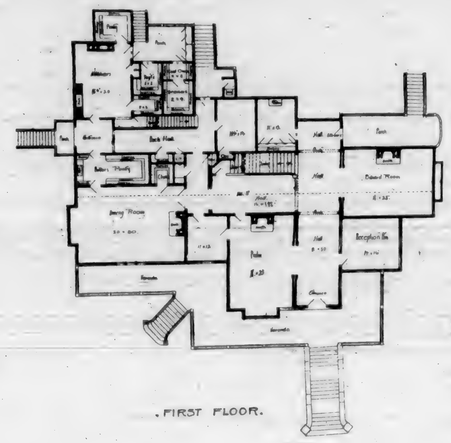


VENTURA MISSION.



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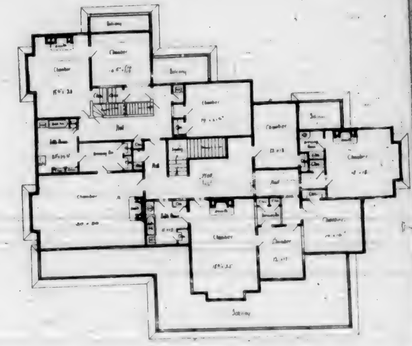

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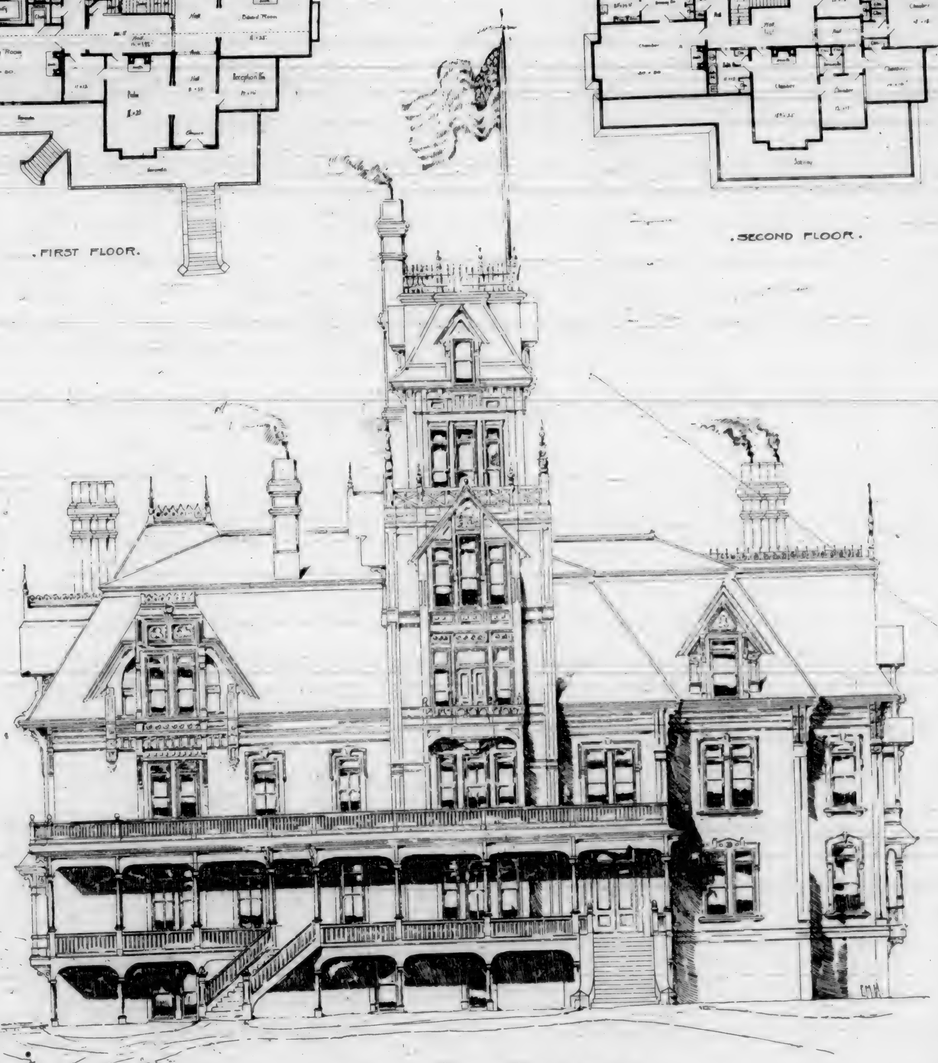

THE JOHNSON RESIDENCE.
.. SONOMA COUNTY ..
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B. McDougall and Son
. ARCHITECTS .
330 PINE STREET S.F.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
GEO. A. BOARDWELL, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
C. E. PURINGTON, Sec. W. C. CROSETT, Treas.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, PRES. H. G. JARMAN, SEC.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

FAILURE TO COMPLY WITH SPECIFICATION.—Where the requirement of a building contract, that the cellar be made water-tight, (its situation making it subject to the flowing of water,) is not performed, and the omission is not shown to have been unintentional, there is not a substantial performance of the contract; and the refusal of an architect to give the certificate required by the contract as a condition precedent to the last payment thereon is not unreasonable, and the builder cannot recover such payment.

Weeks v. O'Brien, Superior Court of New York, 12 N. Y. Supp. 720, (69 M).

CREDIT ON RESERVED PAYMENTS FOR CONTRACTOR'S FAILURE.—Where the owner of a building, against which mechanics' liens are filed, fails to retain after the completion of the work, and pay over to those entitled thereto, one fourth of the contract price, as provided in his contract, he is responsible to that extent, but may have deducted any lawful credits to which he is entitled under the Code of Civil Procedure, Cal., Sec. 1200 which provides that, if the contractor fails to perform his work in full or abandons it, the proportion of the contract price applicable to mechanics' liens shall be deemed the difference between the value of the work and materials already done and furnished and the payments then due and actually made.

Reed v. Norton, Supreme Court of California, 27. Pac. Rep. 426, (130C).

CLAIM AGAINST PUBLIC BUILDING.—Where the statute provides that a mechanic or material-man may give the owner of the building for which he has furnished material or labor written notice of his claim, and that it thereupon becomes the duty of the owner to retain sufficient funds to pay it, a mechanic employed by a sub-contractor, who serves the required notice, acquires a prior right to the funds in the hands of the owner due the contractor, and though the latter may not be entitled to a lien, the building being a public one.

Bates v. County of Santa Barbara, Supreme Court of California, 27 Pac. Rep. 438, (109C).

SUFFICIENCY OF RECORD OF CONTRACT AND NOTICE OF LIEN.—Where a statute provides that material-men may have liens, and that all building contracts shall be in writing when the price exceeds $1,000, and shall be filed in the office of the County Recorder before work is commenced, otherwise the contract to be void, and in such case all material furnished at the instance of the owner, a failure to give a description of the property affected by the contract does not invalidate it, as no description is required by statute. Where a contract was recorded, a notice of lien which states that the lien claimant agreed with the contractor to furnish the lumber and building material to be used in the construction of a building, and delivered the same, for which the contractor agreed to pay $833.86, as he received payment under his building contract, is sufficient, as the terms of payment could be ascertained from the building contract.

San Diego Lumber Co. v. Wooldredge, Supreme Court of California, 27 Pac. Rep. 431, (171C).

SUFFICIENCY OF AFFIDAVIT FOR LIEN—EFFECT OF AMENDMENTS TO STATUTE.—Where the affidavit for a mechanics' lien is entitled at the head as of the county in which it was sworn to, it is a sufficient description of the property to say it is "located in said county" though the name of the county does not appear in the body of the affidavit. Where an amendment to the lien statue is passed, lessening the time within which a lien may be filed, the old provision remains in form as to contracts performed prior to the enactment of the amendment.

Nyston v. London & N. W. Am. Mortgage Co., Supreme Court of Minnesota, 49 N. W. Rep., 394, (120M).

MECHANICS' LIEN FOR PAPER DECORATING—A mechanics' lien may be established for papering a house. It is not necessary, in order to sustain a lien that the price of the work should have been agreed upon, but it is enough if it appears, that the work was ordered, as that implies a promise to pay the reasonable worth and value of the work.

La Grille v. Mallard, Supreme Court of California, 27 Pac. Rep., 294, (70 M).

CONDITIONAL ACCEPTANCE OF BUILDERS' ORDER.—When an order is drawn by the surviving member of a firm of contractors for a specific sum, with direction "to charge the same to firm on account of work done and work to be done on your building now in process of erection," and the same is accepted on these terms, "I agree to pay within order when the building is completed and received by Messrs. Bruce & Morgan," the acceptance is conditional upon the completion of the building by the drawer; and if, without fault of the acceptor, he fails to complete it, and the acceptor has it completed by others at his own expense, there can be no recovery in an action on the acceptance.

Baker v. Dobbins, Supreme Court of Georgia, 13 S. E. Rep., 524, (130M).

DISTRIBUTION OF ASSETS AMONG LIENS AND MORTGAGES.—When there are several liens upon the same property, and a mortgage as well, and some of the liens are prior to the mortgage and some subsequent, the proper method of distributing the assets, is to first set aside the amount of those liens which are prior to the mortgage, then satisfy the mortgage, and then add the residue to the amount first set apart, and divide it *pro rata* among all the liens, as there is no priority among them, as between each other.

Tinlayson v. Crooks, Supreme Court of Minnesota, 47 N. W. Rep., 398, (98M).

MECHANICS' LIEN LAW IN THE STATE OF WASHINGTON.—The mechanics' lien law of the State of Washington, provides that the notice for a lien shall contain a statement of the demand after deducting all just credits, and also a statement of the terms and conditions of the contract, if any. Such a notice is defective where it states that the material and labor for which the lien is claimed were furnished under a sub-contract, but omits to set out the terms of the original contract. The notary must use his seal in certifying the verification of such lien notice, as the notice is not intended primarily for use in court or in judicial proceedings, and hence is not within the exception of a statute providing that such documents need not bear the seal.

Gates v. Brown, Supreme Court of Washington, 25 Pac. Rep., 914, (142C).

BUSINESS MOSAICS.

Among all the stair builders of the city Geo. R. Jesse stands at the head. He has been in the business for many years and his work has given general satisfaction.

Persons who wish a good job of painting done should call on J. L. Cahill, 932 Mission St. Mr. Cahill also imports paints, oils, glass and wall paper of the finest grade.

The *Moniteur Industrielle* recommends the use of a mixture of oil and graphite on all screws in machinery. It says it will effectually prevent them from becoming fixed, and protects them for years from rust, at the same time the mixture facilitates tightening up.

The Joseph Dixon Crucible Co., Jersey City, N. J., have for a number of years prepared graphite mixtures which have found great favor with machinists and steamfitters of this country.

Dixon's Graphite Pipe Joint Mixture not only takes the place of red lead but is infinitely better, while Dixon's Graphited Oil is used where a thinner mixture is desired and also for lubricating bearings. Graphite is the best natural lubricant known.

The Union Pressed Brick and Terra Cotta Company manufacture only first-class material, among which are moulded, ornamental and plain pressed brick, also terra cotta worked in very artistic designs.

They are always making new and valuable improvements in their work and any advance in the requirements of the trade is immediately met by this company. They have facilities for turning out new designs and patterns with the utmost dispatch. The quality of materials furnished by this company has been thoroughly tested by use and proves itself a standard article. The office of the company is at the southeast corner of Bush and Sansome streets, S. F.

Parquet floors and wainscoting is used in many places where ornamental hard wood is desired.

The firm of Reynolds & Adams, 1237 Market St., appear to have distanced all their rivals, on account of their work being so much more artistic.

This firm has put up some beautifully worked fret-work in many of our new banks and counting rooms.

Ornamental metal work becomes of more importance each year. One of our best and most reliable metal workers is William Cronan of the "Eagle Sheet Iron Works," 1213 & 1215 Market St.

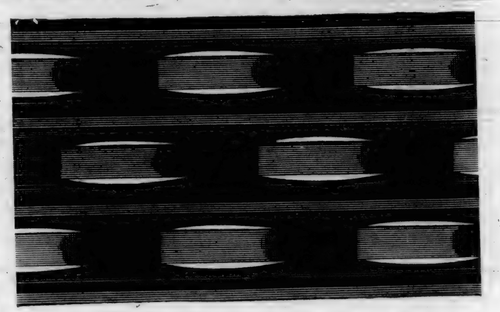
Mr. Cronan has moulded and put up the ornamental sheet metal work on many of our most prominent buildings.

THE BOSTWICK STEEL LATH.

We have many times referred to the multiplicity of new uses to which steel was being applied, and our purpose at the present time is to call the attention of our readers to one of the latest applications of the metal—the manufacture of steel lath.

A year ago the Bostwick Metal Lath Company was organized in the city of New York with a capital of $250,000. The demand for the product became so urgent that a second company was organized for its manufacture at Niles, Ohio, with a capital of $100,000. We have before described this lath in our columns, but it may not be out of place to briefly reproduce it. The lath is a sheet of metal corrugated longitudinally, and having between the corrugations certain slits cut in the metal, the metal between the slits being stretched or expanded, forming loops, projecting on one side of the sheets. The plaster, when applied, passes under the loop and through the opening, thus forming a double key to the mortar.

The fact that it is so extensively used by builders and recommended by architects throughout the country, speaks volumes for its excellence and practical utility. The manufacturers claim for it several points of superiority over all other laths, among which may be mentioned: First, the fact that the lath itself is fire-proof; second, the facility with which it can be put on, it having been demonstrated that a workman can put on about three times as many steel lath as he can wood lath in a day; third, a man can plaster a much larger number of square yards of this lath than any other in the same period of time; fourth, this lath can be used on either surface, the smooth side being especially adapted to the use of adamant, or any patent hard plaster in the market.



The keying secured by the loop is superior, and the plaster is not liable to crack or fall off. A saving of plaster follows, because, in the first place, the surface to be covered is even and unyielding. Secondly, the openings being uniform, are sufficient to guarantee a strong key and do not admit of waste mortar falling from the back of the lath. Again, it is claimed to be far superior to any other form of lath, as it can be adapted to any kind of shape or surface. It possesses rigidity, requires no stretching, and can be bent to a semi-circle when used on the cove of a ceiling, iron pillars or other curved surfaces. It will not corrode or rust, as the alkali of the lime in the mortar is a preservative.

It is also claimed to be a non-conductor of lightning; is rat and vermin proof, and a great saving of labor and material is obtained by its use, and is now being specified by all the leading architects, and extensively used in government and other large public and private buildings.

Another point the company call attention to is the great saving in insurance. Recently the underwriters of St. Louis have issued a manifesto on the subject. They say that to be ranked as first-class construction and get the best rates, iron lath, or an equally good style of construction must be adopted and neither wooden lath nor wooden furring will be admitted.

For further information see advertisement on page XIV.

The Byrkit-Hall sheathing lath has, upon trial, been found superior in many respects to the system of narrow laths. It is especially valuable on walls of school-rooms where a solid backing is required for blackboards, and store walls where shelving is liable to be put up, on account of its firmness and strength. This lath can be put on horizontally or diagonally. In the latter case it acts as a brace for the whole building, being made of one-inch boards. It forms a good key for the plastering and retains the heat of a room. The agent of this article is John F. Byxbee, 42 Market St., S. F.

As the season of cold weather comes on a great many people are looking around for the best system for heating apartments. In all new buildings of any pretensions whatever, gas pipes are run in such a manner so that they can be used for all the fires, whether open grate, close heating or cooking purposes. Movable heating stoves can be obtained with the latest and most approved gas burners which utilize all the heat available in the gas. Thesd heaters can be readily attached to any gas fixture, and give out an agreeable heat without smoke. Gas heating and cooking appliances for any purpose whatever can be had of the S. F. Gas Light Co., No. 16 Post St.

Plumbing according to the latest sanitary principles is done by G. & E. Snook, 630 Sacramento St.

This is an old firm, long known for the excellence of its work.

Plaster of Paris from the Golden Gate Plaster Mills, Lucas & Co., 215 & 217 Main St. of this city, holds its place against all competition. This plaster has proved itself a reliable article—it quality being uniform—and can always be depended upon.

With the introduction of high buildings the system whereby access is had to the upper floors becomes an important feature for consideration. As time in business is money, speed is required with the utmost safety that can be had. To fill all these requirements, we know of no manufacturers superior to W. H. Birch & Co., 119 Beale St.

They have been machinists for many years, and have the necessary experience in such matters. They use the celebrated Ellithorpe air brake and air cushion, which has withstood successfully many practical trial tests.

Gas fixtures and plumbers' supplies can be obtained of Thos. Day & Co., 222 Sutter St. This firm is one of the oldest and most reliable in the city.

TENDERS TO BE RECEIVED.

Sealed Proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 1st day of December, 1891, for all the labor and materials required for the wharf, gangway, warehouse, etc., at the U. S. Quarantine Station, San Diego, California, in accordance with the drawings and specification, copies of which may be had at this office or the office of the surgeon in charge.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for wharf, gangway, warehouse, etc. at the U. S. Quarantine Station, San Diego, California," and addressed to

W. J. Edbrooke,
October 21, 1891. Supervising Architect.

Sealed Proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 30th day of November, 1891, for all the labor and materials required for the cut stone work and brick work, iron and wood floor and roof construction, roof covering, approaches, etc., for the superstructure ready for the interior finish of the United States Court House and Post Office Building at Springfield, Missouri, in accordance with the drawings and specification, copies of which may be had at this office; or the office of the Superintendent at Springfield, Missouri.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in an envelope, sealed and marked, "Proposal for the cut stone work and brick work, iron and wood floor and roof construction, roof covering, approaches, etc., for the superstructure, etc., ready for the interior finish, for the U. S. Court House and Post Office, at Springfield, Missouri," and addressed to

W. J. Edbrooke,
October 29, 1891. Supervising Architect.

CITY BUILDING NEWS.

Ash Ave. near Van Ness. To build; owner, Jas. A. Ryan; architect, Fred B. Wood; Contractors, Currie & Loomer; bond, $1411; cost, $5644; signed, Oct. 12; filed, Oct. 12; payments, $1400, frame up and roof ready for tin; $1400, brown-coated, $1433, completed; $1411, 35 days.

Block bounded by Union, Green, Steiner, and Fillmore. Brickwork; owner, F. M. Pixley; architect, J. Gash; contractor, D. J. O'Brien; cost, $2050; signed, Sept. 30; filed, Oct. 3; payments, 75 per cent as work progresses; balance, 35 days.

Broadway near Gough. Cement and concrete; owner, R. M. Murray; architect; W. H. Lillie; contractor, W. R. Patterson; bond, $850; cost, $1275; signed, Oct. 24; filed, Oct. 29; payments, 75 per cent as work progresses; balance, 35 days.

Broadway near Gough. To build; owner, D. F. Walker; architect, W. H. Lillie; contractor, R. M. Murray; bond, $4000; cost, $17,200; signed, Oct. 24; filed, Oct. 29; payments, $4000, foundations in; $2280, frame up; $2280, building enclosed; $2280, brown coated; $2280, standing finish on; $2280, completed; $4300, 35 days.

Broadway near Gough. Plumbing and gas fitting; owner, D. F. Walker, architect, W. H. Lillie; contractor, W. F. Wilson; bond, $1000; cost, $2000; signed, Oct. 24; filed, Oct. 29; payments, $750, rough work in; $787, completed; $513, 35 days.

Buchanan and Washington. To build; owner, Julia Strassburger; architects, Salfield & Kohlberg; contractor, Alex. L. Campbell; bond, $3000; cost, $11,887; signed, Oct. 1; filed, Oct. 8; payments, $1500, 1st floor joists on; $1887, roof ready for slating; $3000, ready for plastering; $2500, completed; $3000, 35 days.

California near Central ave. To build; owners, Cal. St. Cable RR. Co.; architect; H. C. Macy; contractor; P. G. Martin; cost, $3800; signed, Oct. 27; filed, Oct. 28; payments, on 20th, 40th and 60th days from date hereof, 75 per cent of value of work done, balance, 35 days.

California near Jones. To build; owner, Geo. S. Fife; architect, Clinton Day; contractors, Ingerson & Gore; cost, $3450; signed, Oct. 26; filed, Oct. 28; payments, $800, frame up and roof boards set; $800, exterior ready for painter; $919 and 75 per cent of extras, completed; $821 and 25 per cent of extras, 35 days.

California and Leavenworth. To build; owner, Fred Deininger; architect, P. A. Stoll; contractor, Henry Rohling; cost, $7200; signed, Sept. 29; filed, Oct. 7; payments, $1200, frame up; $1050, roof on; $1050, brown coated; $1050, white coated; $1050, completed; $1500, 35 days.

California near Montgomery. Brick and iron work; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractor, Jacob Haaf; bond, $10,000; cost, $19,700; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance 35 days.

California near Montgomery. Carpenter work and glazing; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractors, Mahoney Bros.; bond, $2000; cost, $7900; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California near Montgomery. Concrete work; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractor, George Goodman; bond, $1150; cost, $2107; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California near Montgomery. Elevator; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractor, John Hammond; bond, $1800; cost, $3668; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California near Montgomery. Iron work; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractors, Winslow Bros. Co.; bond, $2200; cost, $4583; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California near Montgomery. Lathing and plastering; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractor, H. Fisher; bond, $1500, cost, $2000; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses balance, 35 days.

California near Montgomery. Plumbing and gas fitting; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractors, Shepard Bros.; bond, $1100; cost, $2268; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California near Montgomery. Roofing, copper and galvanized iron; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath; contractors, Forderer Cornice Co.; bond, $800; cost, $1820; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses, balance, 35 days.

California near Montgomery. Vaults; owners, German S. & L. Soc'y; architects, Kenitzer & Kollofrath. contractors, W. W. Montagie & Co.; bond, $1600; cost, $2275; signed, Oct. 27; filed, Nov. 2; payments, 75 per cent as work progresses; balance, 35 days.

California and Octavia. Plumbing, drainage and tiling; owner, Edgar Mills; architect, A. Page Brown; contractors, Duffey Bros.; cost, $3900; signed, Oct. 14; filed, Oct. 14; payments, 75 per cent as work progresses on 1st day of each month; balance, 35 days.

California near Sansome. Brick and concrete; owner, Mutual Life Ins. Co.; architect, Clinton Day; contractor, Jno. McCarthy; cost, $84,000; signed, Sept. 29, filed, Oct. 21; payments, $8000, concrete foundations complete; $13,387, stone and brickwork are built and basement limed; $8225, stone and brickwork are built side of 2d course above bases of main pilasters; $1588, to level of 1st story lintels; $8000 to ornamental sill course of 2d story; $4000 to bottom bed of brackets of 2d story piers; $5500, to top of 2d story; $5200, completed; $21,000, 35 days.

California near Steiner. Alterations and additions; owner, D. F. Walker; architects, Smith & Freeman; contractor, S. H. Kent; bond, guaranteed; cost, $2600; signed, Oct. 13; filed, Oct. 13; payments, $1500, ready for painter; $450, completed; $650, 35 days.

Clay near Baker. Carpenter, plumbing, painting; owner, Annie Hendry; architect, Louis S. Stone; contractors, Knox & Cook; cost, $4255; signed, Nov. 3; filed, Nov. 3; payments, $1063.75, building enclosed and roof on; $1063.75, plastering completed; $1063.75, completed; $1063.75, 35 days.

Clay near Laurel. To build; owner, A. H. Martin; architect, W. H. Lillie; contractor, A. C. Soule; bond, $2000; cost, $3700; signed, Oct. 20; filed, Oct. 22; payments, $555, frame up; $555, enclosed; $555, brown coated; $555, standing finish; $555, completed; $925, 35 days.

Clipper near Diamond. To build; owner, R. F. Johnson; architects, Townsend & Wyneken; contractors, Currie & Loomer; bond, $368; cost, $1475; signed, Nov. 3; filed, Nov. 5; payments, $450, frame up and chimneys built; $350, brown coated; $307, completed; $368, 35 days.

Collingwood near 20th. To build; owner, Arthur Josue; architect, C. K. Kirby, Jr.; contractor, Geo. R. Scott; cost, $2552.95; signed, Oct. 21; filed, Oct. 22; payments, $400; frame up to 1st floor joints, and 1st floor joists on; $600, frame up and roof rafters on; $400, outside finish on; $800, inside on; $212.45, completed; $640.50, 35 days.

Dolores and 20th. To build; owner, Thos. Roy; architect, C. M. Rousseau; contractor, Andrew Christensen; cost, $1600; signed, Oct. 2; filed, Oct. 2; payments, $1000, roof on; $200, completed; $400, 35 days.

Douglass near 17th. To build; owners, Chas. Baltz & Peters Bros.; architect, H. Geilfuss; contractors, Rechenbach & Hoelle; cost, $3500; signed, Oct. 19; filed, Oct. 21; payments, $875, frame up; $875, building enclosed and stable set up; $875, completed; $875, 35 days.

Eleventh near Market. Exterior and interior mill work; owner, Church of the Advent; architects, Coxhead & Coxhead; contractor, W. J. Thornton; cost, $2200; signed, Oct. 27; filed, Oct. 31; payments, 75 per cent as work progresses; balance, 35 days; $1350, exterior work; $850, interior work.

Eleventh near Market. Iron work; owner, Church of the Advent; architects, Coxhead and Coxhead; contractor, Wm. Cronan; bond, $800; cost, $1895; signed, Oct. 10; filed, Oct. 23; payments, 75 per cent. as work progresses; balance, 35 days.

Elizabeth near Castro. To build; owner, Henry Soetje; contractor, A. Petry; cost, $1500; signed, Oct. 17; filed, Oct. 19; payments, $375, frame up; $375, brown coated; $375, completed; $375, 35 days.

Erie near Mission. To build; owner, Chas. S. Laumeister; architect, A. J. Barnett; contractors, Rhoades & McDonald; bond, $2500; cost, $4075; signed, Oct. 15; contracted October 24; payments, $1925, 2nd floor joists on; $1400, roof on, flooring laid; $1500, brown coated and outside finish on front above 1st floor; $1500, white coated and outside finish on; $1000, completed; $2550, 35 days.

Eureka and 22nd. To build; owner, Anna Devriese; architect, Geo. E. Voelkel; contractor, Louis Cereghino; bond, $2000; cost, $3990; signed, Oct. 6; filed, Oct. 16; payments, $400, frame up and building roofed; $1000, plastering completed; $1490, completed; $1000, 35 days.

Fifteenth near Noe. To build; owner, T. J. Bass; architect, A. J. Barnett; contractors, Rhoades & McDonald; bond, guaranteed; cost, $3080; signed, Oct. 15; filed, Oct. 16; payments, $770, rustic and roof boards on; $770, brown coated; $770, completed; $770, 35 days.

First and Harrison. Alterations and additions; owner, J. Newman; architects, Mooser and Cuthbertson; contractors, Welsh & McCann; bond, $1500; cost, $6000; signed, Oct. 20; filed, Oct. 21; payments, $1000, house raised, frame up, $1250, brown coated; $1250, plastering completed; $1000, completed; $1500, 35 days.

Franklin and Grove. Plumbing and gas-fitting; owner, Catherine Oliver; architect, T. J. Welsh; contractors, Ford Bros.; bond, $385; cost, $1538; signed, Oct. 28; filed, Oct. 29; payments, 75 per cent. as work progresses; balance, 35 days.

Francisco bet. Mason and Taylor. To build; owner, Jno. C. Fredericks; contractor, August Guilbert; cost, $6455; signed, Oct. 14; filed, Oct. 14; payments, $1600, frame up and rustic on; $1600, brown coated; $1600, white coated; $1655, completed.

Fulton near Lyon. To build; owner, Jas. W. McClure; architect, M. G. Bugbee; contractor, W. S. Wilson; cost, $5555; signed, Oct. 26; filed, Oct. 30; payments $1388.75, frame up and enclosed; $1388.75, brown coated; $1388.75, completed; $1388.75, 35 days.

Geary near Dupont. Plumbing and gas-fitting; owner, S. L. Sachs; architects, Salfield and Kohlberg; contractor, R. A. Vance; cost, $1263; signed, Sept. 26; filed, Oct. 7; payments, $450, rough work in; $500, completed; $313, 35 days.

Geary near Dupont. Wrought and cast iron; owner, S. L. Sachs; architects, Salfield & Kohlberg; contractors, Bigelow & Little; cost, $872; signed, Sept. 25; filed, Oct. 7; payments, 75 per cent. as work progresses; balance, 35 days.

Geary near Laguna. To build; owners, P. D. & Mary Burke; architect, A. Klahn; contractor, A. Klahn; cost, $3190; signed, Oct. 1; filed, Oct. 5; payments, $800, frame up; $800, brown coated; $790, completed; $800, 35 days.

Green near Kearny. To build; owner, Chas. Lagrave; architect, Chas. M. Rousseau; contractors, Miron & Robertson; cost, $2200; signed, Oct. 28; filed, Oct 29; payments, all when work is completed and accepted.

Green near Laguna. To build; owners, Woods & Moore; architect, W. H. Lillie' contractor, C. W. Mitchell; bond, $4000; cost, $6970; signed, Oct. 21; filed, Oct. 22; payments, $1045, frame up; $1045, enclosed; $1045, brown coated; $1045, standing finish on; $1047, completed; $1743, 35 days.

Green near Pierce. To build; owner, J. F. McGauley; architects, Coxhead & Coxhead; contractor, Joseph Norris; cost, $3125; signed, Sept. 28; filed, Oct. 2; payments, $800, frame up; $1000, building covered in; $300 plastering completed; $425, completed; $600, 35 days after completion.

Green near Scott. To build; owner, Miriam F. Bancroft; architect, Louis S. Stone; contractor, A. C. Bryan; cost, $4000; signed, Oct. 20; filed, Oct. 20; payments, 75 per cent as work progresses; balance, 35 days.

Green near Scott. To build; owner, Ida Middleton; architect, Louis S. Stone; contractor, A. C. Bryan; bond; $1000; cost, $4556; signed, Oct. 15; filed, Oct. 15; payments, 75 per cent as work progresses, balance, 35 days.

Green near Scott. Carpenter, plastering, cement work; owner, Ida Middleton; architect, Louis S. Stone; contractor, A. C. Bryan; cost, $4556; signed, Oct. 15; filed, Oct. 17; payments, 75 per cent as work progresses; balance, 35 days.

Hampshire near Twenty-fourth. To build; owner, Annie A. Morton; architect, W. C. Dickerson; contractor, F. C. Kleebauer; bond, $1000; cost, $2600; signed, Oct. 6; filed, Oct. 6; payments, $650, frame up; $650, brown coated; $650, completed; $650, 35 days.

Howard near Second. Concrete, illuminating tiles, etc.; owners, Bliss & Tobey; architect, H. A. Schulze; contractors, Mahoney Bros.; cost, $2407; signed, Sept. 1; filed, Oct. 3; payments, 75 per cent as work progresses; balance, 35 days.

Howard near Second. Excavating, grading, etc.; owners, Bliss & Tobey; architect, H. A. Schulze; contractors, Ransome & Cushing; cost, $1938; signed, Sept. 1; filed, Oct. 3; payments, 75 per cent as work progresses; balance, 35 days.

Howard near Twenty-second. Alterations and additions; owner, Adam H. Murphy; architects, R. H. & R. White; contractor, Edward Brown; bond; $800; cost, $3119; signed, Oct. 14; filed, Oct. 19; payments, $400, raised and enclosed; $450, brown coated; $500, standing finish on; $269, completed; $1500, 35 days.

Jersey near Castro. Alterations and additions; owner, Philip Muller; architect, Caspar Zwierlein; contractor, Caspar Zwierlein; cost, $2175; signed, Sept. 19; filed, Oct. 16; payments, $543, frame up; $544, brown coated; $544, completed; $544, 35 days.

Jones near O'Farrell. To build, except painting and plumbing; owner, Wm. John; architects, John & Balczynski; contractor, F. W. Kern; cost, $6490; signed, Oct. 19; filed, Oct. 29; payments, $1200, frame up; $1200, roof on, floors laid, partitions set; $1200, white coated; $1200, completed; $1600, 35 days.

Jones near O'Farrell. Brickwork; owner, William John; architects, John & Balczynski; contractor, Jacob Wagner; cost, $1027; signed, Oct. 14; filed, Oct. 14; payments, $300, foundations laid, $800, chimneys built; $227, completed.

Laussett near Steiner. To build; owner, Jos. Aaron; architects, Townsend & Wyneken; contractors, Madden & McKay; bond, $1000; cost, $2197; signed, Oct. 22; filed, Oct. 27; payments, $400, frame up and house enclosed; $500, brown coated; $647, completed; $550, 35 days.

Leavenworth near California. To Build; owner, Amedee Benoit; architect, Chas. M. Rousseau; contractor, Andrew Christensen; cost, $4000; signed, Oct. 24; filed, Oct. 24; payments, $1000, frame up; $1000, brown coated; $1000, completed; $1000, 35 days.

Leavenworth and Washington. Sewerage and plumbing; owner, Emilia Goldberg; architect, W. H. Lillie; contractor, W. H. Tobin; cost, $1053.50; signed, Oct. 3; filed, Oct. 24; payments, $394.75, rough work completed; $394.75, completed; $264, 35 days.

Market St. No. 1318. Alterations and additions; owner, John G. Carr; architect, Jos. Rowell; contractor, Jas. McConahey; cost, $1400; signed, Oct. 15; filed, Oct. 15; payments, $800, brick walls up and roof boards on; $340, carpenter work completed; $350 completed; $850, 35 days.

Market St. No. 1318. Alterations and additions; owner, Jno. R. Hite; architect, Jos. Rowell; contractor, J. G. Carr; cost, $1400; signed, Oct. 15; filed, Oct. 15; payments, $800, brick walls up and roof boards on; $340, carpenter work completed; $350, completed; $350, 35 days after.

Masonic Ave. near Frederick. To build; owner, M. A. Fritz; architect, A. J. Barnett; contractors, Fulton & Ogle; bond, guaranteed; cost, $6925; signed, Nov. 2; filed, Nov. 5; payments, $1100, roof boards on; $1100, brown coated; $1100, white coated, $1100, completed; $1485, 35 days.

McAllister and Jones. Iron work; owners, Hibernia S. & L. Soc'y; architects, Pissis & Moore; contractors, Calvin, Nutting & Son; cost, $2122; signed, Oct. 16; filed, Oct. 31; payments, 1st and 15th day of each month 75 per cent as work progresses; balance, 35 days.

Mississippi near Napa. To build; owner, Peter McKeand; architect, John Trotter; contractor, John Trotter; cost, $2400; signed, Oct. 2; filed, Oct. 3; payments, $600, frame up, and building enclosed; $600, brown coated, and rough plumbing in; $600, completed; $600, 35 days.

Morton and Kearney. Alterations and additions; owners, Geo. & J. W. Raphael; architects, C. R. & J. M. Wilson; contractors, Field & Lack; cost, $3817; signed, Sept. 30; filed, Oct. 1; payments, $3987.75, completed; $1329.25, 35 days.

O'Farrell near Mason. To build; owner, Jose Guadiola; architect, Clinton Day; contractor, W. T. Commary; cost, $13654.47; signed, Oct. 23; filed, Nov. 2; payments, $1675, roof boards ready for tin; $5500, rough plumbing in; $2166.47, and 75 per cent of extras when completed; $4415, and 25 per cent. of extras, 35 days.

O'Farrell near Mason. Brick and concrete; owner, Jose Guadiola; architect, Clinton Day; contractors, Cal. Bridge Co.; cost, $7590; signed, Oct. 14; filed, Oct. 21; payments, $2850, basement walls built to plates for 1st floor joists; $2470, walls built to plates for 2nd joists; $2170, for 3rd joists; $1500, walls built to plate of roof trusses; $1965, completed; $3985, 35 days.

O'Farrell near Powell. Carpenter work; owner, Pierre Priet; architects, Pissis & Moore; contractor, W. M. Fletcher; cost, $18997; signed, Sept. 14; filed, Oct. 3; payments, 75 per cent. as work progresses on 1st and 15th day of each month; balance, 35 days.

O'Farrell near Powell. Plastering of a 4-story frame; owner, Pierre Priet; architects, Pissis & Moore; contractor, Chas. Dunlop; cost, $3475; signed, Sept. 26; filed, Oct. 3; payments, 75 per cent as work progresses; balance, 35 days.

Olive ave. near Laguna. To build; owner, Flora S. Cohn; contractor, S. T. Crawford; cost, $1750; signed, Oct. 2; filed, Oct. 2; payments, $425, frame up and roof boards on; $425, brown coated; $425, completed; $475, 35 days.

Pacific ave. near Franklin. Alterations, etc.; owner, Louise Abrams; architect, Jno. Gash; contractor, P. Griffin; cost, $7500; signed, Oct. 27; filed, Oct. 28; payments, $1126, frame work up of rear part; $1126, brown coated; $1126, white coated; $1126, entire front on and side bay window; $1126, completed; $1878, 35 days.

Pacific ave. near Franklin. Plumbing, gas-fitting, etc.; owner, Max Davis; architects, Jordan & Lyon; contractors, S. Ickelheimer & Bros.; cost, $1095; signed, Oct. 14; filed, Oct. 19; payments, $400, rough work in; $400, completed; $295, 35 days.

Pacific near Leavenworth. To build; owner, F. P. Muffe; architect, C. M. Rousseau; contractor, John Stroud; bond, $2000; cost, $3873; signed, Sept. 30; filed, Oct. 1; payments, $968, frame up; $968, brown coated; $968, completed; $969, 35 days.

Page near Broderick. To build; owner, Louis Friedlander; architect, Louis Frienlander; contractor, F. L. Hanson; bond, $1285; cost, $4123; signed, Oct. 10; filed, Oct. 19; payments, $960, frame up; $960, brown coated; $960, white coated; $960, completed; $1285, 35 days.

Pine near Jones. To build; owner, J. C. Stump; architect, I. C. Stump; contractor, R. M. Murray; cost, $1600; signed, Oct. 2; filed, Oct. 20; payments, 75 per cent. as work progresses; balance, 35 days.

Pine near Sansome. Lathing and plastering; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractor, Arthur O'Brien; cost, $5000; signed, Sept. 23; filed, Oct. 8; payments, $1500, 1st coat of mortar on; $500, 2nd coat on; $1750, white on; $1250, 35 days.

Pine near Sansome. Vault work; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, McNeal & Urban Safe and Lock Co.; cost, $3850; signed, Sept. 21; filed, Oct. 7; payments, 75 per cent. as work progresses; balance, 35 days.

Sacramento near Buchanan. To build; owner, R. C. Chambers; architect, W. J. Mathews; contractor, W. G. Jones; cost, $3400; signed, Oct. 17; filed, Oct. 27; payments, $637.50, one fourth work completed; $637.50, one half completed; $637.50, three fourths completed; $637.50, completed; $850, 35 days.

Sacramento near Jones. To build; owner, Cyrus S. Wright; architects, Wright & Sanders; contractor, Alex. L. Campbell; cost, $1562; signed, Oct. 19; filed, Oct. 21; payments, 75 per cent as work progresses on 1st day of each month; balance, 35 days.

San Jose ave bet. 25th & 26th. To build except brick work and excavating; owner, Geo. Peacock; architects, Kenitzer & Kolfrath; contractor, Jas. Coehran; cost, $9600; signed, Oct. 23; filed, Oct. 23; payments, $900, building enclosed and roof completed; $900, plastering completed; $900, completed; $900, 35 days.

San Lobos near Capitol. To build; owners, C. E. Doty & wife; contractors, C. S. & J. A. Buck; bond, $1000; cost, $1310; signed, Oct. 27; filed, Oct. 27; payments, $327.50, frame up and roof on; $327.50, brown coated and chimneys built; $327.50, completed; $327.50, 35 days.

Sansome near Pine. Painting; owner, Jas. Otis; architects, Smith & Freeman; contractor, G. V. Daniels; cost, $1689; signed, Oct. 28; filed, Nov. 2; payments, $800, 2 coats of varnish on; $400, completed; $489, 35 days.

Sansome near Pine. Tile flooring; owner, Jas. Otis; architects, Smith & Freeman; contractors, Bush & Mallet; cost, $2345; signed, Oct. 8; filed, Oct. 9; payments, $1758.75, completed; $586.25, 35 days.

Scott near Union. To build; owner, Elizabeth S. Bates; architect, Louis S. Stone; contractors, Scranton & Steele; cost, $3045; signed, Oct. 29; filed, Oct. 30; payments, 75 per cent as work progresses; balance, 35 days.

Sonoma near Union. To build; owner, Francisco Bacigalupi; architect, Francisco Bacigalupi; contractors, Cuneo & Casaretto; cost, $2400; signed, Oct. 1; filed, Oct. 3; payments, $600, frame up; $600, brown coated; $600, completed; $600, 35 days.

South Park and Centre. To build; owner, Henry Joost; architect, Caspar Zwierlein, contractor, Caspar Zwierlein; cost, $12,300; signed, Oct. 26; filed, Oct. 26; payments, $2306, frame up; $2306, brown coated; $2306, white coated; $2307, completed; $3075, 35 days.

Steiner near Golden Gate Ave. To build; owner, Thos. Kirkpatrick; architect, W. H. Armitage; contractor, J. H. McInnes; cost, $3500; signed, Aug. 31; filed Oct. 1; payments, $1375, frame up; $1375, brown coated; $1375, completed; $1375, 35 days.

Stockton near Green. To build; owner, Nathan Joseph; architect, B. J. Clinch; contractor, Thos. R. Bassett; cost, $3140; signed, Oct. 27; filed, Oct. 28; payments, $800, frame up; $800, plastering completed; $740, completed; $800, 36 days.

Sutter near Franklin. Alterations and additions; owner, Maurice Casey; architect H. A. Schulze; contractor, John T. Grant; cost, $3993; signed, Oct. 28; filed Oct. 31; payments, 75 per cent as work progresses; balance, 35 days.

Sutter and Jones. Elevator; owner, A. Wolf; architect, Chas. J. Devlin; contractors, A. J. McNicoll & Co.; cost, $2800; signed, Oct. 24; filed, Oct. 26; payments, 50 per cent as work progresses; balance, 90 days.

Taylor near Jackson. To build; owner, O. W. Nordwell; architect, Alfred Gould; contractor, Wm. McPhee; bond, $1100; cost, $4450; signed, Oct. 14; filed, Oct. 16; payments, $840, frame up; $840, building enclosed; $840, brown coated; $830, completed; $1100, 35 days;

Twentieth near Church. To build; owner, W. G. Salter; architect, Alex. Pfarrer; contractors, Pfarrer & Son; cost, $2225; signed, Oct. 31; filed, Nov. 2; payments, $725, frame up; $500, brown coated; $500, completed; $500, 35 days.

Union and Front. To build, except concrete work; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, J. W. Wissinger; bond, $1720; cost; $6975; signed, Oct. 7; filed, Oct. 16; payments, $1400, plank foundation all in; $2070, frame of roof and galleries up; $2085, completed; $1720, 35 days.

Union and Front. Concrete work, underpining, etc.; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, Geo. Goodman; cost, $4900; signed, Sept. 24; filed, Oct. 6; payments, $1000, when grader has completed his work; $2740, when all completed; $1250, 35 days.

Upper end of Dry Dock. Coal wharf; owner, Union Iron Works; contractor, Thos. Thomson; bond, guaranteed; cost, $4425; signed, Oct. 21; filed, Oct. 24; payments, 25 per cent, half work done; 50 per cent, completed; 25 per cent, 35 days.

Valencia St. between 22d and 23d. Plumbing and gas-fitting; owner, D. S. Prindle; architect, Chas. Geddes; contractor, J. G. Gallagher; bond, garanteed; cost, $434; signed, Sept. 24; filed, Oct. 1st; payments, $200, rough gas and water pipes in; $163, completed; $121, 35 days.

Vallejo near Van Ness Ave. Mill work; owners, H. & H. E. Law; architect, Wm. Brown; contractor, C. M. Depew; cost, $1400; signed, Sept. 24; filed, Oct. 7; payments, $250, Nov. 12, '91; $250, Dec. 12, '91; $250, Jan. 12, '92; $250, Feb. 12, '92; $350, 35 days.

Van Ness Ave. No. 1714. Marble and granite work; owner, Herman Liebes; architect, W. J. Lyon; contractor, Robt. Orford; cost, $1050; signed, Oct. 14; filed, Oct. 19; payments, $750, completed; $300, 35 days.

Alameda County.

Adeline Tr. Oakland Tp. To build; owner, Mary Keon; architect, Fred B. Wood; contractor, H. J. Goetzmar; bond, $800; cost, $1650; signed, Oct. 21; filed, Oct. 23; payments, $400, frame up, chimney built, rustic and roof on; $415, brown mortar on; $420, completed; $415, 35 days.

Block bounded by Telegraph ave., Broadway and 17th sts., Oakland. Alterations, etc.; owner, Robert Dalziel; architect, W. H. Weilbye; contractor, Richard Dickinson; cost, $6500; signed, Oct. 12; filed, Oct. 15; payments, $1625, repairs and changes completed and partitions up; $1625, furniture in, glazing, etc. finished; $1625, completed; $1625, 35 days.

Clinton Ave. near Grand St., Ala. To built; owner, Sally Huntington; contractor, J. J. Boyle; cost, $1975; signed, Oct. 16; filed, Oct. 19; payments, $490, frame up; $490; plastering finished; $490, completed; $365, 35 days.

Clinton Ave. near Sherman, Ala. To build; owner, Mrs. Annie L. Foote; contractors, A. W. Pattiani & Co.; cost, $4081; signed, Oct. 12; filed, Oct. 13; payments, $1000, A. W. Pattiani & Co.; cost, $4081; signed, Oct. 12; filed, Oct. 13; payments, $1000, rustic, roof shingles on, etc.; $1134, window frames set, brown mortar in, etc.; $900, completed; $1050, 35 days.

Damon's West End Tr., Ala. To build; owner, Mrs. A. L. Abbott; architect, Cary; contractors, Marcuse & Remmel; cost, $1800; signed, Oct. 28; filed, Nov. 2; payments, $450, frame up; $450, brown coat plaster on; $450, completed; $450, 35 days.

Diamond Tract, Berkeley. To build; owner, Margaret Hurlbut; architect, G. H. Hurlbut; contractor, J. W. Whyte; cost, $1700; signed, Oct. 15; filed, Oct. 22; payments, $425, enclosed; $425, brown coat mortar on; $425, hard finish on; $425, 35 days.

Durant near Harrison, Oak. To build; owner, W. L. Wilson; architect, W. J. Mathews; contractor, H. E. Jones; cost, $2720; signed, Oct. 6; filed, Oct. 8; payments, $540, ½ work completed; $540, ¼ completed; $540, ¼ completed; $680, 35 days.

Echo near Piedmont Ave., Oakland. To build; owner, Piedmont School District; architect, W. Kirk; contractors, Pierce & Rasch; cost, $9448; signed, Oct. 22; filed, Oct. 24; payments, $2362, frame up and brickwork finished; $2362, first coat plaster on and one coat paint on outside; $2362 completed; $2362, 35 days.

Eighteenth near Union, Oakland. To build; owner, Anna Baxter; contractor, J. H. Fones; cost, $1458; signed, Oct. 19; filed, Oct. 20; payments, $364.50, frame up and roof sheathed; $364.50, brown coat mortar on; $364.50, white plastering on; $364.50, when bills are accepted in full, if not 35 days after completion.

Eleventh & 10th ave., Oakland. To build; owner, A. Fonte; architect, E. C. McManus; contractors, Smith & Lake; cost, $2860; signed, Oct. 10; filed, Oct. 10; payments, $715, brickwork done and roof boarded; $715, brown mortar on, 1st coat paint on outside; $715, completed; $715, 35 days.

Encinal ave. near Willow, Alameda. To build; owner, Anton Hafbritter; architects, Martens & Coffee; contractor, Geo. A. Henseman; cost, $2900; signed, Sept. 28; filed, Oct. 3; payments, $700, frame up and roof shingled; $700, brown mortar on; $775, completed; $725, 35 days after.

Fassking Park, Alameda. To build; owner, C. L. Taylor; architects, Carey & Johnson; contractors, Marcuse and Remmel; cost, $2250; signed, Oct. 9; filed, Oct. 10; payments, $562.50, frame up; $562.50, brown mortar on; $562.50, completed; $562.50, 35 days.

Fourth and Oak, Oakland. To build; owner, Miss Annie May; architects, Cary & Johnson; contractors, Marcuse & Remmel; cost, $1520; signed, Oct. 8; filed, Oct. 12; payments, $380, frame up, enclosed; $380, brown mortar on; $380, completed; $380, 35 days.

Franklin near 20th, Oakland. To build; owner, J. Mercier; architect, Howard Burns; contractor; Jas. W. Bingham; cost, $2100; signed, Oct. 7; filed, Oct. 9; payments, $525, frame up, brickwork done; $525, plaster on; $525, completed; $525, 35 days.

Hobart and Grove, Oakland. Desk furniture in church; owner, Rev. T. McSweeney; architect, Chas. J. Devlin; contractor, Geo. H. Fuller; cost, $1560; signed, Oct. 12; filed, Oct. 31; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Jackson and 7th, Oakland. To build; owner, F. W. Stroneberg; architect, Chas. Mau; contractor, John Schneider; cost, $7300; signed, Oct. 5; filed, Oct. 5; payments, $1400, ¼ material furnished and ¼ work done; $1400, ½ furnished, ½ done; $1400, ¾ furnished, ¾ done; $1275, completed; $1825, 35 days.

Kelsey Tract, Oakland. Raising and enlarging building; owner, Stephen G. Nye; contractors, Leiter & Prugh; cost, $1400; signed, Oct. 21; filed, Oct. 21; payments, brown mortar on, ½; when completed, ½; 35 days after, ½.

Lot 29, Center st., Oakland Point. To build; owners, A. N. Peach & wife; architect, A. N. Peach; contractors, Concannon & Shay; cost, $1425; signed, Oct. 21; filed, Oct. 21; payments, frame up, ¼; brown coat mortar on, ¼; completed, ½; balance, 35 days.

McLeod Tract, Livermore. To build; owner, J. S. Dungan; architect, J. L. Weilbye; contractor, J. F. Meyers; bond, $1500; cost, $3750; signed, Oct. 1; filed, Oct. 2; payments, $937, material on ground, rafters up; $937, 1st coat plastering Oct. 2; payments, $937, material on ground, rafters up; $937, 1st coat plastering Oct. 2; payments, $937, material on ground, rafters up; $937, 1st coat plastering finished, stairs in place; $937, completed; $939, 35 days.

McPherson near Taylor ave., Alameda. To build; owner, Dan. Graham; architect, Chas. S. Shaner; contractor, C. A. Brown; cost, $6160; signed, Oct. 31; filed, Oct. 31; payments, $2200, rough frames up and rafters on; $790, enclosed and 1st coat mortar on; $790, plastering done and casing in doors and windows; $790, 35 days.

Pioneer Addition, Alameda. To build; owner, Mrs. E. Hollingberry; architects, Judd, Hanley & Co.; contractor, John Sath; cost, $2450; signed, Oct. 9; filed, Oct. 9; payments, $612.50, frame and rafters up and sheathing on roof; $612.50, Oct. 9; payments, $612.50, frame and rafters up and sheathing on roof; $612.50, enclosed, chimney built, and ready for plastering; $612.50, priming coat paint on; $612.50, 36 days.

Rose near Oxford st., Berkeley. To build; owner, C. R. Norris; architect, W. H. Weilbye; contractor, C. H. Wedgewood; cost, $3625; signed, Oct. 20; filed, Oct. 24; payments, $906.75, frame up and roof on; $906, 1 coat plaster on; $906, completed; $906.25, 35 days.

San Jose ave. near Grand st., Alameda. To build; owner, Mrs. E. L. O'Conner; architect, Chas. S. Shaner; contractors, Brehaut & Diamond; bond, $2500; cost, $4700; signed, Nov. 4; filed, Nov. 5; payments, $881, frame up, rafters and roof sheathing on building; $881, enclosed, rustic and gables on and window frames in; $881, brown mortared and verandas and porches up; $881, plastering finished and all wood work pertaining to building; $1175, 36 days.

Shattuck ave. near Center, Berkeley. To build; owner, F. K. Shattuck; architect, W. H. Weilbye; contractor, W. H. Weilbye; cost, $14000; signed, Oct. 23; filed, Oct. 23; payments, $3500, foundation in and 2nd floor joists on; $3500, frame up, rustic and roof on; $3500, enclosed, plastering finished and all carpenter work completed; $3500, 35 days.

Sixth near Castro, Oakland. To build; owner, W. H. Stewart; architect, F. C. Manus; contractor, J. C. Bassett; cost, $2000; signed, Oct. 17; filed, Oct. 19; payments, $500, brick work done, rustic on and roof boarded; $500, brown mortar on and one coat paint on outside; $500, completed; $500, 35 days.

Stanford Tract, Oakland. To build; owner, A. F. Hinman; contractors, A. W. Pattiani & Co.; cost, $2863; signed, Oct. 26; filed, Oct. 27; payments, $800, rustic and roof shingles on and chimney built; $700, window frames set, brown mortar on, exterior primed; $640, completed; $723, 35 days.

Taylor ave. near 9th, Alameda. To build; owner, Alex. Spear; contractors, J. S. Hanley & Co.; cost, $1850; signed, Nov. 2; filed, Nov. 2; payments, $462.50, frame up and rafters and sheathing on roof; $462.50, building enclosed, cornice on, roof shingles laid, etc.; $462.50, all wood work finished and priming coat paint on; $462.50, 35 days.

Tenth ave. near 22nd st., Oakland. To build; owner, W. C. Harrington; architect, Chas. Shaner; contractor, C. A. Parker; cost, $1810; signed, Oct. 20; filed, Oct. 26; payments, $362, frame up; $362, outside finished, ready for painting except porches and steps; $362, outside completed and 1st coat mortar on, sashes hung; $362, completed; $362, 35 days.

Thirteenth and Washington, Oakland. Repairs and alterations; owner, H. Mathews; architect, H. T. Bestor; contractor, B. K. Allen; cost, $1975; signed, Oct. 26; filed, Oct. 27; payments, $400, enclosed and tinning done; $475, brown mortar on, $600, completed; $500, 35 days.

Town of Sunol. To build; owners, A. and J. Rambaud; architect, J. L. Wellbye; contractor, J. L. Wellbye; cost, $1275; signed, Oct. 6; filed, Oct. 7; payments, $475, enclosed; $475, completed; $325, 35 days.

William st., Oakland. To build; owner, J. S. Gilmore; contractor, A. J. McKee; cost, $1850; signed, Nov. 3; filed, Nov. 3; payments, $600, frame up and enclosed; $600, brown mortar on; $165, completed; $455, 35 days.

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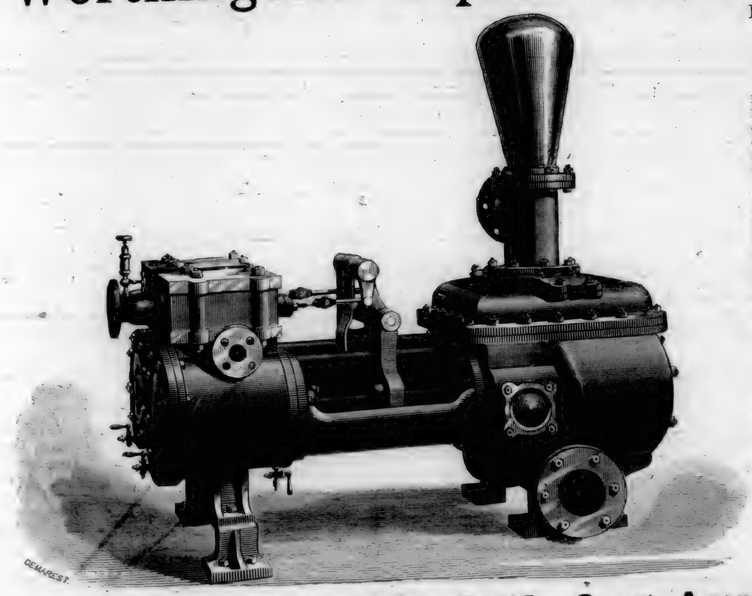

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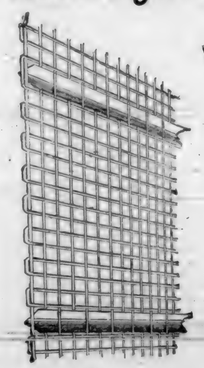

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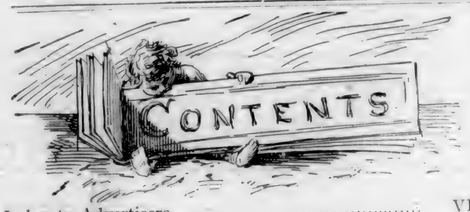

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

WITH this issue ends the Twelfth Volume of this JOURNAL. During the whole twelve years of its existence we know of no month when the JOURNAL has failed in its regular issue. At the present time it is the only one printed this side of the Rocky Mountains in the interest of Architects and Builders.

THE year about to close shows us that many of our past achievements, which we reckoned so wonderful, are not perfect and that the future must be relied on before our expectations can be realized. We have learned that many unforseen influences have forced themselves upon us in a way to change our plans and resolutions. Some have found their best laid schemes go wrong, and enterprises which were supposed to have been carefully erected upon a solid foundation, have come tumbling down bringing disaster and ruin to others as well as themselves. Others have commenced from small beginnings and worked their way cautiously to a stable and prosperous business. Others yet have in a moment caught the inspiration and advanced rapidly into wealth and prosperity.

Yet upon the whole, those connected with the building interests have no reason to feel despondent. The amount expended for buildings in San Francisco does not fully reach that of last year, but the increase in the number of buildings erected shows that building has been more general.

Throughout other sections of California, Oregon and Washington the building business has been more than usually active.

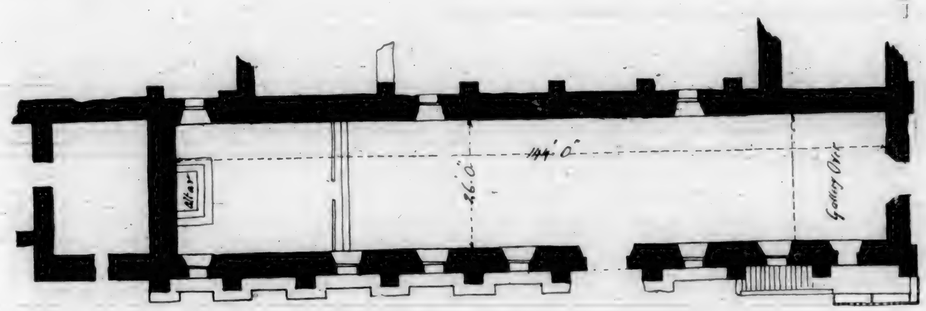
The crops have been abundant and the prices high. Many of the larger holdings of land have been cut up into farms of moderate size. This increase in the number of farms means more families, and more families signifies more homes and citizens.

Let this year with its disappointments and vexations be passed to the rear. Let us learn wisdom from the past, and let no past failure dishearten us in our future efforts.

Let us learn from the past to be steadfast, patient and true to the interests we represent, and let us plan to carry forward our best endeavors and trust to an all-wise providence to guide us to a realizing materialization of our highest aspirations.

WITH the January number of the *California Architect and Building News*, we shall commence a department to be devoted to suburban and rural districts, wherein we shall give hints, sketches and studies of the various architectural problems that may present themselves for country and farm buildings.

The subject is one of great importance, and will consequently take a wide range—to even touch upon the various details that are required, from the drainage of the premises to the final completion and decoration for the great variety of structures at this time deemed requisite for such purposes. The demand for farm buildings is always growing. It is a mistake to suppose that anything which will protect the inmates from the elements, is good enough for the farm. In a country like ours, families living in rural districts have the same desire for suitable modern buildings planned with as much regard for economy, convenience, healthfulness and beauty, as those living in the more central localities.



PLAN OF SAN GABRIEL.

MISSION FRAGMENTS.

In concluding our sketches of the Missions (for the present at all events) we give a perspective on a large scale showing the cloister of San Antonio, Monterey County. The piers and arches as before described, are of 12″ x 12″ x 2″ titles and the haunches are filled in with dobe bricks. The roof is constructed of round timber for rafters, and boughs as a sheathing on which to carry the tiles. In the text is the plan of San Gabriel Mission, Los Angeles County. Taking the road east from the Angel city, we pass through the Arroyo Seco and its tree embowered road, stopping of course to quench our thirst at the little Mexican tavern, and to drink also of that sweet refreshment that comes from sparkling eyes and heaving bosoms, to dream of ideal beauties from fair Castellia, and while we dream, to quaff the red wine that vies in rosy tints with the warm blood that flushes the cheeks of those queens of the Sun.

And then to the dusty road again and onward to the romantically named "Crown of the Valley," Pasadena. Pasadena an American's ideal of what a town should be, neat, busy, orderly, wealthy, smart, buggies and well dressed owners, ladies in silk hats cantering along to make some purchase, perchance to mail a letter to some far distanct friend. And then a few miles further on and we are in the little village of San Gabriel, so different from the Pasadena we have just left, with its ice cream soda ten cents, and civilization. Here we are received by an assemblage of dogs that represent all the life of the place, for while the natives hear the clatter of our horses hoofs and the canine yelp that tells of an approaching stranger, they are but half awake to the fact, and at all events it does not much concern them. There is the sunshine without that looks warm and cheerful, the shadow of the porch to temper its vehemence, the gentle movement of the wind, and within a bottle of wine and a cigar, what more to be desired than this; war and floods, earthquakes or princes crowned, and palaces uplifted to the sky concern them naught.

Enough; the vesper chimes, and low the head doth bow, to what I know not, all is mystery, and so if far beyond the ken of mortal eye all things appear as dimly seen, so even without the circle of a long day's ride the world is just as far away as heaven or hell. Beneath the pepper trees we tie our steeds and view the buttressed walls and grim old bells that ever and anon go cling clang, clank clank, in the belfry. Cracked indeed are the sounds their brazen hollows emit, but perhaps it is this very uniqueness of sound that is half the charm and mystery to which all bow the head as slowly they move along reverently to their devotions. It will be noticed that this building has at regular intervals buttresses along its sides, a peculiarity not found in any of the other Missions, for in all the other cases the buttresses are scattered about in wonderful disorder. The walls are all of stone and the stair to the gallery, which in this case is outside, is also of stone, with an iron balustrade around the landing. I was going to say that the confessional box speaks for itself, but that cannot be, otherwise many is the secret that its wooden walls would have retold, and long e'er now it would have been thrown by the common hangman without the city walls, bearing with it the anathema of the Pope, priest, people and even the very dogs would call out upon such treachery. But it has done its work well for many long years and having a strong heart, oak no doubt, it has not succumbed, in sorrow at the tales of wickedness related within.

We have thus scantily scanned the ancient architecture of California and found that in its twenty-one Mission buildings, things long past. And so we love them, and as the years roll by and time with hands of snowy whiteness lets fall the frost of age upon our brow, bleaching our raven locks as through the century past, it has these Mission walls; our sympathies will grow close and closer to them and we will love them all the more.

December, 1891. TRES.

there is little that in truth can be called truly architectural. Some have only the simplest and most fundamental necessaries of a building; a rectangular enclosure and a roof, others have the outlines of that which might be treated architecturally, but in either case we find that if it be a tower or a gable, it is the mere fundamental idea in its rudest form. No prodigality of design, no beauty of detail, but only the merest shadow of those towers and domes that lift the golden cross to kiss the summer sun in far off Spain. But if it be true that as has been said before they are nothing because of that beauty that comes from fine proportion and delicate workmanship, they have each a native picturesqueness of their own; although in many ways similar in general idea. One is in the heart of a great city almost forgotten, another a ruin far away in a quiet hollow of the mountains, a third the busy haunts of men and the shrine at which reverential hearts pour forth the love they bear for

GOVERNMENT BUILDINGS.

We have received from Mr. Adler, the Secretary of the A. I. A., the following communication. The subject being one of importance to Architects we publish it in full with the hope that they will take such action thereon as may be best calculated to secure the ends suggested in the paper.

"The accompanying copy of a paper read at the last Convention of the American Institute of Architects by Mr. Windrim, late supervising architect of the Treasury Department, sets forth clearly the reasons why there should be a change in the methods adopted by the United States Government for securing designs of its buildings.

A committee of the Institute, of which Mr. Windrim is a member, has been appointed to prepare the draft of a proposed Act of Congress intended to reform the practice of the Government in this particular, to secure a better class of designs, and more judicious expenditure of Government funds upon Government buildings. For it is a notorious fact that the buildings erected for the Government cost more per cubit foot, and are not as well adapted to the purposes which they are intended to serve, as the buildings erected by private individuals and the great corporations of this country.

Congress will not, however, act unless individual Congressmen are first assured, by utterances of the public press and the expressed wishes of their constituents, that a reform demanded by the public."

"ARCHITECTURE AND THE UNITED STATES GOVERNMENT."

"The Federal buildings erected by the Government should characterize the best types of art in architecture. The public mind to-day is becoming educated. It is not satisfied with the mediocrity in art; the æsthetic taste of our people is becoming more cultivated, the beautiful is more appreciated, and the demand is made for it. Good art is educational, refining, and should be enduring. It is proper that the Federal buildings should be of a high standard of artistic excellence, have the elements of proportion and study in design that will illustrate the strength and development of a successful people, and leave the impress of our advancement in art and culture as a nation.

The United States Government erects buildings for the use of the Executive Departments of the Government; it also erects buildings in which it transacts the public business with the people—the custom-houses, post-offices and court-houses, located in every section of the country as the increase in population and development of business necessitates the Government to provide for itself a building to accommodate the public offices, and in which the records of public business may be preserved.

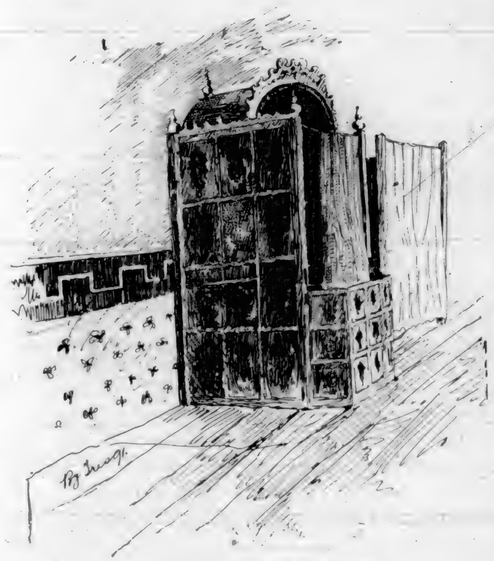
These latter structures are erected when Congress, by legislation, directs the Secretary of the Treasury to procure a site and erect upon it a suitable building to accommodate

the Government offices for the transaction of public business then expressed, limiting the cost of the site and the building, complete in all its appointments, with approaches, to a fixed sum.

The officer under the Secretary of the Treasury to whom the duty of preparing the plans and specifications necessary to construct such buildings, is assigned, is the supervising architect.

This officer is supposed to be the author of the plans and designs for the work thus placed under his care. Twenty-five years ago it was practical for an individual to comply with the duties of the office, but with each succeeding year the rapid increase in public business, with the development of the country, has added consecutively to the labor and responsibility of this officer.

At this time there are probably forty odd buildings under construction and completion, and a number in excess of sixty new structures are awaiting to be designed by the supervis-



CONFESSIONAL, SAN GABRIEL.

ing architect or his assistants. It is patent that the amount of labor thus involved cannot receive from one head careful consideration in the matters of arrangement of buildings and the details of construction, or receive the study and painstaking in design which should be given to the permanent buildings of the Government.

While the routine business of the Government is managed with exacting uniformity, and consequently there is uniformity in the requirements for the building, so that there appears to be a limit in the scope of the architect, there is choice in the adaptation of building to site which invites variety in the form and exterior design of the structure.

The supervising architect's office has some most capable assistants, as much good work in the buildings of the Government shows; but there are not enough capable employees for the amount of work devolving upon the office, and, under existing regulations, they are not obtainable.

The supervising architect experienced this fact and considered it his duty, in the annual report of 1889, to recommend to the Secretary of the Treasury the advisability of securing the plans for the most important buildings for the Government through the architects of the country by competition, and suggested a method that appeared practicable for consideration; also in his report of 1890, again requested attention to this important subject.

The Honorable Secretary of the Treasury, the late William Windom, became so far convinced of the possible benefit to the public service, if the method proposed was tried, that in his report to Congress, he indorses the recommendation on this subject, as follows: "The following recommendations of the Supervising Architect of this Department are concurred in: That the system of competitive designs for public buildings be tried."

The Supervising Architect of the Treasury Department can only be what the designation of the office implies,—a Supervisor whose time is almost continuously occupied with the business management of the office and the solution of its business problems; he cannot be the architect of the many structures that are assigned to his care, and they are successful structures, as best adapted for the purposes for which they are erected, and have merit as artistic designs, largely dependent upon the skill and talent of his assistants.

The Supervising Architect, on Feb. 7, 1891, suggested, in a bill authorizing the erection of a proposed post-office and sub-treasury building in the city of Chicago, a section providing, that at the discretion of the Secretary of the Treasury, the plans for the same be obtained by competition of architects; also on Feb. 20, 1891, the Supervising Architect forwarded a memorandum containing a proposed amendment to the "Legislative, Executive and Judicial Appropriation Bill," to the Committee, as follows:—

"And the Secretary of the Treasury is hereby further authorized, in his discretion, to obtain plans, drawings and specifications for the erection of public buildings, through competitions by architects, under such conditions as he may prescribe, and to make payment of the expenses of said architects' services out of the appropriations for the respective buildings."

Action, however, was not taken in either case by the Committee of Congress.

Such legislation passed would permit the Honorable Secretary of the Treasury to invite competition among architects for the plans and designs for Federal buildings, and by the adoption of the method the Government would be assured of the personal supervision of the architect who would have an individual responsibility for the fitness of the building and for its artistic excellence.

How is the public service to be benefited by the United States Government engaging an architect for each important Federal building? This practical side of the question is that which the business man in Congress will ask in answer.

First. By the dispatch of business the Practising Architect complets his work, as a whole, in the earliest time practicable, and to do this can give undivided attention to the preparation of design and the study of detail. There is a fixed time when his work is finished. Against this is the lamentable fact that public business is conducted with much formality, but not with the directness of private business.

If the buildings erected by the Government were conducted on business methods, the same as the erection of like structures by individuals, it would be economy to the public service.

Second. The careful and continuous thought of an architect directed to one building must produce better results than the same thought disjointed in the effort to care for many buildings. By the selection of architects for merit in design the buildings erected by the Government should represent the best examples of architectural art and the entire counrty would be benefited.

There is a limit to the amount of work one man can do, be he ever so capable. When the limit of capability is reached all business thereafter is not so well done and should be deferred to another. The number of buildings, which the Government is continually erecting suggests the propriety of securing, by division of labor, new thought, energy and ability among the profession of architects. Such action would tend to secure the first, economy to the public service by dispatch of business, and the second, the undivided attention of an architect engaged for a specific duty which would also result in economy."

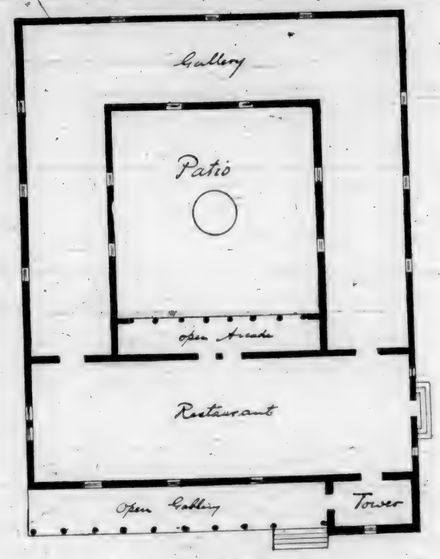
JAS. H. WINDRIM,
Architect.

Philadelphia, Penn., Oct. 26, 1891.

CALIFORNIA WORLD'S FAIR BUILDING.

Synopsis of a paper read before the members of the San Francisco Chapter of the American Institute of Architects, Dec. 11, 1891, by W. J. Cuthbertson.

As none of the plans presented to the California Commission seem quite to fill the bill, here is a suggestion for a building and arrangement which might perhaps be a typical plan, striking enough to attract the attention of all visitors to the World's Fair. It would be an almost exact reproduction of one of the Missions of California—the tower forming



PLAN OF BUILDING.

the entrance, the church the reception hall, cafe and wine sampling room and offices, while around the Patio would be grouped the one story exhibition galleries corresponding

to the buildings around the garden of one of the California Missions. Of course the objection to doing this would be the inappropriateness of these buildings for exhibition purposes which require plenty of light and air, while Mission buildings were very inadequate in this regard.

This however, would be overcome in practice by roofing the buildings with glass; in this manner the roof showing on the outside being roofed with Mexican tiles, while the glazing is hidden in the interior valley. By having these skylights, very little light would be required on the sides, so that the distinctive blank surfaces of Mission buildings would be preserved, while the utility of the building for exhibition purposes would not be damaged. In the Patio, which is protected somewhat by the encircling buildings, plants, trees and scrubs, indigenous to California, would be planted intermixed with fountains, etc., and slices of big trees or other relics from California.

The front building patterned after the church, might be two stories high, the top story used for the cafe devoted to California cooking, and lighted by arcaded galleries opening on to the Patio and to the outside. The lower story in the same way is devoted to the sampling of California wines and brandies, etc., these galleries forming outdoor refreshment places during the hot weather.

Thus an interesting ethological example would be presented to the world's visitors, at the same time that a useful building is had for the purposes of the California Commission.

The outside would be plastered with "L'Unique," a distinctly California production, and the columns of the arcade I would suggest, would be presented one by each of the marble and stone quarries of the Pacific States.

This is a very slight suggestive sketch which I have the temerity to believe is worthy of consideration by California World's Fair Commission.

RULES AND REGULATIONS GOVERNING THE ADMINISTRATION OF THE DEPARTMENT OF FINE ARTS AT THE WORLD'S FAIR.

Section 1. (Duration.) The Department of Fine Arts of the World's Columbian Exposition, will open in Chicago, May 1, 1893, and will close October 30, 1893.

Sec. 2. Classification: It will be open to such works of American (United States) and foreign artists, whether previously exhibited or not, as may be classed under the head of Fine Arts, under the following schedule:

FINE ARTS: PAINTING, SCULPTURE, ARCHITECTURE, AND DECORATION.

GROUP 135. Sculpture.

Class 770. Figures and groups in marble; casts from original works by modern artists; models, and monumental decorations.
Class 771. Bas-reliefs in marble or bronze.
Class 772. Figures and groups in bronze.
Class 773. Bronzes from *cire-perdue*.

GROUP 136. Paintings in Oil.

GROUP 137. Paintings in Water Color.

GROUP 138. Paintings on Ivory, on Enamel, on Metal; on Porcelain or other wares; Fresco Painting on Walls.

GROUP 139. Engravings and Etchings; Prints.

GROUP 140. Chalk, Charcoal, Pastel and Other Drawings.

GROUP 141. Antique and Modern Carvings; Engravings in Medallions or in Gems; Cameos; Intaglios.

GROUP 142. Exhibits of Private Collections.

Sec. 3. The following will not be admitted:
1. Copies, even though they be reproduced in a class different from that of the original. For example, engravings obtained by industrial processes.
2. Pictures, Drawings or Engravings not framed.
3. Works of Sculpture in unbaked clay.

SEC. 4. The Department of Fine Arts shall consist of:

1. An American (United States) section.

2. A section for each foreign country which is represented by a general commission, or by a national committee.

3. A section comprising exhibits of private collections, and the works of artists of non-represented foreign countries, whose works may be admitted under the provisions of section IX.

SEC. 5. (AMERICAN.) American (United States) artists must deposit, or cause to be deposited with the Chief of the Department of Fine Arts, before November 1, 1892, a list signed by them of such works as they desire to exhibit. A separate list should be made for each group and class, strictly following the schedule in Section II.

Artists will be duly notified when their works must be sent in for examination by a jury to be appointed in future.

SEC. 6. Works of American (United States) artists produced since 1876 which have passed the examination of juries of exhibitions of acknowledged standing, will be admitted on list, should the jury so determine. An examination of lists will be made at an early day after November 1, 1892. Artists whose works may be admitted under these conditions will be at once informed by the Chief of the Department of Fine Arts. Works accepted must be delivered at the receiving gate of the Building for the Fine Arts on or before March 1, 1893.

SEC. 7. (FOREIGN.) The Department of Fine Arts, or its representatives, will be responsible for simple interior decoration of the galleries of the Art building. Special decoration or arrangements in lighting, etc., differing from those provided, will be executed at the expense of the National Committee of the country asking for it, and under the joint direction of the foreign representative and the architect of the Art building.

SEC. 8. The Chief of the Department of Fine Arts will not correspond with the artists of countries represented by general commission or national committees. The works of these artists will be admitted only through general commissions or national committees having in charge their reception and return.

SEC. 9. Foreign artists, natives of countries not represented by a general commission or national committee, should address their request to the Chief of the Department of Fine Arts before July 15, 1892. They should notify him of the number of works they wish to exhibit, the subjects and dimensions, including frames; they will then be informed where to send their works for examination by a special jury who will pass upon the admittance of all such works. In the case of works that have already passed the juries of exhibitions of acknowledged standing and have been exhibited, action will be taken by the jury at an early day after July 15, 1892. A notice of the action of the jury will be sent to the artist at once. Works accepted must be delivered at the receiving gate of the Building for the Fine Arts, on or before March 1, 1893.

SEC. 10. (GENERAL.) Packing and transportation of all works will be at the expense of the exhibitors unless special arrangements are made through private enterprise or public effort. A special rule for the guidance of those sending works, giving information in regard to packing, marking and shipping, will be furnished on application.

SEC. 11. When a sufficient number of works (pictures) are contributed by one artist to warrant such arrangement, an effort will be made to hang them in one group.

SEC. 12. A card of admission will be issued to each exhibiting artist, entitling the holder to the privilege of the grounds, when open to the public. This card must be signed by the holder, and must be shown to the attendant when asked for.

SEC. 13. The custodian of the Art building will have the care and protection of works of art. Guardians of the gallery will be subject to his direction. He will use all due vigilance to insure the safety and protection of works of art against theft or damage.

Information as to special insurance, etc., will be given on application.

SEC. 14. Works of art will not be sketched, photographed or reproduced except with the written permission of the exhibitor, countersigned by the Chief of the Department of Fine Arts.

SEC. 15. The number and character of the honors conferred will be announced later; also, the appointment of the Jury of Awards.

SEC. 16. Works of art must remain in the Exposition until its close, unless removed by a special permit, signed by both the Chief of the Department of Fine Arts and the Director General.

SEC. 17. All works exhibited must be removed within a reasonable time after the close of the Exhibition. They will be delivered only on the presentation of the original receipt.

SEC. 18. The Building for the Fine Arts is a bonded warehouse, and all works of art will be received within its walls subject to the inspection of the customs officials, but without the payment of duty. They will be received and sent out in bond.

In cases where pictures or other works of art are sold, to remain in the United States in the possession of private individuals, duty will be paid in accordance with the customs laws governing such cases.

SEC. 19. It is understood that artists, either native or foreign, becoming exhibitors, thereby accept the conditions stated above and agree to comply in every respect with the above requirements.

HALSEY C. IVES,
Chief of the Department of Fine Arts.

APPROVED:
GEO. R. DAVIS,
Director General.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

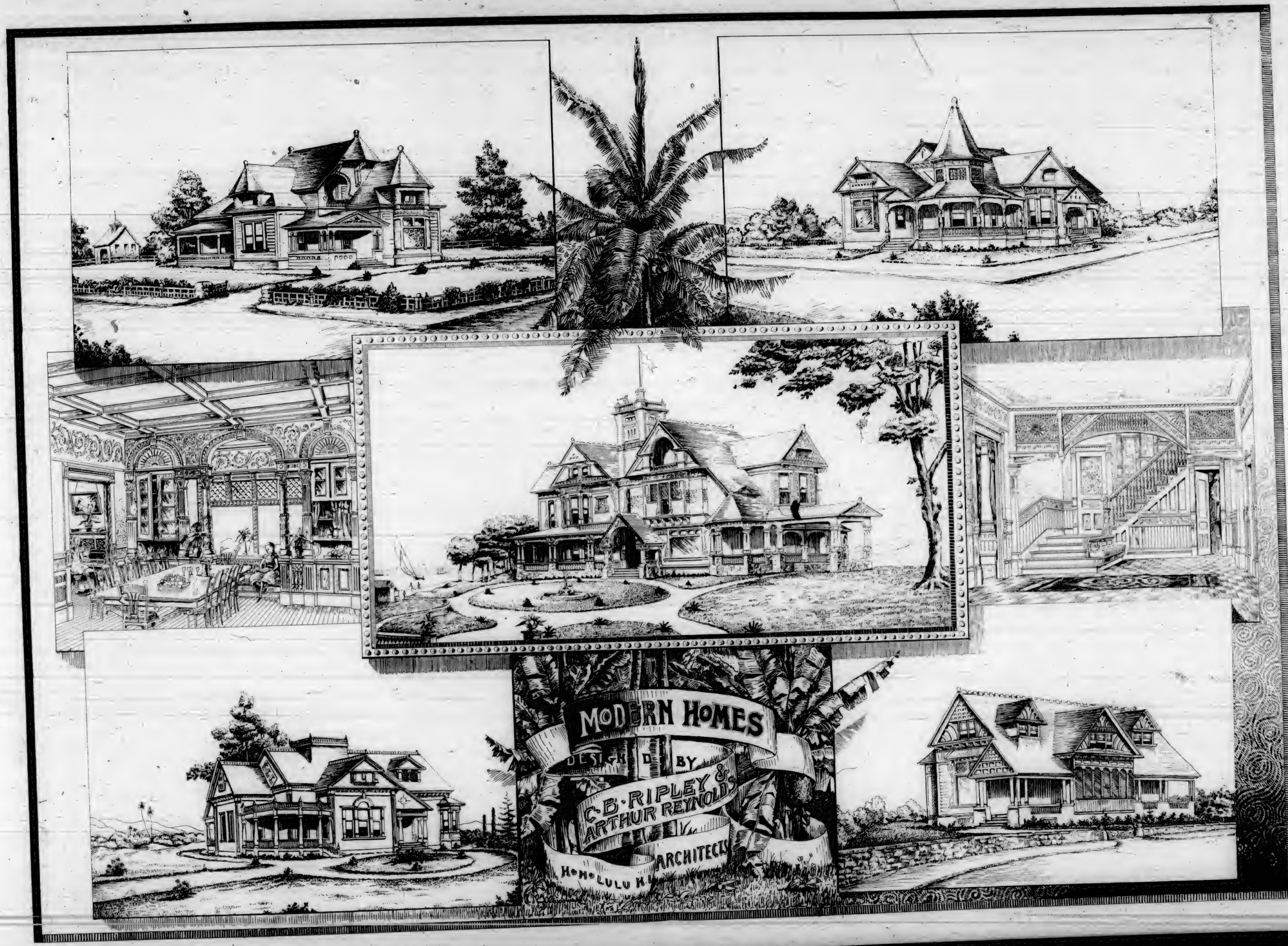
Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

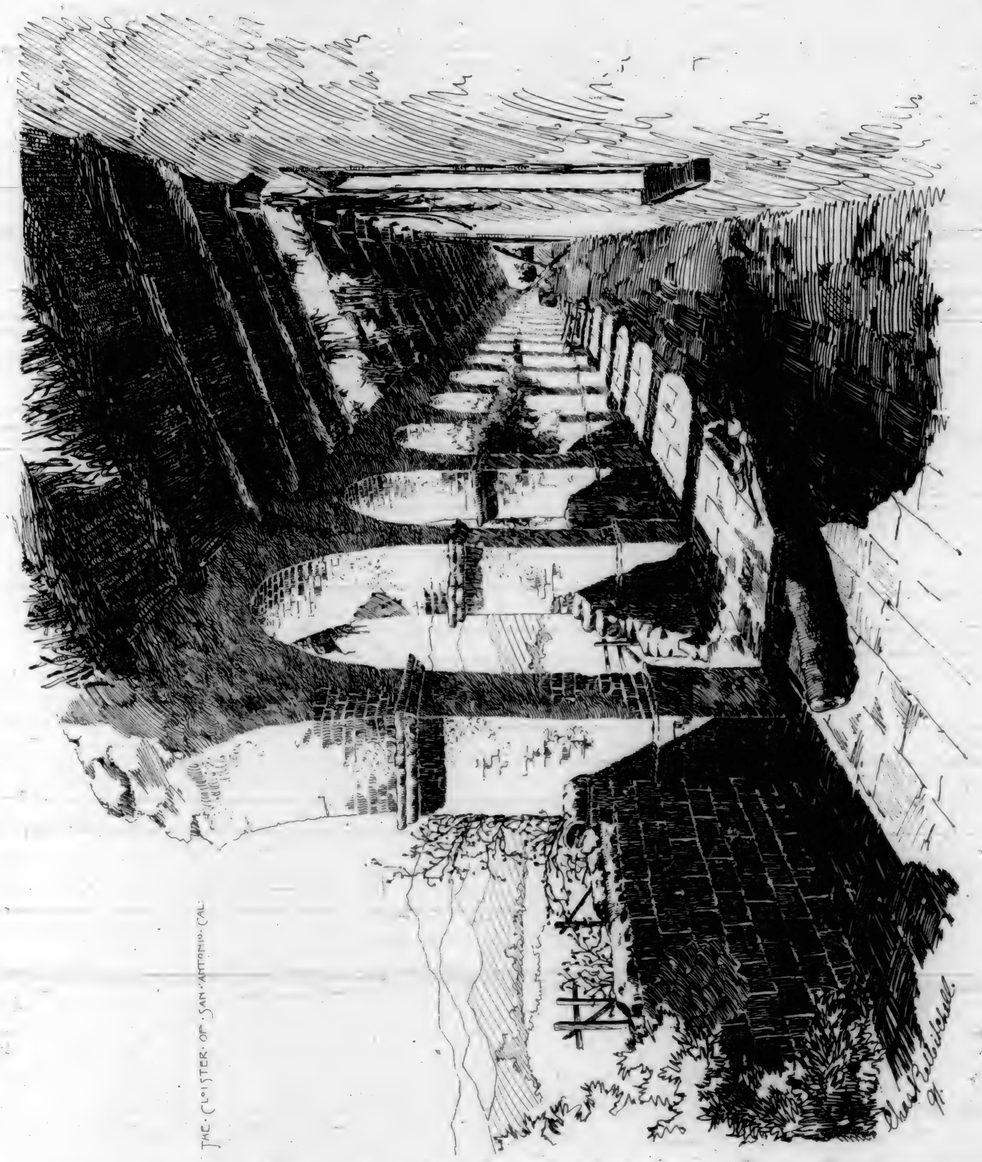
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The double page containing several designs for residences as built in the Hawaiian Islands—C. B. Ripley of Honolulu is the architect.

The Old Mission Church is by "Tres," our special correspondent.

The two cottages are from designs by M. G. Bugbee.


MODERN HOMES
DESIGNED BY
C. B. RIPLEY &
ARTHUR REYNOLDS
ARCHITECTS
HONOLULU H.I.



THE CLOISTERS OF SAN ANTONIO, CAL.

Residence in Ross Valley for E. L. Griffith Esq.

M. G. BUGBEE.
ARCHITECT 419 CAL. ST.
SAN FRANCISCO.

Residence in Ross Valley for T. B. Berry Esq.

M. G. BUGBEE ARCHITECT
419 CALIFORNIA.

BUILT BY STUDENTS.

Comparatively few people are aware that Chicago has a building almost wholly built by the students of an industrial school. The new building of the Institute of Technology, 147 Throop street, is the first building west of New York City ever put up wholly or in part by students. No better evidence of the practical character of the instruction of a school could be desired.

The teaching of trades is in accordance with the broad plan of this Institute which proposes to teach "Any person, any study, day and evening." It now announces the organization of evening classes in Electricity, Plumbing and Bricklaying, as well as Architecture, Engineering and Telegraphy, beginning December 1st next. Draughting of all kinds is made a specialty, four instructors being employed.

A desirable opportunity is thus offered young men who want to "earn better wages."

EVERY MAN HIS OWN BRICK-LAYER.

If all the claims that are made for a new brick invented by a German mechanic are shown to be founded in fact, the bricklayer and his affiliated craftsmen may well view with alarm so startling an innovation. This brick is made of cast iron and is hollow, with a shell so thin that its weight is less than that of an ordinary clay brick. Its size and shape are about the same as those of the common brick, but its most interesting peculiarity is the manner in which it is laid up. Each brick has grooves and ribs on its upper and lower sides which engage with corresponding grooves and ribs on the fellow bricks, making a close fit; and there are also circular openings on the upper side of each brick, adapted to receive projections—one of which is hooked or claw-shaped—on the under side of the brick immediately above it. The result of these ingenious devices is to form not only a wall of great solidity and strength, practically fire-proof, and susceptible of being made highly ornamental by the use of paint, but a wall which a man may build for himself, and tear down and build over again—no mortar being used in the construction—very much after the manner of juvenile architects with their building-blocks. The large air spaces in these bricks, moreover, conduce to the coolness of the house in summer and its warmth in winter.—*Mechanical News, N. Y.*

A FAMOUS TOMB.

When the wife of the Emperor Shah Jehan was on her death bed, her husband, known throughout India as one who had loved his wife with affection akin to idolatry, promised to rear to her memory a tomb which for magnificence would out-do anything known in the history of the world. No sooner had the remains of his loved partner been deposited in a temporary sarcophagus of white marble than Jehan set about carrying out his purpose. He gathered the architects and builders of all known countries, and conferred with them as to what would be the most costly and extravagant design. The result of their deliberations is the famous Taj Mahal, a mausoleum which caused a whole empire to pay tribute and employ 20,000 workmen for 17 years. Its beauty is such as to discourage an attempt at description.

It stands on the bank of the Jumma river, one of the largest feeders of the Ganges, in India. It is about a mile below the fort of Agra, and is approached through an avenue of lofty cypress trees, the tomb being at the end, nearly the third of a mile from the gateway of the green avenue.

The tomb itself is of dazzling whitness, standing on a double terrace, the first being of sandstone, about 20 feet high, and 1,000 feet broad. At each end of this sandstone terrace there is a miniature mosque built of dark red stones, the doorways facing each other.

The second terrace is only 15 feet in height and 300 feet square. On each corner of this 300-foot terrace pure white marble minarets, each 140 feet in height, have been erected, the "Taj" or tomb, being in the center, every stone of the exterior being of marble, fine in texture and without a flaw.

The Taj is what one could hardly call an octagonal structure, neither is it square, the corners being truncated so as to give it the appearance of being eight-sided, the whole surmounted by a dome 200 feet high. It is not the massiveness of this structure which made it famous in the annals of India, but its graceful airiness, which combines both solidity and beauty.

In speaking of it Bishop Heber has truly said: "They built like Titans and finish like jewelers." The dome and the sides of the tomb are inlade with agate, sapphire, jasper and other precious stones, all wrought into flowers, wreaths and vines of exquisite loveliness.

In the center of the edifice, directly under that magnificent dome, are two sarcophagi containing the remains of the emperor and his loved wife, and above them the inscription: "To the Memory of an Undying Love." STONE.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the year about to close:

FOR FIRST SIX MONTHS.

	No. of Brick Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	3	10	$ 98,100	30	45	$ 174,204	6	7	$ 14,415	39	62	$ 286,725
Febry ...	5	21	305,554	33	32	150,664	5	6	23,151	43	59	459,369
March ...	7	16	221,001	48	58	334,075	13	14	53,380	68	88	607,982
April.....	3	8	110,192	50	80	372,709	12	14	44,090	65	102	526,581
May.....	3	14	258,980	49	79	208,793	15	17	100,105	67	110	567,947
June.....	5	23	241,032	88	123	665,499	16	16	42,558	169	162	888,889
Total...	26	92	$1,193,874	298	417	$1,945,944	67	74	$278,695	391	583	$3,416,973

FOR SECOND SIX MONTHS.

	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value
July	9	26	$ 175,247	46	67	$ 309,994	12	17	$ 47,395	67	110	$ 532,636
Aug.....	11	24	192,078	68	84	374,451	21	22	55,190	100	130	621,719
Sept.....	14	20	181,666	65	79	367,962	5	5	27,597	84	113	577,225
Oct.....	6	15	90,915	46	53	245,496	14	16	54,867	66	84	390,248
Nov	5	24	188,556	61	77	271,784	9	10	36,312	65	95	496,649
Dec.....	1	5	32,574	24	36	147,854	9	11	30,208	34	52	210,636
Total	46	124	$ 861,096	300	380	$1,717,508	70	81	$ 250,569	416	584	$ 2,829,083
G'dTotal	72	215	$ 2,054,910	598	797	$3,662,542	137	155	$ 528,694	807	1167	$ 6,246,056

It will be noticed that while the total number of buildings has been increased by twenty-four, and the number of contracts increased by one hundred and thirty, the total cost of the buildings erected has been decreased by $148,957, from last year.

This statement has been made up from the files of the ARCHITECTS and we should bear in mind that in addition to this, there must have been many improvements not noted through the records. We should estimate such improvements at not less than $700,000 in the whole city, making a grand total of say, $6,946,056 for the year.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements, value.....	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669
1887—	1,093	" "	6,605,054
1888—	891	" "	6,244,220
1889—	1,081	" "	7,500,000
1890—	1,037	" "	7,095,013
1891—	1,162	" "	6,946,056

There is a woman in Wisconsin who has been married fifty-eight years, and who has never missed building the kitchen fire. Her husband is probably the oldest fire escape on record.—*Ex.*

From the *Reno Gazette* we learn that Mr. Wm. Thompson is about to organize a joint Stock Company for the purpose of constructing a one hundred thousand dollar hotel for the accommodation of the traveling public seeking rest and recuperation. Reno, we believe, is destined in the near future to become a popular health resort. Its dry, invigorating and health-restoring atmosphere gives it a natural climatic advantage over many of the present famous places.

The utility of chemical engines as an aid to the efficiency of the fire department is beyond question. During the last year many of the fires in this city were put out by means of this apparatus alone, without the use of water. The damage to stock by water was saved.

From the *Timberman*, we learn that the hemlock region in Pennsylania where the trees were infected with worms during the summer, many of the trees are dead, and in order to save the logs they will have to be cut down within a period of a year.

The use of iron and steel in place of wood has been felt in the lumber sections, and while the demand for timber for building and railroad purposes has proportionally decreased, the deficit has been fully met by the increased demand for wood for the manufacture of paper stock. The demand on our forests for paper stock bids fair to increase to immense proportions in the future.

More light is wanted for the City Hall. After several decades have passed, the City Hall Commissioners have passed a resolution asking the Board of Supervisors to order lighted at night the lamps around the City Hall grounds.

The use of Vitrified brick as a paving material for street roadways is growing in popularity. Localities where experiments have been tried with the proper quality of paving brick has so far satisfied the authorities, that preparations have been made for an increase the coming season. It seems to us that it is full time for San Francisco to move in this direction.

The San Francisco Gaslight Company is about to erect the largest gas holder in America. The new works of the company at North Beach, will embrace all the latest improvements in that line, and when finished will be the most complete plant in the country.

San Jose proposes to build a Ship Canal, to tide-water, thus becoming a port of entry for the shipping of the world.

There can be no better advertisement of a city than a reputation for good streets; even one may suffice to make a place well-known. For years the city of Cleveland was not mentioned that Euclid Avenue was not spoken of. San Jose was known far and wide by its "Alameda," a shaded and well-kept driveway, extending to its neighbor, Santa Clara, now unhappily destroyed by a wrong-headed and foolish municipal authority.

Oakland could and should have dozens of equally fine and well-known drives; it has every requirement therefor but the enterprise to create. Look at Eight street as it stands to-day, lined its entire length with beautiful residences and fine improvements, bordered from Broadway to the Point with magnificent poplar trees, stately and regular as the grenadiers of the Imperial guard, possessing an air of aristocratic refinement, unvexed with the omnipresent and exasperating car tract, it is yet avoided by every driver of a vehicle, from the daring butcher cart to the luxurious laudeau, by reason of the hills and vales, ruts and irregularities, stones and earth of its wagon-wrecking, bone-cracking driveway.

More than this, no city can afford to have obstructed streets. It is the manifest duty of the city authorities to cause to be opened all the streets within its limits, no matter what the cost, that, whatever it may be, far more than comes back in increased values, and additional conveniences, in the bettered appearance of the city, and in the increased estimation in which it will be held both at home and abroad. —*Alameda County Real Estate Review.*

The American Architect and Building News, weekly, published by Ticknor & Co., Boston, Mass., has the usual quantity of interesting matter.

Architecture and Building, weekly, published by W. T. Comstock, New York.

The Inland Architect and News Record, monthly, published by the Inland Publishing Co., Chicago, Ills.

Canadian Architect and Builder, monthly, 31 King street, West Toronto, Canada.

The Journal of the Royal Institute of British Architects, monthly, London, England.

Japanese Journal of Architecture, monthly, Tokyo, Japan.

The Engineering Magazine, monthly, published by the Engineering Magazine Co., New York.

The Sanitary Plumber, semi-monthly, New York.

The Sanitary News, weekly, Chicago.

Specialties, monthly, 187 Union street, Borough, London, S. E.

Brick Roadways, a new quarterly periodical, is published by Chas. T. Davis, 161 La Salle St., Chicago, Ill., at the low price of one dollar per year. As the name implies, it is devoted to the dissemination of knowledge relating to brick roadways.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
GEO. A. BOARDWELL, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
C. E. PURINGTON, Sec. W. C. CROSETT, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GASLAGHER, Pres. H. G. JARMAN, Sec.

AN adjourned meeting of the SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS, was held at 408 California street, on the 18th inst., the President, Geo. H. Sanders, presiding.

A communication was received from Geo. H. Sanders, containing a report of the Chapters Students Class for the year; stating that although no work had been recently submitted to the Chapter, yet the members had been diligent in their work and would at an early period, probably at the January meeting, make an exhibition of drawings and models for criticism. Mr. Sanders suggested that prizes or awards of some kind should be made to those showing the best work, and that the Chapter should formulate new rules and regulations in matters relating to competition for the guidance of the students, and that several prizes should be set apart for the more energetic ones to strive for. These suggestions were approved by the members and the subject laid over for especial discussion at the January meeting when it is hoped that all the members who can conveniently do so, will be present to take part in the proceedings.

THE regular meeting of the California Electrical Society was held in their rooms, Academy of Science Building, on Monday evening, December 7th.

Mr. Geo. P. Low, electrical expert of the Pacific Insurance Union, read a paper upon the hazards of Arc Circuits and the methods of restricting the same.

This paper is one of a series which Mr. Low is now delivering before the society. Many instances were mentioned where fires had started from defective insulation; and methods of construction for buildings suggested in a manner to reduce the danger from fire.

The paper was full of information valuable to Architects and Builders.

AT the expiration of each subscription the bill for the succeeding year is mailed, and we shall be pleased to renew the name on our subscription books. The price is three dollars per year, in advance.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

ONE LIEN ON TWO BUILDINGS.—Where work is done on a building and barn under one contract, and they are situated on the same tract of land, a joint lien on both buildings may be filed instead of a separate one on each.

Crawford v. Anderson, (Appellant), Court of Indiana, 28 N. E. Rep., (52C).

INTEREST IN LAND NECESSARY TO SUSTAIN MECHANIC'S LIEN.—A contract for the sale of land, which obligated the buyer to erect six houses thereon within a specified time, and in which the seller agreed to advance a designated sum to partly pay the cost of their construction, is sufficient to show the seller's consent that the buildings be erected, and renders his interest in the land subject to such liens as might be filed for labor and material furnished for the construction of the houses. A stipulation in the contract of sale that any mechanic's lien should be subject to the seller's consent to the erection of the houses, and was not sufficient to subordinate to the seller's rights the lien of a person furnishing materials for the work, who was not connected with either of the parties to the contract, and who had no notice of the stipulation.

Miller v. Mead, Court of Appeals of New York, 28 N. E. Rep. 387, (83C).

SUBCONTRACTORS ASSIGNMENT OF MONEY DUE.—The agreement between a contractor and a subcontractor, provides that fifteen per cent. of the monthly estimates should be reserved until the completion of the work and the payment of all claims by the subcontractor. The subcontractor borrowed money, giving the lender, as security, a first charge on the fifteen per cent. drawback, of which the lender notified the contractor. Thereafter the contractor and subcontractor made an agreement reciting that work, amounting to a certain sum, had been done, and a certain amount paid, and that the subcontractor had on hand material of a certain value, and providing that the contractor should pay him the sum to which the work done amounted, and he should credit the contractor with the amount already paid, and who should purchase the material on hand at a certain price, to be delivered free of all claims, or to pay the claims, and deduct the amount paid. Under this agreement the contractor might pay the labor and material bills necessary to avail himself of the work which had been done with reference to the contract, though nothing was left for the assignee or the subcontractor as he occupied no better position than his assignor, except that the contractor could not after the notice, make voluntary payments to the subcontractor.

Fisken v. Milwaukee B. & I. Wis., Supreme Court of Michigan, 49 N. W. Rep. 873, (232).

APPLICATION OF PAYMENTS.—Where a contractor who was building a house for defendants, delivered a check to plaintiffs' agent, taking a receipt therefore, and requested the agent to apply the proceeds to materials furnished by plaintiffs on a building then being erected for a third person; that the agent refused to so apply the proceeds of the check, but stated that part would be so applied, and that the residue would be applied to certain other contracts, not including that with defendants; that afterwards the contractor went to plaintiffs' office, showed plaintiffs' book-keeper the receipt for the check given by the agent, and the book-keeper, in ignorance of the facts, and relying on the contractor's statments, gave him a receipt for the amount of the check on the materials furnished for defendants' house; that plaintiffs, on discovery of the facts, promptly repudiated the application of the check so made by the contractor, and the contractor afterwards approved plaintiffs' bill for the whole amount of materials furnished on defendants' house, without claiming any credit on account of the check; that the contractor by producing the receipt, afterwards induced defendants to advance "further money" on his contract; and that plaintiffs did not know of the use to which the contractor put the receipt. The defendants were not entitled to have the amount of the check deducted from plaintiffs' claim for material furnished.

Schallert-Ganahl Lumber Co. v. Neal, Supreme Court of California, 27 Pac. Rep. 734, (235C).

RIGHT OF CONTRACTORS BONDSMAN TO RESERVATION OF PAYMENTS.—Where a contractor gives a bond to secure the owner of a building against claims for liens under his contract, and the contract provides that one-fourth of the price should be retained until a final settlement, if the owner pays the contractor the full amount of the contract price immediately upon completion of the building, and without notice to the bondsman, he thereby relieves the latter from liability to the extent of the one-fourth agreed to be reserved, as that was charged with a trust in favor of the bondsmen to make him good, in case of loss.

Kirssig v. Allspaugh, Supreme Court of California, 27 Pac. 655, (96C).

BUSINESS MOSAICS.

The large shipments (recently made) of California tin to Messrs N. & G. Taylor, the pioneer manufacturers of tin-plate in the United States, has stimulated the business at the Temescal Tin Mines, the output being increased as rapidly as possible to fill the orders on hand. Many eastern firms that have recently commenced the business of manufacturing tin plate have ordered tin from these celebrated mines.

Double Acting Lift and Force Pump. All brass. Anti-freezing. Double Acting Force Pumps of this description are often made without guides, the pistons being frequenty bent out of line in the act of pumping by the side strain that accompanies the rocking of the handle from a half to a full stroke.

By recent patented improvements, this company has entirely overcome this defect. By reference to the cut it will be seen that the Guides AA are attached to the sides of the Air Chamber, and are removable therefrom when it becomes necessary to examine or repair the operating parts of the pump. The operating lever is also made *reversible*, so that the pump may be used either *right* or *left*, as desired. The handle, links and cross head are of malleable iron and very strong.

Manufactured at The Union Brass Works, The Wm. Powell Co., Proprietors. 50, 52 and 54 Plum street, Cincinnati, Ohio.

An addition to the Piqua Tin Plate Plant. Ground broken this morning for the additional building. As we stated in the CALL of Sept. 16th, the Cincinnati Corrugating Company proposed to extend their Tin Plant in due time, and we are now advised that in pursuance of this determination they have ordered the following additions to their present outfit: One pair Cold Rolls from A. Garrison & Co., Pittsburg; six Annealing Boxes from McKeesport, (Pa.) Machine Co.; four Morewood Tinning Pots; one Five Roll Morewood Tinning Machine; one Pump for Liquid Tin; Complete Kits of Tinman's and Washman's Tools; Necessary Shaftings and Pullies; also Fire and Red Brick, Cement, Lime, Castings, Bolts, etc., to erect a complete Tinning "Stack."

The first two items are already shipped. The next three are ordered of C. A. Britton, Cleveland, and will be shipped within three or four weeks. Mr. Britton's machines are made at Cleveland, Ohio, after Welsh machinery imported directly by him for that purpose. An extension is necessary to contain part of the new machinery, etc., for the tin plant, as there is not room for all in their present factory buildings. This extension was commenced this morning in charge of Mr. David Speelman, and will be completed within two weeks.

All the additions to the Tin Plant will be completed in four to six weeks, and the Corrugating Company will then have increased facilities for making either Bright or Terne Tin Plates of highest grades. The Steel Sheets will be rolled as heretofore, by the Piqua Rolling Mill Company, that rolled several tons of No. 30 gauge Steel Sheets for this purpose last week.

If the Corrugating Company, finds the operation of the plant, above referred to, as profitable as they have reason to expect, they propose to double or treble it as fast as good business policy dictates. The course of the Corrugating Company, has been entirely consistent from the beginning, and casts shame upon those who by their senseless partisanship, have cried down the beginning of an American industry in our city, because forsooth, it was on a scale too humble to suit its would-be critics.—*Pique Daily Call.*

One of the most prominent lumber firms of the city is that of Preston & McKinnon, Pier 5, Steuart street. Their lumber yards are among the largest on this coast, and contain the best of pine, cedar, spruce and redwood. Their mills are located in the regions where the best grades of timber are to be found, and the machinery cuts straight and true to gauge.

The Columbia Daily Calendar. An old friend in a new dress, and an article that has come to be one of the indispensables of an editor's desk, comes to hand in the Columbia Daily Calendar for 1892. The Calendar is in the form of a pad containing 367 leaves, each 5⅛x2⅝ inches; and each slip bears a short paragraph pertaining to cycling or some kindred subject, and at the bottom of each leaf is a blank for memoranda. The stand is an entirely new departure, being made of sheet metal finished in ivory black, and is very compact. This is the seventh issue of this now well-known Calendar, yet all the matter is fresh and new.

Damp-Proof and Water-Tight Cellar. Peter H. Jackson, San Francisco, No. 462,953. Dated Nov. 10, 1891. This invention relates to building, basement, cellar and vault constructions. The object is to increase the stiffness and strength of walls or floors of buildings without increasing their thickness, so that a structure will remain integral or as originally constructed even after great lapse of time, will resist tensile strain, remain erect under the weakening effects of fire, and may even be able to withstand earthquake shocks and oscillations; to construct basements, cellars, vaults or the like in such manner that the inside will be entirely free from dampness; to construct foundation walls or the walls of basements or cellars on soft bottoms in such manner that they will be capable of sustaining the buildings above them without the employment of piles or other ordinary means for upholding foundations on soft bottoms, and finally, to prevent the tops and bottoms of stiffened walls from being pushed inward when subjected to pressure from without. With these objects in view, the invention consists in a wall, floor or the like, having upon its top surface supporting

walls, and comprising in its structure, along with surface masses of concrete or the like to resist compression, metallic ties or beams embedded slightly beneath the interior or upper surface for the purpose of resisting tensile strain from transverse pressure inward or upward; furthermore, in a wall, floor or the like, composed of two portions—an outer and an inner—the outer portion capable of resisting compressive force and the inner portion capable of withstanding tensile strain, the two portions united by a stratum of asphaltum, or any equivalent water-resisting substance, extending along the neutral axis of the wall or floor, whereby the cellar is rendered damp-proof, and by exclusion of moisture, the metallic parts near the interior surfact of the wall are preserved in a constantly dry condition, and any relaxation of the adhesion of the cement thereto is prevented; furthermore, in a wall or floor consisting of an outer and an inner portion united along its neutral axis by a stratum of damp-proof material, the outer portion constructed of cement, artificial stone, or the like, and the inner portion composed of similar material and provided with metallic ties or small beams embedded in it, whereby tensile strain may be successfully withstood and the floor or wall be prevented from bursting inward; furthermore, in a wall or floor composed of two portions united along the neutral axis by a stratum of damp-proof material, the outer portion made of cement, artificial stone, or similar material capable of resisting compressive force, and the inner portion constructed of like substance and consisting of inverted arches having metallic ties or small metallic beams embedded in the foot of the arches for the purpose of withstanding the tensile strain; furthermore, in the combination with the walls having metallic beams, of beams and blocking pieces to resist pressure above or below, or both above and below, and finally in various novel details of construction whereby the objects of the invention are attained.

Hall's Safe and Lock Co., 609–611 Market street, is putting in the safe and vault work in the Crocker Estate Building, besides other prominent buildings in course of erection. This firm is well known for its excellent work.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 30th day of December, 1891, for all the labor and material required for the Approaches, etc., to the U. S. Court House, Post Office, etc., at Los Angeles, California, in accordance with drawing and specification, copies of which may be had at this office or the office of the Superintendent at Los Angeles, California.

Each bid must be accompanied by a certified check for a sum not less than two per cent. of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Approaches to the U. S. Court House, Post Office, etc., Building at Los Angeles, Cal.," and addressed to

W. J. EDBROOKE,
Supervising Architect.

December 3, 1891.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 8th day of January 1892, for all the labor and materials required for the plumbing, gas-piping, etc., for the U. S. Custom House, Post Office, etc., building at Port Townsend, Washington, in accordance with the drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at Port Townsend, Washington.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Plumbing, Gas-Piping, etc., for the U. S. Custom House, Post Office, etc., Building at Port Townsend, Washington, with the name and address of the bider on the outside of envelope for identification, and addressed to

W. J. EDBROOKE,
Supervising Architect.

December 3, 1891.

CITY BUILDING NEWS.

Angelica near 19th St. To build; owner, Peter Unrath; architect, A. R. Pfarrer; contractor, Frank Williams; bond, $600; cost, $1755; signed, Nov. 16; filed, Nov. 17; payments, $435, frame up; $440 brown coated; $440, completed; $440, 35 days.

Baker near Grove. To build; owner, Wm. Lindop; architect, C. H. Mullen; contractor, M. J. Feely; cost, $1910; signed, Nov. 17; filed, Nov. 19; payments, $477.50, enclosed and roof boards on; $477.50, brown coated; $477.50; completed; $477.50, 35 days.

Boulevard in Golden Gate Park. To build; owners, Golden Gate Park Co., architect, W. O. Banks; contractor, Willis Norton; cost, $7789; signed, Nov. 17; filed, Nov. 19; payments, 75 per cent as work progresses on 1st day of each month; balance, 35 days.

Bryant, Nos. 528 and 530. Alterations and additions; owner, Cornelius Pringle; architect, J. C. Newson; contractors, Humeston & Page; cost, $4550; signed, Nov. 16; filed, Nov. 24; payments, 75 per cent as work progresses; balance, 35 days.

Buchanan and Washington. Plumbing and gasfitting; owner, Julia Strassburger; architects, Salfield & Kohlberg; contractor, R. A. Vance; cost, $1800; signed, Nov. 20; filed, Nov. 25; payments, $500, rough work in; $850, completed; $450, 35 days.

California near Walnut. To build, owner, R. C. Miller; contractor, W. W. Redmall; bond, $800; cost, $2855; signed, Nov. 16; filed Nov. 16; payments, $735, roof on and building enclosed; $700, brown coated; $700 completed; $700 35 days.

Carl, near Willard. To build; owners, Metropolitan Railway Co.; architects, Shea & Shea; contractors, Anderson Bros.; cost, $9125; signed, Nov. 19; filed, Nov. 27; payments, $2250, frame up; $2250, outside finish on; $2250, completed; $2275, 35 days.

Castro, near 23d. To build, owner, Jos. Harris; architect, M. J. Welsh; contractor, R. J. Dowling; bond, guaranteed; cost, $3375; signed, Nov. 30; filed, Dec. 1; payments, $843.75, frame up; $843.75, brown coated; $843.75, completed; $843.75, 35 days.

Clipper near Diamond. To build; owner Katherine de Blaumford; architects, Copeland & Pierce; contractors, McPhee & Bailey; cost, $1733; signed, Nov. 16; filed, Nov. 19; payments, $350, frame up; $350, brown coated; $626, inside finish on; $300, completed; $400, 35 days.

Elizabeth near Castro. To build; owners Wm. Curley; architect, C. M. Rousseau; contractor, Wm. Peters; bond, $800; cost, $1600; signed, Nov. 13; filed, Nov. 14; payments, $400, frame up; $400, brown coat; completeded, $400. $400, 35 days.

Ellis near Buchannan. Moving and alterations; owner, Chas. Levis; architect, S. Hatfield; contractor, Allan MacDonald; cost, $1485; signed, Oct. 22; filed, Nov. 6; payments, $800, old building moved and lower frame up; $850, rustic on; $850, white coated; $857.75, completed; $1121.25, 35 days.

Grove near Lyon. To build; owners, D. & V. Badaracco; architects, B. McDougall & Son; contractor, A. Jackson; cost, $2000; signed, Nov. 27; filed; Nov. 28; payments, $500, frame up and roof on; $500, brown coated; $500; completed; $500, 35 days.

Harrison and Langton. To build; owner, J. MacNamara; architects, B. McDougall & Son; contractors, Brennan Bros.; cost, $3675; signed, Dec. 1; filed, Dec. 2; payments, $500, frame up; $800, frame set and rough plumbing in; $700, brown coated; $918.75, completed; $906.25, 35 days.

Hickory near Gough. To build; owner, M. A. de Laveaga; architect, P. R. Schmidt; contractor, J. J. O'Brien; cost, $4890; signed, Nov. 6; filed, Nov. 9, payments, 75 per cent as work progresses on 1st and 15th day of each month; balance 35 days.

Howard and Washington Ave. Alterations and additions; owner, The Gesellschaft Teutonia; architect, Henry Geilfuss; contractor, F. L. Hansen; cost, $2570; signed, Nov. 18; filed, Nov. 19; payments, 75 per cent as work progresses on 1st day of each month; balance 35 days.

Jackson near Scott. Stone and brickwork; owner, Albert Gallatin; architect, Clinton Day; contractor, John McCarthy; cost, $7084; signed, Oct. 23; filed, Nov. 19; payments, 75 per cent of work done at end of 30 days; 75 per cent of work done 30 days after first payment; 75 per cent completed; balance, 35 days.

Laguna St. bet. Broadway and Vallejo. To pave road and lay granite curbs, owner, —— contractor, G. Raisch; cost, $2400; signed, Sept. 28; filed, Nov. 16.

Market, Larkin and Hayes; stairwork; owners, B. & J. S. Doe; architect, J. H. Littlefield; contractors, Vanderberg & Lewis; bond, guaranteed; cost, $5035; signed, Oct., 1; filed, Nov. 11; payments, 75 per cent as work progresses; balance 35 days.

Market, Larkin and Hayes. To fit up drug store; owners, Oesting & Co.; architect, P. R. Schmidt; contractors, Wolf Bros. et al; cost, $2100; signed, Nov. 12; filed, Nov. 16; payments, 75 per cent as work progresses on 1st and 15th day of each month; balance 35 days.

Mason near O'Farrell. Alterations and additions; owner, Martin O'Dea; architect, Chas. I. Havens; contractor, Robert Currie; cost, $7495; signed, Nov. 14; filed, Nov. 21; payments, $1850, frame up and building enclosed; $1850, brown coated; $1350, hard finished and outside millwork done; $1545, completed; $1900, 35 days.

McAllister and Jones. Lathing, plastering, etc.; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractor, Thos. Mannix; cost, $7855; signed, Nov. 23; filed, Nov. 23; payments, 75 per cent of work done on 1st and 15th day of each month; balance 35 day.

McAllister & Jones. Window sash frames and doors; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, L. & E. Emanuel; cost, $8088.85; signed, Dec. 1; filed, Dec. 3; payments, 75 per cent as work progresses on 1st and 15th day of each month; balance 35 days.

Mission near 16th. Alterations and additions; owner, Richard Doyle; architect, M. J. Welsh; contractor, A. S. Cook; bond, guaranteed cost, $2450; signed, Nov. 18; filed, Nov. 21; payments, $612.50, frame up; $612.50, brown coated; $612.50, completed; $612.50, 35 days.

O'Farrell and Franklin. Brickwork and excavations; owner, A. H. Loughborough; architects, Shea & Shea; contractors, M. Fennell & Son; cost, $2800; signed, Nov. 14; filed, Nov. 18; payments, $700, brickwork finished above ground; $800, brick basement finished to first story sill line; $250, chimneys finished; $250, completed; $700, 35 days.

O'Farrell and Franklin. Carpenter work, etc.; owner, A. H. Loughborough; architects, Shea & Shea; contractor, D. G. Chisholm; cost, $13575; signed, Nov. 14; filed, Nov. 18; payments, $2036, frame up and rafters on; $2036, rustic on roof shingled; $2036, floors laid and partitions set; $2036, outside finish on; $2307, completed; $3394, 35 days.

O'Farrell and Franklin. Painting; owner, A. H. Loughborough; architects Shea & Shea; contractor, H. H. Ihnen; cost, $700; signed, Nov. 14; filed, Nov; 25; payments, $262, exterior has 2 coats and interior primed; $263, completed; $175, 35 days.

O'Farrell and Franklin. Plastering and lathing; owner, A. H. Loughborough; architects, Shea & Shea; contractor, D. O'Sullivan; cost, $1855; signed, Nov. 14; filed, Nov. 18; payments, $733, first coat mortar on; $733, completed; $489, 35 days.

O'Farrell and Franklin. Plumbing and gasfitting; owner, A. H. Loughborough; architects, Shea & Shea; contractors, S. Ickelheimer & Bros.; cost, $1900; signed, Nov. 18; filed, Nov. 25; payments, $699, rough plumbing in; $726, completed; $475, 35 days.

O'Farrell near Gough. To build; owner, Byron Mauzy; architect, John Marquis contractor, J. H. McKay; cost, $6649; signed, Nov. 19; filed, Nov. 23; payments, $1200, frame up and roof shingled; $1200, frames set and ready to lath; $1200, brown coated; $1384, completed; $1665, 35 days.

O'Farrell and Laguna. To build; owner, Amelia Newhouse; contractor, S. T. Crawford; cost, $2200; signed, Nov. 17; filed, Nov. 18; payments, $500; frame up and roof boarded; $600, brown coated; $550, completed; $550, 35 days.

Pacific near Stockton. To build; owner, Ng Chung; contractors, Fennell & Sons; cost, $4158; signed, Nov. 16; filed, Nov. 16; payments, $600, walls completed; $500, roof completed and partitions set; $500, completed; $858, 35 days.

Pacific near Stockton. Addition; owner, Ng Chung; contractors, Martin, Fennell & Son; cost, $1200; signed, Nov. 23; filed, Nov. 23; payments, $300, walls completed; $300, partitions set; $300, entire roof completed; $300, 35 days.

Page near Broderick. Excavating, brick, carpenter work, etc.; owner, Mary Murphy; architects, Martens & Coffey; contractor, L. Arthur; cost, $2760; signed, Nov. 10; filed, Nov. 12; payments, $650, frame up and roof on; $675, brown coated; $745, completed; $690, 35 days.

Pine near Sansome. Concrete work; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, Chatain & Gilletti; cost, $7645; signed, Nov. 4; filed, Nov. 10; payments, 75 per cent as work progresses; balance 35 days.

Quincy, No. 21; Alterations and additions; owner, Henry Jacques; architect, Emile Depierre; contractor, Jean Salanave; bond, $1400; cost, $1350; payments, $400; front up and rough work up inside; $400, ready for painting; $400, completed; $150, 35 days.

Ridley near Church. To build, except plumbing and painting; owners, A. E. and J. Franks; architects, P. R. Schmidt; contractor, C. E. Dunshee; cost, $1425; signed, Nov. 21; filed, Nov. 21; payments, $500 standing finish on; $468.75, completed; $456.25, 35 days.

San Lobos near Orizaba. To build; owners, Chas. E. Doty and wife; architect, Edward Burns; contractors, C. L. and J. A. Buck; bond, $930; cost, $850; signed, Nov. 23; filed, Nov. 25; payments, $232.50, frame up and rustic on; $232.50, brown coated; $232.50, completed; $232.50, 35 days.

Seventeenth St. No. 491. Additions; owner Wm. Von Voss; contractor Henry Pauls; cost, $1550; signed, Nov. 9; filed, Nov. 24; payments, $600, frame up; $400, mortar on; $300, completed; $250, 35 days.

Sunnyside Ave. near Baden. To build; owner, Geo. Kralick; contractors, Petterson & Person; bond, $500; cost $732; signed, Nov. 18; filed, Nov. 19; payments, $250, frame up; $323, completed; $184, 90 days after completion or if not so paid shall bear interest at 7 per cent.

Sutter near Taylor. Elevator; owner, Maria L. Smith; architects, C. R. & J. M. Wilson; contractor, A. J. McNicholl; cost, $2340; signed, Nov. 5; filed, Nov. 9; payments, $500, shaft ready for cage; $600, tanks set and mortar in place; $755, completed; $585, 35 days.

Sutter near Taylor. Carpenter work; owner, Maria L. Smith; architects, C. R. & J. M. Wilson; contractor, Wm. Knowles; cost, $36664; signed, Nov. 6; filed, Nov. 9; payments, $6000, frame up; $5000, brown coated; $3500, inside finish on, $6623, completed; $7541, 35 days.

Sutter near Taylor. Painting; owner, Maria L. Smith; architects, C. R. & J. M. Wilson; contractor, H. F. Wagner; cost, $1900; signed, Nov. 6; filed, Nov. 9; payments, $710, inside two coats and outside primed; $715, completed; $475, 35 days.

Sutter near Taylor. Plumbing and gasfitting; owner, Maria L. Smith; architects, C. R. & J. M. Wilson; contractor, R. A. Vance; cost, $4060; signed, Nov. 5; filed, Nov. 9; payments, $1500, rough work in; $1545, completed; $1015, 35 days.

Sutter and Jones. Plastering, lathing and cementing; owner, A. Wolf; architect, Chas. J. Devlin; orig-contractor, Jon. A. Ehman; sub-contractor, I. C. Conner; cost, $1900; signed, Nov. 12; filed, Nov. 12; payments, $950, brown coated; $475, white coated; $250, completed; $225, 35 days.

Tay near Sacramento. To build; owner, Mrs. C. M. Haynes; contractors, Frost & Kohler; bond, $500; cost, $1380; signed, Nov. 20; filed, Nov. 25; payments, $480, frame up; $400, brown coated; $500, completed.

Twenty-ninth near Dolores. To build; owner, W. Wohn; contractor, A. Klahn; cost, $1000; signed, Nov. 14; filed, Nov. 14; payments, $700, brown coated; $700, completed; $500, 35 days.

Twenty-third near Guerrero. Alterations and additions; owner, T. C. Maher; architect, W. O. Banks; contractor, O. E. White; cost, $1700; signed, Nov. 5; filed, Nov. 10; payments, $500, frame up; $375, brown coated; $400, completed; $425, 35 days.

Vallejo and Van Ness Ave. Plumbing; owners, H. & H. E. Law; architect, Wm. Brown; contractor, G. Humphreys; cost, $1325; signed, Nov. 18; filed Nov. 18; payments, $331, sewer in and first floor roughed; $331, all building 18 roughed in; $331, completed; $332, 35 days.

Waller near Masonic. To build; owner, Mary J. Nachtigall, architect, N. A. Comstock; contractor, John P. McCormick; bond, $2500; cost, $3075; signed, Nov. 7; filed, Nov. 9; payments, $1268.75, frame up; $1268.75, brown coated; $1268.75, completed; $1268.75, 35 days.

Washington near Central Ave. To build; owner, Ada Martin; architect, Samuel Newsom; contractor, H. M. Kirkwood; bond, $1500; cost, $4700; signed, Nov. 4; filed, Nov. 9; payments, $850, frame up; $1100, brown coated; $2750, 1 year after completion to be secured by a mortgage.

Washington near Laurel. To build; owner, A. H. Breckenfeld; architect, P. S. Barber; contractors, Sandy & Gillogley; bond, $1000; cost, $4000; signed, Nov. 24; filed, Nov. 24; payments, $1000, frame up; $1000, brown coated; $1000, completed; $1000, 35 days.

Washington near Walnut. Carpenter, brick work, excavating, etc.; owner, Frank Morton; architect, J. C. Newsom; contractor, W. E. Lane; cost, $4350; signed, Nov. 14; filed Nov. 17; payments, $1090, frame up; $1085, brown coated; $1085, completed; $1090, 35 days.

ALAMEDA COUNTY.

Block 5, Barker Tr., Berkeley. To build; owner, G. F. W. Schultz; contractor, F. E. Armstrong; cost $2050; signed, Nov. 10; filed, Nov. 11; payments, $510, building up and inclosed; $510, brown mortar on; $510, completed; $520, 35 days.

Block. C., Klinknerville Tr. To build, owner, C. A. Klinkner, architects, J. J. & T. D. Newson; contractor, H. D. & A. S. Sellers, cost, $2475; signed, Nov. 27; filed, Nov. 27; payments, $495, frame up etc., $453, chimneys built rustic on and roof shingled etc., $453, rough plumbing done, floors laid etc.; $455, complete; $619, 35 days.

Broadway and 14th, Oakland. Brick, granite, terra-cotta chimneys; owner, Joseph Macdonough; architects, Mooser & Cuthbertson; contractor, John McCarthy; bond, $10,250; cost, $41,000; signed, Nov. 24; filed, Nov. 28; payments, 75 per cent of the value of work done; balance 25 per cent, 35 days.

Broadway and 14th, Oakland. Cast and Wrought iron work; owner, Joseph Macdonough; architect, Mooser & Cuthbertson; contractors, O'Connell & Lewis; bond, $5400; cost, $21,470; signed, Nov. 16; filed, Nov. 28; payments, $4500, basement and sidewalk iron work in set; $8000, 1 story structural work complete; $3570, completed; $5400, 35 days.

Broadway and 14th Oakland., Gas fitting, plumbing, etc.; owner Joseph Macdonough; architects, Mooser & Cuthbertson; contractor, R. Rice; bond, $1950; cost, $7800; signed, Nov. 24; filed, Nov. 28; payments, at rate of 75 per cent of value of work done; balance 25 per cent, 35 days.

Broadway and 14th, Oakland. Granite work; owner, John McCarthy; architects, Mooser & Cuthbertson; contractor, J. P. M. Phillips; cost, $8700; signed, Nov. 27; filed, Nov. 28; payments, 75 per cent of value of work done as work progresses; balance, 35 days.

Broadway and 14th, Oakland. Sandstone; owner, Joseph Macdonough; architects, Mooser & Cuthbertson; contractor, David O'Neil; cost, $6487; signed, Nov. 28; filed, Nov. 28; payments, 75 per cent to be paid when said value of work done; $1375, 35 days.

Broadway and 14th, Oakland. Terra-cotta work; owner, John McCarthy; architects, Mooser & Cuthbertson; contractors, A. Steiger & Sons; cost, $12,500; signed, Nov. 27; filed, Nov. 28; payments, 75 per cent of value of work done as work progresses, balance, 35 days.

Capp, near Nicol Ave., Fruit Vale. To build; owner, Myra L. Maxwell; architect, W. H. Lillie; contractor, James Richards; bond, $2000; cost, $5000; signed, Nov. 21; filed, Nov. 30; payments, $750, entire frame up; $750, enclosed, $750, brown coat mortar on; $750 standing finish on $750, completed; $1250, 35 days.

Delaware near California, Berkeley. To build; owner, Geo. S. Sherman; contractor, Wm. A. Powell; cost, $1020; signed, Nov. 28; filed, Dec. 1; payments, $255, frame up; $255, ready for brown mortar on; $255, within 10 days after building; $255, 35 days.

Eighteenth Ave. near 16th St., Alameda. To build; owner, James Williams; contractor, F. A. Brown; cost, $3000; signed, Nov. 14; filed, Nov. 20; payments, $750; frame up; $750, 1st coat mortar on; $750, completed; $750, 32 days.

Encinal Park Tract, Alameda. To build; owner, Jennie Leroux; architects, Mooser & Cuthbertson; contractor, E. Wrampe; bond, guaranteed; cost, $2400; signed, Nov. 19; filed, Nov. 24; payments, $900, frame up; $900, completed; $900, 35 days.

Flint Tract No. 2, Oakland. To build; owner, Irving J. R. Cockroft; architects, A. W. Pattiani & Co; contractors, Caldwell & Nickerson; cost, $2666; signed, Oct. 31; filed, Nov. 7; payments, $600, chimney built and frame work completed; $800, brown mortar on and exterior primed; $800, completed; $756, 35 days.

Fruit Vale Ave., near School, Brooklyn. To build; owner, Horace C. Watson; contractors, A. W. Pattiani & Co.; cost, $1497; signed, Nov. 10; filed, Nov. 12; payments, $247, window frames set brown mortar on and exterior primed; $625, completed; $625, 35 days.

High and Monroe, Alameda. To build; owner, N. Reinecker; contractor, C. H. Foster; cost, $8250; signed, Nov. 9; filed, Nov. 9; payments, $400, rustic on lower story and second floor laid; $600, enclosed; $600, brown mortar on, frames set and tower completed; $800, white coat mortar on; $850, 36 days.

Linden near 16th St., Oakland. To build; owner, Mrs. Anna Laist; architect, Theo F. Laist; contractor, Richard Sinnott; cost, $5385; signed, Nov. 12; filed, Nov. 16; payments, 75 per cent as work progresses on 1st and 15th days of each month; balance 35 days.

Lot 4, Oakland Heights. To build; owner, Chas. D. Olney; architect, J. C. Newsom; contractor, J. A. Eastman; cost, $4420; signed, Nov. 19; filed, Nov. 20; payments, $1105; frame up; $1105, plastering on walls; $1105, completed; $1105, 35 days.

Park St. near Alameda Ave., Alameda. To build; owner, D. L. Randolph; architect, Joseph A. Leonard; contractors, D. Straub & Son; cost, $8898; signed, Nov. 18; filed, Nov. 19; payments, $1500, 1st story completed; $1500, all brickwork done; $1000, plastering done; $1898, 35 days.

Standford Tract, Oakland. To build; owner, B. S. Hubbard; architect, John Conant; contractors, Stienborgh & Baker; cost, $2250; signed, Nov. 17; filed, Nov. 17; payments, $562.50, frame up and rustic on; $562.50, 1 coat plaster on etc; $562.50, carpenter work done; $562.50, 35 days.

Summit Ave. To build; owner, Mrs. E. Hadden; architects, Wood & Lovell; contractors, Ingerson & Gore; cost, $3300; signed, Nov. 23; filed, Nov. 24; payments, $825, frame up and sheathing on; $825, rough plumbing all in and brown coat on; $825, completed; $825, 35 days.

Summit Ave. To build; owner, W. K. Vickery; architects, Wood & Lovell; contractors, Ingerson & Gore; cost, $4300; signed, Nov. 23; filed, Nov. 24; payments, $1075, frame up and sheathing on; $1075, rough plumbing all in and brown coat on; $1075, completed; $1075, 35 days.

Taylor Ave. near 9th, Alameda. To build; owner, John Sath; contractors, J. S. Hanley & Co.; cost, $1675; signed, Nov. 2; filed, Nov. 6; payments, $418.75, frame up, rafters and sheathing on roof; $418.75, enclosed, cornices on roof shingled, etc.; $418.75, finished and priming coat paint on, ready for plastering; $418.75. 36 days.

Town of Clinton, East Oakland. To build; owner, Elizabeth A. Bangle; contractor, Chas. Murcell; cost, $2590; signed, Nov. 17; filed, Nov. 21; payments, $647.50, frame up and roof on; $647.50, rough coat plaster on, etc.; $647.50, completed; $647.50, 36 days.

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NOTICE.

Correspondents should address their communications to the *California Architect and Building News*, 408 California Street, San Francisco, Cal.

WITH this issue begins the Thirteenth Volume of this JOURNAL. During the whole twelve years of its existence we know of no month when the JOURNAL has failed in its regular issue. At the present time it is the only one printed this side of the Rocky Mountains in the interest of Architects and Builders.

LOOKING ahead, we see many signs of progressive activity throughout the land. New inventions and improvements in everything connected with building, are seeking the light and making their utility known. Commerce is spreading her influence more and more over the Pacific Slope, and in her train construction, architecture and art will surely follow.

Villages and cities must of necessity arise where commerce goes, and architecture through proper channels will display itself in many winning ways; and that which is now but simply utilitarian, must assume the decorative character of the older and more fashion loving cities. Supply follows demand, and capitalists and others seem to be alive to the wants of the hour, consequently, new quarries of ornamental and building stone are being opened and developed, new manufacturing establishments are being erected and put in operation, new systems of irrigation and water power are being developed, and the new mystic power of electricity already contests the ground so long held by older methods.

The advance already commenced is imbued with new life and vigor, and it becomes the duty of the profession to keep it going in the right direction. While keeping in view the past, we have abundant reason to congratulate our friends on the cheering prospect before us, and the brightness on the horizon of the dawning future.

RURAL population illustrates the domestic and wholesome side of life. The home and fireside, as the abode of wife and children, should receive the most conscientious thought in the preparation of the plans, so as to produce convenient and beautiful structures for the home, that life may be brightened, and the disadvantages and unnecessary burdens lessened.

MEMORIAL ARCH, SANTA CRUZ.

DESCRIPTION of the Memorial Arch erected by the citizens at Santa Cruz, California, in commemoration of the early settlement of Santa Cruz by the Mission Fathers, one hundred years ago.

Said arch is located in front of the R. C. Church and forms the entrance into the church grounds, the whole width of the structure being subdivided into three entrances or gate-ways, of which the central and large opening will admit of processions passing through, and the openings on both sides of same are intended for every day use.

MEMORIAL ARCH, SANTA CRUZ.

The frontage of the monument is 34 feet 6 inches, and the height to the top of cross about 24 feet 6 inches. The material is finely cut granite.

The style of Architecture is the Gothic and corresponds to the Architecture of the church.

The design is by Mr. T. J. Welsh, Architect of this city.

THE CALIFORNIA STATE BUILDING FOR THE WORLD'S FAIR.

Instructions by the Committee to Architects.

THE style is to be of the Mission and Moorish type, covering a ground area of from 60,000 to 65,000 feet, with a gallery floor space of two-thirds the same area, and the interior must be so provided as to be easily arranged in departments, with offices, committee and assembly rooms, cafe, kitchen and lavatories. An interior court is to be provided for semi-tropical plants around which arcades will be constructed.

WE have received from D. D. Davisson a piece of an old lintel, recently taken from the Mission Church of Sonoma, California. This piece of lintel is 18 inches wide, 7 inches thick, and about a foot long, and shows the marks of the ax. It is perfectly sound except a little on the two outer edges. This lintel is of redwood, and was 16 feet long and spanned an opening 11 feet wide, and was originally placed in the wall about 100 years ago. This goes to prove that California Redwood is almost inpervious to decay.

POST OFFICE SITE.

The following paper was read before the San Francisco Chapter of the American Institute of Architects, at the last meeting, by Geo. H. Sanders, President.

GENTLEMEN:—Though there is every probability of the Post Office site being finally settled at Seventh and Mission streets, it may not be wholly out of place to discuss the principles on which the site of a great public building should be selected; the controversies in the public press which have prevailed for months past on the subject, having utterly failed in the opinion of the writer, to evolve any definite idea on the subject.

From an Architect's stand-point it would seem that the real points at issue, involving all those higher considerations of architectural fitness and artistic qualities which give value to the setting and reflect beauty upon a great architectural work, have been left wholly out of sight.

In regard to convenience of position some sort of statement on the subject should certainly have been made by the Department, and the fact that such has not been done would seem to argue that it is of no great consequence so far as it is concerned, and such is probably the case. In fact the real parties to consult on the subject are the great wholesale and retail book firms, some of whom are said to handle several tons of mail matter every week. To these the question of hauling becomes a matter of considerable importance and for their convenience a warehouse and branch station on the water front which would save double moving, would be by far the best arrangement.

This would leave the matter of centrality to the transient public, the most important question to decide. The branch stations throughout the city solving the subject for the general public.

The matter would then resolve itself into those questions of prominence and accessibility by the public—proximity to the great hotels, and last, but not least, beauty and dignity of position.

Ready accessibility from the principal streets and by leading car lines, would enter largely into the above considerations—together with that of aspect, as regards exposure to light, and *prospect* in the matter of spaciousness of surrounding areas, and altitude—affording good views of the building on every side, especially of the principal fronts.

The lack of all these considerations is conspicuously absent in many public buildings, especially our City Hall. From no single point can this building be seen as a whole, were it ever possible to view this structure to advantage (when finished), it would be found to be one of the most picturesque and "architecturesque" buildings in America, if not in the world.

The Larkin street facade is one of the finest in existence, and the McAllister street front, were it visible as a whole, would be found to be a very noble composition. But from no place can it be so seen and the architectural qualities of the building are almost wholly lost—and one of the noblest sites in America has been sacrificed to a miserable parsimony which realized something less than the cost of the foundation of the building—by the sale of the best part of it.

The City Hall of Philadelphia is another lamentable example in which millions have been spent on the architectural embellishments and materials of a building which can never be seen to advantage from any one point. Surrounded, as it will doubtless be, some day by tall ten-story structures or higher, it will be out of sight, except for its pipe stem of a tower, from the top of which old Ben Franklin will view with astonishment the improvident folly of his townsmen.

The Capitol at Washington, the Hartford Capitol, and our own at Sacramento, are notable examples of stately good taste and wise magnanimity in the selection of sites. These buildings can be seen to advantage from every side, and it can be readily noted how immensely their architectural values are enhanced by their surroundings and the possibility of viewing them from a proper distance.

As a site for a great public building such as our Post Office undoubtedly will be, it seems to the writer that there is one supremely fitted for the purpose—one not excelled by any in America—both as regards convenience of accessibility, position on important streets, and at an altitude equally attainable from the higher as well as lower levels of the city and which would render the building conspicuously visible throughout the principal part of the town.

I allude to the block on the north side of Union Square, bounded by Post on the south, Sutter on the north, and Stockton and Powell to the east and west. It contains only one building of much importance, and though it might be very costly, it would be well worth all the money that would have to be paid for it, even if the city had to bear half the expense.

Placed in the middle of this block with the open square rising gently from Geary street, with the three principal fronts exposed to the east, south and west, the sunlight and shadows would play about it from dawn till twilight and all night long the moon would follow in her phases, bringing out the architectural features of the pile and giving to every detail its true value and expression. The northern front too, with its bold central entrance and massive architecture would by mere contrast and strength of simple forms, aid the other three by proving a foil to their delicacy and beauty.

It would be the commercial front "par excellence."

With ample space all round the building the effect would be to double the apparent size of Union Square, and would thus prove of double value to the city. Were the whole of the block in question to be devoted to the Post Office site, there would be ample room to double the width of Sutter, Stockton and Powell streets, or rather lay the added space out in park.

On each face of the building should be a grand entrance leading to corridors and offices surrounding a central court or hall which could be covered over with glass at the first story, serving all the purposes of the general office on the ground floor—a very fine effect could be attained by forming a terrace at Sutter street, the terrace to return to the central portico on the north side, and level with the second story of the building; by this means the basement or lower story would be made equal to any in the building—the mail carts could obtain access to the building by passing through archways under this terrace on the north front. Over this point and above the grand staircase and in connection with the elevators would rise the tower or dome or whatever form may be determined on as the central feature—and this on account of the breadth of Union Square on the south would be easily visible from Geary street.

Unless care is observed in the selection of sites for public buildings on other than mere questions of expense and private interest, what possible use is subserved in spending one-fourth or one-third of the whole cost of site and building, in architectural adornments which can never be seen to advantage and are therefore thrown away?

Neither the present site, that of the Mechanics' Pavilion nor that of Seventh and Mission possess the requisites of

good sites on account of the absence of the conditions above noted.

To have to pass through a number of mean and narrow streets to an out of the way corner of the city as at present, or to approach it from the rear from market street as in the case of Seventh and Mission, would be in both cases inconsistent with proper architectural dignity and consistency.

The Mechanics' Institute site is too much hemmed in, and presents features identical with those noticed above in speaking of the City Hall.

The west side of Union Square, another site which has been proposed, is unsuitable on account of the rapid fall of the ground along its principal front, and would be at a disadvantage on account of area, as it would occupy the short side of the block.

Until the true economy of selecting sites for our public buildings, possessed of the necessary qualities of aspect, prospect, and spaciousness is acknowledged, we shall possess no buildings of any architectural value, because whatever they have will be invisible and therefore lost on account of the absence of the conditions necessary to enable the beholder to view them to advantage.

In view of the above considerations it would seem to be the duty of every architect, artist or man of sense and taste, to protest against the shocking waste of money as well as of opportunity and professional ability which is going on continually, not only, alas, in San Francisco, but elsewhere throughout the country on account of popular ignorance and indifference in matters connected with the architectural adornment of the cities and towns we inhabit; and this is lamentably true not only in regard to the State and Municipal buildings and public areas and squares, but in every street and highway it is the same. Every where there is diversity instead of community of interest and the private gets the public gudgeon at an advantage at every turn.

What has made "unter den Linden," "The Place d'la Concord" and the "Ring Strasse" the admiration of and the resort of the world, but the spacious grandeur, architectural magnificence and stately beauty of these noted places and the structures which surround them? It will be something other than private interest and political greed which will accomplish the architectural regeneration of San Francisco.

IN view of the influenza epidemic prevailing at the present time, we give Dr. Harrison's description of infusoria found in air, water and in secretions thrown off by persons suffering from influenza then prevailing in Boston, and which was published in the *Youth's Companion* of January 16, 1879, under the heading of "Colds, or Epidemic Influenza." "Its symptoms are a dry, violent cough, sneezing, copious discharge from the nose, and in severe cases prostration and fever. It is supposed contagious and produced by a small cell, with cilia or feet, which has been named by Dr. E. Cutter, "Arhizopoda" (root footed parasite)." The cuts a and b show the parasites magnified 900 diameters.

Some were found in the air, some in water, and a large number in discharges from the nose, all identical.

They have the power of moving their cilia in any direction, even withdrawing them into their bodies.

Dr. Harrison believes they have the power of producing this parasitic catarrh.

Dr. Cutter recommends inhaling fumes of burning sulphur, it gives relief and destroys the parasite.

MYTHOLOGY.

TERMINUS, a divinity at Rome who was supposed to preside over bounds and limits, and to punish all unlawful usurpation of land. His worship was first introduced at Rome by Numa, who persuaded his subjects that the limits of their lands and estates were under the immediate inspection of heaven. His temple was on the Tarpejan rock, and he was represented with a human head without feet or arms, to intimate that he never moved, wherever he was placed. The people of the country assembled once a year with their families, and crowned with garlands and flowers the stones which separated their different possessions, and offered victims to the god who presided over their boundaries. It is said that when Tarquin the Proud wished to build a temple on the Tarpeian rock to Jupiter, the god Terminus refused to give way, though the other gods resigned their seats with cheerfulness; whence Ovid has said,

Restitit, et magno cum Jove templa tenet.

TERMINALIA, annual festivals at Rome, observed in honor of the god Terminus, in the month of February. It was then usual for peasants to assemble near the principal land-marks which separated their fields, and after they had crowned them with garlands and flowers, to make libations of milk and wine, and to sacrifice a lamb or a young pig. They were originally established by Numa, and though at first it was forbidden to shed the blood of victims, yet in process of time land-marks were plentifully sprinkled with it.

TERMINALIS, a surname of Jupiter, because he presided over the boundaries and lands of individuals, before the worship of the god Terminus was introduced.

ACADEMIA, a place near Athens surrounded with high trees, and adorned with spacious covered walks, belonging to Academus, from whom the name is derived. Some derive the word from "*exaz dnuos*," *removed from the people.* Here Plato opened his school of philosophy, and from this, every place sacred to learning has ever since been called *Academia*. To exclude from it profaneness and dissipation, it was even forbidden to laugh there. It was called *Academia vetus*, to distinguish it from the *second Academy*, founded by Arcesilaus, who made some few alterations in the Platonic philosophy, and from the *third* which was established by Carneades.

ACHELOUS, the son of Oceanus or Sol by Terra or Tethys, god of the river of the same name in Epirus. As one of the numerous suitors of Dejanira, daughter of Œneus, he entered the lists against Hercules, and being inferior, changed himself into a serpent, and afterwards into an ox. Hercules broke off one of his horns, and Achelous being defeated, retired in disgrace into his bed of waters. The broken horn was taken up by the nymphs, and filled with fruits and flowers; and after it had for some time adorned the hand of the conqueror, it was presented to the goddess of plenty. Some say tha the was changed into a river after the victory of Hercules. This river is in Epirus, and rises in mount Pindus, and after dividing Acarnania from Ætolia, falls into the Ionian sea. The sand and mud which it carries down, have formed some islands at its mouth. This river is said by some to have sprung from the earth after the deluge.

RURAL NOTES.

THE orthodox picket is made the same width at bottom as at top, leaving the space at a, the same as at b—Fig 1. We have seen pickets made with the lower end wider than the upper end, being tapering as at Fig. 2. Thus the space at b, is less than at a. The advantage is at once apparent, small animals are prevented from passing through at points near the ground. The pickets may be sharpened at top as in Fig. 3. This tapering form requires no more timber than the old style by sawing the boards reversed as at Fig. 4. We believe there would be a ready sale for this form of picket if the saw mills would place them on the market.

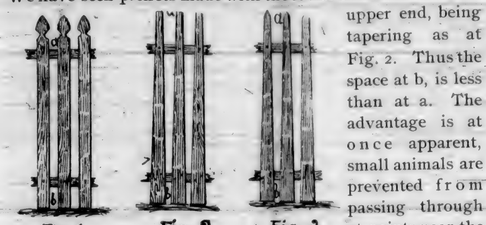

Fig. 1. Fig. 2. Fig. 3.

Fig. 4.

The pickets may be from 3 feet 6 inches, to 4 feet 6 inches in length, and the width, 3 or 4 inches at the lower end and from 1½ to 2 inches at top, sawed from boards 1 inch thick. The pickets may be set at any distance apart as may be desired, we would suggest, however, that the space at b Fig. 2 should not exceed 1 to 2 inches.

THE ladder shown in Fig. 5, is a very convenient arrangement. It is formed of a plank 2 inches thick and 12 or 14 inches wide. Steps a and b are sewed in and cut out to form a 4 inch step. The cut is made vertical to c, in order to give a good foot-hold, and run out at d, to give strength to the step. The steps may be strengthened with large nails as at e. The steps a—b are cut with a bevel or pitch on the top to shed the water where same is placed in an exposed situation. The steps a—b are placed at each side alternately, giving each rise from 12 to 15 inches as desired. In 1869 the writer had a well dug to a depth of 54 feet, having about 6 feet depth of water. A suction and force pump was set at a depth of 12 feet from the bottom of the well, the pump therfore required to be operated from the top of the well, the rods being supported by a guide-plank, which was cut out as above described to facilitate inspection. A scantling should be nailed at the back and made to break joints where the length requires it. The device can be used as a fire escape or as a ladder to the roof. It is also convenient in barns, sheds, granaries and the many places where the regular ladder would be cumbersome.

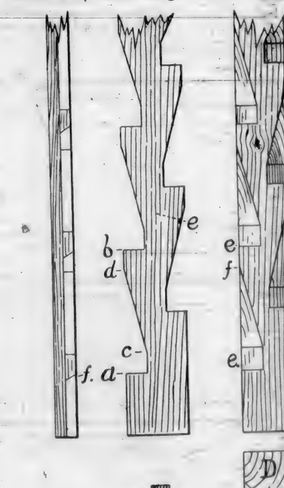

Fig. 5.

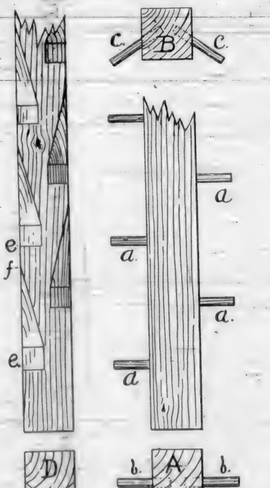

Fig. 6.

Fig. 7.

In Fig. 6, is an arrangement that the writer asw in use some forty years ago, where the corners of the large timbers of a barn were cut out in the manner shown.

Fig. 7 shows a frame post of barn or factory with the usual pin ladder, A the post, and b-b pins or rungs. An improvement is shown at B, where c-c are the rungs set at a slight angle to prevent the foot slipping outward. The rungs are placed alternately with regard to the height, the usual way being to place them opposite.

WORLD'S FAIR NOTES.

The Exposition attractions in the vicinity of the main lagoon entrance, just south of the great Manufactures Building, are to be quite different from those originally planned. No Casino will stand at the end of the pier 1,000 feet from shore, and there will not be a curved mole bearing columns emblematical of the thirteen States. In place of the latter there will be a peristyle 60 feet wide and 500 feet long, extending north and south and spanning the lagoon entrance by a grand arch. Ranged along this peristyle will be emblematic columns representing all of the states and territories. At the north end of the peristyle will be placed the Music Hall, which for a time it was thought would have to be put on the wooded island. It will measure 140 by 200 feet, and will have an auditorium large enough to seat 2,000 people with an orchestra of 75 pieces and a chorus of 300 persons.

Medusaline, a new composition designed as a substitute for brick and building stone, has been adopted for the sidewalks and driveways in the Exposition grounds. The committee on grounds and buildings granted the contract to the Medusaline Manufacturing Company of Chicago for the construction of 450,000 square feet of such sidewalks and driveways. The price is 6½ cents per square foot. The concrete composition to be used by the contractors is said to be as hard as perfect stone, and it is now thought probable that it will be used instead of staff for the exterior ornamentation of the Fine Arts Palace, and several other buildings.

"He is a Brick." The oldest bit of slang which can be traced to a historical origin is said to be, "He is a Brick." Plutarch in his "life" of Lycurgus, gives an account of the visit of an embassador from Epirus to the city of Sparta, who saw much to admire and praise. But he wondered greatly that Sparta was not a walled town and asked the explanation of its lack of defensive works. No answer was returned that day. Early the next morning, however—for the Spartans rose at dawn—the Epirote was awakened and conducted to the field of exercise outside the city, where the army of Sparta was drawn up in battle array. "There," said Lycurgus, "are the walls of Sparta, and every man is a brick."—*The Brickmaker.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

OAKLAND THEATRE.

The Theatre at Oakland is being erected on the corner of Fourteenth street and Broadway for Mr. Joseph Macdonough, from designs by Messrs. Mooser & Cuthbertson, Architects of this city.

The view and sketch plans show the general arrangement.

OLYMPIC CLUB BUILDING.

The Olympic Club Building is in course of erection on the northerly side of Post street between Mason and Taylor streets. The first story will be of stone, and above this pressed brick with Terra Cotta trimmings. The Corner-stone was lately laid by Mayor Sanderson.

The President is Mr. William Greer Harrison.

The Architect is Mr. H. A. Schulze.

HIGH SCHOOL, SAN BERNARDINO.

This building, which is now in course of erection consists of four stories, the lower one is to be occupied by workshop, boys and girls gymnasiums, bath-rooms, toilets, and heating and ventilating apparatus of the most effective description.

On the first floor is the main entrance hall, 34x64, with a spacious stairway in the centre giving access to each floor, and embraces also large hat and cloak rooms, hallway from rear entrance, assembly room 33x51, superintendents offices and store room and three recitation rooms 26x35. This floor is approached on the principal front by a bold flight of granite steps 14 feet wide which give access to a spacious vestibule having encaustic tile floor and paneled wainscoting to the walls. The teachers private rooms are placed on each side of the vestibule.

The second floor contains a stair hall of the same size as that below, together with assembly room 33x51, library 23x35, four recitation rooms 26x33, and boys and girls hat rooms and toilets.

The third floor contains in addition to the stair hall, an auditorium 44x79 with ante-rooms, also laboratory with supplies, and dark room and recitation room.

The basement story is 10 feet 8 inches clear height and each of the other stories are 15 feet 6 inches clear.

The interior is filled up and arranged in the most complete and perfect manner for carrying on the work of the school, drinking fountains are placed in each of the stair halls and the heating and thorough ventilation of every portion of the building is of the most perfect description.

The exterior walling will be built of brickwork on concrete foundations, the basement story faced with coursed rock faced ashlar, and the sills, lintels, belt courses and cornices, etc., will be of rock faced Ventura or Arizona stone.

The roofs will be strongly constructed and trussed, and will be covered with metallic shingles, the ventilators and roof of tower will be covered with tin, with the rolls and bosses formed of lead.

The building is being erected by contract, 51,195 dollars being about 1,000 dollars less than the estimate of the architect.

The architect is Mr. T. H. Goff of San Bernardino, who is also supervising the erection of the Insane Asylum for the city and county of San Bernardino, Cal.

ANCHORING BOLTS.

From a letter to the Troy Polytechnic some interesting particulars are quoted about the usefulness of various substances for anchoring bolts into stone. It was necessary, in the construction of an elevated railway, in a place where a line led over rock, to anchor the foundation by bolts to the ledge; and in view of the expense and other objectional qualities of sulphur and lead for this purpose, it was resolved to try whether cement could be made available. To test the question, fourteen holes were drilled in a ledge of limestone rock, all forty-two inches deep, and bolts, some three-quarters and some one inch, were set in the holes. Around four of the bolts sulphur was then poured, lead was put round four more, and Portland cement mixed neat around the remaining ones. Two weeks later the bolts were pulled by a powerful lever. Out of those run with sulphur, one was drawn out under a strain of 12,000 pounds. With the others the iron yielded before thesulphur gave way. Three of the bolts calked with lead also broke in place, one pulling out; but of those set in cement, one yielded slightly and then broke, while all the others broke in place, showing that Portland cement is not only cheaper for setting iron into stone, as well as less likely to corrode the iron, but is stronger and much more easily applied. This account reminds us, the journal referred to adds, of a little experience of our own, which has a certain interest. In the construction of a building where external anchors are used, some of the bolts, which were built through the walls, were set by a mistake of the maker, with the ends cut for wood screws, instead of being threaded for a nut. As the work was being hurried, and there was not time to wait for others, they were used, on the assurance of the maker that he could fit nuts to them. After the walls were ready for the anchors it was found that no machine was made that would tap an iron nut to fit a wood screw, and the manufacturer made nuts of babbitt metal, which were forced on the screws. They were rejected by the architect on account of the softness of the metal, and a bolt, with the nut, was tested at the Watertown arsenal, on the Emery testing machine, to determine the resistence of the nut. The bolt was pulled in one direction and the nut in the opposite one, and neither yielded until a force of 5,600 pounds had been applied, when the nut burst, the threads stripped and the bolt pulled out. The bolt was three-quarters of an inch, somewhat deeply cut, so that the resistance of the nut was about three-quarters of the strength of the bolt, and if it had been made thicker the iron would probably have yielded before the soft babbitt metal.—*The World's Progress.*

HIGH SCHOOL FOR CITY OF SAN BERNARDINO Cal:

T. H. GOFF. ARCHITECT. San Bernardino

THE · OLYMPIC · CLUB
· SAN · FRANCISCO ·

HENRY · A · SCHULZE · ARCHITECT.

"The MACDONOUGH."

Oakland

Mooser & Cuthbertson - Architects

THE DIFFERENT KINDS OF ASH.

The following inquiry is from the lumber buyer of a large manufacturing concern:

I have a limited knowledge of ash lumber, and in buying it am often unable to classify it with certainty.

1. Is there any way to distinguish absolutely between white, gray, brown and black ash plank? Newhall and Gray have different names, viz., white ash, red ash, green ash, blue ash and black, water or hoop ash.

2. Which of these are synonymous with gray and brown?

3. To which variety does calico ash belong?

4. Does eastern and western black ash differ in appearance or quality of lumber?

There seem to be so many slightly differing shades of color, and degrees of strength and elasticity, as to cause much diversity of opinion among those with whom I meet, and as I have little opportunity to become familiar with standing trees or with logs, I desire definite knowledge to guide in selection of plank.

5. Does selected gray, brown or black equal in strength and suitability for mechanical uses the average of first or forest growth white ash?

6. In what portions of the principal ash producing states can the toughest lumber of the different varieties be obtained?

If these questions can be suitably answered in your columns, kindly print the information at an early date, and greatly oblige

A NEW SUBSCRIBER.

When reduced to lumber there is no method known by which to "distinguish absolutely" between white, gray, brown and black ash. Botanists distinguish by the leaf, bark and fruit, but with these data for determination absent, the judgment is at fault. The white ash, however, is most easily determined from its light color, medium density and elasticity, and some experts even claim to judge almost the locality from which the tree came, by breaking a sliver between the fingers. The ash is a tree which, as a rule, prefers a low, rich, moist, but not wet, soil, with a rather heavy clay loam subsoil. It is quite tolerant of change of conditions, but suffers greatly in quality when growing on dry or limestone soil.

The white ash, as is well known, is the most valuable of the ash family, reaching a height sometimes of 120 feet, and a diameter of five feet. It is found from Canada to Florida, and as far west as the first tier of states west of the Mississippi river, but reaches its greatest and richest development in the Ohio river bottoms, including, in a general way, the southern parts of Ohio, Indiana and Illinois, and the bottom lands of western Tennessee and eastern Missouri and Arkansas. The terms white, red, green, blue, etc., are common designations, rarely accurate, frequently local, given to the different species, but which are often misleading, as the same term is applied to different species in different places. The white ash is so called from the fact that the bulk of the wood is a light yellow or cream color when fresh cut, turning to a pale brown on exposure, and the core or heart is small, often only three or four inches wide in a tree 30 inches in diameter.

The blue ash gets its name from the fact that the inner bark when soaked in water yields a dark blue dye. The wood is darker in color, generally a rich brown, heavier, more solid, and, as a rule, more brittle. It will stand nearly the same transverse strain, but breaks with a less splintered fracture than white. The blue ash is chiefly confined to the territory east of the Alleghanies, and though not as common nor as valuable as white ash, is much used for the same purposes. It is indistinguishable in lumber except by the darker color and greater weight and hardness. The blue ash, a medium sized tree growing on the upland and especially limestone soil, comes next to the white in quality and in extent of territory over which it is found. It is chiefly confined to the states west of New York and north of the Ohio river, but including Iowa and Missouri. It is the heaviest of the ashes, and from the character of the soil it prefers, is naturally quite brittle, but it has a good light yellow color and works well with a high polish in manufacture. The green ash is also a widely spread species, of equal value with the blue, and more elastic. It is supposed to take its name from the pale green color of the leaves, as it prefers a low, almost swampy, soil. It shrinks badly in drying, and is not a very durable wood, except when kept dry as in interior work.

The only other botanical species which has a well recognized name is the black or hoop ash, so called from the dark color of the heart wood. This term, however, is not distinguishing, as the blue and green species when exceptionally dark receive the same name. The wood of the black ash is readily split into thin layers, which are used for barrel hoops, and it is softer and lighter than the white. The color of the sap wood is so light that it is quite undistinguishable from the white ash. The tree is a small one, preferring low wet bottom lands and swamps.

Other kinds of wood called ash are the wafer ash, or hop tree, a small tree of little economic value, and the yellow ash, or yellow wood, gopher wood or shittim wood, a beautiful tree, but very scarce, found in Tennessee and the mountains of North Carolina and Kentucky. Its firm, strong-grained, yellow wood takes a beautiful polish and is very durable, but unfortunately it is so rare as to be almost impossible to procure. In fact, it is said that there are not a thousand trees in all the Alleghany and Blue Ridge ranges. The bark is smooth and light gray, and the leaves in shape resemble the beech, but are arranged on a leaf stalk like the ash. It grows as far north as Massachusetts, and a number of handsome specimens can be seen in and around Boston and Cambridge.

As has been said before, any grading based on color is misleading, is not based on any necessary differences in quality, and varies with different localities. The term gray or brown may be applied to a dark colored white ash growing on the upland, or to a specimen of the blue, green or black ash. Calico ash is a similar name used to designate those specimens of the white ash whose heart wood is variegated and of unusual size. Such specimens are often seen in the delta of the Mississippi or the bottom lands between Cairo and Vicksburg.

As a general rule when elasticity is the prime requisite, the selected white ash of medium weight and rather coarse quality is demanded, such as for light wagons or where the material must be reduced to the smallest size consisent with safety. For purposes where strength is required or initial resistance to flexion or indentation, the brown or black varieties are to be preferred, and where there is a generous margin of safety allowed between size of the finished article and the strain that will be put on it. The brown lumber also will, as a rule, resist weather the best, though the real cause is not to be found in the color but in the character of the wood depending almost entirely on the soil in which it grew. The "toughest" lumber, using that term to denote the most elastic, is found where the white ash reaches its most favorable development.

The relative value of northern and southern ash for various purposes has not yet been carefully investigated, and much remains to be done. In fact, little has yet been accomplished in this line in the investigation of any of the woods of this country, though it is a question of great importance to the manufacturing interests. Each kind of wood has its own special value, and both producer and consumer can work together to better advantage, when the qualities of the various species are known and recognized. The government is doing something from year to year under the able direction of Mr. Fernow, chief of the division of forestry. Many firms, however, and a number of the larger corporations, especially railroads, have been compelled to take up this work in their departments of tests, and consignments of lumber are sometimes rejected for causes which appear to the lumbermen quite insufficient. A year or two ago a large quantity of heavy timbers to be used in the Auditorium were rejected because they were short leaf yellow pine. Of course if the specifications called for long leaf and nothing else, the rejection was right, but scientific investigation shows that the practical difference between the two kinds is often very small, and in the instance under consideration the one would have been precisely as good as the other. The prejudice against the short leaf, however, was such that it had to go. In structures of wood, investigations will soon be possible as a result of the numerous experiments now being made, and the effect will be to make manufacturers more careful, and to give greater security to human life.—*Henry L. Tolman in the Northwestern Lumberman, December 26, 1891.*

The Illinois Board of World's Fair Commissioners has ordered specifications for the architectural reproduction in drawings of all the Illinois state institutions and public buildings, sixteen in number.

ARCHITECTURE—A WOMAN'S STUDY.

We take the following article from the "Architectural Review" published in 1870—by Samuel Sloan of Philadelphia.

We have ever been of opinion that the refined taste inherent in woman's very nature, most especially fits her for the æsthetic requirements of architectic study, and we will confess to some surprise that while the gentle sex is in quest of mental occupation, the charms which surround this art of ours should fail to attract them to inquire into its claims to attention, as a something worthy their application.

With such an impression we awaited the, to our mind, certain development of woman's evident destiny, and were not a little pleased to meet in the *Woman's Journal* with the following:

"Why do not some of our bright girls who graduate from High, and Norman Schools, and who are looking for a vocation, study Architecture? It is a profession that pays well, after it is thoroughly learned, and one in which women of a certain kind of talent might excel." * * *

There are many professional men who would no doubt give females an opportunity of making themselves proficient in drafting, and that they would answer their expectations, we feel that we can judge from what we have seen some accomplish. There is, in fact, no good reason why the delicate nicety of woman's hand, and the preceptive taste so peculiarly her own, should not be productive of admirable drawings and acceptable designs. In literature she has acquired a position which rivals that of man himself. In painting and in sculpture, she commands respect. In music she stands pre-eminent. In all the sciences which are said to complete a polite education, she is ever forward and not infrequently first. Then why should she not add Architecture, with all its lore of history, and its elegant accuracy of science, to her accomplishments? The day is already dawning which shall see woman greatly elevated above her too long existent inequality of mental position; and now that the other professions are gallantly opening ranks to receive her, it is not too soon for architects also to acknowledge her claims, and invite her to a trial of her ability in culling the choicest flowers of beauty to adorn the classic elegancies of design.

We do not propose, or even suppose that the gentler sex will ever assume the ruder and more masculine (so to speak) out-o'-door operations, connected with the practical department of our profession—not at all; but, we do think that in the arrangement of plans, in Domestic Architecture for instance, that woman is the best judge of the convenience and economy of dwellings, for she it is who is the most interested party, and even in the external appearance of our homes who so anxious for the picturesque and the pleasing as she who presides there.

A literary woman is never so intently particular in her work, as when with heartfelt affection she depicts the detailed beauties of the humblest cottage home. Does not this characteristic show that taste, the most natural and refined reigns in her bosom and sways her very imagination. What more is asked than the cultivation of this genuine art-love to make woman devoted to Architecture, with all its graces and attractions so winning, because so kindred to her mind?

By all means, then, let us offer her a liberal welcome, and we shall reap the grateful benefit in the expansion of that patronage we look for so ardently for our profession, and without which, with all its claims to the widest recognition, it will but live on slowly, patronized by the comparatively few, but scarcely recognized by the great majority.

Bellamy—"If the theories of socialism were adopted, sir, men would live as happily as children do now." Smith—"Yes; each one watching greedily to see that nobody else got a bigger apple."

"How's this, Dauber? You've painted Father Time with a mowing machine instead of a scythe." "That's all right. We artists of the modern school keep up with inventive progress."

Electricity Simplified—The Practice and Theory of Electricity, by T. O'Conor Sloane, E.M., Ph. D. Illustrated—Published by Norman W. Henley & Co., New York.

The work on Electricity is the plainest of any that has come under our knowledge. Every student of electricity should have one.

The book is to be had from Messrs. Osborn & Alexander, 401 Market street, San Francisco. We may present some chapters from this work in future numbers of our paper.

Practical Centring by Owen B. Maginnis, with illustrations—published by W. T. Comstock, New York, and for sale by Messrs. Osborn & Alexander, 401 Market street, San Francisco.

This is a book that should be in the hands of every builder and every workman in the trade.

The book treats of centring for all classes of stone, brick or wood work, and for scaffolding, and the cutting of rough or finished lumber for work of this description.

The work is so fully illustrated that we cannot well make extracts from its pages.

The Cosmopolitan with its usual complement of good things comes to us for January, 1892. Price $3.00 per year.

The Fortnightly Review, monthly, by the Leonard Scott Publication Co., 231 Broadway, New York. Price $4.50 per year.

This review is one of the essential periodicals of the present day. Twice every month the reader is supplied with the freshest thoughts of the world's great writers and thinkers.

Lippincott's Magazine comes to us for January, 1892. This popular magazine has been before the public for twenty-five years and has advanced with the requirements of the cultivated taste in literature to a first position. The stories represent the actual conditions of life, the authors being prominent in their special lines. The stories are complete in each number. J. B. Lippincott Co., Philadelphia. Price $3.00 per year.

The Timber Trades Journal, an English periodical devoted to the timber interests of the world, has opened a branch office at 136 Liberty street, New York. Our dealers in Pacific Coast woods may find it to their interest to communicate with said journal.

The Phrenological Journal for January, 1892, comes to us full of useful knowledge about the science of health and human nature. Price $1.50 per year. Fowler & Wells Co. publishers, 775 Broadway, New York.

We have received the first number of the *Pacific Builder*, a new monthly periodical devoted to the building interests of the Pacific Coast. It is published by May S. Purtelle, at Portland, Oregon. Price $1.00 per year. It starts out with a good healthy look, and we wish it success.

The Mexican Financier, published in New York, and simultaneously in the City of Mexico, by the Seeger & Guernsey Company, is a very useful paper to the trading public who may have business with the people of Mexico.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at Academy of Sciences Building.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

W. C. QUIMBY, Pres. O. BROOKS, Vice-Pres.
W. C. CROSETT, Sec. W. C. CROSETT, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST
E. M. GALLAGHER, Pres. H. G. JARMAN, Sec.

THE annual meeting of the Technical Society of the Pacific Coast, was held at the rooms in the Academy of Sciences Building, 819 Market street, on Friday, January 15th, for the purpose of electing the officers and directors for the ensuing year.

Reports of the officers were submitted, showing the transactions of the past year, and the President in his annual address reviewed the work of the Society.

The following officers were elected for the year 1892:—President—John Richards, Mech. Eng.; Vice-President—Luther Wagoner, Min. Eng.; Treasurer—Geo. F. Schild, Naval Arch.; Secretary—Otto Von Geldern, Civil Eng. Directors—H. C. Behr, Geo. W. Dickie, W. R. Eckart, C. E. Grunsky, and A. Schierholz.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held the 15th inst. at 408 California street. The President, Geo. H. Sanders presiding.

The vacant position of Secretary was filled by the election of H. T. Bestor.

A report on the Chapter Classes was received from Mr. Sanders, and free hand crayon drawings, in "black and white," were received and placed on the wall.

For the January competition, three "pen and ink" drawings were received.

A committee, consisting of Messrs. Sanders, Pissis, Everett, Gash and Cuthbertson, was appointed on Competitions of the Students Classes.

The drawings of these competitions will remain on exhibition at the head-quarters of the Chapter, 408 California street, and all Architects or persons interested in this work, are invited to inspect the same.

President Sanders read a paper on the Post Office Site as an Architectural problem, which was ordered printed in the California Architect, and copies forwarded to the daily press of San Francisco. This paper will be found in full in another column.

AT the expiration of each subscription the bill for the succeeding year is mailed, and we shall be pleased to renew the name on our subscription books. The price is three dollars per year, in advance.

From various sources for a long while past have come demands for a revision of the building laws of New York city, and an organized movement has now been begun to secure the passage of an amended law by the next legislature. In order to accomplish this a Board of Revision has been formed, composed of gentlemen named by the American Institute of Architects, the Architectural Iron Works Association, a carpenter and mason from the Mechanics' and Traders' Exchange, a representative of the Real Estate Owners' Association and of the Board of Fire Underwriters, the Superintendent of the Bureau of Buildings and the Counsel of the Fire Department. This board will meet twice a week, to hear the views of architects, builders, real estate owners and others interested in the subject, and will then endeavor to frame a law which shall meet all objections against the present one.—*Fire and Water.*

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in thi column, such as appear applicable to this section of the country.

ATTORNEY'S FEES OF OWNER IN LIEN CASE.—Where the owner of a building has been compelled to enforce liens, to which both he and the contractor were parties, he is entitled to set off against the contract price, not only the amount of the judgments recovered, but all that he had been compelled to pay to relieve his property from the liens, including his attorney's fees and costs.

Cavell v. Washburn, Supreme Court of California, 27 Pac. Rep. 859, (68C).

LIABILITY OF WIFE FOR CONTRACT OF HUSBAND.—Where a husband contracts for the erection of a house on his wife's separate property, the fact that the wife examined the plans for the building, watched the progress of the work, and personally and by letters urged the material-men to push on the work, are sufficient to sustain the verdict that the wife is liable to the mechanic's lien of the material-men. In such case it was proper to charge "that a husband cannot, by making a contract like this, charge his wife's property, unless it appears that the materials were furnished with her knowledge and consent." If she assented to the contract made by her husband in this respect, * * * if she knowingly received the goods, assented to the application of the goods to her property, she is bound by the contract.

Boney v. Thackara, Supreme Court of Pennsylvania, 22 At. Rep. 754, (123C).

PENALTY CLAUSE IN BUILDING CONTRACT.—A person named Kemper and one named Candon entered into a written contract whereby Candon agreed to build a wall, etc., or else at his election, to remove a certain house three feet, and put it in as good condition as it was before; and in such contracts the parties further stipulated as follows: "It is mutually agreed between said parties that a failure on the part of said Candon to perform these obligations shall entitle said Kemper to recover from him the sum of five hundred dollars as liquidated and ascertained damages for the breach of this contract." Candon elected not to build the wall, etc., and afterwards failed to remove the house. The cost of removing the house, and putting it in as good condition as it was before, would not have exceeded $100. When the parties made the contract, and stipulated for damages in case of breach, fixing the amount at $500, they could not have had in contemplation actual compensatory damages; and therefore the sum of $500 mentioned in such contract as liquidated and ascertained damages must be treated as a penalty, and not as liquidated damages, and therefore it cannot be enforced, and only actual damages can be recovered.

Candon v. Kemper, Supreme Court of Kansas, 27 Pac. Rep. 829, (200C).

SERVICE OF LIEN NOTICE ON WIFE.—A wife, who, in addition to her dower and homestead rights, has been awarded exclusive possession of a homestead pending a suit for divorce and alimony instituted by her, is a proper party to an action to enforce a mechanic's lien thereon, and where judgment by default has been obtained in such action against the husband alone by collusion between him and plaintiff, she may become a party, and contest the alleged lien.

Weston v. Weston, Supreme Court of Wisconsin, 49 N. 834, (867C).

LIEN FOR LUMBER FURNISHED TO RAILROAD CONTRACTOR.—Lumber sold to a subcontractor of a railway, for the erection of shanties for its employees and suitable stables for his teams, is not within the statute granting a lien for labor performed on material furnished in the construction, repair, and equipment of the railroad, and gives no right of action against the railway company.

Stewart Chute Lumber Co. v. Missouri Pac. Ry. Co., Supreme Court of Nebraska, 49 N. W. Rep. 769, (75).

BUSINESS MOSAICS.

The San Francisco Mineral Paint Co., the manufacturers of Royal Metallic Paint, an artificial stone coloring and mortar stain, have resumed operations with new machinery and are grinding their material to the finest possible limit that the latest improved machinery will permit. From people who have used it, and are judges of such material, it is pronounced to be the best in the market.

The following letter was received from N. & G. Taylor Co., importers and dealers in Tin Plate, Metals, Sheet Iron, Wire, etc.:

Philadelphia, January 6, 1892.

Editor of "CALIFORNIA ARCHITECT AND BUILDING NEWS."—We are very glad indeed to say that the Block Tin received by us from the Temescal mines we found equal to any tin we ever used. We used some of it in the manufacture of Solder, but the major portion was used in the manufacture of Bright Tin-plate.

It affords us great pleasure to say that we made Bright Tin-plate from Steel sheets made in Pennsylvania, Block Tin from the Temescal mines in California, and the work was done by men born, bred and raised in Philadelphia. If this is not American Tin-plate from a to z and will not satisfy those doubters who are endeavoring to create such an impression against the industry, we really don't believe they would be satisfied if they did all the work themselves.

To us the manufacture of Tin-plate is nothing new nor mysterious; we feel that we have understood the business for many years and that our position is quite different from most importers, in place of being bound to the sale of certain makers' brands and subject to their whims and wishes, we have had brands that we own, which we sold under the most positive guarantees offering absolute protection to the buyer, and we consider it good sound business judgment to prefer to make such plates here under our own supervision in place of having them made three thousand miles away according to our instructions.

In addition to making Bright Tin-plate we are making Taylor's Guaranteed Roofing Plates, which are known the country over, they are:—Taylor "Old Style", "The Taylor Roofing Tin," "Taylor's Columbia." All of the finest quality, the value regulated by the quantity and quality of the coating.

"He who would bring back the wealth of the Indies, must take with him the wealth of the Indies." Which means that you can't have the value without the cost. You get just what you pay for. The only question is what grade you will buy. Of somethings the cheapest is the best; but of important things, the best is the cheapest.

Removal—John A. Roebling's Sons Co., manufacturers of Wire, Wire Rope, Sash Cord, Fire Proof Wire Lathing, Bare and Insulated Electric Wires for all purposes, have removed from their old quarters, No. 8 California and No. 14 Drumm streets, to their new and commodious building No. 25 and 27 Fremont street, in the middle of the block between Market and Mission streets.

This firm has lately furnished for the new Crocker building, corner of Market and Post streets, quite a quantity of the celebrated Roebling Fire Proof Stiffened Wire Lathing.

The Jos. Dixon Crucible Co., Jersey City, N. J., makes a specialty of Graphite Compositions. In looking over the list of preparations where graphite can be used with success, one can see many uses where this material is superior to anything heretofore brought forward. Being of itself practically indestructible it forms the resisting qualities of a paint where heat is present, also as a resistant to friction in lubricants for heavy machinery.

For Crucibles it has long been known. The lead pencils made by this company have won by their superior excellence, the first position for business or artists use.

We call special attention to Suplement and advertisement of the Colton Marble Co., showing the grand staircase in the Academy of Sciences Building in this city. Mr. John C. Pelton, Jr., Manager, Office, Flood Building, Room 42.

Young Husband—"Well, my dear, did you succeed in finding a stove to suit you?" Young wife—"Indeed, I did. Such good luck! I got a stove that will never cost us a cent for coal. The dealer said it was a self-feeder."

The well known firm of Smith and Trowbridge, "West Coast Wire Works," have dissolved partnership, Mr. James Trowbridge purchasing the interest of Mr. Smith.

The souvenir from Messrs. Merchant & Co., for the year 1892, is received. The illustrations are unique as is usual with this firm. The first illustration shows the earth with Chicago as the central point; long lines of passenger steamships from all parts of the world are centering towards Chicago to inspect the manufactures of Merchant & Co. Plate No. 2 shows the World's Fair grounds with the metal tower of this firm. This tower is to be 4,000 feet high and topped out as a "Star Ventilator", and is proposed to be used to ventilate the building at the World's Fair. The different nations are seen concentrating in all manner of conveyances towards this grand exhibit.

Plate No. 4 shows the method of inspecting the roofing plates.

Plate No. 7 shows the top of the "Star Ventilator" over the 4,000 foot tower, where people of all nations are viewing the wonderful city, and country around.

Plate No. 8 shows a grotto cooled to an agreeable temperature by the celebrated "Star Ventilator".

Plate No. 9 shows a close room where most of the inmates have fainted, and where a Brownie is about to place in the ceiling a "Star Ventilator".

Plate No. 10 shows the same room with the contented and pleased look of the inmates after the ventilator is placed in position.

Plate No. 12 shows a large sheet metal retort which is being viewed with consternation by the Russian, it being so superior to anything heretofore manufactured, that the Russian sheet metal is likely to be superseded in the market.

Plate No. 20 shows Miss Columbia placing the crown of honor upon the head of Messrs. Merchant & Co's. Brownie.

Write your advertisements clearly and truthfully, using sufficient space to show what you are prepared to furnish, have them printed continuously, then if you have anything that anybody wants, your returns will be satisfactory.

The Marshall Improved Window Furniture Company last week completed their contract for three hundred windows and sixty wash-stand doors on the Fair building, cor. Pacific and Front streets.

F. Sims, one of the firm of Sims & Morris, Western Iron Works of this city, dipped 40,000 shingles in 77 gallons of Carbolineum Avenarius. These shingles were dipped for two minutes without breaking bundles and when taken out were found to have been thoroughly penetrated and fully saturated with the preparation of Carbolineum.

The J. L. Mott Iron Works are continually adding to their already large number of articles for plumbers use. This firm has always been the manufacturer of the most perfect appliances characterized by beauty and strength, and the sanitary needs of the day in such articles are present in a marked degree. The arrangements for attachment are so perfect and gas tight, that no sewer emanations find their way into the house by this means.

Bath rooms, lavatory sinks and toilet rooms, when fitted with their appliances can be thoroughly cleansed all around the same, leaving no place where refuse or dirt can find a lodgement, as all such places are by their method unmasked.

The Mott Company has for years followed the plan of making all their articles in such a manner as to bear out their superiority over others in the market. By this means they have a standard value that at once recommends them to the favor of any person who has a knowledge of their quality. The latest productions from this firm are fully up to all the advanced sanitary questions of the times.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 29th day of January, 1892, for furnishing and delivering at Freight Depot in city where required, Safes for the U. S. Government Building at the following cities:

Burlington, Vt.; Evansville, Ind.; Grand Rapids, Mich.; Macon, Ga.; New Orleans, La.; New York, N. Y.; Oswego, N. Y.; Philadelphia, Pa.; Sandusky, Ohio; Wheeling, W. Va. and Winona, Minn., in accordance with the specification, copies of which may be had at this office.

Bids for one or more of the safes must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the bid.

The Department will reject all bids received after the time fixed for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for safes for U. S. Government Buildings" and addressed to

W. J. EDBROOKE,
December 31, 1891. Supervising Architect.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 5th day of February 1892, for all the labor and materials required for the trench excavation, concrete and stone foundations, stone masonry, cut stone brick work of the basement and area walls, first floor and basement beams and girders, basement columns, etc., for the U. S. Court House, Custom House and Post Office at Omaha, Nebraska, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal.

The Department will reject all bids received after the time herein stated for opening the same; also bids which do not comply strictly with all the requirements of this invitation.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Trench Excavations, Basement and Area Walls, Iron Beams, Columns, etc., for the U. S. Court House, Custom House and Post Office at Omaha, Nebraska," and addressed to,

W. J. EDBROOKE,
January 8, 1892. Supervising Architect.

CITY BUILDING NEWS.

Battery near Pacific. All cast iron work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, O'Connell & Lewis; cost, $2,563; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Carpenter and stair work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, Smilie Bros.; cost, $20,837; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Excavating, brickwork, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, John McCarthy; cost, $22,150; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Painting, graining, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. M. Sindlinger; cost, $1,595; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent of work done; balance 35 days.

Battery near Pacific. Sandstone, pier, caps, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. P. M. Phillips; cost, $2,205; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Tinsmith work, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. C. Roberts; cost, $2,686; signed, Nov. 17; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days;

Battery near Pacific. Wood and iron, lathing; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Thos. Mannix; cost, $2,345; signed, Nov. 21; filed, Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Battery near Pacific. Wrought iron work; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, Biglow & Little; cost, $5,432; signed, Nov. 17; filed Dec. 9; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Broderick near Ridley. To build; owner, J. Caley; architect, W. H. Lillie; contractors, Harrington & Johnson; bond, $2,500; cost, $4,670; signed, Dec. 17; filed, Dec. 18; payments, $700, frame up; $700, enclosed; $700, brown coated; $700, standing finish on; $702.50, completed; $1,167.50; 35 days.

Castro near 23rd. To build; owner, Joseph Harris; architect, M. J. Welsh; contractor, F. C. Kleebauer; bond, $883.75; cost, $3,335; signed, Dec. 11; filed, Dec. 11; payments, $883,75, frame up; $883.75, brown coated; $883.75, completed, $883.75, 35 days.

De Long near Frederick. To build; owner, C. Lehnhardt; architects, John & Balczynski; contractor, E. L. Hansen; cost, $2,940; signed, Dec. 28; filed, Dec. 31; payments, $700, frame up; $800, brown coated; $700, completed; $740, 35 days.

Dolores near Cumberland. To build; owner, Geo. Walcom; architect, R. H. White; contractor, Rob't Currie; bond, $965; cost, $3,485; signed, Dec. 22; filed, Dec. 28; payments, $720, frame up; $720, ready for brown coat; $720, standing finish on; $720, completed; $965, 35 days.

Elgin Park near Ridley. Alterations and additions; owner, Carlo Oliva; architect, A. J. Barnett; contractor, B. Antonelli; bond, $900; cost, $1,495; signed, Dec. 5; filed, Dec. 5; payments, $500, when house mayers appliances are all removed; $620, completed; $375, 35 days.

Elizabeth near Castro. To build; owner, C. B. Van De Mark; architect, Edward Burns; contractor, Jas. Campbell; cost, $2,850; signed, Dec. 1; filed, Dec. 5; payments, $712.50; frame up; $712.50, brown coated; $712.50, completed; $712.50, 35 days.

Ellis near Buchanan. To build; owner, Winnie Lafferty; contractor, S. T. Crawford; cost, $6,000; signed, Dec. 23; filed, Dec. 28; payments, $1,200, frame up and roof boards on; $1,800, brown coated and enclosed; $1,950, completed; $1,050, 35 days.

Filbert and Dupont. Plastering and lathing; owner, Rev. R. De Carolis; architect; Chas. J. Devlin; contractor, Martin Carrick; cost, $1,100; signed, Dec. 3; filed, Dec. 5; payments, $400, brown coated; $425, completed; $275, 35 days.

Filbert bet. Fillmore and Steiner. To build; owner, J. E. Habergarten; contractor, L. B. Schmid; cost, $2,000; signed, Dec. 22; filed, Dec. 26; payments, $1,000, brown coated; $500, completed; $500, 35 days.

Franklin near Clay. To build; owner, A. P. Hotaling, Jr.; architects, Kenitzer & Kollofrath; contractor, Adam Miller; cost, $15,105; signed, Dec. 14; filed, Dec. 24; payments, $2,000, frame up; $2,500, enclosed and roof completed; $2,000, brown coated; $3,350, woodwork completed and ready to paint; $1,500, completed; $3,750, 35 days.

Geary Street; No. 623. Plumbing and gas-fitting; owner, R. N. Vance; contractor, Jas. Broad; cost, $1,500; signed, Dec. 28; filed, Dec. 28; payments, 75 per cent. of the value of work done on 1st day of each month; balance 35 days.

Geary near Buchanan. To build; owner, C. C. Butter; architects, Shea & Shea; contractors, E. C. Worden & Son; cost, $12,365; signed, Dec. 9; filed, Dec. 16; payments, $1,545, rough frame up; $1,545, rustic on; $1,545, partitions set and outside finish on; $1,546, brown coated; $1,546, white coated; $1,546, completed; $3,092, 35 days.

Geary and Leavenworth. To build; owners, Michalitschke Bros.; architects, John & Balczynski; contractors, Richardson & Gale; cost, $12,000; signed, Dec. 12; filed, Dec. 12; payments, 75 per cent. as work progresses; balance 35 days.

Geary and Polk. Painting, graining and natural woodwork; owner, David T. Pierce; architects, R. H. & R. White; contractors, Smith & Duryea; cost, $1,900; signed, Dec. 10; filed, Dec. 11; payments, 1st day of each month 75 per cent. of value of work done; balance 35 days.

Gough and Broadway. Carpenter work; owner, D. F. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractor, A. Jackson; cost, $27,146; signed, Dec. 2; filed, Dec. 7; payments, $2,000, foundations in; $3,000, frame up; $4,000, ready for plaster; $4,000, plastered; $4,000, ready for painter; $3,358, completed; $6,787, 35 days.

Gough and Broadway. Painting; owner, D. F. Walker, Agent of Althea Walker; architects, Smith & Freeman; contractor, Gus. V. Daniels; cost, $1,794; signed, Dec. 1; filed, Dec. 7; payments, $300, house primed; $500, inside and outside has two coats; $515, completed; $449, 35 days.

Gough and Broadway. Plumbing; owner, D. F. Walker, Agent of Althea Walker; architects, Smith and Freeman; contractors, Dudley Bros.; cost, $1,297; signed, Dec. 2; filed, Dec. 7; payments, $1,000, rough work done; $850, completed; $847, 35 days.

Grove and Baker. To build; owners, J. Arguello and wife; architects, Martens & Coffey; contractor, W. W. Ackerson; bond, $2,500; cost, $13,865; signed, Dec. 22; filed, Dec. 28; payments, $2,000, frame up; $2,000, enclosed and roofed; $2,000, brown coated; $2,000, white coated; $2,395, completed; $3,470, 35 days.

Haight Street, Nos. 436 and 438. Alterations and additions; owner, A. Sandell; contractors, Mullins and McGowan; bond, $775; cost, $3,100; signed, Dec. 14; filed, Dec. 22; payments, $388, house raised and brickwork done; $387, framed; $775, rough plastered; $775, completed; $775, 35 days.

Jackson near Baker. Carpenter work; owner, E. T. Howes; architects, Smith & Freeman; contractor, John G. Adams; cost, $5,600; signed, Dec. 23; filed, Dec. 28; payments, $1,050, frame up; $1,050, ready for plastering; $1,050, brown coated; $1,050, completed; $1,400, 35 days.

Jackson and Laguna. Cabinet work; owner, A. Schwabacher; architects, Percy and Hamilton; contractor, F. W. Kreling; cost, $8,890; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Carpenter and mill work; owner, A. Schwabacher; architects, Percy and Hamilton; contractors, Farrell & Bell; cost, $14,588; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of value of work done; balance 35 days.

Jackson and Laguna. Concrete work; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $8,200; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Plumbing and gas-fitting; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, Duffey Bros.; cost, $3,925; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Ornamental and plain plastering; owner, A. Schwabacher; architects, Percy and Hamilton; contractor, Henry Fisher; cost, $2,235; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Jackson and Laguna. Painting, varnishing, etc.; owner, A. Schwabacher; architects, Percy & Hamilton; contractors, M. J. & J. J. Donovan; cost, $1,425; signed, Dec. 15; filed, Dec. 21; payments, 1st Saturday of each month, 75 per cent. of work done; balance 35 days.

Langton Street, No. 125. To build; owner, Rob't J. Young; contractor, A. G. Martin; bond, $500; cost, $2,400; signed, Dec. 3; filed, Dec. 8; payments, 75 per cent. at end of every two weeks as work progresses; balance 35 days.

Leavenworth near Sacramento. To build; owner, G. D. Mayle; architects, John & Balczynski; contractor, Wm. Plum; cost, $6,490; signed, Dec. 9; filed, Dec. 10; payments, $1,200, frame up; $1,200, partitions set; $1,300, white coated; $1,300, completed; $1,390, 35 days.

Market St.—Palace Hotel. Furniture for writing and reading room; owners, Sharon Estate; architect, A. P. Brown; contractors, West Coast Furniture Co.; cost, $1,552; signed, Dec. 3; filed, Dec. 12; payments, $1,552, completed and accepted.

Market St.—Palace Hotel. Ventilating shafts in courts; owners, Sharon Estate; architect, A. Page Brown; contractors, W. W. Montague & Co.; cost, $1,725; signed, Dec. 23; filed, Dec. 24; payments, 75 per cent. completed; 25 per cent. 35 days.

Market, Post and Montgomery. Show and counter cases; owners, Geo. C. Shreve & Co.; architect, A. P. Brown; contractors, W. B. & B. Smith; cost, $18,500; signed, Dec. 4; filed, Dec. 12; payments, 40 per cent. upon shipment of goods from N. Y., 60 per cent. upon acceptance.

Market, Post and Montgomery. Cartan, pierre and plaster ornaments, owners, Geo. C. Shreve & Co.; architect, A. P. Brown; contractor, Henri L. Bouche; cost, $3,250; signed, Nov. 20; filed, Dec. 12; payments, 60 per cent. when shipments are delivered from N. Y., 40 per cent. upon acceptance.

McAllister and Jones. Decorative painting; owners; Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Moretti & Trezzini; cost, $3,920; signed, Dec. 1; filed, Dec. 17; payments, 1st and 15th day of each month 75 per cent. of value of work done; balance 35 days.

McAllister and Jones. Mosaic marble floors; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Chatain & Ghetti; cost, $1,455; signed, Dec. 1; filed, Dec. 17; payments, 1st and 15th day of each month 75 per cent. of value of work done; balance 35 days.

McAllister and Jones. Mantels and panelled ceilings; owners, Hibernia S. & L. Society; architects, Pissis and Moore; contractors, Fink & Schindler; cost, $6,388; signed, Dec. 1; filed, Dec. 5; payments, 75 per cent. as work progresses on 1st and 15th day of each month; balance 35 days.

Sacramento and Montgomery. Painting, Glazing, etc.; Pacific Life Ins. Co.; architects, Wright & Sanders; contractors, Geo. J. Smith & Sons; cost, $5,546; signed, Dec. 8; filed Dec. 11; payments, 75 per cent. as work progresses; balance 35 days.

Steiner and Ellis. To build; owners, T. F. Misgill and wife; contractors, Petterson & Person; bond, $400; cost, $5,236; signed, Dec. 8; filed, Dec. 10; payments, $1,000, frame up; $1,400, brown coated; $1,300, completed; $1,336, 35 days.

Tehama Street, Nos. 353 to 357. Carpenter work; owner, J. Spaulding; architects, Shea & Shea; contractor, A. C. Hussey; cost, $1,500; signed, Dec. 16; filed, Dec. 18; payments, 75 per cent. as work progresses; balance 35 days.

Twelfth Ave. near "M". To build; owner, Chas. H. Knus; contractors, Parker & Bane; cost $1,400; signed, Nov. 30; filed, Dec. 7; payments, $300, enclosed; $450, brown coated; $400, completed; $250, 35 days.

Twenty-fifth and Capp. To build; owner, Michael Curran; architect, W. H. Bayless; contractors, Doyle & Son; bond, $6,000; cost, $12,000; signed, Dec. 4; filed, Dec. 5; payments, 75 per cent. as work progresses on 5th day of each month; balance 35 days.

Vallejo near Buchanan. To build; owner, Bertha Cellarius; architects, Townsend & Wynken; contractor, J. W. Wissinger; cost, $7,875; signed, Dec. 18; filed, Dec. 22; payments, $905, 1st floor beams are on; $1,000, rough floors laid; $1,500, brown coated; $1,000, white coated; $1,500, completed; $1,970, 35 days.

Waller near Masonic Ave. To build; owner, Mary J. Nachtigall; architect, N. A. Comstock; contractor, Chas. Kinsman; bond, $2,500; cost, $5,500; signed, Dec. 2; filed, Dec. 10; payments, $1,375, frame up; $1,375, brown coated; $1,375, completed; $1,375, 35 days.

Washington near Walnut. To build; owner, W. O. Ludovici; architect, Wm. Curlett; contractor, Wm. Linden; cost, $7,400; signed, Dec. 7; filed, Dec. 8; payments, $3,000, roof on; $1,512.50, brown coated; $1,000, inside finish on and doors hung; $1,887.50, 35 days.

ALAMEDA COUNTY.

Bella Vista near 11th Ave., Oakland. To build; owner, E. S. Chapman; contractors, A. W. Pattiani & Co.; cost, $5,000; signed, Dec. 16; filed, Dec. 17; payments, $1,350, rustic and roof shingles on and chimneys built; $1,250, window frames set, brown mortar on and exterior primed; $1,150, completed; $1,250, 35 days.

Blake Street near Shattuck Ave. Berkeley; To build; owner, C. A. Briggs; contractors, Cheney & Baum; cost, $1,750; signed, Dec. 12; filed, Dec. 12; payments, ¼, enclosed; ¼, brown mortar on; ¼, completed; ¼, 30 days.

Broadway and 14th Streets, Oakland. Concrete arches; owner, Jos. Macdonough; architects, Mooser & Cuthbertson; contractors, Gray Bros.; cost, $3,700; signed, Dec. 14; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance, 25 per cent., 35 days.

Broadway and 14th Streets, Oakland. Gas work; owner, Jos. Macdonough; architects, Mooser & Cuthbertson; contractor, T. H. Andrews; cost, $8,000; signed, Dec. 5; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance, 25 per cent., 35 days.

Broadway and 14th Streets, Oakland. Sandstone; owner, Jos. Macdonough; architects, Mooser & Cuthbertson; contractor, David O'Neil; cost, $1,500; signed, Nov. 30; filed, Dec. 23; payments, 75 per cent. of the value of work done; balance 35 days.

Carrison Tract. To build; owner, A. H. Yeazell; contractor, H. J. Goetzman; cost, $2,050; signed, Oct. 30; filed, Dec. 14; payments, one sorrel horse on date of said contract at agreed price of $300; balance of said $2,050, to be paid as follows: $25, completed, and $25, 30 days, and so on, $20 in each 30 days, until entire sum of $2,050, has been paid.

Central Ave. near Lafayette, Alameda. To build; owner, E. A. Fischer; architect, Chas. S. Shaner; contractors, J. E. Henderlong Bros.; cost, $4,430; signed, Dec. 24; filed, Dec. 29; payments, $832.50, rough frame up and rafters on; $830, enclosed, rustic on and window frames in; $830, brown mortar on; $830 plastering and all woodwork done; $1,107, 36 days.

Channing Way Dana, Berkeley. To build; owners, D. W. & M. Parkhurst; contractors, A. W. Pattiani & Co.; cost, $7,750; signed, Nov. 30; filed, Dec. 5; payments, $2,500, rustic and roof shingles on and chimney built; $1,750, window frames set, brown mortar on and exterior primed; $1,500, completed; $2,000, 35 days.

Delaware Street near Shattuck. To build; owner, Mary Holden; contractor, Chas. H. Thrane; cost, $1,630; signed, Dec. 12; filed, Dec. 14; payments, $543.33, frame up, enclosed and roof on; $543.33, brown mortar on; $543.33, 35 days.

Felton and Herzog Streets, Gd. Gt. To build; owners, John A. Carson and wife; contractor, H. F. H. Brown; cost, $1,630; signed, Dec. 23; filed, Dec. 24; payments, $543.25, roof on and outside completed; $543.25, completed; $543.25, 35 days.

Grand Street near San Jose Ave., Alameda. To build; owners, Nettie R. & E. B. De Golia; contractors, A. W. Pattiani & Co.; cost, $4,356; signed, Dec. 4; filed, Dec. 7; payments, $1,158, rustic and roof shingles on and chimney built; $1,158, window frames set, brown mortar on, etc.; $840, completed; $1,100, 35 days.

Linda Vista Terrace, Oakland. To build; owner, E. D. Ormsby; architect, J. Conati; contractor, Jacob Steinborgh; cost, $8,460; signed, Dec. 17; filed, Dec. 19; payments, ¼, frame up and rustic on; ¼, first coat of plaster is on; ¼, ready for last coat of paint; ¼, 35 days.

Lot 19, block 726. To build; owner, Colombo Raffo; contractor, Frank C. Bignami, cost, $2,906; signed, Nov. 5; filed, Dec. 8; payments, $960, frame up; $975, one coat plaster on; $971, 35 days.

Myrtle near 12th St., Oakland. To build; owner, F. H. Reuning; architects, Percy & Hamilton; contractors, Cornelius & Reed; cost, $2,800; signed, Dec. 26; filed, Dec. 27; payments, ¼, frame up and rustic on; ¼, first coat plaster on; ¼, ready for first coat paint; ¼, 35 days.

Park Ave. near San Jose. Alameda. Alterations; owner, O. E. Derby; architect, A. R. Denke, contractor, Geo. Kueppler; cost, $925; signed, Dec. 15; filed, Dec. 15; payment, $300, building is covered in; $300, completed; $325, 30 days.

San Pablo Ave. near 16th St., Oakland. Brickwood in extension building; owner, W. Hall; architects, J. J. & T. D. Newsom; contractors, Remillard Brick Co.; cost, $1,555; signed, Dec. 17; filed, Dec. 18; payments, 75 per cent. of the value of work done and materials furnished to be paid on 2nd and 16th of each month, and the remaining 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. All plate and glass work in store fronts; owner, Winslow Hall; architects, J. J. & T. D. Newson; contractors, L. & H. Cobbledick; cost, $2,300; signed, Dec. 10; filed, Dec. 11; payments, 75 per cent. of work done and materials furnished on 1st and 15th of each month; balance 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Plumbing, etc., owners; J. C. & E. Coleman; architects, J. J. & T. D. Newson; contractors, Wm. S. Snook & Son; cost, $1,450; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Painting; owners, J. C. & E. Coleman; architects, J. J. & T. D. Newsom; contractors, Doody & Hooley; cost, $1,967; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 25 per cent., 35 days.

San Pablo Ave. near 16th St., Oakland. Brick, carpenter, plastering, etc.; owners, J. C. & E. Coleman; architects, J. J. & T. D. Newsom; contractor, Winslow Hall; cost, $12,175; signed, Dec. 9; filed, Dec. 10; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 25 per cent., 35 days.

Suburban Tract —— lot 14, block A. To build; owner, Rob't. A. Barker; contractor, J. J. Rose; cost, $1,650; signed, Dec. 5; filed Dec. 7; payments, first payment, house up and enclosed; second, house completed; third, 35 days.

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OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

VOLUME XIII. FEBRUARY 20th, 1892. NUMBER 2.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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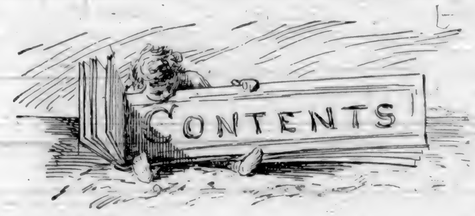

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THE Competative designs for the California State Building at the World's Fair, have been submitted and placed on exhibition

What struck us most in viewing the wealth of creative ability, brains and time exhibited at the rooms of the California World's Fair Commission was the prodigal waste of time, money and vital force therein shown.

Twenty-nine different designs are here shown for a $75,000 building, at least half of which show a creditable amount of ability and worth.

Nearly all have elaborately wrought and colored perspectives and some of very large size, involving an incommensurate expenditure of time and money leaving out the before mentioned vital force.

An unwritten law of the profession should be that members going into competition would not take advantage of their superior wealth in money or even of their superior wealth of time to get an unfair advantage over those who are lacking in these, but leave the decision to a companion under uniform conditions—which conditions would be a sketch only sufficient to elucidate the points of the plan but no meretricious accessories to mistake the facts and lead the judges to be carried away beyond the actual facts or to be influenced by sympathy that one of the competitors, poor fellow, has gone to a tremendous expense and therefore we ought to do something for him.

By the evidences of fierce competition exemplified in this contest, we are surely on a no higher plane than the lawyer whose business it is to bias a judge or jury by anything no matter how dishonest or improper.

We would like to see in the future, owners of honesty, who desire competition, set their face against this unnecessary waste which really instead of helping them to a decision, confuses them with a multitudinous and elaborate exposition of detail and prettiness.

The moral method seems to be to present only a slight sketch—with as little expenditure of life as possible, sufficient to give an idea to the owner of the possibilities of the design.

WORLD'S FAIR NOTES.

A Proposed Palace of Pure Silver.

The *San Francisco Chronicle* says:—A resident of West Fourteenth street, New York, has made the most novel and original suggestion on record for an interesting exhibit at the World's Fair. In a letter to Secretary Foster to-day he says: "I wish to point out to you that you have in your power, with the consent of Congress, to construct the most beautiful and magnificent, as well as the most valuable, exhibit the world ever saw. I allude to building a palace of silver, constructed of the silver now in bullion and coin in the Government's vaults at the various depositories. If the Government could get permission from Congress to recast 15,000 tons of it into slabs of say 600 pounds and one inch thick. This would give 600,000 superficial feet, out of which could be built the most beautiful structure the world has ever seen. It would build a structure 400 feet by 300, with a tower 300 feet high, on which could be placed an American eagle with wings of 100 feet spread. A silver palace worth $100,000,000 would be an attraction that would draw millions of people who always want to see something new and grand. Not over $1,000,000 need be expended in the construction of such a palace, which could be guarded by the army."

SAWING HICKORY AND ASH FOR CARRIAGE WORK.

By Fitz.

THE scarcity of good timber and the well-know fact that for carriage work the situation of the grain layers has a marked influence upon the durability of the finished vehicle, makes it of the utmost importance that the plank be cut in a manner that will prove the most profitable. Until within a comparatively few years, the expense of sawing, except in the old method of cutting through and through, cutting plank as shown by the quarter section, Fig. 1, was so great as to make it unprofitable to cut up in any other way. By

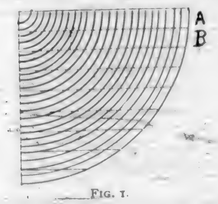


FIG. 1.

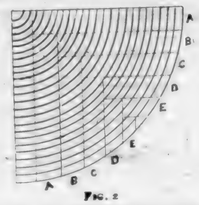


FIG. 2.

this method the center planks, *A* and *B*, were the only ones in which the grains run in the general direction desired, but even these were defective, particularly plank *B*, the center, the toughest part of the wood, was unfit for side or spring bars, unless the thickness was such that they could be cut edgewise instead of on the flat of the plank. Each succeeding plank after *B* grew less and less valuable, compelling the use of bars with the grain in the wrong direction, or causing great waste in timber and in time in cutting the various pieces; then, too, there is much greater loss from warping and springing than there would be if the grains run in a different direction. The various faults combined caused, in the aggregate, a loss of at least 50 per cent. in the quantity of suitable plank for first-class carriage work.

The improvement in saw mill machinery has made it possible to perform work which could not have been done with the old-style gate saw, not only as to the sawing itself, but also in the handling.

Logs are now quarter-sawed as cheaply as they were planked before the day of improved machinery. This quarter-sawing first came into demand to meet the requirements of architects and furniture manufacturers, for oak to be worked in a manner that would place the grain in a most desirable position for showing its beauty. Since then other timbers have been quarter-sawed for other purposes where increased strength was required. The machinery, therefore, for quarter-sawing is very complete, and there is nothing to prevent carriage makers having quarter-sawed timber. This is important, particularly for ash and hickory, not only for the best results as to the location of grain, but also as a check to the waste.

There are various methods of quarter-sawing, and it matters little which is adopted so far as cost is concerned; it

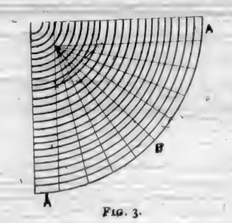


FIG. 3.

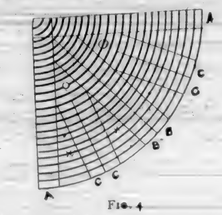


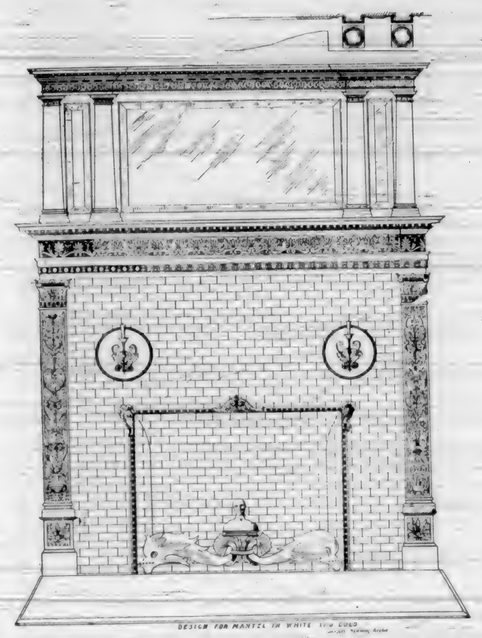
FIG. 4.

follows, therefore, that the method which will give the best result as to position of grains, and reduce the loss to the lowest figure, is one that should be adopted. Fig. 2 shows a very common method. One which is something of an improvement on the old plan as shown by Fig. 1, but it does not give as good a result, as too great a part of log is improperly cut. The planks *A A* are the only ones that are perfect. *B B* answers fairly well, while in *C C* the angle of the grain impairs the stiffness of the cut strips, making them of doubtful value. The trouble increases with *D D*, while *E E* and the triangle between them are unsuited to carriage work. In fact, about one-fifth of the entire log is wasted, or rather is unsuited to the principal uses for carriages, such as shafts, side bars, and spring bars. It can be used for axle beds, perches, head-blocks, etc., but is no better for these uses than if cut in proper form.

Fig. 3 illustrates another method. The first cut planks, *A A*, are in all respects the same as the first cuts of Fig. 2. The balance is cut into triangular pieces, the saw kerf radiating from a common center. By this method planks are secured with the grains in proper position to work to the best advantage. The waste at the center may be avoided by cutting off the point on the line *X X*, or by first splitting on line and then removing the triangles. The uneven thickness may be urged as an objection to this method of sawing, but it is much less than it appears, as bars of all kinds are required of different thicknesses. If care is taken in marking out, the loss will be very light. The main objection is the loss that results of a portion of the finest timber in the log, at the triangle, after the first planks are cut.

The plan of sawing as shown by Fig. 4 is without doubt the most desirable, giving as it does so many planks of uniform thickness, and having the grain in the proper position. In this the first cut planks, *A A*, are similar to those of Figs. 1 and 2. These being removed, the triangles between *A* and *B* are cut away and planks *B B* sawed. These have the grain precisely in the same position of that in *A A*, the planks, however, being narrower. A little waste occurs in cutting these at the beveled edges, but a careful workman can reduce it to the merest trifle. These being cut, the triangles *O O* are cut away and the balance is cut to give planks *C C*. These, though narrow, have the grain in the correct position. The only pieces that are wasteful are the four marked *X* and the two marked *O*, but none of these are all waste. The two marked *O* are large enough to get a good full bar out of each, with the grain in proper position. Those marked *X* will give one, if not two each, leaving very little waste. If the log cut this way is small there will be but one plank instead of the two indicated by *C*, but even in this case the loss is slight, and every plank is in shape to cut to the best advantage and give the best results.

In some sections, the old saw mill, fed by the little stream in the spring of the year, with its gate and mulay saw, is the most accessible, and because of that very much valuable timber is cut to waste. It would be far more profitable to sell the timber in the log than to saw it into unmarketable plank. Care in this respect and in sawing would go far towards removing the apprehension of a scarcity of hickory and ash timber, beside making that in the market far more valuable to the users.—"*We take the foregoing from the "Wood Worker" and which originally appeared in the "Blacksmith and Wheelwright".*


DESIGN FOR MANTEL IN WHITE ENAMELED BRICK AND GOLD

The Mantel here shown is built of white enameled brick—and the ornaments worked up in gold. Designed by Samnel Newsom, architect.

ELECTRICITY SIMPLIFIED.

THE ETHER—ELECTRICITY.

A recent work from which we reprint the first Chapter.

"There are in nature certain mysteries, if such a name does not appear too poetical, which have never been solved and may remain so for all future generations. The conservative scientist is apt to include among such things gravitation, electricity, and perhaps light. To explain the phenomena of light, an almost inconceivable entity termed the luminiferous ether has had to be invented. By assuming such a thing to exist and to be endowed with almost inconceivable properties, light is explained and its phenomena are brought into the domain of mathematics. But no direct proof of the existence of the ether has yet been found, and we hardly can venture to hope for one.

The modern treatment of electricity deals with it as representing and including special phenomena of this ether. Some go so far as provisionally to define it as being the ether itself, and to treat static excitement, magnetism, current electricity, etc., as due entirely to different states of the ether.

The luminiferous ether is by calculation deduced as being of the following general properties. It is supposed to be a medium most resembling a gas in constitution, yet possessing rigidity like a solid, as well as elasticity like that of a gas. Its density is equal to 936 one-thousand-millionths (936-1,000,000,000) that of water, or equal to that of air at 210 miles above the earth. Its rigidity is one one-thousand millionth (1-1,000,000,000) that of steel. It is sometimes compared to an all-pervading jelly, through which waves of light and other radiant energy and of electromagnetism are constantly throbbing. Particles of ordinary matter move through it without resistance. It interpenetrates the molecules of matter, and hence an air pump is entirely without effect upon it. There is no such thing as an ether vacuum (Daniel). It cannot be excluded from empty space.

Such is the hypothetical luminiferous ether, an ultra-gaseous body possessing the properties of both a solid and of a gas. It should be looked upon as an expedient for the present, as something most useful in formulating theories, but unproved. A theory is often little more than a symmetrical skeleton to sustain our laboriously acquired collection of facts. The test of the utility or perfection of a theory is its ability to foretell what will happen under given conditions. It may be able to do this and yet be wholly fictitious.

Light is radiated from one body to another across enormous intervals of space. The mind cannot conceive of one body acting upon another without some connecting medium. The same applies to gravitation and electricity. The ether originally invented to account for the transmission of light through distances, of unknown degrees of immensity in the case of the heavenly bodies, has been found a useful factor in formulating a theory of electricity.

If any object is excited electrically, every object within its range of action, that is to say, which is not screened from its effects, is also affected. This involves the same kind of action across a space as obtains in the case of light. It is termed radiant action and is a manifestation of radiant energy. Again, an electric current or the poles of a magnet produce magnetic effects in their vicinity upon objects not in contact with them. This involves action at a distance also.

These are among the reasons which have induced scientists to invoke the luminiferous ether to aid in explaining and accounting for electrical phenomena. As employed in the present work it will be found useful in enabling the mind to better formulate a theory of the science. Extraordinary as the idea of the ether may appear, it is evident that the modern achievements of electricity are just as strange. They are of such nature as to be entitled to an extraordinary line of explanation.

The sun is at such a distance from the earth that it takes light over eight minutes to travel from its surface hither. The nearest of the fixed stars are so remote that in many cases days and years are consumed in the passage of light from them to us. If one of these bodies were suddenly annihilated we should see its light after it ceased to exist. The sun would seem to continue to shine for eight minutes and twenty seconds after its extinction. We may even now seem to see stars which long ago ceased to be luminous, and distant suns may now be radiating light into space, which light will not reach us to show us a new star, for years to come.

All this is so strange and deals with such infinite relations of quantities as regards distances and time that the luminiferous ether, viewed from such a standpoint, seems not too extravagant a conception to account for the high velocity and intensity of radiant energy.

Pulses or waves of electric energy are found to act like light, to be capable of transmission through some bodies, of reflection from others, and of refraction and interference. The relations between electrostatic and electromagnetic units indicates a ratio corresponding to the velocity of light. These considerations give direct ground for utilizing the theoretical ether as a medium for the propagation of electrical disturbances.

The term radiant energy is continually acquiring new scope in physics. Many phases of electrical disturbance fall under this heading. Others may be attributed to radiant force.

The passion for unification at one time tended to obliterate the old distinction between static and dynamic electricity. Now a true basis for such division must be recognized and may to a certain extent be determined by the consideration of force and energy. True static phenomena are phenomena

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of ether stress or of force; electromagnetic wave and current phenomena are related to ether waves or energy.

FORCE, ENERGY, MASS AND WEIGHT.

Physical concepts, such as force, mass, energy and other elementary things, have received within recent years much accuracy and definition of description and attributes. Only a few years ago great confusion existed, notably in the distinction between force and energy. The enunciation of the absurd doctrine of the conservation of force, and its support in many essays and papers by those who were assumed to be the leading thinkers of the day, is an illustration, now but a few years old, of this fact.

This accuracy has led, and is leading, to more and more subdivisions, which brings about a multiplication of units, and increase in nomenclature especially in electricity, which has already been felt to be a misfortune, although it is not easy to see how it is to be avoided.

For the purposes of this work it is quite unnecessary to enter into all of these subdivisions. There are a few elementary mechanical ideas which may be enunciated before the electrical part is entered on. These involve subjects which are often sources of error and misunderstanding.

As physics and mechanics are based upon measurement, units of different kinds have been established. They are based upon length, time and weight. The relations of these factors to the compound units are termed the dimensions of the unit. The centimetre, gram, and second are the bases of measurement, and the fundamental units constructed or built up upon them are termed the centimetre-gram-second or C. G. S. units.

FORCE is that which, acting on a quantity of matter or mass, can change its rate of motion or can impart motion to it. It can be called into existence or annihilated under adequate conditions; in other words, there is no conservation of force. Its unit is that force which can in one second impart to one gram of matter a velocity of one centimetre per second. This unit is termed the *dyne*. The weight of one gram is equal to about 981 dynes. A dyne is equal to about 63½ grains.

The exertion of force along a path in space, which condition necessarily implies motion against resistance, is termed WORK. Its unit is a dyne exerted through a path one centimetre long. The most convenient way to express force is to refer it to gravitation. Hence the unit of work is generally defined as the raising of 1-981 gram to a height of one centimeter against gravitation. The name of the unit is the *erg*.

The power of doing work is termed ENERGY. A weight of 1-981 gram by frictionless machinery could, in descending one centimeter, raise another body of the same weight the same distance. Hence it would be said to possess energy of position, a form of potential energy, equal to one erg. The sum of energy in the universe is invariable; energy can be neither created nor annihilated by natural causes. This is the doctrine of the conservation of energy, which has replaced the discarded one of the conservation of force.

If a bullet is fired from a gun, the energy of the combustion of the powder is in part expended in driving the bullet forward; in part in driving the gun backward, producing recoil; in part in heating the gun and bullet, and in various other ways. None of its energy is destroyed. The bullet strikes a target and is brought to rest. Its energy is not destroyed, it is only transformed. Some appears as heat energy—indeed most of it directly or indirectly takes this form; none disappears.

If this doctrine is true, perpetual motion against resistance, as generally understood, is impossible. There is very little doubt of this doctrine's truth.

It follows from the above that energy cannot, properly speaking, be expended, and that work is not done at the expense of energy. Work simply denotes the reciprocal of a given form of energy, and is produced by the disappearance of that particular form of energy, and is the result of its conversion into some other form. A weight raised by the combustion of coal is the reciprocal of the heat energy, and no more represents work than it does the product or the result of the conversion of heat energy into mechanical potential energy. In other words, work and energy may be treated as identical. To do work, energy is required, and is absorbed in the process by being converted into some other form or forms. The other forms, either one or more of them, are in many cases some irreclaimable form or forms, which can never again be utilized. This is so often the case that the available energy of the universe is undoubtedly tending to zero. This zero will be attained when all objects have the same temperature.

A body placed at a height above a plane possesses what is termed potential energy, referred to the plane. Its advantageous position indicates a power of doing work. Another example of potential energy would be a strained spring, possessing the energy of stress.

A body in motion, by virtue of its inertia or resistance to reduction of velocity, can do work, and is said to possess kinetic energy. A body at rest in a certain sense may be said to possess the same with reference to moving bodies, because all rest and motion are relative.

An example of the transformation of energy can be taken from the above. A one-pound weight raised one hundred feet has expended upon it one hundred foot-pounds of energy, and possesses that amount of potential energy. If now it is allowed to fall through the same distance, it parts with its potential and assumes kinetic energy. When it has fallen one hundred feet, if in a vacuum, it will at the one-hundred foot mark possess none of its original potential energy, but in its place will have one hundred foot-pounds of kinetic energy. As it strikes the ground and comes to rest, this energy will change into heat energy and other forms, but it will remain the same in amount—one hundred foot-pounds.

MASS is the quantity of any portion of matter. Owing to centrifugal force a body weighs less at the equator than at the North Pole; upon the surface of the moon it would weigh far less. Yet its mass would be the same although its weight might vary. Were transportation cheap enough, and were the other conditions favorable, a merchant could make money by selling by weight, in northern or southern latitudes, goods which he had purchased by weight in equatorial latitudes, provided he weighed with a spring-balance. He would buy and sell the same weight, but would buy a greater mass than he sold.

WEIGHT is mass acted on by gravity. As gravity varies, weight will vary, even though the mass remains the same: all which has been just illustrated.

In electricity we have force and energy. Heat energy in driving an engine that drives a dynamo becomes ultimately converted into electric energy. An electric machine or a battery on open circuit maintains its terminals at a varying potential, or in such state as to exercise electromotive force. This force, producing a current through a resistance, does work. As for electric mass and weight, as yet they are not recognizable, and probably do not exist.

MYTHOLOGY.

LUNA, (*the moon*) was the daughter of Hyperion and Terra, and was the same, according to some mythologists, as Diana. She was worshipped by the ancient inhabitants of the earth with many superstitious forms and ceremonies. It was supposed that magicians and enchanters, particularly those of Thessaly, had an uncontrolable power over the moon, and that they could draw her down from heaven at pleasure by the mere force of their incantations. Her eclipses, according to their opinion, proceeded from thence; and on that account it was usual to beat drums and cymbals to ease her labors, and to render the power of magic less effectual. The Arcadians believed that they were older than the moon.——A maritime town of Etruria, famous for the white marble which it produced, and called also *Lunensis portus*. It contained a fine capacious harbour, and abounded in wine, cheese, etc. The inhabitants were naturally given to augury, and the observation of uncommon phænomena.

RURAL NOTES.

WHEREVER fences are used to inclose fields, some practical method must be devised for the passage of persons from one field to another.

Where gates either hung on hinges or sliding, are used, there is a liability that they may be left open by some forgetful or careless person. Turn stiles are objectionable for several reasons. Any opening for passage through the fence is liable to attract the attention of animals to such an extent that when a breakage is made in the line it will in most cases be near such passages.

The methods here shown may be used for fences formed of either boarding, rails, pickets or barbed wire.

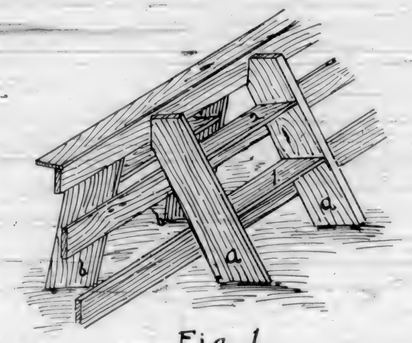


Fig. 1.

Fig. **1,** shows the common step-ladder, having side pieces a–a and b–b, and steps 1–2—or more on one side—with corresponding steps on the opposite side. For permanency the steps should be let into the sides before nailing together.

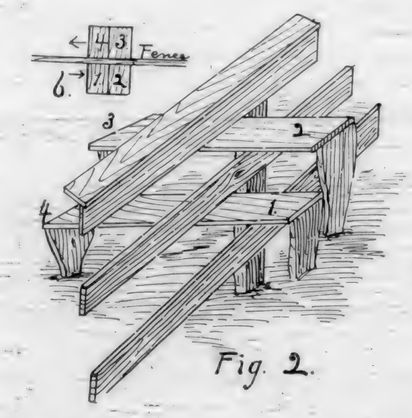


Fig. 2.

Fig. **2,** shows an arrangement that is quite common in some sections. The steps extend to equal distance on each side of the fence, 1–2 or more steps up at one side and the same down at the other side—at b, is shown the line of fence and steps. The ends of the steps are supported in various ways, the cheapest being a board sharpened at the lower end and driven into the ground.

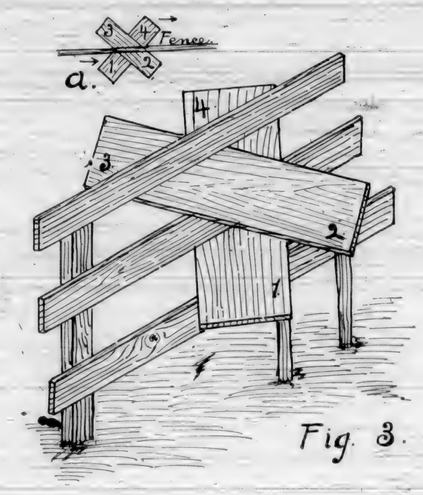


Fig. 3.

Fig. **3,** shows another arrangement where the steps are set at an angle as shown at—a. The ends of steps being supported by stakes same as in Fig 2. In this case as in the others the number of steps can be regulated according to the height.

In Fig **1,** the person passes up on one side at right angles to the line of fence and then down at the other side. In Fig. 2, the person passes up in the direction of the arrow, shown at b—turning about at top and decending as shown by the arrow at the opposite side of the fence. In Fig. 3, the person passes up in the direction of the arrow at a, stepping over and decending at the other side in the same direction.

There is an objection to all these methods as described, for the reason that animals confined within an inclosure usually pass along the fence lines and any projecting parts, such as steps, etc., may be wrecked or the animals injured by these projections.

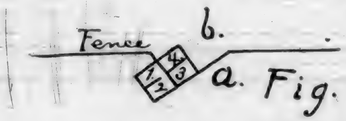


Fig. 4.

This defect may be reduced to a minimum by the arrangement shown in Fig. 4, where the fence is formed with a recessed angle at b, so that the steps shall not project beyond the general line of fence. The protected portion being placed at the side most liable to injury

BRICK AS A BUILDING MATERIAL AND THE TRUE ART OF LAYING THEM.

By J. W. Crary, Sr.

BRICKLAYING is a peculiar art. The *trowel*, is one of the very oldest of mechanical tools, and is by all odds, the most difficult to handle with perfect expertness. Not one bricklayer in six can use a trowel with perfect skill. In order to be a first-class bricklayer, the use of the trowel must be commenced in boyhood. The boy must have a natural mechanical talent, and a particular liking for the trowel, so that to handle and play in mortar with a trowel, as a matter of diversion, as well as art, is a choice pleasure.

There is a peculiar dexterity in taking mortar up from the mortar-board, and then spreading it skillfully on the wall, so as to make a perfect, regular "bed" for the brick. To do this cleanly and nice, without wasting mortar, is a rare art. The mortar should be so spread that the brick, when down to the "*line*," will have a perfect, even bearing, without "*flushing*" much mortar out, back, or front. Mortar should not be spread for more than six to seven brick at a time, then the brick should be wet and laid with a peculiar *shake* and pressure of the left hand, so that they will come down very near the *line*, and only a tap of the trowel is needed to adjust them right to the line after they are laid. I need not say, that brick should be laid plumb and level, though some good front workmen will "*hack*" the joints a little above the first story front, that is, to incline the front of the brick a little over, so that presents more "*face*" when seen from it below. Some contend that a front brick should be laid a little out at the bottom where the wall is seen below the eye, and a little out at top, when viewed above the eye. The old technical name for these differences is "*liping*" and "*hacking*": the top of the brick is cut over, and the bottom under, which give the joint a lip-like appearance. The object is to prevent the show of defects in perpendicular lines, under different views of light and shade. It is a matter of no great importance; it is simply a small draft and principle in favor of beauty, for no scientific builder will say that a brick is laid wrong when its front is plumb, and its bed joint level. The objection to a "lip" joint is that it catches rain, dirt and dust. The smoother the front of a wall, the longer it will retain its freshness and beauty.

There are five other tools than the trowel, that belong to the brick layer, viz., the "Scutch," the "Hammer," the "Chisel," the "Plumb" and the "Level." These, with the trowel, constitute the bricklayer's "kit" of tools, and, although few and simple, the man that has mastered a perfect knowledge and use of them is a first class mechanic.

TO GET AND START A GOOD FOUNDATION FOR A WALL.

If it were not for the fact, that brick, when properly laid form the strongest wall known to builders, the careless, and generally ignorant attention given to foundations, would cause most all walls to crack vertically. Foundations are the main essential in building, and if the principle art is not well understood and strictly applied in all cases, the whole superstructure is impeffect and unreliable. I have seen large and costly buildings made comparatively worthless by negligence or ignorance in preparing the foundation. When walls crack or settle, it is necessary for the architect or engineer to invent an excuse, and the fault will often be laid on the brick, or bricklayer. I could name some prominent public buildings in different places of the country, where this was the case.

There are four general kinds of surfaces to build on, viz., sand or gravel, clay, stone and mud or alluvial soil, such as found in New Orleans. In building on sandy land, if it be level, the trenches for foundation should be deep enough to be below the frost, and all loose, unpacked earth or vegetable matter; then, before brick are laid, the foundation should be thoroughly rammed, so that all inequalities in the looseness of the sand will be equalized; then, the surface being leveled, the best hard brick should be laid and first course well settled. It should never be forgotten by the bricklayer that it is the first bottom course of brick that he must depend on for a good foundation, and that one good heavy stroke in setting the brick as he lays them in the first course, is of more importance than all the nice care he can take in his wall above the bottom course. If the surface of the ground is unlevel or a hillside then the trenches for foundations should be dug out the same depth from the inclined surface. This leaves *steps* or offsets at the bottom at proper intervals, according to the incline plane of the surface. It is not infrequently the case where buildings are put up on a hillside to see one part of the foundation started near the surface and other parts at considerable depth below. This shows a want of ability or honesty in the builder or architect. Still a great deal of this kind of botchery is done everywhere, by common builders.

What I have said of sandy foundations will apply to clay, and to rock, where the entire surface is rock, but if one part be rock and other parts be of other kinds of material, then, after proper excavation, a heavy body of concrete well rammed, or else piling, if in a wet place, is necessary in order to equalize resistance to pressure. It does not follow that the foundation anywhere shall be solid as the rocky part of it, but it must be known that the weakest part of the foundation will much more than resist any pressure that the superstructure or needed weight would amount to. Any skillful builder can make this test. It is simply to find what a given surface of the foundation will resist and how much would ever be put on it.

HOW TO BUILD A FOUNDATION OF ALLUVIAL SOIL OR MUD.

New Orleans is the principal place in the United States where buildings must be on soft alluvial soil, and as it is not generally known how foundations are laid there, and as I have had much personal experience in doing brick work there, I will give a short description of such work. A trench is made of suitable width and deep enough to find water, then plank is put down lengthwise, with foundation, then crosswise, making two courses of plank, the water will cover the plank. Brick work, with cement mortar, is then started on the plank and the work proceeds to completion. As the building progresses, and for two or three years after it is done, it settles until it comes to a bearing equal to the resistance of the mud and soil surrounding the plank foundation. The City Hall of New Orleans had settled, up to 1856, about sixteen inches. I saw that the use of plank as a foundation was a mistake, and instead I used concrete made of brick-bats, stone and coarse sand and cement, which was rammed down thoroughly, then starting the brick work with a broad base, at least three times the thickness of the wall proper, all settling of the walls was permanently prevented. The object in ramming a foundation is to adjust all inequalities. Some places will be soft, loose and spongy. All should be rammed until it ceases to settle.

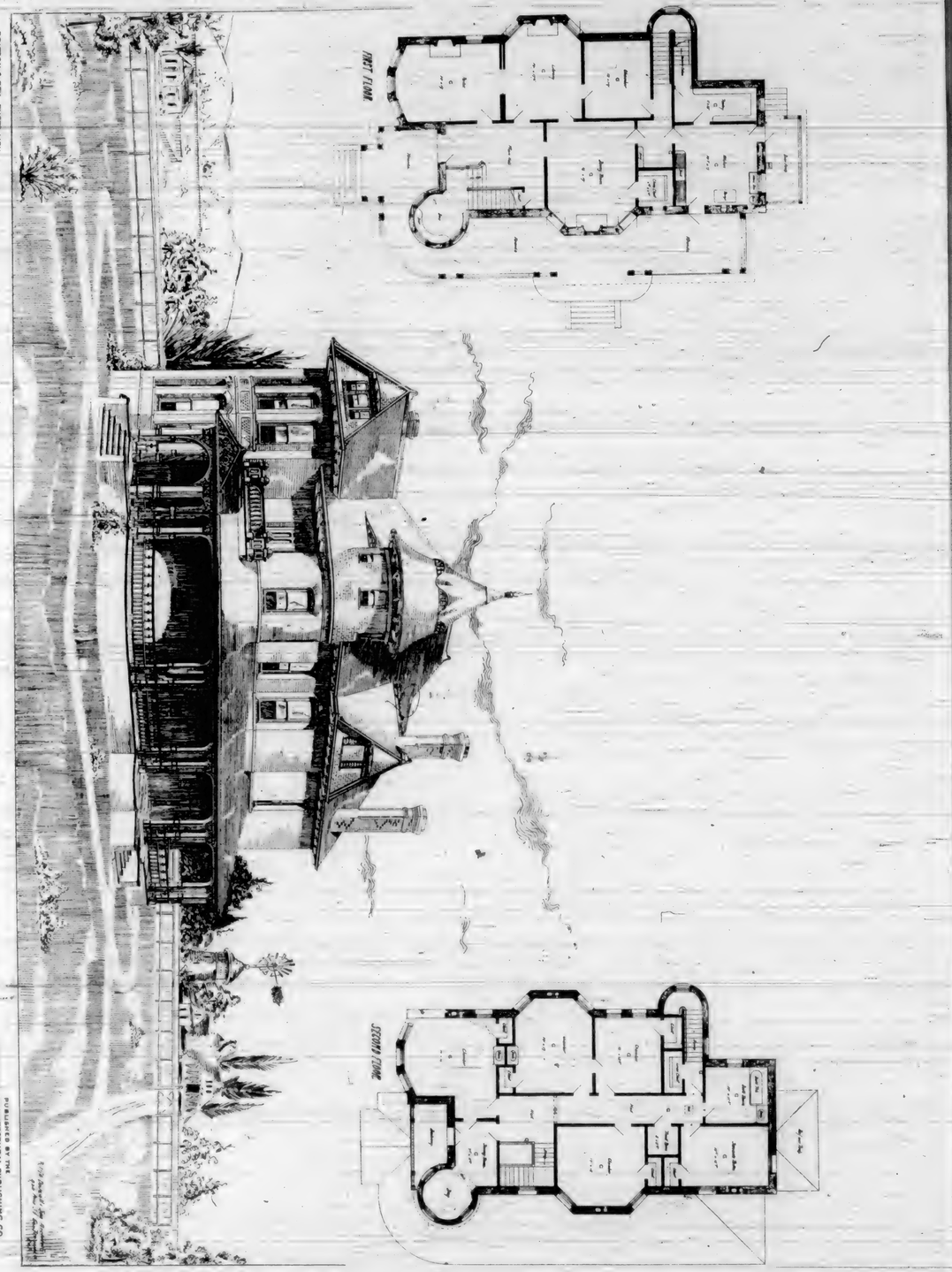
In my preceding article on this subject I have treated mainly on the importance of good brick, good mortar, good foundations and good skill in building walls. I will now try to give some good hints about the best way to build brick walls strong, serviceable and economical.

There is seldom an account of a great fire, that does not show fatal accidents from the falling of brick walls, and the injury and displacement of such as do not fall, so as to leave them useless. In most cases, this is the result of faulty planning by the architect, and bad workmanship, though the bricklayer is not in fact responsible, as he is, at least, supposed to be, under the orders of the architect.

PARTY WALLS OR DIVISION WALLS THE MOST IMPORTANT.

If a wall dividing a pair of buildings, or dividing buildings in a row, or dividing two distinct properties be built on true principles, and with proper care and skill, in nine cases out of ten it will stand firm, and in good condition to be used as at first. In all cities the law requires that party walls shall be built a certain thickness, according to the height of the building the length of the wall or its fire-proof character, is not considered, and the consequence is, when a hot fire burns out—on one side of such wall, that side must expand and curve and crack, and if there be nothing to support it on the opposite side, the vertical curve will cause the wall to over-hang, so that it will lose its balance and fall.

Now if a party wall be built on a good foundation, and on true principles, the outside four inches of the wall on both sides, will be set off from the inside, three-quarters of an



FIRST FLOOR

SECOND FLOOR

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ROYAL INSTITUTE of BRITISH ARCHITECTS - PROV.
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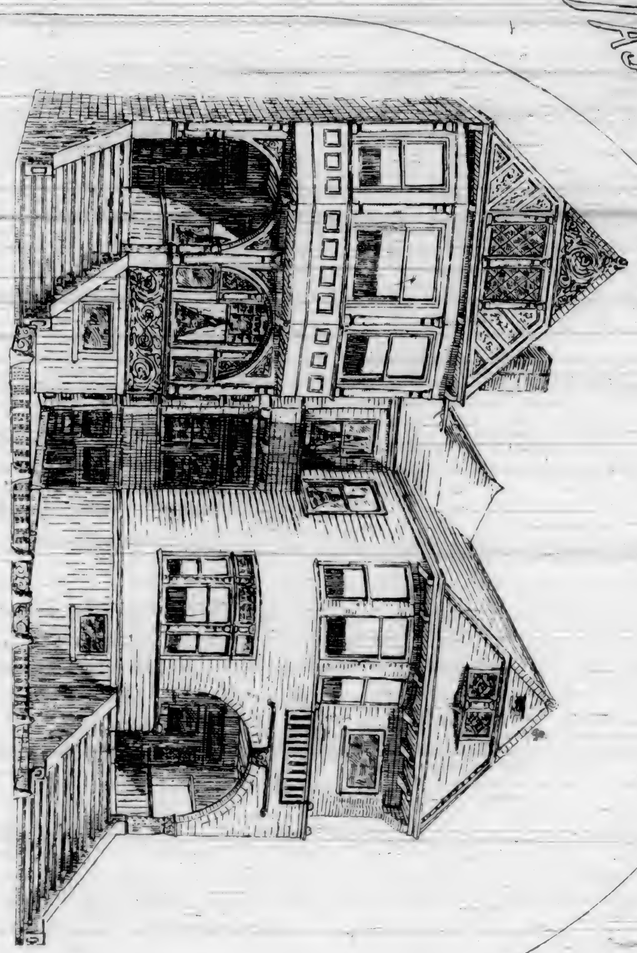

DWELLINGS ON FULTON ST.
FOR
JAS. W. McCLURE ESQ.
S. F.

J. Tamai del.

BRITTON & REY, PHOTO LITH.

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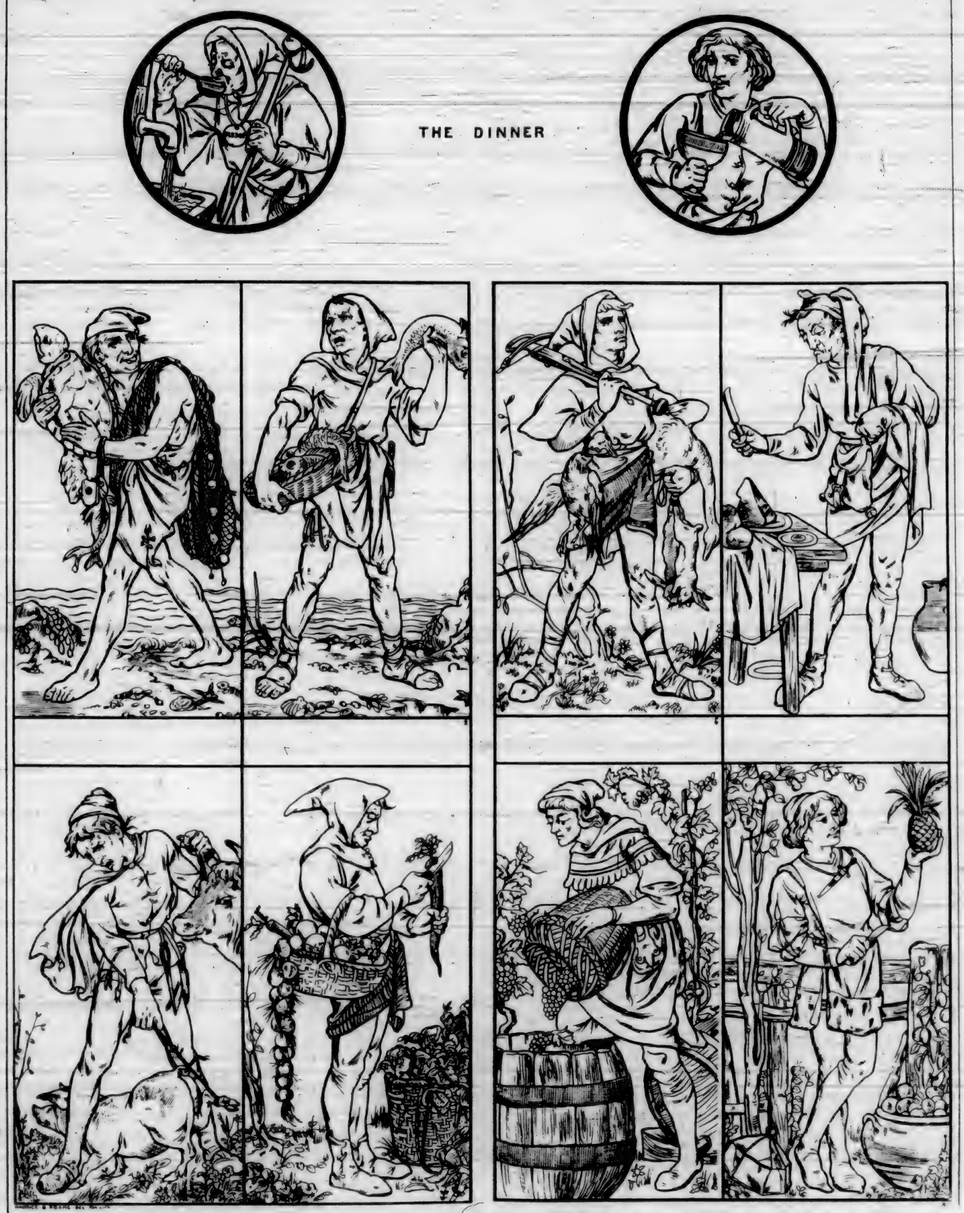
MAXWELL & G. BUGBEE
Architect + 419 Cal. St.
S. F.

FEBRUARY, 1892. VOL. XIII, NO. 2.
THE CALIFORNIA ARCHITECT AND BUILDING NEWS.



PAINTED GLASS DECORATIONS THE DINING ROOM MILNER FIELD YORKSHIRE
THE RESIDENCE OF TITUS SALT ESQ^RE
THOMAS HARRIS ARCHITECT

BRITTON & REY, PHOTO. LITH.

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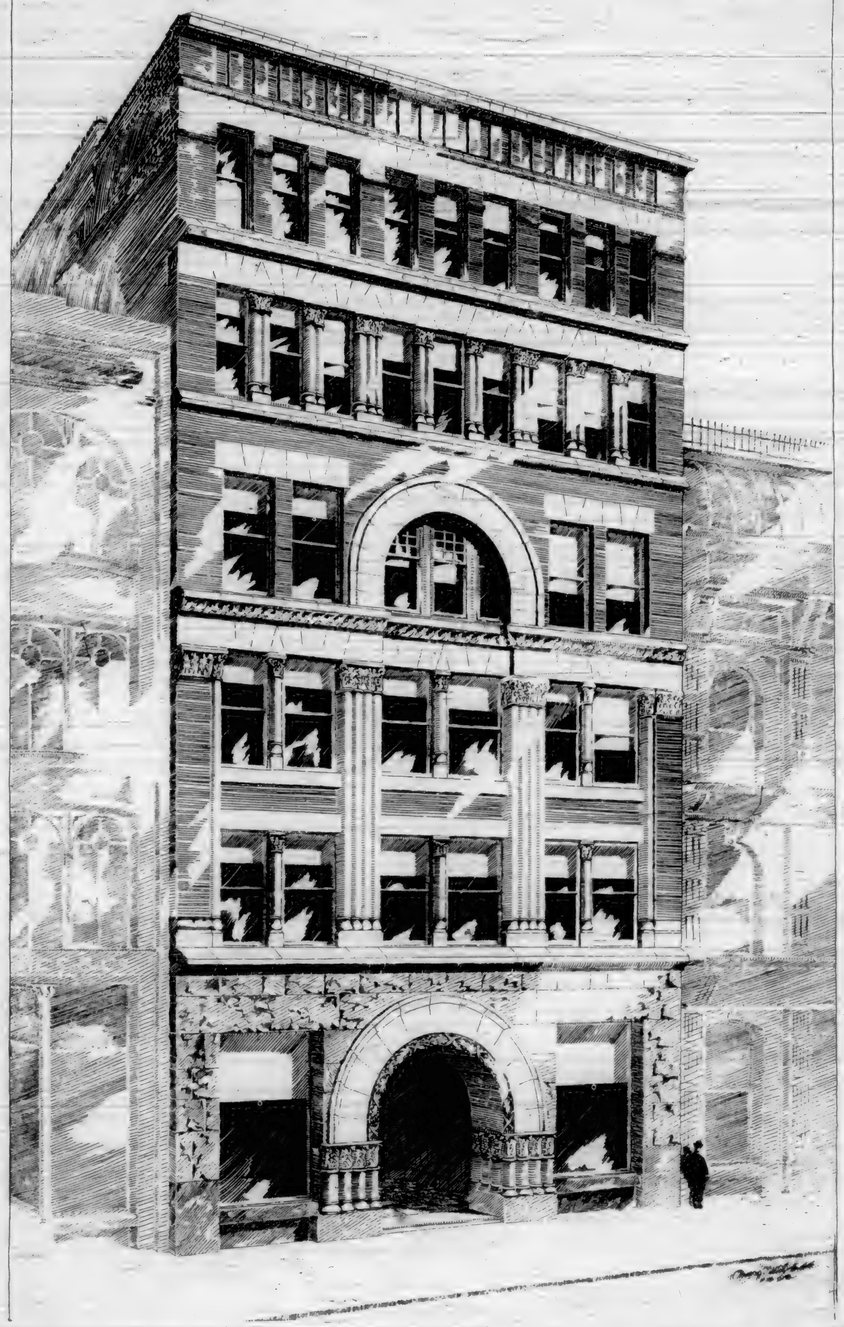
THE OTIS BUILDING S.F.

SMITH AND FREEMAN, ARCHITECTS
412 SANSOME STREET, SAN FRANCISCO.



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inch, so as to leave an air space from bottom to top of the wall, which will act as a non-conductor of heat, and thus prevent to a great, and sufficient extent, the expansion of the wall, so as to seriously injure it. All party walls should be *braced* by *pilasters*, or projections, of at least four inches, not over fifteen feet apart. The face of the pilaster should be equal to the thickness of the wall, and then it should be solid and unbroken from bottom to top of the wall.

STRENGTH IS MAINTAINED AND TWENTY PER CENT. ECONOMY.

By pilasters in a party wall the thickness may safely be reduced. If we are required to build a party wall, say 18 inches thick, we can reduce it to 13 inches, by carrying up on each side a 4-inch pilaster, 12 inches on the face. These pilasters give the wall more lateral strength, than if it were 18 inches thick, and saves at least twenty per cent. of material.

If it be said that pilasters are in the way, I answer that the space gained between them more than compensates for the room they take, and, further, that they are both ornamental and useful in many ways.

BUILDING WOODEN STRIPS IN WALLS FATAL.

It has long been the habit of architects and builders to lay wooden strips in walls, so that "*furring*" for lath could be fastened. At best, "*furring*" and lathing a brick wall is a violation of true art in building, and is entirely unnecessary, as I will show, but, if it has to be done, the plan of cutting out mortar joints and *wedging* is best. A wooden strip laid in place of a joint of mortar is *botchery*. 1st. It is liable to decay and shrink, or swell and get loose, and, of course, weakens the lateral strength of the wall. 2d. If a fire burns out the building, the lath or strip in the joints of the wall, will burn out, and the wall is weakened so that it will easily sway and fall. This is one of the main causes of the falling of walls, during and after a fire.

HOLLOW WALLS ARE DRY AND NEED NO "FURRING."

Any brick wall can be built with an aperture of three-quarters of an inch between courses of brick, without impairing the strength of it. If a thirteen inch thich wall be built with the inside course of brick set three-quarters of an inch from the outer part of the wall, the "bond headers" will have all necessary bearing on the inside of the "front header." If only one brick, or, what is termed a nine-inch wall is to be built, the inside stretches can be set three-quarters of an inch from outside "stretchers," or, what is better, for dwelling houses, the inside course of brick can be set on edge, and three courses high will be equal to five courses on the "*flat*," which makes every sixth course a "header" or "bond course." This plan gives ample air space to prevent heat, cold, or dampness, coming in from the outside and the wall is just as strong as if it were solid. In building nine-inch walls for houses, the "jambs" of the doors and windows should be a brick and a half or 13 inches thich, and if doors and windows are placed so as to admit of it, the "jambs" should be started as "pilasters" and carried up from bottom to top of the walls; this gives great additional lateral strength to the walls, takes but a trifle more work, and material, and gives ornateness to the finish of the rooms. A three-story dwelling can be safely built in this way, with a saving of 16 per cent. of brick and mortar.

OBJECTIONS TO "FURRING" AND "LATHING."

First, the cost; *second*, liability to decay; *third*, it makes a harbor for rats, mice and bugs; *fourth*, it takes up room; *fifth*, it impairs the strength of the wall, for the reason that it is not plastered, which when done, on the brick, gives strength and permanency to the building.

CONSTRUCTION OF SMOKE FLUES.

One of the greatest evils in brick work, is the careless, imperfect building of smoke flues. There should be no sharp angles or turns in a smoke flue. It should be uniformly and smoothly "*pargeted*," and no offsets should be left where mortar can lodge and *choke* the flue, and all smoke flues should be at least six inches from any wood work.

Now that terra cotta is cheap and easy to get, it should be used for smoke flues, whenever and wherever practicable.

SETTING JOISTS AND SIMILAR BEARINGS ON A WALL.

It is a common error to "set and anchor" joists in a wall, so that when a building happens to burn, the hoists fall, and pull a part or all of the walls down. Joists should be so set and fastened to the wall that if they burn out and fall, no damage is done to the brick work. There are so many simple ways of doing this that will suggest themselves to the builder. In fact, there is very little added to the strength of brick work, by fastening wood work to it. If brick work be well done, on true principles, it needs no bracing up with anything, and nothing should be fastened to a brick wall that would endanger it in case of fire, or overloading the floors.

I have finished this series of articles, and trust that I have given some hints and facts that will benefit those interested. My sole object in writing these articles, was to help and encourage economical, good brick building. I do not claim to know all that can be known about brick, though I have been *in brick* over sixty years, the field for thought widens, and I am yet a student. A perfect brickmaker would be a sight indeed.—*Clay Worker.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

BUSINESS BLOCK.

The business block illustrated is in course of erection on Sansome near Pine street, in this city. Messrs. Smith & Freeman, architects.

RESIDENCE AT ROSS STATION.

The design for the residence at Ross Station and in course of erection, is by Mr. M. G. Bugbee, Architect.

RESIDENCE AT BAKERSFIELD.

The residence with plans was designed for Mr. H. C. Pacts to be built at Bakersfield, California. The building is of brick with the exception of the verandas and cornices which are of wood. The location has been carefully considered in the arrangement of the plan and method of construction. Bakersfield being within the warm section of the southern part of the state, the brick walls are built hollow so as to allow a free passage of air. The projecting cornices, and wide verandas with thorough ventilation contribute to the comfort of the inmates. The general arrangement is shown on the plans. B. McDougall & Son are the architects.

THE DINNER.

The "Dinner" is designed to be executed in stained glass, and speaks fully its own story—We are indebted to the London *Building News* for this illustration.

Electricity Simplified.

By T. O'CONOR SLOANE, E. M., Ph. D. Published by NORMAN W. HENLEY & Co., New York, and for sale by OSBORN & ALEXANDER, 401 Market St., San Francisco. Price $1.00. In another column we reprint the first chapter. The work is very practical, and is so fully illustrated that any person wishing to become informed on the subject should obtain a copy of the book.

The Clay Worker

Is a monthly journal devoted to BRICK, TILE, and TERRA-COTTA interests. T. A. RANDALL & Co., publishers, Indianapolis, Ind.

On another page will be found an article from the *Clay Worker* on "Brick as a Building Material," etc., by J. W. CRARY, SR. Mr. Crary is the author of a valuable work on Brick and Tile Making, called "Sixty Years of Brick Making and Burning," and published by the same publishers.

Theory and Practice in the Designing of Modern Framed Structures

The title of a new work on timber and metallic structures, written by PROF. J. B. JOHNSON, MR. C. W. BRYAN and F. E. TURNEAURE, is now in press, and will soon be issued by JOHN WILEY & SONS, Publishers, New York.

Practical Centring.

By OWEN B. MAGINNIS. Illustrated—Published by W. T. COMSTOCK, New York. This is a new work treating of the PRACTICE OF CENTRING ARCHES in building construction as carried on in the United States at the present time, also giving other useful information of value to the trade.

The work embraces each subject in detail and in language that practical men can understand, and is especially commended to students attending trade, technical and architectural schools.

The Architect's and Builder's Pocket Book.

By FRANK EUGENE KIDDER, C.E. Pp. 900. 500 illustrations. New York, 1892, published by JOHN WILEY & SONS. Full leather, gilt Price $4.

The original aim of the author was to produce a reference pocket book which should be to the architect and builder what Trautwine is to the engineer or Haswell to the mechanic. The author has succeeded admirably, and it would be a difficult matter to find as much useful information in the same compass. The work has been rearranged and many of the chapters rewritten and one hundred pages of new matter has been added. The work treats of mensuration, geometry, trigonometry, the strength and stability of foundations, walls, buttresses, arches, beams, floors, roofs, etc... The present or ninth edition will doubtless be well received by the profession, owing to the great development of the use of steel and concrete in building construction. Great attention is given to the strength of steel and the methods of using it. A glossary of technical terms, ancient and modern, adds greatly to the usefulness of the work. The arrangement of the book is admirable and the great number of illustrations serve to make the book an indispensable companion for the architect. The book is to be had from MESSRS. OSBORN & ALEXANDER, 401 Market St., San Francisco.

Lippincott's

For February, comes with its usual variety of finished stories. The principal one is *Roy the Royalist*, by William Westall.

COMMERCIAL LAW.

I—The Law and the People.

Blackstone, in his commentaries on law, which comprise to-day, as they did a century ago, the basic principles of all law, says that every man should be versed to a greater or less degree in the law of the land in which he lives. The reason for this is obvious. No man can transact business without constantly engaging himself in operations which are governed and controlled by law. It is neither necessary nor expedient that every man, or any man, should be "his own lawyer," for there is a great deal of truth in the old "saw" that he who acts as his own lawyer is very apt to have a fool for a client. It is not a wise man who acts as his own physician when illness overtakes him, but it is an extremely foolish man who does not possess himself of sufficient information regarding physiology and hygine to protect himself from such ailments and diseases as may be prevented and avoided by a proper degree of care. When prevention has failed and disease comes, a wise man relies upon the physician.

And so it is with the law. A wise man who is constantly engaged in the buying and selling of goods should have a fund of general information concerning those principles which underlie all contracts of purchase and sale. A man who is to a considerable extent engaged in the giving and taking of notes, should understand at least the fundamental principles of the law of bills and notes. The employer of labor should know what his rights and responsibilities are. And so through the various relations of life, there are fundamental legal principles applicable alike to all of their class, which should be known of all men who are interested in them. His knowledge of these things should be for his own protection. When litigation does come, the lawyer should always be called in.

That this is becoming more and more recognized is evidenced by the fact that the technical press, which is always alert to the needs of its constituents, has within the past year or two, to a very considerable extent, incorporated among its departments the reports of legal decisions of interest to its readers. This had been followed from time to time, by the publication of articles elaborating special points of interest, until the business man, if he be a subscriber of a progressive paper of his trade or profession, has an opportunity of gathering together a fund of practical information concerning the law of his business.

It is probable that a more general understanding of the history of law itself, and the methods by which it is arrived at and applied, would not only render this information of more value but would enable a much more intelligent use of it by a law reader. It is therefore proposed in a series of two or three articles to give a brief *resume* of the growth of law and the methods employed by the courts in applying it.

There is probably no nation in which the mass of the people are as interested in law and its administration as are the people of the United States. This is due, in a measure, to the fact that we are closer to the government than any other people—for here the people are the government. The people also participate to a larger degree than in any other country in the administration of the law—from the mass of the people is drawn the jury whose determination of the facts, if properly made, is final and subject to no appeal. The courts are opened with more freedom to spectators and every facility is offered for familiarity of the people with the law and its administration. Why then should not the people possess themselves of a wider information of the law which governs them, which controls their acts and their commercial transactions, which they are expected to follow and obey; which they judicially determine to have contracted with reference to, whether they are informed upon it or not, and which they are called upon from time to time to aid in administering. The purpose of this article and similar matter which is published from time to time is not to inform its readers upon those technical lines along which the lawyer must work, but rather to place within reach of the people information upon those branches of the law which they and not lawyers have to deal.

(Copyrighted, Law News Bureau, 1892.)

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. — OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. — JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. — L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. — O. BROOKS, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. — H. G. JARMAN, Sec.

THE annual meeting of the California Electrical Society was held at the rooms of the society, at the Academy of Sciences Building, 819 Market St., for the purpose of electing the officers for the year 1892.

The following officers were elected:—

President, Geo. P. Low; Vice-President, C. O. Poole; Secretary, W. I. Crossett; Treasurer, Orion Brooks. Executive Committee—E. A. Roe, C. T. Ryland, Jr., and R. B. Elder.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONTRACT AGAINST LIENS.—A building contract in Pennsylvania provided that the owner should not "in any manner" be answerable for any of the materials used in finishing and completing the building, and that there should not be any lawful claims against the contractor in any manner, from any source whatever, for work or materials furnished on said building. The contract provided against the filing of mechanics' liens, and was binding on subcontractors.

Dersheimer v. Maloney, Supreme Court of Pennsylvania, 22 At. Rep. 813, (64C).

MECHANIC'S LIEN ON PARTNERSHIP PROPERTY.—A partnership composed of three persons, erected a building upon a lot owned by two of the partners. The partners, holding the legal title of the lot, contracted in the name of the firm for material used in the construction of the building. In an action by the material-man to foreclose his lien, it was held that the lien attached to the lot and building thereon. A mechanic's lien under the Nebraska law, is not lost or waived by the taking of the note of the debtor for the balance due on their account, not in such case by giving to the latter a receipt as in full for the demand. The acceptance by a material-man of a note and chattel mortgage as collateral security for materials previously furnished for the erection of a building under a contract with the owner is not a waiver of the lien, unless such was the intention of the parties.

Hooglund v. Lusk, Supreme Court of Nebraska, 50 N. W. Rep. 162, (147).

BREACH OF PARTY-WALL CONTRACT.—The owner of a lot erected a building, under a verbal agreement with the owner of a lot adjoining that the wall on that side should be built partly upon both lots, and that when he should use it he should pay his proportionate share of the cost. Afterwards he sold to one who knew that the wall was partly over on his lot, but who refused to assume the obligation of the contract. Having made compliance with the contract impossible, the seller was liable for the damage thereby sustained by the other owner.

Nalle v. Pagi, Supreme Court of Texas, 17 S. W. Rep. 371, (94C).

ACCEPTANCE OF CONTRACTOR'S ORDER BY OWNER.—Where the owner of a building has accepted an order drawn by the contractor on him in favor of one to whom the contractor was indebted, he cannot thereafter refuse to pay it upon the ground that a defect has developed in the roof for which the contractor is liable, unless he can show that the unpaid balance remaining in the hands is not sufficient to repair the defect, as the payee of the order is, at all events, entitled to the remaining balance after the repair is made.

Layton v. Davidson, Supreme Court of Pennsylvania, 22 At. Rep. 909, (82C).

RULE OF ASSUMPTION BY RISK BY EMPLOYE.—The rule of law with reference to the assumption by an employe of the risks incident to his occupation is, that he assumes such risks arising out of an unsafe place in which to work, or unsafe appliances with which to perform his labor, as are manifest to the senses, or may be ascertained by the prudent use of them.

Quick v. Minnesota Iron Co., Supreme Court of Minnesota, 50 N. W. Rep. 244, (55C).

LEGAL STATUS OF PARTY WALL CONTRACT.—An agreement between adjoining owners in relation to a party-wall erected on the division lines of their lots is binding on the parties, and those who purchase subject to such agreement, and creates an equitable charge upon the lots.

Stehr v. Roben, Supreme Court of Nebraska, 50 N. W. Rep. 327, (48C).

INFRINGEMENT OF PATENT BY CONTRACTOR.—Where one has contracted to erect a building, lets a portion of the work to a subcontractor, and in the prosecution of their respective parts each infringes patent-rights of another, both are liable as joint infringers. Letters patent No. 263,412, granted August 29, 1882, to Peter H. Jackson, for "improvements in the method of illuminating basements;" No. 269,863, granted January 2, 1883, to the same, for "iron and illuminating stairs;" No. 302,338, granted July 22, 1884, to the same, for "improvements in the construction of buildings."

Jackson v. Nagle, United States Circuit Court, California, 47 Fed. Rep. 703, (87C).

Some men are always trying to begin at the top, unmindful of the fact that it is all folly to shingle the house till after the cellar is dug and the foundation laid.—*Ex.*

BUSINESS MOSAICS.

Line Drawings made in pen and ink suitable for reproduction by any of the processes in use, can be ordered through this Journal. Architects and Engineers are oftentimes too busy or too isolated to obtain the time or talent for the ornamental drawings. These drawings can be made from the plain drawings, and we will cheerfully furnish information regarding such work.

The Folding Iron Gate is far superior to the old style of iron gate. When closed they are similar in appearance, but when open they occupy about one-eighth of the space that the ordinary iron gates do. The gate is riveted together in such a way that when opened the main perpendicular bars close side by side, while the joinings or bands between the bars fold up.

Architects, builders or owners about to erect new buildings, when anything in the shape of a Guard for windows, doors, etc., is required, would be wise to call on the company at 129 New Montgomery street, and inspect models.

Public Buildings are not complete unless some system of heating is provided for. Geo. H. Tay & Co., 614 to 618 Battery street, San Francisco, furnish a heating apparatus which has always given perfect satisfaction to the parties who purchased them. He guarantees perfect heating, as well as unequaled economy of fuel.

The Hill Sliding Blind is one of those articles which every architect and owner should inspect. It has many advantages over the folding blind. It is entirely inside of the window casing, thus avoiding the tearing of curtains, etc. The sunlight can be excluded from any part of the window, and at the same time all the light necessary can be admitted into the room. If desired they can be easily removed from the window and put back without any trouble. Mr. Edw. B. Hindes & Co., will be pleased to have you call and examine the blinds at the office, 411 Mission cor. Fremont St., San Francisco.

Persons requiring a fire-proof and smoke-proof lath will find that the "Telescope Sheet Iron Lath" will give perfect satisfaction. It is for sale by M. J. Donovan. See advertisement on page xvii.

A Complete porcelain kitchen sink, which for practical convenience and artistic design is shown on page viii. It is at once apparent that apparatus of this class is from the J. L. Mott Iron Works.

Patent Chimneys are a necessity where buildings are of wood frame-work, and more especially when built on yielding ground. In former years some of these chimneys have been found wanting in important particulars, and one of the chimneys that has withstood the test of time and use is that of Wm. E. Stevens, cor. Larkin and Market streets.

The Ives Co. patented hardware specialties are well known to be of a practical kind, and artistic. The Ives Sash Locks and Door Bolts give great security and are made to last.

P. H. Jackson & Co., 228 and 230 First street, have lately made some improvements in vault lights and artificial stone frames, sidewalks, etc.

For Architects' materials such as instruments, papers, etc., call upon or write to the old and well known firm of Edward Denny & Co., 418 Montgomery street.

The Byrkit-Hall Sheathing Lath is formed of narrow boards one inch thick, and from three to five inches wide, tongued and grooved together. Each board has on its face side dovetailed grooves to firmly hold and key the plastering. To prevent warping or other displacement, the back of the board is cut out behind each projection. The sheathing lath is put on the walls and portions to be plastered, and securely nailed to the studding or frame work, the plastering is spread over the surface the same as for other lath. This lath presents some especial advantages, the wall being made stronger than by common laths, and where great stiffness is desired the laths may be put on diagonally. Where nails are likely to be driven into the walls, or for a backing for blackboards the advantage of this form of lath is at once apparent.

To obtain the anticipated satisfaction by the use of gas stoves for heating and cooking, the persons having them in charge should make themselves familiar with the exactness in the regulation of the quantity of fuel and heat, together with their wide range and effectiveness when used intelligently, which will at once place them at the head of the list of articles that cannot be dispensed with.

No climate however balmy, no skies however bright, no circumstances however adventitious, can avail for man's benefit, unless he himself be sufficiently vigorous and intelligent to take advantage of them for his own purposes. This necessary vigor and intelligence can be gained only through continued effort and energetic action.—*Ex.*

When you are in need of a good house-smith call on A. J. Dunbar & Co., 220 Fremont St., San Francisco, and he will attend to your work promptly. He makes a specialty of fire-escapes and artistic iron-work.

The building season is approaching and people will be on the look-out for the best and most economical mantels to be had. They should call on the well known firm of W. W. Montague & Co., and inspect their goods.

They carry in stock all classes of mantels from the plain and substantial to the more artistic ones. They also have on hand ranges of all descriptions; plain, ornamental and art tiles; heating apparatus for warming dwellings, churches, halls, etc., and numerous other articles of use in that line.

Schenck's fire hose reel should be examined by architects and others interested in building, its efficiency being beyond question. Every building of any importance should be so planned and constructed with reference to placing the apparatus in the proper place for simple and practical use.

Weatherly, Jardine & Co., 132 Market street, are the agents for a number of building specialties. A BLOUNT door check and spring, for which this firm is agent, placed on our office door some two years ago is still in perfect order, and from present appearances is likely to remain so for some time to come.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 8th day of March, 1892, and opened immediately thereafter, for all the labor and materials required for the Interior Finish of the U. S. Court House and Post Office Building at Birmingham, Ala., including furring, lathing, plastering, iron stairs, marble work, joinery work, tower clock, etc., in accordance with the drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at Birmingham, Ala.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal.

The right is reserved to reject any or all bids and to waive any defect or informality in any bid. All proposals received after the time stated, will be returned to the bidder.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Interior Finish of the U. S. Court House and Post Office at Birmingham, Ala.," and addressed to,

W. J. EDBROOKE,
Supervising Architect.

February 5, 1892.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 9th day of March, 1892, and opened immediately thereafter, for furnishing and erecting complete the hydraulic passenger elevator, including pump, tanks, piping, car, etc., required for the U. S. Post Office, Court House, etc., at Wichita, Kansas, in accordance with drawings and specification, copies of which may be had on application at this office, or the office of the Custodian at Wichita, Kansas.

Each proposal must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any or all bids and to waive any defect or informality in any bid. All proposals received after the time stated, will be returned to the bidder.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for a Hydraulic Passenger Elevator for the U. S. Post Office, Court House, etc., Building at Wichita, Kansas," and addressed to,

W. J. EDBROOKE,
Supervising Architect.

February 8, 1892.

CITY BUILDING NEWS.

Alabama near 25th. To build; owner, Mary Sullivan; architect, W. C. Dickerson; contractors, McLeod & McLean; cost, $3,057; signed, Feb. 2; filed, Feb. 3; payments, $750, frame up; $750, brown coated; $750, completed; $807, 35 days.

Block 28, Sunnyside. To build; owners, Installment Home Association; contractors, Home Building Co.; cost, $1,563; signed, Jan. 6; filed Jan. 9; payments, $400, frame up; $400, brown coat of motar on; $362, completed; $400, 35 days.

Block 44, Sunnyside. Brickwork of a smoke-stack; owners, S. S. Construction Co.; architect, Fred Wiler; contractor, D. J. Brennan; cost, $3,140; signed, Dec. 30; filed, Dec. 31; payments, 75 per cent. as work progresses; balance, 35 days.

Broadway near Taylor. To build; owner, Frank Nash; contractors, Doss & Morgan; cost, $1,750; signed, Jan. 22; filed, Jan. 23; payments, $500, frame up; $625, brown coated; $625, 30 days.

Butte and Mississippi. To build; owner, Thos. H. Roberts; contractor, R. O. Davis; cost, $2,709; signed, Jan. 28; filed, Jan. 29; payments, $900, frame up; $900, ready for brown mortar; $900, brown coated; $525, completed; $675, 35 days.

California near Sansome. Steel and iron work; owners, Mutual Life Ins. Co.; architect, Clinton Day; contractors, J. K. Firth & Co.; cost, $55,835; signed, Jan. 14; filed, Jan. 14; payments, $5,280, 1st floor beams, sidewalk beams and basement columns set; $5,040, 1st and 2d story tiers of beams and columns set; $4,128, 2d and 3rd story tiers of beams and columns set; $4,128, 3rd and 4th story tier of beams are set; $4,128, 4th story column and 5th story tier set; $4,128, 5th story columns and 6th tiers; $4,128, 6th story column and 7th tier; $4,704, 7th column and 8th tier; $6,212.25, completed; $15,958.75, 35 days.

Castro and 24th. Additions; owner Fannie S. Downing; contractor, A. Klahn; cost, $1,210; signed, Jan. 9; filed, Jan. 11; payments, full amount 35 days after completion.

Clara Ave. near 18th. Carpenter and mill work; owner, Fred Wagner; contractor, Geo. Reichley; cost, $2,050; signed, Jan. 2; filed, Jan. 6; payments, $500, frame up; $825, brown coat and porches up; $825, completed; $500, 35 days.

Clementina near 6th. To build; owner, A. Rothschild; architect, A. J. Barnett; contractor, W. H. Mead; bond, $2,000; cost, $6,800; signed, Jan. 5; filed, Jan. 15; payments, $1,275, frame up; $1,275, brown coated; $1,275, white coated; $1,275, completed; $1,700, 35 days.

Dupont near Lombard. To build; owner, Chas. Sahrbacher; contractor, A. Christensen; cost, $4,000; signed, Jan. 26; filed, Jan. 26; payments, $1,000, frame up; $1,000, brown coated; $1,000, completed; $1,000, 35 days.

Folsom near 15th. To build; owner, Henry R. Baldwin; contractor, James McConahey; cost, $2,000; signed, Feb. 1; filed, Feb. 1; payments, $500, framed; $500, brown mortar on; $500, completed; $500, 35 days.

Franklin near O'Farrell. To build; owner, S. Foorman; architect, M. J. Lyon; contractor, A. Jackson; bond, $3,000; cost, $12,850; signed, Jan. 20; filed, Jan. 25; payments, $2,000, frames up; $2,000, rough plumbing and sewers in; $3,000, white coated and window frames set; $2,677.50, completed; $3,212.50, 35 days.

Front and Union. Brickwork and plastering; owner, Henry Cowell; architects, Mooser & Cuthbertson; contractor, Ed. Fladung; bond, $1,700; cost, $6,400; signed, Nov. 16; filed, Jan. 9; payments, 75 per cent. as work progresses; balance, 35 days.

Geary and Leavenworth. Carpenter work, mill, etc., owner, J. A. Michalitschke; architects, John & Balczynski; contractor, S. H. Kent; cost, $30,904; signed, Jan. 22; filed, Jan. 23; payments, $3,000, third tier of joists are laid; $3,000, frame up; $5,000, ready for inside plaster; $6,000, white coated; $6,178, completed; $7,726, 35 days.

Geary and Leavenworth. Iron work; owners, J. and A. Michalitschke; architects, John & Balczynski; contractors, Bigelow & Little; cost, $8,094; signed, Jan. 22; filed, Jan. 23; payments, 75 per cent. as work progresses; balance 35 days.

Geary and Leavenworth. Lathing and plastering; owners, J. & A. Michalitschke; architects, John & Balczynski; contractor, A. O'Brien; cost, $5,674; signed, Jan. 22; filed, Jan. 23; payments, $1,700, brown coated; $2,000, white; $555.50, accepted, $1,418.50, 35 days.

Geary and Leavenworth. Painting and polishing; owners, J. & A. Michalitschke; architects, John & Balczynski; contractor, Fred Schaefer; cost, $1,970; signed, Jan. 22; filed, Jan. 23; payments, $400, first coat on outside and inside; $400, ready for graining; $677.50, completed; $492.50, 35 days.

Geary and Leavenworth. Plumbing; owners, J. & A. Michalitschke; architects, John & Balczynski; contractors, Duffey Bros.; cost, $6,250; signed, Feb. 2; filed, Feb. 4; payments, $2,250, rough plumbing done; $2,437.50, completed; $1,562.50, 35 days.

Geary and Polk. Concrete work; owner, Cora A. Wallace; architects, R. H. & R. White; contractors, Gray Bros., A. S. P. Co.; cost, $1,000; signed, Jan. 25; filed, Feb. 1; payments, $750, completed; $250, 35 days.

Gold near Sansome; To build; owner, L. H. Butcher; architect, T. J. Welsh; contractor, J. J. Dunn; bond, $1,700; cost, $6,906; signed, Jan. 6; filed, Jan. 7; payments, 1st and 15th day of each month 75 per cent. of value of work done; balance 35 days.

Green near Powell. Grading, brick and carpenter work; owner, Jos. Calegaris; architect, T. J. Welsh; contractor, J. W. Smith; bond, $1,487; cost, $3,945; signed, Jan. 29; filed Jan. 30; payments, $1,114.50; frame up; $1,114.50, brown coated; $1,114.50, white coated; $1,114.50, completed; $1,487. 35 days.

Grove and Baker. Mill work; owner, W. W. Ackerson; architects, Martens & Coffey; contractor, A. Kendall; cost, $3,050; signed, Jan. 15; filed, Jan. 21; payments, $570, contractors 2d payment is due; $570, when 3rd is due; $570, when 4th; $577, when 5th; $763, when 6th is due.

Grove and Baker. Painting; owners, Julius Arguello and wife; architects, Martens & Coffey; contractor, L. J. Dwyer; cost, $985; signed, Jan. 14; filed, Jan. 21; payments, $300, outside 2d coated and inside ready to grain; $324, completed; $345, 35 days.

Grove and Baker. Plumbing, gasfitting, sewers; owner, Julius Arguello; architects, Martens & Coffey; contractors, W. S. Snook & Son; bond, guaranteed; cost, $1,300; signed, Jan. 11; filed, Jan. 13; payments, $400, rough gas and water pipes are in, also sewers; $575, completed and accepted; $825, 35 days.

Harrison bet. 23d and 24th. To build; owner, E. H. Hardy; architect, Oliver Everett; contractor, R. B. Hicks; cost, $2,600; signed, Jan. 28; filed, Feb. 3; payments, $700, frame up and rustic on; $750, ready for plaster; $850, completed; $500, 35 days.

Hayes near Steiner. To build; owner, Mrs. A. C. Joice; architect, A. C. Lutgens; contractor, John Sath; bond, $2,000; cost, $3,838; signed, Feb. 3; filed, Feb. 4; payments, $700, frame up and roof shingled; $700, 1st coat of plaster on; $700, 2d coat of plaster on; $778.50, completed; $959.50, 35 days.

Locust near Washington. To build; owner, L. S. Boruck; contractor, W. W. Redmall; bond, $700; cost, $3,100; signed, Jan. 2; filed, Jan. 5; payments, $3,100, on completion of building.

Market, Post and Montgomery. Interior finish and window sashes; owners, Crocker Estate Co.; architect, A. Page Brown; contractors, L. & E. Emmanuel; cost, $94,490; signed, Oct. 17; filed, Jan. 20; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Market Street No. 928. Store fixtures and alterations; owners, Summerfield & Roman; architect, M. J. Lyon, contractor, J. S. W. Saunders; cost, $2,050; signed, Jan. 9; filed, Jan. 25; payments, 75 per cent. completed; $512.50, 35 days.

McAllister near Broderick. Plumbing and gasfitting; owners, Board of Education; architect, C. I. Havens; contractor, H. Williamson; cost, $1,784; signed, Jan. 12; filed, Jan. 16; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

McAllister near Broderick. To build; owners, Board of Education; architect, C. I. Havens; contractor, H. Jacks; cost, $19,650; signed, Jan. 13; filed, Jan. 16; payments, 75 per cent. on 1st day of each month as work progresses; balance 35 days.

McAllister and Jones. Painting and polishing; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractor, M. J. Donovan; cost, $2,675; signed, Jan. 7; filed, Jan. 19; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

McAllister and Jones. Marble floor of Rotunda; owners, Hibernia S. & L. Society; architects, Pissis & Moore; contractors, Chatain & Giletti; cost, $1,950; signed, Jan. 8; filed, Jan. 19; payments, 1st and 15th day of each month 75 per cent. of work done; 25 per cent. 35 days.

Mission Pier; No. 2. To build; owners, Jno. Rosenfeld's Sons; architect, Harbor Engineer; contractors, S. F. Bridge Co.; cost, $8,500; signed, Jan. 16; filed, Jan. 25; payments, 75 per cent. as work progresses; $26 per 1000 ft. b. m. for such additions and alterations as may be ordered.

Morton and Kearny. Alterations and repairs; owners, Geo. and Julius Raphael; architects, C. R. and J. M. Wilson; contractors, Field & Lack; cost, $2,683; signed, Jan. 20; filed, Jan. 23; payments, $1,000, columns are placed in position in 3rd story; $1,000, 2d story floors down, 2d and 1st story ceiling lathed and plastered; $683, 35 days.

Morton and Kearny. Store fixtures; owners, Raphael Bros.; architects, C. R. & J. M. Wilson; contractors, Field & Lack; cost, $1,350; signed, Jan. 30; filed, Jan. 30; payments, $900, completed and accepted; $350, 35 days.

Natoma and 7th. To build; owner, M. B. Levy; architect, Jno. Gash; contractor; W. R. Dunning; cost, $2,185; signed, Jan. 28; filed, Jan. 30; payments, $200, tinned; $100, brown coated; $100, white coated; $200, doors and windows hung; $1,050, completed; $335, 35 days.

Page near Webster. Carpenter work; owner, Hannah Kerns; architect, J. H. Littlefield; contractor, Adam Miller; bond, guaranteed; cost, $7,963.; signed, Jan. 15; filed, Jan. 21; payments, 75 per cent. of work done on 1st, 10th and 20th of each month; balance 35 days.

Page near Webster. Excavating and brickwork; owner, Hannah Kern; architect, J. H. Littlefield; contractor, D. T. Pierce; bond, guaranteed; cost, $975; signed, Jan. 15; filed, Jan. 22; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

Page near Webster. Painting; owner, Hannah Kern; architect, J. H. Littlefield; contractor, J. M. Sindlinger; bond, guaranteed; cost, $840; signed, Jan. 15; filed, Jan. 21; payments, 1st, 10th and 20th of each month 75 per cent. of work done; balance 35 days.

Page near Webster. Plumbing and gas-fitting; owner, Hannah Kern; architect, J. H. Littlefield; contractors, Samuel Ickelheimer & Bro.; bond, guaranteed; cost, $1,040; signed, Jan. 15; filed, Jan. 21; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

Pine near Sansome. Elevator; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, Cahill & Hall; cost, $3,700; signed, Jan. 2; filed, Jan. 5; payments, $1,000, elevator set and well ready to receive cage; $1,700, completed; $1,000, 35 days.

Pine near Sansome. Hot water heating; owner, Daniel Meyer; architects Salfield & Kohlberg; contractor, Wm. Cronan; cost, $3,900; signed, Jan. 16; filed, Jan. 22; payments, 50 per cent, as work progresses; balance after acceptance.

Post near Octavio. To build; owner, Eugene Moffat; architect, Julius E. Krafft; contractor, W. W. Ackerson; cost, $9,200; signed, Feb. 1; filed, Feb. 2; payments, $1,700, roof shingled and chimneys built; $2,300, brown coated; $3,000, completed; $2,300, 35 days.

Potrero Gas Works. To bore wells; owners, S. F. Gas Light Co. and Union Iron Works; architect, Engineer of Gas Co.; contractors, Smith & Cook; bond, guaranteed; cost, $7 per foot; signed, Dec. 23; filed, Jan. 4; payments, $350, as every 100 feet of well is completed; $1.75, per foot on completion; $1.75, per foot, 35 days.

Powell St. Theater. Repairs; owner, E. A. Denicke; architects, Wood & Lovell; contractor, W. W. Ackerson; cost, $6,800; signed, Jan. 20; filed, Jan. 20; payments, 1st and 15th day of each month 75 per cent of work done; balance 35 days.

Sacramento near Powell. To build; owner, E. A. Denicke; architects, Kenitzer & Kollofrath; contractor, J. F. Logan; bond, $14,000; cost, $43,397; signed, Jan. 18; filed, Jan. 19; payments, $5,000, rear frames are up; $5,000, front up; $5,000, buildings enclosed and window frames set; $5,000, brown coated; $5,000, plastering completed; $5,000, ready to paint; $2,397, completed; $11,000, 35 days.

Sacramento near Powell. Painting and graining; owner, E. A. Denicke; architects, Kenitzer & Kollofrath; contractor, J. S. Thomson; bond, guaranteed; cost, $1,880; signed, Jan. 20; filed, Jan. 22; payments, $1,100, buildings second coated outside; $1,000, ready for graining; $1,200, completed; $1,180, 35 days.

Sacramento near Powell. Plumbing and gas-fitting; owner, E. A. Denicke; architects, Kenitzer & Kollofrath; contractor, Wm. F. Wilson; bond guaranteed; cost, $5,350; signed, Jan. 20; filed, Jan. 22; payments, $1,000, gas, water and waste pipes in rear building; $1,000, gas, water and waste pipes in front; $2,500, completed; $1,450, 35 days.

San Jose Ave. and Sagamore. To build; owners, H. Vandre and wife; contractors, Buck Bros.; cost, $1063; signed, Jan. 12; filed, Jan. 22; payments, $300, building enclosed; $300, ready for plaster and outside finished; $241.50, accepted; $241.50, 35 days.

Scott near Pine. Alterations and additions; owner, Hettie Morse; architect, J. H. Littlefield; contractors, Fulton and Ogle; bond guaranteed; cost, $1,025; signed, Jan. 11; filed, Jan. 12; payments, 75 per cent. of work done on 1st, 10th and 20th of each month as work progresses; 25 per cent., 35 days.

Seventeenth near Douglass. To build; owner, C. Ruhland; contractor, C. Zwierlein cost, $5,580; signed, Jan. 27; filed, Jan. 27; payments, $1,046, frame up; $1,046, brown coated; $1,046, white coated; $1,047, completed; $1,395, 35 days.

Sunnyside Ave. near Baden street. To build; owner, John Kaiser; contractors; Peterson & Peterson; bond. $500; cost, $1,085, signed, Jan. 14; filed, Jan. 21; payments, $277, frame up; $276, brown mortar on; $266, completed; $266, 35 days.

Sutter near Hyde. Brick, cement, carpenter work, etc.; owner, Chas. A. Zinkand; architect, R. Zimmerman; contractor, F. W. Kern; bond, $2,572; cost, $10,200; signed, Jan. 18; filed, Jan. 18; payments, $1,925, frame up; $1,925, partitions set and building enclosed; $1,925, white coated; $1,940, accepted; $2,575, 35 days.

Sutter near Hyde. Plastering; owner, Chas. A. Zinkand; architect, R. Zimmerman; contractor, Arthur O'Brien; cost, $1,124; signed, Jan. 18; filed, Jan. 18; payments, $450, brown coated; $450, white coated; $224, 35 days.

Sutter near Hyde. Plumbing, etc.; owner, Chas. A. Zinkand; architect, R. Zimmerman; contractor, H. Williamson; cost, $1,094; signed, Jan. 18; filed, Jan. 18; payments, $350, rough work done; $500, completed; $244 accepted.

Sutter near Hyde. Alterations and additions; owner; H. Zacharias; architect, Chas. I. Havens; contractor, F. Klatt; cost, $7,500; signed, Jan. 30; filed, Jan. 30; payments, $1,000, frame up and building enclosed; $1,000, brown coated and principal part of outside finish on; $1,000, hard finished; $1,000, completed; $3,500, 30 days.

Sutter near Hyde. Plumbing and gas-fitting; owner, H. Zacharias; architect, Chas. I. Hivens; contractor, H. Williamson; cost, $1,100; signed, Jan. 30; filed, Jan. 30; payments, $400, rough gas, water pipes and sewers in; $425, completed; $275, 35 days.

Sutter near Taylor. Brickwork; owner, M. L. Smith; architects, C. R. & J. M. Wilson; contractors, Hock & Hock; cost, $4,000; signed, Jan. 2; filed, Jan. 5; payments, $2,000, when original contractor receives 1st payment from owner; $1,000, when he receives 2d payment; $1,000, 35 days

Sutter near Taylor. Mill work; owners, California Mills; architects, C. R. and J. M. Wilson; original contractor, Wm. Knowles; sub-contractor, California Mills, N. Parrish & Co.; cost, $5,000; signed, Jan. 25; filed, Jan. 25; payments, $1,250, brown coated; $1,250; inside finish on; $1,250, completed; $1,250, 35 days.

Taylor near Bush. Concrete walls, plumbing, etc.; owners, Board of Education; architect, C. I. Havens; contractor, F. A. Williams; cost, $1,315; signed, Jan. 12; filed, Jan. 16; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Turk near Larkin. Brick, plumbing, plastering, etc.; owner, Jno. G. Clark; architect, Jno. G. Clark; contractor, Jno. G. Adams; bond, guaranteed; cost, $3,400; signed, Jan. 25; filed, Jan. 30; payments, $850, frame up; $850, brown coated; $850, inside finish completed; $850, 35 days.

Twenty-fourth and Castro. To build; owner, Fannie S. Downing; contractor, A. Klahn; cost, $4,973; signed, Feb. 3; filed, Feb. 3; payments, $973, frame up; balance, $4,000, 35 days.

Twelfth near Howard. Brickwork and smoke-stack; owners, E. P. White & Co.; architect, J. E. Krafft; contractor, J. O'Sullivan; cost, $7,300; signed, Jan. 20; filed, Jan; 21; payments, 1st and 15th day of each month 75 per cent of work done; balance 35 days.

Union near Scott. Moving and alterating old buildings; owner, Henry Wadsworth; architects, Mooser & Cuthbertson; contractor, J. R. Whalen; bond, $550; cost, $2,200; signed, Jan. 19; filed, Jan. 26; payments, 75 per cent. as work progresses; balance 35 days.

Western Addition, block 548. Grading; owner, Mathias Meyer; contractor, C. A. Warren; cost, $15,500; signed, Jan. 7; filed, Jan. 8; payments, 75 per cent. of work done each month on said contract shall be payable on the 5th of the following month at 20 cents per cub. yd.

Willow Ave. near Buchanan; To build; owner, John Torre; contractor, S. T. Crawford; cost, $1,450; signed, Jan 22; filed, Jan. 22; payments, $500, house enclosed; $588, completed; $362, 35 days.

ALAMEDA COUNTY.

Adeline St. near 12th, Oakland. To build; owner, W. H. Morrison; contractors, A. W. Pattiani & Co.; cost, $3,300; signed, Dec. 7; filed, Jan. 12; payments, $1,275, window frames set and lathed, ready for plastering and exterior primed; $1,200, completed; $825, 35 day.

Bay St. near R. R. Ave. Alameda. To build; owner, A. Sinnett; architect, Howard Burns; contractors, Pierce & Ruch; cost, $2,858; signed, Jan. 16; filed, Jan. 18; payments, $714, frame up and completed; $714, plastering in all on; $714, completed; $716, 35 days.

Bella Vista Park, Oakland. To build; owner, J. H. Kirk; architect, Bert L. Smith; contractor, F. A. Brown; cost, $8,076; signed, Jan. 16; filed, Jan. 16; payments, $769, frame up and sheathing on; $769, plumbing done and first coat plaster on; $769, completed; $769, 35 days.

Block B, Eureka Hd., Berkeley. To build; owner, Mrs. E. Stevens; contractors, Esty & Jewett; cost, $2,333; signed, Jan. 9; filed, Jan. 12; payments, $366.62½, ⅓ of entire amount when first house is enclosed; $366.62½, ⅓ of amount when brown mortar is on 1st house; $366.62½, ⅓ when first house is completed; $366.62½, ⅓, 35 days after completion of first house; $366.62½, ⅓ when 2d house is enclosed; $366.62½, ⅓ when brown mortar is on; $366.62½, ⅓ when completed; $366.62½, 35 days.

Block 536, Oakland. To build; owner, Chas. Helmke; architect, Chas. Mau; contractors, Leiter & Prugh; cost, $2,767; signed, Feb. 2; filed, Feb. 4; payments, $520, ½ materials furnished and ¼ completed; $520, ½ furnished, ⅓ completed; $520, ¾ furnished, ¾ completed; $515.25, completed; $691.75, 35 days.

Broadway bet. 17th and Durant, Oakland. Excavations, brick, granite and iron work; owner, Mrs. Catherine Collins; architect, Chas. Mau; contractors, Remillard Brick Co.; cost, $2,300; signed, Jan. 18; filed, Jan. 28; payments, $800, ½ materials furnished and one-half work completed; $825, completed; $575, 35 days.

Broadway bet. 17th and Durant, To build; owner, Mrs. Catherine Collins; architect, Chas. Mau; contractor, H. E. Jones; cost, $4,800; signed, Jan. 28; filed, Jan. 28; payments, $1,215, one-third materials furnished and one-third work completed; $1,215, two-thirds furnished and two-thirds completed; $1,215, completed; $1,215, 35 days.

Broadway and 14th Sts. Oakland. Carpenter work, etc.; owner, J. Macdonough; architects, Mooser & Cuthbertson; contractors, Smilie Bros.; cost, $68,900; signed, Jan. 13; filed, Jan. 15; payments, payments to be made on 1st of each month and at rate of 75 per cent. of value of the work done, 25 per cent., 35 days after completion and acceptance of said work.

Dana Street near Bancroft Way, Berkeley; Stone, brick and frame building; owners, Stiles Hall Association; architect, Clinton Day; contractor, Rob't McKillican; cost, $21,842; signed, Jan. 25; filed, Jan. 28; payments, $1,500, first floor beams set on wall plates, etc.; $4,000, walls finished to line of second floor and beams set; $4393, slate roofing completed, brown coat mortar on etc.; $4,489, completed; $5,460, 35 days.

Durant Ave. and Audubon, Berkeley. To build; owner, Elizabeth Taylor architect, J. C. Newsom; contractors, Weeks & Son; cost, $2,410; signed, Jan. 28; filed, Jan. 30; payments, $602.50, frame up; $602.50, brown mortar on; $602.50, completed; $602.50, 35 days.

Dwight Way and Audubon, Berkeley. To build; owners, G. W. Fletcher and wife; architects, Pissis & Moore; contractor, John Spencer; cost, $4,295; signed, Jan. 21; filed, Jan. 29; payments, $750, frame up; $750, 1st coat plaster on; $750, plastering completed; $750, ready for painting; $220, completed; $1,075, 35 days after.

Eleventh near Franklin, Oakland. Storage building; owner, W. L. Orchard; contractor, V. L. Fortin; cost, $1,197; signed, Feb. 4; filed, Feb. 4; payments, $598.50, brick work done to 2d floor joists; $598.50, entire brick work complete.

Henry St. near 7th, Oakland. To build; owner, John H. Bruning; contractor, J. C. S. Whalin; cost, $2,560; signed, Jan. 6; filed, Jan. 20; payments, $850, building enclosed and roof on; $850, first coat plaster on; $860, completed.

Hobart and Grove. Brick church structure; owner, Rev. Thos. McSweeney; architect, Chas. J. I. Devlin; contractors, Forderer Cornice Works; cost, $7,186; signed, Jan. 22; filed, Jan. 23; payments, 75 per cent. as work progresses; balance 35 days.

Klinknerville Tract, Oakland. To build; owner, C. A. Klinkner; architects, J. J. & T. D. Newsom; contractors, A. D. & H. S. Sellers; cost, $1,025; signed, Feb. 3; filed, Feb. 4; payments, $250, frame up; $250, rustic on roof, etc.; $268.75, completed; $256.25, 35 days.

Livermore Station. Depot; owners, Southern Pac. Co.; contractors, Smilie Bros.; cost, $5,945; signed, Jan. 29; filed, Feb. 1; payments, $2,220.25, ¼ completed; $2,229.50, completed; $1,486.25, 35 days.

Lot 9 block A, Percy Tract, Berkeley. To build; owner, N. L. Freese; contractor, F. A. Armstrong; cost, $2,150; signed, Jan. 8; filed, Jan. 9; payments, $500, building up and enclosed; $500, brown mortar on; $600, completed; $550, 35 days.

Lot 11, block 669, Oakland. To build; owner, J. O. Besse; contractor, F. C. Bignami; cost, $1,400; signed, Jan. 25; filed, Jan. 28; payments, $465, frame up; $465, first coat plaster on; $470, completed.

Mountain View Cemetery, Oakland. Vault; owner, G. L. W. Strel; contractors, Amador Marble Co.; cost, $1,200; signed, Jan. 21; filed, Jan. 26; payments, $400, excavation, brickwork and iron work in proper place and plastering done; $400, completed; $400, 35 days.

Park and Santa Clara Ave., Alameda. Alterations and additions; owner, Minnie E. Tucker; architect, Geo. A. Bordwell; contractor, J. J. Boyle; cost, $2,750; signed, Jan. 21; filed, Jan 29; payments, $600, brown coat mortar on; $700, plastering done and fronts finished; $750, completed; $700, 35 days.

Peralta Ave. and Palm St., Fruitvale. To build, owner, Mary F. Johnson; contractor, T. R. Goth; cost, $1,400; signed, Dec. 23; filed, Jan. 28; payments, $600, rustic and shingles on and building ready for lathing; $500, plastering completed; $400, completed.

Santa Clara Ave. near Union. To build; owner, Geo. E. Colwell; contractors, A. W. Pattiani & Co.; cost, $2,586; signed, Dec. 29; filed, Dec. 31; payments, $700, rustic and roof shingles on and chimney built; $636, brown mortar on and exterior primed; $600, completed; $650, 35 days.

Trenton near Haste, Berkeley. To build; owner, M. C. Hamlin; contractor, Geo. A. Embury; cost, $2,100; signed, Feb. 1; filed, Feb. 1; payments, $600, frame up; $600, enclosed and brown mortar on; $500, completed; $600, 35 days.

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THE situation at the beginning of the year was one of encouragement, while at the present time, with the grateful warmth of spring, confidence seems to expand with the growth of the vine and leaf; even the thermometer shows a growing tendency. Almost everywhere the polished armor of the plows is evidence of their activity. A greater area has been turned and seeded than ever before, which, aided by the warm rains, present indications that this will be the greatest productive year known on this Coast. The products are becoming more diversified, the marketing has assumed a more business aspect, and the manufacturing and storing of wine has become systemitized. The freight rates are being looked after by the mercantile community, and it is to be hoped that some fair agreement between the parties concerned, will be arrived at, thereby increasing the trade of this Coast.

With good crops comes a general prosperity and real comfort which is a powerful incentive to work. From our exchanges we learn that the country is going forward and developing its resources in all lines of industries. Improvements of various kinds are being undertaken and prosecuted in an energetic manner wrought of courage and confidence.

There is now much life in the manufacturing enterprises, and vigorous efforts are being made to push their wares into notice.

THIS season bids fair to be an era in church building. More church edifices have been planned to be built this year than for any previous year; not alone in San Francisco, but in nearly all the cities and towns of the interior. In no other way can the citizens of a village make so favorable and lasting an impression on the visitor who may be seeking for a location in which to settle, as that produced by a neat, commodious house of worship.

According to appearances, it will be only a few years hence when our section of the country will be noted for its beautiful churches, and the steady respectability of its inhabitants.

THE ART OF PLANNING.

An Address to the Students, Delivered by MR. J. MACVICAR ANDERSON, President of the Royal Institute of British Architects, and published in the Journal of the Proceedings of the R. I. B. A. The question is treated fully and yet so concisely that we are unable to make any reduction, therefore, we re-print the entire article.

IF it be true that one of the chief difficulties that attend the study of architecture is to be found in the number and variety of subjects with which it is essential to be more or less familiar, it is no less true that the comprehensive nature of the pursuit constitutes one of its greatest attractions, for it opens up a field of inquiry over which the mind may roam with ever-increasing vigor and interest. Absorption in one particular subject of study may produce lassitude, but no amount of devotion to a study so varied as that of architecture should ever conduce to such a result, for mental refreshment is to be found—not in cessation—but in variety of thought; and the student of architecture need never experience difficulty in finding mental repose by turning from one to another of the many fields of research that lie before him. For example, in History he will find the phases depicted through which the art has passed in by-gone ages; in Literature he will become familiar with the opinions of great masters which imparted individuality to the art of different epochs; in Nature he will gather from the development of the mineral and vegetable creations, the properties of the materials in which his designs will have to find expression; in Science he will learn what is the strength and formation of such materials, and how to adapt them to his requirements without doing violence to their material characteristics; in Observation of the executed works of others, whether ancient or modern, he will, from sketching and measurement, discern how successful results have been attained, or artistic effects produced. In Design he will apply the varied knowledge he has thus acquired from History, Literature, Nature, Science, and Observation; and, by the artistic and scientific treatment of the materials at his command, he will impress his ideas and personality on the architecture of his day.

For the successful pursuit of a study so varied and so fascinating many qualifications are desirable, but three are essential: Natural Aptitude, Application, Imagination. Without the first, the student will do well to abandon the career, even though he may have spent time in discovering his want of affinity with it. Many illustrations from real life might be quoted of men who had devoted years to the preliminary study of a profession only to find that they had no aptitude for it, and have with good sense left it for a more congenial career, in which they have earned reputation and renown. If the heart, as well as the intellect, be not engaged in the work of life, you may possibly, in favoring circumstances, attain to respectable mediocrity, but you will never achieve real success. Be sure, therefore, at the outset, that you possess that earnestness of purpose and heart-love for your work which spring from natural affinity and cannot exist without it. It is needless to insist on the importance of Application. Original genius or natural endowments cannot be acquired or imparted, but it is marvellous to what an extent Application compensates for the lack of such gifts. Was it genius that led George Stephenson to perfect the invention of the locomotive steam-engine—probably the greatest promoter of civilization that the world has ever seen—or was it simply indefatigable application? Read his life, if you have not done so, full of lessons for all, and judge for yourselves. Or again, look at a life but recently terminated: admittedly unendowed with genius, but possessed of good sense, honesty of purpose, and earnest application, how startling the success, how remarkable the position, which was achieved by the late First Lord of the Treasury. If you have application, you possess one of the most powerful levers with which to remove and triumph over difficulties. But it is obvious that Natural Aptitude and Application, invaluable as they are, are not sufficient to qualify you for the career on which you are entering. Far away the most important work of your lives as architects will be that of Design, and if you are devoid of the mental endowment of Imagination—by means of which alone can there be Design—you will be like a ship without compass or rudder, your lives will be aimless, and you will miss the prize of your calling. Possessed of all knowledge your works, without imagination, will be but imitations and reproductions, not designs. Equipped with learning, but devoid of creative power, you would not be artists; and, therefore, could not be architects.

I have glanced at the varied nature of your engagements as students of architecture; it would be manifestly impossible within the brief compass of this Address to discourse on all, or even a few, of these with any prospect of a beneficial result. I propose, therefore, to confine my remarks to one branch of them only, and to ask your attention to a few suggestions respecting it. The subject which I have selected is what I do not hesitate to refer to as "The Art of Planning." No doubt there are those who will regard such a designation as a contradiction in terms, for it is to be feared that there are not a few who consider planning as, at the best, a very prosaic part of an architect's work—to whose poetic fancies the idea of elevating it to the dignity of an art may appear to be a sort of architectural blasphemy. There are others who, without going so far as this, do not hesitate to relegate planning to an inferior and subordinate place, not worthy of the exercise of the higher and artistic faculties of the designer—a constructive skeleton, as it were, admirable it may be in its mechanism, but which the architect must clothe with grace before it can be admitted to the sacred courts of art. Now I do not hesitate to declare that such views of planning are thoroughly fallacious, and injurious to the best interests of architecture, because derogating to a commonplace utilitarianism what is really an integral and inseparable part of the art, the root from which grow the loftiest conceptions,—the suggestive source from which springs all that follows.

Thus viewed, you will see at once that it is impossible to exaggerate or over-estimate the importance of the study of planning. It may indeed be safely asserted that there is no study in which the human mind can engage on the results of which the comfort, convenience, and happiness of society so much depend. This, I admit, is claiming a good deal, but no more than the study properly demands. It is not my purpose at present to emphasise utilitarianism, but do not forget that every building is designed for use; to say so is not to derogate from art, because the highest art is displayed when a building is so designed as most successfully to fulfil its purpose by combining fitness with beauty. Thus the primary field for the exhibition of the architect's art is planning. This does not appear to admit of doubt. Let me demonstrate it. What is architecture? Is it the mere clothing of the structure? Or is it the artistic design of the structure itself? Unquestionably the latter; and if so, how can the study of planning be other than artistic work, the primary stirring of the dry bones out of chaos, and the life inspiration which creates out of them the useful and the beautiful? Planning is not the mere casual throwing together of so many forms, the chance disposition of so many lines representing walls, enclosing so many haphazard spaces representing rooms; it involves the exercise of imagination. The design of the plan is the medium for educing this quality, just as much as the design of the elevation. It is customary, no doubt, to hear the word design applied to the latter much more than to the former; but the one is really just as much design as the other; consequently the plan affords the opportunity for the display of artistic power just as much as the elevation. Not only so, but a true artist while studying and elaborating his plan has a mental drawing-board by his side, on which he rears in his mind's eye forms and proportions suggested by it and emanating from it; he disposes the arrangement so as not only to meet the requirements, but also so as to produce a happy result in point of effect; in short, the two things go together, they are mentally indivisible, and must be elaborated, not without reference to one another, but in unity. Hence experience demonstrates that a good plan will generally be found to produce a good elevation: they are integral parts of a whole; the one having been artistically studied with a view to the other, the result will be harmonious, for if the tree is good, so will the fruit be.

Did time permit, it might be interesting to divide the subject; and classify it under separate heads, treating each in turn, as for example: the plan ecclesiastical, the plan collegiate, the plan palatial, the plan municipal, the plan judicial, the plan official, and the plan domestic; and a moment's reflection will show you how easily we could find, in the elaboration of the characteristics and requirements of each, much that might profitably engage our attention. I must, however, content myself with a more general treatment, touching briefly what may be called principles, leaving the application of them to your own imagination.

None but those who have made a real study of planning have any conception of the infinite breadth and variety of the field of design which it creates. They only know experimentally the charm of puzzling over difficulties; of revising, re-arranging, and re-disposing, in order to overcome them; thereby probably creating other difficulties, which in their turn have to be surmounted by a further similar process, and so on, until, after many disappointments, many failures and many inventions, a satisfactory result is at length reached. It is now many years since I resolved never to let a plan leave my hands until I felt satisfied that it was right; and in battling with the difficulties thereby created until they have been successfully obviated, I have found some of the most engaging studies of professional life. The question with you should never be, whether a plan is good enough—that is an unworthy standard—but rather, is it the best that I can design? The former, the "it-will-do-well-enough" standard, prevails far too commonly; the latter is the only standard really worth working for, because the only one which will lead to attainments beyond mediocrity. Never, then, rest content with a plan until you are satifieds that it meets and fulfills all the requirements of the case, in the best and most complete manner that you can think of; the plan is the foundation of the whole design, and I need not say to architectural students, that if the foundation be faulty, there is not much hope for the superstructure.

It may seem like insisting on an elementary truism to say that the plan of a building must necessarily be adapted to, and governed by, the exigencies of the site, but the not infrequent violation, or rather neglect, of so obvious a principle justifies me in emphasising its importance. The peculiarities of a site in respect to levels and aspect frequently constitute difficulties that at first sight appear insurmountable, but out of which emanate in skillful hands the happiest results, which otherwise might not have been thought of, or attained. Herein is displayed the skill of the artist: to lay hold on all such adventitious circumstances and hindrances, and conform them to his will, transforming obstacles into mediums for achieving success. The neglect of such opportunities is unpardonable, and betrays the bungler.

Prospect, again, constitutes an important factor in planning. When the right aspect presents the best views, the case is simple; but this is often not the case, and few conditions call for more ingenuity than when the proper aspect is at variance with the prospect that it is desirable to secure. In towns, indeed, aspect and prospect must necessarily, and to a great extent, be subordinated to immovable conditions; but in the country it is different. While, therefore, striving for comfort, convenience, and grace within, never neglect an opportunity of securing the inestimable attraction of a higher than any art loveliness, the prospect of nature and creation. In connection with prospect, let me in passing condemn a practice too much in vogue, the glazing of the upper portions of windows with tinted, stained or painted glass, sometimes uglier than anything it is intended to obscure from view. Situated as we are in London, the expedient is no doubt attended with advantages, shutting out hideous objects which one's neighbors are so found of obtruding, or excluding the impertinent gaze of the too curious; but in the country, where it is frequently adopted, what possible justification can be urged? Is it possible that anything can compensate for the light of the sun, the beauties of nature, or the marvels of the heavens? Never, then, attempt to obscure the contemplation of God's universe by the commonplaces of humanity.

I would say, further, that a plan to be good must be simple. No doubt the arrangement of some buildings is necessarily more elaborate than that of others; but you may take it as an unerring guide, that when you find a plan becoming complicated and confused, you are on the wrong tack. I have seen an artist, after hours of work, wipe from his canvas all he had painted, and then make a fresh start with manifest advantage and no real loss of time; so, when your planning results in complication, your best course is ruthlessly to obliterate what you had done, and begin *de novo*. Nothing will compensate for the absence of simplicity in a plan. This is a golden test which I have never hesitated to apply, and I speak from no inconsiderable experience.

Again, a plan is only good when it is the embodiment of thrift. Much has been said, and more has been written, on the moral aspect of thrift; and it would be easy to enlarge on the advantages of its application, not merely to the life, but also to the artistic work of the student of architecture. I must, however, be content for the present to deal with it in its relation to my subject, and to show that without thrift, both of space and material, a plan cannot properly fulfill its purpose. Thrift is not parsimony any more than liberality is waste. Each space is a plan, be it room, hall, stair or passage, should be just the size that is necessary for its purpose; if it be less, there is parsimony, for what is inadequate will have to be enlarged hereafter at much more than what would have been the original cost; if it be more, there is waste, for it has involved the expenditure of more capital than was required, and will incur needless labor and consequent cost in maintenance. Take as an illustration a room which has been designed on a scale beyond the necessities of its occupants; it is obvious that it has cost more to build and furnish than it should have done, and involves a perpetual cost for maintenance and service which should have been avoided. Hence, the happy medium is to be found in thrift. So in respect to materials: walls should be of sufficient thickness, floors and roofs of sufficient strength for their respective functions, not much more, and not much less; else there will ensue, either waste in the first instance, or parsimony, which will involve waste in the long run. There are, however, cases in which materials should not be too sparingly employed: in a mansion, for example, intended to be a family home, and to pass from generation to generation, it would be unwise, and out of keeping with its purpose, to apply too literally such a condition as this; for nothing imparts more dignity and a greater idea of the enduring purpose for which such an edifice is designed than massive walls, thicker no doubt than may be actually required for sound construction, but not more than is called for in order to be in harmony with the traditions and associations which the structure will represent. This, however, is but one of those exceptions that prove the rule of thrift which I have enforced. I am, of course, not unprepared for the inevitable protest of the art student, who in a burst of æsthetic enthusiasm will denounce the suggestion that so prosaic a quality as thrift should dare to enter the hallowed sanctuary of the art studio; but while entertaining much sympathy with the enthusiasm of youth, and by no means desiring to curb it, and while respecting opinions which I doubt not are perfectly genuine, I venture to think that it would be easy to demonstrate that it would be in the true interest of art were her portals more frequently and more hospitably thrown open for the admission and entertainment of the prosaic maiden I have introduced to your notice. How often for instance might she, with manifest advantage, restrain the artist hand in scattering with inartistic profusion ornament which is misplaced, and therefore ineffective! But to enter on such matters would be to deal with other branches of the architect's studies, and be foreign to my present purpose.

I need not detain you by enumerating conditions more or less obvious, each one of which contributes in its place to the merit of a plan. Apart from considerations of aspect, prospect, and dimensions, each place should be—not only convenient in itself—but should be in its proper position in relation to other places; the work of an establishment, as well as the cost, may be materially diminished or increased, according as this condition is observed or neglected. Doors, windows, fireplaces, should be arranged so as at once to pro-

mote comfort and convenience without needlessly destroying wall-space, or incurring draughts; the amount of window-space should be regulated according to the aspect; and many other considerations of a similar nature should be duly thought of. In short, the perfect plan is, and can only be, the result of the thoughtful study of each principle and every detail: none are too minute to be overlooked: as little things sweeten life, so attention to little details makes a plan complete.

I have written to little purpose if I have not convinced you that planning is one of the most important, difficult, and artistic studies of the architect.

Now let me inquire why it is that plans are so frequently bad. I am aware that there are men in the profession who are adepts in planning, and whose productions in this respect we admire. But are they the majority? Rather, I fear, will they be found to be the small minority. Rarely do I examine published plans without detecting faults which are obviously not the necessary outcome of the circumstances. Why is this? In the majority of cases it does not, I believe, arise from lack of ability on the part of the author, but from the neglect to apply the ability he possesses to the working out of a good plan. Where plans are bad, they are so from two causes. (1) It is impossible to produce a satisfactory result without practical knowledge of the requirements: in the case of a gentleman's house, for example, how can we expect to succeed without being familiar with the nature and working of the establishment? (2) Plans are bad because they are not studied as they should be: I am satisfied that there are many practising architects who have never realized the true nobility of planning, who have never experienced the fascination of the almost exhaustless field it presents for the display of imaginative artistic skill, and who consequently have concentrated their artistic powers in the design of the elevation. Need I guard myself from possible misconception by adding that not one word I have written is intended to militate against the importance of artistic design as applied to the elevation? My subject is Planning, and my remarks naturally apply specially to it. Moreover, architects are not likely to regard the design of the elevation as the least artistic portion of their work, and it is because I entertain the conviction, judging from results, that they do far too much regard the design of the plan in that light, that I have emphasised its artistic character.

The architecture of the future will derive its character, and find its development, from the students of to-day; hence I have been tempted to embrace this opportunity to bring specially before you the subject of planning, believing that those who under-value it, do so because they have not studied it and tasted its fascination, and in the conviction that there is no more useful as well as artistic study in which you can engage. Remember that the subject vitally affects you who are devoting your lives to the study of architecture, and that your treatment of it will still more vitally affect those for whom, by-and-by, you will be called on to design; nothing will so certainly secure for you their grateful blessing as to promote the comfort, convenience, and beauty of their homes, for on nothing does the daily happiness of civilized society so greatly depend. If I have succeeded in elevating the study and lifting it out of the prosaic level from which it is too generally regarded; if I have inspired in any of you, whom it is my privilege to address, the determination to throw yourselves into it with an enthusiasm which you may not hitherto have displayed; if I have thus, through influencing you, sown seed which will fructify for the benefit of succeeding generations; if I have demonstrated that in this study is to be found one of the most interesting, fascinating and artistic pursuits, the time will not have been misspent which we have this evening devoted to the consideration of the Art of Planning.—J. Macvicar Anderson.

THE evolution in architecture for residence property during the past quarter of a century in San Francisco, is fairly represented by the two buildings herein illustrated.

The building shown at the left in the engraving, is a partial side view of one erected about twenty-five years ago, on Haight street, between Laguna and Buchanan streets, for Mr. Hiram Rosencrans, at the time a prominent hardware dealer, and at present the property of Mr. G. G. Burnett.

The more prominent building adjoining is the residence of Mr. Thos. Pollard, built in 1891.

Both these buildings were designed by, and erected under the supervision of Mr. James E. Wolfe, architect.

CITY RESIDENCE.

ONYX ON THE PACIFIC COAST.

BY PROFESSOR LOUIS FALKENAU, MEM. TECH. SOC.
[Read Sept. 4, 1891.]

Taken by permission from the Bulletin of the Transactions of the Technical Society of the Pacific Coast.

The demand for material adapted to the interior decoration of buildings is steadily increasing, and for some time past variegated marble and the so-called onyx have been extensively used, as they are more easily cut and polished than other stones, and are otherwise preferable to many of the materials at our disposal.

Onyx proper is a species of quartz of great hardness, and occurs in small fragments or nodules, while the so-called onyx of which this paper treats is mainly calcium carbonate, mostly in the modification called aragonite, and occurs in large masses. Its hardness is from 3½ to 4, its specific gravity from 2½ to 4, and it is easily cut into slabs and polished.

Onyx has been found in several localities of our State, but with a few exceptions, in small deposits, that do not yield large and perfect slabs. Large deposits have been found in Arizona, and new finds are constantly reported from all parts of the United States. Mexico has many fine deposits of onyx, most of which is used for clocks, table tops and small ornaments. The specimens of Mexican onyx, which I have here, are from La Sorpresa and La Mesa Mines, Tehuacan Pueblo, of which I have received the following description by the owners:

The deposits of onyx are found running through hills measuring about four miles across, at an angle of about 45 degrees, in layers of from 4 to 15 inches in thickness, separated from each other by parallel layers of clay, gravel and country rock. The deposits reappear on the other side of the canyon, running into the opposite hills at about the same angle.

The Sorpresa onyx is mostly white and green. The La Mesa, variegated. The first is near the bottom of the hills, the latter above it; a hard, red country rock separates the two mines. No marble, and no calcite crystals have thus far been found there. The deposits have been worked for three or four years without the use of machinery. From 5,000 to 6,000 cubic feet of onyx have been shipped to Paris, London and New York at a price of about $10 per cubic foot. The shipping port is Vera Cruz, which is reached in one day by railroad.

As the croppings of these deposits have been traced for five miles along the hill-sides, and extend from the bottom of the hill to the top, the amount of available material is very great. The largest slabs obtained were 12 feet long, 8 feet wide and 5 feet in thickness.

In our State the deposits of Suisun, and of San Luis Obispo, have for several years past been worked by Messrs. J. & F. Kesseler, of this City, who have kindly furnished me these specimens and the following description of the San Luis Obispo quarry:

To Prof. Louis Falkenau. Sir:—According to promise, we send you a short statement regarding our onyx mine in San Luis Obispo County, Cal. The mine is situated about thirty miles from San Luis Obispo, and about twenty miles from Pismo Beach. It lays in the hills between Huasno Creek and Arroyo Creek, about sixteen miles from Arroyo Grande, a station of the narrow gauge railroad. The ledge stands nearly perpendicular on the side of a hill. The earth and stone in front of the ledge have been removed to the depth of about forty or fifty feet for a distance of eighty feet along the ledge, which is sixteen feet wide on the top and gets thicker going down.

The croppings show themselves from three to four hundred feet along the ledge, and again about half a mile to the northwest. The blocks stand all on their edges, and are from two to three feet, from eight to twelve feet, and some from fifteen to twenty feet long, and from six inches to eighteen inches thick.

Along the ledge there are also several valuable mineral springs. The onyx has beautiful colors—red, green, sky-blue, rose color, and a lovely golden yellow. The rich colors run in charming and graceful transition from one shade to another. Men who have worked and used onyx extensively declare it to be the finest onyx known. It has solidity, large sizes, beautiful colors, and an endless variety of tints. It is within easy reach of San Francisco, whence it may be shipped to all parts of the world.

Surrounding the mines and springs are nine hundred and twenty-nine acres of land, which form part of the property; they have plenty of timber and running water, and would form a beautiful park for the springs.

Very respectfully,

San Francisco, March, 1891. J. & F. Kesseler.

I have no knowledge of other deposits in California having been worked to any extent. The Arizona deposits, discovered in August, 1889, which I visited in September, 1890, are located in Yavapai County, about 28 miles southwest from Prescott. The onyx is found in a group of low rolling hills. Eleven claims of 600x1500 feet cover the location. The bottom of the hills, and the beds of the creeks and gulches surrounding them show strata of conglomerate, formed of fragments of onyx mixed with other rock and cemented by lime carbonate. Above these the onyx crops out boldly in well-defined strata of from 12 to 20 feet in height, extending into the hills almost horizontally, with a slight dip toward the center.

The tops of the hills show indications of onyx, and several shafts sunk at a considerable distance from the hillsides show solid masses of onyx immediately below the surface. At the time of my visit, only about 1,800 square feet of the ground had been explored by cuts and shafts. At a very conservative estimate, I would say that there were 1,440,000 cubic feet, equal to 144,000 tons of onyx then available. Should, as is very probable, the balance of the still undeveloped croppings, prove to represent strata of equal dimensions to those already opened, the available supply would be practically inexhaustible. Large blocks, some 7x4 feet and 18 inches in thickness, had been separated from the mass by blasting, and from such blocks most of the samples I have here were broken by a sledge hammer. That the material stood such treatment as well as it did speaks highly for it.

The many varieties found in this deposit differ very much in color and density (8 to 10 cubit feet per ton). Analysis showed the presence of iron, manganese, strontia and magnesia, and it is to the iron and manganese the different tints are due.

Several tons of the onyx were taken to Colton to be cut and polished. The small slabs I have here are samples I brought from there.

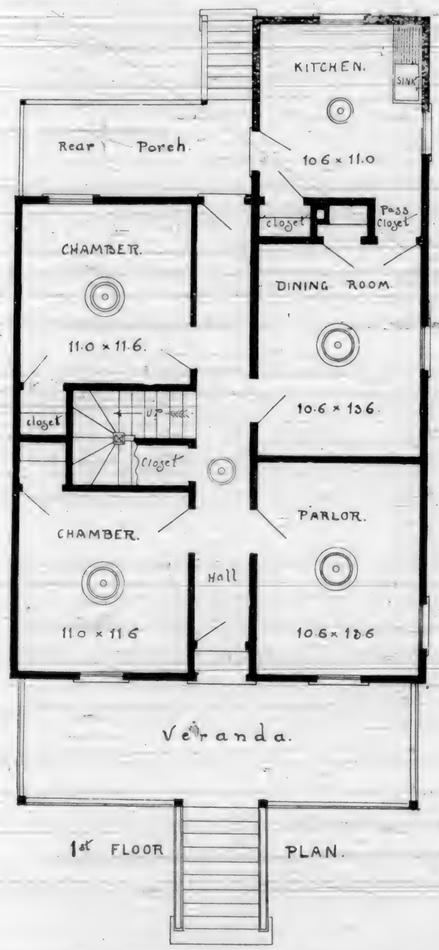
Lately a new location has been found near Phœnix, Arizona, which is said to produce onyx of good quality and in great abundance. The cost of onyx varies from $5 to $10 per cubic foot, and over. To what extent it is used may be inferred from the following amounts expended on it: In Vanderbilt's residence, Newport, $250,000; C. P. Huntington's residence, New York, $100,000; Equitable Building, New York, $75,000; Auditorium Hotel, Chicago, $60,000; Imperial Hotel, New York, $500,000; Grand Union Hotel, New York, $25,000.

At the time the foregoing paper was read there were exhibited about forty specimens of onyx having polished surfaces and presenting almost every shade of color, and showing the laminations which indicated the manner of its formation by deposition.

Removal—Mr. James E. Wolfe, architect, after twenty-one years continuous occupancy of the same suite of rooms, corner of Montgomery and Pine streets, has moved his office to the Flood Building.

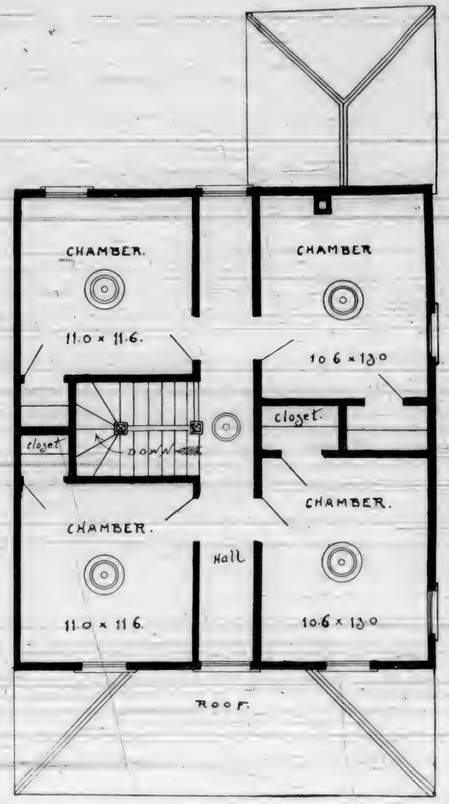
RURAL NOTES.

THE accompanying design is intended for a cheap and commodious suburban or farm dwelling. The front may be finished in any style desired. The interior arrangement presents some desirable features for locations in the "warmer belts" of this coast and some of the valleys. The first floor has on one side the parlor, dining-room and kitchen, while on the other side are two chambers and the stair-way to upper story. The second floor is divided into four chambers, stair-way and main hall. The main halls of both stories are extended through from front to rear, having doors or windows at each end, which secures perfect ventilation with through air currents. The first story has a wide veranda across the front, and at rear a porch convenient to hall and kitchen. The kitchen chimney is placed in the two story part of the house to gain sufficient height to insure a good draught.



1st FLOOR PLAN.

SUBURBAN DWELLING.



2nd FLOOR PLAN

SUBURBAN DWELLING.

ADULTERATION OF PAINTS AND OILS.

Written for the California Architect.

PERHAPS of all the adulterations from which the public suffer, the most aggravating is that caused by the adulteration of paints and oils, and this because the amount of profit to be derived by the painter is so small when compared with the loss and damage to the owner of the property, caused by the use of poor material when the best the market affords is called for in the specifications of the architect. The labor of painting being the same, or very nearly the same when good materials are used, as when the adulterated, or substitute, is employed, the extra profit being only on the first cost of the stock; which bears no comparison to the injury done to the owners of the property where the latter is used.

A slight review and comparison of the two methods of work may not be uninteresting to architects, contractors, and others who take an interest in the welfare and good looks of our city and its surroundings.

To the better understanding of the subject it may not be out of place to glance briefly on the composition and manu-

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MODERN HOUSES.

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WILLIAM HINKLE ESQR.

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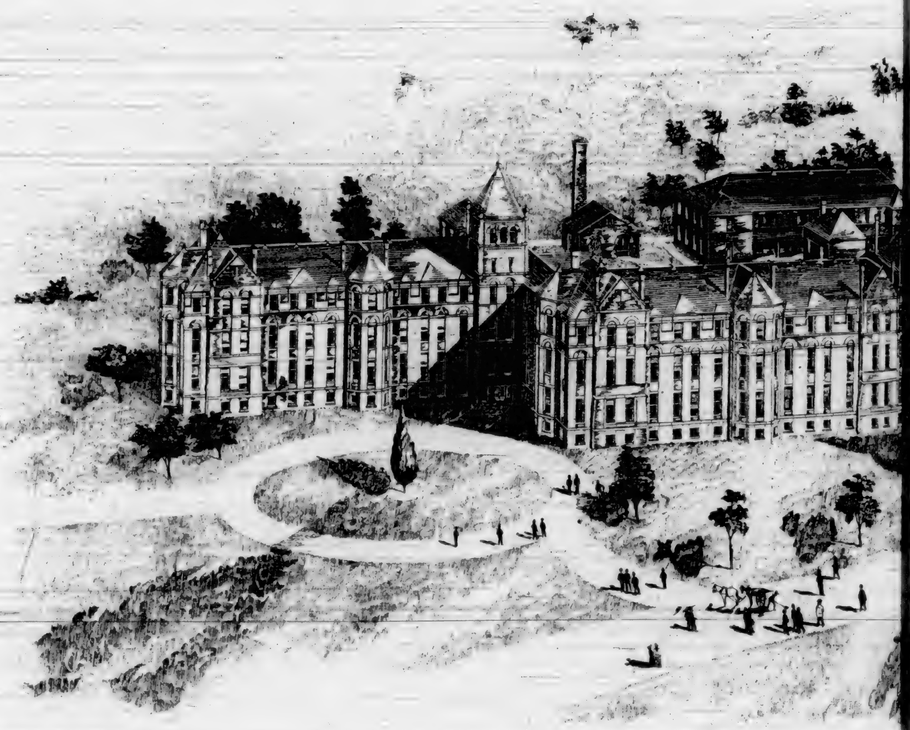
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

BRITTON & REY PHOTO. LITH.

THE MENDOCINO STATE ASYLUM FOR THE INSANE
UKIAH CALIFORNIA



COPELAND AND PEIRCE ARCHITECTS
SAN FRANCISCO CAL.

Bush St. Jehill. Cal
1892

BRITTON & REY PHOTO. LITH.

PUBLISHED BY
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

ROYAL INSTITUTE OF BRITISH ARCHITECTS * MDCCCXXXIV

facture of both lead and oils as intended for the use of the house painter, upon which much ingenuity, skill and science has been displayed, to say nothing of the vast sum that has been expended in plants for the manufacture of an article intended for the use, ornament and presentation of our buildings.

White lead, or carbonate of lead, is manufactured from the purest of metallic lead, great care being used in the selection of the same to obtain the best quality, care being taken to avoid that containing much silver, that metal being the one that would cause the discoloration of the finished article. It is a singular fact that of all the rapid processes for making white lead none have superseded the old Dutch method for producing white lead with body, or covering quality—this is due no doubt to the opaqueness of each particle of the body—if each article is more or less transparent it shows the effect when spread upon wood notwithstanding the same amount of lead may be contained in both preparations.

The white lead ground with linseed oil forms in time a chemical compound instead of a mere mechanical mixture. It is this quality that renders it so valuable a medium for preserving wood from decay. The wood absorbing the oil and carrying the lead into the pores, thus preventing the atmosphere from encroaching upon, and commencing its work of oxidation upon the wood. Another cause for the preservation of the wood may be found in the destructive effect that lead has upon all fungus growth.

If, however, sulphate of baryta, a heavy earth, though of the same weight bulk for bulk, as white lead and also satisfactory in regard to its color, be ground with oil, the result is merely a mechanical mixture, no chemical union takes place between the oil and baryta, no cement is formed and but little protection of the wood afforded. In fact it is little better than a coat of whitewash if so good. Now what is true of the whole, is true of a part, and a mixture of half and half lead and baryta, is only half as good as all lead. Some painters contend that as baryta is a permanent color it is an improvement to add to the lead, this might be true if the oil united chemically with the baryta as it does with the lead. This not being the case however, it may be considered an adulteration pure and simple.

Before leaving the subject it may not be amiss to give an easy mode of detecting the presence of baryta. Take a small quantity of the suspected article, say a table-spoonful or less of the mixed paint, put it over an open fire, in an iron ladel, or small crucible, thus burning off the oil and turpentine. Then add to the remainder placed in a glass vessel, some nitric acid diluted one half with water—the lead will be dissolved forming nitrate of lead, the baryta left as a residue.

Linseed oil, as is well known, is expressed from flaxseed—the best quality being obtained from cold pressed seed—an additional quantity of lower quality is obtained by heat and repressure. It would seem that up to the present time nothing has been devised of a more satisfactory nature than this oil for the purpose of making a mixture with lead, or other mineral oxides, and carbonates for the reason that the oil will form with the lead or other mineral oxides, a chemical combination and therefore a more lasting protection to the wood, and thus serve to give wood and metals a coating well adapted to protect them from the action of the atmosphere.

Pure white or red lead ground with linseed oil, thickened to the proper consistency with spirits of turpentine, furnish a coating to wood or metal that will protect as well as ornament, also remain a protection and ornament for a reasonable length of time—while on the other hand poor fish oil diluted with benzine and ground up with baryta, affords no adequate protection to either wood or metals, and though for a short time may look well will soon blister, work off, and look dirty—affording no protection to the wood and become anything but an ornament.

The dealer in adulterated paints and oil should be held accountable for a large measure of the blame for such work, many painters doubtless purchase their stock in good faith that the articles they buy are what they profess to be. We were informed some years since that one of the largest of Eastern paint manufacturers, one too that manufactured much pure paint, never placed on the label "pure" except upon adulterated paint.

The claim for Lucol as a new invention to resist water, acids, alkalines, etc., and far above linseed oil in some respects, the writer leaves to others for further consideration.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

MENDOCINO STATE ASYLUM FOR THE INSANE.

The buildings for the Mendocino State Asylum for the Insane are now being erected on the State Ground three miles east of the town of Ukiah in Mendocino County. The Asylum consists of eight buildings. The Administration building, four ward buildings, two for the reception of female and two for the reception of male patients, a kitchen building, laundry and bakery building, and a boiler and engine house.

The buildings are built of brick with fire-proof halls and stair cases, the roofs are covered with slate. The fronts are of pressed brick with Ione red sand stone trimmings.

The total frontage of buildings is about 9,000 feet, and will be completed on or about January 1, 1893.

When completed they will accommodate about 600 patients.

Messrs. Copeland & Peirce of this city are the architects.

MODERN HOUSES.

Our illustration shows a row of dwellings now being built on the corner of Octavia and Broadway, that will prove quite an improvement to that part of the city.

The location is one of the best, situated as it is on the sunny-side of the block and a commanding elevation allow-

ing an unobstructed Marine view. Each house will be two stories with finished attic and basement.

The interiors will have finish of oak, mahogany and maple in principal rooms, and redwood in natural color in attic rooms. The dining-rooms will have paneled ceilings of oak and high oak wainscot of same material, and floors of inlaid hard-wood.

Each house will be finished with all modern conveniences—such as furnaces, dumb waiters chutes, electric lighting, speaking tubes, etc., and new and elegant designs in plaster decorations. The fronts will be finished in shingle, pebble-dash and paneling.

The front entrances are bold and inviting, approached by broad flights of concrete steps, and the vestibule floors laid in mosaic. Front doors will be oak and plate glass and all trimmed in antique copper.

The buildings are being erected by William Hinkle, Esq.

The designs are by Mr. Edward Burns, architect, under whose supervision the entire work will be performed.

Architectural Compositions.

By HENRY P. KIRBY. Published by BATES, KIMBALL & GUILD, 9 Tremont Place, Boston, Mass.

A collection of 50 fac-simile plates in portfolio, 15 by 20 inches, from pen drawings of Cathedrals, Chateaux, Palaces, Country and City Mansions, Hotels, Churches, Railroad Stations, Interiors, Details, etc., etc. Mr. Kirby requires no introduction to architects, as his wonderful pen drawings are already well known. His drawings have a freshness, sparkle and vigor that are entirely their own.

Two editions will be published, both from the same plates. The first printed on Whatman's hand-made paper, with special portfolio and title-page, each copy numbered, and sold only by advance subscription at $15.00. The second, printed on fine cream tinted paper made expressly for this work, price $10.00.

California's World's Fair Magazine.

A monthly journal devoted to the interests of the California exhibit at the World's Fair. Published by B. FEHNEMANN, 75 Flood Building, San Francisco. Subscription price, $3.00 per year. The Magazine is a new publication devoted to the interests of the World's Fair and in the aid to the advancement of industrial progress.

The Timber Trades Journal and Saw Mill.

We have received the Seventeenth Annual Special Issue of the *Timber Trades Journal*. It contains about 400 pages and is fully illustrated, and is an international authority on matters relating to the lumber trade throughout the world. It is published by WILLIAM RIDER & SON, London, Eng. The American office is at 136 Liberty street, New York.

The Engineering Record

Contains an illustrated article on the subject of "Public Baths," and which should be in the library of every architect.

South San Francisco News

Is the title of a new eight-page weekly paper. The first edition appeared on March 4, 1892. It is published by MR. C. L. BARNES, and is devoted to the interests and development of South San Francisco.

The paper has started out with a bright energetic look and we wish it success.

Toilettes

Is a monthly journal published in New York and treating of art in costumes, and is well illustrated with designs from Worth and other celebrities.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. — OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. — JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. — L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. — O. BROOKS, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. — H. G. JARMAN, Sec.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held the 11th inst. at their rooms, 408 California street. The President, Geo. H. Sanders, presiding.

A report from the committee on the Chapter Classes was received. For the competition of pen and ink drawings, "Diffidence," Mr. Linden Bree, received first mention; "Mars," Mr. Henry H. Meyers, receeived second mention; and "Pen and Ink," Mr. C. A. Meussdorffer, received third mention. The committee recommended that the Chapter Medal for the year 1891, be awarded to Mr. Linden Bree.

Drawings from models—Mr. C. A. Meussdorffer was placed first; Mr. Linden Bree, second; Mr. Joseph Rowell, third, and Mr. R. H. Wetmore, Jr., fourth.

Flat Studies—Mr. C. A. Meussdorffer was given first mention; Mr. Harvey E. Harris, second; and Messrs. Meyers and Blackenburg as equally entitled to third mention.

Mr. W. W. Polk was introduced as a visitor. Mr. Polk gave some good advice to the art students who were present, and entertained the members of the Chapter on the subject of the inspiration of art and architecture. The meeting ended with a pleasant discussion in regard to the architecture of the present time. Those who were absent lost a rich treat

COMMERCIAL LAW.

II. THE GENERAL CHARACTERISTICS OF LAW.

LAW is the rule of action prescribed by the supreme power in a state, for the guidance and control of the individual. From the rude regulations of the nomadic tribe, to the finely adjusted system of jurisprudence of to-day, is a long span of gradual but logical and progressive development. As new commercial and social development has extended and multiplied the rights and duties of men, the law has widened in its application to meet the new conditions. The first requisite of law is that it shall be as stable and fixed as the eternal hills, and the next requisite is that it shall be as flexible and pliant as the changing needs of men. We shall see how this apparent paradox is met. First, there are two kinds of law, so to speak; or more correctly, two sources of law; one, the common law and the other statute law. Common law is defined to be that "which runneth back to the time when the mind of man runneth not to the contrary," while statute law is that which is specially enacted. Common law may be said to be the foundation and the structure—statute law the alterations and additions.

The common law contains the essential elements of all jurisprudence. The common law of commerce, or law merchant as it is termed, is really the judicial adoption of those customs and practices which were adopted among merchants from time memorial. It is practically, a system of philosophy reasoned out from the primal conditions it is designed to protect. Statute law is the enactment of such additional regulations as necessity from time to time requires.

An instance which well illustrates this principle is the Statute of Frauds, so called. At the common law a man might do with his own as he chose. As the cunning of men was educated by experience, it developed that men might, in the proper exercise of this right perpetrate great wrongs upon others. The common law provided no remedy for this, and so resource was had to statute, and a law was enacted, providing, among other things, that upon a sale of personal property there must be an immediate and continued change of possession, to indicate where the title was actually vested. At the common law, there was nothing to prevent a man, when his goods might be levied upon, from saying that they were not his; that he had previously sold them to another, and by collusive testimony the prior sale could be proved. So the statute was enacted to prevent that and other species of fraud. In our own time, the Interestate Commerce Act furnishes an instance of supplementing by statute the requirements of the common law. At the common law a common carrier was required to carry for all who applied, and to charge for his services a fair and reasonable compensation. But it was found that charges, in themselves, fair and reasonable, and therefore within the common law duty of the carrier, became detrimental to the interests of the community by being different for different persons. And so by statute the further duty was imposed upon the carrier charging the same price to all for the same service. These will serve to show the relative relations of statute and common law.

There are two grand divisions of law—civil and criminal, and civil law is composed of two branches—contracts and torts. The law of contracts refers wholly to these obligations which are voluntarily assumed by the individual, while the law of torts refers exclusively to those obligations which are imposed upon him by law. The whole of the law of contracts may be summed up in the statement that the law will compel a man to do that which he has agreed to do, and the law of torts is simply to enforce against a man the consequences of doing what he ought not to do.

The application of these simple propositions to the complex necessities of such a civilization as ours, sometimes makes the law seem full of uncertainties and strewn with technicality, but it will be found that every case resolves itself down to one or the other of these propositions. The maze of complication which the law presents to the casual observer arises from the application of the underlying principles to the facts of the particular case.

If the facts of a given case are undisputed, there can seldom be a serious difference of opinion as to the law applicable to it. Ingenious lawyers may devise cunning theories, but, with the facts determined, an honest lawyer, properly equipped, ought to be as well able as the judge, to determine what the result of litigation would be.

The first question to be determined is as to whether a wrong exists—if so, we have the word of Blackstone that its remedy may be found in the law. Litigation is rather a question of proof than of law, as a rule, and of that every litigant should be sure before entering court. If men would inform themselves more thoroughly upon their rights and duties under the law, and be better able to judge for themselves of the probable outcome of litigation, thousands of cases which encumber the courts, would never have been brought. And this is information which the business man should possess, and which he ultimately will consider essential to his success.

We have seen the necessity for a general intelligence upon these subjects, we have seen something of the nature of law, and in the next of this series will be found some information as to the application of the law by the courts.

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LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

LIABILITY FOR DEATH OF UNSKILLED WORKMAN.—Where a person employes about dangerous work, men who are not skilled in the work, he must provide them with proper safe-guards. A man was employed about dangerous work at a factory, in which he had no experience, under the direction of a competent master mechanic. The master mechanic left the work and placed in charge an unskilled man, and by reason of the use of improper tools and appliances, an accident occurred and the workman was killed. The employer was liable in damages to his surviving family.

McElligatt v. Randolph, Supreme Court of Errors of Connecticut, 22 At. Rep. 1094, (91C).

PARTNERSHIP RELATIONS UNDER JOINT CONTRACT.—A mason and a carpenter furnished estimates to the owner of a lot for work, in the erection of a building thereon, to be done by each according to his craft. These estimates were separately accepted, but only one contract was made between the owner of the first part, and the mason and the carpenter of the second. Payments as the work progressed were made to either indifferently, and were divided between themselves in the proper proportion. In their notice of lien they described themselves as contractors, and their claim as arising under a single contract, the notice being verified by both. The carpenter assigned his interest to the mason, describing them both in the assignment as claimants for the whole amount of the lien. These facts are sufficient to sustain a finding that they were partners as to the work done and the lien claimed therefore, though both testify that they had no intention of becoming partners.

Parr v. Baur, City Court of Brooklyn, 16 N. Y. Supp. 258, (157H).

SUFFICIENCY OF MECHANIC'S LIEN STATEMENT.—When the Mechanic's Lien statute requires a person claiming a lien for labor, under an entire contract for labor and materials at an entire price, to file a statement of the amount due him, and provides that "the contract price, the number of days of labor performed or furnished, and the value of the same, shall also be stated," a statement which contains two items, as follows: "Labor of myself, between September 1, 1889, and May 1, 1890;" and "Labor laying 1,100 yards concreting, at twenty-five cents per yard, in the last part of August 1890, and ending Auguts 30, 1890," is insufficient, because these items do not show the number of days labor was performed.

Ellinwood v. City of Worcester, Supreme Judicial Court of Massachusetts, 28 N. E. Rep. 1053, (114H).

BUSINESS MOSAICS.

Line Drawings made in pen and ink suitable for reproduction by any of the processes in use, can be ordered through this Journal. Architects and Engineers are oftentimes too busy or too isolated to obtain the time or talent for the ornamental drawings. These drawings can be made from the plain drawings, and we will cheerfully furnish information regarding such work.

Shingle Stains are being extensively used for exterior coloring of shingle work on modern dwelling houses, especially of the better class.

The above cut is a sketch of a cottage which was coated with Cabot's Creosote Stains and presents a very pleasing appearance. It was built in Ross Valley, California, last summer, and was planned by M. G. Bugbee, architect of this city. Mr. Samuel Cabot, of Boston, is the manufacturer of these stains and has met with success principally on account of using pure material and no adulterant in his stains. These stains stand the California climate wonderfully, and are perfectly adapted to red wood. The agenst of this firm are Bell & Van Wyck, 330 Pine Street, San Francisco.

The Excelsior Redwood Company is one of the most extensive firms on this coast engaged in the manufacture and shipment of finished redwood products for the markets of the business world. The company has two large plants, one in San Francisco and the other in Humboldt County, California.

They have all the latest improved machinery for turning out first-class articles worked ready for the builder. One of the specialties of this firm is the manufacture of tanks from 300 up to 50,000 gallons. The redwood tanks are used for the storage of water, wine and beer.

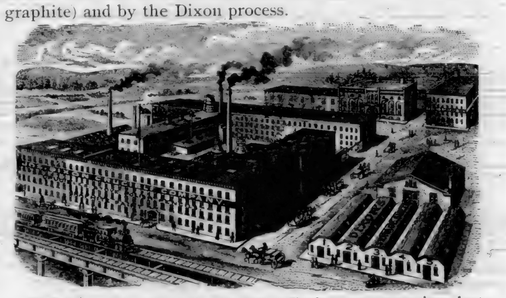
Another specialty is the manufacture of shingles for the Eastern market—redwood shingles having a great advantage over pine or other shingles commonly used in those sections—besides great quantities of split posts, shakes, tree-stakes, piles, fruit-trays, etc. The office of this company is at the corner of Fourth and Channel Streets, San Francisco.

We have received from the Cincinnati Corrugating Co., Ohio, an illustrated catalogue of their manufactures, which include Corrugated Roofing, Siding, Ceiling, Arches, Lath, Shutters and Doors, V Crimp Iron Roofing, Standing Seam Plain Roofing, Roll and Cap Steel Roofing, Outcalt Elastic Joint Roofing, Metallic Weather Boards, Ridge Capping and Beaded Metallic Ceiling; also Roofing Tin Plates and Juniata Galvanized Sheets, "Piqua" Brand.

They make a specialty of ornamental ridge work.

The Graphite Industry is fittingly represented by the Company whose founder first gave it birth.

The Joseph Dixon Crucible Co., Jersey City, N. J., was founded by Joseph Dixon in 1827, who, at that time, began the manufacture of black lead crucibles and completely revolutionized the crucible business. All crucibles used at the present day for melting brass, steel, copper, gold, silver nickel, etc., are made of blacklead, (the common name for graphite) and by the Dixon process.



The Dixon Company have not only been progressive, but they have been aggressive, and have pushed their goods into all parts of the civilized world. During the past year they made extensive changes in their factories, and we take pleasure in showing by the illustration above the main works and offices located in Jersey City. Their graphite mines are at Ticonderoga, N. Y., and their cedarmills are at Crystal River, Fla.

The nature of graphite, sometimes called Plumbago, or blacklead, is not generally understood; and therefore, its great value in the mechanical arts has not been fully appreciated. Graphite is one of the forms of carbon. It is not affected by heat, cold, acids, alkalies or any known chemical solvent. It is also the best solid lubricant known to science a remarkable conductor of heat and electricity. The peculiar qualities of Graphite have given it a wide range of usefulness. It is used in the manufacture of lubricants for all purposes, crucibles, stove polish, lead pencils, foundry facings, electrotyping graphite, graphite paint, etc.

The Dixon Company are miners as well as importers of graphite in all its forms, and use no graphite that they do not mine or prepare. Their mines are located in Ticonderoga, N. Y., and they have every facility in the way of chemists and expensive machinery, etc., necessary for completely freeing the graphite from the silica, sulphur and other impurities which it contains when it comes from the mines. The company's illustrated catalogue of graphite productions is an interesting pamphlet and well worth reading. It is sent free on application.

Mott's Patent Open Lavatory, as illustrated on page viii, has many advantages over the old style of lavatory. There is no closet underneath to act as a receptacle for dirt or filth; but it is so arranged that it can be kept perfectly clean, and presents an artistic appearance as is usual with this firms manufactures.

Merchant & Co's. Star Ventilator is an article which should be carefully examined into by all interested parties. It is made of galvanized iron, copper or brass, and for ventilating churches, school houses, theaters, factories, etc., it has no equal. Special ventilators for railroad cars are also furnished by this firm.

The Wm. Powell Company of Cincinnati, Ohio, manufacture a rubber stopper which is far superior to any stopper heretofore known. It is metal cored, which gives it weight and strength, so that it cannot float out of the socket. It is encased entirely with rubber, so that it cannot injure or dent the most fragile Basin or Bath, and there is no brass stud ring to pull out. For basin, bath, sink and tray plugs they are excellent, and should in all cases be used in preference to the old style of metal stoppers.

The windows of the Crocker Building are being fitted out complete with the Marshall Patent Sash Balance and Burglar Proof Lock.

TENDERS TO BE RECEIVED.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M., on the 8th day of April, 1892, and opened immediately thereafter, for all the labor and materials required for the excavation, foundations, cut stone work and brick work, iron and wood floor and roof construction, roof covering, etc., ready for the interior finish of the U. S. Post Office, etc., Building, at San Jose, Cal., in accordance with drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at San Jose, California.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defects or any informality in any bid.

All proposals received after the time stated, will be returned to the bidder.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Excavation, Foundations, Cut Stone Work and Brick Work, Iron and Wood Floor and Roof Construction, Roof Covering, etc., ready for the Interior Finish, of the U. S. Post Office, etc., building at San Jose, Cal.," and addressed to,

W. J. EDBROOKE,
Supervising Architect.

February 27, 1892.

Sealed proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., until 2 o'clock P. M. on the 5th day of April, 1892, and opened immediately thereafter, for all the labor and materials required to put in place complete the iron columns, steel and iron floor, ceiling and roof construction, skylight roof complete, etc., for the U. S. Custom House and Post Office Building at Newark, N. J., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Newark, N. J.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid. All bids received after the time stated, will be returned to the bidder.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the iron columns, steel and iron floor, ceiling and roof construction, for the U. S. Custom House and Post Office Building at Newark, N. J.," and addressed to,

W. J. EDBROOKE,
Supervising Architect.

March 5, 1892.

CITY BUILDING NEWS.

Antonio near Jones. To build; owner, C. Curtin; architect, M. J. Welsh; contractor, Henry Rohling; cost, $4,400; signed, Feb. 24; filed, Feb. 24; payments, $1,100, frame up; $1,100, brown coated; $1,100, completed; $1,100, 35 days.

Baker near Clay. To build; owner, R. C. Miller; contractor, W. W. Rednall; bond, guaranteed; cost, $5,000; signed, Feb. 20; filed, Feb. 20; payments, $1,200, roof on and building enclosed; $1,200, brown coated; $1,200, completed; $1,250, 35 days.

Baker near Grove. To build; owner, H. H. Lowenthal; architect, Edward Burns; contractors, Buck Bros.; bond, $3,000; cost, $5,500; signed, Feb. 17; filed, Feb. 17; payments, $1,000, frame up; $1,000, brown coated; $1,000, completed; $2,500, 35 days.

Bartlett near 24th. To build; owner, J. H. Robertson; architect, M. J. Welsh; contractors, Douglass & O'Connor; bond, $1,586; cost, $6,345; payments, $1,586.25, frame up; $1,586.25, brown coated; $1,586.25, completed; $1,586.25, 35 days.

Broadway near Fillmore. To build; owner, Geo. F. Volkman; architects, Kenitzer & Kollofrath; contractor, C. F. Ruppel; bond, $3,650; cost, $14,600; signed, Feb. 8; filed, Feb. 9; payments, $3,500, frame up; $3,500, brown coated; $3,650, ready to paint; $600, completed; $3,650, 35 days.

Broadway and Gough. Plastering, arches and centres; owner, R. M. McMurray, architects, R. H. White & Co.; contractors, Lockwood & Hogan; cost, $1,125; signed, Feb. 8; filed, Feb. 9; payments, $450, brown coated; $393, standing finish on; $282, 35 days.

Broadway near Gough. To build; owner, Althea Walker; architect, W. H. Lillie; contractor, G. V. Daniels; bond, $500; cost, $1,300; signed, Jan. 22; filed, Feb. 5; payments, 75 per cent as work progresses; balance 35 days.

Broadway near Webster. To build; owner, Adolph A. Son; architect, Clinton Day; contractor, Samuel H. Kent; cost, $18,009; signed, Feb. 27; filed, Feb. 29; payments, $5,000, second floor joists are set; $3,000, enclosed and roof boards on; $2,000, brown coated and exterior primed; $2,800, inside finish on; $2,706, completed; $4,503, 35 days.

Bush and Chelsea Place. Brickwork and trench digging; owner, Mrs. M. W. Newman; architect, P. B. Schmidt; contractor, J. O'Sullivan; cost, $2,935; signed, Feb. 20; filed, Feb. 20; payments, 1st day of each month 75 per cent of value of work done; balance 35 days.

Bush, bet. Gough and Octavia. Grading; owner, Centenary M. E. Church; architect, W. W. Polk; contractor, F. Simonart; cost, $300; signed, Feb. 19; filed, Feb. 20.

Bush near Montgomery. Plastering; owner, D. O. Mills; architects, Burnham & Root; contractor, J. L. Crichton; cost, $19,887; signed, Feb. 19; filed, Feb. 19; payments, 1st and 15th day of each month 75 per cent as work progresses; balance 35 days.

Carl near Willard. Retaining walls; owners, Metropolitan Railway Co.; architects, Shea & Shea; contractor, D. J. Brennan; cost, $1,368; signed, Feb. 16; filed, Feb. 18; payments, $1,000, brickwork and cementing finished; $188, completed; $307, 35 days.

Carl near Willard. A power house; owners, Metropolitan Railway Co.; architects, Shea & Shea; contractors, Anderson Bros.; cost, $9,100; signed, Feb. 27; filed, Feb. 29; payments, $2,850, brick wall up and rear wooden walls up; $2,000, roof tinned and sash in place; $1,975 completed; $2,275, 35 days.

Chapultepec and Henrietta. To build; owner, Chas. Brusell; contractors, Peterson & Person; bond, $400; cost, $1,182; signed, Feb. 11; filed, Feb. 12; payments, $295, frame up; $295, brown coated; $297, completed; $295, 35 days.

Eddy near Laguna. To build; owner, Jeanette Joel; architects, John & Balczynski; contractor, Wm. Pluns; cost, $4,685; signed, Feb. 12; filed, Feb. 15; payments, $800, frame up; $800, partitions set; $800, white coated; $800, completed; $1,185, 35 days.

Eddy near Scott. Excavating, grading, etc.; owner, Rev. J. F. McGinty; architect, T. J. Welsh; contractor, M. J. Feely; bond, $1,707; cost, $6,827; signed, Feb. 29; filed, March 1; payments, $1,280, frame up; $1,280, brown coated; $1,280, white coated; $1,280, completed; $1,707, 35 days.

Elizabeth near Noe. To build; owner, F. Campbell; contractor, A. Petry; cost, $1,700; signed, Feb. 26; filed, Feb. 28; payments, $425, enclosed; $425, brown coated; $425, accepted; $425, all bills are shown and receipted.

Ellis near Powell. Plumbing and gas-fitting; owner, J. Frowenfeld; architects, Salfield & Kohlberg; contractor, H. Williamson; cost, $1,390; signed, Dec. 18; filed, Feb. 16; payments, $600, rough work in; $500, accepted; $390, 35 days.

Fell near Ashbury. To build; owner, Geo. Lang; contractor, W. H. Lillie; cost, $3,000; signed, Feb. 23; filed, Feb. 26; payments, 1st and 15th day of each month 75 per cent of work done; balance 35 days.

Fifteenth near Guerrero. To build; owner, Mary A. Schmidt; contractors, C. L. & J. A. Buck; cost, $2,585; signed, Feb. 16; filed, Feb. 18; payments, $500, roof on and rough plumbing in; $600, brown coated; $835, completed; $650, 35 days.

Frederick and Masonic Ave. Artificial stone work; owner, M. A. Fritz; architect, A. J. Barnett; contractors, W. R. Patterson & Co.; cost, $1,200; signed, Feb. 20; filed, Feb. 23; payments, $450, sidewalks completed; $450, completed; $300, 35 days.

Fulton, No. 617. Alterations and additions; owner, Cora Cliff; contractors, Gardner & Boyden; cost, $3,650; signed, Feb. 9; filed, Feb. 10; payments, $1,000, ready for plastering; $1,000, white coated; $1,000, ready for painter; $650, completed.

Geary near Franklin. To build; owner, J. A. Miller; architect, A. J. Barnett; contractor, O. E. White; bond, $2,000; cost, $5,000; signed, Feb. 18; filed, Feb. 20; payments, $1,000, roof boards all on; $1,000, brown coated; $750, white coated; $1,000, completed; $1,250, 35 days.

Harrison near Third. Alterations; owner, Leon Levy; contractor, L. A. Secor; cost, $784; signed, Feb. 29; filed, March 3; payments, $150, rear part done and brickwork finished; $250, plaster on; $384, accepted.

Hayes and Buchanan. To build; owner, P. J. Gallagher; architect, N. A. Comstock; contractor, Frank Williams; cost, $5,720; signed, Feb. 15; filed, Feb. 26; payments, $1,430, frame up; $1,430, brown coated; $1,430, completed; $1,430, 35 days.

Hayes near Webster. To build; owner, Henry F. Blanchet, Jr., architect, Emile Depierre; contractor, David Ross; bond, $1,200; cost, $6,540; signed, Feb. 19; filed, Feb. 23; payments, $800, 1st story joists are on; $1,200, roof on and building enclosed; $1,200, standing finish on and glazed; $800, ready to paint; $945, accepted; $1,895, 35 days.

Hyde, No. 812. Carpenter, brickwork and plastering; owner, Mrs. Caroline Stern; architect, Wm. Curlett; contractor, S. Wray; cost, $2,655; signed, Feb. 15; filed, Feb. 27; payments, $691.25, frame up; $400, roof on; $400, brown coated; $400, completed; $803.75, 35 days.

Hyde near California. Alterations and additions; owner, Ellen Littleford; architects, Henriksen & Mahoney; contractor, Geo. Lack; cost, $1,825; signed, Feb. 24; filed, Feb. 26; payments, $1,369, as work progresses; $456, 35 days.

Ivy Ave. near Laguna. To build; owner, J. Boas; architects, Salfield & Kohlberg; contractor, Henry Holzenberg; cost, $3,100; signed, Feb. 9; filed, Feb. 16; payments, $750, frame up; $750, white coated; $800, accepted; $800, 35 days.

Laguna near Green. To build; owner, Jeremiah Donovan; architect, H. D. Mitchell; contractor, Jno. T. Hayes; bond, $1,000; cost, $4,495; signed, Feb. 1; filed, Feb. 5; payments, $850, frame up; $850, enclosed and laths on; $850, white coated; $820, completed; $1,125, 35 days.

Laguna and Greenwich. To build; owners, H. P. Schneider and wife; architect, H. D. Mitchell; contractor, L. B. Schmidt; cost, $9,000; signed, Feb. 8; filed, Feb. 9; payments, $1,500, frame up; $1,500, brown coated; $1,500, completed; $1,500, 35 days.

Lloyd near Scott. To build; owner, Max Wiesenhutter; architects, John & Balczynski; contractors, Schutt & Kreeker; cost, $2,500; signed, Feb. 17; filed, Feb. 17; payments, $800, frame up, building enclosed, roof on and floors laid; $800, white coated; $675, completed; $825, 35 days.

Mission near Main. To build; owners, John Lee & Co.; architect, M. J. Welsh; contractor, Jas. T. Edwards; cost, $7,928; signed, Feb. 16; filed, Feb. 16; payments, $1,400, foundation walls ready for joists; $1,400, walls ready for 2nd floor joists; $1,200, walls ready for roof; $1,000, roof completed; $940, completed; $1,983, 35 days.

Mission and 15th. Store fixtures; owner, Jas. J. Stanton; architect, J. E. Krafft; contractor, Chas. M. Depew; cost, $1,355; signed, Feb. 16; filed, Feb. 17; payments, $800, work set and ready to paint; $255, completed; $400, 35 days.

O'Farrell near Pierce. To build; owner, Henry Geary; contractor, J. J. Matsem; cost, $3,800; signed, Feb. 8; filed, Feb. 24; payments, $1,000, frame up; $900, white coated; $1,900, 35 days.

O'Farrell near Gough. To build; owners, Duschbery and J. Stencel; architect, C. I. Havens; contractor, S. T. Greene; cost, $11,900; signed, Feb. 23; filed, March 2; payments, $2,231, rough frame up and diagonal boarding on; $2,231, brown mortar on and principal part of outside finish on; $2,231, hard finished and outside mill work up; $2,231, completed; $2,976, 35 days.

Pacific near Morrell. To build; owner, E. Micheletti; architect, M. J. Welsh; contractor, Ivory Wells; cost, $4,000; signed, Feb. 18; filed, Feb. 19; payments, $750, frame up; $750, brown coated; $750, completed; $750, 35 days.

Page near Schrader. To build; owner, J. F. Sarber; architect, W. H. Lillie; contractors, Brault & Batcman; bond, $800; cost, $2,300; signed, Feb. 25; filed, Feb. 26; payments, $345, frame up; $345, enclosed; $345, brown coated; $345, standing finish on; $345, completed; $575, 35 days.

Post near Mason. Tinwork, etc.; owner, Olympic Club; architect, H. A. Schulze; contractors, Jos. F. Forderer Cor. Wks.; cost, $9,895; signed, Feb. 17; filed, Feb. 17; payments, 1st day of each month 75 per cent of work done; balance 35 days.

Powell Street Theater. Electric lighting; owners, Denicke & Siebe; architects, Wood & Lovell; contractors, Edison Electric Co.; cost, $2,250; signed, Feb. 18; filed, Feb. 19; payments, $1,087.50, completed; $862.50, 35 days.

Powell Street Theater. Interior work; owners, Denicke & Siebe; architects, Wood & Lovell; contractors, Kellett & McMurray; cost, $1,500; signed, Feb. 10; filed, Feb. 11; payments, 75 per cent as work progresses; balance 35 days.

Sacramento and Montgomery. Passenger elevator; owners, Pacific Mutual Life Ins. Co.; architects, Wright & Sanders; contractors, Cahill & Hall; cost, $8,000; signed, Jan. 24; filed, Feb. 6; payments, 1st day of each month 75 per cent of work done; balance 35 days.

Sacramento near Drumm. Alterations and additions; owners, Hirschler & Co.; architect, W. H. Armitage; contractor, J. R. Whalen; cost, $2,950, signed, Feb. 25; filed, March 2; payments, 15th and 30th day of each month 75 per cent of work done; balance 35 days.

Sacramento and Powell. Grading and brickwork; owner, J. T. M. Kelly; architect, W. H. Armitage; contractors, Martin Fennell & Son; cost, $1,248; signed, Feb. 17; filed, Feb. 20; payments, $600, walls ready for plates; $329, chimneys completed; $320, 35 days.

Sacramento and Powell. Moving etc.; owner, J. T. M. Kelly; architect, W. H. Armitage; contractor, J. J. Dunn; cost, $15,769; signed, Feb. 17; filed, Feb. 23; payments, 1st day of each month 75 per cent work done; balance 35 days.

Sutter bet. Steiner and Fillmore. To build; owner, M. S. Price; architect, H. C. Macy; contractor, P. G. Martin; bond, $300; cost, $1,960; signed, Feb. 8; filed, Feb. 10; payments, $1,470, as work progresses; $490, 35 days.

Texas near Solano. To build; owner, Hannah Roberts; architect, W. C. Dickerson; contractor, T. Bishop; cost, $2,250; signed, Feb. 23; filed, Feb. 23; payments, $450, side walls of frame up; $550, enclosed and roof tinned; $800, completed; $850, 35 days.

Twelfth near Howard. Iron work of engine house, etc.; owners, E. P. White & Co.; architect, J. E. Krafft; contractors, Joshua Hendy Machine Works; bond, $2,500; cost, $4,511; signed, Feb. 11; filed, Feb. 11; payments, 75 per cent on 1st day of each month; balance 35 days.

Twelfth near Howard. Laundry and engine house; owners, E. P. White & Co.; architect, Julius E. Krafft; contractor, Thos. M. McLachlan; bond, $7,000; cost, $11,560; signed, Feb. 10; filed, Feb. 11; payments, 75 per cent of work done 1st day of each month; balance 35 days.

Utah near Yolo. To build; owner, Patrick Barrett; contractor, T. F. Mitchell; cost, $1,100; signed, Feb. 29; filed, Feb. 29; payments, $275, frame up; $275, brown coated; $275, completed; $275, 35 days.

Walnut, bet. Sacramento and Clay. Brickwork; owners, L. M. Weismann; et al.; contractor, Fred Wagner; cost, $1,280; signed, Feb. 17; filed, Feb. 19; payments, $200, all foundations in; $600, brown coated; $480, 60 days.

Washington near Baker. To build; owner, H. H. Lowenthal; architect, Edward Burns; contractor, L. B. Schmidt; bond, $3,000; cost, $4,500; signed, Feb. 17; filed, Feb. 18; payments, $1,000, enclosed, rustic on and roof on; $1,000, brown coated; $1,150, completed; $1,350, 35 days.

Webster and Bay. To build; owner, E. J. Wilkinson; architect, C. M. Rousseau; contractor, Andrew Christensen; cost, $5,700; signed, Feb. 23; filed, Feb. 24; payments, $1,425, roof on; $1,425, brown coated; $1,425, accepted; $1,425, 35 days.

ALAMEDA COUNTY.

Boardman's map of Oakland. Additions, alterations, etc.; owner, Oakland Preserving Co.; architect, Chas. Mau; contractor, G. S. Johnson; cost, $1,600; signed, Feb. 25; filed, Feb. 27; payments, $400, ½ material furnished and ¼ work completed; $400, ½ furnished and ½ completed; $400, completed; $400, 35 days.

Central and Alameda Ave., Alameda. To build; owner, F. B. Haight; architects, J. C. and E. A. Mathews; contractors, D. Straub & Son; cost, $4,264.50; signed, Feb. 4; filed, Feb. 9; payments, $800, frame up and ready for enclosing; $800, enclosed and chimneys built; $800, brown mortar on and gas, water and heating pipes are in; $796.50, completed; $1,065, 35 days.

College Hd., Lot 8, Berkeley. To build; owner, Jas. S. McShane; contractor, Thos. H. Gilbert; cost, $5,750; signed, Feb. 23; filed, Feb. 24; payments, $837, frames up and rustic and shingles on; $837, brown mortar on; $837, completed; $839, 35 days.

Encinal, near Ala. To build; owners, Brucker & Bansbach; architect, T. G. Cary; contractors, Marcuse & Remmel; cost, $2,600; signed, Jan. 23; filed, Feb. 10; payments, $650, frame up; $650, brown mortar on; $650, completed; $650, 35 days.

First and Lizzie Street, Alameda. To build; owner, Norman McLeod; architect, H. Meyers; contractor, Wm. Sanderson; cost, $1,969; signed, Feb. 10; filed, Feb. 11; payments, $400, frame up and roof sheathed; $800, building enclosed and mortar on; $800, completed; $969, 35 days.

Fountain near Lincoln Ave., Alameda. To build; owner, Mrs. Jennie Shannon architect, M. Stenhint; contractors, Marcuse & Remmel; cost, $1,375; signed, Feb. 27; filed, Feb. 29; payments, $343.75, frame up; $343.75, brown mortar on; $343.75, completed; $343.75, 35 days.

Fulton near Kittridge, Berkeley. To build; owner, Levi Booth; contractor, Geo. A. Embury; cost, $2,600; signed, Feb. 9; filed, Feb. 10; payments, $650, frame up; $650, building enclosed and brown mortar on; $650, completed; $650, 35 days.

Kings Ave. near Patterson, Ala. To build; owner, A. D. McMorran; contractor, H. Scholten; cost, $1,600; signed, Feb. 23; filed, Feb. 23; payments, $400, frame up and enclosed; $400, brown mortar; $400, completed; $400, 35 days.

Market St. Tract, Oakland. To build; owner, Stephen Zerga; architect, S. Edgar Fisher; contractor, Joseph Mennerman; cost, $1,875; signed, March 1; filed, March 1; payments, $468.75, ¼ when frame is up; $468.75, brown mortar on and chimneys in; $468.75, ¼ completed; $468.75, 35 days.

Ninth near Broadway, Oakland. Brickwork, etc.; owner, S. Huff; architects, Salfield & Kohlberg; contractors, Merrill Brick Co.; cost, $4,600; signed, Feb. 13; filed, Feb. 23; payments, 75 per cent as work progresses, 25 per cent 35 days.

Ninth near Broadway, Oakland. Carpenter work, glazing, etc.; owner, S. Huff; architects, Salfield & Kohlberg; contractors, McDonald & Eggleston; cost, $4,100; signed, Feb. 19; filed, Feb. 23; payments, $1,500, partitions set; $825, completed; $750, completed; $1,025, 35 days.

Ninth near Broadway, Oakland. Cast and wrought iron work; owner, S. Huff; architects, Salfield & Kohlberg; contractors, Bigelow & Little; cost, $2,331; signed, Feb. 13; filed, Feb. 23; payments, 75 per cent as work progresses until accepted, 25 per cent 35 days after acceptance of building.

Ninth near Broadway, Oakland. Gas-fitting, plumbing, etc.; owner, S. Huff; architects, Salfield & Kohlberg; contractor, Henry Saudern; cost, $1,00; signed, Feb. 23; filed, Feb. 23; payments, $370, rough work done; $370, work accepted; $260, 35 days.

Ninth near Broadway, Oakland. Iron Work, etc.; owner, S. Huff; architects, Salfield & Kohlberg; contractor, Wm. Cronan; cost, $800; signed, Feb. 23; filed, Feb. 23; payments, 75 per cent as work progresses and 25 per cent 35 days.

Ninth near Broadway, Oakland. All plastering; owner, S. Huff; architects, Salfield & Kohlberg; contractor, D. S. McNamara; cost, $873; signed, Feb. 24; filed, Feb. 26; payments, $400, brown coat plaster on; $253, completed, $220, 35 days.

Oakland Por lots 10 & 11. To build; owner, W. L. Archard; architect, C. M. Wange; contractor, H. J. Specht, cost, $861; signed, Feb. 9; filed, Feb. 11; payments, as work progresses.

Pacific Ave. and Paru, Alameda. To build; owner, Alvan Roundy; architect, Chas. Shuner; contractor, J. H. Young; cost, $3,380; signed, Feb. 24; filed, Feb. 25; payments, $1,000, frame up; $800, enclosed; $740, plastering on and windows in; $850, 35 days.

Peralta Ave. near Belmont, Brooklyn. To build; owner, Harry W. Davis; architects, J. C. Mathews & Son; contractors, McDonald & Eggleston; cost, $1,482; signed, Feb. 23; filed, Feb. 25; payments, $150, frame up and ready for enclosing; $450, enclosed and one coat plaster on; $511.50, completed; $370.50, 35 days.

Peralta Park. To build; owner, Mrs. J. E. Hocking; architect, R. Gray Frise; contractors, Ashley & Dornell; cost, $6,913; signed, Feb. 10; filed, Feb. 11; payments, $978.40, foundations laid, framing up and buildings enclosed, except roof; $978.40, roof on, rough plumbing done and 1st coat plaster on; $978.40, plastering finished, windows put in and hung; $978.40, 35 days.

Roberts and Wolfskill Tr., O. T. To build; owner, J. W. O'Donnell; architect, O. Everett; contractors, Brehaut & Diamond; cost, $2,350; signed, Feb. 18; filed, Feb. 19; payments, $587.50, rustic on, building and roof sheathed; $587.50, brown mortar on; $587.50, completed; $587.50, 35 days.

Sixteenth near Jefferson, Oakland. To build; owner, Aaron Jacobs; architect, E. C. McManus; contractor, J. C. Bassett; cost, $3,500; signed, Feb. 18; filed, Feb. 23; payments, 1st and 15th of each month 75 per cent of value of work done and materials furnished; 25 per cent 35 days.

Twenty-second and New Broadway. To build; owner, Max Greenhood; architects, J. C. Mathews & Son; contractor, F. C. Bignami; cost, $9,086; signed, Feb. 25; filed, Feb. 26; payments, $1,200, brick walls of basement are completed; $1,000, frame up and ready for enclosing; $1,500, enclosed, gas and water pipes in place and chimneys built; $1,500, brown mortar on and outside painted one coat; $1,589.50, completed; $2,271.50, 35 days.

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GAS is rapidly supplanting coal for cooking, heating and general or special household use. The present demand for conveniences for housekeeping can only be met by the substitution of gas for other fuel. It seems somewhat anomalous that in many cases the much vaunted electric light is made applicable by the use of gas which runs a gas engine, which in turn runs a dynamo for inducing the electric fluid forming the electric light. The field for its use is widening, and the consumption of gas is continually increasing to such an extent as to lead to the conclusion that gas is destined to become the fuel of the future.

When gas became a necessity for lighting purposes, it was the usual custom for the house owner to put in the tubing, leaving for the tenant the furnishing of the fixtures, such as chandeliers, etc. At the present time, it is expected by the tenant that the owner will provide the gaslight fixtures.

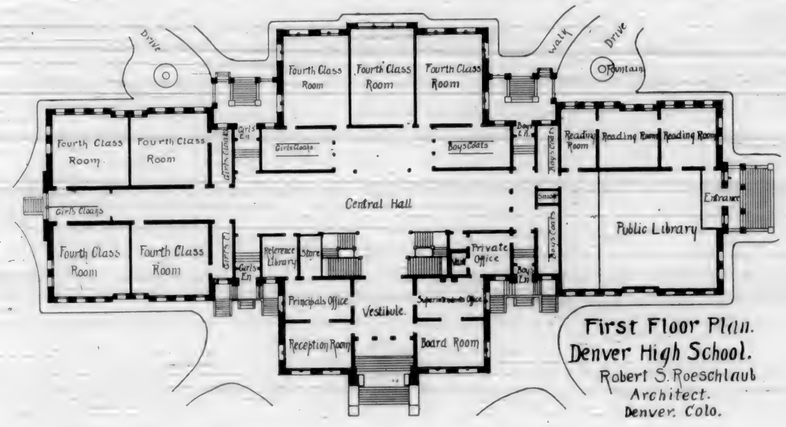
In the cooking department, the tenant furnishes the movable stoves, but the owner provides ranges, when set in brick work. The owner puts in all the apparatus where hot air, water or steam is used for heating, also grates for burning wood or coal in open fire places. In some of the larger cities it has become the custom for the owner to provide all the cooking and heating appliances for gas fully connected and ready for the use of the tenant by turning on the gas. The Mecca Flats, recently built in Chicago, comprising a block of ninety flats, each of which has a gas cooking range, gas water heater, and gas clothes drier furnished and fitted up complete ready for the tenant. Another block of one hundred and thirty four flats, each flat has a gas cooking range and all requisite heater generators provided by the owner.

Architects during the last few years have given much attention to the various systems of cooking and heating, and the appliances which would produce the most satisfactory results as to economy and comfort. In all household heating, one main feature to be gained is cheerfulness. A home without cheerfulness seems prevaded by the atmosphere of the tomb. "The fire on the hearth" enlivens everything in the apartment; care is driven away and contentment reigns over the home. The most feasible way to obtain this desirable condition seems to be the open gas fire grate, it is cleanly to use and always thoroughly under control by the turn of the finger.

IT is frequently a source of annoyance to be unable to find the names of streets on the lamps at street corners. In time the letters become so far effaced as to be illegible, while in others the lamp has been turned partially around, thereby indicating a wrong direction.

Where concrete sidewalks are laid, we would suggest that the names of the streets should be formed in bold letters stamped in the material while in a plastic condition. By this method the objections to the present system would be removed.

WE are indebted to *Books*, the bulletin of the Public Library, Denver, Col., for the accompanying plan of the East Denver High School and Public Library. Mr. Robert S. Roeschlaub, the architect, has designed a number of public schools for Denver. The building is 208x147 feet, and is intended to accommodate 700 pupils.



IN some localities there are times when the torrid heat becomes almost unbearable, verandas are inadequate and even the interior rooms are a delusion. At such times the enemy may be subdued by hanging a wet blanket or cloth in an open window or door, when the apartment will become delightfully cool and agreeable. The more rapid the evaporation from the cloth, the cooler the apartment; consequently, the blanket should face the air current, or at the most heated part.

Many ways will suggest themselves for this arrangement. If a portion of the open space of a veranda should be fitted with an awning of woolen cloth so arranged that it may be wet with a sprinkler or a small water pipe or trough at the top, provided with fine holes, through which water may trickle in sufficient quantity to keep the blanket damp, a surprisingly cool retreat may be thus formed during the most heated term.

For cooling a room the common outside screen door may be covered with woolen cloth which when wet will reduce the excessive heat.

WE invite the attention of Students of Architecture to the chapter on *The Art of Planning*, by MR. I. MACVICAR ANDERSON, President of the Royal Institute of British Architects, and published in the Journal of Proceeding of that Society, and reprinted in the March number of the CALIFORNIA ARCHITECT AND BUILDING NEWS. We believe it to be of great value in educating the younger and inexperienced members to the true value of such work. It is the man who studies and understands the importance of the advantages to be obtained by the adoption of careful planning, who will in the future take the lead in the profession.

NO trade or profession gives a man more scope for the exercise of his best faculties than Architecture.

THE SUBLIME AND BEAUTIFUL.

By Edmund Burke.

(Published about 1753.)

CHAPTER ON TASTE.

ON a superficial view, we may seem to differ very widely from each other in our reasonings, and no less in our pleasures: but notwithstanding this difference, which I think to be rather apparent than real, it is probable that the standard both of reason and taste is the same in all human creatures. For if there were not some principles of judgment as well as of sentiment common to all mankind, no hold could possibly be taken either on their reason or their passions sufficient to maintain the ordinary correspondence of life. It appears indeed to be generally acknowledged, that with regard to truth and falsehood there is something fixed. We find people in their disputes continually appealing to certain tests and standards, which are allowed on all sides, and are supposed to be established in our common nature. But there is not the same obvious concurrence in any uniform or settled principles which relate to taste. It is even commonly supposed that this delicate and aerial faculty, which seems too volatile to endure even the chains of a definition, cannot be properly tried by any test, nor regulated by any standard. There is so continual a call for the exercise of the reasoning faculty, and it is so much strengthened by perpetual contention, that certain maxims of right reason seem to be tacitly settled amongst the most ignorant. The learned have improved on this rude science, and reduced those maxims into a system. If taste has not been so happily cultivated, it was not that the subject was barren, but that the laborers were few or negligent; for, to say the truth, there are not the same interesting motives to impel us to fix the one, which urge us to ascertain the other. And, after all, if men differ in their opinion concerning such matters, their difference is not attended with the same important consequences; else I make no doubt but that the logic of taste, if I may be allowed the expression, might very possibly be as well digested, and we might come to discuss matters of this nature with as much certainty, as those which seem more immediately within the province of mere reason. And indeed, it is very necessary, at the entrance into such an inquiry as our present, to make this point as clear as possible; for if taste has no fixed principles, if the imagination is not affected according to some invariable and certain laws, our labor is likely to be employed to very little purpose; as it must be judged a useless, if not an absurd undertaking, to lay down rules for caprice, and to set up a legislature for whims and fancies.

The term taste, like all other figurative terms, is not extremely accurate; the thing which we understand by it is far from a simple and determinate idea in the minds of most men, and it is therefore liable to uncertainty and confusion. I have no great opinion of a definition, the celebrated remedy for the cure of this disorder. For, when we define, we seem in danger of circumscribing nature within the bounds of our own notions, which we often take up by hazard, or embrace on trust, or form out of a limited and partial consideration of the object before us; instead of extending our ideas to take in all that nature comprehends, according to her manner of combining, we are limited in our inquiry by the strict laws to which we have submitted at our setting out.

A definition may be very exact, and yet go but a very little way towards informing us of the nature of the thing defined; but let the virtue of a definition be what it will, in the order of things, it seems rather to follow than to precede our inquiry, of which it ought to be considered as the result. It must be acknowledged, that the methods of disquisition and teaching may be sometimes different, and on very good reason undoubtedly; but, for my part, I am convinced that the method of teaching which approaches most nearly to the method of investigation is incomparably the best; since, not content with serving up a few barren and lifeless truths, it leads to the stock on which they grew; it tends to set the reader himself in the track of invention, and to direct him into those paths in which the author has made his own discoveries, if he should be so happy as to have made any that are valuable.

But to cut off all pretence for cavilling, I mean by the word Taste no more than that faculty or those faculties of the mind, which are affected with, or which form a judgment of, the works of imagination and the elegant arts. This is, I think, the most general idea of that word, and what is the least connected with any particular theory. And my point in this inquiry is, to find whether there are any principles, on which the imagination is affected, so common to all, so grounded and certain, as to supply the means of reasoning satisfactorily about them. And such principles of taste I fancy there are; however paradoxical it may seem to those who on a superficial view imagine that there is so great a diversity of tastes, both in kind and degree, that nothing can be more indeterminate.

All the natural powers in man, which I know, that are conversant about external objects, are the senses, the imagination, and the judgment. And first with regard to the senses. We do and we must suppose, that as the conformation of their organs are nearly or altogether the same in all men, so the manner of perceiving external objects is in all men the same, or with little difference. We are satisfied that what appears to be light to one eye, appears light to another; that what seems sweet to one palate, is sweet to another; that what is dark and bitter to this man, is likewise dark and bitter to that; and we conclude in the same manner of great and little, hard and soft, hot and cold, rough and smooth, and indeed of all the natural qualities and affections of bodies. If we suffer ourselves to imagine, that their senses present to different men different images of things, this sceptical proceeding will make every sort of reasoning on every subject vain and frivolous, even that sceptical reasoning itself which had persuaded up to entertain a doubt concerning the agreement of our preceptions. But as there will be little doubt that bodies present similar images to the whole species, it must necessarily be allowed, that the pleasures and the pains which every object excites in one man, it must raise in all mankind, whilst it operates naturally, simply, and by its proper powers only; for if we deny this, we must imagine that the same cause, operating in the same manner, and on subjects of the same kind, will produce different effects; which would be highly absurd. Let us first consider this point in the sense of taste, and the rather, as the faculty in question has taken its name from that sense. All men are agreed to call vinegar sour, honey sweet and aloes bitter; and as they are all agreed in finding these qualities in those objects, they do not in the least differ concerning their effects with regard to pleasure and pain. They all concur in calling sweetness pleasant, and sourness and bitterness unpleasant. Here there is no diversity in their sentiments; and that there is not, appears fully from the consent of all men in the metaphors which are taken from the sense of taste. A sour temper, bitter expressions, bitter curses, a bitter fate, are terms well and strongly understood by all. And we are altogether as well understood when we say, a sweet disposition, a sweet person, a sweet condition, and the like. It is confessed, that custom and some other causes have made many deviations from the natural pleasures or pains which belong to these several tastes: but then the power of distinguishing between the natural and the acquired relish remains to the very last. A man frequently comes to prefer the taste of tobacco to that of sugar, and the flavor of vinegar to that of milk; but this makes no confusion in tastes, whilst he is sensible that the tobacco and vinegar are not sweet, and whilst he knows that habit alone has reconciled his palate to these alien pleasures. Even with such a person we may speak, and with sufficient precision, concerning tastes. But should any man be found who declares, that to him tobacco has a taste like sugar, and that he cannot distinguish between milk and vinegar; or that tobacco and vinegar are sweet, milk bitter and sugar sour; we immediately conclude that the organs of this man are out of order, and that his palate is utterly vitiated. We are as far from conferring with such a person upon tastes, as from reasoning concerning the relations of quantity with one who should deny that all the parts together were equal to the whole. We do not call a man of this kind wrong in his notions, but absolutely mad. Exceptions of this sort, in either way, do not at all impeach our general rule, nor make us conclude that men have various principles concerning the relations of quantity or the taste of things. So that when it is said taste cannot be disputed, it can only mean, that no one can strictly answer what pleasure or pain some particular man may find from the taste of some particular thing. This indeed cannot be disputed; but we may dispute, and with sufficient clearness too, concerning the things which are naturally pleasing or disagreeable to the sense. But when we talk of any peculiar or acquired relish, then we must know the habits, the prejudices, or the distempers of this particular man, and we must draw our conclusion from those.

This agreement of mankind is not confined to the taste solely. The principle of pleasure derived from sight is the same in all. Light is more pleasing than darkness. Summer, when the earth is clad in green, when the heavens are serene and bright, is more agreeable than winter, when everything makes a different appearance. I never remember that anything beautiful, whether a man, a beast, a bird, or a plant, was ever shown, though it were to a hundred people, that they did not all immediately agree that it was beautiful, though some might have thought that it fell short of their expectation, or that other things were still finer. I believe

no man thinks a goose to be more beautiful than a swan, or imagines that what they call a Friezland hen excels a peacock. It must be observed too, that the pleasures of the sight are not near so complicated and confused, and altered by unnatural habits and associations, as the pleasures of the taste are; because the pleasures of the sight more commonly acquiesce in themselves; and are not so often altered by considerations which are independent of the sight itself. But things do not spontaneously present themselves to the palate as they do to the sight; they are generally applied to it, either as food or as medicine; and, from the qualities which they possess for nutritive or medicinal purposes, they often form the palate by degrees, and by force of these associations. Thus opium is pleasing to Turks, on account of the agreeable delirium it produces. Tobacco is the delight of Dutchmen, as it diffuses a torpor and pleasing stupefaction. Fermented spirits please our common people, because they banish care, and all consideration of future or present evils. All of these would lie absolutely neglected if their properties had originally gone no further than the taste; but all these, together with tea and coffee and some other things, have passed from the apothecary's shop to our tables, and were taken for health long before they were thought of for pleasure. The effect of the drug has made us use it frequently; and frequent use, combined with the agreeable effect, has made the taste itself at last agreeable. But this does not in the least perplex our reasoning; because we distinguish to the last the acquired from the natural relish. In describing the taste of an unknown fruit, you would scarcely say that it had a sweet and pleasant flavor like tobacco, opium, or garlic, although you spoke to those who were in the constant use of these drugs, and had great pleasure in them. There is in all men a sufficient remembrance of the original natural causes of pleasure, to enable them to bring all things offered to their senses to that standard, and to regulate their feelings and opinions by it. Suppose one who had so vitiated his palate as to take more pleasure in the taste of opium than in that of butter or honey, to be presented with a bolus of squills; there is hardly any doubt but that he would prefer the butter or honey to this nauseous morsel, or to any other bitter drug to which he had not been accustomed; which proves that his palate was naturally like that of other men in all things, that it is still like the palate of other men in many things, and only vitiated in some particular points. For in judging of any new thing, even of a taste similar to that which he has been formed by habit to like, he finds his palate affected in a natural manner, and on the common principles. Thus the pleasure of all the senses, of the sight, and even of the taste, that most ambiguous of the senses, is the same in all, high and low, learned and unlearned.

Besides the ideas, with their annexed pains and pleasures, which are presented by the sense; the mind of man possesses a sort of creative power of its own; either in representing at pleasure the images of things in the order and manner in which they were received by the senses, or in combining those images in a new manner, and according to a different order. This power is called imagination; and to this belongs whatever is called wit, fancy, invention and the like. But it must be observed, that this power of the imagination is incapable of producing anything absolutely new; it can only vary the disposition of those ideas which it has received from the senses. Now, the imagination is the most extensive province of pleasure and pain, as it is the region of our fears and our hopes, and of all our passions that are connected with them; and whatever is calculated to affect the imagination with these commanding ideas, by force of any original natural impression, must have the same power pretty equally over all men. For since the imagination is only the representation of the senses, it can only be pleased or displeased with the images, from the same principle on which the sense is pleased or displeased with the realities; and consequently there must be just as close an agreement in the imaginations as in the senses of men. A little attention will convince us that this must of necessity be the case.

But in the imagination, besides the pain or pleasure arising from the properties of the natural object, a pleasure is perceived from the resemblance which the imitation has to the original: the imagination, I conceive, can have no pleasure but what results from one or other of these causes. And these causes operate pretty uniformly upon all men, because they operate by principles in nature, and which are not derived from any particular habits or advantages. Mr. Locke very justly and finely observes of wit, that it is chiefly conversant in tracing resemblances; he remarks, at the same time, that the business of judgment is rather in finding differences. It may perhaps appear, on this supposition, that there is no material distinction between the wit and the judgment, as they both seem to result from different operations of the same faculty of *comparing*. But in reality, whether they are or are not dependent on the same power of the mind, they differ so very materially in many respects, that a perfect union of wit and judgment is one of the rarest things in the world. When two distinct objects are unlike to each other, it is only what we expect; things are in their common way; and therefore they make no impression on the imagination: but when two distinct objects have a resemblance, we are struck, we attend to them, and we are pleased. The mind of man has naturally a far greater alacrity and satisfaction in tracing resemblances than in searching for differences: because by making resemblances we produce *new images;* we unite, we create, we enlarge our stock; but in making distinctions we offer no food at all to the imagination; the task itself is more severe and irksome, and what pleasure we derive from it is something of a negative and indirect nature. A piece of news is told me in the morning; this, merely as a piece of news, as a fact added to my stock, gives me some pleasure. In the evening I find there was nothing in it. What do I gain by this, but the dissatisfaction to find that I have been imposed upon? Hence it is that men are much more naturally inclined to belief than to incredulity. And it is upon this principle, that the most ignorant and barbarous nations have frequently excelled in similitudes, comparisons, metaphors, and allegories, who have been weak and backward in distinguishing and sorting their ideas. And it is for a reason of this kind, that Homer and the Oriental writers, though very fond of similitudes, and though they often strike out such as are truly admirable, seldom take care to have them exact; that is, they are taken with the general resemblance, they paint it strongly, and they take no notice of the difference which may be found between the things compared.

(To be Continued.)

PUBLIC BUILDINGS BILL.

Under the provisions of the bill passed by the Senate, and now pending before the House Committee on Public Buildings, the following named California towns will get public buildings: Alameda, Auburn, Bakersfield, Berkeley, Chico, Colusa, Eureka, Fresno, Gilroy, Grass Valley, Hanford, Healdsburg, Hollister, Los Angeles, Los Gatos, Marysville, Merced, Modesto, Monterey, Napa, Nevada City, Oakland, Oroville, Pasadena, Petaluma, Placerville, Pomona, Red Bluff, Redding, Riverside, Sacramento, St. Helena, Salinas, San Bernardino, San Diego, San Jose, San Luis Obispo, San Rafael, Santa Ana, Santa Barbara, Santa Clara, Santa Cruz, Santa Rosa, Selma, Stockton, Tulare, Ukiah and Vallejo.—*Sacramento Weekly Union.*

MYTHOLOGY.

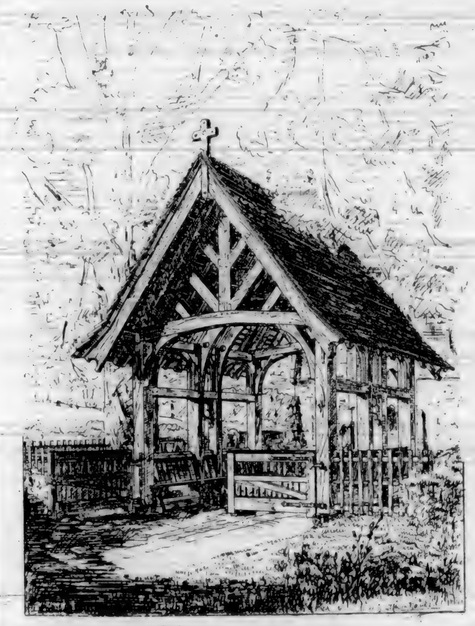
ALCYONE or HALCYONE, daughter of Æolus, married Ceyx, who was drowned as he was going to Claros to consult the oracle. The gods appraised Alcyone in a dream of her husband's fate; and when she found on the morrow, his body washed on the sea-shore, she threw herself into the sea, and was with her husband changed into birds of the same name, who keep the waters calm and serene, while they build and sit on their nests on the surface of the sea, for the space of 7, 11, or 14 days.

RURAL NOTES.

THE Swiss style is eminently adapted to the hill-side cottage architecture in many of our towns, especially those on rolling ground. The style being based upon wood as the constructive material brings it in accordance, more than any other, with our own staple building material.

The charming picturesque effect of its projecting roof with its bold carved brackets, gives a marked expression to the landscape, protecting the walls during the inclement seasons and shading them during the more heated portion of the day.

A style so well adapted for tasteful homes should receive more attention from the designers of rural homes.



ORNAMENTAL GATE-WAY.

WE herewith present a design for a covered gate-way which would form a picturesque effect as an entrance to gardens, parks or private premises.

THE increased mileage of our railways means the contracting of space and lessening of distance between settlements, which tends to the growth of villages, towns and cities with a rapidity hitherto unknown.

The demand for practical skill in construction, and artistic ability in designing is the necessary consequence.

The diversity and peculiarities of our climate requires special modified features in planning, thus giving to the architect a wide range in the various styles which may be adapted to the locality.

The Photographic Times,

Of March 11th, contains an article on "Development Printing on Prepared Paper". *The Photographic Times*, N. Y., is an illustrated weekly publication, each issue of which contains, in addition to the regular articles, many notes of practical value to the Architect or other person who may wish to finish his own pictures.

The Electrical Review,

New York, has published a Decennial Number, showing ten years of Electrical Progress. The leading article is a review of the Journal as it advanced side by side with the development of electrical science, and today as formally, is recognized as one of the leading papers in that line. The article taken as a whole is a complete history of the practical application of electricity to mechanical power, lighting and the various other uses in the industries of the age. The engravings show many modern electrical plants which contrast strangely with those of the previous ten years.

The Brickbuilder

Is a monthly Journal, published by the *Brickbuilder Publishing Co.*, 4 Liberty Square, Boston.

This is a new publication devoted to the interests of brick architecture. We have publications, already in the field, treating of the manufacture and marketing of brick, but the *Brickbuilder* deals with the finished product as used in the construction of buildings. The subjects have been well selected for the illustrations of the number before us. We wish it success, yet as architecture deals with so many different forms of manufactured articles, we see no real need for a special publication on the architectural features only, for any one particular article.

The Lancet, Clinic.

A weekly Journal of Medicine and Surgery. Published at Cincinnati, Ohio. Aside from the members of the Medical Profession, this paper has many articles of interest to Architects and Sanitarians who wish to keep informed in regard to the discoveries made from time to time in that science.

Fashion and Fancy.

Published monthly at New York, and is devoted to the fashions in costumes, household furnishing and decorating, and each number contains many notes of value to the artist or housekeeper who desires to make home pleasant for both old and young.

The FORTNIGHTLY REVIEW for March, has a chapter on the "Dissipation of Energy," by Kelvin; also one on the "Dangers of Modern Finance" by Samuel Montagu.

LIPPINCOTT'S MAGAZINE for April, has an article on "Walking" by Julian Hawthorn.

The COSMOPOLITAN for April, contains an illustrated article on "Homes of the Renaissance" by Wallace Wood.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

RESIDENCE AT ROSS VALLEY.

The residence illustrated is for Wm. Barber, Esq., an attorney of this city. It is situated in Ross Valley and is being built to rent during the summer months. A deep veranda extends along three sides, and the halls and rooms are spacious and arranged for comfort and convenience.

The design is by Maxwell G. Bugbee, architect.

YOLO COUNTY HOSPITAL, WOODLAND.

Four designs were submitted for this hospital; the design illustrated, by Messrs. Gilbert & Son, architects of Woodland, being selected as the most suitable for erection.

The building has a frontage of 165 feet, by a depth of 110 feet. The foundation walls are six feet in height which secures ample air space. The front shows a central building of two stories in height, designed for the warden and attendants, physician's office, dispensary, library and reading room.

The main building is arranged for two large wards and smaller rooms for special cases. A wide veranda extends along the whole front, connecting with open corridors around each ward, thereby separating the toilet rooms, dining room, etc., from them. There are two turrets at either end of the front; one is finished for the accommodation of insane patients, and the other for the nurse. The dining room and kitchen are located at the rear. The air space under the floor and over the ceiling affords a free circulation of pure air for ventilation. The heating is by the hot water system. The doors of the wards and rooms are made wide to permit the moving of the cots with the patients.

The cost of the building will be about $12,000.

THE MACDONOUGH THEATER, OAKLAND.

The grand main entrance to the theater will be on the Fourteenth street side of the building, seventy feet from Broadway. It will be twenty-five feet wide and thirty feet long. The entrance is larger than any theater in San Francisco except the Grand Opera House.

The floor will be of mosaic tiling, and the walls of the entrance will be finely frescoed. The ceiling will be dome shape, decorated in elegant style. So large will be the entrance that crowding at all times will be avoided. To the left of the main entrance is the balcony exit, and to the right is the gallery entrance.

The entrance to the *foyer* and the box office will be in unison with the other parts of the theater. The doors leading to the *foyer* will be made of carved oak and art glass.

The *foyer* will be one of the charming features of the new theater. It will be fourteen feet wide and seventy feet long. The staircase leading to the balcony is in the center of the *foyer*. It will be elegant in every respect, the prevailing wood being polished oak. The floor of the *foyer* will be richly carpeted. Between the *foyer* and theater will be arranged arcades the whole width of the theater, so that one standing in the *foyer* can view the stage. The ceiling over the *foyer* will be diamond shaped and handsomely decorated in white and gold. The entire woodwork in this section will be of white oak.

At the extreme end of the *foyer* is the ladies' parlor.

Near the staircase on the right of the *foyer* is an exit eight feet wide leading to the Broadway entrance of the theater.

The balcony is reached by way of the grand staircase. The *foyer* here is the same size as on the main floor, with ladies' reception rooms. The arrangements, so far as exits are concerned, are ample.

The ground floor of the auditorium will be 70 feet wide and 90 feet long and will have a seating capacity of 576, exclusive of the boxes.

Special attention has been given to the stage details. The proscenium opening will be circular headed, thirty-six feet in height and thirty-three feet six inches wide. The stage will be equipped in a manner unequaled by any theater west of Chicago.

The contracts call for the lighting of the theater by both gas and electricity. The electricity will be furnished from a special dynamo. In the entire theater there will be 2080 electric lights.

WORLD'S FAIR NOTES.

The enormous steel trusses to sustain the roof of the Manufactures Building are about to be erected. These trusses are the largest ever made for architectural purposes. They span 368 feet and rise to a height of 211 feet. The contract for them calls for about $460,000.

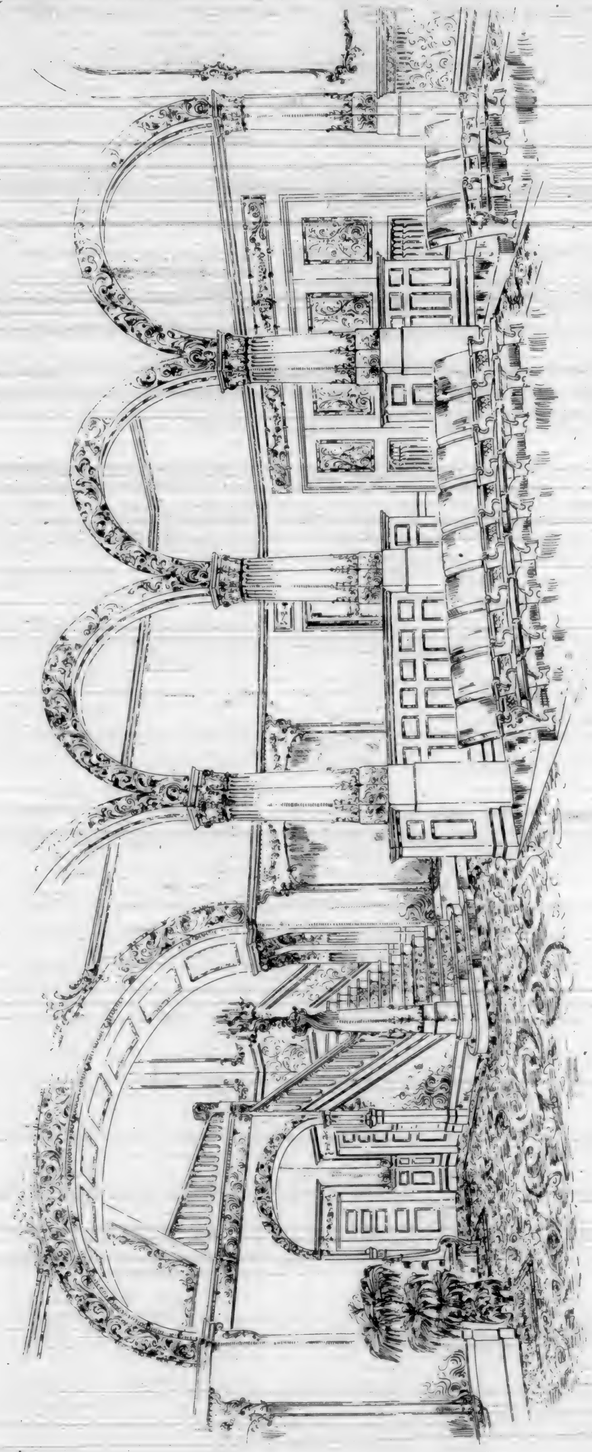
An Esquimaux village, inhabited by from 50 to 75 natives of the frozen regions, will be one of the sights on Midway Plaisance at the Exposition.

A Choral Hall, 160x260 feet, will be erected near the Horticultural Building. There Professor Tomlins, with 2,000 trained voices, will furnish rare choral music during the Exposition. The Welsh International Eisteddfod will occupy the building for a week.

Instead of a reproduction of an Aztec temple, Mexico will construct a typical hacienda, or residence of a wealthy landed proprietor. This will be decorated in lavish manner with Mexican fruits and flowers and archæological and ethnological specimens. The Mexican exhibit will illustrate the present condition and resources and products of the country rather than its past history.

Jackson Park will retain as one of its permanent attractions the building which Japan will erect for its head-quarters at the Exposition. The building will be modeled after one of the most famous and architecturally unique of Japan's ancient temples, and with its surrounding garden will cost $70,000. About 40,000 square feet will be occupied. The South Park commissioners have accepted the offer of S. Tegima, representative of the Mikado, to give the structure to Chicago on condition that it be kept permanent and in repair, and that one room in it be devoted to a public exhibit of Japanese works of art, which the Japanese government agrees to replenish from time to time.

ROYAL INSTITUTE OF BRITISH ARCHITECTS • MDCCCXXXIV



VIEW OF FOYER.

The "MACDONOUGH" Theatre

OAKLAND, CAL.

Mooser & Cuthbertson, Architects.

PUBLISHED BY THE CALIFORNIA ARCHITECTURAL PUBLISHING CO. SAN FRANCISCO, CAL.

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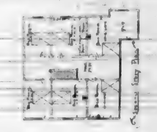

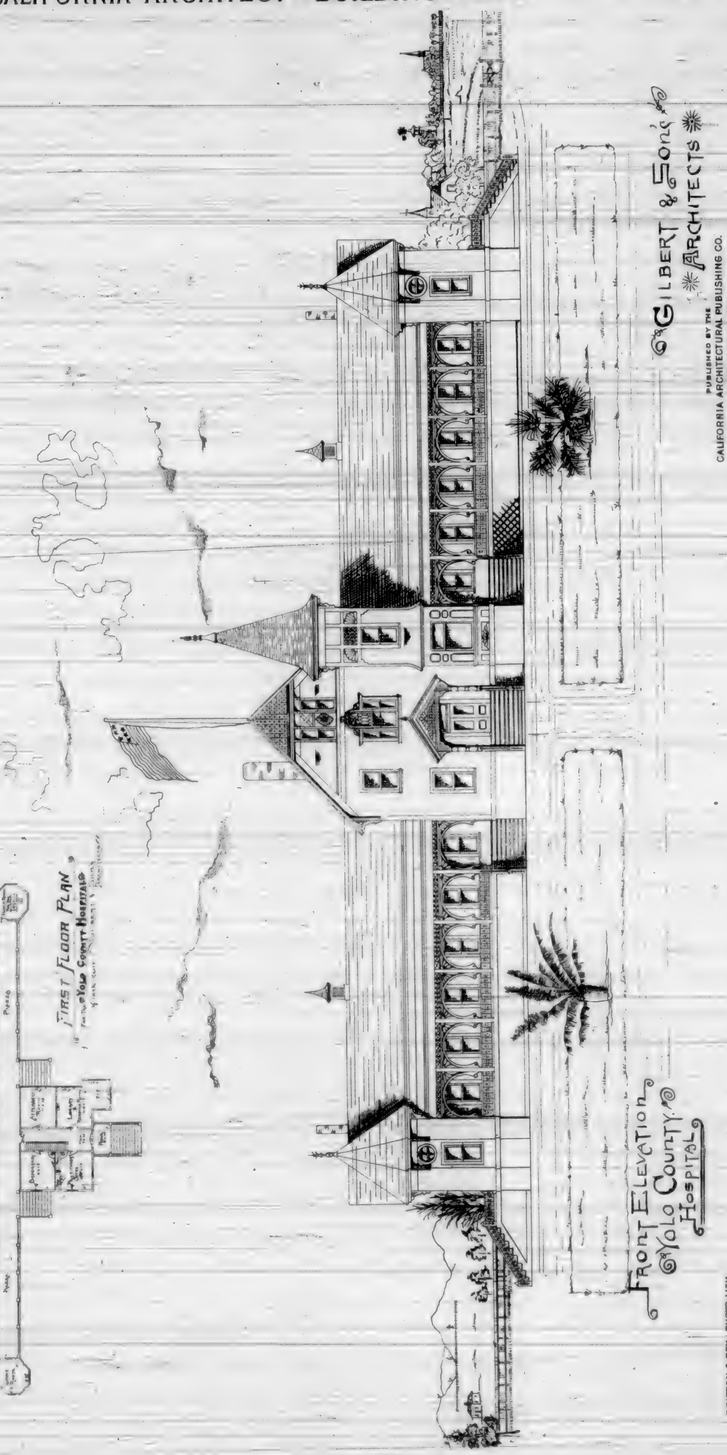

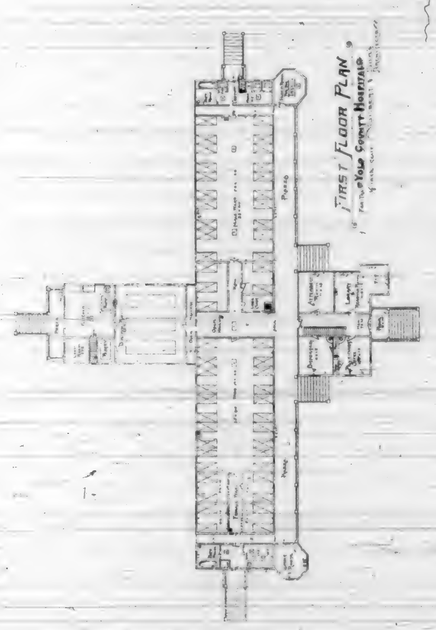

GILBERT & SON, ARCHITECTS

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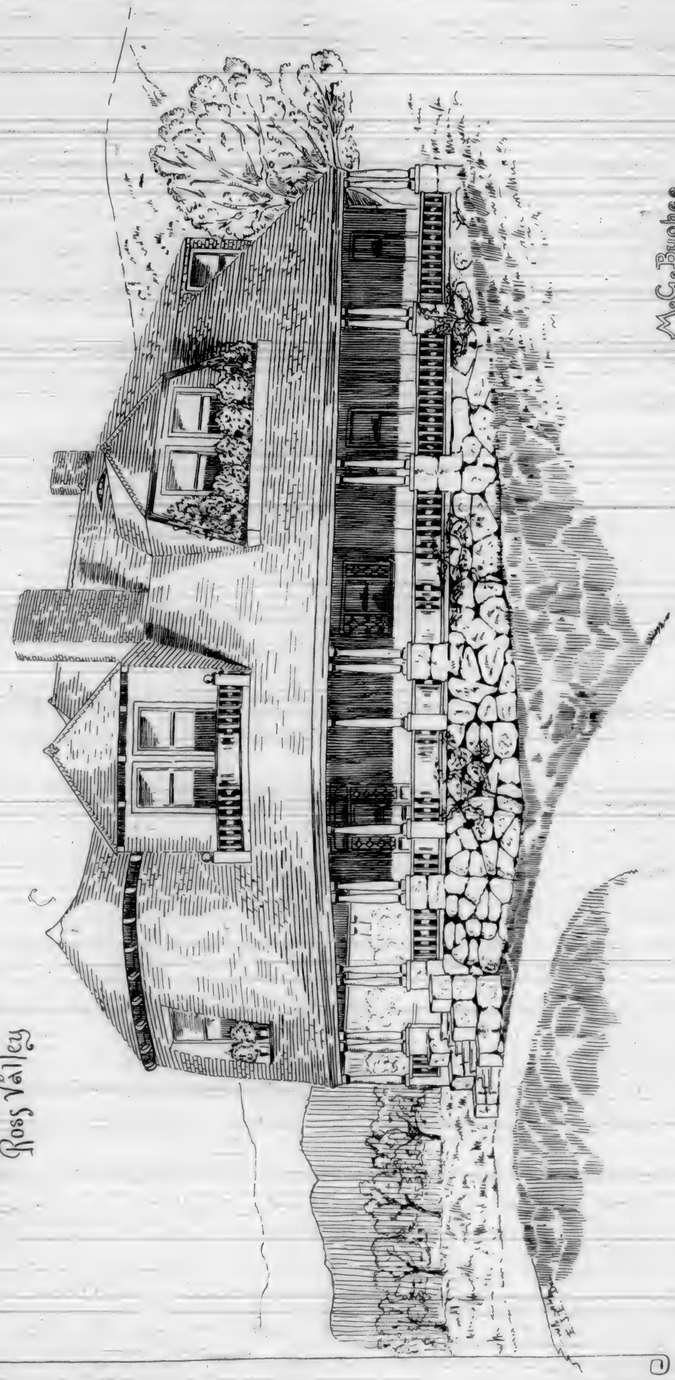
FIRST FLOOR PLAN of the YOLO COUNTY HOSPITAL

FRONT ELEVATION YOLO COUNTY HOSPITAL

BRITTON & REY PHOTO. LITH.

APRIL 1892. THE CALIFORNIA ARCHITECT AND BUILDING NEWS. VOL. XIII. NO. 4.



M. C. Bugbee ARCHITECT 419 CALA ST S.F.

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RESIDENCE OF Wm. BARBER ESQ. ROSS VALLEY

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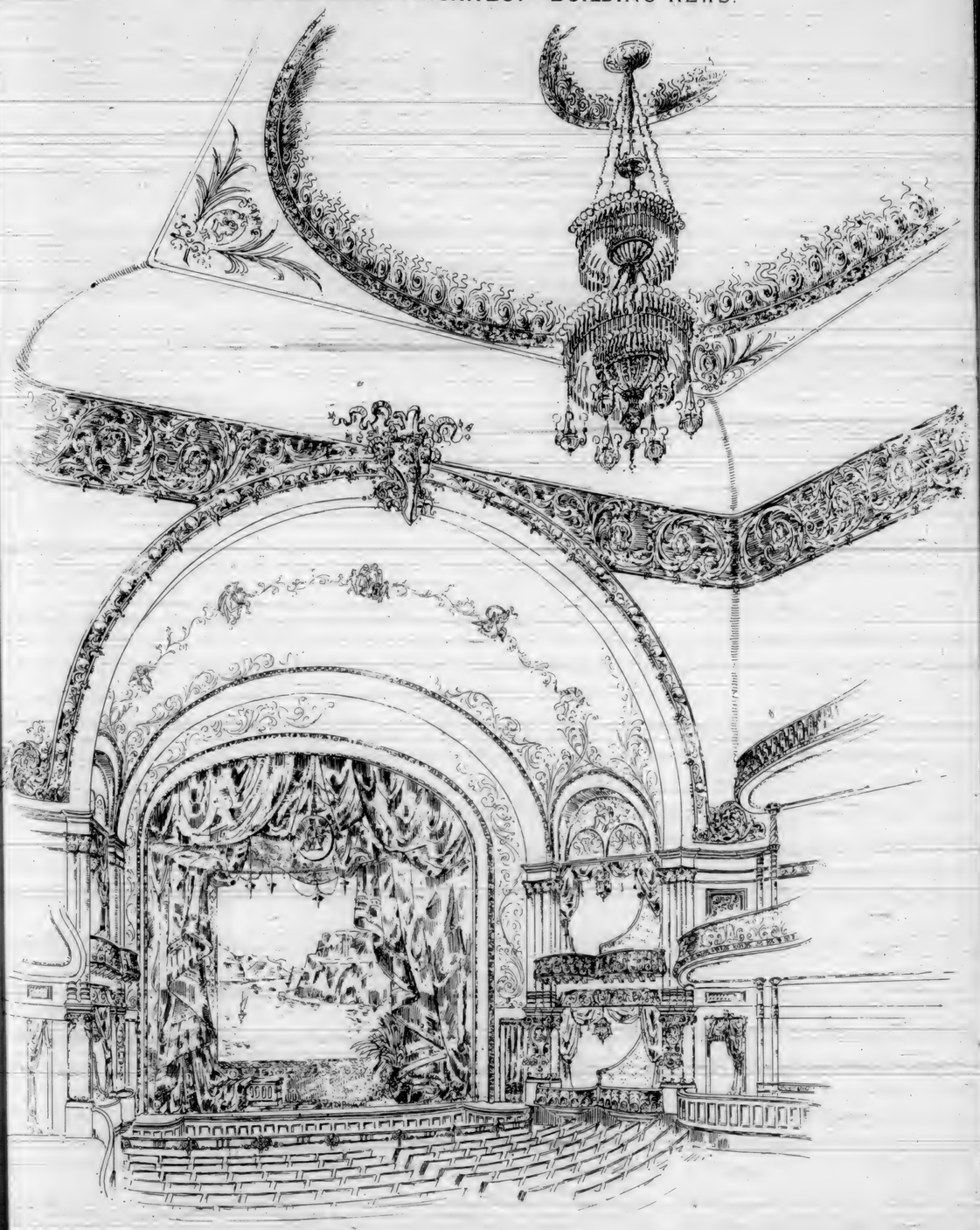

VIEW OF PROSCENIUM.

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. — OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. — JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. — L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evening of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. — O. BROOKS, Treas.

MASTERS PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. — H. G. JARMAN, Sec.

CLASSES OF INSTRUCTION UNDER THE AUSPICES OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

AT the January meeting the report of the Committee, after noting the honorable mentions for single competitions, contained the following:

"There are several other students of whom I feel it only right to make special mention. First, Mr. Samuel Benson who received first mention for six out of eight 1st honorable mentions in the competitions for 1890. This student was always distinguished for the delicacy, beauty and artistic quality of whatever work he undertook, and I beg to suggest that for such abilities as his, some adequate recognition is due by the Chapter, and I would propose that upon the attainment of the majority of first mentions for general work for any one year, the Honorable degree of Draughtsman, together with the Chapter's medal, to be conferred by the President for the time being on the successful candidate for that year, and the degree alone for the students attaining the second largest number of 1st mentions.

"The next student who distinguished himself by the greatest number of first and second mentions, both in competitions and flat studies, was Mr. Van Vlack; commencing with a good second he succeeded in vanquishing his chief opponent for the final competition of the year, viz: the best pen and ink rendering of a photograph. This was quite a difficult subject, and the difference between the subjects chosen by Mr. Van Vlack, (a carved capital) and Mr. Benson, (the North Entrance to Chartres Cathedral) who came in second, was so great and the work so nearly equal in execution respectively, that it was a matter of delicate judgment to decide between them. A slight lack of effect in general shading, however, in Mr. Benson's drawing, determined the committee to decide in favor of Mr. Van Vlack. Both these gentlemen it would seem were therefore entitled to the degree above suggested with the added distinction of a medal to Mr. Benson as the winner of the greatest number of 1st mentions.

"Third in order to merit for 1st mention are Mr. Meussdorffer and Mr. Bree, both of whom received one 1st mention each. Mr. Rowell was awarded two 2d mentions and two 3rd mentions for work which only needed perseverance and diligence to bring it up to a very high order of merit, both for quality of design and execution.

"Mr. Frank Holland received two mentions for design and also produced some excellent flat studies, of which, however, no mention has been made, though executed during the period embraced in the above report."

That the subject may be carefully considered by the Members, the following report has been prepared.

To the San Francisco Chapter of the A. I. A.

GENTLEMEN:—The Committee on Classes to which was referred the question of medals and competitive prizes, at the last meeting of the Chapter, begs leave to submit the following report:

In pursuance of the scheme briefly outlined in the report on classes at the last meeting of the Chapter, your Committee recommends the establishment of three divisions amongst the students attending the Chapter Classes. 1st, Pupils; 2d, Draughtsmen; 3rd, Assistants; and in correspondence with this division it is proposed that the Chapter confer three medals, viz: bronze, silver and gold. That the pupils or students shall compete for the medals in the order above named. The gaining of a bronze medal by a *pupil*, entitling him to compete for the silver medal of the Draugtsman, and on gaining that, for the gold medal of the Assistant. The holding of all three medals by a competitor constituting him a properly qualified architectural draughtsman of the A. I. A.

These medals would then form, in themselves, an appropriate and interesting as well as valuable testimonial to the holder's ability, and the attainment and conferring of the gold medal at the completion of the student's indentures with his principal, would be likely to form an interesting and noteworthy incident in his career—corresponding with the matriculation of a student in law, medicine or divinity.

To fully attain the benefits to be derived from the adoption of the above proposition, it would be necessary to arrange for proper courses of studies and competitions, suitable for the respective grades of students to be pursued in their order, so that the benefits derived by them should not be confined wholly to the acquirement of superficial skill in draughtsmanship alone, but be accompanied by the acquirement of such knowledge as would seem to solidify and supplement his acquirements in the chosen field of his life's labor.

In furtherance of the above suggestion it is thought that the purchase by the Chapter of some standard works of reference for the use of the students would be a valuable addition to the Chapter library, and constitute a source of attraction to the students who belong to the chapter. These works might be loaned to the students on proper guarantee being given for their preservation and return.

In connection with the above it has also been suggested that a quarterly gathering of the members of the Chapter and students thereof, together with invited guests, should be established, at which the student's competitive drawings should be exhibited and criticised and awards made, and at which some special addresses, calculated to be useful to the students and members as well, should be delivered on some subject connected with architecture and cognate arts.

It is also suggested that a circular be printed in the journal of the chapter and circulated amongst the professional men of the city, containing a resume of the above, as well as an explanatory statement showing the connection between the Chapter and the Chapter students, and setting forth the benefits which it is hoped will be attained by the above arrangements, and also the advantages to be derived by a broadening of the apprenticeship system and the building up of a properly qualified and respectable profession of Architects on the Pacific Coast.

MR. Geo. P. Low, Electrical Inspector for the Pacific Insurance Union, and President of the California Electrical Society, will, at an early date, deliver an address on Electrical Matters Relating to Buildings, before the San Francisco Chapter of the American Institute of Architects.

The members and those invited will receive due notice through the mail. Members are invited to send to the Secretary of the Chapter such questions as they may wish to have discussed.

EXPIRED PATENTS RELATING TO BUILDING.

B

Britton & Chamberlin—Machine for cutting Shingle Bands.....Feb. 9-75-159,493.
J. W. Haines—Door Knobs.....Feb. 9-75-159,509.
H. A. Holt—Wood Molding Machines.....Feb. 9-75-159,514.
A. B. Kingsbury—Machine for Crozing Stoves.....Feb. 9-75-159,551.
C. P. Poirier—Mitering Machines.....Feb. 9-75-159,552.
C. D. Wilson—Grey-Compounds for Picture Frames..Feb. 9-75-159,555.
W. Clemson—Saw Frames.....Feb. 9-75-159,562.
H. Hempel—Miter Boxes.....Feb. 9-75-159,573.
V. Hepp—Sandpapering Machines.....Feb. 9-75-159,574.
Z. M. Lane—Awning Hook.....Feb. 9-75-159,586.
C. Linder—Saw Mills.....Feb. 9-75-159,589.
J. C. Mackey—Lath Bolting Machines.....Feb. 9-75-159,591.
F. J. Martin—Saw Burring Tools.....Feb. 9-75-159,593.
D. M. Mefford—Weather Board Gages.....Feb. 9-75-159,597.
F. W. Benjamin—Saw Filing Machines.....Feb. 9-75-159,631.
W. Horbort—Sash Fasteners.....Feb. 9-75-159,678.
J. Kauffman—Hinges.....Feb. 9-75-159,682.
J. Tiffany—Refrigerator's floors.....Feb. 9-75-159,718.
Andrews & Tucker—Manufacture of Matches (Re-issue).....Feb. 9-75-6,276.
J. Kinzer—Cases for Reversible Latches and Locks (Re-issue).....6,282.

The above list of recently expired patents, relating to buildings, is supplied us by Alexander & Davis, Patent Attorneys of Washington, D. C. We have engaged this firm to supply us regularly with lists of expired patents relating to this line of inventions, and these lists will appear regularly hereafter, so that our readers will be kept promptly advised of the patents that become public property. Copies of these patents may be had of the above firm at the official cost (10 cts.) with postage added.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

SMOKE-PROOF LATH.—The Order regulating the construction of buildings in the City and County of San Francisco, states that all elevator or light shafts shall be formed of substantial framing, both sides of which shall be covered with smoke-proof iron laths and finished with three coats of mortar. Much controversy has arisen between the Inspectors of the Fire Wardens and the Builders, as to what constitutes a smoke-proof lath. The Chief Deputy, Mr. Sullivan, claiming that only certain forms of lath fulfill the requirements of the Ordinance, while the Builders claim that none of the iron laths are smoke-proof until after being plastered. Recently Mr. C. C. Morehouse, a plasterer, was arrested for using the Bostwick Steel Lath in the light well of the Otis Building on Sansome street, that form of lath being contrary to the fire ordinance as interpreted by the Fire Wardens. Upon trial in Judge Rix's Court, the Jury after a short consultation found him not guilty.

Fire Wardens vs. Bostwick Steel Lath Co.

LIABILITY FOR ACCIDENT.—Where a person is injured by an accident occuring while the employes of another are engaged in work upon his premises, he may recover if the injury resulted from the negligence of the workman. But if it was an unavoidable accident, untainted with negligence, he is entitled to no damages. Steen v. Williamson, Supreme Court of California, 28 Pac. Rep. 52, (53C).

BUSINESS MOSAICS.

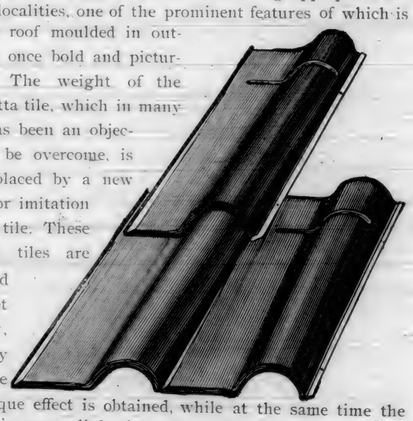
The A. Lietz Co., 422 Sacramento street, San Francisco, are manufacturers of scientific instruments of all kinds for the use of Architects and Engineers. This company comprises Instrument Makers and Engineers of high repute, who will examine, repair and adjust instruments when required. Supplies for field and office work kept in stock and supplied upon short notice. They have some very excellent levels, inclinometers, etc., especially adapted for the use of Architects.

Perspective Drawings made in pen and ink suitable for reproduction by any of the processes in use, can be ordered through this Journal. Architects and Engineers are often times too busy or too isolated to obtain the time or talent for the ornamental drawings. These drawings can be made from the plain drawings, and we will cheerfully furnish information regarding such work.

Every person in any way interested in the building trades should subscribe for the CALIFORNIA ARCHITECT AND BUILDING NEWS.

The Marshall Improved Window Furniture Co., 126 Main street, is fitting the windows of the Crocker Building with the Marshall Patent Sash Balance. Besides their general usefulness, these fittings have points of superiority which renders them especially applicable in certain situations. The upper or lower sash is locked at any position whether partially or fully open. This feature has advantages for windows opening where they may be accessible from halls, light wells, areas, balconies, fire escapes, etc. See page xv for further particulars.

The quaint style of the old Spanish Missions has attracted the attention of architects as being appropriate for certain localities, one of the prominent features of which is the tile roof moulded in outlines at once bold and picturesque. The weight of the terra-cotta tile, which in many cases has been an objection to be overcome, is now replaced by a new device or imitation Spanish tile. These Spanish tiles are moulded in sheet copper, whereby all the

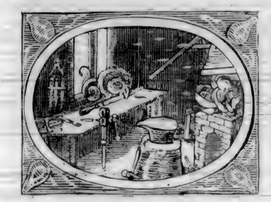


picturesque effect is obtained, while at the same time the weight is very slight in comparison with the old form. These copper tiles are placed on the market by Messrs. Merchant & Co. See advertisement on page xxi.

"Out of sight out of mind" is as applicable to-day as ever. A man might as well take down the sign over his door as to take out his advertisement occasionally. Advertisements should be continuous to insure the greatest benefit. When the usual advertisement fails to appear it gives rise to the thought that the firm has retired from business, or that the articles have been superseded by others in the market.

To Marble Men.—An unusual opportunity is offered to work a marble quarry, which is easy of access, only eight miles on good county road to railroad depot. Ledge is very large, solid and well defined; its marble is of superior quality. Owner will give to any quarry man, who has the necessary plant and is ready to commence work, the privilege of working the quarry for the first six months without royalty. Address owner, Mrs. Annie E. Wright, at New Almaden, Cal., or Julius Reimer, Att'y at Law, 507 Montgomery Street, San Francisco.

One of ÆSOP'S fables is the "Viper and the File."



A Viper entering a smiths shop, looked up and down for something to eat; and, seeing a file, began gnawing it as greedily as could be. The file told him very gruffly, that he had best be quiet and let him alone: for that he would get very little by nibbling at one, who, upon occasion, could bite iron and steel.

MORAL—We are cautioned to consider well before we speak ill of persons or merchandise, either by reason of envy or malevolence; which, like the viper, rather than not bit at all, will fall foul where it can hurt nothing but itself.

You can't pull a man over the fence with a single piece of thread, but if you have pieces enough you can weave them into a solid rope which will prove irresistible. That is the secret of the success of the J. L. Mott Iron Works. Not one design, but hundreds; not one patented improvement, but scores; not for one place only, but for all conceivable positions; no other manufactory in the United States to compare with it.

No wonder their works have been enlarged.

Wise men lay up knowledge: but the mouth of the foolish is near destruction.

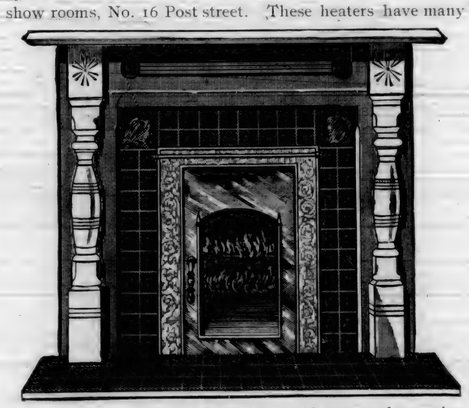
Carbolineum Avenarius has become an important article for the preservation of wood. Its chemical action neutralizes the nitrogenous substances of the fibers of the wood which gives it antiseptic properties of great value. Where the humidity varies it prevents the growth and spread of house fungus, and is an excellent disinfectant in stables, barns, etc. For timber and posts bedded in the ground or otherwise exposed to the actions of the elements, it is recognized as an effective preservative, at the same time comparatively inexpensive. It keeps away rats and other vermin, and also destructive insects. Carbolineum is a German invention where it has been manufactured and successfully used for the last fifteen years. Messrs. Muecke & Co., of 319 California street are the importers and agents for the Pacific Coast, and are reporting extensive sales. Write to them for further information.

He that gathereth in summer is a wise son: but he that sleepeth in harvest is a son that causeth shame.

With the growth in population, wealth and luxury on the Pacific Slope, the trade in hard woods for ornamental work and finish will increase. Our stocks of oak, ash, hickory, maple, walnut, mahogany, gum, birch, cherry and beach, is mostly drawn from the eastern markets. The E. D. Albro Co. of Cincinnati, Ohio, are dealers in all lines of domestic and foreign ornamental woods. We invite the attention of parties interested to their advertisement on last page of outside cover.

The young man, the country architect, and the builder who desires to improve himself in the art and science of building, should carefully read and study the best works on that subject to be had. THE CALIFORNIA ARCHITECT AND BUILDING NEWS will furnish him with valuable reading and hints for study, and its advertising pages will give him good ideas in regard to the improvements of the day in that line.

In office or house cheerfulness is more easily attained by the use of the open fire place for heating, than by any other means. The gas fire place heaters, as sold and put in by the San Francisco Gas Company, can be seen at their show rooms, No. 16 Post street. These heaters have many



features of superiority and which should command attention; the mantles and facings of the grates are made as highly ornamental as desired, the burning gas impinges and works its way over the asbestos backing, thereby consuming all the inflammable substance of the gas. Some of our largest and finest office buildings, such for instance as the Mills Building, are being fitted up for these open gas heaters.

This Company also furnishes all kinds of cooking appliances, water heaters, cloth driers, etc., arranged for gas.

Architects and other interested parties are invited to examine the Rapid Safety Filter as provided by the Filter Company.

These filters can be seen in operation at their show rooms, 1209 Market street. Among the various devices for sanitary improvement, the filtration of the water used for the house and office is receiving marked attention, as it has been proven that impure water has been the cause of much sickness.

The Pullman Sash Balances are becoming deservedly popular. The best evidence of this is the fact that there are now in actual use about one million, and the demand is steadily increasing. They will be used in the Oregonian Building at Portland, Ore., and the Carson Building at Eureka, Cal., taking between three and four hundred sets, besides in many residences here and elsewhere on the Coast. In seven years of manufacture they have placed upon the market an article as perfect as it is possible to produce, and will guarantee them to give satisfaction when properly applied.

The manufacturers are receiving many letters from architects who are satisfied with their use, and strongly recommending them.

CITY BUILDING NEWS.

Bartol near Broadway. To build; owner, C. Branagan; architects, Martens & Coffey; contractors, R. Doyle & Son; cost, $2,884; signed, March 4; filed, March 5; payments, $725, frame up; $725, brown coated; $725, completed; $719, 35 days.

Baker near McAllister. To build; owner, Chas. H. Rosenthal; architect, R. H. White; contractors, White Bros.; bond, $1,200; cost, $4,470; signed, March 25; filed, March 28; payments, $800, frame up and rafters on; $820, brown coated; $800, standing finish on; $800, completed; $1,150, 35 days.

Broderick near Hayes. Alterations and additions; owner, Thos. McGrory; architect, W. H. Armitage; contractor, Jas. Geary; cost, $3,600; signed, March 14; filed, March 17; payments, $750, frame up; $750, brown coated; $500, standing finish on new building; $700, completed; $900, 35 days.

Buchanan near McAllister. Excavating, sewer, plumbing, etc.; owner, D. Buckley; architect, T. J. Welsh; contractors, Ford Bros.; bond, $302; cost, $1,305; signed, March 9; filed, March 19; payments, $451.50, work roughed; $451.50, completed; $302, 35 days.

Buchanan near McAllister. Grading, brick-work, etc.; owner, D. Buckley; architect, T. J. Welsh; contractors, Currie & Loomer; bond, $2,016; cost, $8,030; signed, March 14; filed, March 19; payments, $1,505, frame up; $1,505, brown coated; $1,505, white coated; $1,505, completed; $2,010, 35 days.

Bush and Chelsea Place. Patent chimneys and iron stone pipe; owner, Mrs. M. W. Newman; architect, P. R. Schmidt; contractor, Francis M. Stevens; cost, $2,045; signed, March 9; filed, March 16; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

California near Devisadero. Plumbing; owner, John I. Sabin; architect, Jno. C. Pelton; contractor, W. F. Wilson; cost, $885; signed, March 5; filed, March 11; payments, $375, rough work in; $510, completed.

California near Devisadero. To build; owner, John I. Sabin; architect, John C. Pelton; contractor, F. W. Kern; cost, $7,654; signed, March 5; filed, March 11; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

California near Van Ness. Alterations and additions; owner, Harriett S. Stone; architect, W. H. Lillie; contractor, R. Murry; bond, $400; cost, $2,850; signed, March 30; filed, March 31; payments, $427.50, frame up for new portion and false roof of old portion; $427.50, new portion enclosed and false roof finished on old partitions; $427.50, brown coated; $427.50, standing finish on; $427.50, completed; $712.50, 35 days.

California Ave. near Eugenia. To build; owner, Chas. Mills; contractor, Jno. Mills; cost, $1,600; signed, Feb. 1; filed, March 17.

California near Montgomery. Indirect steam heating plant; owners, German Savings & Loan Society; architects, Kenitzer & Kollofrath; contractor, Wm. Cronan; bond, $1,000; cost, $2,850; signed, Feb. 20; filed, March 12; payments, $2,137.50, completed; $712.50, 35 days.

California near Montgomery. Mosaic flooring and tiling; owners, German Savings & Loan Society; architects, Kenitzer & Kollofrath; contractors, W. W. Montague & Co.; bond, $1,200; cost, $4,762; signed, Feb. 24; filed, March 12; payments, $3,571.50, completed; $1,190.50, 35 days.

Carl near Stanyon. To build; owner, G. S. Graham; architect, Edward Burns; contractor, Henry Rohling; bond, $700; cost, $2,789; signed, March 10; filed, March 12; payments, $698, frame up; $697, brown coated; $697, completed; $697, 35 days.

Catholic Orphan Asylum, South San Francisco. Concrete, iron, carpenter, etc.; owner, Catherine Roche; architect, T. J. Welsh; contractors, Dyer Bros.; cost, $2,700; signed, March 30; filed, March 30; payments, 75 per cent. of work done; balance 35 days.

Catholic Orphan Asylum, South San Francisco. New elevator; owner, Catherine Roche; architect, T. J. Welsh; contractors, A. J. McNicoll & Co.; cost, $1,000; signed, March 30; filed, March 30; payments, $1,000, 35 days.

Clay near Broderick. All work specified; owner, W. R. Eckart; architect, J. Cather Newsom; contractor, W. E. Lane; bond, guaranteed; cost, $7,865; place; $1,179.25, frame up; $1,179.25, rough plumbing in and chimneys built; $1,179.25, ready for lathing, $1,179, completed; $1,993, 35 days.

Clay near Broderick. Concrete, granite and cement; owner, W. R. Eckart; architect, J. C. Newsom; contractors, Ransome & Cushing; cost, $1,600; signed, March 5; filed, March 7; payments, $600, foundation walls completed; $450, completed; $550, 35 days.

Dupont and California. To build; owner, Chas. L. Vercoutere; architect, Chas. M. Rousseau; contractor, W. H. Wickersham; cost, $8,743; signed, March 16; filed, March 17; payments, $2,185, 2d story joists on; $2,185, brown coated; $2,185, completed; $2,188, 35 days.

Eighteenth near Danvers. To build; owner, Patrick Conlin; architect, Edward Burns; contractor, J. C. Brown; bond, $2,000; cost, $3,325; signed, March 7; filed, March 7; payments, $831.25, frame up and rough boards on; $831.25, rough plaster and sash on; $831.25, completed; $831.25, 35 days.

Eleventh near Market. Lathing and plastering; owner, Church of the Advent; architects, Coxhead & Coxhead; contractor, Jos. Norris; cost, $2,200; signed, Feb. 29; filed, March 11; payments, 75 per cent. as work progresses; balance 35 days.

Elizabeth near Diamond. To build; owner, Peter Christensen; contractor, Andrew Christensen; cost, $4,000; signed, March 23; filed, March 25; payments, $1,000, frame up; $1,000, brown coated; $1,000, completed; $1,000, 35 days.

Fifteenth near Mission Block. To build; owner, Jas. McMahon; architects, Townsend & Wyneken; contractor, Carl Stroth; bond, $2,000; cost, $3,010; signed, March 8; filed, March 9; payments, $600, frame and east side boarded; $700, brown coated; $857, accepted; $753, 35 days.

Geary near Dupont. Carpenter work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractor, Henry Holzenberg; cost, $6,650; signed, March 22; filed, March 24; payments, $500, 2d story joists on; $1,500, roof on; $1,000, floors laid; $1,985, completed; $1,665, 35 days.

Geary and Dupont. Excavating and brickwork; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractor, Adam Bock; cost, $14,100; signed, March 22; filed, March 28; payments, $2,000, basement wall ready for joists; $1,500, 1st story walls ready for joists; $1,500, 2d story walls ready for joists; $1,500, 3rd story walls ready for joists; $1,500, 4th story walls ready for joists; $2,400, accepted; $3,700, 35 days.

Geary near Dupont. Granite and sandstone work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractor, J. P. M. Phillips; cost, $5,700; signed, March 22; filed, March 24; payments, $1,500, granite of 1st story set; $1,750, granite of 2d set; $1,000, completed; $1,450, 35 days.

Geary near Dupont. Wrought and cast iron work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractors, Bigelow & Little; cost, $2,825; signed, March 23; filed, March 24; payments, $1,400, work of basement 1st and 2d floor in; $565, completed; $660, 35 days.

Green near Mason. To build; owner, Mrs. C. Garibaldi; architects, C. R. & J. M. Wilson; contractor, P. Antonelli; cost, $5,554; signed, March 11; filed, March 11; payments, $1,600, frame up and old house completed; $1,277, brown coated; $1,277, completed; $1,400, 35 days.

Geary near Devisadero. Excavating, brick, carpenter, etc.; owner, Mrs. E. Kibbe; architect, T. J. Welsh; bond, guaranteed; cost, $6,750; signed, March 29; filed, March 30; payments, $1,265.50, frame up; $1,265.50, brown coated; $1,265.50, white coated; $1,265.50, completed; $1,688, 35 days.

Geary near Dupont. Terra cotta work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractors, Gladding, McBean & Co.; cost, $950; signed, March 17; filed, March 26; payments, $950, completed.

Guerrero near Army. To build; owner, E. Koeg; architect, M. J. Welsh; contractors, Currie & Loomer; cost, $1,950; signed, March 31; filed, March 31; payments, $487.50, frame up; $487.50, brown mortar on; $487.50, completed; $487.50, 35 days.

Guerrero bet 18th and 19th. Addition; owner, Jno. J. Carroll; architect, P. R. Schmidt; contractor, Jno. J. O'Brien; cost, $1,450; signed, March 11; filed, March 12; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Harrison and Fremont. To build; owner, Rev. Jno. F. Nugent; architect, T. J. Welsh; contractor, T. R. Bassett; bond, $4,255; cost, $14,295; signed, March 24; filed, March 24; payments, $2,500, frame up; $2,500, brown coated; $2,500, white coated; $2,500, completed; $4,295, 60 days.

Howard near 11th. Alterations and additions; owner, Anne Clarke; architect, A. J. Barnett; contractor, W. H. Mead; bond, $600; cost, $2,000; signed, March 3; filed, March 8; payments, $500, frame up and rustic on; $500, brown coated; $500, completed; $500, 35 days.

Jackson and Lyon. Millwork; owners, Herbst & McLeod; architect, J. C. Newsom; contractor, A. Kendall; cost, $2,800; signed, March 14; filed, March 28; payments, $525, contractor's second payment is due; $525, 3rd due; $525, 4th due; $525, 5th due; $700, 6th due.

Jackson and Lyon. To build; owner, Anna Meade; architect, J. Cather Newsom; contractors, Herbst & McLeod; bond, $3,000; cost, $11,649; signed, March 3; filed, March 7; payments, $1,747.35, foundations in and first floor joists are in place; $1,747.35, 2d floor joists in place; $1,747.35, rafters in place, chimneys built and enclosed; $1,747.35, ready for lathing; $1,747.35, completed; $2,912.25, 35 days.

Jessie and 4th. Carpenter, plumbing, etc.; owners, Edison Light Co.; architects, Percy & Hamilton; contractor, Thos. McLachlan; bond, $4,000; cost, $8,690; signed, March 4; filed, March 15; payments, 1st Saturday of each month 75 per cent of work done; balance 35 days.

Jessie and 4th. Excavating, concrete, etc.; owners, Edison Light Co.; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $6,575; signed, March 4; filed, March 15; payments, 1st Saturday of each month 75 per cent. of work done; balance 35 days.

Jessie and 4th. Iron and steel work; owners, Edison Light Co.; architects, Percy & Hamilton; contractors, Western Iron Works; bond, $5,000; cost, $12,943; signed, March 4; filed, March 15; payments, 1st Saturday of each month 75 per cent of work done; balance 35 days.

Jessie near 4th. Brick and stone work; owners, Edison Light Co.; architects, Percy & Hamilton; contractors, Peacock & Butcher; bond, $7,000; cost, $15,000; signed, March 4; filed, March 15; payments, 1st Saturday of each month 75 per cent. of work done; balance 35 days.

Lobos near Plymouth O. V. To build; owners, Instl. Home Ass'n.; contractors, Home Building Co.; cost, $1,275; signed, March 4; filed, March 5; payments, $300, rough frame up and enclosed; $300, brown mortar on; $300, completed; $375, 35 days.

Lombard near Mason. To build; owner, Wm. Raubinger; architect, P. R. Schmidt; contractor, Emil Hoelle; cost, $3,327; signed, March 23; filed, March 25; payments, $690, frame up; $600, brown coated; $600, hard finished; $600, completed; $830, 35 days.

McAllister near Broderick. Painting; owners, Board of Education; architect, C. I. Havens; contractor, W. S. Nepham; cost, $1,245; signed, March 8; filed, March 14; payments, monthly payments, 75 per cent. of work done; balance 35 days.

Minnesota near Butte. To build; owner, Robert Paekham; architect, A. J. Barnett; contractor, F. C. Kleebauer; bond, $1,000; cost, $2,500; signed, March 25; filed, March 28; payments, $625, roof boards on; $625, brown coated; $625, completed; $625, 35 days.

Mission near 3rd. To build; owner, Wm. Shiels; architect, A. J. Barnett; contractor, Wm. Little; bond, $3,000; cost, $10,997.50; signed, March 22; filed, March 22; payments, $3,000, 2d floor joists on; $2,500, roof on; $2,747.50, completed; $2,750, 35 days.

Mission near 14th. To build; owner, Jas. Torry; architect, Oliver Everett; contractor, D. H. Matheson; cost, $12,900; signed, March 8; filed, March 9; payments, $1,935, basement walls in; $1,935, frame up; $1,935, brown coated; $1,935, white coated; $1,935, completed; $3,225, 35 days.

Mission near Sickles Ave. To build; owners, C. Effinger and wife; contractor, H. R. Schmuckert; cost, $1,650; signed, March 15; filed, March 19; payments, $412.50, rustic on; $412.50, brown coated; $412.50, completed; $412.50, 35 days.

Mission near Stuart. Excavating, piling and capping; owner, W. J. Lowry; architects, Kenitzer & Kollofrath, contractors, B. McMahon & Son; cost, $7,532; signed, March 22; filed, March 22; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Nineteenth near Diamond. To build; owner, A. M. Whittle; contractors, Marcuse & Remmel; cost, $2,370; signed, March 16; filed, March 17; payments, $592.50, frame up; $592.50, brown coated; $592.50, completed; $592.50, 35 days.

Noe and Jersey. To build; owner, Wm. Postel; contractor, A. Klahn; cost, $2,814; signed, March 14; filed, March 14; payments, $700, frame up; $700, brown coated; $700, completed; $714, 35 days.

O'Farrell near Franklin. All work except plumbing; owner, Adolph Cohn; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $6,255; signed, March 14; filed, March 15; payments, $1,200, frame up; $1,455, enclosed; $1,000, white coated; $1,000, completed; $1,000, 35 days.

O'Farrell near Franklin. Plumbing, gas-fitting and sewer; owner, Adolph Cohn; architects, Salfield & Kohlberg; contractor, H. Williamson; cost, $779; signed, March 14; filed, March 15; payments, $350, rough plumbing in; $229; completed; $200, 35 days.

O'Farrell near Franklin. To build; owner, Jacob Schleicher; architects, Shea & Shea; contractor, F. W. Kern; cost, $7,840; signed, March 18; filed, March 28; payments, $1,470, frame up; $1,470, inside ready for brown coat; $1,470, outside finish up, inside ready for finish; $1,470, completed; $1,960, 35 days.

O'Farrell and Franklin. Marble and mosaic work; owner, A. H. Loughborough; architects, Shea & Shea; contractor, Wm. Black; cost, $1,705; signed, March 24; filed, March 29; payments, $1,278, completed; $427, 35 days.

O'Farrell near Franklin. Painting and graining; owner, Adolph Cohn; architects, Salfield & Kohlberg; contractor, J. M. Sindlinger; cost, $500; signed, March 28; filed, March 28; payments, $175, 1st coat on; $200, completed; $125, 35 days.

O'Farrell near Gough. Plumbing and gas-fitting; owners, Dusenberry & Stencel; architect, C. I. Havens; contractors, Ford Bros.; cost, $1,583; signed, Feb. 29; filed, March 4; payments, $550, gas, water and sewer pipes are in; $643, completed; $400, 35 days.

Pacific Ave. near Pierce. Brick and concrete work; owner, J. C. Stubbs; architects, Percy & Hamilton; contractors, Peacock & Butcher; bond, $1,000; cost, $2,375; signed, March 15; filed, March 25; payments, 1st Saturday of each month 75 per cent. of value of work done; balance 35 days.

Pacific Ave. near Pierce. Carpenter work; owner, J. C. Stubbs; architects, Percy & Hamilton; contractor, A. H. Plummer; bond, $3,000; cost, $8,765; signed, March 15; filed, March 25; payments, 1st Saturday of each month 75 per cent. of work done; balance 35 days.

Pacific Ave. near Pierce. Painting, etc.; owner, J. C. Stubbs; architects, Percy & Hamilton; contractor, Paul Agmar; cost, $1,050; signed, March 15; filed, March 25; payments, 75 per cent of work done on 1st Saturday of each month; balance 35 days.

Pacific Ave. near Pierce. Plumbing, etc.; owner, J. C. Stubbs; architects, Percy & Hamilton; contractors, S. Ickelheimer & Bro.; cost, $1,650; signed, March 15; filed, March 25; payments, 75 per cent. of work done on 1st Saturday of each month; balance 35 days.

Pacific near Powell. To build; owner, Anton Robrecht; architect, Chas. M. Rousseau; contractor, G. Damkroeger; cost, $1,795; signed, March 8; filed, March 8; payments, $450, brick-work up; $450, brown coated; $445, accepted; $450, 35 days.

Page near Schrader. To build; owner, J. F. Sarber; architect, W. H. Lillie; contractor, A. C. Soule; bond, $625; signed, March 10; filed, March 12; payments, $375, frame up; $375, enclosed; $375, brown coated; $375, standing finish on; $375, completed; $625, 35 days.

Pine near Jones. To build; owner, Geo. Whittel; architects, Townsend & Wyneken; contractor, M. L. Lynch; cost, $12,500; signed, March 18; filed, March 18; payments, $2,500, frame up; $2,000, ready for lathing; $2,000, plastering completed; $2,500, completed; $3,500, 35 days.

Pine near Sansome. Galvanized iron work; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractor, Geo. H. Tucker; cost, $1,890; signed, March 26; filed, March 26; payments, $250, roof on and conductors in place; $790, accepted; $850, 35 days.

Pine near Sansome. Glazing and glass material; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractor, L. Wilkenson; cost, $1,695; signed, March 15; filed, March 26; payments, 75 per cent. when glass is delivered to building; 25 per cent. completed.

Point Lobos and 22d Ave. To build; owner, M. H. Lawler; architect, A. J. Barnett; contractor, L. B. Schmidt; bond, $868.75; cost, $3,475; signed, March 15; filed, March 16; payments, $868.75, frame up; $868.75, brown coated; $868.75, accepted; $868.75, 35 days.

Post near Mason. Plumbing, etc.; owners, Olympic Club; architect, H. A. Schulze; contractors, Duffey Bros.; cost, $16,500; signed, March 2; filed, March 16; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Powell Street Theater. Remodeling; owners, Denicke & Siebe; architects, Wood & Lovell; contractor, W. W. Ackerson; cost, $5,000; signed, March 11; filed, March 18; payments, 1st and 15th day of each month 75 per cent of work done; balance 35 days.

Ripley near Columbia Place. To build; owner, Geo. Fahrbach; contractor, L. B. Schmid; cost, $1,890; signed, March 7; filed, March 8; payments, $890, brown coated; $890, accepted.

Sacramento near Gough. To build; owner, J. B. H. Cooper; contractor, A. C. Hussey; cost, $9,636; signed, March 14; filed, March 16; payments, 25 per cent. when ½ of work done and materials furnished; 25 per cent. ⅔ done; 25 per cent., completed; 25 per cent., 35 days.

Sacramento and Montgomery. Plastering; owners, Pacific Mutual Life Ins. Co.; architects, Wright & Sanders; contractor, Chas. Dunlop; cost, $6,900; signed, March 9; filed, March 15; payments, 1st day of each month 75 per cent. as work progresses; balance 25 per cent., 35 days.

Sacramento and Montgomery. Galvanized iron and tin work; owners, Pac. Mut. Life Ins. Co.; architects, Wright & Sanders; contractor, J. C. Roberts; cost, $6,490; signed, March 22; filed, March 28; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Sanchez near Elizabeth. To build; owner, J. F. McGillicuddy; contractor, Wm. C. Hamerton; cost, $3,561; signed, March 22; filed, March 23; payments, $890, enclosed and brown coated; $890, white coated; $890, completed; $891, 35 days.

Scott bet. O'Farrell and Geary. Heating and ventilating; owners, Board of Education; architect, T. J. Welsh; contractor, M. McManus; cost, $3,712; signed, March 17; filed, March 18; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Seventh near Douglass. To build; owner, Adolph C. Bauer; architect, H. Geilfuss; contractor, Henry Rohling; cost, $3,605; signed, March 17; filed, March 18; payments, $540, frame up; $540, enclosed and partitions set; $540, brown coated and porch work done; $540, inside finish on; $540, completed; $905, 35 days.

Seventh Ave. near D. Dance and skating hall; owner, C. M. Jackson; contractor, J. Schuler; cost, $1,580; signed, March 17; filed, March 17; payments, $400, frame up; $400, roof on and building enclosed; $380, completed; $400, 35 days.

Sheridan near 9th. To build; owner, R. O'Connell; architect, M. J. Welsh; contractor, J. J. Grace; bond, $2,500, cost, $3,100; signed, March 31; filed, March 31; payments, $775, frame up; $775, brown mortar on; $775, completed; $775, 35 days.

Shotwell near 24th. To build; owner, Geo. Pennington, Jr.; architect, H. D. Mitchell; contractors, J. McNeil & McLean; bond, guaranteed; cost, $1,925; signed, March 12; filed, March 22; payments, $480, frame up; $480, laths on; $480, completed; $485, 35 days.

Sixteenth near Shotwell. To build; owner, Chas. Rosenmann; architect, R. Zimmerman; contractor, Emile Hoelle; bond, $2,000; cost, $4,000; signed, March 25; filed, March 26; payments, $1,000, frame up; $1,000, brown coated; $1,000, completed; $1,000, 35 days.

Stockton near Sacramento. To build; owner, Jos. Goetz; architect, T. J. Welsh; contractor, R. Ringrose; bond, $1,200; cost, $4,500; signed, March 29; filed, March 31; payments, $1,650, 1st story up; $1,650, completed; $1,200, 35 days.

Strawberry Hill, Park. Alterations and additions to Park Panorama; owner, Thos. U. Sweeny; architects, Percy & Hamilton; contractors, Ransome & Cushing; cost, $5,000; signed, March 4; filed, March 16; payments, 1st Saturday of each month 75 per cent. of work done; balance 35 days.

Tennessee near Sierra. To build; owner, Hans Rasmussen; contractors, F. Beckelhymer & Co.; cost, $6,578; signed, March 10; filed, March 11; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Third St. No. 4. Store fixtures and alterations; owner, Thos. Lundy; architect, T. J. Welsh; contractor, C. W. Kinsman; bond, $425; cost, $1,780; signed, March 7; filed, March 8; payments, 75 per cent. on completion; 25 per cent., 35 days.

Twelfth near Howard. Galvanized and corrugated iron work; owners, E. P. White & Co.; architect, Julius E. Krafft; contractor, Frank De Guerre; bond, $1,300; cost, $2,068; signed, March 26; filed, March 30; payments, 1st and 15th day of each month 75 per cent work done; balance 35 days.

Twenty-fifth and Bryant. To build; owner, Jno. McBride; architect, M. J. Welsh; contractors, R. Doyle & Son; cost, $3,600; signed, March 30; filed, March 30; payments, $900, frame up; $900, brown coated; $900, completed; $900, 35 days.

Twenty-second near Treat Ave. To build; owner, M. A. Leonard; contractor, J. F. Le Bourveau; bond, $700; cost, $2,884; signed, March 25; filed, March 25; payments, $300, foundation walls finished and 1st floor joists finished; $400, frame up and rustic on; $700, brown coated; $750, completed; $714, 35 days.

Twenty-fourth near Ellen. To build; owner, Otto M. Furkert; contractor, Wm. Campbell; cost, $1,035; signed, March 11; filed, March 14; payments, $400, enclosed; 75 per cent. of balance when completed; 25 per cent., 35 day.

Union near Larkin. To build; owner, S. H. White; architects, Shea & Shea; contractor, A. H. Taylor; cost, $1,135; signed, March 5; filed, March 5; payments, $212, frame up; $213, brown coated; $213, hard finished; $213, completed, $284, 35 days.

Union near Mason. To build; owner, L. Gracchi; architects, Mooser & Cuthbertson; contractor, F. V. Steinman; bond, $1,200; cost, $4,700; signed, March 3; filed, March 9; payments, 75 per cent. as work progresses; balance 35 days.

Webster near Clay. To build; owner, Edwin Palmer; contractor, W. S. Wilson; cost, $2,784; signed, March 22; filed, March 23; payments, $622, frame up and rustic on; $522, roof on and ready for lathing; $522, plastering finished and windows in; $622, completed; $696, 35 days.

_____. Carpenter work, etc.; owner, Alice Summerfield; architects, Salfield & Kohlberg; contractor, Thomas Elam; cost, $1,200; signed, March 2; filed, March 9; payments, $500, brown coated; $400, completed; $300, 35 days.

_____. Furnishing dynamos, etc.; owners, S. F. and San Mateo Ry. Co.; contractors, Thomson-Houston Elec. Co.; cost, $188,250; signed, June 16, '91; filed, March 14; payments, $75,000, in bonds at par of S. F. and San Mateo Ry., upon presentation of bill of lading; $75,000, road has been in operation 30 days; $38,250, 90 days after 2d payment.

TENDERS TO BE RECEIVED.

Treasury Department, Office, Supervising Architect, Washington, D. C., April 2, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 28th day of April, 1892, and opened immediately thereafter, for all the labor and materials required to put in place complete the iron beams and girders in basement and first floor, basement columns, etc., for the U. S. Court House, Custom House and Post Office building at Omaha, Nebraska, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Omaha, Nebraska.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid. All bids received after the time stated, will be returned to the bidders.

Proposals must be enclosed in envelopes, sealed and marked, "Proposals for the iron beams and girders in basement and first floor, basement columns, etc., for the U. S. Court House, Custom House and Post Office Building at Omaha, Nebraska, and addressed to,

W. J. EDBROOKE,
Supervising Architect.

ALAMEDA COUNTY.

Alameda Tr., near, Blk. 18. To build; owner, Adam Kraft; architect, Martens & Coffey; contractors, Herbert & McLeod; cost, $3,591; signed, Feb. 26; filed, March 10; payments, $800, rustic on and roof shingled; $800, brown mortar on and all inside finish; $900, completed; $851, 35 days.

Base Ball Grounds, Oak. To build; owner, Durham Peterson; contractor, Peter Ahern; cost, $2,400; signed, March 21; filed, March 23; payments, $575, enclosed without the windows; $575, doors and windows hung, etc.; $575, completed; $575, 35 days.

Barker Tr., Blk. 5, Berkley. To build; owner, Louis Juvete; contractor, F. E. Armstrong; cost, $1,750; signed, March 12; filed, March 14; payments, $437, frame up and house enclosed; $437, brown mortar on; $437, completed; $439, 35 days.

Bridge's Tr., Alameda. To build; owner, Chas. P. Doe; contractors, Marcuse & Remmel; cost, $2,835; signed, March 5; filed, March 8; payments, $708.75, frame up; $708.75, brown mortar on; $708.75, completed; $708.75, 35 days.

Broadway near Monroe, Ala. To build; owner, D. G. Alexander; architect, Chas. S. Shain; contractor, A. W. Cornelius; bond, $1,200; cost, $3,252; signed, March 26; filed, March 28; payments, $806.75, rough frame is up and sheathing on main roof; $800, enclosed, roof, rustic and cornice on and window frames in; $804, brown mortar on building and veranda and porch up; $804, plastering is finished and all wood-work done; $806.25, 36 days.

Butler Ave, Butler Tr., Oak. To build; owner, C. A. Klinkner; architects, J. J. & T. D. Newsom; contractor, G. B. Sonnier; cost, $1,710; signed, March 25; filed, March 26; payments, $840, rough frame up; rustic on and roof shingled; $300, frames set, rough plumbing done and rough plaster on; $300, completed; $810, 35 days.

Caledonia Ave, nr. Tel., Oakland. To build; owner, John A. Beckwith; architect, Howard Burns; contractor, John Ogle; cost, $2,400; signed, March 5; filed, March 17; payments, $600, enclosed, ready for plastering; $900, plastering done, doors and windows in place; $550, completed; $650, 35 days.

Central Ave, nr. McPherson. To build; owner, Mrs. M. Reigelmaph; architect, T. C. Cary; contractors, Marcuse & Remmel; cost, $2,000; signed, Feb. 23; filed, March 4; payments, $500, frame up; $800, brown mortar on; $800, completed; $800, 35 days.

Christina nr. King's Ave. To build; owner, George Langhorne; contractor, J. J. Boyle; cost, $2,100; signed, March 1; filed, March 7; payments, $525, frame up and secured; $525, plaster on; $525, completed; $525, 35 days.

Christina near King's Ave. To build; owner, Geo. Langhorne; contractor, J. J. Boyle; cost, $1,085; signed, March 2; filed, March 7; payments, $920, frame up; $920, plastering completed; $927 completed; $925, 35 days.

College Hd., Blk. 4, Bky. To build; owner, Lizzie K. Hume; contractors, Estey & Jewett; cost, $2,800; signed, March 8; filed, March 9; payments, $700, enclosed; $700, brown mortar on; $700, completed; $700, 35 days.

Eagle Ave, and Bay, Ala. To build; owner, Peter Ahlstrom; contractors, Marcuse & Remmel; cost, $2,100; signed, March 7; filed, March 7; payments, $525, frame up; $525, brown mortar on; $525, completed; $525, 35 days.

Eleventh and 5th Ave., Oakland. To build; owner, Oakland Tennis Club; architect, H. L. Smith; contractor, Chas. W. Burles; cost, $1,098; signed, March 18; filed, March 21; payments, $732, completed; $866, 35 days.

Eleventh Ave near 12th. To build; owner, Chas. Jurgens; architects, J. C. & E. Mathews; contractors, Baughman & Reom; cost, $3,280; signed, March 28 filed, March 30; payments, $800, frame up ready for enclosing; $800, enclosed and chimneys built; $800, gas and water pipes in and brown mortar on and building painted one coat; $850, completed; $829, 35 days.

Eleventh St. nr. Center, Oakland. To build; owner, Thos. J. Ford; architects, Townsend & Wyneken; contractors, Currie & Loomer; cost, $3,060; signed, March 19; filed, March 23; payments, $700, frame up and houses enclosed; $700, brown mortar on; $800, completed; $800, 35 days.

Elm St. nr. San Pablo Ave. To build; owner, O. J. McKemey; contractor, J. V. Embury; cost, $3,400; signed, Feb. 25; filed, March 5; payments, $775, brick foundation completed and frame up; $775, building enclosed and ready for plastering; $775, brown mortar on and priming coat on outside of house; $775, completed.

Fifteenth near 15th Ave., Oakland. To build; owner, Henry Schroeder; contractor, F. A. Brown; cost, $1,450; signed, March 9; filed, March 14; payments, $335, frame up; $335, 1st coat mortar on; $345, completed; $335, 32 days.

Franklin nr. Durant, Oakland. To build; owner, Mrs. S. Chamberlain; architects, J. C. Mathews & Son; contractors, Pierce & Ruch; cost, $4,036; signed, March 3; filed, March 4; payments, $500, frame up, ready for enclosing; $1,000, building enclosed, chimneys built; $1,000, gas and water pipes in place; $977, completed; $1,159; 35 days.

Fruit Vale Ave., Bkyn. Tp. To build; owner, Mrs. A. E. Douglas; architect, C. H. Wedgwood; contractor, Geo. J. D. Kyte; bond, $1,500; cost, $4,945; signed, March 29; filed, March 29; payments, $486.25, building up and enclosed, rustic and roof on; $486.25, plastered and hard finish on; $486.25, completed; $486.25, 35 days.

Fulton near Kittridge, Berkeley. To build; owner, Panthea H. Rogers; contractor, Geo. A. Embury; cost, $2,500; signed, March 19; filed, March 21; payments, $600, frame up; $600, when enclosed and brown mortar on; $600, completed; $700, 35 days.

Garfield Ave. nr. Haight St. To build; owner, J. L. Sanakamp; contractor, A. R. Denke; cost, $1,400; signed, March 14; filed, March 15; payments, $850, frame up; $850, 1st coat plaster on; $850, completed; $850, 35 days.

Harrison near 14th, Oakland. To build; owner, Fred'k. S. Stratton; contractors, A. W. Pattiani & Co.; cost, $5,082; signed, March 14; filed, March 21; payments; $1,350, building has rustic and roof shingles on, chimneys built; $1,300, window frames set, brown mortar on etc.; $1,161.50, completed; $1,270.50, 35 day.

Johnson Ave. and Court St. To build; owner, Wm. J. Smith; contractors, Marcuse & Remmel; cost, $1,450; signed, March 2; filed, March 4; payments, $362.50, frame up; $362.50, brown mortar on; $362.50, completed; $362.50, 35 days.

Kennedy Tr., Blk. C. To build; owner, C. N. Whitaker; architect, E. C. McManus; contractor, E. P. McGowan; cost, $3,573; signed, March 9; filed, March 10; payments, $893, brick work is done, frame up and rustic on; $893, roof shingled, window frames set, floors laid, etc.; $893, completed; $894, 35 days.

Lake View, Oakland. To build; owner, E. W. Woodward; contractor, Geo. W. Flick; cost, $7,464; signed, March 16; filed, March 18; payments, $1,866.17, tank house completed and 1st floor joists completed; $1,866.17, frame work dwelling completed and one coat mortar on; $1,866.17, dwelling house and stable completed; $1,866.17, 35 days.

Lorin Villa Tr. Ok. Tp. To build; owner, Sarah E. Axtell; architect, R. Gray Frise; contractor, William Jess; cost, $1,315; signed, March 29; filed, March 30; payments, $525, frame up and roof boards on; $525, roof and rustic on, window frames in, brown mortar on; $525, completed; $340, 35 days.

Lots 15, 16, 17, blk. 557, Oakland. To build; owner, F. Gee; contractor, F. C. Bigmani; cost, $2,400; signed, March 14; filed, March 18; payments, $800, frame, of each house on; $800, brown coat plaster on each house; $800, 35 days.

Lots 6, 7, block 7, addition to Bklyn. To build; owner, John Peters; architect, Marcuse & Remmel; cost, $1,670; signed, March 21; filed, March 23; payments, $417, frame up; $383, brown coat mortar on; $383, completed; $386, 35 days.

McClure Acad. Grounds, Ok. To build; owner, Guy C. Earl; architect, Chas. Mau; contractors, Concannon & Shuey; cost, $6,000; signed, March 15; filed, March 15; payments, 75 per cent of the value at May 1st, and June 1st; balance 35 days.

Minturn near R. R. Ave., Ala. To build; owner, Mrs. P. P. Cubery; contractors, Marcuse & Remmel; cost, $2,900; signed, Feb. 17; filed, March 4; payments, $725, frame up; $725, brown mortar on; $725, completed; $725, 35 days.

Morgan, bet. Railroad and St. Clara Ave. To build; owner, S. McHenry; contractors, Marcuse & Remmel; cost, $4,456; signed, March 21; filed, March 25; payments, $1,237.50, frames up; $1,237.50, brown coat mortar on; $1,237.50, completed; $1,237.50, 35 days.

San Antonia near Union, Ala. To build; owner, S. A. Brooks; architect, Chas. Shaner; contractors, Brehaut & Diamond; bond, $1,500; cost, $3,035; signed, March 22; filed, March 24; payments, $758.75, rough frame up and sheathing for shingles of roof on; $758.75, enclosed, cornice on, window frames in and ~~mortar on~~; $758.75, all wood work is done and building ready for painters; $758.75, 36 days.

San Leandro, Blk. 48. To build; owner, Miss Nellie Byrne; contractors, Simney & Graalfs; cost, $1,975; signed, March 1; filed, March 10; payments, $650, enclosed; $650, brown coat plaster on; $675, 35 days.

San Pablo Ave. nr. Market St. Addition; owner, Mrs. Rob't Chandler; contractors, Leiter & Prugh; cost, $500; signed, March 3; filed, March 4; payments, $200, outside done and brown mortar on; $100, completed; $200, 35 days.

Seventh nr. Adeline, Oakland. To build; owner, Mrs. M. I. Kolle; contractors, Leiter & Prugh; cost, $2,450; signed, March 8; filed, March 8; payments, $550, house is in place, etc.; $550, brown mortar is on and outside completed; $550, completed; $700, 35 days.

Thirteenth nr. Washington, Oakland. To build; owner, Julius Abrahamson; architect, Chas. Mau; contractors, Judson Iron Manufacturing Co.; cost, $5,176; signed, March 19; filed, March 21; payments, 75 per cent of sum when the work is fully completed and accepted; 25 per cent, 35 days.

Thirteenth near Washington, Oakland. To build; owner, Hugo Abrahamson; architect, Chas. Mau; contractor, V. L. Fortin; cost, $11,200; signed, March 19; filed, March 21; payments, $2,100, ½ materials furnished and ¼ work done; $2,100, ½ done and ½ furnished; $2,800, completed.

Thirteenth nr. Washington. To build; owner, Chas. Mau; architect, Hugo Abrahamson; contractors, Concannon & Shay; cost, $14,600; signed, March 30; filed, March 31; payments, $2,737.50, ½ materials furnished ¼ work done; $2,737.50, ½ furnished ½ work done; $2,737.50, ¼ materials, ¾ done; $2,737.50, completed; $3,650, 35 days.

Thirteenth Ave. and 24th St. To build; owner, Christian Hansen; architect, W. Winterhalter; contractor, C. Walte; bond, $400; cost, $1,450; signed, March 29; filed, March 29; payments, $400, frame up, roofed, enclosed, ready for plaster; $250, brown coat on and outside finish on; $400, completed; $400, 35 days.

Union St. near Encinal Ave, Oakland. To build; owner, Peter Klein; contractor, J. H. Young; cost, $1,070; signed, March 21; filed, March 23; payments, $400, frame up; $400, rustic and roof on; $400, putty coat on; $470, 35 days.

Union sch. dist., San Leandro. To build; owners, Trustees of Union sch.; architect, Howard Burns; contractors, Simney & Graalfs; cost, $5,496; signed, March 25; filed, March 25; payments, $1,374, frame up; $1,374, enclosed and partitions all on; $1,374, completed; balance 35 days.

_____. Cable and Electric R. R. owners, Piedmont Cable Co.; contractors, S. F. Tool Co.; cost, $182,500; signed, March 24; filed, March, 25.

MISCELLANEOUS.

Bay City, Oregon. To build school house; cost, $4,500.
To build saw mill, etc.

Davisville, Cal. To build; owner, Mr. J. Vincilit.

Golden Gate, Cal. To build church; owners, Baptish Church.

Hobsonville, Oregon. To build hotel; owners, The Truckee Lumber Co.

Lorin, Cal., Benton St. To build; contractor, W. C. Moran; cost, $1,100.
Alcatraz near Ellis. To build hall; contractors, Johansen & Sheridan.

Mill Valley, Marin Co., Cal. To build; owner, J. L. Cahill; contractor, Geo. R. Bowles; cost, $1,000.
To build public hall; owner, J. L. Cahill; contractor, Geo. R. Bowles; cost, $1,200.

Santa Maria, Santa Barbara Co., Cal. Addition; owner, Mr. Coblentz; contractor, L. T. Jeter.
To build; owner, Mr. Fleisher; contractor, Mr. Orr.
To build; owner, Thos. Boyd; contractor, Mr. Doane.
To build; owner, Mr. Farrington.
To build; owner, Mrs. Stephens.
To build; owner, Mr. Smythe.
To build; owner, Mrs. Gwin.

San Jose, Cal., Tenth St. near St. John. To build; owner, Mrs. M. Cherrie contractors, Geo. F. Decker & Son; cost, $3,138.
Ninth and St. John Sts. To build; owner, Chas. E. Howes; contractor, Joseph Des Roches; cost, $1,104.
Tenth St., near San Salvador. Owner, Etta Parker; contractor, C. A. Bates; cost, $1,600.

Stockyards, Cal., Dalton Ave. To build; owner, Jerry Smith; contractors, McIntyre & Johnson.

Woodland, Cal. Alterations; owner, District Attorney Hopkins.

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NOW IN THE THIRTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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AS the building season opens the prospects for the building interests seems to brighten. A very considerable number of buildings have been placed under contract but not equal in number or value for the same time last year. Dwellings of a superior class are being extended far into the suburbs, mainly, because some of the most desirable locations are now accessible by the cable or electric railway system. Bulidings for business purposes show an advanced taste in design, stone and marble being used in place of the cheaper material heretofore in use. This increase in the demand and use of stone has stimulated parties with capital to look around for investment in this line with the result that new quarries are being opened in localities where the material can be economically shipped to market; the freight charge being an important factor in the cost of stone work. If the cost of freight can be reduced from $25.00 to $2.00 per ton a remarkable development will take place, which at the end of the year will make a good showing.

THE North Pacific Coast Line Railroad has been sold to eastern parties, who, it is said, intend to extend it to connect with some through overland road. It is probable that in the future management business principles will manifest themselves to the great benefit of that section. The *Petaluma Argus* suggests two routes by which the road could be extended to tap the immense redwood forests of Mendocino and Humbolt counties at points almost inaccessible at present. At present the road runs through several valleys sheltered from the ocean fogs, and beautifully situated for summer resorts.

Probably no other city in the United States can show such desirable suburban garden spots for quiet homes, and where the climate undergoes such change from the cool fog and dust of the city to a semi-tropical atmosphere and so easily accessible. Many delightful residence locations may be had within one hours travel from San Francisco.

THE architectural profession is becoming more complicated as new appliances are brought into notice in which science enters to such a degree that old systems are being changed, or new methods substituted to meet the new conditions.

The system of giving all the various contracts relating to a building to one contractor is convenient, but at the same time gives rise to many ills, especially those contracts where a considerable degree of scientific knowledge is required.

Electric work, when contracted for separately by well-known firms, would prove more satisfactory to all the parties interested. Where the contracts are carried out by the parties most interested in good work, better work will be the natural result.

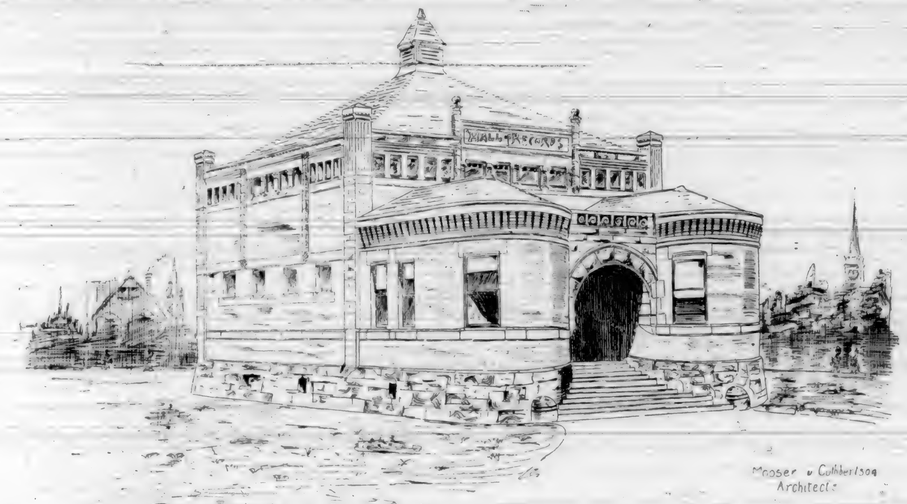
WITH the growth of a great people, there comes not only an increase of wealth, but an increase of want; with the passing away of the time when men struggle to obtain the bare necessaries of life there comes a period of luxuries; and luxuries to many of those who can command them become a necessity.

To provide for these additional luxuries new modes of manufacture become necessary, and machines are a factor in the labor problem, and it has been feared by many that machine work will supplant labor to such an extent as to seriously interfere with trained workmanship, and that the time is not far distant when no reward will be offered for excellence.

The experience to the present time has demonstrated that the machine can never cope with the facile hand having a trained and active brain to guide it. In the field of labor the skilled artesian is always in demand. The machine does one thing, and does it well, and in endless repetition, while the skillful workman does the same thing with many variations. One of the charms of nature is that no two thing are exactly alike; every blade of grass, every leaf, stone, stream, hill or cloud differs from every other one of its kind.

It may be well to bear in mind the fact that nature will continue to evolve and unroll new combinations long after the age of machinery has passed away. As we look forward toward the future we cannot fail to see an ever widening field for skilled labor in the manufacture of those things which knowledge and culture demand, and wealth is willing to pay for. With an increase of culture a higher order of craftsmanship will be required.

The leading art workman of the future is the student of to-day, and the young man who aspires to the attainment of excellence in his field of labor, should improve, as far as possible, the opportunities offered.



Record Hall at Sutter County

THE new Hall of Records for Sutter County, at Yuba City, California, is shown herewith. This building is of stone and brick, with a slate roof, and is entirely fire-proof. Cost $25,000, without the fittings. Messrs. Mooser & Cuthbertson, Architects.

COMPETITION is a term used as a cloak for unworthy methods of doing business. Ever since the creation of man, individuals and communities have been competing for something, and will continue to do so. Competition is a struggle in which each person endeavors to benefit himself, the natural tendency of which is toward selfishness and a disregard of the rights of others. The great problem is how to succeed by competition without injuring our business or wronging others. Competition is often looked upon as a warfare in which all ways and means for success are considered as fair, but warfare has its code of honor and recognized methods of procedure.

THE DECAY OF WOOD.

BY A. H. EVERETT.

THE question was asked the writer of this article, the other day, what causes the decay of wood and when does it commence? A comprehensive answer might be that it is a law of nature, a part of the universal law for the reproduction of new forms of life and beauty that we see around us on every side. The most beautiful flowers that grow upon the mountain-side no sooner complete their growth, and arrive, as it were, at perfection, than decay commences; and on the other hand the very granite mountains themselves, that appear to be indestructible,

"Warm by the tempest, wasted by the rain,
Sink slowly down to fill wide ocean's plane."

This, however, could not be a satisfactory answer to the architect who wished to preserve the foundation of his building in the most practicable manner from too rapid decay, or give him an idea of the best means, if not of preventing, at least of retarding decay.

One may, perhaps, arrive at a more every day matter of fact conclusion upon the subject before us if we look to the chemist to give some information in regard to the composition of wood, water and air, and the chemical changes that the elements undergo in the process of decay, even if obliged to admit at last that decay is only the result of the action of the universal law of nature. It will aid greatly to the better understanding of the process of decay if we look at the manner nature employs to construct vegetable substances. Organic substances have their origin entirely in plants; there they are first put together, fashioned into innumerable forms, and endowed with their wonderful qualities.

Starting with the germination of the seed, vegetable physiology informs us that every perfect seed contains within itself the rudiment of a new plant, which in some varities is so complete that the microscope reveals its structure, root, stem and leaves, while in others it is less distinctly developed. This minute plant, the germ, or embryo as it is called, lies imbedded within the mass of seed surrounded by a substance well adapted to protect and preserve it; wrapped in this envelope the embryo remains at the disposal of external agents. Under certain conditions it continues at rest and torpid, but when these conditions are favorably changed, it suddenly awakens from its slumber, puts forth a new power and begins to grow; this is called germination.

The germ during growth, derives its nourishment from that portion of the seed in which it is enclosed, and which consists chiefly of starch. But no nutriment can enter the germ except in a liquid form, and starch is insoluble in water, hence, it cannot accompany the fluid sap when it begins to circulate. To remove this difficulty, nature resorts to a very beautiful process. When a seed is exposed to the joint action of moisture and air, at a proper temperature it absorbs water and oxygen, swells in bulk, chemical action begins, carbonic acid is given off, its temperature rises and a new substance is produced within the seed called "diastase", which has the remarkable power of converting starch into sugar, and this the sap conveys to the plant.

Our tree has its start in life, one part of the embryo shoots downward to form the root, while another extends upward to the surface.

As the stem comes above the ground the leaf appears and a new order of growth now takes place, while a new order of phenomena is manifested equal in beauty and sublime interest to anything in nature.

The leaf is the seat of these chemical changes, and as Youman in his chemistry says, "whether it be an humble blade of grass or upon the oak that has stood a thousand years its office is the same:" it is at once an organ of exhalation, digestion and respiration, corresponding to the skin, stomach, and lungs of animals.

Water containing mineral and gaseous substances in solution is absorbed by the roots and carried upward as ascending sap to the leaves, from the surface of which much of it evaporates, leaving the remainder in a more concentrated state. This process goes forward in the daytime with great activity. Hales found that a sunflower weighing three pounds exhaled from its leaves thirty ounces of water in a day. According to Gray, the apple tree leaf contains 24,000 pores upon a square inch. Leaves absorb carbonic acid from the air, and although the proportion of this gas in the air seems small, 1-2500 of its bulk, or by calculation about seven tons over each acre, yet the structure of the vegetable machine is such as to draw it from the air in a very rapid manner. The leaf decomposes the acid setting free the oxygen and allowing the carbon to furnish the solid element of wood. Thus we have accounted, though in an imperfect manner, for the union of the three elements, Carbon, Hydrogen and Oxygen into the solid substance we call wood.

We have now the data for making our formula of wood, water and air, and can perhaps in this manner show that decomposition or decay must result in returning these elements again into the atmosphere.

But before doing so it may not be inappropriate to destroy the wood in another manner, first by fire directly with free access of air, in which case we find our wood has returned to the atmosphere in the form of gas, and the vapor of water, with the exception of the small per cent of ash.

Next, if we confine the wood in a retort and exclude the air, the heat will drive off the valatile parts in the form of gas or vapor of water, leaving the carbon in a solid mass called charcoal.

Why this difference? In the former case the free access of air has furnished oxygen to unite with the carbon forming carbonic acid and producing the rapid destruction or combustion of the wood; while in the latter method, the air being excluded, no carbonic acid can be formed, the volatile parts are driven off leaving the carbon unconsumed.

Therefore decay may be called slow combustion, the carbon uniting with oxygen of the air forming carbonic acid gas. When the combination of elements are once broken the different parts will seek fresh combinations, and thus the structure is destroyed.

The carbon united with oxygen from both the air and water forms carbonic acid; the hydrogen united with the nitrogen forms ammonia.

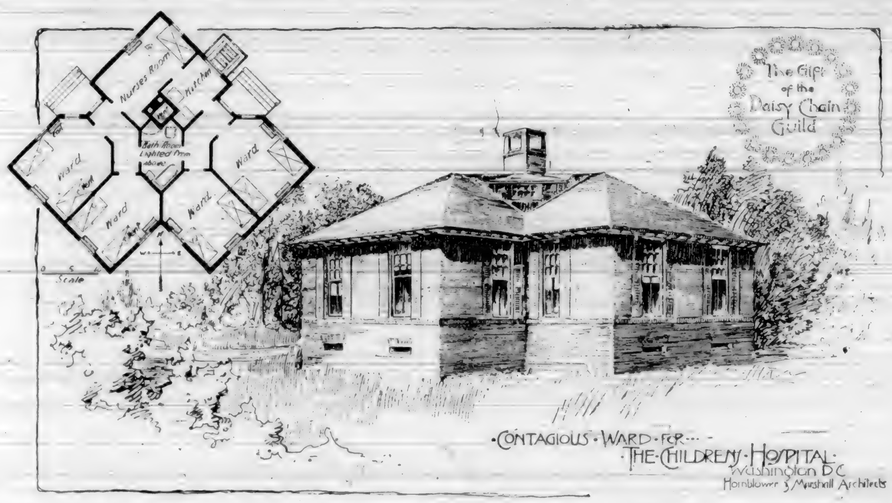
Thus are the elements returned to the atmosphere, free to form fresh combinations, to construct more trees, or perhaps grain may be the next form taken, and thus in its turn aid animal life to exist, only, however, to be again cast forth, decomposed as before to continue traveling around the circle to the end of time.

Having thus taken a hasty glance at the chemistry of decomposition, it may not be out of place to ask if chemistry can do anything to protect from decay, or to prevent the slow combustion of such materials used in the construction of our buildings? Preservation of wood from decay can be in a measure prevented by covering the outside with paint or other preparations which will protect it from air and moisture. Also, the process of Kyanizing wood by impregnating with bi-chloride of mercury, salts of iron, copper and zinc, has been used with good success for the purpose of rendering the albumen from the sap insoluble.

HOSPITAL.

We are indebted to the *Engineering Record* of March 19th, for the engraving of the Contagious Ward for the Children's Hospital at Washington, D. C. The plans were prepared by Messrs. Hornblower & Marshall, architects, and approved by Dr. John S. Billings, U. S. A. "The structure is one story high, with an air-chamber over and a cellar under the kitchen and nurses' room with access through a bulkhead outside. The air-chamber under the wards is 4 feet high, and the entire surface under the building is concreted. The plan is a square of 38 feet on a side. The building is placed with its angles on the cardinal points of the compass for the purpose of obtaining sunlight in all the rooms. A notch is cut on the south side of the square to expose each ward upon two sides. The out side walls are of brick, tarred on their inner face and plastered directly on the walls with soapstone finish, all the internal angles of the plaster being rounded.

The plan is designed to obtain for each ward-room the greatest amount of isolation in the least ground area. By sealing the hall doors of the outside wards, they can be cut off entirely from the rest of the building, and access to them can be obtained from the porches. Each ward has cubic contents of 1,850 feet, and will accommodate two beds. Heating is by direct-indirect steam supplied from a central plant outside, with 100 square feet of coil surface to each ward, the radiators being placed under the windows. In each ward there is a fresh-air supply of 7,200 cubic feet per hour at one foot velocity. Ventilation is secured at the floor under the beds and at the ceiling, communicating with a central shaft, with a duct velocity of two feet per second. The shaft current is maintained by heat from the laundry and kitchen stoves, and by a Bunsen burner in the shaft controlled from the bath-room. The bath-room is inclosed at the junction of the passages, carried up the full height of the building and lighted by a skylight and the dormers shown in the perspective. It contains a water-closet, a wash-basin and a tub on trucks for use in the ward rooms. The store and linen lockers are to be movable furniture in the nurses' room. The laundry in the basement will have a steam chest for purposes of disinfection."



It is proposed to make glass tubes to be used for drain and sewer pipes.

THE SUBLIME AND BEAUTIFUL.

By Edmund Burke.

Published about 1753.

CHAPTER ON TASTE.

Continued from page 40.

Now, as the pleasure of resemblance is that which principally flatters the imagination, all men are nearly equal in this point, as far as their knowledge of the things represented or compared extends. The principle of this knowledge is very much accidental, as it depends upon experience and observation, and not on the strength or weakness of any natural faculty; and it is from this difference in knowledge, that what we commonly, though with no great exactness, call a difference in taste proceeds. A man to whom sculpture is new sees a barber's block, or some ordinary piece of statuary, he is immediately struck and pleased, because he sees something like a human figure; and, entirely taken up with this likeness, he does not at all attend to its defects. No person, I believe, at the first time of seeing a piece of imitation ever did. Some time after we suppose that this novice lights upon a more artificial work of the same nature; he now begins to look with contempt on what he admired at first; not that he admired it even then for its unlikeness to a man, but for that general, though inaccurate, resemblance which it bore to the human figure. What he admired at different times in these so different figures, is strictly the same; and though his knowledge is improved, his taste is not altered. Hitherto his mistake was from a want of knowledge in art, and this arose from his experience; but he may be still deficient from a want of knowledge in nature. For it is possible that the man in question may stop here, and that the masterpiece of a great hand may please him no more than the middling performance of a vulgar artist; and this not for want of better or higher relish, but because all men do not observe with sufficient accuracy on the human figure to enable them to judge properly of an imitation of it. And that the critical taste does not depend upon a superior principle in men, but upon superior knowledge, may appear from several instances. The story of the ancient painter and the shoemaker is very well known. The shoemaker set the painter right with regard to some mistakes he had made in the shoe of one of his figures, and which the painter, who had not made such accurate observations on shoes, and was content with a general resemblance, had never observed.

But this was no impeachment to the taste of the painter; it only showed some want of knowledge in the art of making shoes. Let us imagine that an anatomist had come into the painter's working-room. His piece is in general well done, the figure in question in a good attitude, and the parts well adjusted to their various movements; yet the anatomist, critical in his art, may observe the swell of some muscle not quite just in the peculiar action of the figure. Here the anatomist observes what the painter had not observed; and he passes by what the shoemaker had remarked. But a want of the last critical knowledge in anatomy no more reflected on the natural good taste of the painter or of any common observer of his piece, than the want of an exact knowledge in the formation of a shoe. A fine piece of a decollated head of St. John the Baptist was shown to a Turkish emperor; he praised many things, but he observed one defect; he observed that the skin did not shrink from the wounded part of the neck. The sultan on this occasion, though his observation was very just, discovered no more natural taste than the painter who executed the piece, or than a thousand European connoisseurs, who probably never would have made the same observation. His Turkish Majesty had indeed been well acquainted with that terrible spectacle, which the others could only have represented in their imagination. On the subject of their dislike there is a difference between all these people, arising from the different kinds and degrees of their knowledge; but there is something in common to the painter, the shoemaker, the anatomist, and the Turkish emperor, the pleasure arising from a natural object, so far as each perceives it justly imitated; the satisfaction in seeing an agreeable figure; the sympathy proceeding from a striking and affecting incident. So far as taste is natural, it is nearly common to all.

In poetry, and other pieces of imagination, the same parity may be observed. It is true that one man is charmed with Don Bellianis, and reads Virgil coldly; whilst another is transported with the Æneid, and leaves Don Bellianis to children. These two men seem to have had a taste very different from each other; but in fact they differ very little. In both those pieces, which inspire such opposite sentiments, a tale exciting admiration is told; both are full of action, both are passionate; in both are voyages, battles, triumphs, and continual changes of fortune. The admirer of Don Bellianis perhaps does not understand the refined language of the Æneid, who, if it was, degraded into the style of the Pilgrim's Progress, might feel it in all its energy, on the same principle which made him an admirer of Don Bellianist

In his favorite author he is not shocked with the continual breaches of probability, the confusion of times, the offences against manners, the trampling upon geography; for he knows nothing of geography and chronology, and he has never examined the grounds of probability. He perhaps reads of a shipwreck on the coast of Bohemia: wholly taken up with so interesting an event, and only solicitous for the fate of his hero, he is not in the least troubled at this extravagant blunder. For why should he be shocked at a shipwreck on the coast of Bohemia who does not know but that Bohemia may be an island in the Atlantic ocean? And after all, what reflection is this on the natural good taste of the person here supposed?

So far, then, as taste belongs to the imagination, its principle is the same in all men; there is no difference in the manner of their being affected, nor in the causes of the affection; but in the *degree* there is a difference, which arises from two causes principally; either from a greater degree of natural sensibility, or from a closer and longer attention to the object. To illustrate this by the procedure of the senses, in which the same difference is found, let us suppose a very smooth marble table to be set before two men; they both perceive it to be smooth, and they are both pleased with it because of this quality. So far they agree. But suppose another, and after that another table, the latter still smoother than the former, to be set before them. It is now very probable that these men, who so agreed upon what is smooth, and in the pleasure from thence, will disagree when they come to settle which table has the advantage in point of polish. Here is indeed the great difference between tastes, when men come to compare the excess or diminution of things which are judged by degree and not by measure. Nor is it easy, when such a difference arises, to settle the point, if the excess or diminution be not glaring. If we differ in opinion about two quantities, we can have recourse to a common measure, which may decide the question with the utmost exactness; and this I take it, is what gives mathematical knowledge a greater certainty than any other. But in things whose excess is not judged by greater or smaller, as smoothness and roughness, hardness and softness, darkness and light, the shades of colors, all these are very easily distinguished when the difference is in any way considerable, but not when it is minute, for want of some common measures, which perhaps may never come to be discovered. In these nice cases, supposing the acuteness of the sense equal, the greater attention and habit in such things will have the advantage. In the question about the tables, the marble polisher will unquestionably determine the most accurately. But notwithstanding this want of a common measure for settling many disputes relative to the senses, and their representative the imagination, we find that the principles are the same in all, and that there is no disagreement until we come to examine into the pre-eminence or difference of things, which brings us within the province of the judgment.

So long as we are conversant with the sensible qualities of things, hardly any more than the imagination seems concerned; little more also than the imagination seems concerned when the passions are represented, because by the force of natural sympathy theyare felt in all men without any recourse to reasoning, and their justness recognized in every breast. Love, grief, fear, anger, joy, all these passions have, in their turns, affected every mind; and they do not affect it in an arbitrary or casual manner, but upon certain, natural, and uniform principles. But as many of the works of imagination are not confined to the representation of sensible objects, nor to efforts upon the passions, but extend themselves to the manners, the characters, the actions, and designs of men, their relations, their virtues and vices, they come within the province of the judgment, which is improved by attention, and by the habit of reasoning. All these make a very considerable part of what are considered as the objects of taste; and Horace sends us to the schools of philosophy and the world for our instruction in them. Whatever certainty is to be acquired in morality and the science of life; just the same degree of certainty have we in what relates to them in the works of imitation. Indeed it is for the most part in our skill in manners, and in the observances of time and place, and of decency in general, which is only to be learned in those schools to which Horace recommends us, that what is called taste, by way of distinction, consists; and which is in reality no other than a more refined judgment. On the whole it appears to me, that what is called taste, in its most general acceptation, is not a simple idea, but is partly made up of a preception of the primary pleasures of sense, of the secondary pleasures of the imagination, and of the conclusions of the reasoning faculty, concerning the various relations of these, and concerning the human passions, manners, and actions. All this is requisite to form taste, and the ground-work of all these is the same in the human mind; for as the senses are the great originals of all our ideas, and consequently of all our pleasures, if they are not uncertain and arbitrary, the whole ground-work of taste is common to all, and therefore there is a sufficient foundation for a conclusive reasoning on the matters.

Whilst we consider taste merely according to its nature and species, we shall find its principles entirely uniform; but the degree in which these principles prevail, in the several individuals of mankind, is altogether as different as the principles themselves are similar. For sensibility and judgment, which are the qualities that compose what we commonly call a *taste*, vary exceedingly in various people. From a defect in the former of these qualities arises a want of taste; a weakness in the latter constitutes a wrong or a bad one. There are some men formed with feelings so blunt, with tempers so cold and phlegmatic, that they can hardly be said to be awake during the whole course of their lives. Upon such persons the most striking objects make but a

faint and obscure impression. There are others so continually in the agitation of gross and merely sensual pleasures, or so occupied in the low drudgery of avarice, or so heated in the chase of honors and distinction, that their minds, which had been used continually to the storms of these violent and tempetuous passions, can hardly be put in motion by the delicate and refined play of the imagination. These men, though from a different cause, become as stupid and insensible as the former; but whenever either of these happen to be struck with any natural elegance or greatness, or with theses qualities in any work of art, they are moved upon the same principle.

The cause of a wrong taste is a defect of judgment. And this may arise from a natural weakness of understanding (in whatever the strength of that faculty may consist), or, which is much more commonly the case, it may arise from a want of proper and well-directed exercise, which alone can make it strong and ready. Besides that ignorance, inattention, prejudice, rashness, levity, obstinacy, in short, all those passions, and all those vices, which pervert the judgment in other matters, prejudice it no less in this its more refined and elegant province. These causes produce different opinions upon everything which is an object of the understanding, without inducing us to suppose that there are no settled principles of reason. And indeed, on the whole, one may observe, that there is rather less difference upon matters of taste among mankind, than upon most of those which depend upon the naked reason; and that men are far better agreed on the excellency of a description in Virgil, than on the truth or falsehood of a theory of Aristotle.

A rectitude of judgment in the arts, which may be called a good taste, does in a great measure depend upon sensibility; because, if the mind has no bent to the pleasures of the imagination, it will never apply itself sufficiently to works of that species to acquire a competent knowledge in them. But, though a degree of sensibility is requisite to form a good judgment, yet a good judgment does not necessarily arise from a quick sensibility of pleasure: it frequently happens that a very poor judge, merely by force of a greater complexional sensibility, is more affected by a very poor piece, than the best judge by the most perfect; for as everything new, extraordinary, grand, or passionate, is well calculated to effect such a person, and that the faults do not affect him, his pleasure is more pure and unmixed; and as it is merely a pleasure of the imagination, it is much higher than any which is derived from a rectitude of the judgment; the judgment is for the greater part employed in throwing stumbling-blocks in the way of the imagination, in dissipating the scenes of its enchantments, and in tying us down to the disagreeable yoke of our reason: for almost the only pleasure that men have in judging better than others, consists in a sort of conscious pride and superiority, which arises from thinking rightly; but then, this is an indirect pleasure, a pleasure which does not immediately result from the object which is under contemplation. In the morning of our days, when the senses are unworn and tender, when the whole man is awake in every part, and the gloss of novelty fresh upon all the objects that surround us, how lively at that time are our sensations, but how false and inaccurate the judgments we form of things? I despair of ever receiving the same degree of pleasure from the most excellent performances of genius, which I felt at that age from pieces which my present judgment regards as trifling and contemptible. Every trivial cause of pleasure is apt to affect the man of too sanguine a complexion: his appetite is too keen to suffer his taste to be delicate; and he is in all respects what Ovid says of himself in love,

> "*Molle meum levibus cor est violabile telis,*
> *Et semper causa est, cur ego semper amem.*"

One of this character can never be a refined judge; never what the comic poet call *elegans formarum spectator*. The excellence and force of a composition must always be imperfectly estimated from its effect on the minds of any, except we know the temper and character of those minds. The most powerful effects of poetry and music have been displayed, and perhaps are still displayed, where these arts are but in a very low and imperfect state. The rude hearer is affected by the principles which operate in these arts even in their rudest condition; and he is not skillful enough to perceive the defects. But as the arts advance towards their perfection, the science of criticism advances with equal pace, and the pleasure of judges is frequently interrupted by the faults which are discovered in the most finished compositions.

Before I leave this subject I cannot help taking notice of an opinion which many persons entertain, as if the taste were a separate faculty of the mind, and distinct from the judgment and imagination; a species of instinct, by which we are struct naturally, and at the first glance, without any previous reasoning, with the excellencies, or the defects, of a composition. So far as the imagination and the passions are concerned, I believe it true that the reason is little consulted; but where disposition, where decorum, where congruity are concerned, in short, wherever the best taste differs from the worst, I am convinced that the understanding operates, and nothing else; and its operation is in reality far from being always sudden, or when it is sudden, it is often far from being right. Men of the best taste, by consideration, come frequently to change these early and precipitate judgments, which the mind, from its aversion to neutrality and doubt, loves to form on the spot. It is known that the taste (whatever it is) is improved exactly as we improve our judgment, by extending our knowledge, by a steady attention to our object, and by frequent exercise. They who have not taken these methods, if their taste decides quickly it is always uncertainly; and their quickness is owing to their presumption and rashness, and not to any sudden irradiation, that in a moment dispels all darkness from their minds. But they who have cultivated that species of knowledge which makes the object of taste, by degrees, and habitually, attain not only a soundness, but a readiness of judgment, as men do by the same methods on all other occasions. At first they are obliged to spell, but at last they read with ease and with celerity; but this celerity of its operation is no proof that the taste is a distinct faculty. Nobody, I believe, has attended the course of a discussion, which turned upon matters within the sphere of mere naked reason, but must have observed the extreme readiness with which the whole process of the argument is carried on, the grounds discovered, the objects raised and answered, and the conclusions drawn from premises, with a quickness altogether as great as the taste can be supposed to work with; and yet where nothing but plain reason either is or can be suspected to operate. To multiply principles for every different appearance, is useless, and unphilosophical too in a high degree.

This matter might be pursued much further; but it is not the extent of the subject which must prescribe our bounds, for what subject does not branch out to infinity? It is the nature of our particular scheme, and the single point of view in which we consider it, which ought to put a stop to our researches.

MYTHOLOGY.

LUNA (*the moon*) was the daughter of Hyperion and Terra, and was the same, according to some mythologists, as Diana. She was worshipped by the ancient inhabitants of the earth with many superstitious forms and ceremonies. It was supposed that magicians and enhanters, particularly those of Thessaly, had an uncontrolable power over the moon, and that they could draw her down from heaven at pleasure by the mere force of their incantations. Her eclipses, according to their opinion, proceeded from thence; and on that account it was usual to beat drums and cymbals to ease her labors, and to render the power of magic less effectual. The Arcadians believed that they were older than the moon.

BRITTON & REY PHOTO LITH.

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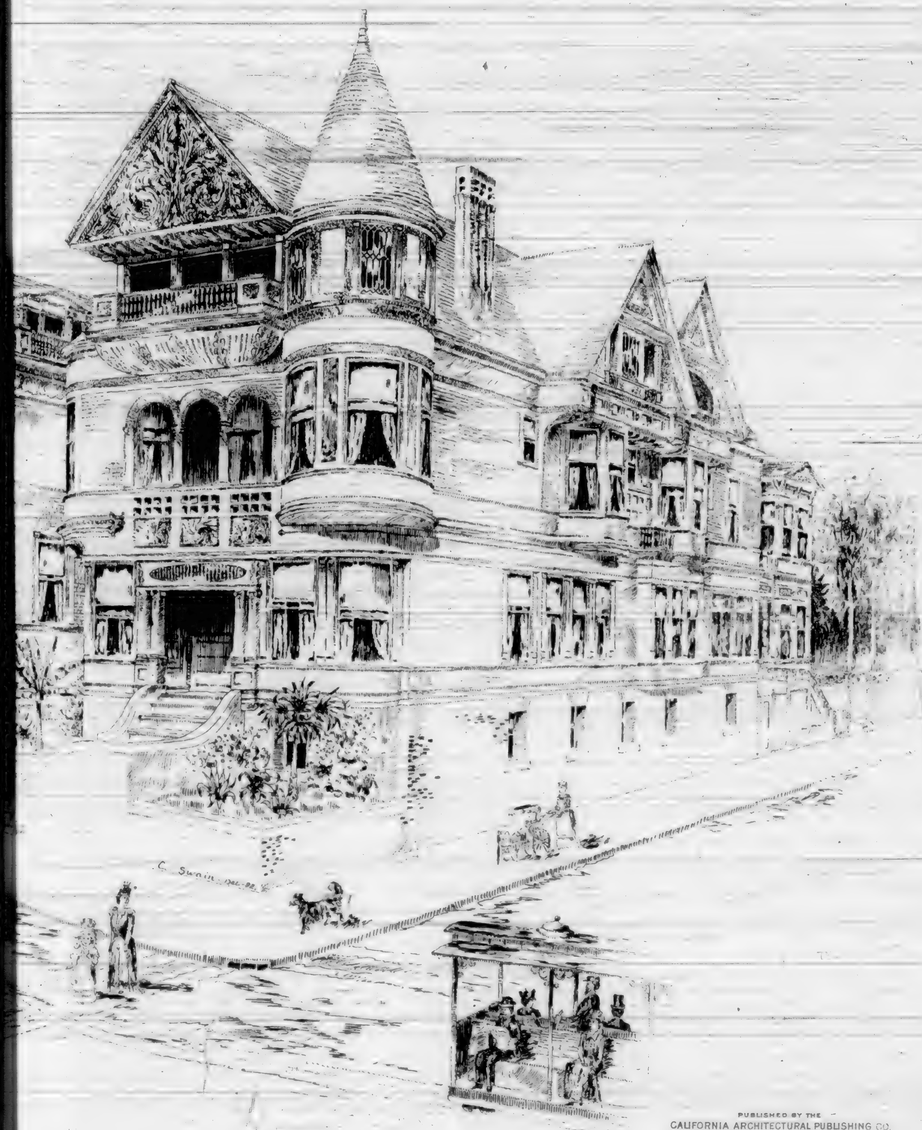
W.H. LILLIE, ARCH'T. - RMS. 28-29 ST. ANN'S BL'DG.

BRITTON & REY PHOTO LITH.



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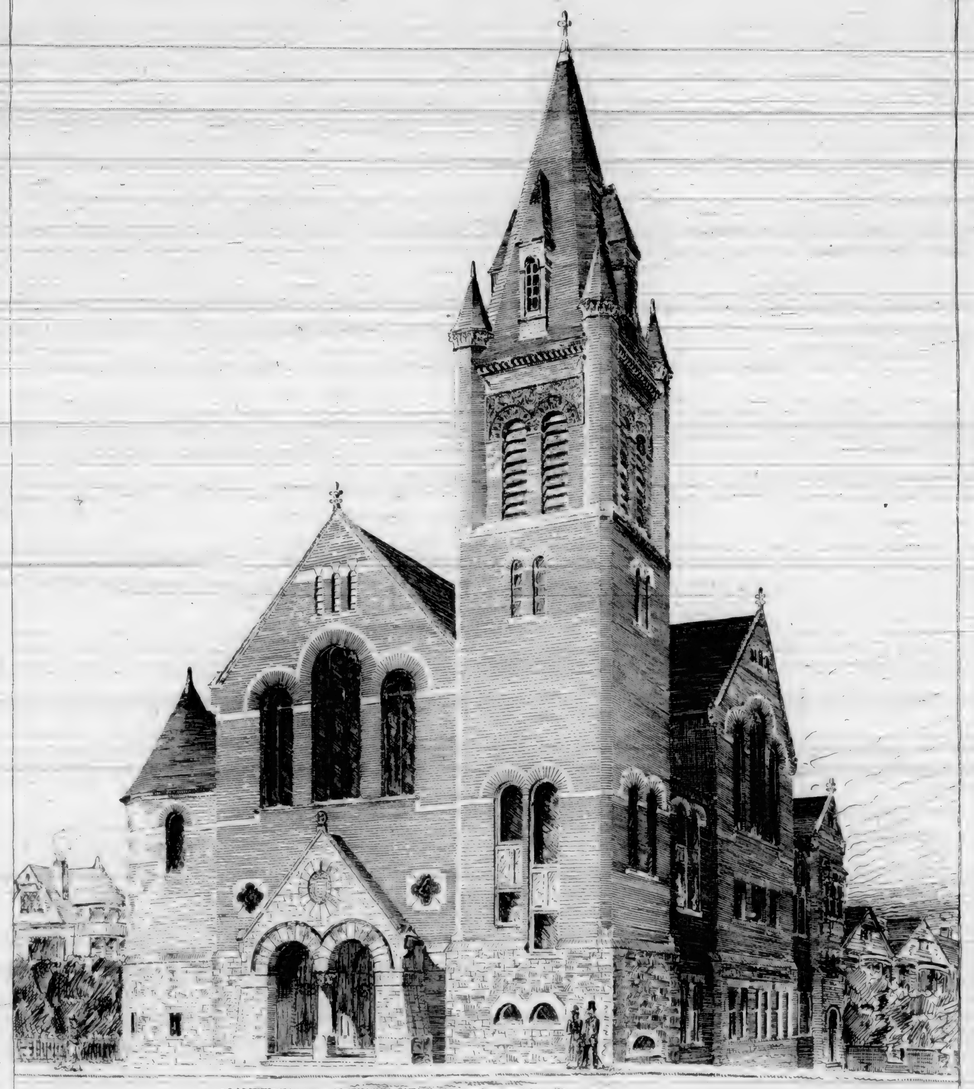
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.



RUSH STREET METHODIST CHURCH.
PEASE & HAMILTON, ARCHITECTS.

BRITTON & REY PHOTO-LITH.

PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

The double page illustration is a block of dwellings in course of erection on the corner of Washington and Buchanan streets in this city. Messrs. Rountree Brothers are the owners. W. H. Lillie, Architect.

On the single page we show an illustration of the Bush street Methodist Church—San Francisco. Messrs. Percy & Hamilton, Architects.

The two dwellings shown on single page are for Mrs. Annie Hendry, at Piedmont, and for Mr. Clayton Smith at Berkeley, California. Mr. B. J. S. Cahill, Architect.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. — Oliver Everett, Vice-Pres.
H. T. Bestor, Sec. — John M. Curtis, Tres.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards, Pres. — L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. — Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. — C. O. Poole, Vice-Pres.
W. I. Crosett, Sec. — O. Brooks, Treas.

Master Painters' Association of the Pacific Coast.

E. M. Gallagher, Pres. — H. G. Jarman, Sec.

A special meeting of the San Francisco Chapter of the American Institute of Architects was held on the 9th inst. at their rooms, 408 California street, to take into consideration the subject of an exhibition and entertainment by the Chapter. After a general discussion it was decided to defer the exhibition to some time later in the season, and that the Chapter give an entertainment and dinner. The members of the Chapter will be notified in due time.

BOOKS & PERIODICALS

THE ELECTRICAL RAILWAY IN THEORY AND PRACTICE, by Oscar T. Crosby and Louis Bell, Ph. D., published by the W. J. Johnson Company, New York, 1892, and for sale by Osborn & Alexander, 401 Market Street, San Francisco, California, price $2.50.

This work treats on the general principles, methods, results and a detailed study of motors. Specific instruction are given in the construction and working of motors and car equipments; the line, track, car houses and stations. The efficiency of electric traction by the steam engine, also by the storage-battery, in connection with high speed service and commercial considerations are given in full. An appendix follows with instructions to linemen, expenditures of electric street railways, and a chapter on lightning protection.

ARCHITECTURAL IRON AND STEEL, AND ITS APPLICATION IN THE CONSTRUCTION OF BUILDINGS, is a new work by Wm. H. Birkmire, published by John Wiley & Sons, New York, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal. Price $3.50.

This work is intended for Architects, Architectural Students and Builders, and treats the subject of iron and steel in its latest forms of application to building construction of the modern type. It takes in a very wide field; commencing with the pig iron through the processes of the manufacture of wrought iron, steel and cast iron, showing the strength and economic use of each. The strength and construction of floors, girders, lintels, trusses, struts, columns of cast and wrought iron, stairways, ornamental iron work, doors and shutters are all described in detail.

Sash, Doors, Blinds, Mouldings, Stair work, Mantles, and all kinds of interior and exterior finish for joiner work; also the latest styles of embossed, ground, and cut glass. Published by Rand, McNally & Company, Chicago, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal. Price $2.00.

This work is nearly all illustrations of designs for doors, sash, wainscot finish, verandas, scroll work, brackets, newels and balusters for stairs and verandas, mantels, sideboards, desks and seats, mouldings, etc.

In the FORTNIGHTLY REVIEW for April, Robert S. Ball discusses the subject of "How Long can the Earth Sustain Life," and Juliette Adam treats of "Woman's Place in Modern Life."

The COSMOPOLITAN for May, has an article by S. P. Langley on the subject of "Mechanical Flight."

LIPPINCOTT'S for May, has a short chapter on "After-dinner Botany," by P. Hemsley.

The LANCET, CLINIC, April 2d, contains an interesting article on "Laboratories of Hygiene," by Dr. John S. Billings, of the U. S. Army. It is proposed to erect and equip buildings especially for the purpose.

Notes & Comments.

Building is quite brisk at Sebastopol.

It is proposed to build a $100,000, market in Oakland.

A condensed yeast factory is to be erected at Santa Rosa.

Boston capitalists are about to form a new steam ship line here.

The building business in the country districts is quite lively.

The Methodist church of West Berkeley has contracted for a new organ.

Work has been commenced on the new silk factory to be erected at Petaluma.

The citizens of Reno are agitating the project of building a fruit cannery.

The citizens of Santa Maria are moving themselves to establish a public library.

The great tunnel for the Southern Pacific near San Louis has been commenced.

Considerable lumber is being hauled to Alameda from the saw mills in this immediate vicinity.

The haying, harvesting and threshing machines are being put in order for the large harvest in view.

Orange county capitalists have organized to build an extensive pickle factory at Westminster.

A cannery building is in course of erection in Santa Maria, and a large dairy building is under consideration.

The Chicago Historical Society is about to erect a new building from the designs of H. I. Cobb, architect.

The Portuguese Catholics are erecting a building near Petaluma in which to celebrate the ceremonies of the day of Pantecost.

Terra-cotta tiles, glazed or unglazed, are now made in different colors and shapes, thus giving the designer more freedom in composition.

The late Rev. Dr. Benton left a property site at Berkeley to the Pacific Theological Seminary. The trustees have decided to build on the property.

A new paving material now being introduced in London, is composed of granulated cork and bitumen, pressed into blocks, which are laid as brick or wood pavements. A pavement of this material is very elastic and pleasant to the feet, and affords an excellent foothold for horses. There is almost an entire absence of noise.—*Exchange.*

EXPIRED PATENTS RELATING TO BUILDING.

J. Sweet—Sash Holders	160,554
E. C. Underwood—Weather Strips	160,555
J. B. Cornell—Wrought Iron Column	160,574
W. Johnson—Door Hanger	160,598
J. Gorton—Chimney Cops	160,668
H. L. Dorr—Wood Filling Compound	160,010
W. H. Gedney—Construction of Floors for the Passage of Pipes	160,014
A. Brandt—Cooling-Floors for Breweries	160,077
L. Brandt—Slate Roofs	160,078
J. Beanland—Quadrant for Opening, Shutting and Fastening Windows	159,744
S. W. Gouch—Window Ventilators	159,800
G. B. Adams—Fastenings for the Meeting Rails of Sashes	159,880
E. L. Barnes—Spirit Level	159,882
H. C. Parker—Flume for Conveying Timber	159,959
J. M. Withers—Fastening for the Heeting Rails of Sashes	159,994
J. Hale—Scall Sawing Machine	160,768
T. T. Loomis—Steam Pile Driver	160,781
J. H. Mathes—Molds for Angle Brick	160,832
M. S. Motor—Machine for Sawing Lathes	160,838
G. B. Smith—Apparatus for Preserving Wood	160,846
H. Winn—Locks for Doors, etc	160,859
John Gehr—Sawing Machine	160,899
W. P. Hale—Sawing Machine	160,899
S. Hiler— Knob Roses	160,907
S. Hiler—Door Knobs	160,908
M. M. Miller—Sawing Machines	160,939
E. A. Rowley—Machines for Relishing Tenons	160,957

The above list of recently expired patents, relating to buildings, is supplied us by Alexander & Davis, Patent Attorneys of Washington, D. C. We have engaged this firm to supply us regularly with lists of expired patents relating to this line of inventions, and these lists will appear regularly hereafter, so that our readers will be kept promptly advised of the patents that become public property. Copies of these patents may be had of the above firm at the official cost (10 cts.) with postage added.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Material Lien in South Dakota.—A sub-contractor who furnishes materials, lumber, or labor, not to the owner, but to the contractor, for the erection of a new building, can, under the provisions of sections 5469, 5470, Comp. Laws, acquire and enforce a lien on the building, and on the interest of the owner of the real estate on which the building stands, to the extent of the value, or the price agreed to be paid by the contractor for the material, lumber, or labor furnished. It is not the contract between the original contractor and the owner which supports the lien under the statute, but it is the use of the materials and work upon the premises, the putting of them into the building and attaching them to the freehold, whereby the owner is benefited by them, which entitles the party furnishing them to a lien to the extent of their value.

Albright v. Smith, Supreme Court, of South Dakota, 51 N. W. Rep. 590, (15IC).

Limitation of Action for Extras under Building Contract.—Where a written building contract provides that extras shall be paid for at such rates as shall be agreed upon by the parties, the amount due for such extras is an amount due under a written contract, though the price was a verbal agreement, and the statute of limitation as to written contracts applies to it.

Wilkinson v. Johnston, Supreme Court of Texas, 18 S. W. Rep. 746, (61C.)

The October number of the California Architect and Building News will contain a supplement.—The price for single number will be fifty cents. No extra price to regular subscribers before that date.

Burglars at this season of the year being less active than during the winter, is no reason why provision should not be made for the time when it will be needed. Burglar alarms have become a necessity in modern houses. The system used by the Electrical Storage and Supply Co., shows the slighest irregularity in the proper adjustment of windows

and doors which is communicated by alarm signals to any location desired. It can be arranged to work with the doors and windows only, or to turn on the light in whole or part of the house, or all in combination as wished. The circuit lines can be turned on or off as wanted, and when turned on any protected point, when tampered with, will give the alarm. For further particulars see advertisement of the Electrical Storage and Supply Co. on page xii.

N. & G. Taylor Co's. American Tin Plate has become a standard article. The materials, coating and general good qualities give satisfaction wherever used. The plate is of even thickness, soft and pliable, and hammers down without cracking; the coating heavy and evenly applied, and has a clean and superior finish with all the qualities requisite for durability. Workmen in this line say it works and solders well. On account of its many excellent qualities it is gaining in favor wherever a good article is desired.

The Ives Mortice Door Bolt is easily set in place, as it only requires a hole made with a bit in which to insert the bolt. Insert the turn key and screw on the escutcheon and the job is finished. One of the good points for which this bolt is famous is that one turn of the key runs the bolt fully out or back as wanted, so that the user knows at once whether the door is locked or unlocked. The knob and escutcheon is made plain or ornamental to suit any style of hardware in use. The Ives Sash Lock is made with double eccentric mechanism which easily draws the sashes together and locks them securely. This sash lock is well adapted for either light or heavy sashes, and is made ornamental to suit any style of hardware. See advertisement on page x.

Attention is called to the Hercules Gas Engine which works without the electric attachment. All the gas is consumed and used for power; consequently, no smell from unburned gas. It is so completely under control and can be run with so much economy that any person who proposes to use a gas engine should inquire further. See advertisement on page xix.

Carbolineum Avenarius is guaranteed by the Pacific Coast Agents, Messrs. Muecke & Co., 319 California street, San Francisco, to preserve any kind of wood, above or under ground or water, and to prolong its life at least 100 per cent. While a wood-preserver in the truest sense of the word, Carbolineum must also be of great interest to owners of Vessels and to parties using and handling Ropework, Canvass, etc. Messrs. Muecke & Co. claim Carbolineum the only article which will render Rope and Canvass absolutely water proof and make rot or decay an impossibility.

Rope and canvass treated with Carbolineum will be soft and pliable and remain always in this condition without cracking or breaking. Rust from Iron Hinges or Hooks will not in the least affect rope or canvass on which Carbolineum has been used. It is claimed one gallon of it will go as far as four or five gallons of best tar.

The Byrkit-Hall Sheathing Lath is formed of board about one inch thick and five inches wide, having the surface worked out in dovetailed grooves as lock joints to hold the plastering, as shown in the advertisement on page x. The laths are worked in long lengths, ten or twelve feet or more. These laths are especially useful wherever earthquakes are liable to occur, as they add strength to the walls and ceilings. The damage by the late "shake" would have been much less if this lath had been used. The plastering cannot fall off from any considerable space because of the peculiar form of the key. They answer the purpose of a combined sheathing and lath, and when put on at an angle they form a thorough bracing, which is at once apparant to any person experienced in building.

Joists Hangers of metal will soon be placed on the market by James A. Maguire, 661 Market street. The principle of the construction of this hanger will be readily understood by the profession by a glance at the cut as shown in the advertisement on page xi. It will be made out of the best metal, thoroughly tested. The T shaped shank at the back of the hanger is built into the brick wall, leaving the "shoe" hanging entirely outside of the wall. The joists rest in these shoes and are notched in the bottom to correspond with the projection on inside bottom of the "shoe" of the hanger thus making a complete tie to the walls, and at the same time leaving joists free to fall out without prying down the walls, in case of fire.

You will notice that by this method the joists are entirely out of the wall, and the walls are built solid without a break. In light party walls, slow burning construction, framing around chimneys, and preventing dry rot to end of joists, these hangers will have no equal.

Wm. H. Birch & Co., is one of the oldest manufacturers of elevators on the Coast. The devices in use by this firm are simple, safe and easily worked, and the machinery is of the most complete description, which, with the air brake and air cushion renders their elevators the safest and most economical of any in the market.

The Pacific Press Brick Company has for several years been engaged in the manufacture of Fine Bricks, during which time their bricks have enjoyed the highest reputation for color, beauty, accurate bond and durability. The demand for a superior article has induced the company to increase its facilities, and they are now prepared to furnish this superior brick in any size lots as may be wanted. They will be pleased to furnish such information as may be desired by persons interested in this material.

The successful advertiser is one who has something that everybody wants and would buy if he only knew where to get it.

The J. L. Mott Iron Works for this month show a set of their Imperial Porcelain Roll-rim Wash Tubs. These fixtures for the Laundry Room have marble back slabs, and non-absorbent floors, and the tubs supported upon metal standards. By the methods adopted by this company, absolute cleanliness can be had with very little labor. See page xiii.

The firm of Hopper & Schroeder has been dissolved and the business will be carried on by Wm. Schroeder as sole proprietor. Another new furnace for bending glass has been put in. The Embossing room is separate. All descriptions of "art glass" work is done by Mr. Schroeder at the manufactory, 39½ Fremont St., San Francisco.

The new building on California street, for the German Saving and Loan Society, is having the front windows fitted with Clark's Self Coiling Steel Shutters by the Pacific Coast Agents, Edw. B. Hindes & Co., 411 Mission Street, San Francisco.

Browell's Patent Chimneys have given satisfaction wherever used. They are considered earthquake-proof, and are recommended by the highest authorities. In buildings where the recent "shake" damaged so many brick chimneys, the loss would have been much less if these chimneys had been used. Manufactured and put up by J. Browell, 727 Montgomery street, San Francisco.

Rischmuller's Door Opener or Closer is a practical device for opening or closing the entrance door of tenements, flats, etc., without decending one or more sets of stairs. The mechanism is strong and simple, and is entirely concealed from view. The appliance is worked by means of a handle from any desired position, such for instance, as placed at the top of stairs, or in another room, and is always under the complete control of the person operating it.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., May 5, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 3rd day of June, 1892, and opened immediately thereafter, for all the labor and materials required for the excavation, fouudations, cut stone work, and brick work of the basement and area walls, basement columns, first floor iron beams and wood joists, manhole and sewer connection, for the U. S. Post Office Building at Cedar Rapids, Iowa, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Cedar Rapids, Iowa.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated, will be returned to the bidders.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for excavation, foundations, cut stone work and brick work of the basement and area walls, etc., for the U. S. Post Office Building at Cedar Rapids, Iowa," and addressed to

W. J. Edbrooke,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., May 4, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 26th day of May, 1892, and opened immediately thereafter, for all the labor and materials required, for the plaster models of the ornamental copper, plaster and woodwork for the U. S. Post Office, Lansing, Michigan, in accordance with drawings and specification, copies of which may be had at this office or the office of the Superintendent at Lansing, Michigan.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Plaster Models of Ornamental Copper, Plaster and Wood Work for the U. S. Post Office, Lansing, Michigan", and addressed to

W. J. Edbrooke,
Supervising Architect.

CITY BUILDING NEWS.

Baker near Fulton. Carpenter, brick work, etc.; owner, G. Cipollino; architect, J. J. Clark; contractor, J. Gadans; surety, T. Dolan, $1,000; cost, $4,270; signed, April 7; filed, April 8; payments, $1,000, when contract is signed.

Baker near Grove. Two story frame; owner, Annie Kelly; architect, W. H. Lillie; contractor, Geo. R. Lang; cost, $4,470; signed, April 21; filed, April 22; payments, $670.50, frame up; $670.50, enclosed; $670.50, brown coated; $670.50, completed; $1117.50, 35 days.

Baker near Sutter. Alterations and additions; owner, Jane McEwen; architect, R. H. White; contractors, Bradt & Bateman; cost, $4,465; signed, April 14; filed, April 22; payments, $900, frame up; $815, ready for brown coat; $815, standing finish on; $815, completed; $1,129, 35 days.

Battery and Halleck. Two concrete floors; owner, Rosenda Campbell; architect, T. J. Welsh; contractor, Geo. Goodman; sureties, J. Mahoney, $375; cost, $1,500; signed, April 12; filed, April 19; payments, $1,125, completed; $375, 35 days.

Battery near Vallejo. Alterations and additions; owner, Achille Paladini, architects, B. McDougall & Son; contractors, A. Mussa & N. Tosc; cost, $8,700; signed, March 31; filed, April 2; payments, $1,000, 1st tier of joists in position; $1,000, frame up and rustic on; $1,200, brown coated and sidewalk lights set; $1,400, white coated and sidewalk laid; $1,925, completed; $2,175, 35 days.

Belcher near Ridley. To build; owner, Julia E. Lewin; contractor, J. C. Sloan; sureties, C. R. Eagen and W. T. Wheatly, $865; cost, $3,450; signed, April 11; filed, April 12; payments, 300, basement frame up; $400, frame up and rustic on; $400, ready for lathing; $400, plastering completed; $400, exterior has 1st coat paint; $685, completed; $865 35 days.

Broadway near Franklin. Three story flat; owners, J. H. and Mary Hatch; architect, James E. Wolfe; contractor, James R. Whalen; sureties, J. Levi, Sr. and Mendd Esberg, $2,400; cost, $9,825; signed, April 16; filed, April 18; payments, $1,200, diagonal boarding on, and floors laid; $1,400; rustic on and chimneys built; $1,800, inside stairs up and brown coated.

Broadway near Franklin. Plumbing and gas-fitting; owners, J. H. and Mary Hatch; architect, J. E. Wolfe; contractor, H. Williams; cost, $1,050; signed, April 21; filed, April 21; payments; $450, gas and water pipes in; $840, completed, $200, 35 days.

Broderick and California. Granite and sand stone work for a brick church; owner, Bush M. E. Church; architects, Percy & Hamilton; contractors, Wm. H. Johnstone; bond, $3,500; cost, $6,600; signed, April 11; filed, April 16; payments 1st Saturday of each month 75 per cent. as work progresses.

Buchanan near Filbert. Mechanical works; owner, S. Jancovich; architects, Townsend & Wyneken; contractor, Ivory Wells; cost, $2,200; signed, April 25; filed, April 25; payments, $550, foundation in, frame up, chimneys half up; $550, enclosed; $550, completed; $550, 35 days.

Bush and Chelsea. To build; owner, Mrs. M. Newman; architect, P. R. Schmidt; contractor, Jas. Cochran; cost, $25,200; signed, April 1; filed, April 2; payments, 1st day of each month 75 per cent. of work done; balance 35 days.

Bush and Chelsea Place. Gas and plumbing work; owner, Mrs. N. W. Newman; architect, P. R. Schmidt; contractors, Duffy Bros.; cost, $4,000; signed, April 22; filed, April 22; payments, $1,200, rough gas and water pipes in; $800, sinks, bathtub, water closets and washtraps set; $1,000, completed; $1,000, 35 days.

Bush and Chelsea Place. Mill work; owner, Jas. Cochran; architect, P. R. Schmidt; contractors, California Mills; cost, $540; signed, April 14; filed, April 16; payments; 75 per cent. as work progresses; balance 35 days.

California near Montgomery. Grill work, screens, ventilators; owners, German Sav. and Loan Societies; architects, Smith & Freeman; contractors, Winslow Bros. & Co.; sureties, John Hammond and John J. Mahony, $800; cost, $6,214; signed, April 8; filed, April 14; payments, $4,660.50, completed; $1,553.50, 35 days.

California near Montgomery. Fresco painting and tinting; owners, German Saving and Loan Societies; architects, Kenitzer & Kollofrath; contractor, E. A. Otto; sureties, E. L. Rueter and Chas. Mayer, jr., guaranteed; cost, $3,500; signed, April 8; filed, April 14; payments, 75 per cent. as work progresses; balance 35 days.

California near Montgomery. Interior finish, counters, chairs; owners, German Saving and Loan Societies; architects, Kenitzer & Kollofrath; contractors, F. W. Kreling & Son; bond, $6,500; cost, $13,942; signed, April 8; filed, April 14; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

California near Gough. To build; owner, Joseph Hyman; architects, Salfield & Kohlberg; contractor, David Perry; cost, $9,499; signed, April 21; filed, April 23; payments, $1,500; frame up; $1,000, enclosed, $1,000, floors laid, partitions set and outside mill work on; $1,500, standing finish on; $2,124, completed; $2,375, 35 days.

California and Larkin. Carpenter work; owners, Cal. St. Cable R. R.; architects, H. H. Macy; contractor, J. J. O'Brien; cost, $1,450; signed, March 18; filed, April 2; payments, $500, frame up; $572.50, completed; $357.50, 35 days.

City Hall. Bronze work and statuary; owner, F. Happersberger; contractors, Whyte & De Rome; bond, $3,000; cost, $20,000; signed, April 20; filed, April 20; payments, $2,000, 1st group cast; $2,000, 1st group finished; $1,550, 7th group cast; $500, 2nd cast; $500 second finished; $500, 3rd and 4th cast; $500, 3rd and 4th cast; $500, 3rd and 4th finished; $200, 8th group cast; $200, 8th finished; $450, substitute cast; $450, substitute finished; $125, 6th group cast and finished; $675, 5th cast and finished; $2,000, 35 days.

Clipper near Noe; To build; owner, Mrs. M. Whitney; contractor, James E. Schulz; bond, $600; cost, $1,150; signed, April 9; filed, April 11; payments, $287.50, frame up; $287.50, brown coated; $287.50, 35 days.

Cumberland near Sanchez. To build; owner, A. J. Kleinhaupt; architect, A. E. Herman; contractor, Wm. Belyea; cost, $6,565; signed, April 14; filed, April 14; payments, $800, foundation in and 1st floor, joists on; $1,000, frame up and roof ready for tinning; $1,000, brown coated and roof tinned; $1,000, white coated and house primed; $1,305, completed; $1,700, 35 days.

Devisadero near Jackson. Frame building; owner, Anna Waterman; architect, J. E. Kraft; contractors, Schmidhe & Volswinkler; sureties, J. Rumetsch and Fritz Krug, $4,000; cost, $7,200; signed, April 18; filed, April 20; payments, $1,200, building sheathed and chimneys built; $1,200, brown coated; $1,200, plastering and wainscoting on; $1,800, completed; $1,800, 35 days.

Dore near Harrison. To build; owner, H. B. Myers; architect, Edward Burns; contractor, Jno. Mann; cost, $4,000; signed, Jan. 8; filed, April 5; payments, $1,000, frame up and siding on; $1,000, brown coated; $1,000, completed; $1,000, completed; $1,000, 35 days.

Douglass near Jersey. First story and basement; owner, Mary McConologue; contractor, Richard Searle; cost, $1,320; signed, April 13; filed, April 18; payments, $325, frame up; $325, 1st coat of plaster on; $325, completed, $325, 35 days.

Drumm near California. Pile driving and capping; owner, H. Braunschweiger; architects, Kenitzer & Kollofrath; contractors, California Bridge Co.; sureties, N. W. Spaulding and A. W. Burett, $3,000; cost, $2,885; signed, April 26; filed, April 27; payments, $1,000, piles all driven; $1,135, completed; $750, 35 days.

Farallones near Capitol. To build; owner, Frank N. Montrose; contractors, Morrison & Cook; cost, $1,350; signed, April 11; filed, April 11; payments, $500, brown coated; $500, completed; $850, 35 days.

Fell near Octavio. To build; owner, Bernhard Fross; architects, B. McDougall & Son; contractors, Brennan Bros.; cost, $4,270; signed, April 12; filed, April 13; payments, $300, old house underpinned and stairs up in front; $800, frame up for new houses; $800, old house brown coated, plumbing roughed in and brown mortar on new houses; $800, white coated; $562.50, completed; $1,067.50, 35 days.

Fifth Ave near Clement. To build; owner, Wm. Menge; contractor, Caspar Zwierlein; cost, $1,550; signed, April 11; filed, April 14; payments, $500, brown coated; $662, completed; $888, 35 days.

Filbert near Laguna. Two-story frame; owner, Jon. Devlin; architect, Chas. M. Rosseau; contractor, H. C. Higge; cost, $2,700; signed, April 27; filed, April 28; payments, $675, roof on; $675 brown coated; $675, completed; $675, 35 days.

Geary near Hyde. All work to build; owner, Edward C. Hisgen; architect, T. J. Welsh; contractor, Andrew Christensen; sureties, D. H. Bibb and O. W. Greenwald, $1,796; cost, $7,180; signed, April 26; filed, April 26; payments, $1,346, frame up; $1,346, brown coated, $1,346, white coated; $1,346, completed; $1,796, 35 days.

Guerrero near 14th. To build; owner, N. Bullerdeick; architect, Henry Geilfuss; contractor, Flek Cebner; cost, $4,215; signed, March 30; filed, April 1; payments, $632, frame up; $632, partitions set; $632, brown coated and basement work done; $632, inside standing finish on; $632, completed; $1,055, 35 days.

Guerrero near 28th. Alterations and additions; owner, Annie M. Harrison; architects, Colley & Lemme; contractors, Greenwood Contracting Co.; cost, $1,400; signed, April 20; filed, April 20; payments, $350, ready for lathing; $350, brown coated; $350, white coated; $350, 35 days.

Guerrero bet. 19th and 20th. One story frame; owner, Jos. Baker; contractor, Geo. Tressler; surety, Chas. Wesson, $1,000; cost, $2,135; signed, April 11; filed, April 20; payments, $500; frame up; $500, brown coated; $335, white coated; $800, completed.

Howard and Lafayette. Alterations and additions; owner, Michael Curran; architect, W. H. Baylliss; contractors, Doyle & Sons; cost, $6,500; signed, April 18; filed, April 20; payments, on the fifteenth of each month 75 per cent. as work progresses; balance 35 days.

Hyde street. Two-story frame; owner, Helen Chase; contractor, Henry Jensen; cost, $3,400; signed, April 26; filed, April 27; payments, $850, frame up; $850, brown coated; $850 white coated; $850, completed.

Larkin near Lombard. To build; owner, W. H. H. Tobey; contractor, Geo. Healing; cost, $2,550; signed, March 31; filed, April 4; payments, $480, frame up; $480, brown mortar on; $480, doors hung; $470, completed; $640, 35 days.

Leavenworth near Ellis. Alterations and additions; owner, Chr. Figing; contractor, F. V. Steinman; cost, $3,000; signed, April 4; filed, April 5; payments, $850, building raised and rustic on; $700, brown coated; $700, completed; $750, 35 days.

Lot 892, block 97. All work for a brick building; owner, Levi Strauss; architects, Wrights & Sanders; contractor, Thos. M. McLachen; cost, $16,600; signed, April 11; filed, April 25; payments, first day of each month 75 per cent. as work progresses; balance 35 days.

Market and Powell. Plumbing, gas-fitting, etc.; owner, Annie Donahue; architect, C. I. Havens; contractor, Wm. F. Wilson; cost, $19,469; signed, April 9; filed, April 9; payments, 75 per cent. of work done on first day of each month; balance 35 days.

Mason near O'Farrell. Four-story frame; owner, J. P. Riordan; architect, Jno. J. Clark; contractor, Jno. G. Adams; surety, S. H. Harmon, $2,610; cost, $10,450; signed, April 28; filed, April 28; payments, $2,000, frame up and rustic on; $2,610, brown coated; $2,615, inside finish complete; $2,625, 35 days.

Mason near Vallejo. Three-story frame; owner, Cathe Tate; contractor, Harry Wyatt; sureties, R. K. Pattridge, $4,000; cost, $4,000; signed, April 18; filed, April 19; payments, $1,500, enclosed and floor laid; $1,000, brown coated; $500, completed; $1,000, 35 days.

McAllister near Broderick. Brick, carpenter and plumbing work; owner, Jno. Boyd; architects, B. McDougall & Son; contractors, McKay & McCann; cost, $10,450; signed, April 20; filed, April 21; payments, $1,000, brick wall built and 1st floor joists set; $1,000, frame up; $1,500, window frames and partitions set; $2,500, plastered and first coat of paint on outside; $1,000, second coat paint on, platforms finished; $837.50 completed; $2,612.50, 35 days.

McAllister and Jones. Iron stairways, doors and frames; owners, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractors, Western Iron Works; cost, $4,921; signed, Feb. 9; filed, April 4; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

McAllister and Jones. Art glass work; owners, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, Jno. Mallon; cost, $4,488; signed, Feb. 6; filed, April 4; payments, 1st and 15th day of each month 75 per cent. of work done; balance 35 days.

Meacham Place near Post. To build; owner, Wm. Sullivan; contractor, B. K. Albertson; surety, P. Ashe, $1,000; cost, $2,900; signed, April 4; filed, April 11; payments, $800, 1st floor joists on; $800, roof on; $600, brown coated; $600, white coated; $300, completed and accepted.

Minerva near Plymouth. To build; owner, Jno. F. McGrath; contractor, Thos. Curry; cost, $1,080; signed, April 9; filed, April 11; payments, $270, frame up; $270, brown coated; $270, completed; $270, 35 days.

Mission and Lands of the S. P. Co's. To build; owner, Ann Lovell; architect, W. H. Bayless; contractors, Doyle & Sons; cost, $1,950; signed, April 28; filed, April 28; payments, 75 per cent. as work progresses; balance on completion.

Mission and Stuart. Three-story and basement brick building; owner, W. J. Lowey; architects, Kenitzer & Kollofrath; contractor, W. B. Kreger; cost, $20,960; signed, April 26; filed, April 26; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Mission and Stuart. Brick and stone work; owner, W. J. Lowey; architects, Kenitzer & Kollofrath; contractors, McGowan & Butler; cost, $7,732; signed, April 26; filed, April 26; payments, $2,500, basement and 1st story walls build; $3,232, completed; $2,000, 35 days.

Mission Road near 34th. All work necessary to build; owner, Anna M. Eccles; architects, Townsend & Wyneken; contractor, J. P. Rines; cost, $1,518; signed, April 25; filed, April 26; payments, $400, frame up; $400, coated, $400, completed, $318, 35 days.

Montgomery near Green. Carpenter work, etc.; owner, Louisa Gauthier; architect, S. Hatfield; contractor, George Connon; cost, $2,110; signed, April 5; filed, April 8; payments, $500, frame up and roof boarded; $500, plastering completed; $532, completed; $528, 35 days.

Page near Devisadero. To build; owner, Michael J. Slattery; contractor, Henry Jacks; cost, $3,048.75; signed, April 12; filed, April 13; payments, $500, sewers, brick work and 2d floor joists on; $650, brown coated; $650, white coated; $486.75, completed; $762, 35 days.

Pierce and Sacramento. Nine two-story residences; owner, Mrs. K. D. Casey; architect, Henry A. Schulze; contractor, Rhody Ringrose; cost, $5,700; signed, April 21; filed, April 26; payments, 1st day of each month 75 per cent. as work progresses; balance 35 days.

Pine near Sansome. Incandescent light work; owner, Daniel Meyer; architects, Salfield & Kohlberg; contractors, Cal. Electrical Supply Co.; cost, $1,060; signed, April 14; filed, April 20; payments, $785, completed; $275, 35 days.

Post near Jones. Concrete and brick work; architects, Henriksen & Mahoney; contractors, Ransome & Cushing; cost, $7,500; signed, April 2; filed, April 2; payments, $3,750, 1st floor joists laid and basement arches finished; $1,875, completed; $1,875, 35 days.

Powell Street Theatre. Tinting and decorating; owners, Denicke & Siebe; architects, Wood & Lovell; contractors, Spierling & Linden; cost, $6,375; signed, March 24; filed, April 5; payments, 1st and 15th day of each month 75 per cent of work done; balance 35 days.

Sacramento near Laguna. Two-story frame; owner, Jno. Siebe; architect, Henry Geilfuss; contractors, Schutt & Kreeker; cost, $12,720; signed, April 28; filed, April 28; payments, $2,382, frame up; $2,385, partitions set; $2,385, inside standing finish on; $2,385, completed; $3,180, 35 days.

Sacramento near Laguna. Plumbing and gas-fitting; owner, John D. Siebe; architect, Henry Geilfuss; contractor, H. Williamson; cost, $1,160; signed, April 28; filed, April 28; payments 1st and 15th day of each month 75 per cent. as work progresses; balance 35 days.

Sacramento near Maple. Five room cottage; owner, Geo. Schaefer; contractor, Geo. Healing; cost, $1,480; signed, April 8; filed, April 19; payments, $370 frame up; $370, brow coated; $370, completed; $370, 35 days.

Sixteenth near Dolores. To build; owner, S. Scorpo; architect, W. C. Dickerson, contractor, J. C. Rogers; cost, $4,000; signed, April 6; filed, April 6; payments, $1,200, frame up; $1,200, building enclosed and brown mortar on; $1,250, completed; $1,250, 35 days.

Sutter near Broderick. To build; owner, J. Jacobs; architects, Salfield & Kohlberg; contractor, W. F. Judson; cost, $4,140; signed, April 7; filed, April 9; payments, $1,000, frame up; $1,000, brown coated; $1,100, completed; $1,040, 35 days.

Sutter near Broderick. Plumbing, gas-fitting, etc.; owner, J. Jacobs; architects, Salfield & Kohlberg; contractors, Striegel & Ponder; cost, $569; signed, April 8; filed, April 9; payments, $226, rough plumbing done; $200, completed; $143, 35 days.

Sutter near Taylor. Plumbing; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractors, W. S. Snook & Son; cost, $3,148, signed, April 1; filed, April 12; payments, $1,215, rough plumbing in; $1,149, completed; $784, 35 days.

Sutter near Taylor. Plastering; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractor, Chas. Dunlap; cost, $3,800; cost, $3,800; signed, April 1; filed, April 12; payments, $800, lathed; $1,000, 2nd coated; $800, 3rd coated; $250, completed; $950, 35 days.

Sutter near Taylor. Painting; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractor, Jos. Thomas; cost, $1,240; signed, April 1; filed, April 12; payments, $300, work is second coated; $430, completed; $314, 35 days.

Sutter near Taylor. Carpenter work; owners, Golden Gate Bldg. Ass'n.; architect, Smith & Freeman; contractor, T. H. Day; cost, $21,220; signed, April 1; filed, April 12; payments, $1,400; 2d story joists on; $1,400, rafters on front building; $4,000, ready for painter; $8,000, ready for painter; $1,122, completed; $5,308, 35 days.

Sutter near Taylor. Terra cotta work; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractors, A. Steiger & Son; cost, $3,450; signed, April 1; filed, April 12; payments, $1,000, 2d story including belt course completed; $1,000, 3rd completed; $587, completed; $865, 35 days.

Sutter near Taylor. Iron work; owners, Golden Gate Bldg. Ass'n.; architects, Smith & Freeman; contractors, J. K. Firth & Co.; cost, $5,645; signed, April 1; filed, April 12; payments, $500, 1st walls are up; $900, beams and columns set; $1,800, trusses set; $1,033, completed; $1,412, 35 days.

Sutter near Taylor. Mason work; owners, Golden Gate Bldg. Ass'n.; architect, Wm. F. Smith; contractor, J. H. Wilson; cost, $20,750; signed, April 1; filed, April 2; payments, $2,200, concrete foundation in; $2,000, ready for 1st story joists; $5,000, ready for 2nd; $5,000, ready for roof; $1,362, completed; $5,188, 35 days.

Tennessee and Susquehanna. Two-story frame; owner, Chas. M. Rosseau; architect, Chas. M. Rosseau; contractor, Louis Mendus; cost, $2,250; signed, April 26; filed, April 27; payments, $562, roof on; $562, brown coated; $562, completed; $564, 35 days.

Turk and Scott; Two-story frame; owner, Jno. Otten; architect, A. C. Lutgens; contractor, J. J. O'Brien; cost, $5,015; signed, April 19; filed, April 20; payments, $800, first story joists set; $800, roof ready for tinning; $800, brown coated; $800, white coated; $801.25, completed; $1,253.75, 35 days.

Twenty-third and Dolores. To build; owner, Jno. Clency; contractor, Droge & Munster; cost, $1,300; signed, April 7; filed, April 8; payments, $800, frame up; $800, brown coated; $800, white coated; $800, completed; $1,100, 35 days.

Valparíso near Mason. Three story frame; owner, V. Gamba & wife; contractor, Emanuel Picasso; cost, $3,300; signed, April 14; filed, April 16; payments, $575, rear house in place; 1st floor joists of new house set; $575, enclosed and roof on; $575, brow coated; $575, completed; $1,000, 35 days.

Walnut near Jackson. Two-story frame; owner, Henriette Keating; architect, Wm. H. Wharff; contractors, E. C. Worden & Son; sureties, Kincaid & Shaw, $821; cost, $3,286; signed; April 26; filed, April 25; payments, $800 rustic on; brown coated and roof completed; $800, completed; $886, 35 days.

Washington near Central Ave. To build; owner, Mary E. Marshall; architect, W. H. Lillie; contractor, R. M. Murray; surety, $5,000; cost, $9,900; signed, April 6; filed, April 6; payments, $1,485, frame up; $1,485, enclosed; $1,485, brown coated, accepted; $1,485, standing finish on; $1,485, completed; $2,475, 35 days.

ALAMEDA COUNTY.

Beaudy and Peladeau Tr., Oakland. To build; owner, Robert Knowles; architect, Joseph A. Leonard; contractor, Luther Hill; cost, $1,300; signed, April 6; filed, April 9; payments, $825, frame is up; $825, brown mortar on; $825, completed; $825, 35 days.

Blasdel Tr., Blk. 2. To build; owner, H. G. Blasdel; contractor, J. A. Eastman; cost, $5,000; signed, March 31; filed, April 6; payments, $1,250, when work is completed; $1,250, rough coat mortar on; $1,250, completed; $1,250, 35 days.

Bowditch and Channing Way, Berkeley. To build; owner, Mrs. E. C. Head; architect, S. Edgar Fisher, contractor, J. B. Sprague; cost, $10,500; signed, March 25; filed, April 6; payments, $2,625, ¼ frame up; $2,625, ¼ brown coat mortar on; $2,625, ¼ completed; $2,625, 35 days.

Buena Vista near Willow, Ala. To build; owner, Miss E. S. Hirschery; contractors, A. W. Pattiani & Co.; cost, $2,070; signed, March 31; filed, April 1; payments, $600, rustic and roof shingles on and chimney built; $500, window frames set, coat brown mortar on; $450, completed; $520, 35 days.

Castro and 5th, Oakland. Alterations and building; architect, E. C. McManus; owner, Patrick Hanley; contractor, David Baxter; cost, $1,485; signed, April 14; filed, April 14; payments, $295, brick foundation in and second story frame up; $295, stairs up, first coat of paint on; $295, completed; $300, 35 days.

Central Ave, near Union, Alameda. Two-story dwelling; owner, Mary Cashman, architect, Chas. H. Shaner; contractors, Brehant & Diamond; sureties, E. Dunning; A. B. Victors & J. B. Bigler; cost, $5,000; signed, April 25; filed, April 25; payments, $937, frame up and roof sheathed; $937, enclosen roof and cornice on; $937, brown mortar on, and verandas built; $937, all plastering and wood work done; $1,250, 36 days.

Clinton, Portion of blk. 4. To build; owner, W. S. Goodfellow; architect, H. A. Schulze; contractor, C. E. Nichols; cost, $4,082; signed, April 19; filed, April 19; payments, 1st day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Columbus and Maple, Oakland. Frame building; owner, Mrs. J. B. Monser; architect, C. H. Wedgenwood; contractor, W. W. Miller; cost, $2,040; signed, April 22; filed, April 22; payments, $510, rustic and roof on; $510, hard finish on; $510, completed; $510, 35 days.

Dwight Way near Sacramento, Berkeley. Frame building; owners, Henry and Anna Ratfish; architect, L. L. Nicholas; contractor, C. E. Nicholas; cost, $1,078; signed, April 16; filed, April 22; payments, $360, enclosed and roof shingled, $360, outside finished and brown mortar on; $358, 35 days.

Eight near Alice, Oakland. To build; owners, Lang Bros; architects, Jonh & Balezynaski; contractors, Herbst & McLeod; cost, $1,875; signed, April 11; filed, April 13; payments, $400, frame of cottage and stable is up; $500, building enclosed, roof and brown mortar is on, $400, completed; $475, 35 days.

Filbert and 14th, Oakland. Frame building; owner, Mrs. P. Bruenn; architect, S. Edgar Fisher; contractor, J. B. Sprague; cost, $2,550; signed, April 25; filed, April 26; payments, $637.50, frame up; $637.50, brown mortar on; $637.50, completed; $862.50, 35 days.

Fourteenth and Franklin, Oakland. Gallery in Presbyterian Church; owners, church trustees; architect, Samuel Newsom; contractors, W. F. Veitch Bros.; cost, $4,770; signed, April 21; filed, April 22; payments, 15th day of each month 75 per cent. as work progresses; 25 per cent. 35 days.

Fourteenth near 28th Ave., Alameda. Two-story building; owner, Frank Bieler; architect, A. W. Smith; contractor, John Bamnan; cost, $4,515; signed, April 22; filed, April 22; payments, $1,000, frame up; $820, enclosed; $820, brown mortar on; $875, 35 days.

Franklin and 7th, Oakland. Three-story brick; owner, Octave Lamarche; architect, Chas. Mau; contractor, Remillard Brick Co.; cost, $3,943; signed, April 25; filed, April 26; payments, 75 per cent. in four installments as work progresses; 25 per cent. 35 days.

Franklin and 7th, Oakland. Three-story brick building; owner, Octave Lamarche; architect, Chas. Mau; contractors, Herbst & McLeod; cost, $8,000; signed, April 25; filed, April 25; payments, $1,500 work done; $1,500, ½ work done; $1,500, ¾ work done; $1,500, completed; $2,000, 35 days.

Fruit Vale Ave. near 14th St., Fruit Vale. Two-story dwelling; owner, Edward Marnedel; architects, J. C. & E. A. Mathews; contractors, Baudin & Ebers; cost, $3,286; signed, April 18; filed, April 21; payments, $800, frame up; $1,150, enclosed, brown mortar on and one coat of oil on finish; $1,013.75, completed; $821.25, 35 days.

Garden Tr., Hd. To build; owner, Catherine Jones; contractors, Langtry & Johnson; cost, $1,280; signed, April 4; filed, April 6; payments, $300, frame up, roof on; shingled, building enclosed with rustic; $300, brown mortar on; $300, completed; $380, 35 days.

Graves and Taylor Tract, Oakland. One-story frame cottage; owner, Joseph Coxen; contractors, Elsy & Jewett; cost, $1,645; signed, April 16; filed, April 18; payments, $411.36, house enclosed and roof on; $411.36, brown mortar on; $411.36, completed; $411.35, 35 days.

Haight Ave, near 7th, Alameda. To build; owner, Thomas Mills; contractor, A. R. Denke; cost, $2,450; signed, April 6; filed, April 9; payments, $650, frame up; $600, 1 coat plaster, $600, completed; $600, 35 days.

Lake Merritt. Park Tract, Oakland. To build; owner, Wm. N. Holway; architect, Jno. Conant; contractor, A. W. Cornelius; cost, $3,800; signed, March 28; filed, April 4; payments, $1,500, brown mortar on; $1,300, carpenter work done and ready for painting; $1,000, 35 days.

Ninth Ave, near 15th, Oakland. Cottage; owners, A. J. Read and wife; contractor, T. R. Goth; cost, $1,570; signed, April 21; filed, April 26; payments, $570, ready for plastering; $1,200, to be paid in a dead deed right and title to be vested in party of second part to all that portion of land situated in the town of Los Gatos.

Oak St., Alameda. To build; owner, J. F. Fletter; architects, Percy & Hamilton; contractor, C. L. Lombard; bond, $1,000; cost, $10,191; signed, April 5; filed, April 5; payments, 75 per cent. of the value of work done and materials furnished 1st of each month; 25 per cent. 35 days.

Oxford St., Berkeley. To build; owner, Mary B. Metcalf; architect, Walter J. Mathews; contractors, Veitch & Veitch; cost, $3,800; signed, April 6; filed, April 6; payments, $800, when ⅓ of work is completed; $1,000, ⅔ completed; $1,000, completed; $1,000, 35 days.

Paradise St., Lorin. To build; owners, Lorin Hall Ass'n.; architects, Martens & Coffey; contractor, Andre Johanson; cost, $8,745; signed, March 29; filed, April 11; payments, $600, frame up; $600, rustic and roof boards on, etc.; $621, brown mortar on; $600, outside finished, one coat paint on; $500, completed; $924, all receipts, from contractors, etc., are presented and signed as paid.

Park Hd., blk. 26, Alameda. Cottage; owner, Mrs. J. M. Graham; architect, C. M. Jenkins; contractors, F. G. & E. C. Cary; cost, $2,071; signed, April 22; filed, April 25; payments, $517.75, frame up; $517.75, enclosed; $517.75, plastered; $517.75, 35 days.

San Jose Ave. near Grand, Ala. To build; owner, Wellesley Moore; contractors, A. W. Pattiani & Co.; cost, $3,823; signed, March 28; filed, April 3; payments, $1,050, rustic and roof shingles on and chimney built; $850, window frames set coat brown mortar on; $807, completed; $850, 35 days.

San Pablo near Alcatraz, Oakland. Frame building; owner, Balthasar Emmerick; contractors, Marcuse & Remmel; cost, $1,075; signed, April 21; filed, April 22; payments, $288, frame up; $288.75, brown mortar on; $288.75, completed; $288.75, 35 days.

Santa Clara Ave., Alameda. To build; owner, Wm. J. Smith; contractors, Marcuse & Remmel; cost, $3,800; signed, April 6; filed, April 9; payments, $950, frame up; $950, brown coat mortar on; $950, completed; $850, 35 days.

Santa Clara Ave, Oakland. Frame building; owner, Chas. Miller; contractors, Marcuse & Remmel; cost, $900; signed, April 21; filed, April 25; payments, $225, frame up; $225, shingled and wainscoting completed; $225, completed; $225, 35 days.

Seventeenth near Clay, Oakland. To build; owner, Eliza A. Tompkins; architect, Elmer Childs; contractors, Bandin & Co.; cost; $5,356; signed, April 6; filed, April 6; payments, $700, frame up; $1,000, brown coat mortar on; $1,000, outside completed; one coat paint on; $1,317, completed; $1,336, 35 days.

Seventeenth near Clay, Oakland. To build; owner, F. L. Adams; architect, Elmer Childs; contractors, J. P. Bandin & Co.; cost, $5,356; signed, April 6; filed, April 8; payments, $700, frame up; $1,000, brown coat mortar on; $1,000, outside fully completed and one coat paint on; $1,317, completed; $1,339, 35 days.

Shattuck Ave. and Cedar, Berkeley. Two-story frame; owners, Boysen & Anderson; contractor, W. B. Mells; cost, $2,200; signed, April 19; filed, April 20; payments, $550, frame up; $550, brown mortar on; $550, completed, $550, 35 days.

Stan Tr., Lot 25, block B, Oakland. To build; owner, W. S. Merriam; contractors, Caldwell & Nickerson; cost, $2,148; signed, April 7; filed, April 7; payments, $400, frame up and sheathing on roof; $400, enclosed and inside finish on; $400, brown mortar on; $400, completed; $598, 35 days.

Telegraph Ave. and 24th, Oakland. To build; owner, M. M. Dunn; architect, Chas. Mau; contractor, Jas. Tohig; cost, $5,500; signed, March 28; filed, April 4; payments, $1,025, ¼ materials furnished, ¼ work done; $1,025, ½ furnished, ½ done; $1,035, ¾ furnished, ¾ done; $1,050, completed; $1,375, 35 days.

Telegraph Ave. near 17th St., Oakland. To build; owner, Chas. Sexton; architect, Howard Burns; contractors, Burpee & Libbey; cost, $4,781; signed, April 25; filed, April 25; payments $1,195, walls to second story, joists set; $1,195, roof on and floor laid; $1,195, completed; $1195, 35 days.

Thirty-fifth near Grove, Oakland. To build; owner, Geo. G. Baker; architect, R. Gray Frise; contractor, Alexander Wahlstrome; cost, $3,200; signed, April 19; filed, April 19; payments, $550, frame up, building enclosed; $550, roof on, floors laid, rough plumbing done and brown mortar on; $550, plastered, windows hung and building primed; $550, 35 days.

Twenty-fourth near Valley St., Alameda. To build; owner, James Lyng; architect, Howard Burns; contractor, Peter Crinnion; cost, $2,700; signed, April 22; filed, April 22; payments, $675, frame and brick work completed; $675, enclosed and brown mortar on; $675, completed; $675, 35 days.

Thirty-fifth near Grove, Oakland. Frame building; owner, Geo. B. Baker; architect, R. Gray Frise; contractor, Axel Wahlstrom; cost, $4,400; signed, April 28; filed, April 28; payments, $1,100, building enclosed; $1,100, roof on, floors laid, brown mortar on and rough plumbing done; $1,100, plastered, primed inside finish on; $1,100, 35 days.

Washington and 31st., Oakland. Millwork; owners, Conenon & Shay; architect, Chas. Mau; contractors, Juyler & Atkinson; cost, $3,300; signed, March 31; filed, April 1; payments, $825, outside frames are set; $825, standing finish on; $825, completed; $825, 35 days.

Wood and Atlantic, Oakland. To build; owner, M. Good; architect, C. H. Foster; contractor, A. W. Smith; cost, $1,075; signed, March 31; filed, April 1; payments, $268, frame up; $266, enclosed, ready for lathing; $268, completed; $275, 35 days.

———. To build; owner, Wallace Everson; architect, Walter J. Mathews; contractor, Patrick Maloney; cost, $3,747; signed, April 1; filed, April 5; payments, $936.66, ⅓ work done; $936.66, ⅔ done; $936.66, completed; $937, 35 days.

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NOW IN THE THIRTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THE subject of high buildings for business purposes has attracted the attention of architects for a number of years and many predictions have been made concerning the limit to which such structures may be carried. In Chicago, where the most noted examples of high business blocks may be found, the Common Council has passed an ordinance limiting the height of buildings. The ordinance was passed by a vote of thirty-nine yeas to nine nays. The question elicited a spirited discussion with regard to the rights of the public and the business and sanitary interests of the city. The ordinance provides that for buildings upon streets of not more than 80 feet in width the height shall not exceed 125 feet; that upon streets of not more than 40 feet in width the height shall not exceed 100 feet; the extreme height in any case shall not exceed 150 feet. The ordinance does not prohibit the erection of towers, spires, domes, etc., under certain conditions.

In this matter the Council has taken into consideration the right of the commonwealth as well as the rights of the owners of high buildings. The danger from fire for this class of structures has for some time occupied the attention of fire underwriters. A committee from several prominent Insurance Companies has recently made a report recommending that the height of buildings should not exceed four stories or 50 feet as a standard risk. This height is based on fireproof buildings of modern construction.

We should infer from this that Insurance experts rate the fire risk as increasing with the excess of height above 50 feet.

The streets and buildings of a city are the creation of the inhabitants, each individual being directly interested in any matter pertaining to the public welfare, therefore, we see no reason why the height of buildings should not be restricted to a safe limit as time and experience may determine.

With the growth of cities the importance of sanitary provisions becomes more pronounced and measures must be adopted to prevent the increased disease and death rate due to overcrowding. It has come to be an acknowledged fact that many forms of disease are propagated and carried about in the air, the danger from which may be lessened by a free movement of the air as in the rural districts. High buildings and narrow streets have a tendency to prevent free circulation, consequently the disease germs are multiplied and concentrated and the death rate increased. Thus from a sanitary point it seems proper that some restriction should be placed upon the excessive height of buildings.

AT a meeting of the Board of Health, held on May 20, 1892, the following resolutions introduced by Dr. Bucknall, were adopted:

In accordance with the recommendation made to the Board at its last meeting, by the Plumbing Inspector, I offer the following:

Resolved, That all persons building New houses, or altering Old ones, demand a certificate from the Plumbing Inspector of the Health Department before accepting.

Resolved, That all property owners putting down permanent sidewalks, should have an intercepting trap, with air-pipe, on outer edge of sidewalk, as sanitary precaution against Sewer Gas permeating their premises.—JAS. W. KEENEY, M. D., Health Officer.

WE are again indebted to *Books*, published in Denver, Colo., for the School Building herewith illustrated. The building was designed by Mr. Robert S. Roeschlaub, Architect, of Denver. The plans present features not usually meet with in school architecture.

With such buildings for school purposes as this and the High School shown in our April number, together with the facilities for study afforded by the Denver Library, it is no wonder that its citizens claim superiority over less favored places.

Well planned school buildings are the pride of the inhabitants of every city and town, and as architects are giving more thought to this class of structure than formely, the present school houses are showing a marked improvement to those erected a few years ago.

CORONA SCHOOL, DISTRICT NUMBER ONE, DENVER, COLO."

A recent issue of the *Granite Cutters Journal* contains a report from a committee from the Granite Cutters National Union in reference to a communication to that body from the Granite Manufacturers' Association of New England. The following paragraphs are taken from this report as they contain some reasonable advice to employers generally.

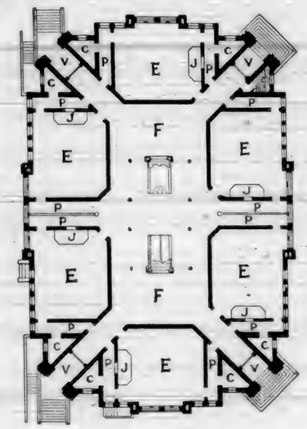
"We are also told that competition in the trade is so close and the margin of profit so low that they cannot afford to do anything. With whom is this competition? Surely not with the workman at the banker When an association or its members say that they are handicapped by the unfair competition of their own members, it is time for that association to take steps to bring its members to a healthy state of fair dealing one with another, and not endeavor to foster that system of unfair competition by throwing the burden on the workmen. We believe the system on which the Manufacturers' Association is founded is a wrong one, and its members should at once remedy its defects, and endeavor to elevate the trade instead of trying to destroy it. * * * It is better for them to live in peace and harmony with all men than to lie awake nights scheming how to get the better, not only of their workmen, but of their associates as well."

ELECTRICAL ILLUMINATION.

FROM time immemorial there has been a call for more light, and history leads us through a long line of development from the "torch" by way of the "tallow dip" to gas and more recently to electricity, which has brought into the field new and important problems for the consideration of the Architect. From the Journal of the *Royal Institute of British Architects* we reprint an abstract of a paper on this subject by Mr. W. H. Preece, F. R. S.

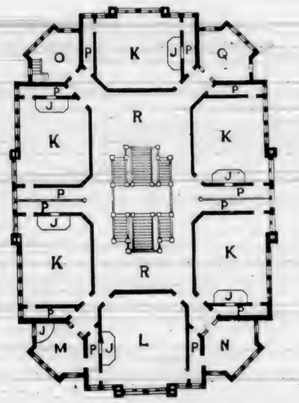
The Internal Illumination of Building.

"The art of internal illumination of buildings, the author considers, is just born, and will be an art in the future. Electricity is rendering theatres bearable and houses healthier, while the architect is brought face to face with a new art, in which the aid of the electrician is required to solve some of the difficulties. History is silent as to the origin of tallow, pitch, wax and oil, but gas as an illuminant came in with the present century. From the earliest days history, whether culled from paintings or writings, teaches that lights have been dim and crude until the middle of the present century. Light, by whatever means generated, follows the same laws, and is due to the rapid rhythmic undulation of the medium, called the ether, that fills all space. Wherever there is light there is heat, and the hope of the philosopher to supply light without any heat at all is at present but a dream. Light cannot be produced without heat, and the higher the temperature the brighter the light. Color varies with the rate of vibration of the ether, while changes of color are due to the changes of wave-motion of the ether. Light may become so intense that all sense of color is lost, and every bright illumination causes all colors to appear whitish. If light emanates from a point, its intensity diminishes with the square of the distance. The candle is the British standard source of light, and the bright surface produced by it at a distance of one foot the standard illumination by which to measure the amount of light distributed by any other means. This standard Mr. Preece calls a "lux". A sixteen-candle power glow lamp is a lamp which gives a light equal to that of sixteen British standard candles concentrated on one spot, and it will at a distance of four feet give the illumination of a lux. Thus one-candle power at one foot, four candles at two feet, nine candles at three feet, fifteen candles at four feet, twenty-five candles at five feet, give exactly the same illumination, viz., one lux, on the paper on which we write or on the page from which we read. The great problem is to diffuse light throughout a room so that it be distributed uniformly over the working surfaces with an intensity of a lux. Sixteen-candle glow lamps suspended eight feet above the floor, and fixed in eight feet squares, effects this very well; and groups of four such lamps fixed sixteen feet high produce a similar result. The light a lamp gives is owing to the expenditure of energy in its carbon filament; an electric current is driven through this filament by electric pressure, its resistance is overcome, it is intensely heated by the proceeding, and the result is pure unadulterated light. The energy expended per second by an *ampere* (the standard current), driven by a *volt* (the standard pressure), is called a *watt*. A sixteen-candle glow lamp takes sixty-four watts, which, assuming the lamps to be fixed eight feet high, means that one watt per square foot of surface is required to secure ample illumination from lamps so fixed. Therefore, in designing the normal illumination of rooms, Mr. Preece takes the floor area in square feet and divides it by sixty-four, which gives the number of sixteen-candle power lamps required, fixed eight feet high; these being increased or diminished according to the purposes of the room, its form and height, etc. The adaptability of the eye to nearly every degree of light is very great, and it is almost impossible for it to judge accurately of the amount of light present; but it is not as a mere source of light that the glow lamp is superior to the gas-burner. The former can be put anywhere and used without the adventitious aid of match or fire. It does not vitiate nor unnecessarily warm the air, and it simplifies the problem of ventilation, while it lends itself above all to the æsthetic harmony of furniture and decorations. Electric light is not always absolutely safe; security is to be obtained only by good design, perfect materials, first-class workmanship, and rigid inspection. Imperfect materials erected by cheap contractors lead to many disasters; on the other hand, it is stated no fire has occurred in buildings fitted up under the rules and regulations, and inspected by the officers of the insurance companies in this country. Mr. Preece advocates keeping everything as much as possible in view, and not hiding the conductors under wainscots or floors or above ceilings. The glow lamp excited by three watts per candle is at present the most perfect source of domestic light, and when the patent expires—in a year or two—will be obtainable at one-third the present price. It is scarcely fair, Mr. Preece thinks, to say all light should come from the side of a room, as Lord Beaconsfield stated in *Lothair* when describing the lighting of Belmont. The House of Commons is one of the best-lighted chambers in London, and is lignted from the roof, a false glass ceiling excluding the heat and glare, and admitting only the light. What is wanted is to avoid the glare of the incandescent filament in the eyes, and to prevent the lamp from being too obtrusive; it can be shaded from the eye without its effectiveness being destroyed, and without the flow of light being obstructed or its quality being deteriorated. Judging from the Crystal Palace Exhibition, at which several leading firms have not exhibited, the electric light fitter has not seized upon the spirit of the age—which is the rule of science over mere conventional æstheticism. Two exhibits at the Crystal Palace, however, the author considers, especially deserve inspection. The one is a Tudor ribbed ceiling erected by Messrs. Allen & Mannooch, who have applied glow lamps to the moulded intersecting pendants in



First Floor.

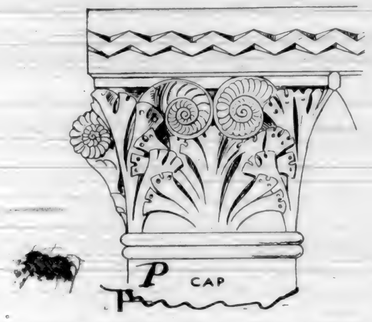
E—School Rooms, 27x33 feet
F—Corridor
P—Wardrobes
V—Vestibule
C—Closets
J—Platforms



Second Floor

K—School Rooms, 27 feet 8 inches x 33 feet 4 inches
L—School Room, 33 feet 4 inches x 35 feet 6 inches
M—Recitation Room
N—Principals' Room
O—Teachers' Room
P—Wardrobes
Q—Library
R—Corridor
J—Platform

such a way that the feeling of the artist is maintained by day, and is rather intensified, and not marred, by the artificial illuminant at night. The other is a bold attempt of Messrs. Rashleigh, Phipps, and Dawson to design in ironwork the whole of the fittings of a dining-room, so that they shall, in combination, convey an idea. The artist (Mr. Reynolds) has attempted to symbolize the solar system, the centre light over the table representing the sun, and the brackets on the walls the planets. A survey of the Royal Academy pictures, the author thinks, affords instructive study." There are many interiors, but few into which artificial light has been introduced. Having described several pictures in which artificial light has been introduced with more or less successful results, Mr. Preece, in conclusion, considers that science is advancing with giant strides. Science has subdued nature so as to bring it within the compass of the human intellect, and Art must follow the knowledge thus acquired. These two being the chief instruments of modern civilisation, the architect and engineer must work hand in hand.



TERRA-COTTA CAPITAL FROM THE MUSEUM NATURAL HISTORY AT KEMSINGTON, ENG.

THE GOVERNMENT TIMBER TESTS.

THE U. S. Department of Agriculture has issued Bulletin No 6, compiled by B. E. Fernow, Chief of the Foresty Division. This work "TIMBER PHYSICS," deals with a practical question of great interest to architects and builders, and we shall, from time to time, make copious extracts from this and the following reports. Mr. Fernow's letter to the Secretary of the Department of Agriculture, and the introduction states the case clearly.

"This is the first of a series of bulletins which are to record the results of an extensive investigation into the nature of our important woods, especially their mechanical and technical properties, and the dependence of these upon structure and physical condition and upon the conditions under which the wood was grown.

The present bulletin is entirely preliminary in its nature. Its object is to serve as a basis for the work which is to follow and is partly begun. It discusses the need, object, and scope of the investigation, gives references to the work which has preceded the present investigations, and explains the methods pursued in these latter, including the forms of record and illustrations of the machinery in use."

"INTRODUCTORY.—Scientific research is satisfied with its results without any reference to their practical application. Increase of knowledge is its self-sufficient aim. Whether this may in the end bring us an increase of power to control nature's forces or to utilize them to better advantage is not the concern of science, and yet all increase of this power has come directly or indirectly from such scientific research. Acknowledgment or ignorance, then, from a scientific point of view, is sufficient to establish the need of an investigation. From a practical and economic point of view, however, it would still remain necessary to point out whether and why the need is a pressing one and what direct benefits may be expected from such an investigation.

It will be admitted by all who have to handle wood in building, engineering and manufacturing, that our knowledge regarding the properties of our various timbers is not very satisfactory, and that while attempts more or less systematic have been made to determine these properties, and knowledge gained from experience exists among those who have handled certain classes of woods for certain purposes, there does not exist much reliable published information for general use.

It is also a well-known fact that from this ignorance of the value of our varied timber wealth, and its special adaptation to particular uses, large quantities of valuable material have been wasted. Everybody is familiar with the waste of our fine black walnut timber for fence rails, posts, and firewood. Until twelve or fifteen years ago many million feet of hemlock were left to rot in the woods, after the bark had been taken for tanning purposes, or this timber was not cut at all because its value for building purposes was not understood or was underrated.

In Alabama, along the Louisville and Nashville Railroad, a few years ago a large amount of chestnut oak was felled for the tan bark alone, the wood of the trees being allowed to rot, because railroad people did not know its value for railroad ties. The Division of Forestry, by a little circular, called their attention to the superiority of this timber for tie purposes, and now the wood is utilized, and thus for this region alone a saving of from $40,000 to $50,000 annually was effected, or more than three or four times as much as the annual appropriations for the Division of Forestry.

Even now many thousand cords of this valuable wood are lost there and in other regions when the bark is taken for tanning purposes, while the wood itself, which contains as much and more tannic acid per cord than the bark, is left unused, because it cannot be profitable transported in its original form. Presently a new wealth will be developed for the tanners, where it was not looked for. * * *

It would be impossible to estimate the direct and indirect losses which the country suffers from our ignorance as to the true values and strength of our building timbers. Such losses occur by using kinds unsuited for given purposes, or by employing either more or else less timber than necessary. Engineers and architects are fully aware of this deficiency in our knowledge, which approaches "a state of ignorance" remarkable to contemplate when it is considered that timber has always been a foremost building material. * * *

Not only are are engineers' tables, giving values of strength, uncertain, unreliable for practical use, based upon European timbers, etc., but probably not one in a hundred engineers or architects, who specifies timber for work, is capable of determining whether a given stick of timber is or is not capable of doing the duty it is designed to do. Even if he recognizes the species of timber, which he rarely can do with accuracy, he would fail to recognize any relation between the appearance or structure of the material and its expected or desired quality. And if he be better informed than the majority it will be only through dearly-bought experience. Empiricism in this branch of engineering still reigns supreme.

It is only six years ago that Prof. Lanza showed that tests made on small specimens, and on which our tables for engineers' use are based, may give results more than twice as high as those made on full-sized sticks; and although a factor of safety of 4 may have been applied in the specification, when it is found that material may have actually a strength .50 per cent. less than that given in the tables, we may often strain our material, without knowing it, to its full capacity and feel safe in so doing.

The following statement, which occurs in one of the letters referred to, may serve as an illustration. Mr. D. H. Burnham, engineer of construction for the World's Columbian Exposition, writes:

When I was appointed engineer of construction, World's Columbian Exposition, August 1st, I found it necessary to make changes in most of the buildings because I did not dare to use as high unit stress in timber as was used by my predecessor, although he claimed to be perfectly safe in his strains, and brought forward authorities—Trautwine and others—to prove his statements.

Inquiries from woodworkers in all branches show that the same lack of reliable knowledge exists with regard to the adaption of woods to technical purposes. Especially are the ideas as to the relation of properties to structure, physical condition, locality of growth, etc., entirely at variance and lacking a sound basis derived from accurate observation and research. It would then appear that from a practical point of view the need of an investigation exists, the more so since our forest resources begin more decidely to show the signs of lavish wastefulness, and proper economy would dictate a more careful employment of our wood materials.

Lastly, since we are beginning to plant forests and since forestry does not concern itself with the production of wood simply, but is to produce wood of given quality, we need this knowledge in order to proceed intelligently in the selection of plant material with reference to locality and in order to be able to control in a measure the quality of the product.

It is of interest to inquire why our ignorance exists and has prevailed so long, and to find out what is necessary in order to remove it.

There is one important factor of difference between other materials of construction and timber. It is the factor of life. Life means variety, change, variability. Each individual differs from every other in its development, and each part of the individual differs from its other parts in structure, and hence in qualities. Each living tree of the same species, therefore, converted into building material offers a different problem as to its properties, especially its strength, and each stick taken from a different part of the tree shows different quality.

This endless variability it is that has kept us in ignorance as to the capabilities of our timbers. While, by experience, we have learned that these differences exist, and even learned to find some relations between physical appearances, anatomical structure, and mechanical properties, the enormity of the enterprise has baffled investigators and deterred them from carrying on, in a systematic and comprehensive manner, such tests and examinations as would furnish us not only with reliable data as to the range of capacity of our timbers, but also as to the exact relation of their properties to their structure and physical condition.

In order to establish fully for any one species the possibilities of its adaption to our use, it is necessary to test a very large number of specimens. In order to formulate laws of relation between physical condition, anatomical structure, and mechanical properties, each test specimen must be carefully examined. In order to establish laws of relation between the physical and mechanical qualities and the conditions under which the specimen has grown, it is necessary to perform the testing and the examination on a large number of specimens of known origin.

Almost all the investigations made in this line are deficient in one or more or all of these points. Not only have there been few tests made on a sufficient quantity of material to allow generalization, but rarely have there been sufficient data furnished regarding the nature and origin of the test specimens to enable us to form a judgment.

Whatever laws of interrelation between physical structure and mechanical properties have been established or indicated, we owe almost entirely to European investigators on European timbers. Our engineers' tables are mainly made up from European sources, and while the extensive tables of the Tenth Census, prepared by Prof. C. E. Sharples, give us an indication as to the relative values of our many species, they can hardly claim to furnish data for practical application; in fact the author himself distinctly disclaims this. Anyhow, no attempt has been made to find out the causes of variation in properties or even to give data from which argument might proceed or a relation between properties and structure might be inferred.

It is to supply this absolute gap in our knowledge—which causes thousands and millions of dollars of waste annually—that the Forestry Division has entered upon a comprehensive and systematic investigation which has become known under the name of "The Government Timber Tests".

This investigation, the most comprehensive of the kind ever undertaken anywhere, in this country or in Europe, differs from all former attempts in similar direction in this, that it starts out with the fullest recognition of three facts:

(1) That in order to establish reliable data as to mechanical properties of our timbers, it is necessary to make a very large number of tests, by which the range as well as average capabilities of the species is determined.

(2) That in order to enable us to make the most efficient practical application of the data thus obtained, it is necessary to know the physical and structural conditions of the test material and bring these into relation with the best results.

(3) That in order further to deduce laws of relation between mechanical properties and the physical and structural conditions, as well as the conditions under which the material was produced, it is necessary to work on material the history of which is thoroughly known.

Briefly, then, to solve the problems before us, it is necessary to make our tests on a large number of specimens of known origin and known physical condition. While the tests in themselves appeal at once and first to the engineer, inasmuch as, by their great number, they will furnish more reliable data regarding the capabilities of the various timbers, the chief value and most important feature of the work lie in the attempt to relate the mechanical properties to the structure of the material and to the conditions under which it was produced.

We are not only concerned to know that a stick of this species of tree will bear a given load, but we want to be able to tell why this stick of the species will bear so much and why the other stick of the same species will bear only half as much; why the timber grown in this locality is found generally superior to that of the same species grown in another locality, etc.

When we have established such knowledge, then it will be possible for an engineer not only to specify his timbers intelligently, but also to inspect them and to know whether or not they come up to his specifications. To be sure, we are not now quite without some knowledge regarding these matters, although few users of wood seem aware of it. But not only is this knowledge scanty, it is not quite certain or capable of general application, and the results and deductions of one investigator may often be found contradicted by another or by the same authority after further investigation. We know that there are differences in quality, at least for some timbers, in sticks from different parts of the tree: not only the heartwood differs from the sapwood, but also the butt log from the top log.

While some experiments would lead us to believe that specific weight is a fair expression of the strength of timber of the same species, yet it would be hazardous to rely upon this factor without regard to other physical conditions and structural features of the timber.

Such "ring-porous" woods as the oaks and ash show the greatest strength and elasticity when their annual rings are wide, while the slow-grown mountain oak seems to excel in stiffness. From conifers, on the other hand, according to Hartig, the slow-grown timbers seem to exhibit superior quality; hence those from rich soils are not desirable. This again has appeared doubtful, or at least true only within unknown limits, from Bauschinger's experiments, who showed that tensile strength in pines was independent of the total width of the annual ring, but dependent on the ratio between the spring wood and summer wood.

That wet soil produces brittle, dry or fresh soil tough timber, is believed but needs proof. Contrary to general opinion, the time of felling seems to be without influence on the strength of pines. The degree of seasoning, on the other hand, seems to increase the strength, although it would still have to be found out whether the manner and rapidity of seasoning may not change this result. Toughness or capacity for bending without rupture, on the contrary, is claimed to be inversely proportionate to seasoning.

Carriage-makers claimed "that the white oak when grown in the South loses its peculiar toughness, by which it excels in the North." We have shown by actual tests that this is not the case, and claim the exact opposite from physiological reasons."

Notes & Comments.

Work on the Yolo City Hall is to be begun immediately.

Work will soon be commenced on the Nevada Bank at Reno.

The Insane Asylum at Stockton is now lighted entirely by natural gas.

The lumber mills in Seattle and vicinity have formed a combination to maintain prices and stop the cutting of rates.

In London it is proposed to make the use of fire-resisting materials compulsory in the construction of important and extensive buildings.

Wharf and Pier room along the water front of San Francisco is getting scarce. A number of passenger and freight vessels are awaiting wharf accomodation.

The house laundry comes in for a large share of benefits from the gas heater, while the irons of the ironing table are warmed up to the work by the same means.

Gilroy, California, a town of about 1,600 inhabitants, has recently voted $50,000 bonds for the improvement and extension of its water-works system. Good water in abundance is a convenient sanitary necessity, and an economical fire protection.

The uses of wood pulp are being extended from time to time into the various departments for finishing and decorating of buildings. It now being used as the basis of a plastic compound to serve as a substitute for lime mortar in covering and finishing walls.

Iron in Butte.—Though no iron has evet been worked in this county yet several large deposits of it are known to exist. One of these is on the land of J. M. Rutherford, a little northeast of Wyandotte. This would not be more than seven or eight miles from the Northern California railroad. The deposit is said to be very rich. Another valuable bed of chrome iron is found near Magalia. This is twenty-four miles north of Oroville, the county seat, and in the mountains at an altitude of something over 2,000 feet. The bed is large and extensive, yet little attention has been paid to it, and we are not able to give any details concerning it.—*Oroville Register.*

Prof. Sorokin, of Kajan, in dealing with the various parasitical destroyers of wood, and particularly the dry-rot (Merulis lacrymanus), finds that a current of air destroys the parasite in twenty-four hours; light is also an obstacle to its growth. When exposed to the simultaneous action of light and a draft of air, drying up ensues within a few hours. The sprinkling of wood with a solution of common salt prevents the appearance of dry-rot. The greater the concentration, the more durable is the protective effect. A solution of sulphate of copper, particularly if concentrated, is preferable to the solution of common salt. Carbolic acid destroys the Merulis very rapidly. Ordinary birch tar is a very efficacious agent against dry-rot. Beams and interior surfaces of boards should be coated with it to make it effective.

Illustrations

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Works of the Edison Light and Power Company in course of erection on Jessie street, San Francisco, California, is from designes by Messrs. Percy & Hamilton, Architects of this city. The building has a frontage of 165 feet, a depth of 80 feet, and a height of 53 feet. All the foundations are of cement concrete, walls faced with stock bricks. The foundation for stack is a single slab of concrete 28 feet square and 9 feet thick. The stack is 18 feet 6 inches for outside diameter at base, and 175 feet in hight, and the flue 12 feet in clear. The inside of flue is lined 9 inches thick to a height of 57 feet 6 inches with fire-bricks, and thence with common bricks to top. The cup of stack is of concrete 17 feet 6 inches diameter and 16 feet in height.

The building is divided into two portions, engine and boiler rooms. The boiler room is the entire height with no intervening supports, the whole roof being supported by steel trusses 17 feet deep. The trusses are made of this depth for the support of coal bunkers, the coal being dumped into hoppers under sidewalk, and carried by endless hoists to the bunkers, and from thence through chutes to the boilers. The engine room portion will have three floors and gallery, all hung from the roof trusses, except the first floor which will be supported from basement. The foundations for engines are of concrete 9 feet thick. In the boiler room there are twenty-seven boilers of 7,000 horse power.

The building throughout is built in a most substantial manner to withstand the continual jarring of machinery and dynamos. Elevators are provided for lifting machinery, etc.

The Edison Light and Power Co., are the successors of the California Electric Light Co., and the buiding illustrated is known as "Station C".

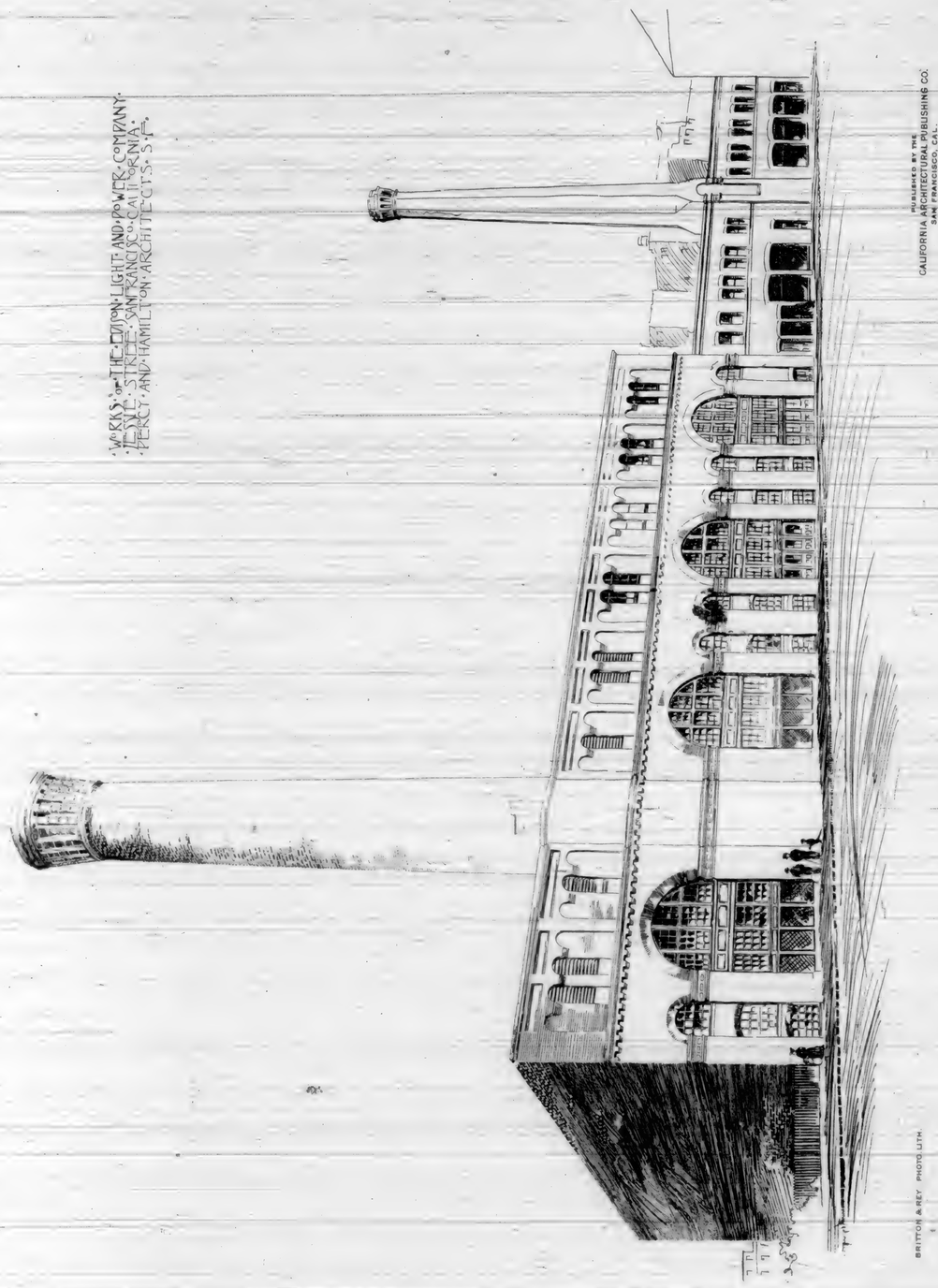
DESIGN for a house to be erected at Hyde Park, Kansas City, for Miss Annie Bernard. Mr. Willis Polk of San Francisco, Architect. The exterior finish will be of California red-wood shingles to sill-course, and above this Oregon split shingles, all set 2½ inches to the weather. The wood work of the principal rooms will be of red-wood finished to retain their natural color.

The design has been worked out by Mr. Daniel Polk, brother of Mr. Willis Polk, who will go to Kansas City to superintend this structure, with other work in hand there.

THE design for a Suburban Residence is by Mr. Clarkson Swain.

WE are indebted to the Japanese Journal of Architecture *Nagata Chio Ichime*, Tokyo, for the Illustration of the Building in Japan.

WORKS OF THE EDISON LIGHT AND POWER COMPANY.
FIRST STREET, SAN FRANCISCO, CALIFORNIA.
PERCY AND HAMILTON, ARCHITECTS, S. F.



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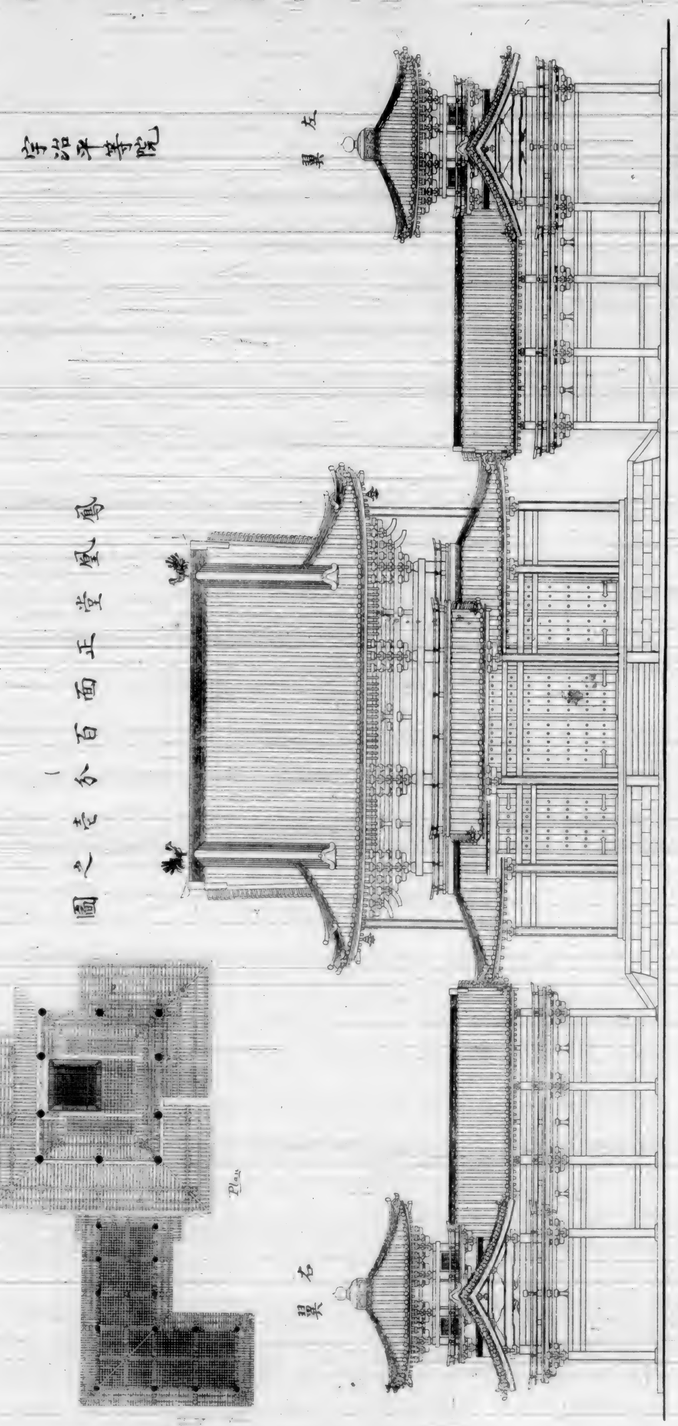

Plan.

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Buildings — Japan.

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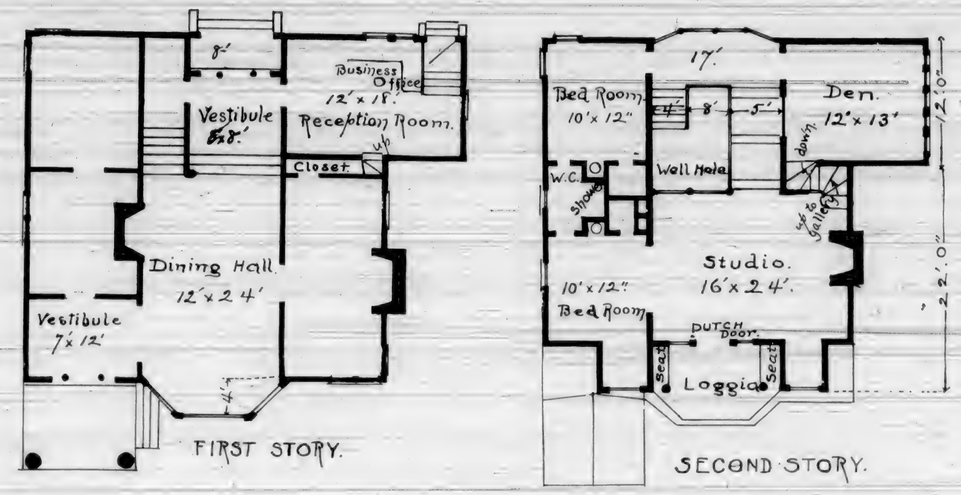

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JUNE 1892. THE CALIFORNIA ARCHITECT AND BUILDING NEWS. VOL. XIII. NO. 6.

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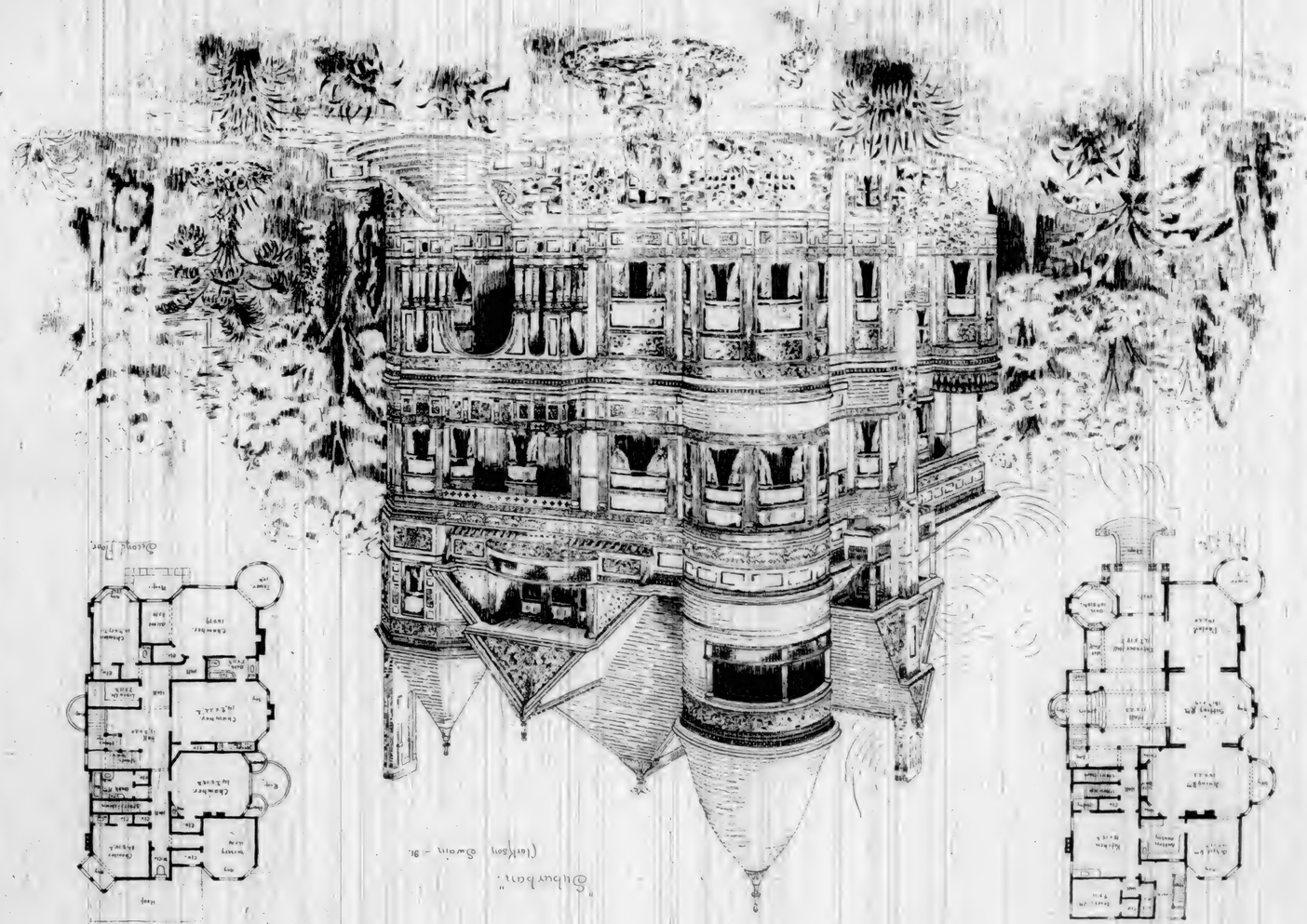


ROYAL INSTITUTE OF BRITISH ARCHITECTS
MDCCCXXXIV

ARMATURE AND FIELD-MAGNET WINDING by Edward Frevert, illustrated, published by Bubier Publishing Co., Lynn, Mass., and for sale by Osborn & Alexander, 401 Market St., San Francisco, Cal. Price $1.50, size 5x7 inches, 113 pages.

This is a new book full of practical working directions for armature and field-magnet winding for Dynamos and Motors, with descriptions of some apparatus made by leading manufacturers. The great experience and ability as an author enables him to give the directions which workmen so often need. The illustrations and descriptions are very clearly set forth, and in a manner to be readily understood. It covers the whole ground, and should be carefully read by all who would understand the subject to which it is devoted.

CENTRAL STATION MANAGEMENT AND FINANCE, by Horatio A. Foster and published by C. C. Shelley, New York, and for sale by Osborn & Alexander, 401 Market St., San Francisco, Cal. Price $1.50. This is a work that deals with the question of station management in a practical manner to the end that electric lines of travel may be worked in an economical manner. A carefully formulated system is outlined, tables and blanks prepared with directions for keeping and making reports.

THE PAINTERS ENCYCLOPÆDIA, by Franklin B. Gardner, published by M. T. Richardson, New York, and for sale by Osborn & Alexander, 401 Market street, San Francisco, Cal., price $1.00, size 5x7 inches, 427 pages. As is indicated by its title, the book is a dictionary containing a large collection of valuable information. The author evidently knows what he is writing about, and every page contains matters of interest to those who are connected in any way with painting or color decoration.

This is a work which should find favor with students and practical men who have no time to wade through more extensive books.

THE WEEKLY POST INTELLIGENCER of Seattle, Wash., of June 9th, gives an account of the founding of the Territory and finally the State of Washington.

The current issue of THE WEEKLY BULLETIN OF NEWSPAPER AND PERIODICAL LITERATURE, published at 5 Sumerset St., Boston, is twice its usual size, containing a classified index of 1300 articles from recent numbers of the periodical press.

The Bulletin catalogues the important articles in the leading daily and weekly papers and the monthly magazines of the United States and Canada, including THE CALIFORNIA ARCHITECT AND BUILDING NEWS. Its value to readers, writers, and students, is sufficiently indicated by its title, and, although still in its first volume, its success as evidenced by the current issue is a surprise to no one acquainted with its plan and purpose.

THE COSMOPOLITAN for June contains more than its usual quota of ideas relating to Art. The chapter on "Modern Life and the Artistic Sense," by Walter Crane, deals with architecture and art as represented in the great commercial centers of civilization at the present time.

LIPPINCOTTS'S for June, contains among other articles, "The Struggle for the West," giving an account of the first settlement of Oregon.

THE ENGINEERING RECORD for May 28th, contains a detailed description and illustration of the construction of the conical roof of the Boston Chamber of Commerce Building. Also a description of the hot-water heating of a Hartford apartment house.

THE AMERICAN MICROSCOPICAL JOURNAL, has a chapter on "Plant Growth and the Terminal Bud".

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. — OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. — JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. — L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. — O. BROOKS, Treas.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. — H. G. JARMAN, Sec.

AT the June meeting of the San Francisco Chapter of the American Institute of Architects, Mr. Willis Polk was elected an active member.

It was decided to give a preliminary dinner as soon as the prize medals should be ready, and later in the season to have an exhibition when it is expected that the interests of the Architects will bring out a full showing to the public.

EFFECTIVENESS in design is that which secures admiration, or gives pleasure without effort at ostentation. This desirable effect may be attained by the breaking up of the sky-line, by heavy projections giving strong shadows, or the artistic irregularity of the plan.

The cottage may partake of the picturesque beauty in harmony with the site as well as the more pretentious mansion.

POPULAR TALKS ON LAW.

By Wm. C. Sprague.

WHEN IS A CONTRACT BY CORRESPONDANCE COMPLETE.

HS a first requisite to the forming of a valid contract, there must be a meeting of minds of the parties thereto. An offer can be revoked before its acceptance, but after the acceptance the offer becomes a promise. The time of acceptance of the offer is the moment of the meeting of minds. It is not a difficult thing to determine this moment in the case of contracts made in the presence of both parties, but the question becomes difficult and very important when the offer and acceptance are made by letter, telegram, messenger, or otherwise. At what moment is the contract consummated? Is it the moment of the posting of the answer, or the receipt of same? Is it the moment the message is started on its way or the moment it reaches and is thus communicated to the offerer? In general a communication of an acceptance is necessary to a forming of the contract. Is this essential requisite complied with when the party to whom the offer is made does all he can do to deliver his acceptance (whether it ever reaches its destination or not) or must the acceptance have reached its destination before it can have the effect of binding the parties?

It is now decided that the acceptance is made when the acceptor has done all that he can to communicate his intention. The moment then of despatch of acceptance is the moment the contract has its beginning and once having despatched the acceptance it is irrevocable. It is understood that one making an offer by letter is making that offer continuously during every instance of the time the letter is traveling, so that if the letter is delayed in transit, and on its receipt a letter is at once posted accepting the offer, the contract is complete, even tho' in the mean time the party offering may have sold the goods which were the basis of the offer. Suppose the letter of acceptance be lost and does not reach the party offering. Is there a contract? The logical result of the position that the contract is made when the acceptance is posted leads us to infer that the question demands an affirmative answer, and such is the law. The settled rule in our Courts is that the time of mailing the acceptance is the time the contract is complete, and that the subsequent fate of the letter is immaterial. This is so on the theory that the post office is the agent of the person who makes an offer by post, and the delivery of the letter to the agent of the person making the offer.

Suppose that a letter revoking the proposal is mailed before the acceptance is mailed, this does not affect the result unless the revocation is received before the acceptance is mailed. One in making a proposal may state it as a condition to the making of the contract that the notice of the acceptance be received in order to be binding. Many other interesting and important conditions arise, a treatment of which we postpone until our next.

The above article on Contracts is from the Collector Publishing Co.

It is stated that one out of every seven land owners in Great Brittain is a woman.

High backed chairs the fac-simile of parliamentary chairs are used in halls; great oaken settles which lift up and in which can be stored away many odds and ends are also used.

EXPIRED PATENTS RELATING TO BUILDING.

E. G. Fethouson—Sash Fasteners	161,020
W. L. Potter—Step Ladder	161,059
J. E. Emerson—Handle for Cross Cut Saws	161,105
A. C. White—Mehted of Enameling Mouldings	161,187
W. Lochefsky—Method of Embossing Wood	161,290
J. A. Brown—Machine for Cutting Veneers (re-issue)	6,341
C. H. Craig—Blind Fastener	161,329
W. Kreitzer—Window Sashes	161,342
D. C. Prescott—Saw Mill	161,523
J. Seade—Fastening for Bell Pulls	161,359
H. Winn—Door Locks	161,371
W. Baldwin—Combination Lock	161,375
C. Diebol—Tile Moulding Machine	161,391
T. M. Losie—Metallic Roofs	161,419
D. Moore—Hatch Indicating and Closing Apparatus	161,429
F. Schwamb—Cutter Head for Wood Working Machines	161,447
J. J. Curran—Lumber Drier	161,490
L. T. Scofield—Fire-proof Walls and Ceilings	161,356
L. T. Scofield—Fire-proof Walls and Ceilings	161,357
G. S. Young—Scroll Sawing Machines	161,585
G. S. Williams—Jig Saws	161,583

The above list of recently expired patents, relating to buildings, is supplied us by Alexander & Davis, Patent Attorneys of Washington, D. C. We have engaged this firm to supply us regularly with lists of expired patents relating to this line of inventions, and these lists will appear regularly hereafter, so that our readers will be kept promptly advised of the patents that become public property. Copies of these patents may be had of the above firm at the official cost (10 cts.) with postage added.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

AUTHORITY TO CREATE LIEN.—Where a vender advances money to his vendee, and, by written contract agrees to convey the land as soon as foundations for a house shall be constructed thereon by the vendee, and take a mortgage for the land and advances, the vendee has "authority," before the delivery of the deed to create liens on the land for labor and materials used in the construction of such house, under the statute, which provides that any person to whom a debt is due for labor or materials furnished and used in the erection of a building upon real estate, by virture of an agreement with or consent of the owner, or any person having "authority" from or rightfully acting for such owner, shall have a lien upon the interest of the owner in the land.

Caren v. Stubbs, Supreme Judicial Court of Massachusetts, 30 N. E. Rep. 219, 133C.

ACTION ON LEIN AGAINST JOINT OWNERS.—When owners of adjoining lots jointly contract for the erection of one building upon the entire tract, they may be jointed as defendants in a suit to foreclose a mechanic's lien on such building. Where the plaintiff in such an action dismisses as to one defendent and seeks to enforce his lien, proportionately reduced, as to the others, the latter will not be heard to complain of such apportionment.

C. B. Carter Lumber Co. v. Simpson, Supreme Court of Texes, 18 S. W. Rep. 812, 80C.

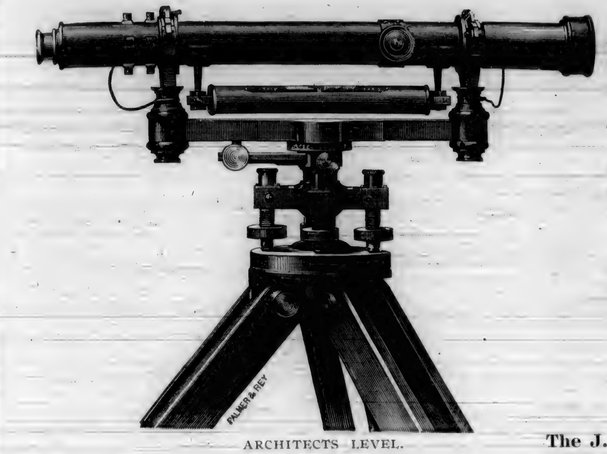
MATERIAL LIEN IN TEXAS.—Where a person enters into a contract with the owner of a building to furnish material for the building, and there is no middleman or other contractor intervening between them, he must be deemed an "original contractor," within Sayles, Civil St. art. 3165, allowing such a person four months within which to file a lien, and is not therefore, confined to the thirty days allowed a "day-laborer or other person" for that purpose. Where a person enters into a contract to furnish building material, and the amount of the material, as well as the times when it is to be delivered, is not fixed by the contract, but left to the needs of the party requiring it, the time at which the indebtedness occurs, and from which the four months begins to run, is the date of the sale and delivery of the last item.

Mathews v. Waggenhaenser, Brewing Co., Supreme Court of Texas, 19 S. W. Rep. 150, 148C.

DAMAGES FROM FAILURE TO PERFORM CONTRACT.—In an action by a sub-contractor against a contractor for breach of contract in failing to have certain preliminary work done, thereby causing delay, and in refusing to allow plaintiff to perform a certain part of the work, loss of the profits which plaintiff might have made as a contractor, but for the delay, doing some other work, cannot be considered.

O'Connor v. Smith, Supreme Court of Texas, 19 S. W. Rep. 168, 63C.

BUSINESS MOSAICS.



ARCHITECTS LEVEL.

The A. Lietz Co., at 422 Sacramento street, manufacture and keep on hand for sale Scientific Instruments of a superior quality. Upon a recent visit we noticed a very useful and convenient level to be attached to a measuring tape. A pocket instrument for taking the heights of rooms, buildings, trees, etc., cost $15.80; also inclinometers, compasses, barometers, thermometers of all the best makers, and measuring tapes for engineers and architects. Wood rules with white celluloid scales from $1.50 to $3.00. We were shown a superior level for architects use with long telescope, also a new styleof level or transit made especially for architects' use. This instrument will set off 90 degrees or right angles on the plan, while the telescope can be used for getting or testing plumb lines. The cost is about $150.00.

Todt & Peters, 53 Beal St., general house smiths, manufacture all kinds of wrought iron work for buildings.

The Gurney Hot Water Heater, J. J. Lawton & Co. Agents, 418 Fulton street of this city, is giving satisfaction wherever used. Architects will find this a very economical and practical apparatus for the purpose.

The Royal Metalic Paint as manufactured by the San Francisco Mineral Paint Co. of this city, has in many instances supplanted the other metalic paints. Painters who have used it recommend it highly on account of the "body" and ease with which it is applied. For farm buildings it seems to have no equal.

The Rapid Safety Filter in our office does its work admirably and has become a great favorite. Try one and you will not do without it.

Worthington Duplex Steam Pumps are suited for all kinds of work where pumps are required. The large hotels and boarding houses are most of them fitted with these pumps. For fire and elevator pumps in buildings they are unsurpassed. See advertisement page xvi.

The Hercules Gas Engine is the correct apparatus for running pumps, elevators, etc. Persons intending to use power in buildings should look into this matter.

The "Blount" Door Check.—This is a genuine Anti-Swear arrangement. Just try one and coincide with us. Try it you'll like it.

"What would you do if you were in my shoes?" asked Dull Times. "Black 'em, and then advertise in the CALIFORNIA ARCHITECT," replied Get There.

Clear money can be made by having your silver plating done at Denniston's.

The J. L. Mott Iron Works have issued a catalogue of designs for Fountains, ranging from the simple wall cup to elaborate monumental structures set off with emblematic sculptured figures for special situations. Parties who intend to put up either private or public fountains, will find it to their advantage to consult with this firm or their representatives. All the output from these works has an artistic value unsurpassed by any other manufactory in the country. See advertisement on page viii.

Copyright 1891 by "The J. L. Mott Iron Works".

FOUNTAIN.

Messrs. Gladding, McBean & Co., are at present, making large quantities of terra-cotta work for buildings. The building in course of erection on the corner of California and Sansome streets in this city, will have all the portion above the stone work finished in bluff colored Roman brick and architectural terra-cotta. Messrs. Gladding, McBean & Co. have in preparation the architectural terra-cotta work for seven large buildings in course of construction at Tacoma. This firm has a new design for hollow arch fire-proof construction. The cut shows that the artistic modeling of their work is of a high order.

Edward Denny & Co., 418 Montgomery street, of this city, have on hand a full line of Albert Levy's blue print papers. This firm also makes blue or black prints of drawings for Architects. Architects in the smaller towns will find it to their advantage to send their drawings to Messrs. Denny & Co. for copying. It is cheap and saves work.

The Gardner Sash Balance Co. are now using a ribbon of Aluminium bronze, which, being "wire rolled" is claimed as superior to anything in that line heretofore used. Chas. A. Hare, 54 Mission street of this city is the general agent. See advertisement on page vii.

The objection that everyone of acute artistic taste has long entertained to a glossy and varnished finish on paint has now become almost universal. The consequence is that paint with a dull, dead surface, or more frequently yet, a stain, is used on shingles or clapboards.

Such stains or paints, from the very fact that the surface is rough and therefore more easily wet in rain, are peculiarly liable to the strong chemical action of rain followed by sunlight, which results in blackening.

We notice often on modern stained houses the change of greens to black or dark gray. To avoid this the stain, whether bought or made by the painter, should contain no Prussian Blue. A drop of soda or potash lye will destroy the blue of a Prussian Green, doing in a moment what sun and rain will do in a few weeks.

But we often notice yellows and other light colors in dull surfaced paints and other stains, blacken badly on the overhanging and exposed positions. This is caused, *not by dust*, but by the use of ordinary linseed oil with a dryer. To avoid this, the oil has to be prepared by a slow process with air, which gives it the drying properties necessary without any tendency to blacken. We believe that the Creosote Stains are the only exterior coloring that contain linseed oil so prepared, and we know that they are the only exterior coloring that will not blacken.

Wire Lathing as furnished by the John A. Roebling's Sons Co., is a superior article for the purpose. This company manufactures wire of all kinds, such as is use for electric conductors, wire rope, etc., either or iron, steel, brass or copper.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., June 2, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 1st day of July, 1892, and opened immediately thereafter, for all the labor and material required for the Approaches to the U. S. Court House and Post Office Building at Helena, Arkansas, in accordance with drawing and specification, copies of which may be had at this office or the office of the Superintendent at Helena, Ark.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Approaches to the U. S. Court House and Post Office Building at Helena, Arkansas", and addressed to

W. J. Edbrooke,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington D. C., June 13, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 20th day of July, 1892, and opened immediately thereafter, for all the labor and materials required to fix in place the low-pressure, return-circulation, steam heating and ventilating apparatus for the U. S. Custom House and Post Office building at Port Townsend, Washington, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Port Townsend, Washington.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated, will be returned to the bidder.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Low Pressure, Return Circulation, Steam Heating and Ventilating Apparatus, etc., for the U. S. Custom House and Post Office Building at Port Townsend, Washington, and addressed to

W. J. Edbrooke,
Supervising Architect.

CITY BUILDING NEWS.

Bagley Pl. near O'Farrell. Four-story brick building; owner, Jose Guardiola; architect, Clinton Day; contractor, Jno. T. Grant; cost, $13,623; signed, May 7; filed, May 9; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Bush and Chelsea. Painting, graining and varnishing; owner, Mrs. M. W. Newman; architect, P. R. Schmidt; contractor, J. A. Commary; cost, $2,288; signed, May 6; filed, May 9; payments, 1st day of each month, 75 per cent., as work progresses; balance, 35 days.

Bush and Gough. Church, chapel and school-room; owner, Trinity Church of S. F.; architect, A. Page Brown; contractors, McGowan & Butler; cost, $105,500; signed, May 17; filed, May 20; payments, 1st and 15th day of each month, 75 per cent. as work progresses; balance, 35 days. The contractors agree to build the mortuary chapel for the additional sum of $7,500.

Bush and Gough. Stone work, steps and copings; owners, McGowan & Butler; orig. con.; architect, A. Page Brown; sub. contractor, D. O'Neil, cost, $34,772; signed, May 19; filed, May 23; payments, 15th day of each month 75 per cent as work progresses; balance, 35 days; $350, extra for three buttresses.

Bush near Lyon. One-story cottage; owner, Mrs. M. B. Decker; contractor, G. G. Gillespie; cost, $2,050; signed, May 3; filed, May 4; payments, $883, frame up; $883, brown coated; $883, white coated; $386, completed; $515, 35 days.

Bush near Montgomery. Alterations and additions; owner, Geo. F. Hooper; architects, Shea & Shea; contractor, John T. Grant; cost, $9,228; signed, April 27; filed, April 29; payments, $2,307; brick work up to line of second floor; $2,307, brickwork finished and roof on; $2,307, completed; $2,308, 35 days.

California near Gough. Plumbing and gas-fitting; owner, Jos. Hyman; architects, Salfield & Kohlberg; contractors, Ickelheimer & Bros.; cost, $1,480; signed, April 26; filed, April 29; payments, $500, rough work in; $610, accepted; $370, 35 days.

California near Gough. Concrete work; owner, Jos. Hyman; architects, Salfield & Kohlberg; contractor, H. Stettin; cost, $1,555; signed, April 22; filed, April 29; payments, $500, foundations ready for 1st floor joists, $695, accepted; $380, 35 days.

California near Gough. Lathing and plastering; owner, Jos. Hyman, architects, Salfield & Kohlberg; contractor, D. S. Samaras; cost, $1,207; signed, April 27; filed, April 29; payments, $500 second coat of brown mortar on; $297, completed; $260, 35 days.

Capp near 24th. Three-story frame; owner, Geo. Asmussen, contractor, Wm. Helbing; cost, $8,400; signed, May 18; filed, May 18; payments, $1,000, enclosed and roof on; $1,500 brown mortar on; $1,500, completed; $4,000, 35 days.

Cassell Ave. near Clover Alley. Cottage; owner, A. R. Steinburg; contractors, Patterson & Person; cost, $2,200; signed, May 13; filed, May 17; payments, $550, frame up; $550, brown mortar on; $550, completed; $550, 35 days.

Clay and Pierce. Two-story frame; owner, Mrs. M. E. McBride; architect, M. J. Welsh; contractor, Henry Rehling; cost, $5,500; signed, May 3; filed, May 3; payments, $1,030, frame up; $1,030, brown coated; $1,030; white coated; $1,035, completed; $1,375, 35 days.

Dehone near 17th. Two-story frame; owner, Jos. Campbell; architect, P. W. Macdonald; contractor, J. L. McLaughlin; cost, $1,715; signed, May 12; filed, May 13; payment, $566, frame up; $566, brown mortar on; $583, 35 days.

Dolores near 16th. Three flats and fences; owner, J. M. Peoples; contractor, J. C. Rogers; cost, $5,150; signed, May 7; filed, May 9; payments, $1,200, frame up and all lumber on ground; $1,300, roof covered and brown mortar on; $1,300, completed; $1,350, 35 days.

Dolores near 25th. Two-story frame; owner, Susie A. Roche; contractor, W. W. Rednall; cost, $2,815; signed, May 1; filed, May 2; payments, $715, building enclosed; $700, brown mortar on, $700, completed; $700, 35 days.

Eddy and Pierce. To build; owner, Dennis Kennedy; architect, T. J. Welsh; contractor, J. J. Manseau; cost, $2,700; signed, May 14; filed, May 16; payments, $675 frame up; $675, brown mortar on; $675, accepted; $675, 35 days.

Eleventh and Howard. Two, 2-story frames; owner, D. Lally; architect, C. J. I. Devlin; contractor, John Foster; cost, $4,500; signed, May 18; filed, May 19; payments, $900, foundations ready for frames; $500, frames up; $750, enclosed and roof completed, $500, brown mortar on; $1,000, ready for painting, $925, completed; $1,125, 35 days.

Elizabeth and Guerrero. Two-story frame; owner, A. B. Knox; contractor, A. S. Cook; cost, $3,675; signed, May 12; filed, May 12; payments, $918.75, frame up; $918.75, brown mortar on; $918.75, completed; $918.75, 35 days.

Fell and Fillmore. Alterations and removing; owner, Rev. Jas. Flood; architects, Shea & Shea; contractors, M. J. Feely; cost, $2,665; signed, May 16; filed, May 20; payments, $850, church moved into position and ready to lower; $1,152, completed; $663, 35 days.

Fell near Laguna. Two-story frame; owner, Maria Fallon; architects, Shea & Shea; contractors, Bulger & Campbell; cost, $2,850; signed, April 20; filed, May 3; payments, $534, frame up; $534, brown coated; $534, hard finished; $835, completed; $713, 35 days.

Fifth Ave. near Pt. Lobos. Frame building; owner, E. F. Verdier; contractor, B. K. Albertson; cost, $2,575; signed, May 17; filed, May 19; payments, $800, 1st floor joists on; $625, roof on; $625, brown mortar on; $625, white plaster on; $400, completed.

Filbert and Laguna. Flats and store; owner, Francis Marx; architect, W. Curlett; contractor, M. S. Yerxa; cost, $8,000; signed, May 14; filed, May 17; payments, $600, 1st floor joists laid; $1,200, frame and chimneys up; $1,000, enclosed and roof on; $1,000, brown mortar on; $1,000, frames set and plastered; $1,300, completed; $2,000, 35 days.

Fillmore and Grove. To build, plumbing excepted; owner, M. J. Brady; architect, T. J. Welsh; contractor, Allen McDonald; cost, $5,160; signed, May 16; filed, May 17; payments, $967.50, frame up; $967.50, brown mortar on; $967.50, white coat on; $967.50, completed; $1,290, 35 days.

Florida near 22d. One-story cottage; owner, Wm. G. Pennycook; architect, Wm. H. Wharff; contractor, Hiram E. Hatch; cost, $1,673; signed, May 2; filed, May 3; payments, $900, frame up; $900, enclosed and chimneys built; $900, plastered; $848, completed; $425, 35 days.

Geary near Hyde. Plumbing, gas-fitting, etc.; owner, E. C. Hisgen; architect, T. J. Welsh; contractor, W. D. Hobro; cost, $1,445; signed, May 3; filed, May 9; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Green and August. Excavating, carpenter and brick work; owner, Christiane Sweeney; architects, Salfield & Kohlberg; contractor, F. Renfort; cost, $2,800; signed, May 4; filed, May 5; payments, $750, frame up; $600, brown coated; $750, accepted, $700, 35 days.

Greenwich and Stockton. To build, plumbing excepted; owner, Antonio Rodrigues; architects, Townsend & Wyneken; contractor, August Lund; cost, $2,710; signed, May 6; filed, May 7; payments, $400, frame up and roof boarded; $600, brown coated; $530, white coated; $500, completed; $680, 35 days.

Guerrero near Cumberland. To build; owner, C. W. Welsh; architect, J. M. Curtis; contractor, James Campbell; cost, $6,400; signed, May 2; filed, May 3 payments, ¼, enclosed; ¼, brown coated; ¼, completed; ¼, 35 days.

Guerrero near 17th. Alterations and additions; owner, Samuel Beatty; contractor, R. B. Hicks; cost, $2,500; signed, May 10; filed, May 20; payments, $500, old house raised and outside frame up; $740, ready for plaster; $500, brown mortar on; $500, plastered and outside finish on; $500, completed.

Harrison near Third. Alterations and additions; owner, Margaret Kearney; architect, H. A. Mitchell; contractors, J. Rush & J. W. Barrett; cost, $2,270; signed, April 27; filed, April 30; payments, $400, old house complete, 1st floor joists laid in new house; $400, frame up and rustic on; $400, brown coated; $400, doors hung and primed; $670, accepted.

Harrison near 3rd. Alterations and additions; owner, Caroline Delobe; architect, Emile Depierre; contractor, J. R. Whalen; cost, $1,300; signed, May 17; filed, May 25; payments, $300 house raised, studding up and building encased; $300, plastering complete and ready to put finish on; $450, completed; $450, 35 days.

Hayes bet. Gough and Octavia. Three-story frame; owner, B. Levy; architects, Townsend & Wyneken; contractor, R. Parker; cost, $4,525; signed, May 23; filed, May 25; $800, frame up; $800, brown mortar on; $800, white coated; $800, completed; $1,325, 35 days.

Hayes near Buchanan. Alterations and additions; owner, E. D. Vecchio; architect, F. B. Wood; contractor, C. L. B. Jones; cost, $2,122; signed, May 9; filed, May 16; payments, $400, building raised and rustic on except front; $660, brown mortared; $600, completed; $562, 35 days.

Henry near Sanchez. Three-story frame; owner, James M. Juhlern; architect, H. Geilfuss; contractor, Tom. Muller; cost, $6,265; signed, May 20; filed, May 20; payments, on July 12, 1892, 75 per cent. of value of work done; after which date 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Howard near 15th. Excavating, raising, carpenter work, etc.; owner, F. W. Runge; architect, H. Geilfuss; contractor, F. L. Hansen; cost, $5,707; signed, May 18; filed, May 18; payments, 1st and 15th day of each month, 75 per cent. as work progresses; balance, 35 days.

Hyde near Turk. Alterations and additions; owner, estate of P. Kelly; architect, T. J. Welsh; contractor, C. L. Lombardi; cost, $7,728; signed, May 10; filed, May 11; payments, $1,447.50, frame up; $1,447.50, brown coated; $1447.50, white coated; $1447.50, completed; $1930, 35 days.

Hyde near Turk. Plumbing, gas-fitting, etc.; owner, Estate of P. Kelly; architect, T. J. Welsh; contractors, Ford Bros.; cost, $1,025; signed, May 10; filed, May 11; payments, $600, rough work in; $600, completed; $407, 35 days.

Iowa near Solano. Frame building, two flats; owner, Jas. McHugh; architect, W. C. Dickerson; contractor, J. C. Rogers; cost, $2,525; signed, May 19; filed, May 19; payments, $625, frame up; $625, roof and brown mortar on; $625, completed; $850, 35 days.

Jackson and Powell. Addition to a two-story frame; owner, J. H. Drossel; architect, H. Geilfuss; contractors, Schutt & Kreeker; cost, $2,880; signed, May 19; filed, May 19; payments, 1st and 15th day of each month, 75 per cent. as work progresses; balance, 35 days.

Jersey near Noe. Cottage; owner, J. W. Lunny; architects, Townsend & Wyneken; contractor, J. C. Rogers; cost, $1,695; signed, May 9; filed, May 10; payments, $250, frame up and chimneys built; $300, brown coated; $270, completed; $275, 35 days.

Jones and Clay. Plumbing and gas-fitting; owner, Geo. W. Hooper; architect, F. B. Wood; contractor, R. H. Vance; cost, $1,695; signed, May 14; filed, May 21; payments, $600, rough work in; $600, completed; $400, 35 days.

Jones and McAllister. Desks and counters; owner Hibernia Savings and Loan Society; architects, Pissis & Moore; contractors, Fink & Schindler; cost, $2,820, signed, May 24; filed, May 25; payments, $2,115; completed; $705, 35 days.

Jones and McAllister. Grill work, etc., for counter; owner, Hibernia Savings and Loan Society; architects, Pissis and Moore; contractors, S. F. Novelty and Plating Works; cost, $1,750; signed, April 11; filed, April 30; payments $1,300, completed; $544; 35 days.

Jones and McAllister. All metallic furniture; owner, Hibernia Saving and Loan Society; architects, Pissis & Moore; contractors, Fenton Metal Manufacturing Co.; cost, $2,175; signed, March 24; filed, April 30; payments, $1,631, completed; $544, 35 days.

Jones and McAllister. Counter for banking room; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractors, Fink & Schindler; cost, $4,315; signed, April 11; filed, April 30; payments, $3,235, completed; $1,080, 35 days.

Jones and McAllister. Granite fence; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, O. E. Brady; cost, $2,000; signed, April 14; filed, April 30; payments, 1st, and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Mission near 10th. Alterations and additions; owner, Sarah Harney; contractor, F. W. Kern; cost, $1,800; signed, May 3; filed, May 4; payments, $950, 1st story studs set; $950, brown coated; $950, completed; $950, 35 days.

Pacific Ave. near Fillmore. All works to build; owner, Esther Greenberg; architect, M. L. Lyon; contractors, White Bros.; cost, $6,100; signed, May 21; filed, May 25; payments, $1,100, frame up; $1,100, building enclosed and chimneys complete; $1,100, plaster completed and standing finish on; $1,175, completed; $1,525, 35 days.

Post and Ophir Alley. Frame building; owner, Thos. McDonald; architects, Henriksen & Mahoney; contractor, Michael C. Lynch; cost, $14,500; signed, April 28; filed, April 29; payments, $2,719, rustic and roof on; $2,719, brown mortar and outside finish on; $2,719 white plaster finished and sashes glazed; $2,718, painting and varnishing finished; $5,625, 30 days.

Post and Ophir Alley. Plumbing, gas-fitting, etc.; owner, Thos. McDonald; architects, Henriksen & Mahoney; contractor, Jno. Doherty; cost, $3,250; signed, April 30; filed, May 3; payments, $1,355, rough work in; $1,080, completed; $875, 35 days.

Prosper near 16th. Two-story frame; owner, J. H. Taylor; architect, C. A. Parker; contractor, J. C. Nelson; cost, $2,505; signed, May 5; filed, May 19; payments, $1,878.75, completed; $625.25, 30 days.

Sacramento and Pierce. Lathing, plastering, etc.; owner, Mrs. K. D. Casey; architect, H. A. Schulze; contractor, Daniel O'Sullivan; cost, $1,275; signed, April 21; filed, May 2; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Sacramento and Pierce. Grading and artificial stone work; owner, Mrs. K. D. Casey; architect, H. A. Schulze; contractors, Gray Bros. A. S. P. Co.; cost, $1,649; signed, April 21; filed, May 2; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Broadway near Gough. Two-story frame; owner, Helen S. Treat; architect, H. A. Schulze; contractors, Ingerson & Gore; cost, $4,700; signed, May 13; filed, May 16; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Broadway near Hyde. Two-story frame and basement; owner, Helen Chase; contractor, Henry Jensen; cost, $3,400; signed, April 26; filed, May 19; payments, $850, framed; $850, brown mortar on; $850, white coated; $850, completed,

Beaver near Castro. Two-story house; owner, P. J. Gorman; contractor, J. Schuler; cost, $2,700; signed, April 25; filed, April 29; payments, $900, frame up; $600, brown coated; $600, white coated; $400, completed; $500, 35 days.

Sacramento and Pierce. Plumbing, etc., in nine two-story frames; owner, Mrs. K. D. Casey; architect, H. A. Schulze; contractors, Duffey Bros.; cost, $3,509; signed, April 21; filed, May 2; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Sacramento and Pierce. Carpenter, joiners' and mill work; owner, Mrs. K. D. Casey; architect, H. A. Schulze; contractor, A. Jackson; cost, $27,769; signed, April 21; filed, May 2; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Sacramento and Pierce. Painting, graining and whitewashing; owner, Mrs. K. D. Casey; architect, H. A. Schulze; contractor, Thos. Downing; cost, $3,750; signed, April 21; filed, May 2; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Sacramento near Drumm. One-story brick and concrete building; owner, Holmes Lime Co.; architect, Wm. Jones; contractors, Richardson & Child; cost, $6,833; signed, May 17; filed, May 17; payments, 1st Saturday of each month, 75 per cent. as work progresses; balance 35 days.

Sacramento near Laguna. Painting, varnishing, etc.; owner, John D. Siebe; architect, H. Geilfuss; contractor, John Quadt; cost, $1,490; signed, April 28; filed, May 16; payments, 1st and 15th day of each month, 75 per cent. as work progresses; balance 35 days.

Sacramento near Leavenworth. Two-story frame with basement; owner, Vicente Denis; architect, Chas. M. Rosseau; contractor, Wm. Linden; cost, $3,195; signed, May 10; filed, May 12; payments, $798.75, framed; $798.75, brown mortared; $798.75, completed; $798.75, 35 days.

Seventh and Natoma. Alterations and additions; owner, Mrs. A. Pincus; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $3,415; signed, May 10; filed, May 12; payments, $900, frame ■; $885 brown mortar on; $800, completed; $850, 35 days.

South Park and Second. Third-story frame; owner, F. Ruhland; contractor, C. Zwierlein; cost, $5,800; signed, May 6; filed, May 10; payments, $1,087, frame up and enclosed; $1,087, brown mortared; $1,087, white coated; $1,089, completed; $1,450, 35 days.

Steiner near Pine. Raising and constructing; owner, Mrs. D. Quinlan; contractor, F. V. Rushton; cost, $2,015; signed, May 20; filed, May 20; payments, $125, house raised; $150, brick foundation done; $250, brown mortar on; $175 plumber has pipes in; $40, electric bells in; $75, chimneys built; $550, completed; $515, 35 days.

Stockton near Bush. Alterations and additions; owner, B. C. Duffy; architects, B. McDougall & Son; contractor, Wm. Tegeler; cost, $7,150; signed, May 12; filed, May 13; payments, $700, building raised and first tier of joists in position; $800, frame up and rustic on; $1,000, roof and brown mortar on; $1,300, white coat on and ready for painting; $1,562.50, completed; $1,787.50, 35 days.

Sutter near Taylor. Raising, moving and all work; owner, Mrs. May H. Morris; contractors, Peterson & Olson; cost, $2,375; signed, May 20; filed, May 23; payments, $1,200, brown mortar on; $575, completed; $600, 35 days.

Tehema near 5th. Alterations and additions; owner, Isaac Jacobs; architect, P. A. Sioli; contractor, J. W. Fish; cost, $4,000; signed, May 2; filed, May 6; payments, $750, frame up and roof on; $750, brown coated; $750, white coated; $750, completed; $1,000, 35 days.

Third near Hunt. Alterations and additions; owner, Joseph Hume; architects, Shea & Shea; contractor, E. B. Gifford; cost, $2,240; signed, May 2; filed, May 3; payments, $840, building raised and brickwork ready for sidewalk beams; $840, completed; $560, 35 days.

Thirtieth and San Jose Ave. Two-story frame; owner, Margaretha D. Joost; architect, H. Geilfuss; contractor, F. W. Kern; cost, $4,135; signed, May 21; filed, May 21; payments, $775, frame up; $775, brown mortar on; $775, standing finish on; $775, completed, $1,035, 35 days.

Union near Gough. To build; owner, Geo. Wise; architect, W. H. Lillie; contractor, Joseph Kennedy; cost, $3,258; signed, May 5; filed, May 5; payments, $485, frame up; $486, enclosed; $486, brown mortar on; $486, standing finish on; $485.50, completed; $809.50, 35 days.

Union near Fillmore. Two-story frame and stable; owner, M. Kelly; contractor, G. G. Gillespie; cost, $2,800; signed, May 11; filed, May 16; payments, $525, frame up; $525, brown mortar on; $525, white coat on; $525, completed; $700, 35 days.

Vallejo near Sansome. Two-story tenements; owner, Ernest Buchel; architect, Wm. Schrof; contractor, F. V. Steinman; cost, $4,400; signed, May 21; filed, May 23; payments, $825, rustic and roof boards on; $825, brown mortar on, $825 white mortar on; $825, completed; $1,100, 35 days.

Waller near Ridley. Two-story flat; owner, Otto Schrader; contractor, J. C. Rogers; cost, $2,250; signed, May 14; filed, May 17; payments, $550, lumber on ground and frame up; $600, brown mortar and roof on; $600, completed; $600, 35 days.

Washington near Hyde. House moving, brick work, etc.; owner, Henry B. Pasmore; architect, B. J. S. Cahill; contractor, Geo. Connon; cost, $5,900; signed, May 21; filed, May 23; payments, $1,000, old house moved into position and frame up; $1,100, brown mortar on; $1,100, frames set and plastered; $1,225, completed; $1,475, 35 days.

Western Addition, one-half 50 vara lot. Church building; owner, South M. E. Church; architect, W. W. Polk; contractors, Wilton & Havard; cost, $7,389; signed, April 23; filed, April 29; payments, weekly as work progresses sufficient sum to pay all employees; and monthly, 75 per cent. of sums for materials furnished. Contractor to receive $1,563, extra for furnishing glass, laying basement floor, putting on the plaster and inside finish, painting, etc. Also to receive $2,835, to complete the entire building ready for use, including what has been done, except grading sewering, etc.; making the total cost, $11,767.

ALAMEDA COUNTY.

Baker Track, Berkeley. Two-story house; owner, F. H. Lawton; contractor, Geo. A. Embury; cost, $2,550; signed, April 28; filed, April 28; payments, $800, frame up; $800, enclosed, brown mortar on; $800, completed; $750, 35 days.

Benton near Central Ave. Two-story frame; owner, J. G. Farrington; contractors, A. W. Cattiani & Co.; cost, $3,082; signed, May 12; filed, May 12; payments, $1,000, rustic and roof shingles on and chimney built; $900, brown mortar on and exterior primed; $852, completed; $920, 35 days.

Block 52, Oakland. To build; owner, Philomena Barbetta; contractor, F. C. Bignami; cost, $3,050; signed, May 10; filed, May 13; payments, $760, frame up; $765, building enclosed; $765, brown mortar on; $760, completed.

Block 207, Evoy Tract. One-story cottage; owner, P. H. Maloney; contractor, Peter Ahern; cost, $1875; signed, April 29; filed, April 29; payments, June 1, 1892, $875; July, 1892, $531.75; $468.25, 35 days.

Block 74, Oakland. Three-story and attic rooming house; owner, Mrs. Pauline Mack; architect, S. B. Abbott; contractors, Pierce & Rusch; cost, $8,113; signed, April 28; filed, April 28; payments, $1,000, frame up and roof on; $1,000, walls covered and floor laid; $1,000, front and roof on; $1,000, interior finish completed; $1113, 35 days.

Bristol and 7th, Berkeley. To build; owner, Anton Thienger; architect, Wm. Schrof; contractor, Henry Gotsoh; cost, $2,425; signed, April 28; filed, May 5; payments, $600, frame up, roof boards on, chimney built; $600, brown mortar, roof and outside finish on; $600, white mortar on, exterior and interior finish on; $625, 35 days.

Broadway and 14th, Oak. An elevator; owners, Joseph McDonough; architects, Mooser & Cuthbertson; contractors, A. J. McNicoll & Co.; cost, $5,100; signed, Jan. 19; filed, May 26; payments, 75 per cent. as work progresses; balance 25 days.

Broadway and 14th, Oakland. Excavating of trenches; owner, Home Savings Bank; architect, Walter J. Mathews; contractors, Ransome & Cushing; signed, May 10; filed, May 13; payments, 75 per cent. of value of materials delivered and work prepared to be paid when ½ of work is completed; 75 per cent. of value of materials delivered and work performed to be paid upon completion, provided the 1st payment be deducted; $200, for excavating and refilling trenches with concrete; 25 cents per cubic foot of concrete for building; balance, 25 per cent. 35 days.

Court St., Alameda. Three buildings; owner, Wm J. Smith; contractors, Marcuse & Remmel; cost, $6,000; signed, May 23; filed; May 26; payments, $1,500, frame up; $1,500, brown coat mortar on; $1,500, completed; $1,500, 35 days.

Eagle Ave. and Bay, Alameda. Building; owner, Wm. H. Jenkins; contractors, Marcuse & Remmel; cost, $1,075; signed, April 27; filed, May 2; payments, $268.75 frame up; $268.75, brown mortar on; $268.75, completed; $268.75; 35 days.

Eighteenth near West. To erect an additional story; owner, Carrie P. Hawley; contractors, Langtry & Johnson; cost, $1,050; signed, May 24; filed, May 25; payments $350, enclosed and brick work finished; $350, first coat of plaster and paint on; $350, completed.

Ellsworth St. near Dwight Way, Berkeley. Two-story frame; owner, Lizzie K. Hume; contractors, Estey & Jewett; cost, $3,600; signed, May 9, filed, May 10; payments, $900, house up and roof on; $900, brown mortar on; $900, completed; $900, brown mortar on; $900, completed; $900, 35 days.

Fitch and Sharon Tract. Three one-story cottages; owner, Frank Lucchette; architect, Fred. P. Fischer; contractors, D. Straub & Son; cost, $5,500; signed, May 9; filed, May 10; payments, $1,350, frames up; $825, enclosed; $825, plastered; $2,500, 35 days.

Fountain near Lincoln Ave. To build; owner, Mrs. J. M. Shannon; contractor, Marcuse & Remmel; cost, $2,900; signed, May 20; filed, May 23; payments, $725, frame up; $725, brown coat mortar on; $725, completed; $725, 35 days.

Fourteenth and Broadway, Oak. To build; owners, Home Savings Bank; architect, Walter J. Mathews; contractors, Rocklin Granite Co.; cost, $11,947; signed, May 23; filed, May 24; payments, $2,240, ¼ of granite stone work required is cut and in the building; $2,240, ½; $2,240, ¾; all, $2,240; completed; $2,987, 35 days.

Lot 13, Hawley Tract, Alameda. Two-story house; owner, L. C. Yates; contractor, C. F. Weldon; cost, $2,468; signed, May 7; filed, May 10; payments, $556, house enclosed; $656 plastered; $656, completed; $800, 35 days.

Mariposa near Aldine, Oakland. Cottage; owner, M. J. Sweeney; architect, John Conant; contractors, Simpson & Spence; cost, $1,200; signed, May 4; filed, May 7; payments, ¼ frame up and rustic on; ¾ brown mortar on; ¾ carpenter work done and ready for painting; ¾, 35 days.

Peralta and Nicholas Ave., Fruit Vale. One-story cottage; owner, H. Tinkensiedh; contractor, P. H. Maloney; cost, $1,650; signed, May 7; filed, May 17; payments, $550, enclosed; $550, completed; $550, 35 days.

Prospect Ave. near Webster. Frame dwelling; owner, Mrs. M. C. Benham; architect, Maxwell G. Bugbee; contractor, W. A. Griffith; cost, $3,658; signed, May 23; filed, May 24; $909.50, frame up and enclosed; $909.50, brown coat mortar on; $909.50, completed; $909.50, 35 days.

St. Mary's Hospital. A vault; owner, A. G. Chanchi; architect, Chas. Mau; contractor, D. Dwyer; cost, $1,000; signed, May 19; filed, May 17; payments, $725, ½ material furnished and ½ work done; $725, completed; $475, 35 days.

Thirtieth and Magnolia, Oakland. Cottage; owners, Mr. and Mrs. Giroux; contractors, Rose & Baker; cost, $2,000; signed, April 28; filed, May 2; payments, $500, frame up and brickwork completed; $500, brown mortar on; $500, completed; $500, 35 days.

Thirty-second near Telegraph Ave. Two-story frame; owner, J. J. Warner; architect, Howard Burns; contractor, E. H. Lake; cost, $2,758; signed, May 10; filed, May 10; payments, $689.50, house ready for plastering, $689.50 plastered, windows set and 1st coat of paint on; $689.50, completed; $689.50, 35 days.

Twenty-eight near Telegraph Ave., Oakland. Cottage; owner, A. C. Sandford; contractor, H. C. Brown; cost, $960; signed, May 9; filed, May 9; payments, $240, building enclosed; $240, brown mortar on; $240, completed; $240, 35 days.

Twenty-third and Broadway, Oakland. Two-story frame building; owner, J. A. Brunge; architect, Chas. Mau; contractors, Leiter & Prugh; cost, $5,357; signed, May 9; filed, May 9; payments, $1,000; ¼ materials furnished and ¼ work done; $1,000, ½ furnished and ½ work done; $1,000, ¾ furnished and ¾ work done; $1017.75 completed; $1339.25, 35 days.

Vine near Spring, Berkeley. Two-story frame dwelling; owner, Wm. McIntyre, architect, Geo. A. Bordwell; contractors, Nickerson & Caldwell; cost, $4,350; signed, May 18; filed, May 19; payments, $900, frame up; $750, brown mortar on; $800, white mortar on; $800, completed; $1,100, 35 days.

Webster near Lake Merritt, Oakland. To build; owner, Mother Elizabeth Roche, architect, Bryan J. Clinch; contractor, Thos. R. Bassett; cost, $10,500; signed, May 6; filed, May 7; payments, $2,600, frame up; $2,600, brown mortar on; $2,600, completed, $2,700, 35 days.

BUILDING IN SEATTLE, WASH., DURING MAY.

The superintendent of buildings presented his report for the month of May to the board of public works on Thursday as follows:

	No.	Cost.
Moves and repairs	46	$ 5,430
One-story frames	36	10,430
Two-story frames	21	64,300
One-and-one-half-story frames	7	4,385
Two-and-one-half-story frames	3	9,250
Three-story brick	1	4,900
Four-story brick	1	100,000
Five-story brick (excavate)	1	2,000
Three-story brick (foundation)	1	1,450
Totals	117	$202,155

—Seattle Post Intelligencer.

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1 Column	12 50	35 00	65 00	125 00
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THE location adds much to the convenience and beauty of the house, and the style or arrangement should be adapted to the location and surroundings. Birds seek a proper locality for their nests and then build in accordance with their peculiar needs, the strength varying with the exposure to the elements. Animals choose places of retreat protected from the influence of the disturbing elements, and then proceed with the erection of their habitations, some of which are marvels of architectural skill.

We thus see that architecture was coeval with the first life appearing upon the earth. If it is true that some forms of life have passed by evolution to the present state of high civilization, so architecture has followed as a natural and necessary accompaniment, and its historical markings, recorded at various epochs, show its faithful adherence to the wants of mankind.

Every building when erected has some object or end to be subserved. This object or end must first be made known to the architect before he can proceed to design a structure adapted to the required purpose.

It is not the province of architecture to present a Greek Temple located upon a bleak hill as a farm house, and say to the proprietor, "Live thou here in this temple, and make thy wants comform with this beautiful edifice," but rather to select a sheltered nook whereon to erect a conveniently arranged house with wide and airy verandas and exterior angles, and roof lines harmonizing with the surrounding landscape. We could go on and mention a number of such enormities, such, for instance, as a rural cottage for the purposes of a Court House.

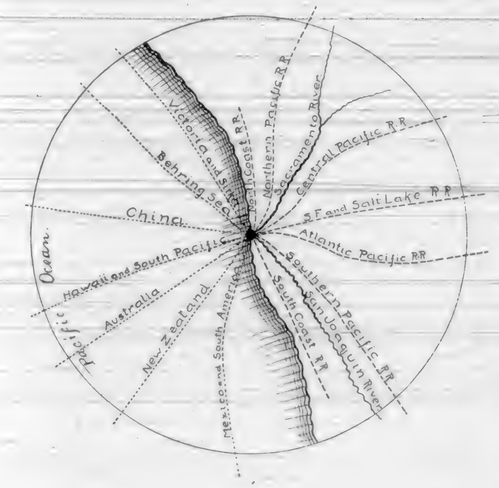
Architecture being so intimately connected and interwoven with our wants and necessities as to be inseparable from life, it follows that the highest type of architecture is that which most faithfully aids in the development of contentment and happiness ranging from the lowest wants of animal or man, through all stages of development, to the inspiration of the highest ideal. It therefore becomes the duty of the architect to plan healthy and comfortable buildings for the housing of the dumb animals, as well as those for the master.

With this end in view, we shall from time to time, give designs and details of construction for farm buildings and conveniences of all kinds, hoping thereby to aid in the work of beautifying and improving the homes which are increasing in number so rapidly at the present time throughout the Pacific Slope.

SAN Francisco as the commercial center of the Pacific Slope and the natnral terminus on the westerly coast of the Continent of North America has a great future. It has unlimited resources and as the means of communication improve and extend, and the manufacturer and merchant are brought more easily and quickly into connection with the trade centers of the world, so will the commercial enterprises become more extensive.

The situation is shown in the diagram, San Francisco being the natural central point for all the lines.

The bay of San Francisco is one of the best harbors in the world, having a depth of water sufficient for the largest ships and is large enough to float at anchor all the ships of the world at one time and have room to spare. It varies in width, but the average may be put at about six miles and has a length of nearly forty miles. The bay is connected with the ocean by one deep channel. At both sides of the channel, and at the entrance to "The Golden Gate", nature



has provided the preliminary requisites for fortifications.

In the development of the commence of a country the natural water ways rank first as an economical means of conveyance and as a check to monopoly. Two navigable streams, the Sacramento and the San Joaquin Rivers flow into the bay at San Francisco and furnish some 1,000 miles of internal navigation whereby millions of acres of fertile soil have direct communication with this port.

Taking the Rail Roads, we find the North Coast Road as a local line. This line has recently changed hands, and will probably be extended to connect with some overland road. The Northern Pacific R. R. is at present a local road but preparations are being made to extend the line to tap the northern coast of California and through to Oregon. The Central Pacific is well known as the first trans-continental road. The San Francisco and Salt Lake R. R. is about to be built to tap the overland routes. The Atlantic Pacific and Southern Pacific are two overland lines which separate after passing the mountain ranges, one line running Easterly and the other Southerly. The South Coast R. R. is running in sections, and when the gaps are all connected will make a line Southerly down the cost to San Diego and Los Angeles, then overland.

The lines of commerce on the Pacific Ocean cover a wide area. A steam-ship line runs up the Coast to Portland, Victoria and Alaska. Whaling and sealing ships run to Behring Sea. Steamer lines connect with China, Japan, Hawaii, Australia, New Zealand and the South Pacific, also to Mexico and South American Ports.

Sailing vessels run to all the trading points. All these lines are susceptible of expansion with a corresponding increase in the trade of the continent.

THE recent fires in this city, nearly all of which were in frame buildings, are admonitions, and the citizens, through the properly constituted authorities, should insist upon additional safeguards against a general conflagration and the use of a more fire-resisting material than wood in the districts outside but adjacent to the fire limits. Brick and terra-cotta come first as wall materials, and the extremely low price at which good brick, and even pressed brick, can be made, and are already to be had in the market, holds out additional reasons why brick should be used. Very few localities have better brick than San Francisco and its vicinity. Some of the brick in this market are of extra strength and are very tough and when properly laid with suitable mortar will make a wall more fire-proof than the wooden frame and equally earthquake-proof as the ones usually erected. One of the later brick manufacturing companies claims a pressure of 2000 lbs. per square inch, consequently a very strong brick and one that may be safely loaded with an increased weight over one of the softer kind, is the result. Our future for brick architecture is open to great possibilities and we hope and expect the subject will become an active one before the season closes.

IN a recent legal contest between Mr. C. C. Moorehouse and the officials of the Fire Department in regard to smoke-proof iron lath, the former presented evidence, which, it is claimed, was indisputable; viz., that there is no iron lath in the market that is smoke-proof until after the interstices are filled with mortar. Further it was claimed that the usually so-called smoke-proof iron lath having an angular corrugated form and which would, after plastering, leave continuous channels between the wall and a portion of the lath, instead of being smoke-proof, really formed flues which would be liable to convey not only the smoke, but the fire as well.

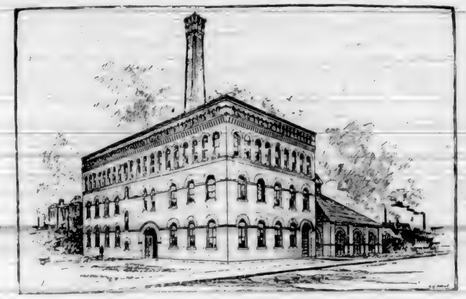
As we understand it, that claim was based upon the supposition that the lath should be applied to a boarded surface or to a wall with a plain surface to back the plastering. When applied to studding the effect is changed.

From this it appears that an iron or steel lath so formed as to make a key for the mortar, and allow the interstices to be completely filled with mortar, or a stiffened wire lath, would constitute the best smoke-proof lath extant.

The officials charged with the execution of the Fire Ordinances and who have been acting for some time, seem willing to accord equal rights to all; but when an attempt is made to introduce an inovation on the usual article it must be shown conclusively that the new article fills the requirements of the law. The newly appointed official whose "hand me down blue pants" have not lost their "shelf wrinkles," and with buttons resplendent with new brass, is the one who thinks it advisable to show convincing proof that he is much larger than any other man of the same size.

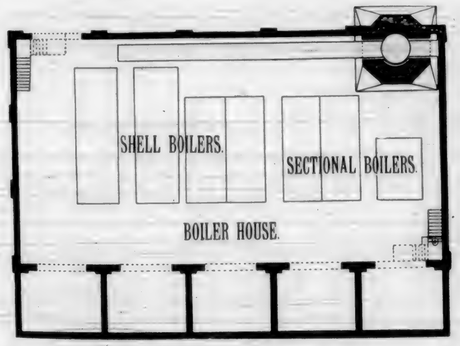
UNIVERSITY OF PENNSYLVANIA.

THROUGH the kindness of Mr. H. W. Spangler, U. S. N., of the Department of Mechanical Engineering of the University of Pennsylvania, we printed in our June number of last year a description of certain proposed improvements and additional buildings to that institution. We are again indebted to Mr. Spangler for the following illustrations and descriptions of the buildings in course of construction.

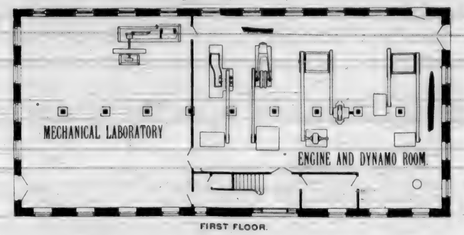


MECHANICAL ENGINEERING AT THE UNIVERSITY OF PENNSYLVANIA.

"About three years ago the necessity of increasing the equipment of the Department of Mechanical Engineering of the University of Pennsylvania became so apparent that a fund was immediately raised to place the Department on an equality with the best schools in mechanical engineering in the country. A portion of one of the very large rooms in the College, having a maximum capacity of about forty drawing tables, was used for a drawing room, one room of



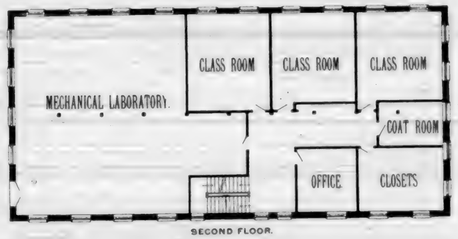
about five hundred square feet was set aside for test work in electrical engineering, and sufficient apparatus added to the equipment to enable satisfactory instruction to be given in this Department of the work. A year later a smaller room, of about one-fourth the floor space, was added to this portion for photometric and similar work. A second room of about six hundred square feet floor surface was taken for a mechanical engineering test room, and in this room was placed a 50,000 pound testing machine, a thirty-horse power testing engine, which could be run condensing or non-condensing, and numerous smaller pieces of testing apparatus, which enabled the Department to give instruction in most of those lines of work with which the mechanical engineer must be familiar. An additional room, covering 1300 feet of floor space, was secured, and a twenty-five horse-power vertical boiler and an 8x16 Porter Allen engine was put in this room, and the remaining space in the room was so



divided and equipped that one-half was used for an iron working shop and one-half for wood working. The additions then made were expected to be sufficient for the use of forty students as a maximum.

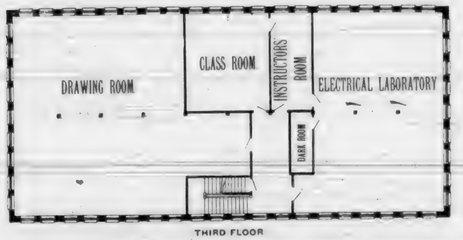
The effect of these additions on the attendance in this Department was such that before one complete year's work had been done the number of students exceeded that for which the equipment had been planned, the second year seeing the number doubled and the third year three times as many as were in the Department at the time the increased equipment was decided upon.

At the beginning of the second year the project of supplying heat and light for one central building was first discussed. There being twelve buildings then erected on the Univer-



sity grounds and some of them very large ones, is was finally decided that such a plant should be erected. This plant was expected to occupy a building about 100 feet by 50, one story high, having the boilers in one end and the engines and dynamos in the other.

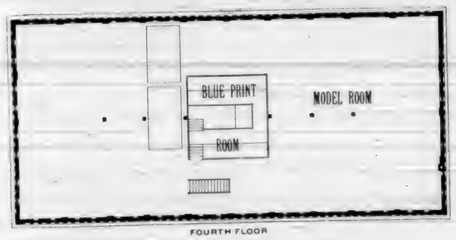
As the number of students in the Mechanical Engineering Department then was greater than the available space could accommodate satisfactorily, the Department began seeking other quarters. College Hall was over-crowded and the only way of obtaining more room was by moving into a separate building. The project of the light and heat station opened the way, and the results are as shown in the accom-



panying cuts. Two buildings are now in process of construction instead of the one at first proposed. The boiler house is 100 feet by 50 feet, and when equipped will contain four

shell and four sectional boilers. These boilers are intended to present to the students the best examples of modern stationary practice, and will be so equipped that the values of different kinds of coal, different methods of setting, different methods of burning coal, can be experimented on under the conditions actually found in a commercial plant. The roof trusses of this building are now being put in place. When completed this plant cannot be equalled by any in this country for the teaching facilities it will enable this Department to use, as it will be not only a plant installed by competent engineers to do economically commercial work, but with especial care as to its usefulness as an aid to the instruction in mechanical engineering.

The other building which is shown in the foreground of the picture, is the Engineering School proper. This building is to be practically four stories high and 100 by 50 feet on the ground. It is of red brick and already presents a handsome appearance, the third floor girders having just been put in place. On a portion of the ground floor will be placed the engines and dynamos for lighting the buildings of the University. This plant, like the boiler plant, has been planned not only to be commercially a successful plant, but to give the largest amount of opportunities for the students to study the peculiarities and test the efficiencies of the best types of engines and dynamos. This plant will be of 300 horse-power, and it is intended to install four engines driving six dynamos of various types. The balance of this floor, about 2000 square feet, will be devoted to the purposes of the Mechanical Engineering Department proper. The walls on



FOURTH FLOOR

this floor are of red brick, the floor granolithic, and mill construction is to be used throughout.

On the second floor will be the remainder of the Mechanical Laboratory—a second room, forty by fifty feet, in which will be installed much of the apparatus now in the laboratory, now in the College Hall. On this floor also will be the office of the Department, three class and lecture rooms and the closets.

On the floor above will be located the Drawing Room—a room covering 2000 feet of floor space——the Electrical Laboratory and Photometric Room, covering 1600 feet of floor space, one class room and the assistant's room. On the floor above will be located the model room, in which will be placed the models of machinery of various kinds, kinematical models and a series of very fine plaster models cast by the students for patterns of their own make, showing the methods of using cores and making castings.

The entire room actually used from day to day in this building for instruction purposes in the Department of Mechanical Engineering will be about 15,000 square feet as compared with about 4000 feet in the present quarters.

This Department has charge of both the Mechanical and the Electrical Engineering work done by the University of Pennsylvania. There are practically two courses of instruction open to students in this work. One of these courses has been established for a number of years, and is only open to students who have taken the first two years in the Towne Scientific School or who come prepared to pass examinations on the work of these two years. This course extends over three years. The Department has graduated from this course upwards of one hundred students, most of whom are actively engaged in some branch of engineering work.

The other course extends over four years and admits students after examination on the subjects usually required for admission to college. The studies taken in this course bear directly on the work of the engineer. At the end of the second year, the studies are differentiated somewhat for those students who desire to pay particular attention to electrical engineering, although all students taking either of the courses are given a good working knowledge of both mechanical and electrical engineering."

WHITHER IS OUR ARCHITECTURE TENDING.

At the Civil Engineers' Club of Cleveland, Mr. C. W. Hopkinson read a paper on "Whither is our Architecture Tending," of which a brief abstract is as follows:

To the casual observer there is much in the present condition of architecture in America which is perplexing. The variety of style and proportion, seen on every hand, and the seemingly ever-changing notion of what is proper, have done much to befog the judgment regarding our existing architecture. The American modern system of designing is essentially eclectic. That is, the different architects of the country work largely independent of each other. Even the work emanating from the same office often shows as wide a variation in style as the Gothic and Renaissance, or the Colonial or Swiss chalet styles. This system of designing has developed during the last twenty-five years, and has come about through the growing desire on the part of our architects for more freedom from restraint in their designing. The improvements in the technical journals, the better knowledge of what the men of the different parts of the country were doing, prevented our eclectic work from degenerating into wild experiments. Certain it is that this system led to an awakening in architectural circles, and made possible the introduction of Mr. Richardson's version of the Romanesque style of France. It was quite favorably received, but owing to Mr. Richardson's untimely death it did not reach the development its friends had hoped for. Instead, it was soon noticed that it began to take on a Gothic feeling, which was chiefly manifested in the ornamentation. In the hands of other architects, it exhibited a leaning towards the Renaissance style. But both the Gothic and Renaissance styles are in the field as candidates for honors. The Gothic claims a large part of the new churches, while the Renaissance has the honor of being the style in which the main buildings of the World's Fair are designed. As to what will be the coming style, it is extremely difficult to state. As a people we are altogether too restless in our natures to accept any one style for any great length of time. It seems probable that for some time the Gothic may claim a large part of the church work and the Romanesque the balance; the Renaissance the bulk of the public buildings and possibly a part of the office buildings, except that in the latter branch of building I shall look for a strong feeling of Romanesque, tempered, it may be, as indicated above. The private work will follow in the wake of all three styles, while the method of designing will probably be eclectic. With the splendid publications so complete on every hand and the training schools constantly sending into the offices young men with proper desires and theoretical training, and so many of our practicing architects zealous to raise the tone of the profession and promote scholarly work, it seems highly probable that the work, as a whole, will constantly grow better and more worthy the architecture of the most enlightened and progressive nation on the globe.—*The Engineering Record.*

Some of the old Mission buildings of this State are to be represented at the World's Fair. Mr. H. C. Ford, of Santa Barbara, expects to display twenty-four water color painting of these historical structures, each painting to occupy a space of about eight square feet.

A CENTURY OF ELECTRICITY, by T. C. Menden hall, Superintendent U. S. Coast and Geodetic Survey. Published by Houghton, Mifflin & Co., Boston and New York. Size 5x7 inches, and 1 inch in thickness. Price $1.00. For sale by Osborn & Axexander, 401 Market street, San Francisco, Cal. This is the revised edition of the work and is illustrated in a manner to make the matter clear. The book covers a long period in the practical use of electricity, giving a description of the discoveries by Galvani and Volta, the battery and electric current, and the electro-magnet. It also gives the history of the development of the telegraph, multiplex telegraphy and submarine cables, Faraday's discovery of the dynamo, the electric light and the transmission of energy; the motor, the telephone, secondary batteries and is supplemented with a copius index.

The work is a very useful one to have in the library for reference. Mr. Mendenhall is well known on this coast on account of his advanced scientific attainments. We predict the book will have a large sale.

Just published, Third Edition Atwood's REVISED RULES OF PROPORTION, complied and original and adapted to modern practice, by D. T. Atwood, Architect.

CONTENTS.

Part 1. Introductory and Explanatory.—Plate 1.—Standard of Proportion. Plate 2.—First Story Basement Elevation. Plate 3.—Fourth Story Elevation. Plate 4.—Optic Diagram. Plate 5.—Transverse Section, Interior of Basement and First Story.

Part 2. Rules, Notes and Tables of Comparative Proportions.—Plate 1.—Story Section, illustration Rules 1, 2, 3 and 4. Plate 2.—Base Section, illustrating Rule 5. Plate 3.—Architrave, illustrating Rule 6. Plate 4.—Room Cornice, illustrating Rule 7. Plate 5.—Post, Column and Pilaster, illustrating Rule 8. Plate 6.—Entablature, illustrating Rule 9. Plate 7.—Level and Raking Cornice, illustrating Rule 10. Plate 8.—Story Elevation, to obtain Raking and other styles of Cornice for Country, Town, or Suburban Houses, illustrating Rule 10.

12mo. vol., bound in cloth, price, 75 cents. Sent by mail free of postage to any part of the world. William T. Comstock, publisher, 23 Warren street, New York.

Mr. Atwood is the author of several works on architecture. In this book the author treats on the systems and rules adapted to the students' rudimentary course of studies in Architecture. The book contains much that is useful and is so compact as to be readily accessible when wanted.

THE METAL WORKER, Essays on House Heating by Steam, Hot Water and Hot Air, with introduction and tabular comparisons. Second edition, revised. Arranged for publication by A. O. Kittredge, editor of *The Metal Worker, Carpentry and Building*, etc. Author of the "Metal Worker Pattern Book," "Practical Estimator," etc. Publisher, David Williams, 96–102 Reade street, New York. 407 pp., 7x6½ inches. Handsomely bound in cloth. One volume. Price, $3.00.

The volume is illustrated with 85 full-page plates, showing the arrangement of apparatus and indicating the runs of pipes. Marginal notes on the pages adjoining the subject under consideration, together with a carefully prepared index at the end of the book, serve to facilitate references to required parts.

This volume is offered to the trades and professions in the interest of which it has been prepared, with the confidence that it will prove what is commonly required, "An Every-Day Help."

The work is not a mere theoretical consideration of principles and a statement of facts gained by inquiry in the trade; but, instead, a collection of essays by practical men, each showing how one man would go about heating the building in question, using the means with which he is best acquainted in practice. Features of the book which are not the least important among its numerous merits are the lists of items and statement of cost accompanying the different essays. Never before in the history of the heating trades has there been offered such a collection of information directly from the practice of those who are actively engaged in the heating business as is contained in this volume.

In this, the second edition, is contained a large amount of matter originally published in *The Metal Worker* and not given in the first edition. This has proven of exceptional interest and value to the trades, and consists of criticisms and opinions from the experience of many interested readers and an exhaustive section devoted to rules for proportioning raidiating surfaces, from standard authorities, with a large number of tables.

All persons who wish to inform themselves on the question of heating should be provided with this new edition. The extensive sales of the first work has made this enlarged edition necessary.

LIPPINCOTTS' for July, contains some travel and legendary stories.

THE COSMOPOLITAN for July, contains a number of articles of interest to architects. "England's Great Modern Schools" and "Riverside Hospital" are especially so.

SUGGESTIONS FOR THE CONDUCT OF ARCHITECTURAL COMPETITIONS.

SACTIONED BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

1.—The Promoters of an intended Competition should, as their first step, appoint one or more professional Assessors, architects of established reputation, whose appointment should be published in the original advertisements and instructions, and whose decision should govern the selection of the designs.

All the designs sent in should be submitted to the Assessors.

2.—The duty of Assessors should be:—

(*a*) to draw up the particulars and conditions as in-

structions to Competitors, and to advise upon the question of cost;

(*b*) to determine which of the designs conform to the instructions, and to exclude all others;

(*c*) to advise the Promoters on the relative merits of the designs admitted to the Competition, and to make a selection in accordance with the conditions.

3.—Every Promoter of a Competition, and every Assessor engaged upon it, should abstain absolutely from competing, and from acting as architect, for the proposed work.

4.—The number and scale of the required drawings should be distinctly set forth, and they should not be more in number, or to a larger scale, than necessary to clearly explain the design. If prespective views be required, it should be so stated; and they should be uniform in scale, number mode of coloring, etc.

5.—Competitions should be conducted in one of the following ways:—

(A) By advertisement, inviting architects willing to compete for the intended work to send in designs. The promoters, with the advice of the Assessor or Assessors, should make their selection from such designs. The author of the design awarded the first place should be employed to carry out the work.

(B) By advertisement, inviting architects willing to compete for the intended work to send in their names by a given day; with such other information as the candidate may think likely to advance his claim to be admitted to the Competition. From these names the Promoters, with the advice of the Assessor or Assessors, should select: (*a*) an architect to carry out the work; or (*b*) a limited number to compete, and each Competitor thus selected should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

(C) By personal invitation to a limited number of selected architects, to join in a Competition for the intended work. Each Competitor should receive a specified sum for the preparation of his design. The author of the design awarded the first place should be employed to carry out the work.

6.—No design should bear any motto, device, or distinguishing mark; but all designs should be numbered by the Promoters in order of receipt. Any attempt to influence the decision of the Promoters, or of the Assessor or Assessors, should disqualify a Competitor.

7.—In every case the amount of premium or renumeration for the competitive designs should be fixed by the Promoters, acting under the advice of the Assessor or Assessors, and should be paid in addition to the usual professional charges for carrying out the work.

8.—Where a deposit is required for supplying the instructions, it should be returned on the receipt of a *bona fide* design; or if the applicant declines to compete and returns the said instructions within a month after their receipt.

9.—A design should be excluded from a Competition:—

(*a*) if sent in after the period named (accidents in transit excepted);

(*b*) if it does not substantially give the accommodation asked for;

(*c*) if it exceeds the limits of site as shown on the plan issued by the Promoters, the figured dimensions on which should be adhered to until officially altered;

(*d*) if the Assessor or Assessors should determine that its probable cost will exceed the outlay stated in the instructions, or the estimate of the Competitor should no outlay be stated; provided always that should the Assessor or Assessors not have been consulted in the first instance respecting the cost, as recommended in paragraph (*a*) of Clause 2, and should he or they be of opinion that the outlay stated in the instructions is inadequate for the proper execution of the proposed works, the Assessor or Assessors shall not be bound in the selection of a design by the amount named in such instructions, but the question of cost shall nevetheless be a material element in the consideration of the award;

(*e*) if any of the other instructions are violated.

10.—It is desirable that all designs submitted in a Competition, except any excluded under Clause 9, should, with the consent of their authors, be publicly exhibited after the award has been made, which award should be published at the time of exhibition.

11.—The architect, whose design may be selected as the best, should be employed to carry out the work, and he should be paid in accordance with the Schedule of *Professional Practice and Charges of Architects* sanctioned and published by the Royal Institute. If no instructions are given to him to proceed within twelve months from the date of the selection, he should receive adequate compensation in addition to the premium (if any) awarded to him. In the event of a part only of his original design being carried out, he should be paid a sum to be agreed upon in respect of the deferred portion, such sum to be merged in the usual professional charge when the completion of the design is proceeded with.

*** It should be understood that the Royal Institute issues these Suggestions as a guide to Promoters where a Competition has been decided upon, but not as necessarily recommending the principle of competition

ASTON WEBB, *Hon. Secretary.*
WILLIAM H. WHITE, *Secretary.*

For the above schedule we are indebted to the *Journal of Proceedings of the R. I. B. A.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

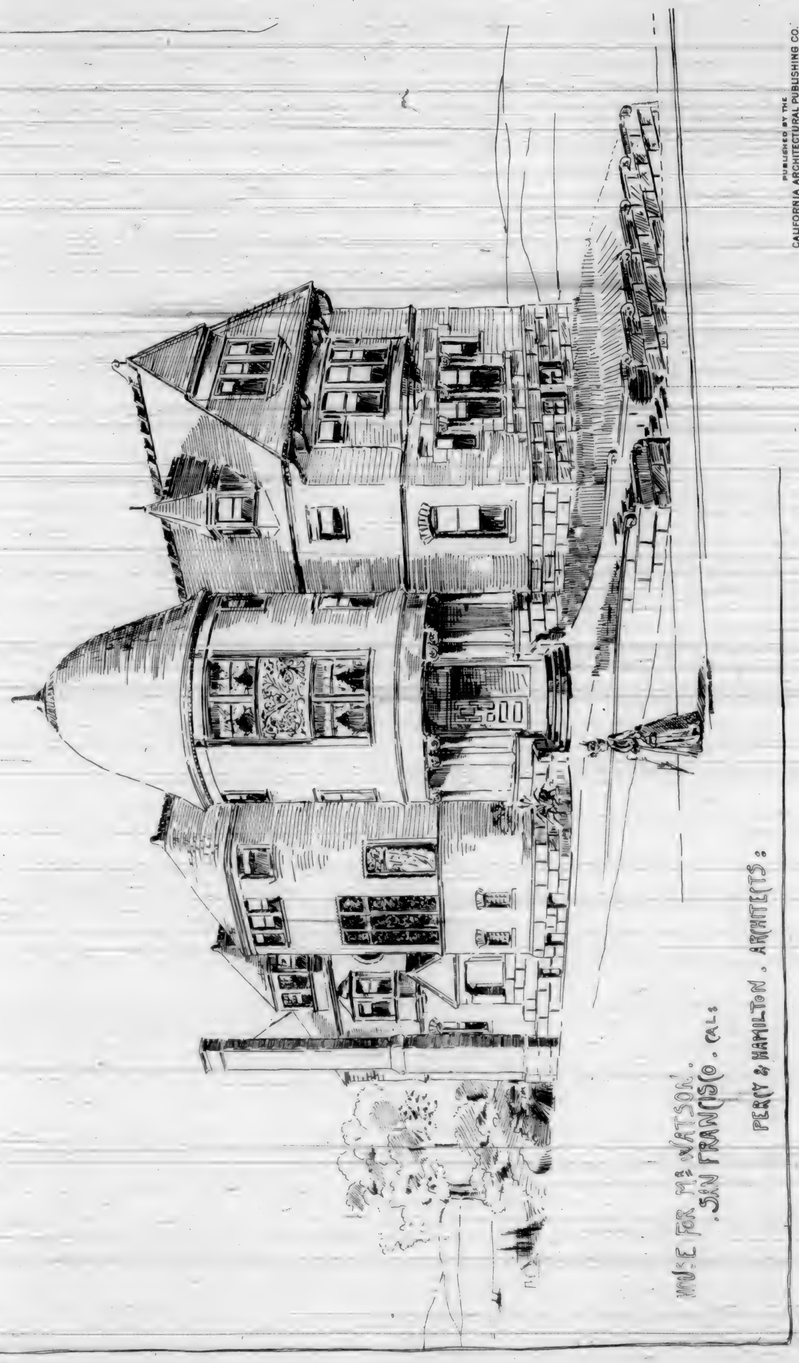
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

DESIGN for the City Prison of Guaymas, Mexico; Messrs. Pissis & Moore, Architects, San Francisco, Cal.

HOUSE for Mr. Watson, San Francisco, Cal.; Messrs. Percy & Hamilton, Architects. The basement and main story are of concrete and brick and the two upper stories are shingled.

THE sketch of building and landscape was worked out by Mr. Clarkson Swain. These sketches are three in number and so picturesquely delinated as to furnish artistic ideas to designers for rural buildings. Cottages and farm buildings may appropriately take on this character of design. The two remaining sketches will appear in later numbers.

THE building on the corner of Geary and Polk streets was designed and carried out by Mr. R. H. White, Architect, San Francisco. The exterior of the lower stories is finished with rustic boarding and of the upper stories with shingles. The building is arranged for a boarding house and flats.



PUBLISHED BY THE CALIFORNIA ARCHITECTURAL PUBLISHING CO. SAN FRANCISCO, CAL.

HOUSE FOR MR. WATSON. SAN FRANCISCO. CAL.

PERRY & HAMILTON, ARCHITECTS.

BRITTON & REY PHOTO. LITH.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

CITY PRISON OF GUAYMAS, MEXICO
FISSIS AND MOORE, ARCHITECTS
SAN FRANCISCO, CAL.

BRITTON & REY PHOTO. LITH.

PUBLISHED BY THE
CALIFORNIA ARCHITECTURAL PUBLISHING CO.
SAN FRANCISCO, CAL.

JULY 1892. THE CALIFORNIA ARCHITECT AND BUILDING NEWS. VOL. XIII. NO. 7.

BRITTON & REY PHOTO. LITH.

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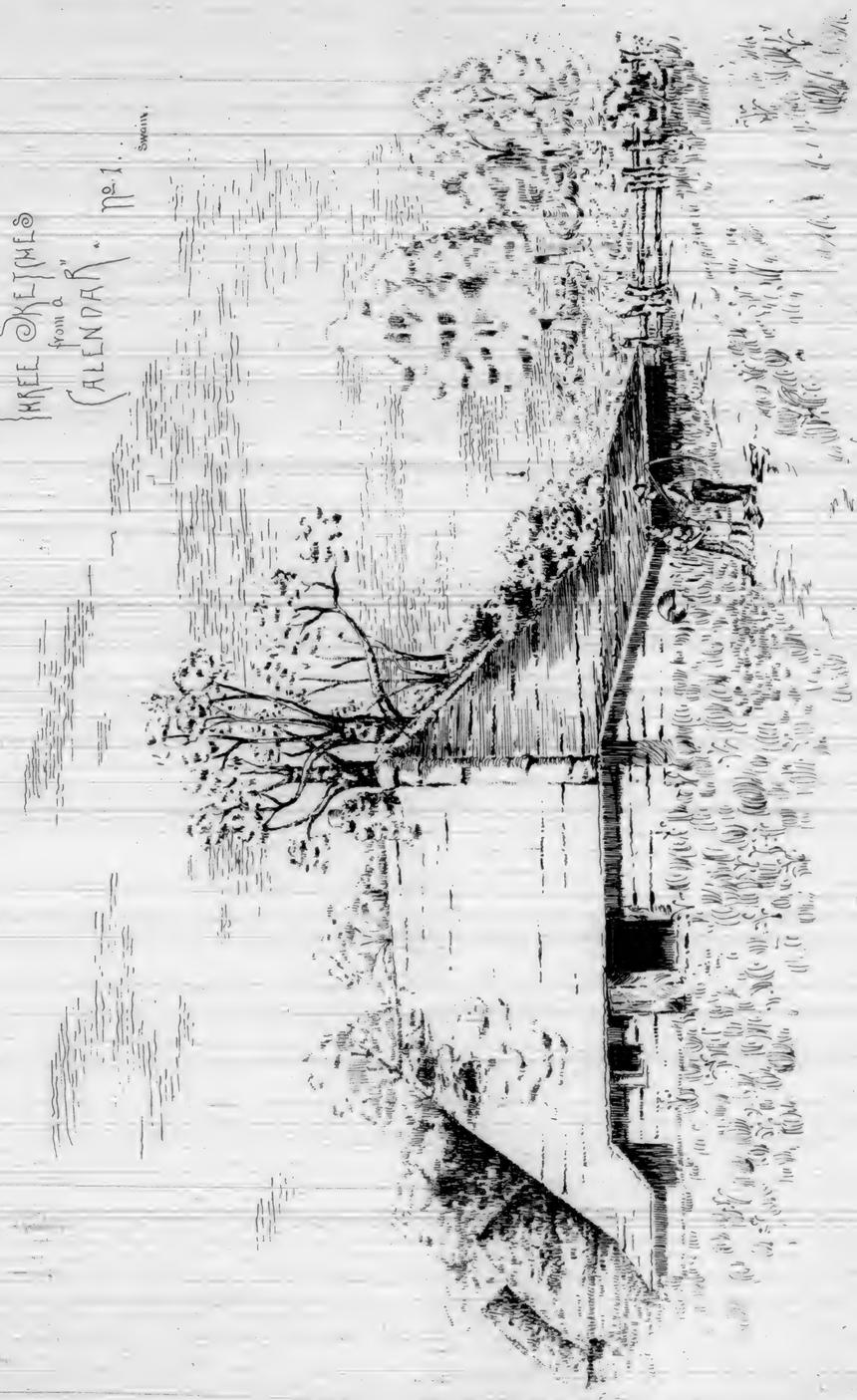
INSTITUTE OF ARTS & SCIENCES
ARCHITECTURE
MDCCCXXXVIII

"THREE SKETCHES from a CALENDAR." No. 1.



SMITH.

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BRITTON & REY PHOTO LITH.

INSTITUTE OF BRITISH ARCHITECTS
MDCCCXXXIV
ROYAL

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. Oliver Everett, Vice-Pres.
H. T. Bestor, Sec. John M. Curtis, Tres.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards, Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
W. I. Crosett, Sec. O. Brooks, Treas.

Master Painters' Association of the Pacific Coast.

E. M. Gallagher, Pres. H. G. Jarman, Sec.

THE Semi-annual Reunion and Banquet of the San Francisco Chapter of the American Institute of Architects was held on Thursday, the 7th inst.

All architects were invited to participate whether members of the Chapter or not.

The "Menu Cards" were all hand pen work prepared by Mr. Daniel Polk. Each card had a different sketch and they presented a unique appearance.

Letters were read from those who were unable to attend.

Mr. Geo. H. Sanders as president of the Chapter made the opening remarks, congratulating the profession upon the progress of architecture during the fifty years of its growth on the Pacific Coast.

He claimed that we have sufficient native latent talent for all future requirements, and that it should be placed under some systematic training at as early a period as possible. He stated at some length, the benefits that would be likely to follow from a Winter exhibition of architectural drawings and art work having a special adaptation to architectural design.

He also mentioned the proposition for forming an Architectural Club, the membership of which may be broad enough to include architects, sculptors, decorators, and all workers in architectural art work, and furthermore it was proposed to include amatures and patrons of such works. A club of this breadth could establish classes of instruction on a more extended scale than a more limited membership would allow. This idea and project of a "Club", Mr. Sanders stated, had been formulated in conjunction with Mr. Willis Polk.

The president then introduced Mr. Wm. Curlett as Master of Ceremonies.

As a preliminary to his remarks, Mr. Curlett quoted the maxim, 'Perfection is out of the question but excellence can be gained by hard work,' and then stated that without unremitting study and work no excellence can be obtained.

His remarks were appropriately pointed to the subject as he introduced the different speakers.

Mr. Geo. W. Percy then presented the awards.

1st Silver Medal to Mr. Samuel C. Benson, he having receive first mention six times out of eight competitions for the year 1890. This student was distinguished for the delicacy, beauty and artistic quality of whatever he undertook.

2nd. Silver Medal to Mr. H. J. Van Vlack, he having received the greatest number of 2nd mentions and the final prize for the best pen and ink drawing from photograph for the year 1890.

3rd. Bronze Medal to Mr. Linden Bree, he having received first mention for the best pen and ink drawing from photograph for 1891.

3th. Certificate of honorable mention to Mr. Conrad A. Meusdorefer, he having received one first mention for pen and ink drawing for 1891.

Mr. Percy then gave the students a brief outline of the history of architecture and of special lines of study, as laid down by eminent authorities, and to which it was desired to call their attention.

Mr. Theo. Lenzen made some old time remarks, and Mr. Albert Pissis was gratified that so much interest was exhibited in the future welfare of the profession. Mr. Jas. E. Wolfe gave an early history of the architecture of San Francisco, and stated that in 1853, the toll gate leading to the Mission Dolores was placed at or very near the locality of the building in which we were then holding our festivites. Mr. L. R. Townsend was pleased to think that the architects should be able to "draw a full house" when so many were away on vacation trips. Mr. J. H. Littlefield made some remarks on the amplitude of speech, architecturally considered, and Mr. Edw. Kollofrath responded to the "dinner" question. Mr. M. G. Bugbee spoke on the subject of "Modern Architecture", and Mr. H. T. Bestor considered the "Press in Architecture".

Mr. Oliver Everett and Mr. Edw. Burns both treated the dining-room from the æsthetic and art side of the question. There were several present of whom we did not get the names. At eleven o'clock all hands joined in "Auld Lang Syne" and the company dispersed.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Release of Liens by Contractor.—A stipulation by a contractor, "to release and discharge the house from the operation of all liens for material furnished or work done in the construction of the same," is not a waiver of the lien so as to prevent a subcontractor enforcing a lien for lumber and woodwork before final settlement between the contractor and owner, Schroeder v. Galland, 19 At. Rep. 632, 134 Pa. St. 277 distinguished. It is no defense to such lien in Pennsylvania that the aggregate amount of the liens entered against the building, together with the cost of completing the same, exceed the contract price, if the materials furnished were of the quantity and quality needed for its construction.

Taylor v. Murphy, Supreme Court of Pennsylvania, 23 At. Rep. 1134, 112C.

TALKS ON LAW.

BY the earlier conquests and during the settlement of a Country, order and law develop and become a part of its civilization. The growth of law and architecture are so interwoven that the history of one becomes the history of the other. America has at different periods had portions of its territory under the influence of different nations which have left certain peculiarities in the earlier architecture that are not easily understood without a history of the settlement of these sections. To obtain a concise history of the settlements made by the different nations is of material aid to the student of the architecture of this Continent. In addition to the legal aspect of the question the student will be interested in the "Talks on Law" by Mr. Wm. C. Sprague, who has by a systematic research given a clear history of the law, with a brevity seldom met with.

THE GROWTH OF AMERICAN LAW.
By Wm. C. Sprague, Esq.

"To obtain an adequate idea of the law of any country, one must travel to its sources and follow its growth from its very beginning. Let us pursue this method in a few studies on the growth of our law. In the first place the seeds of American jurisprudence were transplanted from the old world. The navigators, explorers, missionaries, reformers, gold seekers of the very earliest days, brought to our shores along with their intense desire for conquest, for individual gain, for the glory of their sovereigns, and for religious freedom, the customs and laws of the homes they left and adopted them in the new world so far as they were fitted to their circumstances and their environment. The English brought with them the priceless heritage of the common law of England, and the French and Spanish brought the principles and codes built upon the foundations of the civil law—the law of Rome.

Of the early explorers succeeding Columbus, there was Juan Ponce de Leon, who landed in 1513, near St. Augustine, in Florida, in search of the Fountain of Youth; in 1520, Spanish ships touched the cost of Carolina; in 1521 the territory now known as Texas, New Mexico and California became a part of a great province attached to Spain by the conquest of her great explorer, Cortez. De Soto, another Spaniard, led a party from Florida across the country to the Mississippi in 1542. In 1584–5, Sir Walter Raleigh sent two expeditions to North Carolina. A Spanish settlement was made at St. Augustine, 1565. Jamestown, Virginia, became the first English settlement in 1607. New York (New Netherlands), in 1613, was settled by the Dutch, and Plymouth, Massachusetts, by the English in 1620. La Salle explored the Great Lakes and the Mississippi in 1682, the French establishing settlements at Kaskaskia and Arkansas Post in 1685, and Mobile and Vincennes in 1702. Thus England, Spain and France divided among themselves the great continent of North America. Spain got the Southern, England the Central, and France the Northern portion.

The discoveries thus made vested the new lands in the sovereign. His title was that by discovery grounded upon the three following ideas: The christian nation that discovers a heathen land owns it to the exclusion of all other christian nations. This nation to complete its title must within a reasonable time, occupy and use this land. The native inhabitants are only the occupants of the land and not its owners.

For over one hundred years from the discovery by Columbus no settlement deserving of more than passing mention was made in the new world by the English. Many and feeble attempts were made, fearful hardships endured, heroic efforts put forth, but in vain. Raleigh's and Drake's efforts were unsuccessful. The Spanish settlements were more successful, and for a clear reason. Spain looked upon her explorations as means toward extending her dominion. She looked forward to another great Roman Empire. Her explorations were, in a sense, official, and once a post was planted, high officers of State with large salaries were annexed to it, thus drawing patronage, wealth and population. It was otherwise with the English. In nearly every case colonization and exploration was private enterprise; if unsuccessful drawing in its wake individual suffering and loss, but if successful, resulting in little indeed to the individual but everything to the crown. Left thus to their own resources, English colonies in America had a precarious existence for the first one hundred and fifty to two hundred years, leading one writer to say of the British colonists as late as the end of the seventeenth century, "they were robbers and pirates on a large scale."

BUSINESS MOSAICS.

Geo. H. Tucker, manufacturer of galvanized iron cornices, and other ornamental work in sheet metal; also of the "Hayes Patent" skylights, etc. See advertisement on page xxii.

The Pullman Sash Balance using Alluminum Tape is by degrees displacing the older system of cords and weights. Lately we inspected some old sashes which had been re-hung with this new balance and found them to work either up or down very easily, and to remain where left. In fact, they were under perfect control. The appliance is neat and attractive in appearance, effective in use, and has been in use a sufficient length of time to demonstrate its durability and merits. Interested parties should send to C. A. Maydwell, general agent for Pacific Coast, 132 Market street, San Francisco, Cal.

Portland Cement of the best quality is of great importance. Where brick work is laid up with a good quality of cement, it is considered earthquake-proof. As the science of manufacture becomes better understood, better qualities of the finished product may be found in the market. Messrs. Girvin, Baldwin & Eyre, at 307 California street, San Francisco, Cal., are now importing several brands of the best quality of Portland Cement. See advertisement on page xiv.

Mantels and interior finish for first-class work for banks, offices, etc., are furnished by Wm. Bateman, 411 Mission street, San Francisco, Cal.

Wire work for Aviaries is coming into use for suburban and country estates where many ornamental wire structures are contemplated. The West Coast Wire Works, Trowbridge & Son, 13 and 15 Spear street, San Francisco, Cal., make a specialty of this class of work, together with all kinds of wire work.

The future points to an advance in the iron manufacturing interests on this Coast. The troubles in the Eastern Centers of manufacture will turn the tide backward toward this section of the country. We would particularly call attention to the Western Iron Works at 123 and 125 Beale St., San Francisco, Cal. This company contracts for all kinds of wrought iron and steel work for buildings from anchors to beams and girders of the largest size.

This firm is too strong to have a couple of months dull times drive them out of the market. They have business energy to back them.

The J. L. Mott Iron Works, has issued a new catalogue and price list of Cast and Wrought Iron, Brass, Bronze and Nickel-plated Stable, Cattle and Piggery Fittings. The plans and suggestions shown are of a nature to be useful for the Architect and Builder of such structures. The sanitary problems are worked in accordance with the latest scientific knowledge of the subject. The designs are artistic and present a beauty of finish hitherto unknown in such work. The designs and arrangements shown are the result of years of experience in this line of manufacture as improved from time to time by suggestions from practical experience. Every architect who has not already done so, should inform himself by addressing the agent. See advertisement on page viii.

The San Francisco Gas Light Co. has introduced so many gas cooking and heating stoves that the old style of wasteful coal stove is being rapidly displaced. It has been demonstrated that the pleasant open fire is more economical with gas than with coal. At present new buildings with any pretentions to modern conveniences provide for open gas fires.

In the new building in course of erection for Mrs. Anna Donahue on Market street, Chas. I. Havens, Architect, outlets have been left for gas connections for open gas fires in the grates. As arranged in this case either open fires or close heaters can be used as desired.

Galvanized Steel Laundry Tubes are being used in many of the modern houses. They are light and tough, the corners rounded and easily cleaned, and do not foul and sour with use. Geo. H. Tay & Co., 612 to 620 Battery St., San Francisco, are the manufacturers.

A correspondent in the *American Machinist* says: If engineers, machinists and millwrights in general and pipe-fitters in particular knew of the good qualities of graphite, I dare say there would be ten times the demand for it. Its lubricating qualities are questioned only by the impractical and it is this quality alone that sounds its key note, so to speak. Let me describe a few of what I consider its most important uses. As above stated its primary object is lubrication and it is to this fact we must credit good pipe joints and cool bearings. In making pipe cement, (or as I would term it, pipe smear), it is not necessary to use the best oil or grease, as it is the Graphite and not the body in which it is suspended, that makes the mixture valuable and the joint perfect. I use the drippings from line shaft bearings, caught in the ordinary way and mix it with the best Ticonderoga flake Graphite so that it can be applied with an ordinary sash tool.

During the past three years I have used about fifteen or twenty pounds of dry Ticonderoga flake Graphite for pipe joints, cylinder heads, piston rod packing, etc.

Bolts, smeared with Graphite mixed as above, I have unscrewed after having been in the dampest places for upward of two years, or more, proving the anti-rusting qualities of Graphite. To cool hot bearings put it on as thick as it will mix with oil. Almost any oil or grease will answer but don't use poor Graphite.

The Bostwick Steel Lath seems to have distanced all other sheet iron lath in this vicinity. They have lately increased their facilities and are prepared to furnish their superior lath in any quantities. The superiority of this lath is at once appearent. The openings form a very strong key to hold the mortar in place, while the mortar that passes through the interstices partially covers the back of the lath, thereby forming a fire resisting material. See advertisement on page xvi.

W. T. Garratt & Co. is one of the oldest manufacturing establishments on this coast. This firm has in the market an efficient and noiseless pump especially adapted for elevators, electric motors and gas engines. This firm also furnishes bronze work of all kinds, both high and low reliefs for gates, doors, railings, hinges, etc., for cemetery work; also copper, brass and iron pipe, tubing and fittings of every description.

Patent Chimneys are a standard feature in house construction in San Francisco and the neighboring cities and towns. The Stevens Patent Chimney is one that has withstood the test of time. See advertisement on page xvii.

Another importing house has come over to American made Tin Plate for roofing and other use. Merchant & Co., of Philadelphia, are now furnishing tin roofing plates of a superior quality, each plate being guaranteed. These plates are made by a continuous process. The best quality of steel sheets in large rolls are put in at one end, run through a scouring machine, thence through a tining bath, and then scoured. A course through a tern bath gives the final coating, and then they are cut, assorted and packed. This is one continuous operation from the sheet steel to the finished product ready for the roofer.

This company furnishes copper, tin or other metal tiles for roof and wall work. These tiles give a beautiful effect to towers or high pitched roofs. The Star Ventilators furnished by them are of practical utility. See advertisement on page xxi.

The re-opening of the works of the Hydraulic Pressed Brick Company last month marks a period in the brick architecture of San Francisco. The works are situated near Vallejo where the Company has an abundance of material well adapted to the manufacture of pressed bricks. The hard clay and shale is first carried to and stored in sheds where it air slaks, dries and crumbles. It is then put into a course crusher and thence run through a finer crusher, sifted and bolted, and the resulting fine flour clay dust is conducted through the moulding and pressing machine where it is first pressed from below and then from above with a pressure of 2,000 lbs. to the inch. The bricks are now taken to the kiln and packed for burning. The kiln is continuous, but divided into eighteen compartments by open arches. Each compartment holds one day's work, or 35,000 bricks. As we inspected the kiln the conclusion was forced upon us that the economic system upon which this company is working will revolutionize the general opinion that brick is so much more expensive than frame. The daily capacity of the machine and kiln is 35,000 extra quality of stock and pressed bricks, and so nearly automatic that forty men constitute the working force. Architects and builders will find it to their advantage to look into this matter.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., July 14th, 1892. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 28th day of August, 1892, and opened immediately thereafter, for all the labor and materials required for the erection and completion of the buildings for the U. S. Quarantine Station, at San Diego, California, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent, San Diego, California.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids, or to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidder. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the erection and Completion of the buildings for the U. S. Quarantine Station, at San Diego, Cal," and addressed to,

W. J. Edbrooke,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., July 2, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 2d day of August, 1892, and opened immediately thereafter, for all the labor and material required for the excavation, foundations, cut stone and brick work, iron and wood floor and roof construction, roof covering, approaches, etc., for the U. S. Post Office building at Fort Dodge, Iowa, in accordance with the drawing and specification, copies of which may be had on application at this office or the office of the Superintendent at Fort Dodge, Iowa.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Excavation, Foundations, Cut Stone and Brick work, Iron and Wood Floor and Roof Construction, etc., for the U. S. Post Office Building at Fort Dodge, Iowa," and addressed to,

W. J. Edbrooke,
Supervising Architect.

CITY BUILDING NEWS.

Baker and Greenwich. To build except painting and plumbing; owner, Otto Kaiser; architects, Martens & Coffey; contractor, J. J. O'Brien; cost, $3,370; signed, June 30; filed, June 22; payments, $840, enclosed; $840, brown mortar on; $840 completed; $845, 35 days.

Battery near Pacific. Plumbing and gas-fitting; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, Wm. S. Snook & Son; cost, $3,480; signed, June 11; filed, June 18; payments, 75 per cent. as work progresses 1st day of each month; balance, 35 days.

Broadway near Franklin. Painting, graining, etc.; owner, J. H. & M. J. Hatch; architect, Jas. E. Wolfe; contractor, J. F. Sullivan; cost, $1,130; signed, June 4; filed, June 7; payments, 75 per cent. of value of work done when exterior is primed; 75 per cent. of value of work done when interior is primed and exterior has received two coats of paint; 75 per cent. completed, 25 per cent. 35 days.

Brosman and Guerrero. Frame building; owner, Mary S. Hodgkins; architect, Jno. T. Kidd; contractor, W. A. Secor; cost, $2,790; signed, June 13; filed, June 15; payments, $400, first floor joists on; $600 enclosed; $300, brown mortar on; $600, completed; $700, 35 days.

Buchanan near Union. Two-story frame; owner, P. H. Murphy; architect, C. M. Rousseau; contractor, H. C. Bigge; cost, $3,000; signed, June 16; filed, June 18; payments, $750, frame up; $750, brown mortar on; $750, completed; $750, 35 days.

Bush and Chelsea Place. Lathing and plastering; owner, Jas. Cochran; architect, P. R. Schmidt; contractor, F. Coughlin; cost, $1,000; signed, May 24; filed, June 7; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Bush and Chelsea Place. Hydraulic elevator; owner, Mrs. M. W. Newman; architect, P. R. Schmidt; contractors, W. H. Birch & Co.; cost, $2,675; signed, June 9; filed, June 10; payments, $1,000, ½ work done; $1,000, completed; $675, 35 days.

California and Broderick. Brickwork; owner, Methodist Episcopal Church; architects, Percy & Hamilton; contractor, Waldemar Thurp; cost, $5,703; signed, April 11; filed, June 13; payments, 75 per cent. as work progresses 1st Saturday of each month; balance, 35 days.

California near Drumm. Pile foundation; owner, Luning Co.; architects, Coxhead & Coxhead; contractors, Darby, Laydon & Co.; cost, $7,400; signed, June 14; filed, June 15; payments, 75 per cent. as work progresses, 1st day of each month; balance, 35 days.

California and Sansome. Brick terra-cotta work, etc.; owner, Mutual Life Insurance Co. of N. Y.; architect, Clinton Day; contractor, J. S. McCarthy; cost, $89,984; signed, June 8; filed, June 13; payments, $8,000, walls built to top of fourth story; $10,000, walls built to top of belt course over sixth story; $10,000 walls built to main cornice; $10,000, all exterior and fire walls finished, $12,488, completed, with rebates or extra charges; $17,496, 35 days.

California near Octavia. Carpenter work, etc.; owner, Anna D. Miner; architect, Samuel Newsom; contractor, A. Jackson; cost, $6,000; signed, June 20; filed, June 20; payments, 75 per cent. as work progresses; balance, 35 days.

Cherry near Jackson. Frame residence; owner, Jas. B. Batten; architect, Willis Polk; contractor, R. P. Fravler; cost, $4,179; signed, June 13; filed, June 14; payments, $1,000, frame up; $1,000, brown mortar on; $1,129, completed; $1,050, 35 days.

Clay near Broderick. Alterations and additions; owner, V. J. Dufrance; architect, Chas. M. Rousseau; contractor, Louis Medus; cost, $2,650; signed, May 31; filed, June 2; payments, $862, enclosed; $862, brown mortar on; $862 completed; $664, 35 days.

Crocker Building, 2d floor. Office fittings; owner, Equitable Life Assurance Co.; architect, A. Page Brown; contractors, Miller & Hamilton; cost, $1,000; signed, May 25; filed, June 1; payments, 75 per cent. when completed; balance, 35 days.

Day near Church. Carpenter, brickwork, etc.; owner, Elizabeth Cavanaugh; architect, Edward Burns; contractor, Greenwood Contracting Co.; cost, $4,080; signed; June 6; filed, June 7; payments, $925, frame up; $925, brown mortar on; $925, completed; $905, 35 days.

Douglass near 17th. Frame house; owner, L. Kenney; contractors, Marcuse & Remmel; cost, $1,155; signed, June 2; filed, June 10; payments, $288, frame up; $289, brown mortar on; $289, completed; $289, 35 days.

Drumm near California. Brick and stonework; owner, H. Braunschweiger, architects, Kenitzer & Kollofrath; contractor, Adam Miller; cost, $11,240; signed, June 4; filed, June 6; payments, $2,500, 2d story joists in place; $3,000, fire wall complete; $2,940, completed; $2,800, 35 days.

Duncan near Church. Alterations and additions; owner, Henry Wendt; architects, Martens & Coffey; contractor, M. Laflens; cost, $1,985; signed, June 11; filed, June 13; payments, $750, enclosed, outside finish on and partitions set; $745, completed; $500, 35 days.

Eddy and Leavenworth. Four story frame; owner, Julius Platshek; architect J. G. Hull; contractor, S. T. Crawford; cost, $19,150; signed, June 17; filed June 17; payments, $1,250, foundation walls up and 1st story studding and 2d floor joists on; $2,000, enclosed and roof boards on; $2,500, rough plumbing in and brown mortar on; $3,000, plastered and glazing except store windows done; $1,362.50, interior and exterior finish on; $1,250, completed; $4,787.50, 35 days.

Filbert near Buchanan. Two-story frame; owner, Josephine L. Latte; architect, Emile Depierre; cost, $1,815; signed, April 21; filed, June 4; payments, $400, frame up; $300, brown mortar on; $300, plastered and standing finish on; $801, completed; $451, 35 days.

Fillmore near Bush. Carpenter work, tinning, etc.; owner, J. L. Franklin; architect, Wm. Curlett; contractor, John Miron; cost, $7,825; signed, June 15; filed, June 16; payments, $1,000, second story frame up; $1,000, roof on; $1638.75, outside finish on; $1,500, partitions set; $1,000 completed; $1,950.25, 35 days.

Fillmore near Bush. Lathing, plastering and centers; owner, J. L. Franklin; architect, Wm. Curlett; contractor, Thos. Bodkins; cost, $1,706; signed, June 15; filed, June 22; payments, $600, brown mortar on; $675, completed; $425, 35 days.

First Ave. bet. Fulton and McAllister. Two-story frame; owner, Paul Ritter; contractor, Jacob Schuler; cost, $2,265; signed, May 26; filed, May 27, payments, 75 per cent. as work progresses; balance 35 days.

Folsom and 7th. Three story building; owner, Jennie W. Cushing; architect, A. W. Puttiani; contractors, Childs & Chatham; cost, $15,925; signed, June 13; filed, June 21; payments, $2,500, frame up; $2,000, enclosed and chimneys built; $2,000, lathed, brown mortar on and window frames set; $2,000, plastered; $3,423, completed; $400, 35 days.

Fourteenth near Howard. Three-story frame; owner, J. Johnson; architects, John & Balczynski; contractors, Schutt & Kreeker; cost, $7,800; signed, June 6; filed, June 7; payments, $2,000, frame up; $1,950, brown mortar on; $1,950, ready for painter; $1,900, accepted.

Franklin near Sacramento. Alterations and additions; owner, I. W. Hellman architect, Clinton Day; contractor, C. Chisholm; cost, $28,900; signed, June 13; filed June 15; payments, $3,675, frame and chimneys built; $5,400, rough plumbing in, roofed and brown mortar on; $3,000, plastered; $7,625, plumbing completed $1,975, completed; $7,225, 35 days.

Franklin near Vallejo. Carpenter work; owner, Alex. Warner; architect, E. A. Herman; contractors, White Bros.; cost, $7,270; signed, June 9; filed, June 11; payments, 75 per cent. as work progresses, 1st and 15th day of each month; balance, 35 days.

Geary, No. 36½ and California, No. 573. Alterations; owner, The Luning Co.; architects, Townsend & Wyneken; contractor, J. W. Wessinger; cost, $3,500; signed, June 9; filed, June 9; payments, $2,000, completed; $1,500, 35 days.

Green near Stockton. Concrete and artificial stone work; owner, A. Demartini; architect, Wm. Mooser; contractor, Geo. Goodman; cost, $1,067; signed, May 24; filed, June 3; payments, 75 per cent. as work progresses; balance 35 days.

Green and Union. Three-story frame; owners, A. Demartini and J. Cavagnaro; architect, Wm. Mooser, contractor, John J. Dunn; cost, $7,340; signed, June 20; filed, June 20; payments, $1,095, frame up to second floor including second story joists; $1,095, enclosed; $1,095, brown mortar on; $1,095, plastered, rear platforms and front finished; $1,095, completed; $1,825, 35 days.

Greenwich near Laguna. Two story frame; owner, Jacques Lassus; architect, Chas. M. Rousseau; contractors, Miron & Gardner; cost, $2,975; signed, June 1; filed, June 2; payments, $743, enclosed; $743 brown mortar on and front finished; $743; completed; $746, 35 days.

Hartford St. One-story cottage; owner, Chas. Steinbring; contractors, Petterson & Person; cost, $2,200; signed, June 11; filed, June 13; payments, $550, frame up; $550, brown mortar on; $550, completed; $550, 35 days.

Jessie near 6th. Alterations and additions; owner, Thos. Reid; architects, Shea & Shea; contractor, J. J. O'Brien; cost, $2,900; signed, June 14; filed, June 14; payments, $725, house moved, raised and new frame up; $725, plastered; $725, completed; $725, 35 days.

Jersey near Castro. Three one-story cottages; owner, Cal. Investment Association; contractor, W. H. Mead; cost, $4,200; signed, June 13; filed, June 17; payments, $900, frame up; $900, brown mortar on; $1,200, completed; $1,200, 35 days.

Jones and McAllister. Cast and wrought iron work; owner, Hibernia Savings and Loan Society; architects, Pissis & Moore; contractor, Henry Ralston; cost, $1,092; signed, May 20; filed, June 6; payments 75 per cent. 1st and 15th day of each month as work progresses; balance, 35 days.

Market near Tenth. Brick building; owner, Isabella Alice Clark; architect, Clinton Day; contractor, T. H. Day; cost, $40,900; signed, May 31; filed, May 31; payments, $4,850; 1st tier of joists set; $2,181, 2d tier set; $6,480, 4th tier set, $6,000, roof ready for tinning; $6,255, plastered, tinned and floored; $11,648, completed; $12,475, 35 days.

Market near 17th. Three-story frame; owner, Geo. R. Monroe; architect, Geo. H. Kerr; contractor, Wm. Campbell; cost, $4,450; signed, May 26; filed, June 2; payments, $1,000, enclosed; $1,000, brown mortar on; $1,000, painted and plastered; $450, completed; $1,000, 35 days.

Masonic Ave. near Waller. To build; owner, C. Allison; architect, W. H. Lillie; contractor, F. W. Lewis; cost $1,385; signed, May 28; filed, May 31; payments, $207.75, frame up; $207.75, enclosed; $207.75, brown mortar on; $207.75, standing finish on; $207.75, completed, $846.25, 35 days.

Mission near New Montgomery. Brick work; owner, E. H. Kittredge; architect, Chas. Geddes; contractors, Richardson & Gale; cost, $20,800; signed, June 11; filed, June 13; payments, $5,000, walls ready for 1st floor joists; $4,000, walls ready for 3rd story joists; $3,000, walls ready for 5th story joists; $3,000, completed; $5,200, 35 days.

Mission near New Montgomery. Carpenter work; owner, E. H. Kittredge; architect, Chas. Geddes; contractor, A. Jackson; cost, $20,200; signed, June 11; filed, June 13; payments, $4,500, second floor joists set and iron posts up ready for brick work; $3,000, fourth floor joists secured; $3,000, roof on, floors laid and windows in; $2,500, brown mortar on, outside finished and stairs up; $2,150, completed; $5,050, 35 days.

Mission St. Pier No. 2. To build bridge; owners, J. Rosenfeld & Sons; contractor, S. F. Bridge Co.; cost, $5,585; signed, May 20; filed, June 11; payments, 50 per cent. when material is on the ground; 25 per cent. completed; 25 per cent. 35 days; $51 added to the cost for each pile driven.

Mission near 16th. Store and flats; owner, Edward Hawthorne; contractor, W. C. Robinson; cost, $4,700; signed, June 2; filed, June 7; payments, $800, frame up; $800, enclosed, gas and water pipes in; $800, plastered; $800, carpenter work done; $300, completed; $1,200, 35 days.

Mission near 17th. Alterations; owner, Adolph Morris; contractors, Droge & Munster; cost, $5,080; signed, June 6; filed, June 7; payments, $950, 1st story studding set, $950 brown mortar on; $950, plastered; $960, completed; $1,270, 35 days.

Mission St. No. 2,314. To build; owner, A. Rafetto; contractors, Tocc & Massa; cost, $2,735; signed, May 12; filed, June 13; payments, $410.25, brickwork and excavation finished; $410.25, skeleton put on; $410.25, brown mortar on; $410.25, completed; $683.75, 35 days.

Natoma near 9th. Alterations and additions; owner, P. Foley; architect, H. R. Schmuckert; contractor, Jas. Larkin; cost, $1,800, signed, June 14; filed, June 15; payments, $450, roof on; $450, brown mortar on; $450, completed, $450, 35 days.

O'Farrell near Devisadero. Three-story frame; owner, Seymour Gabriel; architects, B. McDougall & Son; contractors, G. Petersen and A. Olson; cost, $9,500; signed, June 22; filed, June 23; payments, $800, brick walls and 1st tier of joists in; $800, frame up; $1,400, rustic on, shingled, cornice up, rough plumbing in and ready for lathing; $2,300; plastered and one coat of paint on; $800; interior finished, painted and outside platforms complete; $800, completed; $2,375, 35 days.

O'Farrell near Fillmore. Two-story frame; owner, Mrs. H. A. McLean; cost, $4,000; signed, June 4; filed, June 2; payments, $800, frame up; $700, brown coated, $850, plastered; $850, completed; $1,000, 35 days.

Oregon and Drumm. Two-story brick building; owner, J. G. Fair; architect, H. A. Schulze; contractors, Riley & Loane; cost, $18,980; signed, June 8; filed, June 11; payments, 75 per cent. as work progresses, 1st day of each month; balance, 35 days.

Oregon and Drumm. Two-story brick; owner, Jas. G. Fair; architect, H. A. Schulze; contractors, O'Connell & Lewis; cost, $8,600; signed, June 15; filed, June 22; payments, 75 per cent. as work progresses 1st day of each month, balance, 35 days.

Oregon and Drumm. Two-story brick; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Wm. Cronan; cost, $1,890; signed, June 18; filed, June 22; payments, 75 per cent. as work progresses, 1st day of each month; balance, 35 days.

Oregon and Drumm. Cast iron work; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Henry Ralston; cost, $5,956; signed, June 15; filed, June 22; payments, 75 per cent. as work progresses, 1st day of each month; balance, 35 days.

Pacific near Hyde. Three-story flat; owner, Jas. Lomelino; architect, W. C. Dickerson; contractor, John Strand; cost, $4,160; signed, June 18; filed, June 21; payments, $800, frame up; $1,200, enclosed and brown mortar on; $1,100, completed; $1,060, 35 days.

Pacific Ave. near Broderick. Alterations and additions; owner, Clara E. Cunningham; architect, Clinton Day; contractor, C. Chisholm; cost, $10,100; signed, June 6; filed, June 7; payments, $2,500, sheathed and roof ready for tin; $2,000, brown mortar on and house primed; $3,075, completed; $2,525, 35 days.

Page and Clayton. Two-story frame; owner, C. Knickerbocker; contractor, Frank Williams; cost, $2,200; signed, June 14; filed, June 18; payments, $2,200; 35 days.

Park Ave. near City Hall Ave. To build; owner, Eliza Baum; architects, Townsend & Wyneken; contractor, J. H. Wilson; cost, $2,300; signed, June 14; filed, June 14; payments, $500, wall ready for ceiling joists; $600, brown mortar on; $600, completed; $600, 35 days.

Park Road near Park Hill Ave. Carpenter, brick and mill work; owner, Sister M. Ottelia; architects, Shea & Shea; contractor, Hugh Foote, cost, $3,150; signed, May 25; filed, May 27; payments, $865, frame up; $865, enclosed and roof on; $866, tanks in position and outside finish on; $866, completed; $1,288, 35 days.

Pennsylvania Ave. near Colusa. One-story frame; owner, Michael Daly; contractor, J. F. Coleman; cost, $1,350; signed, June 4; filed, June 6; payments, $300, frame up and rustic on; $200, enclosed; $200, plastered; $400, completed; $350, 36 days.

Pierce near Turk. Frame cottage; owner, Emma J. Smith; architect, A. J. Barnett; contractor, John Miron; cost, $1,900; signed; June 9; filed, June 16; payments, $475, roof boards and rustic on; $475, brown coat and outside finish on; $475, completed; $475, 35 days.

Post near Powell. Carpenter, stairwork, etc.; owner, A. Aronson; architects, C. R. & J. M. Wilson; contractor, J. R. Whalen; cost, $8,941; signed, May 31; filed May 31; payments, $1,500, roof ready for tinning; $1,500, brown mortar on; $2,000, inside finish on; $1,705.75, completed; $2,235.25, 35 days.

Post near Powell. Cast wrought iron work, etc.; owner, A. Aronson; architects, C. R. & J. M. Wilson; contractor, C. Ferris; cost, $11,496; signed, May 31; filed, May 31; payments, $2,000, basement walls up and columns set; $2,000, 1st story walls up; $1,500, 2d story walls up; $1,000, 3rd story walls up; $1,000, 4th story walls up; $500, firewalls up; $500.50, completed; $2,860.50, 35 days.

Powell near Sacramento. Three-story frame and alterations; owner, Washington Nevin; contractors, Childs & Chatham; cost, $5,000; signed, June 1; filed, June 2; payments, $433, old house moved and finished; $1,120, building enclosed; $1,121, brown mortar on; $1,121, completed; $1,265, 35 days.

Pacific near Powell. Two-story frame; owner, Mrs. H. Dunn; architects, John & Balczynski; contractor, Peter Johnson; cost, $2,495, signed, June 6; filed, June 6; payments, $500, frame up; $500, enclosed and partitions set; $500, plastered; $475, accepted; $960, 35 days;

Rincon Place and Harrison. Carpenter work and excavations; owner, Charles Chellers; contractors, McLeod & McLain; cost, $4,373; signed, May 21; filed, June 3; payments, $843, frame up; $843, brown mortar on; $843, completed; $844, 35 days.

Sacramento near Hyde. Excavation, brick and patent chimney; owner, Ed. Walsh; architects, Shea & Shea; contractors, Martin Fennell & Son; cost, $1,272; signed, June 11; filed, June 13; payments, $800, foundations complete; $872, chimneys finished; $100, completed.

Sacramento near Hyde. Two-story frame; owner, Ed. Walsh; architects, Shea & Shea; contractor, Geo. Weismann; cost, $14,458; signed, June 9; filed, June 13; payments, $2,334, frame up and rafters on; $2,334, brown mortar on; $2,334, hard finish on; $2,395, completed; $4,113, 35 days.

Sacramento near Maple. Frame cottage with basement; owner, John L. Ballani; contractors, S. C. Murray & Co.; cost, $1,500; signed, June 16; filed, June 21; payments, $300, frame up; $400, brown mortar; $400, completed; $400, 35 days.

Sacramento near Pierce. Alterations and additions; owner, Benjamin Moore; architect, Fred B. Wood; contractor, Robert Currier; cost, $6,907; signed, June 15; filed, June 16; payments, $1,295, grading, carpenter work on Sacramento street front completed, rear building moved and raised, lot graded and brick work done; $1,295, frame of new house up and roof on; $1,295, outside completed, brown mortar on and building primed; $1,295 completed; $1,727, 35 days.

Sacramento near Yerba Buena. Three-story frame; owner, W. Nielson; architects, John & Balczynski; contractor, F. L. Hansen; cost, $5,295; signed, June 17; filed, June 18; payments, $1,000, frame up; $900, floors laid and partitions set; $1,000, plastered; $1,000, completed; $1,395, 35 days.

Scott near Geary. Painting of interior; owner, Board of Education; architect, T. J. Welsh; contractor, J. M. Sindlinger; cost, $1,875; signed, June 1; filed, June 1; payments, 75 per cent. of work done on 1st and 15th day of each month; balance, 35 days.

Seventh and Folsom. Three-story frame; owner, Mrs. J. Cushing; architect, A. W. Pattani; contractors, Childs & Chatham; cost, $15,925; signed, June 13; filed, June 15; payments, $2,500, frame up; $2,000, enclosed and chimneys built; $2,000, brown mortar on and window frames set; $2,000, plastered; $3,423, completed; $4,000, 35 days.

Sixth Ave. near Clement. Frame cottage; owner, W. L. Ferguson; contractor, W. H. Mead; cost, $1,400; signed, June 13; filed, June 17; payments, $800, frame up; $300, brown coated; $400, completed; $400, 35 days.

Sixteenth Ave. near Post. One-story and basement; owner, C. Buckley; architect, J. J. Clark; contractor, W. J. B. Warner; cost, $1,495; signed, June 13; filed, June 13; payments, $670, enclosed; $675, brown mortar on; $675, completed; $675, 35 days.

South Park near 3rd. Three-story frame; owner, N. K. Masten; contractor, Caspar Zwierlein; cost, $5,900; signed, May 25; filed, June 2; payments, $1,087, enclosed; $1,087, brown mortar on; $1,087, plastered and outside finish up; $1,089, completed; $1,450, 35 days.

Stanyon near Page. Two-story frame; owner, Frederick Hoss; architect, S. Hatfield; contractor, A. W. Smith; cost, $3,075; signed, June 2; filed, June 4; payments, $850, enclosed; $850, brown mortar on; $850, plastered; $855, accepted, $1,270, 35 days.

Stewart near Mission. Alterations and additions; owner, Jas. McKenna; architect, D. E. Meliss; contractors, Darby, Laydon & Co.; cost, $1,175; signed, May 28; filed, June 3; payments, 75 per cent. when pile driving has been completed on adjoining lot; 25 per cent. 36 days.

Stuart near Mission. A pile foundation; owner, P. M. Partridge; architect, D. E. Meliss; contractors, Darby, Laydon & Co.; cost, $8,000; signed, May 28; filed, June 3; payments, 75 per cent. 30 days after date of this contract according to work done; 75 per cent. when completed; 25 per cent. 35 days.

Steuart near Mission. Concrete work; owner, P. M. Partridge; architect, D. E. Meliss; contractors, Ransome & Cushing; cost, $14,775; signed, June 1; filed, June 3; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days;

Steuart near Mission. Carpenter work; owner, P. M. Partridge; architect, D. E. Meliss; contractor, Thos. H. Day; cost, $10,150; signed, June 1; filed, June 3; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Stevenson near 4th. Alterations and additions; owner, Jas. Westall; architect, Wm. Curlett; contractor, Wm. Linden; cost, $3,149; signed, June 22; filed, June 23; payments, $500, brick work done and raising done; $500, roof on; $800, brown mortar on; $561.75, completed; $787.25, 35 days.

Sunnyside, block 42, lot 42. Carpenter, brick work, etc.; owner, Wm. Ingarten-architect, Tom Warden; contractor, R. Rochenback; cost, $2,960; signed, June 7; filed, June 7; payments, $740, enclosed; $740, brown mortar on; $740, completed; $740, 35 days.

Sutter near Jones. Alterations and additions; owner, University Club; architect, A. Page Brown; contractors, F. W. Kreling & Sons; cost, $5,190, signed, May 28; filed, May 31; payments, 1st day of each month 75 per cent as work progresses; balance, 35 days.

Sutter near Steiner. Frame building; owner, J. E. Marks; architect, A. J. Barnett; contractor, J. S. W. Saunders; cost, $4,895; signed, June 20; filed, June 21; payments, $970, rustic and roof boards on; $960, brown mortar on; $900, plastered and outside finish on above 1st floor; $900, completed; $1,225, 35 days.

Sutter near Taylor. To build; owner, Cathe M. Atkinson; architect, A. Page Brown; contractors, McGowan & Butler; cost, $10,825; signed, June 18; filed, June 21; payments, 75 per cent. as work progresses; 1st day of each month, balance, 35 days.

Texas near Napa. Carpenter work, etc.; owner, Patrick Howard; contractor, S. Fossum; cost, $1,600; signed, May 31; filed, May 31; payments, $400, frame up and rustic on; $400, brown coated; $400, completed; $400, 35 days.

Treat Ave. near 20th. To build; owner, Maria Yung; contractor, W. H. Mead; cost, $1,300; signed, June 22; filed, June 23; payments, $300, frame up; $300, brown mortar on; $300, completed; $400, 35 days.

Twenty-fifth and Lucky. One-story frame; owner, Gaspar Josick; contractors, Bishop & Brobeck; cost, $2,450; signed, May 24; filed, May 25; payments, $300, 1st story joists set; $500, frame up and roof on; $450, plastered and floors laid; $450, completed; $450, 35 days.

Twenty-fourth and Diamond. One-story and flat; owner, Emma Farnlacher; contractor, H. R. Schmuckert; cost, $2,240; signed, May 31; filed, June 2; payments, $560, frame up; $560, brown mortar on; $560, completed; $560, 35 days.

Valparaiso near Taylor. Two flats; owner, R. Hohenschild; architect, Geo. A. Bordwell; contractors, Hodgkins & Kinsley; cost, $2,041; signed, May 26; filed, May 27; payments, $480, enclosed; $480, brown mortar on and outside finished; $581, completed and accepted; $500, 35 days.

Vermont near Yolo. One-story cottage and basement; owner, Mary Ludeman; contractor, T. F. Mitchell; cost, $1,275; signed, June 16; filed, June, 16; payments, $318.75, frame up; $318.75, brown mortar on; $318.75, completed; $318.75, 35 days.

Vincent near Green. Two-story frame; owner, G. Cumilloni; architects, C. R. & J. M. Wilson; contractor, P. Antonelli; cost, $3,250; signed, May 28; filed, May 28; payments, $812.50, frame up; $812.50, brown coated; $815.50, completed; $812.50, 35 days.

Washington near Baker. Frame building; owner, Eleanor W. Broderick; architect, J. Marquis; contractor, George Richley; cost, $3,145; signed, June 12; filed, June 16; payments, $770, frame up and roof boards on; $770, plastered and outside finish on; $770, completed; $835, 35 days.

Washington near Stockton. Alterations and additions; owner, J. F. Cavagnaro; architect, Wm. Mooser, Jr.; contractor, Gervasio Raito; cost, $1,350; signed, June 8; filed, June 8; payments, $337.50, second story joists up; $337.50, third story up; $337.50, completed; $337.50, 35 days.

York near 23rd. One-story cottage; owner, Mrs. A. A. Whalan; architect, Jos. Falkenhan; contractor, Jas. McConahey; cost, $1,860; signed, June 3; filed, June 3; payments, $400, frame up; $400, plastered, $505, completed; $465, 35 days.

ALAMEDA COUNTY.

Addison near Grant, Berkeley. Frame building; owner, James Reed; contractor, W. B. Wells; cost, $1,300; signed, May 2; filed, June 3; payments, $300, frame up; $300, brown mortar on; $300, completed; $400, 35 days.

Antisell Villa Tract, Berkeley. Two-story frame; owner, Ella T. Preble; architect, C. S. Preble; contractors, Esty & Jewett; cost, $2,850; signed, June 11; filed, June 11; payments, $712.50, roof on and building enclosed; $712.50; plastered; $712.50 completed; $712.50, 35 days.

Block 12, lot 12, Herzog Tract, Oakland. Frame cottage; owner, Louis Arzner architect, H. Stenhilf; contractor, H. F. H. Brown; cost, $1,430; signed, June 16; filed; June 18; payments, $272, frame up; $650, brown coat on; $450, completed; $858, 35 days.

Block 538, lot 5, Oakland. Two-story frame; owner, Antonia Vierira; architect, C. M. Rousseau; contractor, J. B. Eaton; cost, $2,200; signed, June 9; filed, June 10; payments, $550, enclosed; $550, brown mortar on; $550, completed; $550, 35 days.

Broadway and 11th, Oakland. Stucco Work; owner, Joseph Macdonough; architects, Mooser & Cuthbertson; contractors, Kellet & McMurry; cost, $2,000; signed, April 25; filed, June 8; payments, 75 per cent. as work progresses; balance 35 days.

Broadway and 11th, Oakland. Theatre Scenery; owner, Joseph Macdonough; architects, Mooser & Cuthbertson; contractor, W. S. Porter; cost, $2,000; signed, Jan. 7; filed, June 8; payments, payment to be made on delivery of work at building.

Channing Way near Dana, Berkeley. Two-story frame; owner, C. J. Fox; contractors, A. W. Pattiani & Co.; cost, $4,350; signed, June 7; filed, June 10; payments, $1,300 rustic and roof on and chimneys built; $1,100, brown mortar on and exterior primed; $950, completed; $1,100, 35 days.

Dana St., Berkeley. Alterations and repairs; owner, E. L. Fitzgerald; contractor, J. C. Everson; cost, $1,330; signed, June 13; filed, June 13.

Dormitory of St. Mary's Cemetery, Oakland. Vault and monument; owner, Mrs. Mary Canning; architect, Chas. J. Devlin; contractor, A. McLennan; cost, $3,251; signed, June 20; filed, June, 23; payments, $1,200 lot enclosed; curb set, and filling about base of monument completed; $1,238, completed; $813, 35 days.

Dwight Way near Ellsworth, Berkeley. Two-story house; owner, N. S. Trowbridge; contractor, G. A. Embury; cost, $2,600; signed, June 9; filed, June 10; payments, $600, frame up; $600, brown mortar on; $600, completed; $800, 35 days.

Eighth near Oak, Oakland. Two-story frame; owner, F. B. Joseph; contractor, J. C. Whalen; cost, $2,805; signed, April 18; filed, June 9; payments, $965, enclosed; $965, brown mortar on; $965, completed.

Fourteenth near Adeline, Oakland. Two story frame; owner, John R. Hodge; contractor, F. A. Brown; cost, $1,445; signed, May 31; filed, May 31; payments, $361.25, frame up; $361.25, brown mortar on; $861.25, completed; $361.25, 35 days.

Fourteenth near Broadway, Oakland. Bank building; owner, Home Savings Bank; architects, Walter J. Mathews; contractors, R. & J. Smillie; cost, $24,895; signed, June 14; filed, June 14; payments, $2,624.46, one-seventh, completed; $2624.46, two-sevenths completed; $2,624.46, three-sevenths completed; $2,624.46, four-sevenths completed; $2,624.46, five-sevenths completed; $2,624.46, six-sevenths completed; $2,624.46, completed; $6,123.75, 35 days.

Fourteenth and Broadway, Oakland. Bank building; owner, Home Savings Bank; architect, W. J. Mathews; contractor, V. L. Eertin; cost, $21,993; signed, June 7; filed, June 16; payments, $2,749.12, ⅛ work completed; $2,749.13, ⅛ completed; $2,749.12, ⅛ completed; $2,749, ⅛ completed; $2,749.12, 5-6 completed; $2,749.13 completed; $498.25, 35 days.

Fourteenth and Broadway, Oakland. Iron work; owner, Home Savings Bank; architect, W. J. Mathews; contractors, Western Iron Works; cost, $7,125; signed, May 30; filed, June 2; payments, $1871, ⅓ iron and steel work completed; $1871, ⅓ completed; $1,871, entirely completed; $1872, 35 days.

Fourteenth and Broadway, Oakland. Marble work; owner, Joseph Macdonough; architects, Mooser & Cuthbertson; contractors, Cal. Gas Fixture Co.; cost, $1,470; signed, May 9; filed, June 2; payments, $490, goods delivered; $490, completed; $490, 35 days.

Fourteenth near Washington, Oakland. To build; owner, George Uhl; architect, Walter J. Mathews; contractors, Remillard Brick Co.; cost, $2,970; signed, June 16; filed, June 16; payments, $1,000, brickwork up to 1st floor joists; $1,200, brickwork finished; $750, 35 days.

Franklin near Durant, Oakland; Three-story frame; owner, Y. W. C. A.; architect, Chas. Mau; contractors, Herbst & McLeod; cost, $11,061; signed, June 17; filed, June 21; payments, $2,000, ¼ materials furnished and work done; $2,000, ½ materials furnished and work done; $2,000, ¾ materials furnished and work done; $2206.75, completed; $2,765.25, 35 days.

Franklin near Durant, Oakland. Excavation and brickwork; owner, Y. W. C. A.; architect, Chas. Mau; contractors, Remillard; Brick Co.; cost, $1,300; signed, June 20; filed, June 21; payments, $600, excavation done and foundation built, $450 chimneys up and all brickwork completed; $325, 35 days.

Fruitvale Ave., Fruitvale. To build; owner, F. Tillman, Jr.; architect, H. Geilfuss; contractors, Schutt & Kreeker; cost, $1,880; signed, June 9; filed, June 10; payments, 75 per cent. 1st and 15th day of each month as work progresses; balance, 35 days.

Fourteenth near 11th Ave., Oakland. One-story building; owners, Wilkinson & Brooks; architect, G. H. W. Deike; contractor, A. Enos; cost, $1,230; signed, June 6; filed, June 6; payments, $450, shingled; $450, brown mortar on; $330, 35 days.

Harrison and 11th, Oakland. Two-story frame; owner, Y. M. C. A. of Oakland; contractor, L. H. Long; cost, $4,172; signed, June 2; filed, June 2; payments, 75 per cent. of value of work done and materials used; June 20, 75 per cent. of work done and materials used since last payment; June 30, 75 per cent. of work done and materials used since last payments; balance, 35 days.

Hilligass Tract, Berkeley. One-story frame; owner, Mary Harmon; contractor, A. W. Smith; cost, $1,750; signed, May 31; filed, June 3; payments, $812.50, completed; $437.50, 35 days.

Myrtle and First, Oakland. To build; owner, R. Hickmont; contractors, Gardner & Boyden; cost, $3,104, signed, June 23; filed, June 23; payments, $1163.50, ½ of work completed; $1163.50, completed; $776, 35 days.

Oak Park Tract, Alameda. To build; owner, G. H. Hellman; architect, Willis Polk; contractors, C. H. Fosters & Son; cost, $2,170; signed, June 18; filed, June 21; payments, $500, sheathed; $375, walls shingled and roof on; $375, brown mortar on; $375, completed; $545, 35 days.

Oak Tree Farm Tract, Oakland. To build; owner, J. R. Hodge; contractor, F. A. Brown; cost, $1,595; signed, June 9; filed, June 9; payments, 75 per cent. as work progresses; 25 per cent., 35 days.

Pacific Ave. near Benton St., Alameda. To build; owner, David Clarke; contractor, Marcuse & Remmel; cost, $1,600; signed, April 15; filed, June 14; payments, $400, frame up; $400, brown mortar on; $400, completed; $400, 35 days.

Peralta Place, Lot 84. To build; owner, Wm. McIntyre; architect, Geo. H. Bordwell; contractors, Nickerson & Caldwell; cost, $4,350; signed, May 31; filed, May 31; payments, $900, frame up and roof and diagonal boarding on; $750, brown mortar on; $800, white mortar on; $800, completed; $1,100, 35 days.

San Antonio Ave. near Paru, Alameda. To build; owner, Sarah E. Bancroft; architects, Stone & Munson; contractors, Knox & Cook; cost, $3,791; signed, June 14; filed, June 15; payments, $710, frame up; $710, enclosed; $710, brown mortar on; $713.25, completed; $947.73, 35 days.

San Pablo Ave. and 28th, Oakland. Two-story frame; owner, W. Konecke; contractors, Leiter & Prugh; cost, $2,326; signed, June 21; filed, June 23; payments, $581.50, frame up and roof on; $581.50 brown mortar on; $581.50, completed; $581.50, 35 days.

Tenth near Jackson, Oakland. Two-story frame; owner, T. A. Crelin; architects, J. C. & E. A. Mathews; contractor, H. E. Jones; cost, $3,230; signed, June 16; filed, June 16; payments, $800, frame up and ready for enclosing; $1,100; enclosed, brown mortar on and exterior primed; $972.50, completed; $807.50, 35 days.

Thirteenth near Washinfiton, Oakland. To build; owners, J. & H. Abrahamson; architect, Chas. Mau; contractors, Rankin & Mohr; cost; $1,660; signed, June 18; filed, June 18; payments, $553.33, rough work done; $553.33, completed, $553.33, 35 days.

Twelfth near 23rd Ave., Oakland. Two-story frame; owner, L. Brand; architect, E. C. McManus; contractor, Edward D. Bassett; cost, $5,450; signed, June 20; filed, June 21; payments, $1,362, foundation laid and frame up; $1,362, brown mortar on; $1,362, plastered and all woodwork and plumbing done; $1,362, 35 days.

Union near Eagle Ave., Alameda. To build; owner, A. J. Munro; contractors, Marcuse & Remmel; cost, $2,440; signed, June 20; filed, June 21; payments, $610, frame up $610, brown mortar on; $610, completed; $610, 35 days.

Union near San Antonio, Ave., Alameda. Two-story frame; owner, W. W. Haskell; architect, C. S. Shaner; contractors, D. Straub & Son; cost, $5,337; signed, May 27; filed, June 6; payments, $1,334.25, frame up and roof sheathing on; $1,334.25, enclosed, cornice on and window frames in; $1,335.25, completed; $1,334.25, 36 days.

Wicks Addition near San Leandro. Two one-story frames; owner, J. Kerwin; architect, J. J. Clark; contractor, C. W. Collins; cost, $2,788; signed, June 6; filed, June 6; payments, $695, frame up and rustic on; $695, brown mortar on; $695, inside finish complete; balance, 35 days.

SANTA ROSA.

Brick building 100 feet by 100 feet to be used as a fruit storage and assortment house.

PATALUMA.

H. Mecham will build a $5,000 residence on his ranch. Hedges & Paff, are the builders.

RENO, NEVADA.

The Reno Gazett, Nevada, publishes a partial list of buildings in course of construction and shortly to be commenced in that town. Ed. Barber is putting up a neat little cottage. Jim Bristol is erecting a fine house. P. L. Flanigan is very shortly to commence the building of a $6,000 residence. Harry Anderson is building a $5,000 house. C. C. Powning is just putting the finishing touches on a $3,000 cottage of modern architecture. The Bank of Nevada will commence in a day or two the erection of their new two-story brick bank building. C. S. Martin is putting up two two-story brick stores. Benj. Curler, Jr., is putting up a nice house. W. F. Chapman has one just completed. Miss Moral is building a pretty little house. Julien & Fletcher will shortly commence the construction of a two-story brick. C. J. Brookins will build a one-story brick on the foundation already laid, (34x100).

These are only a few of the many improvements now going on and in contemplation, so it will be seen that Reno is at least holding her own in the march of progress.

The California Architect and Building News.

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IT is only a few years since gas began to attract general attention as an economical method of heating. The advantages in the use of gas as fuel for cooking and heating, and for warming dwellings, have been fully demonstrated. Steam boilers are now heated with gas. Rooms can be warmed by hot water circulating pipes run around the room in such a manner as to warm the coldest alcove or corner to an agreeable temperature. The hot water circulation is kept up by the application of a gas flame under a small boiler. With a more general use of gas as fuel, chimneys will not be required, thus saving a considerable expense, especially for steam boilers.

THE practice of separating the different trades and making separate contracts for each department of a building with parties who make such department a special business, seems to be extending. It makes a little more work for the architect in the beginning, but in the long run the advantages are on the side of separate contracts. Where the work is divided, the architect comes more directly in contact with the chief of that division and the work is done more in harmony with the special designs for that purpose. In some cases where experienced workmen are required, trouble has been caused by inferior work, more especially in the electric wiring of buildings, which according to the *Canadian Architect*, is in some cities included in the plumbers' specifications.

THE *Sacramento Weekly Union*, of May 27th, contains an illustration and description of the extensive manufacturing and repair works of the Southern Pacific Company in Sacramento, California, where their locomotives and cars are constructed. These shops give employment to some three thousand persons and cover an area of over thirty acres, and the grounds are laid out with plots of turf and beds of flowers, bordered with rows of eucalyptus trees. These trees were planted some years ago and are now shade trees of seventy feet in height. The grounds contain over three thousand shade and ornamental trees. Only in a place like Sacramento is it practically possible to build such workshops in a veritable garden of paradise.

The *Union* is a staunch friend to the interests that tend to build up and develop this section of the Coast. The section around and back of Sacramento is especially adapted for manufacturing. We shall touch upon this subject again in the future.

ARCHITECTS AND STEAM PLANTS.

AN engineer says: "I wonder why it is that architects, in their plans and specifications for office and other large buildings, pay such little attention to adequate accommodations for the steam plant. I have in mind a building recently completed in this city, of magnificent proportions and splendidly finished, having everything within its walls that modern ingenuity has devised for the convenience of office men, yet when the building was fairly under way and the proprietors began to look around for their steam equipment, they had to entirely change their plans in that particular, for the reason that the space allotted for the engine room would not permit them to carry out their original designs. The room was too cramped altogether, and instead of putting in one or two large engines with capacity sufficient to furnish the power required, they were compelled to place nearly four times that number of a different type of engine, small enough to fit in the small apartments set aside for that purpose. Now, isn't that all wrong? Why, it looks like some of these architects do not regard the steam plant as at all worthy of consideration in making their calculations, yet nothing is more important, for light, heat and transfer facilities are dependent upon it, and if these do not work right and give satisfaction to the occupants, the building will lose its reputation for good management, and untenanted rooms will be the consequence. The sooner this fact is recognized by our architects the better, and the sooner will they become entitled to the good regards of all those who in one way or another are interested in the efficiency and proper arrangement of the steam plant."—*Age of Steel.*

SCOPE AND HISTORICAL DEVELOPMENT OF THE SCIENCE OF "TIMBER PHYSICS."

BY B. E. FERNOW, CHIEF OF FORESTRY DIVISION.

Continued from page 65.

WHENEVER human knowledge in any particular direction has grown to such an extent and complexity as to make it desirable for greater convenience and better comprehension to group it, correlate its parts, and organize them into a systematic whole, we may dignify such knowledge by a collective name as a new science or branch of science. The need of such organization is especially felt when a more systematic progress in accumulating new knowledge is contemplated. In devising, therefore, the plans for a systematic and comprehensive examination of our woods it has appeared desirable to establish a system under which is to be organized all the knowledge we have or may acquire of the nature and behavior of wood.

To this new branch of natural science I propose to give the name of "timber physics," a term which I have used first in my Report for 1887, when, in devising a systematic plan of forestry science, the absence of a collective name for this class of knowledge became apparent.

While forest biology contemplates the forest and its components in their *living condition*, we comprise in timber physics all phenomena exhibited in the *dead material* of forest production.

The practical application of timber or wood for human use, its technology, is based upon the knowledge of timber physics, and under this term we comprise not only the anatomy, the chemical composition, the physical and mechanical properties of wood, but also its diseases and defects, and a knowledge of the influences and conditions which determine structure, physical, chemical, mechanical, or technical properties and defects. This comprehensive science, conceived under the name here chosen, although developed more or less in some of its parts, has never yet been dignified by a special name, nor has a systematic arrangement of its parts been attempted before. It comprises various groups of knowledge derived from other sections of science, which are neither in themselves nor in their relations to each other fully developed.

While plant physiology, biology, chemistry, anatomy, and especially xylotomy, or the science of wood structure, are more or less developed and contribute toward building up this new branch of science, but little knowledge exists in regard to the interrelation between the properties of wood on one side and the modifications in its composition and structure on the other. Even the relation of the properties of various woods, as compared with each other, and their distinct specific peculiarities is but little explored and established. Less knowledge still exists as to the relation of the conditions which surround the living tree to the properties which are exhibited in its wood as a result of its life functions. Suppositions and conjectures more or less plausible preponderate over positive knowledge derived from exact observation and from the results of experiments. Still less complete is our knowledge in regard to the relation of properties and the methods and means used for shaping or working the wood.

The close interrelation of all branches of natural science is now so well organized that I need not remind my readers that hard and fast lines cannot be drawn, whereby each field of inquiry is confined and limited; there must necessarily be an overlapping from one to the other. Any system, therefore, of dividing a larger field of inquiry into parts is only a matter of convenience; its divisions and correlations must be to some extent arbitrary and varied, according to the point of view from which we proceed to divide and correlate.

There are two definite and separate directions in which this branch of natural science needs to be developed, and the knowledge comprised in it may be divided accordingly. On one side it draws its substance largely from the more comprehensive fields of botany, molecular physics, and chemistry, and on the other side it rests upon investigations of the wood material from the point of view of mechanics or dynamics. In the first direction we are led to deal with the wood material as it is, its nature or appearance and *condition;* in the second direction we consider the wood material in relation to external mechanical forces, its *behavior* under stress.

The first part is largely descriptive, concerned in examining gross and minute structures, physical and chemical conditions and properties, and ultimately attempting to explain these by referring to causes and conditions which produce them. This is a field for investigation and research by the plant physiologist in the laboratory in connection with studies of environment in the forest. The second part, which relies for its development mainly upon experiment by the engineer, deals with the properties which are a natural consequence of the structure, physical condition, and chemical composition of the wood as exhibited under the application of external mechanical forces. It comprises, therefore, those studies which contemplate the wood substance, with special reference to the uses of man, and forms ultimately the basis for the mechanical technology of wood or the methods of its use in the arts.

The correlation of the result of these two directions of study as cause and effect is the highest aim and ultimate goal, the philosophy of the science of timber physics. Timber physics, in short, is to furnish all necessary knowledge of the rational application of wood in the arts, and at the same time, by retrospection, such knowledge will enable us to produce in our forest growth qualities of given character.

Conceived in this manner it becomes the pivotal science of the art of forestry, around which the practice both of the consumer and producer of forest growth moves.

The first part of our science would require a study into gross and minute anatomy, the structure of the wood, form, dimensions, distribution, and arrangement of its cell elements and of groups of structural parts, not only in order to distinguish the different woods, but also to furnish the basis for an explanation of their physical and mechanical properties. We next would class here all investigations into the physical nature or properties of the wood material, which necessarily also involves an investigation into the change of these properties under varying conditions and influences. A third chapter would occupy itself with the chemical composition and properties of woods and their changes in the natural process of life, which predicate the fuel value and durability as well as the use of the wood in chemical technology.

Although, philosophically speaking, it would hardly seem admissible to distinguish between physical and mechanical properties or to speak of "mechanical" forces, for the sake of convenience and practical purposes it is desirable to make the distinction and to classify all phenomena and changes of non-living bodies, or bodies without reference to life functions, into chemical, physical, and mechanical phenomena and changes. As chemical phenomena or changes, and therefore also conditions or properties, we class, then, those which have reference to atomic structure; as physical phenomenal changes and properties, those which refer to and depend on molecular arrangement; and as mechanical (molar) changes and properties those which concern the masses of bodies, as exhibited under the influence of external forces, without altering their physical or chemical constitution.

There is no doubt that this division is somewhat forced, since not only most or all mechanical (as here conceived) changes are accompanied or preceded by certain alterations of the interior molecular arrangement of the mass, but also many physical phenomena or properties, like density, weight, shrinkage, having reference to the mass, might be classed as mechanical; yet, if we conceive that physical phenomena are always concerned with the "quantity of matter in molecular arrangement" and with the changes produced by interior forces, while the latter are concerned rather with the "position of matter in molecular arrangement" and with changes under application of exterior forces, the distinction assumes a practical value.

Our conception of these distinctions will be aided if we refer to the physical laboratory as furnishing the evidence of physical phenomena, and to the mechanical laboratory as furnishing evidence of mechanical phenomena.

These latter, then, form the subject of our second or dynamic part of timber physics, which concerns itself to ascertain mainly by experiment, called tests, under application of the laws of elasticity, the strength of the material and other properties which are exhibited as reactions to the influence of applied stresses, and those which need consideration in the mechanical use of the material in the various arts.

Having investigated the material in its normal condition, we would necessarily come to a consideration of such physical and chemical conditions of the material as are abnormal and known as disease, decay, or defects.

Finally, having determined the properties and their changes as exhibited in material produced under changing conditions or differing in physical and structural respects, it would remain the crowning success and goal of this science to relate mechanical and physical properties with anatomical and physiological development of the wood substance.

THE SUBLIME AND BEAUTIFUL.

By Edmund Burke.

Published about 1753.

PART I.—NOVELTY.

THE first and the simplest emotion which we discover in the human mind, is Curiosity. By curiosity I mean whatever desire we have for, or whatever pleasure we take in, novelty. We see children perpetually running from place to place, to hunt out something new: they catch with great eagerness, and with very little choice, at whatever comes before them; their attention is engaged by everything, because everything has, in that stage of life, the charm of novelty to recommend it. But as those things, which engage us merely by their novelty, cannot attach us for any length of time, curiosity is the most superficial of all the affections; it changes its object perpetually, it has an appetite which is very sharp, but very easily satisfied; and it has always an appearance of giddiness, restlessness and anxiety. Curiosity, from its nature, is a very active principle; it quickly runs over the greatest part of its objects, and soon exhausts the variety which is commonly to be met with in nature; the same things make frequent returns, and they return with less and less of any agreeable effect. In short, the occurrences of life, by the time we come to know it a little, would be incapable of affecting the mind with any other sensations than those of loathing and weariness, if many things were not adapted to affect the mind by means of other powers besides novelty in them, and of other passions besides curiosity in ourselves. These powers and passions shall be considered in their place. But whatever these powers are, or upon what principle soever they affect the mind, it is absolutely necessary that they should not be exerted in those things which a daily and vulgar use have brought into a stale unaffecting familiarity. Some degree of novely must be one of the materials in every instrument which works upon the mind; and curiosity blends itself more or less with all our passions.

PAIN AND PLEASURE.

It seems then necessary towards moving the passions of people advanced in life to any considerable degree, that the objects designed for that purpose, besides their being in some measure new, should be capable of exciting pain or pleasure from other causes. Pain and pleasure are simply ideas, incapable of definition. People are not liable to be mistaken in their feelings, but they are very frequently wrong in the names they give them, and in their reasonings about them. Many are of opinion that pain arises necessarily from the removal of some pleasure; as they think pleasure does from the ceasing or diminution of some pain. For my part, I am rather inclined to imagine that pain and pleasure, in their most simple and natural manner of affecting, are each of a positive nature, and by no means necessarily dependent on each other for their existence. The human mind is often, and I think it is for the most part, in a state neither of pain nor pleasure, which I call a state of indifference. When I am carried from this state into a state of actual pleasure, it does not appear necessary that I should pass through the medium of any sort of pain. If in such a state of indifference, or ease or tranquillity, or call it what you please, you were to be suddenly entertained with a concert of music; or suppose some object of a fine shape, and bright, lively colors, to be presented before you; or imagine your smell is gratified with the fragrance of a rose; or if without any previous thirst you were to drink of some pleasant kind of wine, or to taste of some sweetmeat without being hungry; in all the several senses, of hearing, smelling, and tasting, you undoubtedly find a pleasure; yet if I inquire into the state of your mind previous to these gratifications, you will hardly tell me that they found you in any kind of pain; or, having satisfied these several senses with their several pleasures, will you say that any pain has succeeded though the pleasure is absolutely over? Suppose, on the other hand, a man in the same state of indifference, to receive a violent blow, or to drink of some bitter potion, or to have his ears wounded with some harsh and grating sound; here is no removal of pleasure; and yet here is felt in every sense which is affected, a pain very distinguishable. It may be said perhaps, that the pain in these cases had its rise from the removal of the pleasure which the man enjoyed before, though that pleasure was of so low a degree as to be perceived only by the removal. But this seems to me subtilty that is not discoverable in nature. For if, previous to the pain, I do not feel any actual pleasure, I have no reason to judge that any such thing exists; since pleasure is only pleasure as it is felt. The same may be said of pain, and with equal reason. I can never persuade myself that pleasure and pain are mere relations, which can only exist as they are contrasted; but I think I can discern clearly that there are positive pains and pleasures, which do not at all depend upon each other. Nothing is more certain to my own feelings that this. There is nothing which I can distinguish in my mind with more clearness than the three states, of indifferenee, of pleasure, and of pain. Every one of these I can perceive without

any sort of idea of its relation to anything else. Caius is afflicted with a fit of the colic; this man is actually in pain; stretch Caius upon the rack, he will feel a much greater pain; but does this pain of the rack arise from the removal of any pleasure? or is the fit of the colic a pleasure or a pain, just as we are pleased to consider it? * * * *

OF THE SUBLIME.

Whatever is fitted in any sort to excite the ideas of pain and danger, that is to say, whatever is in any sort terrible, or is conversant about terrible objects, or operates in a manner analogous to terror, is a source of the *sublime;* that is, it is productive of the strongest emotion which the mind is capable of feeling. I say the strongest emotion, because I am satisfied the ideas of pain are much more powerful than those which enter on the part of pleasure. Without all doubt, the torments which we may be made to suffer are much greater in their effects on the body and mind than any pleasures which the most learned voluptuary could suggest, or than the liveliest imagination, and the most sound and exquisitely sensible body, could enjoy. * * * But as pain is stronger in its operation than pleasure, so death is in general a much more affecting idea than pain; because there are very few pains, however exquisite, which are not preferred to death: nay, what generally makes pain itself, if I may say so, more painful, is, that it is considered as an emissary of this kind of terrors. When danger or pain presses too nearly, they are incapable of giving any delight, and are simply terrible; but at certain distances, and with certain modifications, they may be, and they are, delightful, as we every day experience. The cause of this I shall endeavor to investigate hereafter. * * * *

IMITATION.

The second passion belonging to society is imitation, or, if you will, a desire of imitating, and consequently a pleasure in it. This passion arises from much the same cause with sympathy. For as sympathy makes us take a concern in whatever men feel, so this affection prompts us to copy whatever they do; and consequently we have a pleasure in imitating, and in whatever belongs to imitation merely as it is such, without any intervention of the reasoning faculty, but solely from our natural constitution, which Providence has framed in such a manner as to find either pleasure or delight, according to the nature of the object, in whatever regards the purposes of our being. It is by imitation far more than by precept that we learn everything; and what we learn thus, we acquire not only more effectually, but more pleasantly. This forms our manners, our opinions, our lives. It is one of the strongest links of society; it is a species of mutual compliance, which all men yield to each other, without constraint to themselves, and which is extremely flattering to all. Herein it is that painting and many other agreeable arts have laid one of the principal foundations of their power. And since, by its influence on our manners and our passions, it is of great consequence, I shall here venture to lay down a rule, which may inform us with a good degree of certainty when we are to attribute the power of the arts to imitation, or to our pleasure in the skill of the imitator merely, and when to sympathy, or some other cause in conjunction with it. When the object represented in poetry or painting is such as we could have no desire of seeing in the reality, then I may be sure that its power in poetry or painting is owing to the power of imitation, and to no cause operating in the thing itself. So it is with most of the pieces which the painters call still-life. In these a cottage, a dunghill, the meanest and most ordinary utensils of the kitchen, are capable of giving us pleasure. But when the object of the painting or poem is such as we should run to see if real, let it affect us with what odd sort of sense it will, we may rely upon it that the power of the poem or picture is more owing to the nature of the thing itself than to the mere effect of imitation, or to a consideration of the skill of the imitator, however excellent. Aristotle has spoken so much and so solidly upon the force of imitation in his Poetics, that it makes any further discourse upon this subject the less necessary. * * * *

To be Continued.

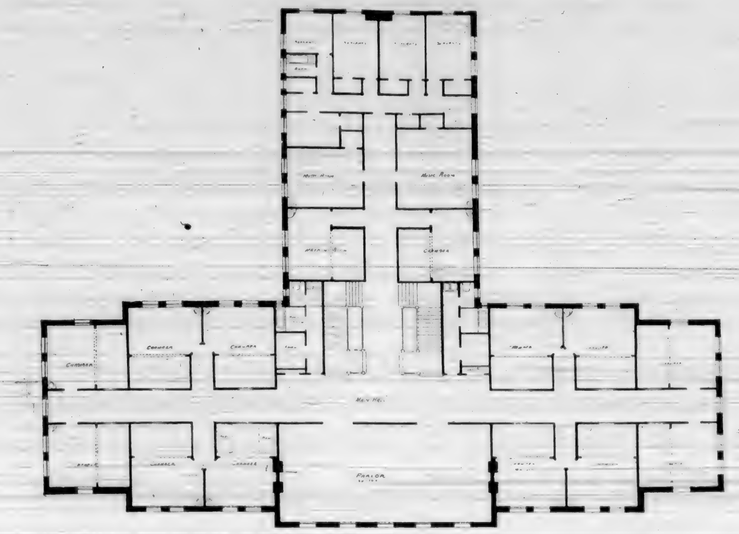
MYTHOLOGY.

AMAZONES or AMAZONIDES, a nation of famous women who lived near the river Thermodon in Cappadocia. All their life was employed in wars and manly exercises. They never had any commerce with the other sex; but, only for the sake of propagation, they visited the inhabitants of the neighbouring country for a few days, and the male children which they brought forth were given to the fathers. According to Justin, they were strangled as soon as born, and Diodorus says that they maimed them and distorted their limbs. The females were carefully educated with their mothers, in the labors of the field; their right breast was burnt off that they might hurl a javelin with more force, and make a better use of the bow; from that circumstance, therefore, their name is derived (*a non, uaza mamma*). They founded an extensive empire in Asia Minor, along the shores of the Euxine, and near the Thermodon. They were defeated in a battle near the Thermodon, by the Greeks; and some of them migrated beyond the Tanais, and extended their territories as far as the Caspian sea. Themyscyra was the most capital of their towns; and Smyrna, Magnesia, Thyatira, and Ephesus, according to some authors, were built by them. Diodorus, I. 3, mentions a nation of Amazons in Africa, more ancient than those of Asia. Some authors, among whom is Strabo, deny the existence of the Amazons, and of a republic supported and governed by women, who banished or extirpated all their males; but Justin and Diodorus particularly support it; and the latter says, that Penthesilea, one of their queens, came to the Trojan war on the side of Priam, and that she was killed by Achilles, and from that time the glory and character of the Amazons gradually decayed, and was totally forgotten. The Amazons of Africa florished long before the Trojan war, and many of their actions have been attributed to those of Asia. It is said, that after they had subdued almost all Asia, they invaded Attica, and were conquered by Theseus. Their most famous actions were their expedition against Priam, and afterwards, the assistance they gave him during the Trojan war; and their invasion of Attica, to punish Theseus, who had carried away Antiope, one of their queens. They were also conquered by Bellerophon and Hercules. Among their queens, Hippolyte, Antiope, Lampeto, Marpesia, etc., are famous. Curtius says, that Thalestris, one of their queens, came to Alexander, whilst he was pursuing his conquests in Asia, for the sake of raising children from a man of such military reputation; and that after she had remained thirteen days with him, she retired into her country. The Amazons were such expert archers, that, to denote the goodness of a bow or quiver, it was usual to call it Amazonian.

Near Marysville they have discovered a mine of hydraulic lime and near by a body of silicious earth, and a company has been formed to manufacture cement.

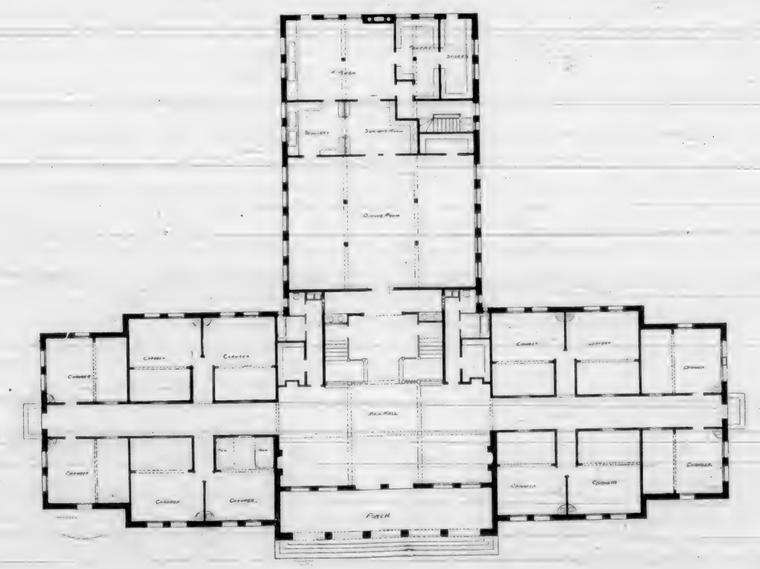
In territorial area the United States ranks third. Great Britain controls 8,557,000 square miles of territory, Russia, 8,452,940 miles, and the United States, counting Alaska, 3,580,242 miles.

The new labor law of New Jersey went into effect in July. It provides that fifty-five hours shall constitute a week's work, and it makes Saturday afternoon a holiday. On other days ten hours is a working day.

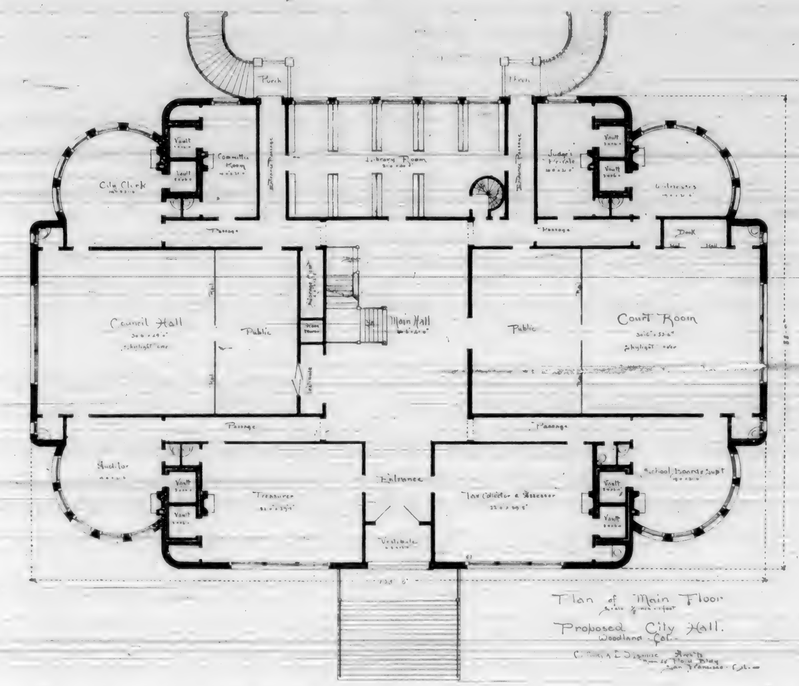


SECOND FLOOR PLAN.

THE plans herewith show the general arrangement of the main and second floors of Roble Hall, Girls' Dormitory, lately erected at the Stanford University, and will accommodate eighty pupils. This building is built of concrete and was erected and finished complete within ninety days from the order to prepare the plans. This is working with a rapidity unusual in buildings of such dimensions.



FIRST STORY PLAN.



PLAN OF CITY HALL, WOODLAND.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE sketch No. 2 of a building and landscape was worked out by Mr. Clarkson Swain. These sketches are three in number and so picturesquely delineated as to furnish artistic ideas to designers for rural buildings.

The remaining sketch will appear in a later number.

THE New City Hall at Woodland, Cal., is from designs by Messrs. Colley & Lemme, Architects, San Francisco.

THE design for the residence in course of erection for D. B. Jackson, Esq., is by Mr. Wm. H. Armitage, Architect, of this city.

ROBLE HALL, Stanford University.—The building "Roble Hall" (Oak Hall) or Girls Dormitory is built on the grounds of the Leland Stanford, Jr., University at Palo Alto, and is situated immediately north of the central quadrangle. The building is 175 feet long by a depth of 118 feet, is three stories high and will accomodate 80 pupils, besides the usual attendants.

The exterior walls are built of concrete, colored yellow to match the stone of the other buildings and built in a manner similar to the museum building of the University, the greatest piece of concrete building construction of modern years. The roof is covered with metalic shingles in imitation of the old tile work of early California buildings.

The floors throughout are finished with wax, the building being finished in a most thorough manner.

The dormitory was erected and ready for occupancy within 90 days from the time the order was given to prepare plans.

Messrs. Percy & Hamilton, Architects, San Francisco.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

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SAN FRANCISCO, CAL.

GIRL'S DORMITORY = PERCY & HAMILTON, Archts
LELAND STANFORD JUNIOR UNIVERSITY.
PALO ALTO, CAL.

BRITTON & REY PHOTO. LITH.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
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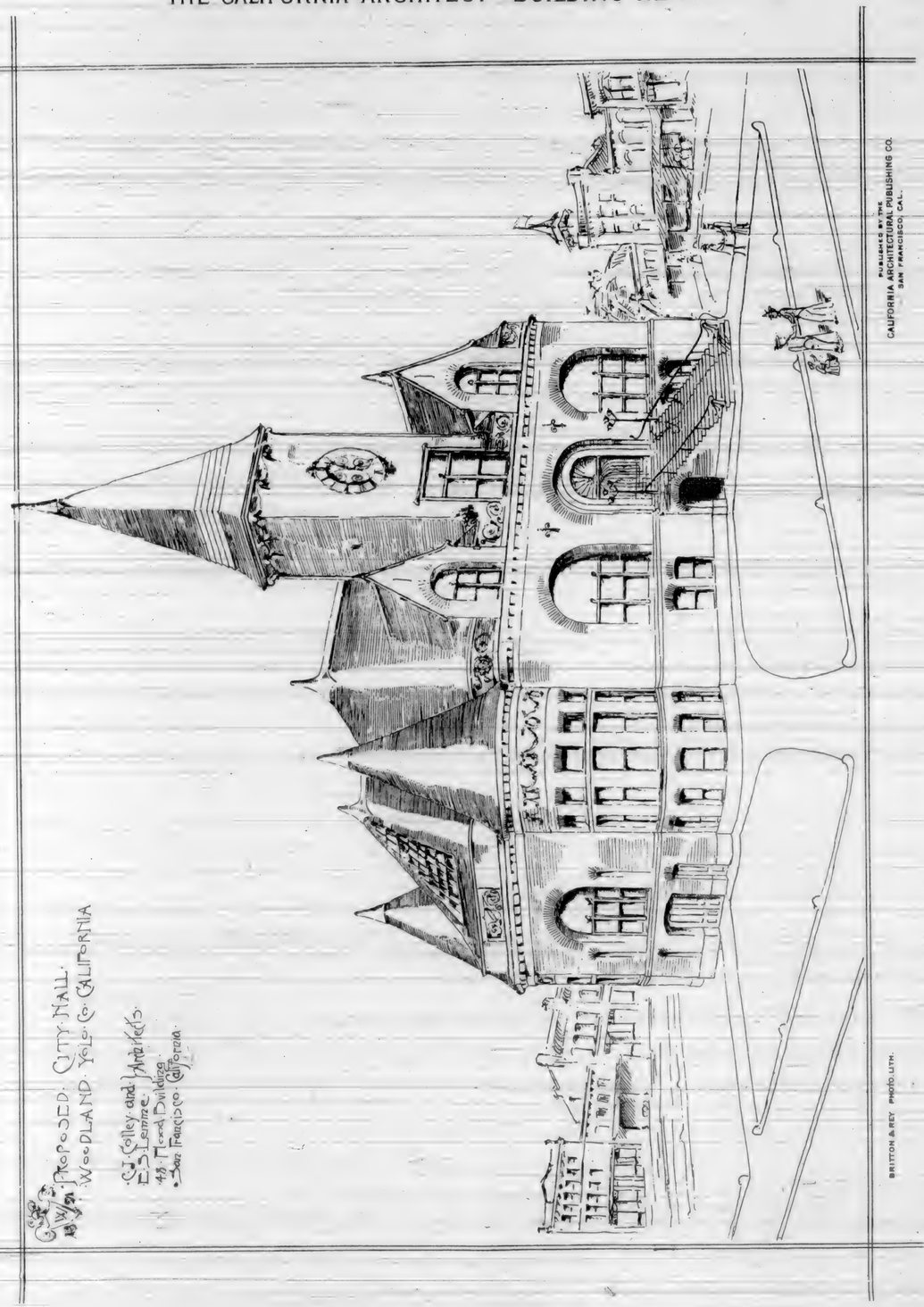

PROPOSED CITY HALL
WOODLAND, YOLO CO. CALIFORNIA

C. J. Colley and Architects
E. D. Lemme
413 Third Building
San Francisco, California

BRITTON & REY PHOTO. LITH.

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"THREE SKETCHES from a CALENDAR." No. 2. 5 Point.

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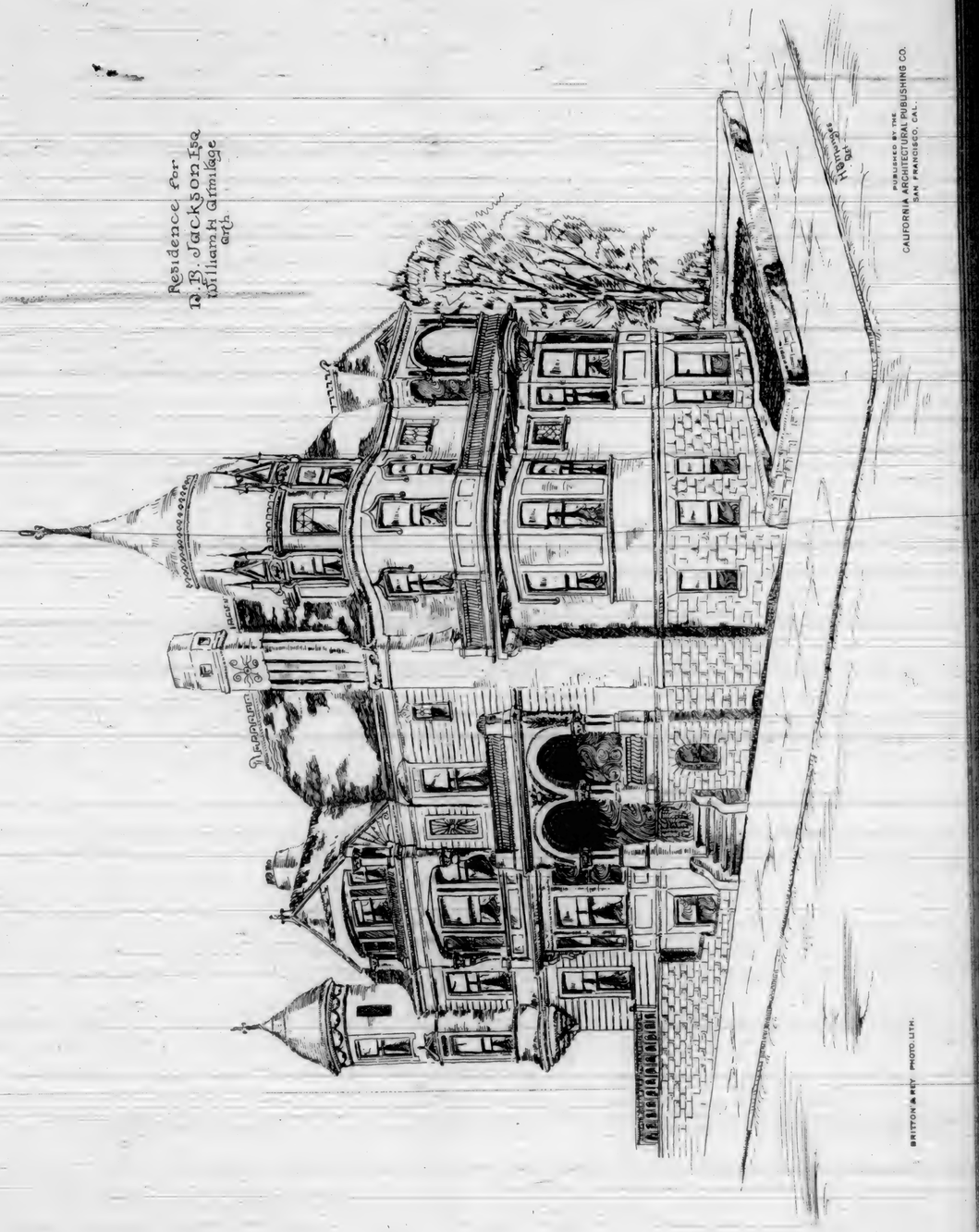

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street

GEO. H. SANDERS, Pres. — OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. — JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. — L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. — O. BROOKS, Treas.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

The first six months of this year has not been as prosperous as the indications at the beginning of the year promised. By a comparison with former years the contracts filed foot up less than for the last year.

FOR FIRST SIX MONTHS.—1892.

	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
January ...	1	14	$ 101,872	22	33	$ 210,665	4	4	$ 7,872	27		$ 320,409
Febry ...	3	8	116,310	28	50	270,149	7	8	24,818	38	66	429,277
March ...	2	8	72,471	30	38	175,071	5	7	14,494	37	83	262,036
April.....	4	22	335,359	46	63	240,772	5	6	20,830	55	91	596,961
May.....	3	17	137,715	46	52	271,200	4	5	21,475	53	74	430,390
June.....	3	9	139,022	39	54	222,110	13	13	51,291	55	76	412,423
Total	16	78	$ 902,749	211	290	$1,398,967	38	43	$140,780	265	411	$2,442,496

To this amount the further sum of $500,000 should be added for work done where no contracts have been filed, which would increase the sum total to $2,942,496.

FOR FIRST SIX MONTHS.—1891.

	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
January ...	3	10	$ 98,106	30	45	$ 174,204	6	7	$ 14,415	39	62	$ 286,725
Febry ...	5	21	305,554	33	32	130,664	5	6	23,751	43	59	459,969
March ...	7	16	221,001	48	58	333,075	13	14	53,586	68	88	607,662
April.....	3	8	119,192	50	80	372,799	12	14	44,390	65	102	536,381
May.....	3	14	228,989	49	79	288,736	15	17	100,165	67	110	617,947
June.....	5	23	211,032	88	123	835,499	16	16	42,558	109	162	888,889
Total	24	92	$1,183,874	298	417	$1,945,974	67	74	$278,865	391	583	$3,410,973

The business of the first six months for several years is shown by the following table.

1885—754 contracts	value,	$4,267,375
1886—670 "	"	2,486,633
1887—516 "	"	3,269,914
1888—437 "	"	2,719,820
1889—546 "	"	3,910,600
1890—556 "	"	3,793,858
1891—583 "	"	3,916,973
1892—411 "	"	2,942,496

In 1885 business was usually heavy. The first six months of this year shows an excess over 1886 and 88, and a decrease from 1889–90 and 91. The months of July and August will show about the same as the same months of last year. The prospect of a good fall trade appears to be good.

THE AMERICAN MONTHLY MICROSCOPIC JOURNAL for July has a chapter on Microscopical Illustrations; also many other papers of interest to workers in that line of science.

We have received the Annual Report of the SMITHSONIAN INSTITUTION and of the NATIONAL MUSEUM at Washington, D. C., for the years 1889 and 1890.

INDUSTRY, San Francisco, for August, has several chapters which present matters of interest to architects and engineers.

THE PHOTOGRAPHIC TIMES for July 15th and 22d, contains an article on "the diaphragm," giving much useful information to the operator. Where the usual circular opening is used, the writer proposes to set the diaphragm at an angle, viz., the top outward and the bottom inward from the usual vertical position, in which case it can be easily understood how the rays from the sky would be reduced while the ground on lower rays would be increased; thus the light reflected from a landscape would be equalized on the sensitive plate. The equalizing effect of a triangular opening in the diaphragm is also considered.

LIPPINCOTT'S for August contains a number of interesting articles. The department called "As It Seems" discusses the popular sentiment wasted on prisoners to the forgetfulness of the honest poor.

We give one of the short chapters:

REFORM BY REACTION.

"The root of the trouble is in our ethical ideas, which have come to be askew and top-heavy. 'The quality of mercy is not strained.'—but it often needs to be. As in divinity, 'a God all mercy were a God not just,' so in our morals and jurisprudence, the bottom is in danger of dropping out when compassion intrudes into the primary place of justice. Humanity and philanthropy are fine things, but like other fine things they are liable to be overdone. If our plea is reactionary, it may be urged that when we have gone too far forward, the only thing to do is to go back a little. It should be remembered that an honest man is better any day than a rogue, and he who loves his neighbor as himself is entitled to more consideration than he who is too handy with bludgeon, knife, or pistol.

THE COSMOPOLITAN for August contains an article on "Bridges and Bridge Builders," by Peter MacQueen. Also one on "A California Farm Village." The illustrations look very "home like" to a resident of this section of the country.

THE FORTNIGHTLY REVIEW deals with the "Servant Question," by MARY JEUNE. ALFRED BINET contributes an article on "Mental Imagery."

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Notice Requisite for Mechanic's Lien in Indiana.—Where in Indiana a contract was made and materials for it were furnished to the contractor part before the notice to the owner and part after such notice under Elliott's Supplement, section 1692, providing that a person furnishing materials for a contractor, to acquire a lien, must give notice to the owner at or before the time the materials are furnished, a lien would be acquired only for such part of the materials as were furnished after notice.

Hubbard v. Moore, Supreme Court of Indiana, 31 N. E. Rep. 534, 82C.

Payment for Extra Work.—In a contract for the erection of a house, a clause which provides that any addition or omission from the contract shall be added or deducted by a fair valuation, but shall in no wise affect the contract, prevents a claim for extra work from being brought under the terms of the contract; and full value for such extra work may be recovered, even though the requirements of the contract have not been complied with, unless the regular work has been done so negligently as to render the extra work valueless.

Garnsey v. Rhodes, Supreme Court of New York, 18 N. Y. Supp. 484, 96C.

Mechanic's Lien on Electric Light Plant.—An electric light company which has a franchise to occupy the streets of a city with its poles, wires and lamps, and is engaged in furnishing light to the people of the city, is not so distinctly public in its nature and operations as to exempt its property from the application of the mechenic's lien statute. 29 Pac. Rep. affirmed.

Badger Lumber Co. v. Marion Water Supply Electric Light and Power Co., Supreme Court of Kansas, 30 Pac. Rep. 117, 67C.

Requisites of Notice for Mechanic's Lien.—A lien notice should be sufficiently definite to fairly appraise the owner of what he is charged with, what kind of material, and what the same was furnished for.

Tacoma Lumber and Manufacturing Co. v. Kennedy, Supreme Court of Washington, 30 Pac. Rep. 79, 36C.

Lien Against Community Property of Husband and Wife.—Under the statute requiring a claim of lien to give the name of the owner or reputed owner of property sought to be charged, a claim which shows that claimant knew that an owner was married, but fails to give the name of such owner's wife, is fatally defective, as an action will not lie against a husband alone to enforce a mechanic's lien against his interests in community property, the wife being alive.

Sagmeister v. Foss, Supreme Court of Washington, 30 Pac. Rep. 80, 76C.

Substantial Compliance with Contract.—In an action to foreclose a mechanic's lien entered contract to do mason work, plaintiff may introduce as witnesses experts in the trade, to show that mason work does not include "plastering and white-washing". Where a contract for mason work to be done on a building by plaintiff provided that a certain payment should be made when the mason work was completed, and that plaintiff was delayed in his work on account of the delay of the work of another independent contractor, which had to be done first, and plaintiff used all diligence in going on with the work after it was possible for him to do so, and went prepared to finish the job, when he was ordered off by the owner, who had put other men on the work, it was a substantial compliance, and entitled plaintiff to his payment.

Highton v. Dessan, Common Pleas of New York, 19 N. Y. Supp., 395, 143C.

The value of the product of the factories and mills west of the Mississippi during the year 1891 is computed at $423,068,695, and the product of the states west of the Missouri alone is computed at $198,722,653.

One of the lumber mills of Seattle, Wash., recently prepared a number of timbers 100 feet long and 24 inches square, to be used for ship building at San Francisco.

POPULAR TALKS ON LAW.

By Wm. C. Sprague, Esq.

SUBSCRIPTIONS TO STOCK.

WHAT is the nature of the obligation one assumes, or does he assume any legal obligation, in signing his name to a subscription for stock in a corporation not yet formed? Is it a proposal, on his part, which he may withdraw at pleasure? Is it a one-sided agreement, or an agreement without consideration, or a conditional promise which may or may not be binding upon the signer according as he shall subsequently choose? It may be fairly stated that many names placed upon stock subscription papers are so placed without any definite comprehension of the nature of the transaction, and of its legal effect. This is apparent to anyone who has been the promoter of corporation enterprises and has had in charge the soliciting of subscriptions thereto. A few words in the direction suggested cannot fail to be of interest and profit to the public, inasmuch as corporate enterprises have become so numerous that there is scarcely an individual, howsoever humble his circumstances, but, at one time or another, has been solicited, or been tempted, to become a subscriber to the capital stock of a corporation. What then is a subscription to stock? It may be stated to be a promise, by the subscriber, to take and pay for the shares for which he subscribes, upon a consideration sufficient and valid to support it. The nature of this consideration we shall discuss later on. More fully, the promise is one to take and pay for the shares on the terms of the subscription paper, and of the act under which the company is organized. It is usual to state in the subscription paper what act it is intended to use in organizing, and if that act makes the stockholders individually liable for the debts, they are thus liable, even although they have not done anything beyond the signing of the subscription paper. In other words, a subscription to the stock means more than an assent to the mere proposal to form a corporation for certain purposes. It means the same as if all the provisions of the statute under which it is proposed to organize were a part of the agreement signed. The agreement of the subscriber is to take the number of shares set opposite his name, and to pay for them according to the provisions of the act. The subscription may be made on condition, as for instance, that the amount subscribed shall reach a certain sum, and it has been held that, in the case of the condition mentioned, it must be intended to mean fair subscriptions, such as may probably be collected. As to the form of subscription, all that is required is that it shall indicate the intention of the subscribers to become stockholders, and the number of shares respectively taken by them. The several subscribers may sign separate instruments, they being copies of each other, and they will be regarded as one and the same instrument, and where a statute requires that subscription books shall be opened, it has been held that one or several subscription papers constitute a "book" within the meaning of the statute. The signer of a subscription paper before the organization of the corporation is complete, cannot withdraw his subscription without the consent of the other subscribers, and, though he has erased his name, the corporation can collect his subscription. This has not been declared to be the law without exceptions, but it has been held universally that where the incorporating of the company was completed, before the subscriber attempted to withdraw his subscription, he had lost the right to do so. When one has signed articles of association, he has entered into a contract which is not open to revocation. The other subscribers have an interest in the execution and performance by each subscriber of his agreement, and after the incorporation has begun a legal existence it has acquired a vested interest in each subscriber's agreement. This subject will be continued in a further paper.

Thirty-seven car loads of shingles were recently shipped by special trains from Seattle to eastern cities.

BUSINESS MOSAICS.

The Roebling Standard Wire Lathing is made for common plastering mortar having hair in its composition, and, also, a special lath for the various plastering compounds where no hair is used. The wire cloth for common mortar is made with square meshes of about three-eighths of an inch, and the wire cloth for special use is made with elongated meshes about three-sixteenths by three-eighths of an inch. This manner of forming the meshes allows the unhaired mortar to pass through and key without falling off before setting. Wire lathing has many advantages, and one that will commend itself is that the wires of the lathing are embedded and thoroughly covered on all sides with the mortar, thereby forming a complete fire-proof screen. The cloth is made with stiffening bars at intervals so that it may be applied to studding or beams as usually placed. One of the later improvements for this form of lathing is a special fastening to iron beams and is easily applied.

They also furnish a special rod or support for longer spans, such as are between iron beams, etc.

The increased cost of using wire lathing is but little more than wooden lathing, and it can be applied by any ordinary mechanic. If such lathing should come into more general use the danger from fires would be reduced.

It is unfortunate for some of the manufacturers of articles and appliances for use in buildings to drop out of the market just at the time when architects are preparing plans for buildings to be erected in the fall.

The Vulcan Iron Works, 135–145 Fremont street, are continually extending their line of specialties for various uses. Their stable fittings have become a standard article. The hand hoists made by them are unexcelled. They have put up some of the largest rope tramways on the Pacific Coast. Persons looking for refrigerators and ice machines for cool storage and packing houses should call on them.

When the festive spider weaves visions of delight over the cash box, it signifies hope without advertising.

Parquet Floors or Wood Carpet make a splendid effect when laid with close fitting joints and the various colored woods worked to harmonize. The smooth, cleanly-finished surface of a parquet floor does not hold dirt or dust, and disease germs find no place for propagation. For this climate this form of hard wood floors is especially adapted, being cleanly, decorative, elegant and economical. For first-class work in this line, Mr. J. M. Reynolds, 659 Market street, San Francisco, has made his establishment the leading one in this city, and his decorations can be seen in the best residences and offices.

Good planning is the essence of economy.

A Porcelain-lined Roll Rim Bath Tub and Foot Bath, are shown on page v., which for practical convenience and artistic design are unrivaled. It is at once apparent that they are from the J. L. Mott Iron Works.

The farmer sows the seed and goes to sleep with the consciousness that nature's forces are working for the increase of his riches. The wise advertiser also knows that while he sleeps *his* crop is maturing and he prepares himself to reap the harvest at the proper season.

The young man, the country architect, and the builder who desires to improve himself in the art and science of building, should carefully read and study the best works on that subject to be had. The California Architect and Building News will furnish him with valuable reading and hints for study, and its advertising pages will give him good ideas in regard to the improvements of the day in that line.

Improvements and care that reduce the cost of production or improve the quality, are equivalent to an increase of the price of the article.

The Excelsior Redwood Co., corner of Fourth and Channel streets of this city, has become one of the most useful manufacturing concerns on the coast. At this factory can be had, ready made, almost everything required for either interior or exterior finish, such as corner and base blocks, balusters, fancy turned columns and posts, etc. The inside partition material three-fourths to one and one-fourth inches thick, planed and moulded in different forms on both sides ready to put up has become a favorite article for convenient use. A patent corrugated roofing is another useful article which has been added to their stock and finds a ready sale. This roofing is worked both sides, is furnished in lengths from three to twenty feet and is especially adapted to hoods and projecting caps over doors and windows, roofs of verandas and porches, summer houses, and all kinds of light roof work. All the lumber is kiln dried and of first quality. See advertisement on page xvii.

The doctor who prescribes gratuitously gives a worthless prescription.

The Fitzgerald Prepared Wall Plaster is making a heavy inroad on the old method of plastering. The Pacific Patent Plaster Company has very extensive works at Rodeo where it is prepared to manufacture in quantities to suit. The advantages to be had by the use of this plaster are many, and persons in search of information should call at the office of the company, 216 Bush street, San Francisco.

The Olympic Club Building, also the Heilbron Building is being plastered with this plaster.

Royal Metalic Paint is a California product and of a dark red color, but of a lighter tint than other metalic paint, consequently, does not give such a somber look. It is made only from the best materials and combines extreme fineness, density, uniformity, reliability and the highest possible degree of covering quality. It is one of the very best paints for use on roofs, farm and out-buildings. Its elasticity is retained for a long time and thus prevents the wood from cracking, and the paint from chipping, scaling or blistering. It furnishes a really good article at a moderate cost. The covering quality is so good that a good effect can be had with one coat only.

Edward Denny & Co., of 418 Montgomery street, is an old established house for the supply of draughtsmen's materials. This firm makes *blue* or *black* prints from drawings and architects in the outlying districts will find this an economical and convenient means for obtaining copies of their drawings. To many the process is inexpensive because they first prepare a complete line drawing on heavy paper, then trace on translucent linen or paper. A large proportion of drawings can be made on paper 20x33 inches. When this size can be used a superior paper for the purpose can be obtained from them. This paper is very strong and is readily worked upon with pencil or ink, and is sufficiently translucent to give clear prints. By making the drawings specially for the purpose much better prints may be had. Avoid color, as black, red and yellow all have the same effect on the print, and in our own practice we have used the single hack line for wood, or stud and plaster walls, and the double or cross hack lines for brick work; these lines will leave clear marks on the print which can be colored if desired. The original drawing if made in water-proof ink may be colored after the prints have been made. In all cases the ink lines should be very dense so that no light works through them to blur the lines of the print.

Elevators for office and commerical buildings have become so general that old premises where this convenience does not exist must have the rents set low or stand tenantless. Inventive genius is actively seeking new combinations whereby the greatest amount of work may be had at the lowest cost. The latest lift for public favor is the Kieckhefer Elevator manufactured and put up by Trimborn Bros., room 20, Flood Bldg., this city.

It combines speed, safety and the utmost economy, and can be arranged for any class of work from the lightest to the heaviest freight hoist and for the most elegant passenger car. This elevator is taking the place of the older ones and is being put into some of the largest buildings in course of erection in this city. Its advantages are at once apparant upon examination, and will, without doubt, increase in favor as it becomes more generally known.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., August 12, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 6th day of September, 1892, and opened immediately thereafter for furnishing all the low pressure, return-circulation, steam heating and ventilating apparatus, for the U. S. Court House, Post Office and Custom House building at Vicksburg, Miss., in accordance with the drawings and specification, copies of which may be had on application at this office, or the office of the Superintendent at Vicksburg, Miss.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal.

The right is reserved to reject any and all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders.

Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Low Pressure, Return-Circulation, Steam Heating and Ventilating Apparatus for the U. S. Court House, Post Office and Custom House building at Vicksburg, Miss." and addressed to,

W. J. EDBROOKE,
Supervising Architect.

CITY BUILDING NEWS.

Baker and Clay. Frame building; owner, Geo. W. Hendy; architects, Stone & Munson; contractors, Knox & Cook; cost, $4,499; signed, June 30; filed, July 1; payments, $1,234.75, enclosed; $1,234.75 plastered; $1,234.75, completed; $1,234.75, 35 days.

Bartlett near 22d. School building; owner, Board of Education; architect, C. I. Havens; contractors, F. Doyle & Son; cost, $24,440; signed, July 25; filed, July 28; payments, $4,500, brick foundation built, frame up and enclosed; $4,500, rough water and gas pipes in and brown mortar on; $4,500, plastered and outside primed; $4,749, completed; $6,200, 35 days.

Battery near Green. Alterations and additions; owners, Fortunato and Elena Maggio; contractor, A. L. Campbell; cost, $1,200; signed, June 29; filed, July 5; payments, $800 excavating and raising completed; $300, enclosed; $900, completed; $900, 35 days.

Broad Ave. near Plymouth. Two story frame; owner, Michael Young; architects, J. J. & T. D. Newsom; contractor, Jas. E. Schultz; cost, $1,950; signed, July 11; filed, July 11; payments, $483, frame up and rustic on; $483, rough plumbing in and outside primed; $484, completed; $900, 35 days.

Buchanan near O'Farrell. Three-story frame; owner, Morris Hamburger; architect, Chas. M. Rousseau; contractor, Andrew Christenson; cost, $5,500; signed, July 19; filed, July 19; payments, $700, frame up; $700, enclosed, tin roof and floors laid; $700, brown mortar on; $700, plastered; $1,400, completed; $1,400, 35 days.

Bush and Gough. Carpenter work for church; owners, McGowan & Butler; architect, A. P. Brown; contractor, Jos. Wilcox; cost, $27,000; signed, June 30; filed, July 9; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Bush and Chelsea Place. Wooden and iron mantels; owner, Mrs. M. W. Newman; architect, P. R. Schmidt; contractors, Bennett & Schutte; cost, $2,225; signed, July 14; filed, July 20; payments, $2,225, mantels completed and set.

California near Octavia. Plumbing and gas-fitting; owner, Anna D. Miner; architect, Samuel D. Newsom; contractor, H. Williamson; cost, $1,150; signed, June 15; filed, June 28; payments, 75 per cent. as work progresses; balance, 35 days.

California near Montgomery. Gas and incandescent light fixtures; owner, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractor, S. F. Novelty and Plate Works; cost, $4,170; signed, July 21; filed, July 25; payments, $2,977.50, completed; $792.50, 35 days.

California near Drumm. Concrete work and planking; owner, Luning Co.; architects, Coxhead & Coxhead; contractors, Gray Bros; cost, $2,133; signed, July 25; filed, July 27; payments, 75 per cent. when completed; balance, 35 days.

California near Drumm. Granite work; owner, Luning Co.; architects, Coxhead & Coxhead; contractors, F. E. Knowles & Co.; cost, $15,680; signed, July 15; filed, July 16; payments, 75 per cent. of work done on 1st day of each month; balance, 35 days.

California near Octavia. Doors and stairs; owner, A. Jackson; architect, Samuel Newsom; contractor, Pacific Coast Door Co.; cost, $1,400; signed, July 6; filed, July 8; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Chester near Taylor. Concrete work; owner, H. S. Martin; architect, Wm. Mooser; contractor, F. V. Steinmann; cost, $6,275; signed, July 1; filed, July 19; payments, $505, 1st story joists on; $1,400, enclosed; $1,400, plastered; $1,400, completed; $1,570, 35 days.

Clipper near Noe. Two-story residence; owner, Angeline Pepper; contractor, C. H. Wedgewood; cost, $3,500; signed, June 28; filed, June 28; payments, $825, rustic on; $825, brown mortar on; $825, hard finish on; $825, 35 days.

Columbia Square near Harrison. Two-story frame; owner, H. W. Westphal; architect, A. C. Lutgens; contractor, John F. O'Brien; cost, $5,039; signed, July 26; filed, July 28; payments, $940, enclosed; $940, brown mortar on; $940, plastered; $962.50, completed; $1,257.50, 35 days.

Dupont near Lombard. House of three flats; owner, Chas. Sahrbacher; architect, H. C. Macy; contractor, Phil. Sheridan; cost, $4,070; signed, July 1; filed, July 1; payments, $150, frame finished and stairs up; $200, outside and hard finish on; $400, plumbing done, mantels set and front stairs up; $750, completed; $1,170, 35 days.

Eddy near Fillmore. One-story frame; owner, Ben. Michelson; contractors, Peterson & Person; cost, $2,306; signed, July 6; filed, July 7; payments, $631, frame up; $600, brown mortar on; $600, completed; $575, 35 days.

Erie near Howard. Three-story frame; owner, E. Klepsch; contractors, Cochrane & Buchwoest; cost, $5,600; signed, July 14; filed, July 14; payments, $1,100, frame up; $1,100, brown mortar on; $1,100, plastered and outside millwork on; $1,100, completed; $1,200, 35 days.

Fifth and Bluxome. Two-story frame; owner, F. S. Moody; architect, Chas. I. Havens; contractor, Jno. Furness; cost, $17,300; signed, July 20; filed, July 20; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Fillmore near Ellis. Plumbing and gas-fitting; owner, Chas. Main; architect, Chas. Geddes; contractor, R. A. Vance; cost, $627; signed, June 29; filed, July 6; payments, $271, pipes in; $200, completed; $156, 35 days.

Fillmore near Ellis. Painting and graining; owner, Chas. Main; architect, Chas. Geddes; contractor, Thomas Downing; cost, $420; signed, June 29; filed, July 6; payments, $200, one cont of paint and inside grained; $115, graining completed; $105, 35 days.

Fillmore near Ellis. Plastering; owner, Chas. Main; architect, Chas. Geddes; contractor, O. F. Mulville; cost, $485; signed, June 29; filed, July 6; payments, $200, brown mortar on; $164, completed; $121, 35 days.

Fillmore near Page. Carpenter, brick-work, etc.; owner, Chas. Main; architect, Chas. Geddes; contractor, F. L. Hansen; cost, $4,750; signed, June 29; filed, July 6; payments, $750, frame and chimneys up; $1,250, enclosed and brown mortar on; $1,000, plastered, windows in and fences up; $573, completed; $1,177, 35 days.

Fourth near Brannan. Two-story frame; owner, M. Dobner; contractor, Aug. Lund; cost, $2,000; signed, July 16; filed, July 20; payments, $500, frame up; $300, completed; $200, 35 days.

Franklin and California. To build; owner, Chas. Gladding; architect, W. J. Matthews; contractor, F. W. Knight; cost, $6,292; signed, July 22; filed, July 26; payments, $1,573, ¼ completed, $1,573, ¾ completed; $1,573, all completed; $1,573, 35 days.

Geary near Dupont. Concrete work, patent lights, etc.; owner, S. Clayburgh architects, Salfield & Kohlberg; contractor, H. Stettin; cost, $885; signed May 27; filed, July 11; payments, $660, completed; $225, 35 days.

Geary near Dupont. Iron and wood lathing; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractor, C. C. Morehouse; cost, $1,980; signed, May 27; filed, July 11; payments, $750, brown mortar on; $735, plastered; $495, 35 days.

Geary near Dupont. Tin and galvanized iron work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractors, Fordorer Cornice Co.; cost, $987; signed, May 27; filed, July 11; payments, $400, roof on; $300, completed, $287, 35 days.

Geary near Dupont. Elevator work; owner, S. Clayburgh; architects, Salfield & Kohlberg; contractors, Cahill & Hall Elevator Co.; cost, $4,345, signed, July 8; filed, July 12; payments, $2,000, machinery; $1,000, cages and tanks set and guide joists set; $1,245, completed; $1,110, 35 days.

Geary and Octavia. Brick, tin and carpenter work; owner, R. M. Black; architect, Wm. Curlett; contractor, Wm. Linden; cost, $17,625; signed, July 19; filed, July 20; payments, 1st and 15th day of each month 75 per cent. as work progresses, balance 35 days.

Glasgow near Eddy. Four-story brick; owner, Wm. Kreling; architect, Edward Burns; contractor, Robert Boyd; cost, $6,423; signed, July 7; filed, July 9; payments, $1,500, brickwalls completed to 1st floor joists, $800, complete to 2d floor; $850, complete to 3rd floor; $850, completed to 4th floor; $800, completed; $1,023, 35 days.

Gough and O'Farrell. To build; owner, B. Marks; architects, Copeland & Pierce; contractor, O. E. White; cost, $7,780; signed, July 5; filed, July 7; payments, $1,800, frame up and rafters on; $1,500, brown mortar on; $1,274, plastered, outside finish on; $1,250, completed; $1,955, 35 days.

Grove near Polk. To build; owner, Michael Diving; architect, H. Geilfuss; contractor, F. Klatt; cost, $3,680; signed, July 14; filed, July 14; payments, $952, frame up; $552, enclosed, floors laid and partitions set; $552, brown mortar on; rear porches and basement done; $552, inside standing finish on; $552, completed; $920, 35 days.

Gutenburg near Hanover. One-story and rough basement frame; owner, Mrs. B. Normund; architect, Oliver Everett; contractor, James Campbell; cost, $1,405; signed, July 18; filed, July 18; payments, $351.25, rustic on and roof shingled; $351.25, brown mortar on; $351.25 completed; $351.25, 35 days.

Harrison near 25th. Two-story, two flats; owner, John Thompson; contractor, W. W. Redmall; cost, $3,500; signed, July 7; filed, July 7; payments, $875, enclosed; $875, brown mortar on; $875 completed; $875, 35 days.

Hickory Ave. near Gough. Alterations and additions; owner, Bertha Kaempfer; architects, John & Balczynski; contractor, Carl Stroth; cost, $775; signed, July 5; filed, July 8; payments, $300, old house moved and new partitions ready for plaster; $275, completed; $200, 35 days.

Howard near 4th. Four-story frame; owner, Mary A. Neary; architect, T. A. Brockidge; contrator, Tim. Sullivan; cost, $8,000; signed, June 30; filed, July 7; payments, $1,000, 3rd story joists in place; $1,000, enclosed; $1,502, brown mortar on; $1,500, plastered; $1,000, completed; $2,000, 35 days.

Hubbard near Howard. To build; owner, F. M. Burke; architect, Chas. I. Havens; contractors, R. Doyle & Son; cost, $5,700; signed, July 29; filed, July 22; payments, $1,000, frame up and enclosed; $1,000, brown mortar on and rough gas and water pipes in; $1,349 plastered and outside primed; $1,349, completed; $1,450, 35 days.

Hyde near Jackson. Excavation and brickwork; owner, J. Goetjen; architects Martens & Coffey; contractor, C. N. Smith; cost, $5,285; signed, June 28; filed, June 29; payments, $990, enclosed; $990, floors laid, outside finish on and partitions set; $990 white plaster on; $990, completed; $1,325, 35 days.

Jackson near Pierce. All work but plumbing; owner, Geo. W. Bowers; architects, Percy & Hamilton; contractor, J. C. Gibson; cost, $4,482; signed, June 29; filed, July 5; payments, 1st Saturday of each month 75 per cent. as work progresses; balance, 35 days.

Jersey near Vicksburg. Frame dwelling; owner, Michael O'Donnell; architect, John J. Clark; contractor, John C. Rogers; cost, $1,560; signed, June 29; filed, July 2; payments, $390, enclosed; $390, brown mortar on; $390, completed; balance, 35 days.

Larkin near Pacific. Alterations and additions; owner, Isaac Friedman; architect, W. C. Dickerson; contractor, John Strand; cost, $1,050; signed, July 18; filed, July 19; payments, $250, rustic on, partitions set and rough plumbing in; $275, plastered and front nearly completed; $250, completed; $275, 35 days.

Lombard near Leavenworth. Three-story frame; owner, Anne M. Wolf; architect, W. H. Wharff; contractor, Geo. Richley; cost, $4,889; signed, July 25; filed, July 22.

Market near Fifth. To build; owner, James Coughlan; architects, Shea & Shea; contractor, M. Fennell & Sons; cost, $11,100; signed, July 14; filed, July 16; payments, $3,000, basement walls ready for 1st story joists; $1,775, wall ready for ceiling joists; $1,775, brown mortar on; $1,775 completed; $2,775, 35 days.

McAllister St. Three-story frame; owner, Anna Wischler; architects, Kenitzer & Kollofrath; contractor, Adam Miller; cost, $9,000; signed, July 20; filed, July 22; payments, $1,200, frame up; $1,500, enclosed; $1,500, brown mortar on; $1,000, plastered; $2,000, completed; $2,400, 35 days.

Mission and 30th. To build; owner, H. Horstmann; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $7,750; signed, July 6; filed, July 8; payments, $1,500, frame up; $1,400, enclosed, floors laid and partitions set; $1,400, brown mortar on; $1,400, completed; $1,950, 35 days.

Mission and 30th. To build; owner, H. Horstmann; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $7,750; signed, July 6; filed, July 8; payments, $1,500, frame up; $1,400, enclosed, floors laid and partitions set; $1,400, brown mortar on; $1,400, completed; $1,950, 35 days.

Morton St. Cylinder Elevator; owner, Raphael Bros.; architects, Wright & Sanders; contractors, Cahill Hall Elevator Co.; cost, $3,900; signed, July 7; filed, July 9; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Noe near Hill. Frame cottage; owner, W. S. Mackay; architect, J. C. Newsom; contractor, W. E. Lane; cost, $2,232; signed, July 18; filed, July 19; payments, $837, outside complete except stairs and bulkhead, rough plumbing in and chimneys built; $837, completed; $558, 35 days.

Oak near Steiner. Carpenter work, painting, etc.; owner, Mrs. M. A. Guptill; architects, Stone & Munson; contractor, Geo. Connon; cost, $5,076; signed, July 6; filed, July 6; payments, $951.75, frame up; $951.75, enclosed; $951.75, plastered; $951.75, completed; $1,269, 35 days.

Oregon and Drumm. Two-story brick; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Thos. H. Day; cost, $22,550; signed, June 15; filed, June 25; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Oregon and Drumm. Sand stone and granite walk; owner, Jas. G. Fair; architects, H. A. Schulze; contractors, Healy & Philips; cost, $3,008; signed, June 8; filed, June 25; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Page and Gough. Two additional rooms to school; owner, Board of Education; architect, Chas. I. Havens; contractor, John Blake; cost, $3,197; signed, June 17; filed, June 28; payments, $797, enclosed; $800, hard finished and outside primed; $800, completed; $800, 35 days.

Point Lobos Ave. near Cook. Alterations and additions; owner, Henrietta Labhard; contractor, G. G. Gillespie; cost, $2,339; signed, July 2; filed, July 7; payments, $440, frame up; $440, brown mortar on; $440, plastered; $442, completed; $388, 35 days.

Point Lobos near 2d Ave. Alterations and additions; owner, J. E. Owens; contractor, T. Sullivan; cost, $1,250; signed, July 25; filed, July 27; payments, $313, raised and frame up; $313, brown mortar on; $311, completed; $313, 35 days.

Post near Mason. Steam heating radiators, etc.; owner, Olympic Club; architect, H. A. Schulze; contractor, Phillip Leprohon; cost, $2,982; signed, June 27; filed, July 14; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Post near Mason. Passenger elevator; owner, Olympic Club; architect, H. A. Schulze; contractors, Cahill and Hall Elevator Co.; cost, $3,750; signed, June 27; filed, July 14; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Post near Mason. Electric light, gas, etc.; owner, Olympic Club; architect, H. A. Schulze; contractor, Electric Improvement Co.; cost, $2,372; signed, June 27; filed, July 14; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Post near Powell. Wrought iron work; owner, C. Ferris; architects, C. R. and J. M. Wilson; contractor, P. H. Jackson & Co.; cost, $1,650; signed, July 2; filed, July 16; payments, $800, 1s tstory walls up; $500, 4th story walls up; $350, 35 days.

Russ House. Elevator, owner, Russ Estate; contractors, Cahill & Hall Elevator Co.; cost, $8,500; signed, July 9; filed, July 15; payments, $1750, completed, $1750, in 60 days.

Sacramento near Hyde. Two 2-story fames; owner, Edward Walsh; architects, Shea & Shea; contractor, Richard Rice; cost, $1,550; signed, July 1; filed, July 7; payments, $500, rough plumbing and gas-fitting in; $600, plumbing completed; $350, 35 days.

Sacramento near Powell. Excavating, brickwork, etc.; owner, S. Cline; architects, Salfield & Kohlberg; contractor, F. Benfort; cost, $4,700; signed, July 5; filed, July 8; payments, $1,200; frame up; $1,200, plastered; $1,100, completed; $1,200, 35 days.

Sacramento near Powell. Plumbing and gas-fitting; owner, S. Cline; architects, Salfield & Kohlberg; contractors, P. N. Berichoff; cost, $445; signed, July 6; filed, July 8; payments, $250, rough work in; $250, completed; $195, 35 days.

Sanchez near 28th. Carpenter work, etc.; owner, P. A. McDonald; contractor, Jas. E. Schulze; cost, $1,600; signed, July 9; filed, July 9; payments, $400, frame up and rustic on; $500, plastered; $300, completed; $400, 35 days.

Scott and Sacramento. Alterations and additions; owner, Mrs. Thomas Holt; architect, J. Cather Newsom; contractor, W. E. Lane; cost, $8,100; signed, July 8; filed, July 7; payments, $2,040, frame up, less rafters; $2,040, enclosed and lathed; $2,040, completed; $2,040, 35 days.

Second Ave. near Pt. Lobos Ave. Two-story and basement frame; owner, Clirika W. Elverson; architects, Townsend & Wyneken; contractors, McLeod & McLean; cost, $2,897; signed, July 19; filed, July 19; payments, $543, frame up; $543, 1st cont of mortar on; $643, 2d on and priming done; $443, completed; $725, 35 days.

Seventh and Folsom. Sewering plumbing; owner, Jennie W. Cushing; architect, A. W. Pattiani; contractor, M. C. Kean; cost, $2,740; signed, July 11; filed, July 11; payments, $1,000, rough plumbing in; $1,040, completed; $700, 35 days.

Seventeenth St., No. 642. Alterations and additions; owner, Wm. R. Philips; architect, Oliver Everett; contractor, Frank Schaadt; cost, $3,720; signed, June 29; filed, July 6; payments, ¼, building raised and new portion enclosed, ¼, brown mortar on; ½, completed; ¼, 35 days.

Seventeenth near Shotwell. To build; owner, L. Van Laak; architect, H. Gelfuss; contractor, F. W. Kern; cost, $2,822; signed, July 14; filed, July 14; payments, $529, frame up, $529, roof on, floors laid and partitions set; $529, brown mortar on; $529 completed; $706, 35 days.

Shotwell near 14th. Two-story frame; owners, Gallick & Silverstein; architect, A. J. Barnett; contractor, J. C. Rogers; cost, $1,000; signed, June 7; filed, July 6; payments, $750, frame up and roof boards on; $750, brown mortar on; $750, plastered; $750, completed; $1,000, 35 days.

Sutter and Montgomery. Alterations and additions; owners, J. & P. J. Donahue; architect, C. J. I. Devlin; contractors, Anderson Bros.; cost, $15,490; signed, July 20; filed, July 27; payments, 75 per cent. as work progresses; balance, 35 days.

Tehama near 4th. To build; owners, Leormand Bros.; architect, Oliver Everett; contractors, Richardson & Gale; cost, $12,284; signed, July 11; filed, July 11; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Third Ave. near Pt. Lobos. Two-story frame of two flats; owner, Frank Musbaum; architects, Townsend & Wyneken; contractors, McLeod & McLean; cost, $2,887; signed, July 19; filed, July 19; payments, $543, frame up; $543, 1st coat of mortar on; $643, 2d on and priming done; $443, completed; $725, 35 days.

Twentieth near Howard. Two-story frame; owner, T. R. Bannerman; architects, Shea & Shea; contractor, F. W. Kern; cost, $6,700; signed, July 11; filed, July 14; payments, $1,256, frame up and rafters on; $1,256, brown mortar on; $1,256, plastered; $1,257, completed; $1,675, 35 days.

Twentieth near Eureka. Two-story frame; owners, Bender Bros.; architect, Jno. J. Clark; contractor, R. Doyle & Son; cost, $4,515; signed, July 21; filed, July 21; payments, $1,128.50, foundation in, frame up, rustic and roof on; $1,128.50, floors laid, rough plaster on, tin work done and 1st coat of paint on; $1,128.50, completed; $1,128.50, 35 days.

Twenty-third and Vicksburg. One and a half story frame; owner, F. H. Abbott; architect, N. A. Comstock; contractors, Leonard & Josslin; cost, $2,000; signed, July 5; filed, July 5; payments, $525, frame up; $525, plastered; $525, completed; $525, 35 days.

Twenty-fourth and Howard. Millwork, etc., except doors; owner, P. R. Sanchez; architect, John M. Curtis; contractors, Miller & Co.; cost, $1,088; signed, July 16; filed, July 23; payments, $272, 24 tier joists on and studding set; $272, enclosed and ready for plaster; $272, completed; $273, 35 days.

Twenty-fourth and Howard. Frame building; owner, F. M. Tompson; architect, John M. Curtis; contractor, R. P. Sanchez; cost, $1,475; signed, June 25; filed, June 27; payments, ¼, 24 tier of joists on and studding set; ¼ building enclosed and ready for plaster; ¼ completed; ¼ 35 days.

Twenty-fifth near Noe. Carpenter, brick work, etc.; owner, Margaret Warde; architect, J. J. Clark; contractor, Patrick Mallonev; cost, $1,000; signed, July 11; filed, July 11; payments, $1,000, rustic on; $1,000, brown mortar on; $1,000, inside finish complet; $1,000, 35 days.

Union near Kearny. Alterations and additions; owner, W. H. Eager; architect, Chas. M. Rousseau; contractor, Andrew Christenson; cost, $2,600; signed, July 19; filed, July 19; payments, $800, frame up; $850 brown mortar on; $700, completed; $850, 35 days.

Uranus near 18th. Two-story frame; owner, P. A. Dolan; contractor, John Gunn; cost, $2,250; signed, June 24; filed, June 24; payments, $750, frame up, rustic and rafters on; $750, floors laid and brown mortar on; $250, completed; $500, 35 days.

Vicksburg near Jersey. One-story and basement; owner, M. Harrington; contractor, John C. Rogers; cost, $1,225; signed, July 6; filed, July 7; payments, $300, enclosed; $925, 35 days.

ALAMEDA COUNTY.

Bay near Rail Road Ave., Alameda. Two one-story and basement cottages; owner, Stephen B. Pierce; contractors, Marcuse & Remmel; cost, $4,900; signed, July 9; filed, July 11; payments, $975, frame of two cottages up and roof on; $975, brown mortar on; $975, completed; $975, 35 days.

Buena Vista Ave., and Sherman St. Two-story and basement; owner, Lucien Lacroix; contractors, J. & S. Henderlong & Bro.; cost, $1,500; signed, July 7; filed, July 8; payments, $375, frame up; $375, brown mortar on; $375, completed; $375, 35 days.

Butler Ave. and Idaho St., Oakland. To build; owner, H. B. M. Miller; architect, F. M. Cramer; contractors, Marcuse & Remmel; cost, $3,400; signed, June 30; filed, July 2; payments, $850, foundation laid, frame and chimneys up, and roof sheathing on; $850, brown mortar, roof and exterior finish on; $850 completed; $850, 35 days.

Castro St., Haywards. To build; owner, Leopold Palmtag; architect, Thos. Moran; contractor, A. L. Campbell; cost, $9,377; signed, July 16; filed, July 18; payments, $1,500, walls ready to receive 2d floor joists; $1,500, 2d floor joists in place and walls constructed; $1,000, building enclosed and covered with tin; $1,000, brown mortar on; $1,000, plastered; $1,032, completed; $2,345, 35 days.

Dormitory, St. Mary's Cemetery. Underground vault and concrete work; owner, Mary Canning; architect, Chas. J. Devlin; contractor, Geo. Goodman; cost, $2,385; signed, June 24; filed, June 27; payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Eighth near Center, Oakland. Two-story frame; owner, J. C. Westphal; architect, Chas. Mau; contractor, H. E. Jones; cost, $4,500; signed, July 14; filed, July 14; payments, $1,137.50, ½ materials furnished and work done; $1,137.50, ⅔ materials furnished and work done; $1,137.50, completed; $1,137.50, 35 days.

Fourteenth near Washington, Oakland. To build; owner, Georg Uhl; architect, W. J. Mathews; contractor, Judson Manufacturing Co.; cost, $4,180, signed, June 30; filed, June 30; payments, $1,564, ¼ work completed; $1,567; completed; $1,046, 35 days.

Fruitvale Ave. Plumbing, gas-fitting, etc.; owner, F. Tillman, Jr.; architect, H. Geilfuss; contractor, Chas. F. Fischer; cost, $1,350; signed, July 12; filed, July 22; payments, 1st and 15th day of each month 75 per cent. as work progresses, 25 per cent. 35 days.

Fruitvale Ave., Berkeley. To build; owner, Fred Tillman, Jr.; architect, H. Geilfuss; contractors, Schutt & Kreckler; cost, $8,500; signed, July 12; filed, July 14; payments, $1,275, frame up; $1,275, enclosed, floors laid and partitions set; $1,275, brown mortar on and outside work completed; $1,275, inside standing finish on; $1,275, completed; $1,275, 35 days.

Fruitvale Ave., Berkeley. To build; owner, Fred Tillman, Jr.; architect, H. Geilfuss; contractor, August Fick; cost, $1,090; signed, July 12; filed, July 14; payments, 1st and 15th day of each month 75 per cent. as work progresses; 25 per cent. 36 days.

Gashill Tract, Oakland. One-story & basement; owner, J. C. Bly; architect, John Conant; contractor, Joseph T. Francis; cost, $1,050; signed, June 22; filed, June 27; payments, $950, frame up and rustic on; $950, completed; remaining payment 35 days.

Haight Tract, Alameda. Two-story frame; owner, M. Ryder; contractor, A. R. Denike; cost, $1,450; signed, June 30; filed, July 2; payments, $600, frame up; $600, brown mortar on; $600, completed; $650, 35 days.

Hobart and Grove, Oakland. Plumbing; owner, Rev. T. McSweeney; architect; C. J. D. Devlin; contractor, E. P. McGowan; signed, July 12; filed, July 16, payments, 75 per cent. as work progresses; 25 per cent. 35 days.

Hobart and Grove, Oakland. Lathing and plastering; owner, Rev. T. McSweeney; architect, Chas. J. Devlin; contractors, G. P. & T. J. Smyth; cost, $7,500; signed, July 21; filed, July 22; payments, $500, walls above main ceiling lathed; $1,500, building scratched and coated; $1,500, walls above main ceiling finished; $750, remaining walls finished; $1,350, completed; $1,900, 35 days.

Hunting Tract. Two-story frame; owner, Chas. Harrison; contractor, E. P. McGowan; cost, $1,450; signed, July 13; filed, July 16; payments; $575, frame up and rustic on; $575, enclosed, brown mortar on and floated; $575, completed; $375, 35 days.

Jones Ave., San Leandro Road. Four buildings; owner, H. Jones; contractors, Marcuse & Remmel; cost, $6,990; signed, June 29; filed, June 29; payments, $1,747.50, frame up and roof on; $1,747.50, brown mortar on; $1,747.50, completed; $1,747.50, 35 days.

Kellesburger Map of Oakland, Block No. 52. Two-story. flat; owner, Mrs. Eliza Fitzell; architect, Elmer C. Childs; contractor, Geo. Gale; cost, $2,880; signed, July 6; filed, July 8; payments, $720, frame up and roof on; $720, enclosed and brown mortar on; $720, completed; $720, 35 days.

Lake Merritt Park, Oakland. To build; owners, Holway & Lane; architect, John Conant; contractor, J. A. Eastman; cost, $3,150; signed, June 21; filed, July 6; payments, $787.50, frame up and roof sheathed; $787.50, brown mortar on; $787.50, completed; $787.50, 35 days.

Lake Merritt Park, Oakland. Two-story frame; owners, Holway & Lane; architect, John Conant; concractor; J. A. Eastman; cost, $3,232; signed, June 21; filed, July 6; payments, $800, frame up and sheathed; $800, brown mortar on; $800, completed; $800, 35 days.

Lake Merritt Park, Oakland. Carpenter, brickwork, etc.; owner, O. A. Lane; architect, John Conant; contractor, J. A. Eastman; cost, $3,500; signed, June 21; filed, July 6; payments, $850, frame up and roof sheathed; $850, brown mortar on; $850, completed; $850, 35 days.

Laurel near Clinton Ave. Two-story dwelling; owner, L. S. Bailey; contractor, C. A. Brown; cost, $2,300; signed, July 8; filed, July 14; payment, $575, frame up and enclosed; $575, brown mortar on; $575, completed; $575, 35 days.

Levy Tract, Brooklyn. Two-story frame; owner, J. W. Phillips; contractor, Chas. Murcell; cost, $5,673; signed, July 7; filed, July 8; payments, $1,418.25; foundation in and roof on; $1,418.25 outside completed and brown mortar on, $1,418.25, completed; $1,418.25, 36 days.

Linda Vista Terrace, Oakland. Two-story building; owner, David R. Rae; contractors, Weeks & Son; cost, $3,756; signed, July 7; filed, July 8; payments, $939, rough frame and chimney built; $939, brown mortar on; $939, completed; $939, 35 days.

North Temescal. Church; owner, Presbyterian Church; architect, J. B. Matheson; contractors, Pierce & Ruch; cost, $6,503; signed, July 7; filed, July 25; payments, $1,875, foundations in and rough frame up; $500, roof shingled and stained; $500, doors and window frames in and outside of house shingled; $500, plastered; $1,000, inside work completed, $500, completed; $1,625, 35 days.

Park near Shattuck Ave. To build: owner, Robert Raphael; contractor, F. E. Armstrong; cost, $1,350; signed, July 6; filed, July 18; payments, $335, enclosed; $335, brown mortar on; $335, completed; $345, 35 days.

Peralta and 17th, Oakland. Two-story addition; owner, Wm. Walsh; architect, Chas. Mau; contractors, Herbst & McLeod; cost, $2,400; signed, July 16; filed, July 16; payments, $600, ¼ materials furnished, and work done; $600, materials furnished and work done; $600, completed; $600, 35 days.

San Leandro Road near Jones. Hotel building; owner, A. Jones; contractors, Marcuse & Remmel; cost. $7,650; signed, July 19; filed, July 19; payments, $1,912.50, frame up; $1,912.50, brown mortar on; $1,912.50, completed; $1,912.50, 35 days.

San Pablo Ave., Golden Gate. School building; owner, Bay School District; architects, Smith & Farr; contractors, McDonald & Eggleston; cost, $12,253; signed, July 25; filed, July 26; payments, $3,063.26, frame up; $3,063.25, floors laid roof and brown mortar on; $3,063.25, completed; $3,063.25, 35 days.

Telegraph Ave., Oakland. Two cottages; owner, Mrs. S. J. Hubbard; architect, R. Gray Frise; contractors, Bryan & Irwin; cost, $3,584; signed, July 25; filed, July 25; payments, $896, enclosed; $896, roof on, floors laid, rough plumbing done and brown mortar on; $896, completed; $896, 35 days.

Tenth near Jackson, Oakland. Two-story frame; owner, James L. McCarthy; architect, Howard Burns; contractor, C. J. Brophy; cost, $3,220; signed, July 7; filed, July 9; payments, $805, frame up and brickwork completed; $805, enclosed and brown mortar on; $805, completed; $805, 35 days.

Twenty-first near 10th Ave., Oakland. Two-story dwelling; owner, W. C. Harrington; architect, A. W. Pattiani; contractor, C. A. Parker; cost, $3,865; signed, July 4; filed, July 5; payments, $724, frame up; $724, enclosed and brown mortar on; $724, plastered, outside except steps ready for painting; $724, completed; $909, 35 days.

Twenty-second and 23rd Ave., Oakland. One story and basement dwelling; owner, L. W. Palmer; architect, A. Winberg; cost, $1,770; signed, July 12; filed, July 13; payments, ⅓ frame erected; ⅓ enclosed, first coat of plaster on; ⅓ second coat of plaster on, all doors and windows in; last payment 10 days after completion.

Twenty-third Ave. near 15th St. Two-story frame; owner, Anna Meyer; architect, B. McManus; contractor, Addison Buck; cost, $2,762; signed, July 14; filed, July 19; payments, $600 frame up and rustic on; $600, completed; $962, 35 days.

Twenty-third Ave. and 14th, Oakland. Two-story frame; owners, Chaffer & Henderson; architects, J. C. Mathews & Son; contractors, Caldwell & Nickersen; cost, $2,905; signed, July 26; filed, July 28; payments, $300, frame up; $700, enclosed; $400, brown mortar on and outside primed; $752.50, completed, $752.50, 35 days.

Twenty-fourth and Valez. Two-story frame; owner, Mrs. Weber; contractors, Leiter & Prugh; cost, $2,405; signed, July 28; filed, July 28; payments, $300, house up and roof on; $300 enclosed and plastered; $300, completed; $505, 35 days.

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THE old saying that "Coming events cast their shadows before," has been brought before us during the last few weeks. The daily papers have given detailed accounts of the Cholera in other countries, and already the shadow of the plague has become well defined in the states bordering on the Atlantic, and may possibly reach this Coast.

This Journal has always taken the position that usefulness, art, strength and health are the four principal factors in good architecture, therefore we offer no excuse for the extra space allotted to sanitary questions.

A large proportion of the buildings in this city and in some of the towns and villages, also many suburban and farm-houses, have the main water supply run into tanks set at a sufficient height to supply the water for use. After a time the water in such tanks becomes covered with a green scum, while decayed organic matter settles at the bottom ready to enter the house supply pipes and be drawn off for household purposes. It needs no argument to show the beneficial result of cleansing these tanks at least once a week. There is a convenience for the cleansing of boilers in the kitchens of many of our residences,—viz., a sediment outlet at the lower part of the pipes under the boilers. The sediment should be drawn off every morning through the faucet. Sometimes this faucet is provided with a waste pipe to a hopper outside the house.

ONE source of danger is to be found in the cities and towns on this Coast where the roofs are used by the Chinese for drying clothes and other purposes only known to themselves and to persons having business which gives them knowledge of this state of affairs. The main roofs are nearly flat and in most cases covered with tin or asphaltum; at a short distance above this there is a floor of boards placed upon light frame work which serves as a cover for the roof. The space between the roof and boards is, in many cases, reeking with moist filth, which under proper authority could be cleaned up and taken away.

THE bake shops may be looked after; the bread, cake and pie pans are in some cases greased with old and rancid fats which permeate the product and may become generative of pestilence.

WE have ordinances sufficient, provided the surveilance was more efficient, to abate one of the worst evils extant. The streets are carefully swept and cleaned up during the night time; in the morning the stores or shops are opened and swept out upon the sidewalks and into the streets, so that by noon the streets contain large deposits of dirt and dust to be raised and wafted about by the winds.

WHILE the question of the transfer of dirt into the street, is considered, it may be well to mention that in most, if not all, the rooming houses fronting on the streets, the inmates of the front rooms use the streets for the deposite of debris from their rooms, and about midnight the pedestrian will every little while hear and see a package from some window thrown into the street. In some localities if the person occupying the first story objects to such methods of scavenging for the upper stories, the landlord straightway raises the rent, as the rottenness of the rooms above pays more than the business places below.

WHERE should be an inspection of fruit and vegetables set out for sale in our markets. Decayed and decaying edibles are a prolific source of propagation of infectious diseases. At many of the street corners may be seen peddlers dealing out partially decayed fruit.

WHE excretions of the dog or cat are considered poisonous, and the animal will try to cover it with earth when the surroundings will admit of it. The dog of the built up districts will not soil its own home, and we have never seen any good reason why it should be allowed to soil the neighbors' doorways or premises, and we fail to understand why it should be permitted to soil the fruit and vegetables for sale in the shops and on the sidewalks of our green-grocers. This is an evil that should be the subject for a crusade by the people and officials. There should be an ordinance passed that no fruit or vegetables should be deposited less than two feet from the floor or sidewalk where subject to this danger.

ON the ninth day of September, 1850, California was admitted into the Union as a state.

The anniversary of this event, or as it is called, "Admission Day" is celebrated each year in a way that only true western people know how to celebrate. This occasion is recognized as a legal holiday and the organization of the "Native Sons of the Golden West" supervises the ceremonies. The coming generation is taught to realize the importance of its glorious state which sprang from a wilderness into a state without ever having a territorial government.

A just pride is taken by the Native Sons and their auxiliary, "The Native Daughters," in upholding and advancing the culture and refinement of "The Golden State" and they deem this the proper day for giving vent to their joyous feelings.

On Admission Day it is customary for the "parlors" of the N. S. G. W. in certain districts to join together and hold their celebrations at some place decided upon by the committee. This year, Santa Rosa, a beautiful, prosperous little city, famous for the exquisite roses raised within its limits, was the favored spot for a number of parlors from this great metropolis.

Santa Rosa is about fifty miles north of San Francisco, and for three days, regularand special trains were run to accommodate the vast throng of people who were either going to take part in the festivities or enjoy the hospitality of the residents of the "City of Roses."

The Veteran Firemen of San Francisco received a cordial invitation to participate in the ceremonies of Admission Day, and on Sept. 9th, the sun, while yet rising from behind the hills, beheld numerous veterans attired in their fiery red shirts, surveying and enjoying the beauties of the surrounding country before going to parade. The Native Sons appeared in their fine costumes and the Native Daughters rivaled the beauty of the hills in Spring-time.

In the long parade that took place that day, the presence of the Veteran Firemen with their old "Masheen," presented a strong contrast with the sturdy Santa Rosa Brigade and its modern apparatus, and to the moralizer, suggested the connection of the past with the present.

All the parlors kept "open house," and the people of Santa Rosa entertained their guests royally, and all manner of good things were provided in abundance for the gratification of the eye, the ear and the taste.

The excellent behavior of the vast mass of people who gathered together to commemorate the admission of California into the Union, speaks well for the future of our State.

After spending a day or two very pleasantly and profitably, the Native Sons and Daughters returned to their business and home duties.

DURING the short time the Veteran Firemen remained in Santa Rosa, as guests of the N. S. G. W. and the resident Firemen, we noticed the excellent steam fire-engine and hose cart, drawn by horses, and it surprised us to see such a brisk and growing city with a hook and ladder truck drawn by the members of the Company.

When buildings in the country towns were erected more than one story in height, the hook and ladder company became of importance, and as the height of buildings increase, this division of the fire brigade becomes more pronounced.

Where a fire occurs in a two or three story building, more effective work can be done when the hose is carried to the upper stories and in such cases the ladder is a useful adjunct in saving property.

The water supply for this thriving city comes from springs among the adjacent hills, and its purity appears to advantage in the healthful looks of the residents.

COMMERCIALISM IN ARCHITECTURE.

MUCH has been lately written about a National Style of Architecture; the world has advanced and intercommunication is so facilitated that Nationalism in Architecture is no more; and the Architecture of the World must now be cosmopolitan, thus following the trend of the mind of tha organism, Society, in the broad sense of the word.

Much can be learned in this regard by studying the predominating trait of Society in general at any epoch in determining the Architecture most suitable to it, or the Architecture which manifests or shows such predominating trait best, or in other words, Art is generally a reflexion of the stronger passions of the people most in vogue.

Now "Commercialism," or more correctly speaking "Mammonism," is the preponderating feature of the latter part of this Century. I use the Eastern word "Mammonism" as I believe we have no word for such a despicable religion in the Anglo Saxon tongue, which speaks well for

that race in its infancy, the nearest compound is "The Worship of Pelf."

We ought to find, therefore, Art affected seriously by this "Mammonism" both for good and bad—if the foregoing hypothesis is true—and so we find it in many respects.

For example: "Mammonism" says that so much rent has to be gotten out of a certain piece of ground, so up goes a fourteen to twenty story building regardless of all other considerations. The same spirit says we must impress our suppliers with the stability of our concerns; so up springs magnificent Banking buildings, Insurance buildings, Boards of Trade and Exchanges, all devoted to speculating on Production.

In the same way the private individual must not allow another to eclipse him in the ornateness and costliness of his house or he will lose the respect and trust of the community, to which may be credited the striving after novelties and strange effects, a species of Advertising which is another of the predominating features of the times—the same spirit giving rise to the vulgar, nauseating and generally very incorrect descriptions of Dwelling Houses and other buildings which teem in our newspapers and journals; the Reporters dwelling always with unctuousness upon the vast amount of money expended, as if that fact was really the only concomitant worthy of much consideration in the Artistic worth of a thing.

This spirit in like manner we find permeating the poorer class and we find it putting up all manner of extraordinary looking buildings, generally wishing to indicate by their appearance that they are really more costly than they are; a sin carried to excess by the speculating builders.

So we may go on through all the phases of Architecture and perceive that throughout them all this prevailing spirit guides their direction.

The effects upon the Architects themselves of this compulsion of search after novelties is on one side no doubt deteriorating and on another stimulating—but mostly the first upon the younger members of the profession, who are specially tempted by it to leave the sober paths of Truth, Fitness and Strength for the excitement of the search after the Picturesque and Meretricious, thus leading them into all manner of extravagances, pettinesses and prettynesses, and getting notwithstanding sometimes beautiful results, although wanting in the air of Grandeur and Stability necessary for good Architecture.

This "worship of Pelf" may also be the reason of the adoption of the Colonial styles for our homes, as representing the Architecture of the time when America was a dependency of Royalty and had not become yet a Republic, the first representing a higher circle in its hierarchy in the opinion of plutocracy.

Taking the first mentioned sign of this worship—the mania for utilizing every inch of ground as high to the sun as possible—we may see where the legitimate carrying out of its ideas will land us in the end by the discussion in one of our Architectural journals as to the feasibility of doing without natural light and air altogether in buildings in our large cities, allowing the whole area to be built upon by twenty story buildings.

The recommendation was that light should be supplied by electricity and that air and ventilation should be obtained by pumping up air from somewhere in the street space outside the building and making it artificially warm or cold as required and pumping it out again when vitiated.

It is food for surmise what kind of beings or existents would be developed after a generation passing most of their lives in such a condition—possible worse than the results of our underground system of labor and gaslit offices and backs of dark stores and inside rooms.

Whether from the cause indicated in the paper or from some other, we find in the prevailing style of the Architecture of our present buildings what I am bold enough to consider a bad motif.

We find all the meaningless mouldings and ornaments of the Colonial style adopted, it itself being an ignorant imitation of the European Architecture when it was at about as low an ebb as it ever was, viz., at the Georgian period in England. This leads to the small, petty, uncouth and bebeaded mouldings which possibly might pass muster when applied to a ladie's cabinet or dressing table, but are simply ridiculous and irritating when used for working in hard marble at the base of a huge building.

The same pettiness is exhibited in the playing with bricks and cast ornaments and arranging them in different positions in and out and so forth, which is appropriate for childhood's days and was in fact done in the infancy of the Romanesque style, but never upon eleven story buildings.

Thus we find that even what there was of good in debased styles imitated nowadays has very often been eliminated and the worst features perpetuated.

Thus e. g.: The useful and appropriate entablature of the Renaissance dividing the several parts of a building has been done away with in their modern editions, and the basement runs into the upper part of the building with no other mark of division than change of material. So all the way up the facade; so that looking up the side of an Ironclad from the bottom of a dry-dock is almost as inviting a view as looking up some of our latter day buildings.

These criticisms are simply made and examples taken from places that we pass every day, for the purpose of better elucidating the matter of this paper, and not as any reflexion upon the Architects themselves, who are doing their best trying to solve a difficult problem, "The Wedding of Art with Mammon," and are all aiding by their mistakes as well as their successes to bring about a better state of affairs Architecturally.

To sum up the matter, the whole world being now, by our improved means of intercommunication both of travel and speech, brought together in no such way as ever before in history, and the whole being dominated by communication, Nationalism is being slowly and surely done away with, and universal commercialism and Architecture to suit, is taking its place, a consummation which is not to be regretted.—*W. J. C.*

KILN DRIED WOOD.

KILN drying hard woods for carriage purposes has its advocates and its opponents. On the one hand, it is claimed that the wood is rendered more rigid and firmer by kiln drying than when air dried, while on the other it is claimed that kiln drying destroys the life of the wood, and makes it brash and weak. Much of this difference of opinion arises from the conditions to which the wood experimented upon was subjected. Timber cut in the summer, when the flow of sap is abundant and when the fibres are distended, will be damaged badly by kiln drying, especially if the heat is extreme at first. Less damage will be done by running at a low heat for ten or twelve hours, gradually increasing thereafter until the extreme is reached. The damage of thus attempting to dry green timber at a high heat, is due to the watery portions of the sap generating steam, in-

stead of being absorbed by the dry air. The steam thus generated destroys the glutinous portions of the sap, and removes those properties which constitute the life of the wood.

Timber cut in the rest period, when the flow of sap is at its least, and the wood in its most compact state, is less liable to injury from being put into the kiln immediately on being cut, than that cut when the flow is full, but even it may be injured. Experience has proved that the best results are attained by air drying, three to six months, according to the size of the timber, before putting it into the kiln, and then raising the heat gradually for twenty-four hours. The arrangement of the kilns to insure an escape for excess of moisture, and to control and regulate the heat, must be of the best character.

Experts who have given special attention to the matter of kiln drying, while claiming much for kiln dried timber that has been skillfully manipulated, admit that the best of timber can be rendered worthless if the correct principles governing the process are not followed to the letter.—*The Hub, Sept., 92.*

WITHIN the last few years the Southern Pacific R. R. Company has been building station houses at some of their stopping places. We present a view of one at San Carlos, about twenty-five miles from San Francisco.

THE SUBLIME AND BEAUTIFUL.

By Edmund Burk.

Continued from page 88.

PART I.—THE RECAPITULATION.

To draw the whole of what has been said into a few distinct points:—The passions which belong to self-preservation turn on pain and danger; they are simply painful when their causes immediately affect us; they are delightful when we have an idea of pain and danger, without being actually in such circumstances; this delight I have not called pleasure, because it turns on pain, and because it is different enough from any idea of positive pleasure. Whatever excites this delight, I call *sublime*. The passions belonging to self-preservation are the strongest of all the passions.

The second head to which the passions are referred with relation to their final cause, is society. There are two sort of societies. The first is, the society of sex. The passion belonging to this is called love, and it contains a mixture of lust; its object is the beauty of women. The other is the great society with man and all other animals. The passion subservient to this is called likewise love, but it has no mixture of lust, and its object is beauty; which is a name I shall apply to all such qualities in things as induce in us a sense of affection and tenderness, or some other passion the most nearly resembling these. The passion of love has its rise in positive pleasure; it is, like all things which grow out of pleasure, capable of being mixed with a mode of uneasiness, that is, when an idea of its object is excited in the mind with an idea at the same time of having irretrievably lost it. This mixed sense of pleasure I have not called *pain*, because it turns upon actual pleasure, and because it is, both in its cause and in most of its effects, of a nature altogether different.

Next to the general passion we have for society, to a choice in which we are directed by the pleasure we have in the object, the particular passion under this head called sympathy has the greatest extent. The nature of this passion is, to put us in the place of another in whatever circumstance he is in, and to affect us in a like manner; so that this passion may, as the occasion requires, turn either on pain or pleasure; but with the modifications mentioned in some cases. As to imitation and preference, nothing more need be said.

THE CONCLUSION.

I believe that an attempt to range and methodise some of our most leading passions would be a good preparative to such an inquiry as we are going to make in the ensuing discourse. The passions I have mentioned are almost the only ones which it can be necessary to consider in our present design; though the variety of the passions is great, and worthy, in every branch of that variety, of an attentive investigation. The more accurately we search into the human mind, the stronger traces we everywhere find of His wisdom who made it. If a discourse on the use of the parts of the body may be considered as an hymn to the Creator; the use of the passions, which are the organs of the mind, cannot be barren of praise to Him, nor unproductive to ourselves of that noble and uncommon union of science and admiration, which a contemplation of the works of infinite wisdom alone can afford to a rational mind: whilst referring to Him whatever we find of right or good or fair in ourselves, discovering His strength and wisdom even in our own weakness and imperfection, honoring them where we discover them clearly, and adoring their profundity where we are lost in our search, we may be inquisitive without impertinence, and elevated without pride; we may be admitted, if I may dare to say so, into the counsels of the Almighty by a consideration of His works. The elevation of the mind ought to be the principal end of all our studies; which if they do not in some measure effect, they are of very little service to us. But, beside this great purpose, a consideration of the rationale of our passions seems to me very necessary for all who would affect them upon solid and sure principles. It is not enough to know them in general: to affect them after a delicate manner, or to judge properly of any work designed to affect them, we should know the exact boundaries of their several jurisdictions; we should pursue them through all their variety of operations, and pierce into the inmost, and what might appear inaccessible, parts of our nature,

"Quod latet arcana non enarrabile fibra."

Without all this it is possible for a man, after a confused manner, sometimes to satisfy his own mind of the truth of his work; but he can never have a certain determinate rule to go by, nor can he ever make his propositions sufficiently clear to others. Poets, and orators, and painters, and those who cultivate other branches of the liberal arts, have, without this critical knowledge, succeeded well in their several provinces, and will succeed: as among artificers there are many machines made and even invented without any exact knowledge of the principles they are governed by. It is, I own, not uncommon to be wrong in theory, and right in practice; and we are happy that it is so. Men often act right from their feelings, who afterwards reason but ill on them from principle: but as it is impossible to avoid an attempt at such reasoning, and equally impossible to prevent its having some influence on our practice, surely it is worth taking some pains to have it just, and founded on the basis of sure experience. We might expect that the artists themselves would have been our surest guides; but the artists have been too much occupied in the practice: the philosophers have done little; and what they have done, was mostly with a view to their own schemes and systems and as for those called critics, they have generaliy sought the rule of the arts in the wrong place; they sought it among poems, pictures, engravings, statues and buildings. But art can never give the rules that make an art. This is, I believe, the reason why artists in general, and poets principally, have been confined in so narrow a circle: they have been rather imitators of one another than of nature; and this with so faithful an uniformity, and to so remote an antiquity, that it is hard to say who gave the first model. Critics follow them, and therfore can do little as guides. I can judge but poorly of anything whilst I measure it by no other standard than itself. The true standard of the arts is in every man's power; and an easy observation of the most common, sometimes of the meanest things in nature, will give the truest lights, where the greatest sagacity and industry, that slights such observation, must leave us in the dark, or, what is worse, amuse and mislead us by false lights. In an inquiry it is almost everything to be once in a right road. I am satisfied I have done but little by these observations considered in themselves; and I never should have taken the pains to digest them, much less should I have ever ventured to publish them, if I was not convinced that nothing tends more to the corruption of science than to suffer it to stagnate. These waters must be troubled before they can exert their virtues. A man who works beyond the surface of things, though he may be wrong himself, yet he clears the way for others, and may chance to make even his errors subservient to the cause of truth. In the following parts I shall inquire what things they are that cause in us the affections of the sublime and beautiful, as in this I have considered the affections themselves. I only desire one favor—that no part of this discourse may be judged of by itself, and independently of the rest; for I am sensible I have not disposed my materials to abide the test of a captious controversy, but of a sober and even forgiving examination, that they are not armed at all points for battle, but dressed to visit those who are willing to give a peaceful entrance to truth.

BUILDING LAW.

THE Law News Bureau of Chicago will furnish for publication in the CALIFORNIA ARCHITECT AND BUILDING NEWS, a series of original articles on the laws relating to the building interests. These articles will interest architects, builders and all persons in any way connected with the building trades.

BUILDING CONTRACTS.

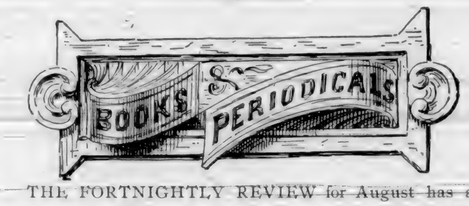
The nature of a building contract is such that it frequently happens, in the course of its performance, that differences arise between the parties to it which render recourse to litigation necessary. A great deal of this could be avoided if in making the contract itself, greater care were used and more attention were paid to the legal principles involved. At the outset of the consideration of the subject of building contracts, it may be said that there is nothing in the law that requires that the contract be in writing unless it is some special statute or provision with reference to mechanics' liens. But as to the validity of the contract itself it is as good verbal as it is written unless by its terms it is not to be performed within one year. This is owing to the operation of the statute of frauds, under which a contract is not valid if by its terms it is not to be performed within one year, unless it is in writing and signed by the parties to be charged. But this does not mean necessarily a contract which is not to be performed within a year, but a contract which by its terms and upon its face cannot be performed within that time. However, as a matter of safety and practical convenience, it is a fact that building contracts are usually reduced to writing. When so written, great care should be exercised for precision of expression that there may be no misconstruction of its terms, and it should carefully provide for all possible contingencies which are likely to arise. The building trade is one which is subject to fluctuations of the market, to the exigencies of the weather and in these days to more or less interruption from labor troubles and all these things which are of common knowledge to the practical builder should be carefully and fully covered in the contract for the erection of a building. It should be borne in mind in entering into a written contract, that when the agreement is reduced to writing, all prior verbal negotiations are merged into that writing, and if there have been any verbal negotiations which are contrary to the letter of the written contract, or if there have been negotiations which are not covered by the contract, the written agreement is supposed to have been entered into with deliberation and to have superceded those prior and informal agreements. It should be borne in mind that the written contract is but the evidence of the agreement of the parties and of itself is of no binding force. Therefore should an agreement be reached and it be reduced to writing and either party fail to sign it that does not affect the validity of the contract itself. Either party upon failure of the other to comply with the terms of the contract, may proceed against the other for damages as if the contract had actually been signed. Of course this principle of the law does not apply to those contracts to which reference has heretofore been made, which are void under the statute of frauds, unless they are reduced to writing and signed by the parties. It frequently becomes the duty of the court after parties have entered into contract to construe those contracts. In the case of agreements involving special trades like building contracts, the language employed is frequently of a technical nature. This language when presented to the court for construction is subject to explanation and definition by persons versed in the trade. Other than that the contract must

stand for construction upon the language which is employed according to the ordinary use of the language. While it is true that the execution of a written contract thereby abrogates any verbal negotiations which may have been entered into by the parties prior to the execution of the writing, it is perfectly competent to modify that written contract after it has been executed by verbal agreements from time to time as the work progresses. For instance, where a contract provides that there shall be in no case any allowance for extra work, if extras are demanded by the owner upon a special verbal contract they are furnished by the builder and the recital in the contract that there will be no allowance for extras will not prevent the contractor from recovering their value provided he can show a special verbal contract. Or, if during the progress of the work, the owner makes such changes in the plans and specifications that it is practically impossible to trace in them any likeness to the plans and specifications upon which the original contract was made, then the builder is at liberty to disregard his original contract both as to terms and price and to charge for the work its reasonable worth and value upon a contract for an agreed price. In one case a contractor found that he was losing money and refused to go on. The owner thereupon verbally agreed that he would make him good for all the labor and stock he might employ, and further said that the contractor should suffer no loss by completing his contract. This agreement though verbal was valid and binding upon the owner and upon the completion of the contract; the builder was entitled to recover in addition to the contract price such an amount as he could show he had expended over and above the price agreed upon in the written contract. These are cases in which the contractor assents to the changes which are made. But if a contract has been entered into with reference to certain specifications and the work is placed under supervision of the architect who prepared the specifications, the architect has no right, without the consent of the contractor, to change the specifications upon which the contract was based. And upon his attempt to do so, the contractor may either abandon the work and recover for what he has already done or if he chooses he may go on and charge such additional price as the changes in the work may make it worth. In making contracts with corporations for buildings the builder should be careful that the contract is one that the corporation or the officers who seek to make it have the authority to make. Corporations being special creatures of the statute are held to a strict enforcement of their charter rights, and unless the contracts which they make are within the scope of the charter which they have from the state, it is in the power of any stockholder to proceed to restrain the completion of the contract. In general, a corporation has the right to erect all the buildings necessary to conduct the business in which it is engaged. To go beyond this they must have special authority either from the stockholders themselves or from the laws under which they operate. Having made a valid and binding contract there are many rights and duties which grow out of it, from which there springs a large amount of litigation. If the parties to these contracts on both sides thoroughly understood their rights and their duties, and knew what the law requires of them and what it would enforce upon them, much of this litigation could be avoided. It is upon that consideration that we shall proceed to consider in future articles some of the responsibilities and liabilities growing out of building contracts. This will include the relations of architects, subcontractors, material men, laborers, and the relations between the contracting parties with reference to breaches of the contract and other responsibilities growing out of the relations of contractor and owner. It is belived that such a consideration of the question will enable the intelligent contractor to avoid many of the harassing features of the business.

The California State World's Fair board has given Miss Ray Beveridge of this city permission to set up and operate a minature blacksmith's forge in the State Building.

Miss Beveridge is a graduate of the Industrial Department of the Cogswell Polytechnic Institute of this city, and is said to be an expert at the anvil. In modeling also she is an artist and bids fair to win fame in that line. Ex-Governor John L. Beveridge of Illinois is an uncle of this talented young lady.

New York is to have a new plumbing law.



THE FORTNIGHTLY REVIEW for August has an article on the "Working Lady in London," by Miss March-Phillipps, giving descriptions of dwellings and lodgings for working people which are of interest to architects.

LIPPINCOTT'S for September has so many interesting articles descriptive of matters on this side of the Continent that it might be called a Pacific Coast edition.

THE COSMOPOLITAN for September has a chapter on the "Advance of Education in the South," giving a description of some of the labor and technical schools.

THE ENGINEERING MAGAZINE for September has an article treating on "Tall Office Buildings, Past and Future" by Dankmar Adler.

THE HUB for September is full of good articles for the wood-worker, among which are the following:—"The Division of Labor in Large Workshops;" "The Abused Grindstone;" "Repairing and Varnishing Old Work;" "Kiln-Drying Hardwood" and "Education of Wood-Workers."

THE CINCINNATI LANCET-CLINIC for September 10th, has a chapter on the "History of Cholera," by T. C. Minor, M. D., and one from J. C. McMechan, M. D. These articles suggest many features of interest to architects engaged in planning hospitals for infectious diseases.

We have received a copy of the introduction to POOR'S MANUAL of the Railroads of the United States for 1892. H. V. and H. W. Poor, publishers, 70 Wall street, New York. It contains a vast amount of useful information, and we shall quote from it at different times during the coming year.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

Wohnhaus des Baumeister Olzen in Berlin.

Thurmstrasse.

Otzen, Arch.

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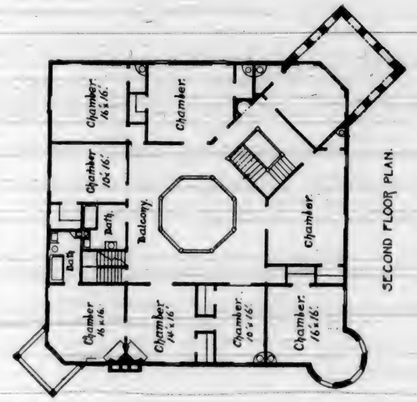
Chamber 16'x16'
Chamber
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Bath
Bath
Balcony
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Chamber 16'x16'
Chamber 16'x16'
Chamber 16'x16'
SECOND FLOOR PLAN.

Servants' Bed Room 10'x16'
Dining Room
Hall
Kitchen 10'x16'
Pantry
Garden 29'x29'
Bath
Bed Room 16'x16'
Billard Room 25'x16'
Parlor
Porch 7'x16'
FIRST FLOOR PLAN

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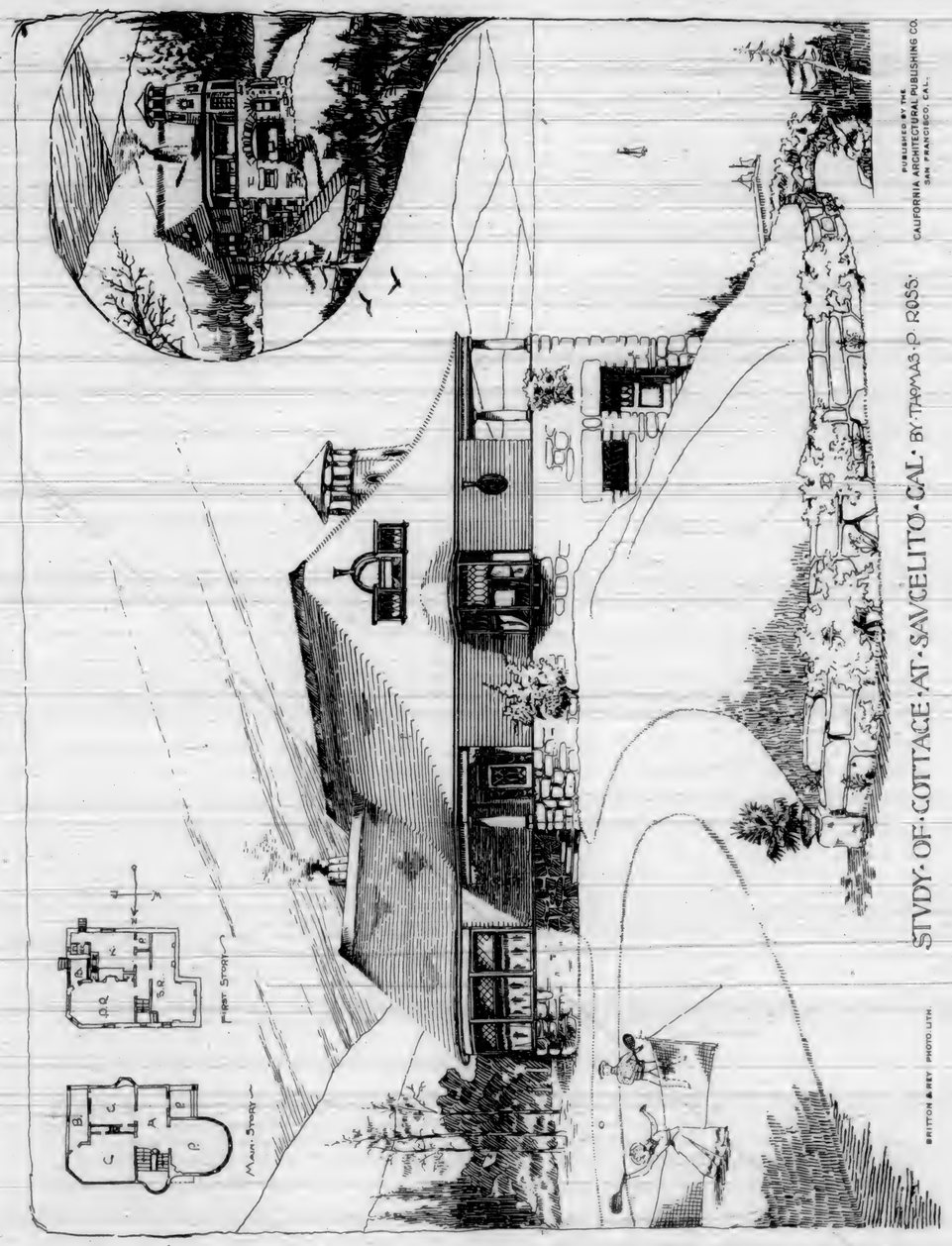
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Main Story
First Story
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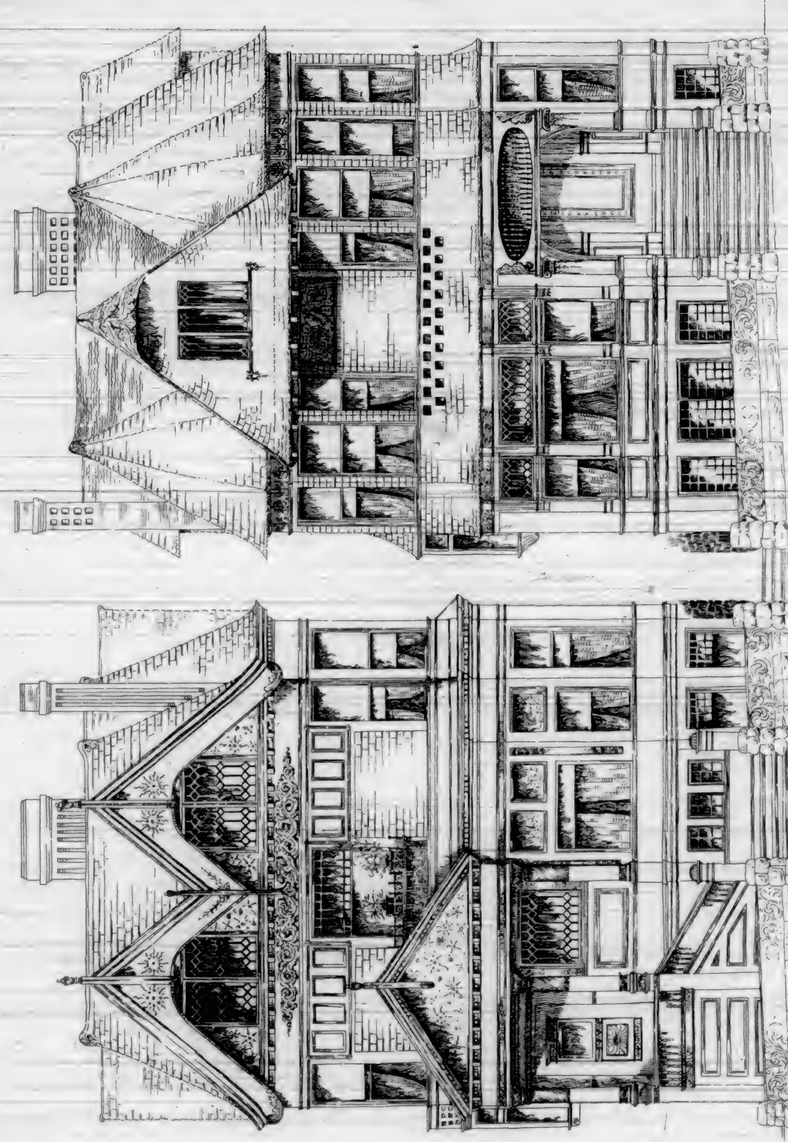

· W. H. LILLIE · ARCHITECT
· 38 · & 39 · STANYS · BUILDG

· FRONT · ELEVATION ·

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BRITTON & REY PHOTO LITH.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE illustration shows the new residence of Mr. Samuel Taylor, and is to be erected on the site of the old Wolfskill home near Winters, California. The rooms are arranged around an open court 30x30 feet, in which will be a fountain and palm trees. On the level of the second story there will be a balcony seven feet in width, leaving an octagonal opening sixteen feet across. This opening is arranged so that it may be closed with glass in the winter to admit its being warmed.

The exterior is in form nearly a square of sixty-two feet and is designed in simple Spanish Style and the walls are coated with rough cement work on iron laths, giving it somewhat the appearance of an adobe house.

The rooms are spacious and well lighted from two sides. The billiard room and dining room are to be finished with black walnut grown on the place. All other parts will be finished in natural red wood.

The plumbing is to be most complete, with modern fixtures, and the entire house will be lighted, and the heating done by means of hot water. Electric bells and other conveniences will be provided.

Messrs. Percy & Hamilton, of this city are the Architects

THE Study of Cottage at Saucelito, California, is from designs by Mr. T. P. Ross, of this city, Architect.

THE *Wohnhaus des Baumeister* is from the Architectural *Skizzenbuch*, 1874.

THE two detached residences shown in the illustration, are in course of erection on the corner of Broadway and Gough streets for Mr. Walker and are from designs by Mr. W. H. Lillie, Architect, of this city.

The architects of the world are to be invited to a congress at Chicago during the World's Fair to discuss architectural subjects and the interests of the profession.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. O. BROOKS, Treas.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. H. G. JARMAN, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

LIEN OF ARCHITECT.—An architect is within the protection of the Alabama Code, as a person who has done "work or labor upon * * * a building or improvement on land." But, the description of a building upon which a mechanic's lien is sought to be enforced must be sufficient for a person familiar with the locality to identify it.

Hughes v. Torgerson, Supreme Court of Alabama, 11 South. Rep. 298, 57.

DAMAGES FOR NON-PERFORMANCE OF CONTRACTS.—It is the rule that, in cases of contracts wholly unperformed, such damages as naturally result from the breach of the contract are presumed to have accured to the injured party and may be recovered, and the measure of such damages in such cases should be the difference between the contract price and the reasonable cost of the work or thing, at the usual and ordinary price.

Richter v. Meyer, Appellate Court of Indiana, 31 N. E. Rep. 582, 73.

DAMAGE FROM DROPPING OF MORTAR.—Where a person sustains damage by the dropping of mortar and bricks during the erection of a wall next to the premises occupied by her, the party for whom the wall was being erected, is not liable for such damage, but the contractor would be, if any one, if it was not a necessary result of the building of the wall, but was caused by the negligence of the contractor or of his servants. The injury caused by dust arising from the dumping of loads of brick near a person's residence might be so trifling as not to be actionable, or there might be evidence of such excessive and long-continued annoyance therefrom as to warrant the submission of the question of damage caused thereby to the jury.

Pye v. Faxon, Supreme Judicial Court of Massachusetts, 31 N. E. Rep. 640, 138.

EXTRAS UNDER CONTRACT.—A written building contract provided that the contractor should, to the satisfaction of the architects, perform and finish "all work included in the entire completion" of the building for a named sum, and that he should make no claim for additional work unless the same should be done pursuantly to a written order from the architects, and that written notice of all claims should be given the architects within three days of the beginning of such work. Under this contract in the absence of an agreement modifying it, the builder was not liable for extra

work unless it was done on a written order; and the contractor could recover for extra work if it was done "at the request, or with the knowledge and consent, express or implied," of the builder, "or his agent," without a waiver by the builder of a written order, or of his independent promise to pay for the work.

Wortman v. Kleinschmidt, Supreme Court of Montana, 30 Pac. Rep., 260, 153.

Effect of Changes in Building on Bond for Performance of Contract.—In an action upon the bond of a contractor given for the faithful performance of a contract, for the construction of a building where the contract contained a clause by which the owner retained the right to alter or modify the original design, and to add to or diminish from the contract price, and the owner or the architect were at liberty to make any alteration in the plan, form, construction or detail, described in the drawings and specifications, without making void the contract, and it is found by the referee trying the case, that a change was made in the plan of the building by moving the wall out two inches, and the specifications were changed by substituting walnut, cherry and poplar, instead of pine, in certain portions of the building; these changes and modifications were provided in the contract, and the bondsmen were not released by reason of such changes; and when it is found that the original specifications exhibited to the bondsmen with numerous alterations noted therein, were taken by the architect to be copied, and it does not appear that the additions made upon the copy are material, and the original is inadvertently destroyed in the architect's office, the destruction of the original specification will not avoid the contract or release the bondsmen.

McLennan v. Wellington, Supreme Court of Kansas, 30 Pac. Rep. 183, 229.

One of the features of the California exhibit at the Exposition will be a pampas palace, twenty feet square, which will be erected in the state building. The palace is the contribution of Mrs. Harriet W. R. Strong, of Whittier, Cal., who is a large grower of pampas plumes.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., September 6th, 1892. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 4th day of October, 1892, and opened immediately thereafter, for all the labor and materials required for the erection and completion (except plumbing and heating apparatus) of the extension to the U. S. Court House, Post Office, etc., building at Dallas, Texas, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Dallas, Texas.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any and all bids, or to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidder. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the erection and completion (except plumbing and heating apparatus) of the extension to the U. S. Court House, Post Office, etc., building at Dallas, Texas," and and addressed to,

W. J. Edbrooke,
Supervising Architect.

BUSINESS MOSAICS.

An architect's level is an instrument of a new form for general use by architects, builders, graders, sewer workers, ditchers and all other workers who desire a convenient instrument.

The telescope has an adjustable focus and the bubble of the level is in view when looking through the tube. The telescope moves through a vertical arc with vernier scale for observing vertical lines and heights, and is also provided with a three inch compass for setting off angles, and can be readily set and adjusted for horizontal or vertical lines.

The price of the instrument complete with tripod is $33.00, and without tripod but made to set on a frame, $28.00.

This low-priced instrument for this kind of work takes the place of a $200.00 one. This as well as all other scientific instruments are to be had of the A. Lietz Co., No. 422 Sacramento street, this city.

The Roche Harbor Lime Co. have made a new departure in the shipment of lime. The cooperage of their barrels is such that there is no waste. Instead of sixteen staves they make but two. Out of a shipment of 5,000 barrels there was not a barrel broken.

SANITARY PRECAUTIONS AGAINST CHOLERA.

It is a well known fact that the germs of Cholera thrive most in damp cellars, decaying wood, and in all places where decomposition of any kind has set in, but Carbolineum Avenarius still sells at the same price, even with the increased demands for it, and it is well known that as a disinfectant, a wood preservative, a preventative of dampness in places where dampness is liable to take place, Carbolineum has no equal. Property owners will save money both from a monetary and sanitary point. It prevents dampness, dry rot, and fungus in wood, and drives out moisture. People having damp cellars should paint them with Carbolineum, thereby making them dry, and from a sanitary point, a preventative against Cholera.

The most eminent authorities agree that impure water is a source of danger that should always be guarded against, and more especially at times when epidemics prevail.

The most efficatious apparatus for the purification of water is the Rapid Safety Filter, as supplied by the company at 1209 Market street. Try one and you will find that you cannot do without it.

THE J. L. MOTT IRON WORKS' "SUNRAY" HOT WATER HEATER.

A hot water heater of new construction has been placed upon the market by the J. L. Mott Iron Works, of New York and Chicago, a complete view of which is illustrated in Fig. 1 of the accompanying cuts. The heaters are made in twelve sizes, to heat from 350 to 5,000 feet of radiators, and are arranged in batteries to supply heat for 50,000 feet of radiation. Each section is bolted on the one immediately above it so that any one section can be taken out and replaced without interfering with the others, and it is claimed that these separate bolts have the advantage of making a stronger joint and one that will always remain tight under

any change of temperature. The flanges that form the joints between the sections are milled by a machine specially designed for the purpose which makes the surfaces so true that a leak is impossible. Each tier of flues in the upper sections is accessible by separate clean-out doors, so that each set may be cleaned without exposing the others.

The heaters are furnished with a new pattern of rocking grate which is claimed will clear the fire of all clinker and ashes without waste of fuel. It is claimed that the arrangement of fire-pot, the spaces above the fire-pot and the combustion chambers in the top of the heater are new features. It will be noticed in the sectional cut, Fig. 2, that the water spaces are directly over each other; this construction enables all the gases generated by the burning fuel to pass freely to the combustion chamber at the top of the heater, where they are consumed before escaping to the chimney. It is claimed for this method of construction that a higher temperature

FIG. 1. COMPLETE VIEW OF HEATER.

can be maintained at the top of the heater than in the fire-pot, and that the whole of the heater surface is as hot as the fire-box.

The return flues shown in Fig. 3 prevent the escape of the heated gases till the heat has been extracted by coming into contact with the water spaces.

It is claimed by the makers of this heater that the top of any water heater should be the hottest part of it, as the return water enters at the bottom and gets hotter and hotter till it reaches the top, where it escapes up the flow pipes to the radiators. The makers assert that this heater has a positive circulation, that all the water entering at the bottom of the heater is passed directly over all parts of the fire and yet no friction is allowed to prevent the water escaping freely up the flow pipes as soon as it has received all the heat it

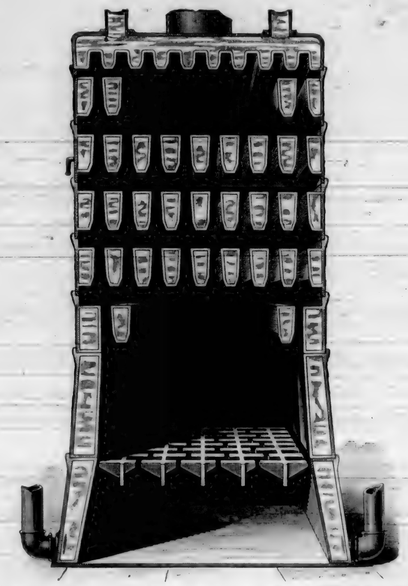

FIG. 2. SECTIONAL VIEW SHOWING WATER SPACES.

can carry. The manufacturers further state the "Sunray" heater has been thoroughly tested to prove its economy, and has exceeded the expectations of the inventors. The heater can be quickly erected and can be taken into any building by an ordinary door. See advertisement on page v.

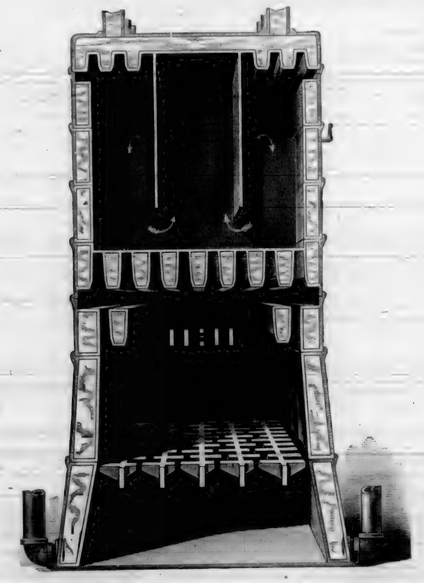

FIG. 3. SECTIONAL VIEW SHOWING RETURN FLUES.

Bartlett near 23rd. Moving two-story frame; owner, Estate of C. Mangels; architect, H. Geilfuss; contractor, P. G. Martin; cost, $2,254; signed, Aug. 18; filed, Aug. 19; payments, 1st and 15th days of each month 75 per cent. as work progresses; balance 35 days.

Broadway near Franklin. To build; owner, J. W. Van Bergen; architect, H. Geilfuss; contractor, F. W. Kern; cost, $10,813; signed, Aug. 2; filed, Aug. 4; payments, $2,027, frame up; $2,027, floors laid and partitions set; $2,027, inside standing finish on; $2,027, completed; $2,705, 35 days.

Broadway near Franklin. Painting, graining, etc.; owner, J. W. Van Bergen; architect, H. Geilfuss; contractor, Wm. G. Koch; cost, $1,200; signed, Aug. 2; filed, Aug. 9; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance 35 days.

Broadway near Franklin. Plumbing, gas-fitting, etc.; owner, J. W. Van Bergen architect, H. Geilfuss; contractor, Chas. Mecham; cost, $1,950; signed, Aug. 2; filed, Aug. 9; payments, 1st and 15th days of each month 75 per cent. as work progresses; balance 35 days.

Broderick and Park Hill Road. Two-story and basement frame; owner, Edmond E. Hill; architects, Shea & Shea; contractor, James McConahey; cost, $6,900; signed, Aug. 16; filed, Aug. 17; payments, $1,218, frame up; $1,219, brown mortar on; $1,219, hard finished; $1,219, completed; $1,625, 35 days.

Bush near Powell. Eight flats and alterations or rear building; owner, Mrs. L. M. Bigelow; architect, J. Cather Newsom; contractors, Belyea & Rogers; cost, $17,350; signed, Aug. 26; filed, Aug. 29; payments, $1,500, excavation completed and foundations in; $1,500, frame of both buildings up; $1,500, rafters up, roof boards on and rough plumbing in; $1,500, enclosed, interiors ready for lathing; $1,500, brown mortar on and outsides primed; $1,500, plastered, and interior finished; $4,000, completed; $4,350, 35 days.

California near Battery. Addition to 4th story; owner, Robt. Sherwood; architect, Clinton Day; contractor, J. T. Grant; cost, $12,881; signed, Aug. 16; filed, Aug. 16; payments, $8,750, brick work completed; $8,000, framing and studding ready for plaster, roof tinned and exterior sashes hung; $2,910, completed; $3,221, 35 days.

California near Gough. Painting; owner, Jos. Hyman; architects, Salfield & Kohlberg; contractor, J. F. Sullivan; cost, $780; signed, July 28; filed, July 29; payments, $280, primed; $300, completed; $200, 35 days.

California near Hyde. Two-story frame; owner, Mrs. C. Comerford; architects, Shea & Shea; contractor, J. F. Klenck; cost, $4,590; signed, July 25; filed, July 29; payments, $860, frame up and rafters on; $860, brown mortar on; $861, plastered; $861, completed; $1,148, 35 days.

California near Montgomery. Steel fixtures for vaults; owners, German Savings and Loan Society; architects, Kenitzer & Kollofrath; contractors, Specialty Manufacturing Co.; cost, $1,477.70; signed, Aug. 6; filed, Aug. 15; payments, $1,108, completed; $369.70, 35 days.

California and Webb. Alterations and additions; owners, San Francisco Savings Union; architect, Wm. Curlett; contractors, Smith Bros.; cost, $83,300; signed, July 12; filed, Aug. 2; payments, at the end of each month, 75 per cent. of value as work progresses; balance 35 days.

Caselli Ave. Cottage and basement; owner, Constantine Holubar; contractor, George Lacky; cost, $1,900; signed, Aug. 9; filed, Aug. 11; payments, $400, studding up; $400, brown mortar on; $400, completed; $360, 35 days.

Castro near Henry. To build; owner, John Frawley; architects, Shea & Shea; contractor, Alfred Hawkins; cost, $3,750; signed, Aug. 17; filed, Aug. 18; payments, $703, frame up and rafters on; $703 brown mortar on; $703, hard finished; $703, completed; $938, 35 days.

Cayton near Page. One-story frame; owner, R. Poehlman; architects, Martens & Coffey; contractor, H. R. Schmuckert; cost, $2,050; filed, Aug. 27; payments, $500, frame up and enclosed; $500, plastered; $535, completed; $515, 35 days.

Chestnut near Dupont. Three-story frame; owner, Gustave Quadt; architect, S. A. Cooper; contractors, H. Behrens & Co.; cost, $4,000; signed, Aug. 18; filed, Aug. 19; payments, $1,000, frame up; $1,000, brown mortar on; $1,000, completed; $1,000, 35 days.

Clay near Mason. Two-story frame; owner, Robt. Westfield; architect, R. H. White; contractor, A. Mandonnet; cost, $1,110; signed, Aug. 23; filed, Aug. 23; payments, $400, brown mortar on; $300, completed; $230, 35 days; $210, 60 days after last payment.

Collingwood near 19th. To build; owner, Mrs. M. J. Katz; contractors, Marcuse & Remmich; cost, $1,800; signed, July 25; filed, Aug. 5; payments, $450, frame up; $450, brown mortar on; $450, completed; $450, 35 days.

Connecticut near Napa. One-story frame; owner, T. Conners; architect, M. J. Welsh; contractor, J. Glacken; cost, $1,100; filed, July 29; payments, $412.50 brown mortar on; $412.50, completed; $275, 35 days.

Connecticut near Napa. One-story frame and rough basement; owner, F. O. Sellman; architect, Samuel Hatfield; contractor, John Sundeen; cost, $1,375; signed, Aug. 11; filed, Aug. 11; payments, $340, foundation completed, frame up, rough boards on and rustic on basement; $341, brown mortar and 1st coat paint on; $350, completed; $344, 35 days.

Day near Church. One-story frame; owner, Philip Fraher; architect, M. J. Welsh; contractor, Ivory Wells; cost, $2,200; signed, Aug. 20; filed, Aug. 20; payments, $550, frame up; $550, brown mortar on; $550, completed; $550, 35 days.

De Long Ave. and Frederick. Two-story frame; owner, G. D. Clark; architect, Oliver Everett; contractor, D. H. Matheson; cost, $3,930; signed, Aug. 10; filed, Aug. 15; payments, $982.50, roof on and frame braced; $982.50, brown mortar on; $982.50, completed; $982.50, 35 days.

Eleventh near Market. Setting in nave of church; owners, Church of the Advent; architects, Coxhead & Coxhead; contractor, Hugh Williamson; cost, $1,800; signed, July 14; filed, July 18; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Elgin Park, No. 28. Alterations and additions; owner, E. T. Jones; contractor, H. R. Schmuckert; cost, $1,050; signed, Aug. 20; filed, Aug. 22; payments, $300, frame up; $300, brown mortar on; $288, completed; $262, 35 days.

Ellis St. No. 324 and 326. Alterations and additions; owner, Wm. Green; architect, C. A. Lutgens; contractor, W. J. Field; cost, $3,543; signed, Aug. 23; filed, Aug. 25; payments, $664, frame up and rustic on; $664, brown mortar on; $664.25, plastered and exterior primed; $665 completed; $885.75, 35 days.

Fair Oaks and 21st. Two-story frame; owner, Mrs. E. L. Cowle; architects, Percy & Hamilton; contractor, C. E. Dunshee; cost, $5,616; signed, Aug. 29; filed, Sep. 1; payments, 1st Saturday of each month 75 per cent. as work progresses; balance 35 days.

Fell near Devisadero. One-story frame and basement; owners, F. G. Rider and wife; architect, W. H. Lillie; contractor, Jos. Kennedy; cost, $2,057; signed, Aug. 23; filed, Aug. 24; payments, $309.25, frame up; $309, enclosed and inside partitions set; $309, brown mortar on; $309, standing finish on; $309, completed; $511.75 35. days.

Fifth and Bluxome. Two-story brick; owner, John Furness; architect, C. I. Havens; contractor, H. H. Larsen; cost, $5,000; signed, Aug. 15; filed, Aug. 17; payments, 1st and 15th days of each month 75 per cent. as work progresses; balance, 35 days.

Fillmore and Wildly. To build; owner, D. J. Creedon; architect, T. J. Welsh; contractors, Currie & Loomer; cost, $5,975; signed, Aug. 19; filed, Aug. 20; payments, $1,300, frame up; $1,400, brown mortar on; $1,275, plastered; $1,225, completed; $1,775, 35 days.

Fillmore and Grove. Two-story frame; owner, Mrs. E. L. Lowe; architects, Henriksen & Mahoney; contractor, Geo. Lack; cost, $5,300; signed, Aug. 3; filed, Aug. 6; payments, $1,010, rustic on and roof covered; $1,010, brown mortar and outside on; $1,010, plastered and sashes glazed and hung; $1,012, completed; $1,348, 35 days.

Fourteenth near Mina. Three-story frame; owner, L. Concannon; architect, C. J. I. Devlin; contractor, R. Fahy; cost, $4,360; signed, Aug. 12; filed, Aug. 13; payments, $600, frame up; $600, enclosed and roof on; $1,000; exterior mill work completed; $1,000, woodwork ready for painting; $270, completed; $1,080, 35 days

Fourteenth near Howard. Seven flats; owner, Mary A. Williams; architect, H. G. Clinton; contractors, Greenwood Contracting Co.; cost, $10,300; signed, Aug. 6; filed, Aug. 6; payments, $2,100, when brown mortar is on design B.; $1,850, brown mortar on all; $1,850, completed; $4,500, 35 days.

Frederick and De Long Ave. Two-story frame; owner, G. D. Clark; architect, Oliver Everett; contractor, D. H. Matheson; cost, $3,930; signed, Aug. 8; filed, Aug. 9; payments, $982.50, walls sheathed and roof and frame permanently braced; $982.50; brown mortar on; $982.50, completed; $982.50, 35 days.

Fulton near Broderick. Plumbing and gas-fitting; owners, Cranston & Keenan; architect, Edward Burns; contractor, H. Williamson; cost, $2,097; signed, Aug. 11; filed, Aug. 12; payments, $1,048.50, rough plumbing and cast iron sewers in; $524.25, completed; $644.25, 35 days.

Fulton near Lott. One-story and basement frame; owner, Erland Dryselius; contractor, J. Bucher; cost, $2,200; signed, July 30; filed, Aug. 1; payments, $550, enclosed; $550, brown mortar on; $550, completed; $550, 35 days.

Gough near Willow Ave. Two-story frame; owner, Wm. John; architects, John & Balczynski; contractors, Wm. Plums; cost, $10,470; signed, Aug. 26; filed, Aug. 26; payments, $2,000, frame up; $1,500, enclosed, floors laid and partitions set; $2,000, sand finished and plastered; $2,300, completed; $2,070, 35 days.

Green near Kearny. Alterations and additions; owner, Francesco Biondi; contractors, Picasso & Barilan; cost, $3,450; signed, Aug. 6; filed, Aug. 4; payments, $610.50, house raised, concrete work done and 1st floor joists in; $609, enclosed and roof ready for tinning; $609, brown mortar on; $609, completed; $812.50, 35 days.

Hampshire near 21st. One-story frame and part of basement; owner, Henry Kasch; contractor, Henry Burns; cost, $1,850; signed, Aug. 3; filed, Aug. 8; payments, $450, frame up; $450, brown mortar on; $450, completed; $500, 35 days.

Harrison near 21st. Flats and basement; owner, Roger Fitzpatrick; contractor, R. K. Albertson; cost, $2,925; filed, Aug. 15; payments, $425, 1st floor joists on; $1,000, brown mortar on; $1,000, plastered; $500, completed.

Harrison near 23rd. Two-story frame with brick basement; owner, D. F. Keefe; architect, M. J. Welsh; contractors, Brennan Bros.; cost, $3,677; signed, Aug. 11; filed, Aug. 11; payments, $919, frame up; $919, brown mortar on; $919, completed; $920, 35 days.

Hawthorne near 2d. Three-story frame; owner, Martin Fahaney; contractor, T. C. Cochrane; cost, $5,625; signed, Sept. 1; filed, Sept. 1; payments, $1,073, frame up; $1,073, brown mortar on and outside mill work completed; $1,073, plastered; $1,074.75, completed; $1,431.25, 35 days.

Hayes near Baker. Two-story frame; owner, F. W. Keuerleber; architect, H. Geilfuss; contractor, F. L. Hanson; cost, $4,040; signed, Sept. 1; filed, Sept. 1; payments, $606, frame up; $606, roof on, floors laid and partitions set; $606, brown mortar on and basement completed; $606, inside standing finish on; $606, completed; $1,010, 35 days.

Hayes and Fillmore. Plumbing, gas-fitting, etc.; owner, Mary D. Armer; architect, C. J. Devlin; contractor, W. F. Wilson; cost, $3,571; signed, Aug. 26; filed, Aug. 27; payments, $1,300, all water, waste, gas and sewer pipes in; $1,300, completed; $971, 35 days.

Hayes and Fillmore. Hydraulic ram hoist and dumbwaiter; owner, Mary D. Armer; architect, C. J. Devlin; contractors, Cahill & Hall Elevator Co.; cost, $1,000; signed, Aug. 24; filed, Aug. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Fillmore. Lathing, plastering, cementing; owner, Mary D. Armer; architect, C. J. Devlin; contractor, J. J. Moorehouse; cost, $3,250; signed, Aug. 20; filed, Aug. 27; pay-ments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Fillmore. Painting, graining, varnishing, etc.; owner, Mary D. Armer; architect, C. J. Devlin, contractor, J. F. Sullivan; cost, $3,125; signed, Aug. 23; filed, Aug. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Fillmore. Tin, galvanized iron and slating; owner, Mary D. Armer; architect, C. J. Devlin; contractors, Forderer Cornice Works; cost, $1,666; signed, Aug. 23; filed, Aug. 27; payments, 75 per cent. as work progresses, balance, 35 days.

Hayes and Fillmore. Hot water heating system; owner, Mary D. Armer; architect, C. J. Devlin; contractors, W. W. Montague & Co.; cost, $2,480; signed, Aug. 20; filed, Aug. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Fillmore. Excavation, brickwork, etc.; owner, Mary D. Armer; architect, C. J. Devlin; contractor, Fitzsimon & Ambrose; cost, $8,840; signed, Aug. 22; filed, Aug. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Fillmore. Carpenters' and joiners' work, etc.; owner, Mary D. Armer; architect, C. J. Devlin; contractor, John Massey; cost, $23,945; signed, Aug. 20; filed, Aug. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Hayes and Octavia. To build; owners, C. & L. Gurdotti; architect, C. M. Rousseau; contractor, Leonard B. Schmid; cost, $3,000; signed, Aug. 12; filed, Aug. 13; payments, $650, roof on; $750, brown mortar on; $750, completed; $850, 35 days.

Henry and Castro. Five, two-story cottages; owner, C. F. McDermott, architect; John Gash; conactor, J. Morris; cost, $4,000; signed, Aug. 17; filed, Aug. 19; payments, $750, rustic on and roof shingled; $750, brown mortar on; $750, plastered, sashes in place and ginzed; $750, completed; $1,000, 35 days..

Hill near Castro. One-story cottage and basement; owners, E. J. Bridgen; contractors, Currie & Loomer; cost, $1,700; signed, Aug. 12; filed, Aug. 12; payments, $425, frame up and enclosed; $125, brown mortar on; $125, completed; $425, 35 days.

Howard and 1st. Steel, iron work, anchors, etc.; owners, Selby Smelting and Lead Co.; contractors, Bigelow & Little; cost, $2,287; signed, Aug. 24; filed, Aug. 30; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Howard and 1st. Brickwork, excavation, etc.; owners, Selby Smelting and Lead Co.; contractor, Adam Beck; cost, $6,450; signed, Aug. 23; filed, Aug. 30; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Howard and 1st. Woodwork, tin roofing, painting, etc.; owners, Selby Smelting and Lead Co.; contractor, J. T. Grant; cost, $1,030; signed, Aug. 24; filed, Aug. 30; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Howard near 15th. To build; owner, F. W. Runge; architect, H. Geilfuss; contractor, Emil Hoelle; cost, $7,480; signed, Aug. 15; filed, Aug. 16; payments, $1,122, frame up; $1,122, enclosed, roofed, floors laid and partitions set; $1,122 brown mortar on, yard and porch work finished; $1,122, inside standing finish on; $1,122, completed; $1,879, 35 days.

Howard near 15th. Excavation, brickwork, etc.; owner, Andreas Zihn; architect, H. Geilfuss; contractor, Toni Muller; cost, $7,150; signed, Aug. 8; filed, Aug. 9; payments, $1,072, entire frame up; $1,072, enclosed, roof on and partitions set; $1,072, brown mortar on, porch and yard work finished; $1,072, inside standing finish on; $1,072, completed; $1,790, 35 days.

Jackson near Central Ave. Two-story frame; owner, Abraham Beerman; architect, W. H. Lillie; contractors, White Bros.; cost, $6,918; signed, Aug. 29; filed, Aug. 24; payments, $1,238, frame up; $1,038, enclosed; $838, partitions set; $1,037, standing finish on; $1,037, completed; $1,730, 35 days.

Jackson near Steiner. Cottage; owner, Wm. Deagener; architects, Kenitzer & Kollofrath; contractors, Schutt & Kreeker; cost, $2,785; signed, Aug. 16; filed, Aug. 19; payments, $1,000, brown mortar on; $900, ready for paint; $188.75, completed; $696.25, 35 days.

Kearny and Green. Three-story frame; owner, Agostino Matroni; contractor, P. Antonelli; cost, $4,975; signed, July 29; filed, July 29; payments, 1st day of each month, $1,000 after commencement of work until sum of $3,731.25 has been paid; $1,243.75, 35 days.

Kearny near Geary. Iron, steel, brick, concrete work, etc.; owner, J. A. Krafft; contractor, Chas. Wagner; cost, $1,000; signed, April 25; filed, Aug. 27; payments, $500, iron and steel work set and arches turned; $400, completed; $250, 35 days.

Kearny and Union. Four story frame; owners, F. & J. Lagomarsino; architect, Emil Depierre; contractor, G. B. Cavaglia; cost, $7,350; signed, Aug. 25; filed, Aug. 26; payments, $1,400, grading completed and 1st story joists set; $1,400, roof on and building enclosed; $1,400, brown mortar on; $1,312, completed; $1,838, 35 days.

Kingston near Mission. One-story frame; owner, Chas. A. Roesler; contractors, Wm. & H. Plant; cost $1,008; signed, Aug. 22; filed, Aug. 29; payments, $400, enclosed and brown mortar on; $350, completed; $258, 35 days.

Lake View, Lot 4, blk. 19. Five-room cottage; owner, Thos. Douglass; contractor, George Lack; cost, $1,525; signed, July 29; filed, July 29; payments, $380, studding up; $380, brown mortar on; $385, 35 days.

Larkin near Bush. Three-story frame and brick; owners, Thomas and Jane Daley; architect, C. J. Devlin; contractor, F. Klatt; cost, $4,380; signed, Aug. 19; filed, Aug. 22; payments, $500, frame up; $1,000, ready for lathing; $750, mill work completed; $750, wood work finished and ready to paint; $200, completed; $1,100, 35 days.

Locust near Sacramento. One-story cottage; owner, Lottie Kern; architect, W. J. Mathews; contractor, Wm. G. Jones; cost, $2,290; signed, Aug. 26; filed, Aug. 27; payments, $572.50, ¼ work done; $572.50, ¾ work done; $572.50, completed; $572.50, 35 days.

Lyon near Grove. Two-story frame, moving, alterations and putting store under one-story cottage; owner, Fannie Bronson; architects, J. J. & T. D. Newsom; contractor, A. B. Larmar; cost, $1,250; signed, Aug. 18; filed, Aug. 20; payments, $630, cottage moved, raised, chimneys built in store and foundation of new building in; $630, store enclosed, floors laid and frame of new building up; $630, new building enclosed, rough plumbing done in store, chimneys built in new building, and brown mortar on store; $630, brown mortar on flats, store plastered and outside primed; $667, completed, $1,063, 35 days.

Market, bet. 5th and 6th. Alterations and additions; owner, Arthur Legallet; architect, Emile Depierre; contractor, M. Fennell & Son; cost, $4,125; signed, July 30; filed, July 30; payments, $800, brick work of main house completed and retaining walls of sidewalk done; $800, grading completed, arches of sidewalk in place and iron work in place; $740, completed; $785, 35 days.

Market near Powell. Glazing; owner, Annie Donahue; architect, Chas. I. Havens; contractor, A. R. Kelley; cost, $5,648; signed, Aug. 24; filed, Aug. 29; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Mission St. wharf, Pier No. 2. Two-story office; owners, John Rosenfeld's Sons; architect, J. W. Kinsman; contractors, Bradt & Bateman; cost, $1,100; signed, Aug. 18; filed, Aug. 16; payments, $300, enclosed and tin roof on; $425, completed; $375, 35 days.

Moss St., No. 32, 34, 34½. Alterations and additions; owner, David Ross; architect, Emile Depierre; contractor, Dennis Chesney; cost, $2,570; signed, July 28; filed, July 29; payments, $650, building raised, underpined and enclosed; $650, plastered, sashes hung and glazed; $650, completed; $650, 35 days.

Moulton Ave. near Detroit. One-story building; owners, Pratt & Connors; contractor, T. R. Goth; cost, $1,200; signed, Aug. 17; filed, Aug. 19; payments, $400, enclosed and ready for plaster; $400, plastered; $400, completed.

Nineteenth near Noe. One-story frame; owner, Alex. Brown; contractor, Ralph Carey; cost, $1,660; signed, Aug. 8; filed, Aug. 19; payments, $415 rustic on and roof sheathed; $415, brown mortar on; $415 completed; $415, 35 days.

Noe and 23rd. Frame dwelling; owner, Mary Wulffing; architect, Edward. Burns; contractor, John Foster; cost, $4,650; signed, Aug. 2; filed, Aug. 2; payments, $800, building enclosed and roofed; $1,100, brown mortar on; $1,100, completed; $1,650, 35 days.

Orazaba and Broad Ave. To build; owner, Palmers Parent; contractors, Morrison & Cook; cost, $1,025; signed, Aug. 12; filed, Aug. 13; payments, $400, frame up; $325, plastered; $300, 35 days.

Oregon near Davis. One-story brick; owner, F. S. Spring; architect, H. C. Macy; contractor, J. J. O,Brien; cost, $2,530; signed, July 27; filed, July 30; payments, $400, foundation complete; $900, brick work ready to receive ceilings; $397.50, completed; $832.50, 35 days.

Pacific Ave. near Broderick. Frame school house of eight rooms; owners, Board of Education; architect, C. I. Havens; contractor, David Perry; cost, $17,528; signed, Aug. 17; filed, Aug. 22; payments, $3,200, frame up; $3,200, gas and water pipes in and building plastered; $3,200, standing finish on and outside primed; $3,546 completed; $4,382, 35 days.

Park Road and Park Hill Ave. Excavation, brickwork, etc.; owner, Sister M. Ottilia; architects, Shea & Shea; contractor, D. J. Brennan; cost, $4,530; signed, Aug. 1; filed, Aug. 3; payments, $2,000, basement joists in and grading complete; $600, chimneys complete above roof line; $785, completed; $1,132, 35 days.

Park Road near Park Hill Ave. Three-story frame; owner, Sister M. Ottilia; architects, Shea & Shea; contractor, Hugh Foote; cost, $32,580; signed, Aug. 16; filed, Aug. 22; payments, $4,073, 24 story joists set; $4,073, roof boarded and rough plumbing in; $4,073, shingled and primed; $4,073, brown mortar on; $4,073, plastered; $4,076.25 completed; $8,147.75, 35 days.

Powell near Bush. Excavating, brickwork, etc.; owner, Anna Jung; architects, Salfield & Kohlberg; contractor, Fred Renfort; cost, $5,600; signed, Aug. 10; filed, Aug. 11; payments, $1,200, frame up; $1,000, enclosed, roof on, floors laid and partitions set; $1,000, brown mortar on; $1,000, completed; $1,400, 35 days.

Post near Powell. Galvanized iron, tin work and skylights; owner, A. Aronson; architects, C. R. & J. M. Wilson; contractor, W. Cromin; cost, $1,600; filed, July 30; payments, $500, roof on and skylights in place; $500, completed; $400, 35 days.

Post near Powell. Lathing and plastering; owner, A. Aronson; architects, C. R. & J. M. Wilson; contractor, Chas. Dunlap; cost, $2,000; filed, July 30; payments, $700, brown mortar on; $700, completed; $145, accepted; $515, 35 days.

Post near Powell. Plumbing, etc.; owner, A. Aronson; architects, C. R. & J. M. Wilson; contractor, R. A. Vance; cost, $2,430; filed, July 30; payments, $950, rough work in; $895, completed; $905, 35 days.

Second Ave. near Clement. Cottage; owner, Wm. Brophy; contractor, John Foster; cost, $1,100; signed, July 23; filed, July 29; payments, $412.50, frame up, enclosed, floors laid and partitions set; $412.50, completed, $275, 35 days.

Scott and Sacramento. Plumbing, gas-fitting and drains; owner, W. E. Lane; architect, J. C. Newsom; contractors, Newman & Gordon; cost, $1,200; signed, July 25; filed, Aug. 4; payments, $400, rough plumbing in; $400, completed; $400, 35 days.

Shotwell near 15th. Two-story and basement frame; owner, Richard Tobin; architect, C. J. Devlin; contractor, Richard Simnott; cost, $4,115; signed, Aug. 23; filed, Aug. 26; payments, $900, frame up; $750, ready for plaster; $400, exterior mill work completed; $650, woodwork ready to paint; $200, completed; $895, 35 days.

Shotwell near 25th. One-story frame; owner, Alfred Girot; architect, M. J. Welsh; contractor, Ivory Wells; cost, $1,700; filed, July 29; payments, $425, frame up; $427, brown mortar on; $427, completed; $420, 35 days.

Silver near 3d. Repairs on two-story building; owner, Thomas McNamara; contractor, Allan Macdonald; cost, $1,981; signed, Aug. 18; filed, Aug. 20; payments, $496, in four payments; last payment 35 days after completion.

Sixth and Townsend. Masonary, iron work and excavation; owner, J. W. Wissinger; architect, H. B. Mages; contractor, J. D. Brennan; cost, $7,500; signed, July 30; filed, Aug. 10; payments, 75 per cent. as work progresses; balance, 35 days.

Steiner and Golden Gate Ave. Excavating, brickwork, etc.; owner, D. B. Jackson; architect, Wm. H. Armitage; contractor, Henry Whittle; cost, $7,400; signed, Aug. 10; filed, Aug. 11; payments, $2,100, grading complete; $4,000, walls ready for plates; $2,900, completed; $2,090, 35 days.

Steiner and Union. Two-story frame; owner, Henry Holtmeier; architect, Wm. Mooser; contractor, A. Guilbert; cost, $4,691; signed, Aug. 15; filed, Aug. 22; payments, $1,172, frame up; $1,172, brown mortar on; $1,172, completed; $1,175, 35 days.

Steiner near Pine. Two-story frame; owner, Johnina Mahoney; architect, B. J. S. Cahill; contractor, E. W. Lewis; cost, $2,887; signed, July 25; filed, Aug. 5; payments, $700, frame up; $700, brown mortar on; $765.25, completed. $721.75, 35 days.

Sutter near Kearny. Alterations and additions; owner, T. M. McLachlan; architects, Wright & Sanders; contractor, Edw. E. Eyre; cost, $9,465; signed, Aug. 12; filed, Aug. 13; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Sutter near Stockton. To build; owners, Clark family; architect, Clinton Day; contractor, Peter Crichton; cost, $74,461; signed, Aug. 24; filed, Aug. 26; payments, $5,700, 1st tier joists set; $6,350, frame up and sheathed and roof boards ready for tin; $4,000, roof tinned, brown mortar on and sidewalk beams set; $17,500, fire escapes set, exterior primed and door ready for paint; $15,098, completed; $7,868, 35 days.

Third and Bryant. Alterations; owner, Mrs. M. P. Rolfe; contractor, H. A. Comfid; cost, $4,700; signed, Aug. 23; filed, Aug. 24; payments, three payments of $900 each as work progresses; balance, $1,000, 35 days.

Turk and Broderick. To build; owner, Max Abraham; contractor, H. Rohling; cost, $4,988; signed July 28; filed, July 29; payments, $1,000, frame up; $1,000, enclosed, floors laid and partitions set; $716, brown mortar on; $1,000, completed; $1,250, 35 days.

Thirteenth Ave. near California. Two-story and attic frame; owner, L. S. McCarthy; architect, A. J. Barnett; contractors, Blake & Ballinger; cost, $5,739; signed, Aug. 24; filed, Aug. 30; payments, $1,072, rustic and roof boards on; $1,072, brown mortar on; $1,072, plastered, outside finish on above 1st floor; $1,072, completed; $1,431, 35 days.

Turk and Broderick. Plumbing and gas-fitting; owner, Max Abraham; architects, Salfield & Kohlberg; contractors, S. Ickelheimer & Bros.; cost, $424; signed, July 28; filed, Aug. 6; payments, $200, rough work done; $118, completed; $106, 35 days.

Twenty-first and Guerrero. Alterations and additions; owner, E. G. Denniston; architects, Percy & Hamilton; contractors, Ickelheimer & Bros.; cost, $1,200; signed, Aug. 24; filed, Aug. 31; payments, 1st Saturday of each month 75 per cent. as work progresses; balance, 35 days.

Twenty-first and Valencia. Three-story brick and frame; owner, E. G. Denniston; architects, Percy & Hamilton; contractor, R. Ringrose; cost, $4,550; signed, Aug. 1; filed, Aug. 2; payments, 1st Saturday of each month, 75 per cent. of work done; balance, 35 days.

Twenty-fourth and York. Alterations and additions; owner, Thos. Morton; architects, Townsend & Wyneken; contractor, Aug. Lund; cost, $4,860; signed, July 30; filed, July 30; payments, $500, building ready for lathing; $500, sashes hung and outside finish on; $395 completed; $465, 35 days.

Union near Larkin. Two-story frame; owner, Mrs. S. C. White; architects Shea & Shea; contractor, James Campbell; cost, $3,085; signed, Aug. 18; filed, Aug. 20; payments, $578, frame up; $578, brown coated; $578, hard finished; $579 completed; $772, 35 days.

Union near Taylor. Frame residence; owner, A. Chuazola; architect, Wm. Mooser; contractor, L. Capurro; cost, $1,150; signed, Aug. 18; filed, Aug. 22; payments, $475, foundations completed; $100, brick chimneys completed; $287.50, completed; $287.50, 35 days.

Valencia near Hermann. All work except plumbing, painting, excavation, etc.; owner, H. P. Sonntag; architect, A. J. Barnett; contractor, Timothy Sullivan; cost, $5,253; signed, Aug. 3; filed, Aug. 9; payments, $1,000, frame up and roof boards on; $1,000, brown mortar on; $1,000, plastered; $925, completed; $1,310, 35 days.

Valencia near Hermann. Three-story frame; owner, H. P. Sonntag; architect, A. J. Barnett; contractors, Ambrose & Hawke; cost, $865; signed, Aug. 1; filed, Aug. 1; payments, $325, grading and excavation completed; $320, completed; $220, 35 days.

Valencia near 21st. Painting, etc.; owner, E. G. Denniston; architects, Percy & Hamilton; contractor, F. A. Herman; signed, Aug. 1; filed, Sept. 1; payments, 1st Saturday of each month 75 per cent. as work progresses; balance, 35 days.

Valencia and 21st. Plastering, three-story building; owner, E. G. Denniston; architects, Percy & Hamilton; contractor, W. C. Watson; cost, $1,300; signed, Aug. 1; filed, Sept. 1; payments, 1st Saturday of each month 75 per cent. as work progresses; balance, 35 days.

Valencia near 21st. Carpenter, tinning, etc.; owner, E. G. Denniston; architects, Percy & Hamilton; contractor, A. H. Plummer; cost, $9,000; signed, Aug. 1; filed, Sept. 1; payments, 1st Saturday of each month 75 per cent. of work done; balance, 35 days.

Valencia near 21st. Plumbing, draining, etc.; owner, E. G. Denniston; architects, Percy & Hamilton; contractor, W. P. Wilson; cost, $1,695; signed, Aug. 1; filed, Sept. 1; payments, 1st Saturday of each month 75 per cent. of work done; balance 35 days.

Vallejo and Fillmore. Plumbing; owner, Mrs. Alex. Center; architects, Smith & Freeman; contractor, Richard Rice; cost, $1,377; signed, Aug. 17; filed, Aug. 19; payments, $600, rough plumbing in; $432, completed; $345, 35 days.

Vallejo and Fillmore. Carpenter, brickwork, etc.; owner, Mrs. Alex. Center; architects, Smith & Freeman; contractor, R. M. Murray; cost, $10,300; signed, Aug. 17; filed, Aug. 19; payments, $1,361.25, frame up; $1,361.25, ready for plaster; $1,200, plastered; $1,361.25, standing finish on; $761.25, completed; $2,575, 35 days.

Varennes near Union. Two-story frame and basement; owner, Antonio Migala; contractor, E. Picasso; cost, $1,250; signed, July 25; filed, Aug. 4; payments, $467, roof on; $467, completed; $326, 35 days.

Varennes near Union. Three-story frame; owner, Frank Paganini; architect, Emile Depierre; contractor, Emanuel Dalgers; cost, $4,470; signed, Aug. 9; filed, Aug. 10; payments, $1,115, second story joists set; $1,115, brown mortar on; $1,120, completed; $1,120, 35 days.

Washington near Broderick. Excavation, brickwork, etc.; owner, Gustav Gumk; architects, Salfield & Kohlberg; contractor, John Furness; cost, $5,980, signed, Aug. 3; filed, Aug. 6; payments, $1,120 frame up; $1,000, enclose; $840 infill work and wainscoting on; $1,600, completed; $1,420, 35 days.

Washington near Lyon. Stable; owner, J. M. Cunningham; architects, Coxhead & Coxheads; contractor, Jos. Norris; cost, $3,685; signed, Aug. 29; filed, Aug. 31; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Washington near Steiner. To build; owner, Mrs. Sarah Kahn; architect, E. A. Herman; contractor, P. G. Martin; cost, $2,641; signed, Aug. 11; filed, Aug. 12; payments, 1st and 15th days of each month 75 per cent. as work progresses; balance 35 days.

Willard near Sullivan. One-story and basement frame; owner, John H. Addicks; architect, J. T. Kidd; contractor, W. A. Secor; cost, $1,671; signed, Aug. 16; filed, Aug. 16; payments, $267, frame up, $267, brown mortar on; $269, completed, $268, 35 days.

ALAMEDA COUNTY.

Addison near Grant. Store and half frame building; owner, James Reed; contractor, W. B. Wells; cost, $1,400; signed, July 12; filed, Aug. 3; payments, $300, frame up; $350, brown mortar on; $350, completed; $400, 35 days.

Associates Tract, Block C. To build; owner, G. T. Leon; contractor, A. Winberg; cost, $1,585; signed, July 29; filed, July 30; payments, ¼ frame up; ¼ enclosed and brown mortar on; ½ plastered, doors and windows in; balance, 35 days.

Bancroft Way near Dana, Berkeley. Two-story frame; owners, Wm. F. Booth and wife; contractors, A. W. Pattiani & Co.; cost, $2,700; signed, Aug. 26; filed, Aug. 27; payments, $750, rustic on, roof sheathed and chimney built; $690, window frames set and brown mortar on; $692, completed; $700, 35 days.

Broadway near 19th, Oakland. To build; owner, S. F. Breweries, Limited; architect, Chas. Mau; contractor, John Schneider; cost, $3,000; signed, Aug. 5; filed, Aug. 8; payments, $750; ⅛ of materials furnished and ⅛ of work done; $750, ⅔ of materials furnished and ⅔ of work done; $750, finished and accepted; $750, 35 days.

Broadway and Prospect Ave., Oakland. Two-story buildings; owner, M. Scharman; architect, Chas. Mau; contractors, Ingerson & Gore; cost, $6,500; signed, Aug. 6; filed, Aug. 10; payments, $1,350, ⅛ of materials furnished and ⅛ of work done; $1,775, ⅔ of materials furnished and ⅔ of work done; $1,750, finished and accepted; $1,625, 35 days.

Butler Tract, Oakland. One-story frame; owner, C. A. Klinkner; architects, J. J. & T. D. Newsom; contractor, H. F. Brown; cost, $1,028; signed, Aug. 1; filed, Aug. 2; payments, $407, foundation in and rough frame up; $407, enclosed, rough plumbing in, brown mortar on, and window frames set; $407, completed, $407, 35 days.

Chestnut St., Oakland. One-story house; owner, C. D. Havens; architect, Howard Burns; contractors, Miller & Co.; cost, $1,396; signed, Aug. 18; filed, Aug. 19; payments, $700, all outside mill work on grounds; $450, furnished and delivered; $446, 35 day after.

Channing Way near Dana. Two-story frame; owner, Thos. Addison; contractors, A. W. Pattiani & Co.; cost, $5,346; signed, Aug. 3; filed, Aug 5; payments, $900, rustic and roof shingles on and chimneys built; $1,600, window frames set, brown mortar on and exterior primed; $1,496, completed and accepted; $1,350, 35 days.

Clay Street, Oakland. Terra-cotta and moulded brick work; owners, Oakland Gaslight and Heating Co.; architects, Coxhead & Coxhead; contractors, Cladding, McBean & Co.; signed, Aug. 1; filed, Aug. 23; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Clay and 17th, Oakland. All cast iron work; owner, C. C. Nordhausen; architect, Chas. Mau; contractor, Judson Iron Manufacturing Co.; cost, $5,475; signed, Aug. 5; filed, Aug. 11; payments, $2,100.25, ½ material furnished, ½ work done; $2,000, completed; $1,368.75, 35 days.

Clay near 17th, Oakland. Three-story brick; owner, C. C. Nordhausen; architect, Chas. Mau; contractors, Shay & Concannon; cost, $28,995; signed, Aug. 31; filed, Sep. 1; payments, $7,248.50, ¼ material furnished and ¼ work done; $7,248.50, completed; $7,248.50, 35 days.

Clay and 17th, Oakland. Three-story brick and stone; owner, C. C. Nordhausen; architect, Chas. Mau; contractors, Remillard Brick Co.; cost, $21,895; signed, Aug. 6; filed, Aug. 11; payments, $5,473.75, ¼ material furnished and ¼ work done; $5,473.75, ⅔ material furnished and ⅔ work done; $5,473.75 completed; $5,473.75, 35 days.

Clay near 13th, Oakland. Granite work; owner, Oakland Gas Light and Heating Co.; architects, Coxhead & Coxhead; contractor, Jas. Rae; cost, $3,045; signed, July 25; filed, Aug. 3; payments, 75 per cent. as work progresses, 1st day of each month; 25 per cent. 35 days.

Eighth near 10th Ave., Oakland. Two-story frame; owner, S. H. Wade; architect, H. A. Schulze; contractor, C. A. Littlefield; cost, $7,535; signed, Aug. 23; filed, Aug. 24; payments, 1st day of each month 75 per cent. of work done and material furnished; balance, 35 days.

Fourteenth and Broadway. Plastering the McDonough; owner, Joseph McDonough; architects, Mooser & Cuthbertson; contractor, T. Tucker; cost, $4,500; signed, July 16; filed, Aug. 4; payments 75 per cent. as work progresses; balance, 35 days.

Fourteenth and Broadway. Plumbing and gas-fitting; owner, Central Bank; architect, Walter J. Mathews; contractors, W. S. & F. W. Snook; cost, $4,395; signed, Aug. 9; filed, Aug. 10; payments, $925.35, ¼ of work completed; $925.30, ¼ of work completed; $925.35, ¼ of work completed; $925.30 completed; $1,233.75, 35 days.

Fourth Ave. near 8th, Oakland. Two-story frame; owner, Chas. Smith; contractors, Sell & Ecker; cost, $2,385; signed, Aug. 12; filed, Aug. 31; payments, $800, enclosed and roofed; $785, partitions set, brown mortar on and walls floated; $800, 35 days.

Fruitvale Ave., Brooklyn Tp. One-story cottage; owner, J. W. Phillips; contractor, Chas. Murcell; cost, $1,425; signed, Aug. 18; filed, Aug. 18; payments, $356.25 frame up; $356.25, outside finished, brown mortar and rough paint on; $356.25 completed; $356.25, 35 days.

Gaskill Tract, Lot 8, blk. B. Cottage; owner, Mrs. A. Sandell; architect, F. M. Cramer; contractors, Schaechtile & Stone; cost, $1,250; signed, Aug. 19; filed, Aug. 23; payments, $312, enclosed and chimneys up; $312 brown mortar on; $312, completed; $314, 35 days.

Handy Tract, Oakland. One-story cottage; owner, Jesse Wysinger; architect, B. F. Maloon; contractor, Wm. Clark; cost, $1,300; signed, July 29; filed, July 29; payments, ¼, frame up; ¼, brown mortar on; ¼, completed; balance, 35 days.

Myrtle St., Oakland. Two-story frame; owner, German Evangelical Lutheran Zion Congregation; architect, Chas. Mau; contractor, Frederick Gallin; cost, $2,617; signed, Aug. 8; filed, Aug. 8; payments, $654.25 ¼ of materials furnished and ¼ of work done; $654.35, ⅔ furnished and ⅔ done; $654.25, finished and accepted; $654.15, 35 days.

Myrtle near 10th, Oakland. To build; owner, H. S. Seaton; architect, Samuel Newsom; contractors, Gardner & Miron; cost, $2,850; signed, Aug. 31; filed, Sep. 1; payments, $900, frame and chimneys up; $900, roof on, frames set and interior ready for lathing; $900, plastered and outside primed; $700, completed; $750, 35 days.

Nicol Ave. near Champion St., Fruitvale. To erect a cottage; owner, Emil H. Steinegger; architect, B. F. Maloon; contractor, Wm. Clark; cost, $2,730; signed, Aug. 5; filed, Aug. 9; payments, $830, as 1st payment; $2,400, from Oakland Building and Loan Association in four equal payments.

Ninth Ave. near 17th, Oakland. Cottage; owner, Wm. Hoffschneider; architects, J. J. & T. D. Newsom; contractor, Jas. E. Bassett; cost, $1,825; signed, Aug. 22; filed, Aug. 23; payments, $450, frame up and chimney built; $450, enclosed, brown mortar on, rough plumbing in, etc.; $450, completed; $475, 35 days.

Powell St., Golden Gate; One-story cottage; owner, A. S. Merserean; contractor, Ira A. Aymar; cost, $1,450; payments, $250 frame up; $200, brown mortar on; balance when completed.

Prosper St., Alameda. One story and basement; owners, J. D. Field and wife; architect, A. R. Denke; contractors, Marcuse & Remmel; cost, $1,900; signed, Aug. 2; filed, Aug. 3; payments, $600 building enclosed and shingled; $500 brown mortar on and window frames set; $400 completed; $600, 35 days.

Seventh and Oak, Oakland. One-story frame and basement; owner, Ellen Stanley; architect, J. J. Stanley; contractors, Smith & Ormsby; cost, $2,373; signed, Aug. 25; filed, Aug. 28; payments, $690, frame up and rustic on; $594, brown mortar on; $300, completed; balance, 35 days.

Shattuck Ave., Berkeley. Two-story frame dwelling; owner, Sarah E. Kierneff; contractors, A. W. Pattiani & Co.; cost, $5,440; signed, Aug. 11; filed, Aug. 12; payments, $1,500 rustic on and chimneys built; $1,900 window frames set, brown mortar on and outside primed; $1,280, completed; $1,360, 35 days.

Sherman St. near Rail Road Ave., Alameda. Three cottages; owner, E. J. Sabla, Jr.; contractors, Marcuse & Remmel; cost, $5,650; signed, July 25; filed, Aug. 5; payments, $1,412.50, frames up; $1,412.50, brown mortar on; $1,412.50, finished; $1,412.50, 35 days.

Sixth near Castro. Frame cottage; owner, Jas. J. Shanley; architect, E. C. McManus; contractors, McGanley & McCabe; cost, $1,001; signed, Aug. 9; filed, Aug. 10; payments, $375 enclosed and brown mortar on; $375, finished and accepted; $251, 35 days.

Tenth near Filbert. Two-story frame; owner, O. F. Rooney; architect, B. McManus; contractor, P. J. Prophy; cost, $2,470; signed, Aug. 1; filed, Aug. 2; payments, $617.50, frame up, rustic on, roof sheathed; $617.50, frames set, roof shingled and brown mortar on; $617.50, completed; $617.50, 35 days.

Thirty-fourth near Adeline, Oakland. Three cottages; owner, C. E. Boman; architect, A. W. Smith; contractor, H. F. Brown; cost, $4,684; signed, Aug. 9; filed, Aug. 9; payments, $1,171, framed; $1,171, plastered; $1,171, completed and accepted; $1,171; 35 days.

Town of Golden Gate. Heating and ventilating; owner, Trustees of Bay School District; architects, Smith & Farr; contractors, G. H. Tay & Co.; cost, $1,807.50; signed, Aug. 29; filed, Aug. 26; payments, $1,807.50, completed.

Twelfth and Adeline. To build; owner, W. W. Washburn; architect, Elmer Childs; contractor, William Winnie; cost, $3,500; signed, Aug. 3; filed, Aug. 8; payments, $875, frame up; $875, brown mortar on and building enclosed; $875, completed; $875, 35 days.

Union near Eagle. To build; owner, C. W. Lillie; architect, W. H. Lillie; contractor, Howard Moore; cost, $1,850; signed, Aug. 9; filed, Aug. 11; payments, $277.50, frame up; $277.50, enclosed; $277.50, brown mortar on; $277.50, standing finish on; $277.50, completed; $462.50, 35 days.

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WE have received the Twenty-first Annual Report of the Board of Park Commissioners of San Francisco, for the year ending with June, 1892.

In addition to keeping the Park in repair some new work has been done. The principal part of the work done is the building of a macadamized walk, twelve feet in width and six thousand feet in length, and high wire fences built around the bird quarters, and considerable work done on the Ocean Boulevard or Great Highway across the ocean front of the Park. The main driveways have been widened and improved. A beautiful steel suspension bridge (from Rœbling's Sons) has been erected to lessen the danger of collisions of persons with vehicles. Several thousand feet of water pipe have been laid.

The Park Commissions seem to have done a large quantity of work with the limited funds at their disposal. Every dollar expended for new improvements means cost in the future for repairs; thus every year adds to the fund for keeping in order the improvements already done, consequently a smaller amount can be used for new work.

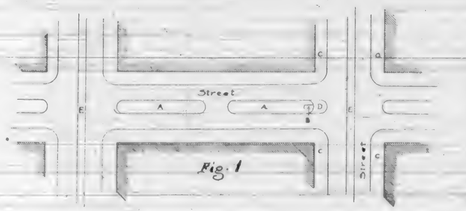
RECENTLY we had the pleasure of visiting the Students' Classes of the San Francisco Chapter of the American Institute of Architects. The Architectural class is under the direction of the President of the Chapter, Mr. Geo. H. Sanders, who has taken a great interest in the classes since their formation some years ago. The class in drawing has attained great proficiency in charcoal and crayon work. Some of their work would do credit to older hands. The architectural modeling class is under the direction of Mr. Victor A. De Prosse, a very able instructor, who is an architect, artist and modeler. The work done by the class is of a kind that will be useful to them in their future work. Both classes are largely attended.

The students are fortunate in having such practical and competent instructors and have made great advancement in their studies.

URBAN SCIENCE.

To the Editor of the California Architect:

IN taking my usual strolls abroad, sundry practical difficulties presented to the proper continuity of my perambulations brought the following thoughts into my head which I have grouped under the title of Urban Science:



this letter being confined however, to one part of that Science, viz.: the laying out streets in relation to Sanitariness and to their adaptability for rapid and unobstructed transit and leisurely and safe pedestrianism.

Urban Science I should define as proper conduct of a city; and its chief branch is Sanitary Science, or the Science of Health as applied to Society. Sanitary appliances in matter of detail have reached a high point of perfection, but the arrangement of these appliances to the best advantage in dealing with large masses of individuals such as we find in a city is not nearly so perfect.

It is surprising to see an enterprising people as we are, or claim to be, still submitting to have our traffic stopped and all manner of inconveniences put up with by the continual tearing up of our roads and excavating of basements.

It seems to me that the reason of this is that no really good remedy has thus far been offered. It may therefore be in order to lay before your readers a system of streets and basement building which will go far to make away with these troubles.

In the first place, a little reflection will immediately show to one the utter absurdity of digging down into the earth for our basements when we have the whole space above into which to carry our buildings.

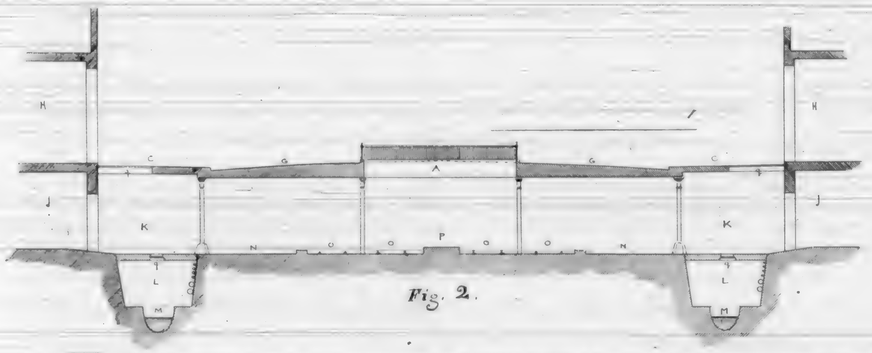
It would be very interesting to investigate the origin of the idea, but we have no time nor space now to enter into this part of the subject; enough it is that the citizen of the latter end of the 19th century persists at a large expense in digging down under the earth to form a dark, damp cellar, often times necessitating constant expense in pumping out the water therefrom while he has the whole space above the earth to build up into. We find him also burrowing into the street and occupying the space under the sidewalks of it. This must arise from what Darwin calls a persistence of the type when our ancestors were moles, as other marks indicate the time when they were pigs.

To remedy this I would propose to make the streets two story and the sidewalks three story.

The lowest story under the sidewalk would contain the sewers, water and gas pipes, electric wires, steam pipes and all the other carrying apparatus for fluids which are now necessary for our life. On the middle or main story, which would be on the same level as the ground, would run under the upper roadway the several motors carrying trains for rapid transit and local passenger traffic and the central space for the pedestrians and for passengers, and on the sides under the walks above would be tramways and railways for trucks and other heavy teaming and for freight cars. All these communicate directly with the basements of the stores on their same level. The top story would be carried on steel beams and arches. The roadway being used for light traffic and pleasure vehicles, while the stores at this level would be the retail stores and the sidewalks would be used by pedestrians for looking into the same and for perambulating. The sidewalks would be partly of glass, thus giving light to the lower street. Large openings would also be left in the center of the upper street for light and ventilation to the lower one. At the crossing of every block would be public elevators, running continuously and automatically, for carrying the passengers from the street cars to the upper level where they debouch onto the sidewalks.

This is a slight sketch of what could be done to make our streets pleasant, clean and safe.

STROLLER.

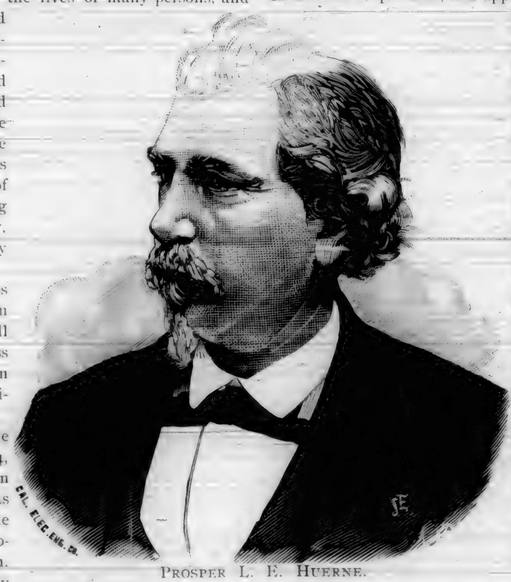


A—Well in center of roadway for light and ventilation to lower regions. *B*—Automatic elevator, a continuously moving inclined plane. *C*—Sidewalks. *D*—Island for reception of passengers, via., elevator. *E*—High level street car tracts for residence streets. *F*—Railing enclosing well. *G*—Roadway for light vehicles, equestrians, etc. *H*—2d story of buildings used as showrooms and display. *J*—1st story used for storage. *K*—Space for backing up drays and wagons; will be finally needless as freight cars running on a railway will supersede them. *L*—Sub-way containing gas and water and electric pipes. *M*—Sewer. *N*—Tramway for drays or freight cars. *O*—Motor railroad cars; one set for rapid transit, the other for local travel. *P*—Platform for passengers and pedestrians. *Q*—Glass Lights.

OBITUARY.

WHERE died in this city on October first, an honored member of the Architectural profession, and a civil engineer of acknowledged capacity; one who in the forty years practice of his professions in this city and on this coast, won the esteem and friendship of all who appreciate the noble qualities of an honest man.

Prosper L. E. Huerne was born at Pontgouin, near Chartres, France, on the 26th of November, 1820. He was educated as a civil engineer in the government school of *Arts et Metiers*, at Chalons, and upon graduating, entered the service of the French government as *Ingenieur Conducteur* in the *Corps des Ponts et Chaussees*, and was rapidly promoted till he became assistant chief engineer; in this capacity he built the great bridge over the River Loire. It was at this time, during the inundation of the river in 1846, that, at the risk of his own, he saved the lives of many persons, and displayed such bravery and good judgment in the perilous task of rescuing the inhabitants of the inundated country from the swift and treacherous currents of the overflowing river, that the government rewarded his services in the cause of humanity, by presenting him with a medal of honor, of which he was justly proud.


PROSPER L. E. HUERNE.

In 1850 he came to this country, landing in San Francisco in June, and till his retirement from business cares two years ago, was an active and enterprising citizen.

As engineer, he built the North Point docks in 1854, and his project for the San Francisco seawall was ranked second among the thirty-three designs submitted in competition. He contracted extensively with the Panama Canal Company for the erection of buildings on the Isthmus, and for dredging several miles of the canal on the Atlantic side, and the energy and skill displayed in the execution of these works, were highly appreciated by the officers of the Canal Company, as a perusal of their letters to him show. He had many correspondents among the members of his profession in Europe, and furnished them with much interesting information concerning the industrial progress of this country, stimulating their interest in the rapid advances made by the newer civilization of the western world.

As architect, he erected the first sugar refinery built in this city by Claus Spreckels, and with a generosity rare in any age, freely donated his services for the erection of the French Hospital in 1857. To mention a fraction of the work designed and executed under his supervision would fill pages.

He acquired skill and experience in mines and mining, and at the day of his death was director in one mining company that had retained his continuous services for over fifteen years.

He was a member of the San Francisco Chapter of the American Institute of Architects, of the California Academy of Sciences, of the Territorial Pioneers of California, of the Exempt Fire Company, of the French National League and other societies.

He enjoyed the blessings conferred by the companionship of a devoted wife, who has the sympathy of numerous friends, yet whose grief can only be assuaged by the faith that he is waiting for her on the other shore.

WORLD'S COLUMBIAN EXPOSITION.

DEPARTMENT OF ART.

To the Architects of All Countries:—The World's Congress Auxiliary is an organization maintained by the World's Columbian Exposition, and approved by the Government of the United States, and has for its object the proper presentation, in a series of Congresses, of the moral and intellectual progress of the world, in connection with the World's Columbian Exposition, to be held at Chicago in 1893.

The World's Congress work is organized in appropriate Departments and General Divisions in which Congress are to be held. The Department of Art includes the general divisions Architecture, Painting, Sculpture, Decorative Art, Photographic Art, Illustrative Art and Art-Literature. The undersigned Committee has been appointed to arrange and conduct a Congress of Architects, under the auspices of the World's Congress Auxiliary, as one of the series mentioned. This Congress will probably be held in the month of August, 1893. This Committee will be assisted by an Advisory Council consisting of the Presidents of Architectural Associations and other eminent Architects selected from the various countries of the world.

The practical objects of this Congress will be to bring the leading Architects of the world into fraternal relations for mutual acquaintance, and the promotion of their mutual interests; to review the progress of Architecture in different countries, and by a comparison of results attained promote the general advancement of the profession of Architecture throughout the world; and to consider the principles of Architectural Art, and the relations of Architecture to the other Arts, Sciences and Industries.

The themes to be selected from those which may be suggested for presentation in the proposed Congress, will be chosen with a view to the most complete summary of architectural progress to the date of the Congress, and the most clear and comprehensive statement of the practical problems with which Architects are confronted at the present time.

Inquiries, suggestions and recommendations, in relation to the proposed Congress, may be addressed to the undersigned Secretary of the Committee.

DANIEL H. BURNHAM, Chairman; WILLIAM LE BARON JENNEY, Vice-Chairman. ROBERT CRAIK MCLEAN, Secretary, 19 Tribune Building, World's Congress Headquarters.

THE GOVERNMENT TIMBER TESTS.

BY B. E. FERNOW, CHIEF OF FORESTRY DIVISION,
U. S. DEPARTMENT OF AGRICULTURE.

LABORATORY WORK WRITTEN BY J. B. JOHNSON.

(Continued from page 82.)

SAWING, STORING AND SEASONING.

ON arrival of the logs in St. Louis they are sent to a saw-mill and cut into sticks, as shown in Figs. 1 to 4.

In all cases the arrangements shown in Figs. 1 and 2 are used, except when a detailed study of the timber in all parts of the cross-section of the log is intended. A few of the most perfect logs of each species are cut up into small sticks, as shown in Figs. 3 and 4. The logs tested for determining the effects of extracting the turpentine from the Southern pitch pines were cut into small sticks.

In all cases a "small stick" is nominally 4 inches square, but when dressed down for testing may be as small as 3½ inches square. The "large sticks" vary from 6 by 12 to 8 by 16 inches in cross-section.

All logs vary from 12 to 18 feet in length. They all have a north and south diametral line, together with the number

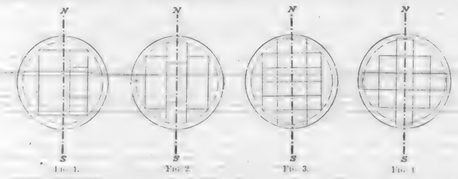


FIG. 1. FIG. 2. FIG. 3. FIG. 4.

The stenciled lines for sawing are adjusted to this north and south line, as shown in the figures.

of the tree and of the log plainly marked on their larger or lower ends.

The stenciled lines for sawing are adjusted to this north and south line, as shown in the figures.

The methods of sawing shown in Figs. 2 and 4 are called "boxing the heart"; that is, all the heart portion is thrown into one small stick, which in practice may be thrown away or put into a lower grade without serious loss. In important bridge, floor, or roof timbers, the heart should always be either excluded or "boxed" in this way, since its presence leads to checking and impairs the strength of the stick.

After sawing, the timbers are stored in the laboratory until they are tested. The "green tests" are made usually within two months after sawing, while the "dry tests" are made at various subsequent times. One end (60 inches) of each stick is tested green, and the other end reserved and tested after seasoning. The seasoning is hastened in some cases by means of a drying box. The temperature of the inflowing air in this drying box is kept at about 100° F., with suitable precaution against checking of the wood, and the air is exhausted by means of a fan. The air is, therefore, somewhat rarefied in the box. The temperature is at all times under control. It operates when the fan is running, and this is only during working hours.

The apparatus pertinent to the timber tests consists of a 1,000,000-pound column-testing machine; one 100,000-pound beam-testing machine, one 100,000-pound universal testing machine, of Riehle's "Harvard" pattern; one small portable beam machine, one 6-horse power Brayton coal-oil engine, one 4-horse power steam engine, one planer and one lathe, for iron work; one planer, one band saw and one cutting-off saw, for shaping and dressing wood specimens; suitable scales, drying ovens, etc., for the moisture and specific gravity tests; the drying box with its steam coils and exhaust fan, and all the necessary appliances, benches, tools, desks, etc., including a Thatcher's slide rule for making the computations.

THE CROSS-BREAKING TESTS.

LARGE BEAMS.—The large beams are tested on the large beam-testing machine. The base of this machine consists of two long-leaf pine sticks (*Pinus palustris*), 6 inches by 18 inches by 24 feet long, with a steel plate three-fourths of an inch by 18 inches by 20 feet long, all bolted up as one beam. The power is applied by hydraulic pressure upon a plunger below, to the crosshead of which are attached the two side screws, on which the upper crosshead is moved by sleeve nuts and spur gearing. The beam to be tested rests on pivots at the ends, placed on top of the base beam, and the upper crosshead is moved down by means of the gearing until the central pivot attached to it comes in contact with the beam, or rather with the distribution blocks placed on the beam at this point. The test then begins, the power originating in a double-plunger pump, operated by hand or by steam power in another part of the room.

To prevent the pivots or "knife-edges" from crushing into the timber, it is necessary to make the contact at both ends and center, first upon a cast-iron plate, then through longer wooden blocks to the timber. The center block is curved somewhat on the lower side, to allow for a considerable deflection in the beam when nearing its maximum load.

In the tests of all beams, both large and small, the load is put on at the same uniform rate, so as to eliminate the time effect, which is very great in timber tests. The load on the small beams is increased at such a rate as to produce an increase in the deflection of one-eighth inch per minute without any pause until rupture occurs. This causes rupture in from ten to fifteen minutes time. The load is read off when it reaches certain even amounts, and an observer notes the corresponding deflection without stopping the test. The time required for the large beam tests is about the same, the deflection rate being greater when the total deflection is expected to be greater, as is the case with 4 by 8 inch sticks 12 feet long. The deflection of the large beams are observed upon a paper scale, graduated to inches and tenths, glued to a piece of mirror, which is tacked to one side of the stick at the center. A fine thread is stretched, by means of a rubber band, over nails driven into the side of the stick above the end supports on the line of the neutral axis. This string or thread is moved about an inch away from the surface of the timber, and all parallax, or error of reading from an oblique position of the eye, is avoided by keeping the eye where the thread and its image in the mirror coincide and form one and the same line. The readings are taken to inches and hundredths by estimating the tenths of the graduation spaces on the scale.

The loads are weighed on the large universal testing machine in another part of the room. This is done by having both machines connected up to the same pump, blocking the weighting machine so that the load on its plunger is transmitted to the scales and weighing beam, and then pumping into both machines. The plungers are of exactly the same diameter; they have similar leather cup packing, and hence the error of this method is simply the difference in the friction of the two plungers in their packing rings. To test the accuracy of this method, and to determine the error, if any, at any time, a nest of calibrating springs was made and tested first on the Emery machine at the United States Arsenal, at Watertown, Mass. The loads were found which corresponded to given deflections, or in other words the stress diagram of these springs up to a 30,000-pound load, which corresponds to a little more than one inch elastic deflection. By repeating this test on the 100,000-pound universal or weighing maching, and then on the large beam machine, and plotting the stress diagrams obtained from each, not only can these machines be compared with each other, but both can be compared or calibrated with the Emery machine at the Watertown Arsenal.

SMALL BEAMS.—The small beams which are nominally 4 inches square and 60 inches long between supports are tested on the small beam-testing machine. This machine

was designed originally for testing cast-iron beams, the load at one end or one-half the load at the center being weighed on a pair of ordinary platform scales. The deflections are read off to thousandths of an inch upon a micrometer screw held in the top iron crossbeam. By this means a rigid connection is obtained, through parts not under stress, from the end supports to the center bearings. The movement of the center with reference to the ends is therefore obtained, regardless of the absolute movements of the parts. The load is put on by the hand wheel and power screw, and the weighing beam kept in balance by putting on overweights and moving the poise. Three men are required to make this test. One moves the power screw, which has one-fourth inch pitch, so as to make one revolution every two minutes, and he continues this uniform motion till rupture occurs. Another keeps the scales balanced and calls off the even hundreds of pounds. Another keeps the micrometer screw in contact with the head of the power screw, reads it for certain even hundred pound loads called off, and records the time of each such reading to the nearest minute, the load, and the corresponding reading of the micrometer screw. Here also the end and center bearings are protected by iron plates large enough to prevent any appreciable distortion from lateral compression.

After rupture occurs the stick is bored for samples from which to obtain the moisture tests, and the uninjured ends sawed off and used for the remaining tests, as described below.

THE MOISTURE TEST.

The borings are taken from two holes, 20 inches from each end, and at about one-third the width of the stick, from either side. These borings are first weighed on a delicate balance then placed in a drying oven, at a temperature of 212° F. until they have reached a nearly constant weight, when they are reweighed. The dry weight is taken as the basis on which to compute the percentage of moisture. Thus, if the original weight is twice the final weight, then there was as much water as woody fiber in the stick, or one-half or 50 per cent of the original weight was water. But when computed on the basis of the dry weight there would be 100 per cent. of water. The advantage of computing the percentage on the dry weight is that it furnishes a constant basis of comparison, whereas if computed on the actual or wet weight the basis on which the percentage would be computed would vary with every change in the amount of moisture.

THE SPECIFIC GRAVITY.

The specific gravity is found by taking one of the end pieces, usually 4 by 4 by 8 inches, measuring carefully its lateral dimensions by calipering them at the middle points of the sides at the central section, measuring the length in a similar manner, and taking the product of these three dimensions as the volume From the total volume and the actual total weight, the weight per unit volume or per cubic foot is found, and from this the specific gravity, which is the weight per cubic foot divided by the weight of a cubic foot of distilled water. It must be understood that all the small (4 by 4 inch) beams are planed up true and rectangular before testing and that all the crosscuts are made by a power saw so adjusted as to cut truly at right angles to the sides. The volume can therefore be very accurately computed from the dimensions as above described.

THE TENSION TEST.

The tension test piece is cut from one end of the broken beam. It is 16 inches long, 2½ inches wide, and 1½ inches thick. Its thickness at the center is reduced by cutting out with a band saw circular segments, leaving a breaking section of some 2½ inches by three-eighths inch. This specimen is then placed between the plane wedge-shaped steel grips, and pulled, the same as a bar of iron, in the Universal Machine. This simple method has been found very satisfactory in practice. For this test care is taken to cut the specimen as nearly parallel to the grain of the wood as possible, so that its failure will occur in a condition of pure tension.

THE ENDWISE COMPRESSION TEST.

Most of these tests are made on sticks 4 inches square by 8 inches long, the ends having been cut perfectly true and at right angles to the sides. They are tested in the Universal Machine, the compression continuing until the stick has been visibly crushed and has passed its maximum load. The crushing usually manifests itself over a plane section, by crushing down, or bending over all the fibers at this section, which may be either a right or an oblique section. The section of failure, however, is seldom at the very end. The slightest source of weakness may determine its position, as a very small knot for example, for knots are a source of weakness in compression as well as in tension.

Some tests are made on columns 40 inches long by 4 inches square on the large beam machine, but these usually fail the same as the short blocks, and not by bending sidewise.

COMPRESSION ACROSS THE GRAIN.

Specimens 4 inches square and 6 inches long are tested in compression across the grain. An arbitrary limit of distortion, namely 3 per cent of the height, has been chosen as a reasonable maximum allowable distortion in practice. This limit is indicated in the test by the ringing of an electric bell, and the load then on the specimen is called the compressive strength across the grain. The same limit has also been found to be very near the maximum load in lateral compression, which is also determined.

THE SHEARING TESTS.

Since timber fails by shearing, or splitting, oftener than any other way this test becomes a very important one. The specimen is taken 2 inches square and eight inches long, and rectangular holes mortised 1 inch from each end, and at right angles to each other. The specimen is then pulled, in the Universal Machine, by means of suitable stirrups and keys. The ends are kept from spreading or splitting by putting on small clamps with just enough initial stress in them to hold them in place. After one end shears out two auxiliary hoops or stirrups are used to connect the key which sheared out to a pin put through the hole at the center of the specimen as shown. The other end is then sheared, and two results are obtained on planes at right angles to each other. In this way the shearing strength is determined on two planes at right angles to each other.

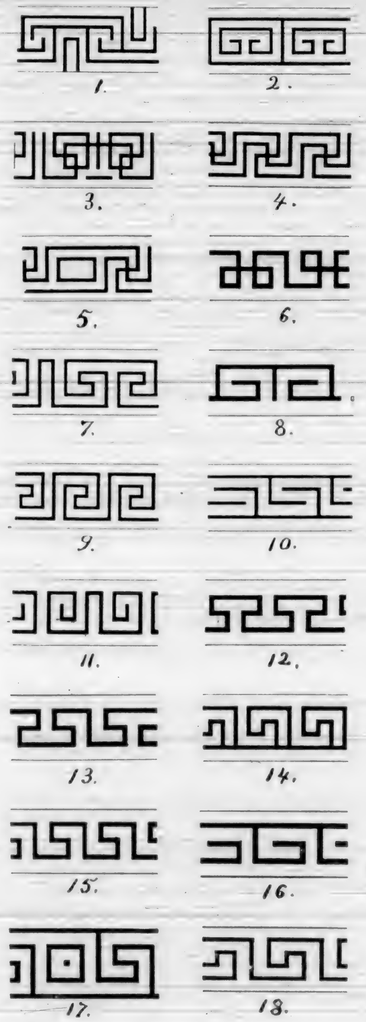
TESTS OF FULL-SIZED COLUMNS.

No set of experimental tests of timber would be complete without numerous tests on full-sized columns. This requires a machine of not less than 1,000,000 pounds capacity, capable of crushing to failure columns from 11 to 14 inches square and at least 30 feet long. Such a machine has been built expressly for this work. It is capable of exerting a compressive force of 1,000,000 pounds on a length of 36 feet or less. The sides or tension members of this machine are made of four long-leaf yellow pine sticks (*Pinus palustris*), from Georgia, each 8 by 12 inches and 45 feet long. The power is applied by the same hydraulic pump which operates both the large beam machine and the 100,000-pound universal machine. The loads are weighed on this latter machine the same as for the beam tests. The plunger in the column machine has just ten times the area of that in the weighing machine, and hence the loads in the column tests are just ten times those indicated on the weighing beam, with a slight correction for the friction differential, which has not yet been determined. The tail block is of cast-iron, resting in a spherical socket, which is carried on a car, and which can be held by struts resting in slots in the timber. The outer ends of these struts are kept from spreading by means of tiebars, and the whole combination can be moved forward or back so as to make the distance between face plates any even number of feet from two to thirty-six. The spherical socket in the tail block will produce an accurate adjustment of the end bearings at the beginning of the test, but after the load is on it is thought that this joint will remain rigid, the same as a solid block, especially if precautions are taken to increase the frictional resistance between these bearing surfaces. This spherical socket is provided to eliminate the effects of unequal shrinkage in the side timbers, or any unequal compression in the bearing sockets, and not to serve as a round-end bearing for the column. When long columns are tested a part of their weight will be supported by means of lines and pulleys, so as to make the test correspond to a vertical load in actual practice.

(To be Continued.)

FRETS have been used as ornament from the earliest period of Architectural history. Their origin appears to have been the reed or bamboo set in broken lines.

The examples shown by the cuts, from 1 to 18, partake of the Grecian character, and figures 6, 8, 10 and 12 may be found in Chinese and Japanese design. In future numbers of this Journal we shall show other examples of frets as illustrated in the architecture of various counties.



¶ Twenty-Three Breaks in One Night.—In one night recently, twenty-three new cracks and fissures were noted in the Chicago government building. The old shell will some day take a tumble and then perhaps the government will see wherein its present policy is what might be politely called foolish.—*Chicago Saturday Blade.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE double page illustration shows the celebrated wine cellars of Mr. W. B. Bourn, near St. Helena, at the upper end of the Napa Valley. The building and accessories are of stone from that vicinity, and the cellars have been arranged and constructed with all the improvements pertaining to the making, maturing and storing of wines. The product of this vineyard has already become famous and, with the increased facilities, the output will more fully supply the demand.

Messrs. Percy & Hamilton of San Francisco are the Architects.

THE Wallace is in course of erection on Sutter street near Jones street in this city. The basement and main story are of buff colored bricks, and the upper three stories are of wood. The building is arranged for a rooming and boarding house and contains one hundred and fifteen rooms.

Mr. R. H. White is the Architect.

THE design for a Casino is taken from the Architectural Illustrations of the "Intime Club" of 1874. This design was submitted in competition by Mr. Claris, Architect, of Paris.

In the basement, are arranged the kitchen, service and attendants' rooms. The main story contains the vestibule, grand saloon and private dining halls, and in the upper story are the family dining rooms.

IN future numbers of the California Architect we intend to make some improvements and introduce matters of especial interest to those residing in localities where the facilities for obtaining the requisite finish and ornaments are not easily obtained, and thus assist in the development of a love for healthy and convenient homes. When visiting the rural districts we have been requested to give a series of details for work that could be worked by any ordinary carpenter without the aid of machinery. In this particular line we shall give examples for such work, based upon the experience of those who have passed through this ordeal in years already past.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXV

SUTTER-NR. JONES STS. THE WALLACE. R.H. WHITE, ARCHT. 104 FLOOD BLDG.

BRITTON & REY PHOTO. LITH

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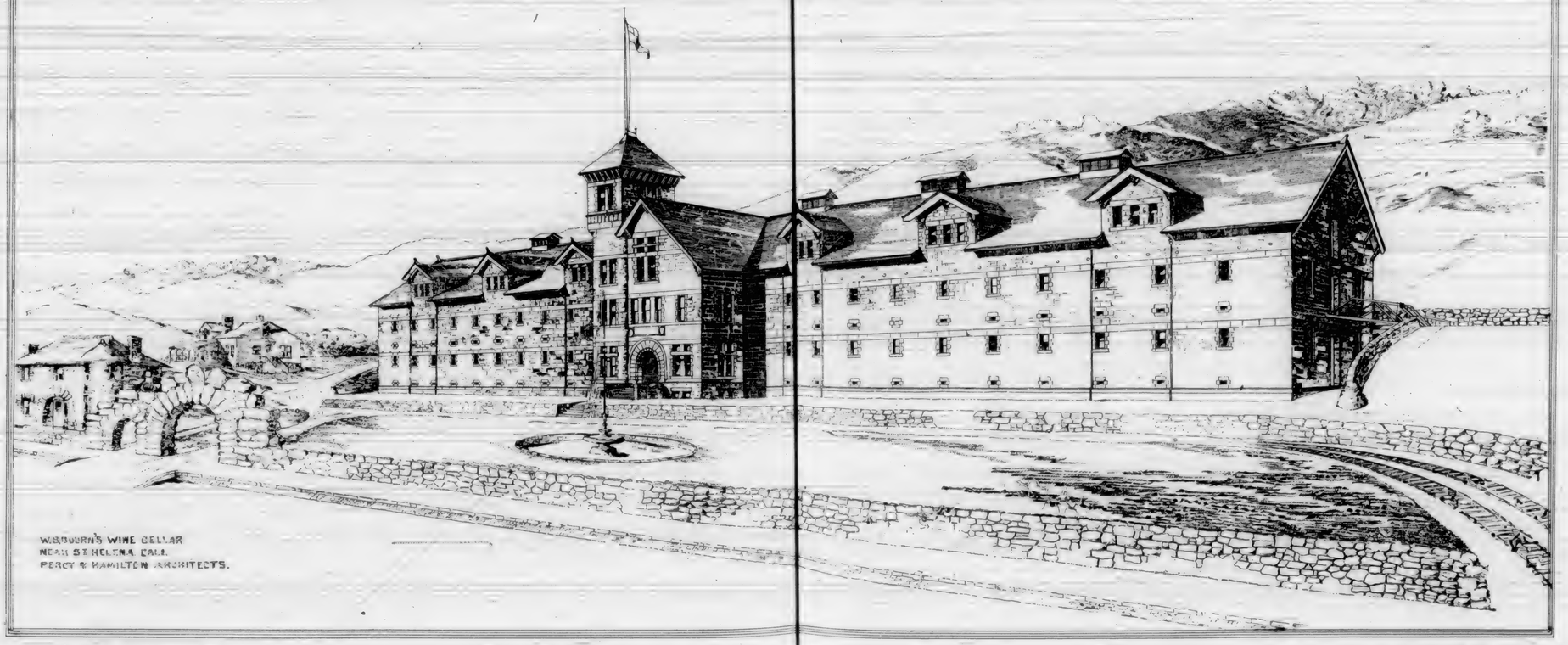

WEBBURN'S WINE CELLAR
NEAR ST HELENA CAL.
PERCY & HAMILTON ARCHITECTS.

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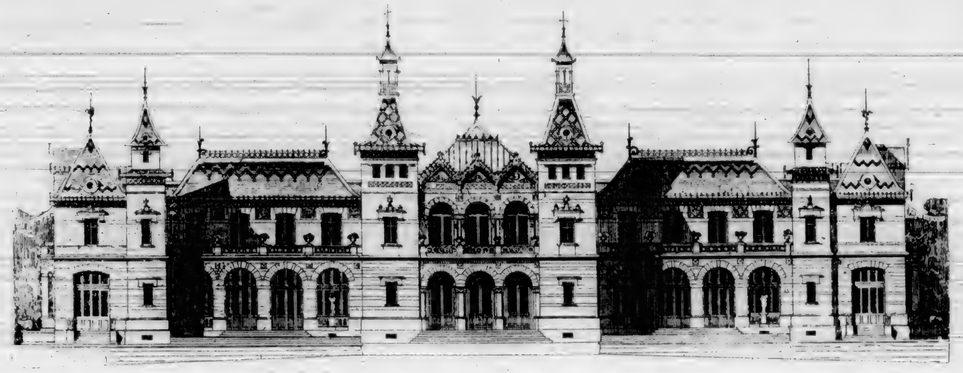
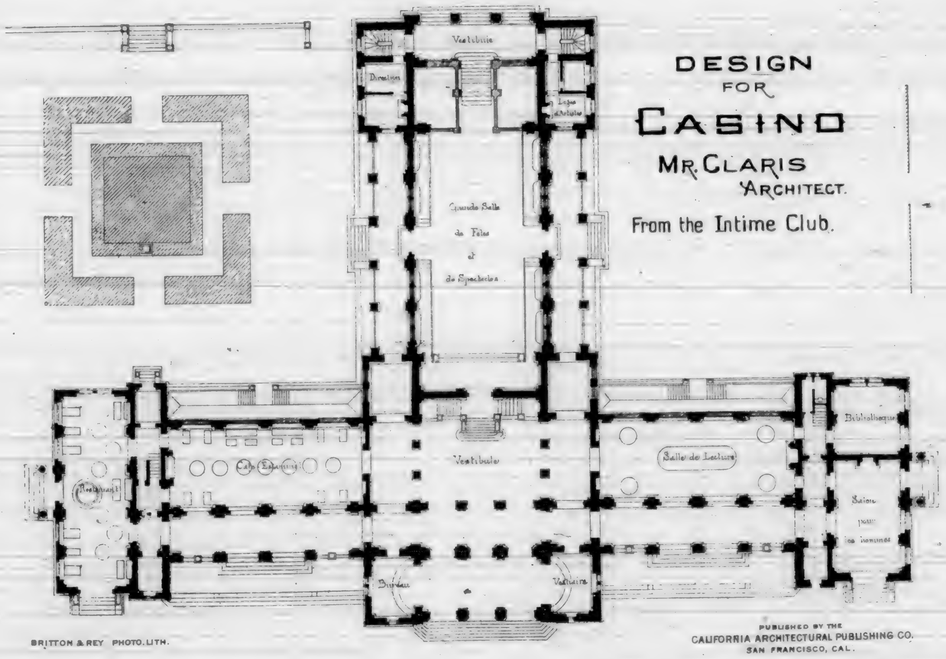


DESIGN FOR CASINO

MR. CLARIS ARCHITECT.

From the Intime Club.



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MDCCCXXXIV

NOTES & COMMENTS.

Advices from Chicago are to the effect that the California Building is about one-third completed. An extra number of men has recently been added to the construction force.

The *Yolo Democrat* says:—The work of laying the sewer pipe of the sewer system of Woodland has been completed. The flush tanks will be placed in position immediately. About seven miles of pipe have been laid since July 6th, and will soon be given a final test.

From the *Sacramento Union* we learn that the people of Sacramento have decided to expend $100,000 for improving the levees, and to place their city beyond all fear of trouble from freshets. At the present time Sacramento is very prosperous and is likely to remain so if assured of safety from the troubles of the past years.

THE AIR LINE SURVEYORS.—The surveyors for the Salt Lake and San Francisco Air Line railroad are making rapid progress toward the east. After coming up the the Feather river they passed through Long Valley to Purdy's switch and then went to the north of Reno abont twenty miles, passing between Pyramid City and Pyramid Lake. They will cross the Truckee a few miles below Wadsworth and thence to the southeast through Churchill county.—*Reno Gazett and Stockman*.

Blank applications for space in the Mechanics' Pavilion at San Francisco for the Preliminary World's Fair Exhibit to be held next January, have just been issued, as has also the full premium list. Detailed information can be had on application to the Secretary of the Mechanics' Institute, J. H. Culver, at 31 Post street, or to C. B. Turrill, General Agent, 63 Flood Building, San Francisco. Intending World's Fair exhibitors by displaying their products at this Preliminary Exhibit will in many cases receive enough cash premiums to recompense them for their entire labor and outlay.

California is to be honored by having a section of one of her famous big trees made a prominent feature in the Government building at the World's Columbian Exposition at Chicago. The project, the accomplishment of which is fully assured, is a unique one. The section of the tree will be twenty-three feet in diameter and thirty feet long. This will be divided into three parts and these will be placed in their natural position, one above the other, and so arranged as to form something like a two-story house. The contract for the tree was made by H. A. Taylor of the Department of the Interior with the King's River Lumber Company in the spring of this year, and the company is now at work getting it out in their forest of sequoia gigantea in the Converse basin on King's river in Fresno county.

The tree selected is one known as the "General Noble." It measures thirty-three feet in diameter near the ground, but as the object was to have the section of the same diameter at both ends, as nearly as possible, a piece is being taken out of the tree at some distance from the ground. To do this and to preserve the section from harm by falling as well as to meet other requirements has proved to be a work of considerable magnitude. The idea is not to send a solid section, but, rather, the rim of the tree hollowed out and cut into segments of suitable size, and all to be numbered so that they can be erected at Chicago, so as to look from the exterior like a solid section of a sequoia thirty feet in height. The three parts into which the section is being cut consist of two parts of fourteen feet each, to be hollowed out, and one, two feet thick, which will serve as a floor between the two stories, as it were.

To get the tree to a point where wagons can reach it required the building of a road two miles long. The tree when erected at Chicago will be surrounded by a glass dome, and will stand directly under the great dome of the Government building.

MYTHOLOGY.

PALLADIUM, a celebrated statue of Pallas. It was about three cubits high, and represented the goddess as sitting and holding a pike in her right hand, and in her left a distaff and a spindle. It fell down from heaven near the tent of Ilus, as that prince was building the citadel of Ilium. Some nevertheless suppose that it fell at Pessinus in Phrygia, or according to others, Dardanus received it as a present from his mother Electra. There are some authors who maintain that the Palladium was made with the bones of Pelops by Abaris; but Apollodorus seems to say, that it was no more than a piece of clock-work, which moved of itself. However discordant the opinions of ancient authors be about this famous statue, it is universally agreed, that on its preservation depended the safety of Troy. This fatality was well known to the Greeks during the Trojan war, and therefore Ulysses and Diomedes were commissioned to steal it away. They effected their purpose; and if we rely upon the authority of some authors, they were directed how to carry it away by Helenus the son of Priam, who proved, in this, unfaithful to his country, because his brother Deiphobus, at the death of Paris, had married Helen, of whom he was enamoured. Minerva was displeased with the violence which was offered to her statue, and according to Virgil, the Palladium itself appeared to have received life and motion, and by the flashes which started from its eyes, and its sudden springs from the earth, it seemed to shew the resentment of the goddess. The true Palladium, as some authors observe, was not carried away from Troy by the Greeks, but only one of the statues of similar size and shape, which were placed near it, to deceive whatever sacrilegious persons attempted to steal it. The Palladium, therefore, as they say, was conveyed safe from Troy to Italy by Æneas, and it was afterwards preserved by the Romans with the greatest secrecy and veneration, in the temple of Vesta, a circumstance which none but the vestal virgins knew.

The FORTNIGHTLY REVIEW for September, has the usual number of original articles.

The COSMOPOLITAN for October, has an article on "Munich as an Art Center," by Charles DeKay.

LIPPINCOTT'S for October, has an article by Edwin Checkley on "Muscle Building," wherein he treats of the "Normal" man or woman as a model.

ENGLISH CATHEDRALS is the title of a new twenty-five dollar work by Mrs. Schuyler Van Rensselaer, illustrated by Joseph Pennell and published by the Century Co., New York.

FIRE AND WATER for September, came out as an elegant "Souvenir Number".

THE BRICKBUILDER for July, gives a number of designs for ornamental brickwork. It is published monthly by the *Brickbuilder Publishing Co.*, 4 Liberty Square, Boston.

The AMERICAN ARCHITECT is publishing a series of valuable papers on Architecture.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
W. I. CROSETT, Sec. O. BROOKS, Treas.

MASTER PAINTERS' ASSOCIATION OF THE PACIFIC COAST.

E. M. GALLAGHER, Pres. H. G. JARMAN, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

PERFORMANCE OF CONTRACT PREVENTED.—Where a person contracts with another to do work and furnish materials, and the latter prevents his completing the work though the contract was entire, he may recover the value of the labor done and materials furnished and used.

Joyce v. White, Supreme Court of California, 30 Pac. Rep. 524, 42.

FAILURE TO RECORD BUILDING CONTRACT.—Where a written contract for furnishing materials and erecting buildings is void for failure to record it, as required by the California Code, the party furnishing such materials and erecting such buildings may maintain an action on an implied contract for the value thereof; the Code providing that nothing in the foregoing statute shall be construed to impair or affect the right of any person to whom any debt may be due for work done or materials furnished, to maintain a personal action to recover such debt against the person liable therefor. Such unrecorded contract is not conclusive evidence of the value of the labor and material.

Rebman v. San Gabriel Val. Land and Water Co., Supreme Court of California., 30 Pac. Rep. 564, 112.

NOTICE OF LIEN FOR MATERIAL USED IN SEVERAL HOUSES.—Where several houses are erected by the same contractor for the same owner, and the materials used in the construction are so used indiscriminately, a notice for mechanic's lien for materials furnished is not defective because it does not specify for which particular house the materials were furnished.

Wheeler v. Ralph, Supreme Court of Washington, 30 Pac. Rep. 709, 57.

WHEN SUBCONTRACTOR'S LIEN ATTACHES.—Where a building is constructed under one entire contract between the owner and the original contractor, the liens of all subcontractors, who furnished material or performed labor for the building at any time during the process of construction, attach by relation, as of the date of the commencement of the work, and are entitled to a preference over a mortgage on the premises, executed by the owner subsequent to that date.

Glass v. Freeberg, Supreme Court of Minnesota, 62 N. W. Rep. 900, 74.

ACTION AGAINST SURETIES ON CONTRACTOR'S BOND.—A landowner entering into a contract with a contractor for the erection of a building by the latter took a bond from the contractor, with sureties, conditioned that it should be void if the contractor should pay all just claims for work and material furnished. The contractor having abandoned the contract, the owner himself completed the building, and sued on the bond to recover for the expenditure made by him in so doing. But the sureties were not liable, the breach assigned not being the same as that for which they became responsible.

Holcombe v. Mattson, Supreme Court of Minnesota, 52 N. W. Rep. 857, 99.

ONE CONTRACTOR KEEPING ANOTHER'S CHECK.—In an action for the conversion of a check drawn by the owner of a building to one contractor, and by him indorsed payable to the order of another contractor, it appeared that the check was intended for the latter contractor for the frame work of the building. The former contractor for excavating the cellers, etc., refused to deliver the check, on the ground that he was kept out of money due him by the latter's failure to put in a tier of beams. There was evidence that the beams were not put in because the first mentioned contractor had not carried up the walls high enough. Under the circumstances judgment was given to the contractor for the framework against the other contractor.

Haas v. Altieri, City Court of New York, 19 N. Y. Sup. 687, 127.

POSSESSION DOES NOT AUTHORIZE BUILDING AND LIEN.—The mere fact that one is in lawful possession and control of land does not give one authority to contract for the construction of buildings thereon, so as to give the contractor a lien. Thus it does not follow because one is a trustee or agent to hold and control property that he is authorized to bind the owner by contract which may become liens upon it. Such power must be expressed, or must be shown to arise within the scope of the agency. An overseer, for instance, is an agent to control a plantation, but he could not bind the real estate by contract, or even the crops, without more authority than arises from his agency.

Miller Hardwood Lumber Co. v. Wilson, Supreme Court of Arkansas, 19 S. W. Rep. 125,974.

LIENS ON BUILDINGS ERECTED BY ADJACENT LAND OWNERS.—Where the several owners of two contiguous lots unite in a joint contract for the construction of one building, to be situated in part on each, both lots may, for the purpose of mechanics' liens, be treated as one tract, and a single claim for a lien for labor or material performed or furnished, for the construction of the building may be filed against both lots. But the lien claimant may, nevertheless, in enforcing his lien, cover his claim and obtain judgment against each lot separately, provided he proves what part or proportion of such labor or material entered into the construction of the part of the building situated on each, and provided the rights of third parties are not thereby prejudiced.

Miller v. Shepard, Supreme Court of Minnesota, 52 N. W. Rep. 804, 130.

MORTGAGE BY PARTNER.—A mortgage on real estate executed by one only of two partners in the presence of the other, and with his consent, as security for a firm debt, is binding upon the firm.

Greer v. Fergusen, Supreme Court of Arkansas, 19 S. W. Rep. 996, 36.

PREMATURE FILING OF MACHANIC'S LIEN A LIBEL.—Under the Virginia Code providing that a subcontractor shall not be entitled to a lien on the work in hand until its completion, a subcontractor who prematurely files a mechanic's lien on the work in hand is liable in an action for libel for the injury occasioned thereby to the contractor. It is a settled rule of this common law, that every publication of language that naturally and necessarily tends to injure another in his office, trade, or employment, is, if without justification, libelous and actionable in itself. Where, however, the language does not import such defamation as will of course be injurious, and is therefore actionable only because it occasions special damage, that is, damage which, though natural and immediate, is yet not the necessary result of the language used, there the damage done must be proved. So the filing of a mechanic's lien by a subcontractor as above for an alleged indebtedness to him by the general contractor, cannot be taken, as a matter of law, as imputing insolvency or dishonesty to the general contractor, nor as necessarily tending to injure him in his business. The resulting damage must be proved.

Moore v. Rolin, Supreme Court of Appeals of Virginia, 15 S. E. Rep. 520, 207.

BUSINESS MOSAICS.

The J. L. Mott Iron Works show this month the design of one of their vases which may be used for decorative purposes. Their mammoth catalogue of vases contains a great number of beautiful ornaments for the embellishment of buildings and grounds.

Another man hung his sash with the Samson Solid-Braided Sash Cord, and from that time on the windows have caused no trouble. These cords are very strong and so pliable that the sash moves with an ease and quiteness unknown when other cords are used. See advertisement on last page of cover.

When your white paint begins to chalk off, get soft, turn yellow and loose color or body, try the Phœnix White Lead.

This paint is compounded on correct scientific principals, and its ingredients are combined in such a manner as to withstand to the greatest degree all the destructive influences found on the Pacific Coast.

The salt fogs from the ocean and the moist haze from the overflowed and tide lands have been found to cause the rapid deterioration of paint as usually prepared, while the Phœnix White Lead, when applied in time, has saved the paint already on and added materially to its life. Phœnix White Lead Paint lasts about twice as long as commonly prepared paint. For further information call at the Phœnix White Lead and Color Works, 713 Sansome St., San Francisco.

The balance of power that will insure peace and comfort to all who dwell in houses. A great deal depends upon the condition of the windows of all buildings for health and comfort. Windows that will not open without the aid of carpenter's tools, or that fly open with a bang and cannot be closed, are among the trivial nuisances that exasperate human nature. To have sash balances constructed on a wrong principle and with cheap cord, which easily breaks, attached to your windows, is to court continual trouble. There are many who are not aware that the Pullman Balance Co. have invented a device that has solved the sash balance problem, and for some time past it has been adopted by the most notable architects in America for the grandest buildings ever erected upon this continent.

There is one essential thing necessary on the part of those who wish to use this sash balance and that is *common sense*. The device is known as the Pullman Sash Balance, and is graded into no less than forty-one classes, suitable to the weights of as many sashes, and a man has only to ascertain the weight of his sash in order to procure a balance that is guaranteed to last fifteen years without a single hitch or break. But if a man buys a Pullman Spring Sash Balance suitable for a sash weighing from 4 to 5 lbs. and applies it to a sash weighing about 20 lbs. it will not work, for very good reasons. Sometimes men have done this, and laid all the blame on the device, whereas it all lays upon their own want of common sense. One of the main features in the new invention is the metal tape which replaces the old-fashioned cord, which always broke sooner or later. This metal tape is made of that new, costly and wonderful alloy known as Aluminum bronze which forms a tape that it is almost impossible to break, even by continued hammering when it is doubled up and repeatedly reversed. The new device comprises all the improvements which experience has gleaned in the past, and its simplicity of operation and durability of construction is a marvel of mechanical ingenuity. The frame and face plates are made of cold rolled steel and by locating the brake inside the drum or case, it becomes automatic in operation and applies itself automatically and in proportion to the tension of the spring and there are no screws or bolts to adjust. The face plates being made with oval ends can be fitted with a common auger bit and only require two screws which is a great advantage over the old-fashioned square face plates. The balance is adapted for old as well as new work and can be used in many places where weights and cord cannot. They are easily applied, run noiselessly and have a very attractive appearance. But what is most important next to its durability is the fact that it costs less than any other balance. No slipshod work passes out of the factory. Every article is subjected to severe tests and all material that will not stand the severest ordeals as to quality is rejected. Every balance manufactured by the company is fit for a sample.

A complete line of gas burning appliances, such as cooking ranges, close or open heaters, laundry boilers and driers, etc., are on exhibition at the sale rooms of the San Francisco Gas Light Co., No. 16 Post street, S. F.

The American Roofing Plates furnished by Merchant & Co., Philadelphia, seem to have displaced all other brands of tin roofing.

Art glass windows are the most effective mode of decoration. On entering an apartment where the light is admitted through such windows, the result, especially when there is a harmonious combination of colors, is very pleasing.

Great praise is due to Mr. Wm. Schroeder of 39½ Fremont street, for his artistic work in this line.

Mr. Schroeder has been in the business for a number of years, and has done some of the best work to be found in the city. All the art glass work in the Louvre was done by him, and he has just been awarded the medal at the State Fair at Sacramento for excellent samples of his work.

The largest contract of its nature ever awarded on the coast was that for the bending of the glass for the dome over the central court of the Mills building, and this was secured by Mr. Schroeder, and he is now engaged on its completion. Embossing, beveling, staining and bending in all their branches are performed in his factory.

Samuel Cabot of Boston sends to us a number of colored views of dwellings showing the artistic effects that may easily be obtained by the use of the "Creosote stains" and are intended as suggestions for color treatment. Recently we have noticed some beautiful effects of these stains where good judgment is used when applying them to our redwood shingles; in some examples, the colors were blended gradually from one color to another, and from light to dark or *per contra* of the same color.

While their artistic effects are good these stains are preservative in a high degree and at a time like the present when the "health question" is so prominent, their value is enhanced on account of the disinfecting qualities of their components. Moss, fungus and other forms of growth which engender may of the preventable diseases are rendered inactive or destroyed where these stains are used. Thus the useful is made pleasing and at a less cost than by other method.

Ives Sash Locks still hold their own over others in the market. They are strong and serviceable and become favorites whenever used. They can be had at all first-class hardware stores.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., October 7th, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 1st day of November, 1892, and opened immediately thereafter, for all the labor and materials required for the trench excavation, foundations, basement and area walls, basement columns and first floor beams for the U. S. Court House and Post Office Building at Mankato, Minnesota, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Mankato, Minnesota.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Trench Excavation, Foundations, Basement and Area Walls, Basement Columns and First Floor Beams for the U. S. Court House and Post Office Building at Mankato, Minnesota", and addressed to,

W. J. EDBROOKE,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., October 8th, 1892. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 2d day of November, 1892, and opened immediately thereafter, for all the labor and materials required for the trench excavation, foundations, cut-stone work and brick-work, iron and wood floor, ceiling and roof construction, roof covering, etc., for the U. S. Court House and Post Office, building at Paris, Texas, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Paris, Texas.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Trench Excavation, Foundations, Cut-Stone Work and Brick-Work, Iron and Wood Floor, Ceiling and Roof Construction, Roof Covering, etc., for the U. S. Court House and Post Office Building at Paris, Texas", and addressed to,

W. J. EDBROOKE,
Supervising Architect.

CITY BUILDING NEWS.

Ashbury near Fell. Painting, plumbing, etc.; owner, M. A. Moddenhauer; architect, W. H. Allie; contractor, Jos. Kennedy; cost, $1,475; signed, Sept. 24; filed, Sept. 26; payments, $521.25 frame on; $521.25, enclosed; $521.25, brown mortar on; $521.25, standing finish on; $521.25, completed; $868.75, 35 days.

Ashbury near Frederick. Two-story frame and stable; owner, W. J. Robinson; contractor, George Healing; cost, $3,190; signed, Aug. 5; filed, Aug. 5; payments, $800, frame up; $800, brown mortar on; $800, doors hung; $800, completed; $800, 35 days.

Brannan and Norton. Two-story frame; owner, George Miller; contractor, Albert Norton; cost, $3,375; signed, Sept. 2; filed, Sept. 2; payments, $843.75, main floor laid and basement finished; $843.75, roof on; $843.75, completed; $843.75, 35 days.

Bryant near Fourth. Three-story frame; owner, Edward Lyons; contractor, M. C. Lynch; cost, $5,150; signed, Aug. 16; filed, Aug. 16; payments, $1,285, frame up and enclosed; $1,290, brown mortar on; $1,290, completed; $1,285, 35 days.

California near Battery. Alterations and additions; owner, Robt. Sherwood; architect, Clinton Day; contractor, J. L. Chrichton; cost, $1,634; signed, Sept. 27; filed, Sept. 28; payments, $600, brown mortar on; $825, completed; $109, 35 days.

California near Buchanan. Alterations and additions; owner, Chas. Knoechel; architect, Chas. M. Rousseau; contractors, Miron & Gardner; cost, $1,000; signed, Sept. 17; filed, Sept. 19; payments, $250, roof on; $250, brown mortar $250, completed; $250, 35 days.

California and Jones. Excavation, concrete, etc.; owner, Geo. Whittell; architects, Coxhead & Coxhead; contractor, Cal. Bridge Co.; cost, $6,907; signed, Sept. 1; filed, Sept. 2; payments, 1st day of each month, 75 per cent. of work done; balance, 35 days.

California near Montgomery. Alterations and additions to a four-story brick building; owner, Isabella Stevenson; architect, H. Geilfuss; contractor, W. A. Miller; cost, $2,127; signed, Sept. 14; filed, Sept. 15; payments, 1st and 15th day of each month 75 per cent. of work done; balance, 35 days.

California near Montgomery. Elevator work on a four-story brick building; owner, Isabella Stevenson; architect, H. Geilfuss; contractors, A. J. McNicoll & Co.; cost, $3,650; signed, Sept. 15; filed, Sept. 15; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Caselli Ave. near Douglass. Five-room cottage; owner, Constantin Holubar; contractor, George Lack; cost, $1,333; signed, Aug. 30; filed, Sept. 6; payments, $330, frame up; $330, brown mortar on; $330, completed; $343, 35 days.

Church near 27th. Alterations and additions; owner, A. F. Moore; contractor, W. Plant; cost, $1,210; signed, Sept. 7; filed, Sept. 8; payments, $600, enclosed; $300, plastered; $200, completed; $210, when bills are presented to owner and receipted.

Clay near Larkin. Two-story frame and basement; owner, Mrs. E. Dwarzazek; architect, C. M. Rousseau; contractors, Hodgkins & Kinsley; cost, $4,100; signed, Sept. 7; filed, Sept. 8; payments, $1,000, frame up; $500, brown mortar on; $550, plastered; $1,025, completed; $1,025, 35 days.

Dorland near Church. Two-story frame; owner, Edw. Mitchell; contractor, James McGuire; cost, $3,040; signed, Sept. 27; filed, Sept. 27; payments, $725, frame up; $725, brown mortar on; $750, completed; $840, 35 days.

East and Mission. Additions, millwork, etc.; owners, Kistenmacher Bros.; architect, F. T. Peterson; contractor, R. Herring; cost, $900; signed, Aug. 29; filed, Sept. 13; payments, $650, mill work set up, completed for use; $250, 35 days.

Eddy and Gough. Painting, varnishing, etc.; owner, St. Paul's Lutheran Church; architect, J. E. Krafft; contractor, J. H. Miller; cost, $1,429; signed, Sept. 6; filed, Sept. 7; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Fell near Gough. Two-story and basement frame; owner, Bertha Kaempfer; architects, John & Balczynski; contractor, Peter Johnson; cost, $3,200; signed, Sept. 3; filed, Sept. 7; payments, $600, frame up; $600, enclosed, floors laid and partitions set; $600, plastered; $675, completed; $825, 35 days.

Fifteenth near Castro. Carpenter work, plumbing, etc.; owner, A. J. Bolfing; architects, Smith & Freeman; contractor, B. J. Malone; cost, $1,023; signed, Aug. 31; filed, Sept. 3; payments, $350, frame up; $417, completed; $256, 35 days.

Filbert near Jones. Two-story and basement frame; owner, Jacob Ohlemutz; architects, John & Balczyski; contractors, Behrend & Heyde; cost, $3,500; signed, Sept. 6; filed, Sept. 7; payments, $600, frame up; $600, enclosed, floor laid and partitions set; $600, plastered; $775, completed; $825, 35 days.

Folsom, No. 2402 Mission Block. To build; owner, Margaretta Both; architects, Townsend & Wyneken; contractors, M. Weber & Co.; cost, $1,081; signed, Sept. 3; filed, Sept. 6; payments, $200, frame up; $200, brown mortar on; $200, plastered and primed; $211, completed; $270, 35 days.

Fourteenth and Folsom; Three-story frame, four flats and two stores; owner, Mrs. Anne Green; contractor, Jno. Foster; cost, $8,000; signed, Sept. 8; filed, Sept. 12; payments, $1,500, frame up; $1,500, brown mortar on; $1,500, plastered; $1,500, completed; $2,000, 35 days.

Geary and Octavia. Lath, plaster, cement and centers; owner, R. M. Black; architect, Wm. Curlett; contractor, Thos. Bodkin; cost, $2,800; signed, Aug. 31; filed, Sept. 6; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Geary and Octavia. Gas-fitting and plumbing on seven houses; owner, R. M. Black; architect, Wm. Curlett; contractors, S. Ickelheimer & Bros.; cost, $2,951; signed, Aug. 20; filed, Sept. 18; payments, $1,475, rough work in; $787.75, fixtures set up complete; $787.75, 35 days.

Gough and Eddy. Frame building with brick basement; owner, St. Pauls Lutheran Church; architect, Julius E. Krafft; contractor, Wm. Pluns; signed, Sept. 3; filed, Sept. 6; payments, $2,000, doors and window frames in; $2,000, frames up and sheathed; $3,000, roof, spires and frame sheathed and ready for roofer; $3,000, interior boarding and exterior finish on and window frames set; $3,000, rough floors laid, ceiling sheathed, rough stair work in and partitions ready for lathing; $2,000, floors laid, shingling and finish of ceiling complete, sashes glazed and ready for stained glass; $2,000, interior finish on and exterior doors hung; $2,440, completed; $6,490, 35 days.

Gough and Eddy. Grading, excavating, brickwork, etc.; owner, St. Paul's Lutheran Church; architect, Julius Krafft, contract, Chas. Wagner; cost, $5,380; signed, Sept. 3; filed, Sept. 6; payments, $1,500, concrete walls built and ready for basement floor joists; $2,000, wall up ready for main floor joists; $335, completed; $1,345, 35 days.

Gough and Eddy. Lathing and plastering; ow ner, St. Paul's Lutheran Church; architect, Julius E. Krafft; contractor, Thos. Munnix; cost, $1,355; signed, Sept. 3; filed, Set. 6; payments 1st day of each month 75 per cent. as work progresses; balance 35 days.

Gough and Eddy. Galvanized iron and copper work; owner, St. Paul's Lutheran Church; architect, Julius Krafft; contractors, Forderer Cornice Works; cost, $3,089; signed, Sept. 3; filed, Sept. 6; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Gough and Eddy. Plumbing, gas-fitting, etc.; owner, St. Paul's Lutheran Church; architect, Julius Krafft; contractor, H. Williamson; cost, $1,164; signed, Sept. 6; filed, Sept. 6; payments, 1st day of each month 75 per cent. as work progresses; balance, 35 days.

Grove and Van Ness. Alterations and additions; owner, Isaac Harris; contractor; J. J. Morehouse; cost, $1,670; signed, Sept. 12; filed, Sept. 12; payments, $835, brown mortar on; $417.50, completed; $417.50, 35 days.

Harrison near 21st. Dwelling; owner, Jas. Laughlan; architect, A. Gordon; contractors, Houston Bros.; cost, $3,085; signed, Sept. 16; filed, Sept. 19; payments, $771, frame up and rustic on; $771, brown mortor on; $771, plastered; $772, 35 days.

Harrison near 22th. Two-story frame; owner, Patrick Canfield; architect, M. J. Welsh; contractor, C. A. Anderson; cost, $2,500; signed, Sept. 13; filed, Sept. 13; payments, $600, frame up; $1,000, ready for lathing; $850, exterior mill work completed; $850, woodwork finished and ready to paint; $895, completed; $1,225, 35 days.

Hayes and Octavia. Four-story frame; owner, Robt. Hubbs; architect, J. C. Newsom; contractor, John Furness; cost, $25,514; signed, Aug. 3; filed, Sept. 16; payments, $3,000, excavation and brick foundation completed; $2,000, 2d floor joists in; $2,000, 3rd floor joists in; $4,000, roof sheathed; $3,500, enclosed and ready for lathing; $2,635.50, outside primed and inside ready for finish; $3,000, completed; $6,378.50, 35 days.

Hayes and Octavia. Plastering and stucco work; owner, Robt. Hubbs; architect, J. Cather Newsom; contractor, J. C. McLeod; cost, $3,000; signed, Aug. 30; filed, Sept. 20; payments, $1,149.75, brown mortar on; $1,149.75, plastered; $766.50, completed.

Hayes and Octavia. Plumbing and gas-fitting; owner, Robt. Hubbs; architect, J. Cather Newsom; contractors, Wm. Snook & Son; cost, $2,294; signed, Aug. 30; filed, Sept. 20, payments, $860.25, rough plumbing in; $860.25, accepted; $573.50, 35 days.

Howard near Eagle. To build; owner, Edward H. Gladwin; architect, C. I. Havens; contractor, John Bruce; cost, $2,360; signed, Sept. 1; filed, Sept. 17; payments, $590, enclosed; $590, hard finished and outside primed; $590, completed; $590, 35 days.

Howard St., Nos. 1502 and 1504. Alterations and additions; owner, G. Raisch; architects, John & Balczynski; contractor, John Sandeen; cost, $3,400; signed, Sept. 1; filed, Sept. 3; payments, $600, porches of former buildings dujished; $650, new frame of 1st story and part of 2d and 3rd stories up; $650, plastered; $650, completed; $850, 35 days.

Howard St., Nos. 1502, 1504 and 1506. Alterations and additions; owner, G. Raisch, architects, John & Balczynski; contractor, J. McCann; cost, $3,500; signed, Sept. 6; filed, Sept. 7; payments, $200, stairs of rear porches of corner building up; $400, new frame up; $650, enclosed and brown mortar on; $800, plastered and outside finish on; $375, completed; $875, 35 days.

Howard near 14th. Alterations and additions; owner, Leonora Krouse; architect, W. C. Dickerson; contractor, August Lund; cost, $2,095; signed, Sept. 7; filed, Sept. 7; payments, $600, frame up; $600, enclosed and brown mortar on; $845, completed; $850, 35 days.

Howard near 19th. Two-story frame with cement foundation; owner, F. C. Howard; architect, C. M. Rossenu, contractor, Geo. Richley; cost, $6,800; signed, Sept. 6th; filed, Sept. 13; payments, $300, excavation and foundation done; $850, frame up; $850, brown mortar on; $850, completed; $950, 35 days.

Howard near 25th. Alterations and additions; owner, T. M. Bickford; architect, M. J. Welsh; contractor, F. A. Worden; cost, $2,200; signed, Sept. 20; filed, Sept. 21; payments, $550, frame up; $550, brown mortar on; $550, completed; $550, 35 days.

Hyde near Post. To build; owner, Alice Moran; contractor, B. K. Albertson; cost, $3,050; signed, Dec. 22; filed, Sept 17; payments, $1,500, enclosed; $1,000, plastered; $550, completed.

Joost Ave., near Acadia. One-story and basement frame; owner, John C. Turner; contractor, Jas. Campbell; cost, $1,925; signed, Sept. 8; filed, Sept. 14; payments, $381.25, frame up, rustic on and roof sheathed; $381.25, brown mortar on; $381.25, completed. $381.25, 35 days.

Larkin near Bush. Three-story frame and brick basement; owners, Thos. Daley and wife; architect, Chas. J. I. Devlin; contractor, F. Klatt; cost, $4,800; signed, Sept. 13; filed, Sept. 13; payments, $600, frame up; $1,000, ready for lathing; $850, exterior mill work is completed; $850, wood work and ready to paint; $895, completed; $1,225, 35 days.

Larkin near Vallejo. Carpenter, mill, stair work, etc.; owner, J. F. Hinrichs; architects, Martens & Coffey; contractor, J. J. O'Brien; cost, $3,876; signed, Sept. 2; filed, Sept. 6; payments, $700, enclosed; $700, outside finish on, floors laid and partitions set; $750, plastered; $750, completed; $976, 35 days.

Liberty near Valencia. Frame building, brick foundation; owner, Stephen Wing; architect, J. E. Krafft; contractor, Daniel Powers; cost, $4,350; signed, Sept. 10; filed, Sept. 12; payments, $1,000, frame up, rustic on and roof sheathed; $1,245, exterior finish on, brown mortar on; $1,000, completed; $1,085, 35 days.

Lott and Grove. To erect a building; owner, Louis Hilbing; contractor, Chas. Sturm; cost, $2,900; signed, Sept. 2; filed, Sept. 7; payments, $750, frame up and roof on; $750, brown mortar on; $750, inside trimming on and doors hung; $850, 35 days.

Market near Powell. Electric work; owner; Annie Donahue; architect, C. I. Havens; contractor, Electric Improvement Co.; cost, $2,050, signed, June 23; filed, Sept. 12; payments, 1st day of each month 75 per cent. of work done; balance, 35 days.

McAllister, No. 337. Carpenter work, plastering, etc.; owner, M. E. Ulmer; architects, Stone & Munsen; contractor, Chas. Condy; cost, $2,070; signed, Sept. 7; filed, Sept. 7; payments, 75 per cent. as work progresses; balance, 35 days.

Minna near Lafayette. All work except plumbing and gas-fitting; owner, C. S. Laumeister; architect, C. I. Havens; contractor, Jas. McLean; cost, $1,080; signed, Sept. 2; filed, Sept. 15; payments, $750, frame up and enclosed; $750, rough gas and water pipes in and brown mortar on; $750, plastered and outside mill work up; $786, completed; $1,012, 35 days.

Mississippi near Napa. Two-story frame and brick basement; owner, J. P. Whelan; architect, M. J. Welsh; contractors, Currie & Loomer; cost, $5,200; signed, Sept. 20; filed, Sept. 20; payments, $1,300, frame up; $1,300, brown mortar on; $1,300, completed $1,300, 35 days.

Mission near New Montgomery. Alterations and additions; owners, R. Barron & G. J. Hawn; contractor, Bernard Breyer; cost, $6,254; signed, Sept. 19; filed, Sept. 21; payments, $985, Oct. 1, 1892; $985, Oct. 15; $985, Nov. 1; $985, completed;

Oak near Buchanan. Two-story frame; owner, Wm. T. Cummings; architects, Townsend & Wyneken; contractor, John Foster; cost, $6,250; signed, Sept. 1; filed, Sept. 20; payments, $1,300, enclosed; $1,200, brown mortar on; $3,750, 35 days.

Park Hill Ave. and Park road. Steam heating, etc.; owner, Sister M. Ottilia; architects, Shea & Shea; contractors, A. Baumeister & Co.; cost, $1,978; signed, Sept. 3; filed, Sept. 10; payments, $778, when boiler and rough work in place; $700, completed; $500, 35 days.

Pierce near McAllister. Two-story frame; owners, J. C. Bothin and wife; contractors, Soule & Hoadley; cost, $8,000; signed, Sept. 8; filed, Sept. 10; payments, $1,125, upon execution of this agreement; $1,000, frame up; $2,000, brown mortar on, $1,875, completed; $2,000, 35 days.

Pine near Hyde. To build; owner, Peter Jorgensen; architect, W. H. Lillie; contractor, J. C. Rogers; cost, $6,000; signed, Sept. 21; filed, Sept. 21; payments, $1,500, old building moved, frame set and frame of new building up; $1,500, frame of stable is up and brown mortar on new building; $1,500, completed; $1,500, 35 days.

Pleasant near Jones. Grading, brickwork, etc.; owner, Jane E. Palmer, architect, Fred. B. Wood; contractor, L. E. Judkins; cost, $4,753; signed, Sept 1; filed, Sept. 19; payments, $888, 1st floor beams on; $888, enclosed; $888, brown mortar on, windows hung and outside finish; $1,181, 35 days.

Powell and Washington. Alterations and additions; owner, D. L. Fouts; architect, W. M. Armitage; contractor, J. R. Whalen; cost, $2,100; signed, Aug 2; filed, Sept. 9; payments, $525, underpined and enclosed; $525, brown mortar on; $525, completed; $525, 35 days.

Ridley and Guerero. Threestory frame; owner, Mrs. R. C. Winch; contractors, G. J. & A. E. Ulrich; cost, $3,428; signed, Sept. 29; filed, Sept. 29; payments, $1,000, frame up and ready to be enclosed; $1,000, enclosed and brown mortar on; $1,428, completed and accepted.

Sacramento and Scott. Three-story frame, six flats; owner, W. E. Lane; architect, J. C. Newsom; contractor, Wm. A. D'Arcy; cost, $1,100; signed, Sept. 12; filed, Sept. 12; payments, $300, lathing completed; $300, brown mortar on; $225, completed; $275, 35 days.

Sadowa and Plymouth. Two-story frame and basement; owner, Mrs. L. Rosenthal; contractors, Morrison & Cook; cost, $1,675; signed, Sept. 16; filed, Sept. 16; payments, $475, enclosed; $400, brown mortar on; $400, completed; $400, 35 days.

Sadowa and Plymouth. Two-story frame; owner, Agnes Van Wyl; contractors, Morrison & Cook; cost, $2,000; signed, Aug. 1; filed, Sept. 16; payments, $450, enclosed; $450, brown mortar on; $450, completed; $650, 35 days.

San Jose Road near Geneva. Cottage and basement; owner, Frank Furrer; contractor, H. R. Schmuckert; cost, $1,800; signed, Sept. 26; filed, Sept. 26; payments, $450, rustic on; $450, brown mortar on; $450, completed; $450, 35 days.

Scott near Turk. One-story frame; owner, Isabel Durney; architect, M. J. Durney; contractor, F. Williams; cost, $1,650; signed, Sept. 21; filed, Sept. 27; payments, 1st Saturday of each month 75 per cent. of work done; balance, 35 days.

Second Ave. near Clement. Two-story frame; owner, Rose Hogan; architect, T. J. Welsh; contractor, Edw. Mooney; cost, $3,375; signed, Sept. 23; filed, Sept. 26; payments, $638, frame up; $638, brown mortar on; $638, plastered; $641, completed; $820, 35 days.

Seventh and Folsom. Painting, etc., of a two-story building; owner, Jennie W. Cushing; architect, A. W. Paffrath; contractors, Swan & Stein; cost, $1,450; signed, Sept. 24; filed, Sept. 26; payments, $250, interior primed and plastered; $800, completed; $406, 35 days.

Shotwell near Twenty-third. Onestory cottage; owner, Alice Meehan; architect, M. J. Welsh; contractor, Ivory Wells; cost, $2,450; signed, Sept. 1; filed, Sept. 15; payments, $642, frame up; $642, brown mortar on; $642, completed; $644, 35 days.

Stevenson near Ridley. Two-story frame; owner, Thos. Cryan; contractor, T. C. Cochrane; cost, $3,425; signed, Sept. 12; filed, Sept. 12; payments, $642, frame up; $642, brown mortar on; $642, outside mill work up; $642.75, completed; $856.25, 35 days.

Stewart near Mission. Brickwork, masonry, etc.; owner, P. M. Patridge; architect, D. E. Melliss; contractors, Ramsome & Cushing; cost, $5,300; signed, Sept. 1; filed, Sept. 16; payments, 1st day of each month, 75 per cent. as work progresses; balance, 35 days.

Stockton near Bush. Threestory frame; owners, J. C. & E. Coleman; architects, T. D. & J. J. Newsom; contractor, T. M. McFarchlan; cost, $7,795; signed, Sept. 1; filed, Sept. 2; payments, 1st and 15th day of each month, 75 per cent. of work done; balance, 35 days.

Stockton near Bush. Threestory building; owner, F. M. McFarchlan; architects, T. D. & J. J. Newsom; contractor, R. Ringrose; cost, $1,825; signed, Sept. 3; filed, Sept. 3; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Stockton and California. Plumbing; owner, Jos. Norris; architect, John Gash; contractor, John Doherty; cost, $1,150; signed, Sept. 3; filed, Sept. 13; payments, $200, 1st payment; $250, 2d; 250, 3rd; $250, 4th; $200, 35 days.

Steiner and Golden Gate Ave. Residence of 12 flats; owner, D. B. Jackson; architect, W. H. Armitage; contractor, H. Williamson; cost, $7,338; signed, Aug. 22; filed, Sept. 2; payments, $3,000, rough work done and sewers in; $2,388, completed; $2,000, 35 days.

Steiner and Golden Gate Ave. Millwork; owner, D. B. Jackson; architect, Wm. H. Armitage; contractor, Pacific Coast Lumber and Mill Co.; cost, $8,825; signed, Sept. 26; filed, Sept. 27; payments, 75 per cent. as work progresses; balance, 35 days.

Shotwell near 25th. Two-story frame and brick foundation; owner, C. Cooper; architect, M. J. Welsh; contractors, Douglass & O'Connor; cost, $3,475; signed, Sept. 7; filed, Sept. 7; payments, $868, frame up; $868, brown mortar on; $869, completed; $870, 35 days.

South Park, No. 38. To build; owner, J. N. Kellips; architect, J. M. Curtis; contractor, R. P. Sanches; cost, $3,485; signed, Sept. 6; filed, Sept. 7; payments, 1st and 15th day of each month 75 per cent. in four equal payments as work progresses and architects make estimates; 25 per cent., 35 days.

Sutter and Devisadero. Carpenter and brickwork; owner, B. Joseph; architect, Wm. H. Armitage; contractor, C. P. Barringer; cost, $3,700; signed, Sept. 21; filed, Sept. 24; payments, $925, frame up; $925, brown mortar on; $825, completed; $925, 35 days.

Taylor St. No. 110. Altering two-story frame; owner, Mrs. E. I. Mahony; architect, J. J. Clark; contractor, Jno. G. Adams; cost, $8,350; signed, Sept. 14; filed, Sept. 15; payments, $2,090, enclosed; $2,095 brown mortar on; $2,090, inside finish complete; $2,085, 35 days.

Twenty-seventh near Sanchez. One-story frame dwelling; owners, Chas. Le Baron and wife; architect, Jno. T. Kidd; contractor, Wm. Plant; cost, $1,584; signed, Sept. 17; filed, Sept. 24; payments, $500, frame up; $500, plastered; $585, 35 days.

Union and Devisadero. To build, two dwellings; owner, Mrs. Agnes Bridge; contractor, Jos. Norris; cost, $4,800; signed, Sept. 5; filed, Sept. 6; payments, $918.75, brick foundation in and rough frame up; $918.75, rustic and shingles on, floors laid, rough plumbing and gasfixtures in, lathed and chimneys built; $918.75, window and door frames set, plastered and outside painted; $918.75, completed; $1,225, 35 days.

Union and Mason. Three-story frame; owner, Albert Weibrli; architect, H. Geilfuss; contractor, A. Lawson; cost, $4,407; signed, Sept. 13; filed, Sept. 14; payments, $660, frame up; $660, building roofed, floored and partitions set; $660, brown mortar on; porches and yard work finished; $660, inside standing finish on; $660, completed; $1,107, 35 days.

Union near Taylor. Frame dwelling; owner, A. Chichizolo; architect, Wm. Mooser; contractor, H. J. Weiss; cost, $1,560; signed, Sept. 2; filed, Sept. 10; payments, $855, frame up; $855, enclosed and roof completed; $855, ready for plastering; $855, completed; $1,140, 35 days.

Vallejo and Franklin. Concrete, bulkhead, etc.; owner, Harriet G. Center; architects, Smith & Freeman; contractor, Carl Grise; cost, $1,475; signed, Sept. 1; filed, Sept. 7; payments, $600, bulkheads completed; $605, all work completed; $870, 35 days.

ALAMEDA COUNTY.

Barber Tract, Berkeley. To build; owner, Wm. H. Kerrison; contractor, F. E. Armstrong; cost, $2,500; signed, Sept. 28; filed, Sept. 29, payments, $625, enclosed; $625, brown mortar on; $625, completed; $625, 35 days.

Blake Tract, Berkeley. To build; owner, M. Richtu; contractor, Robert Sidel; cost, $2,245; signed, Sept. 20; filed, Sept. 20; payments, $545, enclosed; $400, brown mortar on; $400, completed; $500, 35 days.

Broadway near Western Ave., Oakland. One and one-half story cottage; owner; Marietta Boswell; contractor, Ira A. Aymar; cost, $1,800; signed, Sept. 12; filed, Sept. 13; payments, $250, frame up; $250, brown mortar on; $850, completed; $450, 35 days.

Central Ave. near Walnut, Alameda. To build; owner, J. Becanne; architect, C. S. Shauer; contractors, Engvevk & Myhre; cost, $1,330; signed, Sept. 5; filed, Sept. 6; payments, $332.50, raised, foundation in and rustic on; $332.50, bay window finished outside and rough plastering done; $332.50, completed; $332.50, 35 days.

Channing Way near Dana, Berkeley. Brickwork, excavations, etc.; owner, John Simonds; architect, Elmer Childs; contractor, Darius Christy; cost, $4,400; signed, Sept. 24; filed, Sept. 21; payments, $800, rough frame up; $1,200, exterior completed and brown mortar on; $1,300, completed; $1,100, 35 days.

Channing Way, near Dana, Berkeley. Two-story frame building; owner, J. A. Squire; contractor, Geo. A. Embury; cost, $2,700; signed, Sept. 9; filed, Sept. 10; payments, $675, frame up; $675, enclosed and brown mortar on; $675, completed; $675, 35 day.

Choate near Channing Way, Berkeley. owner, John Woolley, contractor, T. H. Gilbert; cost, $1,775; signed, Sept. 6; filed, Sept. 6; payments, $438.75, building up rustic and shingles on; $438.75 brown mortar on; $438.75 ready for painters; $437.75, all bills and receipts submitted, showing that all is done.

Clinton Ave. near Peru, Alameda. Two-story cottage; owners, Whitney Morrow; architects, J. C. & E. A. Mathews; contractor, H. E. Jones; cost, $3,190; signed, Sept. 1; filed, Sept. 6; payments, $800, frame up ready for enclosing; $1,120, enclosed, brown mortar on and outside painted; $972.50, completed; $797.50, 35 days.

Encinal Park Tract, Alameda. Frame dwelling; owner, Mary Maguire; architect, R. H. Daley; contractor, The Home Bldg. Co., cost, $2,370; signed, Sept. 1; filed, Sept. 14; payments, $400, frame up; $400, brown mortar on; $400, plastered; $570, completed; $600, 35 days.

Fourteenth Ave. and Broadway, Oakland. Decoration and frescoing theatre; owner, Jos. McDonough; architects, Mooser & Cuthbertson; contractors, Mortlie & Frizzine; cost, $5,000; signed, Sept. 6; filed, Sept. 17; payments, 75 per cent. as work progresses; balance, 35 days.

Grayes and Taylor Tract, Berkeley. Carpenter, plumbing, etc.; owner, George McKay; contractor, W. A. Young; cost, $1,665; signed, Sept. 20; filed, Sept. 20; payments, $400, frame up; $700, completed; $565, 35 days.

Grove near 22d, Oakland. To build; owners, Enterprise Hall Association; architect, A. Smith; contractors, Lake & Hope; cost, $4,930; signed, Sept. 8; filed, Sept. 10; payments, $1,232.75, building enclosed; $1,232.75, plastered, rough plumbing and gas-fitting in; $1,232.75, completed; $1,232.75, 35 days.

Haste near Fremont, Berkeley. Two-story dwelling; owner, Mrs. R. Beales; contractor, A. H. Broad; cost, $2,700; signed, Sept. 1; filed, Sept. 7; payments, $550, frame up and enclosed; $550, brown mortar on; $550, completed; $950, 35 days.

Helen near Peralta, Oakland. Brickwork, plastering, etc.; owners, Frederick Willie & wife; contractor, H. F. H. Brown; cost, $835; signed, Sept. 27; filed, Sept. 27; payments paid when house is completed.

Lather Tract, Lot 7, Alameda. Five-room cottage; owner, J. C. Curvey; contractor, J. H. Young; cost, $1,600; signed, Sept. 13; filed, Sept. 13; payments, $400, frame up; $400, rustic and roofon; $850, plastered; $850, 35 days.

Magee Tract, Lot 6, Block 14. To build; owner, Michael Heafey; contractor, T. A. Gilbert; cost, $1,600; signed, Sept. 27; filed, Sept. 27; payments, $400, rustic and shingles on; $400, brown mortar on; $400, ready for painters; $400, 35 days.

Monte Vissa Ave., Oakland. Grading, terracing, frescoing, etc.; owner, Harriet L. Hanly; architect, F. M. Cramer; contractor, Alex. Wahlstrom; cost, $3,565; signed, Sept. 23; filed, Sept. 24; payments, $891.25, building enclosed and cnimneys up, $891.25, brown mortar on; $891.25, completed; $891.25, 35 days.

Mozart and Santa Clara, Alameda. To build; owner, F. A. Koeitz; contractors, Marcuse & Remmel; cost, $2,400; signed, Sept. 16; filed, Sept. 12; payments, $600, frame up; $600, brown mortar on; $600, completed; $600, 35 days.

Myrtle near 10th, Oakland. Two-story frame bldg.; owner, F. H. Bruning; architect, Jas. McManus; contractor, P. J. Brophy; cost, $2,875; signed, Sept. 23; filed, Sept. 23; payments, $718, frame up and rustic on; $718, enclosed, frame set and brown mortar on; $718, completed; $724, 35 days.

Pto'n Blk., Lot 5, Oakland. Carpenter, mill work, etc.; owner, Ellen F. Ghirardelli; architect, Sam'l Newsom; contractor, Wm. Clark; cost, $1,400; signed, Aug. 19; filed, Sept. 2; payments, 1st and 15th of each month, 75 per cent. of work done; balance, 35 days.

Ray and Main Sts., Pleasanton. One-story frame bldg.; owner, Jacob Schnieder; contractor, J. L. Wellbye; cost, $1,020; signed, Sept. 3; filed, Sept. 6; payments, $200, frame erected; $300, completed; $200, 35 days.

Rowland Tract, Oakland. Two-story frame dwelling; owner, Frank Ficeman; contractor, C. E. Nichols; cost, $2,000; signed, Sept. 19; filed, Sept. 20; payments, $670, enclosed and roof on; $670, plastered; $660, 35 days.

Seventh and Magnolia, Oakland. One-story frame building; owner, B. Kreinborg; architect, Chas. Mau; contractors, Herbs & McLeod; cost, $1,500; signed, Sept. 22; filed, Sept. 22; payments, $575, ½ material furnished, ⅓ work completed; $575, ⅔ finished, ⅔ completed; $575, completed; $575, 35 days.

Seventh near Oak, Oakland. Two-story frame building; owner, Permelia E. Christy; architects, J. J. & T. D. Newsom; contractor, Chas. Christy; cost, $4,200; signed, Sept. 20; filed, Sept. 24; payments, $800, foundations in; chimney built and frame up; $1,400, enclosed and brown mortar on; $1,400, completed; $1,500, 35 days.

Telegraph and Caledonia Aves., Oakland. Church; owners, Bakewell & Sanborn; architect, W. H. Hamilton; contractor, F. C. Bigmani; cost, $6,025; for still; $1,500, frame up, rustic and shingles on; $1,600, floors laid, all finished and outside on; $1,000, completed; $1,425, 36 days.

Tenth Ave. near 20th, Oakland. To build; owner, F. A. Sellander; architects, Martens & Coffey; contractor, A. W. Cornelius; cost, $4,285; signed, Sept. 10; filed, Sept. 13; payments, $800, rough frame up; $800, outside finish on; $800, floors laid and partitions set; $800, plastered and outside primed; $815 completed; $1,070, 35 days.

Town of San Lorenzo. Plumbing, gas-fitting, painting, etc.; owner, H. B. Martin; architect, C. S. Shauer; contractor, Wm. Dahl; cost, $1,450; signed, Sept. 6; filed, Sept. 7; payments, the whole amount to be paid on 1st of July, 1893.

Twentieth near West, Oakland. To build; owner, John P. Timm; contractor, W. A. Griffith; cost, $2,000; signed, Aug. 20; filed, Sept. 6; payments, $500, bldg. up and enclosed: $500, plastered; $500, completed; $500, 35 days.

Twenty-second and Myrtle, Oakland. To build; owner, Geo. G. Baker; architect, R. Gray Frise; contractor, J. R. L. Jones; cost, $1,020; signed, Aug. 31; filed, Sept. 2; payments, $250, when bldg. roofed and enclosed; balance, 35 days.

Twenty-third Ave. near Twenty-first, Oakland. Two one-story frame dwellings; owner, Herman Drucker; architect, John Laughland; contractors, Macdonald & Coldwell; cost, $3,000; signed, Sept. 10; filed, Sept. 12; payments, $570, enclosed and roof on; $570, brown mortar on; $470, completed; $380, 35 days.

Twenth-third Ave. near Twenty-first, Oakland. One-story dwelling; owner, Herman Drucker; architect, John Laughlnd; contractors, MacDonald & Coldwell; cost, $1,720; signed, Sept. 10; filed, Sept. 12; payments, $425, enclosed and roof on; $425, brown mortar on; $425, completed; $445, 35 days.

CORNING, TEHAMA CO.

Corning, Tehama Co. Brick Store Building; owner, F. W. Clements; architect, W. J. Cuthbertson; contractor, Marshall of Chico; cost, $2,400.

The California Architect and Building News.

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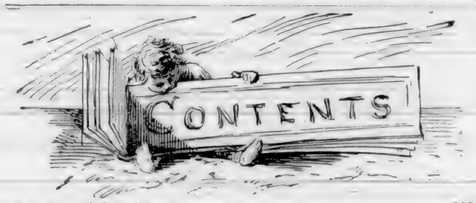

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FOR several months past a number of Architects have been occupied with the preparation of competitive designs for the New French Hospital which the French Benevolent Society proposes to erect.

Two prizes were offered, viz.:—$600 for the first and $400 for the second. The building must accomodate 150 patients and the cost not exceed $180,000.

A large number of plans were received and the committee awarded the first prize upon the plans submitted by William Mooser of San Francisco, and J. Goustiaux of Paris, and the second prize upon those by Emile Depierre.

The property has a frontage of 240 feet on Point Lobos Avenue and a depth of 600 feet. The general plan is upon the separate pavilion system which permits certain patients to be isolated from the other patients.

The December number of the CALIFORNIA ARCHITECT, will contain illustrations of the preliminary plans which were made by Messrs. Pissis & Moore for the guidance of the committee when formulating the rules of the competition, also the first and second prize designs, and such others as we shall be able to obtain, together with a more detailed account of the various designs submitted, and will form a special number devoted to hospital interests. We consider this an appropriate Christmas Souvenir for this enlightened age.

THE summer vacation for the Architects of this vicinity has passed and the members of the profession have settled down to the work of designing the proposed structures which are likely to commence in the spring.

The Chapter A. I. A. has already taken cognizance of some of the irregularities that have been forced into prominence, and many questions of importance have been discussed at their meetings.

The proposition of segregating and placing under separate contracts the different trades meets with some favor but is yet in abeyance.

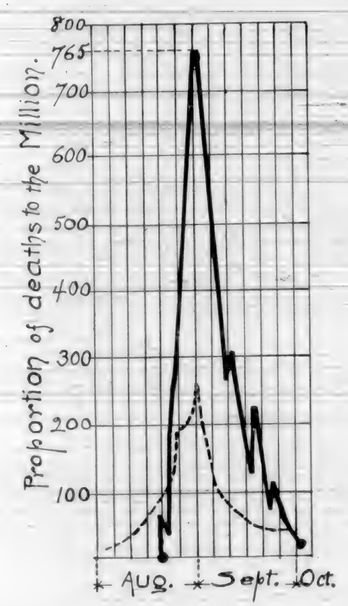
As regards the lien-law, the general opinion seems to be, that, as the lien-law is essentially between the owner and builder, the architect should not be expected to trouble himself about the matter if the owner does not care sufficiently to protect his own interests.

CHOLERA IN EUROPE.

THE United States has so far escaped from the Cholera epidemic which has prevailed so extensively in some of the countries of Europe. It appears that when once the germs of Cholera have been introduced in an insanitary locality it is impossible to say when and with what intensity the epidemic may retire.

The illustration shows the rise and fall of the death rate at Havre and Hamburg. The horizontal lines and figures at the side of the diagram indicate the death rate per one million inhabitants, and the spaces between the vertical lines represent five days each.

In Havre, the first deaths from Cholera occured July 5th, varying in intensity till August 31st, when it reached the proportion of two hundred and fifty deaths to the million (as



shown by the dotted line) then it dropped to the rate of fifty.

In Hamburg, it commenced on the 19th of August and reached the proportion of seven hundred and sixty-five on September 1st, when it receded to a proportion of ten by the end of September. This is shown by the heavy line in the illustration.

In Rouen the epidemic commenced in the later part of July and fluctuated between five and forty till September 20th and 30th, when it reached fifty and then nearly subsided on October 5th.

In Paris it commenced about June and was nearly ended by October 5th. Owing to the care in the sanitary condition of Paris the death rate did not exceed ten.

In Havre, out of the first fifty patients taken to the hospital, forty eight died. At one of the hospitals twelve cases of Cholera were contracted within the walls of the hospital from the cases admitted, when the Cholera patients were sent to another hospital where over one thousand cases were treated and not a single case of Cholera occured within its walls.

This hospital is built on the Tollet system, and consists of isolated pavilions in the shape of the gothic arch, devoid of angles, well ventilated, with light and air on all sides. The rate of mortality was much less in this hospital than the first one mentioned which is built on the block system, several stories in height.

The disinfecting is done by means of stoves, dry heat or steam being used for clothing, bedding, etc. The walls and furniture are sprayed with solution of mercury chloride. The walls are then scraped, scrubbed and whitewashed.

We are indebted to the *Lancet* for the notes for foregoing illustrations and descriptions.

ARCHITECTURAL EXHIBIT.

PAPER read before the San Francisco Chapter A. I. A. by the President, Mr. Geo. H. Sanders.

To the San Francisco Chapter of the A. I. A.

GENTLEMEN:—I beg respectfully to invite your attention to a subject which has already engaged it to a limited extent. I allude to the proposed architectural exhibition in which every branch of art employed in the production of architectural works would be included; and setting forth in practical shape the relationship of architecture thereto as the chief of all the arts.

With this done in an effective way, accompanied by drawings, plans, elevations and sections, and in some cases by details or art on exhibition, it is probable that we, ourselves, would be surprised at the extent and comprehensiveness of the exhibition.

To effect this in a proper manner, would, of course, involve a great deal of careful study, arrangement and expense. Much of the latter should be borne by the exhibitors. It would require a great deal of canvassing to get people to understand the advantage to them, and the bearing their exhibit would have on the whole.

It has occurred to me that if the material (of appropriate architectural character) which will be sent to the World's Fair, could be arranged in one exhibit, with the above in view, supplanted by drawings and other accessories, and such other art works of different kinds as may be procurable, it would seem that the best possible result, at the least possible cost, would be attained.

By judicious advertising a special audience could probably be secured and a series of papers might possibly be prepared and read on several occasions, explanatory of the exhibit, and this would bring out the connection of the exhibits and illustrate the value of architectural style, etc., and the method of its attainment, as well as the necessity existing for the organized effort in the direction of the establishment of art classes or an association which would have for its object the unification of art and the resultant advantages to be thereby attained; also by the organization of a proper school of design under the charge of the Chapter. Such a school would embrace the whole range of architectural design presided over by the professor of architecture attached to the Stanford or California Universities, should such a chair be created in the future. In this way, through the university extension system lately introduced in England, and later in America, and now proposed to be carried out by the University of California, a more or less efficiently conducted system of instruction could be inaugurated leading

to the widely beneficial results. The special classes would be attended by the apprentices and pupils of the different branches of the organization, who would, of course, attend the lectures of the university professor, as well as benefit by the special instruction of the teachers of the school in its subordinate branches. The expense would be partially borne by the pupils themselves, and partly by the contributions of the various departments of the school as a whole.

These would consist of—1st. The Architectural Students. 2d. Students of Decorative Design, Fresco Painters and Furniture, etc. 3rd. Carpenters. 4th. Brick and Terra Cotta Workers. 5th. Metal Workers. 6th. Carvers in Wood and Stone. 7th. Modelers and Plaster Works. 8th. Jewelers, Silver and Goldsmiths, and Engravers. 9th. Lithographers and Wood Cutters. 10th. Sculpture. 11th. Painting. 12th. Engraving, Photographic Work, etc.

In short, of all who would derive benefit, (and who would not) from a knowledge of the true principles of design in architecture.

It might possibly be argued that some of these had better be left to pursue their own course in freedom, evolving their own principles independent of all others and so in a special way working out their own salvation on their own lines, and, independent of all hampering knowledge of architectural taste, developing their own work in their own way.

But it must not be forgotten that Art is one and the one principle obtained in the crystallization of the snow-flake, the growth of the simplest as well as the most complex flower and in the structure of the most highly organized animal as well as in the most complex work of man. All the former, are governed, and the latter should be, by the same law of centralization and subordination of means to ends in the most direct and efficient as well as economical manner, and this, first and last, is Design.

But there is another consideration connected with the above scheme, which, if pursued with energy, might ultimate in the happiest results to architecture. Why could not such an exhibition through the media of the various chapters of the Institute, and by suggestion and example of the Institute itself be brought about at the coming Columbian Exhibition? Important as our own exhibit might be made here as evincing the progress attained in Design in this far-away margin of the Columbian continent, how much nobler a display could be made by a contribution of many such collections from the different states in the Union arranged on similar principles and associated in one great collection in their order of age and development in the greatest exposition of the Arts ever held on Earth?

If one thing more than another would be emphasized, it would be the need of controlling principles in design, and the predominance over all other influences of the Architectural Idea.

This would be seen to be all controlling and universal in everything connected with Art, and it would be at once seen how a beneficial and organized system of instruction and guidance under the above controlling influence would become and how indispensable it is that sooner or later such a system should be introduced.

It seems to me that the right course would have been to have drawn up a memorial to the Institute at its present convention suggesting some such course as is above advocated, even if it involved the construction by the Architects of an architectural exhibition building to receive the exhibits, if space could in no other way be secured.

It would appear from certain notices sent out to the different Chapters and perhaps to individual members of the Institute that in a modified way the above suggestion has already been arranged for, and that an exhibition hall and a collection of some sort has already been provided for.

It is not probable however, that if it is intended to cover anything like the wide extent of art work suggested above, and will, consequently fail in a corresponding degree to effect the desired result. GEO. H. SANDERS.

FIRE-PROOF HIGH BUILDINGS.

THE Fire Underwriters' Association of the Northwest held its twenty-third annual meeting in Chicago, Sept. 27th. Valuable papers and suggestions were presented and a full report of same published by the "*Indicator*," a journal devoted to insurance matters, and to which we are indebted for the following paper by D. J. Sweenie, Chief Marshall of the Chicago Fire Department.

HIGH BUILDINGS—THEIR INTERNAL AND EXTERNAL HAZARD FROM FIRE.

BY D. J. SWEENIE, OF CHICAGO.

To the Fire Underwriters' Association of the Northwest:

GENTLEMEN—So much has been said and so many conflicting opinions expressed through the medium of the daily press, both for and against the modern high building, for examples of which this city is pre-eminent and justly proud, that I fear it is impossible for me to say anything in reference to the internal and external fire hazard of such buildings with which you are not already familiar.

The massive appearance and architectural beauty of our high buildings excite the admiration and wonder of the beholder; but the fireman goes a step farther and takes into consideration the probable chances of such a building becoming a prey to the flames, either during construction or when completed.

When we realize that we have buildings in this city that tower to a height of from 150 to 300 feet, and that a fire is liable to occur in the topmost stories of such buildings, we are free to admit that we must depend to a great extent upon the skill and practical experience of the architect to assist the firemen in protecting them from destruction by fires, by designing and causing to be erected what we can reasonably regard as fire-proof structures. Not alone fire-proof within their four walls, but capable of withstanding the intense heat to which they might be subjected if a fire were raging in adjoining buildings.

Taking up first the internal hazard, this will be governed to a great extent by the use to which the building is to be put, whether for offices exclusively, for office and mercantile purposes combined, or exclusively for merchandise. The two last named classes may be disposed of once for all with the statement, that no style of construction and no building material have ever come under my observation which will render fire-proof a building filled with inflammable goods. In a building of the class under discussion, a fire in a room or floor filled with goods might, in a very short time, gain such headway as to seriously imperil the entire structure by the expansion, warping or twisting of the iron or steel frame-work, and with such a state of facts existing 150 or 300 feet above the ground, it would be next to impossible to do effective work. No building to be used in whole or in part for the storage or sale of merchandise should exceed, in any event, 125 feet in height, and might, with advantage, be much less.

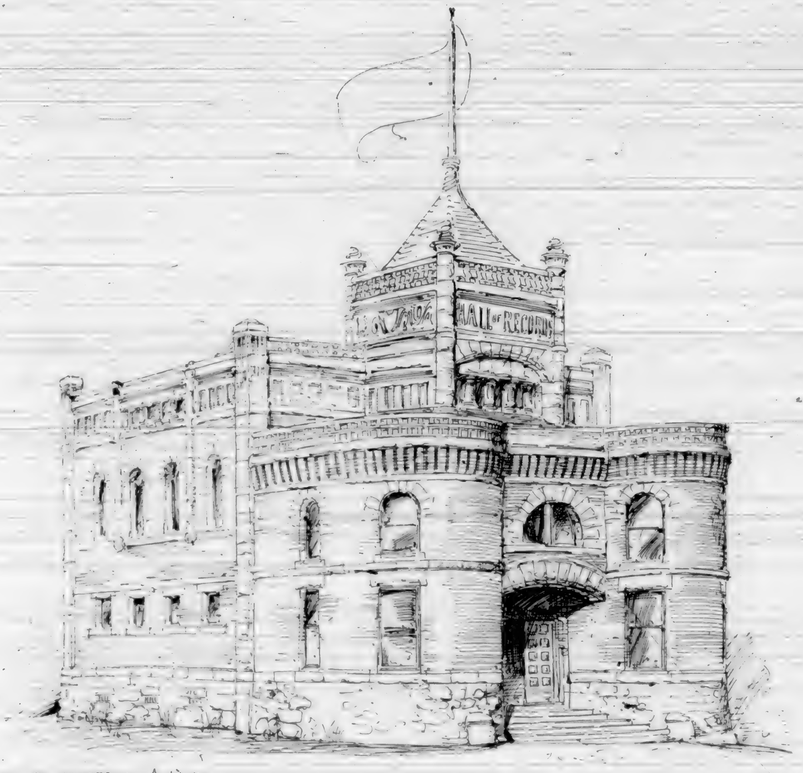
Assuming, then, that our building is to be used solely for offices, I am satisfied that from the point of view we are now discussing, the modern high building is to a reasonable degree fire-proof, where, both in the material used and in the construction, every precaution has been taken into consideration and faithfully carried out to prevent a fire gaining headway in any part of the building.

While such is the case, it does not follow that the greatest care and the utmost precaution should not at all times be exercised to prevent fire, and to promptly extinguish it, should one occur. Each additional tenant increases the hazard, for although the time-honored fire-place and stove have been replaced by steam and hot air, and the candle and kerosene

lamp are giving way to the electric light, the careless smoker and the friction match are still with us. The changes mentioned are not always, however, in the line of safety, for the electric wires require the most careful placing and attention to prevent their becoming a source of danger. As an instance of this:—wires are frequently conducted from floor to floor through a small shaft lined with wood, the wire being fastened to the sides. The danger of this is apparent when we consider that the insulating material used on electric wires, as well as the wooden lining of the shaft, are highly inflammable, and should a fire occur in a shaft of sufficient thickness of non-combustible and non-conductive material to prevent the possibility of its bending or expanding to any serious extent.

We may concede then, that buildings of the class under discussion are, so far as internal hazard is concerned, practically fire-proof. Let us now view them from the standpoint of the external hazard or, in other words, the danger from fire to which they may be subjected from the outside.

Many high buildings of the style now being constructed, have the steel columns supporting them encased in but four inches of brick or tile. In some cases, where there are



SKETCH FOR A HALL OF RECORDS.

this kind, it would be difficult to locate, and afford an excellent avenue for the spread of the flames. To meet this difficulty, I have instructed our inspectors to refuse certificates in all cases where shafts are lined with wood.

The sweepings and waste paper should at once be burned under the boiler or else carried out of the building, and not allowed, under any circumstances, to accumulate. I have in mind two calls on our department from one of the finest high office buildings of the city, and in each case the fire originated in the janitor's waste paper room in the attic.

Before leaving the question of internal hazard, I wish to call attention to the iron and steel universally used in buildings of this class. The iron columns and other metal frame work of the building should be covered at all points with a adjoining buildings, the party wall is used as far as it goes and the iron work placed directly against this wall. This affords practically no protection in case of a hot fire in an adjoining building, or even across the street or rear alley. Sufficient heat is liable to be generated to pass through the brick shell and cause the columns to expand sufficiently to displace the arches, one after another, and thus bring about a collapse of the building. In case the party wall gives way, the iron work is exposed directly to the flames with a like result.

As an illustration of this I may cite a fire which occurred in this city a year or two ago. A building of this description was being constructed and was up several stories, the iron work being directly against the party wall. The joists

of the adjoining building were fastened to the wall with the old style strap anchor, and a fire in the building caused them to fall, the wall went with them, leaving the iron of the new building exposed. The result was that the new frame was so badly twisted and warped as to be useless.

To quote from a recent article on the subject: "No tall building should be erected that does not make use of its own individual side walls, these walls being so constructed and tied to the beams that no falling beam can break them or cause them to fall. These dividing walls should be an absolute barrier against fire, and should not be made thin and weak.

"Architects should remember, that this class of buildings is only assailed by a conflagration, and nothing can withstand a conflagration so well as a standing brick wall. Many architects do not think it necessary to tie the beams to the wall, believing that the weight and friction are enough to hold the walls. This may be all right in ordinary cases, but in extraordinary cases, such as the occurrence of a fire, the walls should be held in position as long as possible."

I fully endorse this and desire in addition to call attention to what I believe a pernicious practice, namely, that of leaving a wall overlooking another building full of openings for windows. In case the lower building is destroyed by fire the heat and flames are almost certain to sweep through these openings into the higher structure with the probable result of destroying it also.

Assuming, then, that the necessity may at any time exist for fighting fire in one of these high buildings, the question presents itself: What preparation should be made on the part of the owners to meet the emergency?

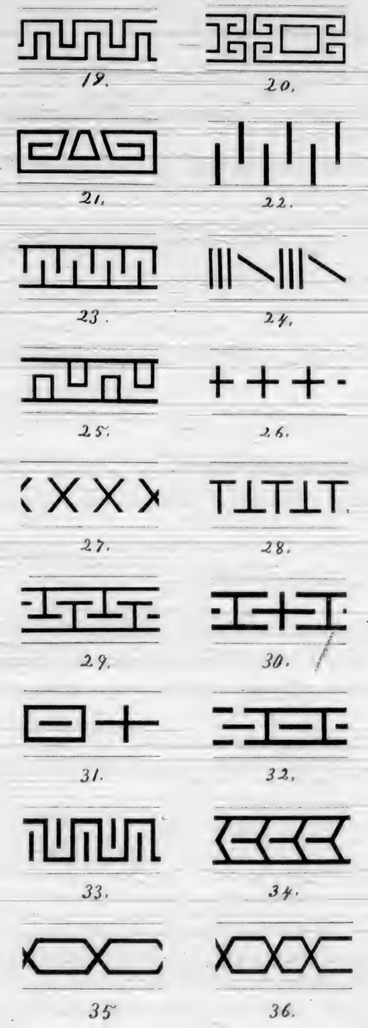
All buildings such as these have ample boiler capacity already at hand, and should be furnished with the necessary pumps to protect the building by providing, in case of fire, an abundant supply of water. There should be a stand pipe extending through the interior to the roof with hose attached on each floor sufficient to reach the most remote corner. Chemical extinguishers should be provided and kept in plain sight and ready for instant use. Each floor should have an electric call communicating with the engine room. All apparatus should be of the best make and provided with the most approved modern appliances. Hose should correspond in size with that used by the fire department, and couplings should have the same thread.

On exposed exteriors there should be lateral perforated pipes connected with a stand pipe, by means of which, in case of fire, a curtain of water could be spread over the sides of the building.

The custodian and his assistants should be thoroughly drilled in the use of the extinguishers and managing the hose and stand pipes. This drill should be frequent enough to keep them in practice, and every one connected with the care of the building should be impressed with the necessity of instantly notifying the fire department whenever a fire, even the most insignificant, occurs. I find on investigation that in nearly all of our high buildings there is no elevator service later than eleven o'clock at night. At least one elevator in a building should at all times be in service ready for instant use, and some one should be on hand to run it the moment the department arrives. Where the fireman has to climb 150 to 300 feet, carrying his appliances, to reach the fire, it is unreasonable to expect of him prompt and efficient work, to say nothing of the loss of time in reaching the field of action.

To sum up the whole matter the modern high building composed of steel or iron frame encased in brick or terra cotta, is as yet an untried experiment so far as its fire resisting qualities are concerned. There is good ground for the belief that a covering of considerably more than four inches would be necessary to protect the frame from a severe blaze continued for any great length of time; but with substantial, solid brick side walls capable of standing alone, and front and rear covering of sufficient thickness and properly anchored to resist the heat to which they are liable to be exposed, where precautions such as I have noted are taken for the protection of the interior, I think the modern high office building may be regarded as practically fire-proof.

FRETS showing examples from 1 to 18 were printed in the October issue and this number contains examples from 19 to 36. Other illustrations of these frets will appear in future numbers.



THE December Number of the California Architect and Building News, will be a Special Hospital Edition and will contain the three designs that were selected by the Committee from the large number submitted in the recent competition. The Journal will also contain other information relating to Hospitals and Hospital Construction. The price of this number will be fifty cents, but subscribers for the year 1893, whose names are sent in before January 1st, will receive this number free. Only a limited number will be printed, therefore names should be sent in early.

SANITATION "IN YE OLDEN TYME".

IN looking over a number of *Our Young Folks*, published in 1866, by Ticknor & Fields, we came across a description by F. W. Newcomb, showing how the plague was stayed in those days.

"One of the principal rites connected with St. John's Eve was the building of great bonfires, around which youths and maidens, gayly decked with wreaths, and bearing bouquets of flowers and sweet herbs in their hands, danced to merry measure. Then they all passed through the flame, leaving their garlands and flowers to be burned, and thereafter considered themselves safe from attacks of ague for the ensuing year. They also believed that, if they looked at the fire through the nosegays they carried, they would insure their eyes thereby from any painful disorder. In Ireland, within not many years now past, it was the custom to build these bonfires on commanding eminences, the heads of families passing through the midst with their households. This is supposed to have been a relic of the ancient worship of the sun, or of Bel (or Baal), the god of fire.

On the other hand, however, the observance is claimed as a tradition of early Christianity; the particulars (from an ancient missal) of the destruction of certain fiery dragons throwing some light upon the origin of the custom, and explaining the title of "bonfires," by which such festival illuminations are still known:—

"In worshyp of Saint Johan the people waked at home, and made three manner of fyres: one was clene bones and noo woode, and that is called a bone fyre; another is clene woode and no bones, and that is called a woode fyre, for people to sit and wake thereby; the third is made of wode and bones, and it is called Saynt Johanny's fyre. The first fyre, as a great clerke, Johan Belleth, telleth, he was in a certayne countrey, so in the countrey there was soo greate hete, the which causid that dragons to go togyther in tokenynge that Johan dyed in brennynge love and charyte to God and man. Then, as these dragons flewe in th' ayre, they shed down to that water froth of ther kynde, and so envenymed the waters and caused moch people for to take theyr deth thereby, and many dyverse syknesse. Wyse clerks knoweth well that dragons hate nothing more than the stenche of brennynge bones, and therefore they gadered as many as they mighte fynde, and brent them; and so, with the stenche thercof, they drove away the dragons, and so they were brought out of greete dysease."

It is a little curious to notice that in the pestilence that was believed to be stayed, as related above, by building bone fires, the cause was supposed to be poisoned water. I believe there is no case on record of the prevalence of the plague or the cholera among a very ignorant people, where the inhabitants were not possessed with the same idea, that the water had been poisoned. Sometimes hundreds of Jews fell victims to the delusion, sometimes hundreds of Christians; and once, in St. Petersburg, not very many years since, during a visitation of cholera, all the hospitals were broken open by the frantic Moujiks, who murdered the French physicians in attendance, under the belief that they had poisoned the wells to rid the city of its crowds of poor.

REMOVAL.—Mr. Fred. B. Wood, Architect, has removed his office to 214 Pine street, Room 57.

A table of lumber measure is convenient to have when making bills of quantities. In the table here given the length of the timber is set off in the upper line ranging from 12 to 30 ft., and the size is indicated in the left hand column. Thus a stick 6x6 in. and 26 ft. long contains 78 ft., board measure.

TABLE OF LUMBER MEASURE.

Size in Inches.	12	14	16	18	20	22	24	26	28	30
2x3	6	7	8	9	10	11	12	13	14	15
2x4	8	9	11	12	13	15	16	17	19	20
2x6	12	14	16	18	20	22	24	26	28	30
2x8	16	19	21	24	27	29	32	35	37	40
2x10	20	23	27	30	33	37	40	43	47	50
2x12	24	28	32	36	40	44	48	52	56	60
2x14	28	33	37	42	47	51	56	61	65	70
3x4	12	14	16	18	20	22	24	26	28	30
3x6	18	21	24	27	30	33	36	39	42	45
3x8	24	28	32	36	40	44	48	52	56	60
3x10	30	35	40	45	50	55	60	65	70	75
3x12	36	42	48	54	60	66	72	78	84	90
3x14	42	49	56	63	70	77	84	91	98	105
4x4	16	19	21	24	27	29	32	35	37	40
4x6	24	28	32	36	40	44	48	52	56	60
4x8	32	37	43	48	53	59	64	69	75	80
4x10	40	47	53	60	67	73	80	87	93	100
4x12	48	56	64	72	80	88	96	104	112	120
6x6	36	42	48	54	60	66	72	78	84	90
6x8	48	56	64	72	80	88	96	104	112	120
6x10	60	70	80	90	100	110	120	130	140	150
6x12	72	84	96	108	120	132	144	156	168	180
8x8	64	75	85	96	107	117	128	139	149	160
8x10	80	93	107	120	133	147	160	173	187	200
8x12	96	112	128	144	160	176	192	208	224	240
10x10	100	117	133	150	167	183	200	217	233	250
10x12	120	140	160	180	200	220	240	260	280	300
12x12	144	168	192	216	240	264	288	312	336	360
12x14	168	196	224	252	280	308	336	364	392	420
14x14	196	229	261	294	327	359	392	425	457	490

THE largest known deposite of iron ore is situated in Durango, Mexico, and yields sixty-five per cent of iron. This iron mountain has been recently purchased by C. P. Huntington, President of the Southern Pacific Railroad Co. The mine has been worked to a limited extent for over a hundred years. Mr. Huntington has in view the erection of the largest iron works in the world and the supplying of the markets of the Pacific Slope, Mexico, South America, Australia and other countries bordering on the Pacific Ocean. The railroad is already extended so as to tap this deposite and it will be but a short time before our market will be supplied from this source.

INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

TRINITY-PRESBYTERIAN-CHURCH
CAPP & TWENTY-THIRD STS - S.F.
PERCY & HAMILTON - ARCHITECTS

BRITTON & REY PHOTO. LITH.

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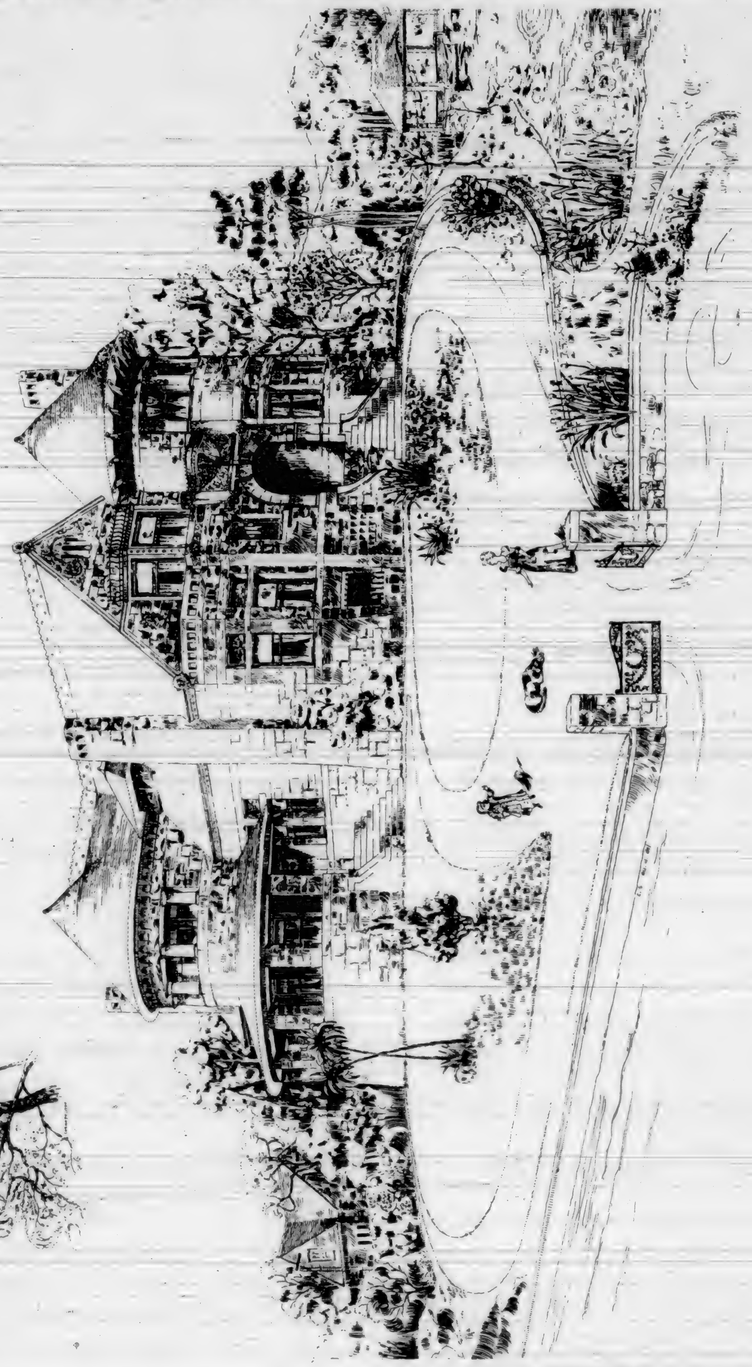
SAN FRANCISCO, CAL.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

"Idle Wild"
Gilchrist Surain - 92



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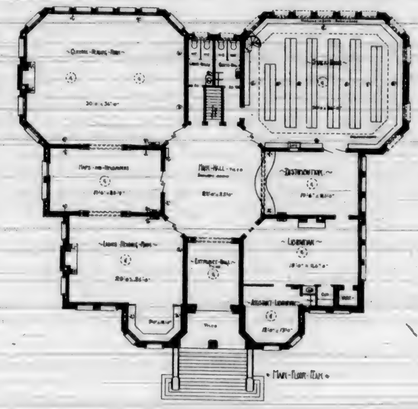

A. A. SKETCH CLUB
SUBMITTED BY "STONE"
C. A. MEUSSDORFFER.

BRITTON & REY PHOTO. LITH.

DESIGN FOR COUNTRY LIBRARY.

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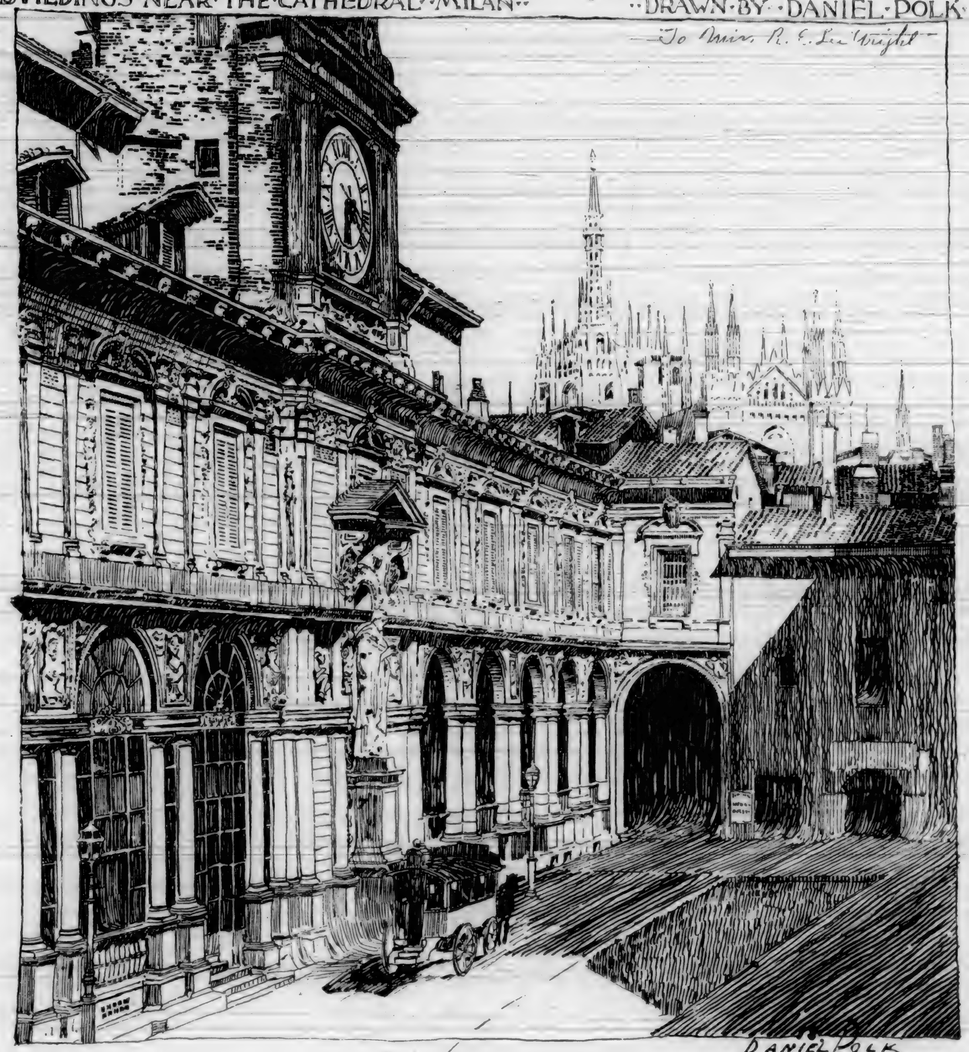
INSTITUTE OF BRITISH ARCHITECTS
MDCCC XXXIX

·BVILDINGS·NEAR·THE·CATHEDRAL··MILAN·· ··DRAWN·BY··DANIEL·POLK·

To Mrs. R. E. Lee Wright



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SAN FRANCISCO, CAL.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. OLIVER EVERETT, Vice-Pres.
H. T. BESTOR, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects was held the 11th inst. at their rooms, 408 California street.

The question inaugurating a more concentrated action of the members of the Chapter looking towards the advancement of architectural influence in this city and throughout the Coast, was discussed at length and laid over for future action.

Nominations of members were made for election at the next meeting to fill the offices for the ensuing year.

The proposition of purchasing some books offered to the Chapter was referred to the committee on "Students' Classes."

The committee on "Students' Classes," made the following report:

To the Officers and Members of the San Francisco Chapter of the A. I. A.

GENTLEMEN:—The committee to whom was referred the students' competitive designs for a Country Library makes the following report:—

No. 1. The design by C. A. Meussdorffer as being first in merit. The drawing shows study and good workmanship. The plan, in general, is cut up into too many small rooms. The entrance and vestibule leading directly into the library are well arranged.

No 2. The design by Lewis Hobart comes next in merit. The plan partakes more of the character of a library. The vestibule has the main entrance directly into the library. The book cases and the ante-rooms are conveniently arranged. The exterior shows originality but some defects, viz.:—the window space is deficient for lighting the rooms. The lower portion would show an improvement if the water-table or string-course had been placed at the height of the cornice of vestibule and annexes so as to form a continuous tie.

No. 3. The design by Henry N. Meyers shows the plan as cut up into too many small rooms and the turn to the left after entering the vestibule in order to reach the library room detracts from its good features. The exterior shows study in the design and the lighting is good. The drawing is well executed.

No. 4. This design by Emil Blanckenburg shows a two-story building arranged for a street facade. The plan shows too many small rooms but the main entrance leads to the library which is commendable. The library is arranged in two stories, the upper story forming a balcony around the main room. The small stairs in the room leading to the balcony would be a convenient arrangement for the attendants, but the principal stairway which is placed outside the main hall seems unusually large for the rooms on the upper floor.

Your committee would suggest that the competitions of the "Students' Club" should be conducted under certain defined rules, and that the instructions should be explicit and should state the limits of cost or size in some way, and if a church, the denomination or form of worship should be given in order that the Judges may have a clear idea of the *motif* before deciding on the merits of the different designs submitted.

All of which are respectfully submitted by

ALBERT PISSIS,
OLIVER EVERETT,
W. J. CUTHBERTSON,
H. T. BESTOR,
COMMITTEE.

The question of separating the Plasterers' contracts from the general contract was referred to a committee.

Upon request of the California Electrical Society, a committee was appointed to confer with a like committee from that society, with a view to the adoption of some system that will tend to improve the quality and character of electrical works in buildings, thereby reducing the fire risks.

The President of the Chapter, Mr. Geo. H. Sanders, presented a paper relating to architecture taking the lead in art work. This paper will be found in full on another page.

Mr. Sanders read the following paper on a system for the studies to be taken by the Class of Students, which was ordered printed and the members requested to give the subject the consideration necessary for the discussion set for the next meeting.

To the San Francisco Chapter A. I. A.

GENTLEMEN:—With reference to the recommendations which were adopted by the Chapter in regard to the awards of Bronze, Silver and Gold Medals to students, draughtsmen and assistants belonging to the Chapter classes, respectively, it seems necessary to adopt some additional regulations for the coming year to the end that a scheme of consistent studies and competitive exhibits should be arranged, so that the students may be enabled to follow the same in such order as shall enable the Chapter to award the said medals intelligently, and so as to be productive of the best results to the students themselves. To this end the following curriculum of studies, subjects of competition and text books are submitted for your approval.

FIRST.

FOR BRONZE MEDALS (TO STUDENTS).—TECHNIC PERIOD.

A—TECHNIC. The best exhibit of practical geometry, arithmetic and algebra, (neatly executed examples inscribed in a book) together with principles of surveying and leveling.

B—ÆSTHETIC. Examples of the Greek and Roman Orders with diagrams showing entasis, volutes and mouldings.

C—PHONETIC. Free-hand studies (flat) in charcoal, crayon or monocrome aqua-tint, together with sketches of natural foliage.

D—Books to be studied, Pugin's Principles, Nicholson's Architecture, or similar elemental works.

SECOND.

FOR SILVER MEDALS (AWARDED TO DRAUGHTSMEN). ÆSTHETIC PERIOD.

A—TECHNIC. The best exhibit of applied mathematics as indicated in problems of strength of materials, systems of framing, girders, columns, piers, foundations, graphic strains, etc.

B—ÆSTHETIC. Examples of the styles, specimens of detail (Gothic and Classic) together with other styles and

national peculiarities of style. Free-hand drawings from models, pen and ink copies of drawings, and studies in tint and line. Competition designs of architectural detail. Doors, windows, chimneys, dormers, arcades, fountains, niches, statues and architectural ornaments, cottages, lodges and summer houses.

C—PHONETIC. Modeling, carving (copies). Studies of foliage (original).

D—BOOKS. Guilt, Seven Lamps and other similar books.

THIRD.

—COLD MEDAL. (ASSISTANTS). PHONETIC PERIOD.

A—TECHNIC. Details of construction in stone, marble, brick, iron, wood and metal.

B—ESTHETIC. Original designs for ornamental work in various styles, in monocrome, polycrome and pen and ink. Competition designs for halls, chambers, residences, hotels and institutions.

C—PHONETIC. Original models, statuary, original carving, metal work, essays, etc.

D—BOOKS. Fergusson, Stones of Venice, Violet le Duc, Discourses and other books of that character.

The above is suggested as a statement of the average result to be placed within the reach of every student of a five years' course of study, with the average opportunities offered in most offices of fair practice, and it is thought would have the effect of directing the students' attention to works within their capacity, and commensurate with the experience attained by them at the respective periods above indicated. It would seem that such a scheme would economize effort by avoiding ambitious attempts beyond their power at given periods, and would have the effect of leading them, step by step, into the higher realms of architectural design, in a systematic way, instead of fostering vanity at the expense of their intellect and understanding, by premature development on wrong lines, at the same time affording to each student absolute freedom of action, from first to last. —

GEO. H. SANDERS.

THE FORTNIGHTLY REVIEW for October contains an article on the "Trend of Trade Unionism" by H. W. Massingham, a chapter on "Raphael" by Walter Pater, and other articles on various subjects.

LIPPINCOTT'S for November has some interesting chapters on "Form in Driving," "Men of the Day," besides the stories and reviews.

DIE RENAISSANCE-ARCHITEKTUR ITALIENS. Aufrissé, Durchschnitte und Details in 135 lithographirten tafeln. Aufgenommen und mit Erlauterndem Texte Herausgegeben von Fr. Peyer Im Hof, Architekt. Erste Sammlung, Leipzig 1870, Verlag Von E. A. Seemann.

The text of this work is in German, and is illustrated with 135 finely etched line engravings, printed on heavy paper, of the most noted examples of Italian Renaissance. It is a work that when seen will be sure of a purchaser, and we know of no other book so fully worth the price to the student of Architecture as this one. Size 6x9 inches and ¾ of an inch in thickness. Price $3.00. For sale by Messrs. Osborn & Alexander, 401 Market street, San Francisco, Cal.

The following books have been received too late for full reviews in this issue, but we shall give more extended notices in future numbers.

"A Manual of Industrial Drawing for Carpenters," William T. Comstock, N. Y., publisher.

"The Steam Engine," "The Drainage of Habitable Buildings," "Electric Lighting Specifications," "Electrical Dictionary." All of which are for sale by Messrs. Osborn & Alexander, 401 Market Street, San Francisco, Cal. They will also have for sale next week an English edition of "Vignola."

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE design "IDLE WILD" is a sketch by Mr. Clarkson Swain for a residence to be erected in the suburbs of this city.

THE illustration of a Library for a country town shows the design submitted by Mr. C. A. Meussdorffer which received the first mention in the recent competition of the Sketch Club of the San Francisco Chapter A. I. A., the report of which will be found on another page.

THE design for Trinity Presbyterian Church recently erected on the corner of Twenty-Third and Capp streets, is by Messrs. Percy & Hamilton, Architects. The basement is built of buff-colored cement bricks with sand stone trimmings; and above this the building is constructed of frame work, the exterior being shingled. The roof timbers are finished to show the construction. The basement contains the Sunday school rooms and parlors, and the auditorium is over them.

THE sketch of the buildings near the Cathedral in Milan is by Mr. Daniel Polk. The view is taken from the south-east and shows one of the purest examples of Italian Renaissance outside of Florence.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

A MECHANICS' LIEN.

WE are indebted to the *Sacramento Weekly Union* for the following:

The decision of the Supreme Court in the case of George Slight vs. G. S. Patton et al., respondents, was filed in Deputy Clerk Govan's office yesterday.

The action was brought in Tulare County to enforce a mechanics' lien. A general demurrer to the complaint was sustained, and plaintiff having declined to amend his complaint, judgment was rendered in favor of defendants. The plaintiff appealed from the judgment-roll and contended that the court erred in sustaining the demurrer to his complaint.

The complaint shows that plaintiff was a sub-contractor, with Thompson and Gamble, who were the original contractors with the defendant, Patton, to build and paint for the latter, on his land, a house and barn, and certain other structures; to furnish all the materials therefor for the gross sum of $5,775, payable on the completion and acceptance of said buildings and structures or within ten days thereafter; that no part of this original contract price was made payable thirty-five days after the completion of the contract; that the work was commenced by the original contractors on or about the 20th day of July, 1889, and completed November 20, 1889; and that neither said original contract, nor any note or memorandum thereof, was ever filed in the office of the Recorder of the county in which said structures were to be built.

Plaintiff further averred that, after the original contractors had commenced the erection of said buildings (on or about August 30, 1889,) plaintiff entered into a contract with them whereby it was agreed that he should do all the painting of said buildings and furnish all the materials therefor, according to the plans and specifications, for the sum of $541.70, to be paid within a reasonable time after the completion of such painting; and that plaintiff duly performed his contract with the original contractors to paint said buildings, and completed the same on the 20th day of November, 1889, on which day the buildings were completed.

The complaint then proceeds to state the filing and recording of plaintiff's notice of lien within thirty days after the completion of said buildings, a copy of which notice is exhibited as a part of the complaint.

The Supreme Court, in considering the objections to the complaint, goes into a particular statement of the portions of it alleged to be insufficient, at great length, and they reversed the judgment and remanded the cause, with instructions to the lower court to overrule the demurrer and proceed in the cause.

CONTRACTORS AS TRESPASSERS.—By exceeding the conditions of an agreement permitting building contractors in erecting a building on an adjoining lot, to enter a person's premises to shore it up, the contractors thereby become trespassers. The damages in such case include loss of profits sustained on account of the contractors' unlawful acts.

Capel v. Lyons, City Court of N. Y., 20 N. Y. Sup. 49.

LIABILITY OF EMPLOYER OF CONTRACTOR.—Where a person owning a lot adjoining another, contracts with a blaster to excavate rock on his premises that forms part of the stratum on which the adjoining house rests, and cannot be blasted without injury to that building, he is not excused by that contract, from responsibility for injuries to that house resulting from blasting the rock, since the act itself, and not the manner of doing it, is wrongful, and he may be enjoined from continuing the excavation in that manner.

Brennan v. Schrolner, Superior Court of New York, 29 N. Y. Sup. 130, 87.

LIEN FOR BUILDING ERECTED BY PURCHASER UNDER CONTRACT.—Where a land-owner entered into contract for the sale of property which was afterwards forfeited for the default of the purchaser, and in the meantime the latter had gone into possession, and erected a house on the land, certain parties furnishing to him materials and labor therefor, on account of which they sought to subject the estate of the land-owner to liens, the contract for the sale of the land making no provision for the construction of buildings except (in substance) that all improvements that might be made should become the property of the vendor, this last mentioned clause added nothing to the legal effect of the contract and the case came under the provision of the Minnesota Statute subjecting the estate of a land-owner to lien for improvements made by others with his knowledge unless he shall give the notice of his want of consent as therein prescribed, which also casts upon the land-owner the burden of excusing his default to comply with the law.

Wheaton v. Berg, Supreme Court of Minnesota, 52 N. W. Rep. 926, 170.

NO LIEN FOR MATERIALS FURNISHED CONTRACTOR.—The statute of Washington providing that every person furnishing materials to be used in the construction of any building shall have a lien therefor, whether furnished at the instance of the owner of the building or his agent, a mechanic's lien cannot be maintained against the owner of a building for materials furnished in its construction that were furnished the contractor in his own name, when the material man had no knowledge of any contract relations existing between the contractor and the owner, nor of the particular building to be constructed, but intended to hold whatever building the materials used in, as security.

Whittier v. Puget Sound Loan, Trust and Banking Co., Supreme Court of Washington, 30 Pac. Rep. 1094, 104.

PAYMENTS WITHOUT CONSENT OF SURETY INVALIDATE CONTRACTOR'S BOND.—A contractor entered into a written agreement with the owner to furnish all materials, and erect for him a building in accordance with certain plans and specifications, and deliver the same free from all liens for labor or material; and the contract further provided that the contractor was to receive therefor a stipulated sum, payable as the work progressed on the estimates of the architect, less 15 per cent, which was to be retained by the owner until the expiration of 90 days from the completion of the work, and then was payable only in the event that there were no liens upon the property for labor or materials supplied through the contractor. A bond was given by the contractor, with sureties, to complete the building according to the contract, and turn the same over to the owner discharged of all liens. Payments in excess of the 85 per cent provided by the contract, were made to the contractor without the consent of the sureties, during the progress of the work, without estimates of the architect. These payments excused the sureties from liability, as it deprived them of the protection of the reserved 15 per cent to which they were entitled.

Bell v. Paul, Supreme Court of Nebraska, 52 N. E. Rep. 1110, 196.

BUSINESS MOSAICS.

The December Number of the CALIFORNIA ARCHITECT AND BUILDING NEWS will be an extra hospital edition. Price fifty cents and free to new subscribers for 1893.

The Hercules Gas or Gasoline Engines have so many excellent qualities that they have given satisfaction wherever used. One of these machines can be made to run an electric plant for lighting shops or factories and as a cheap way of applying power for a great variety of uses. Messrs. Palmer & Rey of this city are the agents.

The California Architect AND BUILDING NEWS is desirous of having active agents in every city and town. Those wishing to act for us will please address this office.

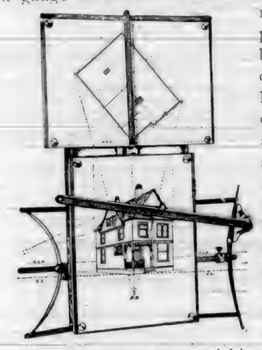
The new catalogue of Messrs. Gladding, McBean & Co., of 1358–1360 Market street, shows some new designs for ornamental terra-cotta tiles, and their improved hollow tile partitions and arches. This firm is one of the few that has kept ahead of the times and was prepared to execute new designs from Architectural drawings.

The Graphite productions of the Jos. Dixon Crucible Co. have steadily advanced and are now far ahead of all others in that line. The manufactures of this company have withstood the test of time and gained in popularity wherever used.

Their list of preparations comprises more than seventy-four articles prepared for special uses. A small can of graphite grease may be readily handled and is of great use to tip on the ends of screws as it lubricates them so that they can be easily set up, and prevents them from rusting; consequently they may be withdrawn without tearing the heads. Dixon's Graphite Paint has no superior for the preservation of metal work where a dark color is permissible.

Perspective drawings and the appliances for simplifying the making of them have been the subject of much thought. Many methods have been tried, but the machine herein shown seems to include so many advantages to the draughtsman that we give a detailed description of its construction.

The frame is of wood and carries metal arms upon which slide grooved guides. To these guides are fastened steel springs which can be set to any desired radius by means of a gauge on the center arms. The center of said curve or radius will be the vanishing points of the perspective to be drawn. By placing a common T square with the head on the outside of the curve or arc, with the blade across the board, it will be seen that when the blade stands horizontally across the board, the true horizon lines will appear, while if moved above or below this point, a line drawn along the blade will be at an angle to the horizontal, but always directly toward the center of radius or vanishing points. (See fig. 1 and 2.) These curves can be set so the centers will be any desired distance from 100 to 10,000 ft. from center of board or picture plane line. The point of sight is obtained in the same manner as horizontal vanishing points, (see fig. 4) and by means of a pin connection with point of sight rule and T square at the picture plane line any point on the plan can be transferred to the perspective without drawing any lines toward the point of sight or taking any measurements at the picture plane line. By placing the hole in the end of the T square over the pin in the point of sight rule, and the head of the T against the bottom of the board (as in fig. 3) and moving the square to the left, the point of sight rule will move with it, and by stopping at any desired point on the plan, the corresponding point on the perspective will be shown at the edge of the T square, which when used in this connection always remains perpendicular. While the point of sight rule always points toward the center of the arc which carries it, (See fig. 4.) or toward the point of sight. By this means the points on the plan are transferred to the perspective direct and saves a multitude of lines, erasures and measurements, thereby saving much time in making true perspectives.



The Kieckhefer Elevators are gaining in favor with those who desire a superior article in this line. Architects and persons interested and who have not yet decided, will, in about two weeks, be able to inspect the Hydraulic High-Speed Elevator having all the latest improvements and which is being put into the new "Examiner Building" in course of erection on Mission street, near Third street in this city. When carefully examined its adoption is sure to follow.

Mr. Chas. A. Hare, the Agent for the Celebrated Gardner Sash Balance, is having printed a handy reference card containing the table for lumber measure shown on page 126.

These cards may be had free upon application at Pier 5, Steuart street, San Francisco.

The superiority of their goods is so well known, that when the J. L. Mott Iron Works is mentioned, no one challenges the quality.

J. L. Cahill, Painter and Decorator has removed from 932 Mission street to 107 Sixth street near Mission, where he has increased facilities for his business which had outgrown the old stand.

Sheet metal work for cornices, ornaments, roofs, etc., from the establishment of Wm. Cronan, 1213-1215 Market street, stand unrivaled. The best approved machines are here used for bending and joining the ornamental projecting finish on the exteriors of buildings.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., November 3rd, 1892. Sealed proposals will be received at this office until 2 o'clock P. M. on the 1st day of December, 1892, and opened immediately thereafter, for all the labor and materials required for the trench excavation, foundations, cut stone and brick work of the basement and area walls, basement columns, first floor beams, etc., for the U. S. Post Office Building at Burlington, Iowa, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Burlington, Iowa.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for the Trench Excavation, Foundations, Cut Stone and Brick Work of Basement and Area Walls, etc, for the U. S. Post Office Building at Burlington, Iowa," and addressed to,

W. J. Edbrooke,
Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., November 3rd, 1892. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 30th day of November, 1892, and opened immediately thereafter, for all the labor and materials required for the trench excavation, foundations, cut stone work and brick work, iron and wood floor, ceiling and roof construction, roof covering, etc., for the U. S. Post Office Building at Fremont, Nebraska, in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Fremont, Nebraska.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Trench Excavation, Foundations, Cut Stone and Brick Work, Iron and Wood Floor, Ceiling and Roof Construction, Roof Covering, etc., for the U. S. Post Office Building at Fremont, Nebraska," and addressed to,

W. J. Edbrooke.
Supervising Architect.

CITY BUILDING NEWS.

Adair near Howard. Two-story frame; owner, C. B. Randall; contractor, C. R. Randall; cost, $3,400; signed, Oct. 25; filed, Oct. 26; payments, $850, roof on; $850, brown mortar on; $850, completed; $850, 35 days.

Bay near Kearney. One-story frame, two stores; owner, Geo. Leviston; architect, P. R. Schmidt; contractor, Jas. Cochrane; cost, $1,900; signed, Oct. 29; filed, Nov. 2; payments, $500, roof on inside ready for plaster; $500, plastered; $100, completed; $500, 35 days.

Beaver near Castro. One-story frame; owner, Sylvester Doan; contractor, W. W. Redhall; cost, $1,977; signed, Oct. 5; filed, Oct. 6; payments, $495, enclosed; $494, brown mortar on; $491, completed; $494, 35 days.

Bryant near Butte. Alterations and additions; owner, Mary Fitzgerald; architect, M. J. Welsh; contractor, Arthur & Lafayette; cost, $1,470; signed, Oct. 7; filed, Oct. 7; payments, $367.50, frame up; $367.50, brown mortar on; $367.50, completed; $367.50, 35 days.

Bush near Broderick. To build; owner, Nicholas Hattna; architect, Harold D. Mitchell; contractor, John Strand; cost, $3,100; signed, Oct. 7; filed, Oct. 15; payments, $900, frame up; $600, house mortar on; $600, standing finish on; $625, completed; $775, 35 days.

Bush near Powell. To build; owner, Mary F. Ryer; architect, W. H. Lillie; contractor, Jos. Kennedy; cost, $18,804; signed, Nov. 2; filed, Nov. 3; payments, $1,503, old building torn down and foundation of new one in; $2,520, frame up; $2,520, enclosed; $2,520, brown mortar on; $2,520, standing finish on, $2,520, completed; $4,701.35 days.

Bush near Powell. Grading; owner, Thos. Madigan; contractors, Belyea & Rogers; cost, $2,100; signed, Sept. 29; filed, Oct. 12; payments, $2,100, completed.

Butte and Minnesota. Two-story flat; owner, Patrick Cronan; architect, W. C. Dickerson; contractor, Miron & Gardner; cost, $3,835; signed, Oct. 10; filed, Oct. 11; payments, $950, framed; $950, roof and brown mortar on; $950, completed; $985, 35 days.

Butte near Mississippi. To build; owner, John Parnell; contractors, Seiter & Stevens; cost, $1,280; signed, Oct. 18; filed, Oct. 20; payments, $320, enclosed; $320, brown mortar on; $320, completed; $320, 35 days.

California and Stockton. Lathing and plastering; owner, J. J. Wyatt; architect, John Gash; contractor, Joseph Morris; cost, $1,200; signed, Oct. 27; filed, Oct. 28; payments, $600, brown mortar on; $100, cornices stuck; $300, one house finished; $150, 2d house finished; $150, completed; $300, 35 days.

Clay and Powell. Three-story frame; owner, Wm. Daegener; architects, Kenitzer & Kollofrath; contractors, Schutt & Kreeker; cost, $12,000; signed, Nov. 1; filed, Nov. 3; payments, $2,500, frame up; $3,000, brown mortar on; $3,000, ready for paint; $500, completed; $3,000, 35 days.

Clay near Powell. Alterations and additions; owner, Gianvito Tocconi; contractor, Luigi Franconi; cost, $2,000; signed, Nov. 2; filed; Nov. 3; payments $675, 1st floor joists and studding set; $375, completed; $375, brown mortar on $375, completed; $360, 35 days.

Clay and Webster. Grading and filling in; owner, Dr. L. C. Lane; architects, Wright & Sanders; contractor, J. G. Conroy; cost, $3,000; signed, Oct. 15; filed, Oct. 18; payments, 1st Saturday of each month 75 per cent. as work progresses; balance, 35 days.

Clayton near Oak. Two-story frame; owner, Ferdinand Frowman; contractors, Soule & Hoadley, cost, $6,000; signed, Oct. 17; filed, Oct. 18; payments, $1,125, frame up; $1,125, enclosed; $1,125, plastered; $1,125, completed; $1,500, 35 days.

Clement near 3rd Ave. Two-story frame; owner, F. T. Newsbury; architects, Colley & Lemme; contractors, Constable & Hamilton; cost, $3,647; signed, Sept. 30; filed, Oct. 3; payments, $945, enclosed; $945, plastered; $945, accepted; $812, 35 days.

Clementina near 3rd. Frame building; owner, R. M. de Larronda; architect, J. Ahlbach; contractor, Henry Munster; cost, $5,000; signed, Oct. 11; filed, Oct. 12; payments, $1,250; enclosed; $1,250, brown mortar on; $1,250, completed.

Columbia near 26th. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; cost, $190; signed, Oct. 19; filed, Oct. 20; payments, $190, completed.

Davisadero and Golden Gate Ave. Frame building of eight rooms; owner, Andrew J. Ralston; architects, B. McDougall & Son; contractor, Jno. H. McKay; cost, $4,165; signed, Oct. 14; filed, Oct. 15; payments, $500, 1st tier of joists in; $800, enclosed and rough plumbing in; $800, brown mortar on; $1,023.75, plastered and completed; $1,041.25, 35 days.

Dolores near 16th. Two-story frame; owner, L. J. Ruffino; architect, C. I. Devlin; contractor, T. R. Bassett; cost, $3,762; signed, Oct. 20; filed, Oct. 20; payments, $550, frame up; $600, ready for lathing; $800, extra mill work complete; $800, ready for paint; $870, completed; $942.50; 35 days.

Dorland near Church. Two-story frame; owner, J. B. Knudson; contractor, J. L. Binet; cost, $1,090; signed, Oct. 20; filed, Oct. 20; payments, $400, enclosed; $115, completed; $271, 35 days.

Douglass St. One-story cottage; owner, Mary Wall; contractor, Wm. & H. Plaut; cost, $1,160; signed, Oct. 13; filed, Oct. 18; payments, $600, frame up; $500, carpenter work done; $160, receipted bills shown.

Eighteenth near Douglass. Three-story frame; owner, Peter McCarthy; contractor, F. V. Acker; cost, $9,500; signed, Oct. 12; filed, Oct. 12; payments, $1,200, frame up; $1,200, rustic and roof on; $1,200, floors laid and inside studding up; $1,000, brown mortar on; $1,000, plastered; $1,400, completed; $2,500, 35 days.

Eleventh Ave. near Pt. Lobos. Cottage; owner, James Moran; contractor, T. C. Cochrane; cost, $1,080; signed, Oct. 3; filed, Oct. 10; payments, $600, brown mortar on; $310, completed; $270, 35 days.

Fifteenth near Howard. Two-story and flats, frame; owner, Christian H. Werner; architect, Julius E. Krafft; contractors, Schmidt & Gensler; cost, $3,250; signed, Oct. 13; filed, Oct. 15; payments, $800, rustic and roof sheathed; $825, brown mortar on; $800, completed; $825, 35 days.

Fremont and Bryant. Frame stable; owner, Oregon Improvement Co.; contractor, Chas. W. Kinsman; cost, $1,950; signed, Oct. 24; filed, Oct. 27; payments, 75 per cent on completion; balance, 35 days.

Geary and Octavia. Painting, varnishing, etc; owner, R. M. Black; architect, Wm. Curlett; contractor, Geo. W. Cahon; cost, $2,575; signed, Sept. 21; filed, Sept. 30; payments, 1st and 15th day of each month 75 per cent as work progresses; balance, 35 days.

Golden Gate Ave. To build; owner, F. Bartmann; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $1,300; signed, Oct. 8; filed, Oct. 14; payments, $300, ready for plasterer; $450, completed; $550, 35 days.

Golden Gate Park. Concrete Bridge; owners, Park Commissioners; architect, A. Page Brown; contractor, Gray Bros. Artificial Stone Paving Co.; cost, $7,000; signed, Oct. 8; filed, Oct. 10; payments, 1st day of each month 75 per cent as work progresses; balance, 35 days.

Golden Gate Ave. near Hyde. Painting Humboldt Primary School; owner, Board of Education; architect, C. I. Havens; contractor, Geo. Gotting; cost, $200; signed, Oct. 17; filed, Oct. 19; payments, $200, completed.

Greenwich near Jones. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; cost, $195; signed, Oct. 19; filed, Oct. 20; payments, $195, completed.

Haight near Schrader. Two-story frame; owner, H. F. Krebo; contractor, Brooklyn Planing Mill Co.; cost, $8,550; signed, Oct. 13; filed, Oct. 13; payments, $710, frame up; $710, roof shingled; $710, brown mortar on; $710, painted and doors hung; $710, accepted.

Hampshire near 22d. Alterations and additions; owner, Caroline Blumanthal contractor, T. F. Mitchell; cost, $1,800; signed, Sept. 28; filed, Sept. 30; payments, $450, house raised and lot graded; $450, brown mortar on; $450, completed; $450, 35 days.

Harrison and Juniper. Three-story frame; owner, Wm. Offerman; architect, Fred. P. Rabin; contractor, Wm. Tegeler; cost, $7,830; signed, Oct. 3; filed, Oct. 4; payments, $1,400, enclosed; $1,400; brown mortar on; $1,400, plastered; $1,072.50, completed; $1,957.50, 35 days.

Howard and 4th. Underpinning and concrete work; owner, Annie N. Farrell; architects, Shea & Shea; contractor, Gray Bros. Art Stone Paving Co.; cost, 30cts. per cubic foot; signed, Oct. 20; filed, Oct. 27; payments, 1st day of each month 75 per cent as work progresses; balance, 35 days.

Hyde and Vallejo. To build; owner, W. K. Bush; architects, Martens & Coffey; contractors, Patterson & Drew; cost, $4,300; signed, Oct. 12; filed, Oct. 22; payments, $1,000, enclosed; $1,000, outside finish and brown mortar on; $1,200, completed; $1,100, 35 days.

Jackson near Lyon. Concrete bulkhead, etc.; owner, Mrs. Annie Meade; architect, J. C. Newsom; contractor, H. Stettin; cost, $1,550; signed, Oct. 13; filed, Oct. 18; payments, 1st and 15th day of each month 75 per cent. as work progresses; balance, 35 days.

Jones near Pine. Three-story frame; owner, E. E. Staples; architect, F. B. Wood; contractor, J. F. Logan; cost, $8,033; signed, Oct. 14; filed, Oct. 14; payments, 75 per cent as work progresses; balance, 35 days.

Jones near Sacramento. Two-story frame; owner, Mary Spillane; architect, F. B. Wood; contractor, John T. Grant; cost, $4,100; signed, Oct. 5; filed, Oct. 6; payments, $1,025, frame up and roof on; $1,025, brown mortar on, sashes hung and glazed; $1,025, completed; $1,025, 35 days.

Karl near Cole. To build; owners, Emma M. & J. L. Callison; cost, $4,000; signed, Oct. 12; filed, Oct. 13; payments, $1,600, frame up; $1,000, enclosed and brown mortar on; $1,400, completed.

La Fayette near Mission. To build; owner, Wm. Hughs; contractor, Jas. McLean; cost, $1,450; signed, Oct. 22; filed, Nov. 3; payments, $400, brick foundations and rear yard porches and steps in; $375, new front on; $675, completed; $400, 35 days.

Lagamore and Plymouth. Two-story frame; owners, Mary Lane and Delia Hall; contractors, Morrison & Cook; cost, $1,425; signed, Oct. 22; filed, Nov. 3; payments, $575, rustic and roof boards on; $350, brown mortar on; $350, completed; $500, 35 days.

Market near Second. Stone fixtures; owner, Palace Hardware Co.; architects, Wood & Lovell; contractors, Anderson Bros.; cost, $1,430; signed, Oct. 10; filed, Oct. 11; payments, $479, ⅓ work complete; $479, completed; $478, 35 days.

Market and Hayes. Store fitting; owner, J. Kemp; architect, Wm. H. Armitage; contractors, Robinson & Gillespie; cost, $2,100; signed, Aug. 8; filed, Nov. 2; payments, material delivered upon ground 75 per cent of value; 25 per cent, 35 days.

Market near Powell. Painting, varnishing, etc.; owner, Annie Donahoe; architect, C. I. Havens; contractors, Fraser & Keefe; cost, $5,895; signed, Oct. 21; filed, Nov. 2; payments, 1st and 15th day of each month 75 per cent as work progresses; balance 35 days.

McAllister near Franklin. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; cost, $200; signed, Oct. 19; filed, Oct. 20; payments, $200, completed.

McAllister near Van Ness. Carpenter work, painting, etc.; owner, M. E. Ulmer; architects, Stone & Munson; contractor, Geo. Connon; cost, $4,892; signed, Oct. 12; filed, Oct. 13; payments, $917.25, frame up; $917.25, enclosed; $917.25, plastered; $917.25, completed; $1,223, 35 days.

McAllister near Van Ness. Alterations and additions; owner, Fred Haussler; architect, H. Geilfuss; contractor, F. W. Kern; cost, $2,460; signed, Oct. 26; filed, Oct. 28; payments, 1st and 15th day of each month 75 per cent as work progresses; balance, 35 days.

Mission near 16th. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; signed, Oct. 19; filed, Oct. 20; payments, $190, completed.

Noe near Ridley. Two-story frame; owner, Mrs. J. B. Jardine; contractor, H. R. Schmuckert; cost, $3,235; signed, Oct. 6; filed, Oct. 7; payments, $606, frame up; $606, brown mortar on; $606, plastered; $608, completed; $809, 35 days.

O'Farrell near Hyde. Alterations and additions; owner, Wm. Schnudtz; architect, C. M. Rossman; contractor, Andrew Christensen; cost, $2,400; signed, Oct. 26; filed, Oct. 27; payments, $400, framed; $800, brown coated; $600, completed; $600, 35 days.

Old San Jose Ave. near 29th. Two-stores and flats; owner, Geo. Ruddock; architect, J. F. Kenna; contractors, Peterson & Olson; cost, $5,350; signed, Oct. 10; filed, Oct. 19; payments, $1,337.50, frame up; $1,337.50, brown mortar on; $1,337.50, completed; $1,337.50, 35 days.

Oregon and Drumm. Plumbing, gas-fitting, etc.; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, Jas. E. Britt; cost, $1,785; signed, Oct. 7; filed, Oct. 15; payments, 1st ann 15th day of each month 75 per cent as work progresses; balance, 35 days.

Pacific near Broderick. Lathing and plastering; owner, David Perry; architect, C. I. Havens; contractor, J. R. Tobin; cost, $1,600; signed, Oct. 7; filed, Oct. 10; payments, $800, plastered; $400, completed; $400, 35 days.

Pacific near Central Ave. Two-story frame with basement; owner, E. T. Shepard; architect, J. C. Newsom; contractor, Fred Kromnick; cost, $2,325; signed, Nov. 1; filed, Nov. 1; payments, $881.25, frame up; $881.25, brown mortar on; $881.25, completed; $881.25, 35 days.

Park Road near Park Hill Ave. Laundry machinery; owner, Sister M. Otilea; architects, Shea & Shea; contractor, Troy Laundry Machinery Co.; cost, $1,695; signed, Oct. 19; filed, Oct. 27; payments, $1,271; machine set in position; balance, 35 days.

Pine near Franklin. Sewering, plumbing, etc.; owner, Gustav Sutro; architect, Julius E. Kraft; contractor, Duffey Bros.; cost, $2,065; signed, Oct. 14; filed, Oct. 17; payments, $900, sewer and rough plumbing in; $900, completed; $555, 35 days.

Pine near Franklin. Two-story building with basement and attic; owner, Gustav Sutro; architect, Julius Kraft; contractor, W. W. Ackerson; cost, $15,000; signed, Oct. 13; filed, Oct. 17; payments, $2,500, frame up and sheathed and bulkheads built; $2,500, enclosed and brown mortar on; $2,500, interior finished and plastered; $2,500, interior ready for painting; $2,000, completed; $3,750, 35 days.

Pine near Hyde. Alterations and additions; owner, Peter Jorgensen; architect, W. H. Lillie; contractor, J. C. Rogers; cost, $5,523; signed, Oct. 4; filed, Oct. 4; payments, $1,023, old building repaired and frame of new building up; payments, $1,500, frame of stable up and brown mortar on; $1,000.02, completed; $1,980.97, 35 days.

Point Lobos and 3rd Ave. Frame building; owner, Patrick O'Donnell; contractors, Huber & Osborn; cost, $2,100; signed, Oct. 17; filed, Oct. 24; payments, $600, enclosed; $600, brown mortar on; $600, plastered; $300, completed.

Post near Stockton. Alterations and additions; owner, M. J. Wilson; architect, Clinton Day; contractor, John McCarthy; cost, $1,784; signed, Oct. 25; filed, Oct. 26; payments, $4,500, 2d story beams laid; $5,500, roof tinned; $6,500, brown mortar on; $7,338, completed; $7,346.35 days.

Powell near Bush. Three-story frame; owner, John Scott; contractor, Richard Fahy; cost, $5,450; signed, Oct. 27; filed, Oct. 28; payments, $1,000, enclosed; $1,000, brown mortar on and outside finish done; $1,500, completed; $1,950, 35 days.

Sacramento near Cherry. Onestory frame; owner, Mary Cavanaugh; architect, Wm. H. Armitage; contractor, W. H. Mead; cost, $1,700; signed, Sept. 27; filed, Sept. 30; payments, $425, frame up; $425, brown mortar on; $425, completed; $425, 35 days.

Sacramento, Nos. 1630, 1632, 1634. Alterations and additions; owner, Julien Smith; architect, J. Marquis; contractor, Robert Currie; cost, $5,386; signed, Smith; architect, J. Marquis; contractor, Robert Currie; cost, $5,386; signed, Nov. 1; filed, Nov. 2; payments, $900, new front, except porches, finished; $900, brown mortar on and sewers connected; $900, completed; $886, 35 days.

Sadowa near Plymouth. Cottage; owner, Mrs. May McKenzie; contractor, H. Lehoussse; cost, $1,100; signed, Oct. 5; filed, Oct. 6; payments, $400, roof on; $400, completed; $400, 35 days.

Seventeenth near Church. Alterations and additions; owner, Bernard Trezzini; architect, A. J. Barnett; contractor, A. G. Faber; cost, $1,000; signed, Oct. 1; filed, Oct. 11; payments, $300, roof boards on; $300, brown mortar and outside finish on; $400, completed; $400, 35 days.

Sharon near 16th. Onestory frame; owner, Eugene O'Connor; contractor, Alfred Hawkins; cost, $1,025; signed, Oct. 11; filed, Oct. 15; payments, $607, enclosed; $406, brown mortar on; $405, completed; $767, 35 days.

Shotwell near 23rd. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; cost, $145; signed, Oct. 19; filed, Oct. 20; payments, $145, completed.

Silver near 2d. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, D. Zelinsky; cost, $100; signed, Oct. 18; filed, Oct. 20; payments, $100, completed.

Silver near 2d. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, W. S. Upham; cost, $130; signed, Oct. 22; filed, Oct. 24; payments, $130, completed.

Stevenson near 19th. Alterations and additions; owner, Mary Cluney; contractor, A. S. Cook; cost, $1,750; signed, Oct. 20; filed, Oct. 20; payments, $887.50, frame up; $887.50, brown mortar on; $887.50, completed; $887.50, receipted bills shown.

Sutter near Gough. Three additional rooms to school; owner, Board of Education; architect, C. I. Havens; contractor, Jas. Campbell; cost, $2,994; signed, Oct. 31; filed, Nov. 2; payments, $1,000, enclosed and brown mortar on; $1,191, completed; $800, 35 days.

Sutter near Jones. Four-story brick and frame; owner, Emeline Wallace; architect, R. H. White; contractor, D. T. Pierce; cost, $22,556; signed, Oct. 10; filed, Oct. 11; payments, $4,750, foundation in and wall plates on; $4,650, frame up; $3,800, ready for brown mortar, main cornice and bay windows; $3,800, frame up; $5,000, ready for brown mortar, main cornice and bay windows; $3,650, plastered; $3,800, inside finish on; $2,000, completed; $21,000, 35 days.

Sutter near Jones. Alterations and additions; owner, University Club; architect, A. Page Brown; contractor, D. S. Chrisholm; cost, $1,575, signed, Oct. 6; filed, Oct. 7; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Sutter near Mason. Grading; owner, Simeon Wonham; architects, Pissis & Moore; contractor, J. H. O'Brien; cost, $3,000; signed, Oct. 1; filed, Oct. 3; payments, 1st and 15th day of each month 75 per cent as work progresses; balance, 35 days.

Sutter and Montgomery. Bank furniture; owner, Donohoe, Kelly Banking Co.; architect, Chas. J. Deeling; contractor, Jos. Kemp; cost, $3,875; signed, Sept. 29; filed, Oct. 1; payments, 75 per cent as work progresses; balance, 35 days.

Sutter and Montgomery. Plumbing work; owners, J. A. & P. J. Donohoe; architect, C. J. Deeling; contractor, $2,000; signed, Oct. 22; filed, Oct. 24; payments, 75 per cent as work progresses; balance, 35 days.

Sutter near Taylor. Fresco work; owner, Golden Gate Building Association; architect, Wm. F. Smith; constructors, Kern & Elbach; cost, $1,600; signed, Oct. 18; filed, Oct. 20; payments, $150, primed and sized; $400, stenciled; $750, completed; $400, 35 days.

Third Ave. near Lake. A dwelling house; owner, Chas. Welsch; contractor, C. A. Petterson; cost, $1,650; signed, Oct. 6; filed, Oct. 7; payments, $400, enclosed; $500, plastered; $650, completed.

Twenty-fourth and Dolores. Concrete wall; owner, Geo. Edwards; contractor, Gray Bros. Art Stone Co.; cost, 50 cts. per cubic foot; signed, Sept. 30; filed, Oct. 5; payments, to be paid in three equal payments on or before the 2, 4 and 6 months from completion.

Union, Fillmore, Green and Steiner. Stone sidewalk; owner, Amelia V. R. Pixley; contractor, George Goodman; cost, $2,440; signed, Sept. 30; filed, Oct. 7; payments, 75 per cent, sidewalk on Union street completed; 75 per cent, Fillmore street completed; 75 per cent Green street completed; 75 per cent Steiner street completed; balance 35 days.

ALAMEDA COUNTY.

Addison St., Berkeley. To build; owner, Edward McVay; architect, G. W. Collignon; contractor, Oscar Carpenter; cost, $1,500; signed, Oct. 6; filed, Oct. 26; payments, 75 per cent as work progresses; balance 35 days.

Alameda Ave. near Walnut, Alameda. Additional work to a building; owner Mrs. Anna Regoudet; contractor, A. R. Benke; cost, $1,700; signed, Oct. 2; filed, Oct. 27; payments, $900, roof on; $800, completed; $800, 35 days.

Block No. 567, Lot 20, Oakland. One-story cottage; owner, Sarah Keetley; contractor, W. M. Campbell; cost, $2,200; signed, Sept. 28; filed, Oct. 1; payments, $675, frames up; $450, enclosed, floors laid and brown mortar on; $450 completed; $575, 35 days.

Butler near Idaho. One story frame; owner, C. A. Klinkner; contractor, G. B. Sommer; cost, $1,735; signed, Oct. 19; filed, Oct. 20; payments, $433, enclosed; $433, brown mortar on; $433, completed; $436, 35 days.

Centreville, Alameda. Two-story frame; owner, Fannie Salz; architects, J. J. & T. D. Newsom; contractor, B. O. Simpson; cost, $3,548; signed, Oct. 11; filed, Oct. 13; payments, 75 per cent as work progresses; 25 per cent, 35 days.

Clay near 13th, Oakland. To build; owner, Oakland Gas Lighting and Heating Co.; architects, Coxhead & Coxhead; contractor, Rhody Ringrose; cost, $7,400; signed, Sept. 21; filed, Oct. 2; payments, 1st day of each month 75 per cent as work progress; balance 35 days.

Dow and Thomas Tract, Brooklyn. Two-story frame; owner, W. F. Thomas; contractor, J. A. Eastman; cost, $1,640; signed, Oct. 5; filed, Oct. 6; payments, $410, frame up and roof sheathed; $410, brickwork finished and brown mortar on; $410, completed; $410, 35 days.

Eighth near Chestnut, Oakland. Two-story frame; owner, Andrew Rudgear; contractors, A. W. Pattiani & Co.; cost, $4,079; signed, Oct. 8; filed, Oct. 10; payments, $1,000; rustic and shingles on and chimneys built; $1,000, window panes in and brown mortar on; $1,000, completed; $1,079, 35 days.

Fifth near Allston, Berkeley. One-story cottage; owner, Wm. Smidt; architect, Wm. Schrof; contractor, Thos. P. Roark; cost, $1,385; signed, Oct. 12; filed, Oct. 14; payments, $345, rustic and roof boards on and chimneys built; $345, brown mortar on, and window frames set; $345, plastered; $350, 35 days.

Fifth near Myrtle, Oakland. Two-story dwelling; owner, Luigi Raffetto; contractor, Alex. F. Johnson; cost, $8,700; signed, Oct. 13; filed, Oct. 13; payments, $600, rustic and roof on; $600, brown mortar on; $600, plastered; $600, windows and doors on; $400, completed; $800, 35 days.

Fitch Tract, Alameda. One-story building; owners, M. A. & Amalie Berg; contractors, Lotter & Prugh; cost, $1,967; signed, Sept. 29; filed, Oct. 1; payments, $490, $\frac{1}{4}$ work done and $\frac{1}{4}$ materials furnished; $490, $\frac{3}{4}$ done and $\frac{3}{4}$ furnished; $840; completed, $497, 35 days.

Fourteenth and Broadway, Oakland. Carpenter work, painting, etc.; owners, Cleenk & Meccevich; architect, Wm. Mooser; contractors, Smilie Bros.; cost, $7,140; signed, Oct. 13; filed, Oct. 25; payments, as work progresses, 75 per cent in three payments; balance, 35 days.

Haight near Chipman, Alameda. Cottage; owners, M. G. H. Perry; contractor, John Sath; cost, $1,000; signed, Oct. 20; filed, Oct. 20; payments, $333.33⅓, frame up and roof sheathed; $333.33⅓, wood work, plastering and priming finished; $333.33⅓, 35 days.

Haight Ave. near 7th, Alameda. One-story frame; owners, Mohrs & Wright; contractor, O. R. Derke; cost, $3,500; signed, Oct. 17; filed, Oct. 17; payments, $875, frame up; $875, brown mortar on; $875, completed; $875, 35 days.

Hirschfeld Tract, Alameda. Story and a half cottage; owners, Helena and W. C. Forsyth; contractor, John J. Boyle; cost, $1,350; signed, Oct. 4; filed, Oct. 20; payments, $506.25, brown mortar on; $506.25, completed; $337.50, 35 days.

Mason near Calvis, Oakland. One-story dwelling; owner, W. H. Bishop; contractor, H. D. Irwin; cost, $1,500; signed, Sept. 30; filed, Oct. 1; payments, $375, frame enclosed; $375, completed; $375, 35 days.

Nineteenth Ave. near 10th St., Oakland. Cottage; owner, T. M. Gardiner; contractor, C. B. Kimball; cost, $3,100; signed, Oct. 18; filed, Oct. 20; payments, $775, frame up and roof on; $775, brown mortar on and rough plumbing done; $775, completed; $880, 35 days.

Olica near 11th, Oakland. Two-story frame; owner, Benard Nolan; architect, Edward McManus; contractor, H. W. Schacker; cost, $2,500; signed, Oct. 26; filed, Oct. 26; payments, $650, rustic on; $650, brown mortar on and window frames set; $650, completed; $650, 35 days.

Parsons Golden Gate Tract. Two-story frame; owners, Phoebe & I. Minehn; contractor, W. M. Campbell; cost, $2,440; signed, Oct. 18; filed, Oct. 18; payments, $450, 2d floor joists on; $450, brown mortar on; $450, completed all but tank houses; $450, completed; $1,100, after completion.

Peach near Jefferson, Alameda. To build; owner, C. E. Keys; contractors, C. H. Foster & Son; cost, $1,242; signed, Oct. 17; filed, Oct. 18, payments, $900, frame up and floor laid; $400, enclosed; $320, brown mortar on; $932, completed.

Shattuck Tract, Berkeley. One-half story cottage; owner, Andrew Herman; contractors, Hyde & Cox; cost, $2,300; signed, Oct. 15; filed, Oct. 20; payments, $575, enclosed and roof on; $575, brown mortar on; $575, completed; $575, 35 days.

Sixth near Bush, Oakland. Two-story frame; owner, M. E. Church; architect, G. A. Bordwell; contractor, J. H. Long; cost, $2,476; signed, Oct. 17; filed, Oct. 17; payments, $620, rustic and shingles on; $618, plastered; $618, completed; $620, 35 days.

Sixth Ave. near 15th, Oakland. Two-story frame; owner, F. A. Henshaw; architect, W. J. Mathews; contractors, Herist & McLeod; cost, $8,170; signed, Oct. 6; filed, Oct. 8; payments, $1,225.50, one-fifth work completed; $1,225.50, two-fifths completed; $1,225.50, three-fifths completed; $1,225.50, four-fifths completed; $1,225.50, completed; $2,042.50, 35 days.

Staunton near Pacific Ave. Cottage; owner, Arthur E. Boyce; contractors, Marcuse & Remmel; cost, $1,455; signed, Oct. 15; filed, Oct. 18; payments, $363.75, frame up and roof on; $363.75, brown mortar on; $363.75, completed; $363.75, 35 days.

Thirty-second near Grove, Oakland. To build; owner, Henry Bente; architect, A. J. Wood; contractor, Chas. J. Antiviler; cost, $1,445; signed, Oct. 1; filed, Oct. 5; payments, $500, shingles and rustic on; $300, brown mortar on; $400, completed; $445, 35 days.

Twelfth Ave. near 21st St., Oakland. Two-story frame; owners, P. J. G. Kenna and wife; contractors, A. W. Pattiani & Co.; cost, $8,077; signed, Oct. 26; filed, Oct. 26; payments, $850, rustic and shingles on and chimneys built; $750, window frames set and brown mortar on; $677, completed; $800, 35 days.

The California Architect and Building News.

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THE old firm of Kenitzer & Kollofrath, Architects, has dissolved partnership. Mr. C. W. Kenitzer remaining at the old stand, 601 California street, corner of Kearny, while Mr. Edmund Kollofrath has located his office in the Flood Building, room 58.

THE end of another year has come, and marks an important event. When one thinks of what it has been in comparison with what it might have been, the contrast suggests the question: To what extent are we, ourselves, accountable for the aqueous castles and misdirected ideals that have come to nought?

Have we, as individuals, performed our duties in a manner to advance and elevate the profession or trade we call our own? We are often reminded that the past, when reviewed, does not present the rosy tints that attracted our attention at an earlier period, yet tints of evening sometimes show a refined softness not to be found in the dazzling light of the morning.

The year 1892 has added many growths to the industries of this section of the country. The mines have turned out their wealth, the farming and fruit products have been more abundant than in any previous year, and the country districts are prosperous to an unusual extent.

Railroads have been extended into some of the richest valleys, electric roads have come to open up increased facilities for travel, the water courses of our hills have been utilized to run electric plants and the power conveyed to what have heretofore been inaccessible points for manufacturing purposes. The increased use of electricity in architecture and engineering during the year has been beyond computation.

The year has shown a marked expression of opinion regarding the technical education of those who are to take the field in years to come, and among them all, architecture as an art and a science has been passing gradually from the hap-hazard styles of a few years ago, to a more systematic development which is very gratifying to those who love the profession. As the days pass on we naturally turn toward the future and endeavor to unravel the mysteries Father Time has in store for us.

GAS for household use is only just beginning to be appreciated. The manufacturers will come forward with the requisite apparatus as soon as the consumers understand its advantages. At present, somewhere about seventy-five or eighty per cent is lost. It will not be a great while when the one gas flame will be used for lighting, ventilation and disinfection, and the heat turned to account for warming, cooking and many other household conveniences. At one time it was thought that the electric light would displace gas, but the partial development of the gas jet has demonstrated that it can hold its own with electricity. The old objection on account of the smoky flame that begrimmed with soot the walls, ceilings, hangings, etc., does not hold good at this time, because of the great improvement in the gas itself and in the appliances by means of which it is used. Gas is plunging ahead with an inertia almost irresistible, and electricity has started with lightning speed which will slacken when it becomes more loaded with practical problems, and then will come the great contest of light with reference to practical utility.—

THE importance of a recognized system for electrical wiring of buildings is worthy of the closest attention of the architectural profession. The Architect and the Electrician should meet and formulate some general plan which will permit the wires to be run in a manner that will not interfere with the style of furnishing, and yet have them accessible for repairs, etc., when desired.

The feasibility of electric lighting depends in a measure on the judicious treatment of the wiring, having due regard for the safety and economy in its application.

THE present indications regarding the future development of Mexico point towards an advance of such proportions as to disparage all previous examples of the growth of other countries.

Only a very small fraction of the resources of Mexico has been brought into notice. Some of the richest mines known are awaiting a time when power can be utilized to advantage in localities that have been considered inaccessible.

Fertile lands in abundance are ready for settlement: large tracts of valuable timber for building purposes, also rare and costly ornamental woods, suitable for furniture and decorative uses, and dyewoods of various kinds are plentiful.

The soil is well adapted to the growth of fibre plants, a product that is receiving the attention of manufacturers of paper, etc.

All countries heretofore have been gradually developed through several centuries: Mexico, on the contrary, has lain asleep during the three hundred and fifty years since its first settlement, but when it does take a start it will have no precedence to look to for guidance. Railroads by steam or electricity will take the place of the typical "mule trail," the forests will be cut and worked by the aid of modern appliances, the soil tilled and crops gathered and marketed by machinery, the mines that could only be worked by hand power, under great disadvantages, will be worked by steam or water power. Such power can be carried over peak and ravine by means of wires and then applied at the surface or deep into the mine itself for drilling, hoisting, crushing, separating and all other purposes for which power is required.

With all these advantages the future prospects of Mexico are exceedingly bright.

THE PROPOSED NEW FRENCH HOSPITAL.

"HOTEL DE SANTE."

THE French Mutual Benevolent Society is about to build the finest hospital in the city. The circular containing the description of the location, the needs of the Society and the terms of the competition was issued last May. The prizes were awarded in November.

The design "Hygiene" received the first prize and was prepared by William Mooser of this city and J. Morin Goustiaux of Paris, France, as associated architects. The committee, however, made several slight objections to the plan, the greater portion of which had been already anticipated by Mr. Mooser. The materials will consist of brick, concrete and artificial stone.

The administration building will front on Point Lobos avenue. There will be fourteen detached buildings, and they will have connections with each other only by means of galleries. Of the fourteen buildings five of them will be of two stories, the remainder one story.

The administration building will be set back somewhat from the line of the sidewalk, in order to allow the cultivation of a garden and room for avenues and walks. On the line of the sidewalk will be a fine bronze fence.

The first floor of the administration building will be devoted to the authorities in the hospital. In it will be the superintendent's office, the clerk's office, the reception-rooms and parlors, the drugstore, the laboratory and consulting-room, and in the rear portion the library.

On the second floor will be the quarters of the visiting and resident physicians and the apartments of the druggist and other officials of the institution.

On each corner of the Point Lobos side there will be two buildings constructed, abutting the side towers of the administration building. They will rise from the very line of the sidewalk, the bronze fence running to their corners. One of these will be the stable of the hospital, and the other will be occupied as quarters for the employes.

The hospital proper, which consists of a series of wards is constructed about twenty feet from the sidewalk and reaches around the entire block. These wards, or pavilions, will all be detached from each other as far as structure is concerned, but some of them will be connected by galleries. They are so arranged as to all obtain the greatest amount of sunshine.

The wards will be of similar design in the following order: First ward for paying patients; second ward, male medical cases; third ward, surgical patients; fourth ward, female complaints; fifth ward, female medical cases; sixth ward, chronic cases; seventh ward, tubercular cases; eighth ward, contagious cases; ninth ward, operating-room.

On the south side will be situated the bath department, which will be a very elaborate affair, and will have no superior in any hospital in the country. It will contain departments for medicated bathing, massage, Russian and Turkish baths, and also the plunge and steam rooms.

Beyond the bathhouse will be the disinfecting department, the morgue, the power house and laundry.

The design "Egalite Fraternite," prepared and submitted by E. Depierre of this city, received the second prize.

The distinctive features of each plan and which appears to have, in a great measure, governed the actions of the committee was the location of the gardens. In the first plan the garden will be placed within the quadrangle as enclosed by

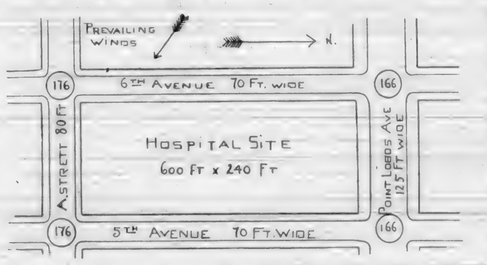
the buildings which encircle the grounds. This arrangement will temper the ocean winds and give fresh air and sunshine.

In the second design the different buildings have been arranged more in a cluster toward the ocean side leaving the gardens at the outer portions of the grounds.

The building committee of the society which had charge of the selection of plans for the new hospital, is as follows:—Henry S. Martin, President; E. Raas, Vice-President; Dr. G. Gross, Secretary; Dr. D. Tait, Secretary; Dr. F. Bazan, Dr. K. Pischl, E. Robinet, O. Bozio, J. St. Denis, M. Hainque, B. Sarthou, V. Marchebout, D. Levy, A. Lagallet, Raoul Chartrey.

THE circular issued to the competing architects was as follows:—

"The French Benevolent Society has decided at a general meeting to open a competition among architects for the designs of a New Hospital which is to be erected in the City and County of San Francisco, on a lot of ground bounded by Point Lobos, 5th and 6th avenues, and by A street.



The lot is a rectangle 600 feet long by 240 feet wide. The levels above base are indicated at each street intersection. The base line is 6 ft. 7 above high tide. The direction of the prevailing winds and the points of the compass are shown in figure. There is a large sewer running along Point Lobos avenue.

The pavilion system shall be adopted for the New Hospital. The pavilions to be mostly of two stories and basement. The different buildings to be connected by corridors. There shall also be the necessary covered galleries.

Walls to be of brick, foundations of concrete, the entire areas of the different buildings at basements to be covered with artificial stone or asphaltum.

The main entrance to be either on Point Lobos avenue or on 5th avenue.

The plumbing to be the best, and special attention must be given to the disposal of the sewerage.

The buildings to be heated with hot water and so disposed as to make the ventilation thorough.

All portions of the buildings to be arranged for gas and electric light.

The Hospital shall be built for 150 patients, distributed as follows:

25 beds for patients suffering from chronic diseases, called "Invalides";

25 beds for paying patients, occupying 20 separate rooms and 5 double rooms;

100 beds distributed in wards, 75 for male patients and 25 for female.

The 75 males to be divided in 4 categories:

1°. 40 cases for medical treatment;
2°. 20 cases for surgical treatment;
3°. 12 cases of tuberculosis;
4°. 6 cases of contagious diseases.

The cases of medicine and surgery to be divided in 2 wards of 20 beds each, and the cases of surgery in 2 wards of 10 beds each.

The female patients, 25 in number, will be divided as follows:

15 cases of medicine, 5 cases of surgery, 3 cases of tuberculosis, 2 cases of contagious diseases.

To resume, the New Hospital shall contain for the accommodation of the patients:

Six Common Wards.—Male: 2 medical wards and 2 surgical wards. Female: 1 medical ward and 1 surgical ward.

1 pavilion for contagious diseases.
1 " " tuberculosis.
1 " " the "Invalides."

Each pavilion shall contain as annexes, separate rooms to isolate patients or for nurses.

The water closets, wash basins, baths, sinks, whenever practicable, shall be placed outside of the pavilions.

Operating Rooms.—There shall be a main operating room of 350 sq. feet, with hat and coat room, store room and etherizing room.

A small operating room 180 sq. ft.

A general Dining Room to accommodate 40 patients.

The service of the administration, the general service accessories, shall comprise:—The pavilion of the administration, the kitchen and annexes, the baths, the engine room, laundry, wells, reservoirs, the morgue, the disinfecting department, a stable, a covered shed and a gate lodge.

The employes numbering 36, to be accommodated as follows:—14 in separate rooms, and the balance in dormitories containing each from 4 to 5 beds.

The following is a list of the employes:—1 superintendent, 2 internes, 2 druggists, 1 head nurse (male), 6 male nurses, 5 female nurses, 1 porter, 1 lingere, 2 cooks, 3 assistants, 2 engineers, 2 laundry men, 1 gardener, 1 messenger, 1 guide, 4 workmen, 1 bather.

The pavilion of the administration shall contain in the first story:

1°. The superintendent's office, bed room, sitting room.
2°. The pharmacy and laboratory 400 square feet, in the basement occupying the same surface shall be the store room for drugs.
3°. Two waiting rooms, 150 square feet each, two consulting rooms with laboratory in alcove with special ventilation.
4°. Dark room for eye examination.
5°. Parlor and library adjoining. 500 square feet.
6°. Dining room for officers, for 12 persons.

Above shall be the lodgings for physicians, druggists, etc.

Two bath rooms and water closets.

The kitchen building shall contain:

The kitchen, 600 square feet.—The pantry, 120 square feet.—A dining room for 30 employes.—The store room for vegetables, 100 square feet.—The store room for groceries, 200 square feet.—The wine cellar, 400 square feet.—Lodgings for the cooks and assistants.

The bath house shall contain 4 ordinary bath rooms, 4 sulphur baths, 1 medicated bath, 1 fumigating room, hot air and steam rooms, small rooms with couches, a massage room, 1 shower room.

The Engine House and Laundry.—The engine room to contain two boilers, 16 feet long, 40 horse power each, engines for pumps for laundry, dynamos, etc., a machine shop. The laundry to cover 800 sq. ft., the drying room 400 sq. ft., the ironing department to occupy 3 rooms. There shall be 2 wells and 2 reservoirs, each of 30,000 gallons.

The Morgue and its Laboratory shall cover 320 sq. ft. and shall contain 1 autopsy table, 4 slabs; adjoining or in close proximity shall be the service of disinfection which shall consist of 2 rooms.

The Porters Lodge, near the entrance, shall consist of two small rooms.

A stable for two horses and two vehicles.

A small shed near entrance for horses and carriages.

A water closet for each sex shall be placed in yards.

The total cost of buildings, grading and enclosures not to exceed $180,000.

The competing Architects shall furnish:

The plan of basement or foundation;

The plans of first and second stories at the scale of one-sixteenth of an inch per foot;

Two elevations and two sections at the scale of one-eighth of an inch per foot, the sections and elevations to be lined only, without shading;

A description of the construction, especially the manner in which the different parts of the works are to be executed;

The materials to be employed and the sizes thereof, the system of ventilation, of heating, the plumbing and all information necessary to give a thorough and clear idea of the designs.

In addition to the foregoing, the competing architects shall be at liberty to send any additional drawings which they deem necessary for the full explanation of their ideas.

All designs to be designated by a motto with the name of the authors, in sealed envelopes.

They shall be submitted on or before the first day of October, 1892, before 5 P. M., at the office of the Society, 610 Jackson street, San Francisco.

Two prizes will be awarded to the committee of fifteen, to whom the Society has conferred full powers.

The author of the design classed first shall receive $600. The second prize shall be of $400.

The plans receiving premiums shall become the property of the Society.

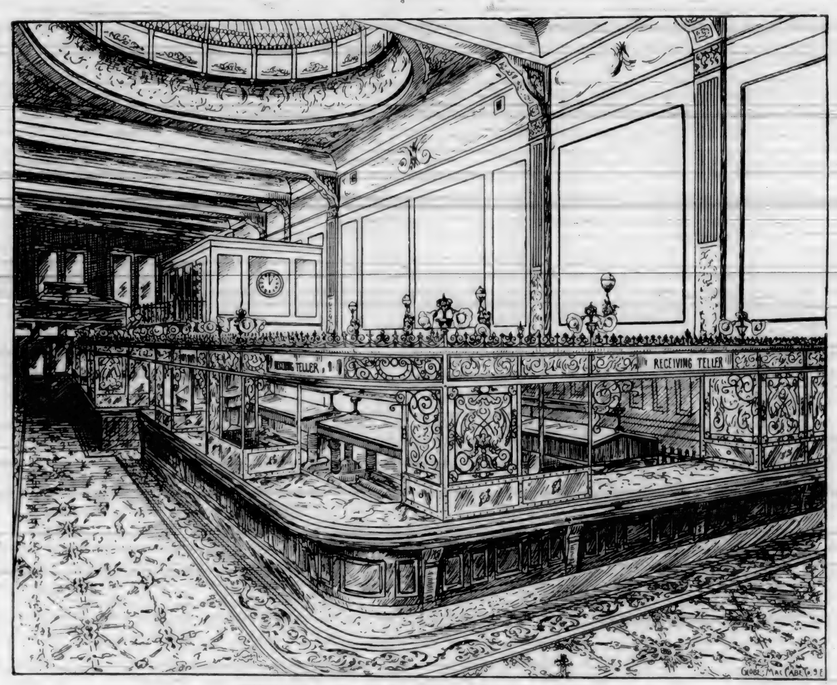
The Committee reserves the privilege of rejecting any or all designs or plans submitted.

H. S. MARTIN,
President of Committee.
DR. DUDLEY TAIT,
Secretary of Committee.

THE GERMAN BANK.

THE new Bank Building for the German Savings and Loan Society has been recently finished and opened for business. The building is constructed of brick, stone, iron and steel, with terra-cotta lining, the interior finishing only being of wood. The exterior is of gray granite with red granite introduced at doorways and arches. The vestibule is of variegated marble.

The main banking room is 36x120 feet and 32 feet in height. Outside the counters the floor is of Mosaic work, while behind the counters the floor is of white mahogany. The room is lighted by a central dome 32 feet in diameter.



INTERIOR OF THE NEW GERMAN BANK.

Great care has been taken to have the lighting, heating and ventilating as perfect as possible. The design was by Messrs. Kenitzer & Kollofrath, architects.

We are indebted to the *German Democrat* for the engraving showing the interior of the banking room.

An illustration of this building appeared in the CALIFORNIA ARCHITECT of June 1891.

THE local health boards of many of the cities and towns throughout England are making arrangements for the erection of permanent isolation hospitals for the isolation of patients suffering from infectious diseases.

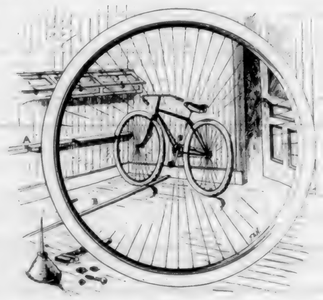
STABLING FOR THE "NICKEL PLATED STEED."

BY FRANK S. HOLLAND.

WHILE proper and safe storage of the bicycle during working hours is a very important feature that is being neglected in the planning of office building, stores, restaurants, etc. The neglect is sorely felt by those wheelmen, who employ the bicycle for business and other purposes. Aside from its intrinsic value, the remarkable and ingenious improvements, that have been made on the cycle within recent years, have been a means of pushing it into more general use among the business community. The lightness, yet rigidity of its construction, the introduction of hardened steel balls in the bearings, the spring frame, and the inflated or pneumatic tie elevate it to a level that is well nigh perfection, and combine to give it its wonderfully increasing popularity.

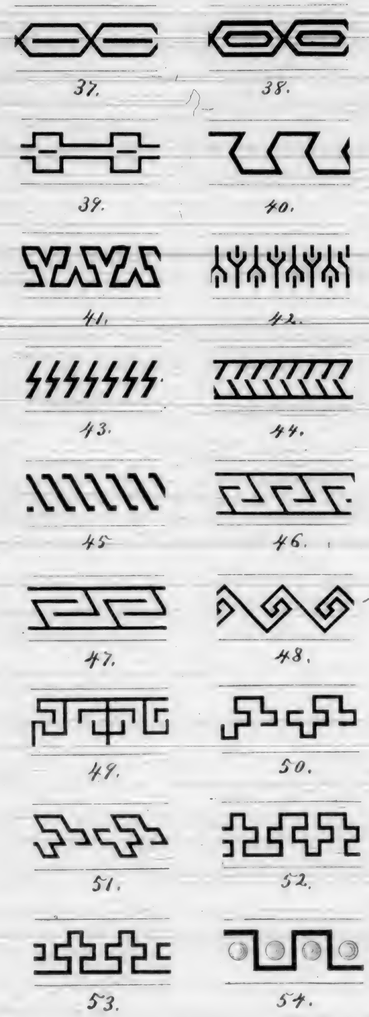
There is now scarcely a business building even of limited tenantry, in which there are not two or more occupants who use the bicycle. These wheelmen have to raise their machines from two to six stories in the elevator, and leave them in the corridors during the day. It is a source of much annoyance to elevator passengers to have a bicycle piloted among them, and to be obliged to climb over the machine when alighting. In many buildings of early construction their is either no elevator, or it is in such a delapidated condition that a breakage is a common occurance. In this case it remains either to carry the wheel up stairs or to leave it in the vestibule. Even though the wheels be locked together, the tool pouch or other attachments remain at the disposal of pilferers. Furthermore, if the weather change, and the rain prevent the cyclist from riding home, it would be necessary to leave the machine unguarded in the corridor or vestibule all night.

There is no need of the present neglect, when the accommodation needed is so easily provided. The room or closet could be off the vestibule, in the basement, or, in some cases, under the stairs. The average machine measures about six feet in length, and about two feet across the handle bar, so that the required space for a given number of bicycles can be readily calculated.



A rack *A* (as illustrated in the figure) could be secured to the wall so as to hold the machine in an upright position, provisions for a sliding bolt, chain or hasp for locking the machine could be made, and a wedge shaped strip, *B*, screwed to the floor to prevent the wheel from moving backward. A locker would also be an excellent provision, in which to keep oil, tools, and other implements or attachments. Although very simple, these interior fixtures would answer all practical purposes.

Is it not obvious, even to persons unfamiliar with the exercise, that cycling is a most beneficial and useful means of locomotion? It strengthens the organs of the abdomen, hardens the muscles, and by promoting respiration, strengthens the lungs, and suffuses the face with a healthful glow. In other words, it is one of the most healthful exercises. Is not, then, the use of the cycle of sufficient importance to be remembered; and is it not worthy of the greatest encouragement?



FRETS.

FRETS showing examples from 1 to 36 were printed in the October and November issues.

STAIR TABLE.

Risers. No.	Treads. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
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7	0.8″	1 5	2 2	2 10	3 7	4 3	4 11	5 8	6 4	7 1	7 9	8 6	9 2	9 11	10 7	11 4	12 0	12 9	13 6	14 2	14 10	15 7	16 3	17 0	17 8	18 5	19 1	19 10
8	0.8″	1 4	2 0	2 9	3 5	4 1	4 9	5 5	6 2	6 10	7 6	8 3	8 11	9 7	10 3	11 0	11 8	12 4	13 0	13 9	14 5	15 1	15 9	16 6	17 2	17 10	18 6	19 3
9	0.7″	1 4	2 1	2 8	3 5	4 2	4 9	5 6	6 3	6 10	7 7	8 4	8 11	9 8	10 5	11 2	11 9	12 6	13 3	13 10	14 7	15 4	16 1	16 8	17 5	18 2	18 9	19 6
10	0.7″	1 3	1 11	2 7	3 3	3 10	4 6	5 2	5 10	6 6	7 2	7 10	8 6	9 2	9 10	10 6	11 2	11 10	12 6	13 2	13 10	14 6	15 2	15 10	16 6	17 2	17 10	18 6
11	0.7″	1 3	1 10	2 6	3 2	3 9	4 5	5 1	5 8	6 4	7 0	7 7	8 3	8 10	9 6	10 2	10 11	11 7	12 3	12 11	13 7	14 3	14 11	15 7	16 3	16 11	17 7	18 3
12	0.7″	1 3	1 10	2 6	3 1	3 8	4 4	5 0	5 7	6 3	6 10	7 6	8 1	8 8	9 4	10 0	10 7	11 3	11 10	12 6	13 1	13 8	14 4	15 0	15 7	16 3	16 10	17 6
13	0.7″	1 2	1 10	2 5	3 0	3 7	4 3	4 10	5 5	6 1	6 8	7 4	7 11	8 7	9 2	9 10	10 5	11 0	11 8	12 3	12 10	13 6	14 1	14 9	15 4	15 11	16 7	17 2
14	0.7″	1 2	1 9	2 5	3 0	3 7	4 2	4 10	5 5	6 0	6 7	7 3	7 10	8 5	9 0	9 8	10 3	10 10	11 5	12 1	12 8	13 3	13 10	14 6	15 1	15 8	16 3	16 11
15	0.7″	1 2	1 9	2 4	2 11	3 6	4 1	4 9	5 4	5 11	6 6	7 1	7 8	8 3	8 10	9 6	10 1	10 8	11 3	11 10	12 5	13 0	13 7	14 3	14 10	15 5	16 0	16 7
16	0.7″	1 2	1 9	2 4	2 11	3 6	4 1	4 8	5 3	5 10	6 5	7 0	7 7	8 2	8 9	9 4	9 11	10 6	11 1	11 8	12 3	12 10	13 5	14 0	14 7	15 2	15 9	16 4
17	0.6″	1 1	1 8	2 3	2 10	3 5	4 0	4 7	5 2	5 9	6 4	7 0	7 7	8 2	8 9	9 4	9 11	10 6	11 1	11 8	12 3	12 10	13 5	14 0	14 7	15 2	15 9	16 4
18	0.6″	1 1	1 8	2 3	2 10	3 5	4 0	4 7	5 2	5 9	6 4	7 0	7 7	8 2	8 9	9 4	9 11	10 6	11 1	11 8	12 3	12 10	13 5	14 0	14 7	15 2	15 9	16 4
19	0.6″	1 1	1 7	2 2	2 8	3 3	3 9	4 4	5 0	5 5	5 11	6 6	7 1	7 7	8 2	8 8	9 3	9 9	10 4	10 11	11 4	11 11	12 6	13 1	13 8	14 3	14 10	15 5
20	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
21	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
22	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
23	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
24	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
25	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
26	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
27	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
28	0.6″	1 0	1 6	2 1	2 7	3 2	3 8	4 3	4 9	5 4	5 10	6 5	6 11	7 6	8 0	8 7	9 2	9 8	10 3	10 9	11 5	12 0	12 6	13 1	13 8	14 3	14 10	15 5
Risers. No.	0.6″	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Treads.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

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STAIR TABLE.

HEREWITH we give a table of rise and run for stairs set in a convenient form for the use of architects, draughtsmen and builders. The spacing of the lines of figures into groups aids the eye in following the direction to the final point.

DIRECTIONS.—In the column beginning with the rise of step desired, find the height of story from top of floor to top of floor, then follow this line to the column under "Risers," which gives the number of risers. In the column under "Treads" find the number of risers LESS ONE, and on this line under the column of width of tread will be the length of run.

ISOLATED ROOM AS A HOSPITAL.

EVERY community is visited at intervals by epidemics therefore an important question for every householder to consider is, "What shall I do with the members of my family who are stricken with disease, so that the surrounding conditions shall be as favorable as the present knowledge of the subject will permit?"

It has been suggested that, for private residences, boarding and lodging houses, hotels, etc., a room could be planned and arranged especially for the purpose and fitted up with the necessary conveniences.

Such room or apartment should be isolated as far as possible from the other portions of the house, and favorably situated for the admission of light and a free circulation of air. The room could be separated from the other rooms by means of a ventilated lobby or corridor between it and the main hall.

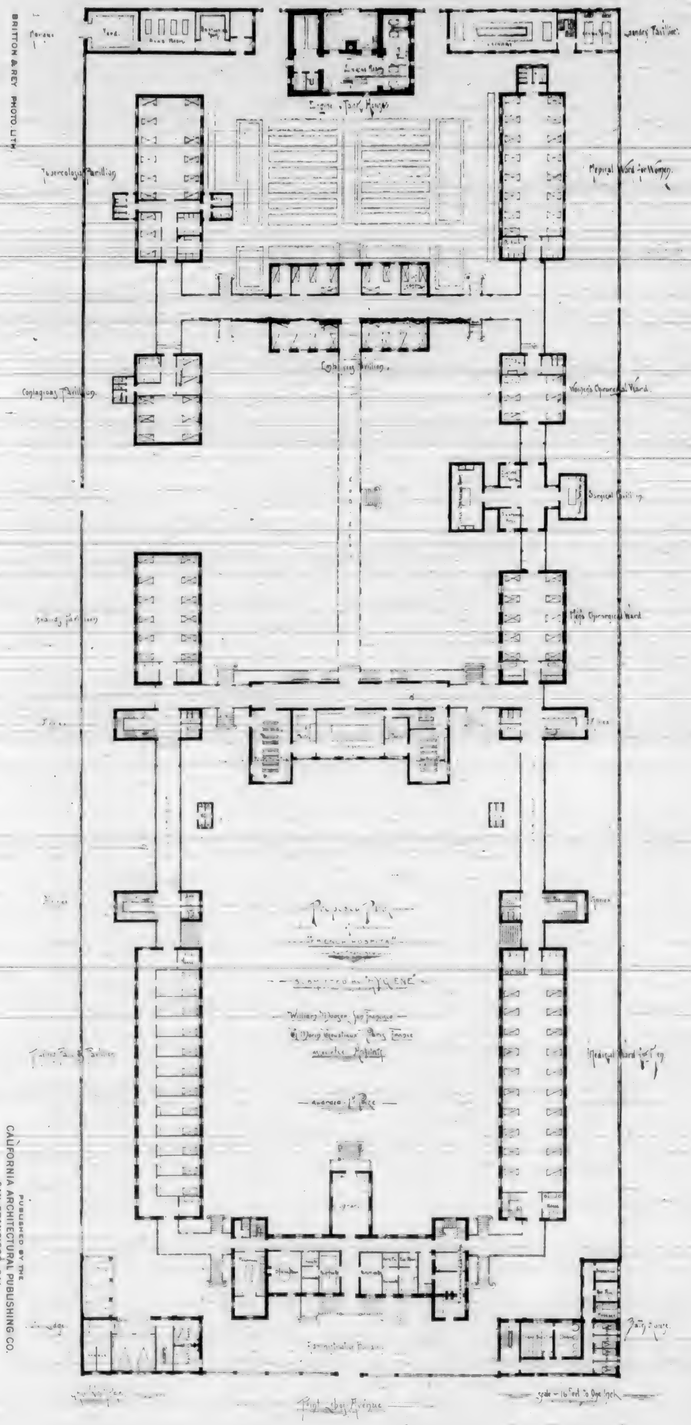
Particular attention should be paid to the heating and ventilation. The outlet air shaft should be supplied with gas burners to facilitate the draft and at the same time the flames utilized for burning and destroying the germs of infection before they reach the surrounding atmosphere. The desirability of such a room will be admitted by all persons who have thought upon the subject.

For houses for the wealthy or well to do class of persons, the extra cost would be a slight objection, but where expense must be economized so far that the rooms provided for in the general arrangement must be for daily use, a modification may be made that will, with a very small additional outlay, provide a better arrangement than the present state of the sick room. A chamber suitably situated for light and air could have the floor, doors, sashes and trimmings of hardwood, the walls made smooth, and all the wood or plaster work rendered impervious to moisture.

Under the present conditions the sick room is the usual bed chamber, and is furnished in the modern style, having the walls papered and hung with pictures, the floor carpeted, the furniture upholstered, and the shelves and brackets overcharged with bric-a-brac. When sickness comes to any member of the family, the sick-room should be cleared of all moveable objects and thoroughly cleaned, and then furnished with a cot and bedding, and rugs that can be taken up and shaken, placed on the floor. When the sickness has passed, the room should be disinfected and cleaned, after which it could be again used as one of the apartments of the house.

We believe it is generally accepted that the influence of the mind upon the body may be used as a powerful agent in curing or removing diseases. Therefore, the decoration of the apartment should be of a quieting nature to bring about unconsciously a favorable state of mind and thus indirectly hasten recovery.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCLXXXIV



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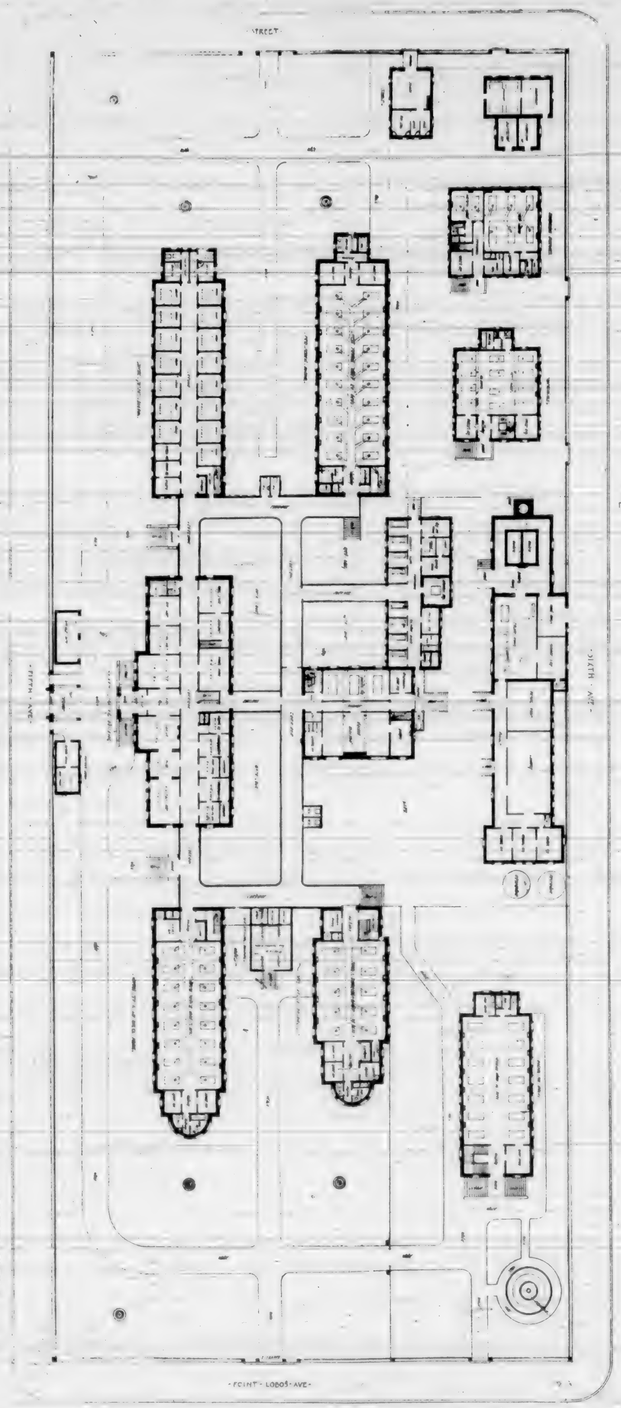

BRITTON & REY PHOTO LITH.

FRENCH HOSPITAL COMPETITION
SUBMITTED BY ESHLEY TRAINER
A.D. 1892 DCCCXCII.

- GROUND-FLOOR-PLAN -

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SAN FRANCISCO, CAL.

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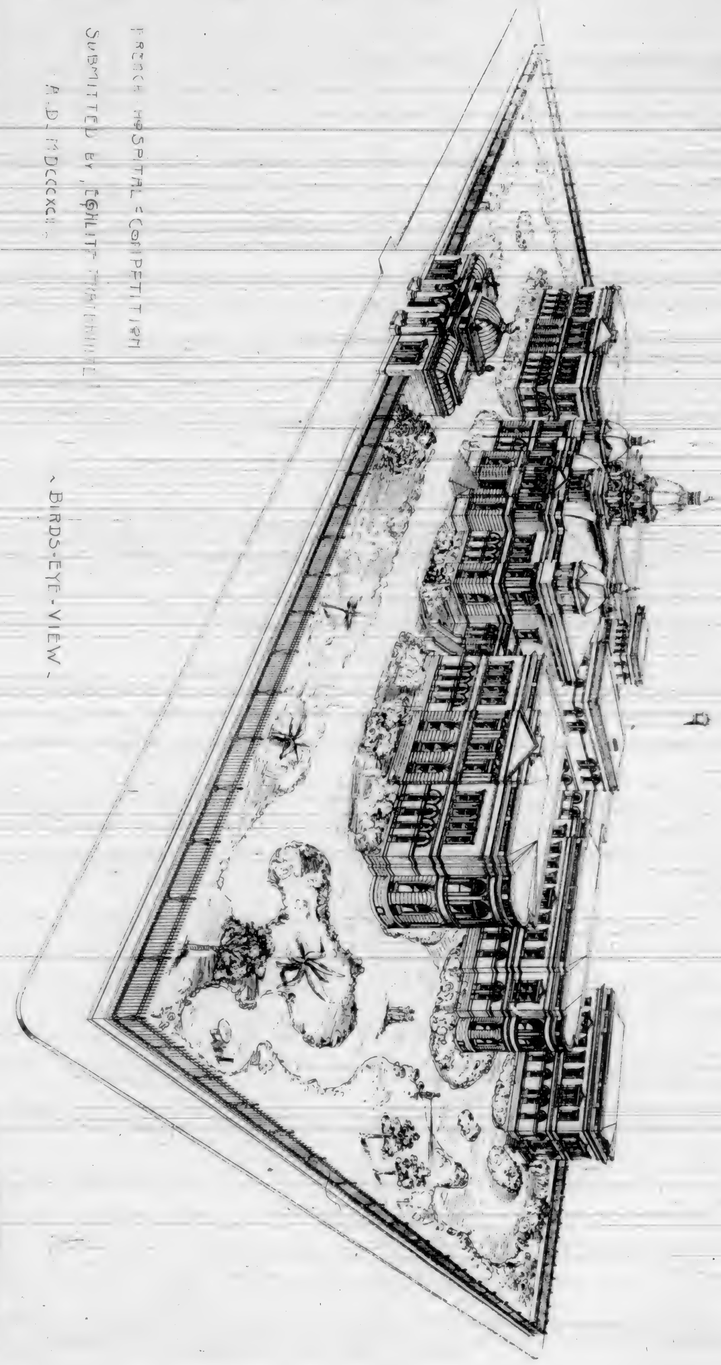
FRENCH HOSPITAL COMPETITION
SUBMITTED BY ESHLEY TRAINER
A.D. 1892 DCCCXCII.

- BIRDS-EYE-VIEW -



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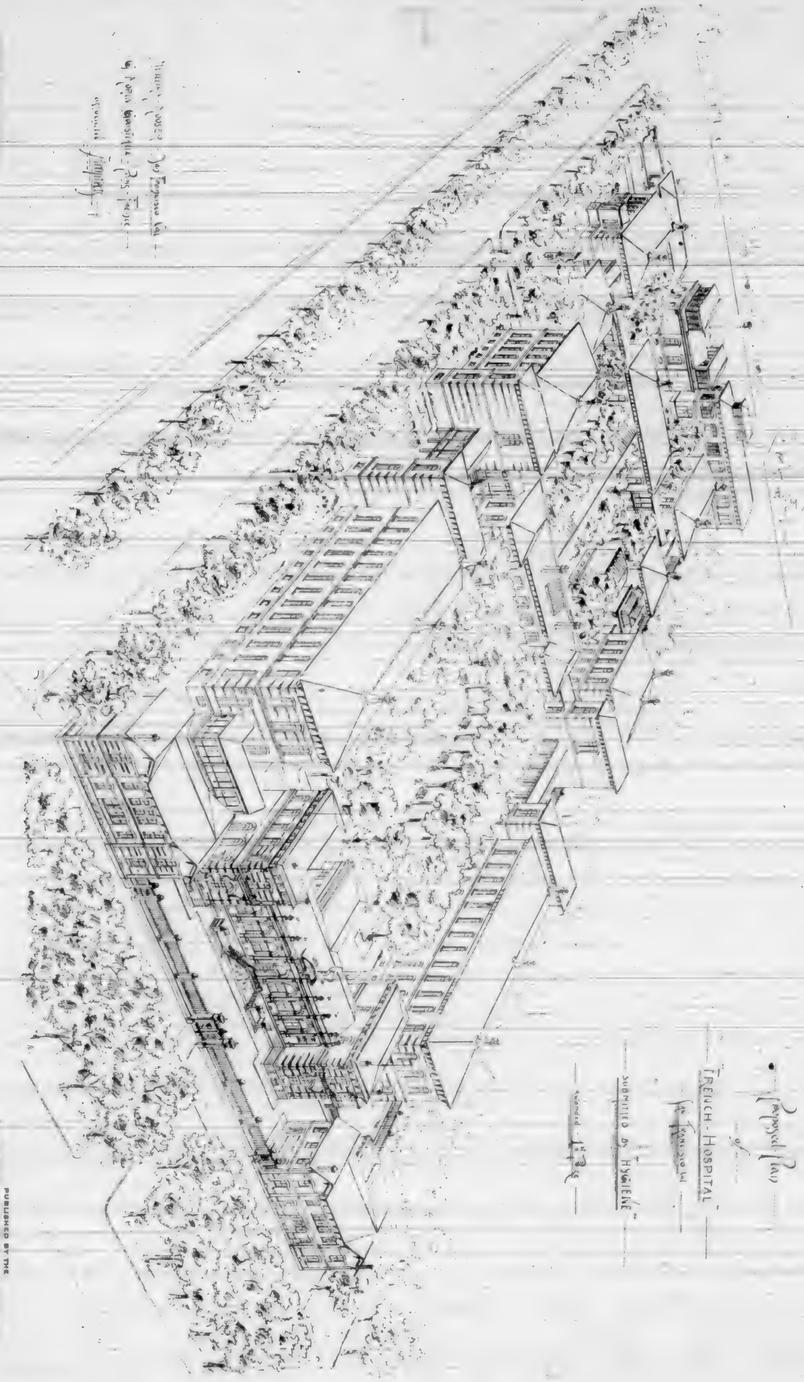

Proposed Plan of FRENCH HOSPITAL for CONSUMPTION and HYGIENE. San Francisco, Cal.

BRITTON & REY, PHOTO LITH.

PUBLISHED BY THE CALIFORNIA ARCHITECTURAL PUBLISHING CO. SAN FRANCISCO, CAL.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXVIII

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

WE present this month the first and second prize designs for the "Hotel De Sante," the proposed new Hospital for the French Mutual Benevolent Society of this city.

THE selected design "Hygiene" was that submitted by Mr. William Mooser of this city and J. Morin Goustiaux of Paris, France, as associated architects.

THE second prize design "Egalite Fraternite" by E. Depierre, architect, of this city.

Notes & Comments.

IT appears that the World's Fair Commissioners have adopted a rule providing for the closing of the fair grounds during the evenings. If the fair is intended for the exhibition of mechanical devices only, then the daytime would answer for those having leisure time, but how will it serve the purpose of instruction to the thousands, who have only the evenings at their disposal?

The greater part of art workmanship of all kinds is designed and worked for both natural and artifical light. Electric and gas illumination would lose their best effects in daylight.

There is yet sufficient time to undo a part of the damage already done, provided the people will bestir themselves and enter a protest against the action of the Commissioners.

Colonel Lyman Bridges has made a complete topographical survey of the new Post Office site, corner of Seventh and Mission streets in this city. He has also made reports upon the water, gas and sewerage of the site, and upon the building materials. Samples of granite, marble, sandstone, brick, etc., that may be obtained on this Coast, have been forwarded to the officials in Washington.

NOTICE TO ARCHITECTS.

THE following notice to architects carries its own moral. Whether any architects, or as the judge says, "alleged architects" will consider it their "inestimable privilege" to submit plans or not, remains to be seen later. The small bud of a cornice just about sprouting from that white, bald faced Court House in the same city shows what such parsimony may produce under certain conditions. *If* in the future this entablature should grow to its proper proportions, *then* it may be possible for the committee to obtain a suitable design under the conditions set forth.

"1. Plans, with full specifications and estimates, will be received up to 2 o'clock P. M, of JANUARY 3, 1893, by the Executive Board of the Hazelton Library Bequest and the Board of Trustees of Stockton Free Public Library, for a Library building to be erected on portions of lots 2 and 4, in block 12, east of Center street, in the city of Stockton, State of California. The dimensions of said lots are 101 feet on Hunter street and 81 feet on Market street.

2. A fire-proof building is preferred. No plans and specifications will be considered that will cost in excess of $50,000. Perspective to be in natural tints.

3. Three premiums will be given, to-wit:—$500 for the best plan and specifications; $300 for the second best plan and specifications, and $200 for the third best plan and specifications, it being understood that the plan and specifications accepted shall be the property of the Executive Board of the Hazelton Library Bequest and the Board of Trustees of Stockton Free Public Library, to be used in any manner they may desire, and the acceptance of the premium by the architect shall be the purchase price for the same. Every competing architect must present with his plans, specifications and estimates a bond in the sum of $5,000, conditioned that the proposed building can be built for the estimate made, and that if his plan is accepted and the Board determine to build in accordance therewith, he will enter into a bond satisfactory in form and amount to the Board, conditioned that if required he will build said building for his estimated cost. Form of bond must be procured from the Secretary of the Board. The plan and specifications adopted are to be approved by a joint meeting of the Board and the City Council of the City of Stockton, State of California, before any premium is paid.

4. The drawings of floor plans and elevations are to be of four feet to the inch. In the perspective the architect to use his discretion.

The board reserves the right to reject any and all plans, specifications and estimates, or either.

By order of Executive Board of Hazelton Library Bequest and the Board of Trustees of Stockton Free Library.

W. F. CLOWDSLEY, Secretary."

As may be noted in our advertising columns a munificent offer is made to architects by the County Clerk of St. Clair County, Ill. It seems they want plans for an addition to their County Court House, and think these "architect fellows," who have little to do except to hang their heels on the table and smoke cigarettes, will be glad to do most anything to while away their time. So they send out the following competition, after reciting what they want and that the cost is not to exceed $30,000: "Upon adoption of a submitted plan or sketch, the designer of such plan or sketch shall make complete plans and specifications, for which the County of St. Clair, Ill., will pay the sum of $200."—*Architecture and Building News, New York and Chicago.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
W. L. CROSETT, Sec. O. BROOKS, Treas.

THE regular meeting of the San Francisco Chapter of the American Institute of Architects, was held the 9th inst, at their rooms, 408 California street. The reports of the officers made a favorable showing.

The following officers were elected:—President, Geo. H. Sanders; Vice-President, W. J. Cuthbertson; Secretary, Oliver Everett; Treasurer, John M. Curtis; Trustees—Geo. W. Percy, Seth Babson, W. J. Cuthbertson, H. T. Bestor, Oliver Everett.

LIPPINCOTT'S for December has a number of interesting articles.

THE FORTNIGHTLY REVIEW for November, contains a chapter on "A Future School of English Art" by the Duke of Marlborough.

THE ELECTRICAL REVIEW is an illustrated, weekly Journal of Scientific and Electrical Progress, published at 13 Park Row, N. Y.

THE ELECTRICAL AGE is an illustrated weekly Electrical Journal, published by the Electrical Age Publishing Co., World Building, N. Y.

THE CINCINNATI LANCET CLINIC is a weekly Journal of Medicine and Surgery, published by Henry C. Culbertson, 199 W. 7th street, Cinn., Ohio.

THE CHURCHMAN is an illustrated weekly Magazine, devoted to news of a religious kind. It has lately been increased in size, and the Thanksgiving number is worthy of the highest praise. Published by M. H. Mallory & Co., 47 Lafayette Place, N. Y.

THE MEXICAN FINANCIER includes the trade and manufacturing interests of Mexico. It is a weekly Journal printed in the Mexican and English languages. Published by Seeger & Guernsey, 7 Bowling Green, N. Y., also in Mexico and London. The paper is of especial value to those having business with our neighbors on the South.

ART OF MITRING. How to Join Mouldings; or, The Arts of Mitring and Coping. A complete treatise on the proper modern methods to apply practically in joining mouldings. A book for working carpenters, joiners, cabinet-makers, picture frame makers and wood-workers. Clearly and simply explained by over 40 engravings, with full directive text. By Owen B. Maginnis, author of "Practical Centring," "The Carpenter's Handbook," (London,) etc. Published by William T. Comstock, 23 Warren street, New York.

This book is attractively bound in cloth, of pocket size 5x7 inches, 75 pages, price $100. It is a very useful work for carpenters, millmen, and all persons who work mouldings which intersect at various angles, or circles of different radii. There has been a pressing need for a work of this kind. The illustrations show the different cuts so clearly that they may be understood by anyone.

THE STANDARD ELECTRICAL DICTIONARY. A popular dictionary of words and terms used in the practice of electric engineering. By T. O'Conor Sloane, A. M., E. M., Ph. D., author of "Arithmetic of Electricity," "Electricity Simplified," "Electric Toy Making." Published by Norman W. Henley & Co., 150 Nassau street, New York.

This is one of the most generally useful works that has been published. It gives the definition of electrical terms which are in many cases illustrated. We do not see how anyone dealing in any manner with modern appliances can do without it.

The work is 5x7 inches, 625 pages. For sale by Osborn & Alexander, 401 Market street, San Francisco. Price $3.00.

Messrs. H. V. & H. W. Poor, publishers of the well-known work, "POOR'S MANUAL OF THE RAILROADS OF THE UNITED STATES," announce that the edition of their "POOR'S HANDBOOK OF INVESTMENT SECURITIES," for 1892–93, will be ready shortly before the close of the year. The department of State, Municipal and County Indebtedness covered, in the last number of the "HAND BOOK," 125 pages. This year it will cover about 325 pages. As may be inferred from this, the information presented in this department has been vastly elaborated; and, to further increase the value of that information to subscribers, maps of each State and Territory have been added.

In all other departments of the book there has been an increase in size and comprehensiveness proportionate to their importance.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the year about to close.

FOR FIRST SIX MONTHS.—1892.

	Brick Building			Frame Building			Alterations & Addit'ns			Total Value.
	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	
Jan'ry	1	14	$ 101,872	22	33	$ 210,665	4	4	$ 7,872	$ 320,409
Feb'ry	3	8	116,310	28	50	279,149	7	8	24,818	420,277
March	2	8	72,471	30	38	175,071	5	7	14,494	262,036
April	4	23	335,359	46	63	240,772	5	6	20,850	596,981
May	3	17	137,715	46	62	271,200	4	5	21,475	430,390
June	3	9	139,022	39	54	222,110	13	13	51,291	412,423
Total	16	78	$ 902,749	211	290	$1,398,967	38	43	$140,780	265 411 $2,442,496

FOR SECOND SIX MONTHS.—1892.

	Brick Building			Frame Building			Alterations & Additions			Total Value
	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	No. of Buildings	No. of Contracts	Value.	
July	8	19	$ 276,427	55	60	$ 267,578	14	14	$ 76,556	77 93 $ 620,561
Aug	3	15	83,263	45	54	280,138	11	11	43,292	59 80 406,693
Sept	4	12	42,303	75	90	476,418	14	14	141,082	93 116 659,803
Oct	1	2	7,350	45	65	270,949	14	14	38,802	62 81 317,601
Nov	1	4	16,790	40	58	232,476	15	16	68,194	56 78 317,460
Dec.	4	8	92,217	41	47	188,822	6	6	10,688	51 61 291,727
Total	21	60	$ 518,350	301	374	$1,716,381	73	75	$379,144	398 509 $2,613,845
G'dTotal	37	138	$1,421,099	515	664	$3,115,348	111	118	$519,894	663 920 $5,056,341

It will be noticed that while the total number of buildings has been decreased by 144, and the number of contracts decreased by 247, the total cost of the buildings erected has been decreased by $1,189,715, from last year.

This statement has been made up from the contracts filed with the Recorder and we should bear in mind that in addition to this, there must have been many improvements not noted through the records. We should estimate such improvements at not less than $800,000 in the whole city, making a grand total of say, $5,856,341 for the year, which is less than in any year since 1883.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements,	value	$1,754,435
1881—	533	"	"	3,790,732
1882—	785	"	"	3,896,212
1883—	803	"	"	5,261,689
1884—	1,127	"	"	6,202,807
1885—	1,457	"	"	7,043,999
1886—	1,148	"	"	6,401,669
1887—	1,093	"	"	6,605,054
1888—	891	"	"	6,244,220
1889—	1,081	"	"	7,500,000
1890—	1,037	"	"	7,095,013
1891—	1,162	"	"	6,946,056
1892—	920	"	"	5,856,341

HEALTH REPORT OF OAKLAND, CALIFORNIA.

THE Oakland Board of Health at a recent session, discussed the necessity for the erection of a hospital for patients who may be afflicted with contagious diseases. Health Officer Dunn submitted his report for November as follows:

"The total number of deaths for November is 50 and the annual death rate per each 1000 of the population is 10. This is the lowest monthly death rate during the year and the lowest for November since 1881, (the lowering of the death rate for the month of November is undoubtedly due to the improved sanitary condition resulting from the recent sanitary inspection of the city). A careful examination of the meteorological conditions for the month of November for several years fails to show any explanation therein of the reduced mortality last month.

"The average rate of mortality for November during the past ten years—from 1882 to 1892 is 13.5 and this as against the rate for last month—10 per 1000—shows an actual life saving by improved sanitation during the past month of 1¾ persons per thousand; and if now the Board of Public Works will dredge Lake Merritt so that the main lake sewer may be kept clean by proper flushing, and also prevent the deposit of sewage into the lake from Peralta heights and Vernon heights and from the Fabiola hospital and other habitations near the northern city limits and will further provide a garbage crematory and additionally construct the proposed intercepting sewer, I have no doubt that we would be able to show from vital statistics a clear saving to this community from such improvements of several more human lives each month.

"It has been repeatedly shown in other places and also in Oakland (ten years ago as well as now) as plainly as any fact can be shown by figures that improved sewerage and other sanitary reforms will materially reduce the mortality, or in other words lead directly to the saving of human lives.

"From a study of the vital statistics of this city, I think it is safe to say that if the needed sanitary reforms I have alluded to were made that there would be an immediate fall in the annual death rate of at least three persons per 1000 of the population. This would represent an annual saving of thirty-six persons, and this would restore Oakland to its former high estate of being the healthiest city in the world—an enviable renown—and insure to our individual citizens not only prosperity, but an extraordinary span of life.—*Oakland Enquirer, Dec. 16, 1892.*

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

NOTICE OF LIEN IN MICHIGAN.—The mechanic's lien law held not to imperatively require the lien statement filed to set forth the name of the owner of the property "at the time of making said statement," it being sufficient that the ownership at the time of the making of the contract and the furnishing of the material is set forth. 60.

DAMAGES FOR DELAY ON FURNISHING PILES.—In an action by the owner of a pipe driver, for damages because of delay in furnishing piles, the measure of damages is the actual profits the owner of the pile driver was prevented, by the acts complained of, from earning elsewhere, and evidence of the per diem value of the machine is inadmissable.

Boston v. Henderson, Supreme Court of Mich. 52 N. W. Rep. 1020, 58.

THE RIGHT OF FOLLOWING MISAPPLIED MONEY OR PROPERTY.—Formerly, the equitable right of following misapplied money or other property into the hands of the parties receiving it depended upon the ability of identifying it, the equity attaching only to the very property misapplied. This right was then first extended to the proceeds of the property, namely, to that which was procured in place of it by exchange, purchase, or sale; but if it became confused with other property of the same kind, so as not to be distinguishable, without any fault on the part of the possessor, the equity was lost. Finally, however, it has come to be held as the better doctrine that confusion does not destroy the equity entirely, but converts it into a charge upon the entire mass, giving to the party injured by the unlawful diversion a priority of right over the other creditors of the possessor.

San Diego County v. California Nat. Bank, U. S. Circuit Court 53 Fed. Rep. 59, 151.

LIABILITY OF OWNER FOR CONTRACTORS BILLS.—A late owner contracted with a builder for the construction of a house, and the builder obtained the lumber from a dealer therein. The owner in conversation with the lumber dealer, said he was dissatisfied with the builder's work, and thought he would finish the house himself. On being asked what would become of the lumber account he replied that he would pay it. The dealer continued to furnish the builder materials, and charged them to him, and repeatedly urged him for payment. No bill was ever presented to the owner, and no intimation given him that the dealer relied on him for payment, there was no new consideration for the owner's promise, and, not being in writing, it was void.

Green v. Latcham, Court of Appeals of Colorado, 31 Pac. Rep. 233, 136.

RIGHT OF SUBCONTRACTOR TO LIEN.—The right of a subcontractor to file a lien on a building is not affected by a default on the part of the principal contractor in failing to keep his agreement with the owner, nor by an agreement between the owner and principal contractor subsequent to the one under which he (the subcontractor) began work, and of which he had no notice, wherein the principal contractor undertook to deliver the building to the owner free of all liens.

Cook v. Williams, Supreme Court of Penn., 24 At. Rep. 746, 85.

NOTICES NEED ONLY BE IN ENGLISH.—The laws of this country and the proceedings of the courts are required to be in the English language. So where a notice has to be given, as that a place is unsafe, it is sufficient that a proper notice in English be put up. No further duty in this respect is owed to persons who cannot read English, or cannot read at all.

Weirs v. Jones County, Supreme Court of Iowa, 53 N. W. Rep. 312, 70.

CANCELLATION OF WRITTEN CONTRACT FOR MISTAKE.—While a court of equity will not reform a written contract upon the ground of mistake, unless the mistake is shown to be common to both parties, yet it may exercise its powers to grant relief in a proper case, by rescinding and cancelling the writing upon the ground of a mistake of facts material to the contract by one party only.

Werner v. Rawson, Supreme Court of Georgia, 15 S. E. Rep. 813, 78.

AN EMPLOYE IS NOT RELEASED BY HIS EMPLOYER'S VIOLATION OF AN INDEPENDENT CONTRACT.—When one is employed by another to render personal services for a particular time, the violation by the employer of a subsequent contract having no connection with the contract for service will not justify the employe in refusing to abide by and perform his contract for the remainder of the time.

Stix v. Roulston, Supreme Court of Georgia, 15 S. E. Rep. 826, 68.

NOTICE OF LIEN IN INDIANA.—The statutes of Indiana require that the notice of a claim of lien shall specify the amount of the claim and the description of the property, and that when a material man furnishes material he shall so notify the owner before he furnishes the material. There are two separate notices, and neither used contain any reference to the other, but in a suit for foreclosure, both must be alleged and proved.

Adams v. Shaffer, Supreme Court of Indiana, 31 N. E. Rep. 1108, 76.

THE SALE OF DELETERIOUS IMITATIONS WILL BE RESTRAINED.—Independently of any right of persons to the exclusive use, as a trade mark, of the name applied by them to their products, the sale by others of a deleterious substance, represented by the latter to be in part or in whole the same substance in which the former are dealing, and of which they are the sole producers, and which is admittedly of a beneficial character, will be restrained.

City of Carlsbad v. Tibbetts, U. S. Circuit Court, D. Mass. 51 Fed. Rep. 852, 81.

BUSINESS MOSAICS.

If any person who is looking for office under the incoming Administration will send us his address and $3.00, we will send him the CALIFORNIA ARCHITECT AND BUILDING NEWS every month during 1893.

The best or none! This is what every person wants when looking for cooking or heating apparatus. Those who are wise in this respect will examine the stove department of the San Francisco Gas Light Company at No. 16 Post street.

The quality of paper for office use is of more importance than is generally given to it. We have tried many places before finding a quality that would fulfil the purposes of our use as that found at Bonestell & Co., 401 Sansome street. They have deafening and carpet felts; lining, sheathing and water-proof papers, and their roll detail and drawing papers are so far superior to others that we have heard many words of praise from those who have used them. Satisfaction will follow a trial. A word to the wise is sufficient.

Dearest reader, when using Dixon's pencils or crayons your eyes will fairly twinkle with delight to see how easily you can get the softest or strongest effects of light and shade. By their use the lights are left clear and sparkling, while the deepest shadows have a transparency which leads the eye still further back into the far distance. On account of their many good qualities they have displaced all other pencils in this office. To use them is to prefer them to any other in the market.

The wet spell, lately, has demonstrated the necessity of using sheathing paper under the outer boarding. The "Neponset" Waterproof Paper has been successfully used for this purpose for many years. Messrs. Dimmick & Low, agents, 221 Front street.

Architects in the City or Country who want "blue prints" of their drawings should send to W. H. Smyth, 258 Market street, this city.

George Goodman, 307 Montgomery street, is well known by all the old Architects and Builders on account of the superior quality of the artificial stone for sidewalks, walls, bulkheads and other work done by him. He has been a long time in the business and we have yet to see a failure in any respect of any of his work.

The Western Iron Works, 123-125 Beale street, have earned a reputation for first-class wrought iron or steel constructional work for buildings. They make anything in their line from a strap or anchor to the largest girder. Their Steel wheelbarrows have been in use for many years, and are considered the best in the market.

The Fitzgerald prepared wall plaster has recently had a "tilt" with the old line plastering, and in the language of the historian "gave em fitz." The Fitzgerald plaster won the prize on account of its superior merit. The largest and most costly buildings in this city are being plastered with it.

Art glass work, bending, cutting, staining, embossing, beveling, name and monogram work as done by Wm. Schroeder, 39½ Fremont street, is of such superior quality as to call forth words of praise wherever seen. Some of the finest business blocks and residences have had Mr. Schroeder's ornamental glass used in their decoration.

M. M. Heineman & Co., 32½ Fremont street, deals in "Linerusta Walton" and ornamental papers of all kinds. The late styles of Linerusta Walton have a beauty distinctly their own, and when touched up by the decorator, form a delightful relief effect for walls, etc.

Rubber goods and fire protective supplies of all kinds can be had of Frank McAllister, 24 Beale street.

F. H. Rosenbaum & Co., of 567 Market street, is one of the oldest houses dealing in mirrors, plate, window and ornamental glass in this city. This house can always be relied upon even when others fail.

For Pumps, Rams, etc., call on W. T. Garratt & Co. and for bronze work they stand above all other manufacturers on this Coast.

Fire-proof iron lath is taking the place of wooden lath in many situations where, heretofore, it was not considered practical. When it is thought of sufficient importance to investigate, then the difference in cost as compared with the difference in the fire risk becomes apparent, and the Pacific Company's Sheet Iron Lath are put on, thereby giving satisfaction to all parties.

The California World's Fair Commission has ordered fourteen of the Schenck Swinging Hose Reels, to be placed in the California building at Chicago for inside fire protection. This will materially reduce the rate of insurance on the building and contents, as by their use one man can put a stream of water on a fire in less that thirty seconds.

The J. L. Mott Co's. Specialties have been prepared with such care and knowledge of the subject in hand, that we are constantly reminded of the advantages to be obtained by their use. The rolled rim of the r bath tubs being enameled and thoroughly finished does away with any capping of wood or metal. The exterior may be ornamented with relief work or worked in plain tints with gold bands. Wherever these baths have been used they have given great satisfaction.

The San Francisco Mineral Paint Co. suffered severe loss by fire on the 12th inst. Their works in Alameda County were so far destroyed as to require new works. The company has been in operation only about two years, but the product was so exceptionally good that it came into favor at once. The demand for the paint has been so great that the mill was run to its full capacity, therefore, only a limited stock remains on hand. The insurance covered only a small part of the loss, but we learn they intend to rebuild immediately.

The Chapman Fire Hose Reel has again come to the front. See advertisement on page xii.

TENDERS TO BE RECEIVED.

Office of the Custodian, U. S. Appraisers' Stores Building, San Francisco, Cal., December 10, 1892. Sealed Proposals will be received at this office until 12 M. on the 28th day of December, 1892, and opened immediately thereafter for all the labor and materials required for miscellaneous alterations to the new U. S. Appraisers' Stores Building at San Francisco, California, in accordance with drawings and specification, copies of which may be had at this office.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidder. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Miscellaneous Alterations to the New U. S. Appraisers' Stores Building at San Francisco, Cal.," and addresses to,

MR. T. G. PHELPS,
Custodian.

CITY BUILDING NEWS.

Allen near Cortland.—To build; owner, Ludwig Schaufel; contractor, F. M. Schweitzer; cost, $700; signed, Nov. 21; filed, Nov. 22; payments, $250, frame, $250, accepted; $200, 35 days.

Alvarado near Castro. Dwelling; owner, Catherine R. Parker; architects, Smith & Freeman; contractor, R. M. Murray; cost, $4,250; signed, Nov. 7; filed, Nov. 16; payments, $800, enclosed and chimneys built; $800, brown mortar on; $750, ready for hardware; $80, completed; $814, 35 days.

Broadway near Kearny. Carpenter work; owner, Wm. Bocarde; cost, $1,425; signed, Nov. 19; filed, Nov. 19; payments, $450, brown mortar on; $450, completed; $825, 35 days.

Bush near Central Ave. One-story cottage; owner, Elizabeth E. Parsons; contractors, Soule & Hoadley; cost, $2,550; signed, Nov. 12; filed, Nov. 14; payments, $178, frame up; $478, enclosed; $478, plastered; $478.50, completed; 637.50, 35 days.

Bush near Powell. Brick and concrete work; owner, Joseph Kennedy; architect, W. H. Lillie; contractor, Henry Larsen; cost, $2,271; signed, Nov. 4; filed, Nov. 9; payments, $1,000, walls ready for sills; $719, completed; $555, 35 days.

Bush near Powell. Plumbing, gas-fitting, etc.; owner, Mary F. Ryer; architect, W. H. Lillie; contractor, R. A. Vance; cost, $1,140; signed, Nov. 23; filed, Nov. 28; payments, $427.50 rough work accepted; $427.50, completed; $285, 35 days.

California near Drumm. Brick work; owner, Lanning Co.; architects, Coxhead & Coxhead; contractors, Richardson & Gale; cost, $7,300; signed, Nov. 4; filed, Nov. 16; payments, brick to be furnished by owner; 1st day of each month 75 per cent as work progresses; balance 35 days.

California near Dupont. Brick, stone work, etc.; owner, Geo. Reichley; architect, Chas. M. Rousseau; contractor, Wm. Bayford; cost, $1,400; signed, Nov. 26; filed, Nov. 26; payments, 75 per cent as work progresses; balance, 35 days.

Church near 24th. One-story frame; owner, J. F. O'Connor; contractor, Wm. Linden; cost, $1,100; signed, Nov. 17; filed, Nov. 18; payments, $550, brown mortar on; $550, completed and receipted bills shown.

Clara near 4th. A frame dwelling; owner, Mary Coffey; contractor, F. V. Acker; cost, $8,300; signed, Nov. 23; filed, Nov. 23; payments, $828, roofed; $825, plastered; $825, completed; $825, 35 days.

Clay and Webster. Masonry; owner, L. C. Lane; architects, Wright & Sanders; contractors, Peacock & Butcher; cost, $52,000; signed, Nov. 19; filed, Nov. 21; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Cook near Geary. Two-story frame; owner, Jacob Gillig; contractor, C. H. Wedgwood; cost, $2,500; signed, Nov. 15; filed, Nov. 17; payments, $600, rustic on; $500, brown mortar on; $875, plastered; $625, 35 days.

Dupont and California. Brick building; owner, C. L. Vercoutere; architect, C. M. Rousseau; contractor, Geo. Reichley; cost, $14,137; signed, Nov. 17; filed, Nov. 19; payments, $1,769, 2d story joists on; $1,767, roof on; $1,767, brown mortar on; $1,767, plastered; $1,767, wood finish on; $1,767, completed; $8,559, 35 days.

Fair Oaks near 22d. One-story frame; owner, John Christensen; architect, M. J. Welsh; contractors, Arthur & Lafayette; cost, $1,870; signed, Nov. 25; filed, Nov. 25; payments, $467.50, frame up; $467.50, brown mortar on; $469.50, completed; $467.50, 35 days.

Fell near Lott. Two-story frame; owners, A. L. Schocken and wife; contractors, Marcuse & Remmel; cost, $4,500; signed, Nov. 16; filed, Nov. 23; payments, $1,125, enclosed; $1,125, brown mortar on; $1,125, completed; $1,125, 35 days.

Fifth and Bryant. Two-story building and stable; owner, Estate of Jas. Adams; contractor, Jas. Campbell; cost, $6,100; signed, Nov. 21; filed, Nov. 25; payments, $1,500, 2d story joists on; $1,500, roof tinned and frame of shed up; $1,575, completed; $1,525, 35 days.

Fillmore near California. One-story frame; owner, John Cronin; architect, T. J. Welsh; contractor, Edward Mooney; cost, $1,403; signed, Nov. 27; filed, Dec. 1; payments, $385, frame up; $385, tin roof on; $385, completed; $385, 35 days.

Fulton near Lott. One-story cottage; owner, J. H. Ohland; contractor, Peterson & Olsen; cost, $1,640; signed, Nov. 21; filed, Nov. 22; payments, $410, roof shingled; $410, brown mortar on; $410, completed; $410, 35 days.

Guerrero near Ridley. Raising and furnishing house; owner, Mrs. R. Winch; contractor, R. C. Hinneston; cost, $1,275; signed, Nov. 26; filed, Nov. 26; payments, 75 per cent as work progresses; balance 35 days.

Hayes and Fillmore. Millwork; owner, John Massey; architect, C. J. Devlin; contractor, Wm. Crocker; cost, $6,500; signed, Nov. 3; filed, Nov. 3; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Howard near 3rd. Plastering; owner, Rienzi Hughes; architects, Newson Bros. contractor, Frank Coghlan; cost, $1,071; signed, Nov. 16; filed, Nov. 17; payments, $330, brown mortar on; $625, plastered; $419, 35 days.

Howard near 8th. Alterations; owner, M. F. Turner; architects, Shea & Shea; contractor, Richard Simon; cost, $1,055; signed, Nov. 28; filed, Nov. 30; payments, $391, brown mortar on; $395, completed; $396, 35 days.

Larkin near Sacramento. Two-story frame; owner, Mrs. Sarah Patek; architects, Kenitzer & Kollofrath; contractors, Schutt & Kroecker; cost, $10,000; signed, Nov. 11; filed, Nov. 12; payments, $1,900, frame up; $2,500, enclosed and brown mortar on; $2,000, ready for paint; $2,100, completed; $2,700, 35 days.

Lombard near Taylor. Carpenter and mill work; owners, Claus Wreden & Co.; architect, W. Winterhalter; contractor, W. Howe; cost, $4,995; signed, Nov. 26; filed, Nov. 28, payments, $1,200, 3rd tier of joists in place; $1,200, main building and brew-house enclosed; $1,200, completed; $1,395, 35 days.

Lombard near Taylor. Work on a four-story brick building; owners, Claus Wreden & Co.; architect, W. Winterhalter; contractor, Louis Wagner; cost, $2,200; signed, Nov. 26; filed, Nov. 28; payments, $1,200, when kettle columns, etc., are delivered on premises; $400, completed and tested; $400, 35 days.

Lombard near Taylor. Excavating, iron, stonework, etc.; owners, Claus Wreden & Co.; architect, W. Winterhalter; contractor, Crawford Ferris; cost, $5,623; signed, Nov. 26; filed, Nov. 28; payments, $1,200, graded, brick work up to 2d tier of joists and iron columns of lower floor in place; $1,000, stone and iron work on premises; $1,000, walls ready for 3rd tier of joists; $1,000, completed; $1,423, 35 days.

Market near Powell. Marble work; owner, Annie Donahue; architect, Chas. I. Havens; contractors, Raffino & Bianchi; cost, $5,757; signed, Nov. 9; filed, Nov. 9; payments, 1st day of each month 75 per cent as work progresses; balance, 35 days.

Market and Powell. Elevator enclosures, stair and metal work; owner, Annie Donohue; architect, C. I. Havens; contractors, S. F. Novelty and Plating Co.; cost, $3,800; signed, Nov. 11; filed, Nov. 11; payments 1st day of each month 75 per cent as work progresses; balance 35 days.

Nineteenth and Treat Ave. Two-story frame and stable; owners, J. Adams and J. Rohrer; architect, W. Winterhalter; contractor, Emile Hoelle; cost, $3,638; signed, Nov. 9; filed, Nov. 9; payments, $910, enclosed; superstructure and other buildings enclosed; $909, completed; $909, 35 days.

Nineteenth near Treat Ave. Grading, sewerage, brick and stone work; owner, J. Adams and J. Rohrer; architect, W. Winterhalter; contractor, Fred. Wagner; cost, $1,334; signed, Nov. 9; filed, Nov. 9; payments, $700, foundations ready for wall plates and stone blocks set; $300, completed; $334, 35 days.

Noe and Alvarado. Frame building; owner, T. J. Lyons; architects, Pissis & Moore; contractor, F. W. Kern; cost, $4,680; signed, Nov. 3; filed, Nov. 15; payments, $750, frame up; $750, brown mortar on; $750, plastered; $750, ready for painting; $510, completed; $1,170, 35 days.

Oak near Ashbury. Two-story frame; owner, Jas. A. Code; architect, M. G. Bugbee; contractor, W. A. Griffiths; cost, $2,800; signed, Nov. 30; filed, Nov. 30; payments, $700, enclosed; $700, brown mortar on; $700, completed; $700, 35 days.

O'Farrell near Powell. Alterations and additions; owner, Elizabeth Penlington; Carrie E. and Mary Bridge; architect, R. H. White; contractor, David T. Pierce; cost, $1,275; signed, Nov. 22; filed, Nov. 23; payments, $1,500, new brick wall up and second tier of joists on; $800, brown mortar on; $900, completed; $1,075, 35 days.

Pacific near Hyde. Three-story frame; owner, Mrs. Pauline Greenburg; architect, W. C. Dickerson; contractor, Wm. Belyea; cost, $8,000, signed, Nov. 30; filed, Nov. 30; payments, $1,000, lumber on ground and 1st floor joists on; $1,000, rustic on and chimneys topped; $2,000, brown mortar on and rough plumbing in; $900, plastered and back porches up; $1,000, completed; $2,100, 35 days.

Pacific Ave. near Polk. Alterations; owners, J. L. & T. F. Norton; architects, Shea & Shea; contractor, Jas. Smith; cost, $1,383; signed, Nov. 23; filed, Nov. 28; payments, $518, brick wall up to joists; $519, completed; $346, 35 days.

Page near Baker. Two-story frame; owner, L. H. Hawley; contractor, Louis Landler; cost, $4,500; signed, Nov. 14; filed, Nov. 15; payments, $100, receipted for; $4,400, to be paid Feb. 15, 1893.

Page near Lyon. Two-story frame; owner, Geo. A. Abel; contractor, L. A. Secor; cost, $2,100; signed, Nov. 7; filed, Nov. 12; payments, $420, frame up except rafters; $420, brown mortar on; $420, plastered; $420, completed; $420, 35 days.

Pine near Larkin. Two-story frame; owner, Wright & Hocking; contractor, Louis Landler; cost, $5,000; signed, Nov. 10; filed, Nov. 15; payments, $1,250, frame up; $1,250, plastered; $1,250, completed; $1,250, 35 days.

Post and Larkin. Two-story frame; owner, Frank S. Kelly; architect, C. I. Havens; contractor, A. J. Hatfield; cost, $7,690; signed, Nov. 16; filed, Nov. 16; payments, $1,400, enclosed; $1,400, brown mortar on and rough pipes in; $1,400, plastered and outside primed; $1,540, completed; $1,950, 35 days.

Post near Scott. To build; owner, Adolph Eisenbach; architects, Salfield & Kohlberg; contractor, H. Rohling; cost, $1,500; signed, Nov. 18; filed, Nov. 21; payments, $600, brown coated; $500, completed; $400, 35 days.

Post near Taylor. Excavating and removal of old building; owner, Mrs. J. Pinet; architects, Pissis & Moore; contractors, Ransome & Cushing; cost, $1,950; signed, Nov. 3; filed, Nov. 9; payments, 1st and 15th day of each month 75 per cent as work progresses; balance, 35 days.

Post near Taylor. A frame building; owner, Mrs. J. Pinet; architects, Pissis & Moore; contractor, F. W. Kern; cost, $5,990; signed, Nov. 3; filed, Nov. 9; payments, 1st and 15th days of each month 75 per cent as work progresses; balance 35 days.

Post near Taylor. Four-story frame; owner, O. M. Goldaracena; architects, C. R. & J. M. Wilson; contractor, P. Antonelli; cost, $9,400; signed, Nov. 17; filed, Nov. 17; payments, $1,762.50, frame up and roof on; $1,762.50, brown mortar on; $1,762.50, plastered and exterior finish on; $1,762.50, completed; $2,350, 35 days.

Powell near Pacific. Store and flats; owner, H. J. Fisher; architects, Townsend & Wyneken; contractor, J. N. McLeod; cost, $3,286; signed, Nov. 2; filed, Nov. 5; payments, $600, frame up, chimneys up, enclosed; $600, brown mortar on; $664, outside work done hard finished; $600, completed; $822, 35 days.

Sacramento and Broderick. Two-story frame; owner, C. H. Hewitt; architect, M. J. Welsh, contractors, Douglass & O'Connor; cost, $4,800; signed, Nov. 28; filed, Nov. 28; payments, $1,200, frame up; $1,200, brown mortar on; $1,200, completed; $1,200, 35 days.

Scott near Pacific. Two-story frame; owner, J. S. Dinkelspiel; architects, Kenitzer & Kollofrath; contractor, C. Chrisholm; cost, $8,300; signed, Nov. 12; filed, Nov. 12; payments, $2,000, frame up; $2,000, brown mortar on; $2,000, inside ready for finish; $225, completed; $2,075, 35 days.

Second Ave. near Clement. To build; owner, R. C. A. Barth; contractor, J. W. Smith; cost, $2,327; signed, Nov. 12; filed, Nov. 16; payments, $600, roof on; $500, plastered; $644.50, completed; $581.50, 35 days.

Seventeenth near Noe. Two-story frame; owner, Louise Hackett; architect, E. Vogel; contractor, L. B. Schmidt; cost, $3,375; signed, Nov. 21; filed, Nov. 23; payments, $843, frame up and roof on; $843, brown mortar on; $843, completed; $846, 35 days.

Sixth and Clara. Additions to stable; owners, Sullivan & Doyle; contractor, H. R. Schmuckert; cost, $1,100; signed, Nov. 30; filed, Nov. 30; payments, $412.50, coal tar on floors; $412.50, completed; $275, 35 days.

Sutter and Mason. Trenching and bulkhead; owner, Simeon Wenban; architects, Pissis & Moore; contractor, J. H. O'Brien; cost, 80 cents per cubic yard to 10 feet below surface; below this $1.00, per cubic yard; signed, Nov. 26; filed, Nov. 26; payments, 1st and 15th day of each month 75 per cent as work progresses; balance 35 days.

Sutter near Mason. Bulkheads and foundations; owner, Simeon Wenban; architects, Pissis & Moore; contractors, Gray Bros. Artificial Stone Paving Co.; signed, Nov. 14; filed, Nov. 16; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Twenty-seventh near Sanchez. One-story cottage; owner, A. L. Lynn; contractors, Wm. & Henry Plant; cost, $1,180; signed, Nov. 5; filed, Nov. 7; payments, $595, frame up; $290, white coated; $295, completed.

Twenty-fourth near Homestead. Two-story frame; owner, Timothy Collins; architect, J. J. Clark; contractor, Wm. Linden; cost, $3,500; signed, Nov. 22; filed, Nov. 23; payments, $875, rustic on; $875, brown mortar on; $870, inside finish completed; $880, 35 days.

Union St., Nos. 517 and 519. Alterations and additions; owner, M. Sabatino; architects, Townsend & Wyneken; contractor, Wm. M. McPhee; cost, $1,600; signed, Oct. 28; filed, Oct. 28; payments, $250, enclosed; $400, brown mortar on; $225, completed; $285, 35 days.

Utah near Santa Clara. One-story frame; owner, E. T. Thomas; architect, E. A. Hermann; contractor, H. Jacks; cost, $1,510; signed, Nov. 7; filed, Nov. 7; payments, 1st and 15th day of each month 75 per cent as work progresses; balance 35 days.

Valencia and Liberty. Two and three story frames; owner, Wm. McCormick; architect, A. J. Barnett; contractor, Timothy Sullivan; cost, $20,070; signed, Oct. 4th; filed, Oct. 28; payments, $2,000, 2d story joists of three story building in place; $2,500, rustic and roof boards on; $3,500, brown mortar on; $4,000, plastered and outside finish nearly completed; $4,050, completed; $5,020, 35 days.

Valencia and 14th. One-story frame, 4 stores; owner, M. Sachs; architects, P. R Schmidt; contractor, John Furness; cost, $3,434; signed, Nov. 1; filed, Nov. 2; payments, $850, 1st payment; $850, 2d, $850, 3rd, $881, 4th.

Valencia near 22d. Painting exterior; owner, Board of Education; architect, C. I. Havens; contractor, Thos. Learned; cost, $185, signed; Oct. 19; filed, Oct. 20; payments, $185, completed.

Vallejo near Scott. Two-story frame; owner, R. J. Taussig; architect, F. E. Neubauer; contractor, J. Schuler; cost, $3,500; signed, Oct. 7; filed, Oct. 13; payments, $700, frame up; $700, enclosed; $700, plastered and outside finished; $700, completed; $700, 35 days.

Varrennes near Filbert. Two-story frame; owner, E. Vatnone; contractor, G. Ratto; cost, $5,200; signed, Oct. 18; filed, Oct. 18; payments, $1,300, rough timbers up; $1,300, brown mortar on; $1,300, completed; $1,300, 35 days.

Washington near Walnut. Two-story frame; owner, H. L. Van Winkle; architect, J. H Littlefield; contractor, O. E. White; cost, $5,183; signed, Sept. 28; filed, Sept. 30; payments, 1st day of each month 75 per cent as work progresses; balance 35 days.

Walnut Ave. near Laguna. Two-story frame; owner, John Horn; architects, Collignon & Larsen; contractor, L. B. Schmidt; cost, $1,350; signed, Nov. 5; filed, Nov. 7; payments, $506.25, brown mortar on; $506.25, completed; $337.50; 35 days.

Webster near Broadway. Two-story frame; owner, S. M. Smith; architect, M. G. Bugbee; contractors, Brennan Bros.; cost, $5,350; signed, Oct. 19; filed, Oct. 22; payments, $1,000, frame up; $1,000, brown mortar on; $1,000, plastered; $1,012.50, completed; $1,337.50, 35 days.

ALAMEDA COUNTY.

Central Ave. near Chestnut, Alameda. Frame building; owner, C. George Bull; contractors, A. W. Pattiani & Co.; cost, $4,330; signed, Nov. 17; filed, Nov. 22; payments, $1,200, enclosed and chimneys built; $1,100, window frames set and brown mortar on; $970, completed; $1,068, 35 days.

Bard and Soto, Haywards. To build; owner, A. E. Fischer; architect, Theo. Lenzen; contractor, Rasmus Albert; cost, $1,790; signed, Nov. 22; filed, Nov. 26; payments, $445, brick work complete and frame up; $445, enclosed and brown mortar on; $450, painting dry; $450, completed.

Bay near Eagle. Two cottages; owner, Bernhard Peterson; contractors, Marcuse & Remmel; cost, $2,500; signed, Nov. 28; filed, Nov. 29; payments, $625, frames up and roofs on; $625, brown mortar on; $605, completed; $625, 35 days.

Filbert near 12th, St., Oakland. To build; owner, W. A. Akins; architects, J. C. and E. A. Mathews; contractors, Caldwell & Nickerson; cost, $1,888; signed, Dec. 1; filed, Dec. 1; payments, $200, frame up; $400, enclosed; $400, brown mortar on and outside of building painted; $416, completed; $472, 35 days.

Franklin near Delger, Oakland. Two-story frame; owner, Peter Thompsen; contractor, C. E. Nichols; cost, $2,550; signed, Nov. 1; filed, Nov. 4; payments, $640, frame up and roof shingled; $640, plastered and 1st coat of paint on; $640, completed; $630, 35 days.

Linda Vista Terrace, Block A. Stone wall; owner, E. A. Herron; contractor, Alfred Fitzjohn; cost, 65 cts. per cubic ft.; signed, Nov. 21; filed, Nov. 21; payments, 75 per cent as work progresses; balance 35 days.

Moss Ave. near Boadway, Oakland. To build; owner, Fabiola Hospital Association; contractor, A. E. Jones; cost, $1,707; signed, Nov. 9; filed, Nov. 10; payments, $1,280.25, completed; $426.75, 35 days.

Oxford near College Way, Oakland. Two-story frame; owner, Mary E. Masters, contractor, F. A. Brown; cost, $2,850; signed, Nov. 15; filed, Nov. 16; payments, $500, foundation in and frame up; $900, enclosed and brown mortar on; $737, completed; $712.50, 35 days.

Santa Clara Ave., Alameda. One-story frame, owner, J. J. Thatcher; contractor, A. R. Derke; cost, $1,400; signed, Nov. 28; filed, Dec. 1; payments, $500, building roofed, $900, 35 days.

Santa Clara Ave. near Walnut, Alameda. Two-story frame; owner, C. Thomsen; contractor, D. S. Brehaut; cost, $2,680; signed, Nov. 1; filed, Nov. 3; payments; $670, frame up and sheathing on main roof; $670, enclosed, roof and cornice on; $670, plastered and windows in; $670, 36 days.

Sea View Park. To build; owner, Catherine Jones; contractor, August Winberg; cost, $1,100; signed, Nov. 21; filed, Nov. 22; payments, ¼ frame erected; ¼, brown mortar on; ¼, plastered; balance 36 days.

Shattuck Ave. and Center street, Alameda. Two-story frame; owner, Christian Frick; contractor, A. H. Broad; cost, $4,330; signed, Nov. 17; filed, Nov. 22; payments, $900, building enclosed; $900, brown mortar on; $900, completed; $845, 35 days.

Thirty-first near Grove, Oakland. One-story frame; owner, H. A. Burns; architect, John Langland; contractor, E. P. McGowan; cost, $2,225; signed, Nov. 1; filed, Nov. 7; payments, $556.25, enclosed; $556.25, brown mortar on and window frame set; $556.25, completed; $556.25, 35 days.

Twenty-seventh near 10th, Oakland. One story cottage; owner, Gustav Becker; contractor, J. C. S. Whalin; cost, $1,930; signed, Oct. 4; filed, Oct. 4; payments, $482.50, enclosed and roof on; $482.50, brown mortar on; $482.50, completed; $482.50, 35 days.

Union near 8th, Oakland. Two-story house; owner, Mrs. L. J. Woods; architect, John Conant; contractors, Simpson & Spence; cost, $2,580; signed, Oct. 4; filed, Oct. 5; payments, $645, frame up and shingles on; $645, brown mortar on and window sashes in; $645, carpenter-work done; $645, 35 days.

Werner Tract, Block 34. One-story frame; owner, Philip Strauter; contractor, W. H. Higgins; cost, $1,665; signed, Oct. 11; filed, Oct. 11; payments, $416, rough frame and chimneys up; $416, roofing, exterior finish and brown mortar on; $416, completed; $417, 35 days.

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WITH this issue we commence our fourteenth year. Having safely weathered the troubles that are popularly supposed to be associated with number thirteen, we now see no reason why we should not live to a hearty old age, and with the best wishes and encouragement of our numerous friends and patrons, shall endeavor to strive for the advancement of the interests of the Architectural profession and the different branches of the building interest that are so intimately associated with it.

ARCHITECTS Wood & Lovell, have entered into copartnership with Mr. Fuller Claflin of this city.

Messrs. Wood and Lovell will confine their attention principally to New York and Chicago, while Mr. Claflin will look after the Pacific Coast interests.

THE terms of the invitation by the Board of Trustees of the Stockton Free Public Library, to architects to submit competitive designs for a new library building, have been severely criticised by prominent architects.

The board, in issuing this invitation, does not seem to have had a very clear idea of an architects duties; but until the general public is better educated as to what an architect is called on to do, and becomes better acquainted with the real duties, responsibilities, rights and privileges of the profession, no great hope can be had that future competitions will be carried out on more just and liberal terms.

If building committees, before framing their invitations, would consult some member or members of the architectural profession, they could, with the advice and assistance that would be placed at their disposal, frame conditions that would secure them the good will of competitors, and attract instead of repel the collaboration of the architects.

To offer small premiums generally means that they will get cheap work in return. Let them try once in a while being liberal and we will predict that the result will be infinitely more satisfactory, and the designs submitted will average a higher degree of merit, than is the case at present.

To require of the architect bonds for the erection of a building within certain limits of cost, is to make him assume obligations that are not a part of his duties.

THE QUESTION OF AMENDING THE PRESENT LIEN LAW.

WE have received the following on the subject of the Lien Law from a firm of local architects. The ideas advanced seem to offer a practical solution of the vexed question, and appear to be worthy the consideration of law makers. Should any of the parties interested desire to criticise the position taken in this communication, space in our columns will be at their disposal:

The question of amending the present Lien Law of this State will undoubtedly be brought before the Legislature now in session, though whether the divergent interests of the numerous classes affected by the law can be united in support of any one proposition, appears problematical.

As far as concerns the building interests, and our remarks are made with particular reference thereto, the law as it stands, is not satisfactory to the very ones it was designed to benefit, and the different building associations and protective societies have different amendments to propose; if they can agree on a course of action, they can probably control legislation on the subject.

They fully realize the difficulties to be overcome, and hope to find a solution of the question, satisfactory to those who desire the protection of the law, and at the same time just to others who have equally as important interests.

The main object of this and all similar laws, is to protect the laborers, material men and subcontractors who co-operate in the erection of a building.

This should be done without injuring the interests, or jeopardizing the property of the property owner, and in our own opinion can be satisfactorily accomplished in a much simpler and more effectual manner than is done by the present statutes. Let it be made obligatory on the owner when he contracts with a builder or other mechanic, to exact a bond for the *full amount of the contract price;* let this bond be drawn, not only to guarantee the completion of the building, but also the *payments of all debts* contracted in its erection, and have it signed by two sureties; and lastly, *require these sureties to duly qualify* before a notary in double the amount for which they bind themselves.

This should afford protection to laborers, material men and subcontractors alike, while it should not meet with any opposition from reputable and reliable contractors, as it would protect them against dishonest competition and would not work any hardship on honest property owners.

The law as it now stands is but of little practical assistance to the creditors in any case, and is open to the very serious objection that it is so complicated that its practical working enables both dishonest contractors and scheming owners to defraud the creditors in nine cases out of ten where such intention exists.

Advantage is taken every day in the week of the ignorance and inexperience of an owner who builds for perhaps the first and only time, and where a dishonest contractor is not able to do up the owner, he always has the equally profitable alternative of doing his creditors, for in many, in fact most cases, the bonds as at present written on building contracts, are for but a small proportion of the amount of the contract, price, are signed by men who have no intention even when they have the means, of fulfilling the obligations they assume and are binding merely for the completion of the building whether the owners of the property or the creditors of the builder are protected is immaterial to them.

The Builder's Association, however, has been opposed to allowing its members to give bonds for more than one quarter the amount of the contract price, though it seems to us that their action is really against their own best interests; if it was made obligatory for a contractor to furnish *good and sufficient security*, the irresponsible and rascally contractors would soon be driven from the field, and the honest man, who desires to give a dollar's worth for the dollar he receives, would have a chance to make an honest living, which is hardly possible when the *pro-rata* man can so easily step in and under bid him, and secure work at prices that are actually insufficient to pay for the labor and material. But for all that the pro-rata man does not go without his profit! Oh, no! That is secured and pocketed at the time the first installment is received, and after that he does not worry; he lets the *other man* do that.

There is one other point in the existing law that should be changed, this is, the clause requiring the contract or the memorandum thereof, to be filed before the work is begun, failure so to do rendering the owner liable for the contractors debts; this sometimes gives a dishonest, designing contractor a chance to start the work before the actual filing takes place, and we have known instances where no secret was made of the sharp practice that thus enabled the contractor to cinch the owner. We think a reasonable time, say three days from the date of the instrument, should be allowed for this filing. Of course the object of the filing is to give the material man and subcontractor a chance to learn how much value is to be given for a certain amount of money, such information being necessary for their guidance in bargaining with the contractor; as a matter of fact, however, this information is very seldom obtained from the recorder's office, but generally from the architect's specifications, or the contractor himself. If the intention of the law was fully carried out the recorder's office would be practically turned into an architect's office or contractors' exchange, and the space and number of assistants at the disposal of the Recorder would be found to be ridiculously insufficient.

GOOD AND BAD ROADS.

COLONEL A. A. Pope, in an interview published in the *Examiner*, reads us a lecture on the subject of good and bad roads; the remarks he made are to the point, and we wish our legislators could be impressed with the immense importance of good, smooth, hard, level highways connecting every town, city and State in the Union; their benefits to every class of citizens cannot be disputed, though we are sorry to say, but few persons realize the far reaching effects of these benefits.

Macaulay has said that of all inventions, the alphabet and the printing press excepted, those inventions which bridge distance have done most for the civilization of our species: intercourse between communities and the development of commerce have shown communities the necessity of systematically prepared roadways.

"The Persians and the Greeks understood this, but the Romans knew it best of all. They built roads that would last for thousands of years, and they did it with the object of civilization, which question involved of course their domain. The old military roads of the Roman Empire constituted a system, the superior of which the world has never seen in its scope and the thoroughness with which it was perfected in all directions. They knew nothing about 'crushers' and 'asphalt' and fire brick, but they dug down into the ground and laid the solid foundation of rock and built the rest upward as scientifically and as honestly as an Egyptian pyramid. It seems to me when I look at your roads in California that it is a shame that some of your road-masters who plow for mud from the ditches and plaster it over, the middle of your highways had not had some good experience in the road gangs under the centurions of Julius Cæsar's army. The road is the sign by which you will best understand a people. If they have bad roads they are savages, for the road is the creation of man and the type of civilized society.

THE ROADS OF ROME.

"When Rome had 100,000,000 people under its sovereignty it was the capital city of such a network of highways that the common saying was, 'All roads leads to Rome.' You have very few respectable roads around San Francisco—in fact, I would name for my part only one, and that is the road at the Presidio, which, I believe, was built by the army. As for your Park, its roads are fair, but nothing to boast of. Go and judge them for yourself after a rain and compare them with one of the Roman roads in France or in England; otherwise you have not a decent highway throughout this State. Mind you, I have been here a number of times, and in fact I paid quite a visit to California in 1872, and I will confess that I have seen no progress in this direction.

"Why don't you do as we have done in Massachusetts—put your convicts to work building you honest roads—and be sure it would do much to make honest men of them? Certainly you cannot expect them to repent in an unhealthy cell or with morbid surroundings. Exercise and fresh air will build up their bodies and give them stouter hearts to resent temptation.

"I am endeavoring at the present moment to have Congress appoint a road department in the city of Washington similar to the Agricultural Department for the purpose of teaching students to become skilled road engineers and to establish a permanent exhibit, in which shall be shown sections of road illustrating the various methods of construction and also the best road materials and machinery. The petition which we have made to Congress will have 1,000,000 names and perhaps more, and we propose to have an exhibit in the Columbian Exposition next year which will explain to the people the secrets of road engineering.

SHOULD ISSUE STATE BONDS.

"Under your present system in California the farmers object to the extra tax for building a road in a decent and substantial fashion, and in many cases they are just; but I don't see why the State should not issue bonds with an extension of say fifty years to build a series of decent roads in the south and in the north. Let posterity pay for it, for certainly posterity gets the entire benefit. Why should we saddle ourselves entirely with the debt, and why should we not allow it to be shared by those who will appreciate the plan we have given them?

"With all our scores of localities in California our farmers are practically shut out from connection with the world for six months of the year. With the first rain the roads become heavy, and grow worse and worse until it is impossible for vehicles to obtain access to a valley or mountain district. Really this is almost the universal case in California. Your people are always talking about your railroads, and howling for a branch line to go there or come here, when you have it in your power to construct good market roads on radiated lines that will serve your purpose just as well as railways."

GLANDERS has been looked upon by the general public as a disease affecting the horse alone, and its prevalence gave no reason to apprehend any great danger to the human being, notwithstanding the health authorities have cautioned the public against the infectious nature of the disease. In one of the hospitals of London, Dr. Collie reports two cases of glanders that occurred recently. Both cases proved fatal.

In the first case, the patient, who was twenty-five years of age, was stricken with this disease while working among sick horses; he died after an illness of nineteen days.

In the second case the patient was twenty-six years of age and had charge of a sick horse, he was sick thirty-five days when he died.

This opens up a new important feature to provide for in hospital construction and in the treatment for a disease always fatal.

WHO will be first to try Sir Edwin Arnolds' recommendation and introduce the imitation of a Japanese House for a country residence?

This is what he writes in their favor, in an article entitled "Japan Revisited," from the January number of the *Cosmopolitan Magazine* under the head of "Homes of the People."

"The longer I myself live in these exquisitely neat and clean dwellings, the more I find to admire and praise in them; and then, moreover, they are decidedly healthy, so extremely inexpensive to erect, so absurdly easy to furnish, and so entirely refined, becoming and artistic as abodes for people of taste and of nice habits. The Japanese abode in which I passed my days of repose at Atami could have been purchased, I believe, for eight or nine hundred yen, or say $600. It certainly had not cost as much to build, and yet it was good enough for anybody of simple habits to live in.

"The rooms are measured by the number of mats they contain, for the mats (tatahi) of Japan is of an absolutely fixed standard, and does not vary a hairs breadth in length and breadth, all over the Empire. Each apartment is called by the number of jo, or mats, it will contain, each mat measuring six feet in length by three in breath."

WHE eminent Swiss savant Hassler, he who organized the U. S. Coast Survey, once made a move to secure an increase of salary. Failing through the ordinary channels, he obtained an interview and preferred his request to the President in person.

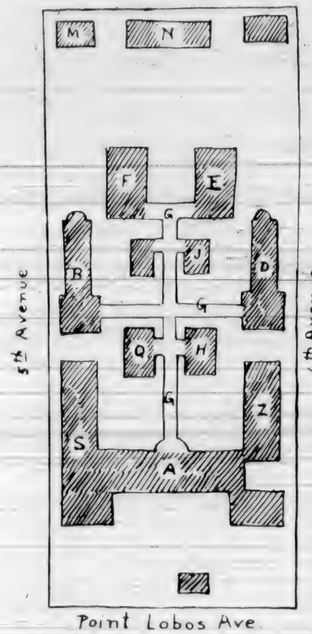
It is on record that Old Hickery treated the Professor with all that suave courtesy of which he was a perfect master, if he did not always use it. While admitting the value of the service and justice of the demand he remarked that the compensation asked for was more than the pay of the Secretary of the Treasury, under whose orders the work was being done. "And" said he, "Professor, would it not be a curious thing for you as a subordinate to Mr. Woodbury, to receive more pay than he does?"

Quick, sharp, pungent came the reply; emphasized, no doubt, by the broken English vehicle which conveyed it.

"Meester Voodbury! Meester Voodbury!! Plentee—plentee Meester Woodbury.—Von—von Meester Hassler."

WALLS A CENTURY OLD.

THE corner-stone of the white house was laid on Oct. 13, 1792; a little less than 300 years after the discovery of America by Columbus. The commissioners had, on the previous March 14th, advertised for plans for a presidents' house and on July 16th, they held a meeting in Georgetown and examined the plans that had been submitted. As is history now, they accepted the plan of James Hoban, a Dublin architect, who had made designs for the president's house, framed, it is said, on the model of the mansion of the Duke of Leinster at Dublin, the palace of royalty in Ireland. The stone was in part quarried at Aquia Creek, Md., and brought to a new wharf, built for the purpose, near the foot of Seventeenth street. No memorial of the ceremonial of laying the corner-stone has been discovered. It is certain that the Virgin Free Masons, who had in 1791 laid one corner-stone in the District of Columbia, and who in 1793, assisted in laying the corner-stone of the capitol, did not participate in laying the corner-stone of the white house. It was probably laid by Maryland Masons. The building began to rise, however, and in eight years was ready for occupancy. The donations of Maryland, $72,000, and of Virginia, $120,000, assisted to pay for it; and in April, 1800, four months after Washington's death, congress appropriated $15,000 to pay for its furniture. Thenceforward it became the chief mansion in the nation. From the time when Mrs. John Adams hung the family wash in the east room to dry to now it has been a home set upon a hill to be seen by all. It has had the fortune of the humblest homes in the land—marriage, births and deaths. Its joys and sorrows have a wide echo, and now sympathy flows toward it from every portion of the land.—*Real Estate Record and Building News.*



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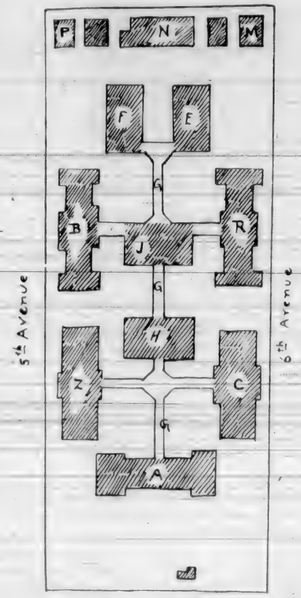

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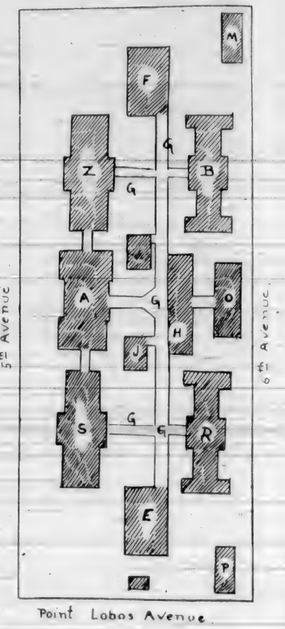
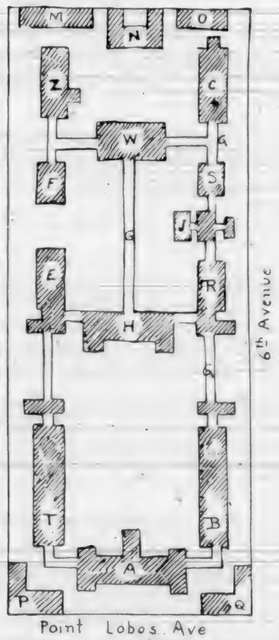
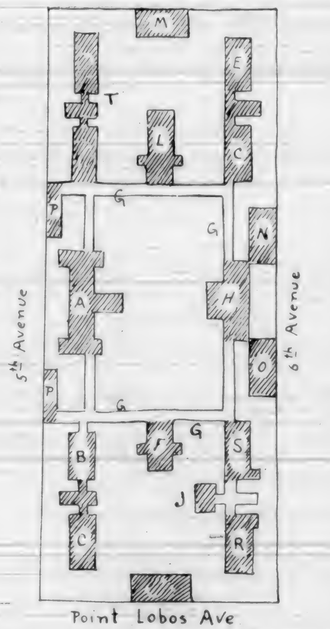


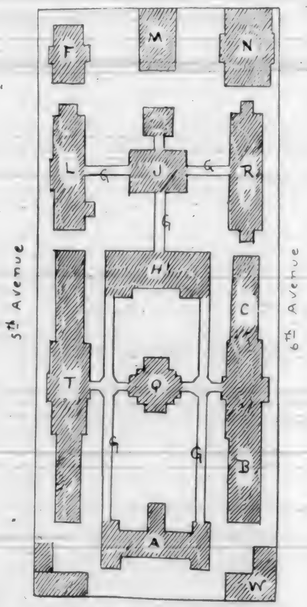
Study No 3 Albert Pissis



Hygiene No 1, by Mooser & Goustiaux

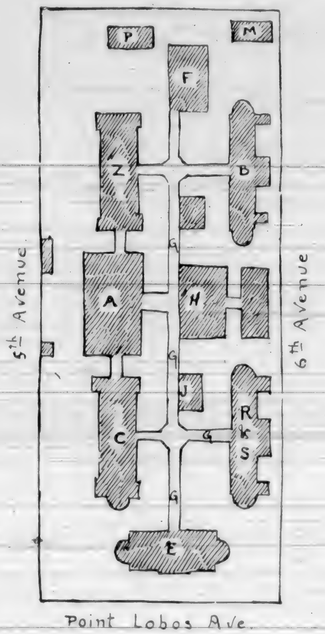


Hygiene No 2, by Mooser & Goustiaux.



Hygiene No 3, by Mooser & Goustiaux

BLOCK PLANS OF DESIGNS SUBMITTED IN COMPETITION FOR THE FRENCH HOSPITAL, SAN FRANCISCO, CAL.



Study No 5 by Albert Pissis.

which is to cost $12,000, was raised by a direct special tax—this is the first high school building to be erected under the law passed by the last legislature. Several others will however most likely be built in other parts of the State.

THE perspective drawing of a design for the proposed new French Hospital, illustrates the plans submitted by J. Marquis, architect.

In addition to this lithograph, and to the illustrations of the designs awarded the first and second prizes which were published in the December number, we give a number of block plans showing the disposition of the different buildings and the general arrangement of a number of other designs submitted by the different competitors whose names are attached to the respective cuts. The studies prepared by the consulting architect of the building committee, Mr. Albert Pissis, were made previous to the issuing of the invitation to architects to submit designs, and were for the purpose of enabling the committee to obtain a clear idea of the requirements of the new hospital, preliminary to preparing the programe of the competition.

The following table of reference will explain the lettering on the plans:

A—Administration Building.	*M*—Morgue.
B—Male Medical Ward.	*N*—Engine House.
C—Female Medical Ward.	*O*—Laundry.
E—Invalides Pavilion.	*P*—Stable.
F—Contagious Pavilion.	*Q*—Bath House.
G—Corridors	*R*—Male Surgical Ward.
H—Kitchen.	*S*—Female Surgical Ward.
I—Water Closets.	*T*—Paying Patients.
J—Operating Room.	*V*—Disinfection.
K—Nurses' Rooms.	*W*—Employees' Quarters.
L—Pavilion for Tuberculosis.	*X*—General Dining-Room.
	Z—Single Rooms for Patients.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Elevation of Germania Hall, which is to be erected on the north side of Bush street near Powell, in this city, is from the designs of the architect, W. H. Lillie.

THE study for a house at Vacaville, for Mrs. Thayer was furnished us by the Messrs. Polk, architects, of this city. The building has been treated in the Brittany style of a gate lodge, all the outer walls are covered with split cedar shingles, left in their natural state.

THE Union High School, No. 1, is to be erected in Livermore, Cal., under the superintendance of the architects Messrs. Percy & Hamilton, the money for this building

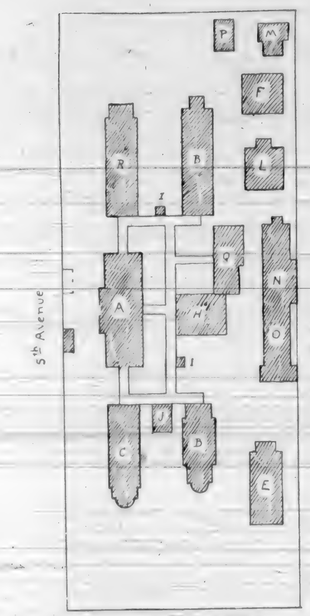
NOTES & COMMENTS.

During the year 1892 over 12,500 buildings were erected in Chicago at a cost exceeding $63,500,000.

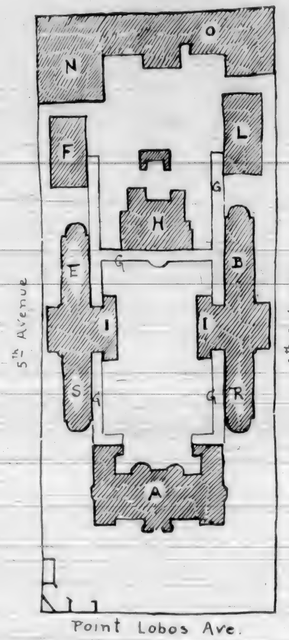
The German Imperial Commission on Cholera has announced that wine—claret or hock—will kill the bacilli of Cholera in a few minutes. Tea will kill them in an hour.

There has been discovered in the northern part of this state a very soft red sandstone that can be whittled on first taking out of the ground like a piece of pine wood and hardens in the sun in a few days so that it will stand pressure. The parties owning it say that when they put it on the market it will supersede terra-cotta.

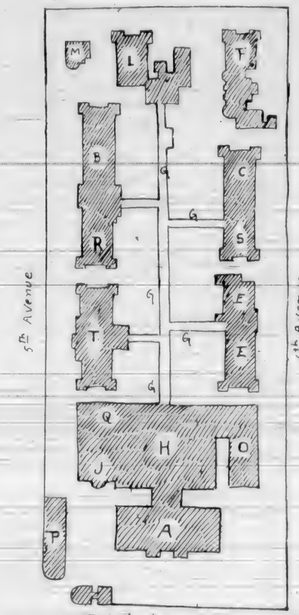
W. J. Edbrooke, the Supervising Architect of the United States, who will draw the plans for the new Post Office, corner of Seventh and Mission streets, states that one thing that he will have to provide for is the pneumatic tube, which will be used for the speedy delivery of mail from the main office to the sub-stations throughout the city. As this is one of the latest modern improvements in that line, residents in the outside of the city will have a quicker delivery of their mail.



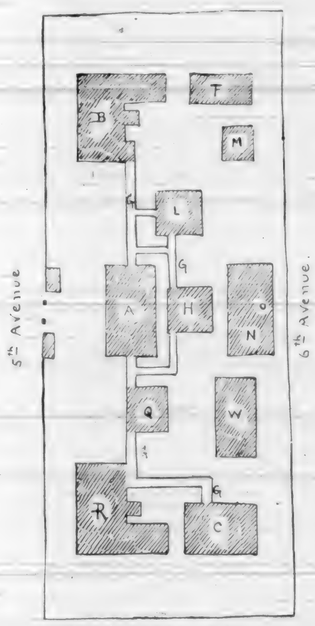
Egalite Fraternite, by Emile Depierre.



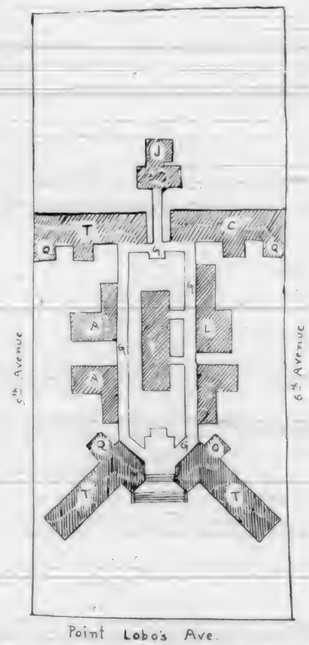
La Patience by J. Marquis.



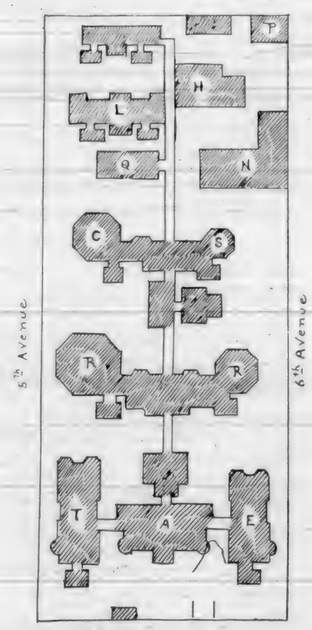
En Avant. by Wm Curlett



E Pluribus Unum No2, by J M Curtis



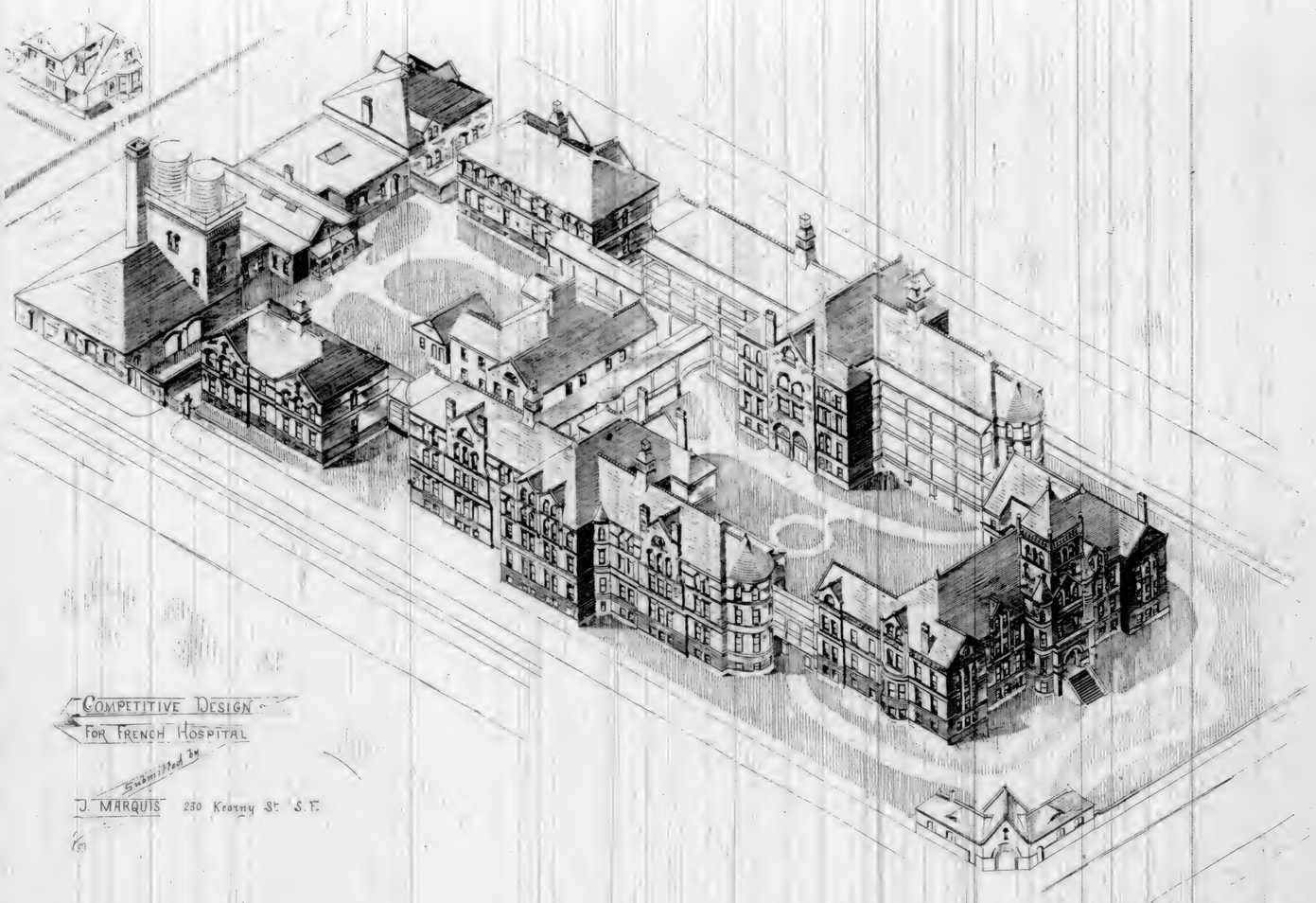
Multum in Parvo Colley & Lemme



Esperance by Banks & Marais

BLOCK-PLANS OF DESIGNS SUBMITTED IN COMPETITION FOR THE FRENCH HOSPITAL, SAN FRANCISCO, CAL.

ROYAL INSTITUTE OF BRITISH ARCHITECTS



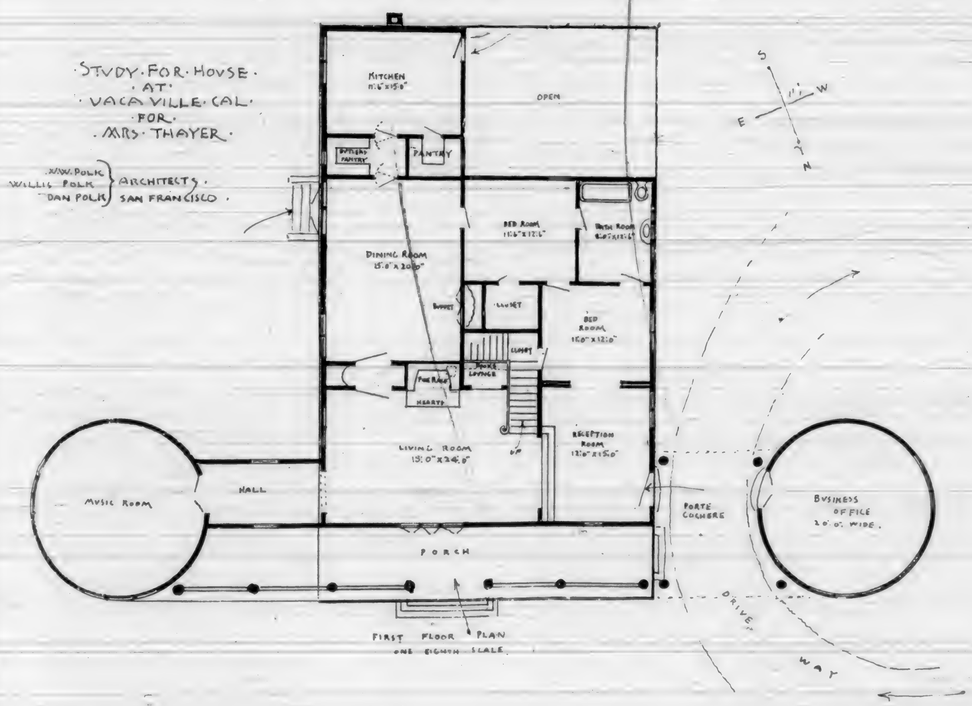
COMPETITIVE DESIGN
FOR FRENCH HOSPITAL

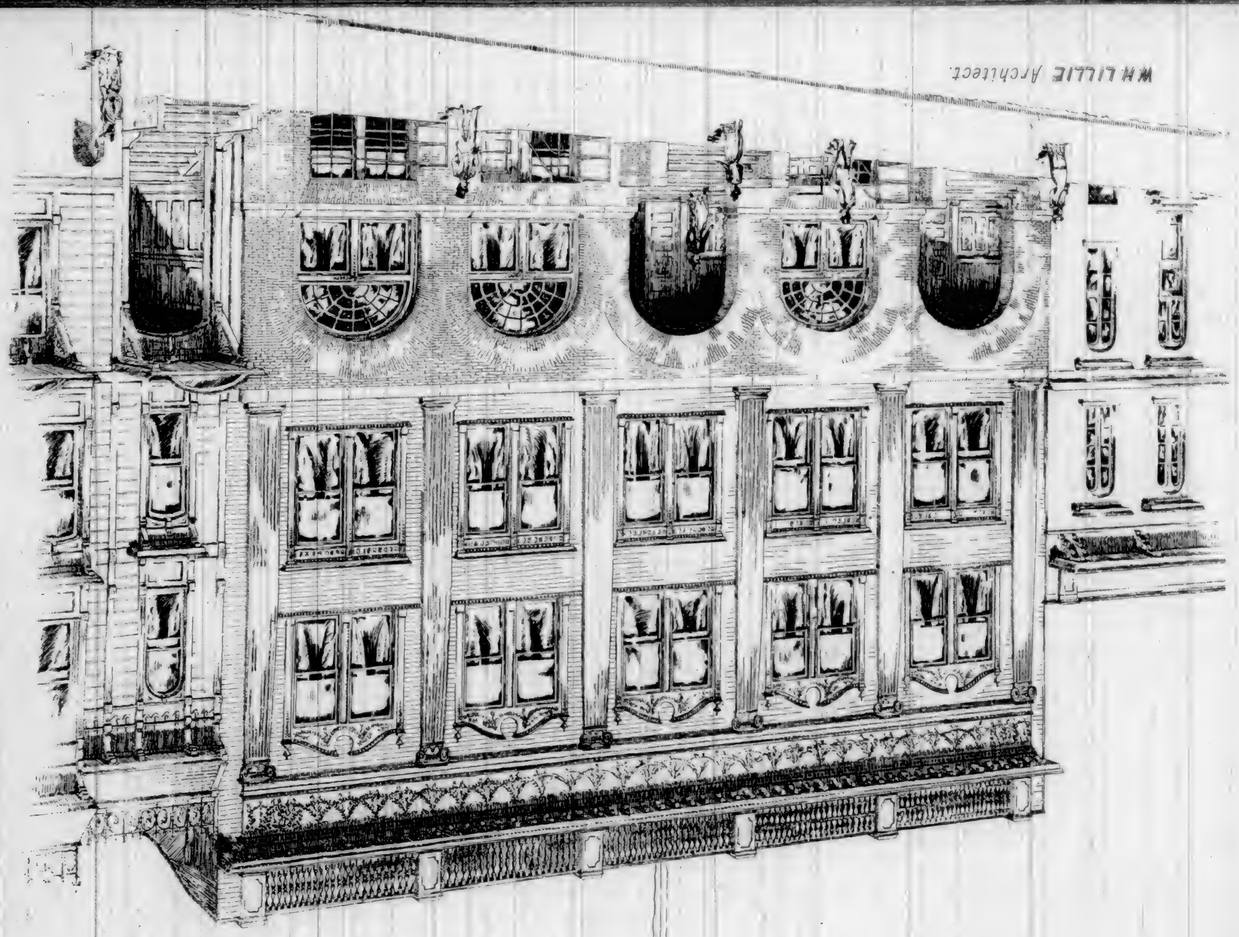
Submitted by
J. MARQUIS 230 Kearny St. S.F.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
DEPARTMENT OF ARCHITECTURE

PERCY & HAMILTON, ARCHITECTS.

UNION HIGH SCHOOL Nº 1
LIVERMORE CAL.





ROYAL INSTITUTE OF BRITISH ARCHITECTS LIBRARY

ROYAL INSTITUTE OF BRITISH ARCHITECTS
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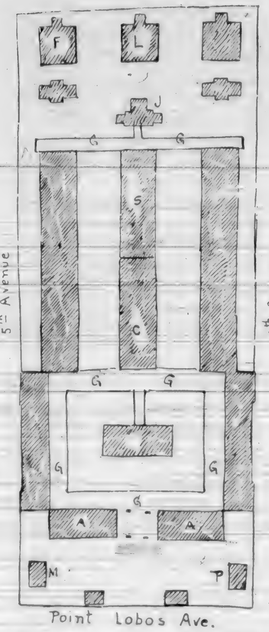
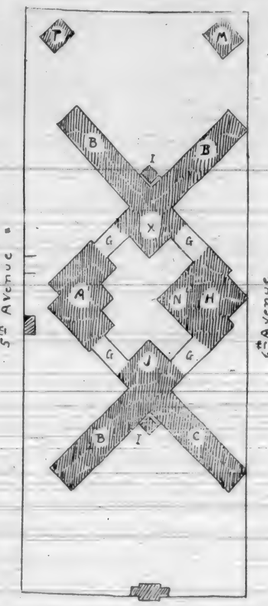
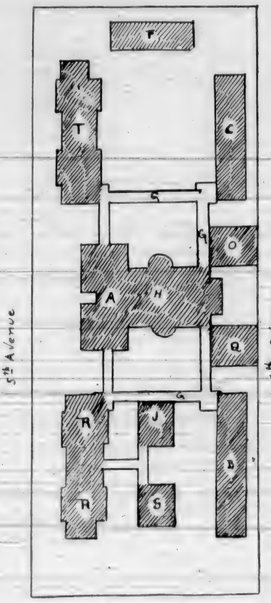


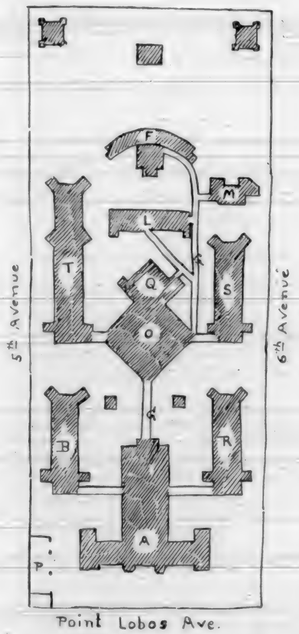
Bath by B.R Maybeck



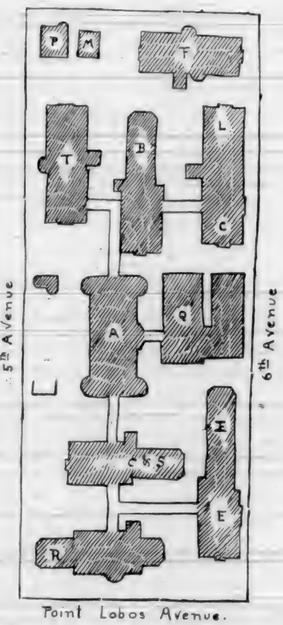
Veni, Vidi,....? by Oliver Everett.



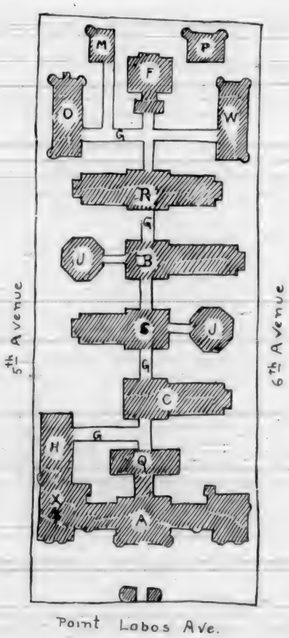
& by Mathieson & Howard



Æsculapius. by Rowell & Benson.



Tuebor, by Meyers & LoRomer.



E Pluribus Unum No1, G.F Hammond

BLOCK PLANS OF DESIGNS SUBMITTED IN COMPETITION FOR THE FRENCH HOSPITAL, SAN FRANCISCO, CAL.

THE OWNERSHIP OF PLANS.

THE question as to the ownership of plans drawn by an architect, for use in superintending and guiding the construction of a building, is by no means settled as a matter of law. It sometimes becomes a question of grave importance to the architect, and to the owner as well, by reason of the large interests involved.

Of course those cases are to be excluded from this discussion where contracts are made with architects to prepare and furnish plans and specifications, for the established law of contracts will cover them. The difference between these cases, where the making and furnishing of plans is the object of the contract, and cases where architects are formally employed only to prepare plans for and superintend the construction of a particular building, the plans being regarded only as means to another end, will readily be seen. These last suggest the question now considered.

Perhaps it will be intimated that in England, that older country from which we have derived so much of our law by inheritance, a precedent will certainly be found. But up to a recent date, there were no decisions in the regular reports there upon this question. Returning to our own country, and taking up the latest, best and practically only treatise that we have on the law of building and buildings, especially referring to building contracts, etc., namely, that of A. Parlett Lloyd, issued in 1888, there will not be found the least assistance in the solution of this question.

Many architects would present the suggestion that the schedule sanctioned by the Royal Institute of British Architects, and confirmed at a General Conference of Architects of the United Kingdom, in 1872, and the Schedule of Charges and Professional Practice of Architects indorsed by the American Institute of Architects disposed of the whole matter, especially as the former states, in section sixteen, that in "respect of the ownership of drawings and specifications," it has hitherto been the general custom for the architect to be paid for their use only, those documents remaining his property, and the latter declares "that drawings and specifications, as instruments of service, are the property of the architect." But in 1870, the English Court of the Exchequer declared that the provisions of the Code of the professional institution of architects issued in 1862, were not binding, as their charges were unreasonable, and it was held, "contrary to good sense and justice," and not a legal standard. "Supposing the custom to exist," said the court, "that an architect in the event of his employment being put an end to, is entitled to be paid for the plans and retain them, such a usage is not a reasonable one." (Ebdy v. McGowan, reported in the *Times*.) The Supreme Court of the state of Illinois. (Wilson v. Bauman, 80 Ill. 493.) has also decided that where it was attempted to prove a certain custom in the case of the employment of an architect, the other side might show if it could, "that there was no such custom, except by architects" and that in order to be available to the architect, "such custom must be as well known to builders and contractors as to architects, and it does not require special skill or science to know of its existence." Moreover what will be of special significance after the declaration of the English Court of the Exchequer above, "a custom or usage to affect a given contract, must not be in opposition to any principle of general policy * * * or against the established principles of the law. Besides this, it must be generally acted upon as known and established, and so well settled and so uniformly acted upon as to raise a fair presumption that it was known to both contracting parties, and that they contracted in reference to it and in comformity with it."

In the old case of Nourry v. Lord, decided by the New York Court of Appeals in 1866, (3 Abbott, 392) where the general question litigated at the trial was, whether an architect was employed to draw a plan of a building or not, the fact that the architect sent for and took away plans he had submitted, it was claimed, indicated that he had not been employed and should not be paid, but the court held that while the circumstance was entitled to consideration, it was not conclusive that the services were wholly voluntarily, or should not be paid for, the architect being allowed compensation in that case for his labor.

The well settled doctrine, as stated by the United States Supreme Court, (Chicago v. Tilley, 103 U. S. Rep., 146,) should also be considered in this connection, that "A party to a contract, who has performed part of it according to its terms, and is prevented from completing it by the failure of the other party, is entitled to compensation for the work performed." This however does not settle, as a little reflection will show, the question of the ownership of the plans.

So far in this article, architects have been treated as all being of one mind, and following the old English and present American rules intended to govern their profession. This however is not true, for enough, if not a large percentage, of architects, and good ones too, can be found, who, in case work is abandoned, after preparation of plans and specifications, will give up these on payment of their charges for preparing them. This will make it extremely difficult to do anything toward proving such a custom as would have the effect of law.

The only wise and safe thing for architects to do is to make a contract in writing in all cases before entering upon an employment, and provide in the contract who shall own the plans if work is abandoned, as well as when the building is completed.

SPIRAL SAFETY ROPE.

THE administration of the Eiffel Tower in Paris invited the municipal council of that city, the heads of the fire department and members of the press to witness a descent by the daughter of the inventor, Mr. Holthausen, with her two small children, from the first platform of the tower by means of the spiral safety rope. The decent was accomplished to the entire satisfaction of everybody—so much so, in fact, that the vice-president of the life-saving department attached to the fire department made another descent himself, because he considered it to be so easily accomplished. Mr. Holthausen and others dissuaded him from undertaking so perilous a performance, as he had not previously examined or been sufficiently instructed in manipulating the rope, but he insisted, and accomplished the descent to the full relief of those present. As far as could be seen by your correspondent, a hollow steel cylinder, with a large spiral screw-thread inside, worked upon a sufficiently thick rope. The upper end of the rope was by a large hook securely fastened to a bar of the platform. The lady enveloped herself in a heavy canvas belt reaching from under the armpits down to the lower part of the body, which secured her upright position, then fastened a hook on the cylinder and swung herself into space.—*Fire and Water.*

ADVANCED BUILDING CONSTRUCTION, an illustrated manual for students, by the author of "Notes on Building Construction," is a volume containing all the information required for the examination in the second stage or advanced course of building construction held annually under the direction of the Science and Art department, South Kensington. For sale by Payot & Upham.

The Drainage of Habitable Buildings, by Lee Beardmore, is a reprint and revision of a series of articles which appeared in THE PLUMBER AND DECORATOR, AND JOURNAL OF GAS AND SANITARY ENGINEERING, in which is described in detail the requirements of different classes of buildings, and the different methods that may be employed for the disposal of sewage. For sale by Osborne & Alexander, price $1.50.

The January number of the ENGINEERING MAGAZINE, has a very readable article on the proper way to select an architect for public works, and explaining also the many causes that exert an undue influence in swaying the judgment of building committees.

The article cuts both ways, showing the lack of judgment often displayed by members of a committee, and the way that a certain class of architects take advantage of this ignorance to their own profit.

PRACTICAL PAPER HANGING, a hand book on decoration in paper and other materials, with practical instructions on hanging them, by Arthur Seymour Jennings.

This book aims to represent from a practical point of view, the paper hanging business as it exists to-day, with all the changed conditions produced by the more or less recent introduction of different materials for wall decoration, such as burlap, buckram, silk, tapestry, lincrusta, etc.

Published by William T. Comstock, 23 Warren street, New York, price $2.00 postpaid.

THE AMERICAN GLOSSARY OF ARCHITECTURAL TERMS, by Geo. O. Garnsey, Architect.

This is the third edition of a very complete and concise illustrated compilation of terms used in architecture. Over three thousand words are defined, and five hundred engravings make the meaning clear.

Published by the National Builder Publishing Co., Adams Express Bldg., Chicago. Price $2.00 postpaid.

In the October number of THE BRICKBUILDER appears a communication commenting on the very favorable results that have followed the appointment of a city architect to take charge of the public buildings in Boston. It gives Mr. Wheelwright the credit of having designed a number of artistic buildings, by employing cheap but durable materials, thus solving one of the most difficult problems an architect has to study. Illustrations of a number of these buildings including an engine house, a police station and a public school are given in the text.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Tres.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

John Richards, Pres. L. Wagoner, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
W. I. Crosett, Sec. O. Brooks, Treas.

Master Painters' Association of the Pacific Coast.

E. M. Gallagher, Pres. G. Jarman, Sec. H

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Liability on Bond of Contractor.—A surety on the bond of a contractor for the erection of a building is bound only in the manner and to the extent provided in the obligation, and, if payments are made to the contractor in excess of the amounts due on the estimates, he will not be liable for such excess.

Gray v. School District of Norfolk. Supreme Court of Nebraska, 53 N. W. Rep. 377, 58.

Responsibility for Mistakes.—No man is infallible; the wisest make mistakes; and for that reason the law holds no man responsible for the consequences of his mistakes which are the result of the imperfection of human judgment; and do not proceed from fraud, gross carelessness, or indifference to duties.

Corle v. Monkhouse, Court of Chancery of New Jersey, 25 At. Rep. 157.

A Dwelling House is a Castle of Defence.—A person's dwelling house is a castle of defence for himself and his family; and assault upon it with intent to injure him, or any of them, may be met in the same way as an assault upon himself, or any of them, and he may meet the assailant at the threshold, and use the force necessary for his or their protection against the threatened invasion and harm.

Wilson v. State, Supreme Court of Florida, 11 South Rep. 556, 77.

Immaterial Error in Lien Statement.—Under the California statute, prescribing what a notice of claim of mechanic's lien shall contain, a statement of the date of completion of the work not being required, a mistake in stating such date will not affect the lien where the complaint in an action to enforce such a lien alleges that the notice was, in fact, filed within thirty days after the completion of the work. Where a notice of claim of mechanic's lien by a subcontractor is made a part of the complaint, it is not open to a general demurrer on the ground that such notice fails to set out the plans and specifications of the original contract.

Slight v. Patton, Supreme Court of California, 31 Pac. Rep. 248, 115.

When Contracts can be Abandoned and Future Profits Recovered.—Breaches of contracts may exist in a great variety of cases which will justify the party not in default in rescinding and putting an end to the contract, thus freeing himself from its obligations, which will not give him the right to abandon further performance, and sue for future profits. In order to the exercise of the latter right, it is not sufficient that the other party has violated and committed breaches of the substantial provisions of the contract, and manifests an intention to continue such breaches. The

breach must be of such character as to have legal effect of preventing the party not in default from proceeding further with the execution of the contract, or to render its objects unattainable by proper performance.

Lake Shore & M. S. Ry. Co. v. Richards, Supreme Court of Illinois, 32 N. E. Rep. 402, 134.

WRITTEN CONTRACTS WHICH MUST BE THEIR OWN INTERPRETERS.—Every contract lawfully made between parties competent to contract and dealing on equal terms, or, as the phrase is, "at arm's length," in good faith, and without fraud or mistake, which is embodied in unambiguous terms in a duly-executed writing, and signed by the parties to it, is its own interpreter; and the courts have no lawful power to construe it, nor to admit any testimony outside of itself to modify or affect its operation. The terms of a valid written contract cannot be contradicted or varied, much less squarely contravened, by verbal evidence of what occurred between the parties previously thereto or contemporaneously there with.

Poyton v. Stuart, Supreme Court of Appeals of Virginia, 16 S. E. Rep. 160, 114.

CONSTRUCTION OF ORDINANCES RELATING TO ELEVATORS IN BUILDINGS.—City ordinances requiring elevators to be built and protected in a certain way, and to be periodically inspected, do not create a civil liability against a person who violates them towards one who is injured by an accident that was in no way caused by such violation. And a city ordinance which requires machinery that is so located as to endanger the lives and limbs of those employed in the building to be so covered or guarded to insure against injury to such employes, gives no right of action to an injured person who is not an employee, as where such a person is injured by the counterweight of an elevator. Gibson v. Leonard, Supreme Court of Illinois, 33 N. E. Rep. 182, 119.

NOTICE OF LIEN IN OREGON.—A notice of mechanic's lien, which states merely the lease of the ground to a certain person, on which is the building sought to be charged, and after description of building and ground, and mention of owner of the ground, declares the person first named lessee of "said property," does not show, either directly or by necessary inference, who is the owner of the building, and is not, therefore, within the requirement of the Oregon Statute.

Gordon v. Deal, Supreme Court of Oregon, 31 Pac. Rep. 286, 82.

A COLLEGE HOSPITAL.

YALE is about to establish a hospital for students taken sick at college. It will be completed this month. This novel idea originated, it is said, with Mrs. Cornelius Vanderbilt, whose son recently came to his home from Yale to die. He had contracted typhoid fever while in New Haven, and it is said was not at first tended as carefully in that city as the seriousness of his ailment warranted. Mrs. Vanderbilt and a number of other prominent ladies of New York have given $40,000 for the hospital.

Now this is well; it is an excellent movement, and does credit to a generous heart touched by grief. But if to this hospital addition there is attached a system for training the students in the art of nursing, something practical will be done, the benefits of which will be immeasurable.

The one thing a man cannot do as a rule, who has not been specially trained to it, is to properly nurse the sick. If Yale is able to add to its hospital two or three skilled trainers and lecturers to instruct students how to care for their sick fellow students, the former will go out in life at the end of four years with an accomplishment of a high order, and that will contribute immensely to their usefulness and general value as men.

Thus every year, after the first three, Yale might easily turn out fifty men who would know how to care for ordinary sufferers in ordinary cases at least; how to treat those who faint, those with broken limbs, patients in fever, delirium, and so on; how to check bleeding, to reduce inflammation, to ventilate and heat the sick room; how food for the sick should be prepared and similar useful knowledge. The idea suggests a new and most desirable accomplishment for collegians.—*Sacramento Union*.

THE last meeting of the Academy of Medicine at Paris seems to have sadly demoralized the microbist. Among other things, Prof. Peter remarked: "*Apropos* of cholera, I desire to call attention to the evolution that bacteriology is undergoing, and the role that morbid spontaneity tends more and more to play in this evolution. Dr. Brouardel has asked me how I can believe that choleriform accidents are identical when the germs are different. I reply that I admit nothing. I only state the facts observed. *I have seen different germs produce identical accidents.* I can go further, and say *identical germs can produce different diseases.* Besides, what I have said I have seen other observers have seen. I have seen the *bacterium coli*, the virgule bacillus of Finkler, produce cholera. I have likewise seen the bacillus coli produce *cholera*, *dysentery* and *typhoid fever*. From these facts I conclude that the bacillus is not unhealthy by itself, but that it may become so, and acquire new properties in the midst where it vegetates. I have come to the conclusion that we ourselves, owing to some internal modifications, develop cholera and dysentery, and it is this change that modifies an innocent bacillus and endows it with toxic properties, that it may transmit to others. The inoffensive bacillus is cholerized by the cholera, dysentery by dysentery, etc."

Here are a few examples quoted by Peter: Gilbert and Girode found in an epidemic of cholera nostra that the bacilli coli taken from the stools of patients dying from cholera experimentally provoked a cholera type. The same bacilli were observed in 1891 in Peter's *service* in dysentery cases. In all these cases the bacilli coli became choleraic after being in the organism of a patient suffering from cholera. Peter then cited, in the same order of ideas, the work of Roux and Rodet, of Lyons.

So, after all, it appears that microscopy reveals rather the changes wrought by disease that poisons the innocent bacilli and makes them in turn poisonous when inoculated, than being the primal cause of maladies. The supposition would be that the more attenuated the amount of virus in the infected bacillus, the less violent tpye of disease it would transmit. Ten years from now all will be forced to admit that poisoned bacilli are the effect and not the primary cause of disease.—*Cincinnati Lancet-Clinic*.

A hysterical state of mind exists in certain localities in some of the older countries. It appears that the Royal Family of one of the most powerful nations has been exposed to the risk of infection from the fact that the "tailor made clothing" for the Royal Family might possibly have been made by the tenement house workers in the same shop and by the same workers, who made the raiments for the workhouse emigrants. For some years the local health boards have been learning the necessities and prescribing rules and sanitary conditions under which such work was to be done, while Royalty contented itself mainly in light Christmas presents and speeches overflowing with advice in reference to industry and contentment under their allotted circumstances.

Like all contagious diseases which begin their course in obscure places and are liable to be conveyed to the Crown center, so this great public evil which has been permitted to fester under insanitary conditions is spreading to such an extent that individuals, who have heretofore taken no part in the work, are now moving to secure their own protection. Whenever the English people recognize the importance of the subject as a national problem that needs immediate correction, then such provisions will be made and enforced as to eventually lead to such an improvement as will, probably in this case, cause the tenement house system of England to become the model for the world.

BUSINESS MOSAICS.

On page V is a cut showing the Patent Flushing Rim Washout Water Closet Range of the J. L. Mott Iron Works. It is especially adapted for Hospitals, Schools, Factories, etc., and can be made in any number of seats by putting two or more ranges together.

The well-known firm of Henry Cowell & Co. wish to inform the architects that they have a plentiful supply of J. B. White & Bros'. Improved Marble Cement on hand and shall continue to keep stocks of the same to fully supply the market at reasonable prices. Therefore, architects need not hesitate to stipulate for Keene's Cement in their specifications.

Owing to the patterns having been burned in the late fire in Milwaukee, the completion of the Kieckheffer Elevators now contracted for St. Joseph's Home and Examiner building, will be delayed about four weeks, the machinery, however, is on the road, and upon its arrival, no time will be lost ir putting the machines in working order.

The Westminster Slate Co. wish to call the attention of our readers to their advertisement on page xviii. Their slate being of superior quality should readily find a market here. Architects would do well to look into the merits of this article and satisfy themselves. It is made in sizes ranging from 24x14 to 12x6. The finished product being shipped to its destination in crates, a saving of 10 per cent in breakage is made. W. A. Jones, Agent, 330 Pine street.

The "Neponset" Waterproof Paper is coming more and more in prominence on this coast as its excellent qualities are becoming better known. In the east where it has been extensively used for years it give the utmost satisfaction and architects who are looking for a good paper for sheathing, lining or roofing purposes cannot do better than look into the merits of the "Neponset." Dimmick & Low are the agents and will be pleased to give any information required. See advertisement on page iii.

The preservation of wood at the present time is but little thought of, lumber being cheap, but it is not the additional expense of preserving it that should be considered, it is the cost of replacing the wood that is liable to decay or rot. Carbolineum used for the purpose for which it is intended, that is solely for the preservation of wood, and at a very small additional expense preserves the wood one hundred per cent. Having been used successfully for twenty years in foreign countries and for about half that number in this; Old Father Time sanctions the above assertion. Muecke & Co are the agents, 319 California street.

We have received from Messrs. N. & G. Taylor Co. of Philadelphia, a photograph of the interior of one of their buildings in which is carried on the manufacture of the special brand of genuine Taylor "Old Style" extra heavily coated roofing plates, for which the firm has a national reputation.

This firm has gone to great expense in constructing the best possible machinery and providing the most perfect equipments required for the production of the finest grades of roofing plates.

Those who want to know how a tin plate factory looks, are invited to call and inspect.

Yellow Pine does not splinter or color, but wears very smooth. It has no equal for halls, stores and stage floors. See advertisement on page xii.

The Acme Company of Oakland has during the past year become one of the principal dealers in Fire Hose and Reels specialties both here and in Oakland.

Their several special makes of Reels—The Peerless—Perfection and Acme—are all well-known to the general public and the Peerless as a Fire Hose Reel is among the best and most compact reels made, having fewer connections and bends and therefore the simplest.

Their Garden Reels have been well conceived are very largely used by Oaklanders especially.

In addition to the Reel business, they represent the Chicago Fire Hose Co. of Chicago and carry a full line of Garden Fire and Fire Department Hose of every description.

Though their office and principal plan of business is in Oakland this does not interfere with their city trade as numerous business places on this side are daily being equipped by them.

The new and handsome Macdonough Theatre and Building and the Metropole, both of Oakland, are among their most recent equipments.

Hurrah for the Sash Balance. *From* G. J. H., *Youngstown, O.*- I have just been through an experience that I am sure the readers of your valuable journal will be glad to know, and my getting out of a tight place will be interesting. I built a house with a veneered brick first story, and as the brick would be weather tight, we decided to dispense with the sheathing boards on the first story. It was thought that plate glass would be the proper thing for the first story front windows and accordingly we made the frames allowing for 1¾-in. sash. Now you will observe that by leaving off the sheathing it only left me pocket room of 4¾ inches, the width of a 2x4 studding when sized, and to make the matter worse, I found when the frames were brought to the building that as there was no sheathing to go outside of the studding, the blind stop must be flush with the stud. Hence, I was obliged to nail a strip on to receive the blind stop for nailing, and that took off ⅞-in. in thickness of pocket. Our windows—two of them were very wide, 60 in. glass—and when we come to weigh the lower sash we found them 72 lbs. each. Nothing in the shape of a weight, not even in lead, could I get that would slide in the cramped pocket space, and the house being plastered and the finish on, I thought my name was "mud." Having had a little experience with sash balances in light weight sash, I determined to investigate and see if a pair could be obtained that would lift a heavy sash, and looking over a catalogue of the Pullman Sash Balance Co., which I had sent for by seeing an advertisement in this paper, I found I could get them and for even heavier sash. I got two pair for the weight required and put them in place and the sash work as easily and smoothly as the best pulley and weight ever hung. All the damage done was a little breaking of the plaster at the place where it projected past the casing, and this was very easily patched. The expense of the balance was very trifling, not as much as special weights and allumiunum cord would have been. If I have any more sash to hang the balances will be my preferences.—*The American Builder*.

CITY BUILDING NEWS.

Broadway near Buchanan.—Two-story frame; owner, Mrs. S. E. Bourn; architects, Percy & Hamilton; contractor, F. W. Kern; signed, Sept. 19; filed, Dec. 8; cost, $13,888.

Bryant near Fifth. Two-story frame building; owners, Weston Basket Mfg. Co.; architect, W. F. Veitch; contractor, A. J. Duke; signed, Dec. 6; filed, Dec. 6; cost, $1,800.

California Ave. near Powell Ave. Addition and general renovation; owner, F. Brandenhof; contractor, F. M. Schweitzer; signed, Dec. 5; filed, Dec. 6; cost, $465.

Clay near Taylor. Alterations and additions; owner, Mrs. J. F. Brown; architect, G. A. Broadwell; contractors, H. Hodgkins, J. E. Kinsley; signed, Dec. 5; filed, Dec. 6; cost, $2,465.

Clementina near Fourth. Two-story frame; owner, Wm. Bacome; architect, Oliver Everett; contractor, Jno. F. Millerick; signed, Jan. 9; filed, Jan. 9; cost, $2,620.

Dupont and Filbert. Furnishing interior of church; owner, Rev. R. de Corolis; architect, Chas. J. I. Devlin; contractor, Daniel Powers; signed, Dec. 3; filed, Dec. 5; cost, $3,300.

Dupont near Sacramento. Excavating brick work and stone cutters cast and wrought iron; owner, Paul Flury; architects, Pissis & Moore; contractors, Leibert & Hoffman; signed, Dec. 20; filed, Dec. 21; cost, $8,300.

Eddy near Laguna. Works to build; owner, A. Marks; architect, W. O. Banks; contractor, O. E. White; Jan. 7; filed, Jan. 7; cost, $1,700.

Ellis near Steiner. Two-story frame; owner, Annie Schilling; architect, Ed. Burns; contractors, Petterson & Person; signed, Nov. 28; filed, Dec. 2; cost, $1,200.

Eight near Minna. Alteration and additions; owner, M. J. Brady; architect, T. J. Welsh; contractor, H. Jacks; signed, Jan. 7; filed, Jan. 9; cost, $2,740.

Filbert near Jones. Two-story frame; owner, Mrs. L. Gehrels; architects, John & Balczynski; contractor, F. L. Hansen; signed, Dec. 27; filed, Jan. 3; cost, $6,440.

Folsom near 26th. Two-story frame; owner, H. B. Angell; architects, Percy & Hamilton; contractor, W. H. Wickersham; signed, Dec. 21; filed, Dec. 21; cost, $9,369.

Fourteenth and Sanchez. Bakery and stable; owner, Sarah E. Slocum; architect, G. A. Kirk; contractors, Gardner & Boyd; signed, Dec. 10; filed, Dec. 12; cost, $10,859.

Fourteen near Sanchez. New bake ovens; owner, W. H. Ward; contractors, P. Glaser, C. Plaetrich; signed, Nov. 17; filed, Dec. 12; cost, $3,800.

Golden Gate Ave. near Devisadero. Two-story frame; owner, Catherine Sullivan; architect, T. J. Welsh; contractor, Edward Mooney; signed, Dec. 20; filed, Dec. 27; cost, $6,140.

Golden Gate Park. Work for pumping station; owners, Commissioners Golden Gate Park; architect, A. Page Brown; contractors, Gray Bros. Art Stone Pav. Co.; signed, Dec. 20; filed, Dec. 29; cost, $10,900.

Greenwich near Taylor. To build; owner, Claus Wreden; architect, W. Winterhalter; contractor, A. Guilbert; signed, Dec. 9; filed, Dec. 10; cost, $2,457.

Hermann Street. Alterations and additions; owner, A. T. Winn; contractor, Ivory Wells; signed, Dec. 9; filed, Dec. 10; cost, $325.

Howard near Sixth. Alterations and additions; owner, B. Coposn; contractor, John Miron; signed, Dec. 30; filed, Dec. 31; cost, $1,351.

Leavenworth near California. One-story cottage; owner, Jas. L. Shearer; architect, C. H. Skidmore; contractor, Adolph Petry; signed, Dec. 12; filed, Dec. 13; cost, $1,545.

Market near Powell. Mantels complete; owner, Annie Donahue; architect, Chas. I. Havens; contractors, W. W. Montague & Co.; signed, Dec. 7; filed, Dec. 8; cost, $81.00 per mantel.

Missouri near Napa. Cottage, one-story and basement; owner, Mrs. E. D. Roberts; architect, R. O. Davis; contractor, R. O. Davis; signed, Dec. 19; filed, Dec. 20; cost, $1,200.

Montgomery. Alterations to office; owners, Selby Smelting & Lead Co.; architect, Jno. Marquis; contractor, Chas. Condy; signed, Jan. 5; filed, Jan. 7; cost, $1,810.

Noe between 16th and 17th. Frame building; owner, Annie Gimpel; contractor, Alfred Hawkins; signed, Jan. 4; filed, Jan. 11; cost, $1,263.

Park near Castro. Outside mill and carpenter work; owner, Geo. Whittell; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, Nov. 26; filed, Dec. 3; cost, $6,400.

Pierce near Turk. To build; owner, Jno. Doherty; architects, J. J. and T. D. Newsom; contractor, A. B. Larmer; signed, Jan. 9; filed, Jan. 11; cost, $2,700.

Pine near Franklin. Painting and roof finishing; owner, Gustav Sutro; architect, Julius E. Krafft; contractor, P. N. Kuss; signed, Dec. 16; filed, Dec. 17. cost, $1,380.

Post near Grant Ave. Passenger and freight elevators; owner, B. & J. Schweitzer; architect, C. R. Wilson; contractors, A. J. McNicoll & Co.; signed; Dec. 13; filed, Dec. 14; cost, $1,850.

Post near Grant Ave. Alterations and additions; owners, B. & J. Schweitzer; architect, C. R. Wilson; contractor, S. H. Kent; signed, Dec. 13; filed, Dec. 14; cost, $18,044.

Prescott near Vallejo. Three-story tenement house; owner, Katarina Schele; contractor, Caspar Zwierlein; signed, Jan. 4; filed, Jan. 5; cost, $3,500.

Scott near Page. Two-flats; owner, Rane Levy; architect, J. B. Wuersching; contractors, Home Building Co.; signed, Dec. 7; filed, Dec. 20; cost, $3,760.

Sharon near Sixteenth. Two frame buildings; owner, Theo. Blodes; architects, B. McDougell & Son; contractors, P. J. & M. Brennan; signed, Dec. 31; filed, Dec. 31; cost, $4,341.

Shotwell near 18th. Brick work, etc.; owner, Rev. P. J. Cummins; architect, C. J. I. Devlin; contractor, Jas. J. O'Brien; signed, Dec. 2; filed, Dec. 5; cost, $4,874.

Stockton near California. Carpenter and mill work; owner, A. E. Davis; architect, John Gash; contractors, McKay & McCann; signed, Jan. 4; filed, Jan. 6; cost, $5,175.

Sullivan and Cum Cook Alleys. Repair three-story brick building; owner, Estate of John Sullivan; architect, F. V. Acker; contractor, A. V. Acker; signed, Dec. 1; filed, Dec. 19; cost, $1,780.

Sunnyside, lot 23, block 47. Factory; owners, Jory Bros.; contractor, Jos. Gabriel; signed, Dec. 31; filed, Dec. 31; cost, $3,635.

Sutter near Jones. Plumbing, gas-fitting, etc.; owner, Emeline Wallace; architect, R. H. White; contractor, Duffy Bros.; signed, Jan. 5; filed, Jan. 11; cost, $7,270.

Sutter and Mason. Brick terra-cotta work; owner, Simeon Wenban; architects, Pissis & Moore; contractor, Union Pressed Brick Terra-Cotta Co.; signed, Dec. 5; filed, Dec. 13; cost, $22,400.

Twelfth Ave. near Clement. One-story cottage and basement; owner, Mary Jane Olwell; architect, C. H. Skidmore; contractor, Adolph Petry; signed, Dec. 12; filed, Dec. 13; cost, $1,530.

Twenty-fourth near Treat Ave. Alterations; owner, Catherine Lynch; architect, Pat'k. F. Lynch; contractor, P. F. Lynch; signed, Dec. 1; filed, Dec. 6; cost, $2,780.

ALAMEDA COUNTY.

Addison near 6th, Oakland. Cottage; owner, Clara Ballard; contractor, Oscar Carpenter; signed, Dec. 16; filed, Dec. 21; cost, $1,000.

Alameda Ave. near Walnut street. Carpenter, plumbing, etc.; owners, J. J. Norman and wife; architect, J. C. Newsom; contractors, Wrampe & Suilflohn; signed, Dec. 16; filed, Dec. 16; cost, $2,225.

Broadway and Fourteenth, Oakland. Erect and furnish elevator; owners, Central Bank of Oakland; architect, W. J. Mathews; contractors, Otis Bros. & Co.; signed, Aug. 20; filed, Dec. 10; cost, $4,250.

Channing Way near Dana, Berkeley. Carpenter and brick work; owner, David W. Loring; architects, Coxhead & Coxhead; contractor, F. W. Kern, signed, Dec. 1; filed, Dec. 2; cost, $6,800.

Encinal, Block 460, Alameda. Cottage and basement; owner, Wm. James; contractors, Marcuse & Remmel; signed, Dec. 19; filed, Dec. 19; cost, $2,000.

Eighth near Madison, Oakland. Brick and carpenter work; owner, Robt. M. Turner; architect, Elmer Childs; contractor, Jas. V. Embury; signed, Dec. 19; filed, Dec. 24; cost, $3,445.

Ellis near Fairview. Bulkheads, carpentering, etc.; owner, Geo. H. Wright; architect, Fred. J. Mauvier; contractor, H. F. H. Brown; filed, Dec. 7; cost, $1,189.

Fifteenth near Broadway, Oakland. Building; owners, Pac. Theological Seminary; architect, Walter J. Mathews; contractor, Herbst & McLeod; signed, Dec. 19; filed, Dec. 22; cost, $7,008.

Fourteenth near Broadway, Oakland. Marble work in Central Bank; owner, Central Bank; architect, W. J. Matthews; contractors, Ruffino & Bianchi; signed, Dec. 16; filed, Dec. 21; cost, $2,000.

Fourteenth near Broadway, Oakland. Lathing, plastering, cement work; owner, Central Bank; architect, W. J. Matthews; contractors, A. C. McTavish, signed, Dec. 12; filed, Dec. 21; cost, $3,240.

Julia near Sherman. Two-story cottage; owner, P. S. Wilson; architects, J. C. & E. A. Mathews; contractors, Pierce & Ruch; signed, Dec. 30; filed, Dec. 31; cost, $1,625.

Milvia Ave. and College Way. Two-story frame; owner, F. B. Gibson; contractor, I. A. Boynton; signed, Dec. 27; filed, Dec. 31; cost, $3,036.

Pacific Ave and Benton. To build; owner, David Clark, Esq.; contractors, Marcuse & Remmel; signed, Dec. 20; filed, Dec. 22; cost, $1,800.

Railroad Ave. near Sherman street. To build; owner, Chas. Moeller; contractors, Marcuse & Remmel; signed, Nov. 29; filed, Dec. 8; cost, $3,000.

Santa Clara Ave. near Seventh. One-story frame dwelling; owner, F. L. Volberg; contractor, A. R. Denke; signed, Dec. 2; filed, Dec. 6; cost, $2,800.

Santa Clara Ave. near Sherman. Cottage; owner, August Bruder, Esq.; contractors, Marcuse & Remmel; signed, Dec. 12; filed, Dec. 22; cost, $1,050.

Searles Track, Berkeley. Two-story building; owner, Mary A. Barracks; architect, John Laughland; contractors, Smith & Keating; signed, Dec 22; filed, Dec. 22; cost, $1,645.

Thirteenth and Broadway, Oakland. Brick work; owner, Pacific Theological Seminary; architect, W. J. Matthews; contractors, Remillard Brick Co., signed, Dec. 24; filed, Dec. 27; cost, $4,755.

Thirty-fifth near Grove, Oakland. Grading, brick work and plumbing; owner, Max Franz; architect, Frederick H. Bomes; contractor, Chas. J. Antivile; signed, Dec. 2; filed, Dec. 3; cost, $1,615.

Washington near 8th, Oakland. Two-story brick; owner, T. H. Corder; architect, C. E. Larsen; contractor, Wm. Winnie; signed, Dec. 14; filed, Dec. 16; cost, $12,085.

Washington and Clay, Oakland. Building and rebuilding wharf; owner, John A. Stanly; contractors, B. McMahon & Son; signed, Dec. 12; filed, Dec. 20; cost, $6,510.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

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DR. Ellinwood in a lecture delivered on Friday evening, February 10th, in the Cooper Medical College, said the time would come when architects would provide in all large family residences, one or more apartments for the sick, specially provided with hospital conveniences and capable of perfect isolation.

In the December number of the CALIFORNIA ARCHITECT AND BUILDING NEWS, we called attention to the importance of this matter and advocated its introduction.

IN the form of builders' contract now in general use in this city and which was formulated by a Conference Committee of the San Francisco Chapter of the American Institute of Architects, and the Builders' Association, the clause in regard to insurance reads as follows:

"The owner shall not be liable or responsible for any accident, loss or damage happening or occurring to the work specified in the within contract prior to the completion of the same (loss or damage by fire or earthquake excepted)."

Of course the natural inference would be that the owner by this clause would be held responsible for loss in either of the eventualities mentioned. Nevertheless we think the extent of this liability should be fixed in definite terms that will admit of no argument as to their true meaning.

In the form of contract adopted by the American Institute of Architects and the National Association of Builders, published *in extenso* in this number, the insurance clause reads as follows:

"The owner shall during the progress of the work maintain full insurance on said work, in his own name and in the name of the contractor, against loss or damage by fire. The policies shall cover all work incorporated in the building and all materials for the same in or about the premises, and shall be made payable to the parties hereto, as their interest may appear."

We think this latter clause an improvement over the first one, as being more explicit, but might it not cause trouble when the amount of the respective damage sustained came to be determined?

C. Mason Kinne, the insurance claim adjustor, in rendering a decision in a case where he was arbitrator between two companies that had issued policies in favor of the Owner and Contractor respectively, took occasion to recommend the following clause as definitely determining their respective liabilities:

"The owner shall not be liable or responsible for any ac-

cident, loss or damage happening or occurring to the works specified in the within contract prior to the completion and final acceptance of the same, with the exception of loss or damage by fire or earthquake, in which event he shall be liable with the contractor in such proportion as his payments shall bear to the excess value of materials and labor yet unpaid for."

How far one party should be required to protect another's interest, is of course open to discussion, but the justice of requiring both the Owner and the Contractor to protect their respective interests, each one for himself, is evident; this would relieve both parties from liability to the other and avoid all chance of possible disagreement in case of loss by fire.

ANNUAL ADDRESS OF PRESIDENT SANDERS TO THE SAN FRANCISCO CHAPTER OF THE A. I. A.

Gentlemen of the S. F. Chapter of the A. I. A.:

Since you have again bestowed upon me the honor of representing you as president of the chapter, I will recognize your kindness and confidence by a very brief address.

Nevertheless, there are some things to be said at the present time which merit our attention, and I will endeavor to speak of them *seriatim*.

In the first place it will be seen that matters of art are looking up and it behooves the architects to see that their interests are not lost sight of, as they surely will be should we be so shortsighted as to place our light under a bushel. If we would have our interests attended to, it is necessary that we should bestir ourselves and make it evident that we know our place and are prepared to assume it when the opportunity occurs, and moreover, to be ready and instant in making opportunity if it does not otherwise offer. To create an opportunity indeed, consists mainly in creating a necessity and to create an necessity is to make it evident. This wholly depends upon ourselves. We must make it evident to the general public as well as to the directors and officers of the two universities and other educational centers of the Pacific Coast, that architecture is the prime factor and chief conservator, and constitutes the essential element in all the arts of design. Without architecture there would be neither sculpture nor painting properly, so called. There would be no habitations, no civilization, the arts of design would languish and mankind would recede to the condition of the savage or the nomad. Even the engineer would lose his occupation and all the refinements and advanced inventions of the present time would become as objectless and as impossible with us as they would be in the midst of China or the Dark Continent. But to evince this fact with sufficient force, it is necessary for the architect, worthy of the name, to assume and to vindicate by his ability, by his ubiquity, by his genius and by his zeal in the cause of art, and in every department thereof, his fitness to lead, and the necessity for his services, throughout the magnificent domain which lies open to him, to conquer and to win. But to do all this, the architect must, by his indomitable perseverance and unremitting toil and effort, place himself foremost in the conduct and direction of the minutest detail of the innumerable departments into which his work divides itself, and to accomplish this, it is necessary that he should be educated to the requirements of the most exacting of all the occupations of man. He must be a perfect and accomplished engineer, he must know how to handle and direct great materials and great operations. He must know minutely the conditions and qualities of soils and materials, he must be thoroughly familiar with the resolution of forests and the chemical affinities of almost every known substance. He must be prepared to confine the unconfinable and render practically immovable the even shifting and disintegrating substances of the material universe so far as his work renders it necessary. *More*, he must be thoroughly familiar with nature in all her moods and tenses, and to be prepared to modify her aspects and command her resources, and so adapt means to ends, as out of the commonest materials to mould each form so that it shall thenceforth become "a thing of beauty and a joy forever!" For be this remembered, no impression of the sublime, the beautiful, or the true, when once impressed on the imperishable tablets of the mind of an individual or a multitude, can never be obliterated in its influences to the latest æons of eternity! Let each student of our sublime art well consider this fact, take it home to himself and prepare himself accordingly if he hopes ever to produce works of permanence or beauty. Also, that ugliness or unsightliness is only less prejudicial and only less permanent than the beautiful and true, and that if he would avoid the one and attain the other, it will only be by storing his mind with proper materials and cultivating the faculties by which he has been endowed, by a careful use of them throughout his life, that he can ever expect to accomplish his mighty task.

But more still, after the architectural student has laid in a large store of technical knowledge, after he has familiarized himself with the beautiful in every form, by means of the abundant elements evolved in previous ages so ready to his hand; and after he has trained his eye to see and his heart to feel the eloquent sentences his mind has learned to formulate and his genius to realize; he must then begin to acquaint himself with the peculiarities and the exigencies of every other art. He must know art in every protean form in which it has been developed in our protean age. He must be in effect a painter, a sculptor, a musician and an orator. He must be acquainted with history in all its ramifications and a theologian, as knowing the tenets and therefore the religious practice of the religionists of every age. He must be familiar with the politics of his time, and past times, as well as a poet, a philosopher, and a mathematician, so that in all the innumerable connections, interrelations of this world of life, he may aid in the regulation and conduce to the perfection of the design of the tapel, which shall fix in glorious color and in lovely forms the wondrous tapestry of our present, as well as the future, of our civilization.

But for ourselves, my brothers in the glorious art of design, is there nothing we can do by act as well as words, to give force to our advice to our young friends the students? At least, while we are in the thick of battle and of fray; down in the actual drudgery, as well as up on the higher levels of our art on which we may have occasion to stray, may we not bear in mind, that by persisting in keeping foremost the ideas of architectural supremacy in our minds, we will be more and more incited to excellence and permanence in all we do, and more exacting and critical in the perfection, beauty and completeness of our designs? And by tentative jealousy of supreme control in the works in which we find ourselves engaged, may we not aid in the accomplishment of what seems to be the chief object of attainment at the present time is the placing of the genius of architecture in the central, if not necessarily the highest place, amongst the arts of design?

In view of the architectural display embodied in the structures of the Columbian Exposition—disappointing as they are in some respects, as an exemplification of the development of architectural taste on new lines in America, still it cannot be doubted, that in the realization of these buildings, good taste and a certain degree of appropriateness has been attained, even if they do not fall short of the ideal, in almost every instance, of what it would seem should constitute, in the closing years of the Nineteenth Century, a perfect Exhibition Building.

DESIGN FOR A CHURCH TOWER.

In regard to what we believe should constitute an architectural exhibition (unless the whole scope and object of the above mentioned exhibition may be considered to fulfil in the best possible way, that idea) it is probable that there will be also cause for disappointment, in view of what might have been accomplished had the proper intention and meaning of such an Exhibition been sooner developed. But we must be content with what the Gods send us in that regard, and there will be ample time to develop the idea to its broadest extent, before the universal Exhibition of the World's industries and arts is held in San Francisco, shall we not say in the semi-Centenial or Jubilee year of its foundation?

In regard to the conduct and administration of the affairs of the San Francisco Chapter of the A. I. A., there is much still to be desired, much to regret, and much to be hoped for. In the first place, the President feels it obligatory on himself to lay upon each of the executive officers, the burden of producing an essay at each of the quarterly Saturday afternoon lunches and exhibitions of student's drawings, which the work of the year will make it necessary to convene.

If some one or other of our older members, such as William Patton, Esq., Henry Kenitzer, Sr., or Mr. David Farquharson, a former member, or some other architect, who has ceased the active practice of his profession, could be induced to prepare and deliver at such a meeting as is above indicated, a paper on some subject agreeable to themselves, viewing professional subjects from their present standpoints, we believe that much would be done to keep alive the "Armor Propre" of the Cult, and bring us up with a round turn in some of the vagaries we are apt to fall into, without the restraint which such conservative influence is apt to exercise. It would not be inappropriate to make our student members, guests on such occasions, that they may be edified by the super-abundance of what superfluous wisdom which is apt to flow around.

Claiming and confidently expecting the zealous assistance during the year, of the officers and members of the Chapter, and trusting and hoping for a large increase of new blood, without which we cannot grow, I beg to subscribe myself,

Your Humble Servant,

The President.

The Californian suggest that the Mount Vernon estate, or what is left of it, be converted into a site for the American Valhalla.

It is true we have no national resting place for our distinguished men; no Westminister Abbey to commemorate the glory, and perpetuate the fame of our heroes; yet whether the institution of such posthusmous distinctions would be quite in keeping with the ideas of the framers of the American Constitution is open to question; on the other hand the associations that would cling to so hallowed a spot, would engender an honest pride in the achievements of our fellow countrymen, and foster those feelings of patriotism, so necessary to our preservation as a nation.—*Ed.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Tres.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

JOHN RICHARDS, Pres. L. WAGONER, Vice-Pres.
OTTO VON GELDERN, Sec. *GEO. F. SCHILD, Treas.

THE regular meeting of the Chapter was held on the 20th ult., too late for us to report its proceedings in the January number of the CALIFORNIA ARCHITECT.

The Chapter awarded first mention in the competition for a Country Chapel (drawings for which were submitted by the students in the Architectural Class at a previous meeting) to Mr. Meussdorffer.

The work of the modeling class received high praise from the members present, and Mr. de Prosse, its instructor, was given a vote of thanks for his services

In connection with this subject of the Chapter Classes it was resolved to apply to the Board of Regents of the University of California, for space in the Mark Hopkins' Institute of Art.

It was the general opinion that much good would result both to the profession and to the public appreciation of its practical work, if a more general interest in and sympathy with its aims, could be aroused in the people, no class, from the highest to the lowest, but what is continually, both in business hours and home leisure, enjoying the benefits of the architects' foresight, or experiencing the inconvenience caused by the employment of ignorant and incompetent pretenders.

This latter evil was discussed at some length, and it was decided to attempt to give the public the means of judging in a small measure at least, whether the architects they employed had had reasonable experience in the practice of their profession before soliciting or obtaining employment from the general public by the introduction of a bill before the Legislature of which the following is the principal point:

Resolved to present to the Legislature the draft of a bill making it compulsory for every practicing architect to register his name with the Controller of the State before advertising or practicing the profession of Architecture; that the requirements entitling the architect to register shall be five years' previous practice of the profession, or five years' service as student in the office of a registered architect.

Violation of the provision of the law to be considered a misdemeanor, punishable the same as other misdemeanors.

Upon invitation of President Sanders, Mr. Alfred Colin read the following paper on the course of study that should be pursued by the Architectural Students after leaving the public schools:

Mr. Chairman, Gentlemen:

Animated with the same liberal spirit of progress as several Chapters of the Institute of American Architects, you study the advisability of establishing Art classes for the younger members of the profession. These classes must gradually raise the standard of required knowledge of the practitioners.

Many colleges and universities have courses in Architecture, requiring the presence of their students during four years. It is an open question to know if more may be achieved during this period. But a university lacks that atmosphere of art which is required for an architect's training and only to be found in great centres of population. There are also institutes, night schools, drawing schools, etc., all are equally insufficient. This brings us to study what may be accomplished in the city of San Francisco.

We shall assume that quarters are provided in the Mark Hopkins' Institute of Art, and that instruction is given day and evening.

THE DAY CLASSES

would be the more thorough as more time would be spent by the student, who, later, might finish his course in the evening classes.

Let us then sketch a course of instruction which might cover two years.

For admission it does not seem expedient to take youths

HALL OF RECORDS, QUINCY, PLUMAS COUNTY, CAL.

before fifteen years of age; candidates ought to pass a satisfactory examination in Arithmetic, Algebra, English and Free-hand drawing. Candidates who would previously have worked in a carpenter shop would have a manifest advantage.

The course of instruction would be

FIRST YEAR:

Geometry, Algebra, Trigonometry,	5 hours weekly.
English Language, General History,	5 "
Free-hand Drawing, Clay modeling, Instrumental drawing	18 hours weekly.

SECOND YEAR:

Mechanics, Descriptive Geometry, Perspective, Surveying, Construction	5 hours weekly.
English Language, History of Art	5 "
Free-hand drawing, Instrumental drawing and Water Color	18 hours weekly.

English language does not mean grammar and rhetoric, but an aptitude to write reports and to read well in public.

By Free-hand drawing must be understood: geometrical solids, ornament, heads, landscape, flowers, animals, sketching, pen and ink, etc.

Instrumental drawing would be introduced late in the first year, because the whole secret of drawing rests with free-hand.

Descriptive Geometry and Perspective, afford excellent practice in construction, which gives confidence to the student who is too inexperienced to undertake problems of Architectural design.

THE EVENING CLASSES

ought to cover in the beginning the same subject matter as the day classes, but with the understanding that this teaching be eliminated as soon as possible, for the course consists of.

Properties and strength of materials, Construction.

Heating, ventilating, hygiene, sanitary engineering.

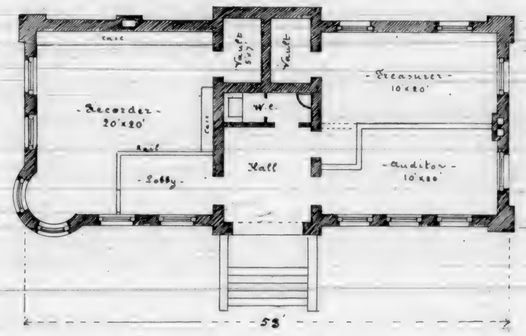
History and composition of ornament.

Theory of Architecture.

Drawing except for competitive examination and composition ought not to be a part of evening classes, as the students are supposed to practice it during day-time in offices.

The evening course would necessitate three years.

It is easily seen that this course leaves out many important branches of knowledge—Physics, Chemistry, Geology, Legislation, etc., but improvements will come with time.



The aim must be to teach as much as possible *drawing* in all its applications and *decorative arts.*

Architecture is the supreme art, but sculpture ought not to be omitted and if *ateliers* were provided, all the crafts of the artist-artizans who contribute to make the house beautiful ought to be represented, such as cabinet makers, wood carvers, decorators, metal workers, etc.

The above scheme is of necessity somewhat vague, no shop work is introduced as the building where the school is to be located is not appropriate to this end; technical or manual schools already exist, or will soon come into existence so that receiving students from them, a more elaborate preparation would be expected of such. Presently the only question is to know *what students* and what *kind* of students may be obtained? However it will take but a very short time to see such a school prosperous as the Art Schools of the Metropolitan Museum of Art in New York, in the organization of which I had the honor of being called to co-operate. ALFRED COLIN.

San Francisco, January 20, 1893.

Mr. Gash had also been reflecting on the subject of Education, and read to the meeting the first chapters of a Catechism of Architecture which he proposed to write

THE February meeting of the Chapter was held on the 10th. A communication was received from the Secretary of the Institute, requesting the Chapter to render such assistance as might be possible to forward the passage of House Bill No. 9592, authorizing the Secretary of the Treasury to obtain plans and specifications for public buildings by competition.

A letter from the Architectural Association of Southern California was received, with a set of resolutions passed by that body in favor of the same bill. Action to that same end was taken by the Chapter, and it is hoped the bill may be passed before the adjournment of Congress.

AN ACT REGULATING THE PRACTICE OF ARCHITECTURE IN THE STATE OF CALIFORNIA.

RECOMMENDED BY THE SAN FRANCISCO CHAPTER A. I. A. AND INTRODUCED BY THE HON. JOHN M. CURTIS, JANUARY 30, 1893.

WHEREAS, The profession of architecture is one that under our present civilization has grown to be a necessity, and there are a great number following the profession who are incompetent by reason of their having no knowledge thereof, which knowledge can be gained only by proper training; and whereas, there is danger to life and property in our State by reason of earthquakes, by fire, and, in some cases, of the actual destruction by settling of buildings, etc., the cause being credited to the ignorance and incompetency, and possibly, in some cases, to the want of practical experience, and dishonesty of persons following the profession; therefore,

THE PEOPLE OF THE STATE OF CALIFORNIA, REPRESENTED IN SENATE AND ASSEMBLY,

DO ENACT AS FOLLOWS:

SECTION 1. It shall be unlawful for any person, after the passage of this Act, to engage in the practice and profession of architecture who has not served an apprenticeship of five years to a registered architect of the State of California, and who holds a properly authenticated indenture from the same, and said indenture shall entitle him to register with the Controller of State as hereinafter provided.

SEC. 2. It shall be unlawful for any person at present engaged in the practice of the profession of architecture in this State, to follow or practice the said profession unless that, within ninety days from and after the passage of this Act, he shall register as hereinafter provided; and no public buildings shall be erected without the services of a registered architect.

SEC. 3. Architects coming to this State from other States, countries, or places shall, before practicing their profession in this State, file satisfactory evidence with the State Controller for this State, that they have served a regular apprenticeship to their profession of at least five years, or shall have practiced their profession five years in the place from whence they came, or in this State.

SEC. 4. Upon the registering of any person authorized under this Act to register, the State Controller shall issue to him a certificate, certifying that he is a registered architect and entitled to follow the profession of architecture in this State, for which certificate he shall be entitled to charge a fee not exceeding ten dollars.

SEC. 5. Any person following or practicing the business or profession of architecture, or in any way advertising himself as an architect in this State, in violation of this Act, is guilty of a misdemeanor, and punishable as provided for other misdemeanors. This Act to take effect and be in force immediately upon (after) its passage

PROPOSED AMENDMENT TO THE EXISTING LIEN LAW.

HON. J. M. Curtis has introduced a bill modifying, the present lien law in several important particulars which are briefly described below:

The time for filing liens (except those of original contractors) has been reduced from thirty days to ten days.

The occupation or use of any building improvement, or structure, in whole or in part, by the owner, his representative or tenant shall (save in cases of alterations, additions or repairs) be deemed conclusive evidence of completion.

Cessation of labor for thirty days shall be deemed equivalent to completion.

Except in the cases above mentioned, a certificate of completion shall be filed for record within five days from and after completion.

The term "original contractor" is more definitely defined, and a new section to be numbered 1203, provides for a bond amounting to twenty-five per cent of the contract price, which bond shall insure to the benefit of any and all persons who perform labor for, or furnish materials to the Contractor; failure to comply rendering the owner and contractor jointly liable for the debts incurred.

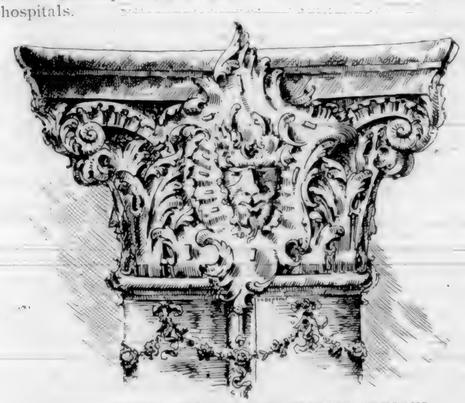
YELLOW PINE AND CALIFORNIA BUILDING LUMBER.

IN early times in California, when the saw-mill business was not reduced to such a science as it is now, many mill-owners placed their plants in the foot-hills. They cut everything that came along, without regard to quality or usefulness. In these foot-hill districts the timber is of an inferior grade, spongy and liable to twist and split if exposed to the elements, and because of the many disadvantages of this lumber it has been given the name, Bull-Pine, a name which suggests the true nature of the wood.

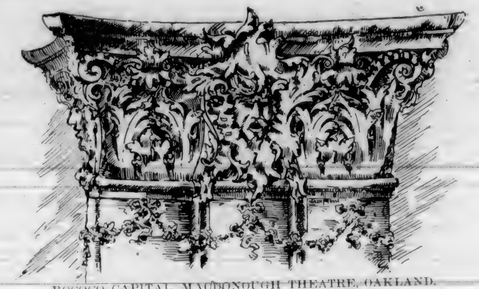
All lumber from the foot-hills is of a similar character to Bull-Pine and is consequently condemned by our architects and builders. Of all pines, Sugar Pine is the most favored and even that, when taken from the lower districts, is of an inferior grade.

During the past fifteen or twenty years the mills have had to go back or higher into the mountains and the temperature, winds and snow, exercise such an influence upon the timber that the mills of a higher altitude are able to produce a pine superior to any of the eastern woods. Yellow Pine, grown in the northern California mountains, is as firm and durable as any of the pines grown in the eastern part of the United States.

For standing finish, flooring, stepping, etc., and places where durability and strength are required it has no superior among the soft woods. Another point in favor of it is its tendency to become light in color with age, while Oregon Pine becomes darker under the same circumstances. The germs of disease cannot get such a hold on Yellow Pine as they can in Redwood, White Cedar, etc., and the delicate pitchy odor peculiar to Yellow Pine, makes it its own disinfectant and especially adapted to use in living rooms and hospitals.



ROCOCO CAPITAL, MACDONOUGH THEATRE, OAKLAND.



ROCOCO CAPITAL, MACDONOUGH THEATRE, OAKLAND.

I will venture to say from my own personal observations, during the past twenty-five years, that slash grain, No 2., Yellow Pine flooring, will outlast the vertical grain in Oregon Pine or Fir, for the reason that it wears smooth and does not sliver, while in vertical grain Oregon Pine, the soft fiber between the hard grain shrinks away and causes the piece to become rough and full of splinters. Scrubbing has no rotting effect but will make it whiter, while an Oregon Pine floor *will rot* under an ordinary amount of scrubbing. While it is true that Yellow Pine costs a trifle more than Oregon Pine, the benefits are increased four fold.

If you will but notice the percentage of Yellow Sugar Pine used in steamboat work, it will furnish convincing proof of the value of it for rough work and its ability to hold paint in spite of the many immersions in salt water.

A few words more in regard to our California woods, we have what is called Oregon Pine or Red Fir and White Fir or Spruce. Our mountain Red Fir is better than Oregon or Fir Pine for railroad bridges and seems an excellent lumber for holding its shape, strength, etc. I mention these facts for the benefit of those who think we produce nothing but Redwood and Sugar Pine.

Much more could be said in regard to our woods in general but my humble pen is not equal to the task of what is known by our Californian lumbermen in regard to a product that will some day form a great factor in our commerce and bring California among the first ranks of lumber producing states.

I feel confident that I have not done full justice to my subject but will reserve for a future article.

Tam Sirrah.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

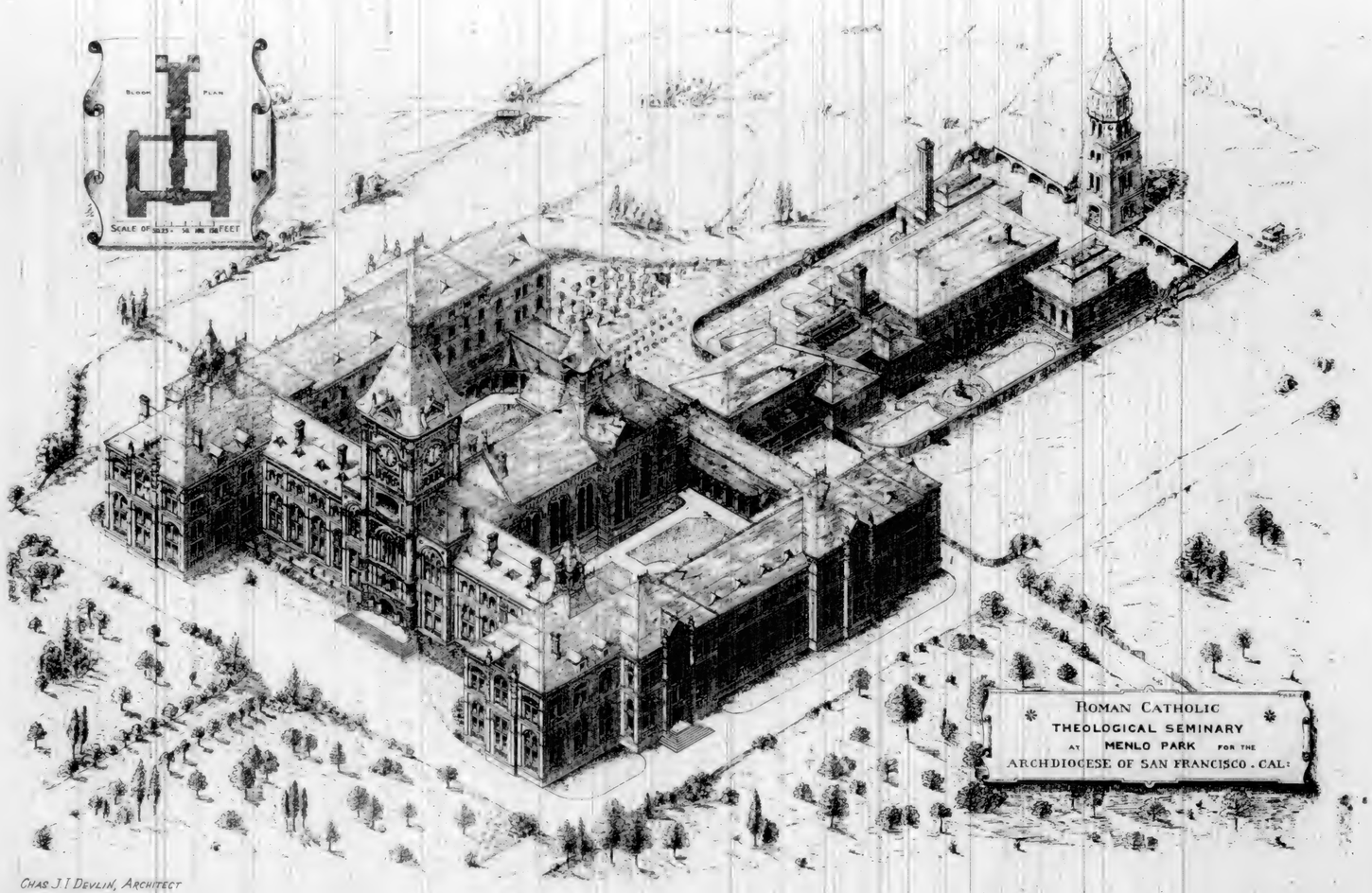
Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Roman Catholic Theological Seminary designed by Architect Chas. J. I. Devlin, is to be erected at Menlo Park.

J. Cather Newsom contributes the perspective view of a residence at San Jose, and Percy & Hamilton, one erected in this city.

THE design for a Country Chapel is one submitted in competition by Mr. C. Meussdorffer, and shows the proficiency attained by Architectural students in the class taught by President Sanders.

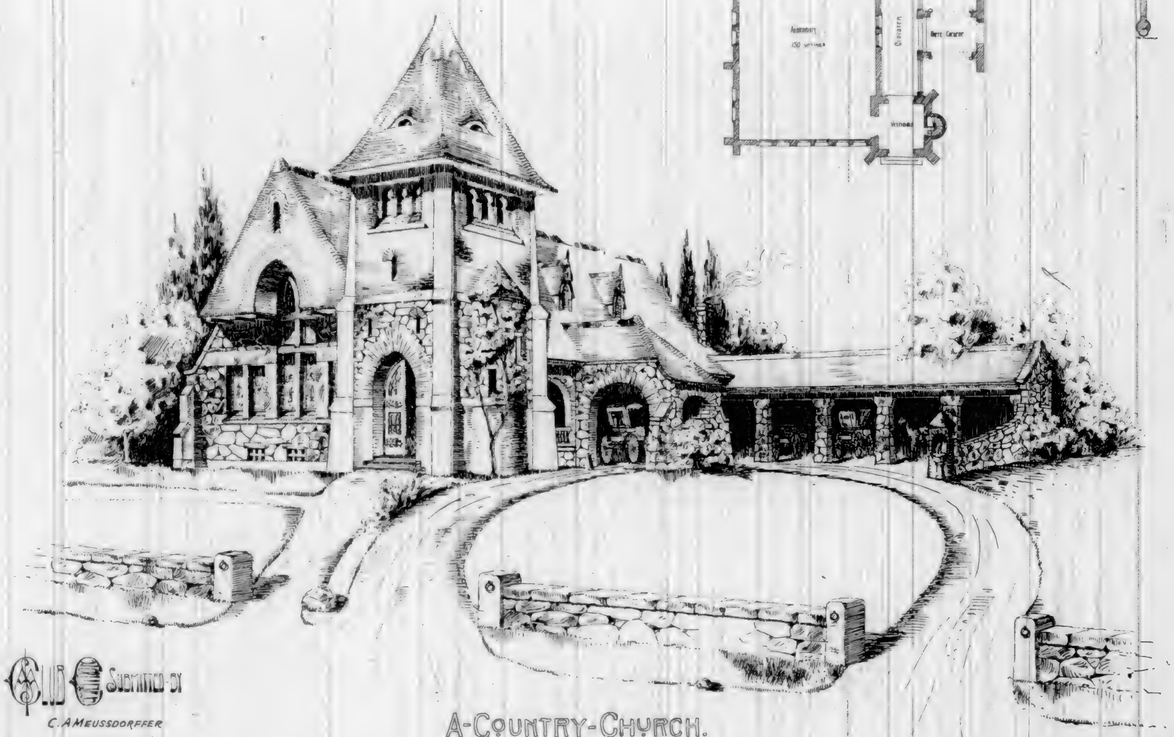


CHAS. J. I. DEVLIN, ARCHITECT

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO. LITH.

VOL. XIV Nº 2. FEBRUARY 1893.



SACRAMENTO ST.

C. A. MEUSSDORFFER

A COUNTRY CHURCH.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO. LITH.

VOL. XIV Nº 2. FEBRUARY 1893.

PERCY & HAMILTON
ARCHITECTS 510 FIRST ST.

RESIDENCE—A. SCHWABACHER ESQ.
JACKSON & LAGUNA STS. S.F.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO. LITH.

VOL. XIV Nº 2. FEBRUARY 1893.

J. FATHER NEWSOM. ARCHT.
ROOM. 21. ACADEMY OF SCIENCES. BLDG.
SAN. FRANCISCO.

RESIDENCE
OF
MR GUS. LION. SAN JOSE.

THE STANDARD CONTRACT FORM.

THE following is the text of the form of Builders' Contract adopted and recommended for general use by the American Institute of Architects and the National Association of Builders, as revised by the joint committee, January 10, 1893, and published by the Inland Publishing Company, the licensee for exclusive publication:

This Agreement, made the.....day of..... in the year one thousand eight hundred and ninety..... by and between..... .....party of the first part (hereinafter designated the Contractor), and..... .....party of the second part (hereinafter designated the Owner),

Witnesseth that the Contractor, in consideration of the fulfillment of the agreements herein made by the Owner, agrees with the said Owner, as follows:

ARTICLE I. The Contractor, under the direction and to the satisfaction of..... Architects, acting for the purposes of this contract as agents of the said Owner, shall and will provide all the materials and perform all the work mentioned in the specifications and shown on the drawings prepared by the said Architects for the..... ..... which drawings and specifications are identified by the signatures of the parties hereto.

ART. II. The Architects shall furnish to the Contractor, such further drawings or explanations as may be necessary to detail and illustrate the work to be done, and the Contractor shall conform to the same as part of this contract so far as they may be consistent with the original drawings and specifications referred to and identified, as provided in Art. I.

It is mutually understood and agreed that all drawings and specifications are and remain the property of the Architects.

ART. III. No alterations shall be made in the work shown or described by the drawings and specifications, except upon a written order of the Architects, and when so made, the value of the work added or omitted shall be computed by the Architects, and the amount so ascertained shall be added to or deducted from the contract price. In the case of dissent from such award by either party hereto, the valuation of the work added or omitted shall be referred to three (3) disinterested Arbitrators, one to be appointed by each of the parties to this contract, and the third by the two thus chosen; the decision of any two of whom shall be final and binding, and each of the parties hereto shall pay one-half of the expenses of such reference.

ART. IV. The Contractor shall provide sufficient, safe and proper facilities at all times for the inspection of the work by the Architects or their authorized representatives. He shall, within twenty-four hours after receiving written notice from the Architects to that effect, proceed to remove from the grounds or buildings all materials condemned by them, whether worked or unworked, and to take down all portions of the work which the Architects shall by like written notice condemn as unsound or improper, or as in any way failing to conform to the drawings and specifications.

ART. V. Should the Contractor at any time refuse or neglect to supply a sufficiency of properly skilled workmen, or of materials of the proper quality, or fail in any respect to prosecute the work with promptness and diligence, or fail in the performance of any of the agreements herein contained, such refusal, neglect or failure being certified by the Architects, the Owner shall be at liberty, after.....day's written notice to the Contractor, to provide any such labor or materials, and to deduct the cost thereof from any money then due or thereafter to become due to the Contractor under this contract; and if the Architects shall certify that such refusal, neglect or failure is sufficient ground for such action, the Owner shall also be at liberty to terminate the employment of the Contractor for the said work and to enter upon the premises and take possession, for the purpose of completing the work comprehended under this contract, of all materials, tools and appliances thereon, and to employ any other person or persons to finish the work, and to provide the materials therefor; and in case of such discontinuance of the employment of the Contractor he shall not be entitled to receive any further payment under this contract until the said work shall be wholly finished, at which time, if the unpaid balance of the amount to be paid under this contract shall exceed the expense incurred by the Owner in finishing the work, such excess shall be paid by the Owner to the Contractor, but if such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. The expense incurred by the Owner as herein provided, either for furnishing materials or for finishing the work, and any damage incurred through such default, shall be audited and certified by the Architects, whose certificate thereof shall be conclusive upon the parties.

ART. VI. The Contractor shall complete the several portions, and the whole of the work comprehended in this Agreement by and at the time or times hereinafter stated ....provided that..... .....

ART. VII. Should the Contractor be obstructed or delayed in the prosecution or completion of his work by the act, neglect, delay or default of the Owner, or the Architects, or of any other Contractor employed by the Owner upon the work, or by any damage which may happen by fire, lightning, earthquake or cyclone, or by the abandonment of the work by the employees through no default of the Contractor, then the time herein fixed for the completion of the work shall be extended for a period equivalent to the time lost by reason of any or all of the causes aforesaid; but no such allowance shall be made unless a claim therefor is presented in writing to the Architects within twenty-four hours of the occurrence of such delay. The duration of such extension shall be certified to by the Architects, but appeal from their decision may be made to arbitration, as provided in Art. III of this contract.

ART. VIII. The owner agrees to provide all labor and materials not included in this contract in such manner as not to delay the material progress of the work, and in the event of failure so to do, thereby causing loss to the Contractor, agrees that he will reimburse the Contractor for such loss; and the Contractor agrees that if he shall delay the material progress of the work so as to cause any damage for which the Owner shall become liable (as above stated), then he shall make good to the Owner any such damage. The amount of such loss or damage to either party hereto shall, in every case, be fixed and determined by the Architects or by arbitration, as provided in Art. III of this contract.

ART. IX. It is hereby mutually agreed between the parties hereto that the sum to be paid by the Owner to the Contractor for said work and materials shall be $..... ..... subject to additions and deductions as hereinbefore provided, and that such sum shall be paid in current funds by the Owner to the Contractor in installments, as follows: ....

The final payment shall be made within.....days after this contract is fulfilled.

All payments shall be made upon written certificates of the Architects to the effect that such payments have become due.

If at any time there shall be evidence of any lien or claim for which, if established, the Owner or the said premises might become liable, and which is chargeable to the Contractor, the Owner shall have the right to retain out of any payment then due or thereafter to become due an amount sufficient to completely indemnify him against such lien or claim. Should there prove to be any such claim after all payments are made, the Contractor shall refund to the Owner all moneys that the latter may be compelled to pay in discharging any lien on said premises made obligatory in consequence of the Contractor's default.

ART. X. It is further mutually agreed between the parties hereto that no certificate given or payment made under this contract, except the final certificate or final payment, shall be conclusive evidence of the performance of

this contract, either wholly or in part, and that no payment shall be construed to be an acceptance of defective work or improper materials.

Art. XI. The Owner shall during the progress of the work maintain full insurance on said work, in his own name and in the name of the Contractor, against loss or damage by fire. The policies shall cover all work incorporated in the building, and all materials for the same in or about the premises, and shall be made payable to the parties hereto, as their interest may appear.

.....

Art. XII. The said parties for themselves, their heirs, executors, administrators and assigns, do hereby agree to the full performance of the covenants herein contained.

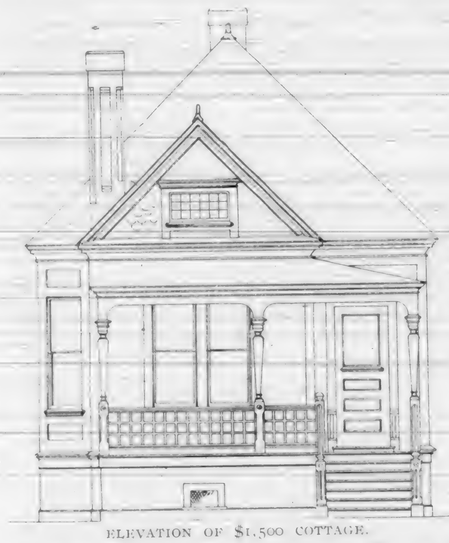
In Witness Whereof, the parties to these presents have hereunto set their hands and seals, the day and year first above written.

In presence of .....[SEAL]

.....[SEAL]

.....[SEAL]

.....[SEAL]



ELEVATION OF $1,500 COTTAGE.

EFFECT OF TURPENTINE GATHERING ON PINE TIMBER.

THE Forestry Division of the United States Department of Agriculture in a circular published about a year ago, stated that tests made on timbers of Longleaf Pine, bled or unbled, lent countenance to the belief that bled or tapped timber did not suffer in strength by virtue of the tapping. Further tests and examinations now permit the announcement without reserve, *that the timber of Longleaf Pine is in no way* affected by the tapping for turpentine. This refers to its mechanical as well as chemical properties, and hence even the reservation that it might suffer in durability is now eliminated and any prejudice against the use of bled timber in construction, wherever the unbled timber has been considered desirable, must fall as having no foundation, in fact, being based only on vague belief, proved to be erroneous.

It is to be hoped that this fact will be made widely known among builders, architects and engineers who have hitherto made discrimination against bled timber and thereby depreciated or discouraged the manufacture and impeded the sale of an article which answers all the purposes of construction and the unrestricted use of which is dictated by true economy.

The basis for the statement regarding the mechanical properties is furnished by a series of tests comprising not less than 300 tests on 32 trees of this Pine, bled and unbled, from various localities.

The somewhat puzzling fact that bled timber exhibited, if any thing, greater strength in the tests has been accounted for by the fact that the turpentine orchards are located mostly on sites which produce better quality timber as well as larger yield of turpentine.

To determine whether any changes in the chemical composition take place, a series of chemical analyses of bled and unbled timber has been made, which indicates that the resinous contents of the heartwood are in no wise affected by the bleeding, the oleoresins of the heartwood being non-fluid, the whole turpentine flow is confined to the sapwood.

Among other interesting facts regarding the distribution of resinous contents through the tree which will be published in a separate bulletin, it appears that trees standing side by side and to all appearances in similar conditions show very varying quantities of resinous contents.

To make sure that experience did not, if sifted down, contradict the results of these investigations, a competent agent, Mr. F. Roth, visited turpentine orchards and sawmills in the Longleaf Pine region. He reports that nobody was found—although it was claimed by some—able to discern any difference in the appearance of the bled and unbled timber; that in spite of consumers' specifications for unbled timber, they are almost invariably served with a mixture without finding it out; that experience in the districts where bled timber is cut and used has not sustained the claim of inferiority.

NOTES & COMMENTS.

Mr. Frank T. Shay of the well-known firm of Shay & Shay, Architects, has been appointed City Hall Architect.

The caves of Burmah are rich in wooden carvings, glazed tiles and images as well as tablets in terra-cotta, marble, alabaster and other materials. These relics illustrate the ancient and modern phases of Buddhist worship.

It is proposed to lay a pipe over the East River bridge, to connect the post-office of New York and Brooklyn. In this tube is to be an electric railway, with cylindrical cars, large enough to enclose a mail pouch, and run by a small motor taking the current by means of a trolley. An estimated speed of one hundred miles an hour is to be obtained.

The *Revue de Chimie Industrielle* says that in order to convert blue prints into black prints the prints should be first passed through water acidulated with nitric acid, and thence into—

Carbonate of Soda	50 grammes.
Water	1 liter.

In this the picture is changed to an orange tone, when it is removed and placed in—

Gallic acid	50 grammes.
Water	1 liter.

Being subsequently washed in water acidulated with HCl.

I first had my attention, said W. D. Howells in *The Californian*, called to socialism as an active force in modern life by President Hayes, who referred to our national post-office as an example of practical socialism, adopted into the old Jeffersonian system of government; and then I began studying its out croppings here and elsewhere. The more I have studied it the more I am convinced of the inherent soundness of its doctrines; and the more I study our people as a whole, I am satisfied that it is the political necessity of the near future.

BOOKS & PERIODICALS

THE CHICAGO ARCHITECTURAL SKETCH CLUB courteously sent us an artistically bound volume illustrating in line and half tone, drawings and sketches by members of the club. The book is well worthy of a place on the table of any architect or draftsman in the land; the drawings are the result of work done at odd moments after working hours by members of the club, which was organized by a few draftsmen in 1885, and has been very successful.

STONE for February contains the first of a series of profusely illustrated articles on the Chateaus of France, by Louis H. Gibson, architect. Also an illustrated article on the Penrhyn slate quarries and the sandstone interests of Northern Ohio. Two pages are given to illustrations of elaborate stone entrances, and an excellent frontispiece of a stone arch bridge adorns this number.

A MANUAL OF INDUSTRIAL DRAWING for carpenters and other wood workers, by W. F. Decker, is a book of practical directions and instructions to enable mechanics to make clear and intelligable drawings that may be understood without difficulty by any workman. For sale by Wm. T. Comstock, 23 Warren street, New York, price $1.50 by mail postpaid.

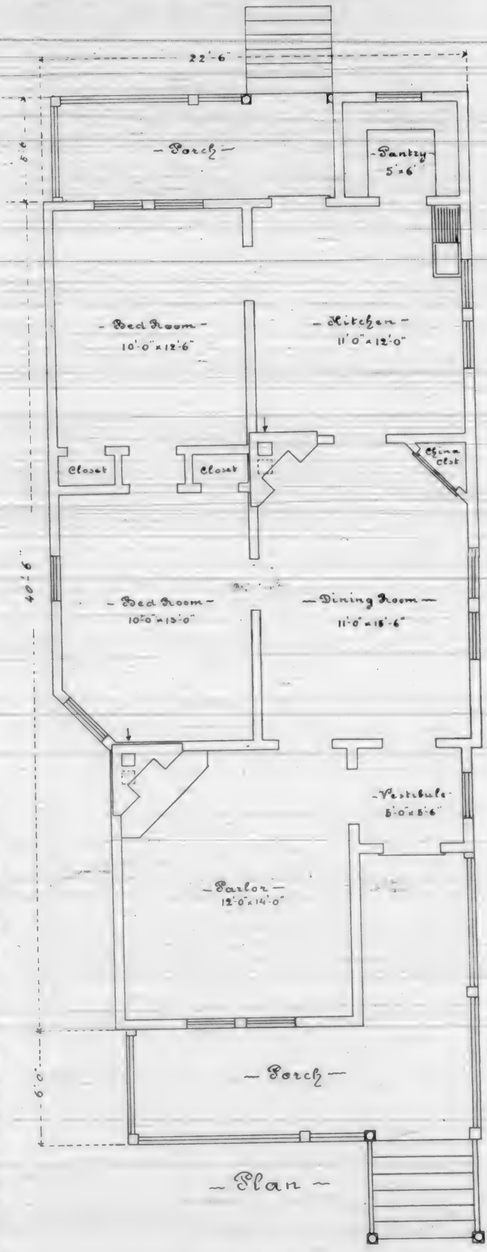
ELECTRIC LIGHTING SPECIFICATIONS for the use of Engineers and Architects, by E. A. Merrill, are intended as outlines to aid in the construction of specifications for individual installations, the details of which would have to be elaborated to meet the requirements of the conditions under which the installation is to be employed.

In the book are the rules and regulations of the National Electric Light Association, the National Board of Fire Underwriters and the New England Insurance Exchange, given in full. For sale by Osborne & Alexander, price $1.00.

The Engineering Magazine, for February, contains among other articles of interest to Architects and Engineers, one entitled "Fire Losses in Fire Proof Buildings," by Charles Bebb.

The writer takes for his text the burning of the Athletic Club building in Chicago—want of space prevents making extended extracts; but the following will prove of interest to both Architects, Insurance Companies as well as those who have in contemplation the building of this class of "Sky Scrapers:"

The result of this great fire demonstrates two great facts. The first is that laws governing the fire-proofing of high buildings do not begin to be efficient, and will not be until the possibility—to owner and architect alike—of using unnecessary combustible material is absolutely precluded, the term "unnecessary" being practically and specifically defined. The other fact is the superiority of the material used for fireproofing in this particular building. This matter deserves very careful consideration, for we have two elements diametrically opposed which cannot be considered apart in any fire, great or small. What we require is the material that will best resist the combined action of *fire* and *water*. The first actual data upon this subject fortunately was given in a widely-read architectural periodical, the *American Architect and Building News* of March 28, 1891. The paper referred to, gave a detailed account of comparative tests of different fire-proof materials made at Denver, Colorado, at the time the award was made for fireproofing the Equitable building in that city. The result demonstrated the unqualified superiority of porous terra-cotta. While the results obtained then may have been regarded as still problematical, this recent fire has been a practical test of their accuracy beyond question.



PLAN OF $1,500 COTTAGE.

A "TALL" STORY.

A section of one of the "big trees" of California, the "General Logan," is now on its way to the World's Fair at Chicago, having been successfully brought down the mountain from its home in the forest, near Fresno, to the railway station at Monson. In order to get it down the mountain it was found necessary to cut it into forty-five pieces, each piece being 14 ft. long, the whole forty-five pieces tipping the scale at 270,000 lbs., and requiring ten flat cars to carry it on the railway. Other sections of trees will be on exhibition at Chicago, but the "General Logan" beats them all. For many years this great tree has been the cause of numerous quarrels between the inhabitants of Fresno and Tulare counties; each claimed it, and each backed up the claim with "Winchesters." At last, to put an end to the senseless waste of good powder and good citizens, a special survey was ordered by the State, and the tree found to be within Fresno county. The foregoing paragraph is not from an American paper; it comes from the London *Daily Chronicle*.

THE PIPING OF DWELLINGS.

THE leakage of water pipes behind decorated walls and in fine ceilings is a sufficient argument against casing or covering service pipes. The repairs are generally costly in themselves, and they entail the additional services of the carpenter and decorator, as well as those of the plumber. Pipes in casings, or set in walls or partitions as they pass from floor to floor, provide especially inviting runways for mice, rats and vermin of all kinds. Nests are built in these places; scraps of paper, rags and food are carried into them, and they become filthy. It is only necessary to remove a covering board from almost any casing to prove this point in a most convincing manner. Even those in comparatively new buildings will be found surprisingly foul.

These casings, or wall pockets, as the case may be, serve another and usually unexpected purpose. They act as ventilators and distribute odors from the kitchen and cellar to all parts of the building. In the performance of this duty they are faithful and impartial.

Pipes carried openly through a building are not dangerous, because their condition can be constantly observed. If accidents occur the point at which the break takes place can be reached at once and repairs easily made. The quality of the work gains materially, because the plumber takes pride in putting up work which is to be exposed. He has natural and very justifiable pride in having the workmanship creditable to himself. This pride is increased by certain traditions of the trade, and there is a double gain to owner and occupant.

Exposed pipes may be made to pass through floors without leaving an opening. The floor around the pipe can be made perfectly tight and the passage of odors cut off completely—at least, as perfectly as the nature of the plaster will permit. This is an enormous gain, while the runways for rats and mice, roaches and water-bugs, are entirely done away with. These vermin can then be exterminated. This is practically an impossibility in houses where casings protect them and afford perfect breeding places. Cut off from free passages to all parts of the house, they prefer more congenial quarters, where rapid transit and fields for colonization are provided.

As decorative features of the rooms cast pipes, at least, are often treated in a beautiful way. The body of the pipe is colored a very dark bluish gray, scarcely removed from black. The bands are silver or nickel bronzed, or have silver or nickel leaf applied to them. Occasionally the whole pipe is finished with two or three shades of bronze. Lead and wrought-iron pipe receive somewhat similar treatment. The lead is often polished and varnished. There is, however, no difficulty in making the decoration of the pipes strikingly effective.

It is satisfactory to know that architects and builders are beginning to break away from the old custom and expose their pipes wherever the prejudices of the owners can be overcome. Some of the best men in the profession are treating the plumbing work in a manner to show constructively its importance and value. The result is a great gain to both owner and occupant.—*Mechanical News.*

STREET NAMES AND HOUSE NUMBERS.

ONE great source of annoyance in American cities is the neglect by those in authority to put up the various street names in a manner and in places clearly visible at all times, and the neglect by private individuals to number their houses properly. In most of our large cities street names are supposedly to be found on the lanterns at street crossings. These lanterns are not always all that could be desired, and it will almost invariably be discovered upon examination that the street name is spelled out in letters several sizes too small and miserably executed with a stencil, while the lantern the sign is affixed or clings to, is looking forward with a hope well-nigh heroic to a coming washday in the dim future. To some extent the same criticisms apply to the manner of putting up house numbers. Often the house has no number on it at all, then again the figures are so small that they cannot be readily discerned, or they are placed in a position where no one can see them at night. The sight of a person walking along the sidewalk gazing searchingly at one house front after another, while going through a mental calculation whether or not this might not be the right house after all, is familiar to everyone

There is ample opportunity for the display of taste and art in the proper numbering of houses, and in affixing street names. There is no reason whatever why street names should not be sandblasted upon street lanterns in large letters, and why an unmistakable sign with the street name should not be made an ornamental feature of houses situated on the corner of a block. Wrought iron grilles, over well illuminated transoms, with figures large enough to be clearly distinguishable across the street, look a great deal better and are more serviceable also than the little numbers so frequently used that can only be read by climbing up the front door steps. To say that larger numbers are in bad taste is to say that it is also bad taste to offer to friends, callers, strangers and everyone a very much needed convenience.

The idea of proper street names and house numbers as indicated, is neither ideal nor new, the most out of the way village of the German Tyrol, inaccessible by rail or by stage, is better provided with facilities in this respect than our most enterprising and prosperous American cities, and to say the least, it is queer and strangely illogical that a people that takes letters and numbers to stand in the stead of other street names because it considers it a matter of convenience, should so hopelessly fail to placard this same invention properly.—*The Trefoil.*

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

THE LAW OF LIEN.—To enforce an asserted lien under the mechanics' lien law, the Supreme Court of California laid down the following new principle of importance to builders and contractors:

The question presented was not whether a lien for work or materials can be assigned or would pass under an assignment of the debt secured, but whether a laborer or a material man can assign his mere right to assert and create a lien by complying with statutory provisions and clothe the assignee with the power to create the lien for himself, and we are satisfied that he cannot.

J. S. Mills v. La Verne Land Company, Supreme Court of California.

THE RIGHTS AND RISKS OF ENTERING ON ANOTHER'S PREMISES TO SAVE THEM.—A license to enter upon the land and premises of another is not always based on the permission of the owner; it is sometimes given by the law. An instance is where a fire breaks out in a city. Here the public authorities, and even private individuals, may enter upon adjacent premises, as they may find it necessary or convenient in their efforts to extinguish or to arrest the spread of the flames. In such case, though they have no express permission from the owner or any other person, they have an implied license by law to enter on the premises to save the property. It is a very ancient rule of the common law that an entry upon land to save goods which are in jeopardy of being lost or destroyed by water, fire, or any like danger is not a trespass. The owner of land and of buildings assumes no duty to one who is on his premises by permissiononly as a mere licensee, except that he will refrain from willful or affirmative acts which are injurious. And, therefor, a licensee, who enters on premises by permission only without any enticement, allurement, or inducement being held out to him by the owner or occupant, cannot recover damages for injuries caused by obstructions or pitfalls. He goes there at his own risk, and enjoys the license subject to its concomitant perils.

Gibson v. Leonard, Supreme Court of Illinois, 32 N. E. Rep. 183, 247.

LOSS OF MATERIAL LIEN.—The New York statute as amended relating to mechanics' liens, provides that if the owner shall, for the purpose of avoiding the provisions of the act, pay by collusion the contractor in advance of the terms of the contract, for the purpose of defeating persons who have furnished materials or done work on the building, he shall, notwithstanding such payment, be liable, etc. Where the owner had in good faith paid the contractor, and the contractor had paid the subcontractor in full for his work and materials, a person who furnished material and did work for the subcontractor was not entitled to a mechanic's lien, though one installment was yet unpaid by the owner to the contractor.

French v. Bauer, Court of Appeals of New York, 32 N. E. Rep. 77, 120.

LIMITATION OF RIGHT OF DRAINAGE.—The owner of higher land is not authorized by the law to dig through or remove natural barriers, and thereby let onto adjoining lower lands, water that would not otherwise naturally flow in that direction. And in case he attempts to dig it, where it is reasonably certain that the proposed act of the proprietor of the higher lands will cause a substantial and irreparable injury to the private rights of the owner of the lower land by creating a private nuisance on his premises, a court of equity will afford relief by decreeing an injunction.

Graham v. Keene, Supreme Court of Illinois, 32 N. E. Rep. 130, 101.

RIGHTS OF BARE POSSESSOR OF PROPERTY AS AGAINST STRANGERS.—Bare possession of property, though wrongfully obtained, is sufficient title to enable the party enjoying it to maintain an action for its recovery against a mere stranger to the property, who takes it from him. One who takes property from the possession of another can only rebut the presumption of title in the latter by showing a superior title in himself, or in some way connecting himself with one who has it. One who has acquired the possession of property, whether by finding, in trust, or even by wrongful act, has a right to retain that possession as against a mere wrongdoer who is a stranger to the property.

Anderson v. Gouldberg, Supreme Court of Minnesota, 53 N. W. Rep. 636, 118.

BUSINESS MOSAICS.

Architects having School Houses in contemplation of erection are advised to refer to the advertisement of the J. L. Mott Iron Works on page V. The Wash-out Water Closet Range, here shown, is one of the best adapted devices for the purposes intended now in the market. Some of the Public Schools of this City are fitted up with them and are giving general satisfaction.

To make windows look like ground glass, brush the glass with a hot solution of salammoniac. It will evaporate instantly, leaving a beautiful radiated deposit.

Do you want a fireplace, and do you want it in an upper story where you cannot put a brick chimney? If so, call on Mr. J. Browell, 727 Montgomery street. He will do the work in a manner acceptable to the fire wardens, which means that the work will be done so as to avoid all possible danger from fire; and the assurance that the work is well done will be a source of permanent satisfaction.

It is asserted that 800 men who work in the Paris sewers are as healthy as any other 800 Parisians, and that they are especially free from infectious diseases.

Closet seats, backs and tanks, made in this city, from Oak, Walnut, Cherry, Maple, Prima Vera, etc., offer a great advantage to buyers and consumers in that they will get their ordered goods in *first-class style*, and not receive them bruised and mutilated, as they are in most cases, when imported from the east. Mr. J. G. H. Meyer of 417-419 Mission street has been manufacturings these seats, tanks and rims for the last four years and is now able to fill orders for the same in quality superior and in price equal to any imported from the East.

The money of the world is estimated to be about $10,000,000,000, of which about $4,500,000,000 is paper, $1,500,000,000 silver and $4,000,000,000 gold.

Chas. A. Hare, Pier 5, Steuart street, San Francisco, is general Agent for California, for the Gardner Sash Ribbon (aluminum bronze), Attachments and Pulleys, and can furnish this material in any quantity from one window up. He also takes contracts for fitting and hanging windows with this well-known device and makes a specialty of heavy ware house and elevator doors and the refitting of old windows. A five years written guarantee is given for all work done by him.

The Joseph Dixon Crucible Co., of Jersey City, manufacturers of Dixon's "America Graphite" Pencils, are taking time by the forelock by putting a fifth story, 175 by 75 feet, on their pencil factory. During the past Summer and Fall they have been unable to promptly fill their orders for Dixon's pencils, even though working their already superior facilities to their full capacity. It was therefore decided to push forward the work at once, instead of waiting until Spring, as intended. The new addition will be equipped with new and improved pencil machinery of their own invention.

In order to tell wrought iron from steel, let a drop of diluted nitric acid fall on the metal, washing it off after a few minutes. If steel, a black spot; if iron, a whitish gray one will be left.

Merchant & Co. have sent us one of their handsome Calendars for the year 1893; a most artistic production and quite in keeping with the meritorious qualities of their manufactures. Every house owner, and house builder, who believes in protecting home industries, should specify one of the brands of roofing plates manufactured by the Messrs. Merchant & Co., and so show his appreciation of the efforts made to introduce this most important industry into the United States.

Whenever ventilation is required, no better method can be used than the celebrated star ventilator of which this firm are the sole manufacturers.

The Pacific Pine Lumber Co., issued new price lists last month. Rustic No. 1, 1x6, 8 and 10 were reduced about three dollars per thousand, and on Rustic No. 2, 1x6, 8 and 10, two dollars per thousand.

During the course of the Mechanics' Fair just ended, William Schroeder, the manufacturer of art glass, had a number of skillful artisans at work making the intricate designs so much admired by the public. Whenever we passed his stand, we saw a crowd of appreciative people, watching with the greatest interest, the deft manner in which the practiced workmen cut the different colored glass to meet the requirements of the pattern, fitting and combining them till the elaborate effects aimed at were fully realized, and another work of art completed for the beautification of a residence and the enjoyment of its inmates. Mr. Schroeder's place of business is 39½ Fremont street near Mission.

Bennett & Schutte, of 148-150 Valencia street, have just received a fine line of mantels of the latest designs. Parties building will do well to call and see them when requiring anything in their line. See advertisement on page xiii.

The watch worn by John Milton is said to be exposed in a Chicago shop. The watch was made with raised figures on the dial to enable the poet to read the time of day with his fingers.

The necessity for perfect insulation of buildings has produced a large variety of building and sheathing papers in this market, as well as throughout the United States generally. The most favorably known of the various manufactures of this article is the P. & B. Building Paper, which is the only paper of the kind manufactured on this Coast The superior qualities of this paper for the purposes mentioned has been thoroughly demonstrated by the use of this article in the extensive buildings of the South San Francisco Land and Improvement Co. at Baden, San Francisco, San Jose and Oakland, also the Union Stock Yards at Rodeo and this city. The Paraffine Paint Co., 116 Battery street, San Francisco, besides manufacturing this and their well known P. & B. Paints, have also on the market for the past eight years the P. & B. Roofing. The latter product is daily growing in favor, and several long tests which the Company can with pride point to are developing a reputation for this article that is indeed an enviable one. All the products of this Company being entirely Californian makes the fact of their rapid progress a matter of satisfaction to all lovers of home industries.

CITY BUILDING NEWS.

Ashbury near Frederick. Cement walk; owners, N. C. and N. J. Dyer; contractor, C. L. Leffler; signed, Nov. 18; filed, Feb. 8; cost $100.

Block 13, Lots 3, 4, 13 and 14. Out-building and tank; owner, D. Lapouble; architect, Emil Depierre; contractor, L. Ceveghino; signed, Jan. 31; filed, Feb. 1; cost $1,700.

Bush and Powell. Plastering of a building; owner, Mrs. Ryer; architect, W. H. Lillie; contractor, J. J. Morehouse; signed, Jan. 18; filed, Jan. 20; cost, $1,700.

California and Sansome. Inside wood finish; owner, Mutual Life Insurance Co.; architect, Clinton Day; contractor, John T. Grant; signed, Jan. 26; filed, Jan. 26; cost, $25,332.

California near Drumm. Mill work and carpenter work; owners, Luning Co.; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, Jan. 24; filed, Feb. 4; cost $8,600.

Clay and Leavenworth. Two-story frame; owner, Jos. Wolf; architects, Johns & Baleszynski; contractor, Adam Miller; signed, Jan. 18; filed, Jan. 21; cost, $5,200.

Clay and Webster. College; owner, Dr. L. C. Lane; architects, Wright & Sanders; contractor, Thos. McLauchlin; signed, Jan. 19; filed, Jan. 20; cost, $28,200.

Crescent Ave. near Bosco. Carpenter work; owner, Edward Norton; architect, M. G. Bugbee; contractor, W. A. Griffith; signed, Jan. 31; filed, Feb. 3; cost $1,295.

Dupont near Sacramento. Brick building; owner, Paul Fleury; architects, Pissis & Moore; contractor, Thos. H. Day; signed, Jan. 11; filed, Jan. 16; cost, $6,890.

Dupont near Sacramento. Plumbing, etc.; owner, P. F. Fleury; architects, Pissis & Moore; contractor, R. A. Vance; signed, Jan. 11; filed, Jan. 25; cost, $1,150.

Dupont near Sacramento. Plastering; owner, Paul Fleury; architects, Pisses & Moore; contractor, Chas. Dunlop; signed, Jan 19; filed, Jan. 25; cost, $1,390.

Ellis near Fulton. Plumbing and gas fitting; architects, Stone & Munson; contractors, G. and E. Snook; signed, Jan. 8; filed, Feb. 8; cost $1,017.

Ellis near Fulton. Plastering; contractor, Thos. E. Winter; signed, Feb. 8; filed, Feb. 8; cost $1,454.

Ellis near Fulton. Galvanized iron work and tin roofing; contractor, J. C. Robert; signed, Feb. 8; filed, Feb. 8; cost $1,660.

Fair Oaks near 22d. Alterations and addition; owner, John Christensen; architect, M. J. Welsh; contractor, Ivory Wells; signed, Feb. 4; filed, Feb. 4; cost $1,100.

Fifth Ave. near Point Lobos. Two story frame; owners, N. L. Lelean and A. O. Donogh; contractor, Chas. Murrell; signed, Feb. 6; filed, Feb. 7; cost $3,300.

Haight near Broderick. Alterations; owner, Thos. J. Walsh; architect, Wm. H. Armitage; contractor, Jno. J. O'Brien; signed, Jan. 27; filed, Jan. 27; cost, $3,300.

Hayes and Devisadero. Two-story frame, three flats; contractor and owner, Robt. Porter; signed, Jan. 21; filed, Jan. 21; cost, $6,000.

Hayes and Octavia. Mantels and gas-fixtures, etc.; architect, J. C. Newsom; contractor, Jno. Furness; sub-contractor, Bush & Mallett; signed, Jan. 19; filed, Jan. 20; cost, $1,270.

Howard and Fourth. Four-story brick and frame building; owner, Annie N. Farrell; architects, Shea & Shea; contractor, Jas. Cochrane; signed, Jan. 9; filed, Jan. 16; cost, $32,980.

Jackson near Central Ave. To build; owner, J. C. Johnson; architect, M. J. Lyon; contractor, Thos. Kinread; signed, Jan. 17; filed, Jan. 23; cost, $4,000.

Laurel near California. Cottage; owners, J. & Peter Schaeffer; contractor, Peter Rednall; signed, Jan. 2; filed, Jan. 23; cost $1,600.

Lombard and Taylor. Royal Wash Machine; owner, Claus Wreden & Co.; architect, W. Winterhalter; contractor, Rapp, Bepler & O'Neill; signed, Jan. 12; filed, Jan. 14; cost $1,400.

Lott near McAllister. Six flats; owner, E. E. Cook; architect, Wm. H. Armitage; contractor, Jos. Bucker; signed, Jan. 10; filed, Jan. 14; cost, $7,100.

Mission between 1st and 2d. Two-story brick; owners, Luning Co.; architects, Townsend & Wyneken; contractor, M. C. Lynch; signed, Feb. 7; filed, Feb. 9; cost $6,950.

Pacific and Dupont. Two-story brick; owner, Ng Chong; contractors, M. Fennell & Son; signed, Jan. 21; filed, Jan. 21; cost, $3,200.

Park near Holly. Cottage; owner, Frank Shoen; contractors, Miller & Miller; signed, Jan. 26; filed, Jan. 27; cost $1,350.

Pine near Hyde. To complete building; owner, Peter Jorgensen; architect, W. H. Lillie; contractor, C. P. Moore; signed, Jan. 17; filed, Jan. 18; cost $2,300.

Post near Taylor. Plumbing work; owner, Mrs. J. Pinet; architects, Pisses & Moore; contractor, H. Williamson; signed, Jan. 24; filed, Jan. 25; cost $1,344

Randolph and Arch. Cottage; owner, Wm. Sheppard; contractors, Morrison Cook; signed, Jan. 19; filed, Jan. 20; cost $1,400.

Rhode Island near Yolo. Five-roomed cottage; owner, Mary E. Eastwood; contractor, John Sandeen; signed, Jan. 28; filed, Jan. 31; cost, $1,292.

Roach bet. Filbert and Greenwich. To build; owner, W. A. Stringer; contractor, J. P. Sheppard; signed, Jan. 20; filed, Jan. 20; cost $1,960.

Sacramento near Franklin. Alterations to residence; owner, H. W. Newbauer; architect, J. E. Wolfe; contractor, John Furness; signed, Jan. 31; filed, Feb. 2; cost $2,040.

Spruce and Washington. Millwork; owner, O. D. Baldwin; architect, Samuel Newsom; contractors, Pacific Coast Door Co.; signed, Jan. 30; filed, Feb. 1; cost $1,666.

Spruce and Washington. Stone work; owner, O. D. Baldwin; architect, Samuel Newsom; contractors, Sutton & Johnstone; signed, Oct. 26; filed, Feb. 1; cost $8,300.

Spruce and Washington. Brickwork; owner, O. D. Baldwin; architect, Samuel Newsom; contractors, Richardson & Gale; signed, Jan. 26; filed, Jan. 27; cost $5,050.

Steuart near Mission. Carpenter work; owner, P. M. Patridge; architect, D. E. Mellis; contractor, Thos. H. Day; signed, Jan. 17; filed, Jan 18; cost $4,579.

Union near Mason. Three-story frame; owner, Samuel Wehrli; architect, H. Geilfuss; contractor, F. Klatt; signed, Jan. 27; filed, Jan. 27; cost $6,940.

ALAMEDA COUNTY.

Benton near Central Ave. To build; owner, A. T. Fletcher; architect, C. S. Shaner; contractors, J. E. Henderlong & Bros.; signed, Jan. 27; filed, Jan 28; cost $3,219.

Berkeley. Glass work; owner, State University; architect, Wm. Curlett; contractor, A. L. Campbell; signed, Dec. 30; filed, Jan. 27; cost $2,000.

Broadway, Oakland. Cast iron work; owner, P. and B. of T. of Pac. T. S.; architect, W. J. Mathews; contractors, Judson Mfg. Co.; signed, Jan. 16; filed, Jan. 21; cost $2,000.

Central Ave. near Park. Five-room cottage; owner, Eugene Young; architect, Alfred J. Wood; contractor, A. L. Campbell; signed, Jan. 25; filed, Jan. 25; cost $1,625.

Estudillo tract, San Leandro. Five-room house; owner and architect, Fred. Straub; contractor, M. G. Comancho; signed, Jan. 17; filed, Jan. 19; cost $1,100.

G. and H. and 7th and 8th streets, Livermore. Two-story frame school building; owners, Union High School; architects, Piercy & Hamilton; contractor, F. Meyers; signed, Jan. 3; filed, Jan. 13; cost $9,220.

Hudson and 2d. Two-story house; owner, C. G. Simonds; architect, L. Nichols; contractors, G. S. and G. H. Johnson; signed, Jan. 23; filed, Jan. 23; cost $3,418.

Inez tract, lot 2, Brooklyn. To build; owner, Edward Clark; contractor, Hugh McCracken; signed, Jan. 14; filed, Jan. 14; cost $2,660.

Newbury tract, Block E, Berkeley. Cottage; owner, Wm. C. Bissell; architect, John Conant; contractor, Jos. T. Francis; signed, Jan. 17; filed, Jan. 18; cost $1,050.

Santa Clara Ave. near 3rd Ave. Frame cottage; owner, Eliza White; architect, David Brehant; contractors, J. J. Boyle; signed, Jan. 23; filed, Jan. 24; cost $1,515.

Stuart near Fremont. Six-room cottage; owners, G. and A. MacMillan; architect, E. N. Hyde; contractor, J. J. Rose; signed, Jan. 13; filed, Jan. 19; cost $1,600.

Summit near Orchard, Oakland. Two-story frame; owner, E. C. Morrison; architects, A. N. Pattiani & Co.; contractor, J. J. Boyle; signed, Jan. 20; filed, Jan. 23; cost $4,700.

Tehama near Dover, Oakland. Two-story stable; owner, J. E. McElrath; architects, Wharton & Weigands; contractors, A. L. Kendalls & Co.; signed, Jan. 24; filed, Jan. 25; cost $2,580.

West street. One-story cottage; owner, Jas. McDonnell; architect, B. McManus; contractor, C. S. Barnard; signed, Jan. 26; filed, Jan. 27; cost $1,340.

The California Architect and Building News.

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VOLUME XIV. MARCH 20th, 1893. NUMBER 3.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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WE notice that another attempt is to be made to cover over one of the few open spaces of San Francisco—we refer to the building of a Fire Headquarters at the corner of Bush and Market streets.

Down town in the wholesale districts the only open spaces we have are those made at the intersection of the cross streets with Market, and while other cities are demolishing their buildings to make open spaces for themselves, having seen the necessity of them, it ill becomes a city of San Francisco's reputation to retrograde instead. Let every other consideration go before we reduce our lung space. We don't feel the want of it now because fortunately tall buildings have not run rampant over the lower part of our city and there are yet a number of vacant lots to be filled, but when the whole will be put up solidly with high buildings we will vainly regret every foot of space given up.

There is no doubt a Fire Headquarters is a desideratum, but there are plenty of convenient vacant lots which can be condemned without having recourse to the one which is most objectionable, if built upon, to the health and the traffic of the busy part of the wholesale mercantile region.

THE recent delivery of a paper by Mr. Geo. P. Low, Electrician for the Fire Underwriters of the Pacific Coast, on "Electric Imposters," brought out very forcibly the fact that under existing practices the general public, in so far as electric light wiring in particular is concerned, is at the mercy of electrical pirates who unblushingly pursue their swindlings and generally escape prosecution because of their shrewdness or their irresponsibility.

The fact is that the only city on the Pacific Coast which receives systematic inspection of its electrical work is San Francisco, and even here the underwriters' inspector is frequently absent from one to four months each year. In almost every other city of the west, electrical charlatans have full swing, and the recent enormous increase in the losses sustained by fire underwriters from fires attributed to "Unknown Causes" circumstantially attest the hazard of their existing methods under which "veneered," "half-baked" and irresponsible electricians are permitted to foist most wretched electric work upon the public. A great many instances have been cited where all the wire concealed behind

plastering has been of various brands, long since condemned as hazardous, while at outlets, where wires are visible, short lengths of high grade wire havs been spliced on. A case has recently been found in which an electric wireman offered to pay a bribe to a building foreman to have the electric work closed in before an inspection could be made. It always creates no little trouble for an inspector to demand the raising of floors or the tearing off of lath and plaster, yet in several instances where this has been done, most hazardous electric work has been found by the local inspector, despite the assurances he had received *in writing* that the work was per requirements. Other cases have been found where the owner, wishing to light his house, that he paid handsomely to have wired, has learned to his dismay that his electric wiring consisted only of short bits of wire sticking out at center pieces and that the man who did his wiring and who "appeared to be a really clever electrician" was totally irresponsible or in parts unknown. It is a fact, admitted by all legitimate electricians that no instrument has yet been devised, nor is there any method extant of ascertaining the permanent electrical condition of electric wiring that has been placed in out of sight and inaccessible places.

The paper referred to lays particular stress upon and thoroughly proves the statement that electricians and fire underwriters have jointly committed a "national error" in permitting the placing of electric light wires in a concealed and inaccessible manner in buildings.

In order to test the condition of electric light wiring, a visual examination is absolutely necessary and the fact that the eye detects hazards and poor construction, which cannot be determined by any known means in concealed work, appears to be proof positive of the correctness of the position taken.

The paper shows the lecturer to be a very careful student of the situation and his independent position, and his freedom from any affiliation with all electric companies renders the solution he proposes for the problem, of special interest to architects. The contention is made that all electric circuits of whatever nature should be so run as to be accessible at all times. They should not be exposed to sight, nor is this necessary and he maintains that wires may be placed so as to be accessible with the same facility that ordinary wiring may be installed, whether the building be under construction or finished. With such accessible construction, no technical electrical knowledge is necessary to apply the requisite tests and every achitect may make his own inspection and assure himself that the installation is without a fire hazard.

To do this but two tests are necessary: first, the ability to withdraw and re-insert wires in their proper channel-ways, and second, the ascertaining by visual examination as to whether all wires are covered by a solid rubber insulation. Nothing could appear more simple.

The importance of this matter to architects cannot be underestimated and fortunately the editor, as a member of the California Electrical Society, is in possession of information establishing in part the correctness of the lecturer's ideas. To illustrate:—A large new modern fire-poof building on Market street, San Francisco, was wired by one of the most responsible electric companies in the country, with ordinary concealed wiring. Some months after, the same electric company wired a similar large office building on Montgomery street, but in the Montgomery street building the wiring was of the accessible construction recommended. In each of these buildings a new brand of insulation was used which was endorsed in the east but which, it transpired, has failed to give entire satisfaction in San Francisco. To rewire the Market street building has necessitated the chiselling up of tiling, mosaic floors, etc., with an expense of over $3,000 to the contractor and infinite annoyance to the owner and tenants, while should it become necessary to rewire the Montgomery street building, it can be done in less than a week without entailing broken plaster, great expense or other inconvenience. Again in refutation of the charge of impracticability of the plan of accessible concealed wiring is cited, the installation now about finished in the Mutual Life Insurance Company's building, corner of California and Sansome streets, San Francisco, which contains electric light, telephone, district telegraph and call bell wiring, all of which is concealed, all of which is accessible, and all so arranged so that subsequent wiring of any nature may be placed from any room in the building to any other room without breaking an inch of plaster or exposing an inch of wire. Moreover the architectural features of the building are not impaired in any sense. With such a system at hand it would appear that little else is to be desired in the way of facilitating electrical work or of insuring owners against the wiring troubles that have so long proved most annoying and exasperating.

ON the day of the inauguration of Grover Cleveland as president of the United States, Edward F. Searles, by a deed of gift, transferred the Hopkins' mansion in this city, to the Board of Regents of the University of California, to be held by them in trust for the use and benefit of the San Francisco Art Association.

The name by which the residence of the late millionaire will in future be known, is the Mark Hopkins Institute of Art. Mr. Searles object in making this generous gift, is to create a memorial that will exist as a commemoration of the achievement of one of California's noted men, and to found an art gallery that will serve for the use and enjoyment of the general public as well as for the benefit of the association that has been chosen to carry out the wishes of the donor.

The School of Design will be removed to and installed in its new home in the near future, and the nucleus of an art collection will have been formed.

The public is to be congratulated on this successful termination of Mr. Searles' endeavors, for many unforseen difficulties, that stood in the way of the realization of his wishes, were encountered, and had to be overcome by him, to reach the present consummation.

The field of usefullness of the Art Association is thus immeasurably broadened, and many beneficial effects should result to the community by a wise and judicious use of the means that have been placed at its disposal.

BY invitation of Mr. Jos. B. Crockett, President of the San Francisco Gas Light Co., the members of the Technical Society of the Pacific Coast visited the new works recently constructed at Laguna and Bay streets. These works, although in addition to those already in use, are of the most extensive and complete of modern plants. The gas is manufactured by the latest improved process.

The primary or heavy gas is first prepared from the coal which heats the chambers of the retort to a white heat when the crude petroleum and steam is introduced, which becoming superheated in the retort combines with the heavy gas to form the best combination of the chemical equivalents for this purpose. The heating and introduction of the separate ingredients into the retort has been ingeniously arranged so that the whole process is under the care and control of one man. From the retort the gas is carried over and through the scrubbing tank where several impurities and the greater part of the amonia is removed (and saved as separate products) and then through a washing process for taking out the last trace of amonia. The sulphureted hydrogen, (or bad smelling product) which was formerly removed by the use of lime, is here taken out by the use of iron oxide, which is regenerated by a current of air through an apparatus arranged by Mr. Jones the superintendent. By this improvement the ill-smelling gas is oxidized and carried off as a new compound having no objectionable properties, and the iron oxide may be used over again. Through the process, as here carried out, the gas is of the purest and best quality for illumination, heating and mechanical purposes.

The gas holder is one of the three largest in the world, the diameter is 165 feet and has a rise of 108 feet, formed in three sections. By the use of steel plates and superior workmanship the weight of the holder has been arranged to balance the difference between the gas and air pressure, therefore, no balance weights are required. The iron frame work surrounding and guiding the holder is a model of lightness and strength. Straining plates, beams or rods have been ingeniously introduced to counteract all weak points.

The buildings have been constructed with red stock bricks for the walls, and chocolate colored terra-cotta trimmings for openings and accentuated points. Some of the buildings will have the rooms or apartments subjected to great variations of temperature, consequently the walls were made of considerable thickness and strength to withstand the expansion and contraction of the iron floor beams. One of the difficulties encountered was to construct a fire-proof floor, and yet have it sufficiently elastic to allow for the changes in the iron construction under the variations of temperature. Through the theoretical and practical knowledge of the president and superintendent this difficulty appears to have been overcome.

H. T. B.

WHERE SHOULD THE KITCHEN BE?

WHE learned Dr. Price, who, in the last century, compiled the famous Northampton tables of mortality, would have been surprised as well as gratified, if he could have known the improvement which the statistics of the present day show in the expectation of the duration of human life. However, in that as in every other branch of research though "much has been done, more remains to do." Increased knowledge of the laws of hygiene and improved conditions have done much towards the preservation of health and the prolongation of human life, yet sanitary precautions have by no means been devised and applied to the extent they should be. Dwellings, even for the well-to-do, continue to be constructed on unscientific principles, with a barbaric, in a double sense, disregard of health and convenience. In many respects we have progressed little beyond the hut of the savage with a hole in the roof for the egress of the smoke. True, we have chimneys, and the smoke from our fires no longer torments our eyes, irritates our respiratory organs, nor begrimes our bodies, but the vapors and odors from cooking our food and allied operations still permeate our dwellings and offend our senses.

Kitchens and other household offices are still so placed that as "sparks do upward fly" so do the ill smelling fumes from saucepan, pot and kettle diffuse their volumes in parlor, hall and chambers. The advent of the boiled dinner with its accompaniments of the savory onion and succulent turnip is disclosed to the members of the household and their visitors long before the appearance of the meal on the family table. The preparation of salted cod-fish and mackerel is long known to the nose before those eatables greet the sight of the assembled household.

Just why these never ceasing, still beginning nuisances are allowed to maintain their place in the domestic economy of any intelligent family, is difficult to determine, but the fact remains the same that they do in ninety-nine cases out of a hundred. Seeing that the fumes arising from the household menage, immediately ascend so soon as liberated, common sense teaches us that if we desire to avoid the annoyance caused by their presence that the only effectual plan is to place the scene of the preparation of food on the top instead of the bottom of the dwelling as is usually the case.

Fatty, sooty and sulphurous vapors contaminate and speedily destroy curtains, carpets and upholstered furniture, besides causing no end of annoyance to all who encounter them. In spite of these acknowledged evils we seem to take infinite pains to secure their unfailing presence. And we shall always do so so long as our dwellings are built on the plans now usually adopted. Of course, the questions of convenience and expense, always controlling factors in house building, are to be considered. They would be immediately urged by those who are governed by, and are part of the *vis inertia* of all communities.

Such people are always opposed to change. No matter whether that change brings with it greater comfort and less

expense, they oppose it because it is a change. With such people it is useless to theorize or argue, nothing but the stern, undeniable logic of events has any weight with them. They have, like Ephraim and Manasseh, to be let along, till they wake up some fine morning with the usual ejaculation "Bless me who'd a' thought it?"

But leaving them to their lethargic repulsion, it would not seem difficult to show that kitchens and culinary offices might be placed immediately beneath the roof of dwellings and yet comply with the reasonable requisitions of economy, both as regard construction and service. Little examination will show that the cost of building in the first instance cannot be but very slightly, if at all, greater.

As regards service, there is something to be said. Fuel and household supplies are usually bulky matters and the transportation of such material and the disposition of waste and refuse call for the exercise of intelligence and practical ingenuity. The problem is not, however, so difficult of solution as it may seem. The every day experience of tenants of flats show that such conditions can be successfully met,

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

Master Painters' Association of the Pacific Coast.

E. M. Gallagher, Pres. H. G. Jarman, Sec.

with no great outlay of expense or labor. A properly planned and constructed dumb-waiter would, in most cases, fully answer the needs of transportation, and the skilled architects and mechanics of the present day could easily devise methods of construction and use which would leave little to be desired in the way of convenience and labor, with the never failing complement of the latter, expense.

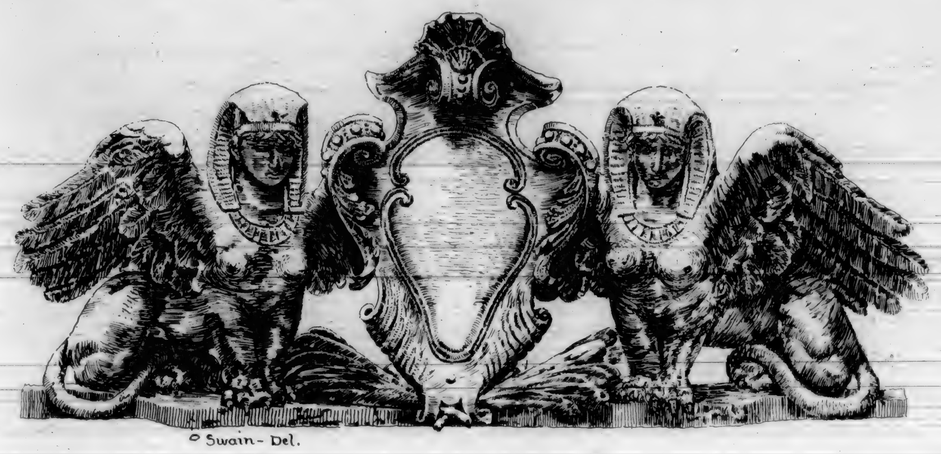
Of course the dining-room would have to be placed in the upper regions as well as its relative the kitchen. To that there could be little or no objection. As arranged on the plan now generally adopted, the dining, or room devoted to the purpose of partaking of meals is usually a sort of den or cellar which is a good place to get out of so soon as, to use a Homeric phrase "the rage of thirst and hunger is appeased." A change that could cause meals to be eaten in a light, airy and cheerful room is not one to be deprecated or avoided.

All things considered a system which would free the dwelling from the vapors and odors caused by cooking and its refuse, would thus seem not only to be desirable but practicable.

COUNTRY CHAPEL COMPETITION.

THE following is the report of the San Francisco Chapter A. I. A. on the competition for a Country Chapel, by the Students of the Chapter Class in Architecture, the premiated design appearing in our last number:

This design for a country chapel evinces the need of a systematic programme for the students to work to and the resultless waste of effort, when this point is disregarded. In this case there seems to have been no limit as to capacity, no limit as to denominational requirements, and no limit as to cost, all prime factors in the production of a practical design and without which it would be quite impossible for the most experienced architect to produce a design of any practical value. The committee would therefore recommend, that in future competitions a definite programme be drawn up for the proposed four competitions of the year, and that the Chapter students, or those who have qualified themselves to enter the competitions by becoming student members of the Chapter, shall be invited to compete for the



Chapter medals, in accordance with the schedule now in the hands of committee on classes. They also recommend that students who desire to compete for said medals in accordance with said schedule shall be enabled to do so on payment of a nominal sum to be hereafter determined on.

In the designs in question it is very difficult even to criticise them intelligently, as in no case have the definite needs of a house of worship been intelligently understood by the respective competitors.

However, taking a broad view of the various features and points of merit or demerit exhibited by the four designs, the Committee have unanimously placed "Z. Y. X." first in design and execution. As to design, while it displays no particular feature which can ally it with any known style it yet preserves the spirit and feeling of a country chapel and would not be mistaken for a library, a wayside inn or country store. The eaves of the tower are somewhat heavy and the tower is perhaps rather low, but on the whole both circumstances are in favor of the style adapted, and the nature of materials of construction, which appears to be the country rock of the neighborhood. There is also some artistic feeling in the quiet and easy lines of roof and spire and in the general trend of the lines of composition.

As regards plan, however, there is less to be said that is favorable though even there may be seen a good deal of architectural forethought in the arrangement of the cloister, *Porte Cochère* and driving shed in the rear, the shady arches of which look cool and refreshing on a hot day in the country. The entrance for the carriage porch is well managed; but when it comes to the entrances there is much to be desired. While it is well for the chief entrance to be in the front of the building, and in view of the use of the *Porte Cochere*, it would be difficult to arrange the entrance on the side. There should be a direct and straight line of entrance and exit between the auditorium and the outside steps. This is especially needed in the case of funerals, and a stampede in case of a panic on account of earthquakes or fire. In the rear or chancel end of the church, there seems to have been no clear idea in the mind of the designer as to the uses of the various parts. For instance, a deep chancel is provided with provisions for the choir to the left hand side, outside the chancel with a recess for a very small organ behind it. On the opposite side there is a font shown on a platform corresponding in size to the choir. This is wholly unauthorized by precedent, except in cases in which, as in the present case, precedent is entirely lost sight of.

The choir in the ancient Basilica occupied the center of the nave before the high altar, in the rear of which was placed the Bishop's chair in an apsis or bema. Afterwards the altar was placed in the bema, the Bishop's chair or throne to the left side, and the seats of the choristers on each side of the elongation of the apse. This is the arrangement in an Episcopal cathedral at the present time, the only true correspondent to the ancient medieval practice at the present time. In the Roman Catholic churches of Europe and America, the choir is almost universally placed in the western gallery, at the opposite end to the high altar in the east. The elongated chancel in the example under consideration is thus; it will be seen quite useless. If the choir seats were placed in it, as in the design marked, "lead pencil", and the extensions on each side for choir and font done away with, the arrangement would be restored to correct precedent and in accordance with modern practice in ritualistic churches.

The design marked "Wood Tick," has been placed second on account of the direct arrangement of the entrance and the simplicity and general harmony observable in the general elevation. The tower, however, (placed on the sloping line of the roof) is objected to, and the style appears to be an indefinite and confused sort of Gothic. The entrance would be greatly improved by leaving out the divisional column and the arrangement of the vestry and organ chamber is somewhat crowded.

The general form of the chancel and communion rail and the shape of the choir and chancel and position of altar are however, quite correct, and in this respect, better than the preceding design, and the baptistry, if placed at the northwest instead of the southwest angle (according to Orientation) would be in the authorized position, though some position at the chancel end is not uncommon at the present time. The execution of this design is very coarse and sketchy and at the same time, over done, and the placing of the building in the the picture is badly managed.

No. 3, "Lead Pencil." The arrangement of chancel in this

example is correct, but the arrangement of vestry robing room, etc., is without meaning or utility, and the entrance is unspeakably bad. The tower is too conspicuous for a small church and the general effect somewhat poor. The use of buttresses, however, in the body or nave of the building, and the arrangement of openings on each side are well managed and correct.

No. 4, "Fire." Seems to be simply a denominational chapel having a very large octagon recess, presumably for organ, choir, and pulpit platform, etc., at the end opposite entrance; and a confused encumbrance of entrance, vestibules, etc., on each side, blocking up light which is admitted only from the front and the first side bays of the nave. The elevation is very poor and ineffective, but still the whole design conveys the idea of a country chapel. The execution is poor and not improved by color.

The report on these designs is much longer and more elaborate than the merit of either one of them would render necessary, but is purposely developed to indicate the necessity for the adoption of a more systematic method for competitions in the future.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE 6th Ward School, Oakland, is to be built of brick, stone and terra-cotta, and slate roof. It is one of several which are about to be put up in Oakland. W. J. Cuthbertson is the Architect and it will cost $35,000.

A residence on Nuuanu avenue, Honolulu, H. I., showing front and side elevations and ground plan, by Messrs. Ripley & Reynolds, Architects.

THE Abrahamson Building on the corner of Washington and 13th streets, Oakland, is by Architect C. Mau.

A residence for Mr. Thiele of San Jose is from the designs of W. D. Van Siclen, architect of that place.

BOOKS & PERIODICALS

ARCHITECTURAL COMPOSITIONS, by Henry P. Kirby, comprising a series of fifty sketches, part of which have been made in connection with actual projects, but many being the result of study during leasure moments. Bates, Kimball & Guild, of Boston, are the publishers.

A short notice like the present one cannot do justice to the subject. The well-known sketches and composition of the author previously published, have found their way into many of the offices throughout the country. The series of sketches before us have been made on heavy paper 15x20 inches, the designs are architectural and picturesque, the massing has been done with strength and the details handled effectively. Here the student and draughtsman can find pen drawing in almost any style to suit his taste, examples being given in the most severe outline through all the grades, including some very delicate lining, more like "copper plate work," and including full line work, having the effect of "half tone work."

It is a valuable work for the architects' office, viewed either from the designs to the skillful execution. Messrs. Osborn & Alexander, 301 Market street, San Francisco, have the album for sale.

LIPPINCOTT'S for March comes to hand and contains a finished story, "Waring's Peril," by Captain Charles King, U. S. N., and the usual amount of interesting reading.

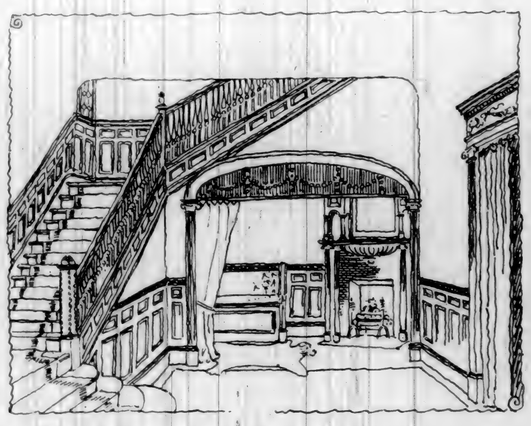
The Puget Sound Lumberman is authority for the statement that the amount of standing timber in the State of California is in round numbers 100,000,000,000 feet; this is less than half the quantity that is credited to Oregon, and only about one-quarter the quantity in Washington. The land covered by timber in the latter state would form a belt around the world three miles wide.

On advertising page x will be found a list of practising Architects in the State of Washington.

ROYAL INSTITUTE OF BRITISH ARCHITECTS

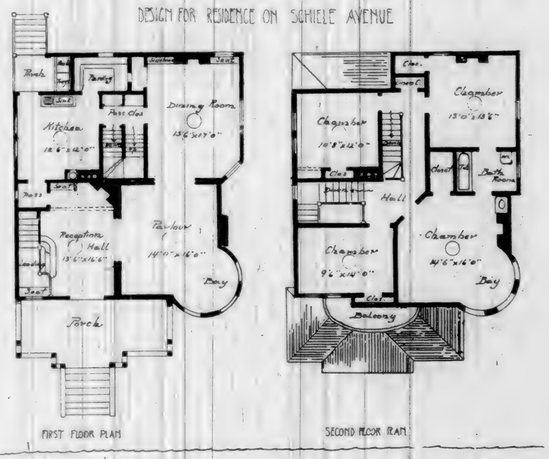
DESIGN FOR RESIDENCE ON SCHIELE AVENUE

W. D. VAN SICLEN,
ARCHITECT.



VIEW OF THE HALL IN THE RESIDENCE ON SCHIELE AVENUE

DESIGN FOR RESIDENCE ON SCHIELE AVENUE

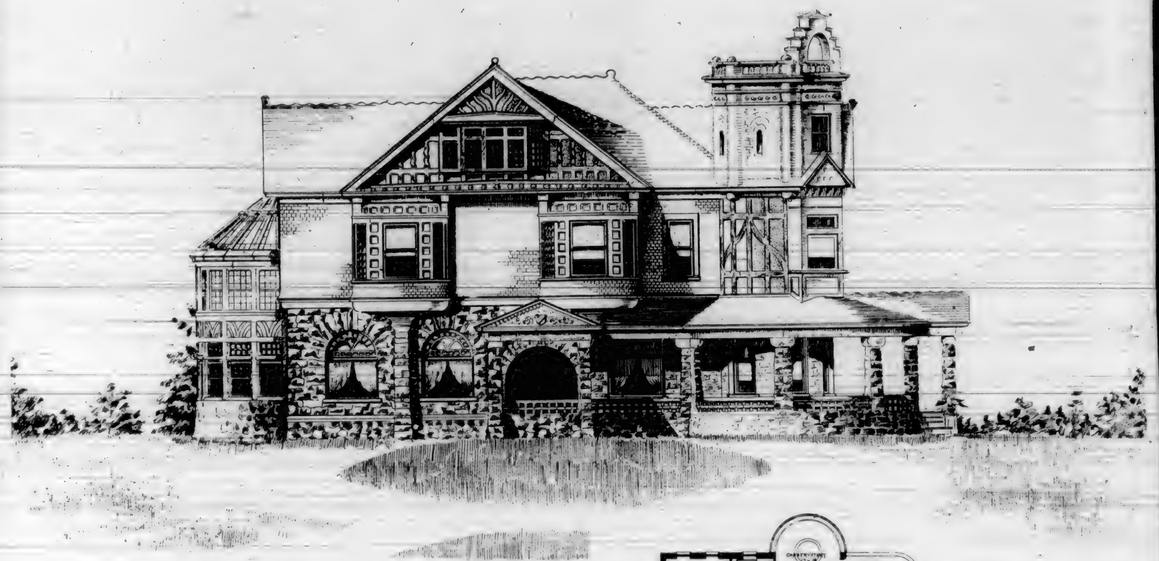


FIRST FLOOR PLAN

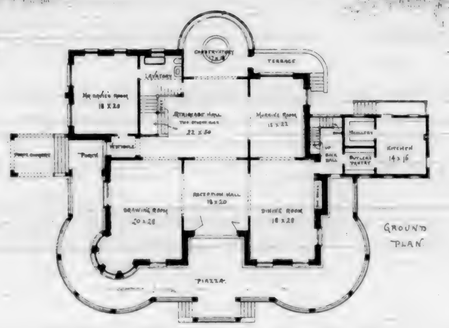
SECOND FLOOR PLAN

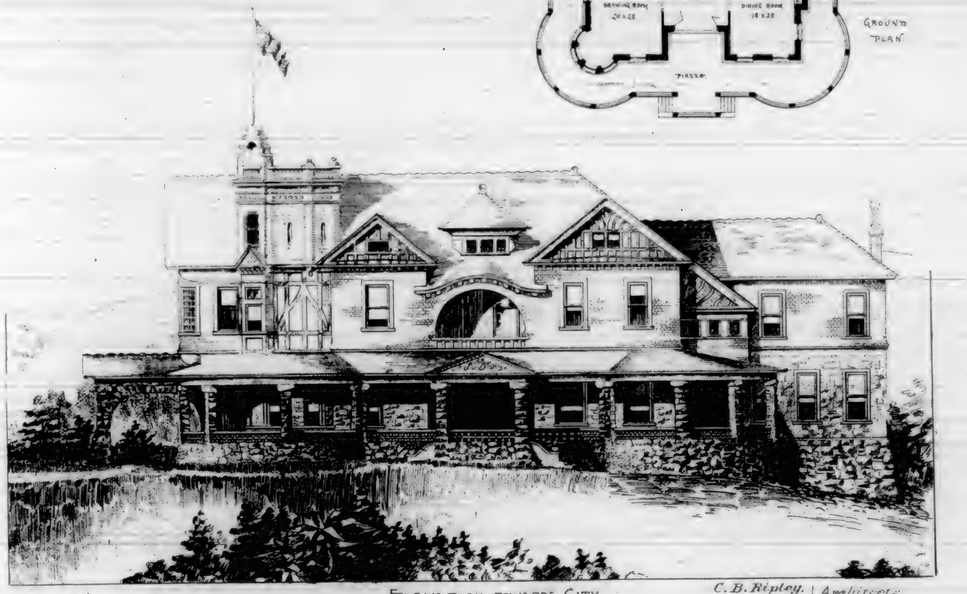
BRITTON & REY PHOTO LITH.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
LIBRARY



ELEVATION TOWARDS MARIANI AVE.





Scale ⅛ inch = 1 foot

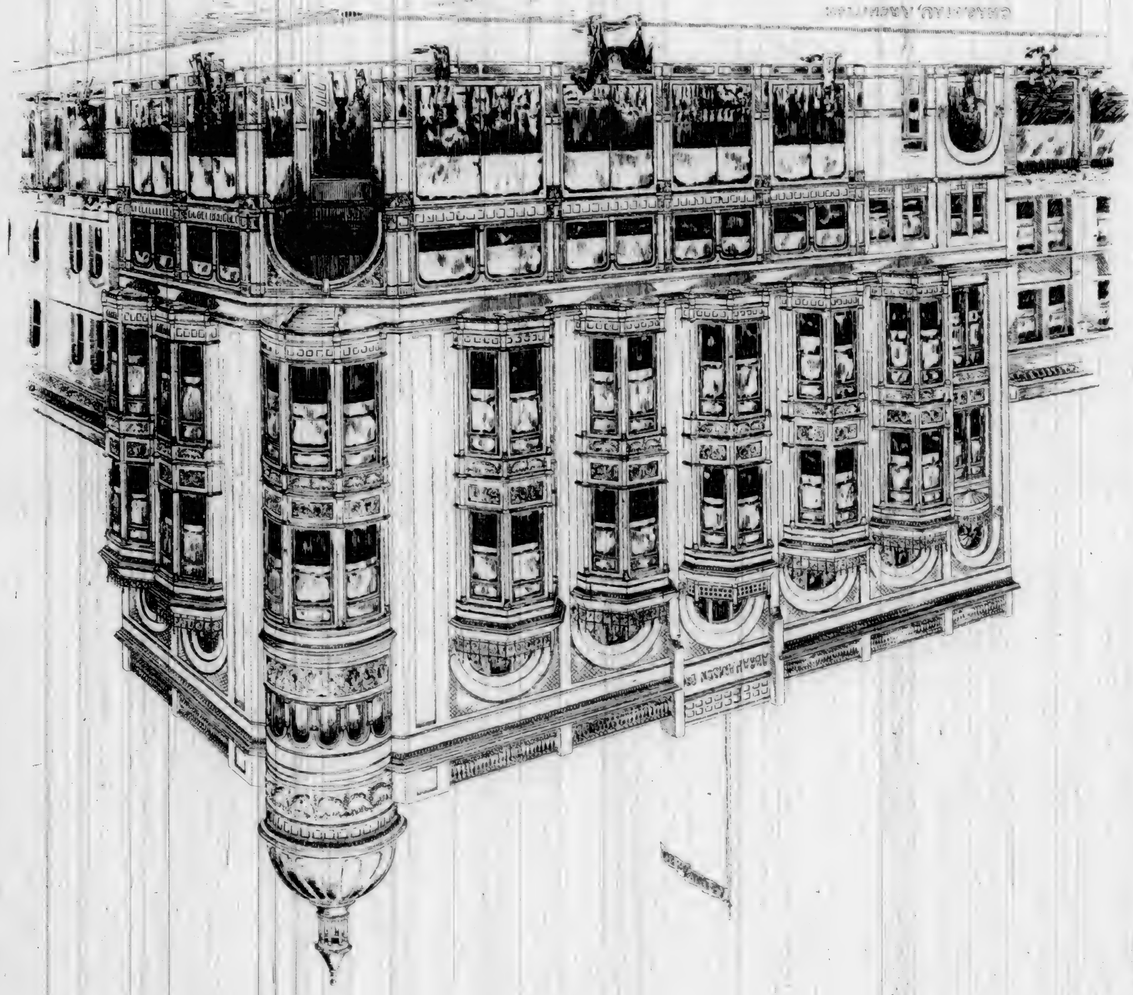
ELEVATION TOWARDS CITY

C. B. Ripley.
A. Reynolds. } Architects

THE CROCKER BUILDING.

A. PAGE BROWN, ARCHITECT.

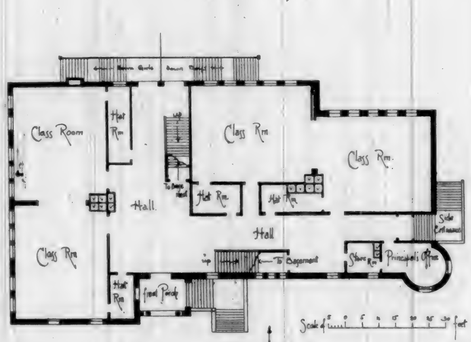
BRITTON & REY PHOTO LITH

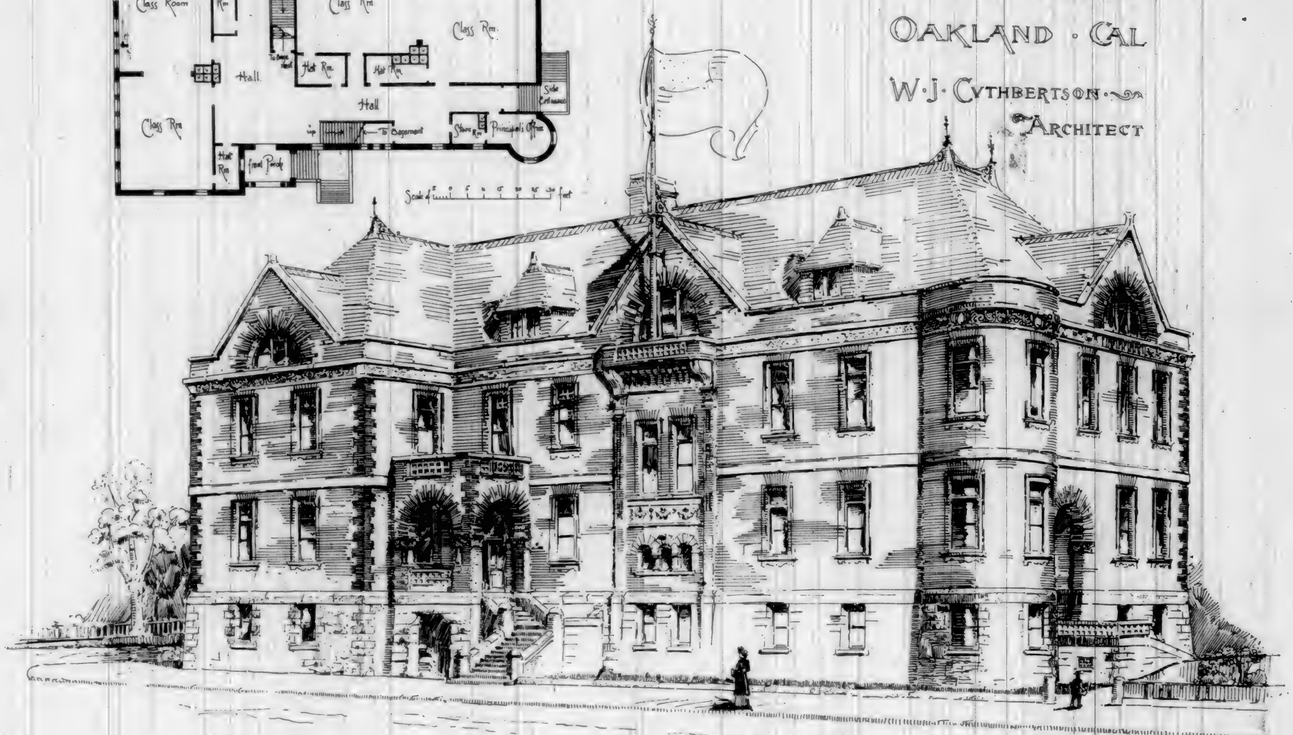


ROYAL INSTITUTE OF BRITISH ARCHITECTS
LIBRARY
NOV 1893

SIXTH WARD SCHOOL-HOUSE. OAKLAND. CAL.

W. J. CUTHBERTSON. ARCHITECT.

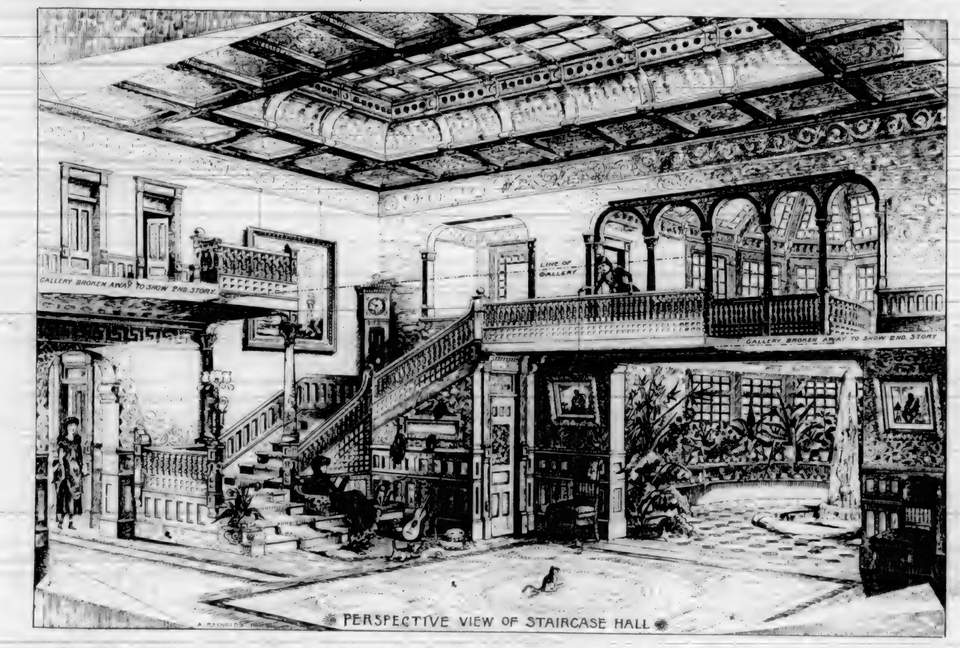




PLATING A TOWER WITH ALUMINUM.

THE work of electro-plating with aluminum the iron work of the new city hall tower in Philadelphia, a surface of 50,000 square feet, is progressing so steadily at the Tacony Iron Works, that it is expected that the great task, if carried on as fast as it has been this year, will have been entirely completed in a little over three years. It will require 20,000 pounds of aluminum to plate the entire surface of 50,000 square feet.—*The Age of Steel.*

The fact that the resisting powers of the metal Aluminum have been greatly over estimated, should render the Architect careful in the use of this metal, as both acids and the atmosphere will oxidize the metal far more than is generally supposed.—*Ed. Cal. Architect.*



INTERIOR VIEW OF RESIDENCE ON NUUANU AVENUE, HONOLULU. H. I., RIPLEY & REYNOLDS, ARCHITECTS.

MUNICIPAL USE OF SALT WATER.

THE advantages to be gained by the employment of salt water for street watering, sewer flushing, fire extinguishing and similar purposes in coastwise towns has received considerable attention from experts in municipal engineering during the past few years, and before long we shall unquestionably witness its widespread use for this purpose. Among others, H. P. Boulnois, a well-known English engineer, has had the subject under consideration, and makes the following report as to the practicability of its utilization:

"Watering the streets with sea water should be adopted wherever it is feasible, as it not only gives a delightful freshness to the air and dispels iodine, but it also causes the surface of the street to maintain its humidity for a longer period than when fresh water is used, as it impregnates the soil with hygrometric matter. This has been attempted artificially by adding common salt to the water used for watering. The general results may be stated as follows: Since the construction of the works the consumption of water for street watering has been annually less than 5,000,000 gallons at five cents per 1,000 gallons, instead of 7,000,000 gallons at twenty-four cents per 1,000 gallons, as before. There is also a considerable saving on the gravel and flint for macadamized roads, and the author believes that these roads can be maintained for about 15 per cent less than when fresh water was used. The salt water does not seem to hurt them in any way. During the summer months the dust is kept under by the qualities of salt water, and in the early autumn, if the surface coating is removed by the broom upon the appearance of the first frost, no evil effect is traceable to the use of salt water. No complaints are made by shopkeepers, jewelers, etc., and the three reasons urged by the committee of chemical experts have given no cause for anxiety. Used in sewer flushing, salt water has cleaned them thoroughly, and after five years' experience no nuisance of any kind has followed. Its effect in the Yarmouth, England, sewers has been to reduce and almost prevent the generation and accumulation of sewer gas. Sewers can now be entered at once on the removal of the manhole cover, which was not the case before. An 18-inch pipe sewer on a gradient of 1 in 300 was formerly constantly clogged by deposits; it is now kept thoroughly clean by two flushes per day from a 3,000 gallon tank, which fills the sewer two-thirds full. There are no deposits of any sort in the sewers, except in several of the larger ones, and there it has been reduced one-half since salt water has been used. As to the effect of salt water on iron, the author says that the syphons are of galvanized sheet iron only, but they have required no repairs since they were put in. As to the sulphates in sea water, no evil effects are traceable; the town possesses no manufactories, and no acids are discharged into the sewers. The salt water has never been used for extinguishing fires, though it is available if needed. The author does not recommend it for this purpose, as he considers that a dwelling would not be habitable after its walls had been saturated with sea water."—*The Sanitary Plumber.*

ARCHITECTURAL LEAGUE EXHIBITION.

THE eighth annual exhibition of the Architectural League of New York was almost lost this year in the spacious and magnificent halls and galleries of the American Fine Arts Society's Building, 215 West Fifty-seventh street, New York.

The exhibition opened on the 2d and closed on the 24th of January. The attendance was larger than heretofore, and in some respects the exhibit was more deserving. This, however, can hardly be said of the purely architectural department, for, although there were some excellent representations of executed work, and a number of meritorious designs, there were not so many of either class as were shown in the expositions of 1891–92. This may be accounted for by the fact that in the years named there were certain causes which stimulated the ambition of American architects. Thus, in 1890 the competitive designs for St. John's Cathedral formed a special and important feature of the exhibit, while last year the Columbian collection would have been sufficient in itself to make an interesting and instructive architectural show. But while this may be called an off year, it must not be concluded that there is any decadence of interest or degeneration of genius manifest in League work; rather the contrary, for the general work is above former standards, and several sets of drawings are decidedly original, we might say American, in conception with a breadth of treatment far beyond the scope of the mere imitators, and adaptors who could not if they would, and would not if they could, depart from the conventional track. First and most striking among these is the California State Building, to be erected in Jackson Park, Chicago. This is a spacious but low, yet imposing structure in the characteristic Mission style of the spanish settlements. Connecticut, Maryland, Rhode Island, New Hampshire, New Jersey, Pennsylvania, Nebraska, New York, North Carolina, Iowa, Georgia, Ohio, Minnesota, Texas and Massachusetts are also represented by designs of State building for the Columbian Exposition, but the Georgian design by G. L. Norrman, of Atlanta, is the only one which can be considered an exponent of a type. The design is characteristic of the Sunny South, where the public buildings have always been more ornate and graceful than in the more material North. It is of the Grecian temple style, but there is enough originality and boldness in the treatment to defend the architect from any suggestion of a too slavish conservatism. There is a beautiful proportion carried out in the details, and the whole is a harmonious picture.

Among the studies is a design by Henry B. Herts, for the Columbian Memorial Arch in New York. This was fully described and illustrated in a former number, but in passing we may express our regret that it is not to materialize in marble, or at least not so soon as was anticipated when its temporary forerunner was receiving the plaudits of the hundreds of thousands who passed under it three months ago.

If Mr. Herts had been an architect of the Pecksniffian type he might have had enough pull to work off on a committee a much less meritorious work by some unfortunate Chuzzlewit, but such is life, and even in architecture the reward of merit too frequently goes to the ostentatious pretension.

The grand market at Lima, by A. Page Brown, has something in common with the California design mentioned above although there is no similarity whatever in the buildings. The style is distinctively South American, with arcade and colonnade, and is a happy combination of the graceful Spanish-Morisco, with a leaning to the solidity of the Flemish.

The annex to the exhibit which includes antiquities, bric-a-brac, painting, sculpture, etc., would be deserving of a much more extended notice if it were not that our last year's description nearly covers the same ground, except that the patrons of the League have been more than ordinarily liberal in their contributions to the loan department.—*The Architectural and Building Monthly.*

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., February 23rd, 1893. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 30th day of March, 1893, and opened immediately thereafter, for all the labor and materials required for Hospital and Attendants' Buildings, Laundry Building, etc., U. S. Quarantine Station, Angel Island, San Francisco, California, in accordance with the drawing and specification, copies of which may be had on application at this office or the office of the Superintendent at Angel Island, San Francisco, Cal.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Hospital, Attendants' Buildings, Laundry Building, etc., U. S. Quarantine Station, Angel Island, San Francisco, California," and addressed to,

W. J. EDBROOKE, Supervising Architect.

Treasury Department, Office Supervising Architect, Washington, D. C., March 2d, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 6th day of April, 1893, and opened immediately thereafter, for all the labor and materials required for the interior finish of the U. S. Post Office, etc., building at Sacramento, California, including iron work, lathing, plastering, iron stairs, concrete floors, joiner work, wood flooring, marble work, painting, polishing, glass, hardware, etc., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at Sacramento, Cal.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Interior Finish of the U. S. Post Office, etc., Building at Sacramento, California, and addressed to,

W. J. EDBROOKE, Supervising Architect.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

DISTRICT COURT CANNOT ALTER PERIOD OF REDEMPTION.—A district court cannot, in the exercise of the discretionary powers conferred upon it by statute, extend or enlarge the period of time within which real property must be redeemed from a sale made in proceedings to foreclose a mechanics' lien.

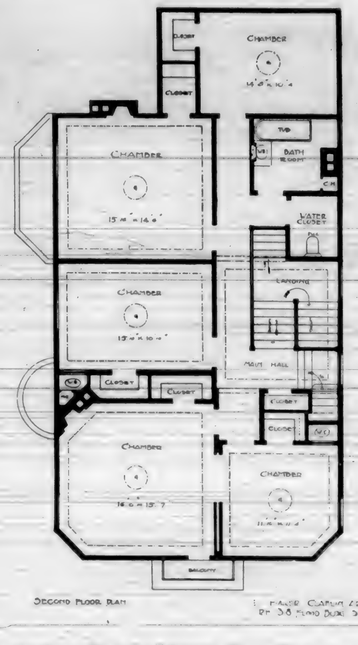
Anderson v. Kerr, Supreme Court of Minn, 53 N. W. Rep. 719, 43.

WHEN BUILDER IS NOT LIABLE FOR REFUSAL TO ACCEPT BID.—The terms of the proposals to receive bids not being proven, not that the builder was to be bound by the offer of the lowest bidder, and it not being established that a certain bidder was the lowest, the builder is not liable in damages for violation of contract.

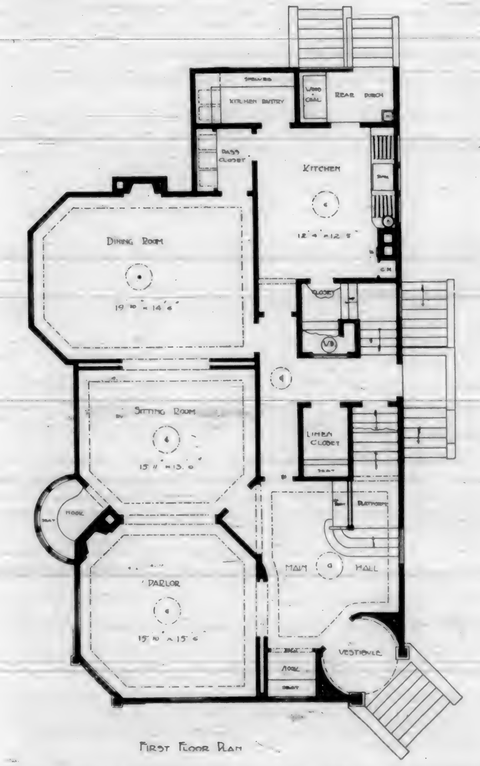
Reusch v. American Brewing Co. Supreme Court of Louisiana, 11 S. Rep. 719, 59.

JURISDICTION OF COURT OVER MECHANICS' LIEN.—Where there is due a contractor a certain amount for which, less his liens allowed his sub-contractors, laborers and material men, he is entitled to a lien, and the court allows the lien of such sub-contractors, laborers and material men, to an aggregate less that the amount for which the contractor would otherwise be entitled to a lien, and deducts that aggregate from such amount, allowing him a lien only for the remainder, the owner is not prejudiced by error in determining the amounts due the sub-contractors, laborers and material men, and cannot complain. Where a pleading for a mechanics' lien sets up but a single lien, no bills of particulars need be filed.

Menzel v. Tubbs, Supreme Court of Minnesota, 53 N. W. Rep. 653, 119.



SECOND FLOOR PLAN



FIRST FLOOR PLAN

A. H. WARD'S RESIDENCE. FULLER CLAFLIN, ARCHITECT.

EFFECT UPON LIENS OF GIVING FALSE RECEIPT.—A material man is not estopped from seeking to foreclose his liens for materials furnished by him to the contractor by reason of his giving a false receipt for the amount due him, to enable the contractor to obtain a payment from the owner, where the owner has paid out no money, and suffered no loss on account of such receipt.

Washburn v. Kahler, Sup. Ct. of California, 31 Pac. Rep. 741, 68.

PRIORITY OF MECHANICS' LIEN OVER MORTGAGE.—Under the statute providing for a lien for work on any building or other improvement on land under contract with the owner of the building and the land on which it is situated; and that such lien shall be preferred to all other liens and incumbrances attached to such building and land subsequent to the commencement of the building, a lien for work done as a mechanic on a building was superior to the lien of a mortgage on the property given and recorded before the work was begun, but after the building had been commenced.

Apperson v. Farrell, Supreme Court of Arkansas, 20 S. W. Rep. 514, 102.

MISTAKE IN LIEN STATEMENT.—The Oregon statute provides that the statement filed shall contain a true statement of the claimant's demand, after deducting all just credits. Plaintiff filed a lien stating that the value of the material furnished by him was $783, and that no payments had been made thereon. On the trial, plaintiff admitted that prior to the filing of the lien $100 had been paid, and stated that the misstatement in the lien was due to a mistake of his agent. Held, that the mistake not being one about the amount or price of labor, or the quantity or value of material furnished, in regard to which there might be an honest difference of opinion, but being one which could have been avoided by the exercise of reasonable diligence, the lien was invalid.

Nicolia Bros. & Co. v. Van Fridagh, Supreme Court of Oregon, 31 Pac. Rep. 288, 135.

ENFORCEMENT OF MECHANICS' LIENS.—The seller of a certain building agreed with the purchaser, to remove and completely rebuild it upon a lot belonging to the latter. The seller then contracted with a builder to furnish all materials needed, and to perform the necessary labor in accordance with the terms of his agreement with the purchaser. The builder failed to complete the reconstruction of the building as agreed upon, and also allowed lien claims to be filed against the property, for materials furnished to him for rebuilding, in an action to foreclose the liens, a mortgage given by the purchaser to secure the payment of his note to the seller, for the amount agreed upon as the price of the completed building, was secondary to the liens of the material men, and as between the seller and the purchaser and the seller, the latter was liable to the former for the failure of the builder to complete the contract.

Bassett v. Menam, Supreme Court of Minnesota, 53 N. W. Rep. 1064, 163.

Notes & Comments.

The Hawaiian Islands have not yet been annexed.

Edward R. Swain, Architect, has resumed the practice of his profession. Room 227, Crocker Building, eleventh floor.

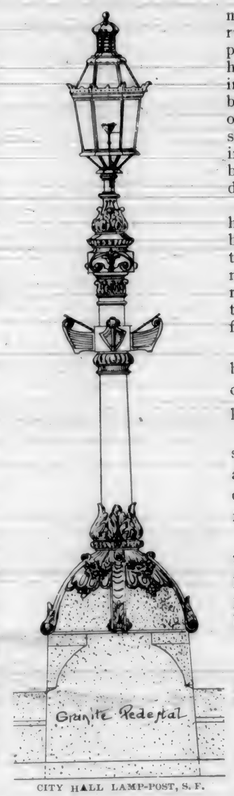
The Assembly Bill introduced by the Hon. J. M. Curtis, in regard to regulating the practice of Architecture in this state came up on the 8th instant and was defeated.

The municipal ordinances regulating the erection of buildings in the city and county of San Francisco are to be remodelled, to bring them more in harmony with the requirements of modern construction.

An interesting feature of the Government exhibit will be a model of the earth, with all the geometrical accuracy that mechanism and art can give to such a difficult representation. It is intended to form a part of the exhibit from the General Land Office of the Interior Department. So far as known it is the largest globe ever constructed. It will surmount a starshaped edifice, which pedestal will elevate the monster globe fifteen feet above the floor, so that it will rise above the surrounding exhibits. The globe will be sixty-three feet in circumference. A stairway in the pedestal will give access to a gallery at the base of the globe, which will revolve on a horizontal axis.—*Warner's Building Review.*

We have no genuine art, as a people, and we can never have so long as that which calls itself "Modern Civilization" possesses so little kinship with the true civilization which has created art in the past. We never consider the essential impulse of art, and it is pitiful to see the poor little attempts we make towards this end, still dimly felt to be desirable. We build big museums of art and crowd them with pictures filched from their homes; and casts which for purposes of art educating, are useless.

Then the people go and stand before the mute memorials of dead civilization, wistfully and hopelessly. It would be laughable were it not miserable. One is reminded of a child who gathers roses and lillies and thrusts their stalks into the sand, hopeful of a fair garden. —*Ralph Adams Cram in The Architectural Record.*



CITY HALL LAMP-POST, S. F.

In view of the large number of petty larcenies from buildings, special preference being shown for mechanics' tools, it would be well for mechanics of all kinds to have their names stamped in several places on all of the tools. A steel stamp costs a very small sum. Saws may be indelibly marked by writing your name on same with a sharp pointed piece of hard wood, which has been dipped in Nitric Acid.—*Wolfe's Building Review.*

Probably the oldest timber in the world which has been subjected to the use of man is found in the ancient temple of Egypt, in connection with stone work, which is known to be at least 4,000 years old. This was the only wood used in the construction of the temple, and it is in the form of ties, holding the end of one stone to another. When two blocks are laid in place, an excavation about an inch deep was made in each block, in which one of these wooden ties, shaped like an hour glass, was driven. It is, therefore, very difficult to force a stone from its position. These ancient ties are made of timarisk or Shittim wood, the same as that from which the ark was constructed.—*St. Louis Republic.*

Ambroise Bierce recently criticized, with much reason, the backhanded way our laws are made and enforced. Mr. Bierce has no patience with stupidity, and it does one good to read his vigorous language in denunciation of the senseless system by which our laws are enforced first and declared void afterward—after mentioning a particular case he generalizes as follows:

"In this State, in every State, thousands, millions of dollars are lost, great industries ruined, families reduced from prosperity to poverty, whole communities driven from their homes, by some Supreme Court coolly declaring unconstitutional laws that have for years been enforced by the terrible power of the State or the Nation. There is no way to distinguish such laws from other laws—the greatest jurist in the world cannot do it; yet of them it may be said that to resist them is calamity, to obey, disaster. The only safety is emigration.

"The overthrow of this barbarous and inhuman system is too much to hope for; it has behind it the inert strength of too many centuries. There is not a lawer, out of jail—and none get in—but can give you two score reasons why things should be as they are; and there is not a fool but will swallow the whole forty with never a twist of the face."

Obviously, the good of the community would be served by making the Supreme Court pass on the Constitutionality of Laws, before compelling the executive to enforce them.

Is it not worse than childish, is it not absolutely idiotic, to allow legislatures to make, and governments enforce laws, that it is unconstitutional and to make consequently the refinement of cruelty to enforce?

Mr. Bierce insinuates that the lawyers are too much interested in the continuance of the present senseless method to allow of reform; yet it is a reform that would be of incalculable benefit to the public.

The proposition to change the location of the State Capital from Sacramento to San Jose will be submitted to the people at the next election

One of the recent industries added to the already numerous manufactures carried on in Chemnitz, Saxony, is the production of curtains made of india-rubber as the main ingredient. The material employed for this purpose consists of 75 per cent of india rubber, 5 per cent of wool dust, 5 per cent of pulverized fruit stones, 10 per cent of bleached amber varnish and 5 per cent of bleached leather waste; to these being also added, if deemed necessary, a quantity of infusorial earth. The various substances thus named are together worked up with bisulphide of carbon in the most perfect manner into a thick mass, and from this are rolled out thin leaves, which are capable of being decorated with the greatest variety of ornamental patterns, and several of these leaves are combined to form a curtain.—*New York Sun.*

The Legislature lately adjourned has modified the Lien Laws.

BUSINESS MOSAICS.

Roche Harbor Lime in quantities to suit the trade, C. L. Dingley, Agent, 29 Steuart street, San Francisco.

Farmer—"Well, I've heard of red currants, black currants and white currants, but I'll stop chewin' if ever I heerd of alternating currents.—*New York Truth.*

Messrs. Dyer Bros. of 110 Main street have only been in business a short time, but by doing good work, and at living prices, giving satisfaction to their customers, they now number among their patrons the first architects of the city. They made all the fence work on the Hibernia Bank. Persons requiring iron work of whatever description should give them a call. Hammered wrought iron work a specialty.

Professor (to class in physics)—Now, describe this electrical machine if you please. Head Boy—It consists of a large glass wheel, turned by a crank. (Applause from the class.)—*Brooklyn Life.*

On page V of this number we would call architects attention to the advertisement of the J. L. Mott Iron Works. As with all things gotten out by this company the articles shown are unique in design and beauty of finish and well worthy the attention of those contemplating building a residence. The company's representative in this city is always willing to furnish all necessary information.

An interesting piece of information brought out during the Brussels conference is the fact that there are at present no less than $100,000,000,000 of counterfeit silver inmoney circulation in France, Belgium, Switzerland, Italy, Spain and Portugal.

The Vulcan Iron Works of 135-145 Fremont street, make everything in the way of stable fittings, also architectural and ornamental iron work of every description; hand hoists, tramways, refrigerators and ice machines. If you are in want of anything in their line call on them.

Careful scientific investigations show that the average speed of the transmission of earthquake shocks is nearly 16,000 ft. per second.

Persons building houses should not be without Dixon's Cement Laundry Tray, both from a sanitary as well as an economical point of view, no foul odors arise from them as is the case with wooden ones and they last longer and are easily kept clean. Mr. Dixon's place of business is 40 and 42 Eighth street between Market and Mission.

It is difficult to pardon in another the weakness that is your own pet vice.

The Phœnix White Lead and Color Works of 713 Sansome street, guarantee the Phœnix Pure Paint and will replace it free of charge with any material the architect may select if it is not satisfactory; being machine mixed it is ground to the last degree of fineness, does not chalk and is much more economical than paint mixed by hand. See advertisement on page XV.

Some people are of the opinion that heating a house by the use of steam or hot water has a tendency to make the house too damp or dry as the case may be. This is not so. Call on Mr. J. J. Lawton, agent for the Gurney heater, of 418 Fulton street, who will be pleased to give the reasons therefor and any information relative to the merits of heating by the use of steam or hot water.

The government of Belgium has formally taken over the telephonic system of that country.

Yellow Pine has been in use on this coast since the earliest days of its settlement. The superior qualities of this wood for finishing for house and office work should be more generally known. The wood grown down on the lower levels of the coast line make a superior framing lumber, as it does not have the springing tendency that Oregon pine has. As we ascend the mountain ranges the yellow pine becomes softer and better adapted for doors, sash and finish, and after reaching the summit, that grown on the easterly slope, resembles the eastern pines. Therefore, the location of the saw-mills has a very considerable bearing on the quality of the product.

The lumber mills of Messrs. Harris & Jones, are located in one of the best of these tracts of soft yellow pine, where they are preparing a superior quality of this lumber and which may be had at their yards, 728 Bryant street, in this city.

In a letter to the Rapid Safety Filter Co., W. T. Wenzell, M. D., Professor of Chemistry in the California College of Pharmacy, Department of the University of California, says:—From an examination of the city drinking water made by me some years ago at the instance of the Board of Health, I became satisfied of the great necessity of filtering the water. Not until I had seen and tested the workings of the Rapid Safety Filter, had I found a filter that to my idea could do this work properly.

Its chief merit lies in the fact that though connected with the service pipe, it is a non-pressure filter; the water filtering through it by percolation only and not by hydraulic or other artificial pressure. No pressure filter can prevent the transmission of microscopic disease germs.

I predicted at once the success of your filter, because I believed that there was not a family in San Francisco able to procure one that would persist in boiling unfiltered water and its germs for soup, tea and coffee, when the luxury of removing the impurities from these beverages by filtering the water could be enjoyed.

As an antiseptic filter, none better could be constructed. The filtering medium used is the best absorbent for odorous gases and putrid organic matter known; and renders the water so filtered as limpid, sparkling and wholesome as the purest mountain spring.

If every user of the Rapid Safety Filter derives as much satisfaction as I have from mine in my laboratory, and enjoys the exemption from sickness that my family has since its use in my residence, you will have abundant testimony to the superior merit of your filter over all others now in use.

CITY BUILDING NEWS.

Alpine near Ridley. To build; owner, Wm. Patterson; contractor, A. J. Duke; signed, Feb. 10; filed, Feb. 13; cost $2,569.

Ash Avenue near Laguna. To build; owner, August Koerber; architect, H. Geilfuss; contractor, L. D. Frichette; signed, March 2; filed, March 2; cost $3,400.

Battery between Pine and Bush. Store alterations; owner, Levi Strauss; architects, Wright & Sanders; contractor, T. McLachlin; cost $5,700.

Broadway and Steiner. Two-story frame; owner, M. Van B. Watson; architect, J. B. Mathison; contractor, A. Jackson; signed, Feb. 7; filed, Feb. 11; cost $4,297.

Bush near Powell. Plumbing, two-story frame; owner, Mrs. L. M. Bigelow; architect, J. C. Newsom; contractor, Wm. F. Wilson; signed, Jan. 31; filed, Feb. 16; cost $1,050.

Bryant Ave. near 24th. Alterations and additions; owner, Margret Burns; architect, E. A. Herman; contractor, H. Jacks; signed, Feb. 28; filed, March 1; cost $1,880.

California near Laguna. Three-story frame; owner, J. and Mary Dowling; contractor, Allen MacDonald; signed, Feb. 17; filed, Feb. 18; cost $5,300.

California and Taylor. Granite wall; owner, C. P. Huntington; architect, J. D. Isaacs; contractor, Robt. Kirk; filed, Feb. 18; cost $9,523.

California and Taylor. Iron fence; owner, C. P. Huntington; architect, John D. Isaacs; contractor, H. Ralston; signed, Feb. 27; filed, Feb. 28; cost $1,900.

Capp between 18th and 19th. Two-story frame; owner, W. T. Little; contractors, Hauston Bros.; signed, Feb. 27; filed, Feb. 28; cost $4,090.

Cook corner Pt. Lobos Ave. Mill work; owner, Carster Otten; architect, M. F. Le Berge; contractors, California Mills; signed, Feb. 14; filed, Feb. 15; cost $800.

Eleventh Ave. near Clement. One-story cottage and stable; owner, Chas. Lennon; architects, John & Balczynski; contractor, Jas. Geary; signed, Feb. 16; filed, Feb. 21; cost $1,850.

Eleventh near Folsom. Alterations, etc., except plumbing; owner, Ellen Huebach; architect, Jas. P. Brady; contractor, J. W. Connell; signed, Feb. 23; filed, Feb. 24; cost $1,350.

Elmira and Agusta. Cottage; owner, J. H. Dolan and wife; contractor, A. Klahn; signed, Feb. 16; filed, Feb. 16; cost $1,190.

Ellis and Mason. To build; owner, Y. M. C. A. Assn.; architect, A. Page Brown; contractors, Mahoney Bros.; signed, March 2; filed, March 2; cost $302,000.

Fair Oaks near 23d. Alterations and additions; owner, Roger Carroll; architect, J. F. Kenna; contractors, Currie & Loomer; signed, Feb. 17; filed, Feb. 24; cost $2,125.

Fifth and Clara. One-story frame; owner, architect and contractor, J. J. Clark; cost $2,150.

Fulton and Broderick. To build; owners, A. Brown & E. Gruber; architect, W. H. Lillie; contractor, J. G. Adams; signed, Feb. 14; filed, Feb. 14; cost $5,000.

Fulton and Scott. Two-story frame; owner, Henry Knust; architects, John & Balczynski; contractor, C. A. Hippely; signed, Feb. 13; filed, Feb. 14; cost $5,450.

Golden Gate Ave. near First Ave. To build; owner, Herman Wahing; contractor, J. Schuler; signed, Feb. 13; filed, Feb. 17; cost $3,400.

Howard and 8th. Plumbing, four-story brick; owner, Annie M. Farrell; architects, Shea & Shea; contractor, Richard Rice; signed, Feb. 28; filed, March 2; cost $4,000.

Humboldt near City Hospital. To build; owner, Geo. Hartman; architect, J. G. Behrens; cost $1,800.

Kearny near Clay. Iron work; owner, E. L. Heuter; architect, H. Geilfuss; contractor, Fred Wagner; signed, Feb. 23; filed, Feb. 23; cost $8,644.

Kearny and Clay. Remove old building and carpenter work on same; owner, E. L. Heuter; architect, H. Geilfuss; contractor, F. W. Kern; signed, Feb. 23; filed, Feb. 23; cost $5,550.

Leavenworth near Filbert. Alterations; owner, Amelia C. Rochford; architect, S. W. Heinenway; contractor, H. Behrens; signed, March 2; filed, March 2; cost $2,400.

Lyon near Haight. Cottage; owner, Robert N. Silver; architect, J. B. Wuersching, contractors, Home Bldg. Co.; signed, Feb. 23; filed, Feb. 24; cost $2,398.

Main street No. 344. Alterations; owner, Margaret Curtain; contractors, Craig & Fulton; signed, Feb. 13; filed, Feb. 17; cost $1,850.

Market near Guerrero. To build; owner, Benj. Goldfish; architect, W. H. Lillie; contractor, W. H. Wickersham; signed, Feb. 25; filed, Feb. 27; cost $2,600.

McAllister near Lyons. Two-flats; owner, Mary Doherty; architect, J. B. Wuersching; contractors, Home Building Co.; signed, Feb. 11; filed, Feb. 16; cost $3,000.

Minna near 7th. Alterations; owner, Sarah J. McLaughlin; contractor, J. Ehmann; signed, Feb. 17; filed, Feb. 17; cost $1,900.

Mission street, No. 1427. Alterations; owners, J. W. McElroy, et al.; architect, P. R. Schmidt; contractor; S. H. Kent; signed, Feb. 13; filed, Feb. 14; cost $3,800.

Octavia and Green. To build; owner, Konrad Schneider; contractor, Wm. Knopf; signed, Feb. 10; filed, Feb. 13; cost $3,900.

Pacific near Hyde. Millwork, 8 flats; owner, Pauline Greenberg; architect, W. C. Dickerson; contractor, W. R. Johnson; signed, Feb. 25; filed, Feb. 28; cost $1,525.

Perry near 5th. Two flats; owner, Annie Galfenther; contractor, Jas. McDonald signed, March 1; filed, March 3; cost $1,700.

Pine near Montgomery. Three-story brick; owner, Henry Cailleaud; architect, Emile Depierre; contractor, H. Behrens; signed, Feb. 28; filed, March 1; cost $3,600.

Pine near Montgomery. Three-story; owner, Henry Cailliaud; architect, E. Depierre; contractor, A. T. Mills; signed, Feb. 21; filed, Feb. 28; cost $2,250.

Point Lobos and 1st Ave. Plumbing; owners, Geary street R. R. Co.; contractor H. Williamson; signed, Feb. 16; filed, Feb. 16; cost $1,134.

Polk street, Nos. 1710 and 1712. Alterations and additions; owner, Jas. Podesta; architect, Oliver Everett; contractor, Fred Renfort; signed, Feb. 27; filed, Feb. 27; cost $2,625.

Post near Gough. Two-story frame; owner, Emma Taylor; architect, C. W. Kenitzer; contractors, Schutte & Krecker; signed, Feb. 28; filed, Feb. 28; cost $5,399.

Randall and Chenery. Eight flats; owner, Sophie Koster; architect H. D. Mitchell; contractor, J. N. McLeod; signed, Feb. 11; filed, Feb. 14; cost $8,540.

Scott near Vallejo. To build; owner, C. A. Murdock; architects, Coxhead & Coxhead; contractor, F. G. Kronnick; signed, Feb. 20; filed, Feb. 20; cost $3,763.

Sickles and Huron Ave. To build; owners, Jno. and Bridget Maloney; contractor, J. L. McLaughlin; signed, Feb. 13; filed, Feb. 24; cost $3,200.

Sullivan near Stanyan. Cottage; owner, Chas. Duffy; architect, J. Wuersching; contractors, Home Building Co.; signed, Feb. 11; filed, Feb. 11; cost $1,350.

Sixteenth near Dolores; Three-story frame; owner, Hannah Boyle; architect, H. Geilfuss; contractor, Henry Rohling; signed, Feb. 27; filed, Feb. 27; cost $4,418.

Tenerife near Susquahanna. Two-story frame; owner, Father T. Fitzpatrick; architect, T. J. Welch; contractor, W. J. B. Warner; signed, March 2; filed, March 2; cost $4,495.

Townsend near 4th. Three-story corrugated iron house; owner, David Hewes; architects, Percy & Hamilton; contractor, A. H. Plummer; cost $3,077.

Twentieth near Church. Two-story frame; owner, Etienne Garneaud; contractor, Jos. L. Bunet; signed, Feb. 20; filed, Feb. 21; cost $2,200.

Twentieth near Howard. Two-story frame; owner, Rachael Rosenblum; architect, A. J. Barnett; contractor, L. Wells; signed; Feb. 13; filed, Feb. 18; cost $5,000.

Twenty-first near Castro. Two-story frame; owner, J. A. McCormick; contractors, Marcuse & Remmel; signed, Feb. 27; filed, March 2; cost $3,200.

Waller and Ashbury. Two-story frame; owner, Wm. B. Dolan; architect, A. C. Lutgens; contractor, C. M. Mason; signed, Feb. 15; filed, Feb. 18; cost $2,330.

Webster near Geary. Two-flats; owner, Josephine Read; architect, W. H. Lillie; contractor, T. T. Pottinger; signed, March 1; filed, March 2; cost $3,000.

ALAMEDA COUNTY.

Addison near Shattuck avenue, Berkeley. Two-story frame; owner, R. Johnson; contractor, G. A. Emburg; signed, Feb. 18; filed, Feb. 21; cost $3,400.

Albion near Telegraph Ave., Oakland. To build; owner, Mrs. R. M. DeGolia; architect, J. S. Adams; contractor, John P. Baudin; signed, Jan. 30; filed, Feb. 2; cost $4,007.

B near Fifth, Haywards. To build; owner, H. P. Jessen; architect, E. W. Mervin; contractor, A. Ubhoff; signed, Feb. 7; filed, Feb. 13; cost $1,575.

Brush and 7th street, Oakland. Two-story frame; owner, J. T. Kelley; architect, Chas. Maul; contractors, Bassett Bros.; signed, Feb. 23; filed, Feb. 23; cost $6,445.

Ellsworth near Dwight Way, Berkeley. To build; owner, W. E. Loy; architects, Coxhead & Coxhead; contractor, E. A. Wheeler; signed, Feb. 4; filed, Feb. 10; cost $3,100.

Eighteenth and San Pablo Ave. Additions and alterations; owner, Mrs. J. E. Johnson; architect, John Johnson; contractor, C. N. Bolles; signed, Feb. 1; filed, Feb. 6; cost $3,230.

Ford's Addition, Lot 7, East Oakland. To build; Mrs. M. Ebeling; architect, A. W. Smith; contractor, H. E. Brown; signed, Feb. 8; filed, Feb. 9; cost $1,200.

Grant and Santa Clara Ave. To build; owner, Nellie Liese; contractor, A. W. Cornelius; signed, Feb. 13; filed, Feb. 15; cost $4,250.

Hobert and Grove, Oakland. Church to build; owner, Rev. T. McSweeney; architect, C. J. I. Devlin; contractors, P. B. and P. H. Hughes; signed, Feb. 1; filed, Feb. 3; cost $8,400.

Kelsey near Russell, Berkeley. To build; owner, L. C. Williams; architect, R. H. White; contractor, H. S. Haseltine; signed, Feb; 21; filed, Feb. 24; cost $3,800.

Lorina street and Ashbury avenue, Berkeley. To build; owner, J. L. Woods; architect, G. A. Bordwell; contractor, C. L. Lombard; signed, Feb. 18; filed, Feb. 18; cost $3,018.

Main and Second streets, San Lorenzo. Alterations and additions; owner, San Lorenzo V. Hall Association; architect, G. Bordwell; contractor, Wm. Smith; signed, Feb. 1; filed, Feb. 14; cost $1,895.

Morton near Santa Clara Ave. To build; owner, H. V. Herbert; architect, A. Steubit; contractor, J. J. Boyle; signed, Feb. 8; filed, Feb. 9; cost $1,875.

Oakland Heights Tract, Oak. lot 3, block L. To build; owner, E. A. Walz; contractor, W. H. Wellbye; signed, Feb. 16; filed, Feb. 21; cost $3,500.

Occidental near McKee street, Oakland. House and barn to build; owner, R. Wilkinson; architect, C. Winstanley, contractor, T. E. Armstrong; signed, Feb. 6; filed, Feb. 11; cost $2,600.

Pacific Ave. near St. Charles street. To build; owner, R. H. Baird; architect, F. P. Fisher; contractors, D. Straub & Son; signed, Feb. 13; filed, Feb. 15; cost $1,880.

San Antonio Ave. near Willow. To build; owner, B. Ghilieri; architect, Chas. Shaner; contractors, C. H. Foster & Son; signed, Feb. 8; filed, Feb. 9; cost $5,057.

Santa Clara Ave. and Encinal streets. To build; owners, J. H. & S. Harrisburger; contractor, A. R. Denke; signed, Feb. 15; filed, Feb. 17; cost $2,560.

Santa Clara Ave. To build work shop; owner, F. J. Fletter; architects, Percy & Hamilton; contractor, J. E. Henderiong; signed, Feb. 21; filed, Feb. 23; cost $1,086.

Teutonia Park, Block 6 and 7. To build; owner, Geo. Whittel; architects, Coxhead & Coxhead; contractors, W. T. Veitch & Son; signed, Feb. 6; filed, Feb. 24; cost $10,800.

Thirteenth Ave. and Twentieth, East Oakland. To build; owner, Isabella Wright; contractor, J. A. Aymar; signed, Feb. 21; filed, Feb. 24; cost $3,300.

Twenty-fourth and Eighth Ave., Oakland. To build; owner, Mrs. M. B. Smith; architect, W. J. Mathews; contractor, F. W. Knight; signed, Feb. 21; filed, Feb. 23; cost $10,393.

Union near Bancroft Way, Berkeley. To build; owner, R. H. Longbridge; contractors, W. T. Veitch & Bros.; signed, Feb. 18; filed, Feb. 20; cost $3,900.

Valdez and Den'n, S. M. Tract, East Oakland. To build; owner, Alex. Doig; architect, J. Conant; contractor, W. F. Whyte; signed, Feb. 16; filed, Feb. 16; cost $2,075.

Verdi near Railroad Ave. To build; owner, C. H. & F. Smith; contractors, Marcuse & Remmel; signed, Feb. 21; filed, Feb. 23; cost $2,850.

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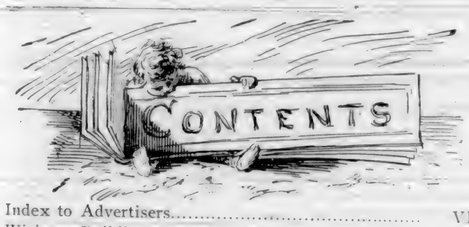

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IT is to be regretted that the Governor vetoed the bill providing for a State Building for this city. It will prove to be "penny wise and pound foolish" to the people of California, as the saving in rents would have greatly overbalanced the interest on the amount of money required. We lose, besides, the chance of having a building that might have been made a most attractive architectural feature.

THE new section added to the lien law of the State of California by the last legislature, makes it obligatory on the owner of any proposed building, or structure when it is to be erected by contract, to secure from his contractor "a good and sufficient bond" in an amount equal to at least twenty-five per cent, of the contract price, which bond shall, by its terms, be made to inure to the benefit of any and all persons who perform labor for, or furnish materials to the contractor, failure on the part of the owner to exact such bond, renders the latter liable for the debts incurred by the contractor.

The design of this amendment is to afford more ample protection to the creditor class, and this object is achieved by making the owner financially responsible for the solvency of the contractor and the contractors bondsmen. Not a very just or logical method of procedure perhaps, but reasonably sure of being effective.

On the whole, the new law will we think be of benefit to the parties honestly interested in the welfare of the building business. It will have a tendency to cause owners to choose a responsible man in preference to an impecunious "cheap John" when giving out their work. It will require much precaution on the part of both owners and architects in the acceptance of bondsmen and without doubt responsible parties will be equally cautious about becoming security for irresponsible or tricky contractors.

Neglect of proper prudence on the part of either owner or bondsmen, will be so dearly paid, that the man who now secures a large amount of work at figures that will not cover the actual cost of construction will find it more difficult to

continue their methods, and will be ultimately driven from the business, or forced to mend their ways. The new departure will afford many a case for the lawyers.

Just what will constitute "a good and sufficient" bond will of course have to be decided by the courts, and the prospects are that a good many decisions will be rendered and appeals argued before positive precedents will be at the disposal of the would-be house builder.

Whether an owner would be safe after having secured a rich and prosperous bondsmen who should become insolvent before the completion of the contract; or in accepting a man of "straw" who should duly qualify before a notary (but whose real estate might be of no more value than an unimproved lot in a suburban cemetery) are problems that will perplex the brains of the architect, and possibly deplete the purses of the owner, till the law is again amended and further experiments made as to the best way to make men honest.

WIRING OF BUILDINGS FOR ELECTRIC LIGHTS.

IT is almost universally the practice in drafting specifications for electric light wiring to stipulate that "the loss in potential in circuits shall not exceed two (2) per cent" or that "the wiring shall have not more than two (2) per cent drop," meaning that the loss in volts on any conductor, due to the resistance encountered by reason of the current passing through that conductor, shall not exceed two per cent of the voltage applied. Why two per cent loss is so generally stipulated is not plain, neither is it always necessary that it should be specified in every case, as in some instances a loss of three, or four or even five per cent would be more advantageous to the owner of a building, than would a loss of two per cent. Neverless, a two per cent "drop" is generally specified, yet it is a fact that of all the larger buildings in San Francisco, hardly one of them comes up to the two per cent limit specified. When it is realized that fifty per cent more copper is required to wire a building under two per cent loss than under three per cent loss, the importance of the matter becomes apparent. To place the facts in another light: a certain building is to be wired for incandescent lighting under specifications calling for two per cent loss. To carry out these electric specifications would require the installation of, say, 3,000 pounds of copper wire. The electrician, however, realizing that the architect generally has no means of determining whether the specification has been adhered to in the matter of "drop" concludes to install the circuits at three per cent loss. He does so and what occurs: The insurance inspector examines the installation and accepts it, for he only looks at the work from the fire underwriters' standpoint and his certificate only attests that the wiring presents no fire hazard. The central station people also examine the work and finding it to be safe and properly laid out, they too pass the work, for they do not compare it technically with the specifications any more than the insurance inspector does. The current is thrown on to the wiring, it works satisfactorily, all lamps burn to the satisfaction of the architect, nothing more is said about the two per cent loss stipulation, the work is accepted and paid for and that is the end of it so far as ninety-nine cases in a hundred are concerned. Yet what has the wireman done: Instead of installing 3,000 pounds of copper wire, as called for under the two per cent clause, and as he was paid for doing, he wired the building for three per cent loss, and saved thereby 1,000 pounds of copper wire, for under three per cent loss but 2,000 pounds was required, and no one was the wiser.

These frauds, so palpable to an expert electrician, yet concerning which laymen are utterly ignorant, are practiced daily by all save a very few first-class wiring companies and indeed many concerns, ignore the loss requirement altogether in wiring, yet consider it in making up bids. Others will maintain that their work is figured for two per cent loss, say, while upon questioning it soon become apparent that they do not know how to figure drop in potential, or they will use a two per cent wiring table and will generally get a two per cent loss each on mains, sub-mains and ultimate circuits, or six per cent loss in all, while two per cent was called for. A large concern having a capitalization of several hundred thousand dollars, when questioned as to the fulfillment of the two per cent clause in a certain building it had wired, struck the keynote in the matter when it frankly and honorably admitted that it had not carried out the two per cent requirement for the reason that it could not do so and compete for business. It had, however, placed the wiring in accordance with commercial usage and it maintained that for that reason the work should be accepted.

The writer has frequently been asked to assign a reason why such a discrepancy so frequently exists between the bids of different electrical concerns on the same piece of work. Reasons for this may be found from the facts above recited. Some few concerns will follow the specifications vigorously in every detail, while others, taking advantage of the almost universal ignorance prevailing in regard to electrical matters contract to do work that they never intend to perform. A dual result ensues: Owners pay for something they do not get—but they do not know it—and the electric wiring business is utterly demoralized both physically and morally.

It must not be inferred that a two per cent specification is never advisable or that a three per cent clause will prove equally satisfactorily as in the instance cited. To lay down a general law even for a given class of building is impossible and each building must receive specific consideration both in the matter of proper loss in potential as well as in the load basis upon which to figure the circuits. It is evident then that the drafting of electric wiring specifications is a matter worthy of most serious consideration and concerning which the architectural profession is deeply interested.

THE NEW LIEN LAW.

THE following is a copy of the New Section to the Lien Law introduced by the Hon. J. M. Curtis and passed at the last session of the Legislature.

SECTION 1. A new section is hereby added to the Code of Civil Procedure of the State of California, to be known and designated as section one thousand two hundred and and three:

SEC. 1203. Every contract required to be filed under the provisions of this chapter shall be accompanied by a good and sufficient bond in an amount equal to at least twenty-five per cent of the contract price, which said bond shall be filed at the same time and in the same manner as herein provided for the filing of such contract, or memorandum thereof. Said bond shall, by its terms, be made to inure to the benefit of any and all persons who perform labor for, or furnish materials to the contractor, or any person acting for him or by his authority; and any such person shall have an action to recover upon said bond, against the principal and sureties, or either of them, for the value of such labor or materials, or both, not exceeding the amount of the bond; but such action shall not effect his lien, nor any action to foreclose the same, except that there shall be but one satisfaction of his claim, with costs and counsel fees. Any failure to comply with the provision of this section shall render the owner and contractor jointly and severally liable in damages to any and all material men, laborers, and subcontractors entitled to liens upon the property affected by said contract.

bled and unbled timber, results which in themselves justify the expenditure by the government of money on such work.

The Forestry Division will exhibit the methods pursued in this work at the World's Fair, which will be of interest, since nowhere in the world has such comprehensive and systematic investigation of timbers been ever devised. The working plans for a similar undertaking by the Prussian Government have only just been perfected.

Another exhibit of interest to railroad engineers and those interested in reducing forest waste will be a collection of the most approved types of metal railroad ties.

UNITED STATES TIMBER TEST WORK.

ALTHOUGH all the leading railroad engineers, architects, professors of engineering and others interested in the Timber Tests had flooded with hundreds of letters their Representatives and Senators and the Committee on Manufacturing in whose hands the special appropriation for the work was pigeon-holed, neither the Committee nor the House paid any attention to this expression of public interest. The Senate, however, realized that there was value in the work and sincerity in its endorsers and increased the appropriations for the Forestry Division by $8,000, that is twenty per cent of the amount asked and considered by those in charge as necessary to continue the work on a proper business basis.

Under the circumstances, the testing will be discontinued until after July, when the new appropriations become available and then proceed at the slow pace which Congress has set.

Although the result of the efforts of those, who took active interest in securing appropriations for the work were not crowned with that success which they deserved, this is the only proper method of influencing legislation and those interested in the investigation should not fail to move again when the new Congress assembles.

The first compilation of test results is now in the hands of the printer and will probably be issued within six or eight weeks as Bulletin 8, Timber Physics, Part II. It will contain the results obtained on Longleaf Pine and will especially discuss in detail the results of tests and examinations of

PROPOSED NATIONAL GALLERY OF HISTORY AND ART.

MR. Franklin W. Smith, a Boston gentleman, delivered on the 12th inst an illustrated lecture under the auspices of the Mechanics' Institute, describing his design for a national gallery of history and art.

His proposition is for the United States Government to take hold of the project, which will, if carried out afford a most interesting and instructive permanent exhibition.

The design exhibits eight courts and galleries, viz: Egyptian, Assyrian, Greek, Roman, Byzantine, Mediæval, Saracenic and East Indian; surmounted by American galleries, for illustration of the history of the United States, and a memorial Parthenonic temple. This temple to contain a hall of the presidents; an American Walhalla, such as stands to-day in grandeur and beauty of marble upon a hill-top of the Danube, a proud manifestation of the patriotism and artistic inspiration of the Bavarian people.

The courts are to contain reproductions in full size of dwellings, temples, monuments, etc., of their respective nationalities; typical of their religion, life and art.

It is proposed that the ranges of galleries enclosing the courts be filled with mural paintings, illustrating in its orderly, chronological succession the history of the peoples whose architecture is shown upon their walls; similar to the pictorial history of Bavaria in the national museum of Munich; the basement stories being filled with casts and models—architectural, artistic and historical; supplying abundant material for elucidation in study.

Mr. Smith reports great encouragement as the result of his explanations, in confident assertion that "It ought to be, it can be, it will be."

OBITUARY.

THE death of David Scannell, Chief Engineer of the San Francisco Fire Department, took place on March 30th. Chief Scannell was seventy-three years of age, and had been connected with the Fire Department of this city for a period of over forty years. He was born in the year 1820 in New York. He served through the Mexican war and took part in the battles of Vera Cruz, Cerro Gordo, Contreras, Cherubusco, Chapultepec, Carrita de Berlin and the City of Mexico, and was promoted to the position of Captain for bravery. In 1851 he came to California in time to take part in the memorable fire of that year. David Scannell was Deputy Sheriff at the time of the Vigilant Committee, and he was the first sheriff under the Consolidation Act.

David Scannell
Chief of Department

In 1860 he was elected Chief of the San Francisco Volunteer Fire Department, holding the office for six years and until the paid department was organized. In 1871 he was again elected Chief of the Paid Department which position he has held to the time of his death.

THE REDWOOD TREE.

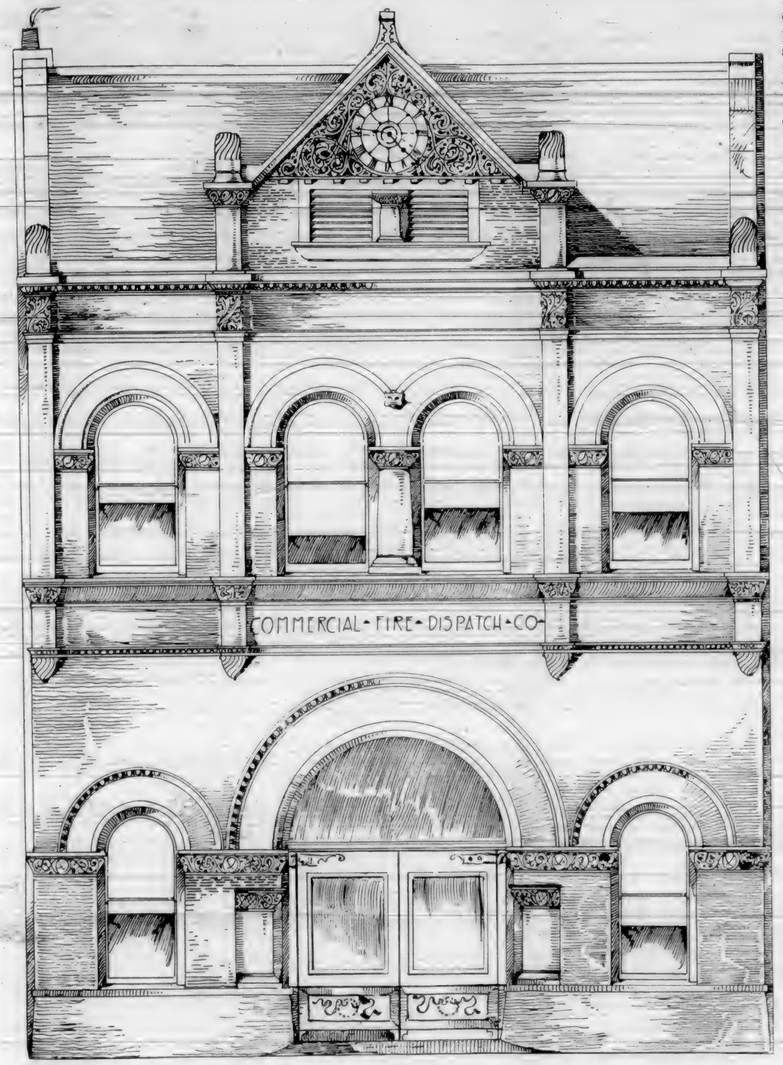
ON the camping grounds of the Bohemian club on Austin creek, and in the Armstrong tract near Guerneville, one finds the low land redwood inperfection. In such places there are often rings of great trees inclosing pits five or six feet deep and thirty, forty, or even fifty feet in diameter. Each of these pits is supposed to show where the venerable ancestor of the surrounding circle of trees once stood. Long before it fell, innumerable sprouts grew from the yet living roots. Afterwards, when the giant yielded, the rains washed new soil into the "bottoms" from the mountain sides to fill the deep chasm. For a century or so there was a struggle among the children of the fallen monarch, and at last only seven or eight remained to become great trees of twelve feet in diameter set on the rim of the pit formed by the decay of the roots of the ancient tree, and each having a complete root system of its own.

Other trees, seedlings or sprouts, grew up between them, and in a few more centuries the process of forming another redwood tree ring will be repeated about the largest of the second growth. Rings of this sort can be found in all stages of formation in every canyon and valley of the redwood country. Some very large rings still show the broken edges of the central tree's roots projecting like the staves of a barrel around the hollow, over-grown with ferns and wild oxalis, or filled to the brim with fresh, spicy redwood sprouts. The green spires of the living forest, 300 feet high, filter the air through their innumerable branches and shut out all but faint blue sparkles of the sky. The dust of one of the pioneers is under foot, and a little tree of last year's growth is struggling to gain a place.—*Charles H. Shinn in Century.*

Another instance of the remarkable vitality of the redwood may be given, a redwood tree growing on the bank of a stream, became undermined, and fell across the ravine, a portion of the roots still retaining their hold in mother earth, while the once lofty head found repose on the opposite bank. The tree soon adapted itself to the changed conditions of its life, and behold! A dozen or more small branches on the upper side of the trunk, ambitious to rise in the world, transformed themselves into redwood trees, drawing their nourishment from the parent trunk, and flourishing as though their roots were in nature's own soil.

THE USE OF BRICK.

IT is noticeable that during the year the use of the better bonds—English bond and Flemish bond—has been more common in the best work, to say nothing of the lavish use that has been made in some instances of the more complicated bonds in ornamental work. We are, of course, a long way yet from any frequent use of English or Flemish bond in every course in purely constructional work; it might be said, indeed, that these bonds are never used except in facade walls. But if our brickwork is to become what it ought, the abominable "American" bond must be adandoned or at any rate, restricted in its use to the cheaper and commoner constructions, except in cases where it may be made of value decoratively where constructional considerations are not paramount. Such cases are, however, very exceptional; and the use of the bond ought to be regarded as a sign of cheap and generally poor work. In addition to the wonderful variety of expensive bricks of ornamental color, the past year has shown more appreciation of the beauty of variety of color in common brickwork also; and there have been several instances which have come under our notice in which common brick has been used with telling effect for the sake of its variety of color, just as the yellow brick, which takes its name from the Madison Square Garden, where it was first used, is especially esteemed for its beautiful variety of color, for there is other yellow brick of which one sees only too much. To see the relative effect of the two, we have but to compare the wall of the Madison Square Garden itself, or any building in which this brick has been used (for we are now speaking merely of the effect of the brick in producing an agreeable wall surface without regard to the design of the building in which it may happen to be used)—we have but to compare, we repeat, the exquisite beauty of the wall surface of the Madison Square Garden, in which every brick differs in color from its neighbors, with, for instance, the wall surface of the yellow brick walls of the addition to the State House of Boston, now in course of construction, where the absolute monotony of color of the brick ruins the effect of the building.



PROPOSED NEW BUILDING COMMERCIAL FIRE DISPATCH CO., C. I. HAVENS, ARCHITECT.

In addition to the points we have already adverted to, we ought, perhaps, also to draw attention to the recognition of the joints of brickwork as a means of effect, and also of the texture of different bricks when contrasted with each other. Both these sources of effect have received much more attention during the past year than formerly, and brick diapers produced by different bonds and using brick of different colors have come much more into use. In England and France in the modern as well as in the old work these sources of effect are well understood.

On the other hand, it is refreshing to note that the monstrous wall of carefully culled red pressed brick is coming more and more into well-deserved contempt, especially among the best architects. We suppose it will take a long time for New York, as well as for some Western cities, to wean itself from the use of the vermilion paint pot. But this too will come in time. It is curious to note that in architecture, as well as in politics, while many of the best reforms emanate from New York, some of the worst abuses seem to find their last refuge there.—*The Brickbuilder.*

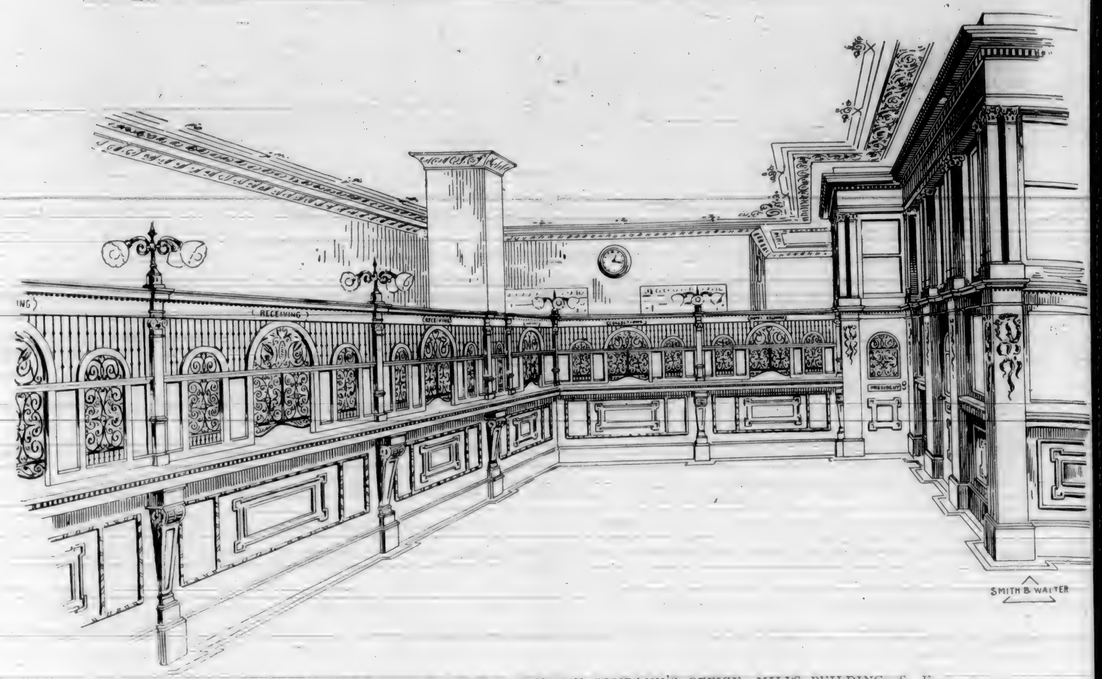
GAS LEAKAGE.

A very curious result from gas leakage is described by Dehnhardt in the *Centralblatt fur Bauverwalt.* It appears that an asphalt pavement had been laid down, and in spite of the fact of the material having been carefully mixed and applied, in about two years afterwards faulty places were observed to appear. These were duly repaired, and in the course of a short time became again faulty; the asphalt at these places was soft and tarry and exhibited upon the surface a number of tiny radiating fissures. The asphalt was broken up and the cause of the trouble investigated. Beneath the faulty places it was discovered that there was an escape of gas from pipes laid beneath the pavement.

On analysing samples of the impaired asphalt it was observed that it had absorbed the heavy hydrocarbons, and especially the benzine contained in the gas, rendering the pitch contained in the asphalt soft and tarry.

INQUIRY.

DOES any one know of a material to put on walls, of an impervious character, similar in quality to what is put on bath tubs so as to make them perfectly washable?



INTERIOR OF THE AMERICAN BANK AND TRUST COMPANY'S OFFICE, MILLS BUILDING, S. F.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Third Ward School is one of several which are about to be put up in Oakland, Elmer Childs is the architect.

A residence in Alameda with plans for same is for Henry K. Field. Architect, Fuller Clafflin.

THIS design for the Oakland High School was submitted in competition by Seth Babson. The basement provides a set of rooms for the janitor and family, a large Dining-Room, Kitchen and Pantries for use on festive occasions, and for a students' lunch room; a lecture room for the Superintendent, and class-rooms for night school. The first-story provides twelve class-rooms, a lecture room and rooms for the Principal and Teachers. The third floor provides a large assembly hall and ante rooms, drawing rooms and rooms for classes in chemistry, physics, and their apparatus.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

THE regular monthly meeting of the San Francisco Chapter A. I. A., was held on the 15th inst. A communication was received from Alfred Stone, Secretary A. I. A. in reference to the eligibility of architects to join the Institute, explaining to all inquirers that the first step to be taken is to become a member of the Chapter in the vicinity where they reside, as it is necessary that every application for fellow membership in the Institute should be endorsed by the President and Secretary of the Chapter of the Institute of which the applicant is a member.

The printed report of the proceedings of the Boston Society of Architects was received and the secretary instructed to suitably acknowledge the receipt thereof.

The following report on the Students' classes was adopted:

This Chapter of the A. I. A. from its inception, has, among its other objects, the promotion of the general welfare of the pupils of its members and that the education and guidance of these students should be carried along

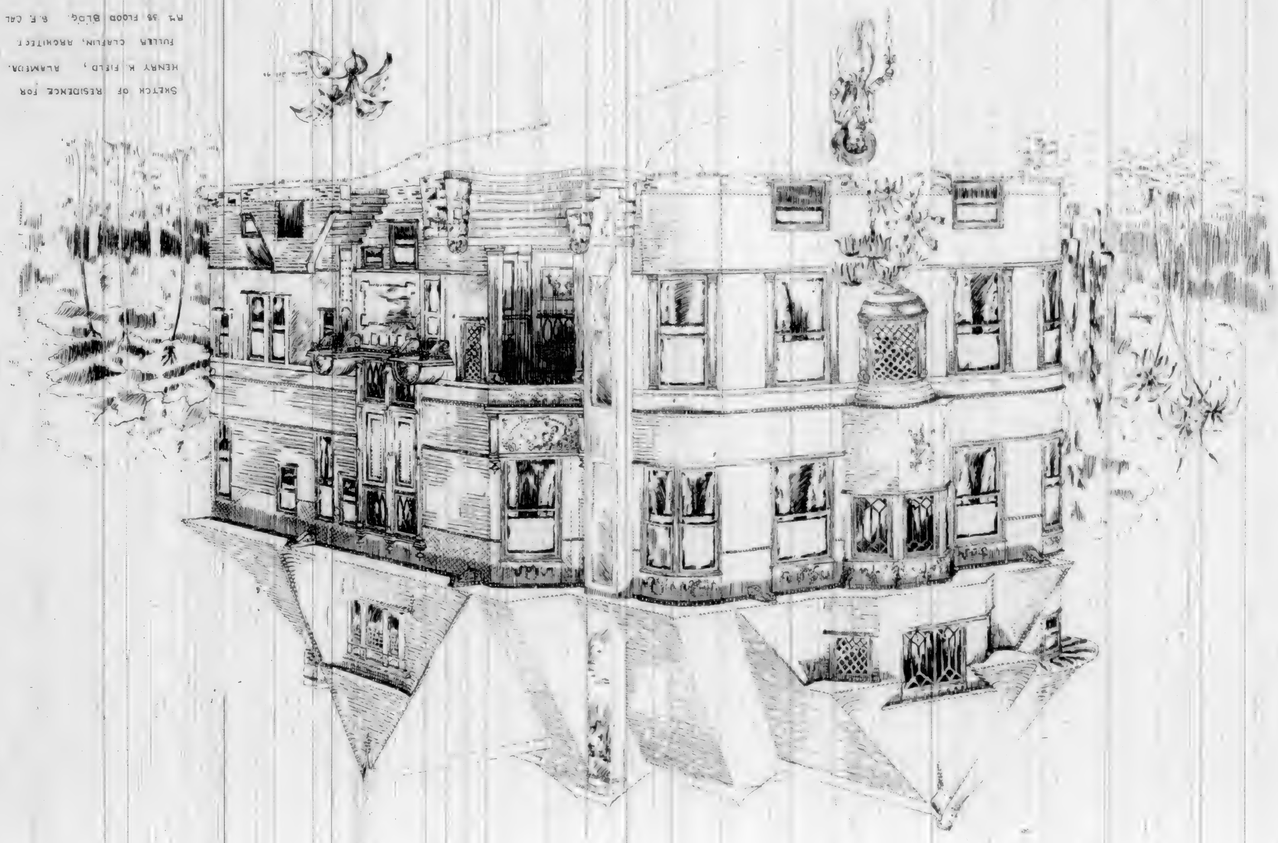
ROYAL INSTITUTE OF BRITISH ARCHITECTS

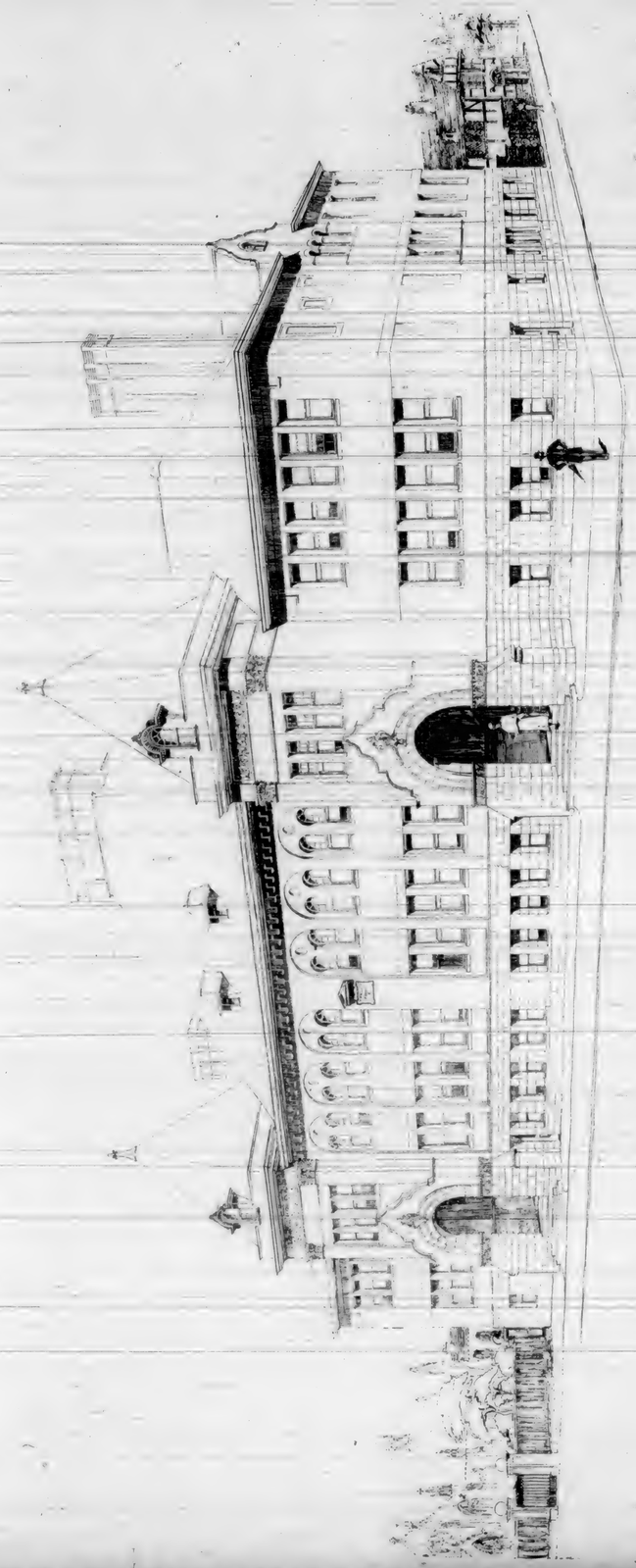
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO.LITH.

VOL.XIV Nº 4 APRIL 1883.

SKETCH OF RESIDENCE FOR
HENRY K. FIELD, ALAMEDA.
FULLER & CLARKIN, ARCHITECTS
Rms 38 FLOOD BLDG. S.F. CAL.





Elmer Tolles, Archt.

THIRD WARD SCHOOL, OAKLAND.

BRITTON & REY PHOTO. LITH.

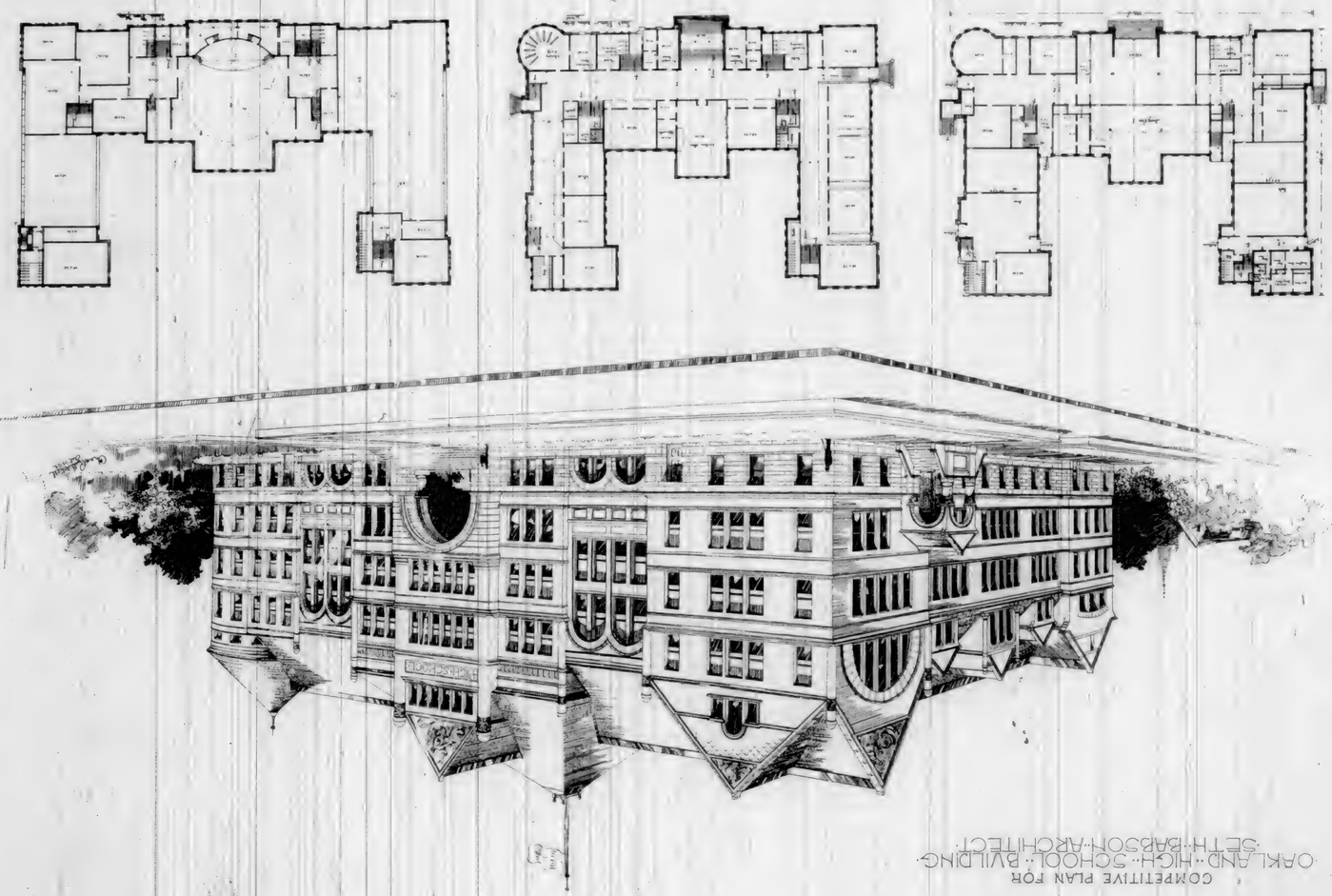
VOL. XIV Nº 4 APRIL 1893.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

THE MILLS BUILDING.

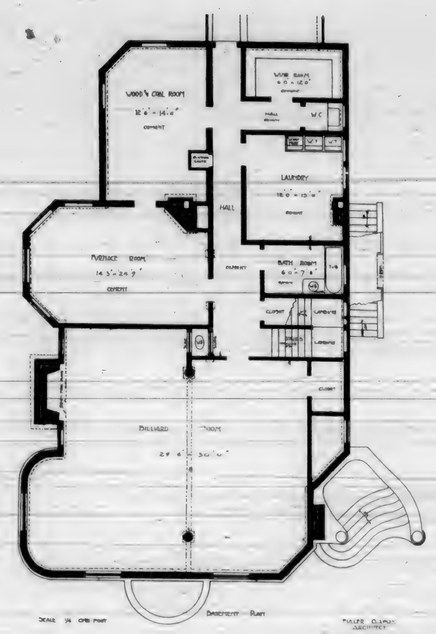
BURNHAM & ROOT, ARCHITECTS.

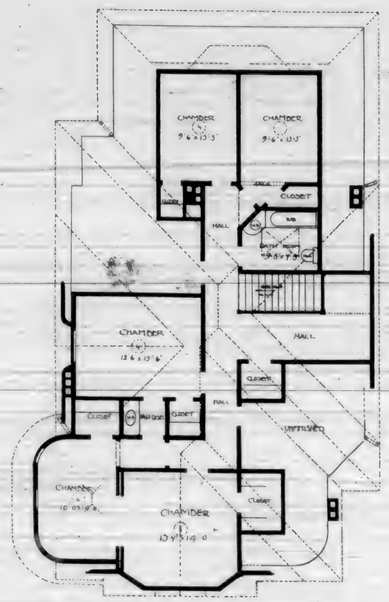
BRITTON & REY PHOTO. LITH.



COMPETITIVE PLAN FOR
OAKLAND HIGH SCHOOL BUILDING
SETH BABSON ARCHITECT

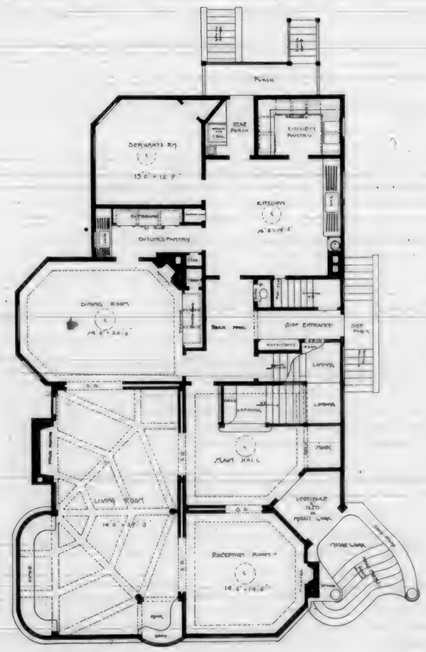
BRITISH ARCHITECTS ROYAL INSTITUTE
MDCCCLXXXIV





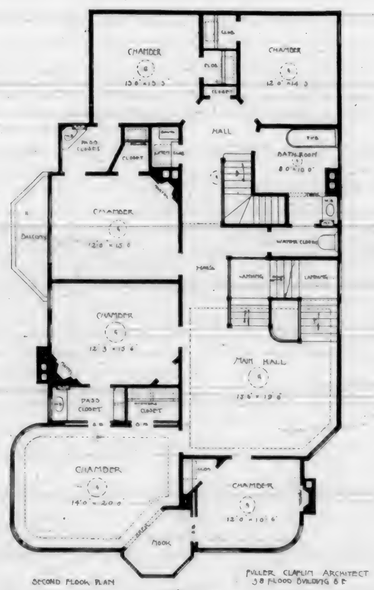
ATTIC PLAN

FULLER CLAFLIN ARCHITECT 38 FLOOD BUILDING



FIRST FLOOR PLAN

FULLER CLAFLIN · ARCHITECT 38 FLOOD BLDG · SAN FRAN.



SECOND FLOOR PLAN

FULLER CLAFLIN ARCHITECT 38 FLOOD BUILDING S.F.

through certain well defined lines of study in the art and science of Architecture.

If through the isolated position of our section of the country we have not accomplished all we could have wished, yet it has been the endeavor to animate the student of art and to direct him by some well directed and persistent effort on his own part to attain the requisite skill to render his ideas in pictorial expression as a medium for the conveyance of his thoughts to others.

Your committee on classes herewith submit the following report on the drawings and models made by the students dur'ng the year 1892, and placed on exhibition at the rooms of the Chapter.

The Students' Classes have been under the immediate supervision of Mr. Geo. H. Sanders, the President of the Chapter, and it is in a great measure due to his untiring zeal and painstaking care that the classes have advanced to its present state of vitality and promises to overcome all obstacles. The studies in free hand drawing from the "flat" the "model" or from "nature" have been directed by the president through his personal attention in the class room.

The modeling class has been under the instruction of Mr. V. A. De Prosse, and the exhibit shows that the pupils have worked with an enthusiasm and artistic feeling which is highly commendable. That the almost imperceptible undulations of the lines and surfaces have been so closely following in the models is proof that the instructor has succeeded in gaining the hearty co-operation of the students in the work.

CLASS IN DRAWING.

1st mention—Mr. Linden Bree: His second years course, comprising a series of nine subjects that have been worked out during a period of one year. Each subject shows a gradual improvement over the previous one, the first example being a leg, and the last a heavily draped figure. These drawings show a greater degree of excellence than any others on exhibition.

2d mention—Mr. E. Blankenberg. His third year, five subjects exhibited. The foliated capital is an excellent piece of work. The color subject, autumn leaves, is well done and shows an artistic feeling. This series of drawings shows that the pupil has natural gifts that with a little more concentration and persistency would bring out some superior work.

3d mention—Mr. H. E. Harris. His second year; two subjects are represented, a large "torso" and a large nude figure. These drawings show that the pupil has set his standard beyond the ability to execute, the attempt is praiseworthy when sufficient time and study is used to work out the details in a thorough manner. The trials in this case argues well for future success.

4th mention—Mr. J. H. Applegarth. His second year; five subjects are presented, hands, feet and legs. They are well executed, the outlining is clean and clearly defined, which, with a little more time and persistent energy applied to the finishing touches would have shown to better advantage.

5th mention—Miss Eda Menzel. Four months' work in preliminary studies; profiles and hands. The outlines and shading has been done with a degree of care and study which promises exceedingly good results in the future.

6th mention—Miss Belle McCuaig. Four months' study in profiles and shading. The outlines as done by this pupil show fairly well, and with study may bring good results.

THE MODELING CLASS.

1st mention—Mr. C. A. Meusdorffer. A grape leaf after nature. All the veins and undulating surface of the natural leaf is shown with precision and care.

2d mention—Mr. H. J. Van Vlack. A "Renaissance" scroll, after model, the contour being well relieved and the lines sharp and clean.

3d mention—Miss Eda Menzel. A leaf scroll, after model, and worked out with spirit and delicacy.

4th mention—Mr. H. Hobart. A seraphine head, from a plaster cast, also a girls hand after a life cast.

5th mention—Mr. Lloyd B. Brown. A "Renaissance" scroll, from the cast.

6th mention—Mr. H. Meyers. Model of ears after a life cast.

After disposing of routine and new business the Chapter adjourned.

MUNICIPAL GOVERNMENT OF BERLIN.

FROM our contemporary, *Fair Play*, we take the following description of some points of interest in the municipal government of Berlin. There is much food for thought in this article, and much that might with advantage be adopted by other cities.

Berlin is the best-managed city in the world, and its city fathers regulate the style of the buildings which shall be put up. You can't build a dog kennel without showing a design of it at the City Hall, and no man can put up a signboard on his own house until he has shown a diagram of it and has gotten the permission of the Government. You can't put down a pavement in front of your house without a permit, and the Government watches your building and insists that you make your walls just so thick, and the ceilings must be of a given height and the fronts must be of a uniform pattern. In building the house you are not allowed to litter the street with your bricks and mortar, and all the materials for building must be kept inside of the lot.

You have to fence off the street while the building is going on, and when your house has reached the height of the second story you must build a roof over the sidewalk to prevent the bricks or mortar falling on those passing below. The building is done much better than with us, and much more economically. Nearly all the mortar is mixed at one place, and there is a mortar company here which sells the mortar ready mixed to the builders, and which carries it about in iron wagons, and delivers it just where it is needed. There is no reason why such a company might not make money in the cities of the United States. This Berlin establishment is paying dividends of 25 per cent on its capital, and it sells its mortar like coal, at so much per wagon load or per ton.

I don't know how much New York runs behind every year, but there is scarcely a city in the United States that is not increasing in debt; Counsul General Edwards tells me that Berlin makes a profit of 5,000,000 marks or $1,250,000 every year over all her expenses. The city here owns two-thirds of the gas stock and it sees that its people have good light. There are gas lamps on the corners of every street, and the posts are of a tasteful pattern. Each lamp has four burners and the lamps are so aided by reflectors from above that there power is doubled. The posts are higher than

ours, and some of them have argand burners. It is the same with fire insurance.

The city insures its own buildings, and it is against the law for another insurance company to give out policies on buildings. The city, in the first place, sees that the buildings are properly put up and that the protection against fire is of the best character, and it then makes every man take out an insurance policy to prevent loss in case of fire. The insurance stock is good, and the city, of course, makes money by it. The only other insurance companies of Berlin are those which insure life and personal property. You can have your furniture insured by a private company, but the police are likely to step in and see that you don't overinsure it. All foreign insurance companies have to own enough city bonds to guarantee any losses which their subscribers might sustain. The Equitable, the New York Life and other American companies have offices here and they do quite a large business.

The streets are well kept. Berlin is fast becoming a city of asphalt, and you can drop your handkerchief almost anywhere and pick it up without soiling. The city takes care of its own sewers, and it has a number of farms on its outskirts over which these street-sweepings are scattered by the paupers of the city. The sewage is pumped out of the sewers on to the farms, and thus the land has become the most fertile in Germany. A large part of the cleaning of the streets is done by boys who get something like twenty-five cents a day and who are at work on every block gathering up the dirt as it comes, and on a wet day scrubbing off the streets with rubber hose. These boys sometimes work in gangs, and a half a dozen of them will take up a street and push the dirt on to the sewers, leaving the road as clean as though it had been scrubbed. If these scrubbings are done at night clean sand is scattered over the street to prevent horses or men from falling. The whole city, in fact, is run in the interest of the people and of health and beauty, rather than in the interests of politicians. It costs more than 2,000,000 marks a year to keep the streets clean. There are 700 street cleaners. The civil service rules obtain even as to these boys, and their wages are raised after they have been working on the streets for three years.

A COUNTRY RESIDENCE.

The buildings are kept as clean as the streets. Every man has to wash down his house so often, and it is against the law to put up bill boards or to paste posters on the houses. When Buffalo Bill was here he was almost crazy because he could not get any place to plaster up his big posters of his "Wild West" show. The only arrangement by which posters can be put up is in connection with round sheet iron tubes, which are on the corners of the streets and which are about fifteen feet high and of the diameter of a hogshead. They are especially for the pasting of big bills. They are not unsightly and on them you find the theater advertisements and business posters. Within the last few months the Urania company has been putting up advertising pillars all over the city, after a plan which forms perhaps the best advertising scheme in existence. These pillars are about fifteen feet high and they are by no means unornamental. They are as big as a flour barrel, but are octagonal in shape, and they are the most valuable guide that any city can have.

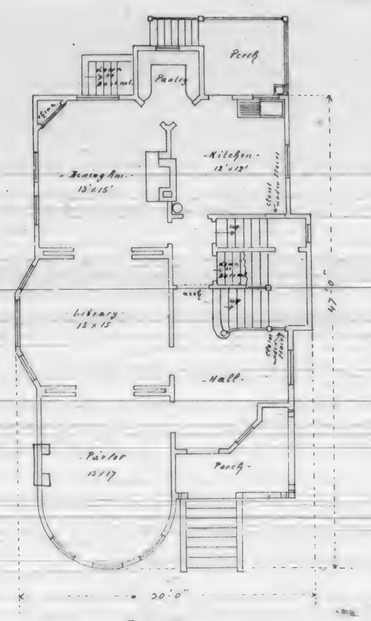
These advertising pillars are connected with the observatory of the city, and there is a clock on each of them that always gives the correct time. Above the clock there is a star showing the points of the compass, so that you can tell the directions from any place you may happen to be. Below this star there is a globe which moves by machinery and which tells you the positions of the stars from day to day. Besides this stands the clock, which has four round disks in different sides of the pillar. One of these gives the time at Berlin. Another gives the world time and a third shows how the earth stands in the solar system from day to day. Below this, with shades throwing an electric light upon them at night, are places for advertisements, which are in frames under glass. These revolve every minute and mixed up with the advertisements are tables of information about the city.

In one of the plates below them there is the time of the trains leaving the city by all the roads, and another plate shows you the condition of the barometer, the thermometer, and of the humidity of the air from hour to hour and keeps a record of it. Upon these pillars you can alway find the nearest police station and the nearest branch post office, and there is a little plan of the section of the city in which the pillar stands, with the streets plainly marked, so that by going to one of these you can always find just what you want without asking questions. I do not know the cost of these advertising pillars but as new ones are being rapidly put up I judge they must be profitable. Such other street advertising as is done is with the sandwich men or by dodgers. You find men distributing bills everywhere and there are plenty of grotesquely dressed figures carrying bill boards. The people advertise very well in the newspapers, and manage to make their wants well known without defacing the buildings.

They tax you here on your income, and they get at your income by looking at your style of living. It is generally estimated that a man spends one-third of his income for house rent, and as I paid 150 marks for rent they estimated that I made 450 marks a month. If I had had better rooms I would have paid more tax, and if a man lives in fine style here he cannot evade taxation. Every man who makes more than $105 a year here is taxed on his income, and everything under the sun in Berlin pays a tax of some sort or other.

One of the curious institutions of the city is an intelligence office, as it might be called, where records of passports are kept, and where you can go and find out just where any man or woman is stopping. If John Smith, who owes you a bill, moves to another part of Berlin to escape you, you have only to go to this office, and by paying a few cents you will get a report which will tell you just where he has lived in the city and where you may find him at present. There is no chance for a man to escape or hide here, for the argus eyes of the government are always upon you.—*The Press*, New York.

A RAID ON INDECENT WIRES. ANTHONY COMSTOCK (Rushing into an electric light office)—"Where is that naked wire?" The office boy faints.—"*Popular Electric Monthly.*"



First Floor

PLAN OF COUNTRY RESIDENCE.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

WHAT CONSTITUTES NOTICE OF MECHANIC'S LIEN.—A statement in a lien notice that claimant agreed to furnish the contractors certain windows, doors, etc., for a building, without specifying the quantity in any way, or that the same where all the doors, windows, etc., used in the construction of the building, does not give the owner sufficient notice.

Tacoma Lumber and Manf'g Co. v. Wolff, Supreme Court of Wash. 31, Pac. Rep. 753, 57.

MECHANICS' LIEN FOR MATERIAL USED IN PUBLIC IMPROVEMENTS.—Under an act which provides that one claiming a lien for material furnished, etc., towards the performance of any public improvement by the city of New York, shall file a notice of his lien, with the comptroller and with the head of the proper department, stating the amount of his demand after deducting all just credits and offsets, and also "that the work was done or materials were furnished to the contractor," "and they were actually performed or used in the execution of the contract with the city," a sub-contractor who willfully and fraudulently misrepresents in his notice of a lien the amount which is due him, by including therein a large quantity of material which he knows to have been rejected by the contractor and not used in the work, is not entitled to a lien for the portion of the materials actually used in the execution of the contract.

Goodrich v. Gillies, Supreme Court of New York, 21 N. Y. S. 400, 156.

INNOCENT ALTERATION OF CONTRACT WILL NOT AVOID SAME.—Where one contracted to purchase a saw mill of another and paid a portion of the purchase price down, afterwards bringing action to cancel the contract, and to recover the amount paid there under, claiming that the seller had lowered the dam which regulated the supply of water to the mill about thirty-four inches, in consequence of which the power of the mill was reduced about one-half; that the seller had been compelled to do this by an abutting owner, whereas he had represented to the purchaser that he had a clear right to maintain the dam at its height at the time of making the contract, and it being shown that the dam was not lowered more than six inches, and that the seller had informed the purchaser at the time of making the contract that he might have to lower it that much, the purchaser was not entitled to be released from his contract. The contract for the sale of the mill included all the lumber in the mill yard, at a certain rate per thousand feet, but as at the time of executing the contract no measurement of the lumber had been made, it was agreed that blank spaces should be left in the contract, and when the amount had been ascertained and agreed on, it should be entered therein. Thereafter, the purchaser measured the lumber and informed the seller of the amount, and some time later the seller made another inventory, and reported the amount to his attorney, who had the contract, and the attorney at the request of the seller, inserted therein the amount of his measurement, which was larger than that found by the purchaser. It appeared that there were several piles of lumber which the purchaser did not count, and the seller understood that the purchaser intended that he should finish the estimate, and then enter the amount. The seller's act was not such a willful alteration of the contract as would render it void.

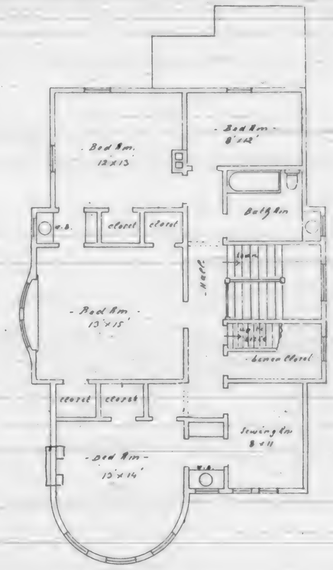
Cline v. Goodale, Supreme Court of Ore. 31 Pac. Rep. 956, 333.

WHEN CONTRACTORS' SURETIES ARE NOT LIABLE.—The lien of a material man for materials furnished certain building contractors, by him, cannot be enforced against persons who entered into the original building contract merely as sureties that the contractor would turn over the building to the owner when complete, free from liens; the material also being charged to the contractors, and furnished solely on their credit. Lien notices must be recorded or filed for record; and where a notice was filed which was invalid, because there was no notarial seal attached to the affidavit thereto, no subsequent proof could be made as to any material fact to render such notice valid, and make it relate back to the time it was filed. Where parties enter into a trial on the merits of the case, without any objection, or demand to have the case tried by a jury, they cannot appeal or raise such objection.

Stetson and Post Mill Co. v. McDonald, Supreme Court of Wash. 32 Pac. Rep. 108.

CITIES CANNOT DESTROY WOODEN BUILDINGS WITHOUT PROCESS OF LAW.—It is not a part of the functions of a city government to enforce the terms of an agreement by forcible measures without process of law. So where a wooden building is maintained in defiance of a city ordinance and in derogation of the terms of the permit granted by the city for its erection, the city government has no power to enforce the terms of the permit by destroying the building without process of law, and a restraining order will be granted the owner until the final hearing and determination of the cause.

Northern Pac. R. R. Co. v. City of Spokane, U. S. Circuit Court, Washington, 52 Feb. Rep. 428, 103.



Second Floor

PLAN OF COUNTRY RESIDENCE.

Notes & Comments.

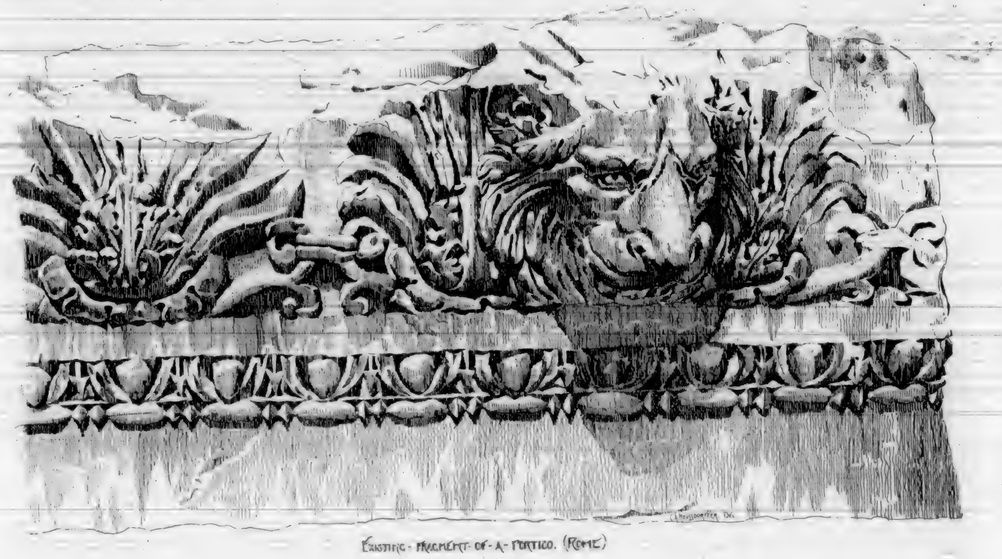
The State of Washington is to have a Capital Building to be erected at Olympia. The last legislature passed the bill which Governor McGraw has recently signed.

The Santa Rosa Board of Education have called an election for April 29th, to vote on the proposition to issue bonds for $30,000, for school purposes. It is proposed to build new school buildings.

The orange and banana fiend is now getting in his work on pavements. Now is the time for the Supervisors to make it a misdemeanor to do such.

New and valuable deposits of onyx and opals have been recently discovered near Colfax. The onyx is reported to be of a varied and rich color, and large blocks free from seams may be taken out.

The auger that bores a square hole consists of a screw auger in a square tube, the corners of which are sharpened from within, and as the auger advances, pressure on the tube cuts the hole round.



EXISTING - FRAGMENT OF A PORTICO. (ROME)

BUSINESS MOSAICS.

Commercial Fire Dispatch Co.—This is a new convenience for the commercial men, bankers and manufacturers, though as it has been established and in successful operation for the last three years it can hardly be called new. The city has been districted in such a manner that they are enabled, by their efficient messengers to notify their subscribers of a fire within a few moments after the alarm is given. At the main office of the company, 61 Flood Building, details of the workings will be given.

A bridge is to be built across the Sacramento river, near Anderson, for the Shasta railroad.

Mr. J. J. Jones, the genial manager of the Westminster Slate Company is in the city at the present time. Since his arrival here he has sold several hundred squares of slate to the principal roofers here and has convinced them of the superior quality of the Westminster Slate and the facilities for the prompt delivery of orders. Further information and particulars can be had of Mr. W. A. Jones who is the local agent for the company.

A. H. Johnson's Automatic Perspective Machine has grown to be a necessity in the office of the architectural draughtman. By the use of it much time and labor is saved and there is no possibility of making mistakes. The construction of this machine is exceedingly ingenious and it accomplishes a marvelous amount of work and is highly recommended by all who have used it.

Chicago City Council has passed an ordinance limiting the height of buildings to 130 feet.

The Sturts Burglar Alarm is superior to all other alarms on account of the simplicity of its construction. New devices are hard to introduce but this alarm having merit will undoubtedly make its way to the front ranks the more it becomes generally known. For further particulars apply at the office of the company, room 15, Thurlow Block, San Francisco.

Messrs, Coppieters & Mockel, manufacturers of Art and Metal novelties wish to call the attention of our readers to their advertisement on page vii.

Fifty-one metals are now known to exist; four hundred years ago, only seven were known.

The Joseph Dixon Crucible Co. has at last been awarded space in the Columbian Exposition—a space 25x28 feet in the Mines Building for a general exhibit of graphite productions such as crucibles, lubricating graphite, graphite axle grease, plumbago facings, graphite machine and railway grease, Dixon's stove polish, silica-graphite paint, core wash, electro-typing graphite, graphite cylinder oil, graphite specialties for electrical and other work, etc.

The cost of the Capitol at Washington has exceeded $30,000,000.

A new glazed tile for partitions, etc., has been put on the Market by Messrs. Gladding, McBean & Co., the well known manufacturers of terra-cotta work for buildings. These partition tiles are glazed on both faces and when set in cement will form a wall having all the desirable qualities as a fire-proof or sanitary partition. This firm also makes a superior quality of glazed bricks, which improvement will recommend them for use in many places. For foundations, setting and backing for kitchen ranges their superiority over those in common use is at once apparent.

The Mott Iron Works still lead in their specialties. See advertisement on page v.

At the Photographer's.—"One more question, sir, before you begin." "Well madam?" "Is it possible to distinguish real stones from false ones on the photo?"—*Wilson's Photographic Magazine.*

If you are in need of rubber, corrugated matting, hose reels or any kind of fire protective supplies call on Frank McAllister, No. 24 Beale street.

A new sleeping car has a space between the sections to allow the occupant of the upper berth to get in by the end and avoid disturbing any one in the lower berth.

Inlaid Floors.—Messrs. Kenney & Wells, 422 Sutter street are the coast agents of J. W. Boughton's Parquet Floors, Wood Carpets and Wainscoting, which have won such an enviable reputation throughout the country. Mr. Boughton began manufacturing Inlaid Floors over twenty-five years ago and now has the largest and most complete factory in the world.

Besides floors, Messrs. Kenney & Wells carry a large line of Mirrors, Frames, Pictures, and manufacture Fret work and Grills. They have lately been awarded all the inlaid floors in the Mutual Life Insurance Co's. building corner Sansome and California street. Branch office 408 and 410 Twelfth street, Oakland.

CITY BUILDING NEWS.

Alcazar Theatre. An electric elevator; owner, M. H. De Young; architect, Wm. Patton; contractors, Otis Bros.; signed, March 21; filed, March 28; cost $5,000.

Bay, Powell and Mason. All work to build; owner, A. Meringo; architect, W. H. Bayliss; contractor, W. N. Nelson; signed, March 28; filed, March 29; cost $2,343.

Baker near Washington. To build; owner, J. A. Hosmer; contractor, Phillip Rive; signed, April 10; filed, April 10; cost $2,925.

Broderick near Jackson. Carpenter, Mason and plastering; owner, E. P. Paddock; architects, Smith & Freeman; contractor, Jas. Mix; signed, March 4; filed, March 7; cost $5,785.

Butte and York. Two-story frame; owner, Cornelius Fagan; architects, Laver & Mullaney; contractor, H. P. Conrady; signed, March 8; filed, March 9; cost $3,200.

Broadway near Van Ness. Alterations to a two-story house; owner, Mary E. Leonard; architect, E. A. Herman; contractor, Joe Ogle; signed, March 15; filed, March 16; cost $2,315.

Broadway near Laguna. Three-story frame; owner, Jane C. Burnett; contractor, S. C. Bozzell; signed, April 1; filed, April 6; cost $3,000.

California and Powell. Grading and concrete work; owner, F. L. Parker; architect, G. A. Boardwell; contractor, W. R. Patterson; signed, March 10; filed, March 10; cost $2,075.

California near Webb. Alterations, etc., to bank building; owner, San Francisco Saving Union; architect, Wm. Curlett, contractors, Smille Bros.; signed, March 16; filed, March 16; cost $178,890.

California and Powell. To build; owner, F. L. Parker; architect, Geo. A. Boardwell; contractor, J. J. Boyle; signed, April 6; filed, April 7; cost $10,240.

California and Webb. Taking down old walls, all excavations, brick, terra-cotta, cutting openings for windows, resetting vaults, etc.; orig-contractors, Smille Bros.; architect, Wm. Curlett; sub-contractor, R. Mitchell; signed, April 7; filed, April 8; cost $39,750.

Church near Ridley. One-story and basement; owner, E. F. Leonard; contractor, Jas. Campbell; signed, April 7; filed, April 7; cost $2,030.

Clay street, No. 409. Alterations and additions; owner, Estate of Agnes Bowie; architects, Mathison & Howard; contractor, W. I. Forde; signed, March 27; filed, March 28; cost $1,655.

Devisadero near California. Two-story frame; owner, M. Spiro; architect, P. A. Sioli; contractors, Wheeler & Wariner; signed, March 7; filed, March 13; cost $4,890.

Eddy near Scott. Frame building; owner, R. C. Dawes; architect, Jno. Marquis; contractor, Jno. Strand; signed; March 2; filed, March 6; cost $3,035.

Eighth and Brannan. One-story brick warehouse; owner, Alvinza Hayward; architects, Percy & Hamilton; contractor, Jno. McCarthy; signed, March 15; filed, March 18; cost $19,684.

Eleventh and Bowie Ave. To build; owner, Patrick McTamney; architect, John T. Kidd; contractor, W. E. Bailey; signed, March 3; filed, March 4; cost $1,445.

Eleventh Ave. near Pt. Lobos Ave. One-story cottage; owner, Mich'l. D. Williams; contractor, Nelson & Marshall; signed, March 21; filed, March 23; cost $1,400.

Ellis and Larkin. To build; owner, Cath Hennebery; contractor, Houston Bros. signed, March 15; filed, March 20; cost $5,820.

Ellis and Webster. Additions to house; owner, Metha Rohe; contractors, Cook & Pattonson; signed, March 20; filed, March 21; cost $1,400.

Ellis near Polk. Alterations; owner, Philip Hessler; architect, Chas. M. Rosseau; contractor, L. B. Schmid; signed, April 6; filed, April 6; cost $1,175.

Ellis near Mason. Grading, supporting, underpinning all adjoining buildings, concrete stone and brickwork; orig-contractors, Mahoney Bros.; owners, Y. M. Christian Assn.; architect, A. Page Brown; sub-contractors, McGowan & Butler; signed, April 8; filed, April 10; cost $50,720.

Eugenia near Mission. Two-story frame; owner, L. G. Fitzgerald; architect, Oliver Everett; contractors, Lundy & Gillogley; signed, March 21; filed, March 21; cost $1,570.

Fell and Masonic Ave. To build; owner, M. B. Sturges; architects, Salfield & Kohlberg; contractor, Wm. Pluns; signed, March 3; filed, March 8; cost $4,225.

Fell near Lyon. To build; owner Isador Zellerbach; architect, A. J. Barnett; contractor, Jno. Ogle; signed, March 22; filed, March 24; cost $10,000.

Folsom near 17th. Two-story frame; owner, M. Sliscovich; architect, C. E. Corrigan; contractors, W. and C. L. Hinkle; signed, March 18; filed, March 27; cost $2,673.

Fulton near Lyon. To build; owner, Howard Morton; contractor, W. W. Rednall; signed, April 5; filed, April 8; cost $3,100.

Geary near Laguna. Alterations and additions; owner, M. De Smith; contractors, Godin & Beaudet; signed, March 21; filed, March 23; cost $1,237.

Guerrero near Fifteenth. To build; owner, Sophie Mendel; architects, Martens & Coffee; contractor, F. Weinoechl; signed, Feb. 20; filed, March 4; cost $3,500.

Guerrero near Nineteenth. Three-story frame; owner, Fred Meyer; architect, C. I. Havens; contractor, Robert Currie; signed, March 2; filed, March 4; cost $8,149.

Hayes near Lyon. Two-story frame; owner, M. McGowan; architects, Copeland & Pierce; contractors, Towle & Broadwell; signed, March4; filed, March 8; cost $1,393.

Hayes near Lyons. Carpenter work; owner, M. McGowan; architects, Copeland & Pierce; contractor, Geo. Healing; filed, March 8; signed, March 4; cost $1,400.

Hayes near Webster. Carpenter work; owner, D. Ross; architect, J. F. Kenna; contractor, T. W. Arnold; signed, March 23; filed, March 25; cost $3,720.

Hayes near Webster. Carpenter work of a two-story flat; owner, D. Ross; architect, J. F. Kenna; contractor, T. W. Arnold; signed, March 23; filed, March 25; cost $2,250.

Harrison and 1st. Alterations and repairs; owner, Geo. M. Aherns; architect, H. Geilfuss; contractor, F. Klatt; signed, March 10; filed, March 11; cost $1,330.

Harrison near 24th. To build; owner, G. A. Gaetcke; contractor, Caspar Zwierlien; signed, April 6; filed, April 8; cost $2,100.

Howard near Fourteenth. Alterations and additions; owner, A. W. Bode; architect, Chas. M. Rousseau; contractor, John Miron; signed, April 4; filed, April 6; cost $2,800.

Howard near Valencia. Two-story frame; owner, Jno. F. Boyd; architects, B. McDougall & Son; contractors, P. J. & M. Brennan; signed, March 16; filed, March 21; cost $17,575.

Jones near Geary. To build; owner, Geo. W. Morgan; architect, W. H. Armitage; contractor, Wm. J. Field; signed, March 18; filed, March 20; cost $7,100.

Kearny near California. Wrought iron work; four-story brick; owner, E. L. Heuter; architect, H. Geilfuss; contractors, P. H. Jackson & Co.; signed, March 2; filed, March 7; cost $2,200.

Kissling near Twelfth. Two-story frame; owner, Jane T. Dowling; architect, Julius E. Krafft; contractor, Daniel Powers; signed, March 15; filed, March 16; cost $2,110.

Leavenworth near Lombard. One-story frame; owner, F. Ballhaus; contractor, Peter Johnson; signed, April 10; filed, April 10; cost $1,900.

Lombard near Gough. Story and basement; owner, Peter Michelette; architect, C. R. Wilson; contractor, P. Antonelli; signed, March 14; filed, March 15; cost $3,500.

Lyon near Washington. To build; owner, Mrs. M. E. Verleger; architects, Plisis & Moore; contractor, Jas. Geary; signed, March 9; filed, March 22; cost $3,690.

Market near Eighth Street. Plumbing, gas-fitting, etc., and sewer work to four-story brick; owner, Louis Schoenberg; architect; Chas. M. Rousseau; contractors, S. Ickelheimer & Bros.; signed, April 5; filed, April 6; cost $1,025.

Masonic Cemetery. Granite and marble work of a Mausoleum (except cement and concrete work of foundation or floors, etc.); owner, N. W. Cole; architect, Jas. E. Wolfe; contractor, A. McLennan; signed, April 7; filed, April 8; cost $3,719.

McAllister and Devisadero. Two-story frame and attic; owner, H. Braunschweiger; architect, C. W. Kenitzer; contractor, Adam Miller; signed, March 21; filed, March 23; cost $15,300.

McAllister and Devisadero. Brick and iron work; owner, A. Miller; architect, C. W. Kenitzer; contractors, T. Hock & Son; signed, March 23; filed, March 25; cost $2,250.

Mission near 23d. Grading, owner, Emma Mangels; architect, H. Geilfuss; contractor, J. O. Sullivan; signed, March 28; filed, March 29; cost $2,444.

O'Farrell near Jones. All work to build; owner, Alice Pease; architect, T. J. Welsh; contractor, H. Jacks; signed, March 28; filed, March 28; cost $5,850.

O'Farrell near Scott. To build four flats; owner, A. Pastene; architects, Coffey & Lemme; contractors, Mix & Hope; signed, March 6; filed, March 8; cost $2,285.

Oregon and Front. Carpenter work, etc.; to add two stories; owner, Jas. G. Fair; architect, H. A. Schulze; contractor, J. B. Gonyeau; signed, March 7; filed, March 22; cost $3,250.

Oregon and Front. Brick, iron and terra-cotta work; owner, Jas. G. Fair; architect, H. A. Schulze, contractors, Riley & Loane; signed, March 7; filed, March 22; cost $3,824.

Post near Grant Ave. Alterations and additions; owners, H. Liebes & Co. architects, John & Balezynski; contractors, Schutte & Krecker; signed, April 4; filed, April 7; cost $18,566.

Post street, No. 2112. Alterations; owner, Wm. Kaiser; architects, Salfield & Kohlberg; contractor, H. Rohling; signed, March 1; filed, March 8; cost $1,530.

Prosper between 16th and 17. Two-story frame; owner, Otto Baumann, contractors' Peterson & Persons; filed, March 10; signed, March 4; cost $2,500.

Sacramento near Devisadero. Two-story frame and moving; owner, A. and R. A. Folsom; contractor, C. H. Wedgwood; signed, March 7; filed, March 9; cost $4,550.

Sacramento near Drumm. All work for a brick building; owner, D. Roth; architect, Townsend & Wyneken; contractor, J. H. Wilson; signed, March 15; filed, March 15; cost $10,550.

Sansome and Washington. Sidewalks, lights, etc.; owner, I. Franks; architects, Wright & Saunders; contractors, Leibert & Hoffman; cost $2,700.

Sixth near Jessie. Iron, steel, brick, cement and artificial stone work, etc. owner, estate of E. L. Goldstein; architect, I. E. Krafft; contractor, R. Ringrose; signed, April 6; filed, April 8; cost $1,364.

Sutter and Mason. Brick and stone; owner, S. Weber; architects, Pissis & Moore; contractors, Riley & Loane; signed, March 8; filed, March 18; cost $23,997.

Sutter and Mason. Iron work; owner, S. Weber; architects, Pissis & Moore; contractors, O'Connell & Lewis; signed, March 15; filed, March 18; cost $14,974.

Scott and Green. All grading; owner, A. C. Soule; architect, Fuller Claflin; contractor, J. E. Carey; signed, Jan. 28; filed, March 18; cost $4,735.

Spruce and Washington. Inside finish; owner, O. D. Baldwin; architect, Samuel Newsom; contractor, West Coast Furniture Co.; signed, March 16; filed, March 18; cost $3,787.

Seventeenth near Valencia. Granite, brick, concrete, etc., to two-story building; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractors, M. Fennell & Son; signed, March 8; filed, March 20; cost $9,187.

Sanchez near 23d. Two-story building; owner, H. D. Matheson; architect, R. H. White; cost $4,500.

Seventeenth near Valencia. Carpenter and iron work; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractor, Wm. W. Ackerson; signed, March 8; filed, March 23; cost $11,432.

Seventeenth near Valencia. Painting; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractor, Ed. Hartman; cost $875.

Seventeenth near Valencia. Plumbing; owner, Mission Parlor N. S. G. W.; architects, Shea & Shea; contractors, Newman & Mills; cost $925.

Seventeenth near Valencia. Three-story frame; owner, Harriet Choynski; architect, Ed. Burns; contractor, Ed. Rohling; signed, March 6; filed, March 6; cost $5,250.

Sharon near 15th. Two-story frame; owners, T. McGrath and wife; architect, Ed. Mooney; contractor, Jno. T. Kidd; signed, March 10; filed, March 13; cost $2,500.

Sharon near 15th. Two-story frame; owners, J. Crampton and wife; architect, Ed. Mooney; contractor, Jno. T. Kidd; signed, March 10; filed, March 14; cost $2,500.

Sacramento St., No. 22 and 27. Alteration and repairs; owner, H. T. Holmes L. Co.; contractor, L. C. Murry & Co.; signed, March 14; filed, March 15; cost $4,187.

Sanchez and 17th. Three-story building; owner, J. J. Hickey; architect, J. J. Clark; contractor, Wm. Linden; signed, March 16; filed, March 16; cost $5,300.

Trent Ave. near 24th. Cottage; owner, Chas. H. Feldbusch; contractor, Wm. Helbing; signed, March 21; filed, March 22; cost $2,000.

Turk and Buchanan. Four three-story frame buildings (except excavations, concrete and cement work); owner, H. F. Fortman; architects, John & Balczynski; contractors, Gray Bros.; signed, April 8; filed, April 8; cost $3,850.

Twenty-first near Dolores. Two-story frame; owners, T. F. Williams and wife; architect, C. H. Skidmore; contractor, Douglass O'Connor; signed, March 7; filed, March 8; cost $3,400.

Vandewater near Mason. Carpenter work on brick work; owner, Fontana & Co.; architect, J. Krafft; contractor, H. Holzenberg; signed, March 2; filed, March 4; cost $9,200.

Vandewater near Mason. Brick and concrete work; owner, Fontana & Co.; architect, J. Krafft; contractor, C. Wagner; signed, March 2; filed, March 4; cost $9,300.

Vallejo near Devisadero. Frame dwelling; owner, E. Rochat; architect, Clinton Day; contractors, Ingerson & Gore; signed, March 1; filed, March 6; cost $9,720.

Vicksburg near 23d. A cottage and stable; owner, Earnest Hoffman; architect, Ed. Vogel; contractor, Wm. Linden; signed, March 27; filed, March 27; cost $1,819.

Walter and Taylor. Three-story frame; owner, C. Brizzolara; architect; E. Deplerre; contractors, L. Cuneo & Co.; signed, March 27; filed, March 28; cost $8,000.

Welgster near Golden Gate Ave. Two-story frame; owner, Geo. Shaefer; architects, John & Balczynski; contractors, Schutt & Krecker; signed, March 27 filed, March 28; cost $5,675.

ALAMEDA COUNTY.

Block A., lot 13. Two-story frame; owner, C. T. Baker; architect, S. A. Bordwell; contractor, J. J. Boyce; signed, March 17; filed, March 22; cost $3,319.

Bowditch near Durant Ave., Berkeley. To build; owner, B. Carrington; contractor, R. Wenk; signed, April 5; filed, April 7; cost $1,600.

Central Ave. near Hight. Five-room cottage; owner, H. H. Hegewald; contractors, Marcuse & Remmel; signed, March 20; filed, March 23; cost $1,525.

C. P. R. R. Right of Way. Two-story frame building; owner, 23d Ave. and 14th L. I. Co.; architects, Colligman & Lassen; contractors, E. P. McGowan and J. Laughlin; signed, Feb. 4; filed, March 15; cost $5,380.

Eighteenth and 9th Ave., Oakland. Two-story frame; owner, E. B. Hill; contractor, C. E. Nichols; signed, March 11; filed, March 15; cost $2,912.

Forty-fourth near Grove. To build; owner J. E. McElarth; contractor, W. M. Campbell; signed, April 5; filed, April 6; cost $1,400.

Grand near Railroad Ave. One-story frame building; owner, J. H. Alders; architect, F. P. Fischer; contractors, D. Straub & Son; signed, March 17; filed, March 21; cost $1,800.

Linden near 24th, Oakland. Six-room cottage; owner, E. A. Beers; contractor, A. D. Coplin; signed, March 17; filed, March 18; cost $1,650.

Moss Tract, block F, lot 7, Brooklyn. To build; owner, T. D. Newson; architects, J. J. & T. J. Newson; contractor, W. H. Higgins; signed, March 29; filed, April 3; cost $1,300.

Ninth near Chestnut, Oakland. Two-story frame; owner, L. Messinax; architects, Townsend & Wyneken; contractor, J. Massoletti; signed, March 14; filed, March 15; cost $2,080.

Pacific near Walnut Ave. Three-story frame; owner, Capt. A. H. McGregor; architect, F. P. Fischer; contractor, D. Straub; signed, March 15; filed, March 15; cost $4,860.

Park near Dayton. Two-story frame; owner, A. W. Ward; architect, T. Claffiin; contractor; R. M. Murray; signed, March 20; filed, March 24; cost $6,668.

Parn near Dayton Ave. Two-story frame; owner, K. D. Field; architect, T. C. Chaplin; contractors, R. Knox & J. G. Cook; signed, March 16; filed, March 20; cost $6,945.

Sixteenth near Fruitvale Ave. Two-story frame; owner, J. A. Jones; contractor, A. W. Pattiani; signed, March 18; filed, March 20; cost $2,963.

Seventh near Henry, Oakland. Alterations and additions; owner, Mrs. M. Walsh; architect, E. Childs; contractor, J. Irwin; signed, Feb. 15; filed, March 15; cost $1,653.50.

Seventh Ave. and 22d street, Oakland. Two-story frame; owner, Mrs. W. B. Smith; architects, Percy & Hamilton; contractor, C. L. Lombard; signed, 18; filed, March 21; cost $2,000.

S end P's Court near R'd Ave. Five-room cottage; owner, C. T. Hoffmann contractors, Marcuse & Remmel; signed, Feb. 10; filed, March 13; cost $1,500.

Taylor and Sixth. Three cottages; owner, J. E. Seigfriend; contractors, Marcuse & Remmel; signed, March 23; filed, March 25; cost $3,615.

Twenty-seventh near 19th Ave., Oakland. One-story frame; owner, H. H. Beach; contractor, A. W. Pattiani; signed, March 22; filed, March 24; cost $2,459.

Thirty-fifth near Grove, Oakland. Two-story frame; owner, K. McDonald; architect, J. J. Clark; contractor, J. R. Robinson; signed, March 14; filed, March 20; cost $2,195.

Twenty-sixth near 14th, Brooklyn. To build; owner, S. Bonsfield; contractor, T. C. Bignami; signed, Feb. 11, filed, March 13; cost $1,552.

Verdi near Railroad Ave. Five-room cottage; owner, F. E. Baker; contractors, Marcuse & Remmel; signed, March 6; filed, March 25; cost $2,325.

Weber near Central Ave. One-story cottage; owner, W. T. Chipman; architect, Wm. Leviston; contractor, R. Christenson; signed, March 21; filed, March 22; cost $2,700.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL, U. S. A

VOLUME XIV. MAY 20th, 1893. NUMBER 5.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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SUBSCRIPTION TO THE JOURNAL, - $3.00 PER YEAR IN ADVANCE.

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1 Column	12 50	35 00	65 00	125 00
¼ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

ESTABLISHED 1879. - - INCORPORATED 1889
NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

A National Gallery of History and Art is a matter of importance to every citizen of America and more especially to students of architecture and art. On Saturday evening the 6th inst, the San Francisco Chapter of the American Institute of Architects, gave a reception in the parlors of the Palace Hotel to Mr. Franklin W. Smith, a retired Boston merchant, who on account of an inherent predilection for architecture, has by constant study and oft repeated visits to European countries familiarized himself with the conditions of the arts and their *needs*, has conceived the magnificent project of a National Museum of History and Art. He proposes to establish at Washington, D. C., a vast series of courts and corridors constructed on the side of Observatory Hill, arranged in historical sequence to contain collections, replicas and original examples of architecture, painting and sculpture, each in its appropriate invironment so that each art and industry may be traced from the beginning to the present day.

These collections and examples to be illustrated by the most notable specimens of art placed in their proper connection and explained in that connection by lecturers who are to be appointed by the various universities, and who shall be selected in accordance with a carefully formulated programme for the benefit of visitors.

This is not a substitution, but a preparation for travel by those who can afford that greater luxury. In a word the proposition embraces a rearranged and improved South Kensington on a vastly enlarged scale.

THE use of cast iron soil and waste pipes for buildings has brought forward the question of the merits of the cast iron pipe with leaded and packed joinings in comparison with the wrought iron pipe with screw joints. It has been contended that cast iron pipes were not sufficiently flexible to prevent breakage by the vibratory motion by wind or other causes.

The article on another page, by J. B. Crockett, descriptive of an experience with a 24-inch cast iron gas main, shows that cast iron pipes where joined with lead packing may be moved and its direction changed to a considerable extent without breaking. The general conditions and results are of especial interest to architects and we invite their attention to the subject.

OUR article in last month's issue of this Journal on "Wiring of Buildings for Electric Lights," was written by an expert in that line and will well repay a careful reading and study of the subject. We cannot ignore the fact that electricity is destined, before many months, to be the coming light; therefore, buildings in course of erection, or in contemplation should be arranged for the most effective work in that line the present state of knowledge will warrant.

SANITARY SCIENCE.

To the Editor of the California Architect:

HAVING occasion to be in Oakland the other day taking in the many improvements and otherwise now going on in that thriving burg, I, being interested in things Architectural, looked over most of the plans of the new school-buildings about to be started there, and was grieved to see that those having the say in the matter have turned back from the ideas most progressive in sanitary science—and have attempted to apply rules appropriate for the Eastern States to buildings here on the Pacific Slope. In, I believe all of these buildings, we find the basement cumbered up with latrines and urinals. The basement, which above all should be kept sweet and clean. The latest and best method, when they have to be placed in the building, is to place all these necessary nuisances on the top of the building so that evil gases may disseminate themselves in the upper atmosphere without having to pass through the stratas of breathable air.

What excuse have we then for men in these latter days who with ample yards and grounds around their buildings persist in placing the latrines in the basement.

This comes in great part from the habit of Californians of having no faith in themselves, but putting their trust in eastern teachers, forgetting that they of all are the worst possible guide for us western people. In the east with their frost and snow they are *compelled* to put their conveniences where they may be kept warm and where their water pipes may not be broken with frost and so that their children may not endanger their noses and ears by having to go out into the death-dealing air. But the conditions here are totally different and generally the rule ought to be to do exactly the opposite to what they do in the east, and you will be more often right than wrong.

In this climate the latrines and urinals of a public building such as a school house should by all odds be kept entirely separate from the occupied building. A covered walk there should be for rainy weather and the edifices devoted to the purpose under consideration ought to be made as architectural as can be. I believe it is, and if not ought to be, a law of Ethics that it is not necessary to emphasize a disagreeable thing for the sake of absolute truth, and there need not be anything about these separate buildings to indicate their use, as all the occupants of the building can be made acquainted with that without it being advertised on the building itself.

Such being the case I cannot conceive of one good reason why these conveniences should be put in the basement especially when the fresh air furnaces are there too, and if there is I would very much like to have it given; and it seems to me that a little more consideration on the part of those having authority might lead them to undo what they have done and start on a more scientific and humanitarian basis.

STROLLER.

AN EXPERIENCE WITH A 24-INCH GAS MAIN.

BY J. B. CROCKETT, MEM. TECH. SOC.

[Read March 8, 1893.]

USUALLY, large engineering operations, such as any class of construction work, are attended with a certain amount of pleasurable anticipation, as the plans are being perfected, and a degree of pardonable pride as the final results are contemplated; but once in a while we are confronted with engineering emergencies that require more skill and watchfulness for successful handling, yet are totally devoid of any of these compensations. This paper deals with one of the last.

What is now known as the Potrero Station of the San Francisco Gas Light Company, was built from 1869 to 1871. It is situated on the Bay Shore, and is bounded by Georgia, Humboldt, and Sierra Streets on the land sides.

The situation of the plant is favorable, with one exception, that the extreme southern part of the City is isolated from the large gas-consuming districts, by water-ways and marshes, extending westward far into the city. To provide an outlet for the gas made at these works, and avoid crossing Channel Creek, or the mud flats which mark the former boundaries of old Mission Bay, it became necessary to lay a twenty-four-inch cast iron main from the works to a point crossing Kentucky street at Solano street, thence over the high hills to the west to Mission street, and thence in a northerly direction down the hill to the marsh at Santa Clara avenue.

The pipe was laid beneath the surface of the marsh on Santa Clara avenue, from Missouri to De Haro streets, a distance of 1,424 feet, then in a northerly direction, 510 feet, to Center street. From Center street the large main enters the heart of the City through Ninth street, and is there connected with the ramification of pipes which supply the city with gas.

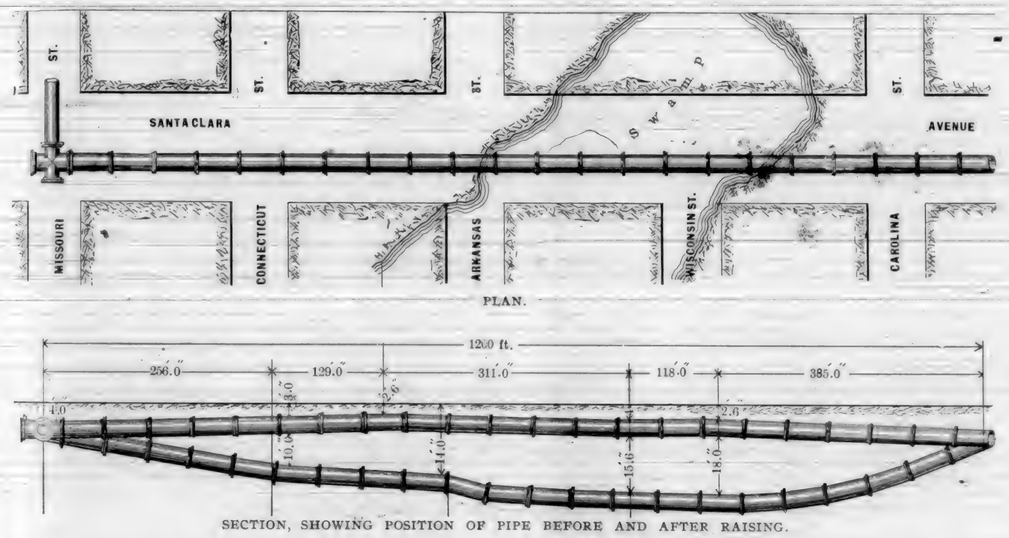
Where the pipe crosses the marsh on Santa Clara avenue, it was laid with about three feet cover of earth, and to all appearances on as good foundation as many other gas mains in the city. At this place the ground was below the official grade, from two feet at the highest, to eighteen feet at the lowest points, but at the time the pipe was laid, no other nor more desirable location was available, nor could the ultimate grading of these streets be anticipated. On a sunny day, with the pipe snugly laid in the marsh, Santa Clara avenue was like a peaceful valley, but after notice was served that the streets in the vicinity were to be graded, it proved to be a veritable "slough of despond." The first notice was the intention to grade Santa Clara avenue from Missouri to Carolina streets, and the intersecting streets. This covered four blocks or about twelve hundred feet of the twenty-four-inch main, and it became necessary to uncover and raise it before the filling was begun.

Before proceeding with a description of the raising of this large pipe, I want to lay stress upon the fact that this pipe

was the main artery of the city's gas supply, which was constantly under pressure, and through which over three-fourths of all the gas supplied by the San Francisco Gas Light Company was drawn. This was previous to the building of the new works at North Beach, and there was no substitute of any kind for it.

On December 16, 1890, work was commenced raising the pipe on Santa Clara avenue, between Mission and Carolina streets. It was necessary to raise the main without cutting or breaking it, and its success depended in a great measure on its flexibility due to lead joints. Had the joints been of cement, as they are almost uniformly made in Eastern cities, the rigidity of pipes and joints would, without doubt, have caused a break, or perhaps many serious breaks, but with about one hundred lead joints, 4¼ inches deep and half an inch thick, it became possible to raise the main without a fracture.

The first section to be raised, weighed about 260,000 pounds, and the method employed in raising it was as



follows: The pipe was first uncovered, the trench extending to the bottom of the main, and at intervals of 12 feet of its entire length, house mover's frames were placed on each side, one above another, to the desired height. A 12x12-inch timber was placed across these tiers of frames, passing over the pipe just behind each joint. Heavy chains were passed around the pipe, back of each heel, and what is known as a two-inch "holder screw," was hooked to each chain and passed through a hole in the timber above. On the upper surface of the timber was an iron washer, and on this rested the large nut on the thread of the holder screw.

After taking up the slack on each chain, a man was detailed with a wrench to each screw, and at a signal from the foreman each man took one turn of the wrench, and the pipe was gradually raised. As the main was raised from the marsh, a gang of men was employed in blocking under it, to prevent its falling in case of the accidental breaking of any part of the lifting machinery, until finally, when it was raised to the desired height, or about three feet below the official grade of the street, the pipe was temporarily supported by house frames. Seven hundred and eighty of these frames, each 2½ feet high, were used in raising and supporting the pipe.

The next step was the permanent support of the pipe previous to the filling of the street. This was done by constructing a series of wooden trestles, five feet wide at the top and twelve feet wide at the bottom. They were made of 8x8-inch uprights with a sill underneath, and a cap at the top of the same dimensions, and braced diagonally by pieces 2x10-inches on each side. After the completion of the trestles, all the other supports, including the house frames used for raising, were removed, and apparently nothing remained to be done but to fill in the street with solid filling. The pipe had been raised without accident of any kind, all the joints had been re-caulked where they had drawn, and the permanent supports were amply strong.

The filling of the street was commenced immediately after the pipe was raised. This was done by taking the rock from the hills east and south of the fill, and transporting it in cars to the dump. This work was done by a contractor for the city.

As fast as the street was filled to grade, a gang of men kept the twenty-four-inch pipe uncovered, and all went well until the fill reached the corner of Santa Clara avenue and Arkansas street, when, on Saturday April 11, 1891, at eleven o'clock P. M., the northerly side of the street began to slide toward the north, carrying the pipe and its supports with it. The main settled four feet and slid to the north three feet, and the wooden trestles were canted over in the direction of the slide.

A gang of men was immediately put to work shovelling the rock and earth away from the trestles to remove the pressure against them, and to distribute the material under the pipe. The following day a number of teams were employed to cart the material from the face of the dump, and to spread it along the line of the pipe, under and on each side of it. The object in thus carting the rock was to distribute evenly the load on the marsh, and gradually raise the whole street to the level of the pipe, instead of keeping up to the street grade, and presenting a steep face at the dump. Carting rock was continued until we had filled in solid under the pipe and had built a cartway about nine feet wide on each side of the pipe, level with the bottom of it. This required the handling of five thousand loads of stone. As the stone was hauled ahead and loaded on the marsh, the street continued to settle, carrying the pipe with it.

Four days after this first trouble, the crossing of Arkansas street commenced to settle very rapidly, and in fifteen minutes the street had gone down four feet. The large body of rock settling in the mud, raised the surface of the

marsh at a point about one hundred feet north of the street, about five feet high, and opened a crevice a foot wide. This was a natural consequence of the displacement of mud by the heavy fill of stone, but why over half of the filled street should slide bodily toward the north, at the same time, and where and when it would bring up were perplexing questions? To ascertain the exact nature of the underlying strata of the marsh, and solve at least one of these problems, we caused soundings to be made in lines ninety-six feet long, extending from south to north, at right-angles to the pipe, by driving a half-inch iron bar into the ground. The crust of the marsh was found to be fairly firm to a depth of three feet, consisting of a sort of marl.

At the northerly side of the street, after passing through the crust, the bar sank into nineteen feet of soft mud, and then reached hard bottom. At the middle of the street the bar went down through seven feet of the same mud, while on the south side there were but two feet and six inches of the mud under the crust of the marsh. The stratum underlying this mud was an extremely hard clay.

These soundings explained to my satisfaction the cause of the body of rock sliding towards the north. The surface of the marsh was nearly level, but the thick body of soft alluvial mud was resting on a subterranean side hill of hard clay, sloping toward the north with a trend of fourteen degrees, and as the rock fill sank into the mud it slid, mud and all, down the slope of the hard bottom.

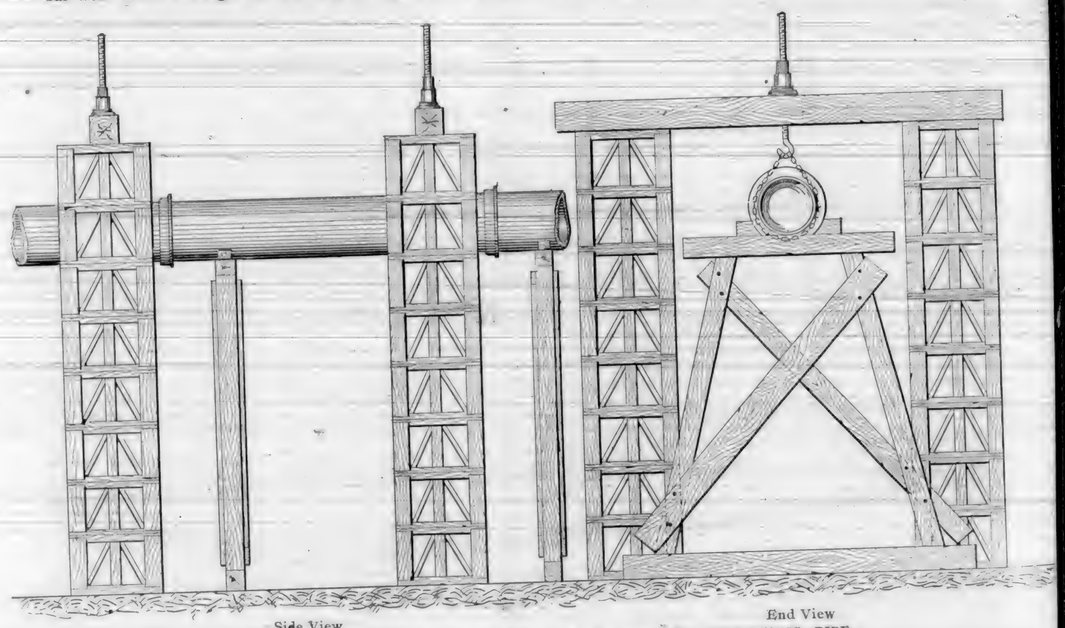
The soundings also explained the sudden and spasmodic settling of the fill. The three feet of firm crust over the marsh offered a resistance to the load of rock piled upon it, until the load was sufficient to overcome the resistance, when the crust broke, letting the entire fill settle from four to five feet at a time.

After the second settling of the pipe it was necessary to resort again to the house frames for raising it, as the wooden trestles had sunk into the marsh and were almost useless. After raising the pipe with screws to the proper height, jack screws were used for forcing it laterally towards the south, back into proper line. By continuous wedging under the pipe, using in all about ten car loads of wooden wedges, we arranged to keep the pipe in its place, until May 1st when another settlement occurred, opening long fissures in the fill, and raising the surface of the marsh to the north about nine feet, and at the same time opening several long cracks nearly two feet wide. This was the most trying period of the whole undertaking, and as a safeguard I laid a line of twenty-inch pipe on the surface of the marsh, south of Santa Clara avenue, and cut the twenty-four-inch pipe between Missouri and Arkansas streets, and at Carolina street, and put in T's twenty-four by twenty.

This was done so that in the event of the construction of the twenty-four-inch main, we could, by making short connections with the twenty-inch main, provide a way to deliver gas to the city temporarily. Fortunately, however, this new line was never used, but its presence was a source of relief.

The last serious settlement occurred on May 15, 1891, when 12x12-inch timbers, thirty feet long, were placed under each length of pipe, back of the joints, and the end of the timber towards the north was blocked up about two feet higher than the south end. With this precaution we were enabled to keep the pipe wedged up in place, although it was a constant source of worry and annoyance, until the rock fill had found a bottom on the hard clay and the street was brought to grade. At the crossing of Arkansas street, which was the worst part of the marsh, the main was raised at the beginning sixteen feet, and the sum of all the settlement at that point, was fourteen feet, that is, the entire fill settled into the marsh a distance of fourteen feet, so that it was necessary to raise the pipe in all, thirty feet, to maintain it at the sixteen-foot level.

The contractor continued filling in, until July 31, 1891, and the average amount of material dumped each day, from May 1st to July 31st, was twenty-three train loads of nine cars each, or about two hundred and seven cubic yards per day. As the contractor completed filling the street to grade, the pipe was kept uncovered, and a 12"x12" timber was placed across each length of pipe, resting on blocking and wedges, chains were passed around the pipe and holder screws were used for sustaining it. For months it was



Side View End View

STRUCTURE SHOWING FIRST MANNER OF LIFTING AND SUPPORTING PIPE.

necessary to keep careful watch of the pipe, and men patrolled its entire length day and night, driving wedges and taking up the slack on the chains, wherever needed. In fact, during all this time Santa Clara avenue became one of the company's telephone stations, and for a while was the one most frequently used.

Finally, in November, 1891, the street had stopped settling, the timbers and screws were removed, and after carefully tamping the earth under the pipe, the trench was filled. Early in October, 1891, notice was received of the intention to grade Santa Clara avenue west from Carolina street, and as the twenty-four-inch main extended west as far as De Haro street, (304 feet) it was necessary to raise it out of the marsh. At De Haro street the pipe turns at a right-angle, and extends to Centre street, (510 feet), and it was necessary to raise the entire 814 feet an average of about eight feet in height.

A pile structure was built to raise and sustain the pipe. Sixteen-inch piles, fifty feet long, were driven through the marsh into the hard clay bottom. These piles were spaced twelve feet apart, and were five feet from the pipe on each side. Ten feet outside of each standard pile a brace pile was driven and sawed off two feet from the ground. On each side of the standard piles, extending down to the brace piles, were diagonal braces 4"x12". Caps 12"x12" were placed over the main, resting on the top of the standard piles, and a screw passed through a hole in the middle of each cap. The pipe was raised as before described.

When the pipe reached the proper grade, waling pieces 4"x12" were bolted on the inside face of the standard piles, and across these were placed two planks 4"x12", on edge, resting on the waling pieces and bolted through the piles. The pipe rested on these 4"x12" cross pieces, and was prevented from rolling by pieces of 4"x 4". The entire wooden structure was securely bolted together.

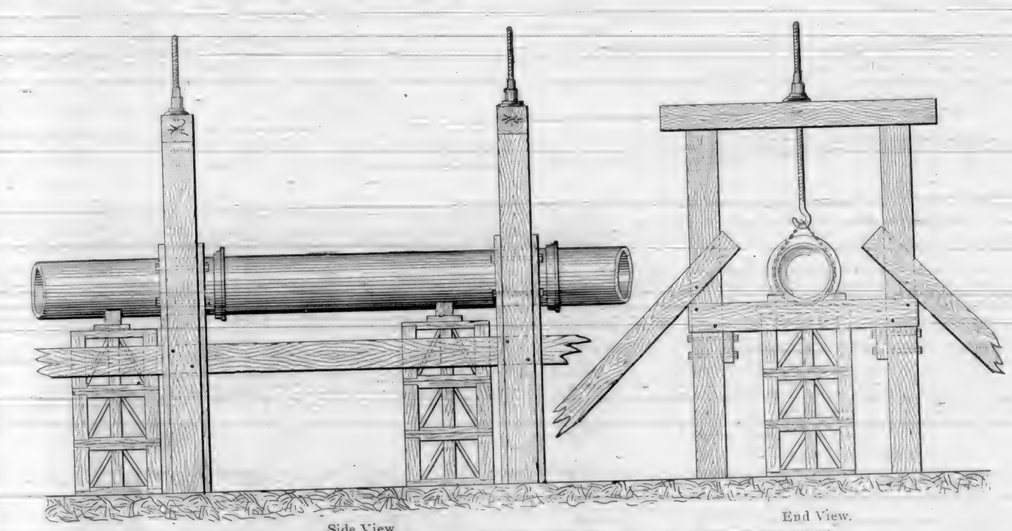
The standard piles were for raising and permanently supporting the pipe, and the brace piles and the diagonal braces were to withstand any side thrust caused by sliding of the marsh.

One of the difficult features of this piece of work was the bracing of the right-angle in the main, at the corner of Santa Clara avenue and De Haro streets. This was accomplished by driving ten piles around the T at the corner, and by a system of diagonal braces. To prevent the pipe from drawing apart, iron bands were bolted around it at the corner, and these bands connected on each side by rods with turn-buckles.

After the pipe was raised and supported, the 12"x12" caps were removed and the tops of the standard piles were sawed off below the grade of the street. As the street was filled, the pile structure stood the strain of the street settling, but there was little or no lateral thrust, as the clay under the marsh was nearly level at this point, and the fill did not slide.

This piece of work was not subject to any of the unfavorable conditions that so seriously affected the first part of the work. In fact, the method employed to raise the first section would have been successful in raising the second section; but it is doubtful if any wooden structure would have withstood successfully the various forces exerted to overthrow it, at the crossing of Santa Clara avenue and Arkansas street.

[Taken by permission from the transactions of the Technical Society of the Pacific Coast.]



Side View. End View.

STRUCTURE SHOWING SECOND MANNER OF LIFTING AND SUPPORTING PIPE.

TO ARCHITECTS.

INVITATION to make plans is extended to Architects generally, for a Stone and Brick Building to be erected at De Coto, 26 miles from San Francisco, to be used as an Orphanage for the Masonic Widows' and Orphans' Home.

The Building to have a capacity for the accommodation of one hundred orphans and twenty-five widows.

Cost not to exceed $60,000.

Plans to be submitted to us by July 13, 1893, at 2 P. M., Masonic Temple, San Francisco.

The Board of Trustees reserve the right to reject any or all plans.

For further particulars apply to

G. L. Spear, Chairman,
Jacob Voorsanger,
Albert Hanson.

Spudkins, who has been refused by eleven girls, says he thinks of becoming a photographer, because he is so successful in producing negatives.—*Philadelphia Record.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE California Home at Glen Ellen, Sonoma County, for the care and training of feeble minded children, is by Messrs. Copeland & Peirce, architects, of this city.

THE Perspective sketch of a residence for Geo. R. Sanderson on Jackson street is by architect C. I. Havens.

THE Japanese M. E. Church to be built on Pine street in this city, is by Maxwell G. Bugbee, architect.

CONCRETE AND TWISTED IRON.

AS USED AT THE STANFORD JR. UNIVERSITY, PALO ALTO, CALIFORNIA.

THE distinctive features of the Stanford Jr. University relate not alone to the course and methods of training, but as well to the character of the buildings which have been erected. The style of architecture is modeled after the low, tile-roofed, abode structures of the mission period. The buildings first erected were of hewn stone, massive, costly and enduring. The later edifices are upon the same general plan, but are also unique and peculiar in mode of construction. They are monolithic, being moulded, walls, floors and roofs of artificial stone or concrete, with the addition of iron rods as an element of supporting strength for the floors.

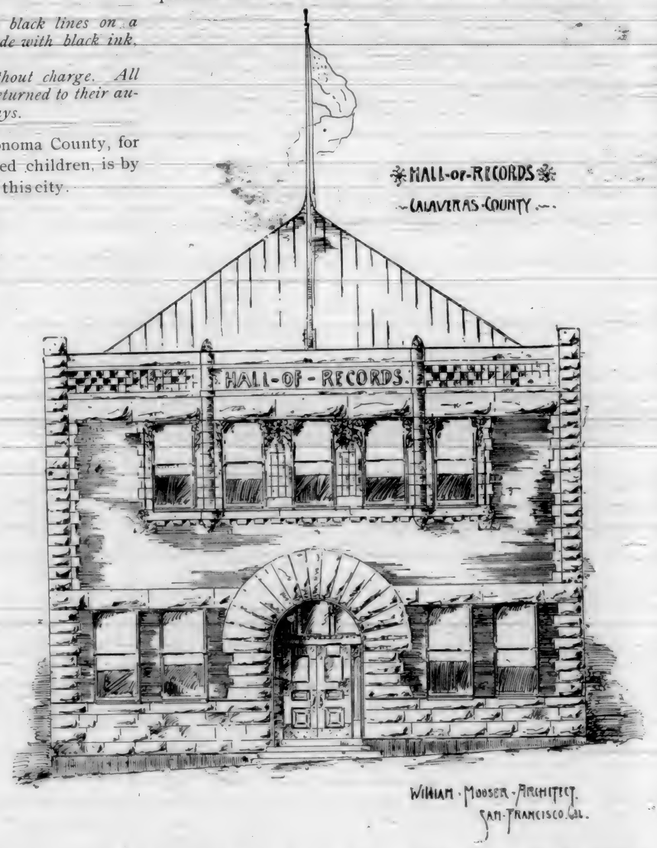
The real problem of successful architecture clearely lies not so much in a choice of material as the proper use of materials common to all structures. Essentially the same elements enter into the construction of all important edifices. The great difference is in the way these are handled; whether the articles in question are used in their natural condition, or shaped and fitted by art, modified by preparation or manufacture, to meet the taste and means of the designer.

Buildings of stone are conceded to be most enduring, and to best resist climatic changes, but they have been the most costly, where the granite or marble has to be transported from the quarry and dressed by hand for use in the walls. The same materials, broken in fragments, and again united by machinery with cement, and utilized in the form of monolithic (single stone) structures of concrete, prove cheaper, and, as use has demonstrated, more enduring, and resist heat better than natural stone.

Such structures are not new, but have heretofore been too massive and imposing. There was needed some device by which floors of stone need not be of excessive weight. In the construction of the new Museum Building and Girls' Dormitory at Palo Alto, this final problem seems to have been solved by a method first introduced upon the bay of San Francisco, which in effect utilizes the principle of the suspension bridge in every separate floor beam.

The floors, though formed of single slabs of artificial stone, are light and graceful in design, though capable of supporting great weight. This requisite strength has been secured by means of bars of twisted iron imbedded within the mass, whereby the tensile strength of the iron—firmly held in place by the surrounding concrete—supports the floor.

The common iron floor beam can be depended upon to the safe limit only of its lateral or transverse strength. Were it possible to use the same weight of iron as a suspension rod,



the safe limit would be the cohesive or tensile strength, which is about three times as great. In other words, a floor can be sustained by a suspension rod one-third the weight of the lateral beam. To break a beam by overloading, it is necessary to separate the particles forming the lower chord of the beam, by tension, or to disintegrate the upper member by compression. Incorporating the twisted bar in the lower portion of the beam, it acts as a suspension rod, and being firmly held at every point, the weight is distributed over the length of the bar. The iron thus imbedded is also safe from corrosion and protected against fire, enduring with the concrete, which hardens as the years pass.

There is yet another feature of large interest here. It has been demonstrated that bars of iron, twisted while cold, and left awhile before use, have their cohesive strength increased fifty per cent. The one-third weight is thus again reduced, showing that less than one-fourth the weight of iron affords equivalent strength.

May not this departure at least indicate somewhat the character of the ideal building of the future?

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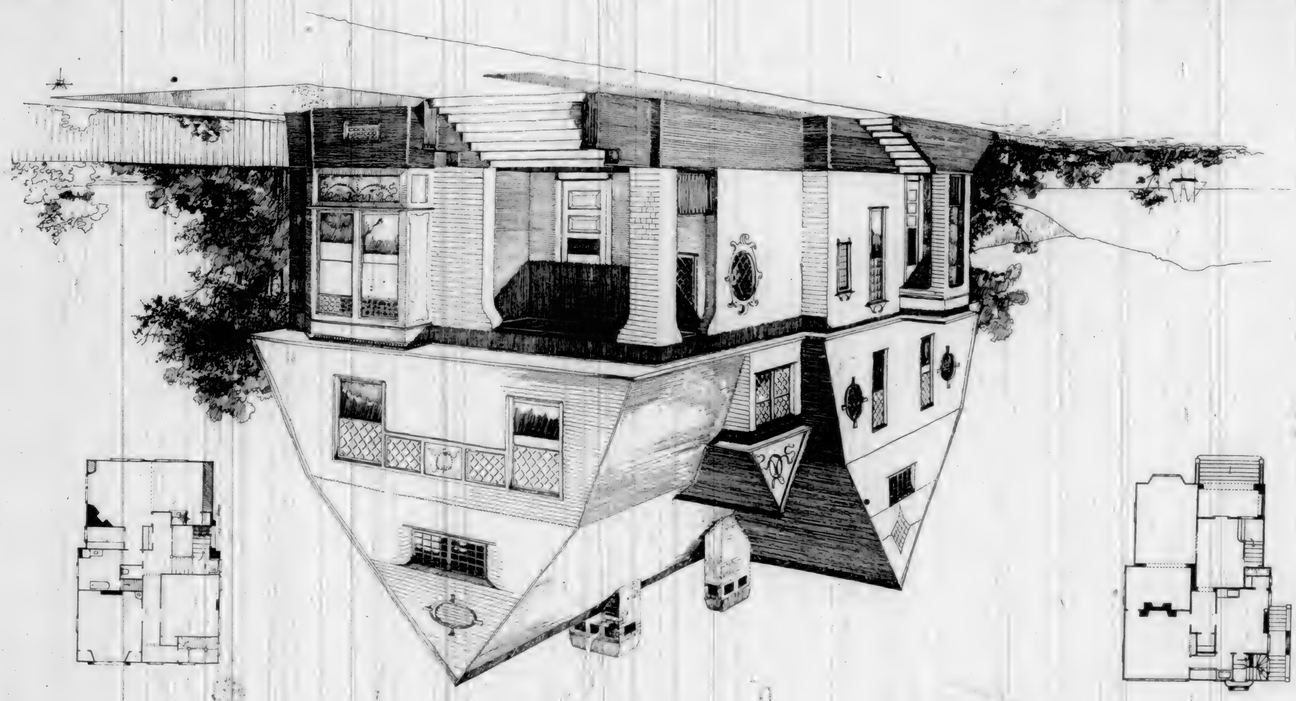
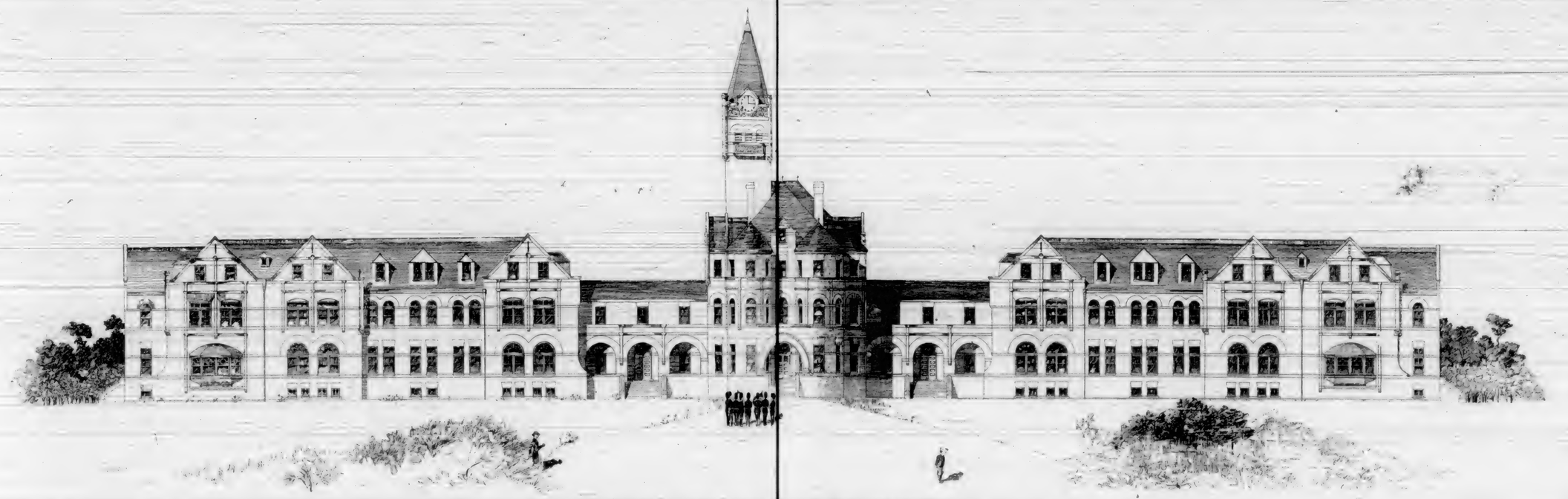
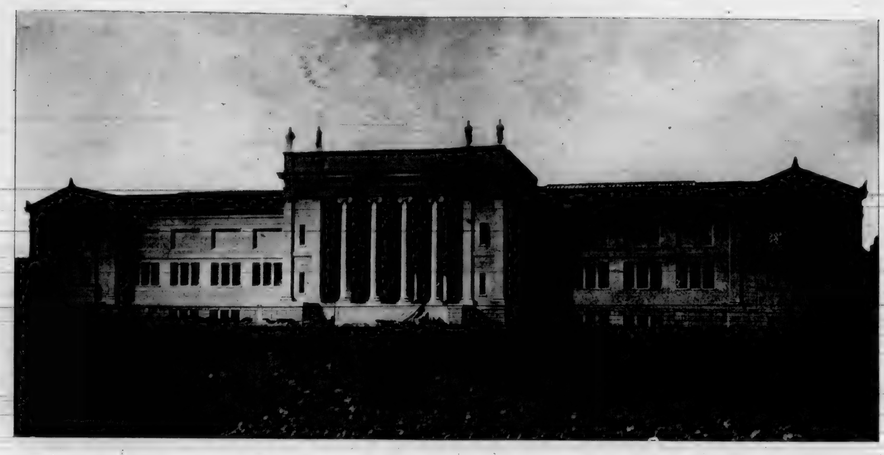


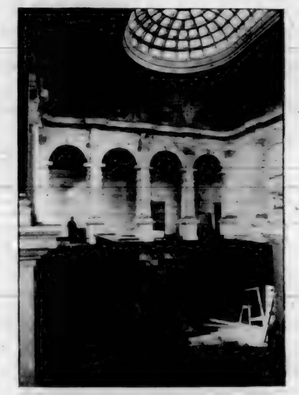
PERSPECTIVE :: SKETCH :
C. J. HAVENS, ARCHT. :
DWELLING FOR CAPT. SAMPSON :
MACKSAN : BET MAPLE & CHERRY STS. S. F.



CALIFORNIA HOME FOR THE CARE AND TRAINING OF FEEBLE MINDED CHILDREN
COPELAND AND PEIRCE ARCHITECTS 126 KEARNY ST SF



MUSEUM BUILDING, LELAND STANFORD JR. UNIVERSITY, PALO ALTO, CAL., PERCY & HAMILTON, ARCHITECTS.



INTERIOR OF DOME, MUSEUM.

INTERIOR OF WING, MUSEUM.

GIRLS' DORMITORY, PALO ALTO, PERCY & HAMILTON, ARCHITECTS.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
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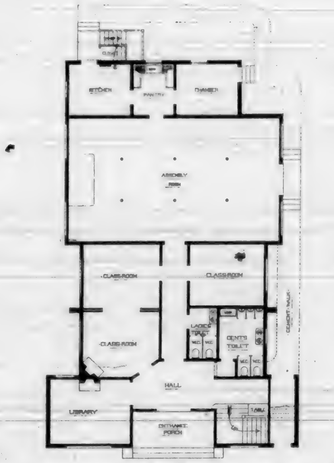
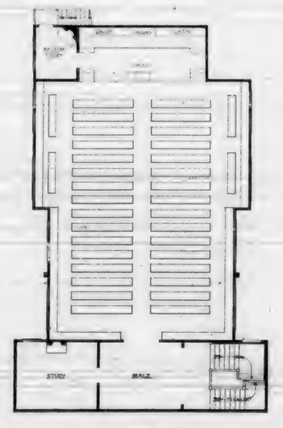
JAPANESE. M. E. CHURCH.
SAN FRANCISCO. CAL.



FIRST FLOOR



SECOND FLOOR

EACH MAN HAS A SHARE.

WE clip the following from the *Examiner*. N. O. Nelson of St. Louis is President and General Manager of the N. O. Nelson Manufacturing Company of St. Louis, Mo., and Edwardville, Ill. Mr. Nelson became imbued with the idea that the settlement of the differences between employer and employee lay in the direction of co-operation. He arranged to have his theories carried into practice.

"At our works near Edwardville, Ill.," he said, "there are about 450 men employed, and at the end of every quarter each one of them, from the manager down to the smallest apprentice, gets his share of the profits. This averages eight per cent on the wages per annum ever since we put the system into force.

"Lilliane is in every respect a model village. We bought 125 acres of ground, erected substantial buildings for our factories and laid off the town, not with square blocks, but on the park idea, with winding roads and grassy lawns. In our village we have a co-operative store where the men and their families trade. They pay the current retail price for everything purchased, but at the end of every three months the books are balanced and the profits thus shown are divided among the purchasers in proportion to the amounts they have paid in. These dividends amount to from twelve to fifteen per cent a year and are so many amounts saved to the men who work. Besides this we have a hall where school and church are held and a free kindergarten is maintained during several months of the year. We bave free baths, electric lights, modern water works and a circulating library. During the winter there is a course of lectures delivered for the men, and some of the best lecturers of the country are engaged. Last winter we had Edward Everett Hale and men of his class.

"To employees who desire homes we sell them one-third of an acre of ground at two dollars a front foot and erect a cottage for them at cost. This is all paid for in installments, the sum not amounting to more each month than the rent of a cottage in a city.

"Ours is essentially a corporation colony, and the only one of its kind this side of the Atlantic. It makes, I think, a superior class of workingmen, and that it encourages men to apply themselves was shown when we reduced the working hours from ten to nine hours without a reduction of wages and without any decrease in the amount of material turned out."

ALLEGORICAL STATUE FOR THE CALIFORNIA WORLD'S FAIR BUILDING, RUPERT SCHMID, SCULPTOR.

MUNICIPAL LODGING-HOUSES.

THE sanitary section of the New York Academy of Medicine at its meeting, Feb. 1st, discussed the subject of municipal lodging-houses. Since June, 1886, a law has existed authorizing the Commissioners of Charities and Correction to establish such shelters, where a night's lodging and a breakfast might be had, in exchange for work. Any lodger refusing the work might be committed for vagrancy. Dr. Henry E. Crompton made a telling report on the police-station lodging-rooms, usually in basements, where seventy or eighty men may be herded together, in a reeking atmosphere. Mr. Jacob A. Riis gave a chapter from his own experience as a poor immigrant boy. He said:

"I speak of what I know when I speak against these places. Let us have the clean and honest free municipal lodging-houses. Experience in other cities has shown that when such places are established the tramps leave the city. Boston has them, and now we have Boston's tramps. Philadelphia has them, and we have Philadelphia's tramps. The tramp loves the free police lodging-house, but the municipal lodging-house, where he must work for his lodging and breakfast, that he loathes and detests."

Decisive action was determined upon; if necessary, through the grand jury, to compel the commissioners to act, in view of the probability of a return of the cholera next summer.

In this connection it may be well to note that the secretary of the Charity Organization Society of London has recently written a letter to the *London Times*, protesting that the Salvation Army Shelters are doing more harm than good; they underbid the cheap public lodging-houses, and are without sanitary or police inspection. "The shelters are not at all, or in a very minute degree, elevating or regenerating their inmates. They are deceiving men into coming to London with a hope of obtaining employment, which must in most instances be frustrated. They are not preventing pauperism. They are for very many men what it was always anticipated that they must be, portals to the Poor Law. All the misdirected and superficial charitable sentiment that has gone to establish these shelters has, after all, affected nothing, unless it be this—that it has proved once more that philanthropy without discretion is not an ennobling but a degrading force in society."—*The Churchman*.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
GEO. H. SANDERS, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. CHARLES D. MARX, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on the evening of the 13th inst.

Among the members present was the Honorable John M. Curtis. The subject of legislation on matters of interest and importance to the architectural and building interests, was discussed, and the effect of past and probable results of prospective laws considered from various points of view.

The committee charged with tendering a reception to Mr. Franklin W. Smith, reported that they had successfully fulfilled their duty, and a pleasant evening in the parlor of the Palace Hotel had resulted. Mr. Smith entertaining and instructing his auditors on the subject of the proposed National Museum of History and Art.

COUNTRY RESIDENCE.

A practical hand book relating to the construction and management of steam and power pumping machines by William M. Barr, member American Mechanical Engineers. With upwards of two hundred and sixty engravings, covering every essential detail in pump construction. Philadelphia, I. B. Lippincott Company, 1893.

This volume of nearly 450 pages, printed on excellent paper and illustrated with many drawings. Cannot fail to be of great use to any one contemplating the erection of works for pumping purposes, as it appears to cover the ground completely and the description of the various pumps, with the illustrations make every device understood at a glance. A good index adds greatly to the value of any book, and in this respect nothing more could be desired. Price $5.00.

LOGARITHMIC TABLES by Prof. George William Jones of Cornell University. Fourth edition.

We have here in a convenient form, printed on good paper, with clear type, a book that must commend itself to every engineer, while the student in mathematics will find in the tables a very clear and comprehensive review that cannot fail to interest as well as instruct.

THE FORTNIGHTLY REVIEW—This always welcome magazine makes its appearance for April full of interesting reading, among others, a review of the Poems of Louise Chandler Moulton will particularly please American readers, as it is seldom an English writer will rank our own authors as favorably as this review does, when he compares "The House of Death," as not unworthy of being ranked with the work of Mrs. Browning and Miss Rossetti.

The concluding article upon the "Alleged Dangers of the Manufacture of White Lead" will be sure to interest architects.

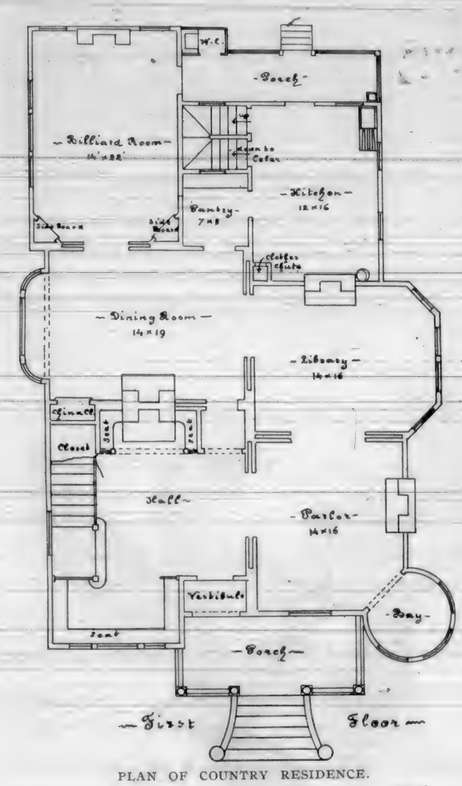
LIPPINCOTT'S Magazine for May contains a complete novel by Rosa Nouchette Carey called "Mrs. Romney". Mrs. Gertrude Atherton supplies a short but appreciative account of the American sculptress Miss Beveridge, while Prof. Haupt discourses on "Colonel Pope and Good Roads".

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., May 9th, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 13th day of June, 1893, and opened immediately thereafter, for all the labor and materials required for Wharf, Buildings, etc., at the U. S. Quarantine Station, Diamond Point near Port Townsend, in accordance with drawings and specification, copies of which may be had at this office or at the office of the Superintendent at Port Townsend, Washington.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Wharf, Buildings, etc., at the U. S. Quarantine Station, Diamond Point near Port Townsend, Washington," and addressed to

Jeremiah O'Rourke,
Supervising Architect.



PLAN OF COUNTRY RESIDENCE.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

STIPULATION AGAINST MECHANICS' LEIN.—A provision in a building contract that the owner will not be in any manner accountable for any loss or damage that may happen to the work, or for any of the materials, and that the contractor shall alone be responsible for all accidents, injuries, damages, or hurt to any person or property, does not prevent the contractor or sub-contractor from filing a lien.

Nice v. Waller, Supreme Court of Penn. 25 At. Rep. 1065, 67.

MECHANICS' LIENS BY MATERIAL MEN.—Where the statute provides that where the building contract is void because it is not recorded, the materials furnished shall be deemed to have been furnished at the personal instance of the owner, and the material man shall have a lien for the value thereof, and materials used in the construction of a flume were furnished before the contract for the construction thereof was recorded, the material man is entitled to a lien against the flume for the value thereof.

Giant Powder Co. v. San Diego Flume Co. Supreme Court of Cal., Feb. 7, 1893, 32 Pac. Rep. 172, 86.

SUFFICIENCY OF LIEN ACCOUNT.—A lien account is sufficiently itemized which describes the windows, sash and all classes of materials sold, with great particularity, except as to price, which appears at the foot of the account, showing the whole amount due at the price agreed upon, since the account contains sufficient information to enable anyone to ascertain whether the price of the materials was reasonable, and whether the materials entered into the construction of the building.

Bardwell v. Anderson Supreme Court of Montana, Feb. 6, 1893, 32 Pac. Rep. 285, 63.

STATUTORY MEANING OF "TRIVIAL IMPERFECTION".—Under the statute which provides that every person, save the original contractor, claiming a lien, must, within thirty days after the "completion" of the building, file his lien, but that any "trivial imperfection" in the construction shall not be deemed such a lack of completion as to prevent the filing of the lien, a lien filed before the doors of a house were hung, the plumbing finished, the closets and bathroom completed, ventilators placed, and mouldings put in, is premature, and cannot be enforced, as such things are not "trivial imperfections" but are necessary to be done to effect a completion of the building.

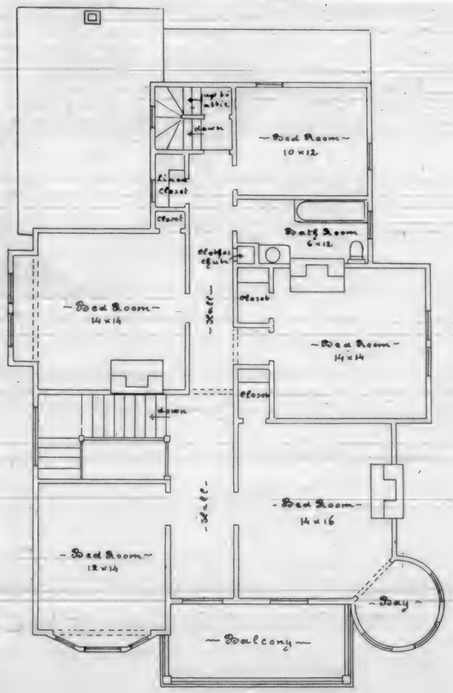
Schallert-Gauahl Lumber Co. v. Sheldon, Supreme Court of Cal. Feb. 9, 1893. 32 Pac. Rep. 235, 109.

MATERIAL FOR ROW OF BUILDINGS IS AS IF FOR ONE BUILDING.—Where material is supplied continuously under one entire contract, to be used in the erection of several buildings on contiguous lots owned by the person to whom it is supplied, and the whole supply is made, the material man has the right to a lien on all the buildings, and need not show how much material was used in each building. The contract in such case is one and relates to the row as an entirety, and not to the particular buildings separately, and the whole row is a building, within the meaning of the law, from being united by the parties in one contract as one general piece of work.

Maryland Brick Co. v. Spilman, Court of Appeals of Maryland, 25 At. Rep. 297, 132.

INSUFFICIENT DESCRIPTION OF PROPERTY SUBJECTED TO LIEN.—Under the statute providing that a notice of a material man's lien shall give a correct description of the property sought to be charged, but that any error or mistake in the description shall not affect the validity of the lien, provided that the property may be identified by the description, a notice of a lien particularly describing lot No. 14, of a certain survey as the lot to be charged, is not sufficient to create a lien on lot No. 13 on the same survey. Nor will the fact that the notice referred to the lot as the lot on which there were certain frame buildings and outhouses, constitute a sufficient identification as such description might apply to any lot on which such buildings stood, even though it appears that there were no buildings on lot No 14, while there were such on No. 13. Where, in an action on an account against the contractor of a building, and to foreclose a material man's lien, against the owner, the complaint states a cause of action on the account a judgment that the claimant take nothing because no cause of action was stated against the owner, will be so modified as to include in its operation only the owner sued.

Goodrich Lumber Co. v. Davie. Supreme Court of Mont. Feb. 6, 1893, 32 Pac. Rep. 282, 213.



PLAN OF COUNTRY RESIDENCE.

BUSINESS MOSAICS.

Cienega Lime in quantities to suit the trade, E. L. Snell, sole agent, 12 Hayes street, also lath, hair, nails, plaster, cement, fire-brick and fire-clay.

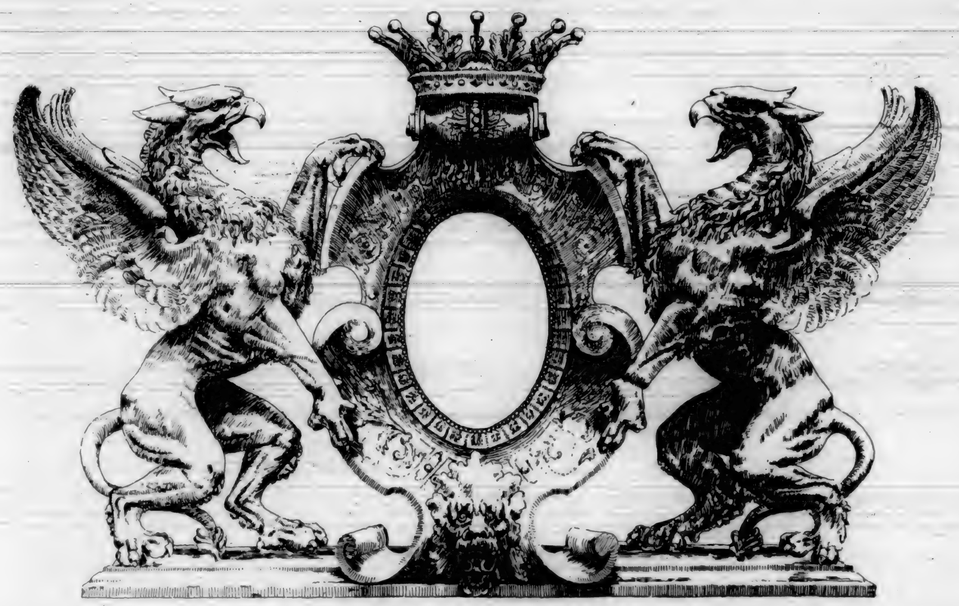
The perpendicularity of a tall monument is affected by the rays of the sun. It leans away from the luminary, owing to the expansion of the side on which the rays fall.

Steam, Hot water and Hot Air Heaters of every description can be had at Geo. H. Tay & Cos'., 610 to 620 Battery street. They guarantee perfect heating combined with economy of fuel. Send for one of their new illustrated catalogues.

The Pullman Sash Balance Company have reason to congratulate themselves upon the success of their Sash Balance in San Francisco when they can announce the business has doubled in this city during the last year, and that the constant demand requires their works to be run night and day. The Crocker residence is fitted with this admirable contrivance and is giving perfect satisfaction.

The following firms in this city carry a good stock of these balances:—G. F. Eberhard & Co., 23 Davis street, as well as Miller, Sloss & Scott, also Dunham, Carrigan & Hayden.

The first wrought-iron pipe was made by Morris, Tasker & Co., Philadelphia, about the year 1841.



Swain - Del

If you have any old silver that needs plating take it to E. G. Denniston of 653 and 655 Mission street, where you will be sure of getting the best of work done and at moderate prices.

Four cent fare has been adopted by all street railways in Cleveland, Ohio, with two exceptions.

Paraffine Paint.—When such good authority as Chief Engineer Holmes endorses anything in this line people are safe who want to preserve their foundations in following such advice. The following from the *Daily Call* speaks for itself:

"Chief Engineer Holmes of the Board of Harbor Commissioners states that the piling at Tiburon prepared with paraffine paint about five years ago is still in a remarkable state of preservation. The method of coating mentioned will be recommended to the board."

Modern Architecture. VISITOR—What is that heavy, gloomy looking building over there? RESIDENT—That is a theatre and pleasure resort. Visitor—And what is the graceful, airy, gothic structure to the right? RESIDENT—That is the jail.—*Chicago News.*

The Hydraulic Press Brick Company of Vallejo, Cal., would respectfully call the attention of the building public to the fact that they are manufacturing a superior article of Press Brick, which they are selling at the same prices as mud brick. Architects and contractors are especially invited to call at the office of the company, 132 Market street, room 16, and examine the brick.

A Pennsylvania inventor has devised a pair of eyeglasses with a mirror mounted so as to reflect objects in the rear of the wearer, but offering no obstacle to direct forward vision through the lens.

The J. L. Mott Iron Works, in this issue on page V, show what they claim is an Indestructable Faucet. The following is an extract relating to same from Minutes of Proceedings of the Institute of Civil Engineers of Great Britain:

"Although modern water-fittings leave much to be desired, they are generally excellent as compared with those of the past; but the desire for cheapness in first cost is still the cause of much waste and subsequent expense. Testing and stamping by the Water Authorities when properly performed, is the only way known to the author of maintaining a sufficiently high standard. The interests of different trades make it practically impossible in large communities to confine the plumbers to the use of fittings of a single type, and, indeed, with one exception, no single type of domestic water-fittings can be said to be manifestly better than another. That exception is certainly a notable one. By the invention of Lord Kelvin there is one practicably imperishable water-tap, on a new but now well-proved principle, without fibrous or organic washer of any kind. These taps are extensively used, though they cannot be produced at the lowest prices; but where introduced, they entirely remove the constant nuisance and cost of leaking washers.

CITY BUILDING NEWS.

Alcazar Building. Adding a fifth story; owner, M. H. De Young; architect, Wm. Patton; contractor, Peter Crickton; signed, March 28; filed, March 30, cost $50,000.

Alabama. Alterations, etc.; owner, Andrea Ricoui; contractors, L. Cuneo & Co.; signed, April 11; filed, April 11; cost $2,450.

Arlington near Mateo. Cottage; owner, Mrs. E. Mengula; contractor, John L. McLachlin; signed, May 1; filed, May 2; cost $1,100.

Army near Sanchez. Hydraulic elevator; owner, S. A. Leslie; architect, S. Hatfield; contractor, J. A. Campbell; signed, March 16; filed, March 16; cost $1,875.

Augusta and Boutwell. Barn, shed and fence; owner, D. W. Ervin; contractor; H. J. Ervin, Jr.; signed, March 29; filed, March 23; cost $1,500.

Baker near Greenwich. Two-story frame; owner, Jos. Merani; architect, E. Depierre; contractor, Jos. Mazzali; signed, April 25; filed, April 28; cost $2,000.

Baker near Washington. To build; owner, J. A. Hosmer; contractor, Philip Rive; signed, April 10; filed, April 10; cost $2,925.

Boyce near Pt. Lobos Ave. To build; owners, Jas. J. and M. Denely; contractor, Wm. Plant; signed, May 3; filed, May 8; cost $1,375.

Broadway near Kearny. Excavations, concrete, brick and chimneys; owner, A. G. Delmonte; architect, E. Depierre; contractor, M. Buzzini; signed, April 1; filed, April 3; cost $1,015.

Broadway near Laguna. To build; owner, Jane C. Burnett; contractor, S. C. Buzzell, signed, April 1; filed, April 6; cost $3,000.

Broadway near Kearny. To build; owners, A. & G. Delmonte and G. Roscelli. architect, E. Depierre; signed, April 20; filed, April 25; cost $8,150.

Bryant near Langton. To build; owner, Emma Lolor; architect, Chas. Geddes; contractor, Todd Boone; signed, April 24; filed, May 2; cost $3,970.

Block near Western Addition. Grading; owner, N. T. Coulson; contractor, Geo. E. Bowers; cost five cents per cubic yard.

Bush and Pierce. Alterations; owner, Julius Van Vliet; contractor, A. J. Kellner; signed, April 28; filed, April 28; cost $1,515.

California and Powell. Two three-story buildings; owner, Frank L. Parker; architect, G. A. Boardwell; contractor, J. J. Boyle; signed, April 6; filed, April 7; cost $10,240.

California and Powell. Painting two three-story frames; owner, Frank L. Parker; architect, Geo. A. Boardwell; contractor, F. L. Poland; signed; April 20; filed, April 20; cost $1,000.

California and Powell. Two three-story buildings; owner, Frank L. Parker, architect, Geo. A. Boardwell; contractor, A. B. Bordwell; signed, April 10; filed, April 10; cost $1,630.

California and Taylor. Masonary and marble work; owner, C. P. Huntington; architect, J. D. Isaacs; contractors, Ruffino & Bianchi; signed, March 30; filed, March 30; cost $1,913.

California and Webb. Tearing down walls, etc.; owner, San Francisco Saving Union; architect, Wm. Curlett; contractor, Robert Mitchell; signed, April 7; filed, April 7; cost $39,750.

Carl near Stanyan. To build; owner, Thomas Lundy; architect, T. J. Welsh; contractor, James J. O'Brien; signed, March 28; filed, March 28; cost $14,900.

Castro near 18th. Two-story frame and stable; owner, H. F. Stolz; architect, H. Gellfuss; contractor, A. Lawson; signed, April 12; filed, April 12; cost $2,669.

Chestnut near Buchanan. Grading; owner, Eliza B. Buckler; contractor, Geo. E. Bowers; cost four cents per cubic foot.

Church near Ridley. A cottage; owner, E. F. Leonard; contractor, Jas. Campbell; signed, April 7; filed, April 7; cost $2,030.

Church near 27th. To build; owner, Wm Swalve; architects, Townsend & Wyneken; signed, April 26; filed, April 28; cost $1,300.

Clay near Cherry. To build; owner, Peter McHugh; architects, Shea & Shea; contractor, Allen McDonald; signed, April 29; filed, May 4; cost $2,100.

Clementina near 9th. Alterations, etc.; owner, John Regan; contractor, John Sandeen; signed, March 21; filed, April 1; cost $1,675.

Devisadero near Vallejo. Two-story and basement; owner, Laura A. Hoeber; architect, C. W. Kenitzer; contractors, Schutte & Krecker; signed, April 24; filed, April 26; cost $7,194.

Douglass near 18th. Two-story frame; owner, Christ Ruhland; contractor, Casper Zwierlein; signed, May 2; filed, May 3; cost $2,800.

Douglass near 22d. One-story and basement; owners, Chas. W. Dammes and wife; architect, Oliver Everett; contractor, D. H. Matheson; signed, April 28; filed, April 26; cost $1,650.

Ellis near Polk. Alterations; owner, Philip Hessler; architect, C. M. Rousseau; contractor, L. B. Schmid; signed, April 6; filed, April 6; cost $1,175.

Ellis near Mason. Grading, brick and stone; owner, Y. M. C. A.; architect, A. Page Brown; contractors, McGowan & Butler; signed, April 8; filed, April 8; cost $50,729.

Erie near Mission. Two-story frame; owner, Mary McAuliff; architect, C. J. Havens; contractor, C. E. Danshee; signed, April 5; filed, April 5; cost $2,800.

Florida near Santa Clara. Two-story frame; owner, Mrs. R. A. Ledgley; contractor, F. W. Kern; signed, April 11; filed, April 11; cost $2,570.

Fourteenth near Sanchez. Two two-story flats and three two-story frame buildings; owner, Henry Arty; architect, C. W. Kenitzer; contractor, Adam Miller; signed, April 24; filed, April 25; cost $4,427.

Fourteenth near Church. Two-story frame; owner, F. W. Kenerieber; architect, H. Gellfuss; contractor, A. Lawson; signed, April 26; filed, April 26; cost $3,700.

Franklin near Fell. Raising and removing three frame buildings; owner, Mrs. C. M. Berger; architect, Oliver Everett; contractor, J. J. O'Brien; signed, May 6; filed, May 6; cost $1,412.

Fulton near Lyon. Two-story frame; owner, Howard Morton; contractor, W. W. Rednell; signed, April 5; filed, April 5; cost $3,100.

Fulton near Scott. Alterations, etc.; owner, Otto Berman; architect, Edw. Burns; contractor, John McCann; signed, April 14; filed, April 17; cost $2,675.

Geary and Gough out to ocean. Laying pipes for salt water; owner, Olympic Salt Water Co.; architect, E. E. Millis; contractors, Williams, Belser & Co.; signed, March 30; filed, April 4; cost $16,032.

Golden Gate Avenue near Buchanan. Three-story frame; owner, Alex McKay; architect, R. H. White; contractor, J. B. McKenzie; signed, March 27; filed, April 1; cost $6,840.

Golden Gate Ave. near Fillmore. Two-story frame; owner, Cathe Wilton; architect, R. H. White; contractor, Thos. Rendell; signed, April 28; filed, April 29; cost $4,350.

Great Highway near B. Engine pit, concrete walls, engine foundation; owner, Olympic Salt Water Co.; architect, D. E. Mellius; contractors, Ramsome & Cushing; signed, May 4; filed, May 8; cost $10,300.

Green and Buchanan. Plastering for six houses; owner, E. A. Sanders; contractor, J. C. Connor; signed, May 2; filed, May 3; cost $1,626.

Green and Buchanan. Brick work; owner, E. A. Sanders; contractor, W. H. Williams; signed, April 6; filed, April 20; cost $1,200.

Haight near Devisadero. Three flats complete; owner, Louis Friedlander; architect, J. F. Kenna; contractors, Currie & Loomer; signed, March 30; filed, March 31; cost $4,597.

Harrison near 24th. To build; owner, Gustave A. Gaetcke; contractor, C. C. Zwierlein; signed, April 6; filed, April 6; cost $2,100.

Hattie near 18th. To build; owner, Jno. J. Reilly; contractor, David Ross; signed, April 28; filed, May 1; cost $1,650.

Howard near 14th. Alterations; owner, A. W. Bode; architect, C. M. Rousseau; contractor, John Miron; signed, April 4; filed, April 6; cost $2,800.

Ivy Avenue near Buchanan. To build; owner, Jane A. Ingalls; architects, Shea & Shea; contractors, Ridout & Rodd; signed, April 24; filed, April 25; cost $2,865.

Jackson near Devisadero. Two-story frame; owner, C. J. Wingerter; architect, A. C. Luitgens; contractor, Wm. Legeier; signed, April 19; filed, April 21; cost $10,915.

Jackson and Octavia. Two-story addition; owner, Emil Sutro; architect, H. Gellfuss; contractors, Schutt & Krecker; signed, May 5; filed, May 5; cost $1,948.

Kisling near 12th. To build; owner, Lewis Cella; architect, M. J. Welsh; contractor, John Sandeen; signed, May 1; filed, May 2; cost $2,315.

Laguna and Chestnut. Grading; owner, Jerome English; contractor, Geo. E. Bowers; signed, April 13; filed, April 18; cost $800.

Leavenworth near Lombard. One-story frame; owner, F. Ballhaus; contractor, Peter Johnson; signed, April 10; filed, April 10; cost $1,500.

Lombard and Webster. Grading; owner, J. M. Wood; architect, C. S. Tilton; contractor, Geo. E. Bowers; signed, April 10; filed, April 18; cost $500.

Main No. 121 and 123. Carpenter, mill, mantels, brick, glass, etc.; owner, Pelton Water Wheel Co.; architect, Samuel Newsom; contractor, Geo. R. Lang; signed, May 2; filed May 3; cost $1,800.

Market and City Hall Ave. One-story brick; owner, John J. O'Farrell; architects, Shea & Shea; contractor, Jas. Cochran; cost $6,000.

Market near 8th. Plumbing a four-story brick; owner, Louis Schoenberg; architect, C. M. Rousseau; contractors, S. Ickelhimer & Bros.; signed, April 5; filed, April 6; cost $1,025.

Market near 8th. Sidewalks and iron four-story brick; owner, Louis Schoenberg; architect, C. M. Rousseau; contractor, Geo. Reichley; signed, April 11; filed, April 11; cost $2,026.

Market near 8th. Four-story brick building; owner, Louis Schoenberg; architect, C. M. Rousseau; contractor, Geo. Reichley; signed, March 29; filed, March 31; cost $14,078.

Market and Ecker. One-story frame; contractors, A. J. McNicoll & Co.; signed, April 10; filed, April 10; cost $2,300.

Mason near Eddy. Carpenter work for six-story brick; owner, S. Silverberg; architects, Salfield & Kohlberg; contractor, W. Pluns; signed, April 12; filed, April 15; cost $11,140.

Mason near Eddy. Iron work; owner, S. Silverberg; architects, Salfield & Kohlberg; contractors, O'Connell & Lewis; signed, April 12; filed, April 15; cost $3,300.

Mason and Eddy. Brick work and mantels; owner, S. Silverberg; architects, Salfield & Kohlberg; contractor, Adam Grant; signed, April 12; filed, April 15; cost $8,500.

Masonic Cemetery. A mausoleum; owner, N. W. Cole; architect, J. E. Wolfe; contractor, A. Maciennan; signed, April 7; filed, 7; cost $3,719.

McAllister near Broderick. Cottage and stable; owner, Louis Gross; architect, E. A. Hermann; contractors, Peterson & Olson; signed, May 4; filed, May 6; cost $2,485.

Mississippi near Solano. Two-story flats; owner, W. S. Young; architect, W. C. Dickerson; contractor, Jno. Sandeen; signed, April 27; filed, April 28; cost $2,625.

Mission near 22d. Two three-story frame; owner, Mrs. E. L. S. Mangels; architect, H. Geilfuss; contractor, F. W. Kern; signed, April 12; filed, April 12; cost $19,370.

Mission and 23d. Painting; Mrs. E. L. S. Mangels; architect, H. Geilfuss; contractor, Aug. Fick; signed, April 12; filed, April 12; cost $2,000.

Mission and 23d. Plumbing; owner, Mrs. E. L. S. Mangels; architect, H. Geilfuss; contractors, Striegel & Ponder; signed, April 12; filed, April 12; cost $3,485.

Mission and 23d. Plastering; owner, Mrs. E. L. S. Mangels; architect, H. Geilfuss; contractor, A. O'Brien; signed, April 12; filed, April 12; cost $2,933.

Mission near 5th. Brickwood, glazing, etc.; owner, Emma Lolor; architect, Chas. Geddes; contractor, Thomas H. Day; signed, April 7; filed, April 29; cost $5,440.

Mission near 5th. Cast iron, dead lights, etc.; owner, Emma Lolor; architect, Chas Geddes; contractors, O'Connell & Lewis; signed, April 7; filed, April 29; cost $2,550.

Mission near 5th. Brick, wood and stone work; owner, Emma Lolor; contractors, Richardson & Gale; signed, April 7; filed, April 29; cost $17,898.

Mission near 5th. Wrought iron work; owner, Emma Lolor; archit ect, Chas Geddes; contractor, P. H. Jackson & Co.; signed, March 31; filed . April 29 cost $2,375.

Montgomery street No. 131. Alterations; owner, J. A. Goell; architect, Oliver Everett; contractor, Ralph Carey; signed, April 21; filed, April 21; cost $2,275.

Montgomery near Leidesdorff. Iron work, etc.; owner, Selby Smelting Works Co.; architect, John Marquis; contractors, J. C. Roberts & Co.; signed, April 24; filed, May 1; cost $1,462.

Moss street, bet. Howard and Folsom; To build; owners, Thomas and Mary A. Gawey; architects, Townsend & Wyneken; contractor, G. Massoletti; signed, April 24; filed, April 25; cost $5,150.

Oak near Fillmore. To build; owner, Adam M. Bratscher; architect, Fred. P. Roblin; contractor, W. A. Muller; signed, May 3; filed, May 4; cost $6,690.

O'Farrell near Webster. Plumbing two three story buildings; owner, C Gebret; architect, W. H. Armitage; contractors, R. Doyle & Son; signed, April 10; filed, April 10; cost $3,548.

O'Farrell near Jones. Plumbing; owner, Alice Pease; architect, T. J. Welsh; contractor, P. F. Ward; signed, April 15; filed, April 17; cost $1,090.

Page near Webster. Two-story frame; owner, Wm. Wertsch; architect, H. Gellfuss; contractor, Henry Rohling; signed, May 3; filed, May 5; cost $4,252.

Page and Schrader. To build, except foundation, plumbing and painting; owner, John Witt; architect, F. P. Rabin; contractor, R. Rechenbach; signed, May 8; filed, May 8; cost $9,800.

Pine near Scott. Two-story frame; owner, P. H. McVey; architects, C. J. Colley & E. S. Lemme; contractors, Jas. Mix and J. W. Hope; signed, April 22; filed, May 2; cost $3,765.

Point Lobos Ave. near 5th. Two-story and basement; owner, J. Marsden; contractor, Chas. Murcell; signed, April 25; filed, April 25; cost $3,225.

Post and Grant Ave. Carpenter work for two stories; owner, H. Liebes & Co.; architects, John & Balczynski; contractors, Schutte & Krecker; signed, April 4; filed, April 7; cost $18,566.

Post near Grant Ave. Stone and terra-cotta work; owners, H. Liebes & Co.; architects, John & Balczynski; contractors, Richardson & Gale; signed, April 26; filed, April 27; cost $5,940.

Post near Dupont. Patent plastering; owners, H. Liebes & Co.; architects, John & Balczynski; contractors, Pacific Patent Plaster Co.; signed, April 22; filed, April 27; cost $3,385.

Post near Dupont. A frame dwelling; owners, H. Liebes & Co.; architects, John & Blaczynski; contractors, Duffy Bros.; signed, April 10; filed, April 10; cost $3,600.

Polk near Green. Two-story frame; owner, Mrs. M. D. Blackstaff; architects, Shea & Shea; contractor, F. W. Kern; signed, April 17; filed, April 19; cost $3,059.

Sacramento near Powell. To build; owner, J. H. Jacoby; architects, Salfield & Kohlberg; contractor, John McLead; signed, April 24; filed, April 25; cost $5,197.

Sacramento near Prospect Place. To build, sub-basement and attic building; owner, The Women's Occidental Board of Foreign Mission of Presbyterian Church; architect, Geo. A. Bordwell; contractor, W. R. Petterson; signed, May 5; filed, May 8; cost $4,012.

Sacramento near Prospect. Carpenter work; owner, The W. O. B. of F. M. of Presbytarian Church; architect. Geo. A. Bordwell; contractor, John J. Boyle; signed, May 5; filed, May 8; cost $9,150.

Sacramento near Prospect. Same as above; plumbing, gas fitting, etc.; contractor, H. Williamson; signed, May 5; filed, May 8; cost $1,028.

Second Ave. near Clement. A cottage; owner, Chas. F. Lundbery; contractor, C. E. Danshee; signed, April 12; filed, April 12; cost $2,119.

Shotwell near 23d. Two-story frame and stable; owner, Jacob Gengnagel; architect, H. Geilfuss; contractor, W. A. Muller; signed, April 19; filed, April 19; cost $3,040.

Sixteenth near Dolores. Millwork complete; owner, R. P. Brennan; architect, T. D. Welsh; contractor, Andrew Wilkie; signed, April 25; filed, May 2; cost $1,740.

Sixth near Jessie. Iron, brick and concrete; owners, E. and E. L. Goldstein; architect, J. E. Kraft; contractor, R. Ringrose; signed, April 6; filed, April 6; cost $1,364.

Steiner near Union. To build; owner, August Lacroix; architect, Wm Mooser; contractor, M. S. Yerxa; signed, March 22; filed, March 31; cost $2,537.

Shotwell and 19th. Lathing, plastering, etc., (for ten tenements); architect, H. T. Bestor; orig-contractor, Henry Behrens; sub-contractor, Daniel Dillon; signed, April 26; filed, April 26; cost $1,350.

Tremont Ave. near Waller. To build; owner, Annie F. Dearborn; architects, B. Dougal & Son; contractor, Ivory Wells; signed, May 3; filed, May 3; cost $2,575.

Turk and Larkin. Carpenter, mill and hardware work for stores and flats; owner, Luning Co.; architects, Coxhead & Coxhead; contractors, Milburn & Gallagher; signed, April 12; filed, May 1; cost $16,881.

Turk and Larkin. Brick, concrete, etc.; owner, Luning Estate Co.; architects, Coxhead & Coxhead; contractors, Richardson & Gale; signed, April 13; filed, April 13; cost $11,950.

Turk and Hyde. Two-story frame; owner, Mrs. M. K. Plummer; contractor, J. T. Grant; signed, April 24; filed, April 29; cost $3,825.

Turk and Buchanan. Four three-story frames; owner, Henry F. Forman; architects, John & Balczynski; contractors, Gray Bros.; signed, April 8; filed, April 8; cost $3,850.

Twentieth near Folsom. To build; architect, W. O. Banks; contractor, Ralph Carey; signed, April 25; filed, May 2; cost $2,585.

Turk and Buchanan. Four three-story frames; owner, Henry F. Forman; architects, John & Balczynski; contractors, Gray Bros.; signed, April 8; filed, April 8; cost $3,850.

Valencia near 17th. To build; owner, Mrs. J. Breen; architect, Jas. P. Brady; contractor, Jas. E. Mooney; signed, April 29; filed, May 2; cost $7,777.

Waller and Shrader. To build; owner, Solomon Cohn; architect, M. J. Welsh; contractor, Brooklyn Planing Mill Co.; signed, April 20; filed, April 20; cost $5,042.

ALAMEDA COUNTY.

Alameda Ave. near Willow. Two-story frame; owner, E. A. and Jennie Vining; contractor, G. W. Pattiani & Co.; signed, April 18; filed, April 20; cost $2,950.

Caroline near Central Ave. Two-buildings, brick work, carpenter work; owner, J. C. Seigfried; contractors, Marcuse & Remmel; signed, April 17; filed, April 20; cost $3,950.

Ceder and Henry, Berkeley. Carpenter work; owner, Clara M. Crichton; contractor, C. T. Lombard; signed, April 22; filed, April 24; cost $2,525.

Chestnut near 8th, Oakland. Two-story; owner, E. F. Fernandez; architect, T. J. Welch; contractor, T. R. Bassett; signed, April 13; filed, April 18; cost $4,400.

Everett near Lincoln Ave. One-story frame, except mantels; owner, J. Knowland; architect, G. A. Bordwell; contractor, C. H. Foster & Son; signed, April 19th; filed, April 20; cost $2,087.

Fallen street, Oakland. To build; owner, Thos. P. Hogan; contractor, C. S. Bannard; signed, April 27; filed, April 27; cost $1,425.

Fifty Associates Tract, lot 9, block B, Oakland. Plumbing, tinning, brickwork, plaster and painting; owner, John Williams; signed, April 17; filed, April 19; cost $1,280.

Linden Vista Terrace, Oakland. Two-story frame; owner, E. A. Heron; contractors, A. W. Pattini & Co.; signed, April 25; filed, April 25; cost $1,900.

Linda Vista Terract. To build; owner, E. A. Heron; contractors, A. W. Pattiani & Co.; signed, April 25; filed, April 25; cost $3,776.

Linda Vista Terrace, Oakland. Two-story frame; owner, E. A. Heron; architect, E. Childs; contractors; W. T. Veitch & Bro.; signed, April 25; filed, April 28; cost $7,088.

Ninth near Harrison, Oakland. To build; owner, C. Terry; contractor, D. S. Brehant; signed, April 15; filed, April 17; cost $6,650.

Rose Ave, near Piedmont Ave., Oakland. To build; owner, D. M. Little; contractor, J. V. Embury; signed, April 17; filed, April 26; cost $1,700.

San Pablo Ave. near 22d, Oakland. To build; owner, J. M. Driscoll; architect, Howard Burns; contractor, P. F. Nelson; signed, April 19; filed, April 19; cost $4,752.

Sixth near Broadway, Oakland. Alterations and additions; owner, H. Davis; architect, E. Childs; contractor, W. H. Butson; signed, April 27; filed, April 28; cost $2,259.

Twelfth near 15th, Oakland. Seveventeen-room two-story building; owner, M. E. Bacon; architect, T. L. Williams; contractor, T. A. Brown; signed, April 11; filed, April 17; cost $3,200.

Twelfth near Webster, Oakland. Three-story brick; owner, N. P. Perrin; architects, J. J. & T. J. Newson; contractor, T. M. McLahlan; signed, April 18; filed, April 21; cost $3,200.

Washington near 11th, Oakland. Carpenter work, etc.; owner, F. W. Schultz; architect, C. Mau; contractors, Herbet & McLeod; signed, April 28; filed, April 28; cost $11,637.

The California Architect and Building News.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

IN 1867, Frederick Law Olmstead in his report to the committee on outside lands recommended that the panhandle entrance to Golden Gate Park be extended to Market street, and that the blocks of land between Franklin street and Van Ness avenue and extending from Market street to the Bay be converted into a boulevard. This would have created a magnificent shaded drive through the residence parts of the city, increased the value of the adjacent lands enough to, in a great measure, compensate for the cost of the improvement, and at the same time, and most important of all, formed a most effective barrier across the path of a great conflagration which some day will sweep its way, fanned by a westerly wind, from Lone Mountain to the Bay. Such a conflagration was threatened this month, but owing to the fortunate circumstance of their being several vacant lots surrounding the scene of the fire, the department succeeded in confining it within the limit of the three blocks attacked, and the dozen or more buildings burned is the price paid for this warning.

To have carried out the recommendations of Mr. Olmstead at the time they were made, would have been a simpler matter than at present, in view of the comparative small value of the land twenty-five years ago, and the fewer improvements that would have had to be demolished. Even now, it would be true economy, notwithstanding the immense expenses that would have to be incurred, if some such measures could be taken to protect the different sections of the city from the danger of fires starting at distant points, for once let a fire get beyond the control of the department, it will burn its way to the Bay, and we will have passed through an experience like that of Chicago and of Boston. Then regrets will be of no avail; but let us at least hope that if we have not been wise enough to profit by the bitter experience of our sister cities, we will at least have the foresight to lock the stable door after the horse has been stolen, and when our new city is springing from the ashes of the present, that a wiser policy will provide against the obvious dangers of building an entire city of wood without effective precautions against the danger of its total destruction by fire.

THE announcement of the World's Congress of Architects, to be held next August at Chicago, should be a hint to the Architects of this Coast, to take some action without more delay, in order to be well represented at that Congress.

TO ARCHITECTS.

THE Committee that has charge of the erection of the Masonic Widows' and Orphans' Home desire to make public the following additional information governing the competion:

Invitation to make plans is extended to Architects generally for a stone and brick building to be erected at Decoto, twenty-six miles from San Francisco, to be used for the Masonic Widows' and Orphans' Home.

All plans must be delivered at the Masonic Temple, San Francisco, by July 13, 1893, at 2 P. M.

The Board of Trustees will be the sole and exclusive judges of the excellence and suitability of the plans submitted and reserve the right to reject any or all plans; no compensation will be made for rejected plans, and they will be returned to their respective owners after the final decision of the Board of Trustees.

Plans must show one elevation. A longitudinal and transverse section all drawn to the scale of eight feet to one inch.

A perspective view of the building is to be furnished, the scale to be eight feet to one inch; the plane of the picture to be taken at nearest corner of building.

A *bona fide* estimate of the cost of construction must be submitted by the Architect, which must not exceed sixty thousand dollars ($60,000).

The building to have a capacity for the accommodation of one hundred orphans and twenty-five widows.

The plans not to contain a dining-room or kitchen, it being the intention of the Board of Trustees to erect a wooden building for that purpose.

The main building to be so designed as to admit of additions.

The general plans to be drawn in either pencil or ink, all sections hatched, no coloring, but the perspective may be shaded or colored.

For further particulars apply to,

Gustavus L. Spear,
Jacob Voorsanger,
Albert Hansen.

AS an argument in favor of the use of electricity as a native power for traveling cranes may be cited the crane built by the Yale & Towne Manufacturing Company, at the Columbian Exposition. The Machinery Hall is divided in three bays, each covered by an electric traveling crane, the above named crane occupying the central bay. The crane has been in active and constant operation day and night, handling the heavy materials and installing exhibits since the middle of December, 1892, and not only has it done its own work in the most thorough and satisfactory manner, but has been engaged in handling the exhibits for the side bays, pending the starting of the cranes covering those portions. The great success with which this powerful crane has done its work is ample demonstration of the value of the use of this new motive power properly applied to correct design and excellent workmanship, and would seem to conclusively prove that the electric traveling crane, is the crane not only of the future but of the present.—*Engineering Magazine.*

ROCOCO WORK.

STRENGTH OF HORIZONTAL BEAMS.

BY CALVIN BROWN, C. E.

ANY horizontal straight beam, whether of one piece or framed of several pieces, as in a truss, usually called a girder, or compounded of cement, concrete, bricks, etc., and metallic ties or rods, and employed for sustaining a load, is subjected by such load to a force or strain which operates with two distinct results. This is plainly illustrated in the breaking of a stick held by its ends and bent downwards or upwards. If bent downwards the upper portion will be compressed as shown by its bulging in the middle part, while the lower portion will be stretched. If bent upward the reverse of this result will occur, the bulge taking place on the lower surface and the stretching on the upper surface. The following diagram shows these results, in a somewhat exaggerated manner, on a loaded beam supported on its ends and supposed to be loaded at its middle, which position is the one we have here to consider:

FIG. 1.

It will be understood that any load upon the beam acts upon its upper portion with an effort to crush its particles together, this being technically termed the "compressive force," while on the lower position it operates with a tendency to stretch or separate its particles, which accordingly is distinguished as the "tensile force."

These forces extending downward and upward in the beam, reach their operating limit at a longitudinal boundary between its upper and lower surfaces termed the "neutral axis" where of course neither force operates.

The position of the neutral axis has been a subject of much study by the most eminent mathematicians, but its difficulty of determination lies in our want of knowledge of the ratio of compressibility and extensibility in any substance; were the one equal to the other the neutral line

would be in the centre of gravity of the beam; but such equality, so far as experiments have shown, does not exist. Professor George B. Airy, F. R. S. Astronomer Royal, has given with very labored analysis and formulæ perhaps the best theory of the strains in the interior of beams. The following diagrams illustrate by means of curves the directions in which compression and tension act through the beam, according to his theory, with their numerical values, which are seen to be equally balanced at exactly opposite points, and which indicate the application of the theory to a perfectly homogeneous beam, which probably cannot be assumed to practically exist. It will moreover be seen that the intersection of the curves representing the direction of the opposite strains, lies in the centre of the beam thus locating the plane of the neutral axis in that centre.

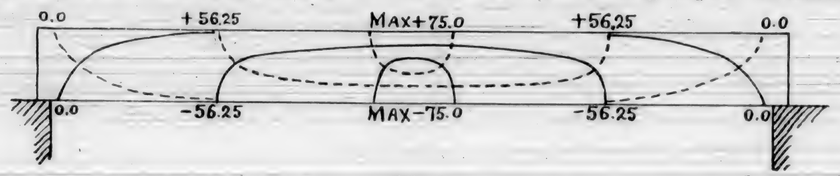

FIG. 2.

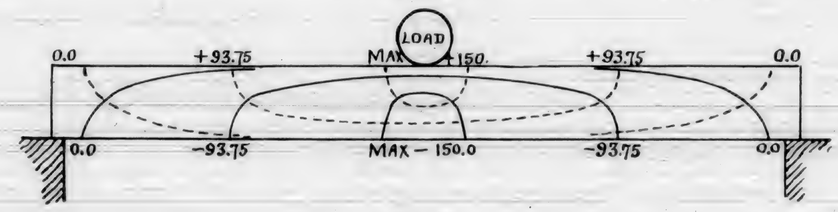

FIG. 3.

The continuous curves indicate the direction of thrust or compression; the dotted lines indicate the direction of pull or tension.
The figures denote the measure of the strain. -|- meaning compression, and — meaning tension.
These diagrams, Figs. 2 and 3, show that the strains upon a beam, indicated by the numerals, originate at the ends where they are 0, to their maximum effect at the middle and of course are thus progressive.

However useful might be an absolute rule for the determination of the position of the neutral axis for ascertaining the strength of a beam, and its proportions for any service required of it, it is not likely to be found by any a priori theory, since no two beam substances are alike in the extent of their resisting powers, nor can any two samples even of the same substance be assumed with certainty to be exactly alike in this respect. Our only resource therefore, for obtaining a guiding rule is by experimenting upon these various substances, ascertaining an average relative indication of their strength values, and combining this element, termed a constant, with the general laws of the strength of beams, which are for transverse pressure or loads.

Directly as the breadth
Directly as the square of the depth
Inversely as the length

or placing these ratios together it is expressed as follows:

$$\frac{\text{breadth} \times \text{depth}^2}{\text{length}}$$

This gives only the general relation of the strength of a beam of any substance to its dimensions and of course is no direct rule for its application—it must therefore be combined with the constant for the especial substance or material of which the beam is composed. Now this constant is the average weight which is found by experiment to break a sample of the material of given dimensions chosen at convenience, and the student may find in any published work on the strength of materials, tables of these constants for every substance employed for beam purposes. If we call this constant *S*, and combine it with the foregoing, we shall get the breaking weight or ultimate strength of the beam.

$$\frac{\text{breadth} \times \text{depth}^2 \times S}{\text{span or length between bearings}} = \text{breaking weight.}$$

Perhaps it may be desirable to express this formula in ordinary language for the merely practical man. "Multiply the breadth of the beam in inches by the square of the depth in inches and this product by the constant found in the tables for the material used, then divide this total product by the length in feet between the supports at the ends—the quotient will be the breaking weight." To elucidate this still further take an actual beam, say 12 inches square and 12 feet between its supports at the end, and of Oregon Pine, whose constant may be assumed at 700.

Then $\frac{12 \times 144 \times 700}{12} = 100{,}800$ pounds or 50 1-5 tons breaking weight, the load being applied to the middle of the beam and not distributed over its length, in which latter case the breaking weight would be double. Of course it will be understood that in practice, only such an allowance from this breaking load must be taken as circumstances may dictate for a safe permanent load, and in this allowance one-half of the weight of the beam should be taken into the account.

In finding the constants above referred to, the ends of the samples experimented upon were left free or loosely upon their supports when the breaking weights were applied—should these ends be fixed, the ratio of strength would be nearly or quite one-half greater, as shown by experiments made by Lieut. Denison of the English service, which fact indicates that in a beam with fixed ends, the action of the compressive and tensile forces are to a certain extent thus resisted.

The above considerations involving the general principles of beams, meaning by this term all structures supported at their ends, or at points by posts, columns or piers, and employed for sustaining loads, imply in their construction and application the observance of certain practical details wherein

their safety and economy as well as strength, are essentially concerned. The history of such structures shows the countless forms in which they have been employed, from the simple stick of timber to the elaborate lofty bridge truss spanning wide rivers and deep canyon, and while it exhibits many splendid examples of scientific construction it also reveals many disastrous failures resulting from various causes in which a want of knowledge of true principles too often appeared.

Leaving out the consideration of a shearing tendency produced at the points of support by a distributed over load, and confining our discussion to the operation of a load concentrated at or near the middle of a beam, we have seen that in a single straight horizontal beam the conditions for sustaining a load consist in the resistance of the material in its upper portion to the compressive action and in that of its lower portion to the tensile or stretching action of the load. To counteract these effects, which is the same thing as giving additional strength to a beam, the truss system is applied; but without undertaking to go into all the details theoretical and practical of this device, since its general construction is well known, it is here only necessary to mention one essential condition of its application not so generally understood as it ought to be, especially by so-called practical builders. The purpose of the truss is to add a tensile resistance to the beam, supposing the compressive resistance to be afforded by its own material intrinsically—therefore in order that as large a portion as possible of the beam should be brought into this particular service, the ends of the truss rods should be secured at points below the plane of the assumed neutral axis and not above it, as is two often seen in practice, from the erroneous supposition that the higher these ends are placed the better would the rods act in a suspensory and therefore more desirable effect. But in such an arrangement it is evident that a lesser portion of the beam is brought into service for compressive resistance to the action of the load, thus losing an essential part of its natural strength and throwing upon the truss rods an unequal share of sustaining duty, and involving larger dimensions for them than would be necessary for a proper adaptation.

The following diagram, Fig. 4, illustrates the principle above set forth, the dotted line showing a vicious, and the full lines a correct position for the ends of the truss rods.

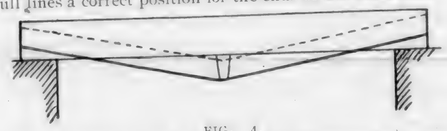

FIG. 4.

The strength given by the most simple method of trussing by iron rods, is shown by Fairbairn to be more than double that of the same sized untrussed beam, depending upon the proper attachment of the rods. It is thus plain that under the law of the strength of a beam being directly as the square of the depth, the truss system obviates the necessity for the employment of such deep and space occupying beams as would be required for the same sustaining power derived from the truss.

It is not the intention in this paper to discuss such beam elements as stiffness or resistance to bending, etc., which are governed by other laws than those above considered, for its purpose is simply a brief and practical exposition of general principles involved in the strength of plain straight beams and other analogous load supporting structures in common use. The discussion of those principles although applicable, will not therefore be here extended to wrought or cast iron or steel beams or to the more complex trussed girders employed for bridges, wide spanned roofs, floors, etc.

Since the felicitous discovery and manufacture of artificial hydraulic cement, most notably the so called Portland Cement, a new development in load bearing structures has taken place, wherein the extraordinary qualities of this material have been utilized to a wide extent in the erection of entire works and in important details of various buildings, such as foundations, walls, floors, etc.. resulting in the grand requisites of economy, durability, strength and efficiency, and an unusual immunity from fire. Bridges of considerable span for railways, acqueducts and ordinary roadways have been successfully constructed with a cheap concrete of this material without the use of any other bond or tie than its own inherent strength, but in these cases, as in the employment of masonry, the arch form with abutments has necessarily to be adopted.

The application of Portland Cement to structures on the straight horizontal beam principle is a comparatively recent practice, extending back about twenty years, more or less, but resulting in that time in a constant progress and mainly through the assiduous study and experiments as well as practical works of Thaddeus Hyatt of New York. It is this system as one of the latest and most important improvements in the construction of buildings which will be now considered, it being understood that although its application is not usual in single or separated beams, in which form however it may be employed, but in solid extended floor or other end and pier supported structures, the same laws and conditions which apply to single beams are operative here.

Applying therefore the same considerations as above noticed, to the case of such cement structures, and considering a single cement beam as involving the same principles existing in a solidly extended and supported work, which is really but a very wide beam, we have first to regard the nature of the material employed, and its necessary combination with other material in order that it may serve its proper functions, which it could not do to any important extent without such reinforcement, except in the arched form as above mentioned.

Thus taking the case of cement beams composed either totally of pure cement mixture or of its conglomeration with other materials, say of sand, gravel, broken stone, etc., constituting a concrete, it is obvious to those acquainted with the granular nature of this composition, that while its compressive resistance may be great enought for all ordinary occasions, yet on account of its comparative brittleness and consequent want of tensile strength, it could not be used for a beam of any considerable length without the application of some means for the compensation of this weaker element. This, therefore, must be supplied in a manner analogous to that of the truss, except that instead of being applied in a bent form and on the outside of the beam, and necessarily connected therewith by end fastenings, it is embedded in the substance of the beam and becomes integral with it.

In Hyatt's system of cement concrete beams this compensation for the natural deficiency of tensile strength, is provided by a series of thin strips or plates of iron or steel embedded in the material of the structure, quite near the bottom, at the place of the maximum tensile strain, such strips being rolled with lateral projections on each side, thus admitting of considerable penetration into the concrete and affording a strong adherence thereto throughout the whole length of the strip or tie, obviating the necessity of

end fastenings as seen in an outside truss rod, and also all tendency of slipping or displacement when the beam is under strain from its load, while at the same time the web or axial part of the strip or tie resists the tensile stretch. In this system it will be understood that the compressive action of the load on the upper portion of the beam is met by the inherent resisting power of the material which from numerous experiments has been found to be from thirty to forty times greater than tensile resistance, depending on the proportion of the cement used in the concrete and the fidelity of workmanship in its mixing and solidifying. Details of manipulation of the concrete might here be given but it is presumed that intelligent workers in this material know the conditions for its proper composition and application.

The strength of beams of concrete as that of other beams, varies according to their dimensions and forms, perfection of workmanship, quality of materials, etc., and upon these elements any degree of efficiency may be obtained. Illustrations of the comparative strength of the simplest form, viz: straight and equal section throughout the length, may be given to show their general adaption for service, especially in many cases where other structures of equal efficacy and economy could not be supplied. Mr. Thaddeus Hyatt, in a published work has given accounts of his experiments made in England in connection with Mr. David Kirkaldy, proprietor of a large testing establishment in London, and author of a work on the strength of various materials. The different samples of beams prepared by Mr. Hyatt, about fifty in number, were tested by this gentlemen who has publicly given his authority for the results.

Without undertaking to exhibit here the numerous cases subjected to trial in these tests, one or two may be selected, not by any means the strongest of the series, but simply as showing the relatively small amount of the cheapest material which was employed for the strength obtained. This was a simple straight equal sectioned rectangular beam, Fig 6, of

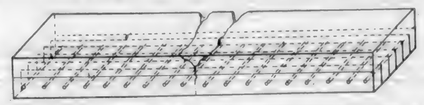

FIG. 5, TIES 4″ WIDE.

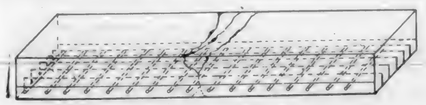

FIG. 6, TIES 2″ WIDE.

12″x 8″ in depth and 6′ long, reinforced longitudinally through its whole length by seven strips of thin iron 2″ wide by 1-16″ thick, through which transversely eighteen wire rods ¼″ diameter were passed, making a sort of grillage; these plates or strips were placed at the bottom of the concrete, their lower edges being exposed; the whole weight of this iron grillage was 21 lbs. The beam was supported at its ends on 6″ bearings, thus having a clear span of 5 feet, and was loaded with 16,418 pounds at its middle before it broke, thus sustaining up to that point a load of 3283 lbs. to the square foot upon the span length.

In comparison with the beam just mentioned and to show the additional strength gained by a wider or deeper iron strip, a similar beam, Fig. 5, in all respects was prepared except that the strips or ties were of double or 4″ width, with the same thickness, viz: 1-16″. This beam, tested in the same way, bore 23,884 lbs. before it broke, thus showing that double the width of the iron ties, and consequently double the total weight of the grillage, gave nearly 50 per cent more strength. It will be here observed, that the extra cost for obtaining this increased strength is only that of 20 lbs. of sheet iron, the labor and the cost of the concrete being the same in both cases.

These two experiments are remarkable as illustrating the principles on which the metal reinforcement to the concrete should be applied, but at the same time it is to be remarked that in piercing the ties for the cross rods they are weakened, and therefore the substitution of corrugated ties as more recently adopted by Mr. Hyatt, affords a more irrefragable bond to the concrete and of course greater strength to the beam with even less cost.

Passing from these early experiments to those more recently made by Mr. P. H. Jackson who has so extensively applied the Hyatt system in this city in various important works, we may adduce one of those executed by him, in further illustration of the strength of concrete beams as resulting from improved methods of construction. Selecting from several of these, as observed by a number of witnesses, among whom was the writer, a structure of the simplest and cheapest form, we have results which in a remarkable degree show the wide capabilities of the system.

The experiment consisted in subjecting an end supported horizontal slab of combined concrete and thin narrow iron ties to a heavy load in order to see what weight would be required to break it down. This slab was 18′ 6″ long by 12′ wide and 9″ uniform thickness, the Hyatt ties being of the corrugated form and their total weight 630 lbs. or about 2 84-100 lbs. per square foot of area. The slab was continuously supported at one end upon a brick wall, and at the other upon two short columns at the corners leaving a clear unsupported space or open span at this end, and also at the sides between the brick wall and the corner columns. A load of 130,000 pounds of pig iron was uniformly distributed upon the unsupported part of the structure, that is between the brick wall and the columns, before it gave way, thus showing a breaking weight of 656 lbs. per square foot of unsustained surface, the breaking being very gradual.

Two other samples varying from each other in the disposition and form of the iron ties, and of somewhat larger area than the above, being of segmental arch construction, with a combination of Hyatt ties and narrow rolled iron girders, were prepared and operated upon by Mr. Jackson, one of them sustaining a weight of 1058 lbs. and the other 1188 lbs. per square foot before breaking—in one of these cases, however, the settlement of one of the supporting columns contributed to the breaking effect. All these samples were supported in the same manner and tested by distributed loads of pig iron.

The intelligent builder will not fail to observe the extended efficiency of concrete structures in the various forms in which they may be made, not only as regards strength and cheapness, but when properly built, in their immunity from fire. The consideration of their fire proof qualities, combined with their smaller cost, shows their adaptation superior to all other systems yet applied to buildings that may be exposed to this source of danger. Wood of course being here out of the question, neither the metals, stone or brick materials, however comparatively secure, can by themselves be economically employed for beams—it is only by their combination with metallic tie rods that they can be

made to serve the purpose, and then in a manner whereby the ties are embedded within the more resistant substance and thus protected from the weakening influence of heat.

The extensive and costly experiments of Mr. Hyatt have proven the efficiency of concrete beams when exposed to the most intense heat, an especial furnace being employed for this test. In these experiments a remarkable coincidence of the law of expansion and contraction of Portland Cement moulded into beam form, with that of iron was discovered, demonstrating the perfect adaptability of the tie for the purpose by its synchronous movement with the substance of the beam and thus always keeping its place. The facility with which these ties can be embedded in the substance of the beam and thus protected from any direct action of fire is obvious.

A peculiarity in regard to the strength of concrete structures remains to be noticed, and this consists in its normal increase with time after the initial set, the maximum not being attained under one or two years, so that whatever may be its degree at first the work never becomes intrinsically weaker by age; of course the judicious builder will see that his work is strong enough at the outset.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE San Francisco Crematory was designed by architects Pissis & Moore. Though not the first one built on this coast, it is the only one easily accessible from San Francisco.

THE confusion caused by the different gauges in use for measuring the thickness of sheet metal, has been a source of annoyance and expense, ever since the illogical and arbitrary standards were fixed.

Both a congressional committee and an association of iron and steel workers are considering the problem, and the best means of solving it.

Oberlin Smith in the *American Machinist* says:—This whole business could be straightened out by competent authority in fifteen minutes, by abolishing all the present gauges, and simply ordering a new one whose numbers would correspond to the number of thousands of inches represented by each size. This would answer perfectly well for all kinds of wire and sheet metal, as well as for paper, glass, leather and other materials. Special gauges might be made resembling in appearance those now used, or anybody preferring it might use the common pocket micrometer guage both of which would however agree.

It is the result of the earnest efforts of a number of people who are firm believers in cremation, as the most logical and best method of disposing of the bodies of the dead. The auditorium in which the services are held, occupies the main floor; the services over the remains are lowered to the floor below, where the incineration may be witnessed by such of the friends or relatives as may desire to be present.

A building for The Citizens' Real Estate & Investment Co., on the corner of 3d and Aldrich streets, Portland, Oregon, is by Reed Bros., architects of this city, cost $250,000.

THE Stockton Theatre at Stockton, Cal., is by Wood, Lovell & Claflin of this city.

A design for a cottage is by C. Swain.

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CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO LITH.

VOL. XIV Nº6 JUNE 1893.

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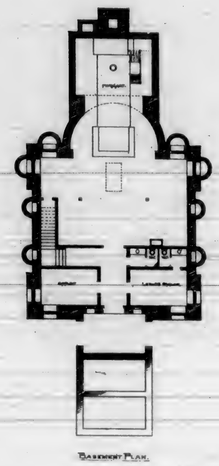
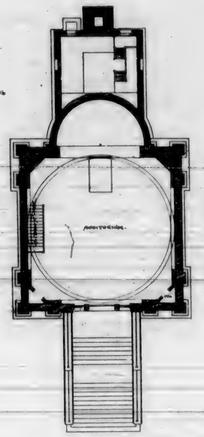


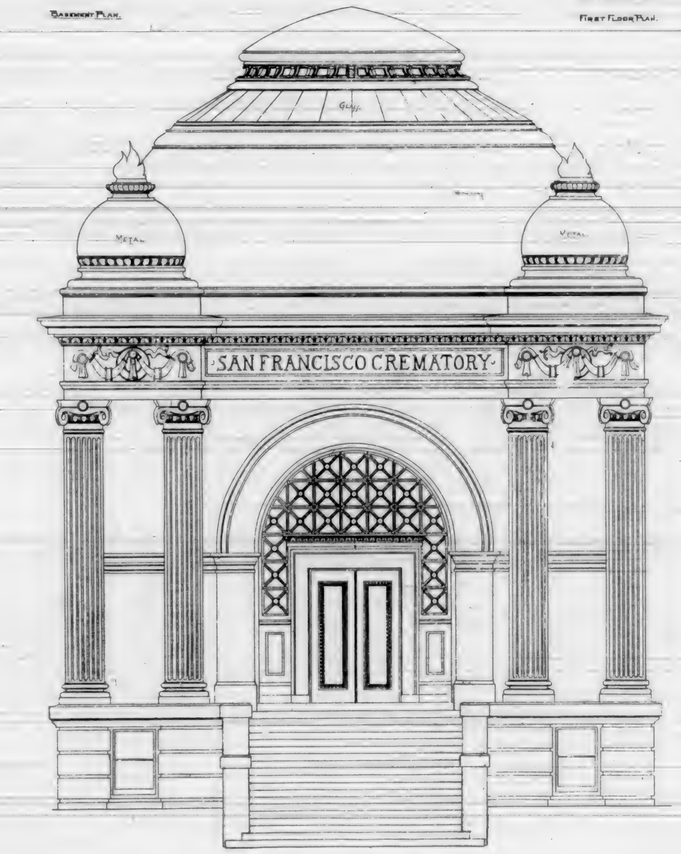
BASEMENT PLAN.

SAN FRANCISCO CREMATORY.

PISSIS & MOORE — ARCHITECTS.



FIRST FLOOR PLAN.



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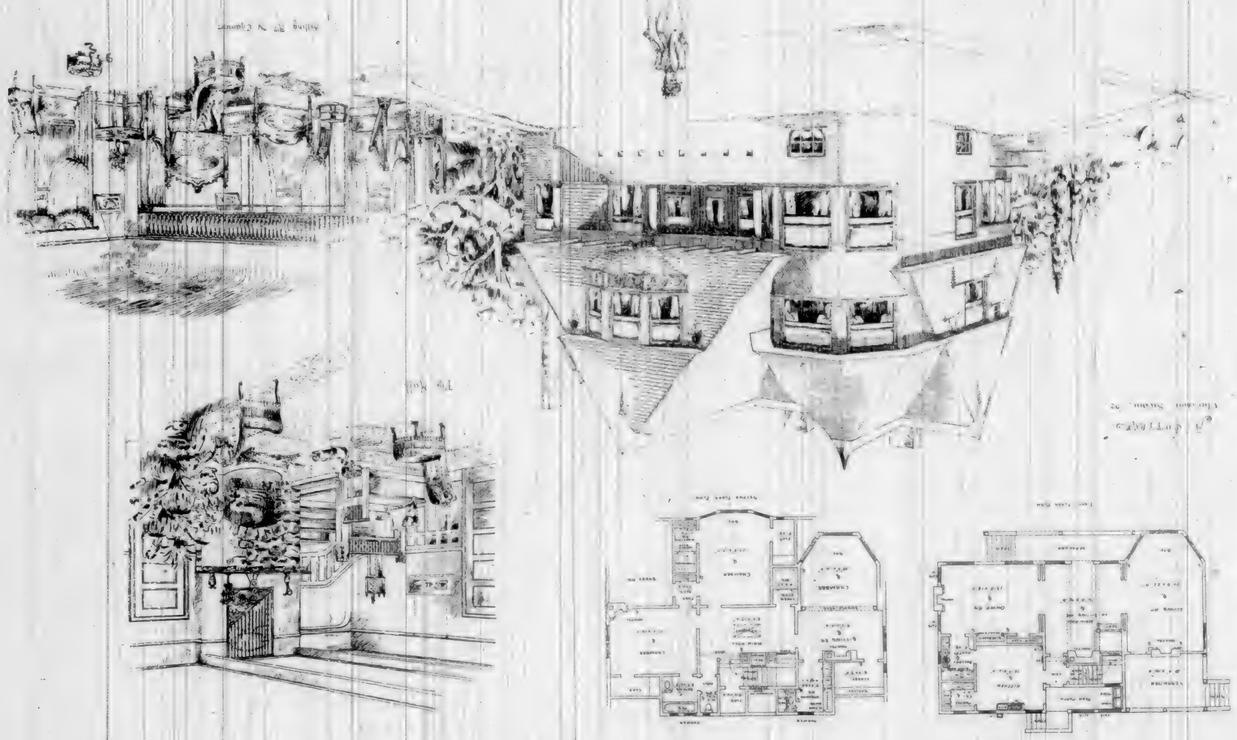


REVOLUTION IN ELECTRIC HEATING.

IN the advance sheets of consular reports for June we have advices concerning a discovery in the use of electricity for heating purposes, which if in simplicity of method and potency of action as thereby announced, is a clean cut advance in practical electricity. The discovery is attributed to the experiments of two Belgian scientists, who recently applied to the German patent office for patents on a new method of heating, melting and refining metals by means of electrical heat. It was determined before granting the patents to make a practical demonstration of the process. The matter was referred to a disinterested electrical expert at Berlin who announced the process a brilliant success. The apparatus as described consists of a glass or porcelain vase, which may be of any size conveniently adapted to the purpose, provided with a lining of lead connected with a strong conductor of positive electricity. The vase is filled to three-fourths its capacity with acidified water. A pair of iron tongs with isolated handles is attached by a flexible conductor to the negative pole of an electrical current generated by an ordinary dynamo. With this simple and comparatively inexpensive equipment the results as claimed are obtained. The current being switched on, a bar of wrought iron or other metal is taken up with the tongs and plunged into the water in the vase. The water begins to boil at the point of contact, and the immersed portion of the iron rises to a red, then to a white heat, emitting a stream of brilliant white light. In but a short time the iron melts and falls off in bubbles and sparks, the heating process being so rapid that neither the water nor the end of the bar held in the tongs are more than slightly warmed, and the current being switched off, the bar, with its submerged end glowing, may be readily held in the naked hand. In the experiments at Berlin it was estimated that fully fifty per cent of the current was directly utilized, whereas the practical limit of such utility is said not to have hitherto exceeded twenty per cent. The explanation of the process lies in the application of the well-known law that resistance to the passage of an electrical current causes heat. The current passing through the tongs and metallic bar into the water decomposes the latter into its two gaseous elements, oxygen and hydrogen. The oxygen is attracted and gathered on the relatively large surface of the lead lining, producing no noticeable results. The hydrogen, on the other hand, gathers around the immersed portion of the iron bar, which is immediately enclosed with a jacket of hydrogen, which, being a bad conductor of electricity, creates a resistance to the passage of the current, thus developing the heat causing the submerged bar to glow and melt.

This discovery or process if as reported is as yet in too early a stage to define its practical range, or its real commercial value. As far as experiments have so far been made, in the welding of certain metals the success in that direction is said to promise a revolution in methods. The difficulties at present existing in the electrical welding of metals, such as the government of the electrical furrace, and the disadvantages of impurities in metal are said to be overcome by the newly discovered process. It is further stated that the new method may lead to important results in the hardening and tempering of armor plates and other products of iron and soft steel in which great resistance to penetration or abrasion by friction is required, while preserving the interior tough and fibrous to resist concussion or strain, as in many parts of machinery. Krupp & Co., of Essen, Germany, are experimenting with the new process in the hardening of steel cannon, while this method of producing an intense heat and easily regulated temperature opens up some hitherto impossible achievements in chemistry, as is the production of precious stones by crystalized carbon.

In this, as in the early announcements of all discoveries, there may be much of anticipation to be qualified by atual results, but there can be no question that the facts as reported indicate an interesting deployment of electrical science and research.

FIRE CAUSED BY WATER.

IN two cases destructive fires have been caused by water, says *The Architect and Builder*. In one of these, a flood caused the water to rise high enough in a factory to reach a pile of iron filings. The filings, on contact with the water, oxidized so rapidly that they became intensely heated, and then set fire to the neighboring woodwork, and the building destroyed. In the other case, the water from the engines, during a fire, found its way into a shed containing quicklime, and the heat generated by the slaking of the lime set fire to the shed, and this to other buildings. Quicklime fires, however, are not uncommon. Many vessels carrying quicklime, have probably beem burned by the admission of water to the lime through a trifling leak, and no architect or builder needs be told how intense the heat of slaking lime may be. Glass globes, which act as lenses, often set fires, and it has recently been claimed, on high authority, that the convex glasses used in sidewalk-lights are dangerous, and should be abandoned in favor of lights with flat tops. As the convex glasses receive and transmit much more light than the flat ones, particularly in muddy weather, it seems hard to be obliged to give them up, and perhaps a lens might be made, convex on the outside and concave on the inside, the concavity being equal to or greater than the convexity, so that rays of sunlight would either pass through unchanged in direction, or would be dispersed instead of being concentrated, so as to unite the advantages of the convex form with complete security.

INCIDENT TO THE FAIR.

INVESTIGATING WASHINGTON WOOD.

WHERE is a prize in store for all lovers of forestry and botany who have not yet visited the Washington State Building at the World's Fair. In the midst of the great collection of tree sections, botanical specimens and other exhibits from the woods of the state is a good sized section of highly polished lead pencil cedar, just as fragrant as a new box of pencils. The tree shows a diameter of a little over one foot, and the grain of the wood is even and soft, just such as is best suited for lead pencil wood. This specimen has attracted the attention of Moriz Von Hardtmuth, a pencil maker of Austria, who with the aid of an interpreter, has beem making careful inquiry about the best way to secure a cargo of this wood for shipment to his factories. This particular tree is not very plentiful in the Puget Sound country, but there are a good many groves on the islands comprising the San Juan archipelago. It was at first supposed to belong to the tribe of cypress, and in consequence one of the islands in that famous group was named Cypress Island on account of the beautiful groves of this valuable wood found on its shores.—*Northwestern Lumberman.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schilp, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

DEADENING FLOORS.

INSTEAD of loading the floor with plaster for the purpose of deadening sound, a method suggested by a writer in one of the French trade papers is to fill in the space between the boarding and the plastering of the ceiling with shavings, which have been first rendered incombustible by dipping them in a tub of thick whitewash. It is a well-known fact that soft substances in closing air spaces form a good non-conductor of sound, and the writer in the paper referred to is of the opinion that shavings so treated will be found of great service, while this incombustibility adds in no small degree to the fire-resising properties of the building. When it is desired to disinfect the space between the floor and the ceiling the shavings are saturated with chloride of zinc or the latter may be added to the lime wash.

$2,500 HOUSE.

The June number of THE ENGINEERING MAGAZINE, still devoted to Industrial Progress, comes to our table so full of good things that our space will not allow us even the mention of tidbits—but refer the reader to the magazine itself.

THE CANADIAN ENGINEER, Vol. 1., No. 1., published at Toronto and Montreal, Canada, is a well printed and well conducted journal, (as far as can be judged by the first number) devoted to the Mechanical Mining and other branches of the Engineering trades. It is thoroughly Canadian in tone, and gives a large amount of Canadian news, relating to the mechanical, mining and manufacturing interest of Canada. We welcome its appearance among our exchanges.

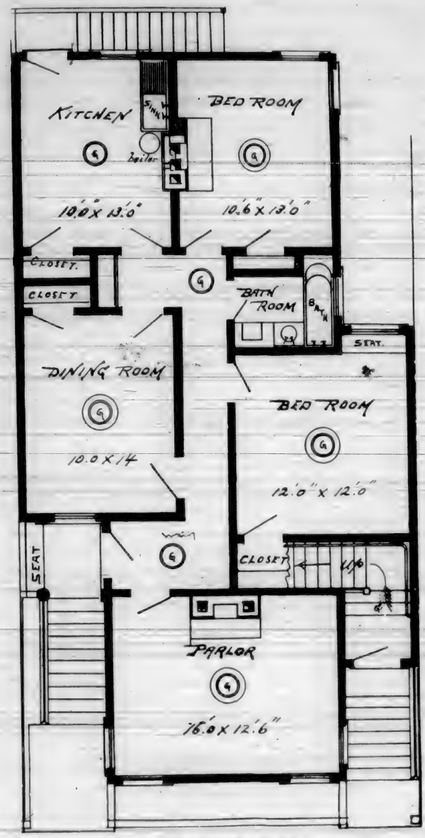
In the WORLD'S FAIR ELECTRICAL ENGINEERING, an illustrated Magazine published in Chicago, will be found in the April number a synoptical index of current Electrical literature which cannot fail to be of interest to the student, as well as to the general public now so generally interested on that subject.

LEND A HAND—A record of progress. Published by J. Stilman Smith & Co., Boston., comes to hand and needs only a list of the editors to be given to insure that there will be found something worth reading. Editors: Edward E. Hale, Mrs. Bernard Whitman, L. E. Dudley, Mary E. Dewey, John Tunis, A. Blair Shaw, M. D., and H. Sidney Everett.

THE SCIENTIFIC AMERICAN comes to hand regularly and is always welcome. According to this authority Tanning by Electricity has been successfully experimented upon in Turin.

THE MECHANICAL NEWS always full of good things in the mechanical line. The June number gives an interesting account of the ingenuity and skill exercised in the imitation of counterfeiting precious stones. Another article on the "Mistaken Idea of Shafting" cannot fail to interest those using power, and if it calls attention in vain, it will be the fault of the millwright who reads and not of the writter of the article.

A false statement is going the rounds of the press to the effect that visitors will not be able to get any water to drink without paying for it. There will be abundance of excellent water free to all who want it. Those who wish to drink mineral spring water, piped to he Exposition grounds from Waukeska, Wis., a hundred miles distant, will have to pay one cent a glass for it.



FIRST FLOOR PLAN.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Liability of Owner for Negligence of Contractor.—Where an owner contracts for work to be done on his premises, which is lawful in itself, and, if properly done, is not likely to require any act likely to cause injury, he is not liable for the negligence of the contractor in performing the work.

Roemer v. Striker, Superior Court of N. Y. City, Jan. 18, 1893, 21 N. Y. Supp. 1090. 53.

Action for Failure to Erect Partition Wall.—In an exchange of lots, the deed recited that, as part consideration, the buyer and the subsequent owners of the lot conveyed, shall have the right and privilege of uniting with and using the south wall "which may be erected," by the grantors on the south part of their lot adjoining on the north, an action for damages for failure to erect such wall, and an amount of unpaid consideration equal to the agreed value of such privilege, could not be maintained since there is no agreement to erect the wall, and hence no breach of contract.

Money v. Peavey, Supreme Court of Mississippi, 12So. Rep. 334. 106

Commencement of Suit in Mechanic's Lien.—Where a lien statement omits part of the land included in the lien the claimant may correct the mistake by filing a correct statement at any time within the period for filing lien statements. Under the statute which declares that the filing of a petition in a court of record, and suing out process thereon, shall be taken and deemed the commencement of a suit, a suit is begun from the time the petition is filed.

South Mo. Lum. Co. v. Wright, Supreme Court of Mo. 21 S. W. Rep. 811. 81.

Indemnity of Owner for Damages to Third Persons.—A stipulation in a building contract by which the contractors assume liability for any damages that may be done to the property or person of any neighbor or passer-by, during the performance of such work is for the protection of the owner, to save him from claims enforceable against him, and does not give a neighbor a right of action against the contractors for the acts of an independent subcontractor, where the owner would not have been liable had such acts been done by the contractors themselves.

French v. Vix, Court of Common Please of New York City, 21 N. Y. Sup. 1016, Feb. 6, 1893. 97.

Binding Power of Customs.—Where an action for mason work at a specified price per perch, is brought, and the dispute is as to the number of perches contained in the work, a uniform, universal, and notorious custom of measurement among masons is binding, though the result of such measurements is greater then the actual contents.

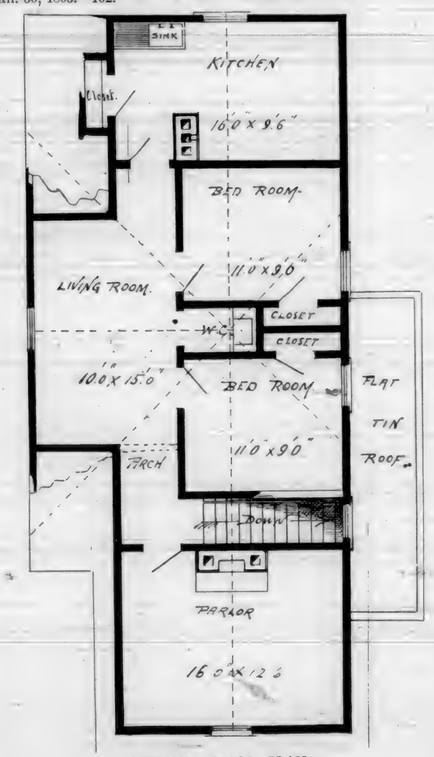
McCullough v. Ashbaidge, Supreme Court of Penn. 26 At. Rep. 10. 59.

Architects' Certificate for Building Contract.—Where a building contract provided that the owner should pay the contractor upon the presentation of certificates, signed by the architect, and that the decision of the architect as to the value of extra or deducted work should be final, and the contractor obtained from the architect a certificate showing the respective values of extra and deducted work, stating the balance due from the owner, which certificate the contractor gave back to the architect, who afterwards refused to give him any further certificate, the contractor was entitled to recover said balance from the owner, although he had not presented him with the certificate.

Arnold v. Bomnique, Supreme Court of Ill. 32 N. E. Rep. 530. 110.

Rights of Lowest Bidder in Building Contract.—A private person, who has asked for bids from contractors on a house that he intends to construct, is not bound to award the contract to the lowest bidder, but he has a right to inquire into the fitness and skill of the bidders to fulfil the contract. The fact that on the opening of the bids the person letting the contract or his architect said to one of the bidders, "You are the lucky man," is merely a recognition of the fact that he is the lowest bidder, and is not equivalent to awarding the contract to him.

Laskie v. Haveltine, Supreme Court of Penn. 25 At. Rep. 886, Jan. 30, 1893. 102.



SECOND FLOOR PLAN.

BUSINESS MOSAICS.

The Misses. Wilson & Kelley of room 45, 6th floor, Mills Building, make a specialty of type writing for architects. Having made a study of this branch of their work they will guarantee satisfaction to their patrons. Do not forget their place, room 45, 6th floor, Mills Building.

Columbus did not make an egg stand on end to confute his opponents. The feat was performed by Bruneleschi, the architect, to silence critics who asked him how he was going to support the dome of the Cathedral of Florence.

We have received from the E. D. Albro Co., manufacturers of veneers at Cincinnati, Ohio, samples of their work in the form of business cards printed on thin veneers, some not thicker than a sheet of note paper; Oak, Maple of various kinds, as well as Birch, making a very pretty souvenir for the World's Columbian Exposition Department of Forestry.

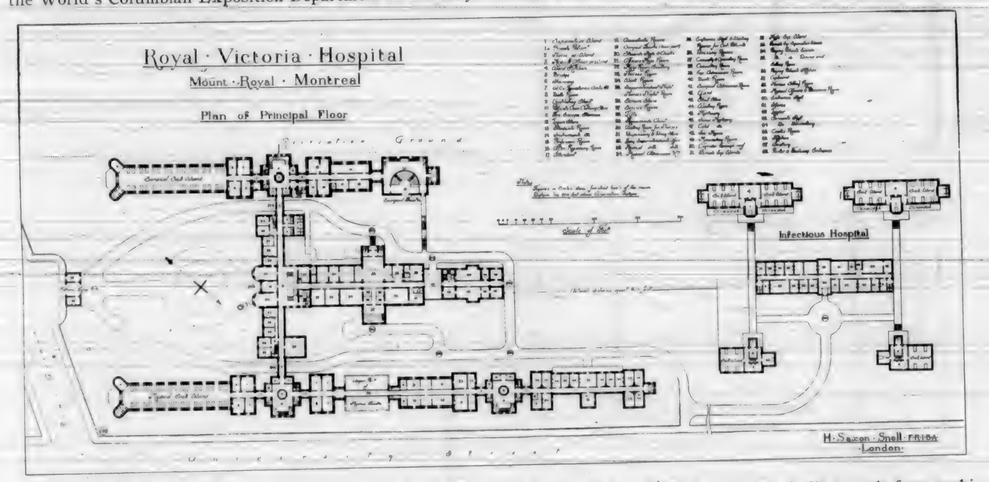
Persons in want of Artificial Stone work should call on George Goodman, 307 Montgomery street. Mr. Goodman's work is well-known for its superior quality, and his name is a sufficient guarantee.

Bilton—"It is a great misuse of terms to say a man is the architect of his own fortune."

CHILTON—"How so?"

Bilton—"When an architect plans a $5,000 house it costs $10,000, but when a man plans to get a $100,000 fortune he usually lands somewhere in the neighborhood of $1,500."—*Tid-Bits.*

The J. L. Mott Iron Works are too well-known to require a work of commendation from us, nevertheless we cannot refrain calling attention to their constant improvements in their line, for which the public should be grateful.



Messrs. Merchant & Co. deserve credit for having placed upon the market a Graduated Tile, which is a valuable addition to their regular "Spanish Metal" tile, and is well adapted for covering all Conical Towers, Circular Roofs, Turrets, Domes, etc., being so graduated in size and form as to fit almost any radius. This tile is manufactured in copper, steel or tin, the latter being painted in imitation of the red clay tile.

Doubtless the manufacture of this tile will do much to encourage the use of a more substantial material for roofing, and in copper we find the ideal material for this purpose.

More Than Plumb. ASSISTANT BUILDING INSPECTOR:—"I am afraid, Mr. Gilligan, you will have to take that front out of your residence,—it's dangerous." MR. GILLIGAN:—"An phat the Devil is the mather with the front; it's the best on the shtreet, and the only one with a bay windy." ASST. INSP'R.:—"But it's not plumb." MR. GALLIGAN: "The Devil ye soy! It's not plumb, is it not? Well I just want to shtate that it's more than plumb. This thing is getting outrageous It was only last week the plumbing inspector was here and made me tear the whole inside out o' the house to have it plumbed according to the modjern idee, and now ye want me to have the outside of it plumbed. Well, I guess not, and ye kin tell Entwisle that I'll see him in——first."

A fine model of Windsor Castle, built to scale from architectural drawings, will be exhibited at the World's Fair. It is believed to be the largest in existence and the only one architecturally correct. The model covers an area of 45x18 feet and stands sixteen feet high. It is built upon a stand, the inside of which is a work of art in saloon decoration.

We are indebted to Mr. Samuel Cabot of Boston, for a handsome Colored Lithograph of his factory, said to be the largest shingle stain work in the world. As specimens of the work done in this line, attention is called to the Forestry Building and several of the State Buildings at the World's Fair in Chicago. To those about to build, the offer is made to send one dozed colored studies upon application to their office in Boston.

With AN EYE TO THE FUTURE.—Mr. Billus was looking over the plans of a new barn he was preparing to build.

MR. BILLUS—"I don't care about having any windows on the side facing the kitchen yard," he said. ARCHITECT—"But you will need them for light." MR. BILLUS—"Light nothing!" "Those windows call for sixty-four panes of glass and I've a boy eight years old! Leave 'em out!"—*Chicago Tribune.*

The highest chimneys in the world are two in Glasgow, one being 468 feet and the other 455 feet, while one near Cologne comes next with a height of 441 feet.

The West Coast Wire Works of 13 and 15 Spear street should not be forgotten by persons in need of wire work of whatever description; Mr. Trowbridge is well and favorably known by architects and builders and any work done by him always gives satisfaction both as to workmanship and price.

A BRIGHT BOY.—OLD GENTLEMEN—"What would you like to be when you grow up?"

BOY—"I'd like to be a bricklayer."

OLD GENTLEMAN—"That's a commendable ambition. Why would you like to be a bricklayer?"

BOY—"'Cause there's so many days when bricklayers can't work."—*Good News.*

A transparent mucilage of great tenacity may be made by mixing rice flour with cold water and letting it simmer gently over the fire.

Ex-President Harrison, whose handwriting is as clear, precise and neat as that of a woman, said, after writing his annual message with a lead pencil, "My thoughts flow more freely from the pencil." General Grant, in writing his important papers, used a Dixon "American Graphite S M" and commended it for its unequaled qualities.

The 40,000 thousand souvenir quarter dollars, which Congress authorized to be minted for the Board of Lady Managers of the World's Fair, will be issued in June. It is thought the ladies will want two dollars each for them, quite a tidy sum.

CITY BUILDING NEWS.

Austin near Franklin. Two-story flat; owner, Mrs. B. McCarty; architects, Townsend & Wyneken; contractors, J. F. Klench & W. Faucher; signed, May 15; filed, May 16; cost $5,000.

Baker and Turk. One-story, basement and attic frame; owner, H. Northrup; architect, Geo. A. Bordwell; contractors, Portor Achinson & Meyer; signed, May 18; filed, May 19; cost $1,693.

Broadway and Steiner. All work to build; owner, M. Van B. Watson; architect, J. B. Mathison; contractor, A. Jackson; signed, May 11; filed, May 11; cost $7,532.

Broadway near Leavenworth. Two, 2-story frame buildings; owners, Jas. and Ann Walsh; architects, Shea & Shea; contractor, Jas. Maguire; signed, May 19; filed, May 22; cost $4,080.

Broderick near Clay. All carpenter work; owners, Mathias Edwards and wife; architect, J. H. Littlefield; contractor, O. E. White; signed, May 19; filed, May 20; cost, $3,757.

California and Jones. Copper work; owner, Geo. Whittell; architects, Coxhead & Coxhead; contractors, Forderer Cornice Works, signed, May 17; filed, May 18; cost $1,970.

California near Drumm. Slating, metal and copper work; owners, Luning Co.; architects, Coxhead & Coxhead; signed, May 19; filed, May 25; cost $2,750.

California near Drumm. Plumbing and gas-fitting; owners, Luning Co.; architects, Coxhead & Coxhead; contractors, Duffey Bros.; signed, April 20; filed, May 15; cost $3,918.

California near Broderick. Two-story frame; owners, Gottell Bros.; architect, C. M. Rousseau; contractors, L. Cuneo & Co.; signed, May 8; filed, May 9; cost $3,150.

California near Hyde. Underpinning, brick, stone, etc., for a 4-story frame; owner, F. Katz; architect, A. C. Lutgens; contractor, E. W. Haaf; signed, May 15; filed, May 16; cost $1,800.

California near Prospect Place. Three flats; owner, Mrs. Caroline Scherr; contractor, W. W. Rednell; signed, May 16; filed, May 16; cost $4,550.

Clara street. Alterations and repairs; owner, John Weir; contractor, J. A. McDonald; signed, May 19; filed, May 20; cost $435.

Clara street No. 223. Alterations and repairs; owner, Jas. L. Fallon; contractor, J. A. McDonald; signed, May 19; filed, May 20; cost $765.

Clarendon Heights, lot 13, block 4. Two-story frame; owner, J. H. Pauls; contractor, A. D. Muller; signed, April 28; filed, May 17; cost $2,510.

Carl and Stanyan. Plumbing, gas-fitting, sewering, etc.; owner, Thomas Lundy; architect, T. J. Welsh; contractors, Duffey Bros.; signed, May 23; filed, June 3; cost $1,898.

Clay near Jones. Excavating, sewering, brick, carpenter, etc.; owner, Cathe Carroll; architect, H. D. Mitchell; contractor, Martin Bapetl; signed, May 22; filed, May 22; cost $4,350.

Day near Sanchez. One-story frame cottage; owners, Gertude and George Samuels; architect, J. B. Wuerscheing; contractors, Home Building Co.; signed, May 20; filed, May 25; cost $1,500.

Drumm, Market and California. A solid brick wall; owners, Luning Co.; architects, Coxhead & Coxhead; contractors, Richardson & Gale; signed, June 3; filed, June 5; cost $3,950.

Ellis near Mason. Marble work; owner, Y. M. C. A.; architect, A. Page Brown; contractors, Inyo Marble Co.; signed, May 9; filed, May 11; cost $1,623.

Ellis near Mason. Terra-cotta work; owner, Y. M. C. A.; architect, A. Page Brown; contractors, A. Steiger Sons; signed, May 6; filed, May 11; cost $11,702.

Fell near Masonic Ave. Four flats; owner, M. A. Moldenhaurer; contractor, A. H. Baily, Jr.; signed, May 17; filed, May 18; cost $5,450.

Fell near Devisadero. Two-story frame; owners, Wm. and Rachel Smith; contractor, Wm. Plank; signed, May 26; filed, June 1; cost $3,843.

Filbert near Mason. Three-story frame, except painting and plumbing; owner, John Haub; architects, John & Balczynski; contractors, Weber & Kohler; signed, June 2; filed, June 3; cost $3,600.

Filbert near Mason. Three-story frame; owner, Jacob Schimp; architects, John & Balcznski; contractors, Weber & Kohler; signed, June 2; filed, June 3; cost $3,600.

Fillmore. Two-story frame; owner, Mrs. C. Fruitger; architect, C. W. Kenitzer; contractor, C. F. Ruppel; signed, May 16; filed, May 16; cost $4,825.

Florida near Butte. Two-story frame; owner, Ellen E. Ryan; contractor, E. Wilberg; signed, May 12; filed, May 12; cost $1,950.

Fremont Nos. 239, 241 and 243. Repairing and additions; owner, Jas. Enright; architect, Oliver Everett; contractor, J. T. Carberry; signed, May 10; filed, May 20; cost $1,640.

Fulton near Octavia. Excavating, brick, plastering, carpenter, plumbing, painting, tinning, etc.; owner, D. Guisto; architect, H. D. Mitchell; contractors, Cuneo & Caraglia; signed, May 29; filed, June 1; cost $4,790.

Garden near Harrison. Carpenter, brick, grading, plumbing, painting, plastering, mill, hardware, etc.; owner, C. H. Ingwerson; architect, M. J. Welsh; contractor, Henderlong Bros.; signed, May 31; filed, June 1; cost $4,025.

Green and Buchanan. Plumbing on six houses; owner, E. A. Sanders; contractors, Cowap & Trumbull; signed, May 2; filed, May 12; cost $1,095.

Hayes near Steiner. To build; owner, Bridget Mogles; contractor, John N. McLeod; signed, May 11; filed, May 11; cost $4,510.

Harrison bet. 5th and 6th. To build, except painting; owner, Henry Besthorn; contractor, Henry Munster; signed, June 1; filed, June 6; cost $4,675.

Harrison near 20th. Two-story frame; owner, J. J. Green; architect, A. J. Barnett; contractor, A. J. Ahern; signed, May 9; filed, May 9; cost $2,700.

Hoffman near Alvarado. To build cottage; owner, Mary A. McComb; contractors, Rule Bros.; signed, May 17; filed, June 1; cost $2,000.

Howard near 6th. Excavating, brick, carpenter, etc.; owner, Jos. F. Swift; architects, Martens & Coffey; contractor, John J. O'Brien; signed, May 13; filed, May 15; cost $5,500.

Howard near 11th. Alterations to a two-story frame; owner, Jos. Herrscher; architect, C. Mau; contractor, W. J. Field; signed, May 6; filed, May 11; cost $3,050.

Jones and Chestnut. Grading; owners, John and Clara Finley; contractor, J. J. Rauer; signed, Oct. 19, 1892; filed, June 3, 1893.

Kearny near Union. Two-story frame; owner, G. Filipelli; contractor, G. Ratto; signed, May 23; filed, May 24; cost $3,590.

Leavenworth near Lombard. Two-story frame; owner, J. J. Stofen; architect, Jas. H. Humphreys; contractor, N. R. Ellis; signed, May 24; filed, May 25; cost $2,488.

Lott near Hayes. To build except plumbing and painting; owner, Adolph Newmun; architects, John & Balczynski; contractor, F. V. Steinman; signed, June 8; filed, June 8; cost $3,650.

Market near City Hall Ave. Two-story brick; owner, S. H. Seymour; architects, Shea & Shea; contractor, W. W. Ackerson; signed, May 31; filed, June 2; cost $13,493.

Mason near Broadway. A frame building; owner, Mrs. Justi Capelli; architect, M. J. Lyon; contractor, Thos. Kinread; signed, May 6; filed, May 10; cost $8,100.

Mason near Eddy. Granite and sandstone work; owner, S. Silverberg; architects, Sailfield & Kohlberg; contractor, J. Sheedy; signed, May 11; filed, May 22; cost $1,250.

Mason near Eddy. Plumbing and gas-fitting; contractors, Samuel Ickelheimer & Bro.; signed, May 11; filed, May 22; cost $3,450.

Minna street, No. 1427. Alterations and additions; owner, Patrick Connell; contractor, M. S. Yerxa; signed, May 19; filed, May 20; cost $1,430.

Mission near Fair Ave. To build, except mantels, gas fixtures and painting; owner, Della Greenleaf; architect, E. A. Hermann; contractor, Henry Jacks; signed, June 3; filed, June 5; cost $4,650.

Oak near Clayton. Two-story frame; owner, Mrs. J. D. Jennings; contractor, W. W. Redmall; signed, May 11; filed, May 12; cost $3,742.

Octavia and Ellis. Grading, etc.; owner, Wm. Wolf; contractor, Jas. J. O'Conner; signed, May 18; filed, May 20; cost $4,709.

O'Farrell near Webster. Three-story frame; owner, David Bernstein; architect, A. J. Barnett; contractors, Miron & Gardner; signed, May 11; filed, May 18; cost $8,504.

O'Farrell and Grant Ave. Carpenter, marble and grille work, plastering, etc for saloon and basement; owners, Caley & Roeder; architect, Chas. I. Havens; contractor, C. B. Green; signed, May 26; filed, May 26; cost $1,855.

Page and Schrader. Plumbing, sewering, etc.; owner, John Witt; architect, F. P. Robin; contractor, H. Williamson; signed, May 18; filed, May 23; cost $1,074.

Page near Devisadero. To build; owner, Henry Mangels; architect, H. Geilfuss; contractor, F. Klatt; signed, May 9; filed, May 9; cost $4,800.

Page near Steiner. Two-story frame; owner, D. Sullivan; architect, P. R. Schmidt; contractor, J. J. O'Brien; signed, May 9; filed, May 10; cost $5,800.

Pleasant near Taylor. Three-story frame; owner, Annie Schurch; architect, Wm. H. Armitage; contractors, Gardner & Boyden; signed, May 20; filed, May 24; cost $6,500.

Polk street, No. 1710-1712. Alterations and additions; owner, Jos. Podesta; architect, Oliver Everett; contractor, John Strand; signed, June 1; filed, June 2; cost $950.

Post near Grant Ave. To alter elevator; owners, H. Liebes & Co.; architects, John & Balczynski; contractors, Cahill & Hall; signed, May 8; filed, May 15; cost $3,525.

Railroad Homestead Association, lot 4 block B. To build; owners, E. J. and Mary McMullin; contractor, Jos. Morris; signed, May 15; filed, May 20; cost $850.

Sacramento and Central Ave. Excavating, concrete and artifical stone work for a frame building; owner, John Irilary; architect, Wm. Mooser; contractor, H. M. Peterson; signed, May 22; filed, May 22; cost $1,950.

Seventeenth and Valencia. Lathing and plastering; owner, Mission Parlor Building Association; architects, Shea & Shea; contractor, J. T. Mackey; signed, May 8; filed, May 22; cost $1,215.

Shotwell near 19th. Painting; owner, Robt. R. Hind; architect, H. T. Bestor; contractor, Daniel Foley; signed, March 4; filed, May 11; cost $925.

Shotwell and 19th. Plumbing; owner, Robt. R. Hind; architect, H. T. Bestor; contractor, D. J. Daley; signed, May 2; filed, May 11; cost $2,050.

Spruce and Washington. Polishing and interior wood work; owner, O. D. Baldwin; architect, Samuel Newsom; contractor, P. N. Kuss; signed, April 19; filed, May 18; cost $1,200.

Spruce and Washington. Plastering and cement work; contractors, D. Leahy & Bro.; signed, April 14; filed, May 18; cost $1,040.

Stevenson near 20th. To build; owner, John T. Millbrick; architect, Edw. J. Vogel; contractor, Hugh Curran. signed, May 24; filed, May 25; cost $2,770.

Sunny Side. One-story frame; owner, John Johnson; contractors, Peterson & Olson; signed, June 3; filed, June 3; cost $1,420.

Sutter and Mason. Carpenter, tin roofing and galvanized iron work, etc. owner, S. Wenban; architects, Pissis & Moore; contractor, F. W. Kern signed, April 27; filed, May 18; cost $15,950.

Thirtieth near Noe. To build; owner, Mrs. B. Beck; contractor, O. E. White; signed, May 16; filed, May 19; cost $1,200.

Twenty-first and Howard. A frame dwelling and stable; owner, C. A. Clinton; architect, W. J. Mathews; contractors, Garden & Boyden; signed, May 20; filed, May 24; cost $8,575.

Twenty-third near Noe. To build; owner, Marietta I. Willats; contractor, J. A. McDonald; signed, May 13; filed, May 20; cost $2,300.

Turk and Larkin. Galvanized iron, metal and tin work; owners, Luning Co.; contractor, Forderer Cornice Works; signed, April 26; filed, May 15; cost $2,285.

Turk and Larkin. plaster work; owners, Luning Co.; architects, Coxhead & Coxhead; contractor, Chas. Dunlap; signed, May 3; filed, May 15; $3,000.

Turk and Larkin. Plumbing and sewering; owners, Luning & Co.; contractors, Duffey Bros.; signed, April 24; filed, May 15; cost $5,723.

Turk and Buchanan. Brick and carpenter work to four three-story frames owner, H. F. Fortman; architects, John & Balczynski; contractor, J. H. Munster; signed, May 10; filed, May 11; cost $23,678.

Turk and Buchanan. Plastering; owner, H. F. Fortman; architects, John & Balczynski; contractor, Arthur O'Brien; signed, May 10; filed, May 11; cost $3,070.

Turk and Buchanan. Plumbing; owner, H. F. Fortman; architects, John & Balczynski; contractor, Wm. F. Wilson; signed, May 10; filed, May 11; cost $3,900.

Union near Baker. To build; owner, Nicolas Silva; architect, J. B. Wuersch-contractors, The Home Building Co.; signed, May 10; filed, May 22; cost $2,900.

Vallejo near Laguna. Two-story frame; owner, C. A. Marshutz; architect, J. E. Krafft; contractor, S. H. Kent; signed, May 29; filed, Jnne 1; cost $8,970.

Vallejo near Laguna. Plumbing and gas-fitting; owner, C. A. Marshutz; contractors, Duffey Bros.; signed, May 29; filed, June 1; cost $1,200.

Vallejo near Polk. Carpenter, mill, etc.; owner, Earnst Lahgendorf; architects, Martens & Coffey; contractor, W. W. Ackerson; signed, May 9; filed, May 15; cost $3,600.

Vermont near Yolo. To build; owner, Morris Wendt; architect, R. H. White; contractor, D. T. Pierce; signed, May 9; filed, May 15; cost $4,933.

Vincent near Union. Two-story frame; owner, G. F. Ertola; contractor, Jean Ducasse; signed, May 24; filed, May 26; cost $1,500.

Washington near Jones. To build; owner, Matilda Wolff; architects, Pissis & Moore; contractors, F. W. Krelling & Sons; signed, May 9; filed, May 10; cost $12,800.

Washington bet. Lyon and Baker. A cottage; owner, Jas. Goveran; architect, Jos. P. Brady; contractor, John T. Hayes; signed, May 8; filed, May 10; cost $1,825.

ALAMEDA COUNTY.

Brush near Thirteenth, Oakland. Two-story frame; owner, Albert Rowe; architect, W. Kirk; contractor, L. H. Long; signed, May 11; filed, May 12; cost $7,245.

Caroline near Central Ave. To build; owner, F. Dohrman; contractors, Marcuse & Remmel; signed, May 8; filed, May 12; cost $2,700.

Caroline near Central Ave. To build; owner, J. C. Seigfried; contractors, Marcuse & Remmel; signed, April 20; filed, April 20; cost $3,950.

Fifth Assn. Tract, lot 9, block B, East Oakland. To build; owner, J. Williams; contractor, A. N. Frost; signed, April 17; filed, April 19; cost $1,280.

Folsom and Tenth, Golden Gate Tract. To build; owner, John Chicon; architect, E. Deplerre; contractor, T. A. Aymard; signed, April 24; filed, May 8; cost $1,350.

Grove near Sycamore, Oakland. To build; owner, Mrs. R. Farley; architect, E. C. McManus; contractor, H. W. Schacker; signed, May 9; filed, May 10; cost $1,500.

Haight Ave. Frame store; owner, F. C. L. Lawlor; contractor, A. R. Denke; signed, May 5; filed, May 8; cost $1,545.

Howard Ave. near Oakland Ave., Oakland. To build; owner, J. F. Callahan; contractor, C. S. Whalin; signed, May 9; filed, May 9; cost $1,300.

Moswood Tract, Oakland. To build; owners, C. H. and C. M. Dan Andker; contractor, K. Nelson; signed, May 10; filed, May 11; cost $1,500.

Ninth near Harrison, Oakland. Two-story frame; owner, C. Terney; contractor, D. S. Brehant; signed, April 15, filed, April 17; cost $6,650.

Pacific Ave. near Anglimbaugh. One-story cottage; owner, A. H. Wolf; contractor, A. R. Denke; signed, May 11; filed, May 11; cost $1,250.

Paru near Alameda Ave. Remodeling; owner, A. Schmidt; architect, C. S. Shaner; contractor, A. W. Cornelius; signed, May 11; filed, May 12; cost $2,185.

N. R. R. Ave near Walnut Ave. Three cottages; owner, Wm. J. A. M. Smith; contractors, Marcuse & Remmel; signed, May 6; May 8; cost $5,600.

San Pablo Ave. near 23d, Oakland. Two-story building; owner, J. M. Driscoll; architect, H. Burns; contractor, P. T. Nelson; signed, April 19; filed, April 31; cost $4,762.

Tenth Ave. near Twentieth, Oakland. Two-story; building; owner, W. H. Gregory; contractor, A. Burk; signed, April 3; filed, May 10; cost $3,672.

Twelfth Ave. near 15th, Oakland. Seventeen-room cottage; owner, M. E. Bacon: signed, April 11; filed, April 17; cost $3,200.

Washington near 11th. Oakland. Carpenter work; owner, F. W. Schultz; architect, C. Mau; contractors, Herbert & McLeod; signed, April 26; filed, April 28; cost $11,637.

PLACERVILLE.

Masonic Temple and Building. To build; owner, Masonic Hall Assn. architect, W. J. Cuthbertson; contractor, Beach & Co.; cost $17,000.

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NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

THE project for the California Mid-Winter Exposition has taken definite shape, and if the enthusiasm of its originators can be imparted to the community of the State, the scheme bids fair to be a success. The time is short, however, and the work to be done immense, and if all difficulties are successfully overcome, great credit will be due the promoters of the enterprise, and undoubtedly much permanent good will result to this State and city.

IN another part of our paper will be found a detailed account of the excuse of an accident at the old Ford's Theatre at Washington by which so many lives were lost.

The lesson which has been so dearly taught ought to have presented itself to the common sense of the United States without such an experience. Professional men are well aware of the necessity of employing only well educated and experienced men on any construction—but the public are not so, so it seems necessary that some such event (it is a misnomer to call it an accident) as that before us should take place to call the attention of the public to these facts.

A competent architect or engineer should always be placed to superintend all works, no matter how apparently trivial they may be, that are undertaken by the government.

This occurence emphasizes the absolute necessity of having a body of men as architects who are thoroughly equipped in their profession—men who are compelled to pass an examination as are doctors and lawyers before they are admitted to practice. The Architectural profession involves more serious risks to life, health, happiness and general welfare, much more fold, than either of the other mentioned professions; and yet it is left to be recruited in a haphazard fashion from anyone who has the presumption to suppose he is fitted for it and is allowed to experiment on the health and life of the community.

ABUSES IN ELECTRIC WIRING.

BY GEO. P. LOW.

WHERE recently appeared in these columns an article upon the wiring of buildings for incandescent lights, in which was pointed out the utter helplessness of the layman in securing the conformity by wiring concerns in specifications for electric work and particularly was it indicated that the placing of an installation at three per cent drop in potential instead of at the two per cent loss so generally specified, will frequently net the electrical contractor hundreds of dollars saved in copper yet generally neither owner or architect will be able to detect the fraud. So completely has the universal ignorance in reference to the technical details of electric work placed the public at the mercy of a trade that is all but demoralized by irresponsible competition that property owners have in this "drop in potential" matter alone, paid thousands and thousands of dollars to wiremen for material contracted for yet which was never furnished. Nor in many instances, did the electrician intend to furnish this material when he contracted to do so. To the shame of the trade—for the just suffer with the unjust—it is a fact that of the truth of these statements there is not the slightest doubt.

Another fraud, equally flagrant with that described and which is closely akin to it, yet which, owing to the ease of detection, is not practiced so freely as it has been, consists in the substitution of a cheap and inferior grade wire for the high grade insulation that must always be used in concealed work. In localities not under the constant vigilance of an underwriters' inspector and where consequently, electrical matters all but take care of themselves, it becomes the simplest thing in the world to wire all circuits located in concealed and inaccessible places with an inferior wire and to splice on to the ends an approved insulation at all points where the wire is exposed to sight. Every experienced electrician—if he will—can cite instances in which this *felony* has been practiced. The word *felony* is used advisedly. If an electrician deceives an architect and defrauds an owner into paying for goods he did not deliver and never intended to deliver, it is a crime, but if he wilfully carrys the fraud to the extent that the property is endangered, that it may be burned from the wretched work and lives may be lost thereby, then the act is of that enormity that it should be treated as a felony. No one knows better than the insurance inspector that buildings have been so wired and that should he relax his vigilance, others would be so wired again.

Property owners suffer further great loss from the fact that sufficient judgment is not exercised in determining the proper voltage for which a building should be wired. Here again as in "drop," it is impossible to lay down a general rule that can be followed even for roughly approximate results. It may be stated however that except in buildings containing isolated plants, the voltage is determined from the nature of the plant or central station that is to supply the current. Should it be desired, the building may be so wired that the wiring may be occupied by any commercial low potential system of lighting, or to go still further, any building may be so wired that its circuits can be occupied by any incandescent system, whether for series or multiple lighting, but the last named scheme would be unnecessary, ordinarily.

The usual systems for which a building may be wired are known as the 50-volt, 100-volt, 110-volt and the three-wire, or 220-volt systems. As to the hazard presented by these systems they are about equally safe, and as far as the public is concerned they may be considered as merely different methods of distributing electric energy for commercial purposes. In the end they each accomplish the same thing, that is, by means of each, about 50 watts of electric energy is delivered to each 16 candle power lamp. But 50 watts may be 50 volts and one ampere, or 100 volts and one-half an ampere or 200 volts and one-quarter of an ampere, for the energy of a current of electricity is expressed in watts, which are derived in the product of the volts and the amperes that constitute that current. All 16 candle power lamps require about 50 watts to burn them, but these 50 watts may be variously derived as above stated, hence the voltage for which a building should be wired depends upon the voltage of the source of supply and upon the lamps to be used. Since lamp makers now furnish lamps of all voltages, the second consideration is immaterial. Clearly then the lower the voltage the higher the ampereage and as ampereage—not voltage—is the factor of electric energy that requires cross-section in the wire along which it travels, it is equally clear that the lower the voltage used, the greater must be the size of the wire run.

The point of greatest importance in determining the proper voltage is to derive the system that will meet all contingents and yet cost the least, for as will be shown, a vast difference exists in the amount of copper wire used by the various systems—and copper costs nearly 20 cents a pound.

In the accompanying table appear the ratios existing between the amount of copper used to effect any installation. In each instance, under the various voltages given, the results will be the same, each lamp will get the same amount of energy, the length of circuit is equal and the drop in potential is the same, yet it is plain from the table that for 50-volt work the amount of copper required will be 4 times that used in 100-volt work, 4.58 times that used in 110 volt work and 12.98 times that used in the three-wire system. Inversely the copper required if the installation was wired on the three-wire system, would be .077 of that used if the wiring was for 50-volts, .310 if 100-volts, and .375 if 110-volts.

RATIOS.

VOLTAGE	50 VOLTS	100 VOLTS	110 VOLTS	220 VOLTS
50	1.	4	4.58	12.98
100	.250	1.	1.21	3.22
110	.218	.826	1.	2.66
220	.077	.310	.375	1.

It must be borne in mind that these figures are theoretical. They, however, hold strictly good in practice except in the smaller sizes of wires where the fire underwriters' requirements prohibit the use of wire smaller than number 14, B and S Gauge. The ratios which the smaller wires bear to the large ones vary very materially in each installation but it is entirely safe to say that the amount of wire uselessly placed can be measured only in tons. The writer has in mind one large western building in which nearly $18,000 was thrown away absolutely, by reason of ignorance in selecting the proper voltage. Again as local electrical situations develop practices are becoming more uniform, and while only a year or two ago, owners were justified in wiring for 50-volts, at the present time the necessity for so doing is fast disappearing, particularly in large cities. Despite this many small and comparatively inexperienced electric wiring concerns still maintain that the only safe course is to wire for 50-volts. Frequently it is true, but by far more frequently is it true that precisely the same results would be attained with the expenditure of from one-fourth to one-thirteenth of the weight of copper necessary to install 50-volt wiring.

To the Editor of the California Architect:

FROM the most remote period of antiquity the tower has been a distinguishing feature of architectural composition. The towers most conspicuous in history, have been located on elevated ground, either natural or artificial, presenting a wide and firm foundation. The tower may be taken as a typical illustration of the sentiments and feelings of mankind. Man has a sense of ambition and a desire to rise above his fellows, so also should the tower rise to a towering height above all surrounding objects. Burke says in his essay on the "Sublime and Beautiful" that "astonishment is that state of the soul in which all its motions are suspended with some degree of horror." This sentence describes our feelings upon seeing an illustration in a morning paper of the proposed design for the buildings and grounds intended for the Mid-Winter Fair, bearing the name of Leon Bonet. It seems to me that no architect would make such a burlesque as that shown.

Upon an examination of the proposed design it appears that the central portion of the space is to be excavated and leveled off, and the outer portions of the plot to be raised, and the buildings erected thereon. As appears by the published design, the buildings will be about fifty feet in height and the terrace will descend about one hundred feet to the level of the central portion. A tower is shown standing in this lower portion; by itself, and if erected upon elevated ground, this tower would make a creditable appearance, but when placed as shown in the design is suggestive of many things. The lowest section might be used as a crematorium, or else for the reception of a power house and electric plant, and the column above as a light beacon, but for the fact that it is too low, and the light would be confined to the inclosure. It might be intended as a monument, but the effect would be insignificant, if a person had to climb a hundred feet to get a full view of it; monuments are not generally inspiring when looked down upon; possibly some of our former enterprising citizens may take that view of the subject. If it was intended for use as a smokestack the situation is also unfortunate, as the wind sweeping over the surrounding buildings would be apt to cause a down draft. Many other possible purposes might be mentioned if space permitted.

In all seriousness is this design to be typical of the whole scheme?

Yours truly,

CRITIC.

FIFTH ANNUAL COMPETITION FOR THE ROBERT CLARKE TESTIMONIAL.

UNDER THE AUSPICES OF THE CHICAGO ARCHITECTURAL SKETCH CLUB OF CHICAGO.

CONDITIONS—The author of each design must execute all drawings without assistance, and non-adherence to these conditions will cause the rejection of the design or designs in question.

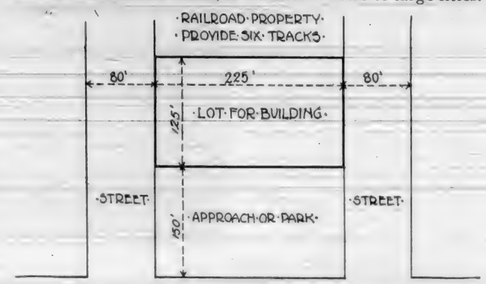
The competition is open to architectural draughtsmen under thirty years of age, residents of the United States and not practicing architects.

The awards will be made by the Adjudicating Committee on the "Robert Clarke Testimonial" competition, and are:

FIRST PRIZE	GOLD MEDAL.
SECOND PRIZE	SILVER MEDAL.
THIRD PRIZE	BRONZE MEDAL.

The prize drawings are to become the property of the Chicago Architectural Sketch Club.

PROGRAMME—A design for an elevated railroad terminal station for suburban traffic, in business centers of large cities.



PLAN OF SITE.

The building is to have three general stories, the first or ground floor to contain a lobby, stairways, offices and all necessary conveniences.

The second floor is to be on a level with the platform and to contain one general waiting room, one waiting room for women and one for men, toilet rooms, ticket office, depot master's office and necessary stairway to reach the Railroad Co's offices on the third floor.

The building can be smaller than the lot outlined on the accompanying diagram, and the space in front is to be used as an approach or park.

The drawings are to consist of the following, their arrangement and the number of sheets being left to the discretion of the competitor:

First or ground floor plan, second floor plan, front and side elevations, transverse or longitudinal section, perspective and block plan. Size of sheets to be 22x28 inches.

Plans, elevations and section to be drawn to a scale of 1-16 of an inch to a foot, pen and India ink rendering. The perspective to be drawn from an 1-8 scale plan, rendering optional.

The drawings are to be marked with a motto or *nom de plume*, and accompanied by a sealed envelope marked in the same manner, containing the name and full address of the author, with the place and date of birth, and must be delivered flat to HUGH M. G. GARDEN, Secretary, Chicago Architectural Sketch Club, at the Club Rooms, 913 Masonic Temple Building, Chicago, on or before Monday, October 2, 1893. Charges to be prepaid. All drawings other than those receiving prizes will be returned at the expense of the contributor.

The Adjudicating Committee on the Robert Clark Testimonial:
W. L. B. Jenny, Chairman.
Samuel A. Treat.
Chas. A. Coolidge.
D. H. Burnham.
Lorado Taft.

CALIFORNIA SLATE.

VERY few people, unless it be the architects, are aware that located in our "fair State" is one of the largest deposits of slate in the world. Its quality is second to none being a beautiful dark steel blue in color, tough and easily worked; it improves by exposure, and will not change color. In fact a true slate in every sense.

A better idea may be obtained of the magnitude of this slate deposit when one considers that the ledge is over 2000 feet wide, 1600 feet high from the bed of the American River—very likely as deep below the bed, with a length of two miles. A great mass, indeed, of fine material, good for all purposes where slate can be used.

PLATE NO. 1.

This deposit is situated in El Dorado County, about two miles from the city of Placerville, on the American River, at the bridge on the road leading to Georgetown. This deposit has been opened and worked in a small way for the past six years. Recently a company was incorporated who purchased the deposit, and has erected an improved plant of machinery for quarrying and manufacturing the material into roofing slate, slabs, etc. It is now in full operation, turning out several thousand squares of roofing slate each month, besides slabs and tiling in large quantities.

PLATE NO. 2.

The accompanying plate No. 1 shows the largest of the quarries, there being two in operation. The machine shown is known as a Channeler, which cuts the slate into solid blocks 6x8 feet. This machine is run by compressed air forced up from the machinery or compressor rooms in pipes, a distance of 500 feet to the quarry. From the Channeling machine the blocks are conducted on a tramway to where they are split into slabs. These slabs are then placed under the saw, which is made of wire 1400 feet in length, running over numerous sheaves and passes over the slate slabs to be cut, the wire being held down by an automatic appliance on the slate. During the passage of the saw, sand and water are dropped on the part to be cut. Thus the slabs are cut to any desired size. From the saw the slate is conducted on an inclined railway to the splitting sheds, is there split and trimmed ready for shipment. Slabs for billiard tables, tiles, and other purposes are cut to size in the same way, by the wire saw and sand. The sand used in cutting, is what is known as "Quartz Sand," and is at hand in great quantities. From the fact of its not having travelled but a short distance, the cutting edges are fully perserved. It is remarkable to note how fast the wire will pass through the slabs of slate.

The parties who first opened these quarries worked them by the old process of blasting with powder, and handling it by the system carried on in Wales for the past hundred years, destroying thousands of tons of the finest material through the action of powder. But by means of the machinery erected by the new company, almost all of the slate taken from the quarry is saved, and turned into a ready market.

The accompanying illustrations give one only a partial idea of these quarries. Plate No. 2 shows the quarry as it appeared when worked under the old system. Men may be seen in the act of drilling holes by hand in the slate to take the blast. Plate No. 3 shows the vast dumps of waste slate. These dumps are made up of the finest material broken into pieces, and almost worthless by blasting. But with such a mountain of slate the former owners of the quarries gave no thought to the material wasted. After a blast they selected the largest blocks or slabs, and the rest was consigned to the dump. Plate No. 4 shows the Channeling machine and one of the benches started by the new owners. This is in the largest quarry, which is an opening in the face of the hill, 250 feet in heighth, and over 400 feet in width. By the use of the machine, the quarry will present a series of steps or benches from bottom to top, six feet each in heighth.

PLATE NO. 3.

It would be hard to estimate the value of this immense deposit. In Wales and the eastern states thousands of men are employed in the slate industry, some of the quarries in Wales employing from three to four thousand men each. Let us hope that ere long we may see as many employed in the slate quarries of El Dorado county.

Surveys and estimates have been made for an overhead rope-way to be erected by the new owners, to transport the slate to the railroad at Placerville, a distance of about two miles.

THE MINISTER—"Do you ever think of a higher life, Miss Emma?"

MISS EMMA—"No! papa is so much afraid of fire we always take the first flat."—*New York Herald.*

THE WESTINGHOUSE ELECTRIC COMPANY'S PROPOSED WORKS AT BRINTON, PA.

THE plans for the Westinghouse Electric Company's new plant at Brinton are nearly ready, says the *Electrical Review*. Of the 222 acres owned by the company, 23 will be covered by the works. The machine shop will cover a space of 750 feet by 250 feet; the warehouse 750 feet by 25 feet; the foundry 700 feet by 250 feet; and the boiler house 150 feet by 40 feet. Including other buildings, the area of the ground floors will be 7⅜ acres, and including the second floors, 15 acres. The structure will be fire-proof stone and steel on the latest methods, and labor-saving devices will be employed to the fullest extent. Electricity as a motive power for labor-saving machinery will be utilized. It is estimated that the saving from the consolidation of the plants will not be less than $250,000 a year. Two hundred houses for the employees will be built at once.

MR. EDISON'S FUTURE WORK.

WHAT tireless inventor, Mr. Thomas A. Edison, has been again heard from as regards the problems he has undertaken to solve. He has not, by any means, given up his idea of devising ways and means of obtaining the energy of coal in a manner more direct than the present wasteful methods, and he promises to soon resume experiments along this line. He has had enough of the machinations of Wall street, however, and what he does hereafter, will be through his own enterprise entirely. He proposes to control all his future inventions himself, without the aid of Wall street.—*Electrical Age.*

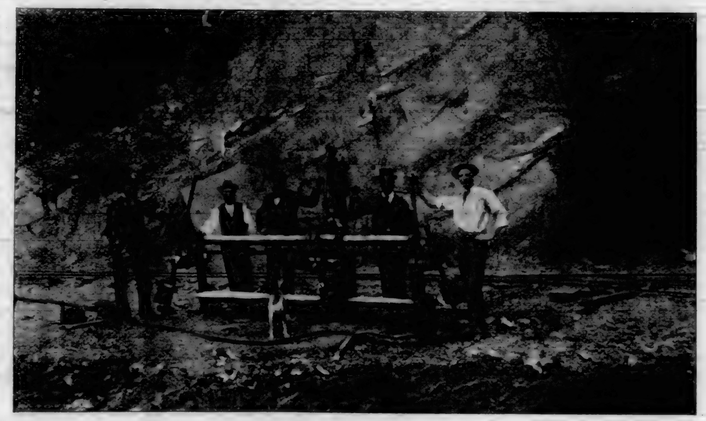


PLATE NO. 4.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Tower for the New City Hall, is by architect Frank T. Shea.

THE Kern County Land Co's Building at Bakersfield is by Henry A. Schulze, architect.

A residence for Mr. Wm. T. Garrett in Alameda, is by architect Fuller Claflin.

ACCIDENT IN THE BUILDING OF RECORD AND PENSION DIVISION, WAR DEPARTMENT, OLD FORD'S THEATRE, WASHINGTON.

LACK OF INTELLIGENT SUPERVISION OF UNDERPINNING.

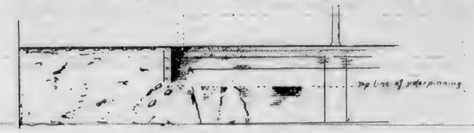
FORD'S old theatre situated on Tenth street between E and F streets was erected by John T. Ford in 1857. Mr. James Gifford was the architect. After Lincoln's assassination the Government took possession of the building and arranged the interior for the Army Medical Museum. The back wall was, and is, considerably out of plumb. The interior, with probably the exception of the roof, was replaced, the floor being supported on cast-iron columns carrying iron beams with four-inch brick arches sprung between them. The back wall, which was out of plumb was strengthened by the addition of an interior wall and anchors tying the wall to the system of interior beams.

The first floor rests on a series of arches sprung from dwarf walls two feet eight inches high from footing to spring line. These arches began about twenty feet from the front wall; the floor on the intervening space rests on sleepers laid in an indifferent bed of concrete.

A small cellar was arranged in the back of the building in which the heating apparatus was located.

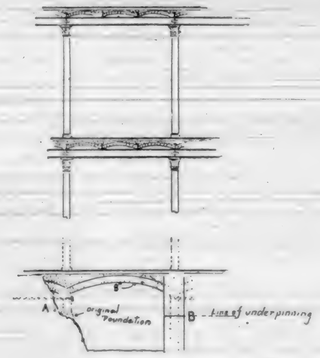
For several weeks workmen have been excavating a passageway from the front to the rear of the building. The central archway had been selected for this purpose. The dirt for this passage was removed, and the dwarf walls were underpinned for a height of about four feet. Curious as it may seem, they had practically completed the underpinning, having finished all the piers on which the columns rested except one, this one as an excavation was made beneath it, gave way, letting down the colum marked *A*, pulling over the column marked *B* and precipitating the beams and brick arches which rested upon them on both the second and third floor to the first floor. The portion of the first floor which rested on 3″ x 4″ sleepers was carried into the excavation. The brick arch over the passageway did not fall. The roof, fortunately, was independent of the system of columns, reaching from wall to wall.

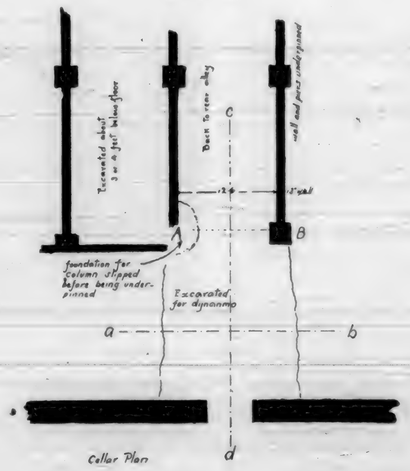
The clerks working on the different floors fell with the falling iron, brick, timber and desks, as there was no warning. Nineteen were killed by the fall, one who was safe, was killed by jumping from a window and sixty-eight were



injured, three having died from their injuries. Twenty workmen were under the archway. The bricklayer, who was preparing to underpin the pier which gave way, feeling dirt fall on his neck, stepped back (out of harm's way) to brush it from his neck just as the crash came.

This accident has brought to light customs of the War Department, which if practised by an individual or a corporation would not only be considered criminal but would render them liable to prosecution and conviction for manslaughter. It seems that in work of this character, where the lives of many people are at stake, it does not employ proper expert supervision, and further, that it does not even get expert advice as to the proper methods of conducting such an important undertaking as underpinning a series of piers on which rested columns supporting two stories of brick and iron floors, 13x20 square feet, loaded with men, desks and papers. The methods adopted in carrying on this work show an entire lack of comprehension of the matter in





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SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XIV Nº 7 JULY 1893.

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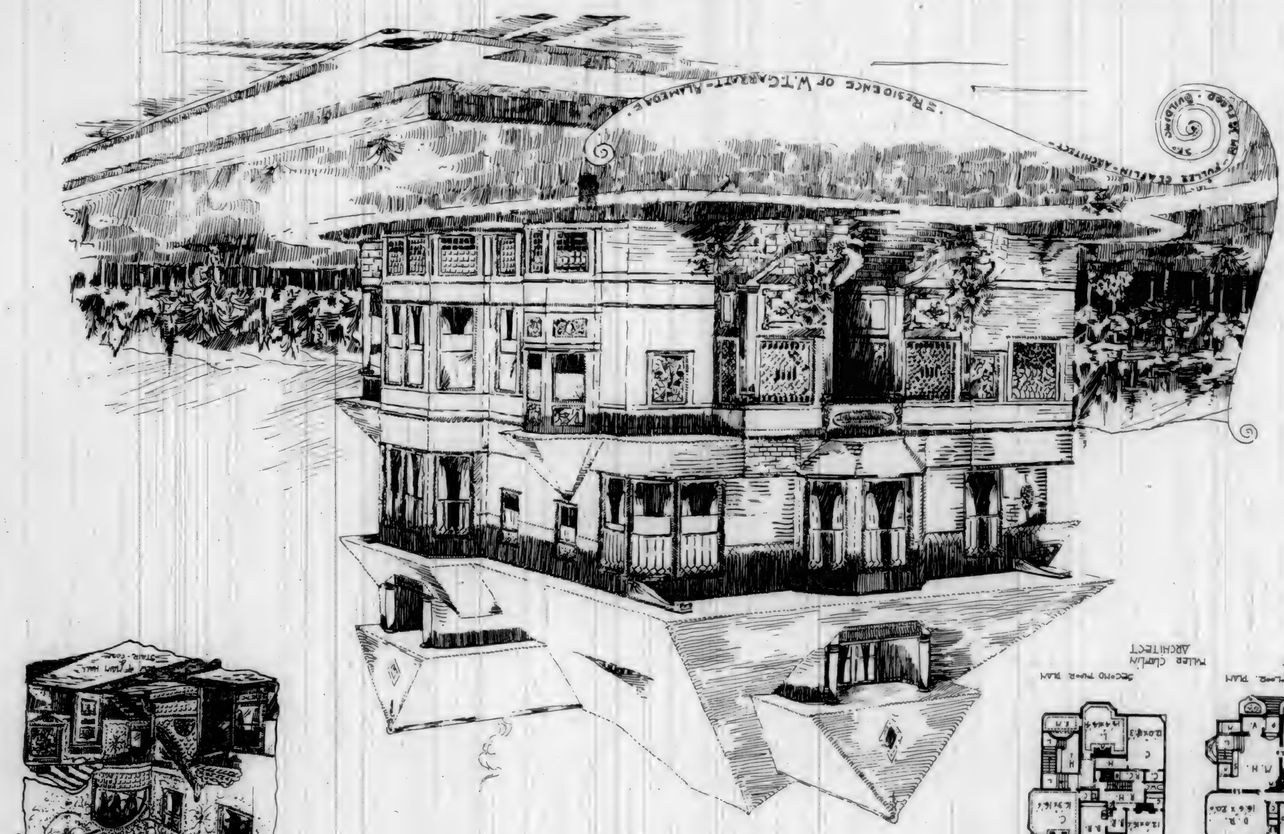
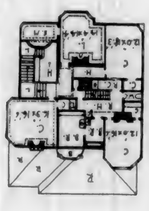




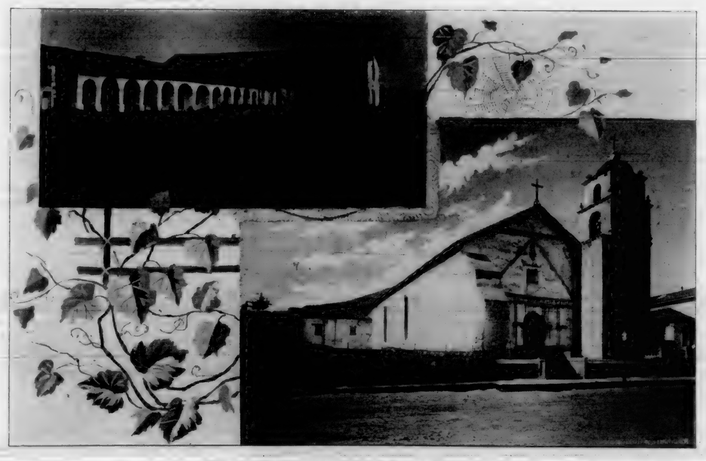
SECOND FLOOR PLAN

FIRST FLOOR PLAN
SCALE ¼ INCH

MILLER CLEVLIN
ARCHITECT

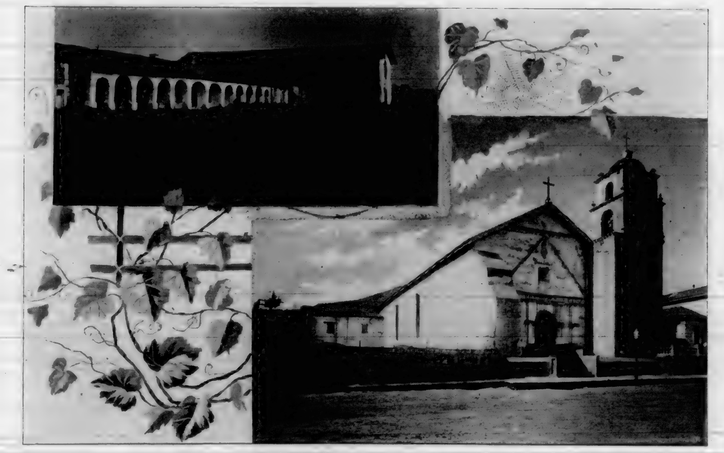
MUSEUM OF HISTORY, SCIENCE AND ART
JUN 18 1934
LOS ANGELES

MISSION OF SAN ANTONIO DE PADUA; FOUNDED JULY 14, 1771.



SAN BUENAVENTURA MISSION.

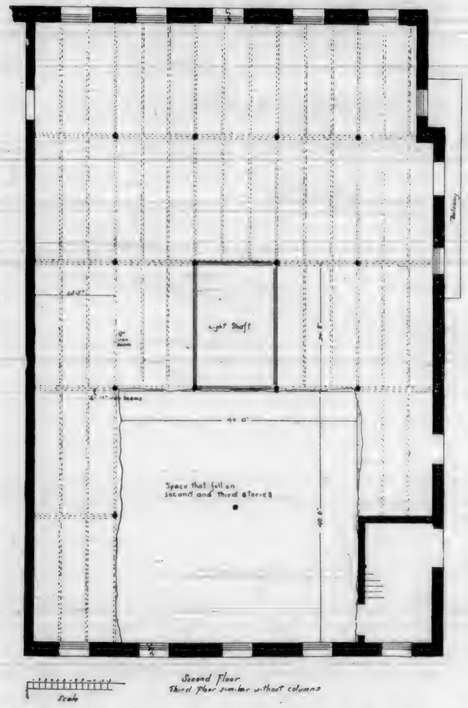
Mission of San Antonio de Padua; Founded July 14, 1771.



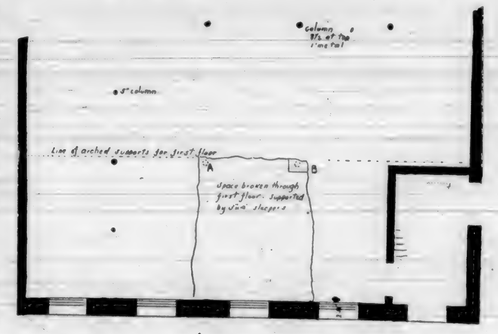
San Buenaventura Mission.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
MDCCCXXXIV

hand. Each pier had, at a low estimate, 51,000 pounds resting on it when the earth was taken from beneath, leaving a bond of about three feet of brickwork to support this great weight above. Curiously, this method was successful until they came to the last column. This pier had a wall bonding into it only on one side, hence they were depending on the strength of a brick corbel with only the counterbalancing weight of three feet in height to support 51,000 pounds. They (we might say miraculously) accomplished this feat at *B*, but at *A*, the last pier, what might have been considered inevitable, happened. The brick corbelling and the little support which was obtained from the earth, a mixture of sandy clay, gave way and the columns and superstructure which they supported collapsed. It does not seem to have occurred to the contractor or any of his supervisors to have shored up the story above. The ease and slight cost of such shoring the cross-beams by temporary support one would think would have commended itself to the most obtuse as well as the most penurious person, whether it was a Department Chief or a contractor. It appears from the assertions of those who made estimates on the job, that no specifications,* drawings, or directions were given for the work. The party in charge of the building said that no specifications were needed, all they wanted was that the dirt should be dug from beneath the walls, and the space bricked-up. That was the quality of expert direction as to how the work should be done. The supervision consisted in Colonel Ainsworth (medical Colonel), Chief of Division, the man who attends the boiler (dubbed engineer) and the contractor for the brickwork examining the work daily and asserting that everything was all right. Dr. Ainsworth and Captain Thorpe, who let-out the contract, assert that this is a common way of letting-out contracts for the War Department, and the Supply Division or Quartermaster's Department which has charge, of course, know little if anything about how the work should be done, hence they depend on the contractors.



This is a sorry confession from the Department which has the whole Engineer Corps of the United States Army at its command. To what better use could the engineers be put in times of peace than computing the weights and size of shores to resist them, and specifying the necessary precautions that shonld be taken in such cases as this? It seems as though such trifling affairs are not worthy the attention of even a lieutenant in the Engineer Corps.



It is a serious question to decide which party is the most to blame, the contractor, Dant, who should at least have known a little about relieving the piers from the weight above underpinning them, or the army officer, Dr. Ainsworth, who should have obtained expert advice and supervision.

The coroner's inquest and the Board of Inquiry, consisting of General Casey, General Batchelder and Major N. Davis, will investigate and probably place the responsibility where it properly belongs. Several questions have arisen in reference to this accident. The building has been condemned by reports of the Surgeon-General Barns, in 1881, and Representative Shellaberger, in 1883. These reports have naturally been talked over and magnified by the clerks. They seem to bear principally upon the bad light, lack of ventilation and the first floor having no cellar, so it was not considered healthful; and further, that the roof was not fireproof and the valuable collections of the Medical Museum were, therefore, in an unsafe building. The walls seem to be strong. The floor beams are lighter than would be used in ordinary practice, being 9" for a span of a little over twenty feet. Beams about four feet four inches on centres. This would be safe, but would give more deflection than would be considered agreeable. The collapse evidently did not occur from the condition of the building, as many suppose. The daily papers and the clerks make quite a point of the floor (which was temporarily supported by the sleepers and roped off while the excavation was going on) shaking when walked upon, but of course this had no bearing upon the accident. It was simply carelessness in preparation for doing and supervising the excavating and underpinning of the new work that was the immediate cause of the failure.

The accident also brings forward prominently the notoriously unhealthful and reported unsafe condition of the Government Printing-office as well as other make-shift buildings which the Government occupies in this city, and again calls attention to the fact that many such buildings are overloaded, and an entire lack of knowledge as to what the floors were intended to carry. All such buildings should have their capacity computed and posted on every floor, as the documents and other matter which the Government stores away, increasing daily, are a menace to the stability of the buildings and the life of their occupants.—*The American Architect and Building News.*

*"The contractor making the above statement declined to bid, and hence, presumably, the crude specification and drawings (which I have seen since writing the letter) which are stated to have been prepared, "not by a regular architect or *builder*," . . . but by a "steam engineer"; *i. e.*, the man who attended to the boiler for the heating-apparatus. The estimates and contract were made on such an indifferent basis as this.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
GEO. H. SANDERS, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. CHARLES D. MARX, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

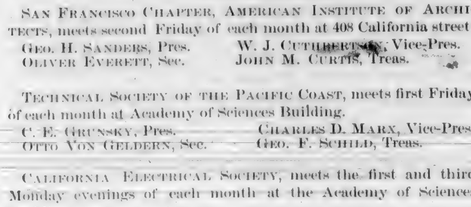
CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

A special meeting of the members of the San Francisco Chapter A. I. A. was held July 7th in reference to the buildings for the proposed Mid-Winter Exposition viewed from an architectural standpoint.

It was the general opinion that the best results could be obtained by following the method so successful in producing suitable designs for good execution at the World's Fair at Chicago, viz: by appointing a supervising architect for the entire work, and an individual architect for each building—a committee was appointed to present to the Executive Committee of the Mid-Winter Exposition resolutions embodying these suggestions.

The regular monthly meeting of the Chapter, held on the evening of the 14th, approved the action taken by the members at the special meeting. A committee consisting of Messrs. Bestor, Curtis and Kollofrath was appointed to consider the advisability of holding an architectural exhibit in connection with the Mid-Winter Fair and report at next meeting.

An amendment to the By-Laws was proposed to be voted on at next meeting.



We have received from the author James R. Willett, Esq., a copy of his address on HEATING AND VENTILATION OF RESIDENCES, delivered to the Engineering Society of the University of Illinois, March 23, 1893, confining himself to its practical application in order to show the way in which a person engaged in such business may prepare designs for excavation. It cannot fail of being useful to the class for whom intended, as well as of interest to the general reader.

The first number of a monthly journal called "ORNAMENTAL IRON, devoted to industrial art, has just been received, certainly the publishers have reason to congratulate themselves upon having produced a jem. The illustrations are truly works of art applied to every day use.

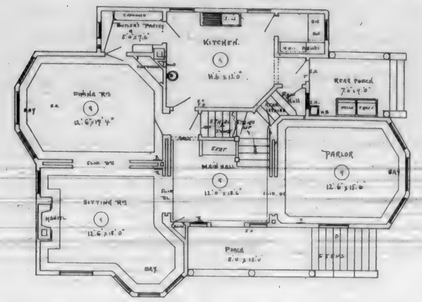
Published by The Winslow Bros. Co., office 761 Rooking, Chicago, Ill. Subscription price per year $2.00.

The circular of the SCHOOL OF ARCHITECTURE of the University of Pennsylvania, just received, is a very attractive four-page leaflet, in two colors, describing in brief and comprehensive form the advantages offered by that institution, its faculty, course of instruction and equipment. Full information will be sent upon application to the Dean of the College Department.

RESIDENCE IN SAUSALITO, W. H. LILLIE, ARCHITECT.

The June number of PAINTING AND DECORATING contains a paper on glass embossing, by Arthur Segmour Jennings. The regular departments contain much to interest the carriage painter, paper hanger and all branches of the trade. One dollar a year seems a small price to pay for so excellent a magazine. Published by the House Painting and Decorating Publishing Co., Philadelphia.

We are indebted to THE WINSLOW BROS. CO. of Chicago, for a handsome collection of photographs of ornamental iron. This new photogravure edition of their catalogue for the year 1893 is certainly a very creditable specimen of the printers art, but cannot fail of being of great use to the architect and contractor who are about to order work of this kind. A long list of buildings that have been supplied with this class of work by this firm, being in many cases illustrated by engravings, gives the reader an opportunity to judge of the effect produced, which in some instances is really very fine. Mr. P. H. Jackson & Co., of 228 and 230 First street, this city, are the agents.



LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONSTRUCTION OF LAWS IN REGARD TO MECHANICS' LIENS.—Under the provision of the Laws of Ky. that persons furnishing labor or materials for the construction of railroads and other public improvements, by contract express or implied, with the owners thereof, or by a subcontract thereunder, shall have a lien thereon for the price of such labor and materials, does not embrace one who furnishes such labor and materials under a contract with a sub-contractor.

Cent. Trust Co. v. R. N. I. & B. R. Co. Circuit Court D. Ky. 54 Fed. Rep. 723. 74.

NEGLIGENCE OF INDEPENDENT CONTRACTORS.—Where a contractor agreed to furnish all materials for the construction of piers, for a railroad bridge across a river, the materials to be subject to the inspection and approval of the engineer of the railroad, and to construct the piers according to certain plans and specifications under the continuing inspection and subject to the approval of the engineer, he was an independent contractor and as such liable for the injuries to third persons, resulting from his negligence in the performance of the work.

Casment v. Brown, 13 Supreme Court Reporter 672. 86.

EFFECT UPON MECHANICS' LIEN OF FAILURE TO RECORD CONTRACT.—Where the constitution provides that mechanics, material men, etc., shall have a lien on the property on which they have labored or furnished material, and the statutes provide that all contracts between the owner and contractor for work, where the amount exceeds $1,000, shall be in writing and recorded before the work is begun, otherwise the contract to be void, and no recovery to be had thereon by either party thereto; that the labor done and materials furnished by all persons except the contractor shall be deemed to have been done at the instance of the owner, and they shall have a lien for the value thereof, a contractor who has failed to record his contract for work, where the amount to be paid therefor is over $1,000, is not entitled to a lien.

Morris v. Wilson, Supreme Court of Cal. 32 Pac. Rep. 801. 131.

ASSIGNMENT OF RIGHT TO MECHANICS' LIEN.—Where the statute provides that all persons and laborers of every class, performing labor upon, or furnishing materials to be used in the construction of a building, may have a lien thereon for such services or materials; and also provides that such persons shall themselves file a claim for record, stating the character of the labor or materials which they themselves furnished for the building, the right to assert such a lien is a personal right, for the laborer's own protection, and cannot be assigned.

Mills vs. LaVerne Land Co., Supreme Court of Cal. Feb. 1, 1893, 32 Pac. Rep. 169. 90.

WHERE BUILDING IS NEGLIGENTLY CONSTRUCTED.—In an action on a contract for the erection of a house, the owner pleaded a set-off for failure to build the same in a workmanlike manner, his evidence showed that the floors were not level, that the windows were not vertical, not at equal heights from the floor, though intended to be on the same level; that they had embrasures above them; that bricks were put in the outer wall that had to be removed; and that one room had so many holes in the wall that daylight could be seen at seventeen different places. The contractor's evidence was that the house was constructed according to the local custom, but did not greatly qualify the facts shown by the owner. If a man contracts to build a house in a workmanlike manner, that means a house built in a workmanlike manner, constructed according to the customs and usages of the section of the country in which the countract is made, but a custom which justified the erection of a house in the manner shown by this owner, is unreasonable.

Anderson v. Whittaker, Supreme Court of Alabama, 11 So. Rep. 919. 185.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

The first six months of this year has shown a slight increase in comparison with the first six months of 1892, both in the number of buildings and total cost.

FOR FIRST SIX MONTHS.—1893.

1893	Brick Building No. of Buildings	Brick Building No. of Contracts	Brick Building Value	Frame Building No. of Buildings	Frame Building No. of Contracts	Frame Building Value.	Alterations & Addit'ns No. of Buildings	Alterations & Addit'ns No. of Contracts	Alterations & Addit'ns Value.	Total No. of Buildings	Total No. of Contracts	Total Value.
Jan'ry	3	7	$ 70,770	27	35	$ 143,988	2	5	$ 6,040	32	47	$ 220,798
Feb'ry	1	3	22,400	40	47	202,447	18	25	61,052	59	67	286,899
March	5	9	280,458	48	55	277,324	18	39	280,221	65	93	838,002
April	7	17	126,793	57	67	251,927	12	18	41,667	76	83	420,387
May	1	2	15,950	65	77	280,129	10	11	20,409	81	90	316,488
June	7	11	78,347	60	73	332,827	8	11	18,850	75	95	430,024
Total	24	49	$ 614,518	297	354	$1,498,541	68	109	$425,239	298	475	$2,524,498

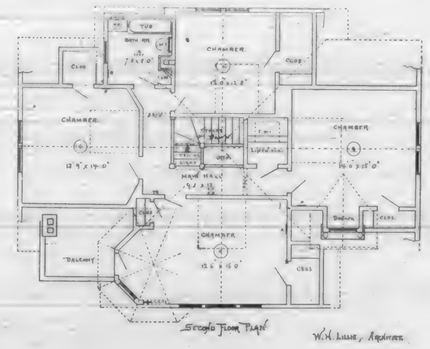
To this amount should be added the further estimated sum of $500,000 where no contracts have been filed, which would increase the sum total to $3,024,498.

FOR FIRST SIX MONTHS.—1892.

	Brick Building No. of Buildings	Brick Building No. of Contracts	Brick Building Value	Frame Building No. of Buildings	Frame Building No. of Contracts	Frame Building Value.	Alterations & Addit'ns No. of Buildings	Alterations & Addit'ns No. of Contracts	Alterations & Addit'ns Value.	Total No. of Buildings	Total No. of Contracts	Total Value.
Jan'ry	1	14	$ 101,872	22	33	$ 210,665	4	4	$ 7,872	27	51	$ 320,409
Feb'ry	3	8	116,310	28	50	279,149	7	8	24,818	38	66	420,277
March	2	8	75,471	30	38	175,071	5	7	14,494	37	53	262,036
April	4	22	338,559	46	64	240,772	5	6	20,850	55	91	599,961
May	3	17	137,715	46	62	271,290	4	5	21,475	53	74	430,480
June	3	9	139,022	39	54	222,110	13	13	51,291	55	76	412,423
Total	16	78	$ 902,749	211	290	$1,398,967	38	43	$140,780	265	411	$2,442,496

The business of the first six months for several years is shown by the following table.

1885—754	contracts.....	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858
1891—583	"	" 3,916,973
1892—411	"	" 2,942,496
1893—475	"	" 3,024,498



CHICAGO ARCHITECTURE.

NO other American city can claim such a record, and it is not the least glory of the whole that the artistic results are as satisfactory as they are characteristic. Granted that the bad buildings of the city out-number the good, the latter are already so numerous and are so entirely part and parcel of Chicago as really to represent its present architectural spirit. And this spirit is thoroughly business-like, thoroughly comprehensive of the complicated problems which hedge in and bind the architect at every turn. Chicago buildings are not palaces, they are not highly ornamental edifices, they are not wonders of decorative skill nor miracles of gingerbread appendages. They are calm business structures, designed for business, used for business and admirable because the business motive is so evident. If they are plain it is because there is reason for the plainness, not because their architects cannot design good ornament nor because decorative structures are not appreciated. They must be judged for what they are, not what they are not nor what they might have been. Those who want palaces for their places of business should not find fault with the people of Chicago because they are wiser and reserve their palatial work for palatial structures or some public building like the Auditorium. The buildings of Chicago form one of the most distinctive and remarkable and successful products of American architecture, and it will be a decided step in advance when we in the East learn to appreciate them better and take them as models for similar structures for ourselves.

At last America has buildings worth going a thousand miles to see, and the traveler who sets forth from New York on his first Western tour will find in the buildings of Chicago some examples of a new form of architecture, a more sensible and more business-like treatment than he will find at home. The least impressive of the lessons he takes away with him will not be the one he gains from the study of Chicago's new buildings.—*Lippincott's.*

Rub a creaking hinge with a very soft lead pencil.

BUSINESS MOSAICS.

The present utilitarian age is one of continuous advancement in the perfection of improved methods of construction, and the scientific specialist is always on the *qui vive* to discover more economical processes for applying the materials placed at his disposal by arts and sciences of advancing civilization. Numerous examples of the application of these remarks can be found, and to call attention to a notable instance of securing greater strength by the combination of two materials, is the object of this writing.

As the gothic architects of the middle ages studied the thrusts of arches till they had ascertained the least weight required to establish an equilibrium of force and the best possible way of disposing of that weight, and out of the results of their studies reared those wonderful cathedrals that now remain as enduring monuments of the skill and knowledge of their designers, so with a similar purpose, the constructors of the present generation are studying to arrive at the simplest and most economical processes for disposing of the more numerous and varied materials at their command, and on pages v, vi and vii of this issue of the CALIFORNIA ARCHITECT, is a detailed description of the methods now perfected and employed by Mr. P. H. Jackson, for combining the great compressive strength of concrete, with the great tensile strength of iron, thus neutralizing the comparatively weak tensile strength of the concrete, and enabling the construction of sidewalk arches, roofs of vaults and fire-proof floors, etc., without the use of the customary steel supporting beams and girders, thus effecting a very material saving in the amount of money required, and resulting in material savings to the property owner, that are more eloquent and speak in louder tones than the language of the most gifted orator.

This saving in cost, which has been secured without lessening the strength of his constructions, enables Mr. Jackson to increase his already extensive business in the face of all competition, and the experience gained during his long connection with the department of public works in New York city, showed him how to practically apply the successful solution of problems and achieve the remarkable results that have sprung from his studies.

In this connection the reader should carefully peruse the scientific analysis of the principles that underlie this construction, which were fully discussed in a paper by Calvin Brown, C. E., published in the June number of this journal.

Mr. Brown enjoys a deservedly high reputation in the scientific world, and the ability and skill displayed in designing and building the immense dry docks of the United States Government at Mare Island, made him one of the best of recognized authorities. In whatever concerns the use of concrete and cement, his opinion can be relied on absolutely, and no more interesting reading can be had by architects and builders than lucid explanations of the principles that have been so successfully applied by Mr. Jackson.

We predict that the use of this method of employing concrete and iron will enter more largely into the construction of the future, not only for the heavier and more substantial buildings suitable for mercantile purposes, but with the object of making the residences of the future more substantial, more enduring and more in keeping with the progressive spirit of the age. It rests with the progressive architect when designing the structures to be erected under his supervision, to take advantage of the opportunities thus presented and introduce into his specifications the result of Mr. Jackson's latest thought.

Verdant Visitor—"What's all the fuss about? Accident happened? BROKER—"The cordage trust has gone to pieces, shares have fallen from 75 to 16. VERDANT VISITOR—"I am not surprised at all. No wonder there is no demand for cordage when the electric chair has been substituted for the rope."

Antinomin is said to offer a complete protection against Dry Rot, Fungi, Mildew, etc., it can be applied like white wash with a brush; is odorless and non-volatile, it has the recommendation of many architects in the old countries. If half that is claimed for this wonderful chemical with a still more wonderful name o-dinitrokresolkalium is true, it is well worthy the attention of architects and engineers. For further information apply to W. H. Schieffelin & Co., New York city.

"The servant you have now seems very nice and quiet."

"Oh, yes: she doesn't even disturb the dust when cleaning up a room."—*Chicago Tribune.*

Model Art Glass Works.—Notwithstanding a conflagration on the second of May last, nearly destroying Mr. Wm. Schroeder's works at 29½ Fremont street, thanks to the energy of the latter gentleman, they were soon rebuilt. A company was then incorporated of which the following are the directors:—Wm. Schroeder, President; Edward Lemme, Vice-President; Henry J. Breuer, Secretary; Wm. Buttner, Superintendent; Wm. J. Breuer, Director.

Mr. Wm. Schroeder continues the management of the works. When such an establishment is at hand no excuse can be given to send for such work abroad.

San Francisco Slate Co., whose office is in the Mills building, have furnished us the illustrated account of the quarries of their company, which appears in this number of our paper. It will be found of much interest; and as for the quality of the slate, parties interested have only to call at the office where full particulars and information will be given. Take the elevator and go to 10th story, rooms 4 and 5.

The attention of our readers is called to an interesting illustrated article in this number of our journal under the title of California Slate Company of this city, having an office in Mills building, are introducing to notice an article of slate said to be equal in quality to any found in the market: it is taken from a quarry described as being 2000 feet wide and 1600 feet high from the bed of the American river and very likely as deep below the bed.

CITY BUILDING NEWS.

Belvedere bet. Waller and Frederick. Plumbing five houses; owners, Smith, Coop and Hinkle; architect, Ed. Burns; contractor, Geo. Humphreys; signed, June 27; filed, June 27; cost $1,375.

Broderick near California. Two story frame; owner, Paul Aguilar; architects, Percy & Hamilton; contractor, F. W. Kern; signed, June 14; filed, June 15; cost $3,490.

Bush near Powell. Painting; owner, Mrs. L. M. Bigelow; architect, J. C. Newsom; contractors, A. Gradin & Co.; signed, June 15; filed, June 17; cost $975.

Bush near Powell. Mill work; owner, Mrs. L. M. Bigelow; architect, J. C. Newsom; contractor, C. M. Depew; signed, June 14; filed, June 17; cost $3,500.

Bush near Powell. Plastering four 2-story frames; owner, W. A. Van Dervort, architect, J. C. Newsom; contractor, G. W. Glosser; signed, June 19; filed, June 26; cost $1,775.

Bush near Powell. Four 2-story frames; owner, Mrs. L. M. Bigelow; architect, J. C. Newsom; contractor, W. A. Van Dervort; signed, June 16; filed, June 10; cost $15,900.

Bush near Powell. Plumbing four 2-story frames; owner, Mrs. L. M. Bigelow; architect, J. C. Newsom; contractor, H. Williamson; signed, June 13; filed, June 13; cost $2,400.

Carl and Stanyan. Painting; owner, Thomas Lundy; architect, T. J. Welsh; contractor, M. J. Donovan; signed, May 28; filed, June 27; cost $1,286.

Carl and Stanyan. Two-story frame; owner, H. Johnson; architect, J. Wuersching; contractor, L. F. Fletcher; signed, July 5; filed, July 5; cost $1,800.

Central Ave. near Washington. School building; owner, Edward B. Spalding; architect, Wm. Curlett; contractor, Jos. Norris; signed, June 28; filed, July 1; cost $8,425.

Clarence Place and Townsend. To construct concrete tunnel; owners, Edison Light and Power Co.; architect, Chief Engineer employed by owner; contractor, W. J. Holmes; signed, June 3; filed, June 5; cost $19,500.

Commercial and Battery. Repairs to brick building; owner, Henry Kane; architect, M. J. Lyon; contractors, M. Fennell & Son; signed, May 31; filed, June 15; cost $1,500.

Eighth Ave. near Point Lobos. A cottage; owner, A. E. Lowry; contractor, Thos. Ridout; signed, June 6; filed, June 10; cost $1,750.

Ellis near Mason. Interior wood finish and mill work; owner, Y. M. C. A.; architect, A. Page Brown; contractors, Burnham, Standeford & Co.; signed, June 9; filed, June 10; cost $13,000.

Ellis and Webster. Alterations; owner, J. F. Ross; contractors, Cook & Patterson; signed, June 14; filed, June 14; cost $1,610.

Filbert near Jones. Three-story frame; owner, J. J. Howser; architects, John & Balezynski; contractor, Emil Hoelle; signed, June 21; filed, June 24; cost $3,750.

First near Natoma. A four-story brick; owner, Pacific Metal Works; contractors, Smille Bros.; cost $20,000.

Folsom and Treat Ave. To build; owners, R. W. Lahaney and wife; architect, D. J. Ellis; contractors, J. P. Rines & Son; signed, June 20; filed, June 26; cost $790.

Folsom street. A cottage; owner, Chas. Hankel; contractors, Koening Bros.; signed, June 15; filed, June 28; cost $1,600.

Fourteenth Ave. and L. Alterations; owner, Board of Education; architect, J. C. Havens; contractor, Robert Currie; signed, June 7; filed, June 10; cost $877.

Francisco near Powell. Excavating and brick work; owner, J. Schweitzer; architect, H. Geilfuss; contractor, J. O. Sullivan; signed, June 30; filed, July 3; cost $4,329.

Franklin and Hickory Ave. Three-story frame; Mrs. C. M. Berger; architect, Oliver Everett; contractor, Jos. McLean; signed, June 12; filed, June 13; cost $6,000.

Golden Gate Ave. near Lyon. One story frame; owner, A. F. Morton; architect, J. B. La Romer; contractor, Todd Boone; signed, June 19; filed, June 19; cost $2,395.

Green near Scott. Two-story frame; owner, Carrie L. Lawler; architect, Fuller Claflin; contractor, A. C. Soule; signed, June 23; filed, June 27; cost $8,500.

Harrison bet. 7th and 8th. Tinning and roofing; owner, Timothy Hopkins; contractor, Forderer Cornice Works; signed, June 12; filed, June 14; cost $9,978.

Hoffman near Alvarado. To build; owner, G. B. Lang; contractors, Soule Bros. signed, June 5; filed, June 12; cost $1,800.

Hyde and California. Carpenter, plastering and stair work; owner, Fred Kutz; architect, A. C. Lutgens; contractor, F. V. Steinmann; signed, July 1; filed, July 5; cost $12,000.

Jackson near Devisadero. Plumbing 3-story frame; owner, Chas. I. Wingerter, architect, A. C. Lutgens; contractor, W. F. Wilson; signed, June 14; filed, June 17; cost $1,084.

Lafayette near Minna. To build; owner, E. Lauthier; architects, Townsend & Wyneken; contractor, J. A. McDonald; signed, June 6; filed, June 12; cost $1,765.

Lily ry near Church. A 1-story frame; owner, E. J. Malloy; contractor, Daniel Einstein; signed, June 19; filed, June 20; cost $1,714.

Lyons near Page. Alterations; owner, Kate Johnson; contractor, F. V. Acker; signed, June 13; filed, June 13; cost $1,726.

Market near City Hall Ave. Two-story brick; owner, L. H. Seymore; architects, Shea & Shea; contractors, M. Fennell & Son; signed, June 5; filed, June 10; cost $6,235.

Market near City Hall Ave. One-story brick; owner, Henry Schmeidell; architects, Mathilson & Howard; contractor, R. Ringrose; signed, June 14; filed, June 16; cost $4,195.

Merritt bet. Denver and Hattie. Two-story frame; owner, Edward McBride; contractor, R. O. Davis; signed, June 21; filed, June 22; cost $2,950.

Minnesota near Butte. A two-story frame; owner, Jas. Flanigan; contractor, Ed. Mooney; signed, June 7; filed, June 10; cost $2,675.

Mission near 30th. To build; owner, Gottlert Arnold; contractor, H. K. Schmuckert; signed, June 6; filed, June 12; cost $5,849.

Mission near 5th. Elevator; owner, Emma Lolor; architect, Chas. Geddes; contractors, Wm. H. Birch & Co.; signed, June 27; filed, July 1; cost $1,755.

Oak near Buchanan. Additions and alterations; owner, Robert Taylor; architect, Edward J. Vogel; contractor, Robert Currie; signed, July 1; filed, July 5; cost $1,829.

Octavia near Grove. Plumbing two buildings; owner, P. L. McCure; architects, Pissis & Moore; contractor, E. Moenning; signed, May 12; filed, May 25; cost $2,150.

Octavia near Grove. Painting; owner, P. L. McCure; architects, Pissis & Moore; contractors, Smith & Daley; signed, May 12; filed, June 25; cost $1,100.

O'Farrell and Bayley Place. Iron work and tiling 6-story brick; owner, B. Curtaz; architects, John & Balezynski; contractor, Western Iron work; signed, June 17; filed, June 19; cost $10,523.

O'Farrell and Bagley Place. To build; owner, Benjamin Curtaz; architects, John & Balezynski; contractor, Adam Miller; signed, July 3; filed, July 3; cost $27,500.

Parker and Henderson Ave. A four-story building; owner, Albert Meyer; contractor, G. G. Gillespie; signed, June 8; filed, June 10; cost $3,250.

Pennsylvania Ave. near Sierra. A cottage; owner, Wm. L. Nolan; contractor, T. F. Mitchell; signed, June 12; filed, June 12; cost $1,880.

Pierce near Oak. To build; owner, Mary G. Murasky; architects, Martens & Coffey; contractor, J. O'Brien; signed, May 16; filed, May 17; cost $8,490.

Pine street No. 2016. Alterations, etc.; owner, Mrs. M. E. Pleasant; contractor, S. C. Murray & Co.; signed, June 8; filed, June 8. cost $5,135.

Plymouth and Lagamore. Additions, owner, P. Pellegrini; architect, L. Morrison; contractors, Morrison & Cook; signed, June 21; filed, June 27; cost $1,330.

Sacramento and Central Ave. Sundry mill work; contractors, N. Parish & Co.; signed, May 12; filed, May 27; cost $1,307.

Sacramento near Polk. Carpenter and plumbing; owner, J. Cazour; architects, Townsend & Wyneken; contractor, Robert Trost; signed, June 8; filed, June 12; cost $2,465.

Sacramento near Spruce. To build; owner, C. P. Fonda; contractor, Phillip Rive; signed, June 12; filed, June 13; cost $2,500.

San Jose Ave. near 26th. All work to build six flats; owner, E. A. Culling; contractor, Jas. Norris; signed, June 10; filed, June 14; cost $5,685.

Seventh near Bryant. Carpenter, mill and mason work; owner, Hayfield & Helling; architects, Townsend & Wyneken; contractors, Brodt & Bateman; signed, June 8; filed, June 9; cost $14,000.

Seventh near Harrison. Two-story frame; owner, Patrick Quinn; contractor C. A. Henderlong; signed, June 24; filed, June 26; cost $2,325.

Seventh near Bryant. Painting and graining; owners, F. Heydenfeldt and Z. O. Hellings; architects, Townsend & Wyncken; contractor, Wm. R. Eaton; signed, June 28; filed, July 5; cost $1,058.

Seventh near Bryant. Plumbing; owners, F. Heydenfeldt and Z. O. Hellings; architects, Townsend & Wyneken; contractor, G. C. Sweeney; signed, June 29; filed, July 5; cost $1,225.

Sickles near Scars. To build; owner, G. A. Gibbing; architect, D. M. Duel; contractors, Bates & Deuel; signed, June 26; filed, June 28; cost $1,100.

Steiner near Ellis. Raising, moving, etc.; owner, F. Knoppnacker; architect, A. C. Lutgens; contractor, James Geary; signed, June 28; filed, July 5; cost $1,375.

Tenth Ave. A cottage; owner, Chas. Boehringer; architects, John & Balezynski; contractor, Emile Hoelle; signed, June 14; filed, June 16; cost $2,010.

Washington and Devisadero. All work except plumbing; owner, Estate of F. Merrifield; architect, E. R. Swain; contractor, J. T. Logan; signed, June 6; filed, June 8; cost $6,123.

Washington and Devisadero. Plumbing; owner, Estate of F. Merrifield; architect, E. R. Swain; contractor, J. T. Logan; signed, June 6; filed, June 8; cost $495.

Washington near Walnut. To build; owner, Lillian E. Suydam; architect, Chas. I. Haven; contractor, Jas. McLean; signed, June 21; filed, June 22; cost $5,470.

Washington near Jones. Plumbihg; owner, Mrs. M. Wolf; architects, Pissis & Moore; contractor, R. A. Vance; signed, June 21; filed, June 24; cost $1,475.

Washington near Buchanan. Alterations; owner, John A. Wright; architects, Percy & Hamilton; contractor, F. W. Kern; signed, June 20; filed, June 27; cost $3,390.

York and 24th. Two-story frame; owner, Adam Herman; contractor, H. P. Conrady; signed, June 13; filed, June 13; cost $4,650.

ALAMEDA COUNTY.

Adeline near 5th, Oakland. Cottage; owner, M. Studewiskl; contractor, A. J. Wood; signed, June1; filed, June 5; cost $1,287.

Blake near Grant Ave. A cottage; owner, F. W. Bauer; contractor, J. J. Rose; signed, May 27; filed, May 27; cost $1,585.

Brush near 22d, Oakland. To build; owner, C. Moran; architect, E. J. McManus; contractor, C. S. Barnard; signed, June 24; filed, June 26; cost $1,651.

Colway near LeConte Ave., Berkley. Two-story frame; owner, R. H. Wetmore, Jr.; architect, R. H. Wetmore, Jr.; contractor, J. F. Meyers; signed, June 20; filed, June 23; cost $2,155.

Eighth and Filbert, Oakland. Two-story frame; owner, M. J. & F. Toushard; architects, W. T. Veitch & Bro.; contractor, A. E. Fake; signed, June 26; filed, June 27; cost $500.

Everett and Central Ave. Two-story frame; owner, E. Z. Garette; architect, G. A. Bordwell; contractor, D. S. Brehant; signed, June 28; filed, June 29; cost $2,275.

Filbert near 14th, Oakland. Alterations and additions; owner, M. E. Coogan architect, H. Burns; contractors, Gardner & Hayden; signed, June 7; filed, June 21; cost $1,250.

Filbert near 24th, Oakland. One-story frame; owner, M. Meyers; contractor, P. J. Brophy; signed, June 19; filed, June 28; cost $2,035.

Filbert near Encinal, Oakland. To build; owner, G. E. Randolph; architect, H. F. H. Brown; contractor, A. E. Fake; signed, June 26; filed, June 27; cost $1,895.

Fruitvale lot 16th. One-story frame; owner, C. T. Slamberg; architect, W. M. Campbell; contractor, A. E. Fake; signed, June 22; filed, June 27; cost $1,390.

Fourteenth near 26th, E. Oakland. To build; owner, J. Anderson; architect, C. L. Corregan; contractor, C. C. Burke; signed, June 7; filed, June 9; cost $2,120.

Haight near 7th, Alameda. To build; owner, A. E. Hoffman; contractor, A. R. Denke; signed, June 23; filed, June 24; cost $1,600.

Lot 10 block E. L. V., Oakland. Two-story frame; owner, W. W. Garthwaite; architect, J. C. Newsom; contractor, T. G. Krownick; signed, June 19; filed, June 28, cost $3,642.

Park near Lincoln Ave. Addition to Pacific Hotel; owner, M. Debret; architect, J. Lath; contractors, Ryus & Underwood; signed, June 16; filed, June 21; cost $1,400.

Rose and Shattuck, Berkeley. To cottages; owners, W. F. & H. Lingaid; architect, Geo. A. Emburg; contractors, Ryus & Underwood; signed, June 19; filed, June 21; cost $2,658.

Santa Clara Ave. Two-story frame building; owner, J. M. Raun; contractor, A. W. Cornelius; signed, May 29; filed, June 1; cost $4,000.

Seventh street. Two-story frame, including fourteen stores; owner, J. Bruguiere, architects, Smith & Freeman; contractors, Hebert & McLeod; signed, May 29; filed, June 9; cost $20,500.

Santa Clara Ave. One-story frame; owner, A. M. Jenkins; contractor, A. R. Denke; signed, June 14; filed, June 14; cost $2,284.

San Antonia Ave. near Union. To build; owner, L. Raschen; architect, N. P. Fisher; contractors, D. Straub & Son; signed, May 27; filed, June 1; cost $3,200.

Second Divison street. Carpenter work; owner, Joe Arenat; architect, W. Veitch; contractor, J. F. Meyers; signed, June 21; filed, June 21; cost $3,750.

Sonoi. To build; owner, J. E. McElrath; architect, H. Wharton; contractors, Weber & Rohler; signed, June 2; filed, June 2; cost $3,350.

Third near Cypress, Oakland. One-story frame; owner, J. Milley; architect, H. Gelifuss; contractors, Weber & Rohler; signed, June 2; filed, June 2; cost $2,222.

Twelfth and Washington Ave., Oakland. Carpenter work; owners, H., S. and F. Kahn; architect, W. J. Mathews; contractors, Price & Rush; signed, June 5; filed, June 12; cost $9,355.

Webster and Haight. Two-story frame; owner, Mrs. J. Schmitt; contractor, A. R. Denke; signed, June 12; filed, June 12; cost $6,250.

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1 Column	12 50	35 00	65 00	125 00
½ Page	20 00	57 50	105 00	200 00
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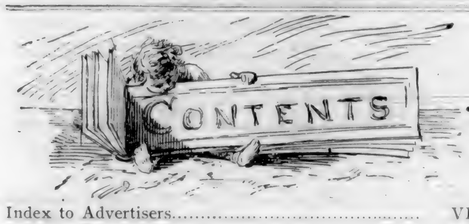

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

IN another column will be found an interesting talk, delivered by invitation of the San Francisco Chapter of the American Institute of Architects, by Mr. G. Morin Goustiaux, on the present status of architects and architecture in France. In some particulars the practice of the profession there has certain advantages over the customs in vogue in this country; notable in regard to the honesty of both patron and architect in the manner of conducting and judging competitions.

In this country we regret to have to say, the majority of building committees endeavor to secure gratis, the best ideas of the profession, by dangling a hook seldom baited with anything more substantial than contingent promises. If cash prizes are offered, they are usually inadequate to properly compensate an architect for a serious study of the problem, and are often tied up with the condition that the premiated designs shall belong to the committee. As long as this method succeeds, it will be useless for architects to hope for a better.

On the other hand the architect who enters a competition, usually does so with the expectation or at least the hope of securing by personal means enough influence to secure a decision of the committee favorable to himself, irrespective of the merits of his design. Thus the cause of progress in architecture is seriously retarded, and instead of architects striving to arrive at the best possible solution of the problem submitted to them, they are too apt to slight the design, and trust to personal considerations for achieveing success.

Another advantage the competing architects enjoy in France, is the fact that the awards of prizes are made on the recommendations of a jury of experts. Who would think of electing a doctor to the Supreme Bench, or consulting a

lawyer in case of sickness? yet the parallel holds good in a majority of cases here, as it is the exception rather than the rule when a building committee considers it necessary or advisable to secure professional advice on the merit of plans submitted.

THE City Trustees of Alameda deserve great credit for the model advertisement for Competition Drawings for their proposed New City Hall, the conditions of which were arranged with great fairness. The result has been that they have received the largest number of well thought-out plans and from the largest proportion of standard architects of any competition that has been held of late.

The competitors generally have also reciprocated, as almost without exception no attempt has been made by them to obtain any undue advantage over their fellows by going beyond the size and quality of the Drawings laid down in the Conditions.

A reception was tendered by the San Francisco Chapter of the American Institute of Architects to Mr. G. Morin Goustiaux, on the evening of Friday, July 28th.

Mr. Goustiaux was delegated by the city of Paris as its representative at the World's Columbian Exposition, and previous to returning to France, passed some few weeks in this city.

Mr. Goustiaux, who is a native Californian, renewed old acquaintances in the Chapter and made new ones, and entertained and instructed his professional brethren by a detailed description of the conditions under which architects and architecture flourish in France.

He described the requirements and examinations necessary to enter the *Ecole des Beaux Arts* and the difficulties to be overcome by the students before graduating, when they are entitled to a diploma, issued by the Government, and the option of entering the public service.

The requirements are severe, and a bright young man is doing well if he secures his diploma at the end of six or seven years—about twelve each year reach their goal; seldom at less than thirty years of age; should they chose to enter the public service, they first take the position of *Conducteur* of work, are afterwards promoted to that of *sub-inspecteur*, then to be *inspecteur*, and finally at the age of forty to forty-five years of age to the position of Architect, and are then given charge of such repair work as may have to be done.

For important works there is a corps of ten to fifteen architects under the direction of the *Inspecteur General* of Paris.

In competitions for public improvements the committee of awards is composed of a certain number chosen by the competitors themselves, a representation from the *Societe Centrale* (the principal architectural association of France) and a special commission of prominent architects. The method employed to arrive at a decision is first to reject all designs that do not conform to the programme, then to reject those that are seriously defective in any important particular, and continue this process of elimination till the number of designs that remain are reduced to the number of prizes offered—and these are then classified in their order of merit; and to the credit of the committee, Mr. Goustiaux states that their decision is almost universally acknowledged among the competitors as being just.

In regard to Architectural Societies there are three—the most important being the *Societe Centrale*, with branches in other departments of the country. This society is very exclusive, and very difficult to enter. No contractor, nor any one who has ever been a contractor is eligible—a certain standard of work must have been executed by the applicant. The customs of the profession as determined by this society are taken as precedents by the courts, and judges frequently refer to the society for information as to the customs, and govern their decisions according thereto—the schedule of material and prices fixed by this society are authoritative.

These is a smaller society consisting of *architects diplome* and a third society to which architects and builders are admitted indiscriminately.

Important public works over 500,000 francs in value is usually decided by competition, the competition being confined to Frenchmen.

A vote of thanks was tendered Mr. Goustiaux for his pleasant talk and the meeting adjourned with mutual good wishes.

A PERFECT ELECTRIC INSTALLATION.

IF any doubt existed as to the advisability of placing the details of electric wiring under the charge of an independent electrical expert, that doubt will be eradicated upon reference to the San Francisco building of the Mutual Life Insurance Company of New York, of which Mr. Clinton Day is architect and of which a full page illustration was presented in the June number of the CALIFORNIA ARCHITECT AND BUILDING NEWS. As most of our readers are aware, this building is a thoroughly modern fire-proof structure of steel, terra-cotta and pressed brick, nine stories in height. No more difficult construction in which to place electric wiring exists, yet the electric work therein installed is a marvel of simplicity and perfection.

The experiences which have been had with the electrical work of other buildings of similar construction in various portions of the country was taken advantage of in designing this installation. Its main features resemble closely those of the incandescent wiring of the Mills buildings, San Francisco, yet the wiring of the Mutual Life building may be considered as the perfection of the idea carried out in the first named structure. In the Mills building, for instance specific provision is made for electric light conductors only. All other wiring such as telephone, district telegraph, time service or bill circuits, are placed together in a recess on top of the incandescent ways, while in the Mutual Life building a separate recess or groove or tube is provided for each distinct class of wiring.

Throughout the whole system, the inviolable idea which has been carried out in that all wiring shall be concealed and hence unobtrusive, yet always accessible.

The wiring usually placed in a large modern office building may be divided into two general classes, namely: electric lighting circuits and signal circuits. It is important for several electrical reasons, chief among which are that immunity from fire and reliability are effected, that the wires of these two classes of circuits be kept distinct from each other. From a mechanical standpoint, running separate ways for distinct classes of circuits is necessary to facilitate handling and what is sometimes equally important it keeps concerns from interfering with wires of other and perhaps rival companies. In the Mutual Life building it was found that the best service would be attended by dividing the circuits into four groups; electric lighting, telephone, bells, and district telegraph and clock wiring. These circuits run to each room of the building; every foot of wire is concealed, every foot is accessible and moreover any wiring may be carried from any room in the building to any other room on any floor without breaking plaster or without exposing the conductors in any way. It is difficult to conceive anything more perfect.

From the engine room in the basement is run an electric riser-way which continues in a straight line to the top floor paralleling the elevator shafts. In this riser-way are run all the electric circuits of the building. The telephone circuits, for instance, come into the building from the under-ground cables, the cable being continued through the basement and up the electric shaft to the fourth floor where it terminates in two twenty-five pair cable heads, and whence the telephone circuits are distributed to the various rooms as will be described. Similarly, the under-ground incandescent service of the Edison Light and Power Company is brought into the basement and connected up to a simple marble switch-board. From this switch-board independent circuits are run to each floor and each hallway in the building. Throughout the entire structure, with the single exception of in the corridor moldings, the insulating tubing of the Interior Conduit and Insulation Company is used. Separate tubes are run through the riser-way from the switch-board to each floor and each hallway for the incandescent system while special tubes are similarly run for containing the signal wires.

In the lavatory of each floor is a cabinet which opens directly into the electric shaft and in which is placed the plug switches and cut-outs for each particular floor. About each hall is placed molding run in line with the casings of the doors and windows and capped and finished in oak to match. The molding is in two parts, capping and backing, the latter containing five grooves, two for electric light wires, one for telephone wires, one for district telegraph and clock wires and one for bell wires, and each room is supplied with a separate tube from each groove. The room cut out is set in flush with the backing of the molding so that the grooves of the cut out and molding are in line. From the cut out conduit tubing is carried down to the room switch, thence to the fixture. A valuable innovation will here be noted. No safety devices are used in the fixture. Each fixture circuit is contained in an independent conduit tubing carried through a switch from a separate cut out in the molding to the fixture direct. Both the fixture and circuit are protected by the safety cut out in the molding, hence if the fuse blows it may be replaced in the hall without inconvenience to the tenant or sometimes without even entering the room affected. The cappings of the moldings are all secured with screws and although it extends entirely around the halls it is neither conspicuous nor a disfigurement in any way.

In each room, the electrical service is confined to two polished oak service blocks. The smaller, placed near the door contains the electric light switch and a push button which may be connected with any part of the building at any time. To the larger service block, also of polished oak 14x16 inches, is brought the messenger circuits of the Postal and Western Union Telegraph companies and the San Francisco District and American District telegraph companies respectively, while but a few inches away and at the proper height is a conduit tubing leading to the telephone groove in the corridor molding so that the tenant may have a telephone placed without disfigurement whenever desired. In order that the idea of accessibility of all circuits should be carried out, not an inch of wire of any description, nor even a fish string, was placed in any tube until after the tubing was set in place, and not an inch of electric light wire was inserted in the tubing until after the plastering was finished. All the incandescent circuits in the building are of the well known Grimshaw White Core insulation. Flush, push wall switches of the Cutter Specialty Company, Philadelphia, are used throughout while the hall circuits are controlled by the S-C flush key switches of the same company. In these the janitor alone holds the key by means of which the switch may be operated.

The entire electrical work was installed by the San Francisco office of the General Electric Company under the electrical expertship of Mr. Geo. P. Low.

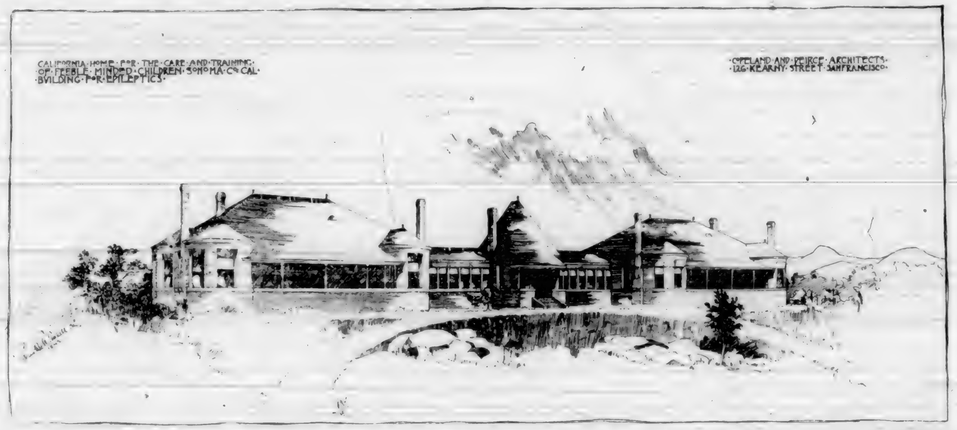
FIGHTING FIRE WITH GASES.

AN interesting experiment in fighting fires was tried at Salem, Mass., last week, and it appeared to be successful. All the apparatus used in the experiment was a sheet-iron cylinder about three inches in diameter and sixteen inches in length. This cylinder was charged with gases and chemicals sufficient to throw a stream half the size of an ordinary lead pencil about twelve feet continuously for five or six minutes. After the cylinder had been charged a box eight feet long and four feet high by four feet wide was obtained, and the inside smeared with tar. Then, to add to the inflammable quality of the material, a half-gallon of kerosene oil was sprinkled upon it and the whole thing set on fire. The heat created by the fire was intense, and those who were witnessing the experiment had grave doubts as to the success. After the fire had burned the boards nearly half through, the contents of the little can were turned on and in less than a minute the flames were extinguished. The test was certainly a severe one. The inventor of this extinguisher thinks that in time he will be able to perfect a device for fighting large fires, and that eventually gases will take the place of water entirely in the fire departments.—*Fire and Water.*

THE RE-INFORCEMENT OF CONCRETE BEAMS BY TWISTED IRON FOR FIRE-PROOF FLOORS.

WHE reference made in the May number of the CALIFORNIA ARCHITECT to the use of Twisted Iron incorporated in Concrete, has called out some inquiries as to the nature and extent of the tests so far applied to this mode of construction. Though first introduced upon this Coast but little has been published here respecting this new departure in fire-proof building.

The Museum at the Standford University was not the first structure where this method was employed, but the concrete beams supporting the heavy dome, have the longest span yet produced, forty-five feet. Another notable example is the California Academy of Sciences on Market street, where five floors covering an area of 50,000 square feet are so constructed. The span ranges as high as thirty feet, and there is also a projection of three feet of concrete over the central area, supporting an iron railing at the outer edge, and a walk for visitors. The floors were estimated to carry with



safety 250 pounds per square foot. One section, 15x22, was tested with a uniform load of 415 pounds per square feet, and the load was left on one month. The architects reported the extreme deflection at the center as only one-eight of an inch. Contractors and workmen were distrustful at first, but their confidence became unbounded before the completion of the work. The saving over the usual mode is estimated at fifty cents per square foot.

Touching the weight of these floors, as compared with iron girders and hollow tiles, the first impression that the concrete must necessarily be much heavier, is found incorrect. For when the span is of usual length, and the required strength of moderate limit, the weight per square foot is less with the new construction. For example: with spans of fifteen to twenty feet, and a safe load of seventy-five pounds per square foot, the saving in weight is about forty per cent over iron girders and hollow tiles. With a load of 125 pounds it is some twenty per cent.

This economy is doubtless due to the fact that the bond between the twisted iron and the enveloping concrete is so perfect and continuous as to give the effect of a homeogenous beam, and that the tensile strength of the iron bar is utilized.

Ordinarily in the use of iron with concrete the strain has been concentrated at a single point by the employment o nuts and washers. By twisting the iron before it is imbedded in the concrete the strain is diffused equally through the length of the bar, while it is firmly held at all points by the enveloping mass.

An incidental advantage of the twisting is that therby all imperfectly laminated iron is at once detected, and the defect exposed, ensuring the employment in practical use of only a high quality of iron.

In the more common forms of construction the major element has been the iron beam, whose lower cord was exposed, necessitating additional protection below against the action of heat. By substituting the concrete beam as the chief factor, the iron used is so incorporated within the body of the stone as to be amply protected without extra cost. Moreover the iron girder is an expensive form, while the very simplest and cheapest is the flat or square bar.

The claim that cold twisting actually adds to the strength of the bar, rests upon somewhat exhaustive experiments conducted by Lieutenant F. P. Gilmore, U. S. N. (Government Inspector of Iron and Steel for war vessels under construction at San Francisco) and by the College of Mechanics of the University of California at Berkeley, also at the celebrated Low Moor Iron Works, England.

Lieutenant Gilmore found that common commercial iron ¾ inch square, being given 1½ twists per lineal foot gained seventeen per cent in tensile strength; given 3¾ twists, twenty per cent, and six twists gained twenty-four per cent.

The best Norway Iron given six twists per foot, gained from fifty to fifty-three per cent in tensile strength.

Similar experiments at the Low Moor Iron Works with ¾ inch round iron, showed twenty-two per cent gain for 1½ twists per foot; thirty-six per cent with 2½, and forty-one with three twists, which was as far as the experiments noted were carried.

The latter experiments conducted by the University of California gave similar results, with one important fact ascertained, namely: that a suitable interval between the twisting and the testing gave a much greater gain. Three-quarter inch iron turned down to ⅝ was given six twists per lineal foot. Twisted while hot there was a small loss in tensile strength. Twisted cold and tested immediately, the gain ranged from thirty-three to forty-three per cent. Twisted cold and allowed to remain five days and then tested, the increase in tensile strength of the same quality of iron was from forty-seven to fifty-nine per cent, or an average of fifty-three per cent.

It would seem that advantage might be taken of this important augmentation of tensile strength in many places. Bridge builders, as well as workers in concrete, would do well to inform themselves fully upon this claim.

SCULPTORS OF THE WORLD'S FAIR.

BY J. H. GEST.

WHATEVER may be the success of the World's Columbian Exposition as an exhibition of the liberal and mechanical arts, or of natural products, it has achieved in one respect a result that could not reasonably have been expected, and certainly could not have been foreseen in its actual magnitude. In 1889 France presented to the world an architectural and artistic spectacle unapproached by former exhibitions, and until within a few months past the last French exhibition remained the ideal in the public mind. Almost no one had thought of an American exhibition which in the architectural beauty of its buildings, and especially in their sculptural decoration, should in any way rival Paris of 1889.

Conceding the ability of our architects to carry out their part of the task, where were the sculptors capable of acceptably decorating the buildings? To do this work required not only one man, or a half-dozen men, but a score or more of trained sculptors supported by a corps of personal assistants, and a small army of subordinate modelers and molders. They must be men fertile in the invention of a kind of ornament for which comparatively little use has hitherto been found in this country—not men capable of modeling merely detached statues, but able also to do it in harmony with architectural surroundings. This aspect of the sculptor's art is almost entirely unknown to the Americans as a people, who for want of knowledge have really no conception of its uses and its value in civic and national life. Even those of us who have occasionally the good fortune to travel in Europe, and who bring back in memory, and in photographic scrap-books, impressions of the architectural and sculptural interest of European towns large and small—even they drop back into the practical course of the overpowering commercial and mechanical movements peculiar to our civilization, and ere long become content with the bald surroundings of brick and stone amidst which the large percentage of our population live and labor. If even these favored few do not sufficiently value the presence of beauty of sculptural form as a leaven in the hard commonplace of our cities, how can the less fortunate, to whom this beauty is as unknown as though it had no existence?

It may be asked: What is the value, to a civilization like ours, of the esthetic expressions in form which are the products of the sculptor's art? Some years ago esthetics seemed entirely apart from the proper course of our lives. The usefulness of art was practically unknown, and even recreation was indulged in either under compulsion or with an unhealthy excitement. It is now generally admitted that of all the means of mental recreation none are so nearly inexhaustible as art, and in none can the restful influence be so ever-present. This is acknowledged in our strenuous efforts to introduce beauty into the most humble of the industral arts, which is the marked characteristic of our industrial advance since 1876. All of this reaches the homes of the people and introduces an esthetic leavening of growing force. Art museums and galleries of paintings and sculpture are carrying the movement forward on a higher plane. But we have just begun to appreciate the fact that buildings, public and private, should themselves teach the value of beauty of proportion, of mass, of form in outline and surface, and even of color. Here the sculptor's work joins that of the engineer, architect and builder. When the capitalist has employed the engineer to plan his enterprise, the architect to give his building not only adaptability to its use but also a character that shall be its entity as compared with others, then steps in the sculptor to ornament, until the whole shall possess not only utility but a beauty which shall make acceptable and perhaps emphasize that very utility. The finished work is thus by its attractiveness made even more efficient for the purpose for which it was intended. Other things being equal, the increased rental of the building will pay the interest on the cost of the sculpture. And the city with fine public squares, artistically dressed with statuary in appropriate architectural settings, will thrive as compared with the rectangular, monotonous, bald, utilitarian town, provided the location and other commercial conditions be not too unfavorable. Further, this ornamentation of a city stimulates its pride—a force constantly active in advancing a community. The streets should, so far as public and private enterprise can make them, be as popular museums full of object lessons that will tend to make good citizens. One of those lessons is the evidence of thrift given by the bustling crowd, another is the stability of buildings, but still another should be the appropriateness and the architectural and sculptural beauty of these same buildings. All this provision for his enjoyment of life tends to add something to the capacity of the citizen for activity.

There is no doubt as to the impression that will be made upon thousands of visitors to Chicago this year. The beauty of grand buildings harmoniously grouped in Jackson Park, the charm of decorative sculpture, the richness of public places and avenues abounding with statuary, create an unsuppressable longing that something of this, apparently so permanent, yet really so temporary, may remain as a lasting impression upon our people. While not attempting to distribute the credit for the beauty of these buildings and grounds, we may well recall that, when the use of Jackson Park—then largely swamp-land— was under discussion, it was Frederick Law Olmstead, the landscape architect, who conceived the plan of dredging lagoons and canals to secure sufficient earth for fills upon which to place the buildings, thus meeting the practical demands of the occasion, and providing the opportunity for artistic effects of land and water. Then followed the grouping of the buildings, of which much was prompted by Mr. Root, though conferences among the chosen architects led to the arrangement finally worked out, and to the adoption of the prevailing style of classic architecture. Coming to the sculptural ornamentation of the buildings and grounds, we should probably find Augustus St. Gaudens the dominant power, though his own work is limited to the gilded "Dina" on the main dome of the Agriculture building, whither it was removed from the tower of the Madison Square Garden, New York. These names, coupled with that of D. H. Burnham, the director of works, are those one hears from all who speak of the enterprise.—*The Engineering Magazine.*

THE COGSWELL FOUNTAIN IN BOSTON.

IT will be remembered, says the *American Architect*, that a few years ago, a certain Dr. Cogswell, of San Francisco, we believe, made to the City Government of Boston, as he already had to other municipal bodies, a proposition to erect on the Common, and present to the city, a fountain, consisting of a bronze figure, sheltered under a classical pavilion of granite, and furnished with an appropriate pedestal and inscriptions. No conditions were annexed to the offer, and the gift was accepted, and the fountain and pavilion duly erected on the Common. The site assigned to it was not a happy one, and the structure itself, although tolerably well executed, did not please the educated taste of the citizens, while, the name of the donor being rather conspicuously displayed on it, an idea became current that it was intended as an advertisement of the donor's business. However that may have been, the popular dislike to the affair became so marked that, after four or five years, the City Government appropriated money to have it removed.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

VESTA DEL MAR—to be erected corner Jones and California streets, an apartment house of 250 rooms, arranged in thirty suits. To be strictly fire-proof. Material, light press brick and terra cotta. Cost $320,000. Reid Bros., architects.

THE proposed building for the San Francisco *Examiner* is by Willis Polk, architect.

SKETCH of stable for A. B. Spreckles is by C. I. Havens, Architect.

DEATH OF COLONEL R. T. AUCHMUTY.

EVERY architect, and every one who has the good of his fellow citizens at heart, must mourn the loss of Colonel R. T. Auchmuty, who died at Lenox, in consequence of an amputation made necessary by a painful disease of the leg, from which he had long suffered. Colonel Auchmuty was a grandson of one of the first rectors of Trinity Church in New York, and was throughout his life identified with that church and with the charitable and religious undertakings connected with it. He served in the army during the Civil War retiring with the rank of colonel. He was educated to the profession of architecture, and was for some time a partner of James Renwick, the architect of Grace Church, but, being possessed of an independent fortune, and finding ways in which he could be of more use to his fellow men than in the practice of his profession, he came of late years to devote himself entirely to his various charitable works, of which the greatest was that of the establishment of the New York Trade Schools. From the time of his first acquaintance, through his professional work, with mechanics of the old and new schools, Colonel Auchmuty had observed the unfavorable effect upon the younger men of the limitation or abandonment of the old apprenticeship system, and the substitution, for the instruction and control of the masters, of the tyranny of trade-unions. In New York, as in other large cities, the unions are almost completely under the control of foreigners, who favor their compatriots, to the exclusion of the native-born, and Colonel Auchmuty found his young fellow-countrymen not only shut out of employment in New York, to make room for foreigners, but prevented from learning a trade which they might practice elsewhere, by the limitation of the number of apprentices in the shops, rigorously enforced by the unions, and the absence of any other provision for training them. Finding that the same difficulty had been met abroad by the establishment of schools, under Government patronage, for teaching the manual arts, Colonel Auchmuty determined to see whether something similar could not be done in this country by private effort, and, securing a small building in New York, he employed instructors and opened a school where young men could be taught carpentry, masonwork and house-painting. The school was not free, a small tuition-fee being charged, and there was every year a deficit to be met, which Colonel Auchmuty and his wife paid. The first year the school was small, but it grew rapidly. Not only was practical workmanship thoroughly taught, but theoretical instruction was given in the properties of materials and elementary statics, and drawing was taught to all the pupils. Very soon, the school increased so much that it was necessary to erect new buildings, which were constructed by the pupils. New courses were added, and the school now has about six hundred pupils, of the best type of American adolescence. It is hardly necessary to say that an institution which taught young men to work and think excited from the first the hatred of the organizations which look upon anarchists as the true labor-reformers, and the walking-delegates tried open violence, as well as their arts of secret terrorism, to destroy the schools. Finding that the schools could not be closed by these means, they closed the shops against the graduates of the schools, ordering every shop "struck" that employed one of them. Colonel Auchmuty met this step by resuming his old profession, and making plans for a considerable number of buildings, which were carried out by the school graduates. After this, the labor organizations, finding that they had aroused a public feeling which it was advisable to allow to subside, ceased active hostility, and the relations between them and the trade schools, though far from cordial, are not now belligerent. On being attacked by the ailment which finally caused his death, Colonel Auchmuty was obliged to leave the work of managing his schools mainly to others, greatly to his regret, but, as he himself said, this has proved a certain advantage, as their continuance is in that way better assured, so far as the system of instruction is concerned, while they were recently firmly established financially, by the generous endownment of half a million dollars, presented them by Mr. J. Pierpont Morgan. Before his death, Colonel Auchmuty, with his wife, added one hundred and sixty thousand dollars to the endowment, this being outside of the seventy thousand dollars which they had already devoted to the schools.—*The American Architect and Building News.*

NOTES & COMMENTS.

Clinton Day, Architect, has removed his office to the fine new building SE corner California and Sansome Sts.

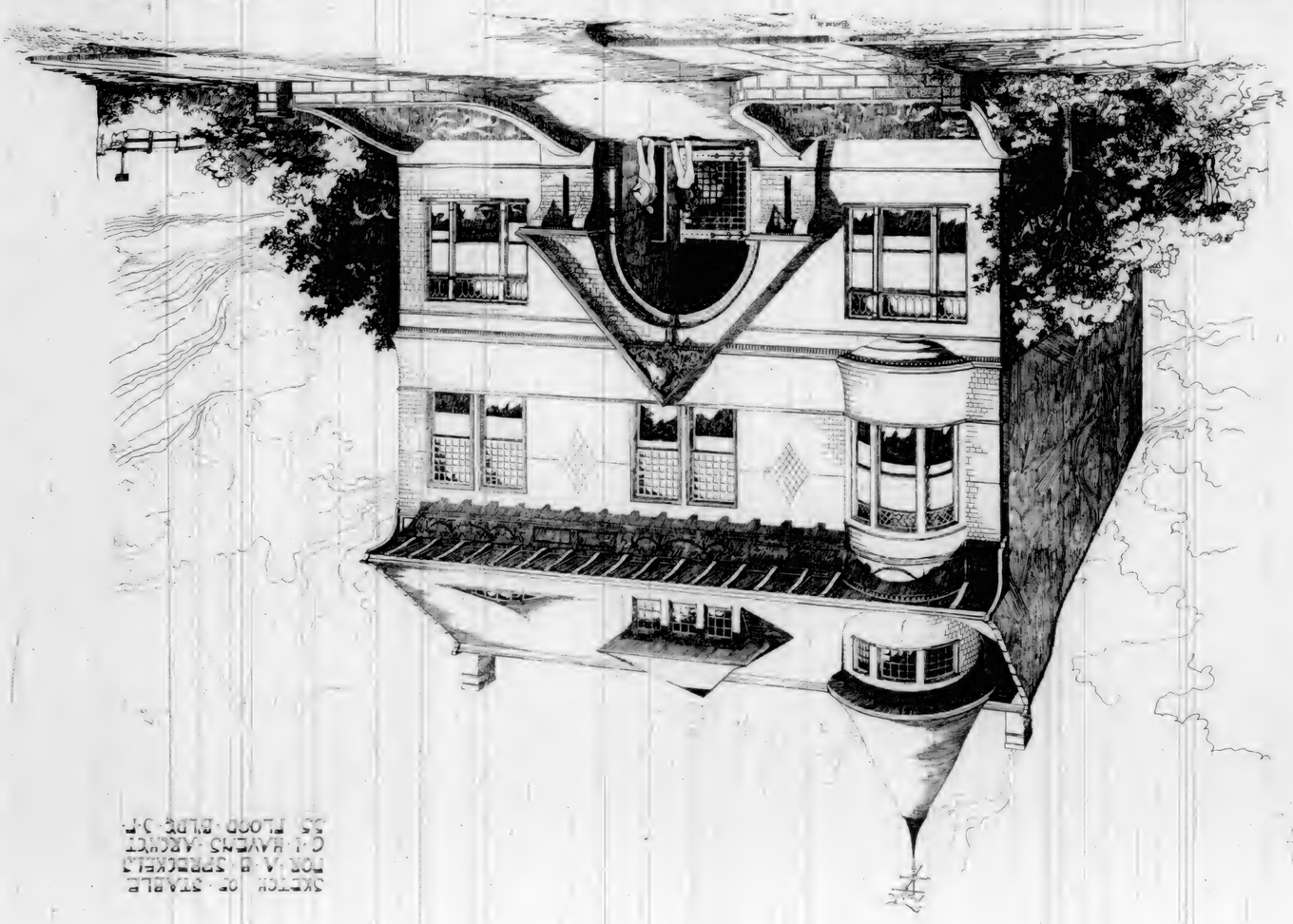
Mr. Geo. P. Low, Electrical expert for the Pacific Insurance Union and who is well known to architects, left for an extended business trip east on August 10th. While absent will attend the meeting of the Underwriters' International Electric Association, of which committee he is a member. Mr. Low will also sit as delegate to the World's Electrical Congress to be held in Chicago beginning August 21st.

The first building erected by the London Council with their own men and without the intervention of a contractor has been brought to a successful issue. The new school building at Crossness was advertised in the usual way and the lowest tender obtained for a contractor was $10,940. The estimate of the Council's architect was $8,440 and the work was actually executed for the sum of $8,310. The example, however, is on too small a scale to prove anything very much at present in regard to the superiority of this system of doing work.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH

VOL. XIV N° 8 AUGUST 1893.



SKETCH OF STABLE
FOR A. B. SPRECKELS
C. A. HAYENS. ARCHT.
SF. FLOOD BLDG. S.F.

PROPOSED BUILDING FOR THE SAN FRANCISCO "EXAMINER," NEWSPAPER.
MR. WILLIS POLK, ARCHITECT.

PACIFIC THEOLOGICAL SEMINARY
OAKLAND · CALIFORNIA
WRIGHT & SANDERS ARCHITECTS SAN FRANCISCO CAL.

REID BROS. ARCHTS
MILLS BUILDING

SKETCH FOR THE
VISTA DEL MAR.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH

VOL. XIV Nº 8 AUGUST 1893.

To the Editor of the California Architect:

AT a time when so much use is made of the Photographic method in the reproduction of drawings and the preparation of plates for the press, a glance backward may not be uninteresting in tracing the development of this process to its present state of perfection. To Mr. Joseph Dixon of Salem, Mass., the founder of the Joseph Dixon Crucible Co. of New Jersey City, N. Y., belongs the credit of this invention. His first experiments in this line were made at Salem, and so successful was he in reproducing a bank note that the bank officials declared it a genuine bill. Mr. Peabody, of the same place, when shown this result, was so convinced of the danger of this discovery, if the process became generally known, and fearing it might be applied for fraudulent purposes, he induced Mr. Dixon to go before the Massachusetts Legislature for the purpose of having a law passed that all bank notes should be printed in colors to prevent reproduction by the photographic process.

Mr. Dixon appeared before a committee of the Legislature, who evidently did not favor the measure; the chairman after hearing Mr. Dixon, remarked: "Well, Mr. Dixon, you tell us that no one but yourself and Mr. Peabody know of this process?" "Certainly," replied the inventor. "Then sir we shall look to you and Mr. Peabody if any counterfeit bills appear."

This naturally angered Mr. Dixon and he resolved to publish the process and accordingly prepared an article for the *Boston Daily Advertiser*. On his way to the office he met a gentleman in Park street and informed him of his purpose. The gentleman said: "Mr. Dixon, you are naturally angry now, give me the manuscript, if you want it to-morrow after thinking the matter over, I will return it at your request."

Mr. Dixon told the writer of this article of the incident and added, "I never called for it and the manuscript may be in his keeping now."

Some years after this event, at a meeting of some scientific society, the process was announced as a recent English discovery; but Mr. Edward Everett of Boston, then United States Minister to the Court of St. James, at once claimed the invention as having been made in this country by Mr. Dixon; as positive evidence to this fact he showed the reproduction of a Latin manuscript with his own autograph and date, thus establishing the claim without a shadowof a doubt.

A. H. E.

DESIGNS ACCEPTED FOR MID-WINTER FAIR.

THE executive committee of the California Mid-Winter Exposition, has made the following choice of designs for the exhibition buildings:

Manufacturers and Liberal Arts, the plans of A. Page Brown. Mechanical Arts—Edward R. Swain. Agricultural and Horticultural—Samuel Newsom. Fine Arts—C. C. McDougal. The decision has yet to be made in regard to the Administration Building.

Ground will be broken on Thursday, August 24th, and the energy displayed and the enormous amount of preliminary work already accomplished afford the most satisfactory evidence that the great project will be made a great success. It only remains for the public at large to say how great a success.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., July 25th, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 30th day of August, 1893, and opened immediately thereafter, for all the labor and materials required to put in place a complete Heating and Ventilating Apparatus in the U. S. Post Office, etc., Building at Sacramento, Cal., in accordance with the drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at Sacramento, Cal. No convict labor nor the use of any product of convict labor will be allowed in this work.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Heating and Ventilating Apparatus at the U. S. Post Office, etc., Building, Sacramento, Cal.," and addressed to

Jeremiah O'Rourke,
Supervising Architect.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

THE regular monthly meeting of the chapter was held on Friday evening, August 11th. The nomination of officers was postponed till next meeting.

The following communication was received from the Architectural Association of Southern California, and a committee of three, consisting of Messrs. Babson, Bestor and Curtis was appointed to confer with the committee from the Southern Association:

Los Angeles, Cal., July 26, 1893.
To the San Francisco Chapter
American Institute of Architects,
Mr. Oliver Everett, Secretary.

Dear Sir:—At a meeting of the Architectural Association of Southern California, held on the fifth day of July, it was resolved that a committee be appointed to confer with your association with a view of securing, should it meet its approval, the incorporation in the by-laws of both societies, rules governing the submission of drawings in competition for public and private works, in order that there may be uniformity of practice by architects throughout the State.

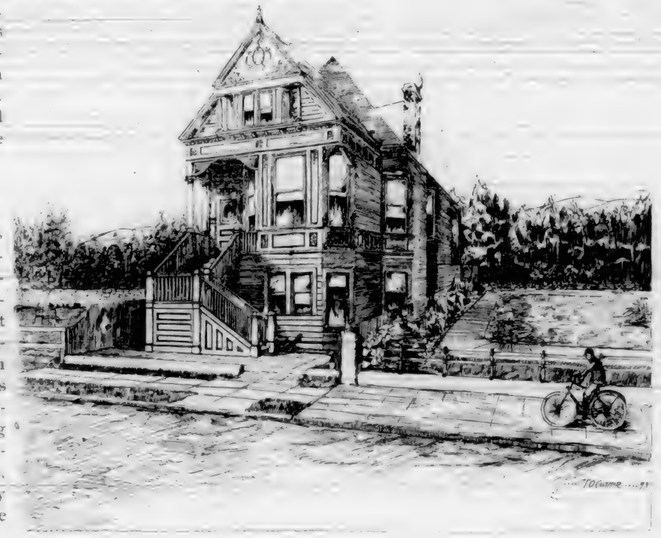
It is certain that the manner in which architectural competitions are generally conducted, securing as they do to public committees and too often to private individuals, elaborated drawings from architects of acknowledged ability, utterly without compensation, is one of the most serious evils with which we have to contend, having a tendency to cheapen all architectural services in public estimation.

Believing that concerted action by our respective associations, making it imperative on members to refuse submission of drawings except under the rules common to both will greatly advance the practice of our profession, we respectfully request you to submit this communication to the Chapter at the earliest convenient opportunity.

T. A. EISEN,
A. WACKERBARTH, } Committee.
A. B. BENTON.

"What's the matter, old man?" "Oh, I've just had a quarrel with my wife." "Well, forget and forgive." "I never can forgive her. You see I was in the wrong." "Then, in that case, demand an apology."—*Brooklyn Life.*

MODERN HOUSES—A new publication by J. Cather Newsom, architect, show a variety of modern residences designed with special reference to the requirements of California. The selections embraces a great variety of styles from the plainest to the most elaborate finish, and the different arrangements shown on the plans, will be of interest to those intending to build. Price $2.50, for sale by Osborn & Alexander.

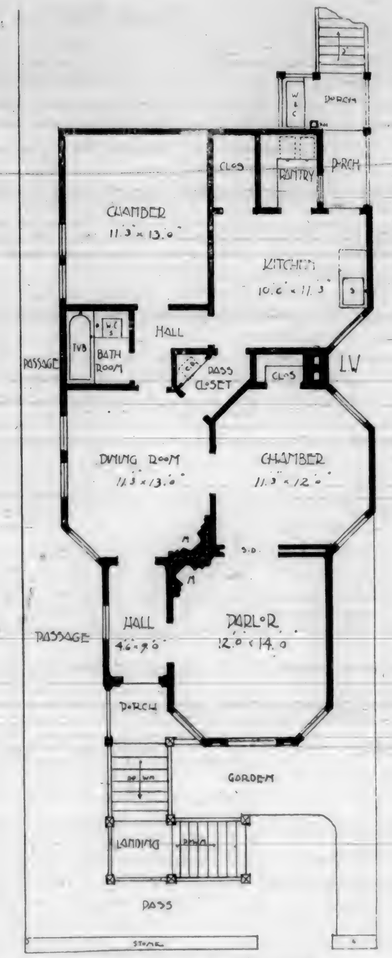


$1800 COTTAGE.

THE STUDIO, an illustrated magazine of fine and applied art. Published at 16 Henrietta St., Convent Garden, London.

This charming and truly artistic magazine cannot fail to please the art student as well as all lovers of the beautiful. The opening article in the July number entitled "Artistic Gardens in Japan" by Charles Holme, will be found very interesting, and illustrated with some charming bits of landscape. The "Leek Embroidery Society" will interest the ladies; while "The Art Magazines of America" will please the general reader.

THE PHOTOGRAPHIC TIMES—This excellent journal devoted to the art, science and advancement of Photography, comes to hand for July, under the heading of "Convention Number" with a charming portrait of H. R. H. the Princess Eulalia, said to be the best photographic portrait which her Royal Highness has had made in this country. The July issue is a double number containing twenty-four pages, but hereafter the regular issue will be increased by just one-third the present number of pages, and will contain sixteen pages instead of twelve.



PLAN OF $1800 COTTAGE.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Modification of Building Contract.—Where one contracts to complete a house, ready for occupancy, within sixty days, according to plans which do not require the finishing of the second story and putting on the last cont of paint, the effect of a subsequent contract made after the sixty days have expired, to do the additional work, for an extra payment, is to waive the original stipulation to complete the work at a certain time, and substitute a stipulation for completion within a reasonable time.

Cornish v. Suydam, Supreme Court of Ala. 13 Sup. Ct. Rep. 148. 80

Decision of Architect in Building Contract.—Where a building contract provides that the work shall be done to the satisfaction of the architect, and that any dispute as to extra claims shall be referred to him, and that his decision shall be final, it is error, in an action by the builder on the contract, to refer to the jury such questions as to extra work and the performance of the contract, in the absence of evidence of fraud, or if the question of fraud is not submitted to the jury.

Guthat v. Gow, Supreme Court of Mich. 55 N. W. Rep. 442. 92.

Extent of Recovery on Mechanics' Lien.—In an action to foreclose a mechanics' lien it appeared that both parties had abandoned the contract when the house was partly built, and before the contractor had been paid anything, and that thereupon the owner had torn down the building and rebuilt it, using the same materials. The contractor was entitled to a lien for the value of the materials furnished by him, less the cost of tearing down the building.

Charlton v. Scoville, Supreme Court of N. Y. 22 N. Y. Supp. 863. 76.

Abandonment of Contract.—Where a building contract provided that if the contractors should fail to perform the contract in any particular, and the architect should so specify, the owner might give them three days' notice to perform, and in case of their refusal to do so within that time, the owner might terminate the contract. The architect having certified that the work was not being done according to the contract, the owner notified the contractors to remove their labor and materials, and to provide such materials as were called for in the specifications, and at the same time notifying them that he should terminate the contract, and taking from them the plans and specifications, the owner thereby abandoned the contract.

Charlton v. Scoville, Supreme Court of N. N., 22 N. Y. Supp. 884. 127.

Party Wall Agreement.—The casement of an adjoining lot owner created by a party wall agreement ceases when the wall becomes unfit either from age or accident. The provision in a party wall agreement that the rights of the parties shall continue so long as the wall shall stand, does not mean so long as any portion of the wall shall remain itself, but so long as the wall shall remain fit for use as a party wall, and therefore it does not violate a provision in the agreement that no perpetual right or casement shall be thereby acquired.

Odd Fellow's Assn. v. Hegels, Supreme Court of Ore. 32 Pac. Rep.. 679. 97.

Accepting Note Not a Waiver of Mechanics' Lien.—Where an agreement that where the work is properly done and the materials furnished, the owners were to give a note at three months from the date thereof, on the 20th of January the work was completed, and accepted by the owners. On the 12th of January they gave their note for a part of the contract, and on the 21st of January, another note for the balance due. The acceptance of the owner's note for materials furnished by the material man is not a waiver of his lien.

Jones v. Morris, Supreme Court of N. Y. 22 N. Y. Supp. 53. 92.

Mechanics' Lien on Land under Contract of Sale.—Where a contractor repaired a house at the request of an intending purchaser, who as the contractor knew, had only an oral contract or an option to purchase, and he was not misled by the owner, who did nothing to prevent the intending purchaser from acquiring title under his contract, he cannot claim a lien on the property as against the owner. He could acquire nothing by the foreclosure of his lien, except the right to be subrogated to the privilege to purchase the property, and they could not obtain that relief until he had tendered the amount which he was bound to pay to establish his right.

Thomas v. Ellison, Supreme Court of Ark. 22 S. W. Rep. 95. 111

Mechanics' Lien on Building on Leased Ground.—Where a lease of land contains no permission or provision giving the lessee, the right to construct any building or to put any machinery on the land, the land cannot be held for a mechanics' lien for a building erected by the lessee on the ground that the owner consented to its construction, since he was not in possession of the premises, and had no power either to dissent from or consent to such construction. The fact that the owner participated slightly in the construction of the building is not proof of such consent, when it appears that he was acting as agent of the company which had leased the land.

Havens v. West Side Elec. L. & P. Co. Supreme Court of N. Y. 20 N. Y. Sup. 764. 108.

Violation of Building Restrictions.—A clause in a deed of a lot prohibiting the erection thereon of any buildings other than dwellings with necessary out-buildings, such dwelling to cost not less than $2000, is violated by placing a tent on the lot, costing less than that sum, and used by the grantee and his family in the summer time as a dwelling, though they do not sleep therein. Since no dwelling house was erected on the lot by the grantee, a stable placed thereon cannot be placed thereon as a necessary out-building.

Blackemore v. Stanley, Supreme Court of Mass. 33 N. E. Rep. 689. (92.)

A HOUSE ON A TREE.

ABOUT sixty miles from the mouth of the Escondido is situated one of the most curious habitations in the world. It is a house built on the top of an enormous lignum vitæ tree. It is the home of Captain Henry Wildersen, a former Louisiana planter, who selected this remote and isolated habitation as his home several years ago. The tree is nearly six feet in diameter, and grows on a bluff overlooking the Rama River, a branch of the Escondido. At about fifty feet from the ground a platform about thirty feet square has been built, supported by diagonal braces, and this serves as the foundation of a rather pretty cottage painted white, with green shutters, and boasting a veranda in front and an observatory above the roof. The diagonal braces are boxed in, and in the inverted pyramid thus formed is the kitchen and storerooms. The upper story is nicely furnished. Access from the ground is gained by means of an elevator resembling a "dumb-waiter," so balanced that a person can easily raise himself by pulling on a rope.—*Phidelphia Ledger.*

A RAPID UNDERGROUND TRANSIT.

MESSRS. Walker & Kimball, of Boston, have made a valuable suggestion for a rapid-transit sub-way for that city. They have, perhaps first among those who have treated the subject, fully adopted the system of underground travel, and propose to excavate the whole width of Tremont street, covering the excavation with concrete vaulting, decorated on the underside with white glazed tiles. In the middle of the space would be two tracts for express trains, sunk below the general level, and the tracts for accomodation trains would run on each side, while a wide platform would occupy the space between the accommodation tracts and the fronts of the buildings on each side, the basements of the stores being fitted up for retail trade, and opening on the platforms, these constituting a continuous sidewalk. The scheme resembles that of the Arcade Company for a Broadway road, but with several improvements, both in construction and arrangement. Messrs. Walker & Kimball provide access to their express tracts by tunnels under the accommodation tracts, and stairways up to the stations, bridges being thrown across the express tracts, to provide communication between the upward and downward accommodation tracts. Of course, the whole structure would be brilliantly lighted by electricity, and those who have seen a modern first-class underground establishment, such, for instance, as the Subterranean Cafe in the Equitable Building in New York, will not need to be told how attractive it may be made.—*American Architect and Building News.*

BUSINESS MOSAICS.

—**Architects** should not forget to specify the "Josson" and "North" brands of Portland Cements in their specifications for brick or concrete work. Every barrel guaranteed by the importers of it, Grace & Co., 203 California street.

Dissensions and bickering may occasionally occur within the Board of Lady Managers, though individually they are agreeable to a man.—*World's Fair Puck.*

Contractors will do well to call on the Pacific Coast Door Co. of 808 Bryant street near Fifth, for estimates for doors, windows and blinds. They also give particular attention to estimates on special work of all kinds. Do not forget them.

Husband—I think I shall go out and catch a few fish for our dinner to-morrow.

WIFE—No, Edwin, we must economize. Buy them of the regular dealer.—*Detroit Tribune.*

For flats there is nothing handier for the opening and closing of the front door than the Rischmuller Door Opener and Closer. Price $15.00. All orders promptly attended to by Geo. Rischmuller, 934B Capp street this city.

When in need of Artistic Metal Work go to the San Francisco Novelty and Plating Works, corner of First and Mission streets, who make a specialty of this branch of their business, also gas and electric fixtures at manufacturers' prices. Gold, Silver and Nickel Plating of every description.

"Your picture of Columbus is anachronistic. You represent him as smoking when tobacco was not used."

"That's all right. He's smoking a cigarette.—*Detroit Free Press.*

We take pleasure in calling the attentions of Architects and Engineers to the very latest Patent Combination Architects' Level and Transit. This instrument is not only a great improvement over many now in use but also appears to be all that is required. It is made in the most substantial manner and a credit to the manufacturers, Messrs. Keuffel & Esser Company, for whom H. S. Crocker Co., 215-217-219 Bush street, are the agents.

The breaking weight of one foot of cast iron one inch square is 5781 pounds; the breaking weight of a piece of hickory of the same dimensions is 270 pounds.

We call attention to an advertisement in this paper of Mr. Albert Hansen, successor to M. & A. Hanson, who retired after a business career of seventeen years. The Pacific Planing Mill, Berry street near Sixth, is too well known in this vicinity to need any commendation from us, and we trust Mr. Albert Hanson will find plenty of new friends to add to the number of those of the old firm.

"**Miss** BLEECKER (describing a fire)—"The building was completely gutted."

MISS EMERSON (of Boston)—"Yes, thoroughly entrailed."

Every building of any importance needs a fire hose reel for its protection. The Chapman Improved Fire Hose Reel is conceded to be one of the most simple, practical and efficient apparatus of its kind, and many a large building has been saved from destruction by the foresight of its owner in placing one or more of these reels in a building. Every machine is guaranteed by the maker, R. S. Chapman, 14 and 16 Front street.

One of the lost arts is the manufacture of malleable glass.

There is nothing so convincing as facts that are proved by experience. At the paper mills East Walpole, Mass., where "Neponset" is made, the red rope fabric can be seen in liberal use, testifying the confidence of the makers in their product, and exemplifying the ability of the fabric to demonstrate its own value. Not only is this fabric used in the protected methods recommended in architects' specifications, but without even the protection of a coat of paint it can be seen where it has been for years doing duty in the place of clapboards and shingles, exposed to the elements on the outsides of buildings used as storehouses and offices, with perfect security to the merchandise and furniture, and entire comfort to the occupants within.

Dimmick & Low, 221 Front street, are the agents for this city where information will be cheerfully given of the merits of this favorite brand of water proof papers.

The door of the studio was flung open and she dashed wildly into the room, and seizing the unlucky photographer by his few remaining locks, shouted wildly: "How dare you, sir! How dare you insult me!"

"Insult you, madam? I am sure I —— ——"

"What is the meaning of that then, sir?" and she pointed to the notice on the back of the mount, "The original of this is carefully prepared."

It took him three weary hours to explain, and she left him a sadder and a wiser man.—*Photographic Times.*

Linerusta Walton is being extensively used at the present time in flats for wainscoting and gives to a room a most pleasing effect. For the latest designs go to M. M. Heineman & Co., No. 32½ Fremont street.

Mr. MCSWAT—"Have you packed you trunk yet, Lobelia?"

MRS. MCSWAT—"Not yet."

MR. MCSWAT (looking at his watch)—"Then you havn't any time to lose, the train leaves in exactly thirty-six hours." *Chicago Tribune.*

D. E. Condon, M. E., C. E., A. M. Inst. C. E., Consulting Engineer, 122 Geary street, room 1. Specialties: Accurate Calculations of Stresses and Strains; Safe Strength and Stability of all Structures in Iron, Steel, Masonry and Wood. See advertisement on prge xxii.

CITY BUILDING NEWS.

Army near Church. Additions to buildings; owner, Margaret Walsh; contractor, Jas. E. Schulz; signed, July 5; filed, July 6; cost $1,333.

Bartlett Nos. 117 and 119. Two-story frame, four flats; owner, J. W. Popper; contractor, M. Linn; signed, July 8; filed, July 11; cost $10,000.

Belvedere near Frederick. Frame building; owner, Amelia C. Rodrigues; architects, Pissis & Moore; contractor, Wm. Knowles; signed, July 24; filed, July 26; cost $2,025.

Broadway near Buchanan. Alterations; owner, Lizzie J. Hemphill; architects, McDougall & Son; contractors, P. J. & M. Brennan; signed, Aug. 8; filed, Aug. 9; cost $4,910.

Broadway and Mason. To build; owner, Catherine Mayer; architects, John & Balczynski; contractor, Peter Johnson; signed, July 18; filed, July 20; cost $3,150.

Broadway between Octavia ann Laguna. Addition to 2-story and basement; owner, James G. Burnett; architects, Piercy & Hamilton; contractors, C. A. Hooper & Co.; signed, July 27; filed, July 28; cost $1,175.

Bryant near 26th. Cottage; owner, Josephine A. Wardwell; contractor, W. W. Rednall; signed, July 26; filed, July 26; cost $1,800.

Capp street. Alterations and additions; owner, Mrs. Annie Smith; contractor, Geo. L. Marshall; signed, July 13; filed, July 15; cost $985.

California near Jones. Cement work; owner, Geo. Whittell; architects, Coxhead & Coxhead; contractors, Chatain & Gillett; signed, Aug. 3; filed, Aug. 5; cost $4,450.

California near Webb. Steam heating and ventilation; owner, S. F. Savings Union; architect, Wm. Curlett; contractors, A. Bannisteiger & Co.; signed, July 23; filed, Aug. 2; cost $5,285.

Carl and Stanyan. To build; owner, H. Johnson; architect, J. B. Wuersching; contractor, L. F. Fletcher; signed, July 5; filed, July 5; cost $1,800.

Central Ave. near Washington. To build; owner, E. B. Spaulding; architect, Wm. Curlett; contractor, Jos. Norris; signed, June 28; filed, July 1; cost, $8,425.

Chestnut near Mason. Two-story frame; owner, Wm. Beckman; contractor, A. Guilbert; signed, July 12; filed, July 26; cost $3,490.

City Hall Ave. Granite work for statuary; owner, Lick Estate; architect, F. Happersberger; contractors, Rocklin Granite Co.; signed, July 11; filed, July 17; cost $17,025.

Clay near Broadway. All work to build; owner, W. S. Rainey; architect, T. J. Welsh; contractor, H. Jacks; signed, July 14; filed, July 17; cost $1,910.

Clement near Ninth. To build; owner, Henry Verleger; contractor, Peter Johnson; signed July 11; filed, July 18; cost $1,580.

Dupont near Clay. To build; owner, Susan Crooks; architect, Chas. I. Havens; contractor, Jno. Furness; signed, July 6; filed, July 11; cost $10,869.

Eighteenth near Sanches. Two-story frame; owner, J. H. Lawson; contractor, Jas. Gabriel; signed, July 5; filed, July 6; cost $3,200.

Ellis near Mason. Hydraulic elevator; owners, Y. M. C. A.; architect, A. Page Brown; contractor, John Hammond; signed, July 18; filed, July 18; cost $4,650.

Fairmont near Palmer. A cottage; owner, Catherine Shepston; contractor, J. L. McLaughlin; signed, June 28; filed, June 29; cost $1,100.

Fell near Laguna. Carpenter work, brick work and painting, etc.; owner, Mrs. Annie Haynes; architect, J. J. Clark; contractor, Jonn G. Adams; signed, July 25; filed, Aug. 1; cost $5,700.

Fell near Lyons. All excavating; brick work, lathing, plastering, plumbing, etc.; owner, A. B. Spreckles; architect, Chas. I. Haven; contractor, Peter Crichton; signed, July 24; filed, July 27; cost $13,400.

Fell near Steiner. Grading and building; owner, Wm. Arthur Martin; architect, W. H. Lillie; contractor, C. P. Moore; signed, July 20; filed, July 28; cost $4,425.

Filbert and Leavenworth. Three-story frame; owners, A. Giusti and wife; architect, J. H. Littlefield; contractor, H. P. Hurlbut; signed, July 15; filed, July 18; cost $13,462.

Fillmore near Felton. All work to build except brick work, plumbing and painting; owner, D. B. Faktor; architects, Martens & Coffey; contractor, I. Bucher; signed, July 24; filed, Aug. 1; cost $4,819.

Fillmore near Fulton. Ex. and brickwork; owner, D. F. Faktor; architects, Martens & Coffey; contractor, J. O. Sullivan; signed, July 29; filed; Aug. 1; cost $784.

Fillmore near Fulton. Carpenter, mill and stairwork; owner, A. Jungblut; architects, Martens & Coffey; contractor, J. Bucher; signed, July 24; filed, Aug. 1; cost $4,787.

Fillmore near Fulton. Excavatings and brickwork; owner, A. Jungblut; architects, Martens & Coffey; contractor, J. O. Sullivan; signed, July 29; filed, Aug. 2; cost $784.50.

Fourth street. To build; owner, Ed. Laeffler; contractor, Jos. Gabriel; signed, July 18; filed, July 20; cost $1,600.

Franklin near Pine. Two-story frame; owner, Chas. Schmitt; architects, Henriksen & Mahoney; contractor, James McLean; signed, July 25; filed, July 26; cost $8,500.

Franklin and Pacific. Alterations; owner, Henry Meyer; architect, J. E. Krafft; contractor, Geo. R. Lang; signed, June 19; filed, June 30; cost $1,482.

Francisco near Powell. Excavation, concrete and brick; owner, J. Schweitzer; architect, H. Geilfuss; contractor, J. O. Sullivan; signed, June 30; filed, July 5; cost $4,324.

Francisco near Powell. Two-story frame, 26 flats; owner, J. Schweitzer; architect, H. Geilfuss; contractor, A. Guilbert; signed, July 18; filed, July 21; cost $16,500.

Francisco near Powell. Plumbing two-story frame; owner, J. Schweitzer; architect, H. Geilfuss; contractor, W. J. Weeks; signed, July 18; filed, July 21; cost $2,105.

Francisco near Powell. Plastering two-story frame; owner, J. Schweitzer; architect, H. Geilfuss; contractor, Arthur O'Brien; cost $2,697.

Francisco near Powell. Painting two-story frame; owner, J. Schweitzer; architect, H. Geilfuss; contractors, J. Quadt & Co.; signed, July 18; filed, July 21; cost $1,925.

Golden Gate Ave. near Devisadero. Carpenter work, etc.; owner, John J. McElroy; architect, M. J. Welsh; contractor, Henry Rohling; signed, July 27; filed, Aug. 5; cost $4,700.

Golden Gate Ave. near Larkin. Additions; owner, Mrs. Eliza Magnes; architect, J. F. Kenna; contractors, Currie & Loomer; signed, July 28; filed, July 29; cost $1,450.

Green near Scott. Grading; owner, Martin O'Connell; contractor, Julian E. Carey; signed, July 24; filed, July 25; cost $485.

Hayes near Webster. Alterations and additions; owners, T. & C. Molloy; architect, C. J. I. Devlin; contractor, Daniel Powers; signed, July 5; filed, July 7; cost $1,451.

Hyde and California. Plumbing and gas-fitting; owner, F. Katy; architect, A. C. Laugens; contractor, Wm. F. Wilson; signed, July 29; filed, July 31; cost $1,587.

Hyde near California. Carpenter and plastering; owner, Fred Katz; architect, A. C. Laugens; contractor, F. V. Steinman; signed, July 1; filed, July 5; cost $12,000.

Jackson and Scott. To build; owner, Wm. H. Talbot; architect, Clinton Day; contractor, Peter Crichton; signed, Aug. 7; filed, Aug. 9; cost $38,000.

J. near 8th Ave. All work to build; owner, Mary Freel; architect, M. J. Welsh; contractor, James McConahey; signed, July 20; filed, July 25; cost $1,500.

Jones and Filbert. Alterations and additions; owner, Chas. O. Rether; contractor, Geo. Weismann; cost $3,875.

Jones near Chestnut. Two-story frames; owner, J. F. Witzel; architect, W. Winterhalter; contractors, Saywell & Mackenzie; signed, July 12; filed, July 13; cost $2,765.

Lombard near Jones. Three-story frame; owner, Kate Johl; architect, R. H. White; contractor, Jas. Campbell; signed, July 19; filed, July 21; cost $5,080.

Marine Hospital. Additions; owner, United States; contractors, McCann & McKay; cost $2,240.

Market near Church. Two-story and basement; owner, Godfrey Smith; contractors, Patterson & Person; signed, July 31; filed, July 31; cost $3,685.

Mason near Eddy. Tinning and iron work; owner, S. Silverberg; architects, Salfield & Kohlberg; contractor, Jos. F. Forderer; signed, Aug. 4; filed, Aug. 9; cost $1,125.

Mason near Eddy. Elevator work; owner, S. Silverberg; architects, Salfield & Kolberg; contractor, Wm. H. Birch; signed, July 18; filed, Aug. 9; cost $3,710.

Mason and Vallejo. Alterations; owners, Francesco Pagano & Cono Sabatino; contractor, Emanel T. Picapo; signed, July 27; filed, July 31; cost $1,300.

Minna between 6th and 7th. Alterations and additions; owner, Mrs. M. Connell; contractor, T. R. Bassett; signed, July 27; filed, July 28; cost $1,400.

Minna near 3d. Three-story brick building; owner, Jean Rieu; architect, E. Depierre; contractors, Ewell & Barton; signed, July 8; filed, July 10; cost $3,925.

Mission Road. All work to build; owner, Jas. Comosky; architect, Ed. J Vogel; contractor, J. F. Mullerick; signed, June 28; filed, June 29; cost $2,250.

Mission near 5th. An elevator; owner, Emma Lolor; architect, Chas. Geddes contractors, W. H. Birch & Co.; signed, June 27; filed, July 1; cost $1,755.

Natoma near 8th. Three-story frame; owner, Jno. Hurley; contractor, Allen MacDonald; signed, July 6; filed, July 7; cost $2,280.

Ninth and Clementina. Carpenter work; owner, E. J. Fotheringham; architect, J. E. Krafft; contractor, C. P. Moore; signed, July 12; filed, July 19; cost $8,700.

Ninth and Clementina. Plumbing; owner, E. J. Fotheringham; architect, J. E. Krafft; contractor, H. Williamson; signed, July 12; filed, July 19; cost $1,150.

Ninth and Clementina. Brick and stone work; owner, E. J. Fotheringham architect, J. E. Krafft; contractor, R. Ringose; signed, July 12; filed, July 19 cost $1,369.

O'Farrell and Bagley Place. Gas fitting, etc.; owner, Benj. Curtaz; architects John & Balczynski; contractor, Wm. F. Wilson; signed, July 29; filed, Aug 5; cost $5,735.

O'Farrell near Franklin. To build; owner, Richard Bunton; architects, Shea & Shea; contractor, Duncan G. Chisholm; signed, July 24; filed, July 26; cost $5,672.

O'Farrell and Bagley Place. Plastering on six-story brick: owner, Benjamin Curtaz; architects, John & Balczynski; contractor, Chas. Dunlop; signed, July 11; filed, July 13; cost $3,475.

O'Farrell and Bagley Place. Carpenter work on six-story brick; owner, Benj. Curtaz; architects, John & Balczynski; contractor, Adam Miller; signed, July 3 filed, July 3; cost $27,500.

O'Farrell near Franklin. Excavating and brick work; owner, Richard Bunton; architects, Shea & Shea; contractors, M. Fennell & Son; signed, July 8; filed, July 11; cost $2,119.

Pacific near Sansome; To build; owner, Antonio Chichiz; architect, Chas. I. Havens; contractor, John G. Adams; signed, July 28; filed, Aug. 2; cost $14,450.

Pine and Broadway. Moving, building and repairs; owner, Lizzie I. Hemphill; architects, McDougall & Son; contractor, Geo. Davis; signed, July 15; filed, July 17; cost $1,700.

Post near Lyon. Alterations and additions; owner, G. S. Olsen; contractor, G. G. Gillespie; signed, July 10; filed, July 11; cost $2,900.

Rich and Harrison. Alterations; owner, E. B. Vreeland; architects, Townsend & Wyneken; cost $6,000.

Santa Clara near Florida. All work to build; owner, Jno. Hannavan; contractor, F. M. Schweizer; signed, June 29; filed, June 29; cost $2,280.

San Jose Road near Onondago Ave. Two-story frame; owner, David Ferullo; architect, Chas. M. Rousseau; contractor, Louis Cereghino; signed, July 24; filed, July 25; cost $2,554.

Sanchez and 14th. Three-story frame; owner, Charles F. Selk; architects, Martens & Coffey; contractors, Schutt & Krecker; signed, Aug. 3; filed, Aug. 4; cost $4,535.

Second street. A salt water intake; owner, Edison L. & P. Co.; architect, T. H. MacDonald; contractors, Healy, Tibbetts & Co.; signed, July 7; filed, July 19; cost $7,500.

Stockton street 119. Building brick house; owner, Stefano Arata; architect, H. Pauls; contractor, J. F. Hills; signed, Aug. 9; filed, Aug. 9; cost $1,675.

Turk near Scott. Two-story frame; owner, Jeremiah Manning; contractor, J. J. Manseau; signed, July 18; filed, July 18; cost $3,600.

Turk and Larkin. Painting; architects, Coxhead & Coxhead; contractor, James W. Reinfield; signed, Aug. 4; filed, Aug. 8; cost $1,007.

Twentieth near Valencia. Two bakers ovens; owners, Frank & Bregetta Laub; architects, Martens & Coffey; contractor, Chas. C. Krelling; signed, July 27; filed, Aug. 2; cost $1,100.

Twentieth near Valencia. Carpenter, mill and stair work, painting and plumbing; owners, Frank and Brigitta Laub; architects, Martens & Coffee; contractor, F. Weirochi; signed, July 24; filed, July 27; cost $6,200.

Twenty-third near Eureka. To build; owner, John Conly; architect, Wm. Mooser; contractor, Wm. Helbing; signed, July 17; filed Aug. 3; cost $3,000.

Twenty-fourth and Mission. Three-story frame; owner, Mrs. Geo. Sweetser; architect, S. Hatfield; contractor, Allen McDonald; signed, July 11; filed, July 15; cost $3,280.

Twenty-fifth street 1413. Alterations and additions; owner, Louis Finberg; contractor, H. R. Schmuckert; signed, July 29; filed, Aug. 3; cost $779.

Twenty-sixth and Mission. Artificial stone work; owner, Emma L. S. Mangels; architect, H. Geilfuss; contractors, Cump & Curillon; signed, July 6; filed, July 7; cost $1,199.

Vallejo near Kearny. Alterations and additions; owner, Thos. Poggie; architect, E. Depierre; contractor, John Dyar; signed, June 28; filed, June 30; cost $540.

Waller and Belvedere. Plastering five houses; owners, Cook, Smith & Hinkle; architect, Ed. Burns; contractor, Andrew Flood; signed, July 14; filed, July 14; cost $1,413.

Waller near Fulton. All work to build; owner, National Bottling Co.; architects, John & Balczynski; contractor, Chas. Hippely; signed, July 19; filed, July 21; cost $3,025.

Waller near Devisadero. Alterations; owner, W. W. Grissim; contractor, John L. Larenzen; signed, July 20; filed, July 21, cost $2,225.

Washington near Franklin. To build; owner, A. G. Booth; architects, Smith & Freeman; contractor, L. H. Kent; signed, June 27; filed, June 30; cost $4,275.

ALAMEDA COUNTY.

Alice and 3d, Oakland. Alterations; owner, Mary A. Surryhue; contractor, Chas. Riedel; signed, July 10; filed, July 11; cost $1,585.

Bartlett Tract, Alameda. To build; owner, I. L. Van Brunt; contractors, A. W. Pattianni & Co.; signed, July 29; filed, July 31; cost $2,360.

Bray Ave. near 19th street, Fruitvale. To build; owner, Seraphie Lampe; architect, Brother Adrison; contractor, T. R. Bapett; signed, July 12; filed, July 14; cost $12,942.

Filbert and 32d, Oakland. Cottage; owner, Mrs. F. Jacobs; contractor, P. J. Brophy; signed, Aug. 3; filed, Aug. 3; cost $1,436.

Ninth and Jackson, Oakland. To build; owner, Rufus Smith; architect, J. Conant; contractors, Cadwell & Nickerson; signed, July 10; filed, July 11; cost $4,023.

North addition to Brooklyn, lot 42 and 53, block 67. To build; owner, C. B. Foote, architect, J. Conant; contractor, A. W. Cornelius; signed, July 7; filed, July 10; cost $3,057.

Paru near Clinton Ave., Alameda. To build; owner, P. B. Ladd; contractors, R. & W. H. Weeks; signed, July 12; filed, July 14; cost $2,718.

Taylor Ave. and McPherson street, Alameda. To build; owner, Eliz. Rodenbeck; architect, C. S. Shanner; contractor, T. F. Fennell; signed, June 7; filed, July 11; cost $1,760.

Villa Lots, Berkeley. Two-story frame; owner, N. L. Freese; contractor, J. W. Budenbecker; signed, July 10; filed, July 11; cost $2,460.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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MR. H. T. BESTOR, one of our most experienced architects is now on his way to visit the World's Fair along with the Veteran Firemen's Association. Mr. Bestor is one of the directors of the CALIFORNIA ARCHITECT AND BUILDING NEWS and has been such since its incorporation four years ago. We wish him *bon voyage* and a safe return.

WE regret to see that no steps are being taken to start work on the new Post Office that San Francisco has so long needed. It is too bad that political influence should hinder the well being and progress of this city. The Post Office is needed and needed badly; the work it will make for idle mechanics is also needed badly, and there exists no valid reason why the two needs should not be satisfied.

If the citizens of this city had enough public spirit to act and act vigorously, when occasion required, and did so, there would not be half so much complaint about hard times. Now is the time to make an energetic protest for this public improvement. Let us knock for recognition; if that hint is not enough, let us kick for it, and kick hard enough to be heard.

WHE Board of City Hall Commissioners have re-considered their action in adopting the design of an Octagon tower for the New City Hall, and have accepted a design prepared by their architect, Mr. Frank Shea, which if executed according to the present intention of the Board, will crown the building with a circular dome; as soon as the drawings are finally completed, we will, with the architect's kind permission, publish such of them as will give a clear idea of the solution now arrived at.

In the mean time we publish in another column the report on the vexed and much discussed problem, that was prepared several years ago by the San Francisco Chapter of the American Institute of Architects, at the request of the Commissioners who had charge of the works at that time.

The present state of affairs substantially justifies the conclusions that were reached by the chapter, after a most careful and painstaking study of the problem, and after lapse of

many years and the rejection of many designs, the recommendations that the chapter made have been followed, and we think the public will, when they have the opportunity of judging the completed structure, be satisfied with the decision reached.

In this regard we desire to call the attention of the Commissioners to a suggestion made by Mr. Pissis, one of the committee who prepared the report in question, who pointed out the value of a model, constructed to scale, of the existing portions of the building on which could be illustrated in miniature the effect of any subsequent proposed modification or additions to the buildings, giving opportunities to judge of the effects that would be produced from the various points of view, and enabling a more correct judgment of these effects to be had than could be obtained from any number of perspective drawings, however carefully executed.

Such a model would prove invaluable in case the question of completing the buildings with the mansard roof, shown in architect Laver's original design, should ever be seriously brought up. To satisfactorily solve this question of a mansard roof, will require quite as much study as has been expended on the problem of designing a suitable tower.

WE present our readers this month with the accepted designs for the five principal buildings that will house the California Midwinter International Exposition, to be held in San Francisco, California this coming winter—as well as some that received the second prize.

The idea of having such an institution in the winter season is a novel one, and one of the main purposes of the originators of the project, is to show the world at large that we possess a climate that will admit of such an innovation upon accepted precedents.

The managers of the Exposition have adopted a set of designs that will do us credit, and our architects have shown that they are fully able to meet such an emergency as that requiring the hasty production, on short notice, of creditable sets of plans for a style of buildings with requirements differing entirely from the customary routine of an architects' duties.

The contracts for the two largest buildings have been awarded and work on them will be begun this month.

On the first of next January the Exposition will be opened to the public and California will show what she can do on short notice.

ARCHITECTS AND THEIR SPECIFICATIONS FOR ELECTRIC LIGHT WIRING.

NAT. B. ALLEN.

THE little importance which Architects attach to the wiring of their buildings for electric lighting, and the loosely gotten up specifications for this class of work, is a matter of regret to every electrical contractor who desires to see the standard of wiring raised to where it should be—as near an ideal system as is possible.

The Pacific Insurance Union, have issued rules which regulate the manner in which work shall be done, also the kind of material to be used, so it is not necessary for the Architect to go into these details, all contractors know that "switches and cut-outs must be double-poled and have incombustable bases," they know that the work must be done according to these rules in order to secure the certificate of inspection from the Pacific Insurance Union; yet the general run of specifications are made up of these details, and no attention is paid to what is of paramount importance, and without which, no reliable estimate can be made, that is, an accurate set of plans showing the location of each cut-out cabinet, the circuits running from these to the lamp terminals, the length of each circuit, the *size* of wire, location of switch out-lets, and the number of lamps to each out-let.

The loss of potential should be figured out in such a manner that the most economical results, in the working of the system may be obtained; this can only be done by one who has, both a theoretical and practical knowledge, of what is required in each individual case. It is impossible to make one set of specifications fit all buildings, as the distribution of losses is entirely different in buildings used for different purposes, a difference of fifty feet in the position of the centre of distribution may entirely alter the location of risers, and may entirely change the cost of the installation several hundred dollars.

Another point of importance which is almost invariably overlooked is the leaving of chases in the walls of brick buildings to carry the wires for floor distribution and for mains; the location of such chases should be carefully considered with reference to lateral openings. Architects leave chases for the plumber and gas-fitter, why not for the electrican? They could be left at a small expense while the walls were being built, but if the contractor has to devote days to drilling brick or stone walls, it necessarily adds considerable to the wiring contractor's bid.

Of no less importance is the position of all out-lets and the number of lights per out-let, since this determines the number of circuits, the length and sizes of tap lines, the method of running the circuits, the number of cut-outs, and the amount of labor involved.

From the foregoing it will be seen that the Architect should make ample provision for the wiring of buildings; we do not think that Architects, as a rule, are sufficiently educated in electrical matters to be able to understandingly make a set of specifications for this class of work and see that they are complied with, he should, therefore, employ some successful engineer to attend to the electrical part of the buildings, this will be much more satisfactory to the electrical contractor, being assured that intelligent provision has been made for his work, he can afford to charge much less for same.

THE SLATE INDUSTRY OF CALIFORNIA.

THE fact that there is a growing demand on the Pacific Coast for Slate Roofing cannot be questioned. In view of this, it is but fair that our journal, published in the interest of the building industry, as well as all materials used in the construction of buildings should at this time present a few facts concerning a material which in the Eastern States as well as Europe is used almost exclusively for covering roofs. Our earliest building on this coast was of such a temporary character that no thought was given to how long the roof covering would last. The cheapest (first cost) most convenient material at hand, would be selected and on it went. In a year or two if the roof leaked on went another, or the old one was patched up to try and outlive another winter. In a few years the roof had cost twice as much as would have covered it, in the first instance, with a material that nature has given us and which will not wear out for many years. Yet to bring slate from the east meant a very expensive roof, and only a few could afford to use the material. Not so to-day for the opening of the Slate Quarries of El Dorado County in this State, has put the material within the reach of everyone. Again we have entered a new era in the building line. Our architects are being called upon to design structures composed of steel, iron, brick, terra-cotta and stone; and such as will compare with any buildings in the world. This is what is causing a demand for slate. Our architects, if allowed, will have a material on the roof that will be in keeping with the rest of the building. The earliest use of slate for covering roofs (of which we have any record) was in the twelfth century. The Old Castle of North Wales at Carnarvon and Conway, were covered with slate. Also the Castle at Augers, France, built in the vicinity of the slate beds that are now being largely quarried under-ground. When Edward I. visited the copper mines o Drwysyeold in North Wales, he stayed at a house in Nantlle, roofed with slate. On the mountain slopes of North Wales on several of the slate ranges are traces of old workers, and the tracks along which they carried the slate on their own backs, or the backs of their horses, are still discernable and form part of many a mountain path. In an Ode written by a Welsh poet in the year 1570, we find the first mention of the Penrhyn quarries. The Bard Sion Tudor asked the Dean of Bangor for a load of slate form the Caehier quarry. The Aberllefeni quarry is as ancient, for an old timbered house is said to have been covered with slates from the quarry in the days of Queen Elizabeth. About the same time the slates from the De la Bole quarries in Cornwall had attained considerable repute. Carew writing in 1602 describes them as, "in substance thimee, in color faire, in waight light, in lasting strong, and generally carrieth so good regard as (besides the supply for home) great store is yearly conveyed by shipping both to other parts of this realm, and also beyond the sea into Britaine and "Netherlands." Speaking of the same quarry in 1758, Borlaise writes that for its lightness and enduring of weather it is generally preferred to any slates in Great Britain. He describes the great quarry as in his time 300 yards long, 100 yards wide, 80 yards deep. It is evident from the size of the quarry that a considerable quantity of slates had at that date been extracted from it.

The growth of the slate trade in Europe within the last twenty-five years has been something enormous, and may be spoken of as one of great prosperity. Limited only by the ability to supply the demand. Merchants there are ready to contract for the whole out-put of good quarries. Aside from this during the year 1892, New York alone exported to the British Isles 2,122,065 roofing slates; notwithstanding the great number of quarries in operation in Wales and the thousands of men employed in the production.

In the United States we have the following states which are producers of slate: Main, Vermont, New York, Ohio, Georgia, Pennsylvania and California. It would take up too great a space to go into details and treat the vast business done in these different states in roofing slate alone. We will however note two as an example. Our Vermont company last year produced 20,152,719 squares and their shipments amounted to 10,299,724 squares. Another company in Pennsylvania shipped from their quarry from eleven to sixteen car loads daily, twenty tons each equal to sixty squares of slate to the car. During the year 1892 the total tonage shipped from the counties of Lehigh and Northampton amounted to 172,000 tons of roofing slate, a little less than 9,000 car loads of twenty tons each.

Until a few years ago all the slate used on the Pacific Coast come from the east, to-day the county of El Dorado supplies most of the slate used here (at least in California). In our issue of two months ago we described the quarries of this county which seems to be the only deposit in this state that could be used for roofing; where there is deposits o what is called slate in other counties it is not such as could be used for roofing. The material for this purpose must have good cleveage qualities, or rather be such as will allow of its being split into sheets, however it is not the process we wish to deal with, sufficient it is to say that California produces a slate of such quality and color as will compare with any produced in the world, and the same can be bought for one-half the cost of eastern slate landed here. The fancy colored slate is fast going out of use, the demand being for black slates, and rightly so, for nothing can be more handsomer than a plain black roof, particularly for our modern style of architecture.

A roof strong enough for shingles will hold slate. It is fire-proof, and when laid properly the elements have no apparent effect. It will not absorb water, nor hold snow. There is many instances where slate has been taken from a building on which it has been for seventy-five to a hundred years and re-laid on another.

Assuming the life of the various kinds of roofing to be as described in the following table, it will be seen that while the first cost of slate is somewhat greater than other materials, it has a very great advantage at the out come:

Material	Original Cost per Square or 10 x 10 feet	Life	Average Cost per Annum
Slate	$10.50 to $11.00	100 years	10 5-100 or 10 10-100 cents
Tin	8.50 " 9.00	15 "	56 2-3 or more "
Corrugated Iron	8.00 " 8.50	10 "	80 " " "
Shingles	4.00 " 5.00	12 "	33 1-3 " " "
Boards	2.00 " 2.50	8 "	25 " " "

In above estimates we have made no allowance for painting of the tin, iron or shingles, if these materials are not painted regularly and well, they will not last the time given.

To the owner or landlord no portion of a building is so great an expense to keep in repair as the roof, nor so great an annoyance to a tenant as a leaky one. Slate is always sold by the square which is 10x10 feet or 100 superficial feet. Let us have more slate roofs on this coast and the result will be that we shall have fewer fires, cooler houses in summer, warmer in winter, and last but not least, less expense for repairs.

ARE CALIFORNIA HOMES AS HEALTHFUL AS THEY SHOULD BE?

BY MARSDEN MANSON, C. E.; Ph. D., MEM. TECH. SOC.

[Read May 19, 1893.]

THIS question must be answered in the negative, for the prevalence of filth diseases* in city, village and country homes in California, in the presence of natural conditions which are a guarantee of the purest health, forces the conclusion that we are not maintaining the healthful conditions which naturally exist. There is, therefore, every justification for a rigid inquiry into the causes which produce and propagate filth diseases, and the use of plain words in laying

*The writer prefers the term *filth disease* to the more frequently used term *zymotic disease*. The former more plainly expresses the true cause of much sickness, which, when fully appreciated, suggests the proper remedy—cleanliness.

the facts bare. The threatened visitation of that most frightful of all filth diseases, Asiatic cholera, further accentuates the propriety of bringing up the subject of cleanliness—not only as to person—but in the broader and equally important application to water, food, air and surroundings.

The causes and conditions which propagate many filth diseases have been considered so subtle that an investigation of them is ofttimes regarded as super-technical and impracticable until too late, when their track is plainly marked in the health reports and death list. The simple and rigorous methods of analysis which microbiology brings to the aid of chemistry, makes the detection of the cause and course of filth diseases absolutely certain.

The particular microorganisms which produce certain of these diseases are as well known as are the symptoms; they are traced from patient to patient through the water, food, or clothing with a certainty, which if generally known, would make every intelligent human being an expert in sanitation. They are multiplied in favorable places and under favorable conditions with a degree of rapidity which would poison a continent in a few weeks with the developments of a single germ. It is therefore necessary to discuss these facts in plain words, and to bring them not only before the physician and the civil engineer, but to the very children in the school house. The complete following up of the study thus inaugurated involves one of the deepest problems of modern science, namely, how to treat small areas so as to permit them to be densely populated without impairing the natural healthfulness, and even to remove natural conditions inimical to healthful occupation.

All the sewers, all the water works, all the heating and ventilating contrivances ever built, have been attempts, more or less successful, to solve this great problem or to remove the fatal consequences of failing to provide proper sanitation at the outset. It therefore becomes necessary for municipal officers to employ the most honest means and the highest talent in planning and constructing every detail of municipal engineering, and to leave no part to the charge of either the ignorant or the grasping. Such large portions of the population of all cities are either ignorant or unmindful of their surroundings that special efforts must be made to force sanitation upon them; not only for themselves, but for the sake of those who are forced to partake of the consequences of witless or vicious self-neglect.

THE CONDITIONS IN THE COUNTRY.

The duties of the writer have called him to many parts of the State, and the natural conditions have been a matter of close observation and study for many years. It may be said that no filth disease naturally prevails in California, except chills and fever in certain low lands in the great valley, and in similar localities elsewhere. Yet in these localities the disease is easily escaped by avoiding the use of surface water. This fact was first brought to the writer's notice some fifteen years ago by Colonel Mendell of the Engineer Corps, of the U. S. A., and has since been closely followed up and observed in numerous localities.

In traveling through the great valley of California, the close observer is frequently struck with the entire absence of chills and fever in a particular locality of a district over which the disease is generally prevalent, the drainage and surroundings of the escaping locality being frequently worse than the infected neighborhood. The method of ascertaining the conditions is as instructive a way of explaining the facts as any other—After the usual salutations and inquiries as to weather and crops, the subjoined questions and answers follow—

"What kind of water have you?"

"Well water"

"Deep well?"

"No, not very, some twenty feet, struck a fair flow at sixteen feet."

"Is the water good?"

"Firstrate, soft water, washes easy so the women folks say."

"Any chills and fever?"

"Well, a little now and then towards fall, but we generally go up to the mountains or to the seashore for a time and get over them."

"What causes the chills?"

"Well the air draws in here from the tules and swamps and brings malaria."

Passing on for a mile or less the inquirer reaches a neighbor and asks the same questions of a sturdy citizen whose ruddy youngsters and buxom wife bespeak entire absence from chills. His replies as to water are about as follows—

"Our well is pretty deep, we didn't get much water at the first gravel and had to bore 190 feet (frequently three or four hundred feet) before we got water, but then got a good flow rising nearly to the surface."

"What kind of water?"

"Firstrate cool water, but a little hard and mineral like. The women folks have to use soda in washing."

"Any chills and fever?"

"No, not here, but down at neighbor Blank's they have a touch in the fall."

"Why do you escape?"

"Well the air draws in here from the plains and we don't get the miasma from the tules."

These questions the writer has asked dozens of times and found that where chills and fever prevailed, the wells are either shallow, or the surface water is permitted to drain in alongside the well casing and is pumped up with the deep water.*

In country homes, exposed tanks badly cleaned are another source of injurious contamination. Very frequent cases are found of milch cows and stock being watered from a shallow well surrounded by the accumulated filth and manure of years. The milk or flesh of such animals cannot possible be wholesome.

The City of Stockton affords a very marked example of the effect of the water supply upon chills and fever. In the early history of the city the water was obtained from wells, generally shallow. After the introduction of the water from deep wells, the disease began to disappear, and is now as rare as it was formerly prevalent. A study of the various strata is very instructive in this connection. At from forty to sixty feet a stratum of dense clay occurs, below which the water is drawn from very distant sources; at from fifteen hundred to twenty-six hundred feet the water is hot and charged with light carburetted hydrogen which largely forms the natural gas of the locality.

The disposition of garbage, manure and fæcal matter around country homes rarely receives that attention which health necessitates. The dangerous and fetid cesspool is almost universal. It could be easily replaced by the construction of a closet on a well shedded mound and the use of a little dry earth. With ordinary attention this simple expedient makes the surroundings entirely pure and inodorous. Some such simple method should be obligatory in isolated country school houses and hotels.

THE CONDITIONS IN VILLAGES.

The villages and small towns of California where there is a public water supply, are generally furnished from deep wells supplemented by the wells of individuals. These latter are classified as are country wells, and are subject to greater danger of surface contamination from cesspools and garbage heaps. The mountain towns and villages have generally a water supply of great purity. It is in the villages and small towns that the disposition of fæcal matter reaches its maximum point of danger to health and life. This fact is distinctly recorded in outbreaks of diphtheria, typhoid, and gastric fevers, and other filth diseases—which diseases could find no lodgment were the naturally healthful conditions maintained by the adoption of proper measures.

The most glaring case of contamination of this character which ever came under the writer's notice was as follows: Some five years since, in looking into the sanitary conditions of a valley town, one family in particular was reported as suffering from a series of filth diseases necessitating expen-

*See "Drinking Water as a Source of Malaria," the *Sanitarian*, August, 1892, Vol. XXIX, page 127.

sive doctor's and druggist's bills and frequent trips to the seashore. The head of the house had been very positive and strong in his condemnation of the healthfulness of the town, and was then absent and his home tenantless. The case was so aggravated that there was justification for a very thorough examination of the premises. The house-drainage was at first looked to. There were no waterclosets, tubs, nor basins, so that danger from this source did not exist. The kitchen sink, receiving all waste water and refuse matter from this source, drained into an open box very much clogged up and full of putrescent matter. This box passed within a few feet of the well casing and was broken so as to permit the drainage to pass to the well; within less than twenty feet of the well was a cesspool with the putrifying fæcal matter of years soaking through the soil in all directions.

The strong remarks of the owner as to the town were but feeble expressions compared with a proper condemnation of this individual case. Instructions were left to the effect that if pure water were not supplied, the household could dispense with the doctor and druggist and send for the undertaker. It is needless to state that as soon as the causes and actual conditions were pointed out the matter was promptly remedied. The city of Sacramento is particularly exposed to the pollution of the soil from cesspools. This danger is increased by the drainage of water-closets into the cess-pool, which practice is essentially more dangerous than the simple pit, although both should be avoided.

An illustration of the results of the want of care as to purity of water supply, is very strikingly illustrated in the case of Plymouth, Pa. This town has about eight thousand inhabitants. In the spring of 1885, nearly one person in every six was stricken with typhoid fever, more than ten per cent of the cases being fatal, the deaths being about 130. This outbreak was traced by Dr. Shakespeare to a single case occuring during the winter in the water-shed supplying part of the town. The dejecta of this patient were thrown out upon the snow and upon the occurrence of warm weather the germs found their way into the water supply with the above result. The melting of the snow occurred on the twenty-fifth of March; the disease broke out on the tenth of April, and was confined to that portion of the inhabitants using water from the infected source.* Medical and sanitary journals and reports are full of many similar cases.

In the hotels and public schools in the villages and smaller towns without proper sewerage systems the closets are generally of the most primitive kind, and foul to a nauseating degree. The simple measures suggested for country homes would make a marked difference in the health of those exposed to this source of disease. It must be remembered that where improper methods of disposing of human waste are practiced the ill effects are cumulative and are not eradicated in centuries.

Several of the large towns and cities are supplied with river water taken below sources of deadly contamination and only escape its consequences for a time and probably not to the extent that they imagine. In the event of the occurrence of filth diseases of a virulent type above these towns it is difficult to see how they can escape serious visitations of the disease. At this point it is proper to call attention to the illegality of discharging foul matter into the streams of this State and the lax administration of Section 374 of the Penal Code. It will thus be seen that there are too many instances of either ignorance or carelessness as to the water supply of homes, and it is the duty of every house holder to look carefully to this, the most ready course of filth disease into the system.

THE CONDITION IN THE CITY OF SAN FRANCISCO.

The water supply of San Francisco is obtained from several sources, the major portion coming from sources of undoubted excellence. There are two minor sources whose area by reason of growing population and neglect are rapidly becoming dangerous if not already so.

The catchment area of Mountain Lake and Lobos Creek, embracing some 1500 acres, all within the limits of the City and County, is fast gaining in those conditions which pollute both the surface and underground drainage. The most glaring of these conditions are:

1. The absence of any sewer system with proper outlet.
2. The existence within its area of a hospital connecting with a sewer without any outfall.
3. The existence of not over clear "dairies."
4. The use of part of the area for cemetery purposes.
5. The dumping of garbage and filth as filling for lots below grade.

The watershed tributary to Lake Merced, some 5,000 acres in extent, is objectionable from the same general causes, although less in degree and extent.

The area tributary to the present Alameda creek source will have to be abandoned in the future for the same cause. All areas from which a municipal water supply is drawn should be kept absolutely free from human habitation, and it would be a wise measure for municipalities in a growing country to acquire catchment areas and afforest them. In this way valuable forest reserves could be made for all time, and the area made as valuable for timber as ordinary farming lands, and by the proper section of the trees to be cut the area made a source of permanent timber supply.

The house tank, when not kept scrupulously clean, is a source of contamination even when pure water is supplied. When not absolutely necessary they should be dispensed with.

Water is the most active disease distributor imaginable, and to paraphrase the very truthful words of a celebrated authority—"No power upon earth could save San Francisco from the scourge of cholera or typhus were a single case to occur or a single infected garment to be washed in one of the watersheds supplying the city with water." The use of a water supply from areas partly within our city limits should be immediately prohibited.

In this connection it may be well to quote from the recent law of the State of New York,* which, in providing for the purity of the water supply of her chief city, conferred upon the Commissioner of Public Works powers possessed only by the most tyrannical governments. Yet these powers were wisely conferred and are being justly and wisely executed; for never can the power of law be more humanely and justly exercised than in the enforcement of those conditions which prevent the introduction and spread of filth diseases. In this remarkable law the Commissioner of Public Works was authorized to enter in upon the lands and homes of persons breaking the imperative laws of cleanliness, and even to burn up and eradicate every vestige of possible contamination. One million five hundred thousand dollars is made available in three equal sums for three years.† Such action is necessary in the face of the fact that during the years 1832, 1848, and 1866, cholera had entered that great mart and paralyzed every industry and brought death and sickness in its most frightful and disgusting forms to her homes.

In 1873, cholera devastated the southern and western portions of the United States, but it gained no foothold in New York by reason of the rigid quarantine measures and excellent control of the imported cases.

DISPOSITION OF GARBAGE AND WASTE.

The degree of carelessness and inattention reached in San Francisco to this important sanitary matter is unequaled in any part of the United States. In this city the matter has long passed the stage of official and criminal neglect, and reached that of civic indifference.

Many lots and streets in the northern part of the city have been filled up with highly putrescent matter which cannot be excavated for foundations, sewers, pipes, or conduits of any kind within the next few centuries without endangering human health and life. In the center of the city, and in a

*Page 3, Textbook of Medicine, Strumpell.—Page 4, Practice of Medicine, Oster.

*AN ACT to provide for the sanitary protection of the sources of water supply for the City of New York. Approved March 23, 1883.

†The New York Academy of Medicine realizing the vast importance of pure water, drafted and presented a bill providing for—

A Croton Water Commission, consisting of five members.

1. The Commissioner of Public Works—President.
2. The Commissioner of public Health—a Physician.
3. A member of the State Board of Health—a Physician.
4. A member selected by the Chamber of Commerce.
5. A member selected by the American Society of Civil Engineers.

This Board appoints a civil engineer who has power to carry out permanent plans, systems and methods for securing pure water. $50,000 is appropriated for the year 1883, and $20,000 for each year thereafter.

district which is surrounded on all sides with dwellings or stores and factories, is an area of many acres already piled from ten to twenty feet deep with foul and putrifying garbage. During the prevalence of a west wind this pest breeding spot can be smelled a mile or more from shore. With every south wind its pestilential odors are blown through the heart of the city. Its foul smell can be detected not only along the adjacent low-lying districts, but at elevations 300 or more feet above tide water and a mile and a half way. After a few hours south wind the course of this foul air can readily be traced by dull headaches, and latter by influenza and sorethroats if nothing worse.

From 250 to 300 loads are daily added to this pest heap, which in aggregate is more dangerous than a dozen well-conducted hospitals for pestilential diseases. Indeed when the truth is known, vastly more disease can be traced to these sources than to the hospitals; and in fact they are one of the prime causes making the maintenance of pest houses necessary. We have been recently treated to prolonged and bitter discussions as to where a pesthouse should or should not be located, when in our midst conditions are tolerated which are many fold worse than a pesthouse full of patients, and which may under favorable circumstances make a pest house out of the homes which we have built for ourselves and families, and which repeatedly fill those homes with air too foul to be pleasant and undoubtedly dangerous; and which greatly adds to the danger from the hundreds of local defects in our sewer system. It is not necessary to here anticipate a report now in progress of compilation, but it may be safely said that we are running risks which only our unparalled natural advantages enable us to do with partial impunity. That we do not entirely escape is known to every citizen, for there is not an intelligent being in this city who cannot recall many preventable deaths. Oft' times, alas, of relatives or friends.

These views are the result of years of observation, and are in harmony with centuries of experience. They may not meet the approbation of those whose interests lie in an easy and profitable disposition of this material, nor of those who desire a cheap filling for valuable tide lots. There are interests at stake in every community which are not in harmony with a proper administration of the law. But it is the imperative duty of every man to see that the true needs of the community are subserved. The hope is therefore expressed that the members and our guests will freely express their observations and views, for "in the multitude of counsellors there is safety."

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

IN presenting to our readers this month, the accepted designs for the Exposition Buildings of the Midwinter Fair, to be erected in Golden Gate Park, San Francisco, California, we think their importance warrants us in giving a short description of the most striking features of these structures, which present an agreeable variety of well planned buildings, that will effectively display the numerous exhibits that are to interest and entertain our own citizens, and we hope the citizens of other countries as well.

THE largest of the buildings is that to be devoted to Manufactures and Liberal Arts and was designed by A. Page Brown. It covers over 100,000 square feet of surface and is nearly 500 feet long. The exterior covering is to be "staff" treated to represent marble. The style of the building is Moorish and the prominence given to the entrances relieves the building from what otherwise would be a monotonous repetition of arches supported by twin columns. Four corner towers, richly and elaborately decorated, support domed roofs which it is the intention to cover with tiles. An interior gallery thirty-five feet wide extends around all four sides, and allows the visitor to survey the panorama spread before him below. Five flights of broad steps lead to these galleries, affording ample means of communication. The building is divided longitudinally into a nave with two side aisles, the nave being lighted by a clere story. The cost will be $100,000.

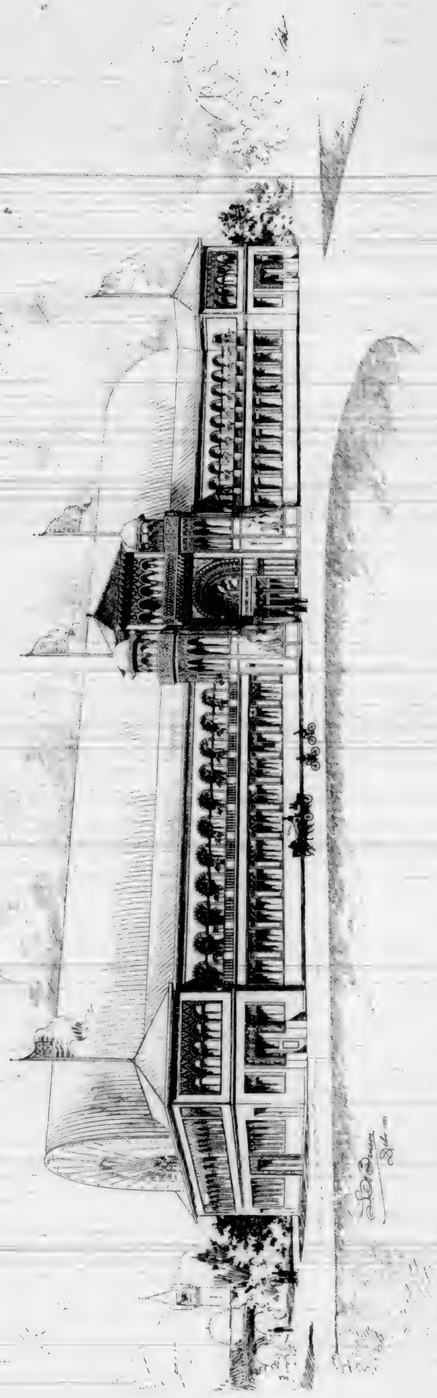
THE Administration Building was the last to be given out but it is one of the most important as it will be the business building, it is also by A. Page Brown. This structure is Oriental in outline, and in the detail of its ornamentation the Central Indian and Siamese are tastefully combined. The cost will be about $25,000.

THE building next in importance to that of Manufactures is the Mechanical Arts Building designed by Ewd. R. Swain, who derived his inspiration from the architecture of the Orient. Mr. Swain has, like Mr. Brown, made the main entrance the most prominent feature, and its massiveness is well relieved by the two delicate minarets that flank it. Color is to be lavishly introduced to heighten the effects, and we think the completed building will be second to none. The towers at the corners are provided with balconies that will allow the visitors to enjoy a general view of the grounds and obtain a more striking idea of their extent than could be obtained from a lower point of view. The estimated cost is about $65,000.

MR. C. C. McDougall's design for the Fine Arts building, was the one accepted by the Committee. In style Egyptian and in plan simple, it presents an imposing effect; the building is a rectangle, 136 feet by 72 feet. It is the only building designed to be a permanent structure, and is to be of brick, cemented, with ornamentation carved. The approach is to be flanked with sphinxes, and by setting the building back some 50 feet from the main driveway, an effective entrance is secured—the peculiar details of the Egyptian ornamentation have been carefully followed, and the lotus crowned columns and battered walls of the portico give the characteristic effect of Egyptian Architecture. The interior of the vestibule is to be a striking feature of the building. It will rise through two stories and the roof representing the "stepped" construction of the pyramid wall, through colored glass cast a soft light to the gallery. The estimated cost is $45,000.

FOR the Agricultural and Horticultural Building, Samuel Newsom has undoubtedly taken for the foundation of his work the Mission building, making free use of his own ideas to adapt it to all the requirements to which the building is designed and cannot be considered a servile copy of any order

DESIGN FOR TRINITY SCHOOL.
SAN FRANCISCO, Cal.



COMPETITIVE DESIGN OF AGRICULTURAL AND HORTICULTURAL BUILDING FOR THE MIDWINTER FAIR SAN FRANCISCO CAL 1893

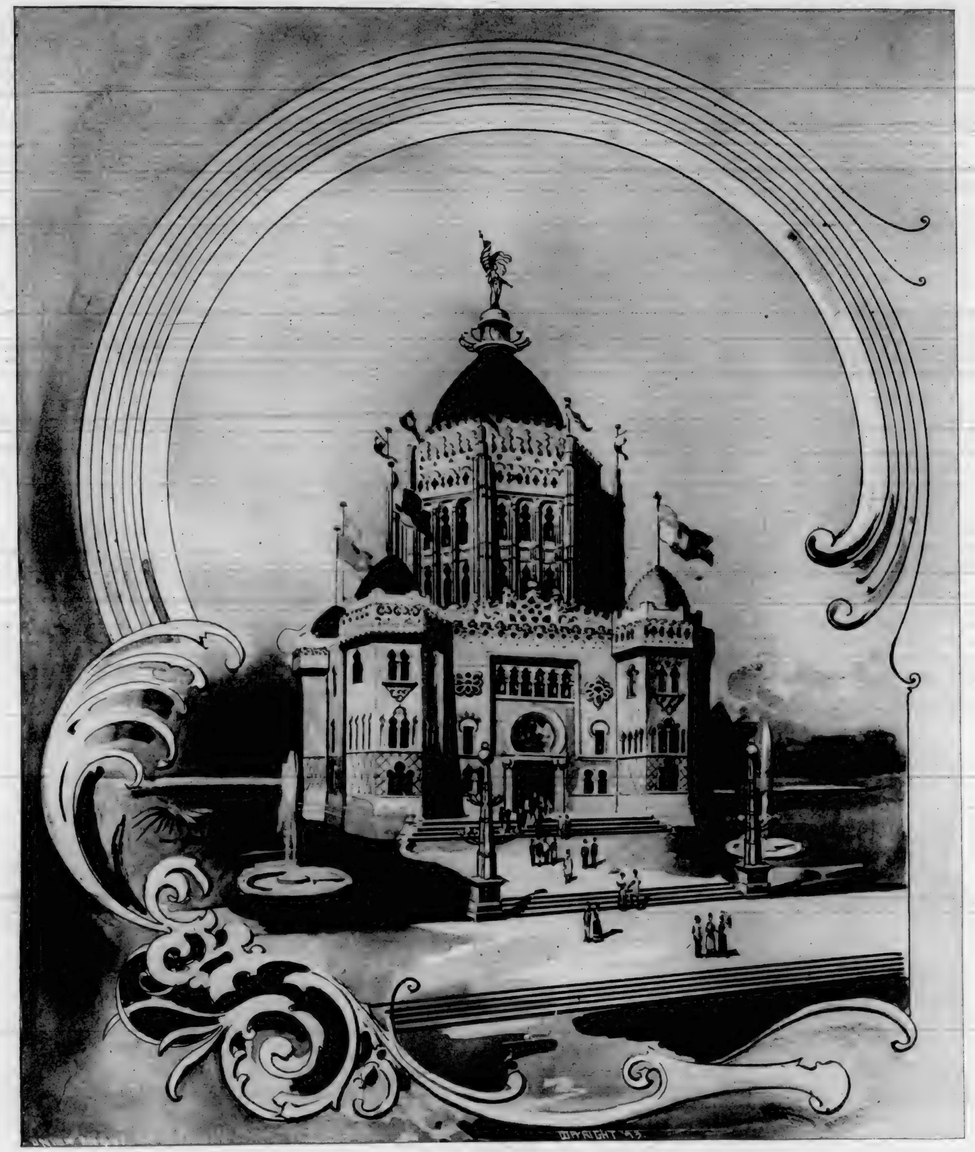
AWARDED SECOND PRIZE.

ROWELL & BENSON ARCHITECTS.

CALIFORNIA ARCHITECT & BUILDING NEWS SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XIV Nº 9 SEPTEMBER 1893.



ACCEPTED DESIGN FOR THE

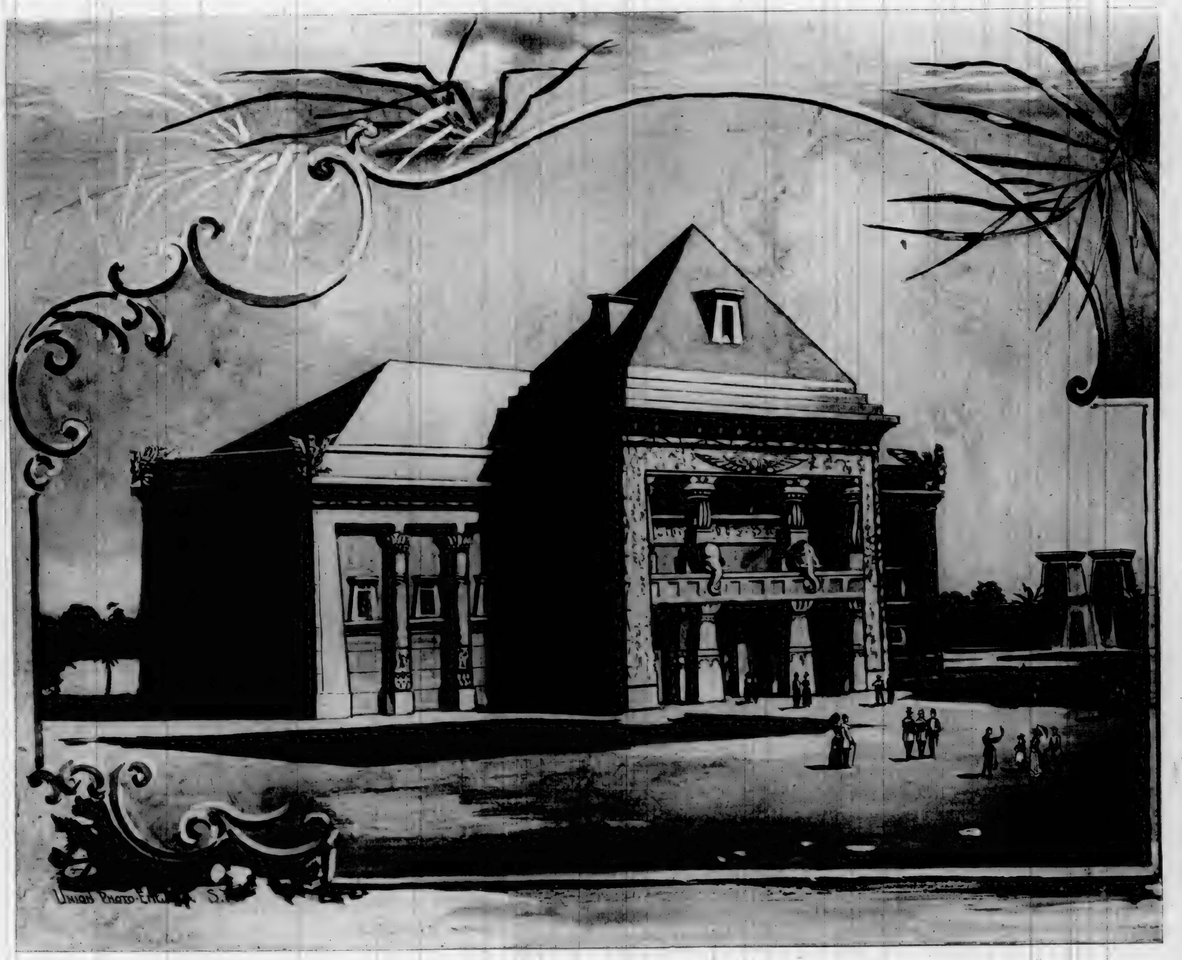
ADMINISTRATION BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION

A. PAGE BROWN, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XIV. No. 9. SEPTEMBER 1893.

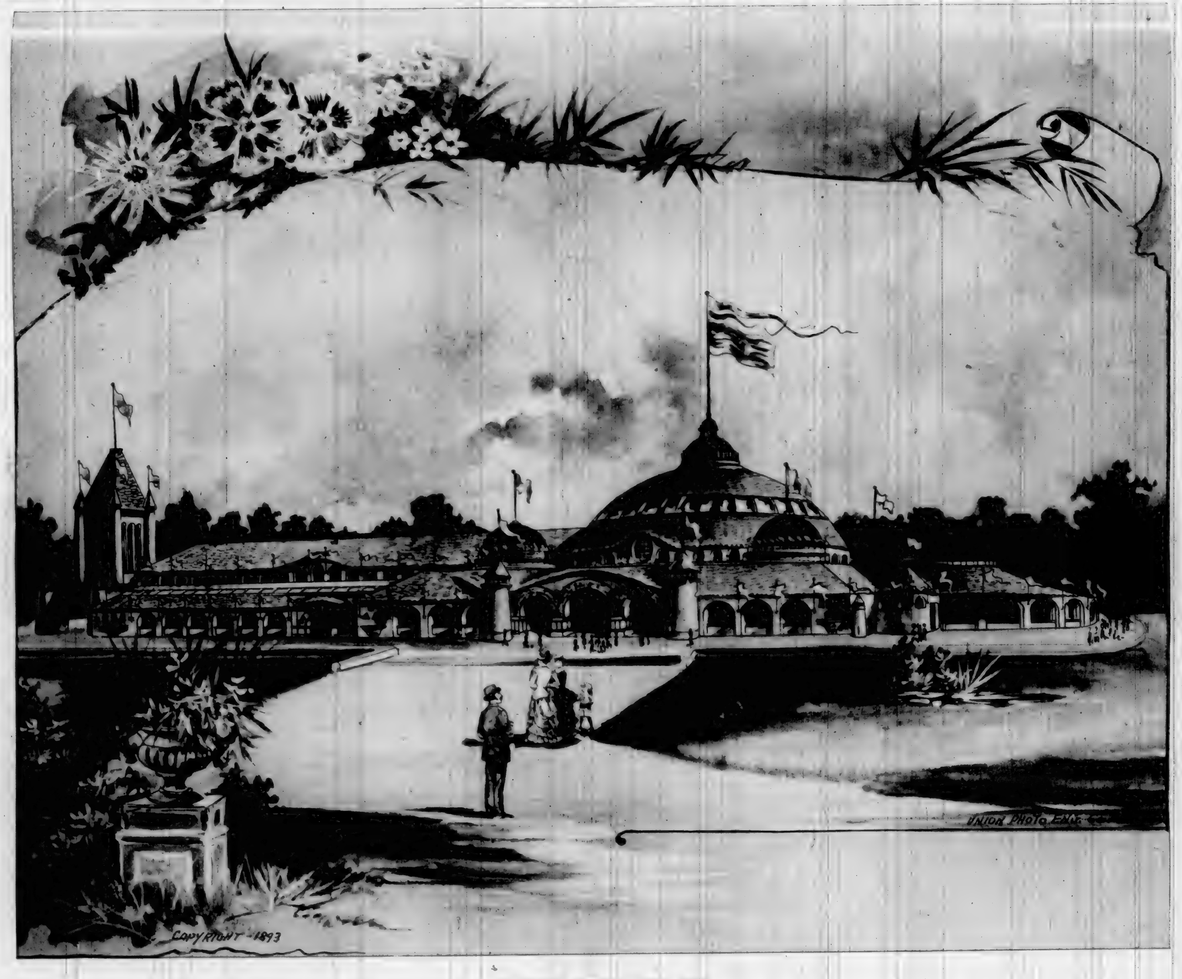


ACCEPTED DESIGN FOR THE

FINE ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

B. McDOUGALL & SON, ARCHITECTS.

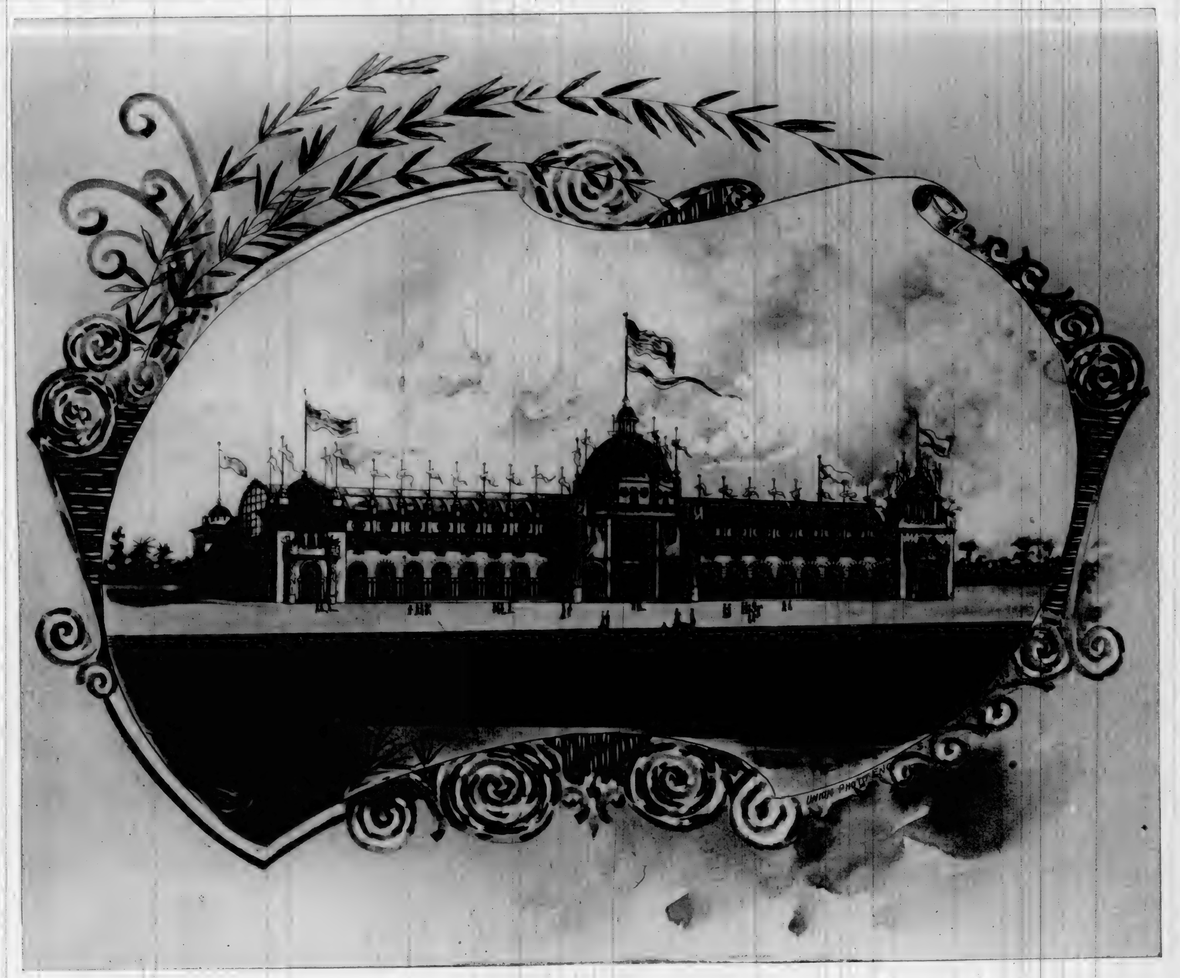


ACCEPTED DESIGN FOR THE

AGRICULTURAL AND HORTICULTURAL BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

SAMUEL NEWSOM, ARCHITECT.

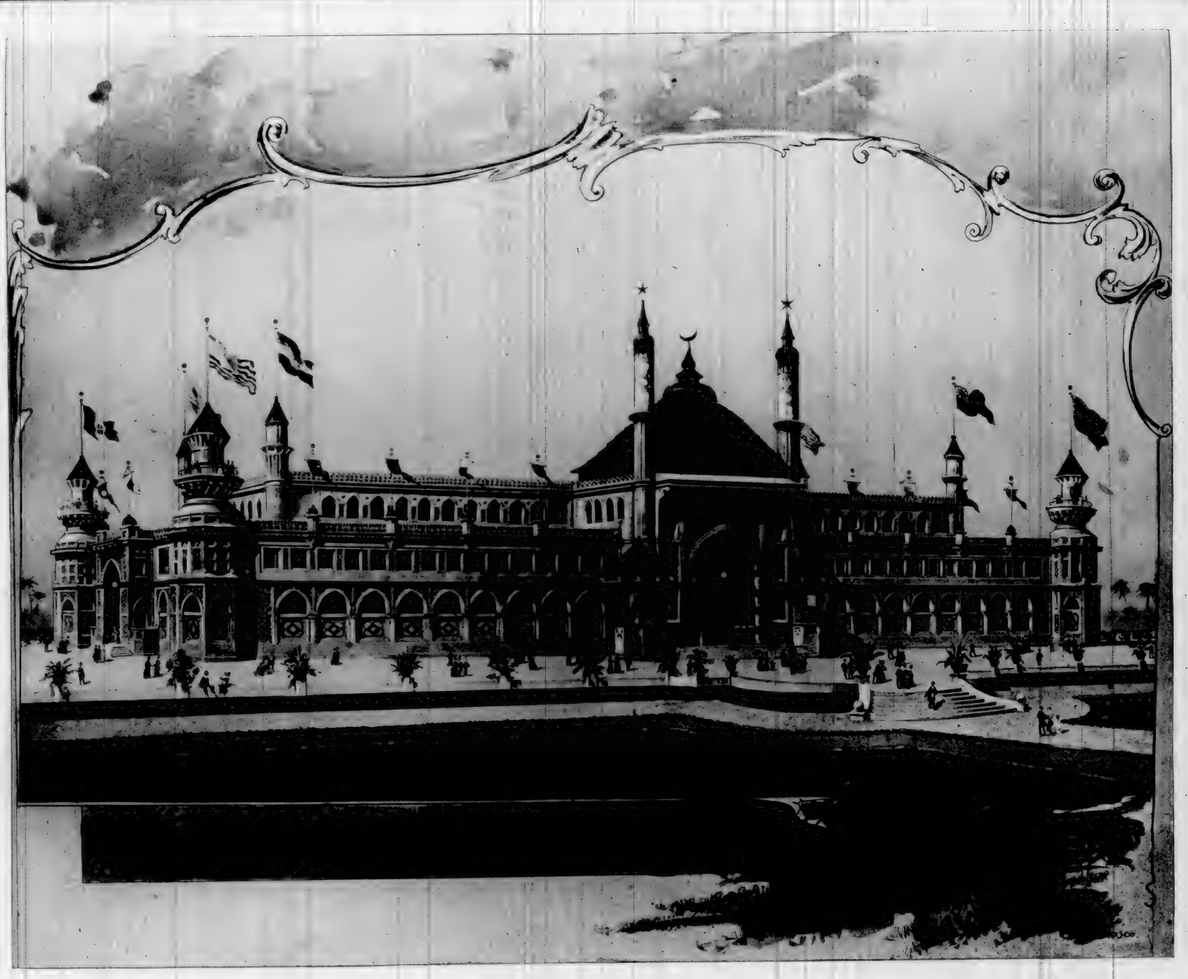


ACCEPTED DESIGN FOR THE

MANUFACTURERS AND LIBERAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

A. PAGE BROWN, ARCHITECT.



ACCEPTED DESIGN FOR THE

MECHANICAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

E. R. SWAIN, ARCHITECT.

JOHN · COTTER · PELTON
ARCHITET
S · F ·

DESIGN · FOR
THE · FINE · ARTS · BUILDING
CALIFORNIA · INTERNATIONAL · MIDWINTER · FAIR.
SAN · FRANCISCO
AWARDED SECOND PRIZE.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XIV Nº 9 SEPTEMBER 1893.

Proposed · Mechanical · Arts · Building ·
· for · the ·
California · Midwinter · International · Exposition ·
· Edmond · Kollofrath · Architect ·
Room 88 Flood · Building ·
San Francisco.
· Awarded · Second · Prize ·

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XIV Nº 9 SEPTEMBER 1893.

of architecture. The great dome is a striking feature of the building, it will be 101 feet 6 inches in diameter and 90 feet high from the ground to the "lantern." The cost will not exceed $70,000 and will doubtless make an attractive feature of the Fair.

SECOND AWARDS.

THE proposed Mechanical Arts Building for the California Midwinter International Exposition, submitted by Edmund Kollofrath, architect, 58 Flood Bldg., and awarded second prize.

The building is of the oriental style and measures 275x175 feet with a boiler house annex, 25x60 and covers about 50,000 square feet, being the third largest in size.

There are three entrances, the main entrance in centre of building and two side entrances.

The entire building, except boiler house annex is to be constructed of wood the latter to be brick.

The main entrance is the principal feature and is covered by a large dome. The skylight on the roof is forty feet wide and running the entire length of the building. All the outside finish to be wood and staff painted in proper colors.

The gallery inside is about thirty-seven feet wide extending all around the four sides of building with two grand staircases at both side entrances and large offices, lavatories, etc. The estimate cost of building is about $75,000.

Mr. Kollofrath is also preparing elaborate plans for all the buildings of the "Vienna Prater" which will be one of the main features of the fair, it will cover about 72,000 square feet.

THE second premium design for the Agriculture and Horticultural Building of the Midwinter Exposition, illustrated in our present number, is the conception of Rowell & Benson, architects.

The drawing was submitted under the *nom de plume* of "Alhambra", and presents a building 300 feet long and 125 feet wide, designed after the Moorish type of architecture, the intricacies of ornamentation admissible in this style being concentrated around the entrances and especially the main entrance which it was intended to embellish in the ornate treatment of color and ornament distinctive of this style.

The roof is entirely of glass supported by a graceful system of iron trusses.

An open roof garden and promenade over-looking the grounds, extends along the front and is accessible from level of second story. The building complete would cost $69,600.

MR. Pelton has selected the Greek style as appropriate for the Fine Arts Building., While the various Oriental styles are eminently appropriate for those buildings which are to be built simply for this occasion, he questions the introduction into this building, of the gay treatment required in Oriental detail.

The permanency of this building, in fact, has been of the first consideration, in character, treatment of detail and construction. He proposes that the walls of the building shall be of brick, seventeen inches thick, with foundations of twenty-one inches thickness. The exterior and the interior surfaces of the walls, to be covered with the Fitzgerald wall finish or other material equally as good. The roof gallery construction and floors, to be of wood and to be protected with fire-proof material as per sample, wherever practicable. All mouldings, projections, decorative treatment, shall be done in Portland Cement, or other durable material. For the interior wood work he proposes to use native redwood and spruce. This building when completed would cost the sum of $35,000.

A design for Trinity School, San Francisco, is by Wm. Curlett, architect.

AN INVALID'S ROOM.

EVERY large family would be the gainer by having a special room in case of sickness. Just how and where this should be situated depends altogether on circumstances. If it is a large family with plenty of means, it is recommended that the room should be in the top of the house and in the southeast corner, with large windows, a pleasant outlook and an abundance of sunlight and air. Every necessary appliance should be at hand. Water and drainage are among the most important. One country family, where modern sanitary ideas are very well carried out, has a room built at the top of the house with the effect of a large square tower. This room has a register-pipe, a water tank and a drainage pipe, which is connected with an independent cesspool far out of reach of the yard or garden, and itself with drainage into porous subsoil. Any illness that seems at all obscure is a signal for removing the patient to the tower chamber, which is voted the most delightful room in the house. A force-pump supplies an abundance of water. There are a bath-tub, closets and all the requirements of the invalid's apartment. This tower, being practically a fourth story of the house, has been arranged with a lift, operated by strong pulleys and heavy weights. There are four pulleys, one on each corner of the box, which is in dumb-waiter fashion. If the care-taker is a heavy person, there are extra weights to attend, and there is also a cord and a tackle-pulley from the middle of the box to a strong cross-beam in the roof and a corresponding one below. By this means the speed and lifting capacity of the appliance are easily controlled. The cost of the thing is a mere trifle compared with its convenience; and as in one corner of the box there is a rack for a tray, it is easy to do all the necessary running up and down-stairs.

A well-adjusted bell from the sick-room to the sitting-room below has a cord with-in reach of the sick person's hand. This room is available not only for the actual sick, but for the weary one who wants to get away from noise, and who goes up, fastens her jaunting car and locks her door with a sense of comparative security from interruption. It is not only the invalid's room, but in days of health the restful annex for several members of a large and busy household.—*N. Y. Ledger.*

The ancient Hammond house, at Marblehead, Mass., is being torn down and some of its spruce timbers, which have been protected from rain and wind for over two hundred years, are being largely sought after by violin makers to use in the manufacture of their instruments.—*Architecture and Building.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

NEW CITY HALL TOWER.

THE following is the report made by the San Francisco Chapter A. I. A. on the proposed Tower for the New City Hall, designed by Augustus Laver and submitted by him some years ago to the then City Hall Commissioners. In view of the fact that the subject matter is again occupying the attention of the Commissioners and the public, we believe the report will be of interest:

First—They consider that the design submitted by Mr. Laver for the New City Hall Tower is in itself well adapted in its external architectural features, to complete and adorn the building to which it is to be added. The height—which has been more or less called in question, is considerable—but is not, in the opinion of the Committee, in excess of the proportions permissable in so vast a structure as that to which it is to be applied. On the contrary, in view of the enormous frontage and other dimensions of the New City Hall, it would be difficult to fix an assignable limit, beyond which it would not be possible to harmonize and proportion a structure of this description under given conditions.

They find also, that the mansard roof, so called, in both the modified as well as the complete example exhibited in the drawings submitted to the Committee, while serving to fill up and prepare the structure for the reception of the tower, is by no means indispensable—at the same time it establishes the fact—that should additional space be at any time required, the same may be obtained by its addition, with advantage, whenever deemed desirable.

They find, however, upon examination of the internal structure of the proposed tower, that on account of the position and nature of the bearings available, it will be necessary to construct it in iron instead of the solid material composing the walls of the complete portions of the building. They also find that in order to perfectly adapt the designs submitted by Mr. Laver, to the existing structure some additions to or modifications of the plans submitted to the Committee, seem necessary; but these considering the comparatively and necessarily immature condition of the drawings, are probably intended by Mr. Laver in the final execution of the work when determined on. In the mean time your Committee with this proviso, beg to suggest that in their opinion, to secure the entire stability of the superstructure, the iron beams forming the foundations of the whole should be extended under the projections at the angles of the tower, no provisions for that purpose appearing on the drawings as submitted to the Committee. They also think that a broad sill plate composed of wrought iron beams and top and bottom plates should be placed on the circular brick wall surrounding the great circular hall under the tower. This would serve to equalize and distribute all unequal strains and bearings and rectify any possible defects in the foundations of this part of the building. The Committee deem this provision absolutely necessary, for though the construction of the tower (which is of wrought iron, steel and sheet metal) is of the slightest practical description, the weight of the whole tower will be in the neighborhood of three thousand tons. But dead weight alone is not the only consideration since the variable strains caused by windage will be very considerable under even ordinary circumstances, and there are times when, at such a height, the velocity of the wind will mean several hundred tons added to the ordinary weights at different points of the circle.

Second—For the above reasons, while the committee have full confidence in the ability of Mr. Laver to carry to completion the excellent design proposed by him in as satisfactory and substantial a manner as is possible under the circumstances and with the materials at his command, they feel compelled to say in view of the various objections which may be urged against the erection of any structure of the sort proposed, that they believe some such type as that adopted by the First Commissioners, would be found on the whole more suitable for the purpose than the new and loftier design, though in the nature of thing, less imposing in appearance and less in proportion to the size and importance of the building. The difficulty and expense of keeping such a structure in repair and proof against the destructive effects of climate and season, is a powerful argument, though one of an economical rather than artistic nature, in favor of reducing as much as possible the area and especially the height of the exposed surfaces. And here your Committee would suggest that instead of employing materials such as galvanized iron or steel in the external casing of the tower, which would need the preservation applications of some sort of paint, and would lead, as before stated, to endless repairs, they are of opinion that the use of copper though of greater prime cost, would in the end prove of much more economical and of vastly greater architectural value, as it is a material beautiful and artistic in its application and effect and eminently durable and in every way admirably adapted to the work proposed.

Third—This brings your Committee to their last and final position—while they fully concede the many points of artistic merit as a whole, of both designs exhibited in Architect Laver's projects for the proposed tower of the New City Hall, and while they are quite ready to admit the *possibility* of their construction with safety and substantiability compatible with materials of such a perishable nature as those rendered necessary by the adoption of the peculiar method of construction hitherto submitted, they are not so ready to admit the *advisability* of such a course; and in view of the conditions existing in the present building—consisting as they do—of a great circular chamber some eighty feet in diameter, surrounded by a massive brick wall, and including a circular peristyle of columns some sixty feet in diameter from centers, they believe that the possibility exists of erecting a perfect unique structure in the form of a circular tower, or dome tower which would offer features superior to any square structure yet proposed—and that before either of the designs now before the Commissioners are finally decided upon, Mr. Laver should be requested to furnish, as an alternative, such a design—homogeneous in material with the existing building and equal to it in durability, and as free from necessity for endless protection and renovation.

Such a structure, we believe, would not only redound to the credit of all concerned in its production, but would ultimately be found to be of great economical advantage to the city generally.

It would be of a height proportioned to its possible diameter and would compensate in dignity of material for comparative lack in magnitude, though a tower or dome of more than ninety feet in outside diameter, is one out of which it would seem that a very grand and imposing structure could surely be evolved. All of which should be left with confidence to the well known genius and artistic ability of the Architect of the building.

NOTICE TO ARCHITECTS.

Olympia, Wash., August 24, 1893.

PLANS and designs for a State Capitol building will be received until 2 P. M. on the fourteenth day of December, 1893, at the office of the state Capitol Commission, in the city of Olympia, State of Washington.

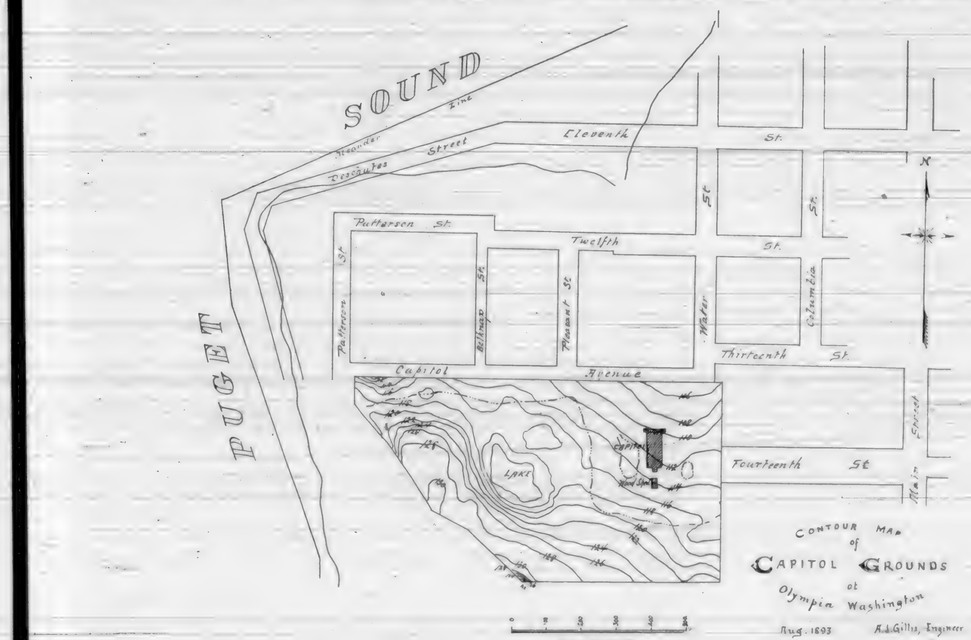
Following is the invitation extended to architects to submit competitive designs:

A map of the grounds, which appears in this issue, shows the location of the present capitol which is to be removed. It also shows the contours of the ground. The new building is to be placed in the most sightly portion, and the Commission desires the suggestions and judgment of the competing architects on this subject.

The principal material to be of stone, for walls, with brick for backing and interior walls, where not objectionable, and the building to be as nearly fire-proof as practicable. As the expenditure permitted by the act authorizing the building of the State Capitol is limited to $1,000,000, architects must confine their designs to this amount, avoiding extreme or superfluous ornaments. The Commissioners prefer appropriate proportions and solidity of design, but provision must be made for the several departments and the various state officers specified in the schedule herewith.

Ample provision must be made for heating by steam apparatus, ventilating by approved methods, and lighting by gas and electricity, the building to consist of a basement and three stories.

The schedule appended sets forth the various state officers, and departments for the accomodation of the executive, legislative and judicial bodies, and provisions must be made for all these officers in the most appropriate parts of the building, and for all other uses of a modern capitol building. The arrangement of the various rooms and departments is left to the judgment of the competing architects.



EXPLANATORY:

The datum to which these contours are referred, is the city base, or practically, high tide of Puget Sound. From the West boundary the ground falls abruptly to the Sound, from the North it slopes gently to 12th street and then drops suddenly. Fourteenth street from Main to the grounds will require to be graded and this with the earth from the foundation will probably bring the whole ground to an elevation of about 115. South of the long dotted line and inside the dotted rings, is a fine growth of young firs 60 to 100 feet high. The lake can be made an ornament to the grounds or can be drained and filled. The site is a commanding one, but the views to the North and the East are especially fine; and a "front" in each of these directions would probably be about the right thing to build.

The following rules are to be observed by architects proposing to submit designs for competition:

First—The drawings are to be made to the scale of sixteen feet to the inch, and to consist of four elevations, one section, and one perspective drawing.

Second—No colors are to be used on the drawings except to designate material on plans and sections.

Third—The building must be as nearly fire-proof as practicable.

The following premiums are offered:

First—The employment of the architect submitting the plan and design accepted by the Commission, as the architect

of the building.

Second—One thousand five hundred ($1,500).

Third—One thousand dollars ($1,000).

Fourth—Five hundred dollars ($500).

Provided that no architect shall be paid more than one premium, and all of which designs are to be considered the property of the state.

A brief typewritten description may accompany drawings, calling attention to points of special importance.

No plans or papers submitted are to have upon them any mark by which they can be known, but there shall be sent enclosed with them a sealed letter addressed in typewriting to the Governor, who is chairman of the Board, giving the author's name and address. This letter will not be opened until the award shall have been made. The drawings and papers will be known by numbers corresponding with numbers given to the letters.

Following is a list of the various state officers: Governor, Lieutenant Governor, Secretary of State, Treasurer, Auditor, Attorney General, Superintendent of Public Instruction, Commissioner of Public Lands, State Land Commissioners (four), State Printer, State Librarian and Adjutant General.

A senate chamber (maximum number, 50), house of representatives (maximum number, 100), together with necessary committee rooms, will constitute the legislative department.

The judicial department consists of a Supreme Court of five members and Clerk of the Supreme Court.

In addition to the offices provided for the above named officers, there should be rooms of convenient sizes for clerks, and also vaults, wash and cloak rooms and closets.

The arrangement of rooms and location in the building, size, etc., are left to the judgment and intelligence of the competing architects.

The commission reserves the right to reject any and all plans and designs, and to readvertise for the submission of further plans and designs.

J. W. MCGRAW, Chairman,
L. R. GRIMES,
J. N. GLOVER,
JOHN MCREAVY,
EDMUND RICE,
Commissioners.

THE LUMBERMAN'S ACTUARY by John W. Barry. The very book that every contractor needs—here we find tables in a compact form just suitable for the pocket, showing at a glance the amount of any number of feet between two feet and 25,000 feet at any price between $6 and $50 per thousand feet, thus at $6, $6.50, $6.75, $7 and so on to $50, also showing the feet in any number of pieces between one and 1,000 pieces for any thickness as inch and one-quarter, etc., up to 24 inches.

Price $2.50 per copy net, address, John W. Barry, Fairbury, Nebraska.

HOW TO FRAME A HOUSE or Baloon and Roof Framing by Owen B. Maginnis. Published by the author, 356 West 124th street, New York, price one dollar. Intended as an indispensable book for carpenters, builders, foremen, journeymen, etc. Illustrated and explained by over thirty engravings of Houses and Roofs.

LIPPINCOTTS' MAGAZINE for September contains the complete novel called "A Bachelor's Bridal" by Mrs. H. Lovett Cameron. It tells of an unconventional and ill-starred marriage and its tragic consequences. Mr. and Mrs. Dickens will be read with interest by all lovers of Boz.

HICKS' BUILDERS' GUIDE.—Comprising an easy system of estimating material and labor for carpenters, contractors and builders, by I. P. Hicks, illustrated by numerous engravings of original drawings. David Williams publishers, 96–102 Read street, New York.

This handy little volume cannot but prove useful to the class intended, and leaves no excuse for the contractor to leave anything out of his estimate, if he consults its pages.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

PERFORMANCE OF CONTRACTS.—In an action by a contractor for constructing a building, the owner cannot set-off damages for his failure to complete the building within the time prescribed by the contract, where each failure was due solely to his own negligence.
White v. Fresno Nat. Bank. Supreme Court of Cal. 32 Pac. Rep. 979. 44.

LIABILITY OF EMPLOYER.—If an employee is injured by reason of the negligence of the foreman or superintendent in charge of the work, he can only recover against the employer when the foreman or superintendent was negligent in performing the duties which the law imposes on the master personally, and cannot recover if the superintendent was merely negligent in the performance of such work as properly pertains to a servant.
Stockmeyer v. Reed Circuit Court D. Ind. 55 Fed. Rep. 259. 69.

FORECLOSURE OF MECHANICS' LIENS.—The fact that a state statute gives an action at law to enforce a mechanics' lien will not deprive the Federal courts of jurisdiction to enforce such liens by bill in equity, for the question whether legal or equitable remedies shall be adopted by the Federal courts is determined not by the state practice or legislation, but by the nature of the case and the foreclosure of a mechanics' lien is essentially an equitable proceeding.
Sheffield v. Furnace Co. v. Whitherow, 13 Supreme Court Rep. 937. 78.

RIGHT OF ADJOINING OWNERS TO LATERAL SUPPORT.—The statute which provides that each coterminus owner is entitled to the lateral and adjacent support which his land receives from the adjoining land, subject to the right of the adjoining owner to make excavations for construction on using ordinary care to sustain the land of the other, and giving previous notice of his intention, is merely declaratory of the common law; and while a coterminus owner has the right to the support of his soil in its natural state by that of his neighbor, such right does not extend to the support of any additional weight or structure he may place thereon.
Sullivan v. Zeiner, Supreme Court of Cal. 33 Pac. Rep. 209. 97.

BREACH OF BUILDING CONTRACT.—Where the contract provided that the contractor should erect a building before a certain date for a specified price, to be paid in four installments, each payment to be made when certain work had been performed, and that if the contractor failed to furnish at any time sufficient material or workman, the owner after three days' notice might proceed with the work and deduct the expense from the contract price. The fact that the contractor was dilatory in the work from the beginning did not entitle the owner to refuse to pay the second installment when the same was fully earned, and afterwards terminate the contract as for a breach thereof by the contractor. Where the owner had acquiesced in such delay up to the time when such installment became due.
Smith v. Corn Common Please of N. Y. city and county, 23 N. Y. Supp. 326. 136.

LIABILITY OF CARRIERS OF PASSENGERS IN ELEVATORS.—A landlord who runs an elevator for the use of his tenants and their visitors thereby becomes a common carrier, and is charged with the highest degree of care which human foresight can suggest, both as to the machinery and conduct of his servants; and an instruction that he owes to persons thus put completely under his control, the highest degree of care consistent with the possibility of injury, while unfortunate in the choice of words, does not misstate the law, and, being explained by the context, is no ground for reversal. A person who undertakes to run an elevator to carry passengers who intrust themselves entirely to his care and control, is charged with the duty of providing experienced and skillful servants for that work; and that standard of due care for an elevator man is that care which may reasonably be expected of an elevator man of skill and experience.
Marker v. Mitchell Circuit Court S. D. Ohio 56 Fed. Rep. 637. 158.

VALIDITY OF LIEN ON PORTION OF BUILDING.—A building contract provided for adding to an old building on part of a lot, and the erection of a new building on the other part. Mechanics' liens were filed for the construction of the addition to the building situated on that portion of the lot covered by the old building. The complaint in an action to foreclose such liens alleged that the contractor agreed to provide all the materials, and change into a two-story building the one-story building then on the premises described. Such allegations were not denied. The findings supported the allegations, and the judgment followed the findings. The judgment was not up to the objection that it was invalid because the liens were filed on a portion of the building only. The fact that the notice of liens described the building as situated on a certain number of feet of a certain lot, while the complaint describes it as situated on the entire lot, causes no variance and is immaterial.
Brunner v. Marks, Supreme Court of Cal. 33 Pac. Rep. 265. 177.

WHO MAY CLAIM MECHANICS' LIENS.—Where the statute provides that mechanics' material men, contractors, sub-contractors, etc., shall have a lien upon the property upon which they have bestowed labor or furnished materials for the value thereof, and that in case of a contract for the work between the owner and his contractor, the lien shall extend to the whole contract price. All such contracts must be in writing when the amount to be paid thereunder exceeds one dollar, and must be recorded. Otherwise they are wholly void and no recovery can be made thereon by either party thereto. In such case the labor done and materials furnished by all persons aforesaid except the contractor, shall be deemed to have been done and furnished at the personal instance of the owner, and they shall have a lien therefor. A contractor who fails to record his contract, where the agreed sum to be paid exceeds $1,000, can have no lien. In such case the contractor cannot claim a lien under the first part of the section on the ground that, his contract being void, he may recover on an implied contract for the services and materials furnished; since, though under the common law, he may be entitled to recover on an implied contract, he cannot have a lien, as the lien is created by the statute solely, and the statute must be complied with.
Spimley v. Griffeth, Supreme Court of Cal. 32 Pac. Rep. 974. 232.

BUSINESS MOSAICS.

Wire Glass—Nothing on the market so completely fills the bill, and supplies a long felt want as wire glass for skylights, vaults, etc. What is wire glass some may inquire? It is a sheet of glass having embedded in its centre a sheet of wire netting of any required size of mesh. Manufactured by the American Wire Glass Manuf. Co., Tacony, Philadelphia and for sale in this city by Jas. A. Maguire, 130 Sansome street.

"What kind of a roof is that?" she asked looking up at a mansard roof.

"Oh! that is a roof that takes 'man's hard' earnings to build," he replied.

F. H. Rosenbaum & Co.—We take pleasure in calling attention to the splendid collection of Mirrors of their own manufacture, both quicksilver and patent back. To those in want of plate and window glass we advise a call should be made at 567 Market street, opp. Sansome.

"I love to see the dear little lambs capering about in the spring."

"So do I; though they taste better when the capers are on the lamb."—*Truth.*

George Goodman—If you have a sidewalk or garden walk, made by the above named gentlemen, you can say of it what the late Bishop Brooks said of the baby, "that is a sidewalk," 307 Montgomery street is the headquarters of Artificial Stone.

Husband—"I think I shall go out and catch a few fish for our dinner to-morrow."

WIFE—"No, Edwin, we must economize. Buy them of the regular dealer."—*Tribune.*

Western Iron Works, 123 and 125 Beale street are still on hand to supply architects, contractors and others with wrought iron and steel building work of all kinds and dimension desired, also sole manufacturers of Champion Wheelbarrows. See advertisement upon first page.

Snooper—"Don't you think we ought to have free baths?"

SKIDMORE—Free baths are not sufficient, sir. What is needed is compulsory baths.—*Brooklyn Life.*

The Bostwick Fire-Proof Steel Lath.—We have had occasion several times before, to call the attention of the Architects and Contractors, in these columns, especially in our own growing city, San Francisco, of the very many excellent qualities of the Bostwick Fire-Proof Steel Lath.

This Lath is the recognized, standard metal lath on the Pacific Coast; and more yards have been sold in San Francisco and Los Angeles, in the past two years than any other metal lath on the market. It is Stiff, Ridged, Smoke, Fire, Rat and Bed Bug Proof, and is the most economical in plaster, making a perfect double tie or clinch around the loops on back of lath. Reference can be made to many of our large buildings in this city, and many of the large office and apartment buildings in Chicago, St. Louis, Boston and New York. This lath is adapted to the use of any kind of mortar or patent hard plaster, and where other metal laths, require two tons to the one hundred yards, the "Bostwick" will do the same work with only half, there being no waste at all, showing its superiority over wire, etc.

Architects, Contractors and any one who contemplates building, will consult their interests by calling on Messrs. Smith & Young at 727 Market street, who are the State agents for this lath, and they will furnish any information needed; or to the Bostwick Steel Lath Co., Niles, Ohio.

CITY BUILDING NEWS.

Boyce near Point Lobos Ave. To build; owner, Rosl Bunrhart; contractor, H. V. Acker; signed, Aug. 28; filed, Aug. 30; cost $3,000.

Broderick near Ridley. Alterations; owner, John Caley; architect, Robert Ewing; contractors, Henry C. Robinson and Wm. J. Gillespie; signed, Aug. 10; filed, Aug. 16; cost $2,710.

Broderick near California. To build; owner, Mrs. C. Harker; architect, S. A. Batchler; contractor, T. R. Bassett; signed, Aug. 29; filed, Sept. 1; cost $4,000.

Broadway near Steiner. To build; owner, Martin Van Buren Watson; architect, J. B. Matthison; contractor, A. Jackson; signed, Aug. 21; filed, Aug. 23; cost $2,700.

Bryant Ave. near 25th street. To build; owner, John P. Farrell; contractor, John Keney; signed, Aug. 28; filed, Aug. 30; cost $1,259.

Bryant between 2d and 3d Sts. Alterations; owner, Thomas Gihon; architects, Shea & Shea; contractor, James E. McConahey; signed, Aug. 29; filed, Sept. 1; cost $1,379.

California near Franklin. To build; owner, Henrietta Zeile; architect, Clinton Day; contractor, C. Chisholm; signed, Aug. 10; filed, Aug. 12; cost $16,662.

California near Drumm. To building; owner, Luning Company; architects, Coxhead & Coxhead; contractors, Pacific Patent Plaster Co.; signed, Sept. 6; filed, Sept. 8; cost $5,800.

Day and Sanchez. To build; owners, Michael & Margaret Tiernan; architect, Chas. I. Havens; contractor, M. Loftus; signed, Aug. 25; filed, Aug. 25; cost $2,220.

East and Filbert. Four two-story frame buildings covered with sheet iron lathing and cement; owners, Lunning Co.; architect, A. C. Hussey; contractors, Gallagher & Milburn; signed, Aug. 25; filed, Aug. 29; cost $10,800.

Eighth near Natoma. Carpenter work, etc.; owner, S. H. Williams; architects, Hochholzer & McHenry; contractor, I. P. Shepard; signed, Aug. 31; filed, Sept. 1; cost $2,200.

Eighth near Natoma. Brick work; owner, S. H. Williams; architects, Hochholzer & McHenry; contractor, James O'Sullivan; signed, Aug. 31; filed, Sept. 1; cost $2,467.50.

Eighth near Minna. Brick work and excavation; owner, Isabella T. Barto; architects, Hochholzer & McHenry; contractor, James O'Sullivan; signed, Aug. 31; filed, Sept. 1; cost $2,432.50.

Eighth near Minna. Carpenter, plumbing, plastering, etc., except brick and iron; owner, Isabella T. Barto; architects, Hockholzer & McHenry; contractor, J. E. Mooney; signed, Sept. 11; filed, Sept 11; cost $3,270.

Eureka near 20th. To build; owners, Geo. and Jennie Colter; architect, W. H. Wharff; contractors, Sandy & Gillogley; signed, Aug. 12; filed, Aug. 16; cost $1,500.

Fifth Ave. near D. Two-story frame; owner, Julia Herzo; architect, C. M. Rousseau; contractor, L. B. Schmid; signed, Aug. 23; filed, Aug. 24; cost $2,320.

Florida and 21st. One-story frame; owner, F. Lassere; architect, Chas. M. Rousseau; contractor, David Emerson; signed, Sept. 6; filed, Sept. 7; cost $1,800.

Front near Pine. Repairs; owner, Estate of Ralph W. Kerkham; architect, Chas. W. Geddes; contractor, Geo. R. Lang; signed, Sept. 6; filed, Sept. 7; cost $2,250.

Fulton near Octavia. Three-story and basement; owner, Bernhard Bernhard architect, E. J. Vogel; contractor, F. V. Steinman; signed, Aug. 25; filed Aug. 28; cost $5,675.

Fulton near Octavia. Concrete steps, etc.; owner, Bernhard Bernhard; architect, Edward J. Vogel; contractor, T. E. Keough; signed, Aug. 25; filed, Aug. 26; cost $1,240.

Fulton near Octavia. Plumbing; owner, Bernhard Bernhard; architect, E. J. Vogel; contractors, Wilson & Wilson; signed, Aug. 25; filed, Aug. 26; cost $1,150.

Goettinger near Wayland. One-story cottage; owner, Mrs. M. F. O'Connor; contractor, H. Lehouse; signed, Aug. 5; filed, Aug. 14; cost $850.

Howard bet. 20th and 21st. Alterations; owner, Mme. T. Cleinelus; architect, Emile Depierre; contractors, Schutt & Kreeker; signed, Aug. 21; filed, Aug. 22; cost $1,975.

Hyde near Geary. Three-story frame; owner, I. Label; architects, Kemitzer & Barth; contractor, J. W. Hansbrough; signed, Aug. 31; filed, Sept. 1; cost $5,541.

Jessie near 6th. A church; owners, The Swedish Evangelical Mission Church. architect, S. Babson; contractors, G. Patterson & S. Persson; signed, Aug 10; filed, Aug. 15; cost $9,195.

Jersey near Castro. Two-story tenement; owner, Jens R. Jorgensen; contractor, Casper Zwierlein; signed, Sept. 4; filed, Sept. 4; cost $3,400.

Julian Ave. near Fifteenth. Brick work, etc.; owner, Simon Fitzpatrick; archi. tect, J. Y. Ayers; contractors, Frank Schnadt & J. C. F. Corbett; signed, Sept 4; filed, Sept. 5; cost $1,670.

Kearny bet. Pine and California. Side walks and vaults; owners, Hyman Bros.; architects, Wright & Sanders; contractors, Worrell & Miller; signed, June 29; filed, Aug. 15; cost $1,320.

Lyon near Turk. Two-story frame; owner, P. J. Shea; architects, Shea & Shea; contractor, A. Stevens; signed, Aug. 21; filed, Aug. 23; cost $2,968.

Mason near Eddy. Painting; owner, S. Silverberg; architects, Salfield & Kohlberg; contractor, Jos. Stoctzen; signed, Aug. 15; filed, Sept. 7; cost $1,075.

Mason near Eddy. Wood work, iron lathing and plastering; owner, S. Silverberg; architects, Salfield & Kohlberg; contractors, Pacific Patent Plaster Co.; signed, Aug. 18; filed, Sept. 7; cost $3,000.

Octavia bet. Broadway and Vallejo. Alterations and additions; one-story cottage; owner, H. S. Stafford; contractor, Edward Mooney; signed, Aug. 28; filed, Aug. 28; cost $2,250.

Page near Schroder. Two-story frame; owner, Maria C. Droger; architect, E. Burns; contractor, I. G. Adams; signed, Aug. 29. filed, Aug. 29; cost $7,263.

Pixley near Fillmore. To build; owner, Lewis Rapp; architect, Wm. Schrof; contractor, Albert Norton; signed, Aug. 19; filed; Sept. 6; cost $4,200.

Post and Leavenworth. Excavation; owners, S. F. Verein Association; architects, Salfield & Kohlberg; contractors, James O'Brien; signed, Aug. 24; filed, Sept. 7; cost $940.

Post and Powell. Concrete foundations, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, Geo. Goodman; signed, Aug. 2; filed, Aug. 31; cost $4,432.

Post near Powell. Grading, trenching, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moor; contractors, P. H. Norton & A. J. Meadows; signed, Aug. 16; filed, Aug. 28; cost $3,000.

Post street No. 609. Sidewalk lights, brick, etc.; owner, Marten O'Day; architect, Chas. I. Havens; contractor, R. Ringrose; cost $597.

Post and Montgomery. Granite stone work; owner, Union Trust Co.; architect, Clinton Day; contractors, Raymond Granite Co.; signed, Aug. 23; filed, Aug. 28; cost $36,500.

Post and Montgomery. Pumping, fencing, etc.; owners, Union Trust Co.; architect, Clinton Day; contractor, John McCarthy; signed, Aug. 23; filed, Aug. 28; cost $50.

Precita Ave. near Mission. To build; owner, P. J. Silk; architects, Martens & Coffey; contractor, M. Loftus; signed, Sept. 2; filed, Sept. 5; cost $3,500.

Sacramento near Drum. Excavation, asphaltum work, etc.; owner, Henry Pierce; architect, Clinton Day; contractors, Gray Bros.; signed, Aug. 14; filed, Aug. 16; cost $4,095.

San Carlos Ave. near 18th. Alterations; owner, Hannah Huntimann; architect, M. J. Welsh; contractor, James McConahey; signed, Aug. 12; filed, Aug. 12; cost $2,075.

Seventeenth and Douglass. Two-story frame; owner, C. Seelling; architect, F. P. Robin; contractor, F. Schaant; signed, Aug. 24; filed, Aug. 24; cost $3,929.

Sutter street No. 912. Alterations and additions; owner, Theo. P. Schaller; architect, Fred. P. Rabin; signed, Sept. 8; filed, Sept. 8; cost $1,725.

Thirtieth near Sanchez. Carpenter work for two-story frame; owners, W. F. Geimann and wife; architect, N. A. Comstock; contractors, Gallagher & Milburn; signed, June 7; filed, Aug. 16; cost $1,725.

Twenty-first near Dolores. Two-story frame; owner, A. McNab; contractor, C. T. Emmons; signed, Aug. 24; filed, Aug. 26; cost $2,800.

Union near Taylor. Carpenter and mill work, electric and marble work, etc.; owner, Anna A. Martens; architects, Salfield & Kohlberg; contractor, G. Forber; signed, Sept. 7; filed, Sept. 8; cost $5,000.

Union near Taylor. Brick work, mantels, excavation; owner, Anna A. Martens; architects, Salfield & Kohlberg; contractor, H. H. Larsen; signed, Sept. 7; filed, Sept. 8; cost $490 and $14 per M for foundation wall.

Union near Taylor. Plumbing and gas fixtures; owner, Anna A. Martens; architects, Salfield & Kohlberg; contractor, H. Williamson; signed, Sept. 7; filed, Sept. 8; cost $1,094.

ALAMEDA COUNTY.

Clinton Ave near Walnut. Brickwork, carpenter work, etc.; owner, Grace M. Davis; architects, C. H. Koster & Son; signed, Aug. 24; filed, Aug. 25; cost $2,592.

Eighteenth and 10th Ave., Oakland. Carpenter work painting, etc.; owner, Jas. Presho; architect, I. C. & E. A. Mathews; contractors, Leiter & Prugh; signed, Aug. 17; filed, Aug. 18; cost $3,887.

Essex street near Ashbury station, Berkeley. Cottage; owner, W. C. Bissell; architect, J. Conant; contractor, W. Bissell; cost $1,700.

East Oakland, lot 16. To build; owner, Peter Rueck; architect, N. A. Ment; contractors, W. H. Stevens & E. Woods; signed, Sept. 4; filed, Sept. 7; cost $1,574.

Fruitvalle Ave. bet. Hopkins street and Chicago Ave., Brooklyn. To build; owner, Geo. J. Haus; architect, Huge W. Stouch; contractor, H. A. Klyce; signed, Aug. 19; filed, Aug, 28; cost $1,985.

Jersey near Castro. Two-story building; owner, J. R. Jorgensen; contractor, C. Zwierlein; signed, Sept. 4; filed, Sept. 4; cost $3,400.

Myrtle near 10th, Oakland. To build; owner, Claus H. Kuchs; architect, Chas. Mau, contractor, C. C. Durkee; signed, Aug. 17; filed, Aug. 21; cost $3,014.

Oakland, block 283, lots 19, 20 and 21. To build; owner, James E. Johnson; architects, Cunningham Bros.; contractor, C. W. Bolles; signed, Aug. 26; filed, Aug. 28; cost $3,900.

Shell Mound Park tract, Oakland. Pile-driving, carpenter work, etc., to shooting hall; owner, Capt. L. Liebe; architect, H. Geilfuss; signed, Aug. 26; filed, Aug, 28; cost $1,420.

Strip of land by country road, Irvington to Centerville. Carpenter work, etc.; owner, D. E. Groverne; architect, A. L. Tundereo; contractor, M. H. Lewis; signed, Aug. 15, filed, Aug. 29; cost $1,860.

Twelfth and Washington, Oakland. Lathing and plastering; owner, Henry, Sol and Fred Kahn; architect, W. J. Mathews; contractors, Geo. P. & J. T. Smith; signed, Sept. 2; filed, Sept. 4; cost $2,000.

Washington, San Arnigos Vineyard. Frame winery; owner, E. P. Werner and E. A. Gear; architects, Percy & Hamilton; contractor, Chas. Riedel; signed, Aug. 17; filed, Aug. 17, cost $1,450.

The California Architect and Building News.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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ESTABLISHED 1879. INCORPORATED 1889

NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

THE Commissioners who have charge of Golden Gate Park deserve much credit for the manner in which they have endeavored to make the quarters devoted to the Children's Playground, enjoyable to the younger generation.

The many attractions that are there especially provided for the young folks, and meant for their exclusive use and enioyment, furnish them with an infinite amount of innocent amusement and harmless recreation, and merit the thanks of the citizens at large as well as of the parents in particular.

To keep the minds of the children busy, and their bodies actively engaged in lively sport, is to lay the foundation of an active and virtuous citizen. A sound mind and a healthy body are of the most vital importance to the rising generation and should be the birthright of every human being; to keep these gifts of nature in proper condition is the duty of, should be the pride of both parent and citizen.

It is as vitally important as the education of the youth, which it is conceded to be the duty of the Municipality to provide for. Seldom, however, is adequate provision made for the employment of children's time outside of school hours, and we believe that in this connection, more consideration should be bestowed on suitable methods of providing proper grounds to be used for the recreation and amusement of the children, where they could pursue their games without interruption, and free from the charge of being an annoyance to their elders.

For this purpose we would advocate the establishment of public play grounds and gymnasia in the city itself, even should it be necessary to convert some of the present parks and squares to this use.

This would be particularly beneficial in the more crowded portions of the city, where the children are forced to play in

the streets, to the annoyance of the public, and danger to themselves; or in cramped back yards and alleys, too restricted for the purpose.

In this respect the country bred youth has a material advantage over the children of the city.

The importance of keeping the child properly occupied in mind and body, can hardly be overestimated. Give a child no way of employing his surplus energies, and they will be turned to mischief. If the youth has no legitimate sport to occupy his time, he will the easier drift into vice, as the old saying is still true:

"Satan finds some mischief still for idle hands to do."

THE buildings that are illustrated in last months issue, as designed to house the exhibits of the Minwinter Fair, are now rapidly assuming form and shape in Golden Gate Park. Towers are seen rising above the tops of the surrounding trees, and the contractors state that the vast buildings will positively be completed in time to have the exposition open on the first day of the coming year.

THE INCONGRUITY OF MANY MODERN COUNTRY PUBLIC INSTITUTIONS.

ONE of the greatest faults of those having in charge the erection of public buildings and institutions situated in the country amongst large and extensive surroundings, is their failure to duly appreciate the proper relation of buildings to surroundings and their relative effects upon each other.

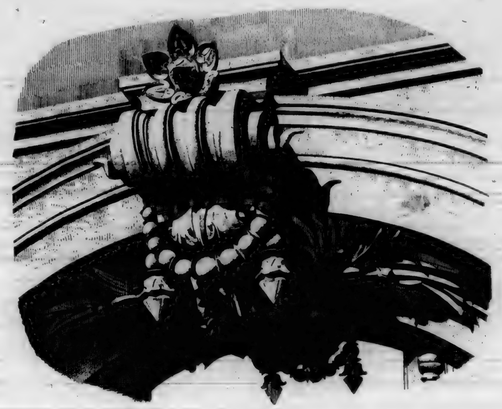
These facts were very forcibly called to my attention not long ago, in one of our interior counties, where I saw a four story administration building with towers, crowning the summit of a hill, and giving me the effect of confinedness and misplacedness and the impression that land must be very valuable in the vicinity, to necessitate the huddling together in one tall mass, of buildings that could have been spread over more ground to better advantage, though they were really situated in the middle of an extensive domain.

These remarks are made for the purpose of calling attention to the fact, in the hope that repetitions of these errors may be avoided in the buildings to be erected in the near future under similar conditions, and which appear to have been designed on the same lines. I hope my remarks may be the means of preventing such incongruities being repeated.

I have left out in this squib the practical and economical objections to high buildings which are intended for the use of old, invalided or young people, such as the requiring of elevators and such like, and have confined myself simply to the æsthetic phase of the question which alone is sufficient to condemn it, when such buildings are placed in the midst of extensive grounds.

Yours,

STROLLER.



SONNET.

Chicago! Teeming centre of the land,
Thy western land from which thou hast up-sprung,
Strong limb'd, full breasted, comely fresh and young
Tall and majestic, thou a queen doth stand!
The nations hither, gather in a band,
Viewing in wonder the jewels thou hast strung;
In stately splendour see their shadows flung
O'er lake and lagoon, in blanche'd beauty grand.
What priceless gems hast gathered in they hand!
Pearls of sentiment, and flashing diamonds bright,
Radiant with rays of intellectual light:
But higher, holier *still* the world's demand
Doth sound the trump of Truth in search of *Right*
Piercing the dense, dark clouds of Theologic-Night!

S.

Sept. 1893.

COMPETITIVE DESIGN FOR THE NEW CAPITOL BUILDING AT OLYMPIA, WASHINGTON.

THE *Pacific Builder* has the following to say in reference to the call for competitive designs for the new Capital building at Olympia, Washington, which we published in full last month.

Competitive designs are now called for from the architects of the country for the proposed new Capitol building for the State of Washington at Olympia. In the call issued it is stated that the architect whose design is accepted will be retained as the architect on the building, but the commission also reserves the right to reject any and all plans and designs. Provision is also made for a "consolation stipend" for the architect whose designs are given second, third and four places in the sums of $1,500, $1,000 and $500 respectively. From a statement made by one of the officials of the Capitol commission and published elsewhere in this issue it will be seen that the board expect, at the same time, that over one hundred competitive sets of plans will be submitted. Over four hundred contour maps of the site for the proposed building have already been applied for, it is said by architects throughout the country. The plans are to consist of four elevations, plan of each story, one sectional and one perspective drawing, and the building is to be modern throughout. To prepare creditable drawings for a building of this character would probably require the services of one man constantly for thirty days. No doubt many competitors will spend the greater part of a couple of months in preparing, altering and elaborating their designs. Estimating at one hundred designs submitted and thirty days for each design we see that the competition will represent three thousand days' work of one architect, or a period of nearly nine years including Sundays. Estimating the value of an architect's services at the rate of ten dollars per day, certainly not an unreasonable compensation for one capable of designing a building of this character, we find that the value of the actual work services to be rendered by the architects in such a competition is $30,000. To this amount must be added the necessary expenses of making the drawings, in material, etc., and as the majority of the competitors will consider it necessary to attend the meeting of the commissioners when the award is made to explain their drawings if called upon, a personal expense must be incurred which, all included, will probably not average less than fifty dollars each, which add $5,000 to the general bill, making a sum total of $35,000. For this great service from the architects of the country what is to be paid? They are conditionally promised $3,000 in cash. This is practically all, for the architect whose design is accepted, if any be so fortunate, so far from having earned anything in the competition shall only have demonstrated his fitness, in the opinion of the judges, to perform the work required and the matter of employment and pay for his services will still remain to be agreed upon. Beyond this cash consideration and the hope of employment there is but one incentive to induce architects to compete and that is the ambition to excel. To bring out the abilities and possibilities of the young architect especially such competitions may be considered opportunities. To accomplish this, however, the competition must be conducted with technical skill and the awards made on the honest, absolute merits of the drawings. Since therefore the architects of the country are expected to contribute over $30,000 in cash and services to this Capitol building it might be well to enquire what are the prospects for an honest and intelligent award. Who constitutes the Board of Capitol Commissioners of the State of Washington? Is it composed of architects, engineers or builders in whole or part? So far as we can ascertain not one member of the board has enjoyed the slightest technical education. Moreover, although explicit requests have been made of the Board to induce them to employ an expert to assist in adjudging the plans, they have persistently avoided anything calculated to favor the impression that they would do so. Here will be one hundred different sets of plans, each set composed of several drawings. It will be necessary for the judges to understand the exact relation which the different drawings of each set bear to one another. To understand the floor plans with relation to the elevations and sectional drawings and judge whether they are accurately and correctly represented. To pass upon the merits of the planning as well as to judge of the difficult problems of lighting, heating and ventilation. Then also to compare the different sets of plans one with another and to judge and weigh the relative points of merit to a nicety. Is it probable that five ordinary business men, however disinterested, will be found competent to pass upon these points? The possibility, we might say the probability, therefore, confronts the architects that the best design may not be selected by the commissioners. Moreover, as the terms of the "Notice to Architects" will show the proposition of rejecting all designs submitted has been fully considered. At Ellensburg, Wash., designs of the best architects in the country were rejected by the board of regents of the State Normal school and the job was given to a local mill-man. At Pulman the extensive building for the college was given to a contractor to plan. It is possible that the Governor and his Capitol Commission may not follow the policy adopted by the other boards in charge of building, appointed by him, even though he is known to have endorsed their actions. But how are the architects who are expected to contribute $30,000 in money and services in this competition to fore-know? They can only judge the future by the past. Relying on that past as a guide we should say that unless the Capitol commission gives timely assurance that the services of competent and reliable experts will be employed as judges in this competition it will be a matter of profound surprise if a design from a single able and prominent architect in the country will be found among the hundred or more which may be submitted in the competition.

HOW UNCLE SAM'S BUILDINGS ARE DESIGNED.

THE following extracts from a paper read by Jeremiah O'Rourke, Supervising Architect of the Treasury Department, to the World's Congress of Architects at Chicago, will give a good idea of the way our public buildings are designed, and the amount it costs to design them:

ORGANIZATION OF THE SUPERVISING ARCHITECT'S OFFICE.

At the beginning of the administration of President Franklin Pierce, in 1853, the Government owned twenty-three completed and occupied buildings, and appropriation had been made for fifteen new buildings. The construction of these buildings was intrusted to the Treasury Department, well nigh everything, except the amount of appropriation, being left to the discretion of the then Secretary of the Treasury, Mr. Guthrie of Kentucky, who was in full accord with the new movement. No method or system had been devised nor means provided for the performance of the duties. Architect A. B. Young had just satisfactorily completed the erection of the Boston Custom-house and, with a view to develop the growing branch, Mr. Guthrie tendered him, all he could, a $1,500 clerkship in his Department. Simultaneously, with a view to an efficient management, he obtained from the Secretary of war the detail of Captain A. H. Bowman of the United States Engineers, and placed him in charge of the construction of these buildings. Though Captain Bowman was nominally Mr. Young's superior, both acted for eight years as colleagues and in full harmony—a duarchy at the head of a bureau existing without authority of law, but strong as the offspring of necessity. Carefully compiled regulations for the design and construction and the repair and preservation of all public buildings under the Department was draughted, accepted by the Secretary, and promulgated. These rules were gradually perfected so as to form the foundation of the complicated, but strong and efficient organization of the Supervising Architect's Office as it exists to-day.

The extent of the business of the Supervising Architect's Office will be appreciated when it is stated that during the last fiscal year ending June 30, 1893, there was expended for sites, construction and repair of buildings $6,741,286.11, and that the contract obligations amounted at the end of the year to $2,834,308.02.

In the transaction of the business there are employed at the central office 145 persons (fifty of whom are females), and 180 persons as superintendents, clerks, foremen, etc., on the various buildings in course of erection throughout the country, from Alaska to Florida and from the Atlantic to the Pacific Ocean.

A large volume of administrative work is charged upon the office by reason of its facilities as a distinctive part of the machinery of the Treasury Department. Permanent and complete records are necessary, the details of the variety of work must be systematically executed in accordance with well considered rules, in order to maintain correct and harmonious business relations with the other executive offices of the Government.

The office force is organized in ten (10) divisions, with a chief at the head of each, all reporting direct to the Supervising Architect, or to his Assistant and Chief Clerk, who acts as Supervising Architect during his absence. These divisions are:

1. Engineering and Draughting Division.
2. Law and Contract Division.
3. Construction Division.
4. Computing Division.
5. Repairs and Preservation of Public Buildings Division.
6. Accounts Division.
7. Tracing Division.
8. Records and Files Division.
9. Copyists' Division.
10. Photograph Division.

The titles of the divisions indicate generally the character

and range of their duties, and but few explanations are required.

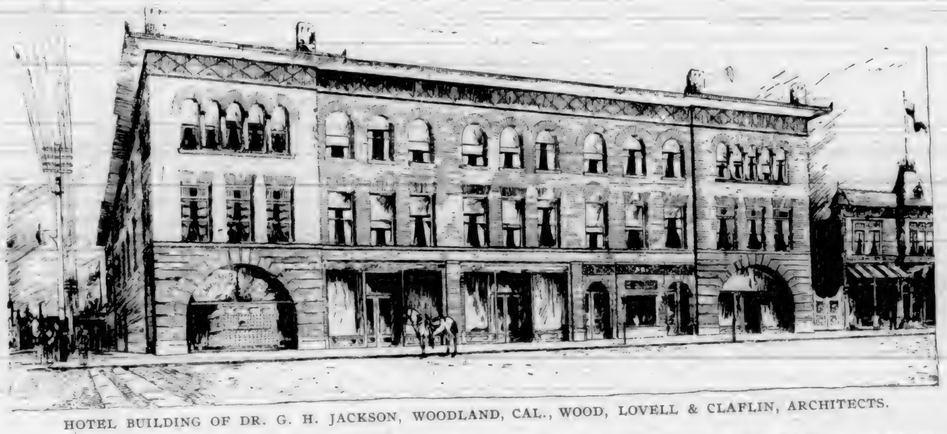
The Engineering and Drafting Division is charged with the making of all designs, plans and detail-drawings required for all the buildings erected, and with the correspondence relating thereto.

It usually employs the services of fifty (50) to sixty (60) expert draughtsmen, including specialists for steel and iron construction, heating and ventilating, and elevator and machinery work.

The draughtsmen are classified and arranged according to their special qualifications, so as to obtain the best results. The draughting-room, which is of large dimensions and well lighted, is supplied with all the best appliances required for a complete architectural and constructive-engineering office.

The salaries range from three to eight dollars per day. The office-hours are from nine to four, with time for lunch. Each draughtsman is allowed, in common with all the employees of the office, thirty days' vacation, with pay, and, in case of sickness, sixty days each year.

The other nine divisions work in harmony with the Draughting and Engineering Division, each through its chief reporting direct to the Supervising Architect, the whole forming probably the largest and best equipped architectural office in the United States, perhaps in the world.



HOTEL BUILDING OF DR. G. H. JACKSON, WOODLAND, CAL., WOOD, LOVELL & CLAFLIN, ARCHITECTS.

METHOD OF PROCEDURE IN PREPARING PLANS AND AWARDING CONTRACTS.

Before any money can be expended on a new public building, the Supervising Architect is required by law to make sketch-plans and estimates of cost, both of which must have the approval of the Secretary of the Treasury, the Postmaster-general and the Secretary of the Interior. The estimates of cost must be, in each case, within the limit of the appropriation made by Congress.

The approval having been obtained, the sketch-plans are returned to the Draughting Division for the preparation of scale working-drawings, which are made to show in full and minute detail all parts of the construction and finish of the building, both external and internal. These are passed through the Tracers' Division to the photographer for copying, and simultaneously to the Computers' Division for detail office-estimates of cost and advertisement for bids, thirty days being the usual time allowed to bidders.

An unusually large number of plans and copies of the plans and specifications of each building are required for circulation among prospective bidders, to whom, on application, they are sent by mail.

It is found that the number of scale-drawings required for each building ranges from thirty (30) to two hundred and twentg-five (225) sheets, and the average number of sets of scale-drawings required for estimates on each building is thirty (30) sets, exclusive of complete, full-sized working-drawings, which are always furnished after the contracts are awarded.

At the appointed time, the obtained proposals are publicly opened by the Supervising Architect, his assistant and chief clerk, and the chief of the Computing Division. A full record of the bids is kept and transmitted to the Secretary of the Treasury, with a recommendation to award the contract ot the lowest responsible bidder.

On the approval of the Secretary, the successful bidder is notified, the contracts and bonds (five sets) are prepared in the Law and Contract Division and transmitted to the contractor. The contract having been signed, bond executed and vouched for by one of the designated Government officials, is returned to the Department, examined and passed upon by the Soliciter of the Treasury, and, unless there is some irregularity, work is started.

The contract contains generally a clause stating the time agreed upon for completing the work, and a *per diem* forfeit for failure to complete within the specified time.

METHOD OF PROCEDURE IN THE ERECTION OF BUILDINGS.

On the award of the contract, a "Superintendent of Construction" is appointed, and, according to the size and importance of the building, he is allowed a clerk and one or more foremen and watchmen to assist him in the performance of his duties.

The soil under the foundation has generally been previously tested by excavation, boring or other reliable method, and unless unexpected impediments are encountered, the work progresses regularly, the "Superintendent of Construction" reporting by mail or telegraph to the Supervising Architect, monthly and whenever necessary, up to time of completion.

At intervals during erection and before final acceptance, each building is visited, examined, controlled and reported upon by "Inspectors of Public Buildings," all working under specific written instructions from the Supervising Architect's Office, and reporting thereto in writing and in detail up to the completion of the contracts.

Payments on account, based on quantities and value of the work actually incorporated into the building, are made monthly, retaining ten per centum of the estimated value until completion and final acceptance of the work.

It may be stated in conclusion, and in justice to the Supervising Architect's Office, that while it may be admitted that the work turned out by this office might, and doubtless will, be improved, still a just comparison and analysis would seem to indicate that, all things considered, it will compare favorably in design, arrangement, construction and cost with similar works erected by either States, municipalities or private enterprise.

It may be proper also to state, with reference to the amount paid by the Government for the professional services rendered by the Supervising Architect's Office, that the records of the office show that the amount paid for said services never exceeds five per cent on the cost of the buildings erected, although the usual proportion of such services are of a character which usually commands, in private practice, a much higher professional fee.

The Supervising Architect himself, for professional services which, in private practice, would easily net $100,000 a year, receives the munificent salary of $4,500, with strictly limited traveling expenses.

LACK OF BUSINESS ENTERPRISE.

THE Board of Manufacturers and Employers of California, have issued for distribution an able address by Henry L. Davis, their president, calling on all retailers to patronize California industries.

The *Herald of Trade* has the following in connection therewith, showing how these home-made goods should be brought to the attention of the people. Times have changed and so have business methods and to be successful one must keep abreast of progress of the times.

Let the Rip Van Winkles of trade go into a modern store and they will recognize progress. Stores better arranged, good kept more neatly and in better order; large capacious sample-rooms, with the samples so arranged as to be pleasing to the eye and handy for inspection, with other inprovements which mark the progressive merchant. Nor is this all. The man of success nowadays uses the trade journal, for in it he recognizes the medium that reaches hundreds of merchants each week. He also knows that a trade journal is closely scanned by progressive dealers, and therefore in it an attractive, catching advertisement, changed often in its make up, does more good than price-lists, circulars, or other makeshifts can possibly do. Continuous advertising in a catching way will draw trade. This is the history of every successful firm. Do the manufacturers of this city follow such a course? Then why do they complain of business passing by them? Take up Eastern trade journals and we find them full of attractive advertisements; with constant changes in their makeup. The more successful firms give steady employment to one person to get up their advertisements so they will be a novelty each week and cause readers to look for each number of the trade journal to see what will be the next new advertising scheme. And it has been found to pay.

But, aside from the advantage to advertisers directly, the sustaining of a trade journal should be a matter of pride, for there is no commercial city but boasts of trade organs, and our city should not be behind the age. This is the age of newspaper education. A person that does not keep abreast of the times by closely reading the daily press for current news is considered a back number, and a trader or person in any branch of trade who does not read his trade journal is left in the race for wealth. Not only does the successful business man read and digest everything published concerning his special branch of trade, but he gives attention to what is said regarding other branches. He also looks over the advertisments of competitors in the jobbing, importing or manufacturing business to see what they are offering for sale, or if in the retail business he scans the advertisements to see if there is any specialty offering which can be made a good advertising card, or else to see if there are any special drives by which he can secure bargains. These facts are so apparent to the wide-awake and progressive merchants that they do not require enlarging.

MAUSOLEUM, HOME OF PEACE CEMETERY, R. H. WHITE, ARCHITECT.

MEETING OF THE LADIES' COUNCIL.

THE late meeting of the Ladies' Council at the Metropolitan Temple is a move worthy of consideration. The question discussed is without doubt one of the most important with which we of the end of the nineteenth century have to grapple and deal with. The subject was handled in good shape by the speakers of the evening. The following resolution was adopted and deserves the serious consideration of our municipal authorities:

WHEREAS—Municipal sanitation is known to be an essential condition of civilized life and progress; and whereas the city of San Francisco is a reproach to our country and a blot on Western civilization in the criminal inferiority and deficiency of her sanitary condition, this condition menacing the lives of her citizens and retarding immigration and all material prosperity, be it

Resolved:—That we, citizens of San Francisco, in mass meeting assembled, hereby demand of our city government the absolute enforcement of existing sanitary laws and such further enactments as shall raise the standard of sanitation in San Francisco to an equality with the foremost cities of the world.

ANNUAL MEETING.

THE annual meeting of the stockholders of the California Architectural Publishing Company, will be held in the office of the company, 408 California street, San Francisco, Cal., on Tuesday the 7th day of November, 1893, at 1 P. M.

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Oregonian building in Portland, Oregon, is by Reid Bros., architects of this city.

THE cottage illustrated in this number is by J. C. Newsom, architect, it has a foundation of klinker brick with a frame work of Oregon pine filled in with a gray cement and covered with cedar shingles.

THE ESCHENHEIMER TOWER.

BY MISS LANDIS.

IN Frankfort on the Main, where the Eschenheimer Landing and the Bockeimer Anlagen meet, stands the old and interesting Eschenheimer Tower. It is a part of the remains of the old fortifications of the city, built in the years from 1400 to 1428 and is forty-eight meters in height, with five small towers around the centre one and four corner towers.

On the tenth of June, 1874, lightning struck the weather signal (a flag,) tearing it down. The saying runs that a number nine was shot in the flag by Hans Winkelsee, a poacher, who saved his life and gained freedom in this way, through his skill. When the flag fell down in 1874, it was found that instead of nine holes, there were only six in the flag. The tower was renovated in 1874, but the beautiful ivy climbing its walls is several centuries old.

By a mistake of the draughtsman the illustration was printed the "Hamburg Tower."

TWO VIEWS—WHICH?

ON the one hand it is claimed by the fire extinguishing experts that English and in fact European apparatus for fire extinguishment are obsolete and old fashioned as compared with the modern inventions and general excellence of our American outfits and brigades, as evidenced by the recent walk-over which our crack Kansas City team had in competition with the teams of the United Kingdom at the competitive fire drill in England. On the other, it is learned that over there they do not bother so much about putting out fires, for they do not have many, and each is generally isolated, and even if it burns itself out in the building where it started, there is not much danger of its spreading to great proportions. Hence they can afford to be satisfied with rather inferior machines and much smaller fire departments, sustained at a very much less annual cost than ours. Here we do the reverse. We spend enormous sums annually for insurance and in keeping up finely disciplined fire departments, equipped with all the latest improved engines and apparatus. Now which is the best and most economical in the long run? We take desperate chances on fires and their extinguishment and save money in construction. It is not merely the frame structures that are dangerous, as the Boston, Chicago, Milwaukee and other great conflagrations easily show. A large part of our brick buildings are "Jerry built," and are mere shells concealing a mass of timber adjusted to create a most satisfactory bonfire. Of the two systems we must admit that we rather incline to the English, and it is only a matter of time how soon this view will be generally recognized. In fact, for the past two decades we have partially learned the lesson, and as the various modern stone, brick and tile structures are brought to the front, there is cheaper and better material, more scientific construction and more honest building resulting in greatly lessening the percentage of fire traps over the entire country.—*The Southern Architect.*

QUEER RESIDENCE IN ARIZONA.

ARIZONA is plentifully sprinkled with the ruins of strange habitations. Most of them are constructed of concrete or adobe, and the mystery about them is the identity of the people who designed them. How they could be built is not a matter of conjecture, as the materials are close at hand. But there is one ruin, still in good state of preservation, which is a mystery, no matter in what light it is considered. It is in the Huachuca mountains, not far from the military reservation, in a northeasterly direction. Nothing is known of its origin, and the wonderful part is the material of which it is constructed. It is about 200 miles from the ocean and surrounded on all sides by hills of sand and rocks covered with cacti. There is no water for miles except the excuses for rivers that run during the rainy season. There is not even the suggestion of water, and yet the house is built of seashells laid in a sort of cement. Where the shells were obtained is a mystery that may never be solved. It does not seem possible that the builder of the house would carry the material over hundreds of miles of desert when there were plenty of rocks near by that would answer the purpose just as well even if they were not so unique. The house is build in the shape of the straw huts of the Papago Indians and is about the same size. There is room inside for five or six persons, but at present nobody occupies it, except, perhaps, some prospector who uses it for a temporary shelter in cold weather. There are a dozen varieties of shells to be found in the walls, and one over the door is of extraordinary size. The age of the building will never be known, but there is little doubt that it is old as the oldest in the territory.—*The Builders' Gazette.*

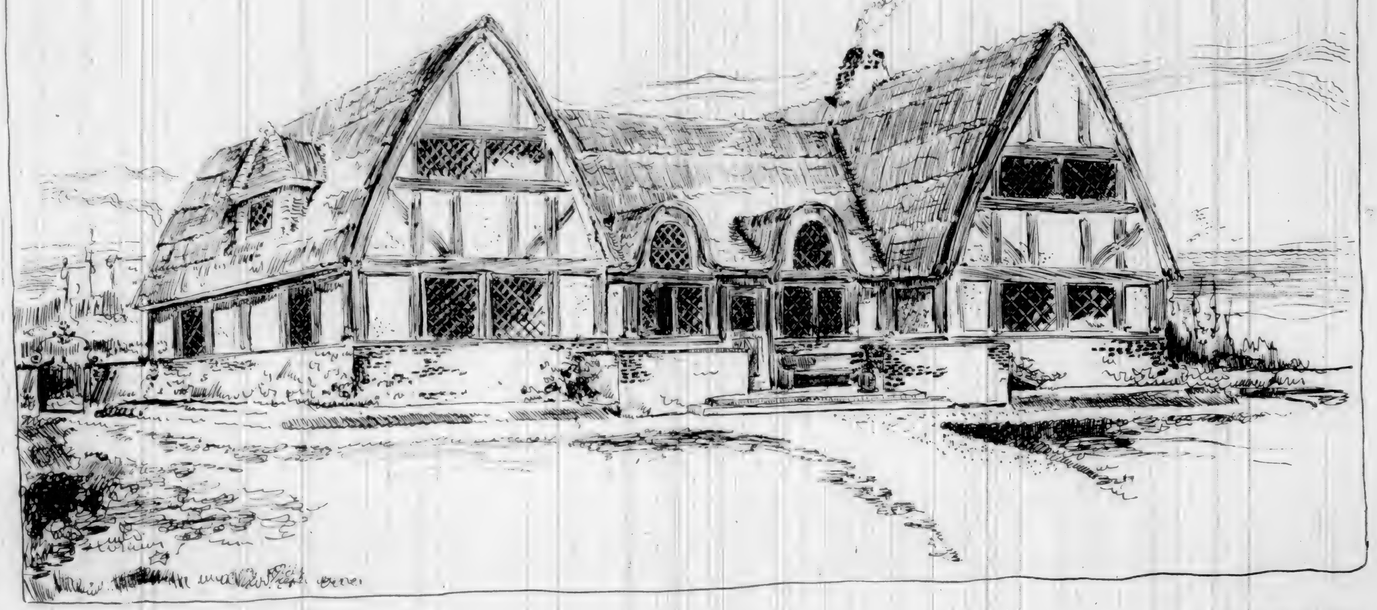
NOTES & COMMENTS.

By an oversight in our last issue we failed to give due credit to the *Transactions of the Technical Society*, from which publication we took the article by Marsden Manson, on the healthfulness of California homes.

What the Sacramento *Record Union* thinks of the CALIFORNIA ARCHITECT—The *California Architect* for September (San Francisco) is a special number, giving very handsome full-page outline pictures of the Midwinter Fair buildings from the accepted designs of the architects. There is a very interesting paper also by Marsden Manson, C. E., on "California Homes—Are They as Healthful as They Should Be?" Other valuable papers appear also, making the number one of high value.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

RESIDENCE FOR W. W. GARTHWAITE
OAKLAND CAL
J. Cather Newsom Architect
S. F.



ARCHITECTURAL INSTITUTE

OREGONIAN BUILDING.
PORTLAND · OREGON ·

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XIV Nº 10 OCTOBER 1893.

MECHANICS' INSTITUTE SAN FRANCISCO

—To Miss Landis—

—Old Watch Tower at Mamburg—

THE UNIFORM CONTRACT.

INDICATIONS from various sources point to the fact that the manner of adoption and recommendation of the use of the Uniform Contract by the American Institute of Architects and the National Association of Builders is not generally understood among either architects or builders. The architects are apparently the less well informed of the two, which is doubtless due to the fact that the use of the form has not been urged upon its members by the American Institute with the same persistence that has been displayed by the National Association of Builders.

A recent example of the lack of comprehension of the situation is indicated by the opinion of an architect practicing in a prominent New England city, who questioned the authenticity of the revised form of the Uniform Contract, and stated that the revision had rendered the form unfit for contract purposes." This case is a slightly exaggerated example of others of a similar character. All action with regard to the Uniform Contract has been taken by regularly appointed committees from the two organizations mentioned, acting in conjunction, with full power to create and amend a Uniform Contract, which should be adopted and recommended for use by the organizations in question. The first joint committee included representatives from the then existing Western Association of Architects, but this organization having become absorbed into the American Institute of Architects, the present sponsors for the contract are the American Institute and the National Association of Builders, the two representative bodies in the United States. It was deemed necessary that the joint committee should be given full power, for the reason that if each sub-committee were compelled to report back to its parent body before final action on the contract could be taken, the differences of opinion on the part of individual members of the two organizations would occasion such lengthy discussion, and so many amendments and recommendations, that united action would have been practically impossible. Each organization, therefore, selected a committee composed of its most able members, to which was delegated full power to prepare a Uniform Contract for adoption and to amend the same whenever amendment should be considered necessary. The form originally prepared by the first joint committee and adopted by the two parent bodies existed without revision for about five years, none of the changes to the form submitted during that time being considered sufficiently important to warrant a revision. In October, 1892, the joint committee met for the purpose of considering all the suggestions for the improvement of the form which had been presented since its adoption, and so make such changes in it as experience in its use indicated as advisable. The result of this meeting was a careful and thorough revision of the form which has made its wording more simple and direct; shorter by five hundred words; and generally improved it over the original form. One feature of the new form which has caused some comment is that the words "contractor" and "owner" are printed in the singular without space for the addition of the plural; but the form definitely states that whatever is the style of name of the contractor or owner, whether an individual, a company, or neuter, for the purposes of the contract they shall be termed "contractor" or "owner". In printing the word "architects" in the plural, it was deemed easier to draw a pen through the s where the singular was needed than to write the letter where the plural was required.

The Uniform Contract as revised by the joint committee was adopted and recommended for use by the National Association of Builders at its last convention, as was stated in these columns at the time; and the official action of the American Institute of Architects is indicated by the adoption at its recent convention, of the report of its Committee on Uniform Contract, which is as follows:

"Your Committee on Uniform Contract begs leave to report that the last meeting of the joint committee of the American Institute of Architects and of the National Association of Builders was held in the office of Messrs. Adler & Sullivan (Chicago), October 19, 1892.

"At that time numerous communications were read in which suggestions were made as to changes in the form. In accordance therewith several important changes were made. The form was considerably shortened—about 500 words having been eliminated. The paragraphs were rearranged, grouping the requirements of either party of themselves, and in both cases the singular number being substituted for the plural. Attention was called to the omission of the clause referring to the penalty for non-completion of work at the specified time. So many conflicting views were presented regarding this portion of the form that it was deemed best to omit it, leaving it to the judgment of the parties in interest to draft such a clause as they should agree upon.

"Your committee suggests that, for the information of the institute, the secretary be requested to cause to be printed such information as will be of value, in circular form, and mail from time to time to each member. This circular to contain information not only as to the revision of the form, but the name of publishers, price, etc."—*Carpentry and Building*.

FROM THE THEATRE OF MONTE CARLO, CHAS. GARNIER, ARCHITECT.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

GEO. H. SANDERS, Pres. W. J. CUTHBERTSON, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

C. E. GRUNSKY, Pres. CHARLES D. MARX, Vice-Pres.
OTTO VON GELDERN, Sec. GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

MUNICIPAL WISDOM.

AN amusing account of the experience of a town in Northern Ontario is given by the *Canadian Architect*. It seems that the municipal fathers, having been intrusted with the arrangements for erecting a town hall to cost about $20,000, began their deliberations by the sage resolution not to employ an architect. Their first step was to call on one of their local carpenters and ask him to prepare rough designs. After these were procured they finally instructed one of their builders to prepare the plans for the building. These on examination proved far from having that architectural effect which was expected on the part of the people or the council and were rejected, when, as a last step, an architect was called, the council and the people having learned by the course of experience through which they had gone that an architect was necessary if their $20,000 town hall was to be either suitable to their wants or presentable in appearance.

FRENCH HOSPITAL CONTRACTS.

CONTRACTS for the construction of the new French Hospital were filed in the Recorder's office. They represent a contemplated expenditure of over $131,000. The amount of the various contracts is as followers: Gray Bros., concrete work, $25,885; Warrell & Miller, brick work, $47,539; Alexander L. Campbell, carpenter work, $45,500; S. Ickelheimer & Bros., plumbing, $9,110; J. F. Sullivan, painting, $3,675; Lat. E. Allen, electric fittings, $375.

The new hospital is to be erected on block 279 of outside lands, bounded by Fifth, Sixth and Point Lobos avenues and by A street.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D.C., September, 28th, 1893. Sealed proposals will be received at this office until 2 o'clock P. M. on the 2d day of November, 1893, and opened immediately thereafter, for all the labor and materials required for the interior finish, plumbing and gas piping for the U. S. Post Office, etc., building at San Jose, California, in accordance with drawings and specification, copies of which may be had on application at this office or the office of the Superintendent at San Jose, California. No convict labor nor any product of convict labor will be allowed in this work.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent. of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so. All proposals received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes sealed and marked, "Proposal for Interior Finish, Plumbing and Gas Piping for the U. S. Post Office, etc., building, at San Jose, California," and addressed to

Jeremiah O'Rourke,
Supervising Architect.

BOOKS & PERIODICALS

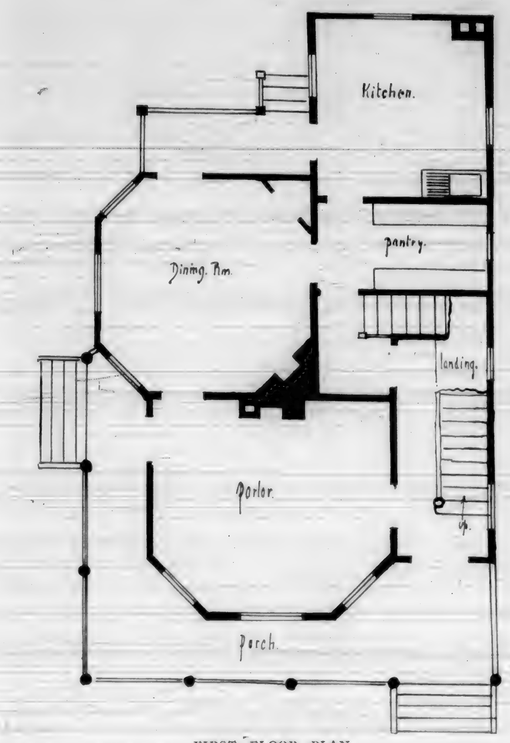
NOTES ON BUILDING CONSTRUCTION arranged to meet the requirements of the syllabus of the science and art department of the committee of Council on Education, South Kensington, Part IV. Calculations for dwelling structures, Course for Honours. London, Longmans, Green & Co., New York, 15 East 16th street. For sale by Osborn & Alexander, 401 Market street. Price $4.00.

GOTHIC ARCHITECTURE by Edward Corroyer, architect to the French Government and Inspector of Diocessan Edifices. Edited by Walter Armstrong with two hundred and thirty-six illustrations. This work as we learn by the preface was translated under the supervision of the editor by Miss Florence Simmond, and presents a value as a picture of Gothic development, even if the reader does not agree with all Mons. Corroyer views and claims. Published in New York by Macmillan & Co.; for sale by Osborn & Alexander, 401 Market street. Price $2.00.

ELECTRIC LIGHTING SPECIFICATIONS for the use of Engineers and Architects by E. A. Merrill, published by W. J. Johnston, New York, for sale by Osborn & Alexander, price $1.50.

In this age of electricity the architect cannot be to careful to inform himself thoroughly, as to the requirements of a safe plant, when introducing electric lights in buildings. This book certainly will be of use for that purpose.

ARCHITECTURAL SKETCHES by F. W. Beall. The introduction of the author may furnish a hint to other architects who desire to advertise in a pleasing and picturesque manner, a number of miscellaneous examples taken from the author's practice are given, with a slight sketch and suggestions between the illustrations of what changes might be made, the cost, etc. Mr. Beall is an architect in the city of New York, office 318 Broadway.



FIRST FLOOR PLAN.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

PROPOSALS FOR BIDS FOR WORK.—Where, by statute, public officers are required to advertise for bids for the performance of certain public work, and to give the contract to the lowest bidder, the person whose bid is lowest is entitled to the contract, and can enforce his rights by mandamus, or by action against the officers for specific performance, or perhaps for damages. This is upon the principle that a tender and acceptance constitute an agreement, and it was held, that where bids were called for, for the performance of certain work according to certain specifications, the work to be given to the lowest bidder, that the lowest bidder for the work, even though his bid was informal, amounted to a tender on his part, and an acceptance on the part of the owner, which made a complete and binding contract, and its provisions were enforced against him.

And though nothing is said in the call for bids as to whether the work shall be given to the lowest bidder, yet, if such is the custom and common understanding, the lowest bidder has a right to treat his bid as accepted, unless it is expressly rejected. But if by the terms of the call for bids a written contract is to be entered into and signed by the parties, after acceptance, the contract is not complete until this is done, and it seems that either party may withdraw before this is done. In fact, if anything is left open to be done before the agreement is complete, either party may recede. In order to make the bid and acceptance a complete contract, nothing must be left to be done by the parties. When a call for a bid for work refers to a certain plan and specification, the plans and specifications are treated as incorporated into, and forming a part of the contract, as well as all other matters referred to in the call. And where compensation is to be made out of a particular fund, no claim can be made except against that fund.

When, however, the law does not require the work to be given to the lowest bidder, and the call for bids does not state that the work will be so given, or when any discretion is vested in the contracting board, the lowest bidder cannot enforce his claim. The same is true in the case of an individual advertising for bids for the doing of certain work, unless he expressly states in the call that the work shall be given to the lowest bidder, or there is some custom regulating the matter, he is at liberty to accept any bid which he deems most advantageous, whether it is the lowest or not. 458.

RULE WHEN THE EMPLOYER OWES A DUTY TO SERVANTS OF CONTRACTOR.—Although a contractee is not in general liable to the employees of the contractor for injuries resulting to them while engaged in his work under the control of such contractors, yet if the work is done on his premises he is bound by the same legal obligation that exists as between him and his immediate servants, to keep them in a suitable and safe condition, and is liable to any of the servants of such contractors for injuries resulting to them from defects therein, not under a contract obligation, but arising from the duty he owes to each of the employees, arising out of his obligation to provide such appliances, and this duty extends to keeping the premises upon which the servants of the contractor are at work, in a reasonably safe condition, whether the contract provides therefore or not. 151.

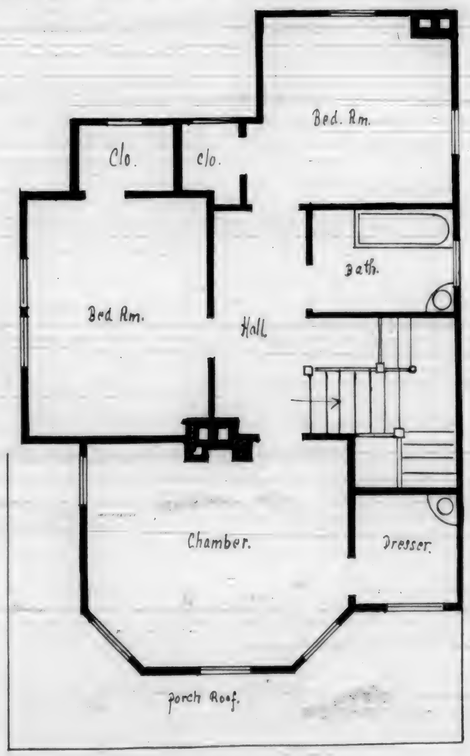
SUBSEQUENT ACTION FOR DAMAGES BY OWNER.—In an action by contractors to enforce a mechanic's lien, the owner is not bound to plead and prove damages sustained by their failure to comply with the contract, and a decree therein is no bar to a subsequent action against them to recover such damages.

Dewsnap v. Davidson, Supreme Court of R. I. 26 At. Rep. 902. 50.

ENTRY OF ADJOINING OWNER TO PRESERVE WALL.—A landlord is not liable to the tenant for damages to the lease-hold by a contractor who entered the premises to preserve the walls while excavating on the adjoining lot, merely because the landlord gave the contractor license to so enter, as he was required to do by the statute which requires the adjoining lot owner to perserve the party or other wall when he desires to excavate to the depth of ten feet below the curb.—McKenzie v. Hatton, Supreme Court of N. Y. 24 N. Y. Supp. 88 84.

AGREEMENT TO PAY SUBCONTRACTORS.—An oral promise by the owner of a building, to pay subcontractors made while the latter are working for the contractors, on condition that they will release their lien, which they do, imposes no legal liability on the part of the owner to such subcontractors, since such agreement is a promise to answer for the debt of another and is within the statute of frauds.

Hutton Bros. v. Gordon, Rockland County Court, 23 N. Y. Supp. 770. 63.



SECOND FLOOR PLAN.

THE MINIMUM SIZE OF PIPE SEWERS.

LONG before the construction of the Memphis sewers the question of minimum size for small public pipe sewers was discussed in England. On account of the frequency of stoppages the English custom has been, for at least 15 years, to fix the minimum diameter at 9 inches. In Baldwin Latham's work on "Sanitary Engineering," second edition, 1878, there will be found some information on this subject. The author, in relating the experience gained at Croydon, with about 19 miles of pipe sewers ranging from 4 inches to 18 inches in diameter, states that "between the 27th of March, 1852, and the 28th of November, 1853, a period of 20 months, 60 stoppages took place in the 4-inch sewers, 34 stoppages in the 6-in sewers, one stoppage in the 8-inch sewers, one stoppage in the 9-inch sewers, one stoppage in the 12-inch sewers, one stoppage in the 15-inch sewers, and two stoppages in the 18-inch sewers. Calculated by the length of sewers of each size in operation in Croydon at the time, the proportion of stoppages to the length of each size of sewer was as follows:

4-inch	sewers,	one	in	106	feet.
6 "	"	"	"	1,807	"
8 "	"	"	"	6,435	"
9 "	"	"	"	14,100	"
12 "	"	"	"	12,117	"
15 "	"	"	"	9,518	"
18 "	"	"	"	758	"

The author further states that "the number of stoppages in the 4-inch sewers would have probably been greater, but some of these very small sewers were taken up in the period and replaced by other of larger size. All the stoppages in the 12-inch, 15-inch, and 18-inch pipe sewers occurred from the insufficiency of the strength of the pipes, and their subsequent collapse in the work. The stoppages in the smaller sewers arose from accumulations of such matters as usually enter sewers, such as paper, hair, etc. To such an extent was the small-pipe system carried in these early works at Croyden that in one district a sewer 4-inches diameter was used for the drainage of 16 houses, one 6 inches diameter for the drainage of 137 houses."

Mr. Latham explains these stoppages by the fact that the sewers were partly laid in the subsoil water and imperfectly jointed with clay. Yet similar experience under better conditions and with cement joints has caused most English engineers to adopt 9 inches as the minimum size for public sewers.

It will be noticed what a great difference there is between the 6-inch and 9-inch pipes in this respect.

Your correspondent says: "It may readily be conceded that there is no serious practical reason, aside from cost, why 8-inch pipes may not be used." They will be kept in substantially as good condition as to cleanliness as 6-inch pipe will, and they will of course, perform the same service. They cost for purchase and laying about 50 per cent more."

It is gratifying to read of this "concession," in view of the author's contrary opinion, expressed some years ago; but the implication in his present letter, that while 8-inch pipes are conceded to be as good as 6-inch pipes from a sanitary point of view, that they are unnecessarily large and costly should, I think, still be disputed. The "50 per cent" of additional cost mentioned by him refers to the materials and labor of laying, and really amounts to only from 7 to 9 cents per running foot of sewer—not a serious matter. This additional cost is less than the usual difference between the bids of contractors for building 8-inch pipe sewers; the main cost being for the excavation and the labor of laying, which is practically the same whether the pipes are 6 or 8 inches in diameter. We should ask ourselves whether an 8-inch pipe is worth that additional small cost. Practical engineers generally say yes. They derive this conclusion not from any theoretical argument, but from actual experience for a long time under a variety of conditions. There is no doubt that 6-inch pipes are amply large to carry the ordinary sewage from many blocks of houses. Your correspondent says: "The 6-inch pipes of Memphis * * * never run half full, even in the closely built parts of the city," but, it might be added, more than 100 stoppages per annum have occurred in them. If nothing but sewage entered, this size would be more than sufficient as a minimum; but we have other matter to contend with which can and does enter through the water-closet traps. A 4-inch trap will pass sticks and other solid matter of a length greater than 6 inches, but rarely greater than 8 inches. When, therefore, a 6-inch pipe has an imperfect or projecting joint, causing such substances to be caught by it, there is a possibility of their assuming such a position across the section that they will catch and hold back paper and other matter which thereby obstructs the flow and facilitates further deposits. In an 8-inch pipe these substances are much less likely to assume such a position, because they are seldom if ever more than 8-inches long and able to be turned over completely during a flush, and thus pass on down the sewer. Herein lies, I think, the main reason why 8-inch pipes, when used as minimum sizes, are so much less frequently obstructed than the smaller ones. The reason given by your correspondent that 8-inch pipes take a longer time to accumulate deposits to the point of obstruction, does not seem to be the true one, for the obstructions are generally found to be formed by a nucleus at a definite point, rather than by a deposit along the line of the sewer excepting where they are caused by a faulty continuation or slope (the size having nothing to do with the formation of deposits), or where the pipes are not regularly or sufficiently flushed.

There is another advantage to be gained in using a diameter of 8 inches as a minimum size. With the same slope it allows the sewage to assume a great velocity during the flushing, and therefore to more effectually scour and clean the pipe. The difference of velocity between the ordinary flow in 6-inch and 8-inch pipes can hardly be noticed, but there is a substantial difference, namely, about 15 per cent in favor of 8-inch pipes when they are made to run at least half full in times of flushing.

While the above results furnish some reasons for the general preference of 8-inch, and in England of 9-inch pipes, as a minimum size for public sewers, we are often justified in using smaller sizes. On steep slopes, for instance, the high velocities are sufficient to minimize the occurence of obstructions by loosening deposits or changing the position of sticks, etc., that have found lodgment. Therefore 6-inch pipes are more successfully used under such conditions. House drains, feeding the public sewers, can often be safely made even 4 inches in diameter if the usual interior projections at the joints of stone-ware pipes are avoided; for instances, by the use of iron pipe. For the benefit of the public pipe sewers it is desirable to reduce the diameter of house pipes to 6 inches or less, so that the result of carelessness and improper use of the sewerage system will be felt and remedied by the parties committing the act instead of by the public at large.—*Rudolph Hering in The Engineering Record.*

CLEANLINESS BRINGS HEALTH.

RECENTLY we read a very entertaining and instructive article from the New York *Times*, in which was described the method of cleaning the city of Paris, France. In that beautiful city they do not rely upon the sweeping machine and dump cart for cleansing the city, but they flush the gutters two or three times a day, and do it so thoroughly that the refuse of the streets and avenues is carried into the sewers, and borne away beyond the limits of the city. It is this care of the city that has given Paris such a reputation for cleanliness, beauty and health. It costs the people of that city, on an average, seventy-five cents a year for each inhabitant, to keep the city clean. This in the aggregate, amounts to a large sum, but it is not as much for each one as a bottle of patent medicine would cost. It is not one-half the sum required to pay for one visit of a physician. Paris gains in the health of its citizens many times the cost of cleaning the city.

If the great cities of America would institute similar thorough methods in cleansing their streets and avenues, the average health of our country would be greatly improved. The life of our citizens would be prolonged, and the comforts of life multiplied and intensified. A wise policy for a city administration would be to cleanse the city at any cost. It is just as essential that we should have clean homes and streets, as it is that we should have clean food and clean water to drink. In fact, without clean homes and clean streets, it is impossible to have clean food, pure air, or pure water.

No better time was ever known for the inauguration of a policy of cleanliness than at the present. The recent ravages of cholera in Europe, and the danger of its entry into this country, have awakened people to the importance of providing against it. They would be willing to assist in carrying out an intelligent cleansing policy, by reason of their anxiety to ward off the disease and turn aside the messenger of death.

It is to be regretted that an appeal to people in behalf of the common decency of cleanliness is urgently necessary in the closing years of the nineteenth century. Cholera is but one of a great many diseases that dirt and filth and neglect engender. It comes but once or twice in a century, while no city in America is free for one day in the year, from many enteric diseases that carry off many thousands from among our people. Looked at from the sanitarian's point of view, cleanliness is not only next to godliness, but it is godliness; for whatever gives health to the body, gives vigor of intellect and soul, and he who is vigorous in his mind and heart, worships better, lives better, and acts nobler. Let us therefore be clean.—*Sel.*

BUSINESS MOSAICS.

Have you a Burglar Alarm upon your safe? If not call upon C. F. A. Sturts, 126 Kearny street and you will be induced to get one for your safe or vault, but at the same time you will probably be inclined to purchase one for your dwelling house.

Miss Hosmer's statue of Apollo was on a pedestal in a corner when an old lady, Mrs. Raggles by name, paused before it. Finally she exclaimed:

"So that's Apoller, is it? She was assured that it was. "Supposed to be the handsomest man in the world, you say?" "Yet." "Wal, I've seen Apoller an' I've seen Raggles, an' I say, give me Raggles!"

Typewriting—If you want typewriting that is typewriting and looks like print, that does not require to be revised and scratched until you wish the typewriter had not been invented, go to room 45, 6th floor of the Mills building where you will find Misses Wilson & Kelly, telephone 5661.

Greek and Roman doors always open outward, and when a man was passing out of a house he knocked on the door so as not to open in the face of a passer-by.

Now that Winter is approaching and the cold weather is coming on we take pleasure in calling the attention of our readers to the Steam, Hot Water and Air Heaters, George H. Tay & Co., 610-620 Battery street, San Francisco. This firm furnishes estimates for heating public buildings and private residences, and will guarantee perfect heating, with unequalled economy of fuel.

Tramp—"Couldn't you give me a few cents ma'am?" WOMAN—"What would you do with it? Buy whisky I suppose." TRAMP—"No, ma'am, I'am collecting money for the Duke of Veragua."—*Judge.*

San Francisco Novelty and Plating works corner of First and Mission streets, manufacturers of artistic metal work. How much the appearence of a bank or office is improved by the judicious use of this style of work may be proved by a visit to any of the various institutions that have of late adapted this style of finish—which adds not only to the looks, but also to the safety and convenience of doing business in such surroundings.

When lumber is in so much demand for the Midwinter Fair we do not know that the San Francisco Lumber Company will thank us for calling attention to their various lumber yards in this city, but to solve any doubt on this point, if you want any lumber call upon J. N. Curtis, Manager, NW corner Pine and Montgomery street.

Cool-Headed citizen—"What are you running for? The dog is going in the opposite direction. Fleeing Citizen (bareheaded and frantic)—"A policeman is shooting at it."—*Chicago Tribune.*

Fitzgerald Prepared Wall Plaster is every day becoming more in demand as its merits become more fully known. The Pacific Patent Plaster Co. will have their hands full to supply orders, 216 Bush street, room 90.

Bacon—"How do you find business?" Egbers—"Advertise for it."—*Yonkers Statesmen.*

Those in want of architectural terra-cotta should call upon A. Steiger Sons, 320 Sansome street, room 3. Their factory is in San Jose, Cal., where every thing in this line from hollow tile to common flower pots can be found; the open fire-place with colored brick will be found very inviting some chilly morning—be in time and order before you regret that you are too late.

Hobbs (to friend at Stuffin's quick lunch)—"I say, Nobbs, how's business?" NOBBS—"Great! Never saw such a rush. No time to sleep, and way behind on meals. That was day before yesterday's lunch I just finished."—*Life.*

How often do we hear the remark "Oh, but it costs too much too use gas for cooking" this is a great mistake. If you want to be convinced of the fact go to the San Francisco Gas Light Gas Stove department, 226 Post street, and examine their stock of gas cooking and heating stoves, gas ranges and open fires. It saves trouble with dust and ashes, improves your temper and makes cooking a pleasure to the housewife at a less cost than the use of coal.

CITY BUILDING NEWS.

Broadway near Buchanan. Three-story frame addition; owner, Lizzie I. Hemple; architects, B. McDougall & Son; contractors, P. J. & M. Brennan; signed, Oct. 4; filed, Oct. 5; cost $4,195.

Bush near Larkin. All construction work above the ground floor; owners, Olympic Salt Water Co.; architect, D. Ernest Melliss; contractor, Jeo. H. Walker; signed, Sept. 18; filed, Sept. 23; cost $29,464.

California near 2d Ave. To build; owner, Chas. Kennedy; architect, Jno. B. Wuersching; contractor, Thomas A. Douglass; signed, Sept. 13; filed, Sept. 14; cost $1885.

California and Jones. Granite work; owner, Geo. Whittell; architects, Coxhead & Coxhead; contractor, Alex. McLennon; signed, Sept. 15; filed, Sept. 19; cost $3,000.

California and Jones. Alterations and additions; owner, Geo. S. Fife; architect, Clinton Day; contractor, John T. Grant; signed, Oct. 3; filed, Oct. 4; cost $2,555.

California near Scott. All excavating, concrete work, etc.; owner, N. Cousin; architect, Wm. Mooser; contractor, R. P. Sanches; signed, Oct. 11; filed, Oct; 11; cost $4,000.

Capp and Adair. Three-story frame except plumbing and painting; owner, Frances Horn; architect, F. P. Robin; contractor, J. H. Pauls; signed, Sept. 25; filed, Sept. 26; cost $4,838.

Clara bet. 3d and 4th. Alterations; owner, L. D. McCarthy; architect, H. D. Mitchell; contractor, L. N. Fletcher; signed, Sept. 15; filed, Sept. 16; cost $1,400.

Clara near Rich. Three-story and basement; owner, T. D. McCarthy; architect, H. D. Mitchell; contractor, L. N. Fletcher; signed, Sept. 30; filed, Oct. 3; cost $3,340.

D and 8th Ave. To build; owner, F. A. Freese; architect, C. M. Rousseau; contractor, L. B. Schmid; signed, Sept. 18; filed, Sept. 19; cost $1,950.

D and 8th Ave. To build except plumbing, tinning and gas fitting; owner, George Fisher; architect, Chas. M. Rousseau; contractor, Chas. P. Ralston; signed, Sept. 12; filed, Sept. 13; cost $800.

Dearborn Place near 17th. To build; owner, Julius Tammeger; contractor, Jno. H. Pauls; signed, Sept. 23; filed, Sept. 27; cost $4,400.

Dorland near Sanchez. To build; owner, J. H. Belser; contractors, J. T. Lorenzen and E. G. Fevrier; signed, Oct. 9; filed, Oct. 10; cost $4,190.

Dupont bet. Vallejo and Green. Repairing and alterations; owner, Daniel Seales; architects, Townsend & Wyneken; contractor, F. W. Kern; signed, Oct. 5; filed, Oct. 7; cost $2,265.

Fell near Steiner. To build; owner, Thos. F. Murray; architect, W. H. Lillie; contractors, White Bros.; signed, Sept. 12; filed, Sept. 13; cost $3,799.50.

Filbert and Scott. To build; owner, Carlo Casassa; architect, Wm. Mooser; contractors, G. B. Cavaglis & L. Cnueo; signed, Sept. 5; filed, Sep, 21; cost $1,700.

Geary and Grant Ave. Painting and decorating; owners, Davis Bros.; contractor, W. G. Roch; signed, Oct. 5; filed, Oct. 10; cost $2,350.

Geary and Grant Ave. Alterations and repairs; owners, Davis Bros.; contractor, Andrew McElroy; signed, Oct. 5; filed, Oct. 6; cost $6,100.

Geary and Grant Ave. Alterations; owners, Davis Bros. contractor, Jas. E. Britt; signed, Oct. 5; filed, Oct. 7; cost $1,700.

Golden Gate Park Midwinter Fair Grounds. Mechanical Arts building, owner, Executive Committee Midwinter Fair; architect, Edward R. Swain; contractor, R. P. Haribut; signed, Sept. 20; filed, Sept. 21; cost $68,973.

Golden Gate Park. Manufactures and Liberal Arts building; owners, Executive Committee Midwinter Fair; architect, A. Page Brown; contractors, Smilie Bros.; signed, Sept. 19; filed, Sept. 21; cost $107,360.

Golden Gate Park. Horticultural and Agricultural building; owner, Executive Committee Midwinter Fair; architect, Samuel Newsom; contractor, J. W. Wissinger; signed, Sept. 22; filed, Sept. 23; cost $54,000.

Golden Gate Park. Midwinter Fair Grounds Art building; owner, Executive Committee California Midwinter Fair; architect, C. C. McDougal; contractors, Worrell & Miller; signed, Sept. 27; filed, Sept. 28; cost $54,890.

Gough and Eddy. Art glass in all windows except basement; owner, St. Pauls German Evangelical Lutheran Church; architect, Julius Krafft; contractors, California Art Glass Bending and Cutting works; signed, Sept. 12; filed, Sept. 16; cost $1,200.

Great Highway near B. Construction of Superstructures of pumping station all work above grade line of lot; owners, Olympic Salt Water Co.; architect, D. Ernest Melliss; contractor, Geo. H. Walker; signed, Sept. 18; filed, Sept. 23; cost $8,895.

Hayes near Devisadero. To build; owner, Isadore Fox; contractor, T. C. Cochrane; signed, Sept. 11; filed, Sept. 12; cost $5,700.

Hayes and Lyon. All work except electric work, tinning, plumbing and painting; owner, Ivan V. Yadich; architect, T. J. Welsh; contractor, James E. Mooney; signed, Sept. 26; filed, Sept. 26; cost $8,210.

Hampshire near 20th. Carpenter work, brick work, painting, plumbing, plastering, etc.; owner, H. Steinhagen; contractor, A. Klahn; signed, Sept. 15; filed, Sept. 16; cost $2,320.

Hyde and Washington. All work to build; owner, Annie Le Guevee, Guardian of Florence Le Guevee and minors; architect, Edward R. Swain; contractors, F. W. Kreling & Sons; signed, Sept. 28; filed, Sept. 28; cost $8,250.

Jefferson near Baker. Grading and sewering building, etc.; owner, Mrs. Emma Haferegger; architect, H. D. Mitchell; contractor, John Miron; signed, Sept. 19; filed, Sept. 20; cost $3,252.

Julius near Whiting. To build; owner, Mrs. Mary Malloy; architect, B. I. Clinch; contractors, J. F. Hefferman and Antonia Massa; signed, Sept. 7; filed, Sept. 12; cost $1,500.

Laurel Hill Cemetery. Two-story frame and brick office; owner, Laurel Hill Cemetery Association; architects, Percy & Hamilton; contractor, F. W. Kern; signed, Sept. 20; filed, Sept. 27; cost $13,068.

Lapidge and 18th. Three-story frame; owners, Mission Turn Verein; architects, Martens & Coffey; contractor, F. Klatt; signed, Oct. 6; filed, Oct. 6; cost $7,340.

Main near Mission. All work for factory and warehouse; owner, Estate of I. B. Pissis; architects, Pissis & Moore; contractors, Richardson & Gale; signed, Sept. 29; filed, Sept. 30; cost $9,600.

McAllister near Jones. Alteration and additions; owners, Katherine Adam & Eliza Kibbe; architect, Julius E. Kraft; contractor, S. H. Kent; signed, Sept. 15; filed, Oct. 4; cost $8,000.

McAllister near Jones. Brickwork and patent chimneys; owners, K. Adams & Eliza Kibbe; architect, Julus E. Kraft; signed, Sept. 5; filed, Oct. 4; cost $5,500.

McAllister near Jones. Lathing and plastering; owners, Katherine Adams & Eliza Kibbe; architect, J. E. Kraft; contractor, T. Murphy; signed, Sept. 15; filed, Oct. 4; cost $2,500.

McAllister near Jones. Plumbing, etc,; owners, Katherine Adams and Eliza Kibbe; architect, J. E. Kraft; contractor, Jos. E. Britt; signed, Sept. 15; filed, Oct. 4; cost $2,483.

Minerva near Plymouth. Excavating, etc., and all work for building; owner, Edward Nessier; contractors, Bates & Deuel; signed, Sept. 18; filed, Sept. 22; cost $1420.

Ninth and Clementina. Lathing and plastering three-story frame with brick foundation; owner, Executors of Estate of John Frothingham; architect, Julius E. Krafft; contractor, A. Hennie; signed, Sept. 23; filed, Sept. 25; cost $1,130.

Oak near Devisadero. Alterations and additions; owner, Lilly Schlessinger; contractors, B. McDougall & Son; contractors, Peterson & Olson; signed, Oct. 7; filed, Oct. 9, cost $4,425.

Page near Webster. Building except brick work; owner, E. A. Hildebrand; architects, Martens & Coffey; contractor, Jos. Bucher; signed, Sept. 26; filed, Sept. 27; cost $3,800.

Pacific and Central Ave. To build; owner, C. E. Brown; contractor, Philip Rive; signed, Oct. 5; filed, Oct. 6; cost $3,575.

Post near Powell. Iron work and illuminating tiles; owner, W. T. Coleman; architects, Pissis & Moore; contractors, O'Connell & Lewis; signed, Sept. 21; filed, Oct. 5; cost $1,450.

Post and Levenworth. Excavating, concrete, etc.; owners, S. F. Verein Assoc.; architects, Salfield & Kohlburg; contractors, Gray Bros.; signed, Oct. 11; filed, Oct. 11; cost $2,100.

Powell near Jackson. To build; owners, F. A. and J. Cavagnaro; architects, Henrikson & Mahoney; contractor, Robert Currie; signed, Oct. 6; filed, Oct. 6; cost $1,825.

Point Lobos Ave. near Collens. To build; owner, Honora Ratledge; architect, M. J. Welsh; contractors, Douglass & O'Conner; signed, Sept. 25; filed, Sept. 27; cost $2,400.

Pierce near Waller. To build; owner, J. C. Neilsen; architects, Kenitzer & Barth; contractor, J. W. Smith; signed, Sept. 12; filed, Sept. 13; cost $2,975.

Sacramento near Drumm. To build brick structure; owner, Henry Pierce; architect, Clinton Day; contractor, J. H. Wilson; signed, Oct. 6; filed, Oct. 10; cost $20,460.

Second street. Foundation to concrete lining of tide water tunnel; owner, Edison Light and Power Co.; architect, T. H. MacDonald; contractors, Healy, Tibbets & Co.; signed, Sept. 30; signed, Sept. 30; cost $6,270.

Second street. Pile foundation; owners, Edison Light and Power Co.; architect, T. H. MacDonald; contractors, Healy. Tibbets & Co.; signed, Sept. 30.; filed, Sept. 30; cost $5,270.

ALAMEDA COUNTY.

Alameda Land Co. Removing 4,000 yards of earth owner, Alameda Land Co., engineer, Geo. L. Nusbaumer; contractor, E. J. Bates; signed, Sept. 28; filed; Sept. 30; cost $500.

Central Ave. and Webster. Brick work, carpenter work, etc.; owner, Quincy Chase; architect, J. B. Matheson; contractors, Concannon & Shea; signed, Sept. 8; filed, Sept. 12; cost $2,320.

Daly Scenic Park Tract, Berkeley. Frame building; owner, Bete Theta Assoc.; contractor, M. Gallagher and M. F. Milburn; signed, Sept. 12; filed, Sept. 14; cost $7,910.

Daly Scenic Park Tract, lot 15, block 11. Two-story frame; owner, M. Carpenter; contractor, Fred Estey, signed, Sept. 16; filed, Sept. 19; cost $2,936.

Fasking Park. Excavating, brick, carpenter, plumbing, etc., on church; owner, First Unitarian Society of Alameda; architect, W. J. Mathews; contractor, H. E. Jones; signed, Sept. 22; filed, Sept. 30; cost $8,430.

Hayes street, San Leandro. Six-room cottage; owner, Mrs. L. Ivey; contractor, I. E. Kent; signed, Sept. 14; filed, Sept. 18; cost $1,600.

Kings Ave. and Caroline street. Alterations and additions; owner, S. J. Loop; contractor, A. R. Denke; signed, Sept. 2; filed, Sept. 11, cost $900.

San Lorenzo, on the Perkins tract. One-story frame; owner, E. C. Perkins; architect, Chas. Mau; contractor, R. Albertson; signed, Sept. 6; filed, Sept. 11; cost $1,892.

Teutonia H'd. Assoc. To build stable; owner. Geo. Whittell; architects, Cox head & Coxhead; contractor, J. J. Boyle; signed, Sept. 25; filed, Sept. 29; cost $2,980.

Twelfth and Washington, Oakland. Cement work on two-story brick; owners Henry, Sol and Fred Kahn; architect, W. J. Mathews; contractor, F. W Wetmore; signed, Sept. 16; filed, Sept. 18; cost $1,100.

The California Architect and Building News.

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NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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½ Page	20 00	57 50	105 00	200 00
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Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

WE present to our readers to-day copious extracts from the Progress Report of Engineers in charge to devise and provide a system of sewerage for San Francisco.

This report shows in a graphic and succinct way the gross fraud and incompetence which has characterized the designing and construction of drainage works of this city. The dismissal of theEngineers in charge was in keeping with the discourteous dismissal of the previous Board of Engineers. The whole matter of spending the public and private funds is now turned over to the tender mercies of the politicians who infest the City Hall. We see no reason why a substantial saloon keeper should not be elected City and County Attorney since unprofessional men are elected to carry out the work of Civil Engineers in other departments.

For years the necessity of devising a proper system of sewerage for the city of San Francisco has been apparent to everyone. Time and again has the matter been brough to the attention of the public and the public officials, and the dangers to health and life pointed out in no uncertain terms. Last year it did really seem as if the time of deliverance was approaching; a competent Sewerage Commission was organized, and an efficient band of engineers chosen to investigate the whole subject, and propose a practical solution of the problem. But it was too much to expect that a body independent of political control, could exist in this city. On the farcical plea of pretended economy the Board of Supervisors resolved to dispense with the services of the Sewerage Commission and the Board of Engineers, and once more the health of a great city was left to take such care of itself as it best may.

The time will come, however, when the imperative nature of the needed reforms will be felt in a way to command recognition, and the longer this recognition is delayed, the more disastrous will be the results of delay, and the more expensive the remedy required.

THE favorable progress still continues to be made with the erection of the exhibition buildings designed to house the wonders to be shown at the coming California Midwinter International Exposition. Not only are the main buildings almost all covered in, but the smaller buildings for the different counties and the special features, are well under way. The Firth Wheel, the Cyclorama of the Volcano of Kilauea, the Japanese Village, and the various attractions too numerous too mention in detail at present; but our subscribers may rest assured that at the proper time the CALIFORNIA ARCHITECT will present to its readers in its usual attractive form all the notable features of what bids fair to be a credit to the State, and a great attraction to the visitors from the east and other parts of the world.

THE ARCHITECTURAL LEAGUE OF NEW YORK.

NINTH ANNUAL EXHIBITON.

THE Ninth Annual Exhibition of The Architectural League of New York, will be held at the American Fine Arts Society's Building, 215 West 57th street, New York City; from Monday, December 18th, 1893 to Tuesday, January 9th, 1894, inclusive.

The Exhibition will include: Architectural Designs Embodied in Plans, Elevations and Sections and shown in Perspective; Finished Detailed Working-drawings; Designs for Decoration, Furniture and Allied Work; Cartoons for Stained Glass; Full-size Working drawings for Ornament, Models of executed or proposed Work; Completed work such as Carvings in Stone or Wood, Bronze, Wrought-Iron, Mosaic, Glass, Textile Fabrics and Furniture; Sketches, Drawings and Paintings of Architectural or Decorative Subjects.

Photographs will be admitted only when they serve to elucidate an accepted exhibit. It is especially requested, that all perspective drawings of architectural subjects shall be accompanied by plans drawn to a small scale.

Exhibits will be received at the Fine Arts Society's Building on and after Wednesday, December 6th; none can be received after Tuesday, December 12th.

The League will collect and return, free of charge to exhibitors, in New York City, Philadelphia and Boston, all exhibits that have been properly entered; all others must be delivered at the Fine Arts Society's Building, carriage prepaid and ready for exhibition.

The private view for Exhibitors, the Press and Members of the Architectural League will be given on Friday, December 15th, from 10 A. M., to 4 P. M.

Collections will be made as follows: In New York City on Thursday, Friday and Saturday December 7th, 8th and 9th, by W. S. Budworth & Son, No 1 West 14th street.

In Boston, on Wednesday and Thursday, December 6th and 7th, by Williams & Everett, 190 Boylston street.

In Philadelphia, on Wednesday and Thursday, December 6th and 7th, by Isaiah Price, 10 South 18th street.

The enclosed blank must be filled out and sent to the Secretary before November 24th. No work will be sent for unless the entry for it has been received by the Secretary, Mr. Charles I. Berg, No. 10 West 23d street.

All exhibits must be properly labelled.

Drawings must be either framed or mounted.

Exhibits of non-resident members are to be sent to a consignee in New York, who will deliver them at the Fine Arts Society's Building, and return them to the exhibitor at the close of the Exhibition.

The names of such consignee are: William S. Budworth & Son, No. 1 West 14th street; Thomas A. Wilmurt, 54 East 13th street; F. Harrison Mills, 147 East 23d street.

The Committee on Exhibitions will be the jury for the selection and arrangement of all exhibits.

For the Committee on Exhibitions: William B. Tuthill, Chairman Sub-Committee on Architecture.

Committee on Exhibitions: George B. Post, Chairman Ex-Officio; Warren R. Briggs, Ex-Officio; Frank A. Wright, Ex-Officio.

Sub-Committee on Architecture: George Keister, Bruce Price, William B. Tuthill, Chairman.

Sub-Committee on Decoration: D. C. French; Will H. Low, F. S. Lamb, Chairman.

REPORT OF THE ENGINEERS IN CHARGE TO DEVISE AND PROVIDE A SYSTEM OF SEWERAGE.

SAN FRANCISCO, JULY 15, 1893.

To the Honorable, the Board of Supervisors of the City and County of San Francisco—

GENTLEMEN: We submit herewith a progress report covering the work done by the board of engineers as finally organized on August 27, 1892, under Resolution No. 6612 (Third Series), and that of the Engineers in charge to devise and provide a system of sewerage, appointed by Resolution 8294 (Third Series), together with a careful compilation of official street grades in the form of a supplement. * * *

THE PRESENT SITUATION.

Immediately upon final organization of the Board of Engineers, the investigation of the condition of the sewers now in use in San Francisco was commenced and records were searched to supplement the results of this investigation in order to make this data, which is essential as a basis for the work of the Board, available in a comprehensive and readily accessible form. Entering upon this work of collecting and compiling data with reference to the character and condition of sewers now in use, it was at once found that the records could not be relied on to disclose the size or character of the sewer in any particular street. The information concerning sewer gradients was, we may say, entirely lacking, and the information concerning depths of sewers below street grade was so fragmentary and in such unsatisfactory form as to be of no value whatsoever. Moreover, it was at once found that specifications for sewer constructions were, and had been, general in character, wish no special requirements to fit particular cases, except for a few sewers that were constructed for districts and according to plans specially ordered to be prepared for such districts; that the specifications, whether of the general or of a specific character, were not closely adhered to, and were often grossly violated, and that no record was preserved showing what was actually

done and to what extent a deviation from plans and specifications had (whether rightfully or not) been permitted by the authorities in charge of sewer construction.

It has heretofore been generally required in the specifications that pipe sewers shall have "openings twenty-five feet apart, sufficiently large to receive a six-inch pipe." As the subdivision of street frontage in the residence portion of the city is generally into twenty-five foot lots, it is evident that this requirement is intended to insure available openings for house connections twenty-five feet apart on each side of every pipe sewer. Yet, within a year, sewers have been constructed under these specifications with less than one-tenth of the required number of Ys for house connections in place, and others have been accepted as properly constructed although the openings required were put upon alternate sides of the sewer, making those upon either side fifty feet apart. In no case however, not even when the specifications were strictly complied with, has a record of the position of the Ys been preserved, and the lack of information as to position of openings for house connections is so indefinite that it has long been customary to disregard their existence entirely and to make house connections by breaking through the sides of the sewers wherever convenient. Under such circumstances it is not surprising that the necessity for the number of openings prescribed by ordinance and required by specifications is not recognized by contractors, and that believing the Ys useless, as many as possible are omitted.

The general specifications as handed down by one set of officers to the next during many administrations require that "steps must be placed in each manhole, formed of half-inch iron set well into the brickwork, etc.," yet for years past the manholes have been constructed without steps.

These and other deviations from specifications are and have been very common in connection with sewer construction in San Francisco, and it is pertinent to inquire why they are possible.

No comprehensive sewer and drainage system for San Francisco has ever been made the guide in the matter of sewer construction. We are at this late date charged with devising one. But even if one had been designed, modifications of detail due to the extension of streets, changes of street grades and other unforeseen conditions would have to be made from time to time.

The duty of preparing the plans and specifications for sewers required from time to time falls to the City and County Surveyor. He prescribes gradients and exercises control over line and grade. The supervision of construction, however falls to the Superintendent of Streets, whose department is required to compel strict compliance with specifications.

Sewers are constructed either by public or private contract. In case of sewer construction by public contract, all proceedings, the calling of bids, the awarding of the contract and the execution of the work are in direct charge of the city officers.

In the case of sewer construction by private contract, the planning and supervising of the work are in charge of city officials, but the authorities are not concerned in the award of the contract, except that before any private sewer construction can be undertaken, a permit for the work must be secured from the Superintendent of Streets.

Whether done by public or private contract, the work is to conform to requirements prescribed by ordinance and specifications, and it is the duty of the Superintendent of Streets to know that there are no deviations from such requirements. Whether constructed by public or private contract, all sewers in streets that have been finally accepted as improved streets must be maintained and kept in repair at public expense.

The original cost of sewers falls upon the property benefitted in proportion to amount of benefit and in proportion to street frontage. In the case of all local sewers, the first cost falls on the property fronting upon the streets sewered.

Although it would appear that by reason of being required to furnish plans and specifications for each sewer constructed, the City and County Surveyor is interested in knowing that the plans are carried out and that the specifications are complied with, it seems to have become a well established custom for that office to participate in ordinary sewer work only to the extent of giving the contractor line and grade for his work, and of certifying to the fact that the sewer at its manholes, when completed, has a depth below street grade as named in the certificate then issued.

The City and County Surveyor charges fees prescribed by ordinance for his services, and as he personally bears all the expenses of surveys it is natural to suppose that he will endeavor to keep his expenses as low as possible. It is not surprising, then, that when information in his office justifies such a course, he issues diagrams to the contractor with instructions to conform to street curbs for line and grade, or to place the sewer at "10 feet below street grades if connections will allow," furnishing reference points in the latter case from which a skillful contractor establishes his own grade line.

This system of issuing indefinite, unintelligible instructions to contractors, and for the guidance of superintendents of streets, pervails to-day, but it is not of recent origin; it has been in vogue throughout many administrations and has led to innumerable defects in construction that will entail great expense to correct.

To the engineering profession the explanation is due in this connection that the office of City and County Surveyor is an elective one, that party politics can be relied on in San Francisco no more than elsewhere to consider qualifications for office a prerequisite to election, and that the responsibility for all sewer work has fallen partly upon the Surveyor and partly upon the Superintendent of Streets. Without such explanation it would indeed be difficult to account for the persistent lack of endeavor to effect a reform. The system of municipal administration is at fault, more than the individual officers, and better results will be difficult of attainment until the construction of sewers receives intelligent and honest engineering direction and supervision. In this connection Hon. William Alvord, Mayor of San Francisco, in his address when retiring from office, says: "If the offices of Superintendent of Streets and Surveyor were united, and the Surveyor allowed the same executive aids which the Superintendent now has, receiving only a salary for his duties, it would be possible to prosecute such works as the opening, grading, paving and sewering of streets according to a comprehensive scientific method and at greatly reduced cost to property holders, who are now assessed doubly and trebly by reason of the many mistakes made in detached improvements. The want of able scientific direction in this department is more especially evident in the matter of sewerage. At present short, isolated sewers are often constructed, without outlet and without reference to ultimate connection with the mains forming part of a well studied, comprehensive system, because such a system has not been commenced or planned."

So lax has been the system of administration in this direction that it is safe to say that superintendents of streets have, more frequently than even the several City and County surveyors, been permitted to prescribe the character and size of sewers to be constructed. The work of sewer construction has moreover been carried forward piecemeal, generally a block or a crossing, rarely a few blocks at a time, according to the temper and inclination of the property holders.

The general specifications for sewer construction being the supposed basis of sewer work, and there being no comprehensive scheme of drainage to adhere to, it has been perfectly natural for the official in direct charge of sewer maintenance and sewer cleaning to insist upon carrying out his views, even in the matter of determining what kind of a sewer should be constructed in any block or in any street crossing, though in fact the only qualification that could be claimed as justifying the assuming of such a responsibility was practical experience in street matters, and the intelligence and common sense supposed to be a part of the stock in trade of every city official.

Only when it seemed advisable to carry out sewer construction as a work of benefit to a district, in which case the City and County Surveyor has had an opportunity of mak-

ing a special charge for plans and specifications, does he seem to have been consulted as to general requirements, and not alone as to line and grade. * * *

Very soon after the organization of the Board of Engineers, whose successors we are, the following letter was sent to the Hon. Board of Supervisors:

To the Honorable Board of Supervisors
of the City and County of San Francisco—

GENTLEMEN:: At the outset of our investigation we find that a practice has long been prevalent of constructing brick sewer crossings where none are necessary, and of making many lateral sewers of much larger dimensions than actually required.

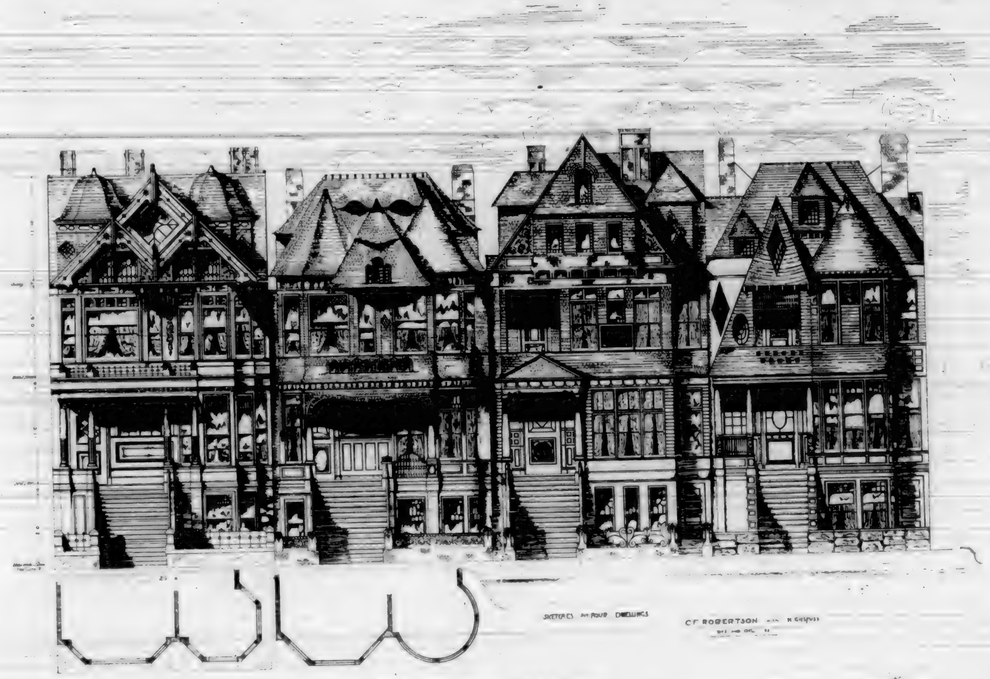
Lateral sewers of excessive size are not only more costly in construction and maintenance than properly proportioned sewers would be, but are detrimental to health by reason of the difficulty of properly flushing them.

"FURTHER RESOLVED, That the City Surveyor be and is hereby requested to consult with the said Board of Engineers in the preparation of specifications for sewer work, so that the same may be constructed in a manner to harmonize with the plans to be hereafter adopted to provide for a proper system of sewerage."

The letter above quoted is self-explanatory.

The absurd practice of constructing large brick sewers in street crossings has extended into all parts of the city. As a result of this practice and the construction of sewers in detached sections, a block or a crossing at a time, several distinctive types of sewer crossings have resulted which it will be necessary to describe somewhat in detail.

In the first place, all sewers in level street crossings are level from end to end, or very nearly level, no matter at what gradients the respective streets approach the crossing. This is a fruitful source of trouble, because at the points where gradients suddenly change regular flow is interfered



ROW OF CITY DWELLINGS.

with; deposits result in the level stretches, which often remain for long periods, and sometimes can only be entirely removed by flushing, and immediately after removal begin to reaccumulate. This applies to intersecting brick sewers as well as the intersecting pipe sewers when no brick sewer intervenes between them and the manhole at the center of the street crossing. * * * * * * *

Should your Honorable Board so desire, this Board will be pleased to advise in these matters and to pass on any project, plans or specifications which may be referred to us, to the end that more systematic and economical work may be at once inaugurated.

The suggestion contained in the letter was at once acted upon, and a resolution was passed containing the following:

RESOLUTION NO. 7481 (THIRD SERIES.)

"RESOLVED, That the Superintendent of Streets be and is hereby requested, before recommending the construction of sewers to this Board, to first submit the proposed sewer work and the location of same to the Board of Engineers appointed to devise and provide a system of sewerage, for their opinion and approval:

"FIRST—As to the necessity of the proposed sewer.

"SECOND—As to the required inside diameter or other dimensions of the sewer, its grade and required depth.

"THIRD—As to the material to be used in constructing the sewer.

SUPPLEMENTAL REPORT IN COMPLIANCE WITH RESOLUTION NO. 9157, (THIRD SERIES.)

ABOLISHING THE OFFICE OF ENGINEERS IN CHARGE TO DEVISE AND PROVIDE A SYSTEM OF SEWERAGE AND TERMINATING THE WORK.

SAN FRANCISCO, CAL., SEPTEMBER 30th, 1893.

To the Honorable Board of Supervisors
City and County of San Francisco—

GENTLEMEN: Complying with instructions contained in Resolution No. 9157 (Third Series) which provides that this

Department be abolished from and after September 30th, 1893, and that the "Board of Engineers are hereby required to turn over and file in the office of this Board all maps, books, data, etc., with a full report on or before said date," we have turned over to you all maps, books, papers, furniture, material and other property under our control as per inventory hereunto attached, and hold the receipt of your clerk for the same.

In our Progress Report, submitted under date of July 15th, we have clearly set forth the defects of the present system of administrative and executive control of public works in this city, with special reference to sewers, and have cited a sufficient number of instances of evils resulting from divided official responsibility, faulty design, carelessness, ignorance and fraud, to convince every intelligent citizen of the need of a better system of planning, directing and managing public works as well as of the need of a comprehensive system of sewerage, which has long been recognized and is daily increasing. To this Progress Report we have but little to add.

In a reply to a communication from Wm. Broderick, Auditor, at the close of the last fiscal year, copies of which were sent to his Honor, L. R. Ellert, the Mayor, and to the chairman of the Finance Committee, we call attention to the urgent necessity for abating many of the serious nuisances created in different parts of the city by defects in the sewers for which the city is responsible and recommending that $100,000.00 be made available to be extended under our supervision, for work planned by us for the protection of the health of the people.

For the prosecution of the work with which we were specially charged, the devising of a system of sewerage, we requested that $20,000.00 be made available, and also emphasized the necessity of making surveys to serve as a basis for establishing grades throughout those portions of the city where not already established, and of correcting grades where a revision was essential.

It was considered impossible to comply with these recommendations although the urgency of them was not questioned. In their stead the sum of $40,000.00 was set apart to be expended for modifications of the flow of sewage and the expenses of this office. We thought we had reason to expect more in view of the importance of our work, its recognized necessity, and the fact that we had turned into the general fund an unexpended balance of $17,238.48 at the end of the last fiscal year, which had not been expended because it would not have been to the best interests of our work to use it, as explained in our Progress Report. We received no intimation as to the apportionment which we were to make of the $40,000.00 set apart for our use, but the necessities were such in some portions of the city, where there have been annually recurring outflows of sewage from the sewers into the streets, yards, cellars and even houses, notably in the low portions of Eleventh Ward, that we are impelled to plan corrective works and suggest remedial measures as outlined in our two reports dated September 7th, 1893.

The plans and specifications for these works are now on file among the papers turned over to you by us. They do not by any means cover all the work which we had intended to recommend as necessary to correct the most glaring of that class of present evils whose existence is chargeable to a bad administrative system and the negligence, incompetence or corruption of representatives of the city. But these improvements are the most important and would if carried out have involved an expenditure estimated by us at $27,000.00, being as great an amount as we thought ourselves justified in expending out of our limited appropriation.

They were not planned as a part of any proposed comprehensive system, but are intended to make efficient some of the principal existing sewers. Had a greater fund been made available for such corrective work, we should have suggested among many minor changes the improvement of Fell street sewer on Fourteenth street between Church and Dolores, where its grade needs correction; a change in Seventh street sewer where at Townsend street, the extension toward Channel street was this year constructed twenty inches higher than the bottom of the old sewer north of Townsend street, and to this extent permits the accumulation of filth, and is an obstruction to the flow of sewage down Seventh street; a correction of grade in Sixteenth street sewer near Folsom street where there is a slope the wrong way; some corrective work near Pacific and Davis streets where the continuity of the Pacific street sewer is interrupted by a sudden rise of two and one half feet; besides the improvement of scores of sewer crossings in all parts of the city.

The necessity for the immediate carrying out of some corrective work was forced upon our notice in making a study of the character, condition and serviceability of the existing

sewers, and we have recommended some of this necessary work, believing ourselves authorized to act in such matters at least in an advisory and supervising capacity by the resolution under which we were appointed and which directs us "to devise and provide a system of sewerage for this City and County." * * * * * *

As explained in our Progress Report it is essential that the system should be planned with due regard to the probable growth of the city, so that without reconstruction of main lines the system can be adapted to further requirements.

Although we are not now prepared to fully endorse any project we feel it our duty to submit at this time a brief outline of some of the measures which we believe will have to be intelligently and honestly carried out before this community will have received from the proper authorities that relief which it is of right entitled to demand. * *

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Court House at Glen Ellen is by John M. Curtis, architect of this city.

A Competitive design for the addition to the Alameda Court House is by J. W. Cuthbertson, architect.

R. H. White has an illustration of his residence of which he is the architect.

RESIDENCE of C. L. Ruggles at Stockton, Cal., is by Architect George Rushforth of that city.

THE CEMENTING OF STEAM PIPE JOINTS.

THE German technical papers are remarkable for the practical receipts which they contain; not that our own journals do not contain practical receipts, but because those in the German papers, instead of being copied from ancient receipt-books or concocted at random, usually bears the name of some well-known scientific man, and are based on reasoning as well as experience. One of these receipts, by Herr K. Keyfar, is copied in the *Bautechnische Zeitschrift*, and is worth remembering by architects, as well as by steam-fitters and plumbers. As is well known, the cement used for making tight the joints of steam-pipes and other ironwork exposed to heat and pressure is a pinkish putty, now commonly made with a mixture of white and red lead, although it is not long since pure red lead was supposed to be the only proper material. This lead-putty is, however, according to Herr Feyfar, often carelessly and ignorantly made, so that it fails, sometimes to a dangerous extent, to do what is required of it. Properly, the cement for putting together steam-pipes should be made with equal parts of pure red and white lead, thoroughly mixed and well kneaded with pure linseed oil, which has been rendered drying by boiling with ten per cent of red lead. Workmen in steam-fitting shops do not know much about the properties of oils, and often mix their putty with raw linseed oil or grease, or even kerosene. It is hardly necessary to say that coal-oil is soon volatilized by the heat, leaving the white and red lead in the form of power. Grease is not much better, and raw linseed oil hardens slowly, and should not be employed. Where the materials are suitable the putty sets quickly, and becomes so hard that it can with difficulty be cut with a chisel. The mixture of red and white lead has certain advantages over either separately, which should be understood. Red lead alone gives a hard and quick-setting cement, but the red-lead putty is not very plastic, and does not cling well to the surfaces of the iron. White lead alone makes a plastic and adherent putty, but while red lead gives up a part of its oxygen to the oil, so that a red lead putty hardens all through, white lead does not yield oxygen, and a mass of white-lead putty hardens only on the surface, remaining for a long time soft in the interior. A mixture of the two substances combines the advantages of both. In kneading the putty, care should be taken not to allow iron filings or bits of dust to get into it. Where the joint is not to be exposed to heat, chalk may be added to the putty in quantities equal to that of the white lead. If the drying must be hastened, a little brown oxide of manganese, very finely ground, will help it. For hot joints, finely ground graphite, in quantity equal to the white lead, may be added, but the granite cement does not set so quickly as the lead alone. The surfaces to be joined should be even, as left by the turning-lathe or planer, but the putty will not stick well to a polished surface. Where the putty alone must support a severe pressure, as in the case of a flange-joint in a steam-pipe, it is best to strengthen it by inserting in the joint a piece of paper or felt, covered with putty on both sides, and if the joints are very rough, as in the case of flanges which have not been turned or planed, it may be best to mix some threads of hemp or flax with the putty, but care should be taken not to use too much. Where the joint is exposed to great heat, no combustible substance, such as flax or hemp, is suitable, and the best way is to cut out a piece of wire gauze, spread it thickly over with putty, and lay in the joint. It is sometimes necessary to make steam-tight joints in such a manner that they can be readily taken apart and replaced, as in the case of the man-hole of a boiler or the head of a cylinder. For making these joints the lead-putty is unsuitable, as it becomes to hard to be easily removed, and it is best to employ felt or soft paper, soaked with boiled linseed oil. If possible, sheets of such paper should be previously prepared by soaking with the oil and drying, and, when used, they should be cut to the proper shape, covered on both sides with boiled oil and laid in the joint.—*American Architect and Building News.*

CLAY EMBANKMENTS.

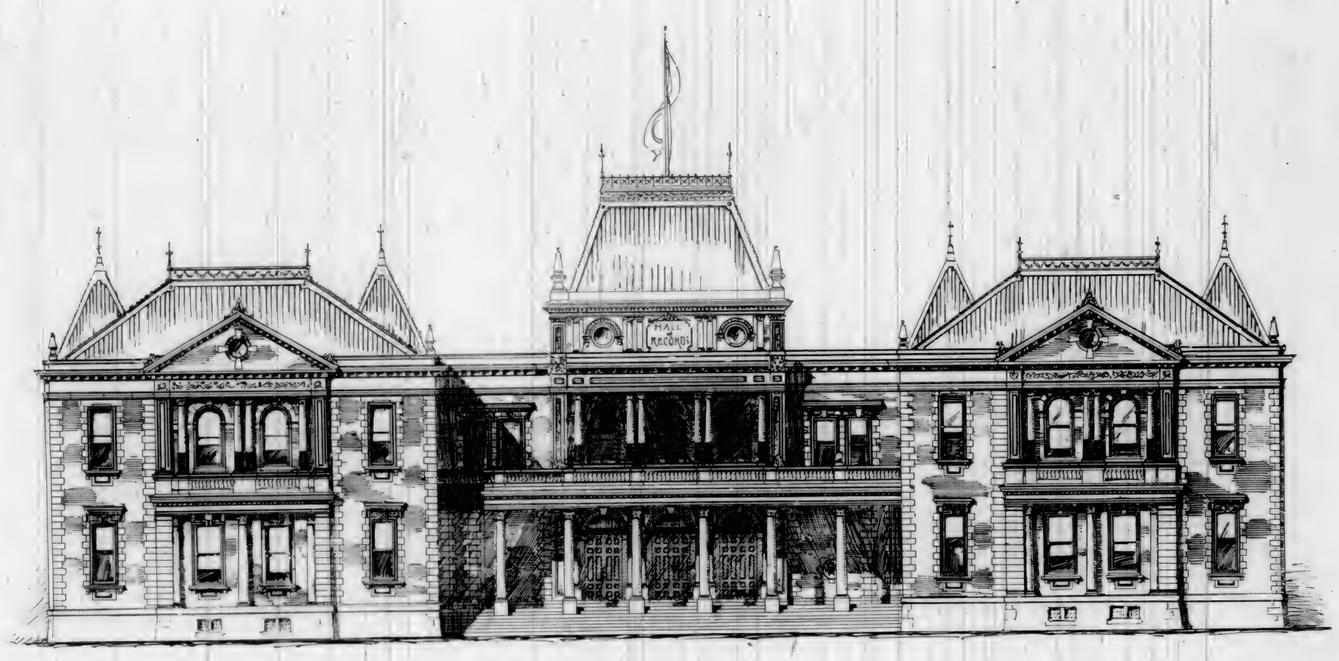
THE support of embankments, where clay forms a considerable part of the material, is a kind of mystery to the unskilled owner and builder of such embankments. In Marine County, opposite this city, for example, there are clay strata all over the slopes, and slides thus caused can be seen on every hand, so the conclusion is that clay will not stand as an embankment unless held by bulkheads of masonry or wood. The fact is, however, that clay stands very well at an angle of 45 degrees, or 1 to 1, if it is drained; but runs like mortar at 16 degrees, or 3 to 1, if saturated. It is all a question of water. No other material is so much affected by saturation. It is at the same time the best and worst material for an embankment. A range of 16 to 45 degrees between drained and undrained embankments is phenomenal. Clay embankments require drains to be placed at frequent intervals, and should have laths of wood, straw or other substance laid in, to form leading channels or perforations connecting to the drains.—*Industry.*

DRUIDIC STONES.

THE prospects seems to be that our great-grand children will know about the remains of the period known as Druidical, or megalithic, only through books, says *The American Architect and Building News*, for the actual monuments of the period are fast disappearing. The estates containing the principal collections of Druidic stones in Brittany have been bought by the Government, but no provision is made for guarding them, and ignorant and mischievous picnickers who visit them are allowed to do as they please with them. In England, the great monument of Stonehenge, which, if not so extensive as that of Carnac, is more perfect, is said to be now totally neglected by its owner. A few years ago, a man was detailed to keep order among the visitors, but this guardian is said to have been withdrawn of

COMPETITIVE DESIGN FOR

ADDITIONS to ALAMEDA RECORD-HALL.



— Elevation of Broadway front with Additional Wings —

W. J. Cuthbertson. Architect.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO LITH

VOL. XIV No 11 NOVEMBER 1893.

NEW COURT HOUSE, GLENN COUNTY, CAL.

JOHN M. CURTIS, ARCHITECT, 126 KEARNY ST. S.F.

BOARD OF SUPERVISORS. { H.C. MULEY, Chairman, D. MARKHAM, M.B. VANDERFORD, P.R. GARRETT, FRANK MILLER, W.H. BALE, Clerk.

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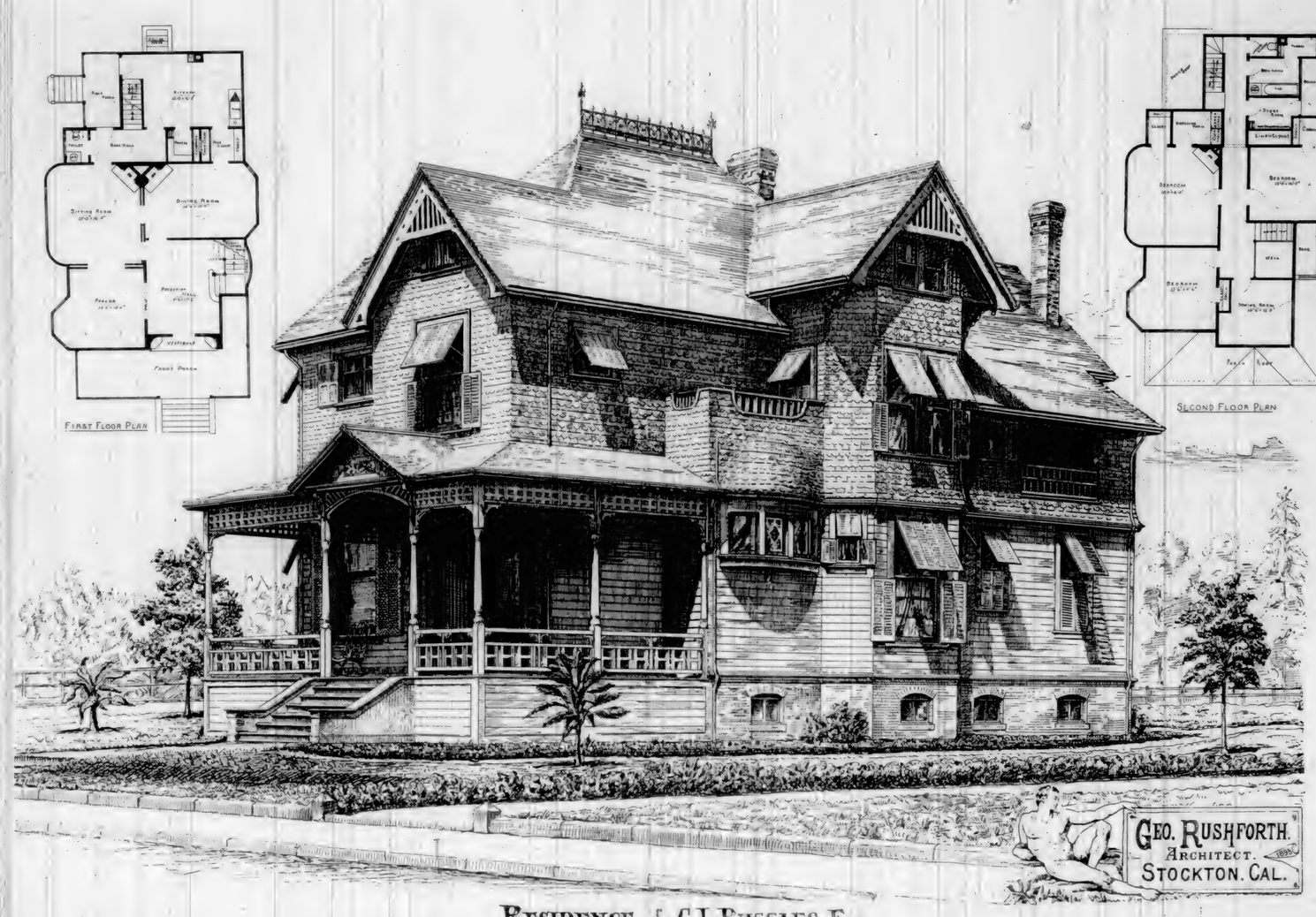

RESIDENCE of C.L. RUGGLES, Esq.
STOCKTON, CAL.

CALIFORNIA ARCHITECT & BUILDING NEWS
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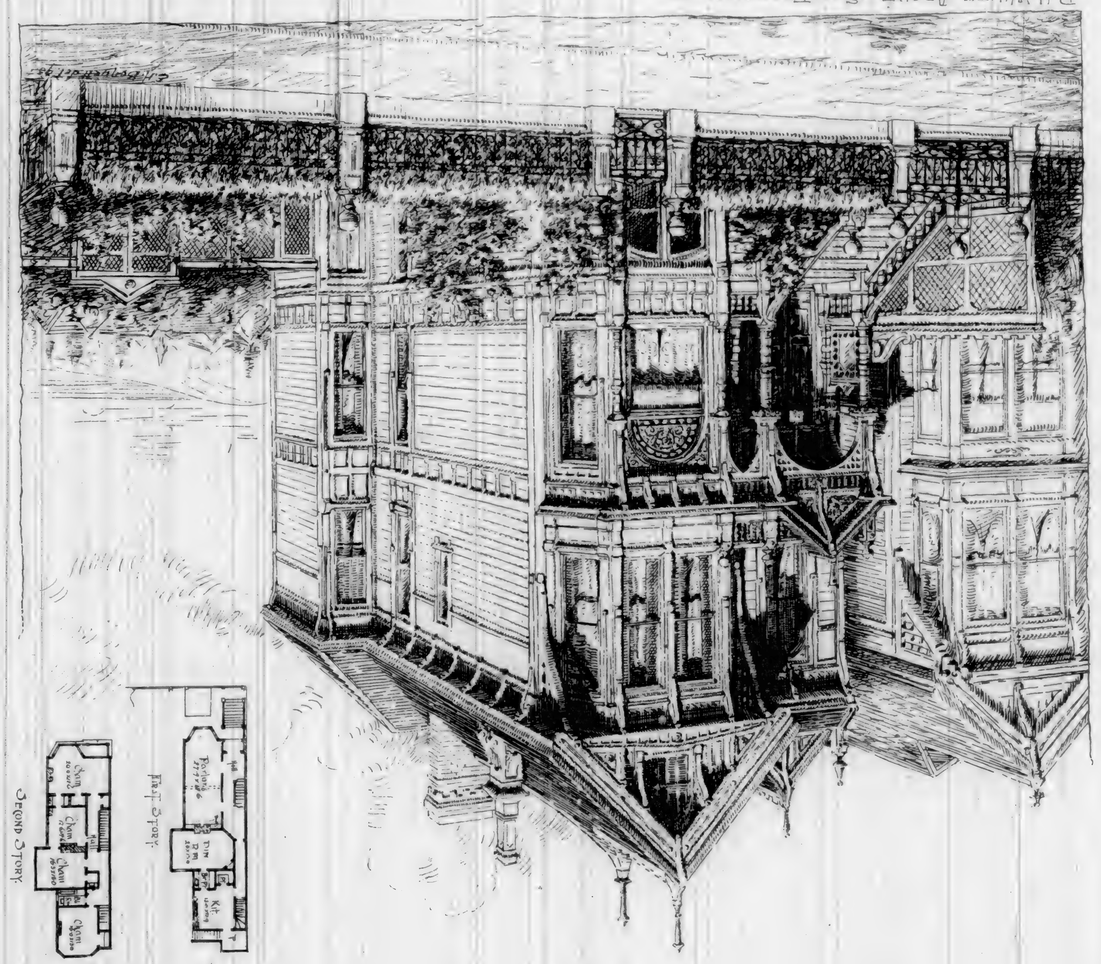
BRITTON & REY, PHOTO LITH

— R.H. White Archt. San Francisco. —



late, and there is nothing to prevent people from building fires under the granite colonnade if they wish.

If Stonehenge and Carnac are fated to disappear from the earth, at least let some effort be made, before they vanish, to find out something of their real history. It is generally agreed that, far from having been built by the Druids, they existed ages before the rise of the Druidic system, but this conclusion only makes their origin still more obscure. It is said that the huge monoliths of the inner ring at Stonehenge are of a peculiar granite, no quarry of which exists nearer than Africa. If this is true, as we suppose it is, the transportation of these great blocks indicates not only a considerable development of the arts of navigation and mechanics among the people who brought them to England, and set them up many miles from the shore, but a connection, either religious or commercial, between Africa and England, to which recorded history gives no clue whatever. It has been said that monuments of the characteristic megalithic pattern are found not only in England and northern France, the Lyonnesse of the legendary period, but in the Southern Lyonnesse, of which the city of Lyons was the capital, and from there westward, along the Mediterranean shore, through Spain. It is said, also, that in Spain and western France these monuments, instead of being scattered thickly over an extensive tract, as in the two Lyonnesse countries, are found at intervals along a certain route, but not elsewhere, as if the people who built them were, in Spain and Provence, foreigners, passing frequently along an established route, as caravans pass through Africa or Tartary, and erecting the symbols of their religion only along the road which they frequented. No mention is, however, made in history of any race trading over such a route, or of any connection between what seems to have been two great Celtic communities, and still less is any clue given to the connection between these communities and Africa. In fact, there is internal evidence that the trilitha of Stonehenge were placed in position before the pyramids of Egypt were built, and if this evidence can be relied upon, the megalithic monuments belong to a period at least two thousand years anterior to that at which the first glimmerings of European history appears. What manner of men lived in England and France two thousand years before the Trojan war we may well be curious to know, and every indication that can be compared with other indications to throw light upon the question should be studied and recorded without delay.

PAY AS YOU GO.

Our friend and colaborer, Mr. Watson of the *Engineer*, New York, when he is a line short often finishes out with a little proverb, says *Industry*, which if properly expanded would swell up and fill the column. In a late issue we find the following: "Pay as you go; if you can't pay don't go." Here in ten words is the whole scheme of human economics; the secret of failure; the key to dishonesty; and the science of human happiness. If one will stop to consider the share of human wrongs that grow out of "going without pay," what is left will be a beggarly remainder. This motto we suspect is one tacked up behind Mr. Watson's desk, he pays as he goes and makes others do so, but among the great mass of our people in this country how many follow such a rule? To do without what you cannot pay for is the great art of successful life. It is a habit of mind and practice, easy to follow when once commenced, but when the "pay" gets behind the "going," it commonly takes more than a life time to catch up.

CALICHE CEMENT.

CALICHE, the name given by the old Spanish settlers of Arizona to a sort of half rock, half clay material, proves on analysis to be a valuable geological formation and bids fair to enter the commercial arena ere long as a new cement.

The caliche lies upon the surface or very near it. It is often found from six to twenty-five feet in thickness and covers many thousands acres of surface. Whenever found it was until recently considered a decided detriment—it interfered with the cultivation of the soil, was useless for grazing purposes and produced no precious metal. In these three items were found almost the limit of Arizona's supposed resources. But not long since, samples of this peculiar "worthless" clayey rock were sent to competent chemists for analysis, with the result that this much abused caliche was declared by them to contain the proper constituents in the proportions to make the very best Portland cement. In fact the analysis indicated the same constituents in almost the same proportion as in the best English Portland cement. Some of the samples contained about twenty per cent of sand, but it is claimed that much of the material contains no sand and also that the sand can be readily eliminated.

Should the claims as at present made prove practically true the discovery is one of large importance, as the use of Portland cement is constantly and rapidly increasing and forms a large item in our imports. And if the caliche, which is so plentiful and is easily and cheaply obtained will furnish a product approximately equal to English Portland cement. it will prove a mine of wealth to Arizona, to the owners of the caliche beds and to all interested in new construction in the line of buildings, bridges, aqueducts or dams and street improvements. It would soon result in cheapening the article and also—an item of no less importance—diminish our imports of it from foreign countries, adding that much to the country's independence and the nation's wealth.—*Manufacturer and Builder.*

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PEOPLE who have driven through the Bois de Boulogne will probably remember the "Croix Catelan," which, although not a cross, but a pyramid, is supposed to have been erected about the year 1700 on the site of a memorial cross, dating from the middle of the thirteenth century. What was the person or thing commemorated by the original cross and consequently, who or what it is proper to think of in contemplating its modern substitute, has been much disputed. The favorite legend is that a troubadour, named Arnaud Catelan, loved the princess Marguerite of Provence, and, when she left the South to become the wife of King Louis the Ninth, followed her on foot, carrying with him some verses, and a few faded Provencal flowers, as a wedding gift. When he arrived in Paris, the king and queen had left their castle of the Louvre, and were making a visit to the king's native town of Poissy. The road from Paris to Poissy, though only fifteen or sixteen miles long, lay through the Bois de Boulogne, then called the Forest of La Rouvraye, which was infested with robbers, and the officers, of the castle gave Arnaud an escort, to conduct him safely through the wood. On the way, Catelan, rejoiced at being so near the end of his journey, made a confidant of the captain of his escort, and showed him the little box which, as he said mysteriously, contained treasures to be offered to the queen. The captain apparently thought that the queen had treasures enough, and that this would be an excellent opportunity for enabling her to share some of them with her subjects; so, when they reached the depths of the forest, he and his men fell upon the troubadour and slew him, and gained possession of the precious box. On opening the case, to get out the jewels which he supposed it contained, he was disgusted to find nothing in it but some sentimental verses, and a packet of dry flowers. The verses he threw away at once, but the flowers had an aromatic scent which pleased him, and he kept them to perfume his clothes on state occasions. The corpse of the poet was soon afterwards found in the wood, but there was no clue to his assassins, and a prolonged investigation revealed nothing. One day, however, Queen Marguerite held a reception, and the captain of the escort appeared to pay his respects to his sovereign. As he approached, the queen recognized the fragrance of Provencal flowers, and a suspicion came into her mind. Officers were sent to search his habitation, and more relics of the troubadour were discovered. The captain was seized, with others of the poet's escort, and they were all roasted over a slow fire, while the king and queen had a stone cross set up on the spot where the unfortunate Catelan had met his death.—*The American Architect and Building News.*

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INTERNATIONAL IRRIGATION CONGRESS.—The official Proceedings of the International Irrigation Congress, held at Los Angeles, California, October 10th to 14th, have just been issued in pamphlet form. The book contains nearly two hundred pages and embraces the Call for the Congress; the Addresses of Welcome; a List of Delegates; Permanent Organization; Address of the President; Formal Opening Address; Resolutions Introduced by Members; Addresses Delivered, (*a*) by Foreign Delegates, (*b*) by American Delegates; Principal Discussions; Address to the Country; National Executive Committee; Organization of the Committee and the Plan of Work for the next Congress.

The discussions cover a wide range of topics on irrigation subjects and the book contains matter of deep interest to all the citizens of the arid States. The proceedings are published by the Los Angeles Chamber of Commerce and extra copies can be secured by sending six five cent stamps, to cover cost of printing and postage, to Fred. L. Allen, Secretary International Irrigation Congress, Los Angeles, California.

MANUAL OF MODERN SURVEYING INSTRUMENTS and their uses, containing useful information for the civil engineer and surveyor, together with a catalogue and price list of scientific instruments, particularly those of the civil engineer and surveyor, made by The A. Lietz Co., 422 Sacramento street. Price fifty cents. This handsome manuel well printed and illustrated should be in the hands of every civil engineer.

A. A. GRIFFING IRON COMPANY'S CATALOGUE has been received, it contains a fine line of steam and hot water heating apparatus. The well known Bundy Radiators are manufactured by this firm. Architects, steam fitters and engineers are invited to apply for copies of this work, which are distributed free to parties interested in the above subjects.

Address 15 Dey street, New York.

REPORT OF THE PARK COMMISSIONERS. The twenty-second annual report for the year ending June 30th, 1893, is at hand, thanks to the kindness of Mr. W. W. Stow, Chairman of the Board of Park Commissioners.

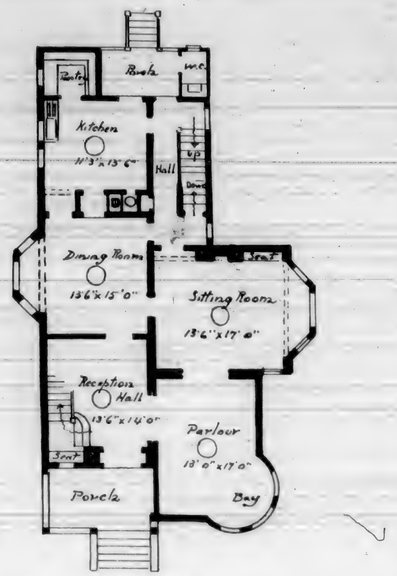
Never since the commencement of work upon the Park has so much been done as in the last year, in the way of improvements of an interesting nature—what with the lake, the waterfall and bridges, to say nothing of the general improvement along the whole line, it must be confessed that the present Commissioners have the knack of making a little money go a long way.

LIPPINCOTT'S MAGAZINE for November, 1893. The complete novel in the November number of Lippincotts is "An Unsatisfactory Lover," by Mrs. Hungerford. It tells in charming manner of an inauspicious wooing and an interrupted courtship, which ends well after all.

THE PHOTOGRAPHIC TIMES announces a Christmas number that will surpass any thing it has yet attempted. The list of the articles that will appear, promises a great diversity of interesting matter, that will be duly enjoyed by both professional and amateur.

RESIDENCE OF MR. WM. FROHLING, SAN JOSE. ARCHITECT W. D. VAN SICLIN.

THE DISPOSAL OF HOUSEHOLD WASTES.—We have here in small compass and at small cost a work by William Paul Gerhard C. E., Consulting Engineer for Sanitary Works, New York, valuable alike to the engineer, and householder, in fact to everyone interested in the promotion of good health and cleanliness; writen in so unpretentious a style and devoid of technicalities that cannot fail to impress the reader that the author understands what he wants to say and knows how to say it in a few words and right to the point—the title page may be given as a sample of what the book is "A discussion of the best methods of treatment of the sewage of Farm Houses, Isolated Country Houses, Suburban Dwellings, houses in villages and smaller towns, and of larges institutions, such as hospitals, asylums, hotels, prisons, colleges, etc., and of the modes of removal and disposal of garbage, ashes and other solid house refuse." Published by D. Van Nostrand Co., New York, for sale by Osborn & Alexander, price fifty cents.



FIRST FLOOR PLAN.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

OPENINGS FOR WINDOWS IN PARTY WALLS.—The owner of land, in building a party wall, partly on his own land, and partly on that of an adjoining owner, has no right, against objections of the adjoining owner, to leave openings for windows therein, to be used until such time as the adjoining owner shall build.

Normile v. Gill, Supreme Judicial Court of Mass. 34 N. E. Rep. 543. 51.

MECHANICS' LIENS ON BUILDING LOTS.—Under the statute giving a mechanics' lien to any person who shall perform labor in altering or repairing any building or building lot, a lien may be had on building lots for grading. A suit to enforce a lien may be maintained though an action is pending for the claim, for which the lien was filed, and for damages for breach of the contract under which the services were rendered.

Raven v. Smith, Supreme Court of N. Y. 24 N. Y. Supp. 601.

LIABILITY OF OWNER FOR NEGLIGENCE OF CONTRACTOR.—Where the owner of premises, whose duty it is to keep the same in repair, contracts with a third person to make the necessary repairs, and he fails to make them, the owner is liable for injuries resulting from the defective condition of the premises, though such third person was an independent contractor.

Brennan v. Ellis, Supreme Court of N. Y. 24 N. Y. Supp. 426. 58.

INTERPRETATION OF CONTRACT.—Where a contractor proposes to contractors to excavate a trench of certain dimensions, under water for a specified sum, the material dredged to be deposited in shore so as not to interfere with said trench, and the latter simply accept the offer, it is not the duty of the contractors to furnish such shore as a place of deposit, and the sub-contractor is not justified in abandoning the contract because the shore inspector prevented him from depositing such material thereon.

Cronin v. Tebo, Supreme Court of N. Y. 24 N. Y. Supp. 644. 82.

PAYMENT OF BUILDING EXPENSES ON ARCHITECT'S CERTIFICATE.—A provision in a building contract for the payment of the builder only on certificates of the architects that payments are due, will not prevent recovery by the builder, when he has fully performed the contract, and the architects refuse their certificates without sufficient cause.

Van Keuren v. Miller, Supreme Court of N. Y. 24 N. Y. Supp. 580. 51.

ENFORCEMENT OF MECHANICS' LIEN IN EQUITY.—The code of 1886, providing that a mechanics' lien may be enforced by bill in equity if the amount involved exceeds $100, is not in conflict with the act giving the circuit court jurisdiction of action to enforce liens of that amount, as there is no inconsistency in giving a remedy in law and one in equity; and the former section is not affected by a section of the latter act, providing for the repeal of all laws in conflict with its provisions.

Colby v. M. E. Church, Supreme Court of Alameda, 13 So. Rep. 515. 90.

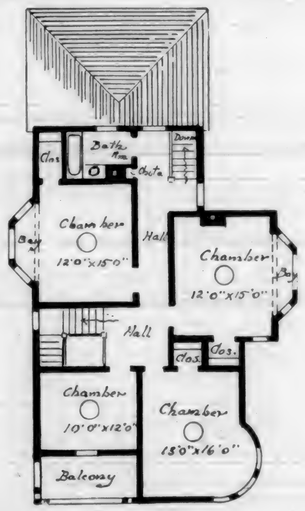
MECHANIC'S LIENS ON HOMESTEAD.—A purchase by a married woman, with the proceeds of the sale of her former homestead, of an unimproved lot, with the avowed purpose of making it the homestead of herself and husband, followed immediately with a contract with a builder for the erection of a dwelling house thereon, is sufficient to constitute the same a homestead; and a material man, who, with knowledge of these facts, furnishes lumber under a verbal contract, to be used in the erection of the dwelling, acquires no lien on the property superior to the homestead exemption.

Cameron v. Gebhard, Supreme Court of Texas, 22 S. W. Rep. 1033. 103.

RIGHTS OF SURETY ON CONTRACTS WHEN ABANDONED BY CONTRACTOR.—Where the surety of a contractor completes the building pursuant to the contract, after abandonment thereof by the contractor, he is entitled to recover from the owner the amount of the contract price, less the amount paid the contractor prior to the abandonment. Where the owner of the building failed to declare the contract forfeited, on its abandonment by the contractor, but permitted the surety to complete the building pursuant to the contract, the surety is entitled to costs in an action against the owner to recover a balance due thereon.

Board of Education of Waterford v. First Nat. Bank of Richfield Springs, Supreme Court of N. Y. 24 N. Y. Supp. 392. 99.

ARCHITECTS CANNOT RECOVER FOR PLANS ACCOMPANYING BIDS.—The mere fact that valuable services are rendered does not raise a liability on the part of him for whom they were rendered, even though at his request, if the circumstances are such as to rebut the inference that compensation was expected to be received or paid; therefore, when the service is performed out of motives of kindness, or in the expectation of a possible benefit to result to the person performing it, in the absence of an express contract, no implied contract can be raised. In the case of architects putting in bids for the construction of buildings, or of engineers for the construction of bridges or other works, and including plans and specifications, unless the parties calling for bids expressly agree to pay for such plans and estimates there can be no contract or promise to pay for them implied, for there is nothing in the circumstances that show that pay was expected to be received or given, except through the possible benefit to the parties performing the service in the acceptance of their bids. Such services are regarded as purely voluntary and gratuitous, unless the plans furnished are made use of, in which event, from their adoption or use, a promise to pay their value would be implied, unless it was provided in the call for bids that such plans or parts of plans might be used gratuitously. 238.



SECOND FLOOR PLAN.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Geo. H. Sanders, Pres. W. J. Cuthbertson, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

GRAPHITE—ITS USES AND DURABILITY AS A PAINT.

An address by John A. Walker, Vice-President of the Joseph Dixon Crucible Co., delivered before the convention of the Master Painters' Association, held July 12th and 13th at Jersey City, N. J.:

"Mr. President and Gentlemen of the Master Painters' Association of New Jersey: I appreciate the honor of this occasion, and have some deference in speaking, as I do at this time, on the subject of paint, after the mode of bringing coals to Newcastle. Possibly every one of you, if you are worthy of the title of master painters, know as much about the subject as I do. Graphite paint is about thirty years old. About thirty years ago graphite was found by some prospectors in the rocks of Ticonderoga, near Lake George. At that time there was formed the agreement of the Graphite Company, and this company was formed exclusively and specifically for the purpose, at that time, of making graphite paint, and this was about twenty-eight or thirty years ago. I saw, two weeks ago, on a visit to Ticonderoga, a piece of machinery lying there that had been painted twenty-three years ago with some paint in an off-hand way, and, except for abrasion made by rubbing against another piece of machinery, to all observation the result of the paint was just as good as it was a dozen years ago.

In the early days, while making their experiments there, certain roofs were painted in the village of Ticonderoga, and observation of the roofs shows they are intact to-day.

Graphite itself is one of the forms of carbon. Charcoal is another carbon form, and the diamond is still another. Graphite has a large number of peculiar qualities. In the first place the graphite itself will stand any change of temperature; it doesn't make any difference how cold the cold is or how hot the heat, the flake of carbon is inert, and suffers no change at either extreme of the temperature. And again, it is indestructable and inert, so that the strongest acids have no effect on it. You can put a piece of graphite in any dilute acid, and after awhile remove it, and you will find no harm has taken place. It is there in its original form, and has not given up any of its properties. The entire piece has remained intact and impervious to that powerful and destructive solution. Made up in this way it has proved to be one of the most valuable of the recent additions to the lines of pigments. It is found in a good many quarters of the globe. The most productive deposits are in the island of Ceylon. The graphite that comes from there is almost all foliated graphite; the flakes come in a granulated form, and these two specimens are the forms of the element as it comes from the island. The largest quantity of graphite used comes from that island. Next in rank as to source of production come Ticonderoga. There is a third source of graphite in the kingdom of Bavaria, in Germany, where a large quantity of amorphous graphite is found mixed with clay and other kinds of minerals, and so intimately mingled that it cannot be separated. The Ticonderoga quartz interposes no difficulty in this respect.

Outside of these three places, graphite is found in Canada; but these deposits have not, or, at least, not very largely, been developed or explored, so no considerable output has come from that territory yet. All over the South specimens have been found, but none of these occurences have proven to have merchantable value. Nine-tenths of all these that have come, so far have been of the amphorous form, in which the impurities could not be separated, so that the debris and graphite have to be ground down together, giving uncertain results.

It occured to the people who had charge at Ticonderoga to work that material up into a paint; but other ideas took up the company's time, and this became a tradition, and that branch of the business was not followed out. Later on, within the last ten years, the graphite paint has been largely manufactured. It has been made a specialty, and its manufacture has been made the subject of careful study. The paint, so far as experience and knowledge of the manufacture goes, has been very useful as applied to roofs, to all classes of bridges, smoke-stacks, boiler fronts, gas holders, machinery in sugar and paper factories, where acids are used in the work. The graphite has proved to be the best anti-acid pigment that could be placed on them, and so on through the line of outdoor iron-work and electric-light poles; and shingle roofs, some remarkable results have been ascertained. Some years ago a Boston and Colorado smelting company, with their works at Argo, in the neighborhood of Eldorado, had their large plant, which was a quarter of a mile long, covered with a corrugated iron roof, and five hundred fires were blazing away within. As the acid rose, the roof was affected, and it was not a great while before it became honeycombed, and it meant protection or a new roof. These people saw some account of the graphite paint and its characteristics in that direction, and they wrote on the subject, received the information desired, and had the roofs painted with graphite paint. Since then those roofs have remained intact, and the only thing that has happened to them in the last fifteen years has been a new coat of paint. The graphite paint was successful in defending the before-victorious attack of the acid fumes. If I recollect, at the convention at Harrisburg last year some statements were made by a man there who had taken observations of roofs, oil-painted, that lasted six to eight years without rusting, and another made a statement of a roof that lasted from ten to twelve years without rusting. Of course we all know that linseed oil is presumably the best vehicle with which to convey the pigment. There may be something better in the future, but up to date the linseed oil is the best vehicle. Mineral oxides, and that class of pigments, are ground down to a powder and deposit themselves on a surface; graphite preserves its flaky character in powder form, so that by the overlapping of these a very thorough covering of the surfaces to be protected is assured. There are a good many qualities to the paint that appear in an off-hand way. Concerning the durability of graphite, there are innumerable testimonials on record in its favor. There is, to my knowledge, a boiler front which was painted in 1885, on Thanksgiving afternoon, and it has not since been repainted, and is in good condition. I remarked to the attendant, or stoker, that the front looked as if it had been repainted recently, but he answered that nothing was done to it since 1885, and he had kept a waste rag, and when the paint got dull he would rub it up with black lead and some oil. The high quality of the paint is shown by its ability to stand the wear and tear of a boiler front, and remain thus, after the lapse of eight years, almost as good as it was the first year.

This is about the sum and substance of graphite paint. There is no doubt it will figure more prominently in the future than it has in the past. One of the handicaps it must bear is the color. Of course, being made of a black pigment, its colors are largely somber. When it comes in its natural form it has a tinge of a natural slate. It can be covered with other materials so that it will become a jet black. Experiments have been recently made by which, by blending other materials, light green and dark green are added to the color; also dark brown and dark red, which will be very likely to produce a good effect.

With one little incident I will close. Some three years ago the iron for the elevated road was made at the Pencoyd Iron Works. The iron for the whole structure was brought to Jersey City and lay there. The work was commenced, and in two months the structure was completed; but six months elapsed before they commenced to operate the road. It had been painted with a mineral paint, and was rusty from top to bottom, and it was necessary to take the rust off. You could pull it off in scales. This work was hurriedly put through by the painters, and the result was when the north and south tracks were up a year they were both painted with graphite paint. With the engineer, Mr. Brooks, I walked the track down to the train shed, and there was not a place on the one side of the track where one could put a knife blade, whereas, on the other side, where it had been painted and not carefully scraped off, and not carefully prepared, the painting was more or less imperfect, and there were large pieces and flakes that came off. The engineer and I went up and down the track, and saw the paint on one side and the blisters on the other side, and he was frank enough to admit that the difficulty lay, not in the paint, but in the application of the paint. The paint as it stood on the south tract stands there to-day, a living evidence of the durability of graphite.—*Manufacturer and Builder.*

BUSINESS MOSAICS.

Among the awards of the World's Fair at Chicago none were more appropriate and deserved, than that to The Bostwick Steel Lath Company of Niles, Ohio, who were awarded the only medal and diploma for Fire-Proof Steel Lath—this lath is too well known to the architects of this coast to need any endorsement of ours, but it is handy to know that Smith & Young, 727 Market street are the agents for the Bostwick Steel Lath Company.

Mr. Flipp—"We havn't see so much of you since your return from the seaside." Miss Dipp—Oh, wait until the opera season opens; you'll see quite as much of me then—perhaps more."—*Town Topics.*

Joseph Budde should not be overlooked when hunting for Sanitary Appliances that are sure to give satisfaction. Householders should not forget the fact that they encourage home industry, at the same time derive the benefit of having a healthy house, with no bad air, when the popular Golden Gate Patent Water Closet is used. A word to the wise is enough.

Farmer's Boy—"There's goin' to be a minstrel show in Pinkington next week. Can I—"

Old Hayseed—"Gee whittaker. It ain't a month sence you went to the top of the hill to see the 'clipse of the moon. D'ye wanter be always on the go?"—*Puck.*

Light Gray Granite in all forms from the Eureka Granite Works in Rocklin, Placer Co., Cal., can be ordered from the agent, E. H. Burrell, 408 California St., room 16—this granite is so well known and like good wine requires no bush.

Young Husband—"Humph! Muddy coffey again, I see." Young wife—Yes; and if you were half the man I thought you were, you would make the city authorities clean the reservoir.—*New York Weekly.*

Coppieters & Mockel, manufacturers of Art Metal novelties in wrought iron, copper and brass, those who intend to prepare a handsome display of their goods in honor of our coming Midwinter Fair, cannot do better than give them a call and order their show windows put in good shape. You will find the works at 23 Jessie street, San Francisco.

Antinonnin—This useful substance is bound to become in favor with the architects on this coast, as it has already, with many architects and builders in the east, as well as in Europe—a preventative of mildew, a preservative of timber, and what the good housekeeper will consider a boon—sure death for fleas. A full description of this new substance will be forwarded on application to W. H. Schieffelin & Co., New York.

Amelia—"Swear not by the moon, the inconstant moon." Augustus—"Then what shall I swear by?" "Swear by that which you hold invaluable; something which is dearer to you than all things else; something that you cannot live without." "Then, Amelia, I love you! I swear it by my salary."—*New York Weekly.*

California Fire Apparatus Works—If you want to reduce your insurance, have packing boxes that never leak and always ready for duty under full pressure of water, call upon W. T. Y. Schenck, 222 and 224 Market street and examine Schenck's Swinging Hose Reel, sold only with the hose, the couplings and hose pipe complete and fully guaranteed.

Tommy (reading)—Here's somthing about a new organ with a hundred stops. Do all organs have stops, papa?" Papa—"Yes, my son, with one exception—your dear mother's organ of speech?"

An exchange editorially endorses in the following words the Pullman Sash Balance:—"The product is all and more than is claimed for it. It is mechanically perfect and accomplishes the desired result in every particular. It is correct in theory and admirable in practical use, satisfactorily fulfilling every demand and requirement. In all respect it is beyond criticism in point of workmanship, superiority of finish, ease of operation, and last but not least, highest durability."

While the Pullman Sash Balance is daily growing in favor with our builders in this vicinity, which fact is proved by the number of jobbing houses in this city that supply the demand, it is pleasing to call attention to the opinion of our eastern friends, to a contrivance that has found such favor with our own people.

CITY BUILDING NEWS.

Belvedere near Waller. To build; owner, Mrs. A. L. Ryder; contractors, White Bros.; signed, Nov. 1; filed, Nov. 1; cost $3,000.

Block bounded by Point Lobos, 5th and 6th avenues and A street. Carpenter, mill work, etc.; owners, La Societe de Benfaisance Mutuelle; architects, Mooser & Goustiaux; contractor, Alex. L. Campbell; signed, Oct. 17; filed, Oct. 18; cost $15,500.

Block bounded by Point Lobos, 5th and 6th avenues and A street. Painting; owners, La Societe de Benfaisance Mutuelle; architects, Mooser & Goustiaux; contractor, J. F. Sullivan; signed, Oct. 17; filed, Oct. 18; cost $3,075.

Block bounded by Point Lobos avenues and A street. Electric bells, etc.; owners, La Societe Francaise de Benefaisance; architects, Mooser & Goustiaux; contractor, Lat. E. Allen; signed, Oct. 17; filed, Oct. 18; cost $375.

Block bounded by Point Lobos, 5th and 6th avenues and A street. Plumbing, gas fitting, tiling, marble, sewers and sewerage; owners, La Societe Francaise de Benfaisance Mutuelle; architects, Mooser & Goustiaux; contractors, S. Ickelheimer & Bros. signed, Oct. 18; filed, Oct. 18; cost $9110

Block bounded by Point Lobos, 5th and 6th avenues and A street. Brick work, cement, plastering and cast iron work; owners, La Societe Francaise de Benfaisance Mutuelle; architects, Mooser & Goustiaux; contractors, Worrell & Miller; signed, Oct. 17; filed, Oct. 18; cost $47,039.

Block bounded by Point Lobos, 5th and 6th avenues and A street. Excavating, concrete, artificial stone work and cementing; owners, La Societe Francaise de Benfaisance Mutuelle; architects, Mooser & Goustiaux; contractors, Feeney Bros.; signed, Oct. 17; filed, Oct. 18; cost $25,855.

Brannan near 2d. Excavating, concrete, etc., and alterations; owner, Del Monte Milling Co.; contractor, Casper Zwierlein; signed, Oct. 24; filed, Oct. 27; cost $1575.

Bush and Larkin. Plumbing, etc.; owners, Olympic Salt Water Co.; architect D. Ernest Melliss, engineer; contractors, Duffy Bros.; signed, Oct. 20; filed, Oct. 20; cost $9,300.

Bush and Gough. Marble work; owners, Trinity Church; architect, A. Page Brown; contractors, W. W. Montague & Co.; signed, Oct. 27; filed, Oct. 31st; cost $3,000.

Bush and Gough. Pews, etc.; owner, Trinity Church; architect, A. Page Brown; contractors, Fink & Schindler; signed, Oct. 27; filed, Oct. 31; cost $4,500.

California near Drum. Concrete, marble and iron work; owner, Luning Co.; architects, Coxhead & Coxhead; contractors, Rullino & Bianchi; signed, Oct. 5; filed, Oct. 18; cost $3271.50.

Capp near 23rd. All excavation and work to build; owner, F. Gries; architects, Martens & Coffey; contractors, Schutt & Krecker; signed, Oct. 16; filed, Oct. 17; cost $4600.

Capp near 22d. All work to build; owner, John Fitzgerald; architect, M. J. Welsh; contractors, R. Doyle & Son; signed, Oct. 23; filed, Oct. 24; cost $3,379.

Clement near 6th Ave. One story frame; owner, Floyd J. Mynard; architect, James Mix; contractor, Robert Murray; signed, Oct. 27; filed, Oct. 28; cost $1199.

Eighteenth and Castro. To build, except painting and gas-fitting; owner, C. Reusche; architect, Emil John; contractor, W. A. Muller; signed, Oct. 26; filed, Nov. 1; cost $3,825.

Fell near Steiner. To build; owner, Nathan Cohn; architects, Pissis & Moore; contractors, Roundtree Bros.; signed, Oct. 26; filed, Oct. 31; cost $5474.

Fifth Ave. near Fulton. Two-story frame; owner, Mary Rakeman; contractors, Home Building Co.; signed, Oct. 20; filed, Oct. 23; cost $2350.

Fifteenth near Howard. To build; owner, F. N. Neavol; architect, Chas. M. Rousseau; contractor, Geo. R. Breese; signed, Oct. 20; filed, Oct. 23; cost $975.

Fourth near Folsom. Excavating and building; owner, John Demartini; architect, Wm. Mooser; contractor, John J. Dunn; signed, Oct. 11; filed, Oct. 13; cost $5,000.

Folsom near 22d. Two-story frame engine house; architects, Henriksen & Mahoney; contractors, R. Doyle & Son; signed, Oct. 4; filed, Oct. 20; cost $6249.

Folsom near 13th. Alterations and additions; owner, James O. Manlon; architects, Shea & Shea; contractors, Conton Bros.; signed, Oct. 30; filed, Nov. 1; cost $1,920.

Florida near 25th. Additions and alterations; owner, Edward Fennsesey; architect, T. J. Welsh; contractors, Wm. Schaffeld & Son; signed, Nov. 3; filed; Nov. 9; cost $1,247.

Golden Gate Park. To build; owners, Chinese Midwinter Fair Co.; architects, Martens & Coffey; contractor, R. M. Murry; signed, Nov. 4; filed, Nov. 10; cost $12,800.

Golden Gate Park. Administration building owner, Ex. Com. Cala. Midwinter Fair; architect, A. Page Brown; contractor, A. P. Antonelli; signed, Oct. 18; filed, Oct. 23; cost $30,474.

Golden Gate Park. Chocolate Cafe; owner, Johnson, Lock Mercantile Co.; architect, Samuel Newsom; contractor, Richmond Sinnott; signed, Oct. 24; filed, Oct. 28; cost $2700.

Gough and Vallejo. Painting; owner, L. P. Barnard; contractor, W. R. Eaton; signed, Oct. 19; filed, Oct. 23; cost $1190.

Guerrero near 19th. Two-story frame and one-story frame stable; owners, Thomas and Alice Flinn; architect, Chas. J. I. Devlin; contractor, R. O. Davis; signed, Oct. 10; filed, Oct. 12; cost $2850.

Hattie bet. 17th and 18th. Raising a one-story cottage to make two-story flats; owner, Margaret O'Conner; contractors, Douglass & O'Conner; signed, Oct. 25; filed, Oct. 27; cost $1150.

Hayes near Webster. To build; owners, Otto and Emily Friendlander; architect, H. Gilfuss; contractors, Schutt & Krecker; signed, Oct. 17; filed, Oct. 17; cost $6200.

Hayes and Lyon. Plumbing and gas service, etc. owner, I. V. Tadich; architect, T. J. Welsh; contractor, G. C. Sweeney; signed, Oct. 14; filed, Oct. 20; cost $1088.

Kentucky bet. Solano and Butte. Carpenter work, plumbing, painting, etc.; owner, Matthew Lunner; contractor, Edward Mooney; signed, Oct. 16; filed, Nov. 1; cost $2,565.

Lott near McAllister. Two-story frame; owner, Mary I. Coddington; contractor, W. W. Redneil; signed, Oct. 20; filed, Oct. 20; cost $5500.

McAllister near Jones. Brick and iron work; owners, Katherine Adam and Eliza Kibbe; architect, Julius E. Krafft; contractor, D. J. Brenan; signed, Sept. 15; filed, Oct. 16; cost $5500.

McAllister near Jones. Painting, graining, varnishing and finishing two-story brick; owners, Katherine, Adam and Eliza Kibbe; architect, Julius Kraft; contractor, J. H. Killer; signed, Oct. 18; filed, Oct. 21; cost $1100.

McAllister near Jones. Lathing and plastering; owners, K., A. and E. Kibbe; architect, Julius Kraft; contractor, T. Murphy; signed, Sept. 15; filed, Oct. 16; cost $2550.

McAllister near Jones. Plumbing, etc.; owners, K., A. and E. Kibbe; architect, Julius Kraft; contractor, Jas. E. Britt; signed, Sept. 15; filed, Oct. 16; cost $2483.

Mason near O'Farrell. To build; owner, Marten O'Dea; architect, Chas. I. Havens; contractor, John Furness; signed, Nov. 8; filed, Nov. 8; cost $6,700.

Oak near Devisadero. To build; owners, City and County of S. F.; architects, Henriksen & Mahoney; contractors, D. Doyle & Son; signed, Oct. 4; filed, Oct. 20; cost $5405.

O'Farrell near Webster. Three-story frame; owner, Solomon Michael; architect, A. J. Barnett; contractors, Peterson & Olson; signed, Oct. 18; filed, Oct. 19; cost $5000.

O'Farrell near Octavia. Masonry, etc.; owner, Geo. Haas; architect, J. H. Littlefield; contractor, Jos. Kennedy; signed, Nov. 6; filed, Nov. 7; cost $7,283.

O'Farrell near Octavia. Sewerage, etc.; owner, Geo. Haas; architect, J. H. Littlefield; contractor, G. C. Sweeney; signed, Nov. 6; filed, Nov. 7; cost $1079.

O'Farrell near Octavia. Painting, etc.; owner, Geo. Haas; architect, J. H. Littlefield; contractor, Gus. N. Daniels; signed, Nov. 6; filed, Nov. 7; cost $314.

O'Farrell near Octavia. Artificial stone; owner, Geo. Hass; architect J. H. Littlefield; contractor, F. W. Schalike; signed, Nov. 6; filed, Nov. 7; cost $406.

Page near Cole. One-story frame with brick foundation; owner, J. F. Sarber; architect, W. H. Lillie; contractor, R. M. Murray; signed, Oct. 12; filed, Oct. 14; cost $1035.

Pacific Rolling Mills. Owner, Pacific Rolling Mill Co.; architect, Patrick Noble; contractors, Healy, Tibbetts & Co.; signed, Oct. 25; filed, Nov. 6; cost $6.75 for each pile driven.

Post and Leavenworth. Brickwork, etc.; owners, San Francisco Verein Ass. architects, Saffield & Kohlberg; contractor, Adam Beck; signed, Nov. 7; filed, Nov. 9; cost $18,796.

Post and Powell. Carpenter work, etc.; owner, Mrs. A. M. Parrott; architects, Pississ & Moore; contractor, F. W. Kern; signed, Oct. 26; filed, Nov. 1; cost $34,500.

Post and Powell. Cast iron work; owner, Mrs. A. M. Parrott; architects, Pississ & Moore; contractors, O'Connell & Lewis; signed, Oct. 27; filed, Nov. 1; cost $8,500.

Post near Stockton. Brick building; owner, V. Menesino; architect, Chas. R. Wilson; contractors, Leibert & Hoffman; signed, Nov. 1; filed, Nov. 4; cost $5,849.

Post near Stockton. Excavation, etc.; owner, V. Menesino; architect, Chas. R. Wilson; contractor, W. T. Ambrose; signed, Oct. 13; filed, Oct. 17; cost $1770.

Post and Powell. Grading and trenching; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, J. I. Rauer; signed, Oct. 20; filed, Oct. 20; cost $1275.

Strawberry Hill in Golden Gate Park. One-story and attic boat house; owners Golden Gate Park Commissioners; contractor, Geo. H. Walker; signed, Oct. 10; filed, Oct. 14; cost $994l.

Twenty-third near Hampshire. Four two-story frames; owner, Peter Kelly; architect, Wm. H. Armitage; contractor, Geo. Weismann; signed, Oct. 26; filed, Oct. 28; cost $5100.

Union bet. Octavia and Laguna. Two-story frame, alterations; owner, F. G. Bacigolupe or T. N. G. Bacigolupi; architects, Chas. Beasley and Son; contractor, Devoto & Sunder; signed, Oct. 3; filed, Oct. 13; cost $4400.

Washington near Baker. Two-story frame engine house; owner, City and County of S. F.; architects, Henriksen & Mahoney; contractor, W. S. Wickersham; signed, Oct. 4; filed, Oct. 25; cost $4880.

Webster near Pine. Carpenter, etc.; owner, Jacob Clauss; architect, Wm. H. Wharff; contractors, Brobeck & Hickox; signed, Nov. 7; filed, Nov. 7; cost $1851.

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1 Column	12 50	35 00	65 00	125 00
¼ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

ESTABLISHED 1879. - - - INCORPORATED 1889
NOW IN THE FOURTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

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THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

SINCE work was begun in September on the exhibition buildings for the California Midwinter Fair, up to the date of this writing, there has not been more than two or three days when the weather interfered with the progress of the work, on the contrary the clerk of the weather has been very favorably disposed, and has granted every requirement to the busy workers, who are now completing a veritable city where naught but barren sand hills existed three months ago.

THE ever recurring troubles of the unemployed are again claiming the attention of the public, not only in this State, but through the entire country and Europe. The distress is general and widespread, without taking into consideration the tramp, and the discontented element that continually looks for work without the desire to find it.

Governments that boast of their advanced state of civilization, and yet have provided no means for the suppression of the tramp nuisance, and no remedy for the voluntary or involuntary idleness of its destitute citizens, both evils that threaten to become menacing dangers to the peaceful existance of society, have certainly failed to satisfactorily solve one of the most important questions they were organized to deal with; for the existance of masses of idle discontented human beings, is a continual threat to the peace and quiet of the social fabric. Society as it becomes more complex, presents ever increasing difficulties to the unemployed to secure remunerative employment. The continuous struggle that exists between the majority of employers and the majority of employees, has a tendency to reduce wages in times of depression, without a correspondingly great tendency to increase them in times of plenty.

Now it is self evident that a danger to society becomes apparent when the rate of wages falls to the point where

they are too small to supply the necessaries of life; and also self evident that in a well regulated social state there should be no valid excuse for idleness and destitution; when the oppression of the upper classes becomes to severe to be borne, the masses overturn the existing state, and seek to inaugurate a better; but they fail from ignorance, where their rulers failed from greed. Before the case comes to this crisis; it is well to look into the matter, and endeavor to find a satisfactory solution of the problem.

In studying the question these two facts are brought to the attention of the student with great distinctness.

First—There is a certain amount of idle labor that seeks employment.

Second—There is ever an immense amount of work that needs to be done to satisfy the wants and increase the ease, comfort and enjoyment of society, both individually and collectively.

As long as these two conditions exist (and they always will exist) it simply remains to find the most advantageous way of making them neutralize each other. As long as the efforts of individuals are sufficient for the accomplishment of this object, well and good; when individual efforts becomes insufficient, it is time the collective efforts of the individual, that is to say the government, should step in and by appropriate legislation supply the deficiency. How this may best be accomplished is not an easy question to satisfactorily answer; we shall make some suggestions in a future article.

THE Executive Committee of the American Foresty Association, report that the work of the association is at last beginning to be effective.

Not only has the policy of reserving public timber land for forestry purposes, established by the last Administration, been recognized by the present Administration—in reserving some 4,500,000 acres more (the Cascade Range and Ashland Timber Reserves in Oregon), making the total acreage in forest reservations nearly 18,000,000—but there is ground for hope that some rational legislation for protecting and utilizing these reserves may be enacted, thanks to the warm interest and energetic work of the Hon. Thos. C. McRae, of Askansas, Chairman of Public Lands Committee.

BEQUESTS FOR A HOSPITAL.

A notable instance of private generosity for philanthropic purposes is brought to light by the filing for probate the will of the late Mrs. Kate Johnson.

The full third of her estate, the entire amount allowed by law for charitable purposes, has been bequested for the erection, endowment and maintenance of a free hospital for all sick women and children, without regard to religion, nationality or color.

In the petition for the probate of the will the value of the estate is given nominally as $1,000,000, and its income at $4,500 per month, but the real value will probably approximate $2,000,000, so the one-third bequested to the free hospital will not fall far short of $700,000.

The clause in the will having particular reference to the proposed hospital is as follows:

I give devise and bequeath to Archbishop Patrick W. Riordan of San Francisco, California, all my pictures and valuable bibelots; also all that certain real property situate in the city and county of San Francisco, state of California, and described as follows, to wit: Horner's addition blocks numbered 173 and 174, bounded on the north by Twenty-ninth street, on the east by Castro street, on the south by Thirtieth street and on the west by Diamond street; also, my new warehouse known and designated as the Gibraltar Warehouse and the lot on which the same is situated at the southeast corner of Sansome and Filbert streets; also, such a sum of money as will, with the real and personal property aforesaid, comprise one-third of my entire estate; all of the same to be held in trust by him to and for the uses, intents and purposes following, that is to say:

THE FOUNDING OF THE HOSPITAL.

It being my desire to found and endow a free hospital to be located in said city and county of San Francisco; all said money and property is to be by said trustees paid, conveyed and delivered over to a corporation to be hereafter formed by a society to be composed of the Roman Catholic Archbishop of San Francisco and R. C. Tobin, Dr. C. F. Buckley, Dr. W. S. Thorn and Dr. Luke Robinson, or the survivors of them, and such other persons as they or their survivors and successors, in their discretion, shall elect to fill vacancies in said society; said corporation to be formed under the laws of the State of California; the name of said corporation to be Mary's Help Hospital; the purposes for which such corporation shall be formed to be to receive endowments and acquire property for and establish, erect, maintain and conduct a free hospital for all sick women and children of the poor, without regard to religion, nationality or color, excepting such as the officers of the hospital consider dangerous to other inmates; such hospital to be conducted by the Roman Catholic Sisters of St. Vincent de Paul, commonly called the Sisters of Charity, under the direction of the Board of Directors of said corporation.

The place where the principal business of said corporation shall be transacted shall be the city and county of San Francisco, State of California, and the number of its Directors shall be five; and I direct the said trustee, Archbishop Patrick W. Riordan, to pay, convey and deliver over to such corporation when so formed all of the money, property and estate aforesaid. It is my wish that the Roman Catholic Archbishop of San Francisco be a member of said society and ex-officio one of the Board of Directors of said corporation, and that the others of such Directors shall at all times consist of one business man and three physicians, and that the medical staff of the hospital shall have the right to give clinical instruction in the hospital to students and graduates of medicine.

THE CITY HALL TOWER.

THE above question will be settled at last by the adoption of a design for a dome surrounded by tiers of colonnades.

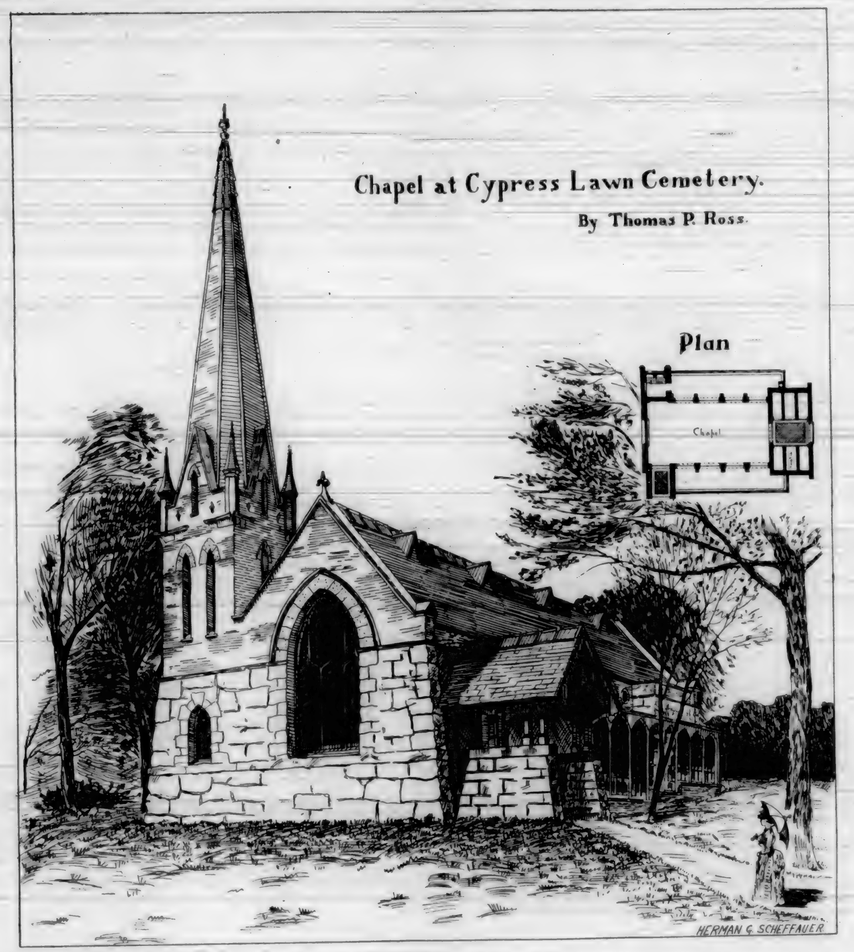
Mr. Frank Shea, the architect of the Board of New City Hall Commissioners has prepared the preliminary drawings and the specifications for the completion of the central feature that is to crown the front of this edifice and in submitting them to the Board made the following statements:

"The specifications of the copper, cement and interior decoration work have not yet been prepared, as I thought it wise to defer their compilation, because many months will elapse before the work will be required. The general plan of construction of the dome consists of a complete frame of metal, commencing at a line on top of the present circular brick wall and interior columns. The entire upright frame, except that portion resting upon interior columns, will be encased in brick and terra cotta walls cemented on the outside, in order that the character of the work of the present building may be maintained. The dome will be covered with copper. The specifications have been prepared separately, so as to permit the receiving of bids, or estimates, upon the work in part or as a whole, and the time set for completion of all the contracts is July 28, 1894.

"I have spared neither time nor labor in the study of the construction of the dome, and I feel confident that in the plans presented the best results possible from a practical and esthetic point of view have been attained, and that, when completed, the New City Hall will be surrounded by a dome in perfect harmony with the great building at its base.

"I have estimated the entire cost at $300,000. It will take twelve months to complete the dome with due haste. The work will give immediate employment in the shops, yards and on the ground proper to 600 men, and continual employment to at least 350 workmen."

The plans have been examined by the Board and accepted and now all that remains is to take bids and start the work immediately.



THE OPENING ADDRESS TO THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

DELIVERED BY THE PRESIDENT, J. MACVICAR ANDERSON, AT THE FIRST GENERAL MEETING, MONDAY, 6th NOVEMBER 1893.

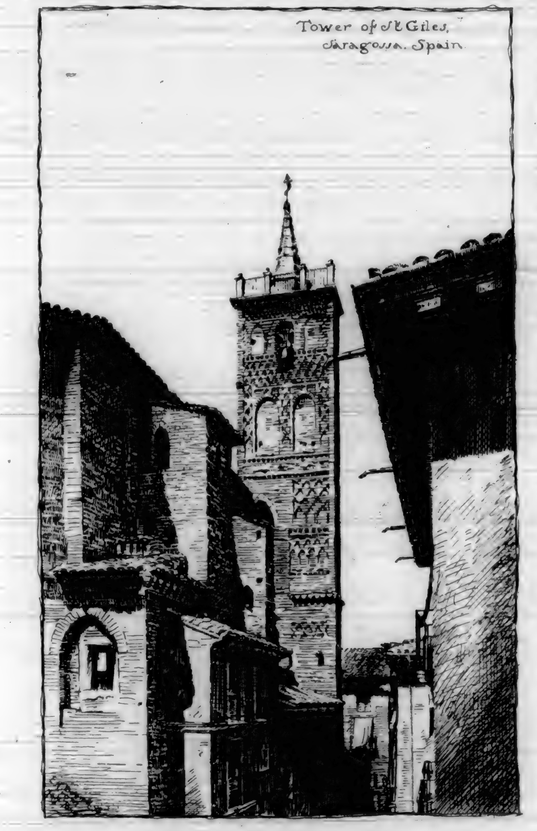
Colleagues and Gentlemen:

THOSE of you who were good enough to honor me with your presence at the opening Meeting of last session may remember that the keynote which pervaded the Address it was then my privilege to deliver was Progress, and from that standpoint I noticed some subjects of professional interest. Progress leads to Attainment, and it is therefore a natural sequence to pass from the means to the end, and from the higher platform to review some points that may be supposed to interest the architect, and less directly the public.

No one who regards life as a serious reality fails to set up some goal, in the attainment of which life is passed. The goals of some wither with possession—the object is too material, attainment too easy. The noblest, as well as the happiest, lives are passed in the pursuit of an ideal, the standard of which is so lofty that it is never fully attained. Point after point may be gained, each one higher than the last; but, as with the Alpine climber, ever in front is displayed the as yet unattained excelsior of excellence, which for the architect is enshrined in Truth and Beauty. And so it comes to pass that in such aspirations the oldest men are still students, because their ideal of excellence is so lofty that

life is too short to attain it. But, just as the highest life is sustained and inspired by Hope, which can alone find full fruition hereafter, so the life of the artist is ennobled by the yearning for the attainment of excellence, which no disappointment can extinguish, and no success can satisfy. This is the Art life worth living.

Architects, however, are sometimes reproached with incapacity because they fail to attain an ideal which the public choose to establish. Such reproach has often been cast at the architects of this century because they have not created



what is called a new style of architecture. No indication is vouchsafed of what is meant by those words, probably because no reflection has been bestowed on the subject. It is sufficient to censure a body of educated men by accusing them of want of originality, and of slavishly copying the works of others. In order to meet the accusation, it is necessary to apprehend what architecture is. When men began to multiply on the face of the earth, when they had to work, when they founded communities, when they erected buildings to provide for their necessities, and when such buildings were constructed with regard to beauty of form and proportion, architecture was born. Thus, architecture is the product of the necessities of life coupled with the aspiration for the beautiful. The development of this germ has found expression in the buildings, monuments, and shrines of succeeding generations; and what are known as styles of architecture are simply the adaption of this germ to climatic influences and conditions of life in different parts of the world. With the modification of such conditions they become subject to variation. Thus, the architecture of feudal times, when warfare, was the rule, not the exception, was characterised by massive solidity, unbroken wall-space, diminutive openings, and bald simplicity. Such characteristics, necessitated by the hardy severity of a warlike age, would obviously be ill adapted to the advanced civilization and luxurious refinement of these days of peace and accumulated wealth; and so solidity gives place to lightness, wall-space to fenestration, simplicity to ornamentation.

If, then, architecture is the outcome of actual conditions of life, it follows that to create a new style is beyond the power of any individual or any body of architects, no matter how bountifully he, or they, may be endowed with the power of original design. Are the conditions of life in our day distinctively different from those which prevailed in the days of our fathers? Our climate, much as it is abused—and, as I think, unjustly—remains much the same. We eat, we drink, we work, we sleep, we marry and are given in marriage, and in all essential conditions we live and die as our ancestors have done before us. Is it, then, reasonable to anticipate the advent of a new architecture? Cause and effect are inseparable. With new conditions of life, a new architecture will be called into existence; but so long as the conditions of national life remain unchanged, it is as absurd as it is illogical to traduce the architects of this age for having failed to attain to the creation of a new style of architecture.

But it is alleged further that our system of education, and, resulting from that, our programmes of examinations, tend to rivet the chains that bind and restrict us to the past; that we inculcate the study of schools of architecture which were called into being by conditions that no longer exist; that we teach forms and proportions defined by masters in such schools, which were beautiful because appropriate to the conditions of life in their day, but which are not appropriate, and therefore not beautiful, now; that we encourage the student to paraphrase Greek, Roman, Romanesque, Gothic, Saracenic, Renaissance, Hindoo, Burmese, Siamese or Chinese art; that historic styles have nothing to do with architecture; that English Composition, Geography, History, Latin, French or German, have no connection with it—in a word, that we look on the essential as unimportant, though most rigorously insisting on what is of no use. Instead of this, we are told that we should inaugurate a system of education and examination that would not disturb the oblivion of the dead past, but that would tend to develop native power by encouraging students to realize the actual requirements of a living age, and to design forms and proportions such as may be best adapted to them; that if we want to test real progress we should see what students can make of a story-post, a cast-iron column, a wrought or cast iron girder; how they can adorn a door or window, or group them; if they can light efficiency or æsthetically when light is only wanted to produce a mental impression; or if they know what forms and proportions are good for sound.

In this and in all such representations there is, no doubt, much that is plausible and calculated to attract and captivate the unthinking; nay, more, there is much in which we cannot but concur. We all desire to encourage and to develop original power. It is inevitable that those who cherish the architecture of a past age to which they are passionately devoted, and which in their judgment is not inapplicable to the wants of the present day, should exercise an influence on their pupils and assistants in the direction of their preference; but it by no means follows that preference for forms or features which a past age admired and practised restricts the development of native power. Is it not apparent that

such representations as I have referred to rest on a fallacy? The inferred assumption is that originality may be the product of education. Now, individuality—that which educes original work, instead of reproducing the work of others—is a natural endowment which education and examination can neither create nor smother. That it is rare is demonstrated by the fact that in Art, as in other callings, the possessor secures a following, and founds a school. The majority of men are only too willing to follow where one master-mind leads. The fact of having studied and been imbued with admiration for proportions and forms which are the legacy of a past generation will not prevent originality from finding expression; nay, it is certain that creative power will in no sense be injured, but rather refined, by the study of beautiful forms and chase proportions attained by past masters of the art, and by the principles on which such forms and proportions were based. If it be true that Latin and History have no connection with Architecture, it is in the same sense true that the dead languages have no connection with the life's work of most of those who are taught them; but experience has proved that such teaching is the best possible mental and educational foundation on which to rear the work of life; and it would be as absurd to banish the teaching of Latin or Greek from our schools, as to exclude a knowledge of Latin, French, German or History from the education of architectural students. The more highly educated our students are—not merely in technical training, but in respect of general attainments and a familiar knowledge of the past—the better will it be for the future of architecture. Sir Joshua Reynolds has well said: "He who is acquainted with the works which have pleased different ages and different countries, and has formed his opinion on them, has more materials, and more means of knowing what is analogous to the mind of man, then he who is conversant only with the works of his own country." In the same relation, the gifted President of the Royal Academy addressed to students words as eloquent as they are true when he asked them "to believe that the gathered experience of past ages is a precious heritage and not an irksome load, and that nothing will better fortify them for future and free development than the reverent and the loving study of the past."

And if it be right that the education of architectural students should be not merely technical but liberal, does it not follow that an examination which is established for the purpose of testing the knowledge which they ought to possess should be co-extensive? The range of subjects embraced in the study of architecture is wide, because there are so many cognate subjects of which it is essential to know something; and, further, because it is desirable that the professor of a Fine Art should not merely be technically an expert, but that he should be also a man of refinement and culture. I have little sympathy, therefore, with the carping criticisms that occasionally reach me respecting the details of our scheme of examinations. The experience which can alone be acquired by time will no doubt lead to the modification of some, or the expansion of other features. No one has been so foolish as to claim perfection for a scheme which is as yet in its infancy. I confess, however, that to my mind the fact that there has been so little to remedy, and that the scheme has already met with so large a measure of success, speaks volumes for the wisdom and the enlightened foresight of the Board of Examiners and of their Chairman. Some of you, indeed, have thought—and I confess to have sympathized with you—that too little prominence has hitherto been attached to the subject of Design; but the Board of Examiners have evinced their desire to meet any legitimate objection by extending, as they have now done, the time to be devoted to this important subject from six hours to two entire days out of the six days to be occupied by the Final Examination, as compared with half a day to be given up to History, Architecural Features, Hygiene, Materials, Construction and Specifications and Professional Practice, respectively, the sixth day being devoted to the Oral Examination. This is a change for the better, which will no doubt be appreciated by students, and which meets with my entire concurrence. I should, however, deplore any undue limitation in our Progressive Examinations in respect of literary or historical subjects, which are not only of vast utility in themselves, but are essential elements in the equipment of one who aspires to be qualified as an architect to take his place with men of education and learning.

It is alleged, as I have said, that the architects of our day are devoid of originality because they have not created a so-called new style of architecture, and that our system of education and examination is defective because it restricts the encouragement of native power and rivets the chains that bind us to a dead past. Let the tree be judged by its fruit. If these allegations be true, the result would be apparent in the architecture of the day, which should be tame, insipid—a slavish reproduction of dead forms and proportions, devoid alike of interest and of life. Is it so? I am not expressing approval of all contemporary works; but I have no hesitation in asserting that, whatever may be said by adverse critics, our architecture exhibits characteristics the reverse of these.

In point of material, the contrast with the past is striking, whether we like or dislike the free use of terra cotta, marble or faience, that is so much in vogue; while in respect to Design, I challenge any impartial observer to find precedents for many modern buildings, which seem to sparkle with the impress of novelty. To quote illustrations from the works of living architects would be invidious, but many examples will occur to you which exhibit remarkable ability and originality on the part of their authors. I conclude, therefore, that the allegations to which I have referred—although occasionally emanating from those whose position entitles their opinions to respect—are groundless, and are refuted by the attainments of contemporary architects, whose works, whether we admire them or not, are the expression, not of a dead art, but of life and power.—*Journal of the Royal Institute of British Architects.*

ILLUSTRATIONS

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE Bohemian Club Building on the corner of Sutter and Mason streets is by Pissis & Moore, Architects.

A sketch for a tower is by Willis Polk, Architect.

FILMORE street, two dwellings by Martens & Coffey, Architects.

OPENING THE TRADE SCHOOLS.

THE New York Trade School, founded by the late Col. Auchmuty, began its thirteenth season Monday evening at its buildings, First avenue and Sixty-seventh street. The classes in bricklaying, plumbing, carpentry, house painting, stone cutting, fresco painting and blacksmith's work opened at seven o'clock Monday evening, while the class in plastering will not begin till December 11th. The day instruction in plumbing, house and fresco painting, sign painting, bricklaying and carpentry will not begin till January 1st. The course in printing will be started, however, on November 13th.

The school has every reason to feel assured of increased success this year. It is expected by the assistant secretary, H. V. Brill, that there will be fully 550 students in attendance on the various courses, an increase of seventy-five over last year. Mr. Brill said that the increase would be even greater were it not for the effects of the present financial stringency.

As to the courses, there will be no essential changes in the conduct of any of them. The class in plumbing is by far the largest attended, over 200 registering in that alone last year. Mr. Brill expected that the class in printing, which was begun last year, and is consequently the latest addition to the curriculum, would probably show a greater relative increase than any.—*Architecture and Building*.

SPURIOUS HARDWARE.

SOME of the leading hardware merchants of Toronto complain that duplicates of some of the more favored and expensive patterns in American hardware are being manufactured in cast iron in Toronto, and after being plated are placed on the Canadian market, represented to be the genuine article. At first appearance the spurious goods are a good copy of the genuine and can be detected only by very careful examination. To make detection still more difficult, a genuine lock is often used with a conterfeit escutcheon. A close inspection will usually reveal that the counterfeit article, while perhaps identical in color, is slightly smaller in size than the genuine. This is due to shrinkage in casting, in the process of which one of the genuine articles is used as a pattern. The genuine article is made of bronze metal, which to a considerable extent is impervious to the action of the atmosphere. The imitation is as we have said made of cast iron, and will retain its appearance at the longest only a few months. The importers of expensive American hardware claim that they should not be placed in competition with a spurious article which can be produced at a tithe of the cost of the genuine. If architects are satisfied with cheap goods they are quite willing to compete on that line, but they should not be expected to place a genuine article in competition with one to which the same name and appearance have been given, but which is counterfeit. Architects would do well to enquire into this matter.—*The Canadian Architect and Builder.*

THE FRANKLIN TRADE SCHOOL.

BENJAMIN Franklin, in his will, gave the citizens of Boston, Mass., in 1791 the sum of £1000, which he directed to be loaned in sums at five per cent interest to young married artificers of good character, under the age of twenty-five, who had faithfully served an apprenticeship in that city. Dr. Franklin estimated that the £1000 would increase in 100 years to £131,000, and then the managers of the fund were to lay out in some public work £100,000, the balance continuing on interest for another 100 years. The whole sum will then revert to the people of the city of Boston and the State of Massachusetts. The trustees under the will are the Selectmen (now the Board of Aldermen), united with the ministers of the oldest Episcopal, Congregational and Presbyterian churches in Boston.

The 100 years having expired, a meeting of the Franklin trustees was held on November 10th, to decide on the appropriation of the available money, amounting to some $415,000. Out of twenty-seven suggestions for its disposition, it was finally decided by vote that the whole amount should be devoted to the purposes of one object, and that object the establishment of a trade school, pure and simple. It was further agreed that the school is to be an independent one, unconnected with the public schools, and that it shall bear the name of the famous donor. This disposition of the fund seems particularly fitting and in harmony with the desire of Dr. Franklin, and the action of the trustees has met with general approval. It is proposed to combine in this school the experience of similar undertakings in the country, and an effort will be made to establish the institution on such lines as will secure the greatest possible benefit to "the young mechanic." It is thought that the New York Trades School, founded and maintained by the late Col. Richard T. Auchmuty, will be the example which will have the greatest weight with the trustees of the Franklin school. Those who are most prominently connected with the educational interests of Boston are wholly in accord with the proposed school, and have commended the movement as certain to fill a need that the city has long felt. The first steps towards the erection of a building for the schools was taken on November 10th, at a meeting of the City Architect, President of School Board, Corporation Counsel and the trustees of the fund. In his last annual report to the trustees the treasurer made the following statement of the condition of the fund February 1, 1893:

Amount of fund February 1, 1892	$398,841.51
Interest accrued during the year	15,958.02
Amount February 1, 1893	$414,799.53
This amount consists of:	
Deposits in Massachusetts Hospital Life Insurance Company	$411,100.38
Deposits in Suffolk Savings Bank	3,489.02
Cash	.13
Balance of bonds, for loans	210.00
Total	$414,799.53

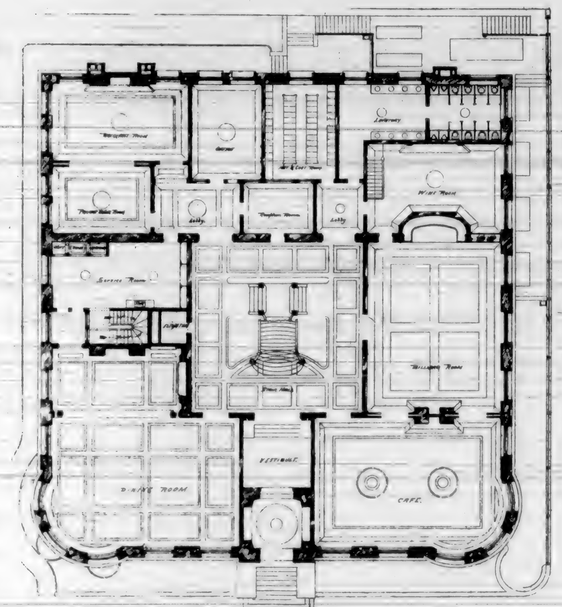
—*Carpentry and Building*.

RESIDENCES of AUG. JUNGBLUT & D.E. FAKTOR.
FILLMORE STREET.
MARTENS & COFFEY, ARCH'TS.
ACADEMY of SCIENCES BLD'G.

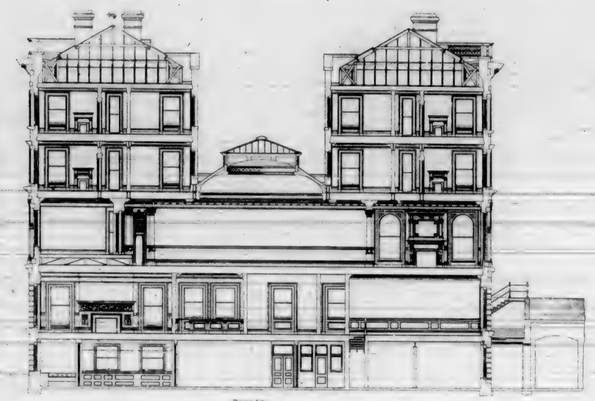
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

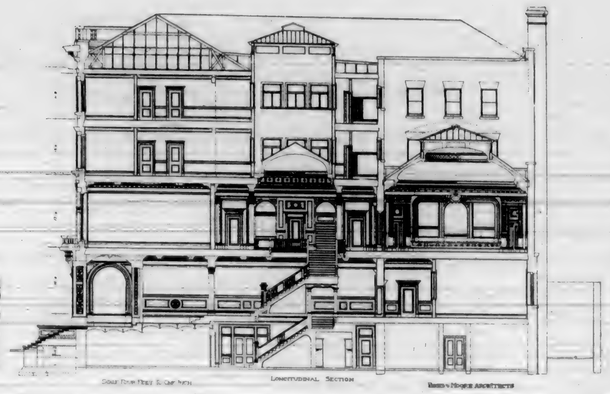
BRITTON & REY PHOTO LITH.

VOL. XIV Nº 12. DECEMBER, 1893.



FIRST FLOOR PLAN





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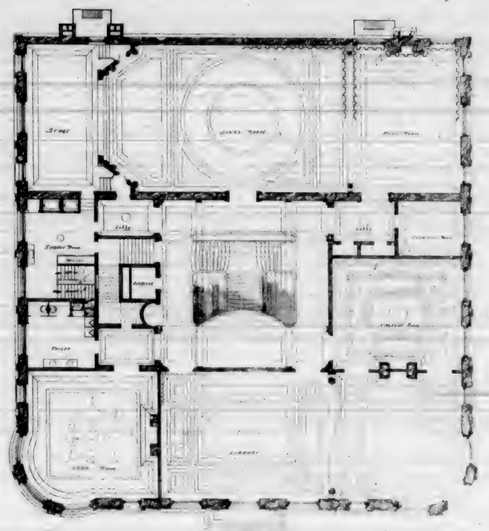
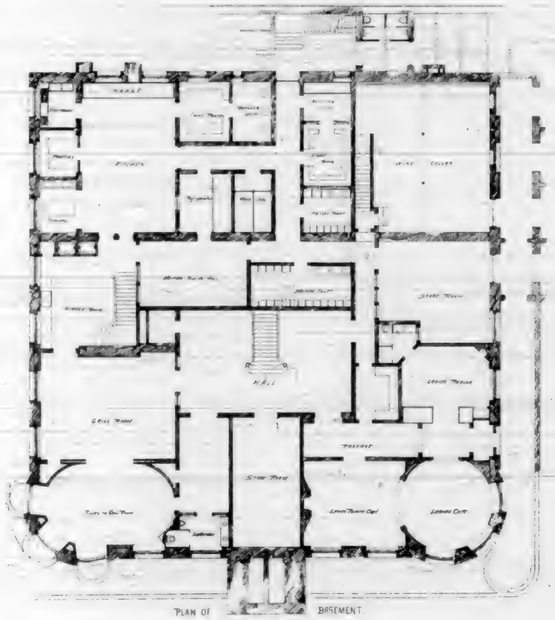
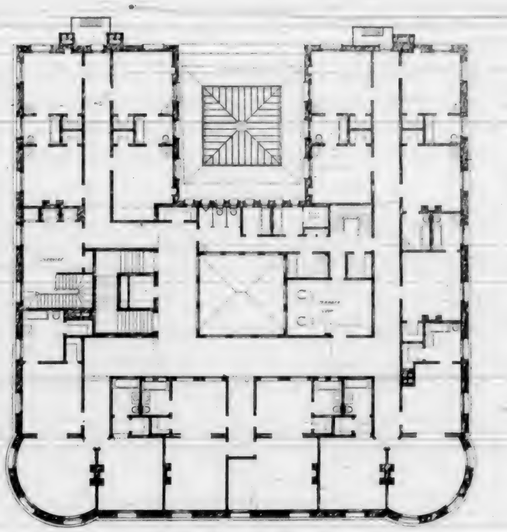




PLAN OF BASEMENT

FRONT ELEVATION



PLAN OF THIRD & FOURTH STORIES

BOHEMIAN CLUB BUILDING

PISSIS & MOORE, Architects, SAN FRANCISCO, CAL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

VOL. XIV Nº 12. DECEMBER, 1893.

·A Towne·Clock·Tower

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO. LITH.

VOL. XIV Nº 12. DECEMBER, 1893.

In an editorial on improvements in electoral methods, the *Examiner* has the following:

It is manifest that the party system, under present conditions, is inconsistent with true democracy. The people do not rule, except possibly in one thing at a time. To have their way in that one thing they must give their agents power to thwart them in everything else.

The imperfections of the present political methods could be remedied by two devices, the referendum and proportional representation. It is unfortunate that the advocates of these reforms do not always work in harmony. They should not exclude, but supplement one another. The referendum can never supersede representative legislative bodies, and proportional representation can never make a legislative body so good, wise and responsive to all the complexities of public opinion, as to dispense with the need for the referendum. But both together would give us an ideal political system, would destroy bossism and the rule of party machines, would eliminate bribery, disarm corrupting corporations, and enable the people to express their will on each subject by itself without entanglements with any other.

Proportional representation was made the subject of one of the World's Fair congresses, participated in by a number of the leading thinkers of the country. Various plans were discussed, some recognizing parties and some ignoring them, but the most promising of all seems to have been the Hare Preferential system, now in operation in the elections for Trustees of the Mechanics' Institute in this city. By this scheme all necessity for party organization is dispensed with. Candidates are elected in groups, each voter having a right to name as many as he pleases in the order of his preference, but his vote being counted for only one. The total number of votes cast is divided by the number of places to be filled, and the result is the quota which each candidate must reach to be elected. In an election for Supervisors in San Francisco, for instance, there would be twelve places to be filled. If there were 60,000 votes cast, each candidate would have to receive 5,000 votes to be successful. The first-choice votes would be counted first. Any candidate who received more than his quota of these would be declared elected, and the surplus transferred to other candidates, according the preference expressed on each ballot. If an elector voted for Smith as first choice and Brown as second, and Smith proved to be elected without his help, his vote would go to Brown. If the quotas were not all filled in this way the candidates receiving the smallest number of first-choice votes would be successively eliminated, and their ballots counted for the highest in order of preference. This process would be continued until there were no more candidates left than there were places to be filled, when all the survivors would be declared elected.

If this plan had been in force at the last election the present Board of Supervisors would have consisted of the most popular men on the Democratic, Non-Partisan and Republican tickets. In the same way the Congressional delegation of a State could be made perfectly representative of all the political elements within it, and the gerrymander would become extinct.

Proportional representation would give us servants in whom the people had confidence at the time of election, but it would not preserve them from temptation after they were elected. To do that we need the referendum. We have had Legislatures, Railroad Commissions and Boards of Supervisors apparently composed of the best men in the community, and has seen them succumb to the advances of the sack as the chaste snowdrift yields to the ardent wooing of the summer sun. Such things may be expected whenever men are placed in a position in which their interests as individuals are opposed to their interests as citizens. The corrupting power of corporations, which is comparatively harmless when spread over the whole body of the people, becomes irresistible when concentrated upon a few legislators. The referendum would relieve legislative bodies of this pressure, since it would not be worth while to buy a decision that could be reversed by an appeal to the people. California has tried the referendum sufficiently to know how it works. The people have voted on constitutional amendments, bond issues, city charters and expressions of opinion, and they are satisfied that they know how to act for themselves without serious mistakes. With officials elected by a plan that would dispense with bossism, and the power of popular review of legislation as a check upon the officials, we should have as good a government as we deserved, and no community can expect anything much better than that.

A New York company is now manufacturing a white brick. It is so hard burnt as to be almost vitrified, and when broken shows a texture much like white marble. It is made of porcelain clay, and shows great crushing strength. The manufacturer's claim that it will not discolor when exposed to the atmosphere.

In view of the great scarcity of black walnut, once so plentiful in Canada, Mr. Joly has proposed to the farmers of Quebec that they should cultivate the walnut tree, as has been done in some of the Western States. The nuts after being left out all winter in heaps, covered with earth and straw, are in the spring planted two inches below the surface of the ground. The walnut tree is said to have a rapid growth. Mr. Joly's suggestion seems to be a valuable one, and we hope will receive the attention of the Forestry Department of the Government.—*Canadian Architect and Builder.*

A new idea has been carried into effect in hardwood flooring. It is simply tonguing and grooving the ends of each board. The idea itself is not new, but until recently no plan was hit upon to do the work cheaply enough. It is said, says the *Southern Architect*, that the work can be done by the new process for a cost of one dollar per thousand feet.

Where the end joints are made on a sleeper, or floor beam, and both ends nailed down well, we do not see any great advantage in the end tongue and groove. But where the joint is made between the supports it is certainly a good idea. Besides preventing the ends from rising or being depressed above or below the general surface, it will save a great deal of labor and considerable lumber in laying a floor.

INDIVIDUALITY IN ARCHITECTURE.

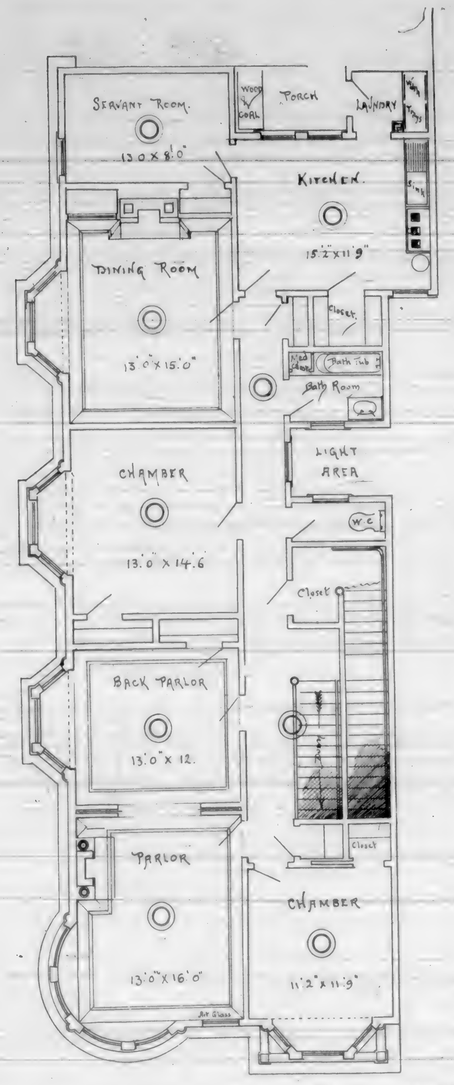
THERE is no more interesting problem than the question of the architect's individuality in his work and the part it takes in his success. A painter may be as individual as he please, may invent a wholly new style, introduce a totally fresh vogue, if he is so minded and has the ability to carry out his innovations. The same liberty is given the sculptor, and all the schools of painting and of sculpture have their origin in this circumstance. The architect has none of this freedom. He must conform to styles and conditions, to limitations and to circumstances, to men and to times as no painter or sculptor need. But there should be no complaint on this score. These are the conditions the architect will meet throughout his professional career, these the circumstances he knew would attend him the moment he chose his career.

It is quite a mistake to place the architect in the same catagory with the painter and the sculptor. Sister arts all three undoubtedly are, and in the Renaissance there were numerous artists in one branch who were also accomplished in others. This, however, implies no organic union, nor does the later differentiation of these arts imply a retrogression. All three have gained by specialism and must continue to do so. But the architect, every now and then, looks at his brother artists and sighs for their unrestricted fields, and wonders why it is he cannot follow the same unrestrained path, quite ignoring the fundamental position of his own art and the wide differences between it and the others.

The architect is thus hemmed in by conditions that may be broadly stated to be unartistic; his possibilities for producing individual work are therefore relatively small. But though not so free as the painter there is no reason why the architect should despair of impressing his personality and his individuality upon his work. He cannot create a style, it is true, and he should above all things avoid setting the fashion for a fad, but between these two extremes he can accomplish a great deal of earnest, thoughtful, individual work, which will be his own as entirely as the picture of the painter or the statute of the sculptor. Not every architect can accomplish this, perhaps, but certainly it is in some men to do so. The possibility of doing it is wholly within the architect himself. The conditions of his art, the limitations under which he works, do not in the least prevent it.

However the architect may strive to make his work individual the conditions cannot be forgotten. The design may be wholly his, but he has followed another's programme, or rather a programme made up by limitations that have no architectural meaning or signification. Hence there would seem to be no reason why an architect should sign a building in the same sense the painter will sign a painting. The architect has made the design, he has superintended the erection of the structure, he has impressed it with his personality so that the ideas are his own self, but with all this he is contending with limitations of site, of municipal restrictions, with the individual wishes or desires of the owner, which last, in many cases, frequently dominate the design as much as any part of the architect's thought. There is, therefore, a limit to the exercise of the architect's individuality. Even the great structures of the World's Columbian Exposition, which were designed under conditions practically unlimited, were designed with reference to each other, and the architect's own personal feelings and inclinations were held in check on more than one occasion. And this limiting of individuality which is found in these buildings is much more marked with the smaller structures that make up the bulk of the architect's practice.—*Architecture and Building.*

PERSPECTIVE VIEW OF FLATS, CORNER OF FRANKLIN STREET AND HICKORY AVENUE.



SECOND FLOOR PLAN OF FLATS CORER OF FRANKLIN STREET AND HICKORY AVENUE.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., November 20th, 1893. Sealed Proposals will be received at this office until 2 o'clock P. M. on the 27th day of December, 1893, and opened immediately thereafter, for all the labor and materials required for Mail Platform Enclosure and Approaches at the U. S. Post Office, etc., building at Sacramento, California, in accordance with drawings and specifications, copies of which may be had at this office or at the office of the Superintendent at Sacramento, Cal.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any and all bids or to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Mail Platform Enclosure and Approaches at the U. S. Post Office, etc., at Sacramento, California," and addressed to, Jeremiah O'Rourke,
Supervising Architect.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

RIGHTS OF ABUTTING OWNERS.—Where one erects a building on his own lot the fact that it shuts out light and air from the adjoining owner gives the latter no remedy, though he has enjoyed the same for more than fifty years.

Knabe v. Levelle, Superior Court of N. Y. City, 23 N. Y. Supp. 818. 36.

ACTION TO FORECLOSE MECHANICS' LIEN.—Where the statute relating to mechanic's liens requires that twenty-five per cent of the whole contract price shall be payable at least thirty-five days after the final completion of the contract, and also authorizes a claimant on establishing his lien, to recover costs and an attorney's fee, in an action by a material man to enforce his claim against the twenty-five per cent of the contract price retained by the owner, the costs and attorney's fees are chargeable against the premises, where the sum so retained was not sufficient to satisfy the claim, and the contractor suffered a default, while the owner, contested the claim.

De Camp Lumber Co. v. Tolhpy, Supreme Court of California, 34 Pac. Rep. 438. 108.

NECESSITY OF FILING CONTRACT.—The statute requiring contracts for buildings or improvements, where the price to be paid exceeds $1,000, to be in writing, and the contract, or a memorandum thereof, setting forth, among other things, a statement of the general character of the work, to be done, to be filed for record, failing in which, the contract to be void, and the owner liable for work and materials, is for the benefit of laborers and material men, as well as the owner, and failure to file the plans and specifications for a building which are an essential part of contract for its construction, is fatal. It is immaterial that the contract does not expressly refer to the plans and specifications as a part thereof, where it appears that they did in fact form a part of it, and without them it would be too infinite and uncertain to meet the requirements of the statute.

Creig v. Riordan, Supreme Court of Cal., 33 Pac. Rep. 913. 158.

RIGHTS OF SUBCONTRACTORS TO MECHANICS' LIENS.—Under the statutes requiring the contract for erecting a building to specify times when payments are to be made, and requiring twenty-five per cent of the price to be retained until thirty-five days after completion, partial payments, however they are specified as to time; may be safely made, provided no notice is given of their subcontracts by material men, in the absence of which they must rely on the responsibility of the contractor, and the twenty-five per cent, required to be retained; and in such case they are not injured by any uncertainty as to the times of payment specified, nor by payments in advance of the specified time. All that material men can require, in such case, is that at the time they serve written notice upon the owner, or, if no notice is served, at the time their lien is filed, there shall be in his hands the amount required by the contract and the statute.

Dunlop v. Kennedy, Supreme Court of Cal. 34 Pac. Rep. 93. 166.

CONTRACT OF PURCHASE SUPERIOR TO MECHANICS' LIENS.—Where building improvements are made on premises for one in possession under a parol contract of purchase only, a mechanic's lien for the improvements does not attach as against the true owner. The fact that he knew the contractor was making improvements on land owned by him, for one in possession under a parol contract of purchase, does not estop him from denying the right to a mechanics' lien, where he did not know the contractor was in ignorance of the condition of the title.

Smith v. Huckaby, Court of Civil Appeals of Texas, 23 S. W. Rep. 397. 91.

WORK TO BE DONE TO SATISFACTION OF ARCHITECT.—A certificate which is not signed by the architect, but by his assistant for him, it is not such a certificate as is called for by a building contract which requires the contractor to do and finish the work, under and to the satisfaction of the architect, and provides that payment shall be made on certificate of the architect, that the work has been done to his satisfaction; that any question arising respecting the contract shall be referred to the architect, whose decision shall be final; and that no certificate made under the contract shall be conclusive evidence of its performance.

McEntyre v. Tucker, Common Pleas of N. Y. City and County, 25 N. Y. Supp. 95. 113.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. Geo. W. Percy, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter A. I. A. was held on Friday afternoon, December 8th, at the hour of 2 o'clock P. M. instead of in the evening at 8 P. M. as usual.

The innovation brought forward an unusually large attendance. The principal business of the meeting was the election of officers to serve the coming year, and after some lively balloting the following were declared elected:

Seth Babson, President; Geo. W. Percy, Vice-President; John M. Curtis, Treasurer; Oliver Everett, Secretary.

For Trustees the following member were selected:—Bryan J. Clinch, W. P. Moore, Jas. W. Reid, Geo. H. Sanders and Edmund Kollofrath.

After the adjournment many of the members remained and talked over matters of interest to the profession; and discussed means for advancing the welfare of the Chapter. Several promising suggestions were made, and will probably be tested by practical experiment some time in the near future.

PHOTOGRAPHING THE FAIR.

THE managers of the World's Columbian Exposition at Chicago, having received a large sum for the privilege of selling photographs of the buildings and grounds, were obliged in turn to protect those who had purchased that right, by prohibiting the taking of views by the general public, both professional and amateur.

This action, however, was the subject of such vigorous protests, that the managers were forced to modify their just intentions, and ultimately decided to allow the use of hand cameras with which pictures not over 4x5 inches in size could be taken; charging a fee of two dollars a day for each camera entering the grounds.

It is to be hoped that the managers of our California Midwinter Exposition will be more liberal in this matter, and allow the photographer, both great and small, professional and amateur, to have freedom from the annoying restrictions which were imposed at Chicago, and which the *Photographic Times* comments on as follows:

"It is a matter of no little regret in an artistic sense that the restrictions accompanying the grudgingly bestowed privilege of photographing at the Columbian Fair have deprived the world of many a *picture* it would gladly cherish after the glories of that Fairyland has disappeared like the fading of a dream. For albeit the work of amateur photographers (worthy of being so designated) is nearly always vastly more artistic and satisfactory than that of professionals, save in portraiture alone, as witness the samples in the British Loan Collection at the Fair, and the Annual Exhibition of the Photographic Society of Philadelphia, New York and Boston—the barring of all save hand cameras not larger than 4x5 inches, left little scope for the exercise of their taste or skill. Had the best workers among our foreign visitors or of our own land been at liberty to use such apparatus as they choosed, without restriction as to size, we should have had illustrations of this unrivaled and unapproachable wonderland now, alas, unattainable. For be it remembered that the negatives from which the larger views sold at the Fair are printed, were all made by wage workers, men whose daily business is to make a certain number of exposures for a specific compensation. Excellent though their technique may be, for "practice makes perfect," the spirit which would lead the artist amateur to spend hours if not days, in the composition and lighting of his subject must perforce be absent in them. Never before, at least in this country, have such combinations of architecture and landscape been made possible, and it is not a little exasperating to have had the wonderful beauties within one's reach, and been unable to grasp them in a larger degree than that bounded by the dimensions of a 4x5 plate. Under these circumstances it is little wonder that a majority of the most capable amateurs who visited the Fair did not do so in company with their cameras. They have not objected to the stiff charge of two dollars per day for the privilege of using one, but to the fact that the results obtained would not be satisfactory to their artistic consciences. The fashion of making negatives purposely for lantern-slides has not obtained to any great extent on this side of the Atlantic, and their small size are not generally very satisfactory for prints, while the work of the ordinary hand camera is not good enough to admit of enlargement to any considerable extent. Hence, as stated, the best workers are greatly in the minority among those who have paid for permits to photograph in the White City. A great number of "push the button" amateurs have been in daily attendance, making snap shots on any and everything in their way, especially upon the Midway Plaisance, but the results of their labors, in so far as I have observed them, have not been above the average of their now well-known performances. Most assuredly the world's desire for artistic picture remembrances of the Fair will not be greatly benefited by them.

AN ELECTRIC ROAD FOR TOKIO, JAPAN.

WHEN an electric street railway was completed for public use in Bangkok, the capital of Siam, last year, by Ohio capitalists, the Rev. J. M. Law, a medical missionary in Japan, thought that a similar enterprise would be profitable and of great public benefit in Tokio, the capital of the Japanese empire, containing 1,400,000 persons.

A few months ago he got Ohio capitalists to subscribe $100,000 to the scheme, with the assurance of additional capital after the plan was further advanced. Dr. Law then went to Japan, and, backed by the influence of American and other Ambassadors, obtained one of the most liberal charters ever granted by Empero Mutso Hita. The intention is to run a line from Tokio to Yokohama, a distance of thirty miles, and built a network of lines in both cities. J. W. Goss and Engineer Riblet have just sailed for Japan to inaugurate the scheme.—*Electrical Review.*

BUSINESS MOSAICS.

For Stairs, Rail, Posts, Balusters, etc., try the Excelsior Mill, Geo. R. Jesse, Bryant street near Fifth, who have constantly on hand a large stock and will promptly manufacture to order.

"What are you crying for, Fritz?" "Because my brothers have a holiday and I haven't!" "But why haven't you a holiday, too?" "Because I'm not old enough to go to school yet!"—*Fliegende Blaetter.*

If you do not happen to know where you will be sure to get good paper of all kinds go to A. Zellerback & Sons 419–421 Clay street, Telephone 1133—we speak from personal knowledge.

Traveler—"The Chinese make it an invariable rule to settle all their debts on New Year's day." America Host—"Y-e-s; but the Chinese don't have a Christmas the week before."—*Dollar Weekly*

The Joshua Hendy Machine Works are still at the front, as manufacturers of all kinds of machinery—making a specialty of engines and pumps for building, as well as architectural iron work, both light and heavy castings, 39 to 51 Fremont street; foundry and warehouse, Kearny, Bay and Francisco streets.

Mrs. Wimpleton—"Come, Mr. Twickenham, and let me introduce you to Mr. Shingle Nail, the coming architect." Twickenham—"Thanks, but I have already met the young man. In fact he built a house for me." Mrs. Wimpleton—"Really? And was it a success?" Wickenham—"He seems to think so. He is living in it."—*Dollar Weekly.*

Todt & Peters General House Smiths, 53 Beale street and 230 Mission street—not only manufacture wrought iron doors, fences, railing, cresting, etc., but also promptly attends to all kinds of repairing.

Darley—"My dear, what plant bears the brightest flowers?" Mrs. Darley—"I'm sure I don't know. Which is it?" Darley—"The electric-light plant."

W. H. Wickersham, building contractor, is still to be found at his old headquarters 1125 York street, he is too well and favorably known to architects to need any recommendation from us.

West Coast Wire Works 13-15 Spear street near Market under charge of Trowbridge & Son, is a place where all kinds of useful and ornamental wire work are made to order.

Stranger—"What a cheerless, dreary, depressing-looking build that is." Native—"Oh, that's only a school. Do you like fine architecture?" Stranger—"I do." Native—"Then wait till you see our new jail."—*Good News.*

Now that the Mayor has advised us all to have our houses got in good shape for the Midwinter Fair—is the time to call upon J. L. Cahill that prince of painting and decorating, 107 Sixth street near Mission, with branch store 1115 Market street.

Tommy—"Say pa, when the world comes to an end and the last card of the game of life has been played what will happen?" Father—"I suppose Gabriel will trumpet.—*Rochester Democrat.*

D. C. Condon of the Western Engineering Company, Mills Building, San Francisco, make specialties of accurate computations of stresses and strains, including bridges, buildings, etc., in iron, steel, masonry and wood. One of the large domes at the Midwinter Fair is a specimen of his work in this line.

New Girl—"What does your papa like for breakfast?" Little Mabel—"He always likes most anything he hasn't got."

Merchant's Roofing. We call attention to Merchant & Co's well known extra coated roofing, architects and contractors will be particularly interested in a new departure from the old style, this as will be seen from their advertisement in another part of this paper, is nothing less than American Continuous Roofing Plates. These plates are made in a continuous roll, are straight, 100 square feet. Each sheet is formed and joined automatically, and thoroughly soldered while in the process of coating. A stock of the above described plates are now in stock at the various agencies of Merchant & Company in New York, Brooklyn and Chicago, as well as at their headquarters in Philadelphia where full information as to price, etc., will be cheerfully given upon application.

In considering this well known brand of roofing it should be remembered it is manufactured at their works in Philadelphia under their personal supervision by the Palm Oil process only, thus it may be considered one of the softest and most reliable plates offered in the market to-day; affording protection to home industry, at the same time securing an unequalled article of roofing.

CITY BUILDING NEWS.

Buchanan and Golden Gate Ave. Two-story frame; owner, Bernhard F. Bruse; contractors, Patterson & Person; signed, Dec. 5; filed, Dec. 7; cost $2,500.

Bush and Gough. To fit complete all electric and gas combination fixtures, etc.; owners, Rict Rectory, Vestory and Wardens; architect, A. Page Brown; contractor, S. F. Novelty Works; signed, Nov. 10; filed, Nov. 14; cost $2,300.

California street No. 38. All interior finish and office fixtures; owner, C. E. Bickford; architect, Edward Kollofrath; contractors, F. W. Kreling & Sons; signed, Nov. 21; filed, Nov. 22; cost $1,812.

California near Drum. One passenger service and two sidewalk elevators; owners, Luning Co.; contractors, Cahill & Hall Elevator Co.; signed, Nov. 21; filed, Nov. 22; cost $5,071.

Castro and 26th. All work to build; owner, Frederick Raup; contractor, Henry P. Conrady; signed, Nov. 11; filed, Nov. 11; cost $3,200.

D street near 5th Ave. Alterations and rebuilding; owner, Louis Metzner; architect, Chas. M. Ronssenu; contractor, Louis Creghino; signed, Dec. 6; filed, Dec. 7; cost $4,000.

D street near 6th Ave. To build; owner, Margaret Richardson; architect, Chas. I. Haven; contractor, John W. Wissinger; signed, Dec. 13; filed, Dec. 13; no cost given.

Douglass near 17th. To build; owner, F. Rupland; contractor, Casper Zwierlein; signed, Nov. 1; filed, Nov. 20; cost $2,900.

Dolores near 21st. To build; owner, Emily McNab; contractor, C. S. Emmons; signed, Nov. 19; filed, Nov. 20; cost $3,000.

Ellis and Mason. All the steam heating and ventilating, pipes and fixtures; owners, The Y. M. C. Assn.; architect A. Page Brown; sub-contractors, W. W. Montague & Co.; signed, Nov. 1; filed, Nov. 12; cost $4,230.

Ellis and Mason. Marble work; orig-contractors, Mahoney Bros.; signed, Nov. 1; filed, Nov. 13; cost $1,138.

Ellis and Mason. Painting and varnishing; owner, The Y. M. C. Assn.; architect, A. Page Brown; contractors, Frazer & Keefe; signed, Nov. 1; filed, Nov. 13; cost $3,200.

Golden Gate Park. Exposition building for the Northern and Central Midwinter Fair Association; owners, R. M. Green and others; architect, Geo. A. Bordwell; contractor, Silas Carle; signed, Nov. 13; filed, Nox. 15; cost $8,602.

Golden Gate Park. To build Oriental Concession on streets in Cairo; architects, Leo Bonet & Co.; contractors, Hurlbut & Logan; signed, Nov. 13; filed, Nov. 15; cost $26,900.

Golden Gate Park. To build an Arena; owner, E. D. Boone; architect, Samuel Newsom; contractor, C. P. Moore; signed, Nov. 15; filed, Nov. 18; bost $5,527.

Golden Gate Park. A frame Exhibition building; owner, Cawston & Orr; architects, Percy & Hamilton; contractors, Ingerson & Gore; signed, Nov. 18; filed, Nov. 25; cost $1,340.

Golden Gate Park. Painting Mechanical Arts building; owners, Executive Com. Cal. Midwinter Fair; architect, E. R. Swain; contractors, Frazer & Keefe; signed, Nov. 25; filed, Nov. 28; cost $2,100.

Golden Gate Park. San Joaquin County building; owner, P. A. Buell Commissioner San Jose Co.; architect, Geo. Rushforth; signed, Dec. 1; filed, Dec. 1; cost $7,483.

Golden Gate Park. Los Angeles, Ventura, Riverside, San Bernardina and San Diego counties exhibition building; owner, Chas. Forman; architect, Sumner P. Hunt; contractor, Alex. L. Campbell; signed, Dec. 1; filed, Dec. 2; cost $10,291.

Golden Gate Park. One-story frame; owner, W. E. Von Johannsen; architect, J. Cather Newsom; contractor, D. T. Pierce; signed, Dec. 2; filed, Dec. 4; cost $3,900.

Golden Gate Park. San Mateo Concession; owners, San Mateo County Midwinter Fair Commissioners; architects, Martens & Coffey; contractor, John Morton; signed, Dec. 9; filed, Dec. 13; cost $2,407.

Grove bet. Lyon and Lott. A two-story dwelling; owner, Rose A. Pritchard; contractor, T. C. Cochrane; signed, Dec. 2; filed, Dec. 4; cost $2,600.

Greenwich near Baker. Two-story and basement; owner, Adolph Vitz; contractor, J. Schuler; signed, Nov. 13; filed, Nov. 13; cost $3,327.

Harrison near 25th. Two-story frame; owner, Mrs. E. G. Bond; architect, E. A. Hermann; contractor, John N. McLeod; filed, Dec. 8; cost $4,449.

Hubbard near Howard. Converting a space now used as a door way into a flat, to correspond with adjoining flat; owner, T. H. Burke; architect, W. H. Little; contractor, George Connon; signed, Dec. 2; filed, Dec. 4; cost $885.

Masonic Ave. near Page. All work to build except sidewalks and fences of a frame church; owner, Rev. James Flood; architect. T. J. Welsh; contractor, John J. O'Brien; signed, Dec. 8; filed, Dec. 9; cost $3,580.

Mission near Plymouth Ave. One-story frame; owner, J. Dunne; contractor, Wm. Plant; signed, Nov. 13; filed, Nov. 14; cost $1,313.

O'Farrell near Octavia. Excavating, grading and cutting down lot and complete bulkheads; owner, George Hess; architect, J. H. Littlefild; contractor, F. W. Schulke; signed, Nov. 21; filed, Nov. 22; cost $525.

Post and Powell. Brickwork, stonework, terra cotta and pressed brick; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, John McCarthy; signed, Oct. 26; filed, Dec. 15; cost $18,000.

Post and Powell. Wood, metal, lathing and plasting; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, D. O. Sullivan; signed, Oct. 26; filed, Dec. 12; cost $8,775.

Post and Powell. Tin roofing, metalic shingle work, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Forderer Cornice Works; signed, Oct. 26; filed, Dec. 12; cost $3,982.

Post and Powell. Brick Fire place, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, L. E. Clawson & Co.; signed, Oct. 26; filed, Dec. 12; cost $3,229.

Post and Powell. Illuminating tiles; owners, Mrs. A. M. Parrott, architects, Pissis & Moore; contractor, P. H. Jackson & Co.; signed, Oct. 26; filed, Dec. 12; cosc $1,750.

Post and Powell. Painting and polishing; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, J. St. Denis & Co.; signed, Oct. 26; filed, Dec. 12; cost $2,880.

Post near Stockton. Carpenter work on a six-story basement and brick building; owner, V. Menesini; architect, Chas. R. Wilson; contractor, James J. O'Brien; signed, Nov. 15; filed, Nov. 18; cost $5,900.

Post and Leavenworth. Terra cotta work; owners, S. F. Verein Assn.; architects, Sailfield & Kohlberg; contractors, Gladden, McBean & Co.; signed, Nov. 6; filed, Nov. 17; cost $5,125.

Post near Leavenworth. Lathing and plastering; owners, S. F. Verein Assn.; architects, Sailfield & Kohlberg; contractors, Pacific Patent Plaster Co.; signed, Nov. 9; filed, Nov. 17; cost $4,350.

Post near Leavenworth. Gas-fitting and plumbing; owners, S. F. Verein Assn. architects, Sailfield & Kohlberg; contractors, Samuel Eckelheimer & Bros.; signed, Nov. 8; filed, Nov. 17; cost $2,600.

Post and Leavenworth. Wrought iron and cast iron work; owners, S. F. Verein Assn.; architects, Sailfield & Kohlberg; contractors, Western Iron Works; signed, Nov. 9; filed, Nov. 17; cost $1,649.

Post near Leavenworth. Carpenter and mill work, hardware and stains; owner, S. F. Verein Assn.; architects, Sailfield & Kohlberg; contractor, Thos. H. Day; signed, Nov. 7; filed, Nov. 17; cost $21,557.

Post near Leavenworth. Granite work; owner, S. F. Verein Assn.; architects, Sailfield & Kohlberg; contractor, John Sheedy; signed, Nov. 7; filed, Nov. 17; cost $2,855.

Second Ave. near Clement. To build; owner, Wm. P. Johnson; contractors Lyons & Bazer; signed, Nov. 9; filed, Nov. 14; cost $2,10

Stanyan near Page. To build; owner, J. R. Holdson; architect, W. H. Hamilton; contractor, Silas Carle; signed, Nov. 16; filed, Nov. 18; cost $4,500.

Turk and Seymour Ave. Alterations and additions; owner, Sarah Hoffer; architect, Oliver Everett; contractor, Ben Wallace; signed, Dec. 1; filed, Dec. 1; cost $3,050.

Valencia near 23d. Raising and moving a one story frame; owner, Martin Fragley; architect, M. J. Welsh; contractor, A. T. Batten; signed, Nov. 28; filed, Dec. 1; cost $2,467.

Valencia near 23d street. Addition to a frame stable; owner, Martin Fragley; architect, M. J. Welsh; contractor, A. S. Batton; signed, Dec. 8; filed, Dec. 9; cost $1,200.

ALAMEDA COUNTY.

Ashby Ave. near Raymond street, Berkeley. To build; owner, Chas. Mansfield; contractor, J. J. Rose; signed, Nov. 15; filed, Nov. 16; cost $2,157.

Alameda County Hall of Records. Wrought and cast iron work; contractors, Fortin Brick Co.; sub-contractor, H. Ralston; signed, Nov. 15; filed, Nov. 16; cost $5,450.

Clinton near 8th Ave., East Oakland. Doors, sash, blinds, etc.; owner, Mary R. Smith; architect, W. J. Mathews; contractors, Burnham & Standeford Co.; signed, Nov. 16; filed; Nov. 18; cost $1,892.

Simpson Ave. near Telegraph, Oakland. To build; owner, Mrs. C. Terney; contractor, Chas. S. Shaver; signed, Oct. 9; filed, Oct. 9; cost $1,990.

Sixteenth street and 6th Ave. Carpenter work, etc.; owner, Emil Nusbaumer; architect, W. J. Mathews; contractor, Wm. W. Winnie; signed, Oct. 12; filed, Oct. 13; cost $2,636.

Thirty-fourth near West street, Oakland. To build; owner, C. W. Hunt; contractor John S. Whalin; signed, Nov. 16; filed, Nov. 16; cost $1,800.

Webster near Central Ave., Oakland. To build; owners, Geo. W. & H. H. Dorkin; contractors, A. W. Pattiani & Co.; signed, Nyv. 16; filed, Nov. 20; cost $4,100.

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
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VOLUME XV

DATE 1894

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The California Architect and Building News.

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ESTABLISHED 1879. - - - INCORPORATED 1889
NOW IN THE FIFTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

THE year just passed has not been as prosperous a one as could have been wished. But in entering upon the year 1894 we do so with brighter hopes for the revival of business and better prospects for the successful prosecution of new enterprises. The uncertainty of the passage of legislation proposed by Congress and now under consideration, has had the effect of making manufacturers, producers and importers extremely cautious and conservative in their operations. This uncertainty will be ended in a few weeks, and a long spell of quiet can safely be anticipated, when plans for the future can be made with the certainty of calculation born of a thoroughly understood condition of the market.

Manufacturers that have temporarily suspended or run on half time, in the hope of obtaining cheaper raw material, will be started up on full time, to replenish exhausted stocks, and this revival will furnish the employment so much needed at present for the unemployed.

New enterprises will be started and business generally be conducted on a firmer basis. While on this subject we cannot refrain from again calling attention to the great desirability of patronizing home industries. Why should we import building materials from abroad when they can be better produced at home. The quarries of slate, of marble, of building stone in this state cannot be surpassed; what more profitable industry could be desired than the opening up of these quarries on a more extensive scale. Why should we go east for iron and steel when they can as well be produced here. Why import hundreds and thousands of tons of cement, when the materials for its manufacture are at our door. The paints manufactured on this coast are equal to the best.

Let the capital now idle, be employed in extending these enterprises. Let the citizens co-operate by giving the preference to these home products. Let saving in freight be retained, and the money so saved used to prosecute new and as yet undeveloped fields, and riches and prosperty will be the rewards that will come.

IN our article last month, we made the assertion that in a well regulated social state there should be no valid excuse for idleness and destitution among its citizens. The fact that enforced idleness and underserved destitution exist to-day, in this and other countries, proves that the present industrial system could be improved on. As long as a bountiful nature yields ample returns for man's labor, so long will there be means for sustaining prosperous communities, which constitute the bases of all great and contented nations.

If the present state of society does not distribute justly and evenly the rewards of man's toils, if the private interests of any particular class produce results detrimental to the well being of the whole people, it should be the duty of the government to intervene.

Mr. Bierce, in a recent article, has the following to say on this subject:—

It is ridiculous to recognize an obligation to support the

helpless indigent, and deny the duty of doing what can be done to prevent helpless indigence! What nearly all the citizens of the Union are now doing hastily, wastefully and imperfectly by private effort under semi-official supervision, the State should do always.

So unfortunate and dangerous a creature as a man willing to work, yet having no work to do, should be unknown outside of the literature of satire. Doubtless there would be enormous difficulties in devising a practicable and beneficial system, and doubtless the reform, like all permanent and salutary reforms, will have to grow. That it is already in course of evolution the private and semi-official movements referred to may be taken as evidence.

As Mr. Bierce says, the difficulties in the road of improvement are many and serious, yet who doubts they will have to be met and overcome—the continued existence of our government depends on the prosperity of its people.

In considering the different methods proposed to relieve the temporary distress of the unemployed, several points must be taken into consideration—first, the action proposed should be such as not to compete with already established industries in such a manner as to injuriously affect their prosperity, else the benefit done to one party would be counterbalanced by the injury to the other—second, the employment must, at the inception of the scheme at least, be of necessity confined to such as requires mainly unskilled labor for the present purpose should be to simply secure temporary employment for the idle, till such time as they can seeure steady and remunerative employment elsewhere.

In view of the above requirements, the work provided should be of public benefit, and not for the profit of an individual.

Following out this course of reasoning, we would advocate what has already been suggested on numerous occasions by the press all over the country, viz.: Set the unemployed at work building and maintaining public highways from city to city, county to county, and state to state.

The need of better accomodations in this respect than what are now available, is very evident even to a superficial observer, and the benefit that would result from any improvements, would be enjoyed by the community at large; consequently it is only right that the community at large should bear the burden in the shape of the taxes necessary.

There is no doubt they would be paid more willingly and cheerfully than if paid for the maintenance of the jails and prisons, and courts and police departments that are now kept up in the hope of suppressing, and for the necessity of punishing crime: a considerable portion, of which, at least, can be traced directly to the degrading effects of abject poverty.

That government can best be called civilized, which by its practical results, shows the highest average standards of intelligence and prosperity among its people.

If only statesmen could be elected to govern, and if politicians could only be relegated to private life, who can doubt that a higher purpose would animate our legislatures, and correspondingly better results be achieved.

THIS journal is prepared to take charge of rendering perspective drawings in pen and ink or color. Charges will depend on size and kind of drawing wanted.

Upon receipt of plan and elevations, with a description of what is wanted, we will submit our estimates for the performance of the work.

REPORT OF THE STRENGTH OF THE DOME OF THE AGRICULTURAL AND HORTICULTURAL BUILDING, CALIFORNIA MID-WINTER FAIR.

BY D. E. CONDON, M. E., C. E., A. M. INST. C. E.
MILLS BUILDING, SAN FRANCISCO, NOVEMBER, 1893.

IN making an analysis of the strength of the Dome of the Agricultural and Horticultural Building as designed for the California Mid-Winter Fair by Mr. Samuel Newsom, architect, I have divided the problem into three parts, namely:—

I. A determination of the effects of the *dead loading*, that is to say the entire weight of the material forming the dome, regarded as symmetrically distributed.

II. A determination of the effects of the *wind force* when acting on one side only.

III. A determination of the effects produced on the various dome members by the *combined* action of the dead loading and wind force.

I. DEAD LOADING.

It is evident that the effects of the dead loading, since it is symmetrically distributed, will be uniform on the various dome members.

The dome has 24 circular *ribs* or principal lines of rafters supporting the dead load, and 24 *panels* or spherical spaces between the ribs.

The dome proper, or part between AB and GH on accompanying diagram, is divided into three spherical zones by circular *rings* or 24-sided polygons connecting the ribs at GH, CD and EF.

In the design the ribs are made secondary to the rings; that is to say the rings are made continuous and divide the ribs into three section or series of *rib rafters*.

Of course the idea is to have the ribs practically continuous also by firmly connecting the rib-rafters together and to the rings at their intersections, so that the whole structure will be bound together and act cohesively.

The intersections of the rings and ribs are the *panel points*.

Each rib consequently carries 1-24 of the entire dead load, or that of one *panel* to the base, and in doing so different compressive strains are produced in the three rib-rafters or sub-divisions of rib between the rings.

There is a compressive strain produced in the upper ring GH, zero strain in the ring EF, a tensile strain in the ring CD, and also a tensile strain at A, B. These strains are marked on diagram.

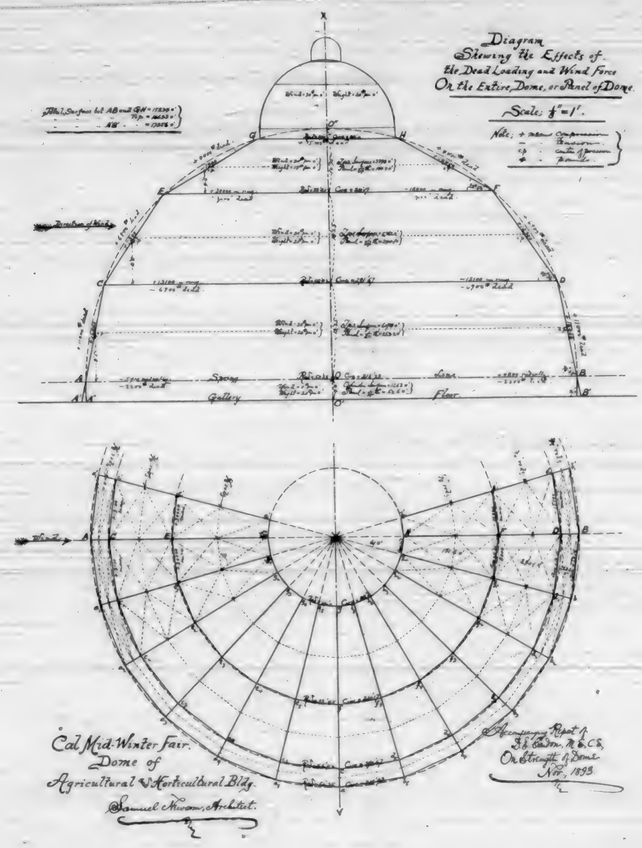
So that if the dome were to be constructed to carry its own weight only, as designed, on the assumption that the latter is symmetrically distributed as I have supposed, then all that would be necessary would be to proportion its various members and their *connections* to the strains marked on diagram. We would require simply a compressive ring or polygon GH strong enough for 15,000 lbs. or 7½ tons through 4 ft. distance between ribs or panel points; with a factor of safety 3, 4″x4″ would be sufficient for this purpose. In addition to the ring I would have a series of pieces less than 14′ long radiating from a central block to each rib, and strong enough to carry 4000 lbs, or 2 tons, for which 4½″x4½″ would be ample with the same factor of safety.

The ring EF would be free from strain.

The ring CD would be free from compressive strain; but

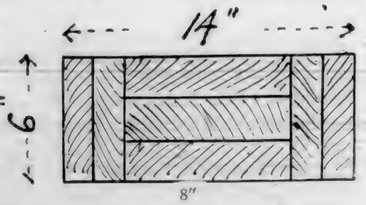
as there is a tensile strain of 6900 lbs. it should be provided for by connecting the panel points with 1⅛″ rods. At A, B we would require in a similar manner a rod polygon strong enough for 8400 lbs., or 1¼″ rods.

If the ends A, B are firmly fixed; or if the tangent AA′ of the ribs be continued to the gallery floor or base (which is



the design), then the rod polygon can be dispensed with, as the outward tendency of the rib toes at A is taken up by the struts AA′, which conveys the rib strains directly to the base.

The *maximum* compressive strain to be provided for in the ribs would be 11,000 lbs. The ribs are bent to a radius of 50 ft., with a versed sine of about 16 inches, and of the section shown in annexed sketch. So that the maximum compressive fibre strain would be about 1100 lbs. per sq. inch, which is as much as the present ribs could be expected to bear with safety.



If the various members as thus dimensioned be properly connected at the panel points, we would, so far as the *dead loading* (in accordance with our assumption) is concerned, have a perfect system of balanced strains, and perfect stability.

II. WIND FORCE ACTING ON ONE SIDE.

There are three kinds of forces brought into action on the dome by the wind force distributed over the panels of its exposed semi-surface, viz:—

I. The vertical components of the resultant wind forces, tending to hold down or preserve the stability of the dome as a whole.

II. The horizontal components of same, tending to bend over the dome from the wind to the lee side, and overturn it or destroy its stability as a whole.

III. The resultant forces, or the combined action of these components, have at the same time a tendency to distort or destroy the spherical shape of the dome by producing unequal strains in its various corresponding members.

In the first place we will consider the distorting action of the wind force.

The *maximum* effect of the wind will evidently be pro-

duced on the panels (2 opposite and rib) directly opposed to its line of action, will be less on the adjoining panels and ribs, still less on the next, and so on in proportion as the angle between the panel face and wind direction becomes less, and will be a *minimum* on the panels (2 opposite and rib) at right angles to its direction. I have regarded the wind as distributed above AB (the spring line) as shown on diagram, and the ribs as fixed at A, B, etc.

If we imagine the ribs AX, XB, with a half-panel on each side (including the two small top domes), and the rings GH, EF, CD as standing alone; and resolve the wind pressures on the sub-panels AC, CE, EG, and the two small domes GX, into their components at A, C, E, G, H, we get a series of forces which we compound into a single force at each of the panel points A, C, E, G, H. These will be the *maximum* forces at the panel points, and the corresponding strains in the rib-rafters and rings will be the *maximum* strains—which are marked on the diagram.

The strains in the rib-rafters (AG, GB) and rings due to the panel forces at a-1 c-1 e-1 g-1 will be less than the maximum strains; and as the *minimum* panel forces act at a c e g, the corresponding strains in the rib-rafters (eg and opposite) and rings will be a *minimum or zero*.

In the ring EF for instance the maximum compressive strain will act from E towards e-1, and from E towards e'-1. The compressive strain due to the panel forces at a-1 c-1 e-1 g-1 will act from e-1 towards E and from e-1 towards e-2 the former having a tendency to balance the maximum strain from E towards e-1—but being less the result is a tendency to move E and e-1 towards XY; and there will be an actual movement of these points unless the rigidity of the ring and connections with the rib-rafters are sufficient to counteract this tendency—which will be a maximum at e as the minimum or zero radial force is at that point... Consequently if the ring is rigid enough in itself, but the ribs are not capable of (or designed to) taking up the outward and forward tendency of the panel points, the circular form will become distorted into that of an oval having its major axis in the direction XY, and its minor axis in the direction XA; unless we counteract this by connecting the panel points of each ring with horizontal tie rods, and those of the different rings and the base by means of a system of diagonal tie rods. In this manner we convey (without distortion) the maximum strain from E to e and from e to F—where it will be balanced by the same strain coming from the opposite side.

So much for the wind side. On the lee side the tendency will be to produce an exactly opposite effect. The maximum tension at F will tend to draw the panel points inwardly and forward; the rigid ring and diagonal tie rods will prevent this, while the horizontal tie rods will convey the maximum tension from F to e and from e to E, where it will be balanced by the same strain coming from opposite side.

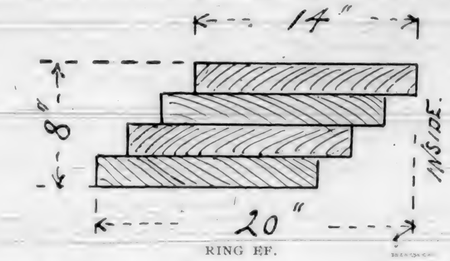
But now we have, at the same time, a resultant radial (horizontal) tendency to move the whole ring bodily forward. There is also a similar tendency to move the other rings GH and CD forward at the same time, but in less and greater degree. Hence in order to make this tendency relative between the rings it becomes still more necessary to connect them by means of a system (analagous to the web in girders) of diagonal bracing or tie rods between the panel points, as indicated on diagram. This system connecting the different rings together and to the base gives (in conjunction with the ribs) the entire structure the nature of a homogeneous shell.

III. DEAD LOADING AND WIND FORCE COMBINED.

The combined maximum strains to be provided for are marked on diagram.

The maximum rib strain is 16,000 lbs. compression. The ribs being bent to a radius of 50 feet, and consequently having a versed sine of about 16 inches, with about 22 feet between panel points, the section as designed would have to bear a maximum fibre strain of about 1600 lbs. per sq. inch, which is too great for a laminated rafter. Hence it would be necessary to introduce three additional polygons of struts and tie rods connecting the ribs *midway* between the base AB and ring CD, between the rings CD and EF, and between the rings EF and GH, as shown on diagram by broken lines.

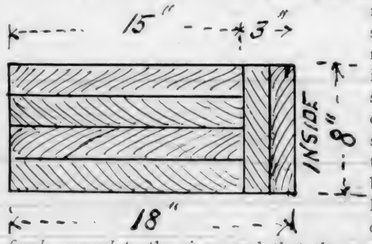
It remains to provide for the strains in the rings EF and CD. The maximum compressive strain in EF is 30,000 lbs. or 15 tons with 8.76 feet between panel points, for which the



RING EF.

ring as designed (annexed sketch) is strong enough. The maximum tensile strain in EF is 18,000 lbs., for which a 1⅜" rod would be ample. The design provides for 1¼" rods.

The maximum compressive strain in CD is 13,100 lbs. or 6½ tons, with 12.15 ft. between panel points, for which the



ring as designed (annexed sketch) is certainly strong enough on the assumption that the ribs are braced as I have indicated, and *firmly secured* to the rings, and that the panel points are connected by means of a *system of diagonal* tie rods as also proposed. I fail to see the necessity of the cumbrous truss, 6 ft. deep, designed for this ring—which will destroy the appearance of the inner surface of the dome, unless it can be utilized for some purpose (such as a display of flowers for instance) which will off-set this effect.

The maximum tensile strain in CD is 15,400 lbs., for which a polygon of 1¼" rods connecting the panal point will be sufficient. The design provides for only ⅞" or 1" rods.

My suggestions for changes are marked on diagram by broken lines.

"So you used to be in business for youself, eh?" asked the business man. "How does it happen you are looking for employment?" "I guess I wasn't up to business ways," answered the applicant. "Every time I failed I made a failure of it."—*Indianapolis Journal.*

CALIFORNIA MARBLE.

STRANGERS visiting San Francisco and other cities of California are at once struck by the absence of the use of marble in the construction of our dwellings and business blocks. This fact is brought more forcibly to their minds when after a short stay here they become convinced that there are a great many men of wealth in this state, also that they reside in beautiful and costly homes, at the same time these houses are constructed almost entirely of wood, thus the impression is forced upon the visitor that marble is not to be had here only at such a price that almost prohibits its use, that we must depend solely on our vast forests of redwood and other timber for our building material.

It is with a view that some of these same visitors may read this article and become convinced that the conditions here are just the reverse that we publish it; at the same time may it serve to call attention to the residents of our state and those intending to build, that we have confined in the hills and mountains of California vast deposits of white, variegated and colored marbles. Material that for strength, duriability and appearance will compare with any produced in the world, and above all cheaper than the imported article.

It is my intention in this review of the different marble deposits of the state, to show no favor to any particular material, but as near as in my power make a fair statement of the various kinds and qualities, where they are quarried, and such other information as I may have, when the purchaser can judge for himself after an examination of the different materials. However, I do not hesitate to say that if there is a deposit of poor marble being worked in California to-day I do not know of it. They are all good, will take the place, and in many cases, give better satisfaction than the imported article.

Inyo county marble.—Near the base of the Inyo mountains in Owens valley near the lake of the same name, lies what is perhaps the largest and most wonderful deposits of marble that has been as yet discovered. It is impossible to describe truthfully these vast deposits of beautifully colored stones.

There is white, black, blue and yellow in pure colors, purple veined, black and gold, making a grand variety of colored marbles very beautiful for interior decoration. The white marble is perfectly clear, the grain is fine, very compact and will stand great pressure; it is a pure dolomite, therefore, will take on and retain a very fine polish.

The first two stories of the Mills Building in this city are, as well as a greater part of the interior finish of same, done in this material and is a most creditable piece of work, the main entrance to the building shows what may be done in the way of relief with the white marble.

The black is almost identical in color with the Belgium black marble, it is very difficult to distinguish one from the other when polished. The yellow marble varies from a delicate cream to a dark mottled orange, there are veins of deeper yellow with fern like markings similar to moss agate is particularly adapted for furniture and interior decorations.

Inyo moss agate marble.—The color of this runs from light to dark lively browns with beautiful fern like markings and I understand is the only marble of the kind known; it takes a fine polish.

Much more could be said of the colored marbles of Inyo county but I must retain space for some of the other counties and their marble. Yet before passing from Inyo it is but just that I mention the fact of it being my extreme good fortune a few days since to be shown a very large collection of fancy colored marbles (in sample) from Italy, and at the time I took pains to obtain from the party the pieces of the different varieties on board the vessel at Genoa, Italy, and also delivered here in San Francisco. I found the prices of these colored marbles were far in excess of the Inyo colored material, and while I must admit that there was some very beautiful specimens of marble in the collection from Italy, I say without fear of contradiction, that the colored marble of Inyo county is fully up to their standard and in my judgment much more beautiful. The question may be asked, are the Inyo deposits being worked? I answer yes, and with a plant of the most improved machinery, capable of turning out as high a grade of work as can be done any place in the world.

AMADOR COUNTY MARBLE.

Situated about six miles from Jackson the County Seat of this County, is vast deposit of True Marble and what is perhaps the truest material (of the marble family) yet discovered in the United States. There are many points about this material which are pleasureable to note.

As yet there are but two varieties developed although the vein is uncovered on the face of the hill for a length of about 275 feet and a height of over 400. This marble is variegated in color, one a gray black vein and the other a pure white with jet black veins. The markings of the variety is similar to some of the Italian marble and is far more beautiful from the fact of the black veins standing out in bold view, while in the case of the Italian marble of this grade the black veins seem to be beneath the surface and are more of a gray than black; a comparison of the two materials leads to a verdict in favor of the Amador Marble. A feature of this material which I have not seen in any marble yet discovered in the United States, is that it is very compact of great strength when put under pressure, yet very easily worked, saws much better than the Italian and for relief work is much preferable to the imported material. I have talked with several marble workers about this and in each case they informed me that the Amador Marble worked up better than the Italian. These quarries were first opened by an Italian of years experience in the quarries at Carrara, Italy, recognizing the excellent features of the material, he came to San Francisco and organized a company composed mostly of his own countrymen who were fully alive to the fact that in the Amador marble they had a material that compared with what they had seen in their own country. The company was named "The Carrara Marble Co. of Amador," after the City of Carrara, Italy, about $50,000 has been spent in the opening of the quarries by these parties. The most prominent piece of work done in this material was the interior work and grand stairway of the Stanford University Museum and is really a magnificent piece of marble work. I am reliably informed that samples of this material have been shown to Mr. Vechhi one of the largest quarry owners in Italy he pronounced it equal to the best (outside of the statuary) Italian material, and predicted that it would eventually drive the imported article out of the markets of the Pacific Coast. This marble received the hightest recommendation from the United States Supervising Architect of all the different varieties of stones presented to the government (in samples) for use in the construction of the proposed new Post Office in San Francisco.

SAN BERNARDINO COUNTY MARBLE.

Here again we have an immense deposit of marble very different in character from that of Inyo or Amador counties, at the same time it is a very fine material of different varieties, there is black, dark gray and blue, these are variegated; also pure white. The deposit is situated about one mile from the town of Colton, has excellent railroad facilities and an improved plant of machinery for working the marble into slabs, pillars, wainscoating and tileing. A company was organized some four years ago to work this deposit. Their principal marble job was done in the interior of the new Academy of Sciences building in this city.

I am informed that the property or the business of the company has now passed into the hands of two experienced marble men from the eastern states, and I understand that these men are fully able to handle the quarries as well as the mill. I trust their efforts will be successful, for the marble from these quarries is worthy of the consideration of every one intending to build or desiring to use marble in any form.

San Diego county also contains a deposit of green marble, a beautiful stone very much the nature of onyx. Sometime since, the parties owning these quarries started in to open them. I have no knowledge of what is being done there at present. I have seen the marble in the rough and finished, it takes on a beautiful polish and is worthy of a place among the best marbles on the market.

In many of the other counties of this state deposits of fine marble have been discovered, none of them have been opened to any extent and are only awaiting capital to develop them.

After calling attention to the above array of material lying at our doors, the thought comes to me why it is that the people of this state do not use more of this material for building purposes and why if they want marble steps, wainscoting, mantles, washstands, etc., that that do not call for the California article? Surely it is far better for themselves and the state in general that they buy home material; not alone can it be bought for less but generally speaking is much more preferable.

Aside from this, by patronizing the home quarries one is fostering an industry that will at no late day make it self felt in the affairs of our state. I am in a position to say that there is plenty of capital awaiting the demand for California marble to show itself, when this same capital will be embarked in the business, both in the development of the present and new quarries, as well as in the erection of mills for working the material. A fair demand in a few years will find the quarries of California as large a source of revenue to this state as the quarries of Italy are to that country, and as the marble quarries of Vermont and Tennessee are to those two states.

Quarrymen and marble workers as a rule are very thrifty men and make intelligent citizens; they are paid good wages when employed. We have very few of them here from the fact that there is no call for their skill. When we want marble let us demand the California article and take no other (it is cheaper and better) we will find it will be but a short time when these same quarrymen and marble workers will come to make their homes with us and find employment in beautifying our homes and business blocks.

Nothing can take the place of a pair of marble steps, they are always bright, clean looking and require no painting; never out of place be it leading to cottage or mansion, and while the first cost may be a slight advance on wood or cement, in the long run they are far cheaper.

In conclusion let me say that I trust the architects will use their efforts in behalf of California marble.

ANNUAL BUILDING SUMMARY.

In the following table we present the number and value of buildings erected in San Francisco during the past year, as shown by the contracts filed at the City Hall.

FOR FIRST SIX MONTHS.—1893.

1893	No. of Buildings	No. of Contract	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	3	7	$ 70,770	27	35	$ 143,988	21	5	$ 6,040	32	47	$ 220,798
Feb'ry ..	1	3	22,400	40	47	204,447	18	25	61,052	59	67	288,899
March ...	5	9	290,458	48	55	277,323	18	39	280,221	65	93	848,002
April	7	17	124,783	57	67	254,827	12	18	41,667	76	83	420,287
May	1	2	15,950	65	77	280,129	10	11	20,409	81	90	316,488
June.....	7	11	78,347	60	73	332,827	8	11	18,850	75	95	430,024
Total	24	49	$ 614,518	297	354	$1,498,541	68	109	$425,239	298	475	$2,524,498

FOR SECOND SIX MONTHS.—1893.

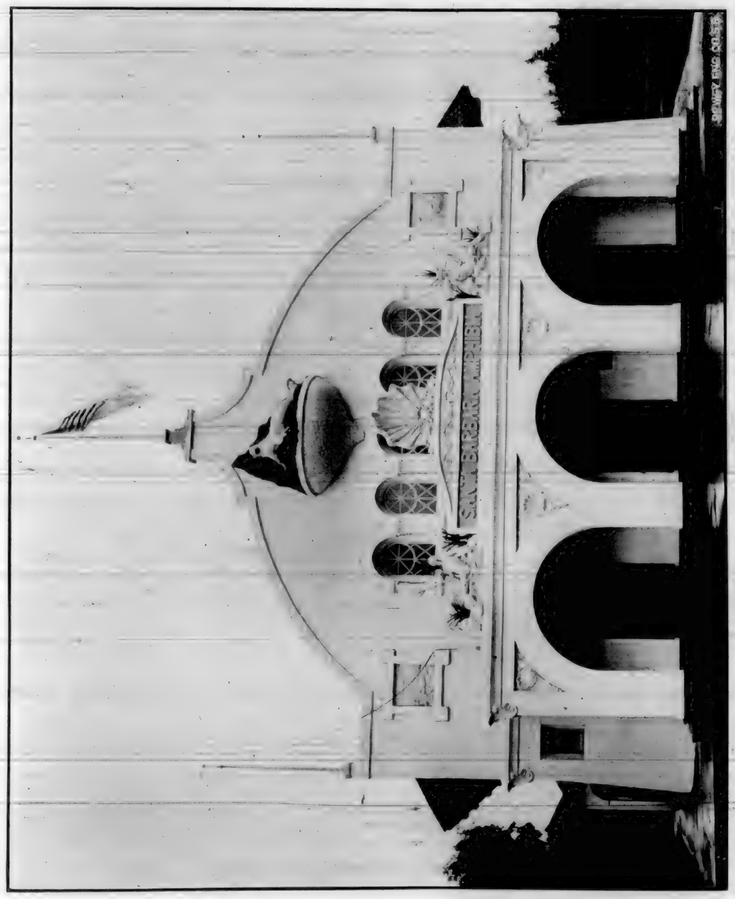
1893	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value
July	4	10	$ 60,384	47	67	$ 303,252	22	37	$ 40,482	73	114	$ 404,118
Aug	1	5	36,500	22	33	79,423	7	10	13,777	30	48	129,700
Sept.....	5	11	53,212	35	41	193,629	6	7	20,710	46	59	267,542
Oct.....	2	17	102,855	32	51	130,785	36	46	39,603	70	114	273,243
Nov	2	6	59,145	20	36	139,542	5	9	4,728	27	44	203,415
Dec.....	1	7	27,800	22	39	118,849	4	7	13,397	27	51	160,016
Total	15	56	$ 339,896	178	267	$ 965,480	80	116	$132,697	273	430	$ 1,438,034
G'd Total	39	105	$ 954,414	475	621	$ 2,464,021	148	225	$ 557,936	571	905	$ 3,962,532

In addition to the above recorded contracts, there should be included an estimate of about $500,000 for work done and not recorded, making a grand total for the year 1893 of $4,462,532.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements,	value.....	$ 1,754,435
1881—	533	"	"	3,790,732
1882—	785	"	"	3,896,212
1883—	803	"	"	5,261,689
1884—	1,127	"	"	6,202,807
1885—	1,457	"	"	7,043,999
1886—	1,148	"	"	6,401,669
1887—	1,093	"	"	6,605,054
1888—	891	"	"	6,244,220
1889—	1,081	"	"	7,500,000
1890—	1,037	"	"	7,095,013
1891—	1,162	"	"	6,946,056
1892—	920	"	"	5,856,341
1893—	905	"	"	3,962,532

LIPPINCOTT'S MAGAZINE for January, 1894. The complete novel in the January number is "The Colonel," by Harry Willard French. Based on a romantic adventure, in which the hero saves the heroine's life at sea, the tale goes on to study the characters of these two highly-gifted idealists, and to trace the fortunes of a mutual passion which neither is willing to own. The sentiment throughout is the purest and loftiest of which human nature is capable, and the chapters appeal to the reader's heart no less than to his brain.



MANUFACTURERS AND LIBERAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

A. PAGE BROWN, ARCHITECT. SMILIE BROS., CONTRACTORS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY 1894.

AGRICULTURAL AND HORTICULTURAL BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

SAMUEL NEWSOM, ARCHITECT.

FINE ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

B. McDOUGALL & SON, ARCHITECTS.

ADMINISTRATION BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION

A. PAGE BROWN, ARCHITECT.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
MDCCCXVI

MECHANICAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

E. R. SWAIN, ARCHITECT. HURLBUT & LOGAN, CONTRACTORS.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XV. No. 1. JANUARY 1894

We have received the initial number of a new monthly periodical called, THE ARCHITECT AND BUILDER, published by H. T. Bestor at 408 California street.

The publication presents a very neat appearance and is to be devoted to Architecture, Building, General Improvements and the Fire Department. The subscription price is $2.50 a year.

Besides the opening chapters of a paper on the History of Architecture, there is a very interesting article on the recent pilgrimage of the Veteran Volunteer Firemen of California to the east, where they were royally entertained, and returned from their visit with memories of a most enjoyable vacation.

We wish the new publication long life and prosperity.

PHOTOGRAPHIC TIMES has a Christmas number that is a pleasure to look at, among other good illustrations snap shots in the south cannot fail to please both old and young. In giving Mrs. E. Main a place among the distinguished photographers of to-day the illustration "Along the Mountain Road" and other views in Switzerland will convince the reader that Mrs. Main has not been misplaced.

Astromical Photography at the Lick Observatory by Prof. E. S. Holden will interest astronomers.

ECONOMY IN SLATE ROOFS.

THE San Francisco Slate Company is striving to convince the public of the practical economy of building in a permanent and substantial manner. While the first cost of a cheap roof is say one-half the cost of a good one, yet if the latter last four times as long as the former, who can deny the economy of the latter method. A tin roof requires constant care and attention and if left too long without paint will rust and ruin in a short time; a shingle roof exposed to the summer sun will warp and split, and the heat drying the pores of the wood renders it very inflamable.

A burning brand on a shingle roof is a great danger, let the same fall on a slate roof and no harm results. But a slate roof, from its very nature, is permanent, and as it is economy in the long run to procure the best article to be had; so when you are considering that most important of all elevated subjects, decide in the favor of a slate roof and you may safely consider yourself above criticism.

THE PARK COMMISSIONERS.

WE had occasion in a late number of this journal to speak of the Park Commissioners as gentlemen who had the faculty of making a little money go a great way in the way of improvements at the park. Now they have proved themselves to have the same faculty in the way of giving the children a day of enjoyment and the use of the park and play grounds, by inducing the railroad company to send and return the children free, enabling thousands of children to enjoy a day of recreation that will long be remembered by many. Thus the surplus derived from the playground was centainly made to go a great way, and do a great deal of good.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONSTRUCTION OF CONTRACT AS TO PARTY WALLS.—Where one erected a wall partly on his lot and partly on an adjoining lot, under an agreement with the then owner, by which the wall was to be mutually used and enjoyed by the respective parties hereto, and their respective heirs, successors, and assigns, for all the purposes of a party wall. One half of the cost of the wall was to be paid by the adjoining owner when it should use the wall. The contract further provided that if the adjoining owner should at any time elect, that it would not use the wall, then it should convey for a certain sum, so much of its lot as the wall occupied. The wall was a party wall under the agreement, and its character could not be altered by a failure to make the election.

Cutting v. Stokes, Supreme Court of N. Y. 25 N. Y. Supp. 365. 128.

DELAY IN PERFORMANCE OF BUILDING CONTRACT.—The fact that a builder of a house does not terminate the contract with a subcontractor for the failure of the latter to complete his work within the time specified, does not prevent the builder from recovering by way of counterclaim, damages for the delay. A builder who has failed to complete, in time, work which was required to be done, on his part, before the work of a sub-contractor could be commenced, cannot complain that the sub-contractor failed to complete his work within the time specified in the contract.

Grannis vs. Hurd Lumber Co. v. Deeves, Supreme Court of N. Y., 22 N. Y. Supp. 375. 94.

FORCLOSURE OF MECHANIC'S LIENS.—When a building contract stimulates that the architect's certificate shall be conclusive evidence of the builder's right to a final judgment, and the certificate is produced, and not impeached, there is no reason to deny foreclosure of the lien.

Snaith v. Smith, City Court of N. Y. 25 N. Y. Supp. 513. 42.

ABANDONMENT OF CONTRACT.—A building contract provided for payments to the contractor every thirty days, in such sum as shall be certified by the architect, but twenty per cent shall be retained until the final completion of the contract. The contractors abandoned the work, and it was completed by the owners. The sum retained by the owner never became due the contractor, and there was nothing in which a material man's lien filed after the abandonment by the contractor could attach.

Kelly v. Bloomingdale, Court of Appeals of N. Y. 34 N. E. Rep. 919. 79.

COVENANT IN AGREEMENT FOR PARTY WALL.—The adjoining owners of a party wall and the land covered by it have each an easement in that portion owned by the owner, by virtue of the party wall contract which runs with the land, but this is entirely independent of the original cost or expense incurred in erecting it. It is competent for the parties to provide how, when, and to whom the cost of his portion should be paid by either party, and to make the convenant to pay, a mere personal convenant, with the convenantee, and severable from his ownership of the land.

Pillsbury v. Morris, Supreme Court of Minn, 56 N. W. Rep. 171. 93.

INSURABLE INTEREST IN BUILDINGS IN COURSE OF CONSTRUCTION.—The owner of land has an insurable interest in buildings in process of construction thereon by a contractor who is to furnish all materials and labor, and be paid after completion of the work.

Foley v. Farragut Fire Insurance Co. Supreme court of N. Y. 24 N. Y. Supp. 1131. 42.

CONSTRUCTION OF BUILDING CONTRACT.—A contract to repair an old building and build an addition, the old part to be turned around, stipulated a certain sum for the whole work, to be paid as follows: "Old part placed in position, $200; foundation in and frame up, $300; inclosed and roof on, chimneys up and the building completed according to agreement, and specifications, $300." The work on the new part not being in condition to entitle the contractor to the third installment, when the building was destroyed by fire, no recovery on such installment could be had for work on the old part, though that was substantially completed, the contract being an entirety. The second coat of paint not having been put on the new part two doors not having been hung, and no lock or fastenings having been put on the front door or windows, and the house not having been delivered to the owner, it was not substantially completed.

Clark v. Collier, Supreme Court of California, Pac. Rep. 677. 611

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

SETH BABSON, Pres. — GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. — JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

C. E. GRUNSKY, Pres. — CHARLES D. MARX, Vice-Pres.
OTTO VON GELDERN, Sec. — GEO. F. SCHILD, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. — H. T. BESTOR, Treas.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on the afternoon of the 12th inst. in the rooms of the Society, 408 California street.

The Executive Committee reported that it had secured the promise of four papers on as many subjects, which would be read during the course of the year and which, it was hoped, would furnish interesting topics of discussion for members present, and cause an interchange of the ideas and experiences of the professional brethren.

The first paper will be by Geo. W. Percy, on the subject of the Use of Concrete in Architecture, its Successes and its Failures, and will be read on February 9th.

Members of the Chapter will receive the usual notice. Other persons interested in the subject are requested to procure admission tickets from the president, Mr. Seth Babson, 408 California street.

THE PORTLAND CEMENTS, "JOSSON" AND "NORTH".

AMONG the most notable of the improvements of modern times ranks the discovery and production of Portland Cement. This cement is not named for any particular place where manufactured but was so christened on account of the close resemblance that the artificial stone made with it, bore to Portland stone.

The various brands now on the market are the results of a long course of experiments, resulting in improving the quality, and establishing the uniformity of recognized brands.

The best proof of these qualities may be sought in the experience of architects, engineers and builders.

When a particular brand of cement is chosen over others in open market, the reason is that the purchaser has found by experience that the brand he choses possesses quality that make it more desirable than other brands. For example when the United States Government employs 85,000 barrels of cement manufactured by a particular firm, it is good proof that the cement is one to give satisfaction.

This amount of "Josson" and "North" Cement has been used in the construction of fortifications on the Pacific Coast, principally at Lime Point and North Point in San Francisco Harbor, and at the Cascades in Oregon.

A supply of these brands is received every month, and purchasers are thus assured of fresh cement, that has lost none of its strength by months of storage in warehouses.

A TENANT went to see his landlord about a house he had rented, and about which he had some fault to find. He mentioned several drawbacks, and then said: "And furthermore, Mr. Oppenheimer, the cellar is full of water." "Mr. Oppenheimer, the landlord, eyed him with reproach, and then exclaimed: "Full, of water? Well, vat you expect? Full of champagne?"—*Harper's Bazar.*

CALIFORNIA MIDWINTER EXPOSITION

AND A DESCRIPTION OF THE WORK DONE AND MATERIAL FURNISHED TO MAKE IT A NOTABLE SUCCESS.

THE formal opening of the California International Midwinter Exposition will take place with the appearance of this number of the CALIFORNIA ARCHITECT AND BUILDING NEWS. The event is a notable one in the annals of the state, and one that will long be remembered by our own citizens and those visitors who will desert the rigorous climate of the eastern states to enjoy the equitable climate and proverbial hospitality of the Golden State. A few words of commendation can well be bestowed upon those individuals and firms who have by their individual support and assistance, rendered these results possible and we take pleasure in awarding them the credit their exertions so fully merit.

THE Midwinter Fair owes a great part of its success, if not the greatest part of this success, to the skill, courage and perseverance of the contractor who built the beautiful structures to house the exhibits.

As it was absolutely essential that the buildings should be ready on time, it was necessary that the contractors should bind themselves to forfeit hundreds of dollars a day for every day's delay in the completion of the buildings beyond the limited time allowed. Under these circumstances it required a deal of nerve to step forward and offer to assume the heavy burdens and serious responsibilites inseparably connected with the enterprise. Unknown difficulties could be counted on to arise, with the certainty that delay would be fatal. Nevertheless the builders of this city eagerly welcomed the opportunity of showing to the people of the state that they were equal to any contingency that might arise, and there was certainly no lack of bidders for the work.

Smilie Brothers were the successful contractors to whom was awarded the contract for the construction of the Manufacturers and Liberal Arts Building, the largest of the buildings, and night and day for many weeks pushed the work to final completion; for when the light of day was no longer available, electricity, the light of night, was called into service; and thus the Californians of a later day showed the pioneers that the push and energy of early days had descended unimpared to present times and in the realization of this fact there is quite as much satisfaction, as in the enjoyment of the more substantial profits coming there from.

THE SAN FRANCISCO LUMBER COMPANY.

THE buildings that form the principal architectural attraction of the Midwinter Fair, are with one exception of wooden construction, covered with staff. An immense quantity of lumber necessarily entered into their construction, and yet this one firm alone in this city furnished more than two-thirds of the amount required.

This firm was incorporated in May, 1887, and the officers and directors are as follows:—W. J. Adams, Pres.; C. S. Holmes, Vice-Pres.; W. H. Talbot, Treas.; Chas. Hanson, A. W. Jackson, A. D. Moore, R. L. Taylor, Directors; James Greig, Sec.; J. N. Curtis, General Manager.

This company and its connections outside of San Francisco, generously responded to the appeal of the promoters of the Fair, and devoted outright five hundred thousand feet of lumber for use in the buildings. The enormous stock of lumber carried by this company can be readily imagined, when we say that in their yards at the foot of Third street and at Fourth and Channel streets, are stacked twenty million feet of pine and ten million feet of redwood.

This immense stock enables them to fill orders for any size and kind of timber, without the least delay, and will explain why they are able to furnish any amount of lumber as soon as the order is received.

While the above description will give our readers an idea of the extent of the business, the accompanying illustrations will be of interest, showing as they do their yard at Fourth and Channel streets, San Francisco, their mills at Tacoma, Port Blakely, Port Gamble and Port Hadlock, Washington, four out of the nine mills controlled by the company.

The extent of the trade can be imagined when we state that there is no country in the civilized world but what purchases the products of these mills. However the principal foreign countries with which the largest proportion of the business is carried on, are Australia, Chili, Peru and The Hawaiian Islands, while the trade in this country takes in the entire Pacific Coast.

Besides the millions of feet of lumber kept in stock to meet the demands of the local market, the company keeps a complete list of dry, clear and surface redwood and Humboldt shingles for eastern shipment.

Their place of business uptown is at 303 Montgomery street, and their offices and yards are situated, one at the foot of Third street and the other at Fourth and Channel streets.

PORT HADLOCK
PORT BLAKELY

SAN FRANCISCO LUMBER CO'S YARD,
FOURTH AND CHANNEL STREETS, SAN FRANCISCO.

TACOMA MILL
PORT GAMBLE

WESTERN IRON WORKS.

THE lightening rapidity with which events take place in this latter part of the 19th Century, was never better illustrated than at present, at our own doors, and by our own people. Think of an exposition, international in character, conceived, elaborated and carried to completion within the space of six months; yet that is what we have just witnessed, and we are becoming so accustomed to the marvelous that it will soon fail to excite surprise.

Think of the capacity for organization that is required; the rapid and intelligent thought, supplemented by as rapid execution. Every detail to be thought of, and men and means provided for its realization.

The general public see and applaud the results. The scientific mind realizes the strain that is necessary to foresee obstacles and provide in advance the means to be employed in overriding them.

The delay of an hour in the arrival of reinforcements in a battle means defeat—the delay of a day in the arrival of the necessary material for a building, causes quite as serious consequences in the progress of the work, and if when it comes it does not come in proper shape to fit to a nicety, everything is thrown into confusion. No such possibilities can be admitted in work of the magnitude of the buildings we now see before us, in the Midwinter Fair, and such confidence had the contractors in their resources, that they bound themselves by a forfeit of $400 per day for any delay.

Under such circumstances no chances of failure could be taken, and as in instance of good judgment in this regard, we will instance the iron work used in the combination trusses and girders of the Mechanical Arts building designed by E. R. Swain, architect, and of the Fine Arts building designed by C. C. McDougall & Son, architects.

This work had to be delivered early in the course of construction, and to have it ready on time the large establishment of Sims & Morris worked day and night. Notwithstanding the haste, however, everything was ready promptly, and $15,000 worth of work when wanted was found to fit to a hair. By such care and attention to details The Western Iron Works, Sims & Morris, have reached their present high standing, and they can safely be relied on to continue in the way that has led them to such business success. Their address is 123–125 Beale street.

ARTISTIC DECORATION AND PAINTING.

AFTER the construction of the buildings of themselves the next most important point is their decoration in a fitting manner. The points of beauty should be made more attractive by color, and from this point of view the buildings surpass those of the White City.

Fraser & Keefe, one of our oldest and best known firms, have carried out the ideas, in this respect, of the designers of some of the main exhibition buildings, and the artistic work done on the Manufacturers and Liberal Arts Building, the Mechanical Arts Building and the gilding on the Fine Arts Building, secured them various other contracts, notably the decoration of the Cairo and Oriental Concessions and the Festival Hall. Messrs. Fraser & Keefe personally supervised this branch of the work, and it will be interesting for our many readers who will admire their work during the next six months, to know whose taste and skill they are indebted to for the pleasure.

As the best method of expressing our appreciation of good work is to patronize the workman, make a mental note that the address of Messrs. Fraser & Keefe is 310 Stockton street, San Francisco

FRESCO PAINTING AND INTERIOR ART DECORATING.

NO matter how well a building is planned and constructed, all will acknowledge that unless good taste in designing and good judgment in the execution of the design of decorating and ornamenting, the full effect may be lost, and the result fall far short of what the architect intended to produce. A. Page Brown, architect of the Administration Building, may therefore congratulate himself upon having Messrs. Moretti & Trezzini, fresco painters and interior art decorators, employed for that purpose. We feel sure that upon the completion of their work upon the building, the verdict of the public will be unanimous in declaring that the interior of this stately and imposing building has gained much by having the work intrusted to such skillful hands as Moretti & Trezzini's. Among the many buildings that they have decorated may be mentioned the following:—St. Ignatius Church, St. Mary's Cathedral, of this city, Macdonough Theatre in Oakland, also most of the best residences and banks in this city. Their fame in fact extends all over the coast from Portland to Los Angeles.

EXHIBIT OF THE JOSHUA HENDY MACHINE WORKS AT THE MIDWINTER EXPOSITION.

AMONG the exhibits which are to be placed in practical operation in the Mechanical Arts Building at the California International Midwinter Exposition in Golden Gate Park, we are informed that the Joshua Hendy Machine Works of 51 Fremont street, this city, have in process of construction and erection, a five (5) stamp quartz mill com plete with all of the latest and most approved forms of Hercules rock-breakers, Challenge ore feeders, Triumph ore concentrators, silver-plated copper plates and as well all of the usual accessories constituting an entire plant for the perfect amalgamation and concentration of gold bearing quartz ores.

They will also place on exhibition their specialties of hydraulic gravel elevators, giants, water-gates, air valves, hydraulic pipes, etc., as adopted in the conduct of hydraulic mining enterprises in all of the placer mining districts of the world.

In conjunction with their exhibit of Quartz Milling Machinery there will be presented a complete line of horse-whims for the raising of ores from mines in the early stages of their development, also ore buckets, mining cars, etc.

They will further place in operation a Russill Automatic and an Ore and Sembower engine for use as power in certain of the departments of the Exposition for the sale of which they are the agents for the Pacific Coast States.

It is deemed proper to state that we are credibly informed that these works were awarded the hightest premiums by Award Committees of the Columbian International Exposition at Chicago for their display of ore-feeders, Triumph, concentrators. Hydraulic, Gravel Elevators, Giants, etc., such as are enumerated above in the proposed exhibit at the Exposition to be held in this city.

An examination of their extensive foundry plant and machinery works may be of interest to some of the persons who intend to visit the Midwinter Exposition, situated as they are conveniently near several street car lines on the corners of Bay, Kearny and Francisco streets in the vicinity of the seawall in the northern part of the city, where will be found a complete equipment for furnishing any description of machinery for any conditions of use and as well architectural iron work and light and heavy castings.

ON HOME INDUSTRIES AND INCIDENTALLY TOUCHING ON THE PRODUCTS OF THE PARAFFINE PAINT CO.

THE manufacturing industries of the Pacific Slope are few in number and small in proportiou to the consuming power of the population it contains. The reasons for this are many, but they are now gradually disappearing under the spirit of enterprise and independence which is taking possession of the west. Of late years there has been a tendency on the part of live citizens to aid and encourage such manufacturing concerns as ventured into the field, by giving preference to their products. In Colorado, the Board of Trade of Denver, adapted a label which certified that the contents of the package on which it was placed, was of home manufacture and they appealed to the citizens of that state to give such articles preference wherever and whenever possible—and report says that the people have generously responded to the advantage of all concerned. In other states of the west the same has been tried with varying success.

PAINT FACTORY AND STORAGE SHEDS OF PARAFFINE PAINT CO., AT BERKELEY, CAL.

In California no organized attempt has been made up to the present time to give home products the preference, though it has on several occassions, been suggested. At the same time, however, there is a strong feeling being developed that home manufacturers should be encouraged in every legitimate way provided, of course, that their quality is up to the standard, and their price reasonable. This is the right spirit and it is no injustice to eastern manufacturers, to ask the people of the west for support for home enterprises.

Among the manufacturers of California, the Paraffine Paint Co. of San Francisco, is of special interest to the architects and builders of the state. A few years ago building papers and patent roofings were almost unknown west of the rocky mountains. In the east, building papers were extensively used, and were deemed essential to the proper construction of frame dwellings, but here the genial climate and short rainy season did not seem to warrant such additional expense. Under adverse circumstances, then, began the Paraffine Paint Co. its work of introduction and education. Thousands of dollars were spent in advertising and drumming up trade, but the architects were conservative and the owners and builders obstructive. Finally the entering wedge was driven—and to-day not a house of any pretension is constructed without building paper. Though cheap eastern papers have at times flooded the market—yet P. & B. papers have captured and held the field by reason of their superior qualities and reasonable prices. These papers are entirely of home manufacture. In the construction of the cold storage rooms of the packing houses at Rodeo and Baden over a million and a half square feet of P. & B. paper were used for insulation. As these buildings were designed by eastern architects, familiar with building papers, the selection of P. & B. Paper by them was a high testimonial of the merits of the home product.

P. & B. Roofing, was for a long time, regarded with suspicion, but now after being subjected to severe tests for years, it is being specified and used by leading architects as a substitute for tin and asphaltum. Its cheapness, durability and fire-resisting qualities have compelled this recognition. A strong argument in favor of the encouragement of home manufactures arises in the fact that the construction of the immense buildings at the Midwinter Fair would have been almost impossible without P. & B. Roofing. The canvas, coal tar and paper roofings used on the World's Fair Buildings at Chicago were a source of continual annoyance and danger, and the Executive Committee and Architects of the Midwinter Fair were determined not to use them. Tin was too expensive and in addition there was not enough of it in San Francisco to roof the proposed buildings. Shingles and slate were in a large measure unsuited to the styles of architecture which the architects desired to use. It was then that P. & B. Roofing met its proper recognition—a Pacific Coast Roofing for a Pacific Coast Fair. The result is that nearly *five hundred thousand* square feet of P. & B. Roofing has been used to cover the main buildings, county buildings and buildings belonging to the Concessionary. These roofs are watertight, virtually fire-proof, and permanent and would not have to be replaced if the committee should decide to let the buildings remain. Such a fire as has just occurred at the World's Fair Grounds, Chicago, is not possible at Golden Gate Park, the roofs will not take fire from sparks and burning brands, should they fall on theme

P. & B. Paint is of especial interest and value wherever it is necessary to protect iron or wood work from rust or decay. It is acid and alkali proof and leaves no taste or odor when dry. On the water main of the Portland City Water Works nearly ten thousand gallons will be used. The pipes which conveyed the Hygia Mineral Water from Waukesha, Wisconsin, to World's Fair Grounds, Chicago, a distance of one hundred and thirty miles, were coated with P. & B. Paint. There are other P. & B. Products which have established reputations both here and in the east. P. & B. Insulating Company, which won a gold medal at the World's Fair, is required by the Pacific Fire Insurance Union to be used in the installation of electric wires. Many fires have been prevented by its insulating properties and many more would have never happened had the electrician known his business, or been honest. Everything used in the manufacture of P. & B. goods is of Pacific Coast production—and they are probably the only goods of which that can be truly said. In giving them the preference, a large amount of money which would otherwise go to eastern and foreign manufacturers and railroads is retained at home to the manifest benefit of all concerned.

AMERICAN WIRE GLASS MANUFACTURING COMPANY.

WIRE Glass, as its name implies, consists of a sheet of glass (which can be made by our process of any size or thickness) having imbedded in its centre a sheet of wire netting of any required size of mesh, or wire, or of any desired design. It can be made of any grade, from rough skylight up to the best polished plate. The advantages of this combination of metal and glass over the ordinary glass for most purposes are manifold.

For skylights in train sheds, this glass fills a long-felt want. It is a great deal stronger than ordinary skylight, enabling thinner glass to be used, or larger sheets, thus reducing weights in the roof. The wire netting which is now stretched under or over most skylights to protect passengers from dropping glass, can be entirely dispensed with, thus saving not only a large initial, but also the continual expense of replacing the wire netting; which is quickly eaten away by the sulphurous gases and steam from the locomotives. Our wire netting, being placed in the centre of the glass, cannot be reached by the gases or the atmosphere, and will of course last as long as the building itself. As is well known, glass when kept clean will transmit a great deal more light than when covered with soot and dirt; which will unavoidably accumulate in buildings used for this purpose. With the wire netting tacked underneath or above, it is very difficult to clean the glass, and this is therefore most always neglected. Wire glass, as is self-evident, can be readily cleaned, and when kept in this clean state many less lights would be required to have the same lighting effect.

Wire Glass resists fire as long as the same thickness of iron would. This quality makes it very usefull for partitions in buildings. A skylight which will not crack and fall out at once in case of fire, and thus cause strong upward drafts, which aid the conflagration, will retard the progress of the fire at the start, when every second of time is of the utmost value.

Wire Glass has been ordered and is now being used in the train sheds of the Penn. Railroad, at Broad street, Phila.; Mantua Avenue Station, train sheds and Kensington Station, Pennsylvania Railroad; Grand Central Station, New York City; train sheds of the Boston and Main Railroad, Boston, Mass., the latter sheds contain an area of three and one-half acres of glass and is the largest single order for skylight glass ever placed in this country: New Congressional Library, Wash., D. C.; Post Office Bldg., Scranton, Pa.; Post Office Bldg., New York City; Newark Post Office, Newark, N. J.; the U. S. Cruiser New York; observatory taken out by Lieutenant Peary to the Artic regions, and in countless other buildings not here enumerated.

In this city Wire Glass has been used in the *Mechanical Arts and the Horticultural and Agricultural Buildings of the Midwinter Fair;* in the Bath and Boiler House of the Olympic Salt Water Co.; in the new Bohemian Club, and has been specified for use in the two large Parrott Buildings, now being erected, one on the corner of Post and Powell streets, and the other on Market street. Other large contracts are now being figured on, to early to mention.

Any architect, contractor or builder desiring samples or other information can secure the same from the agent, Mr. Jas. A. Maguire, 130 Sansome street, San Francisco.

CITY BUILDING NEWS.

Ash Ave. near Octavia street. A two-story building; owner, B. Bernhard; architect, Edward J. Vogel; contractor, F. V. Steinman; signed, Dec. 11; filed, Dec. 14; cost $2,500.

Baker and Sullivan Alley. Alteration and addition; owner, Estate of Jno. Sullivan; contractors, Ingerson & Gore; signed, Jan. 15; filed, Jan. 15; cost, $3,920.

Carl and Stanyan. Alterations and repairs; owner, Thomas Lundy; architect, T. J. Welsh; contractor, James J. O'Brien; signed, Dec. 26; filed, Dec. 28; cost $2200.

East near Mission. Excavating, etc.; owner, Claus Flathmen; contractors, Healy, Tibbitts & Co.; signed, Dec. 18; filed, Dec. 19; cost $7.50 a pile.

Ellis and Mason. Incandescent electric light wiring; owners, Y. M. C. A.; architect, A. Page Brown; contractors, California Electrical Works; signed, Jan. 10; filed, Jan 11; cost $3,350.

Flint Tract. Alterations and additions; owner, B. Pchrisson; contractor, Carl Ahlgren; signed, Dec. 22; filed, Dec. 29; cost $1150.

Florida near 22d. To build; owner, Geo. W. Werner; contractor, Henry P. Conrady; signed, Dec. 15; filed, Dec. 16; cost $2800.

Fourth near Clement. A frame building; owner, Adolph Winterberg; contractors, Lyons & Boyer; signed, Nov. 24; filed, Dec. 19; cost $2,000.

Golden Gate Park. Decorating, etc.; owners, Vienna Prater Co.; architect, E. Kollofrath; contractors, Bush & Wacker; signed, Dec. 28; filed, Dec. 29; cost $2050.

Golden Gate Park. All work except painting, plumbing, electric work, concrete hall and annex for kitchen, etc.; owners, Vienna Prater Co.; architects, Edward Kollofrath; contractors, Mahoney Bros.; signed, Dec. 23; filed, Dec. 23; cost $27,800.

Golden Gate Park. A wooden wall and stable; owners, Oriental Syndicate architect, Edward R. Swain; contractor, Thomas H. Day; signed, Dec. 22; filed Dec. 26; cost $2,550.

Golden Gate Park. Mill work and rough framing for Vienna Prater; architect, E. Kollofrath; contractors, Mahoney Bros.; signed, Dec. 27; filed, Dec. 28; cost $2492.

Golden Gate Park. Plumbing for a Concert Hall, etc.; owners, Vienna Prater Co.; architect, E. Kollofrath; contractor, Ickelheimer Bros.; signed, Dec. 28; filed, Dec. 28; cost $1261.

Golden Gate Park. Electrical fountain; owner, Ex. Com. Cal. Midwinter Fair; contractor, J. M. Weir; signed, Dec. 23; filed, Dec. 28; cost $1000.

Golden Gate Park. All work to build; owners, Cosmopolitan Restaurant Co.; architect, Ira Fancher; contractor, Geo. Cannon; signed, Dec. 13; filed, Dec. 15; cost $9350.

Hayes near Webster. All work to build; owner, Peter Sullivan; architect, Henry T. Munson; contractor, David Ross; signed, Jan. 2; filed, Jan. 3; cost $4490.

Josephine and Point Lobos Ave. Concrete and asphaltum work; owners, Olympic Salt Water Co.; architect, E. Ernest Meiliss; contractor, A. E. Buckman; signed, Dec. 27; filed, Jan. 9; cost 9 cents per sq. ft., for concrete and asphaltum 4 inch thick; 11 cents per sq. ft. for concrete and asphaltum 5 inch thick; 25 cents per ft. massive concrete 1 to 8 composition; 22 cents per ft. massive and concrete 1 to 14 composition.

Kearny near Filbert. To build; owners, John or Giovanni Ghiggeri and Martini Segarini; architect, Chas. R. Wilson; contractor, E. Dalgero; signed, Jan. 11; filed, Jan. 12; cost $6250.

Larkin street. Alterations and additions; owner, Fred and Kate Lumblade; contractor, J. G. Chase; signed, Jan. 2; filed, Jan. 3; cost $1065.

Laurel near California. Two-story and basement; owners, Jacob and Peter Schaefer; contractor, W. W. Rednall; signed, Dec. 18; filed, Dec. 18; cost $1650.

Market near Fourth. Excavating and bulkheading; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, A. E. Buckman; signed, Jan. 9; filed, Jan. 9; cost $10,500.

Market bet. 2d and New Montgomery. Finished wood work except hard floors, alterations and additions Hoffman Cafe; owner, W. J. Sullivan; architects, Wood, Lovell & Claflin; contractor, R. Herring; signed, Dec. 30; filed, Jan. 11; cost $3000.

Market bet. 2d and New Montgomery. Marble work, etc., Hoffman Cafe; owner, W. J. Sullivan; architects, Wood, Lovell & Claflin; contractors, Ruffino & Bianchi; signed, Jan. 5; filed, Jan. 11; cost $1075.

Page street near Masonic Ave. To build; owner, S. N. Woods; architect, Edward Burns; contractors, Jas. & M. E. Rountree; signed, Jan. 6; filed, Jan. 10; cost $8725.

Rail Road near Farragut Ave. To build; owner, Ada M. Plath; contractors, Bates & Deuel; signed, Jan. 5; filed, Jan. 9; cost $1500.

Shotwell street. To build; owner, Henry C. Herbst; contractor, J. H. Pauls; signed, Dec. 11; filed, Dec. 14; cost $2980.

Sutter and Mason. Plumbing, gas-fitting, sewering and marble work to Bohemian Club; owner, S. Wenban; architects, Pissis & Moore; contractors, Sam. Ickelheimer & Bros.; signed, Jan. 4; filed, Jan. 5; cost $15,000.

Twenty-Sixth and Folsom. Alteration and additions; owner, Henry Mohr; architect, Julius E. Krafft; contractors, Ackerson & Peterson; signed, Dec. 18; filed, Dec. 20; cost $2240.

Twentieth near Noe. To build; owner, Frank Hayes; contractor, R. B. Hicks; signed, Jan. 8; filed, Jan. 11; cost $2025.

Turk near Lott. To build; owner, Wm. Boyle; architects, Shea & Shea; contractor, James Cochran; signed, Dec. 16; filed, Dec. 19; cost $1976.

Water Lot 645, 45, 10, Mission. Brickwork; owner, C. Flathman; architect, A. B. Tarr; contractor, J. Wagner; signed, Jan. 8; filed, Jan. 9; cost $2442.

Western Addition, block 326. To grade; owner, H. H. Buhne; contractor, Edward Owens; signed, Jan. 8; filed, Jan. 9; cost $250.

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HAT decision the Capitol Commissioners of the State of Washington will reach in regard to the designs recently submitted in competition for their capitol building is a matter of great doubt. Prof. Ware who was called in as an expert reached his conclusions without any hesitancy. He recommended six designs out of the one hundred and eighty seven submitted from which he hoped the commissioners would make their final choice. From reports in the Washington papers it seem that the local architects and builders are inciting opposition to Mr. Ware's report.

It seems that the commissioners regard his decision as too hasty. It should be remembered that Mr. Ware was employed as an expert, and that very fact should be regarded as sufficient reason for his reaching a conclusion without delay.

Mr. Ware, as every architect knows, has acted as judge in every important competition held in this country in recent years. Having acted in this capacity oftener than any other member of his profession. He stands by common consent at the head of the architectural profession in America and the splendid success of the Chicago Exposition buildings proves that the United States leads the world.

If Prof. Ware in his keen judgment decided without hesitation that six certain designs were more meritorious than all the others submitted it can be safely assumed that he had sound reasons for his decision. Yet the Capitol Commissions only included two of the plans selected by Mr. Ware among the five from which they intended to select the final one.

By "turning down" their expert's report they will not profit fully by his advice, which will of course be a matter for the profession to regret. It seems that the governor who is chairman of the Capitol Commission desires to run things his own way, for according to report, he summarily removed one of the commissioners from office who had had the temerity to decide against the executive. The vacancy thus caused will delay the decision of the commission and it is to be hoped that they will reconsider Mr. Ware's report and give his recommendations the full weight that they deserve.

It is charged that Mr. Ware overestimated the cost of a capitol building when he determined that fifty cents per cubic foot would be required to construct the one at Olympia. The local builders stated that thirty cents per foot would be sufficient.

This has been made an important issue between Mr. Ware and his opponents. From an artistic point of view it is immaterial. But from the practical side it can be easily shown that while thirty cents per cubic foot should be ample to construct any building, most state capitols and other public buildings have cost from fifty cents to one dollar per cubic foot. Indeed some noted examples exist that cost considerable above the last figure.

For the sake of architecture and as a matter of State pride the Washington Commissioners should at least recall Prof. Ware and give his conclusions a fair hearing.

CONCRETE CONSTRUCTION.

THE FOLLOWING PAPER WAS READ AT THE EVENING SESSION OF THE SAN FRANCISCO CHAPTER OF THE AMERICA INSTITUTE OF ARCHITECTS, FRIDAY, FEBRUARY 9TH, BY MR. GEO. W. PERCY.

ON January 6th, 1888, the author read a paper before the Technical Society of the Pacific Coast on the general subject of "Practical Application of Concrete and Iron to Resist Transverse Strains," in which paper many of the early tests and experiments were recorded in detail, together with several examples of executed work. The interest by the writer in perfecting some economical method of fire-proof and permanent construction, has not diminished, and he is glad to report a fair measure of progress and success in the particular direction outlined in the paper referred to.

One of the most important problems that should find a solution in our day is of finding some method of erecting ordinary buildings with enduring materials and largely with cheap or unskilled labor, thus bringing the cost of buildings that shall resist the ravages of fire and other elements, within the means of the average house owner.

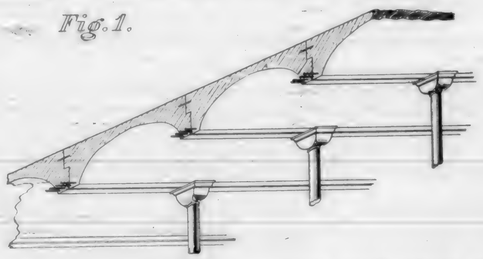
Owing to the abundance and general distribution of suitable materials for concrete, and the ease with which it may be prepared and put in place, the writer believes the desired solution may be found in that direction. The advantages of concrete for foundations and all masonry work under water or underground, are recognized by every one; also its adaptability for basement floors, side-walks and other positions where surface wear and compression are the principal forces to be resisted. For walls and partitions, floors and roofs of buildings, its adaptability has not been so apparent, or its application as successful as might be desired. On account of the small and very uncertain tensile strength of ordinary concrete, it has appeared to be entirely unadapted for horizontal beams or floors, or any parts of a structure subject to other than compressive force, nor did it appear a hopeful field for investigation and experiment. However, many efforts have been made during the past twenty years to unite the tensile strength of iron with the compressive strength of concrete in such a manner as to secure the full value of each material for its respective position. These experiments demonstrated many years ago the feasibility of the union, but the methods were more or less complicated, and wasteful of the more expensive material, iron, for which reason little use was made by the discovery until Mr. Ernest L. Ransome, of our city, invented and applied plain, square, cold, twisted iron bars for this work, and demonstrated clearly that this simple process was perfect in its results, even showing a much greater advantage than the original tensile strength of the iron.

Hundreds of tests have been made by experts in various parts of this country, and in England and Scotland, with the uniform result that cold twisting of plain iron bars increases their tensile strength from ten to twenty-five per cent, and even as high as fifty per cent. increase was obtained in one case by Lieut. Gilmore, at the Union Iron Works in this city. This, together with the fact that the process of twisting will clearly reveal any hidden defects or weak places in the bars, makes the process a valuable one, while the simplicity and effectiveness of the combination of such bars with concrete, makes a long stride towards the solution of our problem, and greatly broadens the field of concrete construction. Mr. Ransome proposes a further saving in iron by rolling the iron bars with largest section in middle of bar, and diminishing toward each end, thus proportioning the area of iron to the required strength. A similar saving can be obtained with the ordinary bars by placing shorter bars in the center of beams, in addition to those extending the entire length.

The present paper will contain notes of the principal work that has been executed in this vicinity and that has come under the writer's observation since the date of the paper referred to.

The first example in point of time is the Bourn & Wise wine cellar at St. Helena, erected in 1888. This building is 400 feet long, seventy-five feet wide and three stories high. The entire site is cut into the side of a gentle sloping hill and so arranged as to have driveways fifteen feet wide along the entire length at the rear, and at the levels of both first and second floors, while beyond the driveways and retaining walls are thirteen tunnels, sixteen feet wide, penetrating the hill about 200 feet. On the site of the building and immediately surrounding it, were an abundance of boulders, of very hard basaltic stone, quite unsuitable for rubble stone work, owing to their rounding form, but excellent material for concrete when crushed; the finer materials were obtained in the form of gravel from a neighboring creek. A good quarry of the soft but durable volcanic tuffa so common in Napa Valley, was found within half a mile of the building, and as it could be quarried, hauled and built into the walls for seventeen cents per cubic foot, it was employed for all walls and partitions of the building. The foundations, retaining walls, lining of tunnel entrances, and main floor laid on the ground, were formed of concrete in the usual manner. The entire second floor, together with the driveway at that level, was constructed with concrete and twisted iron rods in the form of beams and elliptical arches, as shown in figure 1, and as here described. Two rows of iron columns seven feet four inches on center, were placed lengthwise of the building, dividing the width into three sections of about twenty-five feet each. The floor was constructed with concrete beams seven feet four inches on cenetrs, passing entirely across the building, with their soffits resting on the iron columns. The beams were twenty-four inches deep from soffit to surface of floor, and each had four 1¼"x1¼" twisted iron rods near the bottom, with a verticle joint

Fig. 1.



along the center of each beam, protected against leaking by a strip of lead embedded in each half of the beam. The arches between the beams were elliptical in form, and the concrete five inches thick at crown of arches.

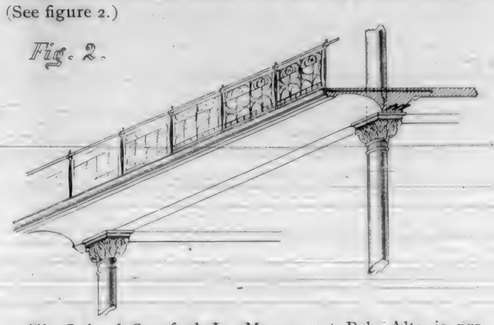
This floor was estimated and intended to carry with safety on each beam, for each twenty-five foot section, two casks each containing 2,000 gallons of wine, or a total weight, including cooperage, of 40,000 lbs., on each section 7'4"x25', or about 220 lbs. per square foot, uniformly distributed. The arrangement of the casks was intended to leave a gangway eight feet wide in the center of each section, thus giving

less stress than a uniformly distributed load. Before the building was finished, one of these sections was tested with a uniformly distributed load of 300 lbs. to a square foot, and produced a deflection of ⅛ of an inch at the centre; on removing the load the beam returned to very nearly its original position. Since the building has been occupied, many of the gang-ways have had tiers of large casks placed two in height along the entire length, and smaller casks set between the upper bilges of the large casks, thus loading the floor largely in excess of its intended capacity. Implicit faith seems to be placed in this construction by those engaged about it, that it will carry anything that can be put on it. These floors have now been in use four or five years, and answer the purpose for which they were designed by making a strong and non-absorbing floor, and assisting in keeping a uniform temperature throughout the building.

The next building of importance in which the writer employed concrete and iron floors, was the California Academy of Sciences in this city. In this case a careful estimate of cost was made of the usual steel beam and hollow tile construction, and compared with the cost of this method. The result was a saving of fifty cents per square foot, or $20,000, for the entire building in favor of the concrete and twisted iron method. After due investigation, the latter method was adopted by the Board of Directors, and executed by Mr. Ransome. This work was subject to much adverse criticism by certain architects and builders, and some members of the Academy of Sciences, and persistent efforts were made by some to have the work condemned by the fire wardens on the ground that it was not provided for in our valuable compilation known as the building ordinances. Several visits were made to inspect the work by parties connected with the Fire Department, but as they could not find anything about the construction that could be injured by fire, and having sense enough to perceive its great strength, they declined to take any action in the matter. To satisfy all skeptics in regard to the strength of this work, a test was made on a section of the second floor twenty-two feet span and fifteen feet wide; this was loaded with gravel uniformly to 415 lbs. to a square foot, and showed a deflection of only one-eight of an inch at the centre of the beam. The load was left on this floor four weeks, and during that time many of the critics were invited to examine it. That very few availed themselves of the opportunity may indicate an unwillingness to have wrong opinions corrected. To those, however, who were directly interested in the work and had entertained honest doubts of its strength, this test was satisfactory and conclusive.

The floors in this building were constructed with large beams about fifteen feet apart and flat panels eight inches thick between, with the plastering applied directly to the concrete and cornices run on the splayed sides of the beams, while the colored cement floor was laid directly on the concrete and marked off into tiles. The tension rods in these floors are hooked into wall anchors at the wall ends, and into holes cast in the flanges of iron columns at the other ends, while all around the large light well the rods clamp the iron columns together. After these floors were put in it was considered advisable to extend the floors four feet beyond the line of columns, thus narrowing the light shaft with balconies four feet wide all around. This was readily accomplished by placing the forms and filling in the concrete, with ¾"x¾" twisted iron rods near the top, placed 1' 6" apart, and extending from two to four feet into the old concrete (by cutting grooves and grouting the rods) as it is evident the tensile strain is at the top in this example. (See figure 2.)

Fig. 2.



The Leland Stanford, Jr., Museum at Palo Alto is probably the largest and most important building in the world constructed entirely of concrete. It was designed to have dressed San Jose sand stone for the external walls, backed up with brick, and to have brick partitions, with concrete floors. Owing to the great cost of stone work, it was decided to build the walls of cement concrete colored to match the sand stone used in the other university buildings, and to carry out the classic design first adopted. This lead to making the entire structure, walls, partitions, floors, roof and dome, of concrete, making it in that respect a unique building.

Having some knowledge of the disadvantages and defects natural to a monolithic building, such as result from the shrinkage and the expansion and contraction of walls, floor and roof, several new experiments were tried to overcome them, with varying results of success and failure. It was thought to overcome the cracking of walls by inserting sheets of felting through the walls following the lines of the joints as near as practicable on each side of windows. The lapping bond of the concrete, however, proved too strong to allow the cracking to follow these joints; in most cases the weakest points were found at the openings, and small cracks appear from window head to sills above.

Joints were formed through the floors about fifteen feet apart and in most cases the cracking has followed these joints and confined to them. To prevent the possibility of moisture penetrating through the walls, and also to render them less resonant, hollow spaces five inches in diameter were moulded in the walls within two inches of the inside face, and with about two inches of concrete between them. These are successful for the primary object, and partially so for the secondary.

Fig. 3.

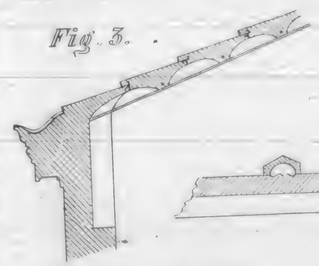
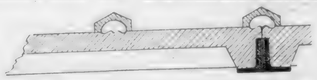


Fig. 4.



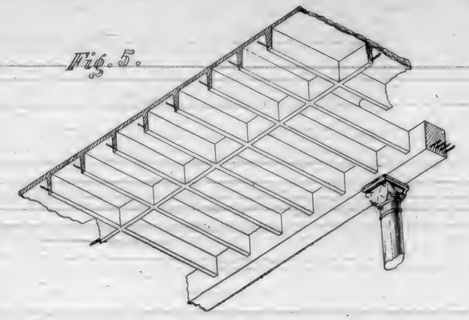
The roof being the greatest innovation, and the first attempt known to the writer of forming a finished and exposed roof entirely in concrete, required the greatest care and consideration. The result in form and appearance is shown by

figures 3 and 4, and is described as follows: The roof is supported on iron trusses ten feet on centre, and has a pitch of twenty degrees. The horizontal concrete beams rest on the iron rafters, and with the half arches form the horizontal lines of tiles about two feet six inches wide, with the joints lapping two inches and a strip of lead inserted as shown. Vertical joints are made through the concrete over each rafter with small channels on each side. These joints and channels are covered with the covering tiles shown on drawings, and similar rows of covering tiles are placed two feet six inches apart over the entire roof, thus forming a perfect representation of flat Grecian tile or marble roof. Notwithstanding the precautions taken, this roof presented several unexpected defects. The most serious proved to be in the Venetian red used for coloring matter and mixed with the cement. This material rendered the covering tiles absolutely worthless, many of them slacking like lumps of lime, and all were condemed and re-made. The same material injured the general surface of the roof, rendering it porous and necessitating painting. The roof over the central pavilion being hidden behind parapets, is made quite flat and covered with asphaltum and gravel over the concrete. This roof, with its low, flat dome, is without question the largest horizontal span in concrete to be found anywhere on earth, being 46′x56′, the flat dome having all its ribs and rings of concrete, with the panels or coffers filled with one inch thick glass, and weighing about 80,000 lbs. This structure, covering 21,000 feet and containing over 1,100,000 cubic feet of space, and requiring about 260,000 cubic feet of concrete, was completed in seven months time from the commencement of the foundations, and at a cost of about eighteen cents per cubic foot of space. This the writer believes to be a very low figure for a thoroughly substantial and fire proof building with marble stairs and wainscoting, cast iron window frames and sashes, and other parts equally enduring, and would call attention to the fact that concrete walls with iron rods imbedded, when cracked are not in the bad condition of stone or brick walls without bond, but the iron ties are always good to prevent spreading or falling, while several methods may be devised for allowing free expansion and contraction without producing unsightly cracks. Some such method should be employed on all finished structures.

One of the rooms in this building was designed to be the receptacle of many valuables, and to render it burglar-proof the floor, walls and ceiling had copper wires embedded in the concrete not over three inches apart, forming a continuous circuit, and designed to strike an alarm bell at the university if any wire should be cut. This device has been in use at the United States Sub-Treasury vaults in this city for several years, and would be very effectual for prison walls and cells, as it would be almost impossible to cut a hole through strong concrete large enough to admit a man's body, without cutting or breaking one or more of the wires, thereby giving an alarm.

Other important works have been executed in concrete in this vicinity, among which may be mentioned the Girls' Dormitory at the Stanford University, a three-story building, completed in ninety days from the time the plans were ordered.. Also the Torpedo station on Goat Island, 80′x250′, with walls about thirty inches high, built under the direction of Col. Mendill; and the addition to the Borax Works at Alameda. In the latter the walls, interior columns and all floors are of concrete, and are remarkable for the lightness of the construction and great strength. These floors are constructed as shown in figure 5. In these floors the clear span is twenty feet. The floor consists of beams four inches wide at bottom, five and one-half inches at top and one foot six inches deep from bottom of beam to top of finished floor.

Fig. 5.



The beams are placed two feet six inches on center and the floor over the beams is only three inches thick. A section of this floor 10′x20′ was tested February 28th, 1893, with the following results: Before testing there was a uniform load of 195 lbs. to a square foot, when the scale was set to indicate deflection.

With 234 lbs. per sq. ft., deflection	. .	1-16 inch.
" 273 " " " " "	. .	1-8 "
" 312 " " " " "	. .	1-8 "
" 390 " " " " "	. .	3-16 "
" 468 " " " " "	. .	3-16 "
" 551 " " " " "	. .	1-4 "

This deflection is in addition to any that may have existed with the initial load. In November, 1893, the writer visited the building with Mr. H. G. Jacobs, Government Inspector of Buildings, and in our presence a test was made on a section of the third floor, that was selected as an apparently weak spot owing to several cracks showing on the ceiling. A sliding rod was adjusted under the center of the beam. There was a distributed load of about 200 lbs. per foot at the commencement; 225 lbs. per foot additional were applied, and the deflection noted was less than 1-16 of an inch. This type of floor appears to be the best form yet devised for obtaining great strength with the minimum weight of concrete and least expense of carpenter work, the forms used being standard size to be used over again. With the present price of materials and labor, such floors can be built with twenty feet span of safe strength for 250 lbs. per square foot, and with finished cement surface, for forty-five cents per square foot, and without the finished floor surface for forty cents per foot. Level plastered ceilings may readily be suspended from the beams and wood or tile floors laid over it, as in other methods of fire-proof construction. This method of forming floors with the minimum of very rich concrete, is ligher than the common method of steel beams and hollow tiles, for the same strength. The concrete should be composed of one part of Portland cement to three parts of selected aggregates.

The results given above are much better than could have been expected or hoped for a few years ago, and it is quite possible we have not yet reached the highest development. Portland cement may be brought to a higher grade of strength, and intelligent handling may produce better results with what we have. Several tests recently made with various brands of Portland cement, to ascertain what effect on the strength of concrete would be produced by a delay between the time of mixing and tamping in place, have given surprising results which the writer believes have never been made public. These tests, as far as carried, show that the initial setting of the cement, (when mixed with sand or gravel,) is not the strongest that may be obtained, and that while a delay of one hour or less may be injurious, a delay of one to three hours may be beneficial. Thus in a test made with Knight, Bevan & Sturgess' cement, one of cement to two of sand, the result obtained was as follows:

Delay in hours: 0, 1, 2, 2½, 3½, 4½.
Test in lbs.: 252, 228, 240, 256, 306, 228.

In this case the delay up to two hours was detrimental, while a delay of 2½ to 3½ hours gave higher results. Similar tests with White's cement gave the best results with a delay of 1½ hours, after which the strength fell rapidly. The writer would suggest that this line of investigation could be profitably followed up, with many tests made with different cements and different mixtures, and the results tabulated, thus adding to our knowledge of cement and showing the way of obtaining the best possible results.

In conclusion the writer would say, that while he does not think that concrete in any form is likely to take the place of stone, brick and terra cotta for architectural work, he feels quite certain that in combination with iron it is destined to fill a large place in the construction of buildings, and for warehouses, factories, wine cellars, etc., it is now the best and cheapest material for producing substantial and incombustible work.

AIR AND WATER PURIFIER.

WE give below a description of an invention recently patented by Dr. Cornelius F. Buckley of San Francisco, which consists of a tank so made as to allow of only pure air having access to its contents.

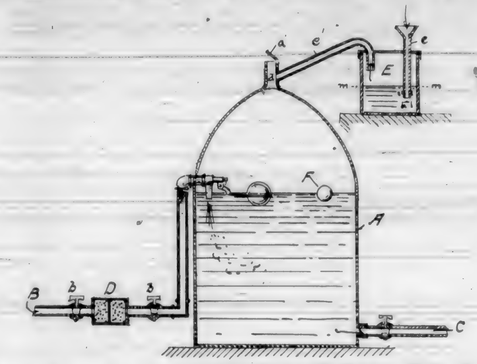
The principal of this tank is a development of experiments made by the late Prof. Tyndall some twenty-five years ago, when the question of spontaneous generation was hotly debated by scientists. Tyndall arranged a series of tubes filled with *distilled* water, exposing some to ordinary atmospheric air—and covering others with layers of cotton wool of different degrees of thickness. It was demonstrated beyond a question that the tubes openly exposed to the atmosphere teemed with living organisms in a space of twelve hours, and that similar organisms developed in the protected tubes in the inverse ratio to their protection. All recent experiments corroborate these statements and go to show that diseases of all kinds are largely obtained through the atmosphere poisoning our drinking water.

Hence, the most important, indeed the vital feature of this tank is first the complete disinfection of the air that reaches the water, second, that disinfected air in turn disinfects the water itself.

Referring to the accompanying drawing which is a vertical section of the apparatus.

A is a closed tank or reservoir of suitable construction and capacity. It is provided with the inlet pipe B, from the water main, and with the cock controlled outlet pipe C, for service. Its top is provided with the air exhaust passage *a* having at its outer end a check valve *a′*. If filtered water is to be use, there is fitted in inlet pipe B a filter D of any suitable construction and containing any desired filtering media. A cock *b* may be placed in pipe B, in advance of the filter, and another *b′* behind it, thereby the passage of water may be controlled, and the contents of the reservoir confined, when for any purpose, as for cleansing, the filter may have to be temporarily removed.

E is a closed air-disinfecting case or bottle. It has an air inlet pipe or funnel *e*, and an air outlet pipe *e′*, the latter communicating with the top of the reservoir A, or as here



shown with the air exhaust passage *a*. This air disinfector may be of any suitable construction or arrangement, and its contents may be of any proper character. It is proposed to use in it a solution of chloride of iron, the level of which will be maintained, as shown by the line *m—m*, above the lower end of inlet funnel *e* and below the lower end of outlet pipe *e′*.

Within reservoir A is a valve for automatically closing the top of the reservoir to prevent the overflow of water therefrom. In the present case this valve is shown as a float ball F, which will rise with the water and will seat itself in the inner end of exhaust passage *a*, thereby preventing the outflow of water through said passage, and also preventing it from overflowing through pipe *e′* into the air disinfector case or bottle E.

The operation of the apparatus is as follows: Water, from the main, passing through pipe B, enters the reservoir A. When the filter D is used, it enters as filtered water. As it fills said reservoir, the air is expelled through the passage *a* and check valve *a′*, and when the reservoir is full the float valve F confines the water. Now, when the water is drawn upon by the opening of service pipe C, the check valve *a′* will close and cut off all direct communication with the outer air, but air will pass down funnel *e*, through the disinfecting medium in bottle or case E, and thence as disinfected air will pass through pipe *e′*, into the reservoir A, to occupy the space left vacant by the lowering water therein. Thus, only disinfected air will be admitted and come in contact with the contents of the reservoir which will serve not only to avoid contamination but also to aerate the water and to permit its ready outflow for use.

The January number of the CALIFORNIA ARCHITECT AND BUILDING NEWS is particularly handsome. It is devoted to the Midwinter Exposition buildings, illustrated by five full-page, half-tone pictures and a sixth, of equal size, of the Santa Barbara Amphibia. The illustrations are very handsome and the detail is excellent. They have evidently been made from photographs taken on the ground. The letter-press is beautifully clear and clean and the new cover is a dainty design. Among the contributed articles is one on the strength of the dome of the Horticultural and Agricultural building by Civil Engineer D. E. Condon.—*San Francisco Chronicle.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE suggestive sketch for an entrance to the Midwinter Fair is by C. T. Taylor, Jr.

A study for a Sutter street front is by Polk & Polk, architects of this city.

RESIDENCES for J. S. Butler, Esq., is by architects, Martens & Coffee.

A Cottage for R. George Zahn, Esq., is by architect, J. Cather Newsom.

THE Columbarium now being built at Cypress Lawn Cemetery, from the plans of architect, Mr. Thomas P. Ross, is nearing completion. Although the interior finish has not been decided on as yet, it is intended to be in marble boxes or niches, with bronze open grille door, two galleries being necessary for height of building. The exterior walls consist of rock faced granite laid in broken ashlar. The dome will be covered with terra cotta tile and with skylight on deck in figured glass. The doors to be of heavy wrought iron with plate glass panels. The building is to be fire-proof in every respect.

"DUST TO DUST AND ASHES TO ASHES."

THE Crematory at Cypress Law Cemetery, built from the plans of Messrs. Pissis & Moore, which plans were published in the June issue of the CALIFORNIA ARCHITECT AND BUILDING NEWS, is now in active and successful operation.

The following article from the San Francisco *Examiner*, give an impressive idea of the ceremonies attending this disposal of the dead:

"Along the grass-bordered paths of Cypress Lawn Cemetery four silent men carry a burial casket. They bear it gently and their tread is slow and solemn. But they seek no grave where earth has been freshly turned and they lay their burden down when they enter a building of gray granite.

"The four men are strangely clad. Each wears a blouse of black silk and a skull cap of the same material. Nowhere is there a gleam of color. When they had placed their burdens on a dais, still treading softly, as silently as they came, they withdraw. For a time their work is done.

"The gray granite structure stands on the side of a gently sloping hill that at the crest is dark with the waving leaves of eucalyptus. The building is plain and massive in general effect, with considerable elaboration of detail. The style of architecture would be difficult to define, but to the interior decorations there has been given a distinctly Greek character. The structure is almost square, though broken in the upper lines, and with the roof terminating in a dome of glass. But for the tall chimney at the rear it might be taken for a mortuary chapel and nothing more. A double flight of stairs, all of granite, leads to the part that is really the chapel. This, a bright, cheerful apartment, the walls finished in light brown relieved by typical shades of the same. The floor is tiled. The lofty ceiling curves until it merges into the glass dome, through which pours a subdued flood of light. At the rear is an arched alcove, and at the head of the center aisle, which ends as it reaches the alcove, is a raised platform, an altar it might be. It is on this dais that the black-clad men lay the casket containing the body about to be incinerated, yet there is no suggestion here of heat or ashes. The members of the funeral party take seats on either side. Flowers have been piled about the casket. Then the minister speaks the words of comfort.

"When the prayers have been said and with hands outstretched above the dais the minister has pronounced the benediction, there is a change. A pall in the form of two extended wings springs from beside the platform and meeting above it, droops and hides the casket from sight. The spreading of the pall makes no sound, and when it has shut the casket from view, the dais and all upon it sinks from sight.

"In a few seconds the pall is removed as strangely as it came, the dais is again in place, but tenantless. In the bright chapel touched by the sun there is no longer sign of death. The mourners pass out. There is nothing more for them to do.

"The men in black are waiting in the furnace room below. When the casket comes down on the elevator the body is quickly removed, and, clad still in whatever raiment may have shrouded it, completely enveloped in an alum-soaked cloth. Then it is placed on an iron cradle that moves on wheels along an iron track. The furnace door is opened so deftly that one marvels how, and so without a jar that it does not seem that steel can be rubbing against steel. In an instant the cradle is pushed forward.

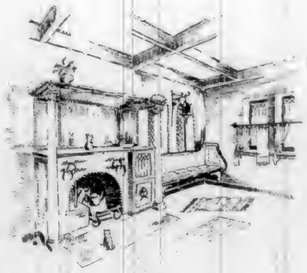
"For a second one may look into the depths aglow with heat, and from the back see flames leaping forward. The track is movable, for no metal could long withstand the temperature of the furnace. The track glides into the rosy interior and the cradle follows. Both are immediately withdrawn, the cradle comes back empty, the furnace door is closed once more and the dead left to turn speedily back to original elements. From the time the rigid form in white was deposited in the cradle to the time when the cradle left it in the retort eight seconds have scarcely elapsed.

"Then for once there is noise, the clamor of blows. The

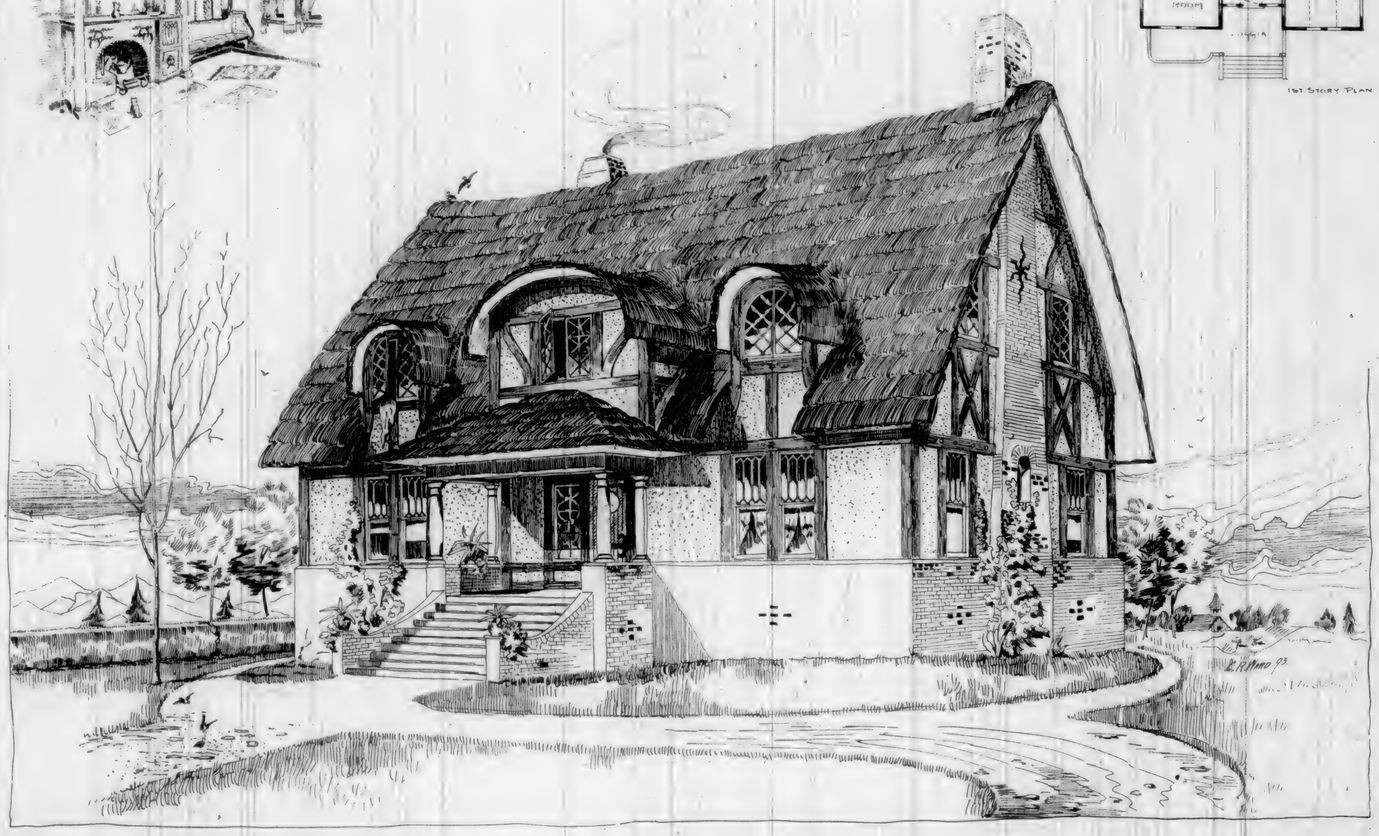
RESIDENCES · FOR J. B. BUTLER · ESQ. ·
MARTENS & COFFEY ARCHTS.
C. WERNER · DEL. 94

COTTAGE FOR R. GEORGE ZAHN, Esq.

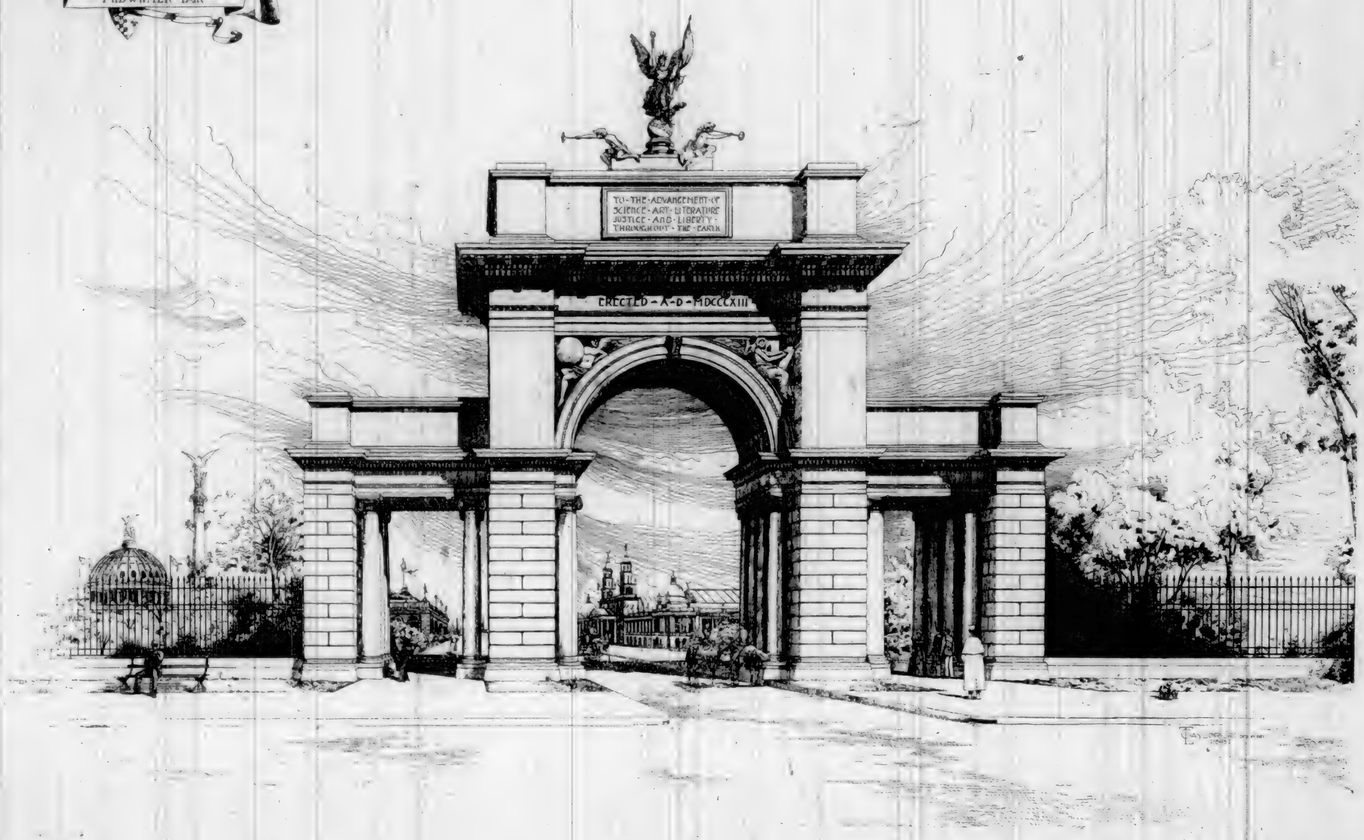
J. Cather Newsom · Architect.
Academy of Science · Bldg.
S.F.



1ST STORY PLAN



SUGGESTIVE · SKETCH · FOR · AN ENTRACE · TO · THE · CALIFORNIA · MIDWINTER · FAIR ·



STUDY FOR A SUTTER STREET FRONT. POLK & POLK, ARCHITECTS. SAN FRANCISCO.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV Nº 2. FEBRUARY 1894.

costly casket is being knocked to pieces, the silver handles smashed and dented. Such is the fate of every casket that reaches the crematory. None so expensive that it is not used for kindling wood. Blow follows blow. The cloth is torn aside and the cedar underneath it shivers to splinters. The satin lining is rudely ripped away. It will be piled upon the flames. In a few moments the handsome case that loving friends had chosen is a heap of waste.

"'But does not this seem like a wanton misuse of money?' The question was asked of the Superintendent.

"'It does at first,' he replied, 'but there is no other way. Unless we did this there would be an illicit traffic in second-hand coffins. Unless we destroyed the handles they would be slyly sold. This has been done elsewhere, and we think it well to profit by the experience of others.'

"'And, then, why should it appear more wasteful than placing the same material in the ground? It is a matter of sentiment. The family feel like dedicating a certain amount to the one who has passed away. It really makes no difference whether this is placed in the fire or in the earth. One method cannot in this respect be termed more wasteful than the other.'

"But half an hour has gone by. A peep through an aperture in the furnace door, ordinarily covered by a slide, reveals nothing repellent. Lying in the chamber where the heat is 1,500 degrees the body still seems to retain its shape, because the alum-soaked winding-sheet does not disintegrate until almost the last. When it does collapse there is no longer anything within. Meanwhile ashes white as snow have been sifting through the bars into an apartment beneath. One hour and there is little left in the retort. An hour and a half, and a trace remains. Two hours; the retort glows empty. In the apartment below the shower of ashes has ceased, and the deposit is taken out without any lessening of the heat above. The retort is ready to be used again.

"The ashes are placed ni a copper receptacle as unpretentious as a milk can, sealed, labeled and put on shelf in a a room devoted to the purpose.

"There is a process of cremation unlike the one described, but it is an exception to the rule. Sometimes circumstances suggest that a body that has been perhaps in the receiving vault be not taken from the casket. In such instances the metal is stripped away and casket and occupant go into the retort together. Incineration takes longer and the residue of ashes is somewhat greater. When a casket is in the retort one may, by listening at the door, hear the crackling of fire, but ordinarily not the faintest sound comes from beyond the barrier, and the leaping flames never touch the body that their heat all but obliterates.

"The furnace-room is not designed to be attractive, but it does not appall nor repel. There is little about it to betray its use. The floor is cement, and so are the walls and vaulted ceiling. The furnace itself is of white birch lined with a clay imported from Germany, the most suitable substance known under a lasting ordeal of fire. The room is entered through heavy oaken doors.

"There is in the building one room devoid of carpet and furniture, devoid of anything but plain shelves sustaining row upon row of the copper receptacles that possess more interest than all. Some of the receptacles are empty, quite a number are filled. The later are sealed and each marked with a date and a name. All the filled receptacles are light, but some twice as heavy as others. The heaviest probably weigh five pounds, and judged by the eye, contain three quarts of ashes. The ashes, of course, are at the disposal of friends. Some are to be interred. Some in deference to requests made by the dying will be scattered to wind and wave. As a rule they will remain where they are until they can be placed in the more pretentious Columbarium for which plans have been prepared and that will one day be as notable an addition to Cypress Lawn as the crematory itself has been. Thus far the regulation copper receptacles have been used, but there is always the privilege of adopting a funeral urn more elaborate.

"It is not without awe that one looks upon the ashes of what has been a human form. The black-coated attendants handle them with all respect. One of the men goes down below the retort by a ladder and draws the ashes out. They are placed, still warm, in the receptacle. The largest particle is not larger than a silver twenty-five cent piece, and there are few this size. For the most part the mass is as impalpable as flour. The work of years been done in a few moments with no longer period intervening.

"All that has happened since the mysterious pall spread itself above the dais has been noted only by those having official right. Idle spectators are not allowed. Generally the mourners prefer not to linger after the solemn farewells in the chapels. The maintenance of privacy extends even to the names of those who have passed into the retort, these being usually held sacred and not regarded as matter of general interest. It will, however, at least remotely concern the public to know that one of the early subjects was Mrs. Griffes, for whose murder a man has just been on trial. Her ashes fill one of the largest receptacles.

"The process of cremation is so new in San Francisco that for a long time the picturesque building of gray will be an object of interest. Many visit it daily, at least to look up at the tall chimney and wonder that they see no smoke. Coke is the only fuel, and the vapor created by the destruction of fleshly tissues is utterly consumed. The crematory began operations without ostentation, and this policy has marked its conduct to the present. The managers were conscious that there was something of prejudice against the system, and feared lest this be strengthened by any chance mishap. There has been nothing of this sort.

"When the fire was started thirty bodies were in the receiving vaults, and these have been incinerated. Besides, there have been a number coming directly from the place of death, and still more are expected from a distance, one from far Mexico.

"The great surprise to the visitor is the absence of details such as might jar on the nerves. The attendants, trained and uniformed for their work, allow nothing to go amiss. When the casket sinks from the sunlit chapel it has been seen for the last time by those who watch it with tearful eyes. Their own word for it: it does not seem to them so terrible as if they saw it sinking into the grave and listened for the falling of the clods.

THE PRESERVATION OF THE WORLD'S FAIR BUILDINGS.

IT is gratifying to see with what unanimity the public is now clamoring for the preservation of the World's Fair buildings, which have certainly made an artistic impression on the country such as has never been felt before. Until within a few days, no proposition which seemed practicable has been made for keeping them, but a company has been formed which proposes to take in hand the buildings around the Court of Honor, replace the perishable staff with Portland cement on iron lath, keeping all the forms of the original, and paint the new material white. This will insure the preservation of the superstructure for many years, and it is proposed to strengthen the foundations, so as to prevent settlement and distortion. The company offers to do all this work, and to keep the buildings, grounds and waterways in order, for twenty years, in return for a concession for that period, entitling it to fence in the group of buildings, and charge a small admission fee. Independent of the question whether the company would find the enterprise profitable, there is no doubt that the city of Chicago would be benefited by the perpetuation of an attraction which may claim to have brought millions of strangers already to the city, and every artist would rejoice to see a little longer life accorded to the most renowned work that American architecture has yet produced.—*American Architect.*

The January number of the CALIFORNIA ARCHITECT AND BUILDING NEWS (monthly) is likened unto the last Sunday issue of the *Examiner*—a production which does credit to the energy and goaheadativeness of its management. The illustrations therein of the Midwinler Fair are finely executed, and original.—*Warner's Building Review.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. Geo. W. Percy, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Charles D. Marx, Vice-Pres.
Otto Von Geldern, Sec. Geo. F. Schild, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the Chapter of the American Institute of Architects was held on February 9th, 1894.

An application for membership was received from Mr. Edgar Marx Lazarus of 664-665 Worcester Block, Portland, Oregon, of the firm of Elliott & Lazarus. The application was presented by Mr. Reid and endorsed by Mr. Percy, and was referred to the Executive Committee to take the usual course.

The following communication was received from Mr. Percy:

Gentlemen:—Having experienced a great deal of trouble with Electrical Contractors, and being satisfied that some method should be adopted, whereby work of this kind could be properly installed, without the trouble and inconvenience usually had, I would respectfully suggest, that this Chapter consider the appointing of a permanent Electrical Inspector, his remuneration to be a certain per cent of the cost of the electric work in each installation, said amount to be paid by the Electrical Contractor, and to be added by him to his contract price.

In support of the above suggestion, I would state that such an appointment will at once relieve architects of the responsibility of designing electric installations, of drafting plans and specifications therefore, and of the supervision thereof. It will positively prevent imposition from the placing of inferior or unreliable electric work and in effecting the solution of the electric wiring problem, will be of the greatest service to both property owners and architects.

I would also suggest that in all Electric Specifications furnished by the architect, the contract should cease at the wiring of the gas outlets, and not include the electric burners, for the reason, that very often, owners do not place fixtures in the building for months after same is finished, thereby keeping the contractor out of his money through no fault of his own.

I also think that where possible, the electric work should be a separate contract, but all carpenter work in connection with same, such as closets, doors, wainscoting, etc., should be included in the carpenter's contract.

I respectfully ask the Chapter to discuss these matters and appoint a committee to consult with the different Electrical Contractors to see what can be done toward carrying out these ideas. G. W. Percy.

Mr. Percy was appointed a committee to confer with the Underwriters and the Electric Light Co., and endeavor to carry out some such arrangement as suggested.

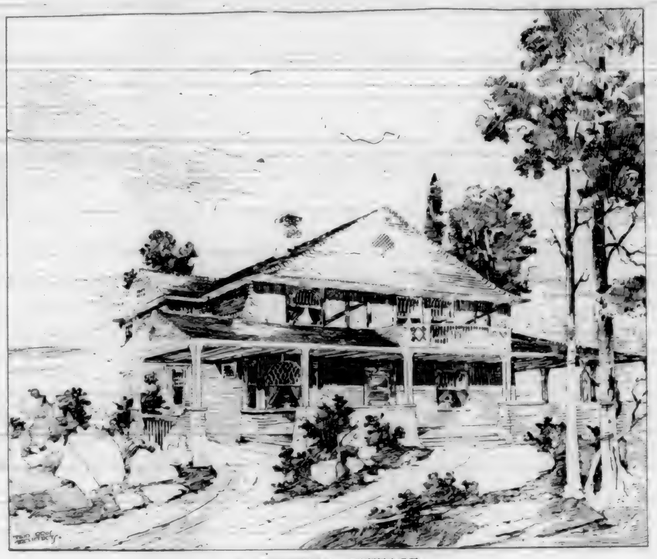
A communication was received from a committee of the Institute, requesting the views of the Chapter on the relationship of the Chapters to the Institute and to suggest such changes as may be deemed expedient.

A committee consisting of Messrs. Polk, Reid and Pissis, was appointed to act with the President and Secretary.

A letter was read from A. J. Bloor, the Secretary of the New York Chapter, in relation to the history of all the transactions of the American Institute of Architects, and kindred organizations, and the Secretary was instructed to assure Mr. Bloor of the hearty co-operation of the Chapter, and too offer such assistance to him as it may be in the power of the Chapter to give.

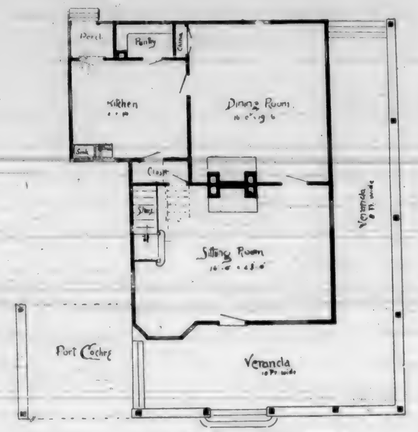
The St. Louis Chapter forwarded a copy of their Constitution and By-Laws, for which due acknowledgments were expressed.

At the evening session, Mr. Geo. W. Percy read an interesting and instructive paper on his experiences in the use of concrete in building construction, and in the discussion that took place after the reading, many points were more fully entered into.



A COUNTRY COTTAGE.

The California Architect and Building News, San Francisco, Cal., is making strides of progress that speaks of much energy and ability. The selection of illustrations are admirable for their useful studies and assistance offered to the profession of designing and planning, from a modest country cottage to palacial structures.—*The Chicago Clay Journal.*



LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Homestead Exempt from Mechanic's Lien.—A parol agreement to pay for materials used in the repair of a house on homestead premises is insufficient to charge the homestead with a lien for such materials.

Burtch v. McGibbon, Supreme Court of Mich. 56 N. W. Rep. 1110. 34.

Liability of Acceptor of Orders.—The acceptance of an order payable out of the last payment to become due on a building contract is enforceable against the acceptor, though the last payment never became due, where it was prevented from becoming due by the fault of the acceptor.

Mersereau v. Villari, Supreme Court of N. Y. 26 N. Y. Supp 135. 47.

Forfeiture of Wages in Contract of Employment.—A contract of employment which stimulates that the employee, if he leaves the service without giving three days notice, shall forfeit all moneys owing him, provides for a penalty, and not for liquidated damages. Schmieder v. Kingsley, Common Pleas of N. Y. City and County, 26 N. Y. Supp. 31. 38.

Evidence of the Value of Services of Architect.—In an action for services as an architect, in drawing plans, the issue being as to the amount to be paid, according to agreement, the introduction of other plans in evidence was, at most, harmless error, testimony of a witness that he had obtained good plans of an architect for a less sum than that proved to be a customary rate of charges of architects, was properly excluded.

Cooper v. Gorgon, Court of Civil Appeals of Texas, 23 S. W. Rep. 608. 76.

Transfer of Material Man's Account Destroys Lien.—The transfer by a material man to another party of his account for materials furnished in the construction of a building, before the filing of his claim for a lien, destroys the right to a lien, and confers no authority upon the assignee to file and enforce a mechanics' lien for such materials. The assignee, after such assignment, cannot perfect the lien by complying with the requirements of the statute.

Noll v. Kenneally, Supreme Court of Neb. 56 N. W. Rep. 722. 91.

Failure to Procure Architect's Certificate.—Final payment of the sum due a sub-contractor, from a builder for work performed cannot be refused on the ground that the sub-contractor had failed to procure an architect's certificate, as to the proper performance of his work, as required by the contract, where the architect has certified that the sub-contractor is entitled to a settlement, but without prejudice to any claim the builder might have for time lost or work done in carrying out the terms of the contract.

Grannis v. Hurd Lumber Co. v. Deeves, Supreme Court of N. Y. 2 N. Y. Supp. 375. 91.

Damages for Breach of Contract.—Where one had contracted to build an ore dock according to certain plans, and to complete the same by the first of May, the timbers required for the work were of peculiar and unusual dimensions, and in order that the workmen be kept employed, it was necessary that the timbers be furnished at certain times; and as the dock had to be built in and over the water, it was necessary to an advantageous performance of the work that it be done while the ice remained on the water. In January a party with knowledge of these facts, agreed to furnish all the timber for the work in three monthly installments, his contract containing a provision that, "in the event of his inability to furnish all or any of said timber as proposed above, he agreed to allow the contractor to purchase the same in the open market, and charge the necessary expense to his account, the same as if he himself had purchased it." This did not amount to a stipulation for an exclusive measure of damages in case of a breach of the contract.

Williston v. Matthews, Supreme Court of Minnesota, 56 N. W. Rep. 1112. 175.

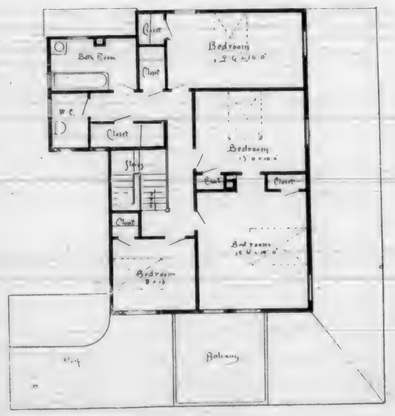
TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., February 8, 1894. Sealed proposals will be received at the office of the Custodian of the U. S. Custom House, etc., and Old Appraisers' Stores buildings at San Francisco, California, until 2 o'clock P. M. on the 15th day of March, 1894, and opened immediately thereafter, for furnishing all the labor and materials required for the repairs, painting, etc., of above named buildings, in accordance with the specification and instructions of the Custodian. Copies of the specification may be had on application at the office of the Custodian at the buildings. Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid should it be deemed in the interest of the Government to do so. All bids received after the time stated for opening the same will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Repairs, Painting, etc., of the U. S. Custom House, etc., and Old Appraisers' Stores Buildings," and addressed to,

Mr. John H. Wise,
Custodian.

Treasury Department, Office, Supervising Architect, Washington, D. C., January 29, 1894. Sealed proposals will be received at this office until 2 o'clock P. M. on the 7th day of March, 1894, and opened immediately thereafter, for all the labor and materials and fixing in place complete the low pressure, return circulation, steam heating and ventilating apparatus required for the U. S. Post Office, etc., building at San Jose, California, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at San Jose, California. Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for the Low Pressure, Return Circulation, Steam Heating and Ventilating Apparatus for the U. S. Post Office, etc., building at San Jose, California," and addressed to,

Jeremiah O'Rourke,
Supervising Architect.



BOOKS AND PERIODICALS.

It is always interesting to read the impressions made upon foreigners on a first visit to America and in NOTES ON MY VISIT TO AMERICA a paper read by C. J. Cuthbertson, Common Councilman of the City of London, we have an account of the effect made upon a Londoner.

Here we have what struck him most strongly in New York:

"During our first walk we noticed the shops were large, bright and attractive. Many tramcars running, some drawn by horses, others by cable. Omnibuses few, drivers and conductors clean, smart and noisy; but the former are bad coachmen. Horses very lightly harnessed. Traps and carts very lightly made swarm in the streets; the most popular being the four-wheeled "buggy" Altogether a place of business, bustle and noise, is the first verdict of the new comer. New York is well planned, the streets run in parallel lines, and mainly distinguished by numbers. The houses very high, commonly rising six or eight stories, and built in blocks. In running up new houses, a foundation is prepared; an entire framework of iron erected, which is afterwards filled in with brick or stone, as required. In one of the squares a building was noticed with a frontage of white marble, producing a remarkably rich effect. Electric light advertisements here and there were very fine; in one instance four different lines of matter being displayed in as many different colours. The elevated railways running through the streets level with the first floors of the houses attracted attention. Although awkward in appearance, and in some cases injurious to business, by blocking the light from the shops before which they pass, they are yet found helpful to others, as they run every minute, stop at certain street corners, and the terminus only, thus giving great facilities to buyers in and around their neighbourhood. *En route* I was much amused at the free and easy attitude of the ticket collector, who was sitting in an armchair, with feet resting well up, coolly looking on while our tickets were placed in a box in front of him. All tickets by rail or car in New York are of the uniform price of 5 cents, and all of same class. The railway carriages are of light construction, while the railways themselves are almost unenclosed. Leaving Fifty-fifth street, I walked to Central Park, and was much struck by its extent and beauty. Within it is a large and excellent Zoological collection, open to all free of charge. Returning to the city, I noticed among the stores that of Stuart, which consists of an entire block, containing about a hundred separate shops. In New York we met with our first monetary experience, the most popular currency here being the Dollar Note, and one felt momentary surprise, when called upon to part with a *note* for 4s. 2d. The principal coins in use are ½ dollars, ¼ dollars, 10 cents and 5 cents. Weather was now very hot; majority wearing straw hats, otherwise in dress our cousins presented the appearance of quiet English gentlemen. Dress generally is here very expensive. Passing down Eighteenth street I paid a visit to the Fire Engine Station. The Captain informed me that in case of an out-break, everything could be got ready and despatched in *nine seconds!* Subsequently at drill we saw this feat accomplished."

It is evident by the following that natural wood finish is not so common in England as here.

"The blocks of mahogany and walnut were enormous, and the specimens from Australia, Canada and California very good. Speaking of woods, I observed that where this material is used for interiors of houses it is simply planed and polished, or varnished, seldom or never painted."

The author's remarks anent the Electricity Exhibit at the World's Fair indicate that nowhere in the world has such an advance been made in its applications as in this country.

"We next visited and revisited the *Electricity Building*. This fairly astonished and entranced me. It baffles description. The American seems to be perfectly at home with the new light. Electricity is seen in all forms and devices on buildings and in streets, the effect in many cases being brilliant and imposing; the illumination of the grounds, statuary, boats, etc., by night was simply grand. On the summit of one of the buildings is an electric search light, which can be seen a distance of forty miles."

He thus curtly dismisses the tall buildings of Chicago with several notes of exclamation.

"As to the city itself, Chicago is noisy, bustling and busy. It is noted for containing the tallest houses in the world. I was invited to a Masonic Lodge on the *eighteenth story!* the house itself having no fewer than *twenty-two!!*"

And winds up with the following tribute to the American character.

"Among our thoughts on the homeward trip was this, that, with the exception of a little extra smartness and alertness, our American cousins are, after all, one with ourselves; and personally I am bound to say that the kindness and courtesy uniformly extended to me in the States contributed greatly to the pleasure of a most enjoyable holiday."

LIPPINCOTT'S MAGAZINE for February, 1894. The complete novel in the February number of Lippincott's "The Picture of Los Cruces" is hardly up to the standard of the novels published in this magazine—the varied contents in other departments, however, will make it an interesting number to the general reader.

ELECTRICAL LITERATURE.—A monthly summary of current literature, Volumn 1, No. 1. Published by Fred De Land, 565 The Rookerey, Chicago, is intended to supply a brief synopsis, in a classified form, of each important article and editorial that may have any bearing on any phase of electrical engineering appearing in any publication, either American or foreign. While their publication cannot fail to be of great use to the Electrical Engineer and students of electricity; we fear the general public who care only for results accomplished, cannot be relied upon to support such a publication, upon reflection we may be saying too much, as there is a vast number of the public who are interested in this subject.

THE POTSDAM RED SANDSTONE CO., have favored us with a very artistic calendar for 1894. They enclose at the same time a report and an excellent likeness of the late Dr. Newberry and other experts of note.

The Potsdam Red Sandstone is doubtless all these expert says, but an account of the distance and cost of transportation has not interested the architects of this coast and those interested in building as it otherwise would. Beside this there is a feeling growing up in this community that we should look at home for building material. Encourage home industry, is getting to be the cry, and eventually it will be found we have building stone and marbles in our own state that cannot be rivaled or excelled.

BUSINESS MOSAICS.

Vulcan Iron Works.—Those in want of Architectural and Ornamental Iron Work cannot do better than give this company a call. To see the dainty stable fixtures will make you wish to build a new stable at once, or at any rate to remodel your old one; why a horse provided with such fixtures in his stable holds his head a trifle higher and looks down with contempt upon the unfortunate animals who do not have his advantages. Do not allow the feelings of your favorite horse to be hurt through the want of fixtures which are cheapest in the end—as they last long and save feed.

Teacher—"Try to remember this: Milton, the poet, was blind. Do you think you can remember it?" "Yes, ma'am." "Now, what was Milton's great misfortune?" "He was a poet."—*American Grocer.*

Ruffino & Bianchi, importers and manufacturers of marble, granite, monuments, tombs, wainscoting, steps, tiling, etc. The good taste displayed by this firm, in a department that more than most others appeals particularly to sentiment and feeling should be a sufficient reason for crowding their works to their utmost capacity. Call and judge for yourself at 862 to 870 Bryant street, San Francisco.

Cholly—I—I called to ahsk—er—er— Her Papa—Yes, yes; you may have her! Take my blessing!! This is my busy day!! Get out!!—*Puck.*

We recently has a visit from Mr. W. S. Purnell, the travelling representative of Merchant & Co. of Philadelphia, whose specialties we have frequently noted in these columns. Merchant & Co. continue to hold their own against numerous competitors by the excellence of their goods. About two hundred of the Star Ventilators will be used in the erection of the New French Hospital in this city, they having been chosen as being the best as well as the most economical.

Englishman—"Beastly weather, h'isnt h'it?" American—"Humph! The only creature that would like this weather is a duck, and a duck isn't a beast; it's a fowl. This is foul weather."—*New York Weekly.*

The Samson Cordage Works of Boston have issued their 1894 Catalogue and call especial attention to their "Samson Spot Cord." This cord has been put on to the market the last year to supply the demand that the Architects have made for a first quality Sash Cord which should be so marked that it could be identified at sight after the label has been removed from the low grade cords which are bought on account of the low price rather than on account of their wearing qualities. The "Samson Spot Cord" is the same quality and price as the regular "Samson" Cord, which has for years been so favorably known marked with a succession of a different color from the body of the cord. The company has adopted this device as a trade mark. Their catalogue describes this cord as being warranted of perfect braid and finish, and to be entirely free from waste stock, and purchasers may have confidence that the spot is a guarantee of quality. Samples will be gladly sent on application.

The Rapid Safety Filter.—To those who wish to retain good health, be wise in time, and order a Rapid Safety Filter, the office of the company is at 1209 Market street. These filters are endorsed by the leading physicians who strongly recommend their use. No charge is made by this company for fitting, keeping in order and cleaning the filter; the charge is very moderate and includes all these points, see their advertisement on page XII this journal. If you once commence with their use you are sure to continue it.

"Be mine, Amanda, and I'll treat you like an angel." "I daresay! Nothing to eat and still less to wear!"—*News Letter.*

Infringement of the Star Ventilator.—In the Omaha *Sunday World Herald*, of December 17th, appears a paragraph in regard to an alleged infringement of the patent of Merchant & Co.'s Star Ventilator. It would seem that the Star Ventilator was specified for the Lincoln, Neb., Hospital for the Insane and that the contractor placed other ventilators in the building which Merchant & Co. claimed to be infringements on their Star patents. Steps were accordingly taken to stop payment on the work pending an investigation. The matter was duly laid before the State Board of Public Lands and Buildings, with the result that the board decided to withhold a settlement with the contractor until he had made a satisfactory settlement with Merchant & Co. We are informed that Merchant & Co. have recovered heavy damages in the case.—*Metal Worker, January 6, 1894.*

"New York is a great place," said the tourist. "It has an Italian quarter, and a Chinese quarter, and a French quarter, but where is the American quarter?" "In the pocket of the hotel waiter," answered his American cousin.—*News Letter.*

Bolton & Strong.—The beautiful half-tones we have published of late were executed by these Photo Engravers, 430 Pine street, San Francisco. There is no doubt these gentlemen stand at the front in this class of work on this coast, indeed they do not take a back seat if we look the country over from east to west. Calling in the aid of the electric light they can work regardless of the state of the weather, clouds or sunshine.

"Why, oh why, do all men join in the mad rush for gold?" shrieked the female lecturer, who had acquired many years but no husband. "Because," yelled a voice from the back rows, "they have to do it to keep the women in clothes!"—*News Letter.*

Dunham, Carrigan & Hayden Co.—Builders' hardware in endless variety, including a complete line of Hopkins & Dickinson Manufacturing Co's Bronze Hardware, indeed, a visit to their bronze art room will well repay one, if only to see the various useful inventions, combining artistic taste with the every day essentials required by every builder. As dealers in hardware, iron and steel this firm are so well known, it is hardly worth while to say their establishment will be found at 17 and 19 Beale street, as well as 18, 20, 22 and 24 Main street, San Francisco, Cal.

Forgetfulness is a common failure of humanity, and everything that helps us to remember easily receives our hearty endorsement. Of just such a character is the "Daily Reminder," which the Bostwick Steel Lath Company, of Nilss, O., are now sending out to their friends and patrons with the compliments of the season for a Merry Xmas and a happy and prosperous new year. This little book is a complete diary and calendar combined, giving the day of the month, the day of the year, holidays, etc. Of course the company are anxious that reference to its pages shall also remind the reader that the Bostwick fire-proof steel lath is the best on the market and should be investigated by architects, plastering contractors and others who are trying to find a good lath to put into their buildings. This lath was awarded a premium at the World's Fair.

"It's very hard," said the water-meter, "I'm always registering, but I can't vote!"—*News Letter.*

The truth of the saying "the works of a good man lives after him" is illustrated by the success of the Joseph Dixon Crucible Company, though greatly enlarged and improved since his death the same spirit governs the concern as when he lived, and the march of improvement is ever onward.

The sight of an excellent likeness of the late Joseph Dixon, reminds me of an occurence that happened some years before his death, it gives a very good illustration of the fun that lurked under a somewhat austere countenance.

About the time when Pains claim of a great discovery was the talk of the day, and some people were ready to believe t a revolution in gas making from water was about to b a certainty, Mr. Dixon announced a lecture upon the subject of Pains water gas, and proceeded from the platform to apparently perform the experiments that Pain had announced with a flourish of trumpets; water was decomposed, the gas collected, afterward carbonized and burst before the delighted audience. Mr. Dixon bowed his acknowledgments—"I should say before you go—there is one little point of difference, my machine is of wood though the magnets are painted to represent iron." Up jumped an indignant man and said, "If that is so I pronounce the thing a humbug." "You have characterised it exactly, the object of the lecture is accomplished," replied Mr. Dixon.

CITY BUILDING NEWS.

Carl near Cole. Two-story frame; owner, Wm. Lang, Jr.; architect, Emil John; contractors, Schutt & Krecker; signed, Jan. 17; filed, Jan. 19; cost $3700.

California near Sansome. Alteration; owner, Josie Guarcola; architect, Clinton Day; contractor, J. H. Wilson; signed, Dec. 4; filed, Jan. 31; cost $3,250.

California street, No. 1919. An annex, theatre and ballroom; owner, M. H. DeYoung; architect, A. Page Brown; contractors, Mahoney Bros.; cost $10,000.

Commercial and Leidesdorff. Repairs to brick building; owners, Howard Estate; contractor, J. V. Lawrence; cost $3350.

Commercial bet. Leidesdorff and [illegible] Repairs to brick building; owners, Estate of Capt. Thomas; contractors, Mahoney Bros.; cost $10,109.

Clayton near Waller. To build; owner, L. F. Crane; architect, John Conant; contractors, McCulloch & Glunz; signed, Jan. 23; filed, Jan. 25; cost $2055.

Devisadero near Grove. One-story frame; owner, Mrs. M. Mocker; architects, Percy & Hamilton; contractor, J. House; signed, Jan. 24; filed, Jan. 25; cost $2000.

Ellis and Hollis. Brick, carpenter and mill work, etc.; owner, Blanche Converse; architects, Shea & Shea; contractor, Ed. Mooney; signed, Jan. 15; filed, Jan. 20; cost $10,570.

Ellis and Hollis. Sewering, plumbing, etc.; owner, Blanche Converse; architects, Shea & Shea; contractor, P. F. Ward; signed, Jan. 15; filed, Jan. 20; cost $1293.

Filbert bet. Hyde and Leavenworth. Two-story frame; owner, Chas. Grasse; contractor, Geo. Welsmann; cost $3800.

Filbert and Taylor. Two-story frame; owner, F. L. M. Peters; contractors, Dean & Worden; signed, Feb. 1; filed, Feb. 1; cost $1900.

First near Minna. Three-story brick building; owner, M. Samuel; architect, Emile Depierre; contractors, John Dunphy & Co.; signed, Feb. 2; filed, Feb. 3; cost $5,200.

Fulton and Webster. Alterations and additions; owner, Elizabeth Moore; contractors, Home Building Co.; signed, Jan. 24; filed, Jan. 26; cost $3600.

Golden Gate Ave. between Lyon and Lott. To build; owner, Joe. Wurdack; architect, Emil John; day work; cost $4000.

Golden Gate Ave. near Lott. To build; owner, John N. Macklin; contractor, Arthur Stevens; signed, Jan. 10; filed, Jan. 26; cost $3320.

Greenwich near Hyde. To build with observatory; owner, Jas. F. Gassmann; contractor, C. A. Henderson; signed, Jan. 18; filed, Jan. 19; cost $3000.

Greenwich bet. Stockton and Powell. To build; owner, Jane Trubody; contractor, E. A. Thompson. signed, Feb. 2; filed, Feb. 5; cost $2600.

Howard near 10th. Two-story frame; owner, H. H. Oelling; architects, Townsend & Wyneken; contractor, F. W. Kern; signed, Jan. 12; filed, Jan. 16; cost $4380.

Howard near 5th. Excavating brick and carpenter work tinning, etc.; owner, H. W. Frank; architects, J. C. and E. A. Mathews; contractor, D. J. Breman; signed, Feb. 7; filed, Feb. 10; cost $10,300.

Jackson near Laguna. Carpenter, mill work, etc., owner, Samuel M. Rosenbaum; architect, Samuel Newsom; contractor, Martens J. Gallagher; signed, Jan. 29; filed, Jan. 31; cost $8850.

Jackson near Laguna. Sewers, plumbing, etc.; owner, Samuel M. Rosenbaum; architect, Samuel Newsom; contractor, Samuel Ichelheimer; signed, Feb. 2; filed, Feb 3; cost $1435.

Leidesdorff and Clay. Repairs to brick building; owner, E. J. Shattuck; contractor, A. C. Hussey; cost $1600.

Lott near Golden Gate Ave. A frame dwelling; owner, Mrs. Flora Ellon; architect, J. Cather Newsom; contractor, Louis Landler; signed, Jan. 23; filed, Jan. 25; cost $6,159.

Lombard and Greenwich Alley. Alterations and additions; owner, P. Castagnetto; architects, Townsend & Wyneken; contractor, C. Paff; signed, Feb. 9; signed, Feb. 10; cost $2700.

Market and Montgomery. Hardware interior; owner, Union Trust Co.; architect, Clinton Day; contractors, Mahoney Bros.; cost $1800.

Market and Montgomery. To build; owners, Union Trust Co.; architect, Clinton Day; sub-contractor, L. & E. Emanuel. cost $6150.

Market and Montgomery. Mill work; owner, Union Trust Co.; sub-contractor, Andrew Wilkie; cost $800.

Pacific Ave. near Laguna. Alterations; owner, J. A. Carit; architect, T. J. Welsh; contractor, W. F. Wilson; signed, Feb. 2; filed, Feb. 12; cost $1016.

Pacific Ave. near Laguna. Painting, etc.; owner, J. A. Carit; architect, T. J. Welsh; contractor, M. J. Donovan; signed, Feb. 9; filed, Feb. 12; cost $1670.

Pacific Ave. near Octavia. Two-story frame; owner, Mrs. Johanna D. Jolliffe; contractor, Willis Polk; signed, Jan. 25; filed, Jan. 29; cost $4700.

Pacific Ave. near Laguna. Brick work, art stone, etc;; owner, J. A. Carit; architect, T. J. Welsh; contractor, J. W. Smith; signed, Jan. 31; filed, Jan. 31; cost $7895.

Post near Leavenworth. Painting, etc.; owners, S. F. Verein Association; architects Sulfield & Kohlberg; contractor, H. F. Wagner; signed, Jan. 11; filed, Jan. 18; cost $2350.

Powell and Jackson. To build; owner, Second African Methodist Church; architect, H. Geilfuss; contractors, Brutcher & Griffith; signed, Jan. 20; filed, Jan 20; cost $4,765.

Pine near Buchanan. To build; owner, Louis Freelander; architect, J. F. Sherman; contractors, Currie & Loomer; signed, Feb. 5; filed, Feb. 6; cost $3825.

Powell bet. O'Farrell and Geary. Alterations; owner, Geo. B. Tay; contractor, Wm. Little; cost $4250.

Scott near Page. To build; owner. Geo. H. Luchsinger; architect, H. Geilfuss; contractors, Schutte & Krecker; signed, Jan. 20; filed, Jan, 20; cost $3500.

Tremont Ave. near Fredrick. One-story cottage; owner, Geo. Offerman; architect, Emil John; contractors, J. A. McDonald & McDonald; signed, Feb. 2; filed, Feb. 6; cost $2000.

Van Ness Ave. and Myrtle. Painting and tinning; owner, C. F. Buckley; architect, M. J. Lyon; contractor, L. J. Dwyer; signed, Feb. 6; filed, Feb. 10; cost $2593.

Van Ness Ave. and Myrtle Ave. Grading concrete foundation, brickwork, etc.; owner, C. F. Buckley; architect, M. J. Lyon; contractors, Martin & James Fennell; signed, Feb. 6; filed, Feb. 8; cost $7250.

Van Ness Ave. and Myrtle Ave. Plumbing, etc.; architect, M. J. Lyon; contractors, Ford Bros.; signed, Feb. 6; filed, Feb. 9; cost $2000.

Van Ness Ave. and Myrtle Ave. Carpenter and iron work; owner, C. F. Buckley; architect, M. J. Lyon; contractors, Wm. Knowles and Geo. Reichley; signed, Feb. 6; filed, Feb. 9; cost $26,000.

Vallejo near Buchanan. To build; owner, Louis Holy; architect, H. Geilfuss; contractor, James McLean; signed, Feb. 2; filed, Feb. 2; cost $4194.

Virginia near California Ave. One-story frame; owner, E. Powers, contractor, James J. O'Brien; signed, Jan. 19; filed, Jan. 19; cost $1200

Virginia near California Ave. One-story frame; owner, Michael Mahoney; contractor, James J. O'Brien; signed, Dec. 2; filed, Jan. 19; cost $1200.

The California Architect and Building News.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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ESTABLISHED 1879. INCORPORATED 1889

NOW IN THE FIFTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

THE American Institute of Architects has been making strenuous efforts to bring about a reform in the Government's method of designing and erecting the Federal buildings of this country.

The Secretary of the Treasury, has at present, control of all buildings of this class, and the actual work is done by a bureau in charge of a Supervising Architect.

At the earnest solicitation of the American Institute of Architects, Secretary Carlisle promised the Committee that waited on him, that he would try the competitive method if Congress would authorize it; so the Committee prepared a bill and the last Congress made it law, authorizing the Hon. Secretary of the Treasury to procure designs for public buildings through public competitions, as advocated by the Institute.

No action was taken under this authorization. Not long ago the Government had occasion to erect a public building in Buffalo. The design adopted was severely criticized by the Buffalo Chapter of the Institute who protested against the adoption of a design which they characterized as unsuitable and unworthy of the purpose for which it was designed and the occasion was taken by President Burnham of the Institute, to urge on Secretary Carlisle the exercise of his prerogative.

Secretary Carlisle has positively refused to do so, and the reform appears to be no nearer realization than before.

This refusal of the Secretary to take action in the matter is really discouraging—the evils of the present system are admitted, but instead of trying to ameliorate them, the authorities seem determined to plod along in the old way.

The Institute has endeavored for years to secure proper recognition for the noble art of architecture, and is bound to succeed in the end.

In the mean time it is justly indignant that its exertions have met with no better appreciation by the government officials, and in concluding the correspondence with the Secretary of the Treasury concerning the law as it now exists, President Burnham uses this sentence:

"You now inform us, in effect, that the law must be amended before you will act under it. I can see but one amendment which is needed to insure the satisfactory working of this measure; *i. e.*, the introduction of a clause ordering the Secretary of the Treasury to carry out its plain intent and purpose, and not leaving it to his discretion."

The Hon. Secretary of the Treasury seems to consider the method that has produced some of the noblest monuments of the old world, as not worthy of trial in this country, and refuses to learn through the experiences of other nations.

We have no intention of reflecting on the professional ability of the incumbents of the office of Supervising Office of the Treasury, past or present, they have undoubtedly done the best they could under the unfavorable circumstances in which they work.

But think of it! Is is not ridiculous to expect that any one man is able of attending to and designing and erecting all the public building necessitated by the requirements of

a nation of sixty millions—even the layman should see the absurdity of expecting any one man, no matter how capable, to achieve such a task in as satisfactory a manner, as if the combined abilities of the foremost men in the profession were employed to the same end.

We extend to the American Institute of Architects our hearty good wishes and encouragement in their work of securing fitting recognition for a noble art, that was better appreciated centuries ago by an earlier, and we regret to think, possibly a more enlightened civilization.

FUTURE SUPPLY OF SKILLED LABOR IN THE BUILDING TRADES.

PRESIDENT Hersey, in his address at the recent convention of the National Association of Builders, in Boston, pays much attention to the question of future supply of skilled labor in the building trades. He bewails the decay of the apprentice system, and favors among other remedies, the establishment of trades schools. It is to be hoped that so much of the address may bear fruit in inclining some of our wealthy people who are desirous of leaving monuments of their philanthropy, to see in this comparatively new field a chance to do the right thing. It is high time that charitably disposed people inquire if there are not other and more promising openings for their bequests than hospitals and so-called higher institutions of learning. It is true that the public schools are doing more than formerly in the direction of manual training, but it is impossible for them to do much in the way of serious preparation for the shop. Manual training is to be encouraged as helping in the direction of a better balanced education, or at the worst, as a recreation to the pupil. It cannot teach how to do the work required in the trades. Some very limited attempts to revive the apprentice system have of late been made with fair success, but there is slight chance of the revival becoming general. Trade schools have not as yet been sufficiently tested to have established an unassailable reputation, but there is a pretty general belief that they must be pretty poor not to be an improvement on the present state of things. In a sense, much less is required of a mechanic now than formerly, so much machinery, and so much specialization of work being the order of the day. Naturally enough one would expect to get a higher order of work from men of whom but a few things were required; but the expectation is not borne out in the building trades of to-day. The architect, if a good superintendent of construction, finds it necessary to establish a sort of trades school on a considerable percentage of his buildings. From the laying of the footing stones to the finishing of the building, he finds men, who, with drawings and specifications before them, and with plenty of the best of building materials, will not get good results without much special effort on his part in the way of actual teaching. It certainly was different under the old system of apprenticeship, for a mechanic who was "dragged up" as a "cub" in those days certainly knew how to do a good many things well. While an apprentice, he was usually taken in hand by a journeyman, who while he required a great deal of drudgery, took a commendable pride in seeing that he got into the way of doing things well, and once being able to do a thing properly it was not advisable for him to relapse. It was then a merit to get a good job out of indifferent materials, whereas now one is so often discouraged in attempts to get good work from men provided with the best of materials. With so much better scientific knowledge at our disposal than formerly, the whys and wherefores may be placed at the disposal of the pupils of trades schools, and along with the reasons for good work, a degree of skill may be taught that will be very helpful. If we may reason from the results of the schools in departments of design, trade schools cannot come too soon. As to President Hersey's other principal remedy for the degradation of skilled labor, the stopping of foreign immigration, he would have done well to give the subject more careful study, and not to have proposed it at all. The effect of the discontinuation of immigration would be very likely to leave us in a position to see some of our own shortcomings a little better, perhaps, which would be well enough in its way, although not exactly what we most desire; but it would, we fancy, leave us very short of help as a general thing. As the case now stands we would in a normal business season be at a great loss to carry on the building operations of the country if we were to insist on using only native workmen, who, although they may be very superior to all others, may certainly learn some things yet, even from those of foreign birth who do so much of the skilled work about buildings, and many of whom certainly rank well in their several trades.—*The Architect, Builder and Decorator.*

DETAILING OF THE ROOF TRUSSES FOR THE MANUFACTURERS AND LIBERAL ARTS BUILDING, CALIFORNIA MIDWINTER FAIR.

BY D. E. CONDON, M. E., C. E., A. M. INST. C. E., MILLS BUILDING, SAN FRANCISCO.

IN dimensioning the various members of the roof trusses designed for the Manufacturers and Liberal Arts Building of the California Midwinter Fair, and proportioning their connections, the primary essentials were:—

FIRST—A determination of the strains due to the *dead loading;* that is to say the entire weight of the roof material, purlins, etc., in one *panel* or space between two trusses, including the weight of one truss itself, regarded as symmetrically distributed.

SECOND—A determination of the strains due to the probable maximum *wind force* acting on one side of the roof surface.

THIRD—A determination of the maximum strains due to the *combined* action of the dead loading and wind force.

There are seventeen trusses in the entire length of the building, spaced twenty-two feet between centres, and twenty-two feet between each end truss and the adjoining gable.

The roof proper is a cylindrical surface of inch boarding, broken at the crown by a skylight; and its weight is carried to the trusses by means of 4″x12″ purlins over twenty-two feet long and spaced two and a half feet between centres.

The *dead loading* was estimated at twenty pounds per square foot of roof surface, and the resulting *dead loads* at the *upper panel points* A, B, C, D, E. D′, C′, B′, A′, (see accompanying diagram of truss) were determined accordingly. The corresponding strains were then computed.

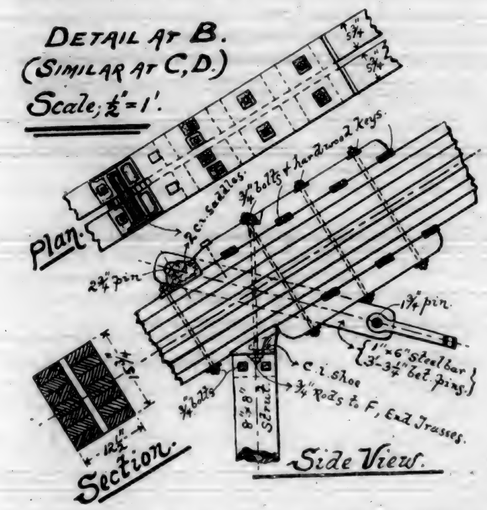
The *wind force* (acting horizontally) was taken at a maximum of thirty pounds per square foot on a plane surface at right angles to its direction; and on this basis the *magnitudes and directions* of the resultant wind forces at the upper panel points A, B, C, D, E, on the wind side were also determined. The strains due to these forces were then computed for the various members both on the wind and lee sides.

By a proper combination of the latter strains with the dead load strains, the *maximum* tensile and compressive

strains to be provided for in designing the various members and their connections were arrived at.

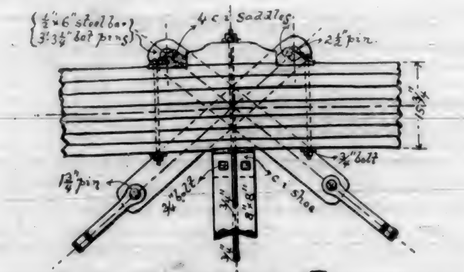
All the compression members were made of white pine wood.

The top A C E C′ A′ (commonly called "upper chord," after the corresponding member or upper flange of girders) was designed to directly sustain the roof purlins, and consequently had to be made circular. The material used being wood it became necessary to form the arc of a laminated or built beam, with scantlings of thickness and length properly proportioned to the curvature, breaking joint and bolted together every two feet. See annexed *Detail at B.*

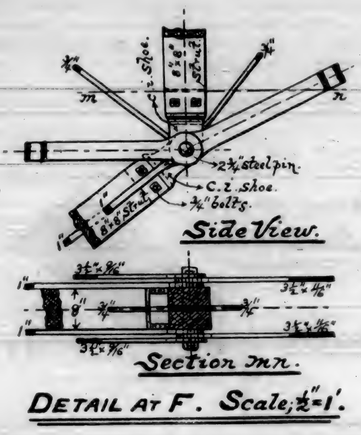


The division of the laminated beam into two equal parts with a space between, provided for the connection of the other members to it, and gave scantlings which could be more easily obtained in the market, without at the same time reducing the strength.

The vertical struts BF, CG, DH, EK were made of square section, with a cast-iron shoe at upper end, slightly gained into the lower lamina of beam, and bolted to both beam and strut. See *Detail at B*, and annexed *Detail at E.*



The lower end of each of these struts was also provided with a cast-iron shoe, similarly bolted to the strut, and having two sufficiently strong webs or ribs (1″ metal) projecting downwardly, four inches apart, with holes through which the pin is passed that makes the connection with all the tension members at the point. See annexed *Detail at F.*



The vertical struts M L, M′ L′ were not provided with a cast-iron shoe at upper end; but the end was gained one-half inch into lower lamina, and tenoned between the two halves of the laminated beam. The lower end of each of these struts was provided with a cast-iron shoe, similar to that at F, G, H, K, (but smaller, ¾″ metal) with a 1¾″ pin connecting *all* the tension members at the point.

The oblique struts F P, F′ P′ were provided with a cast-iron shoe at upper end, same as that at the lower end of the vertical strut at same points, only the projecting eye-ribs are six inches apart. The lower end of each of these struts has no cast-iron shoe, but is gained into and secured between the two 12″x12″ upright posts (six inches apart) of the side frame-work.

All the main tension members were made of steel—flat eye-bars and rods—each proportioned to its maximum strain, with a factor of safety of about three (3) within the elastic limit of the material.

The secondary bracing members (a F, F b, etc.) were all made of ¾″ wrought-iron rods.

The connection of the members at the various points were all made by means of turned steel pins properly proportioned to the maximum shearing and bending strains.

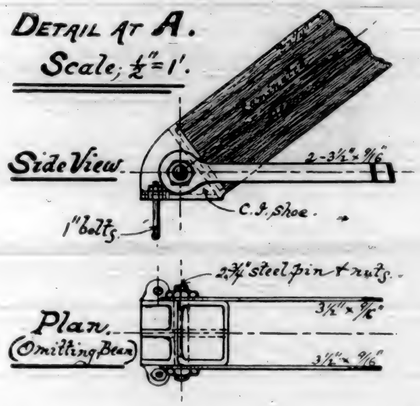
The connection between the diagonal tension members and laminated beam at B, C, D were made by means of a flat steel bar (1″x6″, 3′3¼″ between pin centres) with pin connection between the two member-flats at its lower end, and a pin bearing on two cast-iron saddles at its upper end. See *Detail at B.* The bar passes up between the two halves of beam, and each saddle is slightly gained into and bolted to the half-beam on which it is secured. The component tendencies to sliding along the beam, of the saddles and upper shoe of strut, are mainly counteracted by means of two pieces of wood extending across, and bolted through and keyed to, the two halves of beam. The upper piece has its end opposed to the faces of the saddles, and the lower one has its end opposed to the face of strut shoe. Each saddle is prevented from side movement at the same time by the bolt at its back end, and a projection at the face end which enters the upper lamina of beam.

The connection at the crown E is somewhat different.

The steel bars are only ½" thick, but with the same distance (3'3¼") between pin centres and the cast-iron saddles are smaller. See *Detail at E.*

The connections between the vertical main and secondary tie rods, and the laminated beam were made by means of nuts at ends of rods, with wrought-iron washers seated on and secured to the upper side of beam.

The ends (A, A') of the laminated beam were provided with cast-iron shoe bearings, with pin connection to tension members; and the shoes were firmly bolted down to the supporting frame work. Annexed *Detail at A.*



All the roof purlins were secured to the laminated beam of the trusses, and the beams of all the trusses were connected by a system of ¾" diagonal tie rods.

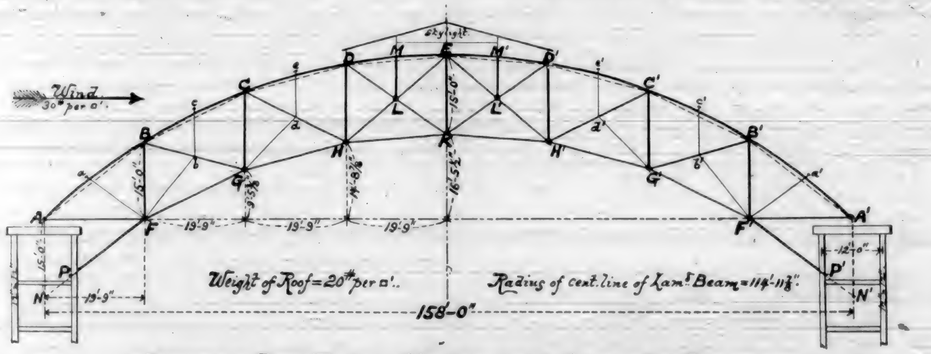


DIAGRAM OF ROOF TRUSS — MANUFACTURES & LIBERAL ARTS BUILDING, CALIFORNIA MID-WINTER FAIR.

MAIN BRACING MEMBERS, DIMENSIONS AND LENGTHS.

AF,	2 eye-bar flats,	3½"x 9-16", 19'9"	between pin centres
FG,	" "	3½"x11-16", 21'10 11-16"	" "
GH,	" "	3½"x15-16", 20'5 3-8"	" "
HK,	" "	3½"x15-16", 19'9 3-8"	" "
BG,	" "	2" x 9-16", 18'6"	" "
CH,	" "	2" x 1-2", 20'0"	" "
DL,	" "	2" x 1-2", 9'10 13-16"	" "
LK,	" "	2" x 7-16", 11'10 13-16"	" "
LE,	" "	2" x 7-16", 10'11"	" "
HL,	one 1" rod, with turnbuckle,	12'11 1-4"	" "

BF, CG, 8"x8" strut for the *fifteen intermediate trusses*, with two ¾" rods, 16' 3" long between pin centre and screw ends, one on each side of strut, for the *two end trusses*, to provide for gable bracing.

DH, EK, 8"x8" strut, with two ¾" rods, 16'3" long between pin centre and screw ends, one on each side of strut, for *all seventeen trusses*.

ML, 6"x6" strut, with two ⅝" rods, 8'10" long between pin centre and screw ends, one on each side of strut, for *all seventeen trusses*.

FP, 8"x8" strut, with two 1" rods, 18'5" long between pin centre and screw ends, one on each side of strut, for *all seventeen trusses*. The ends of the rods are provided with cast-iron bevel washers bearing on the inside of the two 12"x12" upwright posts of the frame-work.

SECONDARY BRACING MEMBERS, DIMENSIONS AND LENGTHS

With pin connections at b, d, etc., between and independent of the main flat bars at these points.

aF,	one ¾" rod,	13'11"	between pin centre and screw end.
Fb,	" "	15'8 37-64"	between pin centres.
bG,	" "	10' 33-32"	" " "
bc,	" "	8'10"	between pin centre and screw end, with forked end at b.
Gd,	" "	14'1 29-32"	between pin centres.
dH,	" "	11'0 3-64"	" " "
de,	" "	8'10"	between pin centre and screw end, with forked end at d.

The gable bracing will be described in next issue.

The *California Architect* has published some plates of the buildings of the Midwinter Fair that exceed anything done by their Eastern contemporaries during the World's Fair. The work is most creditable, and the pictures in one number worth the subscription for a year. We, in common with all interested with journalism on this Coast, feel a pride in the *California Architect.* It is made up in a manner that blends taste with the utilitarian in an art that more than any other depends upon an interchange of ideas and thought in an art that is universal, and for that reason, one that restrains the selfish idea of exclusiveness, widens views, and leads to a higher civilization. It is, moreover, marching with rapid strides into the field of computable quantities. The taste that provides external grace remains, but added to this comes the internal engineering problems of electrical apparatus, elevators, provision for steam power, general heating, with many other elements added in the last few years.—*Industry.*

THE OWNERSHIP OF DRAWINGS MADE FOR AND BY AN ARCHITECT.*

A LETTER is a document which, by means of words, attempts to supply to the reader some information from the writer; even after signature this, until delivery to the Post-office, or until delivery by some other means (the difficulties respecting a letter *in transitu* need not here be discussed), is held to be the absolute property of the writer, unless by agreement he has previously parted with that property. After delivery (if there has been no such agreement), either party may by injunction prevent the publication of the document; but before proceeding to that step, in cases where the Post-office is not the medium of transmission, the delivery to the reader or to an agent specially appointed by him to receive the document must be proved by the recipient. An architect's drawing has the nature of a written document, and is invested with all the qualities of a letter, as soon as it has received his signature, or the formula, "To be returned to the office of A. B.," etc., or even "From the office of A. B.," etc. A drawing is any combination of two or more lines which expresses form more clearly than any amount of description could do. In exception to this definition, some persons might produce copies of photographic pictures, and inquire where the lines are to be seen; others might bring forward shadowed representations of buildings in which no lines appear. The reply is, that no man could have made such a copy or such shadowed drawings without first drawing the lines, which have subsequently been erased.

Architectural drawings are technically known as "*sketches*" of plans, or sections, or elevations, or perspective views; *Draught.* (this term is nearly obsolete, because the words "rough plan," etc., are too generally used in an office for "rough draught of plan," etc.), and sometimes scaled to a *modulus;* General Drawings, always scaled to a foot; Detail Drawings, either at full-size or at an aliquot part of that size; Show Drawings, for exhibition to the client, to the architect's friends and to the public; a drawing in any one of these classes may be either "rough" or "finished," but is not necessarily an original design—the words "design" and "drawing" are so frequently used with indifference as to their separate meanings, that it may be useful here to insist that a design means a project, an idea, which may be very good although expressed in a bad drawing, just as, on the contrary, good drawing may be wasted upon a bad design; and copies or repetitions, which may be either counter-drawn by transfer, or duplicates by tracing or by using the rule and compasses, or enlarged or diminished copies produced by hand or by machinery. The term "Working-drawings" once meant the general drawings drawn so large as to show construction, or to admit of minute dimensions to save mistakes by workmen unused to scales; but now all detail drawings may be included. As to Original Drawings, all from which copies are made are original; however, since an assistant's work has been allowed to pass under the master's name, an original drawing by the master is one which he has himself made. Competition Drawings are finished general (and sometimes detail) drawings submitted in competition with other architects; in a few exceptional cases drawings of the design to a small scale have been at first required, and a selection has been sealed, for verification by the advertising body, from which the larger drawings have been made, and again submitted in final competion. Prize drawings are the successful Competition drawings, although the present day speaks of "premiated prize-drawings" when the competition has been made as a scholastic exercise for a small sum of money, or for a medal, or for books, etc., commonly called a "prize."

When the conditions of competition include a provision that the prize-drawings shall become the property of the donor of the premium, without the addition of words to the effect of "on delivery of the premium," the architect enters into a speculation of making drawings for approval, purchase and payment. The drawings on approval become the property of the donor of the premium, who in the present state of the law of artistic copyright has the power to sell, or lend, or publish them forthwith, without fear of any interference on the part of the architect, who must formally sue the donor for the premium as a debt, unless the architect by some indiscretion has deprived himself even of that remedy.

It is clear that a body corporate having a common seal may advertise for competition designs, receive them, approve two or more sets of drawings, and refuse to proceed to the adjudication of the premiums (on the ground that the advertisement was not a copy of a contract made under seal) until a more satisfactory opportunity; yet the architects cannot compel the body corporate to return the approved drawings; and it is doubtful whether they could compel them to proceed forthwith to adjudication and payment; yet the drawings would be legally in possession of the corporation, if not legally its absolute property.

The drawings made by an architect's assistant in the architect's office absolutely belong to the architect until he parts with his property in them, and this whether the assistant be paid (even if there be a debt due to him in respect thereof) or otherwise. This property depends on the fact that the drawings are made on paper, or vellum, etc., provided by the architect. Hence the clause in Articles of Pupilage that the pupil is to provide all instruments and materials except paper.

The drawings made by an architect's assistant out of the office, for the architect, absolutely belong to the architect until he parts with his property in them, even before he has paid to the assistant the price of the work: This property may arise in one of two ways: either the drawings are made on paper or vellum, etc., provided by the architect, in the same manner as a solicitor supplies to his surveyor the parchments on which the surveyor is to make duplicate drawings; or else the drawings have been made on paper or vellum, etc., *provided by the assistant*, and the architect, by agreeing to have them, acquires the property in them; but, in both cases, the assistant has a lien upon the drawings, or any part of them, for the whole price, unless he has agreed to receive the price at a future day, or takes security for the debt.

Not to omit what may at first sight seem to be an almost extinct branch of the subject, it may be observed that a century or more since, when vellum was more used, paper much dearer, and assistance perhaps worse remunerated than at present, agreements as to the usefulness of assistant's work were settled by destroying the material, a habit said to have been preserved to his later years by Sir John Soane, who did not hesitate to ask the assistant for his penknife, with which Soane reduced, at two diagonal cuts, the drawing into four triangles. Even now, the destruction of a pupil's drawing is taken as the strongest mark of the architect's disapproval. But, of late years, the principle *caveat emptor* has been so triumphant that if the architect does not take care too see satisfactory samples of his proposed assistant's skill, he had better not refuse an unsatisfactory drawing, but, (after pointing out the defects and getting them rectified as much as possible) accept, without manifesting displeasure, the finished work which is tendered to him. And if the architect, during the progress of work done out of the office, should see evidence of carelessness, incapacity or ignorance, he had better say that the drawing at that stage will suit his purpose, as if it were completed; and, upon payment even of the price orignally fixed, withdraw it. To leave a drawing under a continuous lien is not satisfactory.

To be Continued.

* During the period when the important subject of the ownership of drawings was under consideration—a question raised by the demand made by the Office of H. M. Works, etc., on the late Edward Barry, for the drawings made by his father in carrying out the designs for the House of Parliament—my brother the late John W. Papworth, undertook to collect the views generally held by members of the profession, and wrote them out with comments. His notes, which were found, at his death, among numerous other papers in his desk, are given in the above posthumous article. See for other articles on this subject, Vol. VIII, N. S., (Journal of the R. I. B. A), pp. 109, 188, 231, 254, 404.—Wyatt Papworth.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

EVANGELICAL Swedish Mission Church, Jessie street, Seth Babson, Architect.

AN Entrance by J. H. Powers.

CHATEAU Chevalier Wine cellar, St. Helena, Oliver Everett, Architect.

A Dwelling, Percy & Hamilton, Architects.

INTER-OCEANIC SHIP-CANAL COMMUNICATION BY THE AMERICAN ISTHMUS.

Its Geographic and Economic Relations towards the United States.

Portions of a paper read by N. J. Manson before the Technical Society of the Pacific Coast, July 7th, 1868.

MR. President, during the past year, I have expressed through the press some views and opinions upon the subject of inter-oceanic communication. A few of the members of your Society expressed the regret that one of my articles had not been read before this Society. In accordance with a promise made at that time I appear before you to-night asking your indulgence.

"Commerce loves the sea, but it depends for life and health on the land. It derives its sustenance from the rivers and the basins which they drain, and increases the opulence of nations in proportion to the facilities of intercourse which those nations have with the outlets of such basins.

"The three great outlets of commerce, the delta of the Mississippi, the Hudson and the Amazon, are all within 2,000 miles, ten days' sail of Darien. It is the barrier which separates us from 600 millions of people. Break it down and the Atlantic Coast of the United States and the Gulf of Mexico become the focus of the world's commerce." * *

Elevations and Widths of the Isthmus at Possible Points of Transit.

The American Isthmus is for nearly its whole extent a ridge of the Cordilleras. From Tehuantepec, where it joins the expanse of North America, to the Gulf of Darien, where it joins South America, it is in length about 1,230 miles. Its width is out of all proportion to its length. It is more essentially an isthmus than any other narrow neck of land on the globe. If we will compare the mean of the widths of the Isthmus, at Tehuantepec, 143 miles; at Honduras, 161 miles; at Nicaragua, 169 miles; at Panama, 47½ miles; at San Blas, 30 miles, they will give for the breadth of the Isthmus about one-eleventh of its length. Its lowest elevations above sea level, at possible points of inter-oceanic transit, are at Tehuantepec, 754 feet; at Honduras, 2,000 to 3,000 feet; at Nicaragua, 153 feet; at Panama, 287 feet; at San Blas, 1,142 feet; at Caledonia, 1,003 feet; at the Truando-Atrato, 950 feet; at the Napipi Atrato, 778 feet; at the Tuyra-Peranchita, 808 feet. The last five routes are all so mountainous and elevated as to require tunneling from six to ten miles in length. The entire Isthmus has been called an immense causeway, separating the seas while uniting the continents. It is worthy of thoughtful consideration that while the African Isthmus, Suez, is but the center of the Old Continents, the American Isthmus is the center of the oceans.

The opening of navigation through Suez gave a short route inland for Western Europe to the east of the Old Continent. Should this nation, as a nation, open and render free a strait across Central America, we not only join the oceans embracing our country, but we open the two halves of the globe to the enterprise of our people, and there will be accomplished for the people of the United States the most ample and far-reaching achievement of civilization since the creation of the world; or, to quote Humboldt and Maury, an epoch in the history of the universe will stand distinctly marked, and it may be added, that should this channel be permitted to be opened in any other way than by a free, an enlightened, and a liberal nation, its natural guardian and custodian, the clock of the world and of civilization will be turned backward one century at least. * *

Surveys of the Whole Isthmus Directly by the Government.

The Government of the United States, realizing the full importance of an inter-oceanic canal, and acting upon the report of Rear Admiral Davis, sent into Central America its most experienced navigators and engineers, and it expended, in its surveys and explorations, according to De Lesseps, no less than $5,000,000.—*North American Review*, Vol. 130, page 1.

A general attack, in an engineering way, upon all the possible lines of canal transit seems to have been determined upon by Congress.

I. In the first place, Congress caused an instrumental reconnoissance of the Isthmus of Tenuantepec to be made by Captain Shufeld in 1872.

II. In the same year Congress caused to be made, by Commander E. P. Lull, U. S. N., an examination, survey, and definite instrumental location of an inter-ocean canal route from the vicinity of Graytown, via Lake Nicaragua, and thence via the rivers Medio and Grande to Brito on the Pacific Coast. As supplemental to this survey some preliminary observations were made in 1872 by Commander Chester Hatfield, U. S. N.

III. It caused to be made an examination and instrumental survey of an inter-oceanic canal route from Navy Bay to Panama by Commander E. P. Lull, U. S. N., in 1875.

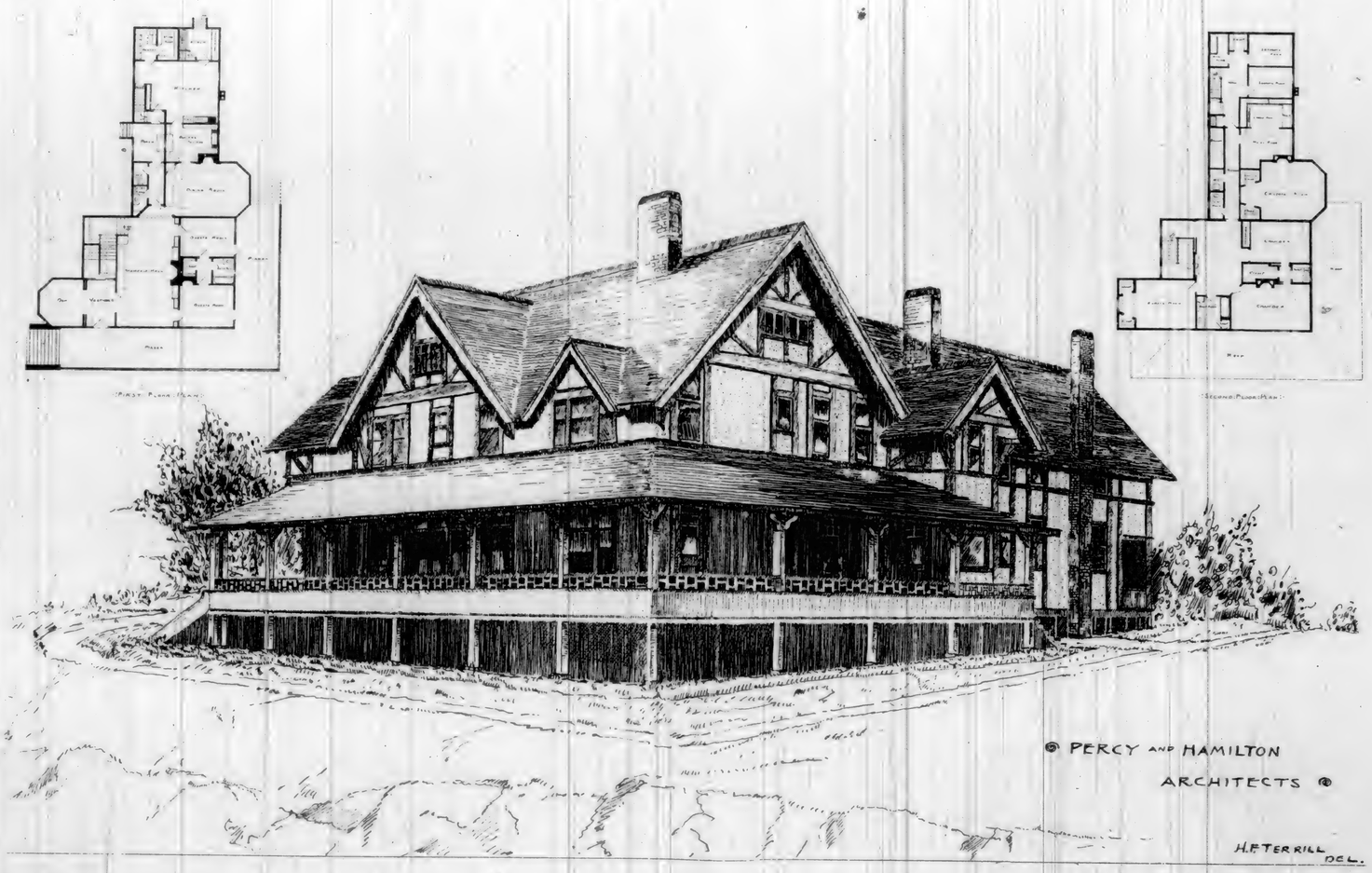
IV. It ordered and caused to be made examinations and surveys from the Gulf of San Blas toward the River Chepo by Commander T. O. Selfridge, U. S. N., in 1870, and caused reconnoissances to be made from the waters of the Chepo towards the Gulf of San Blas by Commander E. P. Lull, in 1875.

V. Under its direction several tentative instrumental surveys in the vicinity of Caledonia Bay, across the Cordilleras, were made by parties under the direction of Commander T. O. Selfridge, U. S. N., 1871.

VI. It caused a barometrical reconnoissance to be made of the "De Puydt Route" by way of the Tenala River, between the Tuyra and Atrato, by a party under the direction of Commander T. O. Selfridge, U. S. N., 1871.

VII. Tentative instrumental lines by the so-called Gorgoza route, from the east coast by way of the Atrato Caracica and Peranchita Rivers, from the west coast via the Tuyra and Cue Rivers across the divide, were made by parties under the direction of Commander T. O. Selfridge, U. S. N., 1871.

VIII. An instrumental examination was made of what is known as the Truando Route by Lieutenants Michler, U. S. A., and Craven, U. S. N., 1856–7. This survey was sup-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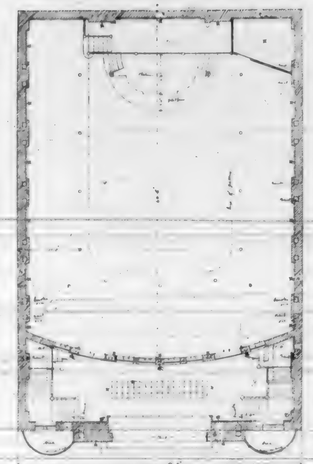
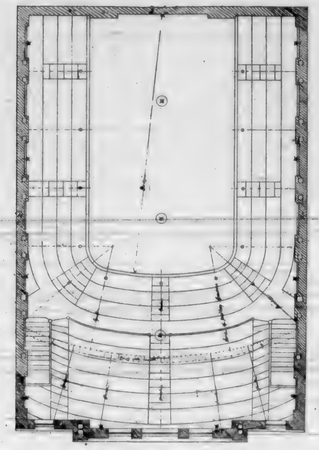
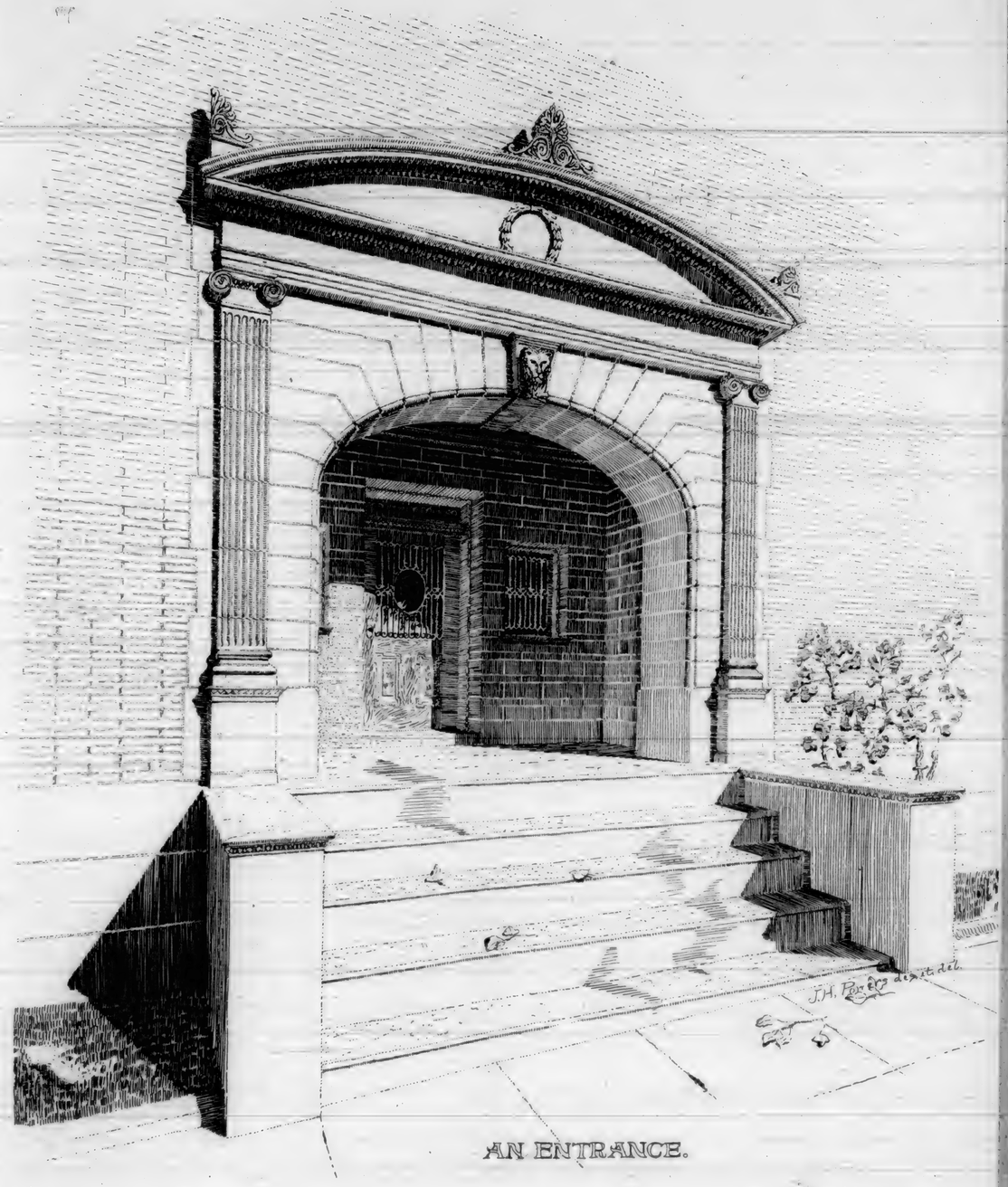


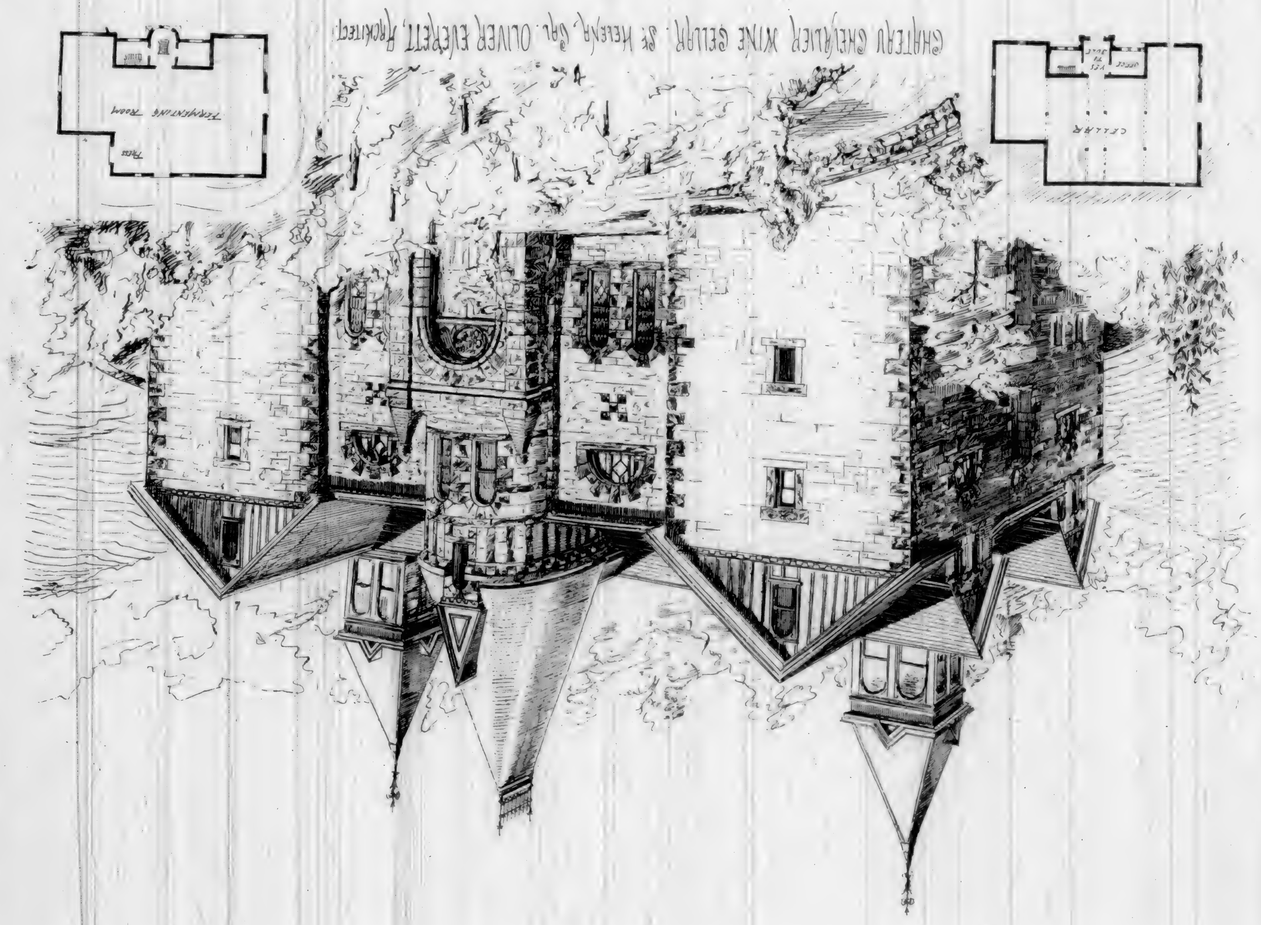


Evangelical Swedish Mission Church Jessie Street, San Francisco, Cal. Seth Babson, Arch't.



AN ENTRANCE.

BRITTON & REY PHOTO.LITH.



CHATEAU CHEVALIER, WINE CELLAR, St. HELENA, CAL. OLIVER EVERETT, Architect.

plemented by an instrumental reconnoissance of the Napipi and Cuia Rivers, including a reconnoissance of the Atrato River to the town of Quibdo, by parties under the direction of Commander T. O. Selfridge, U. S. N., 1871–1873.

IX. It caused a tentative examination and definite instrumental location to be made of an inter-oceanic canal by way of the Napipi and Doguado Rivers by Lieutenant Fredrick Collins, U. S. N., 1875.

X. Congress caused the work of Commander Lull, at Nicaragua, in 1872–3, to be supplemented by parties under the direction of Mr. A. G. Menocal, C. E., U. S. N., in 1880–1 and 1885–6, the nature of this Government work of Mr. Menocal being an instrumental survey and definite location of an inter-oceanic canal via Lake Nicaragua, including the location of the necessary dams, locks, etc. This later work of Mr. Menocal's being subsequent to all the Government surveys was made after the Government of the United States had determined, through what is sometimes called its high commission, that the Nicaragua Route was the most feasible of all the routes, and the survey was made with the express object of carrying out the provisions of the Zavala-Frelinghuysen treaty. (Government Construction and Ownership of the Nicaragua Canal.) The main provisions of this treaty will be adverted to later.

CRITICISMS OF THE SURVEYS OF POSSIBLE ROUTES.

It has been said of these various routes by Professor Nourse, of the United States Navy one of the very highest authorities on this subject:

I. That Tehuantepec, though possessing large natural and political advantages, requires 140 locks to overcome an elevation of 754 feet, and a feeder 27 miles in length.

II. That the Panama Line is the shortest of all the routes, not involving a tunnel. It is liable to the heaviest of tropical rains, falling in the Culebra section upon a trench nearly 500 feet in depth. It is also liable to the sudden rise of the River Chagres. The climate of Panama is notoriously a physical obstacle, which must be considered in any estimate of the advantages and disadvantages of the route. * *

III. We come now to the San Blas route. Of this route Mr. Nourse says though the shortest of all the proposed routes, the distance from tide to tide being only 19.5 miles, and although the harbors at both termini are exceptionally good, it must be eliminated from the problem of canalization by its demand for a tunnel from seven to eight miles in length.

IV. The Atrato-Napipi Route, fully surveyed by expeditions under Commander Selfridge and Lieutenant Collins, which were supplemental to the extensive surveys under Michler, Craven and Trautwine, must also be eliminated, in the opinion of Mr. Nourse, by reason chiefly of a like demand for a tunnel. The late eminent civil engineer, Trautwine, estimated the cost of a canal by this route at from $300,000,000, to $400,000,000. * * * *

V. The Nicaragua Route. This route has, as a grand interior basin and feeder, a lake of 2,600 square miles (4½ times the area of the Bay of San Francisco). It has a healthier country, and more abundant supplies for construction, than any other route. Its supply of native labor is large; it is better than that of any other route. In works of magnitude in tropical countries this is a most important consideration. Except the Tehuantepec route, it is nearer by 700 miles to the United States and its commerce. Its termini lie without the equatorial belt of calms, and if those termini can be built up and restored they will be easily accessible to sailing vessels. * * *

It has been my purpose to lay before the Society the main features of the various Isthmian routes so that it may be able to form a general judgment of the comparative merits of all. I have dwelt at no great length upon the merits of the Panama Route, nor at all upon the merits of the Eads ship railway at Tehuantepec. They may both be practicable and highly meritorious plans, but I do not consider it necessary at this time to farther occupy the time of the Society with these possible undertakings.

I will state, generally, however, in the language of Professor Nourse, in order to enable the Society to form its opinions, that: "To meet the requirements which commerce, supported by all the advanced appliances of this day imperatively demands, the transit must offer the allurements of a full, uninterrupted, safe and speedy transportation. It must be a water highway, through which the largest seagoing vessels, with a tonnage of even 6,000 or more, may pass without breaking bulk; and, it must be remembered, that all experience proves the justice of the statement that railways and canals are supported by the carriage of different species of merchandise—products of great value and small bulk voluntarily selecting the more rapid channel of the railway, while others choose the maritime route." *

CONSTITUTIONAL POWER OF THE GOVERNMENT TO CONSTRUCT AND OWN AN INTER-OCEANIC CANAL.

At this date it is hardly necessary to remind you that the Government of the United States would have the full constitutional power to construct and own the Nicaragua Canal, and operate it in the interest of its people, in the same way that it has improved the Mississippi and the Great Lakes. Indeed, the very convention which framed the Constitution of the United States, by a vote of eight to three, denied the power to the General Government to grant a charter to a private corporation for the purpose of cutting canals in cases in which the authority of a single State would be insufficient (Madison Papers, 1576.) And the same reference will show that it was the intention of the framers of the Constitution to grant the power to the General Government to do directly for the people that class of work.

The direct improvement by the Government of the harbor of Pago Pago, in the Samoan Islands, and Pearl Harbor, in the Hawaiian Islands; the purchase known as the Louisiana purchase, of Florida, and of Alaska, all furnish ample precedent for the direct action of the Government itself at the Nicaragua Route, either by purchase or under treaty with the Nicaraguan Government.

At one time there were a few who thought the General Government would become too powerful or too corrupt if it directly undertook matters of internal improvement. To those I wish to say that they are repeating the arguments of the private speculators. Your Government has become infinitely more corrupt through going into partnership with private corporations, and vastly more injurious and oppressive to the great body of the people from this single circumstance, than from all others combined. If Government legislators were not allowed to sell everything in sight under the name of a Federal franchise, and pocket the proceeds, the body of the American people would have vastly more than they have at present, and an era of congested wealth in the hands of a few would not be upon us.

THE DEMAND IS UNIVERSAL THAT WE RETURN TO SOUND PRINCIPLES OF GOVERNMENT.

When the several States composing the United States surrendered to the General Government the power "to coin money and regulate the value thereof" (Const. U. S., Art. I, Sec. 8); and to issue its treasury notes and greenbacks (the construction put upon the power by the Supreme Court); and in addition thereto denied to themselves the power "to coin Money; emit Bill of Credit; make any Thing but gold and silver Coin a Tender in Payment of Debts" (Const. U. S. Art. I, Sec. 10); and denied to themselves the further power to raise a revenue by duties on imports—indirect taxation—(Const. U. S., Art. I, Sec. 10); and when they granted this power to the General Government (Art. I, Sec. 8), the several States *did*, under the Constitution, effectively surrender the PURSE to the General Government. Since, then, the General Government confessedly and effectively holds the public purse, the law-abiding people of the United States must naturally and of right look to *it* for all necessary internal improvements for the general welfare. The several States, as we have seen, cannot *directly* construct these works, for they placed the means, their purses, in the hands of the General Government.

The purpose of this grant of the purse to the General Government is, *amongst* other things, that Congress shall have power "to establish postoffices and postroads" (Const. U. S., Art. 1, Sec. 8). "Congress shall have power to regulate commerce among the several States"—*Id.* The purse

and the powers enumerated are granted to the General Government to prevent it from turning the people over, in these particulars, to powerful private corporations, to those whose selfish purpose and whose daily practice is to crush out and enslave the people who must use these avenues of commerce.

These great grants of power, with the necessary means to enter upon and discharge the duty and power, were never bestowed upon the General Government to enable it to abandon the people, in these sovereign, governmental and civilizing particulars, to their natural enemies, to those whose interest it is to make all they can out of commerce. It is a rudimental legal maxim that delegated power cannot be delegated, nor can a sovereign power permanently divest itself of any attribute of sovereignty except by voluntary and total dissolution.

The power in Government of making internal improvements for the benefit of the people is not a power in any country dangerous to liberty. On the contrary, it is the one power, of all others, in a civilized country which, when exercised by Government, is the surest guarantee of liberty, and the real power which prevents the enslavement of the masses of the people by the very strength and knavery of our alleged civilization. It is a power resident in the Government which should protect the people from being turned over, bound hand and foot, to the soulless and the avaricious, to the purchasers of legislation. It is that power which, if exercised strictly and entirely by the Government, is for the general welfare and is truly civilizing.

Those powers which are dangerous to liberty are directly and specially granted to the General Government of the United States. All admit that the power of levying taxes, of raising armies, of equipping navies, and of carrying on war, are specifically granted the General Government.

The purse and the sword are the only instruments that are wanted or can ever be employed for the accomplishment of any ambitious purpose. These having been abandoned to the discretion of the General Government, with what propriety can we apprehend danger from the power to construct a sub-treasury, lay out a canal or road, build a bridge, or improve and join our coasts?

Some one has said: "This would be about as unreasonable as if a lady, who had granted to one of her admirers the name and essential privileges of a husband, should afterwards consider it hazardous on the score of delicacy to accompany him on a journey, or take his arm in a promenade."

Did Cæsar, Cromwell or Bonaparte subvert the institutions of their respective countries by laying out a road or canal in the interest of the people? Did they subvert the institutions of their countries by building up its commerce or by causing general and individual prosperity?

It has been reserved for a people living under the form of a free Goverement to witness almost the subversion of their institutions by a power vastly more dangerous to liberty than that of Cæsar or of Cromwell, because it is more insidious and least undersood, and more relentless in its grasp upon the people; because it is unrestrained by either the law or the press. Corporate power is fast becoming the law; corporate power is fast becoming the press. * *

The Government of the United States is one ordained for the *'general welfare.'* It is not established for the building up of powerful private corporations to accomplish the destruction of the people of the United States. I confess that in this undertaking, and in all others, I wish to see the people of the United States go forward from achievement to achievement, from height to height, and from glory to glory."

The woman who distrusts man in the abstract, can always be taken in by man in the concrete.—*Brick.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street

Seth Babson, Pres. — Geo. W. Percy, Vice-Pres.
Oliver Everett, Sec. — John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

C. E. Grunsky, Pres. — Geo. W. Dickie, Vice-Pres.
Otto Von Geldern, Sec. — W. C. Ralston, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.

Geo. P. Low, Pres. — C. O. Poole, Vice-Pres.
Max Caspari, Sec. — H. T. Bestor, Treas.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on March 9th, President Babson in the Chair.

Mr. Reid reported progress in the matter of housing the

COTTAGE AT ROSS VALLEY, J. CATHER NEWSOM, ARCHITECT.

chapter library, binding periodicals, etc. No action was taken in the matter of the appointment of an inspector of electrical work, the subject being postponed to a future meeting.

Mr. Edgar Marx Lazarus, architect, of the firm of Ellicott & Lazarus, Portland, Oregon, was elected a fellow member of the Chapter.

The committee appointed at the previous meeting to draft a resolution in regard to the method of designing Federal Buildings presented the following, which was adopted as an expression of the views of the Chapter:

The San Francisco Chapter of the American Institute of Architects, having had its attention called to the letter of January 9, 1894, from the officers and directors of the American Institute of Architects to the Honorable Secretary of the Treasury, in reference to the designing of public buildings erected under the supervision of the Treasury Department, desires to endorse the protest contained in the above mentioned letter in so far as it applies to the erection of public buildings in general. The case in point simply serves as an example and nearly all the past offices and custom house buildings in the United States add to the weight of their ill designed appearance to the feeling of protest that is steadily growing among Architects and people of

taste generally to the fact that our public buildings are a standing reflection on the architectural ability of American Architects.

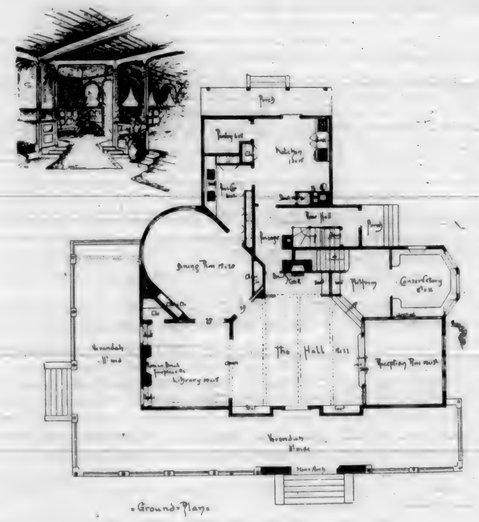
The San Francisco Chapter of the American Institute of Architects in meeting assembled, respectfully urge the Honorable Secretary of the Treasury to consider the following suggestions:

First—That whereas the employment of a supervising architect of the Treasury Department is totally inadequate to the proper designing of so many buildings of the importance that he is called upon to build, and that

Whereas—The concentration of so much work in the hands of an individual is detrimental to the highest excellence in architectural design, that this Chapter adds its voice to that of the Chapters in recommending a change from the existing practice

And whereas according to a law recently enacted the Secretary of the Treasury has the power to call for competitive designs, that this Chapter recommends that all designing for Public Buildings should be adopted in accordance with the terms of said law, and the Competitive Code of the American Institute of Architects, subject to the approval of the Secretary of the Treasury, upon the recommendation of a committee of professional experts, consisting of architects of eminent standing in their pofession, to be appointed for that purpose by the Treasury Department.

Messrs. Polk, Reid and Sanders were appointed a committee to consider the advisability of holding an annual exhibition of drawings, the offering of prizes to students, etc.

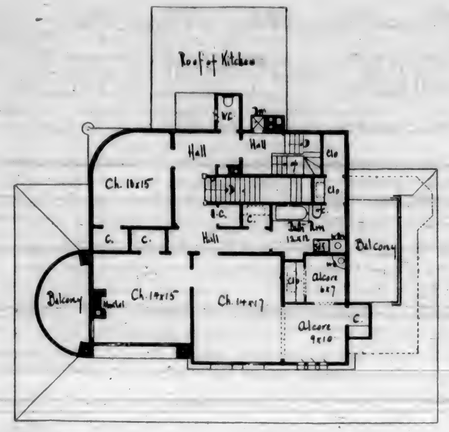


Ground Plans

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Cancellation of Deed for Fraud.—A contract for the sale of a certain building and lot contained a covenant that the westerly wall was an independent wall, an attorney employed by both parties drew the deed, omitting any reference to such wall. He also attended to recording it. One of the purchasers, who transacted the business, could not read, and relied on the seller's representations concerning such wall, and on the attorney to correctly draw



the deed. The seller knew that it was not an independent wall. Some time after taking possession the purchasers discovered the fact, tendered a reconveyance, and demanded a return of the purchase money. A judgment setting aside the conveyance and directing a repayment of the purchase money was proper.

Keller vs. Feldman, Supreme Court of N. Y. 24 N. Y. Supp. 179 120.

When Materials not Used are not Subject to Mechanic's Lien.—Subcontractors who furnish materials specially designed and made for a building, and necessary for its completion, are not entitled to a lien therefore where such materials were not used because the contractor suspended work or for other reason.

Mechanic's Mill & Lumber Co. v. Deeny Hotel Co. of Seattle, Supreme Court of Washington, 34 Pac. Rep. 774. 48.

Right to Remove Party Wall.—A joint owner in a division wall may remove it, and erect a new one, if the work is done in a reasonable time, and the co-owner is reimbursed for necessary expense in protecting his property during the change.

Putzell v. Drovers' & Mechanics' Nat. Bank, Court of Appeals of Maryland, 28 At. Rep. 276. 44.

Action to Recover for Bill of Lumber.—In an action for the price of lumber furnished for the construction of a house, where the issue is whether the lumber was furnished to the owner or to his contractor, it is not a reversible error to exclude evidence to the effect that the contractor carried away the pieces of lumber not used in the house. It having been shown that the contractor gave the lumber dealer an order on the owner for the amount due for the lumber, it is proper to allow him to show by parcel that the order was given for the lumber charged to the owner.

Hartshorn v. Burne, Supreme Court of Illinois, 35 N. E. Rep. 622. 107.

Material Lien Must Take Notice of Title to Property.—The mechanic's lien law requires that a contract for materials, labor, etc., for the improvement of real property shall be made with the owner thereof, or his agent. A tenant, as such, has no power to contract for labor or materials so as to affect with a mechanic's lien the real property leased to him. A person furnishing material for an improvement must take notice of the interest and title of the premises of the person with whom he contracted as shown by the public record, as his lien for labor and materials, aside from the improvement itself, attaches only to such interest.

Waterman v. Stout, Supreme Court of Neb. 56 N. W. Rep. 987. 105.

Liquidated Damages for Delay on Contract.—Under contract for the construction of a house, to be completed at a certain time, providing that the contractor shall forfeit ten dollars per day thereafter until completed, the presumption is that such sum is intended as liquidated damages; and the contractor, contending that it is a penalty, has the burden of proof.

De Graff, Vrieling & Co. v. Wickham, Supreme Court of Iowa, 57 N. W. Rep. 420. 59.

Effect of Building Restrictions as to Subsequent Grantees.—A contract between the owners of property that no building shall be erected within a certain distance from the streets may be made by parol, and grantees of the land, who take with notice of the extent and nature of the restriction, are bound by it.

Hayward Homestead Tract Ass'n. v. Miller, Supreme Court, Special Term, Monroe County, 26 N. Y. Supp. 1091. 54.

BOOKS AND PERIODICALS.

We have received from Mr. Guy Kirkham, Springfield, Mass., a copy of a little volumne called THE BEST SECURITY. This little work is well worth the careful study of both the architect and those about to build. It may be called a succession of hints or suggestions, by giving some of the subjects treated of a good idea of the scope of the work may be obtained, "Convenience and Beauty, not a Matter of Cost," "Oneness of Exterior and Interior," "Plotting the Plan," Living Room and Dining Room" and so on to the end, the authors remarks are full of good sense, expressed in a modest manly way.

INDUSTRY.—Devoted to science, engineering and mechanic arts. The March number comes to hand full of articles of interest, among others "The Red Point Drift Gravel Mine" with a detail of the cost of various portions of the work that cannot fail to be of great interest to mining men, and also give the general public an idea of how small a quantity of gold per ton will pay for extracting, under favorable circumstances, combined with economical and prudent management.

We have not the space required to call attention to the other articles of interest, but would advise persons interested to get the journal and examine its merits at leisure.

THE HISTORY OF A LEAD PENCIL, by Walton Day, price ten cents, published by the Joseph Dixon Crucible Co., Jersey City, N. J. This little volume if carefully read will convince the general reader that it contains more information about pencils and how they are made, why some are bad, and some good, than they would have thought it possible for any one to know.

LIPPINCOTT'S MONTHLY MAGAZINE for March, contains for its complete novel "A Desert Claim" and certainly a charming story. The description of the cowboy and the cows are certainly very life like, ending in a pretty love story or more properly speaking commencing with a love story. The table of contents is unusually good and will well repay a careful reading.

SMITHSONIAN INSTITUTION.—We have received the Annual Report of the Board of Regents of the Smithsonian Institution. As usual it contains a vast amount of interest to collaborators and correspondents of the institution, teachers and others engaged in the promotion of knowledge; among others, an article on the Scientific Work of George Ohm being an address delivered at the public meeting of the Royal Bavarian Academy of Science of Munich, March 28th, 1889, it is well worthy the careful study of the electrical student.

The account of the Corbin Game Park by John R. Spears, although already published, cannot fail to be of great interest to the hunter as well as the general public. When we find a private gentleman investing not less than $400,000 in park of 22,000 acres and a collection of animals that without some such protection would in a few years become extinct—deer, buffalo, the elk and antelope, appear to have been Mr. Corbin's particular pets, though moose and reindeer have not been neglected. Our space will not allow of more than calling attention to this interesting report of Mr. Corbin's efforts in this line.

It is hard where so many matters are presented to our attention, to say which is the most interesting; undoubtedly this was the founder intention when he planned this noble institution for the spread of knowledge, that every class in search of information should come to the fountain head and find something in his line.

THE CALIFORNIA SCHOOL OF MECHANICAL ARTS.

WE are pleased to note in the daily press, that "The California School of Mechanical Arts," has at last a fair chance of becoming a reality.

James Lick, in his will, made provision for establishing and conducting this school; and the Trustees of his bequest are now, after many years of litigation, in a position to carry out the philanthropic motive of the millionaire.

The following clipping from the *Examiner* of March 10th, will be interesting reading, for those who will reap the benefit of Mr. Lick's intentions.

The trustees of the Lick bequest for "The California School of Mechanical Arts" met yesterday and decided to go to work at once on the erection of suitable buildings at the Potrero. The Chairman, Horace Davis, was authorized to take an architect to the site of the school at the Potrero and bring in a rough draft of plans at the next meeting. It is expected to complete the buildings within six months.

Mr. Davis was interviewed yesterday on the status of their funds and the feasibility of forming a union with the recent Wilmerding bequest for an industrial school.

"We have been tied up," said Mr. Davis, 'by the courts for years and years and we are now for the first time free so that we can use the $540,000 bequeathed for the school.

"This is not enough for us to do what we would like to, and the Court has most absurdly, to my mind, maintained that the revenues derived from these funds cannot be used by us until the building is erected and the school founded.

"This leaves but one thing to do. We have a block 200x400 feet in the Potrero. We must now erect a building. We would like to put up a handsome edifice as a monument to James Lick, but this cannot be or the school itself will have to suffer. Our building must be of the simplest, plainest kind and on a very moderate scale.

"We have $540,000. Allowing $140,000 for buildings, we have $400,000, which at five per cent yields $20,000. We must lay aside several thousand per year for a reserve or an emergency sum, and insurance, taxes, repairs and incidentals will bring down our annual revenue to $15,000.

"What can be done with that sum in running a great school? We have been anxiously waiting and hoping that some one would give us a building. Cogswell offered us his building at a most moderate rental, and had the courts allowed us the revenues to which we believe we are justly entitled, we would begin the 'California School of Industrial Arts, there immediately.

"It would indeed be a fine thing if the Wilmerding bequest could be united with ours. Neither is large enough to produce the results which are so highly desirable. There may be some way in which this may be brought about within the law, but I do not now see how.

"We could hardly design in favor of the Regents, even if we so desired. Again, the two funds might be worked with the greatest harmony by the two boards of trustees, each supplementing the other. The difficulty is that this harmonious relationship could not be guaranteed for all time.

"There is some difference, I think, in the two trusts, so far as I can interpret them as to the particular kinds of schools. The Wilmerding School of Industrial Arts is to teach boys trades, fitting them to make a living with their hands, with little study and plenty of work. On the other hand, the Lick bequest reads as follows: 'To found and endow at a cost of $540,000 an institution to be called 'The California School of Mechanical Arts,' the object and purpose of which shall be to educate males and females in the practical arts of life, such as working in wood, iron and stone, or any of the metals, and in whatever industry intelligent mechanical skill now is or can hereafter be applied, such institution to be open to all youths born in California.'

"I admit that Lick's bequest was made in the most bungling language, and although it plainly reads that only native Californians can attend the school, I believe he did not mean that.

"In other respects it is broader than the Wilmerding bequest. We could establish a technical manual training or trade school of any kind, but the board has unofficially decided on a manual training school after the type of the Cogswell Institute. We want to so train the hands of the boy that he can become either a journeyman artisan or a master mechanic in any particular vocation he may take up.

"However, I consider the differences in the trust to be of not so vital a character as to prevent consolidation, and if it can be done within the law it would be a desirable result."

A. S. Hallidie, another member of the Lick Trustees, said that he believed "the Lick school should not be of so high a grade as Cogswell's: that is, it should teach boys to be good journeymen and not master workmen. This is the kind of school that is needed now."

BUSINESS MOSAICS.

Browell's Patent Chimney's. These chimneys have not only the endorsement of the Board of Supervisors but are recommended for general use by the Fire Wardens, insurance agents and architects. Orders for Vitrified iron, stone sewer pipes, traps and connections, terra cotta chimney tops and flue linings filled at short notice by Mr. J. Browell, contractor and builder, 727 Montgomery St., San Francisco.

"When a man makes a large fortune, what do people say?" asked the teacher. "That he is fortunate," replied the bright boy. "That's right. Now when a man fails in business what do they say?" "That he didn't advertise.—*New York Recorder.*

Those about to build and who wish to avail themselves of sanitary appliances that will assure them fresh air with freedom of bad odors, cannot do better than consult Mr. Joseph Budde, the manufacturer of the popular Golden Gate Patent Water Closets. This well known establishment can surely fill your wants in the plumbing line—a visit to Mr. Budde's headquarters, 575 Mission street, will convince you that you have found the right place to have your wants in his line well supplied and all work furnished by him is first class.

"Who is that?" asked Brown, indicating McCork's typewriter and secretary. "That is my recording angel."—*West Shore.*

The San Francisco Lumber Co. are still on hand to supply lumber both wholesale and retail. This company under the able management of J. N. Curtis who will be found at the principal office of the company, NW. cor. Pine and Montgomery streets, have yards in various parts of the city as will be seen by reference to their advertisement in this paper. If the improvement in business continues as spring opens and building is once more commenced in old time style, they may expect a busy season for which they are well prepared.

San Francisco Novelty and Plating Works, also manufacturers of artistic metal works. This company gave a very good illustration of the advantage of keeping up with the times, as fashion changes in ladies dresses every spring and fall, bank decorations and show windows change for the better, season by season, and no more artistic work is found in the city than what is produced by this firm. With the latest improved methods for the deposit of gold, silver and nickel; their works are well worth a visit by the man of science to observe how the secrets of the laboratory are here carried out on a working scale, and for the working artisan to obtain an object lesson in the advantage of science as applied to the every day affairs of life.

Ferry—"Wrattle didn't speak to Bangs for twenty years until last week." Train—"How did he come to speak then." Ferry—"Bangs started to paint his house and Wrattel had to tell him how.—*Puck.*

If you want anything in the way of Parquetry Floors, Wood Carpet, fine Fretwork and Grills, go to Kenney & Wells, 422 Sutter street, San Francisco, or 1110 Broadway street, Oakland. While you are about it it would be a good idea to furnish one's pet room with mirrors, frames and pictures ordered from them and live to regret you had not furnished the rest of the house in the same way.

"How beautifully soft it is," he murmured laying his hand on her glorious white arm. "How less beautiful, but oh, so much softer," she tenderly replied, laying her jeweled hand on the top of his head.—*News Letter.*

Optical Exhibit of Dr. Robt. Thompson representing V. Vernard, Paris, to be found in the French Section, Manufactures Building, Midwinter Fair, is worth a call even if your eyes do not need attention,

Western Iron Works, 123 and 125 Beale street. This well known firm are still in the field for business in their line, contractors for wrought iron and steel building work; also beams, girders, anchors, stirrups, vaults, railings, etc. As the coming season bids fair to see the erection of some large buildings of the class requiring this kind of work, their works promise to have a busy time in the next few months.

He—"I have $3,000 a year. You could certainly live on that?" SHE—"Yes; but I should not like to see you starve.—*News Letter.*

The Lord knew what was best for man's peace of mind when he failed to put eyes in the back of his head.—*Atchison Globe.*

George Goodman—Patentee and manufacturer of Artificial Stone, has this advantage, that whoever walks over their sidewalks becomes an advocate of the extension of such walks. He hardly needs to have a notice calling attention to his advertisement as those that walk can read under their feet "Schillinger's Patent," and this when constructed under the skillful eye of Mr. Goodman is a sufficient warrnat that speaks for itself.

CITY BUILDING NEWS.

Capp near 23d. Grading, brick, carpentering and plastering work; owner, M. A. Warren; contractor, Richard Searls; signed, March 3; filed, March 3; $2,900.

Castro and 17th. Two-story frame; owner, H. Hetherington; architect, H. D. Mitchell; contractor, L. N. Fletcher; signed, March 7; filed, March 7; cost $3815.

Clay near Baker. To build; owner, F. M. Stevens; contractors, White Bros.; signed, March 2; filed, March 5; cost $6275.

City Hall, lot 48. Alterations and additions; owner, California Title and Trust Co.; contractors, Jas. and J. A. McDonald; signed, March 3; filed, March 6; cost $5,941.

Douglass near Alvarado. To build; owner, John A. Keogh; architect, T. J. Welsh; contractor, John P. Dunn; signed, Feb. 27; filed, March 8; cost $1417.

Ellis and Larkin. Alterations and additions; owner, Edward Connolly; architects, Shea & Shea; contractor, James Cochran; signed, Feb. 9; filed, Feb. 14; cost $4400.

Ellis and Larkin. Painting; owner, Ed. Connolly; architects, Shea & Shea; contractor, Jas. Rainfeld; cost $567.

Ellis and Larkin. Plumbing; owner, Ed. Connolly; architects, Shea & Shea; contractor, John P. Culley; cost $800.

Ellis and Mason. Stair work; owner, Y. M. C. A.; architect, A. Page Brown; contractors, Mahoney Bros.; signed, Feb. 13; filed, Feb. 15; cost $3,500.

Eleventh Ave. near J. To build; owner, Emil F. Tahler; contractor, Casper Zwierlein; signed, Feb. 20; filed, March 5; cost $1000.

Fell near Masonic Ave. To build; owner, Edward May; architect, Julius E. Krafft; contractors, Wm. W. Ackerson and Wm. Peterson; signed, Feb. 12; filed, Feb. 14; cost $6114.

Fell bet. Broderick and Baker. A flat made out of a rough basement; owner, Herman Puckhaber; contractor, Peter Johnson; cost $1035.

Fillm re No. 206. Alterations; owner, Mrs. Louisa Hagmaier; contractor, G. G. Gillispie; signed, Feb. 16; filed, Feb. 20; cost $2575;

Folsom and 21st. To build; owner, Ed. Connolly; contractor, Henry P. Conrady; signed, Feb. 14; filed, Feb. 14; cost $6065.

Fulton near Devisadero. To build; owner, Mary A. Gaynor; architects, Shea & Shea; contractors, James E. Mooney; filed, March 5; signed, March 8; cost $3777.

Fillmore near Haight. Grading, brick and carpenter work, plastering, painting, graining, glass, etc.; two too story buildings; owner, John A. Sandell; architect Edward J. Vogel; contractor, Robert Currier; signed, Feb. 13; filed, filed, Feb. 14; cost $4950.

Fillmore near Haight. Plumbing, ga -fitting, etc.; owner, John A. Sandell; contractor, Newmark & Mills; signed, Feb. 12; filed, Feb. 14; cost $698.

Golden Gate Ave. near Lyon. Three-story frame; owner, John T. Hayes; cost $6000.

Harrison and 10th. To build; owner, Geo. I. Roychester; contractor, M. McCracken; signed, March 8; filed, March 8; cost $1900.

Hayes near Scott. To build; owner, Christian Jaun; contractor, Jacob Schuler; signed, March 5; filed, March 5; cost $3840.

Hayes bet. Lott and Lyon. To build; owner, W. H. Kinread; cost $4500.

Henry near Sanchez. To build; owner, Wm. Von Voss; contractors, Kenig Bros.; signed, Feb 12; filed, Feb. 13; cost $3895.

Howard near 23d. To build; owner, Adolph Schulze; architects, Kenitzer & Barth; contractor, Anderson Bros.; signed, March 11; filed, March 11; cost $6680.

Jackson and Gough. All cabinet work; owner, S. Swabacher; architects, Percy & Hamilton; contractors, Fink & Schindler; signed, Jan. 11; filed, Jan. 11; cost $2520.

Jackson near Laguna. To build; owners, Walter Speyer and wife; architect, B. McDougall & Son; contractor, J. H. McKay; signed, March 6; filed, March 6; cost $14,737.

Jackson and Scott. Stable building all work except concrete; owner, Wm. H. Talbot; contractor, Peter Chrichton; signed, March 7; filed, March 7; cost $7720.

Leavenworth near Eddy. Four frame buildings and basements; owner, Harriet McCarthy; architects, Shea & Shea; contractor, W. H. Leahy; filed, Feb. 24; cost $10,780.

McAllister near Jones. Passenger elevator with electric motor; owner, Katherine Adam and Eliza Kibbe; architect, Julius E. Krafft; contractors, A. J. Nicoll & Co.; signed, Feb. 12; filed, Feb, 16; $3100.

Page and Lyon. To build; owners, Rountree Bros.; architect, E. R. Swain; contractors, Rountree Bros.; cost $7000.

Post and Powell. Plumbing and sewering; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, R. A. Vance; signed, Feb. 15; filed, Feb. 20; cost $11,742.

Post and Powell. Sheet plate glass, etc., owner, Mrs. A. M. Parratt; architects, Pissis & Moore; contractors, F. N. Woods & Co.; filed, Feb. 24; cost $3975.

Post and Leavenworth. Electric light works; owners, S. S. Verein Assn.; architects, Salfield & Kohlberg; contractors, Edison Electric Light Co.; signed, Feb. 12; filed, March 1; cost $1710.

Post and Leavenworth. Marble work; owner, S. F. Verein Assn.; architects, Salfield & Kohlberg; contractors, Ruffino & Bianchi; signed, Feb. 12; filed, March 1; cost $2098.

Post and Montgomery Safe and vault work; owner, Union Trust Co.; contractors, Diebold Safe and Trust Co.; filed, Jan. 2; cost $29,067.

Sanchez near 18th. To build; owners, Emery and Minnie La Valle; contractor, Thos Elam; cost $3780.

Scott and Green. Two too-story buildings; owner, E. Avery McCarthy; contractor, Louis Landler; architect, J. C. Newsom; filed, March 5; cost $13,250.

Sixth near Point Lobos Ave. To build; owner, Felix M. Hugh; contractor, Bernard Duffy; signed, March 9; filed, March 10; cost $4600.

Sutter and Mason. Stair work on Bohemain Club; owner, S. Wenban; architects, Pissis & Moore; contractor, H. W. Frick & O. A. Crasmer; signed, Feb. 14; filed, Feb. 15; cost $5174.

Sutter and Mason. Plastering; owner, S. Wenban; architect, Pissis & Moore; contractor, C. Dunlap; signed, Feb. 7; filed, Feb. 15; cost $8247.

Taylor near Filbert. Two too-story and basement; owner, Ida M. Stringer; architect, Chas R. Wilson; contractor, Timothy Sullivan; signed, Feb. 10; filed, Feb. 14; cost $4170.

Twelfth Ave. near H. To build; owner, Jos. Morrisey; architect, W. H. Lillie; contractor, T. T. Pottinger; signed, Feb. 26; filed, Feb. 27; cost $1627.

Thirty-first Ave. near Point Lobos Ave.; To grade; owner, W. R. P. Adamson; contractors, W. N. Stanley & E. F. Dennison; signed, Aug. 20; filed, March 6.

Twenty-third near Sanchez. To building; owner, Edward Brugge; architect, Robert Frost; contractors, R. Erost & Fred Antree; cost $2,150.

University Mound, block 37. To build; owner, J. and G. Giannini; contractor, Wm. I. B. Warner; filed, March 9; cost $1650.

Van Ness and Myrtle Ave. Steam heating; owner, Dr. C. F. Buckley; architect, M. J. Lyon; contractors, Ford Bros.; signed, Feb. 24; filed, March 16; cost $2000.

Waller and Frederick. To build; owner, J. N. Riedout; architects, Townsend & Wyneken; contractor, Thomas Ridout; signed, Feb. 21; filed, Feb. 24; cost $8400.

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THE HONORABLE SECRETARY OF THE TREASURY who apparently knows more law than the lawyers, more finance than the financiers and more architecture than the architects, probably knows more of the creation than the Creator; for he has wisely and properly squelched Daniel H. Burnham who had the temerity to suggest that the American Institute of Architects, a National Organization, was entirely disinterested in its efforts to correct the errors that mark the designing of our public buildings. Mr. Burnham, to whom belongs the proud distinction of having directed the construction of the most harmonious and beautiful group of buildings ever erected in the history of the world, with the natural egotism begot of great success, had the presumption to think that his personal opinion, expressed in approval of the joint wisdom of the American Architects, would add weight to that of the Institute in bringing influence to bear on the high authority vested in the Treasury Department of our great Democratic Government. Mr. Burnham was mistaken and the advancement of Architecture has been checked. But we need not despair, for the natural destiny of a great country is excellence in the Fine Arts.

The marvelous development attending the building of the Chicago Fair buildings is too strong an evidence of the healthy growth that the architecture of this country is experiencing, and the protests that are being entered against the designs of our public buildings are but a small intimation of more that will follow unless there is a revolution in the methods of the Treasury Departments which intrusts the designing of so many important buildings to an official whose salary is equalled by the remuneration received by the assistants to architects of but modern practice.

Perhaps Mr. Carlisle has been too busy to properly interpret the designs of the times, but this is a subject that will refuse to be ignored, and is one calculated to command the most distinguished consideration, if not from Mr. Carlisle perhaps from his successor.

UNTIL this recent affair with the American Institute of Architects, *Life* had supposed Secretary Carlisle to be a reasonably patriotic person. There are few intelligent boys in this country over seven years of age who would have had the courage to come out so fearlessly for what all the rest of the world knows to be the wrong thing.

Educated architects are not looking to this gentleman from Kentucky for professional instruction. If his skin is so thin and his sense of his own dignity so lofty that it unfits him for the purposes for which he is drawing a salary, he would do well to borrow an elastic hat and return to the blue pastures of his own State for a period of reflection.

Mr. Carlisle's ideas of his own dignity are of far less importance to the people of this country than the services the American Institute of Architects can render our national architecture.—*Life.*

[Our bright little cotemporary *Life* is edited by a gentleman of considerable architectural taste and its comments quoted above are calculated to command the respect of even so mighty an authority as the Secretary of the Treasury.—EDITOR CALIFORNIA ARCHITECT AND BUILDING NEWS.]

THE FIRST ANNUAL EXHIBITION OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

N the eastern cities Architectural Exhibitions having so long been regular events it is gratifiying to note a beginning in that direction in San Francisco.

The Chapter of Architects deserves much credit for inaugurating the scheme, and to the Art Association is due the thanks of the profession for its kindness in putting its magnificent room at the disposal of the Chapter.

A visitor to the spring exhibition of the Art Association at the Hopkins Institute of Art cannot fail to be interested in the collection of architectural drawings and designs.

Numbers 1, 2 and 3 in the catalogue are the elevations and sections of the Hopkins House. These drawings made sixteen years ago should be of considerable interest to draftsmen of to-day. They are excellent examples of carefully rendered wash drawings, besides being illustrations on paper, the work of Wright & Sanders, the architects of the building in which the drawings hang.

Number 10 is a pen and ink drawing of the Hibernia Bank by D. A. Gregg. This drawing will command the attention of all draftsmen as much as the building has compelled the admiration of all architects. Messrs. Pissis & Moore have been congratulated so often on this building that any praise would be an old story and any criticism would be out of place.

Moretti's water color drawing, number 11, of Pissis & Moore's Bohemian Club building is not as good a drawing as Moretti generally does. It is anything but clear in color, being heavy and cloudy and reflecting but little credit on

RESIDENCE OF V. J. A. REY, POLK & POLK, ARCHITECTS.

BULINGAME COUNTY CLUB STABLES, A. PAGE BROWN, ARCHITECT.

the building it represents. This building which is now nearly finished is an ornament to the city and another one of which its architects should be proud.

Number 13 is an excellent water color drawing by Ernest Coxhead of his St. John's Church, humorously dubbed "St. Roofus" by the clergy on account of the enormity of its roof. The drawing however is as good an example of an architectural water color as there is in the exhibition.

Number 14 is a pretty little pen and ink, by R. M. Turner, of a Chapel at Coronado by Reid Bros. This is the only contribution that Reid Bros. have made to the collection.

A matter to be regretted and which it is hoped they will remedy before the exhibition closes.

Number 18 the catalogue says is the Union Trust building by Clinton Day, but a careful search of the rooms fails to reveal the drawing. Possibly Mr. Day intends to repair this omission.

Numbers 19 to 26 are a series of clever drawings of work by A. Page Brown.

HOTEL NEAR MONTALVO, CALIFORNIA, A. C. SCHWEINFOURTH, ARCHITECT.

Number 29 is a stunning pen and ink drawing by Ernest Peixotto of a design by Willis Polk for a Market street building.

Perhaps the best pen and ink sketch in the show is of the Palace Contarini, No. 9, by Dan Polk.

EPISCOPAL CHAPEL, CORONADA BEACH, REID BROS., ARCHITECTS.

Messrs. Mathisen & Howard have a large series of attractive sketches that are well worth careful inspection. It is hard to say which of these gentlemen do the most interesting work.

BURLINGAME RAILWAY STATION, MATHISEN & HOWARD, ARCHITECTS.

Coxhead & Coxhead have four or five charming pencil sketches. They should have sent more.

Three drawings by Anderson of some work of Ellicott & Lazarus of Portland, Oregon, are examples of Anderson's well known coloring with which local drawings will compare favorably.

Of decided interest are six little sketches, numbers 63, 64, 65, 66 and 68 by W. M. Ellicott of Portland, number 65 an Interior of St. Mark's Church, Philadelphia, is splendidly done is sepia.

Number 54, The Hobart Mausoleum, by Percy & Hamilton is an excellent design with the drawing rendered in good style.

Number 74, A Winter Residence at Santa Barbara by A. C. Schweinfourth is a splendid water color of a most interesting design. This is in line with a style of architecture

RESIDENCE OF GEORGE WHITTELL, COXHEAD & COXHEAD, ARCHITECTS.

MONTGOMERY MEMORIAL CHAPEL, WRIGHT & SANDERS, ARCHITECTS.

thoroughly characteristic of California and something of which we should see more.

Number 67, the residence at Belvedere of V. J. A. Rey, by Polk & Polk, is in line with it and illustrates the adaptability of the style to a very difficult site.

A BIT OF VENICE, FROM A SKETCH BY DAN POLK.

Among the photographs the residence of O. D. Baldwin, number 98, by Samuel Newsom, is a pleasing variation of the architect's usual style.

Number 100 is Mr. Oothout's residence at Fresno, by A. Page Brown.

COLOR IN BRICK AND TERRA-COTTA.

THE matter of color in brick and terra-cotta is now so well in control that an architect willing to give a little attention to experimental work can count upon getting from any one of the large manufacturers exactly what he wants. It is often the case that he selects one or the other from some sample at hand, and requires a match in the material which he has not selected by sample. When an architect makes such a selection he should try to get the kind of brick he wants, and let the terra-cotta manufacturer do the matching. The principal reason for this is that in brickmaking clay must be mixed to produce the desired color when burned, while in a piece of terra-cotta the exact color can be obtained by "slipping." The slip is a coating applied by a machine on the principle of the atomizer. A creamy paste of the slip clay is mixed and placed in a receptacle, through the top of which projects a tub running down into the paste. Across the open top of this tube a jet of steam is forced, which draws out the paste and sprays it over the piece of green terra-cotta. When this is done the terra-cotta has a secure coating of the kind of clay necessary to give the right color when burned. This process renders it comparatively easy for the terra-cotta manufacturers to produce the exact shade desired by the architect, so that if it comes to a question of matching one with the other, as is now being done to a greater extent than formerly, let it be the brick that is first selected.—*The Brickbuilder.*

CORRESPONDENCE

To the Editor of The California Architect and Building News:

In a recent issue of one of our local building papers and copied by an eastern cotemporary, has appeared a severe article deprecating the construction of Portland Cement Walls for foundations and basement walls of buildings, so much in practice at the present time, as being unreliable, due to gradual waste, and also wanting as a fire-proof construction; which is so at variance with those of experience in application, and the numerous authorities who have given it long and patient scientific study and investigation, that it seems novel at this late day. If such is the writers experience, it must have beeen due either to the use of comparatively valuless quick setting cheap Portland cements of which the market is flooded and manipulated in the hands of workmen heedless as to the requirement to be worked quickly; this probably alone, or together with improverishment due to the small quantity of Portland cement compared to the other ingredients to cheapen the mixture, in the hands of unreliable contractors has most likely been the writer's experience and has soured him on Portland cement concrete.

In support of this statement I revert to the introductory notes on concrete and works of concrete, by John Newman, which is one of our valuable standard works on Portland cement concrete, which reads as follows:

"Portland Cement Concrete has become one of the most important materials in construction, and can be used with absolute confidence that the work will be of a hardness and strength, and will not deteriorate, provided the necessary care is taken in selection, proportions, mixing and deposition, which long and varied experience has proved to be indispensibly requisite.

"By judicious application, many works can now be erected, more especially submerged structures, that by reason of their great cost, it was impossible to construct, but now Portland cement walls of average thickness for engineering purposes, can be built for one-half, or one-third the expense of masonry or brick work.

"The valuableness of Portland cement, is its power of firmly uniting other substances, its cohesiveness, durability, and adapability to be moulded into any form with a rapidity of execution unattainable with brickwork and masonry.

"Apart from the cement, the nature of the other ingredients is of great importance, the mode of mixing, depositing, etc., for practical value of cement may be destroyed without due attention to tliese details."

As Mr. Newman says, which is known to every practical experienced worker in Portland cement, that its practical value may be destroyed without due attention to the mode of mixing and depositing.

Suffice to say, Portland cement and its concretes, has not only held its own, but advanced in usefulness, and far outstripped other cementing materials, that it stands head and foremost, and ranks as one of the great inventions, deserving rank with applied electricity; and it seems to me to berate its effectiveness rather belittles he who does attempt it.

As to the fire-proof or fire resisting qualities I would refer to the following, taken from Thaddeus Hyatt's valuable work, entitled "Portland Cement Concrete Combined with Iron as a Building Material." This work may be found in many of our public libraries.

ADAPTABILITY OF PORTLAND CEMENT CONCRETE AND IMBEDDED IRON OR STEEL TO FIRE-PROOF CONSTRUCTION.

"To ascertain the limits of expansion and contraction of Portland cement within definite ranges of temperature, trial sticks of cement were made and heated, the expansion of the same being ascertained by placing the tests between two fixed points, space being allowed between the variations in which were ascertained by means of tapered pieces, which were then measured by Holtzapffel's thousand gauge. The result was found to be a lineal expansion of .00137 for 180 degrees of heat as compared with .00140 for wrought iron, a result so near that the expansion may be considered the same; but in order to prove the result practically; blocks of cement concrete, fourteen inches long and four inches deep by three inches wide were made, in which bars of iron were imbedded, the bars varying in size 2x1-32 of an inch to 2x2 inches and 12 inches long.

"*On testing these by fire no difference in effect was found to be produced on the concrete by the different masses of metal contained within them.*

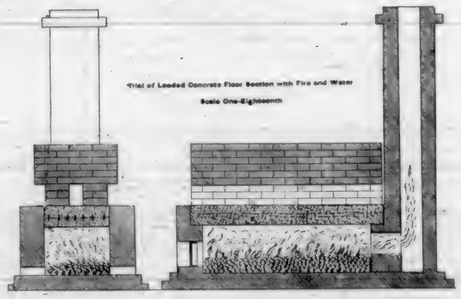
"As a final test, bars of iron two feet long by one-half inch thick were imbedded in blocks of concrete; these blocks on being exposed to the red heat of a furnace for six hours, were found to be entirely sound and good when taken out; the synchronism existing between the expansion of the two materials, whatever the size of the metal, was thus placed beyond question, and in respect to this combining concrete with iron for building purposes the *two materials may be regarded as practically homogeneous.*

"These results as may be supposed, were in the highest degree satisfactory and assuring.

"*In order to test the effect of fire and water to a real floor of the concrete construction, combined with iron*, a section of one sufficiently large to leave no doubt as to the result of fire and water to a real floor in actual use. Accordingly a furnace was built as represented in the following plate, the top being a slab or floor section six feet long by two feet wide, and seven and one half inches thick.

"The tie-metal in gridiron form was placed at the middle of the thickness, three inches of concrete being above and three inches below the metal.

"The furnace was made with a range of air holes on either side, to insure perfect combustion and intense heat.



"Loose bricks were piled upon the furnace top until a load was obtained of 300 pounds per square foot over the whole surface, the deflection being with this load 1-32 of an inch in a span of five feet.

"The fuel was arranged to form an incandescent bed six inches at twelve inches below the under face of the concrete slab.

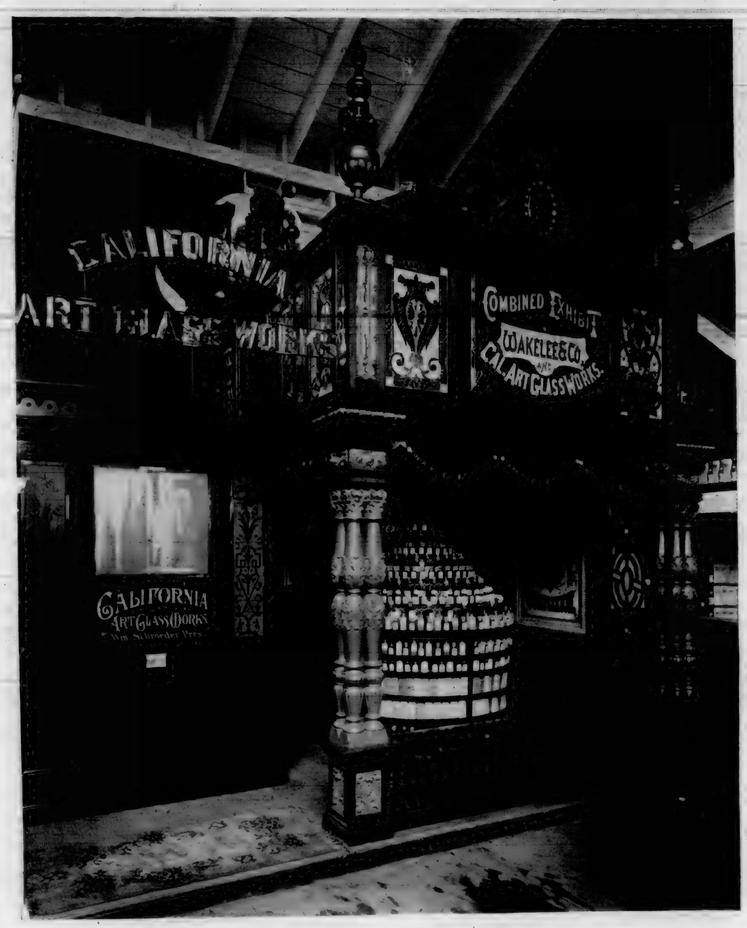
"The fire was kindled at six o'clock in the morning, had by eleven become an intense heat perfectly uniform over the entire surface, and the bottom of the concret was also at a glowing red heat all over.

"At this intensity the fire was kept up until 4 P. M., a period of ten hours from the lighting of it. During this time the slab had deflected three-eights of an inch.

"A stream of cold water was now thrown forcibly against

PARAFFINE PAINT COMPANY'S EXHIBIT.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.



CALIFORNIA ART GLASS WORKS EXHIBIT.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

A. STEIGER SONS' EXHIBIT, SAN JOSE.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

TABER'S PHOTOGRAPHIC GALLERY.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

the bottom of the slab for a period of fifteen or twenty minutes, by means of a garden force pump, and the load then removed.

"On examining the underside of the section it was found uninjured; and the next morning, being then entirely cold, the deflection had disappeared—*the slab had returned to its former level.*

"In order to confirm these results a second trial was made. This time the load was left upon the slab, which, during the firing, deflected as before, *but upon cooling returned to its original level, lifting the load with it.* In proof of the heat of the furnace it may be mentioned that in the course of this experiment the faces of all the side bricks in actual contact with the fire were melted."

In addition to the experiments described others of less moment were made, as to the non-conducting power of various substances, such as plaster of Paris of different densities, and concretes more or less porous, also air spaces; the result of all being that the best material to protect the metal against heat was found to be that which was the strongest in compression, viz: Portland cement concrete of best quality, no advantage for any purpose being found from fibres of any kind, not even *asbestos.*

Mr. Hyatt is the inventor of effectively combining Portland cement concrete with iron or steel as a building material in a way that supporting iron or steel beams are no longer required for support of fire-proof floors, side-walks and the like, saving two-thirds their cost. CONSISTENCY.

THE OWNERSHIP OF DRAWINGS MADE FOR AND BY AN ARCHITECT.

[*Continued from March Number.*]

AN architect is paid for his services either by salary, by fee, by commission, or by time. The term "salary" applies to all payment (generally as an annual one) for continuous professional services necessary to the satisfactory discharge of the duties of the position held by the salaried architect, whether such services be rendered daily or only occasionally, and whether the hours of work be fixed or left to his discretion. There may still occur a case in which an amateur gives to an architect just free from pupilage a moderate salary to look after an estate generally, and to assist in improving it and the mansion. In such a case, all finished drawings absolutely belong to the employer, whoever provided the materials, but they pass to the architect by verbal or written consent, being, in fact, a part of the patronage which supplies him with a portfolio of (not academical) drawings of work that has been, or has been likely to be, executed. All unfinished (in rough) works, such as dimensions in a note-book, measuring-book, or field-book, with calculations therefrom and abstracts thereof, belong to the salaried architect; he has always had it in his power to throw them aside (replacing, if necessary, the material) if he suspected them, and so preferred to take reproach of indolence rather than of carelessness, ignorance or incapacity.

There is, next, the case of the amateur who takes into residence, or pays by salary, or both, a clever, but yet unsuccessful, architect to draw out what the amateur designs, or thinks he designs, or wishes to see designed or drawn. The patron will (perhaps jealously, certainly legally) insist upon securing every scrap of paper used by the architect in setting forth an idea, and every alteration suggested until the completion of the finished drawings, even if these run into complicated details at full size, or highly-finished pespective views. This patron naturally holds that it is not honorable in his salaried architect to make tracings of the finished drawings, either in or out of office hours. This arrangement is sure to fail unless an office room and fixed hours are part of the bargain.

The last phase of salaried business to which attention need be given here is that of the architect attached to a public building or institution. If he acts as steward, which in some places is part of the business, his ledgers belong to the office; and if his work includes building, his contracts and bills examined, or ready for examination, belong to the office. But at the death or departure of the architect, all all rough work excepted in the positions above mentioned, ought not to be asked for by the client, who should be satisfied to think himself fortunate in getting any finished drawings made in explanation of the contract drawings for new works in progress. As to designs for new works proposed, the successor should prepare his own design for his own work, and not lazily avail himself of the labor (which he may misunderstand) of his predecessor, who, if alive, is not to be damaged in reputation by having his work spoilt, or if it be unsuccessfully executed, to be made responsible for the liabilities that may occur.

When an architect takes a salary for the guardianship of a building, the drawings which he may make of defects in the existing structures, for the purpose of pointing out them and the remedies ought to remain in the office for his successors. But all drawings made outside the usual hours of work where daily service is required, or even (by open or tacit agreement for an equivalent) during those hours, or in the intervals of occasional service, for any object apparently connected with the salaried situation, but really foreign thereto, belong entirely to the architect until he parts with them for a fee or other consideration.

The term "fee" applies to payment for a report, whatever be the nature of the document, and whether illustrated or not by drawings. The property in finished work done for a fee is generally supposed to pass so entirely to the client when he excepts the work as to prevent publication by the reporter without the consent of the client, while any attempt on the part of the reporter to prevent publication by the client would be reprobated by his professional brethren. The plan, as of an estate, made by a surveyor is, in fact, a report of the shape, extent and nature of the estate, and the drawing is itself his report; but all wrongly-plotted plans or rough draughts belong to the surveyor, and would not be yielded to the client by any man of respectable position in business. If they were demanded by a troublesome client, the surveyor would probably destroy them, and communicate the fact of their non-existence as his reply to the demand. So, also, if an architect is required to report on the condition of a building, or part of a building, his rough draught of his report might be demanded by a troublesome client; and, inasmuch as the architect's first impressions might have been modified by subsequent surveys, the destruction of the rough draughts of reports would be prudential. Indeed, destruction seems to be the only way by which to promptly meet a demand for papers upon which statements apparently incriminating the architect or surveyor might be founded. It is for the *finished work*, not for the preliminary studies, that the amount of the fee is fixed; otherwise the architect or surveyor might tender the rough work, or studies, and require in exchange the fee; and the order of the client to stop and deliver the unfinished work on part payment of the proposed fee would be as futile in an action against him for the entire profit of the transaction as if he refused to accept the finished work without the rough work.

Continued in our next.

BOOKS AND PERIODICALS.

THE PHOTOGRAPHIC TIMES for April 6th contains an interesting account of an interview with Edison, and a description of his latest invention—the Kinetoscope. The article is illustrated by some photographic reproductions of pictures taken by the instrument. There is also an account of the life and work of Mr. H. P. Robinson, the renowned artist photographer, with some samples of his latest and finest productions recently exhibited at the London Photographic Salon. The rest of the magazine is made up of matter interesting to every photographer, amateur or professional.

LIPPINCOTT'S Monthly Magazine for April contains "The Flying Halcyon" a complete novel by Richard Henry Savage. The reader will find this an interesting story with a dash of California life, a little of Mexican adventures with plenty of chances and changes, and lots of people made happy by being married off in the end.

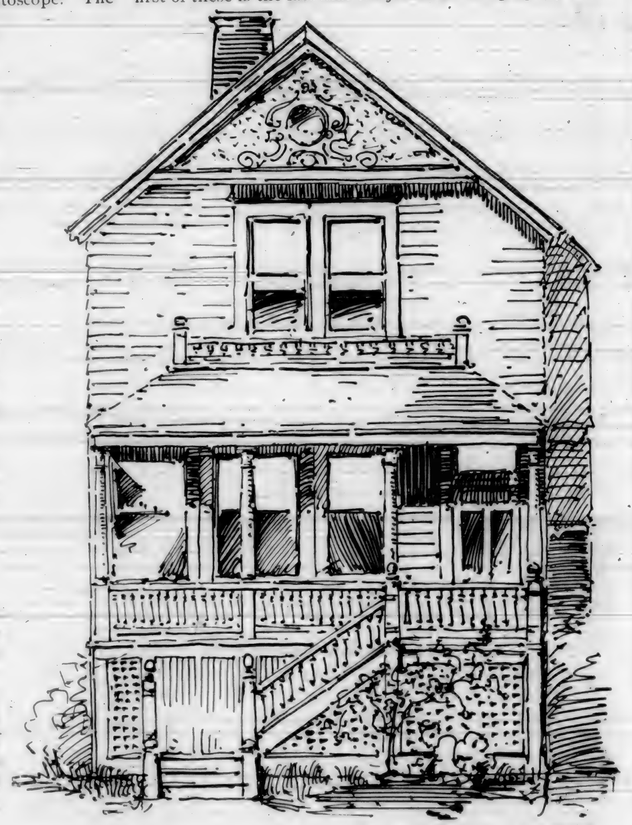
The Librarian among his books by Julian Hawthorne, will interest many that way inclined, while "Co-operative Housekeeping" by H. C. Walsh will come to every housekeeper as a new revelation.

YE SPANISH TILE. An illustrated leaflet by Merchant & Co., giving details of the advantage of Metal Tiles over Terra-Cotta Tiles.

GRAPHITE AS A LUBRICANT—Scientifically and practically considered—a small pamphlet of a very convincing nature. If you want a copy send to the Jos. Dixon Crucible Co., Jersey City, N. J., who will be pleased to forward you one free of charge.

TILE AND IRON HOUSE DRAINS.

THE *Morning Advertiser*, of Rochester, N. Y., is discussing the question of tile and iron house drains. We are sorry to see that the Board of Health of that city has rescinded their former action, which prescribed all horizontal drains within the house to be of extra heavy cast iron pipe. The tile house drain has certain serious disadvantages which there seems at present to be no way of overcoming. The first of these is the fact that the joints are not properly made by ordinary workmanship. The second is its extreme brittleness. A comparatively slight blow or small settling of the foundation of the house is sufficient to break a tile drain. A reasonable system of testing under a small pressure, might perhaps overcome the danger from imperfectly made joints, but it is doubtful whether there is any feasible way of securing safety against breakage. The almost universally bad condition in which old house drains are found is a pretty serious argument against the material. This is an unfortunate fact, because on account of its internal smoothness, freedom from corrosion, and general durability when of a proper quality, it has many points of superiority over any other material which can be used for the same purpose.—*The Sanitary Plumber.*



COTTAGE AT OAKLAND VIEW, W. JONES CUTHBERTSON, ARCHITECT.

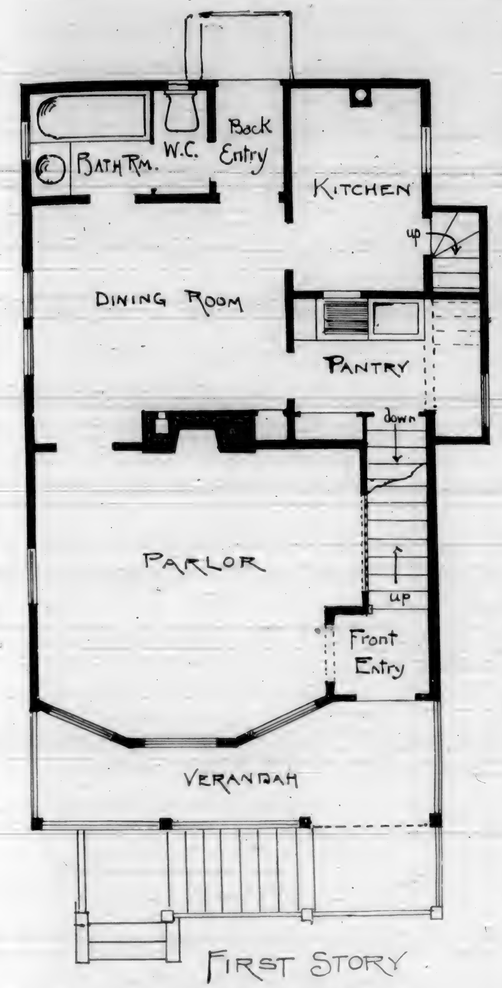
NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

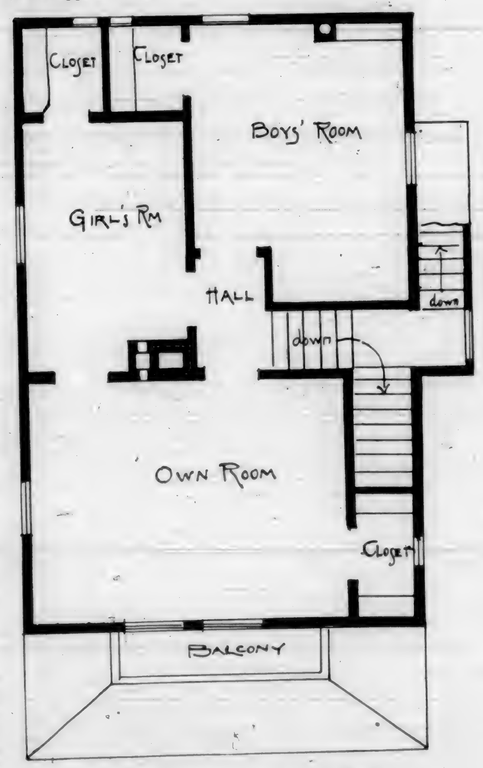
TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

MRS. S.—"Well, here we are in another boarding house. We are regular Arabs." Mr. S.—"Yes; folding Bed-ouins!" —*Life.*



FIRST STORY



SECOND STORY

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CERTIFICATE OF ARCHITECT ON BUILDING CONTRACT.—A building contract, which provides that final payment shall be made within thirty days after completion, "provided that * * the architect shall certify in writing that all the work * * has been done to his satisfaction," constitutes the architect the agent of the owner, and his decision as to completion of the work is final. A certificate under such contract sufficiently complies with the terms of the contract where it states that "there is now due to" the contractor "the final payment on his contract," specifying the amount.
Snaith v. Smith, Common Pleas of New York City and County, General Term, 27 N. Y. Supp. 379. 90.

INTERPRETATION OF BUILDING CONTRACTS.—Where one let a contract to another, to do the stone work on a building, providing for monthly payments, not to exceed eighty per cent of the estimated value of "the work performed on the building." The most expensive part of such work was quarrying and dressing the stone before it was put in the building. The contract intended that the payment should be based on the stone prepared for the building as well as that actually put in.
Smith v. Molleson, Supreme Court, General Term First Dep't, 26 N. Y. Supp. 653. 82.

NOTICE TO OWNER OF MECHANICS' LIENS.—Under the statutes requiring the owner of a building to retain sufficient funds to pay a claim for materials, furnished by a material man who has given notice of his claim to such owner, a material man who serves the required notice acquires a prior right to the fund in the hands of the owner, due the contractor, though the contractor subsequently abandons the contract.
Russ Lumber & Mill Co. v Roggenkamp, Supreme Court of California, 35 Pac. Rep. 643. 71.

ARBITRATION OF DISPUTES IN BUILDING CONTRACTS.—A building contract provided that the owner might at any time during the progress of the work "make any alteration, deviation, addition, or omission in the work hereby contracted for;" the value of which should be added to or deducted from the contract price, and that any dispute should be determined by arbitrators. The provision for arbitration did not apply where the owner refused to pay for the work on the ground that the contract had not been substantially performed.
Oberlies v. Bullinger, Supreme Court, General Term, Fifth Dep't. 27 N. Y. Supp. 19. 86.

RISKS ASSUMED BY SERVANT.—Where one was employed to shovel away from the bottom of a chute debris, consisting of bricks, etc., which the owner was removing from the upper story of a building, and, while so engaged, he was struck by a brick. The chute was in good condition, and was the usual appliance for the purpose for which it was used. The employe had observed the character of the debris coming down, and knew the danger. The injury resulted from a risk incident to the employment.
Fennessey v. Western Union Tele. Co., Superior Court of New York City, General Term, 26 N. Y. Supp. 796. 88.

WHAT CONSTITUTES ABANDONMENT OF CONTRACT.—Where a claimant who has released his lien on the agreement of the owner to pay the claim afterwards, reinstates his lien because of the refusal of the owner to make the payment, he hereby abandons the agreement with the owner, and can not afterwards sue on it.
Cassidy v. Aldhous, City Court of New York, General Term, 27 N. Y. Supp. 267. 52.

THE PRAIRIE SOD HOUSE.

"THE sod house of the Kansas and Nebraska plains is following the buffalo and antelope into the land of legends," said William F. Arbuckle of Topeka to a representative of the Washington *Post*. "A good many of the queer structures are still standing, and in some instances are yet used as human habitations, but most of them are utilized as stables for horses or cattle and are slowly crumbling away to become indistinguishable in their original earth. When I first went West, years ago, my father took up the acres as far as his eye could reach in what is now Eastern Nebraska. There was not a tree in sight of the knoll he had selected as the spot upon which his residence should be erected, and the nearest place lumber could be secured was sixty miles away. He put up a small tent in which to cook and eat—the family slept in the wagons—and, with my brothers and a hired man to help, set about making a house. The thick sod was cut from the prairie in slabs about two feet wide by three feet in length, and on the side of the knoll, where an excavation had been made in its side, these slabs were placed, one on top of the other, until the required height was reached. It was arduous work, and I remember what a lot of excitement there was when my father and my brother Lem started off early one morning to go after the ridge pole and rafters that were to support the roof. They took only the running gear of our small wagon and I cried like a good fellow when they started off because I thought they had broken up my pet vehicle. They were gone nearly a week and reached home in the middle of one night after their journey of 120 miles. They had brought a long, round piece of timber, like a slender telegraph pole, with numerous other small pieces, and my mother nearly had a fit of delight when they proudly displayed a door and two window sashes, with a bundle of glass for the latter. There was great rejoicing when that ridge pole was put in place and the rafters run down from it to rest on the sod walls, and then came the laborious task of putting on the sod roof so that it would keep out the rain and snow. At last it was completed and we moved in. The house had four rooms, which was unusual for such structures, and its two windows soon made it known all over that section of the West as the "Shack with the Glass Eyes.' There never was a more comfortable building erected than a sod house. They are not all damp, as one would suppose, and are warm as you could desire in winter, while in summer they are the most delightfully cool places imaginable. But they are rapidly disappearing now, and when you see one you are sure to find near it a modern cottage with its windmill, just as you do out at our place."

BUSINESS MOSAICS.

Samuel Kellett who as successor to Kellett & McMurray manufacturers of Plaster Decorations whose work at the Fair grounds have been so much admired, will take charge of the business at 28 Ellis street, San Francisco, 375 Twelfth street, Oakland, all business intrusted to Mr. Kellett in the way of decorating, plastering, repairing, etc., will be sure of being properly done you give the order and he does the work in the most satisfactory manner.

"I went to a fine dinner, last night, where all the folks and knives and spoons were of silver." "Let's see them."—*Hallo.*

When you want a Door Check and Spring be sure you call for the "Norton" which is always at hand and prevents slamming of doors. It is almost human in its action; use it and prevent any temptation to use bad words. Frank D. Morrell, 224 Market street near Front, San Francisco. Who wants to hear a door shut with a slam that sounded like a wooden dam.

"Johnny," said the teacher, "is a jackass a biped or a quadruped?" "Please, sir," said Johnny, "that depends on the jackass."

The California Art Glass Bending and Cutting Works.—An old saying has it, that "The profit counts for naught at home," this might be true as to profits proper, but does not apply to a home "Art Industry" we are to speak about. These remarks were prompted to us through inspecting the beautiful display of Art, Cut, Beveled and Embossed Glass in the annex of the Manufactures and Liberal Arts building at the Midwinter Fair, exhibited by the California Art Glass Bending and Cutting Works of 39½ Fremont street, of this city.

This firm undoubtedly could not have succeeded in placing such an elaborate and artistic display, which represents an outlay of several thousand dollars, as it stands, if they "counted for naught" in this community, for although their work can be found in cities all along the coast, it is principally this city and suburbs that enables them, by innumerable orders for their product, to employ such a corps of artists and artisans as can be seen at their works.

The exhibit is not merely a lot of samples placed indiscriminately, but a princely pavilion designed in the early Renaisance style, where art glass is placed in its proper sphere.

As the pavillion is only "A means to the end," that is, to show the ornamental glass to best advantage, we will abstain from describing the same although it would deserve mention from an architectural point of view.

The samples represented are of all kinds, suitable for churches, residences, public halls, etc.

One for instance, has the portrait of Beethoven in medalion shape in centre, while the balance of the light is filled with roundels of appropriate shading; it would make an admirable window for a music room. Front door lights, dining room, vestibule, hall windows with beautiful beveled glass scrolls, and delicate tints of opalescent glass, are represented.

We also saw splendid specimens of ornamental ground and cut glass suitable for interior lights such as in doors between dining and sitting room, etc. Advertising signs made by different processes form no mean part of the display; several are made in art glass, one on cut and ground glass, while others are embossed and silvered.

On inspecting the work closely we find that the workmanship is up to the quality of the artistic part of the same and in no way inferior to any work we have seen east. And now comes the most important part in the matter, that is the cost; we find that the price for the work done by this firm is one-third less than that for the same work done east, which is very natural as the commission to the agents and the freight on the goods, represents the difference. There are still more advantages than mere cost to the patron of this firm, these are promptness in furnishing the work; they can also oversee the construction of the same and if any changes are to be made, order them personally, instead of through third parties by letter. The home firm also takes pride in every piece of work that leaves its establishment, while the one, thousands of miles away, thinks anything is good enough in the Wild West.

We could give hundreds of other reasons why parties in need of ornamental glass should patronize home industry, but what we have said is enough, for as we remarked above the orders pouring in continuously to the works of this old firm on Fremont street, show conclusively that, "A Prophet" not always "counts for naught at home."

Little BOY—"I stayed in the parlor all last evening when Mr. Squeezem was callin' on sister, just as you told me. MOTHER—"That's a good boy, and here is the candy I promised you. Did you get tired?" LITTLE BOY—"Oh, no, we played blind man's buff, and it would have been lots of fun, only I was "it" nearly all the time."—*Good News.*

A. Steiger Sons, manufacturers of Architectural Terra-Cotta, Hollow Tile Fire Proofing, etc., have a very complete exhibition of the various articles manufactured by the firm, all neatly arranged and forming an object lesson in their line of goods, that a few years since would have been considered impossible to produce upon this coast, thus showing as the demand increases California is found able to produce any style of manufactured goods required; not alone for building purposes but to supply the wants of all departments of civilized life. A. Steiger Sons' manufactory is at San Jose, California, office, 16 Post street, Builders' Exchange, 5253, San Francisco, Cal.

Bobby (at breakfast)—"Clara, did Mr. Spooner take any of the umbrellas or hats from the hall last night?" CLARA—Why, of course not. Why should he?" BOBBY—That's what I'd like to know. I thought he did, cos I heard him say when he was going out: "I'm going to steal just one, and why, what's the matter, Clara?"—*New Castle Chronicle.*

Paraffine Paint Company.—In the Manufactures and Liberal Arts building, Exhibit No. 487, will be found a good representation of the products of the Paraffine Paint Co., 116 Battery street, San Francisco, including P. & B. Building Paper, as well as the roofing paper. A very clever method of proving that the building paper is waterproof and odorless may be seen in this exhibition is a case of raisins upon the fruit drying paper; this silent testimony is more convincing of the truth of the claim made for this paper than any words that could be written.

The fact that everything used in the manufacture of P. & B. goods is the production of the Pacific Coast is a strong argument why this company should be preferred when ordering goods in their line—the well-known reliability of this house is a good guarantee that everything that is sold by them is sure to be as represented.

Pullman Steel Frame Sash Balance. All intending builders are continually looking out for the best articles and materials in every line, consequently we take time and space to call the attention of the architects and others to the very best article on the market for the raising and lowering of windows, the Pullman Sash Balance. This balance is by no means new, having been on the market for about nine year and has been tested and used in thousands of houses, public buildings, flats, and factories and has given the very best of satisfaction.

On another page we show a cut of the side balance style and call attention to the fact that it is noiseless in its operation; that it is easily applied to old as well as new windows. In fact it is a perfect window balance in every respect.

Little GIRL—(looking at impressionistic landscape)—Mamma, what made him think it looked like that?"—*News Letter.*

Gas Lighting and Heating—This might properly be addressed to women only, as few women who have not made the experiment, know how much can be saved by using gas for cooking purposes. We know the general exclamation is "It costs too much!" It costs less, saves your time and temper, avoids all the bother and discomfort of coal and ashes and smoke, and the smell and discomfort in coal oil stoves. We advise all housekeepers to give gas a trial, and once tried, you will find you save money, time and annoyance.

"Are you going to the opera to-night?" asked a Parisian. "No; we had tickets, but we were afraid of bombs, and we gave them to some dear friends of ours."—*Hallo.*

Harris & Jones continue to fill all orders for yellow pine, sugar pine, white cedar and all kinds of building lumber, as well as doors, sash and blinds, their address is 728 Bryant street, bet. Fifth and Sixth, San Francisco.

Physician—"The truth can no longer be hidden, madam. I am obliged to tell you that your little son is—er—weak-minded. That is—well, it must be said—he is an idiot." MRS. HIGHUPP—"How fortunate it is that we are rich! No one will notice it."—*New York Weekly.*

The Misses Wilson & Kelley, Mills Building, room 45 6th floor, telephone 5661, do typewritting of all kinds in the most satisfactory manner—making however a specialty of architectural specifications.

Lena—"Fred didn't blow his brains out because you jilted him the other night; he came and proposed to me." MAUD—"Did he? Then he must have got rid of them in some way."—*Ex.*

Any one who has used the new and improved Chapman Fire Hose Reel will never be content to use any other. This admirable contrivance in the new design can truthfully be called an ornament, especially desirable for fine residences, as well as for hotels, theatres and modern office buildings. One satisfaction in ordering from Mr. R. S. Chapman is the purchaser can depend upon being furnished with a machine fully guaranteed to be what it is claimed to be; the most efficient and reliable Hose Reel Apparatus in the world.

Beautiful young lady (at hosiery counter)—"These stockings strike me as being rather loud." POLITE SALESMAN—"But consider how they would keep your feet from going to sleep."—*Harvard Lampoon.*

CITY BUILDING NEWS.

Baker near Page. Two-story frame; owner, Kate J. O'Donnell; architects, Martens & Coffey; contractors, Ackerson & Patterson; signed, March 24; filed, March 29; cost $4,500.

Broadway near Mason. Three-story frame; owner, M. Auragug, architect, Emil John; contractors, Schutt & Kreeker; signed, March 30; filed, April 2; cost $6,070.

Bryant and Butte. Two-story frame; owner, J. F. E. Ehlers; architect, H. Gellfuss; contractor, F. Klatt; signed, March 27; filed, March 27; cost $2,870.

California and Pierce. Block of six houses; owner, Mrs. M. L. Selfridge; architects, Reid Bros.; contractors, Bassett Bros.; signed, March 27; filed, March 30; cost $20,015.

California and Pierce. Plumbing, etc.; owner, Mrs. M. L. Selfridge; architects, Reid Bros.; contractor, H. Williamson; signed, March 27; filed, March 30; cost $4,454.

California and Pierce. Alterations and electric lighting; owner, Mrs. M. L. Selfridge; architects, Reid Bros.; contractors, Will & Fink; signed, March 27; filed, March 29; cost $802.

California near Pierce. Grading, concrete and brick work; architects, Reid Bros.; contractor, T. R. Bassett; signed, March 31; filed, April 4; cost $3,200.

Church near 15th. Two-story frame; owner, Matthew Murphy; contractor, H. L. Joslin; signed, March 26; filed, March 27; cost $1,650.

Clay near Mason. Three-story frame; owners, L. Peirano and I. Solari; architect, Emile Depierre; contractor, L. Cereghino; cost $4,980.

Cumberland near Dolores. To build; owner, S. L. Sutton; contractor, Eddie Cox; signed, March 27; filed, April 2; cost $2,040.

De Haro and Santa Clara. Carpenter work; owner, Fishback & Glootz; architect, J. E. Kraft; contractor, Jas. Campbell; signed, April 7; filed, April 10; cost $5,300.

De Haro and Santa Clara. Brick work; owner, Fishback & Glootz; architect, J. E. Kraft; contractor, I. F. Wagner; signed, April 7; filed, April 10; cost $4924.

Devisadero near Golden Gate. To build; owner, D. Courneer; contractor, R. Sinnott; cost $5600.

East near Mission. Fit up saloon; owner, Claus Flotham; contractors, Bader & Fincke; filed, March 16; cost $1,250.

Ellis and Jones. Moving and raising; owner, Julia Green; architect, W. H. Lillie; signed, March 20; filed, March 20; cost $7,000.

Ellis near Pierce. Mill work on two two-story houses; owner, M. J. Kelly; architect, A. J. Barnett; contractors, Excelsiors M. Co.; signed, April 4; filed, April 6; cost $1150.

Fell near Lott. To build; owner, Edward Warton; contractors, Petterson & Person; signed, March 27; filed, March 27; cost $4,800.

Fifth Ave. and Clement. To build; owner, C. Mohemann; contractor, E. Ginley; signed, April 2; filed, April 2; cost $1,800.

Fourth Ave. near California. To build; owner, Oswald Schultz; contractor, Richard Fahy; signed, April 5; filed, April 6; cost $1200.

Fillmore near Jackson. Plumbing, etc.; owner, Sarah Kahns; architect, E. A. Hermann; contractor, H. Williamson; signed, April 9; filed, April 10; cost $1,594.

Fremont near Market. Alterations, etc.; owner, Huntington, Hopkins Co. contractors, Robinson & Gillespie; cost $4,275.

Fourteenth and Guerrero. To build; owner, M. Roth; architect, M. J. Lyons; contractor, E. McCugh West; signed, March 22; filed, March 26; cost $3,025.

Grove near Polk. To build; owner, M. Corney; architect, D. M. Stanley; contractor, S. G. Worden; cost $2,675.

Geary near Franklin. Carpenter, mill work, etc.; owner, Babetts Brown; architects, Saifield & Kohlberg; contractor, Henry Rohling; signed, April 2; filed, April 6; cost $6975.

Haight near Broderick. To build; owner, W. Jones; architect, J. J. Clark; contractor, W. W. Rednall; signed, March 21; filed, March 22; cost $2,282.50.

Hermann near Stevenson. To build; owners, John and Sarah Whalan; architect, T. J. Welsh; contractor, James Geary; signed, March 22; filed, March 26; cost $3,998.

Howard near First. Three-story building; owner, E. Roesch; architect, Oliver Everett; contractor, James Campbell; filed, March 14; cost $4,240.

Howard near 23d. To build; owner, Henry Stelling; architects, Martens & Coffey; contractor, J. Bucher; cost $8,850.

Jackson near Locust. To build; owner, L. B. Cooper; contractor, F. G. Kronnick; signed, March 27; filed, March 27; cost $3,200.

Jackson near Laguna. Plumbing and sewering; owners, Walter Speyer and wife; architects, B. McDougall & Son; contractor, H. Williamson; signed, March 23; filed, March 29; cost $1,448.

Jackson near Webster. Painting school building; owner, Board of Education; architect, C. J. Havens; contractor, W. J. Bell; signed, April 3; filed, April 6; cost $289.

Landers near Fourteenth. Two-story frame; owner, John Kelvin; architect, A. J. Barnet; contractor, Jas. Cochran; signed, March 23; filed, March 27; cost $2,160.

Market near Fifth. To remove old building and excavate; owner, F. Gutzkow; architect, E. Kollofrath; contractor, A. E. Buckman; signed, March 17; filed, March 17; cost $1,250.

Market near Fifth. Excavating foundation; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, A. E. Burbank; signed, March 20; filed, March 20; cost fifty cents per cubic yard.

Market near Fifth. Concrete work, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, Geo. Goodman; signed, March 22; filed, March 24; cost twelve cents per cubic foot.

Market near Post. Hollow partitions, etc.; owner, Walter S. Hobart by Exrs.; architects, Pissis & Moore; contractors, Mahl Bros. & Co.; signed, March 19; filed, March 21; cost $4,270.

Market near Post. Alterations and fittings; owner, Walter S. Hobart by Exrs.; architects, Percy & Hamilton; contractors, The Jackson Mfg. Co.; signed, March 19; filed, March 21; cost $2,373.

Market near Post. Iron furring; owner, Walter S. Hobart by Exers.; architects, Percy & Hamilton; contractors, Dyer Bros.; signed, March 19; filed, March 21; cost $2,128.

Market street, 730. Saloon and cigar store fixtures; owner, Jessie E. Marks; architect, A. J. Barrett; contractors, Ackerson & Peterson; signed, March 20; filed, March 21; cost $2,000.

Market street, 749. Additions and alterations; owner, Robert Flint; architect, H. B. Maggs; contractor, J. W. Wissinger; signed, March 22; filed, March 22; cost $7,116.

Market street, 810. Show case and fixtures; owner, Geo. Hass; contractors, Fink & Schindler; signed, March 21; filed, March 22; cost $2,800.

Maket near City Hall Ave. Cast and wrought iron; owner, B. Schweitzer; architect, Chas. R. Wilson; contractor, Jos. Kemp; signed, March 23; filed, March 24; cost $11,141.

Market near City Hall Ave. Excavating, etc.; owner, B. Schweitzer; architect, Chas. R. Wilson; contractor, Andrew Lynch; signed, March 23; filed, March 24; cost $4,075.

Main near Mission. Two-story brick; owner, Mrs. E. A. Rutherford; contractor, S. S. Emery; signed, March 22; filed, March 30; cost $12,000.

McAllister near Jones. Marble work to 4-story brick; owner, E. Adam and E. Kibbe; architect, J. E. Kraft; contractors, Ruffino & Bianchi; signed, March 30; filed, April 5; limit 40 working days.

Mission near Main. Brick; owner, S. S. Emery; contractors, Richardson & Gale; signed, April 4; filed, April 4; cost $4300.

Mission near Virginia. A brick car house; owners, Pacific Improvement Co.; contractors, T. H. Day & Sons; days work, cost $46,000.

Mission near Park. One-story cottage; owner, Cornelius Cronin; contractor, Thomas Mitchell; cost $1,350.

Natoma and First. Four-story brick; owners, Mrs. Eliza F. Grosh; architect, Wm. Patton; contractors, Richardson & Gale; signed, March 12; filed, March 13; cost $11,225.

Oak near Scott. Alterations, etc.; owner, John Postel; architect, H. Gellfuss; contractor, F. Klatt; signed, March 20; filed, March 21; cost $1,355.

O'Farrell near Laguna. Two-story frame; owner, Sarah N. Morris; architect, J. H. Littlefield; contractors, Blanchard & Clark; signed, March 13; filed, March 17; cost $4,360.

O'Farrell and Taylor. To build; owners, Rose Boland and Emily Flood; architect, T. J. Welsh, contractor, T. R. Bassett; signed, March 27; filed, March 27; cost $10,345.

O'Farrell near Stockton. To build; owner, H. Gutzeil & J. Molfante; architects, Pissis & Moore; contractors, C. K. Worrell and S. W. Miller; signed, April 2; filed, April 4; cost $29,667.

Page and Webster. Frame buildings and alterations; owner, Pane Levy; architect, A. T. Barnett; contractor, Jno. Ogle; cost $1,765.

Pine bet. Scott and Devisadero. Two-story building; owner, Samuel Deutsh; architect, M. J. Lyons; contractor, Thos. Kinread; signed, March 19; filed, March 26; cost $3,550.

Pine near Treat Ave. Brickwork, etc; owner, Kate C. Kirkham; contractor, Geo. B. Lang; cost $2650.

Point Lobos near Ferrie. Alterations; owner, C. Taubles; architects, Bugbee & Gash; contractor, L. N. Fletcher; signed, March 6; filed, April 4; cost $1879.

Post near Devisadero. To build; owner, H. A. Rosenbaum; architect, M. J. Lyon; contractor, H. Rohling; signed, March 28; filed, April 5; cost $7650.

Point Lobos and Fifth Ave. Cottage; owner, John Burgogne; contractor, Edward Ginley; filed, March 19; cost $1,484.

Post and Montgomery. Deposit boxes and vaults; owner, Union Trust Co.; architect, Clinton Day; contractors, Diebold Safe and Lock Co.; signed, 16; filed, March 19; cost $11,158.

Sacramento near Central Ave. Two-story frame; owner, Chas. Clark; contractor, C. Zwierlien; signed, March 28; filed, March 29; cost $4,000.

Stevenson near Ninteenth. Alterations and additions; owner, Michael Lynch; contractor, William Burk; signed, April 2; filed, April 2; cost $1,600.

Steiner near Haight. Materials and mechanical works; owner, Margaret Glein; architects, Townsend & Wyneken; contractor, C. S. Dunshee; signed, March 15; filed, March 16; cost $2250.

Shotwell near 26th. To build; owner, Martin Seatena; architect, G. Ratto; contractor, H. McCracken; signed, March 19; filed, March 20; cost $5,122.

Sutter bet. Webster and Fillmore. Cottage; owner, Sophia Ettinger; architects, Townsend & Wyneken; contractor, N. C. Post; signed, March 22; filed, March 22; cost $2,000.

Twenty-first near Treat Ave. Two cottages; owner, R. H. Cowan; architect, J. F. Kenna; contractors, Noland & Sheebley; signed, March 27; filed, March 29; cost $2,636.

Tenth Ave. near Point Lobos. To build; owner, Wm. Domrone; architect, H. Gelfuss; contractors, Flood & Watson; signed, April 5; fied, April 16; cost $1180.

Union and Taylor. Excavating; brick, carpenter and mill work, etc.; owner, S. Lazarus; architects, Salfield & Kohlberg; contractors, T. H. Pauls & W. H. Wilton; cost $5,727.

Union near Octavia. To build; owner, Bertha Michelson; architect, C. M. Rousseau; contractor, L. B. Schmidt; signed, April 4; filed, April 4; cost $2980.

Van Ness and Myrtle Ave. Plant for elevator works; owner, C. F. Buckley; architect, M. J. Lyon; contractors, Pettit & West; signed, March 1; filed, March 26; cost $2,780.

Valencia and Quinn. Moving three houses; owner, S. B. Melone; architect, Clinton Day; contractor, E. E. Otterbach; signed, March 31; filed, April 3; cost $1000.

Vallejo near Stockton. To build; owner, C. Southern; architect, H. Gellfuss; contractors, Schutte & Krecker; signed, April 8; filed, April 9; cost $3198.

Waller near Webber. Two-story frame; owner, E. Taylor; contractor, David Reis; signed, March 21; filed, March 22; cost $1,675.

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ONE of our esteemed contemporaries in a late issue calls the attention of the officers of the various fire departments to the unreliability of concrete as a fire-proof building material, and warns them of the dangers which may attend its use, especially in the basement or foundation portions of walls, where during a conflagration it would be subject to the combined action of fire and steam.

In a later issue he approves of the use of concrete in combination with iron, as a material for the construction of floors, and informs us that when constructed in this intelligent manner, concrete is not subject to the same conditions as mentioned in the former article.

Indeed! Why isn't it?

IT must be a satisfaction to the Directors of the Midwinter Fair to have such testimony in its favor coming from the authority of H. N. Higinbotham of Chicago, when we remember that Mr. Higinbotham was President of the World's Columbian Exposition, words of praise coming from such a quarter must be welcomed by the managers. Mr. Higinbotham is reported to have said: "As to my visit to the fair I think I saw it at its best, and it was a sight that made me feel at home. It is a beautiful fair; the buildings are imposing and grand, and it deserves the patronage and best wishes of the entire coast." We have not space in this number to give our impressions of the general effect, and can only say the more you see of this Exposition the more you want to visit it again.

THE reason why long before this the city should not have decided to carry all the tubing, etc., necessary for the public service in a safe and commodious place and in a sensible manner is rather hard to surmise—but so it is. There is, however, a simple and costless method of doing this which we take this opportunity of bringing before our readers. This is a method that no doubt has entered the minds of many—but which, we believe has never been published in a periodical before.

We have already on all our main streets cellars under the sidewalk attached to the stores. Why may not part of these be used for the purpose above mentioned? They are in the street and the space is public property.

Now say that our Supervisors think it about time that the unsightly poles *above* ground and the never ending disturbance of traffic *on* the ground and the destruction of good roads by tearing up for the purpose of getting to the public service pipes *under* ground should be done away with. They then notify the property owners along say Market street

first as being the most important, that the city is about to resume its right to say one-half the space under the sidewalk. It then proceeds to build a wall longitudinally in the centre of the sidewalk, separating public from private part, the public part being that nearest the curb. Meanwhile it recoups each property owner for his expenditures in making that part of the sidewalk taken by the city, and recompenses itself for this by an annual rental to be paid by the several companies now using the public street Conduits for telephone, telegraph, water, gas and sewerage and pneumatic tubes for the use of the Post Office, will all run in this alley, which will be lighted and ventilated at and above surface of pavement.

Ordinances are past directing the several companies against destroying the public highway by digging therein and they thus will be compelled to use the Municipal alley or passage.

Such then is in outline a method of making one of the most important public improvements in a manner which will harm nobody and make a vast improvement in the public health and morals.

It will harm nobody—the property owner or tenant will be fully recompensed for his loss of cellar space by the much better facility of making his connections for plumbing, gas-fitting, telephone, etc., as well as the relief from all interference with his business and clientage by the disturbance of the surface of street or sidewalk—which is now quite an item. Also he saves much by being able to get at all times to his sewerage and other pipes in an easy and quick way.

The companies supplying the public will not suffer as the first cost of removing their present tubes will be the only outlay, and that will be repaid to them in a very few years by the amount saved in being able to get at their tubes to repair or replace them or for any other purpose without any cost. The small annual rental will no doubt be charged by them upon their customers which being distributed all over the city will be an infinitesimal amount to to each one, and even that will be amply repaid to the inhabitants by the general benefit accruing to them in having good roads and pavements.

The citizens considered as organised into a municipality will also not be damaged, for the original outlay which will be small will be all repaid to it in a short time by the rental of its alley and after that said rental will be pure gain, to be used in further extending the system without any expense to the city.

Finally—both the public health and morals will be improved by this system. The first by the facility by which leaks of noxious gases and fluids can be stopped and the latter by removing an offense and nuisance to the public eye and nose, and saving a certain amount of profanity and ill temper caused by stumbling blocks in the way of the traveller.

The shoot of the rubbish boxes which are now being placed along our streets at the instance of our Ladies Sanitary League for the reception of the orange peels, bits of paper and other rubbish which now so conspicuously adorn our roads and sidewalks, will also be connected with receptacles in the subway and be periodically cleaned out by scavengers; all disagreeable sights and smells being thus immediately removed from the public senses.

Now that the City Hall will be finished before the year is out to what better purpose could the money which will then be at liberty be applied? This should be made a burning question next election.

SHALL TWO ELECTRIC WIRES BE RUN IN A SINGLE CONDUIT.

PROCEEDINGS of the Eighteenth Annual Meeting of the Fire Underwriters Association of the Pacific, which have just been issued, contain a full and complete discussion from a practical standpoint of the question that is so often raised among architects as to the advisability of placing two wires of opposite polarity in a single tube or conduit. The discussions referred to is contained in the report made by Mr. Geo. P. Low, Electrician of the Pacific Insurance Union and who constitutes the Permanent Sub-Committee of the Electric Committee of the Underwriters' International Electric Association, and is published below in full for the first time.

REPORT OF SUB-COMMITTEE ON INTERIOR WIRING.

C. M. Goddard, Secretary Underwriters' International Electric Association, No. 55 Kilby street, Boston:

Dear Sir:

The permanent sub-committee on Interior Wiring and Wireways has to report as follows with reference to the proposed amendment "E" to Rule 22 (edition of October 1, 1893), requiring that "wireways must not be supplied with twin conductors, or two separate conductors, in a single tube."

If two wires of opposite polarity are in actual contact throughout their length, trouble may occur in the following ways:

Case 1—Overheating of the conductors from a dead or partial short circuit, the circuit being excessively fused.

Case 2—A dead or partial short circuit or a heavy leakage in an excessively fused circuit may burn off a wire at the point of contact, which may occasion—

Case 3 Arcing, the heat of which will cause—

Case 4—Ignition of the insulation.

Case 5—The insulation, if wet, may be ignited from electrolytic action.

Case 6—A partial short circuit or current leakage resulting in the electrolytic liberation and ignition of explosive gas.

Assuming these wires to be in contact throughout their length and exposed in open air, incipient fire will be caused by the occurrence of any accident except that cited in Case 6, in which the gases will be dissipated and rendered non-explosive. Case 6 presents the only hazard distinctive to wireway construction, in which the liberated gases are confined, but, as yet, the hazard is a theoretical and not a practical one. But one accident that might be attributed to the cause assigned in case 6 has been cited. In this an explosion occurred in a vertical conduit imbedded in a side wall. No fire resulted therefrom and no damage occurred beyond the breaking of plaster. Considering the fact that a short circuit will sometimes occasion considerable violence, it is as probable that the accident was due to this cause as to an explosion of liberated gases, as charged.

But admitting for the moment that the explosion did so occur, it could only have been due to the presence of moisture in the tube. If the ends of interior conduits are closed, per Rule 22, circulation of air through the tube, with consequent condensation and precipitation of moisture, is rendered impossible. The explosion would then be the direct result of a violation of the requirements and would be chargeable accordingly. Again, conditions favorable to condensation within tubes are far more propitious in fire-proof buildings than in wooden ones, which further depreciates this hazard. The opinion is held, therefore, that the occurrence of fire per Case 6 is extremely improbable, if not impossible.

Cases 1 to 5 inclusive resolve themselves into two ultimate classes when the conductors are exposed in air. They must also be contiguous to ignitable material, otherwise fire could not ensue. These two classes are:

1. Ignition of foreign inflammable material from a heated wire, and

2. Ignition of foreign inflammeble material from the flame of burning insulation or of an arc.

It may appear that Class 2 embodies the situation, but experiment proves Class 1 (Case 1) to be distinctive for the reason that invariably overheated wires will ignite some foreign substance, such as wood joist, or cleat, which in turn ignites the melted through insularion—not *per contra*. The danger presented is apparent.

If the wires are encased in wireways, the hazards presented in Cases 1 to 5 and as summarized in Classes 1 and 2, are at once obviated. Experiments made before various underwriters' organizations and elsewhere, have led to the acceptance of the fact that conduit will safely confine two overheated wires, which obviates the danger presented in Class 1. The occurrence of fires from the cause summarized in Class 2, namely, the ignition of foreign inflammable material (1) from the flame of burning insulation and (2) from the flame of an arc, is fully obviated in the facts (1) that combustion (oxidization) cannot exist in a closed tube, and (2) that an arc will burn away the insulation, bringing bare wires into short circuit and throwing the current off the wires through the blowing of the fuse.

The use of two wires in a single tube, therefore, averts the hazards enumerated in Cases 1 to 5 inclusive, which are well established and positive, and presents only the doubtful danger cited in Case 6, which is theoretical. Again, the use of twin wire lessen the hazard from grounding by localizing grounds, owing to the proximity of wires of opposite polarity in a single tube. Furthermore, the carrying out of Rule 22E in its present form increases the cost of conduit installation by from 25 to 75 per cent., varying with the character and size of the building.

The Electric Committee has heartily endorsed and recommended the general use of wireways for rendering concealed wiring permanently accessible because of the extraordinary and perfect facilities afforded therein for universally effecting safe electric wiring. Consistency therewith cannot be attained through the enaction of unnecessary restrictions which vastly enhance the cost of wireway construction and prove effectual in retarding its introduction and general use.

Your permanent committee on Low Potential Inside Wiring, Concealed and in Wireways, therefore, recommends the modification of Rule 22E so as to read as follows:

22. Interior Conduits.

E. Must not be supplied with twin conductors, or two separate conductors, in a single tube, except in ultimate circuits carrying current not in excess of five amperes.

Respectfully submitted,

Geo. P. Low,
Committee.

THE BUILDERS' EXCHANGE BANQUET.

MEMBERS of the Builders' Exchange enjoyed themselves and entertained their friends on the evening of the twenty-fifth of April by a banquet spread in their spacious rooms on Post street.

About three hundred persons sat down to the well filled tables, and comfortably disposed themselves to attack the tempting viands, and applaud to the echo the sentiments that fell from the ready tongues of the orators and the wits, when after many bottles of California's best vintages had been emptied, Chas. C. Terrill, the President of the Association, introduced the toast master, Oscar Lewis, who replied to the toast "Our State and Country."

Architect Geo. W. Percy, in behalf of the members of his profession, gave a sketch of the progress of architecture and building since the early days, and commented hopefully on the downfall of the wooden shams of former times, and the real advancement in the art of building as it exists to-day, where better and more enduring materials are used with better knowledge of their properties and greater skill in their combinations with regard to convenience, durability, use and beauty.

Mr. Terrill in speaking of the "Builders' Exchange and Building Interests" emphasized the fact most strongly that the progress of the building interests kept pace with, and was the best indication of the advancing intelligence and civilivation of the human race. That the degree of progress attained by man through all ages, was truly measured by the fitness of the habitations which he constructed, and the evidence of refinement in the homes which he built, and his hearers were quick to see the natural inference, that the present age is applying the knowledge and experience gained by our forefathers in a manner highly satisfactory to its self-esteem.

Mr. M. J. Donovan, one of the orators of the evening, responded to the toast of "Our City and County," and in eloquent language pictured the future greatness of San Francisco and compared her advantages with those enjoyed by the famous cities of the Old World.

Mr. W. Winnie the President of the Oakland Exchange, replied on behalf of "Our Sister Exchanges" and Jas. E. Britt wittingly described the cordial relations that should always exist between the client, his architect and his builder.

Mr. H. T. Bestor, so long connected with the California Architect and Building News, spoke a few well chosen words on "The Press." and Mr. S. H. Kent responded to the toast of "The Ladies."

The meeting was a practical example of the mutual good fellowship that exists between the members of the Exchange, and the cordial relations it is their aim to foster between themselves and the business world.

In conclusion we trust the California Architect and Building News may witness on future occasions equally as enjoyable reunions that will stretch out and beyond into a long vista of similar events, marking the continued success, and increasing popularity of that thriving association, whose hospitality was so greatly enjoyed—The Builders' Exchange.

INROADS ON THE ART OF ILLUSTRATING.

IN view of the inroads being made by photography and its allies upon the art of illustration, it is quite time to stop long enough to take an account of stock. If we are by an undue patronage of the photographic devices of the time, to discourage that prince of illustrators, the modern wood engraver—and there are even now signs that his vocation is going—the photograph will have much to answer for. There is a mournful side to the fact that the modern illustrated magazine is "marked down." While the world wants cheap pictures, it cannot afford to do without the artist. Of course the people who prepare the half-tone and its kindred for use, would resent the inference, but nevertheless, however valuable and in some ways superior for the purposes of illustrating, these photographic devices may be, they must still remain in the category of scientific inventions and cannot rise to the class of creative art. Despite the fact the photo-mechanical devices have done so much for bringing out the pen-and-ink artists, giving us *fac similies* of his work, wherewe usep to be obliged to take the engraver's

interpretation of it, it is well to keep constantly in mind that this is about the only field where the photographer and his allies have had the best of it, and it was not the proper field for the engraver at any time. The past three decades have brought out a school of artists-engravers on wood, whose achievements may be said to stand at the head of artistic progress for the period, but reports come with painful frequency that these men are drifting into something else for want of employment in their own calling. We are getting in place of their work mainly the "half-tone" and it is none too soon to set seriously about it and make an estimate of what we are losing artistically by the change.—*The Architect, Builder and Decorator.*

THE OWNERSHIP OF DRAWINGS MADE FOR AND BY AN ARCHITECT.

[*Continued from April Number.*]

AN architect's contract with his employer, where the former works on commission, is that the architect will make the usual professional charges, and will be liable to the client for any responsibility incurred by himself or assistants. But the client and his friends understand the matter very differently. They say: "Architect A contracted with friend B to build B a house for £900; yet it has cost £1,200 and ruined B." The architect says that there was not any contract in that case; that the original order was for a £900 house, that his original sketches were for a £900 house; that B, with his family, made additions in size and quality to match what they saw at their neighbor's; that the lowest tender was £1,200, and that B said, "Cut it down as much as possible, but I shall have something more like what I want than you at first designed;" and that, in process of construction, the builder gets orders from B to an amount that fills up the cutting down. Furthermore, our lawyers fall into the verbal trap, and insist on supposing that the architect's contract drawings bind him to the client; on the contrary, the client is bound by them to the builder, and the builder to the client, no variations being usually allowed unless ordered by the architect, or architect and client, in writing. When an architect takes a commission for the erection (I omit the words "the alteration") of a building, he undertakes the production of such a building to the best of his ability, which may improve as the work proceeds. He may write what directions he likes, and so describe his plan as to make a drawing unnecessary (remembering Michael Angelo's celebrated letter to Vasari about the stairs to the Florentine Library); or he may illustrate his letter with diagrams, or his diagrams may be so full as to leave little occasion for writing to it at all. Still his signature constitutes it a letter, for which he is responsible, and which, according to all the text-books on property, belong to the sender, not to the receiver; and, by the way, if a perspective view, highly-colored, be stolen, the value is that of the paper on which it is made.

These diagrams may be a plan, an elevation, a section, a perspective view in free hand or geometrical work; the size of the paper does not affect the fact that they are protected as letters so far that if a piratical publisher sought to print them he would be open to an injunction to leave out all the accompanying explanatory writing. Moreover, the illustrative details in other diagrams, drawn by another person not in the employment of the architect, become the property of the architect as soon as his signature thereto makes him responsible for the directions given thereon.

If the architect be represented as the owner, and the drawings in question have been appended in fact or in schedule to a contract, the thief may say that they are the client's property (it will be impossible to deny that a contract is the client's property), and so escape conviction; on the other hand, if the client be represented as the owner, and the drawings in question never have been appended in fact or in schedule to a contract, the thief may say that they never were the client's property, or at least, that they are the joint property of the architect and client, and so escape conviction. In both these cases it must be observed that the indictment will be framed for stealing the papers (say value 40*s.*), and not for stealing the drawing (say value £4 or £40), by which the property in the papers is proved. Under peculiar circumstances (if known to the thief) a third line of defence might be taken; for he may say that the drawings, having been sent by the architect to the client for transmission to the builder, had become the joint property of the architect and client and so escape conviction.

The subject of the joint property of the architect and client in a drawing is one of the highest importance. An architect's drawings for a work executed upon commission, say of five per cent, appended in fact or in schedule to a contract, have the nature of a written document, and are liable to be stamped accordingly; it will be impossible to deny that the contract is the client's property; the property in the drawings passes, with the implied consent of the architect, entirely to the client, who in the present state of the law of artistic copyright, evidently has the power to sell or lend or publish them, as well as to use them again for another locality. The practice is, of course, reprobated by the profession, which herein cannot help itself.

An architect's drawing for such a work not so appended to the contract, whether made before the contract is signed or at any time subsequently, is an explanation of the subject of the contract, and is as entirely his property, to deal with as he likes, as if it were blank paper, until the moment that it leaves his office with his signature authorizing the execution of the work in the way there shown, at which time it becomes invested with the character of a letter. If any number of copies of such a drawing may have been made in the office, they still remain the property of the architect, even when he has selected the best executed among them for signature for transmission, and he may put them as patterns before his pupils for further copies, or he may publish them. The client has no power to interfere.

Moreover, if the architect chooses to tear up, not only his sketches, but his finished drawings, one after the other, as soon as the works which they show are executed, it might not be prudent, but is clearly within his power to do so. If Sir C. Barry neglected, before his disease, to destroy his papers, that neglect did not transfer his right to burn them to the Government. If a member of the Government had chosen to order Sir C. Barry to deliver up, from time to time, his sketches and drawings, so that they might be officially destroyed, the matter would have been so ludicrous that it could not have been sustained. Official destruction is not so far from official preservation as might be supposed. The Government itself cannot produce all the drawings made by its salaried officials from the fire of London to the Reform Bill.

From the first sketch of the ideas of an architect working on a payment by commission, to the picture representing the extent or intended result made by an artist for the architect, the paper on which those drawings are made remains the property of the architect, not of the client, and can be transferred by the former to any one; and further, the client has no right to select such as he would like to possess, even if he tender the value of the materials and workmanship.—*A paper by the late John W. Papworth, published in the Journal of the Royal Institute of British Architects.*

ROUGH-CASTING IN CANADA.

By Fred. T. Hodgson, Architect.

ROUGH-CASTING, or as it is sometimes called, slap-dashing—both words of which are synonymous with the French *hourdage*, rough work, and *ravalement*, having a similar meaning—is a method of plastering the outside of buildings much used in the northern part of Canada, because of its being durable, cheap and well adapted to keep out cold winds during our long winters. The methods of applying rough-cast and the mixing thereof do not materially differ in this country from the methods adopted in northern Europe or even in the Northwestern States, but it is these minor differences, perhaps, that make the rough-casting done in this country superior, so far as durability is concerned, to much that is done in other parts of the world.

There are frame cottages near the city of Toronto and along the northern shores of Lake Ontario that were plastered and rough-casted exteriorly over forty years ago and the mortar to-day is as good and sound as when first put on, and it looks as though it was good for many years yet if the timbers of the building it preserves remain good. Rough cast buildings are plentiful in every Province in the Dominion from Halifax to Vancouver and from Lake Erie to Hudson Bay, and when well built, and the rough-cast properly mixed and properly applied, the result is always satisfactory. It is quite a common occurrence in Manitoba and the northwest Territories in the winter to find the mercury frozen, yet this intensity of frost does not seem to effect the rough-casting in the least though it will chip bricks, contract and expand timber and render stone as brittle as glass in many cases, and the effect on iron and steel is such as may prove dangerous if exposed to sudden and unexpected strain.

In preparing a frame or log building for rough-casting care must be taken in putting down the foundation. A good stone or brick foundation is of course, the best, but where rough-casting is intended stone or brick foundations are seldomed used, because of their cost, and the builder is compelled to use posts of wood. Here the posts are generally made of white cedar, which has a lasting quality of thirty-five or forty years, if sound when used. The posts are put in the ground from three to five feet, the deeper the better, as they should be deep enough in any case to preven frost from forcing them upward. When a sufficient number of posts have been properly placed a line is struck on them the proper height from the ground and the tops leveled off. The sills are then placed—all joints being broken on top of posts—and the whole made level. These sills and all the other timber, scantlings and lumber should be well seasoned, if possible, for the greatest enemy to the plasterer is unseasoned timber; shrinkage of joists, posts and scantling not only breaks the bond of the mortar, but causes great cracks in corners and angles that no amount of pointing or patching can ever make good.

When the frame is up and the rafters on and well secured the whole of the outside should be covered with good, sound, common inch stock pine, hemlock, spruce or other suitable lumber, dressed to a thickness. If put on diagonally so much the better, but this is not absolutely necessary if the rough-casting is to be of the best quality, as will appear hereafter.

When it can be done it is best to get all partitions set in place and lathed, the roof on and all necessary outside finish or grounds put in place and made ready to receive the lath. The carpenter must prepare his finish or grounds for finish to accommodate the extra lath, as the wall will be thickened accordingly.

For the cheaper sort of rough-casting in one or two coats the following method of lathing is employed: Nail laths on the boarding—over paper or felt, if paper or felt is used—perpendicularly sixteen inches from centre to centre if four-foot laths are used, or eighteen inches or one foot from centre to centre if three-foot lath are used. The whole surface to be rough-casted will require lathing this way. When done lath as is ordinarily done with No. 1 pine lath, breaking joints every fifteen inches. Put five nails in each lath, driving each nail home solid, coat over with mortar, well haired, and that has been made four or more days; smooth and straighten as well as possible with a darby. When done and while yet soft the rough-cast is thrown on it with such force as to drive the pebbles or small stones deep into it. The mixture or dash as it is called, is composed of fine gravel, clean washed from all earthy particles and mixed with pure lime and water till the whole is of a semi-fluid consistancy. This is mixed in a shallow tub or pail and is thrown upon the plastered wall with a wooden float about five or six inches long and as many wide, made of half-inch pine and fitted with a wooden handle. While with this tool the plasterer throws on the rough-cast with his right hand he holds in his left a common whitewash brush, which he dips into the rough-cast and then brushes over the mortar and rough-cast, which gives them, when finished, a regular, uniform color and appearance.

For this sort of work the following proportions will answer: To one barrel of prepared gravel use a quarter barrel of lime putty; mix well before using. This may be colored to suit the taste by using the proper materials, as given further on. It must be understood that the foregoing is the cheapest sort of rough-casting and is not recommended where more durable but more expensive work is required.

The best mode of doing this work as practiced in the lake district of Ontario is about as follows: Have the frame of building prepared as indicated in the foregoing, with partitions all put in and well braced throughout and well secured.

Lath diagonally with No. 1 pine lath, keeping one and a half inches space between the lath. Nail each lath with five nails and break joints every eighteen inches. Over this lath again diagonally in the opposite direction, keeping the same spaee between the lath and breaking joints as before. Careful and solid nailing is required for this layer of lathing, as the permanency of the work depends to some extent on this portion of it being honestly done. The mortar used for the first coat should have a goodly supply of cow's hair mixed in with it and should be made at least four days before using. The operator must see to it that the mortar be well pressed into the key or interstices of the lathing to make it hold good. The face of the work must be well scratched to form a key for the second coat, which must not be put on before the first or *scratch coat* is dry. The mortar for the second coat is made in the same way as that required for the first coat and is applied in a similar manner, with the exception that the scratch coat must be well damped before the second coat is put on in order to keep the second coat moist and soft until the dash or rough-cast is thrown on. The rough-casting is done exactly in the same manner as described for the cheaper sort of rough-cast work.

A building finished in this manner, if the work is well done, possesses many advantages over the ordinary wood covered structure. It is much warmer, being almost air tight so far as the walls are concerned. It is safer, as fire will not eat its way through work of that kind for a long time. It is cleaner, as it will not prove such a harbor for insects. It may be made as handsome as desired, for, before the rough-cast is dashed, it may be laid off in panels of any shape by having strips of battens tacked over the soft mortar, which may be removed after the rough-casting is done and the coloring finished. It is much superior to the so-called brick veneered house, as it is warmer, more exempt from fire and cheaper.

For 100 yards of rough-casting in the manner described the following quantities will be required: 1,800 lath, 12 bushels of lime, 1½ barrels best cow hair, 1¾ yards of sand, ¾ yard of prepared gravel and 16 pounds of hot cut lath

nails, 1¼ inches long. The gravel should be sifted through a half-inch mesh screen, and should be washed before mixing with the lime putty.

To color 100 yards in any of the tints named herewith use the following quantities of ingredients: For a blue-black mix 5 pounds of lamp black in the dash; for buff use 5 pounds of green copperas, to which add 1 pound of fresh cow manure, strain all and mix well with the dash. A fine terra cotta is made by using 15 pounds of metallic oxide, mixed with 5 pounds of green copperas. A dark green color is made by using 5 pounds of green copperas and 4 pounds of lamp black. Many tints of these colors may be obtained by varying the quantities given. The colors obtained by these methods are permanent; they do not fade or change with time or atmospheric variations. Many other colors are used, but few stand like the ones named. A brick color may be obtained by the use of Venetian red and umber mixed in whiskey first and then poured into the dash until the proper tint is obtained. In time, however, like all earthy pigments, these colors fade and have a sickly appearance; they answer better in cements than when incorporated with fat limes.—*Architecture and Building.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SKETCH of a Ranch House is by Clarkson Swain.

A Study for a Public Library is by W. Jones Cuthbertson Architect.

A Residence on Washington street is by Polk & Gamble, Architects.

THE Design accepted for Oahu College, Honolulu, is by Architects Ripley & Reynolds.

NOTES AND COMMENTS.

The most profitable street railway in the world is the Broadway cable in New York, which is now said to be earning fifty cents per car mile, the biggest record ever made by a street railway company. It is understood that it is operated for one third the gross on its very large earnings. The Brooklyn street railway company has downed the elevated road in the city of churches by the introduction of the trolly, and it is now reported to be a serious question as to what will be done with the elevated structure.—*Illustrated Electrical Review.*

One of the smallest offices in New York city is that occupied by an electrical contracting firm in the Havemeger building. The office is four feet wide and eight feet long. But there is not in the arrangement of desks and furniture an inch of waste space. Even the electric radiator which heats it is small and out of the way. It is reported in these lilliputian quarters the firm does a business of $75,000 per year.—*Illustrated Electrical Review.*

[We published last month a communication from a correspondent concerning the fire-proof qualities of concrete, who signs himself "Consistency" in which the writer misquotes from Thaddeus Hyatt's work on "Portland Cement Concrete Combined With Iron as a Building Material." The following letter from Mr. Hyatt explains that the concrete used in the experiment illustrated, was a specially prepared fire resisting concrete, and not the ordinary concrete, which is not fire-proof.—*Editor California Architect.*]

Editor California Architect and Building News:

SIR:—Will you allow me to say a word on a matter just now attracting considerable attention in your region of the world?

An article under the heading "Effect of Fire on Concrete" is, I am informed going the rounds of the Western press *as news;* which I dare say it is to those who have never read a little work on "Portland Cement Concrete Combined with Iron as a Building Material," published by me seventeen years ago in England at an expense of three hundred pounds and more, and likewise distributed by me at the time gratuitously and widely among British and American architects.

The question, is Portland Cement Concrete Fire-proof? is put and answered on pages 12 and 13 of that work, with illustrations, as follows:

"Figure twenty-one represents a sample of concrete made of the best Portland Cement, moulded in brick form; made in the proportion of one cement to two crushed bricks. When one month old it was heated to redness for six hours in a furnace, and when taken out was then partially plunged into water, the end that came in contact with the fluid falling instantly to pieces and disappearing. Similar blocks heated in the same way and left to cool in the open air became disintegrated within periods varying from six to forty-eight hours; the results in all the experiments being uniform as to samples that had been exposed to the same degree of heat, and for the same length of time."

Figure twenty-two represents a similar block made from a New Portland Cement specially prepared to resist fire. This block when heated like the former was plunged bodily into water, and allowed to cool there. With the exception of some fire cracks it appeared to be perfectly sound when taken out."

The illustrations and quotations in your issue of last month in the article over the signature "Consistency" was taken from pages 19, 20 and 21 of that work; and the object of my present writing is not only with reference to the article now going the rounds of the press under the heading, "Effect of Fire on Concrete," but to also add a word of caution and explanation with respect to the quotations and illustrations given by "Consistency" from my work, lest the mistake should be made of supposing that the "slab or floor section, six feet long by two feet wide, and seven and a half inches thick," which formed "the top of the furnace" *was made of ordinary concrete.* It was not ordinary concrete, for my work explains and illustrates by figure 2, that such Portland Cement Concrete is *not* fire-proof. The fire-proof Portland Cement is shown by figure 22; and the concrete slab which formed the top of the furnace that for ten hours stood not only the "glowing red heat" but the crucial test

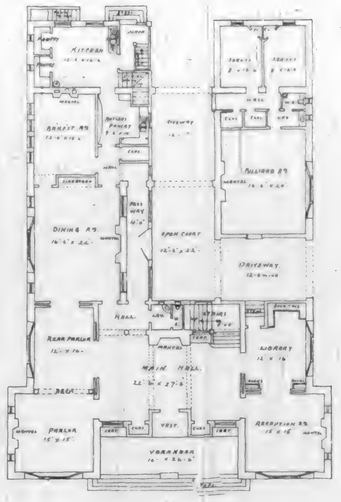
·DR·BOERICKES·HOVSE·ON·WASHINGTON·STREET·SAN·FRANCISCO·

POLK·AND·GAMBLE·ARCHITECTS·

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

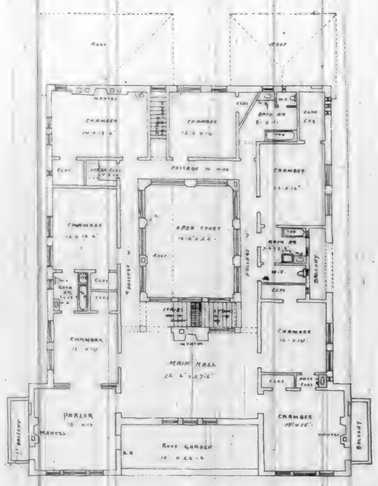
BRITTON & REY PHOTO. LITH.

VOL. XV Nº 5. MAY 1894.

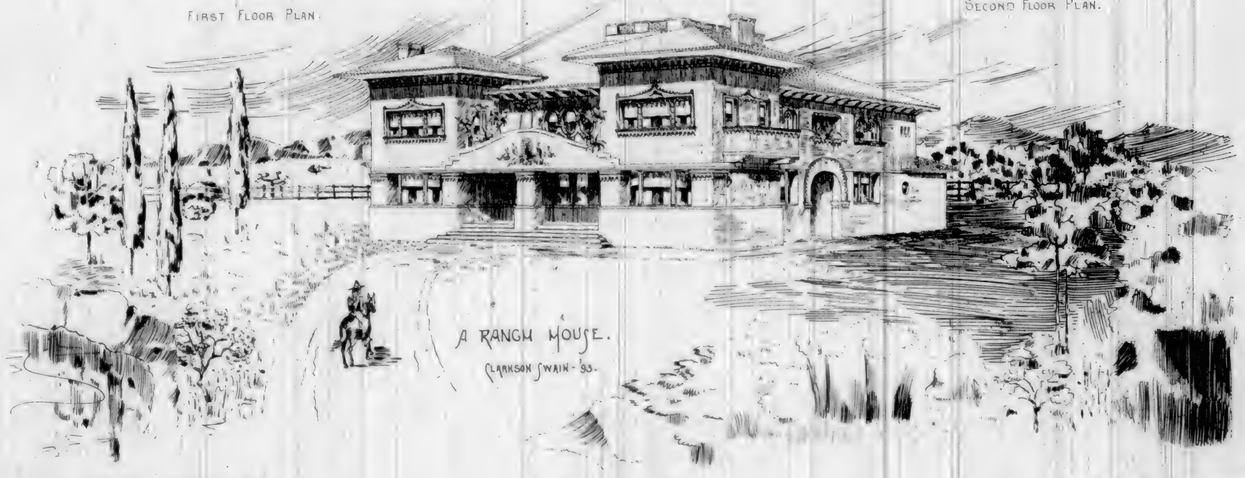


FIRST FLOOR PLAN.

A CORNER IN THE COURT



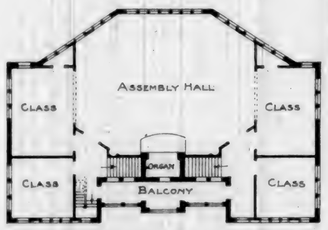
SECOND FLOOR PLAN.



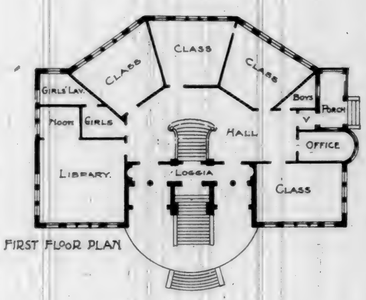
A RANCH HOUSE.

CLARKSON SWAIN - 93.

ACCEPTED
DESIGN FOR
OAHU COLLEGE BUILDING
Honolulu — H.I.
SUBMITTED BY
C. B. Ripley and } ARCHITECTS
Arthur Reynolds }



SECOND FLOOR PLAN



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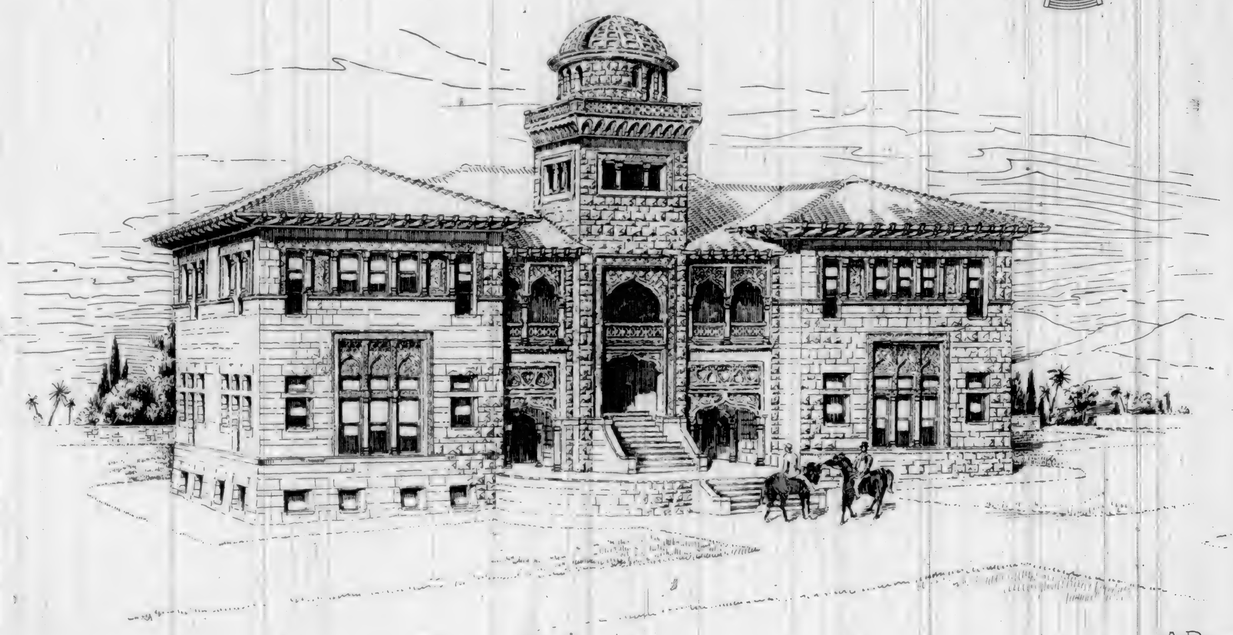
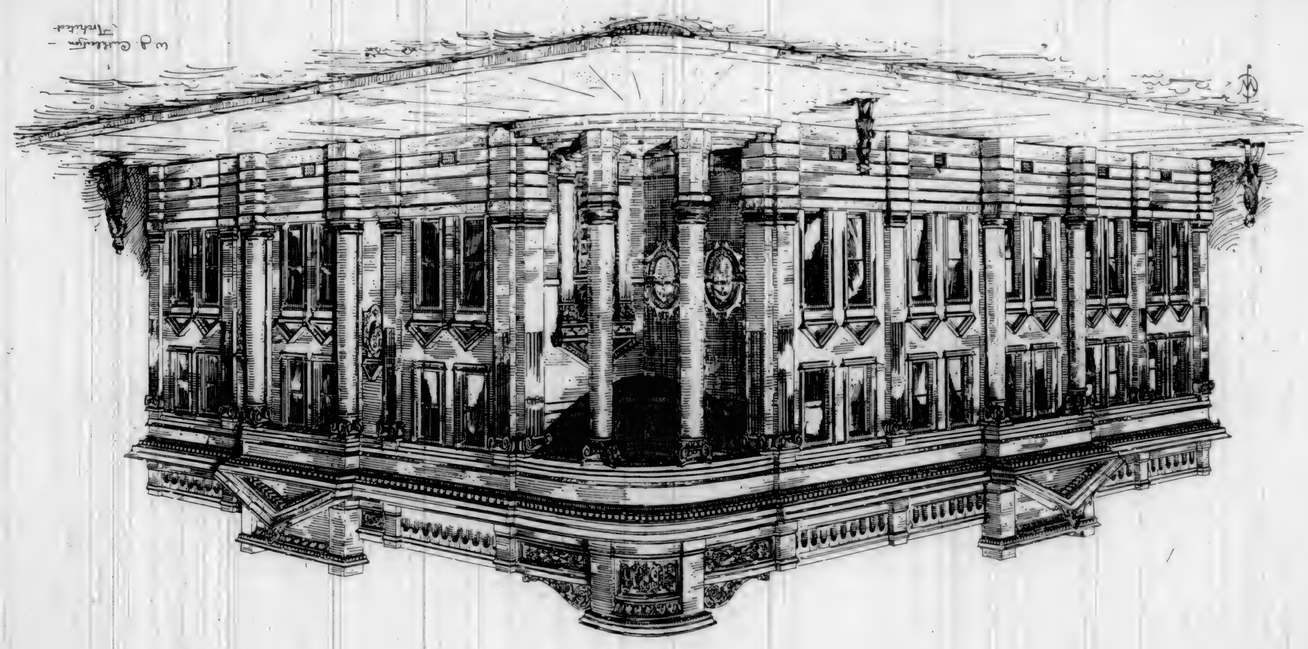


A.R. del.



W. J. Cleveland
Architect.

of the "stream of cold water thrown forcibly against the bottom of the slab for fifteen or twenty minutes" was a concrete made of my (at that time) "New Portland Cement."

THADDEUS HYATT,
73 Henry street,
May 15, 1894. Brooklyn, New York.

To the Editor of The California Architect and Building News:—

It is universally the fate of all new departures from old systems to meet with disparaging and denunciatory opposition, especially from sources that consider their corns trodden upon by the innovation. Long before and ever since the image making craft for the temple of Diana, set up the danger howl when Paul preached the Gospel in Ephesas, changes of old custom, in all departments of human interest, except in womens' dresses and bonnets, have been condemned as fraught with public danger.

After its extraordinary economical and safe use for more than fifty years, as a building material in all the countries of the world, it seems to have been lately discovered in this enterprising city of San Francisco, that Portland cement concrete is not a safe article to be applied for building purposes, especially in foundations. This discovery certainly will be news to the thousands of workmen, architects and engineers who in other places all over Europe, India and America, have employed this material in some of the largest and most important structures which have been erected in the present century, and coming from such an intelligent and influential source as a new San Francisco publication, must cause these unfortunate builders who have thus applied this unreliable composition to regret not having waited for this discovery before they ventured upon its dangerous application at the cost of the millions that have been spent upon it. Even those more ancient builders of centuries before the manufacture of this modern cement and its combinations, who used a much inferior article, if they have any consciousness and interest in their old mundane practice while yet in the spirit world where they are now supposed to be, most reproachfully regret their unadvised risk in adapting their crude conglomerations to the works that still remain as monuments of their imperfect art. Vitruvius, Michael Angelo and other old Italian and Spanish architects and engineers who made extensive use of concretes with natural but inferior cements of trass and puzzuolani, and now superceded by Portland cement, would be astonished to learn what hazards they run in this system of building, and so would be our more modern builders, Smiston, Brinley, Stevenson, Vicat, Pasley, our own countrymen, Baldwin, Col. Sylvanus Thayer and others of their date, as well as those distinguished men now living and who continue the practice, as the French Coignet and the whole of his professional contemporaries all over the world. To these experienced builders it would certainly be a queer intimation that they are guilty of using such a perilous material as concrete exposed as it is to distruction by fire and perhaps other causes as may be discovered in San Francisco.

In apprehension of the direful tendencies of concrete, now just discovered in "three lumps" of it and in a case of bad workmanship, and after the prolonged use of the material for centuries, it would be advisable on the score of humanity to notify these eminent but mistaken builders, to abandon its use and hereafter confine themselves to safer materials. It would also be an act of kindness on the part of those who have made this discovery of the inherent danger of concrete, and the means of warding off some solemn catastrophe, to warn the public, especially in the case of fire near any work wherein it was used, to keep away from it. Particular attention should be directed against such buildings as the Panthion of Rome, whose dome of more than 140 feet in diameter is composed of concrete and has stood over 2000 years, for should a fire occur under it, this unsafe piece of work might "easily crumble" and fall on somebody's head.

The writer has visited magnificent works in European cities in which concrete constituted the entire building from and inclusive of the foundation, to the roof—whole blocks of dwelling houses of six and eight stories; acqueducts of miles in length, railway bridges, monuments, lofty revetment walls and churches wholly of this material even to the surmounting spire and cross. The builders of these works evidently thought themselves well enough assured of the efficiency of the material they used and had the temerity to apply it without waiting to be informed of what might be said about its dangerous tendencies in San Francisco.

OLD CONCRETE USER.

CONCRETE AS A BUILDING MATERIAL.

AN article, said to have first appeared in a California building paper, reflecting severely upon concrete construction for foundations, etc., and as a fire-proof material, has recently been circulated gratuitously among architects and builders on this coast. While it is certainly a matter to excite comment that any reputable building journal should show a disposition to attack concrete construction at this late day, still as a matter of fact the article referred to contains nothing worthy of serious consideration. The writer, to demonstrate that cement concrete cannot be made to resist fire, states that he has taken a few pieces, subjected them to high temperature and immediately submerged them in water, after which they showed a tendency to disintegrate. He might have made the same experiment with pieces of many varieties of well known building stones with exactly tha same or similar results. The very best building stone has been affected by the instant contraction incident to sudden cooling, while the poor qualities have been practically ruined. Lyell has calculated that a mass of sandstone a mile thick raised in temperature to 1000° F. would elevate its upper surface fully fifty feet by expansion. Disintegration must follow sudden contraction. Cement concrete, like stone, is various in quality. The reputation of the best is established. It is a highly valuable building material and is used with satisfaction for foundation work and in almost every position of trust by eminent architects and engineers. Not one but scores of tests have been made of its fire-resisting qualities and the result is that it is being used to-day more than ever before. There is a field for all good materials in building and every improvement should be welcomed.—*The Pacific Builder.*

REMOVAL.—W. J. Cuthbertson has removed his office from St. Ann's building to Room 93, Flood building, corner of Market and Fourth streets, where he will be pleased to see his friends.

MAN (entering dry goods store)—"Is that gentlemen at the desk the head of the house?" CLERK—He is the man that foots the bills.—*Transcript.*

BOOKS AND PERIODICALS.

ANNUAL REPORT of the Board of Regents of the Smithsonian Institution, Washington, 1893. This report as usual contains much of interest not only to the man of science but to the general public, any one who looks at the index, can hardly fail to find some subject referred to and written in such a way as to demand attention. "The Inventors of the Telegraph and Telephone" for instance, will be read with interest by all. The illustration of the "Tibetan Prayer Mill Turned by Water" will, we think, be found more curious than useful at this day.

GOOD ROADS.—An illustrated monthly magazine published by the League of American Wheelmen, Sterling Elliott managing editor, 12 Pearl street, Boston, Mass. This magazine judging by the April number that is before us, is certainly entitled to the credit of working faithfully in the cause it has adapted, and in which all are interested. The illustrations of good roads are very enticing to the reader, and ought to urge every one to become a subscriber, as for the sum of one dollar the magazine is sent for one year.

THE MERCANTILE ADJUSTER published by the Mercantile Adjuster Publishing Co., Times Building, New York. A monthly Legal Directory and Commercial Law Digest. This must prove a very valuable manual to those wishing to have debts collected at a distance, in fact is a law library in its self that one could carry in his pocket.

RICHEY'S GUIDE AND ASSISTANT for carpenters and mechanics. A work of practical information, giving almost every geometrical and practical problem likely to arise in the work of the carpenter, and quick and easy methods for their solution. The use of the steel square, etc., tables showing strength and weight of materials, methods of framing, useful receipts, etc., etc., by H. G. Richey, illustrated by 201 engravings. Address William T. Comstock, 23 Warren street, New York, price $2.00 sent by mail free of postage to any part of the world.

This handy volume contains much information condensed into a small space, will be found useful; while nothing new in this line can be expected after so much has been written upon the subjects treated of, the author has succeeded in giving in a simple way directions that all can understand and freedom from much that often confuse the reader instead of giving him aid in understanding the subject.

DOES ADVERTISING PAY?

A book entitled "How to Get Money," published way back in the 'fifties, contains the following on advertising: "Whatever your occupation or calling may be, if it needs support from the public, advertise it thoroughly and efficiently in some shape or other that will arrest public attention. I freely confess that what success I have had in life may be attributed more to the public press than to nearly all other causes combined. There may possibly be occupations that do not require advertising, but I cannot well conceive what they are. Men in business will sometimes tell you that they have tried advertising and it did not pay. This is only when advertising is done sparingly and grudgingly. Homeopathic doses of advertising will not pay, perhaps; it is like a portion of physic, making the patient sick, but effecting nothing. Administer liberally and the cure will be permanent. Some say they cannot afford to advertise. They mistake; they cannot afford not to adverti e. In this country, where everybody reads the newspapers, it will be seen that these are the cheapest and best media through which persons can speak to the public, where they are to find their customers. Put on the appearance of business and generally the reality will follow. The farmer plants his seed, and while he is sleeping his corn and potatoes are growing. So with advertising. While you are sleeping or eating or conversing with one of your customers, your advertisement is being read by hundreds and thousands of persons who never saw you or heard of your business, and never would, had it not been for your advertisement appearing in the newspapers."—*Free Press.*

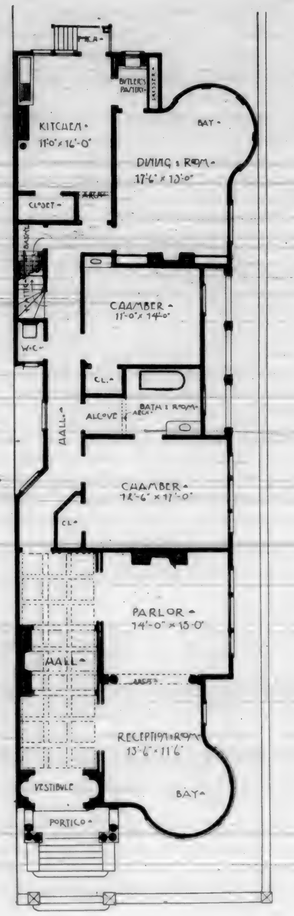
COTTAGE ON FRANKLIN STREET.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. Geo W. Percy, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Geo. W. Dickie, Vice-Pres.
Otto Von Geldern, Sec. W. C. Ralston, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.



FIRST STORY PLAN

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Party Walls.—A party wall is a wall on the division line of estates which each proprietor is at liberty to use as a support to his building. When such a wall stands in part on the land of each it is presumed to be owned by the two, unless the contrary is shown. At the common law no person was under obligation to unite with his neighbor in building a party wall, or even to furnish his proportion of the land for it to stand upon; but an erection might be made a party wall by agreement, and if one person allowed another to make use of his wall for the support of a building, and to continue the use for twenty years, the grant of a right to do so was presumed, and the wall became a party wall by prescription. The inconveniences of the common law rule have been obviated to some extent by statutes which permit a proprietor to build into his neighbor's wall for the support of his own building, provided the wall is sufficient for the purpose, on making payment of the just proportion of the cost. These statutes establish the rule of the civil law. Where a party wall is built by agreement, the strict rule of law requires a deed, but if the agreement was by parol only, the case would be a very strong one for the application of the doctrine of equitable estoppel, and no doubt a dissatisfied proprietor would be enjoined from repudiating the arrangement and interfering with his neighbor's enjoyment of the wall as a party wall afterwards. If one erects a block of houses or shops, and then conveys them separately to purchasers, the walls between them become party walls for the mutual benefit. Where a party wall exists, each proprietor has an easement in the land of the other for its use, repair and support; but the extent of his rights may be limited by the contract between them with respect to the wall, or by the user or by the statute under which it was built or is owned. Rights in party walls pass with the land to heirs or assignees without being specially mentioned in the conveyance. Each proprietor owes to the other the duty to do nothing that shall weaken or endanger it, and though each may rightfully, when he finds it for his interest to do so, increase its height, sink the foundations deeper, or on his own side add to it, yet it seems that in doing so he is insurer against damages to the other proprietor. If the wall becomes ruinous, and ceases to answer the purposes of support, the easement is at an end, and each proprietor may build as he pleases upon his own land without any obligation to accommodate the other. 472.

Validity of Contracts.—It is no doubt the general rule of law that no right of action can spring out of an illegal contract. And the rule that an illegal contract cannot be enforced applies as well to contracts prohibited as to contracts bad in themselves. But it does not necessarily follow that all the consequences attending a contract which is contrary to public morals or founded on an immoral consideration attend and affect a contract prohibited merely. The law, in the former case, will not undertake to relieve parties from the position in which they have placed themselves, or to adjust the equities between them. But in the latter case, while the law will not enforce the prohibited contract, it will take notice of the circumstances, and, if justice and equity require a restoration of money or property received by either party there under, it will, and in many cases has given relief.

Winegard v. Fanning, Supreme Court, General Term, Third Dep't., 27 N. Y. Supp. 566. 153.

Construction of Contract for Party Wall.—Where one being about to erect a building on his lot on the west side of an adjoining lot on which the owner had a three-story building, running back 104 feet, the rear seven feet of the lot being covered with a one-story shed built for wood, on the side toward his lot, made a contract with him providing that the east wall of his building should be erected as a party wall, the cost to be borne by him, the adjoining owner to pay $3000 whenever he should make use of the party wall, and for the support of any building which he might thereafter construct. As his building came to the dividing line of the lots, it was necessary to take down the west wall, to make room for the party wall, and in doing this his building was built into and attached to the party wall. He was not liable for the $3000 till he thereafter constructed a building on his own lot, and he was not liable by reasoning of fastening his front wall into the party wall in making repairs, nor for covering over the wall on the inside of his building with plaster and wainscotting, and on this hanging gas fixtures and coat racks. Nor was the tearing down of the wooden part of the one story shed on the rear seven feet of the lot, and extending the rear brick wall of the shed, and fastening it into the party wall with cement joints, no wall being put between the shed and the party wall, the construction of a building within the contract.

Fox v. Mission School, Supreme Court of Missouri, 25 S. W. Rep. 171. 279.

Construction of Building Contract.—In a building contract, it was stipulated that, in case of the failure or unreasonable delay of the contractor to provide the necessary labor and materials to complete the work by a certain time, in the judgment of two architects named, then the other party to the contract might, after three days notice, provide other labor and materials, and complete the work. The contractor could not lawfully be stopped from proceeding with his work in constructing said buildings, upon the judgment of said architects, where the judgment of one was based solely upon what the other had informed him, and not upon his own examination of the premises and a proper inquiry into the facts constituting such default on the part of the contractor. He was entitled to the benefit of the joint judgment of the architects, based upon a full knowledge by each one of the facts which constituted such default, especially where the examination of the condition of affairs called for a personal examination of them, as a condition precedent for the exercise of the discretion and judgment of each architect.

Benson v. Miller, Supreme Court of Minnesota, 57 N. W. Rep. 943. 188.

TO ARCHITECTS AND BUILDERS.

PLEASE note that Phœnix Pure Paint has been purchased by W. P. Fuller & Co., who will continue its manufacture in connection with their own Manufacturing Department, under my personal supervision. Its high grade and absolute purity will be fully maintained. It will be my aim to make it as it always has been, the purest, best and safest paint to specify.

I thank you for your cordial support in the past, and hope to merit its continuance. Respectfully yours,

L. H. Butcher,

Formerly of The Phœnix White Lead and Color Works.

A CURIOUS QUESTION.

A curious question has come up in New York, says the *American Architect*. Mr. Elbridge T. Gerry, who is well known as a yachtsman, is having a building on Maiden Lane, belonging to his wife, painted a bright orange color. It happens that Maiden Lane is mostly occupied by jewellers, and some of these, who have windows opposite Mrs. Gerry's building, find that, when the sun falls on its orange-colored paint, the reflected rays affect the color of the white diamonds displayed in their windows, making them look yellow, and apparently, destroying a great part of their value, as a yellowish diamond is worth only a small fraction of the value of a pure white stone. The jewellers whose property is thus affected met the other day, and civilly requested Mr. Gerry to allow his building to be painted of a different color, offering to pay the whole expense themselves. This request Mr. Gerry is reported to have refused, saying that he once painted another building of his, on Broadway, of a bright red color, and that the neighbors objected, but afterwards became reconciled to it. Mr. Gerry has the reputation of being a fair-minded and amiable man, and it ought not to be necessary to point out to him that a diamond merchant, to whom it is essential to be able to judge the color of stones correctly, could hardly carry on business in a glare of orange-colored light, however it might be with clothiers on Broadway. If the buildings opposite the flame-colored front were tenanted by artists, Mr. Gerry might count with confidence on seeing them pack up their goods and move away before his decoration was even finished, and there must be some limit to the right of a man to destroy his neighbors' business by his whims. He would probably not be pleased if the jewellers, unable to carry on their own business, should sublet their buildings to copper-smiths and soap-makers, yet their right to do so would be much less questionable than his right to indulge an extraordinary freak at their expense.

BUSINESS MOSAICS.

Joseph Budde will be found to be well represented in his line of sanitary appliances; every thing relating to good plumbing, including the various new designs will be seen in this exhibit. In fact it will almost tempt one to build a house in order to be able to fix it up with such closets as are here presented to view.

If you do not go to the fair, remember the number of Mr. Budde's factory and show rooms, 575 Mission street, San Francisco, Cal.

Conductor—"No smoking allowed." Irishman—"I'm not smokin'." Conductor—"Well, you have your pipe in your mouth." Irishman—"Sure I have my feet in my shoes but I'm not walking."

As the march of improvement goes marching on, our houses which at one time we only thought a shelter from storms, now demand attention to ornamental decoration and glass staining and decoration, and glass staining and embossing works come to the front. What can be more delicate in the way of ornament than a shelf of art glass in your favorite room. Now all these wants are supplied by Mr. John Mallon's Pacific Glass Staining and Embossing Works. Call and see the endless variety that can be furnished by Mr. Mallon at 19 Fremont street and 1213 and 1215 Howard street, San Francisco, Cal.

Caller—"One of your sons is a minister and the other a physician, aren't they?" Mother (proudly)—"Yes; one preaches and the other practices."—*Detroit Free Press.*

Paraffine Paint Company are the only manufacturers of P. & B. Building Papers, Water-proof and Odorless; 500,000 square feet on the Midwinter Fair buildings were used as roofing. Anything in their line will be found at 116 Battery street where fair treatment and prompt delivery of orders make it a pleasure to do business with the firm. See their advertisement on page V in this journal.

As the merits of Fitzgerald Prepared Wall Plaster becomes known, the demand increases, nothing is a better assurance of a good thing, than the constant increase of its use; if you are in doubt where to go when you want your walls well plastered, call on the Pacific Patent Plaster Co., 216 Bush street, examine what they have to show, hear what they have to say and thus remove any doubt you may have on the subject.

Elder Sister—"Come, Clarence, take your powder like a man. You never hear me making any complaints about such a little thing as that." Clarence—"Neither would I if I could daub it on my face; it's swallerin' it that I object to."—*Life.*

The Bostwick Steel Lath Co. warns all persons from buying, selling or using the Turnbull & Cullerton Metal Lath, recently put on the market as an imitation of their old and unrivaled Lath; their notice of suit entered under their several patents covering their Lath and the machinery for making the same, and their guarantee to their customers against actions for infringements.

Penmen—"I'm getting out a book to be called 'First Aid for the Injured.' Tell me, what is the best thing to do when a bather has been in the water too long?" Old Salt—"Send for the Coroner."—*Spare Moments.*

San Francisco Novelty and Plating Works, manufacturers of artistic metal work for bank, office, show window fixtures, elevator enclosures, cages, railing, etc., we have only to enter any of the lately finished bank buildings, to notice the great strides in this stile of work that has been within a short time. Gold, silver and nickel plating is no small part of the business of this firm, as well as the supply of gas and electric fixtures. Office First and Mission streets, San Francisco.

Gold, silver and nickel plating.—Every description of metal goods plated, at the old stand of the San Francisco Plating Works, 653 and 655 Mission street. E. G. Denniston the proprietor of these works has for so many years been at the old stand, and the work he has so faithfully executed, that he needs no notice to call the attention of old friends—but as new arrivals may not be so well posted where they can have work well done, we venture to call attention to his advertisement on page iii of this journal.

Mrs. Chatter—"Do you believe that cures can be effected by the laying on of hands?" Mrs. Clatter—"Most certainly. I cured by boy of smoking in that way."—*Spare Moments.*

Dixon's Graphite Cycle Lubricant.—The Joseph Dixon Crucible Co., Jersey City, N. J., are putting a Cycle Chain Graphite on the market, which for purity of graphite and usefulness is vastly superior to anything of the kind heretofore prepared. The graphite is not only of the choicest stock, but is ground to an impalpable powder, and then reground with a high grade of lubricating oil. This material, when applied to the chain of a bicycle, penetrates the bearings and thoroughly lubricates and protects them from wear and rust.

The Dixon Company will shortly put the same material on the market in the form of a solid stick, for the convenience of wheelmen who wish to carry it in their tool bags.

"Here," said the farmer, "just split up some of that railroad timber and I'll give you a good meal." "Alas! I cannot," said the tramp; "the greater part of my life has been passed walking on such as those. It is too much like breaking up home ties."—*Puck.*

The Pacific Coast Door Co.—This is an incorporated company, office 808 Bryant street near Fifth, San Francisco, for the manufacture of doors, windows and blinds, a complete apartment of stock doors and windows, as well as sash weights and cord always on hand. Any kind of door will be made to order and estimates made for special work, T. A. Pettus, Superintendent.

We call the attention of our readers to the advertisement on the last page of this issue, of Phœnix Pure Paint. Phœnix Pure Paint has been largely used by the architects of the Pacific Coast for the last few years, and has proven itself a very meritorious article. As it is sold under a guarantee of absolute purity, architects find that where they specify it to be brought on a contract, in original unbroken packages, it saves them a great deal of trouble in watching their paint materials. Being a combination of strictly pure Lead, Zinc and Linseed Oil, it seem to be about as perfect a paint as can possibly be made. The manufacturers of this paint have demonstrated that it is possible to produce not only as good paint on the Pacific Coast as is made in the United States, but even a better article. Wherever Phœnix Pure Paint has been used it has proven itself to be of the highest possible grade, and we commend it to our readers as a perfectly safe paint.

"Er—has young Hifli come into his money yet?" "Come into it?" Great Scott, man! He's gone clear through it."—*Buffalo Currier.*

San Francisco Slate Co., rooms 4 and 5, 10th floor, Mills Building. The quarries of this company have a capacity of three thousand squares per month, are situated in El Dorado county in this state, the quality is every thing that can be desired, while the prices are the cheapest—what more can be asked for. Therefore if you want slate either for roofing or for vaults you will know where to go for a first rate article at a fair price. In our volume for 1893 you will find an illustrated article upon these slate quarries that is well worth refering to by those interested in this subject.

He—"Is that a love story you are reading?" She—"No; all the people in it are married."—*Chicago Inter-Ocean.*

The Vulcan Iron Works, 135 and 145 Fremont street, should be visited if you wish to get an idea what you can find in the way of architectural and ornamental iron works. Those about to furnish or remodel their stables should not go however, unless they wanted to be induced to order new fixtures all round as the temptation to do so will be great.

CITY BUILDING NEWS.

Belvedere near Waller. To build; owner, S. L. Strickland; architect, W. H. Lillie; contractor, F. G. Kronnick; signed, April 12; filed, April 16; cost $3100.

Broadway near Hyde. Raising and altering; owner, Ellen Roward; architect, A. L. Roward; contractor, H. Behrens; signed, April 6; filed, April 7; cost $1700.

Bush near Scott. To build; owner, Mrs. Anna C. Tietjen; architect E. Kollofrath; contractor, Wm. Louden; signed, April 14; filed, April 16; cost $3736.

Buchanan and Beach. Bulkhead and foundations; owner, S. F. Gas Co.; contractors, S. F. Bridge Co.; signed, April 25; filed, April 25.

Capp near Adair. Two flats; owner, D. B. Beaver; contractor, T. C. Cochran; signed, April 9; filed, April 9; cost $4038.

Clayton near Oak. To build; owner, J. F. English; architect, J. B. Hall; contractor, J. J. Dunn; signed, April 10; filed, April 28; cost $4900.

Clarendon Heights, Excavation; owner, Spring Valley Water Works; contractor, A. E. Buckman; signed, April 27; filed, May 3.

Connecticut and Napa. To build; owner, H. Lilienthal; contractor, H. Munster; signed, April 10; filed, May 2; cost $2325.

Dupont near Green. To build; owner, E. C. Palmetre, et al.; contractor, G. Massoletti; signed, April 18; filed, April 17; cost $3675.

Eddy near Laguna. To build; owner, Jno. Ross; architect, R. H. White; contractor, Jas. Campbell; signed, April 10; filed, April 12; cost $4,245.

Eighteenth and Shotwell. Alterations to St. Charles Church; owner, Rev. P. J. Cummins; architect, C. J. I. Devlin; contractor, Dan Powers; signed, April 14; filed, April 16; cost $4100.

Fillmore near Jackson. Mill work on two four-story frames; owner, Sarah Kahn; architect, E. A. Hermann; contractors, Pacific Coast Lumber Co.; signed, May 4; filed, May 8; cost $1642.

Fillmore near Jackson. To build; owner, Sarah Kahn; architect, E. A. Herman; contractor, M. J. Gallager; signed, April 7; filed, April 9; cost $4570.

Fillmore near Clay. A livery stable; owner, Gertrude S. Bowers; architects, Percy & Hamilton; signed, April 19; filed, April 20; cost $17,760.

Fillmore near Washington. To build; owner, Mrs. T. Meyer; contractor, G. G. Gillespie; signed, May 9; filed, May 9; cost $3000.

Filbert street. All work plumbing excepted; owner, Henry Beck; contractor, F. Hansen; signed, April 23; filed, April 23; $3200.

Filbert and Webster. To build; owner, Richard Malon; architect, W. O. Banks; contractor, Geo. H. Walker; signed, April 30; filed, May 3; cost $5700.

Florida near 22d. Foundation floors and roofing; owner, Jno. McAdams; contractor, H. P. Conrady; signed, May 1; filed, May 3; cost $2350.

Folsom near Pacific Ave. A school building; owner, P. Leo Bruener; architect, R. A. Van de Parert; contractor, R. Frost; signed, April 20; filed, April 24; cost $3,704.

Fremont near Market. Alterations, etc.; owner, H. Huntington Co.; architect, Wright & Sanders; contractors, Robenson & Gillespie; signed, April 10; filed, April 11; cost $4273.

Golden Gate near Pierce. Alterations; owner, H. Bingham; architect, R. H. White; days work; cost $4000.

Golden Gate Ave. near Baker. To build; owner, R. G. Wenzel; architect, E. J. Vogel; contractor, Robt. Currie; signed, April 14; filed, April 14; cost $3800.

Golden Gate Ave. near Octavia. Plastering; owner, Wm. John; architect, Emil John; contractor, C. Dunlap; signed, April 27; filed, May 1; cost $1150.

Golden Gate Ave. near Octavia. Plumbing; owner, Wm. John; architect, Emil John; contractor, Ickelheimer & Co.; signed, April 27; filed, May 1; cost $2783.

Golden Gate Ave. and Broderick. Raising and additions; owner, Kate Oliver; architect, T. J. Welsh; contractor, H. Jacks; signed, April 27; filed, May 2; cost $3987.

Haight near Broderick. Brick two-story frame; owner, Jas. C. Malon; architects, Shea & Shea; contractors, M. Fennell & Son; signed, April 11; filed, April 16; cost $1196.

Haight near Broderick. Plumbing; owner, Jas. C. Malon; architects, Shea & Shea; contractor, P. F. Ward; signed, April 11; filed, April 16; cost $1070.

Haight near Broderick. Carpenter work, tin and plastering; owner, Jas. C. Malon; architects, Shea & Shea; contractor, P. Griffin; signed, April 11; filed, April 16; cost $8945.

Harrison near Third. Alteration; owner, H. Goldstein; architect, W. H. Armitage; contractor, T. C. Cochran; signed, April 2; filed, April 8; cost $5100.

Howard near 11th. To build; owner, P. J. Stolz; architects, Martens & Coffey; contractor, Jno. Foster; signed, April 18; filed, April 20; cost $5700.

Kissling near 11th. Brick work; owner, Verein Eintracht; architects, Martens & Coffey; contractor, J. Magner; signed, April 16; filed, April 21; cost $1723.

Kissling near 11th. Carpenter work and iron; owner, Verein Eintracht; architects, Martens & Coffee; contractor, H. Behrens; signed, April 16; filed, April 21; cost $19,000.

Kissling near 11th. Painting; owner, Verein Eintracht; architects, Martens & Coffey; contractor, J. C. Derbsom; signed, April 16; filed, April 21; cost $1550.

Kissling near 11th. Tin and iron work; owner, Verein Eintracht; architects, Martens & Coffey; contractor, J. D. Gear; signed, April 16; filed, April 27; cost $1879.

Kissling near 11th. Plastering; owner, Verein Eintracht; architects, Martens & Coffey; contractors, H. L. Holgoth; signed, April 16; filed, April 27; cost $1945.

Kissling near 11. Plumbing, etc.; owner, Verein Eintracht; architects, Martens & Coffey; contractor, C. Rehn; signed, April 16; filed, April 27; cost $2193.

Leavenworth near Eddy. Raising and alterations; owner, Franz Acker; contractor, S. T. Crawford; signed, April 12; filed, April 12; cost $2270.

Leavenworth street. Carpenter work, plastering and painting; owner, L. A. Phelps; architects, Townsend & Wyneken; contractor, L. N. Fletcher; signed, April 16; filed, April 20; cost $2985.

Laurel Hill Cemetery. A vault; owner, Henry Williams; contractor, D. T. Pierce; cost $2600.

Liberty near Valencia. To build; owner, G. B. Clifford; architect, R. H. White; contractor, W. W. Fancher; signed, April 19; filed, April 20; cost $4000.

Lombard and Leavenworth. Alterations, etc.; owner, J. S. Hand; architect, H. D. Mitchell; contractor, M. P. Power; signed, April 20; filed, April 23; cost $1985.

Market near 6th. Brick, granite, iron work; owner, F. Gatzkow; architect, E. Kollofrath; contractors, Richardson & Gale; signed, April 17; filed, April 18; cost $27,700.

Market near 6th. Plastering; owner, F. Gutzknow; architect, E. Kollofrath; contractor, W. C. Watson; signed, April 17; filed, April 18; cost $3815.

Market near 6th. Carpenter work; owner, F. Gutzkow; architect, E. Kollofrath; contractor, Adam Miller; signed, April 17; filed, April 18; cost $30,650.

Market near 6th. Concrete to six-story brick; owner, F. Gutzkow; architect, E. Kollofrath; contractor, Geo. Goodman; signed, April 18; filed, April 18; cost $ 470.

Market near 6th. Artificial stone; owner, F. Gutzkow; architect, E. Kollofrath; contractor, Geo. Goodman; signed, April 18; filed, April 18; cost $1294.

Market near 6th. Painting; owner, F. Gutzkow; architect, E. Kollofrath; contractor, H. F. Wagner; signed, April 17; filed, April 18; cost $1400.

Market near 6th. Plumbing; owner, F. Gutzkow; architect, E. Kollofrath; contractor, R. A. Vance; signed, April 18; filed, April 19; cost $4990.

Market near 6th. Sandstone for a six-story brick; owner, F. Gutzkow; architect, E. Kollofrath; contractor, D. Kilpatrick; signed, April 28; filed, April 28; cost $7300.

Market near Post. Marble work; owner, Est. W. S. Hobarl; architects, Percy & Hamilton; contractors, Inyo Marble Co.; signed, April 25; filed, April 26; cost $11,804.

Market near Post. All heating work; owners, Ex. Est. W. S. Hobart; architects, Percy & Hamilton, contractor, W. W. Montague & Co.; signed, April 10; filed, April 13; cost $2720.

Market near Post. Plumbing; owner, Ex. Est. W. S. Hobart; architects, Percy & Hamilton; contractor, W. F. Wilson; signed, April 10; filed, April 13; cost $9765.

Market near Post. Carpenter work; owner, Ex. Est. W. S. Hobart; architects, Percy & Hamilton; contractor, R. Smille; signed, April 10; filed, April 13; cost $14,100.

Market near Post. Iron work; owner, Ex. Est. W. H. Hobart; architects, Percy & Hamilton; contractors, Dyer Bros.; signed, May 7; filed, May 9; cost $2676.

Market near Octavia. To build; owner, Mrs. Carrie Fallon; architect, E. D Govarich; contractor, Tim Williams; signed, April 9; filed, April 9; cost $7000.

Mission near 4th. To build; owner, Jos. Westall; architect, C. H. Wilson; contractor, R. Boyd; signed, April 7; filed, April 12; cost $16,500.

Minerva near Plymouth. To build; owner, Louis F. Messler; contractor, D. V. Devel; cost $1000.

Mission near Tingley; To build; owner, G. Risto; contractor, G. Ratto; signed, April 18; filed, April 19; cost $1200.

Minna near 7th. To build; Thomas Molloy and wife; architect, C. J. I. Devlin; contractor, R. Van Parent; signed, April 16; filed, April 24; cost $1995.

Montgomery street, no. 427. Alterations, etc.; owner, Emma Egan; architect, J. B. Whittemore; contractors, Brodee & Hickox; signed, April 27; filed, May 2; cost $2100.

Nineteenth and Guerrero. Carpenter work; owner, Mrs. Emma Lolar; architect, H. Geilfuss; contractors, Schutte & Krecker; signed, April 11; filed, April 12; cost $15,275.

Nineteenth and Guerrero. Painting; owner, Mrs. Emma Lolar; architect, H. Geilfuss; contractor, F. Wagner; signed, April 10; filed, April 12; cost $2223.

Nineteenth and Guerrero. Brickwork; owner, Mrs. Emma Lolar; architect, H. Geilfuss; contractor, Jas. O'Sullivan; signed, April 10; filed, April 10; cost $2333.

Nineteenth and Guerrero. Plastering; owner, Mrs. Emma Lolar; architect, H. Geilfuss; contractor, Arthur O'Brien; signed, April 10; filed, April 12; cost $2293.

Nineteenth and Guerrero. Plumbing; owner, Mrs. Emma Lolar; architect, H. Geilfuss; contractor, H. Williams; signed, April 10; filed, April 12; cost $2784.

Oak near Scott. To build; owner, Mary A. Rollins; contractor, Wm. Plant; signed, April 20; filed, April 23; cost $3310.

Pacific Ave. and Devisadero. Carpenter work; owner, C. L. Ellinwood; architects, Smith & Freeman; contractor, R. M. Murray; signed, April 10; filed, April 16; cost $13,110.

Pacific Ave. and Devisadero. Plastering; owner, C. N. Ellinwood; architects, Smith & Freeman; contractor, Alex. Mennie; signed, April 10; filed, April 16; cost $1097.

Pacific Ave. and Devisadero. Mason work; owner, C. N. Ellenwood; architects, Smith & Freeman; contractor, S. B. Cushing; signed, April 10; filed, April 16; cost $4475.

Pacific Ave. and Devisadero. Plumbing; owner, C. N. Ellinwood; architects, Smith & Freeman; contractor, R. Rice; signed, April 10; filed, April 16; cost $5183.

Pacific Ave. and Devisadero. Painting; owner, C. N. Ellinwood; architects, Smith & Freeman; contractor, W. S. Udham; signed, April 10; filed, April 16; cost $1040.

Pacific Ave. 2118. Moving and alterations; owner, Asa Wells; architect, J. N. Newsom; contractor, R. Ringrose; signed, April 15; filed, April 19; cost $1150.

Pacific Ave. near Broderick. Painting school house; owner, Board of Education; architect, C. J. Haven; contractor, C. H. Anderson; signed, April 20; filed, April 23; cost $210.

Pacific Ave. Alterations, etc.; owner, Wm. Thomas; architects, Smith & Freeman; contractors, Ingerson & Gore; signed, April 24; filed, April 24; cost $3200

Page near Lyon. To build; owner, C. Dorgeich, contractor, Jos. Kemp; signed, April 24; filed, May 1; cost $3680.

Post and Montgomery. Alterations and additions; owners, Masonic Hall Assn.; architects, Kenitzer & Barth; contractor, A. L. Sanborn; signed, May 5; filed, May 9; cost $1985.

Post near Devisadero. Cement bulkheads; owner, H. A. Rosenbaum; architect, M. J. Lyon; contractors, P. M. Ward & Co.; signed, April 6; filed, April 9; cost $1900.

Pine near Front. Brick work; owner, Kate C. Kirkham; architect, C. Geddes: contractor, G. R. Long; signed, April 6; filed, April 11; cost $2650.

Pierce and Golden Gate. To build; owner, Nellie V. Bingham; architect, R. H. White; contractors, White Bros.; signed, April 12; filed, April 14; cost $3278.

Pierce near Greenwich. To build; owner, Fred Haussler; architect, H. Geilfuss; contractor, W. H. Bush; signed, April 26; filed, April 27; cost $3290.

Seymour Ave. near Turk. To build; owner, Jacob Schmidt; architect, A. C. Lutgens; contractor, Chas. Koenig; signed, April 31; filed, May 2; cost $4125.

Sutter near Grant Ave. Alterations and additions; owner, Alice P. Sullivan; contractors, Ingerson & Gore; signed, May 6; filed, May 8; cost $2915.

Tenth Ave. and Point Lobos. Extra brick work; owner, Wm. Danrowe; architect, H. Geilfuss; contractors, Flood & Watson; signed, April 5; filed, April 7; cost $1180.

Twentieth near Capp. To build; owner, Jno Reid; contractor, J. T. Grant; signed, April 16; filed, April 27; cost $6938.

Twentieth near Guerrero. To build; owner, J. T. Adcock; contractor, Adam Miller; signed, April 10; filed, April 28; cost $4850.

Twenty-first and Alabama. To build; owner, Patrick McKaon; architect, T. J. Welsh; contractor, C. Douglass; signed, April 24; filed, April 28; cost $3725.

Twenty-second near Fulton. To build; owner, Mrs. M. Morton; architect, M. J. Welsh; contractors, Brennan Bros.; signed, April 11; filed, April 12; cost $1774.

Twenty-fourth near Folsom. Additions to house; owner, Margt. McGrath; architect, D. V. Duel; contractor, Chas. Fish; signed, April 13; filed, April 19; cost $1200.

Vulcan Lane and Vallejo. To build; owner, T. E. Pierran; architect, C. M. Rousseau; contractors, R. Doyle & Son; signed, May 9; filed, May 9; cost $8949.

Washington near Broderick. Repairs to building; owner, Mrs. C. D. McLean; architect, C. Geddes; contractor, Jas. Mix; signed, April 26; filed, April 24; cost $1485.

Webster and Germania. To build; owner, Fredrick Huber; architect, Wm. Schrof; contractor, Henry Weiss; signed, May 9; filed, May 9; cost $3930.

Zoe near Bryan. To build; owner, Timothy and Mary McAuliff; architect, T. J. Welsh; contractor, A. Fisher; signed, April? - filed, May 8; cost $2667.

The California Architect and Building News.

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ESTABLISHED 1879. - - - - INCORPORATED 1889

NOW IN THE FIFTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

IN the last twenty-five years the American Institute of Architects and members of the profession who do not belong to that body, together with many others who are deeply interested, have been trying to bring about a reform in the method of designing and constructing buildings for the United States Government, but the efforts of a quarter of a century have failed, and although the Institute has labored long and earnestly, and has faithfully and persistently exerted every means of persuasion in its power, to convince Congress and the public, of the truth of its arguments, and justice of the stand the profession has taken in this matter, yet the goal is apparently no nearer than it was at the commencement of the crusade, and this unfortunate condition of affairs is the more discouraging, as success seemed at one time already certain.

But although the Honorable Secretary of the Treasury remains wedded to the present system and thinks the machine made designs turned out under his supervision, to be the best that architecture can accomplish, and all the public should require, yet the Institute has bravely resolved to again take up the fight, and convince the public and its law-makers, that the public buildings of this country should be designed by the best professional talent in the land, working under the stimulating effects of ambition and emulation, instead of by draftsmen at a nominal salary.

The following is a statement of some of the existing facts concerning this matter presented in a circular prepared by the Secretary of the American Institute of Architects, and which will be of interest to the tax-payer as well as to the patriotic citizen, who desires to think with pride, and not with shame, of the architectural monuments of his native land:

OFFICE OF THE SECRETARY OF THE AMERICAN INSTITUTE OF ARCHITECTS.

Providence, May 21, 1894.

THE ABUSES TO BE REFORMED.

1st. The needless cost of the public buildings.

2d. The needless cost of architectural service.

The authority for the figures quoted below is Mr. Glenn Brown's article in the *American Architect* of April 7th, 1894, entitled "Government Buildings Compared With Private Buildings."

Mr. Brown's statistics show the actual cost of a large number of government and private buildings, which he compares with each other, class by class.

COST OF BUILDINGS.

These statistics prove that the United States Government Buildings cost sixty-seven per cent more per cubic foot than private ones of similar construction, finish and size.

COST OF ARCHITECTURAL SERVICE.

Private "architectural service" covers the following:

Preliminary sketches, which include competitive drawings.
The final designs of every sort.
The working drawings, details and specifications.
All necessary reproductions of drawings.
All services of mechanical, sanitary, heating, electrical and constructional engineers, together with the draftsmanship, details and reports, necessary to carry out their ideas.
All paper, stationery, book-keeping, estimating and rendering of accounts, making of certificates, etc., etc.
All preliminary and final adjustments.

For the above services the regular fee is five per cent on the total cost of the building. To this should be added the sum of one per cent, estimated on the cost of the building for travelling expenses, in case there are any, and for clerk-of-the-works, both of which are usually paid for by the owners themselves.

The cost, therefore, of complete private architectural service, including the clerk-of-the-works and travelling expenses, amounts to six per cent.

Mr. Glenn Brown's statistics, taken from the actual cost of a large number of *separate structures*, shows that *the government expends* for the same architectural service, as listed above, *over nine per cent* (9 per cent).*

COMPARISONS.

Cost of architectural service, public buildings	9 per cent
Cost of architectural service, private buildings	6 per cent
Excess of cost of government over private architectural service	50 per cent

But this last comparison is made as if the government and private buildings cost the same per cubic foot, which, however, is not the case, as the government buildings cost on an average sixty-seven per cent more than private buildings. The true comparison, therefore, on a basis of the same cost per cubic foot for private and public buildings is:

Architectural service, public buildings,	15 per cent
Architectural service, private buildings	6 per cent
Excess of cost of government over private architectural service	150 per cent

NOTE.

It is stated by Actiug Secretary of the Treasury Curtis, in House of Representatives, 53d Congress, 2d Session, Ex. Doc. No. 179, which was recently sent to the speaker of the House of Representatives, that;

"It appears from the schedule of fees customarily charged by architects that the expense of preparing plans, drawings, and specifications and administration under the act might be greater than at present, but how much cannot be satisfactorily determined until a definite and detailed scheme is prepared for its development."

Does the Acting Secretary mean that the extravagant system now in vogue in the office of the Supervising Architect of the Treasury Department must be retained, and that to the total percentage must be *added*, that paid to outside architects, should they be employed to make designs? If so, one of the main purposes of any new legislation, so far as the architects are concerned, should be cut off this frightful extravagance in the office of the Supervising Architect in order that the government may have its work done at the same price that individuals pay, and by means of a service more able, expert and satisfactory.

It is this very matter of enormous expense that we are striking at.

The government can have its work done as cheaply as anyone else, provided a mandatory law be passed, insuring the employment of the expert architects of the country.*

THE ARCHITECTURAL RESULTS.

This point needs no argument:—That after spending fifty per cent more for a given building, and one hundred and fifty per cent more for full professional services than there is need of doing, and after taking from twice to ten times as long to finish the structure, the result is inferior. The government buildings obtrude themselves upon us; are inferior not only to the *best* contemporary private structures, but to the *average* ones; few, if any, are well planned, and all are more or lest offensive in appearance.

We wish to stop this great waste of the people's money, and to prevent the erection of any more structnres which shall debase public taste.

*"Civis" (Adolf Cluss, who from service in the office of the supervising architect knows whereof he affirms) in a paper on this subject printed in 1889, says that the architectural service rend red cost the Government more than 118-10 per cent.

LETTER FROM THE ACTING SECRETARY OF THE TREASURY.

* * * IN REPONSE TO HOUSE RESOLUTION ADOPTED MARCH 16, 1894, RELATIVE TO PLANS AND SPECIFICATIONS FOR PUBLIC BUILDINGS.

TREASURY DEPARTMENT, OFFICE OF THE SECRETARY,
Washington, D. C., March 31, 1894.

SIR:—In response to a resolution adopted by the House of Representatives March 16, 1894, requesting the Secretary of the Treasury to inform the House of Representatives what measures, if any, had been taken by him under the act entitled "An act authorizing the Secretary of the Treasury to obtain plans and specifications for public buildings, etc.," approved February 20, 1893, and to inform the House what, if any further legislation is in his opinion necessary to carry out the provisions of the said law, I have the honor to make the following statement:

Early in March, 1893, the subject-matter of the act in question was brought to the attention of the Secretary of the Treasury by several members of the American Institute of Architects, and at their suggestion a conference was held on the twenty-second of March, 1893, at which the provisions of the act were discussed, and some of the difficulties in the way of putting it into practical operation mentioned. Subsequent thereto certain correspondence took place between the officers of the American Institute of Architects and the Secretary of the Treasury, and also between them and the Supervising Architect, individually.

Early in January, 1894, a committee of the American Institute of Architects submitted a written protest against the sketch plans of the United States public building at Buffalo, N. Y. which had then been prepared by the Supervising Architect and approved by the Secretary of the Treasury, and two conferences in regard thereto, one on January 10th and the other on February 6th of this year, were held by the committee with the Assistant Secretary of the Treasury, having general direction and supervision of all matters relating to the public business assigned to the Supervising Architect, the Secretary being unable to met them owing to other engagements. These conferences, and the tenor of the correspondence arising therefrom, emphasized the inadequacy of the provisions of the act to accomplish the desired object, and it was then decided that the designs for the Buffalo building, which had been temporarity held in abeyance, be proceeded with, but that this should not prevent further negotiations in the endeavor to effect the intention of Congress in making the enactment. * * *

The following suggestions were made to the architects' committee:

That there was a conflict between the provisions of the present act and the provisions of certain other statutes regarding public buildings; that it was necessary to prepare a comprehensive scheme under which a competition could be arranged and a method provided for selecting a jury of award to pass upon the designs received in such competition; that the relations of the successful competitor with the Secretary of the Treasury and with the Supervising Architect's Office should be clearly established and defined by contract; that the required change in the method of preparing the plans, drawings, and specifications would necessitate a reorganization of the office of the Supervising Architect, a reduction in its force, the rearrangement of the different divisions, and the work to be performed therein; that they should examine the workings and details of the office in order to make intelligent criticisms and suggestions thereon.

The act of March 3, 1875 (sundry civil act, section providing for payments, contracts, etc., for public buildings), was neither repealed nor amended, and this requires that—

No money shall be expended upon any public building on which work has not yet been actually begun until after drawings and specifications, together with detailed estimates of the cost thereof, shall have been made by the Supervising Architect of the Treasury Department, and said plans and estimates shall have been approved by the Secretary of the Treasury, the Secretary of the Interior, and the Postmaster-General. * * *

This provision conflicts with the evident purpose of Congress expressed in the present act.

The Supervising Architect of the Treasury is the proper Government official to prepare a scheme for the competition contemplated in the act in all its various details. He has the necessary experience and acquaintance with his professional associates, and can give the time and attention required therefor. A proviso that such scheme should be approved by the Secretary of the Treasury would seem to insure the satisfaction of the public.

In the selection of a satisfactory design for a public building both practical and architectural questions are presented and any jury of award to pass upon the plans should consist, not only of architects, but also of business men or Government officials who are familiar with the practical uses and necessities of the public building under consideration at the time. A commission or jury of award consisting of five members, three of whom should be architecrs of recognized professional standing and experience, and two business men or Government officials to be appointed by the Secretary of the Treasury, and paid for their services while actually engaged in their work, is suggested.

Under the present act the successful competing architect will have the preparation of the plans, drawings and specifications, while the preparation of the proposals, the award of contracts, and the payment of all moneys are delegated to the Supervising Architect, and the latter is to perform all luties that now pertain to his office, except the preparation of drawings and specifications for the buildings and the local supervision of construction. This language fails to clearly define the duties of either. It would, therefore, seem necessary that the architect should have entire control of all the details pertaining to the construction of the building in the manner in which architects customarily control them, and the duties of the Supervising Architect be limited to a general supervision, to protect the interests of the Government during the course of construction, or that the competition should be limited to designs to be carried out by the Supervising Architect. In any event the Secretary of the Treasury should be authorized to use his discretion as to this, and directed to contract with the architect, and obtain an agreement defining strictly his duties and rights in the premises, the amount of his fees, the method to be followed during the course of construction, and to make any other provisions deemed advisable.

The office of the Supervising Architect is engaged with other work besides the construction of public buildings. It arranges for and supervises the repairs and preservation of the public buildings in the country, finished and occupied, numbering 273, the assignment of rooms therein to various officials as the needs of the public services require, the keeping a large number of records regarding the Government buildings, the proceedings regarding the obtaining of sites, the condition of the various appropriations and expenditures thereunder, and many other details. It would be necessary to retain a considerable portion of the present force of the Supervising Architect to carry out this work effectually.

It appears from the schedule of fees customarily charged by architects that the expense of preparing plans, drawings and specifications and administration under the act might be greater than at present, but how much can not be satisfactorily determined until a definite and detailed scheme is prepared for its development.

I am of the opinion, then, that in order to carry out the intention of Congress in enacting this law, it will be necessary to amend the act by substituting the following:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and is hereby, authorized, in his discretion, to obtain competitive designs or complete plans, detailed drawings, and specifications for the erection of the public buildings of the United States authorized by Congress to be erected under his supervision and direction. The Supervising Architect of the Treasury Department shall prepare a scheme for free or open competition among the architects of the United States, therefor, such scheme to be approved by the Secretary of the Treasury. That the Secretary of the Treasury shall nominate and appoint a commission or commissions, each consisting of five citizens of the United States, three of whom shall be architects of recognized professional standing and experience, and two of whom shall be men of business or Government Officials who are familiar with the uses and necessities of the public building under consideration at the time, to select the best design or complete plans from those submitted in accordance with the scheme of competition hereinbefore provided. The members of the said commissions shall be paid their actual travelling expenses and subsistence while actually engaged in the performance of their official duties.

The expenses of the commission and the fees for the services of the architect successful in said competition shall be paid from the appropriation for the building respectively passed upon or designed. In case the complete plans, detailed drawings, and specifications are furnished by competition, as herein provided, the Supervising Architect of the Treasury Department shall be the representative of the Government to inspect the erection and completion of the building, the receipt of proposals, award of contracts therefor, and the disbursement of moneys thereunder. In case designs only are supplied by competition, the Supervising Architect shall perform the duties now required of him by law, in the usual manner, excepting the preparation of such designs. That in the discretion of the Secretary of the Treasury, the architect selected as herein provided to furnish complete plans, drawings and specifications shall have the entire direction and control of the construction of said building, and the direction and control of the local superintendent of construction, and the Secretary of the Treasury is hereby authorized in all cases to make a contract with said architect for his services, providing for such erection and control, fixing his duties and responsibilities during the construction of the said building, and making proper provision for modification or change in the plans and specifications during the progress of the work, and for additions thereto; also determining the amount of his fees and charges, and including such other provisions in the contract as may, in his discretion, appear advisable to protect the interests of the Government. Any or all of the designs, or plans, detailed drawings and specifications presented in the competition herein provided may be rejected by the commission, and in case the competition fails for any cause, or it is practicable to obtain designs or plans, detailed drawings, and specifications by competition, the Secretary of the Treasury shall direct the Supervising Architect to prepare plans, drawings and specifications and supervise the construction of the building in the usual manner according to law.

All acts or parts of acts inconsistent or in conflict with this act are hereby repealed.

Respectfully yours,
W. E. CURTIS,
Acting Secretary.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OUR NEW POSTOFFICE.

THE Treasury Department has been urged by Representative Maguire to commence work on the new San Francisco Postoffice, and according to a dispatch in the daily papers it is probable that early action will be taken to this end.

The new building is to be of classic architecture, comprising three stories and basement, with a square elevation over the main entrance, which is to be on Seventh street. The four corners of the elevation will consist of pillars surmounted by appropriate statues. The external plans of the building are as yet but roughly drawn, and the Supervising Architect will not permit any inspection of them or any photographs or copy to be taken until they have been perfectly finished, which will not be for three or four weeks, as the force of the Architect's office is wholly inadequate to the work now being carried on.

The completion of the floor plans of the building has been greatly delayed by the insufficiency of the force in the office. The Supervising Architect states, however, that the building when completed, according to the approved plans, will be from an artistic standpoint one of the handsomest in the United States.

The attempt of Representative Bankhead to delay the

erection of this building till he has had time to prove that the Government paid too much money for the site, is sheer folly—nobody expects or hopes that any portion of the excessive price can be recovered, and still less expects that the vendors will consent to take back their lot. This being the case, the building must perforce be built on the lot now in possession of the Government, and to delay the erection of the building now, would be only to add another blunder to the folly already consummated. As besides the advantage of giving employment to many workmen now idle the importance of having the building finished as soon as possible cannot be too strongly impressed upon the powers that be. In fact we want the use of the new Postoffice without any delay.

HOSPITAL PLANNING.

A PAPER READ BY MR. GEO. H. SANDERS BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS, ON JUNE 9, 1894.

GENTLEMEN:—This paper on hospitals is merely an introduction to a series of articles taking up the subject of hospitals, past and present, in the endeavor to treat the subject tentatively by gathering up such available information as has gradually developed, along the line of adaptation of ends to purposes, from the first inception of the idea to the present time. The object will be to demonstrate the advantage of closely following up the evolution of motives in architecture, by showing that the only progress ever substantially made in art, as in science of any kind is that effected by the one only process of advancing step by step in a definite direction rather than by merely travelling in a circle or series of circles as the case may be. True it is that the real advance will be made in this way, perhaps by "natural selection" or "the survival of the fittest," or shall we not rather say as applied to architecture *progressive adaptation*, or, by whatever term is employed, *principle* is meant which is just as evident in architecture as in any other of the arts of mankind. The point I wish to make is, that by the practical recognition of this principle in the art of design, of which architecture is undoubtedly the first and chiefest, the younger element amongst us, at least, may be led to train their energies by a definite effort in one direction, instead of being led astray in a mad chase after the will-o-the-wisp of mere popularity for the time being, of some one or other, of the many beautiful forms which art has assumed in the past.

We cannot clothe ourselves either becomingly or comfortably in the cast off and worn out habiliments of our ancestors, remote or recent. All our modes of construction at the present time should be the result of past experience, wedded to new conditions, and the result would be—progress. Witness the development of the ship. From the catamaran of the Malay, to the oceanic greyhound of the present time; from the warship of the Norseman, to the modern man-of-war, a continual uninterrupted progress is visible—and what a progress! From the cave temple of the ancient Etruscan or the mighty Trilithons of Stone-Henge, to the vast cathedral of the fifteenth century, again what a progress! It is only where the latter is clothed like St. Peter's or St. Paul's in the effete forms of the architecture of the Augustan age that a step backward has been taken and with what disasterous consequences. From that day, progress in architecture has been hampered by conditions inimical to success, and we find ourselves making shorter and shorter circles, and ringing the changes by periodically reverting, not only to the erst time noble forms of Greece and Rome, but, in time debasing every beauteous creation of every age, and of every land, by absurd parodies in every style, from Romanesque to Old Colonial, and from Egyptian to Japanese, utterly regardless of adaptation of means to ends, or materials to uses, until a modern city has become little more than a mere collection of imitation architectural bric-a-brac.

True, we have the elevator, electricity and steel, together with the unknown possibilities of aluminum. What these and other modern improvements of the present day will develop in the coming century, who can say? Let us hope and strive for the *best*, and our efforts, however feeble and inefficient individually will not be wholly in vain.

Historically, there seems to be but little evidence of hospitals proper amongst the ancients. The Eastern Kahn or caravansary appears to have been the earliest form of which the hospital of modern times, with all its elaborate sanitation, muitiplication of parts and aggregation of conveniences is the heir lineal.

Plato speaks of refuges for travellers and there were Inns in the time of Christ, in one of which He was born—the first lying-in hospital on record! The Good Samaritan also is described as taking the wounded traveller to an Inn. But the Beth-Esda or "Home of Mercy" by the sheep market in Jerusalem, which consisted of five porches or sheds it may be, in which a multitude of sick folks awaited the moving of the waters (of a spring probably possessed of medicinal qualities,) is the first example we read of, describing the forerunner of a modern "springs" hotel, the sojourners at which like the Beth-Esdans of old, seek the angel of mercy in the waters of healing for the relief of their physical ailments.

But eight hundred years or more before the Christian Era, (so says Phœnecian tradition) the springs located on the site of present town of Bath in England, were resorted to from far and near on account of their curative properties, and only a few years ago, in the neighborhood of the present baths, which are still copiously supplied by the warm waters of the original spring, the remains of extensive Roman baths were uncovered, showing how that practical people had taken heedful note of the situation, and had devoted to public use the local "natural opportunity". Architectural remains of considerable magnificence were revealed. The property has been appropriated to public purposes, and the ancient basin is still brimming with the medicinal flood as of yore.

But the above is a digression; neither the Bethesda nor the springs having more than a relative significance in this connection.

Etomologically, the word "hospital" seem to have been evolved from the word "hospes", indicating "host," and is easily traced through its derivatives, "hospitalis," "hospitium," "hospitale," "hospitalia," and thence through the English "hostel," the French "hospice," "hopital" and "hotel". In the process, the last four terms seem to have served to differentiate the meaning of the word into its several designations, (1st) as a place of temporary residence, as an inn; (2nd) a temporary residence for the sick; (3d) a permanent residence for the poor and the infirm, the aged, the incurable and the insane, answering in some degree to the English

alms-house, and (4th) a term applied to dwelling houses both public and private.

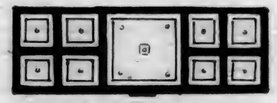
Amongst the English, the word "hospital" (adopted from the early French) and directly derived from the Latin "hospitalis" and the Italian "ospitale", frequently includes both the first and second of the above meanings. It is also commonly applied to structures specially designed for the exclusive reception of one or other of the different classes of disease, such as the blind, the insane, the deaf and dumb, etc. Whilst *infirmary* from "Infirmaria", a place set apart in monastaries for the reception of the sick, the infirm, the weak, the blind, etc., has come to be applied extensively to structures designed for the general reception of those afflicted with disease both acute and chronic.

Amongst the Greeks of the time of Pericles there seems to have been but scant provision for the care of the sick in any sense, and with the Romans, while the "valetudinarium" and a medical staff, appear to have been provided for the army there seems to be no indication of anything like a hospital for the use of the general public having been in existance.

It was not until 370 A. D. that we read of a hospital founded by Valens in Caesarea, and another, in Rome in 382-4 by a Roman lady, Fabiola by name. These were probably the first establishments on a scale sufficiently large to attract historical notice of a sentiment which must have been growing constantly under the influence of the new religion which made the welfare of the individual a matter of interest to the public, based on duty, rather than on self-advantage. In other words, these early hospitals, which were, possibly, also almshouses, must have been the final outcome of many previous attempts of a tentative character. However this may be, it is certain that the real origin of the modern hospital is to be fouud in the monasterial "infirmariva", rather than in the "hospitales" of the Romans or "Zenon" of the Greeks.

During the Middle Ages, as above remarked, the "sick" and "indigent" appear to have been tacitly relegated to the care of the various monasteries, which became, virtually, houses of entertainment, as well as the resort of people of all conditions of life throughout the civilized world. The "infirmara" and the "infirmarius" became permanent and very important constituents of every monastery and nunnery, and although there is no doubt that under the then existing conditions of society, they were a vast and almost indispensable benefit, there is plenty of evidence to show that many evils had their origin in these institutions as well. This arose from the absorption of the Infirmary into the beneficies of the Clergy, with the easily understood result of inefficiency and malfeasance in the conduct of these departments, so that many regulations had to be issued by the Roman Pontiff, restraining and forbidding the wrong practices which had arisen.

The best example known of an infirmary of the Middle Ages, is that of the projected plan of the great Monastery of St. Gall (9th Century) in which the wards apparantly for

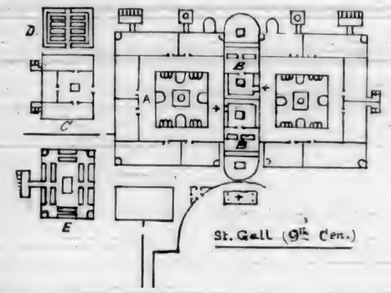


OSPITALE GRANDE MILAN (DIAG.)

both sexes are seen arranged around a cloistered court or garden on one side of a double Chapel. There is also a doctor's residence, a garden for medicinal herbs and "simples", a dispensary and other details of arrangement so complete and well understood that it is evident the whole was the result of system and practice, no longer in the experimental stage.

The first regular hospitals erected for the purpose in England, were those founded by Lanfranc, Archbishop of Canterbury, in London, A. D. 1080; one for leprosy and one for ordinary diseases.

Amongst the many notable hospitals of the world, perhaps the most noted of them all, is the "Ospidale Grande" in Milan, Italy, begun in 1456 and completed in 1621. It is certainly one of the grandest, if not the very grandest, building of the time, built for such a purpose, during the whole period preceding the great hospital-building epoch of the eighteenth century, and still holds its own, not only in regard to beauty an appropriateness of design, but also on account of climatic adaption to the purpose for which it is intended. It consists of an immense garden court adorned with fountains, and blooming with flowers, the court is 340 feet square with a block about equally large at each end,



divided into four smaller courts, each and all, surrounded internally by two story cloisters or arcades on to which the wards open, thus affording cool shade in the brilliant Italian atmosphere, as well as shelter in all weathers for those who are able to move about. Of course the general arrangement of the wards round courts is not that of a modern hospital, and there is no doubt but that the pavilion plan is much superior to any connected system of wards or series of wards such as that employed in the Ospitale Grande, nevertheless, for the time in which it was erected and with the experience and conditions such as those then existing in Italy, the structure presents fewer defects than under the circumstances would be expected. It was, however, during the eighteenth century above alluded to, that the hospital became as did the cathedral of the thirteenth century, the special object of attention in the civilized countries of the world. In Great Britain and Ireland alone, upward of fifty of these great structures were erected, and in every country of Europe the same activity in this direction was observable. The evolution of the hospital idea, as in future papers will be seen, has served to develop as before mentioned, the special characteristics of these structures in a remarkable manner, but this must be left for consideration in our next paper.

M. S. James the Pacific Coast Agent of The J. L. Mott Iron Works has removed his office from Room 46 Flood Building to Room 35 in the same building.

PORTLAND CEMENT IN THE CITY WATER WORKS OF PORTLAND OREGON.

THE Engineer in charge of the City Water Works of Portland, Oregon, furnished the following report to a committee of one hundred representing the tax-payers of that city, in refutation of charges that had been made of favoritism in the awarding of the contract for furnishing the cement to be used in the work.

Those interested in the use of cement and concrete will be interested in the table of comparative tests contained in the report which follows:

ENGINEER SMITH'S RECOMMENDATION.

It was finally agreed to read the communication of Engineer Smith, with the accompanying extracts from minutes of the board and exhibits pertaining to the analysis of the different kinds of cement. The letter is as follows:

OFFICE OF THE CITY WATER WORKS,
PORTLAND, OR., MAY 11, 1894.

H. W. CORBETT, ESQ., PORTLAND, OR.—*Dear Sir:* I enclose herewith a transcript, prepared by Mr. Dodge, of all proceedings of the water committee in relation to the cement contracts; also specifications on which proposals were made, and a copy of the reports of the engineers on the tests made in accordance with the specifications.

According to the specifications, it was necessary that the cement should conform to the requirements stated in article 8, in relation to fineness, time of setting after mixture, tensile strength, etc.

The result of the tests for fineness and time of setting is shown in the following table, from reports of the engineers:

PROPOSAL TO FURNISH 15,000 BARRELS CEMENT.

Brand	Price bid per bbl.	Per cent of residue on sieve of 5800 meshes per square inch	Cost per bbl. of available cement after rejecting on sieve of 5800 meshes per square inch	Time of setting minutes
Josson	$2 50	4 05	$2 60.52	75
North	2 50	5 00	2 63.15	42
Whites	2 45	8 54	2 67.88	42
K. B. S.	2 40	10 70	2 68.78	20
Gresham	2 40	12 70	2 74.91	25
Gillingham (Extra)	2 60	6 16	2 77.07	22

The residue of the cement remaining in the screens after testing is of no greater value than so much sand, as was shown by specimens presented to the committee.

The bid on the Josson cement was $2.50 per barrel, but as it contained 4.05 per cent of refuse, the cost per barrel of the pure cement was $2.60.

The bid on the Gresham cement (from George Pope & Co.) was $2.40 per barrel, but as it contained 12.70 per cent of refuse, the cost of the pure cement was $2.74 per barrel.

From this test it appears not only that the cements offered by Taylor, Young & Co. were the cheapest, but that they were the only ones coming up to the requirements of the specifications in relation to fineness.

When cement sets before being used it is of no value, and therefore it was stated in the specifications that all cement setting within thirty minutes after being mixed would be rejected.

In this respect also the cements offered by Taylor, Young & Co. were the only ones coming up to requirements of the specifications.

For these reasons all bids were rejected, except those of Taylor, Young & Co. and Meyer, Wilson & Co., and the engineers were directed to make further tests for tensile strength at intervals of three, seven and twenty-eight days.

After making these tests the engineers reported that the Josson brand was superior to all the others in cost, fineness and strength.

The reason for letting a contract for 30,000 barrels, instead of the 15,000 barrels called for, are stated in the following extract from the report of the engineer:

"When I first called for 15,000 barrels, I understood that there were 45,000 to 50,000 barrels of standard brands of cement in the city, all of which I supposed would be available, and I mentioned 15,000 barrels as a quantity desirable to start on the works, and sufficient to contract for at once, presuming that the remaining amount could be had at any time during the year; but after making our tests it developed that the Josson was the only brand that fulfilled all our requirements, and in order to get what we need of that this year, it was necessary to order more immediately. There is no time to wait and advertise for more bids, and there would be no use doing so if we stick to our specifications."

For making the tests a new Fairbanks cement-testing machine, borrowed from Mr. McCraken, was used, and all bidders were invited to be present at the testing of the different brands.

The tests were all made in the same room, with the same proportion of water, and under like conditions.

Mr. Graves, the representative of Messrs. George Pope & Co., was frequently present when the tests were made, and expressed himself as being perfectly satisfied with the results. The same gentlemen brought to the office several briquettes, which he said had been made by Mr. Pope, and they were tested at his request.

Mr. London for Balfour, Guthrie & Co., also had the mixtures made in accordance with instructions from the English makers, and was present when the tests were made.

Mr. McCraken was also present at some of the tests which were made with his own machine, and so far as I know, expressed no dissatisfaction at the results.

All the tests have been registered and can be inspected, although they were not furnished for publication.

The tests all show, not that the rejected brands are of a bad quality, but that in respect of strength, time of setting, fineness and cost, the Josson brand was the best of all.

Respectfully yours,
ISAAC W. SMITH,
ENGINEER OF THE WATER COMMITTEE.

NOTE—The bid of Corbitt & Macleay for 11,500 barrels was not in accordance with the specifications, which called for 15,000 barrels, but it would have been accepted if the engineers had not reported that after making the tests it proved to be deficient in strength.—*The Sunday Oregonian. Portland, May 13, 1894.*

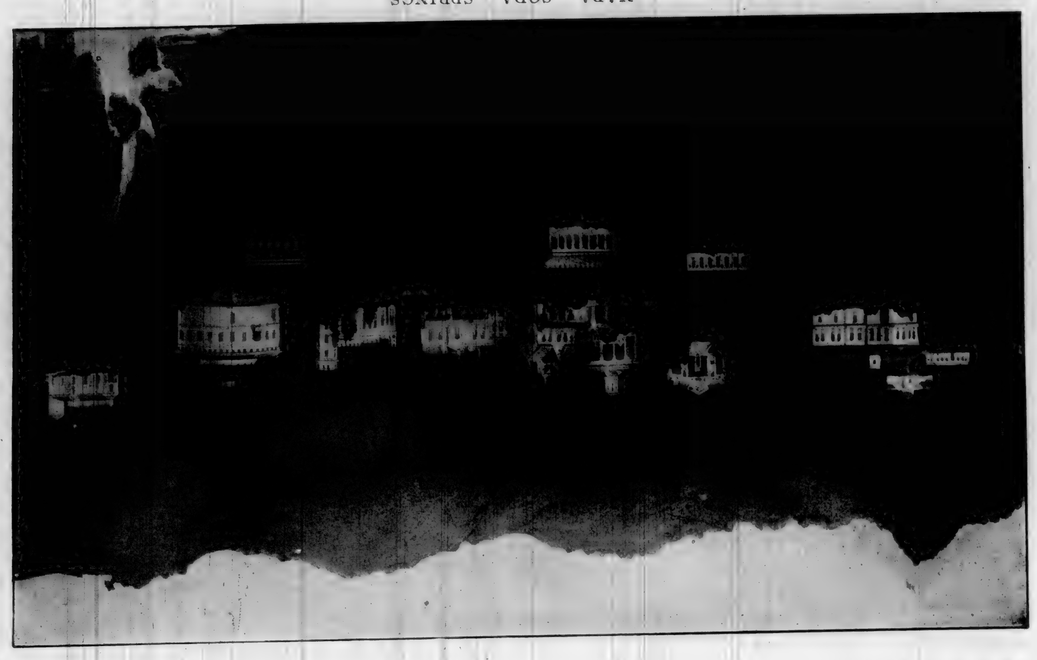
INGENUITY IN SHINGLING.

THE Ferguson Cedar Shingle Company, at Latona, have hit upon a happy idea to save the transportation of waste material from the woods to their mill by removing their "cut off" saw and "knee bolter" to a point on the Seattle, Lake Shore and Eastern road where it crosses the Pillchuck creek. There the company have put in a boom and established a camp. The bolts are taken from the water and sawed and trimmed ready for the shingle saw. By means of an endless belt they are loaded upon cars especially prepared to receive and transport them to their mill at Latona. The saving in transportation is estimated at one-third and saves the necessity of maintaining a fire to consume the waste, thereby lessening the danger from fire. The change has also enabled them to increase their daily output from 90,000 to 120,000 per day.—*Seattle Intelligence.*

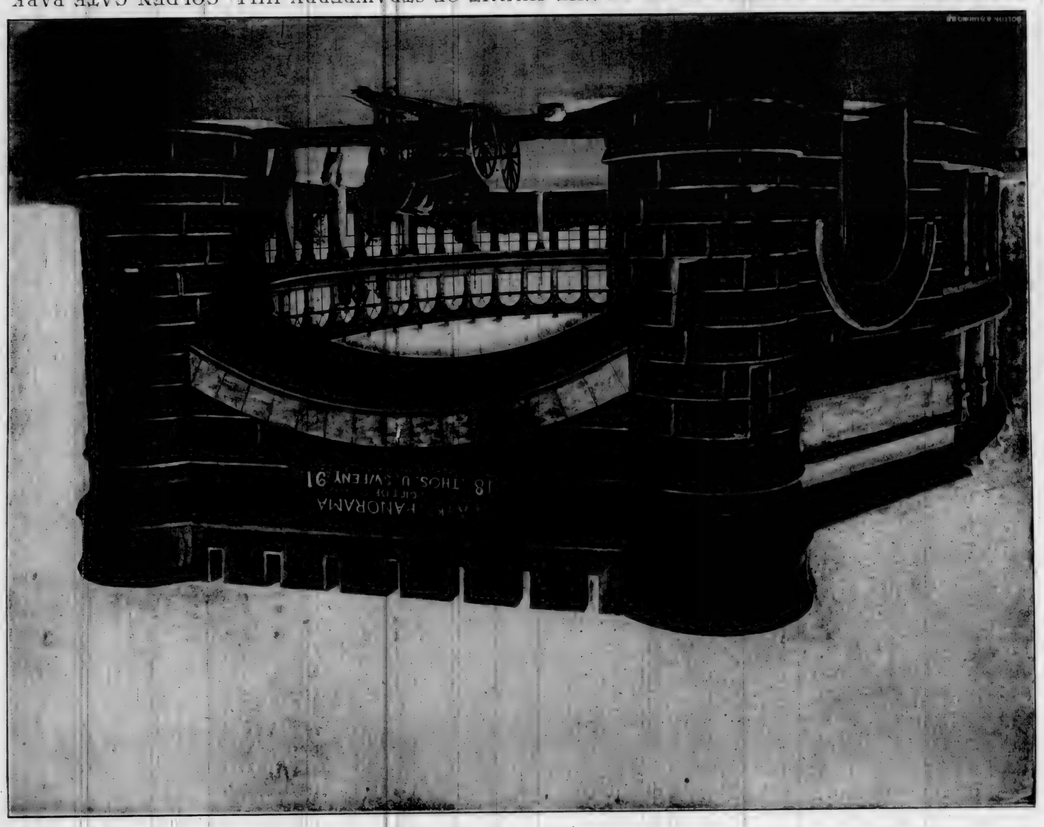
EDWARD B. HINDES & CO'S. EXHIBIT, MANUFACTURES AND LIBERAL ARTS BUILDING.

CALIFORNIA MIDWINTER INTERNATIONAL EXPOSITION.

NAPA SODA SPRINGS.



PARK PANORAMA AND OBSERVATORY ON THE SUMMIT OF STRAWBERRY HILL, GOLDEN GATE PARK.



CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.
VOL. XV, NO. 6. JUNE 1894.

STUDEBAKER BROS. CARRIAGE REPOSITORY, MARKET AND TENTH STREET,

SAN . FRANCISCO, CAL.

CLINTON DAY, ARCHITECT.

THE MONTHLY MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

AT the monthly meeting of the San Francisco Chapter of the American Institute of Architects held in their rooms Friday June 8th, the Exhibitation Committee reported a very favorable exhibit of architectural drawings at the Art Institute. The application of Architect M. J. Lyon for application for fellow membership, was favorably reported by the executive committee, and will be balloted on at the next meeting.

The paper on "Hospital Planning," read by Mr. Geo. H. Sanders, will be found in another column of this number.

PELE, THE HAWAIIAN GODDESS OF FIRE.

THE traditions say that she was the most beautiful woman that ever lived, and the most capricious. She made her home on various islands from which she was successively driven by the Water God "Kamapuaa," who had the body of a man and the head of a hog. She finally took refuge in the Volcano of Kilauea, where she maintains herself to this day. Whenever her wrath was excited she would turn into a lava flow or throw masses of hot rocks and overwhelm her enemies.

PELE, THE HAWAIIAN GODDESS OF FIRE.

POLITENESS is the result of good sense and good nature.

BOOKS AND PERIODICALS.

YELLOWSTONE NATIONAL PARK—An illustrated pamphlet giving information about Yellowstone Park and the Northern Pacific Railroad is well worthy of mention; this brochure in the way of a guide to the northwest will well repay a careful study. Seldom do we find so much information about what may be seen upon a journey placed before the reader in such a charming manner.

The illustrations are not only well executed and printed, but give a delightful insight into a comparatively unknown region; already it requires two steamers to accommodate the travel of this line upon Puget Sound to Alaska, thus proving it will not remain an unknown region much longer.

For six cents in postage stamps the agent of this line will send a copy of "Indianland and Wonderland" giving a detailed account of routes, price of fare, etc.

THE FORTNIGHTLY REVIEW for May contains among other interesting articles one upon the "Appreciation of Gold" by Robert Barclay, Director of the Manchester Chamber of Commerce. This timely article is well worthy the serious consideration of every one, and is certainly very encouraging that the evils of a single gold standard of value is beginning to open the eyes of the English people to the fact that the maintenance of a single standard is likely to re-act upon the English people in a way not favorable to either their commerce or manufacturers, thus inducing them to urge the Government to take steps to restore the use of both gold and silver to the currency of the world; without the aid of England the desirable object cannot be obtained.

LIPPINCOTT'S Monthly Magazine for June as usual is full of good things "The Wonder Witch" by M. G. McClelland is the complete novel, while the last installment of the "Tresspassor" by Gilbert Parker finishes what may be called a sentimental story that we are glad to see the last of; "My First Library Acquaintance" by R. H. Stoddard will call to the recollection of old timers the New World with its motto

"No pent up utica contracts our powers
The whole boundless continent is ours."

A SUBURBAN COTTAGE FOR TWO SMALL FAMILIES.

ORNAMENTAL IRON—A monthly journal devoted to industrial art. The April and May furnishing a double number and completing the first volume gives us a good opportunity to review the good work done and the many excellent specimens of ornamental iron work presented in this volume, this style of metal work so essential to modern commercial use and public buildings has come among us to stay; it is therefore important to have at hand a standard authority on the subject and certainly the Winslow Bros. Co., 759 The Rookery, Chicago, have furnished exactly what was wanted. Architects will do well to see that this very clever magazine is always at hand and often refered to.

"How did Algy get so frightfully burned?"

"He was warming before the grate, just after a bath, when his clothes caught fire."

"Didn't he jump back into the bath tub?"

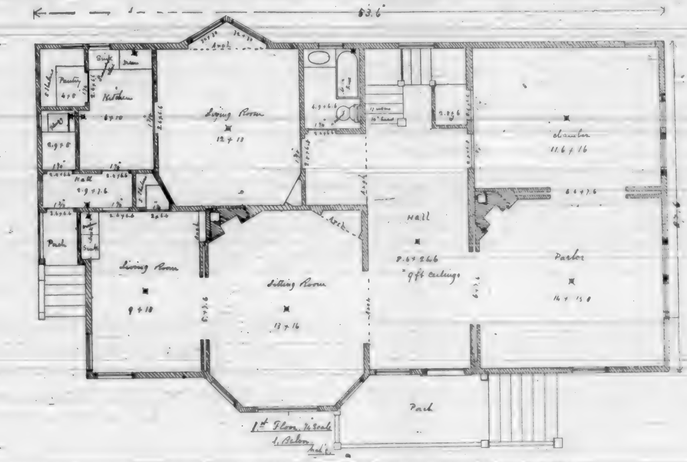
"No. He ran out on the fire escape."—*Life.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.



PLAN OF SUBURBAN COTTAGE FOR TWO SMALL FAMILIES.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

RIGHT OF REDEMPTION BY JUDGMENT CREDITOR.—A mortgagee who has obtained a degree of foreclosure is a "decree creditor," within the meaning of the statutes, which declares that "any decree or judgment creditor" may redeem from an execution or foreclosure sale after twelve and within fifteen months from the sale.

Whitehead v. Hall, Supreme Court of Illinois, 35 N. E. Rep. 871. 50.

LIABILITY OF AGENT FOR UNDISCLOSED PRINCIPAL.—An agent who fails to disclose his principal is personally liable to a person with whom he contracts, though such person might have discovered the agency; actual knowledge being necessary to relieve the agent of liability.

Mahoney v. Kent, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 19. 42.

LIABILITY OF CORPORATION FOR ACTS OF PROMOTOR.—A promotor is not an agent, for agency implies the exercise of a principal, and a delegation of authority from the principal to the agent. Therefore a corporation is not responsible for acts performed or contracts entered into by a promotor before it came into existence. But a corporation may, however, make itself responsible for such acts and representations by adoption. The adoption of an agreement made by a promotor of a corporation may be implied from the acts of acquiescence of the corporation without any express acceptance. After a corporation has knowingly received the benefits of an arrangement or understanding entered into by its promoters, it will not be permitted to deny that it did not agree to it.

Huron Printing & Bindery Co. v. Kittlesome, Supreme Court of South Dakota, 57 N. W. Rep. 235. 78.

BREACH OF CONTRACT TO REPAIR.—Where a lessor agreed to put in a new furnace, but there was no stipulation as to the amount of heat that it should give, and it failed to give out heat according to its capacity because of a defect in the pipe connections. Failure of the landlord to remedy such defect which could have been done at a small expense, was not an eviction, as the lessee could have done it, and set off the cost against the rent.

Doolittle v. Selkirk, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 43. 85.

LIABILITY FOR DEFECTIVE APPLIANCES.—The owner of a building is not liable for injuries to one of the workman employed thereon, caused by the breaking of the joist, in consequence of an obvious defect, where the person injured was an experienced carpenter, and assisted in placing the defective joist.

Griffiths v. New Jersey & N. Y. R. Co., Superior Court of New York City, General Term, 28 N. Y. Supp. Rep. 75. 49.

LIABILITIES OF OWNER FOR MATERIAL FURNISHED CONTRACTOR.—A personal judgment cannot be obtained against the owner of a building for material furnished the contractor on his own account, if the owner had no knowledge of the purchase of the material by the contractor.

May & Thomas Hardware Co. v. McConnell, Supreme Court of Alabama, 14 S. Rep. 768. 43.

INTERPRETATION OF CONTRACTS.—Where a building contract provides that the contractor shall receive as compensation the cost of material and labor used in the building, "and ten per cent, added thereto as profit," the accounts paid by the contractor on sub-contracts for various portions of the work, including the customary profit of the sub-contractors, will be considered as "the cost of labor and material," in estimating the amount due to the contractor.

Hamilton v. Coogan, Common Pleas of New York City and County, General Term, 28 N. Y. Supp. Rep. 21. 73.

COUNTY PROPERTY EXEMPT FROM MECHANICS' LIENS.—The public buildings of a county are wholly exempt from the operations of the mechanics' lien law, and cannot be sold under execution or other process. The county court of a county cannot be compelled by a bill in chancery to issue an order against the county funds for any debt or claim, just or unjust, against the county. The by a statutory law furnishes the remedy in all such cases, and it must be strickly pursued.

Hall's Safe & Lock Company v. Scites, Supreme Court of Appeals of West Virginia, 18 S. E. Rep. 895. 80.

WASHINGTON ARCHITECTS ORGANIZE.

ON the afternoon of May 10th, a meeting of architects of Tacoma and Seattle was held in the city hall council chambers of Tacoma. The object was the formation of an organization of architects with the final object of becoming a Chapter of the American Institute. The meeting was composed of eight members from Seattle together with eight architects of this city, making sixteen who signed the constitution and by-laws. It is proposed to hold a meeting at Spokane a little later to interest the architects in that city and give them an opportunity to join. The Tacoma members are as follows: G. W. Bullard, Wm. Farrell, Albert Sutton, A. L. Robinson, Louis Mendell, L. C. Houser, A. J. Russell and C. B. Talbot. The Seattle members are: Messrs. Boone, Wilcox, Saunders, Chas. H. Bebb, James Stevens, Albert Wickersham, G. H. Parks and Emil De Neuf. The officers are: President, W. E. Boone of Seattle; First Vice-President, W. H. Wilcox of Seattle; Second Vice-President, G. W. Bullard of Tacoma; Secretary, C. W. Sanders of Seattle. At the meeting in this city an interesting paper was read by architect G. W. Bullard on the subject of "Architects as Pioneers." President Boone's opening addressed was listened to with interest. A condensed report of it is as follows:

"For some time past the architects of this state have, in a desultory and unsystematic way, been debating with one another the advisability of establishing a chapter of architects which should bring together and organize all the worthy members of the craft within the boundaries of Washington. The necessity for such an organization was admitted by everybody. Its absence was deplored by all who desired to preserved in their integrity, on this virgin soil, the honorable traditions and gentlemenly practices of the profession. As a check and deterring restraint upon the greedy and unscrupulous, it was rightly held that an organization would be not less beneficial to the great body of upright architects than to the entire community. It was also strongly desired that we should take the necessary steps for admission to that important body, the American Institute of Architects, whose influence upon American architecture has already become most extensive and beneficial. Firmly impressed with the very great importance of organization, the architects of the city of Seattle resolved to take some practical measure for the establishment of a chapter of architects in this state. What form this measure should assume was the first matter for decision. It was deemed better to create a chapter out of the material at hand, and then solicit the cordial co-operation of the entire profession in the state making it really and truly what it is already in name—the Washington Chapter of Architects. We accordingly organized this chapter by the adoption of a constitution and by-laws and the election of officers; and we are now before you, gentlemen of Tacoma, for your approval and co-operation, of which, indeed, we have never entertained a doubt. Your brethren in Seattle claim no primacy, pre-eminence or privileges in the chapter. The work which they submit to you is provisional only, and they expect it to be amended, improved and strengthened by your zeal, intelligence, wisdom and experience. Their hope and wish is, that after you have subscribed the by-laws and thus become members of the chapter, a meeting of the chapter be held, as early as possible, in the city of Spokane, to afford our brethern there an opportunity of joining hands with us. With Seattle, Taeoma and Spokane thus enrolled under the banner of the chapter, we can arrange for further meetings in the large towns of the state, so as to enable all the reputable and honorable architects of Washington to affiliate with us. When the organization is thus perfected, with every part of the state represented, the permanent home of the chapter can be fairly and satisfactorily located. Within the past decade no part of the United States has done more building relatively than Washington. Much of it has been of a highly important character, and still more important work is to be done in the near future. It behooves the profession to exert all its influence in the most systematic and effective manner for the establishment and maintenance of a high standard of professional ethics, architectural skill, and solidity of construction. The public judge us favorably or unfavorably in proportion as we erect and aim for our own guidance and control a high or low standard and rule of action in these transcendently important respects."—*The Pacific Builder.*

A SUMMER HOTEL IN THE ATLANTIC OCEAN.

FROM *The New York World*, we learn of the proposition to build a summer hotel in the Atlantic Ocean.

The exact spot in the ocean where the buildings will be erected is not made public. Mr. Coen said yesterday that it had been selected and the soundings had been made and the exact location marked by buoys. It is off the Long Island coast, probable somewhere between Fire Island and New York, and it will be fourteen miles from the shore. Atalantis, as it is to be called, will not be built upon a sand-bar. It will not even be built over shoal water. Now, at the first thought it seems ridiculous that any structure could be made strong enough to resist the power of the waves of the ocean in a storm, but Mr. Coen says the engineers have declared that the scheme is feasible.

The chief engineer is Captain R. D. Evans of the United States Navy, who is practically at the head of the Light-House Board. He is recognized both in this country and abroad as one of the ablest of engineers in deep-sea construction and has a very high reputation in Government circles. Associated with him is J. C. McGuire, who has charge of the steel construction in Government buildings, and who is just now in charge of the new Appraiser's stores building in West street. Captain Howard Patterson, formerly of the United States Navy, formerly Professor of Naval Science in Brown's College, and who was admiral of the Haytian navy, is another of the engineers.

The engineers, it is said, have agreed to put down the foundations under a forfeit of $1,000,000. This convinced those who hesitated about putting money into the scheme. The structure will rest upon cylinders. Atlantis will include a number of structures, of which but one will be built this year. It will be a great pavilion, constructed in the form of a square, two stories high in the main and three in the towers, and will rest upon large iron cylinders, filled and sunk in Portland cement.

The main floor will be thirty feet above the water, and the Roman order of architecture will predominate.

The edifice will be built entirely of steel, iron, glass and tiles, thus making it entirely fire-proof. Within will be a grand amphitheatre. It is calculated that the lower floor will accommodate 10,000 people, while the gallery will hold 7,000 more. There is also provision for a spacious esplanade or roof garden, seating 3,000. There will be 120 large rooms for hotel accommodation, a cafe, restaurant, billiard-room and all accessories of that sort. Then there is the anglers' pavilion, which ought to increase the popularity, because the structure will be located in the midst of the fishing grounds.

The promoters of the enterprise say that it offers all the advantages of a sea voyage without the discomforts of sea-sickness. It is promised that it will be within two hours sail of this city.

Mr. Coen expects that the building will be opened before the summer is over.

BUSINESS MOSAICS.

The San Francisco Repository of Studebaker Bros., is located at the corner of Market and Tenth streets, and is one of the finest and most extensive carriage repositories in America, or, for that matter, in Europe; it has a 90-foot frontage on Market street and 145-foot frontage on Tenth street, has five floors the full size of the building devoted to salesrooms for Carriages, Buggies, Carts, Spring, Farm and Team Wagons, also Harness of every kind and price, Robes, Blankets, Whips and Stable Supplies. In addition to their repository they have extensive warehouses near the depots on the railroad tracts, having 75-foot frontage and running through an entire block. Vehicles are shipped from their factories in their own cars and never break bulk until unloaded at their warehouses. Almost any kind of vehicle or harness known to the trade can be had at the San Francisco Repository of Studebaker Bros. Mfg. Co.

Mr. E. E. Ames, well known as one of our leading and prominent citizens, has been manager of the San Francisco Branch for over twenty years. With the Studebaker Wagons and Carriages he has built up the most extensive business of any house on the Pacific Coast.

She—"Cease your flattery, sir, or I shall put my hands over my ears." He (wishing to pay her a compliment)—Impossible! your hands are too small for that."—*Le Petit.*

The McMillan Sash Balance and Lock is an article which commands the attention of every one interested in having a reliable and perfect attachment that will allow you to easily work the window without fear of breaking the sash cord or slamming of windows and at the same time feel secure that the windows are fastened when ventilation is desired. Advantages claimed for the McMillan Sash Balance and Lock, are that you can take out the sash to clean the glass by locking and throwing back the left wheel (when two locks are used) and taking off left hand strip. You can lock either sash at any point, open any distance, to ventilate, or

SASH BALANCE.

BEAD FASTENER.

tightly shut together. It will not allow the sash to rattle with the wind. It balances the sash perfectly by a coiled flat spring inside the wheel. It cannot be picked as there is no way to reach it from the outside. It cannot be broken by any pry placed under the sash, as other locks can.

It can be put into old houses as well as new, and at a very small cost for labor. No boxing necessary, therefore no place left through which cold air can rush in as in the case with ropes and weights. For durability it surpasses anything in the sash balance line, being made of best metal and sheet steel. The rack in sash is made of sheet steel and will last as long as the house stands.

The balance is hidden, therefore no cords or ribbons are exposed to view. The balance is made to carry windows from three to five hundred pounds. The World's Fair Medal was awarded by the Columbian Exposition, Chicago.

The Common Sense Bead Fastener is also an indispensable attachment where it is desired to remove the windows at any time without injuring window casing or stop bead.

Smith & Young of San Francisco and Los Angeles are General Agents for the McMillan Sash Balance and Lock combined as well as the Common Sense Bead Fastener and on application will send price list and other information relative to the same.

She—"I beg your pardon, monsieur, for having trodden on your toe." He—"Don't mention it, mam'selle; it is I who ask pardon for having a toe."—*Tid-Bits.*

If you are about to paint your house and want it well done, you must use good materials, do this and you will not be troubled with cracks and blisters and all the evils that follow when poor materials are used; this being granted all you have to do to obtain what you desire in this line is to call upon W. P. Fuller & Co. manufacturers of Phoenix Pure Paint, this article is made of white lead, zinc, oxide and linseed oil, thoroughly mixed by heavy machinery and is sure to give satisfaction to all concerned.

Their new wall finish is a splendid thing for the good housewife, as it is claimed to be a washable water color that petrifies on the wall and will not crack or chip off. What more can be asked of a wall finish?

Bradford—"Binks and his wife make a good match." Robinson—"Yes; he's a stick and she the brimstone."—*Harlem Life.*

We furnish with this issue a half-tone of Edw. B. Hindes & Co's. beautiful exhibit, located in the SE corner gallery of the Manufactures and Liberal Arts building. On entering, to the left is shown their Rolling Wood Partitions for Churches, Sunday School Rooms, etc.; next a Self Coiling Noiseless, Burglar and Fire-proof Corrugated Steel Shutter.

The next opening contains one of the Modern Venetian Blinds, of which they are the only manufacturers on the Pacific Coast. The next two windows are devoted to their justly celebrated Hill's Patent Inside Sliding Blinds, in Hard Woods and White Cedar. The last window to the right shows the Hill Patent Sliding Fly Screen, acknowledged to be the most perfect screen in use, covering either top or bottom sash and can be instantly removed to clean windows or when not needed. The architecture and finish of this exhibit is conceded to be among the finest making it one of the most attractive features of the Midwinter Fair.

The main office and factory of this firm is at 411 Mission street, San Francisco.

Farmer Squashead (observing a metropolitan daily on the counter of the village store)—"What! Aint that air paper busted up yet? Why, I quit taking it fifteen years ago."—*Time.*

Union Pressed Brick and Terra Cotta Co.—We cannot find the space in these pages for an enumeration of the various kinds of pressed, moulded and ornamental brick to say nothing of the varieties of Architectural Terra Cotta and fire-proofing, paving tile, etc., but if you send for a catalogue to their main office, SE corner Bush and Sansome streets you can find out all about it.

CITY BUILDING NEWS.

Army near Folsom. To build; owner, P. Leo Bruener; architect, R. A. Van de Pavert; contractor, Robert Trast; signed, May 23; filed, May 24; cost $23,350.

Baker near Bush. To build; owner, T. Randall; architect, R. H. White; day work; cost $500.

Baker near Bush. Painting; owner, T. Randall; architect, R. H. White; contractor, J. F. Sullivan; cost $530.

Broderick near Fulton. To build; owner, Henry Dederky, Jr.; architect, Chas. M. Rousseau; contractor, Philip Rive; signed, May 22; filed, May 23; cost $2950.

Buchanan and Sacramento. Carpenter work; owner, M. Hyman; architects, Percy & Hamilton; contractor, T. M. McLachlan; signed, May 24; filed, May 28; cost $14,909.

California near Jones. Interior finish, stairs, hardware and glazing; owner, George Whittell; architects, Townsend & Wyneken; contractors, W. T. Geitch & Bros.; signed, May 14; filed, May 22; cost $8500.

California near Laguna. To build; owner, R. J. Wilson; architect, Walter J. Mathews; contractor, H. E. Jones; signed, May 23; filed, May 28; cost $13,470.

California near Laguna. Stone work; owner, R. J. Wilson; architect, Walter J. Mathews; contractors, Sutton & Johnson; signed, May 26; filed, May 28; cost $2500.

City Hall Ave. Excavation and concrete work on City Hall; owner, Frank Happersberger; architect, Clinton Day; contractor, Thos. E. Keough; signed, May 26; filed, May 26; cost $1050.

Day near Church. To build; owner, Wm. Edwards; contractors, A. Hanson & J. Sandeen; signed, May 19; filed, May 19; cost $1675.

Denver near Falcon. To build; owner, John Fles; architect, J. T. Kidd; contractors, Hood & Watson; signed, May 9; filed, May 12; cost $2700.

Diamond and Collingswood. To build; owner, Frank A. Meyers; contractor, H. R. Abrahamson; signed, April 14; filed, April 19; cost $1565.

Diamond and Collingswood. To build; owner, J. H. Colman; contractor, H. R. Abrahamson; cost $1565.

Eddy near Hyde. Additions and alterations; owners, Louis Cranz & wife; architects, Martens & Coffey; contractor, D. G. Chisholm; signed, May 25; filed, May 28; cost $4336.

Eighth Ave. near California. To build; owner, Annie E. Hall; architect, Clyde Corrigan; contractor, J. E. Eastman; signed, May 23; filed, May 26; cost $2150.

Ellis near Mason. Plumbing; owner, Maurice Casey; architect, Henry A. Schultz; contractor, H. Maddern; signed, May 7; filed, May 15; cost $6425.

Ellis near Mason. Tin, iron and painting; owner, Maurice Casey; architect, Henry A. Schultz; contractor, William Cronan; signed, May 1; filed, May 15; cost $2425.

Ellis near Mason. Cast iron work and painting; owner, Maurice Casey; architect, H. A. Schulze; contractor, Joshua Hendy Machine works; signed, May 1; filed, May 15; cost $1765.

Ellis near Mason. Wrough iron, steel work, painting and fire-escapes; owner, Maurice Casey; architect, H. A. Schulze; contractor, Judson Manufacturing Co.; signed, May 1; filed, May 17; cost $3770.

Eight Ave. near Clement. Frame cottage; owners, Marshall Newman and wife; architects, Kenitzer & Barth; contractors, Peterson & Olson; signed, May 19; filed, May 19; cost $1350.

Eleventh Ave. near J. To build; owners, W. H. and Kate Jones; contractor, G. Larson; signed, May 7; filed, May 22; cost $1433.

Fell near Scott. To build; owner, C. J. Kaighin; contractors, Pattersen & Person; signed, May 17; filed, May 18; cost $5500.

Folsom near 25th. To build; owner, Mary Sparks; architect, John T. Hogan; contractor, James A. McDonald; signed, May 18; filed, May 21; cost $2400.

Folsom bet. 3d and 4th. Raising and moving; owner, T. J. Hund; architects, De Ross & Co.; contractor, F. V. Steirman; signed, May 14; filed, May 16; cost $3585.

Fifteenth near Noe. To build; owner, Delia Ryan; architect, T. J. Welsh; contractor, A. Hawkins; signed, May 10; filed, May 12; cost $3500.

Fulton near Lyon. To build; owner, James Reaxey; architect, E. A. Hermann; contractors, Peterson & Olson; signed, May 22; filed, May 23; cost $1600.

Fulton near Devisadero. To build; owner, Moses A. Epshraim; contractor, W. W. Rednall; signed, May 25; filed, May 25; cost $1450.

Golden Gate Ave. near Devisadero. To build; owner, John Traynor; architects, Lauer & Mullany; contractor, James Cochran; cost $5250.

Harrison near Fourth. To paint Whittier School; owner, Board of Education; architect, Chas. I. Havens; contractors, The Painters Protective League of S. F.; signed, May 24; filed, May 26; cost $1200.

Hayes near Polk. To build and alterations to one-story building; owner, Rose V. Jessop; architect, R. H. White; contractor, John Furness; signed, May 19; filed, May 22; cost $7800.

Howard near 17th. Alterations and additions; owners, J. L. Fallon and Della Fallon; architect, Chas. J. I. Devlin; contractor, Jas. J. O'Brien; signed, May 19; filed, May 19; cost $2190.

Hyde near Bush. Carpenter work to six flats; owner, Samuel Foster; architects, Smith & Freeman; contractor, S. H. Kent; signed, May 17; filed, May 26; cost $14,446.

Hyde near Bush. Plumbing; owner, Samuel Foster; architects, Smith & Freeman; contractors, Shepard Bros.; signed, May 17; filed, May 26; cost $2976.

Market near 5th. Plumbing, etc.; owner, Emma Spreckles; architects, Reid Bros.; contractor, W. F. Wilson; signed, May 8; filed, May 26; cost $20,250.

Market near 5th. Certain branches of work; owner, Emma Spreckles; architects, Reid Bros.; contractors, G. Dillon and J. W. Hansbrough; cost $41,744.

Market near 5th. Lathing and plastering; owner, Emma Spreckles; architects, Reid Bros.; contractor, Thos. Mannix; cost $5920.

Market near 5th. Store front; owner, Emma Spreckles; architects, Reid Bros; contractor, D. McPhee; cost $13,200.

Mason and California. Mark Hopkins Institute of Art, to paint, tint and burn off old paint; owner, S. F. Art Assn.; contractor, P. N. Kuss; signed, May 21; filed, May 22; cost $1400.

Oak near Webster. Plumbing; owner, Edmund Schuntenbaus; architects, Salfield & Kohlberg; contractors, Koch & Grimes; signed, May 9; filed, May 12; cost $900.

Oak near Webster. Moving and underpining; owner, Edmund Schuntenbus architects, Salfield & Kohlberg; contractor, H. Behrens; signed, May 9; filed, May 12; cost $1264.

O'Farrell near Franklin. Carpenter work and tin beams; owner, The Deutsche Evang. Luthern Church; architect, H. Geilfuss; contractor, F. Klatt; signed, April 27; filed, May 15; cost $19,540.

O'Farrell near Franklin. Plastering, etc.; owner, The Deutsche Evang. Church; architect, H. Geilfuss; contractor, Chas. Dunlap; signed, April 27; filed, May 11; cost $2090.

O'Farrell near Franklin. Brick and stone work; owner, The Deutsche Evang. Church; architect, H. Geilfuss; contractor, Adam Beck; signed, April 27; filed, May 11; cost $16,927.

O'Farrell near Franklin. Artificial stone work; owner, The Deutsche Evang. Luthern Church; architect, H. Geilfuss; contractors, Camp & Carillon; signed, April 27; filed, May 11; cost $1149.

O'Farrell near Franklin. Heating appliances; owner, The Ductshe Evang. Church; architect, H. Geilfuss; contractors, Ford Bros.; signed, April 27; filed, May 11; cost $1681.

O'Farrell near Franklin. Painting; owner, The Deutsche Evang. Church; contractor, August Fick; signed, April 27; filed, May 11; cost $1264.

Pacific Ave. near Devisadero. Excavation, concrete, etc.; owner, Annie Meyer; architect, E. A. Hermann; contractor, Carl Greise; signed, May 25; filed, May 26; cost $1822.50.

Post and Montgomery. Elevator; owners, Masonic Hall Associati n; architects, Kenitzer & Barth; contractor, John Hammond; signed, May 4; filed, May 10; cost $6875.

Ridley and Scott. To build; owner, B. Tenderlein; contractor, A. De Fair; signed, May 10; filed, May 11; cost $7000.

Seventeenth near Dolores. To build; owner, Eugene Kelly; architect, Oliver Everett; contractor, Ralph Carey; signed, May 22; filed, May 24; cost $2844.

Sutter street, 1525. Alterations and additions; owner, Mrs. H. Hug; architect, Edmund Kollofrath; contractor, John Furness; signed, May 15; filed, May 16; cost $3922.

Twenty-fourth and Guerrero. Two-story frame and three-story frame; owner, C. Branagan; architects, Martens & Coffey; contractors, Ackerson & Paterson; signed, May 14; filed, May 14; cost $10,425.

Union and Jasper. To build; owner, G. Rocca; architects, Townsend & Wyneken; contractor, G. Masoletti; signed, May 5; filed, May 10; cost $2385.

Union near Laguna. Carpenter work; owner, Jno. M. Allyne and W. H. White; architect, Chas. Geddes; contractor, Jas; McLean; signed, May 25; filed, May 28; cost $6925.

Union near Laguna. Plastering and brickwork; owner, John Allyne and W. H. White; architect, Chas. Geddes; contractor, H. H. Larsen; signed, May 25; filed, May 28; cost $1184.

Utah and Santa Clara. Alterations and additions; owner, Michael Fogarty; architect, Jas. P. Brady; contractor, Thomas F. Mitchell; signed, May 10; filed, May 11; cost $1400.

Valencia and Quinn. Excavation, brickwork; owner, Sarah B. Melone; architect, Clinton Day; contractor, G. Connon; signed, May 25; filed, May 28; cost $886.80.

Washington bet. Powell and Mason. To erect two three-story frames; owner, M. Ghishla; architect, Emile Depierre; contractor, P. A. Antonelli; signed, May 14; filed, May 15; cost $9000.

Washington and Laurel. Two semi-detached frame buildings; owner, John Dempster McKee; architect, W. H. Lillie; contractor, R. P. Hurlbut; signed, May 17; filed, May 19; cost $10,612.

Washington near Locust. To build; owner, Chas. Clark; contractor, Casper Zwierlein; signed, May 23; filed, May 23; cost $7140.

Webster and Pine. Two-story frame except plumbing; owner, Jacob Clauss, architect, Wm. H. Wharff; contractor, Jacob Schaler; signed, May 23; filed May 28; cost $1137.50.

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SINCE our last issue the all absorbing topic of discussion throughout the length and breadth of the United States, is the present struggle for supremacy between organized labor and organized capital.

Deplorable as are the immediate results of this bitter fight, yet we look for good as its ultimate result.

If the present struggle shall awaken society to a realization of the gravity of the present situation, and the absolute necessity of devising laws to establish a just equilibrium between the conflicting demands of Capital and Labor, the price the country is now paying will not be too much for the lesson.

It is doubtful, however, if that point has yet been reached. The absolute necessity of finding a just and equitable solution of the problem, is not yet realized by the public or its government. The law has very properly put down the lawless element, when it reached the point of violence and disorder. The true aim of government, however, should be to find means of preventing the cause of violence and disorder, and it will probable take more serious uprisings to bring this truth home to the people.

But as all progress in human affairs is achieved solely by and through strife, the desired improvement can only be expected to come through this means. To improve the condition of the people of France, humanity waded through the blood and horrors of the revolution. To solve the problems of the present age, may take equally as deplorable means. How disastrous the temporary results may be, only the future can determine.

If capital endeavors to push a temporary advantage to such a point as will drive defeated labor to desperation, or should labor become so exacting as to demand more than its just share of the benefits of production, the solution of the question will become infinitely more difficult. But it is not unreasonable to hope that progress is being made to a solution that will result in ultimate benefit to the growth and prosperity of this American government, and American people.

Possibly the material struggles could be averted, and peace attained at less cost, if the disputants would be content to substitute reason for brute force, and a christian spirit of conciliation in place of the arbitrary use of power and the threats and intimidating methods now employed.

A peaceful result, however, is too much to expect at the present stage of human progress, and it is extremely doubtful if vital questions will ever be solved without an appeal to force and violence.

ON THE USE OF COLOR IN ARCHITECTURAL DESIGN.*

BY H. LANGFORD WARREN.

IT is hardly beyond the truth to say that, so far as the exterior of buildings is concerned, there has been until recently no use of color in architectural design since the close of the sixteenth century in Italy. And even now, though some attention has of late been given to this subject, both here and in Europe, which has produced some successful color design, the most striking fact with regard to our use of color in architecture is probably our timidity. This modest caution in the first unwonted essays at color treatment after so long disuse is certainly wise and right, since too great boldness in this matter is more likely to lead to failure than success. But the possibilities of the use of color in architectural exteriors and the right treatment of it certainly demand more serious consideration than they have generally received. To treat the exterior of a building in a single material and in absolute monotone is doubtless the safest procedure, and is vastly preferable to an ambitious but faulty color scheme, but it is clearly to give up one important source of beauty in architectural design.

Ruskin, in a characteristic passage in his "Seven Lamps of Architecture," thus expresses his opinion on the subject: "I do not," he says, "feel able to speak with any confidence respecting the touching of sculpture with color. I would only note one point, that sculpture is the representation of an idea, while architecture is itself a real thing. The idea may, as I think, be left colorless and colored by the beholder's mind; but a reality ought to have reality in all its attributes; its color should be as fixed as its form. I cannot, therefore, consider architecture as in anywise perfect without color."

In this opinion most architects nowadays will probably concur, though monotone is still largely the rule in the exteriors of our buildings, and there are not wanting those who maintain that it is the ideal and the only dignified treatment. Such a view, however, receives but little support from the authority of the past. Most ancient buildings, it is true, are of one color *in their present condition*, and our architectural ideals are doubtless largely formed by the noble buildings of the past *as we have seen them;* yet we know that when their builders left them most of them were glowing with color.

To recall briefly the history of the color treatment of buildings will show the extent to which color has been employed in architecture.

The columns and walls of the Egyptian temples were covered with rich color decoration which, in most instances, still remains to this day. The capitals, which borrowed their form from the lotus flower or bud, were painted in red and green and white, with ornaments closely imitated from the same plant. The shafts were similarly decorated in color or with hieroglyphics incised and painted. If most of this color is to be found in the interior of the temples, it is because the architecture itself was mainly internal. But little external architectural effect was sought in Egyptian temples until a comparatively late date, except about the entrances, and these were always decorated with color.

In Greece, the marble of the temples (or the fine stucco which covered walls and columns where a coarser stone was all that could be obtained) was regarded as a field for ornamental color treatment. Indeed, the marble seems to have been chiefly prized for its excellent surface for color decoration. The Greek temple did not stand out entirely white against the blue sky, as we are apt to picture it to ourselves but was a glowing mass of color. Since the day of Hittorf's color restorations this is no longer matter for conjecture, but has been clearly proved by the numerous colored fragments and traces of color which have been found. Mr. Edward Robinson has recently fully shown, both by literary evidence and by traces of color which he has found, that even the statues were fully colored in a somewhat conventional manner. The Romans, heirs to the arts of Greece, followed the same methods. The well-known statue of Augustus, for instance, retains such complete traces of color as not only to show that it was entirely painted, but to make on accurate restoration of the color possible. But in the decoration of their buildings the Romans seem to have used applied color much less than the Greeks. Instead of this they obtained their color effect by the use of variegated marbles and precious stones, though applied color was used, especially when expense precluded the use of the more precious materials. The use of applied color in the provincial towns has been made familiar to us by the discovery of Pompeii and Herculaneum. And similar treatment was employed in many buildings of Rome itself; though here in the more important public buildings columns were made of porphyry, verde antique, and rich marbles from the East, and variegated marble was used in slabs as a covering for the walls. Gilding was also lavishly employed in capitals and other members. This method of obtaining color effect by the natural color of rich materials continued in the Byzantine empire, which added to it the use of mosaic. (The marvelous church of St. Mark at Venice is the most familiar and the most beautiful example of this style.) And it continued in Italy through the various styles that followed until the later Renaissance.

The medieval architects of the northwest of Europe did not have these richly colored materials at their command, but they were far from giving up, on that account, the use of color. The very fact of the fairly complete preservation in which the great cathedrals have for the most part come down to us, so far as their general form is concerned, makes especially difficult to us the realization of what their appearance must have been when they still had all their color decoration. But enough traces of color are still clearly visible to show their original condition with tolerable certainty. In a general view, these venerable buildings seem to have no color but the natural gray of the weather-beaten stone—no more variety of tint than can be found in some old cliff of which their walls so much remind us, stained and worn as they are by time and with weeds and brambles growing in their crannies. But if we carefully scrutinize the hollows and protected portions of the carvings, especially in the porches, we shall almost certainly find unmistakable remains of applied pigment. Especially is this the case, for instance—or was before the restorations—in the porches of the cathedral of Amiens, where the pigment used on the molding of carved roses and of the hawthorne in its natural colors could still be plainly seen in places. The most striking and complete example I have seen and noted of medieval color decoration on the exterior of a building is to be found at the Church of St. Martin at Laon, in the central porch of the west front—which dates from the fourteenth century. Enough remains to show that this porch was completely covered with color. The columns and arch moldings were painted in red and yellow chevron stripes and similar patterns, which can be clearly traced. In the tympanum are carved two angels swinging censers on each side of a figure (probably of Christ or the Virgin) which has disappeared and which stood on top of the center mullion of the door. The angels' wings were gilded and their robes were tinted. The background was filled in with other painted angels, and the under side of the tabernacle roofs over the figures in the

*Prepared by invitation of the American Institute of Architects, to be read at its annual convention, but by its courtesy made a part of the programme of the Congress of Architects.

porch was painted blue. These colors and other similar remains are quite crude. What the general effect of this treatment must have been in an interior, one gets a clear and undoubtedly substantially correct idea from the restoration of the Sainte Chapelle at Paris, especially in the upper chapel. In the interiors the remains of color are more frequent and in better preservation, as would be expected, and are especially to be noted in the chapels and on tombs and rood-screens. A very interesting and complete example of color applied to interior architecture is to be found in the rich late Romanesque porch now walled up, on the north side of the cathedral of Rheims.

It is clear that one should picture to himself the completed cathedral of Medieval France as richly decorated with color inside, besides the stained glass windows; the color overflowing, as it were, and covering the porches, which were probably entirely covered with rich coloring. Color was, it seems likely, also, more sparingly applied to other portions of the exteriors.

The interiors of the cathedrals of Italy at this time were also fully decorated by applied color, for mosaic, which had been introduced from Byzantium, fell more and more into disuse as fresco painting developed. But in the exteriors, in connection with colored marbles, which, as we have seen, were principally relied on for color, mosaic continued to be used, as in the gorgeous fronts of the cathedrals of Siena and Orvieto. With the coming of the Renaissance mosaic becomes still more unusual. But colored marbles were never used with more delicate taste or more beautiful effect than they were by the architects of the early Renaissance in Italy, and there are few classes of buildings so fruitful of lessons in the right principles of the application of color to buildings. The little Monte di Pieta and the palazzo publico at Brescia, or Fra Giocondo's loggia, at Verona (in which sgraffito is also employed), or the Ca'Dario or Ca'Trevisan, at Venice, may be named as examples of these.

With the further advance of the Renaissance, color gradually disappeared from the exteriors of buildings, first in Rome and Florence, later in Venice, whose delight in color led her; while other cities were already contenting themselves with monotone, to cover even the exteriors of her buildings with paintings by Giorgione, Veronese or Sebastiano del Piombo, the faded remnants of which may still be dimly seen on her walls.

In this rapid survey, no mention has been made of the styles of the East or of the Moors in Europe—styles essentially dependent upon color for their beauty. Attention has been purposely confined to those styles which have been developed in, or have directly influenced, western Europe.

What has been said recalls enough of the history of color in architecture to show clearly that the later, and especially the debased, Renaissance is the only style which, until modern times, has attempted to dispense altogether with color as a means of architectnral effect, and that in most styles color has been regarded as of essential importance, the apparent exceptions being due, until the time of the Central Renaissance, to lack of means rather than to preference.

In the face of this unanimity of opinion and of precedent, it would be difficult to argue in favor of a general use of monotone in the exteriors of buildings. The strength of argument lies, however, altogether in favor of the employment of color. But it must be confessed that many of the recent attempts at external color treatment are far from successful. Such use of color is as yet new to us, and it is not matter for surmise that there should be some bungling. Especially to be regretted, for instance, is the placing of color emphasis on the quoine at angles and on window and door jambs. This treatment was first, I beileve, brought into prominent use by the late H. H. Richardson, and has since been much imitated; but like most great men it has been Mr. Richardson's fate to find more imitators of his faults than of his good qualities.

In view of the growing desire for color treatment and its difficulty, a statement of the principles which should govern color design in architecture is often asked for.

In the first place, it must be said that there is perhaps no subject more difficult to consider by means of *words*, inasmuch as almost any color scheme which it is possible to describe in words can be made harmonious and perhaps beautiful in the hands of a true artist, or may be discordant and ugly, arranged by a person without color sense. The delicate variations and the proportioning of one color to another, which make the difference between beautiful and unpleasant, are too subtle to be described in words. In the next place, while the color sense may undoubtedly be trained and strengthened by proper instruction and by observation and practice, yet it is useless for anyone without that inborn color sense to undertake to have anything to do with it. So that of color more than of any other object to study, the paradox is true that instruction is unnecessary for those that are gifted and useless for those that are not. Finally, while for the reasons above given, dogmatism with regard to color is especially out of place (for a master will upset all rules), yet there is, perhaps, no subject so difficult to treat without dogmatism, since it is too subtle for argument, and conclusions with regard to it are necessarily based on observation and experience, guided by taste and feeling—not by reasoning. So much premised, a few general principles may be stated as marks to shoot at.

The first principle I feel inclined to lay down is that any theory of color design, taken as a guiding rule for practical work, is certain to be fatal to the result. What horrors have not been perpetrated in the name of the old theory of the primary colors—red, blue and yellow, with their secondaries, tertiaries, complementary colors, and what not; a theory which, to be consistent, would have us refuse to see any beauty in the colors of a peacock's tail or a for-get-me-not. But this theory has been exploded. Very true. But as a guide to color design the Jung-Helmholtz theory is not much better. It can to some extent analyze and explain, but it cannot construct. And an artist is not concerned with analysis and explanation, but with creation and enjoyment. Ruskin's theory that the *principles* upon which nature applies her color must be right, and that therefore color as applied to architecture must not follow constructive lines, because in nature it does not (as in the tiger-skin,) would, logically followed, lead to absurd conclusions.

Furthermore, the different styles demand different color treatment, so that general principles are the more difficult to lay down.

In approaching the study of color, let us then clear the ground by getting rid of all theory at the outset, and let us follow our sense of what is beautiful.

In what has been said above it is not meant to imply that nothing is to be learned from nature for our color treatment of architecture. A few broad principles we may perhaps glean from her, but our lessons will be for the most part in learning what is beautiful, rather than by opportunity for deducing recipes or theories. The English architect, E. L. Garbett, in his little book on design, mentions one of the few general principles it may be safe to deduce. "In nature," he says, "sameness of coloring is the rule, variety the exception; the former being found in all large or grand objects and broad surfaces, and the latter only in small and scattered organisms." A general law is no doubt here pointed out—by "sameness of coloring" Garbett cannot, of course, mean absolute sameness, but the sameness of a green tree where the whole is green, but there is great variety of green in the individual leaves; or of a gray cliff, where the whole is of one prevailing color, but with much variety of shade and tint within certain limits. But the principles here indicated in so far as valuable as guides in color design, are so not because we find them in nature, but because we see by observation that they apply also to art. A small building may, if you please, be a glowing mass of color; but a large one, all of vivid and varied color would be tiresome; to have dignity and impressiveness it must have one dominant prevailing tone. This may be seen by comparing two such buildings as the quomos of Florence and of Pisa The Pisan color is much pleasanter and gives greater dignity of effect on account of its broader massing. The building is mainly of one color (white marble, now a rich gold with age) with mosaic patterns of various marbles in tympana and spandrils, while the cathedral of Florence is checkered all over with colored marbles—dark green, white and reddish brown. The dominant color must be selected with the greatest

care with regard to the surroundings of the building and the colors of adjacent objects, of whatever kind, with which it will come in contrast. This is a point too often not enough considered in the choice of building material. But this dominant color will not be of absolutely uniform tint. If there is to be any beauty of color there must be some variety, as in the leaves of a green tree where light and shade add to the variety of local color, or in a cliff, or mountain side, or pebbly beach. If stone is used, the different blocks will not be accurately matched in shade, but will be so placed as to make slight contrasts in tint between the different blocks. If the structure is brick, the brick will not be culled, but used with all the accidental variety the kiln affords. No surface could well be ugher than the respectable brownstone front, or the wall of culled red pressed brick. Indeed, it is strange how, when traveling in Europe, we can admire the variety of color in old brick and stone walls, and tile roofs, and then when we return home continue to build with the utmost monotony of tone our great mechanical skill can attain, and proceed to wonder why our wall surfaces are lacking in beauty. The dominant shade may be further varied by delicate contrasts of other material in friezes or spandrils, as is so beautifully done in the cathedral of Pisa or the palazzo municipale at Brescia already referred to.

If vivid color is to form a part of the scheme, it should be mainly confined to the recesses of loggias and porches, and should be focused at some one point—for instance about the entrance—which should form the key and climax of the whole design. But the mistake is often made of supposing when color treatment is mentioned that vivid color is necessarily intended. Every building necessarily has its *color*, whether vivid or subdued, greatly varied or largely in monotone, and this color should receive careful study and consideration, and should not be left to be decided by accident, or by the whimsies of inconsiderate building committees. Indeed, the whole design should from the outset be made with a certain material and a certain color treatment in view. The fact that the color scheme may seriously affect the apparent proportions of the building is often overlooked.

Whether the color of a building should be natural or applied, will necessarily depend largely on circumstance and on climatic considerations. The climate, indeed, and the kind of light it brings with it, is of the utmost importance as a determining influence in the color scheme. In our climate there can be no doubt that we should depend for our color largely on the natural colors of materials. Applied color and rich decoration being confined to porches and loggias, as has been so effectively and for the most part so beautifully done at the World's Fair buildings.

Another principle too ofter overlooked is that, as Ruskin has pointed out, a certain mystery is necessary to perfect beauty and delightfulness of color. There must be constant change. The eye must be continually confused. Anything like mechanical regularity inevitably injures the effect. Thus, in using stones of different colors in the decoration of a building in bands or patterns, one color should be allowed to run over somewhat into another. In decorating a wall with bands of color—say, red and white marble, for instance—let occasional white stones find their way into the red bands and occasional red stones into the white. In the same way in using diaper patterns, let the pattern be broken by allowing the ground color to run into the bands—that is, let the bands occasionally disappear. This treatment will often be noticed in old English and Dutch brick diapers, and can be seen in the front of the Ducal Palace at Venice. Or if bright colored stones are used betweed the brackets of a cornice over a dull colored wall, as at the palazzo publico at Perugia, let some of the spaces between the brackets be filled with the wall color. In all these cases care must be taken not to lose the pattern; the eye must always unconsciously complete it.

Another principle seems to be that the contrast between two colors, used in anything like equal quantities, and either in large masses or pervading a whole design, must never be great. They must harmonize, as dull red and brown, greenish or purplish blue and gray. The vivid and strongly contrasting colors must only be used in small points to give value to the whole composition, and on the judicious use of these small points of bright color will depend the brilliancy and beauty of the whole. A single point of color may change a whole color scheme—may ruiu it or may give it just what it lacked. Thus, a point of light red may make a gray wall look blue by contrast, or it may make a brownish gray look red by sympathy. The effect of the stronger colors in changing the apparent color of duller hues placed near them is a matter always to be carefully considered, and is one of the things which makes color composition so difficult if not guided by that unerring instinct we speak of as "a strong color sense."

The marking of jambstones and quoins has already been spoken of as a thing to be avoided. Jambs and corners are essentially part of the wall, and should not receive a different color treatment. In general, the common practice with us of making the trimmings uniformly of one color and the rest of the work uniformly another is rarely effective and is generally a thoughtless or indolent subterfuge to avoid the serious study of color treatment, or to disguise inability to handle it. There can be no such rule-of-thumb for arranging the color of a building. It must always be a matter of feeling, and of separate feeling in each case; but feeling always, rather than thought. Good color can never be worked out like a mathematical problem.

Of late the perfecting of enameling of terra cotta and the richness of color obtainable in blocks of all sizes in this material opens a new and rich field for color design. But it comes with danger in one hand, though with promise in the other, and its rich possibilities will need to be used with reserve and caution if they are to lead to success.

The safe rule is, if you are a colorist, use color freely—indeed, you cannot help doing so when opportunity occurs; if you are not, have as little to do with it as may be.—*World's Congress of Architects.*

CORRESPONDENCE

Chicago, June 19, 1894.

To the Editor of the California Architect and Building News:

Dear Sir:—In the several articles lately appearing in your columns respecting the fire resisting qualities of concrete, I have noticed no allusion to the tests carried out by Professor Bauschinger of Munich which were published in this country some years ago. They were instituted I believe by the government, for the purpose of ascertaining the pre-resisting qualities of iron, stone, brickwork and concrete, and resulted in concrete standing out pre-eminent from them all in this respect.

Sometime ago a nitro benzine factory near Lyons, France, the walls of which were of concrete, took fire. The fire was of such a destructive character that the machinery was partly melted and the only effect on the walls, was to partly vitrify their inner surface.

At a fire at one of the government shops at Benicia sometime back. I examined the ruins, and whilst the granite and freestone trimmings had suffered severely, the artificial stone window head made of Portland Cement Concrete, were but slightly injured although they had stood the brunt of the fire; the bricks about them were badly injured.

Take any face brick made on the Pacific Coast, heat it to redness and plunge it into cold water and it will go to pieces. Firebrick even, often suffers under such a test.

With due care in the selection of the aggregates Portland Cement Concrete, will withstand fire better than any of our ordinary building materials. Yours Respectfully,

Ernest L. Ransome.

QUALITIES OF BUILDING STONE.*

The qualities necessary to the best possible building stone are: Workability, durability and beauty. It must also be cheap.

Workability includes in its meaning accessibility, a ready yielding to quarrying operations, the absence of refractory qualities under the hammer and chisel, and a texture and grain that will hold decorative finish.

Stone that cannot be quarried readily has the disadvantage of great cost to begin with. If the "raw material" is expensive, the finished product must be costly. On the other hand, if nature has so deposited her stores that the stone is easily taken from the quarry, still, if the material is refractory in the final cutting and finishing, no matter what may be its other qualities, it cannot be a very cheap material for the builder, as it will demand an over amount of expense and delay in preparation. Still less will it be desirable if it obstinately refuses to hold finish or decoration. Stone that comes from the quarry soft and yet somewhat tough, but hardening after a time, has the finest quality of workability. This renders it easy to quarry, very responsive to the tools of the cutter, and capable of taking easily and holding permanently the finish and decorative designs of the architect's specifications. It must be kept in mind, however, in examining stone, that if it comes from the quarry wet, and for that reason easily workable, it may again take up water after drying, which would be most objectionable; but if in the process of drying in the first place it passes through a chemical change which will render it ever afterward impervious to water, the quality is just what could be wished for in this regard. Usually an examination of the out-cropping surfaces of the stone in place will give a safe knowledge of its value as regards workability. Next after the character of the stone regard must be had touching the conditions of its deposit. Too much overlying matter, whether stone or earth, will usually make the quarry work very heavy and expensive. This overlying matter, technically called "stripping," is, as a rule, quite worthless, and must be entirely removed before the stone can be worked with steam channelers or other quarrying appliances, hence the necessity of a careful examination to determine its nature and extend in each case before opening a quarry.

Durability, as applied to building stone, includes every quality tending to make the material lasting and unchangeable after it is laid in a structure. These qualities are many and often seemingly conflicting in their nature. Hardness, elasticity, tensile strength, power to resist the greatest crushing force, imperviousness to water and invulnerability to the attacks of air and its corrosive and disintegrative burdens are some of the qualities, but not all. Eveness and homogeneity of composition, unity of substance, so to speak, and the power to resist extremes of heat and cold are quite as necessary. It will be seen at once that chemical analysis must be relied on to insure the best knowledge of some of these requirements. Some otherwise good and durable limestones will become corroded and discolored and have their integrity destroyed by the effect of sulphurous smoke from the burning of impure coals; others will be injuriously affected by the action of rain-water, and still others by the oxidizing power of the air. Some sandstones bear too much iron in their composition; others lack sufficient cohesion of the particles, whilst others yet are clayey or unequal in grain or texture. Every test of practical science should be given to stone before it is used in any building intended to be a permanent structure. As a rule, if the outcroppings ledges are found to be infiltrated with water, which makes the outer surface constantly damp, the stone will not be good, for this would indicate that it would take up too much moisture in the wall. Still, it is often the case that an apparently over-hydrous stone will dry out permanently after it is quarried and cut. Many of the sandstones, notably the better qualities of conglomerate, are of this character, and so soft when first taken out that they may be cut to any rough shape with a common ax or hatchet, but hardening after a few day's exposure so that water will not affect them.

The elasticity of stone may be tested by sawing it into long, slender strips, say two inches square and three feet long, when, if it be quite perceptibly flexible, its elasticity is good. If such a bar be suspended so as to hang free by a string and is struck a light blow with a hammer, its evenness and solidity of fiber will be attested by a clear, sweet metallic note, not unlike that of a fine bell, or that of a well tempered steel bar. As a rule the best stone will break with a direct line of fracture; but it may be conchoidal or otherwise indirect and still be unobjectionable. Parallel lines of cleavage or of stratification are always favorable indications where other features are promising.

Resistance to crushing weight may be pretty safely inferred from solidity of texture and eveness of grain; but it is always necessary before a final acceptance to submit the material to the severest tests of an apparatus for that purpose. This will be described in the proper place.

In examining sandstone, with a view to building purposes, the outcropping, if there be any, should be carefully scanned with a view to discovering what effect long exposure to the atmosphere and the rigors of winter may have had upon it. If the stone has "weathered" badly this will be shown by one or another sign of disentegration or demolition and a talus of fragments and sand will be found formed at or near the base of the outcropping cliff. Often the substance of the rock will show unmistakable evidence of inequalities of structural composition, such as horizontal cavities caused by the weathering out of seams or streaks that, on account of bearing too much iron, have oxidized and crumble away. Such stone, if used in a building, would prove worthless and, therefore, dangerous. It is often the case, as I have observed during a long experience in civil engineering, that public bridges erected by counties are rendered unsafe by having their piers and abutments constructed of this kind of stone, and that, too, in places where most excellent material lay near at hand, and which a little knowledge of the nature of stone would have pointed out to the superintendent. Too frequently it happens that appearances of the most untrustworthy kind are relied upon where an ignorant person is set to do work which ought to be in charge of a skilled and well-informed engineer.

In judging of the probable durability of limestone, before subjecting it to any test of science, the same observations should be made as in the case of sandstone, with a view to ascertaining its weathering qualities. Any unequal discoloration of the face of the exposed ledge should be scrutinized carefully. Usually these are caused by the presence of iron in the composition of the rock. But limestones are much more injuriously affected by hidden faults of composition than are sandstones, and for this reason they demand a much more careful examination before any extensive quarries are opened. It is often the case that iron in limestone will do no more than discolor the outer surface on exposure to the action of air and rain-water; but even this is a serious defect when the stone is to be used in any structure wherein beauty is a chief object. For the rough masonry of

*From 17th Indiana Geol. Report.

ordinary bridges, and for the hidden foundations of buildings, a cheap and durable stone is what is most wanted, and in these discoloration is not a fatal fault.

Beauty, when applied to any building material, includes all the good qualities already enumerated with the added value of a pleasing color, or combination of colors and a general effectiveness of appearance when the structure in which it is used has been completed. The variegated granites undoubtedly are the most beautiful of all building materials. Next to granite the red and brown sandstones are most pleasing to the eye, but the white, gray and blue limestones are very effective, and they have the advantage over granite in that they work much more easily in ornamentation, while they take figures in relief with far more clearness of outline than do the sandstones as a rule. Architects have long since discovered the pleasing effects to be produced by using different kinds of stones in the same building, placing each where its particular qualities will best serve the general motive of the design. As a rule, all else being equal, the stone which holds its native color best will be most beautiful in a building, and of the stones which change color, that will be most desirable which changes least and evenly. Some of the gray sandstones, however, change color unevenly and give a striking and ofttimes picturesque cloudiness to the surface, which adds to its effectiveness of color in a wall. The nearly white limestones that take on by exposure a dark cream-brown hue, if they do not contain too much magnesia, hold that tint very well and are quite beautiful. As a rule the presence of many large animal remains in a stone is objectionable on account of the tendency of such a composition to crumble; but where fossiliferous rock is durable it will usually be found very beautiful when cut, the organic remains bossing it over with variegations that greatly heighten its appearance. Stone which contains large fossils is not, however, the best for receiving raised ornamentations, such as figures in relief, no matter how durable and beautiful it may be, for the animal form will interfere with nicety of cutting and polish, as well as with the regularity of the figures. Fossils will usually be found harder than the matrix in which they are set, but this not always the case, for quite often the form is that of a hollow cast or impress, filled in with material which crumbles easily. As a rule fossils, though very hard, are but loosely set in sandstone, and often they are very large and rough forms of plants, extremely silicious and refractory. Blocks containing these are to be avoided as probably worthless for building purposes, however valuable and interesting they may be from a scientific point of view.

Many very beautiful stones that are not durable when exposed to the weather are very valuable for the inside finishing of buildings, where they will last for ages, holding the finest tints of their coloring without preceptible change.

From what has been said above it will be seen that every owner of stone beds should, before going to the expense of opening quarries, have his rock beds examined by an expert, whose report should show all the defects as well as all the good qualities of the material. Usually this can be done without any delay of labor or money, for the experienced geologist or engineer can quickly discover from the stone and its surroundings the nature of the deposit, and very simple chemical and mechanical tests will settle the question of strength and durability. There are beds of magnificent building stone lying undeveloped in many places, simply for the reason that the owners are not aware of the treasure they possess. In other places quarries are being industriously worked and the stone used in the erection of costly buildings, where in fact the material is wholly unfit for use on account of its lack of durability. I have examined many extensive structures whose stone was fast crumbling away. True, a few years will not show much decay, but in the long future the result will certainly be disastrous. The constant action of the atmosphere, the expansion and contraction consequent upon extremes of heat and cold, and the disintegrating effect of rain-water slowly but surely tell upon the integrity of the exposed parts.—*Maurice Thompson in Stone.*

So great is the echo in one of the rooms of the Pantheon that the striking together of the palms of the hands is said to make a noise equal to that of a 12-pound cannon.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

BUILDING for Mrs. A. M. Parrott, Market street, San Francisco, Pissis & Moore, architects.

STUDY for Railroad Station, by T. O'Connor '94.

A Cottage at Stockton for J. B. Paris, Esq., W. W. Oates, architect.

SCHEME for a Spanish Chateau, Spanish Renaissance style with interior garden court, is by T. O'Connor.

CO-OPERATIVE BUILDINGS.

SOME years ago we discussed in these columns the advisability of a method of building to do away with the kitchen and many of the disadvantages of housekeeping, says *Architecture and Building*. The idea then started seems to be about to become an established fact, and the professors of the Chicago University will adopt, it is said, the scheme as elaborated by Mrs. Mary Coleman Stuckert for the erection of a model home settlement in that charming section of Chicago known as Hyde Park. Within a block of land forty-four houses of pressed brick and stone, tastefully constructed and varied, are to be erected. These houses may be of several stories, but none are to be over two rooms deep in order that they shall have essential light and air. In the centre of the flat is to be a large two-story building. Under this roof will be gathered the kitchen, laundry, cold storage plant and the machinery for heating and lighting. In the second story of this building are to be a kindergarten, library and a hall for amusements. The different houses are each to be connected with the central building by telephones and an electric conduit. The latter is to convey hampers for the meals to and from the kitchen. These hampers will be constructed of some non-conductive material in order that they will retain the heat. In the same hampers the dishes will be returned to the kitchen to be washed. There will also, however, be a central dining hall for those who wish or where large dinners may be given.

That the idea is considered feasible is proved by the action of the Illinois Chapter of the American Institute of Architects, who have invited Mrs. Stuckert to address them on the subject on July 2d. As Chicago may be considered the first to utilize the "skyscrapers," it appears that she is to be also the pioneer of another type of building enterprise which is likely to prove popular. We noticed a real estate paper claims that Mrs. Stuckert proposes to carry out an idea originated by them a few months ago, but Mrs. Stuckert is said to have spent several years in perfecting her scheme, which as we before stated, is an elaboration of our views published some years ago.

BUILDING FOR MRS. A.M. PARROTT
MARKET ST. SAN FRANCISCO
PISSIS AND MOORE. ARCHITECTS.

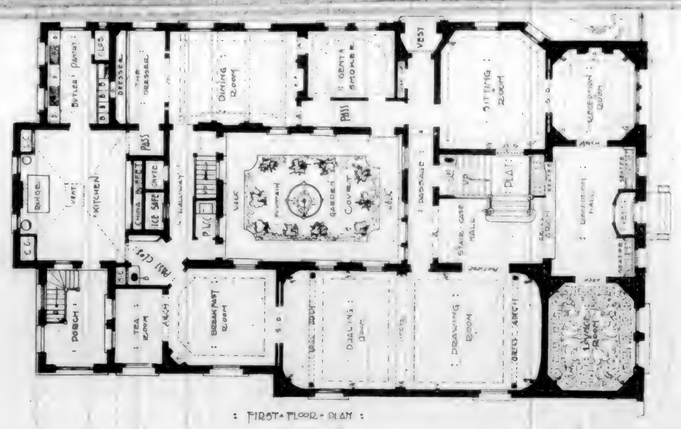
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

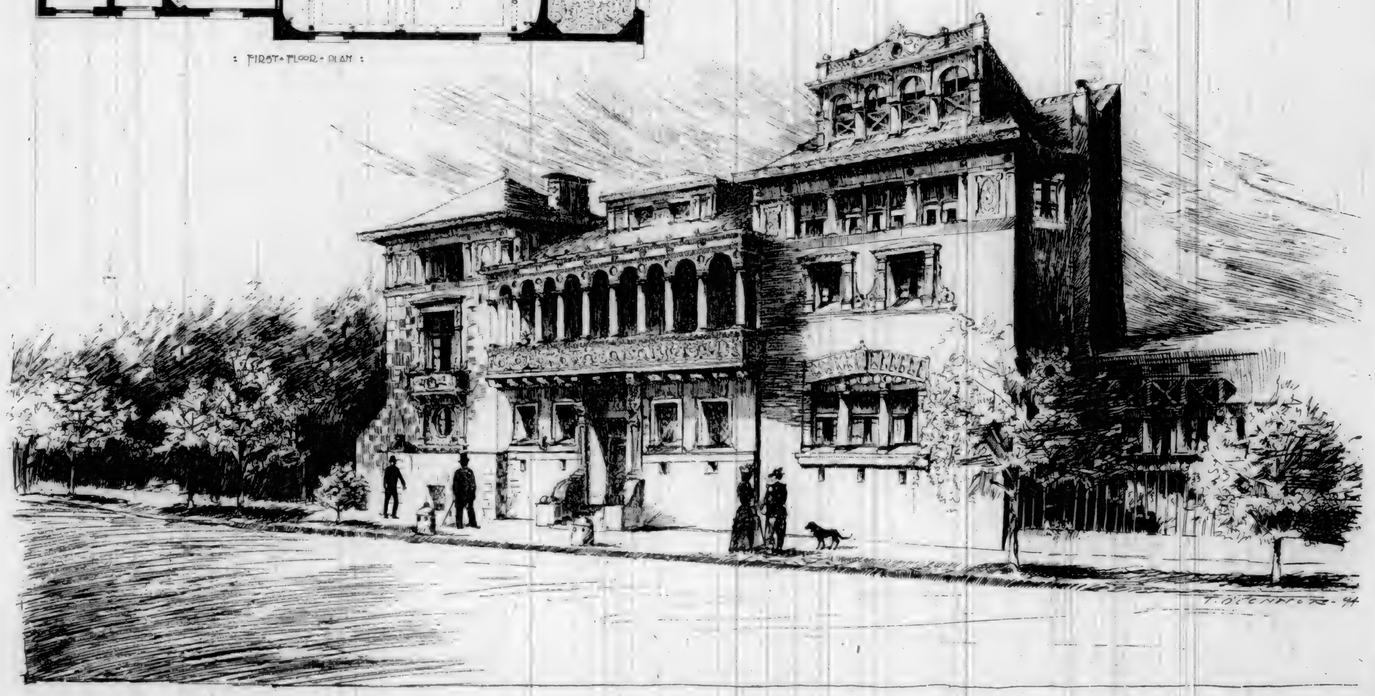
VOL. XV Nº 7 JULY 1894.

: STUDY FOR A CHATEAU :
: SPANISH RENAISSANCE :

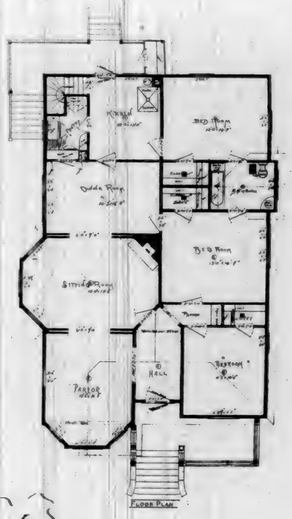
T. E. O'CONNOR DEL & DES.

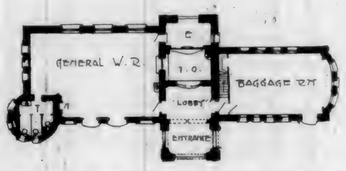


: FIRST FLOOR PLAN :



A COTTAGE AT STOCKTON
FOR J. B. PARIS Esq.
W. W. OATES, ARCHITECT.





STUDY FOR RAIL-ROAD STATION

GROUND PLAN

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV Nº 7 JULY 1894.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

THE first six months of this year has shown a decrease in value in comparison with the first six months of 1893, though an increase in the number of buildings.

FOR FIRST SIX MONTHS.—1894.

1894	Brick Buildings No. of	Brick Contracts No. of	Brick Building Value	Frame Buildings No. of	Frame Contracts No. of	Frame Building Value.	Alterations & Addit'ns No. of Buildings	Alterations & Addit'ns No. of Contracts	Alterations & Addit'ns Value.	Total No. of Buildings	Total No. of Contracts	Total Value.
Jan'ry...	1	5	$ 64,867	27	37	$ 124,620	19	29	$ 46,046	47	71	$ 235,533
Feb'ry...	2	6	30,436	22	31	96,975	7	12	17,452	31	49	150,863
March...	1	3	11,225	56	60	395,470	14	17	34,591	71	80	441,286
April.....	7	15	165,437	121	144	289,214	16	21	33,604	144	180	488,255
May.....	5	12	126,691	35	46	199,653	16	16	50,281	56	74	376,625
June.....	7	11	74,704	40	46	152,092	13	13	39,166	60	70	266,962
Total	23	52	$ 479,360	301	364	$1,258,924	85	108	$221,140	409	524	$1,959,424

To this amount should be added the further estimated sum of $500,000 where no contracts have been filed, which would increase the sum total to $2,459,424.

FOR FIRST SIX MONTHS.—1893.

1893	Brick Buildings No. of	Brick Contracts No. of	Brick Building Value	Frame Buildings No. of	Frame Contracts No. of	Frame Building Value.	Alterations & Addit'ns No. of Buildings	Alterations & Addit'ns No. of Contracts	Alterations & Addit'ns Value.	Total No. of Buildings	Total No. of Contracts	Total Value.
Jan'ry...	3	7	$ 70,770	27	35	$ 143,988	2	5	$ 6,040	32	47	$ 220,798
Feb'ry..	1	3	22,400	40	47	202,447	18	25	64,052	59	67	288,899
March...	5	9	240,458	48	55	277,323	18	30	280,221	65	93	848,002
April....	7	17	24,793	57	67	251,827	12	18	41,667	76	83	420,287
May.....	1	2	15,950	65	77	280,129	10	11	20,420	81	90	316,488
June.....	7	11	78,347	60	73	332,827	8	11	18,850	75	95	430,024
Total	24	49	$ 614,518	297	354	$1,498,541	68	109	$425,239	298	475	$2,524,498

The business of the first six months for several years is shown by the following table.

1885—754	contracts	value,	$4,267,375
886—670	"	"	2,486,633
1887—516	"	"	3,269,914
1888—437	"	"	2,719,820
1889—546	"	"	3,910,600
1890—556	"	"	3,793,858
1891—583	"	"	3,916,973
1892—411	"	"	2,942,496
1893—475	"	"	3,024,498
1894—524	"	"	2,456,424

THE TOWER OF THE PHILADELPHIA CITY BUILDING.

ACCORDING to the Philadelphia *Press*, there are signs of movement in the tower of the Philadelphia City Building, and work has been suspended on the upper portion until the substructure can be strengthened. It will be remembered that this tower was originally intended to be the highest structure in the world. Since the design was made, however, its proposed height has been far surpassed by the Eiffel Tower, and, when the building is completed, it will probably hold only the third or fourth rank among high structures. However, a tower five hundred feet high is, in any case, a rather serious matter of construction, and it is not surprising that difficulities have been encountered. According to Mr. Powell, the newly-appointed architect of the building, who seems to have been the first to discover the movement, and point out the true cause, the foundation and first story of the tower were well built, of perhaps sufficient thickness, with brickwork in cement. Above the first story, for some unexplained reason, the walls, although about six feet thick, were built, for several stories, with lime mortar, with a facing of marble ashlar, twelve inches thick. Above the fifth story, the builder seems to have recovered his senses, or the architect to have realized what was going on, for henceforth the brickwork was laid in cement. As the weight on the masonry increased, the natural result took place. The walls of the first story and basement, being laid in cement, kept their place, Mr. Powell having found no trace of settlement subsequent to the hardening of the cement. Where the brickwork was laid in lime, however, there has, of course, been no hardening. The mortar in the interior of the walls is still soft, and the compression of the joints, added to the shrinkage from evaporation, has not only caused serious settlement, but by bringing the pressure on the thin, but almost incompressible marble ashlar, has crushed and split this to a rather alarming extent. Mr. Powell has arranged to fill up some of the arches in the lower part of the tower, and in other ways distribute and equalize the weights, and, as we gather from the newspaper account, to reinforce the masonry in lime with proper brickwork in cement; and it is much to be hoped that his efforts to stop further mischief will be successful. It will be remembered that considerable repairs on the lower portions of this tower had to be carried out nearly ten years ago, owing to carelessness of very similar character on the part of workmen or architect. At that time a considerable portion of carved and polished stonework had to be replaced because it had been cracked and crushed through the unequal settlement between the brick filling and the facing, the joints of the latter not having been laid slack enough to allow for the greater compressibility of the brickwork filling. Accidents of this kind are not so uncommon that their causes and remedies are not known to every one, and yet there are architects and workmen whose love for a close, neat joint in stonework is such, that they make use of it at the risk of having to make costly repairs later, such as these at Philadelphia or those demanded by a similar mishap at the Statehouse at Hartford.—*The American Architect and Building News.*

DISINFECTION OF SEWAGE BY MEANS OF LIME.

THE practical employment of lime for the disinfection of sewage, as recommended by Pfuhl, is as follows: In order to render free from danger fresh sewage that may contain the organisms of typhoid fever or Asiatic cholera, it is necessary that lime be added to the sewage in the proportion of, at least, one to one thousand. In this proportion, disinfection is complete in from one hour to one hour and a half. It is necessary that during the addition of the lime the sewage be kept in motion, so that there will be a homogeneous distribution of the lime throughout it, for it has been shown by experiment that in sewage not so stirred, lime may be added often to an extent of three to one thousand, and yet living typhoid bacilli may be detected after two hours, a condition evidently due to the restriction of the activity of the lime, to and immediately about the point in the still sewage at which it was deposited. In practice, it is further to be observed that the disinfectant activity of the lime is frequently interfered with through the presence of precipitating substances, such, for example, as the salts of sulphuric acid. It is also necessary that the lime should be of the best quality and freshly burned, so that in calculating the amount necessary for a given volume of sewage, only pure calcium hydrate will come into the computation.—*Internation Medical Magazine.*

JUDGE—"Well, doctor, what is the condition of the burglar's victim?" DOCTOR—"One of his wounds is absolutely fatal, but the other two are not dangerous and can be healed."—*Fliegende Blatter.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE MONTHLY MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Franciso Chapter of the American Institute of Architects was held on the afternoon of Friday, July 13th, at the Mark Hopkins Institute of Art.

The ballots on the application of Mr. W. J. Lyon, for fellow membership in the Chapter were opened, and declared Mr. Lyons duly elected.

The principal topic of discussion was the proposition under consideration by the New York Chapter, on the advisability of modifying the schedule of charges as formulated by the Institute, as far as the same has reference to preliminary studies and competitive work.

The Chapter was of the opinion that the proposed changes were perfectly proper, and voted to endorse the recommendations of the New York Chapter.

THE DECLINE IN PRICE OF ELECTRICAL EQUIPMENTS.

IN commenting on the business situation and the decline in prices of electrical apparatus, the *Electrical Review* says: "Six years ago the price for a complete equipment for a trolley car, including two motors, was about $4,500. This price held for a year and a half and then dropped to $3,850, $3,500, and $3,300, until two years ago it was about $2,850. One year ago $2,000 was the price of the same equipment, greatly improved in quality and efficiency, while to-day the average price is between $1,000 and $1,200. We have been told of an electric railway manager who desired quite recently to purchase an equipment for a single car. He wrote to seven manufacturing companies, and immediately was called upon by seven salesmen, all of whom had paid traveling expenses to try for the order. The prices quoted ranged from $1,500 to $640. The manager bought the $640 apparatus. Here we have a decrease in actual selling prices from $4,500 in 1888 to $640 in 1894, a period of six years. In 1888 there were seven electric railways in the United States. In January, 1890, there were 162 electric railways in operation and in process of construction. In January, 1891, this number has grown to 281, while to-day there are probably over 500 cities in the United States equipped with electric roads, many of them of great mileage, as in Boston, Brooklyn, St. Paul, Minneapolis and Cincinnati.

"This marked reduction in the price of railway apparatus during the short period of six years is due largely to competition between manufacturing companies, but chiefly to a reduction in the cost of manufacture, accompanied by an increase in the quality of the product. The margin of profit on the equipment mentioned at $4,500, in 1888, was not as large as it was on a better equipment at $2,850, in 1892, owing to the reduction in the cost of the manufacture. While prices have been fearfully cut during the last year by all the manufacturing companies, partly due to intense competition and partly to the business depression, we do not believe that any company can make and sell a satisfactory car equipment for $640 and clear a profit on it."

LIGHTNING STRIKES A CHICAGO "SKYSCRAPER."

LIGHTNING struck the Teutonic Building, corner of Fifth avenue and Washington street, at noon of June 15th. The larger portion of the north finial of the balustrade on the Fifth avenue side was nearly split in two, a part falling to the pavement below and the remainder scattering over the roof and the court of the building. That part which traversed the distance of ten stories to the pavement fell among the passing pedestrians and, together with the shock of the storm, produced a panic. No one was injured, though several had narrow escapes.

A COUNTRY RESIDENCE.

The tenants of the big building from the tenth to the sixth floor felt the shock severely. In some of the rooms a panic ensued. Ex-Coroner Hertz, Colonel Moore, J. C. Saterlee and others, keenly sensitive to the shock and blinded by the brilliancy of the flash, fled into the hallway, where they were confronted by a fantastic display in the building's court, which seemed to form a center for the electric current in its efforts to reach the ground.

The Teutonic is the first of the "skyscrapers" to be struck by lightning. It is a steel structure from the basement to the roof. A close examination of the point of contact and the immediate surroundings, together with the fact that the electric-light plugs were blown out in the basement, suggests the conclusion that the electric current, after demolishing the terra-cotta covering of the finial, came in contact with the steel rod which supported the demolished finial, and by it was communicated to the steel structure itself, thus making a conductor for the electric current from the roof to the basement.—*Examiner*.

CASTLES IN THE AIR.

THE urban architects of the United States are interchanging views on the tendancy towards Tower of Babel architecture in our cities, and we are gratified to note that there is a unanimity of sentiment against the many-storied, steel-framed structures. But there is a diversity of opinion as to the best means of successfully opposing this tendency. While some think that drastic legislation should be properly interposed, says the *Architectural and Building Monthly*, others believe that moral suasion and public sentiment will prove sufficient checks. While we hold that the fewer legal restrictions upon any art or industry the better, yet when cupidity tempts a real estate owner to double or treble the capacity of a hundred-thousand-dollar building lot we have but little confidence in the potency of public sentiment as a deterrent. The "public-be-damned" policy has to be put down by other forces than moral suasion, and there are sufficient grounds on the score of sanitation, public comfort and convenience to warrant the interference of the strong hand of the law. Let there be, then, a limit put to the height to which city buildings may be carried, and let it be done before new cities are superposed upon the old ones. A few years more and the remedy may come too late.

LEGAL DECISIONS.

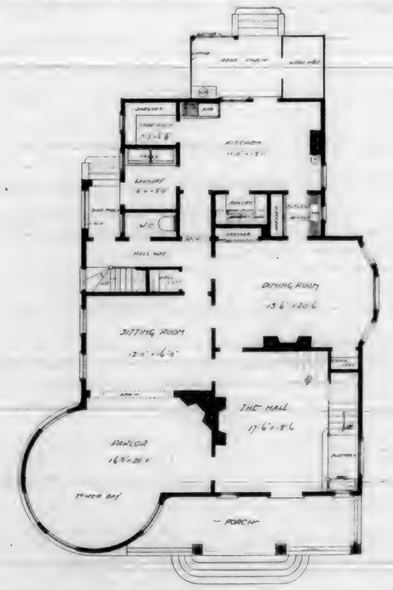
From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

RIGHT OF CONTINUING PARTNER TO LIEN.—Under laws 1886, which requires that the statute relating to mechanics' liens shall be construed literally and in futherance of the remedy, members of a firm who requires the interest of his partner may have a lien for materials furnished by the firm.

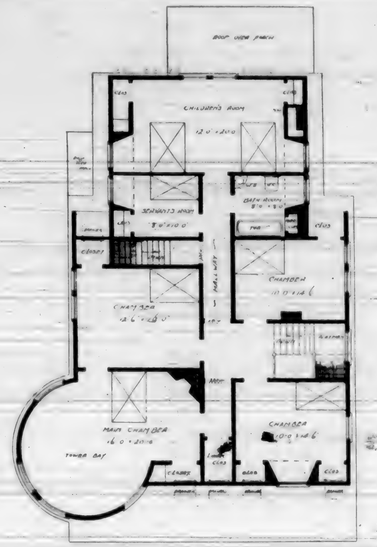
Ogden v. Alexander, Court of Appeals of New York, 35 N. E. Rep. 638. 52.

ACTION BY SUBCONTRACTOR TO FORECLOSE LIEN.—In an action by a subcontractor to enforce a mechanics' lien, it appeared that the contractor abandoned the contract, and forfeited the final payment, unless the owner waived the forfeiture, under the terms of his contract, and elected to complete the work, at the contractor's expense. The owner, in his lifetime, and his heirs, after his death completed the building, and asserted no claim of forfeiture. The subcontractor could enforce his lien on the surplus of the final payment over and above the cost of the completion. The fact that the owner did not give the contractor three days' notice of his election to complete the building, as provided by the contract, does not exclusively show that he did not so elect, where, when, the contractor abandoned the work, he made a general assignment to the owner, and neither such subcontractor, nor any one claiming under him, is asserting any need of such notice.

Ogden v. Alexander, Court of Appeals of New York, 35 N. E. Rep. 638. 160.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

RIGHT TO MECHANICS' LIEN.—One who furnishes material and labor for the erection of structures on the property of a mining corporation, pursuant to a contract made in the company's name, by its authorized agent, is entitled to a mechanics' lien, notwithstanding the existence of an agreement, not known to him, whereby the agent was to have possession of the property, and make the improvements on his own sole credit.

Mammoth Min. Co. v. Sale Lake Foundry & Mach. Co., Supreme Court of the United Seates, 14 Su. Ct. Rep. 384

TRUST FOR PREFERENCE OF CREDITORS.—Where a debtor, for the purpose of securing certain debts, conveys in trust property less in value than the amount of such debts, a provision in the trust deed authorizing the trustee to sell at either public or private sale, and to employ clerks and attorneys to assist and advise him, will not affect the validity of the trust deed as to secured creditors, since they could not be injured by it. A provision in the trust deed for the benefit of creditors, directing payment of a stated sum to an attorney for services in drawing the deed and the execution of the trust is valid unless such sum is unreasonable in amount.

Butler v. Sanger, Court of Civil Appeals of Texas, 23 S. W. Rep. 487. 118.

INSURANCE CLAIM AS TO OCCUPANCY OF BUILDING.—Where a policy of insurance provided that it should be void if the premises became vacant or unoccupied without the written consent of the company should be indorsed. The tenant occupying the insured building partially moved out the day before the fire, leaving in the building a portion of his furniture. The premises were not vacant or unoccupied, within the meaning of the policy.

Liverpool & London & Globe Ins. Co. v. Buckstaff, Supreme Court of Nebraska, 56 N. W. Rep. 695. 72.

MECHANIC'S LIEN ON LEASEHOLD INTEREST.—A mechanic's lien for materials furnished and work done upon a leased building under a contract with the lessee extends only to the leasehold interest.

Z. C. Niles & Co. of Seattle v. Gordou, Supreme Court of Wash. 36 Pac. Rep. 266. 30.

BOOKS AND PERIODICALS.

PLUMMER'S REFERENCE MAP of the city and county of San Francisco, is a map up to date and well worthy of the prize that has been bestowed upon it by those who are competent to judge of its value. Not only a correct outline of the water front is given showing the different sections of the sea wall, and other important points of interest to those who empty steamboats, or are otherwise interested in the bay, but the addition of about 250 streets, avenues, alleys and places make it a map for all. To those who wish to keep up with the times and know about the city they live in we should say get this map at once. Mr. Plummer will be happy to receive orders at his office, 408 California street.

LIPPINCOTT'S for July has one of Captain Charles King's charming Army stories as the complete novel; and is as usual full of good things that will well repay perusal.

CLAY WORKER. Indianapolis, Ind. The June number of this excellent magazine has an illustrated article entitled "The Beginning of a National Ceramic Art in America" showing the great advancement that has been made in this country in that art, since the first rude attempts of the manufacturer to compete in that line.

The people of the coast have reason to congratulate themselves that the clay workers of this coast have made great progress in the development in the useful manufacture of architectural appliances from clay, as was shown in the exhibits at the Midwinter Fair.

PAPER AND PRESS. The Arts Printorial, illustrated. Published by W. M. Patton, Philadelphia, Pa. An interesting article "The Government Printing Office," will well repay a careful reading, and probably astonish those outside the trade by the enormous increase of business in this office from its commencement March 4, 1789 until the present time.

THE PHOTOGRAPHIC TIMES. Published at 423 Broome street, New York. The delayed mails from the east are now being promptly delivered, and among the large accumulation of exchanges we notice several numbers of the ever welcome *Photographic Times* the July number contains a charming view of "An English Country Lane." The seven ages of man, illustrated by photograph, is extremely funny.

THE AMERICAN AND BUILDING NEWS, contains an article very severe upon the recent strikes, that have unfortunately prevaded of late all over the country; the editor appears to look upon only one side of the question, and forgets that the constant comtempt of the law shown by many of the great companies for years past, have educated their employees to the same way of thinking. This unfortunate strike only required the display of a little common sense on the part of the managers to have been stopped at once. In place of that the men were excited to madness for the very purpose of having the troops called into the field.

A WANING FASHION.

ONE of the strangest vagaries of public taste is that which a few years ago brought yellow pine into prominence as a finish wood says *Hardwood*. A passing fancy was artfully and artificially developed into a craze, the effects of which have not yet entirely disappeared, there being still a few misguided architects and builders who insist, in season and out of it, that yellow pine is both suitable and desirable for all kinds of inside trim, from parlor to kitchen. The producers and handlers of the wood have done what they could to corrupt the public taste in this regard, and their efforts have been supported by the papers which draw a large share of their revenue from the yellow pine interest. They have sought to make people believe—and have met with no little success in the effort—that the red and yellow streaks, varied sometimes with crooks and curls, which are distinctively characteristic of the wood, are really beautiful, and that nothing more pleasing or satisfying to a refined taste is to be had in a low priced finishing wood. They admit that cherry and mahogany, and possibly quartered oak, are finer woods, but they urge their greater cost, and still maintain that after all yellow pine is as durable and nearly as handsome as any of its rivals. No doubt by continually preaching this artistic heresy they have come to believe in it themselves, but happily the taste of wood users is drawing away from the unsightly yellow pine, and is developing a greater appreciation of the quieter and handsomer native woods, any one of which for beauty and real excellence as a material for trim is so far its superior as to be beyond comparison.

It is not denied that yellow pine is a valuable timber. For nearly all structural purposes it is admirable, rivaling even oak in strength and stiffness. It makes a capital building material, and properly sawed, a fairly good flooring, but its merits are exhausted before we reach those which belong to a desirable finish wood, for which one of the leading requirements is beauty of color and grain. This yellow pine does not possess, the extravagant claims of its friends to the contrary notwithstanding, and for this reason it has no place in the exposed work of any building in which an effort is made to secure an artistic and handsome finish.

THE GOLDEN CHAMBER OF CONSTANTINOPLE.

ACCORDING to Bishop Liutprand, of Cremona, says the *Scottish Review*, the Golden Chamber was the most splendid part of the whole palace. If Justin rebuilt it, Theophilus and Constantine VII. did much for its decoration. Theophilus made a silver table "for the accommodation of the guests and the adornment of the palace," in which so many foreigners and courtiers feasted with the emperor. A great chandelier hung from the centre of the hall over the table.

The famous golden tree, so often mentioned in accounts of the palace, was constructed by Theophilus. "Birds sitting on the branches sung by some mechanism, the air being supplied by concealed passages." The walls were ornamented with mirrors and colored tiles, "affording the more pleasure to the guests owing to the delicious nature of the viands." Besides making the silver doors (into the Tripeton) Constantine VII. ornamented the walls and ceiling of the Chrysotriklinos with flowers and leaves, framed in silver circles.

In the Golden Chamber the most striking object must have been the Pentapyrgion, of which, unluckily, no accurate description has survived. It was "a magnificent structure of wood, covered with gold. Within and without it was hung a great variety of decorations, golden ornaments and the imperial robes." At the feast of Easter it was the custom that a small table should be placed for the emperor in the Pentapyrgion, while the foreign ambassadors whom he invited dined at the golden table below him. Thus it would seem to have been a sort of throne arranged for the purposes of a dining hall.

BUSINESS MOSAICS.

San Francisco Plating Works 653-655 Mission street, E. G. Denniston, proprietor. These well known and long established works, are always prepared to do any kind of gold, silver, nickel and copper plating. Metal goods of every description plated. Particular attention given to copper plating of architectural iron and steel work.

Little Daughter—"This book says that in Norway a girl has to make a whole lot of linen before she can get married." Mother—"Yes, it's the custom there." Little Daughter—"I'm glad I'm an American. Here we only have to learn to typewrite."—*Smith' Good News.*

Joseph Budde Manufacturer of Sanitary Appliances. Medals and diplomas awarded at the State Fair at Sacramento, Cal., in 1888 and 1889 for the popular Golden Gate patent water closet, speak for themselves. The best award of honor is perhaps the unaminous approval of those who have been fortunate enough to have their houses supplied with his appliances. The man that would find fault with what he can select from Mr. Budde's varied stock would indeed be hard to please.

"The landlord has put up the rent on the family that have the second flat." "Is there anything wrong with them?" "He thinks so they have never complained about anything."—*Chicago Inter-Ocean.*

Mr. George Goodman the patentee and manufacturer of artificial stone in all its branches can be found at his office in the Nevada Block, 307 Montgomery street; he makes a specialty of side walks and garden walks—but anything in his line is sure to be well done for the man takes a pride in his work, as well as knowing how to do a good job and is therefore entitled to his name of "Goodman."

Watts—"Do you always agree with your wife when she makes an assertion?" Potts—"Of course I don't. Do you suppose I want the poor woman to have no amusement at all?"—*Indianapolis Journal.*

The Western Iron Works.—Notwithstanding the dull times and general stagnation of business the above named firm moves on in the even tenor of a well regulated concern, and continue to furnish iron and steel building work; they are also the sole manufacturers of the Champion Steel Wheelbarrow against this, thank Heaven, there has been no strike, so it will doubtless continue to run.

"Then, when you have finished your lecture," said the professor of elocution and deportment to young Dulle, "bow gracefully and leave the platform on tiptoe." "Why on tiptoe?" queried Dulle. "So as not to wake the audience," replied the professor.—*Pearson's Weekly.*

The J. L. Mott Iron Works continue in the good work of manufacturing, contriving and improving all the various articles for making home a healthy place—all will agree that without good plumbing no home is what it should be. If you want your wife to be able to say "Well after all there is no place like home for solid comfort," you must be careful to see that your house is well provided for in regard to good plumbing. The deserved reputation of the J. L. Mott Co. known all over the United States is a warrant that you get what you pay for when this firm supply the goods. Mr. James their agent has his office in the Flood Building.

San Francisco Slate Co.—We have before now had occasion to call the attention of our readers to the excellent quality of the slate furnished by the above company. At the present time when discord between labor and capital is making such disturbance in our community, and shutting off all communication with the east it is well to make up our minds to encourage home industry and show the world we are in a great measure independent of the outside world, and can furnish supplies of the first quality in building materials, by encouraging home industry to the fullest extent should be the aim of all those who have the welfare of this coast in consideration. Information about their slate and quarries may be had at the rooms of the company, 4 and 5, tenth floor, Mills Building.

Teacher (in mineralogy class)—"Johnie, give me the name of the largest known diamond?" Johnie—"The ace."—*Tit-Bits.*

Phoenix Pure Paint—If you want facts about paints you should call upon W. P. Fuller & Co. who manufacture Phoenix Pure Paint, and who will give you all the reasons why their paint is considered the best, made of pure materials and finely ground and thoroughly mixed with heavy machinery are good reasons why their manufactured paint should stand A. No. 1.

"Has that horse a pedigree?" asked the tourist. "Nope," replied the honest farmer; "nothin' but the heaves."—*Washington Star.*

San Francisco Gas Light Co.—People who predicted a few years ago that gas had seen its day, when the electric light began to be talked about, reckoned without their host. The important fact that gas was an excellent substitute for coal in cooking was in a great measure over looked. Now when we find the body of the house before a neatly constructed gas stove with shining pans and kettles, making a pleasure of cooking instead of the slavery of the coal stove with its heat and ashes, dust and dirt, all that is changed. Those who have been deterred from the use of gas for this purpose by the bugbear that gas costs so much, will find if they make the experiment that gas does not cost so much.

She—"And so they were married! Was it a case of love at first sight?" He—"I imagine not. The first time he saw her she was riding a bicycle.—*Life.*"

Something new and useful.—Dixon's Waterproof Graphite Grease and Graphite Lubricants, manufactured only by Joseph Dixon Crucible Co., Jersey City, N. J. A table giving the results of experiments made at the Brooklyn Navy Yard by Robert Grimshaw, M. E., in collaboration with John A. Bell of the Eqipment Bureau U. S. Navy, clearly shows the advantage in the use of this Lubricant.

Miss Paddington—"Do you believe in love at first sight?" Mr. Linton—"Oh, no! It's impossible to be perfectly sure that a girl is rich."—*Boston Life.*

Mann's Patent Chimneys endorsed by the Board of Supervisors and recommended for general use by architects, fire wardens and insurance companies as the most complete and safest in the market. Can be found at 306 Sutter street bet. Grant Ave. and Stockton Sts. Messrs. Schuster Bros. agents, they are also sole agents for the Pacific Coast for the Celebrated Richmond Ranges, hot air furnaces and radiators. See their advertisement on page ii of this journal.

CITY BUILDING NEWS.

Army bet. Guerrero and San Jose. All work except brick and plumbing; owner, F. Kaufmann; architects, Townsend & Wyneken; contractor, F. V. Archer; signed, June 2; filed, June 2; cost $6700.

Army bet. Guerrero and San Jose. Plumbing; owner, F. Kaufmann; architects, Townsend & Wyneken; contractor, Nanon & Gordon; signed, May 19; filed, June 2; cost $1350.

Ashbury near Waller. To build; owner, Bedella Boyd; contractors, Jno. Sath and J. B. Cogswell; signed, June 16; filed, June 16; cost $3175.

Bartlett near 21st. Alterations and additions, except plumbing; owner, A. E. Patridge; architects, Townsend & Wyneken; contractor, M. C. Lynch; signed, May 31; filed, June 2; cost $5095.

Brannan and Fourth. Grading and concrete work for a church; owner, D. Neugent; architect, John J. Clark; contractors, Flinn & Tracy; signed, June 1; filed, June 2; cost $2,000.

Broadway near Scott. To build; owner, M. E. Fitzhugh; architect, Reid Bros.; contractor, B. O. Johnson & P. G. MacIntzer; signed, June 19; filed, June 23; cost $3600.

Bryant near Butte. Two-story frame; owner, B. Hardy; contractors, Genscrowsky & Kolbe; signed, June 26; filed, June 26; cost $2300.

California near Octavia. Alterations and additions; owner, Winson Brown; architect, W. J. Mathews; contractor, Concannon & Shay; signed, June 9; filed, June 14; cost $1570.

California near Broderick. To build; owner, Adolph Rapp; architect, Emil John; contractors, Lorenzen & Trevier; signed, June 9; filed, June 11; cost $3680.

Clay near Leavenworth. To build; owner, I. L. Hoffmann; architect, Chas. R. Wilson; contractor, F. V. Steinman; signed, June 15; filed, June 20; cost $6650.

Clay near Franklin. To build; owner, J. W. Edwards; architect, W. H. Lillie; contractor, F. G. Kronnick; signed, June 23; filed, June 23; cost $4700.

Clay near Franklin. Plumbing; owner, J. W. Edwards; architect, W. H. Lillie; contractor, H. Williamson; cost $1700.

Douglass from Ocean House Road. To build; owner, Frank Dummell; contractor, Robert Trost; signed, June 6; filed, June 8; cost $1513.

Eighth Ave. near California. To build; owner, William Royal; architect, C. S. Corrigan; contractor, C. Lansen; signed, June 12; filed, June 13; cost $1550.

Florida near Solano. Carpenter, plumbing, etc.; owner, H. Throde; architects, Martens & Coffey; contractor, F. M. Schwubler; signed, May 29; filed, May 31; cost $7250.

Florida near Solano. Excavation, stone and brick work; owner, H. Throde; architects, Martens & Coffey; contractor, J. O'Sullivan; signed, May 29; filed, May 31; cost $5843.

Fifth and Clara. To build; owner, W. N. Weeks; architects, Shea & Shea; contractor, James Cochran; signed, June 9; filed, June 27; cost $3618.

Fulton near Baker. To build; owner, Peter Garrity; architect, Edward Burns; contractor, Edward Mooney; signed, May 28; filed, May 29; cost $4600.

Grove near Broderick. To build; owners, John Peters and wife; architects, Smith & Freeman; contractors, Henry Whittle & F. Smith; signed, June 1; filed, June 3; cost $13,754.

"H" and 12th Ave. To build; owner, Mary V. Foley; architect, D. Foley; contractor, H. Behrens; signed, June 20; filed, June 22; cost $1550.

Hampshire near 19th. To build; owner, Patrick Dempsey; contractor, H. P. Conrady; signed, June 9; filed, June 11; cost $2700.

Henry near Castro. To build; owner, G. Carle; architect, H. Hess; contractor, C. Schwefzer; signed, June 12; filed, June 13; cost $1850.

Lake and Lake. To build; owner, L. W. Darbee; architect, Wm. F. Lee; contractors, R. A. William & Co.; signed, June 23; filed, June 23; cost $2100.

Leavenworth and Post. Mantels; owner, S. F. Verein Assn.; architects, Salfield & Kohlberg; contractors, Fink & Schindler; signed, June 15; filed, June 29; cost $1500.

Leavenworth near Clay. Grading; owner, I. S. Hoffmann; architect, C. B. Wilson; contractor, A. E. Buckman; signed, June 18; filed, June 14; cost $1800.

Linden near Octavia. Alterations, etc.; owner, G. H. Rudolph; contractor, U. G. Heath; signed, May 31; filed, June 3; cost $482.

Market near 5th. Granite work; owner, A. M. Parrott; architects, Pissis & Moore; contractor, Raymond Granite Co.; signed, June 14; filed, June 14; cost $21,405.

Market near 8th. Concrete and artificial stone; owner, L. W. Moffatt Ex. of Geo. Moffatt; architect, Chas. R. Wilson; contractor, W. F. Ambrose; signed, May 31; filed, June 15; cost $4,320.

Market near 15th. To build; owner, Charles E. Hanlon; architect, T. P. Ross; contractor, Geo. Connon; signed, May 28; filed, May 31; cost $4816.

Market near 5th. Brick and concrete; owner, Mrs. Emma Spreckles; architects, Reid Bros.; contractor, Crawford Ferries; signed, May 14; filed, June 3; cos $19,012.

Market near Eighth. Underpinning and repairing brick building; owner, Levi Strouse; architect, Chas. R. Wilson; contractors, Richardson & Gale; signed, June 8; filed, June 9; cost $1500.

Market near 5th. Elevator, etc.; owner, F. Gutzhow; architect, Edmund Kollofrath; contractor, T. Hammond; signed, June 13; filed, June 13; cost $4950.

Mason near Jackson. To build; owner, St. Johannes Church by Trustees; contractor, Henry T. Griet; signed, June 1; filed, June 5; cose $1050.

Minerva near Plymouth. To build; owner, Board of Education; architect, Chas. I. Haven; contractor, Morrison Cook; signed, June 7; filed, June 7; cost $3355.

Morton between Dupont and Stockton. To build; owner, Jules Einden; architect, Emile Depierre; contractor, Jean Salanare; cost $2300.

Neynda near Rhode Island. Carpenter and brick work; owner, Thomas C. Van Bibber; architect, Wm. H. Wharff; contractor, Geo. O. Dean; signed, May 29; filed, May 31; cost $1570.

Ninth near Howard. Carpenter work on three stores; owner, F. B. Wilde; architects, Smith & Freeman; signed, June 14; filed, June 18; cost $2400.

Ninth Ave. near California. To build; owner, C. E. Carbly; architect, Edward Burns; contractor, Geo. S. Paff; signed, June 26; filed, June 26; cost $3200.

Oak near Buchanan. To build; owner, H. Beckery; architect, H. S. Munson; contractor, F. H. Wheeler; signed, June 6; filed, June 8; cost $4,200.

Outside land block 29. Grading and filling; owner, La Societe Francaise de Bianfanssance Mutual; architect, Emile Depierre; contractor, E. F. Dennison; signed, June 18; filed, June 18; cost $1200.

Pacific near Dupont. To build brick building; owner, Paolo Arata; architect, Emile Depierre; contractor, P. A. Antonelli; signed, June 18; filed, June 19; cost $8650.

Pacific near Dupont. Brickwork and grading; owner, Paolo Arata; architect, Emile Depierre; contractor, P. A. Antonelli; signed, June 20; filed, June 21; cost $4800.

Pacific Ave. near Devisadero. Plumbing, sewerage and gas fitting; owner, Annie Meyer; architect, E. A. Hermann; contractor, H. Williamson; signed, May 29; filed, June 1; cost $2325.

Page near Broderick. Additions; owner, the Board of Education; architect, Chas. I. Haven; contractors, R. Doyle & Son; signed, June 7; filed, June 7; cost $5979.

Penna Ave. near Sierra. To build; owner, Thomas Hart; architect, Jas. Glackin; contractor, John Kennedy; signed, June 4; filed, June 5; cost $1065.

Pine near Scott. To add a story; owner, Board of Education; architect, C. I. Haven; contractors, R. Doyle & Son; signed, June 7; filed, June 7; cost $7498.

Post street No. 109. To build; owner, E. Preston; architect, Wm. Corbett; contractor, C. W. Kinsman; signed, June 6; filed, June 13; cost $3140.

Post and Powell. Mantel, grates and hearth work; owner, A. M. Parrott; architects, Pissis & Moor; contractors, Ruffino & Bianchi; signed, April 14; filed, April 14; cost $2557.50.

Sacramento near Pierce. Plumbing; owner, G. E. Bacon; architect, J. J. Manseau; contractor, W. R. Smith & Co.; signed, May 26; filed, June 5; cost $1400.

Sacramento near Pierce. Plastering; owner, G. E. Bacon; architect, J. J. Manseau; contractors, W. R. Smith & Co.; signed, May 26; filed, June 5; cost $1400.

Seventeenth near Serpentine. To build; owners, E. Perry & wife; contractor, J. J. Kolbe; signed, June 5; filed, June 6; cost $1980.

Steiner bet. Fell and Hayes; To build; owner, F. Marx; architect, M. J. Lyon; contractor, E. McWest; signed, May 21; filed, June 6; cost $3275.

Steiner bet. Fell and Hayes. To build; owner, F. Marx; architect, M. J. Lyon; contractor, E. McWest; signed, May 21; filed, June 9; cost $3300.

Steiner and Hayes. To build; owner, T. A. McCormick; architect, T. P. Rabin; contractors, E. S. Slack & F. Corbett; signed, June 21; filed, June 22; cost $3400.

Tenth near Folsom. Frescoing a church; owner, Rev. P. Scanlon; contractors, Rusch & Walker; signed, June 8; filed, June 11; cost $2400.

Tehama near 5th. Carpenter work, etc.; owner, L. Silverstone; architects, Salfield & Kohlberg; signed, June 14; filed, June 20; cost $3875.

Union and Laguna. Plumbing, etc.; owner, T. W. Allyne & W. H. White, architect, Charles Geddes; contractor, R. A. Vance; signed, May 26; filed, June 5; cost $1649.

Union near Laguna. Plastering, etc.; owners, T. W. Allyne & W. H. White; architect, Chas. Geddes; contractor, W. C. Watson; signed, May 24; filed, June 5; cost $1150.

Vallejo near Stockton. To build; owners, D. and Emma Stang; architect, Julius E. Krafft; contractor, F. W. Kern; signed, June 18; filed, June 19; cost $1820.

Valencia near Quinn. Alterations and additions; owner, Sarah B. Melone; architect, Clinton Day; contractors, Connon & Thompson; signed June 27; filed, June 28; cost $2670.

Washington and Laurel. Plumbing, etc.; owner, John Dempter McKee; architect, W. H. Lillie; contractor, W. H. Tobin; signed, May 31; filed, June 1; cost $1500.

The California Architect and Building News.

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VOLUME XV. AUGUST 20th, 1894. NUMBER 8.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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1 Column	12 50	35 00	65 00	125 00
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1 Page	40 00	110 00	200 00	350 00

AS the usual dullness in business still continues the ways of the drummer are as hard as ever. This dullness has affected also the building trades for the last two years, and will continue to do so for the balance of this year. Next year a revival will take place if we may judge from the prior history of the world and by analogy. The commercial or distributing system under which we are working, and under which the civilized world has been working ever since history commenced requires these depressions and reactions to take place; and they will keep on taking place and with increased virulence for the simple reason that science of distribution has not kept pace with the science of production. With our wonderful scientific discoveries and machinery and mechanical power we can easily produce by using all available human labor working the ordinary number of hours per day enough products to fill the consumption of the civilized world of ten years in three.

Now while these are facts it is a self-evident proposition that humans are working too hard; and until they confine their working hours to four hours per day they will have to bear the hardships now scattered upon them. By doing this by distributing their labor throughout the ten years and all working instead of concentrating their efforts into five years and then laying off for the other five as they now are practically doing and being hard up and many starving for those five, people will be able to live well right along and not over work themselves at one time and go round with their hands in their pockets at another.

This unscientific way of production is well illustrated by the progress of the northern towns of this coast. Portland, Tacoma, Seattle, all concentrated their buildings in five years what ought to have been distributed over ten years at least so now they lie dormant.

No apology is needed in bringing attention to this in a professional journal as architects and the building trades are as much affected as any by this evil.

Let the law making powers of our boasted civilization, find and apply the remedy or remedies for such a deplorable condition of human affairs and general plenty and contentment will reign; and instead of longing for destruction to take place so as to provide work, we shall all strive to conserve all our wealth as there will be nothing gained by destroying it.

LAVER VS. CITY HALL COMMISSIONERS.

SOME fine legal points have been lately raised in regard to the matter of the completion of the New City Hall.

Architect Laver, the designer of the original plans for the building, has lately filed a suit asking the courts to restrain the commissioners from carrying out their designs for crowning the unfinished rotunda with a dome, instead of the square clock tower designed by Mr. Laver.

By the courtesy of Mr. Laver we are enabled to publish the full text of his complaint against the New City Hall Commissioners in this matter.

FIRST—That said Plaintiff now is, and for many years prior hereto, has been a tax payer in said City and County of San Francisco, State of California, having real property during all of said time listed upon the assessment roll of said City and County and duly assessed therein:

SECOND—That said Defendants, L. R. Ellert, William Broderick, and H. T. Creswell are now and for more than one year last past have been the duly and legally constituted, qualified, and acting members of said Board of New City Commissioners, in said City and County of San Francisco.

THIRD—That heretofore, to wit: On or about the first day of April, 1870, the Legislature of the State of California duly past an Act, entitled, "An Act to Provide for the Erection of City Hall in the City and County of San Francisco," and said Act was approved by the then Governor of said State on the fourth day of April, 1870. That under and in accordance with the provisions of said Act, said Governor appointed P. H. Cannavan, J. G. Eastland and Charles McLane as Commissioners of said City Hall provided to be elected by said Act, who immediately thereafter, duly qualified as such Commissioners by taking the required oaths and giving the required bonds, and organizing as required by said act "The Board of City Hall Commissioners" in said City and County of San Francisco.

FOURTH—That on or about the eleventh day of February, 1871, said Board duly adopted complete designs and plans as prepared and presented to said Board by the firm of Fuller, Laver & Co. for said City Hall, which said designs and plans are now on file in the office of the architect of said building. That no other and different plans for said building were ever adopted by said Board. That according to the said designs and plans there was to be built upon the Southern middle portion of said City Hall and as a part thereof a Square Clock Tower of the height of about four hundred and fifth-three (453) feet.

FIFTH—That on the twenty-fourth day of March, 1876, the Legislature of said State of California duly past an Act, entitled, "An act to Provide for the Construction of the Building in the City and County of San Francisco, known as the New City Hall" and by the provisions thereof, the then Mayor, City and County Attorney, and Auditor of said City and County of San Francisco, were authorized and empowered to act as a "Board of New City Hall Commissioners" for the said City and County of San Francisco.

SIXTH—That immediately after said twenty-fourth day of March, 1876, said Mayor, said City and County Attorney, and said Auditor duly qualified as such Commissioners as required by said last mentioned Act, and proceeded to, and did duly organize said Board of New City Hall Commissioners and they and their successors in office ever since have constituted and now do constitute "The Board of New City Hall Commissioners" of said City and County of San Francisco. That said last mentioned Board, as directed by the provisions of said Act of March 24th, 1876, on or about the first day of April, 1876, took possession and control of all the plans, specifications and designs of every description and kind of said building, which has been adopted as aforesaid, and which were then in the possession of the Board of Supervisors of said City and County of San Francisco, and ever since and now have the same in their possession and under their control.

SEVENTH—That under and by virtue of the provisions contained in last aforesaid Act of the Legislature of said State of California, said Board of New City Hall Commissioners were authorized, empowered, and directed to proceed with the construction and completion of said New City Hall according to the plans theretofore adopted on said eleventh day of February, 1871, for said building, to wit: the said plans of said Fuller, Laver & Co.

EIGHTH—That on or about the fifth day of May, 1894, said Board of New City Hall Commissioners entered into a written contract with the firm of O'Connell & Lewis for the erection and construction of a dome of the height of two hundred and fifty feet, upon said City Hall in the place and stead of said clock tower as indicated and provided for by the designs and plans of said building theretofore adopted as aforesaid. That the plans and designs according to which said Board of New City Hall Commissioners have contracted as aforesaid with the said firm of O'Connell & Lewis to construct said dome are entirely different from the said adopted plans of the said Tower. That said Plaintiff is informed and believes and therefore alleges that said Dome, if constructed in accordence with the terms, conditions, specifications and plans contained in said contract will cost over fifty thousand (50000) dollars more than said Tower would have cost, if built according to the plans adopted as aforesaid, and said Dome will materially detract from the architectural beauty of the said building. That said contract is wholly illegal and unauthorized and will if carried out and completed work irreparable injury to the Plaintiff.

NINTH—That said last mentioned Board of New City Hall Commissioners have, prior to the commencement of this action by resolution passed at a meeting of said Board, resolved to pay to said firm of O'Connell & Lewis the sum of $5250.62, as part payment for work performed and materials furnished under said contract, and said last mentioned Board threatens and will if not restrained by order of this Court allow the said claim and direct the Auditor of said City and County of San Francisco, to audit the same, and further proceed to have said Dome completed as provided by said contract.

TENTH—That all money agreed to be paid to said firm of O'Connell & Lewis under said contract for the construction of said Dome, will be paid out of the New City Hall fund in the hands of the Treasurer of the said City and County of San Francisco, and said fund is a part of the municipal taxes collected from the tax payers of said City and County.

WHEREFORE, SAID PLAINTIFF PRAYS:

FIRST—That said Defendants by order of said Court be perpetually enjoined and restrained from allowing said claim of O'Connell & Lewis for said sum of $5250.62.

SECOND—That said Defendants by order of said Court be perpetually restrained from proceeding in the construction and completion of said Dome under said contract, as alleged herein.

THIRD—That said contract and all proceedings of said Board of New City Hall Commissioners in relation thereto, be decreed illegal and void and for such other and equitable relief as to the Court may seem just.

GALE & PEERY AND J. F. FLEMING,
Attorneys for Plaintiff.

The lawyers representing the City Hall Commissioners demurred to the complaint and Judge Slack has sustained the demurrer.

The question raised by the demurrer was whether the board has power under the act of March 24, 1876, to change the plans adopted so as to construct a tower and dome 150 feet high instead of a tower 250 feet in height.

In his decision Judge Slack says that the act of April 4, 1870, provides that the Commissioners shall adopt plans for the erection of a new city hall, the object being to provide a permanent building which in their judgment would be sufficient and suitable to accommodate the different departments of the city government.

Under this act Judge Slack holds that the adoption of plans for the erection of such a building as specified is confined to the judgment of the Commissioners. It is neither expressly nor impliedly contemplates that plans once adopted cannot be changed, and if during the course of construction the plans adopted were deemed unsuitable to the purpose of the commission they might in the exercise of their judgement change them.

When the act of March 24, 1876, provided for the creation of a Board of New City Hall Commissioners to take charge of the premises and proceed with the construction of the building "according to the plans heretofore accepted" or contemplated there was no change in the intent of the law. In considering the question upon which the complaint is based, "What was contemplated?" the answer is, "A permanent building sufficient and suitable to provide rooms for the departments of the city government."

If the present board, maintains Judge Slack, must proceed as contemplated it must furnish what the statute ordered and if charges are deemed neeessary the board has power to make them.

For these reasons the demurrer was sustained and Laver was allowed ten day in which to amend his complaint.

THE NEW GOVERNMENT ARCHITECTURE BILL.

IN the House of Representatives on June 16, 1894, Mr. McKaig introduced the following bill: (H. R. 7470) "To provide for the securing of plans and for the erection of the public buildings of the United States," which was referred to the Committee on Public Buildings and Grounds and ordered to be printed.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President, by and with the advice and consent of the Senate, shall appoint a commission on public architecture consisting of three architects of high scientific and artistic attainment and large practical experience, and two officers of the Engineer Corps of the United States Army. If necessary, a separate appointment of any or of all three members of the commission who are architects may be made for each building under consideration, and members of the commission for one building may act upon other buildings. That the commission under the general direction of the Secretary of the Treasury shall discharge all the administrative duties relating to the procuring of designs and the appointing of architects for all buildings hereafter erected by the Government of the United States.

SEC. 2. That the Secretary of the Treasury shall be the president of the commission ex-officio, and the Supervising Architect of the Treasury Department shall be a member of the commission ex-officio. In the absence of the president of the commission one of the members shall be elected as chairman by ballot, and he shall preside at the meetings and perform such other duties as the rules of the commission may prescribe: and the Supervising Architect of the Treasury shall act as secretary of the commission.

SEC 3. That the Secretary of the Treasury shall convene the commission whenever in his judgment the exigencies of the service require it.

SEC. 4. That the commission shall adopt rules and regulations governing competition in the procuring of designs, and for the government of its meetings and the general performance of its duties. The members of the commission shall be paid their actual expenses and subsistence and a per diem allowance of ten dollars while actually engaged in the performance of their official duties, but no per diem allowance or salary shall be allowed to any civil or military officer on account of his being employed on the commission, but his actual traveling expenses and subsistence shall be paid while engaged thereon.

SEC. 5. That in case the limit of cost provided by law is one hundred thousand dollars or over, the commission shall select by ballot, for each building, five architects to prepare designs in competition; in case the limit of cost is less than one hundred thousand dollars, the commission may, in its discretion, select by ballot an architect without competition. No architect shall be eligible for entering as a competitor, or for appointment, who has not had at least ten years' experience as an architect-in-chief, and unless he can satisfy the commission, through work already done by him, or otherwise, that he is competent to take charge of the economical construction of the building. The commission shall cause to be made and issued to competing architects surveys, schedules of requirements for the building, limitations of cost, and all facts which might control or influence the character of the required design. The commission shall specify the number and character of the drawings required, and fix a definite time for their completion. The Secretary of the Treasury, upon the recommendation of the commission, shall pay to each unsuccessful competitor, to reimburse him for expenses incurred in preparing the competitive drawings, the following amounts: For designs for buildings to cost not more than one hundred and fifty thousand dollars, the sum of one hundred and fifty dollars, and for each and every one hundred thousand dollars of the limit of cost of the building above that amount, the additional sum of one hundred dollars; but in no case shall more than one thousand dollars be paid to any unsuccessful competitor.

SEC. 6. That the commis ion shall reject and return to the author any drawings which have failed to exactly comply with the requirements and regulations adopted by the commission for the competition, and no compensation for their preparation shall be paid, and the author thereof shall be debarred from all further participation in the competition. The commission shall carefully examine the drawings of each competitor in competition and shall select one design as the design of the proposed building, and shall recommend its author as the architect for that building and return forthwith all other drawings to their authors. The Secretary of the Treasury shall thereupon appoint the architect so recommended and he shall perform all the customary duties performed by an architect in private practice, namely: The making of all preliminary sketches, the modification of his design to meet possible requirements of the commission, the preparation of a set of general working drawings to procure estimates; the preparation of a set of general details on a larger scale, a set of full-size drawings for moulded, carved or ornamental work, and a set of all other original drawings and specifications required by the commission. He shall

supervise the construction of the building, and no payment shall be made to any contractor until the certificate of the architect has been received by the Secretary of the Treasury that the work has been executed in conformity with the contract. He shall file a complete set of the construction drawings in the Treasury Department, from which all duplicates shall be made, which duplicates shall be paid for out of the appropriation for the building. The architect shall be paid for his services a fee of five per centum upon the total cost of the work and the usual traveling expenses. The expenses of the commission and the fees of the architect shall be paid by the Secretary of the Treasury out of the appropriation for the building in the erection of which they were incurred.

SEC. 7. That the Secretary of the Treasury, upon the recommendation of the commission, shall authorize the architect to employ a competent clerk of the works, at a salary to be established by the commission, and he shall be paid for his services out of the appropriation for the building.

SEC. 8. That the Supervising Architect of the Treasury Department, under the direction of the Secretary of the Treasury, shall be the representative of the Government in all matters connected with the erection and completion of public buildings and the payment therefor. He shall receive proposals for the work and, with the approval of the architect of the building, he shall award the contracts therefore. He shall perform all other duties that now pertain to his office except such duties as are vested by this act in the architect of the building.

SEC. 9. That all acts and parts of acts inconsistent with this act are hereby repealed.—*The Inland Architect and News Record.*

ACOUSTICS IN ARCHITECTURE.

BY ALEX. F. OAKEY.

THE published contributions to the discussion of Acoustics in Architecture have not been hitherto sufficiently definite to establish even the basis for an exact science.

I would not underrate the labors of Mr. Scott Russell, Mr. T. Rodger Smith, M. Lachez, M. Savart and others; but it must be admitted that the contributions of these gentlemen are tentative and almost altogether analytic in method: attempts to account for success or failure by application of known acoustic phenomena to the conditions of existing auditoriums. In these attempts much valuable data in measurement and description of auditoriums has been accumulated, but the reasons alleged for success or failure in particular instances have been nullified by inconsistencies, made apparent by conditions in other instances.

Physicians will tell us that the essential step in medical treatment is a correct diagnosis, that it is futile to treat a patient for a paralysis superinduced by inflammatory rheumatism, when the real trouble is a little brain tumor on a nerve center near the fissure of Rolando. Intuitive perception may suggest lines of inquiry, but it is only by the most minute synthetic process that any reliable base can be established. The more we learn the more vague become the dividing lines between the sciences, until we are forced to realize with a sigh, that the thorough understanding of anything involves at least a general understanding of almost everything else.

With this conviction I undertook the study of the human ear, the human voice, the construction of musical instruments and of harmony, in the hope that such knowledge as I had already acquired, as an architect, of the nature of materials, of heating and ventilation, and other familiar matters, might, so supplemented, enable me to form a practical theory, and I have not been disappointed. Without the application of facts and deductions never sought for our uses, by such men as Professor Von Helmholtz, Professor Haweis, Dr. Mackenzie and many more, we would have to admit that the acoustics of halls and theaters are, as stated by a prominent actor and playwright, "notoriously and confessedly a matter of accident." This is the prevailing belief, even among architects, and few of them have made any serious attempt to remove the stigma. In explaining my own efforts to this end I would ask your indulgence for any seeming dogmatism, as we lack time for the arguments and reasoning that warrant my conclusions, but I shall make no assertion that you cannot verify at the cost of following carefully the line of inquiry I shall briefly describe.

It should be noted that an auditorium that is practically all that could be desired for speaking is not always acoustically satisfactory for music, as for instance, the lecture hall of the University of London; while an auditorium that is acoustically satisfactory for music is always satisfactory for speaking, like the little Chamber-Music Hall, in Leipsig. Hence only the musical requirements concern us, and these are not satisfied by mere hearing, in the sense that one may hear what occurs on the opposite side of a street, however exactly one may catch the least word of a conversation. The music lover must be physically in vibratory sympathy with the rendering. The capacity for this varies greatly, but for our purposes we choose a musically supersensitive mortal blessed, of course, with the positive ear. Let us examine this marvelous organ. It will repay our study, for it includes the most perfect music hall imaginable, in which the whole symphony of life is always and forever performing. This symphony, for the modern city denizen, is so horribly dissonant that if he is not rendered partially deaf his ear becomes jaded, like a hack horse, and is no longer capable of the finer sensibility. There is an analogy worth noting here: that a fine violin, constantly excited by the scraping of a mere fiddler, loses tone, and must be nursed and trained by a master to its natural responsiveness; and we shall have occasion to refer to this fact when discussing the properties of materials in their bearing upon our results.

For our present purpose we need not dwell upon the wonders and mysteries of the middle ear and the inner ear, though I would recommend the study if only to convince us that no broadax, happy-go-lucky method of probabilities can possibly serve in ministering to such a delicate constitution. The music hall I referred to is the external auditory canal, whose proportions and parabolic concavities, together with the nature and action of the membranes, present a hall in which any sort of sonorous vibration is sustained, increased or diminished, modified, or totally changed or instantly stopped, without possibility of confusion; and this chamber illustrates the essential principles of a fine violin, which, as you know, is a combination of parabolic reflectors with a common axis, the internal space, being in harmonic proportion, inclosed by different thicknesses and kinds of wood, the shapes and properties of each piece being determined by the nicest acoustic law.

We need not now further discuss the construction of the violin, though its minutest detail is of essential importance to us. I should occupy this convention for a week if I allowed myself anything more than a suggestive outline of various matters involved in the main question. It is important to state, however, that we are now with certainty making violins that lack nothing but age to equal the great Stradivaris, Amatis and Guarnaris. I need hardly say that a concert hall exactly like the auditory canal or the violin would not serve. I am talking of principles that are applicable to an infinite variety of conditions. The audience in the auditory canal is a single listener who never changes his seat and presents no absorbing surface, is contented to remain in darkness, and does not vitiate the air by breathing or perspiring. However, all these considerations have been

carefully weighed and reduced by actual, practical experiment to figures and formulæ, that can be handled and controlled with certainty. One vexing question especially has been eliminated by the introduction of the incandescent electric light. We can now avoid the stratification of the atmosphere into different densities, different degrees of heat and moisture, and, in short, so far as the conditions of the air itself is concerned, we can absolutely reproduce the ideal conditions of homogeneity of the auditory canal.

We know now how to supply oxygen with the due proportion of heat and moisture, and draw off from below, if necessary, in the riser of every seat, the carbonic anhydrate, ammonia, etc., and to give the whole body of air the desired movement toward the audience and upward to our heat vents. The necessity for proportionate measurements of an auditorium, if other evidence than is supplied by the ear and the violin is necessary, may be appreciated from the phenomena of the voice and those of the action of sound waves. If it is admitted that what we are striving for is to achieve such conditions, that what takes place in the auditory canal, in a violin, or in the mouth cavity of a great singer, shall, on a larger scale, take place in our auditoriums, it must also be admitted that the proportionate resistance of the body of air to be set in tremulous action in every direction must be determined with the same nicety that nature has taught us. An examination of Dr. Mackenzie's collection of casts of the mouth cavities of great singers is as suggestive and useful as the other inquiries I have touched upon. These forms, as might be expected, vary greatly, but the same principles of proportion and parabolic curvature prevail; but in these we are dealing with an instrument for producing sonorous vibrations, not an apparatus for measuring them, and it is instructive to note that the contralto or the soprano mouth cavity is distinct from the tenor or the baritone, and from each other, as much so as the length, size and other properities of the respective vocal cords, as also the quality and action of the respective lining membranes.

We must go back to the violin and to practical experiments based upon its functions to determine how and to what extent absorbent surfaces—especially those presented by an audience—interfere with our results; and how this interference shall be controlled and made an essential factor of success, as certainly as the stopping of a string on a fretboard. This has been settled by determining the amount of absorbent material, such as woolen fabric, that can be put into a violin without appreciably muffling the tone; and by corroborating the results of these delicate trials in actual experiments with audiences, curtains and other appliances in various rooms and halls, under various conditions. The results would seem to establish formulæ: That when the cubic space exceeds 325 feet per head, too great resonance need not be feared; on the contrary, every means of increasing resonance must be employed. As the proportionate cubic space is less than the above maximum figure, extremely resonant surfaces for walls and ceiling should be proportionately replaced by less and less resonant surfaces, until the conditions demand hard, non-resonant surfaces such as plaster throughout, when the minimum figure of 180 cubic feet per head is reached.

As to reverberation or echo, all possibility of such disturbance is obviated by the general form of the auditorium, which may be best described by a half-revolution of an obtuse parabola on its axis, the focus being on the floor line behind the last row of seats. You will ask how in the same auditorium the ideal balance of resonance can be preserved between very full, dense audiences and moderate or thin audiences? These varying conditions can be met by the simplest mechanical devices of pedals controlled by the occupation of the seats automatically, so that as the audience fills up the dampers act proportionately on area after area of surface. I am quite aware that the average manager may shrink at the possible expence involved in this, as in other essential precautions But why should we not take seriously the announcements we occasionally see that every precaution has been taken to insure acoustic success? These announcements are like the moral clauses in political platforms—admissions that there are enough intelligent people who think something of the kind should be accomplished to make the verbal concession advisable. As to arrangement of seating there can be no doubt that each row should be at least four inches higher than that in front, but I cannot find evidence to warrant insistance on a greater difference, for in a hall or theatre of approximately good acoustic properties, when the heating and ventilation are properly adjusted, the seats in the galleries are no better than those on the floor.

I will venture the assertion that if we will conscientiously construct a music hall on the principles we have mentioned, and construct our walls and ceiling in panels of wood of varying thickness and quality, the thinner and more easily excited sufaces being furthest from the voice or instrument, we can achieve results that shall insure a refinement of enjoyment hitherto unknown. Referring to the effect of careless, tuneless playing upon a violin, the effect upon a voice of persistently singing out of tune, compared with the effect of the opposite tasteful method, we can easily believe that some acoustic defects in auditoriums may grow worse with time as others may improve. As for remediable measures: Sounding-boards, stretching of wires, etc., we may admit that these and many other more radical prescriptions may be warranted by a correct diagnosis of the disease. I am inclined to think, however, that if the wires have ever done any good it was because accidently, by their varying tension, they supplied in a bungling way a similar apparatus to the rods of Corti of the inner ear, by which the physiologists are not yet agreed that we distinguish the quality of tones by measuring the over-tones. However this may be, of one thing I am certain, that all subdivisions of space, such as that under galleries, must be treated on the same principles as the main auditorium, and with the same nicety as to detail. That it is necessary to construct our ceiling, walls and floor with sufficient space behind, above or below, to insure the action of our resonant panels and that these spaces must not be mere waste spaces, but properly finished chambers, properly dry and ventilated. There are advantages in this from a practical view: that the main construction of the building is a thing apart, our hall is an apparatus, a sort of large ear with its own laws of being within.

We are possessed of the data for a book on the whole subject, a work that shall be exhaustive and final, to which we could turn for facts and formulæ with the same reliance that we use our engineers' pocket books for tests and strains. Such a work would be copiously illustrated and could not be less voluminous than Professor Helmholtz's "Sensations of Tone as a Physiological Basis for the Theory of Music." But where shall we find the devoted spirit who could, if he would, give three years of his life without hope of pecuniary reward, and where is the publisher who will invest the necessary thousands in so unpromising a venture?. In what I have said I have adopted the tone of positive assertion because I most potently believe what I have told you, and am warranted in so believing by the results of practical experiments. I could not in any less compass than a dozen courses of a dozen lectures of an hour or more each, have marshalled and reviewed all the facts, all the details, of investigation and the reasoning based upon these; and I have, therefore, thought best to flatly state my conclusions in the hope that they may excite discussion.—*World's Congress of Architects*

A SAD ACCIDENT ON MOUNT TAMALPAIS.

WM. Curlett, Jr., son of William Curlett, the architect, whose home is in this city, was killed by the accidental discharge of a rifle in the hands of Ralph Prescott.

Prescott is said to be wild with grief over the unfortunate affair, as young Curlett had been his friend for years. We cannot refram from offering our most heart felt sympathy to the family and friends of the young man.

A new law in the State of New York requires that all stone for Municipal and State buildings shall be cut, dressed and carved on the premises where used.

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For our present purpose we need not dwell upon the wonders and mysteries of the middle ear and the inner ear, though I would recommend the study if only to convince us that no broadax, happy-go-lucky method of probabilities can possibly serve in ministering to such a delicate constitution. The music hall I referred to is the external auditory canal, whose proportions and parabolic concavities, together with the nature and action of the membranes, present a hall in which any sort of sonorous vibration is sustained, increased or diminished, modified, or totally changed or instantly stopped, without possibility of confusion; and this chamber illustrates the essential principles of a fine violin, which, as you know, is a combination of parabolic reflectors with a common axis, the internal space, being in harmonic proportion, inclosed by different thicknesses and kinds of wood, the shapes and properties of each piece being determined by the nicest acoustic law.

We need not now further discuss the construction of the violin, though its minutest detail is of essential importance to us. I should occupy this convention for a week if I allowed myself anything more than a suggestive outline of various matters involved in the main question. It is important to state, however, that we are now with certainty making violins that lack nothing but age to equal the great Stradivaris, Amatis and Guarnaris. I need hardly say that a concert hall exactly like the auditory canal or the violin would not serve. I am talking of principles that are applicable to an infinite variety of conditions. The audience in the auditory canal is a single listener who never changes his seat and presents no absorbing surface, is contented to remain in darkness, and does not vitiate the air by breathing or perspiring. However, all these considerations have been carefully weighed and reduced by actual, practical experiment to figures and formulæ, that can be handled and controlled with certainty. One vexing question especially has been eliminated by the introduction of the incandescent electric light. We can now avoid the stratification of the atmosphere into different densities, different degrees of heat and moisture, and, in, short, so far as the conditions of the air itself is concerned, we can absolutely reproduce the ideal conditions of homogeneity of the auditory canal.

We know now how to supply oxygen with the due proportion of heat and moisture, and draw off from below, if necessary, in the riser of every seat, the carbonic anhydrate, ammonia, etc., and to give the whole body of air the desired movement toward the audience and upward to our heat vents. The necessity for proportionate measurements of an auditorium, if other evidence than is supplied by the ear and the violin is necessary, may be appreciated from the phenomena of the voice and those of the action of sound waves. If it is admitted that what we are striving for is to achieve such conditions, that what takes place in the auditory canal, in a violin, or in the mouth cavity of a great singer, shall, on a larger scale, take place in our auditoriums, it must also be admitted that the proportionate resistance of the body of air to be set in tremulous action in every direction must be determined with the same nicety that nature has taught us. An examination of Dr. Mackenzie's collection of casts of the mouth cavities of great singers is as suggestive and useful as the other inquiries I have touched upon. These forms, as might be expected, vary greatly, but the same principles of proportion and parabolic curvature prevail; but in these we are dealing with an instrument for producing sonorous vibrations, not an apparatus for measuring them, and it is instructive to note that the contralto or the soprano mouth cavity is distinct from the tenor or the baritone, and from each other, as much so as the length, size and other properities of the respective vocal cords, as also the quality and action of the respective lining membranes.

We must go back to the violin and to practical experiments based upon its functions to determine how and to what extent absorbent surfaces—especially those presented by an audience—interfere with our results; and how this interference shall be controlled and made an essential factor of success, as certainly as the stopping of a string on a fretboard. This has been settled by determining the amount of absorbent material, such as woolen fabric, that can be put into a violin without appreciably muffling the tone; and by corroborating the results of these delicate trials in actual experiments with audiences, curtains and other appliances in various rooms and halls, under various conditions. The results would seem to establish formulæ: That when the cubic space exceeds 325 feet per head, too great resonance need not be feared; on the contrary, every means of increasing resonance must be employed. As the proportionate cubic space is less than the above maximum figure, extremely resonant surfaces for walls and ceiling should be proportionately replaced by less and less resonant surfaces, until the conditions demand hard, non-resonant surfaces such as plaster throughout, when the minimum figure of 180 cubic feet per head is reached.

As to reverberation or echo, all possibility of such disturbance is obviated by the general form of the auditorium, which may be best described by a half-revolution of an obtuse parabola on its axis, the focus being on the floor line behind the last row of seats. You will ask how in the same auditorium the ideal balance of resonance can be preserved between very full, dense audiences and moderate or thin audiences? These varying conditions can be met by the simplest mechanical devices of pedals controlled by the occupation of the seats automatically, so that as the audience fills up the dampers act proportionately on area after area of surface. I am quite aware that the average manager may shrink at the possible expence involved in this, as in other essential precautions But why should we not take seriously the announcements we occasionally see that every precaution has been taken to insure acoustic success? These announcements are like the moral clauses in political platforms—admissions that there are enough intelligent people who think something of the kind should be accomplished to make the verbal concession advisable. As to arrangement of seating there can be no doubt that each row should be at least four inches higher than that in front, but I cannot find evidence to warrant insistance on a greater difference, for in a hall or theatre of approximately good acoustic properties, when the heating and ventilation are properly adjusted, the seats in the galleries are no better than those on the floor.

I will venture the assertion that if we will conscientiously construct a music hall on the principles we have mentioned, and construct our walls and ceiling in panels of wood of varying thickness and quality, the thinner and more easily excited sufaces being furthest from the voice or instrument, we can achieve results that shall insure a refinement of enjoyment hitherto unknown. Referring to the effect of careless, tuneless playing upon a violin, the effect upon a voice of persistently singing out of tune, compared with the effect of the opposite tasteful method, we can easily believe that some acoustic defects in auditoriums may grow worse with time as others may improve. As for remediable measures: Sounding-boards, stretching of wires, etc., we may admit that these and many other more radical prescriptions may be warranted by a correct diagnosis of the disease. I am inclined to think, however, that if the wires have ever done any good it was because accidently, by their varying tension, they supplied in a bungling way a similar apparatus to the rods of Corti of the inner ear, by which the physiologists are not yet agreed that we distinguish the quality of tones by measuring the over-tones. However this may be, of one thing I am certain, that all subdivisions of space, such as that under galleries, must be treated on the same principles as the main auditorium, and with the same nicety as to detail. That it is necessary to construct our ceiling, walls and floor with sufficient space behind, above or below, to insure the action of our resonant panels and that these spaces must not be mere waste spaces, but properly finished chambers, properly dry and ventilated. There are advantages in this from a practical view: that the main construction of the building is a thing apart, our hall is an apparatus, a sort of large ear with its own laws of being within.

We are possessed of the data for a book on the whole subject, a work that shall be exhaustive and final, to which we could turn for facts and formulæ with the same reliance that we use our engineers' pocket books for tests and strains. Such a work would be copiously illustrated and could not be less voluminous than Professor Helmholtz's "Sensations of Tone as a Physiological Basis for the Theory of Music." But where shall we find the devoted spirit who could, if he would, give three years of his life without hope of pecuniary reward, and where is the publisher who will invest the necessary thousands in so unpromising a venture? In what I have said I have adopted the tone of positive assertion because I most potently believe what I have told you, and am warranted in so believing by the results of practical experiments. I could not in any less compass than a dozen courses of a dozen lectures of an hour or more each, have marshalled and reviewed all the facts, all the details, of investigation and the reasoning based upon these; and I have, therefore, thought best to flatly state my conclusions in the hope that they may excite discussion.—*World's Congress of Architects*

A SAD ACCIDENT ON MOUNT TAMALPAIS.

WM. Curlett, Jr., son of William Curlett, the architect, whose home is in this city, was killed by the accidental discharge of a rifle in the hands of Ralph Prescott.

Prescott is said to be wild with grief over the unfortunate affair, as young Curlett had been his friend for years. We cannot refram from offering our most heart felt sympathy to the family and friends of the young man.

A new law in the State of New York requires that all stone for Municipal and State buildings shall be cut, dressed and carved on the premises where used.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SCHOOL House at Redwood, Martens & Coffey Architects.

ACCEPTED Design for City Hall, Alameda, Percy & Hamilton, Architects.

DESIGN of the City Hall, Alameda Cal., W. O. Banks, Architect.

PRESENTATION OF THE ROYAL GOLD MEDAL TO SIR FREDERICK LEIGHTON, BART., P. R. A. [H. A.], MONDAY, JUNE 25, 1894.

ADDRESS BY THE PRESIDENT, FRANCIS C. PENROSE, M. A., F. R. S., F. R. A. S., KNIGHTS OF THE ORDER OF THE SAVIOR IN GREECE.

COLLEAGUES AND GENTLEMEN:—

E have before us this evening a grateful task, and one in which I feel it to be a high privilege to take a share, in presenting, in the name of our Most Gracious Patron, Her Majesty the Queen, the Gold Medal to one who has greatly honored us by accepting it at our recommendation. The distinguished President of the Royal Academy is well known to all of us here by his works and by his renown, to many by his friendship, and his genial courtesy to all who have had any intercourse with him.

As it is possible that some one who has not sufficiently followed the considerations which have guided the Institute in this award might ask, Why should a medal intended for the recognition of architectural merit be awarded to a painter? I propose addressing myself briefly to that point by-and-by; but, in the first place, I will endeavor to trace shortly some of the steps by which our distinguished friend has attained the highest eminence in our British world of Art.

Sir Frederic Leighton was born at Scarborough, and his natural inclination towards the graphic arts early declared itself. His father, a physician, though he had other views for his son—intending, it is said, to give him a University education, with a view to his ultimately being called to the Bar—nevertheless encouraged him to make himself acquainted with anatomy, and gave him every facility for the study of art in order that he might be equipped for the profession should he eventually follow it. We early find him, then studying at Rome; and, if I may be allowed a moment's digression, this leads me to reflect that I must occasionally have fallen in with him during the winter and spring months at the Artists' excursion called the Cervara, or on the Pincio or when it was the ambition of the British art students who were there to fall in with John Gibson at his early coffee at the Lepre.

Dr. Leighton became so far a convert to his son's wishes as to consent that the latter's drawings should be submitted to the famous American, Hiram Power—a man not less remarkable for his great skill as a sculptor and his knowledge of art, than for his noble physique, his courteous manners, and his sterling character—and if he decided that there was the true artist's ring about these works, his son should no longer be opposed in following the bent of his inclination. We may, I think, appreciate the pleasure which the good American had in assuring the father that there could be no doubt whatever on the subject. The pithy way in which old Hiram Power gave his verdict is worth recording: "Then you think," said Dr. Leighton, "I ought to let my son be an artist?" to which there came the answer: "You have no choice, sir; Nature has done that already." After this, the youthful painter studied in various European centres, and made himself proficient, not only in the art of the countries in which he sojourned, but also in the languages, as those who have heard his discoursing with foreigners can testify. At Brussels, when eighteen years of age, he produced his first finished picture, "Cimabue finding Giotto in the 'Fields.'" He shortly afterwards showed his sympathy with our profession by a painting of which the subject was the death of Brunellesco. After some residence in Paris, working at the Louvre, he studied at Frankfort under the painter Steinle, to whom he submitted the design of his magnificent picture "The Triumph of Cimabue," which he carried out at Rome. I have heard that during this period Thackeray fell in with him, and prophesied that, although as yet altogether unknown in England, he would become President of the Royal Academy.

The great picture above referred to was sent to England for the Exhibition of 1855, then held in the rooms of the present National Gallery. The seniors here present can remember, and many of the juniors who saw the picture when it was exhibited again at Manchester can well understand, the fervour which was created on all sides by the unexpected appearance of such a work by a man hitherto unknown. The picture was immediately bought by the Queen. But, for the present renouncing what might have seemed a lucrative opportunity for accepting work in London, he returned to his studies, and resided for some years on the Continent, chiefly in Paris, in communication with some of the most distinguished painters of that capital.

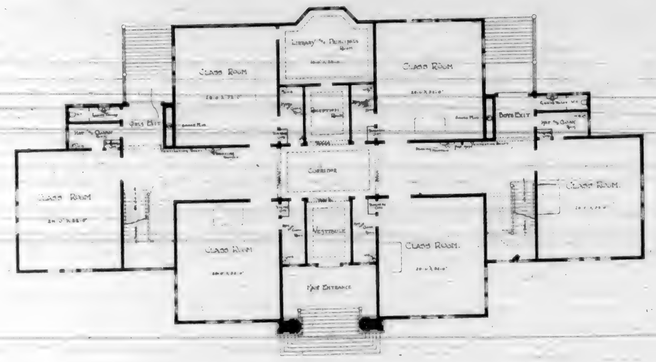
Soon after his return to England, he painted the fine fresco representing "The Five Foolish Virgins," in the church at Lyndhurst, in the New Forest; and in the same material, but more recently, two large fresco paintings at the South Kensington Museum, representing the Industrial Arts applied to Peace and War.

It is, however, impossible, in the space here available, to enumerate anything like a list even of his principal paintings.

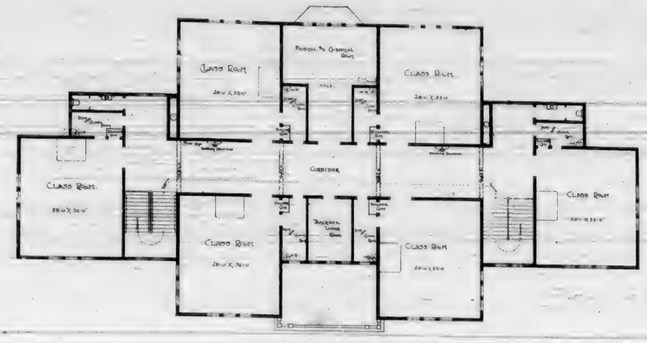
"The Power of Music" was exhibited in 1856. The great classical subject of "Hercules Wrestling with Death for the Body of Alcestis" must be specially mentioned, for it called forth the praise of his friend Browning in the poem called "Balaustion's Adventure":

> I know, too, a great Kaunian painter, strong
> As Herakles, though rosy with a robe
> Of grace that softens down the sinewy strength,
> And he has made a picture of it all.

More lately we have seen the fine, pathetic picture of Andromache, *dejectan conjuge tanto*, in her captivity. In 1881 the merited compliment was paid him in the request from Italy that he should contribute his portrait to the gallery of di-



First Story Plan.

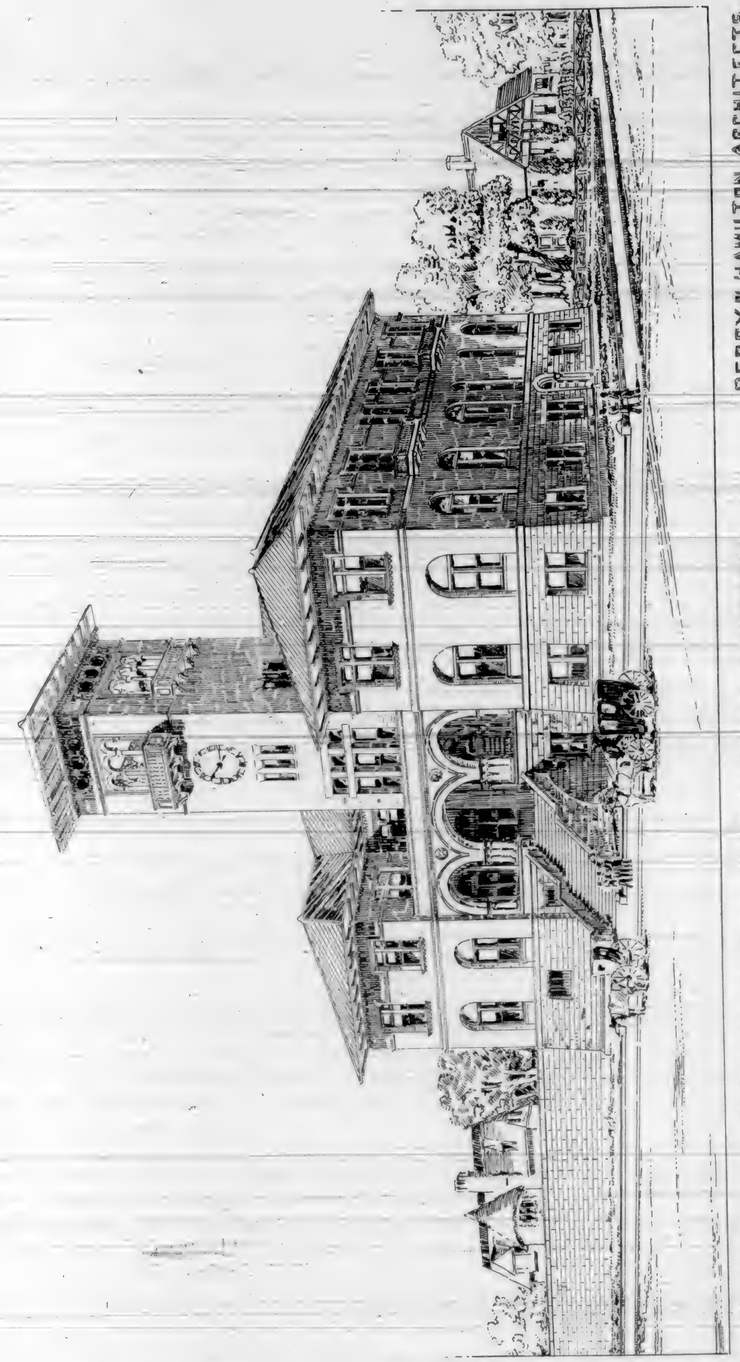


Second Story Plan.

Redwood City School House

Martens & Coffey. Archts
Rm 18 Academy of Sciences Bldg.
San Francisco, Cala.

Britton & Rey Photo Lith.



ACCEPTED · DESIGN · FOR · CITY · HALL · BUILDING · ALAMEDA · CALIFORNIA.

PERCY & HAMILTON ARCHITECTS.

BRITTON & REY PHOTO LITH.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

VOL. XV Nº 8 AUGUST 1894.

DESIGN · FOR · CITY · HALL · ALAMEDA · CAL
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CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV Nº 8 AUGUST 1894

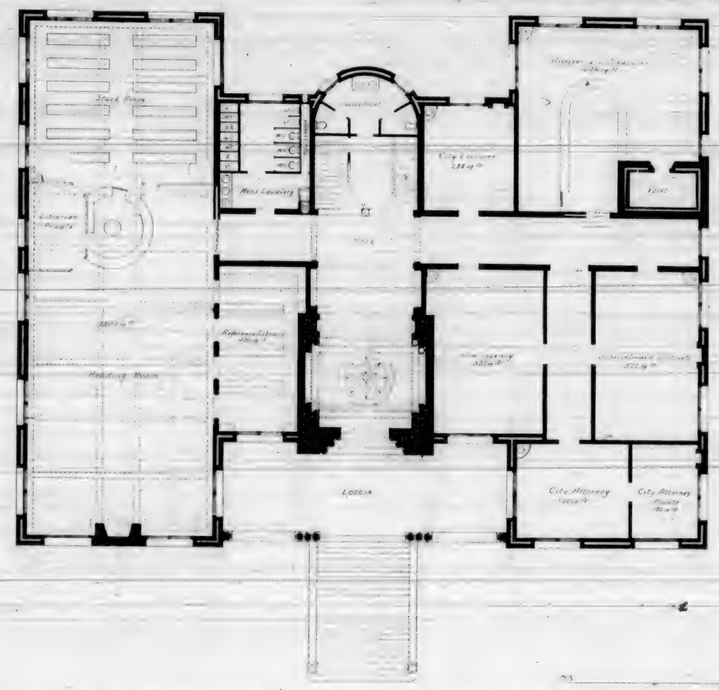
tinguished painters in the Uffizi at Florence.*

Thus far we have followed his career as a painter; but, not content with the triumphs of his brush, he has invaded the sculptor's domain. In 1877 we admired the fine group of the "Athlete Struggling with a Python," and in 1886 his bronze statute of the "Sluggard." I shall presently have to speak of his potential claim to graduate in architecture.

I necessarily omit much. Of him it can without exaggeration be said, *Nihil tetigit quod non ornavit*. Up to 1883 he had for many years, as their Colonel, led the Artists' Corps of Volunteers. His eloquence in presiding at the Royal Academy Dinners is the theme of all. The social side of his character is equally admirable, and many are those who can bear witness to generous actions on his part, both in purse and kind sympathy.

But Sir Frederic Leighton is very much more than a painter. He is the only President of the Royal Academy, from the time of its first foundation, of whom it can with certainty be said that he has evinced a thorough knowledge of all the great Arts, and who is practically great as a painter, a sculptor, an orator, and a writer.

The greatest master in Art since the days of Pericles is reported to have said, "I know but of one Art." There have been but few who could justly adopt those words, but but one of those few is Sir Frederic Leighton. Similar to its tripartite analogy in Nature, where length, breadth and thickness form one space, so architecture, sculpture and painting are one in Art; the practice is different, but the principles, whenever excellence is touched, are found to be the same in each branch. You know Sir Frederic Leighton's



ACCEPTED DESIGN FOR THE ALAMEDA COUNTY COURT HOUSE.
FIRST FLOOR PLAN. PERCY & HAMILTON, ARCHITECTS.

I do not suppose there is anyone in this room who questions that the Institute has been thoroughly right in making the award of this medal which we have the happiness of bringing to its consummation to-night; but, as I said before, in case there should somewhere be a doubter, I will make a few remarks on that head. Had Sir Frederic Leighton no other claims upon us than the noble architectonic works that have often been products of his hand, works many of them in oil and fresco, executed for the embellishment of public and private buildings, the Institute would have a perfectly good answer to give. The late Prince Consort thus defined the ruling principle—namely, that the appropriation of the Gold Medal should be left an open question to be raised according to circumstances in each year, and to be applied as the Council might periodically feel to be the best for the general interests of the profession. The Institute would therefore be justified in awarding the medal to an artist of high distinction either as a painter or sculptor.

* The dates of the principal steps of Sir Frederic Leighton's advancement are these:—Associate of the Royal Academy, 1864; Royal Academician, 1869; President, 1878. In the last-named year he was knighted, and in 1886 created a Baronet. In France he is an Associe Etranger of the Institut (Academie des Beaux-Arts) and a Commander of the Legion d'Honneur. In Germany the rare distinction of Frederick the Great's "*Ordre pour le Merite*" has been conferred on him—an honor accorded to very few.

high achievement in sculpture. In architecture there is the clearest evidence of what I have called his potential merit had he had occasion to practice in our special branch.

In biennial Addresses to the Students of the Royal Academy, particularly in the years 1889, 1891, and 1893, we find criticism of the highest value clothed in beautiful language on the Spanish, French and German Schools of Mediæval Architecture. Not mere sketches and generalizations, but dealing with the subject in an exhaustive manner.

Our ex-President has most happily and justly eulogised these addresses, saying in his discourse to students at the beginning of this year that they demonstrate in regard to architecture that their writer possesses an intelligent and a critical grasp of the subject second to no modern author. To few indeed is it given to combine with wide historical research and keen critical acumen the indescribable charm of composing poetry in prose. Let me command to your thoughtful attention the study of these singularly learned and graceful discourses.

That an artist of such refinement would also be in sympathy with the spirit of classical architecture will not be doubted. I had myself frequent opportunities of bearing witness to his appreciation of the elements of beauty in the

works of the Greeks at meetings of the Publication Committee of the Society of Dilettanti; but I wish particularly to call your attention to the masterly summaries of the characteristics of Mediæval architecture as practised by the leading races of Continental Europe in the Academy lectures before referred to. The whole series is full of practical teaching in clear and incisive language: but as in this address limitation is necessary, I will confine myself almost entirely to what is said on the evolution of Gothic architecture from its source at Saint-Denis. After a short discussion of the earlier manner of vaulting from the Roman type, in which stability for the wagon vault was sought in the resistance of solid masses of brick and concrete work, we read:—

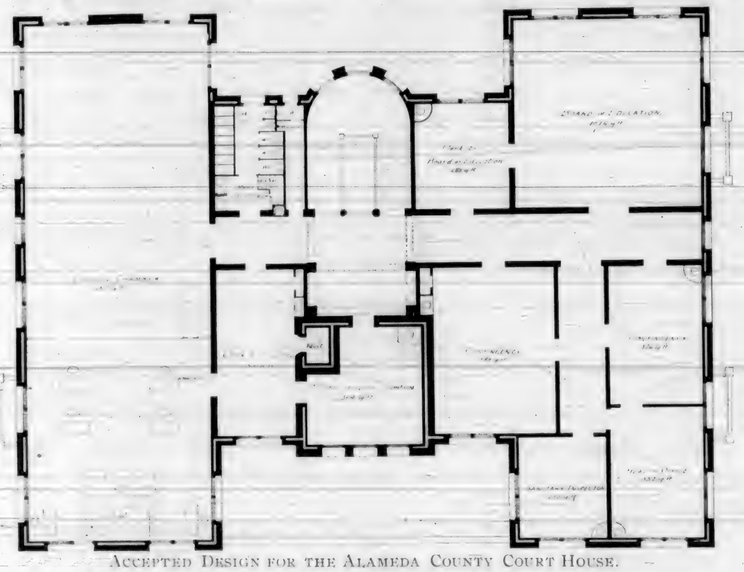
"The substitution of the principle of a balance of active forces to this principle of inert resistance is probably the greatest revolution ever introduced in the science of building: we have here the generative principle of Gothic architecture, its essence and its life. How this revolution was brought about I can of course only indicate to you in summary outline. Let us first note in passing that the presence of a pointed arch, except as a structural form, does not constitute Gothic architecture. Isolated radiating pointed arches have been built in ages and countries in which the Gothic style was not dreamt of; a building might be Gothic in structure and principle without showing a point opening anywhere: it is through the roof, not through the window, that the formative Gothic idea entered."

Then after describing various expedients for securing stability, including the important step taken at Vezelay, where intersecting vaults, but without ribs, were substituted for the continuous wagon-head—an advance, but not yet satisfactory—we read: "A few years later, in the early middle of the twelfth century, a Benedictine monk, feeble of frame, but of a lofty spirit, sugar, the great Abbot of Saint-Denis—who has no sculptors, by the bye, this special claim, that he boldly withstood the bitter denunciations launched by St. Bernard against the sculptural decoration of churches—began the erection of a church in which the tentative groupings, at which I have hinted, gave place to the systematic and logical application of a new and fruitful conception—the idea of stability based on the balance of active forces, expressed in a self-sustaining combination of upright supports and vaulting ribs, with detached buttresses bringing their action to bear exactly on the points at which the trust of the vaults is gathered up."

The address concludes: "Is there any lesson that we may draw from this hurried survey of artistic evolution amont the French? I have dwelt with emphasis on the genius o their Mediæval builders; do I advocate—the young architects for whom I nave mainly spoken to-night may ask—d I advocate the adoption of Gothic forms for the purposes o our own lives? I have spoken to little effect if my answe can be doubtful. Artistic forms are the vesture of ideas and the expression of mental conditions; the ideas and mental conditions of our day are widely removed from those of the Middle Ages; the modern mind cannot with fitness put on the garb which was moulded on the mind of a day long past. But if we may not fitly adopt those forms, we cannot too reverently note the spirit which presided over their development, for a like spirit brought to bear on other material and under other conditions may yet bear new and noble fruit. And the characteristics of that spirit are—a masculine independence, a tenacious grasp of central principles, a fearless sincerity in expression, a scorn of shams and trust on truth."

In Sir Frederic's address for last year we find admirable criticisms on the German Mediæval architecture; praise where due is given to the German Romanesque, and afterwards the reflection, which appears to me perfectly just, that the Germans as a race were never in unison with Ogival architecture; and in respect to their great achievement—Cologne Cathedral—though not withholding praise, he observes, as I think most truly: "We feel that we are in the presence and under the spell of a powerful will, grasping serenely and solving with unfailing and intellectual resource a scientific problem; we bow accordingly before a triumph of skill and volition, we are not, as it seems to me, thrilled by the kindling touch of genius."

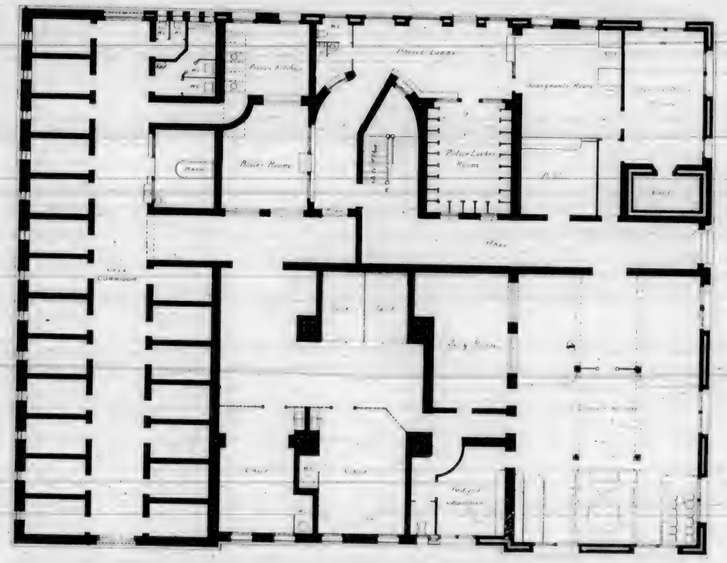
To the pictorial works by Sir Frederic Leighton in connection with architecture already named may be added paintings for the ceilings of a house at New York, of which our Gold Medalist, Mr. Richard M. Hunt, was architect, as well as several of the same character in London. But I must specially mention one work combining architecture in the solid with which he has had much to do. I allude to the removal of Alfred Stevens' monument from the south chapel in St. Paul's to the nave for which it was originally designed, which was done entirely under his inspiration and in no small degree at his expense. I feel sure that there can be no need for me to dilate further on what seems to require no argument in justification of the action of our ex-President and of the Council, and of the Institute which has ratified their action in awarding this medal, especially when, to the great advantage of the Institute, Sir Frederic Leighton's acceptance of its sheds lustre on the roll of Gold Medalists, so well begun with the loved and honored name of Professor Cockerell; and it must be obvious to all of us that the whole profession gains from the fact that the chief representative of Art in its three branches in this country thereby shows how much he is in sympathy with Architecture.—*Journal of the British Institute of British Architects.*



Accepted Design for the Alameda County Court House.
Plan of Basement. Percy & Hamilton, Architects.

Grimes—"Did you get ahead in that poker game last night." Wierdek—"Guess so. I had a head this morning when I woke up."—*Truth.*

Willie—"Come mamma, let's go over and see the monkeys. Mamma (who has the children out for an airing)—No, let,s go home and see papa.—*Chronicle.*



Accepted Design for the Alameda County Court House.
Second Floor Plan. Percy & Hamilton, Architects.

BOOKS AND PERIODICALS.

THE ARCHITECTS' DIRECTORY for 1894. This valuable reference book to the architectural profession has just appeared from the press of Wm. T. Comstock. It is put up in convenient shape and bound in red boards with gilt stamp, making quite a striking appearance. The work bears marks of very careful preparation and aims to give, classified by States and towns, all the architects in practice in the United States and Canada. In giving architects' names the membership in the architectural societies is indicated by figures in brackets following each name; (1) indicating membership in the American Institute of Architects; (2) the Architectural League of New York; (35) Royal Canadian Academician. This will be found a valuable feature, not only interesting to architects, but to those following up the work of associated architects. The influence of architectural associations in raising the standard of architecture in this country is well known, and this feature of the Directory will be regarded important.

The work is well made up, clearly printed and of convenient size, and will be found of great value to architects and the building trades. The price is one dollar.

THE BUILDERS' PROGRESS and PACIFIC ARCHITECT.—This is the title of a new paper published every Saturday by P. J. Donohue at 309 California street. Its mission is to gather from every quarter such news as will most interest interestrthosc who are about to build, a directory of architects on the Pacific Coast, with a list of contractors and material men together with other matter useful to all to those interested in building, and want to know where to lay their hands upon what they want for that purpose. We hope that the publisher may receive all the encouragement he wants in placing his new venture before the public.

The convention number of the PHOTOGRAPHIC TIMES for July 20th, arrived at hand too late for a notice in our last number. Though much was promised for the convention number, none need be disappointed in what proves to be a great success; with "The Old Fashioned Girl" with her spinning wheel for a commencement, to the end of the number the illustrations are life like and striking. The Hand Camera in the Streets by Walter D. Welford give many hints of what the camera is capable of in the way of

street views is well illustrated by the two pictures entitled "An Interesting Moment" and "Shopping on a Wet Day."

The work, however, must be seen and read to be fully appreciated.

"WORKING-CLASS SETTLEMENTS IN MULHOUSE AND MILAN" is an article giving an account of the great success of what we should call building associations, though having a much more comprehensive plan of operations, than our building associations and according to the account given have proved very successful; the author calls the *Societe Industrielle* "a sort of Royal Institution and philanthropic society rolled into one." Resulting in good house, cheap rents with comfort and happiness to all. What more can be asked for?

THE FORTNIGHTLY REVIEW for July 1894, is of unusual interest; one article "A Lesson from Chicago" should be read by all who have a love for our American Navy. This article though addressed to British readers is very complimentary to the ships built for Our Navy.

LIPPINCOTTS' MAGAZINE for August, 1894, comes to hand with a novel call "Sweetheart Manette," by Maurice Thompson; while Louise Stockton's tale "A Mess of Pottage" is concluded, "Uncared for Cats" as well "Feminine Phases" are both full of fun and humor, while "Washington Before the War" by Mrs. M. E. W. Sherwood supplies many interesting reminiscences of that interesting period.

CORRESPONDENCE SCHOOL OF MECHANICS. It has become a common thing to have schools established for instructing by correspondence, we have received a little leaflet from "The Colliery Engineer Co." Scranton Pa., containing extracts from letters from students who have taken a course in "The Correspondence School of Mechanics" all appear to be much pleased with the progress made in the department selected for study and offer many reasons why they could not avail themselves of any other method of instruction.

PACIFIC MEDICAL JOURNAL for August 1894, published from 603 Sutter street, Winslow Anderson, M. D., editor and publisher. This is a handsome magazine, well printed on good paper; we should judge it must be of interest to the medical profession as every thing relating to good health is of interest to the public at large we trust the circulation of this magazine may continue to be everything that the publishers may desire. An interesting article entitled "Some Things Noticed on a Trip to the Eastern States" cannot fail of having many readers both of the professional and non-professional class.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

MONEY PAID FOR ANOTHER'S USE.—Where a contractor on a building abandons the work, leaving the workmen unpaid, and the owner tells the contractor's bondsmen that there is enough money coming on the contract to complete the building, and directs him to pay the workmen, so that the work shall go on, and says that he will refund the money so paid as for money paid to and for his use.

Dibble v. Demattos, Supreme Court of Washington, 36 Pac. Rep. 485. 79.

RIGHT OF MORTGAGEE TO BUILDING REMOVED FROM MORTGAGED LOT.—Where the owner of a lot and building thereon, mortgaged the same the mortgager subsequently sold the said premises subject to such mortgage. Afterwards, the purchaser, without the knowledge or consent of the mortgagee, removed the building to another lot, owned by his wife. Neither the severance of the building nor its annexation to another lot destroyed the right of his mortgagee to enforce his claim against it, the lot mortgaged being first exhausted. After its removal to her lot, the wife made certain additions to and improvements upon the building. The improvements and additions so made in this case, did not destroy the identity of the mortgaged building, or defeat the mortgagee's right to subject it to the payment of so much of his mortgage debt as remained unpaid after exhausting the mortgaged lot.

Dakota Loan & Trust Co. v. Parmelee, Supreme Court of South Dakota, 58 N. Y. Rep. 811. 143.

WHERE AN EMPLOYE IS VICE PRINCIPAL.—One employed by the architect of a building to construct the scaffolds upon which the bricklayers and hod carries shall work is, in the construction thereof, a vice principal, and not a fellow servant of a hod carrier.

McNamara v. MacDonough, Supreme Court of California, 36 Pac. Rep. 941. 44.

EFFECT OF ALTERATIONS AND ADDITIONS IN BUILDING CONTRACT.—When additions are made to a house in course of erection, which a contract has agreed to build for a certain sum, the original contract still exists so far as it can be traced, and the excess is to be paid for according to its reasonable value; and it is only where the charges have been so great that it is impossible to follow the original contract, that it will be deemed wholly adandoned, so that the contractor can recover on a basis of value. When such contract is shown to have existed, the burden is upon the party claiming its abandonment to prove the same.

Hood v. Smiley, Supreme Court of Wyoming, 36 Pac. Rep. 856, 112.

WHAT CONSTITUTES FELLOW SERVANT.—Where a foreman in erecting a scaffold, builds it in a negligent manner, and an employe under him is injured by such defective scaffold, the foreman is a fellow servant and the master is not liable.

Noyes v. Wood, Supreme Court of California, 36 Pac. Rep. 766. 38.

EFFECT OF ABANDONMENT BY CONTRACTOR.—A building contract provided that the last installment of the price should be paid when the building was completely finished and accepted, and that no payment should be made until the contractor should procure from the county clerk a certificate that "no liens or claims have been recorded or filed against said premises or building, which are then unsatisfied of record." Where the work was abandoned by the contractor, and finished by the owners, an assignee of the final payment to become due the contractor could not recover without producing such certificate.

Bates v. Trustees of Masonic Hall and Asylum Fund, Supreme Court, Special Term, Oneida County, 27 N. Y. Supp. 951. 97.

WHAT CONSTITUTES USE OF PARTY WALLS IN COMMON.—Where a wooden warehouse is framed against a brick wall, built one half on each lot, though no joists or other timbers are let into the wall, yet, if the ends of the sides and the roof are attached thereto in a permanent manner, and the wall used as one side of the enclosure, there is a use in common which entitles the owner of the wall to recover from his neighbor for his use, and half the value of such party wall.

Deere Wells & Co. v. Weir Shugart Co., Supreme Court of Iowa, 59 N. W. Rep. 255. 85.

BUSINESS MOSAICS.

Schenck's Swinging Hose Reel for Mills, Factories, Hotels and Public Buildings. This reel has many advantages for inside protection, from the fact it is simple, safe and reliable in construction, and always ready for use, having packing boxes that never leak. Sold only with the hose the couplings and hose pipe complete, it is fully guaranteed. Reduce your insurance by having the best protection. W. T. Y. Schenck, 593 Mission near Second.

Boston Street Car Conductor.—"How old are you my little girl?" LITTLE GIRL—"If the corporation doesn't object I prefer to pay full fare and keep my own statistics."—*Chicago Standard.*

Mantels, Grates and Tiles.—No matter how well your house may be built, if you have not proper heating apparatus you will never be satisfied with it, therefore if you are wise you will call upon W. W. Montague & Co., before giving your orders in this line. This house has establishments in San Jose and Los Angeles in addition to their headquarters in this city. Your wants will be well supplied either with artistic work in bronze, or the common every day out-fit for the kitchen, all good of its kind. See advertisement in this journal.

Friend—"Now that you have made millions, what will you do?" OLD BULLION—"I shall retire, and amuse myself telling people what a burden wealth is, and how happy I was when I was poor."—*N. Y. Weekly.*

P. H. Jackson & Co., manufacturers of structural iron and steel works for buildings, sidewalk lights, and sky lights, etc. If you want to improve some dark corner of your building or have a cosy bright room, made of what is now a dark vault under the sidewalk, call upon these gentlemen and they will show you how it can be done, and what is more, do it in such good shape, that you will thank your stars that you thought of going to their place of business 228 and 230 First street, San Francisco, Cal.

Hotel CLERK—"The old gentlemen in No. 201 says that his room is full of steam from the laundry." PROPRIETOR—"All right. Charge him $1 50 for a Turkish bath."—*N. Y. World.*

The attention of architects and those contemplating to build are called to the advertisement of "The J. L. Mott Iron Works" in this edition. This concern manufacture a large number of different articles of fine sanitary goods for fine residences, as also large buildings, factories, school houses, etc., which are not excelled by any manufacturers in the world. Their Pacific Coast Representative, M. S. James, has on hand all the catalogues and will be pleased to furnish same to any one desiring them, and will give all necessary information that may be desired.

Portland Cements.—This might be called the "Age of Cement" if we judge by the quantity of cement in use in this city, and upon the whole coast in fact, while every day shows an increase in the demand of this article. A word to the wise is enough, therefore we says "Josson" and "North" can always be had by leaving an order with J. W. Grace & Co., 203 California street, San Francisco.

Practical ÆSTHETICS—FRIEND—"Why do you have all your ceilings and walls finished in crimson?" MRS. SUBURB (of New Jersey)—"That's so we can slap mosquitoes without making a splotch."—*N. Y. Weekly.*

Architectural Terra-Cotta.—Messrs. A. Steiger Sons, manufacturers of architectural terra cotta, having their works at San Jose, California, can supply all orders in the way of hollow tile, flue linings, colored bricks, vases, and fire bricks and an almost endless list of terra cotta work that the architects want for safety and adornment. Their office in this city is at 320 Sansome street, room 3, telephone 5253.

"Have you been playing the races?" "No," replied the rejected looking man. "The races have been playing me."—*Washington Starr.*

Fitzgerald Prepared Wall Plaster—We have had occasion before now to call attention to the merits of Fitzgerald Wall Plaster, the steady increase of its use since it was first introduced upon the market, is conclusive that it has come to stay, if you want to know about it call upon the Pacific Patent Plaster Co., 216 Bush street, San Francisco, room 90 Telephone Building, telephone 638.

The SARCASTIC BARNSTORMER (after the bombardment from the gallery)—"I have eggs enough now, thank you. Will no one send up an accompaning ham?" THE GALLERY—"Its on the stage now!"—*Chicago Record.*

Smith & Young, office 723 Market street, San Francisco, 230 South Spring street, Los Angeles. These gentlemen supply almost every thing required in building, from blue prints and paper for making them, to wood carvings; as well as wood ornaments, pressed, Bostwick Steel Lath, painted or unpainted, mineral wool, painted as well as mortar stains, but the list is too long for this notice. See their advertisement on page ix this journal.

"My sympathies," said the effervesing young woman, "are altogether with the dear Japanese." "So are your hired girl's," said the matron. "She believes all china should be eternally smashed."—*Detroit Free Press.*

San Joaquin Brick Co.—This company's works are situated in Stockton, Cal.; the manufacture of fresh water brick is carried on extensively at that point, their San Francisco yard is on Berry street between 6th and 7th, San Francisco; F. W. Muller, President; C. Horton, Secretary; E. H. Burrell, Agent, 408 California street, room 16.

CITY BUILDING NEWS.

Alvarado, lot 21, Heyman Tract. To build; owner, Thos. J. Hume; contractors, H. Plant & W. H. Davis; signed, July 18; filed, July 23; cost $1480.

Beale and Howard. One story brick; owner, W. F. Whittier; architects, Percy & Hamilton; contractor, R. Ringrose; signed, July 10; filed, July 10; cost $7964.

Butte and Texas. To build; owner, Jno. F. Danielson; contractors, Peterson & Person; signed, July 6; filed, July 7; cost $2340.

California and Laguna. Alterations and additions; owner, E. W. Hopkins; architect, Clinton Day; contractor, C. Chisholm; signed, June 26; filed, July 10; cost $2805.

Cole and Page. To build; owner, Frank Dickson; architects, Wright & Sanders; contractor, James Geary; signed, July 2; filed, July 16; cost $4025.

Clipp r near Noe. To build; owner, C. H. Wescott; contractors, J. W. Mullin and J. H. Rothgeber; signed, June 29; filed, July 20; cost $1500.

Clay near Cherry. To build; owners, L. H. Nagel and wife; architect, W. H. Lillie; contractor, W. H. Kennedy; signed, July 20; filed, July 21; cost $1600.

Cole near Carl. Two-story frame; owner, Minna Stettin; architect, Emile John; contractors, Schutt & Kraecker; signed, July 12; filed, July 26; cost $3000.

Dolores near 24th. Moving and additions, etc.; owner, J. B. Davis; architect, J. C. Newsom; contractor, B. B. Williams; signed, July 14; filed, July 24; cost $1691.

Engine House No. 4. Alterations, etc.; owner, City and County of San Francisco; contractor, J. B. Burk; cost $2450.

Engine House No. 5. Alterations, etc.; owner, City and County of San Francisco; contractor, Alex L. Campbell; cost $2193.

Engine House No. 12. Alterations, etc.; owner, City and County of San Francisco; contractor, Alex. L. Campbell; cost $1526.

Engine House No. 13. Alterations, etc.; owner, City and County of San Francisco; contractor, Alex. L. Campbell; cost $1277.

Engine House No. 7. A brick building; owner, City and County of San Francisco contractor, James Campbell; cost $8590.

Engine House No. 26. A brick building; owner, City and county of San Francisco; contractor, Jas. Campbell; cost $9985.

Eight Ave. near California. To build; owner, A. Seip; architect, A. J. Barnett; contractor, A. L. Jackson; signed, July 30; filed, July 30; cost $1574.

Fell near Fillmore. Plumbing two-story frame; owner, A. C. Freese and wife; architect, T. J. Welsch; contractor, J. E. Britt; signed, July 11; filed, July 14; cost $1220.

Fell near Fillmore. Carpenter work; owners, A. C. Freese and wife; architect, T. J. Welsh; contractors, G. Petersen & A. Olson; signed, July 11; filed, July 14; cost $8750.

Fulton near Lott. To build; owner, M. A. Martin; contractor, A. Winberg; signed, July 23; filed, July 23; cost $2700.

Fillmore near Pine. To build; owner, John Hughes; architect, Chas. I. Havens; contractor, Brennan Bros.; signed, June 28; filed, June 28; cost $12,618.

Fifth near Clara. Second story addition; owner, Geo. Alpers; architect, Jno. J. Clark; contractor, H. Barn; signed, July 31; filed, Aug. 1; cost $1000.

Glover near Leavenworth. Alterations; owner, A. Stanner; contractor, H. S. Grieb; signed, July 28; filed, July 30; cost $1050.

Green near Dupont. To build; owner, Joseph Recca; architect, T. J. Welsh; contractor, G. Masoletti; signed, July 24; filed, July 26. cost $2000.

Guerrero near 25th. To build; owner, W. J. Handy; architect, A. C. Lutgens; contractor, Joseph Kemp; signed, July 21; filed, July 24; cost $3480.

Harrison near Caroline. To build; owner, J. H. Hudges; architect, A. C. Lutgens; contractor, H. Munster; signed, July 9; filed, July 9; cost $1755.

Hampshire near 22d. Alterations and additions; owner, Margaret Gallagher; contractor, Victor Godin; signed, June 14; filed, July 14; cost $980.

Hayes near Buchanan. To build; owner, Godfrey Smith; contractors, Peterson & Person; signed, June 29; filed, June 30; cost $1110.

Isis near 18th. To build; owner, Claus Wohltmann; contractor, R. B. Hicks; signed, July 2; filed July 5; cost $2450.

Jackson near Scott. Brick work; owner, A. K. Gibbs; contractors, McGowan & Butler; signed, June 27; filed, July 10; cost $1575.50.

Jackson near Scott. Granite work; owner, A. K. Gibbs; contractor, James Roe; signed, June 28; filed, July 11; cost $1020.

Jackson near Scott. Plumbing; owner, A. K. Gibbs; contractors, Duffey Bros.; signed, June 29; filed July 11; cost $2830.

Jackson near Scott. Cut stone work; owner, A. K. Gibbs; contractor, Jno. D. Metgilvray; signed, June 29; filed, July 11; cost $5637.

Jackson near Scott. Roof tiling; owner, A. K. Gibbs; contractors, Gladding, McBean & Co.; signed, June 26; filed, July 12; cost $2450.

Jackson near Scott. Glass and carpenter work; owner, A. K. Gibbs; contractors, Wm. Knowles & Geo. Reichley; signed, July 11; filed, July 13; cost $4541.

Juri and San Jose Ave. To build; owner, Louis Juri; architect, John I. Kidd; contractor, Chas. M Depew; signed, July 14; filed, July 16; cost $4580.

Kentucky near Sierra Nevada. To build; owner, P. O'Farrell; architect, J. E. Wolf; contractor, C. J. Autwiler; signed, July 13; filed, Aug. 4; cost $1987.50.

Larkin near Pine. Two separate tenements; owner, C. S. Blair; contractor, Wm. Plant; signed, July 24; filed, July 24; cost $3061.

Market near Geary. Repairs of the Golden Rule Bazaar; owners, Davis Bros.; contractor, Geo. H. Walker; signed, June 29; filed, July 2; cost $3800.

Market near 8th. Brick work; owner, Geo. Moffatt by Ext.; architect, C. R. Wilson; contractor, Robt. Boyd; signed, June 5; filed, July 5; cost $5475.

Market near 8th. Carpenter work; owner, Geo. Moffatt Ex.; architect, Chas. R. Wilson; contractor, James J. O'Brien; signed, June 5; filed, July 5; cost $9850.

Market near 8th. Iron work; owner, Geo. Moffatt Ex.; architect, C. R. Wilson; contractor, H. Ralston; signed, June 5; filed, July 5; cost $2315.

Market near 5th. Sand stone work for 4, 5, 6 and 7 stories; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, J. D. McGilvay; signed, June 8; filed, July 26; cost $53,645.

Market near 5th. Sandstone work, 1, 2, 4 stories; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, J. D. McGilvray; signed, June 6; filed, 6; cost $51,355.

Ninth Ave. near California. To build; owner, Ella A. McNear; architect, F. E. McNear; contractor, Geo; L. Paff; signed, July 13; filed, July 16; cost $2900.

Nineteenth near Noe. Two flats; owner, Jos. H. Robinson; architect, A. W. McQueen; contractor, Jos. Drolette; signed, July 20; filed, July 25; cost $3000.

No location given. To build; owner, Wm. Muller; architect, T. J. Welsh; contractor, A. Hawkins; signed, Aug. 1; filed, Aug. 6; cost $6300.

No location given. To build; owner, J. Jacobs; contractor, I. H. Pauls; signed, July 16; filed, July 26; cost $8940.

O'Farrell near Mason. To build; owners, Annie Martin, J. C. & J. H. McGovern and M. McG. Riddell; contractor, Wm. Little; signed, July 16; filed, Aug. 1; cost $6250.

Pine and Mason. Altering stable; owner, S. F. Art Association; architect, A. Page Brown; contractor, I. R. Wilcox; cost $7000.

Pine near Larkin. To build; owners, Japanese M. E. Church; contractor, J. S. W. Sounders; signed, July 27; filed, July 31; cost $6475.

Pleasant near Jones. Two flats; owner, Julia Jones; architect, W. H. Lillie; contractor, W. H. Wiekersham; signed, July 24; filed, July 25; cost $3084.

Polk near Filbert. To build; owner, D. Depaoli; contractor, J. L. McLaughlin; filed, July 28; cost $1230.

Powell near Greenwich. To build; owners, Sarah J. and H. Harris; architect W. H. Armitage; contractors, Stoker & Bunce; signed, July 24; filed, July 31 cost $3500.

Point Lobos Ave. bet 5th and 6th Aves. Concrete and stone, etc.; owners, French Hospital Association; architect, Emile Deplerre; contractor, A. Warner; signed, July 24; filed, July 31; cost $1885.

Sacramento and Laurel. Five frame buildings; owner, Chas. Clarke; contractor, Casper Zwierlein; signed, July 25; filed, July 26; cost $7917.

Sacramento near Baker. Heating and ventilating; owners, California State Hospital; architects, Wright & Sanders; contractors, A. Baumsteiger & Co.; signed, July 24; filed, July 31; cost $4750.

Sacramento near Baker. To build; owner, California State Womans Hospital; architects, Wright & Sanders; contractor, James Geary; signed, June 28; filed, July 5; cost $14,300.

Second Ave. near Pt. Lobos Ave. To build; owner, Mary Dunphy; architect, W. H. Wharff; contractor, F. W. Maurice; signed, June 30; filed, June 30; cost $1460.

Stockton near Pacific. To build; owner, S. Granucci; architect, Chas. R. Wilson contractor, J. J. O'Brien; signed, June 29; filed, June 30; cost $5350.

Sixth near Berry. Refrigerating room etc.; owner, The Pabst Brewing Co. of Milwaukee; architect, H. Geilfuss; contractors, Schutt & Kraeker; signed, July 3; filed, July 5; cost $2676.

Shotwell near 28th; All work; owner, Jno. F. Schomer; architects, Martens & Coffey; contractor, J. Bucher; signed, July 11; filed, July 12; cost $2675.

Seventh and Jessie. Brick building and alterations; owner, Jeremiah Noonan; architect, A. J. Barnett; contractor, J. A. McNeil; signed, July 19; filed, July 21; cost $5000.

Sharon near 16th. Carpenter, paint, mill, etc.; owner, Alexander Black; architect, J. T. Kidd; contractor, Geo. Welsmann; signed, July 12; filed, July 23; cost $1025.

Taylor near Filbert. Three-story frame; owner, John McFadden; architect, Chas. M. Rousseau; contractor, Jas. Glackin; signed, July 18; filed, July 19; cost $4480.

Truck House No. 2. Alterations, etc.; owner, City and County of San Francisco; contractor, A. McElroy; cost $1976.

Twelfth Ave. near Clement. Frame Cottage; owner, Robt. Hazelett; architects Shea & Shea; signed, July 19; filed, July 23; cost $1775.

Washington street. Work on Gymnasium; owner, E. B. Spalding; architect Wm. Curlett; contractor, P. Rive; signed, July 20; filed, July 24; cost $1275.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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ARCHITECTS are as a class the worst protected people in the community. Their genius and ability is considered fair game by the majority of the people with whom they come in contact. This is not always the result of total depravity, but simply from a want of thought and a forgetfulness of the Golden Rule, and very often from a want of explicit explanation on the part of the architect of his position. In fact the architects themselves, instead of the public, are most to blame for this state of affairs. Let every architect insist on a written contract before doing any work, and refuse to do any work for nothing, except in a case of charity, and the matter is at once clinched. Verbal orders are always liable to misconstruction.

In architecture, unlike most businesses, there is no visible object by which people who wish a design may judge whether the result of an architect's labor will suit or not. When a person buys furniture, a garment, or a ready-made house, he has something tangible from which to select. You will find generally that a purchaser will visit several shops to see where he may be best suited. Now this idea he carries into the realm of architecture and when he wants to build something and get plans therefor, he considers that sundry different ideas should be presented to him by sundry different architects for his inspection in the same manner as a tradesman exhibits the articles he has for sale—forgetting that the tradesman has already his wares in stock—and all that he loses, if not bought from, is his time in showing the goods, which, to be sure, is bad enough. But the case of an architect is entirely different, he has to set to work and make these several sketch plans out of his brain, and paper and pencil—and these, if rejected are useless to him afterwards, while in the first case if a visitor does not buy from a tradesman he still has the article left for sale to somebody else.

This idea of the general public, the architect has to combat in nearly all cases, and it is very difficult to make a person believe that he ought to pay for something he has no use for and rejected; and here is where a protective society for architects would come in, to disseminate counter ideas to the generally received one, to discountenance any architect who seeks to gain an advantage over his fellows by encouraging this idea, and if after a client has been previously informed of the necessity of returning some collateral for the labor of preparing sketches for his choice, he should refuse

to do justice in the premises, to follow him with the Arm of the Law to see that he does.

This co-operation is more important among architects than others for the very reason that the opportunity of defrauding them of their just dues is greater than in the generality of business.

In Europe and in the East there exists societies for the mutual protection of their members from the rapacity of unjust people by means of helping each other in legal fights to maintain their rights, and if such were established here and a few of these fights gained, it will come to be understood that the work of an architect has some value, even if not used, and that consultations with architects are always of value to the consultor in adding to his stock of knowledge, although of no immediate practical benefit, and consultors will be more willing to pay for the time of the consultees.

THE idea that a complete building can be formed from the combination of the designs of two different architects, especially when of two different schools, although prevalent among the uninitiated, is altogether against the opinion of those who know whereof they speak—and it is against the canons of good taste in all the senses of the word to tag on an entirely different feature to a conception worked out on different lines. In general a private owner sees this and keeps within the bounds of ordinary circumspection; but public buildings seem fair game for all manner of experiments and incongruities. Pity it is so, but so it seems to be.

A THREATENED OUTRAGE.

APPARENTLY our Postoffice site job is going to be capped by the construction of an architectural monstrosity, says the *Examiner*. The Supervising Architect of the Treasury refuses to allow the public to see the plans for the new building upon which millions are to be expended by the taxpayers of the country, on the ground that there would be criticisms which would make trouble by necessitating changes. Of course that means that the plans are not fit to bear public inspection.

We have feared this from the start, and we expressed are fears some months ago. The office of the Supervising Architect of the Treasury is a machine-shop, in which designs are ground out like boards from a sawmill. The Supervising Architect himself, by the very conditions of his service, is necessarily incompetent. The character of the his work moves every intelligent architect in the country to language unfit for publication. His Government building at the World's Fair was one of the two great blemishes of the exhibition, the other being the remaining conspicuous example of political architecture—the monstrosity erected by the State of Illinois. Recognizing the deficiencies of his office in artistic matters, Congress passed a law authorizing the Government to avail itself of private talent in the construction of important public buildings. This law was nullified by the Treasury Department, which insulted the architects who had made the World's Fair a vision of beauty, and expressed its complete satisfaction with the work of its official design factory. Consequently the country is doomed to go on paying the price of palaces for the contempt of the artistic world until Congress takes more peremptory action.

Such action should certainly be insisted upon in the San Francisco case. We have waited long enough for our Postoffice to be able to wait a little longer. For a building that is to be one of the chief architectural monuments of the city we have a right to demand a decent design, and if the official Architect Laureate of the Treasury cannot give it to us, as he probable cannot, we have a right to get it outside. Congress should make an appropriation for the building at its nxet session, and should insert a proviso requiring the work of preparing plans to be thrown open to the qualified architects of the country. It is the duty of our delegation to keep up a disturbance until this is accomplished.

SIXTH ANNUAL COMPETITION FOR THE ROBERT CLARK TESTIMONIAL.

UNDER THE AUSPICES OF THE CHICAGO ARCHITECTURAL SKETCH CLUB OF CHICAGO.

CONDITIONS—The competition is open to architectural draughtsmen under thirty years of age, residents of the United States, and not practicing architects.

The author of each design must execute all drawings without assistance, and non-adherence to these conditions will cause the rejection of the design or designs in question.

The awards will be made by the Adjudicating Committee on the "Robert Clark Testimonial" competition, and are—

First Prize—Gold Medal. Second Prize—Silver Medal Third Prize—Bronze Medal.

Those designs receiving Honorable Mention will receive special Bronze Medals.

The prize drawings are to become the property of the Chicago Architectural Sketch Club.

PROGRAMME.

A design for the facade of an "Art Club" House in a Classic or Cenaissance style, the building to be situated on a residence boulevard.

The building shall be 80 feet in width, situated on a lot 100 feet in width and at a distance of 25 feet from the inside line of the sidewalk. The lot is not situated on a corner, and little or no attention is to be paid to the sides of the building, beyond indicating the proper return of the corhice, etc., in the respective.

The rooms which require expression and which take their light from this front are—

FIRST STORY—An entrance located in the centre and a single room on either side, to be used as Reception and Reading Rooms.

SECOND STORY—A large Banquet Hall located in the centre, and a small unimportant room on either side, which can be lighted from the front or from the sides at the discretion of the competitor.

THIRD STORY—The third story is devoted to bed-rooms, to be arranged at will.

The drawings required are an elevation, at a scale of ¼ of an inch to a foot, rendered in line with pen and ink without shadows or other embellishments, and a perspective rendered at will. They are to be mounted upon stretchers of heavy card-board 29x40 inches, and must be marked with a device or nom de plume. An envelope marked in a similar manner, and containing the name and full address of the author, with place and date of birth, must accompany each design.

Drawings must be delivered to John Robert Dillon, Secretary, Chicago Architectural Sketch Club, at the Club House, 274 Michigan Ave., Chicago, on or before Thursday, November 15th, 1894, charges to be prepaid. All drawings not receiving prizes will be returned at the expense of the contributor.

The Adjudicating Committee on the "Robert Clark Testimonial": W. B. WUNDIE, Chairman. FRANK L. WRIGHT. IRVING K. POUND.

IMPORTANCE OF SLOW BURNING CONSTRUCTION FOR BUILDINGS.

THE August number of the *Engineering Magazine* contains an excellent article by Mr. Edward Atkinson, on the enormous losses by fire, the results of ignorance, stupidity and neglect. He says:

There are no more perfect examples of the art of combustible architecture than are to be found in most of the hospitals, asylums, college buildings and school houses. He has been called upon to inspect more dangerous and unsuitable buildings than some of the larger hospitals, especially one for the insane, which he was once asked to protect as far as he could. The power of invention had been exhausted in making that building unsafe and unfit for its use, and that has been the common rule rather than the exception down to a very recent period. He does not insist upon an absolute fireproof construction of all buildings, as that would be impracticable, owing to the heavy costs; but he strongly advocates a better use of ordinary building materials, whereby the fire cannot so rapidly spread, thus giving time for extinguishment.

For instance, wherever the mill floor, suitably constructed of three inch planks, grooved and splined, covered with one inch top boarding, laid on timbers eight or ten feet on centers, has been made continuous—that is to say, without any break for belt holes, open elevators, or open stairways—it has never been burned through by fire upon the floor or by fire passing through the floor above, except in one instance, and that was a warehouse where a pile of jute bales took fire in a place where it could not be reached. The firemen then put water through the hole from open butts and drowned it out. Fires on such mill floors have been held, not only in the building, but in the room where they originated.

Again, iron posts have been crippled or sprung by heat a great many times at an early period in a fire. A wooden post of suitable size has never burned off until other parts of the building were already destroyed. They have in one instance resisted for hours fire which destroyed granite posts near them by reducing them to sand—the granite measuring 12x12 inches. In this instance oak posts were put in between the original posts of granite to bear an added weight of machinery. When the fire came, the oak sustained the whole load.

To repeat, the mill floor properly constructed and rightly guarded has sufficed to hold fires not only in the building but in the room in which they have originated, until the mill fire department or the public fire department could extinguish the fire. The wooden mill post of suitable size will last longer than the floor. The mill floor possesses this very great advantage over the ordinary joisted floor: fires may be readily swept away between the timbers either by sprinklers or by water from hose pipes; while in the joisted floor or floor laid over plank on edge 18 inches to 24 inches apart on centers, the fire will burn on one side of the joist or plank while the water is playing on the other side.

WHAT MILL CONSTRUCTION IS.

I. Mill construction consists in so disposing the timber and plank in heavy solid masses as to expose the smallest number of corners or ignitable projections to fire, to the end also that when fire occurs it may be most readily reached by water from sprinklers or hose.

II. It consists in separating every floor from every other floor by incombustible stops—by automatic hatchways, by increasing stairways either in brick or other incombustible partitions—to the end that a fire shall be retarded in passing from floor to floor to the utmost that is consistent with the use of wood or any material in construction that is not absolutely fireproof.

III. It consists in guarding the ceilings over all specially hazardous stock or processes with plastering laid on wire lath or upon dovetailed lath or by plaster board of a suitable kind, following the lines of the ceiling and of the timbers without any interspaces between the plastering and the wood; or else in protecting ceilings over hazardous places with tin or other suitable metal, but not with zinc.

IV. It consists not only in so constructing the mill, workshop, or warehouse that fire shall pass as slowly as possible from one part of the building to another, but also in providing all suitable safeguards against fire.

V. It consists in laying the top floor and the outer boarding of the roof over mortar, plaster board, or some other fire retardent between it and the plank, where the maximum of safety is to be attained.

WHAT MILL CONSTRUCTION IS NOT.

I. Mill construction does not consist in disposing a given quantity of materials so that the whole interior of a building becomes a series of wooden cells; being filled with concealed spaces, either directly connected each with the other or by cracks through which fire may freely pass where it cannot be reached by water. That is the common practice now named "combustible architecture."

II. It does not consist in an open timber construction of floors and roof resembling mill construction, but of light and insufficient size in timbers and thin planks, without fire stops or fire guards from floor to floor.

III. It does not consist in connecting floor with floor by combustible wooden stairways incased in wood.

IV. It does not consist in putting in very numerous divisions or partitions of light wood.

V. It does not consist in sheathing brick walls with wood, especially when the wood is set off from the wall by furring, even if there are stops behind the furring.

VI. It does not consist in permitting the use of varnish upon wood work over which a fire will pass with the speed of a race horse.

VII. It does not consist in leaving windows exposed to adjacent buildings unguarded by fire shutters.

VIII. It does not consist in permitting the storage of very combustible goods without protecting the ceilings with solid plastering, plaster board, or metal.

IX. It does not consist in leaving even the best constructed building in which dangerous occupations are followed without automatic sprinklers and without a complete and adequate equipment of pumps, pipes and hydrants.

X. It does not consist in using any more wood in finishing the building after the floors and roof are laid than is absolutely necessary, there being now many safe methods available at low cost for finishing walls and constructing partitions with slow burning or incombustible material.

The importance of these suggestions will be understood if we reflect for a moment upon the vast aggregate of property values annually destroyed by fire. Mr. Atkinson says:

The waste of property by fire is increasing year by year, in undue proportion to the increase of property at risk. Last year's ash heap in the United States has been computed in excess of $150,000,000. In order to ascertain the true measure of the fire tax we must add to this some $60,000,000 to $70,000,000 as the cost of sustaining insur-

ance companies, by which a part of the loss is distributed throughout the cummunity. To this again must be added the cost of sustaining fire departments, which came to $25,0000,000 some years ago, when I first investigated this subject. Thus the measure of this fire tax in the past year cannot have been less than $250,000,000. That is the penalty which we pay for ignorance, stupidity, carelessness and crime, for which the responsibility must be distributed mainly among owners of buildings, though shared in part by occupants, architects and builders.

THE GODWIN BURSARY REPORT, 1893.

MR. Banister F. Fletcher's Report as Holder of the Godwin Bursary* for 1893.

SECTION I. briefly recounts the preliminaries in regard to the question of site, and the composition and functions of the Commission appointed to carry out the general arrangements of the Exhibition, and goes on to tell how the boundless marshy waste chosen for the site, consisting of a succession of low sand dunes situate on the shore of an inland sea, was turned to the best and most effective use by the eminent "landscape architect," Mr. Olmstead, to whom was entrusted the laying-out of the grounds. In an interview with Mr. Olmstead the author gained much information about this part of the undertaking, which is duly retailed in the Report.

The question of procuring designs for the great buildings was a problem not a little difficult of solution, and many any various were the suggestions offered. At length a Council of Architects was decided upon, who sinking personal idiosyncrasies, agreed to work together for the benefit of the whole scheme. It was fortunate, remarks the author, that at the head of this Council was placed by mutual consent Mr. Richard Morris Hunt (*Royal Gold Medallist* 1893), who is looked up to as the Nestor of the architectural profession in the States, and who exercised a controlling influence over the other members of the Council; and more fortunate still that the architects of the buildings surrounding the great court were all pupils or direct followers of Mr. Hunt. Mr. Post and Mr. Van Brunt were pupils; Messrs. Howe, Peabody and Stearns had been pupils of Mr. Van Brunt; and Mr. McKim, by his training at the Ecole-des-Beaux-Arts, was of the same school of thought and design. Harmony was thus assured, with a result the more satisfactory to architects because it led to what was practically an exhibition of architecture. True, the expression of American life in the art was not to be found, but this can be forgiven in the face of the object-lesson afforded of the accepted canons of architectural art with respect to proportion, and its union with sculpture and painting, and those points which are apt to be overlooked in a new country. Nevertheless, the reproduction of these great classic designs all over the country for town-halls, museums and the like is strongly deprecated; it is sufficient that American architects, who are already advancing so rapidly along certain new lines of departure, should profit by the lessons such designs teach, without lavishly copying the forms. Otherwise a great "classic revival" will result, and stay for a prolonged period the true progress of art in America. Section I. concludes with a tabular statement showing the extent of area covered, and statistics as to the number of exhibitors, attendance, receipts, cost, etc., of all the principal exhibitions since that held in London in 1851.

SECTION II., The Great Buildings, commences with a list of the principal buildings, and gives the area occupied, cost, dimensions, and names of the architects who designed and superintended their construction. The largest of all, the Manufactures Building, measured 1,687 by 787 feet, and cost £200,000; the most expensive, costing £240,000 with the annex, being the Machinery Hall, the dimensions of which were 846 by 492 feet. A few features common to all the buildings may usefully be noted.

The enclosing walls were built of a framework of wood, properly braced, and sheathed on front and back with boarding laid diagonally, to which was fixed the exterior facing of "staff"—a material the composition and mode of preparation of which are given in the Report. All the statuary and ornamentation, such as caps, pilasters, etc., were formed of this material, which can be sawn, planed and tongued like wood, and if painted, and the weather kept from penetrating behind the face, will last, it is said, as long as wood. Mr. Fletcher gives as well the recipe for making the paint used on the exterior of the buildings. This consisis of varying proportions of rice-flour, bicarbonate of soda, linseed oil, water, and table salt; and besides being considerably cheaper is much more satisfactory than ordinary oil-paint for brick, cement or plaster.

The foundations of the buildings were constructed entirely of plank. The load on the soil for spread foundations was 2,500 lbs. per square foot, and a maximum load of fifteen tons per pile where piling was used. As the soil was almost entirely sand, and the subsoil either clay or sand, the spread foundations were put right on top of the sand. The main floors of all the buildings, except the Machinery Hall and the Mines Building, were figured for 200 lbs. per square foot. The Machinery Hall was figured for 250 lbs., and the Mines Building for 150 lbs. The galleries were figured for 80 lbs. per square foot, except those used for restaurants, which were figured for 100 lbs. The roof trusses were figured for 40 lbs. per horizontal foot, or 25 lbs. vertical load and 30 lbs. wind pressure. Purlins and jack rafters were figured for 30 lbs. per horizontal foot. The unite and fibre strains were as follows:—

Tension: steel 20,000 lbs., iron 11,000 lbs. per square inch.
Compression: steel 15,000 lbs., iron 10,000 lbs., reduced by formula, per square inch.
25,000 lbs. fibre strain was allowed in steel pins, and 20,000 lbs. in iron pins.
Steel pins, bearing, 20,000 lbs., iron 15,000 lbs.
Steel rivets, 20,000 lbs. bearing, 10,000 lbs. shear.
Iron rivets, 15,000 lbs. bearing, 7,500 lbs. shear.
Wood, fibre strain, white pine, 1,200 lbs. maximum.
Bearing perpendicular to fibre, 300 lbs.; shear with grain 100 lbs.; maximum bearing at end of timber 800 lbs.; tension 800 lbs. to 1,000 lbs.

The wooden framework was a novel construction never before attempted on so large a scale; and it is interesting to note the methods employed to keep within the architectural lines of the design all the constructive necessities. The upright posts as a rule were six inches by six inches, braced with cross-bracing and nailed with round nails of great holding power, put up without any framing out of stock sizes of lumber. Stock sizes were used so that the framework might be sold as salvage at the close of the Exhibition. This box construction was then sheathed with rough boarding laid diagonally, and the "staff" nailed to the sheathing. Where extra strength was required the framing was double sheathed, on the inside as well as the outside, the sheathing being reversed for extra strength. In the case of height exceeding a certain length, horizontal ties were added, and from this platform the framing started afresh. The sheathing was well nailed to each stud-post, and at least one half of the boards were continuous over plate, and everywhere broke joint. Plates 30 feet long or under were made in pieces in one length, plates over that length being formed of two or three pieces breaking joint, at least 10 feet apart, spiked with ten spikes per running foot. Sheathing on all plates was on two sides diagonally in opposite directions nailed with ten nails per running foot. Rain water pipes were of corrugated iron.

From an architectural point of view the Agricultural

* The Godwin Bursary, consisting of a Silver Medal and £40, was founded for the promotion of the study of works of Modern Architecture Abroad, and is awarded to any member of the profession who shall submit the best selection of practical working drawings, or other evidence of special practical knowledge, and testimonials. The holder of the Bursary is required to spend not less than five weeks abroad, in Europe or America, to study, examine, and report on some of the best specimens of modern planning and modes of construction, drainage, water-supply, ventilation, and other sanitary arrangements to be found in the place he undertakes to visit. Within a given time he must furnish the Council with an illustrated memoir descriptive of the same.

† Mr. Fletcher left England for New York on the 17th of May, 1893, and visited Brooklyn, Philadelphia, Baltimore, Washington, Chicago, where he spent five weeks, Niagara, Montreal, Boston, and back to New York, returning to England in the middle of August.

Building was the finest, owing to the union of architecture with painting and sculpture. The latter was most unsparingly applied, and might be considered almost a dream in "staff," presenting a composition which, owing to the expense, it would be impossible to render in any lasting material.

From a constructional point of view, the steel centilever trusses of the great nave and aisles of the Mines Building by Mr. S. S. Beman were exceedingly interesting and novel. The central space to be roofed was 630 feet long and 230 feet wide, with an extreme height of 100 feet at the centre, and 47 feet at the sides. Steel cantilever roof trusses, supported on steel stancheons, were placed 64 feet 5½ inches apart longitudinally, with a span of 115 feet, and aisles on either side of 57 feet 6 inches span. The total area, therefore, of 630 feet by 230 feet was carried on sixteen supporting stanchions.

As a color scheme the Transportation Building was probably more important than any erected in recent years, from the simple fact that it was designed from the commencement for color treatment. Mr. Sullivan, one of the architects responsible for the building, is an enthusiastic botanist, and all his system of sculptured as well as color work is derived from a study of practical botany.

The method of designing the sculpture on the Fisheries Building is interesting. A full-size drawer was first made of old Romanesque capitals, and this was taken to the sculptor's studio, and there worked over with representations of animals real or mythological, such as frogs, reptiles, various kinds of fish, dolphins, etc., The outline of the old cap was retained, and the detail filled in with various things connected with the sea. A variety of caps was thus produced, which could be easily cast in "staff" and duplicated throughout the building.

SECTION III. The States Buildings.—The pages comprising this section are devoted to the more important buildings erected at the expense of the different States of the Union. In regard to methods of construction there was nothing very novel to report, and in general the buildings were treated without any regard to each other or to grouping, their design being determined by associations connected with the founding and historical development of each State, thus affording opportunity of introducing many interesting features. Many of the buildings ranked highly as designs, and all were interesting as illustrative of the manners and resources of the various States, and the enormous and varied wealth of the country in building materials.

SECTION IV. The Constructive Exhibits.—In this section a short account is given of the more noteworthy exhibits connected with methods of construction, and of materials such as building stone, bricks, tiles, etc. The fireproof partition walls formed of hollow tiles varying in thickness from two to six inches, now so general in the States, are a great improvement on the old 6-inch lath-and-plaster partitions ordinarily used in England. The skin of the tiles is half an inch in thickness, and is left rough on the face for receiving the plaster. The tiles are laid one over the other to break joint, and are further secured longitudinally by iron clips, wood bricks being set in the vertical and horizontal joints to affording nailing surface for the architraves, wainscoting, etc. The hollow tiles allow the introduction of flues for ventilating, heating, etc., and gas and gas-pipes, electric wires, etc. Outer walls are also constructed of these tiles.

Steel is used largely for constructive purposes, and some novel exhibits were shown in the way of steel roofing and steel ceilings and wainscoting. The roofing is prepared in sheets and painted with graphite paint. It costs 14*s* per hundred square feet, and 20*s* for laying. The thin plates of steel used for ceilings are designed to supercede ordinary plaster ceilings; they can be pressed out to any pattern, and it is claimed for them that they are fire-and-water proof, permanent, will not skrink, burn, warp, crack, or fall like plaster. They can be applied over old plaster ceilings. For rough wear in large halls or schools the steel wainscoting would be of service. The Ransome concrete inventions formed an important exhibit; they are applicable to various constructions, especially for floors and foundations, allowing of the distribution of a great weight over a large area without sacrifice of height. An explanation of the principles which guided the inventor is given in the Report.

SECTION V. The Sanitary Exhibits.—The various forms of drain traps and w.-c. apparatus exhibited are described in this section, and attention drawn to anything novel in their application. The ambitious scheme formulated for the Hygiene and Sanitation Bureau by Dr. Brewer, the Superintendent of this department, unfortunately fell through from want of support by the Exhibition authorities; hence the opportunity was lost of making the department, what it might and should have been, the most complete of its kind. Dr. Brewer's original proposals were for a most comprehensive scheme, the details of which are set out in a prospectus inserted in the Report.

SECTION VI. Heating and Ventilation.—Some interesting and useful notes are given in this section culled from a pamphlet on the Heating and Ventilation of Residences, by Mr. James R. Willett, being an address delivered by him to the Engineering Society of the Illinois University. The work has since been presented to the Library by Mr. Fletcher, who states that the information contained therein, based as it is upon the practical experience of a practising architect, will be found very useful. With regard to the methods of ventilation adopted in the States, the disc fans seem to be most favored, and it is surprising they should be so little known in England. Several kinds were exhibited, the chief advantages consisting in the quantity of air set in motion, the small power required to work the apparatus, the adjustibility of the blades, its easy removal to any part of the room, and its noiselessness.

SECTION VII. The Institute of Building Arts.—This is a permanent exhibition in the city of Chicago of every class of building materials, systematically arranged, and under the care of a responsible curator. The Institution is under the control of the Illinois chapter of the Institute of Architects, and bears the same relation to the constructive arts generally as the Parkes Museum does to sanitation and hygiene. Anything new in methods of construction or materials is here exhibited, with incalculable advantage to architect, client and builder, who may compare and select at will. Such an institution, suggests Mr. Fletcher, started under the auspices of the R. I. B. A., under the control say, of the Practice Committee, would be of the greatest service to the profession in England. Under proper management and under one roof all new methods could be judged by periodical visits, saving much time and trouble in single investigations. The income of the institution under notice is derived from a nominal annual charge for exhibit space, amounting to five dollars per superficial foot per annum. The institution is free to the public, and information given gratuitously; materials are tested free of charge, and lectures delivered on special subjects connected with the exhibition. That the institution is popular may be judged from the fact that it is visited on an average by over 1,500 persons monthly.

SECTION VIII., IX., X. Specifications and Contract Drawings of Buildings.—Through the courtesy of Mr. D. H. Burnham, the chief of Construction to the Exhibition, Mr. Fletcher was able to include in his Report a selection of the specifications prepared for the erection or completion of the various portions of different buildings in the grounds.—*Journal of the Royal Institute of British Architects.*

A DEMAND FOR A TELEPHONE.

"DOWN in Texas," says an electrical salesman, in *Electrical Review*, "I think there is a good demand for a telephone that can talk over 100 miles of barbed wire fence. On the ranches cowboys are kept 'riding the fence,' that is, riding up and down a section of barbed wire fence, inspecting it and keeping it in order. Many ranches are twenty, thirty and fifty miles square, and if a serious break in a fence is found, the cowboy must ride back to the ranch to report. Now if a good telephone could be provided for each section it would save all that riding. The staples holding the two top wires to the posts could be removed, insulators put in their places and a man would have a complete metallic telephone circuit around his ranch."

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COMPETITIVE design for a State Capitol building to be erected in the city of Olympia, State of Washington, Copeland & Pierce and W. O. Banks, associated architects, San Francisco.

RAG Pickers Alley, Chinatown, San Francisco, by C. D. Mitchell.

OAKLAND High School, second mention, J. C. Newsom, Architect. Rejected on account of cost.

CORRESPONDENCE

To the Editor of the California Architect and Building News.

DEAR SIR:—In a recent issue of your paper we notice in Mr. Ernest L. Ransome's letter of June 19, 1894, the following paragraph:

"Take any face brick made on the Pacific Coast, heat it to redness and plunge it into cold water and it will go to pieces. Fire brick, even, often suffers under such a test."

Replying to this we would say that within a month we have made very thorough tests of our face or pressed and fire brick.

The most thorough test made was of two buff pressed brick. Each of these were heated to a red heat five separate times, and after each heat they were put into cold water and remained there until perfectly cool.

With the exception of a slight discoloration, these brick are in just as good condition as they were before they were subjected to this test. We have also made similar tests of our fire brick and they have not gone to pieces as Mr. Ramsome predicted they would. The brick that we subjected to these tests are now in our office on exhibition and can be seen by anybody interested in such matters.

Yours respectfully,

GLADDING, MCBEAN & CO.

NOTICE—PLANS AND SPECIFICATIONS FOR A SCHOOL-HOUSE.

By order of the Board of Trustees of Santa Cruz School District, Santa Cruz County, State of California, notice is hereby given that plans and specifications in detail will be received up to 12 o'clock noon of Saturday, August 25, 1894, at the City Clerk's office in the City Hall of the City of Santa Cruz, for a new schoolhouse to be erected and built upon the school lot situated on the south west corner of Walnut and California streets in said city of Santa Cruz, County and State aforesaid. Said schoolhouse to be a two-story frame building, with basement; the main building to contain eight school rooms of about the usual size, together with laboratory and necessary cloak and teachers' rooms, and proper provisions for ventilation and heating.

The cost of said building shall not exceed twenty thousand dollars, the amount authorized by law and said Board for the construction thereof. Said Board will pay for the plans accepted for said building the sum of five dollars.

O. J. LINCOLN,
Clerk of Board of Trustees of Santa Cruz School District.

SAN JOSE, CAL., AUG. 24, 1894.

The California Architect and Building News,

GENTLEMEN:—A few days ago I sent you a copy of the *Santa Cruz Sentinel* with an advertisement for Plans and Specifications, at the same time I wrote to O. J. Lincoln, Clerk of Board of School Trustees, and asked him if the amount, five dollars for Plans and Specifications, was not a mistake.

Enclosed you will find his reply which will no doubt be of interest to architects and especially to members of the American Institute of Architects who are fighting for the advancement of our profession and fair competitions. If the law says that Plans and Specifications shall be advertised for, it certainly means that the city shall be benefited by competition, and not to give the work to the man who has the best pull or influence with the board; although the architect selected may be a very competent man, there may be better and if so this is the reason the law call for a competition to give the city the benefit of the best. Again, if they had wished to patronize Local Architects, it could have been so stated in the advertisement, and still be legal.

But when any person or public body advertises for architects services and puts a value of five dollars for the same, it certainly lowers the dignity of the profession in the eyes of the public, as many people would understand the advertisement literally.

Hoping that you can give this matter space in you paper as I should like to hear from yourselves and other architects who may be interested. Yours respectfully,

J. FAIRLEY WIELAND.

SANTA CRUZ, CAL., AUG. 24, 1894.

J. F. Wieland, Esq., San Jose, Cal.

DEAR SIR:—Yours received, the advertisement is all right, it was not intended for competition, the Trustees had decided what they wanted and put it into the hands of local architects to be worked up, but a useless law makes it necessary to squander a little coin in advertising.

Very truly yours,

O. J. LINCOLN.

NOTICE TO ARCHITECTS.

Design for a building suitable for a boathouse, clubhouse and gymnasium, to cost no more than $2,500, will be received at the office of J. E. Budd, 226 new Yo Semite block, Stockton, Cal., up to September 15, 1894. For particulars see Gus. G. Grant, Secretary, at the obovr office.

GUS. G. GRANT, Secretary. JOHN E. BUDD, President.

To the California Architect and Building News.

GENTLEMEN:—I cut the above advertisement out of the *Stockton Evening Mail*, it is such a "curiosity" I could not refrain from sending it to you, it is the most *modern* and *improved insult* to the professional architect which I have seen. Yet I cannot believe that the brother of "Jim Budd" would intentionally be the author of such an offense, to a profession every wit equal to his own, by compiling the above "demand" for designs for an Athletic Club House to cost

MDCCCXXXIV

The Oakland High School ...

Second Mention.

J. Cather Newsom Archt. Room 21 Academy of Sciences Bldg. San Francisco.

Hog Dickers Alley Chinatown San Francisco

COMPETITIVE · DESIGN · FOR · A · STATE · CAPITOL · BUILDING · TO · BE · ERECTED · IN · THE · CITY · OF · OLYMPIA ·

STATE · OF · WASHINGTON ·

COPELAND and PEIRCE · ASSOCIATED ARCHITECTS ·
W·D·BANKS · · SAN FRANCISCO · CAL ·

PERSPECTIVE · VIEW ·

WRITTON & RE PHOTO LITH.

$2500.00 and no more, without any reference whatsoever to the awarding or payment for same.

Is it not time that something should be done to protect the profession from such insults as this?

I have no doubt whatever but that they will receive designs from "Contractor Architects" and will not be surprised if *some* architects *went in for it*. A SUBSCRIBER.

THE STRENGTH AND RESILIENCE OF CAST IRON.

BY PROF. J. B. JOHNSON.

THE working qualities of structural castings are of extreme importance, so much so that the necessity for these qualities goes without saying. Furthermore, these qualities can be tested, and are tested, of necessity, in the finishing of the castings for service. Any failure of the working qualities is immediately discovered by the machinist and corrected by the foundryman. The strength and the toughness of the castings, however, are two qualities which are not unusually determined at all except by such incidental indications of strength and toughness as come from the breakage of these parts in practice under loads or shocks which they were assumed to be able to resist.

The most convenient form for a test specimen of cast iron for cross bending is a rectangular cross section about twenty-four inches long. The size of the cross section should have some relation to the thickness of the webs or parts in the structural forms into which the metal is run and for the strength of which the tests are made. Thus, if the iron is to be used in forms where the thickness of the metal is about one inch, the test specimen should be made about one inch square. If, however, the metal is to be used in parts the thickness of which is not more than ½ inch then it would be well to make the test specimens ½ inch thick and perhaps 1½ to 2 inches wide.

In testing such a bar it should be supported on knife edges near the ends, these knife edges being at a definite distance apart. This specimen is then broken by placing a load at the center, preferably by means of another knife edge, and this load applied slowly and uniformly and without shock. About the only way to do this properly is by means of a screw turned steadily and very slowly. The modulus of rupture of cast iron in cross breaking corresponds to the tensile strength of the iron, and if the iron were perfectly elastic up to the point of rupture this modulus of rupture would be the same as the tensile strength in pounds per square inch; but since cast iron takes some permanent set before it breaks, the theoretical formula no longer applies, so that the computed modulus of rupture, as determined from cross breaking tests, is found to be always very much larger that the true tensile strength of the cast iron, its average value being from one and one-half to twice as much as the strength per square inch in tension. If the cast iron has a tensile strength of 20,000 pounds to the square inch, its modulus of rupture in cross bending will be, therefore, from 30,000 to 40,000 pounds. It is common to assume that a tensile strength of 20,000 pounds corresponds to a cross breaking strength, or modulus of rupture, of about 36,000 pounds per square inch. To find this modulus of rupture from a cross breaking test on a rectangular bar we use the following simple formula:

$$f = \frac{3}{2}\left(\frac{W\,l}{bh^2}\right)$$

where f=modulus of rupture in cross bending in pounds per square inch; W=load at center of beam in pounds; l=length of beam between bearings in inches; b=horizontal breath of beam in inches; h=vertical height or depth of beam in inches.

It is much better to use this formula and compute f from the cross breaking weight W, and the dimensions of the bar b, h and l, than to use some thumb rule, as for instance, that a bar 1 inch square and 12 inches long should carry a load of 2000 pounds at center. This would give a modulus in cross breaking of 36,000 pounds, which indicates a very fair quality of cast iron, so far as strength is concerned; but if the specimen should prove to be a little more than 1 inch square, or a little less, there is nothing in the specification to show by how much the loads should vary to compensate for this change of size. Whereas, if it be specified that the modulus of rupture should be 36,000 pounds, that could be determined from the above formula very easily, whatever the dimensions may have been. In fact, b and h should always be measured to the nearest 1-100 inches, and, of course, the castings could not be made of any given size to anything like this degree of accuracy.

In all cross-bending tests of cast iron some means should be provided for accurately measuring the deflection of the bar up to the point of rupture. This can only be properly done by the aid of some kind of attachment to the testing machine itself. These deflections should be measured to the nearest 1-1000 inch. The use of the deflection is to enable us to compute the resilience or elastic spring of the iron, as will be explained below.

Resilience signifies the toughness or the ability of the material to resist a shock or blow. Thus, if the total breaking load be multiplied by the total deflection of the beam, and this product divided by two, the result is the resilience of the beam in inch-pounds, provided the load were measured in pounds and the deflection in inches. This product varies directly with the form and volume of the beam, irrespective of its dimensions, so that if the half product be divided by the total number of cubic inches in the beam, the result represents the resilience of the iron for a rectangular beam in inch-pounds per cubic inch of metal. This is an absolute measure of the resilience or toughness of the iron, but it is easier to weigh the specimen than it is to compute its volume in cubic inches. Hence we may find the resilience of a rectangular beam per pound of metal by dividing the total resilience by the number of pounds in the specimen, just as before we found it per cubic inch by dividing by the number of cubic inches in the specimen. The writer prefers this latter method, and therefore he recommends the following:

Rule.—Multiply the breaking load in the middle of the beam by its deflection at the time of rupture, and divide the product by twice the weight of the beam in pounds.

The result should not be less than 20 for ordinary cast iron, and may be as high as 50 for the best quality of refined cast iron, such as is commonly known at gun metal.

In all tests of cast iron in tension the specimen should be cast round, free from all defects, and then turned down in a lathe throughout its entire length, the middle portion being reduced to a somewhat smaller diameter than the ends. Such a specimen can only be broken upon a regular tension testing machine, such as few foundries have in their outfit, and hence these tests are not so well adapted to common practice as the cross-breaking tests described above.

Several concerns manufacture cross-breaking testing machines which give indications of the deflection, such as are required in the application of the rule given above for determining resilience. In these tests it is very necessary that the load be put on slowly and with perfect uniformity, and this is accomplished in all these machines by means of a screw.

It must be noted that both the strength and the resilience can be determined from the same test. Having measured the length, breadth and height of the bar, and determined the breaking load, we can compute the breaking strength as described above; also having weighed the bar and determined its breaking load and its deflection, the resilience in inch-pounds per pound of metal can be determined so that a single test in cross-breaking fixes both the strength and the resilience or toughness of the iron. It must not be forgotten that these two qualities are entirely distinct and must not be mistaken the one for the other. Thus, one mixture may be very strong and brittle, and another comparatively weak but very high in resilience. It is not impossible, however, to obtain both great strength and high resilience from the same mixture, and this, of course, is the ideal kind of cast iron. Such iron offers the greatest resistance, both to dead loads and heavy strains, and also to such shocks and blows as it may receive either in actual practice or from some accident.—*Age of Steel.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. — GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. — JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. — GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. — W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. — H. T. BESTOR, Treas.

THE ANNUAL MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE Annual Meeting of the San Francisco Chapter of the American Institute of Architects was held Friday afternoon, September 14, 1894.

The following officers were elected to serve during the coming term:

Seth Babson, President; Geo. W. Percy, Vice-President; John M. Curtis, Treasurer; Oliver Everett, Secretary, and Messrs. Jas. W. Reid, Albert Pissis, Willis Polk, Edmund Kollofrath and Geo. H. Sanders as Trustees.

Mr. Percy of the Committee on Fire Ordinances reported progress and promised a full report for the October meeting.

The Chapter unanimously passed a vote of thanks to Mr. Alfred Colin, for his services in instructing the Chapter's Classes in Drawing and Design.

An amendment to the By-Laws was presented by Mr. Sanders, concerning the withdrawal of moneys in bank.

A communication was received from the Washington State Chapter, but owing to the lateness of the hour, it was laid over for consideration at the next meeting, and ordered printed in the official organ of the Chapter, for the information of absent members.

Following is the communication in full:

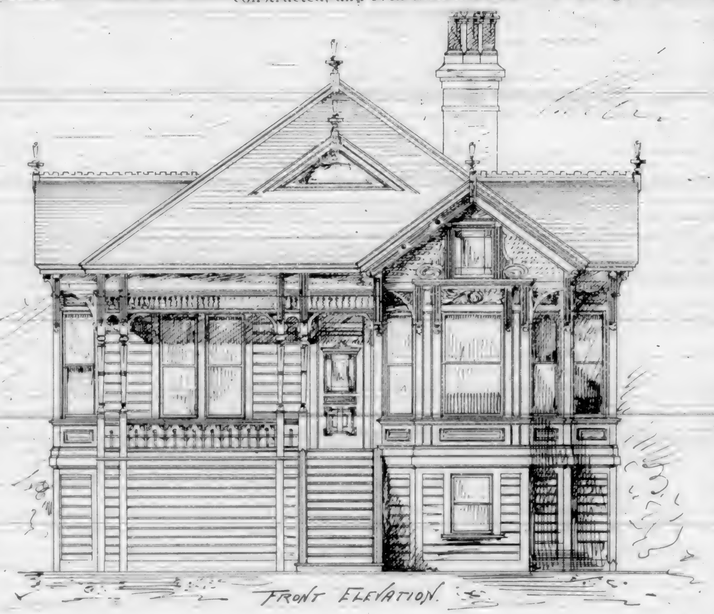
SEATTLE, WASH., AUG. 14, 1894.

Mr. Oliver Everett, Secretary San Francisco Chapter American Institute of Architects, San Francisco, Cal.

DEAR SIR:—By instruction of the Washington State Chapter of the A. I. A., I enclose you herewith copies of Resolutions and Addenda to Resolutions, which were passed by our Chapter at its regular meeting held at Tacoma, in July. These resolutions were sent to Mr. Alfred Stone, Secretary of the A. I. A., and in his letter to us of August 1st, he writes that he will submit the same to the Committee of the Institute appointed for the purpose of procuring the passing of the bill now before Congress for a reform in the methods of designing and constructing buildings for the United States Government.

In regard to the Addenda to the Resolutions, Mr. Stone comments as follows: "We think that in order to secure what you ask for, to wit: that only bona fide residents of, or voters in, a state shall have the designing of buildings within such state, it will have to be urged upon the Commissioners appointed under the new bill for it will be useless to attempt to make any amendments to the present bill, as it would probably endanger its passage, and we are now in hopes that it will be passed at this session of the present Congress."

Our Chapter disagrees with Mr. Stone in this, that by restricting the competition to architects within the state or territory in which the Government building is to be constructed, it will appeal more directly to each Senator and Representative throughout the country when he can see his own constituents more directly benefited. In a general open competition the West would be at considerable disadvantage, and in most cases, would scarcely be able to compete for Government buildings unless meetings of the Commissioners should be held in the states where the buildings were to be constructed, and even then there would be danger from the usual result of competitions in favoritism shown through influence or friendliness towards a clique.


FRONT ELEVATION.

We would be glad of an expression from your Chapter in this regard whether you will co-operate with us in urging what seems to us a very important amendment to the bill now before Congress rather than to leave it to the Commissioners after its passage. Very truly yours,

CHARLES W. SAUNDERS.
Secretary of Washington Chapter A. I. A.

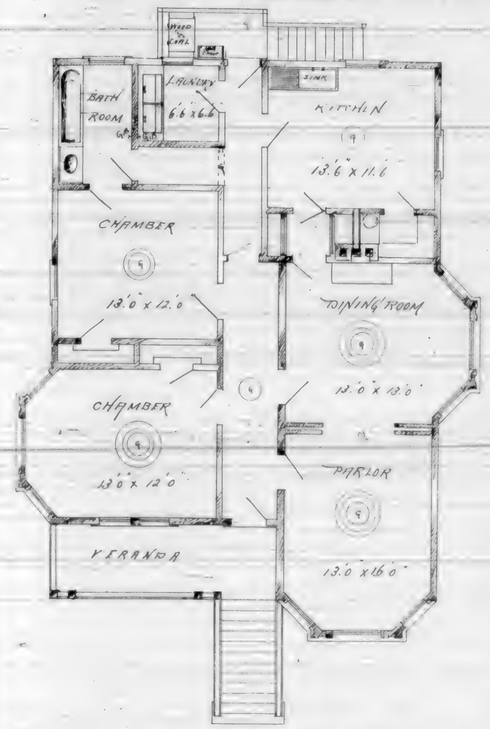
RESOLUTIONS:

WHEREAS—The peculiar manner in which the office of the Supervising Architect of the Treasury is carried on, yields architectural results in the planning and designing of the Government Buildings which suffer in comparison with the private architecture of the country, and are costly, inferior not only to the best contemporary private structures, but to the average ones, and

WHEREAS—The American Institute of Architects, and members of the profession who do not belong to that body, together with many others who are deeply interested, have been trying for years to bring about a reform in the methods of designing and constructing buildings for the United States Government; therefore, be it

RESOLVED—That the Washington Chapter of Architects hereby pledges itself to second the action of the American Institute, faithfully and persistently, in efforts to obtain this reformation, in order that the Government shall have its work done at the same price that individuals pay, and by means of a service more able and skillful; to contribute to the erection of structures which shall not debase public taste; and that the Architects of the State of Washington unite in petition to their members of Congress, respectfully asking their advocacy of such legislation as is necessary to secure this result.

An Addenda to the above Resolutions, submitted by Mr.



Wickersham was adopted by vote, and the Secretary was instructed to submit it and the original Resolutions to the Senator and Representatives in Congress and to the California Chapter American Institute of Architects.

ADDENDA TO RESOLUTIONS.

All competitions for procuring plans, etc., for Public Buildings of the United States Government shall be confined strictly to the Architects who are bona fide residents of and voters in the State in which the said Public Building of the United States Government is to be erected. And the members of the Washington State Chapter of Architects, together with many that are not members, believe that the foregoing resolution, if incorporated in a statute law, will be just and equitable and of great benefit to the Architectural profession throughout the country, in this: that the architects of each state will be given an equal opportunity to display their skill and ability, in the erection of structures that should be a credit not only to the State and Nation, but to the Architectural profession as well; that the possibility of all, or nearly all, the public buildings of the United States Government being controlled by a clique or ring, would be reduced to the minimum; therefore the members of the Washington State Chapter of Architects and others, respectfully request and strongly urge that a clause embodying the foregoing resolution, be incorporated in and made a part of any bill that the American Institute of Architects has already placed or purposes placing before Congress for enactment.

Acknowledgements were ordered sent to the Rhode Island and Colorado Chapter, for copies of By-Laws of the respective chapters.

Upon motion of Mr. Bestor, the President was authorized to appoint four permanent committees on the following subjects:

The Architectural History of San Francisco and the Pacific Coast.

Statistics of Building Interests Including the Growth of Industries.

Antiquities of the Pacific Slope.

Modern Construction for Various Purposes.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

EFFECT OF VOID CONTRACT.—Where a contract is void for failure to file with the contract in the recorder's office the plans and specifications, the liens are entitled to recover the full value of the materials furnished, irrespective of the contract price.

Dunlop v. Kennedy, Supreme Court of California, 36 Pac. Rep. 765. 42.

ACCEPTANCE BY ARCHITECT NOT CONCLUSIVE ON OWNER.—Where a building contract stipulates that the materials shall be of a certain quality, and that the work shall be performed in the best manner, subject to the acceptance or rejection of the architect, all to be done in strict accordance with the plans and specifications, and to be paid for when done completely and accepted, the acceptance by the architect of a different class of work or of different materials will not bind the owner as the provision for the acceptance by the architect is merely an additional safegard for the benefit of the owner.

Lewis v. Yagel, Supreme Court, General Term, Fourth Department, 26 N. Y. Supp. 833. 102.

WHEN RECOVERY MAY BE HAD FOR EXTRA WORK.—A building contract which provides that no work shall be considered as extra unless a separate estimate in writing shall be submitted by the contractor to the architect and the owner, and their signatures obtained thereto, does not preclude a recovery for extra work done under a parol agreement between the contractor and the owner.

Lewis v. Yagel, Supreme Court, General Term, Fourth Department 28 N. Y. Supp. 833. 63.

CONSENT OF OWNER NECESSARY TO CHARGE PROPERTY.—Where a lease contains no covenant by the lesser to repair, knowledge on his part that the premises are being improved under a contract with the lessee and acquiescence therein, does not constitute the consent required by the mechanic's lien law to charge the property.

McCauley v. Hatfield, Supreme Court, Special Term, Kings County, 28 N. Y. Supp. 648. 53.

RELEASE OF SURETIES OF CONTRACTOR'S BOND.—Sureties on a bond conditioned for the erection, in accordance with certain plans and specifications, and keeping in repair, of bridge, abutments, are released from liability by a substantial change in the plans of the work, made by the principal, and accepted by the obligee of the bond, without their knowledge or consent.

Morgan County v. McKhe, Supreme Court of Kansas, 36 Pac. Rep. 717. 62.

A SIMPLE SYSTEM OF FILING CLIPPINGS.

EVERY engineer and reader of the trade journals recognizes the value of clippings and scraps taken from them, and appreciated as well the difficulty of collecting and classifying such data conveniently and so it may be readily got at for reference. Mr. Spencer Miller, engineer of the Lidgerwood Manufacturing Company, 96 Liberty street, New York city, employs a simple solution of the difficulty in a specially designed scrap cabinet and system of filing, which was described at the recent meeting before the American Society of Mechanical Engineers in Montreal, Canada. The cabinet consists of one large drawer for "miscellaneous scraps," another of the same size for a "stock drawer," two shelves for scrap books and a series of smaller drawers of uniform size. In clipping, the scraps are thrown as cut into the large "miscellaneous scrap" drawer, from which they are assorted at leisure and placed in the series of smaller drawers, each under its proper head. There are as many of these drawers as there are subjects desired to be covered.

A drawer at a time is then taken in hand and the clippings trimmed to the minimum size and pasted upon sheets of paper perforated on one edge and of uniform size.

The clippings of course are pasted only upon one side of the sheet, with date and name of publication attached. When there is a sufficient number of these sheets they are assembled in proper order in the form of a scrap book, with cover (being stapled or fastened together with thread), and these are put upon the shelves of the cabinet for reference.

By this system it will be noticed that at no time are the clippings in any form in which they cannot be easily found, neither is there any time when the books may not be rearranged. For this reason it is found better not to page the books.

The size of the sheets used in making up the books is optional with the user. Mr. Miller uses 8½x11 inches, manila paper such as is ordinarily found in the best scrap books being preferred. Each sheet is cut with a separating strip or stub 1x11 inches pasted on one edge of the same, being perforated with four holes placed at equal distances. This keeps the book from widening at the opening side. The covers are made 9x11½ and have a neatly-stamped title. They are made still, with a flexible joint one inch from the binding edge.

The large drawers are 3 inches deep. The inside dimensions of the smaller drawers are 10x11½ inches, which will allow the finished books to be dropped in if desired. One of the difficulties which arise usually to all who have a love for clipping and collecting scraps occurs when an immense amount of clippings have been collected and one feels a desire to cull. The system used by Mr. Miller permits culling better it would seem than any other. A dozen sheets may be torn out of a book and the hole can be simply closed up, and their absence is never noticed.—*Stone.*

TO MOUNT PHOTOGRAPHS WITHOUT BUCKLING.

THE satisfactory mounting of photographs is a troublesome operation, and the following suggestion from a contributor to the *Outlook* may be of assistance to amateurs: I have found a method by which a photograph or engraving can be mounted on the thinnest paper without curling or wrinkling. If the picture is a photograph it should be ironed out smooth with a hot iron and then trimmed. Mix a little gum arabic in hot water, so as to make a rather thick mucilage. Place the picture on the page in position and mark just inside the corners. Remove the picture and take some of the mucilage on a ruling pen and draw a heavy line of mucilage from one point to another, so as to make a line of mucilage all around the place where the picture is to be. As soon as the mucilage is sticky put the picture in place a book over it to keep it flat. When dry you will have a smooth mount that will not curl.

BUSINESS MOSAICS.

California Art Glass Works have removed from their old stand 39½ Fremont street to new quarters 156 Mission street. We hope to be able in our next number to give a description of their new works, which we understand are well worthy of inspection and description. Mr. Schroeder, the president of the company will be pleased to show his patrons new designs, which can be seen to better advantage in his new place of business.

Tommy—"Paw, what makes them have the weather office away up on the top of a high building?" MR. FIGG—"That is so that it will be too much exertion for a fat man to climb the stairs and kill the weather man."—*Indianapolis Journal.*

We have before this had occasion to call the attention of our readers to the good quality of Schenck's Swinging Hose Reel and wonder that any of our factories, hotels and buildings can afford to be without, if there are such let their owner think the matter over for a second time, second thought is always the best, and then go and secure an almost certain protection from the all devouring flames that from time to time sweep away the accumulation of a life time. All the hose and apparatus supplied by W. T. Y. Schenck are fully guaranteed to be what is represented. A call at 593 Mission street near Second street, will convince any one in search of protection from fire that they can find what they want and find it of the very best quality.

The dainty designs for bathing furnished by The J. L. Mott Iron Works, would almost tempt one to refrain from the sea-side; when in want of a bath, a room furnished in the latest style with all the plumbing accessible and wherever possible without cabinet work, is surely a room where one can enjoy either a hot or cold plunge with far more comfort, and far less expense than at the sea-side. Ask Mr. M. S. James the Pacific Coast representative of these works, room 35 Flood building, if this is not true and at the same time obtain from Mr. James information and circulars to give your friends who may not know all about it.

Fond MOTHER—"Yes, sir; I have a little fellow who is only ten, and yet he writes beautiful poetry." OLD EDITOR—"Well, there's some hope for 'em when you catch 'em young; you can whip it out of 'em easier then.—*Atlanta Constitution.*

Heating and Ventilating.—Wright & Olsen will furnish estimates for heating any size of building by steam, hot water or warm air; also sole agents of Magee Furnaces and Ranges, Barler's Ideal Heaters, Dr. Buckley's Water Purifier, as well as Wright's Fire Place Heaters for heating by hot water, this latter contrivance is well worthy of special notice, as a number of rooms can be heated by an ordinary fire. Call at 27 New Montgomery street, and you will not regret the time spent in the examination of the good things on the way of keeping warm that you will find there.

Merchant & Co's. Star Ventilator.—The claim for this ventilator as being above all others in scientific and functional advantages, appears well founded; being durable, noiseless and storm-proof while all down draughts are prevented Oscar S. Levy agent for Merchant & Co. can be found at 205 Market street, San Francisco, Cal.

Mother (at a party)—"Why did you allow young Saphead to kiss you in the conservatory?" DAUGHTER—"Why maw!" MOTHER—"Oh, you needn't 'why maw' me. One side of his nose is powered and one side of yours isn't.—*N. Y. Weekly.*

Fitzgerald Prepared Wall Plaster.—As the desire of good walls for your home becomes more common, the demand for this Plaster increases. Nothing like the increase of business to show that satisfaction is given; those that use it once are sure to advise their friends to do the same, and this undoubtedly accounts for the increased demand of Fitzgerald Prepared Wall Plaster. If you call at the office of the company 216 Bush street, San Francisco, you can inform yourself all about its merits.

Mr. HAYSEED (in city hotel)—"Wall, I guess yon'll have to blow out the gas, Mandy." MRS. HAYSEED—"Why Josiah? The porter made me promise not to do it.—*Life.*

If you want anything in the line of house building, or indeed of allmost any other line, go to Smith & Young, you are almost sure to find what you want. Blue prints and paper to make them on, wood carvings as well as pressed wood ornaments, mineral wool and sheathing papers, infusorial earth and Bostwick steel lath, painted and unpainted, are among the stock that is always on hand to be found at either their store 723 Market street, San Francisco or 230 South Spring street, Los Angeles. See page ix of this journal for their advertisement.

He—"What is he going to do after he graduates? SHE—"Wouldn't it be more appropriate to ask, "Whom is he going to do?"—*Truth.*

If you are interested in brick it would do your heart good to see the barge loads of brick arriving at the yards of the San Joaquin Brick Co. from their works in Stockton, Cal. A visit to the company's yard in this city on Berry street between 6th and 7th would make you think our city was about to be rebuilt with brick.

When you want anything in the line of artificial stone, concrete, sidewalks or garden walks don't forget that George Goodman does everything in this line and does it well, what more can you ask as you are sure of getting a good job at a fair price if you go to his office, 307 Montgomery street, Nevada Block, San Francisco. See his advertisement on page ix of this journal.

"What did you do with that check your father-in-law gave you for a wedding present?" "Had it framed; no one would cash it."—*Boston Gazette.*

F. H. Rosenbaum & Co., 567 Market street are always on hand to supply your wants in the way of plate and window glass—also manufacturers of mirrors, both quicksilver and patent backs, as well as ornamental cutting and beveling in all its branches.

Visitor—"Where is your mamma?" LITTLE GIRL—"She has gone out for five minutes two hours ago."—*Buffalo Commercial.*

The Pacific American Decorating Company have something well worthy the attention of those inclined to decorate their residences with landscapes, marine views, photographs of persons, animals, etc., by the Hyrroscopic process, any thing from the works of the old masters, to the latest fad of the amature photographers can be reproduced upon glass in a manner that will please and astonish any one who examines the work done by this firm, thus opening a vast field for every one to display his artistic taste in the decoration of his own hall. Call and see their work and be convinced of the great possibilities before you. C. S. Chadbourn, Pres. Peter L. Mallon, Vice-Pres.; John Mallon, Sec.

Teacher—"They builded better than they knew. Do you understand that?" BRIGHT BOY—"Yes'm; they always do." TEACHER—"Who always do?" BRIGHT BOY—"The architects, you know. Pop's new $5,000 house cost most $10,000."—*Good News.*

The removal of the office of the San Francisco Slate Company from their former rooms in the Mills building to 415½ Montgomery street, between California and Sacramento streets, reminds us to state that the California slate supplied from their quarries in El Dorado County is of a quality superior to any in the market, and at the same time the cheapest, if you do not agree with us on that point call at their new office and become convinced that it is so.

CITY BUILDING NEWS.

Broadway near Leavenworth. To build; owner, Patrick Kilduff; architects, Shea & Shea; contractors, Magner & Gallegher; signed, Aug. 30; filed, Sept. 1; cost $2885.

Broadway near Leavenworth. To build; owner, A. Buchegnani; contractor, L. Cuneo & G. B. Cavanagh; filed, Aug. 8; signed, Aug. 8; cost $3000.

Broadway near Pierce. To build; owner, Charles L. Patton; architect, W. H. Hamilton; contractor, M. J. Savage; signed, Aug. 28; filed, Aug. 31; cost $4081.

Broderick near Golden Gate Ave. To build; owners, Jas. and Ellen Gallegher; architect, C. J. I. Devlin; contractor, R. Van de Pavert; signed, Aug. 13; filed, Aug. 14; cost $3302.

Bush and Stockton. Carpenter and mill work; owner, City of San Francisco; architect, C. I. Havens; contractor, H. Whittle; signed, Sept. 5; filed, Sept 8; cost $4990.

Bush and Stockton. Three-story brick school; owner, City of San Francisco; architect, Chas. I. Havens; contractor, Henry Whittle; signed, Aug. 10; filed, Aug. 16; cost $15,275.

Brannan near 4th. Concrete work to Saint Rose Church; owner, Rev. D. Nugent; architect, J. J. Clark; contractor, S. Giletti; signed, Aug. 15; filed, Aug. 16; cost 12 cts. per cubic foot.

Castro near Alvarado. To build; owner, Robert Irwin; contractor, W. W. Rednall; signed, Sept. 4; filed, Sep. 5; cost $1750.

Courtland Ave. and Buena Vista. To build; owner, D. Masornad; architect, G. A. Berger; contractor, D. Currie; signed, Aug. 20; filed, Aug. 21; cost $3876.

Davis, Pacific, Front and Clark streets. Market building; owner, E. Henrietta, Jr. and John Telle; architect, Clinton Day; contractor, J. T. Grant; signed, Aug. 8; filed, Aug. 11; cost $50,000.

Davis near Washington. All work for foundation; owner, Isaac Kohn; architects, Pissis & Moore; contractors B. McMahon & Sons; signed, Aug. 6; filed, Aug. 16; cost $2800.75.

Davis near Washington. Removing buildings, etc.; owner, Isaac Kohn; architects, Pissis & Moore; contractors, Gray Bros.; signed, Aug. 13; filed, Aug. 16; cost $2610.

Devisadero near McAllister. Plumbing; owner, E. Happersberger; contractor, W. F. Wilson; filed, Aug. 13; cost $2282.

Devisadero near McAllister. All work except plumbing; owner, E. Happersberger; contractors, Schutte & Kreeker; signed, Aug. 13; filed, Aug. 13; cost $11,290.

Devisadero near McAllister. Painting; owner, Emil Happesberger; architects Kenitzer & Barth; contractor, J. S. Thomson; signed, Aug. 29; filed, Sep. 5; cost $1325.

Dolores near 29th. To build; owner, J. O'Connor; architect, M. J. Lyon; contractors, J. Conway & Leahy; signed, Sept. 4; filed, Sept. 13; cost $2900.

Ellis near Scott. To build; owner, Robert Alther; contractor, H. Rohling; signed, Aug. 20; filed, Aug. 20; cost $540.0.

Eddy near Steiner. Alterations and additions; owner, James Rourbin; architect, A. C. Luigens; contractor, Wm. Linden; cost $2043.

Eleventh Ave. near Clement. One-story frame; owner, W. H. Green; architect, F. Mead; contractors, W. H. Mead & G. C. Nail; signed, Sept. 8; filed, Sept. 8; cost $1790.

Fillmore near Union. To build; owner, Patrick Lynch; contractors, W. H. Stevens & E. Woods; signed, Aug. 10; filed, Aug. 16; cost $2000.

Folsom street wharf. All work on coal bunkers; owners, Dunsmuir & Sons; Engineer, H. C. Holmes; contractors, Pacific Bridge Co.; signed, Aug. 4; filed, Aug. 7; cost $27,127.

Folsom corner of Army. To build; owner, H. Drewes; architect, R. A. Van de Pavert; signed, Sept. 1; filed, Sept. 5; cost $2225.

Folsom near Fifth. To build; owner, Mrs. Catherine Borden; architect, B. J. Clinch; contractors, Doyle & Son; signed, Sep. 3; filed, Sept. 6; cost $4760.

Fourth and Point Lobos Aves. All work except painting and plumbing; owner, Chris. Bunger; architects, Mariens & Coffey; contractor, J. J. O'Brien; signed, Aug. 2; filed, Aug. 22; cost $5400.

Fulton near Lyon. A residence; owner, First United Presbyterian Church; architect, Wm. Curlett; contractors, McCulloch & Glonz; signed, Aug. 14; filed, Aug. 21; cost $3285.

Filbert near Webster. To build; owner, John Gianini; architects, Pissis & Moore; contractors, Cocein & Cahelli; signed, Aug. 30; filed, Sept. 3; cost $2450.

Frederick near Clayton. Cottage; owner, W. H. Green; contractor, Ernest Nag 1; signed, Aug. 21; filed, Sept. 8; cost $1500.

Glover near Leavenworth. To build; owner, Jas. Kaungiesser; architect, E. J. Vogel; contractor, J. Savage; signed, Aug. 13; filed, Aug. 14; cost $2675.

Green near Gough. To build; owner, Andrew Glover; architect, W. H. Wharf; contractors, Blanchard & Clark; signed, Aug. 16; filed, Aug. 16; cost $3505.

Golden Gate Ave. near Lyon. To build; owner, Fannie Ambrose; architect, M. O'Brien; contractor, D. Ross; signed, Aug. 15; filed, Aug. 18; cost $1738.

Green near Gought. Plumbing; owner, Andrew Glover; architect, W. H. Wharff; contractor, G. C. Sweeney; signed, Aug. 22; filed, Aug. 22; cost $418.

Hampshire near 23d. Alteration, etc.; owner, C. O. Johnson; contractors, Lawrence & Nelson; signed, Aug. 23; filed, Aug. 24; cost $1400.

Hyde near Sacramento. Additions; owner, Chas. R. Gagen; architects, Shea & Shea; contractor, Jas. A. McDonald; signed, Sipt. 11; filed, Sept. 12; cost $1250.

Jasper near Filbert. To build; owner, Luigi Bedout; contractors, Cuneo & Cavaglia; signed, Aug. 14; filed, Aug. 18; cost $4800.

Laidley near Grove. To build; owner, Axel L. Sohl; contractors, Peterson & Olson; signed, Sept. 5; filed, Sept. 6; cost $1600.

Lyon near Hayes. All work except plumbing and painting; owner, August F. Meyer; architects, Martens & Coffey; contractor, J. Bucher; signed, Aug. 11; filed, Aug. 14; cost $3795.

Lyon near Washington. To build; owner, Gertude S. Bowers; architect, A. Page Brown; contractor, M. J. Gallagher; signed, Aug. 21; filed, Aug. 25; cost $4463.

Lily Ave. near Laguna. Alterations and additions; owner, Thos. Conolly architect, T. J. Welsh; contractor, D. Currie; signed, Aug. 28; filed, Aug. 31; cost $1422.

Market near 8th. Plumbing; owner, Lizzie W. Moffat; architect, C. R. Wilson; contractor, R. Rice; signed, June 20; filed, Sept. 4; cost $5887.

Nebraska street. To build; owner, Akolph Richter; contractor, Cuneo & Cavaglia; signed, Aug. 30; filed, Aug. 31; cost $2800.

No location mentioned. Carpenter and plaster work; owner, J. Cavagnari, et al; contractor, J. J. Dunn; signed, Aug. 12; filed, Aug. 13; cost $1460.

Oak near Laguna. Grading, brick and cement work; owner, Jas. M. Goewey; architects, Shea & Shea; contractor, O. E. Brady; signed, Aug. 11; filed, Aug. 14; cost $1024.

Oak near Laguna. Plumbing; owner, James M. Goewey; architects, Shea & Shea; contractor, John Doherty; signed, Aug. 11; filed, Aug. 14; cost $1280.

Oak near Laguna. Carpenter work Iron and plastering; owner, Jas. M. Goewey; architects, Shea & Shea; contractor, Jas. Mooney; signed, Aug. 11; filed, Aug. 14; cost $6267.

O'Farrell near Taylor. Moving and all work except plumbing; owner, Stephen T. Gage; architect, H. A. Schulze; contractor, J. H. McKay; signed, Aug. 3; filed, Aug. 14; cost $9700.

O'Farrell near Taylor. Plumbing; owner, Stephen T. Gage; architect, H. A. Schulze; contractors, W. S. Snook & Son; signed, Aug. 3; filed, Aug. 21; cost $1400.

O'Farrell and Jones. Plumbing; owner, John Proctor; architect, T. J. Welsh; contractor, J. E. Britt; signed, Sept. 8; filed, Sept. 12; cost $2000.

Octavia and Chestnut. Grading; owners, V. S. Tevis, G. H. Roe et al; architect, C. S. Tilton; contractor, J. G. Fair; cost $6050.

Post and Montgomery. Painting and frescoing; owner, Masonic Hall Association; architects, Kenitzer & Barth; contractor, M. Harmouth; signed, Aug. 3; filed, Aug. 7; cost $2945.

Post near Leavenworth. Tinting and fresco work; owner, S. F. Verein Asso.; architects, Salfield & Kohlberg; contractors, Busch & Mocker; signed, Sept. 3; filed, Sept. 5; cost $1500.

Polk and Bonita. To build; owner, Lewis Vaish; architect, Chas. M. Rousseau; contractor, J. W. Hansbrough; signed, Aug. 16; filed, Aug. 16; cost $600.

Polk and Austin Ave. To build; owner, Mrs. Sarah Fry; contractor, O. E. White; signed, Aug. 15; filed, Aug. 16; cost $1420.

Point Lobos Ave. To build; owner, E. Servean; architects, Mathison & Howard; contractor, A; Jackson; signed, Aug. 30; filed, Aug 31; cost $1800.

Pine near Scott. To build; owner, Mrs. F. L. McNorton; contractor, B. R. Van Deusen; signed, Aug. 21; filed, Aug. 21, cost $2050.

Pine near Buchanan. To build; owner, Ann R. Meader; architect, Wm. Mooser; contractor, J. T. Hayes; signed, Aug. 28; filed, Aug. 31; cost $3393.

Potrero Ave. To build; owner, John A. Rippe; contractor, Thos. F. Mitchell; signed, Sept. 15; filed; Sept. 15; cost $980.0.

Ringold near 8th. To build; owner, Mary Hughes; architect, J. P. Brady; contractors, Holm & Sheibley; signed, Sept. 1; filed, Sept. 1. cost $2480.

Sacramento near Baker. To build; owner, Washington Dodge; contractor, Geo. Healing; signed, Sept. 4; filed, Sept. 5; cost $2600.

Sacramento near Gough. To build; owner, F. W. Leitz; architect, A. J. Barnett; contractors, Ackerson & Patterson; signed, Aug. 17; filed, Aug. 21; cost $7950.

Sacramento and Cherry. A dwelling house; owner, Harry Bevell; contractor, C. W. Duffie; signed, Aug. 21; filed, Aug. 21; cost $1600.

Sacramento and Pierce. Painting; owner, Gaston E. Bacon; architect, J. J. Manseau; contractors, Rhodes Bros.; signed, Aug. 16; filed, Aug. 22; cost $1063.

Sacramento near Buchanan. Two-story frame and brick; owner, Mrs. Phoebe Lowenth; architect, A. Page Brown; contractor, M. J. Gallagher; signed, Aug. 22; filed, Aug. 25; cost $6725.

Shanchez and 17. To build; owner, Jas. H. Cahill; contractors, Brandt & Bateman; signed, Aug. 2; filed, Aug. 24; cost $2075.

Shotwell and 25th. To build; owner, Fannie Carlisle; architect, John T. Kidd; contractors, Ogle & Smith; signed, Aug. 24; filed, Aug. 25; cost $2246.

Sharon near 15th. To build; owner, Wm. H. Gersterbeg; architect, H. Hess; contractor, Chris Knutte; signed, July 27; filed, Aug. 7; cost $1970.

Tenth near Bryant. Hose and stable; owner, Ellen J. Tierney; architect, W. C. Mahoney; contractors, R. Doyle & Son; signed, Aug. 13; filed, Aug. 14; cost $3125.

Tenth Ave. near California. To build; owner, James M. F. Baumuller; contractor, Jas. Heaney; signed, Sept. 1; filed, Sept. 4; cost $1150.

Texas near Yolo. To build; owner, Henry Hasemen; contractors, Stevens & Wood; signed, Aug. 2; filed, Aug. 7; cost $987.

Trenton near Washington. Brick building; owner, Yee Sue Kwin; architects, Townsend & Wyneken; contractor, A. McElroy; signed, Aug. 16; filed, Aug. 18; cost $4140.

Turk near Taylor. Alterations; owner, James G. Fair; day work; cost $1200.

Twenty-ninth near Dolores. To build; owner, H. Hesson; days work; cost $900.

Twenty-seventh near Dolores. To build; owner, August Schrick; contractor, R. Frost; signed, Sep. 2; filed, Sept. 11; cost $1500.

Turk and Scott. To build; owner, R. F. Morgan; architects, Shea & Shea; contractor, A. N. McIsaac; signed, Sept. 7; filed, Sept. 12; cost $1674.

Utah, Centre and Nebraska. School building; owner, California School of Mechanical Arts; architects, Percy & Hamilton; contractors, Thomas H. Day; signed, Aug. 3; filed, Aug. 9; cost $32,080.

Utah; Centre and Nebraska. Plumbing; owner, California School of Mechanical Arts; architects, Percy & Hamilton; contractors, Duffy Bros.; signed, Aug. 6; filed, Aug. 9; cost $5450.

Valencia No. 836. To build bake ovens; owner, Geo. A. Rutz; architect, E John; contractor, C. C. Koelling; signed, Aug. 13; filed, Aug. 14; cost $1080.

Van Ness Ave. near Vallejo. Brick Building; owners, Hartland & Herbert E. Law; architect, J. L. Mathison; contractor, Chas. M. Depew; signed, Aug. 4; filed, Aug. 7; cost $14,750.

Washington and Davis. foundation work; owner, John Ivancovich; architects, Pissis & Moore; contractors, B. McMahon & Son; signed, Aug. 6; filed, filed, Aug. 16; cost $7329.45.

Washington and Davis. Removing old buildings, etc.; owner, John Ivancovich; architects, Pissis & Moore; contractors, Gray Bros.; signed, Aug. 13; filed, Aug. 16; cost $5688.

Washington near Broderick. To build; owners, Hannah and Rose Phillips; architect, W. H. Lillie; contractor T. T. Pottinger; signed, Aug. 21; filed, Aug. 21; cost $4200.

Washington near Lyon. A church; owner, Rev. Jas. Worcester; architect, A. Page Brown; contractor, M. J. Gallagher; signed, Aug. 23; filed, Aug. 25; cost $4432.

Webster near McAllister. To build; owner, Victor Kuehn; contractor, J. S. Hofmeister; signed, Aug. 30; filed, Aug. 30; cost $2783.

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R. C.-E. Grunsky was endorsed for the Candidacy for Superintendent of Streets of the City and County of San Francisco by the San Francisco Chapter of the American Institute of Architects.

The Chapter wishes it understood that this departure from its usual conservative course, was not occasioned by a desire to enter politics, but from a sincere conviction that the important office of Superintendent of Streets, should be taken out of politics, and given to a man competent to design a system of sewers (instead of suffering them to be built without any system at all) and with enough energy and ability to give the city of San Francisco clean streets, and decent pavements.

We venture to say that for the million and a half dollars yearly raised and expended for these purposes, the citizens of San Francisco have but a small fraction of the benefits to which they are entitled. Street pavements are put down one year to be torn up by the next ring that gets into power, and relaid with another kind of pavement. Sewers are built at haphazard, too small where there is a large area to be drained, and ridiculously large and out of proportion where but a few blocks are to be drained.

If an architect calculates the drainage of a building, basing his estimates on the depth that the sewers in the street should be laid, and which the data in the public records state the sewer has been laid, ten to one he finds when the sewer has been reached that it is not at the depth it should be, sometimes not within several inches or several feet. Often sewers are discovered having no outlet, and sometimes not connected at all, or connected so low as to trap the flow of sewerage, and form stagnant bodies of putrid liquid and solid matter, that are a serious menace to the public health. The garbage of the city instead of being burned, is dumped into the low lands along the water front, leaving a legacy of disease and death for future generations, when the march of improvements will have built over these districts with factories and tenements.

No wonder the architects think it will be a public benefit to have a capable engineer in charge of this important office. If such a man had directed the expenditure of the thirty millions of dollars that have already been paid out for the streets and sewers of San Francisco, the city would have had something to be proud of to-day, instead of the shameful condition of affairs that has existed so long.

ANY Amendments to a Constitution deserve careful consideration before being acted upon. There is one to be passed upon by the people next election which bears looking into. We allude to that one amending Article 13 Section I, which exempts from taxation the property issued for free public libraries and museums. This is a piece of special legislation which it would be an act of great unwisdom to incorporate in our Constitution, for it leaves the door open for all manner of exceptions. If free museums and libraries not belonging to the State are made untaxable then why not any other free exhibition or building—a free dive, a free church or a free lunch, would all put up their claims to have the property used by them exempted. It is against good public policy to allow any property outside of that belonging absolutely to the people, *i. e.* National State and Municipal Property, to be exempted from taxation.

BEQUEST FOR A SCHOOL FOR MANUAL TRAINING.

THE late Mrs. Miranda W. Lux, widow of Charles Lux, a California cattle king, has in her will, given a generous portion of a $3,000,000 estate to the founding of a school for manual training; the trustees of which school are to receive, invest, reinvest and keep invested the said trust fund and property, and after paying out of the income thereof all necessary or proper expenses connected therewith, to apply the balance of the income to the promotion of schools for manual training, industrial training and for teaching trades to young people of both sexes, in the State of California, and particularly in the city and county of San Francisco, it being the desire to assist in furnishing facilities for the education of young children from the time they leave the kindergarten schools, and while they are still quite young, in what is known as "manual training," and in all kinds of training looking to the acquisition of useful trades by and through which habits of industry will be acquired and practical knowledge of those things which are useful in earning a living may be acquired.

ARCHITECTURE AND POLITICS.

FROM the following dispatches appearing in the daily papers, it can be seen how seriously politics interferes with the proper management of the office of the Supervising Architect of the Treasury Department.

If the Honorable Secretary of the Treasury, would try the recommendations of the American Institute of Architects, (as he is fully authorized to do under the existing laws,) the public would get a chance to see how much better and cheaper the government's work could be done than it is at present

However, to expect a politician to relinquish his prey, or his patronage is too much to ask of the present school.

WASHINGTON, September 18th.—The retirement of Supervising Architect O'Rourke from the Treasury Department will probably further hinder the work of the department on the plans for the San Francisco public building. Secretary Carlisle, who demanded O'Rourke's resignation late yesterday, did so, he says, for the good of the service. There will be no difficulty in his way in forcing O'Rourke out of his present position. He will retire voluntarily,

There seems little doubt that there has been a wrangle between the Supervising Architect and the Secretary of the Treasury, his assistants and also chiefs of divisions and clerks in the Supervising Architect's office for several months past, on account of this dissension. The business of the office has been delayed, and what has been accomplished has been done, so it is said, in a very careless way. Just who is to blame is a matter that cannot be satisfactorily explained at the present time. It seems certain that Secretary Carlisle has not followed a politic course with O'Rourke, for the reason that by his course he has simply made O'Rourke a mere figurehead. There has been trouble between them over removals and appointments, and any amount of trouble over the routine business of the office. Had it not been for the turmoil in the architects' department it is believed that the plans for the San Francisco building would have been prepared long before this and the actual work begun upon the site in preparing it for the erection of the immense structure that will yet be put upon it.

Supervising Architect O'Rourke stated to the *Examiner* correspondent to-day that he would retire, having been asked to do so, but that he considered a great injustice had been done him by the Secretary. Before making a thorough investigation of the affairs in this department of the Treasury, O'Rourke would not definitely state just how far the work on the San Francisco public building had proceeded, but intimated that in the change by his retirement and the appointment of a successor there would be a further delay. So far as can be learned at the Treasury to-day it is not probable that the plans for the San Francisco building will be fully completed for several weeks to come.

WASHINGTON Sept. 23d.—Ex-Supervising Architect O'Rourke has given out the correspondence with Secretary Carlisle leading to his enforced resignation. In his first letter O'Rourke alleges the existence of a conspiracy against him, the exposure of which would cause a grave public scandal, and he therefore asks a postponement of his resignation until he can be heard.

In his reply Secretary Carlisle disclaims any specified accusations against O'Rourke's personal or official integrity, but alleged want of system and harmony in the administration of his office O'Rourke thereupon forwarded his resignation, expressing regret that he was not given the privilege of a personal conference with the Secretary, and adding:

"I have felt for some time that I could not continue to hold the office without surrender of honor and self-respect, because of the many obstructions persistently placed in the way of an orderly and reputable administration of this important office, mainly by two of my subordinates, absolutely without technical or artistic knowledge, who I regret to say, claim to have the special countenance and support of the department. It seems to me that if I had been so unfortunate as not to satisfy these gentlemen in the solution of grave questions of the administration to request my resignation on that account is a unique reversal of the action ordinarily taken when such a state of facts develop in any public office."

ALL Architects wishing to start an Architects Protective Association will please communicate with W. J. Cuthbertson, care CALIFORNIA ARCHITECT AND BUILDING NEWS, 408 California street.

CLEANSING THE STREETS OF PARIS.

BY HENRY SMITH WILLIAMS.

IN spite of the rather poor natural facilities for drainage and for disposal of garbage, Paris is probably the cleanest large city in the world. Even the walls of its buildings, private as well as public, are required by law to be painted or otherwise renovated at regular intervals, while its streets are perpetually swept and scrubbed till their surface is the wonder and admiration of beholders in general and of visitors from the Western hemisphere in particular. Manifestly the average Parisian is largely imbued with love of cleanliness, whatever his short-comings regarding the virtue alleged to rank next above it. But love of cleanliness, even with love of comfort added, will not fully explain the extraordinary attention bestowed upon the exterior of Paris. Love of the beautiful supplies the missing motive. The Parisian regards the parks and boulevards of his beloved city as among its distinctively artistic features. He speaks of the Place de la Concorde, for example, as "one of the most beautiful creations of modern art," and of favorite boulevards as component details of a system "illustrating the clear and solid tendency of French art as developed soon after the Renaissance," and the like. Imagine the average New-Yorker considering his parks and streets in such a light as that! Why, most New-Yorkers seemed but little disturbed when it was suggested, not very long ago, that an elevated railroad should be built along the Western Boulevard, almost the only extensive avenue in the older portion of the city that has considerable artistic possibilities, let alone realities. Under corresponding conditions the average Parisian would faint at such a suggestion. But, after all, utilitarianism must of necessity precede æstheticism. Art is long, and the Western metropolis is young. Doubtless when our municipality is as old as Paris now is (that will be about the year 4000!) we shall be as artistic, as proud of our streets, and as clean—though this last seems from the present standpoint impossible—as Paris is to-day.

In the mean time the method by which Paris is kept clean may advantageously be considered by the residents of New York and other cities that by lack of method are kept filthy. A tangible idea of the magnitude of the problem may perhaps be gained from the statement that the pavements of Paris cover in the aggregate an area equal to that of a field a mile wide and more than five miles long—a field, that is to say, of some 3500 acres. Much the larger portion of this street surface is paved with stone blocks; but as elsewhere, macadamized and asphalt surfaces are substituted on many streets, and of late pavements of wooden blocks have come into vogue, finding favor in particular in the vicinity of school buildings and wherever else noiseless traffic is especially to be desired. The stone pavement is by far the most economical, as it costs on an average but 76 centimes per square metre annually to keep it in repair while the asphalt surface costs 2 francs, the macadamized, 2 francs 17 centimes, and the wood, 2 francs 80 centimes. The aggregate annual cost of keeping all pavements in repair is two million dollars. This has no reference to cleaning the streets but only to putting them in readiness for traffic. It is a most essential preliminary, however, as the streets could not possibly be kept clean if they were not also kept in perfect repair.

The refuse demanding the attention of the street-cleaning department of Paris, as of any other great city, may be divided, speaking generally, into two classes—(1), pavement garbage, caused largely by the traffic of 100,000 horses and about three millions of people, and (2), ash-barrel garbage, by which term may be described such waste products of indoor living as cannot be removed, via., the sewers, but must be carted off through the streets. Unlike New York and most other cities, Paris handles these two kinds of garbage according to different systems. For convenience of description the one may be spoken of as the street-cleaning system, the other as the scavenger system. The duties of the street-cleaning system are to sweep the streets, depositing all suitable matter in the sewers, and collecting that unsuited for such disposal in piles convenient for removal, and to sprinkle, wash, and in general supervise the pavement surface. The duty of the scavenger service is to remove the ash-barrell garbage, together with such bulkier portion of the pavement garbage as cannot properly be swept into the sewers. The sewers themselves, which as everybody knows, are unique in point of size and in many ways wonderful, have only an incidental interest in the present connection, though of course as accessories of the street-cleaning service they are absolutely essential, and their importance in the general sanitation of the city cannot be overestimated.

When it is said that the entire pavement surface of Paris is swept clean every morning, and that to accomplish this only 3200 men are employed at most, and a large proportion of these only for a few hours each day, it hardly needs saying that the work of the street-cleaning service is conducted in a most systematic way. The plan adopted is, however, extremely simple. For purposes of street-cleaning the city has been divided into 150 districts, called "ateliers." Each atelier is presided over by an official known as a "cantonnier," who is held responsible for the proper care of all streets in his territory. Such a force of subordinate employees and such machinery and apparatus are provided as experience has proved necessary. The "cantonniers" and their chief subordinates are salaried officials (at from 100 to 125 francs per month), and give their entire time to the service; the other employees are paid by the hour (strong men receiving 32 to 37 centimes, and "women, children, and weak men from 25 to 30 centimes"), and, as a rule, are employed only during the morning hours.

The main body of the work is done by sweeping-machines, each drawn by a single horse, the work of hand-brooms being only supplementary. The order of procedure is practically the same in all parts of the city and over all kinds of pavements. Summer and winter the work begins at 4 A. M. In advance goes a watering-machine to settle the dust. This is followed in narrow streets by a single machine, and in wider ones by two or even three machines in succession, the foremost one nearest the centre of the street. Such a cavalcade passing up one side of a street and back the other shifts all the surface garbage of that street into the gutters on either side, while a single man following flushes the gutters, and directs all but the bulkier portions of the garbage into the sewer openings, situated at short intervals between the hydrants. Such a cavalcade is equivalent to a small army of hand-sweepers, it being estimated that each machine does the work of twelve men—that is to say, of twelve Parisians, each of whom is supposed to sweep 500 square metres in an hour. Just what the equivalent of a machine would be in terms of the doughty-muscled time-servers employed in New York's farcical street-cleaning service it would be hazardous to guess. Each cohort of watering-carts and sweeping-

machines has, of course, its definite district to cover, and so accurately are these apportioned that all the different cohorts finish at practically the same time. By about 8:30 the entire city has been swept, and the detritus worn from the pavements by thousands of hoofs and wheels the day and night before is being carried harmlessly on through the great sewers to the Seine, instead of hurtling on every chance gust into the face of the wayfarer, as does the dust of less-favored cities.

The regular morning sweeping accomplished, the work of the permanent employees of the department varies somewhat in different regions and with varying seasons. In some regions the sweeping-machines make a second tour, in the afternoon, supplemented now by a larger corps of hand-sweepers, since the traffic makes their work less uniform and complete than in the early morning hours. Asphalt pavements must be freely sprinkled with sand to prevent horses from slipping, this being especially necessary because an ordinance that aims to protect the pavement from needless wear requires all horses to be smooth shod. But the most important work of all, from a hygienic stand-point at any rate, is the constant sprinkling of all the streets with water during dry weather. Here again there is a delightful contrast to the New York method, according to which the greatful shower of the sprinkler, far from falling for just and unjust alike, seeks out with most unorthodox discrimination the abodes of those fortunates alone who are able to pay for the privilege to private contractors. In Paris street-sprinkling is not an individual enterprise but a public function, and water everywhere seems free as air. The sprinkling is accomplished in part by horse-cars of familiar pattern (of which 370 are utilized in summer), but in part also by hand-carts, and very largely by hose attached directly to hydrants. The last is by far the most economical method, and one-third of the entire street surface is sprinkled in this way. In addition to the constant sprinkling, the entire road-bed is inundated from the hydrants at regular intervals, varying from one to three days. All gutters are flushed twice every day. Thus the entire street surface of the great city is actually washed clean at regular intervals, as no New-Yorker ever dreamed of seeing his city washed, except at the fitful pleasure of Jupiter Pluvius. This free use of water, by which the germ-laden dust is prevented at all times from permeating the atmosphere, is a hygienic measure of such importance that it deserves to rank as the most admirable feature of a marvellously efficient street-cleaning system.

The entire street-cleaning system just described is conducted directly by the municipality as such, and all persons employed in this service are paid directly from the city treasury. Such is not the case with the scavenger service, by which all bulkier garbage is removed. For this service also the city is districted, but there the parallel ceases, as the person in charge of each district is not in any proper sense an employee of the city, but only a contractor in his service. Contracts for this work are let to the lowest responsible bidder for terms of three years. The garbage becomes the property of the contractor, and within certain restrictions specified in the contract, he is free to remove it in his own way, employing whom he will to do the actual work as freely as if it were a purely individual enterprise. While these two systems are thus radically different in details—one introducing the socialistic and the other the individualistic principle—yet they are not, after all, so wide apart as might at first thought appear, inasmuch as each rests on the sound principle of divided and accurately traceable responsibility.

The cantonnier has practically the same power over his district in all that pertains to street-sweeping, sprinkling and the like, that the contractor has over his in regard to the removal of bulky garbage, and in practice it seems to make little difference that the subordinates of the one are employed by the city, those of the other quite independently of the city authorities. Needless to say, however, it would make a very great difference in a city where a partisan spoils system governed municipal appointments.

That there should be this separation of the scavenger service from the regular street-cleaning service seems an anomaly, but it is one that is easily explained. It grows out of the fact that the bulkier garbage, which is handled exclusively by the scavenger service, has a commercial value. It is hauled to the suburbs of the city, and sold for fertilizing purposes to farmers. Not long ago the contractors who handled this garbage paid the city for the privilege of removing it, as it could be sold at a profit. But of late the growing city has so encroached upon suburban farms that the market for fertilizers near the city is restricted, and hauling to a distance is so expensive as to take away all profit. Hence, though the garbage is still handled and disposed of in all other respects as before, the city is now obliged to pay the contractors instead of receiving pay from them. The entire cost of the city, however, of removing garbage, which aggregates about a million tons yearly, is only about $400,000.

The official scavenger system in operation is so simple as to require but a few words of explanation. At 6:30 A. M. in summer, and seven in winter, the garbage wagons start on their respective routes. Each wagon patrols on an average a district inhabited by 3500 persons. They are monster vehicles, each drawn by two or three horses hitched tamdem, and they contrast strangely with the diminutive carts used for a similar purpose in New York. With each wagon are four men—a driver, an emptier, and two lifters—and a woman follows with a broom to complete the work. So expeditiously is the work effected that by 9:30 each morning the entire mass of garbage not claimed by the sewers is on its way to the suburbs. For the most part it is hauled to its destination in the wagons in which it was collected.

While the official scavenger service of the city is thus simplicity itself, there is a supplementary, unofficial service that is much more complicated, and which deserves especial notice, because it is in all respects the most picturesque element in the entire street-cleaning system. The half-tramp garbage-cleaner who searches ash-barrels for scraps of possible value is a familiar figure in every city, but in Paris this individual has developed and systematized his calling till it is fairly entitled to rank as a trade. There are no fewer than 41,000 persons in the city who follow this calling. They are known as "biffins," or "chiffonniers," and they regard their trade as a perfectly legitimate and honorable one. Indeed, there are various ranks or grades even in this humble calling, and, ridiculous as it seems, the tyro must serve an apprenticeship before being regularly admitted to the title of professional cantonnier. During this stage of apprenticeship the novitiate wanders about the streets at night, securing such gleanings as he may, but being chiefly rewarded by the experience gained as to different localities and their possibilities, and as to tricks and methods of the trade. In course of time he gains acquaintance with some professional gleaners, who ultimately introduce him to one of the "cities" where the chiffonniers live by themselves, usually presided over by a proprietor, who furnishes the lodgings and purchases the gleanings. The novitiate, now becomes a professional, is no longer known as a simple

'r am asseur de nuit," or night picker, but has mounted to the rank of "coureur," or habitual runner. He is now equipped in the regular way, with "dorser" lantern, and "crochet" (hook), and is instructed in the regular methods of the trade, working only at daybreak, when the ash barrels and boxes are sent out upon the sidewalks. In course of time the coureur requires by right of custom a regular territory, his exclusive right to glean in which is respected by his fellow-chiffonniers. He has now reached the highest grade in his profession, and is known as a "placeur," or placeman. So well observed is the unwritten law that gives the placeur an exclusive right in his territory that he may even sell his privilege—sometimes in a favored locality, receiving from ten to forty dollars in return—and the rights of the purchaser will be similarly recognized. This might at first thought appear to be a case of honor among thieves, but such a deflection does the chiffonnier injustice, for as a rule these gleaners are not thieves. On the contrary, they are credited with rather an unusual degree of honesty, and it is said that they frequently restore to their rightful owners such articles of considerable value as accidentally find their way into the garbage-boxes.

The gleanings that are the legitimate spoil of the chiffonnier cover a wide range of articles, the chief of which are old paper (including books and pasteboard), ropes and thread, wadding and cotton, rags of all sorts, metals, remnants of earthen-ware, horse-hair, human hair, horn, fragments of whalebone, cork, India-rubber, bones, grease, old leather and rabbit skins, and bread crusts. It gives one a curious sense of the degree to which diversification of industries is carried in an old civilization to learn that for each of these different classes of refuse articles there are purchasers who are specialists in that line alone, handling nothing else. For example, there are fifty merchants who handle nothing but old rags, and twenty firms, some of them of considerable importance, that purchase only scraps of paper.

It has been estimated that the gleanings of the placeur bring him sometimes as much as fifty cents a day, and that the majority of coureurs realize thirty cents a day, while even the apprentice or night runner may make twenty cents a day. The total sum received annually by the entire army of chifionniers for the gleanings rescued by them from the garbage-boxes is estimated to exceed $5,200,000—about three times the sum expended by the city on its entire street cleaning department. The gross weight of the material rescued by the chiffonniers daily, and through their efforts restored to channels of usefulness, is estimated at about 1250 tons. When it is understood that this is all material of which the contractors who own the entire mass of the garbage would make no use what ever—most of it, indeed, being of such a nature as to detract from the value of the garbage for purposes of fertilization—it will be seen that the work of the unofficial gleaners has a more than respectable degree of economic usefulness, and the pride with which the chiffonnier regards his "profession" seems in a measure justified.

While the street cleaning department of Paris, with its various official sub-departments and its unofficial accessories, attains a degree of efficiency under all ordinary conditions approaching perfection, there is at least one contingency that it has not learned to fully cope with. When at long intervals there comes a heavy fall of snow, the machinery of street-cleaning is for the moment clogged, and the authorities are sorely distressed. A partial solution of the difficulty has been reached in the suggestion that salt be sprinkled on the snow to facilitate thawing, and large quantities of salt are now kept on hand for this purpose. This is a costly expedient, however, and its efficiency when applied on a large scale has not yet been demonstrated. But, after all, snow falls in large quantities so infrequently in Paris that the question of its removal can hardly be considered a serious, even if it is an unsolved problem. To the outsider it might even seem that a few days of discomfort from this source, at intervals of several years, might rather be regarded as serving the useful purpose of teaching the public to appreciate by contrast the delightful cleanliness of their streets under all other conditions.

To the New-Yorker who contemplates the harmonious systems by which Paris is made clean each morning before the breakfast time of the average Parisian, there must come by antithesis a painful vision of the methods followed and results achieved by the street-cleaning department of his own city. The results are patent: Paris is clean; New York is—not clean. As to details of method, it would perhaps be unfair to press the comparison too far, the conditions of the tasks set the street-cleaning departments of the two cities are so diverse. Paris has the advantage of mild winters, relatively free from frost and snow; also of an inexhaustible water supply, and a matchless system of sewers. But, on the other hand, New York has unexampled natural facilities for drainage, and for sewage and garbage disposal, in that it lies on a relatively narrow strip of land, with an arm of the sea at either elbow; and it would seem that these incalculable advantages of location ought to far more than outweigh any disadvantageous climatic conditions.

It may be freely conceded, however, that there is one condition imposed upon the street-cleaning department of New York that insuperably bars the work of that department from successful competition with that of the Parisian authorities. This is the fact that the road-beds of the average streets in New York, only passable or worse in the first instance, are allowed to go unrepaired till their condition is wretched. To make such streets clean in the sense in which the streets of Paris are clean would be impossible; but they might be, and ought to be, made approximately clean—as they never are.

It would be quite useless, however, to seek an explanation of the difference in efficiency between the street-cleaning departments of Paris and New York in the diversity of conditions, natural or artificial, existing in the two cities. The real explanation is to be found only in the difference of principle underlying the operation of the two departments. These principles are not at all difficult to fathom. They may be correctly deduced from observation of the most humble sweepers in there spective services. The Parisian sweeper moves as if he had some definite task to accomplish. He has energy, facility, efficiency. Plainly he is hired to help clean the streets. The average New York sweeper creeps wearily along the street, usually moving against the wind, as if determined that such dust as he stirs at all shall be instantly rescattered, and on no account gathered in piles to tax the muscles of the garbage-gather. It requires no unusual insight to discover that he is a time-server who can not have been selected because of his fitness for the work in hand. A slight investigation would show why he was selected. The law requires that he shall be a citizen; custom demands that he shall be a faithful follower of the dominant political party. In a word, he has been selected not because of efficiency as a street-cleaner, but because of usefulness at the polls. To secure and maintain his position he requires not energy but "influoence;" if he is to work his way to better positions in the service he must have not push, but "pull."...

This, then is the fundamental difference between the Parisian and the New York systems of street-cleaning. The authorities of Paris desire and demand that the street-cleaning department shall give them clean streets; the authorities of New York demand that the street-cleaning department, like every other department of municipal government, shall give them—patronage. While this continues so—that is to say, while Tammany continues to rule the city—we may look towards Paris with envy, but not with hope of emulation, for no amount of money placed in coffers controlled by Tammany will suffice to give our streets that degree of cleanliness which public health and public comfort require, and which, were our better citizens less absorbed in their own immediate personal affairs, and more sensible of their duties as voters, public sentiment would imperatively demand.—*Harper's Weekly.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COMPETITIVE design of the Washington State Capitol at Olympia, Washington, Laver & Mullany, Architects, San Francisco, Cal.

PLACER County Court House, Auburn, Cal., John M. Curtis, Architect, San Francisco, Cal.

RESIDENCE, Carthage, Ill., Geo. W. Payne & Son, Architects, Carthage, Ill.

CORRESPONDENCE

To the Editor of the California Architect and Building News.

SIR:—In the course of my perambulations through the City Hall Corridors, I happened into the court room of Justice of the Peace G. W. F. Cook, I there heard a very extraordinary summing up of a case delivered by him which deserves publication.

As I understood the case was where an architect was sueing an owner for working drawings, receiving bids, etc., for work which did not go ahead.

There was a direct conflict of testimony between the parties as to orders to make these plans; it is not necessary to go into the merits of the case as that didn't cut any figure presumably in the Court's mind, for he did not mention that he considered that one of the parties' oath was better than the other's, but said that the preponderance of evidence was with the defendant (the owner) because it was the custom of architects to make drawings for owners for nothing on the strength of or in consideration of the chance of them getting the work if it went ahead.

The suit was not for sketches, but for full working drawings and specifications, of the making of which the owner admitted he was fully cognizant at all times—therefore the decision of the Justice could refer to only full working drawings and specifications—so that the summing up amounted to this: that it was a practice among architects to submit full working drawings and specifications to owners and to charge them nothing for them on the contingency of getting the work.

The remarks were quite contrary to the facts as I knew them, for I had never heard of a high class architect ever doing such a thing, or for that matter even a low class architect.

I had heard of several cases of architects preparing *sketches* for nothing but never in twenty-five years' experience of architects preparing *working drawings and specifications* for nothing.

I had the curiosity to see the Judge next morning and ask him whether my ears were not deceiving me in the matter, but he answered me that he was quoted correctly. If this opinion goes abroad without protest by all architects, clients will become to believe that such is the case and expect it, and an honorable profession is degraded into a gambling concern—where architectural gamblers put their brains and abilities against one another and put them down against a bank which takes no chances at all, but simply rakes in all the valuables in sight and delivers no equivalent.

The decision, which is the subject of this letter, is only another straw showing the necessity of the establishment of an Architects' Protective Association, the merchants have their M. P. A. why not the Architects their A. P. A.

I hope Mr. Editor that you will see your way clear to receive the names of all architects willing to combine in such a body to protect themselves from future calumnies and exploitation.

Yours,

STROLLER.

To the Editor of the California Architect and Building News:

There are five essential points in securing the health of houses:

1. Pure air.
2. Pure water.
3. Efficient drainage.
4. Cleanliness.
5. Light.

Without *these*, no house can be healthy, and it will be unhealthy in proportion as they are deficient.

FIRST—To have pure air, your house must be so constructed that the outer atmosphere shall find its way into every corner of it. Architects should consider well, the vital importance of this, and the owner of a house should see to it with his own eyes, no house with any untrapped, unventilated drain pipe (communicating immediately with an unventilated sewer) whether it be from water closet, from sink or from hopper, can ever be healthy; an untrapped sink may at any one time spread fever or Dyœmia among the inmates of a palace.

SECOND—Spring Valley water is not considered always healthy unless it is filtered; well water properly managed is better, but the only healthy water is distilled water.

THIRD—A very great evil in house construction is carrying drains underneath the house; such drains are never safe.

FOURTH—Without cleanliness, within and without your house, ventilation is comparatively useless and there are others ways of having filth inside a house besides foul drains. Old paper walls of years standing, dirty carpets, and uncleaned furniture, are just as ready sources of impurity to the air as if a manure heap were in the basement. People are so unaccustomed from education and habits to consider how to make a home healthy, that they never think of it at all, and take every disease as "from the hand

PLACER COUNTY COURT HOUSE AUBURN CAL.
JOHN M CURTIS ARCHT
124 KEARNY STREET SAN FRANCISCO CALIFORNIA

SUPERVISORS
GEORGE B HEWES CHAIRMAN
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C C CONER
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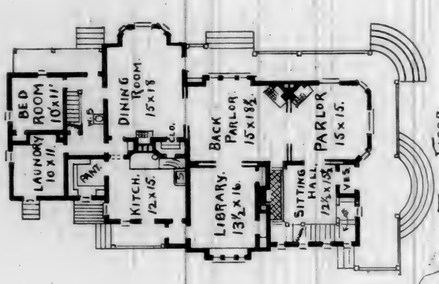
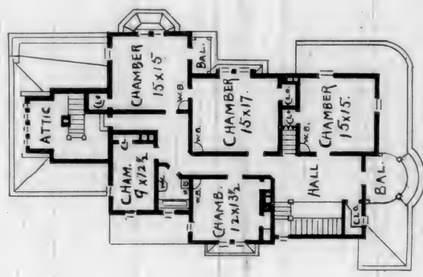
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV Nº10 OCTOBER 1894.





GEO W PAYNE & SON, ARCH'TS.
CARTHAGE, ILL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO LITH

VOL XV Nº10 OCTOBER 1894

Competitive Design for the

WASHINGTON STATE CAPITOL

AT OLYMPIA.

LAVER & MULLANY, Archts.

San Francisco, Cal.

PERSPECTIVE VIEW. CAPITOL. WASHINGTON.

BRITTON & REY LITH.

of providence," when in fact it is from their own neglect of a most serious responsibility.

FIFTH—A dark house is always an unhealthy house, always an ill-aired house, always a dirty house; want of light stops growth, and promotes Scrofula, Rickets, etc., among children, and sours the mind and temper of the parents. A great genius once wrote "Where there is sun there is thought," all natural law confirms this, for without sunlight we must degenerate in body and mind.

How stand we in San Francisco in our relation to pure air and sun light?

The architect generally speaking makes ample provision for ventilation and sun light, but as generally speaking, these prime factors of health existence are ignored by the housekeepers. For proof of this, let those interested make inspection any day in any part of San Francisco, say western addition, and view there the noble examples of Classic and Renaissance architecture. The first feeling will be exultant, but soon succeeded by one of sorrow, to see such grand mansions shut up, impervious to air or light, and suggestive of asylums or penal settlements. Can there be here *Mens sana in corpore sano*? With the prime elements of healthy existance shut out "Sound minds in sound bodies" is absent.

In 1844 the writer was connected with a "Health of Towns Commission" appointed by Parliment, Dr. Lyon Playfair, M. P. for Edinboro, was President, he said "The Air of no house with water closets inside can be free from Malaria."

When the average number of people in a house is from five to twenty persons, the amount of fetid Effluvia afloat every day is incalculable. The only remedy, is *complete detachment* of all water closets and urinals from the house, a detachment not less than six feet. This detachment might be in the form of a square tower connecting with the house by covered bridges at each story.

M.

ENGINEERS OF TO-DAY—AND YESTERDAY.

THE September number of *The Engineering Review*, published in London, England, contains a portrait of Hamilton Y. Castner, trained as a chemist under Professor Chandler, at the School of Mines, Columbia College, New York. Mr. Castner has while still a young man proved himself not only a successful inventor, but has shown a combination of skill, pluck and perservance seldom seen displayed in one person.

The following interesting account of this young chemist is taken from an article headed "Engineers of To-Day and Yesterday" in *The Engineering Review*:

Hitherto, Mr. Castner has been chiefly known to fame as the inventor of the sodium process for the manufacture of aluminium—a process which, although highly ingenious and successful, so far as it went, has since been largely superseded by the electrolptic processes of manufacture inaugurated in the United States and Switzerland, and carried on both there and in different European countries. At the time when Mr. Castner began his experiments on the production of sodium, both that metal and aluminium were exceedingly dear and were regarded rather as curiosities of the chemical laboratory than as products of practical utility in the arts. Mr. Castner was so convinced that there was a wide field open for research and improvement in this direction, that, in 1884, he gave up his business as a public analyst in New York city, in order that he might devote himself entirely to experimental researches, designed to cheapen and improve the manufacture of these products. After two years of hard work, he succeeded in perfecting his well-known process for the manufacture of sodium, by means of which the cheap production of aluminium was made possible. Convinced that there was then a better field for his process in Europe, Mr. Castner, in 1886, came to London, an utterly unknown man, without friends, and almost without acquaintances, determined to win his spurs in this recondite branch of metallurgy. As a preliminary, he took premises near the Waterloo Railway terminus, where he constructed a small experimental plant, which was to be the pathway to the success at which he aspired. He then obtained introductions to Sir Henry Roscoe, F. R. S., Dr. Anderson, F. R. S., Major-General Sir Andrew Clark, Gerald W. Balfour, and other men of influence and technical ability, who became interested in his process, and were convinced that, as it involved the production of aluminium at very much less than it had previously cost, and sodium at almost as many pence as it had previously cost shillings, it was one of great immediate value and of high promise for the future. As the most likely means of bringing the process into immediate practical operation, a company was formed, of which these and other gentlemen became directors, and works were built by Mr. Castner, at Oldbury, near Birmingham, for working it on a large scale. These works realized to the fullest extent every anticipation that had been formed and every expectation that had been raised by Mr. Castner and his friends—excepting only one. They produced aluminium of a higher purity than had ever before been known on a regular commercial scale selling it at 15*s.* per lb., which was gradually reduced to 5*s.*, where it had never before been sold for less than 60*s.*, and they produced sodium at 1*s.* per pound., where it had previously cost 4*s.* or 5*s* or more; but there was no guarantee that the Castner process could "hold the field" permanently as the only one suited to the production of cheap aluminium. At that time chemists and metallurgists all over the world appeared to be working with might and main at aluminium processes, and quite a crop of different systems was announced and discussed month after month in the chemical and engineering press. In the end, another American chemist succeeded, as did also a Swiss chemist at the same time, in producing aluminium by an electrolytic process for 2*s.* to 3*s.* per lb., and works were immediately constructed at Pittsburgh and in Switzerland. The American firm, headed by the well-known Pittsburg engineer, Mr. Alfred E. Hunt, has since, together with the Swiss firm, had a divided monopoly of this industry, at a cost of production that would not have been believed possible when Mr. Castner's friends and himself constructed works to manufacture and sell the metal on a large scale. In other words, it came to this, that while Mr. Castner by his process reduced the cost of aluminium to one-tenth of what it had been when the old Deville process only was employed, the electrolysis process succeeded in reducing the cost of the metal to only one-twentieth part of its cost, less than three years before. Needless to say, the Pittsburgh and Swiss companies got the field, and it is only just to add that they have since held it.

As the success of the electrolytic processes meant the failure of the process introduced by the Aluminium Company, the latter was necessarily placed in a very serious and critical position. They had still the sodium process left, but four years ago there was hardly any demand for sodium, and

there did not appear to be much hope in that direction. Nevertheless, Mr. Castner and his friends made up their minds to develop the manufacture and demand for sodium as the only resource open to them. At that time they had constructed works which had cost them over £60,000, and which were adapted to the carrying on of five or six distinct original chemical processes, actually being worked to an extent that involved the daily consumption of seventy tons of coal, 40,000 lbs. of hydrochloric acid, 10,000 lbs. of caustic soda, 20,000 lbs. of lime and limestone, and many other materials required for the production of 500 lbs. of aluminium. All this was stopped, and Mr. Castner, acknowledging his defeat, took the most manly and praiseworthy course open to him, by endeavoring to improve his sodium process, and create an industry in this metal. The result was that he was able before long to announce that his original sodium process hae been superseded by an electrolytic method which gave to his Company a monopoly in the manufacture of this product. Although there was no market for sodium at that time, Mr. Castner turned his attention to its application in the cyanide manufacture, and he succeded before long in realizing his aim—namely, that practically all the cyanide, which is now so important in the recovery of gold, should be made from prussiate of potash by the use of sodium. In other words, Mr. Castner has created a sodium industry on a considerable scale where none had previously existed.

Even this result, however, did not satisfy the aspirations of Mr. Castner and his friends. At the time when he was endeavoring to improve his sodium process, peroxide of sodium was a curiosity, even in the laboratory, and had no commercial value. Mr. Castner conceived the idea of its manufacture on a commercial scale for application as a direct bleaching agent, and for the preparation of hydrogen peroxide. This he accomplished, inventing a process and securing patents for its manufacture from sodium, until now it has become such a formidable competitor to barium peroxide that that chemical has fallen in price to the extent of over 50 per cent. since sodium peroxide became a commercial product.

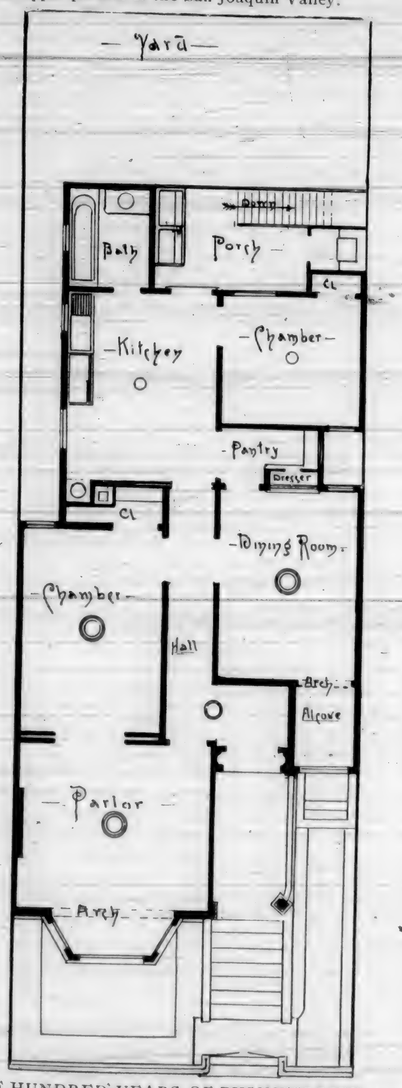
In the course of his investigations into the electrolytic preparation of sodium, Mr. Castner became convinced of the possibility of producing caustic soda and bleach by a somewhat similar process, and undertook experiments with that end in view. In this direction many others had worked before him, and not a few appear to have attained the threshold of success, but difficulties have invariably arisen mainly in connection with the means employed for preventing the recombination of the products of the electrolysis. Mr. Castner, with his accustomed ingenuity and resource, has solved the problem effectually, and has succeeded in producing caustic soda of exceptional purity at quite 30 per cent less than the price at which it is produced by the Leblanc-Weldon process hitherto adopted. Satisfied with the results disclosed by Mr. Castner, the directors of the Aluminium Company have recently erected a large plant for the manufacture of caustic soda and chlorine by the Castner process. That plant, completed only last month, has been examined by a number of the leading chemical experts of the day, and the judgement pronounced upon it, and upon the system generally, has been entirely favorable. In short, Mr. Castner has devised a process which appears to be destined to revolutionize the alkali trade, and to supersede the present processes of manufacture. Of the importance of such achievement to Mr. Castner and his company it is unnecessary to speak. To the alkali manufacturers of the Clyde, the Tyne, and the Mersey, it is, however, manifestly a very serious matter. They have invested upwards of six millions of capital in existing plants and works, which would largely be rendered useless by the success of the Castner process, so that they stand face to face with a grave dilemma.

COUNTRY COTTAGE.

BOOKS AND PERIODICALS.

LIPPINCOTT'S Monthly Magazine comes to hand for September with the complete novel "Captain Molly" by Mary A. Denison author of "That Husband of Mine." Among the short stories "The Sale of Uncle Rastus" is one that will be hard to read with a dry eye.

THE GAS AND PETROLEUM YIELDING FORMATIONS of the Central Valley of California by W. L. Watts, M. E., from the State Printing Office at Sacramento, to those interested we will mention that a free copy can be obtained by application to the State Mining Bureau, 24 Fourth street San Francisco. The article is a correlation, of all the information as yet obtained by Mr. W. L. Watts concerning the gas and oil yielding formations in the central valley of California and the neighboring foothills, also the result of experiments made to determined the full value of the natural gas both at Sacramento and Stockton and in certain localities in the upper portion of the San Joaquin Valley.



ONE HUNDRED YEARS OF BUSINESS LIFE, 1794-1894. A handsome phamphlet with the above title tells the story of the house of W. H. Schieffelin & Co., New York. The illustrations showing a portrait of the founder of this famous business house, as well as the portraits of the present members of the firm and also various buildings that form an interesting memorial, as well as a land mark in the history of the city of New York.

The ILLUSTRATED PACIFIC STATES comes to hand with the announcement of a change of publishers, A. T. Dewey having retired from the management. Jennie E. Patrick and Frank J. Francoius assume control and promise that not only will the high character of the Illustrated Pacific States be maintained, but improved upon. Office, 2 Market street, San Francisco. Price $1.00 per year.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CANCELLATION BY PAROL AGREEMENT OF CONTRACT UNDER SEAL.—Where after commencement of work on a building, the owner agrees to permit the contractor to retain twenty-five dollars already paid him above his expenses, and to pay for the material furnished, in consideration of the cancellation of the contract, such agreement is not void for want of consideration. A contract under seal must be cancelled by parol agreement.

Blagborne v. Hunger, Supreme Court of Michigan, 59 N. W. Rep. 657.

WHERE ONE IS LIABLE FOR USE OF PARTY WALL.—Under an agreement that when any part of a party wall shall be used by the party who did not construct it, or by his heirs or assigns, he or they shall pay half the cost to the party who did construct it, one is not liable for such payment because, at the time she party who did not construct the wall, built a house on the adjoining lot, he was mortgagee of the lot. Nor is he liable because he afterwards became owner of the lot through foreclosure; continuation of the building, after its erection, not being a use of the wall within the agreement.

Pfeiffer v. Matthews, Supreme Judicial Court of Mass., 37 N. E. Rep. 571.

LIABILITY FOR USE OF PARTY WALLS.—The original owner of two lots built houses upon each lot, with a party wall between them, and afterwards sold them to different purchasers without imposing any obligation as to the party wall. A predecessor in title of the present owner of one of the lots built the wall higher after strengthening its foundation. The owner of the other lot having built his house higher, and used the addition to the wall, was not in the absence of an agreement, liable for such use.

Allen v. Evans, Supreme Judicial Court of Mass, 32 N. E. Rep. 571.

CREATION OF EASEMENT BY RESERVATION OF DEED.—A reservation by the owner of a building comprising two stores in a deed conveying one of them, of "the rights to use the front stairs and hall on the second floor in common with the owners of the premises hereby conveyed," which stairs and hall communicate with both stores creates an easement appurtenant to the premises retained by the grantor, the benefit of which passes to subsequent purchases of the latter premises.

Waltz v. Waltz, Supreme Court of Michigan, 59 N. W. Rep. 531.

EFFECT OF UNFULFILLED CONTRACT UPON MATERIAL MEN.—Where the statute provides that every person save the original contractor, claiming a mechanic's lien, must within thirty days after the "completion" of any building file his claim of lien, and that cessation from labor for thirty days on "any unfinished contract," shall be equivalent to a completion thereof. Persons who furnish material to a contractor who abandoned his contract were not entitled to mechanic's liens where their claims were not filed within sixty days after such abandonment, though the owner afterwards made a contract to complete the building, with another, who completed it.

Johnson v. La Grave, Supreme Court of California, 36 Pac. Rep. 650.

FIXTURES TO REALITY MUST BE PERMANENT.—A derrick used in a stone quarry, capable of removal from one point to another, as required, is not a fixture subject to a lien for material and labor furnished in its construction, though fastened by means of a post set in the ground, and guy ropes attached to the rock by anchor bolts if its removal would not injure the realty.

Honeyman v. Thomas, Supreme Court of Ore, 36 Pac. Rep. 636.

PAYMENT IN ADVANCE DOES NOT DEFEAT LIEN.—Where the owner of a building pays the contract price to the contractor, before it is due, such payment does not defeat the right to mechanic's liens, though it was made before notices of liens were filed.

Banham v. Roberts, Supreme Court, General Term, Second Department 28 N. Y. Supp. 828.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE ANNUAL MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held on October 12, 1894.

There were present Messrs. Babson, Sanders, Henriksen, Bestor, Lyons, Everett, Curtis, Polk and Cuthbertson.

The most important business consisted in the consideration of the report of the Committee having in charge the preparation of a new set of Fire Ordinances for this city, which committee submitted the result of its labors during the past two years. As the hour of adjournment was reached before the discussion was fairly opened, the Chapter decided to have weekly evening sessions on Fridays at 8 P. M., at which the members of the Chapter are particularly requested to be present.

A member present having made the astonishing statement that a judge on the bench had publicly declared it to be the custom among architects to provide working drawings and specifications to clients for nothing, on the mere chance of being employed, it was resolved to instruct the Secretary to inform his Honor "that it is not now, and never has been the custom among architects, to prepare working drawings and specifications for clients on speculation."

Mr. Marsden Manson was present by request, and gave a great deal of valuable information about the present lack of system in regard to the sewers of this city, and after discussing the evil at some length, the following preamble and resolutions were unanimously adopted:

"WHEREAS, the needs of this city demand that the streets and sewers be placed under competent engineering supervision, and as the California Association of Civil Engineers has put forward one of its prominent members, Mr. C. E. Grunsky, as a candidate for the position of Superintendent of Streets, be it therefore

RESOLVED, that the San Francisco Chapter of the American Institute of Architects, endorse the candidature of Mr. C. E. Grunsky, for the position of Superintendent of Streets, and place itself on record as to the vital importance to the building and business interests, of our streets and sewers being under the supervision of competent professional engineers.

BUSINESS MOSAICS.

It is very necessary that we should have on the Board of Freeholders—the Charter makers, an Architect and Civil Engineer. As questions will arise during the progress of their labors—which can only be considered properly by the aid of an experienced man of those professions. We are therefore glad that one of the Parties has seen fit to nominate for that position our esteemed colleague—W. J. Cuthbertson.

School TEACHER—"What have the numerous expeditions to the North Pole accomplished?" SCHOLAR—"Made geography lessons harder."—*Life.*

W. P. Fuller & Co.—This firm from long experience in the paint business can give you facts about paints, and what is more can sell you paint that is in fact all that is claimed. The Phoenix Pure Paint is guaranteed absolutely pure and satisfactory on the building, or they will replace it with any material the architect may select. What more can be asked? If you want the new wall finish or washable water color use Duresco, manufactured by this firm.

Daughter—"I love him he is the light of my life." FATHER—"Well, that is all right, but I object to having my house lit up by him after midnight."—*Pearson's Weekly.*

In all matters connected with sanitary appliances "The J. L. Mott Iron Works" are leaders. The fixtures shown in this edition are especially adapted for Rail Road Depots, School houses, Barracks, Insane Asylums and large buildings, where strength, durability and cleanliness are desired as well as perfection from a sanitary point of view. The well-known reputation of this house is a sure guarantee that the fixtures are all that is claimed for them.

Last May the Illinois Chapter of the American Institute of Architects, instituted the first Chicago building trades and national exhibition which was held in their rooms, at 63, 65, 67 and 69 Washington street, Chicago, May 15th to June 2, 1864.

The Bostwick Steel Lath Co. had an exhibit of their justly celebrated Fire-proof steel lath and on June 30th were awarded a medal and diploma for merit. The same came to hand yesterday. Below we give a copy:

This is to certify that the Illinois Chapter of the American Institute of Architects awarded a Medal for Merit to the Bostwick Steel Lath Co., for its exhibit of steel lath and construction in the First Annual Chicago Building, Trades and National Exhibition held in the Institute of Building Arts, May 15th to June 2, 1894.

MINARD L. BUSS, Chairman Jury of Awards. H. W. PIERCE, Manager. *The Niles Daily News.*

"That's a good idea, Carry it out," said the editor to the man who came in with a better plan for running the paper.—*Philadelphia Record.*

W. & J. Sloan & Co.—From personal experience we can vouch for the style, price and quality of the goods sold by this firm. If you want carpets that is the place to go to, while for furniture no better place can be found in the city: their upholstery is unrivaled. If you call at 641-647 Market street you will be convinced of the truth of this assertion.

Mother—"And what did you do when he kissed you? I hope you showed him you were angry and indignant." DAUGHTER—"Yes, indeed! I was up in arms at once."—*Puck.*

Schenck's Swinging Hose Reel.—If there should be still any in want of this invaluable article for the protection of mills, factories, hotels and public buildings. Now is the time to make protection against the winter fires almost absolute. Do not forget that the reduction of insurance goes a long way towards paying for this almost indispensible safe guard against the extension of fire—a word of warning before hand is worth a volume of regrets after your building is reduced to ashes for want of this very article that can be found at 593 Mission street near Second, San Francisco.

Man in a hurry—"Is there a way of getting to the Grand Central Depot sooner than by taking this car?" URBAN CONDUCTOR—"Yes, sir; run and catch the next car ahead."—*New York Press.*

Richmuller's Door Opener and Closer is the very thing you want if you are building, because it is the most perfect, simple and durable opener and closer in the market. As there are two wires used, one for opening and one for closing, it will be evident the door is under full control as if you had the door knob in your hand. Orders left with Geo. Richmuller, 320 Nineteenth street, will be promptly attended.

Fogyduff—"I have no money to spend in advertisements." PACER—"Of course you havn't, and that's just the reason."—*Boston Transcript.*

Surely the manufacture of Art Glass is not one of the lost arts, for although the same has been made for several centuries, it has remained for the end of the Nineteenth Century to produce the wonderful effects and delicate shadings in color and tone, that we see in Church windows as well as in private residences, of the present day. The progress made in this particular branch of architectural embellishment has amply kept place with all other arts and sciences, so we thought it not amiss to give a brief description of the process of Manufacturing Art Glass.

It is through the courtesy of Mr. Wm. Schroeder, president of the California Art Glass, Bending and Cutting Works, 103 and 105 Mission street, that we are enabled to do so. The gentlemen mentioned, kindly escorted us through the vast establishment and explained to us all the intricacies of the art. Leaving the elevator (for it is on the third floor) we step into a hall leading to the public and private offices, thence into an elegantly appointed show room, here we were shown samples of art glass, cut, embossed, beveled and all other kinds of ornamental glass work for architectural purposes, variety enough to satisfy the most fastidious in an artistic sense, also all purses could be accommodated, for some beautiful work we saw for a very moderate price.

This article having for its object the description of how art glass is made, we will not linger here but proceed through an immense room where all the machines for glass cutting, beveling, grinding as well as the furnaces for beveling glass, are to the Art Glass Room proper. This room, about 40x50 feet in size contains a great many tables and work benches, at one end of the room we observe the artist designing the patterns actual size on thin detail paper, all the lines represented "lead lines" while the spaces between are for the different colored kinds of glass, the names of which are marked thereon, then the pattern passes to the assistant artist who traces the same on heavy detail paper, this latter being cut with a peculiar kind of shears by following all the lines. Now we have all the small and large patterns in which shape the glass is to be cut, which the art glass cutter, on the table adjoining the artist, cuts by placing each separate pattern on the glass, and running around the same with a diamond. Before cutting the glass the glass cutter submits the same to the artist for inspection to make sure it is the desired color or shade. All the glass pieces are then placed on the first design, which is called the working pattern. Then the lead glazier takes it in hand and puts lead around and between all the pieces, always keeping the outermost in place with round nails, driven into the table. When the leading is done the joints are all soldered so as to make the whole light one solid frame. Having soldered both sides the light is now turned over to the cementing table. The cement is brushed over the glass and lead and thoroughly rubbed in on both sides, after all superfluous cement is cleaned off the light is put aside for it to harden, which eventually becomes as hard as the glass itself and virtually makes the glass and lead one piece. The lead, the cut end of which looks like a capital H, is turned through a mill, also in this room: ten different sizes can be made, for the most delicate tracing to large Church windows. The above description relates to mosaic art glass windows, the same applies to figure windows, only that the parts of a figure, as the face, hands, etc., are painted on the glass, which is already cut to shape by a special artist who has his studio next to the show room, as he requires a north light, for he must paint the glass while looking from a comparatively dark room toward the light, and the latter must be as unchangeable as possible. All the paintings must be fired three and in some cases four times before they are ready for the lead glazier, the reason for this is that the colors vanish to a considerable extent after each firing and they have to be applied again and again until a satisfactory result is obtained. The glass for draperies, foliage, etc., is opalescent or semi-translucent glass and is obtained from factories in Europe and the East which make a specialty of manufacturing the same. Of course it remains for the artist to select the colors and shades to attain the desired result of harmony and design.

In some future article we may give a description of the different processes for the manufacture of Ornamental Glass Cutting as well as beveling, bending, embossing, etc. We cannot close without mentioning the fact that the firm quoted above received the highest award for Art Glass, the Gold Medal, at the late Midwinter Exposition.

CITY BUILDING NEWS.

Army near Folsom. To build; owner, C. H. Drew; contractor, R. Trost; cost $2800.

B[illegible]ver near Noe. To build; owner, Patrick Parnell; contractor, Chas. Eriksen; signed, Sept. 15; filed, Sept. 17; cost $3500.

[illegible]ett near 21st. To build; owner, George Resing; contractor, A. Petry; signed, Oct. 15; filed, Oct. 16; cost $2715.

Buchanan and Olive Ave. Plumbing; owner, M. Brown; architect, Clinton Day; contractors, Ickelheimer Bros.; signed, Sept. 15; filed, Sept. 18; cost $1650.

Broadway near Mason. To build; owners, Jean and Maria E. Baron; architect, Emil Depierre; contractor, Jas. McLean; signed, Sept. 14; filed, Sept. 18; cost $5000.

Broadway near Mason. Plumbing; owners, Jean and Maria Baron; architect, Emil Depierre; contractor, H. Williamson; signed, Sept. 14; filed, Sept. 18; cost $740.

Broderick near Park Road. One-story frame; owner, Wm. W. Delano; contractor, W. W. Redmill; signed, Sept. 29; filed, Oct. 5; cost $160.0.

Bryant near 18th. Alterations and additions; owner, Mrs. Ellen Mullen; contractors, J. H. Rothgeber & J. M. Mullins; signed, Aug. 31; filed, Sept. 20; cost $1660.

California near Lyon. To build; owner, P. J. Fitzpatrick; architect, W. H. Wharff; contractor, F. W. Mauricer; signed, Oct. 8; filed, Oct. 12; cost $3300.

Corporate Limits of the City and County of S. F. To build; owner, D. W. Teltjen; architect, J. M. Curtis; contractor, Randolph P. Sanchez; signed, Oct. 8; filed, Oct. 12; cost $1850.

Church near 20th. To build; owner, P. H. Ruddock; architect, R. H. White; contractor, W. Fegeler; signed, Sept. 11; filed, Sept. 13; cost $7750.

Clement and 3d Ave. To build; owner, D. Dangers; architects, Kenitzer & Bath; contractor, W. J. Field; signed, Sept. 18; filed, Sept. 20; cost $1670.

Clement and 5th Ave. To build; owner, Ernest Uebner; architect, A. J. Barnett; contractor, Ed. Mooney; signed, Sept. 29; filed, Oct. 3; cost $3030.

Day near Dolores. Four five-room cottages; owner, J. M. Comerford also builder; cost $6000.

Desiadero near Sacramento. Additions; owner, A. W. Cranbury; architects, Percy & Hamilton; contractor, E. W. Kern; signed, Oct. 2; filed, Oct. 3; cost $3000.

Eleventh and Minna. Three-story frame and additions; owner, Julia Martin, architect, M. J. Lyons; contractor, Thos. Kinrad; signed, Aug. 25; filed, Sept. 7; cost $9100.

Eleventh and Minna. Plumbing; owner, Julia Martin; architect, M. J. Lyon; contractor, H. Russchmidt; signed, Aug. 25; filed, Sept. 17; cost $1200.

Ellis near Mason. Plastering, etc., on six story brick; owner, Maurice Casey; architect, Henry A. Schulze; contractor, Dan Leahy; signed, Sept. 8; filed, Sept. 19; cost $4800.

Ellis near Mason. Artificial stone work; owner, Maurice Casey; architect, Henry A. Schulze; contractor, Geo. Goodman; signed, June 6; filed, Sept. 19; cost $1033.

Fair Oaks near 25th. To build; owner, Hilda M. G. Roberts; contractors, Dashlberg & Lund; signed, Sept. 20; filed, Sept. 22; cost $3000.

Folsom near 10th. Two three-story frames; owner, Chas. Bach; architects, Kenitzer & Barth; contractors, Peterson & Olsen; signed, Oct. 4; filed, Oct. 4; cost $12,084.

Folsom near 10th. Plumbing; owner, Chas. Bach; architect, Kenitzer & Barth; contractor, G. C. Sweeney; signed, Oct. 4; filed, Oct. 4; cost $1898.

Folsom near 25th. To build; owner, Mrs. J. B. Lieb, wife of A. H. Lieb; architects, Martins & Coffee; contractor, J. Bucher; signed, Oct. 9; filed, Oct. 10; cost $4050.

Fifteenth near Castro. Cottage; owner, Mary O'Brien; architects, Shea & Shea; contractor, M. J. Gallegher; signed, Sept. 12; filed, Sept. 15; cost $1075.

Fillmore near McAllister. To build; owner, L. C. Levy; architect, J. B. Wuerschring; contractor, J. S. Hafmeister; signed, Oct. 15; filed, Oct. 15; cost $5000.

Fourth Ave. and California St. To build; owner, John F. Meinert; architect, R. H. White; contractor, Emil Aoelle; signed, Sept. 17; filed, Sept. 17; cost cost $3750.

Fourth Ave. and Clement. To build; owner, Chas. K. Hawthorne; architect, C. F. Robertson; contractor, C. Larsen; signed, Sept. 22; filed, Sept. 24; cost $2000.

Fillmore and Sutter. Plumbing; owner, Mrs. Peter Crichton; contractor, E. J. Duffy; signed, Sept. 24; filed, Sept. 25; cost $1150.

Golden Gate Ave. and Lyon. Five frames buildings, 12 flats; owner, Roundtree Brothers; day's work; cost $15,000.

Golden Gate Park. Removal of the Royal Pavilion; owner, Executive Com. Mid-Winter Fair; architect, A. Page Brown; contractors, Mahoney Bros.; signed, Oct. 1; filed, Oct. 2; cost $5350.

Glover near Jones. To build; owner, Hannah Wortsmith; architect, Victor Monet; contractors, Mullan & Harrigan; signed, Sept. 15; filed, Sept. 18; cost $2402.30.

Glover near Leavenworth. To build; owner, Mrs. M. Chubakar; architects, J. J. & P. J. Newsom; contractors, Jackson & Leavers; signed, Sept. 17; filed, Sept. 18; cost $2025.

Grove near Webster. Alterations and additions; owner, Herman Fischer; contractor, T. C. Cochrane; signed, Sept. 11; filed, Sept. 18; cost $1200.

Greenwich No. 527. To build; owner, Louise Steiz; contractor, Jean Baptiste Pene; signed, Sept. 24; filed, Sept. 26; cost $1502.

Guerrero bet. 15th and 16th. Alterations; owner, F. W. Kreling Sons; architect, W. H. Armitage; day's work; cost $10,000.

Haight near Devisserdero. To build; owner, James M. Kane; contractor, James J. Mausenu; signed, Oct. 2; filed, Oct. 3; cost $6000.

Harrison near Beale. owner, Robert S. Moore; architect, C. I. Havens; contractor, J. J. Dunn; signed, Sept. 18; filed, Sept. 24; cost $2800.

Hyde near Pine. To build; owner, Fred. Degnan; contractor, J. M. Hoege; cost $4000.

Hyde near Pine. Carpenter work; owner, H. W. Hutton; architect, W. H. Lillie; contractor, Wm. J. Field; signed, Sept. 17; filed, Sept. 20; cost $4000.

Howard near Leavenworth. To build; owner, Jos. Eigel; architect, R. H. White; contractor, James Campbell; signed, Sept. 17; filed, Sept. 20; cost $6400.

Howard near 8th. Plumbing; owner, Jos. Eigel; architect, R. H. White; contractor, Geo. Humphreys; signed, Sept. 17; filed, Sept. 22; cost $1120.

Jackson and Laguna. Excavations and grading; owner, W. F. Whittier; architect, E. R. Swain; contractor, C. A. Warren; signed, Sept 25; filed, Sept. 28; cost $700.

Jackson street No. 427. Maccaroni factory; owners, L. Valsangiacomo & S. Romani & Co.; contractors, McIntosh & Woolpmann; signed, Sept. 27; filed, Oct. 5; cost $1425.

Jackson near Broderick. To build; owner, Ida and Luella Gillishle; architects, Coxhead & Coxhead; contractors, Chas. Paff & Co.; signed, Oct. 12; filed, Oct. 14; cost $3875.

Jones near Greenwich. Three frame buildings two flats each; owners, R. C. Bolton, Eliza M. Bolton and Francess B. Melliss; architect, Wm. Patton; contractor, Geo. H. Walker; signed, Oct. 2; filed, Oct. 3; cost $12,457.

Jones near Greenwich. Plumbing, etc.; owners, R. C. Bolton. Eliza M. Bolton and F. B. Milliss; architect, Wm. Patton; contractor, John Doherty; cost $1840.

Landers near 16th. Frame building and stable; owner, Geo. Scherer; contractor, Christ Senweizer; signed, Oct. 8; filed, Oct. 9; cost $1150.

McAllister near Baker. To build; owner, W. J. Randell; architect, Oliver Everett; contractor, J. B. Kearny; signed, Sept. 24; filed, Sept. 24; cost $2176.

Mission near 30th. To build; owner, Chas. A. Russler; contractor, E. McHugh McWest; cost $3000.

Oak near Masonic Ave. One-story frame; owner, William M. O'Brien; architect, Smith O'Brien; signed, Oct. 1; filed, Oct. 2; cost $2250.

O'Farrell near Leavenworth. Plumbing; owner, Emma M. Ricker; architect, W. H. Lillie; contractor, W. H. Tobin; signed, Sept. 18; filed, Sept. 19; cost $1185.

O'Farrell near Stockton. Plumbing; owners, Gulzeit & Malfanti; architects, Pissis & Moore; contractor, E. James Duffy; signed, Sept. 26; filed, Sept. 27; cost $10,500.

Page and Scott. To build; owner, F. Koch; architects, Salfield & Kohlberg; contractor, Chas B. Schmid; signed, Sept. 11; filed, Sept. 13; cost $6955.

Page and Scott. Plumbing, gas fitting, etc; owner, F. Koch; architects, Salfield & Kohlberg; contractors, Shepard Bros.; signed, Sept. 11; filed, Sept. 21; cost $900.

Page near Webster. To build; owner, Louis Friedlander; architect, J. F. Kenna; contractors, Hood & Watson; signed, Sept. 27; filed; Sept. 27; cost $3140.

Pacific Ave. near Buchanan. Alterations; owner, Mrs. H. R. Muzzy; architects, Mahoney & Ryland; contractors, Ackerson & Paterson; signed, Sept. 14; filed, Sept. 15; cost $4300.

Post and Montgomery. Marble work, etc.; owner, Union Trust Co.; architect, Clinton Day; contractors, Fink & Schindler; signed, Sept. 13; filed, Sept. 14; cost $5998.

Post near Hyde. To build; owner, Lawrence Glennon; architect, V. Vettin; contractor, W. H. Wickersham; signed, Sept. 8; filed, Sept. 19; cost $3600.

Sewell near Greenwich. To build; owner, L. Capurro; architect, Emil Deperre contractor, S. Soywell; signed, Sept. 21; filed, Sept. 22; cos. $2000.

Prospect Ave. near Virginia. To builder; owner, M. D. Coleman; contractor, J. E. Schulz; signed, Sept. 28; filed, Sept. 28; cost $1225.

Precita Ave. near Bernal Heights. To build; owner, John Rootkeever; day's work; cost $3000.

Point Lobos Ave. near 6th Ave; Concrete work; owner, French Benevolent Society; architect, E. Depierre; contractor, S. B. Cushing; signed, Oct. 3; filed, Oct. 3; cost $955.75.

Point Lobos Ave. near 6th Ave. Iron fence, etc.; owner, French Benevolent Society; architect, E. Depierre; contractor, Western Iron Works; signed, Oct. 3; filed, Oct. 3; cost $2060.

Pine near Lyon. To build; owner, Stephen Edwards; contractor, Thomas F. Crawford, signed, Oct. 3; filed, Oct. 3; cost $2450.

Scott and Green. Planing mill work; owner, E. A. McCarthy; architect, J. C. Newsom; contractor, A. Hansen; signed, Oct. 13; filed, Oct. 15; cost $2450.

Scott near Bush. To build; owner, Frank J. Shonig; architect, W. H. Wharff; contractors, Schuler & Bauer; signed, Sept. 21; filed, Sept. 24; cost $2900.

Steuart and Folsom. Repairs; owners, Osmer & Co.; architect, H. Gelfuss; contractors, Larenzen & Fevier; signed, Sept. 25; filed, Sept. 25; cost $2000.

Stanyan street, Sutro's addition. To build; owner, F. A. Hjett; contractors, Peterson & Person; signed, Oct. 2; filed, Oct. 3; cost $1636.

Shotwell near 25th. To build; owners, L. A. Hayward & wife; architects, Mathew & Coffey; contractor, R. B. Kicks; signed, Oct. 2; filed, Oct. 3; cost $6151.50.

Steiner near Feli. To build; owner, James P. McGinty and wife; architect, C. J. I. Devlin; contractors, Ogle & Smith; signed, Oct. 5; filed, Oct. 10; cost $3753.

Sutter near Lyon. Alterations, etc.; owner, Herman Steffens and wife; contractor, Geo. Lack; signed, Oct. 13; filed, Oct. 15; cost $3500.

Tehama near 8th. Alterations; owner, Luke O'Conner; architect, M. J. Welsh; contractors, Simanton & Griffin; signed, Sept. 13; filed, Sept. 14; cost $1185.

Tennessee near Sierra. To build; owner, H. J. and Katie M. Shroder; contractor, T. C. Cochrane; cost $1995.

Townsend near 7th. Alterations and additions; owner, Timothy Hopkins; architect, Henry A. Schulze; contractors, Ingerson & Gore; signed, Sept. 15; filed, Sept. 19; cost $14,390.

Twenty-fourth near Castro. Cottage; owner, T. A. Born; cost $2200.

Twenty-fourth and Bryant. To build; owner, Elizr Jane Harkins; architect, M. J. Welsh; contractor, Ira W. Coburn; signed, Oct. 10; filed, Oct. 10; cost $1200.

Twelfth near H. To build; owner, Mrs. M. R. Kavanuagh; architect, W. H. Lillie; contractor, T. T. Pottinger; signed, Oct 13; filed, Oct. 13; cost $2028.

Van Ness Ave. and Clay. Stone, brick and terra-cotta work; owner, Claus Spreckles; architects, Reid Bros.; contractors, McPhee & Grolliere; signed, Aug. 27; filed, Sept. 17; cost $51,030.

Van Ness Ave. and Geary. Alterations and additions; owner, Mrs. Julia Martin guardian Jefferey's Marten; architect, J. M. Lyons; contractor, H. Jacks; signed, Oct. 2; filed, Oct. 6; cost $8329.

Van Ness Ave. and Geary. Plumbing, etc.; owner, Mrs. Julia Martin guardian; architect, J. M. Lyon; contractor, H. Williamson; signed, Oct. 2; filed, Oct 6; cost $1084.

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OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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NOW IN THE FIFTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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IN this part of the country, the increasing use of decorative plaster work for the ornamentation of exterior surfaces, is the cause of our calling attention to the necessity of careful attention being paid by architects and superintendents to the quality of the materials used for this purpose.

Thirty years ago, a great part of the ornamental work on the facades of buildings was done in this material, and its great durability is shown by the excellent preservation of most of the work done at that period of our city's growth.

The experience gained at that time, and the improvements since made in the direction of increasing the weathering qualities of this material, allow of its being safely used as a legitimate decorative material, provided it is made and handled by parties capable of appreciating its requirements, and honest enough to fulfill them in its manufacture.

We lately inspected a piece of a frieze that had been in position less than two years, and had already begun to disintegrate, owing to the flimsy construction and poor quality of material used in making it. In fact it was no more capable of giving satisfactory service, than the cheapest quality of staff used in the temporary structures of our late Midwinter Fair.

Let every architect and superintendent insist on getting good material and workmanship in his decorative plaster work, as the future appearance of his buildings depends largely on this point being insisted on.

Carelessness in this regard will surely cause dissatisfaction sooner or later, and there is no more excuse for excepting inferior material in this case than in passing poor cement when used for concrete work. We will refer to this again in a future issue.

AS the fifteen Charter makers have been selected and are ready for business, attention ought to be turned to suggestions to the end that the Charter will be likely of carriage by the people.

We have only space in this number to allude to one clause, that in regard to the division of the city into districts or wards having about equal population, say twelve wards as we have at present. Divide the whole city from San Mateo to North Beach into twelve strips run-

ning from ocean to bay, each strip to be of as near as possible equal in population. At every census (ten years) a re-distribution to be made according to the population at that time following the same method. By having this elastic system no gerrymandering can take place and all parts of the city will be equally represented.

CONCRETE CONSTRUCTION, ITS PRACTICAL APPLICATION.

PAPER READ BY ERNEST L. RANSOME OF CHICAGO, LATE OF SAN FRANCISCO, BEFORE THE AMERICAN SOCIETY OF ARCHITECTS, OCTOBER 17, 1894.

THE practical application of concrete may be conveniently divided into four divisions, viz:—

1st. False work.
2d. Materials.
3d. Tools.
4th. Labor.

The second division can be usefully divided into four sections, viz:

A. Cement.
B. Aggregates.
C. Iron.
D. Water.

Division A. False Work:

Concrete in respect to False Work is unfortunate in comparison with other masonry because it not only needs more expensive centering whenever centering is necessary: but it also usually requires cribbing, whereas, other masonry does not.

This characteristic entirely prohibits its use in many cases where in all other respects it would be very desirable and it is therefore an obstacle to the more extended use of this valuable construction that should be minimized as much as possible.

Of late years I have met with considerable success by adopting systems of standard centering and cribbing, which whilst not of universal application, are of great use, permitting as they have done of the construction of floors and buildings that otherwise could not have been attained.

Such false work can be used over and over again many times for a long period without material change or repairs, and the parts ultimately requiring renewing are comparatively inexpensive, but as this is of interest to the contractor rather than to the architect, I will not enter into a detailed description thereof.

Great difficulties have ofter arisen in the swelling of the sheeting of the centering or cribbing, caused by the wood absorbing the moisture of the newly placed concrete. From this cause many arches have been lifted and broken, floors cracked, and walls thrust out of line. By using sheeting boards of a moderate width, say six to eight inches, and bevelling one edge slightly, the boards may be put close together and when expansion occurs, the only effect will be to slightly crush the outer edge of the bevel without lifting or disturbing the concrete abutting or resting upon it; the widest side of such boards being of course placed facing the concrete.

This is such a very inexpensive, simple and unfailing remedy, that from its conception I have used it in all cases; and since its use I have never had any trouble from swelling of the timber. Some such device as this is especially necessary in dry climates, also in light construction, such as floors of but an inch or two in "thickness" or hollow walls.

For standard centering or cribs, if of wood, it is advisable to make them of planed lumber. The surface of the wood should be thoroughly coated with common, thick kerosene oil before it is used for the first time, and before each subsequent use it should be brushed over afresh with the oil. Fresh oil is objectionable, as it is apt to injure the surface of the concrete and linseed oil is generally too gummy for this purpose.

It may be accepted as a general rule that false work of light sheeting, well braced, is more economical than heavier planks with braces farther apart. I am aware that this is not the usual practice.

The ornamental effects can be much more cheaply produced by recessed than by projected work.

MATERIALS—Under this head, cement, by reason of its greater cost and active qualities, stand out pre-eminent. I will limit my remarks under this sub-division to Portland Cement, with the exception of the following observation, viz:

That where rapidity of construction is not a great object and aggregates are unusually cheap, by the use of common lime, with or without some of the cheap native cements, properly handled, work of a good quality and of astonishing cheapness may be made—one part of lime to forty parts of aggregates not being considered too little in some cases.

Portland Cement, a giant from its birth, is striding rapidly along the way of improvement and quality and price, so that formulas of tests that were thought severe a few years ago, would not be considered sufficiently exacting at the present time, to ensure as first class, the cement that would successfully pass them.

The current technical literature teems with methods of testing, so that we can hardly go astray in the selection of a good cement. The three principal requisites for a first class article are as follows:

1st. That it sets or hardens without undue expansion or contraction.

2d. That it be sufficiently finely ground.

3d. That its tensile strength be high.

1st. The cake test. This test is so well known that a description of it here is unnecessary. When time is an object, by the use of hot water, the test may be hastened. Under expert supervision the "boiling test" is by many considered superior to the cake test, but the difficulties in the way of carrying it out, and some uncertainties in the results that yet linger about this new test, prevent me from advocating its substitution for the older test.

2d. The test for fineness. Ninety per cent of the cement should pass through a hundred mesh screen having 10,000 holes to the inch. It would be better to use a yet finer screen for testing but for the difficulty of readily obtaining finer screens. The practice of using coarser screens is to be condemned, because they pass much that is inert. The screenings should feel soft and silky to the touch. The residue on the screen should be hard, black, angular grains. The economic importance of fine grinding has seldom been exaggerated. It is usually unduly disregarded, yet it has been established beyond reasonable doubt, by repeated experiments that the sand like grains of the cement are practically inert and useless. Still, unlike the first qualification, this is an economic question, and the ill effects of coarse grinding, if not apparent in the first test, can be overcome by making due allowance for the coarse portion in proportioning the cement to the aggregate, and then but little harm will follow the use of coarse ground cement in ordinary work.

3d. Tensile Strength: This test is usually and best made by aid of the ordinary testing machine. Several first class cements will now develop tensile strengths of 600 or 700 lbs. per square inch in seven days and whilst this may be too high a standard to insist upon, yet the cement that will not furnish a strength of 450 lbs. in seven days, ought not, in my judgment to be graded as first class, unless it is exceptionally fine ground.

It is desirable, when time will permit, to make the tests with a mixture of one of cement to three of sand, but ordinarily with cements of equal fineness, the relative strength of different brands will remain about the same as under the test with neat cement.

With regard to the aggregates, not so much has been published.

Sufficient interest is not usually taken in these inert materials, which, nevertheless, have a powerful influence upon the character of the concrete, so much so, that a good concrete with a poor cement will sometimes give better results than a good cement with a poor aggregate.

A first class aggregate should be made of a hard, tough rock, free from clay or dirt, and having a rough surface and sharp angles when broken, it should be so graded from the finest grains to the largest pieces admissable in the work it is for, as to give whilst retaining the largest proportion of large sized pieces, the smallest proportion of voids.

If the aggregate is all of one material, the desired aggregation can be determined by weighing a given measure. That proportion which, whilst retaining the maximum amount of large pieces weigh the most, is the best.

If on the other hand, the aggregate is composed of different materials, than that proportion which in a given measure and under the same limitations as just given, will permit of the introduction into the filled measure of the least quantity of water, is the best.

In making such tests the larger the measure, the better: a round measure is better than a square box and it should not contain less than two cubic feet. The material also ought to be shaken down into the measure.

For fireproof work, care should also be taken to avoid such aggregates as contain feldspar and where the possibility of the concrete being subjected to a long continued red heat is sufficiently probable as to be worthy of precautions being taken to meet its effects, limestone also should be rejected from the aggregate.

To those who have studied the matter practically, it is evident that in the large majority of cases the prejudice against the use of the dust and finer particles created in crushing brick or stone, is unfounded, and the practice of prohibiting these and substituting therefore, ordinary sand, is strongly to be condemned. Lieut. Innes found that both limestone dust and ground burnt clay gave stronger results than the purest sand, and tests and works carried out under my supervision, thoroughly corroborate this.

The hardest stone does not necessarily make the best aggregate. For instance, finely crushed granite is for some purposes inferior to finely crushed limestone, although as a rule, the granite is the harder of the two. One reason for this is not hard to seek. Owing to the brittle quality of granite, in crushing, it is not only broken into small pieces, but many of these pieces are so bruised or contused that upon a little pressure being exerted upon them, such for instance as can be applied by the finger or thumb, they will crumble. With limestone and many other softer rocks, by reason of their greater toughness and elasticity, this is not the case.

Again, some stones, as quartz and the like, have surfaces of such smoothness that the adhesion of the cement thereto, is not so good as that between cement and other stone such as basaltic lava, sandstones and the like which when fractured, present a rough surface. Such stones as these latter, usually make first class aggregate. Broken stone, as a general thing, is a better aggregate than gravel. Sometimes a mixture of the two is preferable to either alone. Usually the use of one or the other has to be determined by the economic side of the question and the local supply. When from such causes gravel is selected, its quality can be greatly improved, at small cost, by running it through a crusher that will break the larger pieces as they pass.

The common practice of limiting the maximum size pieces so that they will pass through a three inch ring, is I think, open to question. In massive work stones much larger may advantageously be used, not, however, if the late fashionable practice of "dry concrete" be adhered to.

The experiments carried out by Mr. Elliot C. Clarke tend to show that the presence of a small amount of clay in the concrete is no detriment to its strength, even with as much as ten per cent of the aggregates and cement combined.

In corroboration of this I would instance the Niagara gravel, which whilst it contains a marked quantity of clay, yet makes most excellent concrete.

Having determined the aggregate, the next important question is what is the proper proportion of cement to use for any given work?

With first class materials, in round figures and within the limits of proportions between the cement and the aggregates of from one to four, to one to fifteen, the crushing strength of concrete, when skillfully made, at a month old, may be taken as follows: Multiply the *constant* number 700 by the number representing the proportion of cement used, and divide it by the number representing the amount of aggregate used and it will give the crushing strength in tons per square foot; for instance, a concrete composed of one part of cement to fourteen parts of aggregates should when properly seasoned, have a crushing strength of 700x1-14 50 tons; when three months old the strength will have increased some twenty-five per cent and when twelve months old it will have increased some fifty per cent.

Under this rule a concrete composed of one of cement to fourteen of aggregate would be about on a par with good brick work when a month old and be about fifty per cent stronger when twelve months old. This rule reduces the strength of the concrete to much as the proportion of aggregate is increased, but it is reasonably correct, and quite safe to act upon.

SECTION C. IRON.—The tensile strength of concrete is comparatively little, and by reason of the gradual, though slight shrinkage that takes place in all concrete structures that age in dry situations, should not be relied upon in any important work.

For giving tensile strength to concrete, all modern workers of note now use iron in some form or other.

Angular iron bars, cold twisted, commend themself in many ways, and on this continent they have been more largely used than any other form in concrete-iron construction. The advantages of this cold twisting are many; they may be summed up as follows:

1st. The tensile strength of the iron is largely increased, viz: from twenty to fifty per cent; dependent upon quality of iron used.

2d. Its elongation under strain is considerably lessened, a very important advantage in concrete-iron construction.

3d. It forms a *continuous* key with the concrete, both longitudinally also athwart the bar. The effect of the twist is to *grip* the concrete in every direction, and in fireproof flooring and other work where light construction is desired, the importance of this universal key, is very great, for it counteracts the tendency which a bar otherwise would have to split the concrete along the line of the bar.

4th. The cost of twisting is nominal and the royalty for its use not prohibitory.

In placing these bars, care should be exercised in putting them in the position where they will best exert their strength. They should be strait and laid directly in the line of strain. Any deviation from this rule should be such that the tendency to straighten, which invariably occurs upon the application of the strain, will do little or no damage, such a deviation, for instance as laying a bar of a floor beam with a slight sag in the center. In such a case when the strain takes place, the tendency to straighten would have the effect of thrusting the center of the bar upwards against the downward thrust of the load, and it would be harmless. If on the other hand the bar was laid crowning in the center upon the floor being loaded, the tendency of the bar to straighten would be in the same direction as that of the downward thrust of the floor load and the consequences would be detrimental, if not fatal, to the integrity of the structure.

Concrete is an excellent conservator of iron. Von Emperger states that he knows of a case where iron rods were found perfectly rust free after having been imbedded in concrete below the water level for forty years. (T. A. V. C. E. Vol. 31, P. 447.) W. G. Triest, Jr., states that a wrench that had been buried in concrete twenty-two years had kept its black metallic surface. (T. A. V. C. E. Vol 31, P. 467.)

Referring to some concrete foundations that I built about ten years ago, the President of Starr & Co. writes as follows under date of December 30, 1893: "Though this foundation is on tide land and submerged in salt water more than half way up, there is no rusting or deterioration to the iron. We had occasion to cut through one of the arches and found the iron as stated." A long time ago I imbedded a dozen pieces of hoop iron in as many blocks of concrete, leaving one end of each piece of iron projecting from the surface: After years of exposure to sea air, all the exposed iron had rusted away, or so nearly as to leave but a few soft, jagged needles of rust that were readily removed by the hand. In all cases upon cutting into the blocks I found the iron almost as good as new and from one to two inches from the surface it was invariably so.

SECTION D. WATER.—The water for mixing should be clear, and by preference soft. If it cannot be obtained of ordinary purity, then due allowance should be made for the impurities by an additional quantity of cement.

Sufficient water should be used to bring the mass when thoroughly mixed into a stiff, sticky, tenacious, visceous condition. An error as to the amount of water that should be used in concrete some years ago crept into the professional practice, both of engineers and architects and with suprising rapidity permeated and revolutionized it. I allude to the erroneous theory that only sufficient water should be used to slightly moisten the mass, and hardly enough to render it cohesive in its uncompacted state.

An error seldom takes the hold this did upon a skilled body of men without some apparent justification. The only justification that I have been able to find after considerable research is the fact, that in making briquettes for testing purposes, the use of a minimum quantity of water gives the best results. From this one little isolated fact the generalization was made, that to produce the best results concrete should be mixed in like manner. The fatal flaw in this deduction lies here, viz: that a mixture of cement or of cement and sand, with water, differs radically in conditions when to either of these gravel is added, and differs yet more if broken stone is used.

If cement, or cement and sand is mixed with a large proportion of water, it cannot be compacted by blows or such pressure as can usually be brought to bear, for the mixture would flow from under the tamper. In the latter case, however, where gravel or broken stone are used, with a larger proportion of water, the concrete can be compacted more intimately and closely than with the minimum quantity and under all ordinary conditions, makes a much better concrete. The only exception to this is where smooth, rounded pebbles only, are used with the mortar of the concrete, but this exception does not apply to ordinary gravel, and never applies where broken rock is an ingredient. I allude to this at some length, because the error, although on the wane, is still wide spread.

THIRD, TOOLS.—There is great advantage and economy in mill mixing. Mills can now be obtained at a reasonable figure and should always be used on large works. By their use the cement is more fully utilized, the cost of labor lessened and their work is more uniform and satisfactory in character.

An objection is often made to mill-mixed concrete, viz: that the concrete is injured by over mixing. What is "over mixing?" A very rare *distemper* this. I have never once met with it although I have been actively engaged in concrete construction for thirty-five years. It is never epidemic or fatal, but like vaccination, if present, it would prevent worse and more fatal ailments.

Mr. Spencer Newberry found that a mixture of one of cement to three of sand which when worked for one minute with a trowel developed a tensile strength of sixty-seven pounds in seven days; developed a strength of 240 lbs. in the same period after being worked with a trowel for five minutes, a remarkable result, surely and well worthy of consideration.

Contrary to the almost universal opinion, Portland Cement is improved by a delay between mixing and placing. I have experimented with several brands of Portland Cement and find that they were invariably improved in tensile strength by a delay of from one to four hours between mixing and placing.

In placing concrete it is preferable to have it of one uniform consistency throughout the mass. In cases, however, where it is required that the face of the work should be of a finer grade both grades should be carried on simultaneously, the face grade being placed up against the sheeting or mold a little in advance of the backing by means of a trowel or other convenient tool. In more careful work thin strips of iron about six inches wide and of any lengths convenient, may be set up on edge in the concrete parallel to and at any desirable distance from the face of the mold. The face concrete should then be inserted between the mold face and the iron whilst the backing is placed at the other side thereof. As each layer is put in, the iron is drawn up a few inches, so that when the concrete is tamped, the effect of the tamping is conveyed below the lower edge of the iron, and causes the two grades of concrete to become thoroughly united and monelithic.

The material should in ordinary cases, be placed in thin layers, seldom greatly exceeding in depth the length of the largest aggregates used, and these layers should follow one another sufficiently quickly so that one layer does not become stiff or partially set before the next is upon it.

Flat tampers should not be used for massive work except in the first and last layers of the days work; thin or edged tampers should be employed. Wherever practicable the concrete should be compacted by rolling, in preference to tamping. It is cheaper and much more effective. I am not aware of its being done outside of my own practice, but it is certainly deserving of almost universal use. On large work, steam rollers would be excellent.

It may be accepted as an axiom that concrete cannot be too thoroughly compacted, provided the action is not violent enough to bruise or crush the aggregate.

In massive or deep work, as it proceeds through the day, often the working surface becomes richer in mortar, when, and as often as this occurs, the mixture should be changed by adding thereto more of the larger aggregates free from fine dust, sand or gravel, until this fault is remedied. If on the contrary at any time the surface becomes open for lack of mortar, it should be immediately remedied by putting into the next mixture a lesser quantity of the larger aggregates and not substituting anything in their place.

In a similar way the amount of water used in the mixings should be regulated, changing to more or less as the working surface appears too stiff or too watery. It should be firm under the tamper or roller and yet the mortar should be viscous and unctous to the touch.

The quantity required to produce the condition varies greatly, dependent upon the character of the aggregates whether but slightly or very porous and upon the age and character of the cement and weather.

Great care should be observed in joining the work of one day to that of the next. The last layer should be thoroughly compacted and left with a slight excess of mortar. It should be finished with a level surface which at proper time, as soon as sufficiently stiff, should be patted or stippled with a steel float so as to produce a surface studded thickly with little conical knobs. This surface should be kept wet throughout the night and in the morning immediately before the application of the first layer of fresh concrete, it should be covered with a wash consisting of a mixture of equal measures of Portland Cement and air slacked lime mixed with water to the consistency of thick cream. This covering should be put on in excess and brushed thoroughly back and forth upon the surface, so as to insure a close contact therewith, the excess being swept along just ahead of the fresh concrete until all the surface has been covered, when it should be removed.

When in place the concrete should be kept moist for as long a period of time as possible. When one bears in mind that the chemical action which causes the cement to harden can only take place in the presence of moisture, the importance of keeping the work wet is at once apparent.

In all concrete construction excepting subway and other works where the concrete remains permanently moist, provision should be made for the slow but certain shrinkage that takes place in the concrete as it becomes thoroughly dehydrated. The vertical shrinkage will take care of itself as the weight of the building is in harmony with its movement. The horizontal shrinkage, however, is resisted by the inertia of the structure and the friction of its foundation. There are several ways to direct such shrinkage; that which I have found most feasible is to partially divide the wall at certain intervals, preferably over the windows where there are several in line and to insert across the division a weathering strip of copper or lead.

Where the appearance of a straight division line on the face of the building would be objectional, for instance, on a wall blocked off into ashlar face, I build this division straight and caused it to coincide with the line of the V recesses of the ashler, marking in every other course, and I block out in the intermediate courses, recesses opposite to the division line, and subsequently fill these recesses with concrete ashlers made and seasoned beforehand. By adopting the pattern of alternate long and short ashlers in every other course with long ashlers only in the immediate course meeting at the center line of the short ashlers above and below them, there separate concrete ashlers may be made small and the additional cost of their manufacture will be but trifling.

Apart from the questions of appearance some such division of the surface of a concrete wall is advisable for the two-fold reason: some defining line is needed at the juncture of each day's work at least, and by dividing up the surface by deep recesses into small sections, surface cracking is largely avoided.

In reference to this shrinkage of concrete, lest I should have unnecessarily alarmed you, I will state that in building, the walls of which were 170 feet long and divided thus it was nearly two years before any apparent shrinkage took place, and now it can hardly be observed by a minute examination of the division joints. No outsider, ever though a careful observer, would be likely to perceive any effects of this slight shrinkage when thus directed.

In situations where it is not possible to make shrinkage joints by a liberal use of twisted iron, shrinkage cracks can often be prevented.

The resistance of Portland Cement concrete to the destroying section of fire.

By a misunderstanding, due to a windy interference (Mr. Stone tells me one of my letters was blown out of his office window) I find I am expected to speak on the protection concrete affords iron in case of fire.

There seems to be not so much data on this subject as one would desire. What little there is, however, seems to be in favor of concrete as a fire resistant.

It is generally understood that the artificial stone made with Portland Cement concrete withstood the Chicago fire well. Some years ago the blacksmith's shop at the Benicia Arsenal, California, was burned out, leaving the outer walls standing. This was a brick building with granite door sills, free stone belt courses, with window caps and cornice of Portland Cement concrete. I examined the ruin carefully. The granite was spoiled badly and broken into several pieces; the freestone was badly broken and injured; the brick work was burnt out in the joints in many places, rendering the walls unsuitable, many of the bricks also being spoiled, whilst the concrete window heads which had probably to bear the brunt of the fire on the outside, were but little injured; the surface had softened a trifle and were badly discolored, but they remained whole and strong.

Concrete bricks made of well burnt clinkers and lime (by

a process which converts the lime into silicate of lime and thereby makes it resemble a Portland Cement in character,) withstanding the action of a hot fire and the subsequent sudden cooling by water better than any burnt brick, either common pressed or fire brick that I could obtain in San Francisco, and I presume the same relative result would be obtained from most of the bricks of the several states.

I have repeatedly made the tests so severe that every burnt brick in the dozen or so tested at a time, broke into two or more pieces, whilst under the same test the concrete bricks, beyond discoloring slightly, showed no change.

The thermic expansion of Portland Cement; Bonnicean is quoted as giving the expansion of Portland Cement at 0,00000143 for 1 celsius and iron is given at 0,00000145 which is practically the same.

Hyatt corroborates this in some careful experiments he made with loaded floors submitted to fire in which the concrete iron construction bore a red heat for several hours and a subsequent sudden cooling without injury.

Throughout Europe I believe hollow tile construction is almost unknown. Concrete floors are commonly used in fire proof buildings. The result of tests undertaken in Germany under Government supervision to ascertain the relative value of the ordinary building material, including brick work, places concrete at the head of the list as the best fire resistant.

If due regard is paid to the aggregate used, I think it will be found that Portland Cement concrete is an excellent fire resistant. ERNEST L. RANSOME.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

A building for the Native Sons of the Golden West. A. C. Lutgens, Architect, San Francisco, Cal.

ALAMEDA County Crematory, Stone & Cahill, T. P. Ross, Associated Architects.

STERILIZED AIR.

DR. C. F. Buckley's system of aerating water by Sterilized Air—which we illustrated in our February number—has since made rapid progress in the opinions of the medical profession and those interested in health matters and a company has now been incorporated to carry the invention into execution—with such directors as Dr. Luke Robinson, Dr. W. F. McNutt, Dr. Herzstein, Timothy Hopkins, William Greer Harrison and Attorney F. Alleyne Orr.

It is proposed to apply the invention to the water supply of dwellings and public buildings.

The water as taken from the cisterns supplied with this apparatus when subjected to microscopical tests by bacteriologists was found to be absolutely barren of organic life—a condition which the physicians regard as a scientific triumph. This stands to reason, as all the air supply to the water tanks has first to pass through a sterilizing liquid, such as chloride of iron or formaline—which it of the bacilli which convey disease to many thousands in cities—and passing through the drinking water effectually removes from it the deadly microbes. This liquid will remain good for several months so that the cost of maintenance will be very slight while the benefit to the general health of the community will be incalculable.

THEATER FIRE CATASTROPHES AND THEIR PREVENTION.

BY WM. PAUL GERHARD, C. E.

PREVENTION of fire and incidental panic in halls of audience requires that in the planning, construction, interior arrangement and equipment of such buildings certain rules are followed and certain precautions are observed by the architects and engineers of such structures. Of the greatest importance in respect to the enactment of strict building laws are all buildings where a multitude of people are congregated, by day or at night, for worship, education or amusement, such as churches and synagogues, schools and colleges, concert and lecture halls, circuses and theaters. I shall restrict my remarks to theaters, although much of what I shall say applies equally to the other classes of buildings named.

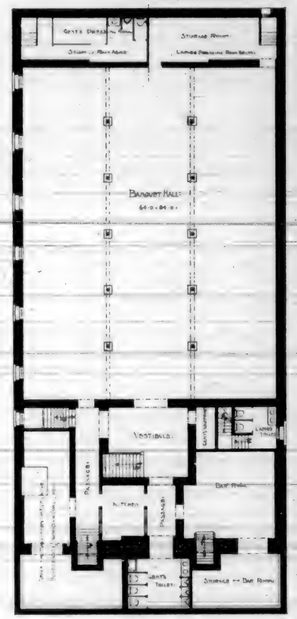
The prevention of theater fire calamities is a subject in which not only firemen but the general public are, or ought to be, much interested.

In the planning and construction of theater buildings, even more than in other buildings, the combined skill, knowledge and talent of both the architect and the engineer are necessary to create a model and safe structure. While the architect works out the best plan on the available site, determines the arrangement of the divisions of the building, decides the mode of construction, designs the elevation, and selects the decorative treatment of the interior, he is assisted by the engineer or by specialists in the various engineering branches in the solution of intricate problems requiring special expert knowledge, such as the construction of difficult foundations, the calculation and the working out of details of all iron constructions, the design of the mechanical or power plant, comprising steam boilers, engines, dynamos, hoisting and general stage machinery, the heating and ventilation of the building, the gas lighting and the electric lighting system, the plumbing, drainage and water supply, the arrangement of the toilet rooms, the general sanitation, and finally the fire protection of the theatre.

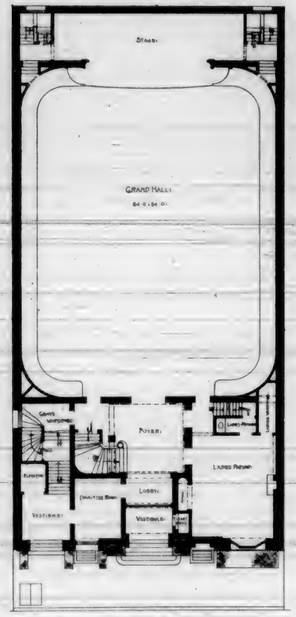
THEATRE FIRE STATISTICS.

To begin with, I shall give a few statistics regarding theater fires and their causes. Here we at once encounter much difficulty in gathering and presenting accurate and reliable figures and facts.

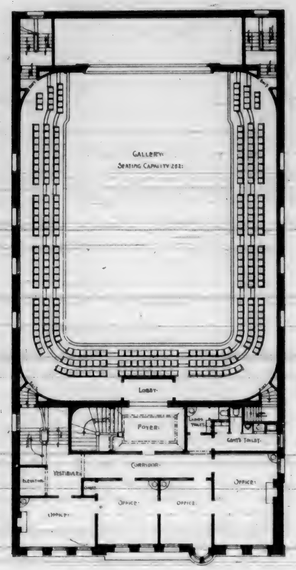
There are numerous cases in which a fire breaking out in a theatre, on the stage, in the auditorium or elsewhere, is at once extinguished by the stage hands or by the firemen on duty in the building. Many cases of this kind never become known to the public or to the press, and no accurate record is kept of them. In other instances, again, blind fire alarms



Basement.



First Floor.



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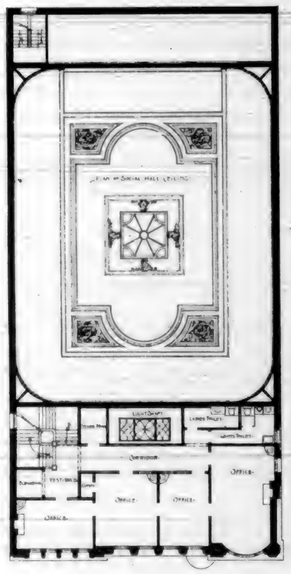
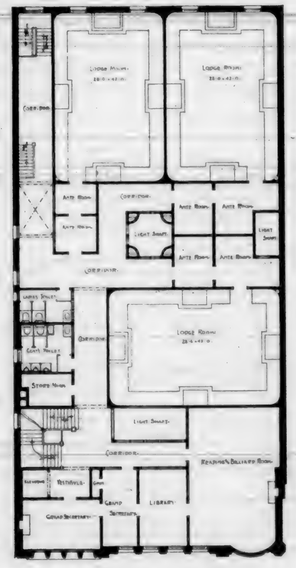


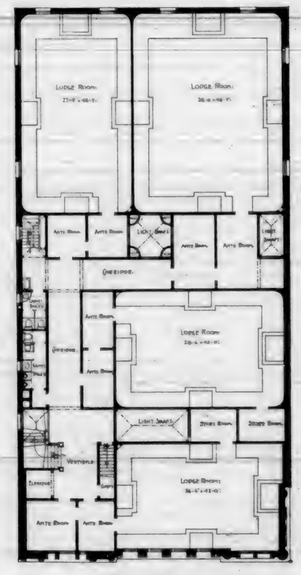
Third Floor.



Fourth Floor.

N·S·G·W·Building.

San Francisco·Cala·



Fifth Floor.

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Alameda Co Crematory

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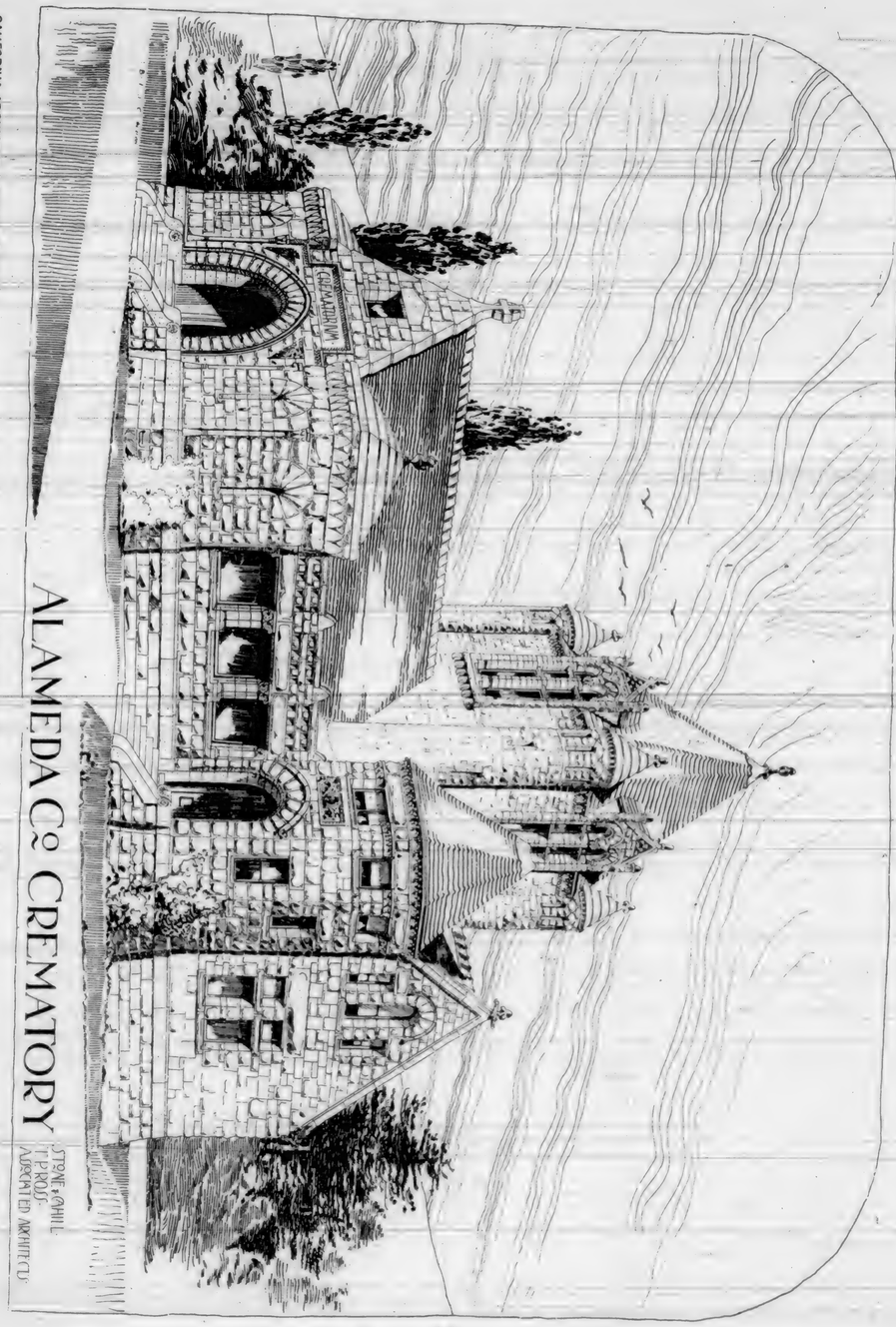

N. S. G. W. BUILDING.
SAN FRANCISCO
CAL.
A. C. LUTGENS. ARCHITECT
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are followed by á panic and often by loss of life. When a fire in a theatre breaks out during the night and destroys the building, the cause of the same often forever afterwards remains a mystery. Distinction must be made between occasional outbreaks of fire which are subdued before they can spread and such fires which completely destroy the building. Those fires which break out during a performance, when the building is crowded with people, are naturally the ones of greatest interest to us. If accompanied, as they unfortunately often are, with loss of life, the number of persons killed and wounded is difficult to ascertain with absolute accuracy, as many perish in the building who are not missed by friends or relatives. The tendency in these cases is usually for the press to exaggerate the number of victims, whereas, on the other hand, the theater officials or the municipality often try to keep the figures below the actual number. The curious mistake is sometimes made of counting both the dead and the wounded in the same figure of victims, obtaining thereby largely increased and incorrect figures. * * * *

Out of a total of 252 theatres, 70, or more than one-fourth of them, are destroyed before they reach an age of five years.

Theatres, therefore, as a rule, do not attain an old age, and Herr Foelsch figures the average age of these 252 theatres as 22 3-4 years. For the United States, the average life of a theatre is said to be only from 11 to 13 years, but it should be remarked that these figures were reached some years ago, before the more strict theatre laws of some of our large cities (New York and Boston, and quite recently Brooklyn and Philadelphia) were enacted.

Recent analytical studies of the question have elicited the fact that there are two periods in the life of theatre buildings when they are most endangered or subject to destruction by fire, namely, one from the time of the construction up to and including the first five years; and, the second period, after the theatre has been opened from 40 to 50 years. This may be explained first, by the fact that in a new theatre the safety appliances, the arrangements for lighting, the scene hoisting devices, the fire protection appliances, are rarely in perfect working order, and the theatre employes have not, as yet, become accustomed to handling them, and are likewise unfamiliar with the rules of management.

The second period of renewed danger is explained by the fact that, after the number of years quoted above, much of the apparatus in a theatre has become worn out or useless, and is not always kept in repair or replaced by new apparatus, and it may also be attributed to the fact that after the lapse of many years, the theatre management and inspection are apt to be less strict, and that often interior alterations are made which unfavorably affects the safety of the building.

From the middle of the last century to our present day, nineteen theatres on the average have been destroyed annually by fire. * * * *

The hour of the day in which theatre fires started is of considerable interest. Out of 289 fires, 56 theaters burned during the day between the 7 A. M. and the afternoon, or 19·4 per cent; 15 theatres burned one hour before beginning of performance, or 5·2 per cent; 36 theatres burned during performance, or 12·4 per cent; 69 theatres burned within two hours after close of performance, 23·9 per cent; 113 theatres burned during the night and before 7 A. M. next morning, or 39·1 per cent.

Later on, when the records of 373 theatre fires were available, Herr Foelsch found this percentage to remain nearly the same, viz.: 19·9, 5·6, 11·6, 22·6, and 40·3 per cent respectively. It will be seen from these figures that the greatest danger from fire to a theatre is during the two hours following a performance, and not during the performance, as would naturally be supposed. The reason for this is partly that, during the performance, a greater watchfulness exists as regards open lights, the sources of heat, and the other usual causes of fire, and partly because many fires, while actually started during a performance, for instance, by carelessness in the use of fireworks or by the use of fire-arms, do not break out at once, but smoulder for a while in the inflammable scenery and woodwork of the stage, and break out during the hours following the performance. The risk from fire immediately before the performance and while the audience is admitted is found to be three times as great as during other hours of the day, which is explained by the fact that at this time the gas flames are lit which illuminate the scenery.

Theatres are, therefore, safest in the day time, the danger is increased threefold during preparations before the performance, because of lighting up, etc., it is reduced during the performance on account of the careful inspection and greater watchfulness on the stage, but is still twice as large as during the day. The danger reaches a maximum (seven times the day risk) during the two hours after the close of the performance, and it remains during the night nearly three and a half times as great as during the day. (Sparks from fireworks or pistol wads may remain glowing for hours after the performance.)

The theatre fires which break out during the performance are often accompanied with loss of life of both spectators and actors, are therefore of particular, though sad interest to us. The life of firemen is often greatly endangered at theatre fires at all hours, and the list of instances where firemen have been killed while engaged in their duty in trying to save burning theatres is quite large.

Herr Foelsch describes in detail thirty-six theatre fires between 1770 and 1877, which began during the performance, and out of this number not less than six were accompanied by appalling loss of life. From 1877 to 1889 six other deplorable theatre calamities have occured. In the twelve years from 1876 to 1888, not less than 1600 people have been killed in the six well known theatre disasters of Brooklyn, Nice, Vienna, Paris, Exeter, and Oporto, nearly all of the victims being dead within ten minutes from the time when the flames and the smoke from the stage reached the auditorium and the galleries.

Dr. Choquet, in his statistics, enumerate a total of 732 theatres destroyed by fire from 1751 to 1885, with a total number of victims, i. e., both killed and wounded, of 6573. This list includes fires where firemen lost their lives in the performance of their duty. Since the beginning of this century 536 theatre fires occured, and from 4500 to 5000 persons had been killed or wounded. * *

CAUSES OF THEATER FIRES.

Before discussing the precautions necessary for prevention, let us inquire briefly into the chief causes of theatre fires and calamities. This study of the causes leading to fires and panics is of the utmost importance, because it enables us to derive therefrom the best practical lessons as to what to do, and what to avoid, to prevent the occurrence of a disaster.

Dr. Choquet, in discussing the causes of theatre fires, divides them into two principal groups, viz.: (1) The intentional causes, or incendiarism; and (2) the accidental

causes. Leaving incendiarism, from malice or other reason, out of consideration, we can distinguish further between:

1. Exterior causes, such as lightning, exposure, dangerous trades carried on in the vicinity of a theatre, bombardment of the city, or riots.

2. Interior causes, viz.: a, on the stage; b, in the auditorium; c, in other parts of the house.

3. Mixed causes, such ss fires originating in living apartments or in stores, or offices, or restaurants, under the same roof with the theatre proper.

Placed in the order of their frequency, we find theatre fires to have their origin:

1. On the stage.

2. In the actors' dressing rooms, in the engine and boiler room, in the cellar, and in the administrative offices.

3. In stores, offices, living apartments, or restaurant kitchens in the theatre.

4. In the auditorium.

5. In outside causes; such as exposure to neighboring

COTTAGE AT MILL VALLEY.

buildings on fire.

In not a few cases the exact cause of a theatre fire remains forever unknown. This is due largely to the rapidity with which the flames spread among the vast mass of combustible material, and to the haste and confusion incident to the fire, particularly when this breaks out during the night time. The best information about causes of theatre fires is derived from those fires which break out during a performance, and which, for obvious reasons, are the most dangerous and often lead to deplorable calamities.

The majority of fires during performances break out on the stage, and are due to open and unprotected or to deficiently protected lights in too close proximity to or amid a mass of unprotected and highly inflammable scenery, draperies, gauze, ropes, and woodwork. Among the numerous other causes I mention the careless lighting of gas lights on the stage, by alcohol lamps on long poles, and sometimes defects in the electric spark or flashlight apparatus, causing escapes of gas or gas explosions; carelessness in the use of lamps on the stage or in the dressing rooms, or exposure of lamps to sudden draughts, careless handling of candle lights in in dressing rooms; alcohol lamps used by actresses for heating hair curling irons in the dressing rooms; the dropping of sparks from the lighting torches on the stage, or on decora-

tions or papers; temporary gas conduits needed on the stage, generally consisting of rubber tubing, becoming leaky, or not being well jointed together, or becoming otherwise damaged and defective; the use of portable open gas burners near movable scenery; the use of defective gas burners and gas fittings, exposed gas pipes damaged by the shifting or carrying about of heavy pieces of scenery or furniture; main gas pipes becoming leaky, and causing escapes of gas; gas explosions in the gas meter vault, or elsewhere; swinging gas brackets setting woodwork or scenery or curtains on fire. Lights other than gas lights are often worse; the upsetting of coal oil or kerosene lamps, and the explosion of such lamps, are fruitful causes of fire.

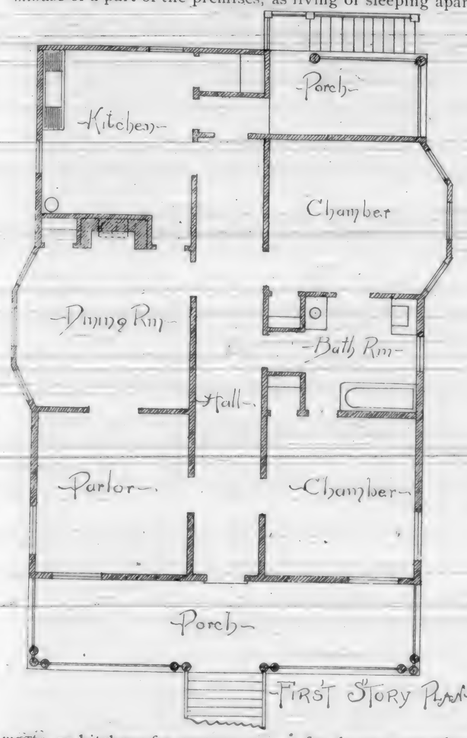
The electric light, finally, although the safest comparatively of all lights, may cause fire by reason of electric light wires not being properly insulated, or being faultily installed.

The careless use of matches, other than safety matches, throwing away of lighted matches, and rats or mice grawing phosphorus matches, in hidden recesses, are among the causes of fires.

The smoking of tobacco, cigars, cigarettes as well as pipes, and the careless throwing away of lighted cigars or cigarettes, in dressing rooms or on the stage, or in the sub-basement; the careless use of the oxy-hydrogen or lime lights; the use of fireworks in spectacular plays calculated to attract the public; the use of red fires, torches, Roman candles, the firing of rockets, are dangerous causes of fire, because a spark often lodges amid scenery and the flames break out during the night following the performance. Sometimes fireworks are prepared for the play in the theatre building, which is a pernicious practice. The representation of fire or conflagrations or actual explosions in the course of the play, the firing of firearms, pistols or guns, with paper wads; the careless handling and use of benzine or turpentine in workshops and costume rooms. The heating apparatus, particularly stoves and furnaces when overheated during extreme cold weather, defective flues, timber near woodwork; floors registers and heat flues; hot ashes; the use of straw or hay on the stage; the careless use of soldering furnaces on tin theatre roofs; gauze dresses of ballet dancers catching fire and in turn setting decorations on fire, non-removal of rubbish and trade refuse; and accumulation of large masses of combustible material, woodwork, canvas, gauze, pasteboard, hemp ropes,

paper with varnish, so-called properties, etc., on the stage; the use of rooms in the theatre, in the basement or in the loft over the auditorium, or even of the stage, as paint or carpenter's shop; the spontaneous combustions of heaps of waste material, of oily rags used for cleaning lamps, or in engine or dynamo room; the action of rays of the sun concentrated by window glass or lenses; carelessness in the necessary quick moving or shifting of inflammable scenery near the innumerable gas lights; the drying up of woodwork on the stage by the heat due to the numerous lights.

As indirect causes of fire, I may lastly mention: An undesirable site, the danger from contiguous or adjacent houses and property, the bad arrangement of the plan, the use of bad materials in construction, defective general system of construction without division into separate fire risks; the misuse of a part of the premises, as living or sleeping apart-



ments, as kitchens for restaurants, or for dangerous trades, or stores; the want of proper fire appliances and of a fire watch; the absence of fire alarm telegraphs, or delays in sending the alarm; frequent changes of watchmen, fire watch and stage hands, and the fact that even men occupying responsible positions grow careless after long time.

The danger of fire in a theatre is also, to some extent, dependent upon the character of the play, whether the plain comedy or drama, or the more elaborate opera, ballet or spectacular play; the arrangement and size of the stage, the method of lighting used, incandescent electric lights being without doubt the safest to use, and the age of the building, the first five years being as found by experience, among the most dangerous.

CAUSES OF PANICS.

Panics may occur in any place of assembly where large crowds of people are congregated, even when there is no outbreak of fire, and sometimes very trifling causes may create terrible panics. It is, in many respects, much more difficult to prevent a panic in a theatre than a fire; and, what is worse, panics may become quite as dangerous in fireproof buildings as in those of a combustible nature.

The immediate causes of a panic may be: A sudden outbreak of fire; a false cry of "fire," the false alarm being given either by some excited or frightened, foolish person in the audience, or sometimes intentionally, as, for instance, by pickpockets; a sudden commotion on the stage or in the audience the sudden appearance of smoke on the stage from burnt fireworks or otherwise; the unannounced darkening of the house; a sudden extra pressure of gas at the footlights, causing the flames to flare up unduly; the sudden extinguishment of the electric light; a fire alarm in the neighborhood, or even only the rattling noise of passing fire engines; the reflection of a fire in the neighborhood of the theatre; a thunder storm or stroke of lightning; persons fainting in the theatre; horses on the stage becoming frightened and shying, or falling into the orchestra pit and others.

Features in the construction and arrangement of a theatre which may indirectly lead to a panic are: too few exits; various exit passages crossing each other; obstructed aisles or corridors; too narrow stairs; winding stairs; doors opening inward; doors opening in dark corridors, and safety exits kept under lock and key.

The best way to prevent panics is to give to the theatregoers a feeling of security by planning a very ample number of wide exits, so as to enable the quick add quiet emptying of the house, by arranging easy stairs, by providing at least two separate stairs for each of the tiers, by arranging a large number of stairs for the visitors in the gallery, by installing the electric light in the theatre, particularly on the stage, and providing also auxiliary lights in the corridors, stairs and exits. Furthermore, by making it known to the theatregoers that safety appliances are provided in abundance, chief among these being large stage ventilators, a fireproof curtain, fire walls dividing the stage and the auditorium, the fireproof treatment of scenery and of woodwork on the stage, also the putting up and keeping in readiness for instant use in an emergency of plenty of fire extinguishing and life saving appliances, including an automatic sprinkler system on the stage, which must be kept in good working order. Finally, by informing the public that a striet fire watch is kept, that the theatre is frequently inspected and by issuing and publishing stringent regulations referring to theatre management.

DANGERS TO HUMAN LIFE.

To further understand correctly the subject of theatre fire catastrophes, let us consider briefly the various ways in which human life is endangered in a theatre fire or panic.

At the outset I will state that it is an error to suppose that the flames are the chief cause of death in theatre fire catastrophes. The lessons of all theatre calamities point to the fact that it is not the fire, but the smoke, the fire gases and the intense heat incident to the fire, and on the other hand, the mad rush in a panic, which kill most people. Indeed, the majority of people, particularly in the upper galleries, are suffocated or trampled to death before the fire reaches them. In many of the theatre conflagrations cited above the bodies of victims were found perfectly intact and either in a sitting position or else fallen upon the floor dead, without the flames ever having reached them.

The lives of people in theatres, whether spectators, actors, musicians, choras singers, ballet girls or stage hands, are, therefore, endangered:

1. By smoke, fire gases, heat, asphyxia, exhaustion.

2. By fire burns.

3. By jams, knocking over, falling down stairs, trampling, crush.

4. By direct shock or fright.

5. By accidents, such as the falling of the central chandelier.

These various causes may result in (a) almost instantaneous death, (b) mortal injuries (c) injuries resulting in permanent bodily disablement; (d) temporary illness and recovery.

The long list of theatres destroyed by fires breaking out during a performance, and the numerous instances of fires breaking out during these hours, but which are put out be-

fore spreading, are proof sufficient that the dangers spoken of are constantly threatening the theatre-going public.

To sum up, chief among the causes to which serious calamities are due are open lights and inflammable scenery: defects in gas lighting and gas piping; defective gas lamps; faulty construction of the building, deficient exits and absence of a fireproof curtain, or where same is provided, curtain not used or out of order, absence of fire extinguishing appliances or lack of water under fire pressure: auxiliary lights in corridors, exits and stairs not provided, absence of smoke ventilator over the stage, accumulation of inflammable scenery, and bad management in the theatre.—*Scientific American.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE REGULAR MONTHLY MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday afternoon, November 9, 1894.

The application of Mr. Ernest A. Coxhead for fellow membership, was received and referred to the Executive Committee to take the usual course.

A communication was received from the Chamber of Commerce, requesting the Chapter to appoint a committee of ten to meet other public organizations to consider the subject of the prompt construction of the Nicaragua Canal. The President appointed the following members to serve on the said committee:—Seth Babson, G. W. Percy, Geo. H. Sanders, Albert Pissis, Willis Polk, H. T. Bestor, B. E. Henriksen, John M. Curtis, Frank Shea, Oliver Everett; and the Chapter instructed them to assure the Chamber of Commerce of its sincere conviction of the necessity of the Canal and its further conviction that the Canal should be built by the Government of the United States of America, and paid for by the issue of bonds, and that it would be against public policy and a proof that the Government had not gained wisdom from experience, should the Government endorse any enterprise controlled by private capital.

A communication was received from the Southern California Chapter of the American Institute of Architects in regard to introducing a bill to the coming legislature, regulating the practice of architecture in this State.

ANNUAL MEETING OF STOCKHOLDERS.

THE Annual Meeting of the Stockholders of the CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY was held on the afternoon of the seventh of November.

The reports of officers showed that the company had about held its own during the past year, in spite of the depressed condition of the building and business interests.

The old board of Directors was re-elected.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

PAROLE EVIDENCE AS TO CONSTRUCTION OF CONTRACT.—In an action on a written contract to "do all the mason work and furnish all the building stone" for a building at a certain price, the estimate to "include all brick work," parole evidence is admissible to show that defendant was to furnish the bricks.

Streppone v. Lennon, Court of Appeals of New York, 37 N. E. Rep. 638.

AGREEMENT TO ARBITRATE FOR CHANGES IN BUILDING CONTRACT.—Where a building contract stipulated that if alterations were ordered, and their value disputed, they should be valued by two competent persons, and these might chose an umpire, whose decisions should be final. The builder could not sue for extras without an attempt to arbitrate. Since the contract provided for alterations which might reduce the contract price, the last installment of said price, which was to be retained by the owner till thirty-five days after the work was completed, to cover liens of damages would be subject to reduction, and could not be recovered until its amount was fixed by the arbitration provided for.

Ball v. Aoud, Supreme Court of Oregon, 37 Pac. Rep. 70.

INSUFFICIENCY OF NOTICE OF CLAIM FOR MECHANIC'S LIEN.—The statute, requires the statement for a mechanic's lien to be essentially true. A notice of lien was insufficient where it stated that the claim was for labor and materials, while only labor was furnished. Where the complaint and claim of lien states that the work is done for an agreed price, and the evidence shows no price was agreed on, there is a fatal variance.

Wagner v. Hanson, Supreme Court of California, 37 Pac. Rep. 195.

WHEN ACTION AGAINST CONTRACTOR WILL NOT LIE.—No action lies against a contractor for failure to comply with a contract which provides that in case of noncompliance the owner may annul such contract, and forfeit the unpaid part of the work.

O'Connor v. Henderson Bridge Company, Court of Appeals of Kentucky, 27 S. W. Rep. 252.

WHEN RIGHT TO ANNUL CONTRACT IS LOST.—The right to annul a contract for non-performance of its terms by the contractors, is lost where the employers are in default, by failure to estimate and pay for work done and materials furnished by the contractors.

O'Connor v. Henderson Bridge Co., Court of Appeals of Kentucky, 27 S. W. Rep. 252.

PROCEEDINGS TO PERFECT MECHANIC'S LIEN.—Under the statutes, providing that original contractors, journeymen, day laborers, or other persons seeking a lien shall file their contracts, but if such journeymen, day laborer, or other person have no written contract, it shall be sufficient to file a verified account of his claim, an original contractor may file a verified account to secure a lien, when he has no written contract.

Whiteselle v. Texas Loan Agency, Court of Civil Appeals of Texas, 27 S. W. Rep. 309.

WHERE A SALE TO FORECLOSE A MECHANIC'S LIEN IS VOID.—The Supreme Court of Illinois holds, that where a sale to foreclose a mechanic's lien is void for want of jurisdiction, judgment creditors cannot obtain any rights by redeeming from such sale. The fact that a judgment creditor has treated such a sale as valid, by attempting to redeem under it, does not estop him from afterwards asserting its validity, since he could not thereby have deceived any one, the want of juridiction being a defect patent to all.

Holcomb v. Boynton, 37 N. E. Rep. 1031.

WHERE A CONTRACTOR AGREES THAT PART OF THE SUM SHALL BE PAID BY THE OWNER.—The appellate Court of Indiana, holds, that where a contractor agrees with his material men that part of the sum due him for building a house shall be paid by the owner to the material men, and the owner assents, and the material men release the contractor from liability, the contractor is not a necessary part to an action by the material men to foreclose a lien on the house.

Leeper v. Myers, 37 N. E. Rep. 1070.

LIABILITY FOR NEGLIGENCE IN EXCAVATION.—Where a building is being construction on a city lot, and the excavation in the sidewalk is not protected as required by ordinance, the owner of lots is liable to persons by falling therein, though the work is being done by an independent contractor.

Spence v. Schultz, Supreme Court of California, 37 Pac. Rep. 220.

BUSINESS MOSAICS.

Portland Cement.—The well-known brands "Josson," and "North" can be had by applying to J. W. Grace & Co., 203 California street, San Francisco. If the increased use of cement continues at the present rate, we may be said to be living in the cement age.

There is a big fat girl clerk in a confectionery store on Madison street. "What do you weigh?" a fresh young printer asked her. "Candy," she sweetly replied.—*Clay Record.*

W. & J. Sloane & Co., 641–647 Market street are the ones to call upon if you want style, price and quality, as this is the headquarters for carpets, furniture and upholstery. If you have any doubts of this fact, call and examine their stock and prices and you will be sure this assertion is right.

Fresh AIR BOY—"Mister, do you have to buy chewing gum for all those cows?"—*Clay Record.*

Dunham, Carrigan & Hayden Co., 17 and 19 Beale street, San Francisco, have an illustration of their American Sliding Door Hanger, (on page ix of this journal) for which they claim unusual advantages; trackless, no wheels to bind, noiseless, while the doors are easily adjusted. What more is wanted in a hanger is hard to tell—architects should investigate the claim and orders would doubtless follow.

Editor's SON—"Papa, what do the letters 'SINNED' spell?" EDITOR—"Well, my boy, transpose 'em and they spell the name of the merchant who refuses to advertise during the dull season."—*Detroit Herald.*

If you send to Edward B. Hindes, 411 Mission street, San Francisco, Cal., he will forward you a catalogue and price list of Hill's Patent Inside Sliding Blinds, Perfection Window Screens, Latest Inproved Venetian Blinds, Patent Self Coiling Burglar and Fire Proof Steel Shutters and Rolling Wood Partitions.

Collector—"Say look here, I'm tired of calling here about this bill." THE EDITOR—"Well, I'm glad to hear it.—*Call.*

Rischmuller's Door Opener and Closer. We have had occasion before now, to recommend this very efficient door opener, but as one cannot have too much of a good thing, we take pleasure in repeating that if you want the best in the market, leave your orders with Geo. Rischmuller, 320 Nineteenth street, San Francisco.

A Colchester paper avers that a hotel in that place has a cook so good looking that she mashes the potatoes by looking at them.

The J. L. Mott Iron Works, New York, Boston, Chicago, St. Louis and San Francisco, are so well and favorably known that any announcement of improvement in their line of goods is sure of attracting attention. We call attention to their advertisement on page v of this journal of the Water Closet Range fully illustrated. It certainly appears a great improvement in a sanitary point of view. Mr. M. S. James, Pacific Coast Representative, room 35 Flood building, San Francisco.

A. Steiger Sons, nothwithstanding the great fire, are still on deck as manufacturers of Architectural Terra Cotta, can be found at San Jose, California, P. O. Box 1025; tele. 5253. Anything including stoneware, flue linings, colored bricks, vases and fire bricks, salt glazed sewer pipe, chimney pipe and tops, drain tile, etc., will be found at their headquarters; in addition, you will be sure of fair treatment, and can depart upon getting what you order at fair prices.

"This," said the batchelor, as he paid for sewing on a button, "is what is meant by a single tax."—*Cleveland Plain Dealer.*

Any thing in the way of gold, silver, nickel and copper plating, as well as copper plating of every description of architectural iron and steel work, is done and done well at the San Francisco Plating Works, 653–655 Mission street, San Francisco. E. G. Denniston, proprietor.

"And so he has succeeded in getting engaged to the heiress?" "Yes, he is now her affianced."—*Washington Starr.*

Pacific American Decorating Company manufacturers of Stained and Art Glass by the hygroscopic process by which landscapes, marine views, photographs of persons, animals, etc., are reproduced; we wonder the amature photographers do not make a rush to this establishment to reproduce the result of their labors in the field.

Wife (returning from the seaside)—"What you have never opened my letters?" HUSBAND—No, but I sent you money every time one came."—*Humoristiche Blaetter.*

The San Francisco Gas Lighting Company.—The Gas stove department of this company have at their show room, 26 Post street, gas cooking and heating stoves, gas ranges and open fires, if you call you can see them in operation—do not fail to do so if you wish to be comfortable these cold evenings. You will find that the cost of gas is not the great objection that is sometimes urged against their use. The company claim that the heat obtained in this manner is cheaper than by coal at eight dollars a ton. One word to the ladies that do their own house work, and are aware "that time is money," try it and you will never do without this great convenience, save the annoyance of dust, ashes and smoke.

McManus—"Good mornin', sor. Can me an' Clinchy go up on yure roof an' see the Orangemin's percission go by?" SLATTERY—"Phy don't yez go t' th' place phere yez buys yure drinks?" MCMANUS—"Sure yure chimney has double th' bricks in it, sor."—*Call.*

Mann's Patent Chimneys are endorsed by the Board of Supervisors and recommended for general use by architects, fire wardens, insurance agents and owners. Schuster Bros., 306 Sutter street, between Grant Ave. and Stockton streets, are the agents, also agents for the Richmond Ranges, Richmond Hot Air Furnaces and Radiators.

CITY BUILDING NEWS.

Baker and Grove. Steam heating plant; owners, Boys and Girls Aid Society; contractors, A. Bannsdiger & Co.; signed, Nov. 1; filed, Nov. 12; cost $2162.

Belvedere near Waller. To build; owner, Frank B. Pritchard; contractor, W. W. Redmall; signed, Oct. 24; filed, Oct. 24; cost $1750.

Buchanan and Birch. Two-story stable; owner, Mrs. T. H. Van Huys; architect, Wright & Sanders; contractors, Liebert & Hoffman; signed, Nov. 7; filed, Nov. 10; cost $30,790.

Buchanan and Birch. Plumbing; owner, Mrs. T. H. Van Huys; architects, Wright & Sanders; contractor, W. F. Wilson, signed, Nov. 7; filed, Nov. 10; cost $2298.

California and Larkin. Plumbing; owner, Henry Kahn; architect, J. M. Lyon; contractors, Ickelheimer & Bro.; signed, Nov. 2; filed, Nov. 8; cost $2650.

California and Larkin. Alterations; owner, Henry Kahn; architect, J. M. Lyon; contractors, Morrison & Cook; signed, Nov. 1; filed, Nov. 8; cost $7000.

California and Jones. All work to complete a nine-story brick and stone house; owner, W. H. Eastland; architects, Bugbee & Gash; contractor, L. N. Fletcher; signed, Oct. 27; filed, Oct. 29; cost $200,000.

California and Jones. Carpenter work; owner, W Eastland; architects, Bugbee & Gash; contractor, C. Chisholm; signed, Sept. 25; filed, Oct. 31; cost $5665.

California and Jones. Exterior stone carving; owner, W. H. Eastland; architects, Bugbee & Gash; contractor, Ludwig Ochiman; signed, Oct. 16; filed, Oct. 30; cost $2000.

California and Jones. Excavations, concrete, etc.; owner, W. H. Eastland; architects, Bugbee & Gash; contractors, Fletcher & Jordan; sub-contractor, S. Giletti; signed, Oct. 27; filed, Oct. 30; cost $31,260.

California and Jones. Grading; owner, W. H. Eastland; architects, Bugbee & Gash; contractor, Secondo Giletti; sub-contractor, John Tuttle; signed, Oct. 31; filed, Nov. 1; cost $1425.

Clement and 2d Ave. To build; owner, P. Filippini; architect, A. W. Smith; contractor, A. W. Goss; signed, Oct. 10; filed, Oct. 19; cost $5660.

Clement and 7th Ave. One-story frame; owner, E. D. Allen; contractor, B. I. Taylor; signed, Nov. 9; filed, Nov. 10; cost $800.

Clay near Laguna. Alterations and reconstruction; owner, Annie L. Wallace; architect, S. Newsom; contractor, W. H. Wickersham; signed, Nov. 2; filed, Nov. 9; cost $2689.

Eddy near Steiner. Alterations; owner, Mrs. Mary Birchell; architect, C. M. Rousseau; contractors, Miran & Gardener; signed, Nov. 1; filed, Nov. 7; cost $2300.

Eighth Ave. near Clement. To build; owner, John R. Billington; architect, H. J. Kraetzer; contractor, A. L. Jacobson; signed, Oct. 30; filed, Oct. 31; cost $1475.

Ellis near Mason. Electric Light Wiring; owner, Maurice Cassey; architect, H. A. Schultz; contractors, Edison Light Company; signed, Oct. 27; filed, Nov. 1; cost $1502.25.

Florida and 24th. To build and addition; owner, Mrs Katherine Warz; architects, Martens & Coffey; contractor, John Foster; signed, Oct. 18; filed, Oct. 18; cost $2250.

Frederick near Cole. To build; owner, Robert Wannemacher; architect, Emil John; contractors, Schutt & Kreeker; signed, Oct. 19; filed, Oct. 23; cost $1860.

Fulton near Lyon. To build; owner, Henry Eggeling; architect, C. Zwierlein; contractor, Casper Zwierlein; signed, Nov. 5; filed, Nov. 7; cost $6400.

Fourth near Stevenson. To build brick building; owner, Chas. W. Stein; contractors, Liebert & Hoffman; signed, Nov. 5; filed, Nov. 7; cost $4900.

Glover near Jones. Alterations; owner, M. Piche; contractor, Jean Solanave; signed, Nov. 5; filed, Nov. 8; cost $1225.

Hartford near 18th. Cottage; owner, Geo. Pollock; architects, Occidental Building Association; contractor, Chas. Delmas; signed, Oct. 20; filed, Oct. 20; cost $1200.

Howard near Beale. Two-story brick; owner, W. F. Whittier; architects, Percy & Hamilton; contractors, Riley & Loane; signed, Oct. 30; filed, Oct. 30; cost $5865.

Heyman Ave. near California Ave. Cottage; owner, P. Broderick; contractor, John Gillegley; signed, Oct. 31; filed, Oct. 31; cost $1280.

Jackson near Scott. Plastering; owner, Augusta K. Gibbs; architect, W. W. Polk; contractor, J. R. Tobin; signed, Oct. 19; filed, Oct. 22; cost $1650.

Jackson near Central Ave. Frame residence; owner, W. J. D. Duisenberg; architect, E. G. Duisenberg; contractor, F. G. Kromnick; signed, Oct. 22; filed, Oct. 24; cost $3870.

Jackson and Laguna. Brick store and dwelling; owner, W. F. Whittier; architect, E. R. Swain; contractor, O. E. Brady; signed, Oct. 12; filed, Oct. 13; cost $45,000;

Jackson and Laguna. Carpenter work, etc.; owner, W. F. Whittier; architect E. C. Swain; contractor, C. Chisholm.

Jackson near Broderick. To build; owner, Fannie Hyman; architect, W. H. Lillie; contractor, P. T. Pottinger; signed, Oct. 30; filed, Nov. 1; cost $3513.

Liberty near Dolores. Cottage; owner, T. Griffith; architect, D. Stanley; contractor, H. Foote; cost $3500.

Market bet. 5th and 6th. Marble wainscoting, etc.; owner, Miss Emma Spreckles; architects, Reid Bros.; contractors, Ruffino & Bianchi; signed, Oct. 20; filed, Nov. 7; cost $21,349.25.

Market bet. 5th and 6th. Asphalt roofing work; owner, Miss Emma Spreckles; architects, Reid Bros.; contractor, R. Flaherty; signed, Oct. 17; filed, Nov. 7; cost $1233.

Market bet. 5th and 6th. Electric and telephone wiring; owner, Miss Emma Spreckles; architects, Reed Bros.; contractor, California Electric Works; signed, Oct. 6; filed, Nov. 7; cost $2849.

Mission near 29. To build; owner, W. J. Rustemeyer; architect, H. Geilfuss; contractor, H. Behrens; signed, Nov. 5; filed, Nov. 7; cost $3000.

Morton bet. Grant Ave. and Stockton. Brick to build; owner, Mrs. Rosalie Fawre; architect, C. M. Rousseau; contractor, A. W. Lawson; signed, Oct. 17; filed, Oct. 19; cost $2775.

McAllister and Devisadero. To build; owner, Theodore Dierks; architect, C. M. Rousseau; contractors, Dean & Worden; signed, Oct. 20; filed, Oct. 23; cost $3980.

Oak and Stiner. To build; owner, Carleta A. Logan; architect, W. H. Lillie; contractor, Moore & Cameron; signed, Oct. 19; filed, Oct. 22; cost $3272.

O'Farrell near Stockton. Elevator work; owners, Gutzeit & Malfanti; architect, Pissis & Moore; contractor, A. J. McNeull; signed, Oct. 10; filed, Oct. 20; cost $5150.

O'Farrell near Steiner. Two flats; owner, Mrs. W. M. Rodrigue; architect, J. H. Littlefield; contractors, Morrison & Cook; signed, Oct. 23; filed, Oct. 26; cost $2938.

Pierce near Fulton. To build; owner, Wm. McCormick; architect, A. J. Barnett; contractors, Ogle & Smith; signed, Oct. 22; filed, Oct. 23; cost $6700.

Polk near California. To build; owner, M. B. Bradbury; architect, Fred Woods; contractor, R. O. Chandler; cost $5500.

Post near Stockton. Alterations and additions; owner, A. Aronson; architect, C. R. Wilson; contractor, T. Sullivan; signed, Oct. 16; filed, Oct. 18; cost $1963.

Post near Devisadero. To build; owner, Thos. Lacoste; architect, J. Godart; contractor, L. Cuneo; signed, Oct. 23; filed, Oct. 24; cost $2700.

Post near Larkin. To build; owner, Charlotte Drew; architect, Samuel Drew; contractor, J. J. Manseau; signed, Oct. 27; filed, Oct. 27; cost $ 0.0.

Second Ave. near Point Lobos. Alterations; owner, City of San Francisco; contractor, J. K. Delmas; cost $1838.

Taylor and Valparaiso. Alterations and additions; owner, William E. Wassell; contractor, H. T. Greib; signed, Oct. 19; filed, Oct. 20; cost $1900.

Twenty-fourth near Vicksburg. Alterations and attitions; owner, J. M. Swales; contractor, J. H. Rothgerber; signed, Oct. 18; filed, Oct. 18; cost $1208.

Twenty-third near Guerrero. Three two-story buildings; owner, E. Pognter; architects, Townsend & Wyneken; contractor, W. Lidden; signed, Oct. 25; filed, Oct. 27; cost $10,575.

Turk and Scott. To build; owner, R. F. Morgan; architects, Shea & Shea; contractor, P. Carmouche; signed, Nov. 9; filed, Nov. 10; cost $1552.

Vallejo and Gough. To build; owner, William H. Wharff; architect, Wm. H. Wharff; contractor, F. W. Maurice; signed, Oct. 20; filed, Oct. 20; cost $3160.

Vallejo near Laguna. Double two-story frame; owner, Chas. E. Lipp; architect, Oliver Everett; contractors, Dean & Worden; signed, Oct. 24; filed, Oct. 24; cost $9000.

Van Ness near Union. To build; owner, Virginia Barcle; architects, Townsend & Wyneken; contractor, L. Cuneo; signed, Oct. 29; filed, Oct. 31; cost $3295.

Van Ness Ave. and Vallejo. Additions and alterations; owners, H. & H. E. Law; architect, J. B. Mathiesen; contractor, C. M. Depew; signed, Nov. 8; filed, Nov. 10; cost $5800.

Valencia near Liberty. Plumbing; owner, J. B. F. Davis; architect, J. C. Newsom; contractors, Marian & Gordan; signed, Sept. 26; filed, Nov. 2; cost $974.

Waller near Webster. To build; owner, John M. Nolan; architect, A. J. Barnett; contractors, Stevens & Vodden; signed, Oct. 24; filed, Oct. 25; cost $3078.

Washington near Scott. To build; owner, S. J. Schuyler; architect, F. W. Wood; contractor, D. Currie; signed, Nov. 9; filed, Nov. 10; cost $4198.

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SOME years ago the Legislature of this State passed a mechanics' lien law for the protection of laborers, material men and sub-contractors. The main feature was a very laudable one. It provided that all contracts over one thousand dollars should be matters of public record, to give all parties furnishing labor and materials the opportunity of judging whether or not the contractor was to receive a sufficient compensation for the work to be done, so that they could decide in an intelligent manner whether it would be safe or not to furnish labor and materials to the contractor. The penalty for non-compliance on the part of the owner being to render the latter responsible for all bills not settled by the contractor.

This worked very satisfactorily at first, but after awhile some creditors of a contractor who had failed to pay dollar for dollar in settling up on some building, raised the technicality that the articles of agreement only had been filed in the recorder's office, and as the architect's plans and specifications had been made a part of the contract, and had not been filed therewith, the contract was therefor totally void. The courts held the point well taken, and decided also that the plans and specifications should be filed to make the record complete, and give the interested parties all the information the law intended.

As a matter of fact, it is universally conceded that in actual practice this information is obtained by the interested parties, from the contractor or architect direct, and not one time in ten thousand is it obtained from the records, consequently as a matter of fact the filing of the plans and specifications at the City Hall is a useless formality, and being a very expensive and troublesome one, the legislature passed an amendment to the law, making it optional to file either the contract, or a memorandum thereof stating the five main points of the contract, one of them being "a statement of the general character of the work to be done."

The Supreme Court has recently decided that a memorandum, to comply with this clause, must contain plans and specifications; in other words that a "statement of the general character of the work to be done" must contain a detailed description of every one of the thousand and one minutiæ that enter into a full description of a building. To a non-judicial mind, this appears to be a rather absurd proposition. Suppose an owner is favorably impressed with a building put up by a carpenter by days work, without either plans or specifications, and that he contracts to have a

similar house built for himself by the same carpenter. Will the learned Judges maintain that the first building would have to be filed with the Recorder to make the contract valid? and would it be illegal to take the natural course of examining the building to find out what was to be done under the contract?

This last decision by the Supreme Court renders the amendment to the lien law concerning a memorandum of no more force and effect than if it had never been passed, and the plain intention of the amendment has been purposely ignored or misunderstood.

We incline to the latter opinion as the more probable. Are the learned Judges aware that it is customary for an architect, during the construction of a building, to give personal directions as to the method of executing the work, and to frequently illustrate his meaning, by drawings, or details, as they are called, which are made as required by the progress of the work? Now as these personal directions and detail drawings are mentioned in the contract and are consequently a part thereof, it logically follows, according to the learned judges decisions, that they should also be filed with the County Recorder, to make the contract legal; not only filed with the County Recorder, but filed *before the work is begun*, to comply with the requirements of the law.

WOMEN AS ARCHITECTS.

THERE are two very interesting girls in New York, says the *Examiner*, Miss Alice Hands and Miss Mary Gannon, whose plans have been accepted for the Florence Sanitarium in San Francisco.

The projectors of the hospital are Dr. Florence Saltonstall and Dr. James W. Hall. It will be a private institution, conducted under the care of its founders. The site chosen for it is at the corner of Laguna street and Broadway, on an eminence overlooking the Golden Gate.

The building will be of wood and the style of architecture will be colonial. It will be three stories in height with a basement and the cost of the building is estimated at about $25,000. It will have accomodations for at least forty patients. There are to be two wards with fifteen beds each and ten private rooms. The operating room, with sterilizing and etherizing rooms opening off, are most complete as to arrangement and size. An immense elevator is in the middle of the central building which admit of patients being transferred from one floor to another in their beds.

Dr. Saltonstall has been quietly going ahead with the preparations for the construction of the sanitarium. None but the most modern and improved building for the purpose would satisfy her, and the Architectural League was appealed to. The requirements of the sanitarium were briefly submitted to architects of ability and who stood high in the profession, and competitive designs were submitted. These were passed upon by a board of competent judges, and the two young ladies, Miss Hands and Miss Gannon, were the choice. They were the first women to have work hung in the Architectural League, and they will be the first of their sex to be the architects of a building of any prominence, or perhaps of any kind, in San Francisco.

Art students in New York can be said no longer to be uncommon. Their flowing capes and Tam O'Shanter caps make our life picturesque in a dozen different localities that seek to be little Latin quarters. But of full-fledged architects, just budding into womanhood, there are few such as these girls are.

Miss Hands is twenty-one years of age and Miss Gannon only a little older. Miss Hands lives with her parents in New York, where she has always lived, and Miss Gannon whose home is in Bethlehem, Pa., boards a little distance away from the friend from whom she is nearly inseparable. Neither is at all masculine, nor yet obtrusively or "picturesquely" feminine. They are simple-mannered, well-bred girls, with oval faces, thoughtful dark eyes and brown hair that has not yet lost its childish softness. Their honors as successful architects they bear meekly, although they have achieved enough of fame and profit to turn heads less bent on study and faithful work. Rarely do they talk, even between themselves, of what they feel life has in store for them, but Miss Hands this evening, coming in pink and flushed from a dancing class, chattered like a magpie of how it has all come about.

"When I left school," she said, "I went to the Young Women's Christian Association and began lessons in mechanical drawing. Just why I wanted to learn architecture I do not know. No one in the family had ever chosen that profession, and how much I really know about the requirements of it I cannot remember now. I just decided that way, and I have never regretted it.

"I did my best there, but when Mrs. Dunlap Hopkins opened the school for applied design I saw at once how much better that was, and I went there as soon as I could get in—a month, in fact, after it opened. There are several departments, you know: wall-paper, carpets, silks, architecture and water-colors, taught by Paul de Longpere. Sometimes when I came home and told my people how the girls in the wall-paper department had been out that afternoon and had sold $50 and even $60 and $70 worth of their designs they used to speak as if I had made a mistake in not choosing designing.

SHE LOVED HER WORK.

"But I was satisfied. I loved it. I loved the classical forms and traditions of achitecture and I studied. Miss Gannon had been in an architect's office in Bethlehem, and had many bad tricks of modern architecture to unlearn, but she is clever and it is all right now.

"We studied two years, and last June I had my diploma. Mrs. Hopkins is the dearest as well as the cleverest woman in the world, and she gave us the use of rooms in the school building during the summer, and then we went to work to enter such competitions as we could. We made plans for five school-house ranging up to $8,000 in value and we secured all five. We entered for the Florence Sanitarium and, as you know, secured that, but we certainly worked for it, for I visited every one of the best arranged hospitals in the city; the Presbyterian, the Cancer, the Flower and all, amalgamated their points of excellence as best I could and made the plans accordingly.

"A California millionaire, whose name I cannot give, has commissioned us to build for him a summer house after that in which the Czar died in Livadia. We have made plans for a house for the Reverend Mr. Davenport and we entered in the Atlantic Exposition competition. Though we have lost that, other work is promised us, including a church at Toronto and, altogether, we have been very busy since June

ONE DREADFUL DISAPPOINTMENT.

"The Atlanta Exposition Building was a dreadful disappointment to us, but I think Mrs. Hopkins is not going to let the award go as it has started without at least letting the Judges know that she is aware of the processes by which the award was made.

"The loveliest thing about our school and the privileges that the three hundred scholars enjoy is the possibility of earning money. We get every cent that the work brings in, and we get our five per cent and four per cent for the work just as men architects do. Not a cent goes to the school, which is self-supporting, but it comes to us, so that we have had a financial success as well as merely the comfort of having our plans accepted.

"I think it is a noble profession for women—one in which if they will only hold to the prices as women competing with men should, there is every reason for their making handsome incomes.

"We are staying still at the school, though we get no instruction there now. When work gets too heavy for us to stay there for lack of room we shall take an office and put out our firm shingle."

Miss Gannon equally enthusiastic, speaks in a charming older-sister manner of the unity with which she and Miss Hands work together—with words which are full of wisdom for a young professional woman.

"We work at the same desk; each makes her own original sketch, and from these we work out together one which has as few of the faults and as many of the good points as we can. It is pretty work; it is fascinating work; it is profitable, and I think it is noble in that every one who is placing higher ideals of art before the people is doing what is great and good."

THEATRE FIRE CATASTROPHES AND THEIR PREVENTION.

BY WM. PAUL GERHARD, C. E.

[*Continued from November number.*]

WE have now gained a sufficiently clear understanding of the causes of fires and panics in theatres to enable us to turn to the second part of our subject, viz: The prevention of theatre fire catastrophes:

The principal measures for the prevention of theatre fire disasters should have in view, first, the safety of the people in the theatre, whether spectators, actors, stage hands or firemen on duty, and next, the safety of the building. The safety of the people comes first in the order of importance. The building may even burn down, but the public must under all circumstances have facilities for saving themselves. All efforts must be directed towards making the play-goers, the players and the theatre employes safe. All manner of danger arising from a fire or from a panic, caused by a real or false fire alarm, should be averted, and appliances for saving life should be kept within reach. Next, the building should be made structurally safe, and efficient means for fire extinguishment should be provided, thus preventing the immense fire loss usually caused by a theatre conflagration.

The safety measures, to be briefly considered hereafter, may be divided into four principal groups, viz:

a. Measures to prevent outbreaks of fire, which include rules of theatre management, regular systems of inspection; considerations of plan, size, location and construction of a theatre, height of building and number of galleries, and structural details.

b. Measures to localize fires and to prevent their spreading, if in spite of precautions they do break out. Under this heading would come the fire walls, the fire doors, the fire curtain, the floor and roof construction, and the division of the theatre, horizontally and vertically, into many separate fire risks.

c. Measures to insure the safety of the spectators and of the stage people, to prevent injuries resulting from a jam or crush and a panic, the suffocation by smoke and death by fire. This group includes ample means for safe, easy and quick exit from the burning building and relates to such subjects as seats, aisles, passages, doors, stairs and exits. It also embraces the questions of lighting and of ventilation, provision of stage ventilators, and special safety appliances, such as thermostats, automatic fire alarms, etc, telegraphic commnnication with the fire department, etc.

d. Measures to put out fires, which include all fire appliances, the stage sprinkler system, etc., a good, plentiful water service, etc.

The whole subject is discussed more systematically and at a greater length in my paper "The Essential Conditions of Safety in Theatres, an Essay on Modern Theatre Planning, Construction, Equipment and Management," published in the *American Architect* for June and July, 1894, to which I refer those in search of details. It will suffice here to enumerate only the principal measures of safety.

1. To begin with, the theatre building should be isolated as far as practicable. Then, there should be in every theatre plenty of wide, well arranged and well distributed exits, leading the audience as quickly as possible to outdoors, and thereby decentralizing the crowd. There should be separate and numerous fire-proof stairs, at least two for each tier. For the stage and its accessory departments provision should be made for at least two independent exits. Fire-proof stairs for the workmen should lead from the rigging loft down to the stage floor. The fire at the Opera Comique taught a good lesson in pointing out the necessity of having proper means of escape for the performers and workmen on the stage, which sometimes number as many as three or four hundred people. Where the theatre is not standing free on all sides, there should be wide courts on both sides and additional safety exits from the auditorium to the same, including suitable fire escapes from the balcony and upper galleries. Much the best plan, where the dimensions of the lot permit, is to have wide fireproof terraces, foyers or colonnades adjoining the corridors in each tier, which form places of safety for the audience in case they have to leave the theatre suddenly. All halls, corridors, passages, stairs, exit door, courts and exits should be free from all obstructions. All exit doors should open outwards. Exits should not be reduced at any point, but if possible, should widen outward. There should be plenty of wide aisles, without steps, and no chairs or camp stools should be permitted in the aisles. It is particularly important that there should be a sufficient number of stairs and plenty of exits for the occupants of the galleries, who, as the fire catastrophes described amply prove, are more endangered than the other spectators. Those who pay twenty-five cents admission fee have surely the same rights to safety as the occupants of three to five dollar seats, and in a place of amusement, to quote the words of the Rev. Dr. Duryea, spoken at the

funeral services for the victims of the Brooklyn Theatre fire, "the poor should be made as safe as the rich."

Stairs from different tiers should not communicate together, nor should streams of people cross each other on their way out. All stairs should be provided with handrails on both sides; winding stairs and single steps should be avoided.

The provision of proper exits (including in the broader sense of the word aisles, corridors, stairs, doors) is by far the most important safety measure, both for fire and for panic. In fact, if properly carried out, it will save the lives of people even where all the other precautions are neglected. The aim should be to arrange the exits so that a theatre can be emptied without the slightest difficulty in from two to three minutes. Much will depend upon the available site and upon the plan of the building.

If only plenty of exits are provided, so that, under all circumstances, the whole audience, even when frightened and suddenly thrown into a state of high mental excitement, can leave the building inside of two or three minutes, the fire-resisting qualities of the building are of less consequence, as regards the safety of the persons in the theatre. In fact, a theatre inferior in point of construction, but having exits as above described, would be safer than one built thoroughly fireproof, but otherwise not well arranged and not provided with sufficient stairs and exits, and where, therefore, in case of a false or real alarm of fire, or a panic from any cause, the people would be necessarily in grave peril.

2. Recognizing, from the lessons taught by past theatre fire catastrophes, that the stage is the chief point of danger, it should be the aim to completely isolate this part of a theatre. Fire walls should separate the stage from the auditorium on the one hand, and from the dressing rooms and theatre offices on the other The fire wall dividing the auditorium from the stage, in which is located the large proscenium opening, should have as few other openings as possible, and none at all above the level of the stage. All openings should be kept closed by fire doors. The proscenium opening should be fitted with a fire-resisting curtain, closing as nearly as possible hermetically. The chief object of the curtain is to localize a stage fire and to cut off the fire, smoke, and the view of the fire during the retreat of the audience: It thus serves to restore confidence, and will often help to avoid the usual panic and jam. The fire curtain should be able to withstand the increased air pressure due to the heat, sufficiently long to enable the audience to make its escape. Whether the curtain be of corrugated iron, or of asbestos, it is important that the apparatus for lowering the same be located on the stage, and not in the rigging loft, which place very soon becomes inaccessible when a stage fire breaks out.

3. Smoke and fire gases being the chief cause of death of the victims of theatre fire calamities, it is essential that large smoke ventilators or ventilating skylights be fitted up over the stage in order to remove the smoke at the highest point of the stage roof. Incidentally, the stage ventilators tend to create a current of air from the auditorium toward the stage, and thereby prevent smoke, flames, and suffocating gases from escaping into the auditorium. In this connection the abolishment of the usual central chandelier and ceiling vent in the auditorium is important. All ventilating registers for the auditorium should have dampers which are controlled and can be closed from the stage. This measure will tend to prevent the suffocation of the people in the upper gallery in case of a fire.

4. The study of the causes of theatre fires having shown that open gaslights in the vicinity of stage scenery and settings are the most prolific cause of fire, it is obvious that the stage and the scenery can be made much safer by fitting the same with incandescent electric light. All open lights, and gas lights in particular, as well as all sources of heat, should be eliminated from the stage. Incandescent electric light constitutes a brilliant, uniform, and easily regulated light. It has not only the advantage of being much safer as regards danger from fire, but it is superior also because it does not vitiate the air, because it creates much less heat than gas, and because it does away with the dangerous lighting up of gas flames, which has been the cause of many a fire. In short, the electric light in theatres has all the advantages of gas without any of its inconveniences and dangers. But, if gas lighting must be used, the gas piping should be most carefully done, all open flames should be well protected, the gas meters set in a safe place, and the best available electric spark or flash-lighting system should be installed for lighting up. In addition to the regular system of lighting, whether by gas or electricity, there should be provided in the corridors, stairs, and exits auxiliary lights, either candle lanterns or oil lamps burning vegetable oil to make the retreat of people safer in case the gas is turned off or in case the electric light fails. The central gas chandelier in the auditorium, moreover, should be abolished.

5. To increase the safety of the stage still further, it is imperative to insist upon the fireproof treatment of all stage woodwork by the application of fireproof paint, and likewise upon the chemical impregnation of all gauze scenery, draperies, furniture and costumes, to render same uninflammable. A further step forward in the right direction consists in the employment of light sheet iron frames or of wire cloth netting, or in the use of asbestos for scenic decorations. Improvements in the stage machinery, such as the use of hydraulic power for raising and lowering traps and scenery in place of wooden hoisting drums and hand labor, the substitution of steel wire ropes in place of hemp cord, the entire abolishment of borders and wings, are much to be desired, all of which tend to make the stage safer. These are not merely theoretical suggestions. They have, on the contrary, proved eminently practical in actual use. The improvements recommended are largely due to the Asphaleia Society, of Vienna, Austria, whose system of stage construction and stage machinery has been successfully used at the theatres of Buda-Pesth in Australia Hungary, at the People Theatre in Vienna, at the Halle Stadt Theatre in Germany, in the Victoria Theatre in Sydney, Australia, and in our country in the new Auditorium Theatre in Chicago.

The accumulation of much scenery or scenic decorations on or near the stage should be avoided, and not more scenery should be hung than is needed for two performances. Neither the auditorium loft nor the cellar under the auditorium should be used for the storage of scenery. Want of order on the stage is sometimes due to lack of storeroom or to an insufficient number of stage hands.

6. In the construction of the theatre building fire-resisting materials should be preferred, and unprotected ironwork granite and limestone should be avoided. The building should be divided into a large number of separate fire risks, both horizontally and vertically. The stage should be completely isolated by fire walls carried above the roof; all dressing rooms should be made fireproof and the whole auditorium and each of its tier, corridors and stairs should be constructed in a fire-resisting manner.

7. All scene docks, workshops, carpenter and paint shops should be banished from the theatre building and placed in a separate fireproof annex. The heating apparatus, the dynamos of the electric light plant, the fire pump and the gas meter should be located in fireproof vaults, preferably under the sidewalk, but not under the stage nor under the auditorium. No living or sleeping apartments, no stores, should be located in the theatre building, and no dangerous trades should be carried on in the same.

8. In order to put out a fire in a theatre before it can gain headway, there should be provided an abundant supply of water under fire pressure and plenty of efficient fire-extinguishing appliances, such as one or more fire pumps, fire stand pipes, fire valves, hydrants, monitor nozzles and fire hose; a large number of fire pails, casks of water, chemical fire extinguishers, fire axes, fire hooks on poles, wet sheets, wet sponges on long poles, etc. The whole stage should, moreover, be protected by an automatic sprinkler system, supplied from a large fire tank on the highest roof, and having also an outside fire department connection, to which the fire engines may be coupled. All the appliances mentioned are useful chiefly during the first moments of a fire, and wherever provided and kept in good order and in readiness for instant use, they have served to put out many a stage fire which, without them, might have resulted in a serious calamity. It is true, however, that as soon as the flames have spread, in the majority of theatres as constructed until recently, the fire appliances would soon become powerless to subdue a fire.*

9. Much care should be bestowed upon the heating apparatus for a theatre, for in not a few instances it has been the cause of a fire. A number of fires as sources of heat being out of the question on account of difficulties in attending to them, and also because they increase the fire danger, the choice lies between a warm air furnace, a steam and a hot water boiler. Furnaces can only be used for theatres of small size, and in the majority of cases heating is done by steam. The usual precautions should be observed, and the steam boiler placed in a fireproof vault, preferably outside of the theatre proper. It may with advantage be combined with the electric light plant.

10. Efficient lightning rod protection adds to the safety of a theatre building, and in European theatres its installation is generally included in the equipment of the building.

11. It is quite important to have on hand in every theatre, for cases of emergency, a few life-saving appliances, such as rope escapes, a jumping net and a cloth chute to aid in saving persons in case their retreat from the upper floors should be too suddenly cut off by fire or smoke.

12. Finally, it will be a great help in preventing theatre fires, if a fire watch is kept in the building day and night, reinforced during the hours of the performance by detachments from the city fire department. Nothing will increase more the security of a theatre than frequent inspections, about which I shall say something hereafter. There should be a telegraph connection with the nearest fire department station, and automatic fire alarms at many points in the building, which should be frequently tested to make sure that they are in good working order. There should also be speaking tubes, electric bells and telegraph alarms, to bring all parts of the building into communication with each other. And lastly, the theatre employes should undergo regular fire drills, so that in case of an emergency each employe will know what duty he has to perform.

13. Many of the safety appliances spoken of can be arranged so as to work automatically. Such automatic appliances are good in their way, and some of them have proved in actual experience to be quite efficient. They should not, however, be sorely relied upon, and in general it will be better not to trust to automatic appliances altogether. The automatic fire alarm system and the automatic sprinkler system may be approved, but the automatic sliding skylights, or the smoke ventilators over the stage roof and the automatic fire curtain may fail to work properly just when needed. I am quite aware of the fact that others argue in favor of antomatic appliances, claiming that one cannot rely in moments of danger upon the coolheadedness of men, and that in a panic every one will think of his own safety first, and theatres employes will forget their duties.

But in my judgment it is infinitely better to put all such appliances in charge of a special, reliable "safety officer," who may be a trusted firemen, whose sole duty, in case of an outbreak of fire, should be to lower the fire curtain, to open the stage ventilators, to close the auditorium ventilating registers, to send the alarm to the theatre engineer who runs the fire pump, and to the nearest fire engine station, to notify the audience promptly that they must disperse quietly, to see that the gas is not shut off and that the auxilary lights are kept burning, to see that all doors leading to the stage are kept closed to prevent a draught, and who should order the water turned on at the fire hydrants, the monitor nozzles and the perforated pipe system, where such is installed in place of automatic sprinklers.

I have not, so far, made any distinction between old and new theatre buildings, for the requirements for safety apply to both alike, but, of course, are much more difficult to enforce in the case of the older structures. These are everywhere, as a rule, lamentably deficient and unsafe, and much good would result if they were frequently inspected by the fire department, and if alterations were ordered made to increase the safety of audiences. The public generally is not able to, and does not, discriminate between safe and dangerous theatres. If the older theatres cannot be made safe, particularly as regards to exits, they should be closed up by the authorities. All theatre regulations should be compulsory, and the building, fire and police departments should have power to stringently enforce them. The law should clearly define the responsibility of architects and builders and of the theatre managers, in the matter of theatre safety. It is but reasonable to require of the atre managers that every known approved measure tending to increase the safety of the public, be provided for. It is likewise justifiable to require builders to construct places for public amusement in such a secure manner that all damages to life and limb are averted.

THEATRE INSPECTIONS.

In the case of new theatre buildings, it does not suffice to have them well planned and well constructed. There should be, after the opening, regular inspections to make sure that the laws are not violated after the new building has passed the final examination of the authorities. If subsequent alterations are contemplated, they should likewise be made to conform to the building laws. The theatre license should be subject to revocation at any time for violation of the law. In the efficient periodical inspection and control of theaters by the authorities lies the greatest safeguard against fire catastrophes. Such inspections should be made much oftener than once a year. In Vienna they occur four times a year, in Paris inspections are made every month by a committee of safety, consisting of a police commissioner, an official from the city fire department, and an architect. In London monthly inspections are required. These inspections should be made not only in daytime, but likewise in the evenings during a performance, and all details should be included in the examination. Special expert surveys and tests of the gas pipes, electric conduits, fire alarms and the fire appliances should be made from time to time, and official reports made as to the results found. It is best to make inspections without any previous announcement. The results should be published, without fear of favor, in the daily newspapers. Nowhere are theatre inspectors carried out with greater strictness than in Berlin. All theatres are regularly inspected and surveyed, at odd times, by a committee from the fire brigade and the building department. Every two weeks the district fire marshal examines the theatres, during the day and also at night. Finally, officers of the fire brigade make nightly inspections during the performances, and a

* Regarding the details of "The Water Service and Fire Protection of Theatres," I refer to my paper under this title read at the June, 1894, meeting of the New England Water Works Association.

watch of trained firemen is placed in every theatre during the performances. All these precautions have a tendency to awaken public confidence, and in case of a fire a panic is not so apt to occur. Indeed there are several instances of well-built and well managed theatres on record, where during a performance fire broke out which ultimately destroyed the building, but where the whole audience left the theatre quietly and in good order, and where no accident of any kind occurred.

For the safety of theatres it is essential that they be continuously watched. In the words of Mr. Garnier, the architect of the Paris Opera House, "The strict minute and incessant watch and inspection of all parts of a theatre constitute the chief defense of theatres against fires."

A century ago it was decided in France that firemen were the proper persons to do this. At first they were present on the stage merely during performances, subsequently it was decreed that firemen should be on watch in a theatre during the day and the night. If the employment of fire watches is left to the discretion of theatre managers, persons are sometimes engaged who are incompetent, or if competent, they are required to perform other duties besides, and being thus overworked, fail to efficiently accomplish the object sought for. Fire watchmen should be well acquainted with the building, the whole theatre staff should be under their control and they should be vested with authority to interfere in case of violation of the theatre regulations. In the large Paris Opera House there are always twenty-five firemen on duty and during performances their number is doubled.

* * *

THEATRE MANAGEMENT.

Strict rules and regulations pertaining to the management of theatres should be drawn up by the authorities, and enforced by the fire, building and police departments; which, as regards theatres, are correlated. Such rules of management relate to the proper storage of decorations, scenery, furniture and property, to the maintenance of general order, cleanliness and discipline; to the removal of rubbish, litter and ashes, to keeping the scenic decorations free from dust, keeping all corridors and exits unobstructed, and likewise to holding all fire stand pipes, hydrants, fire pails and casks of water accessible and ready for use.

They also relate to the use of open fires and lights, the employment of special lights and fire effects, the use of fireworks, of firearms, the representation of actual fire scenes, the use of matches, the prohibition of smoking or lighting cigars in the auditorium, foyers or dressing rooms, and should only permit the same where needed in the course of the play. These rules should also include the daily use of the fire curtain, and the opening of all exits, the maintenance of auxiliary lights, either oil lamps or candle lanterns, in corridors, courts, and exits, the keeping up of steam under proper pressure at the fire pump during performances, the employment of a special fire watch and a theatre night watch, etc. They should require the fireproof treatment of all gauze costumes, and prohibit the use of open lights in the wardrobes and dressing rooms. A penalty should be enforced for the use of fire pails for other than fire purposes. Moreover, the number of persons in each tier should be limited by law, and standing room in the aisles should be prohibited, and a heavy fine enforced for any violation of these rules. The practice of a sudden, unannounced darkening of the auditorium should not be permitted, nor any dangerous fire exhibitions on the stage, except where the stage is absolutely fireproof. Special precautions should be enforced where the stage is decorated with natural branches of fir trees which when exposed to heat dry out quickly and become extremely fire-hazardous, and also where the auditorium and the stage are temporarily thrown together, as during masquerade balls. The rules should prohibit workshops of any kind in the theatre proper. They should finally require clear plans of the theatre, showing the exits, to be hung up at conspicuous points and also to be legibly printed on all theatre programmes, and last, they should compel the plain marking of all exits in large letters painted over the doors.

One cannot learn the dangers incident to large fires, nor the effect of good fire-extinguishing appliances, better than by being daily engaged in fighting flames, nor can anybody have a better appreciation of the effect of suffocating smoke than a fireman. Firemen, therefore, are as well qualified as builders, architects and engineers, to judge of the security of a theatre building, and of the efficiency of the safety measures adopted. The training of firemen is such as to make them proper persons to examine and pass upon the plans for new theatres, and to inspect both the theatres in course of erection as well as those already built. With their assistance the rules and regulations for theatre management should be framed, they should be entrusted with the inspection of theatres, to see that the rules are enforced; finally, they should be in charge of the fire appliances in theatres, and should direct the fire drill of the employes.

Only a few more words in conclusion. Experience teaches that after each theatre fire, accompanied by loss of life, the greatest excitement prevails for a time; the daily papers, the magazines and the technical press are full of articles discussing defects of theatres snd suggesting remedies; the public refrains temporarily from going to these places of amusement; the authorities show the greatest zeal in making official inspections; and theatre managers actively undertake interior improvements. Very soon, however, the excitement subsides after a little while the lessons of the calamity are forgotten, the theatre management resumes old habits, the most common precautions are neglected, the public becomes again indifferent to the dangers constantly threatening them in unsafe theatres and everythings goes along as before. This, I need hardly say, is all wrong.

There is an old adage which says, "In time of peace prepare for war." Applied to our subject, it means that the movement for theatre reforms should constantly be kept stirred up, that without unnecessarily alarming the public, interest in the subject of theatre fire prevention should be ever maintained, and that quiet but persistently radical measures should be adopted to stamp out the graver dangers to which human life is exposed in the theatres of many of our cities.

Strict theatre building laws and frequent theatre inspections by the fire departments constitute the most important factors in lessening, for the future, the number of theatre fire catastrophes—*Scientific American.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

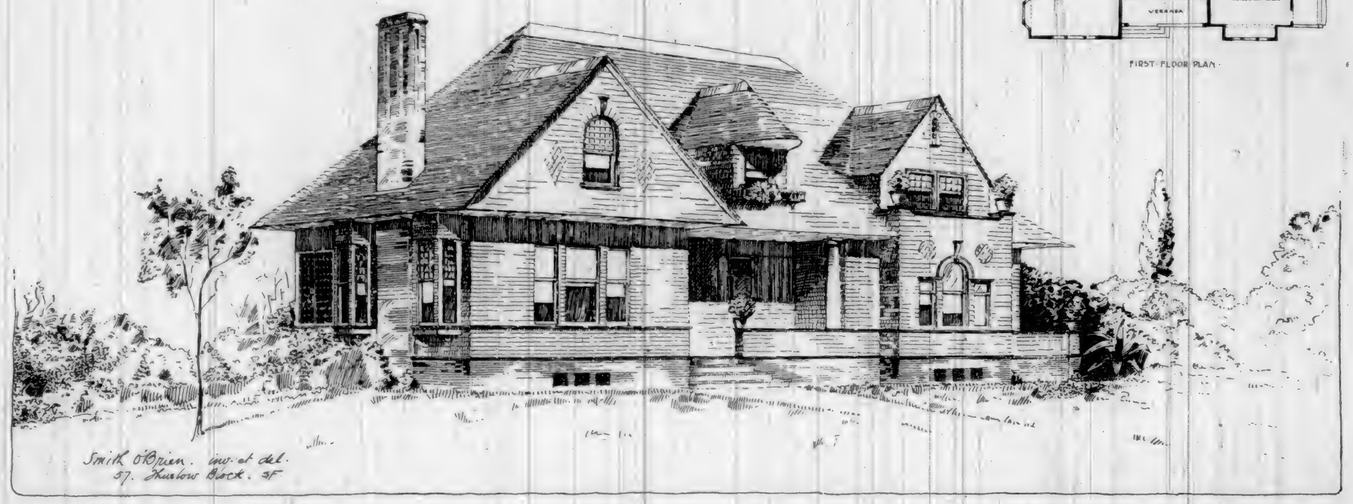
COMPETITIVE Design, Placer County Court House, W. J. Cuthbertson, Architect.

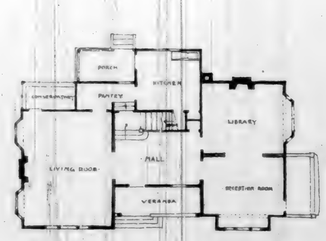
CREMATORIUM, Stone & Cahill, T. D. Ross, Associated Architects, with elevation of the same.

PERSPECTIVE View of N. S. G. W. Building, Copeland & Pierce, Architects. In competition.

SKETCH for Country Place, San Mateo, Smith O'Brien.

SKETCH FOR COUNTRY PLACE
SAN MATEO





FIRST FLOOR PLAN.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XV Nº 12 DECEMBER 1894.

COMPETITION DESIGN FOR N.S.G.W. BUILDING.

PERSPECTIVE VIEW.

COPELAND & PIERCE ARCHTS.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

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VOL. XV Nº 12 DECEMBER 1894.

COMPETITION DESIGN

PLACER COUNTY COURT-HOUSE.

W. J. CUTHBERTSON · ARCHITECT.

VOL XV Nº 12 DECEMBER 1894

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CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

WEST ELEVATION.

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 108 California street
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE REGULAR MONTHLY MEETING OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects, was held on Friday afternoon, December 12th.

The Committee appointed at last meeting, at the request of the San Francisco Chamber of Commerce, to consider the question of the prompt construction of the Nicaragua Canal, made their report and were discharged.

A Committee of Messrs. Sanders, Bestor and Henriksen was appointed to act with the Executive Committee in formulating a law to be submitted to the Legislature for Regulating the Practice of Architecture in this State.

The following communication was received from Secretary Stone of the Institute:

PROVIDENCE, R. I., Dec. 4, 1894.

Mr. Oliver Everett, Secretary, San Francisco Chapter A. I. A.

DEAR SIR:—In response to questions from the Secretaries of several chapters of the Institute and also from the Fellows of the same, the Secretary of the American Institute of Architects, after having submitted the same to the Chairman of the Committee on the relations of the chapters to the Institute, begs leave to submit the following as his interpretation of the effect of the amendments of the By-laws as passed at the last annual convention.

1.—The amendments went into effect on the adjournment of the convention.

2.—No person's election to the special grade of practising membership in a chapter, required by Section 3 of Article 10, can be complete until such person has been elected a Fellow of the Institute.

2.—The initiation fee of the chapter grade referred to above is $10.00, and the annual dues $5.00.

4.—In order to become a chapter member of such grade, it is necessary to have practised the profession of architecture for not less than three years.

5.—A chapter may provide for other classes of members than the above, with higher or lower dues, with distinguishing titles; such members need not become Fellows of the Institute, but they may do so whenever eligible through a practice of three years.

6.—A Fellow of the Institute not a member of a chapter when the new by-laws were passed, need not join a chapter unless his Fellowship should lapse and he should again apply for Fellowship.

7.—A member of a chapter not a Fellow in the Institute when the new by-laws were passed, need not join the Institute.

8.—All architects now wishing to join the Institute must have been in practice for at least three years, and must at least be provisionally elected to the above mentioned grade of practising membership in a chapter in the Institute, unless their place of business is more than twenty-five miles from the headquarters of any chapter.

9.—Resignation from any chapter carries with it resignation from the Institute, and vice versa.

Yours truly,

ALFRED STONE,
SECRETARY.

The meeting then adjourned for one week, to give the Committee on Legislation time to report.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

VALIDITY OF INDEMNIFYING BOND BY CONTRACTOR.—A bond by a contractor, indemnifying an owner against liens on his building, is valid, though the plans and specifications forming part of the building contract were not filed with the county recorder. Where the surety on a bond given by a contractor to an owner, to indemnify the latter against mechanic's liens on his building, supplies to the contractor material for such building, and files a mechanic's lien therefor, and in consideration of the satisfaction of the lien the owner gives him his note for an amount less than the claim, the owner may, in an action on the note, set up as a defense the liability of the surety on his bond.

Blyth v. Robinson, Supreme Court of California, 37 Pac. Rep. 904.

ASSIGNMENT OF MECHANIC'S LIENS.—An assignee of a mechanic's or material man's claim cannot file the notice of a claim or serve the notice on the owners, so as to perfect the lien, as the privilege of asserting a mechanic's lien cannot be assigned.

McCrea v. Johnson, Supreme Court of California, 37 Pac Rep. 902.

IN AN ACTION FOR PERSONAL INJURIES.—Evidence tending to show that the employe while working, was directed by his foreman to go on a temporary scaffold to help carry a heavy beam over it; that the scaffold consisted of planks laid across two joists which were set on edge without being fastened, and one of which having a large knot near one end turned and broke, injuring him; that the foreman had superintended the construction of the scaffold; and that he was not aware of the knot in the joist, is sufficient to warrant the submission of the case to the jury. The amount of damages in personal injury cases is a question of fact not reviewable by the supreme court.

Goldie v. Werner, Supreme Court of Illinois, 28 N. E. Rep. 95.

WHEN LIENS MAY BE CREATED ON HOMESTEAD.—Under the statute, which provides that "every building constructed on any land with the knowledge of the owner shall be held constructed at his instance and subject to liens unless such owner within three days posts a notice disclaiming responsibility," liens may be created on a homestead without the joint action of husband and wife.

Palmer v. Lavigne, Supreme Court of California, 37 Pac. Rep. 775.

THE SUPREME COURT OF MICHIGAN—Holds that where one who has contracted to do work stops it by reason of the command of the one with whom he has contracted, he is entitled to damage for breach of the contract; but he cannot claim a breach of the contract where he merely acquiesces in a request to do no more for a certain time.

McGregor v. Ross Estate, 60 N. W. Rep. 38.

EFFECT OF PURCHASE OF PROPERTY IN WIFE'S NAME.—Creditors have no right to their debtor's services; and where he buys a mill for his wife in her name and on her credit, and by his management makes profits which he applies on his wife's notes, the property is not liable for his debts. If a husband uses his own money to pay his wife's debts on her property, his creditors might charge her property with the amount paid, but could not, therefore, treat the property as his, and subject it to his debts.

Wheeler v. Biggs, Supreme Court of Mississippi, 15 So. Rep. 118.

VALIDITY OF CONTRACT LIMITING LIABILITY.—A contract between a shipper and a common carrier, which, by its terms, limits the liability of the carrier, and relieves it from either entirely or partially responding in damages for injury or negligence of the carrier, is invalid, or void, under the common law, as against public policy.

Atchison T. & S. F. Ry. Co. v. Lawler, Supreme Court of Nebraska 58 N. W. Rep. 968.

CONSULT THE ARCHITECT.

THE desire to practice economy in connection with the erection of a proposed building improvement sometimes prompts the individual who is about to build to deny himself the services of the architect. Some ambitious builder tell him that he can prepare the plans just as well and thereby save the fee that would otherwise go to the architect. The novice in building matters believes the builder and begins to take his lesson in experience. The builder has secured his victim and proceeds to bind him, hands, feet and pocket-book. The victim gets a cheap building, oftentimes faulty in construction, and pays a fat price for the same, happy in thought, for the time being that he was able, by shrewd, (?) business tact to save the expense that would have been incurred had he consulted an architect.

In connection with a contemplated building improvement of any magnitude the services of a competent architect are indispensable. Nobody thinks of consulting the drug clerk in case of serious illness—you go for the doctor. The drug clerk is of service too, for he can execute the doctor's orders in filling prescriptions, but nobody wants the clerk's advice at such times. So in building you want the advice of the architect. He can give the orders and the builder, if he is competent, can execute them. The architect is a good man to have around the progress of construction for his experienced eye can detect flaws in material and construction that would not be noticed by the owner. Finally, whence the building is completed, under the supervision of the architect, it is ascertained that a good job has been obtained for a comparatively small amount of cost. If you are going to build a dwelling or a building for business purposes you will save time, worry and time and money by first consulting some reputable architect, and you will be wise if you leave the matter entirely in his hands. He knows the difference between good and bad material, between good and bad construction, and he knows when the builder is doing his duty. Presumably you don't know much about these things and you had better pay some one to look after them for you.—*The Builders' Gazette.*

"Ah, Miss Oldgirl," said Charlie Smart, pointing to a bunch of roses on her breast, "I see you wear bloomers." They do not speak now.—*Minneapolis Journal.*

CEMENT FLOORS.

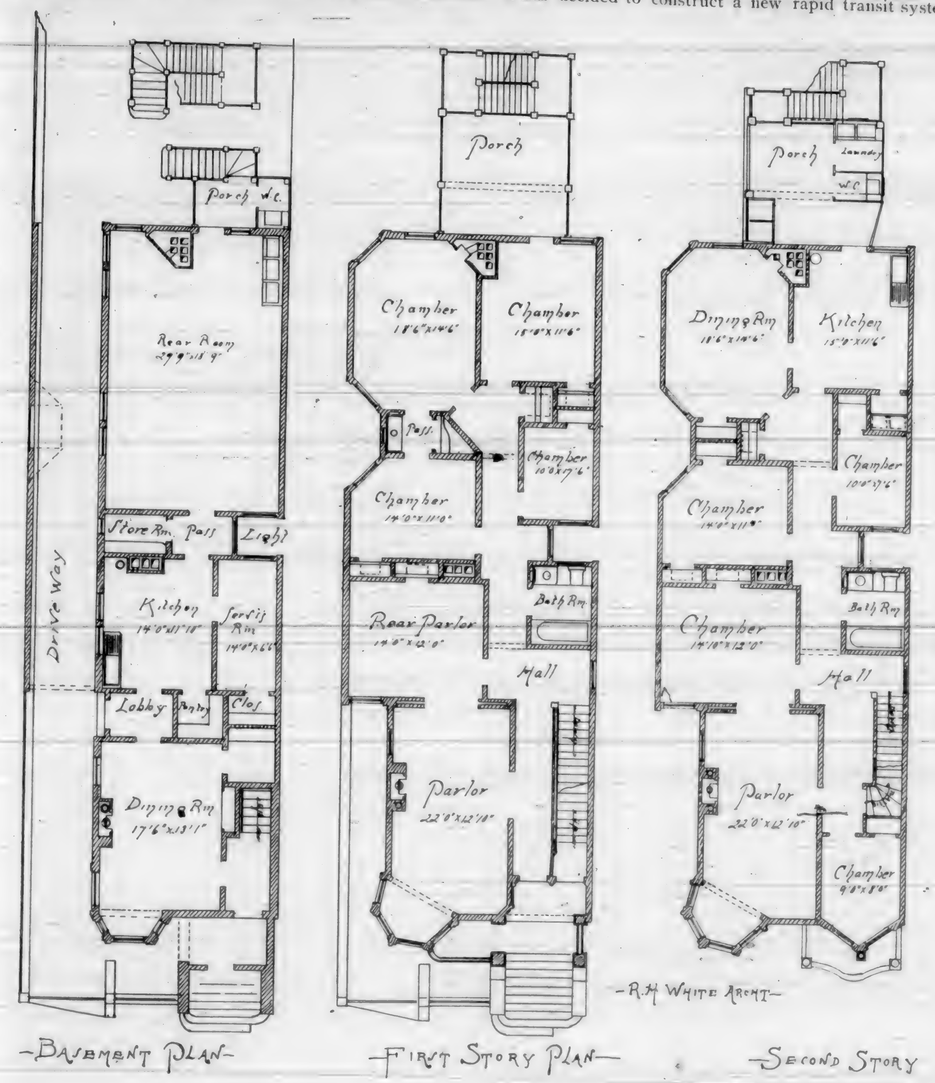
IN several parts of the world, widely distant from each other, the workmen, are in the habit of making cement and mortar floors of a remarkable degree of smoothness and solidity. The general principle involved in all the operations is compression by means of light hammers or mallets, and constant rubbing of the surface, so that the mortar becomes exceedingly hard and solid. In India the floor is made by putting bricks on edge in mortar in the usual way for a foundation. Upon this is spread a layer, say, four inches thick, composed of pounded bricks and freshly-slaked lime, says the *Carpenter and Builder.* The pieces of brick are about the size of a pea. A mortar is then made of one part by measure of lime and two parts of the siftings of these same bricks, which also contain a small proportion of the large size. This mixture is thoroughly mixed with water, and spread over the substratum to a depth of perhaps four inches. After this the whole surface is thoroughly beaten with light wooden mallets. The beating is kept up for several days, and the layer thoroughly consolidated. This reduces its thickness to about three inches. It is allowed to set for some time before putting on the cement. The appearance of the floor at this stage is somewhat rough, and this is considered an advantage, as it enables the cement to adhere more firmly. The cement is mixed with a coarse, sharp sand, one part of cement, two parts of sand, and a sparing amount of water. It is put on 3/8in thick and leveled. A little dry cement is powdered over the surface and rubbed in with a trowel. The final skin is secured by rubbing the floor with a slightly moistened trowel. This makes a hard and highly polished surface.

A GOOD EXAMPLE.

DURING the month of June the carpenters of St. Joseph Mo., are reported as having struck for certain concessions from the employers which would involve an increase in the cost of building. The principal demand of the workmen was for an increase in wages, but an unusual course was taken in the effort to secure the concession. The carpenters refuse to work only on such jobs as the contractors had been afforded an opportunity to estimate upon at the increased rate of wages. It is reported that no movement was made against jobs that had been taken by the contractors at the lower rate of wages; the whole action of the carpenters seeming to be a refusal to work upon new jobs at the old wages. The course pursued by the men in this case showed a just appreciation of business principles, and enabled such contractors as were willing to do so to increase the wages without loss to themselves. It is stated that the employers were so favorably impressed with the stand taken by the men and the spirit of fairness in which they acted that all but two conceded the increase at once; and the two who are reported as having held out, finally fell in line. It is rarely the case that a manifest effort to be fair fails to elicit a proper response, and every such effort by either workmen or employers should be met half way by the other. —*Carpenter and Building.*

MUNICIPAL OWNERSHIP OF A RAPID TRANSIT SYSTEM.

NEW York is about to enter upon the most important experiment in municipal self help ever undertaken in America. By a vote of three to one and a majority of 70,000 it has decided to construct a new rapid transit system for itself. The contracts will be let by a city Rapid Transit Commission and the bills paid from the proceeds of municipal bonds. This decision has been reached after a failure to accomplish the same result through private enterprise. The elevated railroad monopoly has succeeded in preventing private competition in urban transit in New York, just as the Southern Pacific has prevented all kinds of railroad competition in California.



The new rapid transit system will run underground and will probably cost at least $40,000,000. It is expected to be a model in every way. The motive power will probably be electricity, but the results required from it, of course, will be beyond any comparison with those on ordinary trolley lines and will be of the same order as those obtained from the best steam locomotives. A conspicuous success of this great experiment in New York, following the successful operation of the public cable line over the East river bridge, would stimulate the movement for the municipal ownership of local transportation facilities everywhere.—*Examiner.*

BOOKS AND PERIODICALS.

THE NEW SCIENCE REVIEW. Published quarterly by the Translantic Publishing Company, Philadelphia, New York and London. This handsome quarterly magazine appears destined to fill a want long felt, by that class of people the late President Lincoln would call the "common people," or as the Rev. Edward E. Hale would express it "the children of the public." To this class all the articles prove profitable and interesting.

The contents for the October number now before us contains a long list of interesting articles, and among the others "What Electricity Is" will not fail to be of interest to many who think they know all about it now, but who will be willing to be more modest in their claim after reading it.

If Mr. J. M. Stoddart the editor continues to sustain the high standard he has commenced we predict a success for the new venture.

FISH COMMISSIONER'S REPORT.—The Thirteenth Biennial Report of the State Boart of Fish Commissioners of the State of California for the years 1893–1894, printed for the State at their office in Sacramento. The commissioners are Joseph D. Redding, President; Hugh L. Macneil, Los Angeles; William C. Murdock, Secretary, San Francisco.

This report certainly makes a very favorable showing of the result of the labors of this commission. It cannot fail to be of interest to that large class who are favorable to the introduction and protection of fresh water fish. The illustrations of the fish are faithful reproductions, while the State Fish Hatchery, at Sisson, California, give a good idea of the buildings surrounded by redwood trees where the fish are carefully nursed till large enough for removal.

OUVENIR OF CRANFORD, NEW JERSEY.—Illustrated by some thirty sketches of principle buildings, including churches, residences, etc., "A Quiet Nook" and "Down the River" are worthy of an art journal.

The population of the town is about twenty-five hundred and in the last three years some $750,000 have been spent for building purposes mostly by new comers from New York and Brooklyn. Now, that speaks well for the enterprise of the real estate men, and if our real estate dealers would manifest a little of the same snap and business tact, instead of waiting for business to come to them, our city would show a marked improvement in building and business in general—why we doubt if there is a real estate dealer in the city with pluck enough to subscribe to an architectural journal, let alone the idea of getting out an Illustrated Souvenir. If they had any pluck, the San Joaquin Rail Road would be well under way by this time.

GOVERNMENT RAILROADS—The question of government ownership or government control of railroads is one that has been brought prominently before the people of late years, and at the present time is of particular interest to the Pacific States.

Arthus Pew, of Macon, Ga., has lately published a pamphlet of notes on Government Railroads, containing many valuable statistics of results obtained by other countries where the railroads were owned by the government.

LONG DISTANCE HOUSE MOVING.

A curious case of house moving was recently witnessed in Oregon: A man who owned a residence at Seattle, which cost him $5000 to erect, removed to Olympia and did not have sufficient funds to build another house. He bought a lot and concluded to remove the building he owned at Seattle. Every one laughed at him, but he persisted. Rolling the house down to the river, he loaded it upon a scow and it was soon at Olympia, a distance of about 60 miles. Then he had it rolled upon his lot and, strange to say, not a timber was strained nor even a piece of furniture broken, although he had not removed the contents before starting the house upon its unusual journey.—*Scientific American.*

CORRESPONDENCE SCHOOLS.

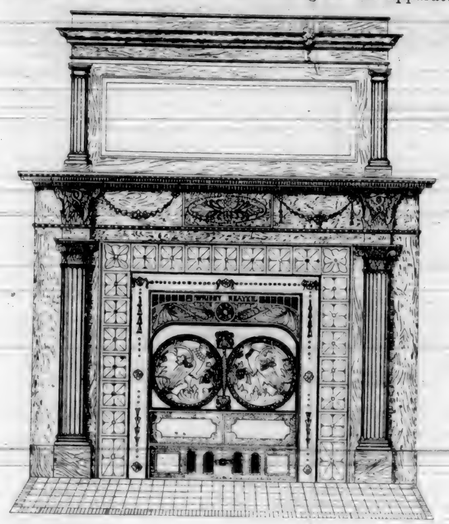
We mentioned last month the receipt of a number of publications relating to the "Correspondence Schools," at Scranton, Pa., among these, and of most interest, are a large number of letters, nearly two hundred, written by students in respect to their experience and opinions of the system. It is the most original agency for technical education that has ever been devised, capable of an extension that has no visible limit, and portends a time when we will not set off a few of the most fortunate for education, but educate all up to the limits required in the application of the skilled arts. One effect will be to raise the standard of the ordinary courses in technical colleges and schools, because mediocrity can be attained at a tithe of the expense and in ways more congenial to most students.

The habit of writing out exercises is a good one, good in all kinds of mnemonic effort, and when to this is added the interest of a communication personally addressed, and the environment of a home, it is easy to discern the attraction of a correspondence system.

Among the papers mentioned is one sheet of examples in hydraulics that as a collection of educational problems is the best we have seen. When a set school book is done, and the plates made, there is an end, but in the present a tentative course is possible. Change and improvement can go on continually; not only this, the problems submitted can be nicely graded to the requirement and capacity of the student, and can, by the facility for change, be made relevant to particular examples or practice.—*Industry.*

BUSINESS MOSAICS.

Among the latest heating novelities is a recent patent Mantel Hot Water Heater patented by Mr. Wright of the firm of Wright & Olsen as shown by the accompanying engraving. Among the many points claimed for it is the economy in the first cost in putting in and the small expense to operate as with the fire used in one fire place with this apparatus it will heat four or five other rooms. It has been a great drawback to owners building flats in this country not having an easy mode to heat them, for when they place a heater in the basement it was a stumbling block to arrange for some one to attend to the running of the apparatus.



Then again the question of fuel was brought up as some of the tenants would want heat and others would not and trouble would arise as to the adjustment as to who had used the most heat. This new device obviates all the objections as to fire places not heating the room in which they were placed, but with this apparatus it not only heats the room in which it is placed but four or five others and with the same amount of fuel that would be used in trying to heat one room as with the present system of fire places. They have one in operation in their store which demonstrates that they can heat a large store with this new fire place heater while it is known that the ordinary fire place heater will not heat a small living room. This is worthy the attention of all architects and builders.

Friend—"I wonder, Ethel, that you allowed that Frenchman to kiss you in the conservatory?" Ethel.—"I couldn't help it!" Friend—"Why couldn't you help it?" Ethel—"Because I can't speak French."—*Pearson's Weekly.*

The heavy rains we have had for the last week will convince those that did not have their houses lined with P. & B. Building Paper, that they made a mistake. It should be a warning to those about to build not to neglect to have this important matter attended to in time.

The J. L. Mott Iron Works, New York, Boston, Chicago, St. Louis and San Francisco. We wish to call the attention of our readers to the advertisement on page v of the above named firm who appear to be constantly on the watch to produce something in their line that is an inprovement of what went before. Mr. M. S. James the Pacific Coast Representative can be found at his office, 35 Flood building, always willing to furnish information and circulars.

Doctor—"For Heaven's sake Mike, what are you doing in that bath! Do you want to kill yourself?" Mike Mevers—"Why doctor didn't yez tell me to take three pills in wather?"—*Clay Record.*

At the Montreal meet of the American Society of Mechanical Engineers, an interesting paper was read on methods for preserving metal used in pipes, roofs, bridges, poles, construction work, etc. In conclusion, the whole question of how best to protect iron and steel from corrosion in all the varying conditions that the wants and usages of to-day demand, seems to resolve itself into several "Don'ts," as the best method of answering it, to wit:

Don't have any scale on the metal. Don't paint it with anything but pure linseed oil and oxide of lead or graphite paints. Don't forget that frequent inspection and care are very necessary. Don't let the cost and interest accounts be the governing factors in the case of protecting any meta structure on whose continuity and strength human life and safety depend. In comparing the two paints recommended, it may be well to add that a properly made graphite paint should prove more durable and a better protector than oxide of lead. Graphite has a strong affinity for metal surfaces, and experienced painters claim that even where light colors are desirable, graphite paint should be used as a priming coat. Again, graphite is impervious to the action of heat, cold, sea air, acid or alkali fumes, which are more or less destructive agents to lead paints. The Joseph Dixon Crucible Co., Jersey City, N. J., have manufactured a pure linseed oil and graphite paint for over twenty-five years, and have some very convincing testimonials of its value.

He came and stood beside the typewriter. "I am greatly interested in you," he said tenderly, "will you be my wife?" The girl wrote four words before replying. "No," she remarked finally, "I prefer to have you interested in me."—*Detroit Tribune.*

Phoenix Pure Paint is a good example of how an honestly prepared article can be relied upon to work its way into public favor. Starting with the idea that to insure the best results, pure materials only should be used, and these finely ground and thoroughly mixed by heavy machinery, the result has been that Phoenix Pure Paint is now generally specified by architects on the Pacific Coast.

"You little imp!" replied the father, "if I catch you risking injury in a football game I'll break every bone in your body!"—*Adams Freeman.*

San Francisco Lumber Company. This well-known company, wholesale and retail dealers in lumber, continue to have their principle office corner Pine and Montgomery Sts., while their yards may be found at the foot of Third and Channel streets, between Fourth and Fifth. The manager, Mr. J. N. Curtis is a man that is sure to give satisfaction to those who have dealings with the company, as also their secretary, Mr. Gregg.

TENDERS TO BE RECEIVED.

Office of the Custodian, U. S. New Appraisers Stores, San Francisco, California, December 3, 1894. Sealed proposals will be received at this office until 12 o'clock M. on the 8th day of January, 1895, and opened immediately thereafter, for all the labor and materials required for the ainting, etc., of this building, in accordance with the specification, copies of which may be had at this office.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. All bids received after the time stated will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposals for Painting, etc., at the U. S. New Appraisers Stores, San Francisco, California," and addressed to JOHN H. WISE, Custodian.

Treasury Department, Office, Supervising Architect, Washington, D. C., December 4th, 1894. Sealed proposals will be received at this office until 2 o'clock P. M. on the 8th day of January, 1895, and opened immediately thereafter, for all the labor and materials required for the approaches to the U. S. Custom House, Post Office, etc., at Port Townsend, Washington, in accordance with drawing and specification, copies of which may be had at this office or the office of the Cnstodian at Port Townsend, Washington.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so.

All bids received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposal for Approaches to the U. S. Custom House, Post Office, etc., building at Port Townsend, Washington," and addressed to,

CHARLES B. KEMPER,
Acting Supervising Architect.

CITY BUILDING NEWS.

Austin near Larkin. To build; owner, Olympic Salt Water Co.; architect, H. A. Schulze; contractor, J. H. McKay; signed, Nov. 12; filed, Nov. 22; cost $12,870.

Austin near Larkin. Concrete and cement work; owner, Olympic Salt Water Co.; architect, H. A. Schulze; contractor, S. B. Cushing; signed, Nov. 12; filed, Nov. 22; cost $3060.45.

Battery between California and Sacramento. Additions and repairs; owners, Main & Winchester; architect, C. Geddes; contractor, James McLean; signed, Nov. 9; filed, Nov. 15; cost $1440.

Bryant near Second. To build; owner, Margaret Brown; contractor, M. C. Lynch; signed, Nov. 24; filed, Nov. 24; cost $5500.

Bush and Baker. To build; owner, J. McInerny; contractor, J. McInerny; cost $5000.

California near Baker. Two two-story frames; owner, Mrs. C. F. Clarke; architect, W. H. Wharff; contractor, F. W. Maurice; signed, Nov. 14; filed, Nov. 15; cost $6721.

Cumberland street No. 120. Additions and alterations; owner, William Wallace; contractor, G. G. Gillespie; signed, Nov. 19; filed, Nov. 20; cost $1315.

Clay near Broderick. To build; owner, Otto Tum Suden; architects, Salfield & Kohlberg; contractor, H. Rohling; signed, Nov. 23; filed, Nov. 23; cost $4418.

Clay and Polk. Alterations; owner, Warring Wilkinson; architects, Wright & Sanders; contractor, J. Stuart Mackay; signed, Nov. 26; filed, Dec. 3; cost $4395.

Day near Sanchez. Alterations and additions; owner, Anton Schwellinger; contractor, H. Klahn; signed, Nov. 24; filed, Nov. 30; cost $1620.

De Long Ave. near Fredrick. Cottage; owner, W. D. Scurlock; architect, Clide Currigan; contractor, A. Larsen; signed, Nov. 12; filed, Nov. 14; cost $1720.

Diamond near 25th. To build; owner, Eliza Harrington; contractor, J. T. Hofmeister; signed, Nov. 20; filed, Nov. 21; cost $1600.

Douglass near 22d. To build; owner, Chas. T. Collins; architect, T. J. Welsh; contractor, H. Jacks; signed, Nov. 28; filed, Dec. 6: cost $1185.

Folsom near 18th. Painting; owner, Charles Back; architects, Kenitzar & Barth; contractor, W. E. Mortensen; signed, Oct. 11; filed, Nov. 27; cost $1020.

Fulton near Steiner. Six flats and addition to one-story cottage; owner, T. R. Scheyer; architect, Salfield & Kohlberg; contractor, T. R. Bassett; signed, Nov. 17; filed, Nov. 22; cost $12,523.

Golden Gate Ave. near Laguna. Three-story addition; owner, G. H. Luchsinger and others; architect, H. Geilfuss; contractor, F. W. Kern; signed, Dec. 1; filed, Dec. 4; cost $3820.

Hayes near Octavia. To build; owner, G. Boro; architect, J. Godart; contractor, F. W. Kern; signed, Nov. 15; filed, Nov. 17; cost $7072.

Hayes near Lott. To build; owner, Peter Martin; architect, T. J. Welsh; contractor, W. Koenig; signed, Nov. 14; filed, Nov. 16; cost $1610.

Laguna and Jackson. Stone work; owner, W. F. Whittier; architect, E. R. Swain; contractor, O. E. Brady; signed, Oct. 12; filed, Nov. 9; cost $8670.

Laguna and Jackson. Spanish tiles, etc.; owner, W. F. Whittier: architect, E. R. Swain; contractor, Forderer Cornice Works; signed, Nov. 21; filed, Nov. 24; cost $4200.

Langton and Bryant. To build; owner, Mary A. Baxter; contractors, R. Doyle & Son; signed, Nov. 16; filed, Nov. 17; cost $2100.

Market and Pine. Alterations and additions; owner, Eliza N. Sherwood; architect, Clinton Day; contractor, John T. Grant; signed, Nov 30; filed, Dec. 1; cost $720.

Market between 6th and 7th. Two-story brick; owner, V. E. Harrigan; contractor, R. M. Murray; signed, Nov. 24; filed, Dec. 3; cost $5993.

McAllister near Parker Ave. To build; owner, Jacque Faivre; contractor, W. W. Rednall; signed, Nov. 20; filed, Nov. 21: cost $1815.

McAllister near Park Ave. To build; owner, Samartha A. Wohlke; contractor, W. W. Rednall; signed, Nov. 20; filed, Nov. 21; cost $1815.

Minna near 7th. Three-story building, six flats; owner, Eugen Paulme; architect, C. M. Rousseau; contractor, R. Van de Pavert; signed, Nov. 12; filed, Nov. 13; cost $6625.

Ninth Ave. near C. street. Two frame cottages; owner, Mary M. B. Martin; contractor, J. Winberg; signed, Nov. 8; filed, Nov. 13; cost $3840.

Pacific Ave. and Octavia. To build; owner, E. J. York; architect, H. Burns; contractor, T. McLachlan; signed, Nov. 17; filed, Nov. 17; cost $9450.

Pacific Ave. and Octavia. Plumbing work; owner, E. J. York; architect, H. Burns; contractor, W. F. Wilson; signed, Nov. 17; filed, Nov. 17; cost $1975.

Powell bet. Ellis and O'Farrell. Alterations; owner, Thomas Regan; contractor, W. Paulson; cost $1000.

Post near Leavenworth. Alterations and additions; owner, Geo. B. Jones; architect, R. H. White; contractor, J. L. W. Saunders. cost $1695.

Pine near Franklin. Alterations and additions; owners, T. Kelly & Sons; architect, M. J. Lyon; contractor, James Campbell; signed, Nov. 10; filed, Nov. 13; cost $4750.

Pine near Franklin. Brickwork; owner, T. Kelley & Sons; architect, M. J. Lyons; contractor, D. J. O'Brien; signed, Nov. 10; filed, Nov. 13; cost $1057.

Scott Place near Broadway. To build; owner, Jean Clavere, individually and as trustee for estate of Pierre Clavere; architect, Oliver Everett; contractor, J. B. Pene; signed, Nov. 13; filed, Nov. 13; cost $2550.

Scott near Clay. To build; owner, D. F. McCrath; architect, C. F. Robertson; day's work; cost $7000.

Second Ave. near Clement. To build; owner, Nathan Abraham; contractor, White Bros.; signed, Nov. 27; filed, Dec. 3; cost $2350.

Vallejo near Laguna. Plumbing; owner, C. E. Lipp; architect, Oliver Everett; contractor, Geo. Humphrey; signed, Nov. 16; filed, Nov. 17; cost $1295.

Vallejo near Franklin. Alterations and additions; owner, Henry Evans; architect, H. D. Mitchell; day's werk; cost $3000.

Vallejo near Franklin. Alterations and additions; owner, Henry J. Evans; architect, H. D. Mitchell; contractor, L. B. Schmid; signed, Nov. 27; filed, Nov. 27; cost $2200.

Valencia and Quinn. Alterations and additions; owner, Sarah B. Melone architect, Clinton Day; contractors, Cannon & Thompson; signed, Nov. 26 filed, Dec. 4; cost $2330.

Van Ness Ave. near Geary. Alterations and additions; owner, T. J. Simons; architects, Salfield & Kohlberg; contractor, A. Jackson; signed, Nov. 20; filed, Nov. 23; cost $4200.

Waller near Masonic Ave. To build; owner, Gussie Palmer; architect, W. H. Lillie; contractor, James McLean; signed, Dec. 1; filed, Dec. 8; cost $2110.

Webster near Elm Ave. To build; owner, L. D. West; contractors, Hyde & Cox; signed, Nov. 12; filed, Nov. 23; cost $5300.

Webster and Ivy Ave. Additions; owner, Teresa Murphy; architect, M. J. Welsh; contractor, Chas. Donglass; signed, Nov. 29; filed, Dec. 3; cost $2000.

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VOLUME XVI

DATE 1895

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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OF the many bills introduced in the present legislature, the one to regulate the practice of Architecture in the State of California, formulated by the San Francisco Chapter and the Southern California Chapter of the American Institute of Architects, is of special interest to the profession. It is a step in line with the attempts that have been made of late years in Eastern States to legislate on the subject. There is no valid reason why the public should not be protected from unscrupulous practitioners in the noble art of architecture, in the same manner as in the case of lawyers and doctors.

The questions concerning life, health and property that have to be decided by the Architect, are quite as numerous and important as similar questions handled by the other professions just mentioned, and the men interested in educating the public to a just appreciation of the desirability of the proposed law, are hopeful of success. While we cannot have the credit of being the first State to make this step of progress, yet we hope California will not lag too far behind her sister States in a matter of such public interest. The proposed bill has received the careful consideration of the Chapters of the Institute in this State, and while not precisely the same as the laws favored by the legislatures of New York and Texas agrees with them in their general features.

While the proposed bill may not cover all the points that it may be found advisable to regulate, yet its passage will be of benefit to the public, and the law can be amended and perfected, should its practical workings reveal any defects not now forseen.

The full text of the proposed bill will be found in another column.

IN this number we publish a copy of the Bill now before Congress for providing for the securing of plans for the United States public buildings. It shows itself throughout as a very complete and satisfactory document—the only point in which possibly it might be improved being in the doing away of the restriction of the competition to five

architects, debarring others from entering into the competition. It is well to select five and pay them, but do not confine the limit of choice to them, but have it open to all having the stated qualifications.

This may be of great advantage in some cases. Suppose that among the five architects chosen by the Commissioners there should happen to be no local architect who would, it would be presumed, know more about the wants of the locality, natural phenomena of the site, harmony with the buildings of the vicinity and such other matters as would not occur so well to an architect at a distance—it would give a chance then for the people to obtain possibly a better building than under the proposed restricted arrangement of the bill, and it would inure to no one's disadvantage.

If the Commissioners should find that among the outsiders a better plan could be obtained it would be its duty to select the same—and it may be considered as certain that the five picked architects would be glad to gracefully retire if such should happen to be the case.

AN ACT TO REGULATE THE PRACTICE OF ARCHITECTURE.

FORMULATED BY THE SAN FRANCISCO AND THE SOUTHERN CALIFORNIA CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE people of the State of California, represented in Senate and Assembly, do enact as follows:

SEC. 1.—Within sixty days from and after the passage of this Act the Governor of the State shall appoint ten persons, which persons so appointed shall constitute a Board, which Board shall be known and designated as the State Board of Architecture.

Five members of said Board of Architecture shall be residents of the Northern United States Judicial District of California, and shall constitute the Northern District Board for the examination of applicants for licenses to practice Architecture in this State. And five members of said Board shall be appointed from the Southern United States Judicial District of California, and shall constitute the Southern District Board for the examination of applicants for licenses to practice Architecture in this State.

The Districts shall be the same as the Northern and Southern United States Judicial Districts of this State at the time of the passage of this Act.

Said State Board of Architecture shall be appointed by the Governor as follows: Three members shall be appointed from the members in good standing of the San Francisco Chapter of the American Institute of Architects, two of whom shall be designated to hold office for two years. Three members shall be appointed from the members of the Southern California Chapter of the American Institute of Architects, two of whom shall be designated to hold office for two years; one member shall be appointed from the faculty of the State University at Berkeley, one member shall be appointed from the Teachers of the State Normal School at Los Angeles, and two members, one of whom shall be a resident of the Northern District and one a resident of the Southern District, who shall be lawyers in good standing, and who shall have been in practice for not less than five years.

Each person so appointed shall hold office for four years, unless so designated to hold office for two years And thereafter, upon the expiration of the term of office of the persons so appointed, the Governor of the State shall appoint a successor or successors to such outgoing person or persons whose term of office shall have expired, to hold office for four years, provided that the membership of the State Board of Architecture shall be composed as herein set forth.

Each member shall hold over after the expiration of his term of office until his successor shall have been duly appointed and qualified.

Any vacancy occurring in the membership of the Board shall be filled by the Governor of the State for the balance of the unexpired term in like manner.

The members of the Board shall serve without compensation from the State.

The expenses of said Board shall be paid out of the fees collected from applicants for licenses.

SEC. 2.—The members of the State Board of Architecture shall, before entering upon the discharge of the duties of their office, take and file with the Secretary of State the constitutional oath of office.

The said State Board of Architecture shall, within thirty days from and after their appointment, meet and elect from their number a President and a Vice-President, one of whom shall be a resident of the Northern District, and one a resident of the Southern District; and two Secretaries, one from each district. The Secretaries shall also act as Treasurers. The person receiving the highest number of votes shall be entitled to be Secretary, and the person receiving the next highest number of votes, be assistant Secretary. Said persons shall hold office for two years, or until their successors shall have been duly elected and qualified.

SEC. 3. The Board may adopt rules and regulations for the government of its proceedings, not inconsistent with this Act.

The State Board shall adopt a seal for its own use, and one for each of the District Boards. The seal used by the Northern District Board shall have the words "Northern District" inscribed thereon, and the one for the Southern District shall have the words "Southern District" inscribed thereon, and the Secretary and Assistant Secretary shall have charge, care and custody thereof.

The Secretary shall keep a correct record of all the proceedings of the Board, which shall be opened to public examination at all times. Six members shall constitute a quorum for the transaction of business of the State Board of Architecture, and three members shall constitute a quorum of the District Boards for the transaction of business.

Special meetings of the State Board of Architecture shall be called by the Secretary upon the written request of four of its members, and by giving twenty days written notice of such meeting, and the time and place at which such meeting is to be held, to each member of the Board.

The District Boards shall call special meetings upon the written request of two of its members made to the Secretary, and upon five day's written notice to each member of such District Board.

Within thirty days from and after the date of their appointment, the State Board shall meet to organize, elect officers, as in this Act provided for, and formulate and adopt a code of rules and regulations for its government in the examination of applicants for license to practice Architecture in this State; and such other rules and regulations as may be necessary and proper, not inconsistent with this Act. The Board may, from time to time, repeal or modify its rules and regulations, not inconsistent with this Act.

The State Board shall meet annually on the second Tuesday in April, for the purpose of transacting such business as may lawfully come before it, not inconsistent with this Act.

The District Boards shall hold their regular meetings for the examination of applicants for licenses to practice Architecture, on the last Tuesday of January, April, July and October of each year.

The Board of the Northern District shall meet in the rooms of the San Francisco Chapter of the American Institute of Architects in San Francisco; and the Board of the Southern District shall meet in the rooms of the Southern California Chapter of the American Institute of Architects in Los Angeles, and at such other times and places as they may elect, to examine applicants for licenses.

Any person shall be entitled to an examination for a license to practice Architecture upon payment to the District Board when he makes application, of a fee of fifteen dollars, which fee shall be retained by the Board; should the applicant pass a satisfactory examination by said District Board, the Secretary shall, upon the payment to him of a further fee of five dollars, issue to the applicant a certificate, signed by the President and Secretary, sealed with the seal of the District Board, and directed to the Secretary of State, setting forth the fact that the person therein named has passed a satisfactory examination, and that such person is entitled to a license to practice Architecture in this State, in accordance with the provisions of this Act; and upon the payment to the Secretary of State of a fee of five dollars, the Secretary shall at once issue to the person therein named a license to practice Architecture in this State in accordance with the provisions of this Act, which license shall contain the full name of the applicant, his birth place and age, together with the name of the District Board issuing the certificate, and date of issuance thereof. All papers received by the Secretary of State on application for license, shall be kept on file in his office, and a proper index and record thereof shall be kept by him.

SEC. 4. Any Architect in good standing, who shall show to the satisfaction of the District Board, of the District in which such Architect may reside, that he was engaged exclusively in the practice of the profession of Architecture on the date of the passage of this Act, shall be granted a Certificate without passing an examination, on the payment to the District Board of a fee of five dollars, provided such application shall be made within six months from and after the passage of this Act.

Said certificate shall set forth the fact that the person to whom the same was issued, was practicing Architecture in this State at the time of the passage of this Act, and that the person therein named is entitled to a license to practice Architecture, without having to pass an examination by the District Board, and the Secretary of State shall, upon the payment to him of a fee of five dollars, issue to the person named therein, a license to practice Architecture in this State in accordance with the provisions of this Act.

Each licensed Architect shall have his license recorded in the office of the County Recorder in each and every County in this State in which the holder thereof shall practice, and he shall pay to the Recorder the same fee as is charged for the recording of deeds. A failure to have his license so recorded shall be deemed sufficient cause for revocation of such license.

SEC. 5. Within six months from and after the passage of this Act, it shall be unlawful, and it shall be a misdemeanor, punishable by fine of not less than fifty dollars nor more than five hundred dollars, for any person to practice Architecture without a license in this State, or to advertise or put out any sign or card, or other device, which might indicate to the public that he was an Architect.

Provided, that nothing in this Act shall prevent any person from making plans for his own buildings, nor furnishing plans or other data for buildings for other persons; provided the person so furnishing such plans, or data, shall fully inform the person for whom such plans or data are furnished, that he, the person furnishing such plans, is not a licensed Architect; and provided further, that the person so furnishing plans or other data for building shall not be entitled to recover any fee or compensation for such plans, data or services.

Architect's licenses issued in accordance with the provisions of this Act, shall remain in full force until revoked for cause, as hereinafter provided for in this Act.

A license may be revoked for dishonest practices, or for gross incompetency in the practice of the profession, which questions shall be determined by the District Board of the District in which the person whose license is called in question shall reside, or shall be doing business; and upon a full investigation of the charges by the District Board, an opportunity having been given the accused to be heard in his own defense or by counsel; and upon the verdict of at least four members of the District Board, the Board may issue its certificate to the Secretary of State, revoking the license of the person accused; and the Secretary of State shall thereupon cancel such license. And on the cancellation of such license, it shall be the duty of the Secretary of the District Board to give notice of such cancellation to the County Recorder of each County in this State, whereupon the Recorder shall mark the license recorded in his office, "Cancelled".

After the expiration of six months, the person whose license was revoked, may have a new license issued to him by the Secretary of State upon the certificate of the District Board, by which the license was revoked.

Every licensed Architect shall have a seal, the impression of which must contain the name of the Architect, his place of business, and the words "Licensed Architect", with which he may stamp all plans prepared by him.

This Act shall take effect from and after its passage.

THE GOVERNMENT BUILDINGS BILL.

WE publish herewith a copy of the Bill relating to the re-organization of the Government Architects' office, which was introduced into the House of Representatives by Mr. McKaig, and into the Senate by Senator Brice, say the *American Architect*, under the following circumstances:

This Bill originated with a few architects in New York City, who happened to learn that notwithstanding the controversy between Secretary Carlisle and the American Institute of Architects, the Treasury Department was anxious to reorganize the Supervising Architect's office, and to have a bill introduced to this effect, because of the many objection-

able and illegal features of previous bills—notably the "Tarsney Bill"—which made them undesirable as well as inoperative.

The "McKaig Bill," which was draughted by Mr. George B. Post, of New York, in consultation with these New York architects and with the Treasury Department, embodies an entirely new idea which is based on the very satisfactory lines under which a number of Government Departments—notably the Light-house Department—have been conducted most successfully for a number of years; by placing the initiative and professional work under the management of an expert board, of the highest standing, under whose direction the work would be distributed for the best advantage of the country, of the work, and of the profession; leaving the administrative work in the hands of the Government, where it belongs.

The Bill, as originally draughted, was revised a number of times, by the Committee of Architects on the one hand, and by the Treasury Department on the other, and as introduced was entirely satisfactory to all parties concerned. Though many of the minor details may not apply to individual cases in individual sections of the country, they had to be adjusted so as to cover the entire territory, and also so as to meet administrative, legal and other objections not generally appreciated by the profession at large. The powers of the Commission are such as to enable them to modify their details from time to time, as they find it necessary and wise.

The principle of the Bill, namely, the instituting a Commission of high character to have charge of the architectural work of the Government, and to distribute the work amongst the most skillful architects in the country, is unquestionably a correct one.

The Bill has received the approval of the Secretary of the Treasury. It has passed the Committee on Public Buildings and Grounds, of the House, whose indorsement could not be stronger, and the Bill is now regularly before the House. Owing to its introduction at the end of the last session of Congress, at a time when the House was entirely absorbed by the Tariff revision, it was impossible to have a day set for its consideration and passage; therefore it had to go over to the present session of Congress.

In the House Committee's report to the House, recommending the passage of the Bill, they state, among other things:

"Your committee do not believe that the beneficial results that should be obtained, are obtained under the existing methods of planning and constructing public buildings of the United States.

"While the employment of the best artistic thought, and best and most approved systems of construction and equipment ought to be represented in the public edifices of this great nation, the contrary of these propositions is the result obtained under existing methods.

"Your Committee are advised that the best and highest types of artistic thought and architectural skill in European countries is found in the Government buildings of those countries, while in this country the reverse is the rule, and superiority of architectural design is represented in State, Municipal and private buildings, and not those erected by the General Government.

"A comparison of modern buildings, erected by private citizens and corporations, with those belonging to the Government of the United States, will show, as to the former, constant progress in construction and artistic expression, and continual increase in economy of construction, while in the case of the buildings of the United States there has been but little, if any, advancement. The buildings constructed recently by the United States, as compared with those constructed a quarter of a century ago, show a marked deterioration of artistic quality. The cost has been, relatively and positively, much greater that those of private buildings of the best type.

"Your Committee has been furnished reliable and trustworthy information and data, showing the cost of the best type of buildings constructed for States, municipalities, corporations and private citizens, ranges 38 to 50 cents per cubic foot of space, while the cost of buildings constructed by the United States ranges from 50 cents to $1.00 per cubic foot." * * *

"The conditions and results which your Committee thus call to your attention, necessarily follow the methods and practices now employed by the Government." * * *

"It now transpires that the time of the Supervising Architect is wholly employed in matters of administrative detail, and the architectural work of the office, the plans, designs and specifications, are prepared by mere copyists—cheap clerks." * * *

After entering elaborately into the present duties of the Supervising Architect, and showing the physical impossibility for one man to find any time for designing, the Report continues:

"The Supervising Architect rarely sees one of these buildings while in course of construction. Its construction is generally under the supervision of some local carpenter or builder, who never made any pretense to architectural knowledge or study; whose appointment was secured not because of his skill, but because of the political influence he could marshal, and whose greatest solicitude is to prolong the tenure of his employment by delaying the completion of the work." * * *

"A building, which, if the property of a private citizen would be constructed in months, when erected by the Government requires years for its completion. * * A public building at Detroit, Mich., where the construction was authorized eleven years ago, and $1,300,000 appropriated by Congress years since, the foundation-walls are not yet completed.

"Indeed, the abuses in the method above referred to, have become so serious that the Committee cannot conscientiously recommend public buildings at many places where the economical and convenient transaction of the business would require or justify such buildings could they be provided at a cost not greatly exceeding the necessary expenditure by a private owner for similar purposes.

"Of the Bills reported from this Committee during the present session, many are so reported only under the assumption that the buildings contemplated can be erected under some plan less wasteful than now in operation.

"The scope and purpose of the measure herewith presented is designed to remedy the many evils herein pointed out. To give to the country a better type of architecture in its buildings, and to stop the wasteful extravagance which is the necessary result of the present methods." * *

"The measure does not abrogate or take from the Supervising Architect any of the functions or authority belonging to the office, which, under existing conditions, *he is capable of performing*. He will remain and continue the representative of the Government, and perform all the duties that now pertain to his office, excepting the designing and preparation of drawings and specifications for such buildings, and the local supervision shall be subject to his approval." * *

"In fact, this measure is intended to make him what the title of his office indicates, the Supervisor of Architects; not the Government's architect, but the supervisor of the architects of the Government's works. Therefore, your Committee recommend the passage of the Bill."

In the Senate, the Bill was introduced in the Senate and referred to the Committee on Public Buildings and Grounds too late for its consideration, and has not yet been reported upon by this Committee.

To summarize: *In the House*, the Bill is regularly before the House, and as soon as a day can be set for the discussion of the same, it can be passed. *In the Senate*, the Bill is before the Committee, and as soon as it can be reported to the Senate and a day set for its discussion, it can be passed.

The Bill has received the approval of the Committee of the House, of the Secretary of the Treasury, of the Press, and of the profession. It has been before the profession for nearly a year. Numerous meetings of different professional societies and notably of the American Institute of Architects have taken place in the meanwhile, and its endorsement has been unanimous. Many Senators and Congressmen have been seen individually, and without exception have commended the Bill, and promised their support; many of them in writing. Up to the present date there has not been a single objection raised to the Bill; by the Public, by the Government, by the Representatives of the Government in the Senate or House, or by the profession; on the contrary, it has received the most positive and hearty endorsement.

The Bill should pass both Houses with little or no trouble, because:

1. It is purely administrative in its character.

2. Its object is to correct an inefficient system which was instituted years ago, and which has become not only obsolete, but positively pernicious.

3. It does not interfere with the present system, in so far as that system is efficient, but tends to relieve the present system of a burden to which it is not equal, and to enact proper measures to provide for this part of the work.

4. It asks for no appropriations or expenditure of money, but aims on the contrary, to effect economy in the expenditure of the moneys, and to raise the character of the work to the highest standard of the present age.

5. In raising the standard of the work, it will raise the standard of the art, create new incentive, bring forth new men, new opportunities, and result in covering this country with monuments which will eventually compare with those of other countries, and in time, perhaps, excel them.

6. It has received the hearty approval of everybody concerned or interested, on whichever side of the question they may be.

7. It will not legislate out of office any of the present office-holders—many of whom have served the Government faithfully for many years—because the work now in hand under the present system, and the maintenance of the buildings now completed, will demand the services of this force for many years to come, and it only applies to future work.

8. It will relieve the Secretary of the Treasury of all work of an expert character, for which he must necessarily depend upon outside advice, by placing at his disposal in this connection, an expert Board of the highest standing.

9. Not only will the buildings be equal to the best types that are erected in the United States, both artistically and constructively, but they will be built, as stated by the Committee of the House, at a saving of at least 30 per cent on the actual cost of construction, at least three years in the time of construction, saving not only the interest on the cost of the land and the cost of construction, besides salaries of superintendents, watchmen, etc., during this period—the cost of repairs and maintenance due to suspension of the work, but also three year's rent for temporary quarters pending completion of buildings.

10. It can be demonstrated by figures that under the new Bill, with better buildings, erected in a much shorter time, the cost of the construction of the buildings, the commissions of the architects, and the necessary appropriation for the Supervising Architect's office, the United States Government would save at least one million dollars per annum, as compared with the present system.

J. M. Carrere, *Secretary*.

By order of the Legislative Committee on Government Architecture:—

Permanent Committee: Bruce Price, *Chairman*; Ed. H. Kendall; John M. Carrere, *Secretary*.

Advisory Committee: R. M. Hunt, *Chairman*; Chas. F. McKim and Geo. B. Post.

A BILL TO PROVIDE FOR THE SECURING OF PLANS AND FOR THE ERECTION OF THE PUBLIC BUILDINGS OF THE UNITED STATES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President, by and with the advice and consent of the Senate, shall appoint a commission on public architecture consisting of three architects of high scientific and artistic attainment and large practical experience, and two officers of the Engineer Corps of the United States Army. If necessary, a separate appointment of any or all of three members of the commission who are architects may be made for each building under consideration, and members of the commission for one building may act upon other buildings. That the commission, under the general direction of the Secretary of the Treasury, shall discharge all the administrative duties relating to the procuring of designs and the appointing of architects for all buildings hereafter erected by the Government of the United States.

Section 2. That the Secretary of the Treasury shall be the president of the commission *ex officio*, and the Supervising Architect of the Treasury Department shall be a member of the commission *ex officio*. In the absence of the president of the commission, one of the members shall be elected as chairman by ballot, and he shall preside at the meetings and perform such other duties as the rules of the commission may prescribe; and the Supervising Architect of the Treasury shall act as secretary of the commission.

Sec. 3. That the secretary of the Treasury shall convene the commission whenever, in his judgment, the exigencies of the service require it.

Sec. 4 That the commission shall adopt rules and regulations governing competition in the procuring of designs, and for the government of its meetings and the general performance of its duties. The members of the commission shall be paid their actual expenses and subsistence and a *per diem* allowance of $10 while actually engaged in the performance of their official duties, but no *per diam* allowance or salary shall be allowed to any civil or military officer on account of his being employed on the commission, but his actual traveling expenses and subsistence shall be paid while engaged thereon.

Sec. 5. That in case the limit of cost provided by law is $100,000 or over, the commission shall select by ballot, for

each building, five architects to prepare designs in competition; in case the limit of cost is less than $100,000, the commission may, in its discretion, select by ballot an architect without competition. No architect shall be eligible for entering as a competitor, or for appointment, who has not had at least ten years' experience as an architect-in-chief, and unless he can satisfy the commission, through work already done by him, or otherwise, that he is competent to take charge of the economical construction of the building. The commission shall cause to be made and issued to competing architects, surveys, schedules of requirements for the building, limitations of cost, and all facts which might control or influence the character of the required design. The commission shall specify the number and character of the drawings required, and fix a definite time for their completion. The Secretary of the Treasury, upon the recommendation of the commission, shall pay to each unsuccessful competitor, to reimburse him for expenses incurred in preparing the competitive drawings, the following amounts: For designs for buildings to cost not more than $150,000, the sum of $150, and for each and every $100,000 of the limit of cost of the building above that amount, the additional sum of $100; but in no case shall more than $1,000 be paid to any unsuccessful competitor.

SEC. 6. That the commission shall reject and return to the author any drawings which have failed to exactly comply with the requirements and regulations adopted by the commission for the competition, and no compensation for their preparation shall be paid, and the author thereof shall be debarred from all further participation in the competition. The commission shall carefully examine the drawings of each competitor in competition and shall select one design as the design of the proposed building, and shall recommend its author as the architect for that building and return forthwith all other drawings to their authors. The Secretary of the Treasury shall thereupon appoint the architect so recommended and he shall perform all the customary duties performed by an architect in private practice, namely: The making of all preliminary sketches, the modification of his designs to meet possible requirements of the commission, the preparation of a set of general working drawings to procure estimates; the preparation of a set of general details on a large scale, a set of full-size drawings for moulded, carved or ornamental work, and a set of all other original drawings and specifications required by the commission. He shall supervise the construction of the building, and no payment shall be made to any contractor until the certificate of the architect has been received by the Secretary of the Treasury that the work has been executed in conformity with the contract. He shall file a complete set of the construction drawings in the Treasury Department, from which all duplicates shall be paid for out of the appropriation for the building. The architect shall be paid for his services a fee of five per centum upon the total cost of the work and the usual traveling expenses. The expenses of the commission and the fees of the architect shall be paid by the Secretary of the Treasury out of the appropriation for the building in the erection of which they were incurred.

SEC. 7. That the Secretary of the Treasury, upon the recommendation of the commission, shall authorize the architect to employ a competent clerk-of-the-works, at a salary to be established by the commission, and he shall be paid for his services out of the appropriation for the building.

SEC. 8. That the Supervising Architect of the Treasury Department, under the direction of the Secretary of the Treasury, shall be the representative of the Government in all matters connected with the erection and completion of public buildings and the payment therefor. He shall receive proposals for the work, and, with the approval of the architect of the building, he shall award the contracts therefor. He shall perform all other duties that now pertain to his office, except such duties as are vested by this Act in the architect of the building.

SEC. 9. That all Acts and parts of Acts inconsistent with this Act are hereby repealed.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines, on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PERSPECTIVE view of residence, Geo. W. Payne & Sons Architects, Carthage, Ill.

SCHOOL House in Alameda, W. H. Armitage, Architect, San Francisco.

COMPETITIVE Design N. S. G. W. Building, Shea & Shea Architects.

THREE flats, Oak and Laguna streets, Shea & Shea Architects.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BARSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

CORRESPONDENCE

The Editor is not responsible for any opinions of Correspondents.

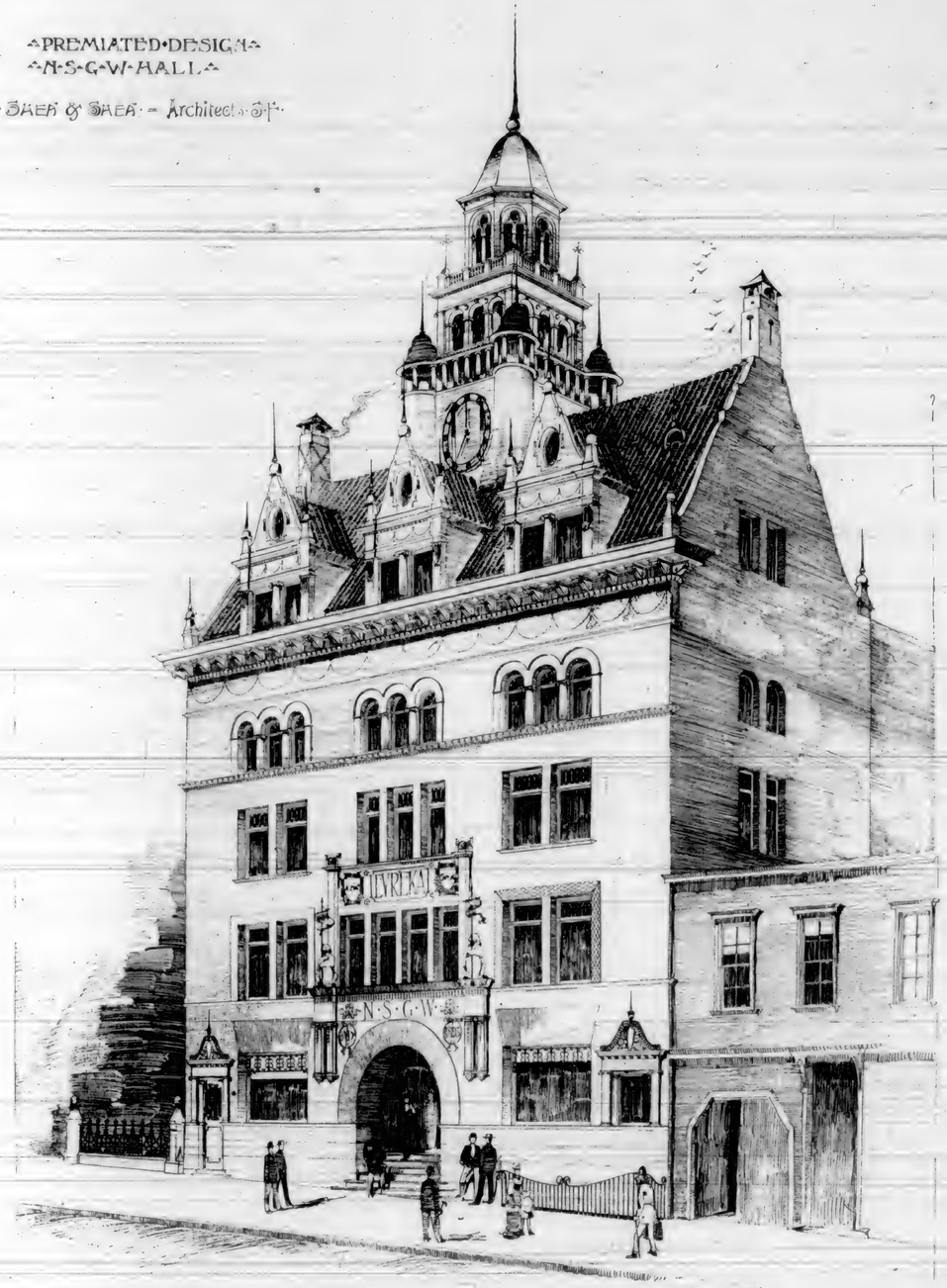
To the Editor of the California Architect and Building News.

IN looking over the proposed Bill for regulating the practice of architects there are quite a number of things that deserve consideration and wherein it appears to me that it might be improved.

1st. In the composition of the Board it is unwise to limit

PREMIATED DESIGN
N·S·G·W· HALL

SHEA & SHEA - Architects



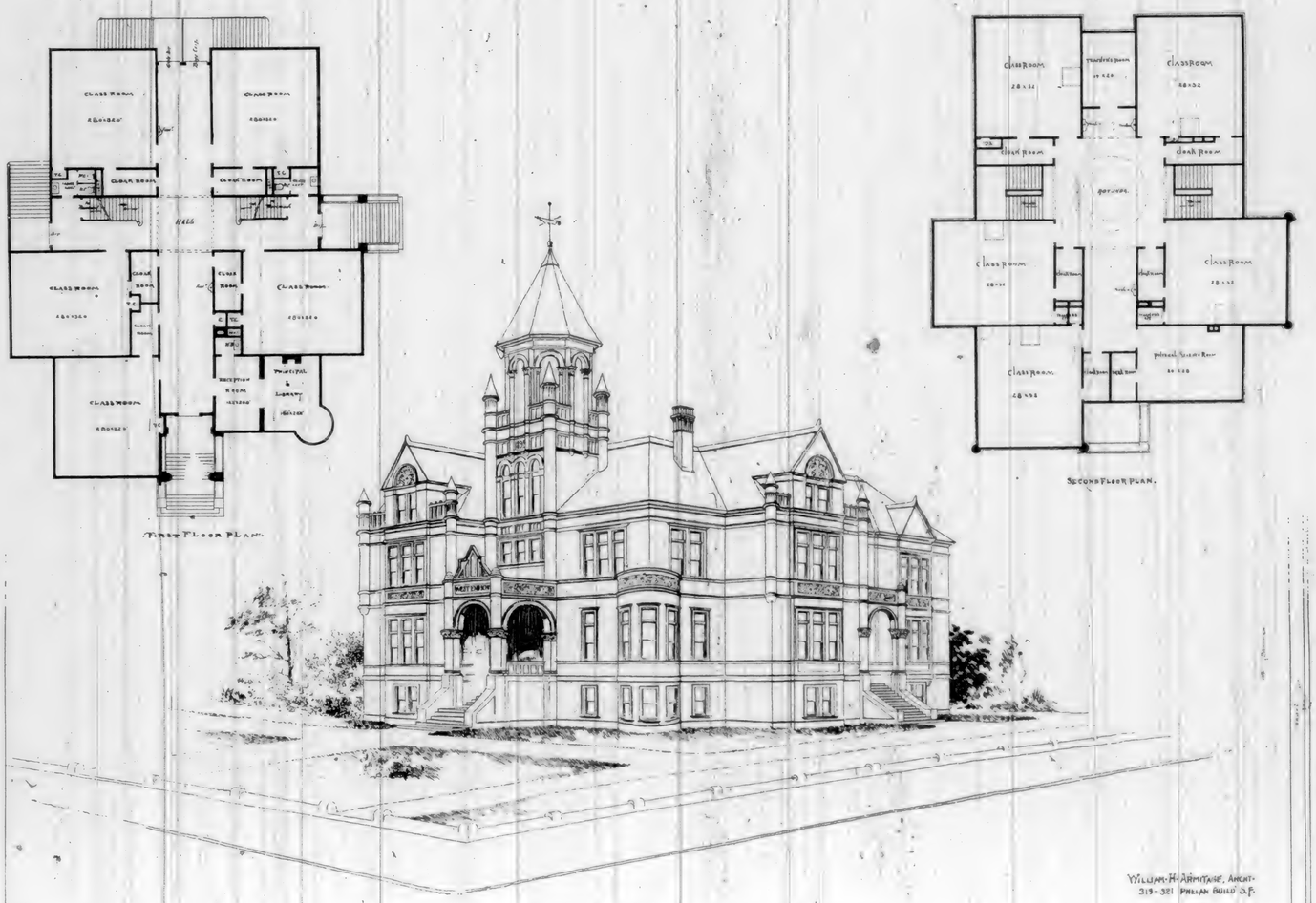
GEO. W. PAYNE & SON.
ARCHITECTS.
CARTHAGE, ILL.

VIEW.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XVI Nº 1 JANUARY 1895



FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

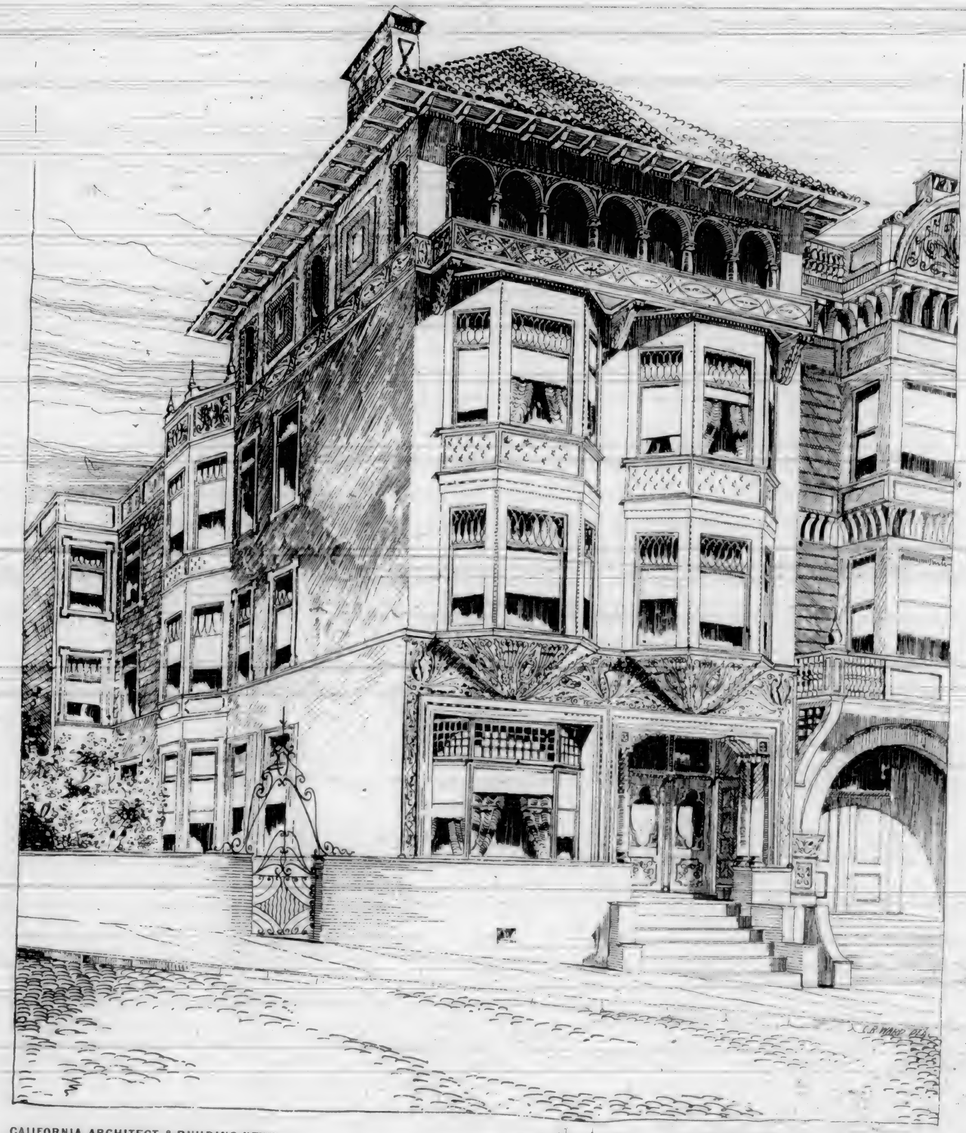
WILLIAM H. ARMITAGE, ARCHT.
313-321 PHELAN BUILDING.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XVI Nº 1 JANUARY 1895

THREE FLATS FOR
MR. J. M. GOEWEY
OAK & LAGUNA STS. S. F.
SHEA & SHEA ARCH'TS



the examining architects to members of the Chapter of the American Institute of Architects—until such Chapters themselves have a more strict examination into the merits of their own members—if such members had to pass an examination themselves before becoming such they would then have a certain standing in the examination of others, and to commence this matter right such should be the case.

The other members of the board have no *raison d'etre*. If there were Professors of Architecture at the Berkeley or Stanford University I should say let thom be on the Board, otherwise have no professors. The lawyers are certainly out of place—might with just as much reason put architects on the Board of Examiners for Law Students. If they are put their for legal advice make them such but to have no voice in the examination or other actions of the Board.

2d. It would seem that semi-annual examinations would be sufficient—instead of quarterly.

3d. Although naturally the most likely place to hold the examinations would be at the rooms of the Chapter, still I believe it would be better to leave such a small matter as this in the hands of the examiners themselves and not bind them down to certain locations.

4th. The clause calling for an architect to record his license in every County in which he may practice gives him needless trouble. It seems to me quite sufficient for all practical purposes to have his license recorded in the County wherein is his principal place of business—and when he has to lose his license because of his forgetfulness in omitting to record it in the County where he may be architect for some little summer cottage—the punishment hardly fits the crime.

5th. In the case of such a serious matter as the Revocation of an Architects' License for dishonest practices or gross incompetency—it should be left to the *State Board* to decide—as in a case of any local prejudice, such prejudice would not so likely get in its work as if the trial should be left to the *District Board* of the District in which the accused practices, if it needs must be decided by a District Board let the Board of the other District take the case up.

These few criticisms I make in the best of spirit and hope they may tend to improve the proposed bill.

Yours, etc., W. J. C.

WASHINGTON STATE CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

IN the latter part of March, 1894, several architects of the State of Washington, believing that the time was ripe for the formation of a Chapter of Architects, met in the office of one of their number and considered the feasibility of such organization.

At an adjourned meeting held in April with enthusiasm, the Chapter was born and a Constitution and By-Laws adopted; officers for the current year, and to serve until the annual meeting in January, 1895, were elected; May 10th, at Tacoma, the organization was ratified and perfected. A Charter was granted by the American Institute, and the Washington State Chapter of the American Institute of Architects was full fledged. A series of amendments to the Constitution and By-Laws in harmony with those of the Institute have accordingly been proposed and submitted to the members for their consideration.

Meetings, with good attendance, have been held regularly on the second and last Thursdays of each month, with the exception of the months of November and December.

The Chapter has kept constantly in mind the importance of interesting the general public in Art and Professional practice. Special papers have been prepared and read at several of the meetings which were held at the Chamber of Commerce in Seattle and City Council Chamber in Tacoma, and subjects of general interest discussed.

The first paper read was "Venice, its Color and Line" by Mr. Willcox, April 12th, then followed, successively, a timely paper on "Competitions" by Mr. Bebb, April 26th; "Architects as Pioneers" by Mr. Bullard, May 10th; President Boone's "Address" May 10th; "The Ethics of the Profession" by Mr. Evers, June 14th; "How to Hake Home Beautiful" by Mr. Willcox, June 28th; "Abuses in the Office of the Supervising Architect of the Treasury" by Mr. Willcox, July 15th; "Testing of Piles" by Mr. Bebb, August 26th; "Laying out of Cities" by Mr. Willcox, August 26; "Fire Proof Construction" by Mr. Bebb, September 13th; "Errors in House Construction" by Mr. Willcox, November 9th; "Building Materials of the Puget Sound Country" by Mr. Talcott, December 11th; with one yet to be read "On the Architect as a Limited Agent" by Mr. Saunders.

The Council believes it is a matter of congratulation, that, with a practicing membership of Thirty-four, with Three Honorary Members, or a roll of membership of Thirty-seven members, this, the youngest Chapter in the United States, save one, we now rank Sixth in a list of twenty-six or more Chapters, and we believe also that as the Society increases in influence, it will serve to a corresponding advantage of its members in many practical ways.

LIST OF OFFICERS AND MEMBERS OF THE WASHINGTON STATE CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

W. E. Boone, Seattle, Wash., President; G. W. Bullard, Tacoma, Wash., 1st Vice-President; William H. Willcox, Seattle, Wash., 2d Vice-President; Charles W. Saunders, Seattle, Wash., Secretary; Cecil S. Evers, Seattle, Wash., Treasurer.

MEMBERS OF THE COUNCIL.

Officers of the Chapter (Ex-officio) and Wm. Farrell, Tacomo, Wash.; Albert Sutton, Tacoma, Wash.

HONORARY MEMBERS.

Prof. J. M. Taylor, University of Washington; Chas. L. Denny, Seattle, Wash.; A. W. Conant, Seattle, Wash.

COMPLETE LIST OF MEMBERS.

Chas. H. Bebb, W. E. Boone, A. B. Chamberlin, A. W. Conant, Chas. L. Denny, Cecil C. Evers; A. V. Hector, E. W. Hooper, E. W. Houghton, T. Josenhans, Emil de Neuf, Chas. W. Saunders, Carl Siebrand, H. Steinmann, Jas. Stephen, Prof. J. M. Taylor, A. Wickersham, Wm. H. Willcox, Seattle, Wash.; G. W. Bullard, C. A. Darmer, Wm. Farrell, L. C. Houser, Louis Mendel, R. L. Robertson, A. J. Russell, Albert Sutton, Chas. B. Talbot, Tacoma, Wash.; L. M. Boardman, Mr. Cutter, John K. Dow, Mr. Malmgren, H. Prousse, L. L. Rand, Spokane, Wash.; H. L. Copeland, Olympia, Wash.; C. Ferris White, Everett, Wash.; John Parkinson, Los Angeles, Cal.; G. H. Parks, Kansas City Mo.

THE FIRST ANNUAL MEETING.

The first annual meeting of the American Institute of Architects, which was held at the Chambers of Com-

merce rooms yesterday, brought out quite a gathering, and developed the fact that the Chapter stands sixth in the United States in the number of members. A petition to the Regents of the State University for the establishment of a Chair of Architecture and the Building Arts was adopted and a valuable report on the building materials of the state was presented. A pleasant interruption in the proceedings occured when the Chapter paid a visit to the Denny Clay Company's works at Van Asselt on a special train, as the guests of the company.

The meeting was delayed by the failure of the members from Tacoma to arrive at the appointed time, which was 10:30, and the assemblage was not called to order till 11:30 by President Boone. Those present were: George W. Bullard, William Farrell, Albert Sutton and H. A. Russell, of Tacoma; Charles H. Babb, A. B. Chamberlain, C. C. Evers, C. W. Hooper E. W. Hampton, E. De Neuf, C. W. Saunders, James Stephen, William H. Willcox and A. Wickersham, of Seattle, active members, and Charles L. Denny and A. W. Conant, honorary members.

President Boone welcomed the members, and after the reading of the minutes he made the following address:

In the month of April, 1894, the first practical step in the organization of this Chapter was taken. A provisional Chaper was at that time founded. On the eleventh of May, 1894, at a meeting held in Tacoma, the work of this provisional Chapter was ratified; then Constitution and By-Laws under which it was started were adopted; and the officers chosen by it were continued as the officers of the State Chapter. This, therefore, is the first annual meeting of the Chapter. The regular monthly meetings have been held in Tacoma and Seattle alternately.

The American Institute of Architects has granted us a Charter, under the name of the "Washington State Chapter of the American Institute of Architects." This makes us an integral part of that important body; and it is surely worthy of remark that while we are probably the youngest Chapter in the United States, we rank as sixth in point of membership. This very high rank in our infancy bears striking testimony to the rapidity with which towns and cities are springing up all over this wonderful young State. If our building operations had not attained relatively gigantic proportions, we could not have so large a membership.

It affords me pleasure to say that in my opinion this Chapter has already exercised a beneficial influence upon our profession in this State. Papers of an interesting and instructive character have been read and discussed at our meetings. Men of learning, ability and experience have given us the benefit of their reflections and observations, and have thus invested our meetings with deep and practical interest.

The American Institute of Architects has for some time past made strenuous efforts to procure the adoption of improved methods in designing and constructing Government buildings. The inartistic character of these buildings in general is at first sight a reproach upon the state of architecture in the United States, and is felt by the Institute as a reflection upon the whole body of Architects.

This Chapter lost no time in seconding these efforts of the Institute, which should be encouraged and upheld wherever there is an architect who takes pride in his profession.

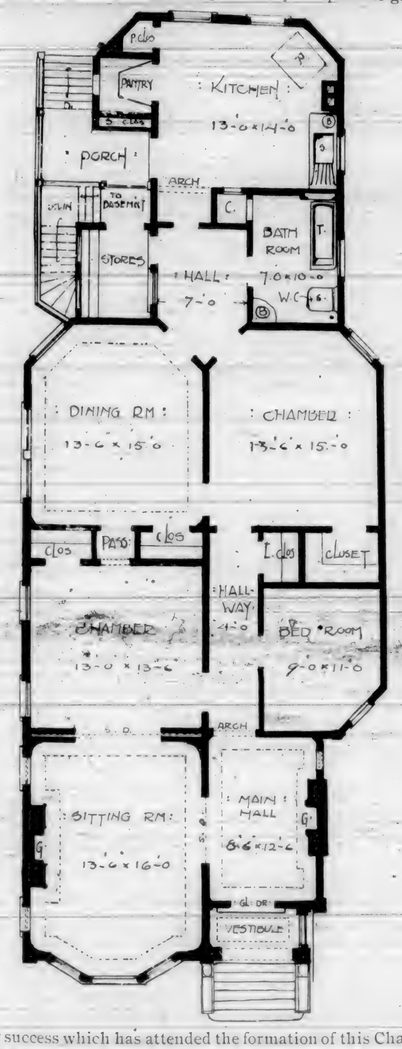
I recommend that as soon as practicable this Chapter take the steps necessary to the establishment of an Institute of Building Arts. This can be commenced with Exhibits of building materials, which would serve effectually to bring into prominence the varied and extensive resources of the building trades in this State.

The number of applicants for instruction in architecture in the principal cities of Washington is already quite large. With the high rank in Chapter membership which has been noticed, it would seem proper that the University of Washington, whose main building is now under construction should establish a Chair of Architecture. This Chapter may appropriately aid in this matter. The State at large is deeply interested in the character and learning of the Architects who are to impress their ideas in a conspicuous way upon our growing and ambitious young cities.

I am satisfied that after due consideration the enlightened

public opinion of the State will approve the establishment of a Chair of Architecture in our new University.

There are other subjects that might be fitly discussed in your President's address; but as there is a considerable amount of business to be transacted by you at this meeting, I have thought it better to touch but lightly upon a few topics. In conclusion, I congratulate you upon the gratifying success which has attended the formation of this Chapter, and I thank you sincerely for the kindness and consideration shown to me as its first President.



The report of the Committee on Tabulation of the Building Material of the State was most exhaustive and complete in its detail and a full report of which will be published in the February issue of the CALIFORNIA ARCHITECT AND BUILDING NEWS.

A CHAIR OF ARCHITECTURE.

The committee on recommendations of the president indorsed his suggestions, and urged the Chapter to place before the Regents of the University a petition for the establishment of a Chair of Architecture.

A communication was received from the Secretary of the American Institute desiring the Chapter to use all the influence possible with the State's Senator and Representatives in Congress to secure the passage of House Bill No. 7470, which provides for a reform in the manner in which designs for Government Buildings are made and selected.

THE NEW OFFICERS.

After a short recess the Chapter proceeded to elect officers for the ensuing year. The election resulted as follows: President, George W. Bullard, Tacoma; Vice-President; A. Wickersham, Seattle; 2d Vice-President, L. M. Boardman, Spokane; Secretary, C. W. Saunders, Seattle; Treasurer, C. C. Evers, Seattle; Council, Albert Sutton, of Tacoma, W. H. Willcox, of Seattle, and officers ex-officio.

A vote of thanks was tendered the Denny Clay Company and the Chamber of Commerce for courtesies shown.

The reading of papers was postponed till the next meeting. The Chapter adjourned at six o'clock to meet on February 14th, in Tacoma.

MEETINGS OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

ADJOURNED and regular meetings of the San Francisco Chapter of the American Institute of Architects, were held during the past month for the consideration of the proposed Act to Regulate the Practice of Architecture in the State of California.

A committee was appointed to confer with a similar committee from the Southern California Chapter and the draft of the law which was agreed upon will be found in another column.

The Board of Freeholders now at work on the making of a New Charter for the City and County of San Francisco, were communicated with to inform them that it was the opinion of the Chapter that provision should be made for a Board of Public Works with power to formulate and enforce rules and regulations to govern the erection and alterations of buildings.

PROTECTING CANADIAN ARCHITECTS.

DOUBTLESS as the result of representations made from time to time by the architectural Associations of Ontario and Quebec, it is gratifying to learn that the Government has resolved to change the method of appraising the value of architectural plans imported for use in the erection of buildings in Canada. We are informed that new instructions have lately been issued by the Government to customs officials, under which architectural plans passing through the customs will in future be charged a duty based on the cost of the building to be erected. It has likewise been stated, though with what authority we know not, that the new regulations are to be retroactive, and that under them duty will be collected on the cost of the Ortario Legislative buildings, the Toronto Board of Trade, and other buildings erected during recent years from the plans of foreign architects.—*Canadian Architect and Builder.*

BOOKS AND PERIODICALS.

LIPPINCOTTS' Magazine for January 1895, has for its complete Novel "The Waifs of Fighting Rocks" by Captain Charles McIlvaine. The scene is laid in the mountains of West Virginia, and the tale is one of adventure, love jealousy among the mountains. "By Telephone," a stirring story by Francis Regal, shows how a plucky reporter defeated a comspiracy and brought the criminals to justice. The Christmas stories are promptly on hand for the holidays; "With the Autocrat" recalls some notable private utterances of Dr. Holmes. We always welcome the coming of this readable magazine with interest.

THE NEW SCIENCE REVIEW for January, 1895. This handsome quarterly comes to hand with its usual readable contents, J. M. Stoddart the editor appears to fulfill the promise made in the start of having a miscellany of modern thought and discovery, keeping a little ahead of his contemparies in bringing the discovery of to-day before the people in a way that cannot but please those who take an interest in Scientific Facts, without being called men of science and this class includes by far the largest number of readers. We notice that the question of "What is Electricity" is the title of three articles in the January number.

The Kalendar of the ROYAL INSTITUTE OF BRITISH ARCHITECTS, 1894-95, comes to hand in its usual neat and attractive form. An article upon the Progressive Examinations qualifying for Registration as Probationer and Student cannot fail to be of interest to architects in this country. Space will not allow us to make extended extracts from the rules. The following advice to applicants before entering an architect's office, are certainly wise and as true on this side of the water, as upon the other. The preliminary, qualifying for probationer. The subjects comprised in this examination are those in which proficiency should be attained by the applicant before entering an architect's office, and it is desirable that special attention be given to them before he leaves school.

Clear and well-formed hand writing, correct spelling, grammar and punctuation are indispensable. Powers of observation and of graphic description, facility of composition and lucidity in the expression of ideas, should be carefully cultivated, as being of the utmost value in the prosecution of further studies, and in the work of later years.

Arithmetic, algebra, and plan geometry should be familiar to the applicant, and a knowledge of their application in the solution of simple problems in elementary mechanics and physics should be acquired.

The geography of Europe and the history of England from the Norman Conquest to the end of the Tudor dynasty should be well studied, regard being had to the connection between the history of the country and its architecture.

A good knowledge of French is essential, and of German or Italian very desirable, and a clear understanding of the Continental metrical system will also be useful.

Geometrical drawing and the elements of perspective are indispensable subjects of study, and should receive particular attention; while freehand drawing with rapidity and precision from the cast and the antique, and sketching with accuracy, should be carefully cultivated. Reasonable proficiency in these subjects is of the first importance.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONSTRUCTION OF PARTY WALL AGREEMENT.—A deed between W. and J. owners of adjoining lots, and the former's mortgagees, recited that it was agreed that J. should convey to W. 5 ¾ inches lying between the western wall of his building and his boundary line, and pay W. $400, in consideration of which W. should execute a convenant to preserve the easement for light and air unto J., his heirs, assigns, etc., and also use five ¾ inches for the purpose of erecting a wall, sixteen feet high only, to the eastern end of a certain addition which W. proposed to so build that its eastern wall should rest on the boundary line between the lots, and that neither W. nor any person claiming through him should make any erection on his lot or such strip higher than sixteen feet, unless there was left between the buildings a clear space of thirty-six inches from the height of sixteen feet upward. It was held, that J. could put windows in a seven story party wall erected by him, six ¾ inches of which stands on W's ground.

Weigman v. Jones, Supreme Court of Pennsylvania, 30 At. Rep. 198. 183.

LIABILITY FOR EXTRAS FOR CHANGES ORDERED BY BUILDING INSPECTORS.—After work was commenced on a church under a contract providing that no extras should be paid for unless agreed to in writing signed by the parties, city building inspectors ordered changes, a sketch of which was prepared by the architect, and the contractor was directed to make such changes. Though there was no express contract for the extras made necessary by the order, it was the duty of the church corporation to see that the order was obeyed, from which arose an obligation to pay for the work necessary therefore, done with the consent of the corporation, under the direction of its architect.

Cunningham v. Fourth Baptist Church, Supreme Court of Pennsylvania, 28 At. Rep. 490. 113.

WHEN CONTRACTOR HAS NO LIEN.—The statute giving a lien to any one who furnishes labor or material for a building "under contract with the owner or his agent, trustee, contractor or contractors," does not give a lien to one furnishing labor or material under a contractor with a lessee in the absence of authority from the owner. The owner of land is not affected by a judgment foreclosing liens for improvements against his lessee if he was not made a party to the action.

Penfield v. Harris, Court of Civil Appeals of Texas, 27 S. W. R. Rep. 762. 86.

EFFECT OF ABANDONMENT OF BUILDING CONTRACT BY CONTRACTOR.—A contractor, to whom payment was to be made only upon approval of the work by the architect, gave complainants an order payable out of the amount to become due, which the owner accepted on condition that the architect approve the work. The contractor abandoned the work before completion. A bill in equity to enforce payment of such order, and for an accounting of the amount due the contractor, was demurrable, as complainants had an edequate remedy at law. Where a contract provides that if the contractor fail to complete the building as agreed the owner may do so, and deduct the expense from the contract price, the contractor cannot abandon the work, and compel the owner to complete it, and account to him for the balance of the contract price.

Bernz v. Marcus Snyre Co. v. Court of Errors and Appeals of New Jersey, 30 At. Rep. 21. 139.

CONSTITUTIONAL LAW RESTRICTING HOURS OF WORK.—The statute which forbids contractors for city work in the city of Buffalo to accept more than eight hours for a day's work, except in cases of necessity, does not "abridge the privileges of citizens" or deprive any citizen of his rights or privileges.

People v. Beck, 30 N. Y. Supp. 473, Supreme Court of Buffalo, General Term. 50.

BUSINESS MOSAICS.

The Schenck Patent Swinging Hose Reel heretofore manufactured by the W. T. Y. Schenck has become the property of the Revere Rubber Co., whose San Francisco Store is located at 527 Market street. The Company is one of the largest and its reputation as manufacturers of high class goods is well established. The Schenck Reel will be a feature of its business and receive the attention so valuable a patent deserves.

When Adam in bliss, asked Eve for a kiss, she pucked up her lips with a coo; gave a look so ecstatic, and answered emphatic, "I don't care A-dam if you do."—*Clay Record.*

The J. L. Mott Iron Works, New York, Boston, Chicago, St. Louis and San Francisco. See their advertisement on p. x of this journal. The Imperial Porcelain Roll Rim Roman Bath cannot be improved upon for fine appearance, durability and perfection from a sanitary stand point, while entiling no labor of scouring or burnishing, merely wiped out with a sponge and the tub is cleaned. For information and circulars apply to M. S. James, Pacific Coast representative, room 35, Flood Building, San Francisco.

Take after his father—"The boy with sawed-off trowsers."—*Clay Record.*

Edward B. Hindes & Co., 411 Mission street, San Francisco, is the place to go if you want Hill's Patent Inside Sliding Blinds, Perfection Window Screens, Latest Improved Venetion Blinds, Patent Self Coiling Burglar and Patent Self Coiling burglar and fire-proof Steel Shutters, or Rolling Wood Partitions. Send for a catalogue and prices if you have not time to call and examine for yourself. Don't go if you can't resist temptation for you are sure to leave an order.

Miss PEART—"What column do you read first in the paper?" Miss TEAR—"The society column. Why?" Miss PEART—"I should think you would be more interested in "Male help wanted."—*Philadelphia Inquirer.*

The attention of those about to build, is called to the advertisement of Joseph Budd the well known manufacturer of sanitary appliances, page vii of this journal. The medals and diplomas awarded him at the State Fair in 1888 and 1889, are all-well enough in their way but the reliability of the man, and the quality of the goods furnished by his house, prove that the old saying "Actions speak louder than work," is true, and accounts for the popularity that the public have manifested in keeping him busy filling orders, even in dull times—what will it be when business revieves—don't forget the number 575 Mission street, San Francisco.

Bacon—"What are you doing with a picture of a foot-ball player pinned to your coat?" EGBERT—"Oh, yes! My wife pinned that there so as to remind me to have my hair cut."—*Yonkers Statesman.*

Clawson's Patent Chimneys, most complete and safest in the market, 1340 Market street, San Francisco. Call and be convinced.

Vulcan Iron Works, 135-145 Fremont street, San Francisco. Architectural and ornamental iron works, also stable fixtures, hay racks, feed boxes, stable guards and harness fixtures, etc., etc. See advertisement on page x this journal.

Mrs. KNERVY rang the bell for the domestic. "Nora," she said, when the kitchen lady appeared, "I'll feed the canary myself after this. The doctor says I am to take more exercise."—*Chicago Tribune.*

The Paraffine Paint Company at 116 Battery street, will be found a great convenience to the householder, now that rainy weather is at hand, many a leaky roof only wants a good coat of paint, to make it water tight, nor are their efforts to do good to the public confined to this city, Mr. E. J. Judah is agent for the company at 221 South Broadway, Los Angeles. After the present rain points out the weak spots in your roof there will be plenty of time to apply Paraffine Paint before the rainy season commences for good.

Higbee—"By Jove, old man, you are looking extremely well. Been taking a vacation? BRADFORD—"No; my wife has."—*Truth.*

To those in want of mantels, grates and tiles, in fact anything in the way of heating apparatus we would say go to W. W. Montague & Co., their main store in San Francisco, with branches at Los Angeles and San Jose.

She—"Doesn't football make demons of men?" HE—"No; it frequently makes angels of them, though."—*Yonkers Statesman.*

If you specify Samson Spot Cord you can tell at a glance that no other cord is substituted; warranted free from waste and imperfections of braid. Samson Cordage works, Boston, Mass. Those that have the bother of the cord that is unreliable, will rejoice that their troubles are ended if they use their cord.

Deacon EBBONIE—"Kunnel, I'se come to ax a favor ob you." COLONEL FAIRFAX—"To help you out of debt?" DEACON EBBONIE—"No, sar; to help me into debt—wif yo'self!"—*Truth.*

Who will be the first to order a memorial window in memory of some dear friend for the year 1895, any in want of something in that line that will be an honor to their church, and a pleasure to themselves should go to the California Art Glass works. Wm. Schroeder, President, 105 Mission street, cor. Spear street, San Francisco.

"It's a good idea to make light of your troubles." "I do," replied Happigo. "Whatever a creditor sends me a letter I burn it."—*Washington Starr.*

Our friend W. W. Wickersham still continues at his old quarters, 1125 York street, San Francisco to do business as contractor and builder those who employ him once always want him to work for them again.

ANNUAL BUILDING SUMMARY.

IN the following table we present the number and value of buildings erected in San Francisco during the past year, as shown by the contracts filed at the City Hall.

FOR FIRST SIX MONTHS.—1894.

1894	No. of Building Permits	No. of Contracts	Brick Building Value.	No. of Building Permits	No. of Contracts	Frame Building Value.	No. of Building Permits	No. of Contracts	Alterations & Additions Value.	No. of Building Permits	No. of Contracts	Total Value.
Jan'ry....	1	5	$ 64,867	27	37	$ 124,620	19	29	$ 40,016	47	71	$ 229,503
Feb'y....	2	6	36,436	22	31	96,975	7	12	17,452	31	49	150,863
March....	1	3	11,225	56	60	395,470	14	17	34,591	71	80	441,286
April.....	7	15	165,437	121	144	289,214	16	21	33,601	144	180	488,255
May.....	5	12	136,004	35	46	190,055	16	16	50,281	56	74	376,625
June.....	7	11	74,704	40	46	152,992	13	13	39,106	60	70	266,802
Total	23	52	$ 479,360	301	364	$1,258,924	85	108	$221,140	409	524	$1,959,424

FOR SECOND SIX MONTHS.—1894.

1894	No. of Building Permits	No. of Contracts	Brick Building Value.	No. of Building Permits	No. of Contracts	Frame Building Value.	No. of Building Permits	No. of Contracts	Alterations & Additions Value.	No. of Building Permits	No. of Contracts	Total Value
July.....	4	9	$ 66,605	32	41	$ 133,870	15	15	$ 39,743	51	65	$ 230,158
Aug.....	5	10	146,489	36	43	89,994	14	14	41,033	45	67	277,516
Sept....	7	8	132,519	51	60	227,280	12	12	25,611	68	89	385,390
Oct.....	3	3	61,550	60	71	244,414	12	12	52,440	81	95	347,414
Nov.....	5	7	281,229	32	39	162,458	9	9	43,113	45	55	474,803
Dec.....	4	9	120,137	46	47	195,304	16	16	49,633	64	71	365,134
Total	28	45	$ 808,532	247	301	$1,019,320	78	78	$242,583	306	423	$2,070,415
G'd Total	46	97	$1,287,892	568	665	$ 2,278,224	163	186	$ 463,723	715	947	$ 4,029,839

Showing a decrease upon the first six months corresponding in 1893 of about five hundred thousand dollars, and making the total amount for 1894, $4,029,839, to this amount should be added $500,000 estimated where no contracts have been filed, grand total, $4,529,839.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements, value.....	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669
1887—	1,093	" "	6,605,054
1888—	891	" "	6,244,220
1889—	1,081	" "	7,500,000
1890—	1,037	" "	7,095,013
1891—	**1,162**	" "	6,946,056
1892—	920	" "	5,856,341
1893—	905	" "	3,962,532
1894—	947	" "	4,529,839

CITY BUILDING NEWS.

Broadway bet. Kearney and Montgomery. Alterations and additions to Garibaldi Hall; owner, Garibaldi Society; day's work; cost $6000.

California and Larkin. Lathing and plastering; owner, Henry Kahn; architect, J. M. Lyon; contractor, A. Flood; signed, Dec. 12; filed, Dec. 14; cost $1100.

California and Jones. Rock and stone apartment building; owner, Nob Hill Improvement Co.; architects, Bugbee & Gash; contractor, S. Gillett; cost one dollar per load.

California and Jones. All molds for artificial sand stone; owners, Nob Hill Improvement Co.; architects, Bugbee & Gash; sub-contractors, Kegan & Manetta; cost $1000.

California and Jones. Hauling rock; owners, Nob Hill Improvement Co.; architects, Bugbee & Gash; contractor, J. J. Norton; cost one dollar and twenty cents per load.

Capp near 17th. To build; owner, A. Eberhart; architect, Emil John; contractor, Emil Huelle; signed, Dec. 13; filed, Dec. 15; cost $4525.

Clipper near Noe. To build; owner, Julie A. Kammer; architect, F. B. Wood; contractor, F. H. Bassett; signed, Dec. 14; filed, Dec. 15; cost $2300.

Clement near 5th Ave. To build; owner, Geo. M. Coon; contractor, A. L. Jacobsen; signed, Dec. 27; filed, Dec. 27; cost $2350.

Davis street. Brick work, etc.; owner, Isaac Kohn; architects, Pissis & Moore; contractor, Liebert & Hoffman; signed, Nov. 12; filed, Nov. 12; cost $5919.

Duncan and Dolores. To build; owner, John J. Comerford; contractor, Wm. Plant; signed, Jan. 7; filed, Jan. 7; cost $1250.

Eighteenth near Sanchez. To build; owner, Peter J. Finley; contractor, G. A. Nagel; signed, Dec. 1; filed, Dec. 13; cost $4500.

Fourth Ave. and California. To build; owner, T. H. Simons; days work; cost $5000.

Fourth and Berry. Sheds &c. holding voting booths; owner, City of San Francisco; contractor, J. M. Weir; cost $4330.

Green and Buchanan. Carpenter and mill work for six frame dwelling; owner, California Title Insurance and Trust Co.; architect, Wm. Mooser; contractor, John Martin; signed, Dec. 29; filed, Jan. 3; cost $4710.

Green and Buchanan. Painting; owner, California Title Insurance Trust Co.; architect, Wm. Mooser; contractor, Joseph Fuchs; signed, Dec. 29; filed, Jan. 3; cost $1000.

Green and Buchanan. Plumbing, etc.; owner, California Title Insurance Trust Co.; architect, Wm. Mooser; contractor, J. P. Culley; signed, Dec. 29; filed, Jan. 3; cost $1930.

Green and Buchanan. Granite curbs, etc.; owner, California Title Insurance Co.; architect, Wm. Mooser; contractors, H. M. Peterson & Co.; signed, Dec. 29; filed, Jan. 3; cost $1000.

Green and Buchanan. Plastering; owner, California Title Insurance Co.; architect, Wm. Mooser; contractor, T. Tucker; signed, Dec. 29; filed, Jan. 3; cost $980.

Guerrero near 23d. Alterations to old church and construction of a new edifice; owner, Trustees of Second Unitarian Church; architect, Samuel Newsom; contractor, John Foster; signed, Dec. 5; filed, Dec. 8; cost $9575.

Haight near Scott. To build; owner, David Sanderson; architect, R. H. White; contractor, John Furness; signed, Dec. 28; filed, Jan. 2; cost $4840.

Hayes near Devisadero. To build; owner, Wm. Macker; architect, Emil John; contractor, J. H. Munster; signed, Jan. 4; filed, Jan 8; cost $4552.

Jackson and Laguna. Plumbing; owner, W. F. Whittier; architect, E. R. Swain; contractor, E. J. Duffey; signed, Dec. 26; filed, Jan. 3; cost $2750.

Lombard and Steiner. To build; owners, architects and builders, Knight & Pottinger; cost $8000.

Lombard near Fillmore. To build; owner, T. W. Rollet; contractors, W. H. Stevens & E. Wood; signed, Dec. 15; filed, Dec. 21; cost $1600.

Lyon near Hayes. To build; owner, Mary E. Liddle; contractor, W. W. Rednall; signed, Dec. 24; filed, Dec. 24; cost $1525.

Market near 5th. Ventilating and heating a brick building; owner, Miss Emma Spreckles; architect, Reid Bros.; contractor, W. W. Montague & Co.; signed, Nov. 20; filed, Dec. 8; cost $11,375.

Market near 5th. Electric light plant; owner, Miss Emma Spreckles; architect, Reid Bros.; contractor, California Electric Works; signed, Nov. 26; filed, Dec. 8; cost $8720.

Market near 5th. Complete ventilating; owner, Miss Emma Spreckles; architect, Reid Bros.; contractor, American Ventilating Co.; signed, Nov. 28; filed, Dec. 8; cost $6600.

Mason near Geary. Excavation and concrete work for a five story brick; owner, Hall Association of the N. S. G. W.; architect, A. C. Lutgens; contractor, Pacific Concrete Co.; signed, Dec. 24; filed, Dec. 26; cost $8220.

Mason near Geary. Steel and iron work; owner, Hall Association N. S. G. W.; architect, A. C. Lutgens; contractor, Western Iron Works; signed, Dec. 26; filed, Dec. 29; cost $9000.

Mason near Geary. Carpenter and mill work; owner, Hall Association of the N. S. G. W.; architect, A. C. Lutgens; contractor, F. A. Williams; signed, Dec. 31; filed, Jan. 8; cost $19,365.

Mason near Geary. Granite work above sidewalk line; owner, Hall Association of the N. S. G. W.; architect, A. C. Lutgens; contractor, J. P. M. Phillips; cost $4650.

Mission near Fourth. Carpenter work of four-story brick; owner, A. W. Wilson; architect, J. R. Miller; contractor, M. J. Gallagher; cost $11,400.

Pacific near Taylor. To build; owner, H. Maskow; architect, Victor Monet; contractors, Mullen & Harrigan; signed, Jan. 3; filed, Jan. 4; cost $2375.

Pine near Kearny. Two-story brick; owner, Loyd Tevis; architects, Kenitzer & Barth; superintendents, Mahoney Bros.; cost $16,000.

Powell near Pine. Removal of old building; owner, August Schiller; architect, Salfield & Kohlberg; contractor, C. B. Smith; signed, Dec. 28; filed, Jan. 5; cost $5425.

Turk near Jones. To build; owner, G. B. Gilman; superintendent, Anderson & Bros.; cost $20,000.

Twenty-second near Castro. To build; owner, T. K. Long; architect, R. H. Daley; contractors, Brutcher & Griffith; signed, Dec. 12; filed, Dec. 17; cost $5,350.

Seventh Ave. near Clement. To build; owner, Sarah F. Mount; contractor, J. Campbell; signed, Dec. 29; filed, Jan. 2; cost $2200.

Sutter near Fillmore. To build; owner, Mary Hinkle; architect, Geo. Hink; days' work; cost $4000.

Van Ness and Geary. Carpenter, mill work, etc.; owner, Mrs. Julia Martin, guardian, etc.; architect, M. J. Lyons; contractor, H. Jacks; signed, Nov. 26; filed, Dec. 10; cost $1186.

Van Ness near Vallejo. To build; owner, H. E. Law; architect, J. B. Mathieson; contractors, Anderson & Gray; signed, Dec. 29; filed, Dec. 27; cost $7515.

Washington and Davis. Brick stone and iron work; owner, Estate of John Ivancovich; architects, Pissis & Moore; contractors, Leibert & Hoffman; signed, Nov. 12; filed, Dec. 21; cost $17,259.

The California Architect and Building News.

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MR. J. M. Carrere, an architect of acknowledged ability, has declined after mature consideration, the position of Supervising Architect of the Treasury Department of the Federal Goverment, which was placed at his disposition.

It is greatly to be regretted that Mr. Carrere could not have brought himself to accept the position. While it would doubtless have involved personal sacrifices on his part, yet the interests of the public and the advancement of Architecture would have received more earnest consideration than can be hoped for now for years to come.

Following is Mr. Carrere's letter:—

JANUARY 28, 1895.

SIR:—As promised to you in our interview at the Treasury Department on January 24th, I have been carefully considering the possibility of accepting the position of Supervising Architect, understanding that you are willing to offer the appointment to me on the terms of my letters and memorandum to you and to Mr. Price and my several interviews with you and Mr. Curtis.

Having had the question of public architecture at heart for several years, and having devoted much of my time to promoting the interests of the "McKaig Bill," when called upon by a large number of leading men in my profession to accept this office, and also understanding that your department was willing to tender the office to me at their request, though I was in no sense an applicant, I felt obliged, as a matter of duty to my profession, laying aside all questions of personal sacrifice, to take the subject under consideration.

I have had every opportunity, owing to your courtesy, to fully investigate the office, and I have been trying for the last two weeks to convince myself that under certain conditions which I asked for, and which I understand you are prepared to grant, I might accept the office with a fair chance of accomplishing the purpose which both you and the profession have in mind, namely, to raise the artistic standard of our public architecture.

In my anxiety to respond promptly and fully to the confidence which has been placed in me, I have at times thought that the task might at least be attempted, and have stood ready to accept the office. After further reflection, and after having fully explained the situation to several leading architects of the country and after consultation with them, I am now convinced that if I should accept the office, and meet even with partial success, I would be defeating the true object which both the profession and yourself have in

view. To our minds, the undertaking is a physical impossibility and must fail.

It is therefore with the greatest regret, and a true appreciation of the efforts which you have personally made to help this branch of the service, that I find myself compelled to advise you that I will not be able to accept the office if tendered to me. In explanation: The work of this department, irrespective of its present organization, or of any improvement that could be made in the same, comprises a staff of about 150 employees, their duties comprising:

1st.—A legal department having charge of all contracts, purchases of sites, deeds, interpretation of laws, classification of the same, and other legal matters relating specifically to this department.

2d.—An extensive system of accounting, burdened by the vast number of small accounts, resulting from the maintenance and repairs of buildings, and needing a very great amount of detail.

3d.—The technical, or draughting division, in which all computations of quantities and cost of work are made: auditing of all accounts; all original designs and working drawings; specifications and calculations comprising both the artistic and practical work, and involving sanitary heating, elevator, lighting, ventilating, and other plants of a purely technical nature; also the superintendence, supervision, and inspection of all these works. The work itself is scattered over the entire United States, and is absolutely beyond the reach of any one man except by proxy, and practically beyond his control.

The number of buildings now in the course of construction, some of them well advanced, others hardly started, and many of them still untouched, is 115, ranging from the Marine Hospitals, the appropriation for which is only about $2000, but involving much troublesome detail and waste of time, up to buildings like the San Francisco Post Office, the appropriation for which is about $2,000,000; Buffalo Post Office, about $1,500,000; Kansas City Post Office, about $1,000,000; the New York Appraiser's stores, $2,000,000; these being the most important buildings, the others ranging all the way from $500,000 to $50,000 and under. In addition to this, eight buildings are now about to be appropriated for, ranging from $100,000 up to $4,000,000 for the Chicago Post Office, the latter to be constructed within a period which I understand is not to exceed two years.

In addition to the above, Congress appropriates about two hundred thousand dollars a year for the maintenance of over two hundred and fifty buildings; most of this money is spent in small amounts, ranging from fifty cents upwards, for repairs, etc., involving infinite trouble and drudgery, and demanding much time and attention.

The present condition of this work is in such a disorganized state that it would take the best part of any man's time to reorganize the work itself, irrespective of the department. The accumulated waste of money is beyond belief. The department, in the main, seems to be well organized, though cumbersome. The personnel is efficient in a measure, but ill adapted to the class of work which the country expects of our Government, and absolutely deficient in artistic worth. The tenure of the office is controlled either by civil service rules or by political influence, and with this state of affairs the office of Supervising Architect, legally, is merely that of clerk of the department appointed by the Secretary of the Treasury, and though his responsibility is supposed to cover all the above work, his authority is absolutely dependent on the Secretary of the Treasury, and much of it is divided with heads of departments.

Any man, no matter what his ability or his power for work and concentration, and no matter what conditions might be offered to him, even those of absolute responsibility with absolute authority, would have to devote himself either to managing the office, allowing the designing to be done by draughtsmen, as at present, or to designing, allowing the office to be managed by heads of departments, as at present; and no man of ability, with a reputation to lose as an artist, would be presumptuous enough to accept the office, even if his duties were to be confined to designing, irrespective of any other work or responsibility, because it is absolutely beyond the grasp, and the ability of any one man who has ever lived to imprint his personality upon this work, and much less to design it and study it himself.

The time must come, and I believe has come, when this work should be divided and intrusted to the best architects in this country, as suggested by the bill proposed by the architects and known as the "McKaig Bill," leaving the administrative portion of the work only in the hands of the Government, where it belongs. My examination of the office and its possibilities convinces me that the underlying principle upon which it is based is radically wrong, and that it is beyond the power of any one man to make a success of it. The system, not the man, should be changed.

Yours respectfully,

JOHN M. CARRERE.

To Hon. J. G. Carlisle, Secretary of Treasury, Washington, D. C.

IN view of the fact that there is now a bill for the licensing of Architects before the Legislature would it not be well for the Chapters of the American Institute of Architects to inaugurate a series of voluntary examinations after the same manner as the British Architects did many years ago; after much patience and perseverance they have finally got these examinations so well established throughout the Kingdom that a successful passing thereof is now necessary before a Candidate is eligible to the R. I. B. A. By this means a standard of excellence is attained that will make a member of that body respected wherever these facts are known, and such a method as this is the only way to raise the profession here from its present, one might call it, degraded state.

When once the public knows that to be able to put A. I. A. after ones name means that the person carrying it has had to give evidence of technical and general education before he can do so, it will with a better grace trust itself to such, and it would help to make many members of the profession who now stand aloof willing to join such an organization.

On another page will be found a History of the Architectural Examining System of Great Britain.

LIGHTING OF SCHOOL ROOMS.

THE proper lighting of school rooms being one of the most important matters in the planning of School Houses the Board of Education of Alameda have examined into the eyesight of the school children—and the following extract from the *Alameda Encinal* gives the result of the experts report:

"The Board of Education held its regular meeting last evening. All the members were present, and after the reading and approval of the minutes of the previous meeting, Dr. P. M. Jones, the occulist, made a report of the result of the examination of the eyes of some 1367 pupils in our public schools.

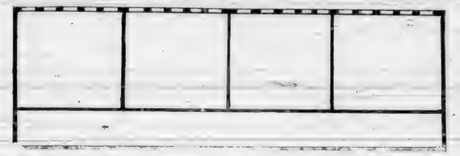
The report was exceedingly interesting, as well as instructive. In the High School he had found 22 per cent of the pupils affected with near sightedness, and 30 per cent. with conjuncturitis, or inflammation of the eye. In the Haight School 15 per cent near sighted and 17 inflammation; Encinal School, 8 near sighted and 35 inflamation; Wilson School, 3 near-sighted and 29 inflammation.

In the Porter School he found a startling condition. He stated that 52 per cent of inflammation was found and 5 per cent of near-sightedness. The inflammation here, he stated, was 20 per cent higher than it should be, and was occasioned by reason of the poor light. He reported that the per cent of strained eyes in this school is also large.

"The matter of light should be fully appreciated in the construction of the new West End School," said the Doctor. "Windows placed only a foot from the ceiling will give 25 per cent better lighting capacity than the ordinary location." As to shades, he recommended opaque shades in preference to blinds. On the whole, however, he admitted that the condition of the eyes of our pupils, outside the Porter School, was better than in many other cities."

It is gratifying to see from this report that the latest building erected the "Wilson" School has the least percentage of bad eyes—and the one erected a little before it the "Encinal" comes close to it, while the oldest school houses, the High and the Porter Schools have by far the largest percentage of bad eyes.

This indicates what a vast stride has been made in School Architecture within the last fifteen years. No doubt still better results may be obtained, but as far as these experiments show—a plan based on that of the latest buildings put up in Alameda is the best for the eyes of the children.



The rooms in the Wilson School face the NW while the ones in the Encinal School face SW which, as both houses are built on practically the same plan, seems to indicate that a northern light is best for the eyes.

The windows used for light are all placed on one side of the room—which should be the largest—and the windows are equally spaced on that side and it should be one of the injunctions placed upon school architects that no consideration of outside grouping should interfere with this arrangement so good for distributing the light equally throughout the apartment.

The points in regard to lighting then are:

FIRST.—Room to be lighted from one side.

SECOND.—That side to be the largest, or in other words, the further side of the room is to be kept within proper lighting distance of the window side.

THIRD.—North light.

FOURTH.—Windows kept as near as possible to ceiling and high up from floor so that the light may reach better the opposite side of room.

FIFTH.—Windows equally spaced.

W. J. CUTHBERTSON.

REPORT OF THE COMMITTEE APPOINTED TO COLLECT DATA OF AUTHENTICATED TESTS ON WASHINGTON BUILDING MATERIALS.

To the Hon. President and Members of the Washington State Chapter of the A. I. A.

GENTLEMEN:—Your Committee respectfully presents the following report, and begs to call the attention of the Chapter to the fact that, in so important a matter as that in hand, being in fact the very foundation from which the Architect and Engineer work, the time has been much too short to give anything but a meagre report, and one which in the estimation of your Committee, must fall far below the requirements.

For information in regard to Washington stone, the Committee have to gratefully acknowledge the courtesy of Colonel Prindle, now Chief Engineer at the Brooklyn Navy Yard, and recently Chief at the Port Orchard Dry Dock, also Mr. H. L. Copeland, Architect in charge of the State Capitol Building at Olympia. For information in regard to clay building materials and lumber, the same acknowledgments are due to Mr. Thomson, C. E., City Engineer of Seattle, Mr. C. B. Talbot, C. E. of Tacoma, a member of the Chapter, The Puget Sound Lumberman, and the Denny Clay Company.

STONE.

Under the above heading your Committee finds that all kinds of stones under the scientific classifications as Siliceous, Argillaceous and Calcareous are found in vast abundance in the State of Washington. We regret to have to report, however, notwithstanding the amount of building that has been done, that for the most part the so-called quarries from which stone is supplied, are little better than undeveloped facings from which stone has been taken only in the crudest way by blasting; a system to be condemned, being injurious to good building stone in that it shakes it, besides causing considerable waste. Exception to these remarks may be made as to the Tenino Stone Quarry.

For the most part the building stones so far used in Western Washington are of the Siliceous order. We herewith submit the record of tests we have gathered, made for the most part by the U. S. Government at the Watertown arsenal:—

ORDANCE DEPARTMENT, U. S. A. REPORT OF MECHANICAL TESTS MADE WITH THE U. S. TESTING MACHINE, CAPACITY 800,000 POUNDS, AT WATERTOWN ARSENAL, MASS., JULY 7th, 1894. FOR HENRY ROEDER, CHUCKANUT, WASH.

Tests by Compression.—Bellingham Bay Stone, from Chuckanut Quarries.

Compressed surfaces faced with plaster of Paris to secure even bearings in the testing machine.

Test No.	Dimensions Height Inches	Compressed Surface Inches	Sectional Area Sq. Inches	First Crack Lbs.	Ultimate Strength Total Lbs.	Per Sq. In. Lbs.
7178	3.99	4.22	4.20	17.52	179,000	182,100	10,276
7179	4.09	4.18	4.20	17.35	183,000	224,960	12,700
7180	4.20	4.21	4.23	17.81	192,000	197,700	11,100

Correct:

J. E. HOWARD.

J. W. REILLY,
Major Ord. Dept. U. S. A.
Commanding.

THE VULCAN IRON WORKS.

SEATTLE, WASH., Nov. 5, 1894.

Northern Construction Co., Tacoma, Wash.

GENTLEMEN:—We have this day tested three pieces of stone for you with the following results:—

Piece of White Sunset,	2⅛x2⅛x4,	Ultimate Resistance,	5801 lbs.	per sq. inch.
" Buff	1⅞x1⅞x4,	"	7199	" "
" Pittsburg,	2⅛x2⅛x4,	"	5886	" "

Yours very truly,

THE VULCAN IRON WORKS CO.,
Per J. Hulme,
Manager.

Test No. 7175, made by the U. S. testing machine at Watertown Arsenal, Mass., July 6, 1894, on Olympia sand-

stone from the Olympia Sandstone Quarry crushed at 13,441 lbs. per sq. inch.

COMPRESSION TESTS OF VARIOUS ROCKS. MARCH 30, 1890.

Nos. 1 and 2.—Vanc. Granite Quarries (Dog Fish Point Sandstone Quarry) Light Grey. Show no sign of cracking at 5000 lbs. per sq. inch.

Nos. 3 and 4.—New Castle Island Stone. Light Grey. No. 3 cracked at 4800 lbs. per sq. inch. No. 4 cracked at 4750 lbs. per sq. inch.

Nos. 5 and 6.—Bellingham Bay. Blue. Show no signs of cracking at 5000 lbs. per sq. inch.

Nos. 7 and 8.—Eureka Sandstone Quarry. Blue. No. 7 shows no sign of cracking at 5000 lbs per sq. inch. No. 8 cracked at 4985 lbs. per sq. inch.

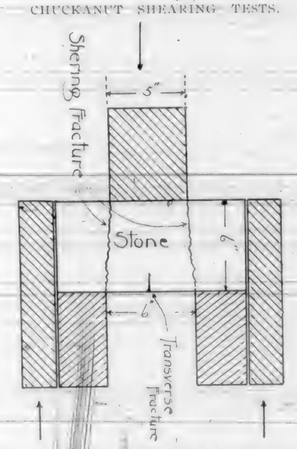
Nos. 9 and 10.—Wilkson Stone. Light Grey. No. 9 shows no sign of cracking at 5000 lbs. per sq. inch. No. 10 cracked at 4975 lbs. per sq. inch.

Nos. 11 and 12.—Tenino Blue. No. 11 cracked at 3025 lbs. crushed at 3855 lbs. per sq. inch. No. 12 cracked at 2990 lbs. crushed at 3475 lbs. per sq. inch.

Nos. 13 and 14.—Tenino Buff. No. 13 cracked at 3010 lbs. crushed at 3525 lbs. per sq. inch. No. 14 cracked at 3275 lbs. crushed at 3875 lbs. per sq. inch.

Tests made with cubes of 1 inch square, testing machine only works to 5000 lbs. pressure, therefore crushing not shown except where it fell below that amount.

CHUCKANUT SHEARING TESTS.



Test No.	Description.	Shearing Dimensions.	Shearing Area.	Transverse fracture developed on tension side.	Shearing Strength: Total	Shearing Strength: Per sq. in.	Surfaces Sheared.
261	Chuckanut Stone.	4.5" x 6.31"x2"	Sq. In. 52.37	Lbs. 27,500	Lbs. 70,800	Lbs. 1352	Two

Correct:
J. E. Howard.

J. W. Reilly,
Maj. Ord. Dept. U. S. A.
Commanding.

SANDSTONES OF WASHINGTON.—ASSAYS.

	Puyallup.	Sunset.	Tenino.
Silica,	77.24 per cent	83.25 per cent	74.00
Iron,	3.42	1.38	6.65
Alumina,	4.96	9.60	13.51
Magnesia,	.14	.35	1.65
Lime,	.42	.35	3.61
Soda,	3.21	2.45	
Potash,	3.61	2.35	

H. L. COPELAND,
Representing Ernest Flagg, Architect,
State Capitol Bldg., Olympia, Wash.

PUGET SOUND NAVAL STATION, PORT ORCHARD, WASH., NOV. 29, 1894.

GENTLEMEN:—Answering your inquiry of 9th inst., as to what tests, if any, have been made by the Government authorities, of materials found in the State of Washington, in connection with the work in progress here, etc., I beg to state that, so far as I am informed, only some analyses of Tenino Sand Stone have been made, by Medical Director Wales, U. S. N., in charge of the Museum of Hygiene, at Washington, D. C., with the following results:

	No. 1.	No. 2.
Silica,	96.70 per cent	87.30 per cent.
Alumina,	.88	1.24
Iron Oxides,	.87	1.20
Lime,	1.24	8.02
Undetermined,	.82	1.04
Specific Gravity,	2.49	2.50

Both samples are of blue-gray color, and the cementing material is chiefly calcium carbonate. The hardness of No. 2 is greater than that of No. 1, and altogether I consider No. 2 the more suitable for building purposes.

Constant action of the sea water will in time tend to dissolve the cementing material and allow the stone to crumble.

Very respectfully,

F. C. PRINDLE,
Civil Engineer, U. S. N.

To CHARLES W. SAUNDERS and CHARLES H. BEBB, Committee on Tests of Washington Bldg. Materials. Bailey Building, Seattle, Wash.

Of the Granites by far the largest quantity so far used in this part of the State has been supplied from the Nelson Is. B. C. quarry. We understand that a granite quarry has been opened at Index on the Great Northern R. R. While the quality of this granite appears good as far as your Committee knows, it has not been officially tested.

It has become very evident to your Committee after the necessarily limited investigation into the subject of stone that the known data is entirely inadequate. The necessity of reliable official tests being of such importance, your Committee would respectfully advise that a new Committee, representing in themselves the Eastern, as well as the Western sections of this State, be appointed. That they prepared a blank form of required tests which should comprise, crushing strength, specific gravity, absorbtion and a simple acid test for weathering qualities; that such form be sent by them to each and every working quarry in the State, with a request that each quarry have their stone tested by some well known authority, preferably by the U. S. Government at the Watertown Arsenal, and the result filled in the form furnished, and returned to the Secretary of the Chapter. We believe that every quarry-owner will gladly embrace the opportunity to place such information in the hands of the Engineers and Architects of this State from purely business motives, and thus afford the means of giving Washington Stone a standard reputation.

In conclusion under the heading of Stone, your Committee would suggest that the following resolution be submitted to the Chapter:

RESOLVED:—That the Washington State Chapter of the A. I. A. now convened at its first annual meeting express it as their opinion that the use for building purposes of freshly quarried stone, unseasoned and full of moisture or quarry sap is detrimental alike to the best interests of the building, the quarry and the Architect.

RESOLVED.—That the members of the Washington Chapter

will give the preference as far as in their power lies for stone which has been duly quarried and seasoned, and that they will do all in their power to encourage the system of using quarried stone only.

To Be Continued.

THE EXAMINATION FOR ADMISSION TO CANDIDATURE: AN HISTORICAL NOTE.

WITH the new Year of Grace the system of Progressive Examination for admission to candidature as Associate has come into full force. Every aspirant for such position must henceforth qualify for registration (1) as Probationer, (2) as Student, and (3) as Candidate for Associateship; and this can only be done by passing three distinct examinations or tests of competency. There are still more than one hundred men, relegated to their studies from previous examinations, who have the right of admission after passing the single Qualifying (now the "final") Examination. It is still possible, in the case of architects in practice and chief assistants, to apply for exemption from qualifying as Probationer and Student; and the privilege will endure for a time. But, for the youth of the profession, admission to candidature as Associate is now only obtainable after satisfying the Council of the Institute in the Preliminary, Intermediate, and Final stages, respectively, of the Examination in Architecture.

As more than a generation has come and gone while the events leading to this result have matured, it may be useful, and perhaps not uninteresting, especially at the present time, to recall the more prominent of them.

Some forty years ago a French architect printed an Essay, a copy of which he presented, entitled *Du Diplome d'Architecte*. He discussed the state of the question at that time, the compatibility of a diploma with the profession of architect, what should be the character of the diploma, and how it should be established. A Paper on this subject, which was to a great extent an abstract of Lance's Essay, was prepared by the late J. Woody Papworth and read before the Institute on the 19th of November, 1855. The discussion which followed, and the lively interest taken in it by *The Builder*, then conducted by the late George Godwin, at that time a member of the Institute Council, caused a slight flutter among the chiefs of the profession; and the discussion was resumed at a General Meeting held 3d December, 1855, when a Vice-President, the late Sir William Tite, who occupied the Chair, opened the proceedings by stating that the Council had received a Memorial from the Architectural Association (London) in favour of a professional examination and diploma.

The text of this memorial, which was signed by the President of the Association, the late Alfred Bailey, and the two Hon. Secretaries, is as follows:—

Your memorialists, representing the younger members of the architectural profession, beg to lay before the Royal Institute of British Architects their desire for the establishment of an Examination, which may eventually serve as the basis for the issue of such a diploma as shall certify that the holder thereof is fully qualified to practice as an architect.

They have been induced to take this step from the consideration of the difficulties which, in the present day, beset the early stages of architectural education.

In preparation for entrance upon their articles, in studies during the period of their sojourn in an office, and in the critical interval from the completion of their articles to the moment of commencing practice, the students of architecture are without sufficient guidance. In no case have they that important and valuable direction given to their several studies which is found to be so successful an inducement to the complete mastery of other professions; and this evil produces its more important effects when students of architecture, having completed their articles, commence practice on their own responsibility.

The want of proper knowledge on the part of the architect, combined as it is with a want of information on the part of the public, leads to many of the anomalies which are now so frequently observable in the practice of the profession, and to the presence in its ranks of many who have not the power, and in some cases of those who have not the will, to uphold its credit.

So much attention has been lately turned towards the necessity of testing by examination the competency of all candidates for public employment, that your memorialists are led to submit that the present is a highly opportune period for bringing the subject under your consideration. They feel that they are addressing those who represent the architectural profession, and by whom only an authoritative step towards the establishment of an Examination, or the granting of a Diploma, could be taken. They are also assured that the senior members of the profession could hardly take the initiative till the necessity for that course had been brought before them by those who have more recently entered the profession.

Your memorialists do not feel themselves called upon to enter into further details, because they are convinced that the members of the Institute must, from their position, be fully cognisant of the evil results of the present system; and, therefore, do not doubt that the Council will take an early opportunity of organising an Examination such as shall be found best calculated to aid and direct the student, and to bring the real qualifications of the architect before the public.

On the 14th January, 1861, at a Special General Meeting of the Institute, when a Vice-President, Mr. (afterwards Sir) M. Digby Wyatt, occupied the Chair, it was announced that the Council, having communicated with several non-Metropolitan Societies, and with the Architectural Association (London) on the subject of an Examination, had received replies generally to the effect that it was desirable to afford an opportunity for a voluntary professional examination. In the discussion which ensued a motion, proposed by the late J. W. Papworth and seconded by Professor Kerr [*F.*] was put and carried, as follows:—"That this Institute, by the publication of the Resolution* of the 25th June, 1860, and by the circulation of the propositions submitted by the Council at that time, having, to the utmost of its power, ascertained the views of the profession thereon, and having taken into consideration the replies forwarded by the various Societies, does, in conformity with the wishes expressed in these communications, take upon itself the labour of constituting an Examination tending to promote a systematic professional education." After further discussion, in which the late George Edmund Street took part, Professor Kerr moved, and the late William Burges seconded, "That the Council be instructed to proceed with the preparation of a Curriculum and By-Laws, and be recommended to appoint a Committee to this end, and to report to a General Meeting."

In May 1862 was published a paper of *Regulations and Course of Examination, with Forms of Declaration and Recommendation, for the Voluntary Architectural Examination*, which was divided into two classes—a "Class of Proficiency" and a "Class of Distinction;" and applicants for admission to either class were required to submit "Preliminary work." In January 1863 nineteen persons applied to be exained inm the class of Proficiency and two in that of Distinction. Fourteen were admitted, the preliminary work of four being

* The words of the Resolution unanimously passed at the General Meeting of 25th June 1860 were "That it is desirable to afford an opportunity for a voluntary professional examination."

deemed insufficient, to the 'Proficiency Class. The late Arthur Ashpitel, the late Sir G. G. Scott, and the late Sir Digby Wyatt were appointed Examiners; the late J. W. Papworth and Professor T. Roger Smith [*F.*], then an Associate, were appointed Moderators. Out of the fourteen applicants, eight passed. The Examiners' Report concluded with congratulations to the Council "upon the healthy stimulant to study which, we cannot but feel, must attend upon exertions made in the spirit displayed by the candidates for examination on this highly auspicious first trial of a system likely to produce hereafter, we fully believe, considerable benefits to the profession."

In 1864 eighteen persons applied. Thirteen were admitted to the class of Proficiency, and seven passed; two were admitted to the class of Distinction and passed. The Examiners were Ashpitel, Scott and Professor T. Hayter Lewis [*F.*]; the Moderators, J. W. Papworth and Mr. Charles Fowler [*F.*].

In 1865 there were only four applications, and no examination was held. In 1866 there were six applicants, and four were admitted to the class of Proficiency, all of whom passed. In 1867 no examination was held, only four persons having applied. In 1868 there was one application and no examination was held. In 1870 there were nine applicants for admission to the class of Proficiency, of whom seven were admitted and four passed. In this year was held the first of the Preliminary Examinations established by Resolution on the 21st June 1869, with the proviso that the passing of them was not compulsory on those who came up for the classes of Proficiency and Distinction in the Voluntary Architectural Examination. In 1872 there was one application to be admitted to the class of Proficiency. In 1873, after the programme of the Examination had been divided into artistic and scientific sections, there were five applicants, three of whom passed in both sections, and one in Art only, another in Science only. In 1875 there were six applicants, two of whom passed.

In 1880 twenty persons, some of whom had passed in one or other section of the Examination, presented themselves in the class of Proficiency, and six passed. In June 1881 was held the last Voluntary Architectural Examination, when four persons were examined and passed.

In the course of nineteen years there had been held ten examinations in the class of Proficiency, and forty-three persons had passed, three of them having also passed the class of Distinction. The passed candidates in the Preliminary class (1870–79) numbered 47; and two of these received the Ashpitel Prize: Mr. J. F. Hennessy in 1875, and Mr. John Bilson [*F.*] in 1877.

That in the course of nineteen years, from 1863 to 1881, both inclusive, not more than a hundred persons thought it worth while to apply for admission to the class of Proficiency in the Voluntary Architectural Examination, that only five students per annum could be induced to enter for this examination, less than half of whom were proved competent to pass it, was discouraging. Apart, however, from examinations, the seventies were not years of prosperity to the Institute, and it is not extraordinary that more than one special committee should have met to consider its affairs and its general improvement as a working professional body. In 1877 the Past-Presidents and Past Vice-Presidents were invited by the general body to assist the Council, to use the late John Whitchord's words, "Not so much in improving the method of our work, as in arousing a spirit of earnest energy within our ranks." It was then that the By-Laws made under the Original Charter were revised with considerable care and acumen; and there was passed a new By-Law,* to the effect that, after May, 1882, no person should be admitted to candidature as Associate without first passing an examination. Mr. Charles Barry [*F.*] was then President, and to him succeeded the late John Whichcord, whose two years of office must always be regarded as having been of vital importance to the interests of the Institute regarded as the representative body of the profession, and to those of the Examination which was to come into effect in 1882. Whichcord, who became President in 1879, took the Chair at all the meetings—the first of which was held 4th July 1879—of the Special Committee for Examinations, whose Report, prepared by Mr. J. Douglass Mathews [*F.*] and Mr. H. L. Florence [*F.*], was passed in February 1880. To them succeeded the "Architectural Examinations Committee," whose first meeting took place 3d June 1880, when Mr. Arthur Cates [*F.*] was appointed Chairman and Mr. R. Phene Spiers [*F.*] Hon. Secretary. Their report was brought up at the seventh meeting; and at the eight the scheme of Examination under By-Law XIV. was passed. Their report contained the Regulations, Programme, Forms of Application, etc., in the new Examination, which were approved by the Institute on the 6th January 1881, after the Meeting had made a remarkable alteration in the Examination Programme. The Committee appointed the year before to work out the scheme, the heads of which were incorporated in the Council Report of 1880 and approved by the Institute, had not ventured to include in their programme a complete test of architectonic aptitude. They had omitted all attempt to fully examine in "Design." The Committee had recommended, and the Council had approved, that two hours and a half of one of the three days given to the Written and Graphic Examination should be devoted by the examinees to making "the plan of a building with the details of arrangement for a selected purpose, adapted to a particular site"—the outline of the said site and a statement of requirements to be prepared for the guidance of the examinees. The Institute approved this with the proviso that the words "section and elevation" should be inserted after the word "plan."

To be continued.

* This was By-Law XIV., which was thus worded:—All gentlemen engaged in the study or practice of civil architecture, before presenting themselves for election as Associates, shall, after May 1882, be required to pass an examination before their election, according to a standard to be fixed from time to time by the Council.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COMPETITIVE Design for Alameda School House, Hermann & Swain, Architects.

SUGGESTIONS in Stone, Point Tiburon, J. L. Cahill, Del.

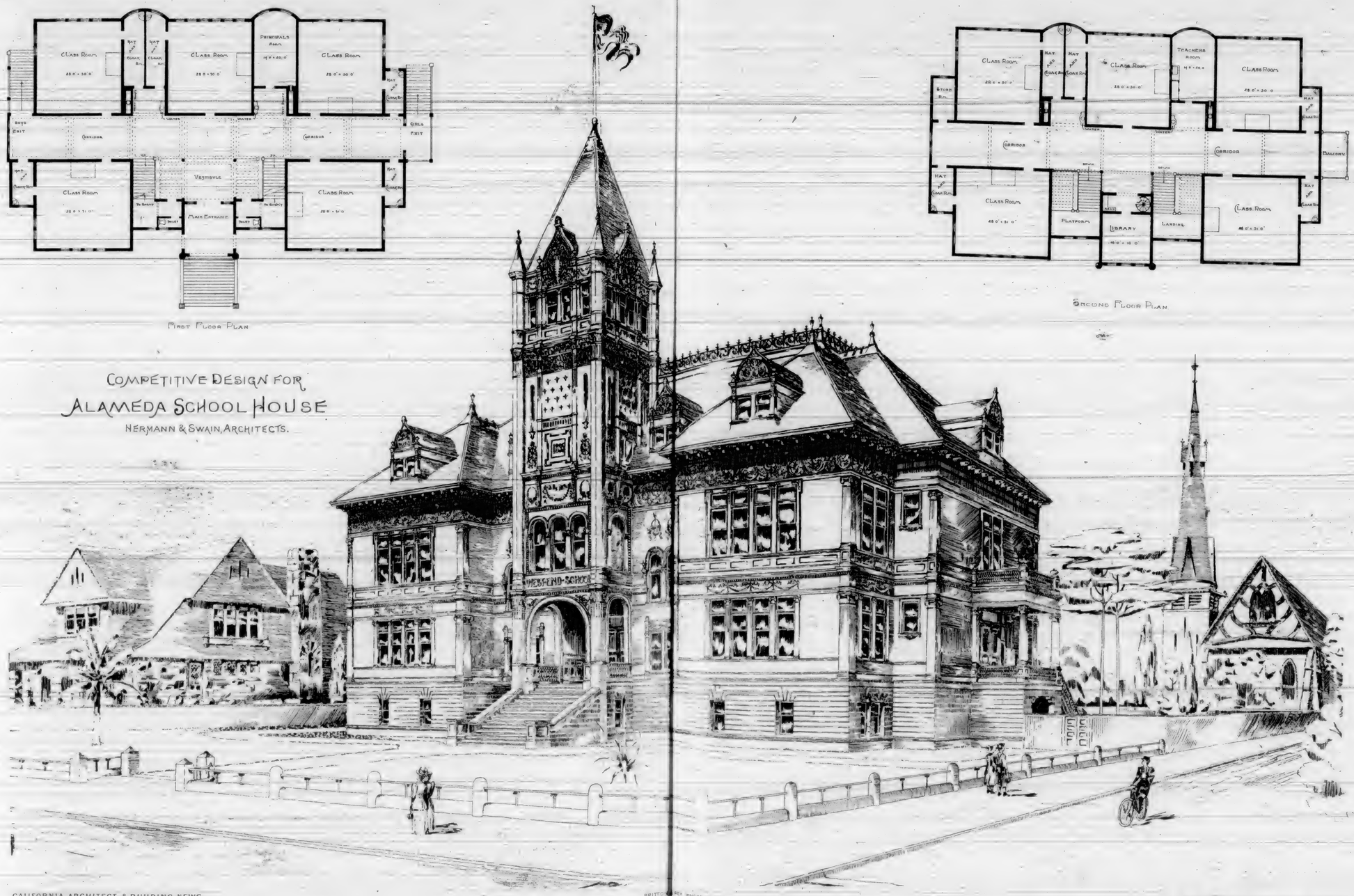
EARLY San Francisco Architecture, Green near Stockton street, T. O'Connor.

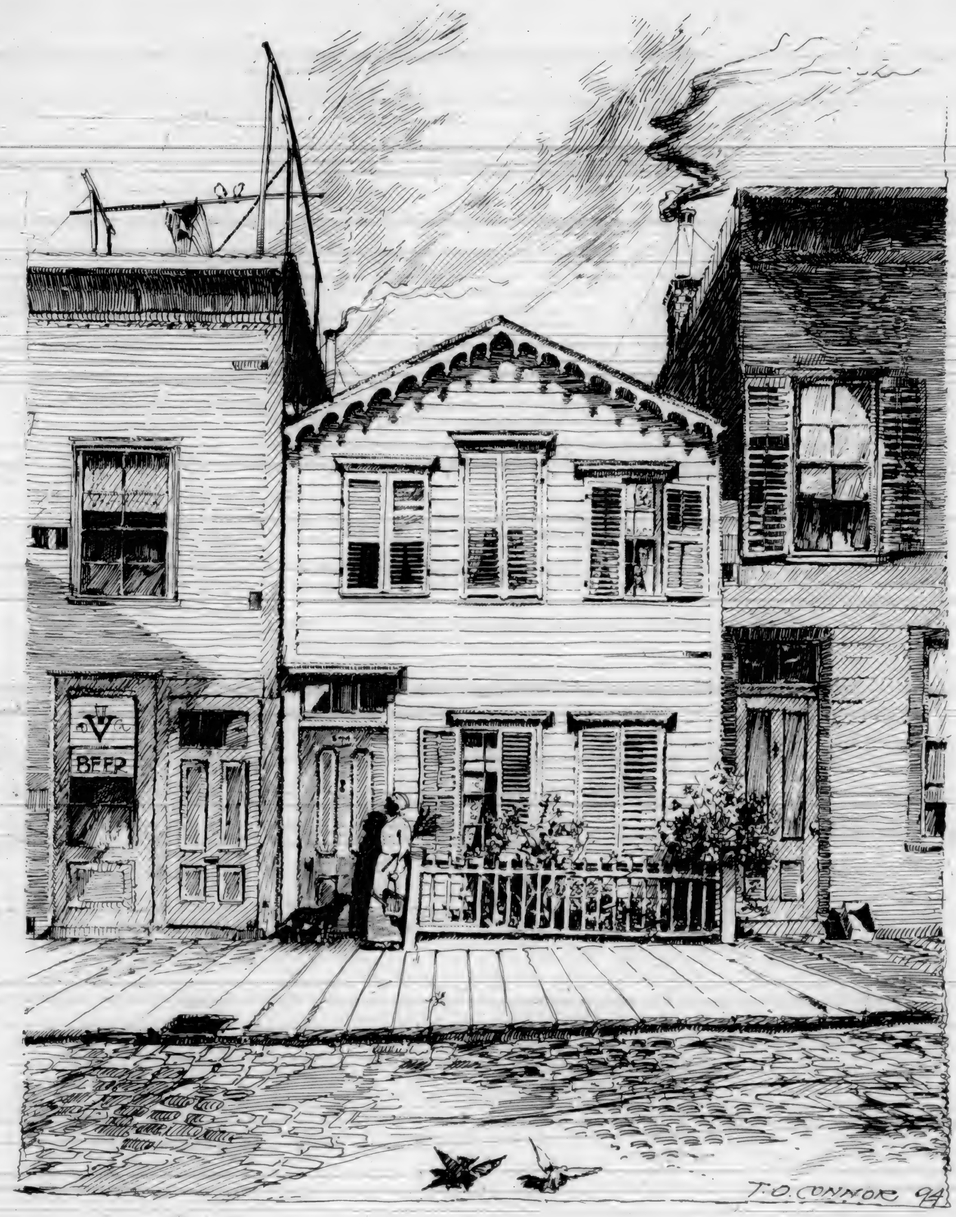
FIRST FLOOR PLAN.

SECOND FLOOR PLAN.

COMPETITIVE DESIGN FOR ALAMEDA SCHOOL HOUSE

NERMANN & SWAIN, ARCHITECTS.





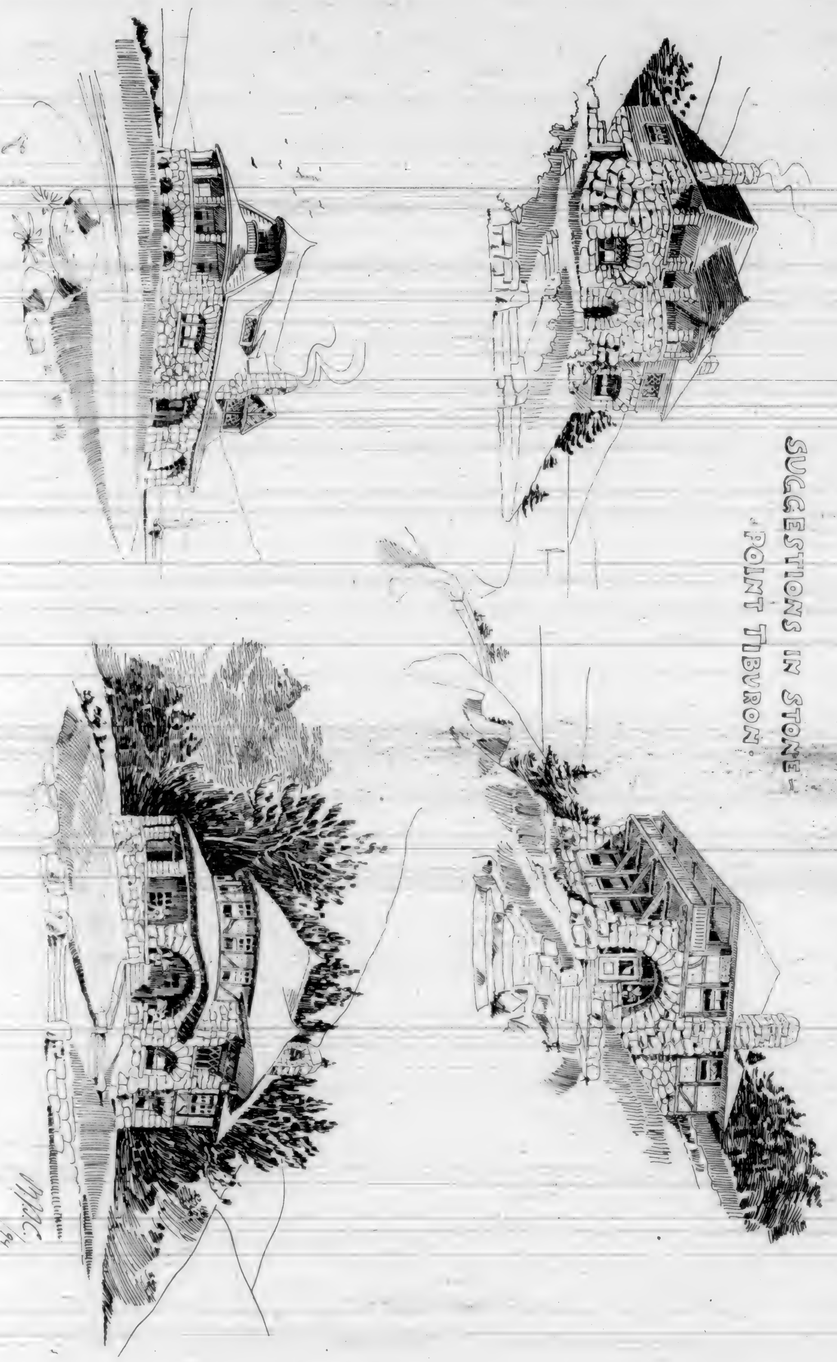
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO-LITH.

VOL. XVI Nº2 FEBRUARY 1895

○ EARLY SAN FRANCISCO ARCHITECTURE ○
GREEN NR STOCKTON STREETS

SUGGESTIONS IN STONE.
POINT TIBURON.



CALIFORNIA ARCHITECT & BUILDING NEWS
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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 108 California street
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, Pres. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

SOUTHERN CALIFORNIA CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular semi-annual meeting of the Southern California Chapter of the American Institute of Architects, was held Wednesday evening, February 6, 1895.

The Treasurer's report was read and showed the finances to be in good condition; other reports are to be submitted at the semi-annual banquet to be given shortly. The report of the committee to act in regard to the Legislative Bill to regulate the practice of architecture in the State was given, and the same committee, Messrs. Morgan, Preston and Benton was authorized to send another delegation to the Capitol if in their judgment such action was necessary.

The report of the special committee on banquet was received, and the committee continued.

The semi-annual election of officers resulted in the re-election of Octavius Morgan to his fourth term as President, and the re-election of Messrs. Edelman and Wackerbarth, Vice-President and Treasurer respectively. The Secretary and Corresponding Secretary are elected at the annual meeting in August.

The new board of directors are Messrs. Morgan, Edelman, Benton, Wackerbarth, Aiken, Burton, Preston and Walls.

BUILDERS' CONTRACT OF THE BUILDERS' EXCHANGE OF SAN FRANCISCO, CALIFORNIA.

ARTICLES OF AGREEMENT.

MADE this——day of——one thousand eight hundred and———between———of the———County of——, State of California, the part of the first part, and——— of the——County of———, State of California, the part of the second part.

WITNESSETH:—The part of the first part will be hereinafter designated as the Owner, and the part of the second part as the Contractor, singular number only being used; and the word Architect used herein in the singular shall include the plural, and the masculine the feminine.

FIRST.—The Contractor agrees, within the space of——working days from and after———to furnish the necessary labor and materials, including tools, implements and appliances, required, and perform and complete in a workmanlike manner all the———and other works shown and described in and by, and in conformity with the plans, drawings and specifications for the same made by———the authorized Architect employed by the Owner, and which are signed by the parties hereto.———

SECOND.—Said Architect shall provide and furnish to the Contractor all details and working drawings necessary to properly delineate said plans and specifications; and the work is to be done and the materials furnished in accordance therewith under the direction and supervision and subject to the approval of said Architect, or a superintendent selected and agreed upon by the parties hereto, within a fair and equitable construction of the true intent and meaning of said plans and specifications.

THIRD.—The time during which the Contractor is delayed in said work by the acts or neglects of the Owner or his employees, or those under him by contract or otherwise, or by the acts of God which the Contractor could not have reasonably foreseen and provided for, or by stormy and inclement weather which delays the work, or by any strikes or like trouble among mechanics or laborers which delay said work and which are not caused by, or the continuance of which is not due to any unreasonable acts or conduct on the part of the Contractor, shall be added to the time for completion as aforesaid.

FOURTH.—Said building———to be erected upon a lot of land situated in———County of———, State of California, and described as follows:—

FIFTH.—The Owner agrees, in consideration of the performance of this agreement by the Contractor, to pay, or cause to be paid, to the Contractor, his legal representatives or assigns, the sum of———dollars in United States Gold Coin, at the times and in the manner following, to wit:—

PROVIDED, that when each payment or installment shall become due, and at the final completion of the work, certificates in writing shall be obtained from the said Architect, stating that the payment or installment is due or work completed, as the case may be, and the amount then due; and the said Architect shall at said times deliver said certificates under his hand to the Contractor, or, in lieu of such certificates, shall deliver to the Contractor, in writing, under his hand, a just and true reason for not issuing the certificates including a statement of the defects, if any, to be remedied, to entitle the Contractor to the certificate or certificates. And, in the event of the failure of the Architect to furnish and deliver said certificates, or any of them, or in lieu thereof the writing aforesaid, within three days after the times aforesaid, and after demand therefor made in writing by the Contractor, the amount which may be claimed to be due by the Contractor, and stated in the said demand made by him for the certificate, shall, at the expiration of said three days, become due and payable, and the Owner shall be liable and bound to pay the same on demand.

In case the Architect delivers the writing aforesaid in lieu of the certificate, than a compliance by the Contractor with the requirements of said writing shall entitle the Contractor to the certificate.

SIXTH.—For any delay on the part of the Owner in making any of the payments or installments provided for in this contract after they shall become due and payable, he shall be liable to the Contractor for any and all damages which the latter may suffer; and such delay shall, in addition, operate as an additional extension of the time for completion aforesaid for the length of time of such delay. And such delay, if for more than five days after the date when said payments or installments shall have respectfully become due and payable, as in this agreement provided, shall, at the option of the Con-

tractor, be held to be prevention by the Owner of performance of this contract by the Contractor.

Seventh.—The specifications and drawings are intended to co-operate, so that any work exhibited in the drawings and not mentioned in the specifications, or *vice versa*, are to be executed the same as if both mentioned in the specifications and set forth in the drawings, to the true intent and meaning of the said drawings and specifications when taken together. But no part of said specifications that is in conflict with any portion of this agreement, or that is not actually descriptive of the work to be done thereunder, or of the manner in which the said work is to be executed, shall be considered as any part of this agreement, but shall be utterly null and void.

Eight.—Should the Owner or the Architect, at any time during the progress of the work, request any alterations or deviations in, additions to, or omissions from, this contract or the plans or specifications, either of them shall be at liberty to do so, and the same shall in no way affect or make void this contract: but the amount thereof shall be added to, or deducted from, the amount of the contract price aforesaid, as the case may be, by a fair and reasonable valuation. And this contract shall be held to be completed when the work is finished in accordance with the original plans, as amended by such changes, whatever may be the nature or extent thereof.

Ninth.—The rule of practice to be observed in the fulfillment of the last foregoing paragraph (eight) shall be that, upon the demand of either the Contractor, Owner or Architect, the character and valuation of any or all changes, omissions, or extra work, shall be agreed upon and fixed in writing, signed by the Owner or Architect and the Contractor, prior to execution.

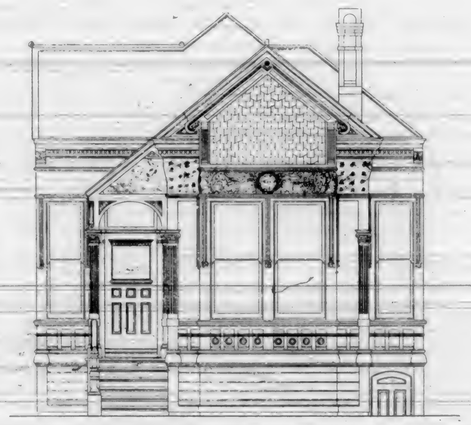
Tenth.—Should any dispute arise between the Owner and Contractor, or between the Contractor and Architect, respecting the true construction of the drawings or specifications, the same shall, in the first instance, be decided by the Architect: but should either of the parties hereto be dissatisfied with the justice of such decision, or should any dispute arise between the parties hereto respecting the valuation of the extra work, work done, or work omitted, the disputed matter shall be referred to, and decided by, two competent persons who are experts in the business of building,—one to be selected by the Owner or Architect, and the other by the Contractor; and in case they cannot agree, these two shall select an umpire, and the decision of any two of them shall be binding on all parties.

Eleventh.—Should the Contractor fail to complete this contract, and the works provided for therein, within the time fixed for such completion, due allowance being made for the contingencies provided for herein, he shall become liable to the Owner for all loss and damages which the latter may suffer on accounnt thereof, but not to exceed the sum of $——per day for each day said works shall remain uncompleted beyond such time for completion.

Twelfth.—In case said work herein provided for, should, before completion, be wholly destroyed by fire, defective soil, earthquake or other act of God which the Contractor could not have reasonably foreseen and provided for, then the loss occasioned thereby shall be sustained by the Owner to the extent that he has paid installments thereon, or that may be due under the fifth clause of this contract; and the loss occasioned thereby and to be sustained by the Contractor, shall be for the uncompleted portion of said work upon which he may be engaged at the time of the loss, and for which no payment is yet due under said fifth clause of this contract.

In the event of a partial destruction of said work by any of the causes above named, then the loss to be sustained by the Owner shall be in the proportion that the amounts of installments paid or due bears to the total amount of work done and materials furnished, estimated according to said contract price, and the balance of said loss to be sustained by the Contractor.

Thirteenth.—The payment of the progress-payments by the Owner, shall not be construed as an absolute acceptance of the work done up to the time of such payments; but the entire work is to be subject to the inspection and approval of the Architect or Superintendent at the time when it shall be claimed by the Contractor that the contract and works are completed; but the Architect or Superintendent shall exercise all reasonable diligence in the discovery, and report to the Contractor as the work progresses, of materials and



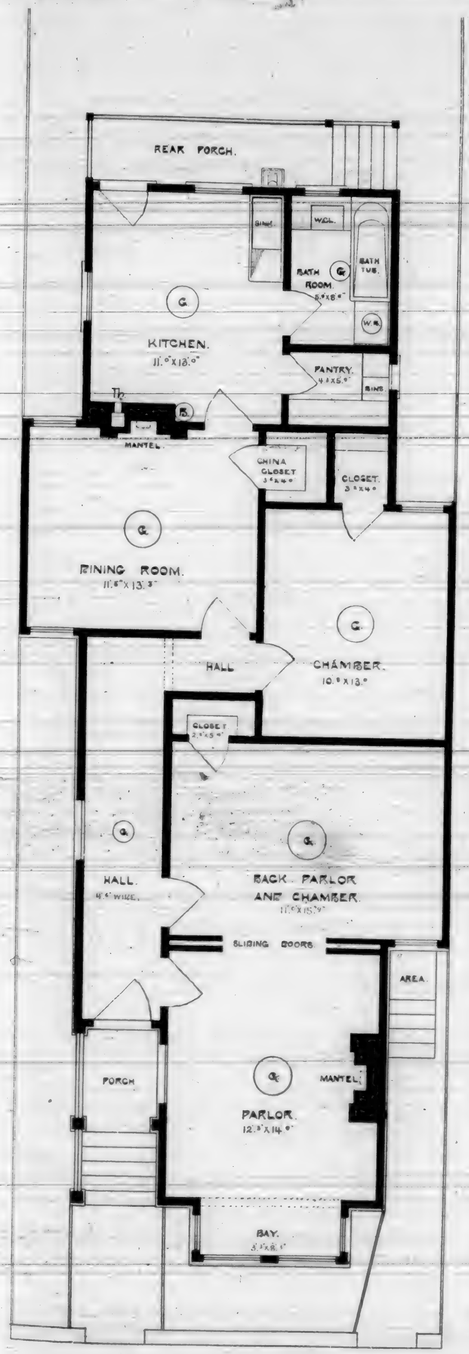
FRONT ELEVATION.

labor which are not satisfactory to the Architect or Superintendent, so as to avoid unnecessary trouble and cost to the Contractor in making good defective parts.

Fourteenth.—Should the Contractor at any time during the progress of the work, refuse or neglect, without the fault of the Owner, Architect or Superintendent, to supply sufficiency of materials or workmen to complete the contract within the time limited herein, or any lawful extension thereof, for a period of more than three days after having been notified by the Owner in writing to furnish the same, the Owner shall have power to furnish and provide said materials or workmen to finish the said work; and the reasonable expenses thereof shall be deducted from the amount of the contract price.

In Witness Whereof, the said parties to these presents have hereunto set their hands and seals, the day and year first above written.

——————[SEAL]



FLOOR PLAN

BOOKS AND PERIODICALS.

SAN FRANCISCO MUNICIPAL REPORTS for the fiscal year 1893–1894 ending June 30, 1894, published by order of the Board of Supervisors of San Francisco. In addition to the official reports this volume contains two pages of illustrations, the portrait of Mayor L. R. Ellert, as well as those of the twelve Supervisors from M. Goodwin of the First ward to James Denman of the Twelfth.

The always welcome ANNUAL REPORT OF THE BOARD OF REGENTS of the Smithsonian Institution, showing the operations, expenditures and condition of the Institution to July, 1893. Our space will not admit of a mention of all the interesting reports contained in this volume; among others that attracted our attention was an article entitled "North American Bows, Arrows and Quivers," by Otis Tufton Mason, fully illustrated, also "Deep-Sea Deposits" by A. Daubree being a review of work of the Challenger Expedition translated from *Journal des Savants*; "How Maps are Made" by W. B. Blakie, cannot fail to interest our geographical friends as well as the public in general; "The Age of the Earth" by Clarence King, but enough, the work must be carefully studied to appreciate its merits.

THE PHOTOGRAPHIC TIMES. An illustrated monthly Magazine devoted to the interests of artistic and scientific photography—published at 423 Broome street, New York.

In changing from a weekly journal to a monthly magazine we should judge by the first number that the publishers had made a very successful departure and are certainly to be congratulated for having produced such a beautiful magazine; many of the illustrations are little gems of art.

The amature photographer as well as the professional are under a debt of gratitude to the editor and publishers of this truly beautiful as well as useful publication, and should pay the debt by becoming subscribers.

FINAL REPORT OF THE CALIFORNIA WORLD'S FAIR COMMISSION, including a description of all Exhibits from the State of California, collected and maintained under Legislative enactments at the World's Columbian Exposition, Chicago, 1893. The Fair Commissioners are to be congratulated upon having given to the public such a handsome volume and with closing their labors in such a creditable manner. In a letter to Gov. H. H. Markham transmitting their report, we notice the following, that certainly is very creditable to our State, with the single exception of that of Illinois, the California building was the largest State building on the Exposition grounds. While maintaining a distinct exhibit in nearly all of the departments or national buildings, such as the Horticultural, Mining, Agricultural and Forestry, the State displayed in her own building so extensive an aggregation of her own products that it was often referred to collectively as "California in miniature," and as an "Exposition in itself."

The illustrations are good and convey a very convincing idea of what California did to represent herself at the World's Columbian Exposition.

WHAT IS NEEDED TO COMPLETE THE CITY HALL.

FROM a report by Architect Shea we take the following detailed statement of the work that will have to be done to complete the New City Hall:

FIRST.—A permanent fire-proof roof, covering the entire building with the exception of the Hall of Records.

SECOND.—The carrying up of all the main interior walls to a proper height, a satisfactory system of ventilation introduced and all smoke-flues raised above the line of roof-ridges, with all necessary capping, etc.

THIRD.—The performance of all work necessary to complete in every particular the inner dome and rotunda, which includes the placing of an ornamental glass dome at the head of the present interior circular colonnade, all window-glazing, etc., the building of a circular gallery on the line or on the level of each floor of the main building and all ornamental work such as cornices, capitals, railings, wainscoting, pavements, staircases, etc., together with an elevator in the shaft adjoining the rotunda on the westerly line, and continuing to the top of the dome. Three rooms should also be provided in the square shaft on the easterly line adjoining the office of the Mayor and the Board of Education, together with all necessary decorations.

FOURTH.—The general reparing of all injured work in rooms, and especially in the corridors, throughout the entire building.

SIXTH.—Providing for each court-room a steel vault for the reception of valuable documents.

SEVENTH.—Repairing all exterior cast iron work, such as columns, capitals and other minor ornamentations which at this date show the need of such attention.

The cost of the above mentioned work is as follows:

Fire-proof roof	$165,000
Attic walls, flues, skylights and ventilation	55,000
Inner dome and rotunda complete	65,000
Elevator from first floor to top of dome	11,000
Repairing of all work in rooms and corridors	5,000
Plumbing repairs	6,000
Steel vaults	4,000
Painting, etc	5,000
Total	$316,000
Total cost of building to date	$5,049,000
Estimated cost of building, complete	$5,465,000

LEGAL DECISIONS.

LIABILITY OF ACCEPTOR.—Where a contractor entered into a written contract for the erection of a building, and gives an order on the owner in favor of a material man who was furnishing materials for the erection of the building, in payment or security for such materials, payable when the next payment on the contract becomes due, which order was accepted by the owner, in order that he might make such payment or give such security, and also to obtain credit for a further supply of materials for the same purpose and these facts being known to the owner. It was held the object of the acceptance being to assure the further progress of the completion of the contract for the erection of the building, that it established a good consideration as between the owner, and acceptor, and the drawee for the acceptance; and that, upon the completion of the contract to the next payment the owner became liable to pay the order thus accepted and that it was immaterial whether the contractor performed the remainder of the contract or not. If the acceptor of such an order chose to pay the contractor for the erection of the building, as if he had completed the contract to the next payment, he would be estopped from denying his liability in an action upon the acceptance when it became due and payable; and so where an order is drawn upon a fund to be paid upon the happening of a condition, which order is accepted, the acceptor cannot either by his own act or by acting in collusion with the drawer of the order, defeat the condition, and then set up such defeasance as a defense to an action upon the acceptance.

Herter v. Goss & Edsoll Cp., Supreme Court of New Jersey, 30 At. Rep. 252.

LIABILITY FOR NEGLIGENCE OF FELLOW SERVANTS.—Where a workman is injured by the fall of a derrick occasioned by the neglect of another employe in charge of the derrick to provide a check rope, the master is not liable.

Jenkinson v. Carlin, City Court of Brooklyn, General Term, 30 N. Y. Supp. Rep. 530.

MECHANICS' LIENS UNDER AN ENTIRE CONTRACT.—Under an entire contract for the erection of buildings on lots not contiguous to each other, one claim for a mechanics' lien may properly be filed against both improved properties where the claimant of such lien contributed material or labor to both improvements.

Bohn Sash and Door Co. v. Case, Supreme Court of Nebraska, 60 N. W. Rep. 578.

RIGHTS OF ADJOINING OWNERS TO PARTY WALL.—An adjoining owner of a party wall has a right to increase its height; and where he contracts with an independent contractor to have this done in a lawful, proper and usual way, so that the work does not become, in itself, dangerous or extraordinary, and does not subject the existing wall to overweight, he is not liable for the damage incident to the falling of the wall through some accident.

Negus v. Becker, Court of Appeals of New York, 38 N. E. Rep. 290.

THE SUPREME COURT OF IOWA HOLDS, that one acting for an investment company in the construction of a building, under a written agreement requiring him to make all contracts for material and labor in his own name, and to be the party responsible thereon, receiving partial payment in the stock of the company, but reciting that the company desires to employ him "in the construction" of the building, and providing for the letting of contracts by him for work and material "subject to the approval of the company," requiring him to devote his whole time to supervision over such labor and materials, and to furnish the company with a statement of the cost of work and material, and providing that he shall receive ten per cent of the cost of certain labor and material "in full for his services in looking after the execution of said contracts and superintending and supervising the entire construction of the building," will be regarded as a servant of the company, and not an independent contractor.

Hughbanks v. Boston Inv. Co., 60 N. W. Rep. 640.

FACTS CONSTITUTING WAIVER OF ARCHITECT'S CERTIFICATE.—By the terms of a building contract, a certificate was a condition precedent to payment, and upon the fact that such certificate had not been issued by the architect himself, was made the defense of the owner of the building to paying for the work done.

It appears that a certificate was presented, signed by the architect's name, per his assistant, and the claim was made that such certificate was ineffectual to entitle the contractor to payment. But it appeared that the architect with the acquiescence of the owner substituted the assistant for himself in the preparation of the specifications and superintendence of the building; that the architect was never on the premises and never saw the work; that the architect authorized the assistant to issue the certificates; that the owner after making the contract never met the architect, and conducted all his business with the assistant; the extra work was planned and executed by the assistant; that when the latter proposed to furnish the final certificate, the owner made no objection to its issuance by him, but only solicited delay; that other certificates had been so issued and had been paid; and that when the final certificate was issued and presented, he accepted it without objection, and promised to settle next week. The contract also provided that that the contractor should permit anyone appointed by the architect to inspect the work. The court held, on the above statement of facts, that the owner had waived the condition of the contract as to the issuance of the certificate by the architect, and assented to the certificates by the assistant, as the clear conclusion of reason and justice.

McEntire v. Tucker, Court Com. Pl., 31 N. Y. S., 672.

BUSINESS MOSAICS.

The J. L. Mott Iron Works, New York, Boston, Chicago, St. Louis and San Francisco; if you refer to page v of this journal you will see what this firm claim to be "The desideratum in modern plumbing," that is to have the various appliances set up open and accessible and wherever possible without cabinet work.

It is only necessary to examine their work to be convinced of the truth of the claim, and every day people are coming to think the same way, as may be seen in the new houses that are constructed upon the most improved plans all contain this open work idea. Information and circulars will be furnished upon application at the San Francisco office, room 35 Flood building, M. S. James Pacific Coast Representive.

Tramp—"I ain't had nothin' to eat for a week, sir. Can't you do suthin for me?" PEDESTRIAN—"Certainly; fast for two months and I'll get you a place in a dime museum."—*Harper's Bazar.*

Joseph Budde, the manufacturer of sanitary appliances in the plumbing line is too well known, and has received so many medals and diplomas from the State Fair at Sacramento that it may seem useless to call attention to the excellence of his work, as the popular Golden Gate Patent Water Closet speaks for itself, we need only to call attention to the fact that Mr. Budde can always be found at his ware rooms, 575 Mission street. An inspection of his stock is all that is necessary to secure an order from those in want of his line of goods. See his advertisement on page vii of this journal.

New Yorker (in Washington)—"I have a gold piece in my pocket that—" Washington—"Ssh! Keep it dark." New Yorker—"Heavens! What's the matter?" Washington—"If Cleveland and Carlisle learn that it's there they'll want to borrow it."—*North American.*

California Art Glass Bending and Cutting Works.—The artistic manner in which this firm finishes church memorial windows is worthy of all praise, their exhibit in the Liberal Arts Building at the California Midwinter International Exhibition was awarded a first prize gold medal. If you visit their show room you will be convinced that what they do, is done well, any work intrusted to their care is sure to turn out to the satisfaction of their patrons. Wm. Schroeder is president of the company, 105 Mission street cor. Spear, San Francisco, Cal.

They have just engaged one of the most celebrated artists in glass staining in the United States, as he just comes from the east where he was employed by some of the largest art glass works, he is full of new ideas which will be an inovation on this coast.

She—"I hope, Oscar, you are not marrying me for my money?" HE—"Bless you no! My creditors will get all of that."—*Blaetter.*

The Joshua Hendy Machine Works, 39-51 Fremont street will furnish all kinds of castings, light and heavy, as well as architectural iron work; engines and pumps for buildings are also made specialties.

Facts about paint and Duresco the New Wall finish or washable color; this will certainly interest the ladies and therefore we can write about it with interest, what good housekeeper but is particular about her walls, and if she can find a wall finish, or washable water color that damp walls do not effect what more can she want, but in addition to these merits it is claimed by the manufacturers "It strengthens the wall and prevents crumbling" for further information on this subject call upon the manufactures, W. P. Fuller & Co., Pine and Front sts.

American Student—"You don't have football in Germany?" Germah Student—"No; the professors draw the line at duelling."—*Puck.*

Do not forget to specify "Samson Spot Cord" if you want a cord that will do good service, and also one that you can tell at a glance is the true article by its perfection of braid. Samson Cordage works, Boston, Mass., are the manufacturers of this valuable cord.

Judge—"You claim Mr. Coffin as a particular friend of yours?"- Mrs. Killboys—"Yes, your honor; he buried two of my husbands."—*Judge.*

Kenney & Wells, 422 Sutter street, San Francisco, 408-410 Twelfth street, Oakland, is the place to go for parquetry floors, wood carpet, mirrors; frames and pictures, as well as fine fretwork and grills.

"It's the little things that tell," as the man said when his 3-year-old boy saw him kiss the cook and carried the news to mamma.—*New York News.*

W. R. Grace & Co., are agents for the famous Portland Cements "Josson" and "North" 203 California street, San Francisco. If you use cement, get the best, a word to the wise is enough.

Maud—"Don't you think that Mr. Totterly is too old to love?" MARIE—"I don't know. But he is rich enough to be loved."—*Ex.*

F. H. Rosenbaum & Co., depot of plate and window glass is at 567 Market street opposite Sansome, they also manufacture mirrors in both styles.

When a man becomes firmly convinced that he is a genius, it is then that the fringe slowly begins to form on the bottom of his trousers.—*Harlem Life.*

Thomas Day & Co., will supply you with gas or electric fixtures, and you are sure to get what you order at 222 Sutter street.

South Streeter—"Jakey, how do you spell fife?" Jakey—"Vot you dinkin' of, dot leedle flute or de mark on dem tree-tollar pants?"—*Ex.*

If you don't want your door to slam leave order with G. Rischmuller for his door opener and closer.

CITY BUILDING NEWS.

Broderick near Oak. To build; owner, J. D. Sullivan; architect, T. J. Welsh; contractor, Jno. Kemp; signed, Jan. 31; filed, Feb. 4; cost $2500.

California near Eugenia. To build; owner, John Geherty; architect, M. J. Welsh; contractor, J. E. Schultz; signed, Jan. 10; filed, Jan. 14; cost $1600.

California near Baker. Plumbing; owner, Mrs. C. E. Clark; architect, W. H. Wharff; contractors, Berwick & Spinck; cost $95.

California near Polk. Alterations and additions; owner, Harriett S. Campbell; architect, W. H. Lillie; contractor, Geo. R. Lang; signed, Jan. 15; filed, Jan. 16; cost $2100.

Castro near 19th. To build; owner, James Curley; architect, H. B. Roulett; contractors, Rountree Bros.; signed, Jan. 7; filed, Jan. 24; cost $3960.

Day near Sanchez. To build; owner, M. and E. Schunmacher; architect, E. J. Vogel; contractors, Henderlong Bros.; signed, Jan. 25; filed, Jan. 29; cost $1600.

De Long Ave. near Frederick. To build; owner, Geo. D. Graham; architect, E. J. Vogel; contractor, M. J. Savage; signed, Jan. 13; filed, Jan. 14; cost $3430.

Eddy near Taylor. Alterations and additions; owner, Silas M. Locke; contractors, Riley & Loane; signed, Jan. 5; filed, Jan. 10; cost $2172.

Eddy near Taylor. Carpenter and plaster work; owner, Silas M. Locke; contractors, Riley & Loane; signed, Jan. 7; filed, Jan. 16; cost $1860.

Ellis near Scott. To build; owner, Mary A. Garness; architects, Townsend & Wyneken; contractor, D. Currie; signed, Jan. 14; filed, Jan. 15; cost $3890.

Florida near 25th. Additions to Clumbia Grammer School; owner, City of San Francisco; architect, T. J. Welsh; contractors, Constable & Hamilton; signed, Jan. 15; cost $3100.

Fourteenth near Folsom. To build flats; owner, Elizabeth Beck; contractor, H. R. Schmuckert; signed, Jan. 12; filed, Jan. 14; cost $4000.

Fulton near Pierce. Plastering, mill work, etc.; owner, Chas. E. Hansen; architect, W. Winterhalter; contractors, Schutt & Kreeker; signed, Jan. 20; filed, Feb. 1; cost $10,880.

Fulton near Pierce. Painting, graining, etc.; owner, Chas. E. Hansen; architect, W. Winterhalter; contractor, Henry F. Wagner; cost $1520.

Fulton near Pierce. Excavation, stone; brick work, etc.; owner, Chas. E. Hansen; architect, W. Winterhalter; contractor, Adam Beck; signed, Jan. 31; filed, Feb. 1; cost $2980.

Fulton near Pierce. Sewers, plumbing, etc.; owner, Chas. E. Hansen; architect, W. Winterhalter; contractors, Sheperd Bros.; signed, Jan. 31; filed, Feb. 1; cost $1495.

Grove near Schrader. To build; owner, J. J. Butler; architect, F. Butler; contractor, J. Weir; cost $1500.

Greenwich near Hyde. To build; owners, Paul J. Stuparich and Emily Stuparish; architect, H. Hess; contractors, P. Carmouche & J. Maguire; signed, Jan. 30; filed, Feb. 1; cost $3200.

Haight near Steiner. To build; owner, Raymo Angelo; contractor, Arthur Stevens; signed, Feb. 4; filed, Feb. 4; cost $3800.

Harrison near 21st. To build; owner, Michael Bobino; architect, C. M. Rousseau; contractor, Jos. Kennedy; signed, Jan. 31; filed, Feb. 1; cost $3000.

Hayes near Broderick. Frame building; owner, Henry C. Cischen; architects, Martens & Coffey; contractor, H. Behrens; signed, Feb. 4; filed, Feb. 8; cost $3390.

Java and Park Ave. To build; owner, Ella Megrane; architect, W. H. Armitage; contractor, C. Larsen; signed, Jan. 15; cost $2932.

Octavia and Hayes. Carpenter work and painting, owner, Mrs. Lizetta Reinle; architects, Stone & Cahill; contractors, Cannon & Thompson; signed, Jan. 10; filed, Jan. 16; cost $5738.

Lots 10 and 11, block West end map. To build cottage; owner, Miss Lizzie Walker; architect, M. J. Welsh; contractor, I. W. Colburn; signed, Feb. 1; filed, Feb. 2; cost $1550.

Market near 5th. Gas and electric light fixtures; owner, Miss Emma Spreckles; architects, Reid Bros.; contractors, Bush & Mallett Co.; signed, Dec. 21; filed, Jan. 15; cost $3500.

Mason near Geary. Stone and brick work on five-story brick building; owner, Hall Association of the N. S. G. W.; architect, A. C. Lutgens; contractors, Liebert & Hoffmann; signed, Jan. 9; filed, Jas. 10; cost $16843.

Mason near Geary. Terra Cotta Work; owner, N. S. G. W.; architect, A. C. Lutgens; contractors, Steiger Sons; signed, Jan. 15; filed, Jan. 15; cost $1800.

Masonic Ave. near Fell. Two three-story and one two-story frame buildings, ten flats; owner, C. D. Sailfield; days work; cost $20,000.

McAllister near Masonic Ave. One-story cottage; owner, Julia O'Kane; contractor, James J. Manseau; signed, Jan. 24; filed, Jan. 24; cost $1500.

McAllister near Masonic Ave. Two one-story frame dwellings; owner, John Otten; architects, Martin & Coffey; contractor, H. Behrens; signed, Jan. 24; filed, Jan. 24; cost $2985.

McAllister near Lyon. Two-story frame; owner, Louis Friedlander; architect, J. F. Kenna; contractor, T. C. Cockrane; signed, Feb. 5; filed, Feb. 6; cost $6650.

Mission near Fourth. Plumbing and gas-fitting on four story brick; owner, A. W. Wilson; architect, J. R. Miller; contractor, R. Rice; signed, Feb. 6; filed Feb. 9; cost $1990.

Mission near 4th. Elevator work; owner, A. W. Wilson; architect, J. R. Miller; contractors, Cahill & Hall Elevator Co.; signed, Feb. 5; filed, Feb. 9; cost $1595.

Pacific Ave. near Octavia. To build; owner, Elizabeth Dore; architect, Sam'l Newsom; contractor, C. L. Emmons; signed, Jan. 15; filed, Jan. 18; cost $6755.

Pine near Kearny. Mason and carpenter work on two-story brick; owners, J. B. Haggin, Loyd Tevis and Jennie Bull; architects, Kenitzer & Barth; contractors, Mahoney Bros.; signed, Jan. 11; filed, Jan. 11; cost $36,000.

Point Lobos Ave. Machinery and disenfecting oven; owners, La Societe Francaise de Remfoissance Mutuelle; architect, R. Chartney; contractors, Clot & Meese; signed, Jan. 18; filed, Jan. 21; cost $2625.

Point Lobos Ave. and Boyce. To build; owner, Annie M. Reilly; architect, T. J. Welsh; contractor, D. Emerson; signed, Jan. 28; filed, Jan. 30; cost $5125.

Point Lobos Ave. and 7th. To build; owner, H. H. Mahan; architects, McDougall & Son; contractor, Wm. W. Farris; cost $8500.

Reed near Washington. To build; owner, R. D. Cunningham; contractor, G. G. Gillespie; signed, Jan. 14; filed, Jan. 15; cost $2810.

Sansome near Broadway. Alterations and additions; owner, Kittle & Co.; architect, Clinton Day; contractors, Riley & Loan; signed, Feb. 6; filed, Feb. 6; cost $4755.

Sanchez near 23d. To build; owner, John H. Eichler & Wilhemina H. Eichler; architect, H. D. Mitchell; contractors, Petterson & Person; signed, Feb. 6; filed, Feb. 8; cost $3661.

Seventh near Point Lobos Ave. To build; owner, and builder, Geo. Constance; cost $3000.

Sixteenth and Noe. Remodelling of church; owner, Trinity Methodest Episcopal Church; architect, John Marquis; contractor, J. C. Kelly; signed, Jan. 12; filed, Jan. 26; cost $2430.

Tenth Ave. near Point Lobos. To build; owner, P. Bergren; contractor, J. L. McInes; cost $2500.

Twelfth Ave. near California. To build; owner, Wm. H. Matthews; architect, C. F. Robertson; contractor, C. Larsen; signed, Jan. 31; filed, Feb. 2; cost $2690.

Twelfth Ave. and Clement. Plumbing; owner, W. H. Mathews; architect, C. F. Robertson; contractor, G. C. Sweeney; signed, Feb. 2; filed, Feb. 6; cost $270.

Van Ness Ave. and Jackson. Hollow tile work; owner, Claus Spreckles; architects, Reid Bros.; contractors, Gladding, McBean & Co.; signed, Dec. 21; filed, Jan. 5; cost $21,670.

Van Ness Ave. near Francisco street. To build; owner, John Mussio; contractor, Miron & Gardner; cost $1500.

Valencia near Liberty. Completing unfinished building; owner, J. B. F. Davis; architect, J. C. Newsom; contractor, John Furness; signed, Jan. 12; filed Jan. 12; cost $2058.

Williamson near Point Lobos. To build; owner, John Moriarity; architects, Shea & Shea; contractor, A. L. Jacobson; signed, Dec. 18; filed, Jan. 17; cost $1200.

ALAMEDA

Alameda. Additions to Porter School; owner, Board of Education, architects, Laver & Mullany and W. J. Cuthbertson; contractor, F. L. Hansen; cost $9964.

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NOW IN THE SIXTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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OF the defeat of the bill introduced into the California Legislature to Regulate the Practice of Architecture, there is little to be said except that the public is not yet educated to the importance of the measure, and the opposition that the bill encountered was mainly from parties who feared their personal interest would be jeopardized.

There is certainly no reason why an architect should not be entitled to the same protection that the lawyer and the doctor have at present under our laws.

The recent collapse of a building in New York whereby many people were killed and injured, the coroner giving as a cause the unskillful construction of the building, should be a warning to the public to intrust their building operations to skillful men, who have shown their ability by their works, as well as by passing an examination before a competent board of examiners, as required by this act.

The sober second thought of the public will eventually compel the Law makers to do justice to the architects and place the profession on the same standing, as the lawyers and doctors.

It has been the constant aim of architects of late years to raise the standard of requirements of those anxious to enter the profession. The Royal Institute of British Architects have of late been publishing the requirements of those about to enter the office of the architect, as well as having to undergo three examinations as they progress in their studies before being allowed to membership of the Institute.

In our own country the American Institute of Architects are more exacting every year in the requirements to enter their association; all this shows a very commendable desire upon the part of the leading architects to raise the standard among the profession and secure the proper qualification before admitting members.

This being the case, it would appear that the least the Legislature could do under the circumstances would be to offer some encouragement to those striving to build up our towns and cities in a creditable manner with due reference to the safety of life, security from fire combined with some artistic taste.

We will only add try again and better luck may be the result.

SERIOUS accidents and damages caused by quick running electric cars, calls our attention to the necessity of some different kind of road-bed for them than the present level of the public street.

When the traffic gets any way large in a city it is much put back in its goings and comings by passenger cars and by the same reason passengers by cars are delayed and put in danger by large traffic. It will therefore be absolutely necessary and is now very desirable to clear streets entirely of rapid transit. The cheapest and most desirarable way to do this is to place electric cars running overhead in the centre of the roadway—in narrow streets but one line, in broad streets two lines. The lines to be supported on rows of columns in centre of street—the rails only just high enough to clear the highest vehicle with its load—between these rows of columns put a Bicycle track and a path raised above said track for pedestrians who do not wish to look in shop windows and whose definite object is to make fast time. On the right hand side of this track must pass all vehicles going in that direction, on the left hand those coming in an opposite direction to the former—thus no chance for collisions and no confusion. Municipal regulation to arrange all this. The sidewalks need not be then near so wide as at present, having to accomodate only saunterers—so that vehicular traffic will have more leeway and people crossing the street will only have to look in one direction to prevent themselves from being run over.

Iron stairways at each crossing of streets are to run up to small landings above, where passengers will wait for the cars.

The advantages of this system are manifold:

FIRST—Unobstructed and therefore quick run for the cars.

SECOND—No danger therefrom to life or limb.

THIRD—Unobstructed and therefore quick run for vehicles and no danger of collision except at crossings.

FOURTH—Unobstructed and therefore quicker and less dangerous run for Bicylists.

FIFTH—And most important, danger from cars, vehicles and bicyles to pedestrians at a minimum—getting to the cars from centre walk easier and safer.

SIXTH—Pedestrians who wish to stroll or look at shops not pushed or hustled by those who may be in a hurry and those in a hurry not obliged to make their way through a slow walking crowd.

ALITTLE more than thirty years ago, the war cry of "On to Richmond" resounded through the country, to-day there is a prospect that the cry of "On to Richmond" will be renewed in this city, not as a war cry but in behalf of peace and peaceful homes.

Where is Richmond? we hear some one ask. Richmond is bounded on the east by First Ave. that gives promise of becoming the leading Boulevard of our city, connecting the Presidio on the north with the Golden Gate upon the south.

This section of our city has recently been sewered and drained in the most through manner and stands to-day as the most perfectly drained portion of our city.

Judging by the number of lots that have been sold the last season, building operations will be very active the coming spring and summer.

As people realize the advantage of living in such a healthy location so easy of access to the business portion of our city, this demand for building lots will increase till the fear of over-crowding will be the only objection. The doctors may object to this, as it is such a healthy place there is not much demand for there services.

If we examine the railway facilities we find them ample, the Sacramento cable road, the steam cars from California street to the Cliff House, as well as the Geary street cable cars all pass through Richmond. The Sutro electric road will soon be added to the number, all affording ample facility for reaching the business portion of San Francisco in a short time.

REPORT OF THE COMMITTEE APPOINTED TO COLLECT DATA OF AUTHENTICATED TESTS ON WASHINGTON BUILDING MATERIALS.

BRICK AND CLAY MATERIALS.

Continued from February Number.

WE beg to submit the following tables under the above heading of tests upon brick made at the Watertown Arsenal, and by Mr. Thomson, C. E., City Engineer of Seattle and the Vulcan Iron Works:

MATERIALS CONTRIBUTED AT THE WORLD'S COLUMBIAN EXPOSITION, CHICAGO, ILL.

Compressed surfaces faced with plaster-of-Paris to secure even bearing in the testing machine.

Test No.	Description	Marks	Dimensions Height Inches	Compressed surface In.	Compressed surface In.
6532	Everett Electric Brick Co. Light Red Brick		2.08	8.08	3.92
6533	" " Dark " "		2.11	7.98	3.00
6534	Facing Brick Denny Clay Company	"We challenge the World for Strength"	2.45	8.98	4.48
6535	" " "	" " "	2.38	8.89	4.45
6536	Fire Brick Denny Clay Company		2.31	8.77	4.33
6537	" " "		2.37	8.77	4.29
6538	Vitrified Paving Brick Denny Clay Company	Denny Clay Company	4.23	8.78	2.70
6539	" " "	" "	2.61	8.76	4.08
6540	Building Brick	P. S. B. T. and T. C. Company, Seattle, Wash. P. O. Box 472	2.40	8.44	4.23
6541	" "		2.50	8.52	4.20
6543	" "		2.39	8.18	4.00
6544	Everett Electric Brick Co.	E. E. B. Co.	2.38	8.14	3.96
6545	Pressed Building Brick C. A. Sherman, Spokane, Wash.		2.48	8.67	4.23
6546			2.40	8.32	4.07

Test No.	Section at Area Sq. Inch	Weight Dry lbs.	Weight Dry oz.	Absorption of Water Total lbs.	Absorption of Water Total oz.	By Weight per cent	By Volume per cent	First Crack lbs.	Ultimate Strength Total lbs.
6532	31.07	4	8¾	13		18.	31.1	104,000	126,200
6533	27.65	4	7½	2½		5.2	11.1	99,000	216,950
6534	40.23	6	13¾	0¾		5.6	11.	250,000	505,800
6535	39.56	6	6¾	6		5.8	11.	309,000	519,700
6536	37.97	5	13½	11½		12.	22.1	59,900	104,980
6537	37.02	5	15¾	11¾		12.3	22.8	43,000	90,450
6538	28.71	7	12¾	½		0.4	0.86	49,000	288,100
6539	35.74	7	12¾	1		0.8	1.85	155,000	761,000
6540	35.70	5	14¾	11½		12.2	23.1	114,000	170,200
6541	35.78	5	15¾	12½		13.1	24.1	82,800	108,200
6543	32.72	4	14¾	13½		17.1	30.5	81,900	131,650
6544	32.23	4	11¾	13¾		17.6	29.8	81,000	145,800
6545	36.07	5	2¾	19½		23.5	37.	89,900	98,800
6546	33.86	5	3¾	13		15.5	27.6	232,000	281,100

Test No.	Ultimate Strength Per Sq. Inch lbs.	Remarks
6532	3984	
6533	7846	
6534	12573	
6535	13137	
6536	2765	
6537	2405	
6538	12151	Tested on edge.
6539	21293	
6540	4767	
6541	3024	
6543	4005	
6544	4524	Have sunken panel 4-9x1-9x20.
6545	2694	
6546	8302	

Correct:
J. E. Howard

J. W. REILLY,
Major Ordnance Dept. U. S. A.
Commanding.

SEATTLE, WASH., Jan. 9, 1894.

Messrs. Charles H. Bebb & C. W. Saunders, Committee on Tests of Washington Building Materials.

GENTLEMEN:—In reply to your request for information touching tests which I have made upon building material manufactured in Western Washington, I would say: My position has been such that my experiments have principally been made upon materials suited for paving and for the lining of sewers, and relate principally to brick.

In October, 1892, a large number of samples were submitted to me for examination in competitive bids for furnishing the lining of our sewer tunnels.

(1) The Denny Clay Company submitted samples of a very dark salt glazed brick, which upon examination and test, gave the following dimensions and behavior:—

Average dimensions, length 8 68-100 inches, width 4 26-100 inches, thickness 2 53-100 inches.

Average weight of brick, dry, 7 lbs. 12 7-8 oz.

Average weight of water absorbed during 72 hours immersion, 2 7-8 oz.

Average percentage of absorption 2 3-10 per cent.

Average specific gravity, 2.27.

One of the brick submitted with the above, showed a percentage of absorption of but 41-100 of one per cent, and had a specific gravity of 2.34, and many of the bricks delivered in our contract were equal in their density, although the average of some 310,000, remained just about the average of the samples. In attempting to crush one of these brick we applied a pressure, of 10,000 lbs. per square inch, and although we destroyed our testing machine, we did not make an impression upon the brick.

(2) The next samples tested were those presented by the Puget Sound Brick Tile and Terra Cotta Company. These brick were of a dark red color, and were made of fairly well pugged blue clay. Under test they showed as follows:—

Dimensions; length 7 68-100 inches, width 3 78-100 inches and thickness 2 26-100 inches.

Weight of brick, dry, 4 lbs. 12 2-3 oz.

Weight of water absorbed during 72 hours immersion, 4 1-6 oz., giving an average percentage of absorption of 5.43 per cent. Their specific gravity was 2.04.

(3) Pontiac Brick and Tile Company submitted samples, which clearly showed that they were poorly ground and poorly burned, and in as much as this company has since that time introduced new machinery, and new methods, the tests of these samples could not be taken as showing the character of present output. They gave as follows:—

Average length: 8 6-100 inches, width 4.00 inch, thickness 2 28-100 inches.

Their average weight was 4 lbs. 13 oz.

The average weight of water absorbed during 72 hours immersion was 11 1-2 oz., and the percentage of absorption 14 94-100 per cent and the specific gravity 1.82.

(4) The Seattle Brick and Tile Company also submitted a very large number of samples. These were of a very dark and dull red color, but were made of a well ground clay, and burned with coal in a down draft kiln.

Their average dimensions were; length 7 92-100 inches, width 3 78-100 inches, and thickness 2 39-100 inches.

Their average weight while dry was 5 lbs. 3 oz.

The average amount of water absorbed 4 1.3 oz., and the average percentage of absorption 5 25-100 per cent and specific gravity of 2 11-100.

Of these latter brick I have used about two million, and of these, the specific gravity has averaged 2 22-100, which is 11.100 better than that of the samples submitted.

Two firms have submitted paving brick, viz: The Denny Clay Co. and the Seattle Brick and Tile Co. The brick presented by the Denny Clay Co. had a specific gravity ranging between 2.21 and 2.35. These brick absorbed 2.29-100 per cent and 1 52-100 per cent of their weight in water respectively. I placed them in a foundry rattler, with about a ton of small sized scrap iron, and revolving the rattler at the rate of twenty-six revolutions per minute, gave them 16,600 revolutions. The softer brick lost 29 per cent of its weight, and the harder one, but 17 per cent, and both still retained, in fair degree, their original shape.

The Seattle Brick and Tile Company's pavers had specific gravities ranging between 2 17-100 and 2 32-100. These were also tested for absorption and showed 4 2-100 per cent and 2 37-100 per cent respectively, and when placed in rattler and given 16,600 revolutions, in connection with above one ton of scrap iron, they showed less of weight of 34 6-10 per cent and 15 6-10 per cent respectively.

From the above experiments I am able to say that we have in the vicinity of Seattle, clays, which under fair and reasonable treatment, will yield as perfect a brick as any I have been able to find from any place in the world.

Very truly yours,
R. H. THOMPSON.

THE VULCAN IRON WORKS CO.

SEATTLE, WASH., Sept. 21, 1894.

To Whom it May Concern:—

We have made the following tests of brick at the requests of the Seattle Brick and Tile Co., viz:—

			Commenced to Crack. Lbs. per sq. in.	Crushed. Lbs. per sq. in.
End Cut	Brick	No. 1	2500	3150
" "	"	" 2	2500	
Side "	"	" 1	Did not crush at 4646 lbs.	
" "	"	" 2	2250	2580
" "	"	" 3	2500	3460

Machine got stuck at 2800 lbs. per sq. inch and did not crush it, in testing End Cut Brick No. 2. We herewith testify to correctness of the above tests.

Yours very truly,
THE VULCAN IRON WORKS CO.
Per J. Hume,
Manager.

Your Committee begs to point out that the lists just read comprise tests made upon the materials manufactured by a very limited number of factories compared to the entire number in the State. Investigation demonstrates that there is not a State in the Union richer in all varieties of clay beds from the highest grades of pure Kaolin and fire clays, to the commonest low grade brick earth. The above tests though made upon material manufactured in the infant development of the clay industry in this State, compare favorably with tests made upon similar materials manufactured by any of the Eastern States, and competition among home manufacturers assures architects, owners and builders of yet higher grades in all lines of clay building materials. We are satisfied that the day has passed when the railroad companies will receive fifty per cent of the cost of high class clay materials, as the State of Washington has now within its limits more than one factory producing pressed brick, terra cotta and fire-proofing equal in quality to anything produced in the East.

We recommend the appointment of a new Committee to further investigate into the clay working industries of the State of Washington, that they prepare and submit a report upon the subject at the next annual convention embracing a record of tests made by acknowledged experts, and in order

that these tests may be really serviceable and valuable to the architects and manufacturers, we advise that a paper of suggestions for the conduct of tests upon various clay materials be prepared by them and a copy furnished the different manufactnrers of clay products. Such suggestions coming from a body of men forming indirectly the chief consumers of their products will, we believe, be received in good part.

LUMBER.

After the careful paper prepared by Mr. C. B. Talbot and read at our last regular meeting, it would seem there is not much left to be said under the above heading. If confirmation was necessary his paper confirms the fact that the State of Washington has almost unlimited stores of the finest lumber in the world for constructional purposes. Your Committee herewith submits the list of tests given by Mr. Talbot and made under his supervision, and has added thereto a table of ultimate fiber strains developed by each stick.

EXPERIMENTS ON ACTUAL BREAKING LOADS IN POUNDS ON YELLOW FIR AND OTHER TIMBERS—CAREFULLY SIZED—BY C. B. TALBOT AND OTHERS.

Size	Length	Clear Span		Deflection	Age	Breaking Load Lbs. per sq. in.
2x4 in.	4 ft.	3ft.-9in.	Y. Fir	5/16 in.	6 yrs.	3063 6891.75
2x4 "	4 "	3 " 9 "	"	1/2 "	5 mos.	half dry fine gr 3062 6889.5
2x4 "	4 "	3 " 9 "	"	5/16 "	3 "	hard gr. fine 4320 9720.
2x4 "	4 "	3 " 9 "	"	1/2 "	3 "	clear " 3685 8178.75
2x4 "	4 "	3 " 9 "	"	1/2 "	1-1/2 "	" " 3358 7555.5
2x4 "	4 "	3 " 9 "	Coner d'Alene Pine		1-1/2 mo.	Cr. fine gr 2274 5116.5
2x4 "	4 "	3 " 9 "	Eastern White Pine		1 yr.	dry 1610 3622.5
2x4 "	4 "	3 " 9 "	"	"	Oak	1 " " 2428 5463.

EXPERIMENTS BY MR. HART AND OTHERS.

6x14 "	16 "	15 " 9 "	"	3/4 "	1 day cut		28635 7257.55
8x16 "	20 "	19 " 0 "	"	3/4 "	1 " "		45000 7910.15
9x16 "	20 "	19 " 0 "	"	3/4 "	6 yrs. old	in bridge	29488 4498.75
8x16 "	16 "	15 " 9 "	"	3/4 "	"	"	41370 5817.65
8x16 "	16 "	15 " 9 "	"	3/4 "	1 day cut	fine close gr	36764 7982.45
8x16 "	20 "	19 " 0 "	"	3/4 "	6 yrs. old		39635 6098.18
9-1/4x16 in.	20 "	19 " 0 "	"	3/4 "	1 day cut		40408 6143.1
8-1/8x16 "	20 "	19 " 0 "	"	3/4 "	6 yrs. old		37041 5053.01
8x14 "	20 "	19 " 0 "	"	"	fresh cut cross grained		17317

This last specimen was selected as the worst possible sort and was so cross grained as to be entirely cut off one in three-and-a-half feet.

In working out these strains your Committee has taken the full length of the stick intead of clear span, the clear span would, of course, have given slightly higher results.

Herewith we also submit the lists of tests kindly furnished by the *Puget Sound Lumberman*.

RAILWAY TESTS OF DOUGLASS FIR.

Following is the result of tests of Washington fir made at mills at St. Paul and Tacoma Lumber Company, Tacoma, Wash., on March 12th and 13th, 1890, by A. J. Hart, Master Mechanic of the Chicago, Wilwaukee and St. Paul Railway Company, Milwaukee, under the direction of John T. Crocker, general purchasing agent, and B. W. Smith, timber agent of said road. At the tests made, Messrs. D. D. Clark, F. M. Haynes and C. B. Talbot, representing the Northern Pacific Railroad Company, were present and assisted in said tests:

Size of Stick	Length of Span	Moduli of Rupture	Fibre Strain
6-1/4x15-1/2 in.	18 ft.	25,284.57	5,391.1
6-1/4x14-1/2 "	15 " 9 in.	29,635.3	7,144.2
6-1/4x14-1/2 "	11 "	39,111.	6,585.
6-1/4x14-1/2 "	15 "	26,794	6,151.7 dry stick
8-1/4x16-1/2 "	19 "	45,277	7,560.9
9-1/4x16-1/2 "	19 "	25,094.	3,724.93 6 yrs old
8-1/4x16-1/2 "	16 "	39,672.75	5,591.63 3 " "
8-1/4x16-1/2 "	15 " 9"	54,722.76	7,458.41
8-1/4x16-1/2 "	19 "	22,104.3	5,263.5 dry stick
9-1/4x16-1/2 "	19 "	38,568.27	5,571.09
8-1/4x14-1/2 "	19 "	34,963 3	5,388.1
8-1/4x14-1/2 "	19 "	16,250.13	3,544.35 cull

The greatest deflection in any of these sticks was 3½ inches. The least deflection in any of these sticks was 1½ inches. In all these tests the centre load was applied.

TESTS OF FIR. RESULTS OF THE SECOND SERIES.

Further tests of the strength of fire lumber have been made by S. Kedzie Smith, city engineer of Ballard, and the *Lumberman* herewith gives the results. The tests were for transverse strength. The lumber, which was furnished by the Stimsen Mill Co., was forty days air seasoned and a little above the grade of good merchantable lumber. It was no better than would enter into good building construction. The bearing of the load on the beam was eighteen inches long and curved to a radius of six feet.

No. of Test Piece	7.	8.	9.
Size of Piece	21 5-16x7-1/8	31-16x8	3x8
Span between end supports	8 feet	8 feet	8 feet
Different loads placed upon each beam with the deflection in inches for each load.	1,000 4/32	1,000 1/32	1,000 2/32
	2,001 6/32	2,000 5/32	2,000 5/32
	4,000 14/32	4,000 10/32	4,000 9/32
	6,000 22/32	6,000 18/32	6,000 20/32
	6,800 1 12/32	8,000 26/32	8,000 28/32
		10,000 1 23/32	10,000 1 21/32
		10,200 2 4/32	10,880 3 11/32
Breaking load	6,800 lbs.	10,200 lbs.	10,880 lbs.
Stress in extreme fiber	5,310 "	7,500 "	8,160 "

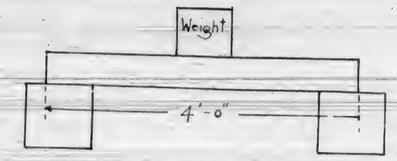
No.	10	11	12	13	14
Size	3 1-16x12-1/4	3x12	4x11-1/4	4x12-1/4	4x11-1/4
Span	12 ft.	12 ft.	12 ft.	12 ft.	12 ft.
Different loads placed upon each beam with the deflection in inches for each load.	1,000 3/32		1,000 2/32	1,000 2/32	1,000
	2,000 6/32	2,000 3/32	2,000 6/32	2,000 4/32	2,000
	4,000 11/32	4,000 10/32	4,000 12/32	4,000 9/32	4,000
	6,000 18/32	6,000 16/32	6,000 16/32	6,000 15/32	6,000
	8,000 25/32	8,000 23/32	8,000 24/32	8,000 20/32	8,000
	10,000 1 2/32	10,000 1 in.	10,000 27/32	10,000 26/32	10,000
	11,000 1 15/32	11,400 1 16/32	12,000 1 3/32	12,000 31/32	12,000
			12,300 1 12/32	14,000 1 27/32	14,000
Breaking load	12,800 lb.	11,400 lb.	12,300 lb.	14,000 lb.	14,400 lb.
Stress in extreme fiber	6,138 "	5,700 "	4,710 "	5,140 "	5,630 "

No.	15	16
Size	3-1/4x12	3-1/4x12
Span	14 ft.	14 ft.
Different loads placed upon each beam with the deflection in inches for each load.	1,000 6/32	1,000
	2,000 8/32	2,000
	4,000 16/32	4,000
	6,000 23/32	6,000
	8,000 1 in.	8,000
	10,000 1 10/32	9,400
	10,200 1 18/32	
Breaking load	10,200 lb.	9,400 lb.
Stress in extreme fibre	4,605 "	4,255 "

Test No. 7 was a coarse-grained red fir.
Test No. 8 a close-grained yellow fir, near outside of log.
Test No. 9 a close-grained yellow fir similar to No. 8; lower edge close to sap.
Test No. 10 a medium fine-grained red fir; near outside of log.
Test No. 11 a coarse-grained red fir.
Test No. 12 a coarse-grained red fir.
Test No. 13 a coarse-grained red fir.
Test No. 14 a coarse-grained red fir.
Test No. 15 a coarse-grained red fir.
Test No. 16 a very coarse-grained red fir.

REPORT OF H. H. WARNER.

As to the strenth of our fir, I, with others, witnessed a test made by Engineer C. B. Talbot of the woods used in car and bridge building, viz: Fir, eastern pine and oak. Pieces were selected of good quality, 2x4 inches, 4 feet long, and tested as illustrated:



The following was the breaking pressure:

Fir	4,320 lbs.
Eastern oak,	2,428 "
Eastern pine,	1,610 "

It will be noted that the tables of ultimate fiber strains run the same average in the lists. It is perhaps not in the province of this Committee to give the fiber strains of woods grown outside of the State. It may be sufficient to point out that yellow Washington fir heads the list published in the *Puget Sound Lumberman* of all woods used for constructional purposes in regard to strength.

There are some points that your Committee wish to draw the attention of the Chapter to. The wide variation in the strength of the same material shown in the lists just read is one of them. The ultimate fiber strains vary from about 4,000 lbs. to nearly 10,000 lbs. per sq. in.; under these conditions does the Chapter consider that a sufficient number of tests have been made from which to adopt a reliable standard. It is a noteworthy fact, that as far as your Committee has been able to discover, there is not one hand-book of Engineering or Architecture that gives any information whatever in regard to Washington fir. We think this is an important fact which deserves consideration by the Chapter. Another point we wish to make is that we are informed that the cutting of trees and the logging business is carried on for the most part in the spring and summer of the year. It is perhaps hardly necessary to go back to the first writer extant on the subject of Architecture, but we find Vitruvius in the year 25 B. C. strongly condemning the practice. No timber to be used in important constructional work should be cut from growing trees while the sap is permeating every branch. Timber should be cut between the months of November and March. We are satisfied that sticks sawed from winter cut trees and properly seasoned will, when tested, show the best results; and as the use of such timber is only in conformity with the best engineering practice, we respectfully suggest the appointment of a Committee to draw up a resolution to that effect to be indorsed by the Chapter now in session.

Your Committee is satisfied beyond a doubt, that the tests so far made that have come to our knowledge, while showing high average results, do not do justice to Washington fir. Trantwine, Hatfield, Rankin, Laslett, and others give the moduli of rupture of *spruce* beams as from 8100 lbs. per sq. in. to 11,100 lbs. per sq. in., and of common white pine as from 10,000 to 13,000 lbs. per sq. in., no doubt derived from tests made upon small specimens, the results being necessarily larger than if derived from tests of full size timbers, as the smaller pieces do not contain as many imperfections as always occur in larger ones. Professor Lanza of the Massachusetts Institute of Technology, however, made some tests on full sized sticks of pine and spruce and the average of sixty-eight experiments gave only 5046 lbs. per sq. in. fiber strains, thus justifying the doubt as to the utility of the fiber strains given by the above mentioned authorities, even for ordinary work. There can be no doubt in the mind of any person acquainted with the three mentioned woods, that yellow fir should develop at least twice the strength of either of the others, which so far has not been the case. Architects and Engineers are still in the dark as to what average fiber strain per sq. in. they may safely adopt for our firs, and consequently, what factor of safety they may use.

We beg also to point out that it has long been considered that it is better engineering to determine as the safe load of a timber beam or joist, the load that will not deflect it more than a certain fraction of its span, in other words to take the bending moment in preference to the modulus of rupture. We are of opinion that the known data is insufficient from which to make a reliable table of deflection under given loads.

Finally we would suggest that further tests be made under the direction of some competent Committee appointed by the Chapter and from these and former tests, some standard be recommended for adoption, and that the information, when obtained, be forwarded to such well known authorities as Trantwine, Kaswell, Hatfield, Kidder, etc., to be published at their discretion in the annual editions of their hand-works.

Your Committee has not had the time to carry their investigations into the other building materials of the State, and while we realize how incomplete this report is, we have done the best with the time at our disposal.

Respectfully submitted,

CHARLES W. SAUNDERS }
CHARLES H. BEBB } Committee.

THE EXAMINATION FOR ADMISSION TO CANDIDATURE: AN HISTORICAL NOTE.

Continued from February Number.

THE first Examination under By-Law XIV. was held in March 1882, and two others were held the same year, in July and November, under the charge of a Board appointed by the Council, the regulation being that the number on such Board should not be less than five Fellows nor more than twelve. As a matter of fact, the first Board of Examiners in Architecture which ever met at the Institute were appointed in November 1880, and consisted of the President (the late John Whichcord), the three Vice Presidents (Professor Hayter Lewis, the late Sir Horace Jones, and Mr. Ewan Christian), the Hon. Secretary (Mr. Macvicar Anderson), with Messrs. James Brooks, Arthur Cates, E. A. Gruning, E. H. Martineau, E. R. Robson, Alfred Waterhouse and T. H. Watson. The newly-appointed Board conducted the last of the Voluntary Architectural Examinations; and, at the meeting of the 20th May 1881, Street, who was then President, occupied the Chair. His immediate successor in the presidential office—the late Sir Horace Jones—presided over the Board at the first Examination under By-Law XIV. held in March 1882, vacating it at the Oral Examination in favour of Mr. Arthur Cates, who has been periodically re-appointed Chairman of the Board, and has conducted almost every Oral Examination since the beginning of that year.

Five years after the introduction of Examinations under

By-Law XIV.—a By-Law made under the provisions of the Charter granted to the Institute by William IV.—a second Charter repealing some of the provisions of the earlier one was obtained from Her Majesty the Queen in Council. The grant was made by a Deed executed 28th March 1887, and the third section of this Charter contains the words "From the date of this our Charter every person desiring to be admitted an Associate shall be required to pass or have passed such Examination or Examinations as may be directed by the Royal Institute." Power was given at the same time, under Section 21, to grant Diplomas and Certificates in connection with Examinations, and to make By-Laws which should define, regulate, and prescribe the relations of the Institute to other Sociaties having kindred aims and purposes.

A few months after the grant of the new Charter an important Conference of Architects was held in London. At one of the meetings held 4th May 1887, it was recommended: (1) That the Institute should undertake the guidance and direction of professional education; (2) that a scheme of a complete system of examination should be prepared; (3) that such system should comprise a Preliminary, an Intermediate, and a Final or Qualifying Examination; and (4) that this system of Progressive Examination should be arranged with the co-operation of local Societies in the United Kindom. At another meeting, held the next day, it was further recommended that the Institute should be the centre of any federation of the members of the profession within the British Empire, and that such object might be best attained by connecting the various local Societies which existed, or which might thereafter be formed, with the Institute. Other cognate matters were discussed by the Conference, but the two above signalised were the most important. A great deal of minute and careful attention was given to both subjects in the course of the two subsequent sessions, and the scheme of Progressive Examination was approved by a Special General Meeting of the Institute, held 8th April 1889. At the same meeting the Architectural Societies of Bristol, Leicester, Liverpool, Manchester, Nottingham and Sheffield, with the Royal Institute of the Architects of Ireland, the Glasgow Institute, and the Northern Architectural Association—nine in all—were admitted to alliance with the Institute under the provisions of By-Laws than recently approved by the Privy Council. Since that time six other bodies in England, Scotland and Wales, with another in Australia, have been similarly admitted to alliance; with what results may be seen in the *Kalendar* last issued to members. The same issue of this work gives the fullest description yet published of the three Progressive Examinations. At the present hour the Probationers number 631, the Students 130; and the number of those eligible for candidature as Associate exceeds 100, with a reserve of 113 applicants relegated from previous occasions, and having the right of admission to the "Final" to be held next March and subsequent Qualifying Examinations.

The above applies only to the class of Associate. All the machinery in force, all the efforts to aid the education of architects and of architectural students, all that is sketched in the foregoing review, concerns admission to candidature as Associate. But the new Charter of 1887, under Section 3, lays down that from the 28th March 1892 the Institute shall have power to declare that every person desiring to be admitted a Fellow shall also be required to have passed an Examination. Although nearly three years have elapsed, the only "Examination" for admission to candidature as Fellow is contained in a "Regulation" for carrying into effect By-Law 3: that after the 1st November 1893 every such person shall submit to the Council, as evidence of his abilities as a practising architect, drawings, or photographs, of his executed works, accompanied with a signed declaration that the said works have been designed by himself. Since that Regulation was passed thirteen persons, of whom ten were already members in the class of Associate, have been elected Fellows; while, during the same period, 76 Associates have been added to the Register. The number of Associates is now 873, and there are more than 100 candidates, 64 of whom passed the recent Examination, eligible for election to that class; while the Fellows, who in October 1892 numbered 617, and in January 1893, 621, now number 611. Before the next Annual General Meeting it may be confidently anticipated that the number of Associates will far exceed 900, while that of the Fellows will show little increase. One of the main results of the Charter of 1887 is an apparent shifting of the preponderance of power, in the ordinary affairs of the corporate body, from the Fellows to the Associates of the Institute.—*Journal of the Royal Institute of British Architects.*

SAN JOAQUIN RAILROAD.

IN the December number of this journal we had occasion to speak of the lack of enterprise shown by the Real Estate men of our city, and remarked if they had any pluck the San Joaquin Railroad would be well under way by this time. Since that time we are happy to say they have in a measure redeemed themselves and at the present time there is every prospect of a competing road being soon ununder way.

If this should meet the eye of any who have not yet subscribed to this deserving enterprise we hope they may be induced forward as they may gain the public weal by adding their names to the subscription list without waiting to be called upon.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COMPETITIVE Design, Alameda City Hall, W. J. Cuthbertson, Architect.

A COUNTRY Hotel, W. D. Van Siclen, Architect, San Jose, Cal.

PERSPECTIVE of California Safe Deposit Building, Henry A. Schulze, Architect.

BUILDING for A. W. Wilson & Co., Mission street between Third and Fourth Sts., J. R. Miller, Architect.

COMPETITIVE DESIGN

ALAMEDA CITY HALL

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

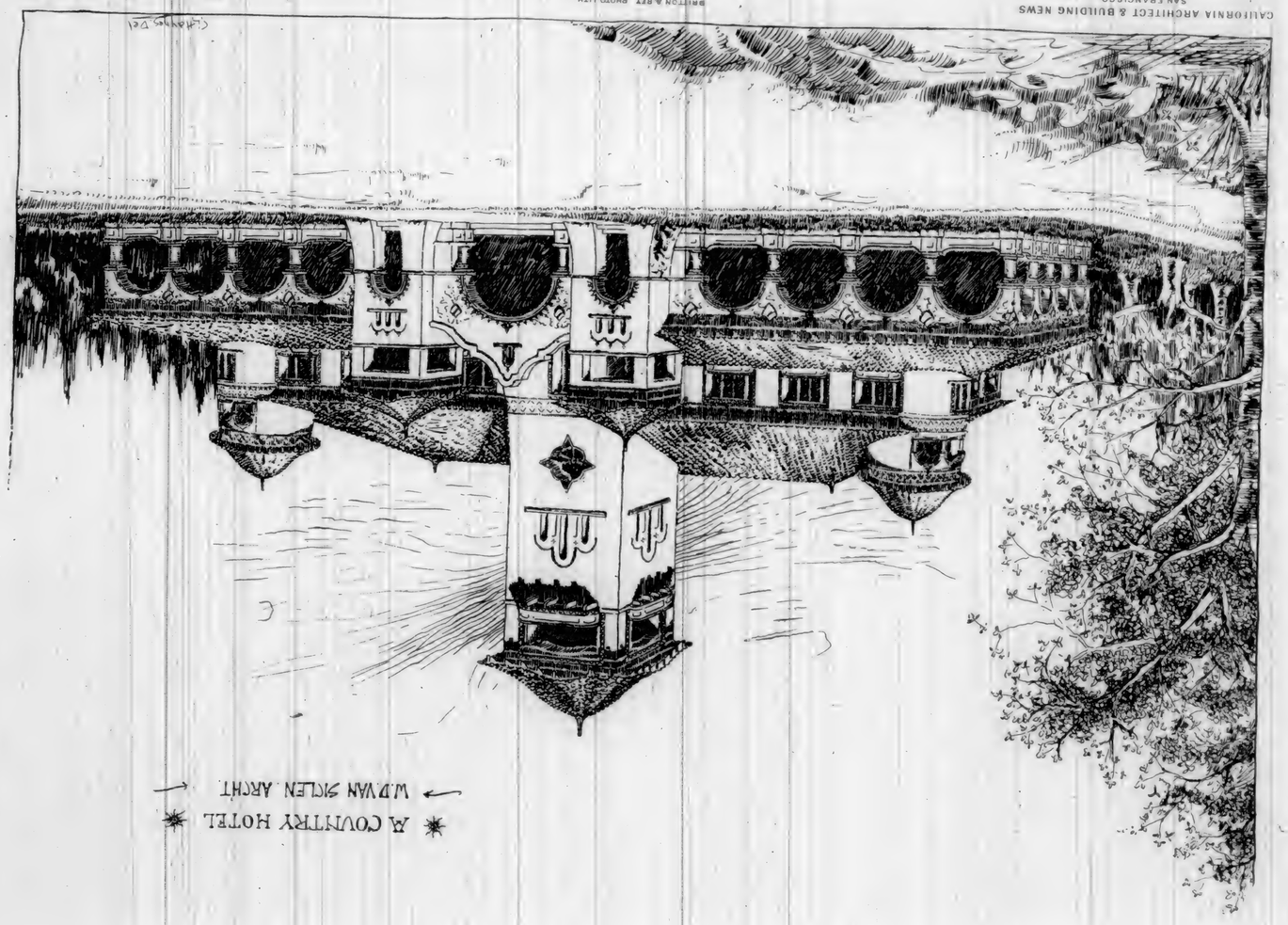
BRITTON & REY PHOTO. LITH.

VOL. XVI Nº 3 MARCH 1895

-- BVILDING FOR A.W.WILSON ESQ --
-- MISSION ST. BET. 3d & 4th STS. --
--J.R.MILLER ARCHT CROCKER BLDG.SF.--

PERSPECTIVE OF CAL: SAFE
DEPOSIT & TRVST Coº BVILDING·
HENRY A. SCHVIZE ARCHITECT·
FLOOD BVILDING RM 94·
SAN FRANCISCO CAL·

BRITTON & REY PHOTO LITH



✱ A COUNTRY HOTEL ✱

⟶ W.D.VAN SICLEN ARCHT ⟵

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, Pres. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

PRACTICAL SUGGESTIONS RESPECTING THE VENTILATION OF BUILDINGS.

A REPORT TO THE STATE BOARD OF HEALTH. BY JOHN H. KELLOGG, M. D.

GENTLEMEN:—In obedience to your request, I herewith present in brief form a few suggestions and fundamental principles which it is believed may be found of service in arranging the ventilating system of public and private buildings. The sole effort has been to embody, in as brief and lucid a form as possible, the information which the writer has gathered during some years of study of the subject, and such facts as he has gleaned from his own experience in planning and superintending buildings of some size for hospitals and other purposes. The only recommendation offered for the plans and principles suggested is that they have borne the test of practical experiment in a satisfactory manner, which cannot be said respecting all the schemes for the warming and ventilation of buildings which have been offered in works on sanitary subjects published within the last score of years. In justice to himself, the writer ought to say that he has not undertaken to make this paper exhaustive, or anything more than what its title indicates; neither has he undertaken to enter the field which properly belongs to the architect, but rather to present simply such suggestions and theories as he has himself found of practical value, and which are susceptible of general application, omitting altogether the minor details, which, however necessary to the adaptation of a general plan or principles to any particular case, are likely to be of little service except in the special conditions to which they are specially adapted. Seeking, then, to avoid as much as possible, redundancy of language and circumlocution in methods of presentation, let us begin at once the discussion of the things most essential in a correct scheme for the proper ventilation and heating of a building.

First of all, it may be stated that the ventilation and heating of a building must be considered together, for a successful working of each will depend upon the conditions of the other. It needs no argument to impress the fact that the amount of heat to be furnished in any given instance must depend very largely upon the amount of fresh air to be supplied per hour or minute. If the air of a room is to be changed four times per hour, certainly a proportionately larger quantity of fuel must be consumed than if the air is to be changed but once an hour.

The air supply of a room or building is generally determined by its size rather than by the number of persons by which it is to be occupied. This is certainly not a scientific method. A large room, occupied by but one or two persons, might possibly admit through cracks about windows and doors, and through its porous walls a sufficient air supply; while a small room, crowded with people, would require a very large provision for the supply of fresh air. The first thing, then, to be considered in the study of the ventilation of a room or building is the number of persons who are to occupy the space under consideration.

According to the most eminent sanitary authorities of England, each healthy adult person requires not less than three thousand cubic feet of air per hour. This statement is based upon careful experiments, which showed that if the normal quantity of carbon di-oxide contained in the atmosphere, which is two parts to every five-thousand parts of air, is increased to three parts in five thousand of air, the limit of tolerable impurity is reached; that is, if the amount of CO_2 is increased by respiration to a larger proportion than that stated, namely, three parts in five thousand, the air thus contaminated becomes productive of disease. It must not be supposed that the poisonous properties of such air are due to the chemical compound CO_2. Air may contain a much larger proportion of CO_2 provided this compound is derived from purely chemical sources, without injury being apparent. But when the CO_2 is furnished by the respiration of animals, there is association with it a subtle poison, which has been shown by the eminent physiologist, Prof. Brown-Sequard, to be one of the most powerful poisons known, exceedingly minute quantities being sufficient to produce death.

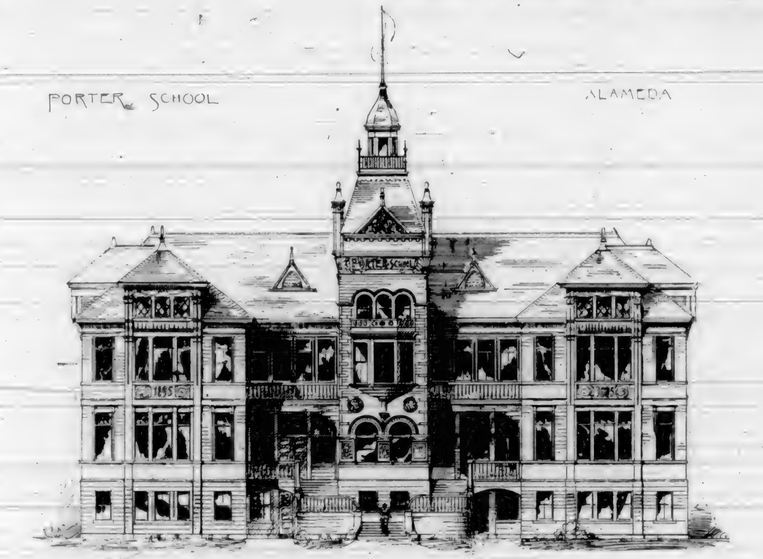
A little computation based upon the experiments referred to will show that Dr. Parke's figures are certainly not extravagant. With each breath, each human being exhales into the air one cubic inch of carbon di-oxide, and a definite amount of organic poison associated with it. As air naturally contains two cubic inches of carbon di-oxide in every five thousand cubic inches of air, and as an additional cubic inch of CO_2, or three cubic inches in five thousand cubic inches of air is the limit of safety, it is evident that each breath renders unfit for further use, five thousand cubic inches, or approximately, three cubic feet of air. The average person breathes eighteen times per minute; consequently each person spoils or renders unfit for further use, 3x18, or 54 cubic feet of air per minute; 54x60 gives us, as the amount of air which each person contaminates per hour, 3240 cubic feet, a slight excess over the amount named by Prof. Parkes. Some other authorities place the line of dangerous contamination at a somewhat higher point, and consequently they require a smaller amount of air. Avoiding either extreme, we may place the amount of air required per hour for each healthy person, at about 2400 cubic feet. It must be understood, however, that this rule applies to healthy persons only, and it is not applicable to hospitals or buildings occupied by infirm or sick persons. For such institutions, and for manufacturing establishments in which the air may be contaminated by chemical or other processes, at leased double the amount named, or 5000 cubic feet of air per hour must be supplied. In any given case then, to ascertain the amount of air required per hour, we have only to multiply 2400 or 5000 as the case may be, by the number of persons to be supplied with air. The number of persons taken should be the maximum rather than the minimum number which the room or building is calculated to accommodate, for the evident reason that the capacity of a ventilat-

ing shaft, duct or opening, may be easily diminished, but cannot be so readily increased.

Having determined the amount of air required in any given case, the following important practical points remain to be determined:—

1. The circulation of the fresh air.
2. The area of fresh-air inlets.
3. The area of foul-air outlets.
4. The location of foul air outlets.
5. The construction and location of foul-air ducts.
6. The location, sectional area, and height of ventilating shafts.
7. The question of artificially assisting the draft by means of a pressure or suction fan, or by means of heat in the ventilating shaft.

We will consider each of these several questions in the order named.



ADDITION TO PORTER SCHOOL, LAVER & MULLANY AND W. J. CUTHBERTSON, ARCHITECTS.

1. A room cannot be properly ventilated without an efficient arrangement for the circulation of air. For this there must be for each space to be ventilated at least two openings: one for the admission of fresh air, the other for the removal of impure air. Nothing could be more absurd than the frequently witnessed attempt to ventilate a room by supplying it with a ventilating shaft connected with proper ducts and foul-air openings, but without any provision for a supply of fresh air. Such an arrangement is eminently well calculated to produce dangerous drafts through the opening of windows, and the impression that any attempt at efficient ventilation is liable to result in failure. It is also essential for the proper distribution of the air admitted to a room that the air shall be heated before it enters room or building, or at the moment of entering.

2. To determine the required area of fresh-air inlets, the amount of air required and the velocity at which the air is to travel must be known. Air heated to a temperature of 40° F. above that of the external air will travel at the rate of about five feet a second when entering a room of ordinary height, from which it may escape readily. If the escape of air from the room is assisted by means of an efficient ventilating shaft, the velocity of the incoming air may be safely computed as ten feet per second. If the fresh air enters the room at a temperature so high as 120° F. to 150° F., the velocity of the air-current will be increased to 12 or 15 feet per second. Better practical results are obtained by large volumes of moderately heated air, traveling at a moderate speed, than from super-heated air traveling at a high velocity.

Calculating the velocity of the incoming air at ten feet per second, it is only necessary to divide the total amount of air required per second by ten, and the result will represent the area of free opening required. An allowance of at least forty per cent must be made when the openings are covered by register-plates. For example: Suppose the amount of air needed is 240,000 cubic feet per hour, sufficient to supply 100 persons with the minimum quantity of air. This requires 66⅔ cubic feet of air per second. Sixty-six and two-thirds divided by 10 is 6.6⅔. Adding 40 per cent for obstruction of register-plate, give us 9.3 square feet as the combined areas of the register-covered openings for admitting fresh air.

3. The number and location of the fresh-air inlets is not a matter of so great importance as is commonly supposed. If the fresh air enters the room at a temperature 20 to 40 degrees higher than that of the air of the room, it will go at once to the ceiling, no matter where or how admitted, and will thence gradually diffuse itself through the room, its course being chiefly determined by the location of the windows and of the foul-air exit openings. I think it preferable that the fresh-air inlet should be in the wall, near the floor, rather than in the floor, as it is by this means better protected against the accumulation of dust and dirt.

In the case of large buildings containing several floors and many rooms or apartments to be supplied with air, it is best not to undertake to carry a separate fresh-air duct to each room, but to equalize the air pressure within the building by leading large ducts to the common hall or corridor of each floor, supplying each room of each floor through open transoms or register plates placed near the ceiling. This arrangement secures a constant supply of pure air in the halls or corridors from which each room can draw, and establishes a constant current in the direction of individual users of the air, the foul air being directly removed from each separate room by its own duct. This plan secures the greatest possible safety from the dissemination of contagion or the dispersal of any element capable of producing dangerous contamination of the air.

4. Experience has shown that in order to prevent unpleasant draft, the velocity of the air at outlet openings should not be greater than five feet per second. The necessary area of outlet openings is readily obtained then, by simply dividing the total amount of air to be supplied per second by five. For example, suppose a room to be ventilated is calculated to accommodate thirty persons, each to be supplied with 2400 cubic feet of air per hour. The aggregate amount of air to be supplied will be 30x2400 or 72,000 cubic feet. Dividing this amount by 3600, the number of seconds in an hour, we have 20 cubic feet as the amount required for each second. Dividing this by 5, the velocity allowable, we have 4, which represents the necessary area for the foul-air outlets in square feet.

It must of course be understood that the figures thus obtained represent actual opening, and not an opening partially obstructed by a grate or register. As before stated, forty per cent must be allowed for when the opening is covered by an ordinary register.

As regards the proportion of the area of the foul-air exits to the area of fresh-air inlets, it may be said that outlets should be at least double the area of the inlets, since a velocity of ten or fifteen feet per second may be allowed without injury or inconvenience at the inlet, although such a velocity would not be tolerable at outlet openings.

TO BE CONTINUED.

EXPOSITION OF INDUSTRIES AND FINE ARTS OF MEXICO, 1896.

THE Federal Government has obligated itself to admit *free of duty* all materials and machinery for any buildings to be erected on the Exposition grounds, or the entire buildings imported for erection there, and, furthermore, it is expected that all building material used in construction of exhibition buildings and buildings entire for exhibition will be carried by the Railroad at one-half the regular tariff on same.

To this very important fact we desire to call the attention of Builders and Dealers and Manufacturers of Lumber, Machinery, Hardware, Glassware, Metal Roofing and Building Material.

It can readily be seen that there is open to our merchants a large and profitable field for their manufactures, taking in consideration the fact that at present there is in Mexico a great dearth of building material, the prices of which, under the tariff, were high. The exposition grounds will embrace an area of about 600 acres, and there will be ample space provided for the construction of all varieties of buildings of a desirable nature aside from the official buildings of the National and Foreign departments and buildings used by concessionaires, and at the close of the Exposition the material used in the construction of these buildings will find ready and quick sale to Railroads, Haciendas, Merchants, etc. It is projected that a large hotel on the American plan shall be erected on the grounds for the accomodation of such visitors as prefer the comforts of American civilization, and it is understood that this hotel will remain permanent, it being located in the suburbs, in close proximity to the city.

The Exposition will undoubtedly create a large demand for portable buildings, such as cabins, kiosks, stations, ticket offices, etc., which could be easily transported and readily sold at the close of the Exposition.

As contracts will be made for the erection of all of the main buildings of the Exposition as well as the buildings

for concessionaires and others connected with the Exposition, a great and legitimate profit could be realized by the formation of a stock company which could handle all of these contracts, and parties desiring to subscribe to the company could in lieu of cash furnish merchandise and material.

The advantage derived from the liberal privileges granted by the Mexican Government to our merchants on the occasion of this Exposition are such as should be eagerly sought for by those who have the interests of the advancement of American commerce at heart.

In the interest of the exhibitors of the United States a company has been formed at San Francisco, Cal., under the style of the American-Mexican Exposition Company, A. K. Coney, Consul General at San Francisco, President, of whom any further information regarding the Exposition can be obtained.

BOOKS AND PERIODICALS.

LIPPINCOTT'S MONLHLY MAGAZINE for March, contains one of Captain Charles King's delightful stories called "A Tame Surrender" for the complete novel. Among other interesting articles "A Glimpse of Cuba" will be found timely from the fact at the present time Cuba is undergoing one of her usual revolutions, or perhaps it would be more proper to write attempted revolutions.

INDUSTRY, a monthly magazine comes to hand for March containing a number of articles not only of general interest, but particularly so for the resident of this coast. "Constructive Engineering on the Pacific Coast," as well as "Ship Building" will be read with pride as showing the advance that is being make in the science of Engineering and Mechanical Arts on this Coast.

THE GOULD'S MANUFACTURING CO.—This company have just issued a handsome illustrated catalogue and price list of pumps and hydraulic machinery for every service. The headquarters of this establishment is at Seneca Falls, New York, with warerooms 16 Murray street, New York City. Having been founded in 1848, it is fair to suppose that their pumps and other machinery must be of great value to account for the large increase of their works, Woodin & Little, 312–314 Market street, San Francisco, is one of their principal branch agencies.

A number of tables giving capacity of round tanks and cisterns, dimensions, weight, etc., of wrought iron welded pipe horse power shafting will transmit; weights and measures, estimate of values of foreign coins, and many others will add greatly to the value of this catalogue as a book of reference.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

SUFFICIENCY OF STATEMENT OF MECHANIC'S LIEN.—A mechanic's lien stating that the labor was done and material furnished in improving the separate real estate of a married woman is sufficient to charge the property.

Reece v. Haymaker, Supreme Court Penn., 50 At Rep. 404.

CONTRACT WITH OWNER NECESSARY IN LIEN FOR MATERIALS.—A person claiming a right to a lien for labor or material furnished in the construction of a building must show that it was performed or furnished at the instance of the owner or his agent.

Sellwood Lumber & Mfg. Co. v. Monell, Supreme Court Oregon, 38 Pac. Rep. 66.

STATUTE FOR MECHANIC'S LIENS LIBERALLY CONSTRUED.—The statute by which a mechanic's lien is created was designed to protect material men, contractors and laborers; and, although in derogation of the common law, its provisions should be liberally construed, to the end that the intention of the legislature may be realized, and substantial justice done to all affected by its provisions.

Hill v. Alliance Bldg. Co., Supreme Court S. D. 60 N. W. 752.

LIABILITY FOR INJURIES TO ADJOINING OWNER.—One who erects a chimney on his land is liable for injuries to an adjoining owner by its fall, when it is not the result of inevitable accident, or wrongful acts of third persons.

Cork v. Blossom, Sup. Jud. Court of Mass., 38 N. E. Rep. 495.

DEFECT IN DESCRIPTION OF PROPERTY CURED BY EVIDENCE.—Where, in a building contract, on which a mechanic's lien is claimed the only description of the property was embodied in the statement that it was "to be erected on Avenue E, just north of U. S. Post Office building, in the city of San Antonio, Tex.," the defect, if any, in such description, is latent, and may be aided by extraneous evidence.

The order of the introduction of evidence is within the discretion of the court.

Myers v. Maverick, Ct. Civ. App. Tex., 27 S. W. Rep. 1083.

WHEN TAKING NOTE DOES NOT WAIVE MECHANICS' LIEN.—In the absence of an agreement or anything indicating an intention to the contrary, a mechanic or material man does not waive his right to file and enforce a lien merely by accepting for the amount of his claim the promissory note of the owner, at his request, and for the sole purpose of suspending his right to foreclose such lien for sixty days, at which time such note, according to its terms, matures.

Neither will the mere assignment of such note operate as a waiver or extinguish the lien, nor prevent the assignee from obtaining a decree of foreclosure, provided he has the note, and offers to surrender it at the trial for cancellation.

Hill v. Alliance Bldg. Co., Supreme Court S. D., Co. N. W. Rep. 752.

RIGHTS OF ASSIGNEE OF CONTRACT.—Where a vendor has made advances to the purchaser to enable him to erect a building on the land under an agreement that he should be secured by a lien, specific performance in favor of the assignee of the purchaser will be decreed, subject to the vendor's judgment for the money so advanced.

The assignee of an oral contract for the purchase of land, which has been partly performed, has the same right to specific performance as the assignor.

Dodge v. Miller, Supreme Court, 5th Dpt., 30 N. Y. S. 726.

EFFECT OF FAILURE TO AFFIX NOTARY'S SEAL TO CLAIM FOR LIEN.—The omission of a notary to affix his seal to the jurat in a notice of claim for a lien cannot be cured, at a trial of an action to foreclose the lien, by the introduction of parol evidence that the claim was in fact sworn to; and where the seal is affixed, and the name of the notary is omitted, parol evidence to the effect that the claim was in fact sworn to is equally incompetent; and the omission in each case renders both claims for a lien insufficient, when filed, to constitute constructive notice of the existence of such liens.

Such failures do not defeat the lien, but operates to postpone it to purchasers or incumbrances in good faith, without notice, whose rights accrued after the time within which the verified statement should have been filed. They are not available to one with actual notice of the existence of such lien, takes a quit-claim deed to the property, subject to all valid liens, under circumstances that fail as a matter of law to make him a purchaser in good faith.

Hill v. Alliance Bldg. Co., Supreme Court S. D., 60 N. W. 752.

BUSINESS MOSAICS.

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates, considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer & Rey, San Francisco, Cal., the manufacturers of this engine, have earned the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

"**It's** the horse Oi don't bet on that always wins at the races," said Mr. Dolan. "An' somehow Oi never can remember to put me money on him an' let th' others alone."—*Washington Starr.*

The attention of architects and those contemplating building is called to the advertisement of "The J. L. Mott Iron Works" on page v of this issue. The high prices that had to be paid heretofore for the class of goods there shown has deterred many architects from specifying and owners from using same, but now this firm has made arrangements, by which these goods can be furnished at practically the same prices as first-class enameled iron goods. The merits of the solid porcelain goods are so well known that no comment is necessary. Their San Francisco agent M. S. James at room 35 Flood Building will give all information that may be wanted on this subject.

"**Haven't** you got this book in a chicken salad binding?" asked the Cheerful Idiot. "What do you mean?" asked the astonished bookseller. "Half calf."—*Indianapolis Journal.*

Merchant & Co. give a number of good reasons why their brands of tin should be used: First because you obtain the finest quality of Martin-Siemen's open hearth steel; second, because you get a uniform standard of coating all over the plate; third, because the coating is put on by a Palm Oil process and not by acid flux generally used on account of its cheapness. Therefore be careful to specify the world's best "Merchant's Old Method," "Merchant's Roofing," and "Alaska." The strength of a chain depends on its weakest link, the life and value of a roofing plate depends on its thinnest bit of coating. The value of Merchant's roofing tin is in the process and uniformity of coating, and the entire absence of acid flux.

"**Can** I write my name under the received payment on this bill?" asked the bill collector who likes to put things as delicately as possible. "No, thank you," replied Mr. Brokely, "I'm no autograph fiend."—*Washington Starr.*

The New and Improved Chapman Fire Hose Reel is the latest improvement and may be considered a very efficient and reliable apparatus, the manufacturer makes the claim that it is the best in the world. See their advertisement on page xii of this journal. R. S. Chapment, late Fire Suveyor for Board of Underwriters, 14 and 16 Fremont street, will give you further information, and a guarantee that what he sells is as represented.

George Goodman may be considered a benefactor of that portion of mankind that live in San Francisco, a man that makes the rough ways smooth can certainly be considered a benefactor; Artifical stone in all its branches with sidewalks and garden walk a specialty is what Mr. Goodman finds to fully occupy his time. 307 Montgomery street, Nevada Block, San Francisco.

Mrs. Quizby—"Why didn't you sell your house after pou advertised it?" Mrs Brown—"When we saw the description that the real estate agent gave of it, we thought it would be a paradise lost if we did."—*Philadelphia Inquirer.*

Phoenix Pure Paint is guaranteed absolutely pure and satisfactory on the building or we will replace it with any material the architect may select "This is what the manufacturers say of this article and when W. P. Fuller & Co. say a thing they mean what they say.

While you are discussing the paint question with this firm, it is a good time to inform yourself about "Duresco" their new wall finish or washable water color, if you are not already posted on that question.

Thar is the place whar the Major fell through the ice." "How do you know?" "Easy enough. Just look at that cork floatin' yander."—*Atlanta Constitution.*

Samson Spot Cord is a cord that speaks for itself, as you can see at a glance that no other cord is substituted; warranted free from wasts and imperfections. Send for samples to Samson Cordage Works, Boston, Mass., and you will be satisfied to use no other.

"**When** does this cough trouble your wife most?" Husband—"When she has her ear to the keyhole trying to hear what the new boarders are saying.—*Chicago Inter-Ocean.*

If you are in want of electric fixtures, and do not know where to find them, go to Thomas Day & Co., 222 Sutter street, where anything in the way of gas and electric fixtures are sure to be of the best quality in the market.

Caller—"We are very rich and wish to marry our daughter to a count, a marquis, or a duke. Clerk (with dignity)—You are in the wrong office. This is a matrimonial agency. You will find the International Purchasing Agency two doors to the left.—*Ex.*

Joshua Hendy Machine Works is the place to go for light and heavy castings. They are dealers in all kinds of machinery of their own manufacture, this company was incorporated Sept. 1882 having been engaged for years in furnishing engines and pumps for buildings and in fact machinery of all kinds for almost every conceivable purpose. 39 to 51 Fremont street are their headquarters, with foundry and warehouse at Kearny, Bay and Francisco streets.

CITY BUILDING NEWS.

Army near Valencia. To build; owner, A. Chamberlin; contractor, F. V. Acker; signed, Feb. 21; filed, Feb. 23; cost $4000.

Berry near 5th. Brick warehouse; owners, Somers & Co.; contractor, W. P. Smith; cost $8000

Bush near Buchanan. Alterations and additions; owner, Patrick and Mrs. A. Walsh; contractor, John L. McLaughlin; signed, Feb. 15; filed, Feb. 18; cost $1120.

Bush near Laguna. To build; owner, Henrietta Ann Forbes; architect, R. H. White; contractor, John G. Adams; signed, Feb. 16; filed, Feb. 18; cost $6800.

Brannan near 8th. Two-story stable; owners, McNab & Smith; architect, Emil John; contractor, Geo. H. Walker; signed, Feb. 18; filed, Feb. 19; cost $8740.

Brannan near 5th. Rough carpenter work; owner, D. Nugent; architect, J. J. Clark; contractor, Cameron & McDonald; signed, March 6; filed, March 6; cost $6970.

Brannan near 5th. Brick for church; owner, D. Nugent; architect, J. J. Clark; contractor, San Joaquin Brick Co.; signed, March 7; filed, March 7; cost $7.87½ per thousand.

Birch Ave. near Buchanan. All work on a building; owner, Mrs. T. N. Van Ness; architects, Wright & Sanders; contractors, Liebert & Hoffman; signed, Jan. 3; filed, Feb. 20; cost $2300.

Bush near Laguna. Plumbing; owner, Henrietta A. Forbes; architect, R. H. White; contractor, G. C. Sweeney; cost $980.

Broadway near Stockton. To build; owner, N. Pucinelli; architect, E. Depierre; contractor, P. A. Antonelli; signed, March 9; filed, March 9; cost $9,000.

California and Jones. Brick and stone building; owner, Nob Hill Development Co.; architects, Buzbee & Gash; contractor, D. Jordan; signed, March 4; filed, March 11; cost $200,000.

California near Baker. Alterations and additions; owner, Margaret Skaine; architect, J. P. Brady; contractor, James O'Sullivan; signed, Feb. 20; filed, Feb. 25; cost $2165.

California Ave. near 30th. To build; owner, Nils Linberg; contractor, J. Gillogley; cost $1475.

California near Polk. Additions and alterations; owner, Samuel Moffatt; architect, H. W. Lillie; contractor, Geo. R. Lang; signed, Feb. 25; filed, Feb. 27; cost $2525.

Castro near 18th. To build; owner, Mrs. Mary Kipp; architect, John T. Kidd; contractor, C. W. Dodge; signed, March 1; filed, March 2; cost $3,600.

Capp near 16th. To build; owner and builder, G. Ratto; cost $6000.

Church and Liberty. To build; owner, Mrs. Mary E. Crawford; architect, W. H. Wharff; contractor, Jacob Schuler; signed, March 2; filed, March 8; cost $4225.

Creek Lane (Erie street) near Folsom. To build; owner, Albert A. Miller; contractor, H. R. Schmuckert; signed, March 9; filed, March 9; cost $2640.

Cora near Visitation Ave. To build; owner, Mrs. C. Bergold; architect, Geo. Strolmeir; contractor, H. A. Tessmer; signed, Feb. 7; filed, Feb. 15; cost $1150.

Cole near Waller. Six two-story frame residences; owner, William Hinkel; architect, Wm. Koenig; days work; cost $24,000.

Corbett Ave. near Hattie. To build; owner and builder, A. Murry; cost $2000.

Davis and Washington. Carpenter work on brick building; owner, Estate of A. Ivancovich; architects, Plesis & Moore; contractor, J. W. Wissinger; signed, Feb. 11; filed, Feb. 23; cost $8675.

Davis near Washington. Carpenter work, etc., on brick; owner, Issac Kohn; architects, Plesis & Moore; contractor, J. W. Wissinger; signed, Feb. 11; filed, Feb. 23; cost $5500.

Douglass near 17th. Additions; owner, Cal. Brewery Co.; contractor, A. Huller; cost $5000.

Diamond and 25th. Two one-story frame cottages; owner and builder, T. A. Born; cost $6000.

Diamond near 25th. Two-story frame dwelling; owner and building, T. A. Born; cost $3700.

Eighth Ave. near California. To build; owner, Mrs. Z. Hawkes; contractor, A. W. Goss; signed, Feb. 13; filed, Feb. 14; cost $1960.

Elizabeth near Hoffman. To build; owner and builder, J. Anderson; cost $2000.

Fell and Masonic Ave. To build; owner, Charles H. Phillips; contractors, White Bros.; cost $6000.

Fell and Masonic Ave. Additions and alterations; owner, Charles H. Phillips; cost $1000.

Folsom near 7th. Alterations and additions; owner, Harris Samuel; architects, Salfield & Kohlberg; contractors, Petterson & Person; signed, Feb. 20; filed, cost $1651.

Fifth Ave. near Clement. To build; owner, Ernest Webner; architect, A. J. Barnett; contractor, Ed. Mooney; signed, Feb. 27; filed, March 1; cost $1500.

Franklin and California. Concrete and cement work; owner, Edward Coleman; architect, W. H. Lillie; contractor, Geo. Goodman; signed, Feb. 28; filed, March 2; cost $2375.

Franklin and California. Plumbing; owner, Edward Coleman; architect, W. H. Lillie; contractor, H. Williamson; signed, March 5; filed, March 6; cost $962.50.

Geary near Leavenworth. Excavations, etc.; owner, Percy Klien; architect, Emil Depierre; contractor, James A. Wilson; signed, Feb. 27; filed, Feb. 28; cost $1700.

Golden Gate Ave. near Laguna. Additions; owner, Mrs. Annie Fallon; architects, Martens & Coffey; contractors, Ackerson & Peterson; signed, Feb. 23; filed, March 4; cost $2180.

Hyde near Broadway. To build; owner, Cornelius Harrigan; architect, J. C. Colbron; contractor, F. W. Maurice; signed, Feb. 5; filed, Feb. 13; cost $5300.

Hyde nerr Clay. Plumbing work; owner, Laura Hirshfeld; architects, Plesis & Moore; contractor, R. Rice; signed, Feb. 23; filed, Feb. 23; cost $1048.

Jackson near Locus Ave. Two-story brick; owner, Belle F. Lee; architect, Newton J. Tharp; contractors, Ingerson & Gore; signed, Feb. 12; filed, Feb. 15; cost $2852.

Jackson near Steiner. To build; John Sprunance; architect, J. H. Littlefield; contractors, Blanchard & Clark; signed, Feb. 15; filed, Feb. 19; cost $5345.

Kentucky near Sierra. To build; owner, Hans Kroeger; architect, H. Geilfuss; contractor, F. Klatt; signed, Feb. 28; filed, Feb. 28; cost $1402.

Kingston Ave. and Mission Sts. To build; owner, John Wiese; architects, Martens & Coffey; contractor, F. Weincehl; signed, March 1; filed, March 4; cost $4080.

Laguna near Vallejo. Concrete foundations; owner, Caroline S. Townsend; architect, W. H. Wharff; contractor, Chas. Quast; signed, March 4; filed, March 4; cost $1620.

Laguna and Jackson. Hydraulic Ram Elevator; owner, W. F. Whittier; architect, E. R. Swain; contractors, Cahill & Hall Elevator Co.; signed, March 1; filed, March 6; cost $1225.

Lott near Grove. To build; owner, Richard English; architects, Martens & Coffey; contractor, I. J. Walsh; signed, Feb. 20; filed, March 6; cost $2988.

McAllister near Devisadero. To build; owner and builder; H. Keenan; cost $500.

Mission and 24th. Repairs and additions; owner, Thusenelda E. Ingram; architect, T. W. McKee; contractor, Ed. Bowyer; signed, Feb. 18; filed, Feb. 19; cost $3100.

Mission near Main. Four-story brick; owner, Eliza T. Grosh; architect, William Patton; contractor, W. A. Butler; signed, March 7; filed, March 8; cost $32,500.

Octavia near Greenwich. Cottage; owner, Mr. Tracy; contractor, J. W. Smith, cost $2000.

Octavia near Greenwich. To build; owner, W. C. Latham; architect, H. T. Bestor; contractor, Christian Andreson; signed, March 9; filed, March 11; cost $1400.

Pacific Ave. near Octavia. Capenter, masonry, plumbing, etc.; owner, Mrs. Elizabeth Dore; architect, Samuel Newsom; contractor, Richard Sinnott; signed, Feb. 12; filed, Feb. 16; cost $7375.

Presidio Reservation. Excavations, etc., for boiler house; owner, U. S. Government; architects, Percy & Hamilton; contractors, W. H. Flaherty; signed, Feb. 19; filed, Feb. 21; cost $7000.

Presudio Reservation. Fort Point 1st brick dynamite building; owner, U. S. Government; architects, Percy & Hamilton; contractor, D. T. Francoiger; signed, Feb. 25; filed, Feb. 25; cost $1400.

Point Lobos Ave. near 5th Ave. Macadamizing, etc.; owner, La Societe Francaise, etc.; architect, Emile D pierre; contractors, Warren & Malley; signed, Feb. 13; filed, Feb. 14; cost $2100.

Polk and Elm. Cottage; owner, R. H. Lyod; architect, B. E. Henriksen; contractors, Doyle & Son; signed, March 1; filed, March 2; cost $3280.

Polk and Sutter. To build; owner, M. De Young; architect, Clinton Day; contractor, Robert Frost; signed, March 5; filed, March 6; cost $31,500.

Pierce near Greenwich. Alterations and additions; owner, F. G. Eickhorst; architect, Emil John; contractor, Alfred Neville; signed, March 4; filed, March 8; cost $1250.

Second Ave. near California St. Cottage; owners, Lee Kahn and wife; contractors, White Bros.; signed, March 4; filed, March 4; cost $2088.

Second Ave. near Clement. To build; owner, H. Frolman; architect, H. Kraetzer; contractor, B. J. Taylor; cost $3500.

Second Ave. near Lake St. To build; owner, Thos. G. Parker; architect, H. J. Kraetzer; contractor, Byron I. Taylor; signed, Feb. 15; filed, Feb. 15; cost $2800.

Steiner near Haight. To build; owner, Mrs. E. Winters; contractor, Casper Zwerlein; signed, Feb. 12; filed, Feb. 15; cost $2210.

Spear near Howard. One-story brick; owner, Janet C. Haight; architects, Herman & Swain; contractor, Daniel D. Cameron; signed, Feb. 16; filed, Feb. 18; cost $2575.

Spear near Howard. Brick and mason work; owner, Janet C. Haight; architect, Herman & Swain; contractor, J. O'Sullivan; signed, Feb. 20; filed, Feb. 20; cost $1848.

Shotwell near 15th. To build; owner, S. LeRoy; architect, F. Vandervecken; contractor, S. F. Building Co.; cost $4500.

Sixteenth and Church. Three-story frame and brick building and two-story frame in rear; owner, Joseph Harvey; architects, Havens & Toepke; contractors, Ackerson & Paterson; signed, Feb. 28; filed, March 4; cost $8100.

Taylor near Green. To build; owner, H. H. Christiansen; contractor, A. Waller; cost $2500.

Third Ave. near Clement. Cottage; owner, Geo. Allen; contractor, H. Rowe; cost $1800.

Tenth Ave. near Pt. Lobos. Cottage; owner, G. Schmelser; contractor, G. T. Paff, cost $1800.

Tenth near California. To build; owner, C. Stoltz; contractor, D. A. McIntosh; cost $2000.

Twenty-third near Folsom. To build; owner, Jas. H. & L. A. Anderson; contractors, Hyde & Cox; signed, March 4; filed, March 6; cost $1850.

Twenty-fourth and Sanchez. Cottage; owner, P. Gumm; contractor, R. Frost; signed, March 2; filed, March 2; cost $1828.

Thirtieth near Laikley. To build; owner, Peter Braunbeck; contractor Robert Frost; signed, March 2; filed, March 7; cost $1500.

Washington near Scott. To build; owner, Agnes J. Jones; architect, H. D. Mitchell; contractor, J. Norris; signed, March 2; filed, March 7; cost $4614.

Webster near Pine. To build; owner, L. R. Ellert; architects, Shea & Shea; contractor, James Mooney; signed, Feb. 12; filed, Feb. 20; cost $5400.

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OUR Eastern exchanges contain full descriptions of the Orchard street disaster and the attempts to place the responsibility therefor on the shoulders of the proper persons. The facts of the case are as follows: An interior cross wall of brick was to be carried by an iron girder, resting on the side walls of the building. The bearing was not sufficiently strong to carry the weight, and gave way with fatal results. The plans for the building had been passed on and approved by the Department of Buildings of New York City, and theoretically would have been within the limits of safety. Owing to the poor quality of bricks used, no bonding, and poor mortar laid in freezing weather, the disaster occurred. The Coroner's jury blamed the deputy inspector who passed the plans as being grossly careless, but the Grand Jury absolved him from blame.

The real responsibility appears to belong to the person supervising the carrying out of the work, and the Grand Jury who reported on the matter recommended "that no building be erected hereafter, or changes made to an existing building, without the employment of a duly 'licensed' architect who shall draw the necessary plans and specifications of the same and superintend the same from first to last during its progress" and also recommended that "no person be allowed to practice the profession of architecture, make plans and specifications for a building or superintend its erection unless duly licensed for that purpose and registered."

Public indifference and private greed and shortsightedness have so far hindered or entirely thwarted the efforts of the architectural profession to exclude by law, the incompetent and incapable practitioners, and it will take more than one fatal accident to interest the public in the important subject of safe building.

The law presented to our last California Legislature, designed to meet the requirements of the more complicated construction of advancing civilization, by restricting the right to practice architecture to those proving themselves competent, fared no better than the law proposed to the Legislature that preceded it, nevertheless the profession men, who see the necessity of some such law for the safety and protection of the public, will continue their crusades in this and other States, until they succeed in their meritorious

efforts to raise the proficiency of the architectural practioner to such a standard that fatal accidents will no longer be cause by faulty construction and imperfect execution. This can only be done by prohibiting the grossly incompetent from practicing.

THE MANUFACTURING INTERESTS OF THE PACIFIC COAST.

A PAPER READ BEFORE THE MANUFACTURERS AND PRODUCERS CONVENTION, BY MR. OSCAR LEWIS.

Mr. President and Gentlemen of the Convention:—

To every man connected with the manufacturing interests of the Pacific Coast (and especially to those engaged in the Building Trades) the necessity of this Convention is but too plainly apparent; and the varied interests here represented show to us all that it is not only one industry that is threatened with disaster, if not annihilation, but that all are alike passing through the most disastrous business depression that has ever visited California. We all of course expect to take our share of these periodical upheavals in industrial and financial circles that sweep over our entire country, but we know, that aside from this, manufacturing has been on the down grade for some years past, and each year sees a greater number of firms, either going out of business altogether, or becoming importers in part at least, of the various articles in which they deal.

"It is a condition, not a theory that confronts us." We cannot disguise it. The time has arrived, when not only the employer, but employe, the mechanic, the farmer, the merchant and the real estate owner, in fact all who have a hope in what California ought to be, must stand together, and putting aside our petty differences, work in harmony for the maintaining and building up of the various industries of this Coast.

In connection with the Building Trades let me give you some examples of selfishness, or short-sightedness, of some of our real estate owners and contractors—and I may truthfully say that a good many of them brought little more when they came to this State, than they did when they came into the world. But before doing so, I will say that our local architects, builders and workmen will compare favorably with any that can, or have been, imported from any part of these United States. We fall short only in the art of combining modern conveniences with modern ugliness, and some of us are bold enough even to attempt that; but at all events there is no reason why San Francisco mechanics should not build San Francisco's buildings.

Yet the iron stair cases and ornamental iron work, costing in the neighborhood of $80,000, of one of our large buildings on Montgomery street, was made by Winslow Bros., of Chicago. It was not even bid on here, as in the opinion of the Chicago architects of that building, it could not be done here. I do not think it could have been done here as poorly. It was condemned and would have been rejected, but for the delay such rejection would have caused. This fact, and that great boon to botch workmanship—lead and putty—pulled it through.

The carpenter, or mill work, the entire wood finish was also made in Chicago, shipped out here and nailed in position by a local contractor; and at this time over one-half of the wood-working, machinery and mill hands of San Francisco were idle, and hundreds of worthy men were standing in line for hours in the rain to obtain a card that would entitle them to work in the Park for a dollar a day.

Why only recently, in the midst of our excitement over the laudable "Valley" Railroad enterprise, we found time to send a small job of iron work to Winslow Bros. of Chicago, while iron-workers walked the streets of San Francisco idle. This reminds me of Artemus Ward, who was in favor of enlisting and sacrificing all his wife's relatives, including his mother-in-law to put down the Rebellion.

And yet, Mr. President and Gentlemen of the Convention, we are all more or less to blame in this matter, for it seems to be a California fashion to shout for the opposition and travel on the old line. Even at this moment, when all Californians seem to be banding together in their effort to build up the industries of the State and City, the Eastern drummer—or human toredo—is at work, boring around the architects' offices with his samples of interior wood finish, seeking to lay his plans to procure wood work that will soon be required for our large business buildings and residences that are now in course of construction.

Owners and Contractors of the Coast, give the mechanics of California a chance: If you want the Eastern woods that are not grown here, import the lumber and have the work done here, unless the Railroad treats you as it does the wire nail industry—charge sixty cents a hundred on wire rods or the raw material, and thirty cents on the finished article.

Gentlemen, it does seem to me that those of us who have invested large amounts of money in rolling-mills, shipbuilding works, wire works, foundries and wood-working plants, have made a mistake, when the great iron and steel manufactuer of Pennsylvania, can be fully represented and equipped on this Coast, by a very affable gentlemen, occupying a 7x9 office, containing a roller top desk and a telephone; and while thousands of extensive Eastern manufacturers and wholesale houses, are represented by nice young men with alligator skin grip-sacks, who adorn themselves with diamond pins, four-in-hand ties, Willie-boy coats and custard pie shoes, while the people of San Francisco sigh for a "Half-Million Club," so do I sigh for a half million clubs.

But enough of complaint: Admit it all, and what is the remedy? Boycott Eastern made goods? No! rather build up our own State and let others build up theirs.

It has been said that the high rate of wages prevents manufacturing. While it is true that wages here are higher than in the East, we hope that the rates in the East may be raised rather than ours lowered. However, notwithstanding the fact that both labor and materials are higher here, our greatest difficulty is local prejudice, and the limited market we have to supply: For we know that the cost of manufacturing is largely governed by the quantity of a given article manufactured.

It is to be hoped that this Convention will go far towards convincing the people of this Coast, without regard to age, color, or previous condition, that their true interest lies in standing loyally together, and so far as possibly supplying their wants from the home market. Use the California produced article, even if it costs a little more, for the extra cost will come back to you tenfold in the general prosperity of the State.

A competing railroad has been advocated. There would be some merit in that, for to us manufacturers it would be no lingering death, and we could rent our plants as storehouses for the reception of its cheap freight and Eastern made goods that would flood San Francisco.

After thirty-six years residence in California, I believe in her resources; I have faith in her people, and I feel that with the commencement of the Valley Road, and the general awakening of the people, the revival of our mining, agricultural and industrial interests, a new era of prosperity will be felt over our entire State and Coast: If on the other hand, the people will not awake, will not protect their own interests from the tomahawk of the middle-man, or the grasping greed of our soulless monopolies, then at least save us from the hands of the Health Officer, and give us an elegant funeral, as will, in the language of Jimmie McGinn, make it a pleasure for us to die; dig the grave wide, dig it deep, and place it face downwards so that we may gaze on Chicago.

CODE OF ETHICS,

IN CONFORMITY WITH THE BEST STANDARDS OF PRACTICE, RECOMMENDED TO ITS MEMBERS BY THE BOSTON SOCIETY OF ARCHITECTS.

Adopted by the Society, February 1, 1895.

SECTION 1. No member should enter into partnership, in any form or degree, with any builder, contractor, or manufacturer.

SEC. 2. A member having any ownership in any building material, device, or invention, proposed to be used on work for which he is architect, should inform his employer of the fact of such ownership.

SEC. 3. No member should be a party to a building contract except as "owner."

SEC. 4. No member should guarantee an estimate or contract by personal bond.

SEC. 5. It is unprofessional to offer drawings or other services on approval and without adequate pecuniary compensation.

SEC. 6. It is unprofessional to advertise in any other way than by a notice giving name, address, profession, and office hours, and special branch (if such) of practice.

SEC. 7. It is unprofessional to make alterations of a building designed by another architect, within ten years of its completion, without ascertaining that the owner refuses to employ the original designer, or, in event of the property having changed hands, without due notice to the said designer.

SEC. 8. It is unprofessional to attempt to supplant an architect after definite steps have been taken toward his employment.

SEC. 9. It is unprofessional for a member to criticise in the public prints the professional conduct or work of another architect except over his own name or under the authority of a professional journal.

SEC. 10. It is unprofessional to furnish designs in competition for private work or for public work, unless for proper compensation, and unless a competent professional adviser is employed to draw up the "conditions" and assist in the award.

SEC. 11. No member should submit drawings except as an original contributor in any duly instituted competition, or to secure any work for which such a competition remains undecided.

SEC. 12. The A. I. A. "schedule of charges" represents minimum rates for full, faithful, and competent service. It is the duty of every architect to charge higher rates whenever the demand for his services will justify the increase, rather than to accept work to which he cannot give proper personal attention.

SEC. 13. No member shall compete in amount of commission or offer to work for less than another, in order to secure the work.

SEC. 14. It is unprofessional to enter into competition with or to consult with an architect who has been dishonorably expelled from the "Institute" or "Society."

SEC. 15. The assumption of the title of "Architect" should be held to mean that the bearer has the professional knowledge and natural ability needed for the proper invention, illustration, and supervision of all building operations which he may undertake.

SEC. 16. A member should so conduct his practice as to forward the cause of professional education and render all possible help to juniors, draughtsmen, and students.

ARMY OFFICERS AS SUPERINTENDANTS OF PUBLIC BUILDINGS.

THE old scheme, of having officers of the United States Army superintend the construction of public buildings, has been revived, according to the Washington papers; and the usual frightful examples of the slowness of progress on such buildings, under the ordinary methods, are brought up to show how much more quickly they would be finished if the military arm took hold of them. To complete the alluring picture, we are told that the Congressional Library, which is nearing completion, under military direction, and has certainly been rapidly built, is "a gem of art," as if all we had to do, to scatter gems of art speedily around the country, was to transfer the Supervising Architect's office to the Army Headquarters. It is hardly necessary to say that this agitation is decidely pernicious. That the Congressional Library is a fine building, well and quickly built, we acknowledge with pleasure, but, notwithstanding the remarkable and exceptional qualifications of General Casey and Colonel Green for architectural undertakings, it is quite capable of improvement as a work of art, and the rapidity with which it has been carried out is due as much to the energy with which the officers cut off Congressional interference, and demanded appropriations, as to any hidden capacity of the military mind for making bricks and stones jump into their places without assistance; while the Pension Building, the other great example of military architecture, though quickly built, for the same reasons, is about as far from being a "gem of art" as any structure within our knowledge. The fact is that the people who can build most rapidly, skilfully and beautifully are the people who have devoted their lives to learning how to do so, namely, the architects; and the sooner the public stops dodging around them, and trying to utilize politicians and generals and carpenters and what not, in place of them, the better off it will be.—*The American Architect and Building News.*

PRACTICAL SUGGESTIONS RESPECTING THE VENTILATION OF BUILDINGS.

Continued from March Number.

FIVE. When a room is heated wholly or chiefly by warm air, the distribution of heat in the room will be almost wholly controlled by the location of the foul-air outlets. The natural course of the air current is this: the heated air

rises to the ceiling, spreads out, and coming in contact with the outer walls which are lower in temperature than the inside walls, especially the windows, it is cooled and falls to the floor. It is evident then that as the outer walls and the proportions of the room adjacent to them are necessarily the coldest part of the room, the circulation of the air through the room and the proper distribution of the heat will be facilitated by placing the foul-air openings along the outer walls and preferably under the windows. If the foul-air outlets are placed in an inner wall or at the floor near an inside wall, one effect will be to draw toward this opening warm air which ought to have been utilized in warming the outer walls. Another effect, and one of the most disagreeable features attending this method of placing the foul-air outlets, is that the air which has been cooled by contact with the windows and outer walls and by its greater specific gravity has fallen to the floor, will be drawn the whole distance across the floor to the opening on the opposite side, thus constantly maintaining at the floor a stratum of cold air. An arrangement of this sort is a very frequent cause of cold floors, and consequently cold feet, and the resulting headaches from which the occupants of such a room are almost sure to suffer.

The foul-air outlets should be placed as near the floor as possible. The opening may be in the base board or in the floor itself The only objection to the latter method is the collection of dust which is likely to be swept into the opening.

6. The ventilating ducts communicating with the foul-air outlets should have a sectional area equal to the free area of the openings with which they communicate. This capacity should be maintained until the duct reaches the ventilating shaft, and should be increased if several turns are made in the duct as each square turn has the effect to diminish the velocity of the air current nearly one-half. Square turns should never be made, and the ducts should be enlarged at the angles where a turn is necessary. In case a duct must be carried for some distance, its capacity should be increased fifty or even one hundred per cent to compensate for the great amount of friction occasioned by distance. The ventilating ducts should of course be made tight. For this purpose it is necessary that they should be lined with metal or some other durable material. Even well-seasoned lumber will shrink and open up large cracks, by which the efficiency of the duct will be very materially diminished. It is also a wise plan to construct ventilating ducts of some non-combustible material, or at least to line with such material as a caution against fire.

Only ducts coming from the same room or floor should be connected with a common ventilating shaft. Each story must have its own foul-air shaft; otherwise the counter drafts occasioned by the opening of doors and windows, especially in moderate weather, or the adverse influence of winds, will be certain to lead to contamination of the air of one room by the air of another room with which it is in communication through the common shaft.

It is of the utmost importance to supply each floor, and if possible each room, with its own independent ventilating shaft running as directly as possible to the open air without any connection with other ducts.

7. The location, sectional area, and height of the ventilating shaft, are questions of very great interest and practical importance. As regards location, it is always better that the ventilating shaft should when possible be located within the building, as in an inside wall; this insures a temperature equal to that within the building, and so secures a constant and positive draft, whenever the building is supplied with artificial heat. If, in addition, the ventilating shaft can be located adjacent to the chimney, or if the smoke can be carried up through it by means of a boiler iron stack or a stack constructed of sewer pipe, a still higher temperature of the air in the ventilating shaft and hence a better draft will be secured.

The sectional area of the shaft will depend upon the amount of air to be removed and the height of the shaft.

By a careful study of the tables of Parke and others, I have been able to construct a simple formula which is of great practical service in determining these two questions. The following is the formula: The square root of the height of a shaft, multiplied by the square root of the difference in temperature between the air in the shaft and the outside air, divided by four, equals the velocity of the air in the shaft in feet per second. In using this formula, it is of course necessary that two of the quantities should be known. The difference in temperature is a pretty constant factor. In fixing this the minimum difference should of course be chosen rather than the maximum, as a ventilating shaft which may have an ample capacity in extreme cold weather when the great difference between the external and internal air would secure a powerful draft, would be quite insufficient to supply the necessary amount of air in moderate weather. I have chosen as a basis for obtaining the minimum difference id temperature, the temperature of 45° F. for external, and 70° F., the usual internal temperature. As a temperature much higher than 45 degrees, doors and windows are likely to be opened, and hence the working of any ventilating apparatus would be interfered with. The difference between 45° and 70° is 25, which may be fairly taken as a basis for calculation.

The height of the ventilating shaft is usually determined by the architect, who considers it with reference to the architectural effect in the building. When this is given, we have but to take the suqare root of the known height of the chimney, multiplied by the square root of 25 which is 5, divide the product by 4 and you have as a result the velocity at which the air will travel in the shaft in feet per second. It only remains to divide the total number of cubic feet to be removed per second by the velocity of the air per second, and the result is the sectional area of the shaft which is sought. Let us take a simple example by way of illustration. Given the height of the shaft 50 feet, and the amount of air to be furnished 72,000 cubic feet per hour or 20 ft. per second, the formula would work out thus:—

$\frac{\sqrt{50}\times\sqrt{25}}{4}$=Vel. in fit. per sec.=9 fit. $\frac{20}{9}$=2.22 sq. ft., the necessary sectional area of the shaft.

If the area of the ventilating shaft is given, the height being left to be determined, it is only necessary to know the amount of air to be removed, the difference between the internal and external temperatures, and to fix upon the velocity at which the air shall travel. The sectional area of the shaft must often be determined by the conveniences of construction, being governed by the plan of the building. A very safe rule is to make the sectional area of the ventilating shaft equal to the combined sectional areas of all the ducts leading into it. It is possible to secure efficient ventilation with a ventilating shaft which is somewhat smaller than this, but this is unquestionably the safest rule to follow. To determine the rate at which the air will travel, it is only necessary to divide the amount of air in cubic feet required per second, by the sectional area of the shaft expressed in feet. With these data the determining of the required height is a very simple problem, using the formula which has already been given. An example will make this entirely clear.

Let us suppose that the conditions are as follows: air is required for 48 students. At 2,400 cubic feet per hour for each, the total amount needed would be 115,200 cubic feet per hour, or 32 cubic feet per second. The combined area of ducts of sufficient size to allow the transmission of this air at the rate of 5 feet per second would be 32÷5=6.4 square feet, and the velocity will of course be 5 feet. The question we have to solve is what would be the necessary height of the ventilating shaft to secure this velocity, the difference in temperature being 25° F. The solution of this very practical problem is extremely simple. Bearing in mind the formula we will let H represent the height of the shaft, D the difference between the internal and external temperatures, and V the velocity of air per second; $\frac{\sqrt{H}\times\sqrt{D}}{4}=V$. Substituting the quantities which are known we have the following: $\frac{\sqrt{H}\times\sqrt{25}}{4}=5$. Reducing we have $5\sqrt{H}=20$; $\sqrt{H}=4$: H =16; that is, the height of the shaft required by the conditions named would be 16 feet. In most instances it is more convenient to employ a smaller shaft and one of greater height. Let us suppose such a case, in which the amount of air required per second is the same, namely, 32 cubic feet per second, and the sectional area of the shaft 4 square feet instead of 6. Dividing the amount of air required per second by the area of the shaft we have 8 as the velocity per second (32÷4=8). Our formula then would be as follows: $\frac{\sqrt{H}\times\sqrt{25}}{4}=8$, reducing we have $5\sqrt{H}=32$; $\sqrt{H}=6.4$; H =40.96. In this case the height of the shaft would be practically 41 feet. By the same method the necessary height of shaft for any given area may be readily determined.

From an economical standpoint, other things being equal, it is far better to secure increased efficiency by increasing the size of the ventilating shaft rather than its height, for the obvious reason that the capacity of a shaft for removal of air increases directly with the increase in sectional area; whereas the velocity of the air current increases in direct ratio with the square roots of the heights of the shaft, thus requiring that the height of a shaft shall be quadrupled to double its efficiency, while it is only necessary to double its sectional area to secure double efficiency. There is also a loss by increase of friction and of cooling surface, and in the disproportionate increase of expense of construction. The cost of increasing the efficiency of a shaft one hundred per cent., by increasing the velocity of the air current, will be very much greater than in securing the same result by increasing its sectional area.

Cases occur, of course, in which the stronger draft secured by increased height of shaft is essential to the efficient working of a ventilating system, or the accomplishment of a specific purpose.

8. When possible to do so it is unquestionably preferable to so plan a system of heating and ventilation that it will operate efficiently by the aid of "natural draft" only. Such a system is as nearly automatic in its action as any ventilating system can be made. A draft which depends upon a mechanical apparatus, as a pressure or suction pan, or even upon a steam coil or other form of heating apparatus in the ventilating shaft, is very likely to be found defective when efficiency is most needed. I have visited many large institutions provided with large ventilating fans, and have never yet found one in which the apparatus was in constant operation. In many cases it had been inoperative for years and was not in running order. In one case I was informed that the fan was started "whenever the odors in the ward became so strong as to be very noticeable." To my nose the odors were at that moment very strongly pronounced, and yet the fan was not in operation. The noses of managers and attendants become accustomed to odors to the presence of which they are constantly exposed, so that they cease to be a proper means of testing the condition of the air.

Some years ago the writer visited a large hospital, the air supply of which was wholly dependent upon a fan which was a pressure blower, and hence so constructed that when the fan was not in operation the opening for the entrance of air through the fan was very small. The fan was placed in the mouth of a tunnel nearly eight feet in diameter, just about the proper size for supplying the air to the hospital at a moderate velocity, but the opening from the fan had a sectional area of only about four square feet. The hospital had been in operation for some three years. The fan had never been in operation since the opening day, as it was run by a separate engine and was so far from the building as to require the attention of a special engineer when in use, and consequently the air supply of the hospital, which was filled with sick people of all classes, was limited to the small opening described, there being no other. It is certainly unwise to so plan the ventilating system of a large building as to make the inmates absolutely dependent upon the efficient working of a mechanical apparatus of this sort. Mechanical and other means of assisting "natural draft" are, nevertheless, valuable; and, in some instances, necessary accessories to a system of natural ventilation, especially for large buildings, as they furnish a means by which the disturbing influence of winds may be more or less completely overcome. The writer has had two large fans in use in buildings under his care for several years, as occasion has required. As usually constructed and employed, however, these appliances are almost useless from their inadequacy and inefficiency. This is especially the case when heat in the ventilating shaft is depended upon as a means of securing a strong draft, in consequence of the use of an amount of heating surface quite inadequate for the work required.

Ventilating shafts which are exposed on all sides, and even those which are placed in the outer walls of buildings must be heated or furnished with a fan to insure a constant draft. The amount of heating surface usually provided in such cases, is ridiculously small, and is not infrequently so placed as to be of very little value. When it is recalled that all the air supplied to a building must pass through the ventilating shaft, it will be apparent that a considerable amount of heat must be imparted to this air to produce a strong draft in case the chimney is so situated that the air loses a considerable amount of its heat before it is expelled from the chimney.

From experiments which have been made (Box) for the purpose of determining the heating capacity of steam pipes, we know that one square foot of surface of one-inch pipe (3 linear feet) will give off about 300 heat units per hour, or 5 heat units per minute under the conditions in which heating is required in a ventilating shaft. Five heat units will raise the temperature of 276 cubic feet of air 1° (1 cubic foot of air at 62° weighs .0761 lbs. The specific heat of air is .238. 5÷.0761.÷238=276). Knowing the amount of air to be transmitted by the ventilating shaft per minute or second, it is easy to determine the amount of heating surface required to raise the temperature of the air one one or more degrees. It is only necessary to divide the amount of air transmitted per minute by 276 to determine the number of square feet of heating surface required to raise the temperature of the given quantity of air 1° F.

Taking, for example, a case in which, as in our last illustration, the amount of air required to be transmitted is 32 cubic feet per second, or 1920 cubic feet of air per minute, we have 1920÷.276=6.95, practically 7 square feet of heating surface, or 21 linear feet of one-inch pipe, necessary to raise the temperature of the air 1° F. To raise the temperature of the air 5°, which would be quite sufficient to insure the successful working of the shaft, would of course require five times as much heating surface, or 105 linear feet of one-inch pipe.

The most economical method possible for heating a ventilating shaft is the combustion of fuel in the shaft itself. A number of years ago, in studying the ventilation of the House of Parliament in London, by the aid of the assistant engineer, who kindly conducted me through the subterranean region of this great structure, I was surprised to find that the current of air in the great towers, which are not merely architectural features but constitute the ventilating shafts of the building, was maintained by means of a great heap of burning coal, which was placed exactly in the center of the shaft upon a high platform, the top of which was at about the same level as the top of the great horizontal ventilating ducts which entered the shaft at its bottom.

Fuel may be consumed in a shaft by means of a stove placed in a chimney, carrying the stovepipe up through it. In exceptional cases the smoke may be discharged directly into the shaft; but this arrangement is not always a safe one and hence cannot be recommended. The position of the heater is a matter of no small importance. I have sometimes seen a steam coil placed at the extreme bottom of the ventilating shaft, the first opening being several feet above it. In so placing the heater, there is very little circulation of air, and hence its efficient heating capacity is not utilized. To secure the efficient working of a ventilating shaft, the heater should be placed above the highest opening. It is, as a rule, not wise to have openings into a ventilating shaft at different levels, but if this arrangement cannot be avoided, the heater should certainly be placed above the highest opening; or if a long heater, placed against the side of the chimney, it should extend above the highest opening. Whether the heat should be concentrated near the lower portion of the shaft, or should be extended some distance along the inside wall, is a question which may be differently answered according to circumstances. There is an advantage in the extension of the heater some distance along the inner wall in that a better opportunity is afforded for radiation, and thus for heating the inner surface of the shaft, and so preventing the tendency to downward currents. It should be remembered, however, that the higher in the shaft the heater is placed the shorter will be the heated column, and hence, from this standpoint, the less the efficiency of the heat employed.

In conclusion, the writer wishes to disavow any attempt to make, in the foregoing, an extensive presentation of the subject of ventilation. Those who wish to make an extended study of the subject will find the means of doing so in the excellent work of Mr. Thomas Box, published by E. and F. N. Spon, 12 Cortlandt street, New York City. My aim in the preparation of this paper has been to present such practical points as I have gathered from a somewhat extended experience in planning the ventilation of large buildings in which I have had an opportunity to live for a series of years, studying the result of various methods employed, and to formulate a few simple rules which are useful for the working out of correct methods of ventilation in all ordinary cases, and which are much less cumbersome for use than the ponderous formulæ of Box and others who have undertaken to present this subject in a scientific way. I ought, also, perhaps, to call attention to the fact that, while the physical principles relating to heating, ventilating, etc., are correctly given by Box and other authors who have given much scientific data upon this subject, the suggestions made with reference to the supply of fresh air are, as a rule, widely at variance with the conclusions at which Parke, Angus Smith, and other investigators have arrived in the study of the question of ventilation from a sanitary and hygienic standpoint, and so are not to be relied upon. For example, Box puts the amount of fresh air required for each person per hour at 212 cubic feet, which is simply ridiculous, being less than one-tenth the amount shown by ample experience to be really necessary.

THE HALF-MILLION CLUB.

WE would call the attention of the Half-Million Club to the importance of having our city properly lighted by gas and electricity during the full month, before inviting strangers from a distance to visit our city in order to gain a favorable impression of its advantages as a residence, or business headquarters.

The new rule of having the city left in the dark for eight nights each month will not favorably impress those from the east who are accustomed to see their streets well lighted at all proper times. If the city is too poor to pay for such accomodation, it had better go out of business at once. If it is good economy to be in the dark nearly one-third of the month, why not save the other two-thirds of the expense and have no light at all?

A GRAND BOULEVARD.

A magnificent boulevard fifty miles long, from San Jose to San Francisco is the latest improvement talked of; many of the leading citizens along the route are interesting themselves in having a macadamized driveway constructed. If this magnificent scheme is carried out, we see no reason why it should not be, it will make one of the finest drives we know of. Another encouraging feature of this promised driveway, is that it shows the city is awaking to the importance of making improvements and if the spirit of enterprise is allowed to develop itself it will lead to still more startling inovations, that may for a time make old fogies sick at heart, but in the end will put money in their pockets.

Pluck and enterprise cause benefits to fall upon the just and the unjust.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SEVENING Building, Oakland, C. Mau, Architect.

PRELIMINARY Sketch of Residence at Saucelito, Narine County, Havens & Toepke, Architects.

CITY Hall, Alameda, Competitive Design, Second Prize, Edmund Kollofrath, Architect.

RESIDENCE at Bakersfield, Cal., Henry A. Schultze, Architect.

AS a matter of information we would state that the original building of the California Safe Deposit and Trust Company's Building was designed by Wm. Patton, Architect; the additions and alterations are by Henry A. Schulze, Architect.

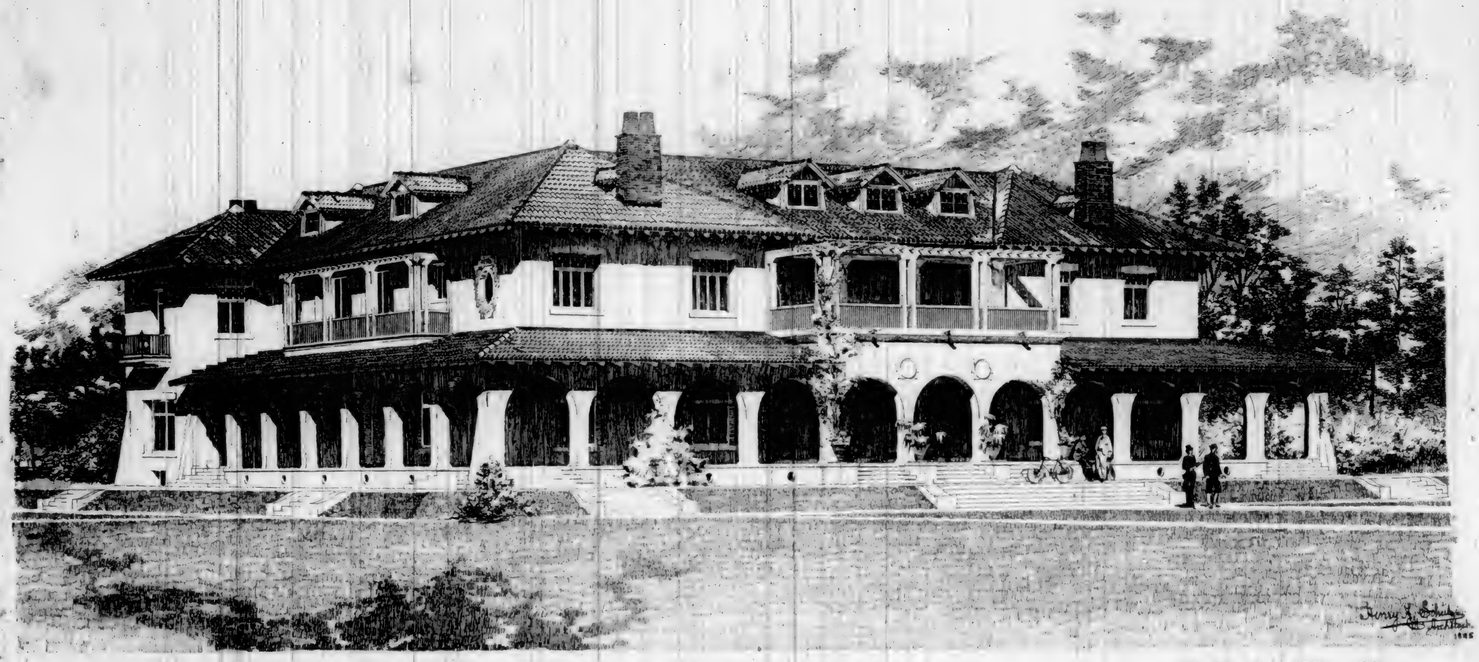
ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXIV

PRELIMINARY SKETCH
FOR MR. F. H. KERRIGANS. RE
SIDENCE AT SAUCELITO MARIN CO.
HAVENS & TOEPKE ARCHTS.
33 FLOOD BUILDING S.F.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XVI Nº 4 APRIL 1895.



CALIFORNIA ARCHITECT & BUILDING NEWS
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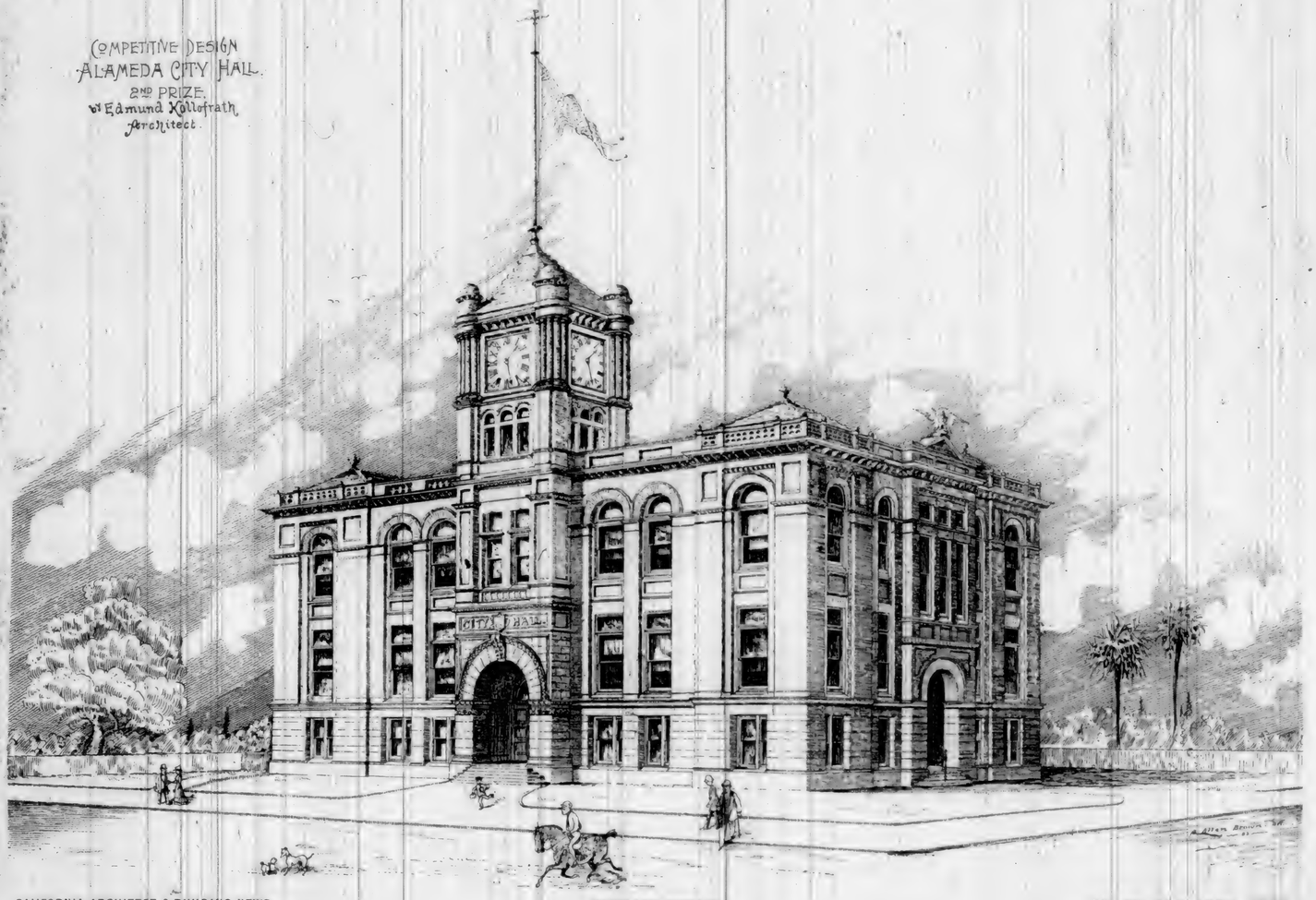
VOL XVI Nº 4 APRIL 1895.

RESIDENCE FOR MR W. S. TEVIS BAKERSFIELD, CAL.

COMPETITIVE DESIGN
ALAMEDA CITY HALL.
2ND PRIZE.
W^m Edmund Kollofrath
Architect.



AMERICAN INSTITUTE OF ARCHITECTS LIBRARY
WASHINGTON

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

EUROPEAN FORESTRY WORK.

NEARLY all the nations of Europe are engaged at the present time in no controlling the forest supply that every bit of public and private property in trees is placed under restriction against destructive cutting. The forests are all so highly protected, says the *Boston Herald*, and even where no state control exists, the freedom in cutting trees which exists in this country is unknown.

In Germany during the last twenty-five years some 300,000 acres have been reforested, and the government has granted $300,000 in this way to private owners of waste land. In Austria, since 1852, a forest law, which exercises a strict supervision over the forests, both public and private, has been in existence, and no one is allowed to devastate a forest to the detriment of adjoining holders of land, and cleared or cut forest must be replanted within five years.

In Italy the effort is constant to increase the amount of wooded lands, and the government contributes three-fifths of the cost of reforestation, upon condition that the work is done according to its plan and instructions. In Switzerland the national government contributes from 30 to 70 per cent of the establishment of new forests, and from 20 to 50 per cent for the planting of protected forests, and the law is very strict in regard to cutting.

France is also deeply interested in public forest property. The forests belong largely to communities and public institutions, as well as to the state, and they are controlled in a manner similar to the regulation of forests in Germany. Here, as well as there, no clearing is allowed except by consent of the forest administration.

In all these countries the strictest attention is paid to the subject of forestry, and schools are everywhere maintained for the purpose of instructing men in this work. Russia has been the only nation where forests have been until lately under no restriction, but since 1888 even this country has had its forest laws, and offers loans on favorable terms for the protection and increase of the forests. Hardly any European nationality is without its state control of the forests or without the training schools in which men are instructed how to take care of them.

They are trying in Europe in every way possible to save the forests, and in the United States efforts are now being made in nearly every commonwealth to regulate and control the wooded lands, but our people are not ready to accept the stringent measures which have been empioyed as a necessity for preservation.

THE BUILDING THAT IS TO BE.

DESCRIPTION OF THE STRUCTURE DESIGNED FOR THE SITE AT SEVENTH AND MISSION STREETS.

THE acting Supervising Architect of the Treasury has at last secured the approval of the plans for the proposed new p ostoffice building for San Francisco. The following is the official description of the building as furnished to the *Examiner* by Mr. Hamilton, the Civil Engineer, who has charge of the drafting room of the Supervising Architect's office.

The main dimensions of the building will be 250 by 215 feet, a height of 70 feet in the main, 90 feet at the main entrance, which will be on Seventh street. This main entrance will project 20 feet from the main building and there will be pavilions on the corners and in the center of the other facades 12½ feet each, making dimensions for Seventh street to the rear 270 feet, and from Mission to Stevenson street 240 feet. The building is to be three stories in height in the main and five stories over the center pavilion on Seventh street.

IN RENAISSANCE STYLE.

The design is what is known as Renaissance, with pavilions on each corner and in centers of facades. The main entrance will be fifty feet wide, divided into three arched doorways. The other entrances will be forty feet wide and will also have three arched doorways with carved pediments over them and in the rear, with tympanums of appropriate designs. The pavilion in the center of each facade will be flanked with columns and pilasters, and the whole building will be crowned with a balustrade. There will be a group of statuary over each center pavilion. The building will be constructed of either granite or marble, which has not yet been determined.

The first story will be set apart for the use of the San Francisco Postoffice. In the center will be a clear space 200 feet square for the use of carriers and other employees engageed in the reception and distribution of mails, and in alcoves there will be rooms for the Postmaster, Assistant Postmaster, and money order and registry offices. This story will be eighteen feet in height.

In the second story there will be three rooms set apart for United States Courts, one each for the Circuit Court, District Court and Federal Court of Appeals. These rooms will by 50x30 feet in size. On this floor there will also be rooms for judges, attorneys and other officials of the courts, jury-rooms and library. This story will be fifteen feet in height.

The third story has been designed with a view of accommodating the Railway Mail Service, Signal Service and Pension Agent. There will be rooms for railway mail clerks, Superintendent of Railway Mail Service, Postoffice Inspectors, a dormitory for mail clerks when off duty, offices of the Signal Service, United States Pension Agent and his clerks and miscellaneous offices for Federal officials. This story, as well as the fourth and fifth, will be thirteen feet in height. In the basement will be located machinery for operating the heating and ventilating apparatus. Here will also be a large space for storage.

PLENTY OF LIGHT.

It is proposed to have plenty of light and ventilation for people employed in the building. All corridors above the first floor will look out upon a court 153x120 feet. This

court will leave a clear space above the postal clerks employed on the first floor, so that there will be no lack of natural light at any time. The ventilating apparatus will also be of the latest improved kind, and there will be four ventilating flues to carry off foul air.

The offices on all floors above the basement will open upon the street. Thus each will be will supplied with light and air. There will be four elevators, two each at the Seventh-street and Mission street entrances. A peculiar feature of th postoffice buildings recently planned is that lookout stations are provided on top of the postoffice safes which are to be built on the first floor. Inspector will have entry by a circular shaft in the basement, which by means of a spiral stairway will enable them to mount to the top of those safes located in different parts of the floor and overlook all the operations of the postal clerks.

ONE MORE MOVE.

The House Committee on Appropriations wrestled for some time to-day with the San Francisco public-building imbroglio. Representives Loud and Maguire were present at the request of the committee and the question was discussed in all its phases. After quite a lengthy wrangle the committee reached a decision. There will be added to the appropriation already available for the building only $50,000, instead of $150,000, as Secretary Carlisle first recommended. This appropriation will be incorporated in the Sundry Civil bill. There will also be further delay in begining work, on account of the decision of the committee that an investigation must be made to determine whether it is safe to erect on the site selected.

The first surprise at to-day's meeting came when it was announced that Secretary Carlisle has revised his first estimate for the appropriation, and requested of the Appropriations Committee only $50,000 in addition to about $190,000 left over from the purchase of the site. When this matter was brought up before the committee, both Representatives Maguire and Loud vigorously protested against this small appropriation for beginning so large a building, but Chairman Sayers was firm, and refused to allow any more than the Treasury Department had requested. Then the San Francisco Representatives conceded that it was a wise course that this appropriation be made a contingent one, and only available after thorough examination of the site has been by United States Army Engineers.

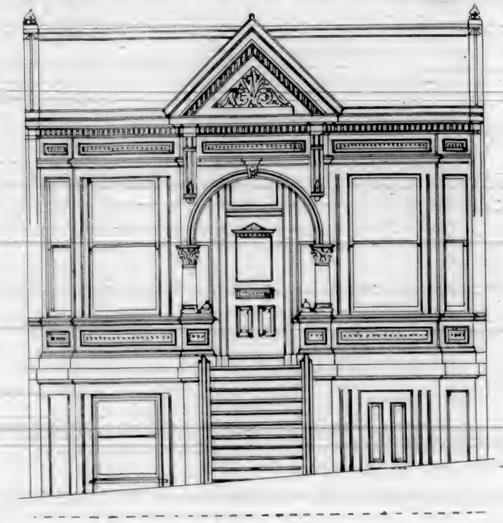
A CASTLE ON TWIN PEAKS.

E. AVERY McCarthy, secretary of the Stanford Addition Land Company, is authority for the statement that a rich English friend is negotiating for the purchase of the Twin Peaks and about thirty-five acres of the adjoining land for the purpose of erecting a handsome residence, built after the style of the old English baronial castles. The site is a perfect one for such a purpose, as it commands a view which cannot be equaled in variety and extent. From the rugged outlines of Marin County to far down among the San Mateo hills, and from the horizon out on the ocean to the mountains back of Oakland, there is nothing which does not come within view from the Twin Peaks.

Perched upon the top of the peaks a large building such as would be put there would stand like a sentinel over Market street, for that thoroughfare would lead right up to its doorstep should it ever be carried out so far. Senator Stanford at one time signified an intention of securing the property for the city, to be used as a public park, but it was sold to others and finally came into the hands of Mr. McCarthy's family.—*Call.*

BOOKS AND PERIODICALS.

MODERN OPERA HOUSES AND THEATRES. Examples selected from playhouses recently erected in Europe, with a short descriptive text and a treatise on theatre planning and construction, with supplements on stage machinery,



FRONT ELEVATION.

theatre fires and protective legislation. By Edwin O. Sachs, Architect, F. S. S., and Ernest A. E. Woodrow, Architect, A. R. I. B. A. Preparing for publication. Illustrated by a Series of 220 plates, reproduced in the best manner by Photo-lithography, from line drawings specially prepared for the Work, and some hundreds of diagrams in the text, reproduced from original working drawings, with all plans and sections drawn to a uniform scale.

The work will be in three volumes, size 23 by 16 inches (58 by 40 cm.), strongly and suitably bound in buckram.

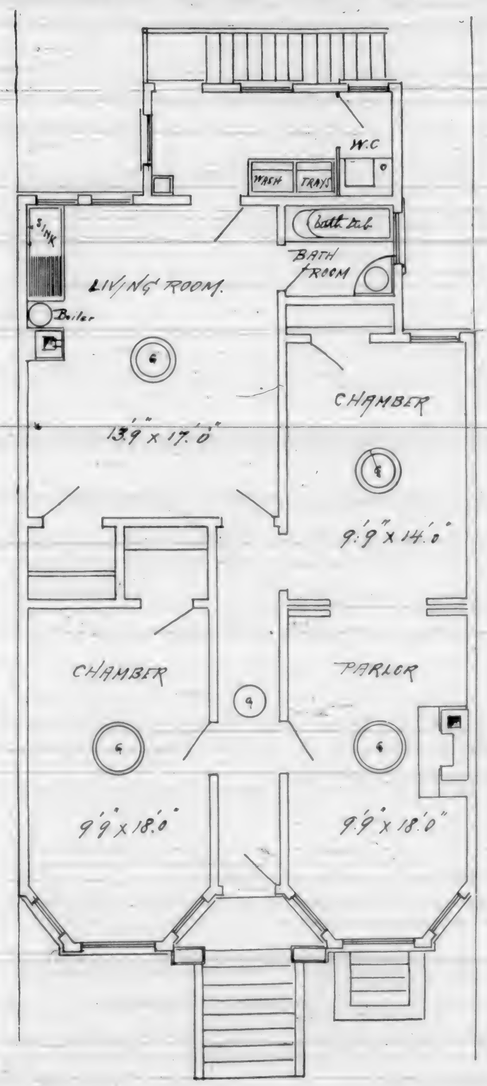
Upon publication the price of the work will be £15 15s., but for the *Subscribers, on whose support the issue entirely depends, the charge will be £9 9s. net.* Half the subscription price will be payable on the issue of the first volume, and the remainder on the completion of the work. A List of Subscribers will be printed in each volume. The first 150 Subscribers will receive numbered copies with a distinguishing title page.

LIPPINCOTT'S MAGAZINE for April, 1895. The complete novel in the April issue of Lippincott's is "Alain of Halfdene," by Anna Robeson Brown. It is a stirring tale of the sea, pirates, rescuers and Mt. Desert (then by no means so well known as now), in the days when Washington was President.

"At the Hop-Pole Inn," by Mrs. Poultney Bigelow, tells how curiously a nearsighted Englishman and his young wife were reconciled after a first quarrel. "The Defendant Speaks" to some purpose in a story by Genie H. Rosenfeld; result, a divorce is avoided.

Mary Dawson relates the innocent loves of a dancer, 'The Butterfly," and her young man. Marjorie Richardson shows how the young woman who occupied "The House with the Paint Worn off" procured its external rehabilitation.

THE ENGINEERING REVIEW edited by J. Stevens Jeans, London, England, can be truly called the "Epitome of the World's Current Literature". The American agency



of this ably conducted monthly magazine is at 12 Cortlandt street, New York, conducted by Messrs. Spon & Chamberlain. American subscription $1.75 per annum.

An illustrated description of a visit to the works of Messrs. Charles Cammell & Co., Limited, Sheffield, England, gives a very vivid account of these immense works for the manufacture of steel and iron as well as the various application of these metals in the way of heavy ordnance, forged cylinders, steel nails, armor plates, etc.

The late Mr. Charles Cammell was the founder of this company in 1837, who in partnership with Mr. Thomas Johnson commenced as steel and file manufacturers and merchants. The demand for their steel proved so great that from time to time enlargements in their works have been made, until at the present time it includes mines of coal and iron ore, and every appliance of turning out the immense production full tables of which will be found in this very interesting article.

We were pleased to notice that the editor gives many notices of recent works of engineering in this country. The article entitled "Recent Progress of Electrical Engineering" by Major T. Flood Page will be read with interest by the Electric Engineers of this country.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Tenant's Remedy for Breach of Agreement by Landlord.—Where a landlord agreed to make improvements for the benefit of the tenant, his failure to make them does not relieve the tenant in possession from liability to pay rent. And, in such case the tenant is entitled to damages, the measure of which is the difference between the rental value of the premises without the improvements and their rental value with the improvements.

Long v. Gieriet, Supreme Court of Minnesota, 59 N. W. Rep. 194.

Action for Balance on Contract for Work and Labor.—Where no time is fixed for the completion of work under a contract in an action thereon for a balance due, the party for whom the work is being done is not entitled to credit for wages voluntarily paid, in the absence of the contractor to another, to do part of the work he had contracted to do.

Wagner v. Jennings, Court of Civil, Appeals of Texas, 27 S. W. Rep. 888.

Effect of Destruction of Building as to Mechanics' Lein.—Under the statutes, giving a contractor who performs labor or furnishes materials in the construction of a building "a lien thereupon, and upon the interest of the owner of such building in and to the land on which the same is situated," and extending the right to subcontractors, neither a contractor nor a subcontractor has any lien for materials or labor when the building is destroyed before completion.

Goodman v. Baerlocher, Supreme Court of Wisconsin, 60 N. W. Rep. 415.

Right to Mechanics' Lien on Theatrical Scenery.—Scenery and other articles constituting the stage and scenic outfit of an opera house are part and parcel of the edifice, as such, they being essential to the completeness of a building of that class. This being so, the furnishing of such outfit, or of the materials composing same, is furnishing materials for the improvement of real estate; and the person by whom said furnishing is done is entitled to a lien upon the opera house and premises, under the provisions of the statutes giving mechanic liens.

Waycross Opera House Co. v. Soseman, Supreme Court of Ga., 20 S. E. Rep. 252.

Liability for Dangerous Premises.—By contract with an elevator company a party agreed to put fire extinguishers in its elevator. The elevator company was to furnish the staging for the men employed to put in the apparatus. One of these men while at work was killed by a fall caused by a defective plank in the staging. The evidence showed that there was a knot in the plank, and the deceased could not possible have seen it, by reason of the darkness. It was held by the Supreme Court of Wisconsin, that the workman was not guilty of contributory negligence, and that the elevator company was liable by reason of its contract to put in the staging, although the contract was not made with him.

Bright v. Barnett & Record Co. 60 N. W. Reporter, 418.

BUSINESS MOSAICS.

What house is complete without some decoration? Samuel Kellett manufacturer of plaster decorations, plastering repaired and whitened. 28 Ellis street, San Francisco; 375 Twelfth street, Oakland.

"Were you ever up before me?" asked a Police Judge. "Shure I don't know, yer anner. What time does yer anner get up?"—*Boston Commercial Bulletin.*

W. H. Wickersham, as we have had occasion previously to remark is a Building Contractor at 1125 York street, San Francisco, whom if you once employ, is sure to give such satisfaction that he is again called for when more work in his line is wanted, this we consider the highest kind of recommendation.

"Why do you punch that hole in my ticket?" asked a little man of the railroad conductor. "So you can pass through," was the reply.—*Boston Commercial Bulletin.*

If you need water only when the wind blows; if you are satisfied to utilize but a small fraction of the water in your well; if you prefer heavy bills for repairs after each storm in winter, by all means use a windmill; but if you want water at any time, and up to the full capacity of your well, put in the Ajax Coal Oil Gas Engine, the latest thing in mechanics, an engine that uses common coal oil for fuel, and is built by the well known firm of Palmer & Rey, San Francisco, Cal.

Labor Agitator—"Every man is the architect of his own fortune." Murphy (from the rear of the hall)—"Yis, that's so, but he stands a mighty poor chance when he has nothing but a shovel or hod to draw his plans wid."—*Ex.*

Architectural and Ornamental Iron Work. Stable fixtures, hay racks, feed boxes, stable guards, harness fixtures, etc. Now that horses are so cheap is a good time to fix over your stable; of late years much attention has been paid to having the horse housed in a proper manner, and if the rage continues the stable is likely to out do the parlor, unless the madam put her foot down. 135–145 Fremont street, San Francisco, is the headquarters of the Vulcan Iron Works.

"Highstep seems very blue since Miss Coins threw him over." "Yes; he's heartbroken to think what an excellent husband she has missed."—*Chicago Inter-Ocean.*

Miss Peart—"Do you think one is liable to catch anything from kissing?" Mrs. Placid—"That's the way I caught my husband."—*Ex.*

Clawson's Patent Chimney's generally considered the most complete and safest in the market, can be found at 1340 Market street, San Francisco.

"Here's a lovely cigar I picked out for you." "Thanks, but give me one you bought for yourself."—*Humoristische Blatter.*

Wm. Bateman manufacturer of wood mantles, interior finish, inlaid floors, banks, offices, stores and steamboats fitted up. If in want of any of this kind of work you have only to call upon Mr. Bateman at 411 Mission street, who will soon convince you that your wants can be supplied at his establishment.

The antique Roman who fell on his sword made a much better historical figure than the modern militiaman who tripped with the same weapon twisted between his legs.—*Puck.*

Proper Lubricant for Cycle Chains.—It is conceded by all wheelmen that some lubricant is needed to prevent wear of chain and sprocket wheel; such a lubricant not only prevents wear but very largely increases speed and ease of driving. Oil or grease, while useful for the moment, catches and holds dust and dirt. After much experimenting it has been found that graphite makes the most perfect lubricant, when the right kind is used and properly prepared.

The word graphite, like the word charity, covers a multitude of sins. Under the name graphite lubricant are found compounds of cheap black-lead, stove polish, foundry facings, soapstone, etc. Safety in buying, and the surety of getting the best graphite lubricant made, lie in purchasing of a firm of world wide reputation and long experience. Such a firm is the Joseph Dixon Crucible Company, of Jersey City, N. J.

He—"Oh, yes, when I was in London I was enthusiastically received in Court circles." She—"What was the charge against you?"—*Pick-me-up.*

Tin Roofers on the Coast will be glad to notice by our columns in the present issue that the old house of N. & G. Taylor Co., Tinplate Manufacturers, Philadelphia, now carry a large stock of their world wide celebrated brand of Roofing Tin, The Taylor "Old Style" at San Jose, in charge of the well-known house of Messrs. John Stock Sons. This firm announce that they are now ready to supply all dealers and consumers, with either prices, samples or general information as to the merits of the goods.

The Taylor "Old Style" has been largely used in the past throughout California, and also in Oregon and Washington. It is now being used on the Grand Central Station on the Northern Pacific R. R. at Portland. It is handled for the North West as a distributing point by Messrs. Goldsmith & Loewenberg, Portland, Oregon. Thousands upon thousands of buildings all over the United States are lasting testimonials of the worth and great durability of this, the original and genuine "Old Style" brand of Roofing Tin, its many imitations have made the "Genuine" almost a household word among the roofing fraternity. To our readers it should be borne in mind that it is made in the same way as Roofing Tin was first made in 1830, over 65 years ago, in Philadelphia, and then handled by Messrs. N. & G. Taylor Co., and as the firm states, "There are roofs East covered with this brand of Tin that are just as good to-day as when first put on nearly 70 year ago." The wear is certainly the true test of value.

Architects in naming the brand in their specifications can run no risk of substitutes or "just as good". The brand can be obtained quickly from Messrs Jno. Stock & Sons, each sheet is stamped with the name of the brand, the thickness, and the name of N. & G. Taylor Co. who warrant the tin, and it is the only tin on the market that is warranted in the sense demanded by the user. We compliment the Messrs. Taylor on the step they have taken, and congratulate Roofers on the advantage they thus secure.

CITY BUILDING NEWS.

Baker near Greenwich. To build; owner, Mrs. T. M. Sheilds; contractor, Jacob Schuler; signed, April 5; filed, April 8; cost $2200.

Beaver street, No. 15. Additions; owner, Mrs. F. Loth; contractor, C. Eriksen; signed, March 23. filed, April 3; cost $2000.

Butchers Reservation, lot 3, block 22. Cold storageplant; owner, Henry Miller; architect, H. F. Spencer; contractor, Cyclops Iron Works and Gurney Refrigator Co.; signed, March 29; filed, April 3; cost $22,000.

Broadway near Stockton. Mason and terra cotta work; owner, V. Pucinelli; architect, E. Deplerre; contractor, P. A. Anotonelli; signed, March 14; filed, March 14; cost $2750.

California and Montgomery. Steam heating; owner, Cal. Safe Deposit and Trust Co.; architect, H. A. Shulze; contractor, P. Leprohon; signed, March 6; filed, March 15; cost $4235.

California and Montgomery. Electric Lighting, etc.; owner, Cal. Safe Deposit and Trust Co.; architect, H. A. Schulze; contractors, Will & Finck Co.; signed, March 6; filed, March 15; cost 3592.

California and Montgomery. Plumbing, gas fitting, etc.; owner, Cal. Safe Deposit and Trust Co.; architect. H. A. Schulze; contractor, James Duffey; signed, March 6; filed, March 15; cost $16,954.

California and Montgomery. Carpenter work and the addition of two stories; owner, Cal. Safe Deposit and Trust Co.; architect, H. A. Schulze; contractor, Thomas Day & Sons; signed, March 6; filed, March 15; cost $35,400.

California and Jones. Ornamental Iron Work; owner, Nob Hill Development Co.; architects, Bugbee & Gash; contractor, D. Jordan; signed, March 18; filed, April 4; cost $4550.

California and Jones. Anchors beams, etc.; owner, Nob Hill Development Co.; architects, Bugbee & Gash; contractor, Dennis Jordan; signed, March 18; filed, March 19; cost $20,600.

California and Jones. Plumbing, gas fitting, etc.; owner, Nob Hill Development Co.; architects, Bugbee & Gash; sub-contractor, J. Doherty; signed, March 13; filed, March 20; cost $10,990.

California and Jones. Electric Elevators; owner, Nob Hill Development Co.; architects, Bugbee & Gash; contractor, Frank A. Hall; signed, March 18; filed, April 4; cost $7,000.

California near Heyman. To build; owner, Mr. Lindberg; contractor, J. Gillogley; cost $1600.

Castro near 19th. Two flats and coal yard, except plumbing; owner, Edward Ring; contractor, Thomas McKee; signed, March 3; filed, March 13; cost $2025.

Carl near Stanyan. To build; owner, A. M. Bruiscber and wife; architect, J. T. Kidd; contractor, W. A. Muller; signed, April 2; filed, April 3; cost $1460.

Central Ave. near Clay. To build; owner, W. R. Van Alen; architects, McDougall & Son; days work; cost $5000.

Clement street and 4th Ave. Three two-story frame residences; owner, D. F. McGraw; architect, C. F. Robinson; cost $9000.

Clementina near 4th. To build; owner, Chas. Giovanetti; architect, C. R. Wilson; contractors, Cuneo & Cavaglia; signed, April 8; filed, April 8; cost $3750.

Chattanoga near 23d. Alterations and additions; owner, Samuel Hortop; contractor, D. Currie; signed; March 16; filed, March 19; cost $2400.

Clay near East. Driving 316 piles; owner, J. D. Montanya; architects, Percy & Hamilton, contractor, S. F. Bridge Co.; signed March. 14; filed, March 15 cost $4218.60.

Church near 21st. To build; owner, R. M. Barry; architects, Mahoney & Ryland; contractor, T. E. Corrigan; signed, March 13; filed, March 19; cost $2595.

Clayton near Frederick. To build; owner, Mary O'Leary; architects, Shea & Shea; contractor, James Mooney; signed, March 12; filed, March 15; cost $2898.

Collins near Pt. Lobos Ave. To build; owner, J. McMahan; contractor, J. D. Barton; cost $1600.

Dolores near 22d. Raising old building and additions; owner, Samuel Mathews, Jr.; contractor, W. P. Smith; signed, March 18; filed, March 18; cost $640.

Duncan near Guerrero. To build; owner, Kate Marron; architect, J. T. Welsh; contractor, P. R. Bassett; signed, April 3; filed, April 8; cost $2250.

Dupont near Francisco. To build; owner, J. Kucich; architects, Salfield & Kohlberg; contractor, John Pecavich; signed, March 19; filed, March 20; cost $2230.

Eddy near Buchanan. To build; owner, Simon H. Bush; contractor, C. W. Depew; cost $5000.

Elizabeth near Noe. Raising building; owner, M. J. Fitzgerald; contractor; Wm. Plant; signed, March 15; filed, March 19; cost $1065.

Elizabeth near Noe. To build; owner, R. P. Thompson; contractor, W. W. Rednell; signed, April 2; filed, April 9; cost $1600.

Fell near Gough. To build; owners, Mrs. Mary F. and George F. Kelly; contractors, Wheeler & Perry; signed, March 27; filed, March 28; cost $4800.

Francis near Mission. To build; owner, James and Delio Rice; contractor, P. H. McKenna; signed, April 1; filed April 1; cost $800.

Folsom near 20th. To build; owner, J. H. Robinson; contractor, H. J. Weiss; signed, March 23; filed, April 2; cost $3313.

Folsom near 21st. To build; owner, Jacob Rohrer; architect, Emil John; contractor, H. T. Grieb; signed, March 28; filed, April 2; cost $2900.

Fourteenth and Howard. Alterations and additions; owner, Maria L. Rerrel; architects, Pissis & Moore; contractor, F. W. Kern; signed, March 19; filed, April 3; cost $6350.

Filbert near Dupont. To build; owner, Pietro Queirolo; contractors, Cuneo & Cavaglia; signed, March 21; filed, March 26; cost $6000.

Fillmore near Washington. Alterations; owner, Mrs. R. Greenfield; contractor, G. G. Gillespie; signed, March 27; filed, March 27; cost $3000.

Fifteenth Ave. near Point Lobos. To build; owner, E. G. Flanders; contractor, W. W. Redmill; signed, March 19; filed, March 23. cost $1350.

Fulton near Baker. To build; owner, Hannah Mahoney; contractor, J. C. Kelly; signed, March 21; filed, March 23; cost $2360.

Fulton near Baker. To build; owner and builder, Thomas Volden; cost $6000.

Franklin and California. To build; owner, Edward Coleman; architect, W. H. Lillie; contractors, Farrell & Bell; signed, March 18; filed, March 19; cost $13,640.

Geary near Leavenworth. To build; owner, Dr. C. D. Cleveland; superintendent, J. W. Blundon; days work; cost $3500.

Green and Taylor. To build; owner, Thomas McCarthy; contractor, A. E. Waller; signed, March 16; filed, March 19; cost $5300.

Grant Ave. and Sutter. Two-story brick; owner, J. W. Tamm; architect, A. J. Barnett; contractor, A. G. Johnson; signed, April 5; filed, April 6; cost $4000.

Hayes and Octavia. Plumbing; owner, Mrs. Reinle; architects, Stone & Cahill; contractor, J. Doherty; cost $960.

Hattie and 17th. To build; owner, Jas. Kelly and wife; architects, McDougall & Son; contractors, Brennan Bros.; signed, March 28; filed, March 28; cost $1740.

Hermann near Steiner. To build; owner, Chas. Huber; architects, Mahoney & Ryland; contractor, Geo. Reichley; signed, March 30; filed, April 3; cost $1989.

Jasper Place near Filbert. To build; owner, A. Cahri; architects, Townsend & Wyneken; contractors, Cuneo & Cavaglia; signed, March 21; filed, March 23; cost $1450.

Jessie near 2d. Five stories and basement, brick; owner, D. Keil; superintendents, Hansbrough Bros.; days work; cost $15,000.

Jessie near 7th. Additions; owner, Michael McNamara; architects, Hatherton & Ross; contractor, J. W. Sandy; signed, March 20; filed, April 3; cost $1250.

Jersey near Noe. To build; owner, Laura H. Wells; architect, Frank Mead; contractor, W. H. Mead; signed, March 27; filed, April 10; cost $1950.

Jones near Chestnut. To build; owners, Mr. and Mrs. David Crowley; contractor, J. W. Pauls; signed, April 6; filed, April 10; cost $3600.

Jones near Post. Berkshire Hotel plumbing; owner, Emily B. Hopkins; architect, J. H. Littlefield; contractor, H. Williamson; signed, March 27; filed, March 28; cost $2750.

Jones near Post. Alterations and repairs; owner, Mrs. Emily B. Hopkins architect, J. H. Littlefield; contractor, D. Currie; signed, March 30; filed, April 1; cost $1200.

Kentucky near Sierra. To build; owner, Catherine Sullivan; architect, A. J. Barnett; contractor, Timothy Sullivan; signed, March 14; filed, March 18; cost $2900.

Laguna near Vallejo. To build; owner, Caroline S. Townsend, architect, W. H. Wharff; contractor, F. W. Maurice; signed, March 14; filed, March 15; cost $11,230.

Laguna near Vallejo. Plumbing and gas-fitting; owner, Caroline S. Townsend architect, W. H. Wharff; contractor G. C. Sweeny; signed, March 28; filed, March 30; cost $1240.

Laguna near Pine. Alterations and additions; owner, Z. Wollberg; architect, H. Geilfuss; contractors, Hood & Watson; cost $1900.

Lafayette Place near Green. To build; owner, G. Gardella and wife Giovanni; contractors, B. Pagano and G. Capelli; signed, March 25; filed, March 25; cost $3194.

Liberty near Guerrero. To build; owner, W. J. Patterson; architects, Martens & Coffey; contractor, H. Behrens; signed, March 26; filed, March 28; cost, $2441.

Liberty near Guerrero. Concrete, Grading, etc.; owner, W. J. Patterson; architects, Martens & Coffey; contractor, Cushing Welmore Co.; signed, March 25; filed, March 28; cost $895.

Lyon near Fulton. To build; owner, K. C. Richard; contractor, Wm. Harvard; signed, March 25; filed, March 25; cost $3250.

Market street, No. 1318. Alterations and repairs; owners, Dunn Bros.; architect, J. W. Rowell; contractor, W. H. Hughes; signed, March 16; filed, March 16; cost $1348.

Market and O'Farrell. Alterations to entrance, Phelan Building; owner, Phelan Estate; architect, Wm. Curlett; cost $6000.

Market near 5th. Mason work on Parrott Building; owners, Parrott Estate; architects, Pisses & Moore; contractors, Richardson & Gale; Estimated cost $76,156.

Market near 5th. Cast iron casing for steel columns; owner, Miss Emma Spreckles; architects, Reid Bros.; contractor, Bay City Iron Works; signed, Feb. 26; filed, March 28; cost $1235.

Market near 5th. Marble work; owner, Miss Emma Spreckles; architects, Reid Bros.; contractor, Vermont Marble Co.; filed, March 28; filed, March 28; cost $3600.

Market near 5th. Finishing a bar room; owner, Chas A. Zinkand; architect, Emil John; contractors, Fink & Schindler; signed, April 2; filed, April 4; cost $11,256.

Market and 4th. Elevator alterations; owner, Mrs. Flood; contractors, Cahill & Hall; cost about $25,000.

Mason near Green. Six dwellings complete; owner, A. J. Garibaldi; architect, E. Depierre; contractor, Jas. McLean; signed, April 1; filed, April 8; cost $6150.

Mason near Geary. Plumbing, etc.; owner, Hall Association N. S. G. W.; architect, A. C. Lutgens; contractors, Allen & Rooney; signed, March 30; filed, April 2; cost $2790.

McAllister near Baker. To build; owner, Thomas J. Campbell; architect, J. B. Campbell; contractor, James McConahey; signed, March 28; filed, April 12; cost $2700.

Montgomery near Vallejo. To build; owner, G. Capura; architect, E. Depierre; contractor, Jas. McLean; signed, March 9; filed, March 12; cost $2345.

Mission near 7th. To build; owner, O. Nolte; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, March 19; filed, March 21; cost $4000.

Octavia and O'Farrell. To build; owner, Hannah Maurer; architect, E. J. Vogel; contractor, M. J. Savage; signed, April 1; filed, April 2; cost $9140.

Ocean House Road. Excavations and embankment for a race track; owner, Alexander F. Williams; Engineer, M. M. O'Shaughnessy; contractors, P. Broderick and J. Kelso; estimated cost $25,000.

Pacific Ave. near Jones. To build; owner, John and Annie Wrede; architect, F. B. Wood; contractor, Robert Frost; signed, March 12; filed, March 13; cost $2475.

Presido. Pneumatic Gun Power House; owner, U. S. Government; architects, Percy & Hamilton; contractors, Francoeur & Bowers; cost $4200.

Post near Pierce. To build except plumbing; owner, Wm. Kaiser; architects, Salfield & Kohlberg; contractor, T. R. Bassett; signed, March 12; filed, March 14; cost $5600.

Post near Pierce. Plumbing; owner, Wm. Kaiser; architects, Salfield & Kohlberg; contractor, W. D. Hobro; signed, March 12; filed, March 14; cost $1125.

Polk and Sutter. Plumbing, etc.; owner, M. H. DeYoung; architect, Clinton Day; contractor, E. J. Duffey; signed, March 7; filed, March 27; cost $4000.

Ridley near Valencia. To build; owners, Galland Bros. & Caro; architect, M. J. Lyon; contractor, J. N. Cobura; signed, March 13; filed, March 16; cost $875.

Sacramento near Walnut. To build; owner, Felix Latz; contractor, F. G. Kronnick; signed, March 14; filed, March 14; cost $4000.

Sanchez and 19th. Additions; owners, Mr. and Mrs. Carmile; contractors, Hood & Watson; cost $900.

Second Ave. near Clement. To build; owner, Mrs. Adline Froham; architect, Herman Kraetzer; contractor, B. I. Taylor; signed, March 21; filed, March 25; cost $2500.

Second Ave. near Lake. To build; owner, T. G. Barker; architect, H. J. Kraetzer; contractor, Byron I. Taylor; signed, April 5; filed, April 10; cost $2500.

Seventh Ave. near A. Cottage; owner, J. C. Shea; architects, Shea & Shea; contractor, Jos. Keaney; signed, March 25; filed, March 28; cost $1100.

Shotwell near 24th. To build; owner, Samuel G. Hammond; architect, E. N. Snell; contractor, C. S. Emmons; signed, March 12; filed, March 12; cost $3363.

Sharon near 18th. To build; owner, Mrs. HuldaHeine; contractor, C. V. Bunce; signed, March 16; filed, March 22; cost $1800.

Stockton near Filbert. To build; owner, V. Podesta; architects, Townsend & Wyneken; contractor, G. Massoletti; signed, March 27; filed, March 28; cost $1425.

Steiner near Hayes. Plans and specifications filed; owner, Anna Cornahrens; architect, Henry Geilfuss; contractor, J. H. Munster; signed, April 6; filed, April 8; cost $4196.

Sutter near Central Ave. To build; owner, Miss Rebecca E. Mathews; architect, C. F. Robertson; contractor, Thomas J. Crawford; signed, March 8; filed, March 16; cost $2300.

Sutter near Powell. Alterations to Elsmere House; architect, Wm. Curlett; cost $3000.

Third street No. 44. Painting, glazing, etc.; owners, Hyman Bros. Co.; architects, Percy & Hamilton; contractors, Merchant & Nickles; signed, April 5; filed, April 8; cost $1500.

Turk near Larkin. Additions; owner, Geo. Scott; contractor, G. A. Hunnewell; signed, March 20; filed, March 20; cost $1200.

Turk and Fillmore. Car House; contractor, Wm. A. Butler; cost $28,000.

Twenty-fourth near Bryant. To build; owner, C. H. Dolan; architect, M. J Welsh; contractor, W. G. Hughes; signed, March 16; filed, March 16; cost $1348

Valencia near 16th. To build; owner, W. A. Bahr; architect, Emil John; contractor, F. A. Hellmuth; signed; March 14; filed, March 15; cost $2585.

Valencia and 15th. Excavations, etc.; owner, Rose A. Pickering; architects, Havens & Toepke; contractors, Whittle & Smith; signed, March 16; filed, March 22; cost $1891.

Van Ness Ave. near Vallejo. To build; owner, John Evans; architect, J. P. Chadwick; contractors, Wm. Smith & Thomas Rindell; signed, March 15 filed, March 8; cost $3675.

Vallejo near Buchanan. To build; owner, Thomas F. Boyle; architect, J. C. Newsom; contractor, Jas. McLean; signed, March 28; filed, March 30; cost $4647.

Vermont near Nevada. To build; owner, Isaiah Leslie; contractors Holmgren & Westerlund; signed, March 30; filed, April 2; cost $1200.

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IF late a great many accusations have been made of inferior workmanship being done in the construction of the foundations destined to carry the superstructure of the new ferry depot, which the State Board of Harbor Commissioners are erecting at the foot of Market street. The daily press have taken the matter up and redoubled the noise made by the accusers, till a disinterested public would be justified in believing it dangerous to even walk across the concrete arches and piers already completed. From the Governor of the State down through the Grand Jury and investigating committees and experts of all kinds, the foundations have been bored and tapped and tested, with the result that the more they are investigated the better they prove to be, and not a single serious charge against the contractors or the engineer in charge has been made to stick. But as a scape-grace must be found, it is now charged that the architect did not make a sufficient number of personal visits of inspection, and our worthy watch-dogs of the treasury will try to avoid any further payment of the architect's commission on that ground.

There is no doubt that the architect would have been held responsible in case the foundations had been found defective; it is a poor rule that will not work both ways; if the architect is responsible for the proper execution of the work, and would be blamed if things went wrong, why in the name of Justice is he not entitled to some credit when praise of the ferry foundations is the order of the day.

WHAT THE STATE OF MASSACHUSETTS HAS DONE IN REGARD TO GOOD ROADS.

STARTING in June, 1892, a Temporary Commission was appointed to examine into the condition of the roads, and to draft a bill providing for the improvement of the highways of the Commonwealth. The law suggested by the Commission was, with some changes, passed in June, 1893, but, before any petitions for construction of State highways were submitted to the General Court, an act was introduced and passed June 20, 1894, increasing the powers of the Commission, and permitting the Selectmen of any town, or the Mayor and Aldermen of any city, as well as County Commissioners, to petition the Highway Commission for taking roads as State highways. In place of submitting to the Legislature a separate bill for the construction of each road, it was voted that the appropriation be used by the Highway Commission, without further legislation, in building State highways.

The $300,000 has been pretty evenly divided among fourteen counties. Before deciding which of the many petitions should be granted an official visit was paid to each locality, and full information as to the value of the proposed improvement collected. While this method has distributed the work in small sections of roads, thus increasing the expense per mile, the advantage to the people at large will be greater, for the reason that each portion of the State highway constructed is intended to be an object lesson to those living near by. County Commissioners and other officials will watch the work as it progresses, and follow out the same lines in building county and other roads which are not intended for State highways.

The plan is to build, section by section, such roads as will connect the great centers of trade, and join with through roads in other States, so that both local and interstate communication will be benefited. Under date of January, 1895, the Massachusetts Highway Commission has rendered a report which covers the work of the past year, and this publication should be consulted by those who are considering legislation.

The provisions of our law will permit contracts for the construction to be let to municipalities or to private corporations, but the former arrangement is preferred, as it is more effectual in teaching the people the art of road building, and protects the State against cheapening the work by the importation of foreign laborers, an element which is apt to be objectionable.

A resident engineer is appointed by the Commission, and it is his duty to be in attendance, and keep a correct account of all items to be paid for by the State.

Wherever the traffic was of sufficient proportions to warrant it the roads have been broadened. The advantage to owners derived from the construction of the way is, as a rule, so much greater than the injury to them by widening the road that, in a large majority of cases, the town officials have been able to procure releases without any cost.

Thirty-eight sections have been contracted for, and only eight of them are to have a width of eighteen feet of hardened surface, all others being fifteen feet wide. As the primary object is to get length of way, the Commissioners are considering the advisability of building single-track roads in the thinly-settled districts. These would not be over nine feet wide, with here and there portions of double width as convenient passing points for carriages. A mile and a half of such roads can be built for less than the cost of a mile of fifteen feet width, and the advantage in getting produce to market is not lessened, provided such construction is confined to localities where the average traffic is from six to eight vehicles an hour.

There is need of legislation to regulate the care of, and responsibility for, sidewalks on State highways. These being of purely local advantage should be under the supervision of the town, the wheelways alone being constructed and kept in order by the State.

Progress has been made in the laboratory work on the road building stones of the State. Experiments of this kind are carried on at Harvard University in the Lawrence Scientific School, whose dean, Prof. N. S. Shaler, is a member of the Highway Commission. The chief aim of these inquiries has been to determine the qualities which constitute fitness for road making. This will be of value to the Commission in enabling them to utilize the road material near at hand, and thus lessen the cost of construction. As this phase of the work progresses maps are made showing the location of all deposits suitable for road building.

A number of towns have already appropriated money to build their streets in the same careful manner as those constructed by the State, and others have purchased road machinery with the intention of extending the work on roads other than State highways.

Careful consideration has been given to the plan of planting shade trees along the highways. With this end in view, experts have been consulted concerning the best varieties for the purpose, and the wayside trees have been examined, so as to determine the species well adapted to the climate and soil of Massachusetts.

As the estimated expense of procuring and planting these trees is not less than one-half a million dollars, the Commission has rightly made this question secondary to road building, but in the meantime they are collecting such data as will enable them to work with profit on the adornment of the roads after the construction is well in hand. The American and English elms have the advantage of fairly rapid growth, with shade high above ground, and the leaves falling from them give but little obstruction to the gutters. They have the disadvantage of being subject to the attacks of insects, so that the cost of protecting them from these pests would be considerable. Maples grow well and are beautiful, though they often shade the road too much. It is the custom in parts of Europe to plant the road-sides with trees which yield profitable crops. In France and Germany, for example, cherry trees abound. In these countries the yield of the wayside trees belongs to the neighboring land owners, but in some cases to the community, and their product is well guarded by law. There will be more or less experimenting on the part of the Commission before they decide upon the species to be planted. The law provides for the beginning of this work in the Spring of 1895, and from that time it will be carried on slowly, so as to give us the benefit of experience.

Every State should make a beginning on road improvement. In thinly settled regions of the country, where the people do not feel able to undertake much, they can do no better than to start the reform by constructing sections of single-track roads. No community can afford to neglect the common roadways. Our prosperity is too intimately connected with the facilities for communication.

I have spent many thousands of dollars in inaugurating and advancing this reform, and continue to take an active part in it, though for a long time I have not addressed you on the subject.

The interest is now general, and the leaders numerous, consequently there is a demand for road news, more especially for the recent advancements in the line of actual experience.

ALBERT A. POPE.

GLASGOW—A MODEL MUNICIPALITY.

TO the thoughtful mind, nothing is more interesting or a more hopeful sign of the times than the growing interest which we in Great Britain are learning to take in questions of municipal government. Sixty years ago representative municipal government, in the sense that we attach to the word to-day, was a thing unknown. The towns were then in the hands of the old close corporations. The representive principle only received final sanction in 1833, in Scotland; two years later, in England. It has grown up with the Victorian era, nor is it the least of the important developments that have done the same. Perhaps a cynic might find significance in the fact that the real importance of Parliament as an administrative body has been steadily decreasing during the same period. The House of Commons has been more and more given up to the demons of speech, irrepressible and leading nowhither, until in this present year of grace men are learning to look to the remarkable renascence of municipal spirit as the most likely source of the reforms that are needed to adjust the conditions of modern life to modern people. Even London, whose inherited *inertia* has combined with her proximity to the central authority of the Empire to make her neglect her own salvation, has at last awakened to the desirability of good self-government, and the consequence is that her inhabitants have, some of them at least, ceased to ask, with disdainful scorn, whether any good thing could come out of Nazareth or Sunderland. They are not unwilling to take counsel from the experience of Berlin and Paris, even of Manchester and Glasgow. The whole change that has come over the public mind in this respect in the last twenty years is admirably expressed in a recent speech of Mr. Chamberlain, who has himself contributed to it in no small degree. "Now," he said, "people are beginning to appreciate the fact that municipal government is the most potent agent of social reform, and that it is the best instrument by which the wealth and the influence and the ability of the whole community can be concentrated and brought to bear in order to relieve the pressing wants of its least fortunate members, and in order to raise the general level and standard of the whole population." There are many towns to-day from which this definition might be illustrated. Manchester and Birmingham and Bradford are all keen at the work. But Glasgow, whom her citizens delight to call the second city of the Empire, assuredly deserves the name of first, both in regard to the chronology of modern municipal development and to the success with which she has executed all her designs. Glasgow was on the crest of the wave of reform which began to gather in the cities of the United Kingdom about the middle of the century, and she has many lessons to-day to teach even her most advanced sisters. Some of these I am now to sketch, with the apologies for the necessary limitation of my canvas.

The municipal policy of Glasgow for the last fifty years may be defined in words used by her present Lord Provost, Mr. James Bell, who is himself an epitome of the social enthusiasm, the business capacity and the enterprise that distinguish the city over which he rules. It is, in brief, to attempt to make the life of the citizens as healthy and as happy as is possible. The Corporation recognise three duties as being lain upon them: to fulfil their trust by economical administration of the city's finances; to improve public health, both physical and moral; and to give brightness and the possibility of happiness to civic life. There are few residents in Glasgow to-day who are unwilling to admit that this rather ambitious programme has been carried out to the full. Good financial management is placed first partly because the Glasglow town council is composed of business men who apply the lessons of their practical life to their municipal work; partly because (to quote the Lord Provost again) their duty "is to the whole body of the citizens rather than to individuals, and low rating is the most widespread of boons." The result is that the well-to-do Glasgow householder enjoys his manifold advantages for a rate of little more than half-a-crown, while his poorer brother is still more lightly taxed. Beyond that, the Glasgow Corporation hold it their duty to undertake the supply of those necessaries of life—light, fresh air and pure water—which private enterprise cannot generally be trusted to provide. Further, they attend to the prevention and cure of the moral and physical diseases that always threaten a large community. They prefer prevention to cure, and therefore they endeavour to give everybody a chance of owning a clean and decent home, with fresh air, sunlight, and opportunities of recreation for himself and his children. Parks and picture galleries, recreation grounds and concerts are supplied by them on a sound commercial basis. "The power of the multiplied penny" is very thoroughly understood in Glasgow, where Councillors are accustomed to boast that for an infinitesimal fraction in the rates they can give their constitutents parks and picture galleries that no millionaire could afford to own so near the heart of a town. Indeed, if the chancellor Oxenstiern had known Glasgow to-day, he would probably have instructed his son to go and see with how little expense and how little fuss the world could be governed, and so have deprived the leader writer of one of his favourite *cliches*.

As in case of most governing bodies which have come into being by evolution, not by creation, the functions of the Glasgow Corporation are distributed in a somewhat arbitrary manner. The seventy-seven gentlemen who compose the Council meet now as one body, now as another, for the discharge of various duties. This Proteus-like transformation is a relic of the past that might be spared. But there is no difference in the constitution of the various ruling bodies, and the Council is really one and indivisible for all its functions. The administration of the city's property is in the hands of the Town Council, as also that of certain minor trusts chiefly educational. Next come the trusts of greater importance which are in the hands of the Magistrates and Council of the City of Glasgow. Thus we have the City Improvement Trust, the Markets Trust, and the Water Trust. The supply of gas and electric light, the parks and picture galleries, the public baths and wash-houses, and the tramways are also managed by the Town Council. That body controls in addition the Michell

Library, a collection of upwards of 100,000 volumes, which Glasgow owes to private generosity. Persevering attempts are being made to get the Free Libraries Act adopted, but it is one of the few blots upon the fame of the city that they have not yet been successful.

The Corporation adopts the name of the Police Commission in order to discharge some of the most important of its duties. Indeed, it may be said that the Town Council might perhaps be spared, but the Police Commission never could. It has also been said that that the one corresponds to the spiritual power, the other to the secular arm; but it is not well to push the metaphor too far. The name of the Police Commission recalls the old Scottish connection with France and the once universal Roman law. It must be taken in the wider significance of the Greek *politeia*, rather than in the narrower sense which England attaches to the word. The duties of the Police Commission of Glasgow include the work of the policeman proper, of the lamplighter and the fireman—watching and lighting, in short; further, the whole of the very important sanitary department, the repair and cleansing of the streets, and the purification of sewage before it is sent into the Clyde, a work that is as yet only done in part. It has long been contended by certain critics that this distinction between the Council and the Police Commission is wasteful, since it involves the duplication of certain officials, and it is possible that the administration of the city will soon be unified in name, as it has long been in reality. But this is another story.

When an outsider proceeds to look more closely than this Pisgahsight has done into the municipal activities of Glasgow, he finds that both in chronological order and in magnitude the water supply is the first matter that calls for attention. This has long been a text for the sermons of would-be municipal reformers in other towns. The wave of municipal progress that appeared in Great Britain about the middle of the century probably arose from the scare that was caused by frequent outbreaks of cholera and typhus in the large towns. In Glasgow it showed itself in uneasiness about the water supply, which was then derived from the comparatively unpolluted Clyde. Forty years ago this supply was both impure and limited; nasty, though by no means cheap; and the Corporation decided, with some misgivings, to venture on the then unprecedented step of taking water for their city from the beautiful and romantic Loch Katrine, thirty-five miles distant. The domestic water-rate was then 1s. 2d. in the pound. In the course of the first sixteen years years after the introduction of the Loch Katrine water it was reduced to 8d., and for the last four years it has stood at 6d. The necessary raising of the Loch has destroyed the famous Silver Strand but Glasgow is not so romantic as to think that an offset to the fact that the water, "caught within cloudland, is purity itself." There is practically an unlimited supply for domestic purposes, and in consequence the Corporation are able to rejoice over the fact that Glasgow is said to use more water per head of her population than any town in the kingdom. Only Dublin gets cheaper water, and not even Manchester gets it better.

The finance of the matter, though dry, is practically interesting, since it relates to the first experiment in municipal collectivism that was made on a big scale in this country. One cannot, unfortunately, say of statistics, as Philaminte did of Greek, that with them *on ne peut gâter rien*; but on a subject like this the reader must be entreated to pardon a certain sprinkling of figures. The capital outlay on the waterworks up to 1894, then, was nearly two and a half millions sterling. In 1870 a sinking fund was established. Through its agency about three-quarters of a million have been paid off up to the present time. And this sinking fund will pay off the whole of the remaining debt by 1941, when the present waterworks will be the unencumbered property of the Corporation. In the meantime the supply of water has been immensely increased, the quality vastly improved, and the price more than halved. It has been calculated that the aggregate saving to the consumer since 1870 amounts to more than two-thirds of the debt now outstanding. It has, in short, been conclusively proved that municipal management of such a business as the supply of water is compatible with a direct saving of money to the consumer and a great improvement in the supply, while it is impossible even to guess at the economy in life and coin that has been effected by the introduction of the soft, pure, and abundant water of Loch Katrine to the crowded city.

The Water Trust is also about to supply power in the form of water at a pressure of 1,000 lbs. to the square inch, throughout the business area of the city. The hydraulic mains will be extremely useful in case of fire. Further, the selling of power ought to prove another interesting experiment in municipal "business."

Along with water one naturally thinks of gas as another necessary of life. Here, too, the Glasgow Corporation have long held the field. It was no doubt, the marked success of their dealing with the water that encouraged them to assume control of the lighting of the city. In 1869 they took over the production and sale of gas from the two private companies which then performed it. The quantity of gas sold has since more than trebled, while its price has been correspondingly decreased. The total debt on the gas works is still nearly two millions, but one is credibly assured that this formidable sum will be cleared off in twenty-five years from now by the operation of the present sinking fund.

The Corporation have also supplied electric light for the last three years. Many streets are lighted with it, in a rather pleasing fashion, and there are about five hundred private consumers.

But perhaps the most brilliant affair is the undertaking of the tramways. The history of this business is worthy of record. The tramways of Glasgow have hitherto been worked by a private company which had a lease of them for twenty-three years, that expired June 30, 1894. Some six years ago the Council requested the Tramway Company to assent to certain conditions, regulating, amongst other things, the hours of work of the Company's servants. The Company refused point-blank to do anything of the kind. Immediately thereafter it was suggested by some of the more advanced Councillors and their friends—especially by their friends—that the town should take the tramways into its own hands on the expiry of the lease. For some time this proposal was generally treated as "rank Socialism." But it was not long in commending itself to the citizens. As often happens, the citizen tail wagged the Corporation dog, and a speedy *volte-face* was made by Councillors who had been most backward in the matter. The Company, confiding in what is fondly considered to be its necessity to the town, refused to make any concessions. And so it was determined that the lease should not be renewed. One consequence of this was that the Company felt itself much injured, and threatened to do its utmost to wreck the Council's business. It was known that the Company was going to

put omnibuses on all the tramway routes, and to start a brisk competition; also that the Council had to begin the service without experience, with new men, new plant, and new horses. So this notable experiment in municipal tramway management was tried under perhaps the most unfavourable conditions that could have been selected.

It is no light matter for inexperienced men to start a tramway business on a scale that involves 300 cars, 3,000 horses, and 1700 men, even with plenty of time in which to prepare. The only possible practice that the Corporation could give their men and horses was "under difficulties, in tracks temporarily laid down at the depot." Their achievement under the circumstances was little short of miraculous. At midnight on June 30th the last of the Company's cars left the lines. At five the next morning those of the Corporation began to run. Luckily it was a find Sunday; still more luckily, the citizens were well aware that the experiment was being made in their interest, and were lenient judges of the inevitable defects of the first few days. The general criticism was, that these defects were wonderfully few in number.

It was a trial start, and with so many new men and unaccustomed horses, some confusion might not unnaturally have been expected. On the contrary, however, the service seemed to go like clock-work from the first hour . . . The horses were only given about half work to begin with, and this was gradually increase as they became somewhat seasoned. Within two months from the start they were able for full work, and the complete service of cars was running."[1]

There was no doubt whatever that the new cars were a vast improvement upon the old. They were larger, more roomy, and much easier of access. The corporation, besides improving the service, also reduced the fares. They introduced the halfpenny fare, hitherto unknown; they extended the penny stage, and made twopence the maximum fare. There were not wanting critics to declare that, in face of the keen competition of the old company's 'buses, this was madness, and to prophesy a serious deficit on the first six months. The Corporation refused to be discouraged, and gave their servants the six-day week, not to exceed sixty hours in all, while the Company has steadily declined to concede.

About two months ago the first opportunity was given for judging as to the financial success of the Corporation. To satisfy the very general and not unjustifiable curiosity, a trial balance was struck for the half-year ending December 31, 1894, The Lord Provost announced the gist of this as follows:—

"The result is that, after providing for all charges for working, maintenance of plant (including permanent way), interest, and also payment to the Common Good, as arranged at the rate of £9,000 per annum, the accounts still show a credit balance on the six months' working; or, to give it perhaps in more detail, the revenue has met all working charges, interest on capital, the half-year's payment to the Common Good, upkeep of cars, upkeep of plant and buildings, upkeep of permanent way, covers loss of horses by death and horses found unsuitable and sold under cost, and still leaves a credit balance; and further, nothing has been placed to capital beyond initial expenses incurred prior to 1st July last. It must be kept in mind that this result has been achieved with the keep charges of a full stud of horses, but as these at 1st July were soft and unfit for heavy work, the service was begun with only 108 cars, gradually increasing until now about 250 are in daily use. All fares have been reduced, on some routes to the extent of 33 per cent, while to the great benefit of the people, halfpenny fares have been introduced."

This result, in face of the opposition of the 'buses, is enough to fill every believer in the possibilities of municipal enterprise with gratification, and reflects much credit upon the business powers of the men who engineered it.

Continued in June number.

(1) Let me here say that this quotation is taken, like so many of my facts, from the admirable summary of the year's work now annually published by the Lord Provost, whose innovation may be recommended to the heads of other municipalities; let me also take this opportunity of thanking him and other members and officials of the Corporation for the courtesy with which they gave me the information I desired.—G. F.

MOSCOW'S BIG BATH-HOUSE.

THE death of the enormously wealthy Russian philanthropist, M. de Tegorow, at Moscow, will probably have the effect of opening to the public the great baths which, some nine years ago, he caused to be constructed under the shadow of the Kremlin walls. Not only was provision made for the classes, but also for the masses, while the clothes of each bather who desired it were to be washed and ironed free of cost. M. de Tegorow spent many million roubles in the erection and furnishing of this establishment, which was to have been thrown open on January 1, 1885. Dismayed, however, by the prospect of too much cleanliness, the gypsies, whose aversion to the quality which is generally considered as being next to godliness is well known, determined to devote all their efforts to frustrate the excellent intentions of the philanthropic millionaire, and consequently an old woman who had besought him to permit her to tell his fortune, warned him that he would die on the day that the baths were opened. Like all his countrymen, M. de Tegorow was extremely superstitious, and the dismal prophesy resulted in the huge structure with all its magnificent appointments remaining unopened and unused. Meanwhile, the object of the gypsies had been attained, for nobody would invest money in the construction of other baths while any possibility of those built by M. de Tegorow remained. The result is that Moscow and its citizens have lived up to their reputation of being the dirtiest city and the most uncleanly people, not only in the Empire, but in all Europe. It is likely, however, that before the summer comes, the establishment will be in full operation, and that the people of Moscow will have the oportunity of pronouncing themselves in favor of cleanliness or filth.—*Marquise de Fontenoy in the Philadelphia Press.*

RICHMOND IMPROVING.

SINCE January, 1893, up to date there have been over 2000 houses built in San Francisco, of which it is estimated 15 per cent have been erected in Richmond. Miles and miles of streets have been graded and sewered. A scientific system of sewerage, with proper outlet to the bay, has been laid down, and to-day, it is said, Richmond is the only properly sewered district in the city. It also enjoys excellent transportation facilities, and when the Sutro road is completed and the Geary street line continued it will, with those roads now running through the district, be ahead in this respect also. Saltwater mains have been laid in the district for private baths, flushing sewers, sprinkling streets and putting out fires, for which purposes it is superior to fresh water. The Spring Valley mains give an abundant supply of good fresh water. The location, scenery and shelter is unsurpassed. Its closeness to the park and bay, coupled with the advantages enumerated above, make Richmond, with its magnificent marine views, a favored locality for building homes.—*Daily Call.*

DURABILITY OF RED LEAD ON IRON.

AN old painter thus sums up his fifty years' experience with red lead as a paint on iron work exposed to severe atmospheric influence: "It was about thirty years ago that I first began to take any interest in the causes of decay in paint on iron surfaces, and then I began to think and inspect work I had done ten years previously. About thirty-five years ago I had to do some iron rods, which were string-bolts for holding a large roof together in a flax spinning factory. These rods had been painted with oxide of iron and had rusted. They were cleaned to the iron, and so thoroughly that the iron was made bright with rubbing. I had to paint them with red lead mixed with half oil and half turps, and some liquid dryer of my own make. This dryer was composed of black wad, red lead and oil boiled to a pulp and then thinned with turps. The second coat was about the same as the first. The third coat contained less turps, and the fourth and last coat hardly any turps. This work has not been done since, and is to-day as perfect a protection to the iron as then. Four years ago I visited the place and was allowed to examine these bolts, and when I scraped off the paint the iron was as bright as when I painted them. Another case is a water wheel which has been built seventy-five years. Twenty-five years ago I had a contract to paint this wheel. The owner thought he would have it cleaned and painted. I employed men to clean it thoroughly and to my surprise I found no rust. When I called the attention of the owner to the fact, he informed me that his father had painted it fifty years before, when it was built, and the red lead was made from ore got in a hill just by, and smelted in the village. However, I gave it two coats of red lead, mixed as I have stated. This wheel is still running, has not been painted since and is in good condition. Now, in regard to work rusted on a smooth surface, I have done work of this kind also, which has been exposed to the sea air. My first step is to clean thoroughly, and then, if badly rusted, to mix a thin mixture of lamp black with plenty of turps and dryers, and a little oil, and when dry apply the red lead as above. This will give a lasting job, as the lamp black arrests and prevents the rusting. In conclusion, I would say if any of your readers want a job of iron painting, let them try the above plan, and I am sure that they will be repaid for the trouble and extra cost as compared with the customary *wash* of matallic paint and oil."—*The Hub.*

TRADE PAPERS DESERVE THEIR SUCCESS.

A man who subscribes for a trade paper does so, not only because he is alive to the interests of his trade in general, but because he expects to find in it—and generally does—information and suggestions of value in the conduct of his own business. Such a man reads his paper from end to end, advertisements and all, commenting as he goes along. Many things are jotted down on his memo. pad for every day use, as well as for inquiring further into on his first visit to market. And as it is necessary for a man to be wide-awake nowadays in order to succeed in business, these are the men who subscribe to their trade journal, and are the advertisers' best patrons. The cannot afford to pass anything which promises help or suggests additional profits. Hence, the trade journal is the best medium for advertising things which concern the business man.—*Newspaperdom.*

APARTMENT HOUSES AT POMPEII.

OUR architects should not forget that the modern system of hotels and apartment houses on a vast scale is merely child's play compared with the practice of the ancients in the same direction. Recent excavations at Pompeii have unearthed some enormous buildings of such beauty and solidity in architecure, such perfect drainage, and such provisions for health and comfort as to fill all who have seen them with astonishment. These newly discovered buildings contain thirty or forty immensely spacious apartments on the first floor, and as many on the second. The rooms looked out on a rotunda nearly forty feet long; courts supported by columns surround the bedrooms which opened upon large, ornamental gardens with fountains. Provision for light and air was made upon the most extensive scale. On the second floor were found evidences that there were suites of rooms built upon the flat plan of to-day. In fact, the revelations made by the exhumers at Pompeii show that place to have been one of the most wonderful watering places for splendor, comfort, health, and enjoyment, and gave every evidence that floor-renting, like many other modern improvements, is not a new thing under the sun.—*Carpenter and Builder.*

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COTTAGE for Marin County shore, Herman & Swain, Architects.

SECOND United Presbyterian Church, Samuel Newsom, Architect.

PROPOSED Hotel, near Golden Gate Park, San Francisco.

Miss Antique—"How dare you kiss me?" Jack Gallant—"I don't know. Must have had a temporary fit of insanity."—*Rochelle Life.*

"Have you heard that big sleeves are going out George?" "Yes, but I don't believe it." "Why not, pray?" "I don't believe they can get through the door."—*Harper's Bazar.*

INSTITUTE OF BRITISH ARCHITECTS M.9.OCT.XXIV

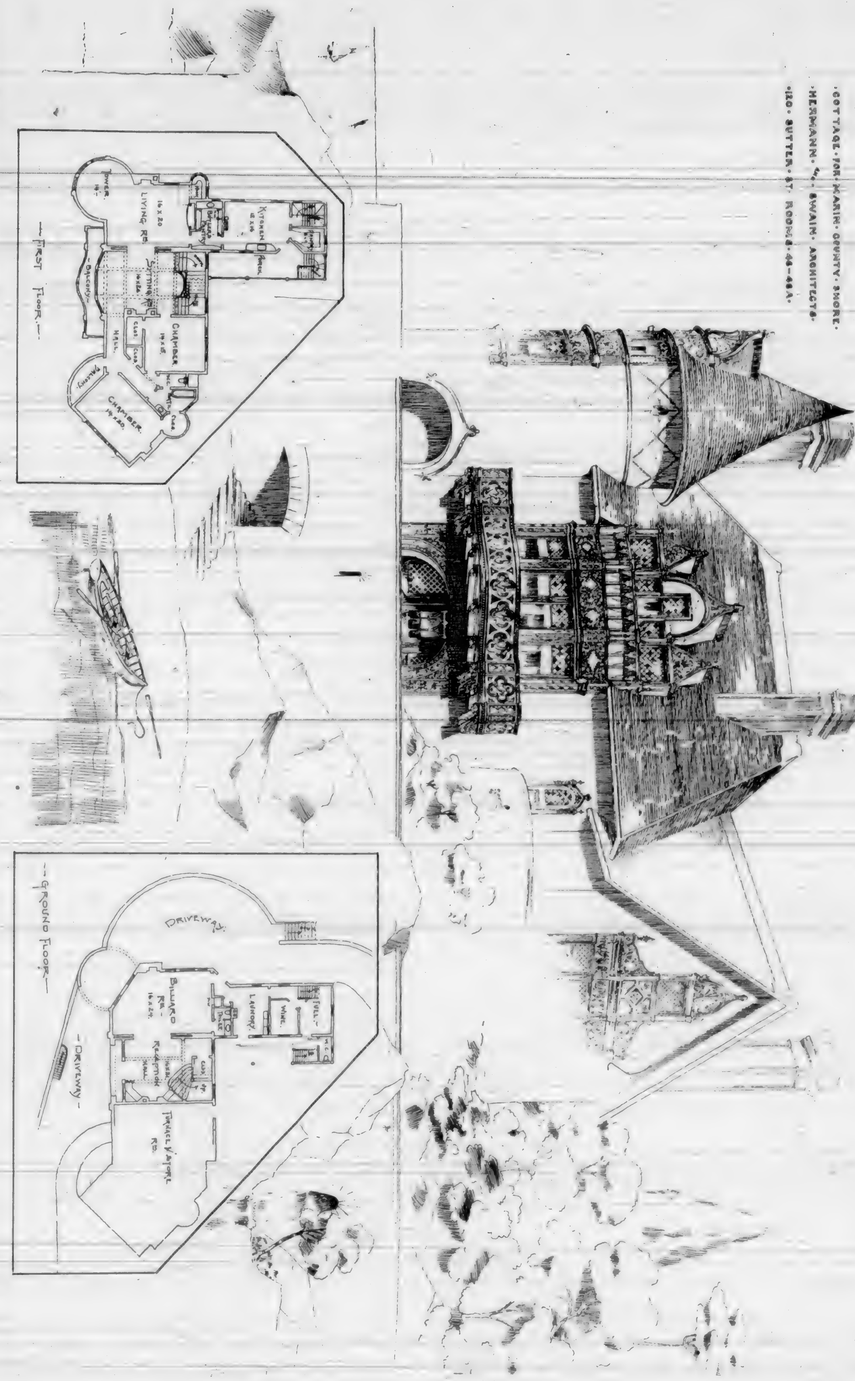
SECOND UNITED PRES-
BYTERIAN CHURCH
REV. E. B. STEWART PASTOR. S. F.
ARCHT. - SAML NEWSOM.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XVI Nº 5 MAY 1895.

GOTTAGE, FORE, KARN, GRUNTY, SNORE,
HERMANN, Sc., SWAIN, ARCHITECTS,
120, BUTTER, ST. ROOMS 8-46-48A.



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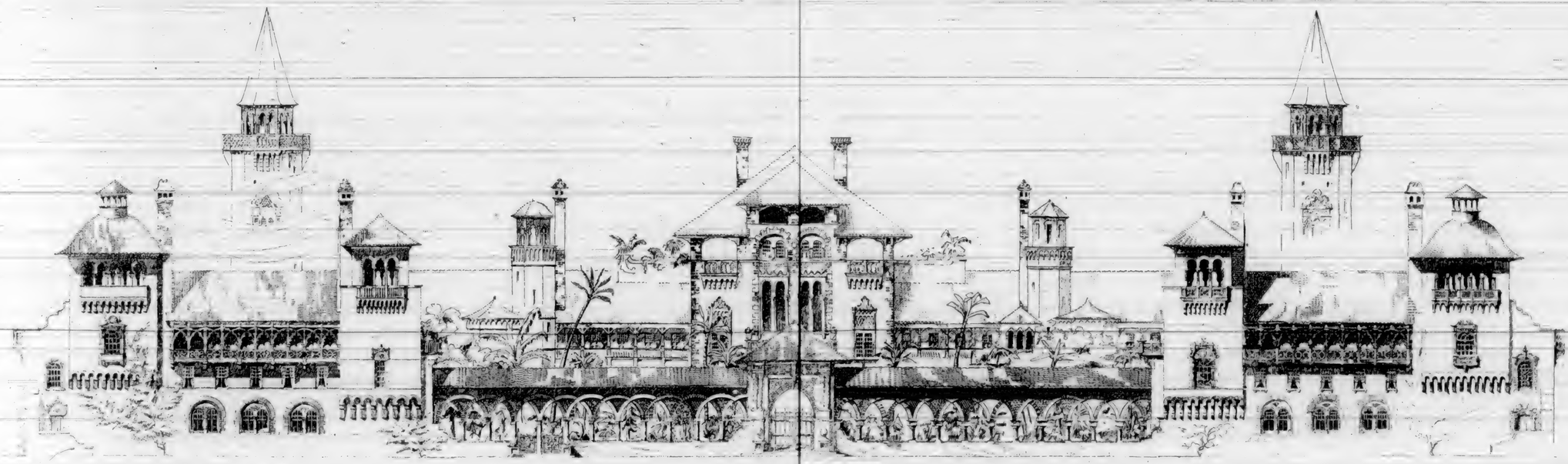


CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO LITH.

VOL XVI Nº 3 MAY 1895

PROPOSED HOTEL NEAR GOLDEN GATE PARK
SAN FRANCISCO CALIFORNIA
ARCHITECT SAMUEL NEWSOM

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

BOOKS AND PERIODICALS.

THE NEW SCIENCE REVIEW. A miscellany of modern thought and discovery, conducted by J. M. Stoddart, published in Philadelphia, New York and London.

This quarterly review made its fourth appearance in April and continues to sustain the promise made in the opening number—while at times it flutters near the boarders of the unknown. It contains much of practical and useful information, along side of John W. Keely "Operation of the Vibratory Circuit."

"Where the Steamboat was Born" by Maggie Symington, as well as autobigraphical notes by Prof. Richard A. Proctor, are very delightful to read, and will prove of interest to the general reader while "Ether and its Functions," by Geo. Fraser Fitzgerald, F. R. S., Trinity College, Dublin, belong to the realm of science; "Railroad Facts and Figures" by Melville Philips come home to the hearts of all, as who does not travel nowadays. The facts here given would have been thought visionary and impossible fifty years ago.

THE YELLOWSTONE NATIONAL PARK. "Sketches of Wonderland" is the title of a beautiful pamphlet published by the Northern Pacific Railroad of which Chas. S. Fee, St. Paul, Minn., is the general passenger and ticket agent, it will be sent to any address on receipt of six cents in stamps. Anyone on the lookout for the summer outing, cannot do better than to send for a copy. This is no common adqertising sheet, but truly a work of artistic merit, that no one can examine with care, without a desire to see something of the "Wonderland" so graphicly described.

OUR DUMB ANIMALS.—This always welcome publication is before us, as ever its hand and pen is raised against cruelty to dumb animals in any form, but more especially to the cruelty of docking horses. As a specimen of Mr. Angell's direct way of writing we quote the following from the April number, after giving extracts from "The Nineteenth Century" by Dr. Geo. Fleming, a distinguished English veterinary surgeon, he adds: "Any man who, having read it, will be guilty of causing another Polo pony or other horse to be so mutilated, is either a heartless fool, a heartless scoundrel, or an incomprehensible idiot."

The following extract shows that Mr. Angell is as full of fun as he is full of mercy:

Flossie is six years old. "Mamma," she called one day, "If I get married will I have to have a husband like pa?" "Yes," replied the mother, with an amused smile. "And if I don't get married will I have to be an old maid like Aunt Kate?" "Yes." "Mamma,"—after a pause—"it's a tough world for us women, ain't it!"

THE FORTNIGHTLY REVIEW for April, 1895, published by Leonard Scott Publication Company, 231 Broadway, New York, comes to hand full of good things as usual, among others one that should be read with care by all lovers of their country, and a sound currency, we refer to "The Monetary Question" by Honorable Alex. Del Mar.

GEYER'S STATIONER.—Devoted to the interests of the stationary, fancy goods and notion trades, a weekly journal published in New York.

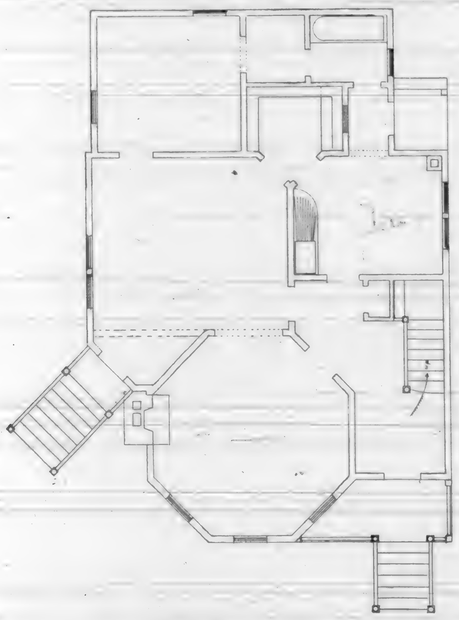
As all the business world is interested in good stationary, it is no wonder that a large mass of information can be accumulated every week on this subject, still the reader cannot help being astonished at the great number of useful and pretty things in the stationary line that this journal calls attention to. Notwitstanding the information is designed to call the attention of the retail stationer of what he may want and where he may get it, the general reader cannot fail to find much of interest even in the advertising column.

BOSTON MUSEUM OF FINE ARTS.

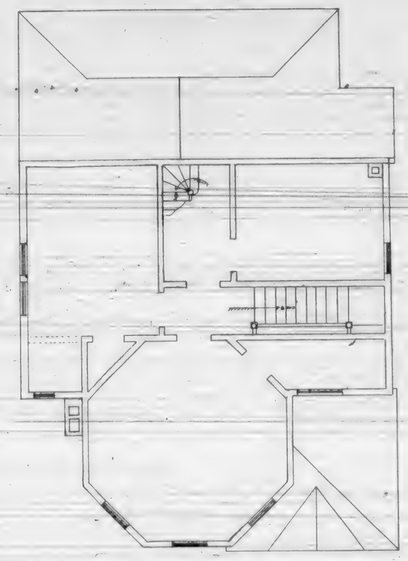
THE Boston Museum of Fine Arts has recently acquired what is beyond comparison the most important collection of Greek vases ever brought to this country. It comprises fifty-three specimens, and those who are familiar with Greek ceramics will appreciate their value from the fact that they include signed examples of such masters as Euphronios, Hieron, Hermogenes, Kachrylion, Duris, Brygos, Pamphaio, Nikosthenes and Xenokles. A number of them contain interesting inscriptions besides the makers' names; but the most remarkable feature of the collection is its intrinsic beauty. Every specimen is a masterpiece of the type to which it belongs, both in shape and in the quality of the drawing upon it, and will appeal to the artist no less than to the archæologist. Boston is not the only city to be congratulated upon this splendid acquisition; for the opportunity it gives to all American students to see Greek pottery at its very best, and the stimulus which is hereby given to the study of the subject, cannot fail to be of benefit to the country generally. It is pleasant to learn that the museum was able to make this purchase out of its own funds, it having received several important bequests lately for the purchase of works of art of various periods.—*Architecture and Building*.

RESULT OF THE CAIRO MUSEUM COMPETITION.

CONSUL-General Penfield, at Cairo, Egypt, reports to the Department of State that in the recent competition of designs submitted for the new Egypt Museum, in Cairo, none of the American competitiors were adjudged a prize. The prizes, five in number, and aggregating $5,000, were secured by Paris architects. The contest was open to architects of the world, and eighty-eight, representing nearly every European country, as well as the United States, participated in the competition.—*Exchange.*



FIRST FLOOR PLAN



SECOND FLOOR PLAN

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

INJURIES FROM BRICK FALLING FROM A WALL.—The fact that a contractor failed to erect proper scaffolding guards about a building because they could not be erected without occupying adjacent property, and that he was prohibited from so occupying it, will not relieve him from liability for an injury to a third person through the absence of such guards.

One superintending the construction of a building, as agent of the contractor, is equally liable with his principal for such injury, or from the negligent construction of the wall.

Mayer v. T. H. Building Co., Supreme Ct. Ala., 16 So. Rep. 620

RIGHTS AND LIABILITIES OF CONTRACTORS.—Where a contractor sues for the reasonable value of extra work, without setting out the building contract, the defense that its value has not been submitted to arbitrators, as stipulated by the contract, is waived by pleading to the merits.

Where the specifications require the contractor to rub down all brick work on street sides, he cannot claim pay for cleaning street walls with acid as for extra work.

A modification of a building contract so as to require pressed brick walls, impliedly requires pressed-brick chimneys, which are a part thereof.

A contractor is not liable for failure to keep the walls plumb, as required by the contract, where the defect is due to the addition of an extra story without strengthening the foundations.

The measure of damages for failure to use the grade of plastering required by a building contract is the difference between the class of work contracted for and that which was furnished.

Chamberlin v. Hibbard, Sup. Ct. Oregon, 38 Pacific Rep. 437.

OBSTRUCTION OF LIGHT.—The easement of light and air cannot be acquired, according to the general current and weight of authority in this country, even by prescription, and of course no right to object to the obstruction of one's windows by a wall erected on the land adjoining can be said to exist. Therefore, one who leases rooms in a building is not entitled to damages from an adjoining land owner because the latter builds so as to shut off the lessees' light on the side of the leased premises.

Lindsey v. 1st. Nat. Bank Asheville, 20 S. E. Rep. 621.

DAMAGES FOR BREACH OF BUILDING CONTRACT.—Where a building contract stipulated that the contractor should pay ten dollars per day as liquidated damages for every day's delay after a certain date, and the building was not finished at such date, and there is no evidence by which the actual damages can be ascertained, the amount of the recovery is governed by the stipulation. Where the owner entered and occupied a part of the building before it was finished, the damages are recoverable only from the time it was agreed to be done and the date on which the owner entered it.

If the stipulation greatly exceeded the actual loss, if there be no approximation between them, and this be made to appear by the evidence, then and then only, should the actual damages, under such a contract, be the measure of recovery.

Collier v. Betterton, Supreme Ct. Tex., 29 S. W. Rep. 467.

MECHANICS' LIEN IN NEW YORK.—Under the laws of New York, 1885, c. 342, sec. 5, providing that mechanics' liens shall be preferred to any conveyance, judgment, or other claim which was not docketed or recorded at the time of filing the notice of lien, a lien filed after the death of the owner for work done before his death does not attach to the interest of the owner's devisees.

The court said: No provision is found in the statute giving the claimant the right to acquire a lien after the death of the owner. Mechanics' liens are created by statute, and while the law should receive a liberal construction, so as to secure the beneficial purpose had in view by the legislature, yet, as it creates a remedy unknown to the common law, it may not be extended to cases not fairly within the general scope and purview of the statute.

Turbrid v. Wright, Court of Appeals, 39 N. E. Rep. 640.

MEASURE OF DAMAGES FOR BREACH OF CONTRACT.—Where a party has contracted to move a building for a stipulated sum of money, and then neglects or refuses to perform, the other, if he has the work done by some one else, is entitled to recover as damages the difference between the contract price and the reasonable cost or expense of performance in accordance with the contract, if there is any difference.

Anderson v. Nordstrom, Supreme Ct. Minn., 61 N. W. Reporter 1132.

BUSINESS MOSAICS.

Revere Rubber Co., 527 Market street, San Francisco, manufacturers "Schenck" Swinging Hose Reel. The company claim the use of this hose will reduce the Insurance rate. It is adapted for mills, factories, hotels, public buildings and general inside fire protection.

Syms—"I don't understand this question of labor and capital." GARNER—"It's very simple. Labor wants capital at the least possible exertion, and capital wants labor at the very smallest outlay."—*The Wasp.*

If you are going to build use Neponset Papers! Why? Because if you use this paper, manufactured solely by F. W. Bird & Son, you will have a paper that is sure to give satisfaction as it makes a handsome and permanent covering for roofs and sides of store houses, factories, poultry houses, farm and other outbuildings. It is very much cheaper than any tar and felt or composite roof, and is a great deal less in cost than shingles. So much for Neponset Red Rope Roofing Fabric, also Neponset Black Building Paper, water, air and vermin proof.

McGilder—"Prize fighters are nothing more than a lot of beggars." O'JONES—"How do you make it out?" MCGILDER—"Because they are always striking somebody for money."—*Brooklyn Eagle.*

On or before May 31st our Principal Office, heretofore located at N. W. corner Pine and Montgomery streets, will be removed to Foot of Third street, below Third and Townsend street R. R. Depot, and on the line of the Kearny and Third street, Electric road; all Market Street Cable and Mission Street Electric cars transfer to this line.

We will maintain an Uptown Order Office at 405 Montgomery street, corner of California street, and will be pleased to see you at either office. Our telephone numbers are:—Principal Office, Foot of Third Street, Main 1047. Uptown Order Office, 405 Montgomery street, Main 1480.

If you have no gas cooking stove in your house, do not delay ordering one at once. Your wife will thank you, your coal bill will decrease enough to pay for the extra gas, and you save a lot of bother in dust and ashes. The San Francisco Gas Light Co., Stove department, 226 Post street, will find exactly what you want.

She—"Do you believe in spirits?" HE (from Kentucky) "I do when they are good."—*Peck's Son.*

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer & Rey, San Francisco, Cal., the manufacturers of this engine, have carried the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

"Does this roof leak always?" AGENT—"Oh, no, ma'am, only when it rains."—*Chicago Inter-Ocean.*

M. S. James, Pacific Coast Representative of the J. L. Mott Iron Works has his office at room 35 Flood Building, San Francisco. The quality of the goods manufactured and supplied to the trade by this firm are too well-known to require a recommendation from us, for like good wine they requires no bush.

Nevertheless, to those about to build, or renovate their premises we would strongly urge the importance of giving Mr. James a call before deciding what class of plumbing materials to order, as anything from the smallest house to the largest hotel, is greatly improved by having first-class materials used for all plumbing required. It is a great satisfaction to deal with a house that you are sure of getting your moneys worth.

"The Old May Flower" Roofing Plates, Re-dipped Old Process, Extra Quality. These plates are guaranteed to be coated with 19 lbs. metal on each box of 14x20 and 38 lbs. metal on 20x28, which is a heavier and better coating than any other works put on Re-dipped Ternes. Made of the softest and best quality of steel, true to size, cut square and free from blisters and other imperfections.

Architects and builders should bear these facts in mind when making specifications where durable and first-class roofs are desirable. Sole importers, W. W. Montague, 309, 311, 313, 315 and 317 Market street, San Francisco, and 122 North Los Angeles street, Los Angeles.

Mrs. Hunter—"I like the flat because it has so many nice closets in it." AGENT—"Great Scott, madame! Those are not closets—they are bedrooms."—*Wasp.*

Ives Patent Sash Locks.—It is important that every house should be made as safe as possible against the attack of sneak thieves, nothing that has been devised in the way of Sash Locks appear to answer the purpose so well as the above mentioned patent sash lock manufactured only by Hobart B. Ives Co., New Haven, Conn. The important features are in securely locking when opened or closed, and simultaneously carrying the Meeting Rail in position, and drawing them closely together. Price list mailed free showing fifty styles in Sash Locks and door bolts. See their advertisement on page xi of this journal.

"So old Squibbs is ill eh?" "Yes; was so bad yesterday that they considered a consultation necessary." "Consultation of doctors?" "No; lawyers."—*Judge.*

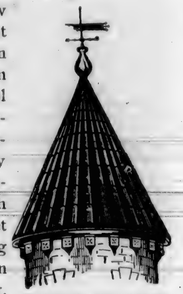
Trade Notice.—Messrs. N. & G. Taylor Co., Tinplate Manufacturers, of Philadelphia, announce that they have given up their old quarters in Water street, New York City, and have moved to the Cable Building, 621 Broadway where they have opened new and commodious offices with a corps of assistants in charge of Mr. George Livingston, a gentlemen who has long been identified with the building and kindred trades of New York and Brooklyn.

The firm also announce that they have secured larger and better warehouse facilities for the quick filling of orders. Consumers wanting their special brand, the celebrated Genuine Taylor "Old Style", extra heavy coated, and also other brands, manufactured by this firm, can secure prompt attention by communicating with the firm's offices, as above stated.

"And I only married to reform you!" "Yesh, but of coursh a man drinksh more if he marries such a fool."—*Life.*

If you want to stop the slamming of that door, all you have to do is to order "The Norton Door Check and Spring" this will render the slamming of doors an impossibility. A simple and durable air cushion check, charging itself when door opens. Not liable to get out of order. Its merits have been proved by being in constant use in this city and elsewhere for the last twelve years. Duplicate parts always on hand. Frank D. Morrell, 593 Mission street near Second street, San Francisco.

There are at the present time few first-class buildings being erected that do not have one or more towers upon them, and no feature of the modern building adds more to its architectural beauty than a graceful and well-proportioned tower. Yet in their construction a difficult problem has invariably arisen as to a suitable covering—especially for conical towers, for which there has been nothing in the market adapted, the only available covering being wood shingles, which split when drawn to the convex form of the tower. Slate will break from the same cause, and metal shingles of forms designed for straight roofing, involves a waste of just fifty per cent of materials in fitting to cones and a greater waste of time in putting on, as after the first course each succeeding one has to be reduced in size and practically made over by the roofer.



GRADUATED TILES

Messrs. Merchant & Co., the well-known Philadelphia tin-plate manufacturers and importers, have recently put upon the market a Graduated Tile, which is a valuable addition to their regular "Spanish" Metal Tile, and which is adapted for covering all conical towers, circular roofs, turrets, domes, etc., being so graduated in size and form as to fit almost any radius. This title is manufactured in copper, steel or tin, the latter being painted in imitation of the red clay tile. As tower roofs are always the most difficult portions of a building to get at to repair or repaint, they should be covered with that which will never require either. Copper, therefore, is the only material that will meet these conditions, being indestructible, and becoming richer in appearance with age. The Merchant & Co's Metal "Spanish" Tile has been specified by leading architects throughout the United States both for private and public buildings. Numerous buildings at the World's Fair were covered with this tile, prominent among which might be mentioned the Colorado, Minnesota and Missouri State Buildings. This tile is also in use on the new City Hall at Tacoma, Wash., the new Union Depot, Denver, Grand Central Station, Portland, Ore., and the Chamber of Commerce Building, Portland, Oregon; also the new Princeton (N. J.) Inn., a beautiful building, the roof of which is almost entirely covered with copper tile, and presents a very rich appearance. Girard Building, Phila.; San Bernardino Court House, Cal.; Baptist Church at Gouveneur, N. Y.; Congregational Church at Gloverville, N. Y.; Bingham Hall, Canandeigua, N. Y.; Crocker Building, Santa Barbara, Cal.; College Arms Hotel, De Land, Fla.; People's Institute, Chicago, Ill.; Winthrop College, Rock Hill, S. C.; Grace Church, Nashville, Tenn.; Church at Fulton, N. Y.; Central School, Guthrie, O.; Library Building, Lawrence, Kan.; Manhattan School, Manhattan, Kan.; City Hall, Wilke Barre, Pa.; Modesta Bank Bldg., Modesta, Cal.; Swain Residence, W. Philada.; First National Bank, Orlando, Col.; Pens. Hospital for Insane, Phila.—*The Engineering Magazine, May, 1895.*

BUSINESS MOSAICS.

Austin near Larkin. Eight circular wood tanks; owner, Olympic Salt Water Co.; architect, H. A. Schulze; contractor, Krogh Mfg. Co.; signed, April 19; filed, May 3; cost $3285.

Bryant near 22d Ave. To build; owner, E. J. Stanley; contractor, A. Olsen; cost $3500.

Bryant Ave. [Preston Place]. To build; owner, T. F. Kiernan; architect, A. J. Barnett; contractors, Quinn & Barrett; signed, April 29; filed, April 30; cost $1608.

Brannan near 4th. Bricklaying for church; owner, Rev. D. Nugent; architect, J. J. Clark; contractor, James Glynn; signed, April 10; filed, April 12; cost $5.25 per M.

Brannan near 4th. Artificial stone work, etc.; owner, Rev. D. Nugent; architect, J. J. Clark; contractor, S. Giletti; signed, April 20; filed, April 20; cost $4000.

Broderick near Ellis. To build; owner, Mrs. Mary Cochrane; contractor, J. J. Manseau; signed, April 21; filed, April 23; cost $1700.

California near Gough. Cabinet work; owner, J. C. Coleman; architects, Percy & Hamilton; contractor, R. Herring; signed, April 13; filed, April 13; cost $3750.

California near Baker. To build; owner, Mary A. Townsend; contractor, W. W. Rednall; signed, April 18; filed, April 19; cost $1800.

Clay near East. Brick building; owner, J. De La Montanya; architect, Percy & Hamilton; contractors, Thomas A. Day & Sons; signed, April 29; filed, April 30; cost $15,073.

Clay near East. Concrete foundation; owner, J. De La Montanya; architects, Percy & Hamilton; contractors, Cushing-Wetmore Co.; signed, April 15; filed, April 15; cost $3030.

Clay near East. Brick, stone and iron work; owner, J. De La Montanya; architects, Percy & Hamilton; contractors, Peacock & Butcher; signed, April 28; filed, April 30; cost $10,075.

Clayton and Oak. Two two-story flats; owner, J. F. English; contractor, J. V. Hull; cost $8000.

Clement near 5th Ave. To build; owner, Irwin Ingermon; contractor, R. Cook; signed, April 12; filed, April 13; cost $2315.

Clementina near 5th. Additions and alterations; owner, S. Pamery; contractor, J. W. Wyllie; cost $2500.

Clement near 5th Ave. Three two-story frame dwellings; owner, D. F. McGrath; architect, C. F. Robertson; day's work; cost $12,000.

Clement near 5th Ave. Plumbing; owner, D. F. McGrath; architect, C. F. Robertson; contractor, G. C. Sweeny; cost $999.

Davis and Washington. Sewers, plumbing, etc.; owner, Estate of J. Ivancovich; architects, Pisses & Moore; contractor, R. A. Vance; signed, April 26; filed, May 13; cost $1894.

Devisadero near Page. To build; owner, C. J. Kaighen; architect, B. A. Brown; contractor, Pettersen & Person; signed, May 9; filed, May 9; cost $1532.50.

De Haro near 23d. Cottage; owner and builder, D. Pollack; day's work; cost $1500.

Douglass and 24th. To build; owner, James Curtin; architect, A. J. Barnett; contractor, Wm. Plant; signed, April 15; filed, April 22; cost $2700.

Diamond near 22d. Cottage; owner, James Loftus; architect, Chas. Koenig; contractor, A. Petry; signed, April 12; filed, April 13; cost $1580.

Eight near Howard. Alteration and additions; owner, W. Ehrenpfort; days' work; cost $1000.

Eighteenth and Hattie. To build; owner, Agnes Petzold; architects, Martens & Coffey; contractor, J. Bucher; signed, April 18; filed, April 19; cost $3808.

Fair Oaks and 25th. To build; owner, Ed. F. Delger; architects, Kenitzer & Barth; contractors, Anderson Bros.; signed, April 25; filed, April 25; cost $3297.

Fair Oaks near 23d. To build; owner, John Valsanglacomo; architect, A. J. Barnett; contractor, Ed. Mooney; signed, May 10; filed, May 10; cost $3250.

Fella Alley near Powell. To build; owner, August Schiller; contractor, Herman Hansel; signed, April 22; filed, April 24; cost $3060.

Folsom and Rich. Additional story; owner, James Mackin; day's work; $3000.

Folsom street, No. 850. Additions; owner, Mrs. Roach; contractor, F. Schmitz; cost $900.

Folsom near 5th. Alterations and additions; owner, P. E. Dueckein; architect, C. M. Rousseau; contractor, Geo. C. Nail; signed, April 18; filed, April 20; cost $1880.

Folsom near 24th. Alterations and additions; owner, H. Mangels; day's work; cost $1000.

Fremont near Frederick. To build; owner, Fred Heine; architect, E. J. Vogel; contractors, Ogle & Smith; signed, April 8; filed, April 11; cost $3505.

Francisco near Dupont. To build; owner, Mrs. Annie Golelli; architect, C. M. Rousseau; contractor, Jos. Kennedy; signed, April 11; filed, April 12; cost $2270.

Franklin and California. Painting; owner, Edward Coleman; architect, W. H. Lillie; contractor, J. P. Fraser; signed, April 18; filed, April 19; cost $366.25.

Fourth Ave. near Clement. To build; owners, J. Levy and Mrs. M. Levy; architect, H. J. Kraetzer; contractor, W. R. Kenny; signed, May 1; filed, May 3; cost $1200.

Fourth Ave. and Point Lobos Ave. To build; owner, R. R. Hind; contractors, Townley Bros.; cost $5000.

Fourteenth near Guerrero. To build; owner, J. M. Griffith; contractors, Hyde & Cox; cost $3500.

Fifth and Brannan. Lumber sheds; owners, Scott & Van Ansdale Lumber Co.; contractor, H. Munster; cost $800.

Fulton near Steiner. To build; owner, J. J. Dowling; architects, Havens & Toepke; contractor, J. H. McKay; signed, April 17; filed, April 19; cost $3595.

Geary near Jones. To build; owner, Thos. Morton; cost $8000.

Grove near Shrader. To build; owner and builder, W. A. Butler; cost $4000.

Guerrero near 22d. To build; owner, Carrie L. Dick; architect, McDougall & Son; contractor, M. M. Cowie; signed, April 7; filed, April 18; cost $4722.

Guerrero near 22d. Plumbing; owner, Carrie L. Dick; architects, McDougall & Son; contractor, W. F. Wilson; signed, April 17; filed, April 18; cost $1010.

Hayes and Devisadero. Additions; owner, Pacific Hebrew Orphan Asylum and Home Society; architects, Wright & Sanders; contractor, Thomas McLachlan; signed, April 23; filed, April 26; cost $17,900.

Hayes and Devisadero. Grading, concrete, etc.; owner, Pacific Hebrew Orphan Asylum and Home Society; architect, Wright & Sanders; contractors, Peacock & Butcher; signed, April 23; filed, April 26; cost $12,500.

Hayes and Devisadero. Plumbing, etc.; owner, Pacific Hebrew Orphan Asylum and Home Society; architects, Wright & Sanders; contractors, McDevitt & Cleary; signed, April 22; filed, April 26; cost $590.

Hayes near Laguna. To build; owner, John Crowley; architect, T. J. Welsh; contractor, P. Maloney; signed, May 8; filed, May 10; cost $4300.

Hyde and Pine. To build; owner, Charles Schlesinger; architect, E. J. Vogel; contractors, McCulloch & Glunz; signed, April 16; filed, April 20; cost $8087.

Hyde near Union. Alterations and additions; owner, W. Sinon; cost $1000.

Hampshire near Solano. To build; owner, John Francis; contractor, Henry Plant; signed, April 22; filed, April 27; cost $1080.

Haight and Baker. To build; owner, John C. Spencer; architect, F. P. Rabin; contractor, Wm. Tegeler; signed, April 20; filed, May 6; cost $6815.

Howard near 22d. Carpenter work; owner, Henry Smith; architect, C. F. Robertson; contractor, C. Larsen; signed, April 24; filed, May 9; cost $4000.

Jackson near Walnut. To build; owner, Henry H. Bull; architect, R. H. White; contractor, John Furness; signed, April 22; filed, April 24; cost $5390.

Jackson near Scott. Carpenter work; owner, Augusta K. Gibbs; architect, Willis Polk; contractors, Knowles & Elam; signed, May 1; filed, May 7; cost $10,200.

Jackson near Scott. Painting, etc., owner, Augusta K. Gibbs; architect, Willis Polk; contractor, John H. Keife; signed, May 2; filed, May 7; cost $1750.

Jackson near Scott. Planing mill work; owner, Augusta K. Gibbs; architect, Willis Polk; contractors, Knowles & Elam; signed, May 1; filed, May 9; cost $4750.

Jackson near Scott. Stone work; owner, Augustus K. Gibbs; architect, Willis Polk; contractor, John D. McGilvray; signed, May 1; filed, May 9; cost $1200.

Jackson near Scott. Stable; owner, Augusta K. Gibbs; architect, Willis Polk; contractors, Knowles & Elam; signed, May 2; filed, May 9; cost $8118.

Kearny and Post. Iron, steel work, etc.; owner, James Stanton; architect, J. E. Krafft; contractors, P. H. Jackson & Co.; signed, May 2; filed, May 3; cost $2013.

King near 4th. To build; owner, Buffalo Brewing Co.; contractor, J. Bucher; cost $5000.

Laguna near Oak. Alterations; owner, Mrs. McBride; contractors, Searle & Co.; cost $1000.

Laurel near Webster. Brick and cement work; owner, Henry Hock; contractor, Weinecht & Franz; signed, May 8; filed, May 9; cost $2130.

Lyon near Haight. To build; owner, Francis Zilberbier; architect, J. F. Kenna; contractor, H. P. Connely; signed, April 13; filed, May 2; cost $4475.

Market near Sixth. Inside finish of billiard room in Spreckles building; owner, C. A. Zinkand; architect, Emil John; contractors, Bader & Finke; signed, April 11; filed, April 22; cost $1725.

Mason near Eddy. Alterations and additions; owner, S. Klavenmeyer; contractors, Williams & Woods; cost $1000.

McAllister near Polk. Raising old building, etc.; owner, T. M. Quackenbush; day's work; cost $2500.

McAllister near Hyde. Grading work; owner, California Bible Society; architect, McDougall & Son; contractor, A. E. Buckman; signed, May 8; filed, May 8; cost $1680.

Mission street No. 737. Alterations; owner, W. C. Shiels; contractor, W. Little; cost $3000.

Minnesota near Sierra. Alterations to school house; owner, City of San Francisco; architect, Thomas J. Welsh; contractor, Alex. L. Campbell; signed, March 26; filed, March 26; cost $3587.

Minnesota near Sierra. Painting school house; owner, City of San Francisco; architect, Thomas J. Welsh; contractor, L. J. Dwyer; signed, March 26; filed, March 26; cost $1779.

Pacific Ave. near Octavia. Carpenter work; owner, Mrs. Elizebeth Blackwood; architects, McDougall & Son; contractors, Peterson & Olsen; signed, May 6; filed, May 9; cost $6750.

Pacific Ave. near Octavia. Excavation, brick work, etc.; owner, Mrs. Elizabeth Blackwood; architects, McDougall & Son; contractors, Fennell & Son; signed, May 6; filed, May 6; cost $1114.

Pacific Ave. near Octavia. Plumbing, etc.; owner, Mrs. Elizabeth Blackwood; architects, McDougall & Son; contractor, J. E. Britt; signed, May 6; filed, May 6; cost $1095.

Point Lobos Ave. and Fifth Ave. Stone sidewalks, etc.; owner, Society Francaise, etc.; architect, E. Depierre; contractors, Gray Bros.; signed, May 9; filed, May 10; cost $1150.

Point Lobos Road near Pacific Ocean. To build; owner, Adolph Sutro; architect, Colley & Lemme; contractors, Campbell & Pettus; signed, April 10; filed, April 13; cost $35,445.

Powell stree, Nos. 13-15. Alterations and additions; owners, Chas. A. and Silas Green; architects, Havens & Toepke; contractor, Geo. H. Walker; signed, April 11; filed, April 12; cost $6000.

Presidio. Brick building for barracks; owner, U. S.; contractor, F. L. Hansen; cost $10,090.

Sacramento near Maple. Brick building; owner, T. T. Williams; architect: A. C. Schweinforth; contractor, W. A. Butler; signed, April 12; filed, April 17; cost $17,000.

Sacramento near Maple. Plumbing; owner, T. T. Williams; architect, A. C Schweinfurth; contractor, W. F. Wilson; signed, April 12; filed, April 17 cost $1600.

Sacramento near Maple. Electric and gas fixtures; owner, T. T. Williams; architect, A. C. Scheinfurth; contractor, S. F. Novelty and Plating works; signed, April 12; filed, April 17; cost $250.

Sacramento near Maple. Elevator work; owner, T. T. Williams; architect, A C. Schweinfurth; contractor, John Hammond & Co.; signed, April 12; filed April 17; cost $800.

Sacramento near Maple. Electric light wiring; contractors, Will & Fink Co.; signed, April 12; filed, April 18; cost $270.

Sacramento near Maple. Heating and ventilation, etc.; owner, T. T. Williams; architect, A. C. Schweinfurth; contractors, W. W. Montague & Co.; signed, April 12; filed, April 17; cost $2000.

Sacramento and Pierce. Alterations and additions; owner, Mrs. Minnie H. Alderson; architect, F. B. Wood; contractor, R. Currie; signed, April 26; filed, April 27; cost $3595.

San Jose Ave. near 25th. To build; owner, Thos. C. Van Bibber; architect, W. H. Wharff; contractor, John A. McDonald; signed, April 12; filed, April 13; cost $4272.

San Jose Ave. near 25th. Plumbing; owner, T. C. Van Bibber; architect, W. H. Wharff; contractors, Levy & Parker; cost $620.

Sanchez and 14th. To build; owner, Fred Hufschmidt; architect, E. J. Vogel; contractor, J. W. Coburn; signed, April 13; filed, April 13; cost $3296.

Shotwell near 24th. To build; owner, Mrs. Ward; contractor, W. A. Lang; cost $3000.

Sixth and Stevenson. Excavations, concrete, cement, brick, etc., for four-story brick; owner, M. Schwerdt; architects, Laist & Schwerdt; contractor, Adam Beck; signed, April 19; filed, May 4; cost $12,575.

Sixth and Stevenson. Carpenter work; owner, M. Schwerdt; architects, Laist & Schwerdt; contractor, S. H. Knight; signed, April 16; filed, May 4; cost $3737.25.

Sixth and Stevenson. Terra cotta work; owner, M. Schwerdt; architects, Laist & Schwerdt; contractors, A. Steiger Sons; signed, April 26; filed, May 4; cost $2785.

Sixth and Stevenson. Plumbing, etc.; owner, M. Schwerdt; architects, Laist & Schwerdt; contractors, Shephard Bros.; signed, April 23; filed, May 4 cost $1961.

Seventh near Folsom. Alterations and additions; owner and builder, C. Mason; cost $4000.

Steiner near O'Farrell. Alterations and additions; owner, Mrs. Schilling; contractors, Patterson & Person; cost $1500.

Steiner near Filbert. To build; owner, Augustus and Eliza La Croix; contractor, J. J. Wilson; signed, April 15; filed, April 15; cost $1325.

Second Ave. near California. Six two-story frame buildings; owner, Stewart Menzies; architect, J. C. Pelton; contractors, Campbell & Pettus; signed, May 8; filed, May 9; cost $10,238.

Sixteenth near Valencia. To build; owners, R. J. Taussig and Adolph Eisenback; architects, Salfield & Kohlberg; contractor, L. B. Schmid; signed, May 2; filed, May 10; cost $6850.

Sixteenth near Valencia. Plumbing and gas-fitting; owners, R. J. Taussig and Adolph Eisenback; architects, Salfield & Kohlberg; contractors, Clark & England; signed, May 4; filed, May 10; cost $1150.

Twenty-second near Noe. To build; owner, L. Schnetzler; contractor, H. R. Schmuckert; signed, April 20; filed May 4; cost $3220.

Twenty-fourth near Sanchez. To build; owner, Moses Mossford; architect, R. Trost; contractor, Job. Hatfield; signed, May 6; filed May 6; cost $1475.

Twelfth Ave. near Clement. To build; owner, Geo. C. Harrison; contractor, Hans Peterson; signed, April 24; filed April 26; cost $1775.

Twenty-sixth and Church. Cottage; owner, John Todt; architect, W. Schrof; contractor, H. Behrens; cost $2745.

Twenty-sixth near Howard. To build; owner, B. Struven; architect, Emil John; contractor, F. A. Hellmuth; signed, April 27; filed, May 4; cost $3526.

Twenty-ninth near Sanchez. Cottage; owner, W. F. J. Dale; contractor, H. R. Schmuckert; signed, April 17; filed, April 17; cost $1575.

Union near Fillmore. Two-story two tenement buildings; owners, Dr. John and Lizzie J. Hemphill; architects, McDougall & Son; contractor, J. H. McKay; signed, April 16; filed, April 18; cost $5790.

Union and Fillmore. Plumbing, gas-fitting, etc.; owners, Dr. John and Lizzie Hemphill; architects, McDougall & Son; contractor, H. Williamson; signed, April 16; filed, April 18; cost $1280.

Union near Larkin. Additions and alterations; owner, Thomas Scott; architect, W. Mooser, Jr.; contractor, Dwyer, cost $1500.

Union near Larkin. To build; owner, J. W. Lomerlino; day's work; cost $5000.

Vallejo near Van Ness. To build except plumbing; owner, Frank Otis; architect, Seth Babson; contractors, Hickox & Tate; signed, April 11; filed, April 11; cost $2695.

Valencia and 15th. Three-story brick; owner, Rose A. Pickering; architects, Havens & Toepke; contractors, Ackerson & Paterson; signed, April 18; filed, April 22; cost $9643.

Valencia and 15th. Plumbing; owner, Rose A. Pickering; architects, Havens & Toepke; contractor, H. Williamson; signed, April 17; filed, April 22; cost $1764.

Vermont and 24th. Alterations; owner, A. Schuman; contractor, Gus. Williams; cost $1600.

Washington near Laguna. To build; owner, J. D. Tallant; architect, W. H. Lillie; contractor, J. G. Adams; signed, April 27; filed, April 29; cost $4100.

Washington near Devisadero. Two two-story frames; owner, Geo. W. Lippman, architect, J. W. Littlefield; contractor, O. E. White; signed, May 2; filed, May 3; cost $5807.

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THE general rebellion now going on in the United States against bad management of our municipal governments makes an account of what can be done by a practical economical people *apropos*, such an account is concluded in this number.

In the case of the Civic management of Glasgow we have the most practical application so far made of Socialistic principles to the government of a big city. Glasgow is a city of about 750,000 inhabitants the most populous city in Great Britain next to London, and is therefore the best exhibition of an advanced municipal government that we have on a large scale. Many valuable lessons may be learned from this example.

The care taken to prevent monopolies from getting possession of the peoples' property, is one. In this case the City of Glasgow had taken the precaution to simply lease the roadbed to the Street Car Company, thus keeping control of the streets, so that when the time mentioned in the lease twenty-three years, had expired and the Company refused to accede to reasonable terms for a re-lease, the City was able to resume control of the roadbed and rails and all it had to do was to supply cars and power, which was successfully done. In the United States the people have been far more liberal in giving away and have generally given franchises for fifty years for exclusive use of the streets, thus preventing themselves during their own generation from ever again getting control of these streets except by repudiation or by running elevated electric cars on tracks over the private company's tracks and thus by

competition with them bring them to sell back their franchises to the people.

In the purchase of the Gas and Lighting plants a practical way to do so is indicated by the article—although no doubt there are still better and more economical ways of procedure: the results however show that even by the system of Bonding as carried out by Glasgow, success has been attained; and the city management is a shining example as the price of gas has been lowered from $1.28 per 1000 cu. ft. to 62½ cents—and still it pays a good income to the city.

Thus we see that whenever a proper idea of the purpose for which they exist animates public bodies, they soon find some way to remedy evils. In the words of our author:

"The Corporation recognise three duties as being laid upon them: to fulfil their trust by economical administration of the city's finances: to improve public health, both physical and moral; and to give brightness and the possibility of happiness to civic life." . . . "Beyond that, the Glasgow Corporation hold it their duty to undertake the supply of these necessaries of life—light, fresh air and pure water—*which private enterprise cannot generally be trusted to provide.*"

The experience of most of American Cities go to verify the last sentence.

"It has in short been conclusively proved that municipal management of such a business as the supply of water is compatible with a direct saving of money to the consumer and a great improvement in the supply."

"The Corporation also provide lectures upon art and kindred subjects in the museum and galleries, and give a good concert every Saturday during the winter in the City Hall, at prices of 6 cts. and 2 cts.; and they make it pay. They are now building a People's Palace in the East end. There theory is that the way to stop drunkenness is to compete in attractiveness with saloons; and, whether it be true or not, they certainly do their best to carry it out."

It is interesting to see how a Corporation that has done such good work in such a short time is organized. We fine the whole business done by Committees of the Council, and the whole power is in the hands of the Council—who are responsible for all that goes on—this appears to us as it should be, have a proper representative Council elected by proportional system of voting, and make them responsible for *all* the business of the city, and have no outside commissions or appointed independent bodies—in short a public corporation modeled on the same plan that has made private corporations so successful.

Thus we find the cleansing of the streets is under the direct control of the Health Commmittee, and we find it efficiently done. The same committee has charge of sewage farms owned by the corporation which "indicate a promising field for the labor of the unemployed."

The civic feeling that is extant throughout our country at this time is encouraging—and when such feelings as those mentioned in the articles before us, "It is a sacred charge entrusted to us, and we must be neither swayed by party or party feelings, and by looking only to what is highest and best for the general welfare of the trusts committed to us, and how we may advance through our corporate work the prosperity of the City we love so well," shall have become more common than they are now, may we look forward to a genial revolution of city affairs tending to the general prosperity and well being of the citizens.

A Single year of judicious advertising is often equal to a lifetime of hard work in the building of a business.

GLASGOW—A MODEL MUNICIPALITY.

[Continued from May number.]

It is worth pointing out that the late Tramway Company only paid a net rent of about £5,000 a year to the Corporation for the use of the streets, so that there is a direct gain in money as well as in efficiency. As an indication of the boon conferred by the introduction of halfpenny fares, I have been allowed to see a table of the average number of travellers in a typical week at the various rates. From this it appears that, in round numbers, 300,000 passengers paid ½d., 600,000 paid 1d., 95,000 paid 1½d., and only 20,000 paid the maximum fare of 2d.

It may be supposed that the next step will be to abolish all fares above the penny, a plan which will simplify bookkeeping, and leave the conductor much more leisure to attend to his passengers than he has at present. It seems to an outsider that the sensible plan would be for the Company to use its omnibuses as friendly feeders to the cars in the outlying districts, instead of running them as rivals on parallel lines, at at present. In that case, this step might follow very shortly.

The capital of the Tramway Department is provided for in the usual way, by a sinking fund which, it is calculated, will pay off the debt in thirty-one years. Altogether, I think that this history of the Glasgow tramways may be strongly recommended to the notice of all Town and County Councils whom it may concern.

One may pass next from the locomotive to the stationary, from tramways to dwellings and lodging-houses. And one must admit that a very interesting part of the work of the Glasgow Corporation is that carried out under the name of the City Improvement Trust. This Trust was established in 1866, when the problems of "over-crowding" were clamant for treatment. Its object was "to let air, light, and, if possible, a little sunshine into the dismal closes and courts of the city, where not fewer than seventy-five thousand human beings were crowed together amid surroundings that had become moral and physical 'plague-spots,' a danger and disgrace to civilisation." During the twenty-eight years of its existence the Trust has spent nearly two millions sterling in the purchase of insanitary property and in building. At first it was thought that the citizens themselves would step in and build improved dwelling-houses upon ground cleared by the Trust. That hope was not fulfilled. Those who built went in for a very different style of edifice. In 1870 the Trust itself undertook the building of a small number of tenements of one and two roomed workmen's dwellings, at rents which ranged from £5 14s. to £9 15s. per annum. Further, they built a model lodging-house to provide for some of the lodgers turned out of the vanished slums. Each inmate of this lodging-house was provided with a separate cubicle and a good bed. Dining and sitting halls, with a kitchen and a shop for the use of the men, were placed on the ground floor. The price of a night's lodging was 3½d. or 4½d. The two hundred and ninety beds were so regularly in demand that the Trust went on to build seven such lodging-houses in all, six for men and one for women. The return for the ten years 1881–1891 was at the rate of nearly 5 per cent per annum upon the total outlay. As the Corporation were meantime borrowing money at 3½ per cent or less, this was clearly a successful experiment in municipal building. But they hold here, as elsewhere, that their business is rather to stimulate private enterprise than to supersede it. One result of the establishment of the model lodging-houses is that the old style of cheap and nasty lodgings is practically extinct in Glasgow. Private enterprise has gone to work on Corporation lines, and the standard of comfort has been raised, by the simple operation of economic law, to that set by the Corporation. It should be added that the committee which manages the lodging-houses has for two years provided a free entertainment every Saturday night in each of them. These entertainments are extremely popular, and help to keep the lodgers out of the public houses.

The Corporation are at present engaged in the building of a Family Home, which is to do for widows and widowers with children what the lodging-houses have done for single men, in the way of raising the standard of comfort and the possibilities of life. In this building, which will provide one hundred and seventy-six dormitories, it is proposed to charge 8d. a night for a room large enough for a man or woman with not more than three children. The children will be fed and taken entirely in charge during the day, as it is expected, for 1s. 6d. a head per week. This, I believe, is an absolutely new experiment for a British municipality to try. If it pays its way, the example will be fruitful in advantage to a particularly unlucky class of the population.

The provision of workmen's dwellings has hitherto not been attempted on a large scale by the Trust. It has, however, built a few tenements, and is now building new ones to supply accommodations for about three hundred families, at rents from £7 5s. to £11 5s. But all this only provides for the wants of the better class of artisans, who can pay a comparatively high rent. Now plans have been approved for houses of one and two rooms, which conform to sanitary requirements, and can be built and let with profit at a rent of £4 10s. to £5 a year for one room, £7 10s. to £8 for two. When the Corporation working at the city's risk, have shown the possibility of making such a building pay, the further erection of similar tenements will be left to private enterprise, as in the case of lodging-houses. A very important class, that of labourers earning less than 20s. a week, will thus at last be provided with the healthy and cheap houses that all practical philanthropists have so long desiderated.

But a work man's leisure is not to be wholly spent in even the most healthy of homes. He and his family need recreation. The Glasgow Corporation have therefore always taken a keen interest in the brightening of civic life. Stong in "the power of multiplied penny," they have endowed their city with museums, half-a-dozed parks, and a really good art gallery. It is significant of their attitude that one of the reasons put forward for the taking over of the tramways was that additional facilities for getting out to the parks might be put in the way of the poorest citizens. In the same way, I learn that a weir is to be built across the Clyde for the double purpose of preventing the ascent of sewage from the lower reaches and of deepening the river so as to allow of boating above the weir. The Corporation also provide lectures upon art and kindred subjects in the museum and galleries, and give a good concert every Saturday during the winter in the City Hall, at prices of 3d. and 1d.; and they make it pay. They are now building a People's Palace in the east end. Their theory is that the way to stop drunkenness is to compete in attractiveness with the public-house: and whether it be true or not, they certainly do their best to carry it out. More important still, perhaps, is the fact that they are providing playgrounds for children in the congested parts of the city, where gymnastic apparatus and games of all kinds are at the disposal oi every child in the neighbourhood. Without doubt all this provision of means for recreation makes the health of the citizens. Let us see what else is done to that end.

The sanitary system of Glasgow is as justly famous as the name of Dr. J. B. Russell, the veteran Medical Officer, under whose direction it has all practically grown up. Sanitation, it has been said, generally has its root in selfishness. Thus the origin of the Glasgow Sanitary Department in 1863 can be traced to the fear felt by the epidemics of typhus and cholera that ravaged the city from 1848 onwards. The organization which now wages the continual battle against disease is at once simple and efficient, as the deputations that continually come from other towns to investigate it know.

The Medical Officer and his lieutenant, the Sanitary Inspector, are the heads of a little army of inspectors who are always acting as spies in the enemy's country. First come the epidemic inspectors, whose task has been a comparatively light one since the Notification Act was put in force. Every person attacked by infectious disease is treated, at least in theory, as a danger to the community. He is taken off compulsorily to the Corporation hospital, unless he can show that he will be properly isolated at home. There was a time when the sanitary officials were looked upon with doubt, and it was often necessary to get a warrant to remove a patient from the poorer districts. It is still so in some towns where the plan of using the police as sanitary inspectors is adopted. Dr. Russell has steadily set his face against this practice, and the result of his wise rule is that the people now have absolute confidence in "the sanitary men," who are allowed to go freely where neither police nor even missionaries may penetrate. Further, the community have recognised that if they insist on taking a man to a hospital for their own sake rather than for his, it is only fair that his stay there should be made as enjoyable as possible. The consequence is that the average Glasgow labourer now regards hospitals in much the same light as Maggy in *Little Dorrit*, who was occustomed to say, "Such beds there is there! such lemonades! such oranges! such d'licious broth and wine! such chicking! Oh, AIN'T it a delightful place to go and stop at!"

A second staff of inspectors are engaged in detecting nuisances. A third staff, again, look out for cases of overcrowding. Any house not exceeding 2,000 cubic feet in total capacity and suspected of offending in this respect may be "ticketed," as the phrase is; that is, marked outside with the maximum number of persons that may be safely allowed to sleep in it. The inspectors have authority to enter any ticketed house at any time, and so check the overcrowding which is fruitful in disease among the very poor. In very bad cases of insanitary conditions a house can be closed althougher. Here as in regard to epidemics, the motto of the department is "Prevention is better than cure."

The supervision of workshops, dairies, etc., and the administration of the Shop Hours Act are also in the hands of the Sanitary Department. One result of this is that there is no dairy in the city in communication with a sleeping or dwelling-room.

The Department employs six female inspectors, whose

duty is to act as sanitary missionaries. They go about widely among the poorer classes, and hold informal talks on sanitary questions with the women of each neighbourhood. These ladies can gain confidence and advice on delicate matters in which "man, proud man," would find himself quite powerless.

The cleansing of the two hundred miles or so of Glasgow streets has also been placed under the control of the Health Committee, since it was found that cleansing and the prevention of cholera go hand an hand. Much time and friction are thus saved, and the work is efficiently done at a moderate cost. The business of sewage purification is also attached to the Sanitary Department. For many years the four condition of "that navigable river, the Clyde" (as one of their own poets has said), has been a disgrace to Glasgow. Works have recently been brought into operation for dealing with one-fifth of the total sewage of the city. At present their effluent into the Clyde is as clear as Loch Katrine water itself, and has no smell. The process will speedily be extended to the rest of the sewage, and the day may not be far distant when salmon will again be caught at Glasgow Bridge. The solid product of the sewage is in part sold to farmers and in part used on the Corporation's own farms. One farm, which was originally leased as moss-land worth 1s. per annum per acre, is now valued at 30s. per annum. This indicates a promising field for the labour of the "unemployed," for whom the Corporation have been forced to find work in more than one of the severe winters of recent years.

No account of the Sanitary Department of Glasgow would be complete which did not allude to the public baths and wash-houses, though these are nominally under different control. Glasgow believes in soap and water. At present there are five public boths and wash-houses in her thickly populated districts. It is felt that this number is inadequate. Experience shows that the average house-wife, though she is glad to take advantage of a wash-house, will not carry her dirty cloths more than half-a-mile. Thus the five wash-houses now existing are used by only about 3,000 women in a year, each of whom goes once a week, and can do her week's washing for 5d. But there is need of many more wash-houses, and it is hoped that in time there will be one at each corner of every square mile in the city, so that few women will need to go more than half-a-mile to their week's washing. The baths and wash houses have not as yet paid their way. There is a small annual deficit to be met by assessments. It is worthy of note that the Corporation have opened the baths free at certain hours to children attending the board schools of the city. The teaching of swimming has thus been greatly encouraged.

But what one may here ask, does Glasgow pay for all these good things? It is obviousiy impossible to go into matters of finance, except in the most general manner. The first question is naturally that of rating. The municipal rates, covering all the departments that have been mentioned, and much more that must be taken for granted, are given, as they were in 1874–75 and as they are in the present year, in the following table:—

Year.	Rate per £ on rental of £10 and upwards.	Rate per £ on rental under £10.
1874–75	3s. 02½d.	2s. 3¼d.
1894–95	2s. 8¾d.	2s. 1 9-32d.

(A rate of a penny in the pound now produces about £15,000.

In the same period the price of gas has been lowered from 5s. 3½d. per thousand cubic feet to 2s. 6d. These figures show that in spite of the increase of the population and the doubling of the area of the City of Glasgow between 1874 and to-day, the rates have decreased all around, whilst the service is substantially improved.

A typical instance of the financial methods which have allowed this to be the case is to be found in the erection of the present municipal buildings. Glasgow's stately and even magnificent *Hotel de Ville* cost something over half a million sterling. A penny in the pound had been added to the assessments in 1868 to pay for the old City Chambers. This was not thereafter taken off. It is sufficient, with the rent contributed by the departments, equal to about ½d. in the pound on the rates, to pay the interest on the cost of the new buildings, their maintenance, and the Sinking Fund. This will pay off the entire debt of over half a million in fifty-six years, when the buildings will be the unencumbered property of the city.

If I were asked, indeed, to state the distinctive feature of Glasgow finance, I should suggest the Sinking Fund. That useful invention is now applied to every enterprise of the Second City. On examining the municipal accounts, one finds that all serious debts are on the way to be cleared off by the automatic operation of this device. Thus the Loan Debt of the Police Commission, amounting to nearly £1,300,000, will be paid off in less than fifty years, four-fifths of it being paid within twenty years. The water and gas debts will be paid, the one in sixty-seven years, the other in forty, without any new call upon the ratepayer. The debt on the parks and galleries will be paid off in forty years, and that on the tramways in thirty-one years.

The present financial position of Glasgow seems, to an outsider, extremely satisfactory. Roughly, one may estimate that her liabilities are eight millions sterling and her assets ten and a half millions, with a clear balance of two and a half millions sterling on the right side of the account. It is clear that, with all her Sinking Funds at work, Glasgow is on the high road to riches beyond the dreams of even municipal avarice. Whatever experiments in municipal collectivism her Council may desire to undertake in the future are at least not likely to be hampered for want of funds, or to fail through lack of business capacity.

Before I finish this sketch of some features of municipal Glasgow, I should like to draw attention to one subject of special interest for Londoners at present, upon which Glasgow may throw some light. It is generally felt by the citizens, as well as the Corporation, that the City of Glasgow, covering as it does, since the extension of the boundary in 1891, almost 12,000 acres, with a population of upwards of 700,000, is tending to outgrow its unity. General municipal *esprit de corps* needs to be fostered in the several districts now knit into one city. At the same time it is strongly felt that only a central authority can deal effectively with such questions as those of sanitation, sewage, police, fire, and so on. A re-arrangement of the wards of the city will be called for next year, and it is highly probable that some scheme of Divisional Committees will then be adopted, without any weakening of the central authority. By the courtesy of a member of the Corporation I am enabled to give the gist of such a scheme, which he has drawn up for submission to the Council. It seems almost certain that this scheme, or something very similar, will be ultimately adopted. The Unification Commission might do worse than consider carefully its provisions, which begin as follows:—

"The object of any scheme of divisional administration should be: (1) To keep alive municipal interest in all parts

of the city by providing some machinery, other than that of the central body, by which local wants and necessities could be ascertained and supplied; and by which local feeling would find more full and complete expression; (2) To relieve the central administratice machine of certain details by having a first process of selection and preparation of business, which would leave the central body more free to deal with the matured recommendations of the district, and with all questions of principal and general policy.

"Any scheme of divisional administration to be successful must comply with the following conditions:—

"(A) The central control over the various departments must be maintained, so that consistency and uniformity of policy and action may be kept throughout the whole territory.

(B) Income and expenditure and the employment of officers of every degree in all branches of the service must rest with the central body.

"(C) The representatives composing the divisional bodies must all be members of the Central Council.

"(D) The power to regulate, diminish, or increase the powers and duties of the Divisional Boards from time to time, as experience and utility suggest, must rest entirely with the Central Council."

The scheme then goes on to propose that Glasgow should for this purpose be divided into five sections, "so as to give the nearest effect to natural geographical groups that the limits of the wards will permit." A Divisional Board is to be formed in each section, of the members elected by the wards contained in it, with others if necessary; the Lord Provost, and the Conveners and Sub-Conveners of the Committees of Watching and Lighting, Statute Labour and Health, to be *ex-officio* members of each board. The minutes of each board-meeting are to be communicated to the next meeting of the Central Council, and, if not disapproved thereon become resolutions of the Council. Provision is made for holding at the disposal of each board of the services of officers from the chief administrative departments, especially acquainted with the territory of the board. The The remaining provisions are as follows:—

"8th. The work of the Board would be to receive, consider, and deal with remits from the Central Council, or any of the standing or special committees thereof, to receive and consider complaints or suggestions from the ratepayers in the districts relating to the public service, to inquire into these, and discuss or make recommendations, and to discuss and mature any improvements or changes in the service of the various departments for recommendation to the Central Council through their standing committees; to report on the requirements of the district previous to the preparation of the annual estimates, and to take a special oversight of the repair and upkeep of streets and sewers, the cleansing and lighting of streets, the removal of refuse, the placing of fireplugs, etc., and the inspection of nuisances within their districts.

"9th. For the proper regulation of the business of the Divisional Boards, Standing Orders should be drawn up by the City Council, providing *inter alia* for a direct appeal to the Council, on the request of two-thirds of the members of the Board present at any meeting, against any decision or recommendation of any Central Standing Committee affecting any Divisional Board.

"10th. It is suggested that the business of the Local Boards should be carried on at some conveniently accessible point in each district, and that, to give outward and visible embodiment to local municipal life, there should be established a Municipal Bureau or district Office, where all possible municipal business would be concentrated (such as collection of gas and water accounts, municipal assessments, etc.,) and where information, advice, and assistance could be at once obtained in reference to epidemic disease, hospitals, and the sanitary service generally, cleansing roads, drains and sewers, lighting, fire, police, gas, water, and indeed every department of the public service which affects the health, comfort, or convenience of the citizens."

The only comment I shall add is that the combined safety and elasticity of this scheme seem to me to be strongly in contrast to the rigid and risky proposal to which Mr. Chamberlain recently saw fit to give the weight of his great authority.

It is hardly necessary for me to point out, in conclusion, that I have of necessity forborne to deal with much that is important in the municipal life of Glasgow. Upon the work of the police and the fire brigade, the Dean of Guild, who supervises building, the profitable Markets Trust, with its control of the meat market and slaughter-houses, and many other parts of the Corporation's business, I have no space to touch. Otherwise I should like to glance at the principle recognised by the Corporation, to do their own work by direct employment of labour in certain cases, such as in the repair and cleansing of the streets, but to employ contractors in other cases, as in bridge-building and street-making. I should especially like to call attention to the grim irony of circumstance which causes a city, so advanced in other respects, to be about the last in the country to offer its citizens a Free Library, and makes a Council, who play lightly with millions when it is a question of material boons, shrink from asking their constituents for a penny in the pound when it is only books that are needed. Probably they have delayed thus long only in order to acknowledge, by one frailty, that they too are human; but an outsider may assure them that they will provoke no envy of the gods if they can make up their minds to force this crowning benefit upon their citizens.

It is true that the Glasgow Corporation have lately been accused of an over-readiness to "force benefits upon their citizens." But the principal Police Clauses of their Bill now before Parliament, of which facetious members have made their sport, have been the public law of Scotland since 1892, and are now merely being adopted by Glasgow. The facetious gentlemen are, therefore, surely a little late.

But I must turn to consider the lessons that Glasgow has to offer the rest of the country, for I think I have justified my title. That, indeed, is a business that the gentle reader can do best himself, if I have been at all successful in my transcript from life. I wish to offer him only two suggestions.

The first is that Glasgow is an instance of the striking progress which may be achieved in municipal matters by a body of good business men who are more concerned about the welfare of the city than the illustration of a political or social theory. Politics, indeed, are practically unknown at the Glasgow Council Board. Nor is eloquent speech in great demand there. The real work is, all of it, done in committees and small sub-committees, and the discussions at the meetings of council are, I understand, chiefly useful to let outsiders know what is going on. Glasgow, again, is claimed by many as a wonderful example of the success of municipal socialism. That may be so, but the Council certainly had so such idea in their heads when they achieved their successes. The method of the Glasgow Corporation, who have done their work solely on the principal of finding the best thing for the citizens in each matter, may be profitably contrasted with that of bodies which begin by enunciating a political or social theory, and then spend so much energy in arguing over it, that they have none left for applying it. Municipal collectivism may have achieved great things in Glasgow, but her Councillors have been col-

lectivists—as M. Jourdain talked prose—without knowing it, or at least without caring about it:

"Like some tall palm the mystic fabric sprung."

In the second place, it is gratifying to note how completely the Glasgow Corporation has fulfilled the conditions deduced by Mr. Chamberlain from his Birmingham experience.

"The municipality is ever present; it is the active centre of all public life of the town; its members are perpetually striving strenuously to promote the good, the happiness, and welfare of the whole population. . . . The City Council are the directors of a great co-operative undertaking, in which every citizen is a shareholder, and the dividens are payable in the better health, in the increased comfort, in the recreation, and in the happiness of the whole population."

This is surely a higher conception of the duty of a corporation than those have formed who attempt to bolster up a political or social theory by their municipal practice. It agrees with that of the Lord Provost of Glasgow, who says, for himself and those who share his authority:—

"It is a sacred charge entrusted to us, and we must neither be swayed by party nor party feeling, ... looking only to what is highest and best for the general welfare of the trusts committed to us, and how we may advance through our corporate work the prosperity of the city we love so well.

When that is the temper in which our municipal affairs are administered, there is no need to wonder that Glasgow is a model municipality, and has traveled a measurable distance on the road to become "the ideal city, in which a pleasant and healthy home is within the reach of every citizen."—*Garret Fisher in The Fortnightly Review.*

STEEL BUILDINGS.

THE advantages of this method of construction over any other is well exemphfied in the case of the Carter building, says the *Boston Commercial Bulletin*. It is stated with authority that the space saved over the old method is worth in rent about $12,000 per annum. Where land is very expensive or where lots are small the steel structure is particularly practical as it permits the saving of considerable interior space is always a matter of great importance.

In the modern steel structures masonry counts for very little, as the weight of the building is borne by columns. Such is the importance of the steel work that goes into these buildings that the greatest care is taken in its manufacture. The best architects and knowing builders see that every piece of steel is carefully tested and if not up to the standard it is thrown aside. The method of testing is a most severe one. The experts are hired and controlled generally by the architect at the cost of those who put up the building: the expert is stationed at the mill. Of such a nature is the work that two concerns in Pittsburgh are making a specialty of furnishing experts to supervise it and are doing the principal work of this character in the country.

It is required of these experts that they thoroughly test each piece of iron and steel made in the mill, or in other words, physical tests are made of each melt. The test specimens should fill the following requirements: Ultimate tensile strength, from 60,000 to 68,000 pounds per square inch; elastic limit, minimum, 35,000 pounds per square inch; elongation in 8 inches, minimum, 25 per cent; reduction in area, minimum, 40 per cent. In the bending test it is necessary that the iron or steel bend 180 degrees flat around a curve whose diameter equals the thickness of the specimens without a sign of a crack on the convex side. These tests alone signify the high standard of the material used, and when one considers how slender the modern steel frames are that hold up our buildings, the reason for this care can be easily understood. An expert also sees to it that properly marked pieces are put into the buildings, and those without proper marks are thrown aside. These experts are paid so much per ton, and make report to architects. Great care is taked that steel does not contain more than 1-10 of one per cent of phosphorus.

In steel frame construction the skeleton of the building is generally erected first, before the masonry is started. Under the old method the iron and masonry were used together in the building of each story. Where bolts were used largely in the last mentioned form, the steel sections are riveted almost wholly in the first. A steel thus riveted can be compared to an inverted bridge, for in fact the modern building is built on the bridge plan, and it is rivited in such a manner as to make it, to all intents and purposes, one piece of steel from top to bottom. Thus any strain which may be put upon the building will be shared by the structure as a whole and not confined to any one spot, as in the ordinary building.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

BUSINESS Building for H. J. Meyer, 931 and 933 Market street. Edw. Kollofrath, Architect.

COTTAGE and plans, Newsom Bros., Architects.

BOY'S Dormitory, Nevada State University, Reno, Nevada, Percy & Hamilton, Architects.

Chase (to dentist)—"I won't pay anything extra for gas. Just yank the tooth out even if it does hurt a little." Dentist—"I must say you are very plucky. Just let me see the tooth." Chase—"Oh, I haven't got any toothache; it's Mrs. Chase. She'll be here in a minute."—*Truth.*

Old De Whiskers—"I have had my life insured for $50,000 in your favor. Is there anything else I can do to please you?" Mrs. De Whiskers (his young wife)—"Nothing on earth, dear."—*Leslie's Weekly.*

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

THE · NEVADA · STATE · UNIVERSITY ··
BOYS · DORMITORY
·· RENO ·· NEVADA ··
PERCY · AND · HAMILTON · ARCHITECTS · SAN · FRANCISCO

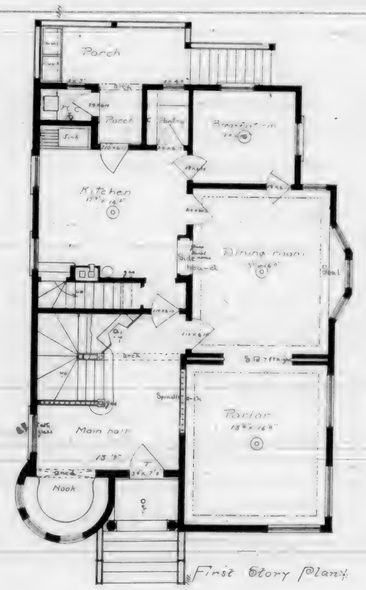
VOL. XVI Nº 6 JUNE 1895

BRITTON & REY PHOTO-LITH.

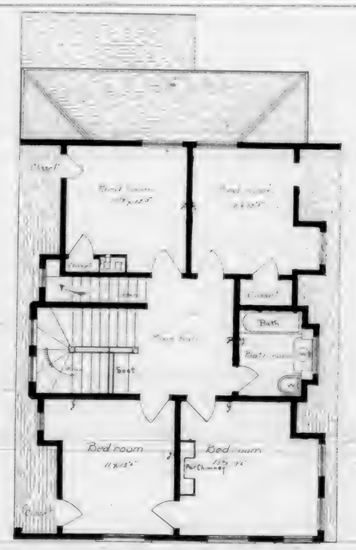
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

JOHN J. & THOMAS D. NEWSOM
ARCHITECTS.

Section Front Elevation Scale 1/4" = 1 inch



First Story Plan



½ Second Story Plan
Scale ⅛ = 1 inch

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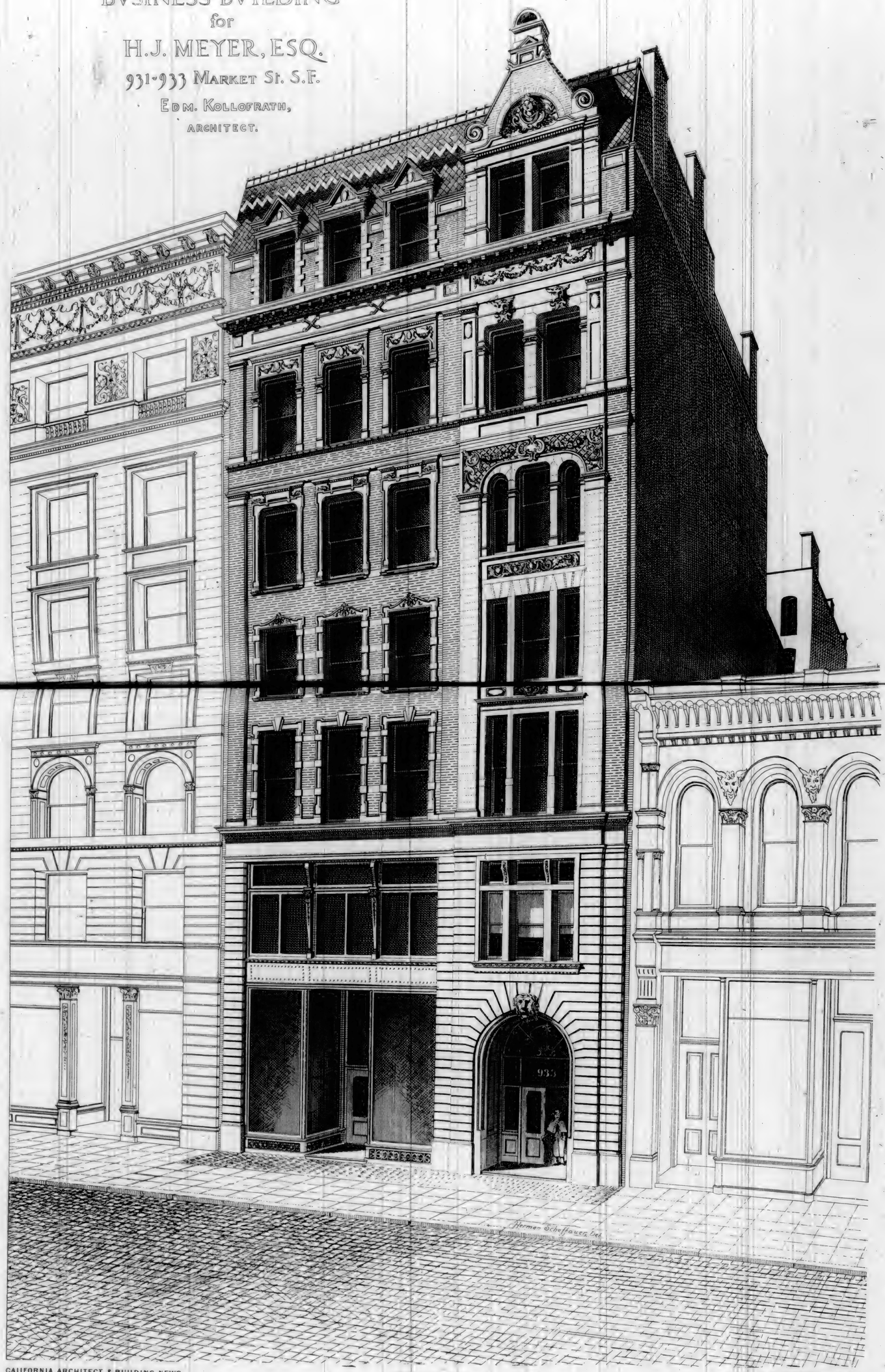
BVSINESS BVILDING
for
H.J. MEYER, ESQ.
931-933 MARKET ST. S.F.

EDM. KOLLOFRATH,
ARCHITECT.



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SAN FRANCISCO.

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ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

BOOKS AND PERIODICALS.

SAN FRANCISCO BAY AND VICINITY.—We are indebted to the Union Photo Engraving Company for a handsome map, published by the above company. We understand this map was modeled in clay, and is certainly a very creditable work that should adorn the walls of every business office in the city.

KIDDER'S ARCHITECTS and BUILDERS POCKET BOOK, published by John Wiley Sons, 53 East 10th street, New York, price $4.00. We know this is considered a valuable book by some one, as it was stolen from our letter box before it reached our desk.

THE FORTNIGHTLY REVIEW for June contains an interesting sketch of "Mr. Chamberlain's Municipal Career." Mr. Chamberlain, at present a member of Parliment from Birmingham, twenty years ago was Mayor of that city, when after much opposition his plan for the requirement of the gas works by the city corporation, as afterwards the water supply of the city, which proved a great benefit; both these projects proving a great success and giving a large revenue to the city, at the same time reducing the cost to the company about one-third in the cost of gas, while double the supply of water was furnished.

THE BROCHURE SERIES OF ARCHITECTURAL ILLUSTRATION. Published by Bates & Guild, 6 Beacon street, Boston, Mass. The Brochure Series in its present form is a continuation of the little occasional circular of the same name already well known to the architects of the country. The favor with which these were reviewed has induced the publishers to establish a regular monthly publication at the low price of fifty cents a year. In regard to the illustrations what the publishers claim is true, viz: "Photographs of the size here given cost from fifteen to fifty cents each . . but in the present form they cost but one-half cent each and for all practical purposes are quite as valuable as the originals."

We take pleasure in presenting our readers an illustration from MODERN OPERA HOUSES AND THEATRES, a work about to be published in London by Edwin O. Sachs, Architect F. S. S. and A. E. Woodrow, Architect A. R. I. B. A., Waterloo Place Pall Mall, S. W. Illustrated by a series of 220 plates from drawings prepared for the work. The design below is the entrance to "D'Oyly Cartes Opera House."

ENTRANCE TO D'OYLY CARTES OPERA HOUSE.

POINTS IN THE INSPECTION OF ELECTRIC PLANTS.

IN a recent paper on points in the inspection of electric plants, read before the Fire Underwriters' Association of the Pacific, Mr. G. P. Low made a number of excellent suggestions. One of his most pertinent remarks was the following: The greatest enemy to safety in wiring is moisture, and the only flexible and durable material having high insulating qualities that will withstand moisture is rubber, or the compounds allied to it. These should be used exclusively for the insulation of all inside wiring, despite their inflammability. Wires should never be permitted to touch anything save their insulating supports: hence it follows that insulating tubes or bushings must be used wherever wires pass through walls, floors or partitions of any description. The hazard of wood base cutouts, switches, etc., is so well understood, that there is no occasion for making further effort to show the necessity for invariably ordering their immediate removal.—*Architects' Electrical Bulletin.*

THE DISPOSAL OF DUST.

HITHERTO the disposal of house dust and general refuse has been a matter involving considerable difficulty for municipalities, and always, even under the most favorable circumstances, one of the most costly items presented to the ratepayers in the parish bill. Thanks, however, to the public spirit displayed by the majority of the members of the St. Pancras vestry, says *Lloyd's*, and the skill of their engineer and chief surveyor, Mr. W. Nisbet Blair, the difficulty has been conquered, and this great metropolitan parish is about to show, not only how to get rid of its refuse at the lowest possible cost, but how to make the heretofore despised waste of commercial utility. Two years ago it was seen that the success attending the establishment of the parochial electric lighting works would necessitate an early enlargement of the scheme, and it was then that Mr. Blair proposed to the electrical engineer, Professor Henry Robinson, a plan for burning refuse in special destructors and utilising the heat for the generation of the power required. Together the two gentlemen formulated a complete scheme, and laid it before the vestry, which for a long time refused to be convinced that it was feasible, but at length perceived its advantages, and having adopted it pushed on the work, which is now rapidly approaching completion.

The buildings cover an area of about two and a-half acres, running from Georgiana street to Pratt street at the back of Great College street, and facing the King's road. Their most conspicuous feature is the great chimney built by Messrs. Kelly Bros., of Liverpool, and stated to be one of the most perfect pieces of work in the kingdom. This gigantic shaft, octagonal in shape, and faced with ornamental lines of rost-red Ruabon brick, rises from a bed of concrete eight feet thick, and twelve yards square, to a hight of 231 feet, its altitude from the ground level being 207ft. 6in. At the base the brickwork has a thickness of five feet, and this is gradually reduced until immediately below the stone cap it is only 14 inches. The caps weighs no less than 32 tons 11 cwt., and the total weight of the whole shaft is 2,680 tons. A lining of fire-brick goes to a height of 78 feet, and between it and the main shaft is a three-inch cavity, to prevent the outer brickwork suffering damage by heat. When plumbed it was found to be less than a quarter of an inch out of the true perpendicular, an accuracy so rare as to be phenomenal. The cost of erection was 3,400*l*. The rest of the work has also been carried out in the same thorough fashion, and its details are full of novelty and interest. The refuse will be taken in through an entrance in Georgiana street, and there weighed and tipped into enormous tanks on each side of the main shed. To these tanks are attached hoppers, which convey the dust to furnaces underneath specially constructed to Mr. Blair's design, and regarded as the most approved type in existence.

The great feature of the whole scheme is its general automatic power, which enables it to deal with an enormous amount of matter, while necessitating but very little manual labour in proportion. This feature is specially exhibited in the furnaces, which are fitted with most ingenious appliances, the patent of Mr. Healey, an engineer, of 24 Queen Victoria street. The dust falls from the hoppers on to bars, arranged somewhat in the form of an enormous gridiron. Alternate bars move continuously up and down with an eccentric forward motion, carrying the refuse to the centre of the furnace. This motion is obtained by means of a special engine, the boiler of which is heated by the fumes of the burning dust which thus assists its own destruction. The same boiler also drives the blowing machinery, by which the draught is obtained to ensure combustion, a mortar mill, and a stone-breaking machine. There are eighteen furnaces in all, capable of consuming 1,260 tons of refuse per week, and leaving behind only a certain amount of "clinker," which is withdrawn every six hours, and which, owing to its properties of making an exceptionally tenacious mortar, will fetch by sale something like 1,000*l*. per anum. In the electric light department, which has been arranged by Prof. Robinson, there are at present three boilers—though provision has been made for six to meet future contingencies—which are heated by the destructors. The fiery gases from the burning refuse pass through a flue—the longest section of which is 60 feet—to the boiler-room, round the outer shell of the boilers, descending again to the main flue, then to the front of the boilers, through a heat economiser, and into the chimney. It is calculated that the destructors will produce 12,000 degrees of heat, giving from three to four hundred horse-power with the three boilers. A novel arrangement of balanced dampers governing the various flues enables the heating fumes from the furnaces to be turned off or on to any portion of the works, or sent direct to the chimney shaft by the mere turn of a lever. Much smoke will also be avoided by combustion chambers above each furnace, which becoming white hot, will destroy all sooty particles in the vapours before they pass into the flues. In case extra pressure should be put upon the lighting department the boilers have been so arranged that they may also be fired by hand or mechanical stokers with coal, so that steam may be quickly raised to meet any emergency. The present plant is designed to serve 10,000 lamps.

"Efficiency with economy" seems to be the motto of the designers of this great enterprise, and on every hand are arrangements for securing it. For instance, water which is supplied by meter to the works might have proved a serious item of expenditure, but is ingeniously prevented from becoming so. The waste steam from the boilers passes through a condenser and then through a water-softening apparatus to a vast tank below, which has a holding capacity of 115,000 gallons. The water at the top of the tank attains to a heat of about 110 degrees, and this is pumped up to a cooling apparatus at the top of the building, whence it returns and re-enters the tank at the bottom, thus being used over and over again.

At present the vestry pays 3s. 6d. per ton for the cartage of its refuse away. On this item of cartage alone there will at once be a saving of a shilling per ton, which, with the revenue derived from the sale of the "clinker" mortar, will show a total saving to the parish of close upon 5,000*l*. per annum. There will also be a great saving in coal at the Stanhope street Electric station, as the new station will switch on and take the entire dayload by means of the destructors alone. What this means will at once be apparent when it is stated that the Stanhope street plant already returns a profit of six per cent upon the original outlay of 100,000*l*., while the ratepayers have the advantage of better street lighting, the possession of a valuable asset, and the satisfaction of knowing that they have not had to pay a farthing for it. And better things are in prospect with the inauguration of this new scheme. The possibilities of the use of refuse as fuel are endless, and the initiative may be followed by results as valuable and amazing in the case of "dust" as they have been in that of the once equally-despised coal tar. Nothing can exceed the energy with which the scheme has been forwarded—Mr. Blair and Professor Robinson carefully overseeing the carrying out of the designs for which they are responsible in their several departments with the assistance of an able lieutenant in the person of Mr. G. A. Ellt, the clerk of the works.

LEGAL DECISIONS.

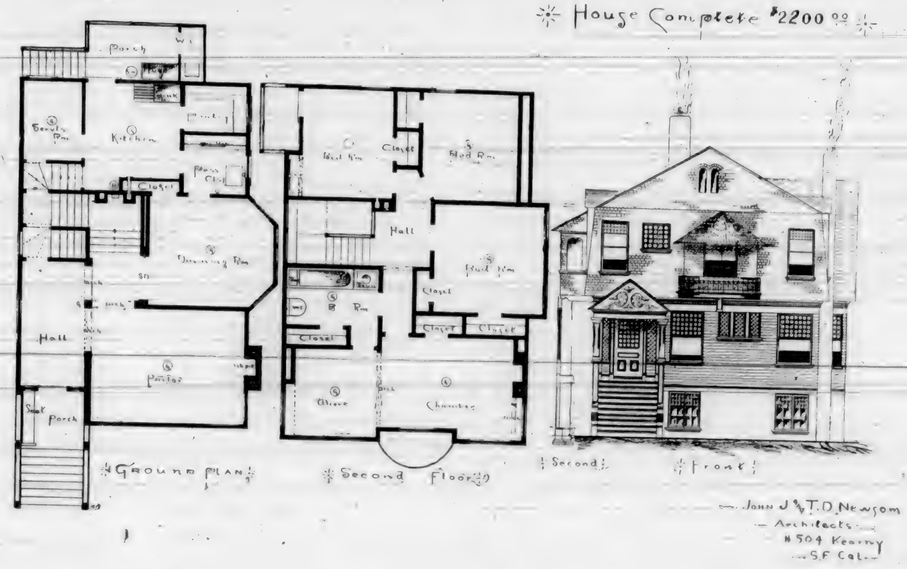
From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Payment of Contractor by Check.—Where parties upon being sued by a contractor alleged that they had given him a check in full payment of all claims under the contract, and a statement to that effect appeared on the face of the check; but the contractor denied that he had so accepted the check, and testified that the one who gave it to him told him that he would receive a further payment, and that the supervising architect advised its acceptance, saying that they would pay him in full afterwards, and this was corroborated by the architect, the Supreme Court of Washington held that the question of whether the check was given and accepted as full satisfaction was for the jury to determine.

Megrath v. Gilmore, 39 Pacific Reporter, 131.

Order by Contractor and Mechanics' Liens.—After a contractor had given a subcontractor an order on the owner, he abandoned the contract, and the owner completed the building under a clause authorizing him to do so in default of the contractor, and to deduct the cost of completion from any moneys due the contractor. The order had been presented prior to the filing of any liens. And the Supreme Court, 1st Department of New York held that such order was an assignment for so much of the balance due the contractor, after deducting for cost of completion, and was entitled to a preference over liens not filed until after its presentment.

Murry v. Micolino, 31 N. Y. S. Reporter, 1109.



Equitable Lien for Building Materials.—A contract for the purchase of materials to be used in the construction of a house, and notes given for the price, reserving title in the seller until payment, who is thus deprived of a lien under the statute, and also cut off from an action at law until the notes are due, creates an equitable lien on the house and lot which may be enforced in a court of equity.

Rose v. Perry, Supreme Ct. Ala., 16 So. Reporter, 915.

Enforcement of Mechanics' Lien.—Where the purchaser of land on which there is a mechanics' lien agrees to pay it off and save his grantor harmless as to same, the lien may be enforced against the land in the hands of the purchaser, without first exhausting the lienor's remedy against the grantor.

Cullers v. 1st. Nat. Bank, 9t. Civ. App. Tex. 29 S. W. Rep. 72.

Damages for Breach of Contract.—Where two parties have made a contract, which one of them has broken, the other must make reasonable exertions to render his injury as light as possible; and he cannot recover from the other damages which might have been avoided, had he performed such duty.

Uhlig v. Barnum, 61 N. W. Reporter, 749.

Presumption of Negligence in Erecting a Building.—Where a person lawfully upon a sidewalk is injured by material falling from a building in the course of erection, and it appears that the sidewalk was not covered or in any way guarded, it is sufficient to raise a presumption that the builder was negligent. This rule is necessary for the protection of those having occasion to use the sidewalks of public streets. The evidence as to how the accident occurred is most usually within the knowledge of the builder and his employes, and the person injured has no means of proving precisely how or why the accident occurred. The first warning of danger that he has is his injury, and then he has no opportunity to investigate the cause.

Dohn v. Dawson, Supreme Court, 1st Dept., 32 N. Y. S. Reporter, 59.

Statements in Mechanic's Liens.—Where a contractor constructs a building as one job, for an entire price, under a special contract which is not in writing, the petition to enforce his lien need not set out in detail the material furnished and the work performed.

Texas State Fair Ass'n v. Caruthers, Court Civ. App. Tex. 29 S. W. Reporter, 48.

BUSINESS MOSAICS.

Open Doors—"There are no secrets in making the best goods," is the title of the latest advertisement issued by Messrs. N. & G. Taylor Co., Manufacturers of American Tinplate, Philadelphia. This house has long been noted for its novelties in trade literature, but the present circular is something above the ordinary, and is quite original and striking. It conveys at once its meaning.

The reader is confronted with the massive double doors of a factory above which is the inscription "Open Doors", and underneath the words "There are no secrets in making the best goods." These two doors open at the touch, and bring immediately to view the interior of Messrs. N. & G. Taylor Co's. tinning-house. This is a re-produced photograph by the half-tone process, and shows in reality the workmen, the tinning stacks, tin racks, dusting boxes, etc. This Tinning House is the largest in the United States, and as the firm states, "with facilities to produce every grade of bright or roofing tin that is made."

Twenty-two tinning stacks are shown that give an output of over 9000 boxes weekly by day work alone, but the most important thing that strikes the eye, is a large hand printed in bright red, pointing to the tinning stacks at the right foreground of the picture to which is inscribed "The Genuine Taylor 'Old Style' brand is made in the stacks shown on the right; nôtice there is no shafting or machinery, the work being done entirely by hand, the same as in 1830, and here the "milk in the cocoanut" appears, and the whole import of the advertisement is quickiy apparent.

In these days of mysterious manufacturing of Roofing Tin, N. & G. Taylor Co. boldly step forward and frankly invite inspection of their product. "Our doors are open, there are no secrets in making the best goods." Their celebrated brand, the Genuine Taylor "Old Style" brand of Roofing Tin is made in tinning stacks that show no shafting machinery or rolls. The work is done entirely by hand, the same as in 1830. No acid flux is used to injure the black sheets, pure Palm Oil only being employed. These sheets are allowed to soak, and are literally "boiled in oil" before they receive their metal coatings. Made in this way, without any secrets, and with "Open Doors," Messrs. N. & G. Taylor Co. may well advertise the brand which they originated so many years ago, and which they to-day hold as without a peer above their competitors. Jealousy and competition may go far in these days of close rivalry, but their brand, the Genuine Taylor "Old Style" is to well known and established in the hands of honest roofers to need any further encomium to praise its worth and durability.

The Maid—"There were four flies on the cake you sold us yesterday." Confectioner (to clerk)—"Give the lady four raisins."—*Echo.*

San Francisco Gas Light Company, Gas Stove Department. By referring to page ii of this journal it will be seen by their advertisement that no charge is made for placing their stove, while the prices have been so much reduced for the stoves that there remains no excuse for the householder not to add this useful, and economical cooking arrangement to his outfit. We are aware among many who have not given much attention to the subject, that there is a false idea that gas costs too much when used for cooking purposes. If a little care is applied in its use, it will be found not only cheaper than the use of coal, but a great saving of time, with a great increase of comfort to the housekeeper. At 226 Post street, San Francisco, you can see the stoves and find out all about their use.

Whizly—"One swallow does not make a summer." Sizly—"No, but one grasshopper can make a spring."—*Phildelphia Inquirer.*

If you need water only when the wind blows; if you are satisfied to utilize but a small fraction of the water in your well, if you prefer heavy bills for repairs after each storm in winter, by all means use a windmill; but if you want water at any time, and up to the full capacity of your well, put in the Ajax Coal Oil Gas Engine, the latest thing in mechanics, an engine that uses common coal oil for fuel, and is built by the well known firm of Palmer & Rey, San Francisco, Cal.

"Was he very much cast down after he'd spoken to papa? "Yes. Three flights of stairs."—*Punch.*

P. & B. Paper is the only Building Paper manufactured on the Pacific Coast, and that, moreover, it is manufactured exclusively of materials produced on the Coast. Its quality has been so thoroughly demonstrated that it now almost exclusively used on all first-class buildings that are constructed in San Francisco and elsewhere. In price it is no higher than the ordinary grades of eastern Building Papers. We believe preference should be given to it on all occasions where Building Paper is specified, as every dollar spent for it means just so much more money kept in circulation at home. Their place of business is at 116 Battery street, San Francisco.

Did you make a hit with that red tennis blazer of yours down on the farm?" "Did I? It struck the bull's eye the first time I wore it."—*Indianapolis Journal.*

If you have to be tempted to take a bath, it is only necessary to look at the picture of a porcelain roll rim bath tub as shown on page v to make the temptation impossible to resist. The J. L. Mott Iron Works manufacture these, also every thing else in the way of perfect plumbing materials if you call upon Mr. M. S. James, their Pacific Coast Representative, room 35 Flood building, San Francisco, you can find out all about it.

As it appears to be fashionable to patronize home manufacture you have an opportunity to keep in fashion by ordering your plumbing from the establishment of Joseph Budde, 575 Mission street, San Francisco, if in want of sanitary closets you have your choice. Supreme, Pioneer, Ocean Spray, Cyclone Syphon Jet, Embo sed Front Washout Closets with Tank, Seat and Nickel-plate Flushing Pipe. They give the best satisfaction of all Washout Closets, on account of their Superior Tank and Workmanship. They have been adopted by the Palace, Miramar, Sutherland, Occidental and Grand Hotels, Mechanics' Institute, St. Mary's Hospital, and other prominent buildings of San Francisco.

CITY BUILDING NEWS.

Bryant Ave, near 21st. To build; owner, J. J. Noonan; contractor, T. C. Cochrane; signed, May 22; filed, May 25; cost $2525.

Brannan near Fourth. Granite work on church; owner, D. Nugent; architect, J. J. Clark; contractor, Thomas B. Roche; signed, June 3; filed, June 8; cost $3500.

Brannan near 4th. Slating, copper and iron work; owner, D. Nugent; architect, J. J. Clark; contractor, J. D. De Gear; signed, May 16; filed, May 22; cost $3344.

Bush near Baker. To build; owner, J. H. Hunt; architect, J. V. Hull; contractor, A. W. Goss; signed, May 17; filed, May 21; cost $1600.

Bush and Webster. Additions and alterations; owner and builder, Tim Sullivan; architect, A. J. Barnett; days' work; cost $2000.

Bush near Laguna. To build church; owner, Congregation Ohabai Phalome; architect, J. M. Lyons; contractor, Henry Rohling; signed, June 12; filed, June 14; cost $12,950.

Buchanan and Ivy. To build; owner, D. Edwards; contractors, Harrigan & Williams; signed, June 13; filed, June 13; cost $2250.

Buchanan near Hayes. To build; owner, Margaretta Johnson; architect, V. Monet; contractors, Harrigan & Williams; signed, May 8; filed, May 20; cost $3295.

Capp near 17th. To build; owner, Margaret I. McNamara; architect, F. B. Wood; contractor, Neil Molloy; signed, June 6; filed, June 8; cost $8215.

Caroline near Howard. Cottage; owner, George Heuston; day's work; cost $1000.

Church near 16th. To build; owner, L. Lame; architect, G. A. Berger; contractor, J. B. Pene; signed, May 16; filed, May 16; cost $2765.

Cherry near Sacramento. To build; owner, Mrs. C. H. Berlin; architect, Frank Mead; contractors, Dahlberg & Land; signed, May 16; filed, May 17; cost $2485.

Clement near California. To build; owner, C. B. Adams; contractor, A. J. Clunt; cost $3500.

Clement near 5th Ave. To build; owner, Geo. M. Coon; architect, A. J. Barnett; contractor, J. J. Manseau; signed, May 21; filed, May 21; cost $1400.

Clay and Locast. To build; owner, E. Dora Cutler; architects, Bugbee & Gash; contractor, D. B. Monroe; signed, May 23; filed, May 23; cost $1750.

Clementina near 4th. To build; owner, Mary Drummond; architect, H. Gellfuss; contractor, L. Cuneo; signed, May 24; filed, May 27; cost $3225.

Cliff House. Electric wiring, etc.; owner, Adolph Sutro; architects, Colley & Lemme; contractor, E. H. Frost; signed, June 1; filed, June 12; cost $1352.

Cliff House. Plumbing, marble floors, etc.; owner, Adolph Sutro; architect, Colley & Lemme; contractor, G. C. Sweeny; signed, June 1; filed, June 12; cost $2995.

Crant and Nye. Cottage; owner, Wm. McCall; architects, Shea & Shea; contractors, B. Duffey & Son; signed, June 7; filed, June 11; cost $1015.

Eddy near Broderick. Alterations add additions; owner, Otto Grundel; architects, Laist & Schwerdt; contractor, H. Behrens; signed, May 16; filed, May 18; cost $1675.

Eddy near Scott. To build; owner, Louis B. Hetty; contractor, J. J. Manseau; signed, June 14; filed, June 15; cost $3750.

Ellis near Franklin. To build; owner, Daniel Neill; architect, R. T. Clinch; contractor, P. J. Brophy; signed June 13; filed, June 13; cost $4780.

Ellis and Mason. Alterations; owner, Harriet McCarthy; architects, Shea & Shea; cost about $2000.

Ellis near Buchanan. To build; owner, Elizabeth Taylor; architect, C. R. Wilson; contractor, J. W. Saunders; signed, April 29; filed, May 15; cost $1465.

Eighteenth near Clover Ave. To build; owner, Johanna Sheehan; contractor, P. F. Lynch; signed, May 20; filed, May 21; cost $2311.

Erie near Howard. To build; owner, Margaret I. McNamara; architect, F. B. Wood; contractor, Neil Molloy; signed, June 6; filed, June 8; cost $2805.

First near Fulton. Additions; owner, H. Hunken; cost $1200.

Filbert near Jones. Alterations and additions; owner, Board of Education; architect, C. I. Havens; contractors, M. C. Brennan & Son; signed, June 6; filed, June 6; cost $15,000.

Filbert and Mason. To build; owner, Catherine Roeder; architects, Mooser & Son; contractor, L. W. Weismann; signed, May 25; filed, May 27; cost $2945.

Fillmore near McAllister; Cottage; owner, Mrs. Laura Albrecht; contractors, Marcuse & Remmel; signed, May 24; filed, June 15; cost $8800.

Fillmore near Grove. To build; owner, C. A. Worth; architects, McDougall & Son; signed, May 25; filed, May 25; cost $2785.

Fillmore near Grove. To build except plumbing; owner, August Jungblut; architects, Martens & Coffey; contractor, F. V. Steinman; signed, May 15; filed, May 21; cost $5200.

Folsom near 24th. Two two-story frames; owner, A. B. Broger; architects, Martens & Coffey; contractors, Williams & Foster; signed, May 25; filed, May 29; cost $7780.

Folsom near 24th. Plumbing; owner, A. B. Broger; architects, Martens & Coffey; contractors, Gullek & Wetherbee; cost $1050.

Folsom near 7th. Additions; owner, Mr. Murray; Carpenter, Mr. Allen; house raiser, A. T. Penchsky; cost $1000.

Folsom near 5th. Alterations and additions; owner, Mrs. Mary A. McHaffie; architect, T. H. Welsh; contractor, J. Hendry; signed, May 27; filed, May 28; cost $4550.

Folsom near 5th. Plumbing; owner, Mrs. Mary A. McHaffie; architect, T. J. Welsh; contractor, J. E. Britt; signed, May 22; filed, May 23; cost $1047.

Fourth near Howard. Excavation and concrete for four-story brick; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, Geo. Goodman; signed, May 17; filed, May 20; cost $1884.

Fourty-Eight Ave, near J. street. To build; owner, Wm. Gercke; builder, J. Heyman; cost $2500.

Geary near Octavia. Alterations and additions; owner, Mrs. Clemence Goldsmith; architects, Sailfield & Kohlberg; contractor, J. V. Hull; signed, June 3; filed, June 6; cost $4100.

Grove and Devisadero. To build; owner, Mrs. H. W. Armstrong; contractor, W. Little; signed, May 17; filed, May 21; cost $1195.

Grove near Laguna. Alterations and additions; owner, Mrs. C. W. Hall; architects, Hatherton & Ross; contractor, H. W. Pritchard; cost $1775.

Green near Mason. To build; owner, Herminie Donahue; architects, Shea & Shea; contractors, Magner & Gallagher; signed, May 13; filed, May 17; cost $4130.

Guerrero near Camp. To build; owner, Geo. Kennedy; architect, H. Gellfus contractors, Hood & Watson; signed, May 25; filed, May 27; cost $3335.

Harrison near 40th. To build; owner, J. McDermott; architect, M. J. Welsh; contractor, M. J. Feeley; filed, May 29, filed, May 29; cost $1787.50.

Hampshire and 18th. To build; owners, L. Kundson and Else Nassen; architect, L. Kundson; contractors, Wiegandt & Lassen; signed, May 24; filed, May 29; cost $1330.

Hartford near 19th. To build; owner, Michael Dolan; contractors, Marcuse & Remmel; signed, June 7; filed, June 8; cost $3000.

Haight and Scott. To build except plumbing and painting; owner, Chas. F. Doekring; architect, R. H. White; contractor, H. Behrens; signed, June 4; filed, June 8; cost $12,000.

Haight and Scott. Plumbing, etc., on three-story building; owner, Chas. F. Doekring; architect, R. H. White; contractor, E. J. Lawton; signed, June 4; filed, June 14; cost $1497.

Hoffman Ave, near 22d street. Cottage; owner, S. W. Boyston; builder, Heyman; cost $2500.

Hoffman Ave, near 23d street. Cottage; owner, A. Harge; contractor, J. Heyman; cost $1250.

Howard near 26th. To build; owner, Catherine Daley; contractor, John L. McLaughlin; signed, May 31; filed, May 31; cost $3400.

Howard, Second and Market. Excavating trenches; owner, Mutual Electrical Co.; contractor, A. E. Buckman; cost 24 cts. per lineal foot of trench, $23 each for large man holes, $19 for second size, $17 for third size.

Humboldt near Rhode Island. Cottage; owner, Mr. Hartmann; contractor, J. Bye; cost $600.

Jackson and Pierce. Concrete work, etc.; owner, Abbey M. Scott; architects, Coxhead & Coxhead; contractor, Rhody Ringrose; signed, May 4; filed, May 16; cost $4450.

Jackson and Pierce. To build; owner, Alice Scott; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, May 22; filed, May 23; cost $4709.

Jackson near Front. Additions and alterations; owner, Hildebrandt, Posner & Co.; architect, J. J. & T. D. Newsom; contractor, H. T. Brady; signed, May 16; filed, May 16; cost $1773.

Jackson near Mason. To build; owner, Geo. H. Jacot; architect, C. M. Rousseau contractor, R. J. Pavert; signed, May 16; filed, May 17; cost $4415.

Jackson near Franklin. Excavation and concrete; owner, Henry Sahleim; architects, Salfield & Kohlberg; contractor, Geo. Goodman; signed, May 16 filed, May 20; cost $1600.

Jackson near Franklin. Carpenter work; owner, Henn Sahleim; architects, Salfield & Kohlberg; contractor, John Furness; signed, May 16; filed, May 20; cost $13,980.

Jackson near Franklin. Plumbing, etc.; owner, Henry Sahleim; architects, Salfield & Kohlberg; contractors, Ickelheimer & Bro.; cost $3845.

Jackson near Franklin. Granite work, etc.; owner, Henry Sahleim; architects, Salfield & Kohlberg; contractor, James Rae; cost $3600.

Jackson near Franklin. Plastering; owner, Henry Sahlein; architects, Salfield & Kohlberg; contractor, C. C. Morehouse; cost 1335.

Jackson near Franklin. Painting; owner, Henry Sahlein; architects, Salfield & Kohlberg; contractors, M. J. & J. J. Donovan; cost $1595.

Jackson and Franklin. Brick work; owner, Henry Sahleim; architects, Salfield & Kohlberg; contractor, J. Wagner; cost $1275.

Jackson near Laurel. Three two-story frames; owner, Chas. Clark; contractor, Casper Zwierlein; signed, June 4; filed, June 7; cost $11,709.

Jessie near 13th. To build; owner and builder, L. B. Schmid; cost $3000.

Julian Ave. near 14th. To build; owner, Mrs. Bridget Costello; contractor, R. Fahy; signed, June 10; filed, June 10; cost $1700.

Lake Merced to the bluff on the Ocean Shore; owner, Spring Valley Water Works; architect, Engineer of S. V. W. W.; contractor, A. E. Buckman; cost $4.45 per Lineal foot about 3,100 ft.

Laguna and Jackson. Heating and ventilating; owner, W. F. Whittier; architect, E. R. Swain; contractor, W. W. Montague; signed, May 10; filed, May 10; cost $2865.

Leavenworth near Glover. To build; owner, Jas. Reilly; architect, T. J. Welsh; contractor, R. Fahy; signed, June 12; filed, June 13; cost $2745.

Market near Fifth. Low pressure steam heating; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, G. H. Tay & Co.; signed, May 29; filed, June 6; cost $10,190.

Market near 5th. Interior fire-proof partitions; owner, Parrott Estate; architect, Pissis & Moore; contractor, A. Wanner; signed, May 25; filed, May 26; cost 12½ cents per sq. foot.

Market near Montgomery. Alterations and additions; owners, Brown Bros. & Co.; architects, Kenitzer & Barth; contractor, I. L. Binet; signed, May 31; filed, June 1; cost $1840.

McAllister and Devisadero. To build; owner, J. J. McCarthy; Sec. Board City Hall Com.; architect, Clinton Day; cost about $75,000.

Mission near West Ave. To build; owner, C. A. Clinton; architects, Havens & Toepke; contractors, Holm & Sheibley; signed, June 11; filed, June 11; cost $2864.

Mission near Main. Carpenter, plumbing, painting, etc.; owners, H. Bird and C. H. Haughy; architects, Martens & Coffey; contractor, A. McElroy; signed, June 15; filed, June 17; cost $3014.50.

Mission near Hermann. Repairs; owner, Board of Education; architect, L. R. Townsend; contractors, Holm & Sheibley; signed, May 13; filed, May 21; cost $1181.

Mission near Hermann. Heating for school buildings; owner, Board of Education; contractor, Geo. H. Tay & Co.; cost $1560.

Mission near Hermann. Painting; owner, Board of Education; contractor, Wm. Linden; signed, May 4; filed, May 21; cost $1400.

Mission near 4th. Carpenter and mill work, etc. for brick building; owner, A Wilson; architect, J. R. Miller; contractor, Woodworth Wetered; signed, May 21; filed, May 22; cost $11,400.

Mississippi street No. 429. Frame building; owner, Ernest and Charlotte Johnson; architect, P. J. Ellis; contractors, Petterson & Person; signed, May 29; filed, May 24; cost $7368.

Nebraska and Yolo. To build; owner, John J. Hickey; contractor, John D. Coleman; signed, May 29; filed, May 31; cost $3150.

Noe and 14th. To build; owner, John C. Voose; architect, C. Geddes; contractor J. J. Walsh; signed, May 21; filed, May 27; cost $4000.

Nineteenth and Guerrero. Four three-story frames; owner and builder, F. Nelson; cost $16,000.

Pacific Ave. near Webster. To build; owner, Ray Wertheimer; architect, J. E. Krafft; contractors, Gardner & Boyder; signed, May 9; filed, May 16; cost $6838.

Pine near Taylor. Concrete and iron work for retaining wall; owner, E. B. Hindes; architect, S. G. Hindes; contractors, Cushing, Wetmore Co.; signed, May 24; filed, May 29; cost $1485.

Post near Franklin. Alterations and additions; owners, Simon Newman; architect, James E. Wolfe; contractor, John Furness; signed, June 1; filed, June 3; cost $1645.

Polk near Filbert. To build; owner, Luke Burk; contractor, C. C. Blair; cost $4300.

Polk and Vallejo. To build; owner, Martin Hink; architects, Martens & Coffey; contractor, J. Bucher; signed, June 10; filed, June 10; cost $5610.

Sanchez n ar 17th. To build; owner, Frank P. Currie; contractors, White Bros.; signed, May 17; filed, May 20; cost $1900.

San Jose Road near Brook street. To build; owners, John and Mary Lally; architect, R Rechenbach; contractor, J. Kenealy; signed, June 3; filed, June 3; cost $1530.

Scott near Turk. Alterations and additions; owner, Claus Wreden; architect, W. Winterhalter; contractor, A. B. Schmit; signed, May 16; filed, May 17; cost $2465.

Steiner and O'Farrell. To build except plumbing, owner, D. J. Murphy; architects, Townsend & Wyneken; contractor, W. H. Field; signed, May 18; filed, May 18; cost $10,470.

Steiner and O'Farrell. Plumbing; owner, D. J. Murphy; architects, Townsend & Wyneken; contractor, J. Doherty; signed, May 27; filed, May 28; cost $1525.

Stockton near Lombard. Additions and alterations; owner, Ole Jorgensen; architects, Martens & Coffey; contractor, H. Behrens; signed, May 27; filed, May 31; cost $2200.

Sixteenth near Guerrero. Additions and alterations; owner and builder, L. B. Schmid; cost $2000.

Taylor and Post. To build; owners, Executors Moffenhauer Estate; architect, T. J. Welsh; contractor, A. L. Campbell; signed, May 31; filed, June 3; cost $4700.

Tenth near Howard. To build; owner, Norwegian Danish Methodist Congregation; day's work; cost $4000.

Tenth Ave. near California. To build; owner, Chas. Braun; contractor, J. Heaney; signed, May 21; filed, May 25; cost $1325.

Tennessee street No. 1711. Additions; owner, Mr. Grady; carpenter, C. Holm; house raiser, A. L. Penensky; cost $3000.

Third Ave. and Clement street. To build; owner, Mattie de Curtoni; architect, Wm. Armitage; contractor, Carls Rossi; signed, May 24; filed, May 29; cost $2800.

Twenty-Third near Douglass. To build; owner, S. W. Royston; architects, Townsend & Wyneken; contractors, Williams & Foster; signed, May 21; filed, May 23; cost $1880.

Twenty-fourth near Alabama. To build; owner, Samuel McKee; architect, Evan Woods; contractors, Westerlund & Holmgren; signed, June 6; filed, June 7; cost $1705.

Twenty-first and Valencia. Additions; owner, J. Lennon; contractor, J. O'Sullivan; cost $2500.

Union near Powell. To build; owner, Jos. Garibaldi; architect, E. Depierre; contractor, D. Ross; signed, May 16; filed, May 18; cost $2877.

Utah near 24th. To build; owner, Martin Johnson; contractor, Thomas F. Michell; signed, June 15; filed, June 17; cost $1175.

Vallejo and Hodges Alley. To build; owners, A. Gotelli and A. Lucci; architect, E. Picasso; contractor, Felice Torigino; signed, May 31; filed, May 31; cost $1600.

Varennes near Union. To build; owner, Davis Garibaldi; contractor, L. Cuneo; signed, June 6; filed, June 6; cost $2580.

Vermont near Humboldt. Cottage; owner, L. Rendler; day's works; cost $1500.

Washington near Walnut. To build; owner, W. S. Gage; architect, H. Burns; contractor, F. A. Williams; signed, May 15; filed, May 16; cost $7268.

Washington near Walnut. Plumbing, etc.; owner, W. T. Gage; architect, H. Burns; contractors, W. S. Snook & Son; signed, May 15; filed, May 16; cost $1730.

Waller street No. 309. Alterations and additions; owner, Mrs. Margaret Hooper; architect, E. C. McManus; contractor, P. J. Brophy; signed, April 4; filed, May 15; cost $1710.

Wisconsin near Napa. Cottage; owner, C. Mackentosh; contractor, J. Young; cost $1200.

York near 21st. To build; owner and builder, Wm. Hebbing; cost $8000.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THE Manufacturers and Producers Association of the Pacific Coast is doing good work in calling attention to the excellence of California manufactures and work and the undesirability of patronizing goods and work from elsewhere. And in line with the argument let us draw attention to the CALIFORNIA ARCHITECT AND BUILDING NEWS, the representative of Pacific Coast Architects. This should be certainly patronized and helped by the architects, builders and owners of this coast. It now stands on a par with any other publication of its class and price in the world—and in the general return of sense in the matter of trading with our neighbors we believe that the CALIFORNIA ARCHITECT AND BUILDING NEWS will not be forgotten either by California advertisers or by subscribers.

IT goes without saying that the proper bringing up of the rising generation is one of the most important objects before us, and to see that it is properly housed during the time that it is occupied in common education is one of the duties of the commonwealth.

To judge from the Report of the Chairman of the Building Committee of the Board of Education of San Francisco, this city is not quite up to date in this regard. From it we find that taking the school buildings generally they are not in the best condition for a proper æsthetic effect upon the pupils studying therein. Twenty-eight buildings have dirty walls and need whitening or rather tinting, as white walls should not on any consideration be allowed in a school room. Thirty-nine need painting. The playgrounds and yards

are just as necessary to be kept in good order as the buildings themselves. We find, however, that forty-two require their yards bitumenized; planking should no more be used, both on account of decay and for unevenness of surface; not good for running around on.

Proper privacy and clean sanitary appliances in the latrines are other things that tend to rear healthy and modest children—therefore crockery troughs instead of the present thirty-three wooden asphatum lined ones are required and proper partitions, etc. Again, an untidy environment to a school house has its bad effect on the characters of the young ones, therefore nine fences and gates ought to be repaired.

Next, there is no doubt but that over-crowdedness is detrimental to a proper teaching and quite a number of the school buildings are not large enough and require class rooms, principal's rooms, librarys, etc., added thereto.

Twenty-eight buildings require their roofs repaired and nine new floors. In one school the sash and glass are so bad that it is necessary to replace them—the Lincoln School needs repairs, but really a new building should be put up on the site as the present one is dark, gloomy, antiquated and a disgrace to the city. Another building according to the report is in a "dangerous condition and not fit for habitation" and the old Polytechnic School is "in a very bad condition" another is "in a generally dilapidated condition" and so on.

It seems to us good policy to spend money on works which will tend to prevent crime by aiding in rearing better young people, in fact more reasonable than to spend money in finding out, hunting up and punishing crime when it is committed; less police—more proper education.

ROADWAYS AND STREET PAVEMENTS.

OUR people begin to realize the importance of excellent roads and their value to all of our industries. The saving made on the ware and tear of our horses and vehicles, also that made by business men in the difference in time it takes to ride over a good and a poor road, and the pleasure to be derived from riding over a good road, are all points which show the need of having first-class roads.

The increased value of property generally amounts to more than the cost of building a good substantial road, and then, too, they are a standing advertisement for the community in which they are built, making the city or town a desirable one in which to reside, helping thus to increase the population and taxable property. A stranger's impression of a city or town depends largely upon the ease with which he can go from place to place in the transaction of business, or in the pursuit of pleasure. The cost of wagon transportation over the roads of France does not exceed one-third the like expense in America, it being common in rural districts to haul three tons, and in the cities from three to five tons net freight with one horse. These and many more facts the people are weighing, and the more they investigate the better it is for the whole country. This movement has already reached such dimensions that it is being agitated all over the United States, and the people are not going to allow it to stop.

Byrne says countries inhabited by the least civilized people, whose wants are supplied by nature in the immediate vicinity of their dwellings, are almost destitute of roads; hence it has come to be said that roads are the physical symbol by which to measure the progress of any age or people. If the community is stagnant the condition of the roads will indicate the fact; if they have no roads they are savages. There are many methods used in the construction of broken stone roads, and a variety of materials used for street paving, of which I will treat briefly for want of time.

As near as can be ascertained the first broken stone pavements were constructed in France in 1764. In the early part of the present century two systems were introduced into England, the first by Telford and the second by MacAdam. The name of Telford is associated with rough stone foundation. MacAdam disregarded this foundation, contending that the subsoil, however bad, would carry any weight, if made dry by drainage, and kept dry by an impervious covering. The names of both have ever since been associated with the class of roads which each favored, as well as with roads on which all their precepts have been disregarded. MacAdam omitted the foundation of large stones, claiming that it was not only useless but injurious. He was the pioneer of good roads in England, and from his name the word macadamized is derived.

Since the time of Telford and MacAdam the art of road making has been greatly improved by the introduction of rollers and crushing machines. The modern road builder endeavors to adapt himself to circumstances; he must secure a good foundation, either with the natural foundation or with the use of gravel, sand or Telford base, for without this the most expensively-built road will fail. It will not stay in position any more than a building will without a good foundation. Good drainage must be secured, the stone should be properly screened, the largest to pass a two and one-half-inch ring, the second size a one and three-quarter-inch, the third a one and one-quarter-inch, and the fourth a one-half-inch ring. The foundation should be brought to a proper grade and crown, and thoroughly rolled. The depth of stone should be varied according to the foundation and the traffic expected. If a good foundation four inches is enough; if a poor foundation twelve inches might be needed. The crushed stone should be spread in light, uniform layers, well rolled, commencing at the bottom with the largest stone, and using the smallest size for the finish. Nothing but the best quality of stone should be used; for this purpose trap rock is the most desirable, and will wear more uniformly, thus keeping a smoother surface than an inferior stone. We cannot afford to use an inferior quality of stone; it is economy to use the best.

Macadamized streets are the cheapest to build, and give good satisfaction when placed under the right conditions, namely, when the traffic is not two heavy and not confined to a narrow space. For instance, one street is always in good condition, as it has an average traffic which is distributed over the entire surface, while all of the macadamized streets in the business portion of the city, where the traffic is too heavy, are often in bad condition, and should be paved. This class of roads cost from 50 cents to $1 per square yard, varying according to the cost of stone, length of haul, depth of stone and cost of foundation. The cost of maintenance with a moderate traffic, of a thirty-foot roadway, is .013 per square yard. With a heavy traffic, where macadam cannot

be used with economy, it costs from .03 to .25 per square yard. The date of the first introduction of street pavements cannot be determined with certainty. Livy informs us that in the year 584 (about 170 years B. C.) the Censors caused the streets of Rome to be paved from Ox market to the temple of Venus. Streets paved with lava, having deep ruts worn by the chariots and raised banks on each side for foot passengers, are found at Pompeii. The first act for paving and improving the city of London was passed in 1532. Orders were issued by the government for pavements in Paris in the year 1184. In the United States, Boston appears to have been the first city to pave its streets. Drake says the paving of the public streets began very early and was made important about 1700.

STONE PAVEMENTS.

Stone in a variety of forms has been used for paving material for 2,500 years or more. It was used by the Romans in the form of large irregularly-shaped blocks; these blocks being laid on a massive concrete foundation. For solidity and durability this form is unequaled. Boston, Mass., it is recorded, had its streets paved with pebbles as early as 1663, and cobble-stone pavements were introduced into Philadelphia in the year 1718. Cobble stones bedded in sand are very cheap, but their roughness requires a large amount of power and energy to be expended in order to move a load over them; besides they do not make a good pavement, as they are so irregularly shaped that it is almost to hold them in place. They are difficult to keep clean and very unpleasant to ride over. In Brussels this form of pavement was displaced by small cubical blocks of stone, and these were used in Paris and finally came to the United States.

GRANITE BLOCKS.

Granite blocks were of large dimensions. The present granite block is of a narrow, rectangular shape, proportioned and laid on a hydraulic cement base, the joints filled with small gravel stones and paving cement. This method is practically a return to the Roman system, only with blocks of smaller dimensions. Without a doubt this form of pavement is the most durable for roadways which are subjected to a very heavy traffic. If a poor quality of stone is used, for instance those that polish, the surface becomes slippery quickly and is rendered unsafe for travel. In some cities Medina stone is used. It is not so lasting as granite, but is quite durable, less noisy and does not become slippery. Buffalo, N. Y., Cleveland and Columbus, O., afford the best examples of this class of pavement. Limestone block pavements were tried in Kansas City, but in a year or two they wore unevenly and split by the action of frost. Granite block pavements cost from $2.50 on sand foundations, with joints filled with sand, to $4.80 with concrete base and joints filled with paving cement. No satisfactory figures can be obtained for the cost of maintaining granite block pavements in America.

BRICK.

Brick is one of the oldest materials used for paving, having been used upwards of a hundred years in the Netherlands. Pavements laid fifty years ago are still in good condition. There are several brick pavements in the United States, from twelve to twenty-two years old, which are still in good condition. The general experience with this class of pavements is that is furnishes a smooth and durable surface, well adapted to moderate traffic. Many failures have occurred with this class of pavements, owing to poor foundation, defective construction and poor material. Whenever proper materials have been used, good foundation laid, with proper construction, excellent results have been obtained. Amsterdam is paved almost entirely with brick, and it is successfully used in Rotterdam, which is a commercial city. There are many ways of laying a brick pavement. A sand foundation, with joints filled with sand, cost $1.50 per square yard; laid with two courses of brick, one flatwise, with a cushion of sand and a wearing surface set on edge, with joints filled with Portland cement—this costs $2.06 per square yard. If laid on concrete base, with joints filled with paving pitch it costs $2.73 per square yard.

Bricks made from blast furnace slag have been tried, and they have been found to be durable, but soon wear slippery. Ordinary building bricks saturated with gas tar have been experimented with in Nashville, Tenn., but the results were not satisfactory. The advantages of brick pavements are, ease of traction, and good foothold for horses; yield but little dust and mud; are adapted to all grades, and are very easily repaired and kept clean; but slightly absorbent; pleasing to the eye and quickly laid. The principal defects of brick pavements arise from lack of uniformity in the quality of the bricks, and the liability of using bricks too soft which crumble under the action of traffic and frost.

ASPHALT.

In Paris asphalt was first employed for street paving in 1838, though it was not used to any extent until 1854. London introduced it in the year 1869, and it has since then been used extensively throughout Europe and in different sections of this country during the past few years. The difference between the asphalt pavements of Europe and those of America is due to the character of the materials. The former are composed of limestone rock which is naturally impregnated with bitumen, while the latter are composed of an artificial mixture of bitumen, limestone and sand. Many deposits of bituminous rock are to be found in the United States; they have been used to a limited extent. The Island of Trinidad continues to be the source of supply for the United States. The cost of construction varies from $2.50 to $4.50 per square yard. Cost of maintenance in America is placed at an average of 10 cents per square yard per annum; in London for an average of fifteen years at 21 cents per square yard. In Paris it costs about 40 cents per square yard per annum to maintain it, including the charge for renewing one-fifteenth part of the surface every year. In this country the cost of maintaining asphalt pavements is usually included in the original contract for construction for a stated term of years, and after that any repairs that are needed are made by the asphalt companies at the expense of the city, as it calls for expert work and an expensive plant.

The advantages of asphalt pavements are, that they are comparatively noiseless under traffic, are pleasing to the eye and are easily cleaned. The defects of the same pavements are, that they are slippery under certain conditions of the atmosphere, they will not stand constant moisture, and will disintegrate if excessively sprinkled. It is not adapted to grades steeper than 2½ per cent. Colonel Haywood states that in his opinion asphalt will last without

extensive repairs from four to six years, and that in the course of ten years the entire surface will have been renewed.

WOOD.

Wood pavements have been used extensively in Europe and the United States, though with different results in both countries. The experience in this country has been with but few exceptions unsatisfactory, while in Europe, especially in London, wood pavements have been used successfully and are quite popular, due probably to the thorough manner in which they were laid and the careful maintenance. The shoeing of horses and the width of tires has something to do with the wear of pavements no doubt. In some portions of Europe this matter is regulated by law, and should be in the United States. It is claimed that wood pavements absorb the filth of the street, and are very unhealthy.

DISTILLATE PAVEMENTS.

During the years 1886 and 1887 many coal-tar or distillate pavements were laid in Washington, D. C., but many of them proved unreliable. In some towns in England coal-tar macadamized roadways are made. This consists in mixing ordinary coal tar with crushed stone; it should be borne in mind that the stone used must be limestone or some soft stone, otherwise it will not wear down evenly with the tar, thus producing a lumpy surface. Concrete macadam, introduced by Mr. Mitchell, London, Eng., is composed of broken stone, sand and Portland cement, so proportioned that the space, otherwise vacant, is filled with an admixture of Portland cement. Mr. Mitchell states that the first piece of concrete road was laid in Inverness, in the approach to the freight station, in 1870. After the road had been used four and one-half years the wear was hardly perceptible.

GRAVEL ROADS.

We have miles of gravel roads in my city that are very fine in dry weather, but a few minutes rain makes the worst kind of red mud. On residential streets where there is light traffic and sand foundation it makes a fair surface, but on most of the streets where this material is in use, it would be economy to employ some other material. We have often been told of the excellent roads of Europe, which are under the government's control. On these roads a force of skilled men are continually at work making repairs, and any defect, however slight, is immediately repaired. It is not considered that the necessity for continual repairs is an evidence of poor workmanship in the original construction, but rather that an earnest endeavor is being made to keep the roadway in perfect repair. This prompt and constant repairing explains the superior condition of the roadways of Europe.

The men who have these repairs in charge are men skilled in this kind of work, and hold their positions because they are thus qualified. Politics has nothing to do with them as it has in this country. These men are removed for cause only. It takes years to teach men the art of road building and the proper method to be employed in making repairs. Generally in this country cities and towns pay for educating the men in charge of their roads and then politics removes them, but time will make this matter right. It will certainly be made right when people find that it is the only way to have good roads. All of us have much to learn in regard to road building. To a very large extent it is in an experimental stage in this country at the present time, and without doubt millions of dollars will be foolishly expended on worthless pavements. This waste of time and money could be saved to a large extent if every person who has a theory or scheme of his own would consult with men thoroughly informed on the subject.

For instance in this state (Massachusetts) we have a Highway Commission composed of three men appointed by the governor, and who are in touch with the most experienced road builders in the world. Fortunately for our state we have on this commission very bright, intelligent men who have the cause at heart. These men are workers, and are not afraid to go into the field themselves. They are well informed on the construction and maintenance of our roadways, and are in every way qualified to give sound, practical advice, and the officials of our cities and towns could not do better than to avail themselves of their advice and experience. When the people become throughly aroused on this subject they will demand and finally secure the best possible methods of construction and maintenance.

Aside from the facts quoted from well known authors I am indebted for much information to the kindness of many of our citizens who have traveled in this country and in Europe.—*William L. Dickinson in Stone.*

WHAT TO EXHIBIT IN MEXICO.

BY OTTO SCHROEDER.

AFTER fifty years of revolutions and political changes, Mexico is now enjoying peace and prosperity. The administration of General Diaz has incited confidence in Mexico's finances at home and abroad. Industry and Commerce have considerably developed during the last twenty years, export and import have doubled. The value of the exports from Mexico for the financial year 1891 was more than $63,000,000 and of the imports more than $50,000,000. Of the total exports for 1892 the United States received $50,000,000, Great Britain $15,000,000, France $5,000,000, Germany $4,000,000. There are more than 7000 miles of railroad open to traffic. The telegraph lines have a total length of 38,000 miles. The postoffice receipts of the Mexican Government were in 1891–92 $1,142,182. Navigation is practised on lakes and rivers at the coasts and across the Ocean. Mexico possesses a merchant navy of 1268 vessels and there are more than 30 excellent harbors.

Mexico's Trade with the United States increases more rapidly than it does with any other country.

In 1888–1889 Mexico received the following articles of import:

Cotton goods from United States, England, France, Germany	$7,534,089
Comestibles from United States, Spain, Italy	4,893,706
Drugs from United States, France, Germany	1,697,830
Woolen goods, from France, England, United States, Germany	1,613,186
Iron and steel ware from United States, England, Germany, France	1,510,310
Paper from United States, Spain, France, Germany, Italy	1,352,143
Silk goods, pure and mixed, from France	788,581
Linen and hemp goods, from England, France	673,029
Hardware from United States, Germany, France	658,854
Glass and porcelain from United States, France, Germany	607,727
Copper ware from United States, France, Germany	593,167
Machines, from United States	539,582
Furs from United States	414,100
Gold ware, silver ware, platin ware from United States	320,844
Arms and munition from United States	280,453
Carriages from United States	213,796
Stone and earthen ware from United States	81,816
Lead ware, tin ware, zinc ware from United States	75,069

This list shows the American exporters what they may

with profit exhibit at the International Fair, which will be inaugurated at the City of Mexico on the 2d day of April 1896. The American manufacturers must make a display of their electrical and steam machinery, hardware and tools, plated ware and cutlery, agricultural implements, rails and locomotives, well boring apparatus and pumps, pianos, and organs, railroad cars for passengers and freight, mining apparatus, silk and woolen goods, printing presses and type, books and paper, maps and globes, slates and lithographic stones, canned meats and preserves, clocks and watches, quicksilver and petroleum and a hundred other articles which Mexico does not produce herself.

Nobody ought to miss this golden opportunity. Our American Industry cannot afford to stay away from the Mexican Exposition as Spain and France, Germany and Italy are already making strong efforts for a great participation.

"The Federal Government of Mexico has liberally consented to admitting free of duties all materials and machinery to be used in the construction of any buildings on the Exposition grounds, while all goods and articles imported from abroad for the Exposition will be treated by the Mexican Government as imported "in bond" and import duties will have to be paid only in case of sale.

The exhibitors and concessionaires—those who sell foreign articles, or have hotels, restaurants, barrooms, theaters, circuses, and other shows in the foreign section, are to be exempt from all federal taxes.

A Lottery will be conducted in such a way that all prizes are to be bought from exhibitors.

The railway and steamship companies will carry exposition freight for considerably less than the regular tariff.

It is proposed to offer special premiums for the best model houses of different countries, said houses to be entirely constructed of material produced in the country which they represent.

Prizes will also be offered for large hotels which are to be erected on the American and European plans, an inducement which will certainly incite the competition of prominent architects and builders of different countries.

Concessions will be granted by special contract for the sale of souvenirs and novelties of every kind.

So it is of vital interest for the American architects and builders, the cabinet and upholstery branch, the carpet trade, the carriage and harness branch, the clothing and furnishing line, the crockery and glass dealers, the drug and paint manufacturers, the dry goods men, the iron and hardware line, the type foundries, the sewing machine makers, the slate trade, the manufacturers of textile goods, the jewelers, to exhibit at the City of Mexico.

To encourage immigration the Mexican Government has granted free introduction of constructing and repairing materials for tramways for a period of thirty years, it will give concessions for hotels free from taxes for a period of ten years and will allow a free introduction of all furniture, crockery, glassware, etc., to be used in said hotels. It has promised to a Colonization Land Co., which is now being organized at Chicago, the special concessions of free introduction of houses, implements, etc., and the liberation from paying taxes for a period of ten years.

There is no doubt, that Mexico's population will in the near future increase in the most surprising manner, and there will be a vast field for American enterprise and business speculation.

The visitors of the Exposition of 1896 will to a great extent consist of Spanish talking people. Mexico and Costa-Rica, Cuba and Guatemala, Honduras and Porto-Rico, the Argentine Republic and Brazil, Chile and Colombia, Paraguay and Peru, Ecuador and Venezuela will be represented by thousands of people, who will investigate and compare the exhibits of all nations and of all individual firms and who will form their opinions according to their experience. To exhibit in Mexico means to make a display of samples to all Latin-American States. Each American exhibit will be an advertisement for American Industry. No American firm ought to neglect this great opportunity.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IT will be seen, that though the number of buildings has slighly reduced, the total amount for the first six months of 1895 show an increase.

FOR FIRST SIX MONTHS.—1895.

1895	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	2	3	$ 50,025	31	33	$ 148,880	4	4	$ 20,847	37	40	$ 219,752
Feb'ry ...	7	9	59,336	38	42	122,880	6	6	12,071	51	57	194,287
March ...	6	9	170,489	76	81	208,081	8	11	17,418	90	101	395,988
April.....	7	9	105,333	57	69	274,080	24	24	87,411	88	102	466,824
May.....	3	7	30,045	85	90	395,037	19	19	59,023	107	116	483,053
June.....	2	5	74,775	67	85	288,791	11	11	21,032	80	101	385,178
Total	27	42	$ 496,001	354	400	$1,435,749	72	75	$193,332	453	517	$2,125,082

To this amount should be added the further estimated sum of $500,000 where costs have not been given, which would make the total for the first six months, $2,625,082.

FOR FIRST SIX MONTHS.—1894.

1894	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	1	5	$ 64,867	27	37	$ 124,620	19	29	$ 46,046	47	71	$ 235,533
Feb'ry ...	2	6	36,466	29	31	96,975	7	12	17,432	31	49	150,895
March ...	1	3	11,225	56	60	386,470	14	17	31,501	71	80	441,286
April.....	7	15	165,437	121	144	289,214	16	21	33,604	144	180	488,255
May.....	5	12	126,091	35	46	199,653	16	16	50,281	56	74	376,025
June.....	7	11	74,704	40	46	152,992	13	15	39,166	60	70	266,862
Total	23	52	$ 479,360	301	364	$1,258,924	85	108	$221,140	409	524	$1,959,434

The business of the first six months for several years is shown by the following table.

1885—754	contracts.....	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858
1891—583	"	" 3,916,973
1892—411	"	" 2,942,496
1893—475	"	" 3,024,498
1894—524	"	" 2,456,424
1895—517	"	" 2,625,082

AN ALMSHOUSE INSCRIPTION.

IN front of some almshouses at Leominster, England, there is the quaint stone figure of a man holding a hatchet in his hand, and underneath there is this inscription:—

He who gives his money before he is dead
May take up a hatchet and cut off his head.

The story current in the neighborhood says that the founder of these almshouses came to want through being involved in building expenses for them, and actually had to seek refuge within their walls as one of the inmates.—*Exchange.*

GAS AND GAS LIGHTING.

SINCE Mr. W. Murdock who lighted his premises in Cornwell with coal gas in 1792, the increased use of this gas has been enormous, as the many millions of tons of coal consumed in its manufacture prove, but even in the early days of its use there were found many old fogies who promised all kind of evil would follow if the use of gas was allowed. More than one hundred years have passed and we find the old fogy still busy at the same old cry of danger in its use to the health of the user; thousands of those at the present time know better by their personal experience and enjoy the luxury of cooking and heating their rooms by its use; the old fogy still lives and croaks however.

THE NEW FRENCH HOSPITAL.

SUNDAY, June 30th, the French Hospital was open to the public for inspection. We think no one of the many thousands that passed through the gates on that day but felt fully rewarded for the trouble of a trip to Richmond. From the reception room through the various wards, into the operating room and last though not least to the famous kitchen with its magnificent range (we say magnificent because it struck us that way upon the first glance), visitors were allowed perfect freedom to inspect and admire the various departments, and many comments were heard upon all sides upon the thoughtful care that must have been displayed by the designers and directors of this most benificial and useful addition to our city, with the thought that generations yet unborn will rise to repeat the praise of the gentlemen who with such untiring perseverance have provided such a blessing to the community.

Each visitor was presented with a beautiful souvenir programme of the New French Hospital containing a history of the French Mutual Benevolent Society, the various illustrations in this souvenir give excellent views of the new buildings as seen from Point Lobos avenue, from 5th avenue as well as interior of main court and various other interior views of the wards and other rooms of interest.

Our space will not permit us to do justice to this subject, but we cannot refrain from giving some general figures to give the reader an idea of the size of this ornamental building erected and dedicated for the welfare of our citizens.

This New French Hospital, occupying a beautiful site 240 by 600 feet on Point Lobos avenue between 5th and 6th avenues and only a few minutes walk from Golden Gate Park is something to be proud of and every one having an interest in the health and welfare of our city will rejoice at the successful completion of such a blessing to humanity.

BOSTON'S PUBLIC LIBRARY.

THE completion of the Boston Public Library, the erection of which has caused a good deal of discussion in architectural journals, though the general opinion appears to be that notwithstanding a Boston architect was not employed as its designer, the building has much to admire.

The American Architect and Building News writing in regard to the cost of the building and expense of running the Library make the startling announcement that it would be cheaper to purchase and give outright the book required, than to lend it from the Library.

It may not be uninteresting to note the commencement of the Boston Public Library as an illustration of what can be accomplished in a community where public interest is once aroused to act for the good of the public.

At the time Mr. Bigelow was Mayor of Boston, Edward Everett, then President of Harvard University, or to write more exactly, University of Cambridge, wrote to Mr. Bigelow, as Mayor of Boston, that if the city would provide a room for the purpose he would donate a thousand volumes as a commencement for a Public Library; at the next meeting of the Aldermen, Mayor Bigelow announced that he would donate a thousand dollars for the commencement of a Public Library. Shortly after this a room was provided in the City Hall and Mr. Everett's books were sent to that place, from that small beginning the present establishment has been founded.

To Mr. George Ticknor of Boston however, perhaps the credit should be given of making the Library a popular institution, Mr. Ticknor's idea was to have a large number of duplicates purchased of any popular work that less delay might be caused in obtaining the book required for the moment.

This plan was adopted with some hesitation on the part of the trustees and from that time the Library became a Boston institution in touch with the public, therefore a success.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

ROBERT Clark Testimonial Medal Competition, Art Club House, submitted by Renaissance. T. O'Connor. *del & invt.* Elevation and Perspective.

STUDY for Town Hall by D. J. Patterson.

TENDERS TO BE RECEIVED.

Office of the Custodian, U. S. Quarantine Station at Angel Island, San Francisco, California, July 9, 1895. Sealed proposals will be received at this office until 12 o'clock M. on the 31st day of July, 1895, and opened immediately thereafter, for all the labor and materials required for the new bulkhead, etc., at the above named station, in accordance with the drawing and specification, copies of which may be had at this office.

Each bid must be accompanied by a certified check for a sum not less than two per cent of the amount of the proposal. The right is reserved to reject any or all bids, and to waive any defect or informality in any bid if it be deemed in the interest of the Government to do so. Proposals received after the time stated for opening will be returned to the bidders. Proposals must be enclosed in envelopes, sealed and marked, "Proposals for New Bulkhead, etc., at the U. S. Quarantine Station, Angel Island, San Francisco, California," and addressed to

DR. D. A. CARMICHAEL,
Custodian.

MDCCCXXXIV

ROBERT CLARK TESTIMONIAL MEDAL COMPETITION

T. O. CONNOR - 95

SUBMITTED BY

RENAISSANCE

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL. XVI Nº 7 JULY 1895.

ROBERT CLARK TESTIMONIAL MEDAL COMPETITION
ART CLUB HOUSE

T. O. CONNOR - 95

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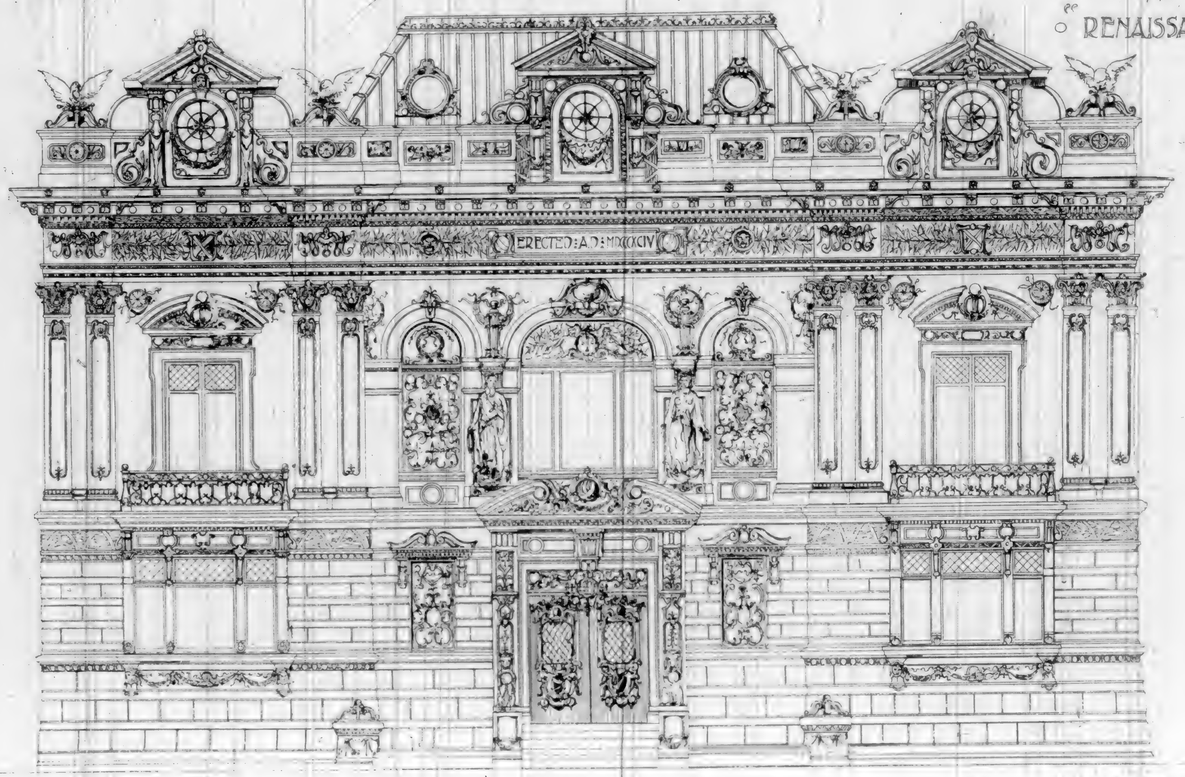

CALIFORNIA ARCHITECT & BUILDING NEWS
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STUDY FOR TOWN HALL
1895 BY D.J. PATTERSON

PHOTO. LITH.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, Pres. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE POSTOFFICE SITE.

THE following official report of the United States Government engineers, as to the stability of the site selected for the new Postoffice building in San Francisco, located at the corner of Seventh and Mission streets, seems to set at rest all questions as to the permanency of any building erected on this lot, and removes the last reasonable ground for longer delaying thec ommencement of work on this long needed and long hoped for building.

SAN FRANCISCO, CAL., July 8, 1895.

The Honorable Secretary of the Treasury, Washington, D. C.

SIR:—The undersigned, appointed in accordance with the provisions of the act of Congress, approved March 2, 1895, to examine the site for the Postoffice and Courthouse building in San Francisco, have the honor to render the following report:

Under date of April 5, having received notification of appointment to perform the duties assigned to us, we reported to you for instructions to guide us in the proposed examinations. On May 27th instructions were issued from the acting Secretary of the Treasury and received by us on June 4th. In this letter we were requested "to examine the nature of the subsoil and bed of the foundation, and to report to the department whether the character of the same is proper for the contemplated building, and what would be the cost of making the foundation for said building, and whether the construction of said building should be proceeded with on said site." We were further requested to make a recommendation as to the character of the foundation and present an approximate estimate of same.

Immediately after the receipt of the above mentioned letter proposals were invited from S. M. B. Haley, who made the former borings on the site, and the Beal Core Drill Company. One bid was received, that of Haley. Mr. Haley proposed to bore the site to a depth of 30 to 50 feet at the rate of $1.25 per foot; beyond 50 feet he was to receive 50 cents additional for each foot.

Under the former action of the Treasury Department four borings were made at the site. These borings will be designated A, B, C and D. Their locations approximate to the four corners of the building. A was near the southwest corner and was sunk to a depth of 149 feet. B was near the southeast corner, depth 111 feet. C was near the northwest corner, depth 147 feet. D was near the northeast corner, depth 140 feet. In a general way the borings at B, C and D show that to a depth of 38 to 40 feet clean sand of varying colors was found; thence to a depth of 50 feet clay was found and below that sand of different grades and colors. In boring A the indications were not so favorable in the upper strata, as the sand was found mixed with vegetable matter, debris, peaty sand, etc. Our boring indicates like nature of material at same location, extending through only a limited area.

We made eleven additional borings to a depth of 50 feet each. Their location is shown on the foundation plan. They are designated by numbers. Borings 1 to 6 inclusive show that to a depth of about 38 feet clean sand of varying colors was found, as in the previous borings; then a stratum of black peat about 6 inches in thickness; then about a foot of heavy black mud, and below that to 50 feet slate-colored clay. Borings 7, 8, 9 and 10 were made at the southwest corner, as at this location the nature of the sub-soil appears to indicate that some additional precautions should be taken in preparing the foundation, and the accompanying diagram shows the locations of these five borings. No. 7 was in the immediate vicinity of A. Yellow, black and white sand was found to a depth of 24 feet; thence to 40 feet sand, mud, debris, in general rather soft material, and below that to 50 feet sand and clay. No. 8 showed the general characteristics of borings 1 to 6. No. 9 showed common sand to 19 feet; then 1 foot of soft black mud and decayed vegetation; then 1½ feet of black peaty mud and sand, filled with sticks, roots, etc.; then good sand for 18½ feet, with a few grass roots at about 29 feet; at 40 feet 1 foot rotten wood and soft mud; then black clay, hard and sticky, 1 foot thick; then slate-clored and yellow sandy clay to 50.3. Nos. 10 and 11 had the usual characteristics of the first borings; that is, sand to 38 and 40 feet, and clay below to 50 feet. The results of the borings are shown on the tracings inclosed.

Throughout the site the general indications are of hill sand to depth of about 28 feet below the surface of the ground, and below that clay. The Coast Survey chart of 1858 shows that the site was a sand lot covered with brush and small trees. There was no indication of running water on the lot. It is only in the northwest corner for a distance of from 50 to 60 feet along Seventh street and along Mission that the material is of such a nature as to cause extra precautions to be taken with the foundation. Water was found at a depth of 8.8 to 12 feet. The surface of the ground was connected by levels with the beach mark (29.04) and the level of the water standing in each well was determined. This latter level is shown on the plats.

It may be stated that the material as found and brought to the surface may not show its condition in place, as the boring apparatus necessarily broke up the mass, and its mixture with the water in the well caused it to appear soft and yielding. It may be that in its natural condition it may stand the same amount of pressure as in other portions of the site.

To the first inquiry, therefore, whether the character of the subsoil is proper for the contemplated building, we are of the opinion that the building can be safely constructed upon it. As to the inquiry whether the construction of the building should be proceeded with, from an engineering point of view we see no reason to report otherwise.

It remains for us to state in a general way only the character of the foundation and to present an approximate estimate of the same. The foundation should be of concrete. The depth is given at 4½ feet. For the purpose of approximating to the cost we have taken that depth for the main walls and a depth of 3 feet for the columns, making the top, of said foundation two feet wider than the base of the wall. For a length of 60 feet on Mission street and on Seventh street, where the soft material is found, the base of the foundation is increased to 25 feet. It is assumed that the ground can be drained into the street sewer for a depth of about nine feet. The water that may be found in the sand to be extracted by pumping will probably depend upon the season in which the excavation may be done. It is hardly capable of estimate, although we insert an item for the work.

The approximate estimate of the cost of the foundation is as follows: Excavation of 9528 cubic yards of material and disposal of same at 50 cents per cubic yard, $4764; 3892 cubic yards of concrete at $7.50, $29,190; pumping, $2,000. Total, $35,944. Contingencies, 10 per cent, $3,595. Total,

$39,549. The concrete proposed consists of the best Portland cement, with twelve cubic feet of selected sand and thirty cubic feet of broken stone to the barrel.

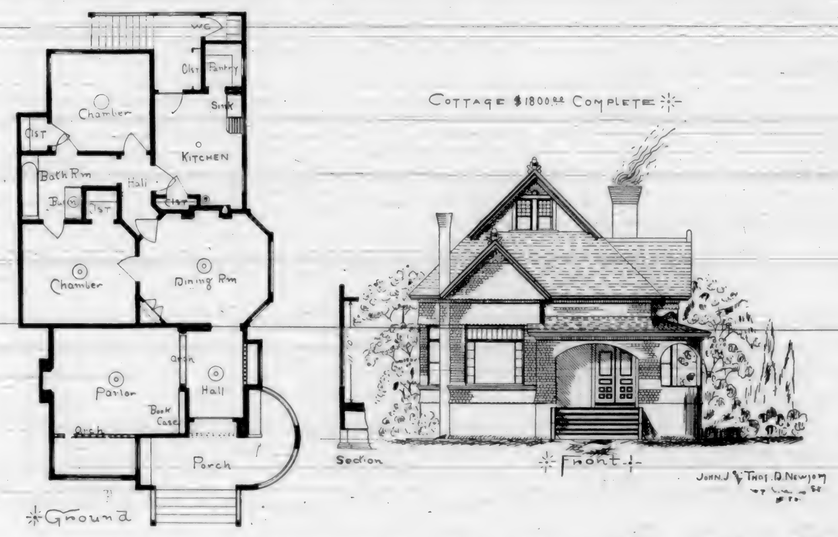
Very respectfully, your obedient servants,

G. W. MENDELL,
Colonel Corps of Engineers.
W. H. H. BENYAURD,
Lieutenant-Colonel Corps of Engineers.

EUROPEAN FORESTRY WORK.

NEARLY all the nations of Europe are engaged at the present time in so controlling the forest supply that every bit of public and private property in trees is placed under restriction against destructive cutting. The forests are all so highly protected, says the *Boston Herald*, and even where no state control exists, the freedom in cutting trees which exists in this country is unknown.

In Germany during the last twenty-five years some



300,000 acres have been reforested, and the government has granted $300,000 in this way to private owners of waste land. In Austria, since 1852, a forest law, which exercises a strict supervision over the forests, both public and private, has been in existence, and no one is allowed to devastate a forest to the detriment of adjoining holders of land, and cleared or cut forest must be replanted within five years.

In Italy the effort is constant to increase the amount of wooded lands, and the government contributes three-fifths of the cost of reforestration, upon condition that the work is done according to its plan and instruction. In Switzerland the national government contributes from 30 to 70 per cent of the establishment of new forests, and from 20 to 50 per cent for the planting of protected forests, and the law is very strict in regard to cutting.

France is also deeply interested in public forest property. The forests belong largely to communities and public institutions, as well as to the state, and they are controlled in a manner similar to the regulation of forests in Germany. Here, as well as there, no clearing is allowed except by consent of the forest administration.

In all these countries the strictest attention is paid to the subject of forestry, and schools are everywhere maintained for the purpose of instructing men in this work. Russia has been the only nation where forests have been until lately under no restriction, but since 1888 even this country has had its forest laws, and offers loans on favorable terms for the protection and increase of the forests. Hardly any European nationality is without its state control of the forests or without the training schools in which men are instructed how to take care of them.

They are trying in Europe in every way possible to save the forests, and in the United States efforts are now being made in nearly every commonwealth to regulate and control the wooded lands, but our people are not ready to accept the stringent measures which have been employed as a necessity for preservation.

Mrs. Doolan—"It's too proud yez are t' talk, Norah Foley since yez won th' bicycle in th' tin cint raffle; but if thim ain't yer ould man's pants Oi'm a nagur."—*Leslie's Weekly.*

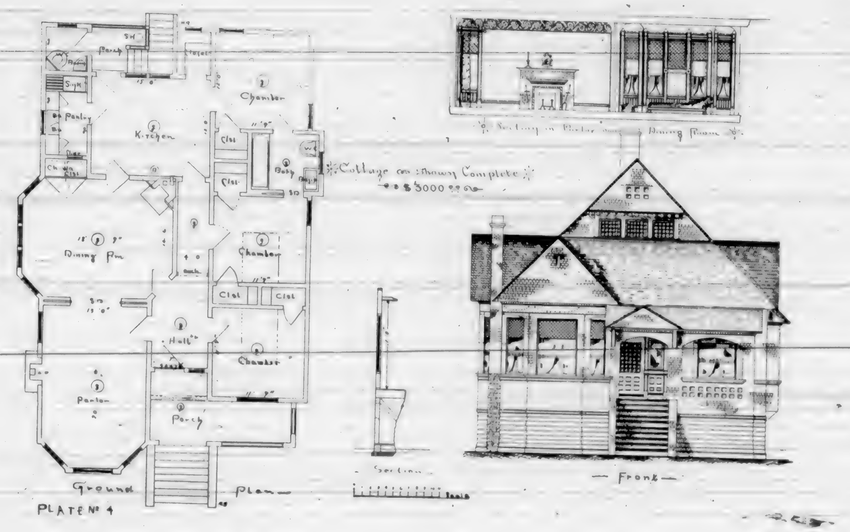
BOOKS AND PERIODICALS.

LIPPINCOTT'S Monthly Magazine for July has for the complete novel "A Social Highwayman" by Elizabeth Phipps Train. Among the contents we notice "The Whole Duty of Women" by Emily B. Stone and "The Recall of Flathers" by Charles Dudley Rhodes, U. S. A., is a sketch that will make the readers laugh.

THE ENGINEERING NEWS—We would call the attention of our readers to an able article in this magazine on "Painting Iron Railway Bridges," by Walter G. Berry of New York. In the course of his professional duties Mr. Bery was called upon to prepare a report upon this subject, and certainly he has made a very able one.

THE NEW GALAXY, published by Harry C. Jones, 92-96 Fifth Ave., New York. Subscription price one dollar a year. Volume 1, No. 1 of this magazine for June, 1895, makes a very picturical appearance while its contains much interesting reading, fully illustrated; it appears to be a tender for the *Monthly Illustrator* at $3 a year, which the same publishers announce as the finest magazine published, containing only original matter by the very best writers and the most beautiful pictures.

THE NEW SCIENCE REVIEW for July 1895, published by the Transatlantic Publishing Company, 63 5th Ave., New York, has a table of contents of unusual interest.



The following from an article on "Mental Telegraphy" by Claude Stuart Coles is certainly curious if true:

"Within us is a power, sleeping. Once in a while some sensitive soul has felt it stir, but there was no known law that governed it, no logic with which to convince others of its being; so it was buried deep in the inner consciousness, where hide ideas that dare not seek light, because they are in advance of their age.

"Long ago, at the house of a friend, I saw a photograph of a man's head. As I picked it up there came over me a sense of having known the original; it was the face of a 'friend!' When my hostess entered I asked about the photograph, and she told me who it was. The name meant nothing to me, but the face meant all things that I knew. Several times in the next week I looked at the photograph, always with the same sense of 'having known.' Then eight years elapsed, during which no memory of that face came to me. One day at the theatre, there flashed over me that same curious sense of 'having known.' Instinctively I turned and caught full the glance of the original of the photograph. What he was doing there I have never found out.

"Several miles away from me lived a friend. Days would elapse without our meeting, but if I sat down and wrote her a note she would come, always crossing the note. I became so certain about it after awhile that I would write the note and tear it up. The thought would stir in her the desire to see me. There was no use in mailing it.

"The sight of a certain handwriting would always make my heart sink; it was something that I could not reason myself out of, yet the letters were pleasant and the words fair. One dark day I found out that my instinct was right. I trust it now."

"The trouble with too many women," says the cornfed philosopher, "is that they regard the marriage ceremony mainly as a license to eat onions and wear ill-fitting clothes."—*Journal Indianapolis.*

"Grace before meat," said Noah, as he held the elephan back to make room for the antelope.—*Yale Record.*

CONTRACT *vs.* DAY LABOR.

THE question as to whether day-labor or contract is the more conomical appears to have received a very decided answer in the experiences of the Canadian Federal Government The point is being continually brought up in municipal councils, but in such cases, it is to be feared, the arguments *pro* or *con* are usually propounded by those more or less biased one way or the other, and a clear candid opinion as to the merits or demerits of either system can hardly be expected from city aldermen. The opinion of Parliamentary committees ought to be worth more, at any rate, both systems have been given fair trials in the last few years here, and the results are eminently in favor of contracts. The case of the Lachine bridges, which was re-

counted in the last Canadian letter, proved conclusively how easily the country may be defrauded, and up to almost any amount, by unscrupulous contractors. A legal precedent for the construction of the Lachine bridges was set some years ago by the plan pursued in the case of the Fort Francis locks. This costly and magnificent work was carried out by the Government, under its own inspectors, without contract, and the results were not satisfactory; but it was thought that in a city like Montreal, where labor was plentiful and wages moderate, better results must be obtained. However, as was shown in the former letter, the Government was doomed to bitter disappointment which was only aggravated by the police magistrate, Judge Desnoyers, refusing to commit the contractor for trial, although the evidence seemed clear enough as to the alleged frauds, but not, in his opinion, sufficient to warrant committal. The matter, however, is not at an end yet. Although the Government has failed in the criminal prosecution, a case for the return of overpayments is to be proceeded with. The country will hardly care to see more of its great works carried out by day-labor. The experiment of the Toronto Council in having its new municipal buildings finished by day-labor is being watched with interest. This building was begun under contract, but only reached some twenty feet above the ground level, when the contractor was dismissed. Owing to certain difficulties in obtaining satisfactory tenders for the completion of the works, it was decided to proceed with them by day-labor.

Mr. Provand, M. P. for the Blackfriars Division of Glasgow, the managing director of the Chignecto Marine Railway Company, has been in Canada interviewing the Government, and requesting for this Company an extension of time for completion of the works at Chignecto by two years. About three and a half millions have been already expended on the works, and about a million and a half more are required. The amount has been subscribed by shareholders, and it is claimed that the work could be completed in the time asked for. The Canadian Government guaranteed a subsidy of $170,000 a year, for twenty years after the completion of the works, the period of construction being limited in the Charter granted to the Company. Mr. Provand stated that it was through no fault of the Company that the work was not completed within the time specified. It was the fault of the contractor, who was largely interested in contracts in the Argentine Republic at the time of the suspension of Baring Bros., which caused his failure and the stoppage of the works. The engineer of the Company, together with Mr. Provand, visited Canada last year, with the same object in view, and interviewed the premier, the late Sir John Thompson, but, so far as is known, did not obtain any definite promise from him. Whether Mr. Provand has been successful this time or not is still uncertain, but a contention has arisen over the interpretation of the expression "efficient working" of the railway, which occurs in the agreement referring to the granting of the subsidy. The Company interprets the words to mean simply having the railway completed and ready for traffic. The other interpretation is that the road should be actually handling a reasonable amount of traffic, and it is said that if the Company desires the extension of time, it will have to show that it is carrying a minimum amount of traffic, which is put down at a million tons of shipping, annually. Mr. Provand has, in the meantime, gone home, and it is possible some time will elapse before anything is settled.—*The American Architect and Builder.*

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Liability of Contractor's Bond.—Where a building contractor abandons the work before it is completed, and absconds, the guarantor of his contract, who elects to treat the failure and flight of his principal as settled facts, and to co-operate with the owner in completing the work, becomes liable as surety.

Lender v. Kline, Supreme Court Penna., 31 Atlantic Reporter, 550.

Unguarded Excavation in Sidewalks.—The Supreme Court of California holds that a contractor who has completed an excavation in a sidewalk, as required by his contract, is not liable for injuries to persons falling into it, due to the absence of proper guards, if he did not contract to guard the excavation after it was completed.

Cotter v. Lindgren, 39 Pacific Reporter, 950.

Right of Adjoining Owner in Overhanging Wall.—The Supreme Court of New York, 1st Department, holds that where the owner of a lot erects a wall, the foundation of which is wholly on his lot, but a part of which overhangs an adjoining lot, the adjoining owner will not be enjoined from removing so much of the wall as overhangs his property.

Lyle v. Little, 33 N. Y. S. Reporter, 8.

Mechanics' Liens.—Where it appeared in an action to foreclose a lien on property owned by husband and wife, that the title was in the name of the husband only, and that knowledge of the fact that he had a wife was not brought home to the lien-holder, it was not error to render judgment for the latter, although the notice omitted the name of the wife.

Wash. Rock-Plaster Co. v. Johnson, Supreme Ct. Wash., 39 Pacific Reporter, 115.

Collection of Notes Given for Building.—Where notes were given in prepayment for the performance of a building contract, and their sale as negotiable paper was consented to by the makers at the time the contract was entered into, they cannot, in the absence of fraud, raise the issue of no consideration, in an action upon the notes by an indorsee; and they cannot contend that such party is not a bona fide holder.

Churchill v. Bielstein, Ct. Civ. App. Tex. 29 S. W. Reporter 392.

Mechanics' Lien—Bond of Owner.—A bond given by the owner of buildings upon which a notice of lien for materials and labor has been filed, conditioned for the payment of any judgment that may be rendered against the property, (as provided by the laws of New York, and some other states) takes the place of the property, and discharges and becomes the subject of the lien; and an action is maintainable upon the bond against all parties interested, including the sureties, without first foreclosing the lien upon the property.

Morton v. Tucker, Ct. App. N. Y., 40 N. E. Reporter, 3.

Penalty or Liquidated Damages.—A party advertised for bids for a court house, the notice requiring each bid to be accompanied by a check for $500, "as guaranty of good faith that the bidder, in case his bid is accepted, will enter into a contract," etc. One whose bid was accepted failed to enter into a contract within a reasonable time, whereupon the check was appropriated. The Court of Civil Appeals of Texas held that the money deposited was not liquidated damages, but a penalty, and only so much of it could be retained as would cover the actual damage.

Lindsey v. Rockwall County, 30 S. W. Reporter, 380.

Liability of Owner for Dangerous Premises.—A party was injured by the falling of a wall of a building. The owner denied negligence, and alleged that the property was in the possession of an insurance company, who were making repairs. The Supreme Court of Louisana held that, there was negligence and that whatever may have been the responsibility of the insurance company during the time that the repairs were being made to a portion of the wall, the owner, aware of the facts as to defective condition, and who takes no part to prevent an accident, is liable for the damage occasioned by the fall.

The safety of walls in a populous city is a public interest, and the interest of one injured is blended with the public right that cannot be subordinated to indefinite agreements between the insurer and insured.

Knoop v. Alter, 17 So. Reporter, 139.

BUSINESS MOSAICS.

Heating and Ventilating—Wright & Olsen at 27 New Montgomery street will furnish estimates for buildings of any size, for heating with either steam, hot water or warm air, also a combination of hot water and warm air.

This concern is agent for the Magee furnaces and ranges as well as Abram Cox Furnace Co., Barbers Ideal Heaters, and Dr. Buckley's water purifier.

Mr. Nincom—"He presented a pistol and declared he'd blow out my brains if I didn't yield." Miss Shapley—"Oh, Mr. Nincom, why didn't you yield?"—*Truth.*

A. Steiger Son's manufacturers of Architectural Terra Cotta, with every thing in their line of business. For further information apply to San Jose, Cal. or San Francisco office Builders' Exchange, 16 Post street.

Pat—"I tell you, Mike, astronomy is a great thing. Why by it you can tell when there will be an eclipse to the very hour and minute." Mike—"Oh, faith, an' that's nothin', you can look in the almanac an' see that."—*Truth.*

Concrete and Twisted Iron.—The Ransome Patents, now operated by the firm of Keatinge, Leonard & Ransome, rooms 11 and 12 Nucleus building, are showing the advantage of this style of work as is in evidence by the three large tanks for the Portland Water Works, and to come near home an example of their work at Main and Mission streets in this City may be seen, and quite at our own door as it were, the work on the Safe Deposit Building will show the advantage of this style of construction.

Customer—"So you sell these watches at $2.50 each? It must cost that to make them." Jeweler—"It does." Customer—"Then how do you make any money?" Jeweler—"Repairing them."—*Standard.*

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates, considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer & Rey, San Francisco, Cal., the manufacturers of this engine, have earned the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

The J. L. Mott Iron Works, New York, Boston, Chicago and San Francisco, Mr. M. S. James, agent of the well-known firm has removed his office to room 27 Flood Building, third floor.

The new apartments are very favorably situated for the display of goods shortly to arrive from New York when a show room will be opened for the inspection of those interested in their line.

No doubt there are disinterested politicians, my son; but when you find one it will be upon the same day that you discover a shad without bones."—*Boston Transcript.*

The Union Pressed Brick and terra cotta Co., with their works at Vallejo, California, have removed their general office to 310 Pine street, room 15, San Francisco, and are prepared to fill orders in their line for architectural terra cotta, fire proofing, paving tile, etc. A catalogue will be sent on application.

Robinson—"Well, old chap, how did you sleep last night?" Smith (who had dined out)—"Like a top. As soon as my head touched the pillow, it went round and round!"—*Punch.*

F. H. Rosenbaum & Co. Anything in the way of plate and window glass can be supplied by the above mentioned firm, who are also manufacturers of mirrors, either quicksilver or patent backs. Ornamental cutting and bevelling a specialty, 567 Market street, San Francisco.

Temperance Lecturer—"Friends, how can we stop the sale of liquor?" Inebriate (in the rear of the hall)—"Give it away."—*Ex.*

Plaster of Paris. The Golden Gate Plaster Mills, 125 and 217 Main street, San Francisco. Lucas & Co., manufacturers of Calcined Plaster (Plaster of Paris,) dealers in marble dust, sand plaster and terra alba.

Jones—"Come, go fishing with me old chap." Brown—"Can't do it; just signed the pledge."—*Judge.*

Sierra Lumber Company, manufacturers and dealers in doors, windows and blinds, also on hand sugar pine, yellow pine, spruce and fir lumber. Yard, corner Fourth and Channel street, San Francisco.

CITY BUILDING NEWS.

Baker near Fell. To build; owner, Premier Cycle Co.; architects, McDougall & Son; contractor, J. M. Weir; signed, June 19; filed, June 19; cost $1794.

Brannan bet. 4th and 5th. Brick warehouse; owner, Ed. Niclaus; mason work by contract; carpenter work by day; cost $5000.

Brannan bet. 4th and 5th. To build; owners, Morgan & Cutler; cost $800.

Brannan bet. 4th and 5th. One-story frame; owner, Father Nugent; contractors, Cameron & McDonald; cost $3000. Only a temporary structure.

Bryant near 22d. To build; owner, C. W. and Anna M. Peck; contractor, Thos. Cochrane; signed, June 24; filed, June 27; cost $2670.

Bryant and Alameda. Alterations and additions owner, Market Street railway Co; architect, H. H. Lynch; contractor, J. W. Miller; signed, July 8; filed, July 9; cost $15,930.

Bryant and Alameda. Carpenter work; owner, Market Street Railway Co.; architect, H. H. Lynch; contractor, Frank Schaadt; signed, July 9; filed, July 9; cost $1150.

Bryant near 5th. Concrete foundation; owner, John Horstmann; architect, H. Geifuss; contractors, Gray Bros.; signed, July 9; filed, July 9; cost $2265.

Broadway near Kearny. To build; owners, A. Cereghino and G. Demartini; architects, Wm. Mooser & Son; contractor, H. H. Larsen; signed, July 10; filed, July 11; cost $1160.

Broadway near Kearny. Carpenter work and plumbing; owners, A. Cereghino and G. Demartini; architects, Wm. Mooser & Son; contractors, Ingerson & Gore; signed, July 10; filed, July 11; cost $1360.

Bluxome bet. 4th and 5th. To build; owner, Mr. Smith; contractors, Schutt & Krecker; cost $600.

Bush near Laguna. Sewers, plumbing, etc.; owner, Congregation Ohabai Salome; architect, M. J. Lyon; contractors, Bertram & Son; signed, June 11; filed, July 1; cost $911.

Bush near Laguna. Brick and cement work for foundation; owner, Congregation Ohabai Shalome; architect, M. J. Lyon; contractor, Wm. Stevenson; signed, June 13; filed, June 18; cost $1600.

California near Mason. Excavations, concrete, etc.; owner, Elizabeth J. Frieot; architect, E. Depierre; contractors, Gray Bros; signed, June 29; filed, July 3; cost $1708.

Castro and 19th. To build; owner, M. Sanders; architect, H. Geifuss; contractors, Lorenzen & Feyrier; signed, July 3; filed, July 3; cost $1490.

Caselli near Douglass. To build; owner, Mrs. Annie Lacy; architects, Shea & Shea; contractor, Arthur Stevens; signed, July 3; filed, July 10; cost $2695.

Church near 27th. Additional story; owner, John Foge; architects, Havens & Topke; contractor, D. Ross; signed, June 29; filed, July 2; cost $1645.

Ogle and Waller. Five two-story frame dwellings; owners and builders; Cranston & Keenan; cost $20,000.

Ogle and Waller. To build; owners and builders, Cranston & Keenan; cost $3500.

Clayton near Waller. Three two-story frame dwellings; owner and builder, Wm. Hinkel; cost $12,000.

Clement and 33d Ave. Car house; owner, Sutro Railroad Co.; architect, V. Krolow; contractor, T. McLachlan; signed, June 16; filed, June 27; cost $7250.

Fourth near Howard. Carpenter work for four-story brick; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, J. W. Smith; signed, June 26; filed, July 8; cost $6696.

Fourth near Howard. Plastering; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, Martin Garrick; cost $1100.

Fourth near Howard. Brick, granite, etc.; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, P. E. Fitzsimmons; cost $5895.

Fourth near Howard. Plumbing; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, Jas. E. Britt; cost $1987.

Fourth near Howard. Iron work; owner, Hugh Dimon; architect, C. J. I. Devlin; contractor, H. Ralston; cost $5600.

Fourth near Brannan. To build barn; owner, Mrs. Zoe J. Venard; architect, C. M. Rousseau; contractor, R. J. Pavert; cost $1240.

Fourth near Howard. Galvanized iron work for four-story brick; owner, Hugh Dimond; architect, C. J. I. Devlin; contractor, Jas. Guilfoy; cost $1000.

Fourth near Brannan. To build; owners, Krug & Yung; architect, F. Mead; contractor, W. H. Mead; cost $1000.

Fourth and Brannan. To build barn and stable; owner, H. B. Goeckens; days' work; cost $1000.

Filbert near Mason. To build; owner, Mrs. Mary Bogan; architect, C. M. Rousseau; contractor, C. Knuttc; signed, July 10; filed, July 11, cost $4200.

Filbert and Jasper. To build and alterations; owner, Trinidad Boyling; architect, P. Boulin; contractor, L. M. Weismann; signed, June 25; filed, June 27; cost $2420.

Fillmore near Waller. Alterations and additions; owner, Geo. Scott; architect, A. J. Barnett; contractor, M. Hartnell; signed, June 22; filed, July 2; cost $1725.

Fifth near Bryant. To build; owner, C. Reichling; days' work; cost about $2000

Francis near Mission. Cottage; owner, J. B. Mathews; contractor, W. W. Redmall; signed, July 9; filed, July 9; cost $695.

Fulton near Broderick. To build; owner, Patrick Lally; architect, H. Geilfuss; contractor, W. A. Muller; signed, June 17; filed, June 17; cost $3035.

Gough near Vallejo. To build; owner, Edward B. Rambo; contractor, W. H. Wharff; signed, June 20; filed, June 21; cost $5550.

Green near Scott. To build; owner, Robert K. Palach ; architect, Edgar A. Matthews; contractor, Andrew T. Ruch; signed, June 6; filed, July 2; cost $1723.

Greenwich near Jones. Two three-story buildings; owner, C. Bill and J. Ohlemutz; architect, Emil John; contractor, J. McLean; signed, Jun filed, June 28; cost $7725.

Guerrero near 15th. Two two-story frames; owner, W. J. B. Henriyulle; architect, T. Godart; contractor, J. A. Arnott; signed, June 20; filed, June 22; cost $6985.

Harrison near 25th. Alterations and additions; owner, Mrs. Margaret Godial; contractors, Westerlund & Holmgren; signed, May 18; filed, June 24; cost $1400.

Hayes near Webster. To build; owner, Mrs. Mary Marsily; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, June 22; filed, June 25; cost $8875.

Haight near Scott. To build; owner, Mrs. F. Cahill; architects, Mahoney & Ryland; contractors, Ackerson & Paterson; signed, June 25; filed, June 29; cost $4923.

Haight and Fillmore. Alterations and additions; owner, Chas. Haigmaier; contractor, G. H. Gillespie; signed, June 6; filed, June 18; cost $4500.

Helen near California. Alterations and additions; owner, John J. Mundwyler; contractor, H. R. Schmuckert; signed, June 27; filed, June 27; cost $2645.

Holy Cross Catholic Cemetery. Vault lined with marble; owners, Executors Estate of J. Ivancovich; architect, B. J. Clinch; contractor, A. Paltenghi; signed, June 21; filed, June 24; cost $1425.

Jackson near Stelner. To build; owner, Austin C. Tubbs; architects, Mathesen & Howard; signed, June 12; filed, June 21; cost $3340.

Jessie near 14th. To build; owner, Mrs. C. L. Straven; contractor, A. Petry; signed, July 8; filed, July 8; cost $1690.

Laurel Hill Cemetery. Granite coping and concrete foundation; owner, Sharon Estate Co.; architect, A. Page Brown; contractor, P. Deegan; signed, June 28; filed, July 1; cost $1498.

Lombard near Fillmore. Three two-story buildings; owner, Michael Hogan; contractor, C. Andresen; signed, June 4; filed, June 19; cost $6250.

Market near 5th. Sewers, plumbing, etc.; owner, Mrs. Abbey M. Parrott; architects, Pissis & Moore; contractor, R. A. Vance; signed, June 19; filed, June 24; cost $38,775.

Market bet. 5th and 6th. Mosaic floor, etc.; owner, Miss Emma Spreckles architects, Reid Bros.; contractors, W. W. Montague & Co.; signed, May 28; filed, July 2; cost $8000.

Market bet. 5th and 6th. Marble work; owner, Miss Emma Spreckles; architect, Reid Bros.; contractor, W. S. Brown & Co.; signed, June 14; filed, July 2; cost $2116.

Market and Sanchez. To build; owner, Mrs. E. L. O'Neil; architects, Salsburn & Embury; contractors, West & Fenn; signed, July 6; filed, July 6; cost $4235.

McAllister and Fillmore. To build; owner, Caroline B. Watson; architects, Percy & Hamilton; contractor, Winslow Hall; signed, June 26; filed, June 26; cost $10,943.

McAllister and Fillmore. Plumbing; owner, Caroline B. Watson; architects, Percy & Hamilton; contractor, R. Rice; signed, June 26; filed, June 26; cost $1500.

McAllister and Pierce. To build; owner, Mrs. B. Morris; architect, J. E. Krafft; contractors, Ackerson & Paterson; signed, June 19; filed, July 8; cost $6170.

Mission and New Montgomery. Carpenter work on two-story brick; owner, Builders' Exchange; architect, A. Page Brown; contractor, D. Powers; signed, July 8; filed, July 11; cost $2070.

Mission and New Montgomery. Mason work, Spanish tiles, etc.; owner, Builders' Exchange; architect, A. Page Brown; contractors, Riley & Loane; signed, July 8; filed, July 11; cost $2397.

Mississippi near 18th. To build; owner, J. Greig; contractors, Westerland & Holmgren; signed, July 3; filed, July 3; cost $2464.

Oak and Clayton. To build; owner, Ellen B. Franzell; architects, Coxhead & Coxhead; contractor, Wm. Knowles; signed, July 12; filed, July 12; cost $7261.

O'Farrell near Powell. Additions and alterations; owner, Mrs. S. O. Alexander; architects, Salfield & Kohlberg; contractor, H. Rohling; signed, May 24; filed, June 25; cost $3025.

Pacific near Leavenworth. Alterations and additions; owner, Margaret Wolfarth; contractor, H. R. Schmuckert; signed, June 18; filed, July 9; cost $1845.

Pacific near Leavenworth. To build; owner, B. Frank; architect, H. Geilfuss; contractor, John H. Munster; signed, June 18; filed, June 20; cost $3124.

Pennsylvania Ave. and Butte. Alterations and additions; owner, James Eva; architect, R. H. White; contractor, W. Chatham; signed, June 19; filed, June 19; cost $1993.

Pierce and Fulton. To build; owner, Wm. McCormick; architect, A. J. Barnett; contractors, Ogle & Smith; signed, June 28; filed, July 1; cost $9700.

Pine near Buchanan. To build, owner, J. A. Ulrich; architect, E. J. Vogel; contractor, M. J. Savage; signed, June 20; filed, June 24; cost $4C30.

Pine near Taylor. Carpenter work; owner, Edward B. Hinds; contractor, M. J. Savage; signed, June 17; filed, June 20; cost $6500.

Pine near Taylor. Plumbing, etc.; owner, Edward B. Hindes; contractor, Philip Haub; signed, June 17; filed, June 20; cost $1195.

Pt. Lobos Ave. near 33d. Cottage and stable; owner, Eliza Potter; contractor, W. W. Redmall; signed, June 18; filed, June 20; cost $2000.

Richland Ave. near Anderson Ave. To build; owners, E. F. and Nellie Sautter; architect, J. V. Embury; contractors, Salsbury & Embury; signed, June 12; filed, June 20; cost $1700.

Sacramento near Baker. To build; owner, J. H. Loeber; architects, Townsend & Wyneken; contractor, D. Currie; signed, June 25; filed, June 27; cost $2350.

Sacramento near Devisadero. To build; owner, Esther M. Wilson; architect, W. H. Lillie; contractor, W. J. Field; signed, June 27; filed, June 28; cost $4825.

Sacramento near Laguna. To build; owner, Richard E. Queen; architect, A. Page Brown; contractors, Mahoney Bros.; signed, June 18; filed, June 18; cost $27,085.

Sagamore near Capital. Two Cottages; owner, William Forbes; contractor, John Flaherty; signed, June 21; filed, June 22; cost $1250.

Sixth Ave. near Clement. To build; owner, John Higgins; contractor, M. J Scott; signed, July 3; filed, July 3; cost $1170.

Sixth and Stevenson. Steam heating in four-story brick; owner, Margarethe Schwerdt; architects, Laist & Schwardt; contractors, J. G. Grannis & Co.; signed, July 1; filed, July 11; cost $1246.

Stockton and California. Additions and alterations; owner, Alfred E. Davis; superintendent, J. W. Duncan; carpenters, Cannon & Mooney; cost $10,000.

Second Ave. near California. To build; owner and builder, Mr. Haskell; cost $2000.

Second Ave. near California. Cottage; owner, G. H. Earle; architect, J. C. Pelton, Jr.; contractor, Jas. McConahey, signed, June 20; filed, June 29; cost $1700.

Second Ave. near Clement. Cottage; owner, Isador I Green; contractor, W. W. Redmall; signed, June 18; filed, June 18; cost $2000.

Scott near Fulton. To build; owner, Mrs. Eliza Baum; architects, Kenitzer & Barth; contractors, Schutt & Krecker; signed, June 25; filed, June 26; cost $6414.

Tennessee near 19th. To build; owner, Rev. P. O'Connell; architects, Mahoney & Ryland; contractors, R. Doyle & Son; signed, June 16; filed, July 1; cost $9089.

Third Ave. near Clement. To build; owner, R. I. Whelan; contractor, H. Rowe; cost $2100.

Twelfth Ave. near California. To build; owners, Jules J. Bailly and wife; contractor, Wm. R. Kenny; signed, June 28; filed, June 29; cost $1225.

Twenty-second and Guerrero. To build; owner, A. Marcacci; architect, E. J. Vogel; contractors, Patterson & Person; signed, June 29; filed, July 2; cost $8872.

Van Ness Ave. and Clay. Steel work; owner, Claus Spreckles; architects, Reid Bros.; contractors, Western Iron Works; signed, June 12; filed, July 2; cost about $8000.

Washington near Mason. Alterations and additions; owner, J. Mueller; architects, Mooser & Son; contractors, Patterson & Person; signed, June 28; filed, June 29; cost $2800.

Washington near Central Ave. To build; owner, Constant Richert; architect, E. Depierre; contractor, Davie Ross; signed, June 21; filed, June 26; cost $3420.

Washington near Fillmore. To build; owner, Emma Joseph; architect, W. H. Lillie; contractors, Moore & Cameron; signed, June 26; filed, June 26; cost $2547.

Waller near Masonic Ave. Four two-story frames; owner and builder, J. Stierlein; cost $16,000.

Waller near Masonic Ave. To build; owner, Mrs. Martin; builder, J. Stierlein; cost $4000.

York near 22d. Cottage; owners, Ella and Peter Kammerow; contractors, Ogle & Smith; signed, July 6; filed, July 6; cost $1700.

York near 22d. Cottage; owner, Robert Goetze; architect, Emil John; contractor, F. A. Hellmuth; signed, July 10; filed, July 12; cost $1625.

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NOW IN THE SIXTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

A GOOD deal of friction and bitterness will probably be caused between the various parties whose interests are concerned, by the action of the Builders' Exchange in voting that their members shall not bid for the erection of any building where any of the work is segregated. The large contractors hold that to protect themselves it is necessary that they have full control of the building during its construction, and argue that the work can be advanced more rapidly, and done more satisfactorily, than when each branch of the work is made a separate contract, and performed by mechanics who pay no regard to other interests than their own.

This is certainly true on small buildings, and saves time to the owner, and annoyance to the architect; but when it comes to construct a modern building costing tens or hundreds of thousands of dollars, there are arguments to be advanced in favor of subdividing the work. The owner may have preferences as to who shall perform certain branches of the work and is desirous of chosing such parties as he has reason to believe will give the best satisfaction and do the best work, whereas the main incentive of the principal contractor will naturally be to secure the performance of the work at the lowest possible figure. The contractors for the sub-branches feel more security in dealing directly with the owner, knowing that they run no risk of having to accept a *pro rata*, that bugbear of the sub-contractor.

The questions involved will, from all appearances, be brought to a test in erection of the latest improvements projected by one of our largest capitalists, and as all parties are ready for the fray, interesting developments may be confidently expected, for both sides seem to be confident of the correctness of their positions, and firm in their intentions to maintain them.

WE learn from a telegraphic dispatch published in *The Call*, that the Supervising Architect of the Treasury Department is to visit this city for the purpose of inspecting the site of our long proposed, New Postoffice Building, which of late years seems to have assumed the proportions and characteristics of other Castles in Spain. It is sincerely to be hoped that Mr. Aiken will find the site material and substantial enough to warrant him in beginning the preparations of plans for the building, but nothing short of *seeing* building operations commenced will ever make the public of San Francisco believe there is any remote future possibility of having a more suitable postoffice building than the tumble-down, rattle-trap of a shanty that has done service for so many decades.

THE MECHANICS' INSTITUTE EXHIBITION.

AFTER a lapse of two seasons the Mechanics' Institute is again being held—with some improvements on the old ones in the way of decoration and arrangement. The ground and gallery plans are arranged in an open and systematic way which conduces to a rapid and exhaustive survey of the whole exhibits by those who come for that purpose and at the same time affords a good *coup deil* from all parts of the building for those who come simply to lounge. The exhibit of the Arts relating to Building and Architecture is not as complete as it ought to be and it strikes us that a grouping together of all these Arts in one part of the building and arranged in classes; so that an easy comparison may be made between different materials, patents, etc., of the same description, would be a desideratum; this could evolve into a permanent museum of the Building Arts placed in one corner of the spacious pavilion, always open to the public.

Glancing over the exhibits already installed, we find in the way of building material commencing at the foundations the following:—

A fine exhibit of different sized crushed rock suitable for concrete and other purposes—as well as a part of a wall built of stone from a quarry in San Francisco which makes a fine hard blue building stone and of which the new Golden Gate Park Lodge is being built by Gray Bros., and is especially suitable for Rubble work. Marble is represented by Inyo Marble Company, who present a collection of their beautifully marked marble—good both for building and decoration purposes—while the capacities of terra cotta are exemplified by an East Oakland Terra Cotta works. Marble, granite and other stones as applied to monumental purposes are exhibited by Jones Bros.

In the Hallidee Ropeway—of which there is a large and a small sized model—we have an economical means of transporting building material from their resting place in the earth to place of manufacture, and it allows of development of quarries, mines, etc., in places which otherwise would have to remain undeveloped for years. It seems to us that this might be used to advantage on buildings covering a large area in course of construction for the transportation of brick, mortar and other material from one scene of operation to others.

In the way of miscellaneous articles relating to buildings we notice saws for wood-working machinery by Pacific Saw Manufacturing Company. Building paper, including a model showing roofing paper applied to a gravel roof, and deadening felt by the Paraffine Paint Co., Asbestos by Joshua Hendy Co., and a paint and its application by the Ferre Elastic Paint Co.

In the matter of heating and ventilating, Wm. Cronan has a very creditable exhibit as well as a model of a patent Ventilated Iron Skylight—all of which is deserving of attention.

In furniture and decoration, there are some very good exhibits, those of Plum and of Fredericks standing out as attractive. Some artistic metal hanging lamps in Oriental style are exhibited by G. Benyard. We miss the always attractive exhibit of Stained Glass by Mr. John Mallon, which had become quite a feature of former fairs but are compensated for it by the extensive and good exhibit of Butterworth & Company.

In plumbing—the Furlong Cement Wash Trays offer a cleanly and durable article. Finally the Patent Swing Window turns up as usual, in what seems to be the most feasible shape yet for locking the sash and for swinging it inwards for washing purposes, including an ingenious method of fixing the inside stop of the frame. This is exhibited by the Surety Window Hinge Co., E. S. Barney, manager.

Coming to the Fine Arts we find Architecture unrepresented—sculpture in a very slight degree and painting in many cases very well. This is not as it should be and we hope before the next exhibition that an effort be made to have the Noble Art of Architecture thoroughly well and systematically represented—an Art in which the public requires to be educated more than in any other for the reason that it is one in which the choice of an architect by a client is made in ignorance more often than in other professions, the people trust to themselves and do without professional advice and in consequence the educated eye has to endure many offences against it. For which reason an exhibit of only the good in architectmre should be made in such a popular resort as the Mechanics' Fair. We hope that the Architects and the Chapters may get together and get a good collection of their works at the next exhibition—and that the directors appoint a competent hanging committee.

The other Fine Arts, those of Feeding and Draping the human body, are very well represented and it is a good sign that such important arts are not neglected, for without proper food and clothing we cannot expect to have noble architecture, sculpture or painting.

A VISIT FROM THE SUPERVISING ARCHITECT OF THE TREASURY DEPARTMENT.

WASHINGTON, D. C., Aug. 15.—Now it is the supervising architect's turn to take a junket. A representative of *The Call* had an interview with him to-day concerning the construction of the new postoffice building at San Francisco.

Mr. Aiken is a secretive official, and is careful to give out as little information as possible regarding public works. He keeps himself carefully behind closed doors, and outside of his sanctum stands a guard who has been given strict orders to rigidly exlude newspaper men.

The Supervising Architect is naturally a little bit disgruntled, because of many severe newspaper criticisms of the conduct of his office. He is also nettled because many influential newspapers advocate a change whereby the plans for Government buildings will be awarded to outside architects, after competitive examination. It is believed that this plan will secure the best talent in the country, and Government buildings of the future may be of architectural beauty, instead of the grand, gloomy and peculiar edifices now in vogue.

Mr. Aiken is quite an independent individual, and takes care that this fact shall become known. When he was seen to-day, *The Call* representative said to him: "The San Francisco people are anxious to know when their postoffice building is going to be commenced. They have been trying for so many years and have met with so many disappointments that they are beginning to feel that it is almost a forlorn hope. But now that the Board of Engineers has reported that the Seventh and Mission streets lot is firm enough to support the structure, they would like to know what is the occasion for further delay."

The architect said: "Yes, I know all about that, I know the whole history of the matter, but we cannot perform impossibilities. There are 125 new buildings to look after, and 480 that have to be patched up continually. We will begin work on the San Francisco postoffice just at soon as possible. Next week I am going to start for San Francisco to make a personal inspection of the premises. Director of Mint Preston will accompany me, and we will stop off at Denver to examine different sites offered for the new mint to be erected there. We will then stop a day or so at Salt Lake, where is to be a new building erected. I will also visit Portland, Or., and may stop on my return at Boise. The two Idaho Senators are involved in a dispute as to the selection of a lot for the new postoffice there, and I may decide that matter myself."

Replying to a question Mr. Aiken said he thought the Seventh and Mission streets lot at San Francisco was all right, but would not state the exact nature of the business that required his presence there. The architect was asked whether or not, in his opinion, the work of construction would be commenced this fall or winter.

"The angel Gabriel can answer that question better than I," he said, "I expect to be back in Washington within thirty-five days from the time I start, and immediately upon my return I expect to begin drawing plans. You must understand that thus far only sketch plans have been prepared, and these have been published. I don't know how long it will take to finish the plans or how long it will be before the work of excavation will be begun."

The Call correspondent suggested there was fear expressed in some quarters that Secretary Carlisle was really responsible for the delay in the construction of the building, as well as other Government works, as he wanted to keep every dollar possible in the treasury in view of the state of finances.

"Yes, I know," replied the architect scornfully; "the people are not discriminating enough to lay the blame where it properly belongs—on Congress."

It was then suggested that California people were inclined to believe that there State was a little too far from the seat of Government; in other words, that they were not "in it," geographically speaking.

"I cannot help what they think," said he. "We will not favor any city because of its proximity, or neglect it by reason of its remoteness. You can wire that to your people."—*The Call.*

WHAT makes life dreary is want of motive.—*George Eliot.*

REASONABLE SKILL AND CARE.

THE phrase "reasonable skill and care" is so often used in a legal sense, and so much turns upon its meaning in the discharge of the architect's functions, that it may be worth while asking what it implies in the ordinary duties of the practitioner. When an employer claims damages from his architect for negligence or want of skill, he has to prove by attested witnesses the truth of his allegation, and of course, this is a question of expert evidence. It is not an arbitrary or fixed measure of skill, but sufficient under the circumstances of each case, which varies, as a matter of course. For example, in the design of a hospital, it would be reasonable to suppose that the architect planned his sick-wards on principles that were generally recognized; that the sanitary provisions were sufficient and convenient, that the heating and ventilation were devised upon good models. If he failed in any of these points of plan or provision, he could not be said to have shown reasonable skill. Mr. Brown is a good general house designer, but has had no experience in the planning of a free library. Would it be just to charge him with having failed to carry out the requirements of the committee? Here the question of limited experience might be urged; that the promoters knew beforehand Brown had no experience in building libraries, says *Building News*, and that they could not therefore expect him to exercise a high degree of skill in the design or plan. Such a view of the matter has been held by judges and juries, they holding that "reasonable skill" must be interpreted in a limited sense in such a case. But there is a presumption that every professional man represents himself as possessed of the requisite ability and skill. When an architect is employed to carry out any building, no matter of what description, and he undertakes the work, there is an implied warranty on his part that he is reasonably competent to the task. And this is the general and reasonable view. Mr. Tompkins, the architect, who undertakes to design Mr. Smith a house or a shop, is supposed to bring to his task all necessary knowledge and experience, and on his part Mr. Smith expects all that he has bargained for, and certainly holds Tompkins responsible for any defects in design or negligence in superintending the building. If it were not so, an employer might just as well engage a builder or a foreman of works to carry out what he wants in his own way. In the same manner, a man who was suffering from illness or some malady might save the cost of a doctor's fee by going to an apothecary, and would be himself to blame if by mischance a wrong medicine was given to him. On the other hand, if he went to any registered medical practitioner—whether or not he was a specialist matters little—he would be justified in assuming that his case would be treated with a certain or reasonable amount of skill, or that at least, his competence for the task would be assured him. If it was an eye or throat trouble, the general practitioner would, at least, prescribe safe measures that were generally followed; or, if it was too complex a case, would at once recommend his patient to go to an hospital or consult a specialist. And so the professional architect is presumed to understand the requirements of any particular building he undertakes—so far, indeed, as to protect his client against loss or damage.

One of the frequent charges brought against the architect is that of under-estimating. A client has a right to expect a certain degree of accuracy in the estimate he receives, and

if he prescribes an outside limit of expenditure, he has reason to be dissatisfied if the lowest tender exceeds that limit to any large extent. A reasonable approximation to the actual cost is certainly a question of skill. When the contract sum exceeds, say, by thirty per cent the architect's estimate, it can hardly be said that reasonable skill or care has been exercised, unless of course, as ofter happens, additions, changes, or alterations have been made during its progress. Estimating is certainly one of those branches of architectural practice about which a certain degree of skill is looked for. The Law Court reports afford ample evidence of what is expected from the architect. No doubt the profession are great sinners in this respect. The exceeded estimate is a common reproach leveled against architects, but that is no reason why they should be content to bear the brunt of a charge which is damaging to their interests, and which in many instances can be avoided. An architect is blamed for many things which are not to be placed to his charge. For instance, he cannot forsee the nature of the soil on which his building is reared. When the digging for foundations is begun, it often turns out that they must be sunk to a greater depth than show or specified, and expense of concrete or even piling may be incurred. The architect is blamed because he has not forseen this, and provided for it. His estimate has been based on a superficial examination, or on borings that have been supplied him; these turn out misleading, and his charges are disputed because he neglected to make a more thorough personal examination. In one or two cases cited the architect has failed to recover on this ground. But such charge can scarcely be said to be due to want of skill; it is merely an excusable omission on his part, which may be made up at any time without incurring loss.

Then we have supervision. What is a reasonable amount of supervision will always be a very debatable question, because some people are apt to think that every part of the building should be inspected and approved by the architect; while his nation of his duties is that he gives only a general supervision, and is not responsible for such things as improper bricks in any conceivable situation, or the stone to be laid on its natural bed in every part, nor is he responsible for the laying of drains underground or their proper jointing. The charge of want of skill or negligence may be raised by an irate client in several ways. There may be mistakes in the design in the use of materials, and it is for every architect, in the particular circumstances in which he is placed, to avoid these as far as he can. Want of skill in design is again a question depending on the evidence of experts, which may vary. Conceptions of plan, for example, would be difficult to define in many cases unless there was some glaring omission, or some self-evident want of skill—as, for instance, a hall with inadequate means of ingress and egress, a too-narrow main entrance, cramped or dangerous staircase, a dark corridor. Want of skill would arise if an architect planned a block of offices with windows too small for giving adequate light, or without considering the right of the dominant adjoining owner to obstruct. A ccurt of law will assume, naturally, that it is the duty of an architect to make himself familiar with the law of easements, such as those of light and air and support, as his ignorance of the law may involve his client is serious litigation and loss. Examples of such cases abound in our columns of "Legal Intelligence." Every arcnitect is presumed to know so much law as will be necessary to pertect his client's interests. There is no excuse for a professional man in London or elsewhere if he blunders in not complying with the Building Act or by-laws, and thereby puts his client to needless expense. The law will not excuse him by pleading ignorance of its provisions.

So also with respect to other matters than those directly connected with his profession. There is no excuse for him to plead ignorance of engineering. He cannot plead that he knew nothing of treacherous soils or the substrata of the site if theifoundations give way and the building settles, or thet it was a technical matter outside the architect's work. If he did not know how to provide for wet sand or clay, or what engineering expedients to adopt, such a piling, or planking, or coffer dams he should has called to his assistance someone who did. Again, if through defective design an iron girder gives way, precipitating a wall, or an iron roof collapses, causing serious injury, it will not do for the architect to exonerate himself and lay the blame on the engineer. If an arch fell in from want of sufficient abutment, as shown by scale on the drawings, the architect would certainly be held liable, and the same if any wall or column proved too weak. Perhaps in questions like ventilation and acoustics there would be more difficulty in proving incompetency. We are not aware that any legal charge of incompetence has been made out against any architect because the ventilation of his building was bad, or because the acoustical properties of a concert or lecture hall were defective. These are matters about which there are conflicting views and theories. It may indeed be affirmed generally that the term "reasonable skill and care" could only be applied to those practical and definite matters relating to building which every architect is supposed to know, and not to questions of any speculative or doubtful kinds, about which opinion would naturally vary. A wide interpretation of the meaning of the phrase would be given by any jury in some cases where, for instance the complexiiy of the building or its conditions rendered the architect not altogether responsible, and the phrase would bear a more definite meaning in connection with buildings of ordinary size and every-day use.—*Building News.*

INCREASE OF BUILDING IN THE NEAR FUTURE.

EVERYTHING points to a great increase in building operations in the near future, all over the country. In New York, which, as the centre of business, feels very promptly improved general conditions, the amount of building is already enormous. The number of permits for the erection of new buildings during the past six months, says *The American Architect and Building News*, is almost exactly twice as great as the number issued during the corresponding part of 1894, and the proportion between the intended cost of the buildings for the two periods follows nearly the same ratio. Meanwhile, the number of permits for alterations has not very much increased; showing that the hesitating season of alterations, which usually precedes a time of confident and extensive building, is nearly over, and that New York, at least, is entering on a new era of development. How soon its example will be followed by other cities remains to be seen; but nothing is more certain than that the prosperity of one part of the country means the prosperity of all; and local conditions can only in a slight degree delay or modify the change which building interests have for the last few years looked and hoped for.

THE BLAST AT PENRHYN SLATE QUARRIES.

A SPECIAL correspondent of the London *Times* writes:—Until the afternoon of Saturday, April 27, Y Talcen Mawr was the central point and perhaps the most striking feature of those famous quarries near Bethesda which have been in operation since the reign of Queen Elizabeth, and have changed half the rugged protuberance of the mountain called Bronllwyd into a deep amphitheater. Many thousands of people who have visited the quarries must carry with them a memory of the Talcen. It was a rough slab-sided obelisk of grey rock, with a bold vein of white quartz at the summit. Its height from the bottom of the quarry was about 300 feet, and it was pierced at regular intervals with tunnels representing the level of operations at various periods in the past history of the quarry. At all times this great pillow of green rock presented a picturesque appearance, whether it was viewed from above or below, for the terraces, which the quarrymen call galleries, of purple slate, rising tier upon tier, one upon another, almost to the top of the mountain, formed a singularly effective background. Opinions vary as to the reason why this upstanding fragment of a dyke which ran across the center of the quarry from north to south was suffered to remain, while the dyke itself was cut away on either side; but the better opinion is that a manager of the quarry who flourished at the beginning of the century, not forseeing the colossal scale upon which the quarry would be worked in the future, hoped that this portion of the green rock might serve as a support for one side of the quarry. But the quarry grew beyond his expectations. The quarrymen cut through the dyke on either side, and left the Talcen in obelisk, which grew more and more picturesque and more and more dangerous every day and every year as the slate rock was cut away deeper and deeper at its base.

It was in August of 1894 that, after a report from the chief agent had caused Lord Penrhyn to make a personal inspection, the Talcen was doomed, and the wisdom of the sentence was proven almost at once by the sudden fall, fortunately in the night of a fragment weighing several tons, which if it had fallen in the day, must have destroyed a large number of quarrymen. From that date till Saturday preparations for the great blast proceeded, and on Saturday the huge pillar, weighing 125,000 tons at the least, was demolished. The spectacle was imposing in the extreme. On the very brow of the quarry, fully 500 yards away from the scene of the coming explosing, and some hundreds of feet above it, a knot of privileged spectators was assembled near a flagstaff. The time was a few minutes past three. All along the brow of the quarry, and up on the slopes of the mountain above were crowds of spectators. All knew that in the bowels of the Talcen were two charges of powder, one of three tons and the other of four tons. At last the decisive moment came. The flag on the brow of the quarry was hoisted. A blue wisp of smoke from the base of the pillar, and all present knew that the triplicate fuses has been lighted, and that the hugh bricked-up chambers of powder would do its work shortly. There was a silence of expectation for five minutes or so, an interval which was almost painful; but still the wisp of blue smoke rose lazily, and a little cascade of water on the Bethesda side of the rock fell down merrily. The minutes passed very slowly, but at last—sixteen minutes and a half after the flag had been hoisted—there was a crashing sound. The noise was not so loud as one would have expected. With it came an outburst from the base of the pillar of smoke, of minute dust and of something that was either flame or red-hot powder of stone. Away from the top of the pillar sped two kestrel hawks which have nestled there for many a year. The base of the great rock seemed to fall away as water falls from a fountain jet at its highest point. There was no sign of any stone being thrown to a great distance. Then, in less time than these words occupy in the writing, but in orderly sequence none the less, there was the roar of huge masses of stone rolling one upon another, and with it came the spectacle of the huge rock sinking and subsiding with a slowness that was almost majestic until it was a mere chaotic mass of boulders reeking with smoke, quivering and gliding downwards for many minutes like an avalanche. Another minute followed, and then the whole of the quarry was vested in a cloud of heavy and evil-smelling smoke, of which however, the keen wind made short work.

MR. RICHARD MORRIS HUNT.

THE profession of architecture, not only in this country, but throughout the world, has suffered a great loss in the death of Mr Richard Morris Hunt, which occurred at his country house at Newport on Wednesday. Mr. Hunt was born at Brattleboro, Vermont, October 31, 1828, of a distinguished family. The sons of this generation seem to have been endowed with artistic talent in a remarkable degree, for a brother, the late William M. Hunt, became one of the most noted painters that this country has ever produced. Richard, while yet a very young man, was sent to Europe to complete his education, and, while there, was taken with a fancy for architecture. With characteristic energy, he prepared himself for entrance into the School of Fine Arts in Paris, remaining there for about seven years, under the great Lefuel; On leaving the School, he travelled extensively, and, returning to Paris, was invited by Lefuel, who was then engaged in building the wings connecting the Tuileries and the Louvre, for the Emperor Napoleon III, to become his assistant. He accepted the invitation, and is reputed, according to the tradition among New York architects, to have designed many of the details of the building, including the entrance archway from the Rue de Rivoli to the court-yard. At this time, Hunt was much more a Frenchman than an American. At the time that he entered the School of Fine Arts, he was, we think, the only American in the School, or, at least, in the Department of Architecture, and he was identified with French architectural design, and French architectural practice, until his work on the Louvre was finished. Returning then to America, he was employed for a time by Dr. Walter on the extension of the Capitol at Washington, and then entered into practice on his own account in New York. Although comparatively rich, both by inheritance and by marriage, he worked assiduously and ardently in his profession, and designed and carried out an immense number of fine buildings. In New York, those which occur to us at the moment are the Lenox Library, on Fifth Ave., the *Tribune* Building, on Printing-house Square, the W. K. Vanderbilt house, on Fifth Ave., the Osborne house, on Park Ave., a hospital near Third Ave., the Marquand house, and many other dwelling-houses, besides several mercantile buildings on Broadway and elsewhere; and the pedestal to Bartholdi's Statue of Liberty; besides the Vanderbilt Mausoleum, on Staten Island, and a large number of monuments. In Newport,

he built many splendid country houses, including the so-called Marble Palace, belonging to Mrs. W. K. Vanderbilt, and the magnificent Goelet house, reputed to have cost a million dollars. In Boston, his work is represented by the two Brimmer houses on Beacon street. At Asheville, North Carolina, he was engaged, at the time of his death, in the completion of an immense house for another of the Vanderbilt family. In the assignment of the work for the Chicago Exposition, he was given the principal place, by being asked to design the Administration Building, and all the world knows how he succeeded. Before that time, however, his great talents had long been recognized in the profession. He had been repeatedly elected President of the American Institute of Architects, to whose interests he devoted the most earnest and wise attention, both in office and out of it; and was decorated many years ago with the cross of the French Legion of Honor. Later, the French, who seemed to have followed his career with an affectionate interest, which was fully returned on his part, raised him to the highest honor that could be bestowed on a foreign architect, by making him Corresponding Member of the Institute of France, in the Section of Fine Arts; and similar honor was recently done him on the other side of the Channel, by the Royal Institute of British Architects, in the award of the Royal Gold Medal.—*The American Architect and Building News.*

AN INTERESTING PIECE OF FOUNDATION WORK.

AN interesting piece of foundation-work has been going on in New York, at the corner of Exchange Place and Broad street, where a sixteen-story office-building is to be erected for the John Taylor Johnson estate, says *The American Architect and Building News.* The soil at this point is a stiff clay, mixed with gravel and boulders, and resting on rock, at a distance of about forty feet from the surface. As usual in New York, where such lofty buildings are to be erected in the lower part of the town, caisson foundations are used, but the method of sinking the caissons is novel. Instead of forcing air into them, so that the earth can be excavated under them, the work of sinking them is performed mainly by water-jets, directed in a very ingenious manner. Around the lower edge of the caissons, which are of the usual form, and proportioned in size to the weight which is to come upon them, are fixed hollow castings, each of which is pierced with a row of holes, about one-eight of an inch in diameter. Pipes, descending on the outside of the caisson, enter the castings, and convey to them water, at a pressure at a hundred pounds or more to the square inch. The water issues in jets from the holes in the castings, washing away the earth from under the edge of the caisson. Around the lower edge of a caisson of moderate size there are something like a thousand of these jets, and their combined effect loosens the earth so effectually as to allow the caisson to sink rapidly. The movement is hastened by loading the top with iron weights, and by exhausting the air from the interior; and it is said that a caisson can be sunk forty feet in about a day, including all the delays incident to testing and rectifying the movement, and riveting together the three sections of which each caission is made. As might be expected, the sections do not sink with perfect accuracy, and the work must be stopped at intervals to apply gauges, and modify the current through the water-jets, until the necessary correction is made. In most cases, this is all the rectification required, but when the descending edge of the caisson meets a large boulder, it is sometimes necessary to apply a special treatment, which consists in directing a jet of water upon the earth below the the boulder, and a little outside of it. This jet soon excavates a hole, into which the boulder falls by its own weight, out of the way of the descending caisson. After the caissons are sunk to the rock, they are excavated in the usual manner, the surface of the rock trimmed and leveled if necessary, and concrete and masonry put in, filling them to the top. As soon as the concrete has set, the foundation is ready to receive the superstructure. As usual with modern caissons foundations, the steel cylinder is intended to serve only as a form in which to mould the concrete pier, which is the real support of the building, so that the metal may corrode away at any time, after the concrete has set, without diminishing in the least the security of the structure. Compared with the older method of making caisson foundations, the new one, which is the property of the Hydraulic Construction Company, has great advantages in point of rapidity, the sinking of a caisson being a matter of a few hours, instead of several weeks.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

STUDY for a Village Inn, Havens & Topeke, Architects.

I. O. O. F. Building, Redwood City, J. Marquis, Architect.

OUR double plate shows the new building to be erected by Claus Spreckles, on the corner of Third and Market streets, in which *The Call* is to make its home.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

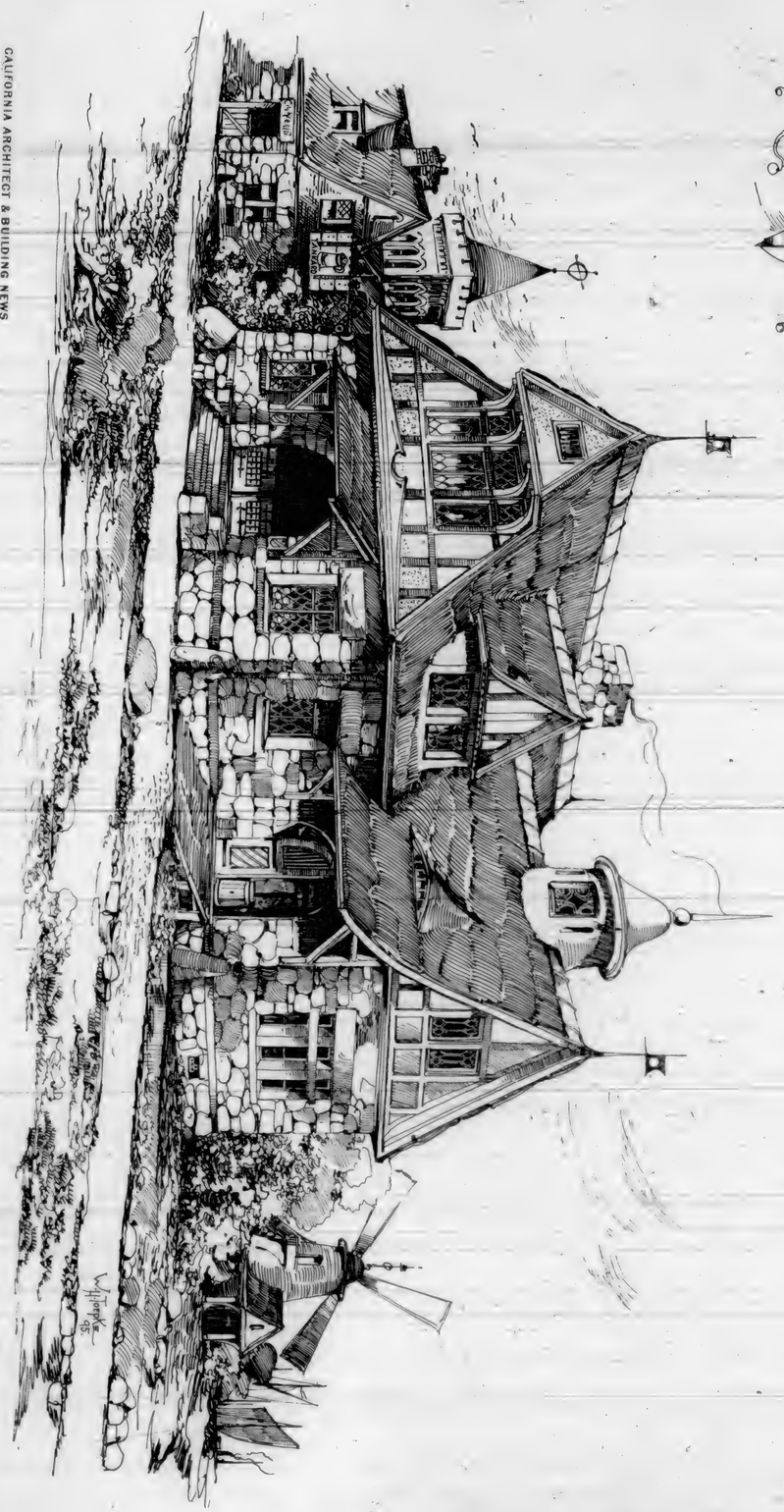
AT the August meeting of the San Francisco Chapter of the American Institute of Architects, officers for the coming term were nominated, to be voted for at the annual meeting in September. A full attendance of members is requested at that meeting.

INSTITUTE OF BRITISH ARCHITECTS MDCCCXXIV ROYAL

I.O.O.F BUILDING. REDWOOD CITY.

J MARQUIS ARCHT

STUDY FOR A "VILLAGE INN." :: HAVENS & TOEPKE: ARCHTS ::



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SAN FRANCISCO

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. GEO. W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

ARTIFICIAL WEATHERING TESTS OF BUILDING STONES.

A paper by Mr. Lea McI. Luquer in the Transactions of the American Society of Civil Engineers for March of this year raises a question in connection with the tests of building material which we discussed in these columns more than two years ago. As Mr. Luquer observes, the artificial testing of endurance of building stones exposed to the atmosphere, by means of the formation of crystals of some suitable substance in their pores, has for many years come to be regarded as satisfactory, although he raises the question which we pointed out in our former comments on this subject, whether the artificial procedure can be considered equivalent to the natural process of weathering. It is almost certainly not exactly equivalent, but we think it is a question well worth considering whether it is even approximately so. No theoretical considerations are sufficient for the determination of the physical forces developed or the changes produced in the material by them.

It is not impossible that small chemical reactions, at least, may take place in the material of some stones when treated by the sulphate of soda of similar processes, although it is improbable that such effects often result to an appreciable extent. Leaving out of account, however, all such influences, there still remains the fact that the destructive effects produced by the formation of ice in the small interstices of stone are almost certainly not identical with those induced by the formation of the crystals of such chemical substances as sulphate of soda. It may of course be said that while considerable inequality in these results may exist, yet the destructive effects of artificial crystallization may furnish a basis for a comparative or quantitative inference in regard to the weathering capacity of any given material. This is probably true, and the observations would possess practical value were there in existence actual data establishing the desired relation. As a matter of fact no such relation has yet been established for any stones, natural or artificial, and hence the results of artificial crystallization are, to a large extent at least, of suppositive value as establishing probable relative capacities among a given set of stones.

Again, there is a class of weathering effects due to the action of the sun and resulting from alternate expansions and contractions, to say nothing of slow possible chemical actions, of which no artificial process of crystallization can give us any measure. It is seem, therefore, that the latter class of tests fail in some very material characteristics of furnishing to the engineer such a measure of weathering endurance as he should desire or demand.

We do not make these observations in the line of hypercriticism, because we recognize the fact that the engineer, like everyone else, mu t always use the best means at his command to accomplish any desired end, although those means may fall very short of meeting the conditions which he fully recognizes. Mr. Luquer's admirable paper shows conclusively what has been at least partially recognized before—viz., that the sulphate of soda process is much more severe in its effects on the considerable number of stones which he tested than the same number of alternate freezings and thawings, and to an extent which varies widely with stones of different texture. While, therefore, the sulphate of soda and similar processes may and do give valuable information to the engineer in regard to certain weathering properties, and while such tests must necessarily in some cases be the only endurance tests available, their results should in all possible cases be supplemented by the effects of actual weathering exposure wherever possible. Indeed it is probable that there is no better measure of resistance to weathering by building stones, when available, than that exhibited by the outcrop of the quarries which have been exposed to all weathers and all seasons through perhaps centuries of time. On account of the varying qualities of stone in the same quarry this test is obviously unusually unavailable, but engineers with a very little forethought and trouble may accumulate in the course of a few years data in regard to the weathering properties of natural and artificial stone of a most valuable character by submitting specimens to continuous exposure under such conditions as will develope effects of sun, frost, and other influences which act on the exposed faces of buildings. The accumulated data of such investigations as that of Mr. Luquer, and others of a similar character, would then perhaps in time give us the desired relation between the artificial and natural methods. In the meantime provisional methods must be employed for what they are worth, but with caution, in the hope that both architects and engineers may give the subject much more attention than it has yet received.—*The Engineering Record*.

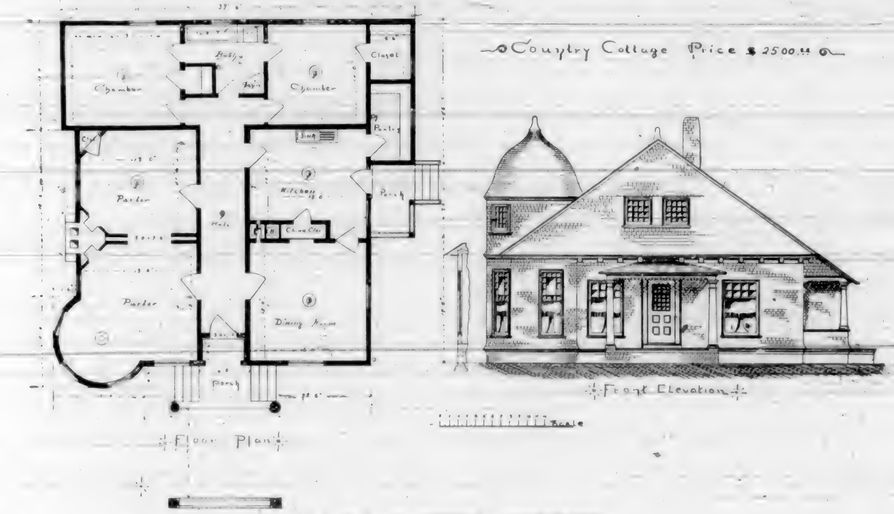
THE STONE-WORKER'S FUTURE.

IN looking forward to the probable developments of the next few years it appears to one who has personal contact with the pulse of invention, that we will make very great strides in the perfection of stone-working machinery of an entirely new type. There are, as it were, periods or waves of improvement. The pneumatic tool marks one of these waves, being one of the inventions that stamps its character upon every class of the industry. It marks an era in the craft. The time is fast approaching when we will feel another wave of progress, and it will also make its mark upon every class of the craft.

But a ten minutes walk through a modernly-equipped stone works reveals to the thoughtful mind, many places where both labor and time are wasted, and are unproductive. And as competition becomes more severe labor and time are the great items upon the expense side of the ledger, and anything that tends to save these becomes a chief factor in a successful business enterprise. Only a week or two

ago I had a long and interesting talk with the owner of one of the oldest and most important steam stone works of New York City, and the conversation turned mainly upon this very theme, the mechanical saving of labor and time in the dressing of building stone. When he was young in the business, good work was all that was needed to fill up a fat order book, but now it requires a close cost estimate. And this is truer as the years pass by.

In the first place, it occurs to a practical mind that the cutting of stone as it is done now is entirely too slow a process. And the machinery is too expensive by all means. From five to ten thousand dollars is entirely too much to spend for a saw cutting little more than a quarter of an inch per minute. Again, dimension work must be put through faster. The cuts should follow rapidly, and the measurements be made by mechanical means. Cutting and trying is a relic of the days when carpenters hewed beams with adzes. Measuring and squaring should be absolutely under



J. J. & T. D. NEWSOM, ARCHITECTS.

mechanical control. Gang work should be done at high speed. Planers must work faster and be automatically operated. Tools must be invented to do special work automatically from pattern, and without waste of stock. I expect to soon see arches cut without any waste of material within the segment.

In fact there are great lessons for the worker in stone to learn. Some of them can be found in any well-equipped wood-working shop, and in machine shops. Is there any reason why the same principles cannot be applied to the working of stone? It is not because stone is heavy, for in the Washington Navy Yard I have watched the handling of a hundred ton cannon with as much ease as though it were a Napoleon. Steel is as hard as granite. The real secret is that the inventive mind has not taken hold of the entire problem as yet. The rapid manipulation of stone will be a fact when proper attention is focused to that end.—*Edw. C. Weaver in Stone.*

A Weak mind is like a microscope, which magnifies trifling things, but cannot receive great ones.—*Chesterfield.*

BOOKS AND PERIODICALS.

We have before up the Catalogue of the EIGHTH ANNUAL EXHIBITION of the Chicago Architectural Club Art Institute, Chicago, May 23d to June 10, 1895. Among other illustrations is the competitive design for the gold medal of the Illinois Chapter A. I. A. by J. W. Johnson.

This Catalogue is neatly printed on good paper, many of the sketches are very creditable to the artist, and show that the club is doing good work in the cause of Art.

A new magazine called GRANITE, PRODUCER AND BUILDER, devoted to the interests of quarries, manufacturers and sculptors of granite and marble as used for monumental or building purposes. This magazine appropriately dressed in a granite color cover is published by Ladd, Hunt & Co., 131 Devonshire street, Boston, Mass.

It contains some handsome illustrations, among the number a panel carved in granite that makes a very striking figure, we should judge it must be a valuable work for those interested in this line.

COMPRESSED AIR and the Clayton Air Compressors, complete catalogue No. 8, Havemyer Building, Cortlandt, Church & Dey Sts., New York; it is not our custom to review trade catalogues, but make an exception in this case because of a valuable article upon "The Wide Use of Compressed Air" which the volume contains, calling attention to the many uses that at the present time compressed air is applied to that cannot fail to be of interest to constructing engineers.

PAINTING IRON BRIDGES is by Walter G. Berg instead of Walter G. Bery.

LEGAL DECISIONS.

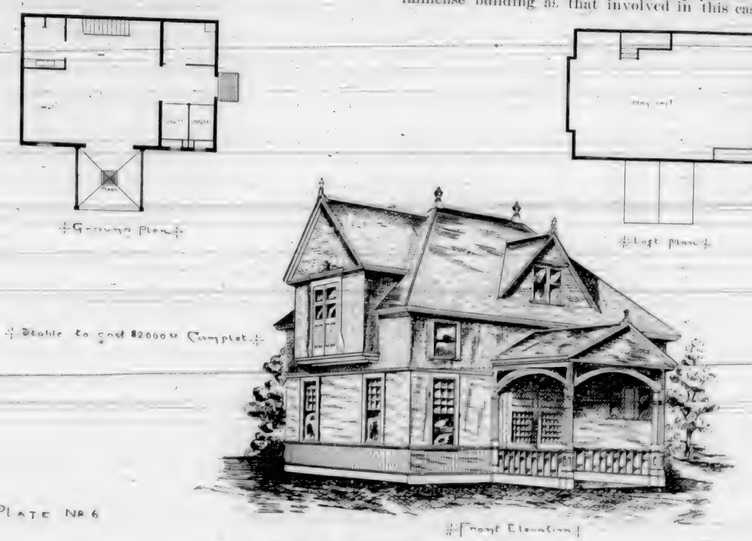
From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

When Order of Contractor Takes Precedence of Lien.—An order given by the contractor on the owner in good faith, and for a valuable consideration, before notice of a material man's lien is given, takes precedence of such lien.

Newman v. Levy, Supreme Court, General Term, Second Department, 32 N. Y. Sup. Rep. 557.

Statements of Contractor's Son.—A statement by a contractors's son, while working for his father, in the latter's absence, that the time for filing a mechanic's lien for certain work had expired, does not bind the father, where the son was not authorized by him to make the statement.

Alexandria Bldg. Co. v. McHugh, Appellate Court of Indiana, 39 N. E. Rep. 877.



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Accepting Service of Notice.—In proceeding by the original contractor to enforce a mechanics' lien against the owner of the land, no rights of subsequent purchaser intervening, the owner by accepting service of a copy of the statement in lieu of the statutory service, before the time had elapsed within which the statutory service could have been made, is estopped to assert that the service was not made in the statutary manner.

Mount v. Fisher, Supreme Court of Michigan, 62 N. W. Rep. 338.

Iron Building Construction.—The thirteenth claim of the Buffington patent, for "improvements in iron-building construction," being "the combination, with the posts and girts, of the angle plates connecting them, and forming supports for the veneer shelves," does not include a claim for the idea of supporting horizontal sections of masonary veneer on the iron framework of a building, or the combination of such veneer and the shelves supporting it with the iron frame, merely because shelves and veneer supported thereon in horizontal sections are described in the specifications of the patent.

Buffington's Iron Bldg. Co. vs Eustis, Circuit Court of Appeals, Eight Circuit, 65 Fed. Rep. 804.

No Lien for Damages for Breach of Contract.—Under the laws of New York, a contractor has no lien for damages sustained by him by reason of a breach of contract by the owner, but is confined to the value of his labor and the materials furnished.

Wolf v. Horn, Com. Pl. N. Y. City, 33 N. Y. S. Reporter, 173.

Measure of Damage for Failure to Complete Contract.—When a contractor fails to complete a building, and the owners take possession and do so, the measure of damages will be the amount of the paid contract-price, less the fair and reasonable amount the owner had to pay to complete the work.

Mills v. Paul, Ct. Civ. App. Tex., 30 S. W. Reporter, 559.

Architect's Lien for Preparing Plans, etc.—The Circuit Court of the United States (Northern Dist. Ohio,) has decided that, a statute giving a lien to a person "who performs labor or furnishes machinery for erecting, altering, repairing or removing a house by virtue of a contract," etc., includes not merely those performing manual labor, but extends to the labor of an architect in preparing plans and specifications, and in superintending construction, where it appears that such plans and specifications were prepared with a view to the particular location where the building was actually located, and in pursuance of a contract having a substantial financial basis.

The Judge said:—"There is no reason in equity or law why the architect who conceives and puts upon paper the design of such an immense building as that involved in this case, and who puts upon paper with such minuteness of detail the specifications and drawings as to enable any one skilled in such business to erect, with perfect proportions and proper stability, such a mammoth structure, should not be protected in his contribution to the completion of such work, as well as the carpenter, the plumber, the painter, or any one who performs manual labor.

"The Court ought certainly not to strain the statute to exclude labor of this high character and grade, unless it is plainly the intent of the legislature that it should bear such interpretation. The architect in this case is entitled to a lien not only for the plans and specifications, but for the labor and assistance in the construction of the building in pursuance of these plans."

Phœnix Furniture Co. v. Put-in-Bay Hotel Co., 66 Fed. Rep. 635.

Attorneys' Fees for Securing Lien.—The Supreme Court of Montana holds that: A law providing that in an action to enforce mechanics or other liens, the party if successful shall recover a reasonable attorney's fee and costs is constitutional.

Helena Steam Heating & Supply Co. v. Wells, 40 Pac. Rep. 78.

Occupation Tax on Architects.—Acts 1883, imposing an occupation tax on architects, was not repealed by Acts 1889, or by Acts 1891, both of which provided for state and county revenues. The occupation of an architect can be made the subject of a privilege tax.

Cook v. City of Memphis, Supreme Court of Tennessee, 30 S. W. Pap. 742.

BUSINESS MOSAICS.

Rock Asphalt—In another part of this issue will be found an advertisement of a quantity of the celebrated and widely known Neuchatel Rock Asphalt Mastic, which is so extensively used in New York, Chicago, and all the other large Eastern cities, as well as in Europe, for laying side walks, fire proof floors, etc. It is peculiarly adapted for water tight floors in stables, sanitary cellars, and for other similar work, and anyone desiring an article that will meet their requirements for the above purposes cannot do better than by using this asphaltum.

The lot now offered for sale is the genuine product from the Neuchatel Valley, Switzerland, and is the balance of a shipment received here some time ago, but parties ordering having failed, it has been held in store pending sale. Owners having determined to dispose of this balance at an early date, have now authorized their representatives here, Messrs. Williams, Brown & Co., 116 California St., to make a specially low figure to that end. The attention of all in the trade is drawn to this article as the cheapest and best for the purposes above stated.

Wife—"Dear, dear! What can you be dropping oil on your best coat for?" Husband—"I bought a bottle of stuff to-day to take out grease stains with, and I wanted to see if it was any good."—*News Letter.*

As the windy season is almost over it is time to think of having your house repainted, therefore a few facts about paints do not come out of place. The Phœnix pure paint, manufactured by W. P. Fuller & Co., is certainly an article that fills the bill; its extensive use upon the Pacific Coast for the last five years proves that it is what is claimed to be by the manufacturers. Without pure materials how can you expect good work? Note what is guaranteed: "Absolutely pure and satisfactory on the building or we will replace it with any material the architect may select."

New Customer—"Is that your dog?" Barber—"Yes, sir." New Customer—"He seems very fond of watching you cut hair." Barber—"It is not that, sir. Sometimes I make a mistake and take a little piece of a gentleman's ear.—*Tit-Bit.*

The fact that cement has been gaining in favor for foundations, sidewalks, etc., is self evident to every one interested in the welfare of our city. When you order cement why not order the best, to this end why not order from W. R. Grace & Co., 203 California street, you will certainly be satisfied with "Josson" or "White Starr," but as you pay your money you can take your choice of many other brands they have on hand.

"What a talker Mrs. Frakshus is!" exclaimed Mrs. Dinwiddie. "Yes," replied Mr. Dinwiddie; "even her teeth chatter."—*Life.*

A. Steiger Sons.—This concern has proved itself fire proof, for notwithstanding the destruction of their works by fire, business has been continued with renewed energy, any thing in the way of Architectural Terra Cotta, etc., will be found in stock, or manufactured to order. Orders can be left at the office in San Jose, Postoffice Box 1025, San Francisco office, Builders' Exchange, Post street, room 16.

Heating and Ventilation, 27 New Montgomery street. Mr. Wright having purchased his partners interest will continue to furnish estimates for the heating and ventilation of buildings of any size, either by steam, hot water, warm air, or by combination of hot water and warm air. As the importance of good ventilation, combined with a comfortable heat is daily becoming more in use, people desiring pure air are more inclined to pause before ordering a hot air furnace, the right thing to do is to consult some one who makes a business of this art, surely it is an art; Mr. Wright is the man to apply to. Judge Murphy might not now be on the sick list, if Mr. Wright had ventilated the Court Room.

Mr. Brice must have lost his hat. He is now talking through his secretary.—*Cleveland Leader.*

If you need water only when the wind blows; if you are satisfied to utilize but a small fraction of the water in your well, if you prefer heavy bills for repairs after each storm in winter, by all means use a windmill; but if you want water at any time, and up to the full capacity of your well, put in the Ajax Coal Oil Gas Engine, the latest thing in mechanics, an engine that uses common coal oil for fuel, and is built by the well known firm of Palmer & Rey, San Francisco, Cal.

He—"My views of bringing up a family are—— She—"Never mind your views; I'll bring up the family; you go and bring up the coal."—*Halifax Herald.*

San Francisco Lumber Co., wholesale and retail; the readers should be reminded that their principal office has been removed to the foot of Third street, uptown office for orders 405 Montgomery street, cor. California. The yards, foot of Third and Channel streets south side bet. Fourth and Fifth streets, contain almost everything the contractor and builder may require, the fact that Mr. J. N. Curtis is manager is enough to insure fair treatment and prompt delivery of orders.

The Teacher—"Now, who can tell me which travels the faster, heat or cold?" Johnie Bright (promptly)—"Heat, of course. Anybody can catch cold."—*Pathfinder.*

W. W. Montague & Co. is the place to go, if you wish anything in the way of mantels, grates or tiles. Before you leave their establishment it will be well to look over the large stock of most everything in the way of heating apparatus; it may be hard to make a choice among so many desirable articles that add to the comfort of house-keeping, but when you leave the store you will go with the idea that San Francisco has establishments equal to any other city.

Architect's Wife—"What makes you so bad tempered to-night, John?" Architect—"I don't know; unless it is because I was drawing some cross-sections this afternoon."—*Drake's Magazine.*

The Improved Chapman Fire Hose Real is what you want if you want the best. At 14 and 16 Fremont street you will find Mr. R. S. Chapman, late Fire Surveyor for Board of Underwriters, what he doesn't know about hose is not worth knowing. Call and be convinced.

CITY BUILDING NEWS.

All work for schooner for the American Board of Commissioners for Foreign Missions; architect, Hugo P. Frear; contractor, Geo. W. Knoass; signed, July 3; filed, August 2; cost $4250.

Bartlett near 22d. To build; owner, M. J. Dempsey; contractor, H. Munster; signed, July 20; filed, July 25; cost $2400.

Belvedere near Fredrick. To build; owner, W. Hinkle; architects, Hermann & Swain; contractors, Peterson & Person; signed, Aug. 8; filed, Aug. 9; cost $3075.

Bluxome near Fourth. To build; owner, J. F. Hill; architect, E. A. Garin; contractor, D. R. W. Smith; cost $4000.

Bluxome near Fourth. Stable buildings; owner, Overland Freight and Trans. Co.; architect, S. O'Brien; contractor, M. Bagey; cost $1800.

Brannan near Fourth. To build; owner, A. Steinmetz; contractor, W. Bell; cost $900.

Brannan near Fifth. Mason work, etc., on brick warehouse; owner, Ed. Niehaus; architect, B. J. Clinch; contractor, J. Wagner; signed, July 13 filed, July 15; cost $2500.

Brannan near Fifth. Furniture factory; owner, C. Reichling; contractor, C. Klein; cost $2000.

Brannan near Fifth. To build; owner, F. Huber; contractor, F. W. Steinmann; cost $2000.

Brannan near Fifth. To build; owner, R. Herring; contractor, M. J. Gallagher; cost $2000.

Brannan near Fourth. To build; owner, Herman Harms; architects, Martens & Coffey; contractor, J. Bucher; signed, Aug. 6; filed, Aug. 7; cost $7240.

Bryant near Tenth. Engine House; owner, City of San Francisco; contractor, W. H. Wickersham; cost $5345.

Bryant near Centre Place. Alterations and additions; owner, Jas. Mahoney; architect, J. E. Krafft; contractor, P. J. Brennan; signed, July 22; filed, July 24; cost $1398.

Bryant near 23d. Cottage; owner, Bessie J. Hetzer; architects, Hermann & Swain; contractor, H. Jacks; signed, July 16; filed, July 16; cost $1582.25.

Bryant near Fifth. Brick building; owner, John Horstmann; architect, H Geilfuss; contractors, Miller & Beck; signed, July 17; filed, July 17; cost $3695.

Bryant near Fifth. Carpenter and iron work; owner, John Horstmann; contractors, Hood & Watson; signed, July 17; filed, July 17; cost $4675.

Broadway near Gough. To build; owner, Mrs. Maggie Hockstadter; architect, M. J. Lyon; contractor, R. Sinnott; filed, July 24; filed, July 24; cost $6200.

Bush near Laguna. Mill work on church; owner, Congregation Ohabae Ohalome; architect, M. J. Lyon; contractor, H. Rohling; signed, July 3; filed, July 18; cost $2800.

California and Montgomery. Iron work; owner, Cal. Safe Deposit & Trust Co.; architect, H. A. Schulze; contractors, Union Iron Works; signed, June 24; filed, July 13; cost $17 171.

California and Montgomery. Boilers, engines, etc.; owners, Cal. Safe Deposit & Trust Co.; architect, H. A. Schulze; contractors, Risdon Iron & Locomotive Works; signed, June 24; filed, July 13; cost $3800.

California and Montgomery. Sidewalk lights; owner, Cal. Safe Deposit & Trust Co.; architect, H. A. Schultz; contractors, Keatinge, Leonard & Co.; signed, June 5; filed, July 27; cost $3630.

California and Baker. To build; owner, Kate A. Adams; contractor, W. W. Redhall; signed, Aug. 2; filed, Aug. 3; cost $3575.

Caselli Ave. To build; owner, J. A. Bigger; contractor, Josiah J. Rose; signed, July 31; filed, Aug. 3; cost $1420.

Chattanooga St., No. 12. Additions; owner, P. Coughlan; contractor, T. C. Cochrane; cost $1000.

Cherry near Sacramento. To build; owner, P. A. Peshon; architect, August Lund; contractors, Dahlberg & Lund; signed, July 20; filed, July 22; cost $3500.

Cliff House. Enclosing porches with glass; owner, Adolph Sutro; contractors, Campbell & Pettus; signed, July 25; filed, July 25; cost $2770.

Cliff House. Extra floor in attic; owner, Adolph Sutro; contractor, Campbell & Pettus; supplement to contract filed April 13; cost $420.

Cliff House. Diagonal boarding; owner, Adolph Sutro; architects, Colley & Lemme; contractors, Campbell & Pettus; cost $1661.

Clipper near Sanchez. Cottage; owner, Geo. S. and Annie Knowles; architect, T. J. Welsh, contractor, J. W. Coburn; signed, Aug. 7; filed, Aug. 8; cost $1875.

Colma Creek. Excavations, etc.; owner, Spring Valley Water Works; architect, Chief Engineer of Co.; contractor, A. E. Buckman; signed, Aug. 9; filed, Aug. 9; cost 9 cts. per cubic yard.

Diamond near 17th. To build; owner, Andrew Norin; architects, Hermann & Swain; contractor, R. Trost; signed, July 17; filed, July 17; cost $1750.

Dolores near 25th. To build; owner, J. M. Robinson; contractor, Chas. Koenig; signed, July 17; filed, Aug. 2; cost $3150.

Fell near Pierce. Alterations; owner, C. Westphal; architect, A. C. Lutgens; contractor, A. G. Johnson; signed, July 24; filed, July 26; cost $3158.

Fell near Gough. To build; owner, Peter Kelly; architect, W. H. Armitage; contractors, Wheeler & Perry; signed, Aug. 2; filed, Aug. 5; cost $3825.

Fourth and Freelon. To build; owner and architect, O. W. Kenitzer; contractor, Adam Miller; cost $4000.

Fourth near Brannan. To build; owner, H. Goecken; architect, H. D. Mitchell; contractor, Geo. Lack; signed, July 20; filed, July 23; cost $4320.

Fourth street, No. 610. To build; owner, A. Robins; contractor, L. Westerlund; signed, July 31; filed, July 31; cost $2630.

Fourth near Bluxome. To build; owner, A. Roberts; contractor, Westerlund; cost $2000.

Fourth near Welsh. To build; owner, M. Daliner; contractor, R. Rechenback; cost $800.

Fourth Ave. near Point Lobos. To build; owners, T. Morrow and wife; contractor, P. Fredriksen; signed, Aug. 6; filed, Aug. 3; cost $1250.

Geary near Hyde. Alteration except plumbing and painting; owners, Annie and Katie M. Butler; architect, J. T. Kidd; contractors, Cannan & Mooney; signed, Aug. 5; filed, Aug. 6; cost $3112.

Hampshire near 10th. Stable; owner, City of S. F.; architect, C. R. Wilson; contractors, Doyle & Sons; cost $12,873.

Howard near 9th. To build; owner, E. Campini; architect, R. A. Herold; contractor, E. Picapo; signed, July 30; filed, Aug. 1; cost $3275.

Jackson and Webster. To build; owner, T. J. Tiekenor; architects, Mahoney & Ryland; contractor, J. J. Dunn; signed, Aug. 7; filed, Aug. 8; cost $1250.

Jones and Sutter. Five story brick; owner, Dr. M. Herzstein; architect, M. J. Lyon; contractor, Wm. Knowles; signed, July 27; filed, July 31; cost $26,500.

Locust near Sacramento. To build; owner, D. T. McArthur; contractor, C. Zwierlein; signed, July 23; filed, July 24; cost $3400.

Market near Spear. Brick building; owners, Macdonough Estate; architect, H. A. Schulze; contractors, Mahoney Bros.; cost $15,000.

Market near Fifth. Electric light wiring; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, E. H. Frost; signed, July 24; filed, Aug. 5; cost $32,926.

Market near Fifth. Folding gates, etc; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Coppetiers & Mockel; signed, Aug. 5; filed, Aug. 6; cost $9.45 per running foot, about $12,000.

Market near Fifth. Elevators, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Coppetiers & Mockel; signed, Aug. 1; filed, Aug. 5; cost $5400.

Market near Stockton. Alterations and additions; owner, I. Magnin; architect, A. J. Barrett; contractors, Ackerson & Paterson; signed, Aug. 6; filed, Aug. 6; cost $150.

Market near Powell. Brick building; owner, Claus Spreckles; architects, Reid Bros.; contractor, C. Ferris; signed, July 10; filed, Aug. 2; cost $8000.

Market near Powell. Carpenter work o nbrick; owner, Claus Spreckles; architects, Reid Bros.; contractor, J. W. Hansbrough; signed, July 15; filed, Aug. 2; cost $5300.

Market near Powell. Pressed brick and terra cotta work; owner, Claus Spreckles; architects, Reid Bros.; contractors, Gladding, McBean & Co.; signed, July 12; filed, Aug. 2; cost $2270.

Market near Powell. Plumbing, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractor, W. F. Wilson; signed, July 10; filed, Aug. 2; cost $1005.

Market near Powell. Plastering; owner, Claus Spreckels; architects, Reid Bros.; contractor, Thos. Mannix; signed, July 23; filed, Aug. 2; cost $1085.

Market near Powell. Roof and iron work; owner, Claus Spreckels; architects, Reid Bros.; contractor, Philip Hammond; signed, July 10; filed, Aug. 2; cost $885.75.

McAllister near Hyde. Carpenter work and plastering; owners, California Bible Society; architect, McDougall & Son; contractor, J. H. McKay; signed, July 20; filed, July 20; cost $20,190.

McAllister near Hyde. Brick, stone and terra cotta work; owners, California Bible Society; architects, McDougall & Son; contractor, M. McGowan; signed, July 20; filed, July 20; cost $9889.

McAllister near Hyde. Concrete foundations; owners, California Bible Society; architects, McDougall & Son; contractors, Gray Bros.; signed, July 20; filed, July 20; cost $5329.

McAllister near Hyde. Plumbing and gas fitting, etc.; owner, California Bible Society; architects, McDougall & Son; contractor, H. Williamson; signed, July 20; filed, July 20; cost $2612.

McAllister near Hyde. Painting, graining, etc.; owner, California Bible Society; architects, McDougall & Son; contractor, W. T. Beck; signed, July 20; filed, July 20; cost $820.

Montgomery near Green. To build; owner, G. Capurro; architect, E. Deplerre; contractor, A. Norton; signed, July 16; filed, July 18; cost $6415.

Moss near Howard. To build; owner, J. Saunders; architect, D. C. Coleman; contractor, J. Kenealy; signed, July 12; filed, July 18; cost $2175.

Natoma near 5th. Brick building; owner, Louis Dipery; contractors, J. B. Gonyeau & J. Miron; cost $1200.

New City Hall. Steel work for tower; owner, City of San Francisco; architect, Frank T. Shea; contractors, Fennell & Son, cost $7396. Corrugated iron, work, contractor, J. H. McKay, cost $2240. Terra cotta, etc.; contractors, Gladding, McBean Co.; cost $2625. Shelving in Law Library; contractor, W. G. Hughes; $891.

Oak near Scott. To build; owner, D. F. Shea; architect, J. J. Clark; contractor, Holm & Shelbley; signed, July 24; filed, July 29; cost $4807.

O'Farrell near Octavia. Carpenter work; owner, Geo. Haas; architect, J. H. Littlefield; contractor, Robert Smilie; signed, July 11; filed, July 17; cost $5650.

O'Farrell near Octavia. Plumbing; owner, Geo. Haas; architect, J. H. Littlefield; contractor, H. Williamson; signed, July 11; filed, July 17; cost $1085.

O'Farrell near Stockton. Alterations and additions; owner, Hyman Bros. Co.; architects, Percy & Hamilton; contractors, Ingerson & Son; signed, July 31; filed, July 31; cost $1595.

Pacific near Jones. Engine house; owner, City of San Francisco; architect, C. R. Wilson; contractor, W. H. Wickersham; cost $14,948.

Perry near Third. To build; owner, J. J. Cass; contractor, A. Klahr; signed, Aug. 3; filed, Aug. 5; cost $2320.

Pennsylvania Ave. near Colusa. Cottage; owners, Chas. H. & Gesine Kaster; architect, D. C. Coleman; contractor, John T. Coleman; signed, Aug. 4; filed, Aug. 6; cost $1400.

Pierce near Union. To build; owner, G. E. Thompson; architects, Martins & Coffey; contractor, James Mooney; cost $2495.

Pine and Steiner. To build; owner, Mrs. E. M. Stewart; architect, C. J. Colley; contractors, Dunford & Kronnick; signed, Aug. 2; filed, Aug. 3; cost $5320.

Power House. Engines and boilers, etc.; owner, Sutro R. R. Co.; architect, J. C. H. Stut; contractors, Fulton Engineering Works; signed, July 30; filed, Aug. 1; cost $36,398.

Post and Powell. Alterations and additions; owner, G. F. Davis; contractors, Robinson & Gillespie; cost $3000.

Polk street No. 1217. Additions; owner, S. B. Denkelspiel; contractors, Robinson & Gillespie; cost $1200.

Sacramento near Gough. To build; owner, M. G. Weed; architect, Reid Bros.; contractors, W. S. Veitch & Bro.; signed, July 18; filed, Aug. 2; cost $5398.

Sacramento and Laguna. Carpentering, plastering, etc.; owner, H. L. Hill; architect, W. J. Mathews; contractor, J. A. Smillie; signed, July 23; filed, July 27; cost $10,775.

Sacramento and Laguna. Concrete and cement; owner, Horace L. Hill; architect, W. J. Mathews; contractors, Keatinge, Leonard & Ransome; signed, July 22; filed, July 26; cost $1000.

Sanchez and 22d. To build; owner, L. Bergerat; architect, G. A. Berger; contractors, Klein & Eickholt; signed, July 31; filed, Aug. 2; cost $2100.

Second Ave. near Clement. Cottage; owner, Geo. F. Lyon; contractor, W. W. Rednall; signed, Aug. 8; filed, Aug. 9; cost $2100.

Steiner and Grove. Carpenter work; owner, E. Probert; architects, Pissis & Moore; contractors, Gardner & Boyden; signed, July 3; filed, July 17; cost $5621.

Steiner and Grove. Plumbing; owner, E. Probert; architects, Pissis & Moore; contractor, Ickelheimer & Bro.; signed, July 3; filed, July17; cost $1137.

Steiner near Oak. To build except plumbing; owner, Mary A. Fuller; architect, Shea & Shea; contractor, R. Trost; signed, July 13; filed, Aug. 6; cost $3723.

Seventeenth near R. R. Ave. To build; owner, Henrietta Warsdale; contractor, Marcuse & Remmel; signed, July 18; filed, July 20; cost $1475.

Sixteenth near Valencia. To build; owner, Mary Harmann; architect, H. Hess; contractors, Weirochi & Franz; signed, July 31; filed, July 31; cost $9,300.

Stockton and Francisco. Engine House; owner, City of S. F.; architect, C. R. Wilson; contractor, W. H. Wickersham; cost $14,948.

Sutter and Grant Ave. Additional story; owner, Macdonough Estate; architect, A. Page Brown; contractors, Mahoney Bros.; cost $10,000.

Third Ave. near Lake. Cottage; owner, G. S. Conroy; contractor, B. J. Taylor; signed, July 19; filed, July 22; cost $1650.

Twenty-second near York. Cottage; owner, Rose Lafee, contractor, J. Kenealy; signed, Aug. 7; filed, Aug. 9; cost $1050.

Twenty-third near Noe. Cottage; owner, Peter McDevit; contractor, W. W. Rednall; signed, July 16; filed, July 16; cost $1100.

Twenty-third near Noe. To build; owner, Mary McDevit; contractor, W. W. Rednall; signed, July 16; filed, July 16; cost $2700.

Turk street No. 314 and 324. Alterations and repairs; owner, Emilie Haller; architects, Wright & Sanders; contractor, J. S. Mackey; signed, July 15; filed, July 17; cost $3610.

Turk near Buchanan. To build house and stable; owner, Wm. F. Wilson; contractor, F. C. Bell; signed, Aug. 6; filed, Aug. 6; cost $6000.

Union near Fillmore. To build; owner, Mrs. J. Ryerson; architect, F. P. Rabin; contractor, J. A. McDonald; signed, Aug. 2; filed, Aug. 5; cost $2688.

Washington near Octavia. Additions and alterations; owner, R. B. Furman; architect, W. J. Mathews; contractor, J. A. Smilie; signed, July 26; filed, July 27; cost $1997.

Welsh near 4th. Additions; owner, Mrs. Deagan; contractor, T. F. Mitchell; cost $800.

Welsh near Fourth. Repairs; owner, Estate of R. White; architect, R. H. White; contractor, D. H. Matheson; signed, July 17; filed, July 17; cost $1900.

Willow Ave. near Buchanan. To build; owner, Annette Reinochel; architect, H. D. Mitchell; contractor, Geo. Lack; signed, Aug. 8; filed, Aug. 9; cost $2950

York near 21st. Cottage; owner, Bridget McDermott; contractors, Blanchard & Clark; signed, July 26; filed, July 27; cost $1575.

York near 21st. To build; owner, T. E. Brown; contractor, T. C. Cochrane; cost $3500.

The California Architect and Building News.

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NOW IN THE SIXTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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THE chaotic condition of the ordinances regulating the construction of buildings in the City of San Francisco is a disgrace to any community with any pretense to civilization.

The original ordinances were framed in 1888 and have since been amended, added to and modified so many times that it would take the traditional Philadelphia lawyer to make head or tail out of the resulting tangle.

Several times in the last few years attempts have been made by the Chapter of Architects, the Chief of the Fire Department, and the Board of Supervisors to frame a complete and comprehensive order to take the place of the present disjointed and fragmentary series of orders that are a serious annoyance and source of confusion to architects, owners and contractors alike, but each attempt has only resulted in failure and the situation has been continually changing for the worse. New methods of construction are being continually introduced, and improved methods and materials are taking the place of the antiquated ideas of former generations; to meet these modern requirements should be the aim of our legislators, yet in place of keeping abreast of the times, and stimulating the progress of invention, that progress is retarded and confined by the swaddling clothes of infancy which should have been discarded years go.

Chief Sullivan of the Fire Department is now attempting to pursuade the Board of Supervisors to give their consideration to this matter, and a petition is being circulated by the architects designed to aid him in his attempt to impress on our City Fathers the importance and necessity of some action being taken with as little delay as possible. Many months time has been devoted to the preparation of a satisfactory ordinance by professional men competent to pass on the many questions involved, and at last an ordinance has been drafted that it is believed will satisfy the different requirements of all the interests concerned. Doubtless there are clauses that are open to objection, but taken as a whole there is no question but it will prove a great improvement on the existing laws, and will give the Architects and Builders the positive knowledge of what is not permissible, which it is so difficult to obtain at present, and thus remove many causes of contention that frequently disturb the harmonious relations that should exist between the property owner, the Fire Department, the Insurance Companies and and the Architect.

PROPOSED NEW CITY HALL FOR OAKLAND.

THE following extracts from the Architect's Report to the Oakland Officials gives a description of the building, and the method proposed to be used in raising money to build same.

The key note to the plan lies in the fact that Washington street, which is now blocked by the present City Hall, is desired to be continued through the City Hall lot and so on to San Pablo Ave. The design allows this and at the same time preserves the *coup d'œil* which all public buildings should have, *i. e.*, a position at the end of a street. The street is continued full width through the building—which is carried over it by arches of colossal proportions, this curtain between the two wings being surmounted by a Tower.

The ground floor is occupied by stores. The arch over the roadway is carried through two stories so that there will be no communication between the wings on the second story. One of these wings on this floor being devoted to a Public Library and the other to the Council Chamber, no communication is necessary.

By this arrangement the Library is entirely separate from rest of building—which is necessary—and the Council Chamber, and the crowds attending on its sessions, are secluded from what might be called the Administrative Offices—which is desirable.

The whole of the third floor is devoted to the offices—while the fourth floor is at present to be left vacant until such time as its space is required by the offices of electric and gas lighting, water works, street railways and other public utilities which will some time be under the control of the Municipality.

Meanwhile the space is proposed to be used for a Public Gymnasium—for public conveniences—and promenade on top of the curtain building.

Two fast elevators would be used one for each wing, and the main entrances would be under the archway in Washington street.

As to the method of raising money to build this Municipal Palace it is proposed to do so by the following means:—

The cost of erecting a fire-proof building would be about $500,000—for which bonds would have to be issued payable in twenty years. They are to be issued in small denominations as low as five dollars. These would be taken up by the people at three per cent interest as has already been proved at Philadelphia.

The building would take say four years to build, so that $125,000 of bonds would be issued every year—at end of the first year would be due one-twentieth of $125,000 or $6,250 and interest $3,750.

Second year there being another issue of $125,000 there would be due $12,500 and interest and so on to the end of the third year when the stores would be ready for occupancy.

There are sixteen stores, each would let for $100 per month, altogether $1,600 a month, $19,200 per year, say $19,000; so that at end of fourth year or at completion of building the amount would stand thus:—

Payable on $487,500 bonds outstanding, one-twentieth	$21,875
Interest on same at three per cent	13,125
	$35,000
Deduct rent of stores	19,000
Balance to be paid at end of fourth year	$16,000

Thus it is seen that the interest is all paid by rent and we have $2875 to carry to general municipal expenses or to pay off principal by loaning out the Sinking Fund at three per cent to the people instead of paying into General Fund; before the end of sixteen years the whole $500.000 will be paid off and the City will be having an income of $19,000 per year or whatever more the stores will rent for at that time. We will not burden our readers with figures to prove this, but it is so.

This is supposing these bonds are presented every year for redemption. I believe however that the mechanics, architects and superintendents would be glad to receive one-half of their pay in these bonds—especially if the shopkeepers would receive the same in payment for goods and if they refused the city could make arrangements by which the men could get provisions, etc., for these bonds.

They would be found so convenient however as money that very few would be presented for cashing at the City Treasury and as the interest would die out as the bonds matured, this would inure to the benefit of the City so much and the burden upon the city at any time would be but little.

REPORT OF THE CONSULTING ARCHITECT ON THE PLANS OF A. PAGE BROWN FOR THE NEW UNION DEPOT AND FERRY HOUSE.

SAN FRANCISCO, Sept. 10, 1895

To the Honorable Board of State Harbor Commissioners.

GENTLEMEN:—In compliance with instructions received from your President, on August 28th, we have examined the plans and specifications prepared by A. Page Brown for the proposed Union Depot and Ferry House, with a view to suggesting any modifications that might be better adapted to the use of California materials, and an economical application of the same.

To receive a complete set of drawings and specifications from Mr. Brown, who has also extended every courtesy and facility for examining into the details of the work.

We would say in general we find the plans of the building very complete, and we think well adapted to the objects for which it is designed.

The most important point in which we would differ from the opinion of the designer, is the unit of floor loads to be assumed as a factor for estimating the strength of floor beams, girders and supporting columns.

The plans for metal work as prepared, are estimated to carry with safety, something in excess of 225 pounds per square foot of floors throughout, including Mezzanine floors and the fourteen floors in tower. As the constant weight of beams, tile arches and cement or mosaic floors will be about ninety pounds per square foot it leaves about 135 lbs., per foot for the estimated superimposed load.

The greatest load that can possibly be put on these floors at any place, when used for its legitimate purpose, is a crowd of people, and as people cannot be crowded so as to weigh over eighty pounds to a square foot of floor surface, we think that is all that should be calculated for, or after adding, say, ninety-five pounds for weight of floor, using 175 pounds as the unit of safe floor load.

As this safe load is supposed to have a factor of safety of four for the breaking strength, it follows that it would require a superimposed load of about 600 pounds per foot to break down such floors, or one-half of that amount to strain the material to their elastic limit, and as its greatest load

can be only eighty pounds, it would seem that the margin was abundant.

We would, therefore, suggest that the thickness of metal in beams, girders and columns, be reduced to meet such requirements.

In regard to the beams being furnished by local rolling mills we would observe the spans throughout are about twenty-eight feet, and for any assumed floor load, twenty inch beams are more economical than those of less depth. Our local mills are not prepared to roll beams over fifteen inch in depth. These, if used in the work, would require approximately twenty per cent more metal than would twenty inch beams.

If fifteen inch beams are allowed to be estimated on, the field of competition would be widened, and possibly the price per pound might be less than for twenty inch beams. The cost of the work will doubtless be greater with fifteen inch beams than with twenty inch beams.

We would recommend reducing the weight of tower walls and floors as suggested by Engineer Holmes.

The building as now designed, has skeleton steel construction throughout, except at the front facade.

We believe it would be advisable to put in Z bar columns in the front, and thereby make the entire frame independent of the walls.

The plans are prepared for cast iron columns in the first story, while the specifications give the contractors the privilege of substituting Phœnix steel columns.

As these are to be exposed to the atmosphere and all sorts of wear and conditions, we think cast iron is best for the purpose and they can be produced here without difficulty.

We should remove that choice from the specifications, and require cast iron columns as designed.

The tower Z bar columns, we would require in two story lengths, breaking joints at alternate stories, and put together with fish plates, with the bracing and other parts as on the strain diagram prepared by Mr. Holmes.

As to the general design and details of walls, the plans are worked up for pressed bricks and terra cotta, with a granite base. These materials we consider the most appropriate and economical for clothing and protecting steel construction from the effects of the elements, including fire.

Alternative plans are prepared for stone and bids will be invited for various kinds of that material. If stone were used, the building would appear more monumental and impressive.

We would recommend the cellular constructions in either case, and the proposals submitted will doubtless form the basis of your decision as to the materials to be used.

We shall hope to see glazed bricks used for lining inside walls, corridors, etc., as designed, although alternative bids are to be taken for pressed bricks.

In regard to the scheme of thin marble veneering as proposed by Mr. Pelton, we would say we consider the method in general is practicable and perfectly feasible, if performed with faithful skill and care, and every precaution taken to overcome possible defects.

The vertical joints at angles should be disguised by small reentrant angles, or in quirks of beads, or other manner.

The metal adjustable anchors holding the slabs to the steel frame, should be of some metal or alloy not liable to corrosion, and should extend upward from the joints to the frame, across the air space, so as not to conduct water to the steel frame.

The greatest care should be exercised to fill the joints both vertical and horizontal, with good cement, and after every precaution is taken, we believe some water would find its way through the lofty exposed sides of the tower, and in such places copper gutters should be arranged in the air space above the roof of main building, to catch such leakage, and conduct it out over the main roof.

While we believe buildings may be faced up in this manner to last as long as any portion, we do not feel like recommending it on so large a scale and on such an important building in such an early stage of the methods development. Its cost and probability of getting material within reasonable time, will also be factors in your final decision.

In regard to the Portland cement used for brick and concrete work, we think an excess amount is specified. We would suggest for the mortar used in brick work, one part of cement to four parts of lime mortar, made in the usual manner, with North Beach sand; and for the concrete filling and lower portions of floors, one part of cement to nine or ten of properly selected aggregates. And in all cases, we would urge as very important, that the Board of Harbor Commissioners furnish the cement and not the contractors.

Otherwise it will require the constant watchfulness of a superintendent to get one-half of the above amount of cement in the mortar for brick work. With the Board furnishing the cement, the proportions may be changed by the Architect or Superintendent, when it appears desirable, without loss or profit to the contractor.

Finally, we would reduce the thickness of the galvanized iron for all work of that character, from No. 18 to No. 22, as that is as heavy as can be worked by any machine on this coast.

The above are all the suggestions and recommendations we have to make, the advisability of which we will be pleased to discuss with your Honorable Board, Architect and Engineer at any time.

Respectfully submitted,

PERCY & HAMILTON.

FORM OF CONTRACT ADOPTED BY THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ARTICLES OF AGREEMENT made the day of 189 between of in the County of (hereinafter called "the Employer") of the one part and of and of County of Builder* (hereinafter called "the Contractor") of the other part. Whereas the Employer is desirous of† a messuage and premises at and has caused Drawings and a Specification describing the work to be done to be prepared by of , his Architect: And whereas the said Drawings numbered 1 to inclusive and the Specification marked "A" have been signed by or on behalf of the parties hereto: And Whereas the Contractor has agreed to execute upon and subject to the Conditions set forth in the Schedule hereto (hereinafter referred to as "the said Conditions") the works shown upon the said Drawings and described in the said Specification for the sum of £ :

*Insert "s and co-partners" if such is the fact.
†Insert "erecting" or "restoring" or "adding to" as the case may be.

Now it is Hereby Agreed as Follows:—

1. Inconsideration of the sum of £ to be paid at the times and in the manner set forth in the said Conditions, the Contractor will upon and subject to the said Conditions

execute and complete the works shown upon the said Drawings and described in the said Specification.

2. The Employer will pay the Contractor the said sum of £ or such other sum as shall become payable hereunder at the times and in the manner specified in the said Conditions.

3. The term "the Architect" in the said Conditions shall mean the said or, in the event of his death or ceasing to be the Architect for the purpose of this Contract, such other person as shall be nominated for that purpose by the Employer not being a person to whom the Contractor shall object for reasons considered to be sufficient by the Arbitrator mentioned in the said Conditions. Provided always that no person subsequently appointed to be Architect under this Contract shall be entitled to disregard or overrule any decision or approval or direction given or expressed by the Architect for the time being.

4. Any reference in the said Conditions to the Bills of Quantities shall not have the effect of constituting them part of this Contract.

5. The said Conditions shall be read and construed as forming part of this Agreement, and the parties hereto will respectively abide by and submit themselves to the conditions and stipulations and perform the agreements on their parts respectively in such Conditions contained.

As witness our hands this day of 189

Signed in the presence of

SCHEDULE OF CONDITIONS.

DRAWINGS AND SPECIFICATION.

1. The works shall be carried out in accordance with the directions and to the reasonable satisfaction of the Architect in accordance with the said Drawings and Specification, and in accordance with such further drawings, details, and instructions in explanation of the same as may from time to time be given by the Architect. The Contractor Drawings and Specification shall remain in the custody of the Architect, and shall be produced by him at his office as and when required by the Employer or by the Contractor.

COPIES OF DRAWINGS AND SPECIFICATION.

2. One complete copy of all Drawings and of the Specification shall be furnished by the Architect free of cost to the Contractor for his own use. The Architect shall furnish to the Contractor, within days after the receipt by him of a request for the same, any details which in the opinion of the Architect are necessary for the execution of any part of the work, such request to be made only within a reasonable time before it is necessary to execute such work in order to fulfil the Contract. Such copies and details shall be kept on the works until the completion thereof, and the Architect or his representative shall at all reasonable times have access to the same, and they shall be returned to the Architect by the Contractor on the completion of the Contract.

COPY OF ESTIMATE.

3. The Contractor shall on the signing thereof furnish the Architect with a verified * copy of the original estimate for his sole use or that of the Surveyor appointed as in Clause 13 hereof, and for the purposes only of this Agreement.

* The word "sealed" to be inserted if so agreed.

CONTRACTOR TO PROVIDE EVERYTHING NECESSARY.

4. The Contractor shall provide everything necessary for the proper execution of the works, according to the true intent and meaning of the Drawings and Specification taken together, whether the same may or may not be particularly shown on the Drawings or described in the Specification, provided that the same is reasonably to be inferred therefrom; and if the Contractor find any discrepancy in the Drawings, or between the Drawings and Specification, he shall immediately refer the same to the Architect, who shall decide which shall be followed. Figured dimensions are to be followed in preference to the scale.

LOCAL AND OTHER AUTHORITIES; NOTICES, ETC.

5. The Contractor shall conform to the provisions of any Acts of Parliament relating to the works, and to the regulations and by-laws of any Local Authority, and of any Water and Lighting Companies with whose systems the structure is proposed to be connected, and shall, before making and variation from the Drawings or Specification that may be nessitated by so conforming, give to the Architect written notice, specifying the variation proposed to be made, and the reason for making it, and apply for instructions thereon. In case the Contractor shall not in due course receive such instructions he shall proceed with the work, conforming to the provision, regulation, or by-law in question, and any variation so necessitated shall be dealt with under Clause 13. The Contractor shall give all notices required by the said Acts, regulations, or by-laws to be given to any Local Authority, and pay all fees payable to any such Authority, or to any public officer in respect of the works.

SETTING OUT OF WORK.

6. The Contractor shall set out the works, and during the progress of the building shall amend at his own cost any error arising from inaccurate setting out, unless the Architect shall decide to the contrary.

MATERIALS, ETC., TO CONFORM TO SPECIFICATION.

7. All materials and workmanship shall be of the respective kinds described in the Specification, and the Contractor shall upon the request of the Architect furnish him with vouchers to prove that the materials are such as are specified.

FOREMAN.

8. The Contractor shall keep constantly on the works a competent general foreman, and any directions or explanations given by the Architect to such foreman shall be held to have been given to the Contractor.

DISMISSAL OF WORKMEN BY ARCHITECT.

9. The Contractor shall, on the request of the Architect, immediately dismiss from the works any person employed thereon by him who may, in the opinion of the Architect, be incompetent or misconduct himself, and such person shall not be again employed on the works without the permission of the Architect.

ACCESS FOR ARCHITECT TO WORKS

10. The Architect and any person authorized by him shall at all reasonable times have access to the works, and the Architect and his representatives shall at like times have access to the workshops of the Contractor or other places where work is being prepared for the building.

CLERK OF WORKS.

11. The Clerk of Works shall be considered to act solely as inspector and under the Architect, and the Contractor

shall afford him every facility for examining the works and materials.

VARIATIONS AND EXTRAS.

12. The Contractor shall not vary from the Drawings of Specification except as provided by Clause 5, or by the authority of the Architect, which is to be sufficiently proved by any writing or drawing given by him or by any subsequent written approval by him. If the work shown on any of the details or the further drawings or details referred to in Clause 1, or necessary to comply with any instructions, directions, or explanations which may be given from time to time by the Architect, be, in the opinion of the Contractor, in excess of that comprised in the Contract, he shall, before proceeding with such work, give notice in writing to this effect to the Architect. In the event of the Architect and Contractor failing to agree as to whether or not there is any excess, and of the Architect's deciding that the Contractor is to carry out the said work, the Contractor shall accordingly do so, and the question whether or not there is any excess, and if so the amount thereof, shall, failing agreement, be settled by the Arbitrator as provided in Clause 32, and the Contractor shall be paid accordingly. No claim for an extra shall be allowed unless it shall have been executed under the provisions of Clause 5, or by the authority of the Architect as herein mentioned. Any such extra is hereinafter referred to as an authorized extra.

PRICE FOR EXTRAS; HOW ASCERTAINED.

13. No variation shall vitiate the Contract; but all authorized extras for which a price may not have been previously agreed, and any omission which may have been made with the knowledge of the Architect, or without his knowledge, provided he subsequently give a written sanction to such omission, shall be measured and valued, as hereinafter provided, by * ; and a copy of such measurement and valuation shall be given to the Contractor. The fees for so measuring and valuing the variations shall be added to the contract sum. If in the opinion of the Architect the work cannot be properly measured and valued, day work prices shall be allowed therefor, provided that vouchers specifying the time and materials employed shall have been delivered for verification to the Architect, or his nominee, at or before the expiration of the week following that in which such work shall have been done. The variations shall be valued at the rates contained in the Contractor's original estimate, or, where the same may not apply, at rates proportionate to the prices therein contained. The amount to be allowed on either side in respect of the variations so ascertained shall be added to or deducted from the contract sum as the case may be.

* Insert "the Architect," or "a Surveyor appointed by the Architect and approved by the Contractor."

BILLS OF QUANTITIES; EXPENSES OF.

14. The fees for the Bills of Quantities and the Surveyor's expenses (if any) stated therein shall be paid by the Contractor to the Surveyor named therein out of and immediately after receiving the amount of the certificate or certificates in which they shall be included. The fees chargeable under Clause 13 shall be paid by the Contractor before the issue by the Architect of the certificate for the final payment. If the Contractor fails or neglects to pay as herein provided, then the Employer shall be at liberty, and is hereby authorized, to do so on the certificate of the Architect, and the amount so paid by the Employer shall be deducted from the amount otherwise due to the Contractor.

NOTE: In cases where the Surveyor is engaged by the Employer to be paid direct by him this clause will come out.

UNFIXED MATERIALS WHEN TAKEN INTO ACCOUNT TO BE PROPERTY OF EMPLOYER.

15. When the Contractor shall have received payment of any certificate in which the Architect shall have stated that he has taken into account the value of any unfixed materials intended for the works, and placed by the Contractor thereon, or upon ground adjacent thereto, all such materials shall become the property of the Employer, and shall not be taken away, except for the purpose of being used on the building, without the written authority of the Architect; and the Contractor shall be liable for any loss of or damage to such materials.

POWER OF ARCHITECT TO ORDER REMOVAL OF IMPROPER WORK.

16. The Architect shall, during the progress of the works, have power to order in writting from time to time the removal from the works, within such reasonable time or times as may be specified in the order, of any materials which in the opinion of the Architect are not in accordance with the Specification or the instructions of the Architect, the substitution of proper materials, and the removal and proper re-execution of any work executed with materials or workmanship not in accordance with the Drawings and Specification or instructions; and the Contractor shall forthwith carry out such order at his own cost. In case of default on the part of the Contractor to carry out such order, the Employer shall have power to employ and pay other persons to carry out the same; and all expenses consequent thereon or incidental thereto shall be borne by the Contractor, and shall be recoverable from him by the Employer, or may be deducted by him from any moneys due or that may become due to him.

DEFECTS AFTER COMPLETION.

17. Any defects, shrinkage, or other faults which may appear within months from the completion of the works, arising in the opinion of the Architect from materials or workmanship not in accordance with the Drawings and Specification or the instructions of the Architect, or any damage to pointing by frost appearing within the like period, shall upon the directions in writing of the Architect, and within such reasonable time as shall be specified therein, be amended and made good by the Contractor at his own cost, unless the Architect shall decide that he ought to be paid for the same; and in case of default the Employer may employ and pay other persons to amend and make good such defects, shrinkage, or other faults or damage, and all expenses consequent thereon or incidental thereto shall be borne by the Contractor and shall be recoverable from him by the Employer, or may be deducted by him from any moneys due or that may become due to the Contractor. Should any defective work have been done or material supplied by any sub-contractor or other person employed on the works who has been nominated or approved by the Architect, the Contractor shall be liable to make good in the same manner as if such work or material had been done or supplied by the Contractor, and been subject to the provisions of this and the preceding clause.

WORK TO BE OPENED UP AT REQUEST OF ARCHITECT.

18. The Contractor shall, at the request of the Architect, within such time as the Architect shall name, open for in-

spection any work covered up; and should the Contractor refuse or neglect to comply with such request, the Architect may employ other workmen to open up the same. If the said work has been covered up in contravention of the Architect's instructions, or if on being opened up it be found not in accordance with the Drawings and Specification or the instructions of the Architect, the expenses of opening and covering it up again, whether done by the Contractor or such other workman, shall be borne by, and recoverable from, the Contractor, or may be deducted as aforesaid. If the work has not been covered up in contravention of such instructions, and be found in accordance with the said Drawings and Specification or instructions, then the expenses aforesaid shall be borne by the Employer and be added to the Contract sum: provided always that in the case of foundations, or of any other urgent work so opened up and requiring immediate attention, the Architect shall, within a reasonable time after receipt of notice from the Contractor that the work has been so opened, make or cause the inspection thereof to be made, and at the expiration of such time, if such inspection shall not have been made, the Contractor may cover up the same, and shall not be required to open it up again for inspection expect at the expense of the Employer.

ASSIGNMENT OR SUB-LETTING.

19. The Contractor shall not, without the written consent of the Architect, assign this Agreement or sublet any portion of the works.

SUB-CONTRACTORS.

20. No sub-contractor or other person nominated by the Architect shall be employed upon the works against whom the Contractor shall make what the Architect considers reasonable objection, or who will not enter into a contract with the Contractor guaranteeing the due performance of his work, and indemnifying the Contractor against any claims arising out of misuse by the sub-contractor or his workmen of any scaffold erected or plant employed by the Contractor, or that may be made against the Contractor in consequence of any act, ommission, or default of the sub-contractor, his servants or agents.

DAMAGE TO PERSON AND PROPERTY.

21. The Contractor shall be responsible for all structural and decorative damage to property, and for injury caused by the works or workmen to persons, animals, or things, and shall hold the Employer harmless in respect thereof. He shall also be responsible for all injuries caused to the buildings, the subject of this Contract, by frost, or other inclemency of weather, and shall reinstate all damage caused by the same, and thoroughly complete the whole of the works.

INSURANCE—(A) OF A NEW BUILDING.

22. (*a*) The Contractor shall insure the works, and keep them insured until they are delivered up, against loss or damage by fire, in an office to be approved by the Architect, in the joint names of the Employer and Contractor, for the full value of the works executed, and shall deposit with the Architect the policies and receipts for the premiums paid for such insurance; and in default the Employer may insure the works and deduct the premium paid from any moneys due or which may become due. All moneys received under any such policies are to be paid to the Contractor by instalments on the certificates of the Architect, and to be applied in or towards the rebuilding or reparation of the works destroyed or injured. The Contractor shall, as soon as the claim under the policy is settled, proceed with all due diligence with the rebuilding or reparation, and shall not be entitled to any payment in respect thereof other than the said moneys received, but such extension of the time herein mentioned for completion shall be made as shall be just and reasonable. (*b*) The whole building and the works executed under this Contract shall be at the sole risk of the Employer as regards any loss or damage by fire, and in the event of any such loss or damage being so occasioned which affects the original building or structure in addition to the new work, the Contractor shall be entitled to receive from the Employer the full value of all work then executed and materials then delivered, calculated in the manner provided for by Clause 13 hereof, and this Contract, so far as it relates to any subsequent work, may at the option of either party be determined if in the opinion of the Arbitrator such determination shall be just and equitable.

NOTE: Clause [*a*] or [*b*] to be struck out to suit circumstances. [*b*] of a building in course of alteration.

DATE OF COMPLETION.

23. Possession of the site (or premises) shall be given to the Contractor on or before the day of . He shall begin the works immediately after such possession, shall regularly proceed with them, and shall complete the same (except painting and papering or other decorative work which in the opinion of the Architect it may be desirable to delay) by the day of , subject nevertheless to the provisions for extension of time hereinafter contained.

PENALTIES FOR NON-COMPLETION.

24. If the Contractor fail to complete the works by the date named in Clause 23, or within any extended time allowed by the Architect under these presents, and the Architect shall certify in writing that the works could reasonably have been completed by the said date, or within the said extended time, the Contractor shall pay or allow to the Employer the sum of £ sterling per* as liquidated and ascertained damages for every* beyond the said date or extended time, as the case may be, during which the works shall remain unfinished, except as provided by Clause 23, and such damages may be deducted by the Employer from any moneys due to the Contractor.

* Insert "day" or "week" as may be agreed.

EXTENSION OF TIME.

25. If in the opinion of the Architect the works be delayed by *force majeure* or by reason of any exceptionally inclement weather, or by reason of instructions from the Architect in consequence of proceedings taken or threatened by or disputes with adjoining or neighboring owners, or by the works or delay of other Contractors or tradesmen engaged or nominated by the Employer or the Architect, and not referred to in the Specification, or by reason of authorized extras or additions, or in consequence of any notice reasonably given by the Contractor in pursuance of Clause 12, or by reason of any local combination of workmen or strikes or lock-out affecting any of the Building trades, or in consequence of the Contractor not having received in due time necessary instructions from the Architect for which he shall have specifically applied in writing, the Architect shall make a fair and reasonable extension of time for completion in respect thereof. In case of such strike or lock-out the Contractor shall, as soon as may be, give to the Architect written notice thereof. But the Contractor shall nevertheless use his best endeavors to prevent delay, and shall do all

INSTITUTE OF BRITISH ARCHITECTS MDCCCXXIV

PROPOSED CITY HALL, OAKLAND, CAL.

W. J. CUTHBERTSON, ARCHITECT.

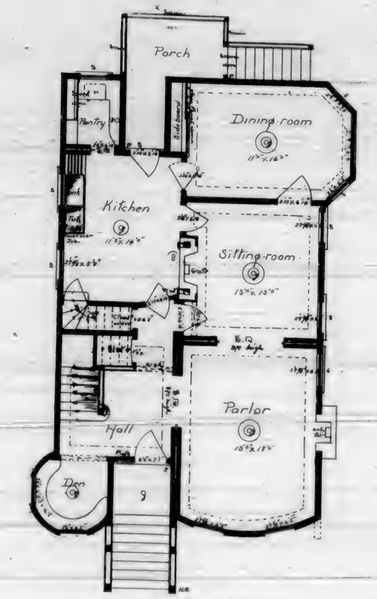
BRITTON & REY. PHOTO. LITH.

PROPOSED CITY HALL, OAKLAND, CAL.

W. J. CUTHBERTSON, ARCHITECT.

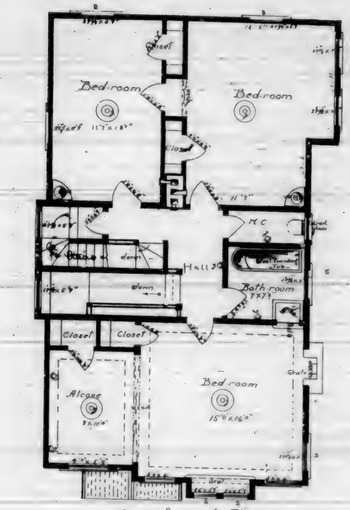
CHATEAU DE VITRÉ

By Francis W. Wilson.



First Floor

JOHN J & T.D NEWSUM
ARCHITECTS.
RM 49 MERCHANTS
EXCHANGE
S.F. CAL



Second Floor

Section—

Front Elevation

INSTITUTE OF BRITISH ARCHITECTS * ROYAL * MDCCCXXXIV

that may reasonably be required to the satisfaction of the Architect to proceed with the works.

SUSPENSION OF WORKS BY CONTRACTOR.

26. If the Contractor, except on account of any legal restraint upon the Employer preventing the continuance of the works, or on account of any of the causes mentioned in Clause 25, or in case of a certificate being withheld or not paid when due, shall suspend the works, or in the opinion of the Architect shall neglect or fail to proceed with due diligence in the performance of his part of the Contract or if he shall more than once make default in the respects mentioned in Clause 16, the Employer by the Architect shall have power to give notice in writing to the Contractor requiring that the works be proceeded with in a reasonable manner and with reasonable dispatch. Such notice shall not be unreasonably or vexatiously given, and must signify that it purports to be a notice under the provisions of this clause, and must specify the act or default on the part of the Contractor upon which it is based. After such notice shall have been given, the Contractor shall not be at liberty to remove from the site or works, or from any ground contiguous thereto, any plant or materials belonging to him which shall have been placed thereon for the purposes of the works; and the Employer shall have a lien upon all such plant and materials, to subsist from the date of such notice being given until the notice shall have been complied with. Provided always that such lien shall not under any circumstances subsist after the expiration of thirty-one days from the date of such notice being given unless the Employer shall have entered upon and taken possession of the works and site as hereinafter provided. If the Contractor shall fail for days after such notice has been given to proceed with the works as therein prescribed, the Employer may enter upon and take possession of the works and site, and of all such plant and materials thereon (or on any ground contiguous thereto) intended to be used for the works, and all such materials as above mentioned shall thereupon become the property of the Employer absolutely, and the Employer shall retain and hold a lien upon all such plant until the works shall have been completed under the powers hereinafter conferred upon him. If the Employer shall exercise the above power he may engage any other person to complete the works, and exclude the Contractor, his agents and servants, from entry upon or access to the same, except that the Contractor or any one person nominated by him may have access at all reasonable times to inspect, survey, and measure the works. And the Employer shall take such steps as in the opinion of the Architect may be reasonably necessary for completing the works without undue delay or expense, using for that purpose the plant and materials above mentioned in so far as they are suitable and adapted to such use. Upon the completion of the works the Architect shall certify the amount of the expenses properly incurred consequent on and incidental to the default of the Contractor as aforesaid, and in completing the works by other persons. Should the amount so certified as the expenses properly incurred be less than the amount which would have been due to the Contractor upon the completion of the works by him, the difference shall be paid to the Contractor by the Employer; should the amount of the former exceed the latter, the difference shall be paid by the Contractor to the Employer. The Employer shall not be liable to make any further payment or compensation to the Contractor for or on account of the proper use of the plant for the completion of the works under the provisions hereinbefore contained other than such payment as is included in the contract price. After the works shall have been so completed by persons other than the Contractor under the provisions hereinbefore contained, the Employer shall give notice to the Contractor of such completion and may require him from time to time, before and after such completion, to remove his plant and all such materials as aforesaid as may not have been used in the completion of the works from the site. If such plant and materials are not removed within a reasonable time after notice shall have been given, the Employer may remove and sell the same, holding the proceeds, less the cost of the removal and sale, to the credit of the Contractor. Any notice to be given to the Contractor under this clause shall be given by leaving the same at the place of business of the Contractor, or by registered letter sent to him at that address.

"PRIME COST," MEANING OF.

27. The words "Prime Cost" or the initials P. C. applied in the Specification to goods to be obtained and fixed by the Contractor, shall mean, unless otherwise stated in the Specification, the sum paid to the merchant after deducting all trade discount for such goods in the ordinary course of delivery, but not deducting discount for cash, and such sum shall be exclusive of special carriage, the cost of fixing, and Contractor's profit.

PROVISIONAL SUMS.

28. The provisional sums mentioned in the Specification for materials to be supplied or for work to be performed by special artists or tradesmen, or for other works or fittings to the building, shall be paid and expended at such times and in such amounts and to and in favor of such persons as the Architect shall direct, and sums so expended shall be payable by the Contractor without discount or deduction, or (without prejudice to any rights of the contractor existing under the contract referred to in Clause No. 20) by the Employer to the said artists or tradesmen. The value of works which are executed by the contractor in respect of provisional sums, or in additional works, shall be ascertained as provided by Clause 13. At the settlement of the accounts the amount paid by the contractor to the said artists or tradesmen, and the said value of such works executed by the contractor, shall be set against all such provisional sums or any sum provided for additional works, and the balance shall be added to or deducted from the contract sum.

CONTRACTOR TO ERECT SCAFFOLDING FOR SUB-CONTRACTORS.

29. The contractor shall, unless otherwise stated in the Specification, provide and erect all necessary scaffolding and plant for the due execution by the artists and tradesmen referred to in the preceding clause of the work entrusted to them. He shall also permit of the execution of work by any other artists or tradesmen who may be engaged by the Employer.

PAYMENT AND CERTIFICATES.

30. The contractor shall be entitled under the certificates to be issued by the architect to the contractor, and within days of the date of each certificate, to payment by the employer from time to time by installments, when in the opinion of the architect work to the value of £ * (or less at the reasonable discretion of the architect) has been executed in accordance with the contract, at the rate of per cent of the value of work so executed in the building.

until the balance retained in hand amounts to £ (x), after which time the installments shall be up to the full value of the work subsequently executed. The contractor shall be entitled, under the certificate to be issued by the architect, to receive £ (y), part of the said sum of £ (x), when the works are practically completed, and in like manner to payment of the balance within a further period of months, or as soon after the expiration of such period of months as the works shall have been finally completed, and all defects made good according to the true intent and meaning thereof, whichever shall last happen. The architect shall issue his certificates in accordance with this clause. No certificate of the architect shall be considered conclusive evidence as to the sufficiency of any work or materials to which it relates, nor shall it relieve the contractor from his liability to make good all defects as provided by this agreement. The contractor when applying for a certificate shall, if required, as far as practicable, furnish to the architect an approximate statement of the work executed, based on the original estimate.

NON-PAYMENT BY EMPLOYER.

31. Should the employer not pay the contractor any sum certified by the architect within the times respectively named in Clause 30, the contractor shall give written notice to the employer of the non-payment, and should the employer not pay any such sum within the period of days from the date of delivery of such notice at the employer's address or sent to him there in the ordinary course of post by registered letter, or if the employer shall become bankrupt or file any petition for liquidation of his affairs, and if his Trustee in Bankruptcy shall repudiate this contract, or if the Trustee shall be unable to show within days to the reasonable satisfaction of the contractor his ability to carry out the contract, and to make all payments due or to become due thereunder, or if the works be stopped for months under an order of the architect or any court of law, the contractor shall be at liberty to determine the contract by notice in writing to the architect, and to recover from the employer payment for all work executed and for any loss he may sustain upon any plant or material supplied or purchased or prepared for the purpose of the contract. In arriving at the amount of such payment the rates contained in the contractor's original estimate shall be followed, or, where the same may not apply, rates proportionate to the prices therein contained.

ARBITRATION.

32. Provided always that in case any dispute or difference shall arise between the employer or the architect on his behalf and the contractor, either during the progress of the works or after the determination, abandonment, or breach of the contract, as to the construction of the contract or as to any matter or thing arising thereunder (except as to the matters left to the sole discretion of the architect under Clauses 4, 9 and 19, and the exercise by him under Clause 18 of the right to have any work opened up), or as to the withholding by the architect of any certificate to which the contractors may claim to be entitled, then either party shall forthwith give to the other notice of such dispute or difference, and such dispute or difference shall be and is hereby referred to the arbitration and final decision of

or in the event of his death or unwillingness or inability to act, of , or, in the event of his death or unwillingness or inability to act, of a person to be appointed on the request of either party by the President for the time being of The Royal Institute of British Architects, and the award of such Arbitrator shall be final and binding on the parties. Such reference, except on the question of certificate, shall not be opened until after the completion or alleged completion of the works, unless with the written consent of the employer or architect and the contractor. The Arbitrator shall have power to open up, review, and revise any certificate, opinion, decision, requisition, or notice, save in regard to the said matters expressly excepted above, and to determine all matters in dispute which shall be submitted to him, and of which notice shall have been given as aforesaid, in the same manner as if no such certificate, opinion, decision, requisition, or notice had been given. Upon every or any such reference the costs of and incidental to the reference and award respectively shall be in the discretion of the Arbitrator, who may determine the amount thereof, or direct the same to be taxed as between solicitor and client or as between party and party, and shall direct by whom and to whom and in what manner the same shall be borne and paid. This submission shall be deemed to be a submission to arbitration within the meaning of the Arbitration Act 1889.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PROPOSED CITY HALL, Oakland, Cal., W. J. Cuthbertson, Architect.

DESIGN FOR RESIDENCE, John J. & T. D. Newsom, Architects.

CHATEAU DE VITRE by Francis W. Wilson.

REID BROS. should have been credited with the design of the building being erected by Claus Spreckels on Market street for the *Morning Call* published in last month's Journal.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE Annual Meeting of the San Francisco Chapter of the American Institute of Architects was held on Friday, Sepremper 13, 1895.

The election of officers for the ensuing term resulted in the selection of the following:—Seth Babson, President; W. P. Moore, Vice-President; Oliver Everett, Secretary; John M. Curtis, Treasurer. Trustees—Geo. H. Sanders, W. J. Mathews, F. T. Shea, H. A. Schulze, M. J. Lyon.

BOOKS AND PERIODICALS.

THE ENGINEERING REVIEW, epitome of current engineering literature, published in London for August, 1895, contains as leading article the description of the principal steamship lines, with illustrations. The remarkable advances that have been made in naval architecture and marine engineering during recent years invests this subject with a special interest.

THE FORTNIGHTLY REVIEW for August has a very explicit account of politics in the Transvaal, proving pretty conclusively that the present Boer Reign cannot last much longer with the large influx of Americans, English and Africanders thereinto. Also an article on "Common Sense and Crime," a critique on the Report of the Parliamentary Committee formed for examining into Prison Administration. The whole result seems to be contained in the following sentence—"Honesty is but poorly paid, the wages of weekly toil are but trifling in comparison with the profits of a single *coup* which will enable its perpetrator to lead an easy, idle life for months." From which it appears that the common sense way of diminishing crime is to make the wages of honest labor sufficient for its recipients to lead a well-to-do, easy life and to provide the opportunity for all to obtain the same.

Fitting tributes are made to Prof. Huxley—in one of which he is set right with the Altruistic world by showing that the survival of the "fittest" did not necessarily mean the "best," in the following passage quoted from the works:

"As I have already urged, the practice of that which is ethically best—what we call goodness or virtue—involves a course of conduct which, in all respects, is opposed to that which leads to success in the cosmic struggle for existence. In place of ruthless self-assertion it demands self-restraint; in place of thrusting aside, or treading down, all competitors, it requires that the individual shall not merely respect, but shall help his fellows; its influence is directed, not so much to the survival of the fittest, as to the fitting of as many as possible to survive. It repudiates the gladiatorial theory of existence. It demands that each man who enters into the enjoyment of the advantages of a polity shall be mindful of his debt to those who have laboriously constructed it; and shall take heed that no act of his weakens the fabric in which he has been permitted to live. Laws and moral precepts are directed to the end of curbing the cosmic process and reminding the individual of his duty to the community, to the protection and influence of which he owes, if not existence itself, at least the life of something better than a brutal savage."

LIPPINCOTT'S MAGAZINE for September comes to hand with its usual complete novel "A Case in Equity," by Francis Lynde, it is of interest as the reader is lead to expect a case in a law court while after all the equity is a case in the court of love, but as every thing comes out all right in the end, every body is supposed to be happy. "Napoleon and the Regent Diamond" is rather a disappointing detail of dry facts, where the reader may have been expecting a story as sparkling as the name implies. In general the contents are interesting and will repay a careful perusal.

J. CATHER NEWSOM, ARCHITECT.

"WHERE IGNORANCE IS BLISS, T'IS FOLLY TO BE WISE."

HOW many people appear to be happy living under the delusion that the above line from Thomas Gray is a fact. We were led into this reflection by over-hearing a contractor who was building a house upon the opposite side of the avenue in which we live. "Why!" he exclaimed, "your cottage has a foundation fit for a three story house, there is no need of such bracing for a one story cottage, it costs money, and the owner never knows the difference."

Many people appear to think the money paid to an architect for planning and supervising a building, is so much money added to the cost, not reflecting that every dollar paid the architect, may result in saving two dollars to the owner.

It may be true that a poor foundation and scant bracing may pass muster for a time and if the walls are prettily tinted and a lovely picture moulding around the rooms, the owner is satisfied for the time, then if another house is built on each side the three may protect each other from blowing down.

This is no fancy sketch as may be seen in more than one instance in Richmond where a house has been wedged in between two other houses for the purpose of support.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

RELEASE AND DISCHARGE—JOINT CONTRACTORS.—Where a person who is liable to two or more on a joint contract settles with one of them for a part of the claim, such settlement does not discharge him from the liability to the others, but they may sue for their part without joining the one settled with.

Lansing v. Bliss, Supreme Court, General Term, First Department, 33 N. Y. Sup. Rep. 310.

EFFECT OF PAYMENT OF AMOUNT OF LIEN INTO COURT.—The character of an action to foreclose a mechanic's lien is not affected by the fact that the amount claimed has been deposited with the clerk of the court, and the claimant is not entitled to the money deposited until he has recovered a judgment of foreclosure against the property.

Schillinger Fire-proof Cement & Asphalt Co. v. Arnott, Supreme Court, General Term, First Department, 33 N. Y. Sup. Rep. 343.

SERVICE OF NOTICE OF MECHANICS' LIEN ON OWNER.—Under the statute, providing that a notice of the lien filed shall within ten days be served on the owner or lessee if he can be found in the county, or in case of his absence from the county, then a copy on his agent within the county, and, if neither can be found within the county, a copy of such notice shall be posted on the building, service of notice by mailing a copy to the general manager of the owner at a place outside the county is insufficient.

Hannah & Lay Mercantile Co. v. Mosser, Supreme Court of Michigan, 62 N. W. Rep. 1120.

DAMAGES FOR DELAY.—Where a contractor fails to complete a building, and the owners take possession and do so, the measure of damages will be the amount of the unpaid contract price, less the fair and reasonable amount the owners had to pay to complete the work.

Mills v. Paul, Court of Civil Appeals of Texas, 30 S. W. Rep. 558.

THE SUPREME COURT OF PENNSYLVANIA HOLDS, THAT THE OWNER OF A BUILDING CANNOT COMPLAIN OF AN INSTRUCTION.—In an action to enforce a mechanics' lien restricting a material man's recovery to the value of the materials furnished by him on the credit of the buildings, and actually used in their construction.

Scranton Lathe Turning Co. v. Cassidy, 31 At. Rep. 734.

VALIDITY OF ORDER CANCELLING LIEN.—Under the statutes, providing that at the commencement of an action to forclose, the lien may be discharged by the deposit of "such sum of money as in the judgment of the court will be sufficient to pay any judgment which may be recovered against the property," the only question for the court, on an application to cancel the lien, is the amount of the deposit to be made, and the validity of a claim cannot then be inquired into, and therefore an order directing the cancellation of a lien without requiring a deposit to secure it is void, though the claimant was made a defendant to the action, and failed to appear.

Fisher v. Hussey, Supreme Court of New York City, General Term, 32 N. Y. Sup. Rep. 762.

PAYMENT CANNOT BE ENFORCED UNTIL CONTRACT IS COMPLETE.—Under the statute, providing that, before a party can compel another to perform any act under it, he must fulfill all conditions precedent imposed upon himself, one who has agreed with a contractor to furnish "all the couplings to be used in the construction of a pipe line," at a fixed rate per pound, cannot enforce payment before all the material has been delivered; and hence his cause of action against the owner of the structure does not accure till the last delivery.

First Nat. Bank of Bridgeport v. Perris Irrigation Dist. 40 Pac. Rep. 45.

ENTIRETY OF CONTRACT.—Under a contract providing for the erection of a house, and that the owner, on the erection of the same, should pay the contractors the sum of $2,218 as follows: First shall be deducted therefrom (the final payment) all liquidating damages and deductions by reason of improper labor and material, and the balance payable as follows: $200 when foundation is completed, $600 when roof is on, $700 when plastering is completed and acceptance of house, provide dno sum shall be due till all work and material is done and furnished in compliance with plans and specifications to the owner's satisfaction, and mechanics' lien released—is not an entire contract, preventing action upon it before completion of the building according to the contract.

Crawford v. McKinney, Supreme Court of Penn., 30 At. Rep. 1047.

DEFECTIVE CLAIM FOR MECAANICS' LIEN.—A mechanics' lien claim, which states that the material was furnished to one person, and that the land was owned by another, and does not state that the material was furnished at the request of the owner, is fatally defective, though it alleges that the person to whom the material was furnished was in possession of the land under a contract of purchase with the owner.

Cross v. Tscharnig, Supreme Court of Oregon, 39 Pac. Rep. 540.

FATAL VARIANCE IN MECHANICS' LIEN CLAIM.—Where the claim of mechanics' lien, and the complaint in an action to foreclose the lien, alleged a contract to pay the carpenter $3.50 per day, and a contract to pay the reasonable value of his services was proved, and such value was shown to be $2.84 per day, the variance is fatal.

Jones v. Shuey, Supreme Court of California, 40 Pac. Rep. 17.

THE J. L. MOTT IRON WORK'S SHOW ROOM.

THE J. L. MOTT IRON WORKS of New York have opened an exhibition of goods manufactured by them, at Room 27 Flood Building under the management of M. S. James who, for several years has been well and favorably known on the Pacific Coast as their Representative. They have fitted up two large rooms completely filled with the different articles that are needed by Architects, Plumbers and Builders. Along one wall is a row of closets under water showing all the latest improvements in Mechanism, and the practical working of same can be seen.

There are all the usual kinds of Bath and Seat Tubs shown in Porcelain Iron and Imperial Solid Porcelain; Laundry Tubs, Kitchen and Slop Sinks, etc. Some of them are beautifully decorated in gold and some are plain. One of the most attractive objects of the whole display is a Lavatory of Mexican Rose Onyx, with China Basin and Mirror over same and Silver plated Trimmings. Another Lavatory shown is of Italian Statuary Marble with China Basin, Mirror and Nickel plated Trimmings. The great reduction in the prices of the Imperial Solid Porcelain goods recently made by this Firm brings them in reach of almost everyone that would use the Porcelain lined goods, there being only a slight difference in the cost.

There is a display also of Shower and Needle Baths for use principally in private residences and public Baths. These are shown fitted with Porcelain lined Iron Receptors instead of the old style Marble Slab. These Receptors prevent the water from flowing all over the floor of Bath Room and are a great improvement. There is also to be seen a full line of Plumber's specialties, including Bath Room Trimmings, such as Towel Racks and Shelves, Sponge and Comb and Brush Holders, etc., that are manufactured by them and which have obtained for themselves such a high reputation.

The J. L. Mott Iron Works has been induced by Mr. James to open these Show Rooms because of the unsatisfactory methods both to him and his customers of selling from Catalogue. The goods can now be shown the parties who desire to use them and can see exactly what they are going to have. The business of the Mott Iron Works has increased to such an extent, and with the constantly getting out by them of new goods it became almost an absolute necessity that some such Headquarters should be opened.

The J. L. Mott Iron Works, through Mr. James their Coast Manager extends a very cordial invitation to Architects, Plumbers, Contractors and all persons contemplating building, who may be interested in fine plumbing work to visit these rooms in the Flood Building feeling satisfied that they will be well repaid.

CITY BUILDING NEWS.

Alabama near 22d. To build; owner, John C. Callaghan; architect, M. J. Welsh; contractor, Jos. Sullivan; signed, Aug. 8; filed, Aug. 10; cost $2,605.

Bartlett near 21st. Alterations; owner, Mrs. A. C. Kratz; contractor, H. R. Schuckert; signed, Aug. 9; filed, Aug. 10; cost $1189.

Bartlett near 22d. Alterations and additions; owner, Mrs. Agatha Curiaz; architect, Emil John; contractors, Welavehi & Fromz; signed, Aug. 12; filed, Aug. 14; cost $3525.

Bernard near Jones. To build; owner, Abraham Hessel; contractor, F. V. Acker; signed, Aug. 20; filed, Aug. 20; cost $2550.

Brannan near 4th. To build; owner, Rev. D. Nugent; architect, P. J. Donohoe; contractor, Daniel Powers; signed, Aug. 8; filed, Aug. 10; cost $7599.

Brannan near 2d. Alterations and repairs; owner, Vermont Marble Co.; contractor, J. A. McDonald; cost $5000.

Brannan near 4th. To build; owner, John Donovan; architect, E. A. Garin; contractor, J. A. McDonald; signed, Aug. 14; filed, Aug. 22; cost $2825.

Brannan near 4th. To build; owner, D. Lewis; cost $2900.

Broderick near Golden Gate Ave. To build; owner, A. Goodman; architect, C. M. Rousseau; contractor, J. Irwin; cost $5000.

Broadway near Webster. To build; owner, W. H. Dimond, architects, Polk & Polk; contractors, W. Knowles & Co.; signed, Aug. 6; filed, Aug. 16; cost $14,960.

Broadway and Buchanan. Plumbing, etc.; owner, Annie Donahue; architect, A. Page Brown; contractor, W. H. Wilson; signed, Aug. 9; filed, Aug. 23; cost $4480.

Broadway and Buchanan. Steam heating; owner, Annie Donahue; architect, A. Page Brown; contractor, W. W. Montague & Co.; signed, Aug. 23; filed, Aug. 23; cost $1525.

Broadway and Buchanan. Mill work; owner, Annie Donahue; architect, A. Page Brown; contractors, Burnham-Sandeford Co.; signed, Aug. 7; filed, Aug. 23; cost $4850.

Broadway near Gough. Plumbing, etc.; owner, Mrs. Maggie Hochstadter; architect, M. J. Lyon; contractor, H. Williamson; signed, Aug. 15; filed, Aug. 29; cost $788.

Broadway and Buchanan. Painting, etc.; owner, Annie Donahue; architect, A. Page Brown; contractor, J. H. Keefe; signed, Aug. 31; filed, Sept. 5; cost $1735.

Bluxome near 4th. To build; owner, Elizabeth O'Brien; architect, P. J. Donahue; contractor, C. B. Franklin; signed, Aug. 20; filed, Aug. 21; cost $2400.

Bush near Laguna. Alterations and additions; owner, M. J. Simmons; Alexander; Hildebrand, superintendent; contractors, J. A. and Allan McDonald; signed, Aug. 20; filed, Aug. 21; cost $2845.

Bush near Laguna. Painting, etc.; owner, Congregation Ohabai Shalome; architect, M. J. Lyon; contractor, A. A. Ehat; signed, Aug. 17; filed, Aug. 20; $964.

Buchanan near Sutter. Alterations and additions; owner, Mary Doran; contractor, Herman Hansel; signed, Sept. 2; filed, Sept. 2; cost $1840.

California and Devisadero. To build; owner, Mary G. Dutton; architects, Percy & Hamilton; contractors, Concannon & Shay; signed, Aug. 14; filed, Aug. 15; cost $7500.

California and Devisadero. Excavations; owner, Mary G. Dutton; architects, Percy & Hamilton; contractors, Riley & Laine; signed, Aug. 14; filed, Aug. 15; cost $2175.

California near Scott. To build; owner and builder, J. F. Ortman; architect, M. R. Johns; cost $12,000.

California near Broderick. To build; owner, Wm. F. Roberts; architect, Emil John; contractor, W. H. Wilton; signed, Aug. 21; filed, Aug. 24; cost $3140.

California near Broderick. Alterations and additions; owner, Mrs. Annie A. Kelly; architect, Emil John; contractors, Lorenzen & Fevrie; signed, Sept. 4; filed, Sept. 7; cost $2286.

California near Mason. To build; owner, Elizabeth Jane Tricot; architect, Emile Depierre; contractor, D. Ross; signed, Sept. 4; filed, Sept. 5; cost $8800.

Central Ave. near Pacific Ave. To build; owner, Mr. and Mrs. C. E. Brown; contractor, P. Rive; signed, Aug. 15; filed, Aug. 16; cost $5300.

Clement near 13th Ave. To build; owner, Andrew Lynch; architect, C. F. Robertson; contractor, C. Larsen; signed, Aug. 26; filed, Aug. 27; cost $925.

Clay near Drumm. One-story brick; owner, John Van Bergen; architect, Henry Geilfuss; contractors, Hood & Watson; signed, Aug. 2; filed, Sep. 2; cost $1439.

Commercial near Sansome. Repair on brick; owner, Agent L. C. Babin; contractor, W. B. Kroeger; cost $8600.

Dupont and Bay. Mason work for brick warehouse; owners, Stauffer & Co.; contractor, J. H. Hanavan; cost $1360.

Drumm and Commercial. Two-story brick; owners, Deming & Co.; cost $7000.

Drumm and Merchant. Two-story brick; owner, J. De La Montanya; architects, Percy & Hamilton; contractor, Silas Carle; signed, Aug. 24; filed, Aug. 27; cost $23,743.

Ellis near Taylor. Additions; owner, by Agent G. O. Davis; raising, etc.; cost $10,000.

Ellis near Laguna. Additions and alterations; owner, Anton Hollar; architect, Martens & Coffey; contractors, Ackerson & Peterson; signed, Aug. 31; filed, Aug. 31; cost $5945.

Eleventh near Bryant. To build; owners, J. T. and O. J. Redmond; architect, J. P. Brady; contractors, Barrett & Quinn; signed, Aug. 26; filed, Aug. 30; cost $2950.

Fair Oaks near 25th. To build except mantels, etc.; owner, Clara L. Arguello; architect, Martens & Coffey; contractors, Ackerson & Paterson; signed, Aug. 22; filed, Aug. 22; cost $3600.

Fourth near Brannan. To build; owner, Isabella H. Lacy; architect, S. Babson; contractor, M. S. Libbey; signed, Aug. 22; filed, Aug. 22; cost $2850.

Fourth Ave. near Lake. To build; owner, W. O'Leary; contractor, Jas. McConahey; signed, Aug. 12; filed, Aug. 12; cost $1582.

Fourth Ave. near Pt. Lobos. To build; owner, Mrs. Marie J. Ganco; contractor, J. V. Hull; signed, Aug. 13; filed, Aug. 13; cost $3400.

Fourth and Branhan. To build; owner, Estate of Wm. Schmidt, per W. G. Horshaw; architect, W. J. Mathews; contractor, P. Maloney; signed, Aug. 23; filed, Aug. 29; cost $4925.

Fourth and Brannan. To build; superintendent, Geo. Lack; days' work; cost $2500.

Fifth near Brannan. To build; owner, J. Hummell; contractor, H. Mitzler; cost $1800.

Folsom Wharf Coal bunkers; owners, Dunsmuir & Sons; contractor, Pacific Bridge Co.; cost $10,387.

Folsom street wharf No. 2. Coal bunkers; owner, R. Dunsmuir & Sons; architect, H. C. Holmes; contractors, Pacific Bridge Co.; signed, Sept. 6; filed, Sept. 11; cost $10,724.

Fillmore and Washington. To build; owner, Emma Joseph; architect, W. H. Lillie; contractors, Moore & Camerary; signed, Aug. 22; filed, Aug; 29; cost $5896.

Freelon near 4th. Three two-story frames; owner, Mrs. J. Stappenbeck; architect, Emil John; contractor, H. T. Grelb; signed, Aug. 9; filed, Aug. 14; cost $4525.

Freelon near Fourth. To build; owner, Patrick Minehan; architect, A. J. Barnett; contractors, Sheilds & Hickox; signed, Aug. 20; filed, Aug. 22; cost $1410.

Freelon near 4th. To build; owner, Wm. Gleuson; architect, A. J. Barnett; contractors, Sheild & Hickox; signed, Aug. 20; filed, Aug. 22; cost $3200.

Fifteenth near Brannan. Stable; owner, Mrs. Zoe F. Venard; contractor, R. J. Pavert; signed, Aug. 12; filed, Aug. 13; cost $1081.

Fifteenth Ave; near P. To build; owner, Casper J. Becker; architect, D. J. Ellis; contractor, J. P. Rines; signed, Aug. 12; filed, Aug. 13; cost $1200.

Fourteenth near Howard. To build; owner, Leon Levy; architect, E. J. Vogel; contractors, White Bros.; signed, Aug. 19; filed, Aug. 19; cost $4225.

Francisco and Stockton. Concrete and artificial stone work; owner, S. F. Fire Department; architect, C. R. Wilson; contractor, W. H. Wickersham; subcontractor, Keatinge, Leonard & Ransome; signed, Aug. 8; filed, Aug. 22; cost $4150.

Forty-eighth Ave. and V. To build; owner, C. Musorro; architects, Havens & Toepke; contractor, Geo. Walker; signed, Sept. 10; filed, Sept. 11; cost $3525.

Green near Fillmore. To build; owner, Alexander Heins; architects, Kenitzer & Barth; contractor, Chas. Schutt; signed, Aug. 14; filed, Aug. 16; cost $4480.

Green and Octavia. To build; owner, Edward Delcani; architect, E. Depierre; contractors, A. Caccia & Co.; signed, Aug. 22; filed, Aug. 24; cost $6470.

Grove near Buchanan. To build; owner, Jacob Denzler; architects, Kenitzer & Barth; contractor, Adam Miller; signed, Sept. 4; filed, Sept. 5; cost $7100.

Haight and Waller. Clayton and Cole, recreation ground; owners, Paul Boyton Chute Co; architect, Robert J. Riley; contractors, Pacific Bridge Co.; signed, Sept. 5; filed, Sept. 6; cost $3015.50.

Harrison near Third. owner, Mary J. Morrison; contractors, Johnson & Secor; signed, Sept. 3; filed, Sept. 3; cost $2300.

Howard near Lafayette. To build; owner, Margaret McCormick; architect, J. P. Brady; contractor, John Foster; signed, Aug. 23; filed, Aug. 23; cost $3375.

Hyde near Geary. To build; owner, M. Keefe; architect, M. J. Welsh; contractor-Doyle & Son; signed, Sept. 6; filed, Sept. 11; cost $6784; plumbing, etc., contractor, E. Hogan, $840; electrical work, contractor, Will & Fink, $165; painting, M. J. Donovan, $635.

Jackson near Central Ave. To build; owner, Minnie H. Hollows; architect, Emil John; contractor, F. A. Hellmuth; signed, Aug. 30; filed, Sept. 4; cost $2886.

Jersey near Noe. To build; owner, Wm. Morgan; contractors, Bell & Townsend, signed, Aug. 30; filed, Sept. 7; cost $1600.

Laguna and Jackson. Concrete floors; owner, W. F. Whittier; architect, E. R. Swain; contractor, Geo. Goodman; signed, Aug. 16; filed, Aug. 27; cost $1816.

Lake Honda. Excavations; owner, Spring Valley Water Works; architect, Chief Engineer S. V. W. W.; contractor, A. E. Buckman; cost $4.45 per lineal foot and $9.00 for each thousand foot of lumber placed in position; signed, Aug. 19; filed, Aug. 21.

Sanders near 16th. To build; owner, A. Daveggio; architect, H. Hess; contractor, A. Christensen; signed, Aug. 16; filed, Aug. 16; cost $1620.

Leavenworth and Post. Bulkhead wall; owner, Levi Strauss; architects, Wright & Sanders; contractor, Geo. Goodman; signed, Aug. 1; filed, Aug. 15; cost $1114.

Leavenworth and Post. Granite coping, etc.; owner, Levi Strauss; architects, Wright & Sanders; contractors, Raymond Granite Co.; signed, Aug. 6; filed, Aug. 16; cost $1600.

Leavenworth and Post. Iron and bronze work; owner, Levi Strauss; architect, Wright & Sanders; contractors, S. F. Novelty & Plating Works; signed, Aug. 6; filed, Aug. 16; cost $1250.

Market near 5th. Iron stairs; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Western Iron Work; signed, Aug. 22; filed, Aug. 2; cost $15,250.

Mason near Geary. Lathing and plastering; owner, Hall Assn. N. S. G. W.; architect, A. C. Lutgens; contractor, Arthur O'Brien; signed, July 17; filed, Aug. 13; cost $4344.

Mason near Geary. Painting and varnishing; owner, Hall Assn. N. S. G. W.; architect, A. C. Lutgens; contractors, Dutot & Gibson; signed, June 14; filed, Aug. 3; cost $1430.

Mason near Geary. Electric light wiring; owners, Hall Assn. N. S. G. W.; architect, A. C. Lutgens; contractor, Mathews O'Brien; signed, Aug. 14; filed, Aug. 15; cost $1300.

McAllister near Devisadero. To build; owner, J. H. Stein; architect, W. Koenig; contractors, W. H. and T. Kinrad; signed, Aug. 26; filed, Aug. 26; cost $2400.

McAllister near Scott. To build; owner, T. J. O'Brien; architect, M. J. Welsh; contractor, Jas. J. O'Brien; signed, Sept. 5; filed, Sept. 11; cost $4400. Electrical work, contractor, The California Electrical Work, $164. Plumbing, J. E. Britt contractor; cost $643. Painting, etc., Quaidi & Co. contractor, cost $78.

McLea Court near 9th. Two two-story frames; owner, Geo. Bucker; contractor, C. Andresson; signed, Aug. 9; filed, Aug. 28; cost $4800.

Moss near Howard. Completing a partly finished building; owner, J. Sanders; contractor, P. L. Bassett; signed, Aug. 14; filed, Aug. 16; cost $2540.

Montgomery and California. Metal grill work; owner, Cal. Safe Deposit and Trust Co.; architect, H. A. Schulze; contractors, Schrader & Lutze; signed, Aug. 13; filed, Aug. 13; cost $1493.

Mission near Fourth. Carpenter work; owner, A. W. Wilson; architect, B. E. Henriksen; contractors, Peterson & Olson; signed, Aug. 28; filed, Aug. 29; cost $11,100.

Mississippi near Butte. To build; owner, J. Mattson; architect, R. A. Herold; contractors, O. L. Wold and L. D. Uttman; signed, Sept. 4; filed, Sept. 5; cost $2953.

Ney and Congdon. To build; owner, Antone Metten; contractor, R. Trost; signed, Aug. 5; filed, Aug. 13; cost $1035.

Noe near Day. To build; owners, Peter Bernard and Julia Herzog; architect, C. A. Berger; contractor, Frank Doyea; signed, Sept. 2; filed, Sept. 3; cost $1700.

Ocean House Road near Arlington Ave. Grand stand and Paddock; owner, Pacific Coast Jockey Club; architect, T. J. Welsh; contractor, A. L. Campbell; signed, Aug. 14; filed, Aug. 15; cost $26,064.

Ocean House Road near Arlington Ave. Stalls 480 to 600; owner, Pacific Coast Jockey Club; architect, A. M. Allen; contractor, A. L. Campbell; signed, Aug. 26; filed, Aug. 29; cost $37.35 stall erected.

Page near Cole. To build; owner, Ferdinand Epel; architect, E. R. Swain; contractor, R. Trost; signed, Aug. 12; filed, Aug. 13; cost $3175.

Page near Broderick. To build; owner, Henry Myers; architect, W. H. Lillie, contractors, F. G. Kronnick & Bros.; signed, Aug. 10; filed, Aug. 13; cost $3350.

Ridley near Sanchez. To build; owner, James Hagerty; architect, M. J. Welsh; contractor, James J. O'Brien; signed, Sept. 10; filed, Sept. 11; cost $3400.

Sacramento and Laguna. Gas fitting, etc.; owner, Horace L. Hill; architect, W. J. Mathews; contractor, W. S. Snook & Son; signed, Aug. 22; filed, Aug. 24; cost $1784.

Sacramento near Walnut. To build; owner, Thomas K. Kelley; contractor, T. F. Mitchell; signed, Aug. 15; filed, Aug. 17; cost $2550.

Second Ave. near California. To build; owner, Geo. A. Jackson; architects, Herman & Swain; contractors, Moore & Cameron; signed, Aug. 27; filed, Aug. 27; cost $1240.

Second Ave. near California. To build; owner, Mrs. Emma Hinds; contractor, Hans Peterson; signed, Aug. 7; filed, Aug. 23; cost $1950.

Shotwell and 26th. To build; owners, J. H. and Charles Buttmann; architects, Hermann & Swain; signed, Aug. 26; filed, Aug. 28; cost $2960.

Silver near 2d Ave. To build; owners, Wm. and Sarah Kennett; architect, F. B. Wood; contractor, John Dyar; signed, Aug. 31; filed, Sept. 2; cost $3840.

Silver near 2d. To build; owner, J. W. Dreyer; architect, A. H. Wilselm; contractor, T. C. Cockrane; signed, Aug. 14; filed, Aug. 15; cost $3550.

Sixth near Channel. To build; owner, Albany Lumber Co.; contractor, Wm. Linden; cost $1200.

Stanyan near Fulton. To build; owner, Mrs. C. R. Richardson; architect, M. J. Welsh; contractor, H. Jacks; signed, Sept. 10; filed, Sept. 11; cost $4225. Plumbing, Geo. Humphreys contractor, cost $529. Painting, M. J. Donovan contractor, cost $455.

St. Marys street. Brick building; owner, Mrs. S. M. Blumenberg; contractor, Wm. Bayford; signed, Aug. 4; filed, Aug. 12; cost $500.

St. Marys street. Brick building; owner, Mrs. S. M. Blumenberg; contractor, J. F. Sweeney; signed, July 22; filed, July 22; cost $1127.60.

Sullivan near Stanyan. To build; owner, C. H. Backe; contractor, John J Walsh; signed, Aug. 12; filed, Aug. 13; cost $1040.

Taylor and Pleasant. To build; owner, Emile M. Pissis; architect, Pissis & Moore; contractors, Gardner & Boyden; signed, Aug. 10; filed, Aug. 12; cost $8869.

Taylor and Lincoln. To build; owner, Luigi Demartini; architects, Wm. Mooser & Son; contractor, R. P. Sanchez; signed, Aug. 15; filed, Aug. 16; cost $3375.

Telegraph near Onondago. To build; owners, Mr. and Mrs. L. Renner; architect, M. J. Welsh; contractor, I. W. Coburn; signed, Sept. 7; filed, Sept. 7; cost $1840.

Twentieth near Guerrero. To build; owner, Richard Barry; architect, C. J. I. Devlin; contractor, James Irwin; signed, Sept. 5; filed, Sept. 11; cost $2588.

Twenty-second near Florida. To build; owner, John H. F. Richtotieg; contractor, L. Oversterland; signed, Aug. 14; filed, Aug. 14; cost $2300.

Twenty-fourth near Hampshire. To build; owner, Thomas Gagan; contractor, T. F. Mitchell; signed, Aug. 14; filed, Aug. 15; cost $2950.

Union near Jones. Carpenter work, etc.; owners, Kalz & Sons; architect, A. C. Lutgens; contractor, W. Tegeler; signed, Aug. 13; filed, Aug. 15; cost $2925.

Union near Jones. Excavations, etc.; owners, Kalz & Sons; architect, A. C. Lutgens; contractor, J. F. Wagner; signed, Aug. 13; filed, Aug. 15; cost $1267.

Union near Devisadero. To build; owner, Mrs. Mary B. Agus; architect, J. H. Littlefield; contractor, O. E. White; signed, Aug. 23; filed, Aug. 26; cost $6488.

Union near Devisadero. Excavations, etc.; owner, Mrs. Mary Agus; architect, J. H. Littlefield; contractor, H. H. Larsen; signed, Aug. 23; filed, Aug. 24; cost $1303.

Union near Devisadero. Additional contracts; owner, Mary B. Agus; architect, J. H. Littlefield; concrete, Keatinge, Leonard & Ransome, cost $925; plumbing, etc., Flood & McDonald, cost $990; painting, Charles Cornberger, $190; mantels, not let, $75; gas fixtures, etc., $650; total cost $4670.

Waller near Laguna. To build; owner, William L. Helke; architect, W. H. Sorrell; contractor, D. Currie; signed, Sept. 7; filed, Sept. 11; cost $4759.

Washington near Webster. To build; owner, Sidney M. Smith; architects, Rughee & Gash; contractors, M. C. Brennan & Sons; signed, Aug. 17; filed, Aug. 17; cost $5600.

Webster near Green. Five two-story frame dwellings; owner and builder, J. B. Mathison; cost $50,000.

Welsh near Fourth. To build; owner, Jeremiah McCarthy; architect, A. J. Barnett; contractor, L. Westerlund; signed, Aug. 27 filed, Aug. 27; cost $2300.

Williamson near Pt. Lobos. To build; owner, M. E. Guildea; contractor, O. W. Forsyth; signed, Aug. 6; filed, Aug. 20; cost $1250.

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IT is undoubtedly a fact that the business of this generation is controlled by different principles and conditions than have heretofore obtained. Our predecessors were content to achieve success. The merchants of to-day are not content with success alone, but must strive for the extermination of business rivals, by combinations that do not seem to us to be founded on principles of right and justice, but on the contrary that seek to destroy that equality of opportunity that we have so long boasted was guaranteed us by the Constitution of the United States. Our legislation has in vain attempted to suppress or control these combinations when they become so powerful as to threaten the well being of society, but until a healthy public opinion is found strong enough to effectually discountenance such proceedings, but little permanent improvement can be hoped for. As a case in point we understand the Master Plumbers' Association of San Francisco, have entered into an agreement with the jobbers of plumbing supplies of this City, that in consideration of the members, belonging to the association, buying all their supplies from the jobbers of this city, exclusively, the jobbers on their part will sell plumbing goods only to those that are members in good standing of the Master Plumbers' Association. We believe there are over 200 licensed plumbers in this city, of which over 100 belong to the association. By reason of this action, nearly, or quite one-half of the licensed plumbers of this city will be obliged to go out of business, be forced into joining the association, or go abroad for their supplies; which, in many cases would work a great hardship on them by reason of not being known abroad, and only wanting goods in small quantities it would not pay them to do so. It is well known that all fine plumbing goods, such as bath tubs, and other specialties are not manufactured on this Coast, and have to be imported from the eastern manufacturers; and although we strongly believe in encouraging home products as also giving to local business houses their patronage in preference to buying abroad we cannot conceive how any business man should be obliged to buy such goods in this market from local houses when he can buy the same goods abroad for less money. It appears to us a hard matter for one set of men to band themselves together and say to others, "You must join with us or we will drive you out of business." In this case the point cannot be made that it is sending money abroad, that can be kept here, for in any case the jobbers would have to order these goods from the East and send the money there to pay for them. Plumbing has now arrived at such a point, that only the very best sanitary appliances should be used. And as we have remarked to a very great extent this class of goods are only manufactured by the large Eastern concerns, the policy should be to buy this class of goods where they could be bought the cheapest, and thus enable owners to get the best goods for the least money. To say to any set of business-men, "You must buy your goods where we dictate," is arbitrary, unbusiness-like, and against public policy. The tendency in all business now is to deal directly with the manufacturers and not through secondary parties or middlemen whenever it is expedient to do so. We are certainly in favor of trade

organizations for their mutual benefit and advantage, but on the question of individual members of same being dictated to as to how or where they shall buy goods appears to us as going beyond the province of associations of this kind.

THE hightest talent in the way of Architecture should be enlisted to provide a design worthy of such an occasion as the erection of an enduring and monumental building such as that for the Affiliated Colleges about to be erected in San Francisco.

It is therefore to be hoped that the Board of Regents of the University and the Commissioners Appointed from the Affiliated Colleges will see their way to open the plans to competition either by all or by a selected few—in either case providing liberal premiums to the unsuccessful—and thus encourage their sister profession of architecture, who although not having the good fortune to be housed in the contemplated building will however thus have a hand in putting up a monument worthy of the use of the other professions.

AS the height of buildings in this City of San Francisco has been decided upon as 125 feet for streets over 100 feet wide and 100 feet for those under, we make a resume of the arguments *pro* and *con*.

1st. The advocates of high buildings argue that limiting such height would work an injustice to those capitalists who have invested in land at high figures in the central part of town—and who cannot now make interest on their investment unless the number of stories in their buildings are large enough to allow of rents sufficient to pay such interest.

To which the advocates of low buildings reply that the interests of the public at large and those of adjoining or opposite owners who may not be blessed with so much worldly goods as the high building capitalists are in the aggregate more important than the interest on the investment of those few who are able to put up such high buildings.

2d. The high building advocates secondly state that the appearance of a town is improved by having high buildings, in that it makes such City appear of a more business-like character or more metropolitan—and that therefore the wellfare of any City is subserved by having tall buildings therein.

This is answered by their opponents by stating the fact that the two most metropolitan cities in the world—London and Paris have no tall buildings in the modern acceptation of the word and have stringent laws preventing the erection of the same and it is only where by reason of topographical causes such as work both in New York and Chicago that we find so many of them.

3rd. Another reason giving for the existence of high buildings is that it concentrates commerce and business in small area and thus allows the same to be transacted easier.

To which is replied that the health of those engaged in their business who are compelled to spend a good part of their lives amongst these surroundings is more important even taking it in an economical sense than the small gain by such concentration—and the increase of land values on the outskirts of the business area—by having the business part of a town spread latitudinally compensates fully any inconvenience caused by the greater distances of said business area.

It seems to us that all these conflicting interests would be harmonized by the adoption of the rule that no part of a building on one side of a street should extend beyond a line drawn from the foot of the building on the opposite side of the street, at an angle of forty-five degrees, this gives the public and the adjacent owners of property their share of sunlight and air—and at the same time allows a man to build as high as he likes on the rear portion of his lot, as long as he does not obtrude upon that forty-five degree line.

HIGH BUILDINGS.

THERE are evidences that we are soon to have in this City a renewal of that controversy over high buildings which began years ago in Chicago, was continued in New York and other cities of the East, and has been practically concluded in that section of the country by a victory everywhere for the advocates of the new form of architecture.

The objections to high buildings, or "skyscrapers," as it is the fashion to call them, grows out of the natural conservatism of man. Some people dislike any change simply because it is a change. Others see that a change in any one thing will break the existing relation with other things around it and fear the new condition will entail danger or loss somewhere. One of these objects is about as futile as the other. Changes for the better there have been since the world began and must be so long as man is capable of learning new things. Nor does any one change long disturb the harmony of the complex relations of life. It simply brings about other changes in other things until a new adjustment is reached and thereby proves not only a benefit itself but the cause of further benefits in many ways.

Tall buildings are a development of the age, and, like all such developments, have resulted from needs engendered by existing conditions. No one planned them as an inspiration. They grew by slow degrees in response to the demands of modern life. If they introduce new problems they brought also the answers with them. They have been opposed everywhere and everywhere they have been accepted. A hard fight was made against them by the Fire Department in Chicago, but it ended not by checking the buildings but by improving the fire service; and so great was the improvement that only a short time ago the Chicago *Times-Herald* predicted a complete revolution in the methods of fighting fire in that city before the close of the year.

The high building, as we have said, did not come by inspiration of genius. It is a need of the time. A law prohibiting such buildings would lower the price of every foot of land anywhere near the center of the City. No one would purchase a lot at a high price if he were not to be permitted to erect upon it a building high enough to obtain in rents a fair return upon his investment. If the land-owners of San Francisco are to enjoy as full use of their property as land-owners in other American cities they must

be as free here as elsewhere to make every use of modern architecture and engineering in improving their property by the constructions of such buildings as the requirements of the time demand.

It is hardly likely that the controversy here will be waged either so long or so warmly as it was waged elsewhere. It is in fact a virtually exhausted issue. It has been argued over and over in the East, and every possible problem involved in it has been discussed and solved. It is no longer a question between New York and Chicago as to whether they shall have high buildings, but as to which shall have most and highest.—*Call.*

TALL BUILDINGS.

WE have received the following from one of our correspondents, but don't propose to become responsible for the remarks made therein.—*Ed.*

"Get out of my sunlight" said Diogines as he past, but as he turned to see whence came the obstacle to his sunlight he saw how futile were his commands and passed on as quickly as his easy going temperament would allow out of the Shadow of Death caused by the Tall Buildings. "Duce take these tall buildings," remarked the young lady, "I shall have to wear my bloomers in the future," rough Boreas by the aid of the tall buildings twisted her skirts, threw her cape over her head and otherwise maltreated her. As the philosopher and philantropist came along the problem came to them as they shivered and craned their necks to take in the monstrosity—"What must be the power of greed that prompts a fellow man to destroy his neighbor's health by depriving him of what ought to be free to all—Light—to destroy the beauty of the City in which he lives by ill proportioned erections and prevents his fellow property owner from gaining the advantages of an extension laterally of the City—and form a menance to the citizens when mother earth takes to shaking herself or the fire fiend lights up its inaccessible lights.

THE HEIGHT OF BUILDINGS.

IT is a familiar doctrine of the common law that one who owns a piece of land owns from the center of the earth to the very sky itself. His fee simple title is not to be questioned, save where he infringes upon or interferes with the rights of his neighbors.

There is a tendency in recent years to modify the rule of the common law, but such tendency should never be extended beyond reasonable limits. For example, the restrictions sought to be put upon the height of buildings in this City should be tested by the canons of expediency and common-sense, and there should be no limitation fixed upon the construction of a building unless some good and sufficient reason can be given for it.

In many of the European cities, where the streets are so narrow as to be only lanes or alleys, it is obvious that high buildings must be a serious detriment to those who inhabit the sunless side of the street, but in a City like this, where the streets are sixty, eighty and even more than 100 feet in width, that argument possesses no force or validity. A solid block of fifteen-story buildings on Market street could not exclude air or sunlight from these on the opposite side of the street.

Modern buildings in the business portion of a city are uniformly built as nearly fireproof as possible, and hence the Fire Department argument cuts little or no figure. If those members of the Board of Supervisors who seem to be so strongly opposed to high buildings would take action in behalf of an extension of the fire limits they would do much more to guard against the risk of a general conflagration than by objecting to tall buildings.

The height of buildings is purely comparative and it would be just as reasonable for the owner of a one-story cottage to object to his neighbor building a two-story house as for the owner of a six-story business block to object to his neighbor erecting a twelve-story building. As to sanitation and all that the term involves there is no modern building in the City which is not thoroughly supplied and equipped with the best of sanitary appliances.

It would be interesting to know the source of this newly developed zeal against high buildings in this City, when it is perfectly well known that all the high buildings, beginning with the Chronicle building, which was the pioneer, are models of fire-proof, well-ventilated and thoroughly sanitated structures. There is something more in this recent movement than appears on the surface.—*San Francisco Chronicle.*

THE ANTI-HIGH-BUILDING MANIA.

THE anti-high-building mania has extended to San Francisco. It would seem impossible for it to go further westward, were it not that the United States has territory extending as far to the west of that city as it has to the east of it. But San Francisco is far enough. It is harh to understand the agitation that has arisen against these vast modern structures. It is true few architects know how to design them, and most of those who have undertaken to explain why they should be banished from off the face of the earth have not been noted for the manner in which they have solved this difficult problem. I trust I will not be deemed too personal when I say I should be glad to own a dozen of such structures, and I will undertake to point out a million people in New York alone who entertain the same opinion. Surely every architect who condemns them would be glad enough to get an opportunity to design one every six months or so.

The truth is the high building problem is not one to be decided by architects or building law commissions. It concerns questions of law, of equity, of real estate, of municipal development, of public convenience, of business methods, of a host of things the architect has no business with, and of which, on other questions, he would have nothing to say. The problem is one that will settle itself; the moment the market is over supplied their erection will come to an end, and the agitators will have to find other things to talk about.

A very narrow street, lined on either side with fifteen and twenty-story buildings, is something dreadful to think of, no doubt. Yet if I owned a piece of land, and my neighbor built up twenty stories, I should not sit down quietly under a law that, a few years later, said I could only build to half this height. Nor should I, were I a real estate man, feel pleasantly toward the architects and other busybodies

who had been instrumental in securing the enactment of such a law. The large cities do not suffer the danger from the large office building, well built, well lighted, provided with every comfort and convenience, carefully watched—a scientific monument of the resources of our time—as they do from the little old houses of the back streets, filled with squalor and filth of every description, and harboring, it may be, the larger part of the city's population. Communities engaged in regulating the dimensions of buildings might make an application of the warning not to take the mote out of their brother's eye while there is a beam in their own. Let the cities get rid of the bad first, and then see what can be done to make the good better.—*Architecture and Building*.

INSPECTION OF STEAM BOILERS.

THE Boston Manufacturers' Mutual Fire Insurance Company, which is often the first to investigate matters related to the art of building, publishes a circular of great interest, in which it says that it has always declined to undertake boiler insurance, but that, under a recent statute of Massachusetts, all users of boilers will be obliged to insure them in an authorized company, or to submit to a State inspection, says *The American Architect and Building News*, which may be insisted upon at inconvenient times, and may possibly involve the injury of the boilers by the operations of incompetent inspectors. As mill owners will not like either to run the risk of having their boilers spoiled, or blackmail levied on them, by political heelers, decked out as boiler-inspectors, or to be compelled to take out policies in a certain company, on the company's own terms, it has occurred to the Mutual Company, or rather, to Mr. Atkinson, its President, that it might be judicious to collect a body of information in regard to the construction, setting and use of steam-boilers, which would be useful to persons interested, and might form the basis for a rational system of insurance, similar to that which has revolutionized mill-insurance throughout New England, and, by cheapening the cost of manufactured goods, through the elimination of the greater part of the fire-losses incident to the business, which of course, are added in the long run to the price of the goods, has saved the consumers of such goods many thousands, perhaps millions, of dollars. In England, a Steam Users' Association already exists, under the charge of a very distinguished engineer, with headquarters at Manchester. This Association insures boilers, and its investigations, as our readers know, have had great influences on the designing of steam-plants in England. With the rapid development of our manufactures, it is quite time that something of the kind should be established here, and Mr. Atkinson's plan is a promising one.

He proposes that the members of the Mutual Company over which he presides, together with any others interested in the matter, who are willing to pay the three dollars subscription required of all the participants, should, if they have any real knowledge of the best material for setting boilers, of the method of avoiding waste of heat in baking the ground underneath, of the prevention of smoke, the best construction of chimneys, and the best type of boiler for a given service, furnish such information on the subject as they can. Meanwhile, two experts are to investigate boilers and steam-making, one in Europe, and the other in this country, their inquiries to extend over a year. They will make occasional reports, which will serve, later, as a basis for general rules. These reports will be printed, without, however, disclosing the identity of the plant which may form the subject of a discussion, and the printed slips will be distributed among the subscribers. Of course, the work will only be undertaken if the subscriptions warrant it; but there should be no doubt of this, for the subject is one of immense importance to a great number of people. Many architects will, we are sure, be greatly interested in the results of the investigation. At present, every architect is called upon for advice in regard to steam-plants to be established in hotels, apartment-houses, stores and office-buildings. In many cases, the consumption of coal under boilers put in under his observation reaches several tons a day, and a saving of ten, or fifteen, or twenty-five per cent in coal is of great importance to the owners. As a rule, architects disclaim anything but the most general knowledge of steam-work, and would not undertake to give expert advice on the subject; but the ridiculous claims made to their clients by the drummers who represent various patent devices, and whose efforts to effect a sale would put Baron Munchausen to the blush, often call them out, in spite of themselves, in defence of the established principles of steam-production. Most of them would be glad to add to their store of knowledge on the subject, and it is certain that the reports, made under the auspices of Mr. Atkinson and his Company, would furnish as rational and well-considered information as it would be possible to obtain.

LOSS OF HEAT BY UNPROTECTED STEAM PIPES.

RECENTLY Mr. Albert Haacke fitted up an apparatus for measuring the amount of heat lost by radiation from steam pipes, and has published the results of some of his first experiments, together with a description of the arrangement. The tests were directed to determine the relative losses of heat from (1) bare pipes; (2) pipes covered with one inch of composition; and (3) pipes covered with one inch of composition and three layers of hair felt. The testing surfaces are represented in Mr. Haacke's arrangement by three cast iron steam pipes of five inches internal diameter and six feet long, with blank flanges on each end. Those test pipes are supplied with steam that has been dried, and are placed so as to be subject to radiation and convection under precisely similar conditions, one being bare, the other covered with composition one inch thick, the third with one inch of composition and three layers of No. 3 felt, each one-half inch in thickness. The result of experiments with steam in the different pipes under pressure of from 45 to 60 pounds upward goes to show that a covering of composition one inch thick saves, out of a possible loss of 100 per cent, as much as 83.57 per cent, and if over this covering 1½ inches of hair felt with canvas is added, the extra saving is only 8.25 per cent. If one pound of coal is required to evaporate eight pounds of water into steam of 60 pounds pressure, then 6½ cwt. of coal are required every year to make good the loss of heat from every square foot of uncovered steam pipe. This loss is even greater in winter, or when pipes are exposed to cold air, or where steam of high temperature is used.—*Heating and Ventilation*.

CHICAGO ARCHITECTURAL CLUB.

THE Chicago Architectural Club held a "Bohemian Night" at the Club House, October 14, 1895. The delicatessen was provided by A. Woltersdorf and Hugo Arnold and was or was not hard to take according as the participant were in bad health or not.

Interesting competion drawings for a City House of Moderate Cost kindly loaned to the Club by the Brick Builder Publishing Company of Boston were on exhibition.

IRON SAND.

A PECULIAR industry in connection with the granite trade is the manufacture of iron sand. This curious and interesting process as carried on at the Pioneer Iron Works, Aberdeen, is as follows: Into an opening at the top of a firebrick cupola, with an outer casing of iron, are thrown from an elevated stage, coke and bits of old cast iron—railway wagon-wheels, cannon-balls, agricultural implements, etc. A fierce heat is kept up in the cupola by means of fans driven by a steam-engine. The metal when melted finds its way out at the foot of the cupola down a spout, and a powerful steam blast sends it flying in white-hotel spherical globules into a brick chamber containing a tank with cold water. On taking off the litter door at the observation hole, and peeping cautiously in so as to avoid a hot particle invading the eye, one can see the spherules dropping in a shower on the water, causing a host of tiny explosions. Such is the strength of the blast that the sparks fly out now and then at the chinks of the iron doors at the other end of the brick chamber, and strike the wall fifty feet at least from the cupola. Among old iron railway chairs are perferred. The writer of this paragraph on his visit saw an old cannon, twelve feet long, lying on the ground, ready to be broken up and cast into the smelting pot. The melting operations over, the water is run off the tank. The spherules are then collected and spread on sloping iron platforms to dry for a day or so. There are seven steam-pipes at intervals to aid in the drying part of the process. The material is then riddled by wire sieves moved by steam-power, and falling down a spout is collected and put up in cwt. bags for sale, or stored in the sheds in loose heaps. This portion of the premises is ventilated by a louvre ventilator and an iron funnel. It is in the riddling that the superiority of the Aberdeen plan over the system prevailing in the United States comes in. At the Pioneer Iron Works seven different sizes are produced, the present retail price of the finest being £6 a ton in Aberdeen. The sizes vary from a very fine powder to No. 1, which about equals No. 6 shot. Iron sand is, in fact, generally called chilled shot by granite workers in Aberdeen. Of the intermediate sizes No. 4 resembles clover seed in dimensions, and No. 3 would about equal the pellets known among sportsmen as sparrow-hail. Iron sand is used for sawing and polishing granite. For ordinary steam saws (which are made of mild steel) the largest variety is employed. These saws when in motion are fed with the iron sand and with water. The water washes out the iron sand, which is caught in a box and utilized over and over again until used up. For nice sawing, when the granite is cut perhaps an eight of an inch thick, to be polished on both sides for fancy caskets, samples, etc., the roughest kind is not used. The three finest grades are used in the first stage of machine polishing. When iron sand is used the stones do not require to be dressed so finely before being machine polished as they did when sea sand was used. The employment of iron sand enables machine polishing to be executed about three times as fast as when sea sand was used, and about ten times less of it is necessary. Emery or sea sand is, however, used for hand polishing at all stages, and emery is also employed in the second stage of machine polishing.—*Stonemason*.

A UNIQUE CHURCH.

THE Presbyterian church society of Waterloo, Iowa, is possessed of an edifice which can well claim to be one of the unique buildings of the world, so far as relates to the material of its construction, for it is built substantially of stone taken from one hugh bowlder. The stone from which the church is constructed, says *The Architect, Builder & Decorator*, weighed more than 5,000,000 pounds, and was therefore about twice as large as the bowlder from which was hewn the pedestal on which stands the statute of Peter the Great in St. Petersburg, though not so large as the great bowlder called Pierre de Marmettes, at Monthey, in the cannon of Valais, on which a chalet was built. When in 1890, the Rev. C. H. Purmory and the members of the Waterloo Presbyterian church decided to erect a new place of worship and began to look for stone in a section where stone is scarce, their attention was called to what was apparently a very large bowlder situated two miles from Waterloo, a part of which projected eight feet from the ground. Work of excavating the great stone was begun. Eight feet of rich dark soil was penetrated, then six feet of sand of different strata and seven feet of blue clay before the bottom of the bowlder was reached. This clay indicated the ooze of a pre-glacial swamp where the ice floe had left the bowlder after carrying it from the far Northwest, and the sand showed the action of depositing water, which, for many years, had been preparing a moisture carrying flow on which afterwards was lain the thick stratum of loam. When exposed as the bowlder stood, it was found to be twenty-eight feet high, thirty feet wide and twenty feet thick. On this monolith the workmen began their labors with drill, powder and sledge, and soon the Napoleon of bowlders met its Waterloo. The pieces were carried to the pretty town, and in a short time a wonderful metamorphosis was apparent and the gigantic bowlder, after resting undisturbed and nearly buried by the deposits of ages, was transformed into a beautiful temple of a religion that was not dreamed of when the great stone started on its journey in the grinding embrace of a mighty glacier. The desire for a slight variety of color was all that prevented this bowlder from furnishing absolutely all, instead of substantially all, of the stone for the church. A few small bowlders of varying hues were used in the building to meet the requirement of architectural taste, and the result has been a most beautiful as well as unique church.

Mr. Whitewings—"Say, I hear you've been a-callin' me a fool. Uncle Pete—"I didn't call yer a fool. I ain't no sech fool as to say eberyting I tinks."—*Munsey's Weekly*.

ONE ON THE LAWYER.

WHERE is a story on record of an architect repudiating any connection with the building fraternity in the case of the late eminent and talented Mr. Alexander, the architect of Rochester bridge and several other fine buildings in the county of Kent. He was under cross-examination in a special jury case at Maidstone, by Sargeant—afterwards Baron—Garrow, who wished to detract from the weight of his testimony, and who, after asking him what was his name, proceeded thus: "You are a builder, I believe?"

"No, sir; I am not a builder; I am an architect."

"Ah, well; architect or builder, builder or architect, they are much the same, I suppose?"

"I beg your pardon, sir, I cannot admit that; I consider them to be totally different."

"Oh, indeed; perhaps you will state wherein this great difference consists?"

"An architect, sir, prepares the plans, conceives the design, draws out the specifications—in short, supplies the mind, the builder is merely the bricklayer or the carpenter—the builder, in fact, is the machine; the architect the power that puts the machine together and sets it going."

"Oh, very well, Mr. Architect, that will do; and now, after your very ingenious distinction with out a difference, perhaps you can inform the court who was the architect of the Tower of Babel?"

"The Tower of Babel, sir!" replied the witness. "There was no architect—and hence the confusion!"—*Ex.*

THREE GREAT CITIES.

IN all the countries of Europe, in the United States and in the Dominion of Canada there are, so far as recent and authentic figures show, 70,000,000 houses. There are 342,090 houses, some of them unsubstantial affairs, in the city of Tokio, one for every five people, so that the Japanese metropolis does not suffer from overcrowding.

New York has 115,000 houses, averaging eighteen residents to each. London, the greatest accumulation of inhabitants in the world, has 600,000 houses, or seven residents in each on the average. London has increased in this respect very rapidly, for at the beginning of the present century the number of houses was only 130,000, little more than New York has at this time. The population of London at that time (1800) was 960,000. It is now 4,200,000. So it has increased nearly five fold, but the number of houses has not increased in as large a ratio.

Paris has 90,000 houses. At the close of the Franco-Prussian war it had 70,000. At the close of the Napoleonic wars it had 28,000. The area of the city had extended meanwhile. The average number of residents in a house in Paris is twenty-five, which is about fifty per cent greater than in New York. The majority of public buildings in Paris are utilized for purposes of residence, especially upon the top floors, whereas in New York scores of the buildings in every street down town are given over exclusively to business purposes. In a square mile or more of the territory between Wall and Spruce streets and between Broadway and the East river there were at the recent election only 430 votes, representing a total population of 1750.—*New York Sun.*

TRINITY CHURCH, BOSTON.

ARCHITECTS, and other persons interested in architecture, who happen to be in Boston, should not fail to make a visit to Trinity Church, and study the detail of the new porch, on which the carvers are busily at work. It is hardly necessary to say that the work is interesting, and to the extent compatible with correctness of style, original; and this porch, which is thoroughly Romanesque in the variety and richness of its detail, has afforded a fine field for artistic expression. The opportunity has not been lost, and we do not know a piece of exterior architecture in this country of the same extent, which will hold the attention of a student for a longer time, and with more satisfaction. The staging, of course, affects for the present the lighting of the pretty little singing cherub heads which swarm in the cornices and gables, so that the necessary allowance must be made for all the circumstances; but even as it is, the richness and interest of the sculpture, the delicate profiling of the columns, contrasting with the deep shadows and the solidity of the massive stonework, produce an impression which, to our mind, cannot be obtained elsewhere on this side of the Atlantic. As to whether the alterations improve the original building, "that is another story."—*The American Architect and Building News.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PRINCESS Angeline's Chief Seattle's Daughter Palace, J. W. Krause, 1894.

MILNER Building, Main street, Los Angeles; 40'x87' buff Roman brick; two stores and twenty-six rooms; plate glass front; Hudson & Krause, Architects, cost $18,000.

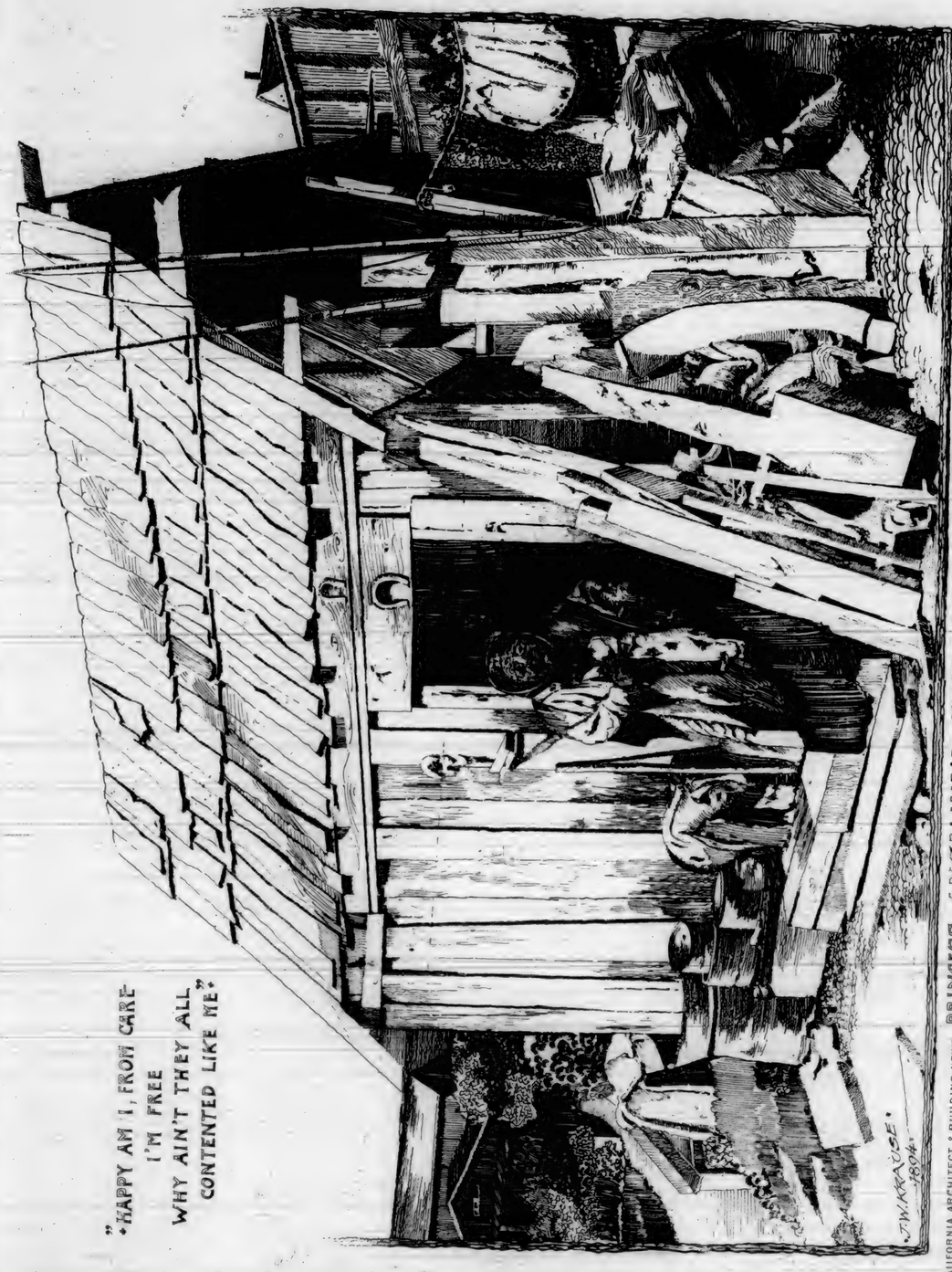
SKETCH for a Town Tower, C. L. Taylor, del.

WE received too late for publication in this number of our Journal, a valuable report of the Committee on "Strength of Bridge and Trestle Timbers," presented at the Fifth Annual Convention of the American International Association of Railway Superintendents of Bridges and Buildings at New Orleans, La., Oct. 15, 1895. Mr. Walter G. Berg was chairman of the committee.

ROYAL INSTITUTE OF BRITISH ARCHITECTS MDCCCXXXIV

MILNER BUILDING
MAIN STREET
LOS ANGELES

HUDSON & KRAUSE
ARCHITECTS



PRINCESS ANGELINE'S, CHIEF SEATTLE'S DAUGHTER, PALACE

"HAPPY AM I, FROM CARE I'M FREE
WHY AIN'T THEY ALL CONTENTED LIKE ME."

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY PHOTO. LITH

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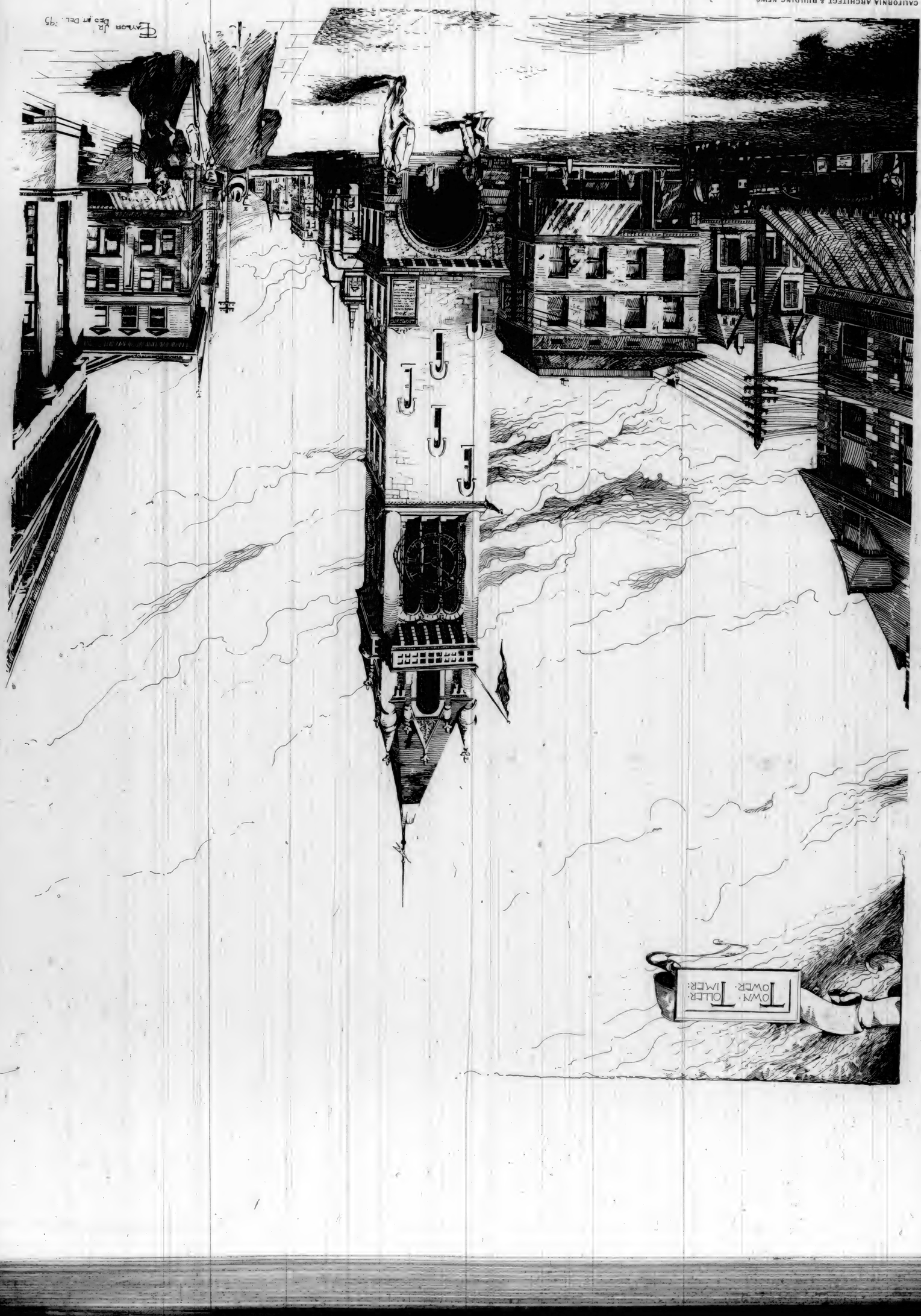

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. GEO W. PERCY, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

THE RIGHT OF AN ARCHITECT TO A LIEN ON A BUILDING.

A RECENT decision in the United States District Court in the Northern District of Ohio, gives the architect the right to a lien on a building for his services. The Judge in his decision says: "There is no reason in equity or law why the architect who conceives and puts upon paper the design of such an immense building as that involved in this case, and who puts upon paper with such minuteness of detail the specifications and drawings as to enable any one skilled in such business to erect, with perfect proportions and proper stability, such a mammoth structure, should not be protected in his contribution to the completion of such work as well as the carpenter, the plumber, the painter or any one who performs manual labor. The court certainly ought not to strain the statute to exclude labor of this high character and grade unless it is plainly the intent of the Legislature that it should bear such interpretation. The architect in this case is entitled to a lien not only for the plans and specifications, but for the labor and assistance in the construction of the building in pursuance of these plans." This seems certainly in accord not only with the dictates of common sense, but with the equitable rules of justice.—*Architect and Builder.*

SCHOOL OF ARCHITECTURE.

THE School of Architecture at the University of Pennsylvania opens this fall with the largest Freshman class in its history, a class more than double that of the previous year.

The recent growth of the School has rendered necessary the appointment of two additional instructors, which increases the teaching force to eleven. Mr. Frederick N. Mann, graduate of the Massachusetts Institute of Technology in 1894 and in 1895, and Gold Medalist in the competitions of last year of the Society of Beaux-Arts Architects, has been appointed to the Instructorship in Design and will have charge of the Junior work in this subject. Mr. Lewis Frederick Pilcher, graduate of Columbia College in 1895, will take charge of the work in Archæology and will assist in the general architectural studies of the first year.

ART AND LABOR.

I HAVE never seen in a city anything in the way of decoration upon the house of an American citizen which he had himself designed and wrought for pleasure in it. In the house of an Italian peasant immigrant in our own neighborhood, I have seen wall and ceiling decorations of his own design, and done by his own hand in colors. The designs was very crude, the colors coarse; but there was nothing of the vulgar in it, and there was something of hope.

Could men build their own houses, could they carve or fresco upon casing, door or ceiling any decoration which pleased them, it is conceivable that, under conditions of freedom and happiness, they should refrain from doing so. It is inconceivable that, adorning their own dwelling, in the gladness of their hearts, they should not develop something of grace, of beauty, of meaning, in what their hands wrought; impossible that their hands should work on unprompted by heart or brain; impossible then, as invevitable now, that most men's houses should express nothing of themselves save a dull acceptance thrust upon them.

ELLEN GATES STARR.

A CHANCE FOR ARCHITECTS.

THE well-known political economist Professor Richadr T. Ely, in a paper devoted to the study of the practical results obtained by government ownership and control of railroads in Germany says: "One of the greatest improvements in Germany during the past fifteen years has been in the construction of stations. The railway stations in Germany at the present moment are so far beyond all controversy the most beautiful and convenient in the world, that for any one to deny it must be taken simply as a proof of ignorance or misrepresentation. These stations are constructed with a view to architectural effect. Before the station in Frankfort was constructed there was a prize competition of architects, just as there has been for the construction of the new Episcopal Cathedral in New York, and after the examination, the design which was regarded as in every way most satisfactory was selected. The result can be seen in that magnificent station which, taking it all and all, is probably the largest and most beautiful in the world."

"Doctor, I wish you'd go up to Mrs. Blank's and see my friend Jarret, the actor—he is very sick." "Sir," replied the Doctor, "curing hams is not my specialty."—*News Letter.*

THE SMALL TOWN AND THE TROLLEY.

IN a short editorial the *American* calls attention to the decline of the small town. That this is a fact any one at all familiar with the older States recognizes at once. The writer at one time had occasion to take a trip over the post road running through the southern tier of countries in New York State and found many centres in a state of decrepitude where once was great activity. These towns were the stopping points of the old stage lines and were centres of large farming districts, and at the time of this trip the old taverns were dilapidated and blacksmith shops, harness shops, stores and all the business of a once thriving village departed and but the decaying shells left. This the old inhabitant attributed to the railroad destroying the business of the stage lines and removing the centres of business. Similar conditions may be found in all parts of New England, much of Pennsylvania as well as New York State. The question arises whether this condition of things is to be permanent and whether the great railroad lines are to continue to build up great towns and great cities at the expense of smaller rural towns, and cause the decadence of the surrounding farming districts.

In considering this question we must recognize new influences that are likely to have a large effect on these scattered settlements. One of the most powerful of them is likely to be found in the trolley. Its use is cities has long been recognized and its influence in the country is equally recognized, as is evidenced by the opposition of the great railroads to those roads where they paralleled their roads. The advantage of the trolley is to be found in the ease with which they can be laid on the ordinary country road. These trolley roads can not only be adapted to passenger traffic but equally to freight, and may thus open again the old post roads and afford transportation facilities to vast sections without railroad facilities, and rebuild these old villages and improve farming districts where the expense of ordinary road transportation have cut them off from the markets. In fact the very roads that have been opposing them in the legislatures may find them their most important feeders. It seems quite within the bounds of reasonable expectation that the trolley may afford transportation facilities at such rates for farm produces, garden truck, milk and manufactures from farms and villages too remote at present from railroad centres to be under present conditions profitably produced, but which with such aid will become profitably industries. The difficulties of transportation consign to inactivity many farming sections and villages, under present conditions, which electric roads would turn into active and prosperous communities. It is certainly among the possibilities that electricity may bring about a renaissance of the old village and farm life that prevailed in the country fifty or more years ago. The healthy conditions that are to be found in small factory villages and on profitable farms are much to be desired, and it is possible the work of the trolley may be more far-reaching in its results than we at present anticipate.—*Architect and Builder*.

Lady (seeking a nurse girl)—"Is she not rather short?" Proprietor—"That is not an objection. You see, should she drop your child, it could not fall far."—*Pittsburg Bulletin*.

J. CATHER NEWSOM, ARCHITECT.

SALT WATER IN FIRES.

THE recent disastrous fire in San Francisco, when $1,000-000 worth of property was destroyed, shows the lack of a proper system of fire protection. The water pressure was altogether too low. With a view to remedying this evil, which is recognized by the authorities, the Olympic Salt Water Company of San Francisco, has for some months past been laying its mains, and intends to bid for the patronage of the city. The company proposes to offer the city free of cost all the salt water needed for sprinkling purposes in the section where their mains are laid and their hydrants set. Fighting fire with salt water is not an experiment, but has been successfully used in England for years. It has been proved beyond question that salt water is best adapted for fire purposes, and there are several reasons why this is so. First, the density of the water does not allow it to evaporate so readily, thus allowing it a longer period to get in its destroying power. Again, salt water weighs sixty-four pounds to the cubic foot, as against sixty-two pounds for fresh water. The difference of course is found in the salt. It is claimed that one service of salt water is equal to three in fresh. Returns from seventeen English cities where salt water is used for sprinkling purposes show that the streets have gradually become macadamized. The mortality has also decreased from twenty to thirty per cent. The Olympic Company has a reservoir with an elevation of 320 feet above the city. The reservoir is on Point Lobos avenue, near Josephine street, and has a capacity of 4,500-000 gallons.—*Fire and Water*.

BOOKS AND PERIODICALS.

DYMANO ELECTRIC MACHINERY by Carl Mac Fadden and William D. Ray—has been published in Chicago by Laird & Lee. This handy volume is illustrated; a likeness of Thomas A. Edison shows a face of wonderful determination. Price one dollar, this is a book that should go into the hands of every one interested in this fast growing business that is daily increasing in importance.

LEND A HAND for October, published in Boston by J. Stillman Smith & Co., is an unusual interesting member, the leading article "The Progress of the Century" by Rev. Edward E. Hale will well repay a careful study, coming at this time when the author has suffered the last of a cherished and promising son just entering upon what promised to be a useful life. Anything from the pen of such a father must be read with interest.

The "Tenement House Question" by Margaret Bradshaw is also an article that will call carefull attention to this much vexed question and gives much information that will be of great service to those who wish to attempt the improvement of the Tenement House.

A valuable little work on the practical application of

THE NEW SCIENCE REVIEW for October, 1895.—This able review is always welcome because we suppose that it always contains some articles that set the reader a thinking, and asking the question can this be so.

"Apergy" Power without cost by Charles Morris: this writer claims that John Ernest Worrell Keely, the inventor of the notable "Keely Motor" has nearly made a useful invention or discovered a new farce.

John Jacob Astor in his romance called "A Journey in Other Worlds" makes use of this power called "Apery" to propel his vessel to unknown regions in the upper air.

The article on "Vivisection" shows conclusively that no gain to science has ever been gained by this cruel practice and that its sole result has been the brutalizing of the medical student and physician into those abnormal beings which are frequently met with amongst those who indulge in this horrible pastime.

THE ARCHITECTS' DIRECTORY.—"The Architects' Directory" for 1895–96, containing a list of the architects in the United States and Canada, classiged by States and towns, giving the architectural associations to which they belong, has the publisher states, been prepared with great care to secure accuracy of both name and location. It is published by Wm. T. Comstock, 23 Warren street, New York, bound in red boards, gilt title, 16mo. price $1.00.

In comparing this directory with the last year's issue a great multitude of cuarges are noticeable. The effect of the last two years of dull business have had a marked effect on the profession of architecture. In the West especially, the change has been great; many towns that had several architects, to-day are unrepresented. Lack of business has compelled practitioners to seek other fields or different lines of employment. The list, by the many changes made, shows careful revision and an earnest effort to obtain the utmost accuracy. Any one who has had the least experience in preparing an accurate list of any calling must see how much effort it is to secure it. A reference to these pages will show that carefull work has been done in this case, and we feel that both architects and material men will appreciate the efforts made to secure a correct list of architects.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

MECHANICS' LIEN CANNOT BE APPLIED TO SCHOOL PROPERTY.—The right to a mechanics' lien has no existence, except by virtue of the statute. While a liberal construction should be given to its provisions, to the end that the purposes of its enactment may not be defeated, still its scope cannot be enlarged by attaching to the language employed a forced or unusual meaning. The rights and remedies of a sub-contractor are to a certain extent, measured by those of the original contractor. The foundation of the right of either to a lien is the original contract, and if that is not such as the statute contemplates, and cannot therefore, be made the basis of a lien in favor of the original contractor, a contractor under him is entitled to none. The original contract must be made with the owner of the land upon which the building is erected, or with some person authorized to act for him, and the resultant lien is co-extensive with his interest or claim in the property. An owner is one who has dominion over that which is the subject of the ownership. He has the right to make such use of it, consistent with the right of others, as he may see fit. The ownership may extend to the entire thing, or may be limited to an interest in it; but whatever is the subject of the ownership, it is held by the owner for his own individual benefit. For the purposes of the act, as assignable, transferable, or conveyable interest or claim in the thing constitutes ownership, but the right to assign, transfer, or convey resides in the person having the interest or claim, to be exercised at his pleasure, so that his relation to the interest or claim is that of "owner" under the general definition of the term. By the terms of the statute all school property within the district is held by the school board in trust for the school district, for the benefit of the school, and the school is a state institution. We do not think that either the school board or the school district is, within any definition of the term the "owner" of the school property; and, the provisions of the mechanics' lien law cannot be applied to public school buildings. But it does not follow that the lienor is without remedy. He has recovered a judgment against his immediate contractors. A school district is a quasi corporation, and not subject to process in garnishment; but if the board has money in its hands belonging to the contractors, and the lienor is unable to realize anything upon his judgment, the money can be reached by a proceeding in equity. A court of chancery will subject property and funds to the satisfaction of a judgment, when they cannot be reached by legal process, and the judgment cannot otherwise be satisfied.

Florman v. School Dist. No. 11 El Paso County, Court of Appeals of Colorado, 40 Pac. Rep. 469.

APPLICATION OF PAYMENT.—A contractor received money from one W., for whom he was building a house, and paid it to a material man, who had filed a lien against the house, and to whom the contractor was indebted on several accounts. At the time of

making the payment the contractor stated that he received the money from W., and that "I gave it to you on account." The material man applied it to an account other than that for materials furnished for W's house. It was held, that a claimant who had filed a subsequent lien against such house was not entitled to have the payment applied to the account for the materials furnished for W's house, merely because the money came from the owner.

Orr v. Nagle, Supreme Court, General Term, Second Department, 33 N. Y. Sup. Rep. 879.

A CONTRACTOR WHO HAS ABANDONED WORK.—A contractor who has abandoned work for which he contracted cannot recover on a quantum meruit for the part done by him unless the contract was rescinded, or its complete performance was rendered impossible by the wrongful conduct of the owner. The fact that the owner upon the statement of the contractor that his failure to prosecute the work was owing to his inability to get mechanics, employed extra men himself, does not show a recission of the contract by the owner nor cause for recission by the contractor.

McGonigle v. Klein, Court of Appeals of Colorado, 40 Pac. Rep. 465.

PERFORMANCE OF CONTRACT.—A contract to put a gravel roof on a building, to be done in first class shape, and guaranteed for a certain time, does not require the personal services of the contractor, so as to prevent his hiring another to do it under his supervision and instruction.

Curran v. Clifford, Court of Appeals of Colorado, 40 Pac. Rep. 477.

TO RECOVER FOR WORK DONE UNDER CONTRACT.—In an action to recover for work done under a contract, and for breach of the contract by the owner in preventing further performance, a report made to the contractor by his workmen that they had been stopped by the owner, accompanied by proof that they had been stopped by him, is competent to show the reason why the contractor ceased further performance of the contract.

Raven v. Smith, Supreme Court, General Term, Second Department, 33 N. Y. Sup. Rep. 972.

RESTRICTIONS IN DEED.—A restriction in a deed "that no building shall be placed at a less distance than twenty feet from the easterly line of the street" is violated by the erection, within the prohibited distance, of a piazza, eight feet wide, encircled by a railing, and having a roof supported by posts, attached to a house, and extending along its entire front.

Reardon v. Murphy, Supreme Judicial Court of Massachusetts, 40 N. E. Rep. 854.

IN AN ACTION ON A NOTE.—In an action on a note given by the owner of a building for materials furnished the contractor, in the absence of any warranty exacted from the material man when the note was given or other contract in regard to the materials, the Supreme court of Michigan holds, that the owner cannot recoup damages on the ground that the material furnished did not come up to the specifications in the building contract.

Delbridge, Brooks & Fisher Co. v. Patterson, 63 N. W. Rep. 436.

BUSINESS MOSAICS.

TYPEWRITING.—Save time and labor by dictating your contracts, specifications, etc., in shorthand to our stenographers free of charge. Sent to all parts of the city. Typewriting only five cents per folio of one hundred words. Additional copies two cents per folio. Pacific Copying Co., 10 Murphy Building, Telephone Jessie, 31.

Mrs. MORIARITY—"Oh, Moike, Moike, can't you spake to me?" Mr. Moriarity—"It's dead I am, darlint. I'm kilt entirely." Mrs. Moriarity—"And it's right glad I am to hear you say that same."—*Terre Haute Express.*

Joseph Budde manufacturer of sanitary appliances in the plumbing line, furnishes everything in this line that can be required to make our residences healthy and convenient; it will be well to remember in giving orders to Mr. Budde that you are patronizing home industry, and at the same time getting what you want of the most improved kind, at reasonable prices. His factory and show room is at 575 Mission street, San Francisco.

Harriet—"Let's play cleaning house, will you Henry?" Henry—"All right; you pound your fingers with the tack hammer, and I'll up set the stove pipe and say dammit."—*Society.*

A. Steiger Sons manufacturers of Architectural Terra Cotta, and almost everything in the way of stoneware, etc., have their San Francisco office at 320 Sansome street, San Francisco, San Jose address P. O. Box 1025.

Building Paper and Paraffine Paint are almost indispensible now days in making a house comfortable and lasting; you have an opportunity to patronize home industry, and add to your comfort at the same time by calling at 116 Battery street and leaving your orders.

"What were your husband's last words?" "He hadn't any," sobbed the widow, "I was with him."—*N. Y. Sun.*

Edward B. Hinds & Co., 411 Mission street, San Francisco continue to furnish Hill's Patent Inside Sliding Blinds, Perfection Window Screens, Self Coiling Burglar and fire-proof steel shutters, as well as rolling wood partitions. Send for catalogue and price list.

Mr. de Style—"Let's go to the theatre to-night." Mrs. de Style—"I have nothing to ware." Mr. de Style—"Then let's go to the opera."—*New York Weekly.*

If you want the most complete and safest patent chimney in the market get Clawson's at 1340 Market street, San Francisco.

"Was Washington a polished writer?" "Well, he used to knock the King's English silly."—*Life.*

Messrs. N. & G. Taylor Co., manufacturers of the "Taylor Old Style" brand of Roofing Tin, Philadelphia, are out in a neat advertisement. It is a four-leaf folder, on heavy paper, printed in two colors in attractive type. It is entitled "A Roofing Tin That Will Last as Long as the Building." They also devote a page to the "Secret in the Tinplate Trade," and go on to say that "The Secrets" in the Tinplate trade are in the producing of plates that appear other than what they are. The circular also states that their special brand "The Taylor Old Style," is the only plate made to-day exactly the same as in 1830, since which time it has never caused a complaint." To those interested in good Roofing Tin, we would suggest that they write to the N. & G. Taylor Co., Philadelphia, and secure samples and prices. This firm has always enjoyed the reputation of handling the best of goods.

His Piece—She—"I didn't hear anything of father's dog. He held his peace to-night, didn't he?" He (bitterly) "Yes; his piece of my $15 trowsers."—*Yale Record.*

Any of our readers interested in building a comfortable residence, should not fail to visit the show-room of the J. L. Mott Iron Works under the charge of Mr. M. S. James who is the Coast representative of the company.

To those not already posted it will prove a revelation to find what a fine display of goods that may well be called luxurious, every thing in the line of baths, wash tubs, foot baths, etc., with the latest improvements in the way of fitting will be found.

No excuse can be made for not having our houses properly provided for in this line, when we have on hand such a choice selection to choose from. Office and show rooms 27 Flood Building, third floor.

Clause Spreckels proposes to build a house out of sugar. That's nothing. We know a dairyman in Ohio who built several houses out of chalk and water.—*Toledo Bee.*

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates, considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer and Ray, San Francisco, Cal., the manufacturers of this engine, have earned the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

Girl (weeping)—"I'm sorry you have to go on the road again. It almost breaks my heart." Drummer—"Don't cry, Fanny, I'll manage to pick up another girl somewhere."—*New Lettler.*

William Bateman manufacturer of wood mantels, interior finish and inlaid floors. Mr. Bateman gives particular attention to fitting up banks, offices, stores and steamboats, 411 Mission street between First and Fremont streets.

Cabot's Creosote Shingle Stains.—Since the introduction of these stains manufactured by Mr. Samuel Cabot, 70 Kilby street, Bostou, there has been great improvement in the looks of those houses that have what may be called an unrivaled article for the permanent improvement of the looks, as well as the lasting qualities, for by the use of this stain you do not require to repaint your building so often as is the case where the stain has not been used. Bell & Van Wyck are the agents of Samuel Cabot, their office is at 303 California street, San Francisco.

Briggs—"Sometimes I wish I could be a hermit, and not have to associate with my fellow men." Braggs—"You can get practically the same effect by eating onions."—*News Letter.*

Those in want of artificial stone work, would do well to call upon George Goodman, who makes a good sidewalk as well as every thing else in his line of business, his office is in the Nevada Block, 307 Montgomery street, San Francisco.

CITY BUILDING NEWS.

Austin street No. 420. Additions; contractor, Aug. Lund; house raising, A. T. Penebsky; cost $1000.

Austin and Gough. Two-story frame; owner, Mrs. M. O'Brien; architect, Herman & Swain; contractor, J. J. O'Brien; signed, Oct. 5; filed, Oct. 5; cost $3940.

Belvedere near Waller. Cottage; owner, E. J. Malmgren; architect, A. Stenbiht; contractor, W. W. Rednell; signed, Sept. 18; filed, Sept. 18; cost $1900.

Broadway and Buchanan. Plastering three-story frame; owner, Mrs. Annie Donahue; architect, A. Page Brown; contractor, Henry Fisher; signed, Sept. 20; filed, Sept. 30; cost $2900.

Broadway near Webster. Plumbing, sewers, etc.; owner, W. H. Diamond; architects, Polk & Polk; contractor, E. J. Duffey; signed, Sept. 18; filed, Sept. 30; cost $1787.

Brannan near 4th. Two-story frame; owner, R. Herring; day's work; cost $1500.

Brannan and 6th. One-story frame; owner, D. Gallagher; contractors, Hood & Watson; cost $1000.

Brannan and 5th. Sheds; owners, Scott & Van Arsdale; cost $1000.

Buchanan near Turk. Two-story frame except painting and plumbing, etc.; owner, Mrs. Meta Ecks; architect, Emil John; contractor, C. Schutt; signed, Sept. 10; filed, Sept. 12; cost $3860.

Bush and Baker. Two-story frame; owners, Emil and Julia Barth; architects, Kenitzer & Barth; contractor, Adam Miller; signed, Sept. 11; filed, Sept. 14; cost $4300.

California near Mason. Specification filed; owner, Elizabeth J. Fricot; architect, Emile Depierre; contractor, H. Williamson; signed, Sept. 12; filed, Sept. 18; cost $1288.

California and Taylor. Repairs to building; owner, Alfred Tubin; day's work; cost $3000.

Clement near 5th Ave. Two-story frame; owner, C. Mohrmann; architect, W. H. Armitage; contractor, L. B. Schmid; signed, Sept. 20; filed, Sept. 26; cost $2591.

Clara and Fifth. Additions, etc.; owner, Mrs. Sullivan; contractor, H. Brown; cost $1200.

Devisadero and Post. Three-story frame; owner, John W. McDonald; architects, Havens & Toepke; day's work; cost $18,000.

Eighteenth and Folsom. Frame building; owners, Townley Bros.; day's work; cost $1000.

Fell near Clayton. Two-story frame; owner, F. T. Green; contractor, D. Einstein; signed, Sept. 11; filed, Sept. 14; cost $2750.

Fourth and Freelon. Three-story frame except painting, plumbing and plastering; owner, Adolph Schneider; architect, Emile Depierre; contractor, F. V. Acker; signed, Sept. 10; filed, Sept. 12; cost $4650.

Fourth near Brannan. Two-story frame; owner, Robert Watt, trustee; architects, Percy & Hamilton; contractor, D. B. Munroe; signed, Sept. 21; filed, Sept. 25; cost $6400.

Fourth and Welsh. Two-story frame; owner, John Barry; architect, R. H. White; contractor, Donald Currie; signed, Sept. 27; filed, Oct. 1; cost $6900.

Folsom near 25th. Two-story frame; owners, Geo. and Sophie Buecker; architect, I. C. Behrens; contractor, H. P. Conrady; signed, Sept. 21; filed, 8 pt. 21; cost $3800.

Freelon near 4th. Two-story frame; owner, Ann Keyes; architect, M. J. Welsh; contractor, M. C. Lynch; signed, Sept. 11; filed, Sept. 12; cost $5100.

Freelon near 4th. Two-story frame; owner, James Reavey; architects, Townsend & Wyneken; contractors, Peterson & Olson; signed, Sept. 19; filed, Sept. 20; cost $2600.

Freelon near 4th. Two-story frame; owner, John S. Thompson; architect, A. J. Barnett; contractors, Ogle & Smith; signed, Sept. 24; filed, Sept. 25; cost $1950.

Filbert near Webster. Repairs to Engine Hose 20; owner, City of San Francisco; contractor, J. T. Hayes; cost $ 965.

Fulton near Octavia. Alterations and additions; owner, John H. McMenomy; architects, Lavier & Mullaney; contractor, J. W. Fish; signed, Sept. 14; filed, Sept. 14; cost $2200.

Fulton near Pierce. Two-story frame to build except painting and plumbing; owner, Wm. McCormick; architect, A. J. Barnett; contractors, Ogle & Smith; signed, Sept 24; filed, Sept. 25; cost $3824.

Fulton near Pierce. Painting and plumbing; owner, Wm. McCormick; architect, A. J. Barnett; contractors, Ogle & Smith; cost $6666.

Grove near Buchanan. Plumbing and gas fitting work; owner, Jacob Dewzer; architects, Kenitzer & Barth; contractor, H. Williamson; signed, Sept. 20 filed, Sept. 26; cost $750.

Haight near Masonic. Carpenter work on schoolhouse; owner, City of San Francisco; architect, T. J. Welsh; contractors, Hansbrugh Bros.; signed, Sept. 14; cost $55395.

Haight near Masonic Ave. Concrete work; owner, City of San Francisco; architect, T. J. Welsh; contractors, Gray Bros; cost $4888. Plumbing contractor, E. Hogan; cost $2300. Galvanized Iron Work; contractor, Forderer Cornice Works; cost $ 676. Painting; contractor, D. Zelinsky; cost $1875.

Haight, Waller, Cole and Clayton. Concrete and asphalt work as a reservoir; owner, Paul Boynton Chute Co.; manager, W. H. McNaughton; contractor, Western Improvement Co.; cost ten cents per sq. foot for actual surface covered.

Jackson near Larkin. Two-story frame; owner, Catherine M. Mathews; architects, Shea & Shea; contractor, R. Trost; signed, Sept. 10; filed, Sept. 17; cost $7181.

Jackson near Walnut. Two-story frame; owner, Mary Gallway; architect, J. E. Krafft; contractor, J. Bucher; signed, Sept. 19; filed, Sept. 23; cost $2950.

Jessie near 15th. Two-story frame; owners, Patrick and Ellen Clark; contractor, G. Ratto; signed, Sept 10; filed, Sept. 11; cost $1600.

Jessie near 14th. Two-story frame; owner, Cornelius Benehy; contractor, C. Anderson; signed, Sept. 19; filed, Sept. 19; cost $2155.

Laurel near Sacramento. Two-story frame; owner, Clara J. Burtchaell; contractor, G. A. Nagel; signed, Sept. 24; filed, Sept. 24; cost $3300.

Leavenworth near Powell. Three-story frame; owner, Hugh McKevitt; architect, M. J. Welsh; cost $4000.

Lombard near Powell. Three-story frame; owner, Hugh McKevitt; architect, M. J. Welsh; contractor, Donald Currie; signed, Oct. 5; filed, Oct. 8; cost $4100.

Market near Stockton. Sidewalk improvements; owner, W. Eads; concrete work, Geo. Goodman; cost $1800.

Market street No. 836. Alterations; owner, B. Lucke; contractors, Ackerson & Paterson; cost $4500.

Market near Fifth. Encaustic Tile work; owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractor, T. F. Rigney; cost $7500.

Market and 3d. Excavations; owner, Claus Spreckles; architects, Reid Bros.; contractor, A. E. Buckman; signed, Sept. 21; filed, Sept. 27; cost thirty-seven cents per cubic feet.

Market and 3d. Concrete work for foundation; owner, Claus Spreckles; architects, Reid Bros.; contractors, Gray Bros.; signed, Sept. 21; filed, Sept. 21; cost $3500.

Market and Powell. Additions and alterations; owner, E. J. Baldwin; architect, M. J. Lyon; cost $25,000.

Masonic Ave. and Haight. Eight two-story frame dwellings; owners, architects and builders, Cranston & Keenan; cost $40,000.

Mason near Geary. Elevator work; owners, N. S. G. W.; architect, A. C. Lutgens; contractors, Cahill & Hall; signed, Sept. 5; filed, Sept. 14; cost $2775.

McAllister near Masonic Ave. Two-story frame; owner, James Pedlina; contractor, J. J. Maisseau; signed, Sept. 25; filed, Sept. 30; cost $3000.

McAllister near Buchanan. Repairs to Engine house; owner, City of San Francisco; architect, C. R. Wilson; contractor, W. H. Wickersham; cost $1946.

Mission near Onondago. Additions; owner, Mr. Cordes; house mover, A. T. Penlesky; day's work; cost $1000.

Mission near Onondago. Additions; owner, Mr. Towrane; day's work; cost $1200.

Mission near 23d. Alterations and additions; owner, Nils Thompson; architect, M. J. Welsh; contractors, Dean & Son; signed, Sept. 17; filed, Sept. 19; cost $2286.

Mission near 20th. Additional story; owner, E. R. Lawson; architect, A. C Lutgens; day's work; cost $4000.

Mission near 3d. Two water tight pits; owner, T. T. Williams; architect, A. C. Schweinfurth; contractor, Geo. Goodman; signed, Sept. 17; filed, Sept. 20; cost $1524.

Mission and Ridley. Additional story; owner, Patrick Casey; contractor, James Maguire; signed, Oct. 2; filed, Oct. 2; cost $1350.

Nineteenth and Collinwood. Two-story frame; owner, John Vielmauer; contractor, F. V. Steinmann; signed, Sept. 17; filed, Sept. 21; cost $3500.

Nineteenth and Diamond. Three-story frame; owner, Matilda E. Moore; contractor, T. C. Cochrane; signed, Oct. 5; filed, Oct. 5; cost $4850.

Noe near Henry. Alterations; owner, A. C. Bicbee; contractor, Chas. Koenig; signed, Sept. 12; filed, Sept. 14; cost $1500.

Noe near 19th. Additions; owner, Mr. Quinn; house moving; A. T. Penebsky; cost $1000.

O'Farrell near Stockton. Repairs to Truck House; owner, City of San Francisco; contractor, W. H. Wickersham; cost $973.

P street near 13th. Additions and alterations; owner, Denis O'Leary; architect, C. Winstanley; contractor, F. Bohenberg; signed, Oct. 2; filed, Oct. 3; cost $4100.

Palace Hotel. Additions and alterations; owners, estate of Wm. Sharon; carpenter work; contractor, W. J. Grant. Plastering; contractor, D. J. Mulville. Iron work; contractor, Ralston Iron Works. Cost about $12,000. Painting additional.

Page near Stanyan. Plumbing work; owner, Dr. Sniffeld; architect, B. E. Henricksen; contractor, G. C. Sweeney; cost $1000.

Pennsylvania Ave. near 18th. Two-story frame; owners, David and Mary Kaunitz; architect, D. C. Coleman; contractor, James Glackin; signed, Sept. 26; filed, Sept. 28; cost $2800.

Sacramento and Spruce. Two-story frame; owner, Annie O'Connor; architect, H. Hess; contractors, Spellman & Son; signed, Sept. 25; filed, Sept. 30; cost $ 2695.

Sacramento near Webster. Two three-story frames; owner, Jacob Rosenberg; architects, McDougall & Son; day's work; cost $53,000.

Sacramento near Webster. Lathing and plastering; owner, Jacob Rosenberg; architects, McDougall & Son; contractor, Jas. Kerlin; signed, Oct. 4; filed, Oct. 4; cost $1600.

Sacramento near Webster. Mill work; owner, Jacob Rosenberg; architects McDougall & Son; contractors, McFarland Bros; signed, Sept. 3; filed, Oct 4; cost $4400.

Sacramento near Webster. Plumbing, etc.; owner, Jacob Rosenberg; contractors, Walsh & McClusker; signed, Sept. 19; filed, Sept. 30; cost $1700.

Shotwell near 24th. Two-story frame; owner, Mrs. Mary P. Warnock; contractor, C. T. Emmons; signed, Oct. 3; filed, Oct. 3; cost $3800.

Shotwell near 18th. Too frame cottages; owner, T. A. Brown; cost $3200.

Shotwell and 26th. Additional contracts; owners, J. H. and C. Ruhtmann; architects, Herman & Swain. Mason work; contractor, D. J. Brennan; cost $945. Painting; contractor, G. A. Patterson; cost $400. Plumbing; contractors, Ickelheimer & Bro.; cost $945. Electrical work; cost $20. Mantels and gas fixtures; cost $500. Store fixtures; cost $750.

Silver near 3d. Three flats; owner, Bridget Kane; contractor, A. Klahn; signed, Oct. 3; filed, Oct. 4; cost $4178.

Stanyan near 18th. Frame dwelling; owner Elsie A. wife of Jos. Mader; contractor, W. W. Redhall; signed, Sept. 12; filed, Sept. 13; cost $2150.

Sutter and Jones. Plumbing and sewers; owner, Dr. M. Herzstein; architect, M. J. Lyon; contractors, Ickelheimer & Bro.; signed, Aug. 29; filed, Sept. 21; cost $3500.

Sutter and Jones. Heating and ventilation; owner, Dr. M. Herzstein; architect, M. J. Lyon; contractor, Wm. Cronan; signed, Sept. 18; filed, Sept. 21; cost $5795.

Sutter and Jones. Two electric elevators; owner, Dr. M. Herzstein; architect, M. J. Lyons; contractor, W. L. Holman; signed, Sept. 2; filed, Sept. 21; cost $4600.

Sutter and Jones. Electric work; owner, Dr. M. Herzstein; architect, M. J. Lyons; contractor, J. H. Wolf; signed, Aug. 30; filed, Oct. 5; cost $1350.

Tennessee near Napa. Repairs to Engineer house 18; owner, City of San Francisco; conractor, A. McElroy; cost $1869.

Tremont Ave. near Waller. Two-story frame; owners, Walter and Matilda White; contractors, White Bros.; signed, Sept. 18; filed, Sept. 24; cost $3750.

Third Ave. near Lake. Two-story frame; owner, Frank T. Hart; architect, A J. Barnett. contractor, Jas. Cochran; signed, Sept. 19; filed, Sept. 26; cost $2625.

Twenty-first near York. Frame cottage; owner and builder, A. Olson.

Twenty-second near Tennessee. Two-story frame; owner, Wilhelm Beckmann; contractor, T. C. Cochrane; signed, Sept. 10; filed, Sept. 12; cost $2628.

Twenty-third near Douglass. Frame cottage; owner, Pat. Gartland; contractor, J. McComahey; signed, Sept. 21; filed, Sept. 23; cost $1325.

Twenty-third near Hoffman Ave. Frame cottage; owner, W. S. Foss; contractor, J. Heyman; cost $2000.

Waller near Masonic Ave. Frame cottage; owner, C. F. Blank; contractor, J. Stierlein; signed, Sept. 30; filed, Sept. 30; cost $2100.

Water Front. Storehouse for Harbor Commissioners; contractors, Haley, Tibbetts & Co.; cost $1393.

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PEOPLE of the civilized world, who have the good of humanity at heart, are to-day earnstly engaged in studying the present condition of society with refererence to its probable effect on the future of civilization. It is admitted on ever side, that the existing condition of things could be improved on, and the pessamist thinks that if it is not improved on soon, that an industrialy revolution will surely result.

Every legislative body from town council to national senate is engaged in futile endeavors to so improve our laws that greater benefits may be conferred on a larger proportion of the public. At least that is what a long suffering public is supposed to believe. As a matter of fact, every legislative body, from Supervisors to Senators, is engaged in passing laws, giving special privileges to special classes. Corporations are granted control of our streets for railroads, gas and water and electric light purposes, etc., etc., while an astonishing mass of evidence is at hand to show the benefit that would result to the community, if public instead of private corporations should own and conduct these public utilities. Even the daily press occasionally publishes some of these striking facts, but is usually too timid to strongly advocate a sweeping reform. The old parties in national politics are still tinkering away at the rotten and corrupt legislation that has resulted from the election of petty politicians instead of broad and liberal statesmen; a legislation that surrenders the public money to private ownership, and even goes so far as to give to private banks the right that the Constitution of our United States refused to confide to any hands, save the national government alone.

As a small and local example of the influence of private interests acting against public policy, we can cite the attempts made in recent years to get proper building ordinances for the city of San Francisco.

The Fire Department has had the matter in hand for years. After much study and many consultations with the local Chapter of Architects, an ordinance was framed. We do not know that it is any secret, that private interests kept it from being acted on by the Supervisors for many month's. It is certainly no secret that private interests have prevented its becoming law. Now, in view of the fact, that private interests do as a matter of fact, direct, control and defeat beneficial legislation, is it any wonder that pessamists look with despondency on the future? That socialism is looked to by many as the only escape from present crushing conditions? And that reform parties are springing up on every side, each with new remedies to propose?

CITY HALL ENVIRONS.

AS an attempt will be made next legislature to permit the City to regain possession of its birthright, wrung from it during the first years of the building of its City Hall—that ground forming part of the old Yerba Buena graveyard lying between the City Hall and Market street—some practical way must be devised by which the City may now recoup itself for the prospective millions of dollars it threw away at that time, and which it will now have to pay to take possession again of the land.

If the present owners are allowed to build on these lots comprising this land the buildings 130 feet high—which there is no equitable way to prevent except by buying the property—the view of the whole south front of the Hall will be cut off except the little visible at the end of City Hall Square.

The *tout ensemble* or the altogether of the front will thus be nevermore seen of mortal man. This result looking at it from an artistic view is a result devoutly to be contemned. Therefore if there be any way by which the City Hall may yet be seen in its entirety and still the land facing on Market street be utilized; such a way is worthy of consideration and action.

Now an objection has always been made by business people that a break made in a business street by a park or recreation grounds, spoils the continuity of the line of stores and thus tends to prevent the side of the street on which this is from being favored as a shopping side. This may be so—and if so the solution of the question about to be offered does away with this objection.

The proposition is that the City acquire the whole of the property between the City Hall and Market street down to the corner of McAllister and build thereon a one-story market building—covering the whole ground with a glass roof. In this building can be housed, as many businesses as may be desirable—chiefly however would be those catering to the wants of the citizens in the eating line—butchers, greengrocers, fruiterers, fishmongers, dairy produce, etc., and restaurants. These businesses are always desirable for obvious reasons to be kept by themselves and to have no dwelling place over them.

This crystal palace devoted to the Art and Science of Gastronomy will be a striking feature to the City and at the same time will not prevent the whole effect of the City Hall from being taken in from the opposite side of Market street.

Now as to the financial part of the scheme whatever money necessary to be raised to pay for the land and for the erection of the building will be secured by the rents—the amount of which rents will be found amply sufficient to pay three per cent on the bonds, and at the same time no doubt provide a balance to help pay off the principal; with the satisfaction of knowing that at the end of that time a permanent income will be coming into the City.

W. J. CUTHBERTSON.

"Say, mamma, it's awful hard work fishin', ain't it?" "No, dear." "Then why does papa always have to stay in bed the next day and rest?"—*Truth.*

FOR RIGID BUILDING INSPECTION.

REAL estate men, especially the large and influential class that develops property by building, are more interested in investigations of recent collapses of unfinished buildings than would appear on the surface. The real estate board has on more than one occasion taken a decided stand in favor of licensing architects in a similar manner as members of the legal and medical professions must be licensed before they are permitted to practice. At present there are hundreds of contractors and builders, practical men perhaps, but no architects, who are permitted by the building department to erect, not only frame cottages, but quite pretentious flats and store buildings, upon the presentation of mere excuses for building plans. Frequently only the most primitive sketches are accepted, and the result must naturally be that many insecure buildings are erected.

In this connection, and referring to recent collapses of unfinished buildings in Chicago and New York, the *American Contractor* says that two things at least can be done, which, if they will not render future similar occurrences impossible, will at least make them highly improbable.

First, every city should have building inspectors who inspect. And the first requisite in securing such officers is that their appointment shall be absolutely taken out of the hands of the political machine. To make such a position as it now is, one of the spoils of office, says the paper cited, is as rediculous as it would be to have the office of schoolteacher dependent upon party reward for party influence. No, the building inspector, whose duty it is to see that every building in course of erection is built in full accordance with the ordinances regulating such matters, should be appointed by the executive for his experience and fitness for the office—appointed with the consent of the legislative branch, and when appointed hold his office as does the supreme judge, during life, or until he proves unworthy, and he should be subject only to the law.

* * *

Then, too, the law should throw its protecting barriers about the noble profession of architecture. Architects should be licensed, and no one allowed to design buildings unless he had previously shown to the satisfaction of the state that he thoroughly understands how to calculate strains and knows the strength of building materials.

In most States a doctor who has not thoroughly qualified himself by a course of study in some recognized college is not allowed to practice medicine. And, likewise, no architect should be permitted to design and superintend the erection of high buildings unless he had first qualified himself by a suitable course of study. A mere draughtsman or a carpenter who has made a study of attractive elevations is frequently developed into a full-fledged architect with an abundant line of clients. To diminish the risks to the public by restricting the work of such men of "a little education" is a curtailment of license and not of liberty.

When towns were small and one and two story buildings were the prevailing style it mattered little, but with growth of cities and the almost universal demand for taller buildings—for heavy warehouses of eight and ten stories; for flat buildings of six, seven, eight, or even ten and twelve stories, accommodating scores of families—the needs and responsibilities are multiplied, the attendant dangers quadrupled, and the necessity for public supervision and protection becomes imperative. With the planning of all such buildings exclusively in the hands of competent architects, responsible for the correctness of their figures and detail, and with competent inspectors, whose seal of proper construction, in accordance with plans and local building regulations, shall be a condition essential to the continuance of the work, the disgrace of such catastrophes as recently occurred will be avoided, or if they occur the blame can be readily placed where it belongs and the guilty parties can be held responsible.—*Chicago Times-Herald.*

LAMPS AND THEIR DANGERS.

FEW people realize the extent of the destruction and loss of life annually caused by lamp accidents. In 1893, in London alone, no less than forty-eight lives were lost by fires due to the explosion or upsetting of petroleum lamps. Last year the number was thirty-three, and the fire brigade were called to 418 fires due to the same cause, while the number of smaller fires to which the brigade were not called, and which were caused by lamp accidents, was probably between 1,500 and 2,000. During the past two months ten deaths have resulted in London from lamp accidents, or at the rate of sixty per annum. These figurs are for London only, with its almost universal gas supply. There are no reliable statistics for the country as a whole, but it is evident that the annual loss of life and destruction of property must be enormous.

About two-thirds of the accidents reported are due to the overturning of the lamp and the smashing of the reservoir, which is unfortunately usually made of glass or china. The other third are caused by explosions.

The conditions of explosion vary with almost every lamp, and with the "flash point" of oil used in it. As the oil sinks in the reservoir air is drawn in, and when the oil is warmed to a certain point it gives off inflamable vapour which mixes with the air. A small proportion of this vapour yields the *maximum* explosive force—when the air is saturated with the vapour, as happens generally by the the time the reservoir is nearly empty, the gases contained are highly inflamable, and will take fire almost like gunpowder if the lamp is smashed, but they are much less explosive. The gas may come up the sides of the wick and be ignited by the flame, or a draught caused by the opening of a door may blow the flame down into the reservoir or draw gas up towards the flame, or the wick may be turned too low and the lighted part pass inside.

The first, and by far the most important condition of a safety lamp, is that the reservoir should be of metal, and not of china, glass, or similar fragile metals.

Other conditions are, that the wick should be enclosed in a wick tube passing almost to the bottom of the reservoir, and so shutting off any possible communication between the air inside and the flame. Even if the lighted wick were turned down, and were to pass the tube still burning, it must be extinguished in the liquid oil at the bottom. The wick ought to fit the tube so that when the oil falls to the bottom no air will pass up the side of the wick.

One principal precaution necessary is, that the burner and wick tube should screw securely into the reservoir, so that they will not come apart in case of a fall. There are other matters, such as the provision of a broad base, so that the lamp may not be top-heavy; but the three suggestions named are by far the most important.—*The Citizen.*

A VERY CURIOUS TECHNICAL POINT.

A VERY curious technical point is to be decided by the Bureau of Yards and Docks of the Navy Department at Washington, and architects will be interested in the result. It seems from the newspaper accounts, that the Government is building a dry-dock at the Brooklyn Navy Yard, and a large number of piles are to be driven. The site of the dock is now under water, and the contractors, in order to get the piles down to the requisite depth, place "followers" on top of them, and, by driving the followers, push the submerged piles to the necessary depth. To this arrangement, however, the supervising engineer, Mr. Menocal, objects, and claims that the contractors should sheet-pile the ground, and pump out the water to a depth sufficient to allow the piles to be driven by direct blows to the depth intended. As the contractors do not wish to do this, and Mr. Menocal is not willing to accept piling driven with a follower, it has been agreed to refer the question to the Department officials.

The common impression among architects is certainly unfavorable to driving piles with a follower. According to the daily papers, Mr. Menocal considers that "the stability of the piling is jeopardized" by driving with a follower. What this means we will not attempt to say, but we presume that Mr. Menocal's real object is just that which any architect would make—that in driving piles with a follower, it is not only impossible to give as solid a blow as by direct impact of the hammer, but, owing to the varying rebound of the follower from the head of the pile, it is impossible to tell when piles so driven have reached the firm stratum to which it is commonly intended to drive them. As every one knows, the arrival of the foot of a pile at the bearing stratum is shown partly by the rebound of the hammer from the top of the pile, and partly, as well as more accurately, by the diminished distance to which it sinks under the blow. The sinking at the last blow is usually the most important factor in determining the load that the piles will bear safely, and it is of the utmost importance that it should be accurately measured. Where a follower is used, this essential measurement is rendered misleading. If it is measured, as is usually the case, at the hammer, all that can be shown is the decent of the follower. This may, owing to the crushing of its end, and of the corresponding end of the pile, be much greater than that of the pile itself; or, if the follower is elastic, and its top well "broomed up," a blow on its top followed by a lively rebound, may have a very significant effect in driving the pile below; so, that data drawn from the sinking of the follower are nearly worthless for estimating the resistance of the piles driven with them. Iron plates, with sockets on each side, are sometimes interposed between the pile and the follower, with advantage, and it is to be hoped that the official investigation will serve to elucidate all these points.—*American Architect and Building News.*

REPORT OF COMMITTEE ON "STRENGTH OF BRIDGE AND TRESTLE TIMBERS."

THE Committee appointed to report on "Strength of Bridge and Trestle Timbers, with special reference to Southern Yellow Pine, White Pine, Fir and Oak," desires to present herewith, as part of their report, the very valuable data, compiled by the Chairman of the Committee, relative to tests of the principal American bridge and trestle timbers

and the recommendations of the leading authorities on the subject of strength of timber during the last twenty-five years, embodied in the Appendix to this report and tabulated for easy reference in the accompanying tables I to IV.

The uncertainty of our knowledge relative to the strength of timber is clearly demonstrated after a perusal of this information, and emphasizes, better than long dissertations on the subject, the necessity for more extensive, thorough and reliable series of tests, conducted on a truly scientific basis, approximating as nearly as possible actual conditions encountered in practice.

The wide range of values recommended by the various recognized authorities is to be regretted, especially so when undue influence has been attributed by them in their deductions to isolated tests of small-sized specimens, not only limited in number, but especially defective in not having noted and recorded properly the exact species of each specimen tested, its origin, condition, quality, degree of seasoning, method of testing, etc.

The fact has been proved beyond dispute that small-size specimen tests give much larger average results than full-size tests, owing to the greater freedom of small selected test pieces from blemishes and imperfections and their being, as a rule, comparatively drier and better seasoned than full-size sticks. The exact increase, as shown by tests and by statements of different authorities, is from ten to over one hundred per cent.

Great credit is due to such investigators and experimenters as Professors G. Lanza, J. B. Johnson, H. T. Bovey, C. B. Wing, and Messrs. Onward Bates, W. H. Finley, C. B. Talbot, and others, for their experimental work and agitation in favor of full-size tests. Professor G. Lanza, R. H. Thurston and Wm. H. Burr have contributed valuable treatises on the subject of strength of timber. The extensive series of small and full-size U. S. Government tests, conducted in 1880 to 1882 at the Watertown Arsenal under Col. T. T. S. Laidley, and more recently the very elaborate and thorough timber tests being conducted by the U. S. Forestry Division under Dr. B. E. Fernow, Chief, and Prof. J. B. Johnson of Washington University, St. Louis, afford us to-day, in connection with the work of the above mentioned experimenters, our most reliable data from a practical standpoint.

The test data at hand and the summary criticisms of leading authorities seem to indicate the general correctness of the following conclusions:

First—Of all structural materials used for bridges and trestles, timber is the most variable as to the properties and strength of different pieces classed as belonging to the same species, hence imposible to establish close and reliable limits of strength for each species.

2d—The various names applied to one and the same species in different parts of the country lead to great confusion in classifying or applying results of tests.

3d—Variations in strength are generally directly proportional to the density or weight of timber.

4th—As a rule, a reduction of moisture is accompanied by an increase in strength; in other words, seasoned lumber is stronger than green lumber.

5th—Structures should be, in general, designed for the strength of green or moderately seasoned lumber of average quality and not for a high grade of well-seasoned material.

6th—Age or use do not destroy the strength of timber, unless decay or season-checking takes place.

7th—Timber, unlike materials of a more homogeneous nature, as iron and steel, has no well-defined limit of elasticity. As a rule, it can be strained very near to the breaking point without serious injury, which accounts for the continuous use of many timber structures with the material strained far beyond the usually accepted safe limits. On the other hand sudden and frequently inexplicable failures of individual sticks at very low limits are liable to occur.

8th—Knots, even when sound and tight, are one of the most objectionable features of timber, both for beams and struts. The full-size tests of every experimenter have demonstrated, not only that beams break at knots, but that invariably timber struts will fail at a knot or owing to the proximity of a knot, by reducing the effective area of the stick and causing curly and cross-grained fibers, thus exploding the old practical view that sound and tight knots are not detrimental to timber in compression.

9th—Excepting in top logs of a tree or very small and young timber, the heart-wood is, as a rule, not as strong as the material farther away from the heart. This becomes more generally apparent, in practice, in large sticks with considerable heart-wood cut from old trees in which the heart has begun to decay or been wind-shaken. Beams cut from such material frequently season-check along middle of beam and fail by longitudinal shearing.

10th—Top logs are not as strong as butt-logs, provided the latter have sound timber.

11th—The results of compression tests are more uniform and vary less for one species of timber than any other kind of test; hence, if only one kind of test can be made, it would seem that a compressive test will furnish the most reliable comparative results.

12th—Long timber columns generally fail by lateral deflection or "buckling" when the length exceeds the least cross-sectional dimension of the stick by twenty, in other words the column is longer than twenty diameters. In practice the unit stress for all columns over fifteen diameters should be reduced in accordance with the various rules and formulæ established for long columns.

13th—Uneven end-bearings and eccentric loading of columns produce more serious disturbances than usually assumed.

14th—The tests of full-size long compound columns, composed of several sticks bolted and fastened together at intervals, show essentially the same ultimate unit resistance for the compound column as each component stick would have, if considered as a column by itself.

15th—More attention should be given in practice to the proper proportioning of bearing areas, in other words the compressive bearing resistance of timber with and across grain, especially the latter, owing to the tendency of an excessive crushing stress across grain to indent the timber, thereby destroying the fiber and increasing the liability to speedy decay, especially when exposed to the weather and the continual working produced by moving loads.

The aim of your Committee has been to examine the conflicting test data at hand, attributing the proper degree of importance to the various results and recommendations, and then to establish a set of units that can be accepted as fair average values, as far as known to-day, for the ordinary quality of each species of timber and corresponding to the usual conditions and sizes of timbers encountered in practice. The difficulties of executing such a task successfully

cannot be overrated, owing to the meagreness and frequently the indefiniteness of the available test data, and especially the great range of physical properties in different sticks of the same general species, not only due to the locality where it is grown, but also to the condition of the timber as regards the percentage of moisture, degree of seasoning, physical characteristics, grain, texture, proportion of hard and soft fibers, presence of knots, etc., all of which affect the question of strength.

Your Committee recommends, upon the basis of the test data at hand at the present time, the average units for the Ultimate Breaking Stresses of the principal timbers used in bridge and trestle constructions shown in the accompanying table.

Average Safe Allowable Working Unit Stresses in Pounds per Square Inch.

Recommended by the Committee on "Strength of Bridge and Trestle Timbers."

American Association of Railway Superintendents, Bridges and Buildings. 5th Annual Convention, New Orleans, October, 1895.

KIND OF TIMBER.	Tension.		Compression. With Grain.		Compression.	Transverse Rupture.		Shearing.	
	With Grain.	Across Grain.	End Bearing.	Columns Under 15 Diams.	Across Grain.	Extreme Fiber Stress.	Modulus of Elasticity.	With Grain.	Across Grain.
Factor of Safety.	10.	10.	5.	5.	4.	6.	2.	4.	4.
White Oak	1000	200	1400	900	500	1000	550000	200	1000
White Pine	700	50	1100	700	200	700	500000	100	500
Southern Long-leaf or Georgia Yellow Pine	1200	60	1600	1000	350	1200	850000	150	1250
Douglas, Oregon &) Yellow Fir.	1200		1600	1200	300	1100	700000	150	
Wash. Fir or Pine..,) Red Fir.	1000					800			
Northern or Short-leaf Y. L. Pine.	900	50	1200	800	250	1000	600000	100	1000
Red Pine	900	50	1200	800	200	800	600000		
Norway Pine	800		1200	800	200	700	600000		
Canadian [Ottawa] White Pine	1000			1000				100	
Canadian [Ontario] Red Pine	1000			1000		800	700000	100	
Spruce and Eastern Fir	800	50	1200	800	200	700	600000	100	750
Hemlock	600			800	150	600	450000	100	600
Cypress	800			1200	800	200	800	450000	
Cedar	800			1200	800	200	800	350000	400
Chestnut	900				1000	250	800	500000	150	400
California Redwood	700			800	200	750	350000	100	
California Spruce				800		800	600000		

Average Ultimate Breaking Unit Stresses in Pounds per Square Inch.

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KIND OF TIMBER.	Tension.		Compression. With Grain.		Compression.	Transverse Rupture.		Shearing.	
	With Grain.	Across Grain.	End Bearing.	Columns Under 15 Diams.	Across Grain.	Extreme Fiber Stress.	Modulus of Elasticity.	With Grain.	Across Grain.
White Oak	10000	2000	7000	4500	2000	6000	1100000	800	4000
White Pine	7000	500	5500	3500	800	4000	1000000	400	2000
Southern Long-leaf or Georgia Yellow Pine	12000	600	8000	5000	1400	7000	1700000	600	5000
Douglas, Oregon &) Yellow Fir.	12000		8000	6000	1200	6500	1400000	600	
Wash. Fir or Pine..,) Red Fir.	10000					5000			
Northern or Short-leaf Yel. Pine.	9000	500	6000	4000	1000	6000	1200000	400	4000
Red Pine	9000	500	6000	4000	800	5000	1200000		
Norway Pine	8000		6000	4000	800	5000	1200000		
Canadian [Ottawa] White Pine	10000			5000				350	
Canadian [Ontario] Red Pine	10000			5000		5000	1400000	400	
Spruce and Eastern Fir	8000	500	6000	4000	700	4000	1200000	400	3000
Hemlock	6000			4000	600	3500	900000	350	2500
Cypress	6000		6000	4000	700	5000	900000		
Cedar	8000		6000	4000	700	5000	700000		1500
Chestnut	9000			5000	900	5000	1000000	600	1500
California Redwood	7000			4000	800	4500	700000	400	
California Spruce				4000		5000	1200000		

In addition to the units given in the table, attention should be called to the latest formulæ for long timber columns, mentioned more particularly in the Appendix to this report, which formulæ are based upon the results of the more recent full-size timber column tests and hence should be considered more valuable than the older formulæ derived from a limited number of small-size tests. These new formulæ are Professor Burr's, App. I.; Professor Ely's App. J.; Professor Stanwood's, App. K.; and A. L. Johnson's, App. V.; while C. Shaler Smith's formulæ will be better understood after examining the explanatory notes contained in App. L.

Attention should also be called to the necessity of examining the resistance of a beam to longitudinal shearing along the neutral axis, as beams under transverse loading frequently fail by longitudinal shearing in place of transverse rupture.

In addition to the Ultimate Breaking Unit Stress the designer of a timber structure has to establish the Safe Allowable Unit Stress for the species of timber to be used. This will vary for each particular class of structures and individual conditions. The selection of the proper "Factor-of-Safety" is largely a question of personal judgment and experience, and offers the best opportunity for the display of analytical and practical ability on the part of the designer. It is difficult to give specific rules. The following are some of the controlling questions to be considered.

The class of structure, whether temporary or permanent, and the nature of the loading, whether dead or alive. If live, then whether the application of the load is accompanied by severe dynamic shocks and pounding of the structure. Whether the assumed loading for calculations is the absolute maximum rarely to be applied in practice or a possibility that may frequently take place. Prolonged heavy steady loading and also alternate tensile and compressive stresses in the same piece will call for lower averages. Information as to whether the assumed breaking stresses are based on full-size or small-size tests or only on interpolated values, averaged from tests of similar species of timber, is valuable in order to attribute the proper degree of importance to recommended average values. The class of timber to be used and its condition and quality. Finally the particular kind of strain the stick is to be subjected to and its position in the structure with regard to its importance and the possible damage that might be caused by its failure.

In order to present something definite on this subject, your Committee presents the accompanying table showing the Average Safe Allowable Working Unit Stresses for the principal bridge and trestle timbers, prepared to meet the average conditions existing in railroad timber structures, the units being based upon the ultimate breaking unit stresses recommended by your Committee and the following factors-of-safety, viz.:—

Tension, with and across grain	Ten
Compression, with grain	Five
" across grain	Four
Transverse Rupture, Extreme Fiber Stress	Six
" " Modulus of Elasticity	Two
Shearing, with and across grain	Four

In conclusion your Committee desires to emphasize the importance and great value to the railroad companies of the country of the experimental work on the strength of American timbers being conducted by the Forestry Division of the U. S. Department of Agriculture and to suggest that the American Association of Railway Superintendents of Bridges and Buildings endorse this view by official action and lend its aid in every way possible to encourage the vigorous continuance of this series of government tests, which bids fair to become the most reliable and useful work

on the subject of strength of American timbers ever undertaken. With additional and reliable information on this subject far reaching economies in the designing of timber structures can be introduced, resulting not only in a great pecuniary saving to the railroad companies, but also offering a partial check to the enormous comsumption of timber and the gradual diminution of our structural timber supply.

WALTER G. BERG, Chairman,
J. H. CUMMIN,
JOHN FOREMAN, } Committee.
H. L. FRY

ELECTRIC LIGHT.

COST per lamp per year before and after public ownership, the "after" service being the same as, or better, than the service it replaced:

	Before.	After.
Bangor, Maine	$150	$48
Lewiston, Maine	182	55
Peabody, Mass.	185	62
Bay City, Mich.	110	58
Huntington, Ind.	146	50
Goshen, Ind.	156	77
Bloomington, Ill.	111	51
Chicago, Ill.	250	96
Elgin, Ill.	266	43
Aurora, Ill.	326	70
Fairfield, Ia.	387	70
Marshalltown, Ia.	125	27
Jacksonville, Fla.	24	5

The statements rest upon official reports and returns of municipal officers.

THE ASSOCIATION OF RAILWAY SUPERINTENDENTS OF BRIDGES AND BUILDINGS.

RESOLUTION ADOPTED BY THE ASSOCIATION AT THE FIFTH ANNUAL CONVENTION AT NEW ORLEANS, OCTOBER 15, 1895.

WHEREAS a most comprehensive and valuable series of investigations into the properties of wood and tests of the strength of our commercial timbers have been carried on in the Division of Forestry of the U. S. Department of Agriculture.

WHEREAS these investigations have already demonstrated that a most decided improvement in the practice with timber structures and use of wood and a saving of millions of dollars' worth of wood material are attainable as a result of these investigations.

BE IT RESOLVED, that we, the American International Association of Railway Superintendents of Bridges and Buildings, assembled in regular session, at our Fifth Annual Convention at New Orleans, La., October 15, 1895, endorse, as railroad officials in charge of the construction and maintenance of timber structures and buildings of railroads throughout the United States, the work thus inaugurated by the U. S. Government as tending towards a most needful and rational economy of our forest resourses and desirable improvements in their use, resulting not only in a great saving to users of timber throughout the Country, but especially offering a valuable guarantee for the absolute safety of properly designed timber structures;

RESOLVED, further, that we ask our Representatives in Congress to make liberal appropriations for the continuance and more rapid advance of this work, in order to secure, as quickly as possible, the much needed information, believing that the Government alone is in a position to secure it and that it is true economy to provide it without delay;

RESOLVED, further, that these resolutions be transmitted to the President of the Senate, the Speaker of the House of Representatives, the Secretary of Agriculture, the Chairman of the Committee on Agriculture of the Senate, and the Chairman of the Committee on Agriculture of the House of Representatives.

AN APT SIMILE.

WHEN a firm stops advertising people get the idea they have discontinued business. If the pier of a bridge is to be built in the middle of a river, the builders commence by sinking stones for the foundation. If they drop the first stone and quit because they should not see it, the pier would never be built. If they dropped a dozen stones, one on top of the other, and quit before the pier was big enough to stick out of the water, they would lose their time and stones. But if they go on, put in a good solid foundation and build up from that, they will in time raise a pier that will be strong and permanent and that will hold up a useful and necessary bridge. It is just so with advertising. The first advertisement you drop in only serves as a foundation: they do not amount to anything if you do not drop in enough of them, but if you keep on piling one top of the other, in the end you will have a pier which will sustain the bridge of business all the rest of your life.—*Granite Producer and Builder.*

DEMOLITION OF AN ANCIENT LONDON HOSTELRY.

AT London, England, workmen commenced pulling down the famous old "Goose and Gridiron," St. Paul's churchyard, which was built directly after the Great Fire. While Sir Christopher Wren was superintending the erection of St. Paul's Cathedral, the St. Paul's Freemason's Lodge, of which he was Master, used to meet in this house. Within an upper room the great architect presided over the meetings of the lodge for a period of eighteen years. There he presented to his brethren three mahogany candlesticks, also the trowel and mallet that he used when he laid the foundation-stone of the cathedral in 1675. The site of the "Goose and Gridiron" was, before the fire, occupied by the "Mitre" Tavern, the first London music house. For a good while the "Goose and Gridiron" has been closed. The building to be erected on the site will form part of the warehouse of Messrs. Hitchcock & Williams.—*The Citizen.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

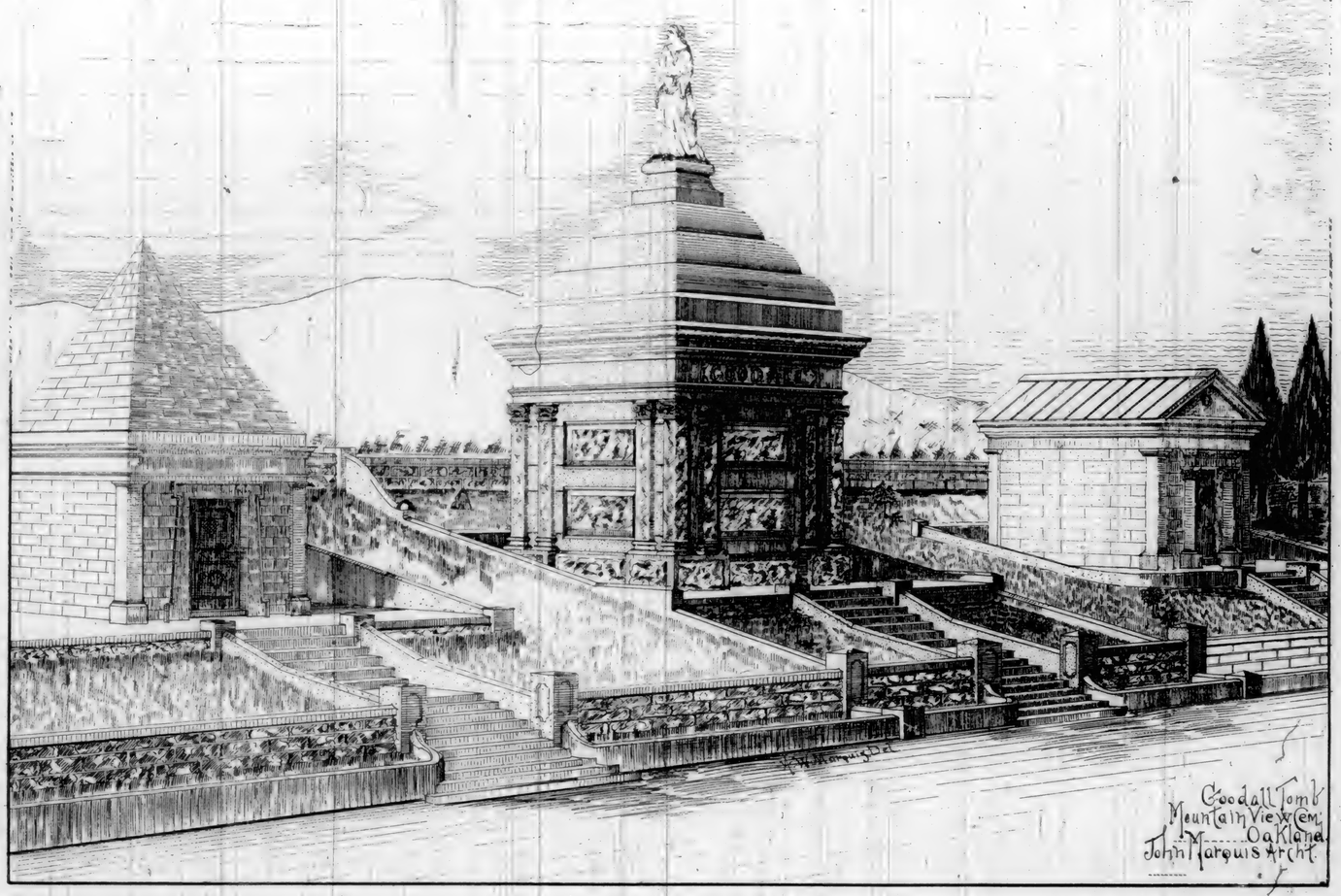
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

CHATEAU de Chaumont, J. W. Krause, del.

RESIDENCE for H. Sullivan, Esq.; Hudson & Krause, Architects.

GOODALL Tomb, Mountain View, John Marquis, Architect.

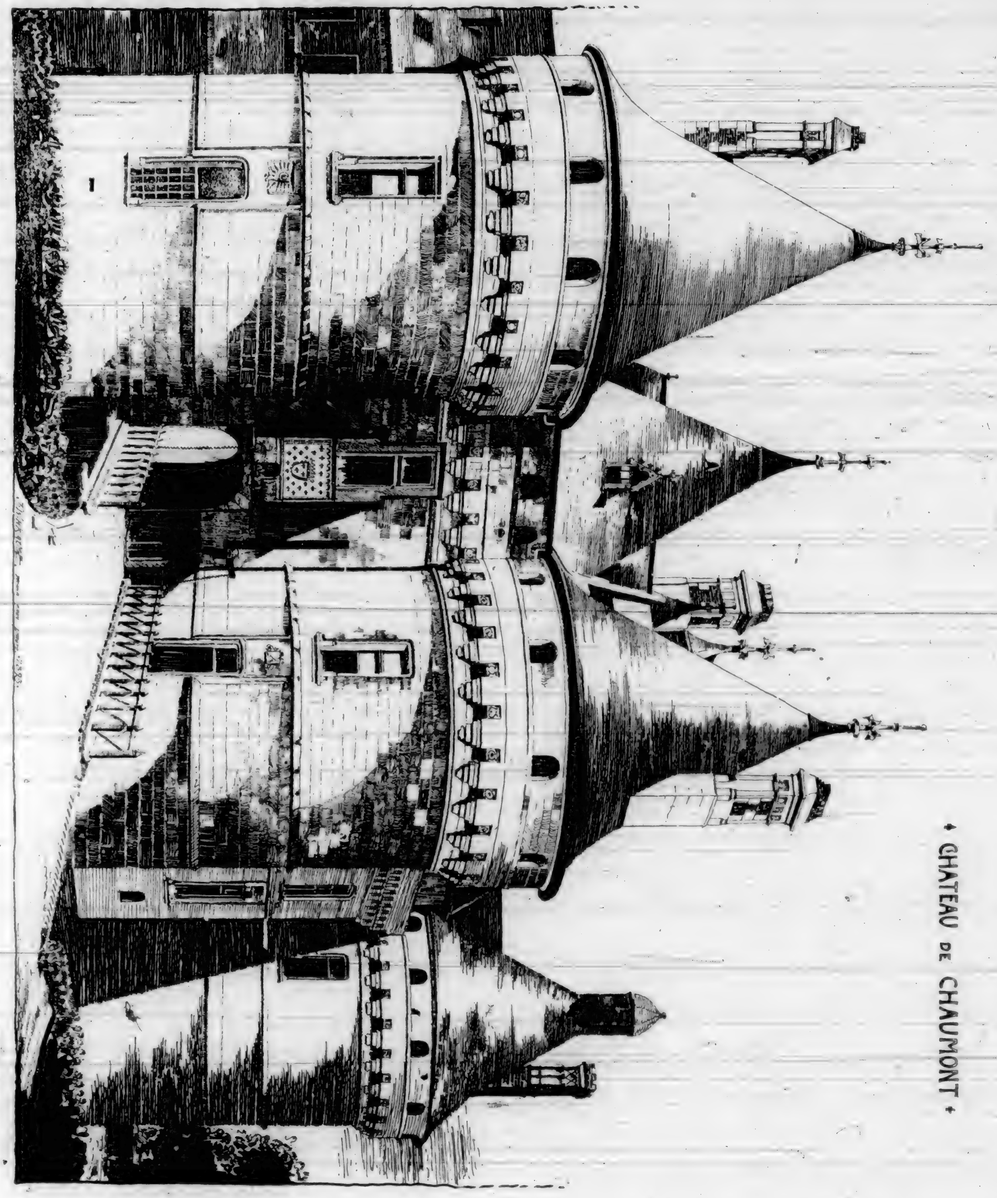
DESIGN for a N. S. G. W. building; B. J. S. Cahill, Architect.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XVI. No II NOVEMBER 1895.

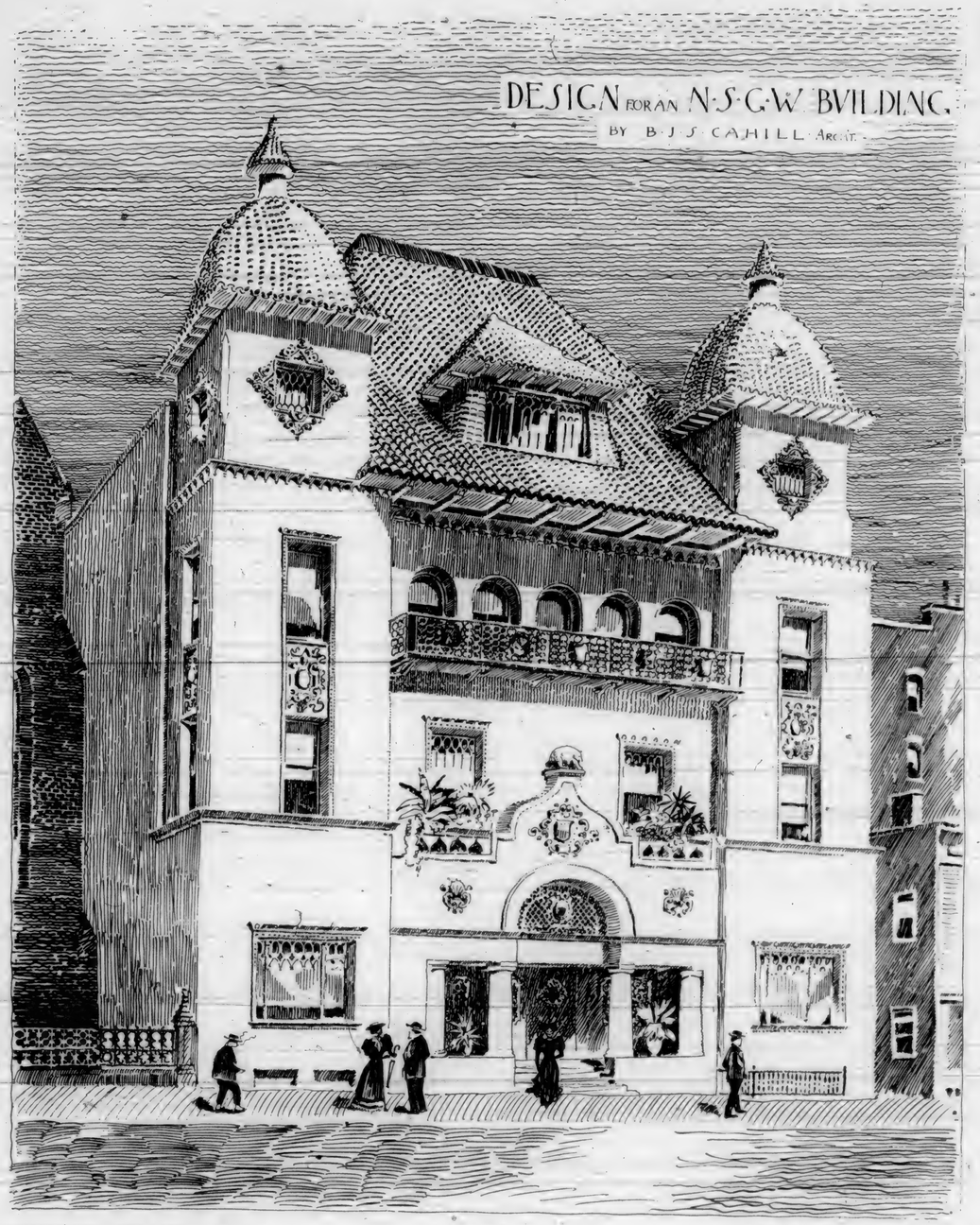


CHATEAU DE CHAUMONT

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO LITH.

VOL XVI Nº II NOVEMBER 1895.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO.LITH.

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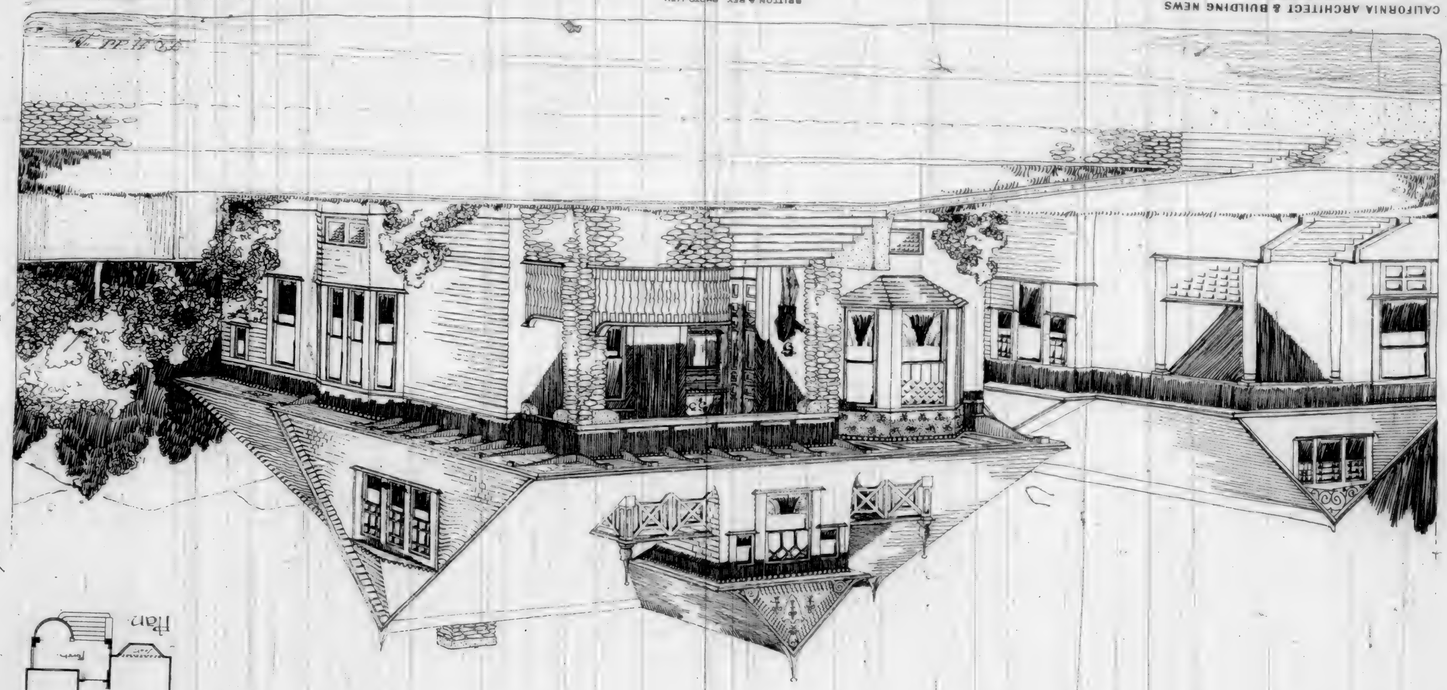

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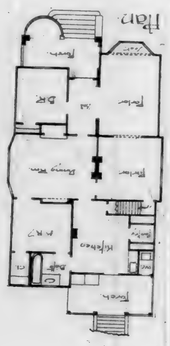

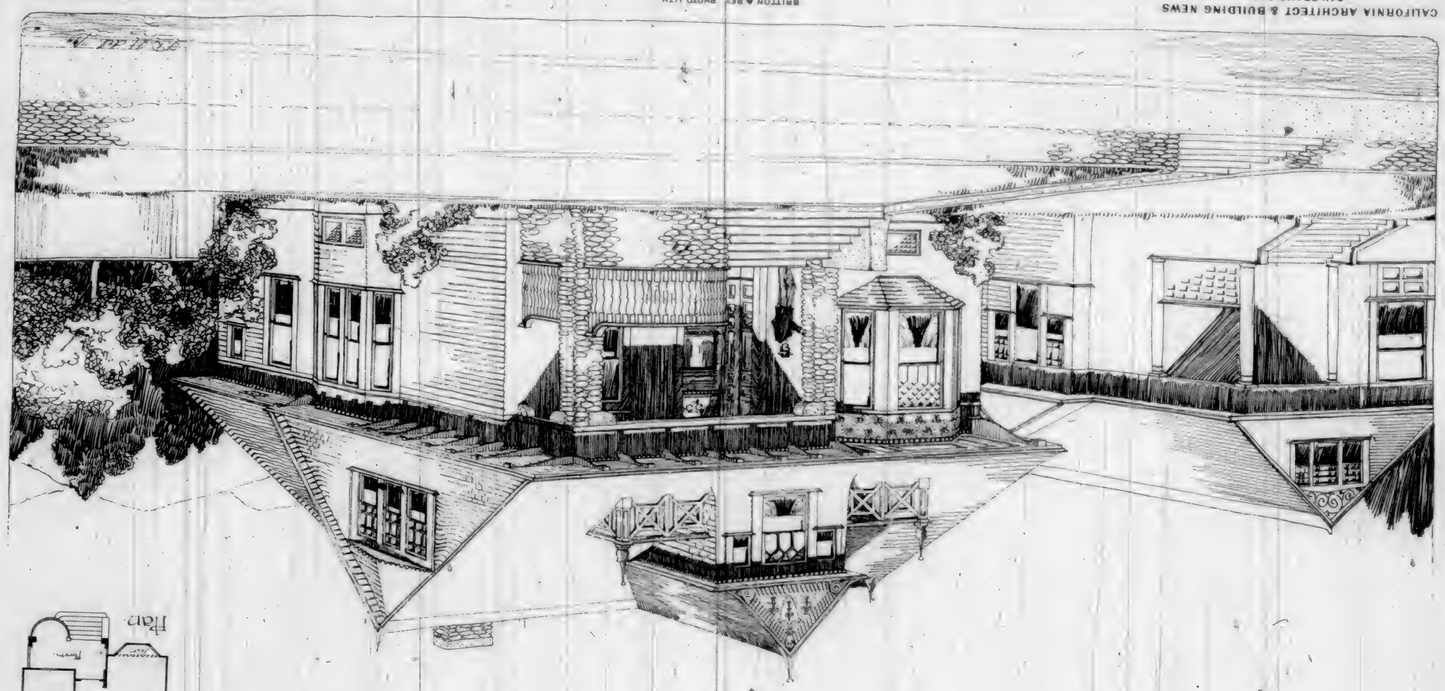

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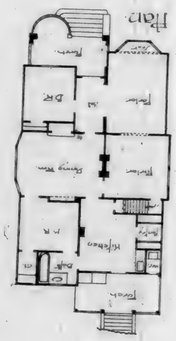


NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. — W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. — JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. — A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. — AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. — GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. — W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. — C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. — H. T. BESTOR, Treas.

TWENTY-NINTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

IF the architects of this country could only manage to construct their buildings with the same degree of skill and polish with which Mayor Walbridge built his words and phrases into one of the neatest little speeches of welcome we have ever listened to, he could not say, as he did, that just as we Americans have no language, having borrowed it from other peoples, so we have no architecture, having borrowed from other races the styles they had invented. The analogy he established between language and architecture was a very welcome variant upon the ordinary comparison at such times with "frozen music." The Mayor's felicitous remarks and the courtesy of Professor Ives, the Director of the Museum of Fine Arts, made the closing of the first day of the Twenty-ninth Annual Convention of the American Institute of Architects at St. Louis really memorable.

As for what preceded it, it is hard to escape asking the questions: "Is this sort of thing worth really while? What does it all amount to after all? Can a machine that needs so much oiling to prevent friction be properly designed? Can it ever do the work it was intended to accomplish?" While the coalition of the American Institute of Architects with the Western Associaton of Architects, six years ago, was beyond dispute a wise measure, it is also pretty certain that a grave mistake was made at that time in abolishing the distinction that had thitherto obtained in the Institute between Fellows and Associates.

As the Western Association had but one grade of membership, it was impossible that they could be expected to join the Institute as members of the Institute's lower grade, and it was equally nujust that they should all become members of the higher grade over the heads of the Institute members of Associate rank. The only solution was to put all members at the time of the coalition upon an equal footing, and the grade of Associate had to be abolished.

But the need was a temporary one. The coalition has been made; all members of the Institute are now of the same grade and yet they are far from happy, and the cause of their unhappiness, apparently, is that there is too much equality, seeing that the equality is one of name, while the inequality of artistic and intellectual capacity is still conspicuous and as galling to natures of one kind as it is hampering to natures of another kind.

There is a very prounced feeling that the Institue is not that body of *eletes* that it should be, that all the members would like it to be and which can only do good work when it has become such. Yet, all the same, it is a very excellent body, doing useful work and likely to do better as time goes on, for in a civilized and progressive world all things ameliorate, and the very friction that now requires such profuse application of oil is polishing off the offensive crudities that offend the higher sensibilities.

There is no need of resorting to the violent and reactionary measures that some members appear to be dimly hinting at. The cure, or at least, a real and permanent palliative is within reach, and is seemingly a simple one. The feeling that the Institute, as now constituted, is too democratic, or at least, not sufficiently aristocratic, is a natural and healthy one, since it betokens aspiration after higher and better things. If, as is certainly the case, it is felt to be a wrong that the newly-elected youthful practitioner should hold the same rank, so far as the public is advised, with the leaders of the profession of double his years and quadruple his professional experience, things can be set right and information conveyed to the public through the very simple measure of restoring the two grades of membership, Fellowship and Associateship.

In such event, where all would like to be Fellows, while most must remain Associates, how can the separation be effected? Very simply, and by the thoroughly democratic method of selection by ballot.

If it could be arranged that one-quarter or one-fifth of the present members who received the highest number of votes should be advanced to a higher grade, something would have been gained which would have a definite meaning to the public and a real value to the Institute and the profession at large. Having taken this step, the next would be to establish the regulation of the method of examination by which those members of the second grade could obtain entrance to the first rank, and with this would be secured the further great gain that whatever may really have been the qualifications and attainments of that portion of the first grade who obtained the rank through the suffrage of their fellows, those who were advanced later certainly did possess a definite and established professional capacity, and those men of real ability who now refrain from joining the Institute because of its, to their thinking, too democratic composition, could no longer plead their unwillingness to endure its leveling tendencies.

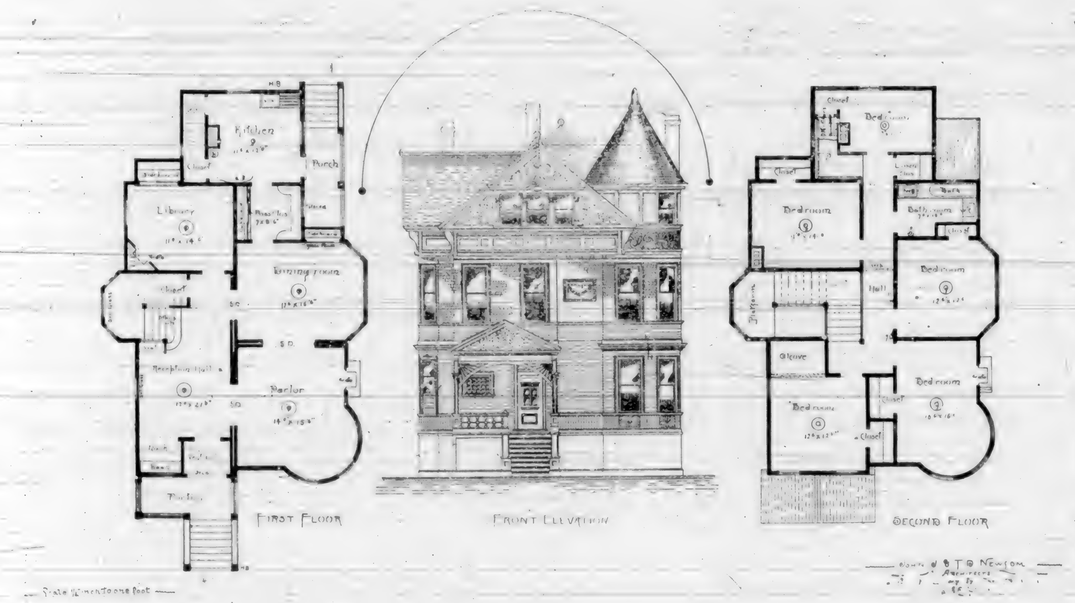
Some such change as this appears to be the way to meet and overcome the feeling of dissatisfaction that seems to be in the air, and a change like this can be adopted more easily and more safely than the more radical ones that some members would like to see enforced.

Although but little was actually said on the subject, yet all through the discussion, during the first morning session

of the matter of amending the by-laws, more than one debater tried to interject it, but the discussion was by the strict ruling of the chairman kept from wondering from the point, and the noon lunch gave time for that informal interchange of views that has so often saved the situation.

As to the amendments to the by-laws, these amounted practically to rescinding the action taken at the last convention, which seemed to restrict the freedom of action of the Chapters. Mr. Kendel, acting as spokesman of the Directors, explained that the action of the last convention had not been intended to restrict, but actually to enlarge the powers of the Chapters, but that since the measure had been generally misunderstood it was evident that, if nothing else was the matter, the language of the obnoxious by-laws was obscure and misleading. He therefore brought forward a series of amendments to Section X of the by-laws which, after prolonged debate and some opposition, were finally adopted.

(To be Continued.)



SAN FRANCISCO CEMETERIES.

SAN FRANCISCO is said to be suffering from its cemeteries, which are, as it happens, now placed on hills, to the windward of the main portion of the city, in such a position that the trade-winds from the Pacific, which blow for two months of the year, bring down among the living whatever miasm may rise from the sepulchres of the dead. A large school-house, situated near one of the cemeteries, was recently closed, on account of the repeated outbreaks of diphtheria among the pupils, and some of the physicians of the city attribute these as well as the other troubles from zymotic diseases, to the air from the graveyards. We do not remember having heard diphtheria before attributed to cemetery exhalations, but it is quite possible that it might be caused by them, and the people of the city are quite justified in urging, as they are now doing, the prohibition of further interments within the city limits, and even the removal of the bodies from the cemeteries already existing. Although the latter would be a rather serious undertaking, it is not likely that diphtheria will diminish much until it is accomplished. Few people have any idea of the time during which noxious and corrupting substances, buried in the ground beyond the reach of the nitrifying microbe, will continue to saturate the earth, and the surrounding atmosphere, with foul vapors. It is commonly assumed that within a few months, or a few years, at the utmost, the products of decomposition are absorbed by the soil, and converted into harmless inorganic substances; but Professor Lanciani tells us that under his direction, trenches were dug in the gardens of Mæcenas, which were made about the year 40 B. C. by filling in twenty-five feet of clean soil over an old cemetery on the Esquiline hill in Rome. The cemetery had long been a nuisance and danger to that part of the city, and Mæcenas earned the gratitude of his contemporaries by buying it and covering it up. Nevertheless, after two thousand years of disuse and exposure to such purification as a good coverifig of clean soil could effect in it, Lanciani found it necessary, when his men had reached the bottom of the earth-filling, and exposed the ancient surface, to relieve them at short intervals, in order that they might escape suffocation from the horrible stench which proceeded from the remains of the people whose bodies were laid there long before the Christian era.—*American Architect and Building News.*

BOOKS AND PERIODICALS.

"In Sight of the Goddess" is the complete novel in the LIPPINCOTTS' MAGAZINE for November. This novel by Harriet Riddle Davis will compare favorably with the many that have been published in this magazine. The table of contents contains an interesting variety of articles, among others "The Pet Meanness" which contains more truth than poetry and cannot be read without a smile.

CALIFORNIA GOLD MILL PRACTICES by Ed. B. Preston, M. E., issued in Bulletin No. 6 by the State Mining Bureau by J. J. Crawford, State Mineralogist.

Much valuable information is given not only in regard to improved machinery now in use at the mines, but to the manipulation of the ore or rocks from which gold is obtained. Mr. Crawford says that any citizen of this State may obtain a copy free by sending three cents for postage with their application, to the California State Mining Bureau, No. 24 Fourth street, San Francisco. The price to those living out of the State is fifty cents.

THE AMERICAN ARCHITECT AND BUILDING NEWS for October 26th, contains an interesting article entitled "Suggestions by Which a Greater Influence May be Exercised by the Institute Among the Architects of the South West, at the Same Time the Elevation of the Profession Before the Public" being a paper by Mr. James B. Cook, F. A. I. A. of Memphis, Tenn., read at the Twenty-Ninth Convention of the American Institute of Architects, held at St. Louis, Mo., Oct. 15th and 17th, 1895. The length of the article prevents our giving it in full, but members of the Institute, and architects in general will find it well worthy of their serious consideration.

Two articles in the FORTNIGHTLY REVIEW for October, 1895, show the great interest now taken in improvements of both the Army and Navy, the one by Major Arthur Griffiths entitled "Advancement in the Army," the other by W. Laird Clowes "The Naval Manœuvres." These two articles taken in connection with another "The Foreign Policy of England" shows the unsettled feeling of the people on the other side of the Altantic. A general desire to be prepared for the worst as well as a dread of what that may be.

The ever welcome Monthly Magazine INDUSTRY for November, 1895, is on our desk containing a very interesting table of contents. The article on "The Modern Gas Engine" will be a surprise to many who have only perfunctory knowledge of that useful little engine, and look upon it as well enough in its way. "Compressed Air for Street Railways" will have an interest for all who ride in the street cars, and that includes all of our community. To those not acquainted with this magazine, it will be a surprize to find so much information of a useful and interesting nature condensed with in its covers. Published by the Industral Publishing Company, 40 California street, San Francisco.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONSTRUCTION OF CONTRACT.—Whether a sum named in a contract is to be regarded as liquidated damages or as a penalty depends on the intention of the parties as it appears from the nature of the contract, the situation of the parties, and surrounding circumstances, and not merely on the language of the contract.

Sanford v. First National Bank of Belle Plaine, Supreme Court of Iowa, 63 N. W. Rep. 459.

A BUILDING CONTRACT CONTAINS THE FOLLOWING PROVISIONS:—"The contractors shall not make a claim for additional work, unless the same shall be done in pursuance of an order from the architects, and notice of all claims shall be made to the architects, in writing, within ten days of the beginning of such work." The Supreme Court of Minnesota held, that this provision is not effectual limitation upon the legal competency of the parties to the contracts, or their authorized agents, to modify or waive any of the contract, except in the particular manner stipulated.

Michaud v. McGaegor, 63 N. W. Rep. 479.

SET OFF FOR BREACH OF CONTRACT.—Where, upon default of the contractor, the architect, acting for the owner, let to the lowest bidder the contract for the completion of a building, the owner was entitled to set off against the original contractor or any subcontractor the actual amount paid for the completion of the work.

Yeomans v. Parker, Supreme Court of Michigan, 63 N. W. Rep. 346.

LIABILITY FOR INJURY TO EMPLOYE.—The foreman of a bridge gang and a mechanic working under his superintendence are not fellow servants, and the employer is liable for the negligence of the former whereby the latter is injured.

San Antonio & A. P. Ry. Co. v. McDonald, Court of Civil Appeals of Texas, 31 S. W. Rep. 72.

VERIFICATION OF MECHANICS' LIENS.—Chapter seventy-five of the Code creates the mechanics' lien in certain cases, on certain conditions; and section four of such chapter, among other things, provides that such account, to be effectually filed for record as a lien, must be sworn to by the person claiming the lien, or by some person on his behalf. Such oath is an element essential to the creation of the lien, and to the effectual, must be in writing, as a part, in some way, of the writing filed for record. If such affidavit be made before any officer of another state or country, it is not duly authenticated for record until it is subscribed by such officer, and there be annexed to it a certificate of the clerk or other officer of a court of record of such state or country, under an official seal, verifying the genuineness of the signature of the first mentioned officer, and his authority to administer an oath.

Buckhead v. Berkeley Springs Waterworks & Improvement Co., Supreme Court of Appeals of West Virginia, 21 S. E. Rep. 1031.

SUFFICIENCY OF VERIFICATION.—A verification of a mechanics' lien which states that affiant knows the contents thereof, and believes the same to be "true," is not invalidated by the use of the word "true" instead of "just," as provided by statute. A verification of a claim of mechanics' lien is not invalid because it refers to such claim of lien as "the foregoing lien." A lien claim which states that the contractor entered into an oral contract with claimant to furnish materials for the construction of said building, and that, in accordance with said contract, claimant furnished the material described, sufficiently shows to whom the materials were furnished.

Sautter v. McDonald, Supreme Court of Washington, 40 Pac. Rep. 418.

PATROL EVIDENCE IN THE INTERPRETATION OF CONTRACTS.—In arriving at the real intention of the parties, as shown by the language employed by them in a contract, and in order to make a correct application of the terms used to the subject-matter and objects referred to, when the same are not clearly expressed, the situation of the parties, and the surrounding circumstances may be considered in construing the contract, but it must be borne in mind that it is the language of the contract itself that is to be construed, and when the parties reduce their agreement to writing no other language employed by them in making the contract can be resorted to, except that furnished by the instrument itself.

Robinson v. Hyer, Supreme Ct. Fla., 17 Se. Reporter, 745.

BUSINESS MOSAICS.

If there is an architect in the city who is not a subscriber to the CALIFORNIA ARCHITECT AND BUILDING NEWS now is the time to correct the mistake, walk up to the office, 408 California street, room 17; hand in your name for the coming year you will be allowed November and December numbers without charge if you subscribe at once.

"There is certainly a strong odor of tobacco. Does that policeman smoke?" "I don't know, mum; he only died last week."—*Life.*

For facts about Paints, see the advertisement of W. P. Fuller & Co., on the outside cover of this journal. As every good housekeeper is anxious about the walls of her house, she should make a point of finding out the merits of **Duresco,** the new wall finish, or Washable Water Color.

"No, Willie, dear," said mamma, "no more cakes tonight. Don't you know you cannot sleep on a full stomach?" "Well," replied Willie, "I can sleep on my back."—*Harper's Round Table.*

A. Steiger Son's.—Architectural Terra Cotta can be supplied in any quantity, as well as every thing in their line. Call at 206 Market street, and be convinced of the truth of this statement. If you have not time to call, remember their telephone, Main, No. 5393.

Miss Yearsy—Do you think a woman ought to work for a husband? MISS QUICK—Yes, till she gets him.—*Melbourne Meekly Times.*

If we judge by the increasing amount of concrete work now being done in the city we should think the firm of W. R. Grace & Co., 203 California street, must be keep busy to supply the demand of Portland cements. As this well known firm always have the best brands in the market on hand it is no wonder their sales are large.

"Where is the man who keeps the restaurant?" said the disgusted customer. "He's gone out to lunch," replied the cashier.—*Town and Country Journal.*

The Gas Stove Department of the San Francisco Gas Light Co., has been the means of producing comfort and health to many a housekeeper of this city. Until the lady of the house has made the experiment of cooking by gas, she had no idea of the saving of time, health and temper which the use of gas for this purpose can accomplish. In fact making housekeeping a pleasure instead of a burden. We notice in most of the new houses in Richmond the gas grate for heating, as well as the gas stove for cooking, are almost universal. Call at 226 Post street and find out all about it.

Smith & Young, 723 Market street, San Francisco, and 230 South Spring street, Los Angeles, keep always on hand an endless supply of Building Materials. If you don't see what you want, ask for it, and you will hardly ever be disappointed.

Hungerford—Do you believe, Doctor, that the use of tobacco tends to shorten a man's days? DR. POWELL—I know that it does. I tried to stop it once, and the days were about ninety hours long.—*Truth.*

A. Zellerback & Sons, 419 and 421 Clay street, is the place to go if you want anything in the paper line; this Journal would use nothing but paper furnished by them. An endless variety may be found at their warehouses from which all wants can be supplied.

Joseph Budde, the successor of Wm. Smith, late of 21 Montgomery street, can be found at his present headquarters, 575 Mission street.

It should be remembered in giving your orders for sanitary appliances to Mr. Budde, you are not only doing what you wish others to do to you, but you are patronizing home industry.

The factory and show room of Mr. Budde are always open to the public, and thus people can be convinced they get what they pay for.

"That whiskey is fifteen years old. I know it because I've had it that long myself." THE COLONEL—By jove! sir, you must be a man of phenomenal self-control.—*Life.*

Architectural and Ornamental Iron work is a special feature of the Vulcane Iron Works, 135–145 Fremont street, San Francisco. A horse housed in a stable fitted with their stable fixtures would think he was in a Prince's stable.

It is better to risk the fire than to stay in the frying-pan.—*Life.*

Mr. Samuel Kellett, manufacturer of Plaster Decorations, plaster repaired and whitened at 28 Ellis street, San Francisco, and 375 Twelfth street, Oakland.

"Do you think you can make a good portrait of me?" "I'm afraid I must answer in the negative."—*Ex.*

If you need water only when the wind blows, if you are satisfied to utilize but a small fraction of the water in your well; if you prefer heavy bills for repairs after each storm in winter, by all means use a windmill; but if you want water at any time, and up to the full capacity of your well, put in the Ajax Coal Oil Gas Engine, the latest thing in mechanics, an engine that uses common coal oil for fuel, and is built by the well known firm of Palmer & Rey, San Francisco, Cal.

W. W. Montague & Co., have always on hand a selection of Mantels, Grates and Tiles that is sure to suit the most exacting, to say nothing of their fire place trimmings, and heating apparatus, either by warn air, hot water or steam.

It would take too much space to enumerate all the good things this firm carry in stock, but we may add the Artistic Bronzes must be seen to be fully appreciated.

She—I regret to say that our engagement is at an end. Here is your ring. HE—Then you do not love me? SHE—That is not the question. My husband is coming to take me home to-morrow.—*Pick-Me-Up.*

Before you decide upon what Door Hanger to select, call upon Dunham, Carrigan & Hayden Co., 17–19 Beale street, San Francisco. They claim the American sliding door hanger will cause a great saving of time and expense. See illustration in our advertising columns, page IX.

The thin one—I'd like to see one of those bicycle fiends dare to run over me. THE PLUMP ONE—No fear of that, dear. There would be to much risk of a punctured tire.—*Indianapolis Journal.*

Patronize Home Industry, and at the same time supply yourself with the best building paper on the market. Remember this is a California production entirely, and that there is none "just as good." For sale at 115 Battery street, and by dealers in general. The Paraffine Paint Co., with their well known mark of P. & B., keep in the front rank all the time.

Mowler—I see that some philosophers says that the way to cure yourself of a love affair, is to run away. Do you believe it? CYNACUS—Certainly—if you run away with the girl.—*Truth.*

The San Francisco Lumber Co., who do both a wholesale and retail trade, have their principal office at the foot of Third street. Telephone, Main, 1042. Their yards at the foot of Third street as well as the south side of Channel street, between Fourth and Fifth streets, are supplied with the lumber that you are sure to want.

To those who have examined the show rooms of the J. L. Mott Iron Works, under the charge of Mr. M. S. James, 27 Flood Building we have nothing to say, as actions speak louder than words, and to see is to be convinced, but to those who have neglected the opportunity now presented by Mr. James of seeing the finest selection of bathing utensils in the city, we would say go at once and be convinced that Mr. James can furnish you with what will make your house a joy for ever.

Mrs. Hicks—I thought you seemed to agree pretty well with Mr. Thirdly's sermon this morning. MR. HICKS—How so? MRS. HICKS—You nodded to about everything he said.—*Ex.*

The Revere Rubber Co., 527 Market street, San Francisco are the manufacturers of "Schenck" Swinging Hose Reel. As the use of this Reel reduces your insurance, this alone should make it an object to obtain what is considered by good judges the best in the market. The reason why this is so may be seen in the fact that it is guaranteed to work under any pressure as it has packing boxes that never leak. In fact as it is claimed by the manufacturers in their advertisement on page iv of this journal it is safe, reliable, non-corrosive, simple, durable, ornamental and always ready. What more can be asked?

"If a boy and a-half ate a green apple and a-half in a minute and a-hlf, how would he feel in an hour and a-half?" "Why doubled in half, of course; ask us something harder next time."—*Fun.*

The San Francisco Gas Light Co., have their Gas Stove department at 225 Post street. If ladies who have not done their cooking upon a Gas Stove, will call at this number on Post street, they will be convinced of the comfort, convenience and economy that will follow the purchase and use of a Gas Stove.

In several instances, where this advice has been acted upon, we know the result has been highly satisfactory.

"Have your smoked that cigar I gave you?" "No; the doctor says I mustn't take any violent exercise."—*Life.*

CITY BUILDING NEWS.

Andover and Eugenia. Additions; contractor, W. Kirshbaum; raising, etc., A. T. Penebsky; cost $1000.

Arlington near Roanoke. Frame cottage; owner, J. M. Mello; contractor, Louis Cereghino; signed, Oct. 10; filed, Oct. 10; cost $737.

Broadway near Fillmore. Plumbing, gas fixtures, etc.; owner, Mrs. Fannie Field; architect, M. J. Lyon; contractors, Ickelheimer Bro.; signed, Oct. 14; filed, Oct. 15; cost $775.

Broadway and Buchanan. Granite steps, fence, posts, etc.; owner, Annie Donahue; architect, A. Page Brown; contractor, A. McLennan; signed, Oct. 30; filed, Nov. 4; cost $3575.

Bush and Jones. Converting six flats into hotel; owner, E. A. Benteling; architects, Hermann & Swain; contractor, R. J. Pavert; signed, Oct. 16; filed, Oct. 16; cost $7846.

Bush near Laguna. To build; owner, Michael McGrath; architect, M. J. Welsh; contractor, J. W. Coburn; signed, Oct. 2; filed, Oct. 22; cost $3600.

Cherubusco near Cortland Ave. One-story frame; owners, Margaret and Edward Fekey; architect, Vincent Krolow; contractor, L. B. Schmid; signed, Oct. 4; filed, Oct. 5; cost $1675.

Clay near Van Ness. One-story banquet room, cabinet work excepted; owner, F. Schwabacker; architects, Percy & Hamilton; contractors, Farrell & Bell; signed, Oct. 22; filed, Oct. 22; cost $4100.

Clay near Stockton. Three-story brick; owner, Pacific Fruit Co.; days work; cost $10,000.

Clay near Drumm. Grading, concrete and brickwork for two-story brick; owners, G. H. and Alvina Lucksinger, et; architect, H. Geilfuss; contractor, F. Wagner; signed, Oct. 22; filed, Oct. 23; cost $1839.

Clay near Drumm. Pilling, foundation, etc; owner, G. H. and Alvina Lucksinger and others; architect, H. Geilfuss; contractors, Thomas Day & Sons; signed, Oct. 22; filed, Oct. 23; cost $3278.

Clayton near Waller. Two-story frame; owner, T. J. & Anne Sheehan; contractor, D. Ross; signed, Oct. 18; filed, Oct. 19; cost $3296.

Devisadero and Post. Plastering, etc.; owner, John W. McDonald; architects, Havens & Toepke; contractors, Clark & Kelley; signed, Oct. 29; filed, Nov. 2; cost $1300.

Eleventh Ave. near L. street. Alterations and additions; owner, Eugene Legallet; architect, E. Deplerre; contractor, L. Perramont; signed, Oct. 14; filed, Oct. 18; cost $2100.

Ellis near Jones. Concrete and cement work; owner, Joseph Hume; contractors, Cushing, Wetmore Co.; signed, Oct. 8; filed, Oct. 24; cost $2350.

Fell near Lott. Two-story frame; owner, J. F. English; architect, J. V. Hall; contractor, F. W. Kern; signed, Oct. 23; filed, Oct. 29; cost $4310.

First Ave. near Point Lobos. School Building; owner, City of San Francisco; architect, C. I. Havens; contractor, W. Linden; cost $2886.

First Ave. near Point Lobos. Water closets and drainage; owner, Board of Education; architect, C. I. Havens; contractor, W. Linden; signed, Nov. 1; filed, Nov. 5; cost $2866.

Fillmore and Lombard. Lathing, plastering, etc.; owners, Henry and Martin Rathjen; architect, Henry Geilfuss; contractor, Arthur O'Brien; signed, Nov. 6; filed, Nov. 11; cost $1689.

Fillmore and Lombard. Carpenter and mill work for three-story frame; owner, Henry and Martin Rathjen; architect, Henry Geilfuss; contractor, Jacob Schuler; signed, Oct. 10; filed, Oct. 10; cost $7738.

Fillmore and Lombard. Plumbing, gas fitting, etc.; owners, Henry and Martin Rathjen; architect, H. Geilfuss; contractor, W. F. Wilson; signed, Oct. 10; filed, Oct. 10; cost $311.

Fillmore and Lombard. Excavations, brick work, etc.; owners, Henry and Martin Rathjen; architect, H. Geilfuss; contractor F. Wagner; signed, Oct. 10; filed, Oct. 10; cost $1059.

Fillmore and Lombard. Plastering, lathing, etc.; owner, Henry and Martin Rathjen; architect, H. Geilfuss; contractor, H. L. Helgoth; signed, Oct. 10; filed, Oct. 10; cost $1065.

Franklin and Oak. Alterations and additions; owner, F. A. Meyer; architect, F. B. Wood; contractor, R. O. Chandler; signed, Oct. 29; filed, Oct. 30; cost $1070.

Front and Broadway. Improvements to warehouse; owner, J. McDonough; contractors, Mahoney Bros.; cost $7000.

Folsom near 25th. Three-story frame; owner, Frank Nelson; architect, C. M. Rosseau; contractor, A. Petry; signed, Oct. 8; filed, Oct. 11; cost $3940.

Fourth near Bluxome. Two-story frame; owners, Simon and Yetta Israel; architect, J. Biller; contractors, Biller & Qualman; signed, Oct. 14; filed, Oct. 16; cost $2556.

Fourth and Welsh. Excavations; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, H. M. Peterson & Co.; signed, Oct. 24; filed, Oct. 25; cost $225.

Green near Kearny. To build; owner, J. S. Godeau; architect, J. Godart; contractor, A. Petry; signed, Oct. 26; filed, Nov. 1; cost $2000.

Harrison street No. 405. Two-story addition; owner Emma Hare; contractor, W. J. Keything; signed, Oct. 22; filed, Oct. 23; cost $1420.

Jackson and Sullivan Alley. Repairs; owner, W. Vrooman; contractor, J. F. Hills; cost $6000.

Jackson near Hyde. Alterations, except plumbing; owner, S. Polack; architect Saifield & Kohlberg; contractors, Bratcher & Griffith; signed, Oct. 24; filed Oct. 25; cost $1800.

Jackson near Baker. Two-story frame; owner, Eleanor Howell; architect, R. H. White; contractors, Campbell & Pettus; signed, Oct. 23; filed, Oct. 26; cost $5140.

Laurel Hill Cemetery. Vault; owner, O. F. Willey, ex. estate of J. Wheeland architects, Townsend & Wyncken; contractor, M. F. Redmond; signed, Oct. 9; filed, Oct. 11; cost $1275.

Laurel Hill Cemetery. Granite and marble vault; owner, F. M. Husted; contractor, Rocklin Granite Co.; signed, Oct. 10; filed, Oct. 12; cost $3173.

Laguna and Jackson. Tile work for five bath rooms; owner, W. F. Whittier architect, Edward F. Swain; contractor, Montague & Co.; signed, Nov. 1 filed, Nov. 7; cost $1018.

Market near 5th. Plastering work; owner, Mrs. A. M. Parrott; architects Pissis & Moore; contractor, A. C. McTavish; signed, Nov. 5; filed, Nov. 7 cost $4000.

Market near 5th. Floor tiling; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, T. F. Rigney; signed, Oct. 7; filed, Oct. 19; cost $2000.

Market and 6th. Alterations; owner, D. Hewes; architect, S. Newsom; contractors, Ackerson & Paterson; cost $1000.

Market and 10th. All work for re-construction of brick building; owner, Timothy Hopkins; architect, H. A. Schulze; contractors, Ingerson & Gore, signed, Oct. 28; filed, Nov. 4; cost $11,090.

Market near Noe. Three-story frame; owner, Josephine W. Cory; architect, Seth Babson; contractor, James A. Smillie; signed, Sept. 30; filed, Oct. 23; cost $4620.

Mason and Greenwich. Retainting walls, etc.; owner, Catherine Dondero; architects, Havens & Toepke; contractor, W. E. Ambrose; signed, Oct. 22; filed, Oct. 24; cost $3250.

Mason near Jackson. Alterations; owner, J. H. Drossel; architects, Kenitzer & Barth; contractor, C. Krecker; signed, Oct. 19; filed, Oct. 19; cost $4077.

Mission and Ridley. Alterations and additions; owner, P. C. Casey; contractor, Jas. Maguire; signed, Oct. 19; filed, Oct. 19; cost $1350.

O'Farrell near Stockton. Fire proof partitions; owners, Gutzeit & Malfanti; architects, Pissis & Moore; contractor, H. Ralston; signed, Oct. 14; filed, Oct. 15; cost $1487.

Page and Buchanan. Alterations and additions; owner, Mary J. Keane; architects, Percy & Hamilton; contractor, B. F. Ellis; signed, Nov. 5; filed, Nov. 7; cost $7031.

Page and Buchanan. Plumbing, gas pipe, etc.; owner, Mary J. Keane; architects, Percy & Hamilton; contractors, W. S. Snook & Son; signed, Nov. 5; filed, Nov. 7; cost $1230.

Page near Broderick. Two-story frame; owner, John Muller; architect, W. H. Lillie; contractor, J. H. Moore; signed, Oct. 19; filed, Oct. 23; cost $3233.

Parker Ave., lots 8 and 9. Frame building; owner, T. Alborn; contractor, Jos. Heaney; signed, Oct. 30; filed, Nov. 4; cost $2040.

Pine near Gough. Alterations and additions; owner, Mrs. M. J. Morffew; architect, M. J. Lyon; contractors, Fenn & Weste; signed, Oct. 15; filed, Oct. 31; cost $1300.

Pine and Central Ave. Alterations and additions; owner, Joseph Beyersdorf; contractor, E. Roettger; signed, Oct. 14, filed, Oct. 16; cost $2360.

Point Lobos and 1st Ave. Two-story frame, except mantels and gas fixtures, owner, F. M. Flugger; architect, C. F. Robinson; contractor, E. A. Priest; signed, Oct. 9. filed, Oct. 11; cost $3790.

Potrero Ave. and 21st. Cottage; owner, Alexander Tillie; contractor, R. W. Smith; signed, Oct. 15; filed, Oct. 17; cost $1775.

Post near Broderick. Alterations and additions; owners, Julius and Mary Heyman; architect, Henry Geilfuss; contractor, C. Schutt; signed, Oct. 21; filed, Oct. 21; cost $1140.

Post and Devisadero. Planning mill work; owner, J. W. McDonald; architects, Havens & Toepke; contractors, C. M. Depew Planing Mill Co.; signed, Oct. 17; filed, Oct. 25; cost $2800.

Post near Scott. Two-story frame; owner, Samuel Solomon; architect, M. J. Lyon; contractor, Hienrick Pauls; signed, Oct. 18; filed, Oct. 30; cost $3300.

Sacramento near Steiner. Two-story frame; owner, Charlotte E. Blyth; contractor, Richard Cook; signed, Oct. 9; filed, Oct. 10; cost $4100.

Scott near Pacific Ave. Two-story frame; owner, Millie L. Wright; architect, W. H. Lillie; contractor, J. G. Adams; signed, Oct. 25; filed, Oct. 29; cost $10,666.

Scott near Pacific Ave. Plumbing, gas-fitting, etc.; owner, Millie L. Wright; architect, W. H. Lillie; contractor, W. F. Wilson; signed, Oct. 26; filed, Oct. 26; cost $1462.

Seventeenth Ave. near K. N. W. Alterations and additions; owner, David Paul; contractor, John T. Coleman; signed, Nov. 2; filed, Nov. 5; cost $1530.

Sixth and Folsom. Additions and new three-story frame; owner, M. Israel; architects, Saifield & Kohlberg; signed, Nov. 5; filed, Nov. 6; cost $8350.

Steiner near Broadway. Two-story frame; owner, Pauline Bachman; architect, M. J. Lyon; contractor, H. Jacks; signed, Oct. 5; filed, Oct. 12; cost $5550.

Steiner near Hayes. Two-story frame; owner, M. Kavanagh; days work; cost $3000.

Steiner near Hayes. Two-story frame; owner, M. Kavanagh; days work; cost $8000.

Silver near 3d. Six flats; owner, Thomas Clark; cost $5000.

Stuart near Mission. Excavating, piledriving, etc.; owner, E. R. Lilienthal; architect, Clinton Day; contractors, S. F. Bridge Co.; signed, Nov. 7; filed, Nov. 11; cost $3400.

Sutter and Jones. Wood and metal lathing patent plaster; owner, Dr. M. Herzstein; architect, M. J. Lyon; contractors, Spencer & Tobib; signed, Oct. 17; filed, Oct. 28; cost $3900.

Sutter and Jones. Painting, etc.; owner, Dr. M. Herzstein; architect, M. J. Lyon; contractors, Ehat & Ellert; signed, Oct. 16 filed, Oct. 25; cost $2500.

Union near Devisadero. Mill work; owner, Mrs. May B. Angus; architect, J. H. Littlefield; contractor, O. E. White; signed, Oct. 4; filed, Oct. 11; cost $1710.

Twelfth Ave. near California. Water closets for school house; owner, Board of Education; architect, C. I. Havens; contractor, William Linden; signed, Nov. 1; filed, Nov. 5; cost $3753.

Twenty-second and York. Two-story frame; owner, Anton Halbritter; architects, Martens & Coffey; contractor, H. Helbing; signed, Oct. 10; filed, Oct. 10; cost $2970.

Twenty-second and Treat Ave. Two and three-story frame buildings; owner, Charles Groezinger; contractor, W. W. Rednell; signed, Oct. 31; filed, Oct. 31; cost $9000.

Twenty-second street No. 217. Additions and alterations; owner, Mary Pendergast; architects, Martens & Coffey; contractor, James Mooney; signed, Nov. 5; filed, Nov. 7; cost $1020.

Twenty-third near Mission. Two-story frame; owner, Niles Thompson; architect, M. J. Welsh; contractor, J. W. Coburn; signed, Oct. 9; filed, Oct. 9; cost $1700.

Twenty-fourth and Sanchez. Additional story; owner, R. E. Ecklen; carpenter, John Blake; raising, etc., A. T. Penebsky; cost $2000.

Twenty-eight near Dolores. One-story frame; owner, Geo. W. Kennard; contractor, O. W. Forsyth; signed, Oct. 28; filed, Nov. 6; cost $1600.

Van Ness Ave. Boat house for Dolphin boat club; owners, Dolphine Boat Club; architect, A. C. Lutgens; contractor, W. Linden; cost $1490.

Van Ness Ave. Bulkhead and granite steps; owner, F. A. Frank; architect, Clinton Day; contractor, Dan'l M'Phee; signed, Oct. 28; filed, Nov. 7; cost $1050.

Waller near Laguna. Additions to Engine House; owner, City of San Francisco; architect, C. Wilson; contractors, Holm & Sheibley; cost $5342.

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ONCE more the inquisitive San Francisco newspaper has inquired of the Treasury Department why we have not seen that new postoffice building on the lot purchased for it some years ago, and once more we have been told that we must be patient. Now patience is a virtue, and to be virtuous is to be happy, so San Francisco should consider herself happy, and really she ought to be. There are no joys so pure as the delights of anticipation—and really we have been greatly favored in that respect; what will the sordid reality in brick and stone compared with the delightful visions of our active imagination.

A young lady who was asked why she was always so happy and contented replied as follows: "Why ever since I was a little girl, my father has been promising me a sealskin sack for Christmas." "But," replied her friend "you have never received it!" "No, but every Christmas father promises to send me to enjoy my summer vacation in the country if I will forego the sack, so I am always contented and happy!"

But it ts really a serious question that the public business of this nation should be so carelessly administered. Just now we are aware that Uncle Sam is too poor to do his business in a business like manner, he even has to borrow some hundreds of millions to keep up his credit, and really you see under such conditions it would be too extravagant to employ a competent architect as a private individual would do, under like circumstances. O no! just think how much more economical it is to employ a few draftsmen in place of an educated architect, who has the presumption to ask five per cent for his services! and he even cannot employ enough draftsmen to do the work when it should be done. "No, let the people wait a while longer; there are a few corporations waiting for pecuniary favors; there are a few millions in interest on money lent to railroad corporations, that the corporations want us to pay, (to say nothing of the original debt) and then I must pay a little attention to passing a few laws for other corporations."

Now the truth is the corporations practically govern this country. There is no use in shutting our eyes to the dismal fact that that we are no longer a free people, for we are not! A President harrison recommends a postal telegraph for the benefit of the people of the United States; a wannamaker attempts to carry the recommendation into execution, and it is whispered that a JAY GOULD will tell them to stop, and THEY STOP!

A Standard oil is accused of electing a Senator by bribery and the Senate of the United States declines to hear any

evidence in the case, a Collis P. wants an extension of time, and a few people think he won't get it—but how many?

If this country is to become the great nation its founders hoped, it will have to change its laws to give the honest mass of the people a chance to legislate directly, without the interference of elected representatives. The only way to do this is by the Initiative and Referendum.

STONE from sundry quarries and their comparative merits have come to the fore lately in San Francisco, as there are at least three large public buildings to be at once commenced in that city. Any building for the public use should have expended on it, as well as the best talent, the best material obtainable; irrespective of State or even National lines. We want the best wherever it comes from, but when within a State there is found material of as good quality as any outside, it becomes then the duty of its representatives to select such.

In the matter of building stone there is as good as any obtainable in California so that there is no reason in going outside of that State for stone for our New Ferry Building or for any other of our prospective public buildings. It would be invidious to name any particular quarry when there are so many good ones scattered throughout the length and breadth of the State of California—and some within a very few miles of the site.

Proper economy points therefore when there are many quarries of stones of equal strength to choose that which most economizes labor in working and in transportation.

WE see with some concern that the abandonment of Buena Vista Park in San Francisco is broached. It is to be hoped that the Park Commissioners have no serious desires in that direction. A closure of any open space belonging to any city is an economic mistake.

The tendency now-a-days is to more municipal control not less, and by no means let a tittle of the City's property be given up. Once San Francisco did this in the case of Yerba Buena Park and has regretted it ever since.

Buena Vista Park is situated on the top of a hill which is useless for residence purposes except by a great expense in grading. The picturesque steep places which now adds to its beauty would be in the way of streets and residences. In truth all of the tops of the hills of the city should be acquired by the municipality for park purposes, should be planted out with trees to form wind breaks and clothing, and crowned by obelisks or other monuments perpetuating the memory of some heroic action or person.

This idea being adopted, no more will the artistic eye be tortured as it gazes on the glories of the setting sun in the Golden West, by having its gaze arrested by the hideous outlines of chimney sweep's and clothier's advertisements which now crown the terminal points upwards of the City's landscape which under better conditions would finish with its natural grandeur and solemnity the Vista of its main street.

TWENTY-NINTH ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

CONTINUED FROM NOVEMBER NUMBER.

THE general purport of Section X in its amended form is this: Taking it for granted that it is desirable to increase membership in the Institute, and that there are certain architects who for one reason or another desire to obtain such membership while they do not care to acquire active membership in the nearest Chapter, the amended Section X allows such Chapters as may so desire to establish a second-grade of Chapter membership at half the usual dues of such Chapter, whatever they may be. The payment of such half dues assures to the members paying them no vote in control of the Chapter's actions; it is only an enabling step which will allow the members to then seek admittance to the Institute itself under the usual conditions and stipulations and upon payment of the full initiation fee and annual dues, as now. Entrance to the Institute can still only be obtained through the Chapters, except in cases of isolation as now, and except that the Directors, in their discretion, may elect to direct membership in the Institute any architect who for twenty years had honorably practised his profession.

In order to prevent this "half-grade" membership from being deterimental to the Chapter, it is provided that if such member at any time resigns from the Chapter he, *ipso facto* resigns also from the Institute, and on the other hand resignation of such half-grade Chapter member from the Institute carries with it resignation from the Chapter. Moreover it is anticipated that as all are more closely and more naturally interested in the local matters these half-grade Chapter members will not be content to be mere onlookers, but will sooner or later wish to have a voice in their control and will so become full members of the Chapter as well as of the Institute, even if it does entail a slight additional expense.

To these and other slight verbal changes in Section X was added a clause of possible usefulness but containing so large a germ of contention that it is remarkable that it should have been adopted. This new clause empowers the Directors to issue a charter to a new Chapter for a territory which is either wholly or partially occupied by an existing Chapter and covered by its charter. Action of such nature can be taken by the Directors only after consulting the wishes of the Chapter first in the field and weighing the value of the arguments it may prefer against the invasion of its territory; but if the Directors consider the advantage to accrue to the Institute itself through the dual occupation of the territory sufficient to outweigh the objections of the elder Chapter, they can grant the second charter in spite of the opposition, and the invaded Chapter seemingly has no right of appeal to any one.

With the exception of this last-mentioned measure the amendments were all very desirable ones and are so carefully considered that no Chapter right is lessened or invaded, while they offer the chance of a great material benefit to the Institute itself. Probably the trouble that is dormant in the clause relating to dual charters may never declare itself, since the President stated that his two years' observation of the working of the Directors had shown him that in cases of uncertainty the Board inclined more toward inaction than to hasty action.

Aside from the reports of the standing committees and the opening address, the entire day was consumed by the discussion of the amendments to the By-laws.

In his opening address Mr. Burnham developed at least one important and interesting suggestion. He said he felt that it was full time that the Institute had its own proper and respectable quarters, not merely a room or suite of rooms, but a building of proper architectural character erected in some city—presumptively, New York—owned and controlled by itself and in which it could have not only its meeting-rooms and library, but also have a "memorial room" in which could be safely gathered and exhibited memorials and portraits of distinguished members of the profession and such of the original drawings of their important works as it is really desirable to preserve. Under present circumstances such drawings and records, on an architect's death, are left to the generally inappreciative care of his heirs and are destroyed, injured or mislaid and lost sight of sooner or later, and in this way valuable personal and professional data are made absolutely unproductive of good. This condition of things seemed to be not only wrong, but needless. These data should be secured by the Institute and placed in a memorial room in a fire-proof building, and he felt not only that such a building should be built but that it could be built.

When he had committed himself by this rather ambitious suggestion, it might have been expected that he would explain how easy it would be to gather together a syndicate who, using the Institute as a nucleus and bait, should proceed to erect an office-building and lease office-room to dealers in building-supplies and to those who are always seeking for well-lighted studios; that by doing things in this purely business way the undertaking of providing a home for the Institute could be safely and economically undertaken. But not at all! Such a scheme as this was far from Mr. Burnham's thought. He at once made it plain that he had conceived the project from the highest conceivable point—that he believed that it would be possible for the Institute to have built for it by the wealthy friends of Art, a building which should be purely devoted to administering to the real need and requirements of architecture as represented by the Institute, a building that should be a worthy memorial of the architects who have gone before and a true record of the best that American architecture is capable of accomplishing at the close of the nineteenth century.

It is an interesting and audacious suggestion, but not by any means one which cannot be carried out, and the Convention appointed Messrs. Burnham of Chicago, Post of New York and Warren of Boston, a committee to carefully consider the suggestion and devise a consistent scheme of procedure.

Mr. Stead, of Washington, said he believed that it would be entirely possible for the Institute to procure at least the temporary use of a suitable room for the storage and display of its valuable collections in the new Congressional Library Building.

The futility, the uselessness of much of the cumbrous machinery that associations of all kinds find it necessary to maintain through a blind respect for traditional methods, although the existence of this useless machinery is the cause of the constant tinkering which annual conventions of all kind waste their time over, was beautifully shown by the report of the Standing Committee on Foreign Correspondence. Mr. Jenney reported that he had found the greatest difficulty in finding out where the records of foreign correspondence were and who had them. Having at length hunted them down, he proceened to acquaint himself with his new duties by a study of these recovered archives, but found that they consisted of copies of a single letter written in 1874 and a second letter in 1884, and that as the periodicity of these foreign communications was already exceeded, he would be very much obliged if any one would instruct him as to who should be the recipient of the overdue decennial letter. Yet, the Convention in place of abolishing this committee has gravely continued it in office. Is the honor of filling a wholly useless office really of any value to any one?

The Committee on Uniform Contract was, however, discharged.

The report on Proportionate Representation of Chapters was not forthcoming and this matter therefore, received no consideration. Neither was it possible to take any action on the proposed change in the Constitution, because not enough members had forwarded their letter-ballot. The Convention authorized the Secretary to issue a new letter-ballot in a hope that a decision might, at length, be reached.

There was practically nothing in the way of business to come before the Convention on the second day, and the morning was in the main occupied by the reading of two very interesting papers of very similar character, and both inferentially expressing a feeling of yearning and dissatisfaction. Both contained abundant good suggestions, and afforded ample food for consideration and discussion—too ample, in fact, for when those who had listened attentively began to express their views on what they had heard they spoke with unusual timidity, as if they were not sure that they understood just what the writer of the papers really recommended that the Institute should attempt to do.

As the text of these papers is not before us at the moment, we confess to the same doubt as to the precision of our recollection of the nature of the recommendations actually made, so it is not possible to discuss them here. The papers will be published in full, and more than this, their subject matter is positively assigned for full consideration next year, the matter being brought up by the report of a special committee, consisting of Messrs. Clay, Patton and Sullivan, of Chicago.

The rather important attempt that was made to discuss the matter on the floor, not only revealed the uncertainty of mind we refer to, but also showed that, if continued, the discussion would inevitably wander over so wide a field that a great amount of time would be consumed in reaching decisions upon many of the points which had been made by the writers. The Convention, therefore, wisely concluded that the proper course would be to refer these papers to a committee. This committee, however, is not to consider the matter and make a report of the views which its unassisted wisdom enables it to prepare: it is instructed to seek advice and suggestion from every quarter and then to collate, compare and digest the suggestions they may in this way receive and submit a full report in print thirty days before the assembling of the next convention. As this committee is expected to have abundant work to do, it was thought best that its members should all reside in the same city, so that they might have easy and proper meetings for discussing their work.

As the next Convention is to be held at Nashville—at the urgent invitation of Mr. W. C. Smith, backed by the Mayor, the centennial exhibition authorities, the Governor of the State and sundry other officials of prominence—and

as Nashville has but little to tempt architects to travel long distances, it is not unlikely that this report, which may be important and may recommend radical and even violent organic changes, may be discussed and acted on by only a small number of the members of the Institute, and this, it seems to us, would be possibly very unfortunate.

This possibility emphasizes in a fresh way the desirability of a permanent house for the Institute, to which all would soon form the habit of restorting, as a matter of course and annual occurrence. The chance wisdom of the past peripatetic assemblages might be expected than to give way to the consistent and sustained policy of those men who have the welfare of the profession sufficiently at heart to take part in the guidance of thought and action at other times than those irregularly occurring seasons when a convention chances to be held in the city of their residence.

The evening was made truly memorable by Mr. Van Brunt's tender and feeling eulogy of Mr. Hunt; his life work and the influence he has had not only on the architecture of this country, but still more upon its architects. How great this influence was we imagine Mr. Hunt never suspected until the coalition convention of Cincinnati took place. At that time, it may be remembered, that a letter from Mr. Adler was read in which he stated fully, frankly and persuasively the strong belief he felt that Mr. Hunt was the one man best fitted for the presidency of the reorganized Institute. The unexpectedness and the delicacy of the tribute was too much for Mr. Hunt, and breaking down absolutely in his attempt to say a word or two—perhaps the only time in his life when words failed him—he could only bury his face in his hands and sob like an hysterical woman.

Mr. Van Brunt was followed by Mr. Post, Mr. Kendall and Mr. Ferry, but Mr. Van Brunt's words hardly required endorsement or strengthening.

Between the morning and the evening session the local Chapter, according to custom, conducted their visitors in coaches and carriages through the new residence portion of the city and the beautiful natural Forest Park. To Eastern men this excursion was a surprise and a revelation. Almost all had expected to find a flat and uninteresting prairie country, so far as its natural characteristics were concerned, with here and there some piece of interesting architecture; but none of the Eastern men were at all prepared for the varied character of the natural scenery nor for the very great amount of interesting and refined work that the younger architects of St. Louis have been doing in the last few years.

The drive was interrupted at several points: first, to examine the extremely interesting group of improved warehouses, known as the "Cupples group," which have been devised and carried out by Messrs. Eames & Young in such a way that not only have the wholesale grocery and hardware trades of St. Louis been revolutionized, but the city has been endowed with an architecturally monumental group of buildings. The second stop was at Washington University, where Professor Johnson had prepared some tests on full-sized wooden beams and posts. Very few, probably, carried away with them any remembrance of the figures which resulted from the test, but all have a vivid recollection of how the beam broke down and the post crimped up under the enormous strain, which was enough even to force the oil through the five-inch cast-steel wall of the cylinder. The final stop came at the Columbian Clubhouse, designed by Mr. A. F. Rosenheim, where all, having first washed off the soot—the only one disagreeable feature of the visit to St. Louis—sat down to one more of the "lunches" with which the visitors have been so bountifully provided.

The ballot for officers on the last day resulted in the election of George B. Post, of New York, President; Henry Van Brunt, of Kansas City, First Vice-President; Wm. C. Smith, of Nashville, Second Vice-President; Alfred Stone, of Providence, Secretary; S. A. Treat, of Chicago, Treasurer; and D. H. Burnham, of Chicago; J. W. McLaughlin, of Cincinnati, W. S. Eames, of St. Louis, C. F. McKim, of New York; F. M. Day, of Philadelphia; N. S. Patton, of Chicago; R. D. Andrews, of Boston, as Directors for three years. Mr. W. R. Briggs, of Bridgeport, was elected a Director vice Van Brunt promoted.

Mr. Berg's paper on discoloration of plaster elicited more practical discussion than any that was read, Mr. Post, in particular, drawing upon his large experience for the benefit of those present. He said that the new asphaltic material, described by Mr. Berg, might prove to be a very useful thing, but that he had been advised by Mr. Theodore Cooper that while asphaltic compounds could be safely used in dry places, they oxidized rapidly in the presence of moisture. For himself, he believed that so far as the protection of iron went—for which Mr. Berg had suggested the new compound might be used—he believed there was nothing better than simple boiled linseed oil mixed with a little lamp-black, or better still, with a little chrome yellow, as this latter material would make it easier to discover imperfections in the protecting coating. Next to this, finely-ground graphite in boiled linseed oil mixed with a pure Japan varnish for a dryer, he had found most desirable. Unfortunately, the best coating of all, pure red-lead in oil, could not be used, because it set with such rapidity. In all cases, no matter what covering material was used, the first consideration was to thoroughly clean the iron and then to use plenty of muscle in brushing on the oil.

Mr. Bullard's paper on the Woods of Washington brought out a protest from Professor Johnson, who declared that the tests quoted were imperfect in character and the results misleading, worthless and mischievous. As the time for final adjournment had arrived, the Chair had to cut the discussion short and invited Professor Johnson to reduce his remarks, made and unmade, to writing, that the Institute might have the advantage of their publication in the Proceedings.

After adjournment the visitors were driven to another section of the city and to still another beautiful park, and the break in this trip occurred at the great Anheuser Busch Brewery. Here, too, hospitality declared itself in the form of another lunch, which, naturally, was not served dry.

As the Eastern trains leave late in the evening the thoughtfulness of the hosts was shown by their preventing any of the usual uneasy loitering about in hotel corridors, by taking every one to the theatre. In simple truth, the St. Louis Chapter, by the perfection of their arrangements and the bounteousness of their hospitality has made it very difficult for any Chapter playing the host in the future to equal the record that has been made this year. After all, there is much of real value in the informal proceedings at these annual conventions and it is by no means wasted effort to make them thoroughly enjoyable and attractive.

The apothegm with which Mr. Post acknowledged his election as President was a fitting valedictory. He declared that there were two things that each architect should consider a duty: first, to become, or attempt to become, a member of the American Institute of Architects, and, second, having acquired membership, then to do the utmost in his power to elevate the standard of architectural and professional performance.—*The American Architect and Building News.*

BRICK-DUST MORTAR AS A SUBSTITUTE FOR HYDRAULIC CEMENT.

THE use of brick-dust mortar as a substitute for hydraulic cement, where the latter cannot be obtained, is now recommended; experiments made with mixtures of brick-dust and quicklime showing that blocks of one-half inch in thickness, after immersion in water for four months, bore, without crushing, crumbling, or splitting, a pressure of 1500 pounds per square inch. It is considered too that the addition of even as small a proportion as one-tenth as much brick-dust as sand to ordinary mortars, is preventitive of the disintegration so often characterizing mortars used in the masonry of public works. The use of brick-dust mixed with lime and sand is said to be generally and successfully practiced in the Spanish dominions, and is stated to be in all respects superior to the best Rosendale hydraulic cement in the construction of culverts, drains, tanks, or cisterns and even roofs, whether for setting flat tiles or for making the usual tropical flat roof. The proportions used there in the manufacture are, approximately one of brick-dust, one of lime, and two of sand, mixed together, dry and tempered with water in the usual way.—*Arthur Lee in Stone.*

ASBESTOS.

ASBESTOS is a wonderful substance, says the *Engineer*, The name comes from a Greek word meaning inconsumable. Fire will not burn it; acids will not gnaw it; weather will not corrode it. It is the paradox of minerals, for it is quarried just like marble. The fibres of which it is composed are soft as silk and fine and feathery enough to float on water. Yet in the mines they are so compressed that they are hard and crystalline like stone. Although the substance has been known for ages in the form of mountain cork or mountain leather, comparatively little has been learned as to its geological history and formation. A legend tells how the Emperor of Charlemagne, being possessed of a tablecloth woven of asbestos, was accustomed to astonish his guest by gathering it up after the meal, casting it into the fire, and withdrawing it later cleansed, but unconsumed. Yet, although the marvelous attributes of asbestos have been known for so long, they were turned to little practical use until about twenty years ago. Since that time the manufacture of the material has grown until it can take its place with any of this country. Indeed, so rapid has been its progress and development, that there is almost no literature of any kind on the subject and, to the popular mind, it is still one of those inexplicable things.

Up to the late seventies, nearly all the asbestos used to come from the Italian Alps and from Syria, but one day explorers discovered a rich deposit in the eastern township of Quebec. Companies were formed, and in 1879 the mines were opened. Remarkable as it may seem, however, although the Canadians started factories, in the operation of which they were substantially backed by English capital, it was an American concern, with headquarters in New York, that developed the industry most rapidly. The company has now grown so large that it has branches in nearly all of the large cities of the country, and the machinery used is specially made and peculiarly adapted to the manufacture of asbestos articles. There is also a large number of factories in England. The veins of chrysotile, as the Canadian asbestos is called, are from two to four in thickness, and are separated by thin layers of hornblende crystals. The nearer to the surface the veins run, the coarser are the fibres and the less valuable. The mining is done by the most improved machinery. Holes are drilled in long rows into the sides of the cliffs by means of steam drills. They are then loaded with dynamite and exploded simultaneously in such a way that a whole ledge of flat falls at once. Then the workmen break out as much of the pure asbestos as possible, load it into tubs or trucks, which are hoisted out and run along to the "cobhouse." Here scores of boys are kept busily employed crumbling or "cobbling" the pieces of rock away from the asbestos and throwing the good fiber to one side, where it is placed in sacks for shipment to the factory. The greatest work in connection with the mining of asbestos is in disposing of the waste rock and refuse of the quarry. Only about one twenty-fifth of the material quarried is real asbestos, and the rocky parts have to be carried to the dumps at great expense. As the asbestos comes from the mines it is of a greenish hue, and the edges are furred with loose fibres. The more nearly white asbestos is the better its grade. The length of fiber is also of great importance, the longest being the most valuable. From the mines the asbestos is taken to the manufacturies in the United States.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

MECHANICS' LIEN.—A memorandum of contract filed in the Recorder's office is wholly insufficient when it does not contain "a statement of the general character of the work to do done" when such a statement is required by the statute, and a mere reference to the plans, drawings and specifications, which are neither set out or filed, nor any attempt made to set out their contents or character, does not comply with the statute and the contract is void, so far as a lien is concerned.

Wood v. O. & B. Rapid-Transit Co., Supreme Ct. Cal., 40 Pac. Reporter, 806.

LIABILITY OF CONTRACTOR FOR NEGLIGENCE OF FOREMAN.—The act of the foreman of a building contractor in stretching a guy-rope across a railroad track to aid in taking down a derrick, is within the scope of his authority, so as to render the contractor liable for an accident caused by the rope to a switchman standing on a moving car, when the foreman had general charge of the work, and special charge of moving derricks, though the contractor had instructed him to employ a derrick specialist when moving derricks.

Reinke v. Bentley, Supreme Ct. Wis., 68 N. W. Rep. 1055.

CONSTRUCTION OF BUILDING CONTRACT AS TO ALTERATIONS.—A Contract provided that the builder should forfeit ten dollars for each day that the building remained unfinished after the time fixed by the agreement for its completion. It also provided that any change in the plans, "either in quantity or quality of the

work," should be executed by the builder, "without holding the contract as violated or void in any other respect." During the progress of the work a change was made in the material for the front of the building from brick and granite to Indiana stone, with carved panels and frieze. The difficulty in procuring a prompt delivery of the stone caused delay in finishing the building, and the owners claimed to recoup the stipulated forfeit and set off the loss of rents. By the agreement the owners reserved the right at any time during the progress of the work to make any alterations in the plans and specifications, and it became the duty of the builder to carry them into effect. The provision that the changed plans should be executed without holding the contract as violated or void on any other respect should be read in connection with this reserved right. The words "in any other respect" exclude the implication of any change in terms except such as would result from alteration of the plans, but not such changes as would be the necessary consequence thereof. Alterations calling for more work and materials, might, of necessity, require more time for the completion of the building. They might be directed so near the end of the work as to make it impossible to complete the building within the time stipulated. In this case the building was where the material fixed for the front by the contract could be purchased in an open market and delivered ready for use in one day. The stone required by the alteration could be procured only at the quarries in Indiana, where an order had to await its turn; and, after delivery, it required weeks of skilled labor to fit it for use in the building. For such delay in the completion of the building as was the necessary consequence of the change of plans by the owners the builder was not answerable, and for it no forfeiture could be exacted.

Lilly v. Person, Supreme Court of Pennsylvania, 32 At. Rep. 23.

BOOKS AND PERIODICALS.

THE ENGINEERING REVIEW for November, 1895, is largely given up to a record of the career and work of the Institute of Civil Engineers, it contains two special supplements the first: "An Illustration of the New House of the Institution of Civil Engineers" the second "A Portrait of Sir Benjamin Baker, K. C. M. G., President of the Institute of Civil Engineers."

Sir. Benjamin Baker was the designer of the famous Forth Bridge. On the fourth of March, 1890, the Prince of Wales stated some facts that are worth recalling. The extreme length of the bridge, including the approach viaduct, is one and one-fifth mile and twenty yards. The extreme height of the steel structure above high water mark, and above the bottom of the deepest foundation, is 452 feet.

The wind pressure provided for is fifty-six pounds on each square foot of area, amounting in the aggregate to about 7700 tons of lateral pressure on the Cantilever portion of the bridge.

We have been favored with a CATALOGUE of GLADDING McBEAN & CO., manufacturers of Vitrified Salt Glazed Sewer Pipe, as well as Architectural Terra Cotta. The well-known reputation of this firm is a guarantee that anything coming from their works is first-class. Office and depot, 1358 and 1360 Market street, San Francisco., manufactory at Lincoln, Placer County, Cal.

The KALENDAR of the ROYAL INSTITUTE OF BRITISH ARCHITECTS, November, 1895 to October, 1896, London, 9 Conduit street, Hanover Square.

The contents of this Annual show that much information of interest to architects is given. The Constitution and By-Laws, as well as a list of fellows are given, also an account of the mode of conducting the business of the Institute.

The complete novel in the December number of LIPPINCOTT'S monthly magazine is "The Old Silver Trail" by Mary E. Stickney.

In addition to the novel will be found an interesting list of articles from grave to gay, intended doubtless to give satisfaction to the many subscribers to this excellent magazine of every class however somber, or however gay.

The Journal of the ROYAL INSTITUTE OF BRITISH ARCHITECTS for November, 1895, contains the opening address, delivered by President Francis C. Penrose, F. R. S., at the first general meeting November 4, 1895. The address takes a wide review of what has been done and makes many suggestions that cannot fail to be of interest to architects in general. His remarks under the head of "Competitions and Competitors" are certainly very applicable to our architects, as well as those on the other side.

ILLUSTRATIONS.

RESIDENCE for Mrs. Lorena Brashear Showers, D. J. Patterson, Architect.

PROPOSED Design for Market Street Business Block, J. Cather Newsom, Architect.

TWO-STORY Residence, John J. & Thos. D. Newsom, Architects.

BUILDERS' Exchange, San Francisco, Cal., A. Page Brown, Architect.

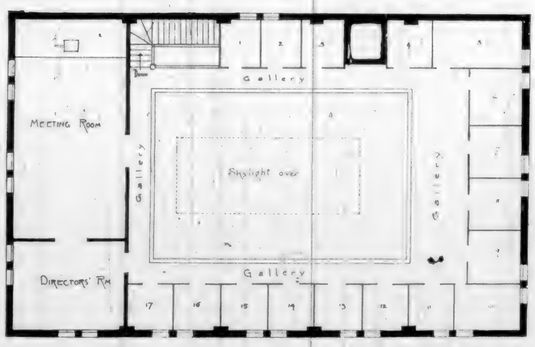
EVERYTHING that you can see in the World around you, presents itself to your eyes only as an arrangement of patches of different colors variously shaded.—*Ruskin.*

YOU could not in a day measure the tints on so much as one side of a frost bitten apple.—*Ruskin.*

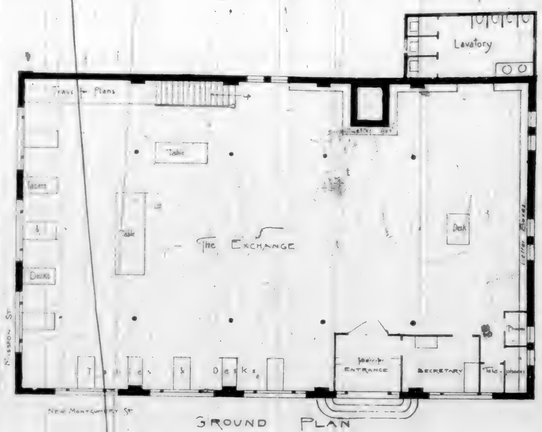
BUILDERS' EXCHANGE.

SAN FRANCISCO, CAL.

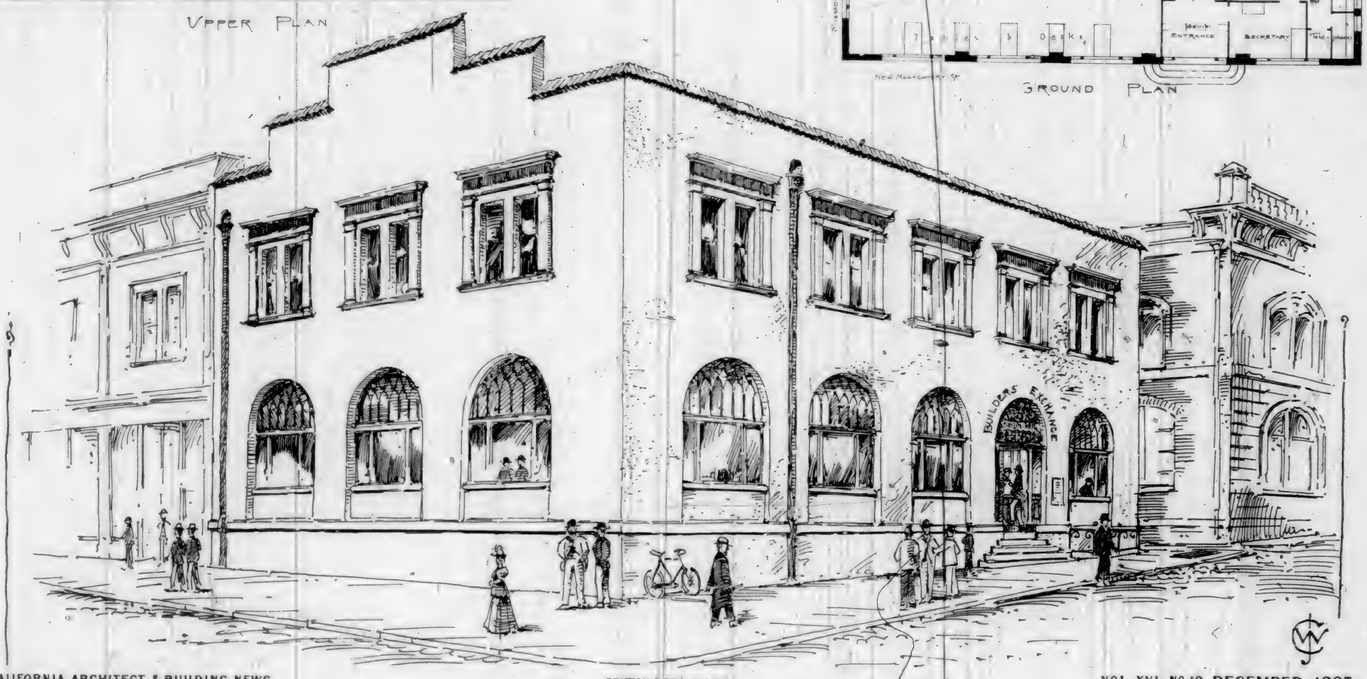
A. P. EROWN-Architect.



UPPER PLAN



GROUND PLAN

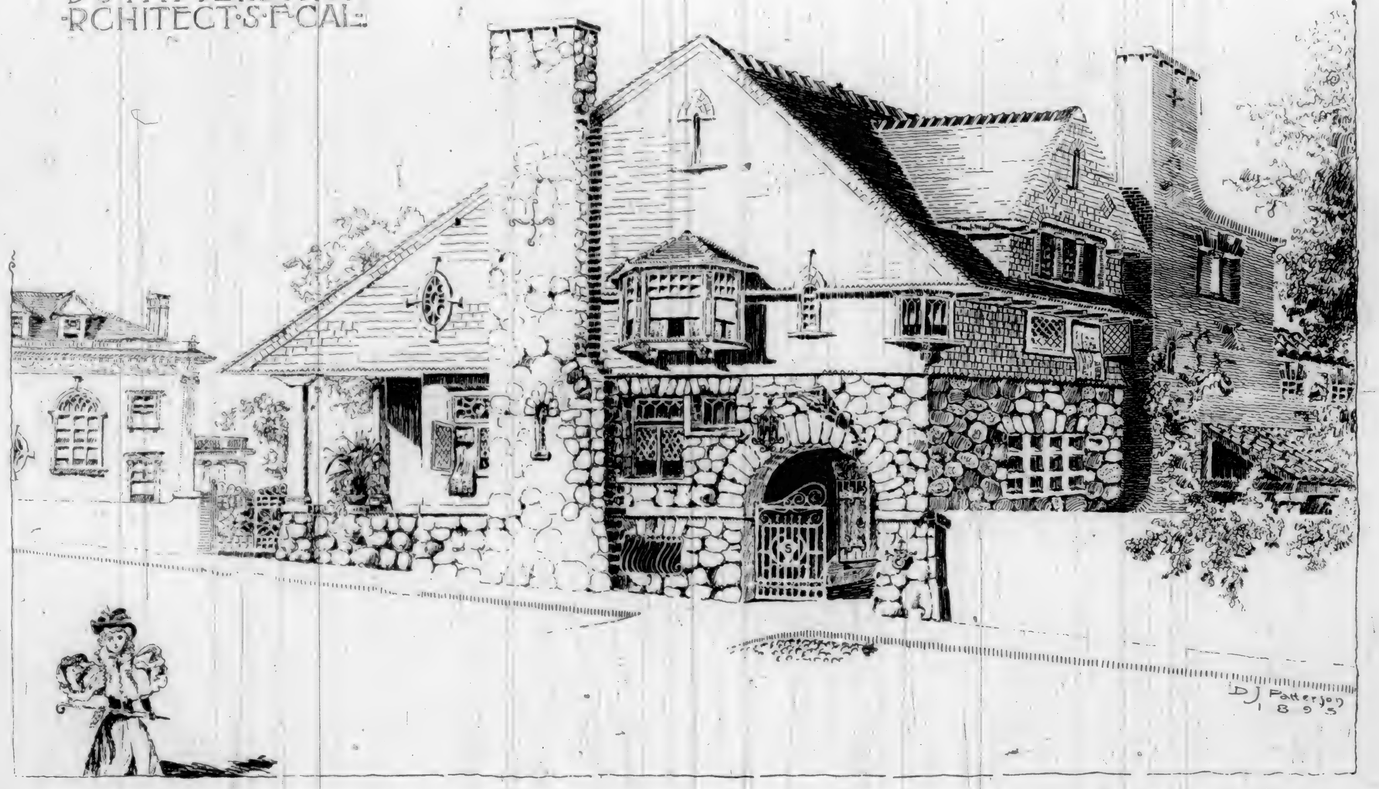


CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

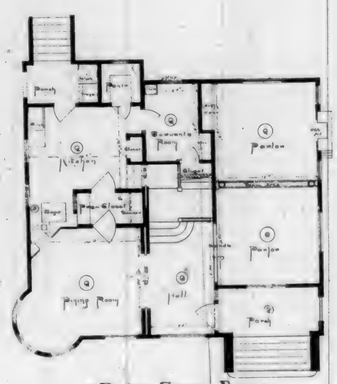
BRITTON & REY. PHOTO. LITH.

VOL. XVI Nº 12 DECEMBER 1895

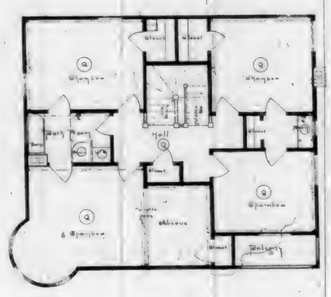
RESIDENCE FOR
MRS. LORENA BRA-
-SHEAR SHOWERS
D. J. PATTERSON. A-
-RCHITECT. S. F. CAL.



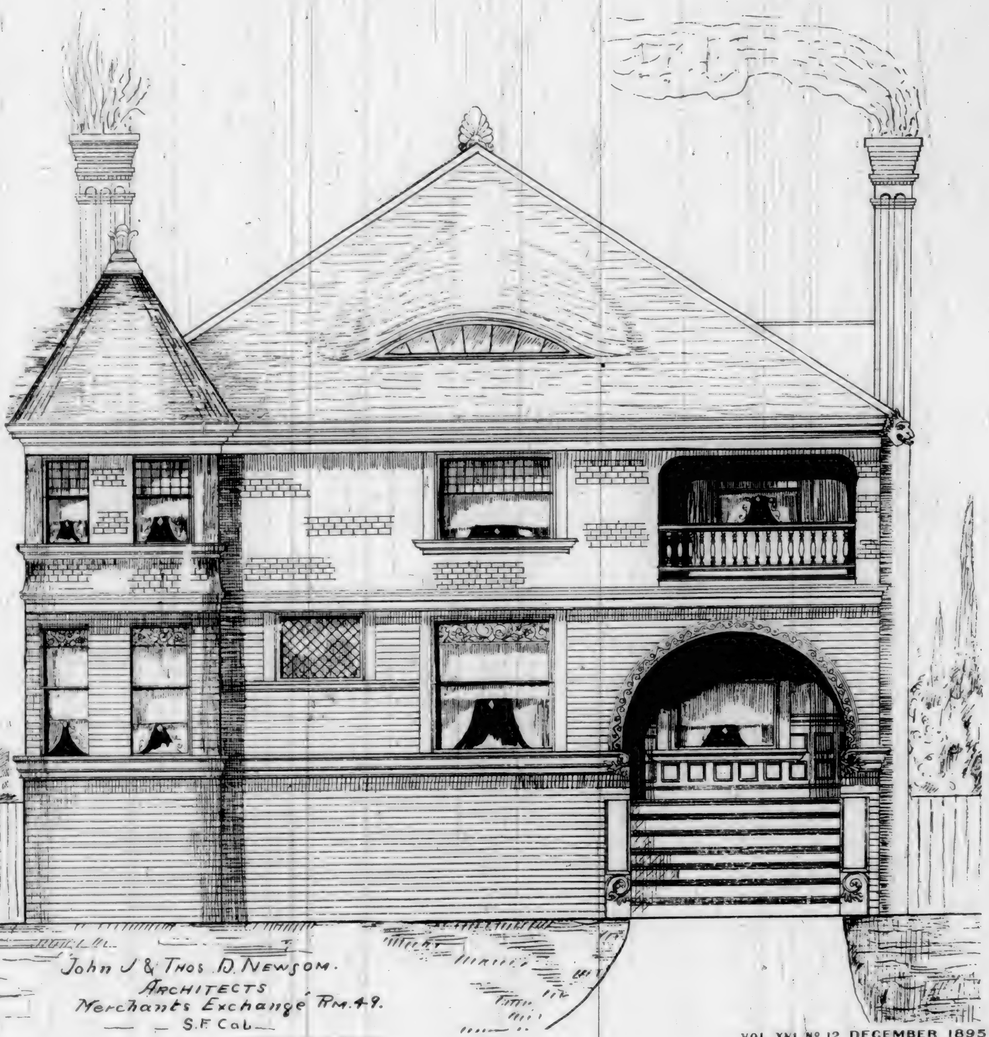
D J Patterson
1895



FIRST STORY PLAN



SECOND STORY PLAN



John J & Thos D. Newsom.
Architects
Merchants Exchange Rm. 49.
S.F. Cal.

PROPOSED DESIGN FOR MARKET ST. BUSINESS BLOCK.

J. CATHER NEWSOM ARCH'T.

CALIFORNIA ARCHITECT & BUILDING NEWS
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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

WAGES AND RENT.

WORKMEN in this world are paying too much of their wages for rent! This is the opinion of Carroll D. Wright, United States Commissioner of Labor. He comes to this conclusion after making a recent investigation of the housing of the working classes in various countries of the world. One-fifth of the wages earned by the head of a family ought to be the maximum expenditure for rent in cities. This Commissioner Wright says, is agreed by the most competent economists. Hence the workman in the city who earn fifty dollars a month should not pay more than ten dollars of it each month to his landlord.

Commissioner Wright has collected information concerning houses and building enterprises for workmen in all of the larger countries of the world.

A French company which has formulated a scheme to assist its employees to become house-owners, rents a comfortable little cottage of brick and cut stone, with two stories, including a kitchen, parlor and two bed rooms, besides a cellar for only $2.32 per month in American money.

Through a real estate company at Rouen, France, comfortable houses are rented to workmen for about twenty-five cents a week, or four dollars a year, which amounts for those workmen receiving the lowest wages to but one day's salary in a week.

A celebrated chocolate manufacturer at Noisiel houses about 1400 of his employees at an average yearly rent of twenty-nine dollars, which is from a tenth to a twelfth of the wages of each family, besides giving free repairs, taxes, water, schools for employee's children, medical attendance, baths and literary and musical entertainments.

In Belgium there is a semi-official institution, the General Savings Bank, holding deposits guaranteed by the Government. This lends money to workmen at low rates of interest in order to encourage them in building their own homes. Through a system of life insurance likewise established under Belgian law, the family of a workman is given a home in case of his death. Commissioner Wright points with great emphasis to the importance of these institutions of the Belgian Government.

At Pullman, Ill., it is estimated that one-fifth of the wages paid go for rent.—*New York Herald.*

MAXIMS FOR DRAFTSMEN FROM RUSKIN.

THE power of shading rightly depends mainly on *lightness* of hand and *keenness* of sight; but there are other qualities required in drawing dependent not only on lightness, but steadiness of hand; and the eye to be perfect in its power, must be made *accurate* as well as keen, and not only see shrewdly, but measure justly.—*Ruskin.*

NEARLY *all* expression of form, in drawing, depends on your power of graduating delicately; and the graduation is always most skillful which passes from one tint to another *very little* paler.—*Ruskin.*

IN darkness of ground there is the light of the little pebbles or dust; in darkness of foliage, the glitter of the leaves; in the darkness of flesh, transparency; in that of stone, granulation; in every case there is some mingling of light.—*Ruskin.*

AN entire master of the pencil or brush ought indeed, to be able to draw any form at once as Giotto his circle; but such skill as this is only to be expected of the consummate master, having pencil in hand all his life, and all day long, hence, the force of Giotto's proof of his skill.—*Ruskin.*

THE BUILDERS' EXCHANGE.

THE Builders' Exchange of San Francisco is deserving of more than passing mention and praise as a useful and model public institution. Prior to its organization in July, 1890, the building business was in a chaotic state, owing to the absence of a recognized rendezvous and a uniformity in business dealings. At this time the brickmasons and the carpenter contractors each maintained separate small club-rooms for the accommodation of its members, but the vast army of manufacturers, dealers and agents of building materials, and contractors in the various building trades, could never meet each other with a certainty, a chance meeting on the street being all that could be hoped for.

With a view of facilitating business, correcting many evils, and a watchword of "Skill, Honor and Responsibility," a few members of the building business, namely, Chas. C. Terrell, Wm. N. Miller, A. W. Starbird, M. J. Donovan, C. C. Morehouse, J. R. Wilcox, John F. Riley, Wm. Cronan, J. K. Firth, A. Hosmer and George W. Duffy associated themselves together, organized The Builders' Exchange, and outlined its objects and aims as follows:—

"FIRST.—To join *one* association all mechanics, manufacturers and dealers of good repute doing business in city and county of San Francisco, whose vocation connects them wholly or generally with the building industry, either as an employing contractor or manufacturer or dealer in building materials.

"2d.—To establish and maintain among the indivlduals so associated a just and equitable system of dealing and a uniformity in commercial usages by rules and regulations;

to acquire, preserve and disseminate valuable information regarding the business in which they are severally engaged.

"3d.—To procure (either by lease or purchase), furnish and maintain suitable rooms for the use of its members for meeting rooms, offices and other purposes.

"4th.—To establish and enforce a system of arbitration for the settlement of all disputes or controversies which may arise between its members or between its members and their employees and other persons.

"5th—To join or otherwise act in concert with other organizations of Employers of Labor, for the purpose of arbitrating all questions of dispute which may arise between said organization and the members thereof, or any of them, or between any of them and their employees. To the end that all matters of difference between the Employers of Labor and their employees may be amicably settled and adjusted without resort to strikes or lockouts."

Having clearly outlined a broad-gauge policy, the Association thus formed was duly incorporated, and a meeting place established at 330 Pine street, with the following officers:—President, Chas. C. Terrill; Vice-Pres., Wm. N. Miller; Treasurer, A. W. Starbird; Secretary, M. J. Donovan.

The corporation thus fairly started on its noble mission, soon won the confidence of the building fraternity—the brickmasons and carpenter contractors consolidating their clubrooms with the corporation.

The Pine street headquarters were soon deserted for more commodious rooms on Montgomery street, which soon became too small, and the large Hall of the Real Estate Exchange at 16 Post street engaged and the clerical force doubled. Again was it necessary to secure larger quarters, and a two-story brick structure was erected on the corner of Mission and New Montgomery streets to accommodate its 400 members.

During the Exchange hour, from 12 to 2 each day, may be found all the prominent building material dealers and contractors of San Francisco and bay cities, and business is transacted by an individual in this short time that could not be otherwise transacted in a whole day.

Not only has the power of the Exchange been great enough to correct many minor evils of the building business, but its influence is equally apparent in the Legislative body of the State, and the precepts and customs introduced by the Exchange have so permeated the building industry of San Francisco, that nowhere in the United States is the same volume of business disposed of in the same space of time and the same uniformity as in San Francisco.

The lower floor is used as a general assembly room; here also are the members' letter-boxes, private cases, telephone rooms and office of the corporation. The upper floor is divided up into private rooms, lodge room and directors' rooms. A large dome skylight, assisted by windows on three sides of the building, afford ample light and fresh air.

The Exchange is open to members and the public on all business days from 8 A. M. to 5 P. M., and an invitation is cordially extended to all parties identified with the building industry and the public in general to visit the Exchange, and examine into its workings.

The present officers and members are as follows:

President, Oscar Lewis; Vice-President, O. E. Brady; Secretary, Jas. A. Wilson; Treasurer, L. B. Sibley; Directors, W. B. Anderson, James McInerny, Chas. Dunlop, A. Kendall, Thos. W. Butcher, Thos. Elam, John T. Hayes; Recording Secretery, E. A. Larsen; Financial Secretary, S. D. North; Attorney, Wm. H. Cobb.

MEMBERS BUILDERS' EXCHANGE.

	Box No.
Abrahamson, P.; patent ventilators	123
Ackerson & Patterson, contractors and builders	343
Adams, John G.; contractor and builder	270
Alameda Brick & Tile Co.; brick	170
Ambrose, William F.; concrete and artificial stone	356
Anderson Bros.; contractors and builders	128
Architectural Iron Works; (O'Connell & Lewis)	47
Arizona Sandstone Co.; building stone	326
Artistic Decoration Co	337
Bassett Bros.; contractors and builders	6
Bass-Hueter Paint Co.; paints, oils and varnishes	136
Barry, James; mason and builder	118
Bateman Bros.; contractors and builders	236
Bay City Iron Works	266
Beck, Adam; mason and builder	11
Bell, Frank C.; contractor and builder	14
Bennett Bros.; hardware	320
Black, E. H.; painter	192
Boyd, Robert; mason and builder	77
Brady, M. V.; mason and builder	34
Brady, O. E., mason and builder	360
Brennan, D. J.; mason and builder	51
Brennan, M. & Son; carpenters add builders	297
Brennan & Fraser; plasterers	158
Britt, James E.; plumber	36
Brode, R.; iron works	295
Burden & Helm; masons and builders	260
Burnham, Stanford Co.; planing mill	28
Burrell, E. H.; building material	146
Burt, W. J.; house mover	296
Butler, Thos.; mason and builder	255
Butler, Wm. A.; mason and builder	
Butterworth, Thos. C.; art glass	371
California Sandstone and Contracting Co	230
California Art Glass Works	63
California Electrical Works	223
California Mills; planing mills	300
Campbell, Alex.; contractor and builder	105
Campbell & Pettus; contractors and builders	184
Carle, Silas; contractor and builder	
Cartwright, D. S.; teaming	10
Central Lumber & Mill Co.; lumber and planing mill	345
Chatham, Wm.; contractor and builder	62
Chisholm, C.; contractor and builder	44
Christy, Chas.; contractor and builder	276
Clark, N. & Sons; terra cotta, etc	290
Clawson, L. E., & Co.; patent chimneys	66
Coghlan, Frank; plasterer	91
Commary, Wm. T.; contractor and builder	
Concannon & Shay; contractors and builders	24
Conlin & Roberts; metal roofers	90
Cowell, H., & Co.; lime, cement, fire brick, etc	7
Crichton, Peter; contractor and builder	339
Crocker, Wm.; planing mill	12
Cronan, Wm.; Eagle Sheet Metal Works	26
Currie & Loomer; contractors and builders	227
Currie, Robert; contractor and builder	143
Cushing-Wetmore Co.; concrete and artificial stone	222
Curry, J. M.; stone dealer	35
Daniels, Gus. V.; painter and decorator	85
Davies E.; plasterer	42
Davis, Geo. & Son; house movers	293
Davis, R. O.; carpenter and builder	201

Day, Thos. H., & Sons; contractors and builders	131
Degan, Patrick; stone contractor	366
DeGear, J. D.; galvanized iron	259
Depew, Chas. M ; planing mill	19
Diggins Bros.; street contractors, concrete stone	176
Dillon, David; teamster and contractor	139
Donovan, M. J.; painter	121
Donnelly, E.; teaming and grading	39
Dougherty, J. P.; plumber	351
Douglass, Chas.; carpenter	125
Doyle, R., & Son; carpenters and builders	142
Duffey, Bros.; plumbers	243
Dunbar, Wm.; mason and builder	364
Dunham, Carrigan & Hayden Co.; hardware	4
Dunlop, Chas.; plasterer	59
Dwyer, L. J.; painter and decorator	197
Dyer Bros.; Golden West Iron Works	64
Elam, Thos.; carpenter and builder	202
Electrical Maintenance Co.; construction and repair work	350
Excelsior Mill Co	72
Feely, M. J.; contractor and builder	180
Fennall, M., & Son; masons and builders	58
Field, Wm. J.; contractor and builder	89
Flanagan, L. G.; lime and cement	53
Flint, J. A., & Co.; tiles, etc	234
Foley, Michael, grading and teaming	254
Forderer Cornice Works; patent sky lights, roofing, etc	164
Fortin Brick Co	98
Foster, John; contractor and builder	330
Fraser, J. P.; painter and decorator	50
Fuller, W. P. & Co.; paints, oils and glass	333
Furness, John; contractor and builder	152
Geary, James; contractor and builder	275
Geier, Frank A.; Market Street Planing Mills	252
Gillespie, G. G.; carpenter and builder	352
Giletti, Secondo; artificial stone	308
Gillogley, Geo.; teaming	324
Gladding, McBean & Co., architectural terra cotta	162
Golden Gate Lumber Co.; lumber and planing mill	
Golden West Iron Works (Dyer Bros)	64
Gonyeau, John B.; contractor and builder	194
Goodman, Geo.; artificial stone, etc	334
Grannis, J. G. & Co.; steam heating, etc	331
Grant, W. J.; contractor and builder	84
Gray Bros.; artificial stone and concrete work	86
Griese, Carl; artificial stone and concrete work	231
Griffiin, P.; contractor and builder	103
Guilfoy, James; metal roofer	370
Hammond, Philip; metal roofer	43
Hanavan, J. H; mason and builder	49
Hansen A.; planing mill	3
Hansen, F. L.; contractor and builder	108
Hansen, M.. & Co.; planing mill	187
Harmon Lumber Co.; lumber	314
Harrison, Fred; mason and builder	309
Haustein, H.; tiles	82
Hayes, John T.; contractor and builder	167
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BUSINESS MOSAICS.

No hotel, or other large building can be considered safe if not supplied with the new and improved Chapman Fire Hose Reel. It is the latest improvement and upon examination is universally conceded by all unprejudiced competent authority to be the most simple, practical and reliable Hose Reel apparatus in the word. R. S. Chapman will confirm this statement, 14 and 16 Fremont street, San Francisco.

Goodfellow—If my clothes were not too big for you, I'd give you an old suit. Hungry Hank (gratefully)—Boss, if you'd give me the price of a square meal, I warrant they'd fit me all right.—*Truth.*

N. & G. Taylor Co., Tinplate Manufacturers, Philadelphia, are out in a very neat blotter illustrating the brands of bright tinplates which they make. They state that all of their plates are made of the finest materials, and in a thorough manner, and they also call particular attention to the quality of pig tin used "being of exceptional fineness and purity."

Their "Brilliant" brand, extra fine quality, is the heaviest coated Bright Tin that can be made, and holds the same high position that their celebrated "Taylor Old Style" brand does in the list of brands of Roofing Tin. Buyers of Bright Tinplates should correspond with Messrs. N. & G. Taylor Co.

"Have you change for a $5 note?" asked one man of another. "Yes; certainly I have." "Ah! then lend me $2 for a day or two, there's a good fellow!"—*Tit-Bits.*

The J. L. Mott Iron Works are again to the fore with some more of their useful improvements to their sanitary plumbing work. These specialties are well worth seeing by all interested, at their well equipped show rooms in the Flood Building.

First Kid—Anyhow, I never had no granddaddy hung for horse stealin'. Second Kid—Don't care if he wuz. Horses wuz worth stealin' in them days."—*Cincinnati Enquirer.*

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates, considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer and Ray, San Francisco, Cal., the manufacturers of this engine, have earned the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

Rischmuller's Door Opener and closer is another contrivance that you must have to be happy. This door opener and closer is the most simple and perfect of any in the market. A full sized working model can be seen at 329 Nineteenth street. Orders left with Geo. Rischmuller, 329 Nineteenth street, will be promptly attended to.

Miss Gushington—How did you feel when you found that the ship would surely go down in ten minutes? Captain Salted—I felt for a life-preserver.—*Harper's Bazar.*

Dixon's Silica Graphite Paint, manufactured by the Joseph Dixon Crucible Co., of Jersey City, N. J., will be used in painting all the tin work and skylights of the Post Office Department Building at Washington. A quantity will also be used on the Capitol, and the District Government Building.

Dudely—What are you going to be when you are grown up, Bobby? Bobby—I'm going to be a man. What are you going to be?—*Harper's Bazar.*

Samson Spot Cord.—If you want the best cord in the market, be sure you specify "Samson Spot Cord." Samples supplied upon application to the Samson Cordage works, Boston, Mass.

Miriam—Don't you think my new hat a poem, Ned? Ned—From its height, dear, I should instead compare it to a short story.—*Judge.*

The well known firm of J. L. Mott Iron Works, established in 1828, furnish a wonderful illustration of the vast improvements made in the line of their business since that date. Few are now living who were of age to appreciate good plumbing, when these works were first established, but the constant improvement ever since that time has been no secret to the public, who in the long run are always ready to respond and encourage a firm who appear ever ready to adapt new methods and devices where the welfare of their customers is concerned.

Mr. M. S. James, the Pacific Coast representative of the firm, has opened a new office and show rooms at 27 Flood Building, San Francisco.

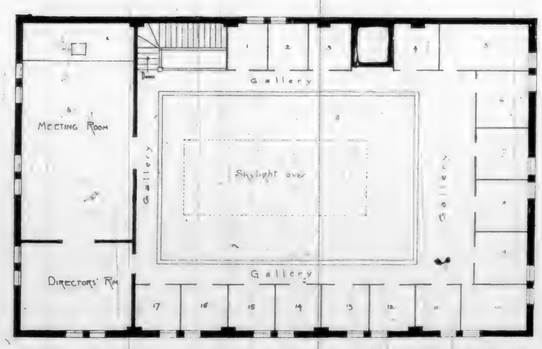
Mrs. Snagg—I understand that paper is made of wood now. Mr. Snagg—Yes, so is string. "String?" "Yes; what else do you suppose cordwood is used for?"—*Telegraph.*

All those who are troubled by the annoyance of flies, we would say call upon Edward B. Hindes & Co., 411 Mission street and examine their perfection window screens, if you once enjoy the comfort they give you will never be without them. A catalogue and prices will be forwarded upon application at their office.

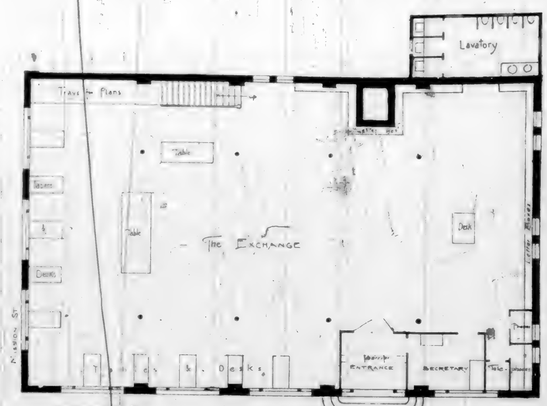
BUILDERS' EXCHANGE.

SAN FRANCISCO, CAL.

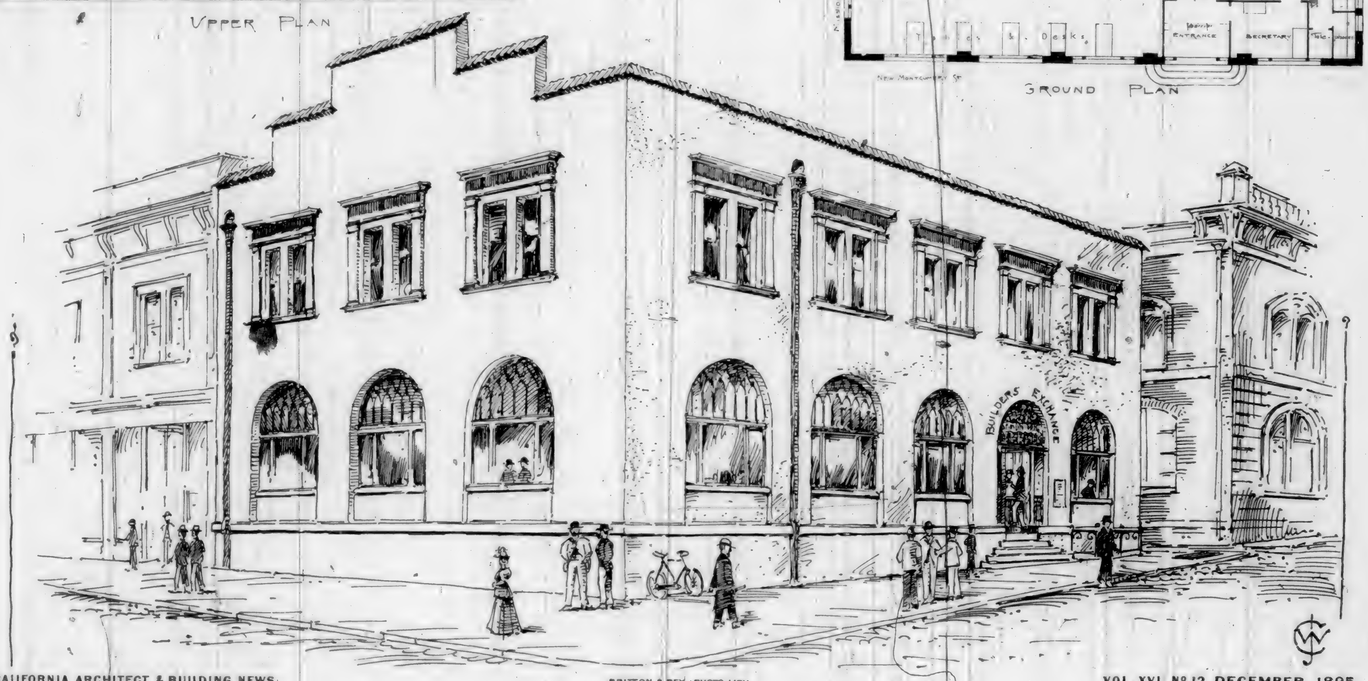
A. P. BROWN, Architect.



UPPER PLAN



GROUND PLAN

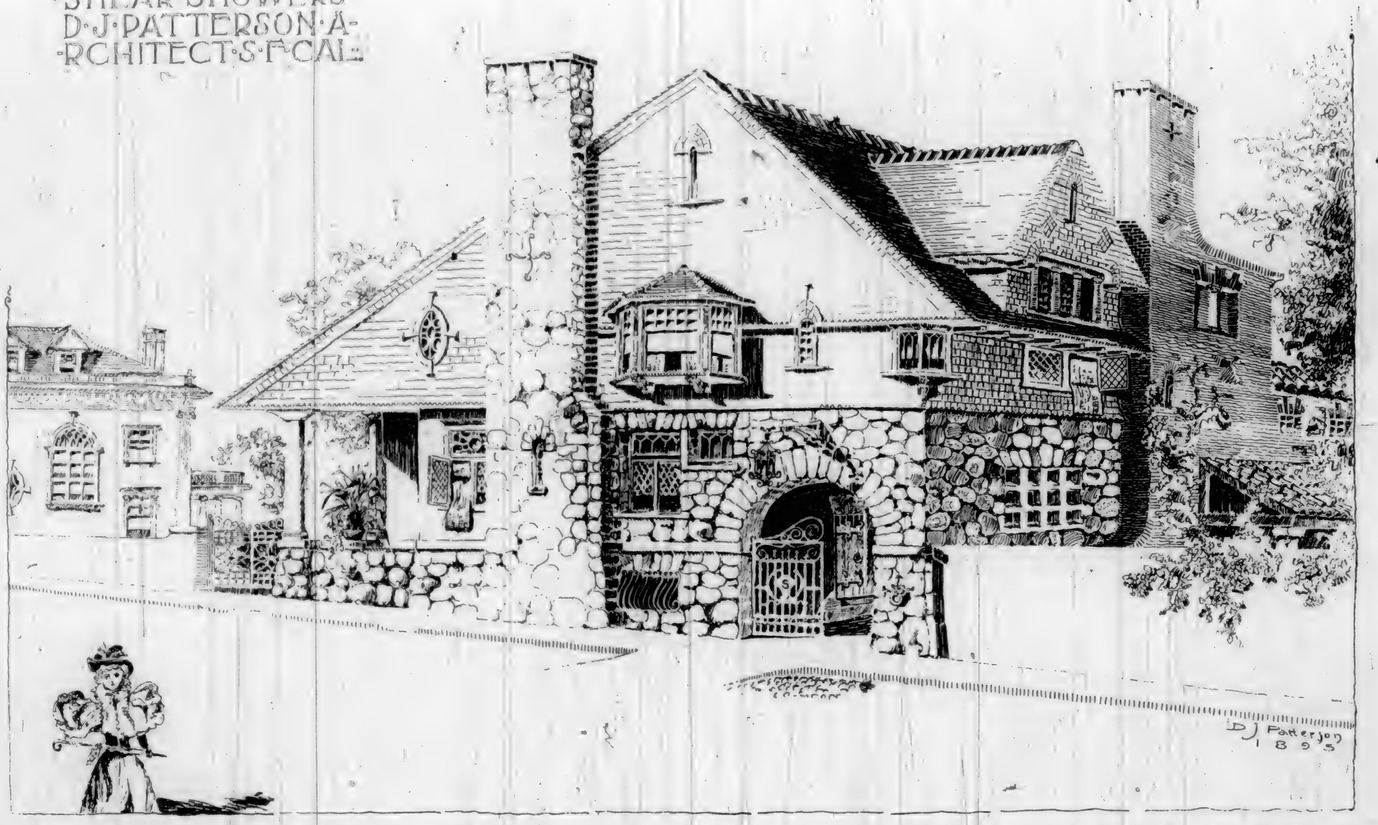


CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO. LITH.

VOL. XVI Nº 12 DECEMBER 1895

RESIDENCE FOR
MRS. LORENA BRA-
SHEAR SHOWERS
D. J. PATTERSON A-
RCHITECT S. F. CAL.



D J Patterson
1895

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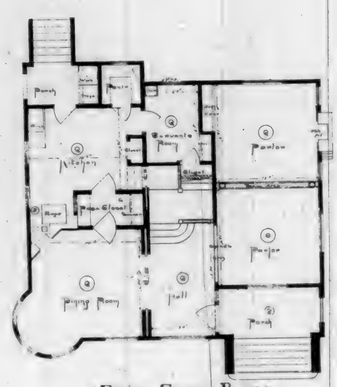
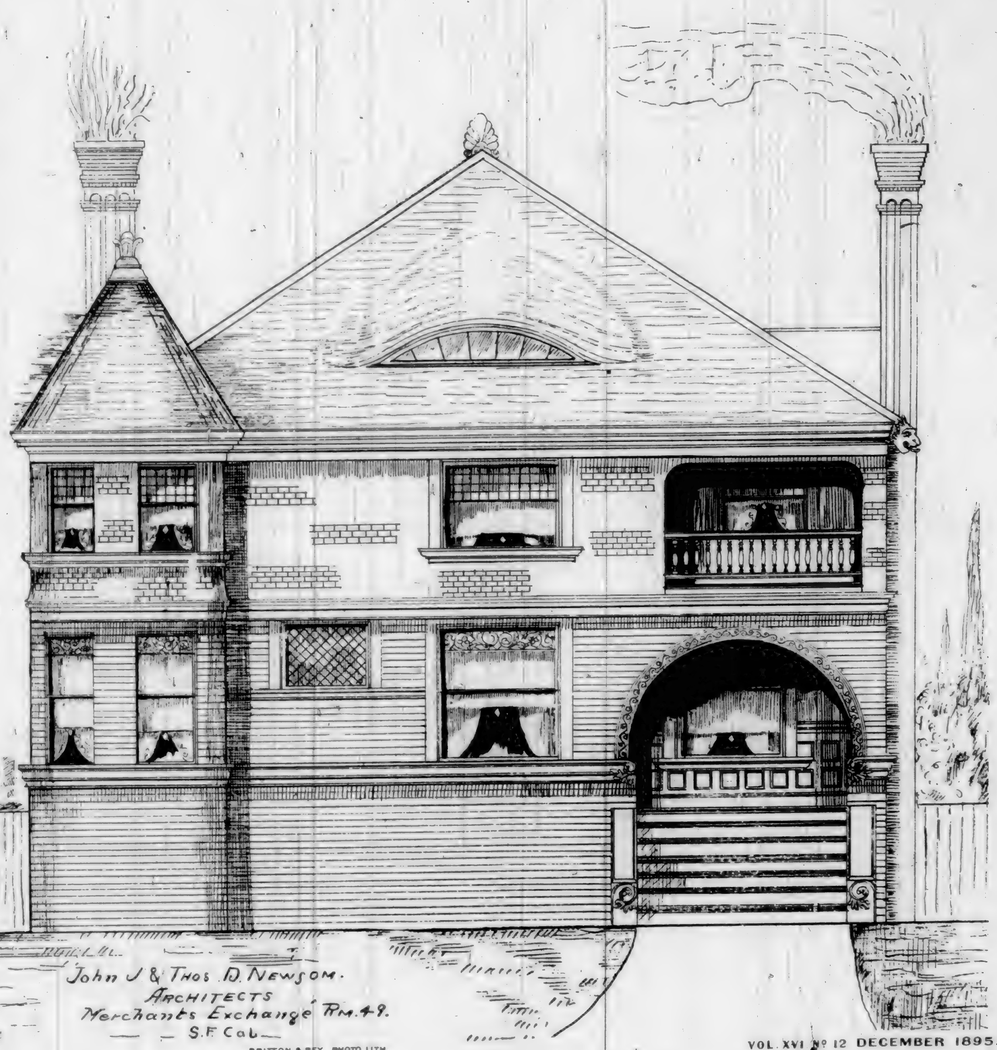


FIRST STORY PLAN

SECOND STORY PLAN



John J & Thos D. Newsom.
Architects
Merchants Exchange Rm. 49.
S.F. Cal.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

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VOL. XVI Nº 12 DECEMBER 1895.

PROPOSED DESIGN FOR MARKET ST. BUSINESS BLOCK

J. CATHER NEWSOM ARCH'T

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY PHOTO. LITH.

VOL. XVI Nº 12 DECEMBER 1895.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
C. E. GRUNSKY, Pres. GEO. W. DICKIE, Vice-Pres.
OTTO VON GELDERN, Sec. W. C. RALSTON, Treas.

CALIFORNIA ELECTRICAL SOCIETY, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
GEO. P. LOW, Pres. C. O. POOLE, Vice-Pres.
MAX CASPARI, Sec. H. T. BESTOR, Treas.

WAGES AND RENT.

WORKMEN in this world are paying too much of their wages for rent! This is the opinion of Carroll D. Wright, United States Commissioner of Labor. He comes to this conclusion after making a recent investigation of the housing of the working classes in various countries of the world. One-fifth of the wages earned by the head of a family ought to be the maximum expenditure for rent in cities. This Commissioner Wright says, is agreed by the most competent economists. Hence the workman in the city who earn fifty dollars a month should not pay more than ten dollars of it each month to his landlord.

Commissioner Wright has collected information concerning houses and building enterprises for workmen in all of the larger countries of the world.

A French company which has formulated a scheme to assist its employees to become house-owners, rents a comfortable little cottage of brick and cut stone, with two stories, including a kitchen, parlor and two bed rooms, besides a cellar for only $2.32 per month in American money.

Through a real estate company at Rouen, France, comfortable houses are rented to workmen for about twenty-five cents a week, or four dollars a year, which amounts for those workmen receiving the lowest wages to but one day's salary in a week.

A celebrated chocolate manufacturer at Noisiel houses about 1400 of his employees at an average yearly rent of twenty-nine dollars, which is from a tenth to a twelfth of the wages of each family, besides giving free repairs, taxes, water, schools for employee's children, medical attendance, baths and literary and musical entertainments.

In Belgium there is a semi-official institution, the General Savings Bank, holding deposits guaranteed by the Government. This lends money to workmen at low rates of interest in order to encourage them in building their own homes. Through a system of life insurance likewise established under Belgian law, the family of a workman is given a home in case of his death. Commissioner Wright points with great emphasis to the importance of these institutions of the Belgian Government.

At Pullman, Ill., it is estimated that one-fifth of the wages paid go for rent.—*New York Herald.*

MAXIMS FOR DRAFTSMEN FROM RUSKIN.

THE power of shading rightly depends mainly on *lightness* of hand and *keenness* of sight; but there are other qualities required in drawing dependent not only on lightness, but steadiness of hand; and the eye to be perfect in its power, must be made *accurate* as well as keen, and not only see shrewdly, but measure justly.—*Ruskin.*

NEARLY *all* expression of form, in drawing, depends on your power of graduating delicately; and the graduation is always most skillful which passes from one tint to another *very little* paler.—*Ruskin.*

IN darkness of ground there is the light of the little pebbles or dust; in darkness of foliage, the glitter of the leaves; in the darkness of flesh, transparency; in that of stone, granulation; in every case there is some mingling of light.—*Ruskin.*

AN entire master of the pencil or brush ought indeed, to be able to draw any form at once as Giotto his circle; but such skill as this is only to be expected of the consummate master, having pencil in hand all his life, and all day long, hence, the force of Giotto's proof of his skill.—*Ruskin.*

THE BUILDERS' EXCHANGE.

THE Builders' Exchange of San Francisco is deserving of more than passing mention and praise as a useful and model public institution. Prior to its organization in July, 1890, the building business was in a chaotic state, owing to the absence of a recognized rendezvous and a uniformity in business dealings. At this time the brickmasons and the carpenter contractors each maintained separate small club-rooms for the accommodation of its members, but the vast army of manufacturers, dealers and agents of building materials, and contractors in the various building trades, could never meet each other with a certainty, a chance meeting on the street being all that could be hoped for.

With a view of facilitating business, correcting many evils, and a watchword of "Skill, Honor and Responsibility," a few members of the building business, namely, Chas. C. Terrell, Wm. N. Miller, A. W. Starbird, M. J. Donovan, C. C. Morehouse, J. R. Wilcox, John F. Riley, Wm. Cronan, J. K. Firth, A. Hosmer and George W. Duffy associated themselves together, organized The Builders' Exchange, and outlined its objects and aims as follows:—

"FIRST.—To join *one* association all mechanics, manufacturers and dealers of good repute doing business in city and county of San Francisco, whose vocation connects them wholly or generally with the building industry, either as an employing contractor or manufacturer or dealer in building materials.

"2d.—To establish and maintain among the indivlduals so associated a just and equitable system of dealing and a uniformity in commercial usages by rules and regulations;

to acquire, preserve and disseminate valuable information regarding the business in which they are severally engaged.

"3d.—To procure (either by lease or purchase), furnish and maintain suitable rooms for the use of its members for meeting rooms, offices and other purposes.

"4th.—To establish and enforce a system of arbitration for the settlement of all disputes or controversies which may arise between its members or between its members and their employees and other persons.

"5th—To join or otherwise act in concert with other organizations of Employers of Labor, for the purpose of arbitrating all questions of dispute which may arise between said organization and the members thereof, or any of them, or between any of them and their employees. To the end that all matters of difference between the Employers of Labor and their employees may be amicably settled and adjusted without resort to strikes or lockouts."

Having clearly outlined a broad-gauge policy, the Association thus formed was duly incorporated, and a meeting place established at 320 Pine street, with the following officers:—President, Chas. C. Terrill; Vice-Pres., Wm. N. Miller; Treasurer, A. W. Starbird; Secretary, M. J. Donovan.

The corporation thus fairly started on its noble mission, soon won the confidence of the building fraternity—the brickmasons and carpenter contractors consolidating their clubrooms with the corporation.

The Pine street headquarters were soon deserted for more commodious rooms on Montgomery street, which soon became too small, and the large Hall of the Real Estate Exchange at 16 Post street engaged and the clerical force doubled. Again was it necessary to secure larger quarters, and a two-story brick structure was erected on the corner of Mission and New Montgomery streets to accommodate its 400 members.

During the Exchange hour, from 12 to 2 each day, may be found all the prominent building material dealers and contractors of San Francisco and bay cities, and business is transacted by an individual in this short time that could not be otherwise transacted in a whole day.

Not only has the power of the Exchange been great enough to correct many minor evils of the building business, but its influence is equally apparent in the Legislative body of the State, and the precepts and customs introduced by the Exchange have so permeated the building industry of San Francisco, that nowhere in the United States is the same volume of business disposed of in the same space of time and the same uniformity as in San Francisco.

The lower floor is used as a general assembly room; here also are the members' letter-boxes, private cases, telephone rooms and office of the corporation. The upper floor is divided up into private rooms, lodge room and directors' rooms. A large dome skylight, assisted by windows on three sides of the building, afford ample light and fresh air.

The Exchange is open to members and the public on all business days from 8 A. M. to 5 P. M., and an invitation is cordially extended to all parties identified with the building industry and the public in general to visit the Exchange, and examine into its workings.

The present officers and members are as follows:

President, Oscar Lewis; Vice-President, O. E. Brady; Secretary, Jas. A. Wilson; Treasurer, L. B. Sibley; Directors, W. B. Anderson, James McInerny, Chas. Dunlop, A. Kendall, Thos. W. Butcher, Thos. Elam, John T. Hayes; Recording Secretery, E. A. Larsen; Financial Secretary, S. D. North; Attorney, Wm. H. Cobb.

MEMBERS BUILDERS' EXCHANGE.

	Box No.
Abrahamson, P.; patent ventilators	123
Ackerson & Patterson, contractors and builders	343
Adams, John G.; contractor and builder	270
Alameda Brick & Tile Co.; brick	170
Ambrose, William F.; concrete and artificial stone	356
Anderson Bros.; contractors and builders	128
Architectural Iron Works; (O'Connell & Lewis)	47
Arizona Sandstone Co.; building stone	326
Artistic Decoration Co	337
Bassett Bros.; contractors and builders	6
Bass-Hueter Paint Co.; paints, oils and varnishes	136
Barry, James; mason and builder	118
Bateman Bros.; contractors and builders	236
Bay City Iron Works	266
Beck, Adam; mason and builder	11
Bell, Frank C.; contractor and builder	14
Bennett Bros.; hardware	320
Black, E. H.; painter	192
Boyd, Robert; mason and builder	77
Brady, M. V.; mason and builder	34
Brady, O. E., mason and builder	360
Brennan, D. J.; mason and builder	51
Brennan, M. & Son; carpenters add builders	297
Brennan & Fraser; plasterers	158
Britt, James E.; plumber	36
Brode, R.; iron works	295
Burden & Helm; masons and builders	260
Burnham, Stanford Co.; planing mill	28
Burrell, E. H.; building material	146
Burt, W. J.; house mover	296
Butler, Thos.; mason and builder	255
Butler, Wm. A.; mason and builder	
Butterworth, Thos. C.; art glass	371
California Sandstone and Contracting Co	230
California Art Glass Works	63
California Electrical Works	223
California Mills; planing mills	300
Campbell, Alex.; contractor and builder	105
Campbell & Pettus; contractors and builders	184
Carle, Silas; contractor and builder	
Cartwright, D. S.; teaming	10
Central Lumber & Mill Co.; lumber and planing mill	345
Chatham, Wm.; contractor and builder	62
Chisholm, C.; contractor and builder	44
Christy, Chas.; contractor and builder	276
Clark, N. & Sons; terra cotta, etc	290
Clawson, L. E., & Co.; patent chimneys	66
Coghlan, Frank; plasterer	91
Commary, Wm. T.; contractor and builder	
Concannon & Shay; contractors and builders	24
Conlin & Roberts; metal roofers	90
Cowell, H., & Co.; lime, cement, fire brick, etc	7
Crichton, Peter; contractor and builder	339
Crocker, Wm.; planing mill	12
Cronan, Wm.; Eagle Sheet Metal Works	26
Currie & Loomer; contractors and builders	227
Currie, Robert; contractor and builder	143
Cushing-Wetmore Co.; concrete and artificial stone	222
Curry, J. M.; stone dealer	35
Daniels, Gus. V.; painter and decorator	85
Davies E.; plasterer	42
Davis, Geo. & Son; house movers	293
Davis, R. O.; carpenter and builder	201

Day, Thos. H., & Sons; contractors and builders	131
Degan, Patrick; stone contractor	366
DeGear, J. D.; galvanized iron	259
Depew, Chas. M ; planing mill	19
Diggins Bros.; street contractors, concrete stone	176
Dillon, David; teamster and contractor	139
Donovan, M. J.; painter	121
Donnelly, E.; teaming and grading	39
Dougherty, J. P.; plumber	351
Douglass, Chas.; carpenter	125
Doyle, R., & Son; carpenters and builders	142
Duffey, Bros.; plumbers	243
Dunbar, Wm.; mason and builder	364
Dunham, Carrigan & Hayden Co.; hardware	4
Dunlop, Chas.; plasterer	59
Dwyer, L. J.; painter and decorator	197
Dyer Bros.; Golden West Iron Works	64
Elam, Thos.; carpenter and builder	202
Electrical Maintenance Co.; construction and repair work	350
Excelsior Mill Co	72
Feely, M. J.; contractor and builder	180
Fennall, M., & Son; masons and builders	58
Field, Wm. J.; contractor and builder	89
Flanagan, L. G.; lime and cement	53
Flint, J. A., & Co.; tiles, etc	234
Foley, Michael, grading and teaming	254
Forderer Cornice Works; patent sky lights, roofing, etc	164
Fortin Brick Co	98
Foster, John; contractor and builder	330
Fraser, J. P.; painter and decorator	50
Fuller W. P. & Co.; paints, oils and glass	333
Furness, John; contractor and builder	152
Geary, James; contractor and builder	275
Geier, Frank A.; Market Street Planing Mills	252
Gillespie, G. G.; carpenter and builder	352
Giletti, Secondo; artificial stone	308
Gillogley, Geo.; teaming	324
Gladding, McBean & Co., architectural terra cotta	162
Golden Gate Lumber Co.; lumber and planing mill	
Golden West Iron Works (Dyer Bros)	64
Gonyeau, John B.; contractor and builder	194
Goodman, Geo.; artificial stone, etc	334
Grannis, J. G. & Co.; steam heating, etc	331
Grant, W. J.; contractor and builder	84
Gray Bros.; artificial stone and concrete work	86
Griese, Carl; artificial stone and concrete work	231
Griffiin, P.; contractor and builder	103
Guilfoy, James; metal roofer	370
Hammond, Philip; metal roofer	43
Hanavan, J. H; mason and builder	49
Hansen A.; planing mill	3
Hansen, F. L.; contractor and builder	108
Hansen, M.. & Co.; planing mill	187
Harmon Lumber Co.; lumber	314
Harrison, Fred; mason and builder	309
Haustein, H.; tiles	82
Hayes, John T.; contractor and builder	167
Healy, M. J; stone contractor	220
Henon & Son; mason and builders	45
Henzel, Ed. F. & Co; electricians	375
Herring, R; mill work	70
Hinchman & Co; planing mill	283
Hindes, Edward B., & Co; patent blinds	174
Hock, T., & Son; masons and builders	232
Hogan, Ed; plumber	81
Hoffman, V; masons and builders	9
Holmes, H. T, Lime Co; lime, cement, etc	268
Hooper & Co; lumber	
Howell Tiling Co	363
Huber, Frank; sash, blinds and doors	342
Hurlbut, R. P; builder	156
Ickelheimer, Samuel & Bro; plumbers	353
Ingerson & Gore; contractors and builders	37
Jacks, Henry; contractor and builder	267
Jackson, A; contractor and builder	200
Jackson, P. H. & Co; illuminating tiles	27
Jackson, W. E; curbing	304
Jesse, Geo. R; stair builder	102
Jordan D., & Son; masons and builders	57
Joshua Hendy Machine Works	188
Keatinge, Leonard & Ransome; concrete, twisted iron	13
Kelleher, M; house raiser and mover	23
Kendall, A; Pacific Coast Lumber and Mill Co	52
Kennedy, J; contractor and builder	65
Kenney & Wells; inlaid floors	368
Keefe, J. H; painter and decorator	199
Kent, S. H; contractor and builder	190
Kern, F. W; contractor and builder	225
Kilpatrick, D; stone contractor	265
Kittredge, E. H. & Co; sash, doors and blinds	204
Klatt, F; contractor and builder	277
Knowles, Wm; contractor and builder	150
Knox & Cook; contractors and builders	244
Kronnick, Fred G; contractor and builder	373
Kuss, P. N; painter, decorator and wood finisher	307
Lewis, D; stair builder	226
Lang, Geo. R; contractor and builder	214
Larsen, H. H; mason and builder	33
Leahy, D; plasterer	344
Leprohon, P; steam and hot water heating	239
Liebert, J. G; mason and builder	32
Linden, W; contractor and builder	229
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Llewellyn, R; Columbia Foundry	182
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Lucas & Co: (Golden Gate Plaster Mills) calcined plaster	31
Lynch, M. C; contractor and builder	274
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Maguire, James A; manufacturer's agent	120
Mahoney Bros; builders	
Mallon, John; art glass	93
Moloney, P; contractor and builder	224
Martland, Grindell & Simpson; electricians	269
Mason, Chas; contractor and builder	228
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McCarthy, John; mason and builder	168
McClure, H. N; teaming and grading	311
McClure, P. L; water	161
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McElroy, A; contractor and builder	211
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McGilvray, John D; stone contractor	340
McGowan M; mason and builder	17
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McKee, John; stair builder	262
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Muller, W. A; carpenter and builder.....235
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BUSINESS MOSAICS.

No hotel, or other large building can be considered safe if not supplied with the new and improved Chapman Fire Hose Reel. It is the latest improvement and upon examination is universally conceded by all unprejudiced competent authority to be the most simple, practical and reliable Hose Reel apparatus in the word. R. S. Chapman will confirm this statement, 14 and 16 Fremont street, San Francisco.

Goodfellow—If my clothes were not too big for you, I'd give you an old suit. Hungry Hank (gratefully)—Boss, if you'd give me the price of a square meal, I warrant they'd fit me all right.—*Truth.*

N. & G. Taylor Co., Tinplate Manufacturers, Philadelphia, are out in a very neat blotter illustrating the brands of bright tinplates which they make. They state that all of their plates are made of the finest materials, and in a thorough manner, and thev also call particular attention to the quality of pig tin used "being of exceptional fineness and purity."

Their "Brilliant" brand, extra fine quality, is the heaviest coated Bright Tin that can be made, and holds the same high position that their celebrated "Taylor Old Style" brand does in the list of brands of Roofing Tin. Buyers of Bright Tinplates should correspond with Messrs. N. & G. Taylor Co.

"Have you change for a $5 note?" asked one man of another. "Yes; certainly I have." "Ah! then lend me $2 for a day or two, there's a good fellow!"—*Tit-Bits.*

The J. L. Mott Iron Works are again to the fore with some more of their useful improvements to their sanitary plumbing work. These specialties are well worth seeing by all interested, at their well equipped show rooms in the Flood Building.

First Kid—Anyhow, I never had no granddaddy hung for horse stealin'. Second Kid—Don't care if he wuz. Horses wuz worth stealin' in them days."—*Cincinnati Enquirer.*

When a man decides upon improving his shop, factory or farm, by the addition of power, he naturally looks for something entirely up to date. He investigates, considers, and finally decides to buy an Ajax Coal Oil Gas Engine as meeting his requirements more fully, and being safer, than any other power obtainable. Palmer and Ray, San Francisco, Cal., the manufacturers of this engine, have earned the gratitude of the public by placing within its reach a reliable, economical power, that defies the restrictions of insurance companies. It is the latest and best.

Rischmuller's Door Opener and closer is another contrivance that you must have to be happy. This door opener and closer is the most simple and perfect of any in the market. A full sized working model can be seen at 329 Nineteenth street. Orders left with Geo. Rischmuller, 320 Nineteenth street, will be promptly attended to.

Miss Gushington—How did you feel when you found that the ship would surely go down in ten minutes? Captain Salted—I felt for a life-preserver.—*Harper's Bazar.*

Dixon's Silica Graphite Paint, manufactured by the Joseph Dixon Crucible Co., of Jersey City, N. J., will be used in painting all the tin work and skylights of the Post Office Department Building at Washington. A quantity will also be used on the Capitol, and the District Government Building.

Dudely—What are you going to be when you are grown up, Bobby? Bobby—I'm going to be a man. What are you going to be?—*Harper's Bazar.*

Samson Spot Cord.—If you want the best cord in the market, be sure you specify "Samson Spot Cord." Samples supplied upon application to the Samson Cordage works, Boston, Mass.

Miriam—Don't you think my new hat a poem, Ned? Ned—From its height, dear, I should instead compare it to a short story.—*Judge.*

The well known firm of J. L. Mott Iron Works, established in 1828, furnish a wonderful illustration of the vast improvements made in the line of their business since that date. Few are now living who were of age to appreciate good plumbing, when these works were first established, but the constant improvement ever since that time has been no secret to the public, who in the long run are always ready to respond and encourage a firm who appear ever ready to adapt new methods and devices where the welfare of their customers is concerned.

Mr. M. S. James, the Pacific Coast representative of the firm, has opened a new office and show rooms at 27 Flood Building, San Francisco.

Mrs. Snagg—I understand that paper is made of wood now. Mr. Snagg—Yes, so is string. "String?" "Yes; what else do you suppose cordwood is used for?"—*Telegraph.*

All those who are troubled by the annoyance of flies, we would say call upon Edward B. Hindes & Co., 411 Mission street and examine their perfection window screens, if you once enjoy the comfort they give you will never be without them. A catalogue and prices will be forwarded upon application at their office.

CITY BUILDING NEWS.

Alamo Square. Coping round block; owner, City of San Francisco; contractors, California Concrete Co.; cost $3000.

Andover Ave. near Courtland Ave. Two-story frames; owner, P. Jackvwiski contractor, P. Mandeson; cost $2000.

Baker near Greenwich. Two-story farme; owner, Mrs. Annie Kennedy; contractors, Kenely & Leterell; signed, Nov. 11; filed, Nov. 14; cost $1940.

Bartlett near 26th. Three-story frame; owner, J. M. Comerford; cost $4000.

Broderick near Fulton. Two-story frame; owner, John H. Hendy; contractor, Cranston & Keenan; signed, Dec. 3; filed, Dec. 5; cost $5000.

Bush near Baker. Two-story frame; owner, S. Magnin; architect, W. H. Lillie; contractor, W. Heibing; signed, Nov. 27; filed, Nov. 27; cost $1700.

Clay near Cherry. Two-story frame; owner, John J. Wirtner; architect, G. A. Dodge; contractor, G. H. Moore; signed, Nov. 14; filed, Nov. 18; cost $2008.

Clement near 9th Ave. Frame cottage except brick work, etc.; owner, Mrs. E. Downey; architect, E. Kollofrath; contractor, W. R. Kenney; signed, Nov. 18; filed, Nov. 18; cost $1000.

Cliff House. Sheds; owner, Adolph Sutro; architect, C. J. Colley; contractors, Campbell & Pettus; signed, Nov. 14; filed, Nov. 16; cost $4844.

Courtland Ave. and Kosciusko. Cottage; owner, Mrs. A. Kilstrom; contractors, Reit & Ahlgren; cost $1000.

Duncan near Dolores. Two-story frame; owner, J. M. Comerford; cost $3200.

East near Mission. Two-story brick; owner, Thomas Magee; architects, Percy & Hamilton; contractor, Riley & Loane; signed, Dec. 13; filed, Dec. 13; cost $5749.

Eddy and Hyde. Excavations and brick work; owner, O. H. Hund; architect, A. C. Lutgens; contractor, Ferdinand Wagner; signed, Dec. 2; filed, Dec. 3; cost $1900.

Eddy and Hyde. Carpenter, plastering, etc.; owner, O. H. Hund; architect, A. C. Lutgens; contractor, F. V. Stelnman; signed, Dec. 2; filed, Dec. 3; cost $10,000.

Eleventh near Howard. Alterations and repairs; owner, Mary E. McDonald; architect, J. P. Brady; contractors, G. A. Fisher and T. J. Capp; signed, Nov. 25; filed, Nov. 29; cost $2085.

Farallones near Orizaba. Cottage; owner, Christine Bergdahl; architect, E. Tillman; contractors, Tillman Bros.; signed, Nov. 30; filed, Dec. 4; cost $1390.

Fourth Ave. near Pt. Lobos. Two-story frame; owner, R. R. Hind; superintendents, Townley Bros.; days work; cost $4000.

Fourth near Brennan. Two-story frame; owners, Simon and Yette Israel; contractors, L. Westerlund, J. Sandeen; signed, Nov. 29; filed, Nov. 29; cost $2057.

Fourth and Welsh. Excavations and concrete work; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, Geo. Goodman; signed, Nov. 16; filed, Nov. 18; cost $4612.

Fourth and Welsh. Carpenter work for two three-story frame buildings and one-story frame building; owner, John Shirley; architects, De Posse & Meusdorffer; contractor, H. A. Conrad; signed, Nov. 16; filed, Nov. 18; cost $14,400.

Fourth and Welsh. Mason work; owner, John Shirley; architects, De Prosse & Meusdorffer; contractors, Miller & Beck; signed, Nov. 16; filed, Nov. 18; cost $1249.

Fourth and Welsh. Plumbing; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, H. Williamson; signed, Nov. 16; filed, Nov. 18; cost $2124.

Fourth and Welsh. Plastering; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, W. C. Watson; signed, Nov. 16; filed, Nov. 18; cost $1495.

Fourth and Welsh. Painting; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, J. F. Sullivan; signed, Nov. 16; filed, Nov. 18; cost $1420.

Fourth and Welsh. Brick work for ovens; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, Peter Glaser; cost $425.

Green near Hyde. Two-story frame; owner, Patrick Hogan; contractor, H. R. Schmuckert; signed, Nov. 13; filed, Nov. 26; cost $2850.

Julian near 15th. Alterations and additions; owner, Martin Fennell; architects, Shea & Shea; contractors, Bassett Bros.; signed, Dec. 4; filed, Dec. 11; cost $1900.

Lakeview Tract, lot 23, block 25. Two-story frame; owner, Carl R. Carlso - contractor, A. Dahlberg; signed, Nov. 18; filed, Nov. 19; cost $2000.

Larkspur Station. Two-story frame; owner, A. Brazil; contractor, Gustave A. Nagel; cost $2330.

Market near 5th. Stucco work for exterior; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, Chas. Dunlap; signed, Nov. 27; filed, Dec. 5; cost $6700.

Market near 5th. Plastering; owner, Mrs. A. M. Parott; architect, Pissis & Moore; contractor, D. Leahy; signed, Dec. 3; filed, Dec. 10; cost $12,785.

Market near 5th. Plastering for basement; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, D. O'Sullivan; signed, Nov. 15; filed, Nov. 18; cost $17,600.

Market near 5th. Fixtures, counters, etc.; owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractors, L. & E. Emanuel; signed, Nov. 27; filed, Dec. 5; cost $5475.

Market and 10th. Plumbing, etc.; owner, Timothy Hopkins; architect, H. A. Schulze; contractors, Snook & Son; signed, Nov. 15; filed, Nov. 27; cost $1382.

Masonic Ave. and Haight. Two-story frame; owner, Mrs. J. A. Bogart; architect, W. H. Lillie; contractors, Cranston & Keenan; signed, Nov. 19; filed, Nov. 21; cost $5100.

Masonic Ave. and Haight. Plumbing on five houses; owners, Cranston & Keenan; contractor, G. C. Sweeney; cost $1500.

Mission and Beal. Two-story brick; owner, J. F. Merrill; architects, Percy & Hamilton; contractor, R. Ringrose; signed, Nov. 12; filed, Nov. 13; cost $19,844.

O'Farrell near Powell. Brick building; owner, Frederick Rver; architect, Chas. Geddes; contractor, Jas. McLean; signed, Nov. 16; filed, Nov. 16; cost $11,925.

Onondaga and Country Road. Two-story frame; owner, Catherine Carson; architect, A. J. Barnett; contractor Henry Luke; signed, Dec. 11; filed, Dec. 13; cost $2111.

Page near Webster. Two-story frame except gas-fitting and mantels; owner, H. Gustav Frautner; contractor, A. G. Johnson; signed, Nov. 18; filed, Nov. 23; cost $4271.

Point Lobos Road near Cliff. Frame depot building; owner, Sutro Railroad Co.; architect, C. J. Colley; contractors, Campbell & Pettus; signed, Nov. 14; filed, Nov. 16; cost $3080.

Sacramento near Broderick. Two-story frame; owner, Charles H. Hewitt; contractor, Philip Rive; signed, Dec. 5; filed, Dec. 10; cost $4235.

Second Ave. near California. Cottage; owner, M. Kahn; contractor, H. Peterson; signed, Nov. 26; filed, Nov. 30; cost $2000.

Stevenson near 3d. One-story brick; owners, Edison Light and Power Co.; architects, Percy & Hamilton; contractors, Riley & Loane; signed, Nov. 20; filed, Nov. 21; cost $3449.

Stuart near Mission. Excavations, pumping, etc.; owner, E. R. Lilienthal; architect, Clinton Day; contractors, Gray Bros.; signed, Dec. 9; filed, Dec. 11; cost $2985.

Sutter near Buchanan. Two-story frame; owner, A. G. Morris, architects, Herman & Swain; cost $4000.

Sixth and Townsend. Four smoke houses; owner, Western Meat Co.; architect, L. Greenbaum; contractor, Thomas Butler; signed, Nov. 29; filed, Nov. 30; cost $3045.

Sixth and Folsom. Plumbing, gas-fitting, etc.; owner, M. Israel; architects, Salfield & Kohlberg; signed, Nov. 26; filed, Nov. 30; cost $1060.

Valencia near 20th. Grading, chimneys, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Lillie; contractors, Riley & Loane; signed, Nov. 25; filed, Nov. 27; cost $1695.

Valencia near 20th. Carpenter, mill work, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Little; contractor, W. J. Fleid; signed, Nov. 25; filed, Nov. 27; cost $4200.

Valencia near 20th. Plumbing, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Lillie; contractor, W. H. Tobin; signed, Nov. 25; filed, Nov. 27; cost $1050.

Van Ness Ave. and Clay. Plumbing; owner, Claus Spreckles; architects, Reid Bros.; contractor, W. F. Wilson; signed, Oct. 2; filed, Nov. 12; cost $6481.

CITY BUILDING NEWS.

Alamo Square. Coping round block; owner, City of San Francisco; contractors, California Concrete Co.; cost $3000.

Andover Ave. near Courtland Ave. Two-story frames; owner, P. Jackvwiski contractor, P. Mandeson; cost $2000.

Baker near Greenwich. Two-story farme; owner, Mrs. Annie Kennedy; contractors, Kenely & Leterell; signed, Nov. 11; filed, Nov. 14; cost $1940.

Bartlett near 26th. Three-story frame; owner, J. M. Comerford; cost $4000.

Broderick near Fulton. Two-story frame; owner, John H. Hendy; contractor, Cranston & Keenan; signed, Dec. 3; filed, Dec. 5; cost $5000.

Bush near Baker. Two-story frame; owner, S. Magnin; architect, W. H. Lillie; contractor, W. Helbing; signed, Nov. 27; filed, Nov. 27; cost $1700.

Clay near Cherry. Two-story frame; owner, John J. Wirtner; architect, G. A. Dodge; contractor, G. H. Moore; signed, Nov. 11; filed, Nov. 18; cost $2008.

Clement near 9th Ave. Frame cottage except brick work, etc.; owner, Mrs. E. Downey; architect, E. Kollofrath; contractor, W. R. Kenney; signed, Nov. 18; filed, Nov. 18; cost $1000.

Cliff House. Sheds; owner, Adolph Sutro; architect, C. J. Colley; contractors, Campbell & Pettus; signed, Nov. 14; filed, Nov. 16; cost $4844.

Courtland Ave. and Kosciusko. Cottage; owner, Mrs. A. Kilstrom; contractors, Reil & Ahlgren; cost $1000.

Duncan near Dolores. Two-story frame; owner, J. M. Comerford; cost $3200.

East near Mission. Two-story brick; owner, Thomas Magee; architects, Percy & Hamilton; contractor, Riley & Loane; signed, Dec. 13; filed, Dec. 13; cost $6749.

Eddy and Hyde. Excavations and brick work; owner, O. H. Hund; architect, A. C. Lutgens; contractor, Ferdinand Wagner; signed, Dec. 2; filed, Dec. 3; cost $1900.

Eddy and Hyde. Carpenter, plastering, etc.; owner, O. H. Hund; architect, A. C. Lutgens; contractor, F. V. Stehman; signed, Dec. 2; filed, Dec. 3; cost $10,000.

Eleventh near Howard. Alterations and repairs; owner, Mary E. McDonald; architect, J. P. Brady; contractors, G. A. Fisher and T. J. Capp; signed, Nov. 25; filed, Nov. 29; cost $2085.

Farallones near Orizaba. Cottage; owner, Christine Bergdahl; architect, E. Tillman; contractors, Tillman Bros.; signed, Nov. 30; filed, Dec. 4; cost $1300.

Fourth Ave. near Pt. Lobos. Two-story frame; owner, R. R. Hind; superintendents, Townley Bros.; days work; cost $4000.

Fourth near Brennan. Two-story frame; owners, Simon and Yette Israel; contractors, L. Westerlund, J. Sandeen; signed, Nov. 29; filed, Nov. 29; cost $2057.

Fourth and Welsh. Excavations and concrete work; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, Geo. Goodman; signed, Nov. 16; filed, Nov. 18; cost $4612.

Fourth and Welsh. Carpenter work for two three-story frame buildings and one-story frame building; owner, John Shirley; architects, De Posse & Meusdorffer; contractor, H. A. Conrad; signed, Nov. 16; filed, Nov. 18; cost $14,400.

Fourth and Welsh. Mason work; owner, John Shirley; architects, De Prosse & Meusdorffer; contractors, Miller & Beck; signed, Nov. 16; filed, Nov. 18; cost $1249.

Fourth and Welsh. Plumbing; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, H. Williamson; signed, Nov. 16; filed, Nov. 18; cost $2124.

Fourth and Welsh. Plastering; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, W. C. Watson; signed, Nov. 16; filed, Nov. 18; cost $1495.

Fourth and Welsh. Painting; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, J. F. Sullivan; signed, Nov. 16; filed, Nov. 18; cost $1420.

Fourth and Welsh. Brick work for ovens; owner, John Shirley; architects, De Prosse & Meusdorffer; contractor, Peter Glaser; cost $425.

Green near Hyde. Two-story frame; owner, Patrick Hogan; contractor, H. R. Schmuckert; signed, Nov. 13; filed, Nov. 26; cost $2850.

Julian near 15th. Alterations and additions; owner, Martin Fennell; architects, Shea & Shea; contractors, Bassett Bros.; signed, Dec. 4; filed, Dec. 11; cost $1900.

Lakeview Tract, lot 23, block 25. Two-story frame; owner, Carl B. Carlso contractor, A. Dahlberg; signed, Nov. 18; filed, Nov. 19; cost $2800.

Larkspur Station. Two-story frame; owner, A. Brazil; contractor, Gustave A. Nagel; cost $2830.

Market near 5th. Stucco work for exterior; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, Chas. Dunlap; signed, Nov. 27; filed, Dec. 5; cost $6700.

Market near 5th. Plastering; owner, Mrs. A. M. Parott; architect, Pissis & Moore; contractor, D. Leahy; signed, Dec. 3; filed, Dec. 10; cost $12,785.

Market near 5th. Plastering for basement; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, D. O'Sullivan; signed, Nov. 15; filed, Nov. 18; cost $17,600.

Market near 5th. Fixtures, counters, etc.; owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractors, L. & E. Emanuel; signed, Nov. 27; filed, Dec. 5; cost $5475.

Market and 10th. Plumbing, etc.; owner, Timothy Hopkins; architect, H. A. Schulze; contractors, Snook & Son; signed, Nov. 15; filed, Nov. 27; cost $1382.

Masonic Ave. and Haight. Two-story frame; owner, Mrs. J. A. Bogart; architect, W. H. Lillie; contractors, Cranston & Keenan; signed, Nov. 19; filed, Nov. 21; cost $5100.

Masonic Ave. and Haight. Plumbing on five houses; owners, Cranston & Keenan; contractor, G. C. Sweeney; cost $1500.

Mission and Beal. Two-story brick; owner, J. F. Merrill; architects, Percy & Hamilton; contractor, R. Ringrose; signed, Nov. 12; filed, Nov. 13; cost $19,844.

O'Farrell near Powell. Brick building; owner, Frederick Ryer; architect, Chas. Geddes; contractor, Jas. McLean; signed, Nov. 16; filed, Nov. 16; cost $11,925.

Onondaga and Country Road. Two-story frame; owner, Catherine Carson architect, A. J. Barnett; contractor Henry Luke; signed, Dec. 11; filed, Dec. 13; cost $2111.

Page near Webster. Two-story frame except gas-fitting and mantels; owner, H. Gustav Frautner; contractor, A. G. Johnson; signed, Nov. 18; filed, Nov. 23; cost $4271.

Point Lobos Road near Cliff. Frame depot building; owner, Sutro Railroad Co.; architect, C. J. Colley; contractors, Campbell & Pettus; signed, Nov. 14; filed, Nov. 16; cost $5980.

Sacramento near Broderick. Two-story frame; owner, Charles H. Hewitt; contractor, Philip Rive; signed, Dec. 5; filed, Dec. 10; cost $4235.

Second Ave. near California. Cottage; owner, M. Kahn; contractor, H. Peterson; signed, Nov. 26; filed, Nov. 30; cost $2000.

Stevenson near 3d. One-story brick; owner, Edison Light and Power Co.; architects, Percy & Hamilton; contractors, Riley & Loane; signed, Nov. 20; filed, Nov. 21; cost $3449.

Stuart near Mission. Excavations, pumping, etc.; owner, E. R. Lilienthal; architect, Clinton Day; contractors, Gray Bros.; signed, Dec. 9; filed, Dec. 11; cost $2985.

Sutter near Buchanan. Two-story frame; owner, A. G. Morris, architects, Herman & Swain; cost $4000.

Sixth and Townsend. Four smoke houses; owner, Western Meat Co.; architect, L. Greenbaum; contractor, Thomas Butler; signed, Nov. 29; filed, Nov. 30; cost $3045.

Sixth and Folsom. Plumbing, gas-fitting, etc.; owner, M. Israel; architects, Salfield & Kohlberg; signed, Nov. 26; filed, Nov. 30; cost $1060.

Valencia near 20th. Grading, chimneys, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Lillie; contractors, Riley & Loane; signed, Nov. 25; filed, Nov. 27; cost $1695.

Valencia near 20th. Cnrpenter, mill work, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Little; contractor, W. J. Field; signed, Nov. 25; filed, Nov. 27; cost $4200.

Valencia near 20th. Plumbing, etc.; owner, Mrs. M. A. Rosekrans; architect, W. H. Lillie; contractor, W. H. Tobin; signed, Nov. 25; filed, Nov. 27; cost $1050.

Van Ness Ave. and Clay. Plumbing; owner, Claus Spreckles; architects, Reid Bros.; contractor, W. F. Wilson; signed, Oct. 2; filed, Nov. 12; cost $6481.

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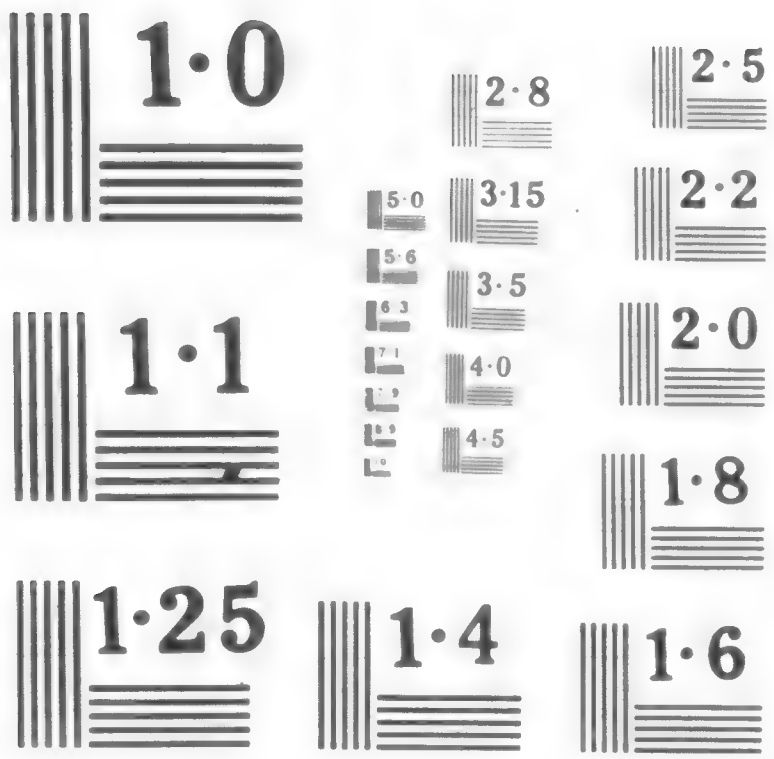

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NOW IN THE SEVENTEENTH YEAR.

W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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WE head our paper with different annual numerals and 1896 is now well under way. The stocks of goods which were produced in our busy years being now somewhat depleted after four years of non-production and the temper of the people being tried during that time to the utmost of their patience, the indications are that production will again proceed sometime during 1896, and after the general business has got a little headway, building will also commence to boom, and architects, contractors and building employes will again have all they can attend to. THE CALIFORNIA ARCHITECT AND BUILDING NEWS intends to be ready for such and will improve as the boom proceeds. We shall commence at once and with this number we issue four sheets of half-tones with other additional cuts and we intend with proper encouragement to increase the usefulness of our matter and the number of our plates.

We wish the profession generally, from British Columbia to California and from the Pacific to Utah, a prosperous year and more especially those who have stood by the only Architectural periodical of its class upon the Pacific slope and which hopes yet to have many a year of prosperity.

MR. H. T. Bestor's death, one time Editor of this paper, took place on the third of this month. He was sixty-one years old and one of the Pioneer Architects of San Francisco. In his later years he devoted himself a great deal to scientific research and belonged to several learned societies including the Chapter of Architects of which he was an active member. He was always willing to impart from his store of knowledge to the students, and they will miss him for he took a great interest in their classes and in their advancement.

IN A. Page Brown, whose death took place on the twentieth of this month, the profession has lost a brilliant member. The terrible injuries he received in the unfortunate accident that happened to him near Burlingham when driving a fast team, he never recovered from. During the short time of his activity in California, he was Architect for quite a large number of the principal new buildings of San

Francisco including the Crocker Building, the Ferry Depot Building, Donohoe Building, and the Manufacturers and Liberal Arts Building of the Midwinter Fair, besides a number of residences.

SUCH agitation as is now being made against the conditions of competition for the buildings for the Affiliated Colleges of the University of California, serves a useful purpose and will draw attention to the abnormal and absurd laws now on the Statute Book concerning the obtaining of plans for State work. They are better observed in the breach than in the keeping thereof, and so thought the Regents of the University for so far, in getting plans for their buildings, they have ignored these laws entirely and appointed their architects without regard thereto; until this last competition when the facts of such a Law was brought to their attention by the legal advisors of the State. Now that the impracticability and absurdity of the Law which was either drawn up by someone totally ignorant of the Status of an architect, or to fit some particular job at that time on the tapis so as to prevent all self-respecting and capable architects from competing, has been made apparent, let the Chapter of Architects and outside architects at once get together and see that such a disgraceful and unworkable law and one so derogatory to themselves is repealed at the first opportunity, and let them devise a better and proper one and get it past by the next Legislature.

In our next number we intend to go into this matter thoroughly and meanwhile invite any suggestions as to the proper kind of a bill to prepare.

THE Artistic public familiar with the grounds and buildings of the State University at Berkeley has long felt the inadequate treatment of these, as so far made, and often longed for some one in authority to take hold of the subject in a proper and broad spirit.

It seems at last we have such a one in Regent Reinstein, lately appointed to that office, who has taken hold of the subject in an energetic, broad and liberal way which is sure to lead to a successful issue. As an instance so as to get the best opinions on the best method of obtaining a complete scheme for said grounds and buildings he sends to all the prominent Architects and Presidents of Universities of America, a series of questions bearing upon the matter—from most of these he has received very painstaking replies.

By the courtesy of the Regent we have had an opportunity of looking over most of their replies and find therein an amount of interesting matter, not only worthy of consideration in this particular case but of general applicability to the architectural world.

We will record here the questions, a digest of the replies and lastly the lessons to be obtained from them.

First question was—

"The desirability and importance of beautiful grounds and surroundings, and buildings which will be both useful and convenient, and at the same time architecturally beautiful and arranged according to some general plan?"

It is a sad commentary on the State of Art Education among the people that such a question should have been necessary—but the present condition of many public grounds and buildings, point vividly to the necessity of impressing the desirability of such things upon those having charge.

It goes without saying that the replies are all thoroughly in favor of such a course—and we cannot refrain from quoting Regent Reinstein's own words in regard to the subject.

"Mr. Maybeck, instructor in architectural drawing has suggested the wisdom of at once setting aside a sum sufficient to obtain the services of the best landscape gardene and the greatest architect obtainable, who shall, within the coming year, and prior to the next session of the Legislature, lay out the permanent plan of the grounds and a general scheme of the buildings contemplated for all time, so that such grounds shall be as nearly ideally beautiful as may be, and that the buildings shall be convenient for use, architecturally fine in themselves and parts of a grand harmonious scheme which shall contemplate upon this, the noblest site on the earth, the most glorious architectural pile in history.

"Not built for a year nor for a hundred years, but for all time; not to rise, like Aladdin's palace, in a night, but during the slow centuries the University is destined to last. Believing as we all do in the great future of our State and her University, we hope it will not be necessary to have the authority of the presidents of the great universities and the best architects of the land to convince the people of the State of California of the wisdom of now laying out the plans of this already great University on a scale commensurate with the power, the pride and the dignity of a great and glorious state, and befitting the noblest and best purposes of a state. Let us build not rapidly, not lavishly, but slowly, yet grandly, that there may greet the commerce which shall whiten the Golden Gate and the civilization which shall grace this western shore an architectural pile of stately and glorious buildings, which shall rival the dreams of the builders of the Columbian Exposition, which shall do honor and justice to a superb Republic, and to its most favored State, and which, even in their ruins, shall strike the beholder with wonder and rapture."

The second item called for—

"Examples and experience, advantages and disadvantages of Competitive Plans in other structures of which you know?"

The replies to this range from the total condemnation of Competition by Mr. Sullivan to the modified approval thereof in certain cases.

However all condemn generally the idea of a competition and claim that better results are obtained by the appointment of some architect and landscape architect who has already shown his ability by practical work.

Mr. Sullivan of Chicago equals the most rabid socialist in his hatred of Competition—he puts his side of the case in strenuous language—towit:

"I regard the Competition idea as wholly fatuous and chimerical, I regard the assumption that you, I or anyone else can draw intelligent and just conclusions from a set of sketches submitted in Competition to be as false as it is specious and tempting. What you really want in an Architect-Artist is his individual power in grasp, imagination and expression: in other words his matured personality: and this is too complex, too subtile, too intangible a quantity to be discerned in anything but executed work: in a real performance.

"I know all that can be said in favor of the Competition idea: I have heard the arguments *ad nauseum:* each time they grow more revolting and grotesque in the semblage of truth

and each time they caricature still further an art too noble and serious to be thus degraded . . . Competitions I hold in contempt so great that I do not even wish to make an extended argument against them."

The consensus of experience among the other architects go to show that very few buildings whose architects were obtained by Competition have been successful. We might add also that no better results have been obtained where there has been no Competition and the choice of architect has been left to a public body when such choice has been made without professional guidance. It all depends upon this latter factor in either case, and this is the unanimous gist of the replies.

A great deal of prejudice against competition is due to those cases, of so called competition, which form the majority, where the architect has been first chosen by the public body and a form of Competition gone through afterwards simply to satisfy a Law or the clamors of outsiders.

THE DISADVANTAGES OF COMPETITION ARE STATED AS FOLLOWS:

First—"It would not be assured that the best man competed."—VAUX.

Second—"That at the time the first drawings are made neither the proprietors nor the architects have given the subject sufficient study to know what is advisable, and a competitive drawing is got up hurriedly, in a manner to catch the eye of the judges. The drawing is often used with the result of a very poor solution of the problem being worked out."—HENRY IVES COBB.

Third—"In choosing an Architect without Competition you can take into consideration the work which an Architect has done, his ability in construction and carrying out works, and his general character, and these questions cannot be so well considered in a Competition."—SHEPLEY, RUTAN & COOLIDGE.

THE ADVANTAGES OF COMPETITION ARE STATED AS FOLLOWS:

First—"They are certainly undeniable, if the Competition can be properly ordered."—VAN BRUNT & HOWE.

Second—"We believe that the best results will be obtained by inviting a certain number of architects of well-established ability and reputation to submit drawings and paying to them a fixed sum for their drawings; then allowing all other architects not so invited to compete if they so desire, and to provide for the latter a certain number of prizes for an inducement. In this way you will secure *all the advantages of a general competition* open to every one, and you will also have the assurance that the six or more men from whom you would wish to receive drawings in any event, will also furnish you with their ideas."—CARRÈRE & HASTINGS.

Third—"The most obvious advantage of a Competition is the opportunity thereby afforded to select and compare among a series of designs. Competitions are at best a cumbrous, costly and unscientific, though sometimes an unavoidable method of selecting an architect."—VAN BRUNT & HOWE, KANSAS.

From the above quotations and from the body of the letters it can be gathered that the general trend of opinions of the correspondents is that in many cases the choice of an architect without Competition is the most advisable, that is if the choice is made by the help of professional assistance. Although many of the writers admit that under *a properly conducted* Competition the most advantages can be obtained to the employer. It will be noticed that all the valid objections made against Competitions are not made so much against Competitions *per se*, but against *improper* Competitions, *e. g*:—Number One and Three disadvantages are answered by number Two advantage whereby the best man can be got to compete by paying him a proper remuneration.

Number Two disadvantage can be overcome by the adoption of the double Competition advocated by the editors of the *American Architect*, "that is to say, instead of holding one competition, it might be advisable to hold two, in which only those who have made the best showing in the first Competition should be invited to take part in the second one, and the actual employment of the winner in the second Competition should be positively assured."

So we see it all depends upon whether the Competition is conducted rightly or not.

The uncertainty of the professional minds on this subject simply indicates to us that we are now in a transitional period—the transition from Competition to Co-operation or Socialism. As we see the trade and manufactures of the world being fast aggregated into the hands of a few large firms—so in the profession of architecture—a few leading firms obtain the cream of the work—preparatory to having all enterprises placed into the hands of the people at large.

But as long as we are still in the Competitive stage—let us use it to our advantage and give talent a chance to be used where otherwise it would be lost; this can only be obtained by Competition in our present position, as this is the only way a man of talent and of no means or influence can hope to make himself known and appreciated.

The Third and Fourth questions as to the proper proportion of premiums to the moneys to the expended and as to the number and character of the premiums—is answered as follows by one correspondent:

Premiums to run from one-half to one and one-half per cent of the cost of the works according to magnitude, which agrees with the usual course, *i. e.*, to spend for premiums one per cent—the amount charged by architects for preliminary sketches.

In this particular case of Plans for a general scheme for University Grounds and Buildings—wherein $10,000 is proposed to be spent—it is suggested by one that each of the invited Competitors, say six, receive $1000 each—awarding two $1000 and two $500 prizes to outsiders and $1000 for expenses of Competition, expert fees, etc., which seems about the general idea.

In reply to the question "Whether the Competition should include foreign countries as well as the United States?" we agree with Lindley Johnson when he says "by all means let the world compete."

Learning is cosmopolitan, and the seats of learning should be the same. The lines between foreign and unforeign are being broken down fast in Architecture and are already broken down in Science. Let us not try to put up the fence again. Quite a few of the correspondents however advocate restricting the Competition to the United States—although they seem to us to give no adequate reason therefore.

The last question as to the data necessary to give Competitors a proper idea of the needs, in this particular case, is not of general interest so we will not enter into that matter.

We have attempted here to give a digest of the opinions on the above subjects, all but the subject of the proper conduction of a Competition, which is too wide a field to enter upon at this time—but to which we will draw attention again soon.

LETTERING.

ALTHOUGH in these days of typewriting and shorthand, Caligraphy has not the importance that it had some few years back and still less than it had before the advent of printing, it still forms an important adjunct to the artistic appearance of a plan. If badly done, it detracts much from a well executed drawing; if well done it makes a badly executed drawing pass, when otherwise it would be totally condemned.

It goes without saying, however, that no matter how careful a draftsman may be in making an artistic looking title, if he is without the idea of proportion and relative spaces he cannot make a complete success. It requires the artist to do this and he may not scientifically know that a curved letter of the same height as a straight lined letter looks smaller than it in consequence of some law of optics, but he knows it is so, and consequently makes his O taller than his E. So with spacing, he places his letters intuitively apart so that the space between all the letters shall be equal. Although this be so he does this with better grace after he has been through the drudgery of spacing by rule in his student days then he is sure of his ground because he goes to work intelligently.

Prof. Jacoby in his book on Lettering, reviewed in this number gives rules in regard to spacing and relative size of letters which seem to lead to a result as good as can be obtained by using rules—but the fact is that there are so many conditions entering into the relations of letters and their juxtaposition that it is impossible to limit them to any hard and fast Rule, and a good deal must be left to the natural sense of proportion of the draftsman. The modern use of typewriting wherein each letter occupies the same space should it be an M or an I spoils that nice sense of proportion to the modern, and an ordinary person gets his senses by this so warped that in despair, he flies to some rough and uncouth letters to cover his lack in this respect.

However we will not be far into the next century when we shall find the present system of longhand caligraphy almost totally abandoned and some system of shorthand substituted therefor, when it will be a problem for the next generation of draftsmen to make this stenography artistic and lovely looking. It do doubt can be done and the doing away with the fearful waste of time and labor now indicated by the use of longhand will be more than a complete recompense for any loss of æsthetic appearance.

By the begining of the twentieth century an agreement should be made between all nations as to the adoption of an universal shorthand Phonetic Alphabet, and immediately means taken for the gradual substitution of the old longhand by the new shorthand. The enormous economy in printers ink, paper, pens, etc., makes this an object worth working for by all those who are able to read and write.

Then will come the time when the poet may dash his thoughts down on paper before they can get cold, as the musician now jots down his notes. The bright thoughts will be as common as gold in Cripple Creek, and the litterateur and journalist may give up his midnight oil and get in all he wants by sunlight.

W. J. CUTHBERTSON.

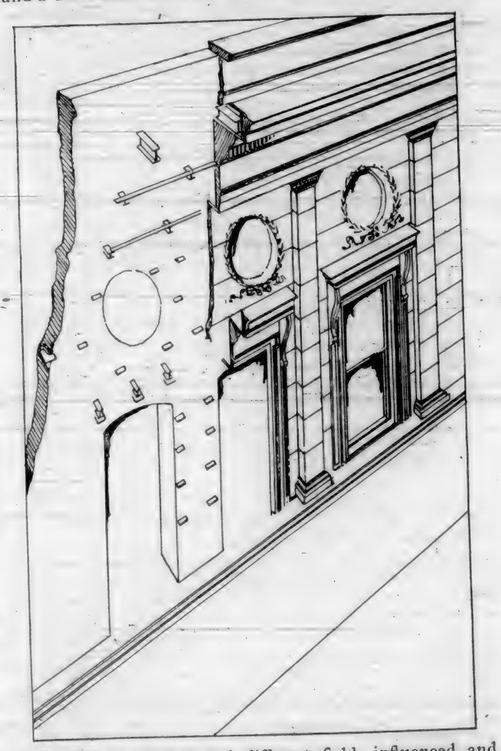
Subscribe for THE CALIFORNIA ARCHITECT AND BUILDING NEWS for the year '96.

PAPER READ BY JOHN COTTER PELTON BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THIS paper is not prepared for the purpose of calling your attention to any particular form of released ashlar construction, but to the subject of released ashlar construction in its broad application to modern structures.

I feel that it is a subject in touch with modern thought and in line with modern constructional progress. I think that in our progress toward the attainment, with a minimum of material, of a superior result in effect that this form of construction may play some part.

I would not pull down the monumental memories of Greece and Rome, but may ask of you, shall we ever again build a Parthenon or a Colosseum. Are not our investigations now in another and different field, influenced and governed by totally different exigencies and sentiments.



The architectural world of 1895 is not the world before Christ, nor is the world of to-day, the world of to-morrow.

The day does not close, but sees at some fellow-craftsman's hands the improvement of a theory or the development of a better one.

I feel the sentiment in each subtle line of Grecian grace, the fragments of the Acropolis hill, tell me of the men who brought their work to such perfection, and they tell me of the spirit which was THERE influence, under which they lived and strove, but it was not the spirit which moves us of to-day.

I will confess to a profound awe in the study of the Parthenon or the Colosseum, as structures, but still I do not think while engaged in that study that any of us look forward to a commisson to build a Parthenon or a Colosseum.

The pyramids are inspiring. That simple, blind purpose, the piling np of stone upon stone, so herculean an accomplishment, as to try the patience in the development of a tenable theory of construction, work costing years of time, and the lives of thousands of human beings, and to obtain a receiving vault of limited size for the security of the remains of a King or his treasure, and I cannot doubt that from a point of security the Greeks would choose, to-day a modern safe deposite vault in preference to any of their temples.

But it quite idle to make these comparisons; let us ask each other, not are we rebuilding pyramids, or Parthenons, but are we building to-day, even as our masters built? Are we building just as we were ourselves building, only a few years ago?

I hardly believe that any of us would confess that ours is the only craft, not in the procession, which moves slowly but surely as the star of the empire, with that profound sentiment, that unconquorable purpose, *the improvement of the condition of man*. But rather may we not claim that through all ages, in architectural development will be found a certain and positive index of the condition of religions, social and commercial life.

The impellant idea which I have had in mind in the perfection of a method of safe construction of a thin ashlar facing for a structural wall, is the minimum use of the more *costly and beautiful materials, stone and marble*, an idea, originating possibly in the pryamids, and developing in the Latin countries early in the Christian Era. I have hardly had time or opportunity to trace the earlier applications of the idea. We need, I think, go no further back than the pyramids of Cheops, where, we may find the most positive and elaborate evidence, in heavy ashlar of black granite on the exterior, and of more rare and beautiful colored granites and porphyry in the interior passages, nor is it necessary to take up time in such an effort. We know that in the old world it is seen on every hand in many forms and degrees of thickness, frequently in the form of a mere veneering of inch marble.

St. Marcs in Venice, from sill to spires, is of rare and beautiful marbles, and I am sure no question will be raised of its permanency, although the application or method of attachment was most simple, done only by wiring and cementing, but rather I feel a question would have been raised by this economical race of people against the burying in walls of unnecessary thickness of costly stone.

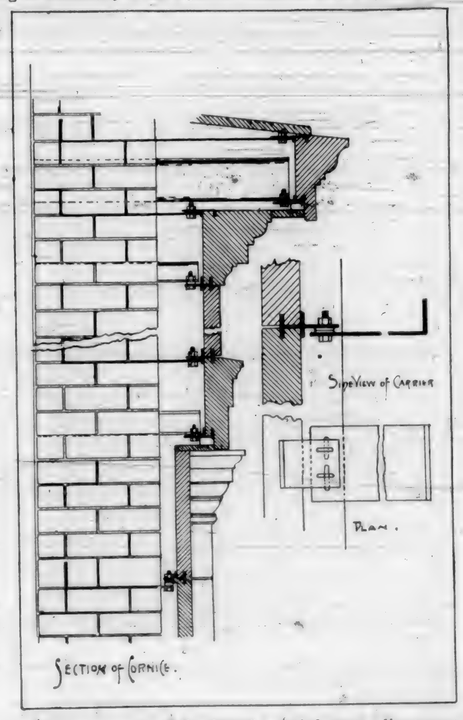
All along the Grand Canal in Venice, we find veneer construction from one to three inches in thickness of marble and sandstone in palaces, dating back as far as the Eight century.

The Milan Cathedral may be mentioned as a notable example of marble veneering. In parts of the bu lding, marble was used in heavy structural form, while later, from economical reasons, veneer construction on brick walls, was substituted, and the building so completed, and this, where marble is cheaper than in any part of the world.

Passing now the economical use of costly or choice material, I will attempt the substantiation of my conviction of the superiority of the released ashlar form of construction. To make this clearer, let us separate the necessary elements of a wall—strength, rigidity, fire resistance and architectural character.

Assuming the wall to be of proper construction being without connection structurally with the ashlar facing—it seems clear that it may be demonstrated to be more perfect than a wall of composite character, say than a wall of bonded brick and stone masonry. This means, of course, where there is limitation of cost and of occupied space.

I trust I shall not be severely criticized when I claim that a wall of given dimensions, carried to a considerable height, is a more reliable an certain construction if of solid brickwork of good character, than if of bonded brickwork and stone, by reason of the wide variation of the crushing resistance of brick and stone, and of brick and stone bonded together; and, also by reason of unevenness in settlement due to the greater number of mortar joints in the brickwork than in the stonework. The crushing resistance of brickwork, we may take at from 300 to 1000 lbs. per square inch; that of the ordinary sandstones of this coast varying according to authority from 1500 to 10,000 lbs. per square inch.



I submit to you the difficulty of a satisfactory adjustment of this variation of strength in a wall which is built as a unit, and I submit that if the adjustment is not perfect, that there can be no integrity in the wall.

I will not limit the comparison of the strength of a mixed brick and stone structure to the crushing resistance, but will risk criticism again in claiming a great degree of strength and permanence from any point of calculation for a wall of uniform material.

The California Hotel and Theater Building is an illustration to which I will refer, with some difference however, as I realize that to account for this error in construction, there must be several views and differing versions, but from no standpoint can the failure be made pardonable. There is

error in calculation, error in choice of material, error in adjustment of incumbent weight, or error in workmanship by stone cutter or by setter, and although I do not suggest the shirking of either question when circumstances demand such a structure, I do, without hesitation call your attention to the much more simple solution of each and every one of these features in the use of a wall of uniform material, *i. e.* brickwork and a released facing.

In question of rigidity in emergency, such as vibration caused by heavy traffic, or the more severe strain imposed by the shock of an earthquake, I believe that investigation will again reveal the superiority of this construction.

The settlement of a wall of brick or of masonry is one of the vital, if not most vital considerations of such work. This natural settlement or contraction has been estimated in average work to be sometimes as much as ¾ of an inch in ten feet in height, and every engineer, architect, superintendant of construction and builder, knows the care to be exercised in the construction of the parts of the work contingent upon such settlement, while the work is in progress. It does not require the consideration of a very high building to find this settlement to be of much moment. This settlement, if established that it exists, must be provided for somewhere or somehow. It cannot be ignored; if it exists, it must be traced in its effects or failure in some part of the structure is certain. If this be applied to a brick wall of even and defined strength, it is in itself serious; if applied to a wall of two different materials of differing strengths, it becomes worthy of most careful consideration. It must be admitted that the releasement of the facing absolutely solves this problem. The walls are carried to their full heights, almost the entire weight of the building is imposed, and the settlement or contraction has taken place before the ashlar is set.

The question of the prevention of dampness in walls of buildings of brick, or of brick and masonry has received your attention too often to require hardly a mention. I will confess to surprise but recently—in reading of the use of hollow bricks in the walls of the Parthenon, built 430 years before Christ. The reflection, therefore, that allowing the absorption of a common brick to be one pint of water that the walls of the Mills Building, in this City, might if exposed on all sides through their whole length might absorb no less than 420,000 gallons of water or 1680 tons, emboldens me to claim the overcoming of this fault of an ordinary wall as a third feature of advantage Sandstone of the average density is hardly less absorbant than brick.

I will ask here, if the exact computation of the parts and functions of the parts of a modern structure, this additional weight should be ignored? I fear it often is. We are all familiar with a number of expedients, of forms of construction, devices is wall anchors, etc., aimed at the releasement of the outer four inch facing of a brick wall, and for the purpose only of protecting the inner or structural wall from the accumulation or absorption of dampness, and I believe that within a few years, that this form of construction has been recognized as the most successful, in fact the only form certain of the accomplishment of the purpose.

By the provision of an air space, I cannot but feel convinced that much will be accomplished in the equalization of the temperatures, not only in the avoidance of the dangerous dampness, but a building so constructed cannot be so rapidly affected by the changes of temperature in the outside air. I submit that if this can be admitted, it is a consideration of importance in climates demanding the heating of buildings at great expense.

In the question of fire resisting qualities, I think I can again demonstrate superiority through the space of air between the structural wall and the ashlar facing, and suggest that until the outer facing has been destroyed and fallen off, the wall itself remains cool, and unaffected by the heat. With reference to the facing as a protection against fire, certainly much depends upon the selection of a material of superior fire resisting quality.

I may suggest in the event of a partial destruction by fire of a building so constructed, the possibility of making repairs without the total demolition of the wall, and here I will pass the reviews of the practical structional functions and will conclude with a few words on the resultant features of rapidity of construction and economy of proper area.

No general estimates can be made of either of these features—the amount of time which may be saved or of the saving of space occupied by walls—this will require special comparison. That such construction may be rapidly prosecuted is evident, the walls being carried to their full height without interruption, without being subject to delay in the preparation of the material for the facade, in which, whether of brick and terra cotta, or brick and stone, may usually be found the cause of delay, consequent upon its more elaborate character and the slower process of ordinary construction, the building being under roof and inclosed, the prosecution of the work of the interior is made entirely independent, and may be begun at a much earlier period.

Continued in February number.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

HARRISON School, Oakland, Cal., W. J. Cuthbertson, Architect. Plans in March No. of '93.

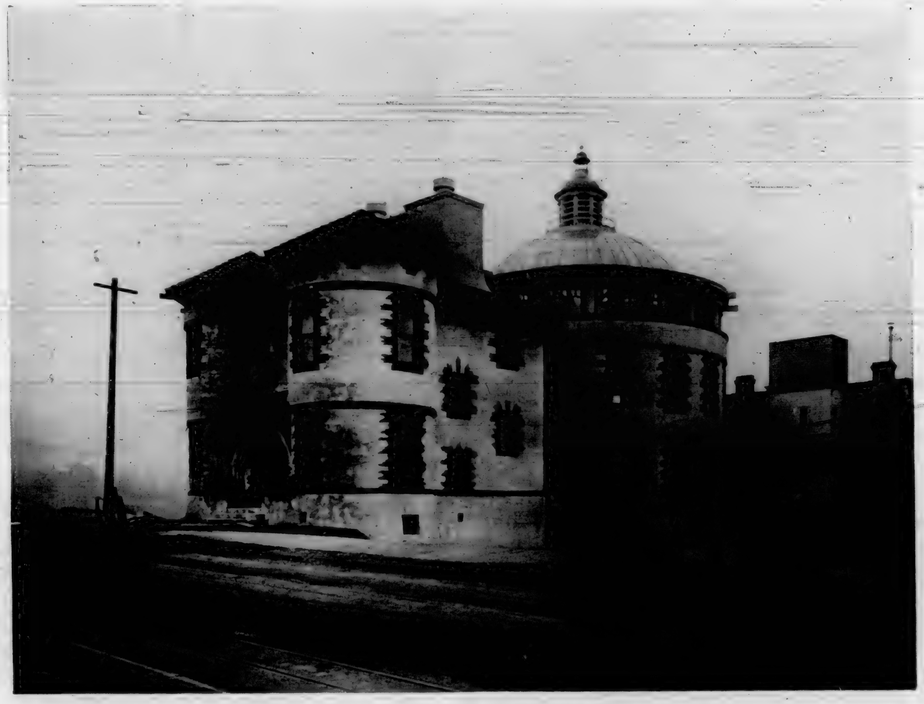
"LITTLE JIM" Ward of Children's Hospital, A. C. Schweinfurth, Architect.

RESIDENCE of Edward Coleman, Esq., W. H. Lillie, Architect.

STOCKTON Library Building, J. C. Pelton, Architect.

RESIDENCE OF EDWARD COLEMAN, ESQ.
W. H. LILLIE, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.
VOL. XVII. No. 1. JANUARY 1896.



"LITTLE JIM" WARD OF CHILDREN'S HOSPITAL.
A. C. SCHWEINFURTH, ARCHITECT.

HARRISON SCHOOL, OAKLAND, CAL.
W. J. CUTHBERTSON, ARCHITECT.

FREE PUBLIC LIBRARY, STOCKTON, CAL.
J. C. PELTON, ARCHITECT.

CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

VOL. XVII. No. 1. JANUARY 1896.

ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the past year, as shown by the contracts filed at the City Hall.

FOR FIRST SIX MONTHS.—1895.

1895	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Addit'ns Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry	2	3	$ 50,025	31	33	$ 148,880	4	4	$ 20,847	37	40	$ 219,752
Feb'ry	7	9	59,336	38	42	122,880	6	6	12,071	51	57	194,287
March	6	9	170,489	76	81	208,081	8	11	17,418	90	101	395,988
April	7	9	105,333	57	09	274,080	24	24	87,411	88	102	466,824
May	3	7	86,043	85	90	393,037	19	19	33,973	107	116	463,053
June	2	5	74,775	67	85	288,791	11	11	21,612	80	101	385,178
Total	27	42	$ 496,001	354	400	$1,435,749	72	75	$193,332	453	517	$2,125,082

FOR SECOND SIX MONTHS.—1895.

1895	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value
July	11	17	$ 151,362	84	90	$ 287,947	15	17	$ 162,263	110	124	$ 601,572
Aug	5	10	153,717	100	111	476,898	13	13	49,244	118	134	679,859
Sept	5	10	31,633	59	72	290,453	8	8	33,012	72	90	355,078
Oct	9	15	40,000	48	56	254,290	26	26	98,811	63	97	393,161
Nov	12	14	98,156	25	36	101,520	9	10	28,138	46	60	277,814
Dec	15	17	163,218	37	39	135,428	8	8	16,165	60	64	286,086
Total	57	83	$ 638,176	343	404	$1,546,486	79	82	$387,633	469	569	$2,574,150
G'd Total	84	125	$1,134,177	697	804	$ 2,982,232	151	157	$ 580,965	922	1086	$ 4,699,235

To this amount should be added the further estimated sum of $500,000 where costs have not been given, which would make the total $5,199,235.

We give the total values and numbers from 1880 so that our readers may make a comparison:

1880—	397	engagements, value	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—	1,127	" "	6,202,807
1885—	1,457	" "	7,043,999
1886—	1,148	" "	6,401,669
1887—	1,093	" "	6,605,054
1888—	891	" "	6,244,220
1889—	1,081	" "	7,500,000
1890—	1,037	" "	7,095,013
1891—	1,162	" "	6,946,056
1892—	920	" "	5,856,341
1893—	905	" "	3,962,532
1894—	947	" "	4,529,839
1895—	1,086	" "	5,199,235

COMPETITION.

ANNUAL COMPETITION FOR THE GOLD AND SILVER MEDALS OF THE ARCHITECTURAL LEAGUE IN CONNECTION WITH THE ANNUAL EXHIBITION OF THE ARCHITECTURAL LEAGUE OF NEW YORK.

CONDITIONS FIRST:—The Competitors must be residents of the United States, and under the age of twenty-five.

SECOND:—The drawings shall be made in conformity with the following programme, and entirely by the hands of the Competitor.

The awards will be made by the Committee on Competition and Awards acting as a Jury, and their decision will be rendered on or before February 13, 1896.

The competitive drawings will be hung at the Exhibition, the first and second prize drawings being so indicated, and these latter shall become the property of the League.

PROGRAMME—THE PRINCIPAL ENTRANCE OF A TERMINAL RAILROAD STATION.

The station is located at the junction of three main streets of a city of first importance, in a "rond point," the principal entrance facing one of them, and the station property being bordered by the continuation of the other two.

The line of the building is set well back from the street, giving ample space for driveways arranged so as to accentuate the entrance, steps, etc., for travelers arriving on foot. The main floor of vestibule must be located at about grade level. The length of front over all, as shown on diagram, is 200 feet. The cost is left to the discretion of the designer.

Only the entrance with preceding driveways, ramps, etc., with indication of main vestibule, shall be shown on plan and elevation.

The drawings will be placed on two sheets 26" by 39"; one sheet containing a section and elevation at ⅛" scale and plan at 1-16" the other a ¾" scale detail, with cast and rendered shadows.

All drawings are to be delivered flat, under a non-de-plume, on or before February 6, 1896, at the League Rooms; charges prepaid.

COMMITTEE: JOHN GALEN HOWARD, ALBERT L. BROCKWAY, THOMAS HASTINGS, Chairman.

NOTES AND COMMENTS

THE GUILD OF ARTS AND CRAFTS.—The interesting exhibition of Books and Printing under the auspices of the Guild of Arts and Crafts is open to the public at 424 Pine street.

OAKLAND'S EXPOSITION.—Oakland has just closed one of the most successful Expositions on record. Gotten up only in three weeks it was engineered by good business men and was not only successful in a pecuniary sense but was in the way of exhibits an exhibition of the enterprise and capacity of Oakland and its environs which surprised all that had the privilege of seeing it. It was successful in every way and has given such a stimulus to Oakland and its business interests that its managers have decided to make a permanent affair of it and will soon get to work to make a permanent building for all such occasions as have just past.

The directors of the concern were:—M. J. W. Nelson, M. J. Keller, Geo. Roeth, Theo. Gier, Fred Becker, Ely Buswell, F. W. Spiars and Wm. Rutherford; Craigie Sharp, Superintendent.

STUDENTS NOTICES.—Mathematical class of Mechanics' Institute, 31 Post street, San Francisco. Sessions: Tuesday and Friday evenings, 7:30–9:30 P. M. New term begins January 6 and ends June 27, 1896. Studies: Algebra, Geometry, Trigonometry. 2 The applicationof Mathematical principles and rules to the solution of problems in mechanics, electricity and advanced commercial calculations.

Any student is permitted to make such selections from the above list of studies as he may consider profitable and useful for himself. Students desiring it, will be given an opportunity to review and extend their knowledge of arithmetic and to learn how to apply its rules to practical examples in mensuration of plane and solid geometry.

For further information apply to the Instructor in charge of the class.

BOOKS AND PERIODICALS.

A text book of PLAIN LETTERING by Henry S. Jacoby Ass. Prof. of C. E. in Cornell University.

This book will be found quite a help to draftsmen. It goes thoroughly into the methods of artistic and scientific letter making—and is not cumbered with the large amount of so-called ornamental lettering which compose the major portion of old fashioned works on this subject. It is welcome if only for the indication it gives of the adoption by the modern draftsman of plain readable letters instead of the almost undecipherable lettering which used to abound on Architectural Drawings.

The BROCHURE Series of Architectural Illustrations—published monthly by Bates & Guild—has every month a very useful and excellent series of half tones of Architectural Subjects of use to the architect and draftsman.

LIPPINCOTT'S for January among other good things has an article on "Architecture in America: a Forecast" by John Stewardson, the first of a series of papers on a subject which now holds a prominent place in public interest—and so far seems well and justly handled by the author.

The following critism on the present rage for tall buildings seems *a propos*:

If we look at the business buildings of Europe and America we find a difference just as striking as in private houses. In England the buildings are not very high, and are cut up into a multitude of small parts following the same styles that are used in country houses. There is little breadth of treatment, little grasping of what is known as the *grand parti*. On the Continent we find the style of the period used for business buildings as well as for everything else. The treatment is broad but monotonous. The buildings are generally studied as a whole, well planned and well proportioned. There interest ceases, the detail being, as a rule, crude and unfeeling, in this respect materially different from that across the Channel. As for business buildings in this country, all the world knows what they are. There is very little good architecture about them, but a great deal of good engineering. Just now it is very much the fashion to praise the huge steel cages with their walls carried on the beams from floor to floor and the weight concentrated into a few vertical shafts, and they are unquestionably admirably adapted to their purpose, but, with very few exceptions, they are not architecture. There is not much more architecture in building a tiresomely long row of offices or apartments, all of exactly the same height and all devoid of any kind of treatment, one above the other, then there is in placing them side by side like any row of brick buildings. Indeed, the architects of some office buildings are men who have never given thought to the principles of proportion, though of course it would be most unjust to the architects of the greater number not to acknowledge the ingenuity and skill with which they have grappled with an entirely new problem; while as for the structural iron-work, it is often as good as can be imagined. From an architectural point of view the greatest drawback to these disproportionate structures—and it is a very serious one indeed—is the fact that they dwarf public buildings, churches, and everything of a monumental character around them, utterly destroying restfulness and scale and marring the general appearance of a city beyond repair. * *

The phenomenal amount of youngmen now turning their attention to architecture as a means of livelihood is remarkable and is alluded to in the following extract. The author however gives no indication as to what shall be done with these students when they become full blown architects:

"Lawyers and doctors tell us there are so many law and medical students that the professions will be scandalously overcrowded in the next few years. Painters deplore the swarms of ambitious young men in the studios, and assure us there will be no room for them in the future. As for writers, they lament about the overstocked condition of the literary market until one is quite tired of hearing about it.

It is therefore with some trepidation that I make the easily substantiated statement that the increase in the number of students in these callings is small compared with their increase in that of architecture. About fifteen years ago, for instance, there were sometimes half a dozen Americans studying in Paris, sometimes one. For the last five years there have been from forty to sixty, while Americans have been frequenting, besides, the schools of Berlin, Vienna, Florence and Rome. To take an example nearer home, six years ago the long-established School of Architecture of the University of Pennsylvania contained two students: this year there are over a hundred; and so it goes, from the Atlantic to the Pacific. Moreover, this increase in numbers does not include the men who are getting their training in offices without going to the technical school at all. * * * *

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

ESTOPPEL TO DENY VALIDITY OF BOND.—Where a bond given to discharge a mechanic's lien is treated as valid by all the parties, and the lien is discharged, a surety cannot, in an action on the bond, deny its validity.

Moller v. Youmans, Common Pleas of New York City and County, General Term. 34 N. Y. S. Rep. 140.

VENUE IN MECHANIC'S LIEN CASES.—Under Pub. St. c. 191 sec. 11, providing that a mechanic's lien may be enforced in a district court, the petition must be to the court within whose jurisdiction the land lies, irrespective of the residence of the parties; and the only effect thereon of St. 1893, c. 396, revising and consolidating the laws relating to district and police courts, was to increase the amount within which the latter courts have jurisdiction.

Boyle v. Gould, Supreme Judicial Court of Mass. 41 N. E. Rep. 114.

MECHANIC'S LIEN—ENFORCEMENT.—Under the statute, giving a mechanic's lien upon the building to workmen, which they had had helped to erect, "and upon the interest of the owner in the lot of land upon which the same is situated," a lien cannot, at the option of the holder, be established on a part only of the whole lot.

Whalen v. Collins, Supreme Judicial Court of Mass., 41 N. E. Rep. 124.

WHAT CONSTITUTES SAFE PLACE FOR SERVANT TO WORK.—A heavy piece of flooring, standing on edge near the place where men were working, was supported as could be plainly seen, by other pieces. The contractor placed a sufficient number of competent men at work moving the flooring and puting it in place. They removed the supporting piece first, and the other piece fell on and killed one of the men. The contractor was not chargeable with negligence in not providing a safe place for him to work.

Smith v. Empire Transp. Co., Supreme Court of N. Y., 35 N. Y. Supp. 534.

CONTRACTS IN RESTRAINT OF TRADE.—An agreement by the members of a national association of master plumbers to withdraw their patronage from any dealer selling supplies to others than master plumbers is not unlawful, even though "master plumbers" be construed to mean members of such association.

Macauley v. Tierny, Supreme Court of R. I., 133 At. Rep. 1.

SIXTH WARD SCHOOL, OAKLAND.

THIS School House lately completed is situated at the corner of Fourth and Harrison streets, Oakland. It is a four room school with ten foot basement, of brick and stone. The basement contains play rooms for the children in wet weather, water closets and the heating furnaces. Exclusive of the four class rooms, the building contains a principal's room, store room, lunch room and kitchen.

The Architect was W. J. Cuthbertson, the superintendent W. Hopkirk and the whole was under the charge of the Oakland Board of Public Works consisting of Mayor Davie, City Attorney Piersol and City Engineer Wilson, and carried out to the satisfaction of the school board, Mr. Ford the School Director for the ward in which the building is situated, giving the matter a good deal of personal attention. The total cost of the building was $35,000.

The Brick work was carried out by the well known and old established firm of Remillard Brick Co., of Clay and Second streets, Oakland. The fronts were faced with their stock brick which, when pointed up with red cement and cleaned down, makes a brick front which leaves nothing to be desired.

The Carpenter work was done substantially, conscientiously and carefully by R. Weeks & Son who have made a good reputation for themselves since they have settled in Oakland; they have been particularly successful in school house work, having only a short time ago completed the Redwood City High School. Besides their work in Oakland, Alameda and Berkeley they can also point with pride to the following work done by them in other parts of the Continent—Garfield University at Wichita, Kansas, costing $270,000; Clements' Block in the same town and several large residences. Mr. Weeks is a man thoroughly experienced in his business and thoroughly reliable. The firm has lately opened a shop in the Turn Verein Building on Webster street near Seventh, Oakland.

The inside finish of the building is of white cedar and was put up by the above in a manner worthy of the way in which it was worked by Burnham, Standeford & Co., the old established firm of millmen, running the Pioneer Oakland Planing Mills, situated on First, Second and Washington streets, Oakland. The finish was thoroughly seasoned in their Patent Lumber Dryer—which is built on the latest improved method. The heat is introduced by pipes under the open floor, the hot air is circulated and regulated by an arrangement of flues and dampers—the moisture as it is driven out of the lumber is condensed on brass plates which form the outside enclosure of the dry houses. The drops of water descend and are caught in a gutter and carried to outside of building. In seven days the stock is thoroughly dry and by this system of drying the sap is solidified so that no shrinking nor swelling is possible and is the only process that successfully kiln drys redwood without checking, crystallizing or case harding. The capacity of the dry house is 15,000 feet and it cost $1500 to put up. It has now been in use nine months and it is found to work most successfully both for hard and soft wood.

Over the kiln is placed the veneering room, kept at a proper temperature where all the gluing and veneering is done. It is fitted up with presses for gluing veneer and everything complete, so that this firm is able without dispute to get out work equal to any of the Eastern houses both in dryness and finish.

The Lumber was supplied by the Puget Sound Lumber Company whose extensive yards and wharf are situated at the foot of Washington street, Oakland, where there can always be found a large assortment of well seasoned lumber such as went into the School House.

The stone work, of which there is quite an amount in the shape of cornices, copings, columns and arches, trimmings and quoins was executed by James Rea. All but the columns is finished in "rock face" and all is carried out in such a manner that any laudation seems superogatory. The Romanesque ornament of the freezes of the cornices, the capitals and other carved work are executed in the best manner of that art, and leave very little to be desired. Mr. Rea also carried out the stone work of the Oakland Gas Company's Office Building and the Native Son's Hall, Delmonico's and interior of Church of the Advent, etc., in San Francisco. The firm is now incorporated under the name os the Rae Building and Contracting Co., Jas. Rae, President; stone yard Seventh and Townsend St, San Francisco.

The painting and polishing is carried out by Messrs. Doody & Hooley. "Good wine needs no bush," and this old established firm needs no puff. All the interior cedar finish was done in natural finish, and Doody & Hooley by using the best materials and good workmen have made a thorough success of its appearance, and the owners have the satisfaction of knowing that a good job of mill work was not spoilt by a poor job of polishing, and the painters have the satisfaction of knowing that this job is not hurting the reputation which they have maintained in Oakland and vicinity ever since 1865. It may be mentioned *en passant* that Miles Doody the senior partner, gave evidence while he held the position of Assistant Engineer of the Fire Department that he made as good a fireman as he did a painter and we presume that is the way with him whatever he takes hold of. The firm has done so much good and well known work scattered around Oakland and its vicinity, that if would be useless to attempt to particularize so we will not attempt to enumerate.

The building is completely equipped with electric bells, speaking tubes, etc. Every class room is connected by these means with the principal's room. All this work has been thoroughly installed by J. A. McCarl & Co. of 365 Twelfth street, Oakland—whose reputation is such that he controls a large electrical business as well as a very successful business in steam and hot water heating, galvinized iron work, tin work, locksmithing and cognate branches. This firm installed the most complete return call system on the Coast in the Redwood City School House and intalled electric systems in Judge Lair Hill's residence at Berkeley, Geo. Garrett's on Oakland Heights and other large residences.

The Plaster Decoration was ably carried out by Jno. Conley of 362 Ninth street, Oakland, who has now taken the front rank in Oakland for that kind of work, as witness the Diploma he has just received from the Oakland Midwinter Exposition of 1895, for the best exhibit of Plaster Decoration. The elaborate outside decoration in plaster of the

Porter School House in Alameda, consisting of panels, medallions and figure decoration is a monument to Mr. Conley's ability in that line, the style showing that he only employs the best artists and modellers. He is now supplying the Reed Building on Clay between Eleventh and Tenth with ornamental plaster work, and has also a large clientage in San Francisco.

The gutters of the roof are all of copper which was laid in his usual thorough manner by Philip Hammond whose shop is at 318 Larkin street, San Francisco, to which lately he has made considerable addition to accomodate his increasing business and the Oakland Metal Works which he has now combined with his city shop. The galvanized iron balcony on the front of the building used to obtain access to the flag pole—and its ornamental balustrade was carried out artistically and adds to emphasize the central feature of the front facade of the building. Mr. Hammond is now employed on the copper and lead work for the large residence for Mr. Spreckles on Van Ness Ave., and has completed satisfactorily the work on the two Spreckels' Buildings on Market street, San Francisco.

The plumbing work is all first-class, exposed work and together with the complete and extensive system of sewerage was done by the old established firm of Dalziel & Moller, a firm which has grown up with the town. Their work was entirely satisfactory, as much so as in the New City Hall of Alameda, another public building upon which they have lately been engaged. Dalziel & Moller have a large establishment in San Francisco which they confine entirely to wholesale plumbing goods and where they succeed in keeping the confidence of the plumbers and gasfitters of the State and keep a full stock of goods requisite for their business. The Oakland shop is at the corner of Thirteenth and Broadway, and the San Francisco one at 554 Mission street.

Special attention has been given to the system of warming and ventilating, the crowing feature of which is to furnish a continuous supply of fresh air. The system in this building has been installed in a systematic and compact way and without making projections or angles in class rooms.

The minimum capacity of the plan, as shown by a test, makes a complete change of air in the rooms from four to five times an hour, while the maximum capacity, as shown by air meter, was over 2,000 feet of air supply per minute, or an equivalent to over eight changes of air in room per hour. Tests as to the uniformity of the heat, the ease of management and economy in fuel has exceeded the Guarantee of the company, making a most successful and economical combination. The sanitary closet system in the basement of the building is a valuable feature, both from its freedom from disagreeable odors and its automatic operations. As a result of the successful working of this system, the company are now executing contracts from Pasadena, California, to Portland, Oregon. The following partial list of buildings show where the heating and ventilating or sanitary flushing closets have been introduced within the last year or is now being introduced:

San Francisco, Cal.—Haight Street School, Richmond School, Sutro School, Douglass School; Pasadena, Cal.; Watsonville, Cal.; Redwood City, Cal.; Alameda, Cal.; Redding, Cal.; Medford, Ore.; Marshfield, Ore.; Portland, Ore.

"LITTLE JIM" WING OF CHILDRENS' HOSPITAL.

THE funds for building the "Little Jim" wing of the Childrens' Hospital were collected during Christmas week 1894. The school children throughout the State with their entertainments and contributions and a committee of ladies who published the Christmas *Examiner* were the chief agents in getting the necessary money. The papers sales and advertisements cleared nearly $13,000, and the sums brought in from other sources netted an equal amount. The money was banked by *The Examiner* and a check for the total was made payable to the order of the Lady Managers of the Childrens' Hospital and Training School for nurses.

As soon as practicable thereafter designs for the new building were drawn by architect Schweinfurth who made a careful study of all the plans of the latest hospitals in Europe and America. Then he endeavored to embody all their best points in the plans of the "Little Jim ward. It has all the latest appliances and conveniences in a hospital way.

December twenty-first last the building was dedicated with appropriated ceremonies and formally turned over to the Board of Managers of the Childrens' Hospital.

Thos. Butler did all the work on the building, outside of the plumbing. Mr. Butler has been identified in his long career with a large number of the most important buildings in San Francisco and is at present enployed on the Grose Building on Mission near Main streets and the Annex to the Park Museum.

The plumbing which of necessity was required to be of the best was done by W F. Wilson of 104 Stockton street, San Francisco. It is all open work; the bath tubs are Mott's movable, porcelain, rolled rims and are mounted on iron rollers with rubber tires so that they can be rolled alongside the bed of the little sufferer and used there. In the floor of the lavatory, which is all of marble including partitions, is a cesspool connected with a waste for the purpose of emptying the tubs. The heating is done by one of Mott's Hot Water Heaters. Mr. Wilson has in charge the plumbing for the Claus Spreckels' residence.

RESIDENCE FOR EDWARD COLEMAN, ESQ.

THE fine residence on the corner of California and Franklin streets, lately completed, is a frame building with a concrete basement in the Colonial style, and cost about $30,000—W. H. Lillie is the architect.

In the basement, which has a cement floor all over, are the heating rooms, fuel rooms and other rooms which usually go in a basement. The first floor contains a study, parlor, sitting and dining rooms and kitchen and appurtenances with spacious halls. The second floor contains five bed rooms with private baths and the attic five bed rooms.

The first floor is finished in oak and mahogany except the parlor which is in cream and gold. The entrance vestibule and doors are of oak—and there is a fine flight of marble steps leading to the same. The cove of the parlor is in ornamental plaster work and hall and dining room have oak beam ceilings.

The general contract was executed by Messrs. Farrell & Bell, one of the oldest firms of builders in the State, having been established in 1853, and ever since keeping up an unsurpassed record for good and honest work. They are equally at home on solid brick buildings and on fine residences. Of the first class they can point to the Odd Fellows Hall Building, Heller Building on Sansome street, etc.,

and of the latter to the residence of Wm. H. Howard at San Mateo and the residences of the Schwabacker Bros., Henry E. Bothin, A. P. Hotaling, J. C. Coleman and others of San Francisco, and this building, their latest, shows equally bestowed upon it the same care and knowledge displayed in their former achievements.

L. B. Sibley did the grading of the lot of which there was considerable, costing over $800, and there is nothing in his line of business that he is not prepared to do from large to small and in a workmanlike manner. He is one of the directors of the Builders' Exchange.

All the concrete work including the concrete basement walls which are lined and molded in imitation of rock face stone, was done by Mr. Goodman of Nevada Block, the character of whose work is too well known to need any laudation.

The painting and polishing was done by J. P. Fraser who is celebrated for fine work in his line. The work here is done in his usual first class manner—the oak and mahogany work being so finished and polished that not only is the appearance good but its lasting capabilities is without question. Mr. Fraser having done the work on most of the large residences and buildings in San Francisco it is useless to try to enumerate them, but they are all lasting records of his skill in his art.

The electric work, consisting of a complete system of incandescent lighting, electric gas lighting and electric bells was installed by the Will & Finck Co., the well-known firm of electrical contractors. One of the principal features of the installation is the use of the Sechrist Automatic Switch whereby the Incandescent lights are operated from a nickel plated press key of the same kind and style as for electric gas lighting. Another feature is a double system of annunciators whereby a call from any part of the house is indicated simultaneously in the kitchen and in the servants' quarters in attic. The neat and workmanlike manner in which the contract has been carried out reflects great credit on the Will & Fink Co. We may mention that they are now installing the extensive electric work of the new Safe Deposit Building.

The plumbing of the house is one of the most complete and modern; all the bath tubs are Mott's Porcelain Rolled Rim Tubs, and are supplied with instantaneous water heaters—all the washstands and baths have shampoo attachments and so on throughout the whole job. The work was done in satisfactory style by Harry Williamson of 413 Sutter street.

The Heating apparatus was installed by W. W. Montague & Co., and their "Commander" Heater used. It is needless to say that their name is sufficient guarantee of the capacity and long livelyhood of their heating arrangements. They also supplied some of the artistic mantels in the house and in this regard it may be said that it is questionable whether the stock of fine mantels on exhibition at their show rooms, 309–317 Market street can be equalled on the Coast.

The three large stained glass windows lighting the staircase were designed and manufactured by Hausmann Bros. They cover a surface of seventy square feet and are designed in the modern Rococo style now so much in vogue in the East, replete with tender tints and delicate effects—the ornamental part entirely in cut glass. The centre panel is a floral piece with a bulrush motif, richly shaded.

Mr. S. Kellett of 28 Ellis street carried out the Plaster Decoration.

BUSINESS MOSAICS.

The Selby Smelting and Lead Company has furnished to R. A. Vance, for use in the Parrott Building, a large number of three inch and four inch lead traps and bends in regular and heavy weights, these goods are drawn on a new hydraulic press, lately imported and in use in their works at First and Howard streets, and are much superior to those which are cast from iron or brass as the lead is compressed *solid* and is perfectly smooth while brass and iron may have pin or blow holes and the inner surface of the brass or iron when cast is rough and catches and retains the filth, whereas, the lead being smooth as a mirror, flushes out and makes a sanitary fixture; special lengths and extra weights drawn to order.

Joseph Budde commenced '96 with an original Calendar in which a beautiful female about to strip for the bath is placed in juxtaposition with his latest No. 1 Cyclone Water Closet—hyperbolically indicating thereby that that sanitary appliance keeps as sweet and clean as its neighbor aforesaid. Anyone that can conceive such beautiful relations deserves recognition on all sides. Another calendar from the same firm represents an innocent child wraped up in her bathing robe just coming from the bath. We suppose typical of the innocency of any obnoxious gases of the adjacent Jos. Budde's No. 1 Cyclone.

A Steiger Sons—Architectural Terra Cotta can be ordered from their San Jose office as well as from the main office in San Francisco, 206 Market street. Remember that as well as Architectural work, this firm can supply anything in the way of stone-ware, such as flower pots, sewer pipes, and an endless varity of goods in this line.

The San Francisco Lumber Co., wholesale and retail; principal office foot of Third street, uptown office 405 Montgomery street corner of California. Mr. J. N. Curtis, manager. This firm is almost sure to be able to supply anything in the way of lumber that you may require.

Facts about anything are what we all want—but facts about paints, are of interest not only to the householder but to the contractors and builders in general.

Don't forget that by applying to W. P. Fuller & Co., you can receive facts about paint, but a guarantee of absolutely pure and satisfactory paint. See their advertisement on the last page of this Journal.

Those in want of the best window cord should order Samson Spot Cord, if you are in doubt, order sample from Samson Cordage Work, 115 Congress street, Boston, Mass.

CITY BUILDING NEWS.

Baker near Page. Two-story and basement; owner, B. Griffin; architect, V. Krolow; contractors, Williams & Foster; signed, Dec. 20; filed, Dec. 21; cost $4100.

Brannan and Langton. Two-story frame; owner, R. P. Merillion; contractor, W. W. Redmall; signed, Dec. 19; filed, Dec. 19; cost $4485.

Bryant and 5th. Two-story brick, mason work; owners, Main & Winchester; architect, Henry Geilfuss; contractors, Miller & Peck; signed, Dec. 20; filed, Dec. 23; cost $3949.

Bryant and 5th. Two-story brick, carpenter work; owners, Main & Winchester; architect, H. Geilfuss; contractor, C. Schutt; signed, Dec. 20; filed, Dec. 23; cost $4875.

Bryant and 5th. Two-story brick, grading, etc.; owners, Main & Winchester; architect, H. Geilfuss; contractor, I. M. Zimmermann; signed, Dec. 20; filed, Dec. 23; cost $1925.

Broadway near Steiner. Alterations and additions; owner, W. F. Herrin; architect, J. E. Krafft; contractor, R. Currie; signed, Dec. 18; filed, Dec. 23; cost $2260.

Bush near Scott. Two-story frame; owner, Philip Thorn; architect, H. D. Mitchell; contractor, Ed. Ginley; signed, Jan. 6; filed, Jan. 7; cost $6215.

Bush near Kearny. Alterations and additions; owner, Estate of Wm. Shiels; architect, A. J. Barnett; contractor, Wm. Little; cost $4085.

California near Laurel. Two-story frame; owner, G. V. Daniels; contractor, A. Dahlberg; signed, Dec. 27; filed, Dec. 27; cost $2515.

Clement near 5th Ave. Frame dwelling; owner, J. King; contractor, A. Jackson; cost $2500.

Charles and French. Steel bridge; owners, City of San Francisco and C. P. R. R. contractors, Henley, Tibbetts & Co.; cost $5500.

Cliff House. Additions to sheds; owner, Adolph Sutro; architect, J. C. Colley. contractors, Campbell & Pettus; signed, Jan. 3; filed, Jan. 4; cost $3156.

Dolores near 14th. Two-story frame; owner, F. B. Hulting; architects, Martens & Coffey; contractors, Reit & Ahlgren; signed, Dec. 23; filed, Dec. 28; cost $2875.

Fell near Ashbury. Two-story and basement; owner, John H. Brising; architects, Martens & Coffey; contractor, C. Schutt; signed, Dec. 26; filed, Dec. 26; cost $3950.

Fell near Ashbury. Two-story frame; owner, Henry Bohls; architects, Martens & Coffey; contractor, C. Schutt; signed, Dec. 26; filed, Dec. 26; cost $5960;

Francis near Mission. Cottage; owner, Bertha Wolch; contractor, James McConchey; signed, Jan. 3; filed, Jan. 4; cost $1150.

Fourth near Clement. Cottage; owner, J. C. Coggin; contractor, E. Ginley; cost $2500.

Fulton near Devisadero. To build; owner, Mrs. Pauline Casner; architect, W. Koenig; contractor, W. H. Kinread; signed, Dec. 17; filed, Dec. 18; cost $3050.

Golden Gate Ave. and Pierce. Alterations and additions; owner, Mrs. Elizabeth J. Hulme; architect, C. J. I. Devlin; contractor, Ralph Carey; signed, Dec. 12; filed, Dec. 17; cost $1925.

Golden Gate Park. Annex to Museum; owners, Park Commissioners; architect, E. R. Swain; mason work, T. Butler; $6000; iron work, Pacific Rolling Mills, $1927.

Hampshire near 22d. Cottage; owner, H. Feige; cost $1500.

Hardy near 16th. Additions and alterations; contractor, Mr. Hayes; cost $1000.

Hyde near Eddy. Three-story frame; owner, Fannie Cohen; architect, A. J. Barnett; contractor, Joseph Kemp; signed, Dec. 14; filed, Dec. 14; cost $5645.

Hyde near Eddy. Three-story frame; owner, Fannie Cohen; architect, A. J. Barnett; contractor, Jos. Kemp; signed, Dec. 14; filed, Dec. 14; cost $5645.

Jackson and Larkin. Three-story and basement; owner, Mary M. Gagan; architects, Shea & Shea; contractor, John J. O'Brien; signed, Dec. 12; filed, Dec. 14; cost $6817.

Kearny and Post. Alterations; owner, Weil & Co.; cost $2500.

Lake Merced. Construction of a shaft; owner, Spring Valley Water Works; architect, F. A. Schussler; contractor, A. E. Buckman; signed, Jan. 7; filed, Jan. 11; bond $500.

Lott near Height. To build; owner, Margeretta J. Wigg; architect, W. H. Lillie; contractor, Jas. McLean; signed, Jan. 14; filed, Jan. 15; cost $3374.

Market near 5th. Fixtures, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, S. F. Furniture Mnfg Co.; signed, Dec. 11; filed, Dec. 17; cost $6076.

Market near 5th. Hardware, doors, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, F. W. Kern; signed, Dec. 12; filed, Dec. 17; cost $29,450.

Market near 5th. Fire hose, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, New York Belting and Packing Co.; signed, Dec. 19; filed, Dec. 20; cost $1927.

Market and Third. Sustaining division wall; owner, Claus Spreckles; contractor, J. S. Stratton; cost $4000.

Masonic Ave. near Waller. Two-story frame; owner, Annie G. Coffey; architects, Martens & Coffey; contractor, W. A. Miller; signed, Jan. 11; filed, Jan. 11; cost $3409.

Noe and Henry. Additions; owner, Mrs. L. Boger; architect, W. H. Armitage; contractor, L. B. Schmid; signed, Dec. 16; filed, Dec. 18; cost $2500.

Oak and Baker. Carpenter work on two-story brick and stone; owner, Howard Presbyterian Chapel Society; architects, Percy & Hamilton; contractor, E. L. Brooks; signed, Jan. 3; filed, Jan. 4; cost $6780.

Oak and Baker. Concrete, brick andd stone work, etc.; owner, Howard Presbyterian Chapel Society; architects, Percy & Hamilton; contractors, Gilmore & McNinch; signed, Dec. 31; filed, Jan. 4; cost $4820.

Oak and Lyon. Repairs to partly burnt building; owner, Eugene C. Owles per Columbus S. & L. Society; contractor, G. Massoletti & Son; signed, Dec. 13; filed, Dec. 14; cost $1995.

Phelan Building. Alterations to front entrance; architect, Wm. Curlett; cost $3000.

Post near Larkin. One three-story frame eight flats and two two-story frames six flats; owners, G. Berson & A. Calleau; architects, W. Mooser & Son; contractor, J. F. Logan; signed, Dec. 27; filed, Dec. 31; cost $23,750.

Post near Larkin. Plumbing and gas fixtures; owners, G. Berson & Armand, Calleau; architects, W. Mooser & Son; contractor, R. Rice; signed, Dec. 27; filed, Dec. 31; cost $2905. Painting and varnishing; W. Barton; cost $1775.

Powell and Market. Marble wainscoting; owner, E. J. Baldwin; architects, Percy & Hamilton; contractor, Vermont Marble Co.; signed, Jan. 3; filed, Jan. 7; cost about $2460.

Sacramento near Webster. Painting and graining; owner, Jacob Rosenberg; architect, C. C. McDougall; contractor, D. Zelinsky; signed, Jan. 3; filed Jan. 3; cost $1300.

Second Ave. near California. One-story frame; owner, Julius S. Morris; architects, Halberton & Rose; contractor, John Sanders & Jas. Button; signed, Jan. 9; filed, Jan. 10; cost $2200.

Sixth near Brannan. Two-story frame; owners, Scott & McCord; contractor, W. P. Smith; cost $2000.

Sacramento near Geary. Additions and alterations; owner, Estate of Wm. Shiels; architect, A. J Barnett; contractor, C. W. Little; cost $3500.

Treat Ave. near 22d. One-story frame; owner, R. D. Cowan; architect, H. D. Mitchell; contractor, A. Lund; signed, Dec. 19; filed, Dec. 19; cost $1860.

Twenty-second and Hampshire. One-story frame; owners, Pat. & Nora Hegarity; architects, Townsend & Wynekin; contractor, Jno. Quinn; signed, Jan. 10; filed, Jan. 11; cost $1040.

Valencia near 16th. Two-story frame; owners, E. Schuntenhaus and John Packwitz; architects, Salfield & Kohlberg; contractor, L. B. Schmid; signed, Dec. 30; filed, Jan. 2; cost $7418. Plumbing and gas-fitting, contractor, H. Hufschmidt; cost $1079. Painting and graining, contractor, J. Quadt; cost $985.

Valencia near 19th. Two-story frame; owner and builder, P. Crichton; architect, Clinton Day; days work; cost $16,000.

Valencia and 16th. Alterations; owner, W. Ede; cost $1500.

Van Ness Ave. Washington. Two-story frame; owner, O. H. Greenwald; architect, A. Page Brown; Supt. Mahoney Bros.; days work; cost $30,000.

Van Ness Ave. near Clay. Plumbing; owner, O. H. Greenwald; architect, A. Page Brown; contractor, R. Rice; signed, Dec. 3; filed, Jan. 2; cost $2885.

Webster near Broadway. Two-story attic, and basement brick and stone residence; owner, Wm. B. Brown; architect, Polk & Polk; contractor, Wm. Bell; signed, Jan. 2; filed, Jan. 14; cost $16,950.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

IF our Supervisors do not change their minds there is danger of another of our City Buildings being botched for lack of foresight. With the present buildings left standing on the site the Criminal Building on Portsmouth Plaza can never be a convenient, symetrical or complete building. It's like "making a purse out of a pig's ear" and an opportunity for the erection of an appropriate Municipal Building will be lost. Those opportunities do not come too often and when they do come those that happen to be in office at the time don't seen able to grasp the situation.

INCE there has been architecture there have been competitions for architectural work—and notwithstanding all their evils they are still with us. Palliatives of those evils we have some—but these are ineffectual without Legislation and that again must be in accordance with the will of the people or it will be ineffective. Witness the present laws on the subject on our Statute Book which are practically dead letters.

In looking up what is the best *modus operandi* for a competition for public architectural work we have a mass of opinions and literature on the subject. In conning over all this we find the following principles unanimously agreed to as the conditions of a professional competition:

FIRST—Professional advice in preparing scheme of competition so that it may include all necessary and no unnecessary requirements.

2d.—Explicit instructions as to the number and character of the drawings; which should be in the nature of preliminary sketches only.

3d.—That an expert jury should be appointed to assist the Board in the judgment of the relative merits of the designs submitted and as to their compliance with the conditions.

4th.—Successful architects to have the work at five per cent commission—and premiums distributed to the other competitors in order of merit to the amount of at least one per cent of total architect's commission.

5th.—In large work there ought to be a preliminary and

final competition—the competitors in the last to be paid.

6th—Sufficient time allowed for the proper study and preparation of the plans.

The reasons of calling for these conditions and other remarks elucidating cannot be better given than in the words of some of the correspondents mentioned in our last number.

1st.—In regard to the first and as hints to a professional advisor Messrs. Van Brunt & Howe say:

"Many schemes are made needlessly difficult either by the imposition of requirements which are incongruous, arbitrary or embarrasing, or by the failure properly to define requirements which are essential. An expert advisor would understand how to discriminate between conditions of necessity and conditions of mere expediency or prejudice, so that the latter might not stand in the way of the former. He should so frame these requirements as to give the largest scope to the artistic capacity of the competitors within clearly understood limits and to eliminate all question of doubt as to the conditions. He should cause to be prepared a careful topographical survey of the ground with contours plainly defined, with the character of the natural features, including tree growth, etc., plainly set forth and with photos of existing buildings and surrounding scenery.

"Amounts to be ultimately expended should be considered so that the competitors should be warned against injudicious economy on one hand and injudicious extravagance on the other.

"Style of the architecture should be left to the competitors subject to general specifications as to the character of building materials available, and the character of existing buildings."

One of the correspondents remarks "with State work, politics often enter and some architect with a *pull* gets some work for the "institution" and recommends therefore that the stipulations be made severe enough, so that even this sort of man, may not ruin the general effect.

In regard to the second item they remark:

"The scheme should plainly define the character and number of drawings required, and at least in the preliminary competition, the scale of these drawings should not be so large as to invite the competitors to unnecessary elaboration of detail and should, in number, be only sufficient to define the leading points of design."

In regard to the expert jury mentioned in item three, Carrere & Hastings says:

"The judgment of the drawings submitted should be a matter of considerable consequence and should be entrusted to men in sympathy with and capable of fully appreciating the problem.

"Perhaps the most satisfactory suggestion which occurs to us at present would be for the Board to nominate a certain number of lay judges, and for the architects to nominate an equal number of architects, say three at the most, making six in all—and to let them judge the competition."

In the matter of picking out five or six architects to enter a competition and paying them, recommended by some; such action in private work would do very well, but in public work it would leave the Board open to charges of favoritism which it would be desirable not to engender.

The reasons and advantages of a double competition are very justly stated by the editors of the *American Architect* in the following language:

"In case of preliminary and final competition instructions given should be entirely full and precise in the first competition, but the work required of the competitors should be limited with great exactness to such simple drawings as will be merely sufficient to give to the expert advisor a clear conception of the real form of the competitor's idea.

"The advantage of making the requirements in the first competition simple is as follows:

"It does not impose upon the competitor a really unnecessary amount of work, and it does not bring about that wanton waste of effort, time and money which would be occasioned if a more elaborated treatment were called for.

"In the second place by asking the competitors for a simple treatment, it does not fix in their minds in a rigid and unchangable form the crude conceptions of the possibilities of the subject, so that they are left with a more open mind and free imagination when the time comes to develop their preliminary idea into the final drawing for the second competition."

To sum up: the general conditions as stated here being recognized amongst architects as just and proper, it only remains to reduce them to explicit and legal language, and get them passed into a Law, of which the justice will be recognized by ordinary capacity and thus may it become an honorable custom amongst all public bodies to adhere to the principles outlined above.

WASHINGTON, D. C., Feb. 4.—In response to a resolution introduced by Representative Loud and adopted by the House, the Secretary of the Treasury to-day sent to Congress the following message:

Treasury Department, Office of Secretary.

Sir: In response to a resolution passed by the House of Representatives on the 21st inst., requesting the Secretary of the Treasury to inform the House what progress has been made under the act for the erection of a postoffice building at San Francisco and the reason for delay in the prosecution and completion of said building, I have the honor to state as follows:

Upon the passage of said act of March 3, 1893, fixing the limit of cost for the new postoffice, courthouse, etc., the plans and estimates for said work were taken under consideration by the supervising architect. On June 12, 1893, however, the department received a communication from the chairman of Committee on Public Buildings and Grounds of the House of Representatives requesting that no action be taken in regard to the erection of said building on the site which had been selected until the House of Representatives should have an opportunity to enter an investigation in regard to the matter.

In deference to said request, the department on June 23d directed that action relative to the preparation of plans and estimates for the building be suspended until further orders. No further steps were taken until October 5, 1893, when in response to a resolution, the Secretary of the Treasury transmitted to the House of Representatives all the papers relating to the selection and purchase of the site. These papers were retained by the House of Representatives until June 9, 1894, when they were returning to the department.

Early in the Spring of 1894 work on the plans for said building was renewed, sketch plans and estimations were made and approved by the Secretary of the Treasury, Secretary of the Interior and Postmaster-General and the preparation of working drawings entered on, which drawings were sufficiently under way to admit of the invitation for proposals for the work of excavating for foundations when Congress, by the act approved March 2, 1895, directed "that before any work is done upon the building or contract let therefor, the Secretary of the Treasury shall cause to be carefully examined the nature of subsoil and bed of foundation of the site purchased for such building and whether character of the same is proper for building, and what will be the cost of making a foundation and whether the construction of the building shall be proceeded with on said site; and the Secretary of War, upon request to the Secretary of the Treasury, shall detail two or more engineer officers of the army to make such examination," said officers submitted a report on the examination made by them, setting forth the result of borings, etc., furnishing drawings to show the location, etc., of said test pits, and concluding with an opinion that the foundations should be of concrete, and that the proposed building can be safely constructed on the site selected; and further, that no reason is apparent, from an engineering point of view, why erection of building should not be proceeded with.

The officers named estimated the total cost of such foundation as they recommended to be $30,540. The prosecution of this work thus interfered with its regular course has proceeded as rapidly as the pressure of current matters would allow. The work on preparation of drawings has been resumed and they will be completed and contracts made as soon as possible. Respectfully yours,

J. G. Carlisle, Secretary.

To the Speaker of the House of Representatives.

It will be remembered that in response to a letter from Judge McKenna an inquiry was made of the supervising architect concerning the plans of the new building. This letter was taken to supervising architect Aiken by Senators White and Perkins and left with that official. After a long talk regarding the proposed building Aiken promised to reply, but after a lapse of a time long enough to have completed the plans of Judge McKenna's courtroom it was thought the supervising architect had forgotten his promise.

So Senator Perkins wrote to him again, recalling the visit and the letter and stating that it having been understood from him that money was necessary to complete plans he would be pleased to be informed of the amount needed to supply the extra help to perfect the plans. Still no answer came. A messenger was sent to Aiken to get from him verbally the figures needed to insert in the bill which Senator Perkins had prepared, designed to supply funds which would enable the Postoffice plans to be complete and work on the new building to be commenced. Aiken promised to reply by letter, but never did so. Other efforts were made to secure data necessary to enable Congress to take action, but Aiken did not reply.

On January 30th, another letter was written by Senator Perkins, in which he called attention to his former communication and to a promise that a reply would be given to the inquiries of Judge McKenna's letter, that an answer might be made to the Judge. It was assumed that Aiken would not be so discourteous as to refuse to reply to the many inquiries made and that the letter had gone astray. This brought forth a reply, but not such as was expected. It was in the form of a letter from Secretary Carlisle, per Aiken, in answer to Senator Perkins' communication, in which he said: "I have to advise you that the department considers it impracticable to give the information desired. If, however, the committee, either in the Senate or House, should ask for information as to what steps the department would advise to be taken to facilitate and hasten the construction of public buildings such request would be complied with."

Here, at least, was something definite. Aiken, through Secretary Carlisle, refused to give the amount which Aiken (as architect) said was necessary to complete the postoffice plans so work might be commenced. But still there was no reply from the recalcitrant architect.

At last it was determined to take another course of action, and a messenger was sent to the architect's office to recover the letter of Judge McKenna, which had been ignored as completely as had the personal requests and communications of the California Senators. He was instructed to remain in the architect's office until the letter of the Judge was delivered to him. He waited, but did not get the letter.

Aiken finally wrote Judge McKenna to-day, submitting three alternative plans for the arrangement of courtrooms, and this matter will be intrusted to John P. Irish to deliver. Irish leaves to-night.

The above is taken from the *Call* and comment seems superfluous. The obstructions placed in the way of San Francisco's much-need and long-promised new Post Office, seems to be intentional on the part either of the Supervising Architect or the Secretary of the Treasury; probably of the latter, as the position of Supervising Architect is a comparatively subordinate one and the boorishness of the incumbent is undoubtedly inspired by his superior officer.

From the official report it is seen that early in the spring of 1894 the plans were begun, and that it took the Supervising Architect's office a full year to get as far as to be able to advertise for bids on the excavating; now another year has passed away, and the office is not even prepared to invite bids on the excavating.

Would any architect in private practice dare to present such excuses, or rather lack of excuses, as justification for delay.

PAPER READ BY JOHN COTTER PELTON BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

CONTINUED FROM JANUARY NUMBER.

Time is usually of sufficient importance to be considered in any business undertaking; In a building enterprise, the first question of importance after that of cost, is the time which must be given the work of construction, and many plans and methods are taken advantage of to facilitate progress, and hasten the occupation of the building and the opening of the rent roll.

The loss from the area of land in space occupied by the walls I do not believe is always appreciated. I am quite sure it would startle the owners of some buildings, even of recent date. The Mill Building, in this City, loses in its walls twelve per cent of the lot area; the Crocker Building loses eighteen per cent, and the Chronicle loses twenty-one per cent. This seems to me to represent a loss in income,

and any saving in such loss seems to me just so much increase in the income.

The first building to which I applied a marble facing, was built on California strreet, near Devisadero street, in this City, for Mr. John I. Sabin, some four years ago. This was a wooden building, and was faced to a height of about ten feet, this height representing about the extent of my confidence in the safety of two inch marble. I could figure to do better, but did not feel quite prepared to undertake a greater height.

The next occasion presented itself in the Telephone Building at Los Angeles. The character of the design called for uniformity of material, the height was about thirty feet, and with the limit in mind, of my first experience, (ten feet) was developed the idea of dividing this height of thirty feet into three sections, and supporting the weight of each section independently, *i. e.* transmitting it to the wall. This may be called the first step in this method of ashlar construction, *i. e.* the interruption of the accumulation of the weight. The walls of this building were built, the carriers sat, and the setting of the marble had progressed to the height of the first interruption or carrier, when it was discovered that the variation of these carriers from the proper measurements was so great, and the alignment so irregular as almost to cause an abandonment of the proposed facade, and this was with difficulty overcome. Here came in the attachment of a second and separable bracket or shelf, with means of adjustment to this irregularity of setting and alignment.

The construction of the marble Library Building at Stockton, California, was then undertaken, with a frontage of 210 feet, and carried to a successful issue.

I trust I am not over-confident in saying that this piece of work has demonstrated the feasibility of the constructional principles, and that an examination of its details will substantiate the claims which I have made for the released system of ashlar construction.

Let us now look for objections; if this is *not* a proper form of construction, there must be clear and tenable reasons, readily stated.

From an artistic or æsthetic standpoint, let us first look for these objections. *I have looked* earnestly, and am unable to find an æsthetic law of thickness. I find nothing to justify the term veneering.

I have never heard an artistic comment upon the thickness or the amount of paint upon an artist's canvass. It is the expression, the character or the sentiment which appeals to us. In fact I cannot find, in the world of art, or in the æsthetic history of architecture, anything about measurements or thickness—to be more practical, I have never heard, except by the ignorant, the term veneering applied, to the architectural facing of four inches of pressed brick in the usual form.

Now, from a constructional standpoint, I am unable to figure out a practical defect, which cannot be provided for. I will state two which have been called to my attention, and which have been certainly worthy of the most careful study and investigation, and to which I am prepared to make answer, but upon these points, I feel that much more can be said, and I trust that if this subject seems to you to be of interest, or that the perfection of such a system of construction may be of value, that some discussion may ensue upon these questions.

The questions are; the possibility of leakage through the joints, and the grinding tendency caused by vibration in a tall structure.

The question of leakage, I think may be answered by proper attention to the workmanship. I have not heard this question raised against the use of a facing of pressed brick, having a multiplicity of joints; why should it be raised against a construction by which this very possibility is reduced five-fold; still, should there be such danger through accident or careless workmanship, it has been suggested by Mr. G. W. Percy, in his report to the Harbor Commission, that means may be provided in the space behind the facing, to care for such seepage.

In the consideration of the question of the tendency of grinding, it must be a very tall structure in which this question would be taken up, but I am prepared to allow to it all the importance which the most careful and technical practitioner may think necessary—feeling that the result will again be found satisfactory. In fact, does not the consideration of this very question revert in favor of the interruption of the facing frequently in the height of such a building and mean another finding in favor of the method? As to the thickness of the facing and the frequency of the interruption, I may say that one balances the other, as the facing increases in thickness, the interruptions should be made at most frequent intervals.

As to the forms of the carriers or anchors, this of course depends upon their position, or upon the duty which they must perform, and varies, of course, constantly according to the architectural character of the facade, etc.

Something might be said of the adaptability to various designs of this method of construction, but still it does not seem necessary; for although familiarity with this form of construction might lead to more simple and readily applied design or style, still it is but a matter of more or less study to make its application satisfactory in any example.

I may state that in the construction of the Stockton Library Building where the Grecian Ionic style was used, no detail was sacrificed in the application of the construction. The style was fully carried out in all its parts and in every detail.

The respective projections are provided for simply by greater strength in the parts.

In the treatment of exposed corners, reference may be again made to the Library Building and to the Telephone Company's Building, in no part of which structures is the thickness of the material evident, and how much more readily this may be effected in the freer Romanesque or Renaissance details, need only be suggested.

In the application of this form of construction to a modern building with steel framing, I feel that there is possible a most perfect achievement, attaining a degree of perfection beyond any form now in use, *i. e.* the strength of the structure being secured in the steel frame—a minimum of material being used for the protection of this frame from fire, and a minimum of material being required for the facing.

ELEMENTARY ELECTRIC DATA.

THE PRACTICAL APPLICATION OF DYNAMO ELECTRIC MACHINERY BY MAC FADDEN AND RAY.

"WHAT is electricity? A question often asked and probably never as yet clearly answered.

Those interested in the practical field, find it almost impossible to keep up to the times, in regard to the laws that govern its generation and control. We know that by means of certain combinations of coils of wire and magnets or by means of chemical action, we can produce, we may say, electricity.

We must be content if we master a few leading laws governing the generation and application of the Electric current. Let the Scientists and Philosophers discuss the question as to what electricity is. In dealing with the simple electric current that is generated by dynamos, batteries, etc., we will find that there are several broad and easily understood laws that govern its practical applications. These laws hold good in all cases and under all conditions, and should be thoroughly understood by anyone desiring to learn even the first and most simple effects of a flow of electric current.

Probably the easiest way to understand this law will be to take a simple case of a pump connected to a loop of water pipe. The pipe is filled with water and it is evident that if the pump is started there will be a circulation of water from the pump through the pipe and back into the pump again. The pump furnishes the power to move the water in the pipe—and it is evident that the water moves through the pipe owing to the pressure exerted by the pump on the water. In (figure 1) an open tank, (d) is shown into which

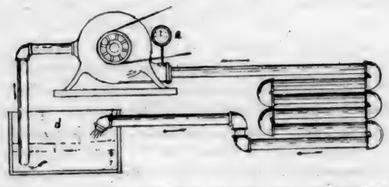

FIGURE 1.—PUMP FORCING WATER THROUGH PIPES.

the water flows from the pipe. The pump takes the water from the tank to keep the pipe filled, and the speed of the water through the pipe and therefore the quantity of water passing through the pump and pipe in a minute of time, will depend on the pressure given the water by the pump.

If we double the pressure of the water and the friction or resistance to the flow of water in the pipe remains constant, the quantity of water handled by the pump will be doubled. In other words by increasing the pressure, we increase the quantity of water passing through the pipe at exactly the same ratio. Now if we found that a guage placed at (a) would have to register 50 lbs. pressure to make 100 gallons of water pass through the pipe in a minute, it is evident that if the friction in the pipe remained the same, that 100 lbs. pressure ought to put 200 gallons through the pipe. It is also evident that if 100 feet of pipe a certain size offers a definite amount of friction, that twice the length of pipe would have two times the friction or resistance to the flow of water that the 100 feet has. Thus to put 100 gallons of water a minute through a pipe will take ½ the pressure required to force 200 gallons through the pipe. This example may serve the purpose of illustrating the principle of the flow of current from a source of electricity. We will let the dynamo take the place of the pump, which will generate the pressure to send the electricity through the circuit which may consist of lamps, etc., connected by means of conducting wires. The friction in the pipe is represented by the "resistance" of the wire and circuit, and the amount of water used, represent the quantity of the current of electricity.

Instead of using the pound as the unit of water pressure we will use the term "volt" which is the unit of electrical pressure. We also have a term which denotes the unite of "resistance," which is the equivalent of "friction" used in the illustration of the pump and pipe. The unit of resistance is called the "ohm."

Then lastly the *quantity* of current in electricity is measured by the unit of current quantity, the "ampere." This is the quantity of current that a pressure of one volt will force through a resistance of one ohm.

The resistance of a conductor of electricity varies not only with its size or cross section but also with the material of which it is made. Silver, when pure, is the best conductor of electricity known, but copper, when pure, nearly approaches silver and is so much cheaper that it is used in nearly all cases to distribute current for practical purposes.

The metals in their order for conductivity are as follows: Silver, Copper, Gold, Aluminum, Zinc, Platinum, Iron, Lead, German Silver, Platinum Silver alloy and Mercury.

In practice the wires or conductors to carry current are either designated in size by their diameter in thousandths of an inch (or mils) or by the sectional area or cross section of the wire expressed in circular mils or by the size in number, as measured by the Standard American or Brown & Sharp Wire Guage.

A circular mil is a circle 1-1000 inch in diameter.

As in the case of pump, the higher the pressure in volts at the dynamo, the larger quantity of electricity (expressed in amperes) will be put through a circuit which has a resistance (expressed in ohms) to the flow of current.

Thus if 1 volt pressure will force one ampere of current through a circuit having 1 ohm of resistance, it will take 5 volts to force 5 emperes through this same 1 ohm of resistance, it will take 5 volts to force 5 amperes through this same 1 ohm of resistance and if this resistance is increased to 2 ohms, the pressure would have to be 10 volts to force 5 amperes of current through it.

It will be seen that these terms are dependent on each other and their relation to each other is expressed by what is known as Ohms Law which is expressed:

$$\text{Current in Amperes} = \frac{\text{Pressure in Volts}}{\text{Resistance in Ohms}} \quad \text{or} \quad C = \frac{E}{R}$$

"C" standing for current, "E" for electro-motive force or volts, and "R" for resistance expressed in "Ohms." This relation C=E | R must be remembered for it is the fundamental law of the governing of electric currents, and is used as a foundation to obtain all of the more complex formulas known to the Electrical Engineers.

Take the simple case of a certain make of incandescent lamp, the resistance of the lamp in question is found to be 200 ohms. The pressure of the circuit on which this lamp is designed to run is 100 volts, and according to Ohms law the current in amperes which 100 volts pressure will force through 200 ohms of resistance is 100-200 or ½ which is the number of amperes such a lamp would allow to pass through it if current at 100 volts pressure was applied.

It will thus be seen that it is a very easy matter to obtain any one of these quantities, provided we have the other two given, by a simple multiplying or dividing of the two known quantities. The relations to each other are expressed

$$C=\frac{E}{R}, \quad E=R \times C, \quad \text{and} \quad R=\frac{E}{C}.$$

There is still another term with which the practical man is brought in contact and that is the unit of power, the "watt." This watt is the *power* represented by the passing

of 1 ampere of current through 1 ohm of resistance and can always be obtained of any current by multiplying the number of volts by the number of amperes.

Thus in the incandescent lamp before spoken of, the watts used by the lamp would be 100 (volts)x½ (amp)=50 (the number of watts), this being the amount of electrical energy necessary to be applied continually to keep the lamp burning. Such an incandescent lamp would be termed "a 50 watt incandescent lamp." An arc lamp which needed a current of 10 amperes at a pressure of 50 volts to keep it in operation would be termed a "500 watt arc lamp." * *

THE OLD CITY HALL OF SAN FRANCISCO.

THIS old landmark is now razed off the face of the earth and plans are already in for a building to take its place. As a tributeto the Archæology of California we are enabled by the courtesy of the Hinton Printing Company to publish two views of the building at different stages of its career, and take the following interesting account of its history from the pages of the Municipal Report of San Francisco for 1894-95:

The Board of Supervisors, on January 4, 1895, instructed His Honor the Mayor to sell all the improvements on the City Hall lot on Kearny street, between Merchant and Washington streets.

The buildings had been vacated and accommodation provided for the different offices and departments in the New City Hall, and while some temporary use was made of different portions, the buildings were held to be unsafe for further use.

The purchase by the city and county at different times of the lots and improvements, and the alterations made to adapt the buildings for municipal uses, as well as the repairs and alterations required to be made in consequence of the damage done by the earthquake on October 21, 1868, cost the municipality over one million dollars.

In June, 1852, the Jenny Lind Theater—the central lot and building between the Union Hotel and the El Dorado buildings—was purchased for a City Hall at a cost of $200,000. In March, 1864, the Union Hotel lot and building, on the corner of Kearny and Merchant streets, was purchased for $65,000, and the El Dorado lot and building, on the corner of Kearny and Washington streets, for the sum of $45,000. In March, 1866, a lot and building in rear of the Old City Hall, now occupied by the Morgue, was purchased for the sum of $15,000.

The site of the Old City Hall is a memorable one, being the central point where the various phases of early California life had full swing, with all the license and abandon that characterized the gambling mania. The following are extracts from the "Annals of San Francisco" and the daily newspapers, in respect to matters appertaining to the site and its use, from time to time, in spite of the destruction visited upon its so-called improvements by conflagrations, to wit:

From the "Annals of San Francisco":

December 26, 1849.—This morning about six o'clock, the awful cry of fire was raised in the city, and in a few hours property valued at more than a million of dollars was totally destroyed. The fire began in Dennison's Exchange, about the middle of the eastern side of the Plaza, and spreading both ways, consumed nearly all that side of the Square, and the whole line of buildings on the south side of Washington street, between Montgomery and Kearny streets.

A certain two-story frame building, known as the "Parker House," and situated on Kearny street facing the Plaza, paid its owners one hundred and twenty thousand a year in rents. Of this sum, somewhere about sixty thousand dollars was paid by gamblers, who occupied nearly the whole of the second floor. The "El Dorado," a gambling saloon which adjoined the "Parker House" on the right, at the corner of Washington street, and which was only a canvas tent of moderate size, brought at the rate of forty thousand dollars per annum.

May 4, 1850.—The second great fire in San Francisco, when property to the value of nearly four millions of dollars was supposed to be destroyed. It began about four o'clock in the morning, in the building on the east side of the place called the United States Exchange and before eleven of the forenoon three immense blocks of buildings, with a few trifling exceptions, were totally destroyed. These were the blocks lying between Kearny, Clay, Montgomery and Washington streets, and the two blocks between Dupont, Montgomery, Washington and Jackson streets.

June 22, 1851.—The City Hall, located at the corner of Kearny and Pacific streets, which had been originally erected at an immense expense as a hotel and was purchased more than a year before by the corporation for one hundred and fifty thousand dollars and improved at a heavy cost, was totally consumed, although the principal office records were saved. Mr. Thomas Maguire, the proprietor of the "Jenny Lind Theater" (which was opened in September, 1850), on the Plaza, which was a most valuable building, now lost all again—a sixth time by fire.

October 4, 1851.—Opening of the new Jenny Lind Theater, on the Plaza. This was a large and handsome house. The interior was fitted up with exquisite taste; and altogether, in size, beauty and comfort, it rivaled the most noted theaters in the Atlantic States. It could seat comfortably upwards of two thousand persons. The opening night presented a brilliant display of beauty and fashion, and every part of the immense building was crowded to excess. A poetical address was delivered on the occasion by Mrs. E. Woodward. A new era in theatricals was now begun in San Francisco; and since that period the city has never wanted one or two first-class theaters and excellent stock companies, among which "stars" of the first magnitude annually made their appearance. Before this date there had been various dramatic companies in San Francisco, but not before had there been so magnificent a stage for their performance. The "Jenny Lind" did not long remain a theater. The following year it was purchased by the town for a City Hall, for the enormous sum of two hundred thousand dollars. The external stone walls were allowed to stand, but the whole interior was removed and fitted up anew for the special purposes to which it was meant to be applied.

Under the caption of "Hotels, Restaurants and Boarding-houses": The first really substantial and elegant hotel of the city was the "Union." This was a four-story brick building, with a front of twenty-nine feet, on the east side of Kearny street, between Clay and Washington streets, and a depth of one hundred and sixty feet. It was constructed, arranged, finished and conducted as well as any similar establishment at that time in the United States. The cost of

OLD CITY HALL BUILDINGS, 1865.

OLD CITY HALL AND VICINITY, 1864.

OLD CITY HALL, 1895.

HOME FOR FEEBLE MINDED CHILDREN, GLEN ELLEN, SONOMA CO.

HOME FOR FEEBLE MINDED CHILDREN, GLEN ELLEN, SONOMA CO.

the building and furniture was $250,000. Messrs. John Middleton, A. A. Selover and E. V. Joice were the enterprising projectors, builders and owners of this superb concern. The tables were supplied with every imaginable luxury, and the boarders were of the wealthiest and most respected inhabitants and visitors of the city. This house, with its contents, was destroyed in the fire of May 3, 1851, and although it has been rebuilt several times, after repeated conflagrations, it never resumed its original character. It is now (1854) occupied below as an extensive billiard-room and drinking-saloon, while the upper stories are divided into comfortable lodging apartments. It is a celebrated resort for all classes of politicians, and most of the schemes affecting the interests of the State and city are here concocted.

JUNE 4, 1852.—The purchase of the new Jenny Lind Theater and Parker House for the purposes of a City Hall was another of the Common Council jobs which excited very much angry discussion at the time, and which afforded interesting and amusing matter for the newspapers the "Jenny Lind Swindle," or sometimes "Juggle," they facetiously called it, during half a year. The old City Hall having been destroyed in the fire of June 22, 1851, the various municipal officials were compelled to get business chambers where they could, for which very high rents had to be paid. As the different public officers were now located in separate parts of the town, much inconvenience was experienced. The arrangement could only be temporary. The rents, which were somewhere about forty thousand dollars per annum, formed a heavy tax upon the public; while ground could be bought and a proper building erected by the city itself for about four or five times that amount. Several desirable sites could be had in the town on moderate terms, and responsible contractors were ready to undertake the construction of the proposed building at fixed rates, which would certainly have reduced the total cost below two hundred thousand dollars.

In these circumstances, the Common Council, for reasons, as the saying is, best known to themselves, and in spite of the indignant cries of the citizens and the general remonstrances of the press, determined—in conjunction with the Board of Supervisors of the County, who were to pay half the costs—to purchase the Jenny Lind Theater, and convert it into the proposed City Hall.

The purchase money of the building as it stood was to be $200,000; while to remove all the inside walls, leaving only the outer ones standing, and to build up the interior anew properly fitted up for municipal purposes, was believed to involve the expenditure of nearly-half as much more. At the same time, it was supposed that the building when so altered would be only a miserable structure at the best. An audience authorizing the purchase was passed by large majorities in both Council Boards, and sent to the Mayor for approval, which was refused. Notwithstanding, the Common Council, on the fourth of June, re-adopted the obnoxious ordinance, and passed it by a constitutional and almost unanimous vote.

Meanwhile the public wrath was growing very clamorous, the more so perhaps that it was impotent. On the evening of the first of June, one of the usual mass and indignation meetings was held on the Plaza, where the proposed purchase was passionately denounced. Mr. William A. Dana presided on the occasion. This was one of the most stormy meetings that had ever been held in the city. Hon. David C. Broderick, who was in favor of the proposed purchase, attempted to make a speech for his cause, but the noise and reproaches of the meeting effectually put him down. Sundry squabbling and wordy sparring took place between Mr. Broderick and Dr. J. H. Gihon, who was on the occasion the people's orator; and the meeting ended in hubbub, riot and confusion. Little cared the Common Council for such proceedings—the general ire—the Mayor's veto—the denunciations and the ridicule of the press. The matter was carried finally into the Supreme Court, at the instance of some public spirited citizens, and shortly afterwards a judgment was obtained recognizing the right of the city and the Board of Supervisors to make the purchase. This was forthwith done; and the contemplated alterations were speedily made on the building, although at a great expense. The whole affair was long a prolific subject for conversation and discussion, for ridicule and the imputation of corrupt motives. It served to glorify the Council of the year as the notorious Aldermen's salaries and medal pieces of business had immortalized a previous party of "City Step-fathers."

After the purchase was made and the alterations completed, it was found that the new structure answered the purpose intended better than was at first anticipated. The situation is excellent. At the present time, however (1854), it is beginning to be discoverrd that the building is too small for the increased business of the city. Movements are now making to purchase additional business chambers elsewhere, or to include a portion of the adjoining Union Hotel into the municipal establishment. Doubtless, before many years pass, the whole of either that building or of the El Dorado gambling-saloon on the other side, if not both, will be required for the necessary extension of the City Hall, unless indeed it be located in some altogether different quarter and built anew.

APRIL, 1854.—The large public saloons, so numerous in 1849 and immediately succeeding years, have become few in number. * * * The chief of them are the "El Dorado," on the Plaza. * * * These places still exhibit the old lascivious pictures on the walls, while orchestral music, excellently performed, continues to allure the idle, the homeless and family-less as to a place of enjoyment, where their earnings are foolishly spent. The cards are often still dealt out and the wheels turned, or dice thrown, by beautiful women, well skilled in the arts calculated to allure, betray and ruin the unfortunate men who become their two willing victims.

From the *Evening Bulletin* of October 21, 1868: EARTHQUAKE—The City Hall is in a bad condition, and the only people inhabiting it at present are the officers of the Fire Department. The Courts are all adjourned and the prisoners were taken from the Station House to the County Jail. A line has been stretched across the front to keep people away. Several large stones in the front wall fell out, and the entire structure may be considered a wreck.

From *Examiner* of October 21, 1868: THE CITY HALL—The Hall is badly damaged. The front looks greatly dilapidated. The inner walls are cracked and opened in many places. The Probate Court room and the Twelfth District Court room are badly torn up, while the upper story is almost beyond repair.

From the *Daily Alta California* of October 22, 1868: THE RESULTS AND LESSONS OF THE EARTHQUAKE.—The State was visited yesterday by an earthquake, and the shock in San Francisco was the most severe felt here since the foundation of the Mission, ninety-two years ago, with perhaps one exception, in 1808, when several adobe walls were thrown

down, but of that shock we know so little that it is impossible to make any satisfactory comparison with it.

Amidst the multitude of slight movements of the earth's surface observed here since 1848, the only one which did any damage before that of yesterday occurred on the eight of October, 1865, when several cornices and parts of green brick walls were thrown down. In that shock the motion was mainly perpendicular, and perhaps it was for that reason that the amount of glass broken was far greater in 1865 than in the horizontal movement of 1868. On the other hand, more cornices were thrown down yesterday.

The main facts of the earthquake as felt in this city, are that four persons were killed by the falling of cornices and chimneys, that a dozen brick buildings on made ground are shattered so that they are untenantable; that the cornices of two dozen buildings have been thrown down, and many walls were cracked, much plastering loosened and many window panes broken.

On the other hand, no person was seriously injured in a house, and the great majority of the buildings on the natural upland show no signs of having been damaged in the least.

The spires of the churches, towers of the Masonic Temple, Merchants' Exchange and Synagogue Emmanuel, the four and five story buildings on Montgomery and Kearny streets are uninjured.

The foundations of buildings should, on the made ground, be as solid as possible; and high chimneys should be secured by iron bars, fastened on with bands and running down below to top of wall. Brick buildings should be tied together by strong iron rods, their walls should be thick, the best mortar should be used and the height should not exceed three stories.

Action of the Chamber of Commerce.—The Chamber of Commerce held a session in their chamber in the Merchants' Exchange. Several members spoke of the importance of transmitting correct intelligence to the East and to London.

A committee of four were appointed to collect information and make an estimate of the probable loss.

Messrs. Otis, Friedlander, Ralston and Gordon form the committee.

These gentlemen met at one o'clock in the parlor of the Bank of California and prepared the following dispatch:

"A severe shock of earthquake experienced here at 7:50 A.M. Considerable alarm felt at time of occurrence. A good many buildings on made ground injured.

"Custom house and City Hall, both poorly constructed, badly injured, and some buildings in process of erection have fallen in. Some parapet walls falling have caused the loss of four lives. No damage to well-constructed buildings.

"Total loss on property will not exceed $300,000.

The President of the Chamber of Commerce, with the approval of the above committee, forwarded the above despatch immediately to the Chambers of Commerce in all the Atlantic, Western and European cities.

From John S. Hittell's History of San Francisco: Gambling was a prominent feature of San Francisco life before 1855. Among the notable gambling houses were the El Dorado, on the southeast corner of Kearny and Washington streets; the Verandah, on the opposite side of Washington; the Bella Union, on the other corner; the California Exchange, on the northeast corner of Clay and Kearny; the Arcade, the Casino and tne Tolka, on Clay and Commercial streets.

Among the notable buildings were the Custom House (an adobe building of one story on the southwestern corner of Brenham place and Washington street), the City Hotel (an adobe of one story and a half on the southwestern corner of Clay and Kearny), Mr. Mowry's dwelling (one-story adobe on the northeastern corner of Broadway and Powell) the adobe residence of Senora Briones (on the northeastern corner of Powell and Filbert) a brick dwelling on the northwestern corner of Washington and Powell (originally of two stories, but now of four, two others having been added beneath because the streets in front of it have been cut down about sixteen feet), and the Parker House (which was built at a cost of thirty thousand dollars and rented at fifteen thousand dollars per month as a gambling house), a two-story frame building on the site of the Old City Hall, fronting on Portsmouth square. The southeastern corner of Kearny and Washington streets was occupied by a large tent, called the El Dorado, and that, too, was used for gambling. The Parker House was burned in December, 1849, and having been rebuilt, was converted into the Jenny Lind Theator, Thomas Maguire being the manager. It was burned again in May, 1850, and in June 1851, and after the last firr the theater was rebuilt of brick, with a stone front, which still stands as a part of the Old City Hall.

* * * * * *

These people did not serve Broderick for nothing, many of them received high pay, usually out of the public treasury. It was not his policy to let those who had been his friends go without reward, some with office, some otherwise, When the County Supervisors and City Council, in 1852 (the city had then one government and the county another) united to buy the Jenny Lind Theater from his friend, Thomas Maguire, for twice as much as the property was worth, he favored the transaction. It was consummated in defiance of a strong outbrst of popular indignation, but not long afterward the value of land advanced so much that the property was worth more than had been paid for it.

When Broderick sought to secure the Senatorship in 1854, he felt the want of support of some respectable newspaper in San Francisco, and he secured that of the *Alta California*, which had previously been his enemy. As it depended for its support mainly on the merchant, with whom, as a class, he was very unpopular, the paper incurred serious risks by advocating his cause, but a cash consideration was paid, and consequently the County Supervisors purchased the Alta Building on the southwest corner of Washington street and Brenham place for a Hall of Records, paying about fifty thousand dollars in warrants, or the equivalent of forty thousand dollars in gold, for it—considerably more than it was worth.

From Colville's Directory, 1857: The fire-proof brick office of the *Alta California* newspaper (Washington street and Brenham place) having been purchased for the round sum of nearly $50,000 in scrip for a Hall of Records, was opened for that purpose on the nineteenth of July. This is one of the very few evidences of any value received by the city for all of its vast expenditures.

BOOKS AND PERIODICALS.

LIPPINCOTT'S for February contains the complete novel "Ground Swells" and in the article on "Paralysers of Style" gives some much needed strictures on the slovenly way of writing of the present age; want of grammar, bad punctuation and such like lapses. The cry is quantity now a days not quality and the high pressure speed at which masses of literature must be turned out causes this want of propriety. We are afraid, however, that while the present fabric of society exists no return can be had to the grand old style of the Elizabethan Age in Literature; no more than to the restful style of the Greeks or the free style of the Middle Ages in Architecture.

PRACTICAL STAIR BUILDING AND HANDRAILINGS by the Square Section and Falling Line System by W. H. Wood. London, E. & F. N. Spon—New York, Spon & Chamberlain, 12 Cortlandt street.

In this work is presented a very full and explicit treatise on stair building—full of practicality and illustrated with quite a number of geometrical diagrams elucidating all the problems that arise in the course of a stair builder's profession treated in a different manner than heretofore. Being both elementary and advanced it will be found a useful hand book on the subject. The price of the book is $4.25 and can be had from G. W. Alexander, 401 Market street, San Francisco.

MUNICIPAL REPORTS, San Francisco, 1894-95.—Published by order of the Board of Supervisors. From Mr. Jno. A. Russell clerk of the Board of Supervisors of San Francisco, we have received the usual yearly reports of the several offices constituting the Municipal Government in a volumn of about 1500 pages, typography good and arrangement succinct; a reference book of great value for statisticians.

The "Practical Application of DYNAMO ELECTRIC MACHINERY," by McFadden & Ray, price one dollar. A handy little book for all architects to have with them, explaining electrical wiring and machinery in a simple and easily understood manner.

Elsewhere we have made an extract from this book to show its style and its usefulness.

The FORTNIGHTLY for January. In the "Blessedness of Egoism" we are given an account of the philosophy of Maurice Barres and Walter Pater, and the disgust with all modern conventionalities and ideals with which the thinker is sometimes seized, making him long for the solitude of nature away from the busy haunts of men. As one of the author's heros remarks truly "With a little alcohol and rare beef at meals, and with money in one's pocket, one may endure contact with men," inferring that without these to a poetic temperament they and their little money getting carking cares are unendurable.

An interesting account of Emile de Laveleye and his ideas is given in "Socialism at Home and Abroad."

"Laveleye defined luxury as 'all that is at once expensive and superfluous,' and he condemned it, from moral and political grounds, as opposed to the true ends of life. Like a good economist, he also repudiated the usual defence of luxury as being "good for trade," pointing out that national prosperity did not arise from unrestrained consumption and unlimited production, but sprang rather from the accumulation of resources resulting from good economy. Most of all, he opposed the reckless and profuse living of great towns; this he did first on the above-mentioned grounds, but also in the name of right and propriety, which required from the rich a constant discharge of duty towards their numberless disinherited brethren. *The one exception which he made was alike characteristic of himself and of his artistic country; all kinds of sumptuousness appeared to him permissible in public buildings.*"

The sentence in italics ought to be taken to heart by those critics who are constantly desirous of saving a few dollars when a question comes up of the expense of a public building, so much so, that we find the architect of the United States of America cannot employ enough draftsmen to do his work properly because he hasn't the funds to pay them, while a multimillionaire is allowed to spend $7,000,000 on his country residence without a protest—in fact his extravagance is lauded.

FIRST ANNUAL REPORT OF MANUFACTURERS ASSOCIATION OF CALIFORNIA—Represents a record of much work and good done in the way of bringing California made products to the fore. As there is no doubt that California materials equal any in the world when given the same opportunity, we wish the Association still further success this year—more especially in instilling into consumers the dishonorableness of going outside for their goods, if able to pay California prices for home work.

The want of this is illustrated by a case brought to our attention lately—when a person holding a high salaried position under the State sends to Mr. Wanamaker in the East somewhere, to get his clothes made; by which means he gets a trifling reduction in price but leaves his own constituents without the means of living.

FALCONNIERS' BLOWN-GLASS BRICKS.—The illustrated album of Falconniers' patent Blown Glass-Bricks to hand:—The article is made by the Adlerhutten Smelting Works at Penzig, Silesia in different models and colors.

A wall of glass-bricks would apparently present an original appearance; the day-light enters it freely, but it is not transparent. Such bricks would be non-conducting of heat, sound and electricity, and must diffuse the light splendidly. The laying of them is very simple, being accomplished in the same manner as ordinary bricks viz. with mortar or cement. This makes the bricks a very valuable material for building hot-houses, ice-houses, especially for factories. The face of them can be parted in pilasters with walls of glass-bricks between and with some windows for ventilation. We understand these bricks have proved very satisfactory for varandas, winter-gardens, factories and greenhouses and would be useful for lighting premises looking over small courtyards which it is not desirable to see or smell, one would think they would be very useful, and by silvering them on the back they act as mirrows and are therefore of benefit in dimly lighted apartments.

NICKEL STEEL.

IF the truth of the statements of Mr. Robert M. Thompson in regard to a new alloy of fifteen per cent of Nickel with Steel can be verified, architects have at hand a metal that will take the place of steel in all building constructions.

Think of an alloy that will not rust, with a tensile strength of 244,000 pounds, with an elastic limit as high in proportion as that of the lower Nickel Steel.—Ed.

Mr. Robert M. Thompson, President of the Orford Copper Co., of New York, at the meeting of the Iron and Steel Institute, in England, made a very interesting address in reference to the manufacture and use of nickel steel. He said there was no doubt but that the United States Government had taken more interest in the use of nickel steel than any other of the great governments in the world, and in doing so it encouraged the steelmakers to use it not only for governmental, but for private purposes. Reference had been made to the quantity of nickel steel that was being used on this side of the water, and he was very glad to know that it was being made here in quantity. During the three years in which the development work had been going on on the other side, there had been somewhere between 50,000 and 75,000 tons of nickel steel produced in the United States. That carried it absolutely out of the domain of experiment. It was to-day, as far as the quality of steel described in the paper, as much a matter of every-day practice in the production of it as was the production of ordinary steel. But the question of the utility of nickel in connection with steel had not yet been finally closed. There were higher alloys which were being experimented upon which contained even greater properties. An ingenious German chemist had just concluded some experiments, and probably many of them had seen an account of his experiments, carried with all the German thoroughness, through all the various grades of nickel from one per cent up to twenty-five per cent, and with varying degrees of carbon. That chemist had arrived at the fact that at about fifteen per cent of nickel an almost new metal had been discovered, one with a tensile strength was obtained of 244,000 lbs. to the square inch with an elastic limit as high in proportion as that of the lower nickel steel. He had made a rough estimate of what an alloy of this kind could be produced at when used in the construction of all the steel parts of one of the great battleships which the world was building now in every quarter. If used for hull plates and all the various parts where it could be employed, it would not increase the cost of the battleship two per cent; and yet only conceive of the enormous increase in strength and the increase of the value of the ship as a weapon of offence, and the great saving that could be made in the whole weight, thereby allowing that ship to carry more coal, heavier guns and more munitions of war—in other words, at a mere nominal increase of cost the actual value of the weapon would be nearly doubled. In the United States at the present time, nickel steel was being used for armour plates, it was being used for the barrels of small arms, it was being used for large guns, it was used for wire for making torpedo netting, and it was being employed in the construction of vessels. The Steel Board of the Navy Department had recommended that the entire hulls of the new battleships that were building should be constructed of nickel steel. The boilers that were being prepared for the "Chicago," were being made of nickel steel, and the shafts of some of the new vessels—the "Columbia's" shaft, he thought, was an instance—were of the same metal. Some reference was made to the roughness of nickel steel as produced. It was certain, however, that they could also produce nickel steel of the very finest quality. He held in his hand a little purse made from nickel steel; it was an alloy of twenty-five per cent of nickel and steel, and nothing could be finer than the workmanship. It was made by the Ferro-Nickel Society, of France, and they were producing a very wide variety of articles, such as bits for horses and scabbards for army swords; they were also making a coat of mail, or a cloth of mail as they might call it, with minute rings, and in every way they were making most interesting articles from it. Their alloy possessed the property that it did not rust; it had perhaps all the qualities of German silver, with very great strength; it had a tensile strength of over 100,000 lb. to the square inch.—*The World's Progress.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec't. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
C. E. Grunsky, Pres. Geo. W. Dickie, Vice-Pres.
Otto Von Geldern, Sec. W. C. Ralston, Treas.

California Electrical Society, meets the first and third Monday evenings of each month at the Academy of Sciences Building.
Geo. P. Low, Pres. C. O. Poole, Vice-Pres.
Max Caspari, Sec. H. T. Bestor, Treas.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Building Contract—Change of Plan.—Where, in an action to recover damages for prospective profits under a contract for driving piles, which provided that the architect might make deviations from or alterations in the plan of the work, it is shown that, owing to the formation of the ground, the architect determined not to have the piles driven, and there was evidence that, after the contracting company knew of this determination, it received a contract for the work substituted for the piles, it was proper to refuse its request to charge that, under the pleadings, the question of waiver could not be considered. In such a case it was proper to charge that, if the contracting company received from the owner reasonable notice of the change of plan, it could not recover for any piling omitted.
St. Louis Bridge & Iron Co. v. St Louis Brewing Ass'n., Supreme Court of Missouri, 31 S. W. Rep. 765.

Agreement for Interpretation of Building Contract.—A provision in a building contract referring to the architect "all disputes and all questions of doubt as to the tenor and intention of the drawings and specifications, or of the contract," embraces the question whether the contractor and his sureties are bound to refund to the owner of the building the amount paid by him on a mechanic's lien. Where the contract provides that the contractor shall deliver the building free from all incumbrances and shall furnish at his own cost all necessary materials. The architect is not disqualified to act as such referee because prior to so acting he was called to a witness in an action between the parties involving the matter in dispute.
Barclay v. Deckerhoof, Supreme Court of Pa. 33 At. Rep. 71.

Date of Contract not Essential to Lien.—The fact that an architect in his claim for a lien on a building, alleges the date of the contract for his services to have been two years prior to the actual date, will not defeat his lien.
Pac. Mut. Life Ins. Co. v. Fisher. Supreme Court of Cal., 42 Pac. Rep. 154.

When Partner may Assign to Himself.—An assignment of a partnership claim by a member of the firm in the name of the firm to himself individually is sufficient to enable his to sue the claim, the other partners not objecting.
Pac. Mut. Life Ins. Co. v. Fisher, Supreme Court of Cal. 42 Pac. Rep. 154.

Extent of Mechanics' Lien. An agreement was made between two persons for the sale of certain lots, for a specified sum, within a certain time after the date of the contract. The purchaser agreed to erect buildings on such lots, work to begin ot once. The seller agreed to deliver a good and sufficient title to the lots upon payment of the contract sum. The purchaser put up his buildings but never paid the money or obtained the deed. Liens were filed by his contractors for labor and materials. It was decreed that the liens covered not only the buildings but extended to the lots.
Shapleigh v. Hull, Supreme Court of Col., 41 Pac. Rep. 1108.

Recovery for Conract Void Under Statute of Frauds.—The value of work and labor supplied under a contract void by the statute of frauds is recoverable upon the theory that a benefit has been recovered, from which springs an implied undertaking to pay the value of such work and labor.
Banker v. Henderson, Supreme Court of New Jersey, 32 At. Rep. 700.

Liability for Dangerous Premises.—The mere maintenance of a dangerous nuisance upon one's inclosed premises gives no right of action to another, who, without necessity, and without invitation from the owner, either express or implied, voluntarily deviates from a public highway adjacent thereto, and, entering upon such premises, is injured in consequenee of the existence of such nuisance. If the nuisance complained of be by itself of such a dangerous character as that a person of reasonable discretion, entering upon the premises of another, inclosed or uninclosed, either from necessity or upon invitation, express or implied, could readily perceive its danger, and in so entering such premises, should suffer injury which he, by the exercise of ordinary care, could have prevented or avoided, he cannot recover. It is the duty of the owner of premises so to inclose a cellar which lies in dangerous proximity to a public street as to afford to one passing along such street, in the exercise of ordinary care, reasonable immunity against the danger of casually falling therein. If the owner fail to perform this duty, and a person exercising such care so falls and is injured, he is entitled to recover from the owner damages for such injury.
Hutson v. King, Supreme Court of Georgia, 22 S. E. Rep. 615.

BUSINESS MOSAICS.

In our description of the Heating and Ventilation of the Harrison School in Oakland in our last number we inadvertantly omitted the name of the firm supplying and installing the same—a piece of injustice which we hasten to rectify by stating the firm in question was the Morgan Heating and Ventilating Company who now have their officer's at Academy of Sciences Building, Market street, San Francisco.

Mrs. Scraply (during the fight)—Now have I made myself plain? Mr. Scraply—No, you were born that way.

Phœnix Pure Paint—Duresco and other specialities of W. P. Fuller & Co., deserve attention to be drawn to them.

Clara—Mr. Mason paid me a great compliment yesterday. He said I grew more beautiful every day. Maud—Well practice makes perfect, you know.—*Life.*

You cannot be much out of the way when you patronize home industry, certainly not when you use a California production that is first-class. Now P. & B. Building Paper answers this description; it can be had of the Paraffine Paint Co., 116 Battery street, who also are dealers in P. & B. felt and composition roofing.

The reader cannot be too often reminded that he consults his own comfort with at the same time a reduction of his coal bill, and in addition receives the thanks of his wife when he calls at 226 Post street and orders a gas cooking stove to be sent to his home.

She—Do you think it would be unmaidenly for a girl to propose to a man? He—Certainly not; if she is rich enough for two.—*New York Sun.*

J. L. Mott Iron Works are always found catering to those who think life is worth living, and of such are those who delight in lying enclosed on all sides by warm water, with their heads resting on Mott's Patent Bath Seat and Head Rest and meditating serenely on all manner of things and even going off for a short time into a *dolce far niente* dose, and when they once more awake to the stern realities of life, it occupies but a moment to lower the head rest, form a seat and while they are drying and fussing with the upper part of their body still leave the lower extremities a chance to get all the good they can out of their surroundings before the final emergence from the bright tub.

"Johanna, don't forget to dust the bric-a-brac." "No, ma'am; where do you keep the dust?"—*Detroit Free Press.*

L. E. Clawson & Co's. "Patent Hood or Throat and Arch-bar Combined" makes the best fireplace in the Market,

prevents all chance of fire from the fireplace or flue; the throat being in one solid piece and a great help to the bricklayer in making a neat job.

"Blykins has his own way in his home." "Yes. But his wife always tells him what it is going to be beforehand."—*Washington Star.*

So far Rischmuller's Door Opener and closer keeps the lead for perfectness, simplicity and durability, and we have heard no complaint from its users for want of these qualities, and even in houses where it is roughly handled by tenants it still stands this rough usage.

"Order in the court!" shouted the Judge. "This is the worst disgrace this court has suffered since I was elected to the judgeship."—*Indianapolis Journal.*

The Vulcan Iron Works exhibit some fine specimens of stable fittings the most complete of their kinds, and all kinds of architectural and ornamental iron work at their works, 135-34 Freemont street.

Bertie—Did you ever notice how Algie's face lights up when he talks? Mable—Yes; he's lantern-jawed, you know.—*Pick-Me-Up.*

A. Steiger Sons still keep up their reputation for first-class terra cotta work; and by dint of this keep their Architectural Terre Cotta to the fore notwithstanding the attacks made on that substance by the stone men.

She—Yes, they are engaged. I know she refused him twice, but the third time he proposed she accepted him. Her Husband—Serves him right.—*Brooklyn Life.*

CITY BUILDING NEWS.

Alvarado near Douglas. Frame cottage; owner, J. Heyman; cost $2500.

Broad near Plymouth Ave. Fire engine house; owner, City of San Francisco; architect, C. R. Wilson; contractor, A. Dahlberg; cost $4473.

California Ave. and Coso Ave. Cottage; owner, W. C. Hamerton; cost $1800.

Clay near Jones. All work on five flats except plumbing, gas-fitting, tinning, tin roof galvanized iron; owner, William Pickett; architects, Bugbee & Gash; contractor, George Eber; signed, Jan. 29; filed, Jan. 30; cost $5300.

Devisadero and California. Alterations; owner, L. M. Walter; contractor, Home Manufacturing Co.; cost $2500.

Eddy and Hyde. Plumbing and gas-fitting; owner, O. H. Hund, architect, A. C. Luitgens; contractors, Allen & Looney; signed, Jan. 17; filed, Jan. 20; cost $1594.

Ellis near Van Ness. Alterations, etc.; owner, Joseph Henry; architects, Copeland & Pierce; contractor, H. Pauls, signed, Jan. 28; filed, Jan. 28; cost $4045.

Fifth and Bryant. Elevators; owner, Main & Winchester; architect, H. Geil full; contractors, A. J. McNicoll & Co.; signed, Feb. 4; filed, Feb. 5; cost $1575

Ferry Slips Nos. 4, 5 and 6. Repairing Dolphins, etc.; owner, Board of Harbor Commissioners; contractor, B. McMahon; cost $2100.

Hampshire near 21st. Cottage; owner, J. P. Donahue; cost $2000.

Harrison and Main. Foundry building; owner, Moore Investment Co.; architects, Havens & Toepke; contractor, Thos. H. Day & Sons; signed, Jan. 20 filed, Jan. 21; cost $1134.

Homestead near 24. Cottage; owner, S. A. Born; cost $2500.

Howard street wharf, pier 2. All work for coal bunkers, etc.; owner, Beaver Hill Coal Co.; architect, Howard C. Holmes; contractor, Thos. H. Day & Sons; signed, Jan. 31; filed, Feb. 4; cost $8641.

Jackson near Nan Ness Ave. Mantels, etc.; owner, H. Sahlein; architects, Salfield & Kohlberg; contractor, L. and E. Emanuel.

Kearny and Post. Additions to White House; owner, R. Weill & Co.; architects, Pissis & Moore; contractor, L. and E. Emanuel; cost $1500.

Market street Ferry Depot Building. Stone work; owner, State of California; architect, A. Page Brown; contractor, C. F. McCarthy; cost $218,000. Carpenter work; contractors, Bateman Bros.; cost $48,000. Galvanized iron work; contractor, W. Cronan; cost $43,599. Painting work; contractors, Smith & Sons; cost $42,900.

Market near 6. Alterations to brick building; owner, Hale Bros.; contractor, L. and E. Emanuel; cost $3000.

Market near 5. Music stand, stairs and balustrades etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, Coppleters & Mockel; signed, Jan. 20; filed, Jan. 25; cost $9850. Fixtures, counters, etc.; contractors, L. and E. Emanuel; signed, Jan. 13; filed, Feb. 25; cost $2675.

Market next to Parrott Building. Alterations etc., owners, Prager Bros.; architect, Allen; contractor, John Hayes; cost $5000.

Montgomery and Washington. Alterations and additions; owner, Montgomery Block Real Estate Associates; architect, T. J. Welch; contractor, John Bath; signed, Jan. 23; filed, Jan. 24; cost $1483.

New Montgomery Grand Hotel. Alterations; owners, Fay & Foster; architect, P. J. Donahue; contractor, Rae Contracting Co.; signed, Jan. 28; filed, Jan. 28; cost $1185.

Page and Lyon. Three-story frame; owner, T. C. Van Issendorf; architect, E. J. Vogel; contractor, R. Currie; signed, Feb. 3; filed, Feb. 4; cost $7600.

Pine near Lyon. To build; owner, Peter Flach; architect, De Prosse & Meussdorffer; contractor, F. V. Steinnan; signed, Jan. 23; filed, Jan. 24; cost $4600.

Oak near Ashbury. Two-story frame; owner, Catherine Weineke; architect, H. Geilfuss; contractor, C. Schutt; signed, Feb. 1; filed, Feb. 3; cost $4300.

Sacramento near Walnut. Two-story frame; owner, Julius Frankel; contractor, G. G. Gillespie; signed, Jan. 15; filed, Jan. 15; cost $3870.

Sansome and Filbert. Additions; owner, P. W. Riordan; architects, Wright & Sanders; contractor, J. S. Mackey; signed, Jan. 27; filed, Jan. 27, cost $3040.

Shrader near Waller. Two-story frame; owner, Samuel Glass; architect, Wm Koenig; contractor, H. P. Conraday; signed, Jan. 14, filed, Jan. 16; cost $4100.

Stuart near Mission. Four-story brick; owner, E. R. Lilienthal; architect, Clinton Day; contractor, Riley and Loane; signed, Jan. 9; filed, Jan. 18; cost $14,443.

Third Ave. near Clement. Two-story frame; owner, C. B. Adams; contractor, A. J. Cloud; cost $2500.

Twentieth near Diamond. Two-story frame; owner and builder, J. A. McConnell; cost $5100.

Twenty-second and Noe. Cottage; owner and builder, H. Peterson; cost $2500.

Twenty-fourth and Douglass. Two frame cottages; owner, J. Anderson, cost $4000.

Valencia and Stable Alley. Three-story frame; owner, Rose A. Pickering; architects, Havens & Toepke; contractors, Ackerson & Paterson; signed, Jan. 23; filed, Jan. 25; cost $10,666.

Webster near Broadway. Plumbing work, etc.; owner, William B. Bourn; architects, Polk & Polk; contractor, H. Williamson; signed, Jan. 31; filed, Feb. 3; cost $2143.

York near 22d. Cottage; owner, Miss Maria Holtz; contractor, M. Holtz; cost $2000.

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NOW IN THE SEVENTEENTH YEAR.

W. J. Cuthbertson, President. Oliver Everett, Secretary.

Remittances should be in the form of postal orders, payable to The California Architectural Publishing Company, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

OF great interest to all real estate owners, both present or prospective, is the question of improving the existing methods of transferring the title to land. The present methods are cumbersome, costly and not always effective, to say nothing of the repetition of useless labor now caused by the necessity of each intending purchaser examining all the previous recorded transactions and tracing the title back to the original possessor, a never ending task that grows more burdensome with each successive transfer. The Torrens' system of transferring title possesses many marked advantages, and has been gradually spreading, but at a discouragingly slow pace. It was adopted in Australia as far back as 1858, and by neighboring governments as they were convinced of its advantages.

But owing to the fact that the people in this country have no direct method of introducing reforms in our legislative bodies, we are almost entirely at the mercy of our politicians, and they as a rule are too much occupied with politics, to consider improvements in government. When they do submit such a proposition to popular vote, the people are quick to see and avail themselves of more advantageous methods as shown conclusively by the adoption of the Torrens' system by Cook County, Illinois, by vote of 82,536 in favor of the new system to 5,279 against it.

Here in California our State Legislature has been trying (unsuccessfully so far) to get its eyes opened to see the advantages of the system, and Bills have been introduced and committees appointed, but nothing has been achieved as yet. However we will continue to live in hopes, until some reform party succeeds in introducing the "Initiative" when desirable legislation can be voted on by the people without having to wait the pleasure of their servants. In another column will be found an interesting article giving many important details of the System.

N this number we publish a letter from Regent Reinstein of the University of California, in which he desires suggestions as to the best method of getting the best designs for a complete scheme for buildings and grounds at Berkeley. In our last two numbers we have threshed the matter of competition pretty well in so far as general application is concerned. From the results thus obtained it will not be a difficult matter to make up a program suitable for this particular case. A scheme for the competition evolved by the Chapters of the American Institute of Architects in California would, we believe, by the tone of the letter of Mr. Reinstein, be acceptable to the Regents and would very appropriately come from the said Chapters.

E call the attention of ambitious architects to the advertisement of the State Capitol Commission of Montana for a new State Capitol Building to be erected at Helena, to cost one million dollars. The commissioners state that four *adequate prizes* have been provided by law for the best designs, and full particulars can be had by applying in person or by letter to the Secretary of the Commission.

It is such an unusual thing to hear that *adequate* compensation is to be given to competing architects, that we cannot help commenting favorably on a proposition that is based on the principle of just reward for honest endeavor, and hope the terms offered will be considered by the profession as adequate as they are held to be by the Commissioners.

HE following communication was read at the last meeting of the San Francisco Chapter of the American Institute of Architects.

To the California Chapter of the American Institute of Architects.

Gentlemen:—There is now an endeavor amongst the artistic and æsthetic circles of the community, to raise a sentiment among the public and those interested, in favor of the adoption of a general plan, forming a harmonious whole, for buildings for the State University at Berkeley; so that when it should be decided to put up any other building on the grounds, said building should form part of this general scheme. This seems to me a laudable object and one that should arouse the sympathies of every true architect and one that should especially be taken hold of by your Chapter as well as by the Southern Chapter forming as they should do the crystallization of Architectural opinion in California. An opinion coming from those two bodies ought to have considerable weight and influence and mold public opinion in the direction indicated.

I therefore respectfully suggest that an opinion from your members be obtained as to the matter and so as to bring it out definitely to have it decidedly expressed in regard to at least these two questions:

1st. Are the Buildings now on the University grounds at Berkeley generally convenient or beautiful and do they form an Architectural or pleasing ensemble, or sufficiently so to form part of some complete scheme?

2d. Would it be best in a case of this kind to work to some complete and united plan; so that all future buildings should be built in regard to such united and complete plan?

An answer to these two questions would give an indication of professional ideas on the subject—to reinforce the same, means should be taken to obtain the opinion of outside Architects and Artists on said questions—so that a consensus of the ideas of the artistic world may be obtained and have its due influence on the rest of the community and those having charge of the interests of the State.

Yours respectfully,
W. Jones Cuthbertson.

This resulted in the following Resolution being passed by the San Francisco Chapter of the American Institute of Architects:

Resolved—That most of the buildings now on the grounds are absolutely incompatible with any artistic arrangement and that it is absolutely necessary in order to secure a future artistic and complete general plan or arrangement of the grounds that a definite and well arranged program be prepared.

TORRENS' SYSTEM OF LAND TRANSFERS.

ONCERNING that realty with a good title is the safest of all investments, says the *Call*, how shall the investor who purchases a parcel of land or lends his money on what he considers to be the security of a good title, know that his money is safe? What redress has he if the title prove defective and in consequence his investment be a bad one? Cognizant of these facts, legislators throughout the civilized world have racked their brains in their efforts to throw safeguards around the ownership of land and to enact such laws and forms in the transfer of same as would afford proper protection to the varied and complicated interests concerned.

The good reports from the city of Chicago of a system of registration of titles, recently adopted, and the appointment by several of the States of commissions to examine into the merits of the Torrens land-title law in force in Australia and in some parts of England, and from which the Illinois statute originated, makes the present a fitting time for a few suggestions concerning it.

From a lengthy paper read before the Six-thirty Club recently, by Warren Gregory, of Chickering, Thomas & Gregory, the following excerpts are taken:

"The two great systems which exist to-day in the records of title are, first, a registration of deeds, and, secondly, a registration of title. It is the former which has prevailed almost universally in the United States from the earliest times.

"Although the transfer of real property is purely a local matter governed by the laws of the State in which it is situate, nevertheless, the general features of this system are the same in all the States. Its sole efficiency lies in the fact that by it is preserved a permanent record. The record of the deed gives it no additional validity between the parties whatsoever. The sole purpose of recording a deed is to give notice. Thus, section 1217 of the Civil Code of this State is 'that an unrecorded instrument is valid as between the parties thereto and those who have notice thereof.' Nor does the transcription of the document in a special book give it any additional validity. This is simply a matter of convenience.

"Defects in the present system are obvious. Lord Cairns, when introducing into Parliment a bill which I shall notice hereafter, declared that 'the objections to a register of deeds are so manifest that hardly any person in the present day would venture to propose it. It would not simplify title in the least. It only puts on a form of record the whole of that multitude of deeds and conveyances of the extent and complication of which we already have so much reason to complain. You have to investigate and search as before; in addition to that you have to pay for searchers in the registry and also to pay in some shape or other the expenses of placing the deeds upon it.'

"With this brief statement of a few of the radical defects in the system of the registration of deeds I pass to a discussion of the second system, viz., registration of title. In its essential features it is practically the system introduced in South Australia in 1858 by Sir Robert Torrens, but inasmuch as the details of the scheme differ somewhat in the various attempts which have been made to introduce it in this country I will take as the basis the recent act passed in the State of Illinois for the County of Cook. I do this for the reason that the act introduced in the Legislature of California in January of the last year had one feature quite unlike the Torrens system. This bill passed the Assembly at Sacramento, but was withdrawn in the Senate. A general feeling prevailed that not enough attention had been given to it to enable the Senators to vote intelligently.

"The difference between a registration of a deed and the registration of a title is fundamental. The essential feature of the latter is that the title passes only by the entry of the transfer upon the official register, and by the virtue of a deed between the parties. The title thus transferred and authenticated gives an indefeasible title. The owner therefore does not depend upon a deed from his grantor but upon a certificate of title issued to him by the official registrar. It is therefore precisely analogous to the transfer of corporate stock or of a ship.

"This brief statement would seem to be charming in its simplicity and effectual in operation, but the plan by which it can be worked out presents by no means an easy problem. First, the method by which land can be brought under the system.

"In England and Australia parties are controlled by no constitutional limitation, and therefore have the right arbitrarily to fix a date upon which all persons then registered shall be admitted to be the rightful owners of the property, or to create in the Registrar absolute authority to pass upon the title of every applicant. Such a ruling is not possible in the United States. For, if A and B each claim a tract of land and A succeeds in getting his title first registered, B cannot thereby be deprived of his right to apply to the courts, for, if so, the Registrar would have deprived him of his property without due process of law, contrary to the fourteenth amendment. It is, therefore, essential, in beginning, to get over this constitutional objection. The method adopted in Illinois is as follows: A person desiring to have his property registered must make a verified application to the Registrar setting forth in detail the description of his property, whether he is married or single and has estate in the land, and whether the same be occupied or not.

"Thereupon the Registrar, through two examiners (attorneys-at-law) authorized to be employed by him, causes an examination to be made of the title and as to the truth of the matter set forth in the application. He makes minute inquiry as to the possessory right, and posts up a notice on the property for a period of ten days, requiring all persons who have any interest in or claim to the land to appear before the granting of the certificate of title. If it appears to the Registrar that the facts stated in the application are true there is issued to the applicant a certificate of title, and from that time forth the land is within the operation of the act. The form of the certificate is somewhat as follows:

"'John Doe of San Francisco, aged twenty-five years, unmarried, is the owner of an estate in fee simple in the following land, subject to the estates, easements, incumbrances and charges hereunder noted.

"'Witness my hand and official seal this twentieth day of December, 1895. ——, Registrar.'

"As soon as the certificate is granted the Registrar makes and publishes in a newspaper a list of all registrations effected during the preceding week and also posts the same in his office. It is then provided that no person shall commence any action for the land or assert any interest therein adversely to the first certificate unless they make known their claim to the Registrar within five years after the first registration. It is no exception to this rule that the person is a minor, a lunatic or under disability. It will be noticed that this last provision attempts to meet the constitutional objection by placing the foundation of the title, not upon any act of the Registrar, but upon lapse of time. The proceeding is akin to a suit to quiet title brought by then owner against all persons known or unknown. A title acquired by a decree in such action has frequently been declared valid by the Supreme Court of the United States. That the Legislature has power to create this statute of limitations or to shorten one already existing is undoubted.

"An objection may at once be here raised, that this proceeding would be a sort of hornet's nest stirring up all the slumbering black-mailers, who would hasten to file a claim on every certificate of title issued. This is probably so, but it would have the advantage of bringing them to the light, for, having once asserted their claim upon the register they are compelled to bring an appropriate action to assert their claim within this period of five years. The machinery of the courts would thus be set in motion and the true owner would have the right to prosecute it vigorously to a conclusion.

"Possessory title is acquired after the land has been once registered, and it is entirely optional whether it be registered or not, it is transferred by a surrender of the certificate to the Registrar and an issuance of a new one to the grantee. Between the parties this may be done by any of the recognized modes of conveyance, and that forms a contract between them which may be inforced in law, but, as stated before, its validity as a conveyance does not exist until the certificate is issued.

"If the Registrar is satisfied that the supposed grantor appears upon the register as the owner of the land, he notes

upon the original certificate the fact of the transfer, issues a duplicate new one to the grantee, upon which shall appear the volume and page in which the new certificate is registered. And here the second constitutional objection arises.

"Let us suppose that A has acquired a certificate to land. The action of the Registrar was in reality erroneous in issuing this certificate, and B is the true owner. Both the examiners and the Registrar have made a mistake. Before B can make known his claim A has transferred the property to C, who of course relies upon the certificate and takes absolute title. Has B a right to proceed in an action at law to set the transfer aside? Unless some provision were made in the act for this contingency, the answer must be 'yes,' because otherwise the Registrar would have usurped the functions of a judge; that is, when he pretends to decide as between A and B he is really exercising a judical function, and it not being in accordance with due process of law the proceeding is a nullity. To obviate this the following section is incorporated in the act:

"All dealings with the land or any estate therein, after the same has been brought under this act, and all liens, incumbrances and charges upon the same subsequent to the first registration thereof, shall be admitted to be subject to the terms of this act and to such amendments and alterations as may hereafter be made. The bringing of land under this act shall imply an agreement which shall run with the land that the same shall be subject to the terms of the act and all amendments and all alterations thereof.'

"In other words, by bringing his land under this act the owner makes an agreement that the registrar may supervise all transfers of title that may hereafter take place.

"The registrar is created an arbitrator for the purpose of deciding those questions. It has frequently been held that an agreement to submit a matter to arbitration, as, for example, the ordinary arbitration clause in insurance policies, is valid, and although this question must first be decided in the courts before absolute safety is felt, it would seem to be a valid condition; at least such was the opinion of the eminent constitutional lawyers who passed upon the Illinois act.

"The provision extending the statute for five years to minors and infants is one which has occasioned much difficulty. Ordinarily, of course, the statute of limitations itself does not run as against a person who is under disability. But if we were to except minors or lunatics from the operation of this act it would be necessary to examine every title, for certainty could not exist as long as there was a possibility of an adverse claim.

"No clear starting point can be had which does not cut off all claimants alike. This section was taken from the burnt record act of Illinois, already referred to as amended in 1887, and which amendment has thus far proved satisfactory.

"The certificate granted by the Registrar is an absolute guarantee of title. Should the Registrar and his examiners make a mistake the State is responsible. But is is urged that if A succeeds in getting a certificate to land to which B is justly entitled, B may not wish to have damages merely, but may wish his identical land restored. It may be a homestead or dwelling to which he is particularly attached. To this the answer is, the possibilities of error are very few. In the course of eighteen years in New South Wales and Tasmania not a single claim has been made against the Government.

"There is of course the possibility of a certificate being forged, but this exists to even greater extent in the present system, and the cases at present in which a notary has been deceived as to the identity of the person making the oath are exceedingly rare.

"So long as A retains the title B is not in any way prevented from still recovering the land from him in an action. But if A transfers it to C, an innocent holder, then B is compelled to make his claim for damages to the State.

"In Australia there has been created an insurance fund and a tax of one-fifth of one per cent is levied upon every transfer for the purpose of indemnifying the Government. This feature has not been incorporated in the Illinois system, owing to the five year limitation clause. Where, as in Australia, an arbitrary time was fixed, it was found necessary to guard against the possibility of a mistake, but it was thought in Illinois that the five year clause would g ve ample opportunity for adjusting every possible case.

"The limits of this paper forbid a detailed examination of all the features of the act. Once given a conclusive starting-point, its workings appear to be simple and perfectly feasible, and it seems to be, in the opinion of the best real-estate lawyers who have seen the plan in actual operation, that there is no insurmountable objection to the application of the system to this State and country.

"It is commonly urged that the fact that it has worked remarkably well in Australia, where the source of title is very near and where the complications in transfers are very few, is no argument for its adaptability to this country.

"Lord Coleridge, late Chief Justice of England, in 1872 in speaking of the applicability of this system to England declared he 'had never been able to perceive the obstacle to applying to land the system of transfer which answered so well when applied to shipping, but as his learned brethren one and all had declared that to be impossible he had become impressed with the belief that there must be something wrong with his intellect, as he failed to perceive the impossibility. The remarkably clear and logical paper which was read by Sir R. R. Torrens relieved him from that painful impression, and the statistics of the successful working of his system in Australia amount to demonstration, so that the man who denies the practicability of applying it might as well deny that two and two makes four.'

"It seems to me that with us in California the application of the system should be particularly easy. We have had, under the control of our Spanish land grants, a well-known instance of an attempt to form a conclusive starting point by the application to the commission of 1852. We are still a comparatively young State, and whatever errors are now upon our land-title records will be perpetuated as time goes on. It is certainly a subject for consideration as to the advisability of a thorough study of this question in order to impress the Legislature with its importance."

WASHINGTON CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

AT the regular monthly meeting of the Washington Chapter of the American Institute of Architects, held Friday evening, February 7, 1896, the following resolution was passed:

"We, members of the Washington Chapter, American Institute of Architects, wish, both as a body and as individuals, to protest against certain statements published in *Harper's Weekly* of December 28, 1895, the Utica *Globe* of January 18, 1896, and other papers of recent date, in which Mr. Edward P. Casey, son of Genl. T. L. Casey, is put prominently forward as the Architect of the new Congressional Library building in this city.

We are familar with this building from its beginning to the present time, and feel that no one can, with propriety or honesty, be entitled to the credit as Architect of this building except J. L. Smithmeyer and Paul J. Pelz. They have devoted the best years of their lives, from 1873 to 1893, in perfecting the plan and in designing the exterior and interior of this building.

Official documents prove that the work was commenced by act of April 15, 1886, under the direction of Smithmeyer and Pelz, Architects. In 1888, Genl. T. L. Casey, father of the alleged Architect, was placed in charge, with directions to complete the building according to the drawings of Smithmeyer and Peiz, omitting four of the stackrooms in the interior courts.

When Paul J. Pelz was discharged, March 29, 1892, Genl. T. L. Casey, U. S. A., wrote him that "as you have entirely completed the designs for the architectural characteristics and features of the building for the Library of Congress, both of the exterior and interior, * * * I have to state that your services will be no longer required by the Government." The alleged Architect, Edward P. Casey, was not employed in any capacity on the building before this date.

We desire in justice to two members of our profession, that the press of the country will publish this protest, and we further recommend the American Institute of Architects to take official action in reference to the matter.

(Signed)

Robert Stead, President.
Glenn Brown, Secretary.

UNITED STATES DEPARTMENT OF AGRICULTURE, DIVISION OF FORESTRY, WASHINGTON, D. C., MARCH 2, 1896.

Walter G. Berg, Esq., Principal Assistant Engineer, Lehigh Valley R. R., Jersey City, N. J.

Dear Sir:—Replying to your request for information regarding the status of the timber test work, especially as regards the kinds tested, number of tests and the data worked up, which I understand you desire in order to keep the American Society of Civil Engineers informed as to the progress of this work most interesting to them, I may make the following brief statement:

The total number of tests made at the mechanical laboratory to January 31st, was 39,437, which during February will be brought up to about 41,500, when all the material collected will be tested and the work for the present abandoned under the orders of the Secretary of Agriculture.

In the above number the moisture determinations which accompany the tests are included reducing the actual number of mechanical tests to probably 35,000.

The material for these tests was specially collected in the woods, comprising 356 trees representing 32 species mainly of southern growth. The distribution of tests by species stands as follows:

Southern pines,	5	species	20,341
Northern pines	2	"	1,097
Bald cypress			4,126
White cedar			243
Oregon fir,	10	pieces	276
Conffers			26,083
Gum, red			867
Oaks, white,	4	species	4,052
" black,	5	"	4,301
Hickory,	8	"	3,011
Ash	2	"	147
Elm	2	"	409
		Total	39,437

You will note, that of Northern timbers only the white and Norway pines have been tested in a small way and of Oregon fir only a few random sticks sent in by an interested party; all others are southern.

Of these sticks only a portion on Longleaf pine was compiled and worked up in Bulletin eight. There are, however, now the entire data on Southern pine worked up in manuscript. The average results will presently be stated in an eight page circular, the status of the printing fund of the Department preventing for the present the issue of a full bulletin. There will then still remain nearly as many data referring to other species undigested.

You will however, understand that this test work differs from other testing done hitherto, in that it places reliance only on large numbers. Hence, for instance, the 276 tests on Oregon fir would hardly warrant us in drawing any conclusions, they are not better than any other tests, except that their moisture condition is noted, which is to be sure one important advantage.

On the other hand, for the Southern pines we may claim to have such a series of data as to make It unnecessary for anybody else to test these timbers again; they cover such a large number under all sorts of conditions that absolute confidence in the reliability of the data for the range of strength in the species should be accorded to them.

At the same time the confusion existing in engineers' tables with regard to the kind of pine (names or species) should not be permitted any longer, especially since the various species promiscuously referred to as southern pine, yellow pine, pitch pine, etc., differ up to twenty per cent in average strength values.

But the mere establishment of the strength values does not exhaust the usefulness of these data; they were to be used, and will be used, if we are permitted, to establish such relationships as will lead to the formulation of *rules of inspection*—the most important object of these investigations—as a result of which the engineer or other consumer will be enabled to judge of the comparative value of the piece in hand.

For such purpose the existing data may sometimes not even prove sufficient and would have to be supplemented by new data obtained under special conditions.

One of the investigations of this nature directly interesting to the engineer is that on the relation of tests on large and small sizes. Here, too, our number of tests is still too small for safe generalization, although not less than 340 large columns and beams have been tested, with the interesting and readily explained result that for symmetrically

cut beams (heart in center) the values are as large and sometimes larger than for the average of the small pieces cut from the same beams; while the columns give mostly but not always lower values, yet the results are so variable, that no trustworthy numerical data have been attained, the range in individual cases being as much as fifty per cent.

At present the work will be abandoned for the fiscal year, the allotment of funds having been exhausted, about $40,000 in all having been spent so far. An attempt to work up the test results, at least for data of strength, will be made.

In the reading of the appropriations for this Division for the next year the reference to this line of work has been left out and a discontinuance is probably contemplated. A bill making special appropriation for its continuance has been introduced in the Senate (S. 1214), but its passage is exceedingly questionable.

Regretting, then, that I cannot report to you a more hopeful outlook.

Yours very truly,
(Signed) B. E. Fernow, Chief.

THE TALL OFFICE BUILDING ARTISTICALLY CONSIDERED.

AN unpromising subject has been tackled by Louis H. Sullivan when he discants on "The Tall Office Building Artistically Considered" in *Lippincotts' Magazine*.

Thus considered the problem resolves itself into the following, according to Mr. Sullivan: "How shall we impart to this stark, staring exclamation of eternal strife, the graciousness of those higher forms of sensibility and culture that rest on the lower and fiercer passions? How shall we proclaim from the dizzy height of this strange, weird, modern housetop the peace evangel of sentiment, of beauty, the cult of a higher life?"

A problem indeed of great difficulty; for the associations of a tall office building are such that the cult of a higher life (except in a physical sense) has as much chance to grow therein as a rose on the top of a granite boulder.

Another difficult problem to solve is what are the "higher forms of sensibility and culture that rest on the lower and fiercer passions." It must be an unstable resting place fer those higher forms.

The normal type of office buildings consist of:

"1st, a story below-ground, containing boilers, engines, of various sorts, etc.,—in short, the plant for power, heating, lighting, etc., 2d, a ground-floor, so-called, devoted to stores, banks, or other establishments requiring large area, ample spacing, ample light, and great freedom of access. 3d, a second story readily accessible by stairways—this space usually in large subdivisions, with corresponding liberality in structural spacing and in expanse of glass and breadth of external openings. 4th, above this an indefinite number of stories of offices piled tier upon tier, one tier just like another tier, one office just like all the other offices,—an office being similar to a cell in a honey-comb, merely a compartment, nothing more. 5th and last, at the top of this pile is placed a space or a story that, as related to the life and usefulness of the structure, is purely physiological in its nature,—namely, the attic. In this the circulatory system completes itself and makes its grand turn, ascending and descending. The space is filled with tanks, pipes, valves, sheaves, and mechanical etcetera that supplement and complement the force-originating plant hidden below-ground in the cellar. Finally, or at the beginning rather, there must be on the ground-floor a main aperture or entrance common to all the occupants or patrons of the building."

The practical way of treating such a building is very justly given by Mr. Sullivan:

"Beginning with the first story, we give this a main entrance that attracts the eye to its location, and the remainder of the story we treat in a more or less liberal, expansive, sumptuous way,—a way based exactly on the practical necessities, but expressed with a sentiment of largeness and freedom. The second story we treat in a similar way, but usually with milder pretension. Above this, throughout the indefinite number of typical office-tiers, we take our cue from the individual cell, which requires a window with its separating pier, its sill and lintel, and we, without more ado, make them *look* all alike because they *are* all alike. This brings us to the attic, which, having no division into office-cells, and no special requirement for lighting, gives us the power to show by means of its broad expanse of wall, and its dominating weight and character, that which is the fact,—namely, that the series of office-tiers has come definitely to an end."

He then remarks that the chief characteristic of the tall office building is its loftiness—and that the man that lives of his life and for his life in the fullest, most consummate sense "must realize at once and with the grasp of inspiration that the problem of the tall office building is one of the most stupendous, one of the most magnificent opportunities that the Lord of Nature in his beneficence has ever offered to the proud spirit of man.

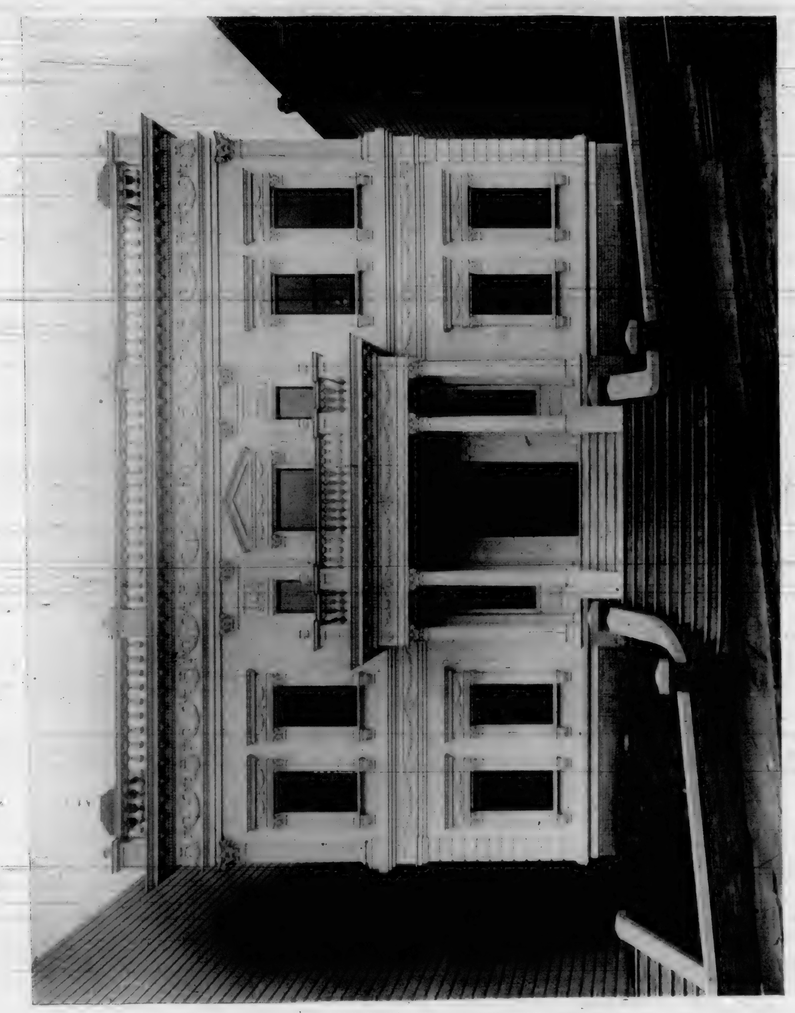
"That this has not been perceived—indeed, has been flatly denied—is an exhibition of human perversity that must give us pause."

I must be one of those exhibitions of human perversity for I fail utterly to see it in that light.

The *raison d'etre* of the tall office building, the mercantile, financial and other commercial pursuits for which it is used, fail to arouse in the ordinary man the enthusiasm exhibited by our essayist. It is no doubt a fact that the tall office building is tall, but that fact alone cannot enthuse the artist. That thrill cannot come over him as he gazes up the lank sides of the tall office building although it does soar into the heavens and may be adorned in the most artistic manner, that comes over him as he gazes up the straight majestic trunk of the mighty Redwood and finally feasts his eyes upon the gently swaying mass of foliage outlined against the heavens—or even, to a less extent, as he follows with his eye the outlines of the tapering spire, massive tower or dome of some building dedicated to the higher susceptibilities of human nature.

Never can the tall office building vie with either of these in exciting artistic feeling; for the idea represented by it is an idea entirely incommensurate with its size and as well may the frog try to inflate itself to the size of the ox as may the tall office building attempt to take hold of a natural and artistic nature in such a way as such other things we have mentioned in our example.

As Mr. Sullivan says: "The law is—*form ever follows function*"—therefore when the function is unenobling the form must be the same, and the more this function is exhibited as it should be by the true architect the truth is



RESIDENCE OF MRS. A. M. WOHLER, 2025 SACRAMENTO STREET.
E. J. Molera, Architect.
CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.
VOL. XVII. No. 3. MARCH 1896.

DINING ROOM, RESIDENCE OF MRS. A. M. WOHLER.

LOWER HALL, RESIDENCE OF MRS. A. M. WOHLER.

more exposed, and although he will naturally show the best side possible of that function, for he detests anything hideous—still its natural infirmity must be brought to light, and must cast its blighting shadow upon the whole edifice—and the only effect on an artist would be the admiration caused by the perfect way in which its functions have been sublimated.

If we are to believe that the author feels that the exhibition of the functions of the office building alone without sublimation enough to make them unrecognizable can excite those thrilling effects upon the artists nature which he portrays, then it is hard to reconcile this with his wind up.

"When we know and feel that Nature is our friend, not our implacable enemy,—that an afternoon in the country, an hour by the sea, a full open view of one single day, through dawn, high noon, and twilight, will suggest to us so much that is rhythmical, deep, and eternal in the vast art of architecture, something so deep, so true, that all the narrow formalities, hard-and-fast rules, and strangling bonds of schools cannot stifle it in us—then it may be proclaimed that we are on the high-road to a natural and satisfying art, an architecture that will soon become a fine art in the true, the best sense of the word, an art that will live because it will be of the people, for the people, and by the people."

W. J. C.

CORRESPONDENCE

SAN FRANCISCO, March 14, 1896.

The California Architect and Building News

DEAR SIRS:—The Board of Regents of the University of California has set apart April 28, 1896, to discuss the best methods of obtaining a permanent grand plan for the grounds and buildings of the University at Berkeley, California.

It would seem that the Board is required by law to have a competition, that is, it is required to "advertise for plans."

Under these circumstances, as I have been requested to make a report to the Board on this subject, you would oblige me greatly, if you would give me your judgment as to the best method of having such a competition to secure the selection of the best plan.

It has occurred to me that there should be a Board of three or five experts advisory to the Regents—that the majority of this Board should be selected by the ten leading architects in the Eastern States, and the balance to be selected by the five leading architects of this State. This Board of experts or Advisory Board might have added to it, if it were deemed advantageous, three members selected from, say Harvard, Yale and Chicago Universities, as they would be presumed to have knowledge and experience in such matters, but the final decision would rest with the Board of Regents.

The Board of Regents would send to all competing architects, a topographical map, and perhaps papier mache cast of the University grounds, and full photographs of the surroundings and the present buildings on the grounds, though they are considered as merely temporary.

The Faculty would make out a list of the requirements for an ideal University, which the competing architects would be expected to plan for this site.

The time given for the competitors will depend largely on the views of the leading architects of the Country in that regard. Without knowledge on that subject, we figure that six months would be sufficient for that purpose.

This is a State University, with assets of about eight million dollars, and a permanent tax for its support of one mill on the dollar of the increasing taxable wealth of the State.

The buildings are to be erected as required, but it is expected that the next Legislature of the State will grant the University two hundred and fifty thousand dollars for building purposes, and it seems probable that say a million dollars will be expended for improvements within the next ten years.

It is hoped that the Regents will give from five thousand to ten thousand in prizes in the competition. I should assume that the architect whose plan was selected would have the supervision of all buildings erected during his lifetime.

For your views on these points, and everything germane to this subject, prior to April twentieth, I should be greatly obliged.

Yours very truly,

J. B. REINSTEIN.

NEW YORK, February 27, 1896.

DEAR SIR:—We have just received a copy of your January number, in which there is a long article concerning the University of Berkeley, quoting several architects opinions in the matter of the proposee work, and though we are quoted correctly, the portion quoted is not the sense of our letter.

We hold practically the same views as Mr. Sullivan and are absolutely opposed to competitions. We undertook, however, to explain the best conditions under which a competition could be conducted, if one is absolutely necessary.

We would appreciate a correction from you.

Yours truly,

CARRERE & HASTINGS.

[We did not make Messrs. Carrere & Hastings' opposition to competitions sufficiently prominent and are glad of the opportunity of correcting any wrong impressings made by not publishing the whole of their letter.—ED.]

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

FRAUD OF CONTRACTOR AND OWNER WILL NOT PREVENT LIEN.—In an action to enforce a mechanic's lien in favor of a subcontractor, notwithstanding the contractor had covenanted that no liens should be filed, on the ground that though the title stood in the name of the sister of the contractor, the latter was whole or part owner of the property, and the whole scheme of having it put in her name, and his making the contract and covenant was a mere device, participated in by both of them, for the purpose of misleading and defrauding strangers to the title who should furnish labor and material, the Supreme Court of Pennsylvania held such evidence sufficient, though it would not be to create a resulting trust adverse to the holder of the legal title.

Brilman v. Heron, 32 Atlantic Reporter, 294.

NOTICE INVALID AGAINST MORTGAGEE.—A claim for material furnished in building two houses under separate contracts, filed as a lien against one of them, is invalid as against a mortgagee of the building, though the owner has consented to a decree establishing the lien in a suit by the claimant against him.

Leftwich Lumber Co. v. Mut. Building, etc., Ass'n, Supreme Ct. Ala. 18 So. Reporter, 48.

WHAT LAND IS SUBJECT TO MECHANIC'S LIEN.—Where a statute declaring subject to mechanic's liens on a building the land on which it is situated, together with so much of the land about it as may be required for the convenient use and occupation of such building, the whole forty acre tract on which a dwelling is located is not subject to liens, it not being meant that sufficient land about the building to support the owner while living there will be subject to a lien.

Cowan v. Griffith, Supreme Ct. Cal., 41 Pac. Reporter 42.

CONTRACT TO CONTINUE AFTER DEFAULT A NEW UNDERTAKING.—In an action to recover the value of work, labor and materials, it appeared that a party had contracted with a third person to do certain work in another's residence; that the contract was partly performed when it was violated by such third person, in omitting to make payments; that the first party refused to proceed, when the owner requested him to finish the work and that he would pay him. The Court held that this was a new promise, and not the promise to pay the debt of another which would have been in the statute of frauds, and should have been in writing.

Schulz v. Cohen, 34 N. Y. O. Sup. 927.

BURDEN OF PROOF OF NEGLIGENCE IN DANGEROUS PREMISES.—Where a building falls without any apparent cause, in the absence of explanatory circumstances, negligence will be presumed, and the burden is upon the owner to show that he exercised ordinary care to keep it in a safe condition; but where it appears from such explanatory circumstances that the cause of the fall of the building was a latent defect in the construction, and there is no evidence tending to show such cause was owing to the negligence of the owner, the burden rests upon the party asserting such negligence to show that such cause might have been discovered and removed before the accident by the exercise of ordinary care on the part of the owner.

Ryder v. Kinsey. Supreme Ct. Minn., 64 N. W. Rep. 94.

LIABILITY OF SURETIES ON CONTRACTOR'S BOND.—A slight departure from the plans and specifications of the work, without the knowledge of the sureties upon a contractor's bond, where the alterations are authorized by the contract the performance of which the bond was given to secure, will not relieve the sureties from liability upon the bond. Nor will the fact that the principal procured the signature of a surety on the promise that he would afterwards obtain the signatures of others, which was not done, relieve the surety from his obligation on a bond delivered, approved and filed.

Risse v, Hopkins Planing-Mill Co., Supreme Ct. Kans. 40 Pacific Report r. 904.

BOOKS AND PERIODICALS.

PROCEEDINGS OF THE FIFTH ANNUAL CONVENTION OF THE ASSOCIATION OF RAILWAY SUPERINTENDENTS OF BRIDGES AND BUILDINGS, held in New Orleans, Louisiana, Oct. 15 and 16, 1895.

We have received the above from the Secretary of this Association, S. F. Patterson. It contains a mass of valuable information, results of experiments and other matters of not only great value to Superintendents of Railroad Bridges but also to the architect and builder at large.

The exhaustive Report of Commission on "Strength of Bridge and Trestle Timbers," we published in our last November number. As of special Pacific Coast interest we publish in this number the Results of Experiments made by the Southern Pacific Railway and of Prof. Wing of Stanford University on Oregon Pine and Redwood.

APPENDIX T.

TESTS OF DOUGLAS FIR AND CALIFORNIA REDWOOD MADE FOR THE SOUTHERN PACIFIC RAILWAY BY MR. JOHN D. ISAACS.

Mr. John D. Isaacs, assistant engineer, Southern Pacific Railway, summarizes the results of tests made under his direction as follows:

"Regarding strength of Oregon pine (properly Douglas fir) and Redwood timber, the following are the averages of many experiments (neglecting abnormal results) made several years prior to 1895, by our company under my supervision."

Ultimate Breaking Strength in pounds per square inch.

	Douglas Fir.	Redwood.
Tensile	15,900	8,000
Crushing	6,000	3,000
Shearing parallel with grain	600	276
Modulus of elasticity	1,272,000	600,000

Allowable Safe Unit Stresses in pounds per square inch.

Used in practice under ordinary conditions, by Mr. Isaacs.

	Douglas Fir.	Redwood.
Tensile	1,600	800
Crushing	1,200	600
Shearing parallel with grain	150	50
Bearing perpendicular to grain	400	150

"In trestle work red wood is principally used for sills, posts and caps, or wherever the timber is subject to rapid decay, although creosoted fir timber has been replacing red wood for the latter purpose on the Southern Pacific railway system.

"The tests were made as follows: A large number of logs were cut from different portions of trees from various localities and exposures. After air-seasoning the logs were cut into one inch square pieces; half of the pieces from each section were tested by tensile and the other half by compressive strain, the pieces being turned down to a round for about eight inches in length. All pieces were tested, except such showing sap or splits running across the grain. The diameters were gauged very carefully. The machine was a home-made apparatus of about 25,000 pounds capacity, with a pressure gauge for recording pressures. The shearing tests were made by pulling a half-inch round out of some of the one-inch pieces. The modulus of elasticity was determined by bending pieces of various dimensions.

"All of the experimental results have been checked at various times by isolated experiments. An extended experience with a great variety of timber structures has confirmed my opinion that the units given above are just right for good practice.

"While the testing methods, as compared with more efficient laboratory machines, may appear somewhat crude, the results obtained are probably just as near the truth, considering the varying characteristics of different pieces of the same species of timber."

JOURNAL OF THE WESTERN SOCIETY OF ENGINEERS, contains papers, discussions, abstracts and proceedings.

This journal is full of interesting matters for engineers

and architects. It contains a specially complete series of monographs on Hydraulic Cement covering the following questions. 1. Relative qualities of the several Portland and natural cements at present in general use. 2. The extent to which the testing of cement is useful in connection with various classes of work. 3. What nature of testing is suitable. 4. The essential points which should be covered in specifications as to testing cements. 5. The influence of the amount of water used in forming pastes and mortar. 6. How the several cement mortars are affected by cold, both in laboratory and in practical work. 7. How mortars are affected by tempering. 8. What specifications should require as to mortar and mortar mixing. 9. How cement mortars are affected by different kinds of sand. 10. What extent cement mortar plasters can be relied upon to adhere to cement mortar concretes, especially when Portland cement is used for plaster and natural cement for concrete.

Also notes on Dry Docks and a paper covering the whole field of Oriental Rail Roads including remarks on the railroad stations—wherein it is noticed that there are very few stations built in the countries under English rule where the interior finish is given much attention while the exteriors are most of them very artistic and beautiful especially the one at Bombay which is said to be the finest in the world. It is in the Gothic style with an Oriental feeling.

Here is an account of how the elephant is used in a lumber yard.

"One of the great sights of Rangoon is the elephants working in the saw-mills and lumber yards. They were formerly employed in all the large mills but at present only one continues to use them, and in this yard we saw fourteen at work, from sweeping the floor to piling up timbers which were said to weigh one ton.

"We saw an elephant walk up a to a stick of timber about fourteen inches square, twenty-five to thirty feet long, which they said weighed one ton, get down on his knees, run his tusks under it, throw his trunk over it, get up and carry it to a pile of similar sticks and put it down with one end resting on the pile and the other end on the ground. He then walked around to the end on the ground, curled up the end of his trunk and with it pushed the timber up on top of the pile and then went to the other end and pushed it up so it lay even with the other timbers."

RESIDENCE OF MRS. ANNA M. WOHLER, 2025 SACRAMENTO STEEET, E. J. MOLERA, ARCHITECT.

THIS residence fronting Lafayette Park is in one of the most fashionable locations in the city. The lot on which it is built is 65 x 137½ feet. The architect has endeavored to follow, for the outside and the inside of the building, a pure Renaissance style. Our illustrations taken from photographs of the edifice will show the successful way of the treatment of the subject.

The front measures fifty feet in width excluding the side entrance. It is two stories in height; the depth of the building is a little over fifty feet with an L where the kitchen, pantry and grill room are built. Besides the residence proper an outside house for the man servant and tool house is built in the rear.

The house contains two parlors, dining-room and three principal rooms all 15x24 feet besides a large hall 16x16 feet, three bath rooms, four additional sleeping rooms, three toilet rooms, etc.

Care has been taken that all the material used should be of the very best kind obtainable and it has been built with the greatest care, each contractor having been allowed all the time necessary to do the best work.

One of the features of this residence is the main stair hall 16x16 feet, built all of best quartered oak with fine carvings. The entrance to the hall in front of the front door consists of an arched way with pilasters on each side of the wall and pilastrettes to support the arch. The stair-case, richly carved, is at one side and lands on a gallery boarded around with a fine balustrade. Oak pilasters support the gallery and the dome which covers this hall. Nearly all the rooms open into this hall or the gallery that surrounds it, and as the top of the dome is covered with an art colored ceiling light 11x11 feet, there is light and ventilation in all parts of the house. There is a chapel with three art windows with original designs. A balcony opens from the chapel into the hall giving a very fine effect.

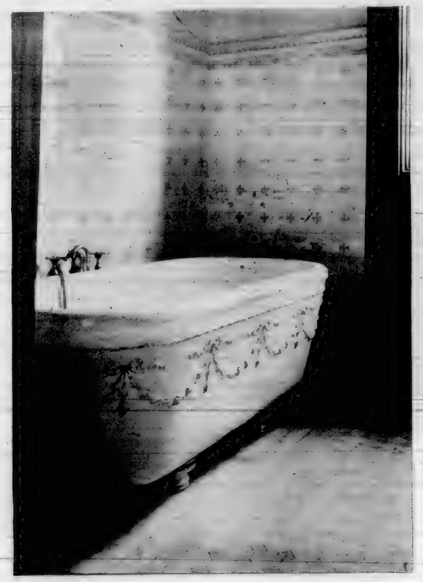
The parlors are finished with moulded cornices and the windows have Ionic pilasters and entablatures. One of the parlors has a most beautiful mantel made of California Onyx by Kesseler Bros., and the other a fine Oak mantle.

ONYX MANTLE MADE BY KESSELER BROS.

The dining-room is one of the most elaborate ever built in this city; it is highly ornamented with wainscoting composed of engraved panels separated with Ionic pilasters. The ceiling has the beams exposed and are ornamented with rosettes and fluted. The crossing of the beams form forty squares three feet on each side, they have all fine centers; the ends of all the beams are supported by mural brackets with moulded cornices between them. All the walls were handsomely decorated by D. O. Sturts the artist, and highly ornamented in white and gold Louis XVI. style by the well-known firm of St. Dennis, painters who did all the painting for the house. All the metal work in this room is gold plated.

Mrs. Wohler, the owner, has adjoining her room a bou-

doir and a very pretty bath-room for her exclusive use. The latter has one of the finest porcelain tubs manufactured exclusively for this work by the J. L. Mott Iron Works, to



MADE AND DECORATED ESPECIALLY FOR THIS BUILDING BY THE J. L. MOTT IRON WORKS AND SET BY MR. W. D. HOBRO.

match the glazed tiling that covers the walls. The water closet, bath tub and wash stand have marble safes, the balance of the room is covered with encaustic tiles; all the metal work in this room is silver-plated.

The contract for the whole building was let to Mr. A. C. Hussey, and to his management in letting out the work to good and responsible sub-contractors and attending personally to the works is owing in a great measure the success of the whole building. The result shows that he was entirely in sympathy with the architect's ideas and carried them out carefully and conscientiously.

Dunham, Carrigan & Hayden Co., had all the hardware specially made by the Yale Lock Co. for this building of the higher class and modern designs.

The firm of Richardson & Gale furnished the granite and material for the brick work which they executed in a superior way. The shafts for the chimneys were specially designed with fluted columns and terra cotta capitals. Their execution was quite difficult but was done in a very satisfactory manner by the above mentioned contractors.

The plumbing in the house was specially designed by the architect to have every sanitary improvement and precaution against sewaga gas, Mr. W. D. Hobro, the well-known plumber carried out the work in a perfect manner.

Every convenience for lighting the gas and bell service was furnished by Paul Seiler the well-known furnisher of electrical supplies.

Great care has been taken to have the gas fixtures to harmonize with the finish of the rooms where they were intended, the extensive stock of Thomas Day Co., made it possible to obtain the many different styles required, and others were promptly manufactured by the same firm.

To insure absolute protection against dampness, heat, cold or dust, all the walls of the building are sheathed with P. & B. Building Paper, a California production manufactured by the Paraffine Paint Co., 116 Battery street. This paper is now used in all first-class houses and is specified by all the leading architects as a most perfect insulator.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
CARL WORRELL, Pres. VICTOR HOFFMAN, Sec.

THE ANNUAL MEETING OF THE BUILDERS' EXCHANGE.

THE Annual Meeting of the Builders' Exchange and the election of directors to serve the ensuing year was held at the Exchange Hall, Mission and New Montgomery streets, on Wednesday, March 25, 1896.

President Oscar Lewis occupied the chair.

Proposed amendments to the By-laws were not acted upon but postponed for two weeks when a special meeting will be called for this purpose.

The president's annual address reviewed the work done by the Exchange for the past year and showed a very flattering increase in the treasury and the membership; there being about 317 members, an increase of 41 and a total in the treasury of about $7,000.

The most interesting proceedings was the election. Sixteen candidates were in the field and the interest taken by many of them for the honors of office and the uniform and deep interest manifested by the general membership, spoke volumes for the future prosperity and extension of Exchange influence and honorable business methods.

The Exchange being composed of all branches in the building business, the various trades supported their particular representative as a rule with the result that the incoming board is a splendid index to the general membership, there being:

M. C. Lynch, Thos. McLachlan, Thos. Elam and C. P. Moore, carpenters; Jas. A. Wilson, Thos. W. Butcher and M. McGowan, bricklayers; J. J. Morehouse, plasterer; Jas. E. Britt, plumber; Gus. V. Daniels, painter; Oscar Lewis, foundryman.

BUSINESS MOSAICS.

The Hunter.—The Hunter Arms Co., Fulton, N. Y., makers of the celebrated L. C. Smith gun, are now manufacturing the Hunter bicycle. The L. C. Smith gun is acknowledged to be the foremost trap-gun in the world, and is used by all prominent shooters. At recent tournaments, Smiths' guns won over ninety per cent of the prizes. The winning team of the Olympic Club and others shoot Smiths. Hunter cycles are made like L. C. Smith guns, first-class in every respect, made by practical mechanics with a reputation for fine work. Gun barrel brazing is the most difficult tube brazing in the world; barrels must be true to a thousandth part of an inch. Hunter cycles are brazed and lined up that way. The Hunter has crown steel, gun barrel tubing, fully reinforced, drop forged steel bearings and cones, extra heavy, with a gun-barrel finish. (There is not a piece of cast iron or steel in this wheel.) Extra large barrel hubs and balls, extra quality spokes, narrow tread, reinforced forks, back and front, easy adjustment of bearings and chain, double truss crown, the strongest ever put on a wheel, visible bearings, locomotive oil cups. The Hunter patent detachable cranks can be taken off in ten seconds. Adjustable handle bar, Brooks, Sager and Hunter saddles, M. & W. or Vimtires, and other improvements. We only ask for a comparison with any bicycle on the market. Critical inspection is invited at either of the city agencies, Clabrough, Golcher & Co., 605 Market street, or E. T. Allen Co., 416 Market street. Pacific Coast agency, Phil. B. Bekeart, 159 New Montgomery street, near Howard.

"Henry," said Mrs. Peck, "I am going to get a bicycle." "Dear me," said Mr. Peck, mildly, "isn't one man enough for you to run over?"—*News Letter.*

When the porcelain iron goods were first introduced to the trade it was regarded as a step in advance, and a great inprovement in the way of sanitary appliances. Since the introduction of the Imperial porcelain ware with its substantial thickness, fine glaze and beautiful appearance, accompanied with a great reduction in prices bringing this article within the reach of anyone heretofore using the porcelain iron goods. A more general demand for this class of goods is springing up.

The J. L. Mott Iron Works are prepared to supply this demand and those who are debating what kind of goods to order for the new house would do well to consult Mr. M. S. James, the Pacific Coast Representative of the above named work. Room 27 Flood Building, San Francisco.

"I am sorry that I have broken your vase. Was it valuable?" "It was old Sevres." "O! I was afraid it was new."—*News Letter.*

The Pancoast Ventilator.—In calling attention to the merits of this ventilator, we are centainly justified in mentioning some of the claims made by the manufacturers, which claims have been fully warrented as vouched for by members, who have used the Pancoast Ventilator. It is guaranteed to exhaust more cubic feet of air per minute than any other storm-proof ventilator made. It is absolutely storm and cinder proof. N. & G. Taylor Co., Manufacturers Agents, Philadelphia.

"How did that criminal evade the detective so long?" "Why, he rented a room in the same flat with him."—*Chicago Record.*

Now is the time, as summer is approaching, to prevent your house becoming a refuge for the annoying fly—Messrs. Edward B. Hindes & Co., 411 Mission street, will furnish you with Hills' Patent Inside Sliding Blinds, as well as Perfection Window Screens. Then you are safe—A word to the wise is enough.

Visitor—Do you think the baby resembles his pa? MOTHER—Oh, yes; he keeps me up late every night.—*News Letter.*

It should be remembered by those who wish to protect their buildings from fire that the use of the Schenck Swinging Hose Reel will reduce your insurance and give you a feeling of security from fire that will make you happy and increase your appetite.

Lady Patient—Doctor, what do you do when you burn your mouth with hot coffee? DOCTOR—Swear.—*News Letter.*

Stevens' Patent Chimney will be found at NE. cor. of Larkin and Market; remember this chimney is approved by the Fire Wardens and endorsed by Architects and Builders. At the same place will be found a good assortment of terra cotta pipe, chimney tops and flour pots, F. M. Stevens, proprietor.

"Don't you think my hat a dream?" "Yes. What did you eat the night before?"—*Detroit Tribune.*

CITY BUILDING NEWS.

Andover and Cresent Ave. Cottage; owner, John Mueller; architect, G. H. Batchelder; contractor, J. W. Fish; signed, Feb. 19; filed, Feb. 20; cost $1250.

Army near Guerrero. Church; owner, Trustee St. Johns G. M. E. Church; H. Schrader, H. Marks; contractor, Chas. Koenig; signed, Feb. 20; filed, Feb. 24; cost $2500.

Baker and McAllister. To build; owner, Robert Wannenmacher, architect, Emil John; contractor, J. Bucher; signed, Feb. 25; filed, March 7; cost $7872. Plumbing and gas-fitting, contractor, Henry Hufschmidt; signed, Feb. 28; filed, March 7; cost $1150.

Bay near Mason. Two-story frame; owner, Henry Pansman; architects, Martens & Coffey; contractor, H. Trost; signed, Feb. 27; filed, Feb. 27; cost $3700.

Belvedere near Frederick. Three-story frame and cottage, except plumbing, owner, Mrs. Nellie L. Knight; architect, Maxwell G. Bugbee; contractor, H. M. Macheson, C. B. Franklin; signed, Feb. 6; filed, Feb. 8; cost $5000

Belvedere near Frederick. To build; owners, Jacob and Peter Schaefer; architect, owner; contractor, W. W. Rednall; signed, Feb. 8; filed, Feb. 10; cost $3690.

Belvedere near Federick. Two-story frame; owner, William Hinkel; architect, Herman & Swain; contractor, Petterson & Pearson; signed, March 5; filed, March 6; cost $3250.

Brannan near 5th. Frame building and stable; owner, Somers & Co.; contractor, W. P. Smith; cost $2000.

Bush near Devisadero. Repairs to partially burnt building; cost $1500.

California near 12th Ave. To build; owner, J. B. Bettelluch and wife; architects, Martens & Coffey; contractors, Weinsehl & Franz; signed, Feb. 15; filed, Feb. 18; cost $2092.

California near Larkin. To build; owner, Henry McDonald; contractor, Wm. Helbing; signed, Feb. 21; filed, Feb. 21; cost $6600.

California near 6th Ave. To build; owner, M. J. Savage; cost $5500.

California and Polk. Frame Bldg; owner, W. B. Bradbury; architect, F. B. Wood; cost $15,000.

Cole near Waller. Four frame residences; owner and builder, William Hinkel; cost $18,500.

Clement near 2d Ave. To build; owner, Mrs. Robertson; contractor, D. Einstein; cost $2500.

Clipper near Dolores. Cottage; owner, Barolin Schachlmber; architect, C. M. Rosseau; contractor, Geo. E. Nall; signed, March 9; filed, March 9; cost $900.

Davis near California. Excavations and pile driving; owner, Mrs. Ellen Folger; architects, Percy & Hamilton; contractor, S. F. Bridge Co; signed, Feb. 19; filed, Feb. 25; cost $7500.

Devisadero near Post. Alterations and additions; owner, Adolph Meyer; architect, Emil John; contractor, Carl Greise; signed, March 6; filed, March 9; cost $1460.

Diamond near 19th. One-story frame; owner, Otto Luhn; architect, Emil John contractor, T. C. Cochrane; signed, March 2; filed, March 7; cost $1800.

Eight Ave. near California. Additions to a two-story frame; owner and builder, W. Keeney; cost $1500.

East bet. Howard and Folsom. Two-story frame; owners, Scott & McCord; contractor, R. Currie; cost $4500.

Fell near Ashbury. Plumbing, gas-fitting, etc., for flats; owner, J. H. Brumings; architects, Martens & Coffey; contractor, G. C. Sweeney; cost $775.

Fell near Ashbury. Plumbing, gas-fitting, etc.; owner, Henry Bohls; architect, Martens & Coffey; contractor, G. C. Sweeney; cost $775.

Fourth near Bluxome. Excavations, concrete, brick, etc.; owner, Peter A. Smith; architect, Emil John; contractor, J. H. Hanuvan; signed, Feb. 27; filed, March 7; cost $8000. Carpentry tubing, etc.; contractor, C. Krecker; cost $2571.

Fifth Ave. near Pt. Lobos. Cottage; owner and builder, W. A. Lee; cost $1500.

Fifteenth near Mission. Alterations and additions; owner, Elizabeth Pomeroy, architect, M. P. Schetzel; contractor, T. McLachlan; signed, Feb. 27; filed; Feb. 28; cost $2475.

Geary near Hyde. To build; owner, Fredinand Bazan; architect, E. Depierre; contractor, R. O. Davis; signed, Feb. 29; filed, Feb. 29; cost $3120.

Haight and Devisadero. Alteration and addition; owner, Hohn Bros.; architect, C. F. Robertson; contractors, Otten & Lorensen; signed, Feb. 18; filed, Feb. 19; cost $3265.

Haight near Broderick. Two-story frame; owner, J. C. Malon; architects, Shea & Shea; contractor, Jas. J. O'Brien; signed, Feb. 17; filed, Feb. 24; cost $6300.

Haight near Masonic Ave. Two-story frame; owner, Elia Dutell; architect, Oliver Everett; contractor, Paul E. Struck, signed, March 9; filed, March 9; cost $2125.

Hyde near Ellis. All work except painting and plumbing; owner, Therese Muller; architect, De Prosse & Meinsdorffer; contractor, Isaac Penny; signed, Feb. 17; filed, Feb. 17; cost $3355. Painting, etc.; contractor, Becker Bros.; signed, Feb. 17; filed, Feb. 17; cost $520.

Jackson near Mason. Alteration and addition; owner, James M. A. Casto; architect, C. M. Rosseau; contractor, L. M. Weismann, C. Bartels; signed, Feb. 14; filed, Feb. 18; cost $3219.

Kentucky and Napa. Two-story frame; owner, D. E. L. Wemple; architect, Hugo W. Storch; contractor, M. & H. Peterson; signed, Feb. 20; filed, Feb. 20; cost $1975.

Lafayette Square near Gough. Grading; owner, City of San Francisco; contractor, John Tuttle; cost $17,500.

Lafayette Place near Green. To build; owner, Giambatista Pezzolo; contractor, G. Banchero; signed, March 23; filed, March 23; cost $3000.

Market near 5th. Fixtures and counters for coat department; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, L. & E. Emanuel; signed, Feb. 5; filed, Feb. 15; cost $3675.

Market near 5th. Fixtures for drug store; contractor, San Francisco Furniture Co.; signed, Jan. 28; filed, Jan. 28; cost $3885.

Market near 5th. Illuminating tiles for side walk; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, P. H. Jackson & Co.; cost $5500.

Market near 5th. Fixtures for artists department; owner, Mrs. A. L. Parrott; architects, Pissis & Moore; contractor, San Francisco Furniture Co.; signed, March 5; filed, March 5; cost $9772. Fixtures and tables for crockery department, cost $5362.85.

Market and 1st. Additions and alterations to brick building; owner, Mark Sheldon; architect, Clinton Day; contractor, W. Grant; signed, Feb. 12; filed, Feb. 15; cost $10,454.

Market street, No. 902. Alterations; owner, J. Farley; architects, Havens & Toepke; contractor, F. W. Kreling Sons Co; signed, Feb. 24; filed, Feb. 24; cost $3696.

Noe and 15th. Two three-story frame; owner and builder, T. Nelson; cost $8000.

Nineteenth near Clement. Cottage; owner, D. J. Heany; cost $1500.

Page and Lyon. To build; owner, C. Van Tssendof; architect, E. J. Vogel; contractor, Fred. B. Butterfield; cost $1806.

Pacific street Wharf Sheds. Owner, Board of Harbor Commissioners; contractor Healy, Tibbitts & Co.; cost $7893.

Point Lobos Ave. and Ferrey. Alterations; owner, Chas. R. Hanthorne; contractor, A. L. Jacobsen; cost $1000.

Post near Stockton. Six-story frame foundations for; owner, Hobart Estate Co.; architects, Percy & Hamilton; contractors, Keatinge, Leonard & Ransome; cost $3746.

Post near Stockton. Mill work, glass, hardware, painting, etc.; owner, Hobart estate; architect, Percy & Hamilton; contractor, T. S. Day & Sons; cost $7600... Structural and cast iron work; contractor, Judson Mfg. Co.; cost $9940. Tin work, skylights, copper roof, painting, etc.; contractor, Forderer Cornice Co.; signed, March 2; filed, March 4; cost $1824. Brickwork and cementing; contractors, Richardson & Gale; cost $9463.

Sansome and Chestnut. Office and sheds; owner, Bellingham Bay Impt Co.; cost $2500.

Sharron near 16th. To build; owner, John McCabe; contractor, T. R. Bassett; cost $2000.

Shrader near Waller. To build; owner and builder, William Hinkel; cost $4250.

Sierra near Tennessee. To build; owner, James Nugent and wife; contractor, John Keneally; signed, March 2; filed, March 9; cost $2139.

Stewart near Mission. Four-story brick; owner, E. R. Lilenthal; architect, Clinton Day; contractors, Riley & Loane; cost $10,856.

Sixteenth and Sanchez. To build; owner, C. E. Gisin; owner and builder; L. B. Schmid; cost $1850.

Stockton near Filbert. Alteration and additions; owner, G. B. Torasso and L. Centenaro; contractor, W. J. Weiss; cost $1850.

Thirteenth Ave. Clement. To build; owner and contractor, H. P. Fish, architect, Frank Charming; cost $2500.

Twenty-second Ave. near Clement. Cottage; owner, Chas. H. Lane; cost $2000.

Twenty-third Ave. near Clement. Six cottages; owner, Samuel Holden; cost $9000.

Twenty-third near Harrison. To build; owner, D. Keefe; architect, M. J. Welsh; contractor, D. Currie; signed, March 2; filed, March 3; cost $3800.

Twenty-ninth near Dolores. To build; owner, Claus Linderman; contractor, W. C. Hamerton; cost $3550.

Twenty-ninth near Npe. To build; owner, R. Trost; cost $2700.

Turk near Leavenworth. Additions; owner, J. C. Nealon; architects, Shea & Shea; cost $3000.

Union near Hyde. To build; owner, James & Johanna Costello; contractors Westerlund & Landeen; cost $1173.

Valencia near 21st. Alterations; owner, Henry Hoffman; architect, John McHenry; contractor, James E. Mooney; cost $2895.

Van Ness Ave. and Jackson. Illuminating, skylights, etc.; owner, Claus Spreckles; architects, Reid Bros.; contractor, P. H. Jackson & Co.; cost $1575.

Vallejo near Gough. To build; owners, Lillian R. Lilienthal, R. L. Lilienthal, Carrie Van Vorst and S. T. Bernhard; contractor, Isaac Anderson; cost $6350.

Walnut near Clay. To build; owner, C. Righetl; architect, E. Depierre; contractor, G. A. Magel; signed, Feb. 25; filed, Feb. 26; cost $4524.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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N another column will be found a letter from a bricklayer who is an old resident of this city where he has been in business many years, in which he brings to our attention the very practical manner in which he is carrying out an excellent idea. He is teaching a class of boys, the sons of men engaged in the building business, not only the methods of laying bricks, but how to express their ideas of form and design on the drawing board in such a manner as to be understood by other intelligent mechanics; and doing it too without interfering with the regular course of studies in the public schools.

This is putting in practice the theory that the development of the body should keep pace with the improvement of the mind, and the early manual training of the youth should meet with the approval of all thinking people; for unless practical application is made by the student of all the knowledge he acquires, the knowledge is of no practical use and of little benefit to himself or society.

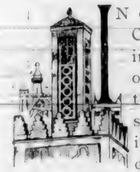
The apprentice system as practiced by the various trades unions, whereby the number of apprentices is regulated by the number of journeymen, is a means of defence whereby they hope to increase the amount of wages by limiting the number of skillful mechanics. This has a tendency to lessen the chances of the unemployed non-union man, by making it more difficult to secure employment or instruction, and while it may be the only available weapon that the unions can employ, it is not a just or logical one. The better way would be to remodel society on a basis that would secure employment to all, and here comes in larger and graver issues than the training of mechanics.

After having received a liberal education and fitted himself for an active and useful position in life, what is the chance of finding the necessary opportunity to apply his knowledge to useful ends? This brings us at once into the much discussed and never settled question of political economy, and it seems that common sense must be left behind and entirely ignored when dealing with this question. At least common sense has always been ignored, and when an attempt is made to adopt sensible methods we are met with the assertion that it is not practicable. For instance statistics show that there are about two millions of idle unemployed men in the United States vainly seeking work, and that in the neighborhood of two million of children of school age are herded in factories toiling at tasks that should be done by adults. This is the result of so-called civilization and our much lauded competitive system, but let us

ask is it right or is it common sense? Common sense would say that the children should be at school, and the idle men at their work.

Another instance: A machine is invented by which one man does the work it took ten men to accomplish before. Common sense would say that it must be of great benefit, because it would allow each man to enjoy nine-tenths of leasure time and still achieve the same results as before. But not so; political economy turns nine men adrift and works the tenth man just as hard as ever.

It seems to us to be a burning shame that a nation that calls itself Christian can find no just and equitable solution to questions that admit of but one logical solution. Is it any wonder that an increasing number of people in all countries are turning from the present school that admits its importance to that of the Socialists who at least claim that they have a remedy. The position of humanity at the present time is very like that of the sick man in the fable: His case was diagnosised by two physicians; one pronounced his case hopeless, and the other said he could be cured. He engaged the former and he next day was dead. "Now you see," said his doctor "that I was right, for the patient died!" "Yes," said his confrere, "but if he had chosen me, he would be well to-day!"



IN our two latest Competitions, the Affiliated College Buildings and the new City Criminal Building, there was no proper amount of time given to the architects to prepare their plans—consequently in both cases no satisfactory result has been obtained, and in the first case, in consequence of the bad conditions of the Competition there were but five competitors and most of those inexperienced in large public buildings. The impossibility of properly considering such a varied question as provides homes for five different, although Affiliated Colleges is evident when we see the very ill considered plans and designs for them. It would be very much better for the State in the first case and the city in the other to lay over the whole matters until proper time and consideration is given to such subjects—for when they are once settled they are irredeemiably settled for many years.

Possibly a new Legislature may by appropriate laws prevent the necessity of new Jail Room and the number of Criminal Courts by which we are now burdened; should that be so the money appropriated for these purposes can with more pleasure be devoted to more remunerative enterprises, for it must be remembered that it is not only the first cost of new jails but the cost of maintaining them thereafter that forms the burden on the tax-payers.

WE publish in another column some interesting information given a *Call* reporter and some remarks by Senator Perkins of California, criticising the way in which the United States government conducts an architect's office. We think the Senator is wrong in blaming the supervising architect for the unsatisfactory condition of affairs. He says "the truth is that the supervising architect is not a big enough man for his place." We think the truth is that the supervising architect is a political underling of an autocratic superior, and as such is obliged to take his orders from head quarters, and when he is ordered to delay the progress of the work of his office, he is obliged to obey those orders.

The American Institute of Architects has for many years past, made a gallant fight to inaugurate a better system, and nothing daunted by repeated failures, is again in the field this year. If the public would only understand and appreciate and support the fight the architects are now making single-handed, there would be much more chance of achieving success and then the people of San Francisco may begin to hope for a new and suitable Post-Office building, but not till political methods are supplanted by business methods is there much prospect of the building authorized by Congress in 1887 (nine years ago on the coming third of March) ever being erected.

AN OLD POST-OFFICE BUILDING.

THE acting supervising architect of the treasury department said to the *Call* correspondent in Washington:

"We are now waiting to hear from Postmaster McCoppin. You understand that these buildings are taken up in their regular order, and San Francisco has now been reached, but we cannot go on with our plans until the Federal officers have agreed as to arrangement of their several and respective rooms."

Another official of the supervising architect's office, who, however, does not wish to be quoted, said to the *Call* correspondent that unless the Federal officers speedily agreed on the interior arrangement of the building the architect would take the matter in his own hands and go ahead with the plans. He said that one of the United States Judges had been very much dissatisfied with the designs of the building, and had intimated to the department that unless the plans were changed he would object to moving into it. He did not say who this official was, but it is surmised that it was either Judge McKenna or Judge Morrow. It was furthered ascertained that the supervising architect would modify the plans and general design of the building. The design, as prepared by the former architect of the treasury, O'Rourke, was the style of Italian renaissance. The modified plans will be after the style of Spanish renaissance, and the appearance of the building will be greatly changed and improved. Indeed, the change will be so radical that the appearance of the building will be altogether different.

An officer of the supervising architect's office said to a *Call* correspondent: "Of course we cannot decide on the design until we know how much space each one of the Federal offices will need, and until Postmaster McCoppin sends on his own ideas we cannot go ahead with the plans. But in general, it will be enough to say that the general appearance of the building will be greatly improved and beautified."

The *Call* correspondent asked the reason for changing the design of the building, and was told that the former plans been prepared by Supervising Architect O'Rourke, but that the present architect, Aikin, was not altogether satisfied with them, and had directed draughtsmen of the office to prepare other designs. The correspondent inquired when the people of San Francisco might reasonably expect the work of construction to begin, and was told that it all depended on the Federal officers, but as soon as Postmaster McCoppin responded to the request of the architect's office, and it was found that the ideas of the several Federal officers might be amalgamated, the draughtsmen of the office would immediately begin to draw new sketch plans.

"Then, when in your opinion will real construction of the building commence?" asked the correspondent.

The acting supervising architect replied:

"That would be impossible to say. It might be only a month or so, and it might be a year, but you may say to your people that the San Francisco building has been reached in regular order and work will be rushed as rapidly as possible. These buildings are taken up in the order in which appropriations were made by Congress, and heretofore it has been impossible for us to do anything with the San Francisco building for the reason that there were other buildings ahead of it, and for the further reason that there has been a delay in hearing from Federal officers in California."

This was all the satisfaction that could be obtained from the architect.

Senator Perkins said to the *Call* correspondent:

"The way the supervising architect has acted in this matter has been very aggravating. Several months ago Judge McKenna wrote me, giving his ideas as to arrangements of courtrooms, judges' chambers, clerks' and marshals' rooms, etc.

"He was anxious to have the courtrooms located at the several corners of the building, so as to secure as much light as possible, and also suggested that for the sake of convenience the clerks' and marshals' offices and other rooms connected with the court all be situated on the same floor. I went to see the supervising architect and had a short interview with him. He expressed regret that the work on the building had been delayed, but said that the office was swamped with work and he was doing his best with the force he had and that there would be many buildings to claim his attention. Time went on, and finally I wrote him, suggesting that if he would send me an estimate of the amount required for additional draftsmen I would introduce a bill in the Senate to appropriate money for that purpose, as was done in the case of Chicago's post-office, when Congress made a special appropriation to secure draftsmen for that building. I was somewhat surprised at receiving no answer to my letter, for I had naturally supposed that the supervising architect would be willing and anxious to have assistance furnished him.

"I wrote him again, but received no satisfaction. Then I sent a special messenger conveying an intimation that I could not understand his reason for not replying to my communications. I instructed my messenger to secure some kind of answer. The architect promised to furnish me the data I had requested, but I never received them.

"It was very discourteous treatment, to say the least, and I gave him to understand that unless I received some information from him I would introduce a resolution in the Senate demanding to know from the Secretary of the Treasury the reason for delay in commencing work on the building, and directing him to proceed with the construction. The supervising architect then sent his secretary to see me. I was not in my hotel, but he left his card. I afterward received notice from the department that if the Public Buildings and Grounds Committee would request information on the subject it would be furnished to Congress. The resolution was then passed, and in response the Secretary of the Treasury sent a letter which merely recited the fact that an appropriation for the building had been made, the site purchased and the limit of cost of the building fixed at $2,500,000, but that a proviso had been made that no work was to be done until the commission of Government engineers had examined the foundation and reported it to be firm; that sketch plans had been drawn, and the working plans were being prepared and would be completed as soon as possible.

"This was the last I heard of the matter, and altogether it has been very unsatisfactory. There is some reason for this delay which I cannot understand. The supervising architect may be swamped with business, but I offered to make an earnest endeavor to provide assistance for him. The truth is the supervising architect is not a big enough man for his place. He devotes too much attention to details of his office, instead of intrusting it to assistants. I am very much vexed on account of the delay and feel that I have been treated very discourteously by the architect. I am considering the advisability of introducing my resolution on Monday, demanding explicit information from the Treasury Department why work is delayed and directing the Secretary to proceed with the construction immediately."

Representative Maguire said: "I have no knowledge of the status of the post-office building plans, but will say that I think the delay is unwarranted. Four weeks ago I was told at the department that plans would be proceeded with when certain information had been received from Federal officers at San Francisco as to the interior arrangements, but since then I have heard nothing."

Representative Loud said: "The department may make excuse after excuse. My own opinion is that they are delaying work on this building and others because they have not the money to spare out of Uncle Sam's cashbox, but don't want to admit the fact."

ARCHITECTURE AND ENGINEERING UNDER THE PROPOSED NEW CHARTER FOR SAN FRANCISCO.

BY W. J. CUTHBERTSON.

UNTIL such time as municipalities assume control of the production and distribution of necessities for their citizens, the chief business—outside of the collection of monies and the protection of life and property—in which they engage is Architectural and Engineering works.

The Board of Freeholders which made up, what must be called for distinction, the Freeholders' Charter, to be acted on by the people next election, was composed of:—1 Dealer in Bonds; 1 Dealer in Stocks; 1 Dealer in Real Estate; 1 Dealer in Dry Goods; 1 Iron Ship Builder; 1 Commission Merchant; 1 Banker; 1 Stevedore; 2 Lawyers; 1 Doctor; 1 Lithographer; 1 Insurance Agent. On this board there was not one who knew anything practically about these two chief branches of the City's Business; and therefore we cannot expect laws governing the conduct of this business devised by men of such experience to be anywhere near perfect. The result shows the correctness of the reasoning.

The great majority of the Board, being as indicated before from the class of traders, we find a large portion of the Charter given over to Laws regulating the trading side of the city management, and providing checks against dishon-

esty and other tricks of trade that might be practised by the City Officials and those having dealings with the City.

An erroneous idea of the nature of a Charter seemed to prevail among the Board. A City Charter is really simply an act of incorporation and answers to the articles of incorporation of a stock company, and should be concerned only with fundamental law. But unfortunately the members of the board have gone into column after column of details of the management of each department—in fact has made complete By-Laws. By this means they have got themselves at sea. All the minute details of finance they are at home in and no doubt their regulations governing that department are good; but when they commence to regulate the Department of Building and Engineering they flounder.

All those experienced in letting out work by contract to the lowest bidder know the evils of that system and the abuses to which it leads, and know that all the regulations and penalties, forfeitures, etc., which the Board has devised to keep the contract system pure are perfectly useless. Yet the Board has such faith in this Contract system that they actually say that all work *shall* be done by contract.

When an owner of property wishes his home built well or his sewerage perfect he doesn't let it out to the lowest bidder, but has it done by day's work under proper supervision. So must all city work be done. When the Merchants want the streets kept clean they don't let the work by contract but employ men by the day. It is a good proverb "set a thief to catch a thief". So to watch a thieving Contractor properly you must have a thieving City Architect and a thieving City Engineer—and finally a thieving Board of Public Works and possibly a thieving Mayor and then what becomes of all those carefully prepared safe guards thrown around then.

It is most surprising that the Board should provide that the Board of Public Works shall be appointed by the Mayor, after the example that the neighboring city of Oakland has offered of the results of such a method. This method of appointing the Board of Public Works led to such abuses in that city that the people arose in their might and an amendment to their Charter was carried abolishing such a method and making the Board of Public Works elected by the people—and it must be said that the result so far has been far preferable to the old regime, though of course anything but perfect. Yet in the face of all this the Board of Freeholders ask the citizens to vote in favor of having such a thing in San Francisco, we presume so that it may fit in with their dominant idea of the centralization of power.

Architecture and Engineering have been recognized for some time as two separate branches of constructive work, and there should be a separate department for each; the first having charge of the buildings and parks, a class of work wherein æsthetics are apparent; while engineering should have charge of public utilities in the shape of streets, sewers, water supply and such like works commonly called engineering works. They should therefore be under control of separate boards—and the heads of these departments as well as all the other departments of the city business should not be appointed by one man but by a popular body of at least twenty-four members, which should be thoroughly representative of the different classes of the community, a result obtained by proportional representation.

There have been benevolent despots no doubt in the worlds' history, who have endeavored to work for the public good, but we cannot afford to hand over our liberties on the chance of getting a benevolent despot to rule us, which would be the case were this Charter adopted.

We need only to point to the present disastrous and almost unbearable state of affairs throughout the country to show the perfect inability of centralized despotism as exemplified in the presidential office of the United States to cope with economical troubles or even to build us a Post-Office.

No reflections are intended in this article to be cast upon the Board of Freeholders who really had not sufficient time to properly consider the business. It is not, against little matters of detail, which can be rectified afterwards, but against the vicious principles which underlie the proposed Charter and which when once endorsed by the people, will direct their character in a wrong direction, that these few remarks are directed.

FIRE-ESCAPES.

THE heart-rending scenes enacted at the recent fire in one of the Troy Collar and Cuff Factories draw attention again to the inadequateness of the upright Fire Escapes for escape from fire where numbers of females are located on the floors of any building. The Burdett Building where the event happened had two vertical fire ladders but it seems they were almost useless for purposes of escape. For all buildings of this description the sloping ladders with handrails ought to be used and all sentimental ideas in regard to destroying the architecture of the facade must be downed—if architects cannot design outside staircases architecturally all the worse for them. It can be done however. Another very necessary regulation which ought to be adopted in view of these horrors, is the adoption of the bloomer costume as a work dress for girls and women. No doubt all could have been saved in this case had it not been for the skirts which hampered their movements.

Another matter which must be at once attended to by municipalities is the abolition of all overhead wires, the way these hampered the working of the firemen on this occasion is ably set forth by E. C. Chamberlain a correspondent of *Fire and Water:*

"As *Fire and Water* is the one paper of its class that is universally read all over this continent, I may be permitted through its columns, to say to other cities (any one of which may have to pass through our recent terrible experience) that they should take warning therefrom and assist upon the overhead wires being placed underground, and insist further upon having affixed to all buildings—where the law commands that there shall be fire escapes—escapes having balconies running across horizontally, as all others are worthless and of no use. Let all cities likewise provide fire apparatus proportionate to the size of their city, and, above all, let them have a good water supply. It is necessary; it is vital; it is the keynote to successfully fighting every fire. In Troy we have never yet been crippled in that way.

"I will say in conclusion. Let us unite in compelling every city in the United States to put its wires under ground. It is not a local, but a national issue, and should be treated as such.

"If one person kills another, we kill him; and the man who strings wires in front of tall buildings which are crowded with workpeople is as much guilty of murder as he who sets a trap for your life. Indeed, what worse or more cunningly contrived death-trap is there than the overhead wires?

"The fire escapes are misnomers, and proved themselves in reality useless for the purpose they were supposed to serve. They may possibly do for men; for girls and women they are simply no good, as their skirts stand in the way of anything like making the descent expeditiously and safely. The overhead wires which form a pendent mass now lie prone on the earth amid the pile of poles and crosstrees, extending right, left, and centre, were so arranged as to form not merely an obstacle to the firemen, but an absolute preventive to their being able to do their work effectually, especially to their being able to save the lives of those who were dependent upon their exertions for preservation from one of the most awful forms of death. In this particular instance the wires along the streets were a menace to the firemen. It was, it always is an impossibility for a fireman to cut down a network of 100 or more wires, as it is never known how many of these wires are 'alive.'"

BOOKS AND PERIODICALS.

APPENDIX U.

PROFESSOR WING'S, FULL-SIZE TRANSVERSE TESTS OF DOUGLASS FIR.

"Professor Chas. B. Wing, Leland Stanford University, California, published in *Engineering News* of March 14, 1895, an account of the methods used and results obtained by him in a series of full-size transverse tests of Douglass fir. None of the specimens were selected for testing. The timber was ordered from a San Francisco lumber yard, and would probably rate as a poor lot of "No. 1 Merchantable." The sticks contained considerable sap. Some of the sticks failed by shearing along the fibre parallel to the length of the specimen. Professor Wing states that it was noted that knots, even when sound and tight, weakened the stick by decreasing the section, and by causing the fibre to be cross-grained and curly, easily crushing when in compression.

The ultimate breaking extreme fibre stress in pounds per square inch obtained from ten sticks, each 6 in. x 10 in. x 17 feet long, was 4,590 to 7,951, average 6,293. The stick giving the limit of 4,590 was a stick that would have been culled in an ordinary lumber inspection. Excluding this stick the results ran from 5,580 to 7,951, average 6,482.

An additional series of ten tests was made with pieces 3 in. x 5 in. x 4 ft. 3 in. long, cut from uninjured parts of the large sticks that had been previously broken. The results showed ultimate breaking extreme fibre stress in pounds per square inch, from 6,438 to 12,056, average 9,257. The stick giving the lowest limit had a knot through the center. Excluding this the lowest limit was 7,960.

HOME STUDY, an elementary monthly journal for students of the Industrial Sciences and readers of the technical press who need a better knowledge of Arithmetic, Geometry, Trigonometry and the principles of Physics and Drawing to enable them to derive the best results from their reading is a very useful magazine for those who are out of the way of Technical Schools or colleges. Published by The Colliery Engineer Company.

THE PENNY MAGAZINE, published monthly by the Penny Magazine Company, Bourse Building, Philadelphia. Subscription price twenty-five cents a year postage prepaid.

Here we have a nicely printed Magazine, on good paper and full of good things, no continued stories, for the trifling sum of twenty-five cents per year. Some Pecksniff who never reads, may exclaim "this is equally objectional" as the twenty-five cents per copy would be, but those who study economy and are fond of good reading will be glad to avail themselves of such an opportunity.

ADDRESS TO THE BOSTON PUBLIC SCHOOLS by George T. Angell. This interesting phamphlet should be read by every child upon the Pacific Coast—we only wish Mr. Angell could be induced to repeat the address before the school children of San Francisco. If this is not possible a copy should be placed in the hand of every child and every teacher of children in the state. This could be accomplished at a comparatively little cost, as the Humane Education Society furnish their publication at a very low rate, besides an immense number distributed free of cost.

Will not the Board of Education look into this and do something towards placing a copy of this address in the hand of every child that attends our public schools.

We are indebted to the State Board of Health of Rhode Island for A REPORT OF THE RESULTS OBTAINED WITH EXPERIMENTAL FILTERS at the Pettaconsit Pumping Station of the Providence Water Works, by Edmund B Weston, published by E. L. Freeman & Sons, Providence, R. I., 1896.

This report cannot fail to interest all those interested in water works, as it appears to give much information in regard to the action of filters upon the water, as well as upon the best mode of cleaning the filter after it may have become foul. The result of these tests made upon a large scale cannot but prove valuable to the engineer, and reflect great credit upon the State Board of Health.

CORRESPONDENCE

SAN FRANCISCO, April 2, 1896.

Editor California Architect and Building News.

DEAR SIR:—I take this method of calling your attention to my school of bricklaying. My class is composed of boys from ten years of age upwards. They take a lesson every

day after school hours from 3:30 to 4:30 P. M., also a lesson on Saturday in bricklaying including an hour in drawing to scale that which they build during the week.

The pupils learn to lay Roman, common and press brick, to construct all the specialties in the trade, such as: Roman brick fire places: French ranges; Dutch, French, Italian ovens and all work appertaining to the trade.

By the time boys have finished with their schooling they will be thorough mechanics in this line. Bricklaying carries their minds into a useful channel, teaches them not to be afraid of work, it spreads them out and makes them strong, active men.

Although bricklaying is light work it acts on all the muscles of the body and there is no better exercise for a boy cramped up in school all day than an hour's work over pure lime and sand.

My class is composed of boys of the leading contractors in the city. I would be pleased to have you call and see what the boys are doing.

S. J. PIERCE,
Manager and Instructor.

SAN FRANCISCO, April 19, 1896.

MR. EDITOR:—It has been asked why so many building contracts are let where the contractor furnishes the plans and specifications. I think I can tell you; in the first place if the plans, etc., are made by an architect, he will take a number of bids on the work, and by close competition the job will be let at a price which allows very little profit to the contractor. The architect requires to much work for the money paid, and in having the work done, has but slight consideration for the welfare of the contractor. Many of our builders, to be sure of making a good, or at least reasonable profit on their work, will furnish the plans and specifications, free to owners. They give the owner just what they have the money to pay for, perhaps not all he wants or expects, but a good job generally. They make a good showing, and any minor things not specified, can be done as cheaply after the buildings are put up and the owners have the money to pay for them, as they could be done under the contract. By furnishing the plans and specifications free, the contractor is his own boss, and gets the work at a fair price without any real competition. He is not bothered by an architect, and gets along with his work faster. He can pick up cheap materials and get bargins in ready made plaster and other ornaments, that give a flashy effect to the work, and answers just as well as the more expensive work, usually required by an architect, and will last as long as is necessary. Nearly all the buildings erected in this way are built on the installment plan, or the money comes from a Building and Loan Association, and the owners have to pay pretty large monthly installments. So you see a cheap building, that answers the purpose is as good as any other, as in a few years it is likely to be overhauled, or remodeled, anyhow. These contractors make a little money out of this business, more than they could in general competitions, they cut their buildings to suit the price paid and never loose money on their goods, and as some owners would rather have a building that is cheap and showey than a better building at greater cost this class of builders have a fair amount of business of course. In the end, there is nothing given free, the owner has to pay well for all he gets, but not being aware of it, is happy.

Yours truly, CHIPS.

NOTES AND COMMENTS

J. P. MCGILVRAY has the contract for the stone work of the new building on the site of the old American Exchange Hotel, Oregon gray stone is the stone chosen.

THE Municipal Waterworks of Santa Rosa have been completed and successfully tested to the satisfaction of the public. The water comes from two sources—artesian wells a short distance from the pumping station and the underflow in the vicinity of Santa Rosa creek. In each instance there is thorough filtration by which the water is purified.

THE Central Lumber Company, principal place of business, Hanford, capital stock, $100,000, with $20,000 subscribed, and A. J. McLeod, C. B. McLeod, B. F. McLeod, George McLeod and I Hirshfield of Bakersfield as directors.

LABOR is the curse of the world and nobody can meddle with it without becoming proportionately brutified.—*Hawthorne.*

IT IS not for reward that the best work is done.—*Jas. Cubitt.*

CEMENT FLOORS.—A correspondent wishes to know whether there is any composition or method by which an ordinary cement floor already laid can be made smooth enough for dancing purposes.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

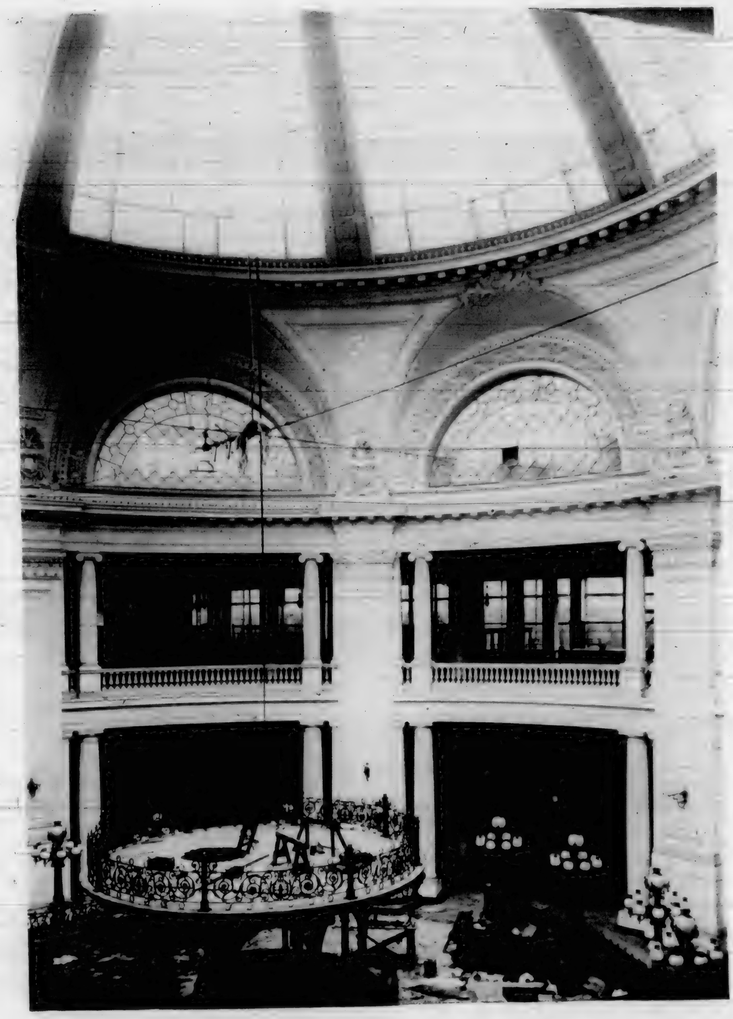
BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
ADAM BECK, Pres. M. V. BRADY, Sec.

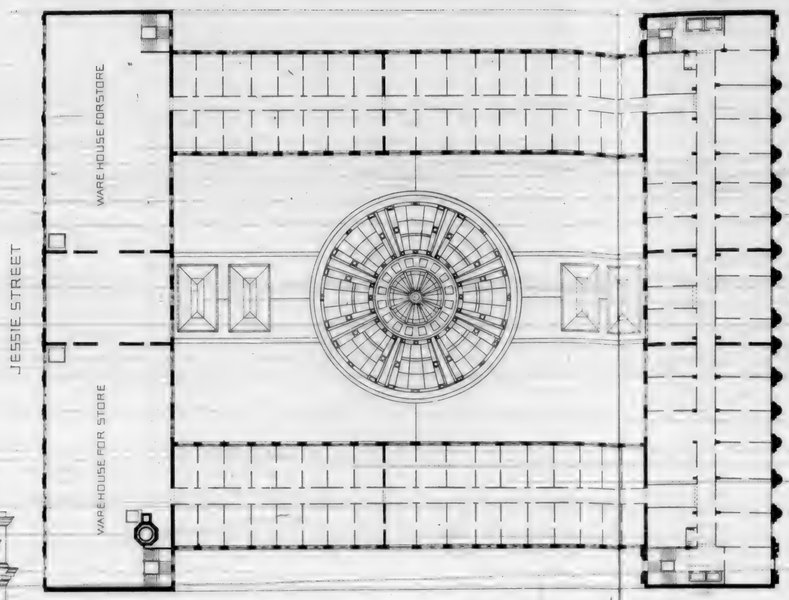
THE EMPORIUM BUILDING.

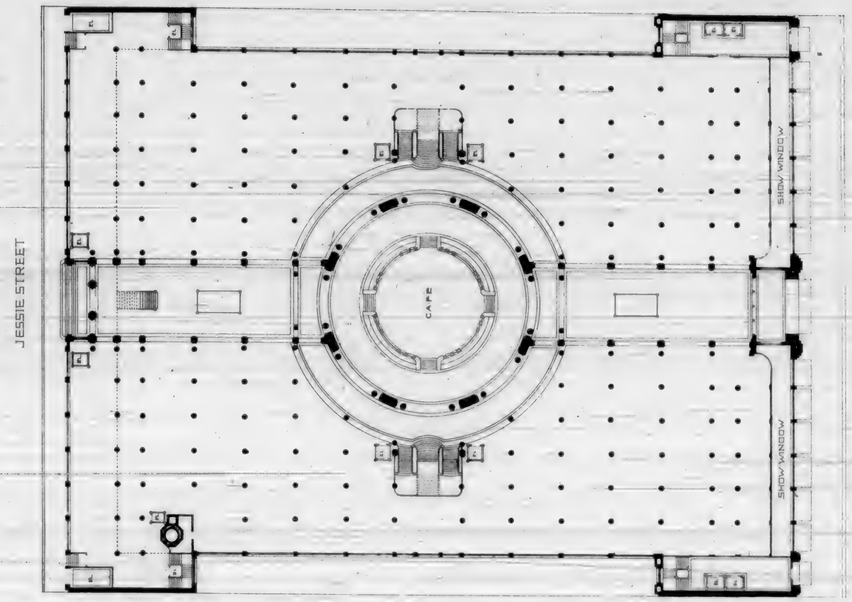
PISSIS & MOORE, ARCHITECTS.

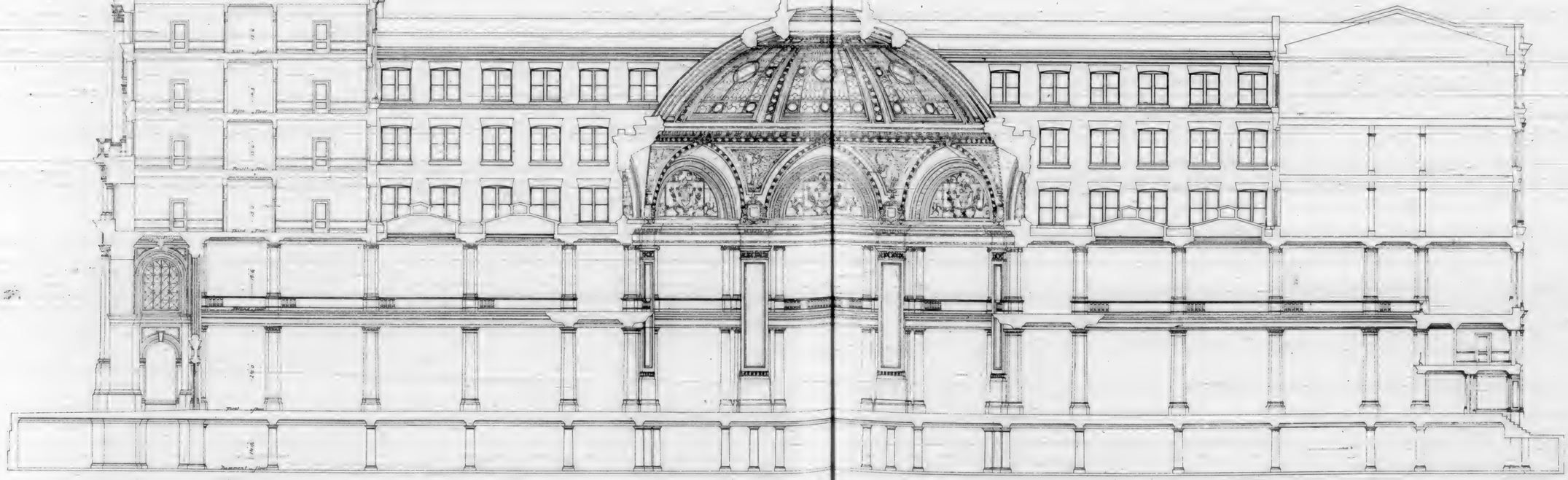
ROYAL INSTITUTE OF BRITISH ARCHITECTS
MDCCCXXXIV



GRAND-STAND, THE EMPORIUM BUILDING.







LONGITUDINAL SECTION

BUILDING FOR MRS A.M. PARROTT ON MARKET ST BETWEEN 4TH AND 5TH

PISSIS AND MOORE ARCHTS

THE EMPORIUM BUILDING.

THIS building is situated on Market street near Fifth street and is a building unique in San Francisco. The first two stories are in steel skeleton frame construction above that solid masonry walls. The whole of the superstructure is supported on columns leaving the whole ground floor, covering a space 275 feet by 250 feet, in one single room or store—which is divided off by fixtures, into the spaces for the various departments of the great Department Store that is about to occupy it.

The main naves forty feet wide form grand promenades running from end to end of the building—these are roofed with glass at a height of forty-five feet and in their centre is the rotunda 140 feet diameter, 100 feet high, covered in with a glass dome one hundred feet diameter. The store is divided into two stories by a gallery floor which overlooks the before mentioned naves.

The main staircases and elevators leading to these gallerys and to the basement, open out from either side of the rotunda and are sixteen feet wide.

The portions of the building facing on Market and Jessie

streets are carried up five stories high above the store, four of which is laid off into offices and the top one as court room and offices for the Supreme Court of California. Wings on each side join these two fronts, part of which is for offices and part for show rooms in connection with the store.

The architects are Pissis & Moore.

THE STORE FITTINGS.

The Department Store is with a few exceptions fitted up by shelving, cases and other fixtures manufactured by the the San Francisco Furniture Manufacturing Company. We hope to give some illustrations of their work in our next number together with other details of this Emporium Building which are not sufficiently completed in this number.

EXCAVATION.

The excavation, bulkheading, etc., was done by A. E. Buckman and was pushed with such energy and dispatch that the work was done within the allotted time in the contract. The extire surface of the lot excavated was 381'x275' covering a super area of 104,775 square feet; it was carried to an average depth of twenty feet making the amount of earth removed 77,000 cubic yards.

In doing this the whole Market and Jessie streets fronts had to be bulkheaded about two and one-half feet outside the curb line so as to allow the concrete foundation and area retaining wall to be built. By reason that the large water and gas mains ran along close to the bulkhead this was quite a difficult matter to overcome as they could not be disturbed a particle. So it was found necessary to bore holes along the line of the bulkhead twenty-five feet deep and into them sink 8"x8" timbers every six feet and then as the dirt was removed three inch plank was lagged up behind these posts. The whole was held in place by series of five struts each, the outer one being over forty feet long.

The piers of the columns had to go below the general surface another eight feet, and thus were below the water line—so each hole had to be sheet piled by grooved watertight sheeting and the hole kept dry while the concrete was put in; when the concrete piers were set the sheet piling was taken out, thus leaving only two inches to fill in between the natural sand and the concrete.

CEMENT.

This has been called the "Cement Age" and this building has not been behind others in justifying this sobriquet. Over 20,000 barrels of cement were used on the building in the foundations, plaster work, tiling and for the pavement of the sidewalk, for the last the "Star" brand was used, a French cement which is guaranteed by the extra precaution taken by having the French Government Inspector inspect all the barrels before leaving the works. All the balance of the cement was the "Josson". Both of these brands were supplied by W. R. Grace & Co., and their use in a building of this character indicates that the reputation these cements have had so far, has not diminished but rather increased.

CONCRETE.

The foundation piers for the steel columns were made of concrete—there were 302 piers distributed over the whole site varying in size from nine feet square to twenty-two feet square and eight feet deep. The exterior piers of both fronts and the retaining walls are fifteen feet high above basement floor and of concrete. The basement floor and side walks are artificial stone, and the foundations for engines and all other machinery are built of concrete by George Goodman, 307 Montgomery street.

GRANITE WORK.

The cappings of all the concrete piers for the reception of the steel pillars and the plinths of the stone work of the front were of granite from the Raymond Quarries in Madera Co., owned by the Raymond Granite Co.—which is noted for being free from iron oxide—and its great strength, the United States Government Ordnance Department tests showing a crushing strength of 20,000 pounds per square inch with no signs of fracture. Part of the main entrance floor is composed of a large granite slab 24'7"x6'6"x12" thick.

BRICK WORK.

All the enclosing walls except the Market street front were built of brick and made the largest contract that had ever been let in San Francisco for similar work. The material was expeditiously handled by means of four steam hoists one at each corner of the building. Richardson & Gale were the contractors.

CEMENT WORK.

The outside of these walls were cemented over with Portland cement and were plastered from swinging stages after the walls were set. The Jessie street facade is finished in cement with moulded cornices, strings, caps and bases of columns, etc., all run in cement in a clean sharp manner. This work was done by Chas. Dunlop.

STONE WORK.

The Market street facade above the store front, the large central arched entrance and the two smaller arched flanking entrances are of stone. The style is classical, very freely

treated so as to adapt it to modern wants. The three central stories are included in a Corinthian Order—consisting of a row of three-quarter columns, above which is an attic crowned by a main cornice of three feet six inches projection with modillions and a balustraded parapet. There is necessarily in the style adopted a large amount of mouldings which were all carefully cut; there is also some fine carving in the spandrils of the arches of the entrances designed with shields and foliage. The central entrance arches are twenty-five feet wide and forty feet high and built of solid through stone voussoirs. The whole work is cut out of more than ordinarily large stones and required a specially strong hoisting gear, with large steel blocks and derricks in proportion, to lift them and set them in place. All was done however without an accident or hitch of any description. Jno. P. McGilvray was the builder of this part of the building.

STONE.

The stone selected had to have the following requisites—strength and enduring qualities combined with a color suitable to the design of the building and an assurance that the stone could be furnished rapidly and in large blocks, as a large percentage of the pieces required, weighed from ten to eighteen tons each, making it difficult for ordinary quarries to furnish. The Oregon Gray Stone was adopted as being a stone and quarry fulfilling all these conditions; the result is a sandstone front which takes its rank as one of the handsomest in the United States. One of the large arch stones weighs eighteen and one-half tons. The quarry is at Yaquina Bay, Oregon, and belongs to the Pioneer Sandstone Company.

PATTERN WORK.

All the patterns for the band-stand electroliers and elevator enclosures were made by the San Francisco Pattern

Works, O. Brown, proprietor, works 110 and 112 Beale street.

WOOD WORK.

Above the third story the floors are of wooden joists, with wood flooring for the rooms and tiling for the halls, the flooring is of one and one-half wide stuff. The roof is of timber and is framed with trusses sixty-two feet span. All the offices communicate one with the other by doors, and a vista through the seventeen openings when from end to end of the building forms a remarkable perspective. F. W. Kern provided and set up all the carpentry and joinery work of the building.

The sashes are all of ash. The rear entrance on Jessie street is quite a feature in itself consisting of a wide vestibule with three sets of doors, and is finished in mahogany and oak; all the interior finish is of oak. Wm. Crocker of the San Francisco Planing Mill did the major portion of the mill work, viz: all the interior finish of the basement, first and second and mezzanine stories and the third, fourth and fifth stories of the rear building. The corridors are lighted by sashes at the top of the rooms in the usual office building style and surrounded by substantial architraves.

MOSAIC.

All floors of the corridors, halls, naves and stair landings of the department store are finished in mosaic and composed of Tesseræ of African and other foreign marbles as well as different American marbles—so laid as to make a harmonious color effect—with borders of a Grecian pattern. There are 30,000 square feet of this mosaic flooring in the building and at least 4,000,000 pieces was used in the laying of them. This work was done by W. W. Montague & Co.

HOLLOW TILE FIRE-PROOFING.

All the first, second and third floors of this building were constructed of Gladding, McBean & Company's Hollow Terra Cotta Tile Fire-proofing, in fact all the columns and girders and iron work of every description throughout the building were covered with Hollow Terra Cotta Tiles which were made and set in place by this firm.

FIRE HOSE.

In speaking of the complete equipments of this building, the fact of thorough protection against possible fires must not be overlooked. Not only has the construction of the building been such as to render the spread of fires from one part to the other practically impossible, but every precaution has been taken so that in the event of a fire originating at any point in the building, appliances are at hand by which it can be promptly checked and damage reduced to a minimum; standpipes have been laid into the walls from basement to roof, with numerous outlets to connect with fire protection hose, the total number of these being seventy-three. At each connection has been placed one of the best styles of automatic hose reel, and a sufficient supply of hose so that, from the various connections on each floor, any portion of the floor can be readily reached with a strong volume of water.

A peculiarity will be noticed in the appearance of the hose, which was selected by the architects after long and careful examination of the different articles of this description submitted to them. The hose, which is of the rubber-lined cotton variety, is a dark tan color, a condition that has been produced by the chemical treatment to which the cotton was subjected before being woven into the fabric of the hose. This process is known as the Leatheriting process, and is the exclusive property of the New York Belting & Packing Co., Ltd., who supplied the hose and reels for this building.

Insurance Companies have become more exacting in their requirements as to the character of hose for fire protection in factories and public buildings, and policy holders are now required to equip with the best and most reliable hose. The New York Belting & Packing Co. Ltd., have for many years been extensive manufacturers of fire hose, and their experiments have led to nearly all improvements now in use in connection with that branch of manufacturing. The Leatherited Cotton Hose produced by this company may be safely regarded as the highest and most successful result of these experiments, as it has been proved beyond a doubt that cotton treated by this process will resist the action of decay and the attacks of insects to a far greater degree than anything else in the shape of a cotton fabric that has been produced. The New York Belting & Packing Co. Ltd., have a branch warehouse and salesroom in this city at 509–511 Market street.

ARTISTIC METAL WORK.

The art metal work was done by the old and well-known firm, the California Artistic Metal Works, Coppieters & Mockel, proprietors, and includes the balustrades and railings of the band-stand, all the folding gates, the very elaborate and handsome newels and electroliers that will shed a radiance as of day over the throngs passing to and fro along the many aisles, and up and down the broad and spacious steps, listening to the strains of music from the great bandstand in the center of the rotunda, another piece

of work of which this firm have every reason to be proud, as it will challenge comparison with the best work of Eastern or European craftsmen. The accompanying photographic views, however, will give the reader a better idea of the artistic excellence of the work than any amount of mere verbal commendation. The firm has recently moved to more commodious quarters, located at 7, 9, 11, 13, 15 and 17 Stevenson street.

THE ROOFING OF THE MAMMOTH COURT.

The roof surrounding the dome over the great central court presented some problems quite out of the ordinary. A roof was a necessity for the protection of the many operations going on below; while at the same time the work to be done on the dome itself, the skylights, the walls, and the upper portions of the building, was of such a nature as to prove destructive to any ordinary covering. In this exigency recourse was had to Watson's five ply felt, composition and gravel roof. Four plys of tarred roofing felt were laid shingling, the laps being cemented together with roofing composition, of coal tar distilled to 600 F., a fifth ply was then laid as a cap sheet and was mopped solid to the four below, this was in turn flooded with the composition, and while the latter was still hot and liquid, clean gravel was bedded in a complete coat by being scraped into the hot composition as spread. This work was done in the fall, and during the months following, the roof was used as a lumber yard and storeroom for plastering horses, mortar beds, and debris of various kinds; materials for the finishing of the upper stories were hoisted to and passed over it in immense quantities; and scaffolding built, some three and some four stories high, to reach and plaster the surrounding walls; and notwithstanding the severe usage made necessary the roof sustained no injury. The materials used in this roof were manufactured by the Pacific Refining & Roofing Co., who also did the work. Their extensive manufacturing establishment is at the Potrero, where they make tarred roofing felts, building papers, roofing compositions, and paints, creosoting oils and other similar goods and products.

WROUGHT IRON WORK.

Besides the several iron staircases scattered about the building it is supplied with four outside fire-escape ladlers. On the Jessie street front there are two, and one in each of the light courts on each side, all with stand pipes. Traveling ladders, fitted with vertically moving seats for washing the windows of the three lower stories of the Jessie street front, which have fixed sash run on rails above and below the windows, allowing all parts of the front to be got at.

Dyer Bros., Golden West Iron Works, did this work and the stairs to the engine room in basement. They have lately moved from their old stand into more commodious quarters at 117–119 Beal street, where they have installed the largest punching and shearing machine on the Coast; this punches and cuts with ease 1½ plates of any length, angle iron and in fact any heavy structural iron; so that Dyer Bros. were fully equipped to carry out all this class of work on this building with ease and dispatch.

HOLLOW TILING.

All the partitions and wall furrings, and large flues for holding the electric wires and plumbing pipes, etc., from basement to roof, as well as the vaults, of which there are about seventy, built around the iron safes in the offices, were built of Wanner's Hollow Tiles, put up by Wanner & Maddox. The roof space was also divided, by means of the Hollow Tiling, into a number of compartments so as to prevent the spread of fire therein and altogether there were at least 300,000 square feet of partition walls. The ingredients used mainly in the manufacture of these tiles are a fire resisting cement found in the southern countries of this state and cinders and ground clinkers. The result is a light but tough concrete, weighs sixty-five pounds per cubic foot, a poor conductor of heat and sound. Manufactured into hollow blocks for partitions, it takes the place of a stud partition and not exceeding the weight of the latter. The thickness of these hollow walls are three inch and four inch in this building; the sections are generally two feet six inches long and contains about four square feet each. The faces are so corrugated or roughened as to form a good clinch for a one-fourth inch coat of plastering—each block is tongued and grooved and set in mortar.

The grounds for baseboards and chair rails are held in place by carriage bolts driven through the wall before or after plastering; picture mouldings are held in place by nails driven direct in the wall. The furring or air space veneering of the brick walls was made up in sections of same size as the hollow partitions and generally 1¼ inch thick except where pipes came up where they were made up to as thick as nine inch according to necessities. The object attained by these furrings are the prevention of dampness passing from the masonry walls and the equalization of the temperatnre inside the rooms adjacent.

PAINTING AND POLISHING.

All the woodwork of the store is painted a dead white, giving a cheerful effect to the interior and forming a background to the display of goods which doesn't in any way interfere with their colors. All the woodwork of the upper or office portion of the building is polished, leaving it with a natural finish. All the painting and polishing was done by the firm of St. Denis & Co. in their usual complete way.

PLASTERING.

The interior of the grand central rotunda is finished in plaster. The lower story has a Tuscan Order the upper an Ionic. Springing from the large paneled pilasters which run through both stories are the arches for the lunettes; the pendentives between which have panels filled in with decorative plaster above which comes the ornamental circular cornice which forms the base of the glass dome. The whole forms a magnificent *coup d'eil* which it is hard to surpass. All this difficult and elaborate work has been carried out successfully by Mr. D. O'Sullivan, the contractor for the plaster work. The whole of the plastering of the store portion of the building, together with the paneled ceiling of the entrance vestibule was also done by Mr. O'Sullivan.

ART METAL WORK.

Winslow Bros. of Chicago, furnished and set up the metal work of the Market street front, the entrance vestibules and doors, the two large main stair railings, with the adjoining elevator enclosure and the balustrades around the two large light wells on the main floor lighting the basement.

All the store fronts are made of Duplex plated iron, the plating having a coppery bronze effect. The rebates of the sash for the reception of the large sheets of plate glass are made particularly straight and true so that the glass fits close to them throughout. The same may be said of the door frames. The Market street entrance doors are covered

with the galvano-plastic material for which Winslow Bros. are noted.

The enormous semi-circular light filling in the entrance arch is made of the same material with ornamental frame. The before mentioned elevator enclosures have the corner pilasters, frieze and cornices of electro plated copper and the filling in of Bower-barffed iron. The railing of the stairs, landings and wells being composed of ornamented balusters gives a substantial effect not otherwise obtained. This metal work railing is capped by a broad mahogany capping which was made and fitted by Mr. H. M. Frick of this city.

The circular newel posts at the foot of the rotunda staircases surmounted by the electroliers with their urn-like standards are remarkable for the beauty of their design and execution.

URINALS AND SINKS.

The Urinals in this building are the Patent Lenox Urinals made exclusively by The J. L. Mott Iron Works and the Imperial Porcelain Slop Sinks were also furnished by the same company.

HEATING.

The building is heated by steam at a low pressure, either exhaust steam from the engines, or steam taken direct from the boilers and reduced in pressure.

The system of piping used is the single pipe, overhead system; the main steam pipe is run directly from the boiler room to the attic over the fifth floor on the Jessie street side. This main steam pipe is cross-connected so that either exhaust steam from the engines or live steam from the boilers can be used. A Davis Reducing Pressure Valve with a by-pass is used for this latter connection. In the attic the main steam pipe is divided into two mains and run in each wing to the Market street front. These mains reduce in size from eight inch to four inch as the drops for supplying the radiators are taken from them. The drops are taken from the bottom of the steam mains with a nipple and forty-five degree Ell, each drop having a gate valve. The drops are carried down full size, concealed behind the finish of the columns, to the radiators on the first floor, where they are reduced to one-half size. All connections to radiators are made under the floors. In the basement the radiators are semi hot water radiators, being connected top and bottom. The piping is of ample size to insure a rapid and noiseless circulation of steam at one-half pound pressure. The return mains in the basement are galvanized iron pipe encased in terra cotta sewer pipe cemented at the joints, water tight. This manner of running the returns is necessitated by the seepage water being near the surface. These mains are run into a sump built of concrete from which the condensed water is pumped back into the boiler. The main steam pipes are covered with Magnesia Sectional Covering. The Detroit Ornamental Fluted Radiator, manufactured by the American Radiator Company, is the radiato used. Each office, the stores on the first and second floors and the restaurant in the basement, are supplied with radiation. The radiators in the offices are twenty-five inches high and those in the stores and basement are thirty-eight inches high; the total amount of radiation, when the building is completed will be 16,000 square feet. All the latest scientific appliances for the better control and regulation of steam systems are used on this plant and it is one of the most perfect in use on the Pacific Coast. The plant was put in by the Geo. H. Tay Co.

ENCAUSTIC TILING.

All the corridors of the upper portion of the Parrott Building are laid in encaustic tile; the prevailing tints and designs are light gray octagons with red dots. The border is a Greek fret ornament with chocolate boundary lines. This is the largest contract for tiling that has ever been undertaken on this Coast, consisting of about 22,000 square feet. Thos. F. Rigney of 119 Valencia street is the contractor of this work, and we must congratulate him on the fine workmanship he has displayed in this building. These encaustic tiles are practically unwearable and when laid in a fine bed of concrete as they are in this case, while the building lasts the floor will last.

SIDEWALK LIGHTS.

The Sidewalk Lights are made in large steel and stone illuminating slabs, each extending from beam to beam without intermediate supporting bearers, which permits of there being glass where such bearers, would be; besides the steel bottoms are galvanized which prevents discoloration of the paint by rust. These slabs are fire and burglar proof and will sustain loads of not less than 500 pounds per square foot, and extend continuously the whole length of the Market street front nine feet wide. On the Jessie street front the steps to the entrances are all made of illuminating tile treads and risers as well as the sidewalk lights. P. H. Jackson & Co., manufactured and set this work, also the water-tight iron sidewalk doors of which there are six on Jessie street.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Acceptance of Building.—Where an owner accepts a building the contractor is entitled to its value as constructed, though not in all respects as contracted for, and owner is entitled to the difference between the value of the house as built and as contracted for. To recover the purchase under a building contract, only a substantial and not a literal compliance with the contract must be shown.
Jennings v. Willer, Ct. Civ. App. Tex., 32 S. W. Rep. 24.

Damages for Delay in Completion of Building.—A clause in a building contract providing that the contractors should pay a certain sum for delay in completing the building must be treated as a penalty, and not as liquidated damages where the only damage suffered was the delay in the occupation of the new house, the difference between the rental value thereof, and of the house occupied during the delay being considerably less then the sum stipulated to be paid.
Jennings v. Willer, Ct. Civ. App. Tex., 32 S. W. Rep. 24.

Liabilities under a Non-Trading Partnership.—A partnership formed to carry on the business of general contractors and builders being a non-trading partnership, a person who accepts from one of the partners a firm note, signed by him, and secured on the firm's chattels, is charged with notice that under the partnership agreement the partner had no authority to execute the note or mortgage on behalf of the firm.
Snively v. Matheson, Supreme Ct. Washington, 40 Pac. Rep. 628.

Lien not Lost By Taking Notes.—The holder of a mechanic's lien, who takes for his account, notes of his debtor, maturing within the time allowed for fsreclosure of the lien, which he discounts and afterwards pays, does not thereby waive or lose his rank as a lien holder, or his right to file and enforce his claim to a lien.
Wisconsin Trust Co. v. Robinson & Cary Co. 68 Feb. Rep. 778.

Payment for Partial Performance of Contract.—It is well settled that where one party has entered into a special contract to perform work for another and furnish material, and the work is done and material furnished, but not in the manner stipulated in the contract, yet if the work and materials are of any value and benefit to the party, he may recover for the work done and materials furnished. This upon the principal that, if the other party has derived a benefit from the part performed, it would be unjust to allow him to retain that without paying anything. The more equable rule has been generally adopted, which pemits a recovery by one who in good faith attempts to perform his contract, and does so substantially, although there may be a slight deviation, or some technical and unimportant omission or defect. A substantial performance, however, is still indispensable to a recovery, and a failure to carry out any material part of the contract will not amount to a substantial performance. And where a party, by an express contract, undertakes to furnish material and perform labor, he is only entitled to payment according to its terms, and the law will not make for him a contract different from that which the parties have entered into. The implied liability arises, if at all, from the subsequent transaction or conduct of the parties, and if there is a substantial non-performance of the contract, and the party for whom the materials were furnished and the labor performed refuses to accept, and does not receive or retain, any of the benefits of the contract, no such liability will arise.
Modell Tp. of Norton County v. King Iron-Bridge Co., Court of Appeals of Kansas, 41 Pac. Rep. 1059.

Materials Furnished Lessee, Lien on Interest of Lessor.—Under the statute, providing that, where a building shall be erected by a lessee or by a builder or other person employed by such lessee, the lien shall apply only to the extent of the interest of the lessee, a lessor's reversion cannot be subjected to the payment of the claim of one who, after making full inquiry as to the lessee's responsibility, and knowing the nature of the contract between him and the lessor, sold him brick for buildings on the leased premises.
Hoffman v. McColgan, Court of Appeals of Maryland, 32 At. Rep. 179.

CITY BUILDING NEWS.

Ashbury near Waller, Two-story frame; owner, J. Stierlein; day's work; cost $10,000.

Baker near Washington. Two-story frame; owner, Channing H. Cook; architect, D. J. Patterson; contractor, William Linden; signed, March 17; filed, March 28; cost $4885.

Belvedere near Frederick. Two-story frame; owner, William Hinkel; architect, Herman & Swain; contractors, Petterson & Pearson; signed, March 5; filed, March 6; cost $3250.

Belvedere near Frederick. To build; owner, A. H. and Theresia Johnson; contractor, W. W. Rednall; signed, March 31; filed, April 2; cost $1975.

Belvedere near Waller. Two-story frame; owner, P. E. Smith; contractor, W. W. Rednall; signed, Morch 31; filed, April 4; cost $3700.

Bush near Laguna. Two-story frame, owner, William Geist; architects, Laist & Schwerdt; contractor, John T. Hayes; signed, March 7; filed, March 14; cost $4170.

California near Scott. Alterations and additions; owner, Mrs. Hettie H. Rehfish; architect, J. H. Littlefield; signed, April 4; filed, April 7; cost $2797.

California near Second Ave. Cottage; owner, Rasmus Anderson; architect, J. H. Littlefield; contractor, W. Chatham; signed, March 9; filed, March 16; cost $1348.

California and Baker. Carpenter work; owner, Mrs. Mayble E. Denervaud; architects, Smith & Freeman; contractors, J. H. Simpson and A. T. Spence; signed, March 18; filed, March 25; cost $2740.

California near Broderick. Two-story frame; owner, Gotelli; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, March 24; filed, March 25; cost $2094.

Castro near 28th. Cottage; owner, Mrs. Dora Wood; contractor, T. R. Bassett; signed, March 5; filed, March 16; cost $1325.

Clement near 12th Ave. Frame dwelling; owner, Samuel Goodman; cost $1800.

Clay near Laurel. Two-story frame; owner, C. P. Stanford; architect, Louis S. Stone; contractor, August Lund; signed, March 18; filed, March 24; cost $4586.

Clay and Sansome. Alterations; owner, R. R. Thompson; superintendent, G. H. Moore; day's work; cost $2500.

Davis near California. Concrete, twisted iron, etc.; owner, Mrs. Ellen Folger; architects, Percy & Hamilton; contractors, Keatinge, Leonard & Ransome; signed, April 3; filed, April 3; cost $3648.

Davis near California. Cast and wrough iron work, etc., owner, Mrs. Ellen Folger; architects, Percy & Hamilton; contractor, Western Iron Works; signed, April 2; filed, April 4; cost $3285.

Davis and California. Brick work, etc., to six-story brick; owner, Mrs. Ellen Folger; architects, Percy & Hamilton; contractors, Riley & Loane; signed, April 3; filed, April 4; cost $9872.

Davis near California. Carpentery, mill work, etc.; owner, Mrs. Ellen Folger; architects, Percy & Hamilton; contractor, Silas Carle; signed, April 2; filed, April 4; cost $9560.

Devisadero near McAllister. To build; owner, Mrs. Emilie Bramas; architect, W. Koenig; contractor, Ira W. Coburn; signed, March 18; filed, March 27; cost $2340.

Devisdero and Turk. Plumbing, etc.; owner, Mrs. Carolina A. Bollman; architect, Wm. Koenig; contractor, W. Williamson; signed, March 19; filed, March 21; cost $2775.

Devisadero and Turk. Four two-story frames; owner, Caroline A. Bollman architect, Wm. Koenig; contractor, H. P. Conrady; signed, March 14; filed, March 14; cost $15,120.

De Long Ave. near Frederick. To build; owner, Clara A. Cook; contractor, Marcuse & Remmel; signed, March 18; filed, March 23; cost $3100.

Dupont near Bush. Additions and repairs; owner, J. B. Dolet; architect; Emil Depierre; contractor, Jean Salanave; signed, March 21; filed, March 21; cost $2000.

Eddy and Powell. Electric elevator; owner, E. W. Hopkins; architect, Clinton Day; contractors, A. J. McNicoll & Co.; signed, March 30; filed, April 1; cost $2200.

Fell near Lyon. To build except plumbing; owner, Emma Joseph; architect, W. H. Lillie; contractors, White Bros.; signed, April 6; filed, April 8, cost $9270.

Fell near Lyon. Plumbing, etc.; owner, Emma Joseph; architect, W. H. Lillie, contractor, G. C. Sweeney; signed, April 6; filed, April 8; cost $1100.

Fell near Scott. To build; owner, Daniel Eirstein; day's work; cost $4500.

Fourth Ave. near Point Lobos. To build; owners, Mr. and Mrs. H. V. Richit; contractor, E. Ginley; signed, March 3; filed, March 3; cost $2500.

Folsom near 16th. Excavations, concrete, etc.; owner, Enterprise Brewery Co.; architect, H. Geilfuss; contractors, Miller & Beck; signed, March 18; filed, March 18; cost $1275.

Folsom near 16th. Steel construction; owner, Enterprise Brewery Co.; architect, H. Geilfuss; contractors, Schrader & Lutze; signed, March 18; filed, March 18; cost $2100.

Folsom and 25th. To build; owner, Edward Gentry; architect, Chas. M. Rousseau; contractors, Williams & Forten; signed, April 4; filed, April 7; cost $11,025.

Frederick and Clayton. Two two-story frames; owner, Mrs. Margaret Rippon; architect, W. Koenig; signed, April 6; filed, April 7; cost $5744.

Geary near Hyde. To build; owner, Dr. A. Abrams; contractor, H. Jacks; signed, April 1; filed, April 4; cost $6850.

Green near Buchanan. To build; owner, Annie M. Seale; architect, W. O. Banks; contractor, G. H. Walker; signed, March 5; filed, March 13; cost $3800.

Howard near 22d. To build, except plumbing, painting, etc; owner, Herman Zweig; architects, Kenitzer & Barth; contractor, Charles Schutt; signed, March 18; filed, March 19; cost $6700.

Howard near 5th. To build; owner, J. G. Lavonsaler; contractor, G. A. Fisher; signed, March 30; filed, March 30; cost $9000.

Hyde near Green. To build; owner, J. F. Kydd; architects, Mooser & Son; contractors, Westerlund & Sandeen; signed, April 2; filed, April 6; cost $3128.

Jackson near Montgomery. Alterations and additions to brick; owner, Marguerite V. Merle; architect, T. J. Welsh; contractor, M. V. Brady; signed, March 14; filed, March 21; cost $3410.

Lake near 3d Ave. Two-story frame; owner, Mrs. Louisa M. Chase; contractor, Dan P. Dolan; signed, March 14; filed, March 23; cost $1750.

Lott near Waller. One-story frame; owner, Adele L. Rodgers and Isabella M. Rodgers; architect, J. C. Newsom; contractors, Simpson & Spence; signed, March 17; filed, April 3; cost $2177.

Lyon and McAllister. To build; owner, Martin Meyer; architect, Emil John; contractor, Jas. Bucher; signed, March 23; filed, March 27; cost $9681.

Market near 5th. Cafe fixtures, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, S. F. Furniture Mfg. Co.; signed, March 5; filed March 16; cost $8140.

Market near 5th. Fixtures, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, S. F. Furniture Mnfg. Co.; signed, Feb. 20; filed, March 5; cost $9772.

Market nr 5th. Partitions, tables, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractors, S. F. Furniture Co.; signed, Feb. 18; filed, March 5; cost $5362.85.

Market street Ferry Depot. All iron and steel work; owners, Board of Harbor Commissioners; architect, E. R. Swain; contractor, Risdon Iron Works; cost $188,000.

Market near Jones. Alterations and additions; owner, Thos. P. Dunne; architect, A. J. Barnett; contractor, T. D. Gilmore; signed, March 23; filed, March 24; cost $1400.

Market and Third. Steel and iron work, owner, Claus Spreckels; architects, Reid Bros.; contractor, Pacific Rolling Mills; signed, March 23; filed, April 1; cost $118,792.32.

Masonic Ave. and Waller. Three frame dwellings; owners, architects and contractors, Cranston & Keenan; cost $24,400.

McAllister near Hyde. Basement floors, etc.; owner, California Bible Society; architects, McDougall & Son; contractor, Gray Bros.; signed, March 23; filed, March 25; cost $1875.

Minnesota near 22d. Cottage; owner, Chas. Berger; contractor, R. O. Davis signed, March 23; filed, March 25; cost $1983.

Ninth Ave. near Point Lobos. Two-story frame; owner, Margaret Clark; contractor, P. Demartini; signed, March 11; filed, March 12; cost $1950.

Ocean House Road. Two-story frames; owner, The Pacific Jockey Club; architect, T. J. Welsh; contractor, Geo. H. Walker; signed, March 26; filed, March 30; cost $11,730.

Pacific street Wharf. Sheds; owner, Board of Harbor Commissioners; contractors, Healy, Tibbitts & Co.; cost $7893.

Parker Ave. near Pt. Lobos. Two-story frame; owner, James J. Harrison; contractor, Otten & Sorenson; signed, March 12; filed, March 14; cost $2065.

Post near Stockton. Granite and sandstone for six-story brick; owner, Hobart Estate Co.; architects, Percy & Hamilton; contractor, John D. McGilvray; signed, Feb. 29; filed, March 14; cost $14,810.

Pine near Powell. Twelve apartment houses; owner, Clara L. Cunningham; architect, Clinton Day; contractor, S. H. Kent; signed, March 24; filed, March 25; cost $36,697.

Precita Ave. lot 2. Frame building; owners, Horace and David Newell; contractor, R. Fahy; signed, April 6; filed, 6; cost $1712.

Steuart near Mission. Elevators; owner, E. R. Lilienthal; architect, Clinton Day; contractor, W. L. Holman; signed, March 2; filed, March 27; cost $1500.

Sutter near Van Ness. Alterations; owner, Mrs. Amelia L. Leszenski; architect Salfield & Kohlberg; contractors, Charles Condy; signed, March 6; filed, March 25; cost $3250.

Sacramento near Walnut. Two-story frame; owner, Vincenzo Lorenzini; contractors, Cuneo & Cavaglia; signed, March 16; filed, March 18; cost $5100.

Second Ave. near Clement. Two-story frame; owner, Catharena Mehrtens; contractor, Jas. McConahey; signed, April 1; filed, April 2; cost $2440.

Scott near Union. Two-story frame; owner, Margaret J. McNamara; architect, E. A. Mathews; contractors, Knox & Cook; cost $4188.

Second Ave. near Clement. To build; owner, Abraham Lowenstein; contractor, W. W. Redmall; signed, April 1; filed, April 1; cost $2100.

Sutter near Hyde. Additions and alterations; owner, E. Edith Crane; architects, Herman & Swain, contractor, W. H. Bagge; signed, March 11; filed, April 1; cost $2575.

Seventeenth near California. Cottage; owner, E. L. Holder; cost $1800.

Twelfth Ave. near Lake. Cottage; owner, Mrs. Mary H. Atkinson; contractor, L. T. Fenn; signed, April 6; filed, April 7; cost $1216.

Twelfth near H. Cottages; owner and builder; Mr. Williams; cost $4,000.

Tenth Ave. near Pt. Lobos. Cottages; owner, T. G. Parker; contractor, H. Byerly; signed, April 1; filed, April 1; cost $2500.

Twentieth near Diamond. To build; owner, B. Crowley; contractor, T. F. Mitchell; signed, April 2; filed, April 2; cost $2967.

Twenty-fourth near Folsom. To build; owners, Russ Bros.; architects, De Prosse & Meusdorffer; contractors, Wenochl & Franz; signed, April 2; filed April 3; cost $4000.

Twenty-fourth near Folsom. Excavations and brick work; owner, Russ Bros. architects, De Prosse & Meusdorffer; contractor, Chas. Wagner; signed, April 1; filed, April 3; cost $590.

Twenty-fourth and Clement. Cottage; owner, Joseph Joost; day's work; cost $2000.

Twenty-fifth and Folsom. To build; owner, Mrs. A. C. Kratz; contractor, E. W. Hyde; signed, April 1; filed, April 2; cost $5700.

Twenty-seventh near Point Lobos Ave. Cottage; owner, William Conlin builder, M. J. Scott; cost $1000.

Twenty-first Ave. near Pt. Lobos. Cottage; owner, Geo. Hodnett; builder, J T. McInnis; cose $1000.

Twenty-ninth near Dolores. Flats and additions; owner, Claus Linderman architect, W. C. Hamerton; cost $3350.

Twenty-ninth near Noe. To build except brick work, etc.; owner, R. Trost; day's work; cost $2700.

Townsend and Stanford. Two-story brick; owner, Ingelnook Vineyard Agency; architect, Clinton Day; contractor, John McCarty; signed, April 2; filed, April 4; cost $8,000.

Townsend and Stanford. Carpenter work, painting, etc.; owner, Ingelnook Vineyard Agency; architect, Clinton Day, contractor, C. Chisholm; signed, April 2; filed, April 2; cost $4036.

Waller and Clayton. To build; owner, Peter E. and Carrie M. Lammers; architect, Oliver Everett; contractor, Jacob Schuler; signed, March 1; filed, March 2; cost $5,050.

Waller near Steiner. To build; owner, G. Depaoli; architect, E. J. Vogel; contractor, R. Fahy; signed, April 1; filed, April 3; cost $4768.

Waller near Devisadero. Additional story; owner, W. B. Morris; architect, W H. Lillie; contractors, Moore & Cameron; signed, April 6; filed, April 9; cost $2640.

York near 22d. Frame work; owner, Henry Picke; contractor, J. E. Schulz; cost $1700.

Valencia and Stable Alley. Plumbing and gas fitting; owner, Mrs. Rose A Pickering; architects, Havens & Toepke; contractor, H. Williamson; signed, March 1; filed, March 3; cost $1574.

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EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

WE publish herewith photographs of the old San Francisco Post-office Building, surrounded with the different wooden sheds that have from time to time been required to meet the needs of a growing city, and also a view of the new post-office premises, authorized by Congress almost a decade ago, and designed to provide adequate accommodation for the postal business of the metropolis of the Pacific Coast.

Possibly our honored Secretary of the Treasury considers we San Franciscans to be a very ill-bred and importunate people, in becoming impatient at such a trifling delay as nine years. What is nine years in the life of a city, why it has taken twice that length of time for us to build a City Hall, and it isn't built yet; and perhaps he thinks if it takes us eighteen years to construct a Municipal building that he should be excused for taking nine years to commence work on a Federal building. Is not the greater dignity of a Federal official to be taken into consideration? Large bodies are proverbially slow in "getting a move on" and the Honorable Secretary of the Treasury is a man of wait (at least he has shown himself to be in this matter.)

Perhaps, however, we may be doing an injustice. It is possible that it is the Supervising Architect of the Treasury

Department who is at fault in the matter. We can readily imagine the despair of an ambitious architect, anxious to surpass some *chef d'œuvre* that has awakened his admiration, and vainly racking his brains in the hopeless attempt. Look at the present main entrance to the old Post-office

Building! verily it would be difficult to design anything more noble and inspiring. Is it not an imposing piece of work? How symetrical is the spacing of voids and solids. How nobly is the severe plainness of the flanking walls relieved by the mullion windows on either side; and in the crowning entablature, see how the æsthetic jig saw has decorated the ornamental portions of the cornice. It is true the shade trees somewhat hide or rather mask the real beauties of the facade, but the glimpses, half concealed and half revealed but whet the imagination, and the trees themselves! how appropriate as rural adornments, how suitable for the little occidental village of San Francisco—how typical of the pastoral life of the wild and woolly west. And then look at the facilities for illuminating the building on fete days and gala occasions. No parsimonious economy can be observed here; instead of the usual single lamp-post that adorns the crossing of the streets, here we have them scattered with lavish hand, not one, but *two*, harmoniously disposed on either side, and gaily decorated with red and green paint. No wonder that the presiding genius of the architect's shop in Washington is dubious about his ability to rival the master hand here displayed—what barbarians must we be to desire the demolition and eternal destruction of such art treasures. Only a few years ago a brand new coat of stucco was applied to such portions of the original walls as remained in place, and the wooden walls of the new lean-to's were painted. Surely the administration is showing a praise-worthy economy in securing the utmost wear out of the coat of paint and stucco. Economy is a virtue and should be inculcated in the masses by precept and example.

Then look at the practical method by which our good government teaches us economy in small things. The fences surrounding the new site are covered with advertisements and not ordinary cheap advertisements but advertisements done in oil, real artistic art, thus encouraging and cultivating the æsthetic sentiment of the people as well as instructing them in the principles of hygiene. Talk about our government not being paternal! Why it even goes so far as to be maternal in its solicitude for the daily habits by which health is preserved, and teaches us what physic is the best to use. So in place of criticizing the government for its lack of action, we should commend it for its masterful inactivity, and hope that we shall reap in the future the rewards of present parsimonies and discomforts.

THERE is an agitation going on by property owners and others in the neighborhood of the Old City Hall site calling for the immediate erection of a Jail and Criminal Court's Building, thereon. One would have thought that such a building as this would not be a very desirable neighbor and the clamor to have it erected appears rather astonishing. This must be one of the anomalies of the present age—for an ordinary sane person would surely not be anxious to have the sight of his friends and customers constantly regaled by views of the patrol wagon with dubious characters therein, and the ambulance with smashed up humanity rattling up every little while, or the loafing, spitting, beer soaked products of modern civilization that are to be found frequently in the environs of such a building.

There is no doubt that the vacant lot should not be allowed to lie idle; but there are plenty of pleasant remunerative uses to which it can be put—e. g., the city could build a large emporium building on the site for the use of the north end of town and either run the business located therein themselves or let it out to tradesmen—or use it for a recreation building for the people; a People's Palace for healthy, rational enjoyment; a more effective way of getting rid of houses of questionable resort than by police force. By either scheme, an income will be obtained for the City instead of a continuous outcome—as will be the case should the supervisors be amenable to the pressure brought upon them by the aforesaid agitation.

OUR attention has been called to an article in the *Builder and Contractor* published at Los Angeles under the head of "Advertising Schemes," it is directed against the business of fake advertisement by means of "leaflets" and "souvenirs" and the method of inducing respectable merchants to advertise under the threat that the architects will not recognize the dealer who does not do so, now this can fairly be called blackmail and should be frowned upon by all respectable architect. It is generally acknowledged by those most capable of judging that the leaflet and souvenir are so much waste paper as far as having any effect upon the purchaser, and therefore any money spent upon such useless trash is money thrown away.

Any person claiming to have the power to prevent the specification of any article of real merit by architects may be set down as a *fraud*.

The architects business and interest is to specify what he considers for the best interest of his employer, regardless of any consideration of friendship or selfishness. Consequently the merchant and manufacturer are perfectly safe in defying any attempt to force him to advertise under the fear of being boycotted by any respectable architect.

The extract below shows the whole nefarious business in its true light and is fully indorsed by the editor:

"We have had occasion from time to time to warn architects, material men and others of the building trades against a certain class of fake advertisers, who happen along at stray seasons and proceed to 'work' everybody and everything in sight for their own behoof; having done so, they clear themselves out, leaving advertisers exhausted and the public flushed with a lot of trash that results of no benefit to the advertiser, nor anyone else, except the fakir.

"Our continued calling attention to this character of itinerents has operated to keep these fellows from pestering advertisers to a considerable extent. They have come to realize that to go to a material-man with any of their fakes, however 'novel,' is worse than useless, so long as said fake has nothing to rest upon but its own merit. Lately, however, they have taken another cut; instead of going to the material-man, showing to him their scheme and soliciting his 'ad,' they bring a force to bear upon him to *compel* him to advertise upon the peril of a loss of prospective trade in his refusal to do so.

SENATOR RAVEY'S BILL.

HIS MEASURE TO LIMIT THE HEIGHT OF BUILDINGS.

The full text of the bill introduced in the New York Legislature by Senator Pavey, at the instance of the City Club of New York, limiting the height of buildings, is as follows:

Section 1. No building shall hereafter be erected in the City of New York in which any floor occupied or used, or intended to be occupied or used, in part or in whole, for working rooms, living rooms, bedrooms, salesrooms, storage offices, or manufacturing purposes, shall be of greater height above the curb level at the centre of the front than fifteen times the square root of the width of the street, road, or avenue on which it is erected, and whenever any building shall front on a street, road, or avenue over 100 feet in width its width shall be taken to be one hundred feet in making this calculation; provided, however, that where any portion of a building shall be set back from the street line the upper floor of the part set back may be carried to an additional height of twice the distance to which it is set back from the street line, and provided further, that where a building shall be built on a corner formed by the intersection of two streets, roads, or avenues, one of which is narrower than the other, the front on the narrower street may be built to the height of the front on the wider street for a distance of 100 feet.

Sec. 2. Where a lot fronts on a public square or open public square, or where the street, road, or avenue on which it fronts is more than 100 feet wide, or where it is opposite the end of a street more that sixty feet wide, the upper floor of any building to be erected thereon may be carried to a greater height above the curb than is above provided; provided, however, that the design and plan for such building shall be approved as being neither detrimental to the health or comfort of the citizens, nor injurious to the beauty of the city; such approval shall be evinced by a certificate in writing, signed by the President of the Health Department of the City of New York, the Superintendent of Buildings of said city; and a member of the Council of the Fine Arts Federation to be appointed from its membership for such purpose, and such certificate, signed by all said persons, shall be filed with the plans of such improvement in the Department of Buildings of said city.

Sec. 3. Nothing in this act contained shall be held or construed to effect buildings already erected, or for the erection of which there have been filed in the Department of Buildings, complete and perfect plans, such as are actually required by the department under existing rules before a permit to build be granted; providing, however, that the work on such buildings shall be actually commenced within sixty days from the passage of this act. If work on any such buildings shall not be commdnced within sixty days from the passage of this act, such buildings shall be deemed to be governed by the provisions of this act, as though no plans had been filed.

Sec. 4. This act shall take effect immediately.

THE SUPERVISING ARCHITECT'S OFFICE BILL.

THE following circular letter is issued to the public by the committee in charge of the Aldrich bill now before Congress, and gives a clear statement of the importance of the bill to the general public and individuals as well, asking general co-operation in securing its passage:

New York, March 24, 1896.

Dear Sir:—It is well known to every public-spirited citizen, and especially to those interested in matters of art, that the present system of designing and erecting the federal buildings of the United States through the agency of the Supervising Architect's office at Washington is the outgrowth of an antiquated and inadequate method, which should have been changed long ago.

The absolutely unsatisfactory results of the present system are apparent to us in the lack of originality and artistic merit of our public buildings, which are constructed after a set pattern, at an expense greatly exceeding the cost of the same class of work and demanding at least three times as long to construct as when built by private enterprise.

Various attempts have been made by the profession, by legislation and otherwise, to remedy these evils. The last attempt was the introduction in the fifty-third Congress of the "McKaig" bill, entitled "A bill to provide for the securing of plans and for the erection of the public buildings of the United States."

This bill provides for the creation of an expert commission, appointed by the President, with the approval of the Senate, to have charge of the architectural work of the government; to select designs, in competitions to be conducted by this commission, for each new building, and to appoint the architect of the building, as in private practice, leaving the Supervising Architect as the representative of the government in all matters connected with the erection and completion of the buildings, and the payment therefor.

In other words, this bill proposes, by a system of competitions, conducted under proper authority, to obtain for our federal buildings the very best designs and the very best architectural skill now available, relieving the supervising Architect's office entirely of the duty of designing, but leaving the supervising Architect in charge of the work

as the representative of the government in all matters of business or general supervision.

The federal buildings would then be under the charge of leading architects in the different sections of the country where they are to be erected. They would become individual to the locality and the outgrowth of the same, not only in design, but in construction and materials. They would also receive constant supervision, and would be built as promptly and as economically as buildings for private individuals.

The Supervising Architect would become the supervisor of the architects commissioned by the government; his duties would be simplified in one direction, and thus give him more time to attend to his important duties in other directions. He would also be able to devote much of his time to collecting and diffusing valuable statistics and information concerning materials and many other matters pertaining to building, so that the profession at large would be able to draw upon Washington for general information, as is now the case with engineers, agriculturalists and other important bodies.

Such a bill must result in better and more prompt and economical methods for the government, in better and more beautiful buildings for the public, and also in raising the standard of architecture, both artistically and otherwise, in the United States.

The "McKaig bill," though drawn at the suggestion of the Secretary of the Treasury and revised by him, was defeated for political reasons. It has been reintroduced in the present Congress and the outlook for its passage is very avorable.

The architects of the country have devoted much time to this work, and have so far subscribed all the necessary funds for legitimate purposes inintroducing and promoting the bill. They find, however, that the work of promoting the bill in a perfectly legitimate way requires ample funds, which they are not in a position to furnish entirely, and they have further found that they are taxed with selfish motives in promoting the bill.

As it is a matter which should interest every public-spirited citizen, as stated above, and which from a business point of view will benefit every individual community where federal work is contemplated, by affording each community the opportunity of erecting its own buildings with local materials supplied by local people, the whole building being under local influence, instead of the present system, where everything is centralized in Washington, to the benefit of a few large contractors who control to a great extent the work and the supplies, not only ignoring local requirements, but in most instances thrusting aside excellent opportunities for local development, it has been decided by the committee in charge of the bill to appeal, through the architects of the country, to the public at large for subscriptions for the purpose of furthering the interests of this bill. Such subscriptions will be not only of material aid, but they will give the bill a very strong moral support by proving that the public at large is interested in its passage.

Yours respectfully,

George B. Post, Chairman.
Bruce Price.
Alfred Stone.
Robert Stead.
James G. Hill.

John M. Carrere, Secretary, 44 Broadway, New York.

Note.—As prompt action in this matter is of the greatest importance, I appeal to you for immediate support, and request that you send your contribution to me at your earliest convenience, should you care to help this cause.

.....Name.
.....Address.

To Mr.....

UNIVERSITY OF CALIFORNIA.

REGENT REINSTEIN'S VIEW AS TO ITS ARCHITECTURAL FUTURE.

The following resolution was adopted by the Regents at their meeting of April twenty-ninth, upon motion of Regent Reinstein:

Resolved—That the Committee on Buildings and Grounds be instructed to confer with Mr. Maybeck, Teacher of Architectural Drawing in the University, together with the President of the University and the Academic Council, to immediately prepare a program to be reported to the Board of Regents "for a permanent and comprehensive plan, to be opened to general competition, for a system of buildings to be erected upon the grounds of the University of California at Berkeley."

In advocating this motion Mr. Reinstein advanced many logical arguments which we are sorry not to be able to quote in full; but we give below some of the most important points in his address:

Gentlemen: Before discussing the subject-matter of this special meeting, namely, the obtainment of a permanent and grand plan for the grounds and buildings of the University of California at Berkeley, I desire to explain, for the benefit of those who may not know the facts in this behalf, that the idea of getting such a plan is neither original with me nor new with this Board. Mr. B. R. Maybeck, teacher of Architectural Drawing in the University, first suggested the matter to me, and I am well aware that this subject has had much thought and attention for many years past from almost every member of the Board, and I desire to state further, that unfortunately I have been unable to give to this subject the amount of attention its importance deserves. That importance has appealed to me with perhaps special force because of my membership on the Committee of Grounds and Buildings of the University, and perhaps also (by reason of the short time I have held the office of Regent), because of my ignorance of the importance of many other subjects which have occupied your time and attention.

In the determination of this question, three factors seem to me guiding and controlling.

First, is the need one which falls within the line of the purposes of the University?

Second, is the time ripe for such need to be answered?

Third, are the means at hand or available to satisfy such need?

And looking at the subject matter of this special meeting with admittedly inexperienced eyes, and having devoted to it far less thought than it deserves, and fully appreciating my ignorance of many other demands of the University, I nevertheless cannot help thinking that the obtainment of a comprehensive, permanent and grand plan for the grounds and buildings of the University of California is at the present time, the need most imminent of all others in point of time, the need most important as a University purpose, and the need, for the accomplishment of which, funds would be most available.

I need hardly say that my own opinion is not without authority and corroboration.

Regarding the subject matter of this special meeting, as I have done from the time it was first mentioned to me in November last, as one of commanding importance, I have communicated with the Presidents of the great Universities and the leading architects of this country, requesting their opinion of the desirability and the importance and the best methods of obtainment of beautiful grounds for the University, and buildings thereon, which should be not only convenient for use but architecturally beautiful in themselves, and parts of a grand, harmonious unity which should contemplate on what is conceded to be the *most beautiful site on this earth, the most glorious architectural pile of history*.

Every person to whom I have written on this subject has answered at length, and with far more interest and enthusiasm than might have been expected from those far removed from us by distance, and it is these opinions, with some of my own views thereon, I beg now to lay before you.

* * * * * *

The present buildings, few in number, and almost all of them admittedly temporary in character, now constitute something of an obstacle to the obtainment of such a plan, but each new permanent building placed upon those grounds will vastly increase and emphasize that obstacle. Those which are there now may be left until they have outlived their usefulness, without seriously impairing the permanent and grand and harmonious structures which are contemplated, but any further additions to such buildings made without regard to such permanent plan would certainly interfere most seriously with our purpose in that direction.

If it be conceded, as I think it will be, without doubt, that the present buildings will not conform to any such purpose as we have in view, and the necessities of the situation demand that the next Legislative appropriation shall be applied to the building of two or three more structures upon that ground, we shall be met again with the same difficulties we have experienced in the buildings for the affiliated colleges; we shall be compelled to advertise for plans; a number of architects (probably most, if not all of them from the Pacific Coast) will compete, and we probably shall have to select three separate plans for three separate buildings. All of these structures will probably be at variance with each other, and with all that has gone before or is expected to come hereafter and will make the present confusion worse confounded, to be emphasized and intensified, when a few years from now, a similar performance will make the present unfortunate condition disgraceful both to the University and the State, and preclude forever the possibility of architectural results at the State University worthy of either a sovereign State or of its highest educational institution.

Our whole method, in the past, of building hap-hazard, has been wrong, and it is high time that we should first lay out our plan for the *whole* University, and then build, forever after, in reasonable accordance with such plan. We have been building at the University just as one would, who built, separately, the various rooms of a house, before having a plan for the entire structure.

The older institutions of learning suffer the most perhaps from this unfortunate condition, and the letters from the Presidents of every old and great University in the land deplore this unfortunate condition in the matter of their University buildings.

Coming now to the proposition that a plan for glorious buildings and beautiful grounds will be a means of benefiting the University financially, first, by appropriations from the Legislature, and secondly by private endowments, it would seem to require no argument that the representatives of the people in the Legislature will be far more apt to give us moneys for buildings when we can show them exactly the purpose for which the money is to be definitely put, and much more apt to give liberally when they can see that the buildings to be erected will reflect credit, honor and glory on the State, and even on the nation.

The people of this State, like those of France, have a just and great pride in their State, a pride which is destined to grow and increase and intensify as the State becomes more populous and better known, and that pride has begun to be manifested in the architecture of our public buildings. In every town and city the city hall, the courthouse, the public library, as the Capitol of the State bear witness to this feeling, and in a sovereign State the buildings which subserve the highest and most important purposes of the State should yield to none in grandeur and beauty, and if we but plan wisely the representatives of the people will be both proud and glad to give lavishly to carry out the plan.

Moreover, such a plan and a few buildings erected in accordance with it, will stimulate private endowment for its speedy completion.

Private individuals will give gladly and freely to perpetuate their names in buildings which are to be parts of a superb architectnral pile *that will excite the admiration of the world*, while they will do nothing if the buildings which are to bear their names are hidden among a lot of others of every conceivable variety of insult to beauty and use, making a hodge-podge which can excite only the pity and criticism of every on-looker.

It is needless to say that all architects agree on the desirability and importance of beautiful grounds and buildings, arranged according to a general plan.

Upon the best method of obtaining such a plan, the leading architects of the country differ most widely. The correspondence received in that regard is however so voluminous that I shall not attempt to present anything more than the points made for the positions taken by such architects. Generally speaking it may be said that all the leading architects are opposed to what is termed an open or general competition and their views are fairly summed up in a pamphlet on the general subject of architectural competitions, written by John M. Carrere of the firm of Carrere & Hastings, concededly among the first of the architects of this country. I quote from said pamphlet the following:

"Architectural competitions, in the judgment of most architects, are 'a delusion and a snare.' The principal of bringing men into rivalry in the solution of the same problem with the hope of producing the best possible work, seems to be a correct one, but even disregarding all other practical reasons, it fails to produce the desired results, because, in the manner of presenting the solution—namely, by drawings—it is impossible, no matter how fully the drawings illustrate the idea, to give a complete conception of the work as it will appear. This would be true even if the judges who select this work were always as able as those who are competing. There is no doubt that in architecture, as in all other liberal arts and professions, the best results are generally obtained by selecting a man on his record for what he has actually accomplished, and entrusting the work to him without competition.

"A competition may result in bringing out hidden talent and give new men opportunities which they would not otherwise secure, but the older men who have their legitimate work to attend to which cannot be neglected, cannot be drawn into competitions for the mere sake of a chance to increase their practice, perhaps at the risk of unfair treatment or prejudiced decisions, and of unreasonable demands upon their time so that it is very seldom that the best men will consent to enter into competition, and the object of the same is thereby immediately defeated. * * * If competitions are to be a success, they should, in the first place, in my opinion, be made such as to commend themselves to the attention of the *entire profession*. The men with established reputations will not look upon competitions favorably, and will not take part in them regularly until a regular schedule has been established making uniform charges for competition drawings in the same manner as for other professional service. * * In the matter of public buildings it is somewhat different, from the fact that the character of the building is one which not only promises *renown* and *honor* resulting from possible success, but which gives the true architect the only opportunity for studying and designing *monumental* art; and for the sake of this *opportunity*, if the competition is properly conducted, the leading architects of this country would probably consent to compete."

These views of Mr. Carrere on the general subject of architectural competition fairly reflect those of the leading architects of this country, and without taking up the time of the members of this Board to quote extracts from the many letters received from such leading architects indicatcating their views upon the subject, I beg to be permitted briefly to epitomize what in my opinion is a fair statement of their position.

First—All of these architects seem to agree upon the proposition that the best plan would be for the Board of Regents to select some prominent architect to work in conjunction with a landscape engineer in the carrying out of our purposes. This idea seems impracticable: first, because of the difficulties in our selection of such an architect, and secondly because we are prohibited from such a course, apparently by the letter, and certainly by the spirit of the laws of this State for the erection of its public buildings.

Second. The plan next favored by leading architects is a competition limited to perhaps ten architects, and in their view the fewer the better, who should be paid for their services in rendering to us plans from which this Board in conjunction with an advisory Board of architects, elected by the competing architects, should choose some plan. As a modification of this idea, many of the architects have suggested that we might have in addition to the plans so furnished us by these ten leading architects, a public competition open to all other architects.

Third, and apparently as their last choice, these architects have suggested an unrestricted, open public competition.

It would seem that under the law only this last method can be adopted by us, and an instinctive feeling of what is fair would recommend this last plan above all the others under the circumstances in which we are situated.

Underlying the feeling on the part of all the great architects that we shall get the poorest results from a general competition, are two factors. First, as such architects are now constantly and lucratively employed, the most eminent architects will not go into such a competition where they claim that the chance of payment for their services and expense is a mere gamble. Secondly, they fear that in such a competition the decision will not be wise or not be just.

We must meet the great architects fairly on both these points. In order to succeed we must arrange some method to secure their services with a practical guaranty of payment to them for such services, and we must safe-guard the decision.

These conditions should be thoroughly recognized by us as essential, if not vital to successful results in any competition.

For these reasons I would suggest an international open double competition; that is, a preliminary, and then a final one. At the preliminary competition the architects competing would present simply a broad general idea or outline of their scheme, with but few and simple drawings.

The competing architects should elect an Advisory Board of five architects, one *each* from England, France and Germany, one from California and one from the balance of the United States.

This Advisory Board of architects, in conjunction with the Board of Regents, should select from the plans submitted at the preliminary competition, a number not less than five nor more than fifteen, among the authors of which there should be distributed equally $5000, and the authors of such selected plans be requested to enter a final competition, wherein their plans and ideas should be amplified and put in greater detail and clearness. As so large a number of plans would thus receive some compensation and the drawings required be but few and simple, each great architect would have a reasonable assurance of some reward for his time and thought thus devoted.

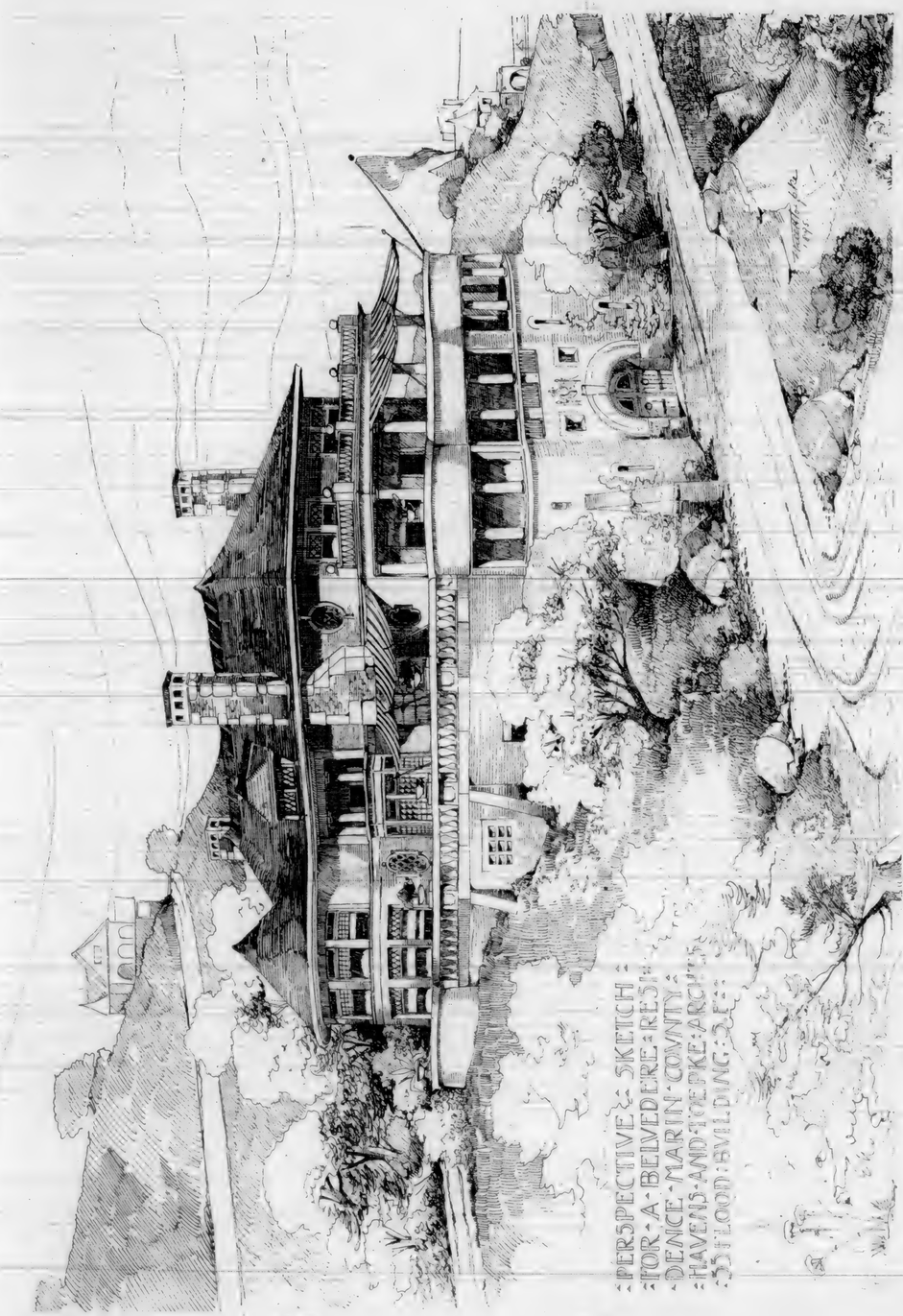
From the plans submitted at the final competition, the Advisory Board of Architects would then select a number of plans, not to exceed five, the author of the first and winning plan to have the construction of all buildings erected within say, twenty-five years and pursuant to his plans, and the authors of the remaining selected plans to have distributed among them $5000.

All the competing plans to be designated only by motto or device, a duplicate of which, together with the name and address of the architect adopting it, to be sent to the President of the United States to be disclosed only *after* the *final* award was made.

We believe that such a course would satisfy every architect of the country in the matter of its absolute justice.

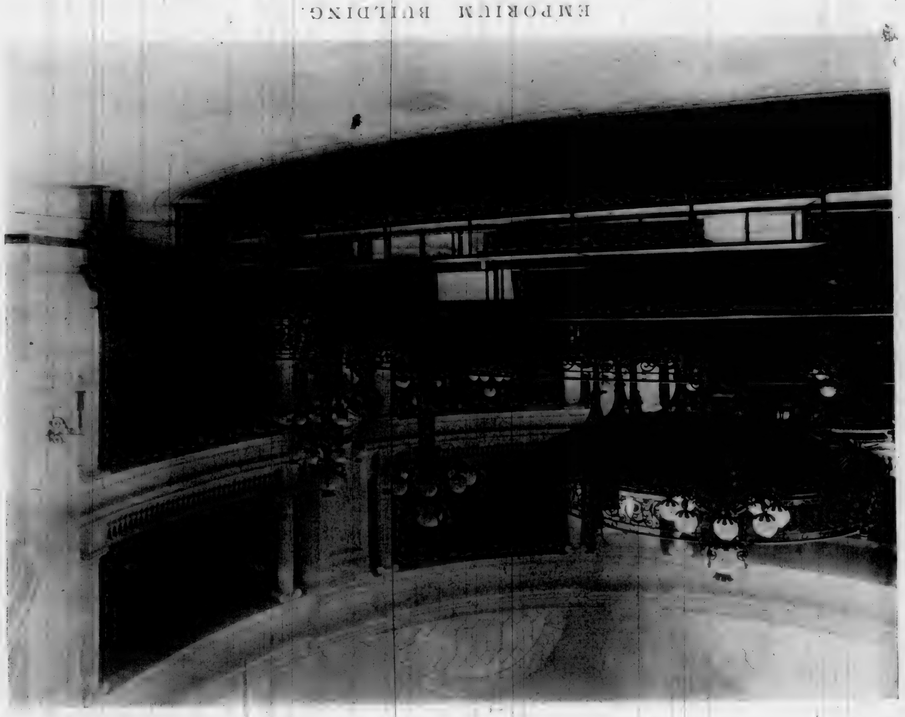
INSULATION.

NEARLY a million dollars loss has been sustained in this city alone, in the past two years, by fires caused by the poor insulation of electric wires. To avoid the possibility of a fire happening from such a cause the installing of the wires in the new Parrott Building has been made with exceptional care. The highest grade of insulated wires was used and these wires were conducted to every part of the building through conduits, which received at least two coats of P. & B. Insulating Paint and a course of the heaviest grade of P. & B. Insulating Paper. Nearly one thousand gallons of the paint and some five thousand square feet of the paper were used. This paint was originated by the Paraffine Paint Co. of San Francisco and is now used in all parts of the civilized world. Like all other articles of merit it has been extensively imitated by unscrupulous parties.



EMPORIUM BUILDING.

INTERIOR FIXTURES ABOVE GRAND STAND.



ROMA ISTITUTO DI BELLE ARTI ARCHITETTURA

EMPORIUM BUILDING.

INTERIOR FIXTURES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS
MDCCCXXXIV

MARSHFIELD SCHOOL.
OREGON.

P. Chappell Browne
Architect.
PORTLAND - Or.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE Chapter held its usual monthly meeting this month and elected to active membership Mr. R. H. White. The report of the Committee appointed at a previous meeting to formulate a scheme, etc., in reference to the best method of obtaining competitive designs for the State University, reported the result of its deliberations which were formally approved by the Chapter.

Following is the report in question:

SAN FRANCISCO, April 20, 1896.

J. B. Reinstein, Esq.

DEAR SIR:—Your communication of March 14th, in reference to the best method of obtaining competitive designs for the State University, was laid before the San Francisco Chapter of the American Institute of Architects at their last meeting, and was referred to a committee consisting of Seth Babson, President of the Chapter, Albert Pissis and G. W. Percy, to formulate and express the views of the Chapter in regard to the matter.

Acting under the instructions received, we would say: The Architects of California and the people of artistic taste having in mind the influence of such a centre of learning, agree with you that the time has come for adopting a complete, harmonious and effective scheme for the buildings and grounds of the University at Berkeley.

While in general we do not approve of competitions for architectural work, probably nothing else will be satisfactory to the majority of those interested.

We think that the general plan suggested by yourself is a good one, especially in having an advisory committee of experts selected from the best talent in the Country.

We would make the following suggestions as worthy of consideration:

The present buildings being for the most part inferior to the standard that will be required in the future, they having been erected without any regard to a general plan, and not being harmonious as to their style and location, they should be considered as merely temporary buildings, so as not to interfere with the general proposed scheme.

That an architect to carry out a general plan and arrangements should be selected after two competitive trials.

The first to be open to all, and should consist of preliminary sketches so as not to entail too much labor or expense on the part of the competing architects. Each competitor to be furnished with sufficient data, setting forth existing conditions and a carefully arranged programme prepared by the Regents, stating the accomodations required, also the number of drawings, scale, manner of rendering.

To these drawings may be added a description and explanation. Each design and description to be accompanied with a sealed envelope containing the name and address of the author and each marked with a motto or other device. From the preliminary plans thus submitted, the Board of Regents, with the assistance of their advisory committee, should select a certain limited number of the most satisfactory designs, and number to be determined at the time of calling for competitive plans. The authors of these designs to be invited to make a more complete study of the subject which shall include such drawings, descriptions and explanations as shall be deemed necessary for a proper and sufficient exposition of the design. The scale and number of such drawings to be determined by the Board of Regents, and set forth in the original invitation for the competitions.

Each architect invited for the second competition, should receive a certain sum as compensation for his work. Their designs should be carefully examined by the Board of Regents, and a report made on them by the advisory committee. From these, three designs should be selected and awarded three prizes consisting of a money consideration and in proportion as they are ranked. In addition, the architect whose design is classed first, should be employed at the usual compensation for all buildings erected during his active practice unless found unworthy of such a trust.

All designs except the one accepted should be returned to their authors, and no suggestions should be taken from them without the consent of the authors.

Respectfully submitted,

SETH BABSON,
ALBERT PISSIS,
G. W. PERCY.

BOOKS AND PERIODICALS.

SPECIFICATIONS—A practical system for writing specifications for buildings by W. Frank Bower, New York, Edward A. MacLean, 14 Lafayette Place, publishers. This work cannot fail to be of great service to the architect as an aid in making out specifications; the thorough manner the work has been compiled leaves no excuse for the architect to leave out anything that should go in, as nothing appears to be overlooked.

The author in the preface says:—"I would not wish to be understood as recommending all the methods of construction described—many have been inserted solely because they are in use in some localities neither do I make any particular claim to originality in the matter contained. Material has been collected from many sources, but I entertain the hope that I have, perhaps, compiled a work which will make specification writing more sure and systematic and less arduous."

THE PLANNING AND CONSTRUCTION OF AMERICAN THEATRES, by William H. Birkmire author of "Architectural Iron and Steel," "Skeleton Construction in Buildings," etc., etc., fully illustrated, published by John Wiley & Sons, New York, London, Chapman and Hall, 1896. The preface of this volume fully explains the reason for publication as follows:—

"Theatres, opera houses and public halls among the cities of this country have become so numerous, the planning and construction so governed by stringent building laws enacted and revised from time to time for the safety of the public, that the author has been induced to prepare this volume for architects and others interested in this class o structures.

In the preparation of the work the writer is under obligations and here makes his acknowledgments to well known architects who have made the subject a special study and

from their latest examples of modern theatres the illustrations have been made."

The book is printed on fine heavy paper and fully illustrated and certainly does credit to the publishers and will be found a welcome addition to any architects library.

The FORTHNIGHTLY contains useful articles on contemporary and live subjects one by Oliver Schreiner gives a thorough history and account of the original and non-progress of the unsophisticated Boers—a race dropped out of the seventeenth century into the nineteenth—and which the modern is doing his best to make conform to modern usages and manners; the other by "Ouida" in her usual sympathetic manner congratulating the Italians on their stand against being sent to Abyssinia to be murdered for the benefit of army contractors and money lenders.

Mr. Sidney Buxton's Reminiscence of Cardinal Manning in his connection with the Dock strike in London a few years ago show the Cardinal up in his best light and shows that in his old age after an experience of over eighty years he became practically a Socialist, is shown by the following letter:

Archbishop's House, Westminster,
Dec 27, 1889.

My dear Mr. Buxton:—"I have been laid up for a fortnight. Six hours in the Egyptian Hall gave me a chill. But I have been turning over the Strike matters, and the the more I think, the more I am on the side of labour.

"1. Labour and skill are capital, as much as gold and silver.

"2. Labour and skill can produce without gold or silver.

"3. Gold and silver are dependent on labour and skill, but labor and skill are independent *in limine*.

"4. The union of the two Capitals demands participation in the product.

"5. Wages are a minimized money representation of shares in product, that is in profits.

"6. Silvertown gives 15 per cent to its shareholders, and denies half-pence and farthings to its workers.

"7. This is more or less the state of the labour market at large.

"8. No strike is worth making except for a twofold share in the profits of a twofold capital. But individualism, selfishness, freedom of contract, and competition have obliterated the first principles of the Metayer system.

"I could not write without saying this, but it would be Evangelium Dæmoniacum. My hope is that the permanent Body of Reference and the subordinate Committees will force a thorough sifting of the whole question. So long as our workingmen men live in rooms not fit for human habitation, neither they nor theirs can live a human life.

"I want a great deal more than better wages.

"Many happy New Years to you.

Very truly yours,
Henry E. Card, Archbp."

In another letter, dated January 21st, 1890, he writes, in the bitterness of his heart:—

". . . a clergyman said last week, 'The Dockers' Strike succeeded because the police did not do their duty; the Gas Strike has failed because the police did their duty.'

"The 'freedom of contract' is maintained by the truncheon.

"There is no justice, mercy, or compassion in the Plutocracy.

"There is my creed, and I hope to write it in this year. . ."

Most people lay these opinions to his wise benevolence—the present Cardinal Vaughn lays it to his dotage. Take your choice.

ILLUSTRATIONS.

Marshfield School, Oregon, P. Chappell Browne, Architect of Portland, Or.

Perspective Sketch for a Belvedere Residence, Havens & Topeke, Architects.

THE PUBLIC ART LEAGUE OF THE UNITED STATES.

CONSTITUTION, LIST OF OFFICERS AND ORGANIZERS.

Article 1. Name—the name of this Society shall be "The Public Art League of the United States."

Article 2. Object—The object of this League is to promote the passage of a law or laws by Congress requiring that before purchase or adoption by the Government of any work of Art, (Sculpture, Painting, Architecture, Landscape design, Coin, Seal, Medal, Note, Stamp, or Bond,) the design or model for the same shall be submitted, to a commission of experts for an expression of opinion as to its artistic merit, and that the approval of such committee shall be a prerequisite to its adoption.

Article 3. Means—The means of accomplishing the object of the League shall be a persistent agitation of the subject before Congress, and the promotion of agencies for the education of the masses of the people.

Article 4. Membership—Persons interested in the objects of the League may become members by authorizing the Secretary to sign their name to the Constitution.

Article 5. Officers—The officers of the League shall be a President and three Vice-Presidents, a Recording and Corresponding Secretary, and a Treasurer, each of whom will serve two years. There shall be twenty-four Directors, six of whom shall retire each year. The Officers and Directors shall nominate three persons for each vacancy that may occur, and from among these nominees one person shall be elected to fill each vacancy by the majority of the votes cast in a letter ballot in which all members of the League may participate.

Article 6. Management—The officers, with the Directors, shall constitute a Board of Managers, who shall have the direction of the affairs of the League and make by-laws for its government. All questions to be brought before the Society must first be submitted to the Board of Managers.

Article 7. Fees—The membership fee shall be one dollar per year.

Article 8. Changes—This Constitution shall not be changed, except upon the recommendation of a two-thirds vote of the Board of Management, and a letter ballot, showing a majority of the League in favor of such change.

LIST OF OFFICERS AND DIRECTORS FOR "THE PUBLIC ART LEAGUE." 1896 AND 1897.

Richard Watson Gilder, Editor *Century Magazine*, N. Y., President. *Richard M. Hunt, Architect, N. Y., 1st Vice-President. Augustus St. Gaudens, Sculptor, N. Y., 2d Vice-President. John La Farge, Artist, N. Y., 3d Vice-President. T. M. Clark, Architect, *American Architect*, Boston, Mass., Recording Secretary. Glenn Brown, Architect, 918 F. street, Washington, D. C., Acting Corresponding Sec'y.

* Deceased. Vacancy to be filled by election under the Constitution.

EMPORIUM BUILDING.

In our last number we gave some illustrations of the exterior and interior of the Emporium Building. In this number we illustrate some of the interior fixtures for the departments of the store.

The San Francisco Furniture Manufacturing Co. made the major part of the fixtures including the fixtures of the Art, Crockery, Clothing and Furniture Departments and the counters and shelves around the Central Cafe under the Rotunda.

They are all constructed in the best methods of joinery of California woods, viz.: California Maple, Spruce, Redwood, Oak and Ash. The only foreign wood employed is Mahogany of which most of the fixtures of the first floor are composed. They are all made from orignal designs by the architects, Pissis & Moore, who in consequence of their complete drawings and details avoided any mistakes or delay in the work.

These fixtures are spread over three floors of this immense building and consist of glass cases, pyramid cases and tables, ordinary tables, shelving, etc. The columns throughout are utilized to advantage by being made the centre around which are placed circular shelving and tables. Besides this the San Francisco Furniture Manufacturing Co. made all the telephone boxes, and dressing boxes for the Tailoring Department and the finish of the Barbers' Shops and Ladies' Waiting Room, the latter in the Grecian style.

The good workmanship of and the short time in which these miles of shelving and thousands of drawers were done demonstrates conclusively that owners and dealers need no more send outside of this State for their furniture or any other work of this description as the San Francisco Furniture Manufacturing Co. challenge any firm in the East to get out any work so good or in such short a time as the work here under consideration.

This firm being established twenty-five years in Chicago has only just moved to San Francisco and therefore the expedition with which this work was done is the more remarkable.

The work done in California Oak in this building will remove the prejudice against that wood so far exhibited. There is no doubt that there is only one Oak that can compare at all with its beauty and that is the English Oak. The cost of that precludes any use of it on this Coast—especially when equally as good can be found in the mountains of Humboldt, Del Norte and other counties of California—as well as Oregon.

When properly kiln dried no fear need be had of its warping or shrinking and we believe that henceforth the days of imported hardwood work are now numbered; as after the demonstration given no excuse can be found henceforth for paying heavy freights which can do no good whatever to this coast. Another advantage of the California Oak is the great length in which it can be obtained—planks forty to sixty feet being obtainable while sixteen feet is the longest piece that can be obtained in the East.

The beauty of the California Maple and Ash likewise cannot be beat in the world and now that the San Francisco Furniture Manufacturing Company has led the way, there is nothing to prevent us not only manufacturing our own furniture here of our own woods but exporting the same to our Eastern neighbors.

THE MORGAN HEATING AND VENTILATING SYSTEM AS USED IN THE MARSHFIELD SCHOOL HOUSE, MARSHFIELD, OR.

In the centre portion is the fuel and furnace room where Walter Morgan & Co. have installed their system of heating and ventilation, which consists of chambers for collecting the fresh air from different sides of the building, then passing same over the surface of large heaters and distributing it to various parts of the building through metallic ducts; in each class room is a patent device for regulating the flow of warm and cool air, so that the temperature can be raised or lowered at the option of the teachers. Along side of each furnace in the basement is an immense flue for ventilation, having a specially designed stove heater to generate heat, and thereby create a power to exhaust the foul air through the various foul air ducts from each room at the floor line.

A TEST OF THE SYSTEM.

A severe test of this system was made during that afternoon by the Board of Directors, which demonstrated the fact that the air in each class room can be changed every ten minutes, thus giving nearly two thousand cubic feet of fresh air each hour to every child without opening a single window or door.

During the summer months it will only be necessary to keep a little fire in the small heaters in order to maintain a perfect system of ventilation.

This system of heating and ventilation is well adapted for schools and other public buildings, being simple in construction, easy to manage and gives good results for a very small consumption of fuel.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec't. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
Geo. W. Dickie, Pres. W. G. Curtis, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.
Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.
Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.
Adam Beck, Pres. M. V. Brady, Sec.

BUSINESS MOSAICS.

The immense amount of damage that is often done by water is clearly illustrated at the recent fire at Ames & Harris' establishment at the corner of Drumm and Sacramento streets. Much of the loss could have been avoided by the use of a course of P. & B. Waterproof Building Paper between the floors. The cost of such a waterproof course amounts to nothing compared to the protection against damage afforded by it.

Visitor—Oh yes, Miss Vantyred, I assure you that while I was on the other side I was considered quite a lion! MISS VANTYRED—The king of beasts?—*Truth.*

With the coming of each and every spring, editors and publishers are offered "Spring Poetry," which is considered by the authors, of a quality quite equal, if not superior, to anything ever launched upon the poetry-loving world. As with poetry, so it is with paint,—as the spring season of painting and repainting comes along there is sure to be offered something new in the way of paint mixture for the protection of roofs, iron work, etc. Fortunately the public, as a rule, discriminate as wisely against such new nostrums as it does in its poetry, and rightly chooses a paint like Dixon's Silica Graphite Paint, which has been so favorably known for over a quarter of a century.

Roofs painted with Dixon's "Silica Graphite" Paint have not required repainting in twelve to fifteen years and over. Railway and other corporations known for their thorough testing and careful selection of materials, use this paint in large quantities. Anyone desiring to know more about Graphite Paint should address the Joseph Dixon Crucible Company, Jersey City, N. J.

Teacher—Now, my boy, tell me what animals are best protected by Nature from the ravages of winter? MY BOY—Those that live on the line of the Equator, sir!—*Puck.*

The heading of this page reminds one to mention the fact that mosaic work is now quite generally used not only in small patches as formerly but now in extensive amounts, witness the floor of the Emporium Building.

W. W. Montague & Co., the layer of this floor has gone into this business with the same vim as they have into the eucaustic tiling, mantels, heating and other branches of their extensive establishment, and have made the same success of it.

Charlie—Miss Flyppe's stockings are extensively clocked. JACK—Yes. They're extensively watched, too.—*Truth.*

Since the establishment of the J. L. Mott Iron Works in 1828, there has never been a time when that company could make such a fine display of goods as at present. Something new all the time appears to be their motto; now we have the hinged drain board for the kitchen sink which marks another advance in sanitary science. You have only to inspect the cut upon page v of this journal to be convinced of the utility of this new departure from the old style of doing things. Mr. M. S. James, Pacific Coast Representative of the company can be found in the handsome sale room 27 Flood Building, San Francisco, Cal.

He—I don't like the man. He called me an ass once! What do you think of that? SHE—I think his politeness does not compare with his knowledge of natural history.—*Truth.*

Samuel Cabot, 70 Kilby street, Boston, Mass., appears to have solved the question of "Sound-proof Construction" by means of Cabot's Deafening Quilt, all this is explained in a little leaflet, published at the above address. It will surprise the reader to find out how much can be said, and well said, in such a small space.

The cabin boy was in the habit of eating his loaf-bread and leaving the crusts. MATE—We ate our crusts here, laddie. BOY—Weel, I'm leavin' them tae ye.—*Dundee News.*

Samuel Kellett, manufacturer of Plaster Decorations will be found at the old stand, 28 Ellis street, San Francisco, with branch office at 375 Twelfth street, Oakland, plastering repaired and whitening.

"How do you keep your collars so bright and clean these dusty days? "They're made of celluloid, and I polish them up with tooth-powder twice a day."—*Judge.*

At the rate Mr. George Goodman is using up cement, one would be inclined to think the market would run short of this article, but we suppose Grace & Co. will tell us there is no danger of this though 20,000 bbls. may be used on one job. If you want a cement sidewalk call upon Mr. Goodman at 307 Montgomery street, Nevada Block, San Francisco.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

WHEN BUILDER CANNOT COLLECT FOR PREPARING PLANS.—Where a contract for a fixed amount is entered into between the owner of property and a builder, according to certain specifications, to which a plan is annexed, as explanatory of same, in the absence of an agreement for it, no charge can be made as for extra services in the preparation of the plan. The builder appears in such transaction, not as an architect, but as a contractor.

Haas v. Hernandez, Supreme Ct. La., 19 Southern Reporter, 269.

WHAT MUST BE SHOWN AS TO EXTRA WORK.—A builder claiming remuneration, over and above the contract price of a building, for certain labor and material, as having been finished for extra work, must establish with reasonable certainty that they were used for that particular purpose.

Hass v. Hernandez, Supreme Ct. La., 19 Southern Reporter, 270.

LIABILITY OF OWNER AND GRANTEES UNDER PARTY-WALL AGREEMENT.—A party-wall contract between O. and K. provided that K., his heirs and assigns, should pay O. one-half the value of such wall when he, or his heirs or assigns, used the same, or for as much as he used of it. The contract was duly acknowledged and recorded. After O. built the wall, K. conveyed his lot by general warranty deed, and from his grantee title was deraigned, by successive general warranty deeds, by D. and S. who appropriated and used the wall. The Court held that, K. was primarily and personally liable to O's. successor in title for one-half the value of such wall, and that K's successive grantees were liable in the inverse order of their deeds.

The fact that such agreement was indexed as a deed, instead of a mortgage, did not affect the question of notice by record.

Knowles v. Ott, Ct. Civ. App. Tex., 34 S. W. Reporter, 295.

INADEQUACY OF CONSIDERATION OF FORECLOSURE SALE.—The Supreme Court of Ohio holds that, where property valued at about forty thousand dollars was sold on execution in a suit to foreclose a mechanic's lien, for nominally two hundred and fifty dollars, but the purchaser was a trustee representing lien claimants whose demands aggregate eleven thousand dollars, and who are equally benefited by the sale, the price cannot be considered grossly inadequate, so as to warrant a vacation of the sale.

Hardware Company v. Cleveland Building Company, 32 S. W. Rep. 1.

MECHANICS LIEN: WHEN CONTRACTOR CANNOT PRODUCE CONTRACT.—A mechanics' lien will not be defeated by the failure of the contractor to register the written contract, when that is required by the law, when such failure is caused by the fact that the written contract is in the possession of the owner of the building, and the latter refused upon demand to surrender it for registration.

Strang v. Pray, Ct. Civ. App. Tex., 34 S. W. Reporter, 666.

ARCHITECT NOT LIMITED BY WORK DONE UP TO TIME OF DISCHARGE.—Under a contract with an architect to furnish the necessary drawings, specifications, and details for the construction of a building for a certain percentage on the total cost of the construction of the building, the architect after furnishing the drawings, etc., is not limited, in case his employment is terminated before the construction of the building is completed, to a recovery of the percentage on the costs of the building so far as it was completed at the time of his discharge.

Havens v. Donohue, Supreme Ct. Cal., 43 Pacific Reporter, 962.

CITY BUILDING NEWS.

Army near Sanchez. Two-story frame except plumbing, etc.; owner, Rober; W. Leslie; architect, C. M. Rosseau; contractors, Westerlund & Sandeent signed, April 8, filed, April 9; cost $2540.

Baker near McAllister. To build; owner, Owen McHugh; architect, C. J. I. Devlin; contractor, F. W. Knight; signed, April 11; filed, April 16; cost $3232.

Battery and Bush. Brickwork, etc., for six-story brick; owners, Isabella D., Alice Ann, Mary E. and Grace E. Clark, by attorney; architect, Edward R. Swain; contractor, O. E. Brady; signed, March 11; filed, April 23; cost $32,974. Carpentry, etc., contractor, T. M. McLachlan; signed, April 6; filed, April 23; cost $10,144. Excavations, etc.; contractor, J. A. McMahon; signed, March 11; filed, April 23; cost $7175. Cast iron work; contractors, O'Connell & Lewis; signed, April 6; filed, April 23; cost $10,900. Wrought iron work; contractor, Ralston Iron Works; signed, April 6; filed, April 23; cost $5420. Plumbing; contractor, W. Wilson; signed, April 6; filed, April 23; cost $1890. Plastering, etc.; contractor, M. Carrick; signed, April 6; filed, April 23; cost $2846. Painting, etc.; contractor, J. H. Keefe; signed, April 6; filed, April 23; cost $845. Roofing, etc.; contractors, Conlin & Roberts; signed, April 6; filed, April 23; cost $760.

Belvedere near Waller. To build; owner, Blanch E. McGivern; architect, John McHenry; contractors, W. H. & T. Kinread, signed, April 24; filed, April 25; cost $3775.

Broadway near Buchahan. Two-story frame; owner, Edward Salz; architect, J. E. Kraft; contractor, Jas. Kemp; signed, April 23; filed, April 27; cost $5760.

Brunswick near Lowell. Two-story frame; owner, Chas. Serveau; architect, F. Diepierre; contractors, J. L. Binet and Ed. Mooney; signed, April 16; filed, April 18; cost $1296.

Bush near Broderick. Alterations and additions; owner, Mrs. C. Meyers; architect, G. Scheadler; contractor, Geo. Lack; signed, April 20; filed, April 21; cost $1500.

Bush and Taylor. Out-buildings, etc.; owner, Board of Education; architect, C. I. Havens; contractor, J. H. McKay; signed, April 18; filed, May 1; cost $1900.

Buchanan near O'Farrell. Three-story frame except plumbing; owner, Pierre Bellue; architect, Oliver Everett; contractor, James Cochrau; signed, April 16; filed, April 17; cost $8524.

California and 12th Ave. Cottage; owner, Jas. Eisen; contractor, A. Aldridge; cost $2000.

California near Scott. Mason work, additions and repairs; owner, Mrs. Hattie H. Rehfish; architect, J. H. Littlefield; contractor, H. H. Larsen; mason work; cost $517. Plastering, etc.; contractor, J. R. Tobin; cost $976. Painting; contractor, W. T. Beck; cost $871. Plumbing; contractor, H. Williamson; cost $442. Mantels, tiles, etc.; contractors, W. W. Montague & Co.; cost $525.

Carlos near O'Farrell. Excavations, concrete, six-story brick building; owner, J. Frowenfelt; architects, Salfield & Kohlberg; contractors, Gray Bros.; signed, April 16; filed, April 16; cost $1450. Mason work; contractors, Miller & Beck; cost $4735. Iron work; contractor, Western Iron Works; cost $800. Plumbing; contractor, Ickelheimer & Bros.; cost $3300. Lathing and plastering; contractor, W. C. Watson; cost $1290. Carpenter work, etc.; contractor, A. L. Bampbell; cost $5430.

Clement near 5th Ave. Two-story frame; owner, Ernest J. Uebner; architect, H. D. Mitchell; contractor, Ed. Ginley; signed, April 10; filed, April 10; cost $3150.

Clement near 31st Ave. To build; owner, Edward Philips; contractor, John Wickman; signed, April 15; filed, May 2; cost $1500.

Clayton near Waller. Two-story frame; owner and builder, Thomas Vodder; cost $4000.

Clayton near Waller. Two-story frame; owner, Julia Schroeder; architects, Hermann & Swain; contractors, Peterson & Person; signed, April 27; filed, April 27; cost $3944.

Devisadero and Ellis. Brick work, etc., for three two-story frames; owner, Hans J. H. Koepke; architect, Emil John; contractor, F. Wagner; signed, April 4; filed, April 9; cost $1497.

Devisadero and Ellis. Carpentry, painting; owner, Hans J. H. Koepke; architect, Emil John; contractor, C. Krecker; signed, April 4; filed, April 9; cost $8585.

Dore and Harrison. To build; owner, F. C. Howard; contractors, Cuneo & Cavaglia; signed, April 28; filed, May 1; cost $2200.

Dolores near 27th. Two-story frame; owner, Jacob Y. Jackson; contractor, James McComahey; signed, May 2; filed, May 2; cost $1850.

Diamond near 18th. Cottage; owner, Th. Binner; contractor, T. A. Bonn; signed, May 8; filed, May 8; cost $1600.

Ellis near Mason. Elevator work; owner, Jacob Frowenfelt; architects, Salfield & Kohlberg; contractor, W. L. Holman; signed, April 7; filed, April 20; cost $2850.

First Ave. near Clement. To build; owner, C. E. Baker; contractor, B. R. Van Deusen; signed, April 10; filed, April 11; cost $2600.

Folsom and 25th. To build; owner, Edward Gentry; architect, C. M. Rousseau; contractors, Williams & Foster; signed, April 9; filed, April 10; cost $3685.

Folsom and 25th. Plumbing and gas-fitting; owner, Edward Gentry; architect, C. M. Rosseau; contractors, Gulick & Wetherbeen; signed, April 10; filed, April 13; cost $1500.

Forth-fourth Ave. near Clement. To build; owner, Theresa Nelcke; architect, V. Knolow; contractor, G. P. Ralston; signed, April 9; filed, April 10; cost $1200.

Freelon near 8th. Two-story frame; owner, Hannah Murphy; contractor, A. Klahn; signed, April 16; filed, April 17; cost $2586.

Fulton near Fillmore. Two-story frame; owner, Harriett H. Moise; architect, W. H. Lillie; contractors, Petterson & Person; signed, April 16; filed, April 17; cost $1422.

Geary near [illegible]. Concrete wall; owner, P. W. Riordan, Archbishop; [illegible]ghnessy; cost twenty-seven cents per cubic foot.

Geary and [illegible]. Excavations for supporting wall; owner, Spring Valley Water Works; contractor, Clinton Day; contractor, James O'Brien; signed, April 30; filed, [illegible]; cost $500.

Georgia and Napa. Cemetery, painting, etc.; owner, Union Iron Works; architects, Percy & Hamilton; contractor, T. McLachlan; signed, April 17; filed, April 23; cost $[illegible]. Granite and mason work; contractors, McCall, Beck & Miller; cost $[illegible]. Plumbing; contractor, W. F. Wilson; cost $1643. Roofing, copper work; contractors, Goodlib & Roberts; cost $[illegible]. Concrete work; contractors [illegible], Leonard & Ransome; cost $7050.

Golden Gate Ave. and Larkin. To build; owner, Katherine Farrell; architects, Shea & Shea; contractors, Bateman Bros.; signed, May 1; filed, May 6; cost $2000.

Gough near California. Grading work; owner, Lewis Gerstle; architect, Clinton Day, contractor, C. A. Warren; signed, May 5; filed, May 8; cost $735.

Greenwich near Jones. Repairs for Cooper School; owner, Board of Education; architect, C. I. Havens; contractor, J. J. Dowling; signed, April 16; filed, May 1; cost $7997.

Guerrero near 16th. Additions; owner, Patrick Hackett; contractor, T. J. Gallehorn; signed, April 9; filed, April 10; cost $1562.

Guerrero near 17th. All work except plumbing and tinning; owner, Stephen Flahoven; contractor, R. Sinnott; signed, April 11; filed, April 11; cost $2540.

Howard near 12th. Additions; owner, C. E. Tosney; contractor, John Foster; signed, April 8; filed, April 10; cost $2175.

Jackson near Gough. Alterations; owner, A. de Uriostegarchitects, Pissis & Moore; contractor, E. J. Duffy; signed, April 16; filed, April 20; cost $1373.50.

Kentucky and Napa. To build; owner, Dr. E. L. Wemple; architect, Hugo W. Storch; contractor, Alfred Hawkins; signed, April 15; filed, April 16; cost $6800.

Kentucky and Napa. Plumbing, gas-fitting, etc.; owner, Dr. E. L. Wemple; architect, H. W. Storch; contractor, P. J. O'Donnell; signed, March 25; filed, April 27; cost $1900.

Kentucky and Sierra. Plastering, staff work, etc.; owner, Dr. E. L. Wemple; contractor, A. Matherson; signed, May 6; filed, May 7; cost $1088.

Locust near Clay. To build; owner, Mrs. Abbie Dyer; architect, Hubert Dyer; contractors, W. T. Veitch & Bros.; signed, April 11; filed, April 13; cost $2268.

Market and 3d. Granite work; owner, Claus Spreckels; architect, Reid Bros.; contractor, J. D. McGilvray; filed, April 24; cost $152,710. Cleaning and pointing stone and granite work; contractor, J. D. McGilvray; filed, April 24; cost $2000.

Market near Van Ness. Gas-fitting, plumbing, etc., for three-story brick; owner, J. H. Mangels; architect, R. Zimmerman; contractor, W. F. Wilson; signed, April 24; filed, April 25; cost $2,845

Market and Van Ness. Plastering work; architect, R. Zimmerman; contractor, M. Carrick; cost $2177.

Market near Van Ness. Brick building; owner, J. H. Mangels; architect, R. Zimmermann; contractors, Riley & Loane; signed, April 13; filed, April 15; cost $5196.75.

Market near Van Ness. Carpentry, marble work, etc.; owner, J. H. Mangels; architect, R. Zimmermann; contractor, F. W. Kern; signed, April 13; filed, April 15; cost $23,949.

Market and Front. Electric Elevator; owners, Agnes M. Agar, J. M. McDonough; contractors, A. J. McNicoll & Co.; signed, April 9; filed, April 10; cost $2600.

Market near 4th. Book-cases, cabinet work, etc.; owner, Mrs. A. M. Parrott; architect, Pissis & Moore; contractors, L. and E. Emanuel; signed, April 15; filed, April 22; cost $1135.

Main near Mission. Two-story brick; owner, John Cherry; architect, J. P. Brady; contractor, John Dunphy; signed, April 11; filed, April 16; cost $3895.

Moulton near Fillmore. Cottage; owners, Mr. and Mrs. Peter Magnussen architect, Emil John. contractors, Stevens & Wood; signed, April 22; filed, April 22; cost $980.

Mission Road near 29th. To build; owner, W. L. Tierney; contractor, W. C. Hamerton; cost $1400.

Oak near Octavia. Alterations and additions; owner, Mrs. B. McCarthy; architect, J. B. Lo Romer; contractor John Blake; signed, April 13; filed, April 14; cost $2300.

O'Farrell near Stockton. Painting, etc.; owner, Walter Orpheum Co.; contractor, H. M. Hesser; signed, April 22; filed, April 23; cost $1400.

Post and California. Plumbing, etc.; owner, W. B. Bradbury; architect, F. B. Wood; contractor, James Day & Co.; signed, April 16; filed, April 16; cost $1815.

Post near Taylor. Alterations and additions; owner, Mrs. Lizzie J. Hemphill; architects, McDougall & Son; contractor, Thomas Butler; signed, May 6; filed, May 6; cost $1920.

Ridley near Sanchez. Additions; owner, L. B. Schmid; cost $2000.

Sacramento and Webster. To build; owner, J. H. Jellett; architects, Salfield & Kohlberg; contractors, T. R. Bassett Bros.; signed, April 27; filed, April 30; cost $8000.

Sansome and Halleck. Piling, etc., for five-story brick and stone; owner, Jacob Stern; architects, Pissis & Moore; contractors, Healy, Tibbitts & Co.; signed, April 2; filed, April 9; cost $3880.

Sansome and Halleck. Sandstone work; owner, Jacob Stern; architects, Pissis & Moore; contractor, John McGilvray; signed, April 2; filed, April 9; cost $23,373.

Sansome and Halleck. Concrete and pavement; owner, Jacob Stern; architect, Pissis & Moore; contractor, Geo. Goodman; signed, April 2; filed, April 6; cost $5400.

Sansome and Halleck. Granite work: owner, Jacob Stern; architects, Pissis & Moore; contractor, Raymond Granite Co.; signed, April 2; filed, April 9; cost $2865.

Sansome and Halleck. Mason work; owner, Jacob Stern; architect, Pissis & Moore; contractors, Mill & Beck; signed, April 2; filed, April 9; cost $7545.

Sansome and Halleck. Cast iron work; owner, Jacob Stern; architects, Pisses & Moore; contractors, O'Connell & Lewis; signed, April 2; filed, April 9; cost $3400.

Sansome and Halleck. Carpenter work; owner, Jacob Stern; architects, Pissis & Moore; contractor, R. Smillie; signed, April 2; filed, April 9; cost $9095.

Scott near Fell. Additional story; owner, T. J. Allen; architect, T. J. Welsh; contractor, A. L. Campbell; signed, April 22; filed, April 27; cost $2491.

Scott near Grove. Two-story frame; owner, John J. Vollmer; architect, H. Geilfuss; contractors, Hood & Watson; signed, May 5; filed, May 7; cost $2489.

Sickels Ave. cor. Sears. Cottage; owner, Eugene H. and James J. Casserly; contractor, James McComahey; signed, April 18; filed, April 18; cost $1000.

Steiner near Broadway. Carpentry, plastering, etc.; owner, Mrs. E. Greenberg; architect, M. S. Lyon; contractor, J. T. W. Saunders; signed, April 8; filed, April 15; cost $3883.

Tenth Ave. near Clement. Cottage; owner, Catherine McFarland; cost $2600.

Tennessee near Sierra. Cottage; owners, John and Catherine Bowes; contractor, John Keneally; signed, April 29; filed, April 30; cost $1197.

Silver near 2d. Alterations; owner, Board of Education; architect, C. I. Havens; contractor, J. H. McKay; signed, April 18; filed, April 20; cost $3800.

Turk and Devisadero. Painting and graining five buildings; owner, Mrs. Caroline A. Bollman; architect, Wm. Koenig; signed, April 18; filed, April 30; cost $1107.

Twelfth Ave. near Lake. Cottage; owner, Mrs. Atkinson; contractor, L. T Fenn; cost $1500.

Twenty-first and York. To build except plumbing; owner, Elizabeth P. Sonntag; contractor, E. W. Hyde; signed, May 2; filed, May 2; cost $2200.

Twenty-first near Hampshire. To build; owner, F. W. Banks; architect, F. M. Cramer; contractor, W. R. Kenny; signed, April 27; filed, April 28; cost $1960.

Twenty-sixth and San Jose Ave. Alterations and additions; owner, Patrick Donellan; architect, J. T. Kidd; contractor, T. F. Doyle; signed, April 6; filed, April 16; cost $1075.

Twenty-ninth near Noe. Alterations; owner, William Inch and Mary Inch; contractor, John Dyar; signed, April 25; filed, April 27; cost $1000.

Union near Scott. To build; owner, Theresa A. F. Peters; architect, H. Geilfuss; contractor, C. Schutt; signed, May 1; filed, May 6; cost $3075.

Vllejo near Laguna. To build; owner, J. J. Boyle; architect, T. J. Welsh; contractor, Thomas F. Doyle; signed, April 8; filed, April 11; cost $4589.

Vallejo near Gough. To build; owner, Charles Meehan; architect, S. Newsom; contractor, W. H. Wickersham; signed, April 25; filed. April 29; cost $3392.

Valencia and 14th. To build; owner, H. T. Scott; architect, W. J. Mathews; contractor, J. A. Smillie; signed, April 13; filed April 20; cost $16,770.

Van Ness Ave. and Clay. Interior work and painting, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractor, San Francisco Mnf. Co.; signed, April 23; filed, May 2; cost $5945.

Van Ness Ave. and Clay. Interior wood work; owner, Claus Speckels; architect, Reid Bros.; contractor, Hester Bros.; signed, April 17; filed, April 21; cost $46,200.

Van Ness Ave. near Golden Gate. Additions and alterations; owner, Geo. H. Goddard; architect, C. J. Coffey; contractors, R. A. Anderson & Co.; signed, April 28; filed, April 28; cost $1507.

Vermont near 23d. Cottage; owner, John F. Struven; architect, Emil John; contractor, H. Born; signed, April 18; filed April 20; cost $1967.

Waverley Place. Alterations and additions; owner, J. B. Stoupe; architect, C. M. Rosseau; contractors, Doyle & Son; signed, April 16; filed, April 18; cost $1700.

The California Architect and Building News.

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EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

A MULTI-MILLIONAIRE is putting up a two hundred and fifty thousand dollar fence around his lot in Newport. The people's lot in San Francisco has a board fence around it, stuck over with advertising placards.

AT the last meeting of the San Francisco Chapter of the American Institute of Architects, the following communication was received from the District Council of of the United Brotherhood of Carpenters and Joiners of America:

SAN FRANCISCO, CAL., June 8, 1896.

Secretary Chapter of Architects.

DEAR SIR:—As the Council of Carpenters will not under

any circumstances work with Shinglers they have instructed me to inform you of the fact and suggest that you put in your specifications "no shingling to be let by piece work." We most earnestly request this as you can save trouble for us, yourselves and the owners. Hoping to hear from you soon, I remain yours,

R. B. Ingle, Secretary.

114 Turk street.

No action was taken by the Chapter other than to receive and file the letter.

This attempt on the part of one body of organized labor to antagonize another body of labor that seeks the advantages of organization on similar lines and for the same purposes, displays a selfish disregard of the rights of others that is not worthy of workingmen.

Until the laboring man and mechanic the world over learns that his interest is identical with the interests of every other workingman and mechanic, it will be in vain for him to hope to permanently better his economic condition through pure and simple "Trades Unionism." Until he learns that he cannot better his own condition without bettering the condition of all workers, and that the interests of the Union man are the same as the interests of the non-Union man, and *vice versa*, he will make no substantial progress towards ameliorating his condition.

It is lamentable to well-wishers of labor, to see this petty jealousy and perpetual bickering between workingmen. The carpenters will not recognize the shinglers; the cooks and waiters will not affiliate with the dish-washers and porters, and so it goes. Instead of uniting, and so obtaining the benefits of organized and concerted action towards a definite goal, the laboring classes remain disunited and unorganized, and consequently, impotent.

What a contrast is presented between this picture and that of the A. R. U. in their fight against the Pullman Company two years ago. In that fight the devotion to their principles of brotherhood was truly remarkable. They recognized the solidarity of the interests of the workingman, and to aid and assist their worthy but persecuted brothers, they did not hesitate at any sacrifice that men can be called on to make; and their deeds may well be chronicled as more heroic than many a noble action that history records, as a lingering death by misery and starvation is more dreadful than a sudden death on field of battle.

Should the time ever come when the spirit that animated the members of the A. R. U. shall govern the actions of the workingmen of America *as a class*, then, and not till then, can they compel the recognition they seek, and enforce such rules and regulations, laws and customs, as shall inure to their permanent betterment of their conditions and environments.

THE National Association of Manufacturers of America are agitating the formation of a separate department of the Government called a Department of Commerce and Manufactures.

The present arrangement of the department is entirely haphazard and unsystematic; witness the following table of the Bureaus of the State and Treasury Department:

State Department—Diplomatic Bureau, *Consular Bureau*, Bureau of Accounts, Bureau of Archives, *Bureau of Statistics*, Bureau of Rolls and Library.

Treasury Department—Supervising Architect, Engraving and Printing, Secret Service, *Bureau of Statistics*, *Life-saving Service*, Commissioner of Customs, Comptroller, Register of the Treasury, Auditors (six), Treasurer of the United States, Comptroller of the Currency, Internal Revenue, Director of the Mint, *Bureau of Navigation*, *Steamboat Inspectors*, *Lighthouse Board*, *Coast and Geodetic Survey*, *Marine Hospital*, Bureau of Immigration.

The bureaus in italic are those proposed to be placed in the Department of Commerce and Manufactures.

The association also proposes the following departments and bureaus to be included in that department:

The Department of Labor, which was established in 1885 as an unattached bureau in charge of a commissioner, deals chiefly with matters directly related to the industrial interests of the nation. The investigations by this department of the cost of production of various staple articles and materials, and the inquiries touching strikes, lockouts and other features of the relations existing between employers and employed are matters which bear directly upon the commercial and manufacturing interests of the nation.

The United States Geological Survey, which forms a bureau in the Interior Department, is engaged chiefly in work that is purely scientific in character, and which does not relate directly to practical business affairs. Certain features of the work of the Survey, however, have a very direct and important bearing upon the industrial interests of the country. The collection of statistics of the production of minerals and metals, and the exploitation of the mineral resources of the country form a line of work that is of practical commercial value. It is likely that the transfer of such work to a Department of Commerce and Manufactures would be of advantage to every interest concerned. Mining, metallurgy and manufacturing are so closely interwoven and so inter-dependent that they natural group themselves together.

The Association also suggests the inclusion of the river and harbor improvements for the following reasons:

Again, it has been suggested that the improvement of the rivers and harbors of the country has no logical connection with the War Department. The reason for placing all these public works under the direction of the War Department doubtless lies in the existence of a large corps of skilled army engineers whose services can be best utilized in times of peace upon the construction and maintenance of public works for the benefit of the nation's commerce. Many civilian engineers are now employed in this work, and the natural and intimate relation of waterways improvement to the commercial interests of the nation invites consideration of the advisability of transferring these functions from the War Department to the proposed department of Commerce and Manufactures. These arguments concerning the Department of Labor, the Geological Survey and the War Department are suggestive, however, rather than conclusive.

The Institute of Architects should join hands in this matter with the Natural Association of Manufacturers and at the same time urge the formation of a separate Department for Public Works which is as much if not more needed than Department of Commerce. The Public Works are now under charge of the Supervising Architect and attached to the Treasury Department, an attachment purely arbitrary and should certainly be severed therefrom at the earliest opportunity. The result of the present arrangement is so patent that we need say no more on that subject.

All other public works outside of building, generally included under the term of engineering, should be included in the Engineering Bureaus of the Public Works Department, including the river and harbor improvements which is suggested above to be placed in the Department of Commerce by the Association. This, however, naturally falls under Public Works.

This matter seems a matter worthy to be taken up by the American Institute of Architects and we hope they will urge upon Congress the necessity of a general re-arrangement of the departments in accordance with modern necessities.

THE ARCHITECT'S BOND FOR THE CITY HOSPITAL, NEWARK, N. J.

FROM *The Engineering Record* of New York, in its issue of May twenty-third, we copy a leading editorial on the absurdity and injustice of requiring or expecting an architect to furnish bonds that the cost of work under his control shall not exceed a stipulated amount.

What would be thought of demanding that a doctor give bonds that he cure his patient, when the patient is free to disregard his doctor's prescriptions; or that a lawyer should bind himself to win his clients case, whether that case was just or unjust. Yet, that is no more reasonable than to require an architect to bind himself that his client shall not spend more than a fixed amount:

"We have had occasion a number of times in the past to comment on the requirement under which a bond is exacted from an architect or other professional man to perform or control something which is beyond his power. Some of the smaller municipalities of the country have occasionally resorted to that vicious procedure, put it seems to be left to the authorities of the city of Newark, N. J., to appear in this particular role among the larger cities of the East. It appears from the publications of the daily press of Newark, that a young architect of that city, Mr. Wilson C. Ely, has drawn plans for the city hospital, which have been or are about to be accepted. Under this acceptance he is to furnish a bank to the amount of $20,000, to indemnify the city against expenditures in excess of $200,000, or those incurred by reason of neglect of the builders to conform to specifications. All this doubtless appears plausible enough to the average common councilman, who has had little to do with or to think of matters beyond the range of ward politics, and it is not unlikely that a young architect fails to give such matters their proper consideration in his eagerness to secure the substantial beginnings of his professional practical. Both these parties, however, are making serious mistakes, if not worse, in entering any such bonded relations.

"In the first place, building committees in charge of such works are seldom composed of men who appreciate the niceties of professional relations, and they too often desire to impress their individualities on work in their charge by modifications of plans without adequate regard to costs or to the architect's ideas of them. In the second place, an architect's estimate cannot often be made with that exactness, in view of the contingencies of builders' bids, which would justify him in guaranteeing the precise limit of cost. His estimate, being subject to these vicissitudes of every day practical experience, should be regarded as the nearest amount to the actual final cost that can reasonably be computed prior to the receptions of the bids. Any attempt to wrest these features of the situation out of their natural proportions or relations will result either in hardships to the architect, or in unprofessional attempts of the latter to evade these hardships or to justify his original position or to other complications leading possibly to litigation, or to all these prejudicial results combined.

"The inevitable consequence of such miserably unbusinesslike procedures is the complete removal of the rational and only proper relations which can exist between the professional man and his client to the detriment of the work in all its details and stages. It must be assumed that the architect will perform his duties in good faith, and in that case conditions are certain to develop under the bond, if enenforced, which seriously will militate against his efficiency. If he does not act in good faith, the pressure of a bond will simply sharpen the keenness of his efforts to evade it. In no event can the bond do any good, and in scarcely any event can it fail to do harm, and much harm.

"The preceding observations show that the bond, among other things, also obliges the architect practically to undertake the control of the building committee. That is usually somewhat of a job, but he must further undertake to indemnify the city against any expense that may be incurred by reason of neglect of the builders to conform to specifications. It is obviously the duty of the architect to exercise the utmost diligence in inspection, and in every other reasonable way to secure the desired excellence both as to material and workmanship, but if after the performance of his whole duty an unscrupulous builder shall have succeeded in introducing in the work that which is an injury to it, as sometimes happens, it is simply common sense to require the builder (and not the architect) to make good that injury. That is the usual procedure, and it accounts for the bond which the builder or contractor gives. It would be difficult, even for a Common Councilman of Newark, to show why the party causing damage by a violation of the specifications, though he should not be caught in the act, should not bear the cost of the consequences of his own violation of agreement.

Any endeavor, such as that contemplated, to shift responsibility so as to prevent its resting where it belongs, is thoroughly irrational and must inevitably impair the efficiency of both the architect and the contractor. It rewards the irregularities (to use no stronger word) of the latter by removing responsibility, and it heavily hampers the former by placing upon him burnens not his own, if, indeed, it does not tempt him to overlook faults of material and construction. The procedure is utterly unbusiness-like, unprofessional, and full of danger to all parties concerned. No conporation should desire it, and no architect should desire it, and no architect should consent to it.

AN ARCHITECTS LEGAL RIGHTS AND DUTIES.

OUR readers will remember the intelligent and reasonable view which has already been taken by the Main Courts of the duties and responsibilities of architects, and it is a satisfaction to be able to note another Main decision affecting the profession, in which the same principles are maintained. In a recent case, an architect was employed to prepare plans and specifications for a house. He had to sue for his pay for them, and the owner, who had not apparently used them, set up in defence that the architect's services were not beneficial to him, for the reason that they were performed in a manner contrary to his express directions and wishes. The explanation of this was, as appeared from the testimony, that he requested the architect to make him plans and specifications for a house to cost twenty-five hun-

dred dollars, "and no more," as he alleged; and when the plans and specifications were made, it turned out that they could not be carried into execution for less than about twenty-seven hundred dollars. In the court below, the judge instructed the jury that if the architect was explicitly told by the defendant, in addition to other things, that the building he was designing must not exceed a certain named cost, the architect should have made plans accordingly, or stated that he could not do it, and thereupon declined to do it; and that if he undertook to make plans with the restriction as to the cost of the building, he must do it before he could recover any pay.

The Supreme Court held that this instruction was erroneous. "It punishes the plaintiff" said the Chief Justice, in delivering the opinion of the Court, "for what might be merely an honest mistake or miscalculation, it leaves out the elements of care and good faith. . . . The ruling implies a guaranty or warranty, when none was testified to, or really pretended. Upon the testimony reported, the Court is of the opinion that even if the defendant's version of the facts be true, then the undertaking of the plaintiff was to make plans for a house to cost twenty-five hundred dollars and no more; and if, acting in good faith, he exercised his skill and ability in an endeavor to bring about that result, that it is all that could be expected or required of him; and no defence is established against his claim even if he failed in his attempt. But if the house designed by him could be built for less than twenty-seven hundred dollars, it could hardly be called a failure, especially in view of the interferences on the part of the defendant's wife; nor a failure if the plaintiff could have so altered his plans, as he claimed might have been done had he been permitted, as to to reduce the house in price; and it seems preposterous to to say that he could not; and he was willing to make alterations, but the defendant or his wife would not consent thereto." In the first part of the opinion the Court laid down its view of the general principles of the employment of architects as follows: "An architect is not a contractor who enters into agreement to construct a house for its owner, but is his agent to assist him in building one. The responsibility resting on an architect is essentially the same as that which rests upon the lawyer to his client, or upon the physician to his patient, or which rests upon any one to another where such person pretends to possess some skill and ability in some special employment, and offers his services to the public on account of his fitness to act in the line of business for which he may be employed. The undertaking of an architect implies that he possesses skill and ability, including taste, sufficient to enable him to perform the required services at least ordinarily and reasonably well, and that he will exercise and apply in the given case his skill and ability, his judgment and taste, reasonably and without neglect. But the undertaking does not imply or warrant a satisfactory result. It will be enough that any failure shall not be the fault of the architect. There is no implied promise that miscalculations may not occur. An error of judgment is not necessarily evidence of a want of skill or care, for mistakes and miscalculations are incident to all the business of life." It will be remembered that the Supreme Court of Texes held the same doctrine, in very similar words, in a case of this kind, so that architects may feel that their legal position in such matters is now tolerably well established in this country.—*The American Architect and Building News.*

THE UNIVERSITY OF CALIFORNIA.

THE University of California has taken a very sensible step in deciding to make provision at once for a systematic and well-studied plan for the buildings which it now needs, and for those which it is likely to need hereafter, for, at least, the next twenty-five or thirty years, says *The American Architect and Building News*. The University owns a beautiful tract of land at Berkeley, near San Francisco, and proposes to invite a general competition for a system of buildings suitable for erection on this tract, with, naturally, suggestions for an appropriate topographical scheme. It is intended to select in the first competition, which will be for sketches only, a certain number of plans, the authors of which will be paid a suitable sum, and compete for the final award, which is to carry with it the making of designs for all the buildings likely to be needed for a quarter of a century to come, and their execution, as the necessities of the University may require them, and its resources permit their erection. It is well known that the University of California has made a very rapid growth in influence and importance within a few years, and the Regents could hardly have taken a wiser or more judicious step than in providing thus early against the wasteful inconveniences arising from a confused arrangement of such buildings, as well as in securing for future generations of young people the æsthetic advantage, which is every day becoming better understood, of artistic surroundings at the most impressible period of their lives.

It is a misfortune that the excellent intentions that have animated the Regents in formulating their programme are not likely to evolve better results. They have sought advice and enlightenment from members of the profession in all parts of the country and have received it without stint, but it has evidently been of a very varying and often contradictory character. Doubtless, much advice that was rational and excellent had to be set aside, as it was found to be in opposition to the enabling legislative act which governs the Regents' course and makes a public competition obligatory. The double-competition method is peculiarly adapted to the problem in hand and if the requirements of the programme for the first one are as simple, and the requirements as exactly stated as they should be, the fifteen prizes of five hundred dollars each offer a sufficient incentive and a fair recompense if the number of competitors is not to be unduly large. But if the requirements are simple and the rewards fairly attractive, a very large number of designs will be sent in, not by the leaders of the profession, but by the average practitioner, the draughtsmen and the office boy, not only in this country, but in England, France and Germany as well, for architects in these countries are especially invited, and are promised they each shall have a representative on the jury. What is likely to be the result of this competition so conducted? This: the Regents will, if properly aided by their experts, find that the solutions presented will arrange themselves in half a dozen general groups, one group of which will be found to be pretty obviously the "*plan type*" the Regents are seeking. But there may be scores and scores of designs which all contain the essential elements, and all practically identical with one another, and yet, one and all, the work of men to whom no sane business man would entrust the work. It is one thing to preceive how to do a thing, but quite another thing to do it. Invention in all of its forms is largely a matter of accident, and the discovery of a typical plan is often as purely an accidental matter as any other "discovery," and in the discovery of the germinal idea of the solution of such a problem as this the tyro and Nestor are more on a par than the latter likes to believe, and it is tyros and not Nestors who will risk their time and labor in a scramble that is open to all the world. The Regents, under the terms they proposed may count on having may schemes presented to them—so many that it will be impossible to award the few prizes with fairness—and many, after all, find that the method they have followed has deprived them of the very aid they desire to have.

COMPETITION IN BUSINESS.

THE two absorbing phenomena of to-day, both in economics and in politics, are the opposite two tendencies—Centralization and socialism. It seems quite sure that the former must run its courss, be its own cure, or fine its complete and final expression, as all anti-trust laws and enactments are vain and futile. It is a tendency of the age which can not be stopped by artificial barriers. It is not often clearly seen that it has much in common with socialism, in the suppression of individualism and of competition, and in its effort to bring all things to the stagnation of a dead level.

Socialism is a beautiful theory, charming in books, but going to pieces in actual operation. How do you know? Of the many efforts which have been made to give practical expression to this idea in business, but few can be said to have had even a modern share of success. They do fairly well when the seas are smooth, and the wind is fair, but in the time of storms and financial stresses, they are pretty sure to be badly wrecked.

It is now seen by those who have given the matter a partial study, that Socialism is confronted with two insuperable difficulties. The impossibility of realizing, excepting temporarily, and in a most limited degree, the Utopian state where each man shall have absolutely a fair and untrammeled chance in life, and the equal impossibility of maintaining this state of affairs when it is once reached.

The plain truth of the matter is that in business, as in nature, the laws of the survival of the fittest and of natural selection work unerringly and unceasingly. They are the essentials of progress, and no sort of an advance is possible without them. It is by keen and active competition alone that new things have developed, new enterprises been brought forth and new methods inaugurated. The best proof of this is the study of some of the nations of the old world, particularly those in the East, where the methods of barter are the same now as prevailed a thousand years ago, and where such things as honesty, fair dealing and frankness are looked upon as iridescent dreams. A shining example to the contrary is in our own country, where the finest hardware in the world is produced, and where we have the best things in this line that the ingenuity of man is able to devise, and we all know what competition means in this country.

If this competition seems at times ruthless and grinding, it denies the right of the unfit man to continue as an individual factor, and is certainly far less cruel than that we see in the every day life of the natural work.

Since the survival of the fittest is a fact proven by experience, it is useless to shut our eyes to it, or to endeavor to set it aside by Utopian means, for humanity has at last reached the stubborn conviction that somehow the highest good must underlie all this, or else it would not be an absolute accompaniment of progress. Further than this, one can not help feeling that if business be warfare, yet nevertheless it is a very mild and modified style of fighting, and that there was never so much frankness, so much honesty in dealings, so much courtesy and kindly feeling between competitors as now prevailing.—*The Age of Steel.*

A BILL TO CHECK THE WASTE OF TIMBER.

A BILL is pending in Congress which, if passed, would do much to check the frightful waste of timber in this country through forest fires. This bill, which is introduced in the House of Representatives, with the sanction of the Committee on Public Lands, provides that the Secretary of the Interior shall be authorized to survey and mark, through all public forests which are liable to destruction by fire, avenues, one thousand feet in width, and five or ten miles apart, running in such directions as will make them most effective in preventing the spread of fire. The timber now standing in these avenues, or ways, is to be offered for sale at public auction, each purchaser binding himself to clear the tract for its entire width, so far as his purchase extends; and, when no bidders appear, the work of clearing the avenues is to be done by contract. The proposed bill is approved by the American Forestry Association, and would probably be passed without difficulty, were it not for the fact that the work of clearing the avenues, in the forests too far from railroad transportation to make the timber valuable, would involve an expense of, at least, half a million dollars, and Congress is not now in the mood for making appropriations which can be postponed.

One trouble about such a law would seem to be that, as it is made no one's interest to see to keeping the avenues, or "ways," clear of brushwood, it would be necessary to repeat the clearing operation every three years, at least, in order to make them effective as barriers against fire; and, as no one would pay anything for the brushwood, the whole expense of the clearings, after the first, would have to come out of the public treasury. Perhaps our public forests are too far from civilization to be treated like those in Europe, but it seems as if it might be possible to gain, at least for some of them, reasonable protection in exchange for certain rights, without calling on the National Treasury to make up the deficiency. We remember spending a day once in the New Forest, in England, which covers seventy-six thousand acres, and yields a net revenue of something like two dollars an acre per year. Speaking about danger from fire, we were reminded that there is no underbrush in the New Forest, and that forest fires cannot start without underbrush; and we were told that the New Forest is kept free from this source of danger, in the simplest manner, by merely authorizing the people who live in the Forest, which, it must be remembered, contains many villages and hamlets, to help themselves to all the brushwood that they need. Of course, the Crown officers determine what shall be considered brushwood, so that there is no danger of interference with the young trees of the valuable sorts; but, apart from these, the ground is free from the inflammable mass of twigs and shrubs which chokes the edges and cleared por-

tions of all our forests, and fires are practically unknown, although the roads through it are mere narrow lanes, which would not check a rdgular forest conflagration for a moment. As the new forest, is Crown property, all the people who live within its limits are tenants of the Crown, and are thus to a certain extent under the control of the forest officials; and it seems not unreasonable to suppose that a somewhat similar system might be applied to our great forests, both public and private. Instead of cutting up the public forests by enormously wide avenues, which must be kept clear at a vast annual expense, and would needlessly sacrifice a very large part of the land, it might, for example, be possible to lay out roads of ordinary width, and, after cutting and selling the timber from a strip five hundred feet wide on each side, to lease this strip to tenants, at a low rent, for cultivation, and allowing them the privilege of gathering brushwood for fuel in the forest beyond, under the supervision of the forest guardians. Of course, some of our forest land is so poor and sandy that it would be worthless for cultivation, even if cleared, but much of it is quite rich enough to attract tenants on such terms, and it is hardly necessary to say that a strip of cultivated land is quite as effective for checking conflagrations as a similar strip overgrown with ferns and brushwood; while the fact that the lives of the tenants of the strip might be sacrificed in case of forest fires in the neighborhood would give them a special interest in seconding the efforts of the forest wardens to remove sources of danger.—*The American Architect and Building News.*

ANTIQUATED STREET CAR HEATING.

WITHIN the city limits and near them there is in use a method of heating street cars which would be appropriate in Wayback, but seems somewhat out of place in the metropolis, says the New York *Sun*. It is used on the street car route connecting City Island with Bartow, a route very much overcrowded in Summer and very little used in Winter. The cars have to be run all the year round or the company would lose its charter. No provision was made in the building of the cars—they are gems of antiquity—for the introduction of stoves or any other means of keeping the passengers from freezing; so the company, in a spirit of kindliness, has put oil stoves into the vehicles. Each car has its own little stove set down in the middle of the floor. Around the stove the passengers gather, and they are expected to give it such care as is needed. Sometimes it happens that there are no passengers, in which case the driver, who is also conductor, takes the stove out on the platform and sits on it for warmth. One cold day recently a party of three men were the sole occupants of the car.

On the way to the City Island they disembarked quietly; so quietly that the conductor didn't notice their departure. He did notice, however, on his arrival at the terminus, that the oil stove was missing, and he concluded that he would have to settle for it. But on the return trip he found the stove standing in the middle of the tract near a cross road, and on it a piece of paper, held down with a stone. The writing on the paper read:

"Being obliged to wait here for a delayed conveyance, we took the liberty of borrowing the company's oil stove. Enclosed find balm for the wear and tear upon your anxiety."

The paper contained a half dollar.

A NEW FIRE-PROOF FLOOR CONSTRUCTION.

A NEW sort of fire-proof floor construction is described in the *Deutsche Bauzeitung*. It is a patented affair, applied only by the firm of Muller, Marx & Co., of Berlin, but it has some interesting features. After a floor has been laid with iron beams, which may be spaced two feet from centres, or even more, if the floor between them is given a curved intrados, parallel slips of sheet-iron, on edge, are laid on them, four or five inches apart. The intervals between the slips are then filled with similar slips, bent to a zig-zag shape, so that the angles will just touch the longitudinal slips on each side, and the points of contact are secured together by wire rings. This skeleton is then filled in with concrete, and the floor so made is found to have great resistance, so that, as the patentees claim, it will support safely a load of one thousand to twelve hundred pounds per square foot.

CHICAGO ARCHITECTURAL CLUB.

THE Syllabus of the "Chicago Architectural Club" for 1896—indicates a healthy interest among the architects of that locality in their profession. Clubs working on the same lines in all the large cities of America would advance the progress of architecture materially. As the result of the club's experience so far it is worth while quoting their syllabus *in extenso*.

"Encouraged by the growth and activity of the Club in the past year, it is proposed to broaden more than ever our range of action.

Believing that the greatest benefit is to be derived from united work and continuous criticism among ourselves rather than from many competitions which, as a rule, excite but little emulation, the club proposes to take up the study of serious problems, which will be studied by the members organized as a class, having a regular time of meeting. The first of these, which will be entered upon immediately, will be the central portion of the new Lake Front Park, which has been delegated to this club by the Municipal Improvement League.

Beginning with the second Monday in January, and on every second Monday following, there will be meetings devoted to illustrated lectures on architecture, and artistic and practical subjects related to it. At irregular intervals in this series there will be exhibitions of lantern slide views of Architecture in Europe. The subjects exhibited will be discussed by those present.

The "Bohemian Nights" will be kept up, beginning for the year on the first Monday in January, and occurring on every second Monday succeeding.

The months of June, July and August will be devoted entirely to outdoor work, sketching trips, bicycle tours, etc.

The regular meetings will be discontinued during these months, but the Club house and the class-room will be kept open for the use of members at all times.

The classes of the year will be kept up and meet as follows:

Every Tuesday evening will be devoted to the study of the regular problems in Architecture.

The class in Pen and Ink Rendering meets every Thursday evening.

The class in Architectural Modelling meets every Friday evening.

The class in Sculpture and Drawing from Life meets on Saturday evening; this class is conducted jointly by this Club and the Chicago Society of Artists.

The class in Water Color meets on Sunday mornings.

No tuition is charged for any of these classes.

The Music Pavilion in the Lake Front Park will be the subject of the Third Annual Competition for the Gold Medal presented by the American Institute of Architects.

The subject for the Eight Annual Competition for the Robert Clark Testimonials will be announced before the Summer vacation.

The Ninth Annual Exhibition will be held at the Art Institute beginning on March 27, 1896.

POINTS ON PLASTERING.

PERHAPS some information on the general practice of lathing and plastering will be interesting. There is undoubtedly much bad plastering, and in every case the mortar and plastering material is blamed. This is not just.

The first essential of good plastering is good preparation to receive it. For plastering on brick or terra cotta, have your work straight and true, the joints rough. Don't use dry press brick, nor terra cotta with smooth face. If your walls are not straight don't expect to get a straight wall in two-coat work—lime mortar cannot be made that is equally good when used half an inch thick and two inches thick in the same wall.

Don't plaster with cement made from gypsum or similar compounds, such as acme, royal, agatite, etc., on Columbian fire proofing, or on Portland cement, unless you have them dry enough to prevent sweating or condensation. Portland or native cements, or even lime mortar is preferable in such work. Don't allow mortar to go on thicker than ¾ of an inch at one time, and have your brick or cement free from dust or dirt. Don't plaster on smoked bricks or old bricks from chimneys; they will stain badly.

In preparing for lathing have your joisting, trimmers, etc., heavy enough to prevent vibration, and strap all large ceilings, using 2"x2" strapping on 16" centers. If you don't strap, at least have all joisting and studding sized; very much crooked work would be avoided by enforcing this rule. Have all angles made solid. See to it yourself and don't rely on lathers who work by the piece to inform you of the carpenter's defects, and have trouble with him in consequence.

Use white pine lath, seasoned but not to dry; 1⅜"x⅜" lath are light enought; 1"x⅜" lath are only fit for use on joisting or studding at 12" centers. 18" breaks are frequent enough, but don't allow lath to break at door posts; the slamming of door or even the nailing of trim will cause a crack here. Don't blame the plasterer for this when you have allowed the carpenter to center his work so as to cause waste of time and lath to avoid it. Don't be unreasonable. Contractors are working at close figures for a living. Blame the right party. When you see a crack at an internal angle just above base, you did not have that angle made solid, and nailing the base caused it to crack.

Lath stains cannot be avoided in two-coat work, and are even more liable to appear when patent plasters are used, as the first coat is put on much thinner to save cost. Two-coat work is also liable to have every lath and joist show through when work gets old—you can count them through the plaster. * * * *By "Plasterer" in the Canadian Architect.*

SAFEGUARDS FOR THE MODERN BUILDING.

IN commenting on the recent disaster to a building in Cincinnati in which several lives were lost and several others wounded, the *Times*, of Pittsburgh, referring to the cause—the explosion of a gosoline engine used for driving a dynamo for lighting the building—says: "While we have been greatly improving the housing of the people and the comforts and conveniences they enjoy, it has in many cases been secured at an increased risk of life and limb which overbalanced the apparent advantages gained." And further points out that "the Cincinnati disaster ought to prove an incentive to more care in the erection of buildings as well as in the safeguards thrown around the modern powerful forces which are placed within them." The conditions under which the house of to-day is erected, with all its modern improvements, are very different from those existing under more primitive conditions, and required not only greater care in introducing these improvements, but greater care in construction to provide the greater strength called for by machinery, electric systems, etc. Even within the short time electric lighting has been used the need of proper insulation has created a special industry to provide effective protection from diverted currents and fires in consequence. In fact, the path of advance in almost every similar line has called for extra precaution, and like provision of safeguards is needed against the new agents brought into use by the requirements of the modern building.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec't. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
Geo. W. Dickie, Pres. W. G. Curtis, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.
Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.
Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.
Adam Beck, Pres. M. V. Brady, Sec.

BOOKS AND PERIODICALS.

Journal of the WESTERN SOCIETY OF ENGINEERS, papers, discriptions, abstracts and proceedings. published bi-monthly by the society, 1737 Monadnock Block, Chicago, Ill. The opening article entitled "Mechanical Methods of Rock Excavation Used on the Chicago Main Drainage Channel," will be found of great interest as giving some of the latest improvements in the methods adopted to do away with the use of the pick and shovel and the hydraulic dredge—this article is fully illustrated by half tone engravings that give a very good idea of the progress of this great undertaking.

FIRE AND WATER, a New York publication devoted to furnishing information in regard to these important interests, comes to hand as a Convention Number with a history of the proceedings of the Convention at Indianapolis of the American Water Works Association. From a comparatively small beginning in 1881 of a number of water works men, whose chief aim was mutural instruction, the association has gradually grown in numbers and influence, till now it is recognized as a real power in the country.

As an adequate supply of water intimately concerns the well being of the community, and therefore interests each individual all the information obtainable upon the supply and purification of water to our cities and large towns is very desirable.

PROCEEDINGS of the TWENTY-NINTH ANNUAL CONVENTION of the AMERICAN INSTITUTE of ARCHITECTS, held in the St. Nicholas Hotel, St. Louis, October 15th 16th and 17th, 1895. Published by the Board of Directors of the A. I. A. under direction committee on publication and library. Alfred Stone editor, Providence, R. I. This volume contains the likeness of the late Robert M. Hunt. A list of the members present at the Convention as well as a list of all the members. The President's address is well worthy of careful consideration not only by the Architects, but the public at large who are interested in having our Government buildings more what they should be, than what they are.

WOLSEY'S GOLD KNOCKER.

JAMES Payne says that at Ottford, in Kent, there was formerly a palace of the archbishops of Canterbury, in which Wolsey is said to have held his court. "It was but a small place and is now a farmhouse, picturesque enough, but exhibiting no special signs of prosperty. The other day, however, this little incident happened: The farmer sent for a carpenter to do some odd jobs about the house, and among other things to mend the knocker. The man took it off and said, after a close examination of it: 'Do you know what this knocker is made of?' 'Why, brass, I suppose.' 'No; it is pure gold.' And it was. Think of the years that that rich prize has hung at the mercy of every tramp?"—*Boston Transcript.*

THE NEW PLUMBER.

EVERY reader of this paragraph is no doubt able to give a satisfactory definition of the work "plumber"—that is, satisfactory from his own point of view. If he is a scholar and acquainted with the dictionary history of the word, he would perhaps entertain us with the literal meaning of the word, which is, "a worker in lead." On the other hand, if he is a mechanic of middle age. with the traditions of the shops of his boyhood in mind, he would perhaps give us, in addition to a definition, some particulars concerning the way in which the trade was conducted when he was an apprentice. Again, if he is a young man of the period, or a man of general observation, he would possibly tell us that a plumber is a man who works largely with iron, brass and plated fittings, who puts in place articles manufactured in large establishments known as plumbing supply concerns, and who occasionally has a little lead work to do.

If we take still another view of the plumber, we are afforded a very different conception of his trade. In certain parts of the country, at the present time, if anything is wrong with the stove, from a mica light to a burned-out grate, or from a superannuated piece of pipe which needs replacing, to a lid lifter which has been lost, the mechanic or tradesman who seems to be first in mind, to whom the housewife should send for the necessary assistance and repairs, is a "plumber." Again, in certain sections of the country, if anything is wrong with the roof or the leader pipe, a "plumber" is sent for, notwithstanding there is no lead whatever about the roof covering. It is the plumber who cleans out the furnace, and it is the plumber who digs a trench for water service or drainage, and it is the plumber who is useful in fixing a pump and occasionally in doing still other odd jobs about the premises.

Going only a little way back in the industrial history of the country, especially outside of the large Eastern cities, the mechanic who formely did all these things was the tinner. Tinners, years ago, or perhaps we should say originally, were men who made tinware or assortment ware, as it was called, but as that trade declined, or, rather, as the demand for hand-made tinware declined before the fierce competition of factory-made goods, the tinner was obliged to find something else to do. Accordingly, in a short period, he become the handy mechanic of the community in which he lived. He repaired the pump, he fixed the range, he tinkered the roof, he mended a leak in the water pipe, and at times he would even put in a piece of glass. On occasion he has been known to do a bit of painting, while fixing cesspools, running drains, putting up windmills and arranging a domestic water supply upon one or another of various plans, are pieces of enterprise that have more or less fallen to his lot since his original calling failed him. The tinner became a roofer because metal roofing came into demand about the time that assortment ware, as it was commonly called, went out. He became a cornice man because sheet metal cornice work was in demand when his industry went into decadence. From a cornice man he became a skylight maker. In some instances the tinner took up certain branches of work which has commonly been assigned to the plumber. He did plumbing work in the absence of plumbers in his locality as best he was able.

The passing of the plumber as he was, that is, as a mere lead beater, and the passing of the tinner as he was, are among the peculiar industrial incidents of the day. Of tinners of the old school probably we shall never have any more, nor are we likely again to have plumbers of the old school in the sense of men who beat out of lead the traps they employed, who made their own fittings, and who took the greatest pride in their manual skill. The plumber of the day is a good mechanic in what were formerly different lines of trade. He is a handy man and able to take care of himself wherever placed. He is able to fit iron pipes, to put in place tubs and trays, and bowls and closets and various other fixtures, in the making of which he is not concerned in the least. He is a man with many times the scientific knowledge of his father and grandfather in the trade, and a man carrying much larger responsibilities than ever were known to the plumber of old. The plumber that can do some of the duties that formerly belonged to the tinner is especially useful. And those who have come into the plumbing trade out of the tinners' school find their old knowledge and skill in frequent demand. Two-branch hands and three-branch hands are much in evidence, especially in the smaller towns.

Many tinners are naturally turning to the plumbing trade at the present time, not to the trade as it was formerly conducted, but as it has been latterly carried on, and right good plumbers do they make, particularly when they take the trouble to become equipped with the scientific part of their trade, gained by a course at a trades school, or by careful perusal of books and technical papers. Useful plumbers n advancing the interests of the trade do they also become when they secure membership in a local association, or take the initiative in establishing an association. The plumber and the tinner of the future may possibly blend, not that either will entirely lose his identity, but that the two will be doing similar work in the community at large. Still later, it is possible that the plumber of the period will be a man doing things differing materially from what the plumber of to-day is doing. The trade is not yet finished.—*Sanitary Plumber.*

NEW PLUMBING LAW FOR NEW YORK CITY.

LAST month Governor Morton signed the new plumbing law for New York City. This law requires all master plumbers to register their names at the Building Department and thereupon the person so registering shall receive a certificate of registration from the department, "provided he holds a certificate of competency from the Examining Board of Plumbers. The time for registration is March. Where, however, a person obtains a certificate of competency at a time other thon in March in any year, he may register within thirty days after obtaining such certificate of competency, but he must also register in March in each year. The registration may be cancelled by the Superintendent of Buildings for a violation of the rules and regulations for the plumbing and draining of the city, or whenever the person registered ceases to be a master or employing plumber, after a hearing before the superintendent and upon a prior notice of ten days. It is made unlawful for a person to expose the word 'plumbing' or 'plumber' or to enter into partnership with a registered plumber unless all of the parties to the co-partnership or firm are registered." The law makes violation of the provisions of the act misdemeanor, and subjects the person on conviction to a fine of $250 or three months' imprisonment, or both, and forfeiture of certificate of competency. The law seems a very stringent one, and with its provisions for inspection should hold plumbers pretty strictly to their duties.—*Architecture and Building.*

PARK LODGE, SAN FRANCISCO.

THIS Lodge for the purpose of housing the Superintendents of the Park and as headquarters for the Park Commissioners and officers in charge of the Park, as well as a store house for tools, implements, seeds, etc., is built of stone with a terra cotta tile roof. The interior is finished in hardwood and redwood. Edward R. Swain was the architect.

The plastering was the work of J. R. Tobin, who has done his part of the work in such a complete and workmanlike manner as to add materially to the charm of the pretty interiors which abound in the Lodge—what ornamental plaster work there is has been rendered faithfully and effectively.

The body of the building is built of the hard sandstone quarried in San Francisco at Twenty-sixth and Douglass

COMMISSIONERS' ROOM, PARK LODGE, SAN FRANCISCO.

street by Gray Bros. This sandstone is a remarkably hard and heavy sandstone being heavier and stronger than granite and is of a pleasing blue color. This is the first occasion when stone quarried in San Francisco County has been used in any large amount, and Gray Bros. have conferred a benefit on this city by developing a building stone supply right in its midst and proving that San Francisco need not go outside its own precints for building stone. The same firm also did all the concrete work in and about the Lodge.

The "Mission" Tile Roof, including the dormer windows, was put on by Jos. F. Forderer and forms the most artistic and durable roof extant. The tiles are of the small type and are laid up in cement, and makes a thoroughly waterproof roof. The Forderer Cornice Works have lately been removed to the Pacific Nail Works Building, 8 and 10 Natoma street, corner of First street, and includes in its business the manufacture of architectural sheet metal cornices, copper and zinc ornaments and tile, slate and metal roofing in all their branches.

The heating of the building is done by W. W. Montague & Co., and the woodwork by J. F. Logan.

ANNUAL CONVENTION OF CIVIL ENGINEERS.

THE American Society of Civil Engineers will hold their Annual Convention in the City of San Francisco. The Convention will open June twenty-ninth.

FLATS ON POST STREET.

THE row of flats on Post street near Larkin, built for Messrs. G. Berson and A. Cailleau, according to the plans of Wm. Mooser & Son, was erected by Mr. J. F. Logan the well-known contractor and builder at a cost of thirty-five thousand dollars.

CONCRETE.

The concrete foundations and stone sidewalks were put in by H. M. Petersen & Co. This work, the durability of which is essential to the well-being of the structure, was done with care that characterizes all of Petersen & Co's. work.

MILL WORK.

Mr. Andrew Wilkie turned out the mill work.

PLUMBING.

Mr. R. Rice did the plumbing, sewering and gas fitting and in a manner that was not only satisfactory to all parties concerned, but a credit to his skill as a competent mechanic. All the bath rooms have porcelain tubs and are finished with tiles; the plumbing is all open and finished with the latest sanitary appliances.

PATENT CHIMNEYS.

All the chimneys in these flats were built by the firm of L. E. Clawson & Co., with Clawson's Patent Chimneys. Each chimney has a bearing of four wrought iron stirrups 2½x½ with ¼ inch boiler flat iron full size of fire-place and hearth. There is eight inches of brickwork around the opening of each fire-place.

Clawson's Patent Hood and Arch-bar which projects seven inches from brick work to face of tiling of mantel is used over top of every opening. This hood makes a perfect seal and bond from brick work to mantel, thereby preventing one from settling away from the other. With this arrangement the fire cannot work in between the brick work and mantel and ignite the furring. The hood conducts the smoke to the flue without any break in the same giving a perfect draught.

The clay pipe used in these chimneys is composed of pure calcined fire clay full inch in thickness. The clay pipes are well cemented together at joints with metal bands six inches wide. There is a galvanized iron air chamber one inch larger than clay pipe which connects with top of roof and conducts off all hot air that may accumulate between clay and iron pipe. The chimneys are braced every four feet with wrought iron braces which keeps them one and a half inches away from all wood work making a perfectly safe chimney with a perfect draught.

This firm superintends all of their work and have never had a fire from one of their chimneys in the eighteen years they have been in this business. Particular pains is taken in the construction of their chimneys so that they will draw and give entire satisfaction.

BUILDING PAPER.

To insure absolute protection against dampness, heat, cold or dust, all the walls of the building are sheathed with P. & B. Building Paper, a California production manufactured by the Paraffine Paint Co., 116 Battery street. This paper is now used in all first-class houses and is specified by all the leading architects as a most perfect insulator.

HARDWARE.

The hardware furnished by Dunham, Carrigan & Hayden Co., made by Yale & Town Manufacturing Company in their Branford factory, is all of most recent designs and finish. The locks are all made with "easy springs" to relieve the jar when closing the door. The hardware is well adapted to this class of building.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

When Contractor for Public Work is not Liable for Defects in Work.—Under a contract to furnish labor and material for the construction of a public work, which provided that the contractor should, as to the quality of material furnished and the manner in which the work was done be subject to the directions of the engineer in charge, and that he should be paid monthly for the materials furnished and work done, such contractor is not responsible for defects in the work as a whole, if the directions of the engineer were complied with.

In re Freel (Supreme Ct. N. Y.) 38 N. Y. S. Reporter, 143.

Fire Escape Law in Ohio Unconstitutional.—The Supreme Court of Ohio holds that the law of that state in relation to fire escapes "on all buildings (save private residences) of three or more stories in height" "within any city of the first class and first class grade" is in conflict with the section of the constitution of that state which prescribes that "all laws of a general nature shall have a uniform operation throughout the state," and is therefore invalid, inasmuch as the act is of a general nature, and yet has operation in only one city.

City of Cincinnati v. Steinkamp, 43 N. E. Reporter, 490.

Sufficiency of Payment to Agent of Contractor.—A sub-contractor on a building authorized an agent to collect an installment due him for work done, given him a written receipt for same, made out to a title company, which had insured the mortgagee of the property against loss by reason of liens, and which was, for its own protection, superintending the disbursement of the funds belonging to the owner. The court held that, the company having paid the agent on the strength of the receipt in his hands, the subcontractor could not again collect his claim, though the agent embezzled the money.

Shroeder v. Waters, Sup. Ct. Penna, 34 Atlantic Reporter, 217.

Execution of Contracts.—A written agreement, of which there are two copies, one signed by each of the two contracting parties, is binding upon both, to the same extent as if there had been only one copy of the agreement, and both had signed it.

Morris v. McKee, Supreme Ct. Ga., 24 S. E. Reporter, 144.

Elevator Part of Building.—Where the original plans for a large building provided for an elevator, and the contract for the construction of the elevator was let when contracts for other work were let, the elevator was a substantial part of the building, and the building was not completed, so that limitations for filing mechanics' liens (under the laws of California) would run, until it was finished.

Coss v. McDonough, Supreme Ct. Cal., 44 Pacific Reporter, 325.

Lien not Invalidated by Claim Including Other Material.—The fact that a claim of lien for material used in a building includes material used in a side walk around the lot on which the building is located will not invalidate the lien, where an itemized statement in the claim renders it possible to determine the exact amount used in the construction of the walk, and the precise amount charged for same.

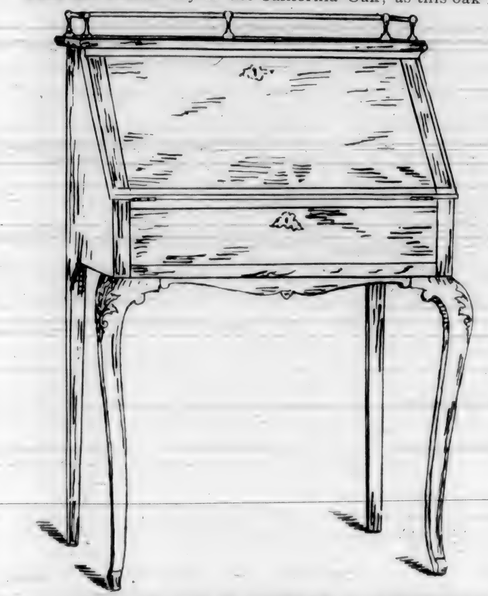
Harrisburg Lumber Co. v. Washburn, Supreme Ct. Oregon, 44 Pacific Reporter, 390.

Churches not Exempt From Liens.—A church is a "building" within the laws of California giving a lien for material used in a building, and is not exempt because another statute makes "pews rented by householder in a place of public worship exempt" from debt.

Harrisburg Lumber Co. v. Washburn, Supreme Ct. Oregon, 44 Pacific Reporter, 391.

BUSINESS MOSAICS.

In calling attention to the advertisement on page x of the San Francisco Manufacturing Company, late of Chicago, it will be well to remember that this company make use exclusively of the California Oak; as this oak is



unquestionably superior to Eastern Oak, the buyer has the satisfaction of encouraging home industry, and at the same time obtain a superior class of goods. Estimates for Oak Flooring of California Oak are furnished by Mr. Charles J. Bruschke Manager, 644 and 648 Bryant street, San Francisco, Cal. Wood mantels, interior work and office furniture a speciality.

"I can see no reason," said the S. P. C. A. boarder, "why it should be thought advisable to dock a horse's tail." "Probably," suggested the Cheerful Idiot, "they are docked for being behind."—*Indianapolis Journal.*

The Imperial Porcelain ware with its substan tial thick ness, fine glaze and beautiful appearance is undoubtedly gaining ground among those who wish their houses to become an abode of beauty as well as of health. The reduction in price has no doubt had much to do with inducing householders to demand Imperial Porcelain, and once fairly introduced there is little to prevent its universal use in all first-class dwellings.

The J. L Mott Iron Works should be awarded the credit of having introduced and placed upon the market this much desired article while Mr. M. S. James, the Pacific Coast representive of this company is at all times prepared to show what has been done in improving this line of goods. Room 27 Flood Building, San Francisco.

Bachelor—"I am told that a married man can live on half the income that a single man requires." Married Man—"Yes; he has to."—*Town and Country Journal.*

Almost anything in the way of plaster decorations can be found at 28 Ellis street, San Francisco as well as at 375 Twelfth street, Oakland. Mr. Samuel Kellett the manufacturer also attends to plastering repairing and whitening.

CITY BUILDING NEWS.

Bartlett and 22d. To build; owner, Pat Deeney; architect, H. D. Mitchell; contractor, A. Petry; signed, June 4; filed, June 5; cost $3180.

Beulah near Cole. To build; owner, W. Hatteroth; architects, Salfield & Kohlberg; contractor, L. M. Weisman; signed, June 4; filed, June 6; cost $4727. Plumbing, etc.; contractor, H. Williamson; signed, June 4; filed, June 6; cost $376.50.

Boyce near Pt. Lobos. Cottage; owner, N. J. and A. E. Jorgensin; contractor, Peter Fredriksen; signed, June 6; filed, June 6; cost $1480.

Brannan near 5th. To build; owners, and builders, Campbell & Pettus; cost $2000.

Broadway and Devisadero. To build; owner, J. W. Ward; architect, A. C. Schweinfurth; contractor, Daniel Sweeney; signed, May 22; filed, May 23; cost $17,100.

Buchanan and Oak. To build; owner, Sine Ludvigsen, wife of N. P. Ludvigsen; architect, R. H. White; contractors, Campbell & Pettus; signed, May 21; filed, May 22; cost $1440.

California near Steiner. Stone work for church; owner, St. Pauls Church; architect, S. Newsom; contractors, McPhee Co.; signed, May 14; filed, May 22; cost $1800.

California near Steiner. All work except stone; owner, St. Pauls Church; architect, T. Newsom; contractor, R. Sinnott; signed, May 14; filed, May 22; cost $8722.

Central Ave. near Golden Gate. Cottage; owner, Diedrick Gerken; architect, Emil John; contractor, William Tegeler; signed, May 11; filed, May 12; cost $1420.

Church near 23d. Two-story frame; owner, Bridget Locke; architect, J. T. Kidd; contractors, Bassett Bros.; signed, May 25; filed, May 26; cost $2800.

Clay near Laurel. Frame dwelling; owner, C. E. Knickerbocker; architect, W. H. Lillie. days work; cost $12,000.

Clay near Spruce. Two-story frame; owner, T. J. Mitchell; architect, J. B. La Romer; contractor, W. C. Boswall; signed, June 3; filed, June 3; cost $2600.

Clipper near Sanchez. Cottage; owner, G. A. Miller; contractor, W. W. Rednell; signed, June 3; filed, June 3; cost $1800.

Connecticut near Napa. To build; owner, Michael Driscoll; contractor, John Keneally; signed, June 1; filed, June 4; cost $2139.

Devisadero and Ellis. Alterations and additions; owner, Cherubino Lombardi; architect, James E. Wolfe; contractor, George Lack; signed, May 29; filed, June 3; cost $905.

Devisadero near Post. Alterations and additions; owner, M. Foley; architect, T. J. Welsh; contractor, J. E. Mooney; signed, June 1; filed, June 4; cost $6000.

Dupont near Bush. Alterations to two-story brick; owners, Le Breton estate; contractor, W. T. Thompson; cost $5000.

Eighth near Harrison. Brick work, etc., for two-story brick; owner, S. F. Brewing Co.; architect, H. Geilfuss; contractor, F. Wagner; signed, May 22; filed, May 23; cost $1628.

Fifth and Mint Ave. Alterations and additions; owner, T. Kelly; architect, E. Kollofrath; contractor, Adam Miller; signed, June 8; filed, June 8; cost $2920.

Fifth and Mission. Painting various buildings; owners, Peter J. Donahue, Margaret Burke; contractor, Thomas F. Mulhall; signed, May 25; filed, May 25; cost $2300.

Fifteenth near Castro. Cottage; owner, Chas. S. Noyes; contractors, Marcuse & Remmel; signed, May 19; filed, May 20; cost $1710.

Fillmore near Union. Alterations; owner, Adolph Lefor; architect, C. Winstanley; contractor, Alve R. Wilkins; signed, May 25; filed, May 25; cost $2400.

Folsom near Jefferson Ave. Cottage; owner, James Rodgers; contractor, W. W. Rednell; signed, May 21; filed, May 21; cost $355.

Folsom near 9th. Alterations and additions; owner, W. Botsford; contractor, C. W. Little; signed, May 28; filed, June 4; cost $4500.

Fulton and Scott. Two-story frame; owner, J. D. Lacy; architect, E. H. Mathews; contractors, Knox & Cook; signed, May 6; filed, May 9; cost $4680.

Geary and Franklin. All work for one-story frame except painting and plumbing, etc.; owner, L. Schilling; architects, Salfield & Kohlberg; contractor, G. G. Gillespie; signed, May 8; filed, May 8; cost $5700.

Geary and Stockton. Concrete work; owner, S. V. Water Works; architect, Clinton Day; contractor, Geo. Goodman; signed, June 1; filed, June 3; cost twelve cents per cubic foot.

Geary and Larkin. Excavations, brick and iron work for two-story building and alterations to an old building; owner, Jones Schoenfeld; architect, Salfield & Kohlberg; contractor, F. Wagner; signed, June 3; filed, June 6; cost $4798.

Geary and Larkin. Carpentery, mill work, etc.; owner, James Schoenfeld; architects, Salfield & Kohlberg; contractor, John Furness; signed, June 1; filed, June 6; cost $9475. Plumbing; contractor, W. F. Wilson; signed, June 2; filed, June 6; cost $2017. Sidewalks, etc.; contractor, Silas A. Chase; signed, May 6; filed, May 6; cost nine cents per square foot. Painting and graining; contractor, J. L. Ostland; signed, June 2; filed, June 6; cost $985.

Haight near Cole. A frame pavilion; owner, Gustav W. A. Walterstein; architects, Knoth & Behrnd; contractor, Silas Carle; signed, May 11; filed, May 13; cost $7500.

Hampshire near 22d. One-story frame; owner and builder; J. Winstron; cost $1500.

Hampshire near 22d. Cottage; owner, J. B. Parr; builder, E. Eriksen; cost $1100.

Hampshire near 22d. Cottage; owner, Chas. Iiger; contractor, C. Eriksen; cost $1400.

Hancock near Church. Two-story frame owners, T. A. Bermingham and Hannah M. Bermingham; contractor, W. W. Rednall; signed, May 15; filed, May 15; cost $4600.

Harrison near Stanley Place. To build; owner, W. F. C. Schmid; architect, H. Geilfuss; contractor, L. B. Schmid; signed, May 8; filed, May 11; cost $3294.

Harrison and Dore. Two-story frame; owner, John Sullivan; architect, M. J. Welsh; contractor, Joseph Sullivan; signed, May 28; filed, June 2; cost $2000.

Herman near Steiner; Two-story frame; owner, Geo. Reichley; cost $4000.

Heron near 8th. Cottage; owner, Mary Sosser; architect, A. J. Barnett; contractor, T. W. Crawford; signed, June 2; filed, June 4; cost $1250.

Hyde and Geary. Carpentry, mill work, etc.; owner, Mrs. P. Rosenweig; architects, Salfield & Kohlberg; contractors, Campbell & Pettus; signed, May 18; filed, May 23; cost $8057.

Hyde and Geary. Excavations, concrete, brick and marble work; owner, Mrs. P. Rosenweig; architect, Salfield & Kohlberg; contractor, Crawford Ferris; signed, May 16; filed, May 23; cost $1523.

Hyde and Geary. Plumbing, etc.; owner, Mrs. P. Rosenweig; architects, Salfield & Kohlberg; contractors, Gullick & Wetherbeen; signed, May 16; filed, May 23; cost $1877.

Jackson and Jones. Three-story frame; owner, Mrs. Jane Trubody; architect, Clyde Corrigan; contractor, E. P. Stone; signed, May 28; filed, June 2; cost $4916.

Kansas near 24th. One-story frame; owner and builder, J. Winstron; cost $1500.

Kentucky near Sierra. Additional story; owners, Claus and Jochim Sass; architect, H. Geilfuss; contractor, C. Krecker; signed, May 19; filed, May 19; cost $1940.

Market near 4th. Brick work for three-story brick; owner, Claus Spreckels, architects, Reid Bros.; contractors, Rae Building and Contracting Co.; signed, May 19; filed, June 1; cost $14 per M for bricks actually laid.

Market near 4th. Carpenter work; owner, Claus Spreckels; architects, Reid Bros.; contractors, Thomas Day & Sons; cost $4515.

Market near 4th. Carpenter work; owner, Claus Spreckels; architects, Reid Bros.; contractors, Thomas Day & Sons; cost $4515.

Market street at Ferry Depot. Frame building for Post-office; owner, State of California; contractors, Healy, Tibbets & Co.; cost $4938.

Market near 16th. Two-story frame and shop; owner, W. E. Dubois; cost $6000.

Market and 3d. Brick work; owner, Claus Spreckels; architects, Reid Bros.; contractor, John McCarthy; signed, May 8; filed, May 22; cost $19,136.

Masonic Ave. near Page. Alterations and additions; owner, Rev. W. Kerby; architect, T. J. Welsh; contractor, Frank Doyeu; signed, May 23; filed, May 26; cost $1075.

McAllister and Baker. Alteration and additions; owner, Owen McHugh; architect, C. J. I. Devlin; contractor, F. W. Knight; signed, May 9; filed, May 13; cost $2350.

Mission near 7th. Mason work on three-story brick; owner, J. Noonan; architect, P. J. Donahoe; contractor, L. C. Schroeder; signed, May 26; filed, May 27; cost $4000.

Mission near 7th. Carpenter work, etc.; owner, J. Noonan; architect, P. J. Donahue; contractor, John Miron; signed, May 27; filed, May 27; cost $1300.

Mission near 3d. Alterations and additions to Howard Presbyterian Church; superintendents, Mahoney Bros.; cost $25,000.

Napa and Georgia. Carpentry, mill work, etc.; owner, Union Iron Works; architects, Percy & Hamilton; contractor, F. W. Kern; filed, May 28; cost $10,344.

Napa and Georgia. Brick and cement work; owner, Union Iron Works; architects, Percy & Hamilton; contractors, McCall, Miller & Beck; filed, May 28; cost $8450.

Napa and Georgia. Concrete, etc.; owner, Union Iron Works; architects, Percy & Hamilton; contractors, Keatinge, Leonard & Ransome; filed, May 28; cost $3590.

New City Hall Dome. Finishing work; owner, City of San Francisco; architect, Frank T. Shea; contractor, San Francisco Novelty Works; cost $83,311.46. Marble work; contractor, California Travatine Co.; cost $16,584. Grand stairway; contractor, W. H. McCormick; cost $3351.60. Marble work for 2d gallery; contractor, W. H. McCormick; cost $4156.80. Plain glass; contractor, F. N. Woods & Co.; cost $900. Elevator; contractor, Cahill & Hall; cost $3075.

Oak near Devisadero. To build; owner, Theresa McKenna; contractor, T. F. Mitchell; signed, June 2; filed, June 8. cost $3430.

Park Ave. near Broderick. To build; owner, Annie Clark; architects, Herman & Swain; contractors, Anderson & Greig; signed, May 21; filed, May 21; cost $3000.

Pine near Dupont. One-story brick; owner, Mr. Tietjen; architect, E. Depierre; contractor, Miller; cost $1500.

Point Lobos near 18th Ave. Cottage; owner, Mr. Wagner; contractor, C. Knutte cost $800.

Polk and Ellis. Additions; owner, E. Bruck; architect, E. J. Vogel; contractor, I. W. Coburn; signed, May 26; filed, May 27; cost $2650.

Post near Taylor. Additions; owner, Mrs. Maggie J. Hemphill; architectst McDougall & Son; contractor, J. H. McKay; signed, May 9; filed, May 9; cos, $2715.

Post street, No. 103-109. Alterations and additions; owners, Kohlberg, Strauss & Froham; architects, Salfield & Kohlberg; signed, May 29; filed, June 2; cost $1400.

Quincy near California. A new brick building and alterations to old; owner, G. Garrsler; architect, E. Depierre; contractor, J. E. Dnuphy; signed, May 29; filed, June 1; cost $2350.

Sacramento and Webster. Plumbing and gas fitting; owner, J. H. Jellett; architects, Salfield & Kohlberg; contractors, Welsh & McCusker; signed, May 27; filed, May 29; cost $1540.

Sacramento near Broderick. Reconstructions; owner, John H. Boardman; architect, W. H. Wharff; contractors, Hood & Watson; cost $850.

Second near Howard. Two-story brick; owners, San Francisco Breweries; architects, Smith & Freeman; contractors, Mahoney Bros.; cost $10,000.

Seventeenth near Noe. Additions; owner, Jas. Hallihan; architect, T. J. Welsh; contractor, Neil Mallory; signed, June 1; filed, June 2; cost $1275;

Sixth street No. 23. Alterations and additions; owner, Nellie J. Hinricks; architect, A. J. Burnett; contractor, T. D. Gilmore; signed, June 1; filed, June 1; cost $2200.

Sixteenth and Folsom. Three-story hotel; owner, John Center; superintendent, N. R. Ellis; days work; cost $18,000.

Stockton near Sutter. Two-story brick; owner, Geo. H. Sanders; architect, G. H. Sanders; mason work R. Beattie; cost $4500.

Sutter and Hyde. Carpentry, mill work, etc, on five-story and basement brick; owner, Dr. J. Rosenstern; architects, Salfield & Kohlberg; contractors, Campbell & Pettus; signed, May 9; filed, May 13; cost $25,450.

Sutter and Hyde. Excavations and concrete; owner, Dr. Julius Rosenstern; architects, Salfield & Kohlberg; contractor, S. Giletti; signed, May 9; filed, May 9; cost $8245.

Sutter and Hyde. Plumbing and gas fitting, etc; owner, Dr. J. Rosentern; architects, Salfield & Kohlberg; contractors, I. Ickelheimer & Bros.; signed, May 16; filed, June 4; cost $12,000.

Sutter and Hyde. Brick works, etc.; owner, Dr. J. Rosentirn; architects, Salfield & Kohlberg; contractor, S. Giletti; signed, May 22; filed, May 2; cost $17,975.

Tenth Ave. near California. To build; owner, John & Margaret Neuenberg; contractor, August Guilbert, signed, May 11; filed, May 12; cost $2200.

Twenty-first near Protrero. To build; owners, Braida & Pasquali; contractor, J. Macconi; cost $1600.

Twenty-second near Shotwell. One-story brick; owner, J. P. Marasson; architect, G. A. Berger; contractor, J. B. Pene; signed, May 15; filed, May 19; cost $1430;

Twenty-second Ave. and Lake. Two-story frame; owner, A. L. Bowhay; architect, H. D. Mitchell; cost $10,000.

Twenty-fourth near Kansas. Too frame dwellings; owner and builder, F. Nelson; cost $4000.

Twenty-fifth and Florida. Three-story frame; owner, F. V. Pistolesi; contractors, M. A. Steward, L. L. Berger; signed, June 1; filed, June 1; cost $2216.

Twenty-seventh near Guerrero. To build; owner, J. M. Burk; cost $4000.

Turk near Fillmore. To build; owner, Mrs. M. T. Welsh; architect, T. J. Welsh; contractors, Williams & Foster; signed May 29; filed, June 1; cost $4750.

Van Ness Ave. and Clay. Steel and copper plated blinds; owner, Claus Spreckels; contractor, James J. Wilson; signed, May 6; filed, May 22; cost $7250.

Van Ness and Clay. Elevator work; owner, Claus Spreckels; architects, Reid Bros.; contractors, Cahill & Hall; signed, May 23; filed, June 3; cost $2950.

Vermont near 25th. Seven frame dwellings; owner and builder, F. Nelson; cost $14,000.

Waller near Masonic Ave. Four two-story frames; owner, W. Whealan; day-work; cost $20,000.

Washington near Leavenworth. Concrete, Brickwork, etc.; owner, Charles D. Cushing; architect, J. H. Littlefield; contractor, H. H. Larsen; signed, May 10; filed, May 20; cost $1474.

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EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

E PUBLISHED last month a clipping from *The Age of Steel*, setting forth at some length, the greater desirability of the present *competitive system* of society, as contrasted with the results which it predicts would occur, should the people ever attempt the *co-operative system* advocated by Socialists.

In order to give our readers food for thought, we will give Socialism (the under dog in the economic, as well as the political fight to-day) a chance to answer the statements made by *The Age of Steel*.

To begin with, *The Age of Steel* in asserting that Socialism is a beautiful theory that "*goes to pieces in actually operation*," has no actual basis of fact on which to rest its assertion. Socialism has never been tried that we ever heard of by a modern civilized government individual efforts at co-operation are not in any sense of the word, Socialism.

Until this trial has been made by a *government* and *failed*,

a Socialist cannot be made to understand why his ideal is "impossible of realizing" and "impossible of maintaining," when realized. On the contrary, he argues with some degree of plausibility, that if the government can successfully conduct the mail service, it could also conduct an express service and a freight service; and that if it is a proper function of the government to conduct a mail service, there can be no logical argument advanced why the government should not conduct an express and a freight service. Once grant that it is right for the government to own and conduct the telegraph (as is done in England) or to own and conduct the railroads (as is done in Germany and a dozen other countries) or to run a pawn-shop (as in done by the Municipal government of Paris,) how can it be denied that the government could, on equal grounds of expediency and justice, own water works, supply gas and electricity and run a bakery? and when the present functions of the government (which are universally acknowledged to be legitimate and desirable and effective) have been extended to embrace all those means of production and distribution of life's necessities that still remain under the control of individualistic or corporate enterprise, then the era that Socialists are striving to bring about, will be practically achieved—the government now erects structures not oniy for the accomodation of the public, for the transaction of Municipal, State and National business, but also at the public expense cares for the sick, the wounded, the insane, the paupers and the criminals. Socialists claim that it would be only one step more in the line of present tendencies, to add to the functions of government the care of the *unemployed*. In other words direct their energies into productive channels, or apply their unoccupied time, first in all ways *useful* to the community, and when all utilitarian avenues have been supplied, then to those productive of public pleasure and recreation; such as the building and maintaining of public parks, museums, memorials, the cultivation of desert places, the ornamentation of public roads and pleasure grounds, national boulevards, etc., etc.

To simply assert that a dream is impossible of fulfillment, is not a valid argument against that dream unless reasons are adduced in support of the assertion.

Napoleon did not chose his Marshals because they were fond of telling him his plans were *impossible*. To a Socialist the fact that Society manages to exist at all under the competitive system, is the strongest kind of an argument that it would florish more vigorously still under a co-operative system.

A Socialist when confronted with the argument that the "fittest must survive" might pertinently ask why a garden is cleared of weeds; if it be true that the fittest must survive, without regard to usefulness to mankind, then why not let the plants fight it out with the weeds, relying on the fact that the fittest must survive, and calm in the consciousness that nature does all things well, and that if the weeds conquer (as they probably would) therefore it is best they should, being the "fittest to survive."

It is no doubt true that among the nations of the East such things as "honesty, fair dealing and frankness" are looked upon as irridescent dreams. But to claim that the ordinary business man of to-day is "a shinging example to the contrary" is to claim just a little too much.

The president of a powerful railroad corporation in this country, stated in public only a few years ago, that while he had every confidence in the truth, honesty and integrity of the word of the presidents of rival corporations when spoken by them as private individuals, *yet he would not trust one of them to tell the truth in a business transaction.*

The Age of Steel seems to be willing to admit that this competition is at times *ruthless and grinding*, but thinks it far less cruel than nature.

This statement might be questioned. Is a lingering death by starvation under the horrors of the blacklist any better than the quick sharp death that nature's beasts of prey inflict on their victims? certainly it is not much, if any, improvement.

A Socialist will hardly admit that much courteous and kindly feeling existed between the Standard Oil Company and the rivals it drove from the field, or much honesty and frankness in business methods that tolerate adulteration in all its forms, even in the food that gives us life.

IN THE PROGRESS made in the flooring of public buildings within the last few years the old fir and cement floors have given place to floors of more expensive character; oak and other hard woods, encaustic tiles, marble and mosaic. It becomes then a necessity to keep these free from stains if one wishes to enjoy their beauty. The trustees of Alameda have come to this conclusion—and have passed an ordinance making it a misdemeanor to expectorate upon the floors of public buildings or in public conveyances—thus keeping up the reputation already gained by them in acquiring their own electric light plant, as the most progressive public body in their vicinity.

It is high time that action on the same lines should be taken in all other communities; why should one be allowed to damage the floors of other people's property, any more than he is allowed to damage the walls by chipping or other means—this is looking at the matter of dollars, but besides that the senses of people of taste deserve some respect, which cannot now be said to be the case, as long as one has to pick one's way on the street, sidewalks and pavements of buildings amidst the spots and splashes of putrescent and tobacconesque matter. One look at the floor and steps of San Francisco's City Hall, with its evil looking decorations, is sufficient to show at once the necessity of a similar ordinance in this City.

A MODEL "FAKE" CAPITOL COMPETITION.

APROPOS to the seeming epidemic of "invitations to architects" just now, and which seem to be accepted with alacrity, is that recently issued by the State of Mississippi for a new capitol building. The general scheme is so attractive that the express business in the South should be greatly stimulated. On July 15 the committee, consisting of the Governor, Attorney-General and Secretary of State, will "meet for the purpose of collecting all plans and information obtained by them," and at that time will be pleased to confer with such architects as may prefer to visit the capital city. As the building is to cost from $550,000 to $1,000,000, and a sum not to exceed $1,000 is to be paid for the plans, or in case the architect is employed to superintend, no compensation shall be paid for plans and specifications, and in no case shall there be any compensation for plans not used, this should be an exceptional opportunity to prove the cheapness of an architect's service. The assurance that the committee will be assisted by a competent and disinterested architect to collate all plans and information that would be useful to the legislature in letting the contract should lend additional attraction to this most unique "invitation." We were wont in times past to point out to these misguided committees that respectable architects would not compete under such conditions, but recent events in the competition line have so far modified this opinion that we would not be surprised to see a long list of competitors for the state capitol building for Mississippi.—*The Inland Architect and News Record.*

THE NEW RULES AND REGULATIONS OF THE SAN FRANCISCO BOARD OF HEALTH.

WE HAVE received the Rules and Regulation adopted by the Board of Health of San Francisco, taking effect July 1, 1896, in place of those heretofore in force. The words and grammar are hardly commendable and there are a few ambiguities, *e. g.*, in Section 10—"The sewer shall have a trap placed either at the line of curb of sidewalks, or immediately inside the area wall under sidewalk"—"at the line of curb of sidewalks" may mean in the gutter of the street, in the curb itself, or in the sidewalk at the inner line of curb, may be all are intended.

"Sec. 26. (Surface Drainage)—No opening shall be provided in the sewer pipe of any building for the purpose of surface drainage unless said opening is properly trapped and supplied with water from a suitable fixture."

"Suitable fixture" is very vague—a definition of a suitable fixture is required—then it says:

"When said surface drain is situated at a distance greater than twenty feet, reckoning in a horizontal line from said suitable fixture, than it may be supplied by a hose-bibb."

It does not say where the hose-bibb shall be, whether standing up in the middle of the yard, over the trap, or twenty feet off. From information we find that the hose-bibb may be twenty feet off as long as the water from it is conducted either with a hose or gully in the pavement to the surface trap. But if the trap is 19'6" from a "suitable fixture" it must be supplied from the "suitable fixture," but in what way we know not and the regulations do not help us out.

When in Sec. 29 it says that "branches must be connected to main vent at an angle not *less* than forty-five degrees." Surely it must mean *more*.

In Sec. 31 where it says that "the branch fitting must be 3'6" from *the floor line*" we would suggest from *the fixture*, as floor line is an indefinite statement.

In Sec. 33 "Every vertical soil, waste or vent pipe must extend full bore two feet above the highest line of roof or coping" should be qualified by "at the intersection of said pipe with said roof or coping"—as it reads now a plumber might be compelled to run his vent pipe two feet above the ridge of the roof which is the "highest line of roof" instead of two feet above the place that the pipe protrudes through the roof.

No distinction is made between a "vent" and a "vent-pipe"—which leads in some cases to confusion, the term vent is generally used for both.

We will stop here or we may be considered hypercritical.

PROFESSIONAL GRADUATES.

AT this season of the year, when our professional schools are launching on the community multitudes of young men who have completed the school course in their preparation for the professions, one is disposed to ask, is all this material needed in keeping up the requisite strength to serve the public in professional lines? While we are disposed to apply it to one profession, is it equally pertinent in the case of the lawyer, the doctor and other similar callings. The world has a great capacity for absorbing material of this sort. In fact, we find that professional study very very often is the step to positions outside the regular lines of practice which the course of study of the school specially points to, yet for which it fits them to a nicety. Graduates of medical schools become chemists or pursue special lines, never, perhaps, touching the regular line of practice. Lawyers become associated with great business enterprises, for which their legal training especially fits them. Examples of such change of work are constantly before us. Take, for example, President Depew of the great New York Central and its immense system. Who can doubt that his training as a lawyer has stood him in good stead in handling and systematizing the business of these roads?

In viewing the exhibition of the Columbia School of Architecture the other day, the value of the training there afforded struck the writer as being of far wider scope than is generally supposed. And to come back to the question of how all these young fellows that are going out from this and similiar institutions are to be employed in architecture, we answer, they don't need to be. There is a broad field for the employment of men who have received this class of training outside of mere building. Architecture may be regarded as a fundamental art. In fact the study of its history shows that all the other arts have grown out of it, however widely separated they may have in time become. So that like classics in literature, and as their study is needful to broad literary culture, thus the study of architecture, its forms and proportions, is the fundamental work in any broad school of design. Recognizing this feature of architectural school work, one can easily see the broad field open to these graduates.

The vast need of able designers is felt in every branch of manufacture that rises at all above the plane of utilitarianism. Intelligent and traveled Americans have long recognized that there was something that made many articles of manufacture from the Continent, in many cases at least, better than ours, and that not found in the value of material or construction, but in the better proportion, the more apt use of color, or in all those directions which are influenced by what we call taste. It is no disparagement to our people to say these things. Americans have been too busy erecting

the material structure of a nation and furnishing the needs of a new people to have had time to dwell on the æsthetic character of their work. Here, however, is where the work of our architectural schools comes in. Any one who looks upon them as the breeding places only of master builders falls far short of a recognition of what they are doing. Their work is to train the minds of young men in the study of design as they teach them to develop their construction in that artistic manner which we call architecture. All design is closly allied, and the same character of ornament may be seen on a terra cotta vase or a silver goblet that appears in a classic frieze, and be equally appropriate in either case. So that in a measure a graduate of an architectural school has gone through a class of training that fits him for all manner of technical design. It is true he has not received that technical knowledge of material or appliance that may be necessary for the execution of his design, but he soon comes to it. His training has all along been such as to exercise his invent ve faculties, and has cultivated a quick comprehension of the circumstances surrounding him and the materials with which he has to work. Here the young architect's training differs from the artist's. The latter can, to a certain extent, create his own surroundings and bring them into harmony withhis own ideals, while the architect must bring his art ideas into harmony with his surroundings; he is confined to limits and bounds beyond which he cannot go, and "to construct beautifully" within the limits of the conditions surrounding him must often tax severely his genius. It is this very circumstance that makes architectural study an especially good introduction to all classes of technical design. In both cases a high degree of mechanical comprehension is required. The architect must understand the limitations of his site, the characteristics of his materials—stone, brick, wood or whatever they may be—and mould them into artistic form, all the time preserving the highest quality of usefulness and commodiousness in the structure. Like conditions govern the designer of carpets, oil cloths and fabrics of all sorts, and the conditions of manufacture and the character of materials have all to be intimately known and carefully considered, otherwise the design is a failure.

Viewed in this light the opportunities of these schools are great, and their influence must be far-reaching and to the benefit of students not only in reference to building, but to every class of industrial pursuit. Besides, they are training schools of our art educators, and their graduates may be found in all the schools for art-artisans throughout the country. These schools are thus centres of artistic growth for the whole country.—*Architecture and Building.*

AN IMPROVEMENT IN WALL FINISHES.

THERE is no one feature in the house which is more constantly before the eye than wall finish, none which appeal more strongly to artistic taste, with the exception perhaps of plumbing, none has a greater hygienic importance, and no other feature has so often to be replaced. The three methods in use of finishing walls, water colors, *i. e.*, kalsomining and frescoing, wall paper and oil paint each have their objectionable features.

All ordinary kalsomines of fresco paints get their adhesive qualities from glue, which being animal matter, in time decays, emites foul and unhealthy odors and causes the finish to crack and chip off. All such finishes are porous and absorptive, and naturally attract and retain disease germs. Not one of them can be washed when soiled and if a leak comes through the wall or a spot gets on them, there is only one way to repair the damage and that is by going over the entire wall again.

Wall Paper is porous and absorption; it is applied with a vegetable paste which becomes food for vermin; it is quickly ruined by dampness and stains, and is expensive.

Oil Paint which is permanent, non-absorptive and washable soon turns yellow when used on interior walls; it intensifies cracks and other defects in the wall and requires four or more coats to make a solid finish, making it expensive. Its gloss which it is impossible to entirely kill, gives the wall a greasy effect, and last, it is not possible to produce with it the delicate shades and soft velvety color effects so admirable in water colors.

It would seem therefore a wall finish which possesses none of these objections should be welcome both to the house-owner and architect. It can be found in Zinolith a California product.

CORRESPONDENCE

[The Editor is not responsible for anything which appears in this column.]

To the Editor of the California Architect and Building News.

SIR:—I have had presented to me a copy of the New Rules and Regulations of the Board of Health of San Francisco, and being interested in what concerns the welfare of the people, it struck me that one part of them at least might be open to criticism. I believe there is incorporated in them a very undesirable principle when they compel a master plumber before he is allowed to register to give "a bond to the State of California for $500 with good and sufficient sureties, for the faithful discharge of his duties as master plumber."

This is a special law and unconstitutional, why should a plumber give bonds more than a doctor, architect, house mover or builder, these have the health and welfare of the citizens as much in their hands as the plumber. If one tradesman is to give bonds, start in fair and make every business man, tradesman and professional man give bonds for the faithful discharge of their duties—for all businesses when improperly carried out are dangerous to the public welfare. How many bodies do incompetent doctors kill off without bonds. How many souls do incompetent divines send to damnation without bonds. How many lives are wasted in badly lighted, badly ventilated abodes and otherwise destroyed by incompetent architects and builders without bonds. How many people are poisoned by adulterated goods sold to them by traders without bonds. Let everybody give bonds *if bonds are the go*, either all bonds or no bonds to be consistent.

The President of the United States is about to issue another batch of bonds, so the Board of Health is evidently in the fashion, and bond servant will be a term quite in vogue, even more so than in Abrahamic times.

But the poor plumber has not only to give bonds but has also to pony up one dollar for his certificate every year. He has also to have an established place of business in San Francisco, so that the plumber over the San Mateo line or in Oakland, San Rafael or other adjacent towns may not come over to San Francisco to do work for his friend. Why this is worse bigotry than the whilom charter-makers of San Francisco wish to foist upon us when they would like us to be compelled to take all our school teachers from California.

These attacks on the liberty of the individual must be stopped or where shall we land?

When a plumber passes his examination and is declared competent—if that examination is honestly conducted as is the presumption—then he becomes a worthy master plumber and the asking him to put himself under obligation to obtain bonds appears very much like an insult.

Yours truly, STROLLER.

PROPOSED FOREST RESERVE IN MINNESOTA.

AFTER the most unparalleled destruction of property and of life by forest fires in Minnesota less than two years ago it is hardly to be wondered at that the new law against these fires in that state is the most effective of all that have been enacted in the various states of the Union. But the advocates of sound forest policy in Minnesota have not rested here, they are making a determined move toward acquiring, in the name of the state, a large area on which it is proposed to restore and preserve the forest. We have received a circular containing a synopsis of the plan proposed by Mr. Judson N. Cross, of Minneapolis, at the meeting of the Forestry Association of Minnesota, held in January of this year, and since the plan is novel and has far-reaching possibilities, all persons to whom the circular is sent are requested to express their opinions as to the details and to send any recommendations for changes, together with reasons for the same, to the Secretary of the Association, Mr. J. O. Barrett, Brown's Valley, Minnesota.

The plan is essentially this: (1) The Legislature is to constitute state, county and town boards of forestry. For the sake of economy the town board of supervisors will act as a town forestry board, the county commissioners will constitute the county forestry boards, and the state forestry board of nine members is made up of the State Land Commissioner, the Professor of Botany in the Agricultural Department of the State University, the chief officer of the Climate and Crop Service of the United States Weather Bureau in Minnesota, and one member appointed by each of the following associations, namely, the State Forestry Association, Farmers' Institute, the Board of Regents of the University; the State Lumbermen's Association, the Board of Public Health and the Fish and Game Commissioners. These are to serve without pay, except for actual expenses, and an executive committee of three is to be selected by the entire board. (2) Owners of Pine lands which have been lumbered over and other lands, especially if they are rocky, rough or sandy, and will probably not be utilized for agricultural surposes for some years, may deed that land to the state when this course is recommended by the town and county forestry boards. This land is deeded for forestry purposes only, all rights in minerals, coal, oil, etc., being reserved. Land so deeded shall be exempt from taxes, because it is dedicated to public use. (3) This land shall be called the Reserved Forest Area, and it shall be under the charge of the State Forestry Board, who is to care for it as the Legislature may direct. (4) Of the future income to be derived from such lands, one-third shall go to the state to reimburse it and the towns and counties for care and protection and loss of taxes, one-third to the person deeding the land and his heirs for a period of, say, one hundred years, after which it is to go to some institution, the other one-third to go to some designated institution or the State University. (5) The state shall have full power to lease low meadow tracts where such are needed as protection against fire, or for pasture where this will not interfere with the growth of the forest-trees. It shall have power also to sell dead and down timber, which it is supposed when the adjoining lands are settled up will bring in a large income, and generally the state is to have full power of control, even the power of alienation of certain tracts when recommended by the State Board of Forestry in such cases, for example, as where the growth of towns, the building of railroads, water-power, etc., may necessitate such alienation.

Of course, this is the merest outline of the scheme, and we have omitted many of the details given in the circular. We call attention to it, however, as a step forward, that the great prairie states, as well as New York and those in the middle Appalachian region, are taking serious thought of securing and maintaining large areas in permanent forest. Experience in Europe and in India has demonstrated that such areas owned by the commonwealth will prove a source of revenue if properly managed. Besides, they will furnish examples which private forest-owners will be eager to follow. More than all, a community which is sufficiently farsighted to take such action will see to it that the heights and slopes which are the sources of water-supply to the valleys below are kept covered forever as the only security against those disasters which the reckless destruction of forests on highland or lowland has invariably brought.—*Garden and Forest.*

THE BISHOP PAID THE BILL.

THE principle of charging for the "know-how" is not forgotten by professional men who have got on well in their work. The story is told in an English book of a distinguished Bishop, who, being dissatisfied with the arrangements of his palace, employed a first-class architect to superintend possible alterations. The architect took time to consider, and at last submitted plans. By this time the Bishop had decided that the cost was too great, and relinquished his building project altogether.

"And now said the Bishop, "I shall be glad if you will tell me how much I shall pay you for your trouble."

"I thank your lordship, £100," answered the architect.

"One hundred pounds!" exclaimed the Bishop. "Why, I have curates in my diocese who do not receive so much as that for a whole year's services."

"That may be true, my lord," said the architect, "but I happen to be a Bishop in my profession!" There was nothing more to be said, and the Bishop paid the bill.—*Youth's Companion.*

ARCHITECTURAL COMPETITION.

AT the closing meeting of the Boston Society of Architects for the session, held May 8, much of the evening was given up to a discussion of the matter of competitions, which was introduced by the following paper which was read by Mr. John A. Fox:—

The treatment of this subject, one of the vital issues of our practice to-day, must depend largely upon the precise nature of our calling. Is it, in the future, to be an art, a profession or a business? At present it has characteristics of all these. But we live in an age of reforms and in a nation of progressive tendencies. Our part of the world's work must advance or lag behind. What are our young men going to make of their chosen occupation? An art, pure and simple, it cannot be. It is too intimately connected with practical matters, and can only be followed exclusively as an art by the subordination of the designer to the engineer, or the man of business. None of us would counsel such degradation. If it is to be a business, the standard will of course be low enough to include all the weak, the lazy, the incompetent and the unscrupulous; and the decay of art, science and morals in our practice will be rapid and complete. All societies and rules will become superfluous, except such as belong to "trades-unions" or "trusts," and are created merely to increase profits. No laws will be needed but the "common law"; and the only incentive to, or test of, success will be the greatest return of income.

The tendency of the times is to measure everything by a money standard. The age is feverish with rivalry, envy and discontent. But we note the fact, while the methods of business and politics seem to be steadity deteriorating, three callings, the church, medicine and law, though somewhat partaking of the current demoralization, still maintain educational and ethical tests and standards, and guard their patrons by examinations and legal certificates. The clergyman, the doctor and the lawyer, with no less love than others for the ease and comfort that money may bring, still look for a part of their reward in the social standing given by their professional position and in the consciousness of intellectual work well done.

Assuming, then, that our choice is to make the practice of architecture a suitable profession for educated gentlemen, what are we to do to prevent the field from being invaded, our standards lowered and the public defrauded by the unqualified and the dishonest.

This brings us to the main problem. Where do we find, in other professions, any system of employment like that known to us as "a competition"—even as seen at its best? and what is there peculiar in our work that demands this form of "trial by battle?" We are considering mainly "public" or "open competitions." What are known as "limited" ones are of minor importance. If a promoter elects to pay adequate prices for the sketches of several architects, though the practice is not a businesslike one for him, or a dignified one for the architects, except under conditions that seldom prevail, yet it may not merit the condemnation called for by the other.

But in the open contest, with all its variations and complications, real artistic feeling and sentiment are thrown to the winds and we have an attempt to select an architect by choosing from a set of sketches one that seems to the promoters, or at best to their adviser, to meet the imperfectly expressed requirements. The party offering the sketch is not known to be its author, or even to be an architect at all. His purpose is at war with the nominal one, for he aims only to secure a premium, or a commission; whereas the promoters wish to employ a competent professional adviser and to secure a thoroughly good and beautiful building—two very different objects.

Perhaps I am not drifting too much into the burlesque, which the absurdity of the situation seems to suggest, in drawing a comparison with another profession. Suppose that one's wife suffers under the affliction of a malignant tumor. The husband wishes the most thorough relief for her, consistent with his limited means. He calls in half-a-dozen physicians and a few medical students, and if very liberally inclined, invites an extra doctor to advise with him. The invited competitors, after being furnished with some general facts in the case, proceed, in the absence of the patient, to illustrate in a sketchy way, and perhaps with aid of a carving-knife and a loaf of bread, how each would treat the case, and to the one who makes the most attractive showing the wife's fate is intrusted. Does this seem a forced comparison, and do you object that the surgeon deals with life and death? If so, what do you count the dignity of a profession that favors "competition," for the most complicated building problem, among draughtsmen and office-boys; and puts its veteran experts on a level with unqualified charlatans? The doctor deals with life and death! What are our dealings with? Pictures? Are there no far-reaching results affecting the health and comfort of thousands? their education in what is lovely, and even their moral welfare, in the design and construction of every important building? Would you select a man to design a national monument, and to expend millions, as you would buy a chromo or a carpet? Few architects accumulate money enough to build extensively; but, if by chance one did, he would surely ignor his own prescription.

Here seems to be the root of the evil. Our methods tend to land our employers, who are ever too ready to adopt superficial views of expert service and with a natural selfishness to undervalue it and give ear to the counsels of quacks, to mistake the shadow for the substance. How easily they could be set right by our united efforts.

We all know that success in competitions implies the possession of faculties and the adoption of methods entirely foreign to the true purpose of building design as a creative art and science. It is well understood that an office organized for success in this unreal and speculative department is less fitted for the legitimate service of clients. The working-plans are often careless in execution, deficient in number and inaccurate. Competition in merit leads to competition in rates of commission and to direct solicitation of work. More work is undertaken than can possibly receive the attention of the chiefs, and professional methods give way to those of syndicates and combinations. The draughtsmen, forced into the rooms of dull routine, lose their interest in their work; do it in a mechanical way; and are deprived of their educational rights. This leads them to settle down into mere machine workmen, or to look for their emancipation to some happy venture, for the successful conduct of which their training has utterly unfitted them. From these temptations and influences follow the various minor irregularities, dissensions and heart-burnings of our professional lives.

It is a matter of record that an open competition seldom

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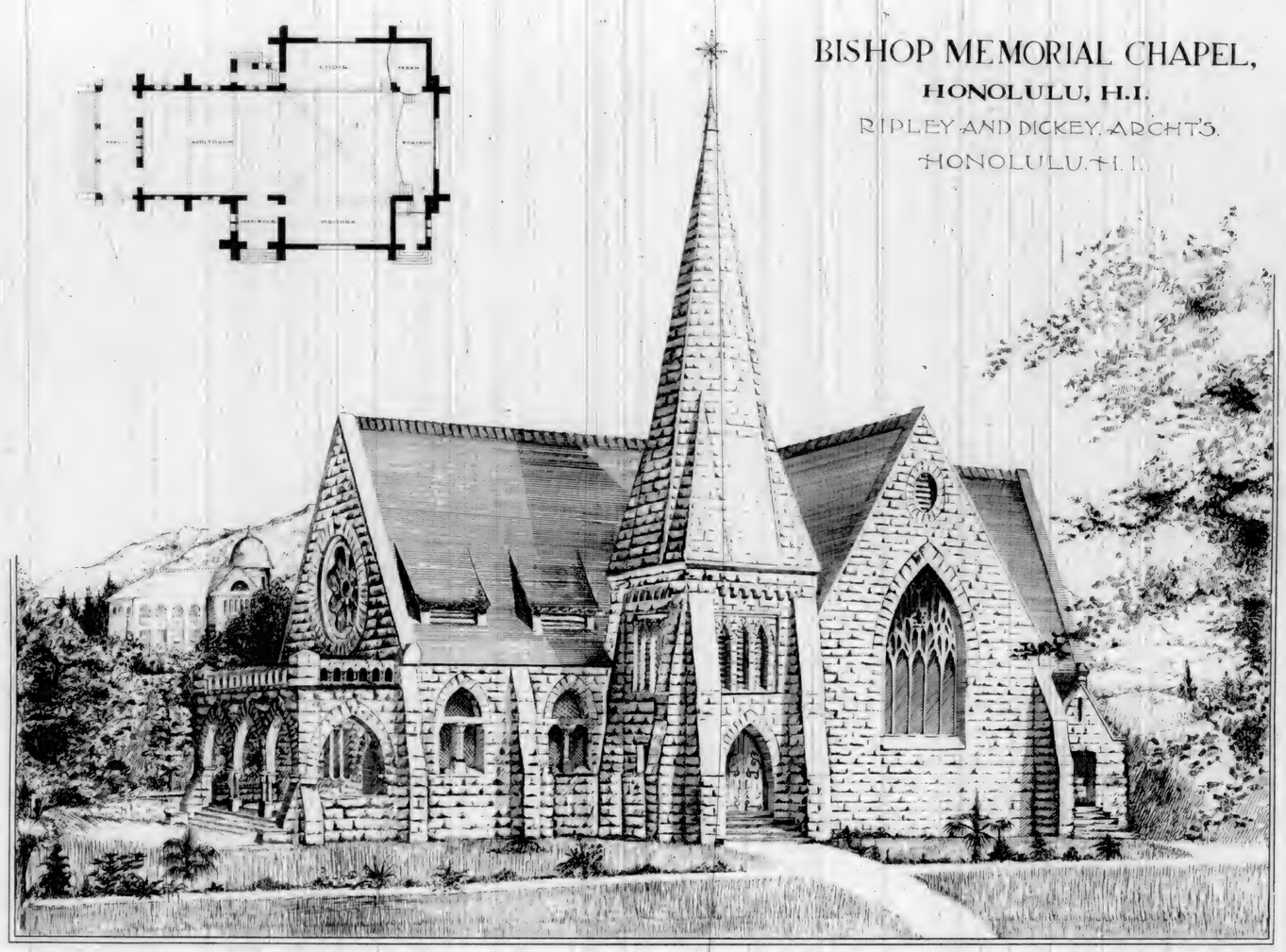

Study for a Small Court House

W. J. CUTHBERTSON.
Architect.

I.O.O.F. ORPHANAGE. THERMALITO, BUTTE CO. CAL.

HERMANN AND SWAIN — ARCHITECTS.

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results in the selection of the best architect or the best design. The technical journals have been filled for many years with the history of failures of the system, and the war of words sure to follow the vain attempts at regulation. And more than all we have repeated and reliable accounts of successes gained in this manner by men not architects in any proper sense and by the use of means that would discredit them in mercantile ventures, even as judged by the low moral standards of modern business.

In view of all this, and more of the same sort, it becomes us to inquire who is responsible for the system and its abuses. Not the public. The general desire of promoters is to have the best building. No clear-headed business man would, on his own motion, think of reaching such a result in such a manner. He does not hire his lawyer or doctor in any such foolish fashion. If he is a sharper, he might try to obtain gratuitous service by some irregular contest; never through (so-called) fair competition. The people learn our ways, good or bad, from our technical journals, the publications of our societies and from intercourse with our individual members. They institute competitions because they are advised so to do by those whose personal interests are forwarded by such methods, or by those who honestly believe that they cannot exist without them. When we announce that an architect's abilities can be measured by an expert, or even by an expert consideration of a sketch, is it strange that the public come to consider his employment as a simple matter? What wonder that so childish a calling becomes a prey to the hard-headed and hard-working engineer, the glib sanitarian, or the enterprising upholsterer! "The fault is not in our stars but in ourselves that we are underlings."

The outlook, however, is improving. When hoary abuses reach the danger-line, it is an American custom to sweep them away. They are marked indications that a large and increasing body of practitioners, including many of the younger architects, are determined to regulate the competition system. Failing in this, their good sense may be relied upon to abolish it. It is an indirect tax on the whole body for the benefit of the few, and no less a tax because indirect. The comparison drawn with works of sculpture and painting is nothing to the purpose. In these the presentation for selection is the thing itself, or something from which a fair estimate of merit can be made. The fact that something of the sort is claimed to bring good results in foreign practice proves nothing. It may suit the Gallic or Teutonic temperament to do serious work under such conditions. The English have nothing favorable to show us. I could weary you with a list of their failures to regulate, and could quote many of their best and ablest men against the practice in any form. But even they have excuses that we have not in their stubborn adherence to precedent, good or bad, and in the restrictions of their social orders which prevent the advance or promotion of men of talent without position or influence. But we have outgrown the provincial habit of commending everything foreign, and why waste your time with the Old World's record of disgrace, dishonor and loss. Have we not American State-houses and court-houses and city-halls?

It is impossible to show by any reliable statistics the relation of expense to return in competitions, or the incidental losses which come through interference with regular work. But, judging from cases where such results can be estimated, there is no doubt that the accumulated cost far exeeds the sum of the gains. It is still harder to compute the physical and mental wear and tear of such needless excitement and anxiety on a class of men ordinarily subjected to the weight of heavy responsibilities and to the enervating effects of sedentary occupation. The time given to effectual rivalry is sadly needed for the professional study that should never be neglected, and in perfecting work in hand, which fails with us more from lack of thoughtful and careful treatment than from any other one cause. Competition brings out qualities of American practice and American architecture that we should exert our utmost efforts to avoid; such qualities as unreality, superficiality, caprice and extravagance (in design), irresponsibility, favoritism, intrigue, jobbery and speculation. Surely a dangerous array of faults to receive the encouragement of a profession of educated gentlement.—*The American Architect and Building New.*

CELERY FOR RHEUMATISM.

A medical authority says celery is a cure for rheumatism, and asserts that the disease is impossible if the vegetable be cooked and freely eaten. The fact that it is almost always put on the table raw prevents its therapeutic powers from becoming known. The celery should be cut into bits, boiled in water until soft, and the water drunk by the patient. Put new milk, with a little flour and nutmeg, into a saucepan with the boiled celery, serve it warm with pieces of toast, eat it with potatoes, and the painful ailment will soon yield. Such is the declaration of a physician who claims to have tried the experiment with uniform success. He adds that cold or damp never produces, but simply develops, the disease, of which acid blood is the primary and sustaining cause, and that while the blood is alkaline there can be neither rheumatism or gout. English statistics show that in 1 year (1876) 3640 persons died of rheumatism, which might have been cured or prevented by the adoption of the remedy mentioned. At least two-thirds of the cases named heart disease are ascribed to rheumatism and its agonizing ally, gout.—*Mining and Scientific Press.*

ELECTRICAL HARDENING OF STEEL.

A FRENCH technical journal anounces a new invention in the field of electrical metallurgy. It is a process which will give an extraordinary hardness to steel. It is reported that the inventor, a Mr. Taux, has executed the following experiments before a committee of engineers at Strasburg. A drill hardened by electricity pierced a shell twice as quick as a drill of the best steel hardened in the ordinary way. The drill was closely examined afterwards by means of a strong microscope and not the least injury could be discovered. An electrical hardened circular saw cut iron bars with surprising ease. With a cold chisel similarly treated a steel bar, one by one-half inch, was cut through and the operation was repeated five time on the same bar. Then a cast-steel plate, one-quarter inch thick, was cut with the chisel, the edge of which showed neither a fissure nor any other alteration afterwards. An electrically hardened table knife cut iron wire of one-eight inch diameter just as easy as a cotton string. The process is said to consist in the hardening of the red-hot steel objects in a conductive bath traversed by an electric current. If these tests should be confirmed by further practical experiences, the consequences would be of the greatest importance for the manufacture of tools.—*Electrical Review.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.
Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec'y. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.
Geo. W. Dickie, Pres. W. G. Curtis, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.
Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.
Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.
Adam Beck, Pres. M. V. Brady, Sec.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE regular monthly meeting of the San Francisco Chapter of the American Institute of Architects was held Friday afternoon July 10, at four o'clock.

The following members were present: Messrs. Babson, Sanders, Percy, Curlett, Pissis, Welsh, Curtis, Maybeck, and Everett.

Regent Reinstein, of the University of California, was present to confer with the Chapter concerning his scheme for a grand International Architectural Competition, to secure suitable plans for the future buildings and beautification of the University. The outline of such a competition as was drawn up by the Chapter on a previous occasion, was discussed at some length, and the desirability of future and more detailed information and advice was urged by Mr. Reinstein.

A committee of three, consisting of Messrs. Babson, Percy and Sanders, was appointed to act for the Chapter, and assist Mr. Reinstein with such advice and information as lay in their power to bestow, whenever called upon by Mr. Reinstein.

After some routine business the meeting adjourned.

A STRONG CEMENT.

A cement which will fasten stone, wood and other substances to metal, and will be entirely waterproof, has long been needed. Such an article, whose composition is a secret, is reported from Switzerland. It is a metalic composition, melts at between 450 and 500 Fahrenheit, and is then sticky like thin glue. It is said to have great adhesive power. To use it, one breaks it up in small pieces and melts it in an iron kettle. Many pretty and delicate objects can be made out of the material in plaster of Paris molds.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

STUDY for Small Court House, W. J. Cuthbertson, Architect.

BISHOP Memorial Chapel, Honolulu, H. I., Ripley & Dickey, Architects.

PROPOSED I. O. O. F. Orphanage, Gilroy, Cal., Herman & Swain, Architects.

A PUBLIC ESTIMATE OF ARCHITECTS' SERVICES.

THE comments of the Columbus *Dispatch* upon the refusal of certain Cincinnati architects to enter a competition for a state house is refreshing as its knowledge of an architect's services is vague. Of course, if it were a legal, instead of an architectural problem, this verdant newspaper would talk differently. Even its narrow scope of vision would see something ridiculous in the state asking written opinions from ten or more celebrated jurists and agreeing to accept and pay for the one it liked best. True, the jurist's opinion would only involve the employment of a ty pewriter lady for a few hours, while that of the architect calls for the work of skilled draftsmen for days (supposing this to be the basis of the *Dispatch's* argument when it speaks of measuring the state house with a tape line, adding a few columns of figures and calculating the utmost expenditure), and nothing to be allowed for the legal or architectural ability involved. After all, the profession is largely responsible for the estimate in which it is held regarding competitive opinions. While the legal profession has taught the public that no lawyer will open his mouth without a fee any more than you can get a piece of gum from the nickel-in-the-slot machine without shoving in the coin, the architectural profession has shown itself only too willing to take chances in the general lottery. The stand maintained by the Cincinnati architects is most commendable, and those in Columbus and elsewhere, by taking the same position, should teach the state government that architectural services mean something more than measuring the ground with a tape line.—*The Inland Architect and News Record.*

ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the past six months, it will be noticed there is an increase in both the number of buildings and the amount of the cost as compared with the first six months of last year.

FOR FIRST SIX MONTHS.—1896.

1896	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Addit'ns Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	5	11	$ 40,743	34	40	$ 177,309	13	13	$ 33,153	52	64	$ 251,205
Feb'ry ...	2	7	251,925	56	60	130,778	13	13	25,605	71	80	408,306
March ...	2	6	38,082	57	63	215,372	6	6	13,500	65	75	266,954
April.....	32	49	694,417	108	120	365,687	28	28	60,796	168	197	1,120,900
May.....	2	14	235,042	30	38	146,752	39	39	24,047	71	89	406,441
June.....	10	19	221,234	93	103	460,234	17	17	70,890	120	139	748,358
Total	53	106	$1,482,041	378	422	$1,496,192	116	116	$157,991	547	644	$3,136,224

To this amount should be added the further estimated sum of $500,000 where costs have not been given, which would make the total for the first six months, $3,636,224.

FOR FIRST SIX MONTHS.—1895.

1895	No. of Buildings	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Addit'ns Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	2	3	$ 50,025	31	33	$ 148,880	4	4	$ 20,847	37	40	$ 219,752
Feb'ry ...	7	9	59,336	38	42	122,880	6	6	12,071	51	57	194,287
March ...	6	9	170,489	76	81	208,081	8	11	17,418	90	101	395,988
April.....	7	9	163,333	57	69	274,080	24	24	87,411	88	102	466,824
May.....	3	7	36,043	85	90	385,377	19	19	33,357	107	116	468,053
June.....	2	5	74,775	67	85	288,791	11	11	24,012	80	101	385,178
Total	27	42	$ 496,001	354	400	$1,435,719	72	75	$195,362	453	517	$2,125,082

The business of the first six months for several years is shown by the following table.

1885—754	contracts	value,	$4,267,375
1886—670	"	"	2,486,633
1887—516	"	"	3,269,914
1888—437	"	"	2,719,820
1889—546	"	"	3,910,600
1890—556	"	"	3,793,858
1891—583	"	"	3,916,973
1892—411	"	"	2,942,496
1893—475	"	"	3,024,498
1894—524	"	"	2,456,424
1895—517	"	"	2,625,082
1896—644	"	"	3,636,224

THE HIGHEST BUILDING.

THE highest building in the world, not counting the Eiffel Tower and the Washington Monument, is the Cologne Cathedral. The height from the pavement to the top of the cupola is 511 feet. It is 511 feet long and 231 feet wide. It was begun August 15th in the year 1248, and was pronounced finished August 14, 1880, over six hundred years after the corner stone was laid.

BOOKS AND PERIODICALS.

THE LAW OF WAGES THE RATE AND AMOUNT by Jno. Richards, published by Industrial Publishing Company, San Francisco.

Mr. Richards is the editor of the Technical Journal *Industry* and has in this little book added to the many Theories of the Law of Wages and looks at the matter in a new and sensible light. He lays down the following four propositions or axioms as a foundation for his Theory:

First.—All manufactured articles of every kind are made up of three elements or components, namely:—material, wages and expense.

Second.—All staple articles of manufacture such as enter into the world's trade must have a nearly uniform or international value.

Third.—The *amount* of wages entering into the cost of manufactured commodities is also nearly uniform, irrespective of the *rate* of wages paid for their production.

Fourth.—The *rate* of wages depends mainly upon what workmen produce, varying with the efficiency of labor, and cost of material and expense.

Here the "amount of wages" is employed to designate that part of the cost of commodities that is paid for labor the balance being made up of cost of material and expense account the expense account meaning taxes, rent, insurance office service, advertising, lighting, heating, etc.

The term "rate of wages" is employed to designate the rate per day, week or month paid to workmen for their services.

These axioms are undeniable and the author shows pretty conclusively that whatever is added to the cost of any one of the three components of the cost of production must be deducted from one or both of the others—for the cost of staple articles must be the same all over the globe, so that one country can successfully compete with another. This being the case a raise in the rate of wages means a reduction in cost of material or expenses—and anything tending to reduce the cost of these components tends to raise wages. So that we see that taking off duties and reducing freights on raw material, will increase the rate of wages if "expenses" remain the same. If the employer is willing to economize in his office expenses, if rent is cheap, etc., this also increases the rate of wages, cost of material remaining the same.

From this Mr. Richards reasons that any arbitary attempted raise of wages by Trades Unions must be abortive unless the cost of material and expense can be reduced; implying we presume thereby that the wage earner should thoroughly look into whether these two components are getting more than there fair share of the total cost before going into the expensive luxury of a strike, if it be a strike for an increase of wage. Sympathetic strikes connot be measured by any such material measure.

This is a rough outline of the arguments of the book, to get completely at the author's argument it is necessary to study the whole.

The matter is presented in a clear practical manner: somewhat unscientific in expression but so that we can understand what he means.

Some of his deductions we must take exceptions to—*e. g.*:

"A fall in the values of the necessaries of life is the same thing as a rise in wages, and for the working man a much better thing, because more permanent."

According to this a Chinaman or Hindoo is much better off than an American, for the necessaries of life are much cheaper in their countries than in this. Experience teaches us that such a proposition is utterly absurd. The experience of the producer to-day proves to the contrary, every thing is cheaper in the United States to-day than they have ever been before at least in the memory of man, but

the people are a great deal worse off than they ever have been before—these are undeniable facts, so that any argument that leads to such a *reductio ad absurdum* must be wrong.

The fallacy lies as in most economic theories, we believe, in the attempt to treat the sentient human being, full of affections and passions as a machine, and coming under certain hard and fast laws applicable to matter but not to soul. The aristocracy of France believed that certain natural laws put them in the position in which they were, but their calculations were all knocked out by the French Revolution, the plutocrats of America to-day believe that certain natural laws govern their financial systems and wages system; but their calculations will be knocked out in a few years as badly as those of the French aristocrats of one hundred years ago.

To show how completely Mr. Richards fails to apply his own arguments he inserts a diatribe against "Trusts." To follow logically his argument trusts are the very best things for the wage earner. By concentration of effort they save considerably the cost of raw material and very considerably the "expense" as it is a well known axiom that a large establishment under one head costs a great deal less to run than a number of little ones—so that these two components of cost being so considerably reduced surely the amount of wage fund must be increased and so the rate of wage.

He states this system of Trusts is among many other bad things "complete Socialism, with Commerce destroyed". Commerce can look after itself, at present it is not an immitigated blessing to America—as almost all the profits of Commerce to-day go into foreign pockets—"*Complete* Socialism" is a mistake; to make it complete these trusts must be run by the people and for the people on a scientific basis; on which basis so far neither production nor distribution has been run.

The ELECTRICAL REVIEW has just completed its twenty-eighth volume, which contains some of the best newspaper work ever done by a technical journal. In addition to giving thoroughly reliable news of the progress of electrical work in all its branches, it has secured in the past six months a large number of unusually valuable and exclusive articles on important subjects. It printed the first official interview with Professor Roentgen and the only interview with Professor Salvioni, of the University of Perugia, Italy, who made some very interesting and remarkable discoveries on the Roentgen ray.

The *Review* was also the first to give an illustrated description of the new Westinghouse-Baldwin electric locomotive and obtained the first official interview with Thomas A. Edison on his new fluorescent lamp. This interview was illustrated with a sketch of the lamp made by Mr. Edison for the *Review*. The greatest honor that this journal has attained is that it was selected exclusively by Nikola Tesla for giving to the world the remarkable series of articles written by him, describing his wonderful progress in X-ray photography and in vacuum-tube lighting.

The electrical field is rapidly broadening and the class of people interested in its progress is as rapidly widening; the progress made from week to week is faithfully delineated for their benefit in the *Electrical Review* of New York City.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Contractor May Have Fraudulent Conveyance Set Aside.—A contractor having a mechanics' lien may sue to set aside as fraudulent a conveyance of the premises by the owner. His standing, said the court, is not that merely of a general creditor, who must first obtain a lien on the property of the debtor by the recovery of a judgment and issue of execution. His lien is perfect on complying with the requirement of the statute, and it is a specific lien on the particular property, similar in all respects to a mortgage.

Mahoney v. McWalters, Supreme Ct. App. Div., 38 N. Y. S. Rep. 256.

No Liens for Plans Without Superintendence.—An architect, who prepares plans for a building, and also superintends its construction, is entitled to a mechanic's lien for his entire services; but the preparation of plans alone, not supplemented with superintendence, does not give him a lien. It is the part the architect takes during the construction that draws his services within the lien law? And where only a portion of the work has been done, and the construction indefinitely suspended, the argument that the plans may be used eventually in the completion of the building does not assist the architect, for he never had a lien for his plans. If nothing had been erected, he would have had his damages, no more. He may have judgment for damages now, and the court can no further aid him.

Rinn v. Elec. Power Co., Supreme Ct. App. Div. 38 N. Y. S. Rep. 345.

Effect of Estimate By Architect.—Where the owner and a building contractor have agreed that payments shall be made as the work progresses on estimates to be made by the architect, such estimates have the force of findings between the parties, and are binding on them unless impeached for fraud.

Kilgore v. N. W. Tex. Bap. Ed. Soc., Supreme Ct. Tex , 35 S. W. Reporter, 145.

Action for the Price of Brick on Refusal to Accept.—A purchaser who, after the delivery of part of the brick called by a contract, refuses to accept or receive the balance, must pay the contract price for the brick delivered. And for damages for breach of contract by refusal to receive the balance, the seller has the right to show the market price of the brick at such time, and recover the difference between such price and the contract price.

Breneman v. Kilgore, Ct. Civ. App. Tex. 35 S. W. Reporter 202.

Purchase of Interest in Property Does not Extinguish Right of Lien.—The fact that, during the progress of their work, contractors claiming mechanics' liens purchased an undivided half interest in the property, will not extinguish their lien, where it appears that the owner had become insolvent, and unable to pay such contractors; that the deed was taken in order to secure a loan on the property, and complete the work; that the contracts were not surrendered or cancelled; and that there was no express agreement for discharge of the liens.

Blatchford v. Blanchard, Supreme Ct. Ills. 43 N. E. Reporter, 704.

When Right to Lien is Waived.—A mechanics' lien is waived or discharged where the parties enter into a special agreement inconsistent with the existence of the lien; as, for example, by the laborer or material man extending credit to the owner beyond the statutory period for bringing an action to enforce the lien.

Elenniken v. Liscoe, Supreme Ct. Minn., 66 N. W. Reporter, 979.

Rights of Purchaser of Effects of Insolvent Contractor.—Where one buys at sheriff's sale the property of a contractor who has failed, and assumes the place of the contractor, under a partially performed building contract, completes the work for him, he is entitled only to the amount which would have been due the contractor, who had been overpaid for the work already done by him.

Marshall v. Brick, Sup. Ct. Penn. 34 Alt. Rep. 520.

BUSINESS MOSAICS.

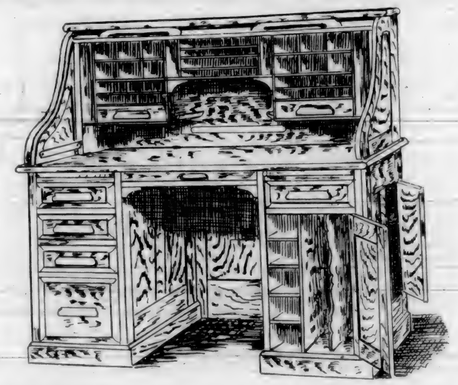
In calling attention to the advertisement of the John Douglass Co., 208 Ellis street, San Francisco, we have this to say, that you miss something worth seeing if you do not call and examine their absolutely noiseless tank and other improvements in the way of water closets.

Lawyer Quibble—What was the greatest trial you ever presided over, judge? Judge—Bringing up ten daughters, sir!—*Spare Moments.*

Architects that have the interest of their clients in view should not fail to specify the use of Dixon's Graphite Paint for roofs and all iron work—as it is unquestionably the best paint for that purpose now on the market. Don't keep in the old rut and use something else because you have been in the habit of so doing, but order the best and see that you get it.

"Is it cold out your way, Mr. Stubbub?" "Cold? Our billygoat won't eat a bite of anything but woolen underwear."—*Chicago Record.*

Oak flooring and Oak furniture are good things to have, if you get California Oak manufactured in California all the better; now this is what the San Francisco Manufacturing



Company does, therefor, that should be the place to go for your Oak furniture. Estimates for Oak flooring are furnished by Mr. Charles J. Bruschke, late of Chicago, 644–648 Bryant street, San Francisco.

He—Even the undertaker was overcome with grief. She—Was he a relative? He—No, but the deceased was the only doctor in the town.—*Ex.*

If you have not examined the merits of the Imperial Porcelain ware, manufactured by the J. L. Mott Iron Works, now is the time to do so, as Mr. M. S. James the Pacific Coast representative of the company has on hand a fine display of this ware at his show room, 27 Flood Building. Seeing is believing, therefore we recommend any in want of the best the market affords to call upon Mr. James.

"Before they build any more skyscrapers in this town," observed Uncle Al, picking his way gingerly across the muddy street, "my opinion is that they ought to pay a little more attention to scrapping the earth."—*Chicago Tribune.*

"Mrs. Beverly always does her hair up in such a beautiful twist." "Yes, but it reminds me of the rumor that her father once kept a pretzel bakery."—*Chicago Record.*

Chili Bar Slate Company furnish roofing slate, slate slabs, black boards, etc., etc. Estimates furnished on application. It should be remembered that this slate comes from quarries in El Dorado County, California, and is the only California slate on the market. At a time when the effort is being made to encourage home industry this is an important fact to consider, as the quality of the slate is all that can be asked for. J. A. Baxter, superintendent, room 24 Merchants' Exchange, San Francisco, Cal.

Aunt Susan—"He was a bad man, and I'm afraid he has gone to the hot place. Nephew George—Oh, well aunt, he won't mind it; he's used to scorching, you know.—*Ex.*

If you are in doubt what window cord to use, send for samples of Samson Spot Cord, warranted free from waste and imperfections. Address 115 Congress street, Boston, Mass.

Merchant & Co., Philadelphia, have published a charming leaflet entitled "Overhead," showing buildings in this State, as well as in other portions of the country where Merchant's Metal Spanish Tiles, made of copper, steel and tin have been used with very good effect—besides being attractive and ornamental, these tiles make a thoroughly storm-proof roof.

"Bill, there's a deal of poetry about the moon after all!" "Tom, there ain't no poetry in nothing when it gets down to its last quarter!"*Life.*

Dugan Bros., contractors for steam and hot water heating apparatus, 404–406 Mission street, San Francisco, are the Pacific Coast agents for H. B. Smith Co's. boilers, also Van Auken Steam Specialty Co's. various inventions relating to the use of steam; see their advertisement on page x of this Journal

"My," said the freckled boarder who came late to break, fast, "I wish I had my wheel kit here; I'd pump up these muffins."—*Chicago Record.*

If you are going a hunting it would be well to call upon Phil. B. Bekeart, 159 New Montgomery street, as you can get a good gun as well as a Hunter Cycle and between the two you would be sure of good sport.

CITY BUILDING NEWS.

Bartlett near 23d: Two-story frame; owner, Mrs. Lucy McPherson; architect, Martens & Coffey; contractor, Wm. Tegeler; signed, June 30; filed, July 1; cost $3940.

Bryant and Broadman Place. Frame building; owner, E. F. Smiddy; contractor, H. Munster; signed, June 29; filed, July 1; cost $6800.

Broadway and Hyde. Frame building for twenty-six flats; owner, Anna L. Whittell; architect, Clinton Day; contractors, Campbell & Pettus; signed, June 12; filed, June 12; cost $28,256.

Broadway and Hyde. Plumbing for twenty-six flats; owner, Anna L. Whittell; architect, Clinton Day; contractor, W. F. Wilson; signed, June 22; filed, June 23; cost $4613.

Broadway and Buchanan. Interior wood work; owner, Annie Donahue; architect, Clinton Day; contractors, Fink & Schindler; signed, June 10; filed, June 25; cost $3484.

Broadway and Buchanan. Plumbing, etc.; owner, Annie Donahue; architect, Clinton Day; contractors, Westphal & Volkmann; signed, June 25; filed, June 25; cost $1165.

Brannan near 4th. Carpenter work, etc.; owner, Rev. Denis Nugent; architect, R. J. Clinch; contractors, Cameron & McDonald; signed, June 26; filed, June 26; cost $6990.

Bush near Taylor. Three-story frame; owner, Mrs. Babette Federlein; architect, Martens & Coffey; contractor, R. Trost; signed, June 11; filed, June 13; cost $3600.

Castro near 19th: Three-story frame; owner, J. H. Berghauser; contractor, T. A. Bonn; signed, June 24; filed, June 30; cost $7350.

Church near 16th. Two-story frame; owners, Hampton & Baily; architect, A. C. Hampton; contractors, Dutton & Halm; signed, June 27; filed, June 27; cost $1175.

Clay near Walnut. Two-story frame except plumbing, mantels, etc.; owner, Annie L. Osborn; architects, Coxhead & Coxhead; contractor, Robert Currie; signed, June 15; filed, June 18; cost $4507.

Clay and Locust. Carpentry, brickwork, etc.; owner, Henry Fordman; architects, Salfield & Kohlberg; contractors, W. H. and T. Kinread; signed, June 23; filed, June 27; cost $6837. Excavations, etc.; contractor, C. Greise; cost $720. Painting, etc.; contractor, F. Wagner; cost $360.

Cortland and Andover. Alteration and additions; owner, Board of Educations; architect, C. I. Havens; contractor, A. H. McKay; signed, June 4; filed, June 11; cost $24,390.

Columbia near 26th. Water closets; owner, Board of Education; architect, C. I. Haven; contractor, J. H. McKay; signed, June 4 filed, June 11; cost $1140.

Devisadero near Oak. Two-story frame; owners, Mary A. Phelps, Ynez O. Phelps; architect, J. M. Curtis; contractor, Neil, Mulloy; signed, June 24; filed, June 26; cost $6500.

Dolores and 17th. Three-story frame; owner, College of Notre Dame; day's work; cost $20,000.

Eighth Ave. near C street. Cottage; owner, Mrs. Alma Bradeen; contractors, Leterell & Kartick; signed, June 30; filed, July 1; cost $1300.

Fillmore near Fell. Alterations and additions; owner, Rev. James Flood; architect, T. J. Welsh; contractor, John J. O'Brien; signed, June 15; filed, June 17; cost $1230.

Fremont near Howard. Reconstructing brick building; owner, W. F. Whittier; architect, E. R. Swain; contractor, James M. Kelley; signed, June 5; filed, June 11; cost $12,136.

Geary near Jones. Alterations, etc.; owner, William Sharp; architect, F. B. Wood; contractor, R. Currie; signed, June 6; filed, June 12; cost $1870.

Golden Gate Ave. near Polk; Alterations and additions; owner, Louisa E. Conrad; architects, Havens & Toepke; contractor, Peter J. Lynch; signed, June 12; filed, June 12; cost $1275.

Green near Baker. Two-story frame; owner, George H. Baker; architects, Mooser & Son; signed, March 25; filed, June 16; cost $2170.

Grove near Larkin. Water closets, etc.; owner, Board of Education; architect, C. I. Havens; contractor, William Linden; signed, June 1; filed, June 11; cost $4997.

Haight near Fillmore. Alterations and additions; owner, George Wendel; architects, Laist & Schwerdt; contractor, D. Currie; signed, June 22; filed, June 25; cost $5275.

Haight street, No. 1166. Alterations and additions; owner, A. Lopresti; architect, W. J. Cuthbertson; contractors, Perry & Green; signed, June 10; cost $800.

Howard near 17th. Two-story frame; owner, Peter Windeler; architects, Martins & Coffey; contractor, Carl Schutt; signed, June 22; filed, June 22; cost $5300.

Hyde near Turk. Three-story frame; owner, Jabob Silverstein; architect, A. J. Barnett; contractor, William Plant; signed, June 18; filed, June 20; cost $3300.

Jackson near Leavenworth. Two-story frame; owner, G. A. McCaw; contractors, Marcuse & Remmel; signed, June 11; filed, June 28; cost $4400.

Leavenworth near Geary. Alterations and additions; owner, A. Wisel; architects, Salfield & Kohlberg; contractor, J. J. O'Brien; signed, June 10; filed, June 20; cost $4780.

Market near 3d. Steel and iron work; owner, Claus Spreckels; architects, Reid Bros.; contractor, Pacific Rolling Mill Co.; signed, June 1; filed, June 13; cost $4681.

Market near Stewart. Brick work, etc., for six-story brick; owner, Harriet McCarthy; architects, Shea & Shea; contractor, W. J. Field; signed, June 6; filed, June 6; cost $14,772.

Market near Stewart. Carpentry work, etc.; owner, Harriet McCarthy; architects, Shea & Shea; contractors, Leahy Bros.; signed, June 4; filed, June 19; cost $42,000. Terra Cotta work; contractors, Gladding, McBean Co.; signed, June 4; filed, June 19; cost $2228.

Mission and West Ave. Two-story frame; owner, J. J. Silk; architects, Mooser & Son; contractors, Westerlund & Sandeen; signed, June 15; filed, June 15; cost $3100.

New City Hall. Plumbing and gas-fitting; owner, City of San Francisco; architect, F. T. Shea; contractor, J. J. McGowan; cost $1885.

Pennsylvania near Yolo. Cottage; owner, Fred. X. Walker; contractor, Chas. Koenig; signed, June 26; filed, June 26; cost $1085.

Post near Powell. Carpentry, roofing, etc.; owner, S. F. Gas Light Co.; architect, Clinton Day; contractor, S. F. Kent; signed, June 1; filed, June 11; cost $10,229.

Post near Powell. Granite work; owner, S. F. Gas Light Co.; architect, Clinton Day; contractor, Raymond Granite Co.; signed, June 1; filed, June 12; cost $11,120.

Post near Powell. Excavations, brickwork, etc.; owner, S. F. Gas Light Co. architect, Clinton Day; contractors, Richardson & Gale; signed, June 1; filed, June 11; cost $22,582.

Post street No. 103-109. Elevator work; owners, Kohlberg, Strauss & Frohman, architect, Salfield & Kohlberg; contractor, W. L. Holman; signed, June 12; filed, June 17; cost $1750.

Post near Taylor. Additions and alterations; owner, Marion Levertritt; architects, Wright & Saunders; contractor, W. J. Field; signed, June 5; filed June 19; cost $2075.

Powell near O'Farrell. Excavation, etc.; owner, George D. Loy; architects, Herman & Swain; signed, June 25; filed, June 25; cost $2-00;

Seventeenth and Caroline; Two-story frame; owner, George Sutter; architect, H. Hess; day's work; cost $2700.

Scott near Green. Two-story frame; owner, Mrs. Chas. B. Stone; architect, E. A. Mathews; contractor, A. S. Ruch; signed, June 10; filed, June 10; cost $5500.

Stockton near Vallejo. Two-story frame; owners, Hirsh Bros.; architects, Salfield & Kohlberg; contractor, Robert Currie signed, June 13; filed, June 15; cost $6400.

Stockton near Vallejo. Plumbing, etc.; owner, Hirsch Bros.; architects, Salfield & Kohlberg; contractor, Henry Hufschmidt; signed, June 13; filed, June 15; cost $675.

Stockton near Filbert. Alterations; owner, John Nollhenins; contractor, H. Grieb; signed, June 20; filed, June 24; cost $1450.

Stockton near Jackson. Carpentry work etc., for two-story brick; owner, M. Schuppert; architect, A. C. Lutgens; contractor, F. V. Steinman; signed, June 30; filed, July 1; cost $1640. Brick, iron and stone work; contractors, Fennell & Son; signed, June 30; filed, July 1; cost $3685.

Sutter near Jones. Brick for alterations; owner, Henry Kohler; architect, H. Geilfuss; contractor, F. Wagner; signed, June 26; filed, July 1; cost $1797. Plumbing; contractor, H. Williamson; cost $4910. Painting; contractor, Schafer & Slade; cost $1020. Raising and moving, etc.; contractor, Silas Carle; cost $10,699.

Sutter and Hyde. Tin and copper work for six-story brick; owner, Dr. J. Rosenstirn; architects, Salfield & Kohlberg; contractor, Jos. F. Forderer; signed, June 10; filed, June 16; cost $2660.

Sutter and Hyde. Cast and wrought iron work; owner, Dr. J. Rosenstirn; architects, Salfield & Kohlberg; contractor, Otto Schrader; signed, June 8; filed, June 16; cost $3281.

Taylor and Clay. Three-story frame; owner, John Rohde; architects, Martins & Coffey; contractors, Lorenzen & Fevrier; signed, June 23; filed, June 24; cost $4964.

Third Ave. near Point Lobos. Two-story frame; owner, F. Nusbaum; contractor, A. Dahlberg; signed, July 1; filed, July 1; cost $2600.

Twelfth near Isis. Alterations and additions; owner, Kate Mars; architect, W. H. Wharff; contractor, F. A. Blanchard; signed, June 9; filed, June 9; cost $1745.

Twenty-sixth and Point Lobos. To build; owner, J. J. Kenny; architect, Winfield Kenny; contractor, M. J. Scott; cost $3000.

Van Ness Ave. and Clay. Marble and bronze work; owner, Claus Spreckels; architect, Reid Bros.; contractor, Patterson & Eisele; signed, May 29; filed, June 13; cost $75,025.

Van Ness Ave. and Clay. Electric and gas fixtures; owner, Claus Spreckels; architects, Reid Bros.; contractors, Thomas Day & Co.; signed, June 15; filed, June 27; cost $7757.

Van Ness Ave. and Clay. Bronze andirons, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractor, F. Happersberg; signed, June 16; filed, June 27; cost $9092.

Van Ness Ave. and Fulton. Mill work, etc., for three-story frame; owner, I. Selig; architect, M. J. Lyons; contractor, W. H. and T. Kinread; signed, June 26; filed, June 29; cost $15,750. Plumbing; contractor, R. Rice; cost $2660. Painting; contractor, D. Zeliuksy; cost $1200.

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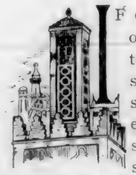
½ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

A MULTI-MILLIONAIRE is putting a twenty-thousand-dollar sidewalk in front of his residence. How does that compare with the nation's sidewalk in front of its post-office site illustrated above.



IF our readers will compare the above view of the existing condition of the property of the Federal Government with the view shown in our last month's issue, he will see that the government is enlarging and extending its advertising plant. A second story has been added to the wooden fence surrounding the site for San Francisco's new post-office building, and in addition to its previous

announcements of physic and flour, beer and tobacco, it it now engaged in booming a new brand of baking powder.

As the prosperity of the country is becoming beautifully less year by year, and the poverty and degradation of the laboring classes is augmenting in a corresponding degree, it is possible that the government is seeking to off-set the resulting idleness and discontent, by itself embarking in the advertising business, with a hope that it may possibly stimulate business.

We would like to call attention to the fact that private individuals are prohibited by our municipal ordinances from erecting or maintaining any advertisement frame or fence which is more than ten feet above the ground. Of course the Federal Government is superior to any restrictions imposed by local legislation, and has the power to deface the appearance of our streets at will; nevertheless it would ses a very desirable example of respect for law, by conforming to reasonable regulations, instead of haughtily ignoring them and allowing them to be contemptuously violated.

While on the subject of our new post-office site, we would like to notice the fact that according to the columns of the daily press, there is now sojourning amongst us, an agent of the Treasury Department, who has extended an invitation to all dealers in building materials to furnish samples of their wares, to aid the Supervising Architect of the Department in selecting suitable materials of which to construct the new post-office, which the authorities have for some years past been asserting is their intention to erect.

It seems to us rather puerile to ask for samples of bricks and samples of lime and cement. Surely the department is capable of deciding upon a standard of quality in the matters, and of specifying that any materials not of the quality demanded shall be rejected, thus leaving the field open to all manufacturers who can furnish goods of the required standard. If it takes the course of chosing a particular make of bricks and a particular brand of cement, it will certainly be an arbitary method that will not give the best results, and if it does not propose to act in this arbitary manner, it is simply putting dealers to useless inconvenience in submitting samples.

If we were called on for an opinion as to why this request was made, we should quote from one of Victor Hugo's novels: he says in *Notre Dame de Paris*, that when an audience is becoming clamorous for the play to begin, and the management is not ready to begin the play, the only sure way of pacifying the audience, is to announce that "the play is to begin at once;" this invariably quiets the audience, and gives the management time to prepare. This is possibly a parallel case; the commencement of work on the post-office has time and time again been publicly announced; as the date is long since passed, and there is still no probability of work being begun, some sop must be thrown to the public, and an agent is sent here to announce that "the play is about to begin."

UGLY BUILDING.

SOME day we shall reach the point of enlightenment that was attained by a certain pagan race on the Aegean some twenty-four centuries ago, and shall speak out boldly thus: "He that builds an ugly building robs me of so much blue sky. He shall restore my sky or go to prison."—*Baptist Standard.*

A CURIOUS discussion has lately taken place in one of our daily papers, as to the truth of certain statements made in the *Arena* by Jno. E. Bennett in an article entitled "Is the West Discontented? Is a Revolution at Hand?" in which he states that "The West IS discontented. It is a simmering, seething cauldron of discontent" and gives Los Angeles, where he is living, as an example.

He gives the state of mind of his neighbors in the same street as he is living and he finds them all discontented from his standpoint.

In regards to discontentment in the building trades and architectural profession, he has this to say:

"There is a great deal of building going on at present in the city; let us inquire among the architects. None of them are busy, yet almost every man has one or more jobs in his office, through which he manages to keep the establishment afloat. We remark to him that there is plenty of building going on in town just now, and he replies: 'That's so, but the architects get little of it.' Ask him why and he tells you that the contractors do most of it, furnishing their own plans, enabling the owners to avoid the services of an architect. The business, too, is cut up, he tells us. It is impossible any longer to get a living remuneration for the services of an architect. The fees of five per cent on the cost of the building, fixed by the Architects' Association, are lived up to solely by the members of that association, and if suspicion is correct many of these default in the observance of this rule. Outside of the association no one pretends he will let a job go because he will not take less than five per cent. "You can get an architect to design you a $10,000 building for $50. You will have to look sharp, though, that he does not make it up on you through collusion with the contractor, for he will do it if he can.'

"If the contractors are doing the bulk of the work, we reason that these, at least, must be well employed, and with excellent returns. Yet when we move among them, what do we find? The number so great, and the competition so intense, that a $1,500 building will be figured on by twenty-two contractors! Ask them if they are discontented, and if so, why? They will say there are too many men in the business; too many contractors for the work; that half of them ought to be doing something else; that a contractor can't get a job unless he finds an owner who wants to build or he can become the favorite of an architect.

"But the building trades are not alone in their discontent; it is in all trades, in all professions. A few are doing well; the many are struggling, barely keeping down expenses."

In San Francisco prices have not quite got so low as in Los Angeles and yet we will find at least the great majority of men in the building trades discontented and thoroughly disgusted, even those who are quite busy, don't seem to be happy over it. Ask them and they will tell you "Yes I'm busy, but things are cut down so there's nothing in it." If discontent then is so rife in San Francisco, where prices are higher than in Los Angeles it would be reasonable to suppose that discontent is still greater in Los Angeles, and we shall have to admit the truth of Mr. Bennett's statements.

However, the San Francisco *Examiner*, which has taken up the cudgels against *The Arena*, states "There is no difference of opinion amongst the well informed as to the condition of Los Angeles, all are agreed that the city is flourishing and its people well to do and reasonably happy."

This statement altogether depends upon what one considers as *reasonably* happy. A man is happy or he is not happy—happiness has nothing whatever to do with reason, being one of the passions, so "reasonably happy" is an incomprehensible term.

In confirmation of the above statement it publishes telegrams from "representative" men.

The representative men are the Mayor of Los Angeles—who would, holding the position he does, not dare to admit that the city he represents in such an honorable position is a discontented city, and he should have been excused.

Next come W. C. Patterson, President Los Angeles Chamber of Commerce. It would hardly do for the President of the Chamber of Commerce to admit that Los Angeles is a discontented city officially. "Nothing succeeds like success" and it is necessary for the sake of commerce to keep up the standard of Los Angeles as a contented prosperous city.

Next comes J. S. Bancroft, Ex-President Los Angeles Typographical Union and delegate in Council of Labor—in a paragraph picked out by the *Examiner*, he says: "The reports from the various labor organizations represented in the Los Angeles County Council of Labor are, *in the main*, to the effect that at least a *fair* state of trade exists." The italics are ours.

We cannot call this a very enthusiastic report or a very roseate view of affairs; "a fair state of trade" doesn't appeal to the imagination as denoting anything rushing or indicative of a mass of contentment, especially when the *fair* state of trade is reported only "in the main," there are evidently some reporters that report trade as bad—if these report trade as good surely Mr. Bancroft would have mentioned them.

There are other protests against *The Arena's* article coming from newspaper men, these depend on the advertising community chiefly, and it would not do to antagonize that class; so they are excused, being interested parties.

Then there are hotels and theatre proprietors and railroad men, these all depend on travel and it would not do to have Los Angeles advertised as filled with a large discontented class. The rich tourist upon whom they depend, doesn't wish to come among such a class, he wishes to have pleasurable surroundings.

Eliminating all these parties we have G. J. Griffith a ranch owner, whose picked paragraph says: "Probably this is the most prosperous city in the country to-day, and the healthful growth of the place is assured beyond question." Mr. Griffith carefully ignores the fact of their being a large body of discontented people in Los Angeles, but branches out into these generalizations, which are issued almost every day in every city by enterprising real estate agents. He calls Mr. Bennett's statement "a piece of flagrant misrepresentation" but gives not an iota of evidence proving it is so.

C. W. Pendleton—who does not give his business and therefore is presumed to be a gentlemen of leisure—makes this statement picked out by the *Examiner* as specially pertinent being printed upside down: "The article is out of all reason, and shows a disregard for the truth which relegates old Ananias to the shades of has-beens. It is a needless misrepresentation, and one which can have but the single result of rebounding to the discredit of the author."

Which is simply a tirade against the author and proves nothing. He says also that "Los Angeles is good enough for anybody," this, Bennett nor nobody else disputes, it's the conditions which make discontented people therein which are not good enough for anybody.

The last is from Frank P. Flint, Attorney-at-law, who says: "This place stands to-day one of the most influential cities of the West, and one whose prosperity has heretofore been pointed to as an object for envy." This also goes to prove nothing, except the melancholy fact that such an influential city and one whose prosperity is an object of envy, should be filled with such discontent as that proven by Mr. Bennett, and raises the saddening thought of what a terrible amount of misery and discontent must be in those cities which are not objects of envy. He calls Mr. Bennett's articles a "palpable exhibition of misdirected effort." It might be even so, and yet the facts he exhibits be true.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 1.

IT is the object of these papers to present to our readers all that has been done in the way of housing the class which form the majority of our citizens—those of small incomes.

So far in the Pacific Coast States we have not got into the over-crowded state which prevails in the East and in the old countries. It is well, however, to be prepared for it—for the incomes of the majority of our people have become so low within the last two or three years that those who formally occupied seven rooms have come down to three, those who occupied three, to one.

We shall take as the basis of our remarks the Special Report of the Commissioner of Labor on the Housing of the Working People, and shall cull from its pages liberally, and shall follow its arrangement generally. The book is divided into twelve chapters:

"Chapter I, is on the scope and character of the present inquiry. Chapter II, while disclosing general sanitary organization in England, France, Belgium and Germany, gives special attention to the local regulations of metropolitan centers within these countries and the United States. A comparative method of social study is the only really valuable one, and the disclosure of what is being done in one center is a positive advantage to all the others. Local conditions, of course, may vary, but the efficiency of general lines of policy is the point to guage. Chapter III deals with expropriations for purposes of public health in their legal aspect and financial and sanitary results. The facts cited are useful both for precept and for warning. Chapter IV treats of certain results of sanitary reform in a few metropolitan centers at home and abroad. Chapter V deals with sanitary aid societies and their work. Chapter VI sets forth the building regulations of representative cities in different countries with the aim of showing what provision is made for guarding against the perpetuation of structurally defective habitations. Chapter VII treats of public intervention in the housing of working people, giving the most notable laws which have been passed and furnishing data showing the encouragement accorded by municipalities,

savings banks, etc. Chapter VIII presents information in relation to rent collecting and other agencies for improving the living environment of working people. Chapters IX, X and XI deal with model housing, and treat respectively of block buildings, small houses, and lodging houses. These three chapters constitute the major part of the present volume. The prominence given them is justified, because it is important to know whether model effort has accomplished or can accomplish useful work. Hence a history of the operation and financial results attending the activities of model enterprises has received conspicuous attention. There exists an undoubted sphere of effort for them in all communities, and for this reason great pains have been taken to present all the facts (even to technical details), with plans of various types of buildings, so that any community, corporation, or individual contemplating action may find in these pages a choice of that particular form of enterprise which will best suit local conditions. It is not pretended that a complete census of model enterprises has been made, but it is believed that almost all of importance in Great Britain, France, Belgium, Germany, the Scandinavian countries, and the United States have received mention. It may be a revelation to some to know that so many exist. The general lesson gleaned from a study of the facts in these three chapters is encouraging. It shows that proper housing of the great masses of working people can be furnished on a satisfactory commercial basis. * *

"Chapter XII is entitled 'Economic and ethical aspects.' The caption may suggest more than perusal of the text will justify. Academic discussions have no part in a statistical investigation such as this; hence only the economic and ethical features of the facts revealed by the inquiry have received treatment. Chapter XIII summarizes briefly some of the more important conclusions.

"The aim of this report is to communicate information which will be serviceable to all persons who are in any way concerned with house sanitation, to architects, builders, philanthropists, or public spirited citizens, and especially to all who may desire to promote the growth of model housing enterprises. The best methods of rendering dwellings habitable, of eradicating slums, of guaranteeing the sanitary character of new buildings, of multiplying model dwellings, and of developing popular proprietorship of homes are presented, not in theory, but as they exist in fact."

The second chapter is on Sanitary Laws and commences in this wise:

"Wisely conceived and well enforced sanitary laws are a supreme necessity of modern civilization. The let-alone policy, if admitted, would mean that urban populations would periodically suffer from fearful epidemics, and that a vast number would fall into pauperism and moral degradation under the irresistible impulsion of unhealthy environments. Legislatures have thus seen the necessity of endowing metropolitan centers with large powers for their self-protection. In New York these powers are especially drastic. Recently a better code has been established in London, but most of the continental countries have not yet fully risen to the occasion."

Which goes to show that the policy of *laissez faire* or individualism is impracticable in the social stage in which we now are and admits the necessity of state interference in cases where people are not able to help themselves, not only for their own protection but for the protection of their neighbors. The idea that a man may do what he likes with his own or with his private property, is shown to be now antiquated, and laws circumscribing his powers in that direction are admitted to be a public benefit—that is the idea of sociality—that society must be protected against any individual who imagines that he may do what he likes with his own even though it causes evil to his neighbor. This is now admitted in sanitary matters, matters pertaining to the health of the body, and it must be admitted in regard to other matters before we obtain a decent sociality.

All cities have now their departments of health, which have powers to protect society against the careless or criminal individual.

"The head of the New York health department is the board of health, which consists of the president of the board of police, the health officer of the port, and two officers to be called commissioners of health, one of whom must have been a practicing physician for at least five years preceding his appointment. The other commissioner, who is not a physician, shall be the president of the board. Both commissioners hold office for six years.

"The department of health is divided into two bureaus. The chief officer of one bureau is called the sanitary superintendent, who at the time of his appointment must have been for ten years a medical practitioner and for three years a resident of the city. The chief officer of the second bureau is called the register of records, and this bureau deals with vital and other statistics. The sanitary superintendent enforces the provisions of the sanitary code and the laws and the ordinances relating to tenements and lodging houses, etc.

"The board of health has executive, judicial, and legislative powers. It establishes its own sanitary code, which is supplementary to the laws and ordinances relating to the subject. It can order the inspection of any premises at any time, and is empowered to call upon the police authorities to enforce sanitary laws and regulations. Refusal to obey orders or to conform to regulations is considered a misdemeanor, and the responsible parties, in addition to being subject to punishment therefor, incur a penalty of $250, to be sued for and recovered by the board in any civil tribunal in the city. Wherever a minimum penalty for refusal to obey or for a violation of an order, regulation, or ordinance is not fixed, the amount recovered shall not be less than $20, the exact sum to be fixed by the judge presiding at the trial.

"The board can order a house vacated when unfit for human habitation by a vote of three out of the four members. In all such cases in the past there has not really been a dissenting voice. An order to vacate must be posted conspicuously in the interdicted building or part thereof, and must be personally served on the owner, lessee, agent, occupant, or any person having charge. If such person can not be found, service of the order may be made through the mail. Orders to vacate are by no means infrequently made. Seventy-five of them were issued between the latter part of May and the middle of July, 1893. The sanitary superintendent has a force of forty inspectors continuously at his service. Twenty of them are physicians and the remainder are technicians in the department of service to which they are assigned.

"The members of the board of health, the sanitary superintendent, or any of his subordinates, may enter upon, examine, and survey all grounds, building, apartments, etc., and inspect their safety and sanitary conditions, making plans, drawings, and descriptions. The board may publish a report of the sanitary condition and results of such inspections in so far as it considers the publication to be useful.

"Until June, 1891, the control of light and ventilation, plumbing and drainage of all new buildings belonged to the sanitary department of the board of health. At that date, however, the division was transferred to a new department of buildings. The powers of the board, however, still extend to the repairs of buildings, houses, and other structures, and the sanitation of new buildings, sewerage, drainage, plumbing, lighting and ventilation of all structures after they have once been completed.

"The law requires that all work must be done by registered plumbers; that all persons pursuing this craft must register under such rules and regulations as the board of health may prescribe. It is unlawful for any other than a registered plumber to carry on the plumbing business in the city.

"It is made the duty of the police department to promptly notify the board of health of any threatened danger to human life and regularly to report all violations of health laws and ordinances, and to give any useful sanitary information. The execution of orders is committed to the police department, and at such times police officers have as ample power and authority as when obeying any prescription of the board of police or when acting under the warrant of a judge. They are responsible for their conduct, however, to the board of police, and not to the board of health.

"For the purpose of carrying out the provisions of the law in relation to tenement and lodging houses, as well as to enforce the provisions of the sanitary code, forty-five policemen, who are men of experience and who have at least five years' service, are detailed for work under the board of health. Fifteen of these are occupied exclusively in the enforcement of laws relating to tenement and lodging houses. These officers are known as the sanitary company of police, and report to the president of the board of health. The latter body pays their salaries and reports any cases for discipline back to the police department. Should objections be made on the ground of inefficiency, another detail must be made. These officers take pride, as a usual thing, in their work. They are entitled to retire after twenty years' service, but, as a matter of fact, they rarely do so. While on inspection duty each sanitary policeman carries a memorandum book in which he notes any cause for complaint. The following is a list of subjects upon which he has to report:

Location—Number of families; number of occupants; privy accommodations—number of sittings; housekeeper on premises; owner on premises.

Cellars, if occupied for dwelling purposes—Whether floor is water-tight; whether the ceiling is plastered.

Yards—Whether properly graded; whether sewer connected.

Front areas—Whether graded; whether sewer connected; sanitary condition.

Waste pipes—Whether joints are connected with cement or lead; whether trapped; whether ventilated two feet above the roof.

Soil pipes—Whether joints are connected with cement or lead; whether trapped.

General inspection—Cellars; stairs and balusters throughout the house; walls and ceilings of halls and rooms throughout the house; floors of rooms and halls throughout the house; slop sinks, whether trapped or ventilated; wash basins, whether trapped and trap ventilated; bath tubs; whether trapped and trap ventilated; Croton supply pipes, roof; wash roof; skylights; leaders; eaves gutters; chimneys; fire-escapes; water-closets, whether trapped and trap ventilated; privy vaults; school sinks; privy houses; cesspools; urinals, whether properly flushed; clothes poles; fences; hydrants in yards; airshafts.

Ash receptacles—Whether sufficient; in sanitary condition; whether kept within stoop line.

"The sanitary policeman rectifies minor nuisances, but those which can not be dealth with, either because of the unwillingness of the responsible party to make the necessary ameliorations, or because of lack of technical knowledge, are reported to the board for action. If the case is a simple one, an order is immediately made, but where technical matters are involved, one of the regular sanitary inspectors is detailed for inquiry and report before final disposition is made. One of the most important duties of the sanitary police is to make night inspections of tenements and lodging houses, to see that overcrowding does not occur. The inspection of tenement houses, obligatory at least twice each year, is made by the sanitary police force.

"Citizens' complaints relating to tenement houses are referred to either a sanitary police officer or a sanitary inspector, according to the nature of the complaint. If, upon examination, the nuisance is found to require an expert examination, reference is made to the sanitary inspector for further examination and report, with recommendations. Where urgency exists, twenty-four or forty-eight hours' time is allowed for compliance with the terms of the order. Where there is no special need for haste, five days is the ordinary limit allowed. In the former case the sanitary police officer is sent at once to the responsible person to give information of the terms of the order and the time set for its execution. At the end of the allotted period he visits the premises, and if the nuisance remains unabated or the work has not been commenced his report of the facts to the board involves the issuance of a new order of arrest for non-compliance.

"Technical sanitary inspectors are required to have a thorough knowledge of their districts and to make a general inspection of them from time to time and to make special reports upon localities which may become dangerous to life and health. To them are referred citizens' complaints where technical knowledge is necessary.

MARK HOPKINS INSTITUTE OF ART, CALIFORNIA SCHOOL OF DESIGN.

THE San Francisco Art Association, with a view of encouraging and fostering Art, will inaugurate evening classes of Drawing from the Antique and Life, at the opening of the August term of the school year, under the direction of Mr. John A. Stanton.

These classes will be established for the benefit of all those following artistic pursuits, and who are unable to take the regular day course. Teachers in the public schools can avail themselves of the opportunity of obtaining a knowledge of the most approved methods in Art Instruction. Architects, Lithographers, Engravers and all those who

follow the applied arts, will also welcome the establishing of these classes.

The successful operation for twenty-five years of the California School of Design, the gradual improvements in its methods and the growth of its usefulness, make the management confident of the success of this innovation.

The terms will be moderate, and every effort will be made to make the classes popular. The pupils of the evening classes may avail themselves of all the privileges to which students of the school are entitled, and will be permitted to enter all competitions.

SCHOOL SESSIONS:—The first term will open first of August, and close the fifteenth of December. The second term will open on the second of January, and close on the fifteenth of May.

CLASSES CONVENE:—Monday, Wednesday and Friday evening from 7:30 P. M. to 9:30 P. M. Entrance, California and Mason streets.

TERMS:—Antique Classes, $3 per month, or $10 per term. Life Class, $5 per month, or $16 per term. Entrance Fee, $1.00, to be applied to Contingent Furniture Fund.

By Order of the Committee of the School of Design.

W. G. STAFFORD,
Chairman.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.
SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
ADAM BECK, Pres. M. V. BRADY, Sec.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PERSPECTIVE View, Competitive Design, Proposed Municipal Building, cor. Washington and Kearny streets, San Francisco, W. O. Banks, Architect. Awarded first prize, $750.

COMPETITIVE Plans for Criminal Court Building at San Francisco, submitted by Wm. Mooser associated with Wm. Mooser, Jr., awarded second prize, $500.

COMPETITIVE design for proposed Criminal Court Building, submitted by Havens & Toepke, Architects. Received third prize, $250.

VAULT at Home of Peace Cemetery, Edw. Kollofrath, Architect.

IN our next issue the accepted plans for the Criminal Court Building, by Shea & Shea, will appear.

REDESIGNING OBJECTIONABLE BUILDINGS.

AMONG many plans for making architecture once more an art appreciated by the people, the T Square Club of Philadelphia has hit upon one which will do much to accomplish this object in a small way if it is carried out as proposed. A medal has been offered to be competed for by members of the T Square Club for the "redesigning" of some of the most objectionable buildings in Philadelphia—a most prolific field of work by the way. A photograph of the building with the approximate requirements for which it was intended will be furnished the competitors, and the medal awarded for the best solution of the problem. The publication of these designs, as proposed, will furnish an object lesson more readily comprehended than simple criticism. The plan has the great advantage of offering a remedy besides pointing out the faults of a design. There

2nd PRIZE

COMPETITIVE · DESIGN ·

FOR

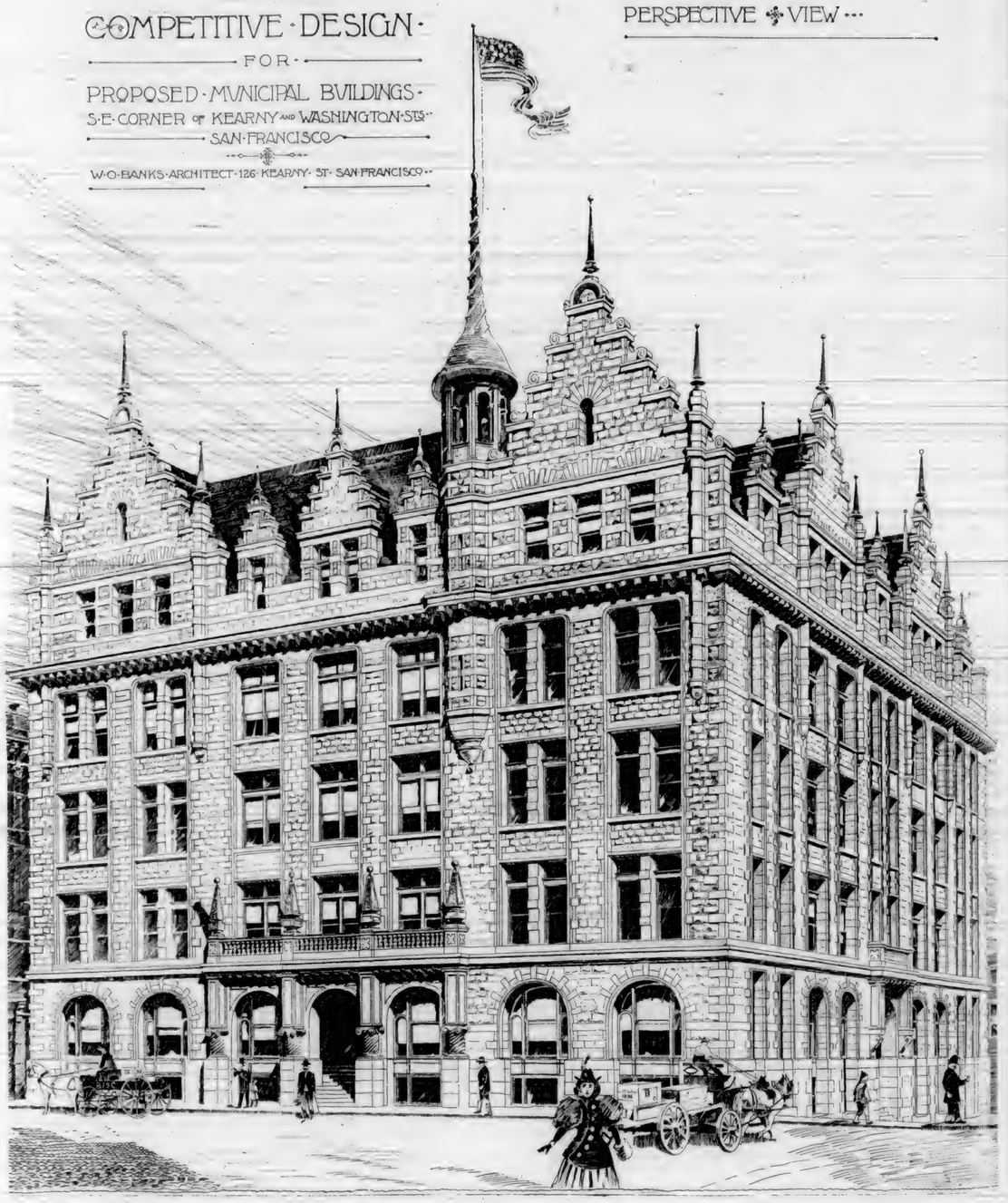
PROPOSED · MUNICIPAL BUILDINGS ·

S·E· CORNER OF KEARNY AND WASHINGTON STS··

SAN·FRANCISCO

W·O·BANKS·ARCHITECT·126·KEARNY·ST·SAN·FRANCISCO··

PERSPECTIVE ✣ VIEW ···



4TH PRIZE

:DESIGN:FOR:PROPOSED:
:CRIMINAL:COVRTS
:BVILDING::CITY:AND:COVN=
:TY:OF:SAN:FRANCISCO::
:SVBMITTED:BY:

:HAVENS:AND:TOEPKE:
:ARCHITECTS:
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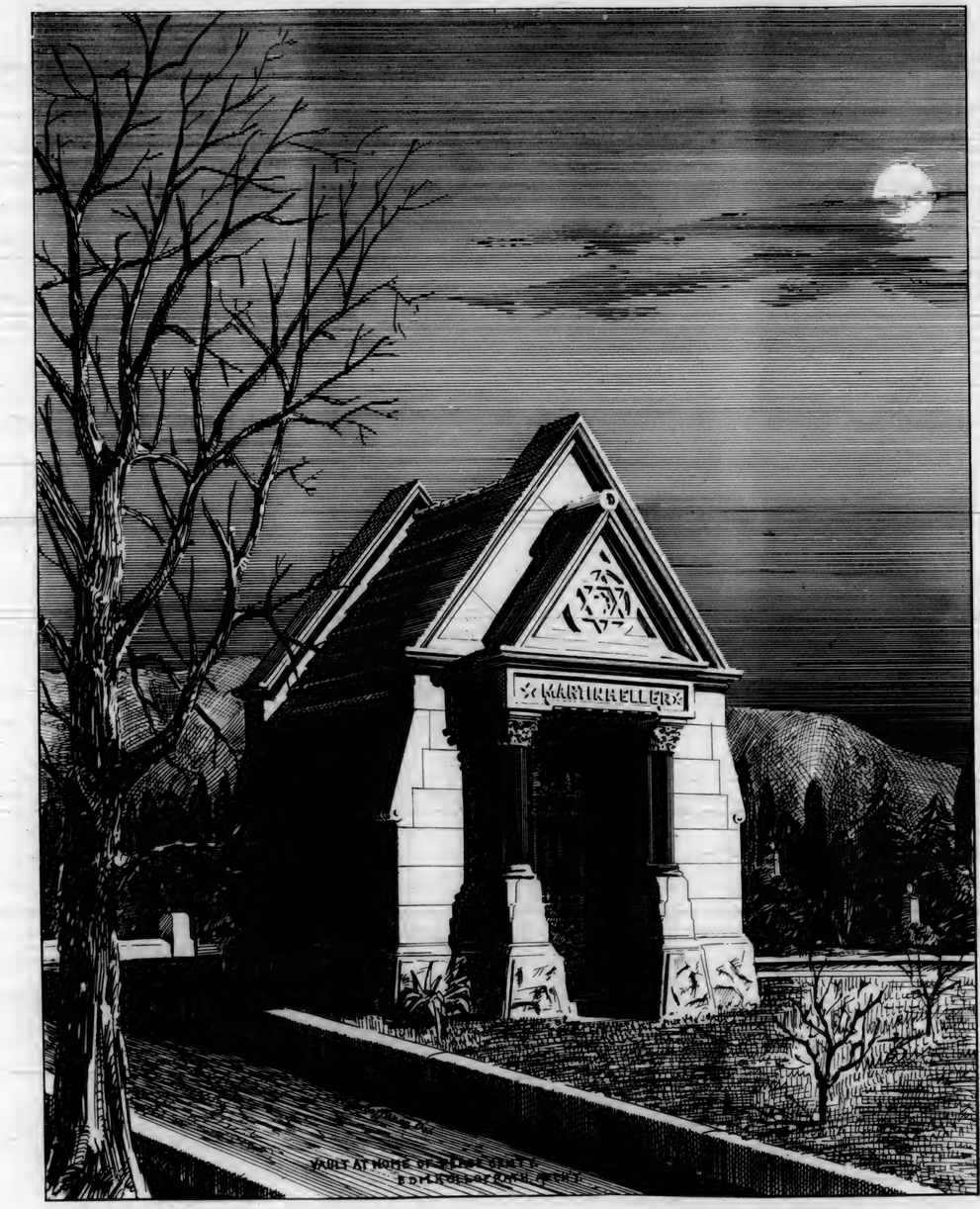


3rd PRIZE.

COMPETITIVE PLANS
For
CRIMINAL COURT BUILDING:
At
SAN FRANCISCO.

Submitted By Wm MOOSER, Associated Architects.
Wm MOOSER JR.,

PERSPECTIVE

is no grievance more commonly met with among artists than the complaint against the "critics." "Destructive criticism," and especially by writers who are not producers, counts for little among artists. The plan of the T Square Club is not exactly what is usually termed "constructive criticism," but it has the merit of presenting the ideas of men who from training and experience as producers are capable of looking at the work in hand from the artists' point of view. Comparison of good and bad, with a competent explanation of the reasons for the excellence of the one and the failure of the other, will frequently awaken the dormant taste of persons who would otherwise take no interest in such matters; or if interested, lack the habit of mind to make comparisons for themselves. It is suggested by members of the T Square Club that one advantage offered by this plan is the enlightenment of that class in the community who are dissatisfied with bad architecture but do not know why it is bad or how to remedy it, and in consequence passively acquiesce, and are imposed upon. This is a chivalrous motive and deserves commendation.—*The Brochure Series.*

ABOUT PAVING MATERIAL.

ALTHOUGH asphalt has come into pretty general use for street paving, there are some serious objections to it, and it is evident that we have yet to discover something which will be better adapted for street paving that anything now in use. Asphalt is expensive, and in damp weather, or a moist climate, is so slippery as to be unsafe. As a test on the latter point a record was kept by the city engineer of London, England, of the accidents arising from the condition of the streets, for fifty days, with the following result: Asphalt 1066; granite 719, wood 542. These figures indicate a serious objection to asphalt in such a climate as that of England.

The city of Halifax, Nova Scotia, has been making some experiments in paving materials for sidewalks, and the city engineer, in his report, recommends concrete on level streets, and asphalt for hills and less important streets. The cost of the former averaged $1.83 per square yard, while the latter cost only 70 cents, and under ordinary conditions could be put down for considerably less. The kind of asphalt pavement used is not specified, but from the low cost we infer that it is not such as would be suitable for roadways. This, however, by the way.

Wood block pavements have much to recommend them, but a great deal depends on the variety of wood and the way they are laid. Cedar blocks, so extensively introduced in Toronto and other cities in America some years ago, have not been a success. They will not stand heavy traffic and have been pronounced unsanitary. Hardwood is now being tried, and the Timber Trades Journal declares that in the near future the whole of London will be surfaced with wood. The variety now being used is the Australian jarrah, which has been tested in the metropolis, on some of the Paris boulevards, and in some of the provincial towns, in every case with satisfactory results. It has supplanted everything except Baltic fir, and is gradually but surely displacing that. If blocks four inches deep will answer, and they are now being tried, it will bring the cost down almost to that of Baltic fir, which has to be laid six inches thick.

Jarrah is the hardest and most durable of all Australian woods, and it is stated it will resist the wear and tear of London street traffic as long as granite. It is free from knots and does not shrink to any appreciable degree, the grain is close and tenacious, and it resists the influence of damp and moisture, in fact, being of the eucalyptus family it is a valuable antiseptic, rendering it valuable from a sanitary point of view. It affords a good foothold for horses without being slippery. What more need be said in its favor?

Other Australian hardwoods are being tried in Great Britain, one known as karri being apparently second only to jarrah, and Tasmanian blue-gum is to be tested in Glasgow. It is, of course, too much to expect that any of these foreign woods will come into use in Canada, where we have so much wood of our own. Vitrified brick, if it can be brought down to a reasonable price, will probably be the pavement of the future in Canadian and American cities.

One of the most unlikely paving materials which has been introduced anywhere is described in the Manufacturers' Record. At Norfolk, Virginia, a plant has been set in operation for making paving blocks out of the grass which grows on salt water marshes- The grass is subjected to heavy pressure, which forms it into large blocks, which are cut by circular saws into smaller blocks, 5½ inches thick, provided with strong wires, which run lengthwise. These blocks are then subjected to a bath in three tanks of different kinds of oil, which renders the fibre supple. A pave of this material has been tested for over a year in Philadelphia, on one of the busiest streets near the stockyards, and with satisfactory results. It is smooth, noiseless, and horses cannot slip on it. Large contracts for these blocks are said to have been secured from New York and Pittsburg. We must, however, class ourselves as doubters as to the wearing qualities of such a material, without further information.

But our readers will perhaps smile with incredulity when we mention another material for paving, which, if such a reputable journal as the Literary Digest is to be believed, has been successfully tested. In the southern states, where sugar manufacturing is carried on, there are millions of gallons of molasses produced, which, after supplying the market, remain over and become a waste product. The head chemist of a refinery at Chino, California, Mr. E. Turke, was led to make an experiment with the molasses, and had a walk one thousand feet long made between the factory and the main street, mixing sand with the molasses and putting it down in the same manner as asphalt. It dried quickly, became hard and remained so, the sun making it harder instead of softening it. A block of the composition two feet long and one foot wide was subjected to severe tests, being laid with its ends resting only an inch or two at each end on supports. When struck in the middle with a heavy hammer it showed no sign of cracking or bending. Notwithstanding this test, we can hardly imagine molasses coming into general use as a paving material.

It is clear from what we have stated that we have not yet passed the experimental stage in the matter of pavements.—*The Canadian Architect and Builder.*

OUR LONDON LETTER.

THE usual weekly meeting of the London County council was held on Tuesday at Spring-gardens, Sir Arthur Arnold in the chair.

The first reports to be debated were those dealing with proposals for the acquisition of tramways. The Highways

committee recently had before them two proposals—one emanating from the County of London Tramways syndicate, who proposed to acquire all the metropolitan lines, with a view to their being leased, for a term of twenty-eight years, to a company yet to be formed; the other proposing that the entire systems of the North Metropolitan and the London Street Tramways companies should be acquired by the council and leased for fourteen years to the former company. The terms of the contemplated lease were that the company should pay a fixed rental of 45,000*l* per annum. The committee recommended that the proposal of the syndicate should not be accepted; and the council endorsed this recommendation. On the other hand, the committee recommended that an arrangement in accordance with the proposals of the North Metropolitan company should be entered into. Mr. J. A. Baker moved; "That the report be referred back to the Highways committee, with instructions to report for the purpose of comparison as to the probable profit to the ratepayers, if the council itself worked such portions of the northern system of tramways as will be within its control after 1898, information being given on the basis of horse traction and also electric traction, or other approved mechanical means." This was carried by 61 to 55.

The Strand Improvement scheme came up again for discussion. The adjourned report of the committee stated that they brought up to the council in March last a scheme for the formation of a new street from Holborn to the Strand and the widening of the Strand at Holywell-street, but withdrew the scheme in order that they might once more give the fullest consideration to the whole subject. The chief features of the scheme are:—(1) The removal of the block of buildings south of Holywell street; (2) the provision of greater road space at one of the most crowded parts of the Strand; (3) the opening to view of several architectural features at present obscured, and the admission of light and air where most needed; and (4) the formation of a much required adequate Strand approach to the Royal Courts of Justice."

The interesting tour of the American pilgrims is rapidly nearing its close. To-morrow it may be said to reach its climax. Then, in the historic city of Gainsborough (whither the party will have traveled from Lincoln, by way of Scrooby, Bawtry, and Austerfield), the American Ambassador will lay the foundation-stone of a memorial church to John Robinson, the "Father" of the Independents who have had so much to do with the making not only of English history, but with that of the United States. A striking feature of to-morrow's ceremony will be the presence of the Rev. W. Robinson, a well-known New York preacher, who traces his descent back to the pioneer pastor of the old Lincolnshire church to which many of the Pilgrim Fathers belonged. It was in Gainsborough Old Hall that the Separatist Church of 1602 was probably organized, and here, by permission of Sir H. B. Bacon, Bart., luncheon is to precede the ceremony of stone-laying. To the lover of literature Gainsborough has attraction as the St. Ogg's of George Eliot's "Mill on the Floss," whilst to the mercantile community this ancient city on "the silver Trent" owes much of its importance to the fact that it is a sub-port of Grimsby.

The London and Provincial Builders' Foremen's Association was formed two years ago, and according to the report there are sixty-four members belonging to it. Several papers on technical subjects have been read and discussed during the year, and smoking concerts held. Applications have been received from Birmingham for the purpose of opening a branch, and many builders in the provinces have applied to the secretary for foremen. At the annual meeting, which was held at the Memorial hall last night, the chairman, Mr. William Ebdon, congratulated the members on the continued prosperity of the association.

BOOKS AND PERIODICALS.

In the FORTNIGHTLY Review for July Miss Olive Schreiner continues her "Stray Thoughts on South Africa" where we find a very interesting account of the South African aborigines; the little "Bushmen," the Hottentots and the stalwart Kaffirs or Bantus, who have not become sufficiently civilized yet to believe in the private ownership of land.

"The idea which to-day is beginning to haunt Europe, that, as the one possible salve for our social wounds and diseases, it might be well if the land should become again the property of the nation at large, is no ideal to the Bantu, but a realistic actuality. He finds it difficult, if not impossible, to reconcile his sense of justice with any other form of tenure. And it is only painfully and slowly (and perhaps never quite successfully!) that under the pressure of autocratic European rule, he is brought to allow, that absolute, individual property in land *may* be consistent with right."

Another infliction of the European upon society is the Halfcaste who Miss Schreiner shows is a deteriorate both from the white and black races, being more unsocial than either, and is therefore a very undesirable breed.

We must quote the following foot note as a rebuke to those morally vacuous persons whose sympathys do not extend beyond their own family or their own country.

"It is curious to note how in the most advanced races and classes, there are cases of singularly arrested moral development. That there are persons who within the circle marked out by blood kinship, will do all and more than all that social feeling can demand, who will even unduly sacrifice themselves and others at the altar of family feeling, yet, who beyond the limits of the family, remain absolute, moral barbarians? Others, and a yet larger number, have their moral growth arrested at the outer limits of national life. Such men may be depended on for moral and socialized action (some times of the very highest kind), where men of their own nation and especially their own class are concerned; they would even be willing to sacrifice life itself for the maintenance of that idealised combination of these men, which forms the national entity, yet, beyond this circle there is absolute moral atrophy! They cannot be depended on for the slightest approach to social actions where persons and nations outside the charmed circle are concerned. They will vaunt themselves on actions directed towards those outside, which within their own circle they would regard as grossly criminal."

Ouida in her usual trenchant style inveighs against the occupation of highways by what she calls "A Highway Robber"—the private railroad. For her peace of mind we hope she will never come to San Francisco, for the robbing of highways has been going on for years here, so that now there is no road even to get out of San Francisco into the country, both of the available routes being occupied by railroads for whose use of the public highway the people get no rent nor any other return.

A notice of this year's Salons is not encouraging, for although 7,000 *objets d'exposition* are exhibited in the two Salons—of the Champs-Elysees and the Exposition des Beau-Arts, "there is a distressing emptiness seeking to hide itself in a dazzle of technical fireworks, and a beating about the bush, not only for artistic conception, but for artistic emotions." "The visitor is wearied by uniformity of standpoint, indisposed by exaggerations of all kinds, or disgusted with horrors depicted in cold blood—horrors convincing neither the painter nor his public."

Although possibly not to such an extent, we find the same thing throughout all civilization at the blazeed end of the nineteenth century. The Pacific Coast being from its isolation more exempt from the moral and artistic leprosy running throughout the older civilizations, we find here a little more decency in our art, although sad to relate an apeing of the ways of decadents is rife here now, and architecture has at last succumbed, and we find an utter absence of imagination in the uniformity of the square box pierced with oblong holes on the one hand and imagination run to seed, in the exaggerated ancient nondescript which seems to be shrieking for recognition in fear that its ugliness may be overlooked—on the other hand. But when this hysterical age has past away—as it will shortly—common sense will reign once more. So we need not despair of the race yet, notwithstanding the alarming symptoms of a whole people gone mad on a question of a trifling increase of the currency; the bankers view of which is presented in the article "Public Sentiment in America on the Silver Question."

Eighth Special Report of the Commission of Labor—THE HOUSING OF THE WORKING PEOPLE. Prepared under direction of Carroll D. Wright, Commissioner of Labor, by E. R. L. Gould, Ph. D.

This is a book of 451 pages devoted as its titles indicates to methods of housing the working people, a class to which it is very difficult to give a distinctive name. A more definite and comprehensive title for it would be "People of Small Incomes" It is prefaced by a "Letter of Transmittal," wherein we find an organic law which shows a proper appreciation of one of the *raison d'etres* of Government which requires to be kept before its officers and the people in general, to counteract the generally received opinion that the Government is for the collection of taxes, for the construction of destructive engines of war, to keep an army and navy, and to issue bonds—and thus they forget the large amount of good work that is done by the peaceful department of the Government—among which we have the Department of Labor. This is the organic law of the department referred to—"To acquire and diffuse among the people of the United States useful information, concerning the means of promoting their material, social, intellectual and moral prosperity," so the author goes on to say "it was deemed particularly appropriate to publish the facts contained in this special report on so important a matter as the Housing of the Working People," and believing that the efforts of the Department in this direction should be made more available to the public we intend to give the gist of the whole report in a series of articles, the first of which appears in this number and will continue the same when we obtain the illustrations with which the report is plentifully supplied. The report is replete with information of interest to the general public, but particularly interesting to architects and builders, and reflects great credit upon its author.

BUILDING CONSTRUCTION AND SUPERINTENDENCE. By F. F. Kidder, C. E., Ph. D., Architect, author of "The Architects' and Builders' Pocket Book." Part I—Masons' Work. Two hundred and fifty illustrations, 409 pp.; one large octavo vol., cloth; price, $4. New York: William T. Comstock.

Although many of our leading colleges have for some time maintained courses in architecture, and several special schools for teaching architecture and building has also been established, it is somewhat remarkable that no complete work descriptive of modern building construction as practiced in this country has as yet been accessible to the would-be architect.

To meet this want was the object of the well-known author of the work before us, and from a study of its contents we believe that his efforts will be highly appreciated by a large class of young men, and also by those whose duty it is to instruct them in this branch of the architectural profession.

As the author has well said in the introduction, the successful practice of architecture requires not only ability to design, but also a thorough knowledge of building construction in all its branches and conscientious and painstaking supervision of the work.

The present volume is devoted to those portions of the builder's work which are classed under the general title of masons' work, including fireproofing and lathing and plastering, although one chapter is devoted to the different forms of iron and steel construction used in supporting walls, especially in buildings of the skeleton type, and such work as comes in intimate connection with the brick and stonework. Other classes of work are to be described in a second volume.

The work is essentially descriptive, only such tables as relate directly to the properties of the materials described being given: the various materials, such as stones, brick, mortars, terra cotta, etc., are clearly and fully described and and the best methods of using them intelligently presented, and in a manner that happily combines the theoretical with the practical.

What we believe will prove an especially useful feature of the book is the large number of cuts illustrating different devices and forms of construction; most of these have evidently been prepared especially for this book, and are eminently the production of a practical architect. We judge that they will prove of much assistance when preparing working drawings.

The suggestions in regard to superintendence embody those points which especially require the personal inspection of the architect, and a great many ways in which unscrupulous builders are apt to slight work or attempt to cover up defects are pointed out in such a way as should prove of much assistance to the young architect.

BUSINESS MOSAICS.

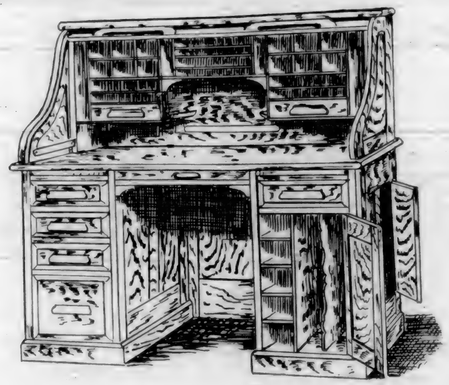
The long established firm of the J. L. Mott Iron Work, so famous for their Imperial Porcelain ware, so well adapted to both the bath room and the kitchen, is well represented in this city by Mr. M. S. James, whose show rooms in the Flood Building, speak for themselves. The Imperial Porcelain ware has a charm for the good housekeeper that nothing else in this line can equal. If you are in doubt what to order call upon Mr. James at his office, 27 Flood Buiiding, and have that doubt removed.

Dobson—Can your daughter play the piano? BUBBUB (wearily)—I don't know whether she can or not, but she does.—*Punch*.

Phœnix Pure Paint holds it own, because it is made of pure materials, white lead, zinc and linseed oil without adulterations, these being finely ground and thoroughly mixed with heavy machinery and cannot fail to produce a first-class article, and the experience of first-class house painters, who fully endorse these claims made by the firm of W. P. Fuller & Co.; manufacturers should set the matter at rest.

Jones—Brooks is dead. BROWN—Well, I'm not surprised to hear. His doctor told me he thought he could straighten him out.—*Life*.

The San Francisco Manufacturing Company deal in California Oak Furniture of their own make as well as Oak flooring. Estimates for Oak Flooring will be furnished by Mr. Charles J. Bruschke, late of Chicago, 644-648 Bryant street, San Francisco. At a time when the community are



almost unanimous for a home market this firm should receive a liberal support, as what they manufacture is the best of its kind, and from California Oak.

To those about to select patent chimneys we would say before you select what you want, call upon L. E. Clawson & Co., 1340 Market street, telephone, south, 257. Clawson's Patent Hood or throat and arch-bar combined, makes the bricklayer conform with mantel-men's work, and guarantees you a safe chimney with a perfect draught.

Professor—Give me the names of the bones that form the human skull. MEDICAL STUDENT—I've got them all in my head, but I can't recall their names.—*New Letter. Life.*

Merchant's Gothic tin shingles and Merchant's combination skylight "Star" Ventilator are becoming so well known among architects as being reliable and storm-proof, it is hardly needed to call attention to the merits claimed by the manufacturers, which are that the "Star" Ventilator is not a compromise between a first-class ventilator and a poor skylight, but the best of both, as it gives light and ventilation simultaneously. Oscar S. Levy, Agent, 205 Market street, San Francisco, Cal.

Trolly President—How does that new fender work? SUPERINTENDENT—I never saw anything like it. They never know what strikes them.—*Life*.

Samson Cordage Works have certainly adopted a very appropriate name for their cord, as strength combined with a cord warranted free from waste and imperfections is what is wanted in a window cord. Send for samples to the Sansome Cordage Works, Boston, Mass., if you are not already familiar with the merits of the article.

Blenkington—I wonder why "churchyards yawn," as Shakespeare says? PEMBERTON—Probably the epitaphs of deceased millionaires make them tired.—*Truth*.

Wm. Wolff & Co. announce they have just received a fresh arrival of Alsen Portland Cement, and for deliveries direct from shipside will make an exceptionally low price on any quantity required. This cementis so well known that it presents a favorable opportunity to provide the best article at a low price, 329 Market street, San Francisco, is thir office.

"Is this a 16 to 1 town? asked the drummer. "It air on Sunday," answered the native. "On Sunday?" "Yes. Sixteen goes fishiu' to one goin' to church."—*Troy Times*.

Roche Harbor Lime was awarded First Prize at the World's Fair, also first prize at New Orleans, Washington and California. For particulars address Tacoma and Roche Harbor Lime Co., box 289 Builder's Exchange, 40 New Montgomery street, San Francisco.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CONTRACTS OF COUNTIES—LIMIT OF INDEBTEDNESS.—Where a county contracts for the erection of a building, the payment to be made in installments each year as the work progressed, the debt or liability created is not the aggregate amount of such installments, but only that which arises froN year to year on the separate installments; and if the installments: and if the installment is within the income each year it is not illegal, under a provision of law forbidding counties to incur an indebtedness or liability in any year exceeding the income and revenue provided for that year.

Smilie v. Fresno County, Supreme Ct. Cal., 444 Pacific Rep. 556.

LIEN FOR MATERIAL DELIVERED IN INSTALLMENTS.—In an action to enforce a material man's lien, where a contract was made for material to be delivered from time to time, as required in the repairs of the buildings, and the materials in accorance therewith is furnished as orders for same are received, each order is not an indepentent contract, so as to reqiure a separate lien to be filed within the required time after the delivery of each order.

Premier Steel Co. v. McElwaine-Richards Co., Sup. Ct. Ind., 43 Northeastern Reporter, 877.

ENFORCING LIEN AGAINST CORPORATION RECEIVING PROPERTY.—A contractor who erected a creamery building under a contract signed by a number of individuals, each of whom signed for a specific sum, binding himself only to that extent, may after the subscribers have organized into a corporation, which is vested with title to the property, maintain a single action to enforce a mechanic's lien on the property for the amount of the unpaid subscriptions, although neither the corporation nor the stockholders who paid their subscriptions are bound by the indebtedness.

Davis & Rankin Co. v. Viee, App. Ct. Ind., 43 N. E. Reporter, 889.

ENFORCEMENT OF LIEN AGAINTS PROPERTY FRAUDULENTLY TRANSFERRED.—Where the right to a lien exists, a conveyance of the property by the owner will not defeat the lien, if it appears that the conveyance was not bona fide.

N. Y. Lumb & Woodworking Co. v. 73d Street Bldg. Co., Sup. Ct. App. Div. 1st Dept., 38 N. Y. S. Reporter, 869.

WHEN THERE MUST BE WRITTEN CONTRACT IN LOUISANA.—Where a demand exceeds $500 for labor and materials in building an addition to and making repairs on a house, there must be a written contract, as against third persons, registered according to the laws of Louisiana.

Murry v. Sweeney, Sup. Ct. La., 19 Southern Reporter, 753.

CITY BUILDING NEWS.

Alvarado near Douglass. Cottage; owner, Jacob Heyman; builder, Jacob Heyman; cost $2000.

Baker and Fulton. Three-story frame; owner, Ernst D. C. Rohde; architects, Martens & Coffey; contractor, M. Loftus; signed, Aug. 7; filed, Aug. 8; cost $6900.

Berry Place near Grant Ave. One-story brick; owner, M. Rene; builder, J. Salanve; cost $1000.

Brannan near 4th. Plastering for St. Rose's Church; owner, Rev. D. Nugent; architect, B. J. Clinch; contractor, P. J. O'Leary; cost $3845.

Brannan near 4th. Two-story frame; owner, Anna E. Davis; contractor, John Wikman; signed, July 1; filed, July 8; cost $2150.

Broadway near Fillmore. Excavations, etc.; owner, P. Anspacher; architect, M. J. Lyon; contractor, G. W. Werner; signed, June 30; filed, July 6; cost $1445.

Broadway near Fillmore. Carpenter, mill and iron; owner, P. Anspacher; architect, M. J. Lyon; contractor, J. A. Smilie; signed, July 12; filed, July 18; cost $6400.

Broadway near Fillmore. Plumbing, etc.; owner, P. Anspacher; architect, M. J. Lyon; contractors, Ickelheimer & Bros.; signed, July 17; filed, July 18; cost $1097.

Bush and Dupont. Repairs and addition; owner, Mrs. Hannah Keesing; contractor, Stephen Canning; signed, July 21; filed, July 23; cost $1050.

California near Leidesdorff. Alterations and repairs; owner, Merchant's Ex. Ass. of San Francisco; architects, J. J. & T. D. Newsom; contractors, Moore & Cameron; signed, July 14; filed, July 14; cost $1385.

California Ave. near Virginia Ave. Alterations and additions; owner, Mrs. Mathielde Schroeder; contractor, R. Faby; signed, July 20; filed, July 21; cost $1350.

California and Polk. Interior finish; owner, W B. Bradbury; architect, F. B. Wood; cntractors, L. & E. Emanuel; signed July 8; filed, July 25; cost, $2850.

Capp near 23d. Two-story frame; owner, W. H. George; contractors, Marcuse & Remmel; signed, July 20; filed, July 24; cost $2565.

Clay near Drumm. Alterations and additions, owner, Martha J. B. Thomas; architect, T. J. Welsh; contractor, A. L. Campbell; signed, July 11; filed, July 15; cost $1220.

Clay near Drumm. Concrete, etc; owners, Martha J. B. & W. B. Thomas architect, T. J. Welsh; contractor, Geo. Goodman: signed, July 11; filed July 16; cost $2725.

Clayton and Fell. Interior work; owner, Mr. W. McPhee; architect, S. Newson; contractor, Home Mnfg. Co.; cost $2500.

Clayton near Frederick. Two-story frame; owner, Wm. Bernstein; contractor, White Bros.; signed, July 16; filed, July 18; cost $2510.

Colusa and Connecticut. Two-story frame; owner, Claus Reimers; architect, D. C. Coleman; contractor, John Person; signed, July 18; filed, July 20; cost $2469.

Courtland Ave. near Bernington. Cottage; owner, Peter Rolle; contractors, Reit & Ahlgren; signed, July 15; filed, July 17; cost $1325.

Courtland Ave. and Andover. Heating and ventilating; owner, Board of Education; architect, C. I. Havens; contractor, Montague & Co.; signed, July 11; filed, July 17; cost $1598.

Dupont near Bush. Alterations and repairs; owner, G. Mussett; contractor, J. Salamave; cost $1000.

Eleventh Ave. near Lake. Cottage; owner, Mr. & Mrs. F. A. Dixon; contractors, Weste & Fern; signed, Aug; filed, Aug. 8; cost $1800.

Ellis and Pierce. Two-story frame; owner, Johanna McGinn; architect, H. Geilfuss; contractor, J. J. Mausenu; signed, Aug. 6; filed, Aug. 6; cost $5255.

Ellis near Powell. Underpinning; owner, J. H. Mangels; architect, Henry Geilfuss; contractor, F. Wagner; signed, July 18; filed, July 20; cost $2150.

Eureka and 19th. Cottage; owner, Hugh M. Cochran; contractor, W. W. Rednall; signed, July 14; filed, July 15; cost $1850.

Eureka near 19th. Cottage; owner, J. J. Bradley; contractor, W. W. Rednall; signed, July 15; filed, July 18; cost $1700.

Fair Oaks near 24th. Additions and alterations; owner, John J. Wall; architect, J. T. Kidd; contractor, M. Lotus; signed, July 3; filed, July 31, cost $1525.

Filbert and Kearny. Bulkhead for school house; owner, Board of Education; architect, C. I. Havens; contractor, J. H. McKay; signed, July 27; filed, July 31; cost $4710.

Filbert near Jones. Bulkhead, etc.; owner, Board of Education; architect, C. I. Havens; contractor, W. Linden; signed, July 8; filed, July 17; cost $987.

Fifteenth Ave. near California. To build; owner, Emile A. Allen; contractor, J. B. Glunz; signed, July 11; filed, July 14; cost $2482.

Florida near 20th. To build; owner, Henry M. Colety; architect, D. V. Devel; contractors, Williams & Foster; signed, Aug. 1; filed, Aug. 3; cost $1500.

Ford near 17th. Additions and improvements; owner, Sergeant P. Shea; contractor, James McInerny; cost $2000.

Fourteenth near Howard. To build; owner, Leon Levy; architects, Shea & Shea; contractors, White Bros.; signed, Aug. 1; filed, Aug. 4; cost $2140.

Fremont near Howard. Grading, etc.; owner, Judson Mnfg. Co; architects, Percy & Hamilton; contractors, Richardson & Gale; signed, Aug. 4; filed, Aug. 7; cost $10,075.

Geary and Stockton. Six-story brick building; owner, Spring Valley Water Works; architect, Clinton Day; contractor, John McCarthy; signed, Aug. 5; filed, Aug. 10; cost $89,716.

Geary and Stockton. Granite work for six-story brick; owner, Spring Valley Water Work Co; architect, Clinton Day; contractor, Raymond Granite Co.; signed, July 10; filed, July 14; cost $24,000.

Geary near Larkin. Grading, etc., for three-story brick; owner, Louis Bazet; architect, C. R. Wilson; contractor, R. W. Beattie; signed, July 21; filed, July 22; cost $3152.

Geary near Larkin. Carpenter work for three-story brick; owner, Louis Bazet; architect, C. R. Wilson; signed, July 31; filed, Aug. 3; cost $2375.

Gough near Fulton. To build; owner, Claus Schroeder; architect, J. E. Kraft; contractor, A. G. Johnson; signed, July 20; filed, July 24; cost $2963.

Grove near Baker. To build; owner, Mrs. Christina Ott; contractor, J. J. Mausean; signed, Aug. 6; filed, Aug. 7; cost $3800.

Haight street, No. 1166. Painting; owner, A. Loprosti; architect, W. J. Cuthbertson; contractors, Scott & Wilkinson; signed, July 20; cost $250. Electric work; contractor, Hetty; cost $80.

Howard near 10th. To build; owner, Mrs. Mary Hoban; contractor, Geo. Letterell; signed, July 21; filed, July 23; cost $1850.

Howard near 25th. To build; owner, Mrs. Olive A. Harper; architect, C. J. Coffey; contractor, E. Cox; signed, Aug. 8; filed, Aug. 10; cost $3660.

Hyde near Pacific. Two-story frame; owner, Peter Mulligan; architects, Mahoney & Ryland; contractors, Westerlund & Sundeen; signed, July 2; filed, July 21; cost $2882.

Jackson near Pierce. Alterations and additions; owner, Mrs. M. A. Forbes; architect, A. J. Barnett; contractor, W. Patterson; cost $960.

Lake and 7th Ave. Carpentry, mill work, etc., on two-story brick; owner, Maria Kip Orphanage; architects, Percy & Hamilton; contractor, Thos. H. Day & Son; signed, July 31; filed, Aug. 1; cost $17,572.

Lake and 7th Ave. Brick, sandstone, etc., for two-story brick; owner, Maria Kip Orphanage; architects, Percy & Hamilton; contractor, Thos. Butler; signed, July 29; filed, Aug. 1; cost $13,061. Excavations, concrete, etc.; contractors, Kentinge, Leonard & Ransome; cost $3000. Plumbing; contractor, Shepard Bros.; cost $2200.

Lower Terrace near Serpentine Place. Cottages; owners, J. F. and Charlott V. Bird; contractor, C. Doughass & Co.; signed, July 18; filed, July 21; cost $1260.

Lyon near Jackson. Cottage; owner, H. F. Muller; architects, Kenitzer & Barth; contractor, M. J. Savage; signed, Aug. 5; filed, Aug. 6; cost $2235.

Market and 3d. Safes; owner, Claus Spreckels; architects, Reid Bros.; contractor, Herman Safe Co.; signed, July 19; filed, Aug. 3; cost $4129.

Market and Powell. Bar and office fixtures for Baldwin Hotel; owners, O. Norman & A. E. Iverson; architect, E. Kollofrath; contractor, Home Manfg. Co.; signed, July 30; filed, Aug. 3; cost $1300.

McAllister near Willard. To build; owner, D. J. McCreedy; architect, D. C. Coleman; contractor, J. E. Schulz; signed, July 15; filed, July 16; cost $1975.

Montgomery Ave. near Powell. Three-story frame; owner, G. Chiappari; architect, E. Depierre; contractor, A. Caccia; signed, July 15; filed, July 15; cost $3834.

Natoma near 2d. Training school for girls; owner, L. Melzger; architect, S. W. Bugbee; Superintendent, G. H. Moore; cost $4000.

New City Hall. Art glass for the dome; owner, City of San Francisco; architect, Frank T. Shea; contractor, American Decorative Co.; cost $16,500.

Nineteenth near Eureka. Cottage; owner, J. F. Boehm; contractor, W. W. Redmall; signed, June 30; filed, July 14; cost $500.

Oak near Clayton. Cottage; owner, H. Herningson; architect, A. C. Lutgens; contractor, Adam Miller; signed, June 22; filed, July 23; cost $2160.

Pine near Pierce. To build; owner, William H. Saunders; contractor, John B. Glurz; signed, Aug. 4; filed, Aug. 5; cost $2950.

Powell near O'Farrell. Three-story brick; owner, George D. Toy; architects, Herman & Swain; contractor, J. A. Wilson; signed, July 20; filed, July 21; cost $17,075.

Powell and Ellis. Painting for four-story brick; owner, Royal Eagle Distilleries Co.; architects, De Prosse & Meussdorffer; contractor, C. Schutt; signed, July 31; filed, Aug. 4; cost $1200.

Presidio. Two brick barrack buildings; owner, U. S. Government; contractor, M. McGowan; cost $74,700.

Powell and Ellis. Excavations, brick and iron work for four-story brick; owner, Royal Eagle Distilleries Co.; architects, DeProsse & Meussorffer; contractor, F. Wagner; signed, July 6; filed, July 6; cost $22,370. Carpentery, mill work, etc.; contractor, C. Schutt; signed, July 6; filed, July 6; cost $18,975. Wrought iron and cast iron work; contractor, F. Wagner, sub-contractors, Brode & Clark; cost $7275. Plumbing; contractor, H. Williamson; cost $1725. Gas-fitting; contractor, H. Williamson; cost $4085. Plaster and cement; contractor, C. F. Schiller; cost $3500. Plastering, etc.; contractor, W. C. Watson; cost $8225. Concrete work; contractors, Slack & Gussel; cost $2850. Ornamental iron work; Todd & Peters; $935. Heating apparatus, etc; contractor, J. G. Graniss & Co.; cost $1385.

Sacramento near Marble. Two-story brick hospital; owner, T. T. Williams; architect, A. C. Schweinfurth; contractors, Richardson & Gale; signed, June 30; filed, July 3; cost $16,445. Plumbing; contractor, James E. Britt; cost $1000. Wiring for electric lights, cost $148. Heating and ventilating; Holbrook, Merrill & Stetson; cost $950. Combination electric and gas fixtures; S. F. Novelty and Plating Works; cost $275.

Shipley near 4th. Two-story frame; owner, Wm. Crane; architect, A. J. Barnett contractor, L. M. Hickson; signed, June 29; filed, July 3; cost $2350.

Shotwell and 24th. To build; owner, John F. Schome; architects, Martens & Coffey; contractor, J. Bucher; signed, July 30; filed, July 31; cost $1725.

Stanyan near Carl. To build; owner, Mrs. Lydia M. Ebatt; contractors, Marcuse & Remmel; signed, July 29; filed, July 30; cost $1780.

Stanley Place near Harrison. To build; owner, Thomas Green; architect, W. H. Armitage; contractor, L. B. Schmid; signed, Aug. 4; filed, Aug. 6; cost $4070

Stevenson near Ecker. To build; owner, Pacific Power Co.; architect, Ira Bishop; contractors, Cushing, Wetmore Co.; signed, July 21; filed, July 27; cost $1800.

Stockton near Greenwich. Alteration and additions; owner, Mrs. Rosina Lornetti; contractor, H. T. Grieb; signed, July 8; filed, July 9; cost $1875.

Stockton near Union. Plumbing, etc.; owner, Balthazer Huth; architects, De Prosse & Meusdorffer; contractor, H. Ernest; signed, July 28; filed, Aug. 5; cost $540.

Stockton near Union To build; owner, Bathason Huth; architects, De Prosse & Meussdorffer; contractors, A. Caccia & Co.; signed, July 27; filed, July 28; cost $4210.

Sutter near Buchanan. All work except plumbing, etc.; owner, Elish Brooks; architect, W. H. Wharff; contractor, Jacob Schuler; signed, Aug. 3; filed, Aug. 3; cost $1300.

Thirteenth near Howard. To build; owner, B. F. Harvey; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, July 1; filed, July 3; cost $5000.

Tremont near Frederick. Cottage; owners, Bertha & Ernest Kriske; contractor; L. Ceregnino; signed, Aug. 10; filed, Aug. 10; cost $1160.

Twenty-first and Hampshire. Cottage; owners, John and Louise Sanderson, contractor, M. A. Stewart; cost $1272.

Twenty-second and York. To build; owner, F. Lurmadn; architect, F. Rabin; contractor, H. Munster; cost $7000.

Twenty-second near Minnesota. To build; owner, C. J. Jackson; contractor, R. O. Davis; signed, July 14; filed, July 17; cost $2450.

Utah near Santa Clara. Cottage; owner, O. Dahlton; contractor, L. B. Schmid; signed, July 16; filed. July 17; cost $1410.

Utah near Sonoma. To build; owner, Augusta C. and Mary Pratt; contractor, Thomas F. Michell; signed, Aug. 4; filed, Aug. 4; cost $1450.

Utah near El Dorado. To build; owner, Rosie Kiernan; architect, T. J. Welsh; contractor, Doyle & Son; signed, Aug. 7; filed, Aug. 7; cost $1349.

Van Ness Ave. and Clay. Marble mantels, bronze fire frames, etc.; owner, Claus Spreckles; architects, Reid Bros.; contractors, Patterson & Eisele; signed, July 22; filed, July 31; cost $12,200.

Van Ness and Fulton. Alterations and additions; owner, I. Selig; architect, M. J. Lyon; contractors, Elder & Jordan; signed, July 2; filed, July 6; cost $650.

Van Ness Ave. and Fulton. Concrete foundation, etc.; owner, I. Selig; architect, M. J. Lyon; contractor, G. W. R. Trester; signed, July 3; filed, July 6; cost $1400.

Van Ness Ave. and Broadway. Church Edifice; owner, St. Bridget's Congregation; day's work; cost $20,000.

Valencia near 21st. To build except plumbing; owner, J. W. Salter; architects, Martens & Coffey; contractor, J. Bucher; signed, July 8; filed, July 9; cost $5652.

Valencia near 21st. Plumbing etc; owner, J. W. Salter; architects, Martens & Coffey. contractor, H. Hufschmidt; signed, June 25; filed, July 9; cost $743.

Vallejo near Pierce. To build; owner, John Simpson; architects, Coxhead & Coxhead; contractor, C. M. Depew; signed, July 17; filed, July 18; cost $8050.

The California Architect and Building News.

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OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

VOLUME XVII. SEPTEMBER 20th, 1896. NUMBER 9.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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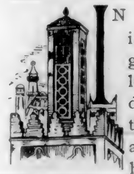
1 Column	12 50	35 00	65 00	125 00
½ Page	30 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	320 00

PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.



IN ANOTHER part of our journal reference is made to the part taken by the national government of the British Kingdom in loaning money to municipalities and individuals, in fact becoming the bankers for the people. Such a terrible cataclysm as that, leads to the holding up of ones hands in holy horror in free America. It is the taking of the bread and butter out of the mouths of the money lenders, the Saviors of the poor farmers and the benefactors of public communities and bodys who wish to make improvements. Why! such a thing as that would do away with bonds!

State it not above a breath—for how could we exist without bonds—and how could the money holder exist without them, and if he was to go we all would have to lie down and die.

Alas! please don't talk about that abominable foreign, British System of the Government loaning its money to counties and cities; and that still greater abomination to

private individuals to allow them to make improvements for the good of the community. Why if the people got an inkling of this, to what use should we put those great vaults at Washington and elsewhere; stacked up with gold and silver coin. Their cost would be thrown away.

And then the stock of money to pay for those huge engines of destruction the three new battle ships, might possibly be spent in some useful and renumerative work such as the Nicaragua Canal or laboring and manufacturing establishments for the unemployed and that wouldn't do you know.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 2.

THE LAWS relating to tenement and lodging houses in New York city are very full and quite severe. Some of them might be introduced in the City of San Francisco with advantage—*e. g.*, that section against the covering a whole lot with buildings—for even in this city where we have the whole peninsula to build upon we find plenty of cases where practically the whole lot is covered with buildings and inadequate light and air allowed to rooms. This is part of the section referred to:

"Sec. 661 (as amended by chapters 84 and 288, laws of 1887). It shall not be lawful hereafter to erect for, or convert to the purposes of a tenement or lodging house, a building on any lot where there is another building on same lot, or to build, or to erect any building on any lot whereon there is already a tenement or lodging house, unless there is a clear open space exclusively belonging thereto, and extending upward from the ground of at least ten feet between said buildings if they are one story high above the level of the ground; if they are two stories high, the distance between them shall not be less than fifteen; if they are three stories high, the distance between them shall not be less than twenty-five feet; but when through ventilation of such open spaces can be otherwise secured, such distances may be lessened or modified in special cases by a permit from the board of health. At the rear of every building hereafter erected for or converted to the purposes of a tenement or lodging house on any lot, there shall be and remain a clear open space of not less than ten feet between it and the rear line of the lot, but this provision may be modified as to corner lots in special cases by a permit from the board of health. No one continuous building shall be built for or converted to the purposes of a tenement or lodging house in the city of New York, upon an ordinary city lot, and no existing tenement or lodging house shall be enlarged or altered or its lot be diminished so that it shall occupy more than sixty-five per centum of the said lot, and in the same proportion if the lot be greater or less in size than twenty-five feet by one hundred feet; but this provision shall not apply to corner lots, and may be modified in other special cases by a permit from the board of health."

The following are also very wholesome provisions as to light and air:

"The total area of window or windows in every room communicating with the external air shall be at least one-tenth of the superficial area of every such room; and the top of one-at least, of such windows shall not be less than seven feet six inches above the floor, and the upper half, at least, shall be made so as to open the full width. Every habitable room of a less area than one hundred superficial feet, if it does not communicate directly with the external air, and is without an open fireplace, shall be provided with special means of ventilation, by a separate airshaft extending to the roof, or otherwise, as the board of health may prescribe. Every room used, let, or occupied by any person or persons for sleeping shall have at least one window, with a moveable sash, having an opening of not less than twelve square feet, admitting light and air directly from the public street or the yard of said house, unless sufficient light and ventilation shall be otherwise provided, in a manner and upon a plan approved by the board of health."

In this city and we presume in the other cities of the Pacific slope we have a nuisance to contend with in the allowance of stables for animals in the midst of a residence block. This should not be allowed, as they are a nuisance to the inhabitants of the surrounding dwelling houses, if not a source of unhealthiness. Some provision should be made by which certain blocks in each district should be devoted to this purpose and no stables allowed except in these blocks.

Until this time comes stringent regulations should be made to keep their contiguity as little as possible a nuisance to the olfactory nerves of those around.

"In New York the board of health has published for the benefit of its inspectory and the public a list of recommendations commonly made to cover certain classes of complaints. They may be considered as types, so to speak, and afford to all interested a simple and speedy method of dealing with insanitary features."

This one in regard to stables is worthy of adoption by our local boards.

"C. That the stable floor and space beneath is not properly drained, and said floor is defective, and the leakage through the same renders the earth beneath very filthy and offensive. R. That all offensive earth be removed from beneath the stable floor, the ground space cleaned, disinfected, cemented, and so graded and drained that all surface water and liquid matter shall be discharged into the street sewer by and through a properly trapped, extra heavy iron drain; thst the floor of horse stalls be provided with a valley drain properly trapped and connected with the sewer connected drain."

The sanitary laws of the large towns of Great Britain are built upon the same lines as New York—the only difference being that to prevent any abuse of right of entry upon private premises, provisions are made that in the rural districts—"Power to enter a house or part of a house used as a dwelling without consent of the inhabitant or without a warrant from a justice is not given."

"Entry on premises for the purpose of examining the conditions of water-closets, ash-pits, water supply, and drainage is allowed at any reasonable time of the day after twenty-four hours previous notice to occupiers, or, if the dwelling is unoccupied, to the owner. This notice may be dispensed with in cases of emergency."

Sanitary matters have not advanced so much in other countries as in the English speaking ones, and there doesn't appear much to learn from the sanitary laws of France, Belgium or Germany; they are interesting to the comparative ethnologist as showing the different ways of getting at the same things adopted by different nationalities.

Chapter III is on Expropriation for Sanitary Purposes and commences in this fashion:

"When houses or neighborhoods become irremediably bad, the only logical thing to do is to wipe them out of existence. It is true this form of procedure is costly, but late awakenings are always expensive. The supreme necessity of safeguarding public health is a sufficient motive for action, but the welfare of individual dwellers is also happily subserved. The right of expropriation is a weapon of last resort, and perhaps alone can efficiently check the unscrupulous rapacity which allows property to degenerate into an incurably unhealthy state."

This dictum is being acted upon by our present San Francisco Board of Health in abolishing the rookeries of Chinatown, which action has received the unanimous approval of the people. Even in such a young city as San Francisco such a course has become necessary—so it is easy to imagine the necessity of such action in a city a thousand years old, such as London—So a comprehensive act was passed by the British Parliament in 1890 called the "Housing of the Working Classes Act":

"The first part of this law relates to unhealthy areas, and is limited in its application to cities and towns. Rural sanitary districts are excepted. It provides that whenever an official representation is made to the local sanitary authority that 'within a certain area in the district of such authority either any houses, courts, or alleys are unfit for human habitation, or the narrowness, closeness, and bad arrangement, or the bad condition of the streets and houses or groups of houses within such area, or the want of light, air, ventilation, or proper conveniences, or any other sanitary defects, or one or more of such causes, are dangerous or injurious to the health of the inhabitants either of the buildings in the said area or of the neighboring buildings; and that the evils connected with such houses, courts, or alleys, and the sanitary defects in such area can not be effectually remedied otherwise than by an improvement scheme for the arrangement and reconstruction of the streets and houses within such area, or of some of such streets or houses, the local authority shall take such representation into their consideration, and if satisfied of the truth thereof, and of the sufficiency of their resources, shall pass a resolution to the effect that such area is an unhealthy area, and that an improvement scheme ought to be made in respect of such area, and after passing such resolution they shall forthwith proceed to make a scheme for the improvement of such area.' The official representation must be made by the medical officer of health, who makes his inspection upon the complaint of two justices of the peace or twelve taxpayers. Should he fail in his duty, the complainants may appeal to the local government board, or if the area is in London, to the home office. The local authorities, in connection with their scheme, must submit maps, particulars, and estimates. They may exclude any portion of the area or include contiguous territory, as their judgment may dictate. Proper sanitary arrangements must be provided, and also (and this is a very important fact to note) accommodations for the working classes displaced by the proposed plan. The scheme must distinguish the lands proposed to be taken compulsorily. Compulsory purchase need not be resorted to if the owner of the freehold confers with the local authority and makes the required ameliorations under the superintendence and control of the local authority. The scheme, when formulated, is publicly advertised, and notice is given to owners and occupiers. It is then laid before the local government board or home office, as the case may be, whose duty it is to make a local inquiry. If approval is given, the appropriate organ of government submits the scheme to Parliament for confirmation by special enactments. If there is opposition, reference is made to a committee of either House of Parliament for confirmation by special enactments, and costs are awarded there against promoters or opposers accordng as the opposition is considered to have been justified or not Wherever the local authorities decline to act upon an official representation they must file their reasons with the confirming body, who will immediately direct the holding of an investigation.

"If the scheme relates to London, a statement must be made of the provisions for accommodating as many persons of the working classes as may be displaced either within the area or immediately outside, unless the confirming power shall be satisfied that equally convenient accommodation is offered elsewhere. Should special circumstances exist, only one-half of the persons displaced need be provided for. In any other city outside of London the local government board may require that displaced parties, working people, may be accommodated either within or without the area under consideration.

"It is important to note that special care is taken by this law of the housing of working people. All undue hardship accompanying their displacement is effectually guarded against. As working people can not be displaced without more or less inconvenience, cordial recognition is given to the necessity of their being properly cared for within the district which, from reasons of contiguity to employment or special facilities of access, they have chosen to make their residence. In this respect the act is in a measure unique. These provisions furnish also the explanation of the fact that some English cities in undertaking the improvement of insanitary areas have built and rented house accommodations for working people. These requirements have been followed, not for the purpose of engaging in socialistic schemes, but with the idea of recognizing the justice of the workingman's necessity of being near his place of toil. In almost every instance, if not in every case, steps have been taken to induce private parties to purchase the land and build suitable dwellings. When these efforts have failed, after a threefold attempt has been made, as in London, the municipalities themselves intervene to fulfill the mandatory provisions of the law. Individuals and building companies have usually asserted that the requirements as to new buildings were such as to preclude the possibility of proper financial return upon the investment. In many instances at least the land has been offered at a figure from which the cost of demolition has been eliminated. This practice, which seems entirely equitable, is based on the view that the whole cost of improvement should not appear in the rent charged to future tenants. The expropriation and demolition of insanitary areas entail benefit to the entire community, and it is but fair that the community as a whole should bear a moderate portion of the cost."

The author seems desirous of removing the taint of Socialism from these schemes of the municipalities providing homes for the people. He must recognize the fact, however, that it was not until the Social Democracy of England had made the British public familiar with these

ideas that the authorities dared to look into the face of a creature of such fearful mien:

"After the improvement scheme has been confirmed, the local authorities are empowered to sell or lease the land acquired to any person who undertakes to carry out the stipulations enjoined. Local authorities themselves may only engage in rebuilding with the sanction of the local government board. The price paid for land must be a fair market value as assessed under the land clauses acts, no allowance being made because the purchase is compulsory. Where nuisances have existed, deduction is made for the sum it would have been necessary to spend for abatement or to put the buildings into repair. Where the premises are unfit for human habitation, the compensation covers simply the value of the land and materials. The lands required are to be purchased either by mutual agreement or upon arbitration. Lands owned by the local authority may be used for providing accommodation to displaced workmen, or if an insufficiency of accommodotion of this sort exists, suitable sites may be purchased. Expenses of improvement schemes are defrayed either from local taxation or from special loans. There exists in England a body known as the public works loan commission, and this is the source from which borrowed money may be obtained upon recommendation of the confirming authority. The period of repayment is fixed at fifty years as a maximum. Three and one-half per cent is the interest charged upon money borrowed from the public works loan commissioners."

Here we have one of the secrets of the phenominal success attending on all municipal improvements in the British Kingdom. Instead of the municipalities being at the mercy of private money lenders and being in bonds to them—the National Government itself loans out its surplus money at a low rate of interest to them, and thus they have never to go to foreign countries for their capital, the people really simply paying their interest to themselves on the same principal as the Building and Loan Associations.

Part II of this act of 1890 deals with unhealthy dwelling houses a matter which we need not dwell upon here—as it has been already considered in our last number.

Part III relates to providing lodging houses for working people which allows of the acquisition of land and the erection of buildings thereon or the alteration of existing construction to become lodgings for working people.

"Expenses incurred by a local authority in the execution of this part of this act are borne in London by the dwelling house improvement fund; in other urban communities as part of the general expenses in the execution of the public health acts. If it is found that any lodging houses, after seven years, dating from their acquisition or erection, are not necessary or are too expensive, they may be sold. Any railway company, or dock or harbor company, or any other company, society, or association established for trading or manufacturing purposes and employing persons of the working class, is granted the authority to build houses for such persons in their employment. In order to encourage enterprise of this sort the public works loan commissioners are authorized to lend money, repayable within a period of forty years, to companies or to private owners of land, not exceeding one-half of the value of the estate. The rate of interest is fixed by the commissioners of the treasury, but may not be less than 3½ per cent."

Another example of where the nation becomes the banker for the people.

THE ST. JAMES OFFICE BUILDING SCHEME.

THE row which has occurred between the promoters of the project to put up a fifteen-story office building on the site of the St. James Hotel, which has got in to court in a controversy over a division of profits, has brought to light about as clever a scheme for floating a big enterprise on wind as this city has seen in many a day. The men who conceived this idea and who are now quarreling over the profits are H. Durant Cheever, manager of the Okonite Company (limited), of 253 Broadway; Charles A. Cheever, who used to be connected with the New York Belting and Packing Company; Dwight W. Bowles, son of the editor of the Springfield *Republican*, and a newspaper man in this city, and one John L. Martin. As far as can be learned, these four clever men conceived the idea that it would be a good thing to put up a big office building somewhere about the neighborhood of Broadway and Twenty-sixth or Twenty-seventh street. The fact that none of them had the two or three millions that such a building would cost was not to stand in the way of the scheme. The four set to work, first to find a site, which could be secured for purchase, and finally purchased upon satisfactory conditions. Then it became necessary to find some one to advance the binding money to hold the land, an architect who would draw plans of the building, some monetary institution which would lend all that was needed, and a builder who would take a contract for the construction of the building and accept part of his pay in bonds and stocks of a corporation which was to be formed to stand as owner of the building. That success was attained in all of this appears to be true, for it is upon this allegation that the Cheevers and Bowles are suing Mr. Martin.

They allege that when the final negotiations took place, for certain reasons this work was left to Martin, who was to act in his own name. Martin carried on the negotiations successfully and made a profit out of them, but instead of offering to divide up $100,000 or so, which his partners believed he would have for them, he only acknowledges having made a profit of about $5,000. That there was a possibility of a profit of $100,000 in merely organizing a scheme to put up a big building without a dollar of capital is interesting. According to Mr. G. W. Brooks, who is counsel for the plaintiffs, there should have been three sources for this profit. The first of these was from the custom of land owners to pay a commission for the making of a sale of this land. The St. James Hotel belonged to the Spofford estate. It is assumed that the Spofford estate paid the usual one per cent commission for the sale of the hotel and its site, and that Mr. Martin arranged to get half of this commission for himself and his associates. This might have been either in cash or bonds, for the Spofford estate was to take part of its pay in bonds. The contractor who was to build the house would take part of his pay in stock and bonds, and in this way a margin of equality would be left upon the new building and its site to make it possible to borrow money for purchase and building. The second source of profit alleged was from borrowing the money. This had been arranged with a big life insurance company through a broker, and it is assumed that the broker divided his customary one per cent commission with Mr. Martin. The third source of profit was more direct. In order to get possession of the property it was necessary to pay $50,000 down. This, it is alleged, was borrowed from a man in Philadelphia, and he was to get a bonus for its use, and when the money was raised from the insurance company and the property transferred to the newly formed St. James Company, it is assumed that in making the trasfer that the property went to the new company at a profit of $75,000 or so over what the Spofford estate was to get for it. Out of this profit, which was to be collected in bonds and stock, the man in Philadelphia was to get his bonus, and the rest was to be devided among the projectors of the scheme.

Such, in a general way, was the scheme as it was told by Lawyer Brooks Tuesday. Mr. Martin's side of the story has not been made public yet. The hearing of the motion to enjoin him from collecting any of the commissions or profits arising from the transactions mentioned will be had on Friday.—*New York Sun.*

PHOTOGRAPHY IN COLORS.

THE discovery of the secret of photography in colors is the latest triumph of scientific research. The artist can now take instantaneous pictures in as many as seventeen colors, and an interesting coincidence in connection with the discovery of this secret is the remarkable fact that two investigators, widely separated and entire strangers to each other, made the discovery at about the same time. James W. McDonough, of Chicago, worked on the problem for thirty years, and only recently succeeded in solving it, and applied for a patent at Washington. In the meantime Professor Jolly, a scientist of Dublin, had been experimenting, solved the same problem, and also applied for a patent, being greatly astonished to learn that McDonough was ahead of him in making the application. The latter's claims were allowed, and Professor Jolly received a satisfaction fee; he also secured the London patent.

The Natural Color Photographing and Printing Company has already been incorporated under the laws of Virginia, with a capital of $500,000, with the privilege of raising it to $5,000,000. Spencer D. Schuyler, head of the New York office of the Maxim Powder and Torpedo Company, and E. M. Dickerson, a wealthy lawyer and amateur photographer, are the backers of the company.

By the new process either instantaneous or timed exposures, absolutely perfect in detail and tint, can be taken. The finished photograph looks like an ordinary piece of work marvellously colored by hand; but so simple is the process, and yet so accurate, that it becomes merely mechanical. It is said that experiments are being made which, it is expected, will result in transfering the art to printing. It will be only a question of time when a photograph can be taken and then printed from a half-tone plate on the specially prepared paper so that all the original colors will show up to true life.

Mr. Schuyler explains the new process as follows: "It requires a specially ruled screen and specially ruled paper. A multicolored screen, ruled by very fine lines formed of dots and small particles, is employed. Fundamental colors of the spectrum are preferably used for these lines, say orange-red, a yellowish-green, and a violet-blue.

"The screen is ruled with lines in these colors, about three hundred to the inch. This screen is placed in front of and in close contact with an orthochromatic plate, which is then exposed in the camera to the object to be photographed. The ordinary black and white negative is thus obtained in lines corresponding to the screen in register.

"From this negative a positive is made in the ordinary way on glass or paper. If now the screen, or a similarly ruled one, be laid on the positive and moved until the positive and screen are in register, the picture comes up in original colors.

"Nothing could be simpler. It is only nature's method of shading the rose its delicate pink and the sky its transparent blue. None of the complicated apparatus of cruder methods that have failed are needed—no adjusting of lights, no manipulation of colors.

"It is wonderful, wonderful," said Mr. Schuyler. "Half a century of patient experiment has at last come to something. Photographs absolutely true to nature can be made without expensive treatment, and in any quantity. It will revolutionize the art of photography, and allow its use in hundreds of ways now impracticable.

"The paper screens are for positives, the glass ones for transparencies. So fine are the color lines on them, and so perfectly proportioned in shade, that they show white when printed, just as the combined colors of the spectrum are white when properly mixed.

"Of course color photography is just in its beginning. Much is yet to be done. But are results are proof of what can be attained. Even now we have taken 500 colored photographs perfect in every detail of tint as well as outline. Anything can be photographed in all its natural colors, with all the delicate tints of life.

"The crowning achievement thus far is a photograph of a Japanese panel. It contains seventeen distinct shades, but the colored photograph brought out every one. Two photographs of the inventor, Mr. McDonough, show perfectly the flesh tints of the face and the exact color of the cravat, to say nothing of all the other little details of his attire.

"The color screens are easily and cheaply prepared. Inexpensive machinery does the delicate ruling required, and as for the paper, it needs no special manufacturing. Orthochromatic plates are only a trifle more expensive than ordinary dry plates. The difference lies in the fact that the common dry plate does not show up colors in their relative values in black and white, which the orthochromatic one does, aided by a specially prepared developer."—*The Southern Architect.*

ANNUAL CONVENTION OF THE TEXAS STATE ASSOCIATION OF ARCHITECTS.

THE annual convention of the Texas State Association of Architects was held in the gentlemen's parlor of the Driskill Hotel at Austin, Tex., Sept. 5, a fair attendance being on hand. The principal business of to day's meeting was the election of the officers for the ensuing two years, which resulted as follows: J. Reily Gordon of San Antonio, President; Burt McDonald of Austin, First-vice President; F. S. Glouer of Houston, Second Vice-President; H. A. Overbeck of Dallas, Secretary, and A. A. Messer of Fort Worth, Treasurer. After the election of officers an adjournment was taken for dinner, and in the afternoon there was a meeting of the executive committee in which numerous questions of the greatest importance was discussed.

The new officers qualified and have entered upon their duties.

ENAMELED BRICK FOR THE SUBWAY.

WHILE the Boston Rapid Transit Commissioners have been making experiments with Keene's cement plastering and Portland cement, to determine whether one of these materials may not be as satisfactory as enameled brick for lining the walls of the Boston Subway, the question has been decided in very short order under similar conditions elsewhere. What is to be known as the Blackwell Tunnel is being constructed in London under the bed of the Thames, connecting the densely populated districts of the city below the Tower. There seems to have been no doubt about what material to use for facing the interior of the tunnel. It will be lined throughout, approaches and all, with white enameled bricks and tiles, and it is proposed to wash it down thoroughly with a hose every morning. There is no reasonable doubt that this is the cleanest, most cheerful, and most enduring finish which can be devised for such constructions, and there is no reason why our Transit Commissioners should longer hesitate in their choice.—*The Brick Builder.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

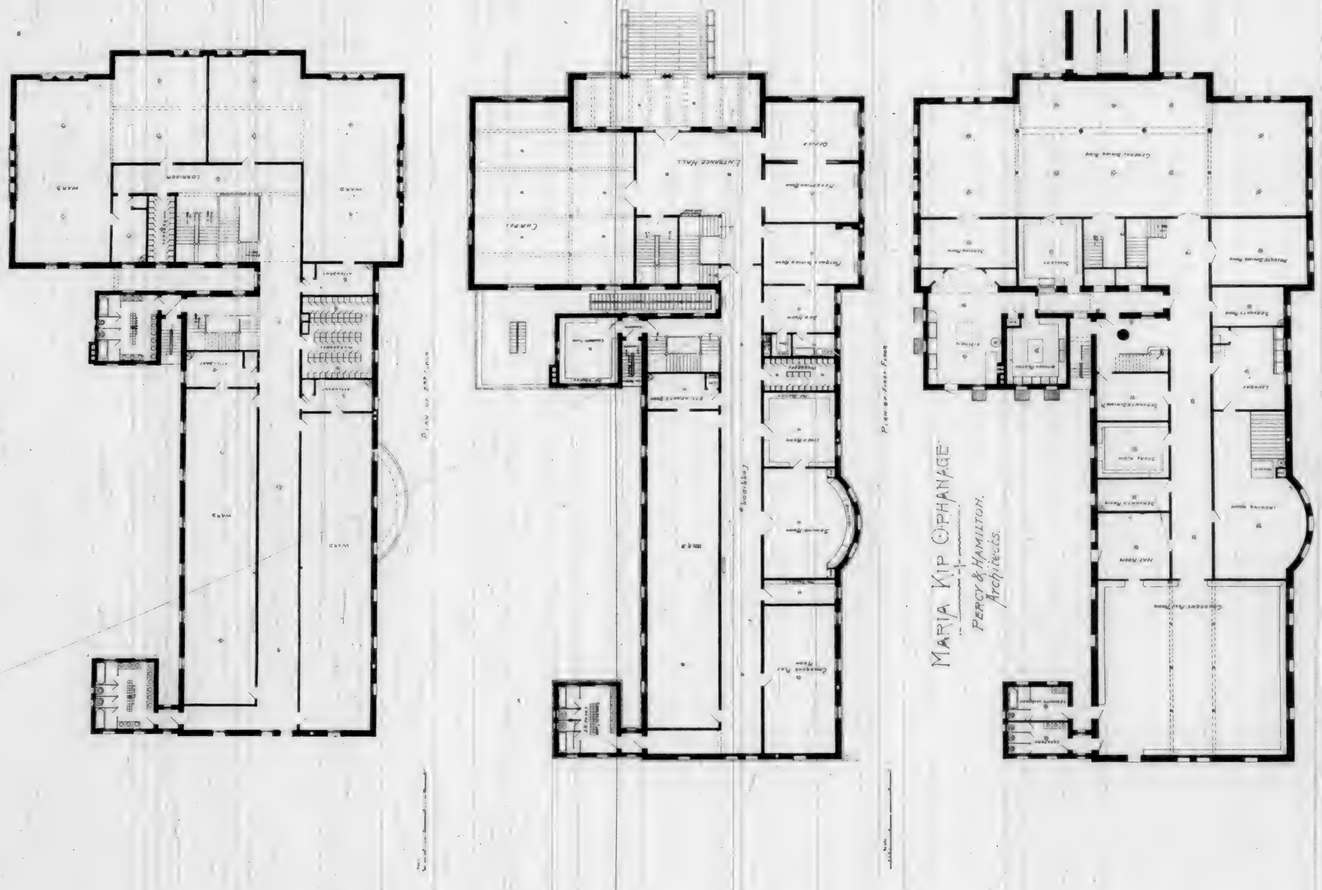
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

MARIA Kip Orphanage with plans, Percy & Hamilton, Architects.

WOOD PULP IN ARCHITECTURE.

IT is claimed that wood fibre decorations do not contract or expand in changeable temperatures, do not warp or twist, and do not crack or peel. Anything that a sculptor can shape in clay or plaster, or that the engraver can put in any material, can be reproduced. The decorations can be taken into a room bare of anything but the studding and rafters, and screwed into position, forming a hard and cheap finish, and a decoration. The ceiling may be formed in panels or otherwise, the coverings enriched or plain, cornices, centerpieces and friezes in convenient working breadths and lengths, and plain and embossed sheets in different thicknesses for the general wall space, with wainscoting skirting boards. No lath or plaster is necessary, the fiberware itself being thick enough, and forming a wall of greater strength and durability than one of plaster, and affording a surface for decoration and color. Imitation of oak, walnut, maple, or cherry is possible, with waincoted and paneled walls and ceilings, in colored, ceramic finished panels of artistic subjects. The embossed panels offer facilities for decoration which no other material outside of carved wood possesses. The architectural revivals of the present day, and the general desire to possess more artistic and refined homes, render necessary a great outlay in interior decorations than formerly. There has been a decided tendency towards the pure Colonial, Renaissance, and Tudor architecture, or what may better be described as the half-timbered or Queen Anne. There is also a decided liking, which is strongly favored by many architects, for the Elizabethan, with its ornate and richly carved decorations.—*Scientific American.*

WALL FABRICKS for interior decoration are beginning to be justly popular in these days, and the manufacturer who places before the public materials novel, artistic and at prices to meet the popular demand is assured beforehand of successful results.—*The National Builder.*



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.
VOL XVII Nº 9 SEPTEMBER 1896.

MARIA KIP ORPHANAGE
—
PERCY & HAMILTON.
Architects.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO LITH.

VOL XVII Nº 9 SEPTEMBER 1896.

CHAPEL. CYPRESS LAWN CEMETERY.

THOMAS P. ROSS, ARCHITECT.

CREMATORY, CYPRESS LAWN CEMETERY.

PISSIS & MOORE, ARCHITECTS.

THE TALLEST OFFICE BUILDING EXTANT.

THE St. Paul building, which is being built in New York for Havemeyer, the sugar king, is 306 feet from curb to cornice, and at the time its foundation was laid was designed to be the tallest office building in the Eastern metropolis. Now a syndicate of New Yorkers, according to a correspondent of the New York *Herald*, have decided to erect a building on Park Row, which shall be eighty feet higher than the Havemeyer building, and will be the tallest office structure in the world when finished. It will be 386 feet in height from curb to cornice, and will have a frontage on Park row of 103 feet. The total cost of the building exclusive of the land upon which it is reared will be above $1,000,000. In its construction it does not present many novel points over other tall buildings of a similar type. The building rests upon piles driven through the sand, one to each square of eighteen or twenty inches- The piles are driven down below the water line, cut off and capped, so that they will not rot, and upon this rises the structure of cement, granite and steel which holds the colossus up. Several of the steel beams, the girders, which are used to carry the weight of the outer walls to an interior base, cantilever fashion, weigh some fifty-five tons. That is heavier than an ordinary locomotive. Only modern steel making, with giant trip hammers and monster forges and colossal cranes, could ever turn out such ponderous billets of steel as this.

If this building, with its foundation, could be set in a scale pan, it would balance a thousand locomotives of the ordinary type. Into the scale against it could be put the entire population of the city of Boston, or for that matter the whole population of several States of the West. And as for its height, it will be far higher than the apex of Trinity spire, a full hundred feet above the topmost point of Bunker Hill monument. Its flagstaff will be on a level with the summit of Cheops.

CEMENT AFFECTED BY FREEZING.

IT appears to be ascertained as a fact, based on more than six thousand recorded results, that Portland cement mortar suffers no surface disintegration under any condition of freezing, but that in most cases its strength is reduced, in some cases by as as much as forty per cent. Rosendale cement is disintegrated when exposed to frost while setting, and its cohesion may be entirely destroyed by immersion in water, which becomes frozen around it. Salt water prevents this disintegration to a large extent, but seems to have an injurious effect upon the strength, and the cement below the disintegrated surface is stated to be increased in strength when the Rosendale cement is used. A mixture of a natural rock cement and of Portland cement is found to give very satisfactory results, as its surface does not disintegrate, and its strength is increased by the freezing. Portland cement is injured less proportionately as the precentage of the cement in the samples is reduced. Again, though lime mortar is ruined by alternate thawing and freezing, fairly good results may be looked for in the case of brick masonry when the mortar is kept frozen for some time after laying.—*The Railway Review.*

EXAMINATION FOR DRAUGHTSMEN IN THE SUPERVISING ARCHITECT'S OFFICE.

IN a few days, says the New York *Evening Post*, the Civil Service Commission will advertise an examination for draughtsmen who desire places in the office of the Supervising Architect of the Treasury. This is a new departure and one of more than ordinary moment. Several years ago such an examination was held, and draughtsmen secured through it, but a provision was at one time attached to an appropriation bill authorizing the employment of temporary assistance in the Supervising Architect's office without the formality of examination. Although this provision has not been repeated, the department has continued to act under its permission, and to make the "temporary" help so employed practically permanent.

With the rigid application of the civil cervice system to the Supervising Architect's office, many opportunities for improvement are in sight. After the office acquires a class of well-trained young men, who has demonstrated their ability, they will be sent to supervise the construction of public buildings all over the country. Heretofore those supervising actual construction have usually been appointed from the local districts, and principally upon the recommendation of Congressmen and political workers. Ofter those supervisors had an interest in prolonging the work instead of pushing it to completion in a business-like way, and it has even been alleged that they have in instances been more or less in league with the local plumbers and contractors, to the detriment of the public service.

In the examination for draughtsmen the Civil Service Commission will avail itself of its privilege in cases where a high degree of scientific attainment is desired, of dispensing with that relic of the spoils system known as the apportionment of Federal offices among the States. It will not be deemed necessary to take fifty per cent more architects from Arkansas than from Connecticut, unless the examinations themselves so decree.

When the President returns to Washington, the Civil Service Commission will confer with him in regard to establishing a register of all applicants for positions as laborers in the public service, similar to that which is now kept in the navy yards. It would obviously be difficult to select charwomen and grass-cutters by means of a civil service examination, but this register can be made up by those who desire work and who are endorsed highly by former employers. Other evidences of fitness for manual labor might be gathered, and when vacancies occur they could be filled from the list.

CEMENT.

EXCESS of water in a concrete mixture is bad practice, as only a fixed equivalent of water can chemically combined with cement. The surplus water simply displaces so much of the solid contents of the mass and leaves voids after it has evaporated. This makes the hardened concrete porous so it will obsorb moisture; this is a source of great weakness as the water held in the interstices during frosty weather expands and thus the cement begins to show cracks or other defects.

THE LATEST IN ELEVATORS.

THE new elevators being installed in the Congressional Library building are undergoing severe test. They are built with a special view to safety, and in addition to a safety-catch are provided with what is known as an air-cushion. This cushion, says the Washington *Post*, is not a real cushion, inasmuch as it is not soft, nor is it made and put in position. It is formed only when the elevator is dropped to the bottom of the shaft, and thus all wear and tear on the cushion is avoided. The principle is a very simple one. At the bottom of the shaft there is a well about thirteen feet in depth. The sides of the well are so arranged as to come at the top within a sixteenth of an inch of the side of the elevator. This space gradually grows larger until there is a distance of an inch and a half between the elevator and the shaft. When the elevator is dropped from the roof it pushes before it a quantity of air, and, dropping into the well, the air is rapidly condensed. As it can escape only by passing through the space at the sides, it escapes very slowly, thus allowing the elevator to settle easily.

Several tests have been made, and in each case the appliances worked in a most satisfactory manner. First, the elevator was taken to the top of the shaft, and on the floor was set a basket of eggs. Everything was then cut loose and the car dropped on the cushion, a distance of about eighty feet. The noise could be heard all over the building, yet the jar was so slight that not an egg was broken, or even cracked. In the next test the elevator was loaded with 2,600 pounds of iron and dropped in a similar manner. It was equally satisfactory.

The lives of the passengers are not dependent on this air cushion, as the safety-catches are of the latest and most improved pattern, but in case they should fail to work the passengers would receive nothing beyond a scare. The cushion would save them from bodily injury.—*The Southern Architect.*

THE DESTRUCTION OF WHITE PINE.

REPORTS from Minnesota state that with the present rate of destruction the days of the white pine are numbered. No other wood equals white pine in value and variety of purposes for which it is used, and its extinction would be a serious loss to the country. It has been and and still is the chief material in wooden buildings all over the country, and lumbermen have attacked the great pine forests as if the supply were inexhaustible until its early disappearance is manifest. Estimates just compiled by the State Forest Warden of Minnesota, an office created by the last Legislature because of the opinion that the rich forests were being too rapidly depleted, show that there are in Minnesota 10,890,000 acres of forest land, and that on this there stand, in addition to other woods, 19,000,000,000 feet of live white and Norway pine and spruce, of which the white pine aggregates 14,500,000,000 feet. This is a vast total, but it is being cut down at the rate of about 1,200,000,000 feet a year, besides fearful losses by fires, and the supply will hardly last more than a dozen years. It would not last so long as this were it not for the fact that the fire-swept pine can be saved by cutting when it is so located that it can be reached by railroads or water in time to save it from the attacks of worms. There is, too, a constant growth of the green timber, estimated at not far from 1¼ per cent a year, which will have some effect in warding off the final axe cuts. But in from ten to fifteen years the last white pine forests in the United States will have disappeared, for pine does not succeed as second growth timber, or at least has not done so with all the experiments carried on in the old pineries of Michigan and other States.—*Architecture and Building.*

BOOKS AND PERIODICALS.

OUR DUMB ANIMALS—It always gives us pleasure to open the envelope of this charming paper for we are always rewarded by finding something good from the pen of Geo. T. Angell. Mr. Angell is a man of very decided convictions, and what is more is not afraid to make them public in his remarks about the remedy for present hard times he writes: "We do not pretend to understand much more about finance than the cobbler whom the old Dutch Governor of New York, Peter Sturvysant, found haranguing a crowd in a public street, and told that if he ever caught him again prating of things he knew nothing about he would tan his hide for drum heads that he might hereafter make noise to some purpose." He then goes on to give his rather radical idea of reform, doubtless he would have been arrested in this city for disturbing the peace if he had expressed his honest opinion here.

THE SOUTHERN ARCHITECT, the representative of Southern Architecture, published at Atlanta, Ga., comes to hand in a new and handsome cover; the September number has an interesting table of contents; "The Strength of Georgia Pine" and "The New Steel Arch at Niagara" are both articles of interest to the architect and engineer.

LIPPINCOTT'S Magazine for September contains among other interesting articles a complete novel "A Marital Liability" by Elizabeth Phipps Train. This magazine always welcome to our table contains much that will be pleasing to the general reader.

NOTES AND COMMENTS

That gigantic piece of engineering, the Blackwall tunnel, attracts as many visitors as some places of entertainment. Under the auspices of the London Reform union, a further band of citizens, numbering about a hundred, inspected the progress of the tunnel under the guidance of Mr. McDougall, L. C. C., and Mr. Hay, one of the engineers in charge, on behalf of the County Council. The visitors were first shown on the surface the remaining two hundred yards that still has to be tunnelled. A descent of the Blackwell caisson was then made, Mr. Hay describing the action of the air-locks, by which the compressed air is kept in the boring chambers. To the accompaniment of dim lights and slippery planks the journey was then made on foot to the Greenwich end, which is approaching completion.

THE DAILY PAPERS have taken up the crusade agains the filthy condition of our public buildings and places—opened by us a few months ago.

GATEWAY, CYPRESS LAWN CEMETERY.
McDOUGALL & SON, ARCHITECTS.

THE STRENGTH OF COMMON MORTAR.

HERR BESCHETZNICK, an Hungarian expert, has been investigating common mortars, feeling that too much attention had been devoted to the higher cements by scientific men in all countries. He tried various kinds of lime, and slaked them all under the same conditions, afterwards allowing them to mature for a week. Mixtures of lime thus treated and ordinary building sand with water were then prepared, and tested after they had been allowed to set for one, three and twelve months.

The result of the tests showed that poor limes set more quickly than fat limes, but that the streugth of the latter was relatively greater when the mixtures used were poor in lime. Thus, 1:5mixtures of fat lime had nearly the same strength as 1:4 mixtures of poor lime.

An American, A. S. Cooper, has also been investigating the question of mortars turning his attention to the influence of the character of the same upon them. He used sands of varying fineness and character of grain, and after numerous experiments arrived a1 the following conclusions, namely:

1. Other things being equal, a fairly coarse sand, for example, one passing through a 12-inch sieve (12 wires to the mesh), and caught on a 16-inch sieve, gives mortars of higher tensel strength than do finer sands.

2. This effects of size of grain disnppears with sands fine enough to pass a 40-mesh sieve and caught in a 60-mesh sieve. Sands finer than this give similar results.

3. The character of rhe service of the grains is of no moment. Mere sharpness of grain is not the only point to be considered, for an extremely sharp sand may have a smooth surface on each facet, and a moderately rough surface is preferable.

All the above results, namely, those of Beschetznick and of Cooper, are of direct practical value, and should be made use of by those who have to use mortar, and are desirous of employing only a thoroughly trustworthy mortar, which will stand the test of time.

It is certainly high time that the composition of the various cementitious materials used in building should be defined, and that the strengths of such materials of known composition should be ascertained, so that nothing should be left to mere chance, or to the intelligent discretion of those talented assistants to whom we alluded in our opening paragraph.—*British Brickbuilder.*

BUSINESS MOSAICS.

A new depot for the sale of Cabot's Creosote Shingle Stains, Sheathing Quilt, Mortar Colors and Brick Preservative has been opened in San Francisco at 640 Mission street. This depot will be in charge of Mr. Charles J. Waterhouse, well known to architects as the representative of Burrowes' screens. All the above mentioned materials will be carried in stock, ready for immediate shipment, and samples, prices, estimates, etc , will be gladly furnished on request.

All architects who are interested in procuring an artistic and durable shingle stain which will prevent the blackening of redwood; or a superior insulator and deafener for walls and floors; durable and economical mortar colors, or a thorough waterproofing for brickwork, will do well to communicate with Mr. Waterhouse.

"George says there's bound to be bolting in the convention." "Yes; I suppose that's to hold the planks in the platform."—*Chicago Record.*

Hobart B. Ives & Co., New Haven, Conn., have lately constructed a new sash lock in stamped steel, bronze and brass on all finishes, which far outstrips any production in this line. See their new advertisement in this paper, one has only to glance upon this improved sash lock to be convinced it is all that is needed for a perfectly safe and reliable sash lock—their catalogue will be forwarded upon application.

"You have an immense amount of hay," observed the visitor at the Clover Meadow Farm. "Ya-as," said Farmer Redneck; "but there ain't a dang thing t' feed it to but bicycles."—*Jocker.*

Dixon's Graphitoleo is a preparation of a very finely pulverized and very choice graphite and a pure petrolatum warranted not to gum or become rancid. The merits and wonderful lubricating power of Dixon's flake graphite are well known to almost every engineer and machinist throughout the world. It has been tested by professors at the leading mechanical institutes, and also by the mechanical experts of the great railroad companies throughout the country, and declared to be the finest and best natural lubricant known. An article combining a perfect lubricant and rust preventive, put up in convenient form, is something desired by every bicyclist, hunter and yatchmen, as well as by every office and household.

To all such and many others Dixon's Graphitoleo will be not only welcome, but indispensable. It is manufactured only by the Jos. Dixon Crucible Co., Jersey City, N. J.

"What point does O'Beeze raise against Mrs. O'Beeze's riding a bicycle?" "Embonpoint,"—*Town Topics.*

At the Fair of the American Institute now in successful operation a fine display, near the entrance, of cordage, attracts universal admiration and reminds us to call attention to an advertisement on the last page of this journal of Samson Cordage Works, Boston, Mass. Samson Spot Cord s warranted free from waste and imperfections.

If we look backwards to the year 1828 and reflect upon the changes in the manner of doing business in this country now and then, when there was no express, no matches, no railroad cars, no telegraph, no electric light, etc., yet this is the year that The J. L. Mott Iron Works were founded; who now produce that marvel in the plumbing world, the Imperial Porcelain Roll Rim Bath Tub, we shall doubtless count this as among the great triumphs of the age. Mr. M. S. James, Flood Building, room 27, represents this company on the Pacific Coast.

Roxy—What are you buying up all that brown wrapping papper for? FOXY—Oh, like to look over a paper once in while that isn't full of politics.—*New York Press.*

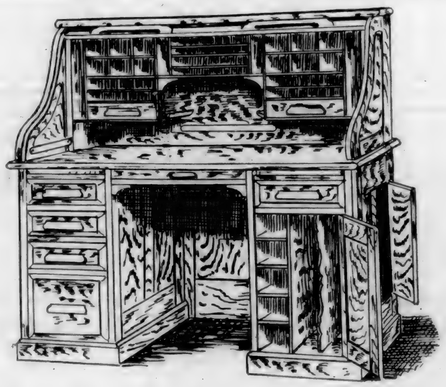
Joseph Budde, 575 Mission street, San Francisco, manufacturer of sanitary appliances in the plumbing line, is so well established in the estimation of architects, contractors and householders, that were it not for the purpose of calling attention to the importance of sustaining home industry it might appear needless to call attention to his stock in this line, the fact of medals and diplomas being awarded at the State Fair, show the estimation which competent committees who have carefully examined into the subject regard him, speak for itself.

The ideal wall finish is a perfectly flat finish prepared ready for use. Contains no glue is non-absorptive and antiseptic, will not crack or peal off. Can be washed when soiled with soap and water.

Zinolith is the trade mark, Manufactured by L. H. Butcher & Co., 593-595 Mission street, San Francisco.

Miss Gosippe—Do you pay much attention to what your husband says? MRS. JEALOUS—Not unless he talks in his sleep.—*Omaha Bee.*

San Francisco Furniture Mnfg. Co., late of Chicago, Ill., is managed by Mr. Charles J. Bruschke. This is the



place to get good oak furniture and oak flooring all of California Oak, 644-648 Bryant street, San Francisco.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

WHO ARE CONTRACTORS?—That a building is erected under the supervision of the owner, except as to the painting and the plumbing, for which he made contracts, does not make the person with whome he made the contract for the plumbing a subcontractor, in that the owner himself was the contractor, so as to prevent a mechanic's lien from being filed for the plumbing materials furnished the person who did that portion of the work. Owen v. Johnson, Supreme Ct. Penna, 34 Atlantic Reporter, 549.

ARCHITECT HAS A LIEN FOR PLANS USED.—An architect says the Supreme Court of Iowa, who prepared plans and specifications for improvements on a building, which are made in accordance with such plans, is entitled to a mechanic's lien on the property.
Parsons v. Brown, 66 Northwestern Reporter 880.

LIABILITY OF OWNER FOR DANGEROUS BUILDING.—The Supreme Court of Nebraska holds that the owner of real property, in exercising his own tastes and inclinations as to the character of a building he will erect upon it, has no right to build and maintain a structure which, by reason of defects or inherent weakness either in material or construction, is liable to fall and do injury to an adjoining owner or the public. He is liable for the natural, probable, reasonable and proximate consequences of his acts only, and it is for the jury to determine whether any of these caused the injury.
Kitchen v. Carter, 66 Northwestern Reporter, 854.

ARCHITECT'S CERTIFICATE OF PERFORMANCE.—Where the architect refuses a material-man a certificate that he has performed his contract with the contractor for the material, on the ground that it was unnecessary, he having certified to the owner that the contractor has performed his contract, such refusal is unreasonable, and dispenses with its necessity on the part of the material man to secure such certificate, as required by his contract to enable him to recover from the contractor. Murdock v. Jones, Sup. Ct. App. Div. 38 N. Y. S. Rep. 461.

CONTRACT WITH LESSEE OF PREMISES.—Evidence that the alteration on the premises, made on the order of the lessee, for which the lien was claimed, consisted merely of the erection of a wooden partition in one of the rooms, does not authorize a finding that the work was part of the original structure, so as to dispense with notice to the owner, as required by the laws of Pennsylvania, in case of repairs, alterations or additions, in order to bind the premises. Hall v. Blackburn, Supreme Ct. Penna., 34 Atlantic Rep. 19.

CITY BUILDING NEWS.

Sixteenth Ave. near N. street. Cottage; owner, Peter Murphy; architect, H. R. Schmuckert; contractor, M. J. Scott; signed, Aug. 24; filed, Aug. 25; cost $1150.

Sutter and Hyde. Painting, etc., six-story brick; owner, Dr. J. Rosenstirn; architects, Saifield & Kohlberg; contractor, D. Zelinsky; signed, July 5; filed, Sept. 3; cost $3100. Blostering, etc.; contractor, J. J. Kelley; signed, July 4; filed, July 14; cos; $4278.

Sutter near Steiner. To build; owner, John Bernva; architect, C. M. Rosseau; contractor, R. J. Pavert; signed, Aug. 12; filed, Aug. 13; cost $8000.

Twenty-third and Nebraska. Alterations, etc.; contractor, McInerry; cost $1000.

Twenty-fourth and Treat Ave. To build; owner, J. H. Mangels; architect, H. Gelifuss; contractor, F. W. Kern; signed, Aug. 28; filed, Tept. 1; cost $7000.

Twenty-fourth and Shotwell. To build; owner, John F. Schomer; architects, Martens & Coffey; contractor, J. Bucher; signed, Sept. 3; filed, Sept. 4; cost $4735.

Van Ness Ave. and Clay. Retaining walls, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractor, McPhee Co; signed, July 30; filed, Aug. 15; cost $14,875.

Valencia near 23d. To build; owner, H. J. Tilden; contractor, W. H. Bagge; signed, Aug. 14; filed, Aug. 18; cost $1615.

Vallejo near Montgomery. Block of two-story frames; owner, Annie L. Whittell; architects, Townsend & Wyneken; contractors, W. T. Veitch & Bros; signed, Aug. 15; filed, Aug. 18; cost $15,445.

Vallejo near Myntgomery. Plumbing and gas-fitting; owner, Annie L. Whittell architects, Townsend & Wyneken; contractor, R. Rice; signed, Aug. 17; filed, Aug. 18; cost $1600.

Vermont and 25th. To build; owner and builder, F. Nelson; cost $3000.

Williamson, Park Ave. Cottage; contractor, W. Helbing; cost $1800.

York and 25th. To build; owner, G. E. Buck; architects, Herman & Swain; contractor, L. B. Schmid; signed, Aug. 24; filed, Aug. 24; cost $2700.

Alvarado near Douglass. Cottage; owner, Jacob Welsbeir; builders, Cotter & Jones; cost $2400.

Baker near Washington. Two-story frame; owners, W. E. Lutz and wife; architect, B. J. Cahill; contractor, W. J. Field; signed, Aug. 15; filed, Aug. 15; cost $3770.

Broderick and Eddy. Cottage; owner and builder, H. Keenan; cost $3600.

Bryant and Converse. Repairs; owner, J. C. Donahoe; day's work; cost $1000.

Brannan near Fifth. Marble work on church; contractors, Pierce & Carter; cost $1600.

Buchanan near Jackson. Additions and alterations; owner, F. V. Acker; cost $1800.

Buchanan near Lombard. Moving and raising; owner, John Hurson; architect, A. R. Wilkins; contractor, S. Uray; signed, Aug. 17; filed, Aug. 29; cost $1153.

Bush near Franklin. Alterations and additions; owner, Jean Maloeg; architect, Jules Godart; contractors, Medus & Hurthore; signed, Aug. 27; filed, Aug. 31; cost $2400.

California near 1st Ave. Cottage; owner, Clara and Markey Weiss; contractor, L. G. Bergren; signed, Aug. 28; filed, Sept. 3; cost $1100.

California near Lyon. Two-story frame; owner, Rosa Arnheim; architect, M. J. Lyon; contractors, Elder & McLaughlin; signed, Aug. 11; filed, Aug. 13; cost $4085.

Castro near 23d. Two-story frame; owner and builder, S. A. Born; cost $2200.

Chestnut near Larkin. Cottage; owner, Mrs. Mary Comming; architects, Pisses & Moore; contractors, F. Miller and P. Fredriksen; signed, Aug. 25; filed, Aug. 29; cost $2915.

Congo near Circular Ave. Cottage; owner, G. A. Fabris; contractor, J. D. Moreland; cost $1000.

Clay and Cherry. Two-story frame; owner, T. P. Hicks; architect, W. Rossand; contractor, C. Anderson; signed, Aug. 24; filed, Aug. 25; cost $3985.

Clay and Webster. Addition to college; owner, Cooper Medical College; architects, Wright & Sanders; contractors, Peacock & Butcher; signed, Sept. 1; filed, Sept. 2; cost $4640.

Clement street and 6th Ave. To build; owner, Mrs. Mary Gilroy; architect, M. G. Bugbee; contractor, A. C. Soule; signed, Aug. 21; filed, Aug. 26; cost $2900.

Croce, Academy tract, near Mission. Cottage; owner and builder, A. G. Anderson; cost $1000.

Douglass near 17th. Cottage; owner, H. Peters; architect, Emil John; contractor, Wm. Tegeler; signed, Aug. 29; filed, Sept. 3; cost $2674.

Eighth Ave. near J. Cottage; owners, Chas. and Ida M. Osborn; contractor, D. McLeod; signed, Sept. 2; filed, Sept. 4; cost $1315.

Fell and Clayton. Concrete, etc., two-story frame; owner, M. A. Moldenhouer; contractor, H. P. Conrady; signed, Aug. 22; filed, Aug. 22; cost $6300.

Fulton and Gough. To build; owner, Louis Schoenfeld; architect, Emil John; contractor, C. Kreeker; signed, Aug. 24; filed, Sept. 1; cost $3340.

Fifth near Stevenson. Concrete work, etc., for five-story brick; owner, John F. Boyde; architects, McDougall Bros; contractors, Warren & Malley; signed, Sept. 3; filed, Sept. 3; cost $1925.

Fifth near Stevenson. Brick work for five-story brick; owner, John F. Boyd; architect, McDougall Bros; contractor, Thos. Butler; signed, Sept. 4; filed, Sept. 5; cost $1160.

Fifteenth near Mission. Alterations and additions; owner, W. M. Currie; architects, McDougall Bros; contractor, M. C. Brennan & Son; signed, Aug. 20; filed, Aug. 20; cost $1600.

Fourth Ave. near Lake. To build; owner, W. F. Parks; contractor, W. W. Rednall; signed, Sept. 3; filed, Sept. 7; cost $1500.

Fourth Ave. near Lake. Cottage; owner, G. B. Lagomarsino; contractor, D. Martino; cost $1000.

Fourteenth near Presidio. Cottage; owner, Mrs. Annie Dixon; contractors, Waste & Fenn; cost $1800.

Folsom near 18th. To build; owner, Henry Meyn; architect, W. H. Wharff; contractors, Holm & Sheibley; signed, Aug. 15; filed, Aug. 18; cost $2466.

Folsom near 18th. Grading, concrete, etc; owner, Henry Meyn; architect, W. H. Wharff; contractor, Robert Bugot; cost $344. Plumbing, gasfitting, etc; contractors, Bertram Bros; cost $500.

Franklin near Washington. Two-story frame; owner, J. D. Bailey; architect, F. B. Wood; contractors, Brutcher & Griffith; signed, Aug. 12; filed, Aug. 13; cost $3973.

Franklin and Clay. Additions; owner, Gordon Blanding; architects, Kenitzer & Barth; superintendents, Mahoney Bros; cost $10,000. day's work.

Fremont near Howard. Two-story brick; owner, C. H. Evans; architects, Percy & Hamilton; contractor, R. Ringrose; signed, Aug. 13; filed, Aug. 14; cost $4947.

Genesee and Joost Ave. Two-story frame; owner, John Wilson; cost $2200.

Golden Gate Ave. near Baker. Cottage; owner and builder; S. A. Born; cost $2600.

Golden Gate Park. Granite bridge; owner, Park Commissioners; contractor, A. McLennan; cost $16,000.

Green and Franklin. To build; owner, Mr. Cademantori, contractor, P. Demartini; cost $1600.

Hampshire and 18th. One-story brick; owner, Viking Brewery Co.; mason work, Riley & Loane; carpentry, I. Schuler; cost $2000.

Harper near 30th. Cottage; owner, Joseph L. Konrad; contractor, Henry Behrens; signed, Aug. 14; filed, Aug. 19; cost $1550.

Hayes near Lyon. To build; owner, Sarah Snow; architect, J. G. Hult; contractor, S. T. Crawford; signed, Aug. 19; filed, Aug. 21; cost $3222.

Haight near Laguna. Roof for orphan asylum; owners, Mesdames Alvord & Garniss, trustees; contractors, Pacific Sheet and Metal Works; cost $3223.

Joost near Circular Ave. Cottage; owner, M. O'Connor; contractors, Miller Bros.; cost $1500.

Lombard near Kearny. Cottage; owner, Frank Browell; architects, Towsend & Wyneken; contractor, P. A. Antonelli; signed, Aug. 19; filed, Aug. 19; cost $1275.

Market and Fell. Repairs to Fairmont Hotel; owner, Maria C. De Laveaga; cost $2000.

Mason near Post. Alterations; contractor, W. Little; cost $1500.

Mission near 8th; Two-story brick; owner, Edward McLaughlin; architect, Chas. Geddes; contractor, D. B. Munroe; signed, Aug. 14; filed, Aug. 21; cost $2670.50.

Mission near 8th. Iron anchors, etc.; owner, Edward McLaughlin; architect, Chas. Geddes; contractor, Henry Ralston; signed, Aug. 14; filed, Aug. 29; cost $1217.

Mission near 8th. Grading and brick work; owner, E. McLaughlin; architect, Chas. Geddes; contractor, H. H. Larsen; signed, Aug. 14; filed, Aug. 15; cost $5833.

Mission near 3d. Alterations and repairs; owner, Shiels Estate; contractor, W. Little; cost $2500.

Mission near 14th. To build except plumbing; owner, Patrick Riordan; architect, Jas. P. Brady; contractor, John Quinn; signed, Aug. 10; filed, Aug. 11; cost $2505.

Mississippi near 19th. To build; owner, G. O. F. Hans; contractor, A. Dahlberg; signed, Aug. 17; filed, Aug. 17; cost $1930.

O'Farrell near Powell. Alteration and addition; owners, Geo. D. and Mary A. Tay; architects, Herman & Swain; contractor, J. G. Adams; signed, Aug. 13; filed, Aug. 13; cost $6324.

O'Farrell and Hollis. To build; owner, E. F. Bareilles; architect, J. Godart; contractor, A. Hawkins; signed, Sept. 2; filed, Sept. 3; cost $8500.

O'Farrell and Hollis. Brick and iron work; owner, E. and F. Bareilles; architect, J. Godart; contractor, John McCarty; signed, Sept. 1; filed, Sept. 3; cost $1300.

Page and Webster. Brick and stone work; owner, M. Greenwood; architect, Chas. Geddes; contractor, H. H. Larsen; signed, July 22; filed, Aug. 15; cost $2100.

Page near Buchanan. To build; owner, John B. Davitt; architect, J. W. Haubrick; contractor, John Miron; signed, June 17; filed, Aug. 18; cost $2700.

Page near Cole. To build; owner, Edward Barnett; architect, C. T. McNally; contractor, John Hood; signed, Aug. 10; filed, Aug. 21; cost $3600.

Post near Kearny. Alterations and additions; owner, Eva R. Barron, ex-estate of E. Barron; architect, R. H. Whtte; contractor, Ingerson & Gore; signed, Aug. 11; filed, Aug. 14; cost $4025.

Post near Powell. Two fire-proof vaults; owner, San Francisco Gas Light Co.; architect, Clinton Day; contractor, Diebold Safe Co.; signed, July 25; filed, Aug. 22; cost $3625.

Point Lobos Ave. near Boyce. Two two-story frame; owner, E. P. Troy; builder, T. A. Born; cost $5000.

Powell and Ellis. Ventilators, etc, for four-story brick; owner, Royal Eagle Distilleries Co.; architects, De Prosse & Meussdorffer; contractor, C. Schutt; signed, Aug. 19; filed, Aug. 22; cost $2285.

Powell and Market. Alterations; owner, E. J. Baldwin; architect, M. J. Lyon; contractor, W. Knowles; signed, Aug. 25; filed, Aug. 25; cost $3000. Copper, iron and brass work; contractor, P. E. Banker; cost $868. Painting, etc; contractor, L. Aron; cost $775.

Pierce and Lombard. Raising and moving; owner, D. Samuels; contractor, Geo. Reichley; cost $2250.

Sacramento near Fillmore. To build; owner, Agnes Holt; contractor, R. R. Redall; signed, Aug. 11; filed, Aug. 12; cost $1035.

Sacramento near Van Ness. Alterations and addittons; owner, J. Z. Passadas; architects, Pissis & Moore; contractor, F. W. Kern; signed, Aug. 12; filed, Aug. 13; cost $1385.

Sacramento near Van Ness. Stone work; owner, Claus Spreckles; architects, Reid Bros; contractor, J. D. McGilvray; signed, July 30; filed, Aug. 15; cost $11,000.

Sacramento near Drumm. Brick building; owner, Capitol Rolling Mills; pile driving, San Francisco Bridge Co.; mason work, Geo. Richardson; cost $25,000.

Sharron near 16th. To build; owners, Geo. and Katherina Stockmier; contractor, R. Trost; signed, Aug. 11; filed, Aug. 11; cost $1835.

St. Marys Ave. and Marsily. Cottage; owner, B. Smith; architect, H. E. Harris; contractor, J. Millerick; cost $800.

St. Marys Ave. near Mission. Cottage; owner, M. E. Haskell; contractor, L. G. Bergren; cost $900.

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W. J. CUTHBERTSON, President. OLIVER EVERETT, Secretary.

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PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

THE MERCHANTS' Association of San Francisco has taken up the question of regulating the mixing of mortar for building purposes on the public street, in order to protect themselves from the nuisances created by the present methods of procedure, and will make an effort to have a suitable ordinance passed by the Board of Supervisors; the San Francisco Chapter of Architects and the Builders' Exchange have been requested to render advice and assistance in framing the provisions of the proposed ordinance, so as to best serve all the conflicting interests. The architects present at the last Chapter meeting were of the opinion that it would be advisable to recommend the method employed in many European cities, of establishing a business devoted exclusively to the mixing and sale of mortar. A convenient and central location could be chosen where orders could be received and filled, and mortar delivered when and where required and in quantities to suit purchasers.

Such a system, properly organized, would render the

obstructing of the streets with piles of mortar unnecessary, prove more economical, and render more satisfactory and uniform results in regard to the quality of the mortar used.

The specialization of each different branch of industry is the tendency of the age, and whether or not the Merchant's Association succeed in their present purpose, it will not be long before the economic side of the question will force a solution, irrespective of the question of public convenience.

MONEY being the subject now uppermost in all minds it becomes us to take cognisance of it, being a matter which effects all industries, the building interests included.

It is a subject clouded over with sophistries; and yet, when denuded of all these, which have been laid over by the hands of parties interested in obstructing the common sense view of the matter, we find t simple enough.

The Law called the Law of Supply and Demand, universally recognized, teaches us that the more of a necessary article there is the cheaper it is, and the scarcer it is, the more expensive it is. Money being a necessity the more of it there is the cheaper it is. So that when it is doubled in volume it becomes about double as cheap. So when the unlimited coinage of silver is allowed, the volume of money being increased about double, the man that has the money will have to pay about double for what the producer has to sell him. It is therefore narrowed down to a struggle between those who have the metals of which money is chiefly now made and those who have them not, to make dear whatever each has to sell.

The man that wants to build and has to borrow money to do so, therefore will naturally vote for the unlimited coinage of silver—he who has money to loan as naturally votes for keeping only gold in use—the mechanic and laborer, who have the products of their labor to sell only, vote for silver as they will then get more for their labor—the capitalist that employs labor of course he wants to cheapen it and make scarce to others the material in which he pays for it and which he holds.

The statistics of the Stone industry given in another part of our journal show the continuous decline of that industry for many years, some claim due to Free Trade others to protection—the fact is, it is due to the want of money in the pockets of the consumers. Stone, marble and all such present luxuries would be used commonly if the people had the wherewithal to indulge.

However this Silver medicine must not be considered a cure all, it is simply the stimulant that is given to a wounded man to keep him together until proper aid can be given him, while the mines are in the hands of private parties instead of in the hands of the State the major portion of the profit on coinage of money will go into the mine owners' hands: while the machinery is not accessible to the community the great mass of the profits of manufacturing will go into the hands of the capitalist manufacturers—and while the land is mortgaged almost all the profits of farming goes into the hands of money holders. That's what we mean when we say that an increase of the currency alone is simply a stimulant or palliative to prepare the social body for the operation which must come later—when we get the blood circulating to all parts of the numbed extremities by that flood of silver which the gold advocates predict, then is the time to talk abont that anti-monopolistic surgical operation that shall make well the body politic.

Whether the architectural and building interests would be temporarily benefited by that bounteous down-pour of sparkling silver rain which would cause money to be cheaper or whether the attempted flood would cause the financial panic and resulting disasters that other prophets predict, can only be ascertained by an actual trial of the proposed experiment.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 3.

WE CONTINUE on the subject of "Expropriation for Sanitary Purposes" and the provisions of the English Law of 1890 in regard to the same.

As the author of the Report of the Commissioner of Labor says:

"One of the great merits of this law is that it provides for the acquisition of slum property without having to pay unreasonable sums for it. Inability to do this greatly hampered the operation of the previous artisans' and laborers' dwellings act."

"Conditions as to rentals charged may be incorporated, otherwise the people are at the mercy of speculative builders. Furthermore, the community will find that, if buildings are built by speculative builders upon land expropriated for sanitary purposes by the city, the community has not been a gainer in the end, for the reason that surrounding localities become overcrowded, and very soon another pest spot is created even worse than the one which was displaced. It is seriously open to question whether or not the municipality must not, in the interests of justice, here intervene. Certainly it must restrict rents and guarantee sanitary features.

The municipality is justified in building on the ground thus acquired, because the benefits of the expropriation are preserved to the taxpayers, and evils incident to the overcrowding and the upgrowth of slums are prevented.

"The act of 1890 is by no means socialistic in character, as the permission to municipalities to build houses for working people and operate them on their own account would seem at first glance to indicate. The consent of the local government board is an essential preliminary to this form of activity. Efforts to dispose of the land to private parties or to building companies must first, in every instance, be made.

"This law is a sanitary measure rather than an enactment to encourage the erection of houses for working people. The only provision for the latter is that permitting the loan of money at a low rate of interest, upon security which is unquestionable, to trading and manufacturing companies employing persons of the working class. In this respect it differs materially in general characteristics from legislation on the continent, particularly in Belgium. The law is distinctly a measure of protection and only incidentally one of social advance. The moral to be derived from its considera-

tion is that an expensive awakening must come sooner or later to all communities where fundamental sanitary requisites in dwelling construction have been neglected. This legislation gives evidence that the interests of property will not henceforth be considered paramount to those of human life."

The last sentence we hope gives the keynote of all future legislation everywhere. The sacredness of property and the violability of humanity has, it appears, had its day—and the converse proposition is more to the front nowadays—and such questions as why should the producers be compelled to live in hovels while the speculators live in palaces, why the one should have to put up with a ten cent lunch while the other can spend thousand of dollars on a banquet are now agitating men's minds.

A rose is as sweet called by whatever name—so we will not cavil with our author about whether these movements of protecting those not able to protect themselves are called "measures of protection and only incidentally one of Social Advance"—or whether it is a measure of social advance and necessarily, therefore, one of protection.

The result is the same; greater happiness for humanity.

The author then enters into the subject of objections to expropriation; which means *the taking property out of one's possession*. It seems to be taken for granted that the taking of property from its holder by the state for the public good is a legitmate operation, which leaves only economic objections such as its cost, and what becomes of the dispossessed.

Property when taken by a City for its own use should be able to become as good a paying investment as private property, if judiciously and honestly handled; for, notwithstanding that it has to pay ten per cent more for compulsory condemnation, it should be able by the magnitude of its operations to recoup itself for this—and get a reasonable income from it.

"In estimating the cost of any improvement scheme, account should always be taken of the fact that the first cost will ultimately be reduced by the taxes upon the increased values of property on expropriated territory and in the immediate neighborhood."

In regard to what becomes of the dispossessed, that is those who are occupying the condemned buildings, it requires only a little management to prevent any serious inconvenience to them, *e. g.*, by proceeding by degrees rather than attempting everything at once. In a large undertaking doing only part at a time and when that portion is done provision is made for housing a large number of the dispossessed and part of the remainder may be destroyed and so on until all is completed.

"It would be futile to deny that large expropriations have resulted in overcrowding side streets in the vicinity. This fact is incontestably proved by the experience of Paris in piercing the city with her magnificent boulevards and in the enormous displacements which took place in London during the construction of the Victoria enbankment and the new law courts. There are other instances, however, to show that comparatively large works may be conducted without this unfortunate feature where sufficient care is taken, and work proceeds more slowly.

In Paris there is no compulsory provision for housing displaced people as in London; consequently there has been tremendous overcrowding of side streets along the great boulevards which were run through old and insanitary quarters."

The author next looks at "some results of expropriation" especially as exemplified in the chief cities of Great Britain where it has been used—in Edinboro, Dundee, Newcastle, Liverpool, Birmingham and Glasgow.

Expropriation has been not always done for rebuilding purposes but for providing open spaces in overcrowded districts as the following:

"Occasionally condemned houses have been purchased by the corporation and pulled down in order to give freer air to crowded neighborhoods. Such houses, instead of being purchased at prices favorable to the owners, have been bought by the corporation as uninhabitable buildings. Not a little of the expropriated insanitary property in Edinburgh has been turned into small open spaces. These can by no means becalled parks or squares, as they cover simply the space formerly occupied by one, two, or three houses. The spaces are paved over, supplied with light gymastic apparatus, and used as a recreation ground for children. Such thoughtful provision for the youth of tenement districts is a splendid boon. Small areas of this kind serve ethical as well as hygienic ends."

It cannot but be interesting in these days of municipal reform to give Glasgow's experience in this matter and its results, as Glasgow is the city of all others at the present time looked to as an example of successful municipal government in a monetary sense:

"In 1846 the municipal and police governments of Glasgow were consolidated. Shortly afterwards the city council determined to spend about £30,000 ($145,995) in acquiring property in the wynds and closes abutting on High street, in the Saltmarket, and in Gorbals. A fairly large area was thus purchased, but it was soon seen that in default of a proper building law builders would continue to consttuct the same kind of buildings in more modern quarters. The whole question of sanitary legislation and building regulations was then brought up, and after a committee had investigated the condition of English cities, which they found in superior sanitary condition, they made recommendations looking towards wiser sanitary administration for the city. Two of the most important recommendations were the appointment of a competent medical officer of health and a staff of nuisance inspectors for the prevention of overcrowding and the interdiction of houses unfit for human habitation. In 1862 an act largely embodying the recommendations of this committee received the sanction of Parlament. Its provisions were deemed at that time exceptionally rigid, and the period of operation was limited to five years. In 1866, however, when the application for the renewal was made, not only were the old parts confirmed, but modifications in the way of improvement were added. The reports of the health committee in relation to the insanitary state of the older houses of the city, coming at a time when projects of construction of railway terminals were pressing for solution, determined the town council, in 1865, to apply to Parliment for a city improvement act, whose object, as stated in the title, was "the construction of new and the widening of older and dividing of existing streets, and for other purposes.'

"The scheme, as originally conceived, embraced about 88 acres, with an average population of 583 per acre, though in some districts more than one thousand were huddled to-

gether in this space. The average rate of mortality was 38.64 per 1,000, and the deaths from epidemic diseases 36 per cent of the whole. Sanction was given to the plan by Parliment in the improvement act of 1866. A much broader scheme than that originally conceived has been carried out under the sanction of later acts with financial results which the following statement shows:

"The total cost of property acquired up to the end of the fiscal year 1893 by the Glasgow Improvement Trust has been as follows:

Within compulsory areas	$7,882,780.24
Oatlands	205,775.27
Overnewton	208,904.57
Cost of erection of two model tenements in Drygate and site thereof	16,672.95
Expenditure on formation of streets, squares, sewers, etc	506,251.25
Lands of Kennyhill and cost of forming same into Alexandra Park	194,660.00
Cost of seven lodging houses, sites, and Moncrieff street ground	435,302.08
Cost of Saltmarket and other new model tenements to date	255,067.52
Total	$9,705,413.88
Of this there has been disposed of—	
For prices and feu duties within central areas	$4,428,227.17
For prices and feu duties at Oatlands	230,418.98
For prices and feu duties at Overnewton	243,858.61
	$4,902,567.76
Giving as the net cost of heritable subjects	$4,802,846.12
Value of property still in the hands of the trustees	2,653,760.40
Deficiency	$2,149,085.72
Total assessment received from the ratepayers since 1866	$2,812,188.42
Excess of liabilities over assets May 31, 1893, which will have to be made by assessing	692,573.05
Total cost to ratepayers from first to last	$3,504,761.47

For this ratepayers have obtained:

1. Alexandra Park.

2. Ninety-seven thousand one hundred and sixty-two square yards of ground, applied in the formation of 29 new streets and in the improvement of 25 existing ones, being 32,492 square yards of street surface beyond what was contemplated in the original scheme.

3. The sanitary and social amenities produced by the street, sewer, and other public works, which cost, as above stated, £104,027 15s. 10d. ($506,251.25.)"

Wherever municipal improvements are made the land adjacent thereto advances in value—it is therefore good business policy for the city not only to buy the property required for the improvements but all property surrounding the same so that the people may gain the "unearned increment" instead of private owners.

"Some of the greatest boulevards of Paris have thus been constructed, practically, without cost to the city, because the adjoining land has been so much enhanced in value that the price received when it was sold has been almost sufficient to meet the cost of public works."

THE CHICAGO DRAINAGE CANAL.

THE city of Chicago suffers from a contaminated water supply by reason of the entire city sewage being emptied into the Chicago river and thence to a great extent, carried into Lake Michigan, where it finds its way in a diluted state into the domestic water supply, through the lake intake tunnels. This water is always more or less impregnated with disease germs, developing epidemic typhoid fever. The city has in the past maintained, as it still does, pumping stations, designed to divert the river current from the lake. These pumping stations are located at Bridgeport, where the water is lifted from the river into the Illinois and Michigan canal, where it flows south into the Illinois river.

This gives only partial relief, however, and, the pumping system not being equal to the task imposed, the Chicago Drainage canal was projected and is now in process of construction, whereby a natural waterway will be created with a natural fall, reversing the direction of the current of the Chicago river so as to pass the water of Lake Michigan through this artificial cut across the continental divide intersecting with the Des Plaines river channel to Lockport, where the controlling works will be located, and thence down the natural fall to and through the city of Joliet and over the natural courses of the Illinois, Ohio and Mississippi rivers to the Gulf of Mexico.

The main channel of the Chicago Drainage canal is the most extensive engineering project in America excepting only the Panama and Nicaragua Ship canal, and when fully matured will bring New Orleans in direct water communication with Chicago. The total amount of excavations in in the main channel is 26,077,765 yards glacial and 12,071-658 cubic yards solid rock aggregating 38,149,433 cubic yards. To this must be added material excavated from the river diversion, 1,564,403 cubic yards glacial drift and 258,926 cubic yards solid rock. Total, river diversion 1,823,329. Grand total, main channel and river diversion, 39,972,762 cubic yards.

Estimated cost of work now under contract	$18,990,078.64
Right of way account	2,606,227.92
Total	$21,596,306.56
Estimated cost of completed canal	$28,000,000.00

The control of the Des Plaines river (which is the key to the valley and had a tendency to wander from its course at certain seasons, thereby causing considerable damage) was one of the first problems to be solved before the work could be safely carried forward. This was accomplished by excavating about thirteen miles of new river channel 200 feet wide at the bottom, parallel to the main chanal, and extending from section C to section A, through portions of sections 1 and 2, and from sections 6 to 11. This river diversion channel includes about ninteen miles of levee between the canal and the Des Plaines watershed. It cost nearly $1,000,000.

The drainage canal is devided into twenty-nine sections, each section averaging one mile in length. Nos. 1 to 15 run southwesterly from Willow Springs, while sections A to O, omiting J, extend east to Robey street. The lettered sections are in earth, sections 1 to 6 are in earth and rock (glacial drift), while sections 7 to 15 are all rock.

The bottom of sections A to E, with 500 feet of section F, is 202 feet wide. East of these the width is 110 feet. Sections 1 to 15, except a portion at the south end of the latter, are 160 feet wide at the bottom. The width at the top of the earth sections is 306 feet.

The fall in earth and glacial drift from Robey street to Willow Springs is about one and one-half inches to the mile; in solid rock (Willow Springs to Lockport) the fall is about three inches to a mile. The bottom of the channel at the controlling works will be about 5¾ feet lower than at Robey street.

The sides of the rock sections are vertical; those of the earth sections slop away towards the top. The walls of the sections in glacial drift (Nos. 1 to 6) are masonry laid in cement.

The average depth of the canal is from 30 to 36 feet and the average depth of water will be from 22 to 24 feet. The canal's greatest depth is 46 feet.

A flow of 300,000 cubic feet of water a minute, sufficient to take care of the requirements of the city's present population, will be permitted by the canal's present dimensions. Later, when the growth of the city demands it, the earth sections may be dredged to permit the passage of 600,000 cubic feet, or 4,500,000 gallons per minute. This will be ample for 3,000,000, people which "Greater Chicago" confidently expects to have. Numerous springs were tapped during the excavations, and their waters cover the floors of sections that are finished. The contractors must keep their sections free from water until the canal is accepted by the State board of commissioners to be appointed by the legislature.

It is reasonable to anticipate the completion of the canal, including the works at Lockport to regulate the flow of the water into the Des Plaines.—*Cement and Engineering News.*

THE "PETRIFIED CITY."

AMONG cities of fable the petrified variety was interesting. We have it in most parts of the world—our prosaic islands knew it, but as a submarine curiosity. In the days when London enjoyed the presence of an Ambassador from Tripoli, that personage astonished the Royal Society once at least. The famous traveler, Dr. Shaw, had mentioned the story of a petrified village near Cyrene. Scientific people derided it, scientific people upheld it—in short, a discussion arose. Some members of the Royal Society, recollecting that there were grave and responsible inhabitants of Tripoli within reach, put the question before the Ambassador. He explained with a vengeance. One of his friends, a person of course, whose honor could not be impugned, was well acquainted with the spot. Shaw made a great mistake in describing it as a village. City was a proper word. The walls enclosed an exact circle, numerous streets crossed at right angles, with shops and avenues of trees, and a noble castle stood in the midst. In the shops and streets were people variously employed—the gentlemen noted, in especial, a baker and his customers' loves in hand, a woman suckling her baby, and so forth. He entered the castle and found a king, or somebody of rank, lying on a gorgeous bed with guards about him. Animals abounded, such as donkeys, camels, oxen, sheep and birds. But everything was stone of a peculiar bluish tint, even the money lying on the shop counters and in people's hands; witness brought a quantity away, and the Ambassador regretted that he could not find some pieces presented to himself at the moment. A description was forthcoming, however; the coins were as large as English shillings, with a horse's head on one side and writing in unknown characters on the other. A happy little touch represented that many of the figures had lost head or limbs—petrification will not endure forever, of course. The Royal Society expressed warm gratitude for this communication. It is scarcely worth while to seek the origin of a fable which is sufficiently explained by the vagaries of imagination. That it was localized at Cyrene—among countless other spots—may be due to the existence of a large and well-preserved necropolis there, with many statues erect in Shaw's time, if not now. He himself made a long and perilous journey to Harnam, in Numidia, where, as the Arabs avouched, a Bedouin encampment was on view, surrounded by oxen and sheep, all turned to stone. In this instance no shadow of foundation for the legend could be found. But it was so widely diffused in those days that rumors of the marvel reached the court of France, and M. le Maire, Consul at Tripoli, received instructions to inquire. He employed some Janissaries, who even undertook to bring away a petrified Bedouin; but they pointed out, very reasonably, that a full-grown specimen would be too heavy. The Consul declared that a baby would satisfy him, to begin with at any rate. After many months, during which his interest was kept up by frequent drafts for expenses, the Janissaries returned, and sure enough they had a stone baby—a very pretty one too, for it proved afterwards to be a little statue of Cupid found among the ruing of Leptis; they had broken off the wings and quiver. Bruce also was tempted to visit this spot, called Ras Sem; and Captain Smyth, of her Majesty's ship "Adventure," went in search of it, bnt in another direction. The Sultan of Fezzan told him a story much like the Ambassador's, and he traveled, full of hope, nine days through a desert country. In this case, however, there were really buildings and bas-reliefs of men and animals, if not statues.—*London Standard.*

PERMATURE OCCUPATION OF NEW HOUSES: A TEST FOR RELATIVE HUMIDITY OF HABITABLE APARTMENTS.

REGARDING newly built houses, sanitarians, for the most part, teach us that a period of four months in summer and six in winter ought to be allowed between the end of the building operations and the entrance of the inhabitants into a house. In this way will be avoided the accidents that arise from the premature occupation of an apartment. It is scarcely necessary to add that, as soon as the house has begun to be occupied, to avoid dampness it should be heated and ventilated; treated, in a word, by all the usual means to maintain a healthy condition of the apartment. If the dampness persists in spite of all these precautions, the proprietor is responsible for the defects in his building. Physicians are sometimes requested to estimate the relative dampness of an apartment or room. This is not always easy by simple inspection, as a room may be damp although saltpetre does not grow on its walls or mould in its corners. The following is an exact means of appreciation, and one that is within every one's scope: In the room in question a kilogramme of fresh lime should be placed, after hermetically closing doors and windows. In twenty-four hours it should be weighed, and if the lime has absorbed more than ten grains of water (that is, more than one per cent) the room

should be considered damp and classed as unhealthy. The question of dampness of dwellings is a frequent cause of dispute between landlord and tenant, naturally solved in the affirmative by the latter and in the negative by the former. The question can be settled in the future by the test of the hydration of lime of which I have just spoken, and which will give irrefutable proof or refutation of the validity of such complaint. The dampness of dwellings is a cause of illness. The death rate is greater in quarters where the apartments are damp than where they are dry. Ventilation is defective where the walls are impregnated with water; the porosity of the walls is done away with, and can only be re-established after the evaporation of the water has been completed, and the heat required to effect this evaporation is furnished by the person living in the room. This is the cause of the vivid impression of cold which we experience in damp places, and it is a well-known fact that exposure to the action of the cold renders the organism more accessible to the attack of morbid germs. The rotting of walls, which appears particularly in places where the water used in building contained nitrates and chlorides, is caused by changes from dryness to dampness and *vice versa*. It gives rise to fragmentation of the mortar, and even of the building stones themselves. Finally, frost can split a wall that is soaked in moisture. The dampness of dwellings is due to internal or external causes. There can be no doubt that a new building ought to be treated for a certain length of time by ventilation and heat, with a view to evaporating the enormous amount of water incorporated with the building materials. According to Pettenkofer, a three-story house requiring 167,000 bricks would need some 835,000 litres of water to build. When this evaporation has been effected great care should be taken in insuring proper drainage for rain and other water.—*Journal American Medical Association.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec't. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

Geo. W. Dickie, Pres. W. G. Curtis, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

STUDY for Residence at Belvedere, F. R. Collins, del.

STORES and Flats for the Phelan Estate corner of South Park and Third street, William Curlett, architect.

NOTES AND COMMENTS

Mr. Chas. S. Tilton, the present City and County Surveyor has been renominated for that office. He is well-known among architects as a man who can be relied upon for good work in his profession.

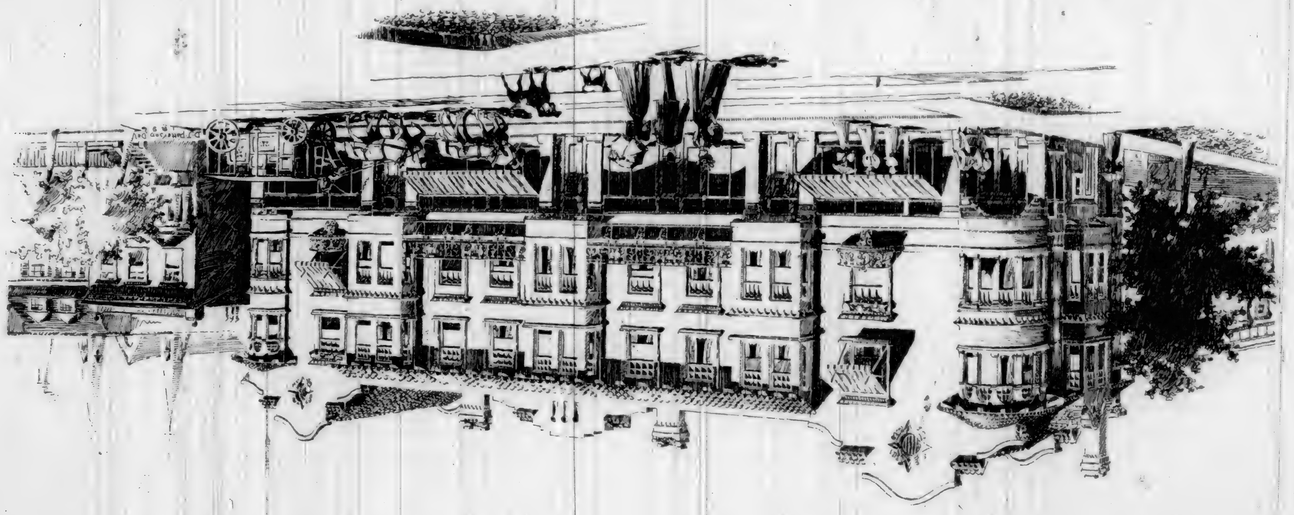
THE Sixth Annual Banquet of the Builders' Exchange was held October 24, 1896, at 40 New Montgomery street, visiting builders from Oakland and San Jose, invited architects and members of the press were in attendance. It was an unusually enjoyable affair; songs and speeches that were received with applause were the order of the evening and we regret that our space will not allow us to reproduce some for these admirable addresses.

Mr. Laver the veteran and well known architect, member of the firm of Laver & Mullany has just returned from a trip east and to Europe.

Articles of incorporation have been filed by the Fraser Electric Elevator Company. The directors are Ethelbert M. Fraser, George Crocker, Charles E. Green, John J. Mahoney and A. J. McNicoll. The capital stock has been placed at $100,000 and of that sum $500 has been subscribed.

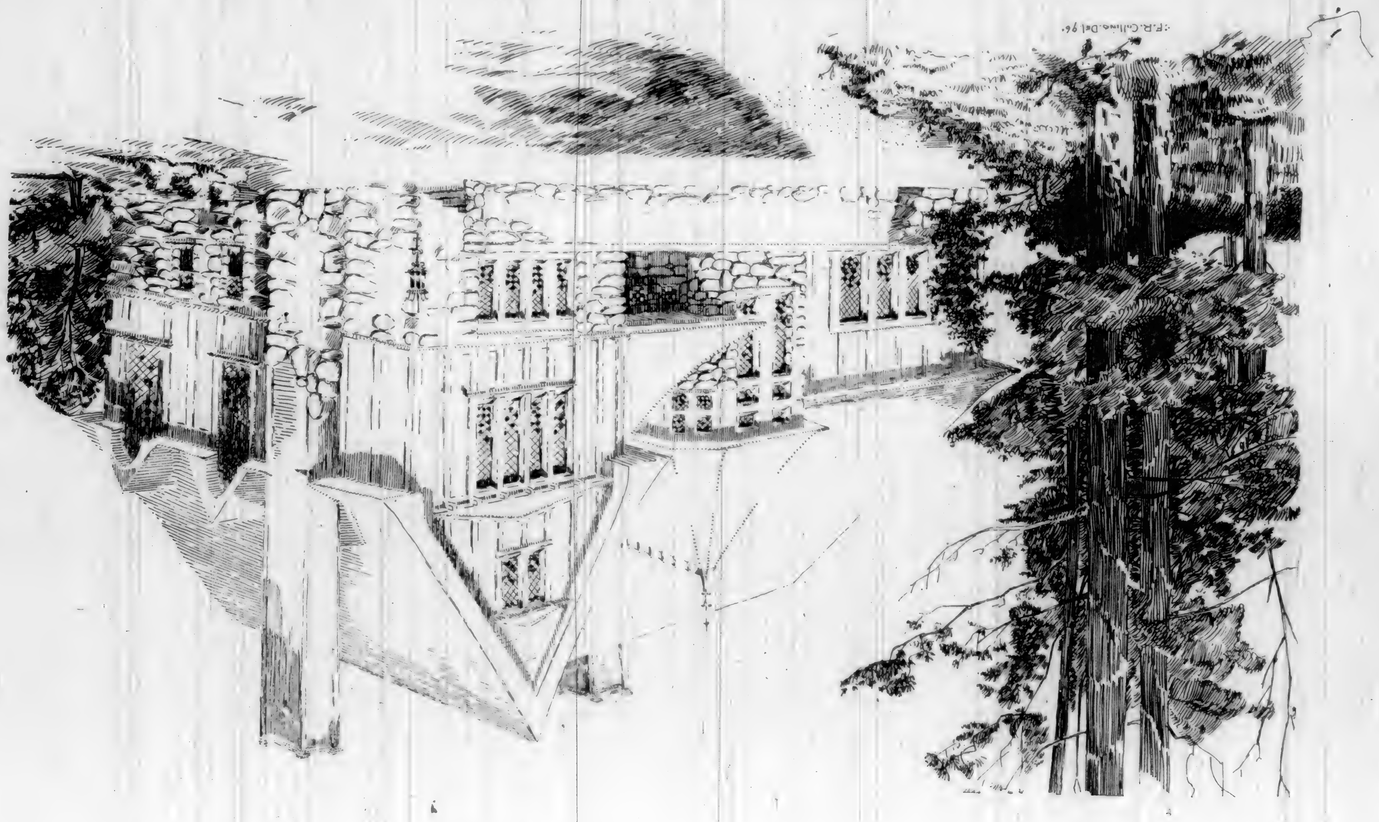
BRITTON & REY. PHOTO LITH.

STORES AND FLATS FOR THE
PHELAN ESTATE CORNER OF
SOUTH PARK AND THIRD ST.
STREET SAN FRANCISCO CAL.
WILLIAM CURLETT ARCHITECT

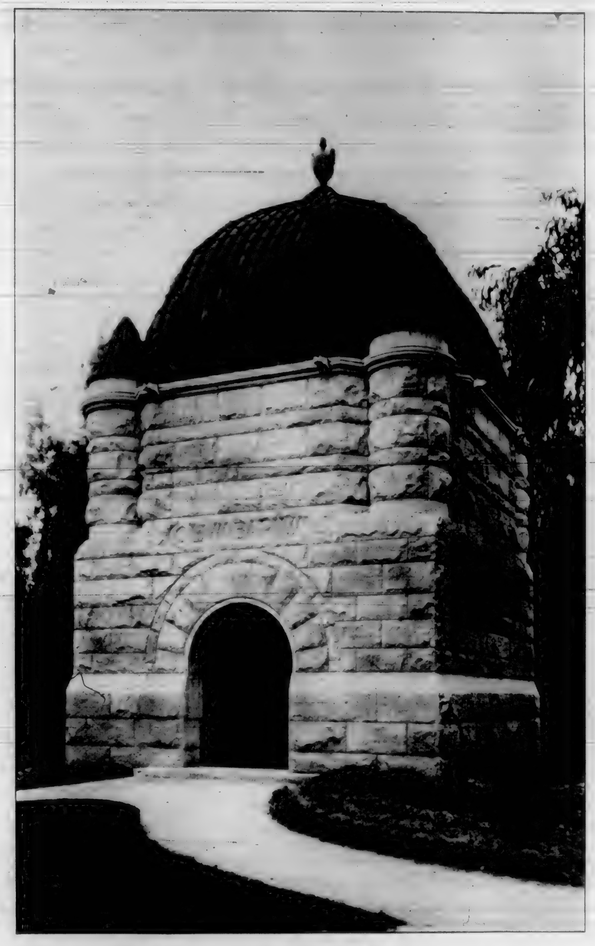


BRITTON & REY. PHOTO LITH.

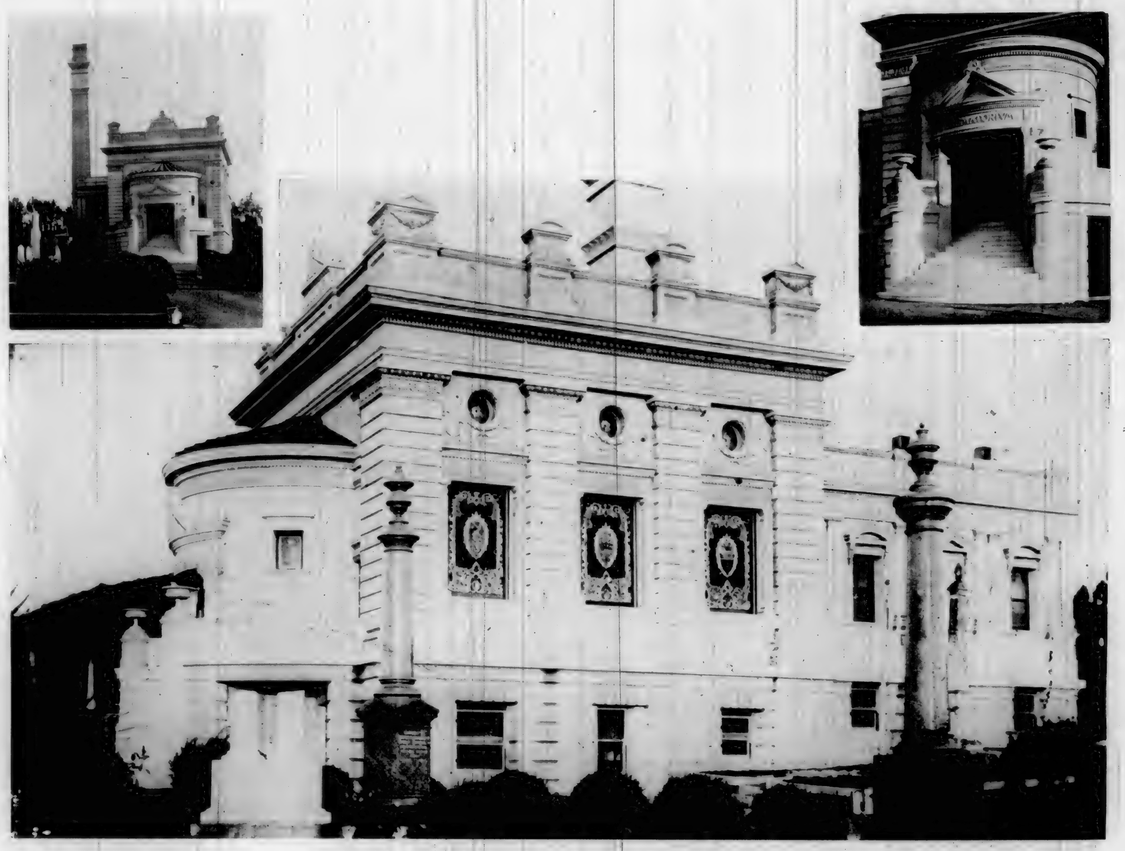
STUDY FOR RESIDENCE AT BELVEDERE.



F.R. Cullen. Del 96.



COLUMBARIUM, CYPRESS LAWN CEMETERY.
THOMAS P. ROSS, ARCHITECT.



I. O. O. F. CREMATORY.

B. J. S. CAHILL, ARCHITECT.

BOOKS AND PERIODICALS

THE STONE INDUSTRY IN 1895, by William C. Day. Extract from 17th Annual Report of the Geological Survey of 1895–6. Department of the Interior. Contains a very valuable survey of the Stone Industry for the Year 1895.

We republish the following table for the benefit of our readers of the Pacific Coast.

VALUE OF DIFFERENT KINDS OF STONE PRODUCED IN THE UNITED STATES DURING THE YEAR 1894 AND 1895.

KIND	1894	1895
Granite	$10,029,156	$ 8,894,328
Marble	3,199,585	2,825,719
Slate	2,790,324	2,698,700
Sandstone	3,945,847	4,111,314
Limestone	16,190,118	15,308,755
Bluestone	*a*900,000	*a*750,000
Total	$37,055,030	$34,688,816

a Estimated.

Of the total valuation of $34,688,816, Pensylvannia takes about five and one-half millions, Vermont and Ohio come next with about three million a piece, while California is about in the middle of the list of states with $700,000.

As to the several kinds of stone, of granite, Massachusetts supplies the largest amount with nearly two million dollars worth, then comes Maine with $1,400,000 and California below the middle of the list with $348,806.

The value of marble product by states is shown in the following table:

VALUE OF MARBLE PRODUCT FOR THE YEAR 1895, BY STATES

STATE	VALUE	STATE	VALUE
California	$ 22,000	New York	$ 207,828
Georgia	689,229	Pennsylvania	59,787
Idaho	2,250	Tennessee	362,277
Iowa	13,750	Vermont	1,321,598
Maryland	145,000		
Massachusetts	2,000	Total	$2,825,719

The following table shows the output of roofing and milled slate in 1895:

VALUE OF SLATE PRODUCT IN 1895, BY STATES.

State	Roofing slate Squares	Value	Other purposes (value)	Total value
California	1,500	$ 10,500	.....	$ 10,500
Georgia	2,500	10,675	.....	10,675
Maine	23,774	118,791	$ 21,363	40,154
Maryland	13,188	59,157	1,200	60,357
New Jersey	200	700	.....	700
New York	13,624	90,150	1,725	91,875
Pennsylvania	426,687	1,437,697	210,054	1,647,751
Vermont	221,359	531,482	93,849	625,331
Virginia	27,095	92,357	19,000	111,357
Total	729,927	$2,351,509	$347,191	$2,698,700

Of Sandstone produced Ohio takes the lead with one million and a half dollars worth—the next is Pensylvania with only one-half million—Ohio produces nearly as much as all the other States put together—California pro duced to the amount of twelve thousand while Arizona produced twenty thousand dollars.

The remarks of the author on the State of the several stone industries in the States of the Pacific Slope are as followers:

GRANITE

"CALIFORNIA—In 1894 the granite output was valued at $307,000; in 1895, at $348,806. The gain of $40,000 is quire noteworthy, in view of the fact that in some other industries the year did not come up to 1894 in prosperity. Some of the producers speak encouragingly of the prospects for 1896. The paving-block industry is at present suffering from the increasing use of the bituminous rocks mined in the State; furthermore, overproduction of blocks in 1893 and 1894 told decidedly on the output of 1895, and, as a further consequence of carrying old stock, prices were reduced. Collections are still slow, and frequently three or four months' time had to be given in order to make sales.

"COLORADO—The output of granite fell off somewhat in 1895, owing to the shutting down of a number of quarries, leaving but few active producers. These, however, speak somewhat encouragingly of the prospects for 1896.

MARBLE

"CALIFORNIA—Marble quarrying in California was very much restricted during 1895, and producers, without exception, have expressed themselves in the most unqualified manner to the effect that there was scarcely any inducement to continue quarrying during the year. Operators are awaiting such revival in business as will justify them in renewing their efforts. Under ordinarily good conditions of trade the State is equal to a production of marble valued at $100,000 per annum, but, as is evident from the table of production, the figure for 1895 is far below this limit.

"IDAHO—A small amount of marble was produced in Cassia County during 1895. Large amounts would doubtless be quarried if business were in a normal condition. Quarries are at present being opened near Albion, Cassia County, and an output may be looked for from these in 1896."

In regard to marble the greatest advance has been in Tennessee marble as shown by the table. Much is imported into California although we have just as pretty marbles here waiting for cheap freights.

SLATE

"CALIFORNIA—While the production of slate in California has never yet reached large proportions, the product has always commanded a good price. The demand for slate as a roofing material is curtailed by the cheapness and excellence of redwood shingles produced in the State. There is no reason at present to expect that the production of roofing slate will increase markedly within the next few years. The output comes entirely from Eldorado County."

SANDSTONE

"ARIZONA—Quarries near Flagstaff were in operation during the year, producing an output valued at $20,000.

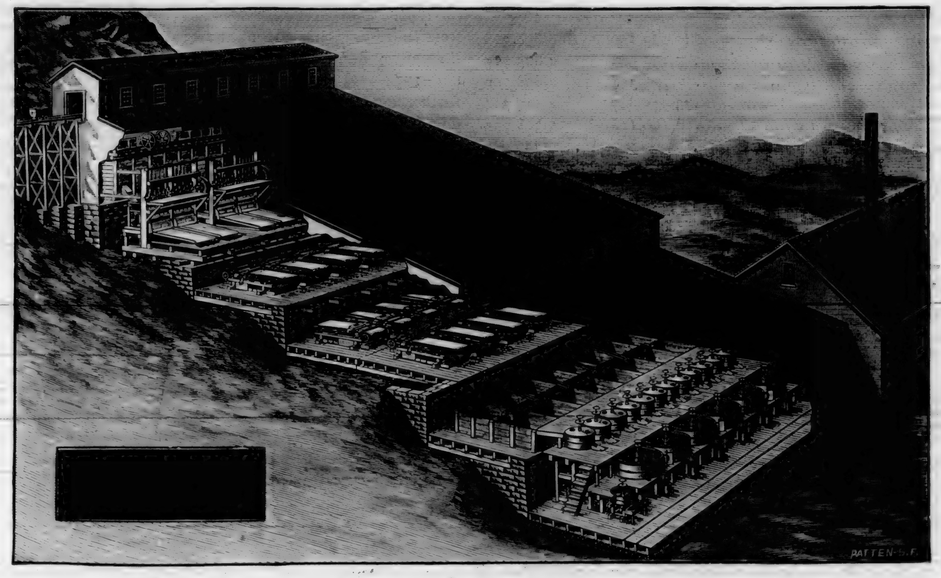
This speaks well for the development of what may be before long an industry of some magnitude.

"CALIFORNIA—Reports of operations in sandstone quarrying in California are rather discouraging, and an output valued at $11,933 is much smaller than was produced in this State a few years since. Building operations were very much curtailed in the past year.

"COLORADO—When the large sandstone outputs of 1890 and 1891 are considered, it is evident that at present the possibilities in this industry are far from being realized. It is encouraging to note, however, that better conditions for 1896 are unhesitatingly predicted by a number of the producers."

LIMESTONE

"ARIZONA—It is only within the last few years that lime-



COMBINATION MILL SHOWING DOUBLE CONCENTRATION WITH FRUE VANNERS.

stone production has amounted to anything more than a very small figure. Since 1893, however, there has been a regular annual increase. In 1895 the product was valued at $24,159. More than one-half of this figure is the value of lime made.

"CALIFORNIA—The value of the product in 1895 was $322,213; this figure includes the value of lime made, namely, $244,580. The remainder was used mainly for rough building and roadmaking. Dull trade is complained of, and a number of the smaller operators ceased quarrying for the year.

"COLORADO—Most of the output of limestone in Colorado is used for fluxing and smelting gold and silver ores. The total value of the output was $116,355 of which $83,346 worth was for limestone used as flux. The output is a little behind that of 1894."

The moral to be derived from these remarks is that California is only waiting for better times to have its enormous resources developed.

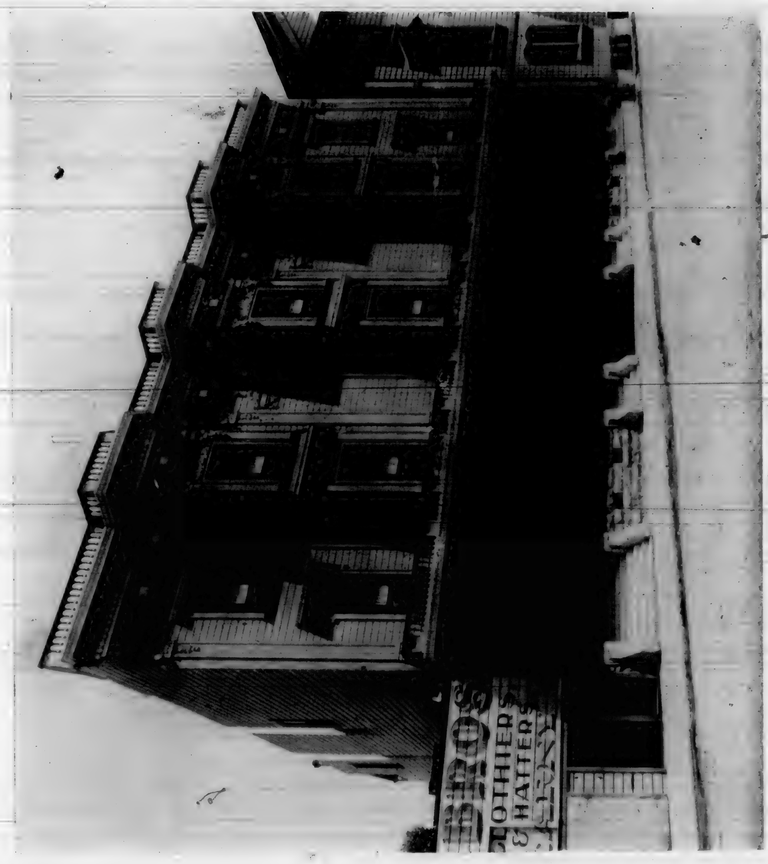
EXAMPLES OF METAL WORK published by The J. L. Mott Iron Works, New York, is got up in the style of an *Editor de Luxe*, and consists of illustrations showing recent examples of the work which are representative in character rather than specially costly or extravagant in design. As they are addressed to professional men no long description of the nature and construction of the various subjects are given which may be considered in accord with the graphical spirit of the age.

They are all from actually executed works which work is claimed to have been done in a manner faithfully carrying out and carefully reproducing the intentions and wishes of the several architects whose designs are here exhibited, and exhibit a certain propriety in the choice and treatment of the different metals and some regard to the architectural character of the surroundings.

The examples include grills, elevator enclosures, elevator cars, entrance doors of bronze, office fittings, cafe screen, entrance gates and fences, staircase railing, wall crestings, area railings, window guards, balcony rails, newel and entrance lamps and ecclesiastical and funeral metal work in bronze, polished brass, electro bronze, forged iron, iron, etc.

From a study of these works one gathers that The J. L. Mott Iron Work is doing just as good work and gaining just as good a reputation in ornamental metal work as they have in their sanitary ware.

THE ARCHITECTS AND BUILDERS REVIEW—A monthly journal devoted to architectural and engineering construction and allied subjects; published by the Burnett Publishing Company, 5 to 11 Broadway street, New York. This new venture in the way of an architectural publication certainly makes a very handsome appearance with new type and good paper; the claim of the editor of his intention to



FLATS ON NORTH SIDE OF POST STREET, BETWEEN HYDE AND LARKIN.
WM. MOOSER & SON, ARCHITECTS.
JAMES F. LOGAN, CONTRACTOR.
CALIFORNIA ARCHITECT AND BUILDING NEWS. SAN FRANCISCO.
VOL. XVII. No. 6.—JUNE 1896.

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VENTURA HIGH SCHOOL.

A CENTURY OLD ADOBE, SAN LOUIS OBISPO COUNTY.

BRITISH ARCHITECT

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PARK LODGE, GOLDEN GATE PARK. EDWARD R. SWAIN, ARCHITECT.

show a continuous improvement in subsequent issues of the review which will render the journal more and more deserving of the success in its distinctive field of operation which will doubtless be attained; a promise that we hope may be fulfilled. Success to the new venture.

CALIFORNIA, HER INDUSTRIES, ATTRACTIONS AND BUILDERS, Illustrated. J. C. Hoag, publisher, San Francisco. The September number of the above named journal comes to hand with the usual number of half-tone illustrations, that make advertising a pleasure as well as a work of art.

CALIFORNIA STATE MINING BUREAU. J. J. Crawford, State Mineralogist—Bulletin No. 9 contained in a phamphlet of over 200 pages is devoted to the subject of Mine Drainage, Pumps, etc., by Hans C. Behr, Mechanical Engineer. Published at Sacramento, A. J. Johnston, Superintendent State Printing.

The author states "Insomuch as there has not been any comprehensive treatise on this subject within the reach of the majority of the miners of this state, it is expected the present one will prove to be of interest and value." As this pamphlet is fully illustrated with engravings of pumps, with other machinery in use in drainage it cannot fail to be of great use and interest to the miners as well as engineers in general.

STONE—An illustrated magazine issued monthly, published at Chicago. The October number of this valuable journal comes to hand, full of good things of interest to the architect and builder. It is devoted to the interest of stone and does not congne itself to any section of the country, but illustrates various quarries from all section, North, South, East and West. This journal should be in the hands of every progressive architect in the United States.

DURABILITY OF TIMBER.

A STRIKING instance of the durability of timber, under certain conditions, was afforded during the excavation for the foundation of the Bowling Green Building. A line of spruce piles was discovered at some distance below the surface of the ground which, as far as we can learn, were placed in position about 150 years ago and actually formed a bulkhead, the tide then reaching this point. These piles, upon examination, were found to be perfectly sound, and to all appearances would have been just as sound and good 150 years hence.—*Architects and Builders Review.*

A PLAUSIBLE THEORY.

A VERY plausible theory to account for some of the peculiar trade conditions now existing was advanced by a gentlemen in conversation with a trade press representative recently. While admitting that the talk about changing our financial standard has a great deal to do with the matter, he maintained that we are undergoing a revolution in other directions, and the Western and Southern farmers, and many other people in the industrial centers who blame the financial laws for their present ills, are largely wrong in thus diagnosing the case. Although too many people have an idea that their ailments may be eliminated through legal enactments. The tariff legislation has given this impression to many of the farmers, and they must be educated to see things as they are before correct conditions will prevail. "I may be wrong in my reckoning," he said, "but let me tell you what I think affects the Western farmers more than the conditions of the national finances. In cities like Boston, Brooklyn, and scores of others of lesser population in this country, while trolley cars are now the rule, thousands upon thousands of horses have been relegated out of date. In the city of Chicago alone between two and three hundred thousand persons ride bicycles. Probably New York, Philadelphia. Boston, Washington, St. Louis, San Francisco, Baltimore, and other communities of large population show a similar precentage of bicycle riders. Just figure out how the casting away the horses by the trolley cars and the general riding of bicycles affects the Western farmers in horse and oat production. Why, if the figures were at hand they would be something tremendous, and it is my opinion that in this one direction the farming interests of the country have been more affected than they have by any of the ills which the politicians say are due to our financial conditions. These ills are largely imaginary, but it is a fact that the horse has been largely superseded by the trolley and the bicycle, and the farmers, who represent three-fifths of the population of the United States, are the great sufferers, and indirectly, of course, the wage earners in the industrial centers suffer."—*Geyer's Stationer.*

WONDERFUL THINGS THAT ARE NEAR.

Flying is solved. The principle is known. A mechanical expedient is all that is now needed to make it successful. Practical flight is to-day not more than five or ten years off.

The glowworm makes light with about one three-hundredth part of the force used in ordinary artificial light. When men know how to make light as cheap, streets and homes will be as light as day for a mere fraction of what light now costs. This is near. Vacuum illumination without incandescence is already in full operation, and in a year or two should cut down the price of light to a sixth of its current cost, and in five or ten years light in a city may be, like water, turned on in every home at will.

Compressed air has long been known to be the best way, theoretically, to store force for use in transportation. There is no waste and no deterioration. The need is a cheap and efficient motor to apply compressed air to the city transportation. If this can be done, first the trolly poles and wires will come down, next the horseless, air-compressed motor carriages will do all the work of the city delivery.

When these changes come the only use for gas will be for cooking—if this is not done by electricity. Factories, also, before many years, will be run by transmitted electric power. This has begun to be done, and in five or ten years will be completed, and the factory fire and boiler will be a thing of the past.

The city of the future, and no very distant future, will have no trolly poles or wires and no horses. All movements will be on rails by silent air motors or by horseless

carriages equally silent. All pavements will be asphalt. Unlimited light will be as cheap as unlimited water is today. No coal will be delivered at private houses and no ashes taken from them. With no horse, no coal, and no ashes, street dust and dirt will be reduced to a minimum. With no factory fires and no kitchen or furnace fires, the air wall be as pure in the city as in the country. Trees will have a chance. Houses will be warmed and lighted as easily and cheaply as they are now supplied with water.

A city will be a pretty nice place to live in when the first twenty years of the twentieth century are passed.—*Philadelphia Press.*

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

COMPLETION OF ARCHITECT'S CONTRACT AND TIME FOR FILING LIEN.—A building contract provided that all payments to the contractor should be made on certified statements of the architects, who were empowered to supervise the construction of the building at a compensation of five per cent of its cost, and that final settlement should be made on their certificate, showing completion of the contract according to specifications. The Supreme Court of Wisconsin held that, as the last act required of the architects was to give a final certificate of satisfactory construction, their time for filing a lien for services did not begin to run until the performance of such act.

Bentley v. Adams, 66 N. W. Reporter, 505.

HOMESTEAD NOT EXEMPT FROM MECHANICS' LIEN.—A claim of homestead cannot be asserted against a mechanic's or material man's lien.

McNally v. Hawkins Lumber Co., Supreme Ct. Ala., 19 So. Reporter, 417.

LIABILITY FOR PROMISED PAYMENT BY A THIRD PERSON.—One who induces a contractor to perform labor or furnish materials by the promise that a third person, who he claims owes him a debt or duty, shall pay to the contractor the agreed price of the labor or materials he furnishes, becomes primarily liable to pay the contract price himself if he receives the fruits of the contract and his debtor does not pay, or the debt or duty did not in fact exist.

Barber Co. Denver, 72 Fed. Rep. 336.

ABRIDGEMENT OF CASES INTERESTING TO ARCHITECTS AND CONTRACTORS.

WHEN CONTRACTOR IS NOT LIABLE FOR DANGEROUS PREMISES.—The failure of a contractor, having a building on a street under construction, to protect a runway leading from the sidewalk into the building, and intended for the use of his employes alone, does not render him liable for the death of a trespasser, who, merely to satisfy his curiosity by an inspection of the building, went on the runway, from which he fell into the cellar of the building.

McNeven v. Arnott, Sup. Ct. App. Div. 1st Dept. 38 N. Y. S. 759.

RIGHT OF LIEN WHERE LAND BELONGS TO THIRD PARTY.—A person who furnishes materials for use in the erection of buildings on land to one in possession of same, under contract of sale, may acquire a mechanic's lien on the premises for any unpaid amount of the price of the materials; but if there is no agreement between the vendor and vendee of the land that the improvements shall be made, the lien can only attach to the interest of the vendee and will be subsequent and inferior to that of the vendor for any balance of the purchase money remaining unpaid.

Fuller v. Pauley, Sut. Ct. Nebr., 66 N. W. Reporter, 1115.

BUSINESS MOSAICS.

Messrs. N. & G. Taylor Co., Philadelphia, manufacturers of tinplates, report a large and steadily growing business in their roofing tin in rolls. These rolls are sheets of tin soldered together with the aid of rosin, no acid being used. They are then thoroughly painted on one side, and carefully put up in rolls ready for shipping.

These rolls are particularly adapted for quick contracts as the tin is all ready for instant use, and for laying on the roof. Messrs. N. & G. Taylor Co. originated the idea of continuous roofing tin some thirty (30) years ago, and do the largest business in this line of any house in the country. They make the tin in all grades from their celebrated "Taylor Old Style" brand, extra heavy coated, down to ordinary grades.

They are also agents for "The Pancoast Ventilator," which is recoguized among the technical as being made under scientific principles, and to be a ventilator that ventilates. They invite correspondence.

"After all, I don't think she is so awfully homely." She has one of those faces that grow on you." "I'm glad it didn't grow on me."

Hargreaves—I had an uncle who knew a week before the exact day and hour he was to die. FERRY—Who told him, the sheriff?—*Cincinnati Enquirer.*

We should judge that the business of Keatinge, Leonard & Ransome must be good, by the loads of twisted iron and barrels of cement we see piled near buildings now under construction, their office is at 11 and 12 Nucleus Building, San Francisco, Cal.

Ethel—Mamma, what makes the lady dress all in black? MAMMA—Because she's a Sister of Charity, dear. ETHEL—Is Charity dead, then?—*Princeton Tiger.*

If you want Tacoma and Roche Harbor Lime, address the company, box 289 Builders' Exchange, 40 New Montgomery street, San Francisco. The claim is made that this is the purest lime in the world—it has been awarded the first prize at the World's Fair, and also at various other fairs.

"But why do you not print a card and deny the accusation?" inquired the politician's wife. "Deny it?" howled the politician, "and then have them prove it? No; I will treat it with contempt.—*Truth.*

W. R. Grace & Co, 203 California street have Portland cements of various brands. It is evidently the intention of dealers in this article, that this city shall be stongly cemented.

Hospital PHYSICIAN—You are bruised too, I see." PATIENT—Yes, I came in an ambulance.—*Dispatch.*

Gladding, McBean & Co., manufacturer of architectural terra cotta, pressed brick, drain tiles, etc., are at the old address, 1358–1360 Market street, San Francisco. This firm and its products are so well and favorably known to the building public that their present address is all that is required to be given.

Edward B. Hindes & Co. 411 Mission street, San Francisco, Manufacturers of Hall's Patent Inside Sliding Blinds, Perfection Window Screens, latest improved venitian blinds and rolling wood partitions. Catalogues and prices sent on application to the above address.

The John Douglass Co., manufacturers of an absolutely noiseless tank, invite the public to visit their show room, 208 Ellis street, San Francisco, and inspect the superior quality of seats and crockery. The cut in their add page VIII speaks for itself.

To those who are preparing for the storms and wish a new coat of paint upon their houses, we would say they can obtain "facts about paint" as well as paint that is a fact, without adulteration from that well known firm of W. P. Fuller & Company.

"She gets her complexion from her mother's folks." "Ah, indeed. Are they druggists, then?—*Detroit Tribune.*

The Norton Door Check and Spring, makes slamming doors impossible, an air cushion check which is changed by opening the door; go and see it at 593 Mission street, Mr. Frank D. Morrell will tell you all about its merit.

Small Boy—Say Pop, why do they have harps in Heaven? STERN PARENT—Becauses the Lord loveth a cheerful lyre, I suppose.

We would call the attention of our readers to a notice in another part of this journal to the handsomely illustrated catalogue of The J. L. Mott Iron Works. M. S. James, in the Flood Building, is the agent on the Pacific Coast and can show the articles so well illustrated.

CITY BUILDING NEWS.

Alabama nr 24th. Additions and alterations; owner, Margeret M. Kehoe; architect, M. J. Welsh; contractors, T. R. Bassett & Bro; signed, Sept. 14; filed, Sept. 15; cost $1500.

Baker near Washington. To build; owner, Mrs. Julia L. Maris; contractor, T. T. Pottinger; signed, Sept. 10; filed, Sept. 11; cost $4000.

Baker near McAllister. To build; owner, Bertha Klaber; contractor, John J. Boyle; signed, Sept. 14; filed, Sept. 16; cost $3200.

Brannan near Fourth. Marble work for alter; owner, Rev. D. Nugent; architect, B. J. Clinch; contractors, Pierce & Carter; cost $945.

Brannan near Fourth. Interior marble work; owner, Rev. D. Nugent; architect, B. J. Clinch; contractors, Pierce & Carter; signed, Aug. 18; filed, Oct. 6; cost $1610.

Brannan near Fourth. Stain glass windows; owner, Rev. D. Nugent; architect, B. J. Clinch; contractor, T. C. Butterworth; signed, Oct. 6; filed, Oct. 6; cost $1500.

Broderick near Post. Cottage; owner, M. Solomon; architect, Emil John; contractors, Lorenzen & Fevrie; signed, Oct. 6; filed, Oct. 7; cost $2800.

Broderick near Bush. To build; owner, Rachel H. Lambert; plans by G. Lambert; contractor, Hugh Keenan; signed, Sept. 14; filed, Sept. 14; cost $3500.

Brighton Ave. near Grand Ocean Boulevard; owner, Sadie Robertson; architect, B. A. Brown; contractor, Chas. Alsup; signed, Sept. 15; filed, Sept. 23; cost $2250.

Buena Vista near Sacramento. To build; owner, L. Coutard; architect, J Godart; contractor, F. F. Sarcander; filed, Sept. 19; cost $2758.

California and Leidesdorff. Skylights; owner, Merchant's Exchange; architects, J. J. and T. D. Newsom; contractors, Moore & Cameron; signed, Sept. 3; filed, Sept. 8; cost $1118.

California Ave., lot 129. To build; owner, John Devine; architect, J. B. Lo Romer; contractor, J. P. Burke; signed, Sept. 11; filed, Sept. 11; cost $2224.

Clay and Van Ness Ave. Steam heating plant; owner, Claus Spreckels; architects, Reid Bros.; contractors, Geo. Tay & Co.; signed, Sept. 24; filed, Sept. 25; cost $1875.

Clay and Steiner. To build; owner, Clara Kluge; architects, Laferme & Collischown; contractor, T. H. Soule; signed, Oct. 1; filed, Oct. 3; cost $6987.

Clay and Steiner. Plumbing; owner, Clara Kluge; architects, Laferme & Collischown; contractors, Shepard Bros.; signed, Oct 1; filed, Oct. 3; cost $750.

Clay and Steiner. Painting, tinting, etc.; owner, Clara Kluge; architects, Laferme & Collischown; contractor, Sartorio & Co.; signed, Oct. 1; filed, Oct. 6; cost $600.

Church near 15th. Alterations and moving; owner, Fannie Beguelin; architect, Havens & Toepke; contractor, John McKay; signed, Sept. 15; filed, Sept. 19; cost $2550.

Crescent Ave. near Mission. Cottage; owner, J. Heyman; builder, J. Heyman; cost $1000.

Davis and Sacramento. Addition and repairs; owners, Sol. Wargenheim & Co.; architect, James E. Wolfe, day's work; cost $1200.

Devisadero near Waller. To build; owner, Louis Muller; architect, H. Geilfuss; contractor, A. G. Johnson; signed, Sept. 28; filed, Sept. 28 cost $2000.

Eighth Ave. near Point Lobos. To build; owner, Rev. John P. Doyle; architects, Shea & Shea; contractor, P. Maloney; signed, Sept. 19; filed, Sept. 25; cost $4575.

Fell near Ashbury. To build; owner, Adolph Weber; architects, Martens & Coffey; contractor, Val. Franz; filed, Sept. 11; cost $4830.

Fell near Ashbury. Sewers, plumbing, etc.; owner, Adolph Weber; architects, Martens & Coffey; contractor, G. C. Sweeney; cost $1000.

Forty-third Ave. near Clement. Cottage; owner, Mrs. A. M. Kruse; contractor, T. L. Williams; signed, Sept. 16; filed, Sept. 19; cost $1650.

Folsom near 24th. To build except mantels, etc.; owner, G. B. Ratto; contractors, Cuneo & Cavaglia; signed, Sept. 21; filed, Sept. 22; cost $4390.

Geary and Stockton. Steel construction for six-story brick; owner, Spring Valley Water Works; architect, Clinton Day; contractor, Pacific Rolling Mill Co.; signed, Sept. 15; filed, 15; cost $61.50 per ten of 2000 lbs.

Grove near Baker. Two-story frame; owner, John Zoller and Catherine Zoller; contractor, Henry P. Conrady; signed, Sept. 12; filed, Sept. 14; cost $3625.

Grove near Baker. To build; owner, T. R. Edwards; contractor, Edward Cox; cost $4200.

Greenwich near Leavenworth. Alterations; owner, Board of Education; architect, C. J. Havens; contractor, W. Linden; signed, Sept. 17; filed, Sept. 19; cost $1078.

Greenwich and Jansen Ally. To build; owners, A. Schabiague and T. Schabiague; architect, J. Godart; contractor, P. A. Antonelli; signed, Sept. 17; filed, Sept. 19; cost $2960.

Grant Ave. and Sutter. Alterations and additions; owner, Mrs. Alice P. Sullivan; architect, E. R. Swain; contractor, Mahoney Bros.; signed, Sept. 21; filed, Oct. 1; cost $18,550.

Grant Ave. and Sutter. Plumbing, etc.; owner, Mrs. Alice P. Sullivan; architect, E. R. Swain; contractor, W. F. Wilson; signed, Sept. 22; filed, Oct. 1; cost $3577.

Guerrero near 27th. Alterations and additions; owners, Catherine Carr and Hattie J. C. Bain; contractor, A. Klahn; signed, Sept. 17; filed, Sept. 24; cost $1182.

Pierce near Filbert. Cottage; owner, C and A. Kober; contractor, C. Douglass; signed, Sept. 28; filed, Oct. 1; cost $1345.

Haight near Laguna. Copper roof; owner, San Francisco Protestant Orphan Asylum; contractor, Pacific Sheet Metal Works; signed, Sept. 12; filed, Sept. 14; cost $3223.

Harper near 30th. Cottage except mantels, etc.; owner, Constance Chaix; architect, E. Deplerre; contractor, Becass & Dupasse; signed, Sept. 15; filed, Sept. 15; cost $1540.

Hollis and O'Farrell. Plumbing, etc.; owners, Emil and Felicien Bareilles; architect, J. Godart; contractor, E. Hogan; signed, Sept. 21; filed, Sept. 26; cost $1450.

Jackson near Steiner. To build; owner, Alfred Bouvier; architects, Mathisen & Howard; contractors, Allyn & Doard; signed, Sept. 25; filed, Sept. 28; cost $4084.

Jackson near Walnut. To build; owner, Charles T. Barker; architect, C. M. Rousseau; contractor, Val Franz; signed, Sept. 28; filed, Sept. 24; cost $4250.

Kearny and Filbert. Planking school yard; owner, Board of Education architect, C. J. Havens; contractors, Holm & Sheibley; signed, Sept. 18; filed, Sept. 21; cost $796.

Lake View Tract, block 24. Two dwellings; owner, Fannie Caley; contractor, J. A. Eastman; signed, Sept. 21; filed, Sept. 30; cost $3000.

Larkin near Greenwitch. To build; owner, Annie McBride; contractor, T. F. Mitchell; signed, Sept. 21; filed, Sept. 21; cost $2000.

Lott near Golden Gate Ave. Additions and alterations; owner, Thomas Kane; contractor, S. H. Farrell; signed, Sept. 14; filed, Sept, 18; cost $1400.

Lindley near Castro. Cottage; owner and builder, J. Hegman; cost $1000.

Market and Powell. Marble work; owner, E. J. Baldwin; architect, M. J. Lyon; contractors, Ruffino & Bianchi; signed, Sept. 2; filed, Sept. 21; cost $1033.

Market near 5th. Fixtures, etc.; owner, Mrs. A. M. Parrott; architects, Pissis & Moore; contractor, R. Herring; signed, Sept. 30; filed, Oct. 2; cost $2875.

Market near Steuart. Store fixtures; owner, Smith's Cash Store; architects, Shea & Shea; contractor, Home Mnfg. Co.; signed, Oct. 7; filed, Oct. 7; cost $4700.

New City Hall. Marble tiling; owners, City of San Francisco; architect, Frank T. Shea; contractor, W. H. McCormick; cost $5340. Marble wainscoting; contractor, Ingo Marble Co.; cost $4798. New Roof; contractor, James J. O'Brien; cost $129,788. Cement; contractor, Spreckels & Co.; cost $6450.

Noe near 13th. To build; owner, Estella H. Williams; contractor, W. W. Rednell; signed, Oct. 3; filed, Oct. 3; cost $2200.

Ocean House Road at Ingleside. Carriage sheds, etc.; owner, Pacific Jockey Club; architect, T. J. Welsh; contractor, Alexander Campbell; signed, Sept. 23; filed, Sept. 24; cost $1833.

O'Farrell near Hollis. To build; owner, Rubin T. Hopkins; architects, Townsend & Wyneken; contractor, G. M. Salsbury; signed, Sept. 15; filed, Sept. 15; cost $1640.

Page and Webster. Carpenter work; owner, Westminster Presbyterian Society; architect, Chas. Geddes; contractors, Campbell & Pettis; signed, Sept. 12; filed, Sept. 12; cost $9800.

Parnassus Ave. bet. 2d and 4th Ave. Granite and brick building for three affiliated colleges; owner, State of California; architects, Kraft, Martens & Coffey. Granite work; contractors, Rae Building Co.; $143,500; grading sublet to A. E. Buckman. Carpenter work; contractor, S. Carle; $67,219. Plumbing; contractor, G. C. Sweeney; $11,193. Galvinized iron work; contractor, J. F. Forderer; $9975. Heating and ventilation contractor, F. J. Lawton; $8325. Iron work; contractor, Pacific Rolling Mills; $4925. Painting; contractor, D. Zelinsky; $3780.

Powell near O'Farrell. Plumbing, etc., for brick building; owner, Geo. D. Toy; architects, Herman & Swain; contractor, H. Williamson; signed, Sept. 12; filed, Sept. 12; cost $2924.

Powell near O'Farrell. Skylights for a market building; owner, Geo. D. Toy; architects, Herman & Swain; contractor, C. J. Guilfoy; cost $100.

Post near Stockton. Metal lathing and plastering for six-story brick; owner, Hobart Estate; architects, Percy & Hamilton; contractor, J. J. Morehouse; signed, Sept. 14; filed, Sept. 14; cost $5375.

Sacramento near Cherry. To build; owner, Patrick Ford and Ellen Ford; architect, C. J. J. Devlin; contractor, T. J. Crawford; signed, Sept. 16; filed, Sept. 18; cost $2890.

Sanchez and Duncan. To build; owner, Frank Straub; contractor, Daniel Einstein; signed, Sept. 28; filed, Oct. 2; cost $2300.

Scott near Bush. To build; owner, Richard O'Connor; architect, Thos. J. Welsh; contractor, W. S. Boswell; signed, Sept. 7; filed, Sept. 12; cost $2591.

Sutter near Kearny. Store fixtures; owner, Sebenbaum & Co.; contractor, Home Manf. Co.; cost $2800.

Sutter and Hyde. Bell work, etc.; owner, Dr. J. Rosenstirn; architects, Salfield & Kohlberg; contractor, J. H. Wolf; signed, Sept. 17; filed, Sept. 25; cost $1600.

Tenth Ave. near Point Lobos. To build; owner, Mrs. Delia Thornton; contractor, T. C. Cochrane; signed, Sept. 14; filed, Sept. 19; cost $1300.

Twelfth Ave. near California. To build; owner, Minnie Armstrong; architect, J. E. Vogel; contractor, F. V. Daniels; signed, Sept. 14; filed, Sept. 16; cost $1500.

Twenty-first near Hamshirs. To build; owner, G. W. Write; contractor, A. Petry; signed, Sept. 25; filed, Sept. 26; cost $1300.

Union and Webster. To build; owner, Albert Landsberg; architect, W. H. Armitage; contractor, Geo. Connon; signed, Sept. 4; filed, Sept. 4; cost $2400.

Wisconsin near Sierra. To build; owner, Robert Scott; contractor, Geo. McLeod; signed, Sept. 25; filed, Sept. 28; cost $1530.

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PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

SINCE our last issue, Mr. William Mooser, one of the prominent architects of San Francisco has passed away. He was sixty-two years old, a native of Geneva.

Since his arrival in the country in 1854 he has left many monuments of his skill in architecture along the years. Among his latest works are the New Western Hotel and the New French Hospital. Also the Macdonough Theatre in Oakland, the last while he was associated with Mr. Cuthbertson, the last two take rank with the best of their class any where. Of late years he has been associated with his son William.

His death makes many regrets among those who admired him for his uprightness and honesty and the conscientiousness with which he did all his work. He was a member of the San Francisco Chapter of the American Institute of Architects.

WE LEARN from the *Berkeley Daily Advocate* of the munificent gift from Mrs. Phebe A. Hearst to the California University at Berkeley. Governor James A. Budd, Professor Wm. Carey Jones and Regent J. B. Reinstein are named as the Hearst Trustees.

Four million dollars for buildings from private citizens is something that is not looked for every day—yet Regent Reinstein informed the Board of Regents at a recent meeting that more than four million dollars had been promised by private persons for the construction of buildings according to the plans to be secured through Mrs. Hearst's munificence—if the State would meet the present exigencies and provide indispensible accommodations by simply contributing the interest on five hundred thousand dollars for a term of years.

We publish below the correspondence between Mrs. Hearst, Governor Budd and Regent Reinstein.

PALACE HOTEL, Oct. 22, 1896.

Regent J. B. Reinstein

DEAR SIR:—Referring to the conversation which I had last week with yourself and Professor Wm. Carey Jones, I desire to say that I am deeply impressed with the proposition now before the Board of Regents, to determine upon a comprehensive and permanent plan for the buildings and grounds of the University of California, on the site at Berkeley, and I heartily approve of the idea.

My son and I have desired to give some suitable memorial which shall testify to Mr. Hearst's love for and interests in this State, and after having carefully considered the matter, we feel that the best memorial would be one which would promote the higher education of its people. And I must confess that the absence of a suitable plan for the University buildings has seemed an obstacle in the way of carrying out some ideas which we have cherished.

I feel now so imbued with the importance to the University and to the State of having such a plan that I should be glad to aid in its complete and speedy realization. I may also say that I am the more anxious for this, as I have in contemplation the erection on the University grounds of two buildings, one of them to be the memorial referred to.

I would therefore suggest that I be permitted to contribute the funds necessary to obtain, by international competition, plans for the fitting architectural improvement of the University grounds at Berkeley. While I understand from you that such plans can be procured for about fifteen thousand dollars ($15,000), I desire to say that the success of this enterprise shall not be hampered in any way by a money consideration.

I have only one wish in this matter—that the plans adopted should be worthy the great University whose material home they are to provide for, that they should harmonize with, and even enhance, the beauty of the site whereon this home is to be built, and that they should redound to the glory of the State whose culture and civilization are to be nursed and developed at its University.

As the full execution of these plans will probably require a long period of time, and one of constant and assiduous attention, I should like to suggest that this trust be reposed in a special committee which will represent the several interests involved. I would name as such trustees, His Excellency James H. Budd, representing the State; Professor William Carey Jones, representing the University, and yourself, representing the Board of Regents. I have the less hesitancy in suggesting these names, as these gentlemen are all graduates of the University of California, and would, I am sure, be glad to perform this labor in gratitude to their Alma Mater. Of course the ratification of a final plan would rest with the Board of Regents.

I believe that the release of Mr. Maybeck (who has been identified with the idea of this plan from its inception) from his duties of instruction at the University, and his presence in the Eastern States and in Europe would greatly facilitate a proper understanding of our design among architects. I would therefore further suggest that he be given a leave of absence for one or two years, and I offer to provide for him a reasonable compensation.

Yours very sincerely,

PHEBE A. HEARST.

SAN FRANCISCO, Oct. 23, 1896.

Mrs. Phebe A. Hearst.

DEAR MADAM:—Your letter of yesterday touching an architectural plan for the University of California has been submitted to me, and I beg to say that I shall be happy to accept the trust therein reposed.

Your conception of the purposes of the University of California as a great State institution on the loftiest and broadest plane wherein the State confers the priceless benefits of the higher education, is as noble as it is true.

Such was the great purpose contemplated in the Acts of Congress and of the Legislature of this State founding this University—a purpose whose scope and grandeur has been as thoroughly appreciated by you as your action will spread and enforce its appreciation by others.

Such a plan as you contemplate will enure to the lasting glory and advantage of the State and the State's University, and to the infinite benefit of the people of the State.

In the name of the State of California and on behalf of the people of the State, I tender you their heartiest thanks and assure you of their sincere and lasting gratitude.

Yours very sincerely,

JAMES H. BUDD.

SAN FRANCISCO, Oct. 22, 1896.

Mrs. Phebe A. Hearst.

DEAR MADAM:—I am in receipt of your letter of to-day expressing your earnest wish for an international architectural competition for a permanent and grand plan of the buildings and grounds of the University of California at Berkeley, and also of your splendid gift to further the obtainment of such a plan.

Perhaps nothing at this time could be more opportune or important for the State University than this wise gift and the gracious influence of its donor, through which we may hope soon to obtain a plan which shall contemplate upon the superb site of this University, buildings in every way worthy of a great State and its highest institution of learning. Whatever may be considered the important needs and the factors of success in this University, it is certain that they all will be subserved immeasurably by buildings which shall body forth the power and the dignity of a sovereign State at the same time that they shall exalt education by the inspiration of glorious architecture, making patriotism and a lofty regard for the State as certain a result of a course at this University, as a love for what is beautiful and true.

Your thought and kindness foreshadow such a plan as will accomplish this double purpose, and in addition will spur the pride and interest of State and individuals to speedily realize that plan in useful, beautiful and harmonious structures.

I shall take the earliest opportunity to bring your letter to the attention of the Board of Regents, and with their permission, will accept with pleasure my share of the great trust conferred. In the meantime, permit me to express to you on behalf of all who cherish the welfare of the University of California a sense of deep and lasting obligation. I am, dear madam, Yours very sincerely,

J. B. REINSTEIN.

AIKEN'S DESIGN IS A MONSTROSITY.

WASHINGTON, D. C., Oct. 29.—At last the Supervising Architect has completed his second design for the San Francisco public building. The first design did not please the people of San Francisco. The plans were after the style of Italian renaissance, and were drawn under the immediate supervision of Jeremiah O'Rourke, a talented Irish architect. O'Rourke soon resigned his official position, and was succeeded by William Martin Aiken. Mr. Aiken is nothing if not romantic. It will be remembered that he made a trip to California. He saw the Mission Dolores, visited the Stanford University at Palo Alto and resolved that the halo of romance should surround his design. He determined to give the building a gloomy, dungeon-like effect, with low, deep and dark grated and arched doorways. But not too somber, however, so he stuck two campanile towers on the roof.

The results baffles description. *The Call* correspondent showed a photograph of the design to a number of experts to-day.

"It is an architectural monstrosity," said one of the most famous architects in the United States, the designer of several Government buildings. "There are corner pavilions, but no center pavilion at all. This gives the facade a a severely plain appearance. The centre should have been emphasized by a pavilion. The corner pavilions should hsve been elevated above the balustrano, with the center pavilion towering above all. Yet we might have forgiven all if the architect had not surrounded the structure with two monstrous towers. It was evidently his idea to give the building an Alhambra effect. I do not see much in his design to suggest 'Spanish renaissance,' as he calls it. But if he wished to ornament his roof with turrets he might have better arranged them. The Madison-square Garden, New York, is castallated. There are at least five companile towers, but they are arranged discriminately. Besides, these turrets on a roof garden theatre are well enough. They are lighted brilliantly to advertise the show, but I think turrets are singularly out of place on a Government building. Uncle Sam does not need to advertise his business. The design is not appropriate. Another objection I have is the row of square windows on the mezzanine floor.

"You will observe that the large arched doorways and windows of the ground floor and the windows of the third oor are out of all proportion to the small square mezzanine windows. These small mezzanine windows are only fit for the attic."

This opinion of an expert was concurred in by other architects, who for professional reasons reluctantly criticized the Government architect. Others who saw the picture, although not versed in structural technology, were almost moved to tears when they beheld it. "Heavens," said one, "the architect must have had two turrets in stock he didn't know what to do with, so he stuck them on his Spanish renaissance roof." Another layman suggested that the two high turrets gave a very realistic billy-goat effect. Another wag said by erecting only one turret on one end of these roofs the tout ensemble would be a la locomotive, or with three turrets there would be a devilish pitchfork suggestion.

But Mr. Aiken is apparently well pleased with his design. The following description was given out to accompany the photographs:

"The new Federal building to be built on the square bounded by Mission, Seventh and Stevenson streets is to serve not only as a City Postoffice but also as a United States Rourthouse. The Postoffice occupies the first floor and a portion of the second, while the third floor and part of the second will be devoted to the courts and their dependencies. On the second floor will also be the offices for the United States Pension Agent, while the Weather Bureau will occupy a partial roof story in connection with the towers.

"The building above the first story is in form like an angular letter 'U,' with the base, which forms the main facade, on Seventh street. In the first story and the courtyard, which is roofed, is the Postoffice working room. Corridors run through the center of each division parallel with the three streets and give direct access to each department. The offices of the Postmaster and Assistant Postmaster face Mission street, while on the opposite side of this corridor is the registry division. The Seventh street corridor has upon one side the screen containing the delivery windows, boxes and mailing drops and on the other the stamp of money-order departments and cashier's office.

"The Stevenson street corridor give access to the working room. At the junction of the side and Seventh street corridors are placed the stairs and elevators, in near proximity to the principal entrances, and an information bureau for the benefit of the general public is found at the corner of Mission and Seventh streets, making the plan as a whole most complete and accessible.

"The center of the Seventh street side on the third story is to be occupied by the United States Circuit Court of Appeals, the hightest court of the district, while at Mission street, or the southwest corner, is the Circuit Court, and opposite, at Stevenson street, the District Court. All the courtrooms are provided with the necessary rooms for Judges, juries, clerks and witnesses. The United States Attorney's offices, two law libraries and a large file room for the various documents in charge of the District Court are on this floor, and the United States Marshal has a suite of rooms at the back of the Stevenson street wing, connected directly with the ground by a private staircase.

"On the second floor, under the District Court and easily accessible therefrom, are the rooms of the Grand Jury and Master in Chancery and a number of petty jury rooms. The central part of this floor is devoted to the use of the railway mail service and postoffice inspectors, while the pension office occupies the southwest corner.

"The Circuit Court of Appeals, as befits its importance,

will be the most elaborate room in the building, finished in white enamel embellished with gold, with vaulted ceiling of ornamented plaster. The other courtrooms will be handsomely finished in various hardwoods as well as the connecting offices and libraries, in which latter the bookcases will form a part of the permanent decoration.

The corridors of the first story will have vaulted ceilings finished in mosaic and ornamented plaster, while below the springing of the vaults the walls will be entirely of native marble. The remainder of this story will be finished in hard wood. The exterior of the building which is to be Spanish renaissance in style, will be built of cream white marble, severely plain in the lower stories, except immediately around the entrances, but richly decorated above the third story stringer course and capped by a deeply projecting cornice and balustrade of elaborate design. Crowning all will rise two towers above the intersections of the corridors on the southwest and northwest corners. These towers, while adding must to the appearance of the building, will also serve a useful purpose, as they are intended to accommodate the apparatus and instruments of the local weather bureau."

The Call correspondent asked the supervising architect when work would be commenced on the San Francisco Post-Office building. "Not for several months," said he. "We are now engaged on the foundation plans and there are some engineering problems to be solved. We must determine the weight that can be supported by such a foundation before we proceed."

INTERNATIONAL COMPETITION FOR THEATRE, KIEFF.

MONSIEUR A. Barthelemy has been kind enough to prepare a full and interesting account of the international competition for a theatre at Kieff, and to combine with it particulars which cannot fail to be useful to British architects who may in spite of the short time at their disposal, submit designs for the projected work. Monsieur Barthelemy writes to the *Journal of the Royal Institute of British Architects* as follows:—

The Russian town of Kieff has decided to build a theatre to replace the one which was destroyed by fire. It sends through the Imperial Society of Architects of St. Petersburg an appeal to the architects of all nations; and it is needless to say that the Royal Institute of British Architects is one of the Societies personally appealed to by the Russian body. I cannot do better than give a translation of the regulations for the competition, which will provide our British architects with all the information they require:—

The Imperial Society of Architects of St. Petersburg have received a commission from the Municipal Council of the town of Kieff, to promote an international competition for a theatre to be erected in Kieff.

1. The theatre is to be erected on the site where the former building stood. The main frontage must extend along the Wladimirskaia street, and may be brought nearer to it than formerly. The square may be done away with.

2. The auditorium should accommodate 1,500 persons.

A. Ample space must be provided in the orchestra stalls and pit, with a sufficient number of openings in order to insure a rapid exit for the public. Pit boxes may be erected, but they should not extend all around the auditorium.

B. The boxes, with the exception of boxes to be indicated by letters, must be made to accommodate five persons, in the pit (pit boxes), on the tier, and in front. The galleries must be placed at the back of these. Balconies and amphitheatres may be added.

C. Dressing-rooms, with separate lavatories for ladies and gentlemen, should be set apart on each story.

D. The orchestra should accommodate seventy musicians, with a special lobby, and a room wherein to store the instruments. Separate exits.

3. The boxes should open on lobby-passages. The vestibules should be spacious. Two booking-offices. Cloak-rooms should not be placed in the lobbies. Give special attention to the necessary number and suitable arrangement of staircases. Exterior balconies are allowed.

4. Site for the buffet.

5. The dimensions of the stage should correspond to those of the auditorium, and allow of grand operas being performed, with necessary provision for the prompt shifting of scenery. It is essential that in case of fire the stage could be isolated from the auditorium and the artists' dressing-rooms.

6. Sixteen artists' dressing-rooms for ladies and gentlemen, with special entrances, as well as a lobby and smoking room. Two dressing-rooms for the chorus, each providing accommodation for forty people. A dressing-room for 100 supers. Two dressing-rooms for the ballet, each accommodating ten people. A room for the leader of the orchestra. A room for the stage manager. A room for the leader of the chorus. Three rooms for rehearsals.

7. The manager's room. A room for the impresario. A room for the inspector. A room for the telephone and the heating and lighting apparatus.

8. In a special part or separate should be provided:—

(*a*) Two wardrobes, with a minimum area of 20 square *sagenes*, i. e., 90 square metres.

(*b*) A store-room for the properties, with a minimum area of 10 squares *sagenes* i. e. 45 square metres.

(*c*) A workshop, with a minimum area of 50 square *sagenes*, i. e. 225 square metres.

(*d*) A library, with a minimum area of 9 square *sagenes*, i. e. 40 square metres.

(*e*) A store-room for scenery, providing space for at least thirty operas.

(*f*) A room for painting scenery.

(*g*) Lodgings for the inspector, composed of three rooms and a kitchen, with a total area of 16 square *sagenes*, i. e. 95 square metres.

(*h*) Two rooms for the care takers, with a kitchen, with a total area of 12 square *sagenes*, i. e. 54 square metres.

9. Separate exits should be provided everywhere, as well as water-closets, and an effective system of water-supply against fire.

10. The drainage of the water-closets and sinks should be connected with the town system of sewers.

11. The heating system is supposed to be that of steam at low pressure with ventilation. Special electric light for the building, entirely separate from all connection with the street. Indicate the sites for boilers and machines.

12. Roofing, ceilings, floors (excepting the stage floor), partitions, and fittings for boxes to be fireproof.

13. The interior decoration to be unostentatious.

14. Frontages to be of bricks, with ornaments, but without stucco.

15. The cost of the building should not exceed R. 450,000 i. e. about £48,000. In order to base calculations for the said cost the price of the cubic *sagenes* (9-71 cubic metres) is fixed at R.55 (about £6). In the above amount of £48,000 the expenses relating to heating, ventilation, water-pipes, electric-lighting, and the machinery of the stage are not included.

16. The designs should include plans of each story, as well as of the frontages, on the Wladimirsky, Foundoukleevsky and Theatrale streets, a longitudinal section, two transverse sections, and an estimate of the whole, with an explanatory notice. The scale to be a hundredth of a *sagenes*. The designs should reach the Imperial Society of Architects (Quai de la Moika, 83) not later than the 3-15 December, 1896, at 7 p. m.

Competitors not living in St. Petersburg may forward their designs by post as late as the above-mentioned date, in proof of which they are required to send the Post Office receipt giving the date when the designs were posted.

17. Premiums will be awarded to the amount of R. 2,500 (about £280) for the first; R. 1,500 (about £160) for the second; R 1,000 (about £120) for the third; R. 700 (about £76) for the fourth; and R. 300 (about £32) for the fifth.

18. The designs selected for awards will become the property of the Municipal Council of Kieff.

The said Council reserve to themselves the right:—

(*a*) To choose from amongst the premiated designs awarded either any one, or any part of any one, which they may deem desirable.

(*b*) To employ to carry out the work either the author of the design or any other person, and to pay such person accordingly.

19. For any particulars not here specified intending competitors should refer to the Rules for the Conduct of Architectural Competitions issued by the Imperial Society of Architects of St. Petersburg on the 28th of March, 1895.

20. The jury will be composed of the following members: Professors N. L. Benois, R. A. Goedicke, and the Count P. J. Suzor, Architect-Academician, Honorary Members of the Imperial Society of Architects of St. Petersburg; Messrs. A. R. Goeschwendt, K. J. Maevsky, P. O. Salmonvitch, Architects, and K. G. Preiss, Architect-Academician. They will have as assessors three persons to represent the Municipal Council of Kieff, the said persons to be chosen by that Council.

There is a curious similarity between the Suggestions for the Conduct of Architectural Competitions which were sanctioned by the Royal Institute in 1892, and those issued by the Imperial Society of St. Petersburg. The differences are few. While the Institute suggests that the promoters of an intended competition should, as their first step, appoint one or more professional assessors, architects of established reputation, the Imperial Society provides for the appointment as assessors to the architects of persons such as sculptors, engineers, physicians, teachers, etc., the number of those members not to exceed a third of the total jury. Both Societies agree, of course, that every promoter of a competition and every assessor engaged upon it should abstain absolutely from competing and from acting as architect for the proposed work. But according to the Royal Institute, the duty of assessors should be, amongst others, the paramount one of drawing up the particulars and conditions as instructions to competitors, and of advising upon the question of cost; while the Imperial Society only admits of those instructions being sanctioned by the jury, after having previously been framed by the promoters.

Clause 4 of the Russian scheme suggests that the conditions of the competition should only bind the competitors to produce sketches with approximate estimates; and clause 6 invites the promoters of a competition to determine the number and kind of plans and drawings, their scale and finish. Both these clauses are very much in accordance with the Institute suggestions. But the Imperial Society adds another condition to these, viz., that the cubic unit should be specified in the programme of the competition, as well as the cost of the unit.

The Imperial Society has a clause which relates to the period during which the designs should reach the jury. It allows of the designs being forwarded by post in a manner which has been heretofore specified.

While the Institute is in favour of the designs being numbered by the promoters in order of receipt, the Imperial Society rules that each design shall bear a motto, the name and address of each competitor being indicated in a sealed envelope bearing on the outside the motto chosen for the design.

The Imperial Society's rules say nothing of the three ways in which, according to the Institute, competitions should be conducted. They suggest that besides the premiums, which should always be awarded to the best designs, there should be provided a certain sum of money to enable the promoters to purchase designs which, although interesting, did not secure a reward.

Clause 9 of the Institute Suggestions has no analogy in the Russian scheme; but while the Institute says that it is *desirable* that all designs submitted in a competition should be publicly exhibited, the Russian scheme makes of such an exhibition a condition *sine qua non*.

The awarded designs become, according to the Russian rules, the property of those who promoted the competition. Both Societies agree in the expression of their desire that the architect whose design may be selected as the best should be employed to carry out the work.

Although I am not personally in favor of competitions, I cannot but hope that our British architects will avail themselves of the opportunity offered by the town of Kieff. There cannot be anything more interesting to an architect than to conceive the plan of a theatre; and the appeal addressed by the Municipal Council of Kieff through such a channel as the Imperial Society of St. Petersburg should be fully responded to.

SKY-SCRAPERS FROM A FIREMAN'S STANDPOINT.

CHIEF BONNER, of the New York Fire Department, has objections to sky-scraping buildings which grow in proportion to the growth of the buildings themselves. He states that if they should eventually reach a height of 500 feet it would not cause him the least surprise. He thinks that the steel-cage principle, which is the basis of their construction, renders the stories independent one of the other, each story carrying its own weight. The space of ground the foundations cover, according to law, must be in proper scientific proportion to the height and weight of the walls, which can be carried, under the present system, to a great height; and, as they are mere brick or stone casings, are not as solid and heavy as of old. The partition walls and flooring are of hollow terra cotta bricks cemented together, which have proved a great advantage in the matter of lightness and enable the structure to be raised to the height of twenty stories or more and still conform to the law in regard to

height, weight and footings. Another and very important advantage is to be added to this: As the walls are of skeleton construction and new materials being reduced, through a very active competition, to a low price in the market, there is a probability of a still greater reduction, as new building material is being manufactured which is even lower in price than terra cotta. In a recent interview on this subject Chief Bonner said:

"The Fire Department considers the sky-scraper a possible scource of danger to its occupants and neighbors. A sky-scraper building, rented exclusively for office purposes, is fireproof in the sense that the woodwork, fixtures and wooden furniture in the various rooms could not cause a sufficient degree of heat, in case they caught fire, to penetrate the cement and terra cotta work that covers and protects the steel frame of the building. The law requires that the steel work must not be left exposed. So long, therefore, as the steel work, on which the stability of the building depends, cannot be reached and warped by heat, the structure may be called fireproof. There is, however, one danger that must be considered. The outbreak of fire in the offices on one floor would naturally result in the combustion reaching other floors. The fire would follow the steam-heating pipes and spread in that way. Now, smoke is as dangerous to life as flame is, and suppose a fire in one the top stories of one of these tall buildings to have gained some headway, one of the most important things to do would be to reach the roof and open ventilators to let the smoke escape. It would not be so easy to reach the roof of a twenty-five-story structure with the elevator service cut off by dense smoke above. The elevator shafts themselves would be a source of danger in case of fire, as they would act simply as flues or conductors for smoke. And, as the stairways in mostly all the tall buildings are constructed close to the elevator shafts and pass by the latter at every landing, it follows, that the stairs would become impassable as well as the shafts. Smoke from fire in lower stories would quickly reach the upper ones in this way, and, as elevators and stairs are the only means of escape from these floors that are above the reach of the department's appliances, the peril of the situation is obvious. In our opinion the tall building should have its stairways constructed as far away from the elevator shafts as possible. There should be two distinct avenues of escape from the building in case of fire. I have said that the term 'fireproof' may fairly apply in the case of buildings occupied only as offices. But, suppose that the constant increase in the number of sky-scrapers causes a diminution in the number of available tenants who want office room only? This I think is a very possible result, and it will naturally have the effect of filling many rooms in the buildings with tenants engaged in mercantile pursuits. The owners will rent to such tenants as they can secure. Thus there will be quantities of inflammable materials stored within the walls, and an outbreak of fire more probable and vastly more serious. Some of the big buildings have already given up their grounds floors to mercantile business, and the tendency in this direction seems to grow. It is entirely different to have a fire break out among merchandise than to have one in an office, with its few desks and chairs. In the former case a degree of heat may be generated sufficient to reach and warp the steel cage frame and induce a collapse of the building.

"Buildings exceeding 125 feet in height are beyond the reach of the Fire Department's best efforts. In our opinion 125 feet is the limit of height consistent with safety. If the sky-scrapers are to continue to soar higher and higher, a law should be passed making it mandatory for the owners to furnish their buildings with first-class machinery for extinguishing fires and to maintain skilled men to operate it. It has been said, and truly enough, that the Fire Department is paid to protect property from fire. But, as I say, there is a limit to our powers.

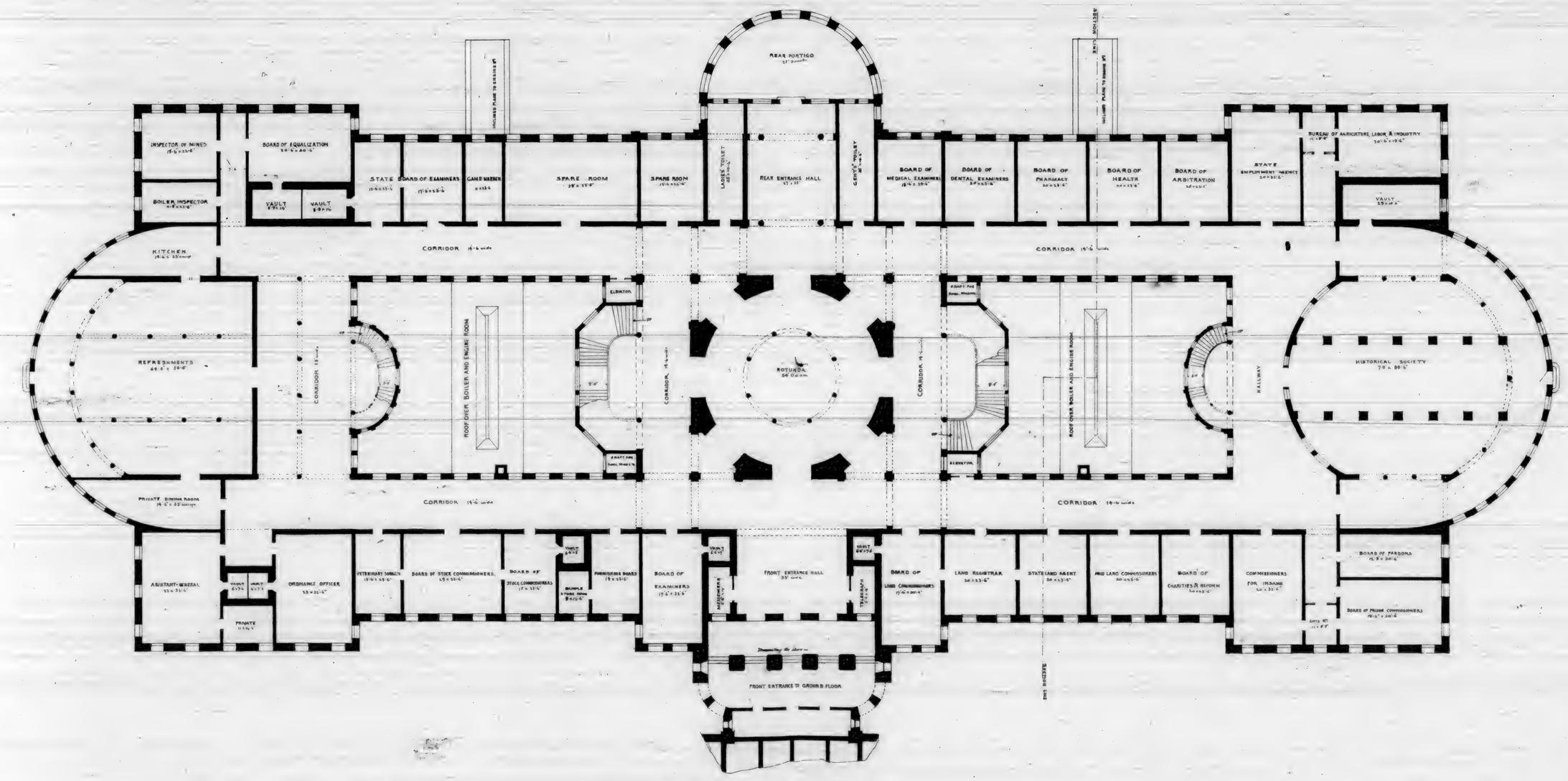
"At present there is no law to compel owners of sky-scrapers to provide apparatus on their premises. It is only when a modification of the original building plans is applied for that the Board of Examiners of the building Department exacts, as a *quid pro quo*, a stipulation that the building shall be equipped with fire appratus. But we do not believe that such stipulations are complied with in the sense in which they are meant, nor can the Board of Examiners enforce them, as there is no law covering the case. It is merely a question of good faith on the part of the owners. Such appliances as are provided are not, we believe, first-class, nor do they receive any regular care. Besides they are merely in charge of the janitor or his staff, who are not trained or skilled in their manipulation. Hence they would prove practically useless in an emergency.

"What the department considers necessary in this connection, in view of the existing and future probable height of 'sky-scrapers,' is that a law should be passed containing the following provisions: All present office buildings, the height of which exceeds 125 feet, should be required to be provided with steam pumps, standpipes, hose and hose connections. There should be a sufficient pressure of steam up at all hours, day and night, to force the water to the uper floors, and to run at least one elevator car at night. The owners of the building should employ experienced men to work the machinery. These men, who should be continually on duty would be able to check a fire, pending the arrival of our apparatus. The danger of smoke cutting off the elevator shaft would thus be minimized, and the firemen enabled to ascend quickly to those parts of the building which otherwise would practically be inaccessible.

"The power to insist upon these precautions being observed should bs vested in the Board of Examiners of the Building Department. The Fire Department should have in its discretion the approval of the appliances when put in place, and it should also be vested with the right of periodical inspection of them. As long as these precautionary arrangements are lacking in a building above the height I mentioned, I consider that it constitutes a menace to surrounding property, and that it may justly be regarded in the light of a public nuisance."—*Architecture and Building*.

NOTES & COMMENTS.

IF those who remember the splendid condition of the Pt. Lobos Avenue when used as a drive to the Cliff House in former years, will make the comparison with the present state of that avenue they would surely blame the commissioners of the Golden Gate Park for the neglect of the



GROUND FLOOR PLAN.

COMPETITIVE PLANS
FOR THE
MONTANA CAPITOL.
W. J. CUTHBERTSON,
ARCHITECT.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO LITH.

VOL XVII Nº II NOVEMBER 1896.

avenue, as its present condition can most truly be called disgraceful.

If the Park Commissioners cannot do better in the future with the trust than they have in the past. The avenue should be restored to the city authorities and let the street superintendent try his hand at reform.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COMPETITIVE plans for the Montana Capitol, W. J. Cuthbertson, Architect.

THE Architects of the I. O. O. F. Crematory, published in our last number, should read "Stone & Cahill and T. P. Ross," as it thus appears on all the drawings. The mistake was due to an oversight on our part entirely, for which Mr. Cahill is in no sense responsible.

BOOKS AND PERIODICALS.

CHARTS FOR LOW PRESSURE STEAM HEATING—for the use of engineers, architects, contractors and steam fitters by J. H. Kinealy, D. E. Professor of Mechanical Engineering, Washington University, St. Louis, Mo.

Publishers by Spon & Chamberlain, 12 Cortland street, New York, London, E. & F. N. Spon, 125 Strand, price one dollar.

These charts cannot fail of being a great help to the architect and engineering in saving time consumed in making calculations. The author remarks in his introduction, while he hopes that the charts will be of some value to engineers, they are published more especially for the use of architects and contractors.

SWEET PEA REVIEW a handsome booklet of thirty-two pages containing complete classification in color groups, according to type, with recommendations for the expulsion of the least desirable sorts. Compiled from critical notes made during Sweet Pea growing season of 1895-96—with comparative chart and numerous illustrations. Price twenty-five cents. Published by the Sunset Seed and Plant Co., Sandsomé street, San Francisco.

Any one wanting information about Sweet Peas would do well to read this Review, as they will be astonished to find how little they know upon the subject.

LIPPINCOTT'S Magazine for November contains "An Interrupted Current," a complete novel by Howard M. Yost. This story is founded upon incidents produced by the telephone and proves very interesting though rather improbable. The usual number of short articles make a very interesting number.

THE ARCHITECT'S DIRECTORY for 1896-97—containing a list of the architects of the United States and Canada, Classified by States, Towns, with the architectural associations to which they belong indicated against each name. Prepared with the greatest care to secure accuracy both of names and location. Together with a classified index of prominent dealers and manufacturers of building materials and appliances. Published annually by William T. Comstock, 23 Warren street, New York. Price one dollar.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Sprin street, Los Angeles, Cal.

OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec't. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 4.

SOME RESULTS OF SANITARY REFORM.

ONE of Lord Beaconsfield's sayings so it is said was "The health of the people is, in my opinion, the first duty of a statesmen."

And our humble opinion is the same. The health of the people involves, we may say everything with which a statesman has to deal. There is not a single move he makes that does not in some shape or manner affect the people's health.

For example—the submission to arbitration of the Venezuelan Boundary dispute just agreed upon will likely do away with the bad health of many British soldiers who would otherwise be afflicted with cholera or yellow fever or whatever disease usually attacks white residents dwelling in such tropical countries. The policy of "protection" which may possibly be inaugurated under the reign of the incoming administration would undoubtedly affect the health of the operatives who will be compelled to work long hours in the factories which are now under process of reopening.

The method of social economy kept in vogue by our statesmen no doubt affects the health of the number of despondent suicides of which we read daily in our newspapers—and to come down more particularly to the subject matter of these articles; the statesmanlike efforts which compel our citizens to curtail their rent account and leave the healthy house vacant so as to huddle in close quarters in the old unhealthy tenements for want of money are responsible for a large amount of the unhealthiness of our people witnessed by the inordinate number of physicians employed to counteract the results. However the provision of healthy homes and proper sanitary urban arrangements no doubt will relieve much of unhealthiness and sickness.

To those who are of what is called a *practical* turn of mind the following excerpt from the Government Report of "Housing of the Working People" which we are taking as our text, giving us a very queer reason why we should keep the laboring classes healthy, must commend itself.

"Sir James Paget, the distinguished English physician, says the statistics of friendly societies and other similar bodies favor the belief that the whole population of England between 15 and 65 years old in each year work 20,000,000 weeks less than they might if it were not for sickness. Estimating those for the domestic, industrial, and agricultural classes as numbering 7,500,000 he puts their loss at £11,000,000 ($53,531,500) annually. "No one who lives among the poor can doubt," says he, "that a very large proportion of the sickness and loss of work which one sees might have been prevented." He reckons this preventable proportion at one-fourth. In such case the loss that is inflicted on the working class must be nearly £3,000,000 ($14,599,500) yearly. One entirely preventable disease, typhoid fever, causes, he calculates, an annual loss of 230,000 weeks of work to those who survive it.

"The royal commission on the housing of the working classes, 1885, speaking of the housing of the poor in the low parts of London, say that the statistics of annual disease consequent upon overcrowding would not convey the whole truth as to the loss to health occasioned by it to the laboring classes. Some years ago the London board of health instituted inquiries in these low neighborhoods to see what was the amount of labor lost in the year, not by illness but by sheer exhaustion and inability to work. It was found that upon the lowest average every workingman or workingwoman lost about twenty days in the year from simple exhaustion.

"It is very evident, therefore, that no matter how much we may glean from comparative death rates as to the results of sanitary reform, they do not tell the whole story. There are thousands of cases of poor health and depressed vitality which are not followed by death. The improvement in the death rate is, however, the surest available gauge because it is the most tangible."

The point of view of considering health only as a factor in producing wealth and luxuries is assuredly a very low one to take; health is sufficiently good for its own sake to need no other arguments.

The argument adduced is moreover fallacious; for the working class loses no time by any of its members being sick, for there are always plenty of idle ones to take the sick one's places, and it is no loss to the community, for the product is so great that everybody is amply supplied with all they want, only a great deal happens to be in the store houses instead of in use; a few weeks off, even as many as twenty million in the year, cuts no figure—the only matter of regret is that those weeks cannot be spent pleasurably instead of on a sick bed, this is the part of it that is being remedied by sanitary reform.

The Report gives a number of interesting tables of statistics showing the results of Sanitary Reform in the way of reduced general death rate attendant on the less density of population per acre—the less density of population per house and per room.

"The death rate of Glasgow, when the improvement trust commenced operations (1871), was 32 per 1,000; in 1892 it was 22.8 per 1,000 for the extended city, and for the old area 23.6."

Study of these tables—which we have not space to publish in these articles—leads to the conclusion that there is an undoubted relation between overcrowding either within dwellings or on ground space, and death rates.

"Obviously the percentage of the total population living in tenements of one room is a fact of the greatest importance. It must have a close relation to physical health. The table shows that generally speaking the highest death rates are found in the towns which show the largest precentage of the population living in one-room tenements. Another column of this table shows the average number of persons living in each one-room tenement. These averages quite generally follow the death rate, the highest death rate being found in the towns with the largest number of persons in one-room tenements. Again, the town which has the smallest percentage of the population living in tenements of five rooms or upward has the highest death rate, and so on throughout the group of the four towns which have the high death rates. * * This table exposes the tremenous hygienic influences of over-crowding. Generally speaking it proves that the most densely populated tenements are connected with the highest mortality and vice versa."

The necessity of preventing overcrowding by force is to be deplored but still it is better than nothing; and is the only way to do until a better state of society evolves itself.

Chapter V of the report is devoted to Sanitary Aid Societies and their work and commences thus wise:—

"Some of the most prominent witnesses before the English royal commission on the housing of the working classes, of 1885, stated their belief that existing laws were ample for dealing with all sanitary questions if they were properly enforced. The same complaint has often been heard in different cities of the United States. Sanitary law and sanitary administration are two quite different things, and the one does not always follow the other in natural sequence.

"It must be observed, however, that expediency plays a a certain part in sanitary administration. To have rigidly enforced at the outset stringent laws, such as exist in New York, for example, would have arrayed the property owning element in opposition and might have brought about a repeal. As owners of unhealthy property grow accustomed to greater pressure, and as tenants become more exacting in their demands, the task of sanitary authorities becomes easier. In the beginning an insistence on conformity to legal prescriptions (many of which were looked upon as unnecessarily strict) would have been unwise and might have blocked the way to progress.

"Sanitary authorities, like all other administrative bodies, if left to themselves, are apt to become conservative. A little stirring up occasionally is usually a good thing, and the interest of enlightened citizens, organized into associations for extending aid and cooperation, is especially useful.

"The testimony of such veterans in sanitary science as Dr. Russell of Glasgow, Dr. Shirley Murphy of London, Dr. du Mesnil of Paris, and Dr. Janssens of Brussels, as well as of a host of American experts, goes to show that the ignorance and apathy of the poor, for whose benefit work has to be done, are among the greatest obstacles met with in the discharge of duty. Sanitary aid societies may do much to help the authorities by acting as intermediaries during the period in which fear of the possible consequences of communicating a knowledge of the existence of nuisances or other insalubrity still holds sway. Direct contact between the poor and boards of health being once established, there is no longer the same necessity of intervention. An important fact is that without the good offices of the intermediary, cooperation is with difficulty established.

"A fundamental need, which has so far received but scant recognition in this country and England, but which is at least recognized in the educational systems of France and Belgium, is instruction in the elements of household hygiene in the public schools. The effects of this kind of teaching would soon become apparent, and in the course of a generation or two would powerfully react upon sanitary amelioration. Dissatisfaction with unhealthy surroundings would be cultivated, and the knowledge of what was good and wholesome would make of the rising generation a far more exacting tenant class than their elders.

The principal functions of sanitary aid associations may be summarized as follows:

"1. To organize and mold popular sentiment in favor of wise sanitary legislation.

"2. To assist boards of health in the discharge of their duties by bringing to their knowledge the existence of insalubrious conditions in districts where they are most likely to occur and which need more or less constant watching.

"3. To encourage sanitary authorities to do their whole duty by supporting them in difficulties arising in critical cases, and in bringing proper pressure to bear wherever there seems to be an inclination to relax effort. The creation of public opinion to sustain sanitary authorities in their work is also an important duty.

"4. To assist in the education of the poor on sanitary questions; teaching them that there is an authority to appeal to against nuisances, instructing them in procedure; leaving in their homes a printed list of elementary hygienic observances, and such literature as is occasionally distributed by boards of health, giving suggestions on the care of infants, and the conditions to be observed in the treatment of persons in cases of infectious diseases. Education in sanitary as well as in all other matters lies back of reform. The knowledge of improved conditions begets a desire for their enjoyment.

"5. The publication from time to time of facts gleamed from official sources which tend to act as a salutary warning against residence in unhealthy neighborhoods. An example of what is meant is the inquiry made by Dr. Thresh into the causes of excessive mortality prevailing in District No. 1, Ancoats, Manchester, England. Taking the returns of deaths from the health and hospital reports he was able to show the true death rate for the whole district. It was proved that only in a few blocks was this less than 40 per 1,000, while in some places it was 50, 67, and even 80 per 1,000. The publication of these facts aroused the more intelligent working people who were residents of the neighborhood to form 'sanitary and healthy home associations,' as they called them. They were awakened from their apathy, and in a short time the rehabilitation of the district was effected. Dissemination of knowledge in relation to death rates and causes of sicknesses for specified localities is of great practical value. Not only is public opinion aroused, but interested opposition is left powerless to thwart progressive action. Public opinion, when informed, will always sustain sanitary authorities in the application of drastic remedies. To make healthy and keep healthy existing buildings is a work of scarcely less importance, though much more difficult to accomplish than the safeguarding of new structures. Voluntary associations of individuals cooperating harmoniously with the regularly constituted authority may powerfully assist in promoting health and good housing among the masses. In sanitary matters eternal vigilance is the price of safety.

"All well organized boards of health seek to disseminate among the poor information relating to the care of children and the maintenance of a favorable hygienic environment. The New York board of health does considerably more. It maintains a special summer corps of physicians whose duty it is to visit every tenement house, beginning in the latter part of June, for the purpose of giving medical advice and treatment, distributing literature, giving hints for the care of infants, and searching out insanitary conditions. There are fifty of these medical gentlemen, forty-eight doing duty in the tenement house district, while two are assigned to the hospital boat and to charitable excursions undertaken for the benefit of mothers and children. Personal visitation of this kind is far more effective than the distribution of literature alone. Attention is usually paid to oral advice from those professionally competent to give it, while heed is not always accorded to even the most useful hints which well edited circulars may contain. A word or two often suffices to correct household defects unfavorably affecting

the health of occupants which were regarded hitherto with complacency."

There is no doubt a little too much paternity or rather maternity about all this—it is no doubt all necessary, but one cannot help thinking that a few municipal workshops well equipped and hygienic—where the heads of families could get constant work at good pay, would sooner do away with unsanitary conditions and cost no more than the army of Sanitary Inspectors and Sanitary Aid Societies—which now potter about trying to cover up the sores which all the time fester below.

Although these Sanitary Aid Societies have done much good, in consequence of their being so many disconnected ones, (in New York there are probably thirty associations engaged in ascertaining infractions of the laws and otherwise aiding the local authorities,) their work being thereby unsystematic, the result of their labors are not what it should be. More practical results, we believe would be obtained by giving an official character to them by the City organizing in each precinct a committee which shall choose a head man, who shall be recognized as a city officer and shall report to the Board of Health all infractions of laws, all complaints, bad state of any streets and sewers and all other matters appertaining to the public welfare.

The closing sentence applies here with good force:

"Vigilance is necessary to maintain a proper hygienic standard in the housing of the poor. From the very magnitude of their work the regular sanitary administrations find themselves crippled from lack of resources and of inspectors sufficient to fully accomplish the work. The organization and maintenance of such societies is a necessity in order to secure the wise enforcement of health laws and the advance of sanitary education in any city. The prime conditions of success are hearty cooperation with regularly constituted authority, and an intimate knowledge of the conditions and needs of the homes of the poor."

COMPRESSED AIR FOR STREET CARS.

THE MANHATTAN Elevated Railroad of New York has authorized an air-power company to place one of its motors on one of its lines to run on schedule time and to draw a train of five cars. If it should be a success in this trial the Manhattan Company will consider the use of air motors on the entire system. The compressed-air locomotive or motor is little more than a long, black cylinder, similar to the boiler of the present locomotive, with the cab at one end. There will be no smokestack, no tender and no dome. The only protuberances on the cylinder besides the cab will be the whistle and the sandbox. The air power company claims that it can draw loaded trains more rapidly, smoothly and safely than is done by the steam locomotive, and at a decrease in operating expense, and points to its cars now running on the 125th street branch of the Third avenue cable line, in New York City, as an example of what it can do. The company avers that the public and the railway officials are more than satisfied with the cars, and that it is only a question of time when compressed air will supersede steam, cable, electric and horse power on city street railways.—*Mining and Scientific Press.*

A NEW PROCESS FOR THE MANUFACTURE OF STEEL.

A NEW process for the manufacture of steel, invented by B. Stockman of Manchester, England, is claimed to be a success. The process involves a combination of both the Bessemer and the open-hearth methods of manufacture, and it is a basic dephosphorizing system. The molten phosphoric iron is brought into contact, in a converter or similar vessel, with dephosphorizing agents—nitrate of soda, common salt and titanic iron sand being the chief ingredients—and, after a contact of only three minutes, the metalloids are practically eliminated. The metal is then poured into an open-hearth melting furnace, where it is treated for about two hours, during which time the dephosphorization and desulphurization are completed, aud the carbon is added in the usual way, as spiegeleisen or ferro-manganese. The steel produced by this system has been tested by Kirkaldy of London and Nash of Sheffield, and the results are said to be satisfactory. It appears to be adapted to the production of steel of any degree of hardness, and, as it only occupies about 2¼ to 2½ hours, it is comparatively inexpensive.—*Mining and Scientific Press.*

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., November 9, 1896. Sealed proposals will be received at this office until 2 o'clock P. M. on the 22d day of December, 1896, and opened immediately thereafter, for all the labor and materials required for the low pressure, return circulation, steam heating and ventilating apparatus and power boiler for the U. S. Marine Hospital Building at Port Townsend, Washington, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Custodian at Port Townsend, Washington.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so.

All proposals received after the time stated will be returned to the bidders.

WM. MARTIN AIKEN,
Supervising Architect.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

RIGHT TO PARTY WALL ACQUIRED BY LONG USE.—Where an adjoining owner and his predecessors in title had used for twenty years a wall, part of which was wholly situated on the neighbor's land, for the support of their building, an easement in such land for such purpose was created by such long use, and this right becomes an appurtenance to the estate and passes to the grantees.

Barry v. Edlavitch, Ct. App. Md., 35 Atlantic Reporter, 170.

ALLEGATION OF OWNERSHIP OF LAND NECESSARY TO LIEN.—Under the law providing that one furnishing labor and material for any structure under a contract with the owner of the real estate shall have a lien upon it for the value of the labor and materials furnished, a complaint in an action to enforce such lien which fails to allege that the party sued was the owner of the land on which it was sought to attach the lien, or set out that such party had any interest in it, is fatally defective.

Knapp Elec. Works v. Mecosta Elec. Co., Sup. Ct. Mich., 68 Northwestern Rep. 245.

DISCREPANCIES IN PLANS AND SPECIFICATIONS.—Where the plans and specifications of a building were accessible to the builder before he made the contract, and an examination of them would have shown that there were apparent discrepancies in them, he is bound by a provision of the contract that if any discrepancies are found to exist between the plans, working drawings and specifications, the architect shall decide as to their true intent and meaning. And the fact that such architects drew the plans and specifications, and were to receive a compensation of five per cent of the total cost of the building, will not warrant an inference of fraud in their decision.

Kelley v. Muskegon, Sup. Ct. Mich., 68 N. W. Reporter, 282.

DESCRIPTION OF PROPERTY FOR LIEN.—A mechanic's lien for construction of foundations for a mill and boiler house sufficiently identifies the property, under the law of Pennsylvania, by stating that the buildings are on the grounds of a certain company, in a certain town, and giving the dimensions of the mill and foundations.

Safe Deposit, etc., Co. v. P. & C. Iron & Steel Co., Sup. Ct. Penna. 35 Atlantic Rep. 229.

BUSINESS MOSAICS.

If you have not made a visit to the rooms of Mr. M. S. James in the Flood Building and inspect his stock of plumbing work in the way of porcelain and porcelain line work you have missed a sight worth seeing. Mr. James is the Pacific Coast Representative of the J. L. Mott Iron Works, New York. This firm is so well known throughout the country for the improvements made from year to year in sadiatry plumbing that one must make a frequent visit in order to keep posted on what is being done in this line.

Family friend—Well, how's little Willie? We don't see as much of you as we used to. WILLIE (shyly)—No; I'm in long trousers now.—*Truth.*

W. P. Fuller & Co., having such perfect machinery for the manufacture of paint, that it is no wonder they produce a pure article, as pure material well ground will produce pure paint. The new wall finish "Duresco" is described as a very desirable article producing a finish upon walls that can be washed and still preserve its face uninjured, at the same time binding the wall even when disposed to crumble.

Mrs. Casey—Joost see little Mary makin' love to little Moikey. MRS. KERRIGAN—God hilp the poor men when she grows oop. She makes love like a widder already.—*Puck.*

N. & G. Taylor Company, Philadelphia, Pa., as manufarturers' agents for the Pancoast Ventilator, issue a striking circular showing a half-tone picture of a 66 inch Pancoast Ventilator 11 feet in diameter, which, with one of 84 inches, weighing over 1000 pounds and nearly 14 feet in diameter, were lately sold to the Crittenden Mfg. & Roofing Company of Minneapolis, Minn.

Customer—Do you keep the CALIFORNIA ARCHITECT AND BUILDING NEWS? STATIONER—No, we sell it.

Joseph Budde, manufacturer of sanitary appliances will be found at his old quarters, 575 Mission street, he invites the public to visit his show room as his motto is "First class work, low prices and two years guarantee for all my work," what more can be asked of any dealer.

She—Will you come home to dinner with me? Oh, no! I have my business suit on. SHE—Well, what of that? Don't you mean business?

No material has so strong an affinity for iron and steel as pure, soft flake Graphite, and for bicycle chains and sprockets there is nothing equal to it. The Dixon Crucible Co., Jersey City, N. J., selects its choicest material from unlimited stocks, and after analyzing all other cycle chain lubricants in the market that it could find, does not hesitate to say rhat Dixon's No. 691 Cycle Chain Graphite is absolutely without an equal for preventing rust and wear of chain and for insuring ease and comfort in riding. Mr. Tom W. Winder, the man who rode 21,000 miles around the borders of the United States, was offered all sorts of chain lubricants, and Dixon's was found superior to anything offered. He says: "It saved me much hard work, as its application never failed to cause an easy running chain." No. 691 is the improved shape, and fits the tool-bag easily. If your dealer does not keep it, send ten cents for a sample, and you will never regret it. Dealers will receive a sample free of charge by sending their business card.

CITY BUILDING NEWS.

Baker near Sacramento. Alterations and additions; owner, Mary E. Finney; architect, A. J. Barnett; signed, Oct. 19; filed, Oct. 21; cost $2624.

Bryant near 3rd. To build engine house; owner, City of San Francisco; architect, C. R. Wilson; contractor, A. Dahlberg; cost $6097.

Brannan near 5th. To build; owner, Heme M'fg. Co.; contractors, Campbell & Pettus; cost $1200.

Bush near Kearny. Additions and alteration; owner, City of San Francisco; architect, C. R. Wilson; contractor, A. Campbell; cost $2788.

Bush near Jones. Alterations and additions; owner, L. Aurbach; architect, Jas. E. Wolfe; contractors, Blanchard & McDonald; signed, Oct. 12; filed, Oct. 14; cost $1040.

California near Larkin. Alterations and additions; owner, William J. Helm; architect, W. H. Hamilton; contractor, William Bell; signed, Oct. 8; filed, Oct. 10; cost $1829.

California near Baker. To build; owner, Jeremiah Lynch administrator of estate of Eudora V. Smith; architect, J. H. Jordan; contractors, Elder & McLaughlin; signed, Oct. 15; filed, Oct. 20; cost $3620.

California and St. Mary. Additions; owner, A. Grapo; contractor, J. E. Dunphy; signed, Oct. 20; filed, Oct. 20; cost $1300.

California near 25th Ave. To build; owner, Francois Bragg; architect, John Godart; contractor, W. R. Kenny; signed, Oct. 30; filed, Oct. 30; cost $1800.

Clay and Webster. Cold storage apparatus; owner, Cooper Medical College; contractor, Vulcan Iron Works; signed, Oct. 8; filed, Oct. 10; cost $1500.

Clement and 4th Ave. To build; owner, C. B. & Louisa M. Ryder; architect, John M. Curtis; contractor, C. Anderson; signed, Oct. 14; filed, Oct. 20; cost $4670.

Devisadero street. To build; owner, E. R. Myrich; architects, Shea & Shea; contractor, J. D. Hannah; signed, Oct. 21; filed, Oct. 27; cost $2755.

Eighth Ave. near Clement. Cottage; owner, Geo. F. Carway; contractor, Ed. Girley; signed, Oct. 7; filed, Oct. 8; cost $1656.

Eighteenth near Sanchez. To build; owner, Mrs. Elizabeth Wallan; contractor, C. G. Gillespie; signed, Oct. 7; filed, Oct. 8; cost $2000.

Ellis near Webster. Alterations and additions; owner, Richard and Emma Ilatele; architect, A. Hildebrand; contractor, L. D. Frichette; signed, Oct. 21; filed, Oct. 22; cost $1462.

Fifth near Stevenson. Brick and terra cotta work five-story brick; owner, John F. Royd; architects, McDougall & Bro.; contractor, Thos. Butler; cost $7540. Carpenter work; contractor, A. Jackson; cost $9282. Cast and wrought iron; contractor, James McCrosson; cost $4031. Plumbing, etc.; contractor, W. F. Wilson; cost $1997.

Folsom near 20th. To build; owner, Michael J. O'Reilly; architect, Jas. S. Brady; signed, Oct. 19; filed, Oct. 20; cost $2800.

Folsom street Wharf Pier 12. Sheds and improvements; owner, Board of Harbor Commissioners; contractor, Thomas Day & Sons; cost $6649.

Fremont near Market. Carpentry, mill work, etc.; owner, L. Guggenheim & L. Mack; architects, Percy & Hamilton; contractor, Thos. McLachan; signed, Nov. 9; filed, Nov. 11; cost $11,090. Brick, terra cotta work, etc.; contractors, Richardson & Gale; cost $1874. Excavating and removal of old building; contractors, Keatinge, Leonard & Ransome; signed, Nov. 9; filed, Nov. 11; cost $5340. Iron and street work; contractor, Dyer Bros.; cost $6130.

Golden Gate Ave. near Van Ness Ave. To build; owner, John De Witt; architects, Smith & Freeman; signed, Nov. 9; filed, Nov. 12; cost $1760.

Guerrero and Market. To build; owner, M. C. Taylor; contractor, B. R. Van Dusen; signed, Nov. 7; filed, Nov. 7; cost $11,300.

Houston near Jones. To build; owner, A. Paladini; contractor, H. R. Schmuckert; signed, Oct. 28; filed, Oct. 29; cost $8517.

Illinois near Napa. Alterations and additions; owner, Jas. F. McDonald; architects, Herman & Swain; contractor, C. J. Anliwiller; signed, Oct. 19; filed, Oct. 19; cost $965.

Ingleside Race Tract. Redwood tank; owner, Pacific Jockey Club; architect, T. J. Welsh; contractor, Pacific Tank Co.; signed, Oct. 14; filed, Oct. 16; cost $1408.

Jackson near Sansome. Alterations; owner, D. Ghirardelli; architects, Wm. Mooser & Son; contractor, M. C. Lynch; signed, Nov. 4; filed, Nov. 4; cost $995.

Lake View, block 25, lot 25. Two-story frame; owner, E. H. Bode; architect, W. J. Cuthbertson; contractor, J. W. Fish; signed, Oct. 13; filed, Oct 14; cost $1865.

Larkin near Jackson. To build; owner, Lorenzo M. Perez; architects, Reid Bros.; signed, Oct. 5; filed, Oct. 15; cost $2880.

Laguna and Birch. Alteration and additions; owner, Mrs. M. C. Dresser; contractor, Chas Kuehig; signed, Nov. 10; filed, Nov. 13; cost $1957.

Lyon near Grove. To build; owner, L. H. Cox; contractor, Ed. Cox; signed, Oct 12; filed, Oct. 13; cost $3700.

Lyon near Hayes. To build; owner, L. H. Cox; contracto, Ed. Cox; signed, Oct. 12; filed, Oct. 13; cost $3700.

Lyon near Hayes. Carpenter work, etc., except plumbing; owner, L. H. Cox; contractor, L. B. Schmid; signed, Oct. 12; filed, Oct. 14; cost $7644.

Market and Seventh. Improvements in Odd Fellows Building; owner, I. O. O. F.; architect, E. J. Vogel. Carpenter work; contractor, L. Schmid. Plumbing; contractor, G. M. Eastman. Marble; contractor, J. Musto & Son. cost $2000.

Market near 11th. Three-story brick; owner, City of San Francisco; architect, C. R. Wilson; contractor, Thomas Butler; cost $15,975.

Noe and 23d. To build; owner, Chas. Bardenhagen; architect, E. J. Vogel; contractors, Petterson & Person; signed, Oct. 15; filed, Oct. 17; cost $2849.

O'Farrell near Stockton. Additions to Delmonico; owners, Gutzeit & Malfanti; architects, Pissis & Moore; cost $1000.

Pt. Lobos Ave. and 1st Ave. To build; owner, Margaret J. Wheeland; architect, C. J. Colley; contractor, Ed. Cox; signed, Oct. 31; filed, Nov. 4; cost $6450.

Page and Shrader. Two two-story frame dwellings; owner, J. E. Doolittle; architect, E. J. Vogel; contractors, Petterson & Person; signed, Sept. 30; filed, Oct. 15; cost $4469.

Page and Steiner. To build; owner, Ella A. Judson; architect, R. H. White; contractor, John Furness; signed, Oct. 19; filed, Oct. 20; cost $5585.

Powell near O'Farrell. Plastering work; owner, Geo. D. Toy; architects, Herman & Swain; signed, Oct. 16; filed, Oct. 16; cost $1075.

Powell and Ellis. Electric work four-story brick; owner, Royal Eagle Distilleries Co.; architect, E. Kollofrath; contractor, L. B. Hetty; signed, Oct. 24; filed, Oct. 24; cost $274.

Powell and Ellis. Interior cabinet work; owners, Royal Eagle Dist, Co.; architect, E. Kollofrath; contractors, S. & G. Gump; signed, Oct. 27; filed, Oct. 27; cost $5430.

Post near Stockton. Electric elevator; owner, Improved Order of Redmen; contractor, Fraser Electric Co.; signed, Nov. 18; filed, Nov. 18; cost $3700.

Pt. Lobos Ave. near 11th Ave. To build; owner, Sophia Hansen; architect, Martens & Coffey; contractors, Relt & Ahlgren; signed, Oct. 13; filed, Oct. 16; cost $2700.

Sacramento near Van Ness Ave. Brick work for stable; owner, Claus Spreckels; architect, Reid Bros.; contractor, Rae Building Co.; signed, Sept. 26; filed, Oct. 8; cost $1190 per M. about $2000.

Sacramento near Van Ness. Grading, etc.; owner, J. Z. Pasadus; Architects, Pissis & Moore; contractor, Peacock & Butcher; cost $2995.

Sacramento near Van Ness. Carpentry, tinning, etc.; owner, J. Z. Pasadus; architects, Pissis & Moore; contractor, Robert Smilie; cost $9887. Sandstone contractor, J. D. McGilvray; $4500. Plumbing; contractor, Ickelheimer Bros.; $2449.

Second Ave. near Clement. Cottage; owner, James McElroy; contractor, W. W. Rednall; signed, Oct. 25; filed, Oct. 25; cost $1650.

Sixteenth and Albion. Plumbing, gasfitting, etc.; owner, S. Bear; architects, Salfield & Kohlberg; contractors, Ickelheimer & Bros.; signed, Oct. 12; filed, Oct. 14; cost $1185.

Sutter and Hyde. Tiling work; owner, Dr. J. Rosenstern; architects, Salfield & Kohlberg; contractors, Mangrum & Otter; signed, Oct. 24; filed, Nov. 25; cost $2800.

Sutter and Hyde. Glass and glazing; owner, Dr. J. Rosenstirn; architects, Salfield & Kohlberg; contractors, Campbell & Pettus; signed, Oct. 15; filed, Oct. 23; cost $1100.

Tehama near 6th. Alterations and additions; owner, Abbie Middleton and Mary Barada; contractor, F. V. Acker; signed, Oct. 23; filed, Oct. 27; cost $1100.

Twenty-second near Castro. Carpenter work; owner, M. C. O'Shannessy; architect, W. J. Cuthbertson; contractor, W. Plant; signed, Oct. 20; filed, Oct. 22; cost $3065. Electric wiring; contractor, McWhirter Electric Co.; cost $60 50 Painting; contractor, Delos Wilson; cost $320. Plumbing; contractor, M. Fisher; cost $417.

Twenty-fourth. and D. Removal of Casino Building from Park; owner, Stewart Menzies; architects, Townsend & Wyneken; signed, Oct. 14; filed, Oct. 15; cost $2250.

Twenty-fourth and Sanchez. To build; owner, Mrs. Margaret Curtin; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, Oct. 22; filed, Oct. 23; cost $4500.

Twenty-fourth near San Bruno Ave. Cottage; owner, Thomas Doyle; contractor, Allen De Lair; signed, Oct. 18; filed, Oct. 28; cost $1125.

Twenty-fourth Ave. and D street. Alterations and additions; owner, Stewart Menzies; architects, Townsend & Wyneken; superintend, Peter Hamilton; day's work; cost $12,000.

Thirteth near Warren. Cottage; owner, Leonard Haas; architect, C. M. Rousseau; contractors, Sarcander & Thompson; signed, Oct. 27; filed, Oct. 28; cost $1200.

Union near Scott. To build; owner, Mary I. Bradford; architect, A. C. Schweinfurth; contractors, Richardson & Gale; signed, Oct. 17; filed, Oct. 18; cost $2745.

Union nr Scott. Plumbing; owner, Mary I. Bradford; architect, A. C. Schweinfurth; contractor, W. F. Wilson; signed, Oct. 17; filed, Oct. 19; cost $365.

Van Ness Ave. Junction with Lewis street. Wharff construction; owner, Fortana & Co.; contractors, Warren & Malley; cost $15,000.

Waller near Shrader. To build; owner, Mary Paolinelle; contractor, Thos. Vodden; signed, Oct. 17; filed, Oct. 24; cost $2000.

Welsh near 4th. To build; owner, Sarah Green; architect, A. J. Barnett; contractors, R. Doyle & Son; signed, Oct. 16; filed, Oct. 29; cost $5919.

York near 21st. Cottage; owner, Geo. A. Heuer; contractor, H. Grieb; signed, Oct. 14; filed, Oct. 15; cost $2150.

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PREMISES OF NEW SAN FRANCISCO POST-OFFICE, AUTHORIZED BY ACT OF CONGRESS, MARCH, 1887.

EXISTING POST-OFFICE BUILDING AT SAN FRANCISCO, CALIFORNIA.

THE attention of architects is called to an advertisement in this number of the desire to obtain an architect on the part of the Trans-Mississippi and International Exposition at Omaha, Neb. As the cost of this Exposition is estimated at $1,000,000, it may be anobject to some of our architects to obtain the situation, though the inducements offered are rather indefinate.

AT THE last meeting of the San Francisco Chapter of the American Institute of Architects it had up for consideration a draft for a bill to be presented to the next Legislature on the subject of obtaining plans for public work, in place of the present absurd and totally inappropriate statute on that subject—which, as all those interested, know, exhibits an entire want of cognizance of an architects status and duties;

the defects of every part of it are so palpable that it needs no further criticism. To show how utterly useless it is, it is practically a dead letter; we have yet to know the first case in which its provisions have been carried out. In the draft for a new law the Chapter has endeavored to look paramountly to the interests of the people; for it will be found that the interests of true architects and of the State are identical.

The principal points of the proposed new law are:—

First—A distinction has been made between architectural and engineering works, between buildings and bridges, etc. In one case the services of an architectural expert is required, in the other an engineering expert; so that there may be no clashing in regard to these matters, such as we find often in national work.

Second—A limit of $20,000 has been placed below which no competitive plans are required, so that a Board or any other authority may appoint an architect or engineer for small work; saves expense both to the people and to the professionals.

Third—Sketch plans and sketch or outline specifications only are required—and none other can be called for, for the reason that these indicate both to a layman and a professional just as much as the most elaborate working drawings as far as selecting the best plan or design goes which can be the only object in having a competition at all. The object of a competition must be to get the best plan, not the best and most experienced architect, for if the latter were the case, competition would be needless, and the architect would be chosen for the work he may have executed.

The report of the expert will show which plans can be built within the appropriation—there is no trouble in making a very close approximate estimate from sketch plans and specifications to an experienced man.

Fourth—The value and number of the premiums have been stated so that uniform conduct may be observed throughout the State, and that first-class architects may put their efforts forwards for the interests of the people, and it is made mandatory because, otherwise, some authority having a low class man picked out as their architect could then by offering nominal premiums shut out first-class men from competing and giving a walk over to their third class man.

The total value of the premiums have been taken at one per cent as being the generally recognized value attached to sketches and for all cost over $200,000 only one-half per cent is taken, because the larger a building is, generally is there less work in proportion, and possibly over one-half per cent might be more than the value of the services rendered.

Fifth—It will be noticed that an expert must be consulted in all cases. The plans generally chosen by Boards without consulting an expert is sufficient evidence of the necessity of this clause.

Sixth—The principle adopted in regard to payment of the chosen architect is, that the buying of the sketch plans is one complete transaction and the appointment of an architect to carry on the building is another. The author of the adopted plan is paid one per cent on the cost of the *entire work when completed* not only on the one appropriation when there may be others needed to complete the work. That completes the Board's transactions with him until such time as the work may proceed.

Seventh—All other plans are returned to their authors at once—the people have obtained all the matter from them that they are justly entitled to when they are used as means of comparison with the successful one—if there are any good points in them to be culled, there is nothing in this law preventing the Board from buying from the owners such points; which should be considered copyrighted till then.

Eighth—The author of the accepted design is made the supervising architect of the structure, for the reason tnat he is the only one who can carry out the design as was intended in his preliminary plans, and his remuneration is made four per cent for his working drawings and supervision, making a total of five per cent when including the one per cent for preliminary plans; because that has been universally conceded to be a fair remuneration of an architect's work from time, one might say, immemorial. It will be noticed that, as preliminary sketches must embrace a design for the whole structure complete, he gets one per cent on the *total* cost of the structure, while the four per cent is only chargeable on so much as may be expended as the work proceeds, which seems eminently just.

Ninth—The necessity for a superintendent of works, who shall be always present on the building, is now so well recognized that no further comment is necessary on the paragraph making his appointment mandatory.

Tenth—The penalty attached to the non-fulfilment of the present statute is making all contracts null and void when said statute is violated. This works an injustice on the innocent contractor and strikes the wrong party. The guilty parties are the officials; and any officials not attending to business on matters such as in question deserve to be deprived of the office which they are manifestly incompetent to fill; any attempt to do this however would meet with determined opposition. So that making *all* of their acts illegal that did not conform to this Law is the next best thing.

The whole bill seems to the point and we hope to see it passed by the legislature, and thus inaugurate an era of better feeling and better architecture in the matter of getting plans for public buildings than is possible under the present abominable and impossible statute.

Else where we give the proposed new bill and the present one for the benefit of our readers.

GOVERNMENTAL ARCHITECTURE.

THE title of "Surveyor of Public Buildings" was given to James Hoban, Superintendent of the Capitol, in 1794, which office he held for twenty-five years. The same title was conferred upon Benjamin H. Latrobe when he succeeded Hoban and became the architect of the Capitol. After Latrobe retired, a Government "Commissioner of Public Buildings" was appointed. But no such office existed after 1830. The Government buildings erected during the first part of the century in Washington and various parts of the country were conducted, somewhat as the capitol was, under the direction of Cabinet officers or Congressional commissions. The buildings comprised a few of the department offices and custom-houses, sub-treasuries, the mints, and a building in Philadelphia for the United States Bank. The latter went out of use with the abolition of the bank. Among those that were retained in use are the Interior Department, the Treasury Department, the Postoffice Department at Washington, the Mint at Philadelphia, and the Sub-Treasury at New York.

It was about the year 1850 that something approaching a system was adopted. The public buildings were then erected under the direction of the War Department, and an office was established under the charge of a major of United States engineers. The plans were made under his direction by architects who simply acted in the capacity of draughtsmen. An officer of engineers was assigned to each building as "Engineer in Charge." Mr. Walter while architect of the Capitol extension, had been charged with making plans for additions also to the Interior Department Building (Patent Office) and the Postoffice, and was later directed to design the extensions of the Treasury Building; all of which, as to exterior, were, in the main, continuations of the old designs. The extension of the Interior Department (generally known as the Patent Office) and Post-office were carried out under his superintendence. The Treasury Building was intrusted to Mr. Young, who was then named the "Supervising Architect of the Treasury Department," and under whose care the south wing of the building was built. This was the commencement of a system of management which has been greatly enlarged and still exists. Mr. Young was succeeded by Isaiah Rogers, of Cincinnati, a very distinguished architect, who had designed the Tremont House, at Boston, the Astor House at New York, the Merchants' Exchange, New York, and the Burnett House of Cincinnati. Mr. Rogers was succeeded by A. B. Mullett, a young architect of Cincinnati of little experience. Under his administration all the Government buildings being erected in the North were put under his sole direction, and civilians were appointed as local superintendents.

During this period of twelve years the Government buildings of New York, Boston, Philadelphia, Cincinnati, St. Louis, and Chicago, and a hundred others of lesser importance, were commenced, including the State, War, and Navy Department building at Washington. The cost of those mentioned was upwards of thirty millions of dollars, and the aggregate cost of all the buildings erected under this architect's administration was over one hundred millions of dollars.

Mr. Mullett was succeeded in office by William A. Potter, a young but experienced architect of New York. He was obliged to finish Mr. Mullett's work, and in the designing of new Government buildings attempted to endow them with artistic beauties, to which the office had before been a stranger. But he found it to be a herculean task to reform its methods of design. He, however, succeeded in leaving his impress upon some of the smaller buildings that were designed during his term, notably those at Covington, Ky., and Fall River, Mass. After a time he resigned in despair, and was succeeded by James G. Hill, of Boston, who had been head draughtsmen. Mr. Hill was entirely at home in the routine of the office, and made some improvements in Mr. Mullett's methods. He was succeeded by M. E. Bell, of Des Moines, Iowa.—*Self Culture.*

CHEAP TELEPHONE SYSTEM.

FOR a fee of from two to eight cents a message, one may talk from even the smallest of Swiss towns over a long-distant telephone system to any part of the country. Of course the Government owns the system.

HOME ARTS IN THE CUMBERLAND MOUNTAINS.

"The makers are the poets; ply your skill,
Coleridge and Southey watch from yonder hill."

HOME ARTS have become so firmly associated with the upper regions of the Albert Hall, where their annual exhibition is held, that many people hardly realize the wide contrast this, their town abode, forms in every respect to one of the most celebrated producing centres of such work, the settlement at Keswick, among the Cumberland mountains. The results of this work are known far and wide, wherever beauty of design and perfection of workmanship are valued, but the workers at home and their work in process (representing as it does a solid national art movement among country folk), are by no means familiar to the many admirers of the beautiful results of these well-spent winter evenings, for few people dare the imagined rigors of the Lake District during winter months. That such imaginings are somewhat foolish, we who live amid the mountain glories of winter know full well; but it is impossible to regret that at *some* time in the year this country should be left to its own resources, and that the boatman and the shepherd with the few others whose homes and toil are of the mountains, should have the hillsides and the tarns to themselves in all their winter beauty. To them it is given to see the sun die down behind Grisedale, with its many hues of orange and crimson reflected in the black ice of Derwentwater; they hear the owls hoot and see the stars come out one by one above snowy Skiddaw—scenes that should call forth all the sense of beauty that is in a man, and enable him to reach unto something in art which is "the expression of man's delight in the works of God." That this *should* be the case, no one can doubt, but that it *is*, is quite another matter, alway excepting unusual dispositions and cases. As a rule, the hardy north-country folk are by no means easily impressed with the beauty of their surroundings; fond of them to a fault, yes—but sensitive to their influences—no; and, indeed, one great reason for the commencement of this pursuit after beauty in the minds of the promoters of this art movement, was to train the eye and open the heart and mind to all the wonderful surrounding beauty of form and color which every season reveals in its infinite variety to the dwellers around mere and mountain.

This may be called the æsthetic aim of our mountain school of art, but its practical object, now successfully attained, was to find remunerative employment for working men and others in spare hours, or when out of work, by teaching them such art industries as can be profitably carried on in their own homes; the payment for such work from the Keswick School is 6d. an hour, and a good workman can easily add £1 a week to his wages by spending his spare time in this way, instead of in that "friendly crack" in the parlor of the "Cock and Dolphin," where the connection with wage-money is subtraction instead of addition.

Our view of the school took place one January afternoon and evening, a view which had been deferred till the permanent building should be established, which, for many reasons, gives an importance and dignity to the work carried on at Keswick. The art work of the classes commenced in 1884, but it was not till the April of 1894 that its abiding home was a possibility. For many years the lessons were carried on in an ordinary parish room under great difficulties for want of proper accommodation, but, though the school in itself has always been self-supporting, it was not possible

to think that it could produce the home of its own, which the committee felt to be essential to its enlarged opportunities." Also they were of opinion that, if the School was to maintain its position and become a means of permanent education to the village of Keswick, it was impossible either to meet the demands of the public or the requirements of the worker, with the very limited accommodation which their temporary premises afforded. So the had recourse to subscription (being able from the school funds to contribute £200, no mean surplus over working expenses), and in a short time over £1,000 was raised, the result being that a lovely unpretentious building grew up on the banks of the Greta, a memento of the old lake-country style of domestic architecture, with a character and charm of its own.

To see the workers at work, one must, of course, visit the Keswick School of Industrial Art in the evening, but it is well worth seeing the place by daylight, to judge of its beautiful position and adaptability for its requirements. Just outside the town over the Greta Bridge, we come to a neat gateway and garden, and a few yards bring us to the door of the pretty little two-storied building of lake country slate, with its outside winding staircase and picturesque wooden balcony; it looks up to the homes of Southey and Coleridge; underneath the balcony are words which represent, as it were, the keynote of its existence:—

"The loving eye and patient hand
Shall work with joy and bless the land."

The ground-floor of the building is entirely devoted to the different workshops, where at present all is silent, but which, a few hours later, will be alive with the ring of the anvil, the beating of brass, and the more silent chip of the woodcarver's tools, as tendril and leaf grow from solid blocks under deft workmanship. The winding tower staircase was specially designed as a separate entrance for the use of visitors to the showroom, so that the workshops should be safe from invasion, and as it is entered the eye is quite dazzled by the glitter, glisten, and sheen of the metal work, upon which the firelight and the departing sunshine are shedding every imaginable lustre. The motto of this rare showroom (the term is most unsuitable to it) is contained in Browning's words:—

"Oh! Earth, as God has made it, all is beauty!
And knowing this is Love, and love is duty."

Such a mass of magnificent outline and extraordinary beauty of shadow is seldom to be seen from any one point of view, much less from a showroom window! But those who have been instrumental in opening many unseeing eyes to their surroundings, would insist that "Art is the expression of man's delight in the works of God," and that the temple of their art, if one may say so, should always be within sight and reverence of the beauty God has made.

So we pass as a matter of course from the cause—Nature—to the effect of its beauty—Art. The sun goes down, and the lights are lit, and every beautiful tint of metal, variety of design and form glance down upon us from walls and tables. It is not intended here to catalogue the many beautiful things that come from this "Home of Arts" in the mountains, but a few words must be devoted to design, as it is set forth in the exquisite copper screens, the endless bowls, the ever-varying trays, sconces, plaques, and wood carvings, the offertory dishes, and service-book backs, to say nothing of a unique coal-box, covered with the fishes of the coal period.

The aim of the promoters of the school is to bring, as their prospectus states, "the designer and workman into such a relation that they become identified as was the case when the arts were truly living." Every one now entering this school is *obliged* to learn drawing, and the dream of its promoters will not be realized until every article produced can be "the handiwork of one man from beginning to end." But at present design in rural hands could not compete for an instant at metropolitan exhibitions, and the Keswick workers know full well that, in this department especially, they owe their exceptional position in home arts to the great ability and untiring energy of one woman, Mrs. Hardwick Rawnsley. Original designs, and designs, copied from anything that is good in any country, age or style, have been her untiring care; ancient Indian designs with their lovely lotus buds and leaves; ancient Coptic designs, strangely recalling those of the oldest Cumberland wood-carving; embroidery, metal work, are all called into the service of home art, by the endless pains and talents of her, the originator or adapter as the case may be. So far, no rustic genius in design has been produced from the art workshops of Cumberland, and until that is so, the Keswick School of Art can never be called quite self-supporting, as the work of Mrs. Rawnsley in connection with it represents the unpaid services of a designer of the hightest class.

But the January evenings creep on quickly, and before we have had time to do more than glance at the Museum, with its Swiss and Italian specimens and books for art study (a sweet reposeful little room where a man might think out his feeling for beauty), or chat with the excellent secretary in her comfortable business room, the hour for this recreation, which is still work, arrives: the men and boys flock in, some fifty in number, and the school is alive with industry and interest.

It must of course be carefully remembered that these "home arts" are in great part done absolutely *at home* in the cottages and homes of the students, but every night there is a class at the school of some sort, and on Thursday nights all its teaching is in operation.

The first room we enter is that for the brass and copper workers, a long chamber with low tables in centre and tables all round the walls; at the first of these sit several boys, tracing from the linen patterns which are no small evidence of Mrs. Rawnsley's endless labour, about a couple of hundred being always obtainable.

On the wall facing your entrance are the words heading this article:

"The makers are the poets; ply your skill,
Coleridge and Southey watch from yonder hill."

One man is at work on what is known as "cut diaper work"; another is employed in hammering out a magnificent design on copper from the Chiesa di Frari at Ravenna; all are in sober, interested earnest.

We pass on to the wood-carving room, where a teacher is at work showing faults and pointing out virtues, among which, first and foremost in excellence, either in wood or metal, may be roughly enumerated clean tracery and good quality of groundwork, the groundwork to be in relation and proportion to pattern, the excellence of the whole design to be decided by its adaptability to the purpose for which the article in question is intended. Here in the wood-carving room we come across a beginner, who having just learned the use of his tools, naturally the first requisite, is preparing to carve a single leaf out of a little block of wood for practice.

A door is opened and the terrible noise at once announces that we are in a smiths' shop, where a lesson is being given by an amateur. This man, with brisk manner and bright intelligence, is one of the enthusiasts of the place; he has his class well in hand; no softening of correction is bothered over by this local art teacher of the north countrie! "Why doa'n't ye beat it reg'lar all round as a've always toald ye?" is the style of reproof administered, and accepted without a word. A few more teachers such as this man, and these workshop schools might be the property of every village. At one time the pursuit of the silver trout and laying the snare for the wily rabbit (the only form in which love of nature seems naturally to come out in a rustic) occupied all the spare hours of this man, but he has, since his work at the school in the evenings, entirely deserted his former pastime for the less venturesome and more profitable work at the class. Though he earns a certain amount like the others thereby, his *teaching* is a free gift, and his enthusiasm a valuable power among his associates. Here we have the sort of man, as to intelligence at all events, for whom Ruskin wrote his *Fors Clavigera;* of which book our workman expressed his approval with the solid patronage of possession, having won a copy as a prize, "Ay—it's a good book!"

Here the beautiful bowls are shaped upon which afterwards some lovely design is to grow, and here too are made the tools for every branch of work in the school. It is the proudest achievement of Keswick that absolutely all tools used are made at home, and here the ingenuity of the men that does not amount as yet to design is often great in inventing some little turn or twist in shape which they know to be specially adapted to their wants in working. There was a triumphant moment among the workers when the school was applied to by another in Bradford as to where it could get a certain tool which Keswick was known to possess. Needless to say the answer went back with pride "all our tools are home-made."

But a visit to the Home Arts School in Cumberland could not in any sense be considered complete without seeing the "finishing shop," as it is called, for which there is not room in the school at present, and to which a little room across the Greta Bridge has been devoted. The man whose special province this department is gave an interesting account of his branch of the trade, and a very important one it is, for here everything made in the school is at present put together; even articles virtually in one piece must be joined somewhere before thry can become candlesticks and teacaddies. Here, also, them important business of polishing is done, and it seems as if "finishing" was likely to be a difficulty in quite realizing the dream of home arts, for in the past ten years, when so many excellent workers have been found, only two finishers have attained to any perfection. It is difficult to say why, unless it be that the work is not so interesting in character, and requires great exactness in detail. Thus it would be impossible that the workman in this department should not, to a certain extent, know his own value to the school, more especially as it was pointed out to him by an offer from a Birmingham tradesman of work to the amount of £40 a month; but "Noa," says the devoted Cumbrian, "t'schule mun cum fust."

And first, indeed, in the hearts of its workers the school does come. "As surely," says Mr. Rawnsley, "as the country side is kept at its deadly dulness for the labouring man on a winter evening, so surely will the pith and marrow of our English rural life find its way up to the bewildering cities, and lose itself, its simplicity, its freshness, its very life, in the flare and glare of our monster towns." The effort to releave this monotony in dull little country places in the winter evenings has been eminently successful, and the people recognize the benefit, and give it their attention, love and gratitude.

I have thought it unnecessary to quote statistics to any minute degree, but some mention of them is necessary for fear of a merely æsthetic valuation being attached to this movement, therefore it may be noted that the little town of Keswick annually produces and sells some £700 worth of this art-work. Among the workers are men of all trades. Pencil-makers are numerous, as it is the special trade of Keswick, a trade that should be a very flourishing industry did not our Government get all their pencils in Germany, as one of the men indignantly remarked. But labourers, boatmen, gardeners, shepherds, tailors, and many another craft are all here banded together in pursuit of the beautiful and in devotion to their work; and there *is* among them, by reason of their teaching, something of the spirit of the Nuremberg wood-carvers of old, something of the attention to a tendril or a flower, which in its highest degree, gave fame to such a man as Benvenuto Cellini.

But whence has come this true spirit of art, whence has come this awakening sense of beauty? Without doubt a mountain race has it within itself, though deeply hidden away, and practically, one may say, non-existent. The spirit to rouse, the power to carry out, the energy and ability to overcome difficulties are absolute necessities for the awakening of enthusiasm, and it would be indeed a very half-and-half account of this art movement of the Fells if I failed to say, that to this power, in the chief promoters of the Keswick School of Industral Art, Mr. and Mrs. Rawnsley, the whole success of the movement is due.

Any why? Because they were not merely content with small ideals, but because the absolute best in art and the opening of the mind to its glorious treasures was their whole single-minded aim, and this, along with the preception, that to follow after the best in nature, in life, and in work, leads to the highest advancement of man, yea, even "unto the King in all his beauty."—*A. M. Wakefield in Forthnightly.*

NOTES AND COMMENTS

A Municipal Public-house—The municipal public-house which has been opened on the Gothenburg system by the Birmingham Corporation, will be a source of much interest to temperance and other orators. The drink is bought by the Corporation, and retailed by the manager, who receives a salary and has no interest in the amount sold. It it curious to see that a quart of beer is the limit of any one customer's consumption in the morning, but he can consume two quarts at night—so that the Corporation take a liberal view of the working-man requirements. It should be added that the house is not at Birmingham, but in the workingmen's village on the site of the new water-works scheme.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PLANS of the Hall of Justice, Kearny street, Shea & Shea, Architects.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

OCTAVIUS MORGAN, PRES. A. M. EDELMAN, Vice-Pres.
ARTHUR B. BENTON, Sec'y. AUGUST WACKERBARTH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. DICKIE, Pres. W. G. CURTIS, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

BOOKS AND PERIODICALS.

LIPPINCOTT'S Magazine for December contains a complete novel called "A Chase for an Heiress"—it is somewhat out of the usual tract for a novel and some of the descriptions of the country around Santo Domingo are very fine; this is a novel that will be read with interest not only on account of the story itself, but because of the description of a part of the West Indies once so famous in History but at the present time almost forgotten. "Shutting out the Sea" contains much information of interest to the engineer as it describes some of the efforts made to prevent the ravages of the ocean waves to engulf our shores. As usual the magazine is full of short articles of interest.

SELF CULTURE, a Magazine of Knowledge, contains for December, 1896, an article on "American Architects and Architecture" extracts of which will be found in another column, it is fully illustrated with engravings of both the early and modern style of construction. This magazine which is certainly a departure from the beaten track of magazine literature cannot fail to be welcomed by a thoughtful class of readers; it is published by the Werner Company Chicago and New York.

THE FORTNIGHTLY REVIEW for December comes to hand, and as usual contains many articles of interest, among the number may be mentioned two that come at the present time as very appropriate "Lessons from the American Election," by Francis H. Hardy—the other "The Working of Arbitration" by H. W. Wilson. It is hard to make a choice where all the articles are so readable.

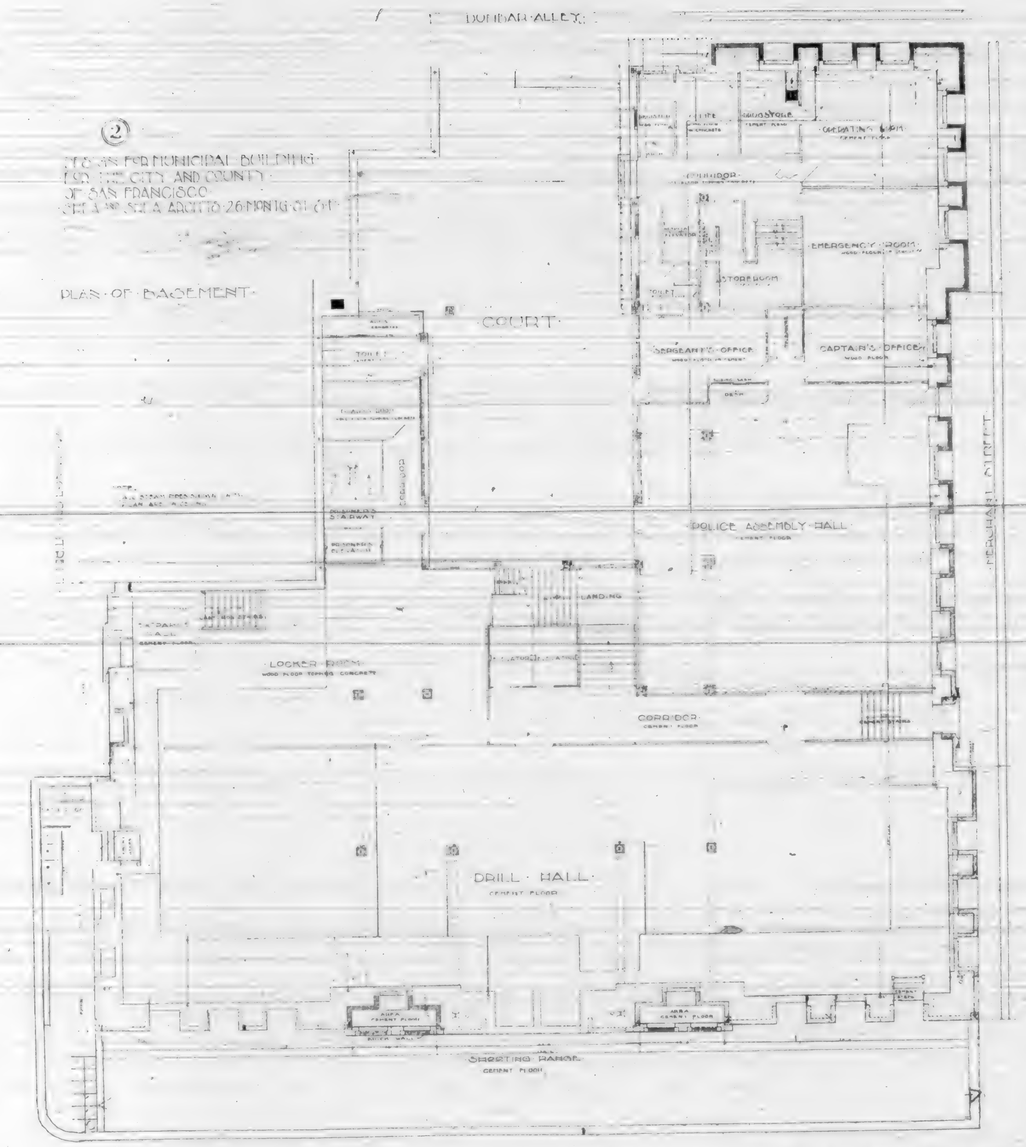
PROCEEDINGS OF THE PURDUE SOCIETY of Civil Engineering 1896. Purdue University, La Fayette, Ind.

This handsome pamphlet contains a list of the faculty of the Department of Engineering Purdue University as well as a list of the members of the Purdue Society of Civil Engineers. The table of contents show a variety of articles of interest to engineers, and one, "Fireproof as a Specialty," of peculiar interest to architects at the present time when the construction of fireproof buildings is so much discussed as well by architects as the public in general.

(2)

PLANS FOR MUNICIPAL BUILDING FOR THE CITY AND COUNTY OF SAN FRANCISCO. SHEA AND SHEA, ARCHTS. 26 MONTG. ST. S.F.

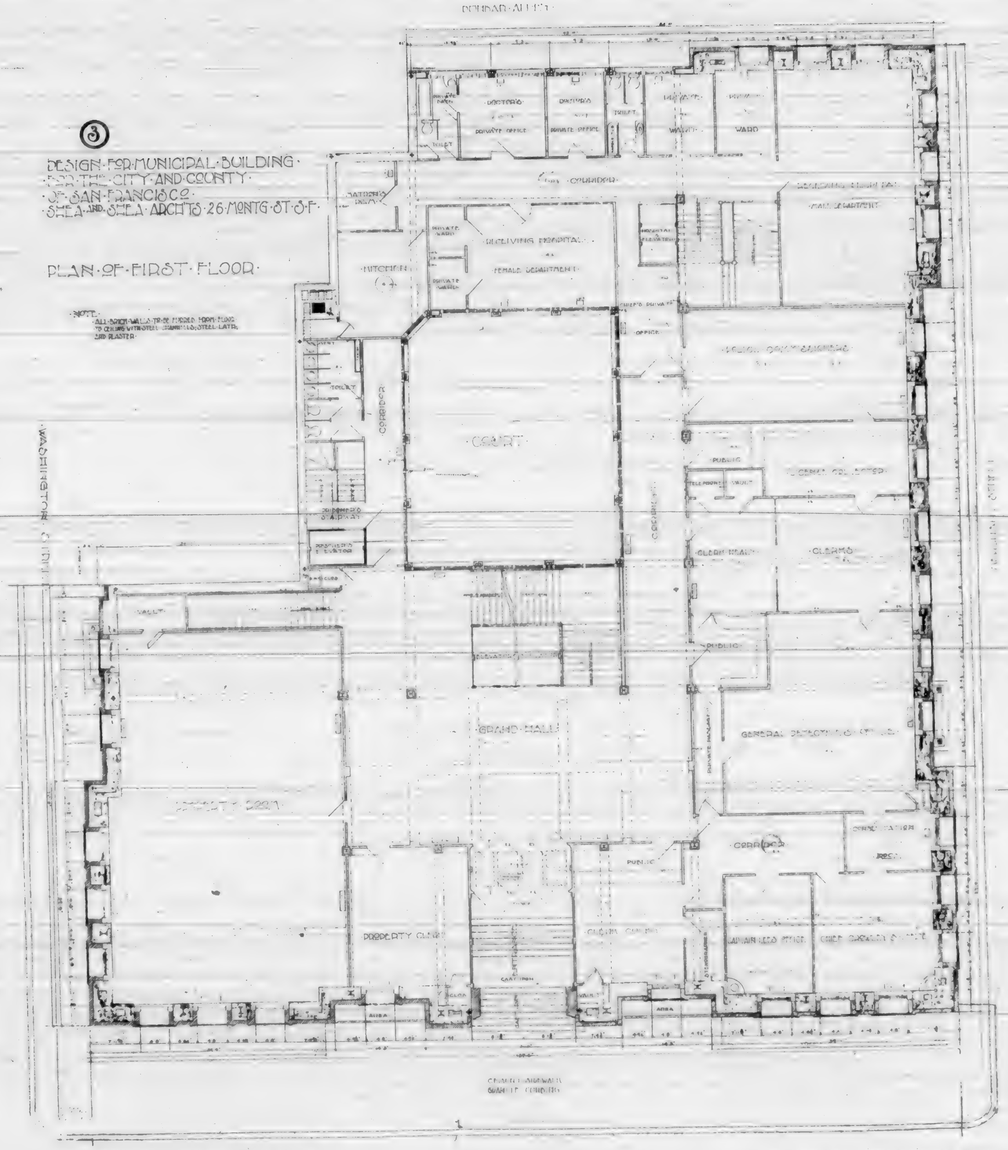
PLAN OF BASEMENT.



(3)

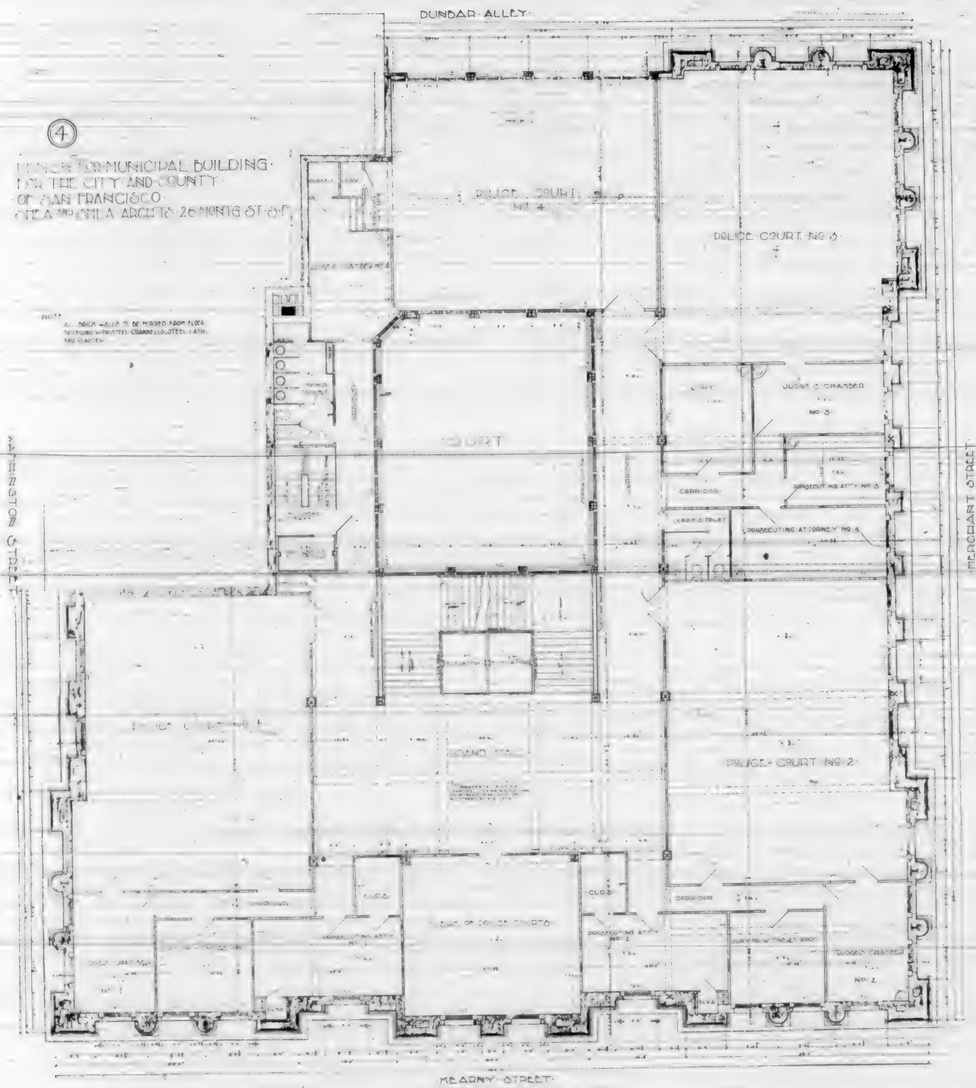
DESIGN FOR MUNICIPAL BUILDING FOR THE CITY AND COUNTY OF SAN FRANCISCO. SHEA AND SHEA, ARCHTS. 26 MONTG. ST. S.F.

PLAN OF FIRST FLOOR.



(4)

DESIGN FOR MUNICIPAL BUILDING
FOR THE CITY AND COUNTY
OF SAN FRANCISCO
SHEA AND SHEA ARCHTS 26 MONTG ST. N.Y.

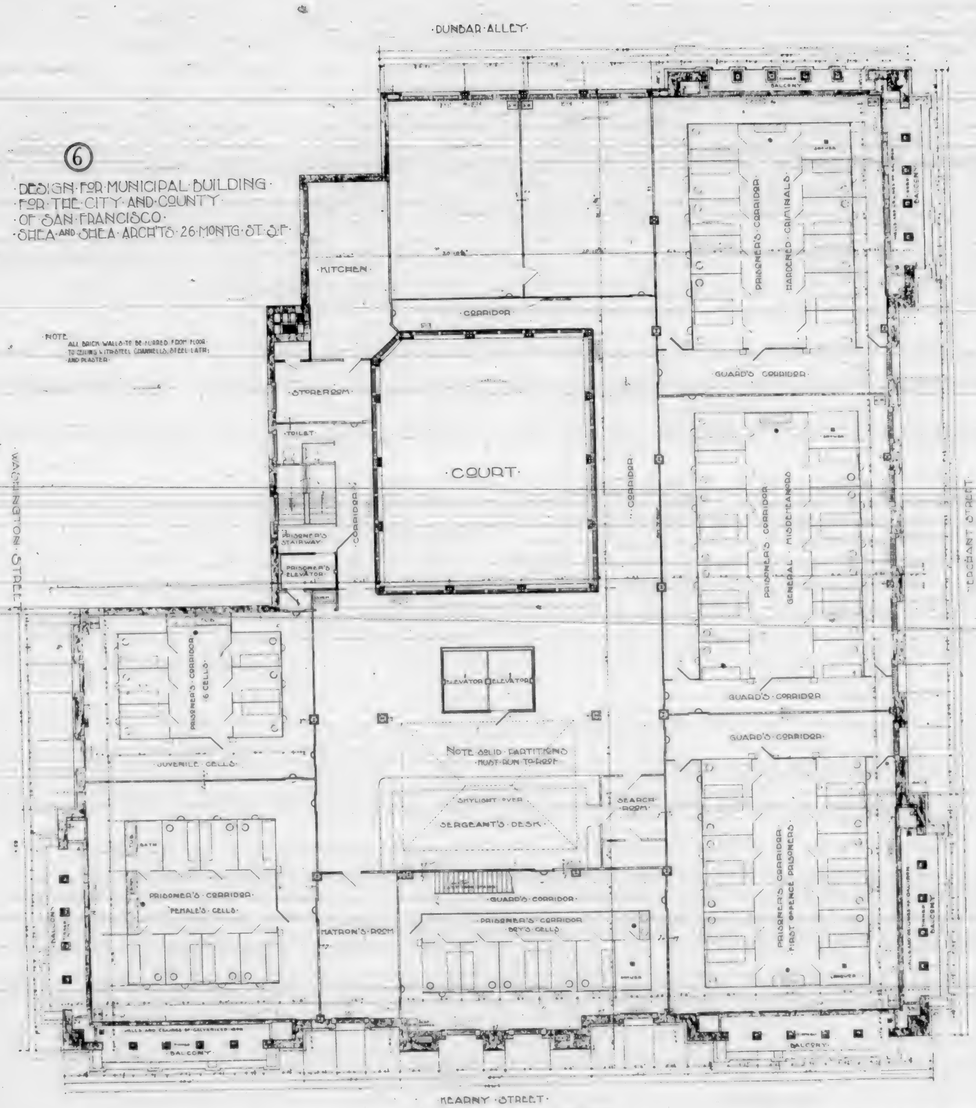


PLAN OF SECOND FLOOR

BRITTON & REY. PHOTO. LITH.

(6)

DESIGN FOR MUNICIPAL BUILDING
FOR THE CITY AND COUNTY
OF SAN FRANCISCO
SHEA AND SHEA ARCHTS 26 MONTG ST. N.Y.



PLAN OF FOURTH FLOOR

BRITTON & REY. PHOTO. LITH.

HALL OF JUSTICE

SHEA & SHEA, ARCHITECTS.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 5.

BUILDING REGULATIONS.

IN THESE series of articles we have, so far, considered laws and actions relative to putting present conditions into the most sanitary form. In this number we will consider Building Regulations for the purpose chiefly of arranging all prospective work in the most perfect and sanitary manner. We cannot do better than to quote again from the Government Report before us:

"The importance of a comprehensive and uniform plan in laying out the suburbs of cities is by no means fully appreciated. It is forgotten that such districts, more or less remote in our own time, may be the very heart of the city in a succeeding generation. The folly of our fore-fathers is often a subject of facetious, and sometimes irritating, comment. But the folly is not all past, and in this regard we of the present are frequently guilty. While we are occupied in undoing the folly of our fore-fathers, and spending vast sums—in the manner of Boston which during the last twenty-five years, spent $40,000,000—to widen or straighten crooked throughfares, we allow the perpetuation of the same evils in rapidly growing suburbs. How often do individuals or companies, in their so-called improvement of certain sections, lay out the acres at their command in streets running at right angles to those already existing, without reference to any system of thoroughfares. When the owner of the adjoining property makes up his mind to improve his possessions he seeks to get out of them the largest amount of salable land and runs his streets in comformity, with his neighbors', or not, as best suits his convenience or interest. Such arrangements as these, in the second or third generation, are bound to create insanitary property. Subsequently these sections become the' slums, the cost of eradicating which, and of making provisions for proper light, air, and ventilation, is simply enormous.

"German cities have taught us a valuable lesson in the matter of laying out suburbs. Improvement plans are furnished by the municipality, and architects are invited to compete in presenting designs. After it has been decided that a certain district shall be opened up, a jury is appointed to assess damages, terms are made with private owners, and the architect furnishing the most acceptable scheme is awarded the prize. In Berlin an effective check is placed upon too rapid urban development by prohibiting building upon unsewered land. Overcrowding on space is likewise a question of deep importance."

As to overcrowding on space there ought without doubt to be regulations preventing building on an entire lot thus causing back to back houses. In the deep lots in San Francisco we find a rear house built often on the back line of the lot with a yard between the front and rear houses; the owner of abutting lot fronting on the next street, rather than give the first builder the advantage of light from his yard does the same thing and back to back houses are at once formed; this should be disallowed. Air stagnates and an unsanitary state of affairs is at once obtained.

"The results appear in the following table:

ANNUAL DEATH RATE PER 1,000 DURING FIVE YEARS IN BACK-TO-BACK HOUSES IN MANCHESTER ENGLAND.

[From Provisional Report on Back-to-back Houses, by the Medical Office of Health, Manchester, April, 1891.]

Groups	Total population	Precentage of back-to-back houses	All causes
I	8,713	8	27.5
II	11,749	23	29.2
III	11,405	66	30.5
IV	892	100	38.4

"The general sanitary condition of these groups was practically the same; but notwithstanding this the table disclosed the fact that the general mortality in back-to-back houses exceeded that in dwellings of the same class with through ventilation by 40 per cent, the mortality from infectious diseases by 93 per cent, and that from consumption and other lung diseases by 86 and 39 per cent, respectively. The mortality from diarrhea was more than twice as heavy. In every case the death rate from all these classes of diseases increases as the proportion of back-to-back houses increases.

"Overcrowding on space is a very important matter. Liverpool is the most densely populated city in Great Britain. Its death rate is, with one exception, also the highest. Still, density of population as the cause of a high death rate must always be considered in reference to the character of the buildings. Sir Sydney Waterlow testified that the average number of persons housed on an acre of space by his company was 1,000. He was of the opinion that this was not too many where good ventilation was provided and where streets are wide. His theory seems to be borne out in the investigation made by Dr. Arthur Newsholme into the vital statistics of the Peabody and other block dwellings in London which show a most favorable death rate. The exact results of this inquiry are given elsewhere. It is undeniable that block dwellings, when very high, cause drafts of cold air in the streets below and shut off other property from the rays of the sun. *Human beings are said to be as much dependent for their health upon sunlight as are plants.*"

The last sentence leads us to the necessity of abolishing cellars and other underground constructions; or if that may be too radical a change at least have laws preventing the use of them for any purpose whereby people are compeled to be in them for more than a few minutes; there is no excuse for having these places, for there is plenty of unoccupied ground waiting for the occupation thereof by above ground structures without boring in the earth like gophers.

The same argument holds good in regard to tall structures above ground.

Looking at London we find the following provisions for rear open space:

"Frontage of building not exceeding 15 feet, open space at the rear 150 square feet; not exceeding 20 feet, the minimum space at the rear 200 square feet; not exceeding 30 feet, the minimum space at the rear 300 square feet; exceeding 30 feet, the minimum space at the rear 450 square feet. There should be no buildings erected on this space higher than the level of the ceiling of the ground floor story, and the space should extend throughout the entire width of the building. This provision had reference to buildings built after 1882, not to those constructed previously.

The act of 1882 is the one which is still in force in London, notwithstanding the recommendation of the royal commission on the housing of the working classes, in 1885, that in the rear of every new dwelling house, whether in old or new streets, there should be provided a proportionate

extent of space belonging exclusively to it, to be free from erection of buildings thereon from the ground level upward, that the space extend laterally throughout the entire width of the dwelling house, that for the distance across the space from the building to the boundary of adjoining premises a minimum should be prescribed, and that this minimum should be increased with the height of the dwelling house or building.

The London county council, in the case of the Boundary street area in Bethnal Green, among the requirements for buildings to be erected on the land, laid down the following conditions:

1. That blocks of dwellings should not exceed 40 feet in height.

2. That parallel blocks should be separated from each other by an open space, clear from the ground, of at least 40 feet in width.

3. The new streets must be 40 feet in width, and the blocks run almost due north and south, so as to admit the maximum amount of light to all the tenements equally.

4. Courtyards between the blocks are to be left entirely open at each end, and unobstructed by cross buildings.

"Land sold under these conditions can not, of course, bring a very good price; but Dr. Parkes makes the point that it is better that the scheme should cost a great deal to the ratepayers of this generation in order that future generations may not have to pay a further price for the sanitary neglect of the present.

"It may be interesting, therfore, to know, from the accompanying diagram (plan No. 2), the proposed method of regulating open space in the rear of dwelling houses in London.

"The general principle of the plan is that an open space, free from any building, 10 feet in depth throughout the entire width of the building, is left at the rear. The remainder of the ground may be covered with any buildings, provided no part of them, except the chimneys, pass above a line drawn at an angle of 45 degrees from the rear toward the house. This is a most excellent requirement, for it treats houses, whether large or small, in proportion to their size. The plan is also adopted in Liverpool."

Private owners putting up the same character of dwellings are subject to proper sanitary and constructive regulations, to some of which objections are made by owners, we presume principally on account of the buildings not paying sufficient interest when these regulations are adhered to.

"The regulations to which private building companies object are:

1. Staircases must be four feet wide.
2. Dwellings must not be higher than four stories.
3. Ceilings must be 9 feet high.
4. Comparatively severe requirements regarding light and air spaces.

"The council consider, however, that the real reasons for their refusing to build on land owned by the county council are the careful supervision maintained by its clerk of the works in reference to construction and materials used, and also the requirement that men employed must be paid union rates of wages. The latter stipulation, it is said, will enhance the cost so that, considering also the better borrowing powers of the public body, private companies would be at a disadvantage. Both the County Council and the building companies look forward to a compromise.

"Regulations adopted by the London County Council for building houses for working people upon its own land conain the following prescriptions:

"Staircases—A central staircase in blocks of dwellings is objectionable, and as regards convenience of plan and thorough ventilation of each dwelling, the best amongst the modes commonly in use is that which provides a staircase close to the outer wall, and having large openings communicating with the open air. Such a staircase can be conveniently arranged to give access to four dwellings, and the ventilation of such dwellings can be effected by means of open doors and fanlights, so that a thorough current of air can be obtained when it is desired. If it is felt in the winter time that this arrangement leaves the persons using the staircases too much exposed to the weather, windows partially enclosing the openings can be provided.

"The chief alternative to this kind of staircase seems to be one which is in the center of the block, and gives access to dwellings on each side of it. In this case the ingress of fresh air to the staircases can only be through the entrance doorway and along a short passage, and through the skylight at the top of the staircase. Upon this the dwellings opening from the staircase have to depend for their through ventilation.

"Both these plans are in considerable use.

"Staircases in buildings more than three stories high should be at least 4 feet in width. The walls of the staircases to a height of about 4 feet 6 inches should be finished with glazed or hard-pressed bricks; the upper portions with hard bricks neatly pointed.

"Basement floors.—There is no doubt that, as compared with the other floors of a building, the basement floor is undesirable as a residence, but in building artisans' dwellings it is generally expedient to construct a story below the ground floor, though it is not necessary that they be used as dwellings: but inasmuch as there is no definite evidence at the present time that basement rooms, frontiug upon a principal street, should not be used for dwelling purposes, their use need not be forbidden, provided that adequate precautions against fire are taken, and that the bottom of the window sills is not lower than than the level of the adjoining pavement, and not more than 3 feet above the floor, and that in other respects they agree with the provisions of section 103 of the metropolis local management act, as applied to new buildings.

"They are usually let at a rate materially lower than the rooms above them, but if they are let at the same rate as the upper floors in a high block of buildings, they are pre ferred by many people who are not able to mount a considerable number of stairs. Beyond the question of health, it is not necessary to object to such rooms on account of their proximity to the street, those who occupy them being able to make such arrangements for privacy as they find necessary.

"Where no areas are practicable, the walls should be covered with asphalt or other damp-resisting material, from the damp-course to the footings.

"Bathrooms, etc.—Uuless they are in close vicinity to public baths and wash houses (a condition which can very rarely happen), bath and wash house accommodation should be provided to every block of dwellings, and this can best be provided in a separate building or on the basement floor, or in a distinct section of the block that can be constantly

under inspection, and to which inexpensive arrangements for water supply, etc., can be applied.

"In connection with this matter, the water-closet accommodation has been considered, on the assumption that the dwellings to be built or promoted by the council will generally be for the accommodation of the lowest class of the population which inhabits separate tenements, a class just above that which uses the common lodging houses, and for which neither private speculators nor the societies for building artisans' dwellings make any provision. It seems inexpedient that either water-closets or separate water supply or sinks should be constructed so as to be immediately accessible from any dwelling rooms. A sufficient number of closets should be supplied to each floor of dwellings to which a separate staircase is provided, together with a provision of sinks and water supply for common use. Such closets should have both doors and windows opening directly to the open air; and where possible, there should be one closet to each family.

"Dust shoots should be provided from each common scullery, or from the landing adjacent, to discharge into galvanized iron movable dust bins, which can be carried out and emptied into the dust cart.

"Size of rooms—The number of rooms to be provided in each tenement, and their sizes, have been considered as one question, and the following may be regarded as minima:

"1. In a one-roomed tenement the minimum superficial area should be 144 feet. This would conveniently be provided in a room measuring about 12 feet by 12 feet.

"2. A two-roomed tenement should have a similar room, with an additional room containing 96 superficial feet, or measuring 12 feet by 8 feet.

"3. A three-roomed tenement should have a large room containing 144 feet in superficial area, and two rooms each containing 96 feet.

"These sizes, however, should not be rigidly fixed, but rooms of various sizes should be provided. Four-roomed tenements need not be provided, but if they are, the fourth room should be of about 100 feet superficial area.

"It would be convenient as regards planning, and also as regards the population to be accommodated, that some little variety should exist in the sizes of the rooms in each tenement as well as in their number, in order to provide for the different conditions of the families.

"The standard height for every room should be 9 feet. The walls of the rooms should be finished in some hard material, for which purpose Portland cement upon brickwork, or brick with pressed face on both sides, should be used up to a height of about 3 feet 6 inches. The upper parts of the walls can be finished by a thin coating of hard plaster upon brickwork, but upon this point some further inquiry is desirable.

"In designing the buildings, some care shoul be taken to give a pleasant appearance to them.

"As regards the interval which should exist between any block of dwellings and the nearest building obstructing the light from its windows, it is suggested that, if practicable, this distance should be equal to one and one-half times the height of the obstructing building. But it does not appear that this space can, in view of the cost of land, be generally provided. Under no circumstances should a nearer distance than the height of the buildings be allowed."

The regulations regarding basement floors appear to be too lenient. There is no good reason for any living room being on or below the level of the ground where the surface is flat, although on the side of a hill, many examples of which we find in San Francisco, living rooms could be allowed in the part of the basement above the natural grade of the adjoining earth.

The higher standard of living on this coast, which we hope may ever be maintained and raised, makes many of these regulations, those in regard to houses for the very poor, hardly necessary at present here. However, if something is not speedily done we will find that such dwellings will spring up and have to be used, and in that case let them be as good as we can make them.

In our next number we will take a glance through all the principal building regulations of the world—compare the same with the San Francisco Building or Fire Ordinance as a type of the Pacific Coast and see where improvement can be made therein.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE usual monthly meeting of the San Francisco Chapter of the American Institute of Architects was held at their rooms 408 California street on the 11th inst.

The annual election for officers was held and the present incumbents were all re-elected.

The most important matter coming before the meeting was the consideration of the draft of a proposed bill concerning the method of obtaining plans for public works prepared by Mr. Cuthbertson. After some discussion the matter was referred to a committee composed of Messrs. Sanders, Pissis and Hendrickson. An invitation was extended to Mr. W. G. Wright to read a paper before the Chapter on the subject of Quantity Surveying. The meeting then adjourned.

After sundry amendments the committee agreed upon the following as the text of the proposed bill above mentioned:

ACT FOR OBTAINING PLANS FOR PUBLIC WORK.

Section 1. Any State or County officer or officers, or any Board of Supervisors or Municipal Corporation or any Board of Trustees or Commissioners or any person or persons created or appointed by authority of law or any statute, called hereafter in this statute "the authority", are about to erect, or cause to be erected or constructed any State, County, Municipal or other architectural or engineering structure, the total cost of which is estimated to exceed the sum of $20,000 it shall be the duty of said authority to advertise for preliminary plans and specifications for said architectural or engineering structure—and to state in said advertisement the amount authorized by law or otherwise to be expended for the erection of said structure and the prizes which shall be offered therefor. There shall at least be three properly graded prizes offered therefor, the aggregate amount of which shall be one per cent for all plans involving expenditure up to $200,000 and one per cent for the first $200,000 and one-half per cent for all over that amount for structures involving an expenditure over $200,000.

The authority shall employ an expert or experts for consultation and to examine said plans and report to it thereon—said experts shall be competent architects for all architectural structures and competent engineers for all engineering structures.

Sec. 2. Whenever the preliminary plans and specifica-

tions of any architect or engineer shall be adopted, said sketch plan and specification shall become the property of the authority calling for the same upon the payment to the author thereof of the sum of one per cent of the total amount appropriated and to be appropriated to complete the aforesaid structure.

All the other plans and specifications including all premiated ones except the first shall be returned to their presenters immediately after the award. Upon the adoption of said preliminary plans and specifications said authority shall appoint as architect or engineer for an architectural or engineering structure respectively, the author of the adopted design. It shall be the duty of said architect or engineer to prepare full working drawings and specifications and give supervision for a structure to cost no more than the amount mentioned in the advertisement conforming as near as may be to the said preliminary plans and specifications for which he shall be paid the additional sum of four per cent of the total cost of said structure or of so much of said structure as may be carried out at any one time. A superintendent of works shall in all cases be appointed to superintend the construction of said structure whose salary shall be paid by the authority.

Sec. 3. Any action of the authority in violation of any or all of the provisions of this Act shall become null and void.

Sec. 4. The Act of 1872 and all other acts relating to the obtaining of plans for public works by bonds or otherwise are and are hereby repealed—and this act shall go into force as soon as passed.

For the information of our readers and for comparison we publish the present statute on the subject:

Section 1. Where by any statute of this State power is given to any State or County officer or officers, or any Board of Supervisors or Corporation, or any Board of Trustees or Commissioners or other person or persons created or appointed by authority of any such statute to erect, or cause to be erected or constructed any State or County, or other building or structure, it shall be the duty of said officers, Board of Supervisors, Corporation, Board of Trustees, or Commissioners, or other persons, to advertise for plans and specifications in detail for said building or other structure, and to state in said advertisement the amount authorized by law or otherwise to be expended for the erection of said building and also the premium to be awarded to the architect whose plan and specifications for the same may be adopted.

Sec. 2. Whenever the plans and specifications of any architect shall be adopted, such officer or officers, Board of Supervisors, etc., so adopting the same, shall before any premiums shall be awarded for such plans and specifications, require such architect to execute and file with such officers, etc., a good and sufficient bond with two sufficient sureties thereto, in the penal sum of five thousand dollars to be approved by said officers, etc., as the case may be, and conditioned that within sixty days from the date of said bond he will, on presentment to him, enter into a contract containing such provisions and conditions as may be required by such officers, etc., and also conditioned that he will give such further bond to secure the faithful performance of such contract, with such sureties as may be required of him in the event that such officers, etc., so acting under authority of law should, within said sixty days, require said architect, to enter into such contract to erect such building at the price named in said advertisement to be expended for such purpose. In case said architect whose plans and specifications are adopted should enter into such contract, it shall be the duty of such officers, etc., to employ a competent architect or superintendent, to superintend the erection of such building or structure, and to see that such plans and specifications are faithfully carried out.

Sec. 3. All contracts entered into by such officers, etc., in violation of the provisions of this act shall be null and void.

TRANS-MISSISSIPPI AND INTERNATIONAL EXPOSITION, OMAHA, NEBRASKA.

Sealed proposals will be received by the undersigned, until Twelve (12) o'clock noon of Monday, the 11th day of January, 1897, for the services of a thoroughly competent Architect, as Supervising or General Architect for the Trans-Mississippi and International Exposition, which opens June 1st to November 1st, 1898. Total cost of Exposition Buildings estimated $1,000,000.

Proposals must state salary desired, qualifications and experience of applicant, and such references or letters as may be deemed of value by applicant. Engagement to begin immediately upon selection being made, and terminate at pleasure and discretion of Exposition management.

By order of the department, Buildings and Grounds,
John A. Wakefield,
Secretary.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Agency of Husband for Wife in Building.—In an action for the price of lumber alleged to have been sold to a married woman, and used in improving her estate, the defense was that the lumber was purchased by the husband on his own credit. The sellers testified that the husband stated that the lot on which he wished to use the lumber was owned by himand his wife; that the woman was present when the lumber was delivered, and gave directions where it should be placed, an expressed herself as being glad that it had come. The court held that this was sufficient to establish the fact that the sale was made to the woman.

Holden v. Kutscher, 40 N. Y. Supp. Reporter, 737.

Covenant in Deed Restricting Building Line.—Where a tract of land is laid out in lots and blocks by the owner for sale in accordance with a general scheme, by which restrictions as to building are imposed on each purchaser, for the benefit of all of the land, such restrictions being embodied in all the conveyances, the right of one lot owner to enforce the covenant against another is not a legal, but a purely equitable right, and will only be enforced where it is equitable in that particular case. A court of equity will not require the removal of a building on the ground that it is in volation of a building convenent, where the grantor and owners of the other lots permitted its erection without objection; and subsequent purchasers of adjoining property are bound by the laches of their grantors.

Trout v. Lucas, Ct. Chancery N. J., 35 Atlantic Rep. 153.

Statement Against Architect.—A complaint, under the laws of Massachusetts, alleging that an architect, employed to superintend the erection of a house, had falsely and negligently, and acting in collusion with the builder, represented that a certain amount of labor and materials had gone into the house, whereby the owner was induced to pay the builder an amount of money called for by the contract, is a sufficient allegation of fraud and negligence to show a cause of action against the architect. In giving oral aduice or statements to his employer, the architect is, or may be found to be, rendering a purely partisan service, and if he is then he is bound to show reasonable care and judgment. As a consequence of his contract of employment, the law throws the risk of his statements upon him at an earlier point than it would do otherwise. Aside froN his contract, he would not be liable for statements, unless fraudulent, or for advise, unless dishonest. Under the contract, negligently erronious statemems and imprudent advice become wrongs.

Corey v. Eastman, Sup, Jud. Ct. Mass., 41 N. E. Rep. 218.

BUSINESS MOSAICS.

The Ives Patent Sash Lock—This Sash Lock is now made is cold rolled steel, bronze and brass in all the popular finishes. The acknowledged superiority for the complete manner in which they perform the work they are intended to do is a recommendation for their use, that cannot be disputed. Hobart B. Ives & Co., New Haven, Conn., are the manufacturers.

Drummer—Who was that man whom I overheard denouncing the new Town Hall? Village Merchant—That was the architect who didn't plan it.—*Puck.*

If you want anything in the way of Plaster Decorations or any plastering repaired, go to Samuel Kellett, 28 Ellis street, San Francisco or 375 Twelfth street, Oakland.

Jones—Who was it that said, "The unexpected always happens?" Jenkins—I don't know. Wasn't it somebody connected with the Weather Bureau?—*Puck.*

William Wolff & Co., 327–329 Market street are the agents of the German Alsen's Portland Cement, which they claim is the strongest, finest ground and most uniform cement in the world, having the largest works and greatest production.

Mr. Fussy—I don't see why you wear those ridiculous big sleeves when you have nothing to fill them. Mrs. Fussy—Do you fill your silk hat?—*Boston Standard.*

If those who are about to build extensively will look into the matter thoroughly, they will find that Dixon's Graphite Paint is what they want for tin or iron roofs, and should insist that their architects place this in their specifications as it is a fact that no other paint will make a tin or iron roof last so long. Joseph Dixon Crucible Co., 304 Market street, San Francisco is the place you can find the article.

First Cannibal—She's a peach. Second Cannibal—How fortunate! I'm a vegetarian by preference, you know.—*Detroit Tribune.*

Steven's Patent Chimney, has the endorsement of architects and builders as well as being approved by the Fire Wardens. F. M. Stevens, corner of Larkin and Market streets, also nealer in terra cotta pipe, sewer pipe, chimney tops and flower pots.

Yeast—Is your wife liberal minded? Crimsonbeak—I guess so; she seems to give me a good deal of it.—*Younkers Statesman.*

The early rain will call attention to the importance of having a house that don't leak. To prevent leaks and having your house water-proof go to the Paraffine Paint Co., 116 Battery street, San Francisco. As they deal in felt and composition roofing and building paper as well as Paraffine Paint and know all about their business, that is the place to go if you want a weather proof house.

If you want a perfect jem in the way of a bath tub, call upon Mr. James in the Flood Building, who will take pleasure in showing you his Imperial Porcelain Roll Rim Bath Tub, manufactured by The John L. Mott Iron Works, as Mr. James is the representative of this country on the Pacific Coast, he will be able to give you information about the other improvements in this line that the company is constantly producing; the chances are that you will not leave his place without giving an order for something.

CITY BUILDING NEWS.

Baker near Page. Carpentry work, etc.; owner, Jas. Hawkins; architect, A. C. Lutgens; contractor, Frank Steinman; cost $3650.

Beulah near Cole. To build; owner, Robert Pieper; contractor, Edw. Cox; cost $6900.

Bush near Broderick. Alterations and additions; owner, D. J. Hesselmeyer; architect, J. E. Kraft; contractors, Brennan & Son; signed, Nov. 16; filed, Nov. 28; cost $2788.

California and Front. Elevator for four-story brick; owners, Rosenbaum; Bros.; contractor, W. L. Holman.

Cole near Beulah. Five two-story frame buildings; owner, Charles Hinkle days work; cost $25,000.

Eddy near Devisadero. To build; owner, Miss Mary E. Roberts; architect, H. A. Schulze; contractor, T. R. Bassett; signed, Nov. 25; filed, Dec. 2; cost $1740.

Eleventh near South San Francisco. Two cottages; owner, J. W. Kelly; architects, Townsend & Wyneken; contractor, M. J. Scott; signed, Nov. 13; filed, Nov. 14; cost $2265.

Ellis and Powell. Store fixtures; owners, N. C. and H. C. Wolf; architects, De Prosse & Meussdoffer; contractors, L. & E. Emanuel; signed, Nov. 20; filed, Nov. 21; cost $795.

Ellis and Powell. Plastering, etc.; owner, Royal Eagle Distrillerie Co.; architect, E. Kollofrath, contractor, W. C. Watson; signed, Nov. 19; filed, Nov. 30; cost $2500. Cabinet makers work; contractor, G. Brandlein; cost $1750. Stucco work; contractor, A. Le Jenore; cost $1500. Marble; contractor, J. McCarthy; cost $2100. Interior finish; contractor, S. Levi; $2130.

Francisco near Powell. To build; owner, Antonio Chichizola; contractor, Henry J. Weiss; cost $2050.

Fulton near Steiner. To build, owner, Fannie Mahon; architect, W. H. Lillie; contractors, Moore & Cameron; signed, Nov. 16; filed, Nov. 17; cost $2997.

Fulton near Baker. To build; owner, Mary Horgan; contractor, J. J. Mauseau; signed, Nov. 16; filed, Nov. 17; cost $3740.

Fulton near Baker. To build; owner, Robert McMillan; architect, E. J. Vogel; contractor, D. Currie; signed, Dec. 14; filed, Dec. 18; cost $9100.

Geary near Larkin. Alterations and additions; owner, Esther Attell; architects, Townsend & Wyneken; contractor, John Hayes; signed, Nov. 21; filed, Nov. 21; cost $2260.

Grant Ave. and Sutter. Fixtures for two-story brick; owner, D. Samuels; architect, E. R. Swain; contractors, W. T. Veitch & Bro; cost $3709.

Green and Stockton. To build; owner, Nathan Joseph; architects, Kenitzer & Barth; contractor, Joseph Wyllie; signed, Nov. 28; filed, Nov. 28; cost $1690.

Jackson near Sansome. Carpenter, brick work, etc., on three-story brick, owners, Domingo and Lewis Ghirardelli administrators estate of Dominigo Ghirardelli; architects, Wm. Mooser & Son; contractors, Campbell & Pettus; signed, Nov. 18; filed, Nov, 19; cost $6794.

Larkin near Chestnut. Additions; owner, C. A. Kenniff; contractor, W. W. Rednall; signed, Nov. 17; filed, Nov. 18; cost $885.

Lombard and Baker. To build; owner, John K. Meyer; contractor, Chas. Alsup; cost $2700.

Market between 3d and 4th. Store front interior finish; owner, Claus Spreckels; architects, Reid Bros.; contractors, Thomas Day & Sons; signed, Nov. 10; filed, Nov. 28; cost $4087. Plastering, etc.; contractor, Thomas Mannix; cost $1496. Plumbing, etc.; contractor, S. Ickelheimer; cost $1942. Wire work, etc; contractor, Justinian Caire; cost $1566. Refrigerating plant; contractor, Cyclops Iron Works; cost $3526.

Mission near Fair Ave. To build; owner, Jos. E. Theriot; architects, Mahoney & Ryland; contractor, J. F. Millerick; signed, Nov. 21; filed, Nov. 25; cost $1250.

Missiod near Fourth. Alterations and additions. Owner, N. A. Hewston; architects, Shea & Shea; contractor, Daniel Powers; cost, $3633.

Mission near 8th. Plastering on brick building; owner, Ed. McLaughlin; architect, Chas. Geddes; contractor, Chas. Dunlop; signed, Nov. 18; filed, Dec. 2; cost $1098.

Ninth Ave.. Cottage; owner, Mrs. Eugenie St. Paul; architect, Wm. Curlett; contractor, Wm. Linden; signed, Nov. 4; filed, Nov. 25; cost $1600.

Sacramento near Van Ness. Mason work; owner, J. Z. Posadas; architects, Pissis and Moore; contractors, Peacock & Butcher; signed, Nov. 25; filed, Nov. 27; cost $3650. Carpentry; contractor, Robert Smilie; cost $12,787. Sandstone; contractor, J. D. McGilvray; cost $7500. Plumbing; contractor, S. Ickelheimer & Bros.; cost $2619.

Sacramento near Devisadero. Three-story frame; owners, Geo. H. and Belle W. Holstein; architect, W. H. Lillie; contractor, M. J. Savage; signed, Nov. 30; filed, Dec. 1; cost $5160.

Sanchez near Day. Cottage; owner, W. F. Laumeister; architect, Casper Zwierlein; contractors, Sarcander & Thompson; cost $1400.

Second near Folsom. Two-story frame; owners, W. F. Nicols & W. B. Hooper trustees; architect, Albert Sutton; contractor, Sidney Walker; filed, Dec. 1; cost $5946.

Shrader near Beulah. Five two-story frame dwellings; owner, A. Wilford; day's work; cost $25,000.

Shrader near Beulah. To build; owner, Wm. D. Ladd; architect, E. Depierre; contractor, John Hood; signed, Dec. 14; filed, Dec. 21; cost $2470.

Sutter and Hyde. Six-story brick; owner, Dr. Julius Rosenteirn; architects, Salfield & Kohlberg; contractor, Geo. H. Tay & Co.; cost $2765.

Sutter near Fillmore. Additional story; owner, Merton S. Price; architect, Oliver Everett; contractor, Christ Krutte; signed, Dec. 2; filed, Dec. 2; cost $3412.

Twentieth Ave. near Pt. Lobos. Frame dwelling and stable; owner, Mrs. Marie Forst; architect, J. E. Kraft; cost $3340.

Twenty-fourth near Alabama. To build; owners, Wm. Splain & Sons; architect, M. J. Welsh; contractor, J. T. Coleman; signed, Nov. 21; filed, Nov. 23; cost $2666.

Van Ness and Clay. Ceilings of porticos, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractors, L. & E. Emanuel; signed, Nov. 10; filed, Nov. 28; cost $1898.

Webster near Broadway. Interior finish; owner, W. B. Brown; contractor, W. Bell; cost $12,000.

York near 23d. Two-story frame; owner, F. E. Almquest; architect, J. Peterson; contractors, Miller & Fredrikson; cost $2400.

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The ❀ California ❀ Architect ❀ and ❀ Building ❀ News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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VOLUME XVIII. JANUARY 20th, 1897. NUMBER 12

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

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ESTABLISHED 1879. INCORPORATED 1889
NOW IN THE EIGHTEENTH YEAR.

OLIVER EVERETT, Secretary.

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AS 1896 has past nothing more need be said of it here except that amidst the numerous failures and tragedies the CALIFORNIA ARCHITECT AND BUILDING NEWS still stands.

During the year it has advocated various improvements in our social arrangements, which advocation we are glad to see has generally been received with favor; in some cases leading to practical results, in others simply laying the foundation for a public opinion.

The following are some of the subjects which have been ventilated in this paper in its last volume and their present status:

Our endeavors for obtaining a decent law providing for a method of obtaining architectural service for public work will, we hope, be crowned with success in the session of the present Legislature, having received the valuable aid of the San Francisco Chapter of the American Institute of Architects

Our efforts made in conjunction with Regent Reinstein's—again with the valuable assistance of the San Francisco Chapter of the American Institute of Architects—to obtain a plan for a comprehensive arrangement of buildings for the California State University have eventuatd in the offer of Mrs. Hearst to set aside sufficient money for the purpose of getting the result of the labors of the foremost talent of the country in evolving a suitable plan therefor.

We are also glad to note the stand made by our Supervisour against the erection of inordinately tall buildings, inveighed against in our Journal.

Our strenuous efforts to obtain a Post-Office for San Francisco has not resulted in any thing further than a statement that the working drawings are about finished—that is something however.

Another of our proteges, the Torren's system of transferring title to real estate will be brought up in this Legislature—result uncertain.

Our opposition to the proposed new Charter for San Francisco has fortunately been justified by the vote of the people and we feel encouraged to hope that another attempt will be carried out more on the lines outlined in our April number.

The last Grand Jury has urged the necessity of Fire Escapes on our School Houses and other public buildings, and we hope practical effect will be given to their recommendations before long. This is another of our fads.

We are also glad that ordinances have been passed in San Francisco and other chief cities of the State for the purpose of putting a stop to the criminal act of placing any articles on the sidewalk as may cause damage to life or limb, and to health, a result of the movemeni inauguated *by us in our last volume*.

So altogether we may feel encouraged and will keep on in 1897 pointing out what we think wrong and what we think right.

Our series of articles on the Housing of people of small incomes will be continued during this year—forming valuable contributions to Urban Science and worthy the serious attention of all public bodies, and we intend to keep up the present standard of the journal, if not to improve thereon, which latter we shall certainly do if encouragement enough is given.

CONSIDERABLE agitation is now going on in regard to the proper position of a Pest House or Hospital for contagious diseases, the presence of which in our midst is unfortunately a necessity from our present imperfect knowledge and carrying out of the Laws of Hygiene.

Without doubt a position in the centre of a town and particularly when placed in the way of the prevailing winds, blowing over it into the most inhabited part of the City and causing the sewerage therefrom to pass through the same before it can be got rid of is bad. When said city is placed on a peninsula like San Francisco the problem is easy to solve; place the Pest House near the edge of the water on the lee side and in a place where residences are likely to be few. A place like the top of Telegraph Hill seems to answer all purposes, its height allows any germs in the air to be blown into the bay—it can be drained directly into the intercepting sewer—and no habitations are close or likely to be close. To get there an elevator can be built on the steep side, or a cable car run as there used to be. We hope that the citizens will insist upon such a locality as the one mentioned being chosen.

IN re-introducing into the New York legislature what is called the Pavey Bill for regulating the heights of buildings in New York city, a curious oversight has been made.

The Bill provides that no building shall be erected of greater height above the curb level than fifteen times the square root of the width of the street, but neglects to say what denomination that width shall be taken in; whether feet, inches, yards, or miles, and it makes quite a difference in the height of a building, according to what denomination is taken, *e.g.*, if feet is meant, then for a street one hundred feet wide we have the square root of one hundred which is ten, multiplied by fifteen which makes the height allowed one hundred and fifty feet. If we take the dimension in yards, we have the square root of thirty-three which is 5.745 which multiplied fifteen times equals eighty-six yards or 258 feet.

So if we take the width in decimals of a mile we obtain by the same calculation a pigmy building.

Although the ordinary public would consider that feet are meant, there is no telling what the lawyers and judges would hold if the matter was brought into Court by someone wishing to erect a building higher than implied in the Act, for the ways of such are like the ways of Providence, past finding out.

TO PROTECT WORKMEN.

NEW YORK'S NEW HUMANE BUILDING BUILDING LAW.

SOME curiosity has been expressed as to the exact wording of the building law enacted by the New York Legislature last June relating to the protection of lives and limbs of workmen on buildings in course of erection. The law follows:

SECTION 1. It shall be the duty of all contractors and owners when constructing buildings in any of the cities in the State of New York, where the plans and specifications require the floors to be arched, between the beams thereof, or where the said floors or filling in between floors shall be of fireproof or brick work, to complete the said flooring or filling in as the building progresses to not less than within three tiers of beams below that on which the iron work is being erected.

SEC. 2. It shall be the duty of all contractors for the carpenter work of buildings, in the course of construction, in any of the cities of the State of New York, where the plans and specifications do not require the filling in between the beams of floors to be be of brick or fireproof work, to lay the under flooring thereof as the building progresses on each story to not less than within two stories below the one to which the said building has been erected. Where double floors are not used, the contractor shall be required to keep planked over the floor two stories below the one on which the work is being carried on.

SEC. 3. It shall be the duty of all contractors for iron or steel work of buildings in the course of construction or the owners thereof, in cases where the floor beams are of iron or steel, to thoroughly plank over the entire tier of iron or steel beams on which the structural iron or steel work is being erected, except such spaces as may be reasonably required for proper construction of said iron or steel work, and for the raising or lowering of materials used or to be used in the construction of the said building, or such places as may be designated by the plans and specifications for stairways and elevator shafts.

SEC. 4. The chief officer, in any city, charged with the enforcement of the building laws of such city, is hereby charged with enforcing the provisions of this act.

SEC. 5. Any violation of the provisions of this act shall be a misdemeanor and on conviction shall be punishable by a fine, for each violation thereof, of not less than $25 nor more than $200.

SEC. 6. This act shall take effect immediately.

—*National Real Estate Guide.*

FROM THE THIRD BIENNIAL REPORT OF STATE MINERALOGIST—STRUCTURAL MATERIAL.

BASALT

NAPA COUNTY

Columnar Basalt occurs in Clark's Canon, 12 miles W. of Napa, on the land of Charles Clark, of Napa.

Columnar Porphyry is found on the eastern slop of Mount Helena, 6 miles W. of Kellogg. Columns, 3″ to 5″ diameter, are found, 4′ to 6′ long. The rock is hard and brittle and of a gray color, and stained.

CEMENT

SAN BERNARDINO COUNTY

California Portland Cement Works—See our XIIth Report, p. 380. These are ¼ mile W. of Colton, at 1,000′ elevation. The limestone used in the manufacture of the cement is quarried from a hill situated immediately back of the works. The quarry is connected with the manufacturing plant by an inclined tramway about 1,000′ long, and rising 600′ to near the summit of the hill. The plant, consisting of four Griffin mills, two revolving oil-burning furnaces of the Duree type, and all the other necessary pulverizing and conveying machinery, etc., is located at the side of the Southern Pacific R. R. The limestone, said to be almost pure, is mixed with a certain proportion of clay and fluor-spar from the Castle Dome mines in Arizona, pulverized and roasted at an intense heat. A semi-clay-like mass, or "clinker," is the result. This is cooled and re-ground, and sacked for shipment. A very complete laboratory and testing-room is connected with the establishment. Seventy-five men are employed. The capacity of the works is said to be 200 bbls. per day. California Portland Cement Co., of Los Angeles, owner; F. N. Spear, of Colton, superintendent.

SOLANO COUNTY

Benicia Works—See our XIIth Report, p. 380. Idle. J. G. Johnson and James Clyne, of Benicia, owners.

CLAY, BRICKS, POTTERY, ETC.

ALAMEDA COUNTY

California Pottery and Terra Cotta Co.—See our XIIth Report, p. 381. Its works are on Twelfth street, in East Oakland. There are two kilns, 18′ and 16′ in diameter, fired with wood. Sewer and chimney pipe, flower-pots, vases, tiles, fire-bricks, stove linings, etc., are manufactured. The clay used is obtained from Carbondale, Amador County. Eleven men are employed in the works. S. W. Winsor, of Oakland, manager.

N. Clark & Sons' Pottery.—See our XIIth Roport, p. 381. It is in the City of Alameda, and consists of eleven kilns—two 25′ in diameter, eight 20′, and one still smaller. A Whitacre machine for making pressed bricks is being erected. The company manufacture vast quantities of vitrified sewer and water pipe, chimney pipe and tops, fireproofing, etc. The clays are principally obtained from Carbondale, Amador County. N. Clark, President; George A. Clark, of No. 13 Spear street San Francisco, secretary.

Oakland Art Pottery.—It is on Twelfth street, between Twenty-second and Twenty-third avenues, Oakland. There are three kilns—one 20′ and two 18′ in diameter. All sorts of ornamental vases, flour-pots, chimney pipes and tops, standard sewer-pipe, ornamental tiling, water-coolers, and general terra cotta wares are manufactured. The clays used are principally obtained near Carbondale, Amador County. Twenty-nine men are employed. James Miller, of No. 1125 E. Twelfth street, Oakland, proprietor.

Remillard Brick Co.'s Works.—See our XIIth Report, p. 381. They are on the S. P. R. R., 1½ miles N. E. of Pleasanton. There are two sixteen-compartment Hoffman kilns of 20,000 daily capacity each. But one kiln is now in operation. Only common bricks are made. They are made from a superficial deposit of sandy loam, 25′ thich, which is near the kilns. Sixty men are employed during summer. P. H. Lamoureux, of Oakland, secretary; E. R. Sinard, of Pleasanton, superintendent.

AMADOR COUNTY

In the vicinity of Carbondale are large and numerous deposits of clay of superior quality, and also of sand. In these deposits large excavations have been made at many points and the material shipped to potteries and pressed-brick works throughout the State, large quantities going to Alameda, San Jose, Scramento and even as far as Los Angeles. The total annual shipment of clay alone from Carbondale is about 16,000 tons. Sand, up to the present time, has been shipped in limited quantities to iron foundries, where it is used in molding. This branch of the industry will doubtless grow into greater proportions as the peculiar fitness of this sand for the purpose becomes better known.

Carbondale Pottery—These works are at May P. O., 1 mile from Carbondale Station. There is but one furnace, and this is fired intermittently. Drain-pipe, terra-cotta chimney tops and pipes, fire-bricks, and a line of stoneware, jugs, jars, etc., are the principal articles manufactured here. Fred Hammer, of May P. O., owner.

N. Clark & Sons' Clay-pits.—These are scattered within a radius of 3 miles of Carbondale Station. They are worked constantly, except during the rainy season. To provide the necessary supply during the winter months, several thousand tons are mined and placed under cover during summer. N. Clark & Sons, of Alameda, owners.

Heath & Smith's Clay-pits.—They are in the vicinity of Carbondale, and supply large quantities of clay, of which there are several qualities, to potteries and terra cotta works throughout the State. During the summer months 4,000 tons will be housed for shipment during winter, when the rains make it impossible to dig or ship the clay from the pits. Heath & Smith, of May P. O., owners.

BUTTE COUNTY

Walker's, W. A. Brickyards.—They are 3 miles S. E. of Chico, and supply the local markets at Biggs and Gridley. A superficial deposit of sandy loam, 3′ to 6′ thick, lying between the surface soil and underlying sand, is used successfully. Where hardpan occurs beneath the loam, as in the case in many places, it is said to contain too little sand to make good bricks.

CONTRA COSTA COUNTY

Mount Diablo Pottery and Paving Brick Co.'s Works.—They have been recently established on the railway, ½ mile W. of Antioch. The company will manufacture paving and pressed bricks, terra cotta, fire-proofing, sewer-pipe, flower-pots, roofing-tiles, etc. The clays used are from stratified beds in the foothill, S. and W. of the pottery, and, so far as they have been tested, are said to be satisfactory. E. T. Maple, of Antioch, superintendent.

KERN COUNTY

The Bakersfield Palent Brick Co. of Bakersfield made abont 600,000 bricks during 1895.

LOS ANGELES COUNTY

The manufacture of bricks and terra-cotta ware has been greatly stimulated by the use of oil as fuel, and by the increased demand for structural material. The Pliocene formations around Los Angeles afford an inexhaustible supply of clay suitable for brick, and for mixing with other clays in the manufacture of terra-cotta ware.

Berg & Layne's Brickyard.—It is at Los Angeles. An open kiln, fired by wood, is used, with a capacity of 8,000 bricks a day. Output for 1895, 1,500,000 bricks. Ten men

are employed. Berg & Loyne, of No. 125 W. Second street, owners.

California Sewer-Pipe Co.'s Brickyard.—It is at Vernon, 1 mile S. of Los Angeles. There are three down-draught kilns—one of 20′ and two of 28′ diameter—in which oil for fuel is used. Sewer-pipe, water-pipe, flue-lining, fire-bricks, drain-tiles, etc., are manufactured. The clay is obtained from near Elsinore, Riverside County. Twenty-six men are employed. California Sewer-Pipe Co., owner; T. M. Riley, of No. 649 S. Broadway, manager.

Capitol Steam Brick Works.—Located at Los Angeles. An open kiln, fired by wood, coal and oil, is used. Its capacity is 40,000 bricks a day. Forty men are employed. E. Simons, of No. 125 W. Second street, owner.

City Brick Co.—See our XIIth Report, p. 381. Its yard is located in Los Angeles, and employs an open kiln, fired with wood. Its capaciey is 38,000 bricks a day. Thirty-five men are employed. A. A. Hubberd, of No. 125 W. Second street, manager.

Davin's Brickyard.—It is in Los Angeles, and uses an open kiln, fired with wood. Its capacity is 12,000 bricks a day. Twelve men are employed. P. Davin, corner Saratoga and Brooklyn streets, Boyle Heights, owner.

Eureka Brick Co.—Its open kiln is located at Los Angeles and heated with oil. Its capacity is 18,000 bricks a day. Fifteen men are employed. W. R. Gleason, of No. 127 W. Second street, superintendent.

To be continued.

HARD-EARNED WAGES.

An old chuch in Belgium decided to repair its properties, and employed an artist to touch up a large painting. Upon presenting his bill, the committee in charge refused payment unless the details were specified, whereupon he presented the items as followers:

For correcting the Ten Commandments	$ 5.12
Embellishing Pontius Pilate and putting new ribbons on his bonnet	3.02
Putting new tail on the rooster of St. Peter and mending his comb	2.20
Replumbing and gilding left wing of guardian angel	5 18
Washing the servant of the high Priest and putting carmine on his cheeks	5.02
Renewing Heaven, adjusting the stars and cleaning up the moon	7.14
Touching up purgatory and restoring lost souls	3.06
Brightning up the flames of hell, putting new tail on the devil, mending his left hoof, and doing several odd jobs for the damned	7.17
Rebordering the robes of Herod and adjusting his wig	4.00
Taking the spots off the son of Tobias	1.30
Cleaning Baalam's ass and putting one shoe on him	1.70
Putting earrings in Sarah's ears	1.71
Putting a new stone in David's sling, enlarging the head of Goliath, and extending Saul's legs	6.13
Decorating Noah's Ark and putting a new head on Shem	4.31
Mending the shirt of the Prodigal son and cleaning his ear	3.39
	$60.45

PRISON BARS TO BE WATER PIPES.

ARCHITECT SHEA HAS A NOVEL PLAN FOR THE HALL OF JUSTICE.

Frank T. Shea, the architect of the Hall of Justice, the corner-stone of which was laid on Saturday, will submit to the Board of Supervisors a device for a City Prison to be continued in the building that in point of novelty and usefulness will outrank anything of the kind in the United States. If Mr. Shea's plan be adopted the escape of prisoners will be rendered impossible in the future.

He proposes to construct the cells in the prison of steel pipes, to be filled with water at a high pressure. At the desk of the sergeant in charge of the prison will be a gauge similar to a steam gauge on a boiler, by which the exact pressure of the water will be registered. If a prisoner should attempt to cut his way out of the prison by filling one of the steel bars a stream of water would escape as soon as he filed through the pipe. Simulaneously with the escape of the water an electric bell on the gauge at the sergeant's desk would ring and the indicator would show the number of the cell where the prisoner was trying to escape.

So far as Mr. Shea knows, a device similar to the one proposed by him has never been used in a prison in the United States or elsewhere. He believes that if the plan were given apractical trial, jail deliveries in this city would never be heard of again.

Mr. Shea has also prepared a system of electrical devices that will remove the necessity of having "trusties" in the prison. By pressing a button at his dest the sergeant will be able to open the door of any cell in the prison. The prisoner desired may then step out into the corridor, after which the sergeant may press another button and close the door. The door separating the corridor from the sergeant's office may afterward be opened in the same manner and the prisoner allowed to walk to the desk.

The value of the device lies in the fact that "trusties" are always a source of more or less annoyance in every prison. In many instances jail deliveries have been traced to men who were given the liberty of the prison in order that they might do odd chores about the place.

Whether or not the plans of the Hall of Justice can be changed at this late day to permit of a trial of the devices suggested by Mr. Shea is a question. Mayor Sutro contends the law specifically prohibits the changing of plans for a public building after they shall have been once agreed upon. By others it is contended that the Board of Supervisors has power to authorize a change in the plans where the public good is at stake. The alterations suggested by Architect Shea would not involve the expenditure of any more money for the building, inasmuch as the increased cost of the prison could be saved somewhat else. At any rate Mr. Shea will suggest to the Board of Supervisors the modifications he has in mind with regard to the prison and it is believed that the plans will be adopted.

Mr. Shea wrote into the Patent Office to ascertain if application had ever been made for a patent on a prison cell constructed of steel pipes filled with water, and was informed that no application of the kind had ever been made. He will apply for a patent on the invention.—*Examiner.*

Now is the time to subscribe for the California Architect and Building News.

CALIFORNIA ROADS.

The California Bureau of Highways has given to the Governor a report of its labors. It closes with this recommendation:

The adoption of the plan proposed, and the inauguration of the system recommended, together with the minor recommendations, would make the Golden State the ideal highway community of the world.

Let the good work go on. The Legislature is about to convene. A great opportunity lies before it, for it has the united support of the people and of the press, and there is no subject now committed to our law-makers from which California can hope for so much immediate advantage and lasting good as from wise laws now enacted which will result in the construction of a complete system of well built highways throughout the State. The movement has gained an impetus which needs but to be wisely directed to accomplish this.

And in the years to come, when the results of their efforts shall be fully seen and appreciated, it will be found that those who are now giving their time and their energies to this movement for good roads, which is extending throughout the entire nation, will have "builded better than they knew."

CALIFORNIA HAS MORE TO GAIN THAN ANY OTHER STATE FROM GOOD ROADS.

In the marvelous diversity of her products, and the mildness of her climate, California has more to offer as an inducement to rural settlement than any other State, and hence she has more to gain from good roads. For good roads bring in their wake everything which will attract industrious men from the occupations of the cities and from other States and other countries to go out upon the lands of California and till them and build up homes upon them. And in settlement of fertile, but now largely unoccupied lands, must we look for the future growth and permanent prosperity of the State. And wherever such men can gather as they will, in thickly settled rural communities, with easy means of access to near-by towns and interior cities, the problem of labor for manufacturing will be solved. And in its solution, and in the upbuilding of local manufacturing industries to supply the home markets thus created by a thickly settled rural population, lies the true key to the solution of many of the problems of transportation and distribution which are perplexing the California producer of to-day.

Good roads will stimulate the subdivision of large holdings, will give increased value to small farms, thus made more easily accessible to neighbors, towns and market, will promote rural settlement by making life in the country more attractive than city life to the most intelligent classes, and will enable our rural people to maintain the very highest standards of mental and educational acquirement and social life. For rural life in California, even to him who has only a cottage home in the midst of a small farm well tilled, affords the fullest scope for all the refinements of life, and can furnish more daily comforts, and be set amidst more beautiful surrounds, than the most lavish expenditure of wealth can give in countries less favored by nature.—*California Advocate.*

WIRE BUILDINGS FOR TELEPHONES.

BY HERBERT LAWS WEBB.

Every large office building that is put up to-day should be fully wired for telephone service. Telephone communication is almost as much of a business necessity to-day as ink and paper and no modern building can be quite modern, and thoroughly up to date, in which provision is not made for supplying telephone communication to every room. At present, it is true, it is rather the exception to find an office building properly wired throughout for telephone connections, but in a few years the exceptions will be those that are not so wired. The demand for telephone service of all kinds is increasing so rapidly that owners of buildings cannot afford to expose their tenants to the delays and inconveniences incident to running wires through large buildings every time a new telephone service is required. A well designed substantial system of telephone wiring is therefore a necessity in the modern office building, in the modern hotel, in the modern factory and even in the modern club or large residence. The architect who would keep abreast with the requirements of the day cannot afford to neglect this.

There are three requisites that a system of interior wiring should fulfill. These are: 1, that the wires should be suitable for telephone working; 2, that they should be accessible to allow of additions, withdrawals or repairs; 3, that they should all terminate at one central point.

The requirements of clause 1 are not difficult to meet. They demand that every circuit shall be metallic and that the two sides of the circuit shall be twisted together with not less than four twists to the foot. This arrangement of the circuit tends to neutralize the disturbing effects of currents that may be circulating in neighboring wires. As to he size of wire, No. 10 B. & S., insulated to 3-32ds with a good quality of water proof compound is sufficiently substantial. But let it be a good quality; beware of cheap insulated wire, for it is the dearest in the end. It is a good plan to have the two wires of the twisted pair of different colors so that they may be readily distinguished at the ends without the delay of testing out.

Clause 2 means, of course, that the wires should be run in conduits or tubing. The area of inflexible and inaccessible systems of wiring has passed. Every kind of wiring that is done on a large scale should be arranged so that the wires can readily be got at for inspection or repairs, readily withdrawn or added to without disturbing walls, partitions or flooring. Such accessibility and flexibility can only be secured by the use of conduit tubing.

The concentration of all the different circuits at one point is a sufficiently obvious necessity to need no elaboration. The wires should all be taken to a terminal or cross-connecting board by means of which connection may readily be made with the trunk lines from the telephone exchange. The cross-connecting board will also serve to connect together circuits from different rooms in the event of permanent communication being required between officers in the same building.

A complete system of telephone wiring laid out in accordance with the general requisites outlined above is a very important and valuable adjunct to the modern office building.—*Architects' Electrical Bulletin.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PLANS and perspective drawing of competitive design for State Capitol of Montana, Albert Sutton, architect.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Octavius Morgan, Pres. A. M. Edelman, Vice-Pres.
Arthur B. Benton, Sec't. August Wackerbarth, Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

Geo. W. Dickie, Pres. W. G. Curtis, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday even ing of each month.

Adam Beck, Pres. M. V. Brady, Sec.

BOOKS AND PERIODICALS.

LIPPINCOTT'S Magazine for January, 1897, contains among other interesting articles a capital story called "Stockings Full of Money." This is a well written novel, and very cleverly contrives to keep the reader wondering how it ends and who is guilty.

Among our exchanges THE BUILDER, published in Boston at 85 Water street, is always most welcome, as this this journal devoted to the interests of architecture in materials of clay is sure to contain something of use to architects, illustrated in a manner that does credit to the publishers. The prospectus of this journal for 1897 announces the leading articles for the year, as well as the writers who will contribute during the year.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE REGULAR monthly meeting of the Chapter was was held on January 8, 1897.

The principal business was the discussion of a bill to regulate the practice of architecture in the State of California. Mr. B. E. Henriksen was appointed a committee of one with power to act, to present a bill on similar lines to the one defeated two years ago.

The following is the text of the bill introduced into the Legislature by Mr. Pendleton on January 16, 1895 and amended in Assembly, under special instructions, March 2, 1895 and further amended in Assembly February 2, 1895:

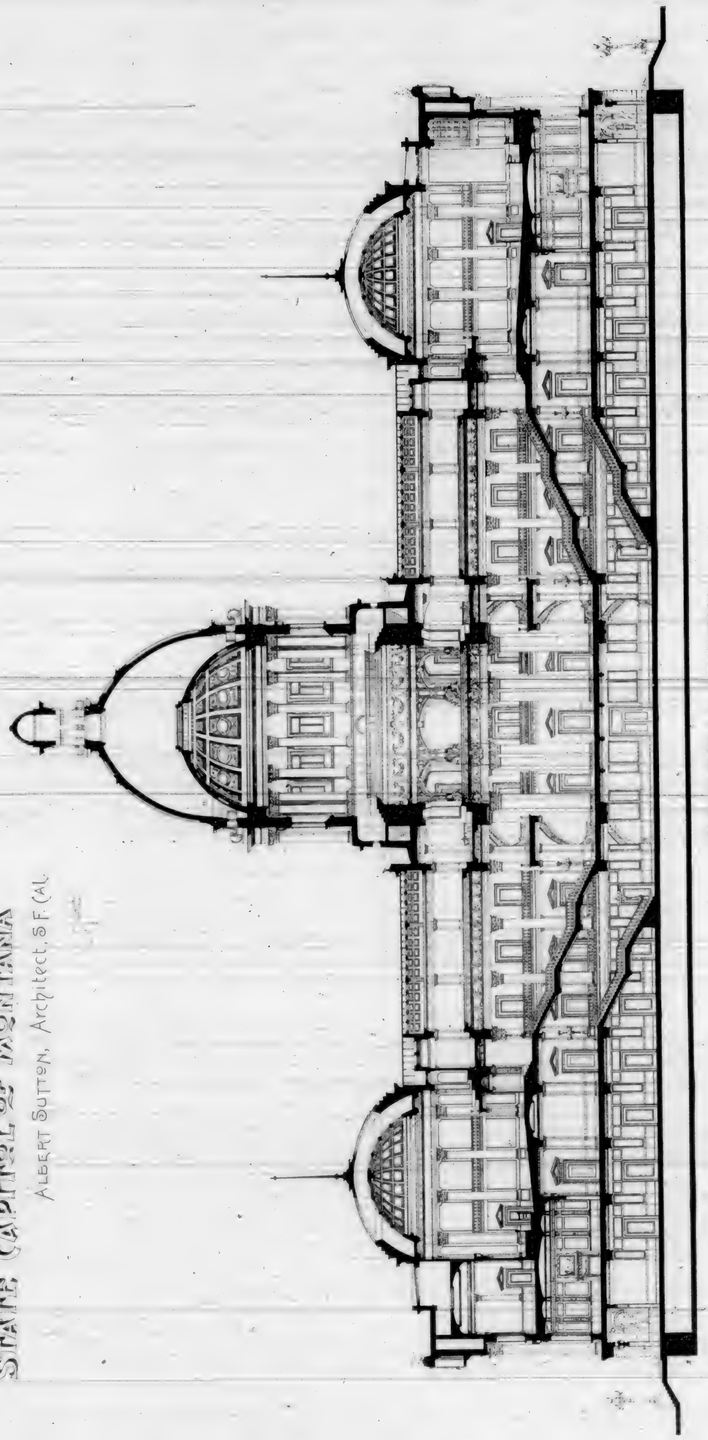
AN ACT TO REGULATE THE PRACTICE OF ARCHITECTURE.

THE PEOPLE OF THE STATE OF CALIFORNIA, REPRESEFTED IN SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

Section 1. Within sixty day from and after the passage of this Act, the Governor of the State shall appoint ten persons, which persons so appointed shall constitute a Board, which Board shall be known and designated as the State Board of Architecture.

Five members of said Board of Architecture shall be residents of the Northern United States Judicial District of California, and shall constitute the Northern District Board for the examination of applicants for license to practice architecture in this State. And five members of said Board shall be appointed from the Southern United States Judicial District of California, and shall constitute the Southern District Board for the examination of applicants for license to practice architecture in this State.

The districts shall be the same as the Northern and



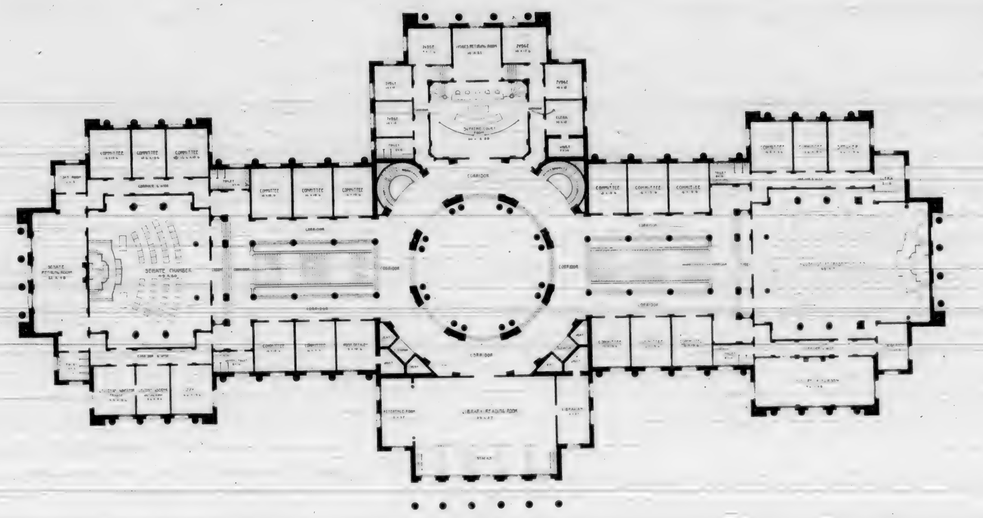
LONGITUDINAL SECTION.

BRITTON & REY, PHOTO LITH.

COMPETITIVE DESIGN FOR
STATE CAPITOL OF MONTANA
ALBERT SUTTON, ARCHITECT, S.F. CAL.

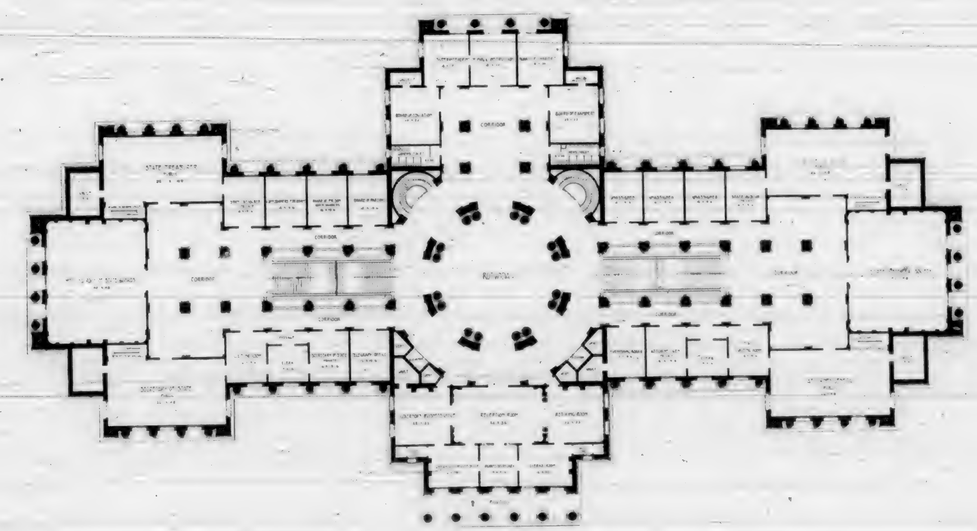
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

VOL XVIII Nº 1 JANUARY 1897.



SECOND FLOOR PLAN

COMPETITIVE DESIGN FOR
STATE CAPITOL OF MONTANA
ALBERT SUTTON, Architect. S.F. CAL.



FIRST FLOOR PLAN

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO LITH.

VOL XVIII Nº 1 JANUARY 1897.

COMPETITIVE DESIGN FOR

STATE CAPITOL OF MONTANA

ALBERT SUTTON, Architect. S.F. CAL.

PERSPECTIVE SKETCH.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XVIII. No. I. JANUARY 1897.

Southern United States Judicial Districts of this State at the time of the passage of this Act.

Said State Board of Architecture shall be appointed by the Governor, as follows: Three members shall be appointed from the members in good standing of the San Francisco Chapter of the American Institute of Architects, (or some similar institute or association of architects), two of whom shall be designated to hold office for two years. Three members shall be appointed from the members of the Southern California Chapter of the American Institute of Architects, (or some similar institute or association of architects), two of whom shall de designated to hold office for two years. One member shall be appointed from the faculty of the Berkeley University, one member shall be appointed from the teachers of the State Normal School at Los Angeles, and two members, one of whom shall be a resident of the northern district and one a resident of the southern district, who shall be lawyers in good standing, and who shall have been in practice for not less than five years.

Each person so appointed shall hold office for four years, unless so designated to hold office for two years. And thereafter, upon the expiration of the term of office of the persons so appointed, the Governor of the State shall appoint a successor or successors to such outgoing person or persons whose term of office shall have expired, to hold office for four years; *provided*, that the membership of the State Boards of Architecture shall be composed as herein set forth.

Each member shall hold over after the expiration of his term of office until his successor shall have been duly appointed and qualified.

Any vacancy occurring in the membership of the Board shall be filled by the Governor of the State for the unexpired term, in like manner.

The members of the Board shall serve without compensation from the State.

The expenses of said Board shall be paid out of the fees collected from applicants for licenses.

SEC. 2. The members of the State Board of Architecture shall, before entering upon the discharge of the duties of their office, take and file with the Secretary of State the constitutional oath of office.

The said State Board of Architecture shall, within thirty days from and after their appointment, meet and elect from their number a President and a Vice-President, one of whom shall be a resident of the northern district, and one a resident of the southern district, and two Secretaries, one from each district. The Secretaries shall also act as Treasurers. The person receiving the highest number of votes shall be Secretary, and the person receiving the next highest number of votes (shall be) Assistant Secretary. Said person shall hold office for two years, or until their successors shall have been duly elected and qualified.

SEC. 3. The Board may adopt rules and regulations for the government of its proceedings not inconsistent with this Act.

The State Board shall adopt a seal for its own use, and one for each of the District Boards. The seal used by the Northern District Board shall nave the words "Northern District" inscribed thereon, and the one for the southern district shall have the words "Southern District" inscribed thereon, and the Secretary and Assistant Secretary shall have charge, care and custody thereof.

The Secretary shall keep a correct record of all the proceedings of the Board, which shall be open to public examination at all times. Six members shall constitute a quorum for the transaction of the business of the State Board of Architecture, and three members shall constitute a quorum for the District Boards for the transaction of business.

Special meetings of the State Board of Architecture shall be called by the Secretary upon the written request of four of its members, and by giving twenty days' written notice of such meeting, and the time and place at which such meeting is to be held, to each member of the Board.

The District Board shall call special meetings upon the written request of two of its members made to the Secretary, and upon five days' written notice to each member of such District Board.

Within thirty days from and after the date of their appointment, the State Board shall meet to organize, elect officers as in this Act provided for, and formulate and adopt a code of rules and regulations for its government in the examination of applicants for license to practice architecture in this State, and such other rules and regulations as may be necessary and proper, not inconsistent with this Act.

The Board may from time to time repeal or modify its rules and regulations, not inconsistent with this Act.

The State Board shall meet annually, on the second Tuesday in April, for the purpose of transacting such business as may lawfully come before it, not inconsistent with this Act.

The District Boards shall hold their regular meetings for the examination of applicants for license to practice architecture, on the last Tuesday of January, April, July and October of each year.

The Board of the Northern District shall meet in San Francisco, and the Board of the Southern District shall meet in Los Angeles, and at such other times and places as they may elect, to examine applicants for licenses.

Any person shall be entitled to an examination for a license to practice architecture upon a payment to the District Board, when he make application, a fee of fifteen dollars which fee shall be retained by the Board; should the applicant pass a satisfactory examination by said District Board, the Secretary shall, upon the payment to him of further fee of five dollars, issue to the applicant a certificate, signed by the President and Secretary, sealed with the seal of the District Board, and directed to the Secretary of State, setting forth the fact that the person therein named has passed a satisfactory examination, and that such person is entitled to a license to practice architecture in this State, in accordance with the provisions of this Act; and upon the payment to the Secretary of State of a fee of five dollars, the Secretary shall at once issue to the person therein named a license to practice architecture in this State, in accordance with the provisions of this Act, which license shall contain the full name of the applicant, his birthplace and age, together with the name of the District Board issuing the certificate, and the date of issuance thereof.

All papers received by the Secretary of State on application for license, shall be kept on file in his office, and a proper index and record thereof shall be kept by him.

SEC. 4. Any architect in good standing, who shall show to the satisfaction of the District Board of the district in which such architect may reside, that he was engaged exclusively in the practice of the profession of architecture on the date of the passage of this Act, shall be granted a certificate without passing an examination, on the payment to

the District Board of a fee of five dollars; *provided*, such application shall be made within six months from and after the passage of this Act.

Said certificate shall set forth the fact that the person to whom the same was issued was practicing architecture in this State at the time of the passage of this Act, and that the person therein named is entitled to a license to practice architecture without having passed an examination by the District Board; and the Secretary of the State shall, upon the payment to him of a fee of five dollars, issue to the person named therein a license to practice architecture in this State, in accordance with the provisions of this Act.

Each licensed architect shall have his license recorded in the office of the County Recorder in each and every county in this State in which the holder thereof shall practice, and he shall pay to the Recorder the same fee as is charged for the recording of deeds. A failure to have his (license) so recorded shall be deemed sufficient cause for revocation of such license.

SEC. 5. Six months after the passage of this Act, it shall be unlawful, and it shall be a misdemeanor, punishable by fine of not less than fifty dollars, nor more than five hundred dollars, for any person to practice architecture without a license in this State, or to advertise, or put out any sign or card, or other device which might indicate to the public that he was an architect; *provided*, that nothing in this Act shall prevent any person from making plans for his own buildings, nor furnishing plans or other data for buildings for other persons; (*provided*, that nothing in this Act shall prevent the recovery of any fee or compensation by an architect residing out of the State of California, whose plans and specifications shall be accepted for a building or other structure within this State.)

Architects' licenses issued in accordance with the provisions of this Act shall remain in full force until revoked for cause, as hereinafter provided for in this Act.

A license may be revoked for dishonest practices, or for gross incompetency in the practice of the profession, which questions shall be determined by the District Board of the district in which the person whose license is called in question shall reside or shall be doing business; and upon a full investigation of the charges by the District Board, an opportunity having been given the accused to be heard in his own defense or by counsel, and upon the verdict of at least four members of the District Board, the Board may issue its certificate to the Secretary of State revoking the license of the person accused; and the Secretary of State shall thereupon cancel such license. And on the cancellation of such license it shall be the duty of the Secretary of the District Board to give notice of such cancellation to the County Recorded of each county in this State, whereupon the Recorder shall mark the license recorded in his office "Canceled." After the expiration of six months, the person whose license was revoked may have a new license issued to him by the Secretary of State, upon the certificate of the District Board by which the license was revoked.

Every licensed architect shall have a seal, the impression of which must contain the name of the architect, his place of business, and the words "licensed architect," with which he may stamp all plans and papers prepared by him.

This Act shall take effect from and after its passage.

☞ Now is the time to Subscribe for the CALIFORNIA ARCHITECT AND BUILDING NEWS—$3.00 per year.

ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the past year.

FOR FIRST SIX MONTHS.—1896.

1896	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry ...	5	11	$ 40,743	34	40	$ 177,360	13	13	$ 33,153	52	64	$ 251,265
Feb'ry ...	2	7	231,023	56	60	130,778	13	13	25,005	71	80	408,306
March	2	6	38,082	57	63	215,372	6	6	13,500	65	75	266,954
April.....	32	49	694,417	108	120	365,687	28	28	60,796	168	197	1,120,900
May.....	2	14	225,642	30	36	146,752	39	39	24,047	71	89	406,441
June.....	10	19	221,234	93	103	460,234	17	17	70,890	120	139	745,358
Total	53	106	$1,182,041	378	422	$1,496,192	116	116	$157,991	547	644	$3,136,224

FOR SECOND SIX MONTHS.—1896.

1896	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value
July	7	11	$ 291,063	36	41	$ 118,795	10	10	$ 13,364	53	64	$ 423,222
Aug.....	11	19	310,139	40	47	169,685	10	10	22,862	61	76	602,686
Sept.....	3	8	35,476	46	54	141,209	16	16	53,394	65	78	230,079
Oct.....	4	14	398,657	40	48	136,765	10	10	14,680	54	72	550,072
Nov	16	12	172,584	75	30	144,359	9	9	26,941	60	51	343,834
Dec.....	2	2	6,464	51	40	123,799	2	2	7,045	40	32	137,308
Total	43	66	$1,214,333	248	260	$834,582	57	57	$139,236	333	373	$2,287,151
G'd Total	96	172	$2,696,374	626	682	$2,330,774	173	173	$ 296,227	880	1017	$6,223,375

To this amount has been added the further estimated sum of $300,000 where costs have not been given, which would make the total for the last six months, $2,587,151, and the total for the year $6,223,375.

We give the total values and numbers from 1880 to that our readers may make a comparison:

1880—	397	engagements, value.....	$1,754,435
1881—	533	" "	3,790,732
1882—	785	" "	3,896,212
1883—	803	" "	5,261,689
1884—1,127		" "	6,202,867
1885—1,457		" "	7,043,999
1886—1,148		" "	6,401,669
1887—1,093		" "	6,605,054
1888—	891	" "	6,244,220
1889—1,081		" "	7,500,000
1890—1,037		" "	7,095,013
1891—1,162		" "	6,946,056
1892—	920	" "	5,856,341
1893—	905	" "	3,962,532
1894—	947	" "	4,529,839
1895—1,086		" "	5,199,235
1896—	880	" "	6,223,375

THE PREVENTION OF PREMATURE BURIAL.

PSYCHICAL Science has proven that the spirit may leave the body for a while, may seek to return to it, and sometimes succeed in its endeavors. This being the case it is our duty to take such care of a vacant body that if the spirit which occupied it makes an effort to return, it shall find it figuratively swept and garnered, that is, shall not find it in a box six feet below the level of the ground or in any other horrible place. Either this should be done, or the body so destroyed that the spirit will find it imposible to occupy it again.

In plain words arrangements should be made in view of the many cases of premature burial to have a building in every community erected for the special purpose of receiving and holding bodies until they show decided absence of any spiritual presence by their decay, after which any disposition may be made of them that their relatives may see fit.

This building should consist of a large room or hall, situated preferably in one of the cemeteries, built by the municipality, in which the coffins of dead people should be placed and numbered. The top of the caskets should be thin glass so that when decomposition sets in it may be seen, and so that, in the event of any of the bodies being revivified, they might see the glorious light once more and feel safe. The building to have a skylight or other good light and at night to be thoroughly lighted with electricity.

The cushions on which the bodies rest to be connected by electric wires to bells with an annunciator so that at any movement of a body, the attendant, one of whom would be constantly on the watch, would be immediately notified thereof.

If the newly returned spirit should have sense enough to see where it is, by a slight rap it could break the thin glass and thus get fresh air to breath.

Those persons who expressed such a desire could have their body made unsuitable for further occupation by an authorized physician—and thus obviate the necessity of having their bodies laid up in the above reception hall and prevent overcrowding the same. STROLLER.

NOTES & COMMENTS.

RECOMMENDATION MADE BY GRAND JURY IN REGARD TO ARCHITECTURAL MATTERS:—Concerning the public schools of San Francisco the report says:

"We would recommend that suitable fire escapes be attached to all public school buildings, and that one be attached to each side of the building. Our children are housed in large frame structures, three, four and five stories high, and while it is true they have what is termed a fire drill, yet it is our opinion that should a fire occur they would become panic-stricken and many be killed or wounded."

The report recommends the establishment of a builders' bureau to be placed in charge of a competent builder or architect, whose sole duty will be to overlook all plans and specifications of new building, improvements or repairs. It is also recommended that the fire alarm station be removed from Chinatown and placed in the dome of the new City Hall. The report finds that some of the theatres are poorly protected from fire. The suggestion is made that a detail of three or four firemen be kept on duty during the progress of each entertainment. The men could be behind the scenes. This report is signed by E. B. Farnsworth, Chairman; W. L. Asbe and D. B. Factor.

The Committee on Health Department and Hospitals in its report scores the management of the City and County Hospital. It says:

"We have visited the City and County Hospital on several occassions, and must say that the sewerage system and the plumbing and ventilating of the different wards and corridors are a disgrace to the city, and should be immediately remedied. We find that there are over three hundred patients and over eighty paid employees, besidee four internes and eight rated ward tenders, who receive no pay."

AS LUMBER can be bought at most any price, the combine being broken, we still continue the old lumber price list as a comparison can be drawn by buyers. Now is the time to build.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

APPORTIONMENT OF INDEBTEDNESS FOR BUILDING LIENS.—Where building material has been ordered for the construction of several houses on a certain tract of land, which, before all of the material has been delivered, or a lien filed, is subdivided according to the number of houses, the lien must be apportioned and charged pro rata against the houses.

Blanchard v. Fried, Sup. Ct. Ill., 44 Northeastern Rep. 880.

LIABILITY OF OWNER OF ELEVATOR.—The duty of those operating a passenger elevator is the same as that of a common carrier, to exercise the highest degree of care for the safety of passengers, or those about to become such; and it is negligence to allow the doorway to an elevator shaft, opening into a hallway in an office building in a city, to remain open and unguarded.

So. B. & L. Ass'n Lawson, Sup. Ct. Tenn., 37 Southwestern Rep. 86.

WHEN ARCHITECT IS NOT ENTITLED TO FEES.—An architect employed to prepare plans and specifications for a building, and furnish an estimate of the probable cost, is not, upon submitting the same, entitled to his fees, unless the building can be erected at a cost reasonably approximating that stated in such estimate.

In this case, the architect has estimated that the building would cost about $4,000, but when bids were obtained it was found that it would cost over, $7,000, and the other party refused to go ahead with the building, and also to pay the architect any commission, claiming that he was induced solely by the estimates of the architect to have the plans drawn.

Feltham v. Sharp, Sup. Ct. Ga., 25 Southeastern Rep. 619.

WHEN LANDLORD IS LIABLE FOR TEARING DOWN ADJOINING BUILDING.—Where a landlord, who owned another building adjoining that occupied by his tenant, the two being constructed together, tore such building down, rendering the leased building unsafe, and then procured its condemnation and destruction by

the city authorities, such acts constituted an eviction, for which the tenant may recover damages, and the landlord cannot avail himself of the action of the city authorities as a defense.

Silber v. Larkin, Sup. Ct. Wis., 68 Northwestern Rep. 406.

Disclosure of Interest to Build by Architect.—An architect employed to furnish plans for the erection of a building, occupied by tenants, is not liable to the owner by disclosure of cintended erection of thenew buildings, the architect having neither ontracted, nor been requested, to keep such fact a secret, for the loss of rent caused by the vacation of the premises by the tenants.

Havens v. Dononue, Sup. Ct. Cal., 43 Pacific Reporter, 963.

Contractor can Recover Though Building Destroyed by Fire.—A contractor for the carpenter work in a building in the course of erection is entitled to recover from the owner the value of the materials used and the work done by him, where the building was destroyed by fire before the contract was completed; but he is not entitled to recover for the value of materials which he had procured to use in the house, but which had not actually been used at the time of the fire.

Hayes v. Cross, Sup Ct. App. Div., 40 N. Y. Supp. Rep. 1098.

HYDRAULIC POWER FOR CITY SUPPLY.

THE distribution of hydraulic power in London is the biggest thing of its kind in existence. It is not only unique in the sense of being the largest distribution of power from central stations in any city in the world, but it is excluding smaller installations in other cities, the only instance of a power distribution which furnishes exclusively a power supply. In other systems, viz, gas, electricity and steam, the main intention is to supply light and heat, the supply of power being only subsidlary. Even the compressed-air supply in Paris, which is the nearest in idea to the hydraulic supply in London, is dependent largely upon its lighting business. Hydraulic power in London and other cities is also interesting in another way, in so much that it depends not only exclusively or mainly on the supply of power alone, but that the supply was originally intended to serve and is, in fact, almost entirely used for one special class of business, viz, that of lifting. The lowest rate charged for hydraulic power in London is 1*s.* 6*d.* per 1,000 gallons. The pressure is 750 pounds per square inch, so that each 1,000 gallons contains 8,738 horse-power hours of energy; 1*s.* 6*d.* per 1,000 gallons is, therefore, equivalent to, say, 2*d.* per horse-power hour. It is only the largest hydraulic plants, pumping 20,000,000 or more gallons per quarter, which are capable of pumping at this cost, if to the actual pumping expenses are added the interest and depreciation on the capital value of the plant and the value of the space occupied by it. The largest private pumping plants existing in London are at the railway goods-depots, and at one of the principal and most modern of these depots, at which over 100,000,000 gallons per year are pumped, the pumping cost, exclusive of interest and other charges, is 9*d* per 1,000 gallons, and the total cost would be very little, if at all, below 1*s.* 6*d.* per 1,000 gallons.—*E. B. Ellington in Cassier's.*

THE NATIONAL ASSOCIATION OF BUILDING INSPECTORS

BUILDING INSPECTORS FOR THE CITY OF BUFFALO.

THE CHARTER of the city of Buffalo requires that building inspectors shall be practical building mechanics of at least five years' experience in their trade.

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The four men were appointed by the Board of Public Works to fill the newly-made positions, and began their duties on August 1. Time passed and pay day came. The pay roll of the Bureau of Building was passed as usual, except the part of it which related to the three building inspectors, who were declared to be not practical building mechanics of five years' experience. The contention arose that these men were practical building mechanics. Some of the councilmen believed that the men were not building mechanics, were ineligible for appointment, were illegally appointed and should be removed. On these grounds their pay was held as regularly as the pay roll appeared before the Council for approval. The question to be decided was: What is a building mechanic, and what did the framers of the charter mean by the expression in the charter above quoted? The civil service commissioners held that they were eligible for the position. The Board of Public Works was asked to hold an investigation, which resulted in the men being declared eligible and competent to fill the positions. The Council committee held an examination and as a result recommended the removal of the inspectors. The Council was divided in its opinion and asked the Corporation Counsel for his opinion on the matter. That gentleman thought over the same for three weeks, and in a length document handed his decision to the Council to the effect that the men were competent to fill the positions, but were not practical building mechanics, and, therefore, should be removed. The inspectors are still holding their positions, waiting for the proper authorities to remove them.

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You certainly make no mistake in patronizing home industry when the goods are of the quality manufactured by the Paraffine Paint Co.; there is nothing quite as good; 116 Battery street, San Francisco, is the place to go when ordering from this reliable firm.

"Brassy, I thought you wuz to be captain of the Cyclone football team?" "I wuz, but me mother cut me hair when I wuz asleep.—*Detroit Free Press.*

Cabot' Creosote Shingle Stains. These stains having stood the test for years are too well known perhaps to need a notice, but it is as well to call attention to the fact that Charles J. Waterhouse, 640 Mission street, San Francisco, is the agent for Mr. Samuel Cabot, sole manufacturer, Boston, Mass.

"Do you like colored servants?" "It depends on the color. I don't care for green ones."—*Harper's Bazar.*

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"He's one of the kindest of men to animals." "Yes; I understand he shuts his eyes when he sees a Frankfurter."—*Yonkers Statesman.*

The Nurse (smiling)—Well, "it" is twins. Wheeler (crushed)—Havens! I hope bicycles will be cheaper next year.—*Puck.*

The Pancoast Ventilator is guaranteed to exhaust more cubic feet of air per minute than any other storm-proof ventilator made, for this reason among many others it is a good thing to have. N. & G. Taylor & Co. Manufacturers' agents, Philadelphia, Pa.

The Model Window Hinge is the only portable hinge extant. It is applied to windows so that they may be swung inside the room, in order that the outside of the glass may be cleaned without the necessity of sitting upon the window sill—a most tedious, uncomfortable and dangerous method of window cleaning. The hinge may be applied to old windows as well as new.

This hinge is simple in mechanical construction, and easy in operation. The hinges remain upon the window only while the latter is being cleaned, they being entirely re-

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Dunham, Carrigan & Hayden Co., 17 and 19 Beale street, San Francisco. Page ix of this journal shows an illustration of their American Sliding Door Hanger, for which they claim unusual advantages, it is quite well worth while to investigate this improvement before ordering a new hanger. They also sell the Celebrated Yale Locks.

"He's one of the kindest of men to animals." "Yes; I understand he shuts his eyes when he sees a Frankfurter."—*Yonkers Statesman.*

The Pancoast Ventilator is guaranteed to exhaust more cubic feet of air per minute than any other storm-proof ventilator made, for this reason among many others it is a good thing to have. N. & G. Taylor & Co. Manufacturers' agents, Philadelphia, Pa.

You certainly make no mistake in patronizing home industry when the goods are of the quality manufactured by the Paraffine Paint Co.; there is nothing quite as good; 116 Battery street, San Francisco, is the place to go when ordering from this reliable firm.

"Brassy, I thought you wuz to be captain of the Cyclone football team?" "I wuz, but me mother cut me hair when I wuz asleep.—*Detroit Free Press.*

Cabot' Creosote Shingle Stains. These stains having stood the test for years are too well known perhaps to need a notice, but it is as well to call attention to the fact that Charles J. Waterhouse, 640 Mission street, San Francisco, is the agent for Mr. Samuel Cabot, sole manufacturer, Boston, Mass.

"Do you like colored servants?" "It depends on the color. I don't care for green ones."—*Harper's Bazar.*

Edward B. Hindes & Co., 411 Mission street, San Francisco, is the place to go if you want Hill's Patent Inside Sliding Blinds, Perfection Window Screens, Latest Improved Venitian Blinds or Patent Self Rolling Burglar and Fire Proof Steel Shutters and Rolling Wood Partitions.

The Nurse (smiling)—Well, "it" is twins. WHEELER (crushed)—Havens! I hope bicycles will be cheaper next year.—*Puck.*

The Model Window Hinge is the only portable hinge extant. It is applied to windows so that they may be swung inside the room, in order that the outside of the glass may be cleaned without the necessity of sitting upon the window sill—a most tedious, uncomfortable and dangerous method of window cleaning. The hinge may be applied to old windows as well as new.

This hinge is simple in mechanical construction, and easy in operation. The hinges remain upon the window only while the latter is being cleaned, they being entirely re-

moved when not in use, leaving the window precisely as before.

The Model Window Hinge Company, the owners of this valuable patent, have obtained patents for the United States and Canada, and are now getting their patents in European countries and Australia.

This appliance has been placed on a great many buildings in San Francisco, Oakland, Portland, Tacoma, Fresno, San Jose and elsewhere and has met with the hearty approval and indorsement of all who have used it, including many of the leading architects of this city.

The following diplomas and special awards have been received by the Model Window Hinge Company, as evidence of the meritorious qualities possessed by this hinge:

Twenty-eighth Exposition Mechanics' Institute, San Francisco, Cal., 1895. Highest Award. The Oakland Exposition, Oakland, Cal., 1895. Gold Medal. The Oakland Exposition, Oakland, Cal., 1896. Diploma. Twenty-ninth Industrial Exposition Mechanics' Institute, [Home Products Exhibition] San Francisco, Cal., 1896. Diploma. Special Mention.

A few of the residences and prominent buildings in which the Model Window Hinge has been placed are: The Chronicle Building, A. B. McCreary's Building, 310 Pine street; second story Girl's High School; City and County Att'y Creswell's office, City Hall; J. Faulkner, 1217 Sutter street; A. P. Black, Asst. Pros. Att'y 1316 Green St.; Cerf Weyl, 1219 Sutter St; J. M. Young, 220 Kearny St; Geo. Cohn, 264 Battery street; L. H. Moise, Fulton near Fillmore; H. B. Russ, 14 Columbia Square; Mrs. J. Barron, 822 Broadway; John Yule, East Oakland; Chas. Parcells, Webster street, Oakland; William J. Kitto, 690 31st street, Oakland; Liverpool, London & Globe Building, Liedesdorff and California Sts.; Kohler Building, Jones and Sutter Sts.; City Hall, San Jose; Court House, Fresno; J. Weyl, 224 Kearny street, San Francisco.

Experienced mechanics are employed by the company to fit its appliance on buildings, and the work is done with neatness and dispatch, and without disturbing the usual routine of the household or the office. One set of the hinges is sufficient for the entire building, thus materially lessening the expense of adopting the hinge.

A sample window can be seen in operation in the office of the company, Mills Building, floor 7, room 5.

CITY BUILDING NEWS.

Belvedere near Fredrick. To build; owner, Otto T. Hildebrecht; architect, F. P. Rabin; contractor, D. Currie; cost $2654.

Bryant and Solano. Two-story frame; owner, Richard Schmuttenhaus; architects, Martens & Coffey; contractors, Franz & Burmeister; signed, Dec. 23; filed, Dec. 28; cost $3568.

Clay near Baker. Excavations, cement work, etc., for three-story frame; owner, F. F. Leitz; architect, C. A. Meussdorffer; contractor, R. H. Stettin; cost $1165. Plumbing; contractor, H. Williamson; cost $960. Carpenter work; A. Olson; cost $6983. Brick and iron work; contractors, T. Hock & Son; cost $650.

Eighteenth and Dolores. Excavating, etc.; owner, Board of Education; architect, C. I. Havens; contractor, Rae Building Co.; signed, Dec. 31; filed, Jan. 2; cost $123,908. Plumbing, contractor, T. C. Sweeney; cost $1,033.50. Heating; contractor, W. Morgan & Co.; cost $8496.

Eighteenth and Dolores. Hills' Patent Blinds for three-story brick; owner, Board of Education; architect, Chas. I. Havens; contractor, Edward B. Hinds; cost $2600.

Fair Oaks and 25th. To build; owner, John W. Smith; architects, Martens & Coffey; contractor, Wm. J. B. Warner; cost $3030.

Franklin and Washington. Alterations and adpitions; owner, Louis Cohen & Son; architects, Salfield & Kohlberg; contractor, H. Behrens; cost $1000.

Freelon near 4th. Two-story frame; owner, J. F. Dorland; contractor, A. Petry; signed, Dec. 22; cost $2100.

Fremont near Howard. Excavation and brick work for two-story brick; owner, Alexander P. Cristie; architect, David C. Coleman; contractor, Matt V. Brady; cost $1597.50.

Gilbert near Brannan. To build; owner, Con. Sweeney; architect, A. J. Barnett; contractor, Ed. Mooney; signed, Jan. 12; filed, Jan. 13; cost $1650.

Jackson near Fillmore. Excavation, etc., for two-story frame; owner, Mrs. Reba Levy; architect, M. J. Lyon; contractor, John Furness; cost $6450.

Lyons near McAllister. Two-story frame; owner, M. Meyer; contractors, T. & W. H. Kinread; cost $1250.

Pacific Ave. and Pierce. Two-story frame; owner, Samuel B. Welsh; architect, E. A. Mathews; contractors, Lieter & Prugh; cost $6938.

Park Road near Frederick. Two-story frame; owner, Richard Spreckles; architect, Edward J. Vogel; contractors, White Bros.; signed, Dec. 21; filed, Dec. 28; cost $6550.

Pierce near McAllister. Two-story frame; owner, L. Frielander; contractor, W. H. & T. Kinread; cost $1627.

Pine near Buchanan. Two-story frame; owners, G. H. and Mary G. Brown; Brown; architects, Townsend & Wyneken; contractors, Holm & Shelbly; signed, Dec. 30; filed, Dec. 31; cost $1807.

Pine near Buchanan. Alterations and additions; owner, J. O'Leary; architects, Townsend & Wyneken; contractor, Q. Powers; cost $1445.

Pine and Laguna. Alterations and additions; owner, Jane Burkhead; architects, Cahill & Condon; contractors, Knox & Cook; cost $2500.

Russ near Folsom. Alterations and additions; owner, H. Marks; architects, Salfield & Kohlberg; contractor, H. Behrens; cost $1670.

Sacramento near Steiner. Two-story frame; owner, A. Morris; architect, F. B. Wood: contractor, Jas. H. Burke; signed, Dec. 31; filed, Dec. 31; cost $3450.

Sixth near Channel. Two-story frame and lumber sheds; owner, Pacific Lumber Co.; days' work; cost $2000.

Twelfth Ave. near California. Cottage; owner, A. Vogel; architect, A. Vogel; contractor, A. McLauchlin; cost $1200.

Twenty-second near York. Two-story frame, six flats; owner, Wm. Torjet; contractor, Wm. Helbing; cost $4725.

Union near Scott. Two-story frame, owner, J. W. Valentine; architect, Edgar A. Mathews; contractor, Andrew T. Ruch; cost $3986.

Van Ness Ave. and Clay. Plate glass; owner, Claus Spreckels; architects, Reid Bros.; contractor, W. P. Fuller & Co.; signed, Nov. 19; filed, Dec. 31; cost $1800.

Washington near Leavenworth. Alterations, etc.; owner, Mary A. Runyou; architect, W. O. Banks; contractor, Geo. H. Walker; cost $2020.

SAUSALITO

Additions to three cottages. Owner, Mrs. L. Miller; architect, W. J. Cuthbertson; contractor, Jno. Mason; signed, Jan. 12; cost $1348.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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1 Column	12 50	35 00	65 00	125 00
½ Page	20 00	57 50	105 00	200 00
1 Page	40 00	110 00	200 00	350 00

OLIVER EVERETT Secretary.

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

THERE is a bill pending before the Legislature making it obligatory to provide definite plans for proposed bridges, in order to enable all bidders to estimate on the same plans and specifications.

This is a great improvement on the old method where the authorities require bidders to furnish their own plans, and as a consequence the contractor who furnished flimsiest and cheapest design, usually secured the contract. But there is no reason why the plans for public buildings required by the counties should not come under the same or a similar law, and we again call the attention of our law makers to the draft of a bill published in our December number outlining a method of obtaining plans for State buildings, and suggest to them that such provisions be adopted into the County Government Act, putting bridges under the caption of Engineering work, and buildings under the head of Architectural works.

FROM THE THIRD BIENNIAL REPORT OF STATE MINERALOGIST—STRUCTURAL MATERIAL.

CONTINUED FROM LAST NUMBER.

Forrester's Brickyard.—It is in Los Angeles, and uses an open kiln, fired with wood, coal and oil. Its capacity is 8,000 bricks a day. Six men are employed. C. Forrester, of No. 125 W. Second street, owner.

Gamble's Brickyard.—It is at Garvanza. An open kiln, fired with wood, is used. Its capacity is 8,000 bricks a day Eight men are employed. J. M. Gamble, of Garvanza, owner.

Houlahan & Griffith's Yard.—It is at Inglewood. They employ two Boenehke continuous kilns, fired with oil and coal. Capacity, 12,000,000 bricks a year. Sixty men are employed. Houlahan & Griffith, of No. 208 Stimson Block, owners.

Jensen's Brickyard.—It is in Los Angeles, and uses open

kilns, fired with wood. Capacity, 38,000 bricks a day. Thirty men are employed. H. Jensen, of No. 130 W. Second street, owner.

Joyce's Brickyard.—Located at Los Angeles. A continuous kiln, fired with coal, is used. Capacity 24,000 bricks a day. Thirty men are employed. T. F. Joyce, of No. 125 W. Second street, owner.

Karr, Frampton & Co's Brickyard.—It is at Los Angeles. Uses an open kiln, fired with oil. Capacity, 16,000 bricks a day. Eighteen men are employed. Karr Frampton & Co., of No. 125 W. Second street, owners.

Los Angeles Pressed Brick and Terra Cotta Co's. Works.—They are located at Los Angeles. Employ five down-draught kilns, fired with an oil "distillate" of 24° B. Twenty men are employed. Company's office, No. 119 S. Broadway; L. F. Miller, superintendent.

Monarch Brick Co.'s Yard.—It is at Los Angeles. Uses open kilns, fired with wood and oil. Capacity 34,000 bricks a day. Thirty men are employed. Whitman & Workman, of No. 127 W. Second street, owners.

Pay Brickyard.—It is at Los Angeles, and uses open kilns, fired with wood. Capacity, 18,000 bricks a day. Twenty men are employed. C. Pay, corner of Mott and Seventh streets, Boyle Heights, owner.

Pierson & Anderson's Brickyard.—It is at Los Angeles. Uses an open kiln, fired with wood and coal. Capacity, 8,000 bricks a day. Eight men are employed. C. Schroder, of Pico Heights, owner.

Simon's Brickyard.—It is at Los Angeles. A Hoffman continuous kiln, fired with coal-slack and wood, is used. Capacity, 25,000 bricks a day. Thirty men are employed. R. Simons, of E. Seventh street, near Boyle Avenue, owner.

MARIN COUNTY

There are three large brick plants in this county, all within a few miles of San Rafael, and accessible to tidewater. They were fully described in our XIIth Report, p. 382, and are as follows: The *Fortin Brick Co.*, the *Patent Brick Co.*, and the *Remillard Brick Co.*

MONO COUNTY

Gorman's Deposit.—It is 1 mile S. E. of Bodie, and is very extensive, proven by a 190′ tunnel and various cross-cuts. It is hard ank soft in places, of many colors, and estimated to be 60′ to 80′ thick. Locally used for brick. Hugh Gorman, of Bodie, owner.

PLACER COUNTY

Gladding, McBean & Co.'s Potteries.—See our IXth and XIIth Reports, pp. 297 and 382. They are at Lincoln, at 170′ elevation. All sorts of architectural terra cotta, vitrified sewer-pipe, 3″ to 30″ in diameter, vases, flower-pots, hollow tile, fire-proofing, pressed and fire brick, etc., are made. The works consist of a 150 H. P. engine and 4 boilers; 16 down-draught kilns; the necessary mixing, grinding, and pugging mills, etc.; and a Boyd's brick-press, for manufacturing pressed brick in the semi-dry way, has been recently added and is in successful operation; 80 tons pressure is said to be applied on each brick. A large quantity of fuel is required. The supply of wood is decreasing, and is being replaced by oil under the boilers and coal in the kilns. The clays (kaolin) used are principally obtained from two large pits at the eastern end of a low ridge 1 mile N. of the pottery. The following section is shown in the southern pit:

Soil	1′
Volcanic breccia	12′
Light, sandy clay	8′
Fine sand	4′
Sandy yellow clay	7′
Sandy clay with gravel	6′

The following section is in the northern pit:

Soil, etc	2′
Volcanic breccia	10′
Fire-clay (for fire-proofing, etc.)	10′
Pipe-clay (for sewer-pipe, etc.)	6′
Fine white terra cotta clay	20′

The clay is excavated in the northern pit to a depth where water interferes. The extent of the deposit is unknown. A hole 60′ deep, bored in the bottom of the pit, is said not to have reached the bottom of the clay, and it is said to underlie the town of Lincoln, where it has been penetrated by wells. One hundred and fifty-six men are employed. J. R. Chambers, of San Francisco, secretary; A. J. Gladding, of Lincoln, superintendent.

RIVERSIDE COUNTY

Elsinore Coal and Clay Co.'s Works.—They are 6 miles W. of Elsinore at 1,200′ elevation. The several pits are near the Elsinore (*Chaney*) coal mine. About 5,000 tons of clay have been shipped to manufacturing establishments. Should the Southern California R. R. extend its tracks to this locality the industry is likely to become one of importance. D. W. McCrea, of Elsinore, superintendent.

McKnight's Clay Works.—It is 4 miles S. W. of South Riverside, at 1,200′ elevation. The clay is of the indurated variety, and occurs as a bed in the Tertiary rocks, having a dip comformable to the sandstone. The clay-pits near Elsinore and in Temecula Canon are mostly Quaternary deposits. The clay is shipped to the pipe-works at South Riverside and to the terra cotta works at Los Angeles. The output at present is 200 tons per month. J. H. McKnight, of South Riverside, owner.

Pacific Clay Manufacturing Co.'s Works.—They are in Temescal Canon, 12 M. east of South Riverside. Several pits are opened in this locality and the clay shipped by waggons to South Riverside, where the pipe-works of the company are located. M. Findlay, of South Riverside, superintendent.

SACRAMENTO COUNTY

Capital Sewer-Pipe Works.—See our Xth Report, p. 509. They are in the eastern part of the City of Sacramento. They consist of two down-draught kilns, 18′ to 20′ in diameter, and a Vaughn sewer-pipe press, of 600 to 1,800 pieces daily capacity, depending upon the size of pipe. The clay used is obtained near Carbondale. Nine men are employed, George Muddox, of Sacramento, owner and manager.

Fountain Bros'. Brickyard.—See our Xth Report, p. 508. It is in the southern part of the City of Sacramento. A superficial deposit of loam, clay and sandy clay, 6′ thick is used for making bricks. It varies in character from loam at the top, through clay, to sandy clay at the bottom, which, by thoroughly mixing, forms good material for bricks. About 1,000,000 bricks are burned annually in common kilns. Ten men are employed when working. W. A. Fountain, of Sacramento, manager.

Kreuzberger & Harvie's (Ryan) Brickyard.—It is near Fountain Bros.' yard, in the southern part of the City of Sacramento. Dark sandy loam, 6′ to 10′ thick, is used; 200,000 bricks are burned per month, or 2,000,000 per annum, in common kilns. Twenty-four men are employed. N. Harvie, of Sacramento, manager.

Sacramento Transportation Co.'s Brickyard.—See our Xth and XIIth Reports, pp. 506 and 383. It is at Riverside, on the Sacramento River, 5 miles below the City of Sacramento. The works consist of five brick-machines of 30,000 daily capacity each; two sixteen-compartment Hoffman kilns of 50,000 daily capacity eoch; a dredger for excavating, and a railroad for transporting the clap from the pits to the works. A 12′ superficial deposit of loam, clay, and sandy clay is used. It is partially mixed by the steam shovel which fills the pits in the lowlands. The demand for bricks now being limited, the works are run intermittently. When running full-handed 160 men are employed, principally Chinese. Frank Dwyer, of Sacramento, secretary; J. O'Neil, of Sacramento, superintendent.

SAN JOAQUIN COUNTY

The agricultural industries are most important, and, with this fact in view, the Stanislaus and San Joaquin Water Co. developed their irrigation canals during the summer of 1895. Manufacturing industries about Stockton, where shipping facilities are good, are also very important sources of revenue. The natural economic mineral resources at present developed consist principally of the well-known natural gas at Stockton, manganese in the western foothills, and brick-clays near the San Joaquin River. A good supply of water may be had from wells, 80′ to 150′ deep, in most parts of the valley lands, and flowing wells are obtained throughout the central part of the valley at about 1,000′ in depth.

Fine, earthy clay occurs in places in the San Joaquin Valley, which, if properly selected, is suitable for making bricks. A number of clay beds suitable for bricks, etc., have been penetrated by wells in Stockton and vicinity, but their depth has prevented their exploitation.

San Joaquin Brick Co.'s (San Joaquin Improvement Co.'s) Yard.—See our XIIIth and XIth Reports, pp. 561 and 394 It is on the San Joaquin River, 5 miles S. W. of Stockton. The material used is a superficial deposit of fine, earthy clay, which contains enough iron to color the bricks bright red. The clay is mined by dredging; the bricks are made in a Potts machine of 40,000 daily capacity, and burned in a fourteen-chamber Hoffman kiln of 18,000 daily capacity; coal is used for fuel. Fifteen to forty men are employed. C. Horton of Stockton, secretary; F. W. Muller, of Stockton, superintendent.

Stockton Terra Cotta Co.'s Pottery.—See our XIth Report, p. 394. It is at Stockton. Terra cotta, sewer-pipe, etc., are manufactured. The clay used is mined at Valley Springs, Calaveras County. Idle. W. C. Morgan, of Stockton, superintendent.

SAN LOUIS OBISPO COUNTY

Ah Louis' Brickyard.—It is 1 mile W. of San Luis Obispo, at about 300′ altitude. Superficial loam is used; the bricks are made by hand, and burned in common kilns. About 800,000 are made per annum for the local demand. Eight Chinese are employed.

SANTA CLARA COUNTY

Dreischmyer's, H., Brickyard.—It is on Coyote Creek, in the suburbs of San Jose. Common stock and pressed bricks are made from a superficial deposit of sandy clay, and burned in a Hoffman kiln; 1,250,000 bricks were burned in the summer of 1895, and 25 men were employed.

Peterson's Brickyard.—It is on the S. P. R. R., in the southern part of San Jose. Common and pressed bricks are from a superficial deposit of sandy clay, 25′ thick, on Coyote Creek, 1 mile E. of the yard. Two patent kilns are used. About 300,000 pressed and 3,000,000 common bricks are made annually. Fifty-five men are employed in summer. T. W. Petterson, of San Jose, manager.

Remillard Brick Co.'s Yard.—It is on the east side of Coyote Creek, in the southeastern part of San Jose. Common stock and pressed bricks are made. The company owns 170 acres, on which is a heavy superficial deposit of clay suitable for making bricks. A Hoffman kiln is used. The clay is hoisted from the pit by steamer-power and transported in side dumping cars to the yards. The works were in operation four monts in 1895, and 60 men were employed. C. Sunard, of San Jose, superintendent.

San Jose Brick Co.'s Yard.—This company have two Hoffman kilns on the Narrow-Gauge Railroad, 1 mile W. of San Jose. A total of about 12,000,000 common and pressed bricks are produced annually. One hundred and fifty men are employed in summer and thirty in winter. J. M. O'Keefe, of San Jose, superintendent.

SANTA CRUZ COUNTY

There is a great variety of clays in this county that have only been tested in a few cases, and but little is known of their general utility. A large percentage of them are indurated, and occur in the form of argillaceous or clay shales. From their light color and general appearance they are locally known as "chalk rock," but are by no means a chalk. They occur in the hills and bluffs about Santa Cruz and elsewhere in the foothills facing the coast. Satisfactory experiments have been made with an indurated clay occurring in large masses, though undeveloped, on the *Hodge ranch*, 1½ miles S. W. of Glenwood, and near the railway. See our Xth and XIIth Reports, pp. 623 and 383.

McCabe Brickyard.—It is situated on the San Lorenzo River, about 1 mile N. of Santa Cruz. Three kilns were burned in the summer of 1895, producing about 422,000 bricks, principally used in the construction of the new court-house in Santa Cruz. The clay is 15′ to 20′ thick, overlies a bed of sand, and consists of the disintegrated mass of granite rocks and shales transported from above by water. Just sufficient iron is contained to give the bricks a bright red color. R. M. McCabe, owner; A. G. Bowman, of Santa Cruz, superintendent.

Hihn's, F. A., Brickyard.—See our XIIth Report, p. 383. It is on San Lorenzo Creek, near Felton. Seventy-five thousand bricks were burned in 1895.

SHASTA COUNTY

Holt & Gregg.—This firm has brickyards located at *Anderson* and *Redding*. At the Anderson yard, situated 2

miles N. of town, a 30,000 per day brick-molding machine is to put up. The past season, 400,000 bricks were burned. Melded and stock bricks are made by the firm, which employs in the busy season as may as 250 men; 30 men are at work at present. Holt & Gregg, of Red Bluff, Tehama County, owners.

SOLANO COUNTY

McKenzy & Reid's Pottery.—It is located in the town of Benicia, and only stove linings are manufactured. The clay worked is obtained principally from Ione, and a small quantity from Hoyt's farm, 1 mile N. of Goodyear's Station. The pottery is run intermittently, and 6 men are employed. J. McKenzy and M. Reid, of Benecia, owners.

Napa.—Clay of good quality and in large quantities exists, but is not utilized at present.

Union Pressed Brick and Terra Cotta Co.'s Works.—These extensive works are at Vallejo. There are four terra cotta and two brick kilns, with ample shed room. Idle. J. W. Pew, of No. 310 Pine street, San Francisco, secretary.

Vallejo Hydraulic Pressed Brick Co.'s Works.—They are 1 mile N. of Vallejo. They consist of a large Hoffman kiln, hydraulic pressed brick machine, steam engine, boiler, etc. Pressed brick were made from the clay shales obtained at the works. Idle. California Bank, of San Francisco, owner.

TULARE COUNTY

At Visalia are two brickyards, owned by T. B. Craycoft and George Ballu, of Visalia. Their combined capacity is about 1,000,000 bricks per year.

To be continued.

CORRESPONDENCE

To the Editor of the California Architect and Building News.

DEAR SIR:—I have not met yet with any rule for the proportion of Risers to Treads of Stairs which seems to be satisfactory generally.

One rule says that the sum of the Riser and Tread should equal 17½" for what reason it does not say.

Another rule starts at a proportion of Tread to Riser of 12" to 5½" and then goes on for every increase of 1" Tread a decrease of ½" Riser.

A third rule says Riser=66 divided by Tread, so that 12" Tread=5½ Riser and 9" Tread=7⅓" Riser.

For purposes of comparison I give the three tables—all in inches:

		No. 1	No. 2	No. 3
TREAD 9 inches	RISER 8½ inches	7 inches	7⅓ inches
" 10 "	7½ "	6½ "	6 2-5 "
" 11 "	6½ "	6 "	6 "
" 12 "	5½ "	5½ "	5½ "

By this it shows they all agree only upon the Riser for a 12" Tread—which forms the start from which they immediately diverge. Number 1 and number 2 stepping along in arithmetical progression, number 1 quicker than number 2, while number 3 goes at a hybrid geometric gait.

The third idea seems the most scientific, for as the steepness of the hill increases, the labor of going up increases in increasing Ratios, or with the same power the shortness of the step increases in a like ratio.

The practice in California is to make the steps a little longer than indicated by 12 to 5, for 12" Tread—possibly because the legs of Westerners are longer than others. The formula—Riser=69 divided by Tread would be nearer to these ideas—this would give the following table reduced to eighths:

Tread 8 inches	.....	Riser 8⅝ inches
" 9 "	.....	" 7⅝ "
" 10 "	.....	" 6⅞ "
" 11 "	.....	" 6¼ "
" 12 "	.....	" 5¾ "
" 12 "	.....	" 5¼ "

Would be glad to hear how this accords with practice of others.

Yours,

STROLLER.

To the Editor of the California Architect and Building News.

DEAR SIR:—The use of slate for roofing purposes is a subject that should engross more of the attention of our architects, contractors and builders. Some of the first named, for some reason known only to themselves, but which is directly contrary to the ultimate interests of those for whom they plan structures, seem to invariably make their specifications exclude the use of slate for roofing or when the owner insists upon slate being used, these architects will manage by some means to have the eastern product provided. The latter action is quite as grevious as it can be, for here in our own State, within one hundred and fifty miles of San Francisco, there are inexhaustible beds of slate of the finest quality. In color it is a beautiful blue black, flawless in every respect and of a most enduring character. This material can be shipped anywhere on this coast and delivered at a cost not greater than eastern or foreign slate, and in some respects for even less, when its superiority as a natural product is taken into consideration.

There is a certain sense of injustice to our own people manifested in these matters, and while every one is ready to cry for the protection of home industries, in the matter mentioned there seems to be a lack of home patronage. This is strikingly wrong regarding public structures where the strictest economy in the long run should prevail and the money of the people put to the best uses.

When the late Page Brown prepared his plans for the new Union Ferry Depot in San Francisco, he represented that a slate roof would be too heavy, and instead recommended the use of corrugated iron. Aside from the fact that the heavy iron frame is amply strong to sustain the weight of a slate roof, the idea of covering such a structure with unsightly corrugated iron ought to have been sufficient to reject his ideas. If this material is used the otherwise attractive building will have a cheap and unfinished appearance. This is not the only objection, for owing to its close contiguity to the water and its exposure at all times to the general humidity, the natural corrosion will be very rapid. In order to partly obviate this difficulty and protect the property, it will require painting every year at considerable expense, and at the end of a decade its service will have ended and a new roof be required to replace it. If slate was used instead, all these objectionable features would be removed; the structure would have the finished appearance it should possess, without any resemblance to a shed; it would never require painting and would last the life of the building itself. It is not even yet too late to remedy this glaring defect and a great advantage to the state in the way of economy would be gained if the plans were changed and an additional appropriation made to effect such a desirable object.

The contemplated roof for the City Hall is to be a combination of corrugated iron and concrete—a heavy cumbrous material not nearly so enduring as slate, and in the end ever so much more expensive. The proposed roof for the New Municipal Building on Kearny and Washington streets is to be of tar, felt, gravel, etc., something that will require frequent expense for repairs.

In contrast to these plans of the state and city compare the action of the Federal Government and its long row of recently erected new brick barracks at the Presidio, all covered with slate.

SLATE ROOFER.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 6.

BUILDING REGULATIONS CONTINUED.

N GLANCING over the Building Regulations—very often called by the narrower name of Fire Ordinances—of some of the large cities of the world including the City of San Francisco, we shall arrange the subject under three divisions, viz.: 1st Those regulations pertaining chiefly to the proper construction of building. 2d Those appertaining to the arrangement of building hygienically. 3rd Plumbing regulations.

FIRST—Pertaining chiefly to the proper construction of building:

In Paris the height of buildings bordering on public streets is determined by the width of the streets, and is measured from the sidewalk to the highest point of the front. The height cannot exceed 12 meters (39.37 feet) for streets 7.80 meters (25.59 feet) wide, 15 meters (49.21 feet) for streets from 7.80 to 9.74 meters (25.59 to 31.96 feet) wide, 18 meters (59.05 feet) for streets from 9.74 to 20 meters (31.96 to 65.62 feet) wide, and 20 meters (65.62 feet) wide. Buildings in any case may not comprise more than seven stories, not including the ground floor. The ground floor story must not be less than 2280 meters (9.19 feet) in height. The height of the other stories and the basement must not be less than 2.60 meters (8.53 feet). In case of attics it is sufficient if the hightest part is 5.60 meters (8.53 feet) in height. Courts of buildings not more than 18 meters (59.05 feet) high must have a surface of not less than 30 square meters (322.92 square feet) with an average width of not less than 5 meters (16.40 feet).

In Berlin no more than five stories will be permitted in buildings intended for permanent occupancy by human beings, and the flooring of the top story must never exceed a height of 17.50 meters (57.41 feet) above the sidewalk. The proposed New York rule is given in our Decembe journal.

In San Francisco on all streets 100 feet and more in width no building shall be constructed exceeding 125 feet in height. On all streets less than 100 feet in width no building shall be constructed exceeding 100 feet in height.

This is altogether too liberal and some more general law should be adopted, such as that of London where no building shall be higher than the width of the street.

In most cities regulations are made establishing a building line for residence parts of the city where the houses have front gardens; this prevents a selfish owner from building in front of his neighbor and should be ordained.

In the San Francisco Ordinance the smallest space allowed between bay windows is specially stated but not space allowed between bay windows or projections and adjoining property. The rule in Berlin is that all projecting constructions extending more than 30 centimeters (11.81 inches) beyond the building line must be kept separated from neighboring properties by a distance equal to at least one and one-half times the distance of the projection.

In the same way provision should be made for thickness of external walls when cut up by many openings. In Manchester whenever openings in external walls in any of the stories are greater than one-half of the whole extent of the vertical face, piers of brickwork or other fireproof supports must be so disposed as to carry the superstructure Piers of this kind must also be placed at the corner or angle of any street on which the building abuts. Openings in party walls are forbidden.

2d. In the matter of those regulations for the treatment of building hygenically—the following are a few of the points requiring consideration:

No street to be less width than forty feet.

No cellar to be used for any other purpose than for storage.

Back to back houses to be prohibited.

In Manchester when the floor of the lowest story of a dwelling house is below the level of the adjoining ground which is immediately in contact this story must be inclosed with double walls having an intervening cavity extending 6 inches above the surface of the ground, being at least 2¼ inches wide and properly ventilated. If the cavity is filled with asphalt it need only be 1 inch wide. The parts of this double wall must be properly tied together with iron, vitrified stoneware, or other suitable material, inserted at distances apart not exceeding 3 feet horizontally and 18 inches vertically. There must be also a damp course of sheet lead, asphalt, slates, or other impervious material at the base of such wall, and likewise at the top of the cavity. The aggregate thickness of the two parts of the double wall, exclusive of the cavity, must be throughout not less than the minimum thickness prescribed for a wall of the same height and length, and belonging to the same class of buildings as that to which the double walls belong.

The yards or open spaces in Manchester, in connection with dwelling houses, to the extent of 150 square feet, must be properly paved with durable and impervious pavement, laid closely and evenly and sloped to a channel leading to a trapped gulley grating so as to carry off all rain and waste water. This pavement is to be so arranged that it shall adjoin the external wall in the rear or at the side of the house, and where practicable it shall extend throughout a distance of 10 feet from said wall.

Fronts of buildings in Paris must always be kept in good

condition. They must be scraped, repainted, or washed at least once in every ten years, under penalty of a fine not exceeding 100 francs ($19.30).

In stables, in Berlin, the floor must be covered with an impermeable material. Sufficient and appropriate receptacles for the reception of stable manure must be provided at a proper distance from the stable. No stable will be permitted to have any openings facing a public street.

In the construction of tenement houses not more than 78 per cent of the ground of the lot shall be covered

The regulations of New York governing the Lighting and ventilation of dwellings are as follows:

VENTILATION OF ROOMS

Every habitable room must have at least one window opening directly upon the street or yard, or upon a court or light shaft.

LIGHT AND AIR SHAFTS

Except as hereinafter otherwise prescribed, every light and air shaft for habitable rooms must be at least 12 square feet in area for a three-story house, 16 square feet in area for a four-story house, and 20 square feet in area for a five-story house; and in every case not less than 2 feet wide in the clear. Shafts or courts between two houses and common to both, must be of double this area, and not less than 4 feet wide. But in houses where there are five interior rooms in a line on a floor, the area of shafts must be 50 per cent greater than above perscribed; and where there are six interior rooms in a line on a floor, the area of each shaft must be at least 100 per cent greater than the minimum above prescribed.

And in every tenement house with apartments on five or more floors, and having more than twelve rooms on a floor, to be erected on an ordinary city lot, except a corner lot, the courts to light and ventilate interior rooms must have an area of at least 265 feet; and where there are twelve rooms on a floor, the area of such courts must be not less than 215 square feet.

WINDOWS

The windows of habitable rooms which open on shafts or courts must be hung with weights so as to slide vertically, each window to be not less than 12 square feet in area.

VENTILATION OF WATER-CLOSET COMPARTMENTS

Water-closets shall not be ventilated by a shaft which ventilates habitable rooms; and where they do not open otherwise to the external air, they must be ventilated by means of a separate shaft, not less than 3 square feet in area, to extend above the roof, and arranged for the admission of light and air at the top in like manner as the shafts for rooms.

WATER-CLOSETS ETC.

No privy vault or cesspool shall be allowed, if water-closets can be connected with the street sewer. At least one water-closet shall be provided for each two families. The general privy accommodation shall not be placed in the cellar,

YARDS AREAS, ETC.

Yards, areas, cellars, and light courts shall be properly graded and drained and flagged or concreted.

ATLERATIONS AND ADDITIONS

No alteration in the light and ventilation of the premises for which this permit is granted shall be made, except upon the express written approval of the superintendent of buildings; nor shall any additional structure be erected upon the lot except upon such approval and a special permit.

3rd. Plumbing Regulations—In New York these are put in force by the Department of Buildings where they properly belong and not to the Department of Health.

No tenement house can be erected until the plans for light and ventilation have been approved, nor can the plumbing and drainage of any building be executed until the plans have been approved by the department. The specifications for plumbing and drainage are exceedingly minute.

SPECIFICATIONS FOR PLUMBING AND DRAINAGE

GENERAL DIRECTIONS

It is expressly understood that these specifications and the drawings submitted herewith to the department of bnildings for approval constitute together, as approved by said superintendent of buildings, the plans for the plumbing and drainage of the buildings herein described; and in respect to all work not covered thereby the plumber is to be governed by the rules and regulations as to plumbing and drainage established by the superintendent of buildings.

The plumber will furnish all materials and perform all labor requisite and necessary for putting up and completing all the plumbing work in a good and thoroughly workmanlike manner, according to the plans therefor as approved by the superintendent of buildings.

All material will be of good quality and free from defects.

The diameter of pipes herein specified are inside diameters.

The —— will properly close all openings in floors and ceilings about lines of drain and vent pipe, so as to prevent the passage of foul odors from one floor to another along said line of pipe.

The plumber will send notice to the superintendent of buildings when the work will begin, and also at various times during the progress of said work before any part of it is permanently covered.

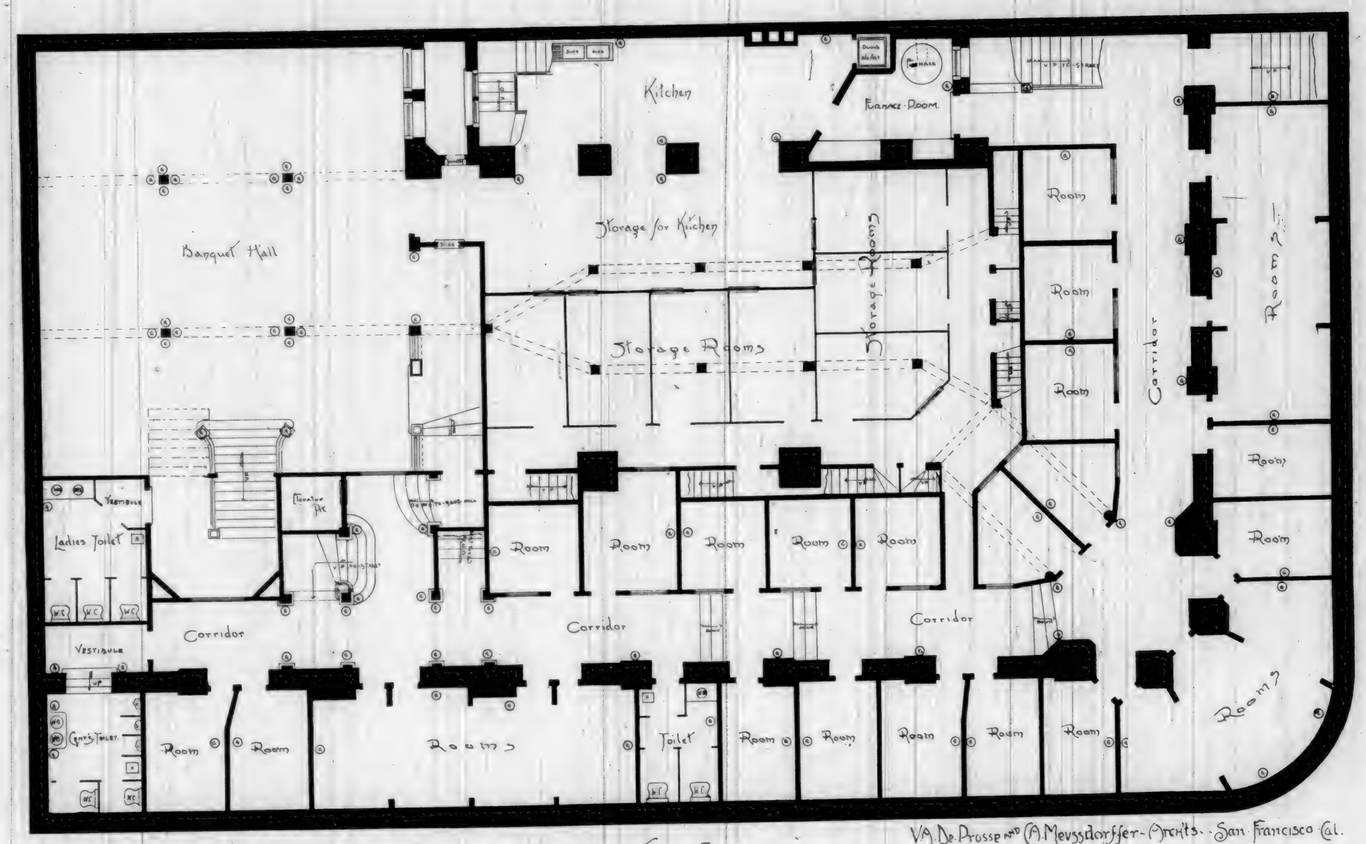
The plumber will properly protect all pipes and fixtures as soon as set, and close all pipe openings so as to prevent obstruction and damage.

The —— will do all the excavating and refilling required for the proper carrying out of these specifications, except as such work is herein otherwise specially provided for.

The plumber will obtain and pay for all necessary permits, and comply with all corporation laws relating to the subject-matter of these specifications.

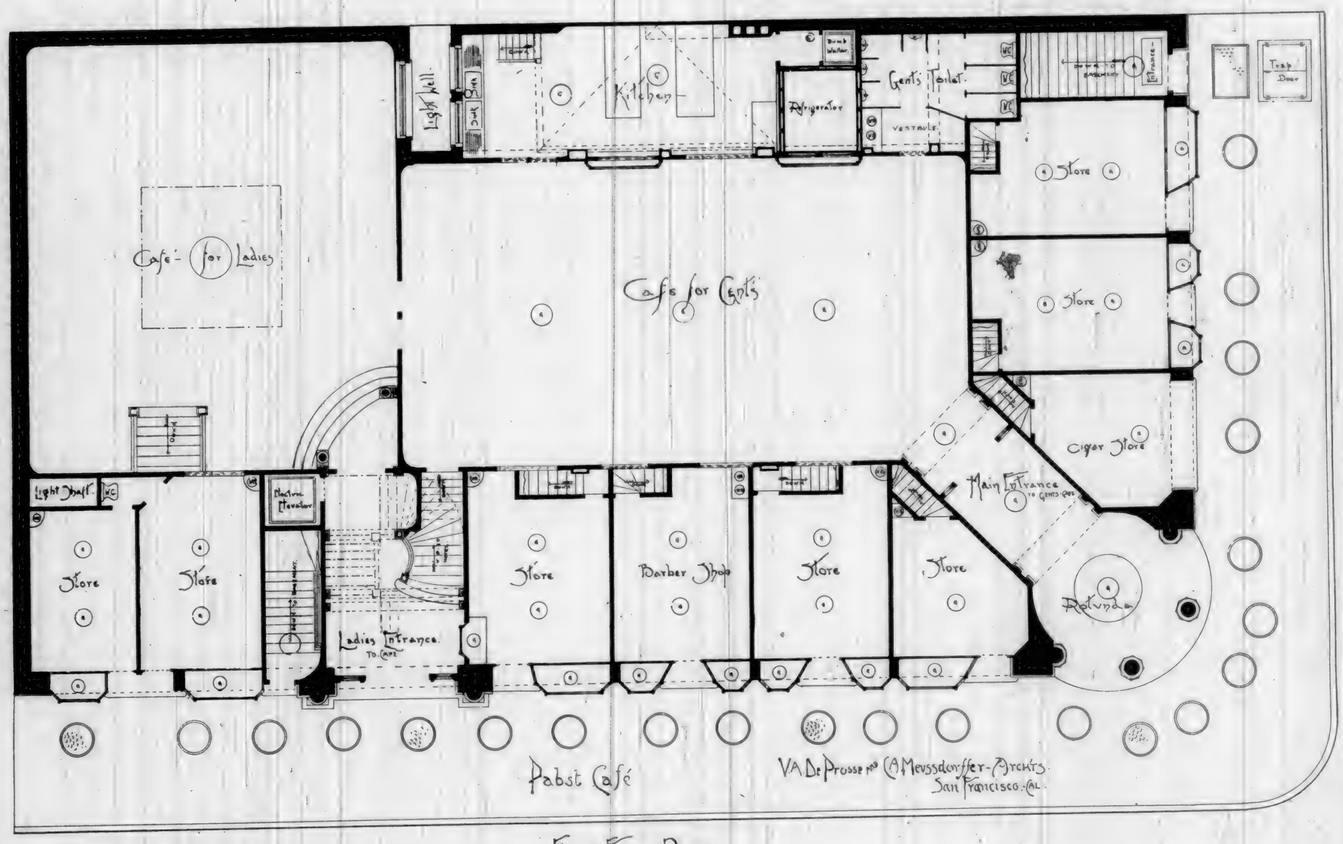
After the completion of the work under the plans and specifications, and before its final acceptance, the plumber must obtain the certificate of the superintendent of buildings

ST. GILES, CHEDDINGTON,
KENT, ENGLAND.



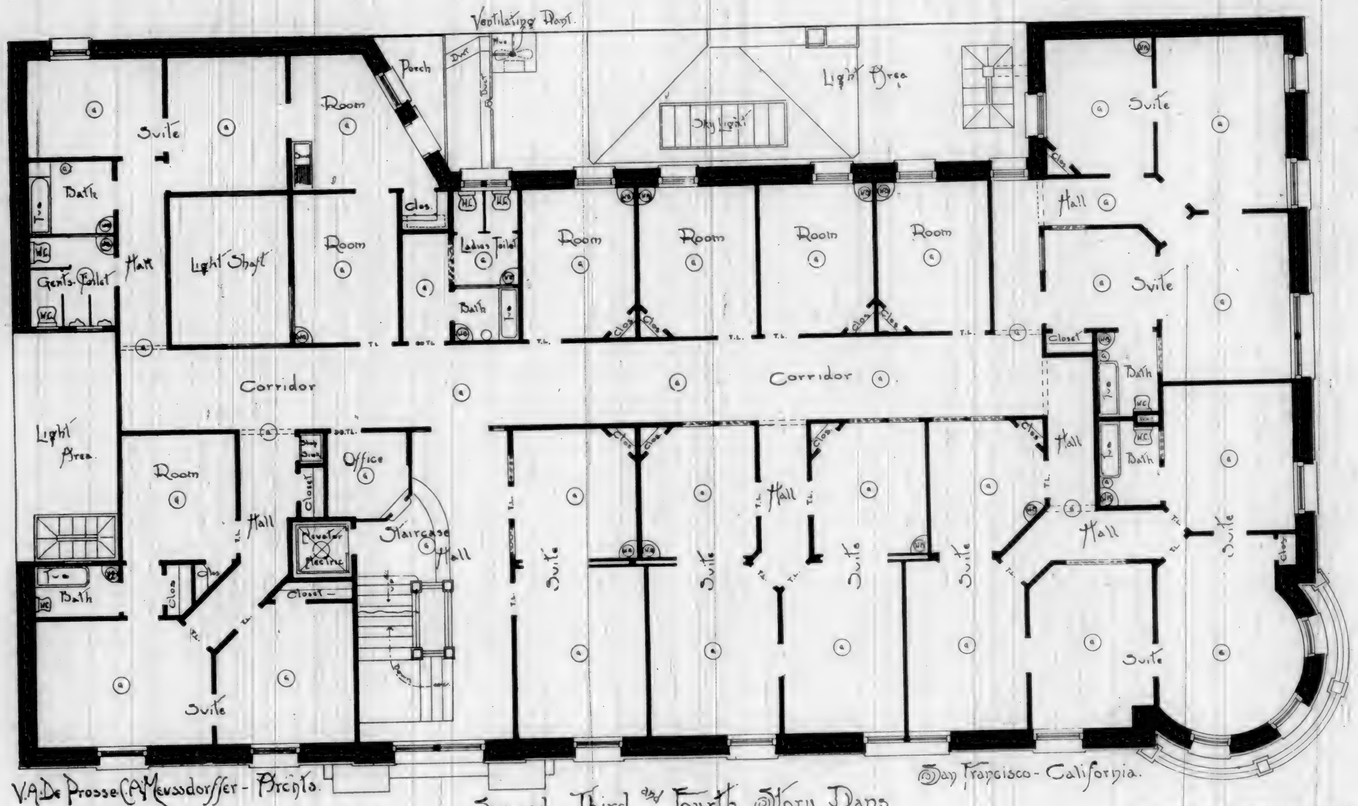
BASEMENT-FLOOR-PLAN.

V.A. De Prosse and A. Meyssdorffer - Archts. - San Francisco Cal.



FIRST-FLOOR-PLAN.

BRITTON & REY. PHOTO. LITH.



V.A. De Prosse & A. Meyssdorffer - Archts. San Francisco - California.

Second - Third and Fourth Story Plans

Design Copyrighted by V. A. De Prosse, 1896.

PAPST CAFÉ. COR. POWELL AND ELLIS STREETS

DE PROSSE & MEUSSDORFFER, ARCHITECTS

that there is no violation of law on record against said work, and also a water permit from the department of public works. He will then turn on the water and leave everything in perfect working order.

I—MATERIALS, ETC.

EARTHENWARE PIPE

All earthenware pipe herein specified must be hard, smooth, salt glazed, and cylindrical, and not less that three-fourths of an inch in thickness. Each length will be perfectly straight and free from any fire cracks, flaws, blisters, or other defects.

All special fittings to be of the same quality as the pipe.

CAST-IRON PIPE.

All cast-iron pipe and fittings must be sound, cylindrical and smooth, free from cracks, sand holes, and other defects, of a uniform thickness, and of the grade known in commerce as extra heavy. All iron pipe will be firmly secured in position by proper pipe supports placed not more than 5 feet apart. No tar-coated pipe will be used, but after the pipes have been tested and accepted by the inspector they will be coated with ——.

The following average weights per linear foot will be accepted:

	Pounds
2 inches	5½
3 "	9½
4 "	13
5 "	17
6 "	20
7 "	27
8 "	33½
10 "	45
12 "	54

All joints in cast-iron pipe will be made with picked oakum and molten lead, and the plumber will make the joints impermeable to gases by bedding the lead with hammer and calking iron. For each joint in cast-iron pipe 12 ounces of lead must be used to each inch of diameter of the pipe in which the joint is made. No putty or cement joints will be permitted. The lead used for calking will be pure, soft pig lead; no old joints or other defective material will be used.

WROUGHT-IRON PIPE

(If any wrought-iron pipe is to be used in the plumbing and drainage of the buildings it should be here specified.)

LEAD-PIPE

All branch lead soil, waste, and vent pipes, including bends, must be of the best quality and of not less than the following weights per linear foot.

Diameter	Weight per foot lbs. ozs.
1½ inches	3 8
2 "	4
3 "	6
4 "	8

All connections of lead with iron pipes will be made by heavy brass ferrules of the same size as the lead pipe, set in the hub of the branch of the iron pipe and calked in with lead, the lead pipe to be attached to the ferrule by a proper solder-wiped joint when practicable. No putty or cement joints will be permitted.

All connections of branch lead pipes will be made by wiped joints.

All lead pipes will be firmly secured in place with hard-metal tacks and screws, placed not more than 3 feet apart, and all horizontal lead pipes will be well supported for their whole length by shelves or carrying strips, to be provided and put up by ——.

[Most of the information in these series of articles is culled from the Eight Special Report of the Commissioner of Labor, U. S. A.]

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street.

SETH BABSON, Pres. — W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. — JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, PRES. — ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec'y. — AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. — JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. — W. J. MARSH, Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. — W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. — EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. — J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. — JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. — M. V. BRADY, Sec.

BOOKS AND PERIODICALS.

—THIRTEENTH REPORT OF THE STATE MINERALOGIST for the two years ending September 15, 1896. California State Mining Bureau. J. J. Crawford, State Mineralogist.

A very exhaustive well arranged and useful report, reflecting great credit on Mr. Crawford its compiler. It also includes the report of the trustees of the State Mining Bureau and a memorial notice of J. Z. Davis, who died Oct. 28th last and was one of the trustees and a large contributor to the Museum and Library and took a large interest in the success of its Bureau.

The statistical tables and information are very thorough and exhaustive and includes the field assistants' mineralogical reports from every county in the State condensed into concise blocks.

Nineteen thousand five hundred and eight men are now engaged in mining and quarrying in the State while the total value of all mineral products is $22,844,644.

While gold still continues to be by far our largest mineral product, the annual value of our non-metallic substances has now reached $1,348,280; hydrocarbans and gasses, $1,404,321, and structural materials, $2,713,755. It is worthy of note that in addition to the precious metals there were 36 other mineral substances produced.

The great value of these reports are attested by the demand for copies, which soon depletes the edition—the recommendation of having them stereotyped is a good one. Another recommendation of Mr. Crawford's also deserves attention when he says:

"If possible, this Bureau should be placed upon a permanent basis in regard to funds, the same as the University, etc., in order to produce work of a superior character. As long as it leads an ephemeral life, existing from Legislature to Legislature, it is impossible to undertake certain lines of scientific work that the character of the institution demands, and which might otherwise be stopped, if commenced, through lack of funds."

Besides the Biennal Reports this Bureau issues Bulletins at intervals. During the present Administration the following have been issued: Bulletin No. 2—Mine Timbering by W. H. Storms; No. 3—Gas and Petroleum Yielding formations of the great valley of California by W. L. Watts; No. 4—Catalog of California Fossils by Dr. J. G. Cooper; No. 5—The Cyanide Process, its Practical Application and Economic Results by Dr. A. Scheidel, E. M.; No. 6—Cal. Gold Mill Practice by E. B. Preston, M. E.; No. 7—Mineral Statistics of California for year 1894 by Chas. G. Yale; No. 8—Mineral Productions of California for 1895 by same; No. 9—Mine Drainage, pumps, etc., by Haus C. Behr; No. 10—A Bibliografy relating to the Geology, Palœontology and Mineral Resources of California by Capt. A. W. Vogdes; No. 11—The Oil Yielding Formations of Los Angeles, Santa Barbara and Ventura Counties by W. L. Watts.

In the latter part of this volume will be found original papers of great interest and instruction. The able article on "Compressed Air," by Arthur De Wint Foote, will direct attention to this most important means of transmitting power, and will enable the student to compare its efficiency and economy with that of electricity.

The value of the article on "Timber Preservation," contributed by John D. Isaacs, Chemist incharge of the Southern Pacific Company's (Pacific System) timber-preserving plants, can hardly be overestimated.

Dr. Salathe's paper will prove a valuable acquisition to the technical literature on the subject of the rapidly growing industry, petroleum. His researches are extensive and have never before been given to the public.

The very excellent article by W. F. C. Hasson, Electrical Engineer, on the several electrical transmission plants in successful operation in this State, together with the numerous illustrations, will prove a valuable addition to this class of literature. It is given in a full, yet concise and practical form, that will be appreciated by business men.

The portion of the report devoted to structural materials is of peculiar interest to architects, engineers and builders—and we shall make liberal excerpts from the same for the benefit of those of our readers who may not be able to get a copy of the full report.

LIPPINCOTTS' MAGAZINE for February, 1897, contains the complete novel "Under the Pacific" by Clarence Herbert New. A very improbable story at the same time very interesting and extremely charming at the end.

The FORTNIGHTLY REVIEW for January contains a defence of Cornelius Herz, at one time a resident of this city, from the charge of fraud in connection with the Panama Canal scandal. The writer makes out a very fair showing for Dr. Herz, who appears to have been selected as a scape-goat for those high in authority in France. The fact that after a long detention in England at the request of the French Government no proof being brought forward against him he was allowed to go free confirms the view of the writer that he was unjustly treated by both the French and English Governments.

Proceedings of the THIRTIETH ANNUAL CONVENTION AMERICAN INSTITUTE OF ARCHITECTS—Held in the rooms of the Engineering Association of the South, Nashville, Tennessee, Oct. 20th, 21st and 22, 1896. This number contains an engraving of Geo. B. Post, pres., and contains a full report of the proceedings of the convention, which cannot fail to be of interest to the architects all over the country.

SAN FRANCISCO MUNICIPAL REPORT for the fiscal year, 1895–96, ending June 30, 1896, published by order of the Board of Supervisors. This bulky volume contains beside the usual reports of the various city officers, a fine engraving of the New City Hall as well as the protraits of our late Mayor and Supervisors.

If not an interesting document it is certainly a valuable one as a record of what has been done during that year.

SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

THE business of the Chapter at the February meeting was the consideration of a paper by Mr. G. A. Wright, a quantity surveyor, entitled "Bills of Quantities and Their Relation to Contracts," on the many advantages that would result to all concerned, if such a system as outlined in the paper could be introduced.

A number of architects and contractors discussed the pros and cons of the question but the important matter of deciding who would or should pay for the expense of preparing the quantity estimates was not decided, although all present agreed that it would be a great convenience, and save much waste of time to contractors and lessen the chance of errors in estimating. The contractors argued that as they gave their time to estimating on plans for the benefit of the owner, the latter should bear the cost. The architects were positive that the amount of their present compensation was all that could be collected from clients and that it would not be practicable to directly tax them the additional one or two per cent that would be necessary to defray the fees of the quantity surveyor, and the result will be that the present customs will continue till the contractors interested combine for their own benefit, and refuse to estimate on work unless a bill of quantities accompanies the plans.

PAPST CAFE.

THE building which is the subject of our illustrations this month is the newly completed Pabst Cafe, located on the north east corner of Powell and Ellis streets.

The building is four stories in height, designed by architects De Prosse & Meussdorffer, and faces the Baldwin Hotel on one corner while diagonally opposite the "Auzerais" on the other.

The architects have planned a very creditable structure, carefully studying the Rococo details which decorate the facades; yet though the ornamentation is elaborate, it is in excellent taste and the danger of overloading the fronts has been skillfully avoided. The entrance on the corner is circular in form, and this plan has been successfully carried up as a dominating motif in the design, terminating in a well proportioned dome.

It is not out of place when a pleasing building has been effectively carried out to give the general public some information as to the individuality of those who have by their exertions carried out the ideals of the designers and made them real and substantial.

It is but just that they should receive some credit for their care and skill, and to those of our readers who are not familiar with the details of the constructive arts, it will be of considerable interest to follow in imagination some of the many and varied trades and arts, craftsmen, and mechanics, who have contributed time and labor, strength and skill, to produce such a modern business structure as we show. Few people outside of those directly employed on the building, fully realize how numerous and varied are the different kinds of labor both skilled and unskilled, that are here brought together. Passing over the great amount of preliminary work done by the architects in preparing the plans, specifications and detail drawings, the first man directly employed is the surveyor, who gives the points, lines and grades establishing the site of the building and its starting points with relation to the street levels—next in order is the grader with his carts and wagons who excavates for the subterranean portions of this building and prepares the trenches for the foundation walls—then comes the Master Mason, in this instance J. Ferd Wagner of 154 Clara Ave., who lays out the work and instructs his assistants how to most economically handle the men and dispose of the materials, seeing the bricks are neither too wet nor too dry, but just moist enough to obtain the proper adhesion of the mortar, too much moisture in the brick preventing suction, and too little absorbing the water in the mortar too rapidly; but our Master Mason is in this case an experienced man and all goes smoothly. Once the walls are up to the line of the street another man takes temporary charge.

CARPENTER WORK.

Ranking in importance with the brick work comes the carpenter work, in this case carried out under the direction and control of C. Schutt, of 13 Shotwell street, an experienced mechanic who has contributed his full share towards the successful completion of the building, and who takes a just pride in the work-man-like manner in which his men turn out their work.

Mr. Schutt has well earned the respect to which his many good qualities entitles him, by his care and attention to all work entrusted to his supervision, and he has as a necessary consequence always been able to keep busy in spite of any hard times. He is at present engaged in fitting up the elaborate and elegant interior of the Oberon, which the public have the pleasure of inspecting.

PLUMBING WORK.

The next trade on the long list is that of the plumber, combining the two traits of utility and beauty; filling the walls and floors of the building with a complicated net work of pipes for supply water and gas throughout the building and conducting the waste from the building—and beautifying the utilities with tiling and toilet fixtures such as were never dreamed of by the ancients. H. Williamson of 413 Sutter street, was chosen to do this work, and no one is more competent than he to carry out this particular work, his practical experience having been acquired by years of hard persistent work. He has at his command a staff of skilled assistants who from long familiarity with the best class of work are able to execute Mr. Williamson's orders to do the work as it should be done.

SHEET METAL AND CORNICE WORK.

The sheet metal and cornice work was performed by W. Hite of 224–226 Mission street, in a manner that commends itself to the observer for the neatness and finish, adding to the attractive appearance of the building at the same time it protects it from the elements.

PLASTERING WORK.

Mr. W. C. Watson of 40 New Montgomery street, did the plastering.

DECORATION WORK.

In all the various industries that have thus far been described, usefulness has entered largely into the results accomplished. Yet in our modern life we are learning more and more of the refining influences of beauty in form and

color and the building on which so much thought and care and time and money has been expended yet lacks the finishing touches.

But here comes in our decorator Mr. E. A. Otto of room 81 St. Ann's Building, who gives completeness to whole by copying the splendors of Aladdin's palace for the enjoyment of the patrons of this modern counterpart in the city by the Golden Gate which is rapidly becoming a Metropolis second to none, where art, science and industry will flourish, growing with the needs of its people, learning by its own and its neighbors experience to solve the complicated questions of modern society, till work is justly apportioned to all, and its results as justly divided by all.

ART GLASS.

The beautiful Art Glass in Ladies and Gents Cafe was made and furnished by the well known California Art Glass Works, 103–105 Mission street. The interior finish in the ladies department beidg in the Rococco style, the windows and ceiling light were made in glass to harmonize, while the gents department is in the German Renaissance to conform with decoration of the same. It is unnecessary for us to eulogize the product of the firm mentioned above, as this work again proves that their reputation for first-class work is well earned.

HEATING.

The heating of this entire building is accomplished by a low pressure steam plant, being installed in the building by J. G. Grannis & Co., the well known firm of heating and ventilating engineers, 544 Mission street, and consists of some one hundred radiators and one horizontal sectional steam boiler manufactured by The Novelty Iron Company of Canton, Ohio, with all of the latest automatic improvements and with the complete and scientifically arranged pipe system this plant is a perfect success and but another evidence of the firms great ability in their special line.

VENTILATION.

The ventilation of the first floor and basement is done by the well known method of exhausting the air. Galvanized sheet iron pipes are run from the various rooms and corridors to the light well over the kitchen, where they are connected to one large pipe, 24" diameter, which extends 10 ft. above the roof. The exhausting fan, which is of the windmill or disc pattern, is placed on top of this large pipe and connected to an electric motor, placed on a platform on the roof and housed to keep off the rain. The rheostat for starting the motor is placed in the kitchen, thus giving contro of the fan and motor on the roof from the first floor.

The fan revolves at a speed of 400 revolutions per minute and exhausts 10,000 cubic feet of air per minute. This changes the air in the Gentlemen's Cafe, Ladies Cafe, Banquet Hall and Corridor four times an hour. In the kitchen the air is changed every five minutes, thus keeping the building free from smoke and smell from the kitchen. This method of ventilating has been placed in several cafes and restaurants in San Francisco with uniform success.

This work is being done by the George H. Tay Co., of 610–620 Battery street.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Consideration in Building Contract.—A building contractor having defaulted before completion of the work, and having permitted liens to accrue against the property in violation of his bond, the contract was assigned to his sureties, and the balance of the price paid to them, on their agreement to finish the work and discharge the liens to an amount not to exceed the amount of the bond plus the amount paid them on the contract. The court held that such agreement was valid and was supported by a sufficient consideration.

McHenry v. Brown, Supreme Ct. Minn., 88 Northwestern Rep. 847.

Liquidated Damages and Penalties.—Where a contractor binds himself in a fixed sum for the performance of the contract, without stating whether such sum is intended as a penalty or as liquidated damages, and without regard to the magnitude or the number of breaches that may occur, or the amount of damages that may issue, and the contract is such that it may be partially performed and partially violated, the sum as fixed is a penalty.

City of El Rene v. Cullinane, Supreme Ct. Okl., 46 Pacific Reporter, 510.

When Contractor is not Liable.—A workman on a building, who fell and was injured by reason of stepping upon a joist which had just been sawn nearly through by another workman, who had momentarily left it, cannot recover from his employer for such injury, on the ground that he should have been notified of the danger.

McCann v. Kennedy, Sup. Ct. Mass., 44 N. E. Reporter, 1055.

What is not Notice to Owner.—The fact that a subcontractor is working on a house does not constitute notice to the owner not to pay the contractor, under the law entitling a subcontractor to lien upon notice to the owner.

Clark v. Edwards, Supreme Ct. N. C., 25 S. E. Reporter, 794.

Negligence in Building Operations.—One who extends an excavation on his lot into the sidewalk of a public street, without properly guarding same or taking any means to warn the public of the danger, is liable for injury to a passer-by who falls into the pit while in the exercise of ordinary care.

Berchers v. Calvin, Ct. Civ. App. Tex., 37 S. W. Rep. 178.

Liability on Contractors' Bond.—Where a building contract, based on plans and specifications made a part thereof, provided that the contractor should make any alterations or additions required by the owner, the price to be subject to addition or deduction for same, as might be agreed upon, the sureties on the contractor's bond cannot defend against liability because the owner in completing the building after its abandonment by the contractor, as was authorized by the contract, deviated from the specifications, nor because changes were made before the abandonment with the assent of the contractor.

De Mattes v. Jordan, Supreme Ct. Washington, 40 Pacific Rep. 402.

BUSINESS MOSAICS.

The John Douglas Co of Cincinnati, Chicago, Philadelphia and San Francisco are the manufacturers of an absolutely noiseless tank for water closets, as well of a superior quality of seats and crockery in this line of goods. Their show room, 208 Ellis street, San Francisco, under the management of Edward Douglas, is well worth a visit from those interested in building.

Poet to editor—I send you a poem, "Why Do I Live?" Please answer. Editor—Because you send your poem by mail.—*Texas Shiftings.*

Cabot's Anti-Pyre, a wonderfully cheap and effective fire-proof paint for interior work, is being handled in this city by Mr. Charles J. Waterhouse, 640 Mission street, general agent for the Cabot Specialties. Used on the interior wood work of factories, warehouses, car-sheds, work-rooms and all places subject to fire risk, it makes the wood non-inflammable, greatly increases the light by the reflecting power of its brilliant white, and is cheaper in the end than whitewash.

"I have cured Bliggins of his horrible superstition at last," the philanthropist exclaimed. "How did you manage it?" "I offered to lend him $13."—*Washington Starr.*

San Francisco Lumber Co., wholesale and retail dealers, foot of Third street, with yards also at Channel St., bet. 4th and 5th streets, is a good place to buy lumber. Uptown office for orders, 405 Montgomery street, J. N. Curtis, manager.

Parson to youngster fishing on Sunday—My boy, I'm surprised to find you here. Youngster innocently—Do you know some other place where they bite better?—*Up-to-Date.*

Stevens' Patent Chimney, endorsed by architects and builders and approved by the fire wardens is advertised on page iii of this journal; every thing from chimney tops to flower pots can be obtained from F. M. Stevens cor. Larkin and Market street, San Francisco.

She—You wife reminds me a great deal of my sister who is in Australia. He—She reminds me a great deal of her first husband, who is Lord knows where.—*Pick-me-up.*

We doubt, if you spend ten thousand dollars for a bath, as it is said one of the Van Ness avenue residences is about to be emblished with, you can have a better bath than can be obtained by applying to S. M. James for one of his Imperial Porcelain Roll Rim Bath Tubs—manufactured by The J. L. Mott Iron Works, see cut on page v of this journal—call at room 27 Flood Building and be convinced of the truth of this assertion.

She—Did you tell Fibs of our engagement? He—Yes. She (aggrieved)—You promised that you would say nothing about it. He—It's perfectly safe with Fibs; no one ever believes him.—*Washington Times.*

Keathinge & Leonard are doing business at their new office in the Hobart Building, 532 Market street, everything in the way of cement work, where twisted iron is required, is right in their line. Work by this firm can be depended upon as being just what is represented.

She—You should see my swell fellow, Fanny. Fanny (enviously)—Your never had a swell fellow. She—Yes I have, he's very swell, he's got the dropsy.

The Pacific American Decorating Company, manufacture stained and art glass—this offers a good opportunity to have your house decorated with landscapes, marine views, to say nothing of having your favorite dog and horse reproduced in your study window—26 O'Farrell street, room 3; 19 Fremont street and 1213 and 1215 Howard street are the places to go if you want the work done.

"The duke's marriage to the American was a bitter pill for his family to swallow." "That is the way with medicine for improvished blood."—*Detroit Tribune.*

Bradley Bros. manufacture a cement tray such as every good house wife wants to have, it is of the best Portland cement and guaranteed not to leak, crack or sweat. Office and factory 53–57 Tehama street.

Geo. Rischmuller, 320 Nineteenth St., San Francisco, make the door opener and closer that answers the purpose to perfection. See advertisement on page iv of this journal where its claim of being just what you want is fully explained.

CITY BUILDING NEWS.

Bartlett near 22d. Two-story frame; owner, John J. Janssen; architects, Martens & Coffey; contractor, J. Bucker; signed, Jan. 29; filed, Jan. 30; cost $3000.

Brannan near 7th. Frame building for barn; owner, H. P. Smith; contractors, Miller & Fredricksen; cost $1725.

Bush near Mason. Three-story frame; owner, Harris Samuels; architect, C. A. Meussdorffer; contractors, A. Caccia and John Peeavich; signed, Feb. 10; filed, Feb. 11; cost $5710.

Dupont near Vallejo. Excavation, etc., for two-story brick; owners, Maccono & Rosso; architect, Frank S. Van Trees; contractor, J. Byron; cost $1450.

Dupont street. Two-story brick building and basement; owner, Isidore Merle; architect, Frank S. Van Trees; contractors, Maccono & Rosso; signed, Jan. Jan. 23; filed, Jan. 24; cost $2695.

Fell near Ashbury. Two-story frame; owner, Mrs. Bertha Bamberger; architects, Shea & Shea; contractor, J. W. Coburn; signed, Feb. 1; filed, Feb. 5; cost $4940.

Fillmore near Filbert. One-story brick; owner, Mary McCarty; architects, Shea & Shea; contractor, Neil Mallov; signed, Jan. 19; filed, Jan. 22; cost $2275.

Geary and Stockton. Work on six-story brick, flooring, etc.; owner, Spring Valley Water Works; architect, Clinton Day; contractor, S. H. Kent; signed, Jan. 22; filed, Feb. 8; cost, $8029. The same contractor, for work on 3rd, 4th and 4th stories; cost $28,411.50. Plumbing, etc.; contractor, Ickelheimer & Bro.; cost $4800. All work above 2d story, contractor, S. H. Kent; cost $12,397.

Geary near Powell. Concrete and artificial stone for five-story brick; owner, A. Aronson; architect, C. R. Wilson; contractor, J. Leonard; signed, Dec. 26; filed, Jan. 22; cost $8750. Cast iron work; contractor, The Alton Iron Works; cost $4000. Wrough iron work and steel beams; contractor, Judson Mfg. Co.; cost $3750.

Geary and Williams. Excavation, brick and iron work for four-story brick; owner, Grace Armont; architect, C. R. Wilson; contractor, Robert Boyd; signed, Jan. 25; filed, Jan. 27; cost $4688. Plumbing; contractors, Burwick & Spinks; cost $1200. Tin work, etc., T. J. Guilfoy; cost $1194.

Geary and Williams. Carpenter and stair work for four-story brick; owner, Grace Armont; architect, C. R. Wilson; contractors, Hawkins & Lindsey; signed, Jan. 28; filed, Jan. 29; cost $3500.

Green near Leavenworth. One-story frame; owner, A. Trueworthy; architect, M. G. Bugbee; contractor, P. J. Brennan; signed, Jan. 25; filed, Jan. 26; cost $988.

Hartford street. One-story frame; owner, G. F. Vella; contractor, John Flaherty; signed, June 22; filed, Jan. 23; cost $1380.

Hayes near Scott. To build; owner, F. W. Keuerleber; contractor, J. J. Mausen; signed, Feb. 5; filed, Feb. 9; cost $3115.

Howard, near 8th. Three-story brick; owner, M. Numan; contractor, for mason work, J. Hagavan. Galvanized iron work; contractor, J. Guilfoy; cost $30,000.

Hyde near Golden Gate Ave. To build; owner, G. W. Rook; architects, Townsend & Wyneken; contractors, Holm & Shelbley; signed, Jan. 30; filed, Jan. 30; cost $1530.

Lot 13 block 47 Sunnyside. Two-story frame; owner, Ann Towns; architect, H. D. Michell; contractors, John Barrett & D. McGrath; signed, Jan. 25; filed, Jan. 27; cost $1895.

Lyon near Grove. To build; owner, H. W. Stokes; contractors, Bailey & Muller; signed, Jan. 13; filed, Jan 30; cost $2500.

Market and Third. Interior tile finish, etc.; owner, Claus Spreckels; architects Reid Bros.; contractors, Gladding, McBean & Co.; signed, Jan. 7; filed, Jan. 25; cost $17,115.

Market and Third. Concrete flooring, metal lath ceiling; owner, Claus Spreckels; architects, Reid Bros.; contractors, Gray Bros.; signed, Jan. 6; filed, Jan. 23; cost $16,715.

Market and Third. Rough carpenter work; owner, Claus Spreckels; architects, Reid Bros.; contractors, Thomas Day & Son; signed, Jan. 23; filed, Feb. 1; cost $5550.

Masonic Ave. near Frederick. Two-story frame; owner, Wm. T. Martin; architects, Shea & Shea; contractor, J. A. M. Donald; signed, Feb. 10; filed, Feb. 12; cost $2338.

Masonic Ave. near Frederick. To build; owner, Carl Griese and wife; architect, Carl Griese; contractor, A. G. Johnson; signed, Feb. 9; filed, Feb. 10; cost $1275.

Masonic Ave. near Waller. Two-story frame; owner, Lyman D. Foster; architect, W. H. Lillie; contractor, Isaac Penny; filed, Jan. 20; cost $2545.

McAllister near Devisadero. Two-story frame; owner, Evlyn G. Graney; architect, Phillip Rive; signed, Jan. 28; filed, Feb. 18; cost $5250.

Montgomery dear Sutter. Alterations and additions; owner, Alexander D. Keyes; architects, Shea & Shea; contractor, P. Griffin; signed, Jan. 18; filed, Jan. 20; cost $4497.

Nineteenth and Minnesoto. Three-story frame; owner, P. Cronin; architect, M. J. Welsh; contractor, C. J. Antwiler; signed, Jan. 26; filed, Jan. 26; cost $2415.

Oak near Ashbury. To build; owner, Leon J. Hirth; architect, E. Depierre; contractors, Maccono & Rosse; signed, Jan. 20; filed, Feb. 1; cost $3400.

Pierce and Greenwich. Two-story frame; owner, F. G. Eichorst; architect, C. A. Meussdsrffer; contractors, Stevens & Foster; signed, Feb. 1; filed, Feb. 4; cost $1949.

Sacramento and Scott. Two-story brick; owners, F. W. and Sarah Marion; architect, C. A. Robertson; contractor, Wm. Bell; filed, Feb. 1; cost $9000.

Sacramento neas Buchanan. Alterations and additions; owner, Phoebe Lowenthal; architects, Salfield & Kohlberg; contractors, C. D. Dean & Co.; signed, Feb. 9; filed, Feb. 9; cost $1415.

Second Ave. near Lake. Cottage; owner, Richards Trevers; architect, Richard Trevers; contractor, W. P. Kenney; cost $1045.

Sixth Ave. near California. Cottage; owner, Margaret Whittman; contractor, L. C. Bergren; signed, Jan. 19; filed, Jan. 26; cost $1358.25.

Seventeenth near Sanchez. To build; owner, Richard O'Connor; contractor, T. C. Cochran; cost $2775.

Sutter and Hyde. Wrought iron grill work for six-story brick; owner, Dr. Julius Rosenstern; architects, Salfield & Kohlberg; contractor, Richard Lutze; signed, Dec. 24; filed, Jan. 28; cost $1848.

Sutter near Larkin. Three-story frame, carpenter work; owner, Dr. Henry Kreutzmann; architect, Oscar Haupt; contractor, Henry Jacks; signed, Jan. 20; filed, Jan. 30; cost $7508. Painting; contractor, J. F. Sullivan; cost $775. Plumbing; contractor, E. J. Duffy; cost $920. Plumbing; contractor, E. J. Duffey; cost $920. Electric work; contractor, California Electric Work; cost $236.

Twenty-first near Folsom. Two-story frame; owner, H. Bullwinkle; architect, Henry Geilfuss; contractors, Horstmeyer; signed, Feb. 3; filed, Feb. 4; cost $2700.

Twenty-fourth near Noe. Additions; owner, Anne Drolette; contractors, A. De Lair and D. T. Francoeur; cost $1400.

Twenty-seventh near Dolores. Cottage; owner, Alfred Ross; architect, C. M. Rousseau; signed, Feb. 4; filed, Feb. 5; cost $1400.

Waller and Schrader. Cottage; owner, Mrs. Carrie Driscoll; architect, Wm. Koenig; contractor, Ira W. Coburn; signed, Jan. 21; filed, Jan. 22; cost $1500.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A

VOLUME XVIII. MARCH 20th, 1897. NUMBER 3

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

Published on or about the 20th of each month by The California Architectural Publishing Company. The Stockholders being Architects and others interested in the profession.

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NOW IN THE EIGHTEENTH YEAR.

OLIVER EVERETT Secretary.

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1 Column	12 50	35 00	65 00	125 00
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1 Page	40 00	110 00	200 00	350 00

Remittances should be in the form of postal orders, payable to THE CALIFORNIA ARCHITECTURAL PUBLISHING COMPANY, and all communications addressed to the office of the Company, 408 California Street, San Francisco, Cal.

THE San Francisco *Call* has lately been stirring up the public bodies of this city to take united action in protesting against further delays in beginning work on a new post office building for this city that was authorized by Congress over a decade ago. We sincerely commiserate our daily press if they really think that any efforts, however herculean, will have any effect in piercing the invulnerable hide of official indifference to the needs of San Francisco, for we are morally certain that they will have but their labor for their pains. True, plans have been prepared for such a building. In fact the office of the Supervising Architect has been preparing plans for several years; the ones now under consideration being the third set we believe, and apparently we are no nearer a satisfactory solution than at first. Several experts and engineers have already examined and reported on the site selected with special reference to its suitability to sustain a modern brick structure. We notice in the last official report of the Supervising Architect, however, that "The United States Engineer Corps has been requested to submit further information in regard to foundations, and it is expected that this office will be fully advised in regard thereto at an early day." The report does not specify any grounds on which to base its expectations for an *early* report, and in the light of past experience, we confess to some degree of scepticism in regard to the expeditious methods of public officials. But if our generation no longer hopes or expects to see the work begun, future generations will have the pleasures of anticipating the day when ground will be broken for the new building.

The following information as to the acts of Congress authorizing the Post-Office may be of interest to our readers:

An Act of Congress of March 3d, 1887, appropriated for cost of site and building, $350,000.

An Act dated January 21, 1889 extended the limit of cost of site for building to $800,000.

Other Acts were passed modifying the cost of the site and building and an Act of March 3, 1893, extended the limit of cost of building exclusive of site to $2,500,000.

There has been appropriated to date $1,300,000.

Of this amount there has been expended on site and incidental expenses $1,090,268.

Leaving the amount actually available for beginning work at this date $209,732.

WE REGRET to have to chronical the defeat of a proposed law introduced in the present Legislature, having for its object the regulation of the practice of the profession of architecture in this state.

The bill was reported adversely by the Committee to which it has been referred on the ground that the proposed measure was "Unconstitutional".

The bill was identical with one that the Legislative committee of the previous session reported favorably, and which passed the Assembly to be defeated in the Senate.

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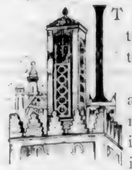

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And surely if we can raise our criminals by giving them honest labor to do and labor that they can see is utilized to the best advantage by the use of machinery, this is a good thing. And is it not better to make the criminal classes who are born so that idleness encourages their propensities work. Surely it must be better to give them work, than to put the honest citizen, who can utilize his leisure in devising schemes for the benefit of the people, to hard labor Let the criminals labor, to whom it is a blessing, and let the honest man reap the benefit. The more machinery we have the better, for the more leisure we thereby get for intellectual and recreative occupation.

It is a mistake to suppose that man was created for hard labor—to earn one's bread by the sweat of one's brow was a truism in the primitive days of no machinery but now the truism of those days is the untruth of these latter days, and there needs no eight or ten hours work day.

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We will not go into the question of relative strength further, but that apart, it appears the Board of Examiners refuse to give any reason for rejecting this material—an arbitary action of a public body which is unseemly. Looking at the construction of this tribunal we find it composed of:

Superintendent Building Department, Chairman; Napoleon Le Brun, from the New York Chapter of the American Institute of Architects; two members from the Mechanics' and Traders' Exchange; one from the Real Estate Exchange, the Architectural Iron Association, the Builders' Association, the Underwriters' Association and the Chief of the Fire Department.

These have irresponsible power and in this case appear to have exceeded those powers; but there seems to be no tribunal that is competent to decide how far those powers shall extend. The matters upon which the Board have to decide are scientific matters and the connection between technical matters of this kind and trades and Real Estate Exchanges or even the Architectural Iron Association appears to be rather remote, and yet we find two members from the mechanics and Trades Exchange one from the Real Estate Exchange and one from the Architectural Iron Association. In our opinion, an architect selected by the builders (who are the class who come in contact with them most) and civil engineers, would fill the bill in better shape than those mentioned above as unsuitable. It is their business to know about these things and are therefore those likely to know most about them. The Board evidently wants reviewing, and may be looked upon by other cities as a Board whose composition must be avoided.

BILLS OF QUANTITIES AND THEIR RELATION TO BUILDING CONTRACTS.

PAPER READ BY G. ALEXANDER WRIGHT BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS, FEBRUARY 12, 1897.

MR. PRESIDENT AND GENTLEMEN:—I have been honored with an invitation from your honorable Chapter to say something to-day upon the subject of "Bills of Quantities and their Relation Generally to Building Contracts:"

The field is a wide one, embracing I think, some points of interest to each of us who are in any way identified with estimating the cost of modern buildings.

With your permission, and whilst fully appreciating the importance, or shall I say the absolute necessity for the young architect of to-day as well as for the contractor, to receive some training in estimating *Q's*,* as well as in estimating *cost*, I propose to consider the subject largely from an estimators standpoint.

During my experience—first as an architect, and subsequently as a Q. S.† in fairly active practice—it has fallen to my lot, to have had many opportunities of judging of the value and advantages attending the use of Q's and the effect of the Q. Sy.‡ upon the owner, the contractor, the architect, and incidentally upon the character and quality of the work executed.

I shall endeavor to lay before you some conclusions I have arrived at, and if my efforts simply have the effect of fostering the growing desire for some improvement in the estimating methods of to-day; or of promoting a friendly interchange of thoughts upon the subject, our time will not, I think, have been unprofitably spent.

By way of introduction I may be allowed to say that some six years ago I was privileged to be present at a meeting of this honorable Chapter and in the course of a short address upon that occasion; I made some observations regarding the system of taking bids upon surveyors Q's and I afterwards brought the same subject before the notice of the Builders' Association, then on Pine street.

Some attempt had already been made by one or two local architects, and also by a Q. S. who had preceeded me—to create some interest in this subject—but little progress however had been made—and I found but few who were acquainted with even the first principles of the "system", and I was not slow to realize how unreasonable it was to expect gentlemen to look kindly upon an estimating system, which to them, as a body, was at that time, something new.

In additions to this, I was then myself somewhat handicapped by want of acquaintance with local methods. To-day however gentlemen, the conditions are changed.

On the one hand, a desire for some improvement in the manner of estimating for work, does occasionally manifest itself and on the other hand, I also, have gained some experience, having made up estimates—some millions of dollars worth probably—for contractors and others in this city, and so to-day gentlemen, I say the conditions existing when I addressed you before, are somewhat changed, and I am free to admit, and I do so most willingly, that an elaborated system of Quantities, would scarcely be adapted, certainly, for some time to come to our San Francisco requirements. *But*, (and I say this with every respect for the views of gentlemen who may not altogether agree with me.) *But* I am equally certain that there is a great dead of room for improvement in our estimating methods of to-day. They are largely primitive and *unreliable*—rule of thumb often preyails, whilst the element of guess-work is not entirely unknown—all of which is, I submit contrary to, and out of keeping with that spirit of advancement which you as architects, have been advocating so long, and which you are happily, still promoting, in the matter of improved design and construction.

Now let us proceed to consider the effects of the Q. S. Let us analyze its application to a large building, say of brick, stone and steel construction.

As the owners agent it would under the Q. Sy. devolve upon the architect to choose a S. as soon as the owners instructions to obtain bids were received. He must not be appointed by either of the financially interested parties, the owner or the contractor.

When wisely selected he should occupy an independent, disinterested position, possessing of course the necessary technical and practical ability, and having the confidence of those, liable to be effected by his Q's.

He should never be in the regular employ of any one person, his services being engaged by "Architects," on behalf of their clients and *only* as occasion requires, and for the specific work and purpose indicated.

It has recently been suggested to me that a dishonest surveyor might favor, or in some way give an advantage to some particular contractor. I deal with this point first as it seems uppermost in the minds of some, indeed it seems to be about their only objection to such a system—that dread of trickery.

Gentlemen—The only answer it is possible to give is this: No surveyor possessing any self respect, and in his natural senses, would jeopardize his living, and invite professional ruin, by placing himself at the mercy of an unscrupulous contractor; *for*, would it not be only such, who would attempt to benefit (even if such a thing were possible) for "detection" would be the easiest thing possible by such means?

But to return—The surveyor having been selected, the drawings, specifications and conditions of contract, are handed to him by the architect. From these he prepares in his own private office, a complete schedule or B of Q's containing a detailed, itemized, and classified list of every item of labor and material required in the building, everything in fact which has a money value, however small, and this is done, whether everything is described with extreme minuteness in the specification, or *not*.

It is well known that occasionally some little oversight, on the part of an architect's clerk, *will creep in somewhere*, (however careful he may be) and is it not a fact that a certain class of contractors, are apt to distort trivial occurrences of this nature into an excuse to try for some extra allowance or concession thereby. Now all such points as I have reference to, would not escape the surveyor, that is a part of his business; to see that no possible opportunity for misunderstanding shall exist, if it does, the attention of the architect is drawn to the matter and the necessary adjustment is made *before the contractor ever sees the drawings*.

The Q's being completed, printed copies are sent to those contractors invited to bid; the drawings and other documents are returned to the architect and the surveyor's duties are at and *end*.

His business is solely to calculate Q's, fairly and honestly between owner and contractor. He has not the slightest further interest in the job (beyond receiving his fee) cares not how much it costs, nor who gets the contract, nor is he interested in what kind of materials are used, where they are *ordered*, or what they *cost*. Such things are outside his province entirely. He devotes himself exclusively to the accurate computations of "Quantities"

Although not always done, I advocated making the Bill of Quantities the basis of and part of the contract, in other words, a certain definite quantity of work for a certain fixed sum of money. The specifications too, need not be so voluminous as they sometimes are. The custom is for the lowest bidder to deposit with the architect, prior to the acceptance of a bid, a copy of his original figures in *ink* and a spare blank copy of the Q's is usually reserved for this purpose free of expense. The architect satisfies himself that this copy has been filled up and totalled in proper form, and

* Quantities.
† Quantity Surveyor.
‡ Quantity System.

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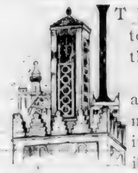

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IRREGULAR PAGINATION

PAPER READ BY G. ALEXANDER WRIGHT BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS, FEBRUARY 12, 1897.

MR. PRESIDENT AND GENTLEMEN:—I have been honored with an invitation from your honorable Chapter to say something to-day upon the subject of "Bills of Quantities and their Relation Generally to Building Contracts:"

The field is a wide one, embracing I think, some points of interest to each of us who are in any way identified with estimating the cost of modern buildings.

With your permission, and whilst fully appreciating the importance, or shall I say the absolute necessity for the

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oung architect of to-day as well as for the contractor, to receive some training in estimating *Q's*,* as well as in estimating *cost*, I propose to consider the subject largely from an estimators standpoint.

During my experience—first as an architect, and subsequently as a Q. S.† in fairly active practice—it has fallen to my lot, to have had many opportunities of judging of the value and advantages attending the use of Q's and the effect of the Q. Sy.‡ upon the owner, the contractor, the architect, and incidentally upon the character and quality of the work executed.

I shall endeavor to lay before you some conclusions I have arrived at, and if my efforts simply have the effect of fostering the growing desire for some improvement in the estimating methods of to-day, or of promoting a friendly interchange of thoughts upon the subject, our time will not, I think, have been unprofitably spent

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Now let us proceed to consider the effects of the Q. S. Let us analyze its application to a large building, say of brick, stone and steel construction.

As the owners agent it would under the Q. Sy. devolve upon the architect to choose a S. as soon as the owners instructions to obtain bids were received. He must not be appointed by either of the financially interested parties, the owner or the contractor.

When wisely selected he should occupy an independent, disinterested position, possessing of course the necessary technical and practical ability, and having the confidence of those, liable to be effected by his Q's.

He should never be in the regular employ of any one person, his services being engaged by "Architects," on behalf of their clients and *only* as occasion requires, and for the specific work and purpose indicated.

It has recently been suggested to me that a dishonest surveyor might favor, or in some way give an advantage to some particular contractor. I deal with this point first as it seems uppermost in the minds of some, indeed it seems to be about their only objection to such a system—that dread of trickery.

Gentlemen—The only answer it is possible to give is this: No surveyor possessing any self respect, and in his natural senses, would jeopardize his living, and invite professional ruin, by placing himself at the mercy of an unscrupulous contractor; *for*, would it not be only such, who would attempt to benefit (even if such a thing were possible) for "detection" would be the easiest thing possible by such means?

But to return—The surveyor having been selected, the drawings, specifications and conditions of contract, are handed to him by the architect. From these he prepares in his own private office, a complete schedule or B of Q's containing a detailed, itemized, and classified list of every item of labor and material required in the building, everything in fact which has a money value, however small, and this is done, whether everything is described with extreme minuteness in the specification, or *not*.

It is well known that occasionally some little oversight, on the part of an architect's clerk, *will creep in somewhere*, (however careful he may be) and is it not a fact that a certain class of contractors, are apt to distort trivial occurrences of this nature into an excuse to try for some extra allowance or concession thereby. Now all such points as I have reference to, would not escape the surveyor, that is a part of his business; to see that no possible opportunity for misunderstanding shall exist, if it does, the attention of the architect is drawn to the matter and the necessary adjustment is made *before the contractor ever sees the drawings*.

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Although not always done, I advocated making the Bill of Quantities the basis of and part of the contract, in other words, a certain definite quantity of work for a certain fixed sum of money. The specifications too, need not be so voluminous as they sometimes are. The custom is for the lowest bidder to deposit with the architect, prior to the acceptance of a bid, a copy of his original figures in *ink* and a spare blank copy of the Q's is usually reserved for this purpose free of expense. The architect satisfies himself that this copy has been filled up and totalled in proper form, and

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† Quantity Surveyor.
‡ Quantity System.

WE REGRET to have to chronical the defeat of a proposed law introduced in the present Legislature, having for its object the regulation of the practice of the profession of architecture in this state.

The bill was reported adversely by the Committee to which it has been referred on the ground that the proposed measure was "Unconstitutional".

The bill was identical with one that the Legislative committee of the previous session reported favorably, and which passed the Assembly to be defeated in the Senate.

Query—How can a bill that is constitutional one session, be unconstitutional the following session, the same constitution governing both sessions?

IT IS disheartening at the end of the Nineteenth century to find such a paragraph as this in the paper:

"Manager Lewis of the Manufacturers' and Producers' Association went to Sacramento yesterday for the purpose of having introduced in the Legislature a bill abolishing machinery in the State prisons after December 31, 1898. This is pursuant to an action taken by the association last Tuesday."

Over one-half century ago there were riots in the old countries against machinery—during which much machinery was destroyed—but the march of progress cannot be stopped by riots and machinery has been a factor in production ever since and will be still more so.

And surely if we can raise our criminals by giving them honest labor to do and labor that they can see is utilized to the best advantage by the use of machinery, this is a good thing. And is it not better to make the criminal classes who are born so that idleness encourages their propensities work. Surely it must be better to give them work, than to put the honest citizen, who can utilize his leisure in devising schemes for the benefit of the people, to hard labor Let the criminals labor, to whom it is a blessing, and let the honest man reap the benefit. The more machinery we have the better, for the more leisure we thereby get for intellectual and recreative occupation.

It is a mistake to suppose that man was created for hard labor—to earn one's bread by the sweat of one's brow was a truism in the primitive days of no machinery but now the truism of those days is the untruth of these latter days, and there needs no eight or ten hours work day.

The crass ignorance of economics exhibited by our most respected citizens is wonderful. Here in San Francisco we have men supposed to be charitable offering work on a boulevard for the improvement of the city and the increasing of the value of its real estate at one dollar for a day of not less than eight hours. This is absurd. Cannot they see that in these days when machinery does almost all the work that is to be done, this is altogether too long for any man to work at hard labor except he be a criminal, to whom it may be all right as a tonic.

IT APPEARS from a late number of the *Engineering News*, that discrimination is made by the Board of Examiners who pass upon the structural part of buildings in New York, against Concrete for Fireproof arches in favor of Hollow Tile and other material. The makers of concrete combined with iron such as the Ransome Patents, the Roebling Sons & Co. and the Expanded Metal System makes are hereby done an injustice; as experiments go to show that concrete properly fortified is quite as strong and fireproof as any other material used for flooring arches.

We will not go into the question of relative strength further, but that apart, it appears the Board of Examiners refuse to give any reason for rejecting this material—an arbitary action of a public body which is unseemly. Looking at the construction of this tribunal we find it composed of:

Superintendent Building Department, Chairman; Napoleon Le Brun, from the New York Chapter of the American Institute of Architects; two members from the Mechanics' and Traders' Exchange; one from the Real Estate Exchange, the Architectural Iron Association, the Builders' Association, the Underwriters' Association and the Chief of the Fire Department.

These have irresponsible power and in this case appear to have exceeded those powers; but there seems to be no tribunal that is competent to decide how far those powers shall extend. The matters upon which the Board have to decide are scientific matters and the connection between technical matters of this kind and trades and Real Estate Exchanges or even the Architectural Iron Association appears to be rather remote, and yet we find two members from the mechanics and Trades Exchange one from the Real Estate Exchange and one from the Architectural Iron Association. In our opinion, an architect selected by the builders (who are the class who come in contact with them most) and civil engineers, would fill the bill in better shape than those mentioned above as unsuitable. It is their business to know about these things and are therefore those likely to know most about them. The Board evidently wants reviewing, and may be looked upon by other cities as a Board whose composition must be avoided.

BILLS OF QUANTITIES AND THEIR RELATION TO BUILDING CONTRACTS.

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The field is a wide one, embracing I think, some points of interest to each of us who are in any way identified with estimating the cost of modern buildings.

With your permission, and whilst fully appreciating the importance, or shall I say the absolute necessity for the

young architect of to-day as well as for the contractor, to receive some training in estimating *Q's*,* as well as in estimating *cost*, I propose to consider the subject largely from an estimators standpoint.

During my experience—first as an architect, and subsequently as a Q. S.† in fairly active practice—it has fallen to my lot, to have had many opportunities of judging of the value and advantages attending the use of Q's and the effect of the Q. Sy.‡ upon the owner, the contractor, the architect, and incidentally upon the character and quality of the work executed.

I shall endeavor to lay before you some conclusions I have arrived at, and if my efforts simply have the effect of fostering the growing desire for some improvement in the estimating methods of to-day, or of promoting a friendly interchange of thoughts upon the subject, our time will not, I think, have been unprofitably spent.

By way of introduction I may be allowed to say that some six years ago I was privileged to be present at a meeting of this honorable Chapter and in the course of a short address upon that occasion; I made some observations regarding the system of taking bids upon surveyors Q's and I afterwards brought the same subject before the notice of the Builders' Association, then on Pine street.

Some attempt had already been made by one or two local architects, and also by a Q. S. who had preceeded me—to create some interest in this subject—but little progress however had been made—and I found but few who were acquainted with even the first principles of the "system", and I was not slow to realize how unreasonable it was to expect gentlemen to look kindly upon an estimating system, which to them, as a body, was at that time, something new.

In additions to this, I was then myself somewhat handicapped by want of acquaintance with local methods. To-day however gentlemen, the conditions are changed.

On the one hand, a desire for some improvement in the manner of estimating for work, does occasionally manifest itself and on the other hand, I also, have gained some experience, having made up estimates—some millions of dollars worth probably—for contractors and others in this city, and so to-day gentlemen, I say the conditions existing when I addressed you before, are somewhat changed, and I am free to admit, and I do so most willingly, that an elaborated system of Quantities, would scarcely be adapted, certainly, for some time to come to our San Francisco requirements. *But*, (and I say this with every respect for the views of gentlemen who may not altogether agree with me.) *But* I am equally certain that there is a great dead of room for improvement in our estimating methods of to-day. They are largely primitive and *unreliable*—rule of thumb often prevails, whilst the element of guess-work is not entirely unknown—all of which is, I submit contrary to, and out of keeping with that spirit of advancement which you as architects, have been advocating so long, and which you are happily, still promoting, in the matter of improved design and construction.

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and that the sum total corresponds with the contract amount, the document is then sealed up in the presence of the contractor and filed away for safe keeping, to the importance of which I shall refer to later on.

The unsuccessful bidders retain their copies of the Q's, and being priced in detail, they are frequently of use, as a means of reference, and form interesting data to the contractor when determining his percentage of profits on future bids.

Surveyor's Q's are sufficiently explicit, as to make it unnecessary for the bidders to closely examine the drawings and specifications whilst bidding, this is a saving of time to *them*, and architects' time would not be occupied in making explanations, and answering questions to bidders. The quantities would explain, in black and white, everything that is right and proper for the bidders to know.

Occasionally we hear of a lowest bidder, wishing to withdraw his bid, or endeavoring to get the amount of it increased, on the grounds of having made a "mistake", forgotten to include his painters bid or his glass or some other thing, but with the Q. S. such a thing would be an impossibility; for everything would be there, in detail. If "money" mistakes were alleged, than by a reference to the priced Q's, the architect could immediately see whether the mistake was a genuine one or not. Gentlemenn, I don't think you would ever hear of a mistake in a bid under that system.

I am sometimes asked, well, what *is* a proper B of Q as used under the Q. S.? In localities where this method of estimating prevails, a B of Q is expected to be what some owners think an *architect* ought to be. "Everything under the sun," and this is just what a B of Q should be, in relation to the contract, a veritable "enquire within for everything." I cannot do better perhaps than quote very briefly for a few moments from an article of mine which appeared recently in the *American Architect* of Boston:

The document should be a *printed* list so that every copy should be an exact counterpart of each other, the same as blue prints are of drawings. It should contain as I say every item of work in the building, however small. On the title page should appear the name or description of the building, the owners and architects names and addresses, place, date and hour for receiving bids, date for completion, and under the heading of preliminary, the penalty for non-completion, conditions of payment, particulars as to sureties, certified checks, and so forth, and the bill should bear the endorsement of the surveyor who prepared it.

Again, when practising as a Q. S. I found it a good plan to commence with such items as cannot be measured in the usual sense, but for which some allowance should be made for example, plant, foremon, superintendent's office, drainage, insurance, lighting, watchman, interest or retention money, pumping or keeping foundation dry; maintenance, accidents to workmen, water, temporary plumbing, strike, contingencies. In some estimates I have found it necessary to consider *all* these questions, and it is better to treat them altogether, under one heading.

The items proper, begin with "excavator," each class of work having a different value being "segregated," as for example: surface digging, foundation trenches above and below five feet deep, cellars, circular digging, forming slopes, each should, having different values, be given separately, state if carried out in baskets or wheeled, or hauled by team and how far. The same principle applies to engineering work, such as blasting, mud and tide work and such items.

Under "drainage" the quantities of all the different pipes, their sizes and depths, including number of bends, junctions, diminishing pieces, hoppers, etc., method of forming the joints of the drains and so on, should be stated.

The brickwork bill should begin with a brief but clear description of all the bricds used—facing, common, fire or otherwise, the kind of pointing to joints, proportions of mortar, brand of cement. Then might come the "number" of bricks, keeping the different thicknesses of walls separate.

Here I would like to observe that there seems to me to be some need for a uniform standard of measurement for brickwork—cost cannot be *accurately* estimated, by simply saying there are so many bricks in a building, for the reason that the labor on brickwork differs a good deal in proportion to the thickness of the walls, and whether pointed or not, a wide foundation or basement wall starting say ten feet below ground, costs less per M than a chimney breast and chimney rising perhaps seventy feet high or more. On the whole I think it is better to give the number of square feet or yards of wall surface, stating how may bricks thick, as half brick thick, one brick thick, two and one-half brick thick and so on, stating if points are left rough, or flat pointed for whitewashing, or cut joints, as the case may be. It is neither wise, nor skillful to strike an average in such cases, and to "lump" the whole thing together at so much a M, for it is the attention to *little* things that tell in estimating. No one thinks much of half a brick, or as we call it, a *bat*, and yet I remember a building I figured, I think it was the City Hall tower, in which a bat, more or less, to the square foot, made a difference of over $3000, in the price of the brick work.

But to return—footings and very thick walls, should be separated from the general walling, also chimneys above, and parts built "in cement" should be so billed and described.

Brick facings—by the square foot these would be given as "extra only" or additional above the price of the common walling. Mouldings, cills and ornamental courses by the lineal foot with these latter I prefer to give all the mitres, etc., internal and external, and returned ends for the reason that when specially molded (as of course they should be in best work) they are more expensive than straight stock of the same kind. The same applies to brick copings, bands, belts, imposts, cornices, etc., etc.

Fair or face arches are given by the square foot, keeping the straight, distinct from the circular. Rough internal arches may be numbered, but the width of opening, rise, thickness and height must be stated.

Numbers of such items as cutting holes, setting grates, safes, boilers, ventilators, etc., with descriptions should appear. In all cases marginal sketches should be given when necessary to illustrate the detail for the contractors information.

A common practice is to commence with all the largest and most expensive items in the materials, and the smallest items in the labors, and here I more particularly refer to the "masons'" bill, though in San Francisco practice, such detail might not perhaps be necessary. We begin with feet cube or rough stone in blocks, each kind of stone being separated, then tons or yards, cube of rubble stone in backings. Lineal items follow, these being stones under 12x12. Small stones are numbered, and described, or sketched. Labor on stone would be in some thing like the following order. Half sawing, plain work, plain work circular, ashlar, pitched, hammered or other facing, all by the square foot. Then we get sunk work as in niches, the same circular.

Next to that is molded work—straight and circular, rubbed and polished work as on marble and granite—both straight and circular, and even circular circular as in spheres and globes, each and every piece of different money value being separated.

In general terms—the same principol applies to mill work, stair work, in fact every part, of each trade is set forth in a similar way—but I will not take up your time with further illustrations.

The bidders price the items in the Q's, and carry the totals of each trade, to the general summary, at the end of the bill and here the bidder finds a space in which to include the Surveyor's fee, or percentage on the sum total.

Upon the contract being let, the better plan, is for the surveyor to be paid upon the architect's certificate, plus of course the out of pocket expense of printing or lithographing the Q's.

It is true that to prepare such Q's as I have referred to calls for more time than individual contractors usually get allowed under the existing method of estimating, but I submit this is of small moment in view of the accuracy and advantages obtained. Three distinct processes are required—1st the taking off or measuring from the drawings, these particulars being inserted in the "dimension" sheets, there *cubed* or *squared* up, etc., as the case may be and these sheets are carefully preserved for reference. 2d The making up of the abstract sheets whereby all similar items are collected, condensed and finally classified. 3rd Writing the bill, which should contain full *descriptions*, and this document is the original of those sent out to the bidders.

The only accurate manner of estimating that I am acquainted with is to systematically measure every part of the building piece by piece—guess at nothing, and take no chances. To do it, may be a little tedious to those not accustomed to such work, but there is no "royal" road—short cut methods are not to be depended upon, cubing or squaring are but approximate guesses, good in their way for certain purposes, but quite unsuited in determining *how much money* an owner is to *pay*, or a builder is to receive for a building.

The system will readily admit of a building being let as a whole, or divided up into contracts one for each separate trade, if necessary.

I have prepared by way of illustration, a few specimen sheets of Q's such as I think would satisfy reasonable requirements in San Francisco for some time to come, and they are here for your inspection—of course in actual practice they would be as I say either printed or lithographed.

Continued in April number.

The Experiment made by Captain W. de W. Abney, C. B., in the Raphael Cartoon Gallery of the South Kensington Museum, London, of using colored glass to intercept the rays of light which act injuriously on pigments is said to be considered quite successful. The colored glass is hardly noticeable, and many people walk through the gallery without being aware of its existence. The system will probably be extended to the skylights of all the picture galleries in which water colors are hung.—*Building News.*

RECOVERY FOR SERVICES PERFORMED BY ARCHITECTS IN PREPARING DRAWINGS, PLANS, ETC.

Evidence of customary charges of architects for similar services competent, although they may be shown to have originated in a rule of compensation established by architects' associations and not binding upon defendant.

Appeal from the Superior Court of San Francisco County. John Hunt, J.

For Appellant, Robert Harrison, Michael Mullany.

For Respondent, A. P. Van Duzer, Walter H. Levy.

Filed January 19, 1897.

IN BANK.

Augustus Laver et al., Appellants vs. A. P. Hotaling, Respondent. San Francisco No. 502.

Plaintiffs are co-partners in the practice of their profession as architects. They sued in this action to recover the alleged reasonable value of services performed, it is claimed, at defendant's request, in the preparation of drawings, plans and specifications for a building defendant had in mind to erect. After verdict, and judgment in plaintiff's favor, the court granted a new trial, on the sole ground specified in its order, that it erred at the trial "in permitting the introduction of evidence of a rule of compensation of architects, established by architects' institutes or associations." The plaintiffs appeal from the order granting a new trial, and contend that if any evidence of a rule of compensation established by architects' institutes or associations was admitted, it was not introduced or offered by them. A careful examination of the record convinces us that this contention is well founded. In order to prove the value of their services the plaintiffs introduced evidence of the customary charges of architects for similar services. The evidence was, of course, entirely competent; just as the current market price is evidence of the value of goods sold.

On cross-examination of plaintiff's witnesses, and on the direct examination of his own witnesses, defendant brought out the fact that the customary rates of charges made by architects originated in, and conforms to, a rule established by an association of architects. But the fact that the customary rate of charges originated in a rule which, as such, was not binding upon the defendant did not render evidence of the actual custom incompetent. If the usual and regular wages of a mechanic are three dollars per day, does such customary rate become any less competent evidence of the value of his services when it is shown to have been first prescribed by a rule of his union? Certainly not. The rule, it is true, is not binding, as a rule upon those who have not made it a part of their contract, and no one is held to have made it a part of his contract unless charged with knowledge of it. But, however ignorant an employer may be of the customary rate of compensation, such customary rate is evidence of value in any suit by his employee upon a *quantum meruit*.

The Superior Court did not err, therefore, in admitting the evidence offered by the plaintiffs, or in refusing to strike it out after the defendants had proved the rule of architects. And certainly the defendant was not entitled to a new trial because of the testimony offered by him.

The instruction of the court to the jury, with reference to this testimony, may have been misleading, but it was not excepted to at the time, nor was it specified as a ground of

the motion for a new trial, and can lend no support to the order.

Other grounds were specified in support of the motion, but none of them are relied upon in the argument of counsel, and we cannot see that they possess any merit.

The order granting a new trial is reversed.

BEATTY, C. J.

We concur:—Van Fleet, J.; Temple, J.; Harrison, J.; Henshaw, J. I dissent:—McFarland, J.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

ON THE HILL, San Francisco, C. A. Meussdorffer, Architect.

COUNTRY RESIDENCE, Linden Bree, Del.

COTTAGE AND PLANS, John J. & T. D. Newsom, Architect.

PROPOSED "Monte Carlo" Mexico, W. J. Cuthbertson, Architect.

THE PAPST CAFE.

IN our description of the handsome Pabst Cafe, that appeared in our last issue a mistake crept in which we take the first opportunity to correct. Credit for the sheet metal and cornice work is due to Mr. W. Heidt of 224–226 Mission street.

In making this correction and again calling the attention of the public to this work, we consider we are only doing justice to Mr. Heidt and the care and attention which he gives to all work confided to him.

CORRESPONDENCE

The Editor is not responsible for any opinions of Correspondents.

To the Editor of the California Architect and Building News.

Referring to "Strollers" enquiry in your last issue as to the proportions for treads and risers, there seems to be no "unalterable" rule, within reasonable limits, if the width of tread plus height of riser=18", a fairly easy going staircase is obtained; for example a 6½" riser to a 11¼" tread—but if *this* rule be carried to *extremes* it would of course be possible to so distort the proportions, as to make stairs resemble a step ladder.

Again, if the "rake" or pitch of stairs be made 30° the result is fairly satisfactory. It would appear that the length of a persons step should govern the width of tread, and as this varies with tall and short people, old and young, an "average" length of a persons step might be, say 24.75 inches. Then taking 6¾" as an "average" for a riser, the following formula would give a good result:

24.75"—(6.75x2)=11.25" the width of tread

This being the same, as in the 18" rule already mentioned for tread and riser. For outside entrance steps, it is better to decrease the riser, and increase the tread.

G. ALEXANDER WRIGHT

FROM THE THIRD BIENNIAL REPORT OF STATE MINERALOGIST—STRUCTURAL MATERIAL.

CONTINUED FROM LAST NUMBER.

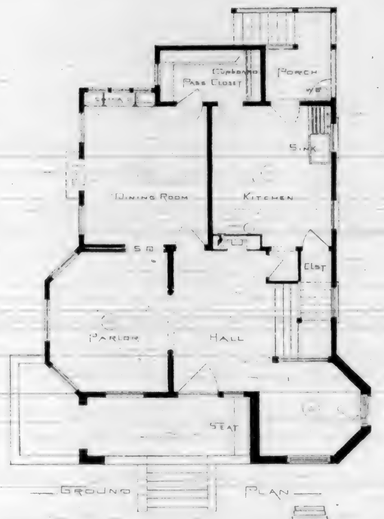
GRANITE

MADERA COUNTY

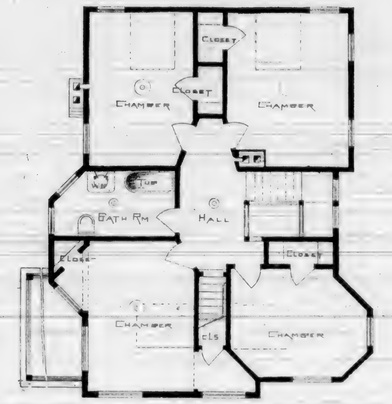
Day Quarries—They are 2 miles S. of Raymond, and were thoroughly equipped in 1893, and worked for a time. Are now idle. Day & Sons, of Raymond, owners.

McLennan Quarries—They are 1½ miles SE of Raymond and have been worked steadily during the past three years, employing from 20 to 60 men. The quarry improves as it is opened, both in quality of the stone and in the size of the blocks which may be obtained. Blocks of granite, 25'x25'x10' are available, if they could be handled. A. McLennan of Raymond, owner.

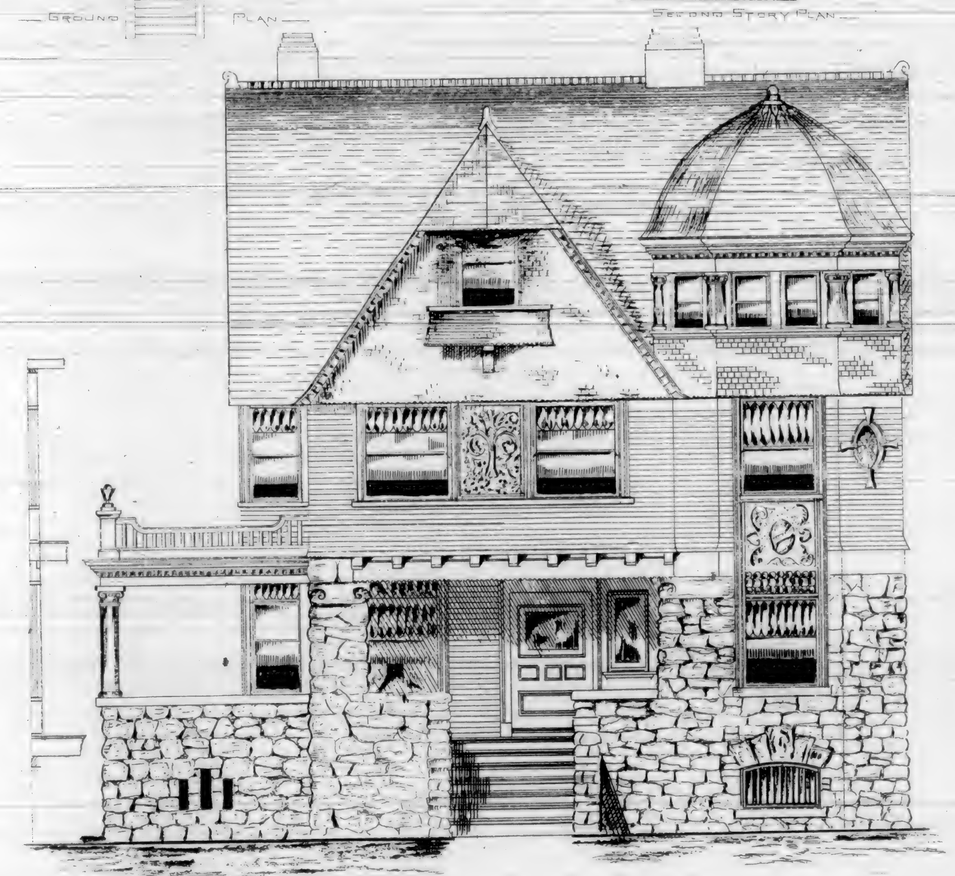
Raymond Granite Quarry—It is 1½ miles E of Raymond, on a spur track of the railroad from Berenda to Raymond. This great quarry has been actively worked for several years, giving employment to a large number of men at the quarries and at the company's yards in San Francisco, where most of the finer stone-dressing is done. After an interval of over two years no considerable impression seems to have been made on this immense, dome-shaped, granite hill. Any noticeable change has been for the better. The great block



— Ground Plan —

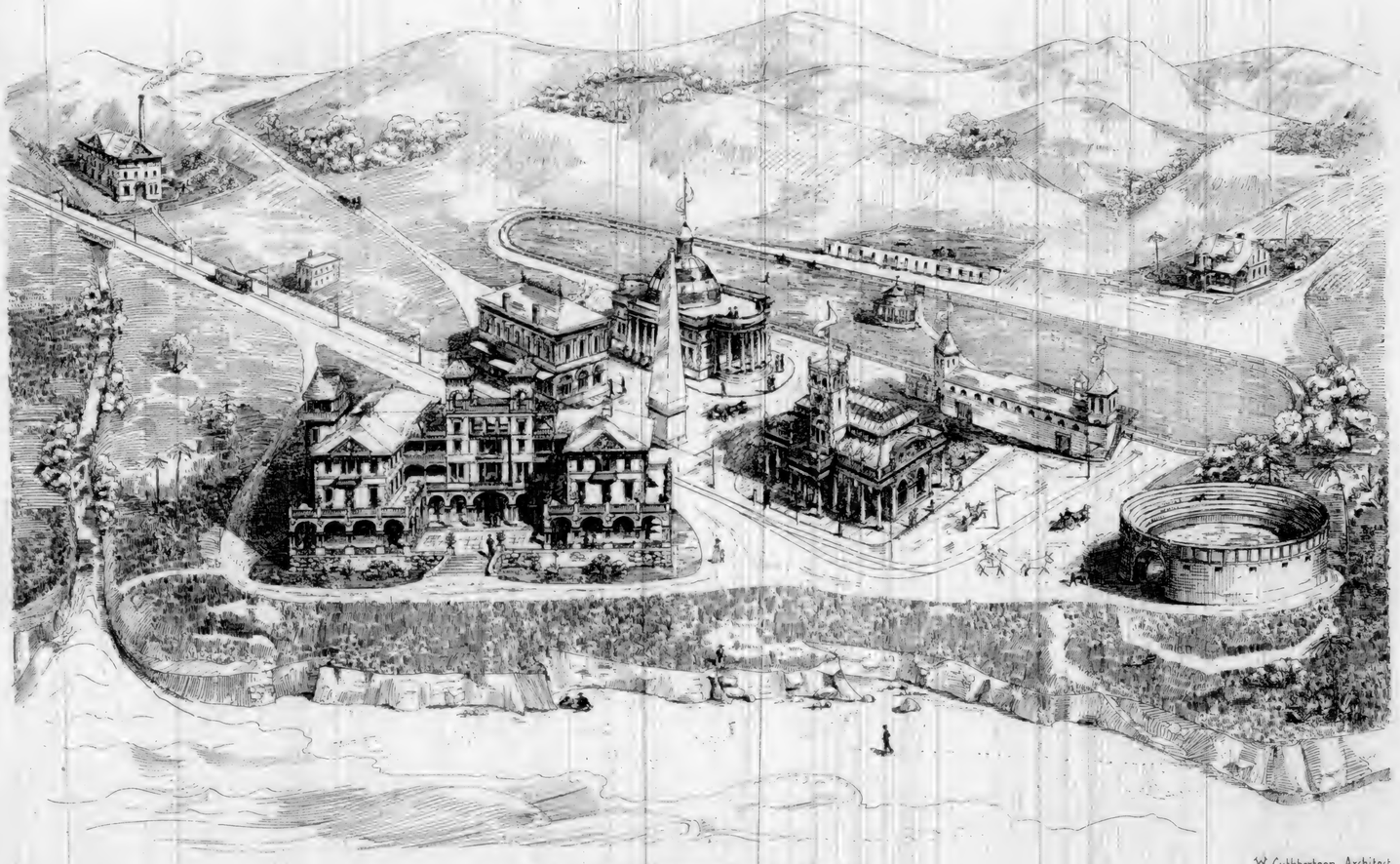


— Second Story Plan —



— John J. & T. D. Newsom —
Architects
Merchants Ex.
— S.F. Cal —

— Front Elevation —



PROPOSED MONTE CARLO, MEXICO.

W. Cuthbertson, Architect.

BRITTON & REY, PHOTO LITH.

Linden Bree, del.

BRITTON & REY, PHOTO LITH.

C. P. MEYSSDORFFER
ARCHITECT.
97-98 STEVENS' BLDG. S.F.

referred to in our XIIth Report has been proven to be thicker as the front portion has been removed. It averages about 20′ in thickness now, 40′ and more in exposed width, and over 300′ in length; when this has been removed, a similar great concentric mass underlies it. The great advantage in this granite lies in its remarkobly homogeneous texture. A slab 20′ in length, or even more, may be riven from a much larger block by the "feather and plug" system, none of the holes being over 3″ or 4″ deep, and the river surface will be almost a perfect plane. Raymond Granite Co., owner; D. L. Knowles, of Raymond, superintendent.

NEVADA COUNTY

Pine Grove Quarry—It is ½ mile E of Nevada City, and comprises 2½ acres. It consists of the working of large bowlders of a fine-grained, hard granite, suitable for curbing, steps, basses to monuments, etc. One hand-derrick with 40′ boom is used. The output last year was 1,000′ of curbing Two cutters are employed, E. D. Bridges, of Nevada City, owner.

PLACER COUNTY

A large area of granite rock ("grano-diorite" of W Lindgren, of the U. S. G. S.) between Auburn and Roseville stretches northward, more or less disconnected, approximately to Bear River. It is extensively quarried about Rocklin, Loomis, Penryn, and Lincoln, and is used for general building purposes, and occurs in large masses, separated by that which is partially disintegrated. About Rocklin and Lincoln it is uniformly very light colored, and shows too little contrast between polished and rough surface. As the eastern boundry of the region is approched it becomes darker. It is said to resist great crushing force.

Borghese & Silvino's Quarry—It is 2 miles NE of Lincoln. Street-curbing is worked from an outcrop or bowlder. Three men afe employed. C. Borghese of Lincoln, manager.

Brady's Quarry—See our XIIth Report, p. 384. It is near Rocklin. Idle. — Brady of Rocklin, owner.

Burlin & Temdle Quarry—It is a small quarry, 2½ miles NE of Lincoln. It empleys 3 quarrymen, 3 stonecutters, and 2 hand-power derricks. William Burlin of Lincoln, manager.

Burns (Burns & Coffey) Quarry—See our XIIth Report, p 384. It is a small quarry, 3 miles SE of Lincoln. Two steam-power derricks are used, and 3 quarrymen and 2 stonecutters are employed. M. Burns of Lincoln, superintendent.

Calderwood's Quarry—See our XIIth Report, p. 385. It is a small quarry, 1½ miles E of Lincoln. Idle. — Calderwood, of Lincoln, owner.

Carlaw Bros.' Quarry—It is 1¼ miles E of Loomis, in Sec. 10, T. 11 N., R. 7 E., at about 375′ elevation. There are 17 acres in the property, on which is a vast quantity of light gray granite rock, used principally in building and cemetery work. One steam-power derrick is used. The rock is hauled to Loomis in the rough, at a cost of $7 per car, and shipped to Sacramento, where the cutting is done. Six men are employed at the quarry. A. W. Turner, of Loomis, superintendent.

Copp's (Copp & Waters) Quarry—See our XIIth Report, p. 385. It is ½ mile SE of Rocklin, in the NE ¼ Sec. 29, T. 11 N., R. 7 E., at about 240′ elevation. The open cut is about 100′x200′ and 80′ deep. Four steam-power derricks are used. The stone quarried is largely used for vaults, foundations, monuments, and buildings; 10 quarrymen, 5 stone-cutters, and 3 laborers are employed. R. H. Copp, of Rocklin, owner.

Dunn's Quarry—It is in Rocklin, on leased ground, in Sec. 29, T. 11 N., R. 7 E. Two horse-power derricks are used. Three men are employed, cutting curbing. D. Dunn of Rocklin, manager.

Eureka Quarry—See our XIIth Report, p. 386. It is in Rocklin, in the NW ¼ Sec. 29, T. 11 N., R. 7 E. The open cut is 75′x200′ and 70′ deep. Three steam-power derricks are used, and 6 quarrymen and 6 stonecutters are employed. J. P. Allen of Rocklin, manager.

Fletcher's, L., Quarry—It is a small quarry on Granite Street in Rocklin, and worked intermittently. Nine men are employed when the quarry is operated. L. Fletcher of Rocklin, owner.

Griffiith's Quarry and Polishing Works—See our XIIth Report, p. 385. They are ½ mile E of Penryn. Idle. D. Griffith, of Penryn, manager.

Grimes' Quarry—It is a small quarry, 2 miles E of Lincoln. Four men are employed, getting out curbing. Amos Grimes of Lincoln, owner.

Hoyt's Quarry—It is in the eastern part of Rocklin, in SE ¼ Sec. 29, T. 11 N., R. 7 E., at 265′ elevation. Four men are employed, getting out curbing. Howard Hoyt of Rocklin, owner.

Hytimen & Wickman's Quarry—It is ¾ of a mile S of Rocklin, on leased land, in the NE ¼ Sec. 29, T. 11 N., R. 7 E. The open cut is 100′x150′ and 60′ deep; one steam-power and two horse-power derricks are used. Four men are employed, getting out curbing. Hytimen & Wickman, of Rocklin, Managers.

I X L (Jeter) Quarry—It is 2 miles E of Lincoln, at about 170′ elevation. The open cut is about 40′x100′ and 40′ deep. Two horse-power derricks are used. The stone is used for cemetery and building purposes. There are 4 quarrymen and 8 stonecutters at work. T. H. Jeter of Lincoln, owner.

Jacobson's Quarry—It is a small quarry in Rocklin, 25′x50′ and 30′ deep. One derrick is used, and 5 men are employed. — Jacobson of Rocklin, manager.

Jeter Quarry—See I X L Quarry.

Johnson's, M., Quarry—It is a small quarry at Rocklin, in the SE ¼ Sec. 19, T. 11 N., R. 7 E. One horse-power derrick is used, and 4 men are employed getting out curbing.

Kent Quarry—See our XIIth Report, p. 385. It is at Rocklin, and practically abandoned.

Loomis Quarry—It is ½ mile S of Loomis, at 385′ elevation. The open cut is 60′x150′ and 65′ deep. Two steam-power and two horse-power derricks are used. Five men are employed. M. J. Haley of Loomis, owner.

Mantyla's Quarry—It is at Rocklin, near the center of Sec. 19, T. 11 N., R. 7 E. The open cut is about 100′x200′ and 40′ deep. Two steam-power derricks are used. It is worked intermittently, and 5 quarrymen and 5 stonecutters are employed when running. John Mantyla, of Rocklin manager.

McDonald's Quarry—It is a small quarry, 2½ miles SE of Lincoln. Four quarrymen and 2 stonecutters are employed. C. J. McDonald of Lincoln, owner.

Quinn's Quarry—See our XIIth Report, p. 385. It is at Rocklin. The open quarry is 125′ and 75′ deep. Two steam power derricks are used. Three quarrymen, 3 stonecutters, and 2 laborers are employed. Mrs. Mary Quinn, of Rocklin, owner; Quinn Bros., of Rocklin, managers.

Roberts & Fippins' Quarry and Stone Works—The works are at Penryn and the quarry is 1 mile SE of it. Gray

granitic rock is quarried from a large outcrop, and the workings do not extend below the general surface. It is darker than the Rocklin granite, and shows a marked contrast between polished and rough surface. The work consists of a 14 H. P. engine and boiler, a double lathe for turning columns, urns, vases, etc., and machinery for polishing both flat and curved surfaces, mouldings, etc. Three quarrymen, 3 stonecutters, and 3 millmen are employed. D. A. Roberts and A. B. Fippins of Penryn, owner.

Rocklin Granite Co.'s Quarry—See our XIIth Report, p. 386. It is at Rocklin, on leased land, in the SW ¼ Sec. 20, T. 11 N., R. 7 E. The quarry is 150'x250' and about 100' deep. The equipment consists of five steam-power derricks, each of which is capable of hoisting blocks weighing 25 tons each, one traveling crane for handling stone in the sheds, one McDonald stone-cutting machine, one 40 H. P. engine and boiler. The "Krox blast" is used in the quarry. Ten quarrymen, 16 stonecutters, and five laborers are employed. E. M. Hall, Jr., of Oakland, secretary; J. L. Delano, of Rockland, president and manager.

SAN BERNARDINO COUNTY

Sherer Quarries—They are two miles S of Oro Grande, at the side of the Southern California R. R. John Sherer of Victor, owner.

SAN DIEGO COUNTY

Waterman Quarry—It is at Fosters, the present northern terminus of the Cuyamaca and Eastern R. R. It was opened in 1894 for the purpose of quarrying massive blocks of stone for the jetty near Point Loma, at the entrance to San Diego harbor. The contract having been completed, the quarry is now idle and machinery removed. W. S. Waterman of San Diego, owner.

SAN LOUIS OBISPO COUNTY

Lee's Quarry—It is 4 miles NW from San Louis Obispo, at about 425' elevation. The rock is a hard, light gray porphyry, in which the feldspar is partially decomposed. The trimmings for the court-house at San Louis Obispo are said to have been taken from this quarry, and considerable rock from it has been used for railway culverts, bridges, etc. The rock is broken by joint planes, which makes it more or less difficult to get good dimension stone. It is worked by an open cut, 25'x75' and 25' deep. Idle. Chas. Lee of San Louis Obispo, owner.

Morro Rock Quarry—It is near the base of Morro Rock, a conical shaped peak at the entrance of Morro Bay, and is about 600' altitude. The rock is a hard, light gray porphyry in which the feldspar is slightly decomposed. It breaks regularly, and good dimension stone may be easily obtained. It is quarried by contract, and loaded from the quarry on barges by a steam-power derrick. The principal part of the rock quarried is used in constructing a breakwater at Port Harford, and a limited quantity for buildings. The quarry is on a Government reservation.

SHASTA COUNTY

Masterton Bros.' Quarry—It is on Brandy Creek, 1½ miles S of Stella. The granite is coarse-grained, dark, and similar to the Lincoln granite, in Placer County. Only bowlders are worked into curbing and coping, the quality being hardly fine enough for monumental work. Pieces 2"x10"x10' are produced. Four men are at work, 2 quarrymen and 2 stonecutters. Masterton Bros. of Redding, owners.

TRINITY COUNTY

Rush Creek Quarry—See our XIIth Report, p. 387. This is situated on Rush Creek, 6 miles E of Waverville, and contains 40 acres. At present only bowlders are worked. The granite is fine-grained, free from iron, and not very hard. Seven stonecutters are employed. Materton Bros. of Red Bluff, Tehama County, owners.

TULARE COUNTY

Griffith & Owens' Quarry—See our XIIth Report, p 387. It is 3½ miles E of Exeter, on the S. P. R. R. and on the eastern base of Rocky Hill. Practically idle. Griffith & Owens of Exeter, owners.

To be continued.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Damages for Non-Performance of Building Contract.—In an action for services for construction of a building, the owner, after testifying that he had to complete it himself, and that it took up his time so that he could not attend to his regular business as a merchant, was asked what time he had lost and its value. The court held that the measure of damages in that regard was the value of the time spent as superintendent, and not the value of the time lost to the other business.

Crawford v. Harris, Sup. Ct. Cal., 45 Pacific Rep. 819.

Fences.—An injunction will not lie to restrain an adjoining owner from maintaining a fence 11 feet high on the divison line, which shuts off the circulation of air from other buildings, thus rendering it damp and unhealthy.

Peck v. Roe, Sup. Ct. Mich., 67 N. W. Rep. 1080.

Married Woman's Property in Kentucky.—Under the laws of Kentucky regarding mechanic's liens, a married woman cannot be charged for labor performed, or material furnished in the erection or improvement of buildings on her separate property, without a written contract, even though she acquiesced in the erection of the building, and gave directions about its construction.

Webster v. Tattershall, Ct. App. Ky., 36 Southwestern Rep. 1126.

Effect of Assignment of Contractor's Claim.—Claims against the owner of a building, says the Supreme Court of Indian, for work done or materials furnished in connection with same may be assigned, but they carry no lien unless a lien has been first perfected by the mechanic or material man in whose favor the right to the lien primarily exists.

Jenckes v. Jenckes, 44 Northeastern Reporter, 632.

When Mortgage is Superior to Mechanic's Claim of Lien.—The lien of a mortgage given by the purchaser of real estate to the seller at the time of the conveyance of the legal title is superior to the lien of a material man who furnished material for the construction of a building on such land, the buildings having been commenced before the conveyance of the title; the purchaser having no authority or permission to enter upon or take possession of the premises, for any purpose, before the legal title was transferred.

No. Valley Lumber Co. v. Keid, Ct. App. Kas., 45 Pacific Rep. 722.

BOOKS AND PERIODICALS.

Rule and regulations of the CENTRAL AMERICAN EXHIBITION decreed by the National Legislative Assembly of the Repvblic of Guatemala.

At a time when our merchants are endeavoring to extend their trade with South America it may be well to call their attention to this exhibition which will be inagurated on the fifteenth of March, 1897 and close on the fifteenth of the following July.

This exhibition will be held in the Capitol of the Republi of Guatemala, covering an area of twelve city blocks and 8082 square yards.

The branches admitted to the exhibition will be classed in groups in the following order:

First—Science and literature; 2d Education and instruction. 3rd Fine arts. 4th Machinery and building. 5th Agriculture, horticulture, Arboriculture and cultivations of a special nature. 6th Fauna and Flora. 7th Decorative art. 8th Various industries. 9th Transporation. 10th Transportation. 11th Mining 12th Immigration.

Article 5. The groups into which these branches are divided will be subdivided into classes in conformity with the annexed list.

Article 6. Articles which are offensive to public morals, or deleterious to the general health, will not be admitted to the Exhibition.

Proceedings of the Sixth Annual Convention of the ASSOCIATION OF RAILWAY SUPERINTENDENTS of Bridges and Buildings, held in Chicago, Illinois, October 20, 21 and 22, 1896.

This report contains a list of the members present at roll call as well as to the road they are with and also a list of the application for membership.

The description of this body of railway superintendents, are fully reported and cannot fail to be of interest to those interested in the construction and safe maintenance of bridges and road ways.

A number of drawings of station houses are given and if we may be allowed the remark, they have more the resemblance of the engineers drawing than the work of an architect, doubtless however they answer the purpose for which they were intended.

Annual Report of the Board of Regents of the SMITHSONIAN INSTITUTION, showing the operations, expenditures and condition of the institution to July 1894. Washington Government printing office, 1896.

This valuable document is one that would be missed not only by the scientific world but by the people in general, on account of the large amount of information of value in relation to our every day life. Photography, electricity, agriculture and astronomy are all included among the various researches that are here published. The latest discoveries up to date are here recorded and suggestions of what may be expected in the near future open a wide field of thought.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec't. August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

THE EXPOSITION OF 1898.

The Exposition site in the northern suburbs of Omaha embraces ample area, is most accessible, and in every way adapted for the purpose. The board of managers passed a resolution providing for the following nine buildings, which will constitute the nucleus around which the smaller buildings will be assembled:

Building No. 1—Agriculture, Horticulture and Forestry; No. 2—Mines and Mining; No. 3—Manufacturers and Liberal Arts; No. 4—Fine Arts; No. 5—Electricity and Machinery; No. 6—Auditorium; No. 7—The Nebraska Building; No. 8—Grand Army of the Republic Building; No. 9—The Silver Palace.

In the discussion regarding these buildings the idea was advanced that the auditorium building should be made a model of the world-famed tabernacle in Salt Lake City, a building renowned as having the most perfect acoustic properties of any auditorium in the world. The material to be used in the construction of the buildings has not been decided upon by the exposition authorities, but it is more than likely that the temporary buildings will be built in the same way as the World's Fair Buildings, of staff, a form of stucco. The plan of the exposition authorities, however, contemplates one or more permanent buildings. It is desired to have four of the buildings built in a permanent and substantial manner, if the arrangements for so doing can be made, but it is certain that some of the buildings will be of a permanent character. The government building will probably be one of these, the purpose of the exposition promoters being to purchase this building after the exposition is over. It is also the purpose to have the auditorium constructed of permanent material.

Application for space at the exposition continue to pour into the department of exhibits and a very flattering showing has been made in a number of different lines. The list of applicants for space is already large and growing daily; manager E. E. Bruce of the department of exhibits announces special prizes, consisting of six gold trophies, six silver cups and six gold medals, to the competitors in each of the following classes: For the best display of an irrigating system in operation; for the best electric light service in display; for the best display illustrating the process of the manufacture of beet root sugar; for the best display of manufacturing plant in operation; as well as two more lots of similar prizes for other high class exhibits to be designated hereafter.

The Exposition will open June first and close November 1, 1898.

FORESTERS' HALL AT PALO ALTO.

Cuthbertson & Williamsons, Architects.

BUSINESS MOSAICS.

The J. L. Mott Iron Works is represented on this coast by Mr. M. S. James, who can be found at room 27, Flood Building. Parties are especially invited to call at their show room and examine the various sanitary appliances as applied to housekeeping. The Hinged Drain Board as shown on the kitchen sink is one among other improvements that demand attention.

Balg—Why do you call your horse She? Burl—Because she makes a rider haggard.

W. W. Montague & Co.—Nowdays when the effect of your rooms is so much improved by a handsome mantel with all the fire place trimmings in keeping, it is well to know where you can depend upon finding the best of every thing in this line of goods. Every article furnished by the above named firm can be depended upon as being what it is represented to be.

You can hardly fail to find what you want in the housekeeping line, either for hotel or private house in the way of heating and ventilation or complete kitchen outfits. Branch stores at Los Angeles and San Jose.

Clark—Why are you going to move, did the owner raise the rent? Schemer—The owner had to, we couldn't.

Joseph Budde, 575 Mission street has so long supplied sanitary appliances in the plumbing line to San Francisco, that it is hardly worth while to call attention to his show room in Mission street but if you will look upon page vii of this journal you will find his advertisement and may be reminded of what you want in his line.

Teacher (serverely)—Tommy Smith, come here. Why haven't you learned your geography lesson? Tommy—'Cause the papers say there's going to be a change in the map of Europe.—*Tit-Bits.*

Dixon Graphite Paint is an article without a rival for the tin or shingle roofs. Architects at the east would laugh if you wished to paint your roof with any thing else. If you want your roof preserved for fifteen years try it.

Virgil says of some of his people: "They can because they think they can." But in the sardine business people can because they have to can.—*Somerville Journal.*

J. W. Burtchaell manufacturer of electric and gas fixtures art glass work, gold, silver, copper, brass and nickel plating, 11 Trinity street, between Bush and Sutter above Montgomery.

The young man who is anxious to lay the world at the feet of the girl he adors, three months after he marries her isn't willing even to lay the carpet.—*Yonkers Statesman.*

J. Leonard contractor for concrete and artificial stone, Spreckels Building, Market street. See advertisement on page xiv of this journal.

Store Propriator—So you want a job as floor walker, do you? Hane you any recommendations? "No, but I'm an experienced hand, Sir. I'm the father of nine children."—*Tit-Bits.*

Samuel Kellett manufacturer of plaster decorations, plastering repaired and whitened, 28 Ellis street, San Francisco and 375 Twelfth street, Oakland.

Owen—What's in a name, anyhow? Dunne—Not much in yours, old man. Owen—What do you mean? Dunne—Why, everything you've got is in your wife's name, isn't it?—*Tit-Bits.*

The Pancoast Ventilator manufactuaed by N. & G. Taylor Co., Philadelphia, Pa., is guaranteed to exhaust more cubic feet of air per minute than any other storm-proof ventilator made. This ventilator is made of black sheet iron and then galvanized. See their advertisement upon page ii.

Mr. Hart (to his wife, teasingly)—Making angel food, my dear? His Wife—No darling. You know if I did there wouldn't be anybody but me to eat it.—*Times.*

As a protection against accidents the Model Window Hinge cannot be too highly recommended, as it affords a safe and easy mode of washing windows without the danger of going outside the house this. If hinge is brought to the notice of the good housekeeper it cannot fail to come into general use.

The office of the company known as "The Model Window Hinge Co." is on 7th floor of the Mills Building, room 5, where the operation as applied to the window can be seen. Do not fail to call if you do not want you neck broken by falling from a window without the model hinge.

CITY BUILDING NEWS.

Alvarado near Douglass. Cottage; owner, Jacob Heyman; days' work; cost $2500.

Alvarado near Douglass. Cottage; owner, John Lynch; cost $1500.

Beal near Bryant. Excavations, brick and cement work; owners, Hobbs, Wall & Co.; architect, T. J. Welsh; contractor, J. F. Riley; signed, Feb. 26; filed, Feb. 27; cost $3000.

Belvedere near Waller. To build; owner, Mrs. M. J. Goodwin; contractor, D. Einstein; signed, Feb. 23; filed, Feb. 24; cost $4050.

Beulth and Schrader. To build; owner, Mrs. Emma J. Purnell; architect, Edgar A. Mathews; contractors, Caldwell & Nickerson; signed, March 3; filed, March 8; cost $1686.

Buena Vista Ave. near Waller. To build; owners, William H. Dick and Mary A. Dick; architect, R. H. White; contractor, White Bros.; signed, March 4; filed, March 5; cost $3800.

California Ave. and Powell Ave. Additions; owner not given; contractor, W. C. Hamerton; cost $1200.

Croke near Mission. Cottage; owner, Louis Metter; cost $1000.

Douglass near Alvarado. To build; owner, John Lander; cost $1500.

El Dorado and Rhode Island. Brick work for garbage crematory; owner, Sanitary Reduction Work; architect, Chas. Thackery; contractors, O. E. Emdy & Son; signed, Feb. 17; filed, March 3; cost $39,680. Roofing work, etc.; contractors, Conlin & Roberts; cost $2010. Carpenter work; contractors, Mascone & Rose; cost $2852. Iron work, etc.; contractors, Josh Hendy Machine Works; cost $19,50.0.

Fell near Laguna. Alterations and additions; owner, J. Silverstein; contractors, Carmichael & Grant; signed, Feb. 8; filed, Feb. 15; cost $2200.

Fell near Buchanan. Alterations and additions; owner, Martha A. Morrison; architect, F. B. Wendt; contractor, Chas. E. Miller; signed, Feb. 22; cost $3570.

Fulton near Lyon. Two-story frame; owner, Mrs. Louise Nieman; architects, Laist & Schwerdt; contractor, Franz & Burmeister; signed, March 4; filed, March 6; cost $3795.

Francis near Mission. Cottage; owner, Frederick Munk; days work; cost $1000.

Geary near Powell. Brick work for five-story brick; owner, A. Aronson; architect, C. H. Weisman; contractor, John F. Riley; signed, Feb. 15; filed, Feb. 24; cost $7500. Carpentery, mill work, etc.; contractor, F. V. Steinman; cost $6500. Sandstone work; contractors, McPhee Co.; cost $3325.

Grant Ave. and Sutter. Alterations and additions; owner, Mrs. Alice P. Sullivan; architect, Edward R. Swain; contractor, Mahoney Bros.; signed, Feb. 11; filed, Feb. 18; cost $10,175.

Grant Ave. and Sutter. Plumbing, gas fitting, etc.; owner, Mrs. Alice P. Sullivan; architect, Edward R. Swain; contractors, Allen & Looney; signed, Feb. 11; filed, Feb. 18; cost $1975.

Green near Scott. To build; owners, Otto C. Gross and H. M. Gross; architect, E. W. Hyde; signed, Feb. 24; filed, Feb. 25; cost $4500.

Green near Montgomery Ave. To build; owner, Mrs. J. Strauss; architect, M. J. Lyon; contractor, R. Fahy; signed, March 8; filed, March 12; cost $3045.

Green near Webster. Alterations and additions; owner, H. W. Luckey; contractor, A. Petry; signed, March 15; filed, March 15; cost $1600.

Greenwich and Jones. To build except plumbing; owner, Julius Riemer; architect, W. H. Armitage; contractor, L. M. Weisman; signed, March 9; filed, March 10; cost $3440.

Grove near Steiner. To build; owner, J. J. Crone; cost $5000.

Gough near Fulton. To build; owners, Giesen Bros.; contractor, G. T. Knopf; cost $3000.

Jackson and Octavia. Excavations, brick and granite work for two-story; owner Mrs. Isaac Hecht; architect, J. E. Krafft; contractors, Miller & Beck; signed, Feb. 11; filed, Feb. 11; cost $4950. Carpenter work, etc.; contractor, C. Chisholm; cost $16,400. Plumbing; S. Ickelheimer & Bro.; cost $2185. Painting, etc.; contractor, J. St. Denis; cost $1090.

Kentucky near 18th. Two-story frame; owner, James McHugh; contractor, R. O. Davis; signed, March 12; filed, March 15; cost $1250.

Lotta near Parnassus Ave. Cottage; owner, Ida H. Lutgen; contractor, W. W. Redmall; signed, Feb. 11; filed, Feb. 13; cost $2350.

Mission near 23d. Alterations and additions; owner, Chas. F. Guinlan and minor heirs; architect, B. J. Clinch; contractors, E. J. Thayer & J. H. Hughes; signed, Feb. 10; filed, 16; cost $1700.

Manchester near Stoneman. Additions; owner, Aug. Voss; contractor, H. Behrens; cost $800.

Montgomery junction of Bay. Frame building for manufactury; owner, Staffer Chemical Co.; day's work; cost $8000.

Nebraska and Cortland Ave. Cottage; owner, Henri Pottet; architect, E Depierre; contractor, R. Trost; signed, March 5; filed, March 6; cost $1474.

Ninth Ave. near "I" street. Cottage; owner, John F. Ritter; architect, Aug. Nordin; contractor, G. W. Hansbrough; signed, Feb. 24; filed, Feb. 26; cost $1500.

Ninteenth and Howard. To build; owner, O. Falch; architects, Martens & Coffey; contractor, C. Schutt; signed, Feb. 26; filed, Feb. 27; cost $3350. Plumbing, etc.; contractor, G. S. Sweeney; cost $1099. Painting; contractor, F. S. Schaefer; cost $570.

O'Farrell near Powell. Alterations and additions; owner, Thos. J. Regan; architect, T. J. Welsh; contractor, James E. Mooney; signed, Feb. 24; filed, Feb. 25; cost $4800.

O'Farrell near Powell. Excavation, etc.; owner, Thos. J. Regan; architect, T. J Welsh; contractor, Thos. J. Mooney; signed, Feb. 24; filed, Feb. 25; cost $2000.

Park Alley near Clay. To build; owner, D. T. and Anna Herzog; contractor, John Byron; signed, March 8; filed, March 12; cost $1275.

Post Office Building at Ferry Depot. Elevator; owner, Board of Harbor Commission; contractors, Cahill & Hall; cost $750.

Polk near Pine. Alterations and additions; owner, Julius Duetch; architect Wm. H. Wharff; builder, Geo. Trozler; days work; cost $900.

Pt. Lobos Ave. and 25th. To build; owner, W. A. Lowler; contractor, Louis Cereghino; signed, Feb. 19; filed, Feb. 26; cost $1800.

Pierce near Filbert. To build; owner, James Owens; architect, J. V. Campbell; contractor, Daniel Powers; signed, March 2; filed, March 3; cost $1800.

Sacramento near Davis. Brick and terra cotta work for two-story brick; owner, Estate of J. G. Fair; architect, Ed Owens; contractors, Miller & Beck; signed, Feb. 24; filed, March 1; cost about $10,000.

Sansome and Hallock. Elevators; owner, Jacob Stern; architects, Pissis & Moore; contractor, W. L. Holman; signed, Feb. 10; filed, Feb. 17; cost $3768.

Sansome and Hallect. Painting brick building; owner, Jacob Stern; architect Pissis & Moore; contractor, M. J. Donovan; signed, March 9; filed, March 12; cost $1500.

San Jose Ave. near 29th. To build; owner, J. Bluxome; contractor, John B. Glunz; signed, Feb. 25; filed, Feb. 25; cost $2352.

Stockton and Market. One-story brick; owner, O. D. Baldwin; day's work; cost $5000.

Shrader near Waller. To build; owner, J. K. Fraser; architect, W. Koenig; contractor, J. W. Coburn; signed, March 2; filed, March 2; cost $4290.

Surry near Diamond. Cottage; owner, F. C. Sowler; cost $1000.

Tenth Ave. near Clement. To build; owner, Charles F. Muller; architect, Wm. H. Armitage; contractor, Harry Wharton; signed, March 9; filed, March 15; cost $2400.

Twenty-second and Chattanooga. Cottage; owner, J. H. Van Glahn; contractor, G. M. Salsburg; signed, Feb. 26; filed, March 1; cost $1260.

Twenty-second and Chattanooga. Cottage; owner, J. H. Van Glahn; contractor, G. M. Salsbury; signed, Feb. 26; filed, March 2; cost $1290.

Twenty-third near Douglass. Cottage; owner, John Oswald; cost $1600.

Taylor near Clay. Three-story frame; owner, John Dunn; architects, McDougall Bros.; contractor, John H. McKay; signed, Feb. 15; filed, Feb. 16; cost $8727.

Van Ness Ave. and Elm Ave. Alterations; owner, I. Lowenberg; architects, Salfield & Kohlberg; contractor, John Furness; signed, March 8; filed, March 9; cost $1186.

Waller near Webster. Cottage; owner, Catherine Wren; contractor, Frank Gallagher; signed, Feb. 15; filed, Feb. 19; cost $1570.

Waller near Masonic Ave. Two-story frame; owner, Minnie Wheeler; contractor, T. T. Pottinger; signed, March 4; filed, March 5; cost $4200.

Waller near Masonic Ave. To build; owner, C. R. Wilson; contractor, A. W Jones; signed, March 6; filed, March 6; cost $5450.

Waverly Place near Sacramento. Excavations, etc., for two-story brick; owner Paul Fleury; architects, Pissis & Moore; contractor, M. V. Brady; signed Feb. 26; filed, Feb. 26; cost $1480.

Waverly Place near Sacramento. Carpenter work, etc.; owner, Paul Fleury, architects, Pissis & Moore; contractor, F. W. Kern; signed, Feb. 23; filed, Feb. 25; cost $1030.

Willard near Adeline. Frame building; owner, R. A. Vance; days' work owner, R. A. Vance; days' work; cost $6000.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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OLIVER EVERETT Secretary.

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WHILE the late Legislature of California is open to criticism for sins of omission as well as sins of commission, it passed one bill that is a meritorious one, and will tend to simplify materially the transferring of land and thus facilitate its purchase and sale. The bill is the one popularly known as the Torrens' bill, which we have frequently commented upon in these pages. In another column we give the more important sections of this bill in full, and a resume of all its provisions, believing the importance of the measure to all real estate holders justifies the amount of space occupied.

THE PUBLIC has been at last aroused as to the want of a new United States Government Building in San Francisco—the persistent efforts of the CALIFORNIA ARCHITECT AND BUILDING NEWS we hope have tended to this result.

Representatives of all the leading business interests in the city met at the Chamber of Commerce and adopted a memorial to Congress, urging that the work be begun immediately. The Trades Unions are also one with this.

The *Examiner* has the following to say on the subject:—"Once more information that work is about to begin on the San Francisco Post-Office comes from Washington to comfort and to cheer. However, as the years fleet by it is losing a measure of its power in this direction."

E SEE by late exchanges the war ship Oregon has gone upon the rocks at the entrance of the Dry Dock—the extent of damage as yet unknown but evidently of a serious nature.

Is it not about time to call a halt upon building these immense unmanageable monsters, that appear to be more dangerous to those that navigate them than to the enemy they are supposed to attack.

A Government that appears to be too poor to construct a post-office building for San Francisco, after ten years trial, should not waste millions upon millions to produce more war ships that they can not navigate from one port to another without wrecking.

E ARE glad to see that Mayor Phelan is attempting to prevent the taking up of the sidewalks by the show windows of shop-keepers by vetoing permission to grant the same.

We cannot do better than to give the reasons for refusing such permission in his own words:

"The evil has grown by reason of the fact that one property owner extends his show window over the sidewalk, thus compelling his neighbor to do the same, and so on progressively until all the show windows are projected. If the privilege was not granted in the first instance, every property-owner would be compelled to occupy his own land. He could produce the same effect on his own line by making embrasures instead of projections, and the public would not be the sufferers. As it is now one foot is taken off the sidewalk and given to the property-owner, thus narrowing the channel over which people are compelled to pass, inconveniencing and crowding them into the roadway. Such an absorption of the sidewalk is certainly in derogation of the rights of the citizen to its free and full use."

BILLS OF QUANTITIES AND THEIR RELATION TO BUILDING CONTRACTS.

PAPER READ BY G. ALEXANDER WRIGHT BEFORE THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS, FEBRUARY 12, 1897.

[CONTINUED FROM LAST ISSUE]

WE WILL now dwell for a moment upon what is being done in other large communities.

In 1891 I visited Melbourne, Australia, the most American city probably in the world, outside the United States—and there the quantity system had been in operation for twelve years or more. In Sydney, N. S. W., it was my privilege to exchange views very fully upon this subject with the president of the Institute of Architects (Mr. Horbury Hunt) and who by the way is an American—who informed me that the architects and builders of the city had just joined hands in the adoption of the quantity surveyor. In Scotland, quantities are used—the same system prevails in England and Ireland—and in Continental Europe a somewhat similar system of measure and value is found in various forms, and although not exclusively the case, the principle, of *so much work* (by measurement) for *so much money*, appears to find favor.

I know of no community where that principle, having once been adopted has been abandoned for the system such as we use here in San Francisco to-day. Nevertheless, we need not copy the system of *any* particulaa place. We can, if necessary, frame a system of our own—and adapted to the local needs of all parties concerned—and who can tell that such a system may not form the basis of one uniform national system for the entire union? I have reason to think that the necessity for some thing of this kind is being felt.

I have had some correspondence recently with Prof. Ware the editor of the *American Architect*, and that gentlemen writes me that he has long been hoping to see some modification of the quantity system universally adopted in this country, and he is not alone in this opinion, and I believe it would be a distinct step in advance if San Francisco could be the first city to take up this question in an organized way and to examiner it.

But I want to speak to you, upon the *advantages* of the quantity system as "briefly" as I know how. In the first place it will save at least one-half of the contractor's time and labor, and which is entirely unproductive *now*. Time we are told is money—and without question, unproductive labor is "waste"—and I believe it is beginning to be recognized. One frequently hears builders and material men say "I am about *tired* of figuring, there is nothing in it, etc.," but it is not to be *wondered* at. I noticed in one of the building papers the other day, a strong protest from a San Francisco contractor against the present unsatisfactory method of estimating and it is not so very long ago that a Boston architect (Mr. Rodman of Boston I think it was) had something to say in one of the professional journals on the subject. He denounced the present system of estimating as reckless, unscientific, and unpractical and I can but endorse his views.

Take the mill work of any large job for example—may be there are half a dozen millmen—all going over exactly the same ground, doing precisely the same thing either at the arohitect's office or elsewhere. A number of brickmen are doing the same in their department—then the concrete men come, and the masons, and the iron men, (but I needn't go through the list we are all familiar with them) twenty, thirty or even forty men or more, figuring in different departments for one job—and this goes on year in and year out—at least ninety per cent of these workers throwing away time and brains. Would they not be more profitably employed in supervising, more closely, what work they already have? and *yet*, the bulk of the work done by these thirty or forty men, could be done by *one* man. As *well*, you say? Why certainly, gentlemen, and I think with advantage to many a builders banking, account.

It has been said that it is better to have the contractor make out his own quantities as well as make up the money estimate. But *does* he (*as a general rule*) do *either* of these things—*now*, I know *some* who *may* do so; but *is* it not a *fact* that the tendency is largely to collect together all the cheapest bids that can be got fram material men and mechanics. The result added to the rough lumber bill perhaps, with something for labor and profit often times forms the "figure." I do not say this is not perfectly legitimate, under the present method, but the ease with which these sub bids are obtained indicates that it is frequently the *sub* bidders who do the bulk of the estimating, of course as I say, with certain exceptions. I remember an interesting point as showing the extent to this practice. There was a case before the courts some three years ago in which I was called as a wit — The issue was a *simple* one, viz: the actual value of a large building standing not far from us now. Several contractors were called as "experts" on both sides, some of these testified as to the value of the building, but under cross examination it transpired that their valuations were made up largely from figures or bids furnished to them for this particular purpose, and so they were testifying upon the strength of somebody else's opinion, and which as the Judge said, was not *evidence*, nor, was it estimating in the proper sense.

Another advantage of the quantity system is that it tells a bidder exactly in black and white, what he is to figure upon, there can be no mistaking what is meant, and we should hear less about omitting to figure items that ought to be figured. A bill of quantities is valuable and indisputable evidence upon all sueh points. Many a bidder can probably recall instances where he lost money upon a contract, though omitting something and which never *could* have occured if he had been bidding under the quantity system.

Another point for your consideration, would the quantity *system* place the incompetent man upon a level with the competent one? in other words, would the incompetent gain any advantage? I say *no*, it would be more likely to be the other way round, and my reason is this. An incompetent estimator is far more likely to forget something thah he is to include too much, this is an established fact, and competitors who *do* get in all their items are handicapped from the start by men who do not. They never know what kind of a break the other fellow will make. I have in the past been there myself and speak from experience. With quantities all are bound to *start* level as regards "quantity" and nine times out of ten this is an advantage to the best men, individual skill and judgment in *pricing*, will tell just as much as *with* quantities as *without* them, and the incompetent, will have a bigger fight on their hands than with the present method. The trouble unfortunately, does not end here. The best estimators have to protect themselves against the omissions of the incompetent. They do so by cutting their itemized prices down to cost, or nearly so, and to-day the keen competition job, is scarcely worth having as far as "profit" is concerned. Dull times are not wholly to blame for low prices, incompetent estimators have something to do with it.

Again, take changes on contracts and this is where that schedule, we filed away in the architects safe is *useful*.

Upon a change being contemplated or executed, it is an easy matter to get at the quantity of material added and omitted, figure it out at the *competitive*, prices given in the schedule and the whole thing is settled, without the chance of a dispute about the payment for the changes. It is all very well to say, disputes don't often occur but when they *do* occur, it is well for both contractor and architect to have something at hand, that will settle them at once, and with absolute fairness to the owner and contractor, quantities will *prevent* disputes usually, which is still better. In a recent case, which came into my hands as an arbitrator a bill of quantities would have been of great value in determining the liabilities and rights of the parties to the arbitration—indeed it is possible that an arbitration would never have been necessary at all.

But I need not occupy your time with further illustrations beyond saying perhaps that the specifications can be made much shorter than is usually done, for the quantities would contain all necessary detailed descriptions.

In concluding this section of my paper, I may remind you that neither the architect nor the contractor are put to the slightest expense for quantities, and I do not suppose that any class of mechanics or builders will seriously object to a document, which is the best of all guarantees in black and white, that they will not be called upon to do a dollar's worth more work than is *stated* (in detail) and is called for by the "quantities."

It might be well to see you a moment how the quantity system would affect the owner.

Before any such system can be adopted, a proper understanding between architects and contractors, is essential. All the available information, and data, on the subject should be obtained. Let the system be thoroughly investigated. If it is then desirable, a uniform standard of measurement for everything in a building—agreeable to all parties, should be established so that the technical terms, descriptions, order and method adopted in *all* quantities (by whomsoever prepared) should be uniform throughout, so that they may be readily understood by all bidders methodical course is essential, so that after pricing one or two sets of quantities, contractors will know exactly where to find any particular item.

To meet any doubt as to the possibility of one contractor set of quantitses being more advantageous than anothers it would be an easy matter to have, open for free inspection one spare copy of the quantities on file at the architect's office, and another, say in the directors room of the Builders' Exchange. This opportunity for verification by any bidder would prevent improper practices, but such details as these might be easily arranged. We will assume now that an owner (whilst very righly trying to obtain a good building at the lowest market price) is willing to pay a fair and legitimate sum for honest and legitimate work. That owners wants an "estimate" or *bid*. Now he does not want it to be any more, than it ought to be, and the contractor does not intend it to be any less. Now it is an impossibility to get an accurate estimate, without accurate quantities, and which are essential to the owner's interest and he must be so informed, and that the expense will be included in the bids.

In view of the work put into modern buildings, compared with that of early days, it is unjust on the part of owners, to expect each contractor to furnish quantities, as well as to calculate cost values, the latter is their legitimate field, but the owner should, through the quantity surveyor say how *much* lumber, *how much* brick work, how many pounds of steel, etc., etc., his agent, the architect has decided to use.

A contractors estimate of the cost of a building, that is the *lowest* estimate is the very thing the owner needs the most, and it is "custom" alone, and a very bad custom at that which has brought about the present one sided condition of things. It matteas not, gentlemen, how long the present method has continued it is wrong in principle, bad in equity, and very largely unproductive in practice to contractors. No body of men are justified in performing unproductive labor, even though custom *has* sanctioned the practice. As I said in the *American Architect* of January 23rd:—

"An owner may decline to build on receiving bids, upon any pretence; he may in his heart never have intended to build at all, unless he saw a chance of getting two dollars of a builder's money for one of his own, and yet he now gets his estimate for *nothing*. This does really seem absurd.

An owner pays (or should pay) his architect for what work he may do, and if the owners be made to see the advantages to themselves of the quutity system, they should be willing to pay for the quantities also. Such a practice, when the justice of it became understood, would not prevent honest owners from building, but it might deter the "grasping" owner (the man who imagines the architect's special duty is to help him to rob the builder); it might deter these men, from defrauding builders out of their time and experience, as is sometimes the case under present conditions."

I remember some months ago, in discussing this "quantity" question I expressed the opinion that if the owner could not be prevailed upon to furnish quantities, he should at least contribute something towards the cost of the estimate, especially where no bid was accepted, and I notice that quite recently the same thing has been suggested in the official journal of the National Association of Builders, published at Boston, still, although this plan may have its advocates, the introduction of some system, of so much work, for *so much money*—is I think, the only true remedy for present evils.

One advantage of quantities to the owner is, that supposing bids exceed the contemplated expenditure, as they have a way of doing sometimes, the cost of the building might easily be cut down, without re-figuring, by striking out of the quantities such items as can be dispensed with, still retaining the balance of the estimate, at legitimate competitive prices, which as I have pointed out, would also apply to any changes, etc.

Again, the less desirable class of contractors or those less skilled in determining money values, will hardly run the risk of figuring on less material than is called for by the quantities, and as they cannot buy any cheaper than the more responsible men the chances will be in favor of the best men being the lowest bidders and this, if not a direct money advontage, will at least favor good work, certainly the more accurate the estimate, the less temptation there is to do anything improper.

I hope no gentlemen will accuse me of professional sacrilege, if I say that from the average owners point of view, the *cost* of a building, is to *him* of almost, or quite, as much consequence, as the *design*—and yet, although he may occupy several months perhaps in making up his mind what he wants, the vitally important question to him, and to the contractor, of what it will cost? has as a general thing to be rushed through almost at lightning speed and as though his very existence depended upon it.

If a building does not go on by reason of the owner deciding not to build, he of course still has to pay for the quantities. They were essential to a proper estimate—which he has received, and can be used, just as soon as he decides to go on. In a general way I think it is an equal and reasonable dividing up of the responsibility, for the owner to furnish the quantities if the contractor furnishes the money estimate. The great progress which is being made in modern building construction, certainly suggests the need of some corresponding improvement in the manner of estimating and taking bids.

In conclusion, gentlemen, I hope I have not detained you too long, beyond the time which should be occupied for a paper of this kind. I much appreciate your kind invitation to be present to-day and I thank you Mr. President and gentlemen for you courteous attention.

AN ACT FOR THE CERTIFICATION OF LAND TITLES AND THE SIMPLIFICATION OF THE TRANSFER OF REAL ESTATE.

Section 1. Recorders and ex officio Recorders in the several counties of this State shall be registrars of titles in their respective counties, and their deputies shall be deputy registrars. All laws relative to recorders and their deputies, including their compensation, clerk hire, and expenses, shall extend to registrars and their deputies, so far as the same may be applicable, except as in this Act otherwise provided. Registrars of titles shall be county officers within the meaning of the laws of this State.

Sec. 2. The official bonds now required by law to be given by Recorders and ex officio Recorders before entering upon the discharge of their duties, shall also apply to and cover the faithful discharge of their duties as registrars, whether such additional condition be specifically provided for in such bonds or not.

Sec. 3. Deputies may perform any and all duties of the registrar, in the name of the registrar, and the acts of such deputies shall be held to be the acts of the registrar.

Sec 4. Registrars and deputy registrars are prohibited from practicing law, or acting as attorneys or counselors at law, or having as a partner a lawyer or any one who acts as such, or from acting as searchers of title under this Act.

BRINGING LAND UNDER THE ACT.

Sec. 5. Land may be brought under the operation of this Act by the filing with the County Clerk of a verified petition to the Superior Court of the county within which such land is situated, by the owner of any estate or interest in such land, whether legal or equitable (other than an undivided share, or an easement). The Clerk shall immediately indorse on such application the exact time of its presentation, and enter the same in a book kept for that purpose and known as the Land Register Docket. Persons who collectively claim to hold the entire legal estate in fee simple may jointly file such petition. A corporation may apply by its authorized agent, an infant by his guardian; any other person under disability by his guardian or trustee. Land constituting a single parcel and lying partly in two or more counties may be included in one application, which may be made in either county in which the land lies, but the certificate issued therefor must be filed with the registrars of all the counties within which such land is situate. Two or more parcels of land may be included in one application if owned by the same person and in the same right.

Sec. 6. The petition shall set forth substantially:

(*a*) The name, occupation, place of residence, and post-office address of the applicant, and if the application is by one acting in behalf of another, the name, place of residence, post-office address, and capacity of the person so acting, and the nature of the disability of the person for whom he is acting.

(*b*) Whether the applicant (except in case of a corporation) is married or not, and, if married, the name and residence of the husband or wife.

(*c*) The description of the land.

(*d*) The applicant's estate or interest in the same, and whether the same is subject to an estate of homestead.

(*e*) Whether the land is occupied or unoccupied, and, if occupied, the name and post-office address of each occupant, and what estate or interest he has or claims in the land.

(*f*) Whether the land is subject to any easement, lien, or incumbrance, and, if any, the name and post-office address [if known] of each holder thereof, and the nature and amount of the same, and, if recorded, the book and page of the record.

(*g*) Whether any other person has any estate or claims any interest in the land, law or in equity, in possession, remainder, reversion, or expectancy, and, if any, the name and post-office address [if known] of ever such person, and the nature of his estate or claim.

(*h*) The names and post-office addresses of all the owners of the adjoining lands, so far as he is able, upon diligent inquiry, to ascertain the same.

(*i*) If the applicant is a male, that he is of the full age of twenty-one years; if a female, that she is of the full age of eighteen years. If the application is made by a corporation, its name, when and where incorporated, its principal place of business, and the names and post-office addresses of its president and secretary. If the application is by a husband or wife, and the property is community property, the petition must so state, and both spouses must join therein. A plat or plan of survey of the land made by the county or a licensed surveyor must accompany the application, and if said land is a part of a city, town or subdivision, the application must refer to the book and page of the records of the county where the map of said city, town, or subdivision is recorded, if at all.

Each application must be accompanied by an abstract of the title, verified by the searcher making the same, as required in proceedings in partition, or, if made by a corporation engaged in the business of making and certifying abstracts of title, then in lieu of the affidavit a certificate by such corporation, under its seal, shall be sufficient. When the title to the land in question has been previously determined by a final decree of a court of competent jurisdiction, such abstracts need not antedate such decree unless required by the court in which such application is filed. No person or corporation shall be authorized to make or furnish such abstracts of title until after entering into an undertaking with two or more sufficient sureties to the people of the State of California in a sum not less tnan [ten] thousand dollars, which may be increased from time to time by order of the court. Such bonds shall be recorded in the record of official bonds in the Recorder's office of the county and then filed in the County Clerk's office. Said bond shall be conditioned to pay all damages and costs which the State may sustain by reason of any error or insufficiency in said abstract. The sureties on such bond shall qualify as provided in section ten hundred and fifty-seven of the Code of Civil Procedure, and the sufficiency of the bond and of the sureties thereon shall be approved by a Judge of the Superior Court of the county where such bond is to be filed. The sureties upon such bond may become severally liable in portions of not less than five hundred dollars each, making in the aggregate at least two sureties for the whole sum. Said bond shall be renewed as often, at least, as once in every period of three years.

Sec. 7. No mortgage, lien, charge, or lesser estate than a fee simple shall be registered unless the fee simple to the same land is first registered.

Sec. 8. It shall not be an objection to bringing land under this Act, that the estate or interest of the applicant is subject to any outstanding lesser estate, mortgage, lien, or charge; but every such lesser estate, mortgage, lien, or charge shall be noted upon the certificate of title and the duplicate thereof, and the title or interest certified shall be subject only to such estates, mortgages, liens, and charges as are so noted, except as herein provided.

Sec. 9. No title derived through sale for any tax or assessment shall be entitled to be first registered, unless it it shall appear to the satisfaction of the court, upon the hearing of the application, that the applicant, or those through whom he claims title, have been in the open, actual, continuous, uninterrupted, undisputed, exclusive, and adverse possession of the land under such title at least five years, and have paid all taxes and assessments legally levied thereon for five successive years.

Sec. 10. The application may be amended only by petition vertified as in the case of the original. Such amendment may be ordered by the court on its own motion, or upon the motion of any person interested in the proceeding.

Sec. 11. The filing of the application in the office of the County Clerk shall be sufficient notice of the same to all subsequent purchasers or incumbrancers without the filing of a *lis pendens* in the office of the Recorder.

Sec. 12. The court shall, in its discretion, examine the abstract itself, or refer the same, as provided in section [eighteen] of this Act. If it shall appear to the court, from an examinotion of the abstract, or from the report of the referee, that the title to the land described in the application is substantially as alleged by the applicant, the application shall be set for hearing, otherwise the court may order the application [dismissed.]

Sec. 13. When the time and place for hearing the application is fixed by the court, notice thereof shall be given to all parties interested, as shown by the petition and the abstract or referee's report, and to the husband or wife of the applicant, if married, and the owners of adjoining lands, in the same manner as the service of a summons in a civil action, [and] [by publication for at least four weeks, in some newspaper of general circulation, to be designated by the court;] *provided*, that no copy of abstract or map need be served with the petition. Any person interested may appear and object to the granting of the application, and if such objection is sustained, the costs of the same shall be paid by the applicant; if not, by the person so objecting. The time for appearance after service shall be the same as in the case of a civil action.

Sec. 14. Upon the day set for the hearing of tne application, or at such time as the same may be continued to, the court shall cause examination to be made into the applicant's title to the land in question, and shall hear testimony as to the allegations of the petition, or of any objections thereto; and if any defects are found in the application, or in the applicant's title to the land, or if any of the allegations of the petition are found to be untrue, or any objections to said petition are sustained, the court may dismiss such application, or may give the applicant such time as the court may deem reasonable, before finally passing upon his application.

Sec. 15. If it shall be made to appear, to the satisfaction of the court, that the notice required by section thirteen has been duly given and served; that the facts stated in the application are true, and that the applicant is the owner of the land, or interested therein, as set forth in the petition, the court shall duly make, give and enter a decree to that effect, which said decree shall contain an accurate description of the property in question, with a diagram thereof, and also shall set forth all liens and incumbrances on said land, with the name of the holder thereof, and the nature, amount, and order of the same, and, if recorded, the book and page of the

record. Any party aggrieved by such decree may appeal therefrom in the manner now or hereafter provided by law for appeals in civil actions.

Sec. 16. A certified copy of such decree shall be filed in the office of the registrar, who shall thereupon issue a certificate of title to the person entitled thereto as shown by said decree, and shall proceed to bring said land under the operation of this Act, as herein provided. Said certificate shall contain the description of the property set forth in the decree, and shall also show the nature, amount and order of the liens thereon.

Sec. 17. The decree of the court ordering registration shall be in the nature of a decree in rem, and shall be final and conclusive as against the rights of every and all persons, known and unknown, to assert any estate, interest, claim, lien, or demand of any nature or kind whatever, against the land so ordered registered, except as provided in this Act.

Sec. 18. Upon the filing of the partition the court may appoint a referee to examine and report upon the abstract accompanying the same. Such referee shall be an attorney in good standing, skilled in the examination of titles, of not less than three years' practice at the bar of the court so appointing him. The compensation of the searcher and of the referee shall be fixed by the court, or agreed upon between themselves and the applicant, and shall be paid by the applicant as a part of the costs of the proceeding.

Sec. 19. Provides that the written opinion of referee is to be filed before decree is made.

Sec. 20. Provides that applicant may withdrow application upon payment of fees at any time prior to issuance of certificate of title.

Sec. 21. Provides that on transfer of interest or death of applicant, proceedings may be continued.

Sec. 22. Provides that Registrar is to keep record of particulars of issuance.

Sec. 23. Provides that certificate of title is to be in duplicate; its contents; original to be retained by registrar.

Sec. 24. Provides form of certificate.

Sec. 25. In all cases where two or more persons are entitled as tenants in common to an estate in registered land, such persons may receive one certificate for the entirety, or each may receive a separate certificate for his undivided share.

Sec. 26. Provides that registered owner may consolidate several or divide up one certificate.

Sec. 27. Provides that certificate may be issued by order of court in lieu of lost duplicate; proceedings therefor.

Sec. 28. If an owner's name or description is incorrectly registered, or becomes changed (*e. g.* by marriage, adoption, divorce, etc.), the court, upon the filing of an application and proof of facts in the manner set forth in section [twenty-seven] of this Act, and the production by the owner of the duplicate certificate, shall order the registrar to issue a new certificate, with such changes as the case may require.

THE REGISTER OF TITLES.

Sec. 29. Provides for original certificate to be entered in register; memorials to be on latest certificate.

Sec. 30. Provides for receipt to be given for duplicate certificate on its issuance.

Sec. 31. In every case of first registration of land or an estate or interest therein, the same shall be deemed to be registered under this Act, when the registrar shall have marked upon the certificate of title, in duplicate, the volume and *folium* of the register in which the original may be found.

Sec. 32. Every transfer or registered land shall be deemed to be registered under this Act. when the new certificate to the transferee shall have been marked, as the case of the first registration; and all other dealings shall be considered as registered when the memorial or notation shall have been entered in the register upon the *folium* constituted by the existing certificate of title of the land. But, for the protection of the transferee or person claiming through any transfer or dealing, the registration shall relate back to the time of filing in the registrar's office the deed, instrument, or notice, pursuant to which the transfer memorial or notation is made.

Sec. 33. Provides that party aggrieved may bring action against registrar and others.

EFFECT OF REGISTRATION.

Sec. 34. The registered owner of any estate or interest in land brought under this Act shall, except in case of fraud to which he is a party, or of the person through whom he claims without valuable consideration paid in good faith, hold the same subject only to such estates, mortgages, liens, charges, and interests as may be noted in the last certificate of title in the registrar's office, and free from all others, except:

1. Any subsisting lease or agreement for a lease for a period not exceeding one year, where there is actual occupation of the land under lease. The term "lease" shall include a verbal letting.

2. All public highways embraced in the description of the lands included in the certificate.

3. Any subsisting right of way or other easement, however created, upon, over, or in respect of the land.

4. Any tax or special assessment for which a sale of the land has not been had at the date of the certificate of title.

5. Such right of action or claim as is allowed by this Act.

6. Liens, claims, or rights arising under the laws of the United States, which the Statutes of California cannot require to appear of record upon the register.

Sec. 35. After land has been registered no title thereto adverse or in derogation to the title of the registered owner shall be acquired by any length of possession.

Sec. 36. Except in case of fraud, and except as herein otherwise provided, no person taking a transfer of registered land, or any estate or interest therein, or of any charge upon the same from the registered owner, shall be held to inquire into the circumstances under which, or the consideration for which, such owner or any previous registered owner was registered, or be affected with notice, actual or constructive, of any unregistered trust, lien, claim, demand, or interest; and the knowledge that any unregistered trust, lien, claim, demand, or interest is in existence shall not of itself be imputed as fraud.

Sec. 37. In case of fraud, any person defrauded shall have all rights and remedies that he would have had if the land were not under the provisions of this Act; *provided*, that nothing contained in this section shall affect the title of a registered owner who has taken bona fide for a valuable consideration, or if any person bona fide claiming through or under him.

Sec. 38. If a deed or other instrument is registered, which is forged, or executed by a person under legal disability, such registration shall be void; *provided*, that the title of a registered owner, who has taken bona fide for a valuable consideration, shall not be affected by reason of his

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CALIFORNIA ARCHITECT & BUILDING NEWS
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C.A.HILL & CONDON
ARCHITECTS

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

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CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

VOL. XVIII Nº 4. APRIL 1897.

James J. Newsom Architect

Residence Corner Lyon & Washington Streets.

BRITTON & REY PHOTO LITH

Mills Bldg SF

claiming title through some one, the registration of whose right or interest was void, as provided in this section.

SEC. 39. No unregistered estate, interest, power, right, claim, contract, or trust shall prevail against the title of a registered owner taking bona fide for valuable consideration or any person bona fide claiming through or under him.

SEC. 40. Provides that in absence of fraud, certificate of title is conclusive evidence in suit for specified performance of contract to purchase.

SEC. 41. Provides that in ejectment or partition suits,

Sec. 42. Provides for the register to be received as evidence.

certificate is conclusive evidence.

SEC. 43. Whenever a memorial has been entered, as permitted by this Act, the registrar shall carry the same forward upon all certificates of title until the same is canceled in some manner authorized by this Act.

SEC. 44. All dealings with land or any estate or interest therein, after the same has been brought under this Act, and all liens, incumbrances, and charges upon the same subsequent to the first registration thereof, shall be deemed to be subject to the terms of this Act, and to such amendments and alterations as may hereafter be made. The bringing of land under this Act shall imply an agreement which shall run with the land, that the same shall be subject to the terms and provisions of the Act and of amendments and alterations thereof.

SEC. 45. No person shall commence any action at law or in equity for the recovery of land, or assert any interest, right in, or lien or demand upon the same, or make entry thereon adversely to the title or interest certified in the first certificate bringing the land under the operation of this Act, unless within five years after the first registration. It shall not be an exception to this rule that the person entitled to bring the action or make the entry is an infant, lunatic, or is under any disability, but action may be brought by such person by his next friend or guardian. It shall be the duty of the guardian, if there is any, to bring action in the name of his ward whenever it is necessary to preserve or enforce the wards rights in registered land; *provided, however*, before such action shall proceed, it must be made to appear to the court that the person bring such action, or those under whom he claims, had no actual notice of the proceedings to register such lands in time to appear and file his objections or assert his claim.

SEC. 46. The action provided for in the last preceding section, shall in no way affect or disturb the rights of any person in said land, acquired subsequent to the registration thereof, bona fide and without knowledge, and for a valuable consideration.

SEC. 47. Any person having any interest, right, title, lien, or demand, whether vested, contingent, or inchoate, in, to, or upon registered land, which existed at the time the land was first registered, and upon or for which no cause of action shall have accrued at the date of the registration of the land, may, prior to the expiration of said five years after such registration, file in the registrar's office a notice, under oath, setting forth his interest, right, title, lien, or demand, and how and under whom derived, and the character and nature thereof; and if such claim is so filed, an action may be brought to assert or recover or enforce the same at any time within one year after the right of action shall have accrued thereon, or at any time within the period of five years after said registration, and not afterwards. It shall be the duty of a life tenant or trustee to file such claim on behalf of any remainderman or reversioner, whether the remainder or reversion be at the time vested or contingent, and of a guardian to file such claim on behalf of his ward.

SEC. 48. A registered owner of land desiring to transfer his whole estate or interest therein, or some distinct part or parcel thereof, or some undivided interest therein, or to grant out of his estate an estate for life or for a term of not less than ten years, may execute to the intended transferee a deed or instrument of conveyance in any form authorized by law for that purpose. And upon filing such deed or other instrument in the registrar's office, and surrendering to the registrar the duplicate certificate of title, the transfer shall be complete and the title so transferred shall vest in the transferee; thereupon, the registrar shall issue in duplicate and register, as hereinbefore provided, a new certificate, certifying the title to the estate or interest in the land desired to be conveyed to be in the transferee, and shall note upon the originial and duplicate certificate the date of the transfer, the name of the transferee, and the volume and *folium* in which the new certificate is registered, and shall stamp across the original and surrendered duplicate certificate the word "canceled," in whole or part, as the case may be.

SEC. 49. When only a part of the land described in a certificate is transferred, or some estate or interest in the land is to remain in the transferer, a new certificate shall be issued to him for the part, estate, or interest remaining in him.

Sec. 50. Provides that time of filing be noted on instrument.

Sec. 51. Provides that papers filed are to be retained in the office of registrar.

Sec. 52. Provides that such copies are to be received in evidence.

Sec. 53. Provides that existing forms of deeds may be used.

Sec. 54. Provides that name and address be indorsed on instrument, and notices to be sent there.

Sec. 55. Provides that instrument affecting registered land is to be but a contract until registered.

Sec. 56. Provides that certificate before re-transfer, etc., must show freedom from tax sale and homestead.

Sec. 57. Provides that certificate is to state marriage or representative capacity, if any.

MORGAGES, LEASES AND OTHER CHARGES.

Sec. 58. Provides that incumbrance on registered land must be registered.

Sec. 59. Provides that incumbrance is created on filing of charge.

Sec. 60. Provides for trust deed to be treated as a mortgage.

Sec. 61. Provides that if instrument charging land be in duplicate or more parts, but one need be filed.

Sec. 62. Provides that certified copies identified as such may be issued.

Sec. 63. Provides for assignment of charge by filing and noting of same by memorial.

Sec. 64. Provides for release of part or whole of charge to be noted as an assignment.

Sec. 65. Provides that charges are to be enforced as at present, except as herein provided and except that notice of lis pendens must be filed with registrar.

ATTORNEYS IN FACT.

Sec. 66. Provides that attorney in fact to deal with registered land must file his power.

TRUSTS, CONDITIONS AND LIMITATIONS.

Sec. 67. Whenever a deed or other instrument is filed in

the registrar's office for the purpose of effecting a transfer of, or charge upon, registered lands, or any estate or interest therein, and it appears from such instrument that the transfer or charge is to be in trust, or upon any condition or limitation therein expressed, the registrar shall note in the certificate, and the duplicate thereof, or memoral, the words "in trust," or "upon condition," or "with limitations," as the case may be, but no entry shall be made of the particulars of any such trust, conditions or limitations.

Sec. 68. Provides that every trustee with express authority, shall have power of sale.

Sec. 69. Provides that no trustee, with limitation, shall sell without order of court to sell.

Sec. 70. Provides that trustee under will have power to sell unless it be withheld.

ESTATES IN PROBATE, IN INSOLVENCY, AND IN EQUITY PROCEEDINGS.

Sec. 71. Provides that existing statutes governing probate, insolvency, and equity proceedings are not affected.

Sec. 72. Provides for orders of sale, decrees of distribution, etc., to contain direction to registrar.

Sec. 73. Provides that certified copy of order, decree, deed, and confirmation be filed with registrar.

Sec. 74. Provides that order of court is necessary for sale of land of insolvent and probate estates; confirmation and issuance of certificates thereof.

Sec. 75. Provides that power of sale of executor be noted.

Sec. 76. Provides that registrar is to issue certificate or note memorial, such to be conclusive.

TAX SALES.

Sec. 77. Provides for notice of purchase to be filed and mailed.

Sec. 78. Provides that tax deed already issued must be registered.

Sec. 79. Provides that interested persons must be made parties to application.

Sec. 80. Such application shall be heard by the court, which shall render a decree showing the condition of the title to such land, and who is the owner thereof, and upon presentation to him, of a duly certified copy of such decree, the registrar shall issue a certificate for said land in accordance with the terms and conditions of said decree.

Sec. 81. Provides that tax deed to State is conclusive.

Sec. 82. Provides that notice required by section eighty shall be personal or by mail and publication.

Sec. 83. Provides that on redemption, memorial is to be canceled.

PARTITION AND JUDICIAL SALES.

Sec. 84. Provides that all parties noted on register must be parties.

Sec. 85. Provides that decree must be filed before certificate be issued.

Sec. 86. Provides that when sale is ordered, purchaser must file copy of decree.

Sec. 87. Provides that when mortgage is on undivided share, lien attaches only to lands set off to mortgagor.

Sec. 88. Provides that purchaser at judicial sale must file certified copy of order confirming sale.

LIS PENDENS: NOTICE OF ACTION.

Sec. 89. Provides that notice to affect registered land must be filed with registrar.

Sec. 90. Provides that when suit, etc., is dismissed, certificate of dismissal or release must be filed with registrar.

LIENS, EXECUTIONS, ATTACHMENTS, ETC.

Sec. 91. Provides that certified copy of judgment or decree must be filed.

Sec. 92. Provides that certificate of levy of attachment, or execution, must be filed.

Sec. 93. Provides that notice of mechanics' liens must be filed.

Sec. 94. Provides that notice of assessments for street improvements, sewers, etc., must be filed by clerk.

Sec. 95. Provides that no notice is necessary is case of lien for labor performed for corporation not complying with law.

Sec. 96. Provides that clerk of court may file certificate of dismissal of suit or satisfaction of judgment.

CORRECTIONS OF ERRORS IN CERTIFICATE.

Sec. 97. Provides that no correction of register be made without order of court.

Sec. 98. Provides that registrar may apply to court for correction of errors or mistakes in certificate.

Sec. 99. Provides that if all parties consent, court may order correction of errors or mistakes.

Sec. 100. Provides that if all parties do not consent, court may hear testimony as to alleged error or mistake.

EMINENT DOMAIN.

Sec. 101. Provides that right of eminent domain be not affected.

INDICES.

Sec. 102. Provides for property indices to be kept.

Sec. 103. Provides for name indices to be kept.

MISCELLANEOUS PROVISIONS.

Sec. 104. Provides that registered lands may be partitioned.

Sec. 105. Provides that registration of adverse lien is not conclusive of regularity of proceedings or instruments by which created.

Sec. 106. Provides that in case of fraud, rights and remedies to be the same as if land was not under this Act.

Sec. 107. Provides that clerk of court shall notify registrar of appeal.

Lection 108. Provides that all fees collected by registrar are to be paid to County Treasurer and applied to expenses of administration of this Act.

Sec. 109. Provides that Board of Supervisiors shall furnisher registrar all necessary books, etc.

Sec. 110. Provides that the Attorney-General, State Controller, and Secretary of State are to prepare forms.

PENALTIES.

Sec. 111. Provides that fraudulent procurement of certificate shall be a felony.

Sec. 112. Provides that fogery of seal, signature, or instrument in registrar's office shall be a felony.

Sec. 113. Provides that no proceeding or conviction under this Act shall affect any remedy at law or in equity.

FEES.

Sec. 114. *First*—The fees in respect of applications and proceedings under them prior to registration, shall be the same as in actions in the Superior Court.

Second—There shall be paid to the registrar:

For issuing a certificate title, including one duplicate thereof, one dollar and fifty cents.

For each additional duplicate, fifty cents.

For registering each transfer, including the issue and registration of the new certificate, one dollar and fifty cents.

For entry of each memorial on the register, including the indorsement upon the duplicate certificates, one dollar.

For the cancellation of each certificate, memorial, or charge twenty-five cents.

For each certificate showing condition of register, one dollar and fifty cents.

For filing any instrument, or for a certified copy of the register, or of any instrument or writing on file in his office, the same fees allowed by law to Recorders for like services.

CONSTRUCTION.

Sec. 115. This Act shall be construed liberally so far as may be necessary for tho purpose of effecting its general intent, but does not adopt by implication the construction of any similar legislation of other jurisdictions which this Act may to any extent have followed.

Sec. 116. This Act shall take affect and be in force from and after the first day of July, eighteen hundred and ninety-seven.

BOOKS AND PERIODICALS.

Ray's Recruit by Captain Charles King, U. S. A., is the complete story in LIPPINCOTT'S MAGAZINE. Everybody who read one of Captain Kings' novels will want to read it so the demand for the magazine should be large, as besides this story the contents are unusually interesting.

Improvement in building construction—mainly relating to Portland Cement, Concrete and Artificial Stone combined with Iron and Steel—by Peter H. Jackson.

This brochure contains an illustrated account of the latest improvements in fireproofing floor construction.

The first construction considered is that called the combined artificial stone and steel sidewalk, in which the roof of the vault consists of galvanized steel corrugated bottoms covered with a thin layer of artificial stone thoroughly tamped into the corrugations which are of dovetail shape—the whole not taking up a greater thickness than three inches. This construction at this thickness can be made up to 5 feet span between beams, center to center, 3¾ inches for 6 feet centers and 4½ inches for 7 feet centers.

The advantages claimed are great strength, burglar and fireproof and greater head-room gained by thinness of floor, while the cost is no greater than the common method.

In direction across the corrugation are embedded in the artificial stone, fence twisted wires which tie the floor in opposite direction to corrugation, and prevents cracking—due to shrinkage. For all this Mr. Jackson offers scientific and cogent reasons.

Complete specifications for this constructions is given in the body of the work, as well as for sidewalks combined with arches either flat or segmental and concrete floors in which reliable ties are used.

Part second treats of the forces exerted on such floors as the latter, and the manner in which reliable ties in concrete construction resist tensile strain.

The book is replete with interesting matter well worth the study of the architect and engineer and is written in the terse nervous style so characteristic of Mr. Jackson. It forms quite an ammunition for those who are defending concrete construction against its enemies.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects; meets second Friday of each month at 408 California street.

Seth Babson, Pres. — W. P. Moore, Vice-Pres.
Oliver Everett, Sec. — John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. — Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec't. — August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. — Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. — W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. — T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. — W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. — Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. — J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. — Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. — M. V. Brady, Sec.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

FIRST PRESBYTERIAN CHURCH, Berkeley, Sam'l Newsom, Architect.

SKETCH for Residence in Brick and Stone Trimmings, for O. D. Baldwin, Sam'l Newsom, Architect.

ACME ATHLETIC CLUB BUILDING, Oakland, Charles Mau, Architect.

I. O. O. F. COLUMBARIUM, Cahill & Condon, Architects.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

BUILDING RESTRICTIONS IN DEED OF CONVEYANCE.—Where lots have been conveyed subject to a convenant that no buildings shall be erected on the same within a certain distance of the street, such convenant is enforceable, though the streets on which such lots abuts has changed from a residence street to a business street.

Zipp v. Barker, Sup. Ct. App. Div., 40 N. Y. Supp. Reporter, 325.

ENCROACHMENT OF BUILDING.—Where a contract for the sale of real estate provides for a variance in the dimensions of the premises of one inch in width and depth, the purchaser will be relieved from the contract if the building on the premises encroaches more than one inch on the adjoining premises.

Steckler v. Godillot, City of N. Y. Court, 40 N. Y. Supp. Rep. 864.

BUILDING CONTRACT AND SECURITY BOND.—Where there is a sufficient reference in the bond given to secure the performance of a building contract, the reference makes all the stipulations of the contract a part of the bond, and they may be read together without a recital in the bond that the contract was a written one.

Forst v. Leonard, Sup. Ct. Ala., 20 Southern Reporter, 587.

MATERIAL MAN:—The Supreme Court of California holds that one who agrees to furnish certain mantels, tiles and grates, and the appurtenances of same, for a building, and to deliver and set them in position, is a material man, and not an original contractor within the meaning of the mechahics' lien law of that state.

Bennett v. Davis, 45 Pacific Reporter. 684.

MATERIAL MAN:—The same court also holds, a person contracting to furnish doors, sashes, blinds, etc., which I facturing to order, he purchased ready made, is a material man only.

Wilson v. Hind, 45 Pacific Reporter, 695.

ARCHITECTURE OF THE NINETEENTH CENTURY.

THE best that can be said of the architecture of the nineteenth century is that it has been an architecture of exceptionally learned, ingenious, and accomplished individualities. It has been an art of experiments which have failed, and of revivals which have been fruitless. These individualities, with their consciousness highly educated and trained, have been embarassed rather than aided by their knowledge of the great achievements of the past. It does not seem to have occurred to them to appeal to the sympathies of the people by uttering their inspirations in the vulgar tongue, but they have labored with immense talent and ingenuity to interpret and apply dead languages. Their efforts have been reminiscent, excursive, and experimental. The architects have analized, theorized, disputed and argued. They have formed schools, canserving classic or romantic traditions—schools which have fallen apart, because progress has been found to be impossible on merely archæo logical lines. Many of the individualities developed under these conditions have been brilliant and powerful, and have had a great following of lesser men. As the century has advanced certain of these individualities have been inspired by nobler and loftier motives. The architecture of the century, because it has been nurished in the same soil that produced the electric telegraph, the telephone, and all the other triumphs of industrial art, has exhibited a certain sporadic vitality, and, conscious of the universal energy, has occasionally thrown out mighty branches full of the possibilities of a great fruition; but, because it has not enjoyed the advantage of concentrated effort, it has not flowered as it flowered in the thirteenth and sixteenth centuries, still less as it flowered in the ages of Periclos and Agustus.—*Henry Van Brunt in the February Atlantic.*

BUSINESS MOSAICS.

Before you decide what plumbing to have in your new house call upon M. S. James, room 27 Flood Building, and examine what he has to show you in the way of bath tubs, kitchen sinks and the various appliances in this line for producing health and comfort in your dwelling. Mr. James is the Pacific Coast representative of The J. L. Mott Iron Works, established in 1828 and well known all over the United States as leader in improvements in the way of making your home comfortable.

Tommy—Paw, what is a designing villian? MR. FIGG—Oh, the description would apply to one of these carpenter architects about as well as anything.

Architects are well informed of the merits of the articles manufactured by the P. & B. Paraffine Paint Co., but it may be well to call the attention of those who are their own architects, and therefor perhaps not so well posted as to the merits of their paint, building paper and roofing. and assure them they cannot go wrong if they order what they want in that line from this reliable firm at 116 Battery street, San Francisco, Cal.

Magistrate—You're charged with stealing some diamond studs. Have you anything to say? PRISONER—Well, yer worship, the card on which was the studs was marked "collar studs," so I took it as an invitation an' did collar 'em.—*London Fun.*

Now that the season of hot weather is coming it is time to look at Hill's Patent Sliding Blinds; instead of being blind and going some place else call on Edward B. Hindes & Co., 411 Mission street and get the newest blind made.

Dunham, Carrigan & Hayden Co., 17-19 Beale St. An illustration of their American Sliding Door Hanger for which they claim unusual advantages is given upon page ix of this journal. The company also sell the Yale & Towne Manufacturing Co. celebrated Yale Locks. In this connection it may be interesting to know that originally this line of locks comprised but seven varieties now has expanded to embrace upwards of three hundred different locking devices, from a large front door lock to the smallest cabinet lock, and from a massive prison lock to a diminutive padlock.

"It is indeed hard," said the melancholy gentleman, "to lose one's relatives." "Hard?" snorted the gentleman of wealth; "hard? It is impossible."—*Figaro.*

In nothing is the house holder more apt to be imposed upon than in paint, therefore a few facts upon paint from a reliable source should be of great value; W. P. Fuller & Co. are competent to give the information upon this point, they say: To make perfect paint the material must be pure and finely ground and throughly mixed with heavy machinery. The Phœnix paint is made in this way.

Sarcastic BARBER (pausing in the mutilation)—Will you have a close shave, sir? VICTIM—(with a gasp)—If I get out of this chair alive, I shall certainly consider it such.—*Omaha Bee.*

George Goodman patentee and manufacturer of artifical stone in all its branches; this stone speaks for itself and is its own recommendation—307 Montgomery street, Nevada Block, San Francisco.

CITY BUILDING NEWS.

Baker near McAllister. Cottage; owner, Peter Schenkel; architect, J. L. Frank; contractor, R. Trost; signed, March 16; filed, March 18; cost $3318.

Beal near Bryant. To build; owners, Hobbs, Wall & Co.; architect, T. J. Welsh; contractor, Pacific Refining and Roofing Co.; signed, March 19; filed, March 23; cost $1050.

Bernard near Jones. To build; owner, Mrs. Susan Underwood; architect, C. M. Rousseau; contractor, W. R. Kenny; signed, March 29; filed, April 1; cost $1950.

Bush and Battery. Alterations; owner, Lewis Meyerstein; architect, E. R. Swain; contractors, L. and E. Emanuel; signed, March 16; filed, March 19; cost $2852.

Bush and Battery. Elevator; owner, Isabella Clark, et al; architect, E. R. Swain; contractor, W. L. Holman; signed, March 26; filed, April 2; cost $2890.

Bryant Ave. Two-story frame; owner, W. Fairgneeve; architect, G. H. Batcheldor; contractor J. Bucher; signed, April 6; filed, April 7; cost $2300.

California near 3d Ave. To build; contractors, Petterson & Person; signed, March 29; filed, April 1; cost $2150.

California Ave. near Virginia Ave. Two-story frame; owner, Mrs. W. Byrnes and Mrs. A. Byrnes; contractor, Alex. O. Brown; signed, April 2; filed, April 7; cost $1806.

California and Leidesdorff. Addition and alteration; owner, Nathan Mayer, Baron Rothschild, et; architects, Pissis & Moore; conractor, F. W. Kern; cost $38,500. Stone work; contractor, J. D. McGilvry; cost $8297. Plumbing, etc.; contractor, E. J. Duffey; cost $3650. Electrical work; contractor, California Electric Works; $1108. Heating, etc.; contractor, Geo. H. Tay & Co.; cost $ 1520. Paining; contractor, J. St. Dennis & Co.; cost $1448.

California near Laguna. Additions and alterations; owner, R. J. Wilson; architect, W. J. Mathews; contractor, J. A. Smillie; signed, April 13; filed, April 14; cost $2100.

Central Ave. near Waller. To build; owner, Edward J. Duffey; contractor, J. J. Mauseau; signed, March 28; filed, March 28; cost $2944.

Devisadero near Post. Three-story frame; owner, W. C. Hays; contractor, B. R. Van Deusen; signed, April 3; filed, April 7; cost $12,500.

Devisadero street. Three-story frame; owner, M. Block; contractor, H. P. Conrady; signed, April 8; filed, April 8; cost $6650.

Eighth Ave. near C. To build; owner, R. H. Savory; contractors, Marcuse & Remmel; signed, March 23; filed, April 5; cost $2000.

Eighteenth and Dolores. Heating and ventilating Works; owner, Board of Education; architect, C. I. Havens; contractors, Peck & Williamson Co., signed, March 12; filed, March 19; cost $9120.

Eleventh Ave. near J. Cottage; owner, Howard Hines; contractor, Ed. Cox; signed, April 10; filed, April 12; cost $1380.

Fell near Fillmore. To build; owner, Mrs. C. L. Purlenky; architect, P. Schwerdt; contractors, Wilhelm & Taylor; signed, March 25; filed, March 26; cost $3890.

Fell near Fillmore. Plumbing; owner, Mrs. C. L. Puolenky; architect, P. Schwerdt; contractors, Hughes Bros.; signed, March 26; filed, March 30; cost $575.

Fifth street, No. 438. Removal of building back new building in front; owner, Mr. Judson; day's work; cost $4000.

Filbert near Webster. Cottage; owner, John Marchi; architect, Jules Godart; contractor, C. M. Depew; filed, March 18; cost $1698.

Fremont near Mission. Two-story brick; owner, Thomas Breen; architect, D. C. Coleman; contractor, M. V. Brady; signed, March 20; filed, March 22; cost $4977. Excavation and concrete; contractor, J. Leonard; cost $2500.

Fifteenth Ave. near California. Cottage; owner, John McDonald; contractor, M. J. Scott; signed, March 22; filed, March 23; cost $1050.

Fulton near Masonic Ave. Two-story frame; owner, Margaret A. Martin; contractor, Chas. Mills; signed, March 11; filed, April 2; cost $2950.

Fourth and Welsh. To build; owner C. B. Rode; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, April 5; filed, April 6; cost $3104.

Geary near Larkin. Alterations and additions; owner, Esther Attell; architects, Bowpsmith & Whitaker; contractor, D. R. Perry; signed, March 22; filed, March 23; cost $1540.

Geary near Broderick. To build; owner, John F. & Matilda Krutmeyer; architect, R. H. White; contractors, Petterson & Person; signed, March 30; filed, Apr. 11; cost $1763.

Greenwich near Fillon. To build; owner, G. L. Keller; architects, Mahoney & Bryant; contractor, C. Kroeker; signed, March 22; filed, March 24; cost $3400.

Greenwich near Octavia. To build; owner, W. C. Miller; contractors, Sarconda & Thompson; signed, March 22; filed, April 4; cost $1235.

Harrison near 24th. To build; owner, Mary C. Collins; architect, D. C. Coleman; contractor, John T. Coleman; signed, March 20; filed, March 20; cost $[illegible].

Howard near Fremont. Two-story brick; owner, Christian Fraelich; architect, Arthur Sutton; contractor, Shaw & Lane; signed, March 30; filed, March 30; cost $[illegible].

Jackson and Taylor. Three-story frame; owner, D. V. Buckley; architect, B. J. Leach; contractors, Shaver & Hughes; signed, April 5; filed, April 6; cost $[illegible].

Lake near 23d Ave. Cottage; owner, Clothilda Capapa; architect, H. Hess; contractor, [illegible] Geoghegan; signed, March 27; filed, April 6; cost $1610.

Laguna near Page. Two-story frame; owner, Joseph Hoene; contractor, C. Zauderich; signed, Frederick; filed, March 16; cost $1450.

Larkin near Jackson. Plumbing, etc; owner, W. Buchanan; architect, L. T. Larkin; contractor, P. Doherty; signed, March 26; filed, March 27; cost $418. Stone, cement and concrete; Doherty; signed, March 26; filed, March 27; cost $418. Carpentry; painting, etc., contractor, F. Miller; signed, March 20; filed, [illegible]; cost $2280.

Larkin near Jackson. Three-story frame; owner, Mrs. Nora Wallace; architects; Mahoney & Bryland, contractor, T. Haywell; signed, March 24; filed, March 24; cost $3885.

Larkin near Sacramento. Two-story frame; owner, Mrs. Sarah Potek; architect, Kemtzer & Barth; contractor, C. Schutt; signed, April 9; filed, April 13; cost $3780.

Lampet near Fillmore. Alterations and additions; owner, Michael McIntyre; architect, M. J. Welsh; contractor, R. Fahy; signed, April 9; filed, April 10 cost $1032.

Leavenworth near McAllister. One-story brick; owner, Mr. Grimm; contractor, H. Sutton; cost $800.

Liberty near Castro. Eight frame dwellings; owner and builder; F. Nealon; cost $20,000.

Lombard near Gough. Cottage and stable; owner, John Bazzini; architect, J. Godart; contractor, P. A. Piombelli; signed, April 12; filed, April 12; cost $2497.

Lyon and Grove. Three two-story dwellings; owner, F. Ruthland; contractor, C. Zwierlein; signed, March 17; filed, March 18; cost about $8000.

Market and Third. Terra cotta, etc., for eight-story brick; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractors, Gladding, McBean Co.; signed, March 11; filed, April 14; cost $17,760. Roofing; contractor, Jas. Conlin; signed, April 10; filed, April 14; cost $1175.

Market and Third. Granite work; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractor, Raymond Granite Co; signed March 17; filed, March 20; cost $8525.

Market and Third. Cast iron work; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractor, Joshua Hendy Machine Works; signed, Feb. 25; filed, March 17; cost $3620.

Market and Third. Plastering iron lathing, etc.; owner, Claus Spreckels; architects, Reid Bros.; contractor, Thomas Mannix; signed, March 26; filed, April 9; cost $10,986. First-story window frames, etc.; contractor, California Artistic Metal Works; signed, March 31; filed, April 8; cost $62,590. Elevators; contractor, Crane Elevator Co; signed, March 17; filed, March 27; cost $32,350.

Market and Third. Interior wood work, etc.; owner, Claus Spreckels; architect, Reid Bros.; contractor, Carsley Manufacturing Co.; signed, March 5; filed, March 20; cost $66,310. Steam heating; contractors, Montague & Co.; cost $67,0. Marble and mosaic floors; contractor, Electric Electric Works; cost $15,373. Marble work; contractor, Ratlino & Bianchi; cost $20,468. Plumbing; contractor, E. J. Duffy; cost $22,416.

Minna near Sixth. Alterations and additions; owner, Little Sisters' Infant Shelter; architect, Oliver Everett; contractors, Holm & Shelbley; signed; March 30; filed, March 30; cost $202.

Market and Third. Concrete work, etc.; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractor Geo. Goodman; signed, March 31; filed, April, 2 cost $3700.

Mission near 23d. Heating and ventilation; owner, Mission Lodge, Masonic Assn.; architects, Herman & Swain; contractor, W. Morgan & Co.; signed; April 6; filed, April 7; cost $866.

Mission near 23d. Brick and terra cotta work; owner, Mission Lodge; architect Herman & Swain; contractors, Miller & Beck; signed, March 23; filed, March 23; cost $8855. Carpenter work; contractor, Thomas H. Day; signed, March 23; filed, March 23; cost $8800. Plumbing, etc.; contractor, W. S. Snook & Son; signed, March 24; filed, March 24; cost $1147.

Nevada Ave. near Courtland Ave. Cottage; owner, J. Heyman; cost $1200.

Nineteenth Ave. near California. Alterations; owner, M. Barker; cost $800.

Nineteenth and Noe. To build; owner, Jos. H. Robinson; contractor, John Dyer; signed, March 28; filed, March 29; cost $4750.

Ninth Ave. and Railway Ave. To build; owner, G. Reichstetter; architect, J. L. Frank; contractor, R. Trost; signed, April 8; filed, April 12; cost $4957.

Ocean Beach Bulevard. Additional story to Villa; owner, R. H. Savary; contractors, Marcuse & Remmel; signed, March 23; filed, April 5; cost $2000.

Pacific Ave. and Broderick. Alterations; owner, Mrs. Clara E Cunningham; architect, Clinton Day; contractor, C. Chisholm, signed, April 8; filed, April 6; cost $2260.

Powell near O'Farrell. Alterations and additions; owner, Mrs. Kenie Chabot; architect, M. J. Mathews; contractor, P. Malony; signed, April 5; filed, April 9; cost $4975.

Powell street No. 13. Alterations and additions; owner, Mrs. Charlotte Clark; architects, Havens & Toepke; contractor, Geo. H. Walker; signed, March 22; filed, March 24; cost $4600.

Pine near Lyon. Cottage; owner, Mrs. Annie Loughery; contractor, G. S. Gillespie; signed, April 5; filed, April 6; cost $1350.

Second Ave. near Clement. To build, owner, W. J. Kilday; architect, A. J. Barnett; contractor, Ed. Mooney; signed, April 8; filed, April 12; cost $1570.

Shrader near Beulah. To build; owner, Nellie E. Scott; contractor, W. W. Redmall; sined, April 8; filed, April 9; cost $2642.

Sixth Ave. near Pt. Lobos. To build; owner, C. B. de Pas; architect, E. Deplerre; contractor, Ira W. Coburn; signed, April 7; filed, April 7; cost $1940.

Sixteenth near Castro. Alterations and additions; owner, C. W. Eichbaum; architects, Copeland & Pierce; contractor, J. J. Doering; signed, April 6; filed, April 10; cost $1150.

Stockton near Clay. Two-story brick; owner, Jas. Goetz; architect, T. J. Welsh; contractor, D. J. Brannan; signed, March 30; filed, April 1; cost $4825. Carpentry work; contractor, A. L. Campbell; cost $1984.

Sutter near Jones. Electric elevator; owner, Henry Kohler; architect, H. Gellfuss; contractor, Cahill & Hall Elevator Co; signed, March 12; filed, March 12; cost $3285.

Sutter near Hyde. Elevator; owner, Dr. Julius Rosenstern; architects, Salfield Kohlberg; contractor, W. L. Holman; signed, March 3; filed, March 19; cost $2550.

Tehama near 4th. To build; owner, Mrs. E. M. Dumont; architect, J. Godart contractor, L. B. Perramont; cost $1158.

Twenty-first and Folsom. To build; owner, J. Schmidt; architect; H. Gellfuss; contractor, W. R. Jack; signed, April 2; filed, April 2; cost $3300.

Twenty-third near Douglass. Cottage; owner, J. C. Clark; builder, J. Hegman cost $1500.

Twenty-third near Hoffman. Cottage; owner and builder, J. Hegman; cost $2500.

Twenty-third near Capp. To build; owner, Thos. F. Brannan; contractor, W. Helbing; cost $2900.

Twenty-forth Ave. Lake. Additions; owner, F. Treichel; days work; cost $1000.

Union and Laguna. Carpenter work; owner, Adolph Eisenbach; architects, Salfield & Kohlberg; contractor, Jos. Bucher; cost $7150. Plumbing; contractor, H. Williamson; cost $1480. Concrete work; contractors, P. H. Goessel & L. M. Zimmerman; cost $1625.

Union near Webster. To build; owner, Mary Muir; architects, Mooser & Son contractor, A. Guilbert; signed, April 7; filed, April 10; cost $1540.

Vallejo near Polk. Additions; owner, Golden Gate Land Co.; architect, H. Gellfuss; contractor, J. Schuler; signed April 5; filed, April 6; cost $1470.

Valencia near 26th. To build; owner, Henry Hoffman; architect, J. McHenry; contractor, Jos. Kemp; cost $3250.

Van Ness Ave. and Clay. Iron fences, etc; owner, Claus Spreckels; architects, Reid Bros.; contractor, Winslow Bros. Co; cost $3150.

Van Ness Ave. near Bay. Cottage; owner, Frank P. Endlich; architect, C. A. Meussdorffer; contractor, F. V. Steinman; cost $1893.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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OLIVER EVERETT Secretary.

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IN ANOTHER column we publish an Amendment to the Mechanics' Lien Law of the State of California, that will be of interest to owners of real estate and all others connected with the building business.

This ammendment was passed by the late legislature and approved March 27, 1897, and imposes additional obligations on those persons who are still enterprising enough to want to improve their real estate holdings.

The intention of the law is good, in endeavoring to make it compulsory on the part of the owner to give the public due notice of the date of the completion of contracts, in order that creditors shall have some certainty in filing their liens. that they have been filed within the statutory time limit.

There has often been serious question about the date of the actual completion of buildings, and if this law helps to determine that point it will be of material advantage to all who honestly desire to comply with the requirements of law, and not avail themselves of technicalities to defeat the plain intention of the law.

However the practical value of the amendment can only be ascertained by actual trial, when any defects that may exist will soon be brought to light. In the mean time owners should make themselves familiar with the new requirements, and not fail to make and file the proper notice of completion.

TENANTS on the site of the proposed Post-office building have been notified to vacate by June 8th, as work on the site will be commenced by the Government by the 1st of July.—*Examiner.*

In the same issue of that paper, but on another page will be found the following dispatch, directly contradictory of the above item:

WASHINGTON, May 9.—Owing to the resignation of Supervising Architect Aiken it is impossible to state just when work will be commenced on the San Francisco public building. Orders have been issued for the dismantling of the buildings now on this site, and plans are practically completed for the superstructure of the new building. Advertisements for bids for excavating will shortly be sent out, according to Chief Executive Officer Kemper of the Supervising Architect's office, and the contract will be awarded within a month after these bids are received. Owing to changes made in the Supervising Architect's office, however, it is impossible to state just when actual work will be commenced.

It is dollars to doughnuts that July 1st will come and go without a visible change in the situation.

The *Call* however, is already patting itself on the back at the prospect of the actual commencement of work on the foundations, as the result of its agitation.

Several years ago it was positively and authoritatively

stated that work would be begun on the "first day of March;" this is what leads us to think that possibly the *Call* is not out of the woods, and that it may yet have to acknowledge the truth of the old adage "there's many a slip twixt cup and lip."

AMENDMENT TO THE MECHANICS' LIEN LAW.

CHAPTER CXLI.—AN ACT TO AMEND SECTION ELEVEN HUNDRED AND EIGHTY-SENEN OF THE CODE OF CIVIL PROCEDURE, CONCERNING THE FILING OF MECHANICS' LIENS.

[Approved March 27, 1897.]

THE people of the State of California, represented in Senate and Assembly, do enact as follows:

Section eleven hundred and eighty-seven of the Code of Civil Procedure is hereby amended so as to read as follows:

1187. The owner of any property on which labor has been performed, or for which materials have been furnished to be used in the construction, alteration, addition to, or repair, either in whole or in part, of any work, mentioned in section eleven hundred and eighty-three of this Code must, within ten days after the completion thereof or within forty days after cessation from labor upon any unfinished contract, or upon any unfinished building, improvement, or structure, or the alteration, addition to, or the repair thereof, file for record in the office of the County Recorder of the county, or city and county, in which such property or some part thereof is situated, a notice setting forth the date when such building, improvement, or structure, or the alteration, addition to, or repair thereof, was actually completed, or in case of cessation from labor for thirty days, the date on which such cessation actually occurred, and said notice shall also contain the name and the nature of the title of the person who caused the said building, improvement, or structure to be erected, or said alteration, addition to, or repair to be made, and also a description of the property sufficient for identification, and said notice must be verified by said owner or some other person in his behalf. In case any such owner neglect to file said notice as herein required, within the time herein required, then the said owner and all persons deraigning title from him, and all persons claiming an interest in said property, shall be estopped in any proceedings brought to foreclose any mechanics' lien or liens, provided for in this chapter, from maintaining a defense therein based on the ground that said lien or liens have not been filed within the time provided in this chapter. Said notice, when so filed for record, must be recorded by the County Recorder with whom the same is filed for record, and the fee for recording the same shall be the sum of one dollar.

Every original contractor, at any time after the completion of his contract, and until the expiration of sixty days after the filing of said notice of completion or notice of cessation of labor by the owner, and every person, save the original contractor, claiming the benefit of this chapter, at any time after the completion of any building, improvement, or structure, or of the alteration, addition to, or repair thereof, and until the expiration of thirty days after the filing of said notice of completion or cessation, by said owner, or within thirty days after the performance of any labor in a mining claim, must file for record with the County Recorder of the county, or city and county, in which such property or some part thereof is situated, a claim containing a statement of his demand, after deducting all just credits and offsets, with the name of the owner or reputed owner, if known, and also the name of the person by whom he was employed, or to whom he furnished the materials, with a statement of the terms, time given, and conditions of his contract, and also a description of the property to be charged with the lien, sufficient for identification, which claim must be verified by the oath of himself or some other person; *provided, however*, that in any event all claims of lien must be filed within ninety days after the completion of said building, improvement, or structure, or the alteration, addition to, or repair thereof. Any trivial imperfection in the said work, or in the construction of any building, improvement, or structure, or of the alteration, addition to, or repair thereof, shall not be deemed such a lack of completion as to prevent the filing of any lien; and in all cases the occupation or use of a building, improvement, or structure, by the owner, or his representative, or the acceptance by said owner or his agent of said building, improvement, or structure, and cessation from labor for thirty days upon any contract or upon any building, improvement, or structure, or the alteration, addition to, or repair thereof, shall be deemed equivalent to a completion thereof for all the purposes of this chapter.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 7.

BUILDING REGULATIONS CONTINUED FROM FEBRUARY NUMBER.

II. Tests.

THE plumber will test all of the soil, waste, drain, and vent pipes herein described, including branches, in the presence of an inspector of the department of buildings, and after due notice to the superintendent of buildings, by a pressure test; the pressure to be applied as directed by the inspector, and after all openings in the pipes have been securely closed by the plumber or other person in charge of the work. None of said pipes shall be covered until after they have stood the test to the satisfaction of the inspector.

III—CESSPOOLS AND SEWERS.

No cesspools will be allowed where there is a well on the same or adjacent premises, without a special permit from the superintendent of buildings.

The ..... will construct in ..... at ..... feet from the building a cesspool ..... by ..... and ..... deep, with ..... inch ..... walls, and bottom made absolutely watertight by means of ..... The cesspool will be covered with ..... and ventilated by .....

As soon as it is possible to connect above-mentioned house with a public sewer, the owner will have the cesspool emptied, cleaned, disinfected, and filled with fresh earth, and

have such connection made in the manner prescribed by the regulations of the superintendent of buildings.

PRIVATE SEWERS.

Where there is no public sewer in the street, and it is necessary to construct a private sewer to connect with a public sewer in an adjacent street or avenue, it must be laid outside the curb under the roadway of the street on which the houses front, and not through the yards or under the houses. Such sewer will be constructed in the following manner:

HOUSE SEWERS—EXCAVATION.

The ..... will make the necessary excavation for the house sewer from the ..... wall to the ..... sewer in ....., making a smooth bottom for each pipe, free from all projections of rock, and with the soil well rammed to prevent settling of the pipe.

HOUSE SEWER—EARTHENWARE.

[Note.—The laying of earthenware drainpipe for house sewers, in made or filled-in ground, is prohibited by the rules established by the superintendent of buildings. But where the soil consists of a natural bed of loam, sand or rock it is permitted to be laid from outside the cellar, vault, or area wall to the street sewer, if laid in strict compliance with the following directions.]

The ..... will make a separate connection for each building with the ..... sewer by an earthenware pipe ..... inches in diameter, hard and salt glazed, and not less than three-fourths of an inch thick, run at a uniform grade of not less than one-fourth inch per foot, extending the same to a point not less than two feet outside of the outer face of the front cellar, vault, or area wall, as the case may be. Every section will be bedded in cement at the hub. The ends of the pipe will be wetted before apply the cement, and the space between each hub and the small end of the next section will be completely and uniformly filled with the best quality of hydraulic cement, care being taken to prevent any cement being forced into the drain to become an obstruction. No tempered-up cement will be used. A straight edge will be used, and the different pipe sections laid in perfect line on the bottom and sides.

HOUSE SEWER—OR IRON.

Or the plumber will make a separate connection for each building with ..... sewer in ..... by ..... inch extra heavy cast-iron pipe, run at a uniform grade of not less than one-fourth inch per foot, to a point just inside of the ....., cellar, or vault wall, as the case may be.

The house sewer in each case will be connected to the street sewer at a point directly in front of the house for which it is laid.

Old sewers or house drains can be used for new buildings only when found by an inspector of the department of buildings to conform in all respects to the regulations governing new sewers and drains. They will in each case be uncovered for examination by the .....

Notice will be sent to the superintendent of buildings when any sewer or drain pipe herein specified is ready for inspection; and it can be covered only after it has been examined and pronounced satisfactory by an inspector of the department of buildings. In filling the trench no stones will be placed in contact with the pipe, and the earth will be thoroughly packed in without moving the pipe in the slightest degree or starting any of the joints.

IV—HOUSE DRAIN.

The plumber will make a proper connection with the house sewer by extra heavy cast-iron pipe and set a ..... inch extra heavy cast-iron running or half S-strap just inside of the front wall, with a hand-hold for cleaning, covered with a screw cap, properly fitted.

A fresh air inlet of extra heavy cast-iron pipe, not less than four inches in diameter, will be provided and properly connected with the house drain on the inlet side of the house trap, and extended up flush with the sidewalk near the street curb, and properly covered by a galvanized iron grating leaded into the flagstone; or extending to ..... not less than fifteen feet from any door or window, and opening at least twelve inches above finished grade, with cap, bend, or grating.

The ....., will build a ..... box or manhole with ..... cover about the drain trap, so as to make it readily accessible.

The plumber will continue the house drain of extra heavy cast-iron pipe.....inches in diameter, along the cellar wall or ceiling from trap to the point shown on the plan, giving it a uniform grade to the trap of not less than one-fourth inch per foot. The house drain must not be laid beneath the cellar floor, unless the locations of fixtures in the cellar or basement, or the drainage of yards, cellars, or areas requires it to be so laid. Make necessary changes in direction by carved pipes and all connections by Y-branch pipes and one-eight or one-sixteenth bends. From the points shown on the plan, branch pipes of extra heavy cast-iron to be connected with the drain-pipe to receive the soil and waste pipes, the rain-water leader, and the connections from the area, cellar, and yard drains.

All of said branch pipes to be of the diameter hereinafter described and as shown on accompanying plan of cellar drainage.

Where hand-holes for cleaning are provided on the house drain or its branches or their traps, or on the house-drain trap, proper ferrules with screw covers will be used and made gas tight.

V.—SURFACE DRAINAGE, ETC.

All yards, cellars, areas, and light courts will be properly graded by the owner and drained as hereinafter specified. The traps for all such drains will be placed inside the cellar wall and made accessible.

Cellars will not be connected with the house drain unless absolutely necessary, dry cesspools being used where practicable. If connected to the house drain, running traps with cut-off valves and proper water supply will be provided for each connection, as follows:

The ..... will build in each yard, cellar, area, and light court, where shown on plans, a brick cesspool or catch basin, ... by ....., made water tight if sewer connected, and the plumber will set over each a ..... strainer and make connection therewith as specified.

Provide and set where shown on plans ..... inch extra heavy cast-iron yard drain, connecting with house drain and trapped by ..... inch running trap.

Provide and set where shown on plans —— inch area and light court drains, connecting with the house drain and trapped by ..... inch running trap.

If found necessary to prevent dampness, the owner will

ventilates habitable rooms; and where they do not open otherwise to the external air, they must be ventilated by means of a separate shaft, not less than 3 square feet in area, to extend above the roof, and arrange for the admission of light and air at the top in like manner as the shafts for rooms.

WATER-CLOSETS, ETC.

No privy vault or cesspool shall be allowed, if water-closets can be connected with the street sewer. At least one water-closet shall be provided for each two families. The general privy accommodation shall not be placed in the cellar.

YARDS, AREAS, ETC.

Yards, areas, cellars, and light courts shall be properly graded and drained and flagged or concreted.

ALTERATIONS AND ADDITIONS.

No alteration in the light and ventilation of the premises for which this permit is granted shall be made, except upon the express written approval of the superintendent of buildings; nor shall any additional structure be erected upon the lot except upon such approval and a special permit.

_____,

Superintendent of Buildings.

TRANS-MISSISSIPPI EXPOSITION.

OMAHA, May.—A small army of men is now at work on the site of the Trans-Mississippi and International Exposition. Contracts call for the completion of grading within forty days. Meantime the plans of buildings will be perfected. Acting jointly, Walker & Kimball, surpervising architects, and Manager Kirkendall of the Department of Building and Grounds, have awarded the buildings to the following named architects, who will prepare plans:

Agricultural—Cass Gilbert, St. Paul, Minn.
Art—Eames & Young, St. Louis.
Electricity and Machinery—Dwight Perkins, Chicago.
Mines and Mining—J. J. Humphrey, Denver, Colo.
Manufactures and Liberal Arts—S. S. Beeman, Chicago.
Spectatorium—Fisher & Laurie, Omaha.

The architects will begin work upon plans at once.

The most imposing feature of the exposition of 1898 is to be the mineral exhibit. It is proposed to set apart a portion of the grounds for this purpose under the designation of Eldorado, in which a silver palace is to be the central structure. The building as proposed by Mr. S. S. Beman of Chicago, one of the architects of the World's Fair buildings, is to be about 450 feet square, and its title, "Silver Palace," signifies the character of the exhibit to be made in it. It is to be built of metal and silver plated.

It seems very appropriate to select a highly ornate Gothic style of architecture for this building, as this style lends itself readily, with its pinnacles, arches, flying buttresses and graceful and delicate forms, to the idea usually associated with silver art work. Milan cathedral has been referred to by the poet as "Frozen Music," and the sentiment is fully justified by the exquisite grace and lace-like effect of its forest of pinnacles, flying buttresses and statuary. It was from this architectural fountain that the inspiration for the Silver Palace design was drawn.

If one can picture in his mind the fairy-like effect of silvered pinnacles, crockets and points presenting a forest of spires to the silver moon or the golden sun for their reflecting and dancing scintillations, a faint idea of the character and novelty of the possibilities of this beautiful idea can be had. It lies only in the province of the poet to adequately describe the bewildering beauties and glories of this Fairy Palace. Truly the possibilities of effects to be here realized are illimitable.

Generally speaking the plan of the building may be described as a perfect square, surrounded by open arcades and loggias at each story similar to the Venetian palaces. The corners are marked by octagonal towers, terminating with spires and pinnacles. These lower towers will each be 140 feet high.

The crowning glory of the palace will be the central lantern or spire, which will be 250 feet high and octagonal in form, and 100 feet in diameter. This lantern is located in the center of the palace, and is to be roofed with glass. Wide avenues will traverse the floor, at the intersection of which will be placed this lantern, access to which will be had by means of elevators. These avenues will be lofty and beautiful in their cathedral-like proportions and lightness. They are to be covered with glass. In the center of each of the four square courts will be a lantern, or dome covered with glass.

The possibilities of the elestrical illuminations are inexhaustible, and colored and flickering lights may top the pinnacles and illuminate the crockets, and outline the graceful curves of the flying buttresses. It is proposed to house the various silver interests in this palace fully illustrating the silver idea from the mining and smelting to the illimitable ramifications of the arts, the industries and finance.—*The Omaha Daily Bee.*

IN STREETS AND PAPERS.

I HEARD a capital story of a young architect the other day which introduced a rather novel incident on the well-worn subject of the mother-in-law, and showed that, at times architects have certain advantages over ordinary folk. This young man, it appears, had decided that the epoch in his existence had arrived at which he should take unto himself a wife. Preliminaries were arranged with the lady, and as a further step in advance a house was begun for the young couple at a point sufficiently remote from civilization to be agreeable and retired.

Everything went along swimmingly until the hard times struck these United States, and the young man found himself with a greater contact on his hands than his funds permitted. Not unnaturally, being his own client, work was gradually brought to a standstill on the mansion, until a solitary workman represented the architectural activity in that place that once had been such a hive of art and industry.

Meanwhile the marriage had been postponed from time to time on the very obvious grounds that the house was not yet finished; clearly, if the young people had no place to go to, marriage was out of the question. This went along for some time until Mama-in-law-that-was-to-be, who luckily resided

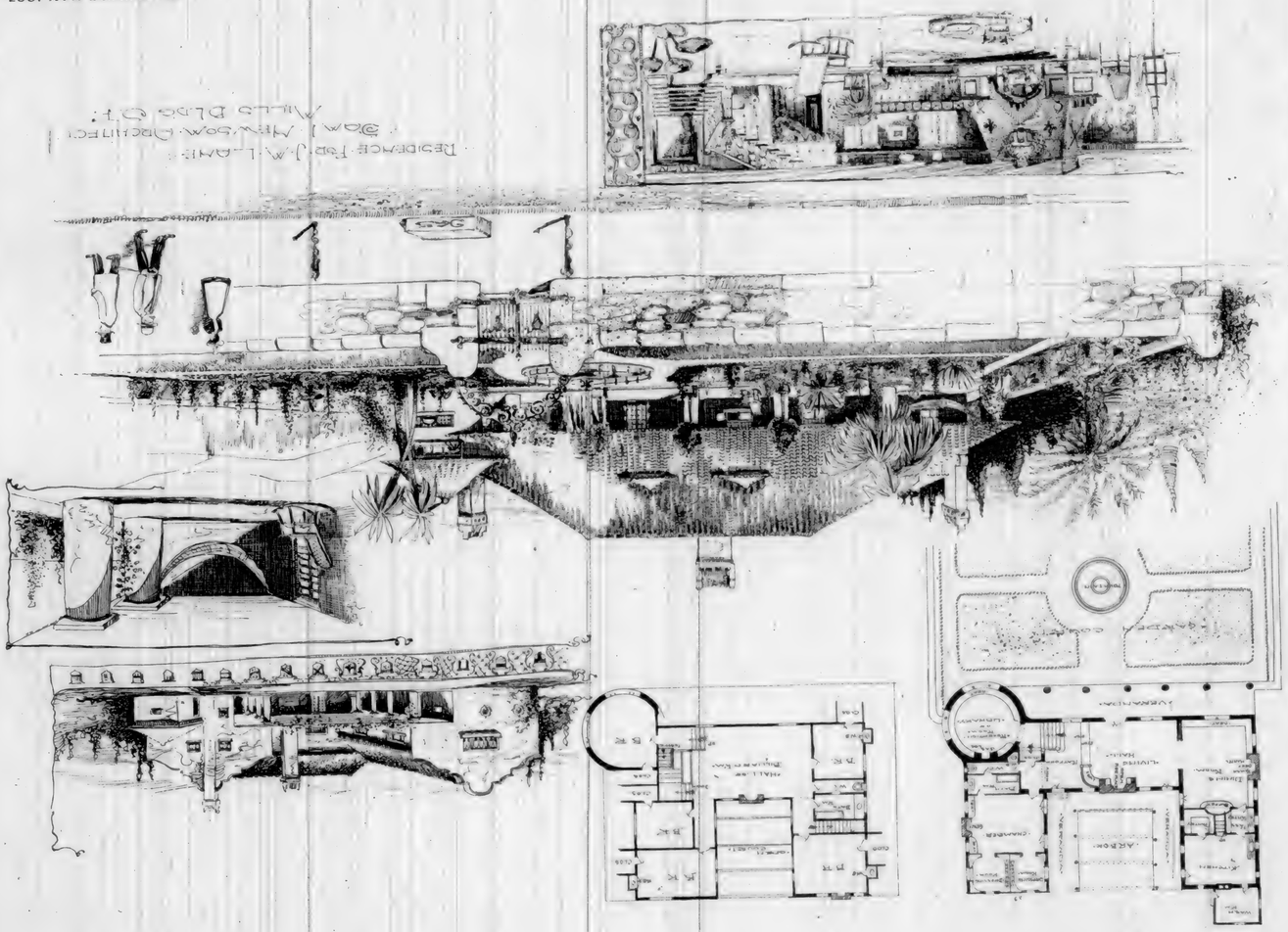
AFFILIATED COLLEGE BUILDINGS.
J.E. KRAFFT & MARTENS & COFFEY, ARCHITECTS.

VOL. XVIII Nº 5 MAY 1897.

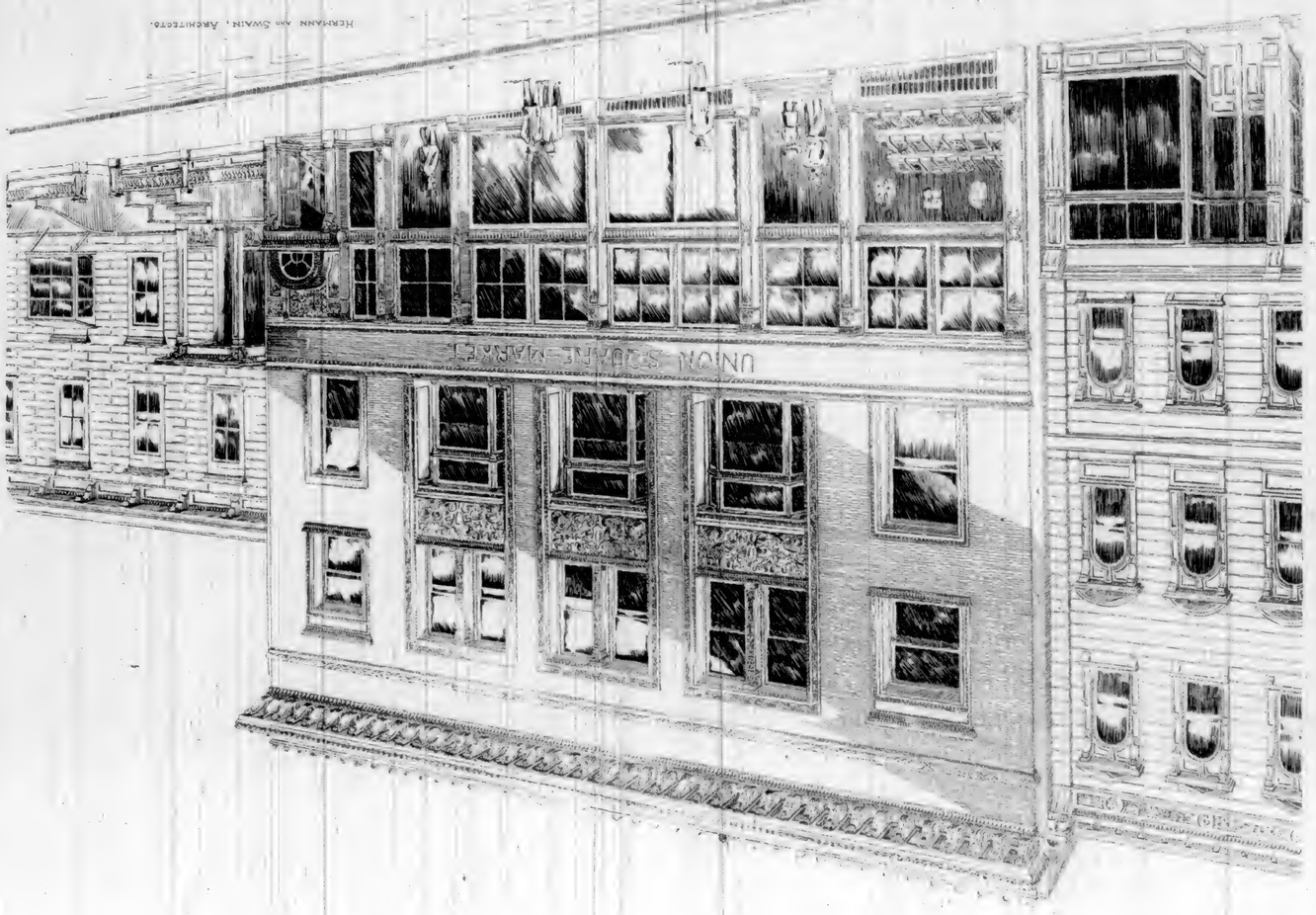
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO-LITH.

RESIDENCE FOR J. M. LANE:
MESSRS. MEEKS & DECKER, ARCHITECTS.
MILLS BLDG. S.F.



HERMANN AND SWAIN, ARCHITECTS.



some hundreds of miles distant from the scene of architectural operations, arrived on the spot to personally investigate into the cause of the delays which were somewhat protracted by this time. To an ordinary man the juxtaposition of a Mother-in-law-that-was-to-be, and an unfinished house containing one (1) laboring man, was an event that savored strongly of a catastrophe. But architects are men of resource, and our youth was no exception to the rule. He bethought himself of the somewhat ordinary circumstance that workingmen have a habit of ceasing from their labors at a definite and appointed time, and never, under any circumstances whatsoever, continuing to labor beyond it. Fortunately, also, the new residence was so remote from everywhere that Mama-in-law-that-was-to-be could scarcely venture to get to it alone. Son-in-law-that-was-to-be therefore impressed upon Mama-in-law-that-was-to-be that he would be only too delighted to take her to his new house any time she wished, and if she would let him know when she wanted to go, he would regard it as the special joy and felicity of his life to take her to see it. At the same time he arranged that his engagements would be such that it would be impossible for him to leave his office until quite late in the afternoon, and so it is easy to perceive that each time Mama and he Son visited the new dwelling they did so after the workmen had gone home.

During the investigating tour of Mama-in-law-that-was-to-be several joint trips were made to the new domicile, but, to this day, the good lady has not discovered that, during the whole time of her stay, only one man was employed on the house, and that, therefore, there was a very obvious reason for the delays in its completion.—*Architecture and Building*.

ARCHITECTS' COMPENSATION.

THE undersigned architects being constantly invited by those not conversant with architectural practice to participate in competitions upon conditions with which it is impossible to comply—announce that they have mutually agreed that they will enter into competition upon the following terms only:

That in any case the undersigned shall be paid at least a sufficient sum to reimburse them for their cash outlay in preparing their competition drawings.

That in case of limited competition the number of competitors shall be definitely named and that the number shall not be increased without the consent of all competitors.

That it shall be definitely understood that the ordinary fees as published by the American Institute of Architects shall be paid as compensation for his professional services to the successful competitor.

That in work of any serious importance a professional advisor or advisors shall be appointed to act with the party instituting the competion in the preparation of a proper programme, which shall be definite in its specifications of requirements, and explicit in its statement of the drawings required, and their character, and of the various rules which shall govern the competition.

In the openion of the undersigned it is very desirable that the professional advisor or advisors should be practicing architects; and the undersigned suggest that the best result can be gained by first appointing the architects to compete and by inviting them to meet with the party instituting the competition, for the purpose of consultation with regard to the preparation of the programme of competition, and to nominate the professional advisor or advisors.

It shall be the duty of the professional advisor or advisors to examine all drawings submitted by the competitors, and to place out of competition any competitor who has not submitted his designs at the date fixed for their reception, or who presents details or models which are not called for, or whose drawings do not conform exactly in number and character with the requirements of the programme, and that if placed out of competition his plans shall receive no further consideration by the party instituting the competition.

In as much as the object of a competition is to adopt the general motif of a design to be further elaborated, and to select an architect for the work rather than to secure plans perfectly studied in all of their details, the undersigned will enter upon no competition unless it shall be agreed that an award shall be made and that an architect shall be appointed on the consideration of the relative merits of the several schemes as shown by the drawings submitted, and that no demand shall be made for additional drawings or for a new competition.

The undersigned are of the opinion that all designs should be signed by their authors, and also that it is desirable that each competitor who has qualified by having his designs accepted by the professional advisor or advisors as complying with the terms of the competition, shall have an opportunity to personally explain his design to the party instituting the competition, in the presence of the professional advisor or advisors.

This has been signed by the following, up to date:

Geo. B. Post	McKim, Mead & White
Bruce Price	Henry Rutgers Marshall
R. H. Robertson	H. J. Hardenbergh
R. W. Gibson	Babb, Cook & Willard
Edw. H. Kendall	Geo. Keister
Rossiter & Wright	Carrere & Hastings
Berg & Clark	Renwick, Aspinwall & Owen
Jas. Brown Lord	Charles C. Haight
R. H. Hunt	Clinton & Russell

NOTES AND COMMENTS

THE Land Title Trust Company of Philadelphia, invited competitive plans for a new office building, and when it had in twenty designs, submitted them to a pet architect of Chicago and gave him the work without a competition. This is the kind of honor that supports the trust companies, and goes to show how genius is rewarded.—*Appeal to Reason*.

THE STOCKHOLM ordinance regulating the height of a building according to the width of the street could be adopted with profit in New York and Chicago. In the Eastern metropolis certain down town streets, like Nassau

street, are converted in the lofty buildings into mere canyons into which the sunlight never reaches and through which winds sweep with terrific force. For sanitary reasons alone these high buildings that form a solid wall on each side of narrow streets should be prohibited.

Our old friend, The Californi Architect and Building News, still keeps in front ranks of the profession, and continues to do yoeman service for its clients and patrons. It is now in its eighteenth volume and is about as vigorous as when it was in its swaddling clothes under the Wolfe regime. We congratulate our cotem on the clean, healthy appearance of the last issue.—*The National Builder.*

A new patent toy.—B. E. Henriksen, San Francisco, Cal., No. 581,420. Dated April 27, 1897. The object of this invention is to provide a simple and attractive toy adapted to produce a sound which may be more or less an imitation of the natural voice of the creature in the likeness of which the toy is constructed. It comprises a hollow resonant figure having a vibratable member, a head with a flexible or hinged neck, a lever within the figure hinged at its lower end and extending upwardly into the neck having its free end adapted to bear against the same to throw the head up, a cord attached to the lever at a point above its hinge and passing outwardly through the vibratable member whereby it may be operated to cause the figure to give forth a sound.

THE GATEWAY AND WATCH TOWER AT POINT TIBURON.

A freight elevator used in hoisting men and building materials at the new building for the New York Life Insurance Co., dropped seven stories. There were six men on the car, but none were injured, as they clung to the beam across the top of the cage and were only hurt by the shock causing them to let go when the cage struck the cellar floor.

It is said that receipts of tin plate by rail into San Francisco were scarcely half as heavy in 1896 as in 1895. During the first three months of this year, however, there has been an important movement in that direction, and it is probable that the figure for the first quarter of this year will be as great as for the whole of last year.

BOOKS AND PERIODICALS.

STONES FOR BUILDING AND DECORATION, by George P. Merrill, Curator of Geology in the United States National Museum, second addition, revised and enlarged, 8 volumn cloth $5 00. 516 pages and 19 full page plates and 18 figures in text. Published by John Wiley & Sons, New York—London, Chapman & Hall, Limited, 1897.

This handsome volume fully illustrated does credit to the publishers, and is made more valuable by a very complete index that always adds so much to the value of a book.

The preface of the second edition informs us that the work of revising and bringing down to date the present edition, as many additions and alterations have been made here an there throughout the text as was prossible without incurring the expense of entirely resetting. Over fifty pages of reading matter and full-page plates have thus been added, and while the revision is not as complete as the author would have been pleased to make it, is believed that the usefulness of the volume has been very materially increased. As before, the writer is indebted to the authorities of the National Museum for permission to use electrotypes of plates that have appeared in the publications of that Institution.

HOT WATER MANUAL with information and suggestions on the best methods of heating public, private and horticultural buildings. Treating on the high and low pressure systems, bath apparatus, hot water supply for public institutions, duplicate boilers, radiators, laundry drying stoves, swimming baths, Turkish baths, causes of and hints to prevent failure—by Walter Jones, Chicago. The American Artisan Press, 1897.

This little volume of about 200 pages should be in the library of every architect as the illustrations make clear many points that might be over looked when making plans for the heating of buildings either public or private. The title as given above fully explains the character of the book.

THE CALIFORNIA STATE MINING BUREAU have issued Bulletin No. II, under the direction of J. J. Crawford State Mineralogist on the oil and gas yielding formations of Los Angeles, Ventura and Santa Barbara Counties. Part 1 by W. L. Watts, M. E., Field Assistant. This Bulletin contains much information of value to the public, and must be very interesting to those engaged in the oil business either as producers or consumers of this article. The illustrations are good and reminds one of the early days in Philadelphia, when oil was searched for upon Oil Creek.

DOGS IN CUTLERY WORK.

A VERY curious use for dogs is noted by E. Edmond Renoir, in an account he lately gave on the subject. He says that dogs are largely employed in the cutlery works of Thiers of France. Each grinder, man or woman, takes in winter a dog to the grinding room, and the four-footed beast stretches himself out upon the back of his master or mistress for no other earthly purpose than to keep them warm. Instead of occupying an upright or sitting position at their work, the grinders, both male and female, have to lie flat upon their stomachs on planks placed horizontally on a scaffolding, which rises above the grindstones. Sheepskins are thrown over the planks to relieve the hardness of the wood, and the head and shoulders of the operators project over the ends of the planks, while their arms reach down vertically to the rim of the grindstone. These latter are kept in continual motion by the belting, driven by water power. The grinder, extending his length on the plank, becomes very soon fatigued and enfeebled, and cold would have a very injurious effect upon him, whilst he would have no power to resist it. As soon as a chill strikes him he whistles for his dog, which immediately springs upon the bench, and lays himself upon the extended legs of his master, covering him as much as possible and supplying him with a much needed warmth. Verily these canine friends have great claims on our gratitude!—*The World's Progress.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street.

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec'y. August Wackerbarth, Treas.

Washington Chapter, American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. F. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

CERTIFICATE OF ARCHITECT.—Under a contract providing that the work should be done under "the immediate supervision" of the architect and that payments should be made on certificates of the architect, the owner is not bound by certificates issued, in the absence of the architect, by one to whom he had attempted to delegate his authority.

Monahan v. Fitzgerald, Sup. Ct. Ill., 45 Northeastern Rep. 1013.

NO LIEN FOR DEFECTIVE WORK AND MATERIALS.—Contractors for putting on lath and plaster, under a contract providing that the mortar should be so applied that the key would be solidly filled, and that the work should be in perfect order when finished, cannot claim a lien, where, by reason of using laths wider than those specified in the contract, and placing them near together, and failing to press the mortar so as to form the proper key, so that a great part of the plaster fell soon after it had dried, though no objection was made by the architect as the work progressed.

Monahan v. Fitzgerald, Sup. Ct. Ill., 45 Northeastern Rep. 1013.

LIABILITY FOR STREET OBSTRUCTIONS.—Where the owner of a building directs the independent contractor having the contract to tear down a building to place the material in the street, the city having given the owner permission to place material in the street, provided the gutter was not obstructed, the owner is liable for damages caused by the contractor placing material so as to obstruct the gutter.

Bohrer v. Dienhart Harness Co., App. Ct. Ind., 45 Northeastern Rep. 668.

LIEN AFTER TAKING NOTES.—Upon the completion of a structure, three notes were taken by the contractors from the owner for the balance due, which notes were indorsed and sold to a bank; and within four months after the completion of the structure, and while the bank was the owner and holder of the notes, the contractors made and filed an affidavit in due form for perfecting a mechanics' lien to secure the indebtedness evidenced by the notes. The Supreme Court of Ohio held that such lien was valid.

Standard Oil Co. v. Sowden, 45 Northeastern Rep. 320.

RIGHT OF PARTIES IN DIVISION WALL.—A party wall, built by one of two adjoining owners, and resting partly on the ground of each, must be one that both of them can use, and have the right to use; and the owner of a lot who sells part of it, restricting by condition in the deed, the height of the building to be erected thereon, cannot extend a party wall built between the two parts above such height for his own exclusive use, but if extended it must be built without openings, and the owner of the other part will have the right to use it, on proper payment, by adding to the height of his building.

Fidelity Lodge v. Bond, Supreme Ct. Ind. 45 Northeastern Rep. 338.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

AFFILIATED College Buildings, J. E. Kraft, Martens & Coffey, Architects.

UNION Square Market, Herman & Swain, Architects.

RESIDENCE for J. M. Lane, Sam'l Newsom, Architect.

LAW LIMITING THE HEIGHT OF DWELLING HOUSES IN THE CITY OF NEW YORK.

CHAPTER 321, Laws of 1887.—An Act to regulate the height of fireproof houses in the city of New York.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. The height of all fireproof dwelling houses and of all fireproof houses containing one or more power passenger elevators used or intended to be used as dwellings for more than one family, now or hereafter constructed or completed, shall be regulated in proportion to the width of the widest street and avenue upon which they abut, and such height measured from the sidewalk line and taken in cases through the centre of the facade of the house to be erected, including rttics, cornices and mansards, shall not exceed one hundred and fifty feet upon all streets and avenues exceeding seventy-nine feet in width, and one hundred feet upon all streets and avenues not exceeding seventy-nine feet in width.

§ 2. All buildings mentioned in the first section of this act, provided the same have a frontage exceeding forty-five feet and exceed one hundred and thirty seven feet in height, shall have two separate firepoof stairways leading from the ground floor to roof, one of which shall be remote from elevator shafts.

§ 3. All statutes in force at the time of the passage of this act, except as herein modified, relating to buildings in the city of New York, shall apply to the buildings hereinbefore referred to.

§ 4. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

§ 5. This act shall take effect immediately.

BUSINESS MOSAICS.

In calling attention to L. E. Clauson & Co's. advertisement upon the outside cover of this journal we would say the combination in Clawson's patent was a happy idea and as it complies with the new fire ordinance leaves nothing more to be desired in the way of being safe.

Maud—What is the height of your ambition, dear? MARIE—(blushing)—Oh, something between five and a half and six feet.—*Tit-Bits.*

The Ives Patent Sash Locks are now ready, in cold rolled steel, bronze and brass in all the popular finishes.

The acknowledged superiority and complete manner in which they perform the work intended make their sash lock a favorite among architects and builders. A new catalogue of window hardware specialties can be obtained by addressing Hobart B. Ives & Co., New Haven, Conn.

Bacon—What are you doing with a picture of a football pinned to your coat? EGBERT—Oh, yes! My wife pinned that there so as to remind me to have my hair cut.—*Yonkers Statesman.*

Considerable interest has been expressed in building circles in an exhibition of several pieces of old roofing tin now in the possession of N. & G. Taylor Company of this city, and which are highly esteemed by the members of this concern as practical illustrations of the efficiency of the "Taylor Old Style" brand of extra heavy coated roofing plates, under the severest tests of both time and wear.

One of these relics came from the roof of the old Bloodgood's hotel on Dock street, this city. The old house was demolished some years ago to make room for the Pennsylvania R. R. Co.'s Freight Station. When the roof was taken off, notwithstanding the fact that it had been in active wear for forty-four years, the tin was found to be bright and perfect, and, in fact just as good as when first put on.

The second and, perhaps, no less important feature of the exhibition is a piece taken from the roof of a residence at Edgewater Park, N. J. This was put on in 1855, and was in active wear for thirty-five years and never painted but once. The piece on exhibition certainly indicates that it is even now equal in every respect to the best plates, bright and new as they are now in stock and for sale on the floor of the company's warerooms.

The third piece on exhibition was taken from the roof of a building at Independence, Mo. This piece was sent by the owners of the building with a letter of explanation stating that the roof had been in active service for over thirty years and had never been painted.

Messrs. N. & G. Taylor Company's works are located on Tasker street, between Swanson and Meadow, and the public is invited to see how good roofing tin is made.

From *The Philadelphia Real Estate Record and Builders Guide*, December 25, 1895.

Mr. M. S. James, Flood Building, room 27, who is the Pacific Coast representative of the J. L. Mott Iron Works, has in his show rooms a collection of almost every thing in the plumbing line to satisfy the most exacting, you can convince yourself of this fact, by calling upon Mr. James and giving a careful examination of the various contrivances he has on hand to make the house not only healthy but beautiful at the same time; if you have not time to call, examine his advertisement in the journal on page v.

Watts—I saw you down town this morning with your better half. N. PECK—If you please, she is not my better half. She is the whole thing.—*Indianapolis Journal.*

The John Douglas Co., 208 Ellis street, San Francisco, are manufacturers of an absolutely noiseless tank, with superior quality of seats and crockery. Any combination of water closet that you desire can be furnished at short notice. See their advertisement on page viii of this journal.

"His life is an open book." "Yes; he never closed accounts.—*Chicago Journal.*

The finger of science points to Graphite paint as the paint of the future for the protection of all exposed iron and metal work. Prof. Spennrath, Director of the Technical School of Aix-la-Chapelle, lately won the $2,000 prize offered by the Society for the advancement of the Industrial Arts for the best essay on Protective Paints. The prize was not won simply by theoretical demonstrations, although the professor furnished scientific reasons also, but by most carefully conducted practical experiments with various pigments and oils, covering several years' time. The results demonstrated that a properly made paint of graphite and boiled linseed oil is the most suitable for protecting structural iron work, roofs, etc., exposed to the destructive agencies of heat, cold, storms, etc.

Running parallel with these results are the facts demonstrated by those who have used Dixon's Silica Graphite Paint during the past 30 years. Roofs and iron work properly painted with Dixon's paint have not required repainting in 15 to 20 years. As the season for painting is now close at hand it may pay those interested to write to the Joseph Dixon Crucible Co., Jersey City, N. J., for circulars.

Tommy—Oh, paw! MR. FLAGG—Well? TOMMY—How can a solid fact leak out?—*Indianapolis Journal.*

Mr. Charles J. Waterhouse, 35 New Montgomery street, is agent for the sale of Cabots' Creosote Shingle Stain, this well known stain manufactured by Samuel Cabot, Boston, Mass., will not crack or peel as paint does, being in the wood, and not wholly on the surface.

Mr. Waterhouse is also agent for N. & G. Taylor Co., Philadelphia, Pa., the well known manufacturers of tin plate for roofing, as well as the Pancoast Ventilator.

CITY BUILDING NEWS.

Alvarado and Hoffman. Cottage; owner, J. Heyman; cost $1600.

Baker Alley off Pine. Removal of old structure and erection of a row of one-story brick buildings; owner, Mr. Neychell; superintendent, J. Miron; day's work; cost $20,000.

Baker and McAllister. Two two-story frames; owner, Emma Joseph; architect, W. H. Lillie; contractors, Moore & Cameron; signed, April 14; filed, April 22; cost $3850.

Baker and Pine. Three-story frame; owner, A. Clarke; architect, C. M. Rousseau; contractor, S. F. Hodgkins; signed, April 27; filed, April 29; cost $6255.

California near Lyon. To build; owner, P. J. Fitzpatrick; architect, T. J. Welsh; contractor, Frank Gallagher; signed, April 28; filed, April 30; cost $3875.

California near 1st Ave. Cottage; owner Peter Swensen; architect, W. H. Armitage; contractors, Hannah Bros.; signed, April 23; filed, April 27; cost $1500.

Castro near 20th. Four two-story frames; owner, F. Nelson; cost $18,000.

Chattanooga near 22d. To build; owner, R. W. Collins; architect, E. J. Vogel; contractor, Geo. McLeod; signed, April 20; filed, April 23; cost $1,500.

Chattanooga near 24th. Additions and alterations; owner, John Craig; architects, Rowell & Collins; contractors, Doyle & Son; signed, April 24; filed, April 28; cost $2040.

Elgin Park Ave. Additions and alterations; owner, C. Oliva; architect, C. A. Meussdorffer; contractor, P. A. Antonelli; signed, April 20; filed, April 21; cost $1600.

Eighteenth near Harrison. All work for new flat and alterations; owner, Mary Hanley; contractor, L. Cimco; signed, April 17; filed, April 19; cost $1140.

Fell near Central Ave. Two-story frame; owners, Edward and Sophia Wharton; architect, D. V. Deuel; contractors, Petterson & Person; signed, April 16; filed, April 17; cost $2000.

Filbert near Mason. Alterations and additions; owner, Morris Windt; architect, R. H. White; contractor, John Furness; signed, April 27; filed, May 3; cost $1880.

Fillmore near Fell. Brick church; owner, P. W. Riordan; architect, T. J. Welsh; contractor, P. Fitzsimon; signed, April 21; filed, April 23; cost $34,636 Carpentry, glazing, etc.; contractor, D. Powers; cost $8230. Slating, tinning, etc., sub-contractor, Conlin & Roberts; cost $2200. Iron work; sub-contractor, Clark & Sons; cost $6500. Grading and concrete work; contractor, P. Fitzsimon; cost $4569. Plumbing; contractor, James E. Britt; cost $768.

Folsom near 21st. Three-story frame; owner, T. McEnearny; contractor, W. Hebbing; signed, April 14; filed, April 15; cost $3880.

Folsom near 21st. Frame dwelling and stable; owner, Julia O'Kane; architects, Townsend & Wyneken; contractor, W. M. Constable; signed, April 10; filed, April 21; cost $1750.

Fulton near Lyon. To build; owners, A. J. and S. T. Scandrett; contractor, Wm. Plant; signed, April 17; filed, April 17; cost $3470.

Folsom near 24th. To build; owner, D. Von der Mehden; architects, Martens & Coffey; contractors, Reil & Ahlgren; signed, May 4; filed, May 5; cost $3800.

Geary and Stockton. Ornamental cast iron work; owner, Spring Valley Water Works; architects, Clinton Day; contractor, Josh Hendy Machine Works; signed, March 29; filed, April 15; cost $6675. Plastering first and second stories; contractor, C. Dunlop; cost $6000. Plastering third and sixth stories; contractor, C. Dunlop; cost $4785. Iron work and elevator, etc.; contractor, Winslow Bros.; cost $17,000. Vault linings; contractor, C. B. Purcells; cost $5370. Steam heating, etc.; contractor, G. H. Tay; cost $6600. Glass and glazing; contractor, W. P. Fuller & Co.; cost $11,000.

Green near Dupont. Alterations and additions; owners, M. Compagni & Belianti; contractor, J. Schiavo; signed, April 15; filed, April 17; cost $1300.

Haight near Scott. To build; owner, John Reutiler; architects, Martens & Coffey; contractor, J. Bucher; signed, April 20; filed, April 22; cost $2795.

Jackson near Stockton. Brick and stone work for three-story frame; owner, M. Schnappert; architect, A. C. Lutgens; contractors, Miller & Beck; signed, April 26; filed, April 29; cost $3600. Carpenter work; contractor, Frank Stemmann; signed, April 26; filed, April 27; cost $2500.

Jessie near 13th. Two-story frame; owner, Catherine Reingpach; architect, C. I. Havens; contractor, A. Cimco; signed, April 15; filed, April 15; cost $2150.

Kearny and Sutter. Brick work for additional stories; owner, Adams Company; architect, H. A. Schultz; contractor, H. H. Larsen; signed, April 24; filed, April 25; cost $4086.

Kearny and Sutter. Cast iron work, steel beams, etc.; owner, Adams Co.; architect, H. A. Schultz; contractor, H. Ralston; signed, April 28; filed, April 29; cost $7000.

Larkin near Green. Carpentry, brick work, etc.; owner, H. G. Otis; architect, C. A. Henderburg; contractor, O. J. Blanckfield; signed, April 30; filed, May 1; cost $3897.

Lyon near Golden Gate Ave. To build; owner, L. Friedlander; contractor, W. H. & T. Kinread; signed, April 15; filed, April 16; cost $3000.

Lyon near Grove. To build; owner, T. J. Dugan; architect, T. J. Welsh; contractors, Hansbrough Bros.; signed, May 1; filed, May 4; cost $3497.

McAllister near Pierce. Alteration and additions; owner, Jos. Figel; architect, R. H. White; contractors, Campbell & Pettus; signed, April 12; filed, April 16; cost $5500.

Mission near 23d. Plastering work; owner, Mission Lodge Masonic Assn.; architects, Herman & Swain; contractor, C. C. Morehouse; signed, April 12; filed, April 20; cost $1666. Painting, etc.; contractor, H. Maundrell; signed, March 19; filed, April 20; cost $670.

Montgomery near California. Additions and alterations; owner, Selby Smelting and Lead Co.; architects, McDougall & Son; contractor, J. H. McKay; signed, April 21; filed, April 22; cost $1445.

Napa near Michigan. Carpentry for skylights; owner, Union Iron Works; architects, Percy & Hamilton; contractor, Jos. F. Forderer; signed; April 24; filed, April 24; cost $4495.

Oak near Ashbury. To build; owner, Emily Eliaser; architect, I. Eliaser; contractor, J. B. Glunz; signed, May 3; filed, May 4; cost $3275.

Page near Scott. To build; owner, Frank Koch; architects, Salfield & Kohlberg contractor, C. Kreecker; signed, April 27; filed, April 28; cost $2800.

Pierce and Filbert. To build; owners, H. E. & L. E. Hartmann; contractor, Jas. Pattinson; signed, March 25; filed, April 24; cost $2102.

Powell near Clay. Three-story frame; owner, Daniel F. Numan; contractor, C. W. Duffy; signed, April 12; filed, April 16; cost $3700.

Sacramento and Gough. Alterations and additions; owner, Emma Joseph; architect, W. H. Lillie; contractors, Moore & Cameron; signed, April 14; filed, April 20; cost $3125.

Sacramento near Walnut. Two-story frame; owner, John M. Lippincott; contractor, T. C. Cochrane; signed, April 20; filed, April 21; cost $2850.

Sacramento near Cherry. Brick work for two-story frame; owner, Frank H. Foote; architect, J. H. Littlefield; contractor, C. E. Nichols; signed, March 14; filed, April 17; cost $2850.

Sanchez and 18th. To build; owner, Brun Cordes; architect, A. J. Harnett; contractors, Petterson & Person; signed, May 1; filed, May 4; cost $2610.

Scott and Vallejo. To build; owner, Julia Sontag; architects, Corbead & Corbead; contractor, C. M. Depew; signed, April 14; filed, April 15; cost $5665.

Seventh Ave. near Clement. Cottage; owner, W. M. Lacey; architect, T. P. Ross; contractor, T. H. Soule; signed, April 23; filed, April 24; cost $1400.

Seventh and Natoma. Raising and addition; owner, Louis Altmark; architect M. J. Lyon; contractors, Elder & McLaughlin; signed, April 30; filed, May 3 cost $1025.

Seventeenth and Collinwood. Two two-story frames; owner, Mrs. Mary Shephard; architect, W. H. Lillie; contractors, Peterson & Person; signed, April 27; filed, April 28; cost $4613.

Spruce near Washington. To build; owner, S. Dolliver; architect, T. J. Welsh; contractor, W. Plant; signed, April 21; filed, April 26; cost $3347.

Sutter near Van Ness. Alterations; owner, Dr. W. F. McNutt; architect, Clinton Day; contractors, Geo. Davis & Son; signed, April 24; filed, May 3; cost $3650.

Sutter street No. 120. Electric elevator; owner, A. W. Ross; architects, Percy & Hamilton; contractors, Cahill & Hall Elevator Co; signed, April 26; filed, April 27; cost $2540.

Tenth near Harrison. To build; owner, P. Barry; architect, D. C. Coleman; contractors, McDonald & Foley; signed, April 28; filed April 29; cost $2550.

Thirteenth and Stevenson. To build; owner, W. H. Blamey; architect, A. C. Meussdorffer; contractors, Wilhelm & Taylor; signed, April 22; filed, April 22; cost $2733.

Turk and Taylor. Alterations and additions; owner, A. W. Wilson; architects, Shea & Shea; contractor, J. H. McKay; signed, April 14; filed, April 16; cost $4620. Brick work, etc.; contractor, Peacock & Butcher; cost $8300. Plumbing, etc.; contractors, Allen & Looney; cost $5600.

Twenty-second near Treat Ave. One-story frame; owner, Miss Bridget Cox; architect, M. J. Welsh; contractor, Jas. A. McDonald; signed, April 14; filed, April 14; cost $1600.

Twenty-second and Treat Ave. To build; owner, Charlott Hahn; architect, H. Geilfuss; contractor, W. Harstmyer & Co.; signed, April 17; filed, April 19; cost $2550.

Twenty-third near Hoffman. Three one-story cottages; owner, J. Heyman cost $4500.

Union near Laguna. To build; owner, H. K. Devely; architects, Mooser & Son; contractor, A. Guilbert; signed, April 15; filed, April 16; cost $2948.

Union near Fillmore. Two-story frame; owner, Amelia V. R. Pixley; contractor, John Wiren; superintendent, W. C. Pease; signed, April 19; filed, April 22; cost $7994.

Van Ness and Clay. Windows, doors, etc., owner, Claus Spreckels; architects, Reid Bros; contractor, Neilsens Bros Co; cost $5505.

Washington and Locus. Foundation, etc.; owner, J. T. Polheim; architect, A. W. Marquis; contractors, Gray Bros; cost $2982. Carpenter work; contractor, G. H. Moore; cost $7500. Plumbing, etc; contractors, Berhman Bros; cost $1240.

Washington near Taylor. Alterations and additions; owner, Henrietta Lucus; contractor, C. Douglass; signed, April 22; filed April 24; cost $1464.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A

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OLIVER EVERETT Secretary.

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SINCE our last number some of the San Francisco Supervisors have shown a very lawless spirit, unworthy of their position, in attempting to break the law regarding projections onto the sidewalk, and we are glad that Mayor Phelan stands up against any such anarchism.

As long as we have a law let us keep to it and admit no special privileges; if it is a bad law let it be abolished. We have altogether too much of this kind of word. To take another example, the laying of sidewalks—this work is ordered done, those property owners who are law abiding do the work in front of there property, while others refuse and we see part of the sidewalk of a block paved while other parts are left undone for years. This should not be allowed but all should be treated alike. While we are on this subject we will draw attention to the obstruction of the main street of the city by a mass of rock extending nearly half way across the street, this has been in this state for many years.

IT IS almost impossible now-a-days to take up a trade paper, or a periodical of any description, without finding more or less space devoted to the economic aspect of the existing conditions of civilized society. Times have been going from bad to worse with disheartening monotony for many years, and the number of idle unemployed discouraged and desperate men and women has been as steadily increasing. It is the exception rather than the rule when the daily papers of San Francisco appear without recording the suicide of some poor despondent human being, driven to seek death from lack of the opportunity to earn his daily bread. Nor is the condition of the average business man much better than the lot of the mechanic and laborer. Here is an editorial jotting from *Painting and Decorating*:

"Much of the cut-throat competition that afflicts the painting trade to-day is brought about by indiscriminate granting of credits by manufacturers and dealers, who take almost certain risk of loss rather than lose a sale," and the

editor goes on to favorably quote another writer who says: "I would decline to compromise any account for less than two-thirds of its value. It is not fair to the competent and honorable merchant that his competitor, who may have been neither, should be provided with goods at half cost to pursue again the methods which brought him to grief and very likely at the same time injure those who pay one hundred cents on the dollar for their goods."

The following is a clipping from *Stone*:

"Boston, Mass.—A bill has been introduced into the legislature to prevent the bring into this State of any stone cut outside of it, and the debate on it brought out the fact that the master builders and union stone-cutters of this city are agitating strongly against the bringing in of stone cut by convicts, which, they assert, is being done to not a small extent, to the detriment of business. An amendment was therefor tacked to the bill to prevent the bringing in of stone cut by convicts, but this, it was asserted, was more important than the scope of the original bill, and it was thrown out. It is stated by the stone-cutters that there is no doubt but that stone is being brought into this city which has been cut in the prison yards of the West, and the case which is cited is that of the stone used on the Brazer building, which, it is asserted, is out of the yards of the prison at Joliet, Ill. It is said that this stone comes certainly from farther West than Rotterdam Junction, to which point it has been traced, and the presumption is that it comes from some where near Chicago. At the building the foreman says that the stone is Bedford, but that he does not know where it is cut. It is said that E. R. Brainerd, of Chicago, who has the stone-cutting contract, has a good deal of his work done at Joliet, and also that a good deal of cut stone has been shipped from that institution lately, although it cannot be traced direct from there to the building."

Here is what a writer in *Lumber* says: "In perhaps no other business in the world is it necessary to use so much tact and keen diplomacy as in the lumber business. Many men fail from just a lack of this propensity. They are just square, honest, easy-going men, thinking that because they are square and right everybody else is. In these days of close competition, however, a man who has not cut his eye teeth is *not in it*."

In other words in the business world of to-day the honest man cannot succeed, but must give way to the man who is shrewd enough to use "keen diplomacy" in place of fair dealing.

And we could go on and on, quoting from one journal after another, showing how the honorable business methods of former timee have been supplanted by trickery and double-dealing, until the ordinary human being is apt to become a confirmed pessimist knowing as he must, that the fierce competition in every line of business tends to lower the scale of wages that the working-man receives thus lowering the standard of living, and making still more bitter the struggle between capital and labor.

CONCERNING SAN FRANCISCO'S NEW POSTOFFICE.

FROM A Washington dispatch to the *Call* dated June 2, we learn that Mr. Aiken, the present Supervising Architect of the Treasury Departmtnt, will be superseded on July 1, and he has practically been relieved of the duties already.

Mr. Kemper, the chief executive officer, is acting as architect and will continue to do so until Mr. Aiken's successor is appointed. Mr. Aiken is still in the office, however, and said to the *Call* correspondent to-day:

"Of course we cannot tell what stone will be used until the bids are opened. If I had my way about it California material would certainly be used, but still if the Eastern quarries should underbid the California people the contract would go there, provided they were responsible bidders.

"My idea has been all along to use granite for the lower part of the building—that is to say, that part of the building up to the first or, maybe, up to the third story—and construct the upper part of marble.

"In this case the marble would not be rough hewn, but cut smooth, like the granite of the Treasury building here. The California granite is excellent, if accessible. I do not think that Eastern firms could transport granite to California and underbid the Raymond quarries.

"As for the marble, I will say that I think the Inyo stone of excellent quality. Of course it may be said that it is somewhat inaccessible on account of the lack of railroad facilities in that part of the country, but at the same time I believe that it could be laid in San Francisco as cheaply or more so than the Eastern marble. But, of course, these are problems for the quarrymen to solve themselves.

"The department cannot act intelligently until the bids are opened. It may be that the Inyo quarrymen would have to expend a considerable amount of money to put in a plant, but they would doubtless be quite willing to do that if they should get this contract."

Chief Executive Officer Kemper said that it was his opinion that granite would be used in the construction of the building. He explained that formerly it was the practice of the department to advertise for bids without specifying to whether the building was to be constructed of granite, marble, sands tone or lime stone, this matter not being decided until it was seen which would be the cheapest when the bids were opened; but latterly it has been the policy to decide what character of stone would be used and then advertise for bids. This will be done in the case of the San Francisco building.

The chances are altogether, therefore, that one of the Raymond quarries will get the contract and if a part of the building should be constructed of marble, the Inyo County people will doubtless be able to underbid the New England people.

The kind of stone to be used will not be settled, however, until the new supervising architect takes charge of his office.

MARIA KIP ORPHANAGE.

WE HAD the pleasure of attending the opening of this splendid institution on the twenty-second of May, since which time over one hundred children have been comfortable settled in their new home.

The building appears to contain every thing in the way of health and comfort that can be desired for the welfare of the children. In a late number of this journal we published the perspective and plans of the building, which do so much credit to the architects Percy & Hamilton.

No one can look at these children, but will be convinced that good care and attention is given to their welfare—a more happy, healthy, neatly dressed lot of children can not be seen anywhere.

HOUSING OF PEOPLE OF SMALL INCOMES.

No. 8.

INTERVENTION OF PUBLIC BODIES.

[CONTINUED FROM LAST NUMBER]

IN MATTERS of private concern the amount of public interference has always been a subject of dispute, and it is evident that no law can be laid down governing the subject; for conditions are constantly changing, making it impossible to draw any hard and fast line at which one can command. "Thus far shalt thou go and no farther."

The amount of what is often called paternal government varies in different nationalities as well as at different times.

The matter of providing homes for those of small incomes is the part of paternal interference which we are interested in now.

Taking the smallest country first we find in Belgium a semi-official bank called *la Caisse Generale d' Epargne et de Retraite* which loans part of its reserves at reduced rates to members of two other institutions, the Loan Companies at 2½ per cent and the Building Societies at 3 per cent; the general principle laid down being loaning only through an intermediary.

In certain localities, agricultural districts, for example, and other places where no intermediary companies of this sort exist, a workingman, through a solvent neighbor who will go security for him, may get money from the General Savings Bank at 3 per cent.

The first step which a workingman takes when he starts to acquire a house is to address himself to the local committee of patronage. He secures from it a certificate establishing the fact that he is a bona fide workingman. This certificate is attached to the act of sale or to the mortgage passed between himself and the company. It is this certificate which gives him the benefit of a reduction of charges for registration fees, etc., which are mentioned in the text of the law.

In order that the bona fide workingman alone may benefit by the advantages accorded, the directors of the savings bank have fixed upon 5,500 francs ($1,061.50) as the maximum cost, land included, of a workingman's dwelling.

Reduction of taxation is made upon incomes of companies or public administrative bodies engaged in transactions having reference to the purchase, building, sale, or rental of workingmen's houses. These reductions are very considerable, and are designed by the government especially to favor the work of companies of this sort.

We may remark, in passing, that this is strictly class legislation and as such is now generally considered objectionable on the score of perpetuating class lines. That is where the too much paternity comes in; any legislation for the public good should be for the benefit of everybody and not restricted to the working classes or any other class. We will continue, and drop out of the subject the further consideration of this part, which is entirely out of line with the genius of America.

To protect the General Savings Banks it is authorized to insure the life of the borrower in order to guarantee reimbursement of the loan in case of death of the party insured at any time during the period. Money is advanced for the construction or purchase of a home and a policy of insurance on the life of the debtor is taken out by the creditor.

The annual payment for $1000 payable in ten years is $123.30, while in the California Building Societies the annual payment for the same amount is $160.20—the latter charge 7 per cent while the Belgian charge 4 per cent.

Should all the intermediary profits be done away with it could easily be 2½ per cent. So one can imagine the tremendous impulse that would be given to the obtaining of homes by the people should the Government lend money directly to them at say 2½ per cent.

Besides the advantage of a low rate of interest a national savings bank offers edvantages over any local institution. Its operations extend throughout the whole country, and local branches exist everywhere. The conditions upon which the loans are given are uniform throughout the land. On the other hand there are certain distinct business advantages claimed for the practice of loaning through an intermediary. Account keeping and receiving and recording weekly or monthly payments would be an enormous task for a national or state institution to undertake. Under the Belgian system the intermediary companies attend to all such work. Moreover, local organizations can watch over the construction and see that the houses built are such as befit the neighborhood. Another advantage claimed for the employment of an intermediary is this: When debtors fail to meet their obligations, local companies acting in accordance with their principle of social helpfulness, can much better take into consideration the circumstances bringing about default and can judge whether leniency should or should not be extended.

Those in a position to know say that formerly the idea of building workingmen's houses directly by the government was exceedingly popular among the laboring element of Belgium. Recently they have begun to take a much greater interest in companies created under the law, and to avail themselves of the benefits offered. The increase in the number of deposits, all guaranteed by the government, has gone steadily on, showing that there has been no lack of confidence in the bank since housing operations were begun. The total increase in deposits during the four years from 1886 to 1889, inclusive, was 93,527,010 francs ($18,050,712.93); during the next four years, viz., 1890 to 1893, inclusive, it was 107,593,676 francs ($20,765,579.47).

Let us take up the advantages claimed for the Intermediary System. The account keeping being any more of a task under one control than under a number of local concerns, must fall of its own weight. It seems to us that one large establishment must have less trouble in that respect than several small ones.

In regard to local organizations watching over construction and seeing that houses are built befitting the locality the Government Bank would certainly have branches in all cities and districts composed of local men who would be just as well able to look after local affairs as private companies. The last advantage mentioned is a questionable advantage.

The increase of the amount of deposits in the semi-official General Savings Bank of Belgium, as shown by the above statistics chiefly goes to show the natural confidence of the people in any concern connected with the Government even though they simply guarantee the depositors against loss; they have still more confidence when dealing with a bank which is entirely in the Government control as is witnessed

by the popularity of the Postal Savieg's Bank of the United Kingdom.

In France much the same system exists as in Belgium as to encourageing the building of workingmen's homes, and the same law as to insuring the life of the borrower to secure payments of his installments should he die.

In Austria nothing much has been done in this matter except special remission of taxation in favor of this class of dwellings.

State intervention in the housing of labor in England goes back more than forty years. Under the influence of Lord Shaftesbury, a philanthropist, the enactment of 1851, which was especially designed to meet the needs of working people, was passed. The act has remained a dead letter, never having been utilized. Since that time a series of measures has been placed on the English statute books, so that to-day corporations are authorizd, indeed compelled, to provide accommodation where expropriations have taken place for at least one-half of the persons dispossessed. An attempt, however, is always made to dispose of property to private individuals, under special restrictions as to the character of construction and the rents to be charged. Builders are not anxious to acquire this class of property, and so it naturally happens that corporations are compelled to build and become landlords.

The principal statutes authorizing public authorities to directly interest themselves in the housing of the masses are as follows:

The laboring classes lodging houses act, 1851.—This act permitted certain populous local divisions in England to raise money by mortgage on the rates for the purpose of providing lodging houses for the working classes, the houses to be regulated by commissioners appointed under the act. Tenement lodging houses, not common lodging houses, were referred to in this act.

2. *The laboring classes dwelling houses act, 1866.*—This statute authorizes the public works loan commissioners to make advances for the purpose of assisting in the purchase of land and buildings, or in the erection, alteration, and adaptation of buildings to be used as dwellings for the laboring classes. The effect of this act is to authorize the council to erect dwellings for the laboring classes. Under this enactment, for example, the city of Liverpool erected the Saint Martin's cottages.

3. *The artisans' and laborers' dwellings improvement act, 1875.*—This act applies to the city of London, the metropolis exclusive of the city of London, and urban districts of 25,000 population or over. It provides for clearing "unhealthy areas" and the rearrangement and reconstruction of streets and houses within such areas. The scheme must have the approval of the local government board, and must provide for as many persons of the working classes as may be displaced. It was under this act that the Victoria Square artisans' and laborers' dwellings and the Juvenal laborers' dwellings were built.

4. *The municipal corporations act, 1882.*—Under this law corporations are authorized, with the approval of the treasury, to make grants or leases for terms not exceeding nine hundred and ninety-nine years of any land belonging to them for the erection of workingmen's dwellings. The corporation is allowed to improve this land by making roads, drains, walls and fences at such an expense as the treasury may approve.

The corporations are empowered to issue, in any grant or lease of the land, provisions binding the grantee or lessee to build in a prescribed manner, to repair and maintain the buildings, and they may prohibit any division of the site of the buildings or any addition to or alteration in their character without their consent. The cost incurred by the corporation in carrying into execution this act is to be defrayed out of the borough fund or borough rate or by money borrowed.

5. *The housing of the working classes act, 1890.*—This enactment is a modification and consolidation of all previous enactments. Large insanitary areas may be more effectively dealt with, and, as compared with previous practice, may be more economically acquired. Fifty per cent of the dispossessed must be provided for on the same site or in the neighborhood by the party displacing them.

England is remarkable for the part which municipalities have played in the housing question. In Liverpool, Glasgow, Huddersfield, Birmingham, and London buildings for working people have been erected and are stilled owned and operated by the municipality. The corporation of Manchester, so writes Mr. Henry Simon under date of April 2, 1894, is constructing a building, regardless of cost, for laborers' dwellings in the neighborhood of the remodeled property of the Manchester dwellings company. Dr. Alfred Hill, medical officer of health in Birmingham, in 1890 said that the council had then decided to erect twenty-two model workingmen's dwellings, more in the fulfillment of a promise than from actual need of houses. Financially it is not expected that they will prove a success. In Glasgow the larger part of the housing facilities furnished by the corporation are utilized by artisans; in Liverpool nearly one-third of the corporation tenements are occupied by the same class. The laboring element which most needs help has not received from municipalities anywhere the attention which one would naturally expect.

Lord Shaftesbury stated to the English royal commission that it was a very difficult thing in London to procure sites for building model dwellings. There was often an unwillingness to sell land for the purpose. He suggested that Parliament should have the right to condemn land for this purpose on the ground that the work was one of public utility.

In Great Britain we have the most complete example so far of intervention of public bodies in providing homes for the people. The result will be considered in detail later on, but we may consider them satisfactory, as there is constantly a growing taking hold of this branch of Urbanity by all the Municipalities of that country.

The principle of the right of public bodies to intervene in these matters is now thoroughly established and can never more be taken away, and the public are made familiar with the kind of municipal ownership, which will appear from the results to be a big step in the right direction—when every family is supplied with a decent home, this kind of activity will necessarily cease, and the liberty of those who desire to live in more luxurious habitations will certainly not be curtailed.

Before closing this branch of our subject we must mention the rent collecting and other private agencies for improving the housing of the poor.

Miss Octavia Hill was the pioneer in this business, she believes that the destructive and criminal classes can not be dealt with by any existing society or any building corporation, because the difficulty with these people is not financial but moral. They must be trained. This is what her system does, and there is no other method. The only way to deal with such people is to make goodness profitable. It is not a question of class, but of character. It is a question of personal influence, and the landlord or his representative is the one who alone can wield it. Miss Hill's statements are so important that extended mention of her methods of work is herewith presented. She insists that moral reformation is the only thing that can deal satisfactorily with the destructive class. If people will buy houses for the sake of managing them then they can get a hold upon such persons. That can not be done by a society. The management depends very much on judgment of character. You must notice when a man is doing better and when he is not, a fact which you can not bring up before a committee and prove it. Thus men must be held and at the same time a plan devised to gradually make them feel the benefit of the care that is being exercised over them. When old houses are bought a few improvements are made at once, such as putting the water supply and the roofs in order, but other improvements are added in proportion as the tenants' own care allows, and they become more capable of valuing and not abusing them.

A narrative of the circumstances which led Miss Hill to commence her work may not be without interest. One day, while attending a sewing reunion or some other church meeting, her sympathy was aroused in hearing about the woes of a certain woman. Impulsively she exclaimed: "I wish I had some houses to look after!" "Do you, though? Are you in earnest?" responded many of her friends. Shortly after, when dining with John Ruskin, she repeated the incident. He said: "Is it money or time you need?" She responded, "principally time." Whereon he replied that her case was hopeless. Ruskin ultimately said: "Go to my lawyer and have him buy three houses. They shall be in your hands. You can carry out your theories of visiting and rent collecting. If the money is lost, no matter. If you succeed, more will be forthcoming." At this time Miss Hill did not think much of the financial and practical sides of the work, whereas this is what Ruskin emphasized when he said: "If you can make it pay you will not only have plenty to do, but others will follow you." Ruskin's lawyer did not approve of so Utopian a scheme and tried to delay by finding objections against all property which Miss Hill suggested as eligible. Upon referring her suspicions to Mr. Ruskin, the latter authorized her to employ her own solicitor. She did so, and three small houses were speedily found, where operations were begun.

Miss Hill has not confined her housing activities exclusively to rent collection. Being an ardent lover of small homes as distinguished from tenement dwellings, she has built with her own money thirty-two cottages in Southwark, near the bridge which crosses the Thames, which she rents at a remunerative figure, receiving annually from 4 to 5 per cent dividend. The cottages are small but prettily disposed, with gardens in front, There is a large open space opposite where she has erected a hall for evening recreation, a gallery where women may sew and children play in rainy weather, and a room in which men may smoke and enjoy social intercourse.

Since Miss Hill started quite a number of private philanthropic societies have been formed for instilling into the minds of the poor a love for better homes by improving their surroundings in proportion to their appreciation of the same.

A proper understanding of the situation is grasped by most of these societies and is evidenced by the Edinburg Social Union by the following:

"The principle is maintained throughout of bettering the condition of the poor, not by lowering their expenditure on rent, which would merely tend to depress the rate of wages, but by giving them greater value for their money, and thus extending to them higher standards of comfort."

This is true political economy and needs no comment.

BRICK JOINTS.

THROUGH the efforts of the architects and manufacturers the brick industry has, of late years, shown a wonderful development, for it is but a comparatively short time since there was practically but one shape and color, and the only variation to be had was in the different degrees of finish. During the period when the pressed brick was in favor, it was unquestionably the desire of both the architect and the mason to avoid, as far as possible, all appearance of texture in a face wall; the bricks were made as smooth and regular as possible. They were bonded with "cut" headers, so as not to disturb the regularity of the courses, and the joints were made as fine and narrow as was possible, one of the essential qualifications of a first-class face brick layer being the ability to make the joints as narrow and inconspicuous as possible. Such work was at first laid in common mortar, made with fine sand, which allowed the bricks to be laid very close, but later the desire to have the joint still less prominent led to the practice of putting such coloring matter in the mortar as would bring it to the same tone as the brick. This practically obliterated the joint, and made a wall of a smooth, slippery, and as it has sometimes been called, "licked" surface.

This kind of masonery, says *The Brickbuilder*, necessarily lacked two essentials of most good architecture,—texture, and a straightforward recognition of the materials employed and the method of using them. Now, the construction of a brick wall naturally consists in laying courses of bricks one on top of the other, with a layer of mortar between each one, and it is consequently apparent that if we are to use our materials honestly, the joint of a brick wall should be recognized as an architectural feature just as much as the bricks themselves; and so soon as this is done we begin to get a surface with texture. It has been difficult to convince the mechanic, who was taught, when learning his trade, to obliterate so far as possible all trace of the joint, that comparatively wide joints of mortar of a different color from the bricks themselves could make a workman-like-looking job, and it is often hard work to bring a man who has served his time to sacrifice his principles so far as to follow the architect's directions, and lay a wall where the mortar joint is conspicuous, both on account of its width and color; but in many instances the mechanic has freely admitted, when the work was finished and cleaned down, that after all it had a certain merit and pleasing appearance, which was lacking in that which was done in the old way.

Besides recognizing the joint by means of color, it is also oftentimes desirable to use a greater width, particularly in the bed joints, which necessitates the use of a much coarser sand than was formely employed, so the bricks will not only stand up, but also stay in place. And if such work is laid in wet weather and a hard and non-absorbent brick is used, it requires some skill to keep the wall plumb and true, but

this difficulty can be overcome by the exercise of a little care and attention.

While the cement or coloring matter, which may be mixed with it control to a considerable degree the color of the mortar, nevertheless, the sand has an appreciable effect, and where it is desired to get a light-colored joint, the best sand for the purpose is a coarse, white beach sand, the only objection to it being that it is not as sharp as some bank sands, but this fact is not of sufficient importance, however, to interfere with its use. It was formerly quite generally supposed that the presence of salt in mortar was detrimental to its strength; it has been proved of late, however, that just as good mortar can be made with salt water as with fresh; and the government, on its most important works, as sea walls, lighthouses, and similar constructions, allows the mortar to be mixed of salt water.

It may be said that, as a general rule, a joint lighter than the brick is the most preferable, and a strong mortar of this kind may be made by starting with a pure lime and sand putty, and tempering it strongly as it is used with Portland cement. Care must be taken, however, in cleaning down a wall which has been laid with a wide joint of lime mortar, that the lime is not taken out by the joint to such an extent that the wall is whitewashed. If acid is used, it should be in very small quantities; but it is better to clean such brickwork with soda instead of acid, which, if the mortar if fairly well set, rarely starts the joints. It is also important that walls laid as described above should be laid so as to have ample time to become set before winter weather sets in. Care should also be taken to ascertain if there is any trouble liable to occur on account of unequal shrinkage in the mortar between the face of the wall and the backing. At one time it was often customary to lay the facing of brick walls, or at least a portion of it, in clear Portland cement, to allow the brick to be carved like stone after being set in place. There are instances where the unequal shrinkage or expansion of the different kinds of mortar made the facing scale off, and in time necessitated the removal of the entire outer 4 ins. of brickwork, but such trouble is undoubtedly less liable to occur with a wide joint in the facing, for in this case the joints of the facing and backing are more nearly equal.

Before the mortar between the bricks is set it is customary to "joint" it, that is to say, to compress it more or less by running an iron tool with a smooth surface along the joint, which compresses and at the same time indents the mortar. The jointer usually has a V-shaped edge which makes a sharp, narrow line, but sometimes a U one, which makes a slight indentation the full width of the joint. A good effect is obtained in some cases by simply cutting the mortar off with the trowel flush with the surface of the brick; but as this leaves a rough surface, the mortar is more liable to be affected by frost than where it is smoothed and compressed with a jointer. In jointing brickwork, where the bricks themselves are more or less irregular in shape and laid with a wide mortar joint, it is usually desirable to have the jointer run along the top of a straight edge, which is carefully leveled each time. Although the method of jointing the mortar may seem at first thought an unimportant detail, yet experience will soon show that it is a matter which deserves careful attention, particularly on work which comes near the eye, as in the case of fence walls, gate posts, and other similar work. If, when the architect is to build a brick wall where he wishes to obtain the best possible results, he will have several samples laid up with the same brick but different joints, he will find that the difference in joints may determine whether or not the wall is satisfactory in both color or texture, and also that a poor brick may be helped, or a good one injured, by the color and width of the mortar. The brick joint is a factor much more important than is generally supposed, and is worthy much more consideration than is ordinarily given to it.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

PRELIMINARY Sketch for proposed Phi-Kappa Pst Hall, Palo Alto, Cal., Havens & Toepke, Architects.

TEMPLE for Mission Lodge 169 F. & A. M., San Francisco, Cal., Herman & Swain, Architects.

A RESIDENCE, Samuel Newsom, Architect.

SKETCH of Club House, Samuel Newsom, Architect.

TENDERS TO BE RECEIVED.

Treasury Department, Office Supervising Architect, Washington, D. C., June 16, 1897. Sealed proposals will be received at this office until 2 o'clock P. M. on the 22d day of July, 1897, and opened immediately thereafter, for furnishing all the labor and materials required for the excavation, sewer and temporary drainage, concrete and steel foundations for the U. S. Post Office, Court House, etc., at San Francisco, Cal., in accordance with the drawings and specification, copies of which may be had at this office or the office of the Superintendent at San Francisco, California.

Each bid must be accompanied by a certified check for a sum not less than 2 per cent of the amount of the proposal. The right is reserved to reject any or all bids and to waive any defect or informality in any bid, should it be deemed in the interest of the Government to do so.

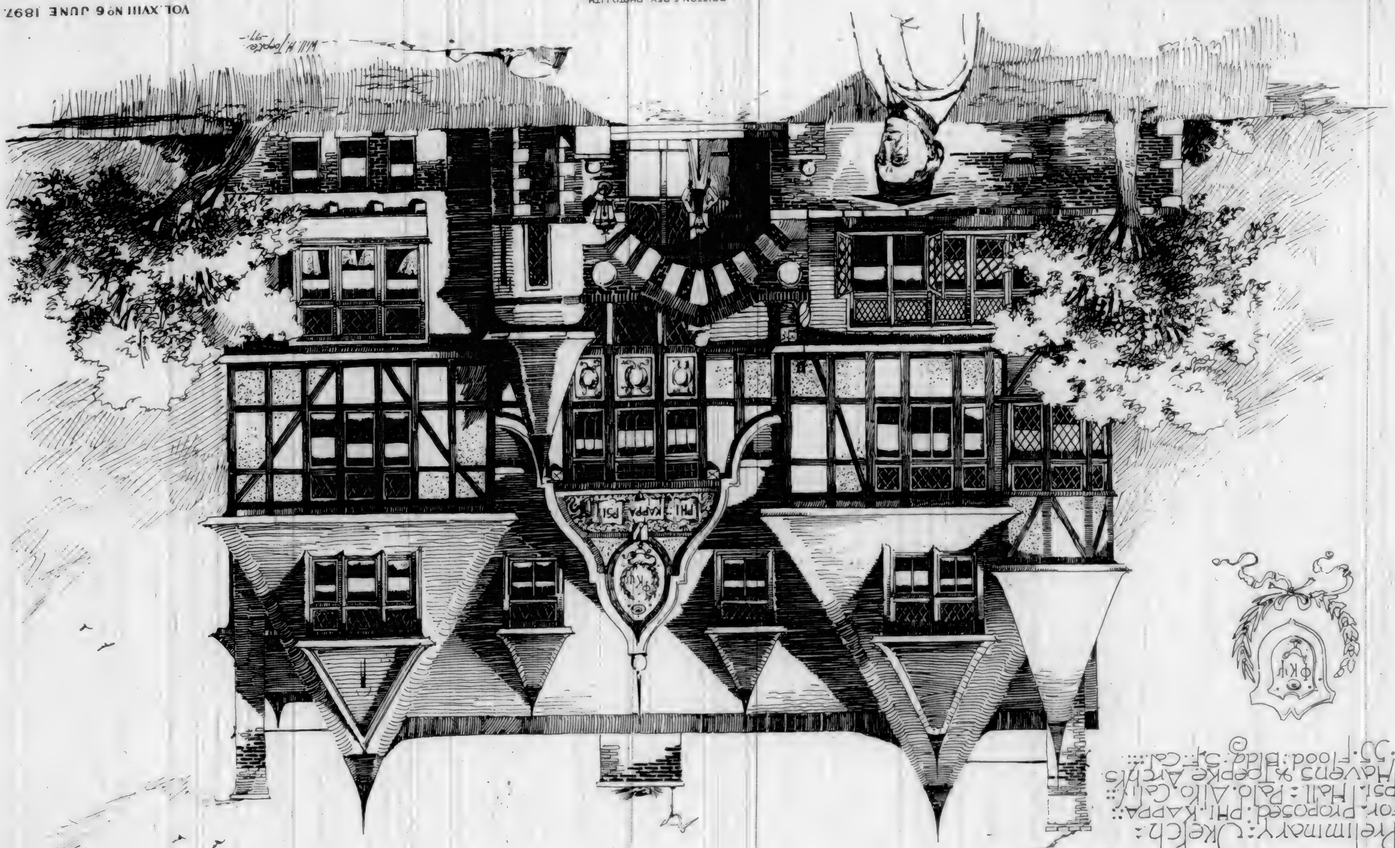
All proposals received after the time stated for opening will be returned to the bidders.

C. E. KEMPER,
Acting Supervising Architect.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO-LITH.

VOL. XVIII N°6 JUNE 1897.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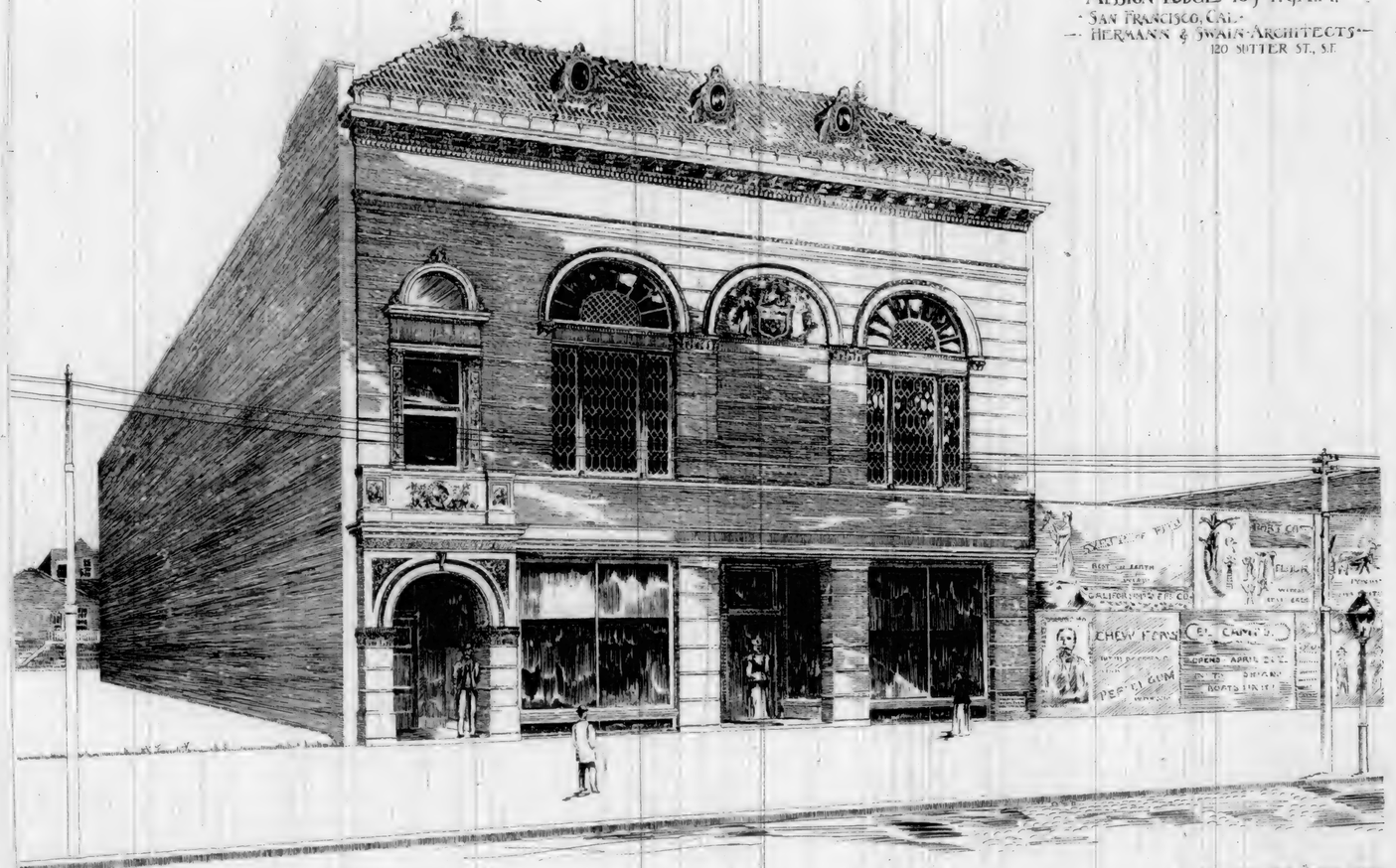
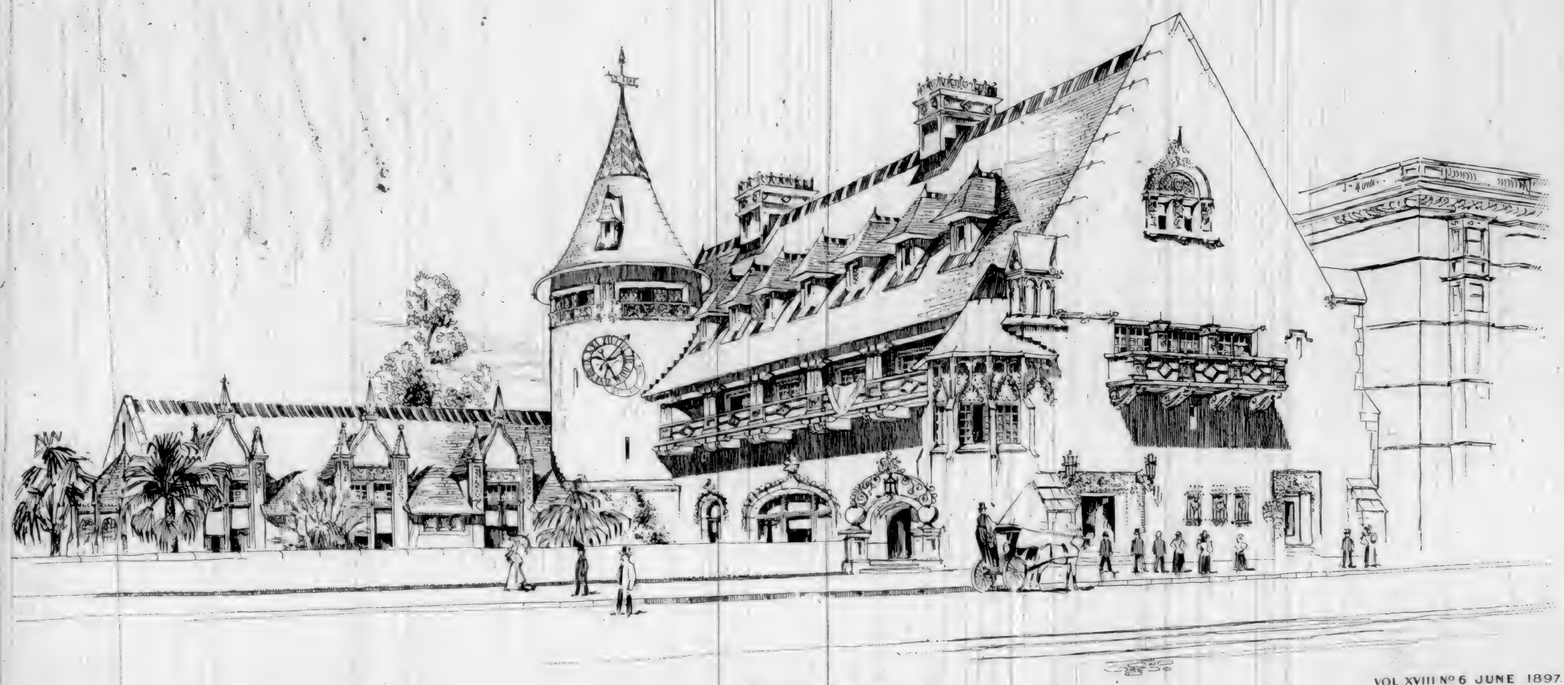
TEMPLE
MISSION LODGE 169 F.&A.M.
SAN FRANCISCO, CAL.
HERMANN & SWAIN ARCHITECTS
120 SUTTER ST., S.F.

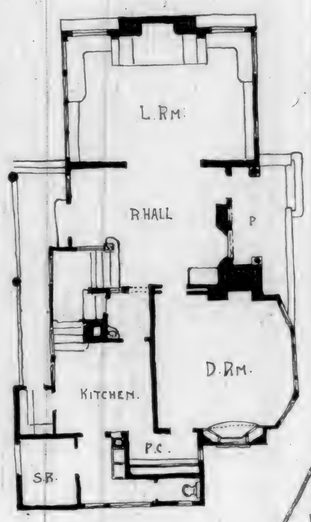


SKETCH OF CLUB HOUSE
SAM'L NEWSOM ARCH'T

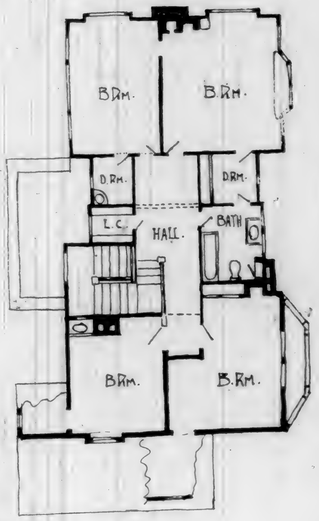


Sketch for a Residence.

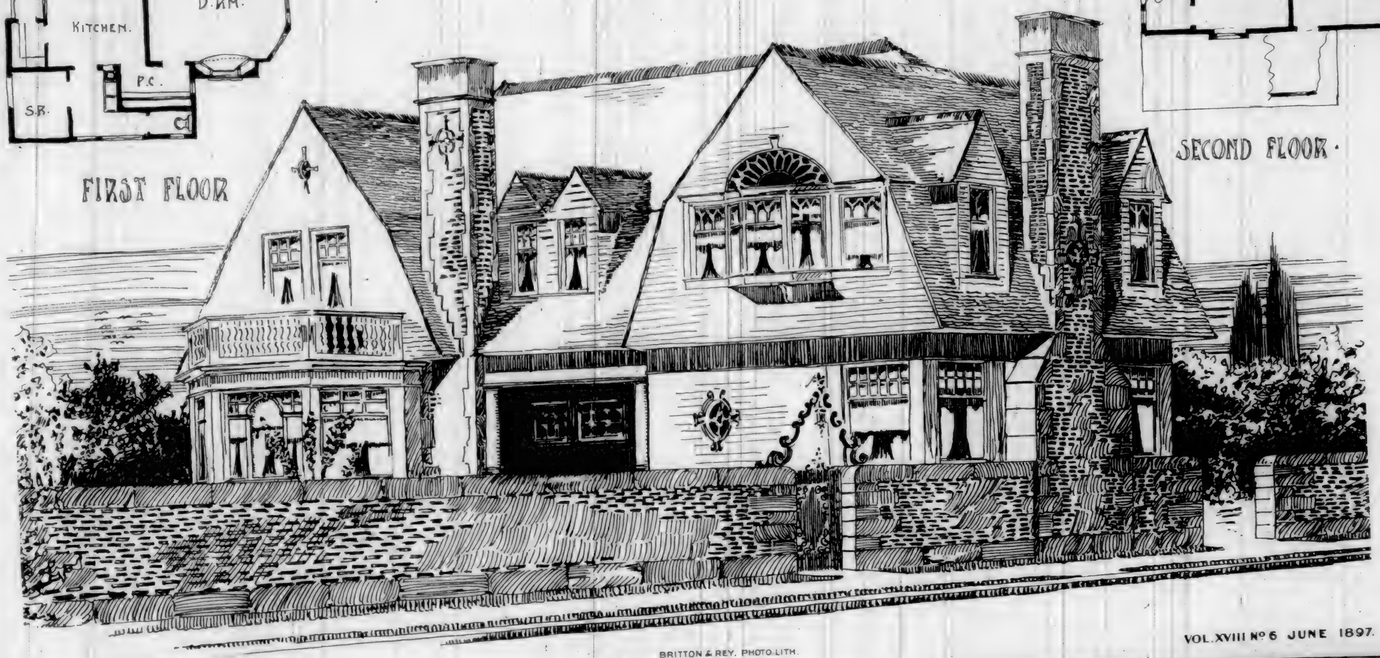
Samuel Newsom, Arch.



FIRST FLOOR



SECOND FLOOR.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY, PHOTO-LITH.

VOL. XVIII No 6 JUNE 1897.

NOTES AND COMMENTS

A COMMUNICATION was received in June last from the Board of Regents, the Governing Body of the University of California, stating that it had been decided to prepare a programme for "a general competition for a permanent, comprehensive, and grand plan of the grounds and buildings of the University of California at Berkeley," and asking for suggestions with respect to the preparation of such programme. The matter was referred to the Competitions Committee, who have drawn up some suggestions which it is hoped will contribute to the successful issue of the Competition.—*Report of the Council of the R. I. B. A.*

WE DO NOT mean to assert that the business depression has borne more hardly on architects and draughtsmen than upon other classes, but when we consider the list of those who have become involved beyond the hope of prompt recovery, those who have felt forced to take their own lives, and those who have even yielded to the temptation to commit such "irregularities" as have brought them within the reach of the law, we doubt if there be any class of men which has suffered more. Besides this, the mortality amongst architects seems to be abnormal and we cannot help feeling that it indicates that the vital powers of resistance have been unnaturally lowered by the long strain and anxiety to which all professional men whose income is dependent on sporadic commissions have been subjected. During the last week, two more architects were added to the lengthening roll of the departed, Mr. W. H. Dabney, of Boston, and Mr. W. S. Fraser, of Pittsburgh. Mr. Dabney, born in the Azores, April 8, 1855, died April 29, leaving as the buildings with which his name will be most often associated, the Warren Chambers and the Trinity Court buildings, Boston, constructed while in partnership with Mr. H. B. Ball. Mr. Fraser, born in Ohio, July 19, 1852, died at Pittsburgh, April 27, after an active career of eighteen years in that city.—*American Architect and Building News.*

AND I END as I began, by impressing on you that no one can become a good architect who does not earnestly study what men have done before, who has not enthusiasm for his art to make him long and resolve to do nothing but what is good in its practice, and who is not ready to show that he has enthusiasm by the industry which surely attends it, and without which no study, no lectures, and no schools can be of any real service.

HE'S A BRICK.

WHEN a boy does something that is particularly good or noble his comrades say: "He's a brick!" for to call a fellow "a brick" is as high a compliment as one boy can pay to another, says the *National Builder*. If we stop to think about it, though, it seems rather strange that a brick should be chosen as a standard for measuring the worth of a boy. There is surely nothing very wonderful or fine about a brick. But, like a great many other sayings that do not appear to have much sense, we shall find, by looking up the origin of this expression, that it started out with a very sensible meaning. In order to get at its beginning, we have to go back into ancient history for a distance of nine hundred years before Christ—all the way back to the time of Lycurgus, the great Spartan ruler. Plutarch tell us that Lycurgus had a great many wise and curious notions as to how people should live and how the affairs of the country should be managed. One of his ideas was that there was no necessity for building a wall about a town if the soldiers were properly trained to protect the place. On one occasion an ambassador from a neighboring country came to see Lycurgus, and he asked how it was that he had no walls around the town. "But we have walls," replied Lycurgus "and if you will come with me I will show them to you." Thereupon he took his guest out upon the plains where the army was drawn up in battle array, and, pointing to the ranks of the soldiers, he said: "These are the walls of Sparta, and every man is a brick." So you see when the expression was used it had a great deal more sense than it has now.

BOOKS AND PERIODICALS

Circular of information of the NATIONAL ASSOCIATION of MANUFACTURERS, of the United States of America—in the February issue the annual report of the president contains many valuable suggestions upon the Tariff as well as the opportunities of improving our trade with China and other nations. He remarks that "in China, more than in any other country of the world, it is necessary to show actual samples of merchandise and machinery in order to create an intelligent impression upon the minds of the intending purchasers." The same might with truth be said of the South American trade.

LIPPINCOTTS' Magazine for June, 1897. Contains the complete novel, "As Any Gentleman Might," is a rattling tale of adventure by William T. Nichols. The hero is an American, but the action mainly in England, and the time is in the early part of the present century. Other short stories will well repay reading.

PROGRAMME of a COMPETITION for the selection of an architect for a New Capital building to be erected by the commonwealth of Pennsylvania in Harrisburg. This pamphlet is divided into four parts—first part giving the total cost $550,000, and terms of reward for those that compete. The second part gives the duty of the Board of Experts, etc. The third describes the plat of ground for the proposed buildings. Part four detailed requirements of the same.

OPPOSED TO CHEAP LODGING HOUSES.

AT a recent meeting of the Social Reform club of New York, Mrs. Josephine Show Lowell, chairman of the committee on vagrancy of the Associated Charities, took up the question of cheap lodging houses. She regards them as, in the end, a bane and no boon. They foster the spirit of vagrancy and irresponsibility. They bring those who have no desire for a higher standard of living into successful competition with the men who have families to support. They really operate to lower wages. For the care of really homeless men she advised the establishment of municipal lodging houses, where the strictest investigation could be given to each individual applying for help. By such means she would deem it possible that deserving men with homes in other cities could be returned thither, actual vagrants committed to the workhouse and young beginners in the life of vagrancy referred to private charity, with some hope of successfully wooing them from the nomadic life so dangerous to the community.—*Industry.*

THE RIGHTS OF THE LOWEST BIDDER.

AS AN illustration of what it considers the rights of the lowest bidder, the *Bulletin* cites the case of a contract for a bath-house for the City of Boston, which was awarded to a contractor whose bid was considerably above the lowest, by order of the Mayor, who had made the award, as he explained afterwards, in consideration of a private promise from the contractor to employ only union men on the work. We need hardly say that no architect was concerned in the Mayor's action, and the whole profession will support the claim of the Boston Master Builders' Association, as set forth in the *Bulletin*, that if a promise to employ none but union men was to be an element in the award, the lowest bidder should have been allowed to make the same promise, if he wished. It is obvious that a case in which known skill, distinguished honesty, or even personal friendship are allowed to count in determining the award of a private contract is a very different thing from one in which the award of public work is made in accordance with a concealed bargain, to which only one of the bidders is admitted. In the former case, the reputation of the different bidders, and usually, the friendship of the owner for any of them, is known to all the bidders; and every one who estimates does so with an understanding of the possible odds against him; but in the latter case the bidders who estimate in competition with the favored contractor have been deceived, inasmuch as the legal reservation of the right to "reject any or all bids," which is manifestly intended to protect the city against irresponsible or vicious contractors, and the application of which, in selecting a contractor, can be reckoned on with reasonable certainty by the bidders, has beed used to justify the award of the contract in accordance with considerations which the bidders were not informed of, and could not have inferred from any circumstances known to them.—*American Architect and Building News.*

OLD HOUSES mended
Cost little less than new before they're ended.—*Colley Cibber.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, Pres. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec'y. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

AMERICAN STEEL IN EUROPE.

AT the annual meeting in London of the Iron and Steel Institute this week American Competition was one of the chief points of discussion. President Richard Martin spoke of the enormous output of the leading American streel works, and pointed out that the Ameticans were outdistancing the British in the uses of steel. He instanced the steel buildings being erected in nearly all the large cities of the United States, and urging lower freight rates, saying that the present cost of transportation was severely handicapping British industry, as the rates not only in America, but in Belgium and Germany, were greatly below the English rates.—*The Age of Steel.*

TROUBLE AT THE MILLS.

LAST MONTH a large number of the mill men and loggers in the Mendocino county mills refused to work at the prices prevailing and under the ruling system of payment. This move at the present time is a very unfortunate one, for it is well known that no line of business is so depressed as is the lumber trade at this very time, says *Pacific Coast Wood and Iron.* Mills have been run at a loss for a long time and mill owners have kept their men at work to prevent, as far as possible, starvation and entire stagnation. Especially have the redwood interests suffered. The great influx of pine, spruce and fir into this market has literally driven redwood from its stronghold and in order to sell it at all, prices have been reduced so that no mill man receives for the product of his mill, no matter how cheaply it is manufactured, a fair equivalent for his capital invested or his labor. Mill owners and all the employes have but one common interest and the laboring man should bear in mind the fact, that although he is working for low wages his employer has had his income reduced and is really working for nothing, besides seeing his forests stripped of the finest timber which can never be replaced. Politicians, for the sake of glory, may force bills through the legislature that hamper and oppress mill owners but mill owners cannot perform impossibilities, and if worst comes their only relief lies in shutting down their mills and closing the doors of their stores and letting the employe go to other lands already overcrowded with laborers. The prospect in Mendocino is very dark.

If the laborers insist upon carrying out the strict letter of the Stanford Law, trouble will ensue that is apt to crush not only themselves but the mill owners, and with them the whole State must suffer. In these times of hardship all should unite to bear the burden, and the load will be made lighter as it is divided; each man lending his help until the time comes when the clouds will grow brighter and the era of prosperity dawns. Then will be the time to ask for and obtain better prices for labor and for lumber. With a greater demand for redwood we feel assured that every mill owner will gladly divide his gains with his employes and rejoice that he is able to do so. The following article from the Fort Bragg *Advocate* shows the effect on that town of the strike. The stoppage of the mill shuts off the electric light and the town is in the darkness in more ways than one: "The mill and woods are still closed down, and no one seems to know when operations will be resumed again It may be in a few weeks, or not for a year. The company has had a hard time to get along the last few years, and just at present the members of the concern are in such a mood that they don't care whether a wheel turns or not for the next twelve months in the mill here. As Fort Bragg is a saw mill town in the strictest sense of the word, with no ordinary industry to back it, it is sincerely hoped that the little unpleasant difficulty at present existing will be speedily settled."

ROADWAY ALONG THE ROCKY SHORE AT TIBURON

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Courts of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

THE SPECIFICATIONS ARE AN ESSENTIAL PART OF THE CONTRACT.—The specifications are an essential part of the contract, and as material as the price of the work or the terms of the payment, where the contract price is not to be paid until the work is completed according to the specifications. It is not indispensable that the specifications be signed by the party to be charged, but it

will be sufficient if they are referred to with certainty. But where the reference is false it cannot be helped out by oral evidence.

Thomas Donnelly, respondent; Frank P. Adams, et al., appellants. Foreclosure. Reversed. S. F., No. 182, Department Two, Filed November 27, 1896.

When Market Value of Materials Cannot be Shown.—In an action against the owner of a building for materials furnished for and used in its construction, the architect cannot testify as to the market value of the materials where the price has been fixed by the contract of purchase.

McCormick v. Sadler, Utah, 47 Pacific Reporter, 667.

Construction of a Warrenty of Bricks.—A sale of "common bricks" to be of "good quality and equal to sample" involves no implied warranty that they shall be fit for the purpose for which they are purchased, although the seller is informed of such purpose.

Wis. Red Pressed Brick Co. v: Hood, Minn., 69 Northwestern Rep. 1091.

Limitation on Building Bond.—A material man cannot sue on a building contract bond which names only as beneficiaries the owner and any person advancing money to the owner to be used in the construction of the building.

Macatee v. Hamilton, Texas, 38 Southwestern Reporter, 530.

Right to Retain Installments.—A building contract provided that the owner might retain from installments as they came due sufficient funds to pay all claims against the contractor due and unpaid, but that such provision should not impair any rights under the contractor's bond. The court held that the right to withhold payments was intended as a protection in addition to the bond, and not as applying only to the final payment.

Dempsey v. Schawacker, Mo., 38 Southwestern Reporter, 954.

BUSINESS MOSAICS.

Rissmann's Rafter and Polygon Guage will give the length and cut for each and every rafter required for roofs of eighteen different pitches, including mitre cuts for planceer, crown moulding, facia, mitres for different polygon, etc. All you require to know is the width of the building and the pitch you desire to give roof. The guage is made of heavy card board, size 11"x13", and is to be fastened onto a board of same dimensions, and with the use of an ordinary carpenter bevel the above cuts may be obtained in an instant.

Price 35 cents postage paid. Agents wanted in every State. F. Reissmann, West Point, N. Y.

Aunt Hannah—Silas, what be filibusters? Silas—Why, they be men what bust in Philadelphy, I guess.—*Examiner*

Bradley Bros. manufacturer Cement Laundry Trays, made of the best Portland Cement and guaranteed not to leak, crack or sweat. Office and factory 53-57 Tehama street, San Francisco.

Portland Cements of the best and most reliable brands can always be ordered from W. R. Grace & Co., 203 California street, San Francisco.

Bender—Miss Styles asked me to call again. Fender—Oh, indeed! What firm are you collecting for now?—*Yonkers Statesman.*

The J. L. Mott Iron Works, represented on this coast by Mr. M. S. James, at room 27, Flood Building, can furnish almost any thing in the way of making your house comfortable and healthy as far as plumbing and bathing is concerned, from kitchen to attic, you have only to apply to Mr. James and your wants will be supplied in the most satisfactory manner.

The John Douglass Co. are ready to supply you with any combination of water closet that you may desire with their absolutely noiseless tank.

Mr. Leonard of concrete and twisted iron fame has room 7, Hobart Building.

To those in favor of home industry we suggest the patronizing of P. & B. Building Paper, manufactured by the Paraffine Paint Co., everything supplied by this reliable firm can be depended upon as represented, and home made at the same time—116 Battery street, San Francisco.

Facts about paint is what we all want who intend painting, therefore go to the fountain head and get W. P. Fuller & Co., to tell you something in this line.

They recommend Phœnix pure paint because it is made from pure material only finely and thoroughly ground and mixed with heavy machinery.

"That couple in the next flat seem fond of each other." "Yes; he lets her try to shave him."—*Chicago Record.*

For heating apparatus either by warm air, hot water or steam, go to W. W. Montague & Co., 309 Market street, where you will find what you want in the way of mantels, grates or tiles, wrought steel ranges and French ranges, as well as complete kitchen outfits for hotels, restaurants, clubs and boarding houses.

San Francisco Lumber Co., wholesale and retail dealer in lumber have their office at the foot of Third street, with yards at Channel street between 4th and 5th, telephone South 1047. Uptown office for orders, 405 Montgomery street.

CITY BUILDING NEWS.

Ashbury near Oak. Two-story frame; owner, Prof. Joseph Wrba; architect, C. M. Rousseau; contractor, R. L. Pavert; signed, May 10; filed, Eay 11; cost $3890.

Broadway near Octavia. Two-story frame; owner, A. S. Johnson; architects, McDougall Bros.; contractor, A. Olsen; signed, May 26; filed, May 27; cost $5065.

Bryant Ave, near 22d. Two-story frame; owner, Mrs. Sussie Woods; architect, D. C. Coleman; contractor, T. F. Doyle; signed, May 26; filed, May 29; cost $2500.

Bryant near 3d. Two-story frame; owner, Margaret McAvoy; architect, J. J. Lr Farme; contractor, J. W. Coburn; signed, June 8; filed, Juen 10; cost $1080.

Butt near Texas. Cottage; owner, A. Jeffries; contractor, John Flaherty; signed, May 21; filed, May 22; cost $800.

Buchanan near Post. Three-story frame; owner, Jonas Schoenfield; architects, Salfield & Kohlberg; signed, May 24; filed, May 27; cost $3985.

Buchanan and Jackson. Three-story frame; owner, John Schoen; architects, Martens & Coffey; contractor, W. Tegeler; signed, May 11; filed, May 12; cost $5100.

California near Webster. Alterations and additions; owner, H. W. Whitely; architect, Albert Sutton; contractors, Knox & Cook; signed, May 10; filed, May 11; cost $2428.

California near Sansome. Telephone room, etc.; owners, Balfour, Guthrie & Co.; architect, W. J. Mathews; contractors, W. T. Veitch & Bro.; signed, May 29; filed, June 2; cost $3960.

California Ave, near Godens. Two-story frame; owner, Niek A. Nielsen; contractor, A. F. Eskilson; signed, June 1; filed, June 3; cost $3350.

Clay or Baker. Grading, brick work, etc.; owner, Mrs. Geo. T. Davis; architect, A. F. Oakley; contractor, W. Dunbar; signed, May 10; filed, May 12; cost $1453. Carpenter work; contractor, Elder & McLaughlin; signed, May 4; filed, May 12; cost $6025.

Clay and Baker. Plumbing, etc.; owner, Mrs. Geo. Davis; architect, A. F. Oakey; contractor, R. Rice; signed, May 4; filed, May 22; cost $1675.

Clement near 8th Ave. Two-story frame; owner, Thorn Kashow; architect, Geo. A. Bordwell; contractor, B. F. Ellis; signed, May 11; filed, May 11; cost $1632.

Clement near 9th Ave. Cottage; owner, A. M. McGregor; architect, T. J. Welsh; contractor, Geo. McLeod; signed, May 28; filed, June 5; cost $2075.

Devisadero near Washington. Two-story frame; owner, L. Friedbander; contractors, Hannan Bros.; signed, May 28; filed, May 28; cost $3775.

Eighth Ave. near D. Cottage; owner, Marquisith Ehlinger; architect, E. Hugh Weste; contractors, Weste & Fenn; signed, June 8; filed, June 11; cost $1150.

Ellis and Gough. Alterations and additions; owner, Mrs. R. L. Horton; architect, T. P. Ross; contractor, T. H. Soule; signed, April 30; filed, May 3; cost $2134.

Ellis near Laguna. Two-story frame; owner, Elizabeth Taylor; architects, Kenitzer & Barth; contractor, D. H. Matheson; signed, May 26; filed, May 26; cost $1262.

Ellis and Anna Lane. Mason work, etc., for six-story brick; owner, W. J. Somers; architects, Percy & Hamilton; contractors, Peacock & Butcher; signed, June 2; filed, June 3; cost $17,800. Iron and steel work; contractors, F. H. Jackson & Co.; cost $4400.

Fairmont Track, Lot 13, Block 17. One-story frame; owner, M. Saloman; architect, H. E. Harris; contractor, John McLaughlin; signed, June 2; filed, June 3; cost $1320.

Fifth Ave. near California. To build; owner, Sophie Swenson; architect, John Miren; contractor, Eric Tillman; signed, May 27; filed, June 1; cost $2837.

Fifth Ave. near Pt. Lobos. Cottage; owner, Mrs. Matilda Nelson; contractor, Edward Ginley; signed, May 15; filed, May 15; cost $1750.

Fremont near Mission. Carpenter work for two-story brick; owner, Thos. Breen; architect, D. C. Coleman; contractor, T. R. Bassett; signed, May 3; filed, May 20; cost $2500.

Fredrick near Chrader. Five two-story frames; owner, John Steerlein; days' work; cost $25,000.

Forty-fifth Ave. and Clement. Cottage; owner, Wm. Miles; architect, C. M. Rousseau; contractor, Geo. C. Nall; signed, May 24; filed, May 26; cost $1075.

Geary near Gough. Three-story frame; owner, Jonas Schoenfeld; architects, Salfield & Kohlberg; contractor, John Furness; signed, May 29; filed, June 3; cost $5800.

Geary near Gough. Plumbing; owner, Jonas Schoenfeld; architects, Salfield & Kohlberg; contractor, W. F. Wilson; signed, June 2; filed, June 11; cost $1027.

Geary near Mason. Additions; owner, G. Metcalfe; contractors, Wiren & Ostland; cost $1000.

Geary near Powell. Plastering for five-story brick; owner, A. Aronson; architect, C. R. Wilson; contractor, J. R. Tobin; signed, March 30; filed, June 3; cost $2573.

Geary and Stockton. Marble work; owner, Spring Valley Water Works; architect, Clinton Day; contractor, Vermont Marble Co.; signed, March 29; filed, May 7; cost $13,970.

Geary and Stockton. Electric work; owner, Spring Valley Water Works; architect, Clinton Day; contractor, California Electrical Works; signed, April 30; filed, May 7; cost $5486.

Geary and Stockton. Concrete and asphalt work, etc.; owner, Spring Valley Water Works; architect, Clinton Day; contractors, Gray Bros.; signed, May 17; filed, May 17; cost $1620.

Geary near Powell. Steam heating for five-story brick; owner, A. Aronson, architect, C. R. Wilson; contractors, Geo. H. Tay Co.; signed, May 16; filed May 14; cost $1540.

Golden Gate Ave. near Devisadero. Two-story frame; owner, Chas. F. Fitzsimmons; architect, C. J. Colley; contractor, W. J. Field; signed, May 11; filed, May 13; cost $3975.

Green near Dupont. Alterations and additions; owner, Mrs. Lene Samuels architect, C. A. Meussdorffer; contractors, Wilhelm & Taylor; signed, June 2; filed, June 11; cost $4530.

Green near Leavenworth. Three two-story frame cottages; owner, A. M. Coyot; architect, M. G. Bugbee; contractor, G. Eber; signed, June 2; filed, June 5; cost $3784.

Green near Larkin. Two-story frame; owner, Mrs. E. M. Leahy; architects, Shea & Shea; contractor, S. T. Greene; signed, June 5; filed, June 9; cost $2300.

Guerrero near 20th. Two-story frame; owner, Elizabeth F. Brown; architects, Havens & Toepke; contractor, J. C. Bassett; signed, May 29; filed, June 5; cost $4625.

Guerrero and Duncan. Two-story frame; owner, F. M. Donohue; architect, M. J. Welsh; contractors, Doyle & Son; signed, May 11; filed, May 12; cost $1089.

Hamdshire near 22d. To build; owner, Christopher Jung; contractor, J. F. Henrick; signed, June 1; filed, June 12; cost $2500.

Harrison Ave. and Shipley. Alterations and additions; owner, Mrs. A. Chatean; architect, E. Depierre; contractors, Guiot & Teper; signed, May 27; filed, May 28; cost $775.

Harrison near Third. Additions; owner, Henry Goldstein; architect, W. W. Armitage; contractor, T. Boyd; signed, May 21; filed, May 24; cost $1500.

Howard near Beale. One-story brick; owner, John F. Merrill; architect, Clinton Day, contractor, Thomas Butler; signed, May 22; filed, May 29; cost $4480.

Jackson near Buchanan. Two-story frame; owner, Isaac Strassburger; architect, W. H. Lillie; signed, May 19; filed, May 20; cost $11,640.

Jessie near 14th. Two-story frame; owner, Eugene R. Wall; contractor, John Keneally; signed, May 27; filed, May 29; cost $2100.

Jones and Union. Concrete work for three stores; owners, Pierre and Francine Chige; architect, J. Godart; contractor, Buzzin; signed, June 11; filed, June 12; cost $1000. Carpentry; contractors, Sarcander & Thompson; signed, June 11; filed, June 12; cost $4055. Plumbing; contractor, G. C. Sweeney; signed, June 10; filed, June 12; cost $630. Painting; contractor, J. F. Sullivan; signed, signed, June 11; filed, June 12; cost $495.

Kearny near Union. Three-story frame; owner, Gernore Faraco; architect, C. R. Wilson; contractor, Giovanni Banchero; signed, May 17; filed, May 18; cost $5000.

Kearny and Post. Carpentry, plastering, etc., for alterations; owner, James Stanton; architect, J. E. Krafft; contractor, O. Rurmeister; signed, May 20; filed, May 27; cost $1125. Iron and steel work; contractors, P. H. Jackson & Co.; signed, May 20; filed, May 27; cost $1268.

Kearny and Sutter. Plumbing and gas fitting for six-story brick; owners, Adams Co.; architect, H. A. Schulze; contractor, E. James Duffy; signed, June 3; filed, June 9; cost $402. Tin work, etc.; contractor, S. F. Cornice Co.; signed, June 8; filed, June 9; cost $1569.

Larkin near Green. Plumbing, etc.; owner, H. G. Otis; architect, C. A. Henderlong; contractor, H. Williamson; signed, May 10; filed, May 10; cost $994.

Leavenworth near Filbert. Two-story frame; owner, F. Pape; architects, Salfield & Kohlberg; signed, May 6; filed, May 7; cost $3100.

Liberty near Castro. Three two-story frames; owner, F. Nelson; days' work; cost $10,000.

Market street, No. 337. Galvanized iron work, etc.; owner, Mr. Spreckels, contractors, Guilfoy Cornice Works; cost $1675.

Market and Third. Gas and electric fixtures; owner, Claus Spreckels; architect, Reid Bros.; contractor, Thomas Day Co.; signed, May 18; filed, June 5; cost 6515.25.

Market and Sanchez. One-story frame; owner, R. T. Broderick; architects, Salfield & Kohlberg; contractor, J. S. W. Saunders; signed, June 8; filed, June 10; cost $2300.

Market near 3d. Alteration and additions; owner, John W. Mackey; superintendent; days' work; cost $2000.

Market and Third. Steam heating plant; owner, Mrs. Phoebe A. Hearst; architect, A. C. Schweinfurth; contractor, J. G. Grannis; signed, May 8; filed, May 12; cost $8035.

Market and Third. Sewerage, etc.; owner, Mrs. Phoebe Hearst; architect, A. C. Schweinforth; contractor, J. E. Britt; signed, May 14; filed, May 18; cost $18,987.

Mason near Vallejo. Excavations, brick and concrete work; owner, Mrs. Marie Garbarrio; architect, E. Depierre; contractor, I. B. Perramont; signed, May 6; filed, May 8; cost $2490.

McAllister near Devisadero. To build; owner, Wm. F. Dunn; architects, Havens & Toepke; contractor, John H. McKay; signed, May 15; filed, May 19; cost $4600.

Mission near 23d. Electrical work; owner, Mission Masonic Hall Association; architects, Herman & Swain; contractor, E. H. Forest; signed, May 1; filed, May 10; cost $790.

Montgomery and Stockton, Brick work, etc., for three-story brick; owner, Lorenzo Scatena; architect, C. R. Wilson; contractor, Luigi Cupano; signed, May 8; filed, May 21; cost $4375. Carpenter and mill work, etc.; contractor, A. Cacua & Perkrich; signed, May 8; filed, May 21; cost $6160.

Montgomery Ave. and Stockton. Three-story frame; owner, L. Scatena; architect, C. R. Wilson; contractor, W. P. Fuller & Co.; cost $1475.

Ninth and Howard. Two-story frame; owner, Mrs. Jas. A. Robinson; architect, F. T. Van Ness; contractors, Anderson & Greig; signed, June 11; filed, June 12; cost $2275.

O'Farrell street. Additions; owner, E. P. Vorbe; contractor, W. B. Kreger; cost $7000.

Pacific Ave. near Scott. Carpenter work; owner, James Stewart; architects Smith & Freeman; contractors, Ingerson & Gore; signed, May 21; filed, May 26; cost $3040. The same contractors; same building; cost $2980, $3300, $9000.

Pacific Ave. near Octavia. Extras; owner, M. J. McCutcheon; architect, E. A. Mathews; contractors, Leiter & Prugh; signed, May 28; filed, May 29; cost $304.

Pacific Ave. and Buchanan. Brick and granite; owner, Albert Meyer; architects, Salfield & Kohlberg; contractors, Miller & Beek; signed, June 1; filed, June 3; cost $9357. Carpenter work, etc.; contractor, John Furness; signed, June 2; filed, June 3; cost $11,375.

Pacific Ave. near Octavia. To build; owner, Edward J. McCutchon; architect, E. A. Mathews; contractors, Leiter & Prugh; signed, May 15; filed, May 18; signed, May 15; filed, May 18; cost $12,080.

Page near Cole. To build; owner, Edward Barnett; architect, J. Stanley; contractor, J. C. Bassett; signed, May 4; filed, May 7; cost $3150.

Park Lane Tract. To build; owner, Adam Straub; architect, Alex Hildebrand; contractors, Klein & Eickholt; signed, May 7; filed, May 7; cost $1458.

Pine near Front. Additions, etc.; owner, Anglo American Crockery Co.; contractor, F. A. Blanchard; cost $600.

Pine near Fillmore. To build; owner, John J. Mehegan; contractor, Richard Cook; signed, May 10; filed, May 10; cost $950.

Post near Stockton. Alterations and additions; owner, I. O. R. M.; contractor, J. Schuler; signed, May 10; filed, May 11; cost $1895.

Precita Valley. To build; owners, Tim P. and Annie M. Kennedy; architect, E. McHugh Weste; contractor, J. T. McInnis; signed, June 8; filed, June 10; cost $2500.

Presidio. Storage building; owner, U. S. Government; contractor, F. A. Williams; cost $9089.

Railroad Ave. and 18th. To build; owner, John Puckhaber; architect, F. B. Wood; contractor, W. J. B. Warner; signed. May 12; filed, May 13; cost $3569.

Rhode Island near 23d. To build; owner, Cyrus Ellenberger; architect, P. H. Bosworth; contractor, John Wyllie; signed, May 19; filed, May 22; cost $1315.

Sacramento near Leavenworth. Three flats; owner, Sarah A. Denis; architect, H. D. Mitchell; contractor, Val Franz; filed, May 29; cost $6000.

Sacramento near Leavenworth. Alterations; owners, Elizabeth M. and J. J. Sullivan; contractor, W. H. Wickersham; signed, May 10; filed, May 12; cost $1269.

Sacramento near De Ray Place. Three-story frame; owner, Ella O. Mann; architects, Havens & Toepke; contractor, Val Franz; signed, May 8; filed, May 14; cost $3819.

Sanchez near Elizabeth. To build; owner, Mary A. McKiernan; contractor, D. T. Francoeur; signed, May 14; filed, May 28; cost $1500.

Second Ave. near Point Lobos. Cottage; owner, Martin O'Connor; contractor, Wm. Plant; signed, May 7; filed, May 12; cost $1500.

Second near Brannan. Four flats; owner, Henry Meyer; architects, Rowell & Collins; contractor, James Geary; signed, May 12; filed, May 21; cost $4150. Plumbing, etc.; contractor, Tibbert Peterson; signed, May 12; filed, May 21; cost $995.

Shipley near 5th. Additions; owner, Mary Donelly; contractor, C. Douglass; signed, May 22; filed, June 11; cost $1046.

Spruce near Washington. Plumbing, etc.; owner, S. Dolliver; architect, T. J. Welsh; contractors, Gulick & Wetherbee; signed, May 11; filed, May 12; cost $450. Electric work; contractor, California Electrical Works; cost $390.

Sutter near Buchanan. Alterations and additions; owner, Mrs. M. Stallman; architects, Townsend & Wyneken; signed, June 9; filed, June 10; cost $1965.

Taylor and Bernard. Addition; owner, Catherine Fahey; architect, H. D. Mitchell; contractor, Peter Hamilton; signed, June 1; filed, June 4; cost $4200. Plumbing, etc.; contractors, Noonan & Gordon; signed, June 2; filed, June 4; cost $1190.

Turk and Taylor. Painting; owner, Alexander W. Wilson; architects, Shea & Shea; contractors, Wm. Willson & Co.; signed, May 7, filed, May 19; cost $1735. Tinning, etc; S. F. Cornice Works; cost $2250. Electric work; contractor, Henry F. Henzel; cost $1200. Plastering, etc.; cost $3825. Patent chimneys; contractors, Conlin & Roberts; cost $2545.

Turk and Taylor. Alterations and additions; owner, A. W. Wilson; architects, Shea & Shea; contractors, Peacock & Butcher; cost $6590.

Twenty-second near Minnesota. To build; owners, Wm. and Annie Burns; contractor, C. J. Antwild; cost $2200.

Twenty-fourth near Diamond. To build; owner, Mrs. Susie Lobin; contractor, E. H. Hyde; cost $3000.

Twenty-eighth near Guerrero. Cottage; owner, M. C. Leisbuttel; architect, B. A. Brown; contractor, E. L. Brookes; signed, May 22; filed, May 22; cost $1100.

Twenty-fifth near Noe. Cottage; owner, David M. Sullivan; contractor, W. W. Redmill; signed, June 10; filed, June 14; cost $1303.

Union near Devisadero. To build; owner, Mrs. T. W. Collins; contractors, Weste & Fern; signed, May 14; filed, May 14; cost $3520.

Van Ness Ave. near Green. To build; owner, John Evans; architect, M. J. Lyon; contractors, Elder & McLaughlin; signed, May 25; filed, May 26; cost $1112.

Vallejo near Larkin. Alteration and additions; owner, Mrs. Mary Neely; contractor, G. G. Gillespie; cost $1435.

Washington near Jones. To build; owner, Wm. Wolff; architect, E. Kollofrath; contractor, C. Schutt; cost $3985.

Washington near Clay. Grading, underpinning, etc; owners, Mrs. Amelia Cohen and others; architect, Edward J. Vogel; contractor, F. Wagner; cost $1230.

Waller near Fillmore. Additions and alterations; owner, M. McIntyre; architect, M. J. Welsh; contractor, R. Fahy; cost $2050.

Webster near Union. To build; owner, Percy J. Greede; architect, W. O. Banks; contractor, Geo. Healing; cost $2644.

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SOME YEARS ago Congress passed a law giving the Secretary of the Treasury the power to secure designs for public buildings by the competitive method. This law was the result of much labor on the part of the Architectural profession exerted both individually, and collectively through the American Institute of Architects, and it was confidently hoped and expected, that a marked and beneficial effect would be the result on the artistic and utilitarian character of future constructions. The profession had every reason to expect such a result from the new departure and were bitterly disappointed to learn that the then Secretary of the Treasury interpreted the law to be optional with him to enforce or ignore, and that he was graciously pleased to ignore the desire of the people to inaugurate improved methods in the conduct of the office of the Supervising Architect, which were designed to secure for the benefit of the nation the talent, abilities and genius of the leading men in the noblest of all arts, the art of building.

The present Secretary of the Treasury has reversed the action of the former incumbent (and incumbrance) of this high office, and put in active operation the provisions of the long neglected law enacted by Congress and approved by the President on the twentieth of February, 1893, and formulated regulations governing the competitions.

Under these regulations at least five architects of good professional standing, and who are citizens of the United States will be requested by the Secretary to submit competitive plans, specifications and drawings for each building to be be erected, the merits of which will be investigated by a committee consisting of the Supervising Architect of the Treasury and two architects or experts in construction, who will report to the Secretary for his approval. The architect whose designs are accepted will receive in compensation for his full professional services, including local supervision of the building, a fee computed at the rates of 5 per centum upon all sums up to $500,000, 3½ per cent on the nex

$500,000, or any part thereof, and 2½ per cent upon any excess beyond one million dollars. The department, however, reserves the right to reject any and all plans.

This departure will certainly cause an increase in the interest of the general public in the beauty of their public structures and lead to a healthy rivalry between the various cities, which should react beneficially on the character of our private architecture as well.

WHAT IS AN ARCHITECT?

E CAN define with reasonable accuracy the physician, the surgeon, the attorney, the artist, the sculptor; but the architect has so many sides to his completeness that it is well nigh impossible for a single mind to work successfully on all the lines which he is now supposed and expected to bring into action. If he could but cut himself away from some things now required; if he could but "press the button" when the inspiration of the sketch is given or when the drawings are perfected and let some other fellow do the rest, we might be able to handle him more readily. But now, through the long tedious and wearying process from the sketch to the final certificate, which is the architect? Is he the plansman, the designer or the specification writer? Is he the man who sees the bricks laid and the nails driven, or the man who cuts down the extra bills? Or is the true architect just the man who gets the job? Is he the artist or the hustler?

Is the soul of his endeavor to be found in the completed work or in the battle for an opportunity? We cannot tell you. Sometimes he is one thing, sometimes another, and each phase of his many sided character has some example stalking in our midst and honored in our motley procession; let us take him as we find him, and help him to what he may be, regardless of his complex nature.

The above is from a report of one of the committees to the last Convention of the American Institute of Architects.

When we find architects themselves not able to define an architect we can condone more readily the lack of the knowledge of what an architect is and what he has to do on the part of the Laity or general public—and their lack of appreciation as to his worth and his labor.

Just a glance at his multitudinous knowledge may open the eyes of the people to the amount of education required to become a worthy member of that, without exception, noblest and most difficult of the professions.

The list of arts and sciences an architect has to have at his fingers' ends, is very formidable. Acoustics he has to be very conversant with otherwise the auditoria he designs will be failures. Arboriculture, Horticulture and landscape gardening he has to be acquainted with, for often he is called upon to oversee the laying out of the grounds around the mansion he is putting up or around some large public building so that all may harmonize. The knowledge of Archeology and History are also some of his necessary accomplishments for little could he design without a vision of old buildings, without a knowledge of the History of Architecture.

Boxing is an art to which he should not be a stranger—to defend himself against some truculent contractor when he insists upon him doing what is right and according to contract, or against an owner who believes that he, said architect, has prepared plans, etc., for him just for the benefit of his health and to keep his hand in, when he asks him, the owner, to pay what he owes.

When he comes to choose the best materials for the several parts of his buildings Chemistry and Mineralogy, Metallurgy and Geology have to be thoroughly digested—and when his materials come from the vegetable kingdom—Botany. Imagination and design he has to be blessed with and the art of drawing, by which he makes these known to others. Educational methods and Pedagogy he has to be grounded in when he puts up colleges and schools and Ecclesiology when he designs churches.

The science of Ethics as it enters into the complicated and delicate relations of architect and client, architect and contractor and architect and craftsman as well as the relations between architect and architect has to be referred to more frequently perhaps than in any other relation in life, for without a scrupulous attention to its codes no true architect can be.

Law, although theoretically out of his province, practically he has to have a smattering of; both in regard to the relations above mentioned, and in getting out the numerous legal documents and filing the same required during the preliminaries to building and at other times during its progress which his client more often entrusts into his hands than into the hands of his lawyer.

He has rlso to be *au fait* with all the latest styles and articles of furniture of the several apartments, with Gastronomy in laying out a dining room to best suit proper digestion; with Cookery in arranging the kitchen—and with what may be called Dormitonomy for the sleeping rooms—not forgeting music when arranging the apartments for the art which is the liquid form of architecture.

Finance must not be a stranger to him, for has he not to make very often $3.00 out of $2.00 or in other words make $2.00 go as far as $3.00. Has he not also to make five per cent commission provide for himself and family after paying draftsmen, stationery, office rent and the thousand and one little outgoings necessary to get a job and keep it.

Hydraulics and Hydrostatics, Pneumatics, Electricity and Physics he must have graduated in to specify and lay out intelligently all the wires, pipes, etc., necessary for a modern building.

Languages must not be neglected by him for there are many technical treatises in foreign languages which he ought to be able to read in the original to keep *en rapport* with advanced ideas.

Mathematics must be to him an open book—for has he not to understand and work out all the formula necessary to find the strains in and strength of his materials and that branch of it, Geometry, has to be as familiar to him as A B C when making his detail drawings.

To be able to specify the materials and labor and to direct construction he is supposed to know even more than the skilled mechanic about the arts and crafts connected with buildings which includes nearly all in some shape or manner.

Machinery in arranging for boilers engines, etc. Mining when making excavations for deep cellars tunnels, etc.—transportation, steamfitting for heating apparatus, locksmithing, carpentery, painting and even the proper way to do the humble trade of Kalsomining, and so on and so on with a list which would take up too much of our pages to complete.

He must know as much about Hygiene as a physician to be able to put up a healthy home or healthy place where humans congregate; and something about practicable Therapeuties and surgery to build hospitals rightly, also know something about Penology to build an appropriate prison.

Turning to the fine arts he ought to be able to paint and to model, and to aid him in the composition of his ornamentation he must use subjects from the animal and vegetable kingdom when an inkling of Zoology and Botany comes in handy. In the adaptation of ancient art, a proper understanding of its motive cannot be obtained without a knowledge of Philology and Mythology; and a practical insight into the Theatrical profession is needed before he builds a theatre.

Then he must build his buildings to be able to withstand cyclones, earthquakes and other like natural phenomena and to suit the climate, so that Meteorology is necessary to teach where these phenomena chiefly occur and the climatic conditions of the place he has to build in.

To write his papers which he occasionally reads before scientific and popular bodies—to make out lucid reports and descriptions, even to write a creditable specification he must be somewhat of a Litterateur.

And finally to have the chance of exhibiting his skill at all he must have studied Hypnotism, Animal Magnetism, Bon Mots, Divinity, Physiognomy, Practical Politics and what not; not forgetting that he must be a bon vivant and a gallant; to make a success he also must be a consistent hypocrite and a time server.

To exhibit what we mean by the ignorance not only of the general public, but of those who come in contact with plans and architects, we cull the following from a San Francisco journal which we have just come across. In describing the half-tone photograph of a cottage the author says:

"The exterior view, which your architect calls the 'plan of elevation,' is a departure from the set and inartistic lines of your cut-off-of-the-same-piece, ready-made dwelling, and as a whole is imposing and extremely attractive.

"The illustration is made direct from a photograph, so that it is a faithful, reproduction of the house itself; and not an ideal creation of a clever draughtsman."

Here we have a terrible jumble of mistatements—what architect (God save the mark!) could the author have come across that calls a perspective view a "plan of elevation"—and then to put the title in quotation marks to show that it is your architect's term! With all due respect for the author, we don't believe he ever heard any architect say such a thing, or if he did, he must have been playing on the credulity of his listeners, vulgarly called joshing him. Then the remark in the last paragraph, although not saying so, leaves an impression that clever draughtsmen's ideal creations are meant to deceive, in comparison to the *faithful* reproduction of the photographs. Here the writer labors under the impression that it only requires *a clever draughtsmen* to make an ideal creation. Of course those initated knows that it requires a *designer* who is called an architect when the result is a building. They also know that the ideal creation of an architect drawn on paper, when carried out in a building is the facsimile of its paper original and looks exactly like it as far as a solid can look like the same drawn on the flat.

We cannot altogether blame the public for these popular fallacies, they are not able to distinguish, with the little enlightenment they have on the subject, between an architect and a quack who hangs out his shingle and advertises himself as an architect.

So it seems the only way to educate them is for the architectural journals and the newspapers to keep digging away and showing up and explaining all these misapprehensions which are constantly showing themselves.

PLUMBING GOODS.

IN LOOKING over the progress of the art of plumbing within the last few years the improvement in that art is more evident than in any other of the building arts. It has bloomed out into what we must call the Art of Sanitation for want of a better name. The actual plumbing in the sense it was used some twelve years ago now is supplemented by several other branches of the building trades or crafts, which connot be considered apart from it, and we find that the whole character and adaptation of plumbing and sanitary fixtures has been almost entirely changed. Instead of the woodwork, sometimes elaborate and expensive, covering up the fixtures and pipes, the bath rooms are now tiled, with all the fixtures open and finished in every part, thereby insuring not only practical usefulness, but cleanliness; nor has this change stopped at the bath room—it has extended to the kitchen, the butler's pantry, the scullery, the laundry and indeed to all parts of a building where sanitary fixtures are used. Both in the kitchen and pantry, and in the scullery, the sink set in woodwork (a harbor for dirt and vermin) has been replaced by the tiled wall with an open porcelain sink and hinged drain boards. In the laundry, with the exception of the portable wringer base, woodwork has been entirely gotten rid of; and so it is, all through, in both public and private buildings. All the large first-class hotels, as well as fine private dwellings, have tiled rooms with porcelain baths and all open fixtures. In the new hospitals and asylums all the baths, water closets, sinks and special fixtures are made of glazed ware and in the large office buildings open fixtures, in lavatories, water closets, urinals and slop sinks, are altogether adopted.

In the sanitation of public institutes progress has been still more marked—school boards now look well that they get the best sanitary fixtures for the schools, and public baths, gymnasiums, asylums, barracks and prison, are now fitted up far more sanitarily than a few years ago.

In private dwellings it is a fact that plumbing fixtures are now recognized as of equal if not of paramount importance to the general furnishing of a well-appointed house and it has become the almost invariable custom for parties building or remodeling to visit show rooms and select their fixtures, fittings, etc. When this can be done, it is in every way the most satisfactory method.

Again in former time the fixtures were selected haphazard and no attempt was made to harmonize them with the surroundings—now the architect has to see to it that the style of plumbing fixtures accords with that of the apartment in which they are placed—or vice versa. For example we find bath rooms fitted up and finished in one style Colonial, Renaissance, Rococo, Empire or whatever may be chosen.

We have been lead somewhat into this line of thought by the perusal of the catalogues of large plumbing goods firms, and more especially the magnificent volume lately issued by the J. L. Mott Iron Works, which is verily an *Edition*

de Luxe, and reflects in better degree than words the strides which has been made in that line. It is a volume of 348 pages every one replete with illustrations of articles of use and benefit to the human and animal races.

It opens with interiors of completely fitted up bath rooms. The carpenter has been now relegated to other parts of the building—the doorways being sometimes the only evidence of his existence; all the interior walls, floors and ceiling being clothed with glazed tiles.

The amount of fittings going to make up the furniture of a bath room are now quite numerous—first of all there's the bath tub itself—until a little over two years ago all Porcelain baths were imported, and indeed were considered a great luxury, only to be enjoyed by the very wealthy; to-day they bid fair to take the place of all others except such as are used in the cheapest class of buildings. The reason for this change are not far to seek for there is nothing to compare with them as regards cleanliness and durability. It is simply the perfect bath, besides which all others, such as metal or iron enameled, are commonplace and in the end really more expensive, as they wear out and have to be replaced from time to time, while the porcelain is always the same; it never changes or discolors; when wiped out with a sponge it is as white and pure a china surface after fifty years' use as when first put in. Indeed, the saving of labor in the simple matter of keeping clean is a most important feature, and one which is particularly appreciated by the large first-class hotels, where hundreds are being put in one building. As a matter of course, in all the new hospitals nothing else is thought of, and in the old institutions the old metal and enameled tubs are gradually being replaced by the porcelain.

Nor is our progression alone in the quality of the ware, but also in design, which now present, instead of the heavy, clumsy, angular vessel as first imported, a graceful and artistic bath tub, the sides and shape of which lend themselves to the most refined artistic and delicate decorations.

Some of the newest designs are made so that the tub sets flat upon the floor instead of being raised upon legs—this style would, we should imagine, in a short time supersede the raised, for it has two very great advantages, one in lowering the tub so that the user can step in and out easier and the other the benefit of doing away with the space under the tub which is liable to be neglected and to get dirty and requires more labor to keep clean. To the tub there are required a number of accessories outside of the supplies and wastes. These are generally made of metal work and finished in nickel-plate as being the most durable.

First among these are the shower and needlespray, which may be fitted onto the tub or onto the wall back of the tub, or it may be entirely separate and have its own receptor to receive the water.

Towel racks and sponge holder are usually screwed to the wall by the side of the tub, while the soap dishes are made portable and so that they may fit onto the roll rim wherever desired.

Second, a seat bath is a most desirable appliance in a bath room serving as it does, the double purpose of seat and foot bath. These are made now with a wave spray from the back as well as the ascending douche.

In hospitals and asylums a light bath tub which is comparatively low and broad, features which facilitate and render convenient the bathing of the patient by the attendants is the most desirable, and one on castors or on a cast iron carriage with swiveled axle and wheels with rubber tire cushions, to allow of the bringing up the same to the bedside.

The most convenient lengths of bath tubs are 5, 5½ or 6 feet, however in some places, e. g.—in yachts and cars these would take up too much space so some are manufactured 2½, 3 and 3½ feet long and symetrical at the ends.

We have not space now to go into the merits of the innumerable supply and waste fittings. As before stated the generally received best material for these is brass, nickel plated, both nickel and silver plate wears off in time, so that some solid untarnishable presentable metal is the ideal. The Mott Company have a metal which they call Crown White Metal which they claim has these advantages, as being solid it will always retain its luster and brightness, no matter how much it may be cleaned.

For a complete bathroom the following are required:—

1st—A place for clean towels, which may be in the form of a shelf of metal grating, a shelf with rack below, a rack only or a towel horse. A rack may be single or triple fixed against the wall or folding like a gas bracket. The advantage of the horse is that it is movable.

2d—A receptacle for soiled towels—this is made in the shape of a metal cylindrical basket about 20 inches high.

3rd—Robe hooks for the hanging up of the bath robes, either single, double or triple.

4th—Sponge holders—these again have a number of varieties, they may be made entirely distinct from the wall being carried on a bracket, and circular, they may be in contact with the wall when an oblong basket, sometimes in shape of a fire grate, is used, or they may be portable so as to hook on to the roll of the tub. These latter are made also with a soap dish below forming a combination sponge holder and soap dish.

5th—Comb and brush racks—the best being those forming a narrower edition of the oblong sponge holder already described. A narrow metal shelf is also handy for combs only.

6th—In hospitals and sanitariums a bath thermometer is required, made with a handle so that they may be immersed in the water.

7th—Although not an absolute necessity a bath seat and head rest are very desirable adjuncts to the bath—it consists of two nickel-plated clamps engaging the rim of the tub, and connected by a flexible band five inches wide. This band can be slipped back and forth through each clamp to attain any desired height of seat or rest, and when adjusted is held firmly in place. It thus makes an admirable seat, being soft and flexible, and the same is true of it as a head rest.

8th—Soap dishes—these again are made in numberless varieties, either to go against the wall or to attach to rim of bath or entirely separate so as to place on slab. They may be made of china ware or of perforated nickel plated brass, the latter may be used for a small sponge also, and appears preferable because allowing the water to drain away and keeping the soap or sponge dry.

9th—Metal holders for shaving mug, tumbler, tooth brush vase are very handy as they serve to keep clear the slab of the wash stand. These are made of ornamental open work, plated brass, on brackets fastened to the wall. The same end may be attained by the provision of a plate glass shelf to receive the articles mentioned above.

The following is a most convenient and sensible arrangement of lavatory appliances. Holders for soap dish, tooth brushes, tumblers, sponge, comb and brush are attached to

the marble back, and each has its particular place, so that the slab is entirely unencumbered.

Finally other necessary fittings are match boxes or holders, and where the water closet is placed in the bath room paper holders of many kinds to which may be added a cigar holder.

The forgoing list indicates the pitch of convenience and luxury attained in the end of the century bath room.

After the bath the lavatory or wash basin claims our attention.

There is no part of our sanitary department that warrants more careful or more special attention than that of lavatories. The evolution from the cabinet wash stand with its concealed pipes and woodwork, often elaborate and expensive, to the highly sanitary and beautifully artistic work now in vogue must appeal to all who may be in any way interested.

Of lavatory slabs a far larger range of choice can now be had than ever before—they are now designed in onyx, in statuary or imported marble such as Numidian, Rose Josper, St. Baum, etc. In regard to the fittings the same may be said, and again in basins which can be had in Cauldon China and earthenware decorated or plain, oval or round. The superior convenience of the oval shape has caused it to supersede the circular form in all but very cheap work.

In the designing of lavatories a greater scope for variety is obtained than in bath tubs and the many beautiful designs in the catalogue already referred to prove the statement.

The designing of the waste and overflow so as not to interfere with the interior of the basin, has always been a hard problem to inventors. The best solution we have seen so far is in the Purita, Utilis and Nassau basins. The salient features of the Purita basin are a deep bowl, large overflow with movable metallic strainer, and a plug or stopper operated by a direct lifting motion. The stopper or plug can be lifted out, giving access to the waste and overflow.

The plug and chain comes in the way and is difficult to keep clean and the same objections obtained in most other devices: these objections are minimizedin the Purita—for the bowl is free from obstructions save the slight circular projection of the overflow at the back of the same. When a combination tap in used and placed over this projection it appears as if the minimum of obstruction has been attained consistent with hygieneity.

In the matter of basin traps, the old lead trap no longer is admissible, and nickel plated brass is the material in vogue. Out of the many traps on the market the most sightly appears to be the Elliptic Cast Brass trap, shaped like a whisky flask with a mouth at both ends.

Another sanitary appliance of even greater importance than those already mentioned is the water closet—the marked changes and improvements made in this department since a time even as late as 1888 would seem to call for some special notice at this time. These changes and improvements have not been altogether confined to the mechanical perfection of water closets as sanitary fixtures but what is artistically beautiful and pleasing to the eye, with a view to unity and conformity of design.

There are several classes of water closets—the Syphon Jet are particularly adapted to the best class of private work. The wash-out form is appropriate particularly for public use, represented by the Inodorso. The wash-down closet is well adapted for both private and public use and one of the simplest and most direct. The pump closet for use on ships, yachts, houseboats, launches, battleships, etc.

In ranges of closets for office buildings, school houses and other public buildings, the same marked improvement has taken place within the last few years. Woodwork is now altogether banished and the partitions of water closets and urinals made of marble or slate fitted into nickel plated brass stall frames, consisting of post and top and bottom carrying pieces from wall to posts. The walls and floors are usually of marble and the partitions stand clear of the floor.

One of the little details considered almost indispensable now in public water closets and railway cars and useful even for private bath rooms, is the Indicator, showing whether the room is occupied or not. Indeed, to our mind, they afford such relief from embarrassing situations likely to occur that it will soon be considered an indispensable attachment where a closet or bath room is in general use, or used by more than one person.

The swinging chain for the pull will soon be superseded by the guide rod which fixes the pull in one place and ensures always a direct vertical pull on the crank of the cistern.

Before we leave this part of the subject, we hope that it won't be long before street and park conveniences come into use in the large cities of this country as they have long ago in Paris and London, and other European cities.

We will now briefly glance over the progress made in plumbing fixtures for culinary and household purposes. It is now recognized that these fixtures have to be as fully hygienically made as those of the bath room, and so we find in use fine white porcelain slop sinks without any woodwork whatever, and fitted with cisterns and flushing pipes. That variety used for hospitals called the clinic sink is made so that the supply is operated by a foot valve obviating the necessity of touching the fittings with soiled or bloody hands.

In no department is the great advance more marked than in kitchen sinks. We have managed not only to get perfect form, but have also succeeded in glazing the outside, front and ends; this, together with the porcelain back and porcelain legs, leaves no part which is not impervious to moisture. Furthermore, strength and durability are assured by the substantial thickness of two inches. Heretofore the backs have always been made of marble, now often of Imperial Porcelain. It is unnecessary to call attention to their great superiority to marble, as it is well known that the latter will stain and absorb grease, while the porcelain back is non-absorbent and simply requires to be wiped off to be perfectly white and clean. The Imperial Porcelain legs constitute a distinct novelty and improvement. They require no care or labor to keep them clean and polished, and being white, the same as the sink, they impart to the combination an element of nearness and brightness unattainable with the metal leg.

A drain board is an important adjunct to a kitchen sink; one has been specially designed for roll rim sinks, which fulfils all practical and sanitary requirements. It is entirely free from the wall, one end being supported by the sink and the other by cast brass brackets or a leg. The corner drain board swings on the hinges fastened to the wall. The end drain board swings on the hinges at back, the supporting leg being telescopic so that the board can be swung up out of the way when it is desired to clean the sink, wall, or when not in use. The board is made of pieces tongued and grooved with rods passing through to insure non-warping. The rim along the three sides of the board prevents dishes falling off, also water from dripping to the floor. At the point where the board rests upon the sink, there is placed a row of rubber fenders to protect the roll rim from damage. Where the board drains into the sink is affixed a downwardly projecting nickel plated nosing, thus insuring all

water draining into sink. Each drain board is furnished with an automatic catch to hold it up against the wall when raised. They are entirely free from the wall.

For pantry sinks the whole is covered with a marble slab the ends forming drainers with countersinking therein, this again does away with all wood around the sink.

A very useful adjunct to porcelain and metal sinks is the mat to be placed at the bottom of sink or upon top of marble slab. They serve the double purpose of lessening the risk of breaking china, and when used, particularly with kitchen sinks, will prevent the scratching and discoloring of the bottom by careless placing of pots, etc , therein. The mat consists of hardwood slats firmly held in place by brass rods. They are more or less flexible.

Another very advisable adjunct is the grease trap.

Directing our attention now to the laundry—porcelain ware, with its substantial thickness, fine glaze and beautiful appearance, is the ideal material for sanitary wash tubs. Iron, cement and soapstone are other materials used, but for the best work porcelain will maintain its ground.

The only objection to them ever raised being the openings between the tubs, which allow water to fall to the floor while clothes are being transferred from one tub to the other; also the difficulty of obtaining a substantial hold for the wringer. These objections are overcome by a wringer base, to which the ringer can be quickly attached by the laundress in a thorough and substantial way, and which drains into the tub on either side. By turning a thum-screw, the ringer base can be removed, while all parts of the tub are accessible for cleaning.

The legs are furnished with adjustable iron frame extending from each leg to wall, thus making a firm and permanett support for the tubs. The porcelain backs are non-absorbent and will not discolor. They project down into the tubs so that nothing can splash and run down behind. With the tubs and the Imperial porcelain legs, they present an all-white surface so desirable in all fixtures of the kind.

Another sanitary problem is the public drinking fountain. The ordinary drinking cup in public schools, parks, bicycle paths and other public places is frequently objected to because it may lead to the spread of contagious diseases. To obviate any danger of this kind, the Purita drinking fountain has been devised. Water enters the drinking cup through the controlling valve, which can be set so as to permit the water to bubble up in a small jet to the desired height. In this way the child or other person can drink of running water, but cannot touch the cup, thus avoiding all danger of contaminaion. It will take some time however for a person habituated to drinking out of cups to get used to this habit of drinking although it is the most natural.

WHAT CO-OPERATION HAS DONE.

MAN has colonized this planet, and century after century, for thousands of years, he has striven to mold to his use the flora and fauna of the globe. He has given some attention also to molding himself and his relationships says the *New Time*. He made a splendid move when he nationalized and democratized defence and the administration of justice. He will make another grand advance when he nationalizes and democratizes industry. In the earliest times, when each one defended himself unaided, it took the whole life of a man for warfare and the training and preparation it required. But after a while men said: "There's a better way than this. We'll form ourselves into a nation, and guarantee safety to every man, and put the whole power of the State behind the promise. Then a few men with guns will be able to keep the peace for all, and a vast amount of vigor and time will be saved." And they did, and the energy thereby released has developed the commerce and science of modern times. The material civilization of the nineteenth century is the result of the nationalization of defence, and the equalization of safety. So it will be with the nationalization of industry and the equalization of security from hunger and cold; the larger part of the time and attention devoted to getting material wealth will be given to higher pursuits, and the twentieth century may see a civilization of the soul, a spiritual development as magnificent as the materjal advancement of the nineteenth.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

BUILDING for Hobart Estate Company Post street near Stockton street, San Francisco, Percy &, Hamilton, Architects.

STORES and Flats for W. J. Dutton, San Francisco, Percy & Hamilton, Architects.

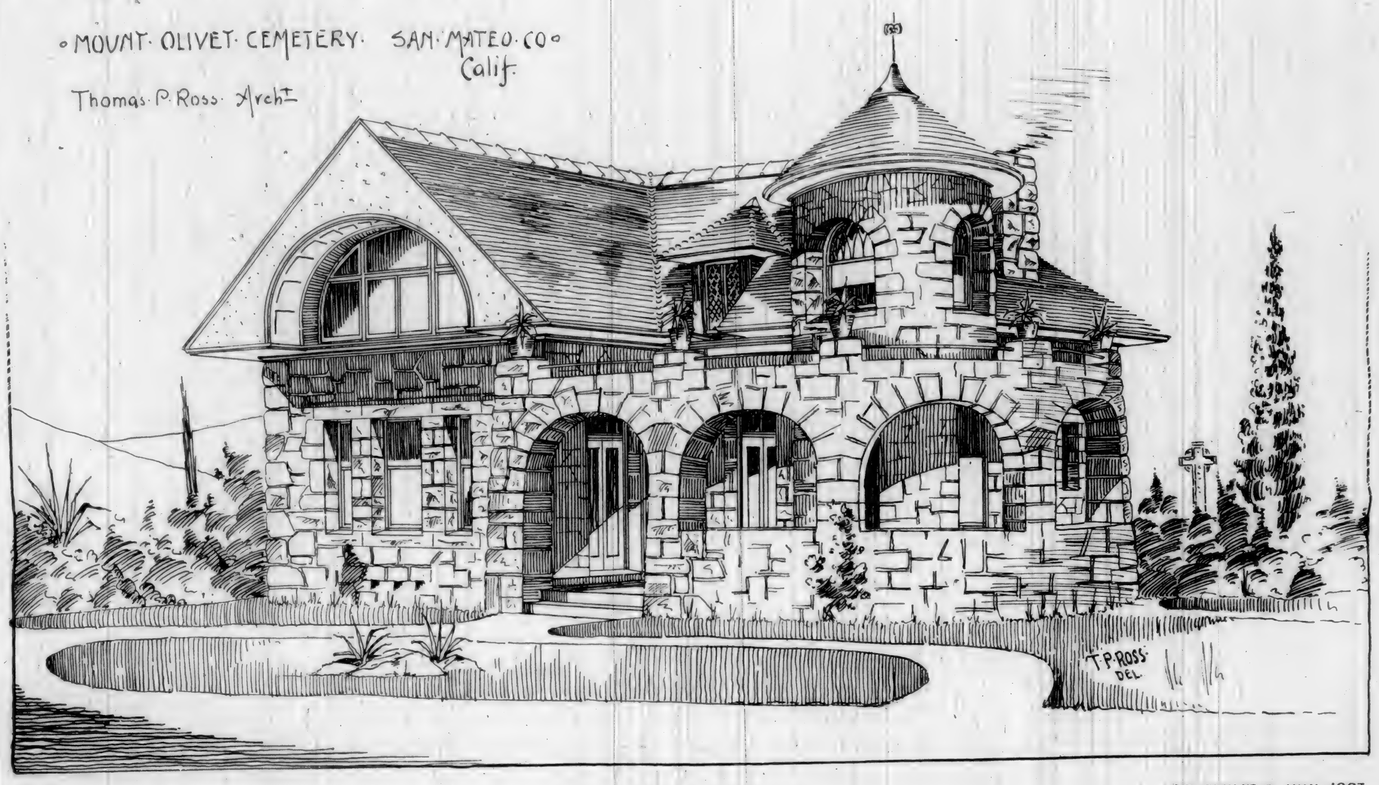
SKETCH of Superintendent's Lodge, Mount Olivet Cemetery, San Mateo Co , Thomas P. Ross, Architect.

FIRST English Evangelical Lutheran Church, Samuel Newsom, Architect.

SKETCH OF SUPERINTENDANT'S LODGE

MOUNT OLIVET CEMETERY. SAN MATEO CO. Calif.

Thomas P. Ross Archt



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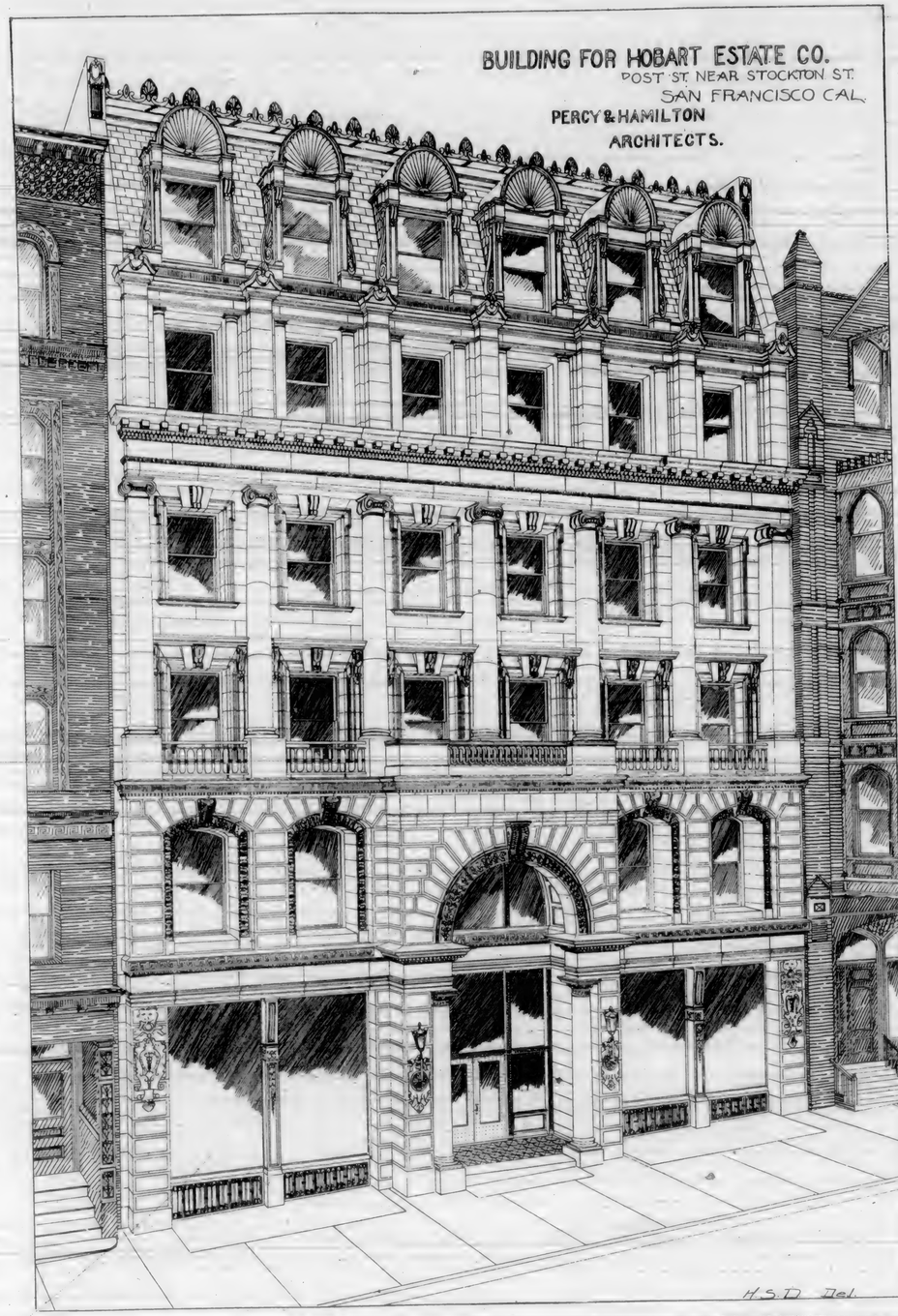
VOL. XVIII Nº 7 JULY 1897.



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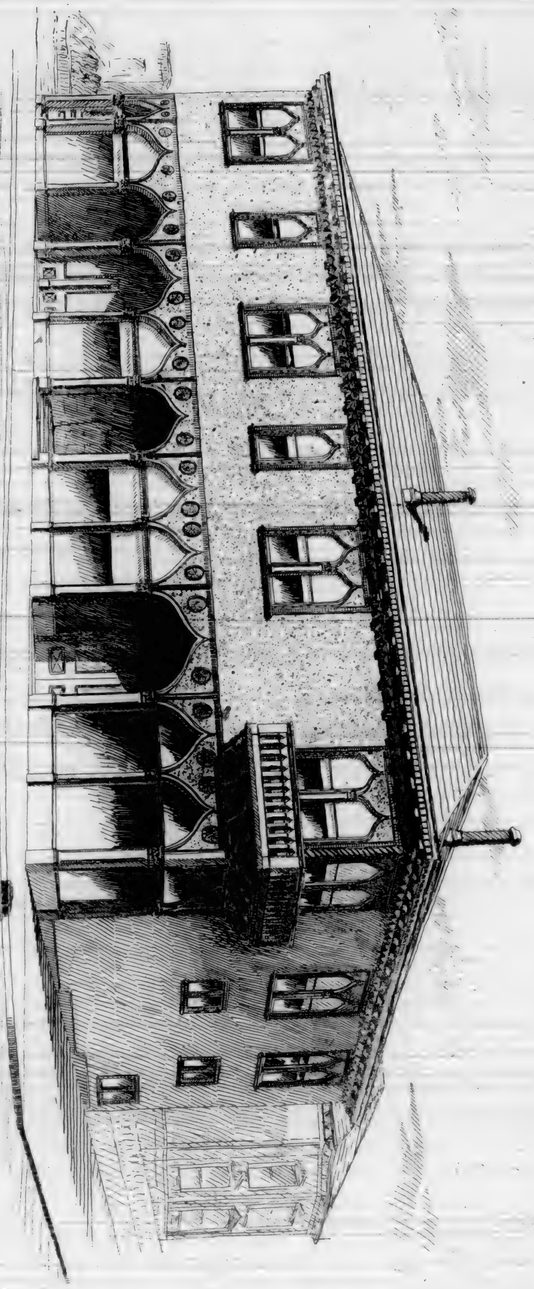
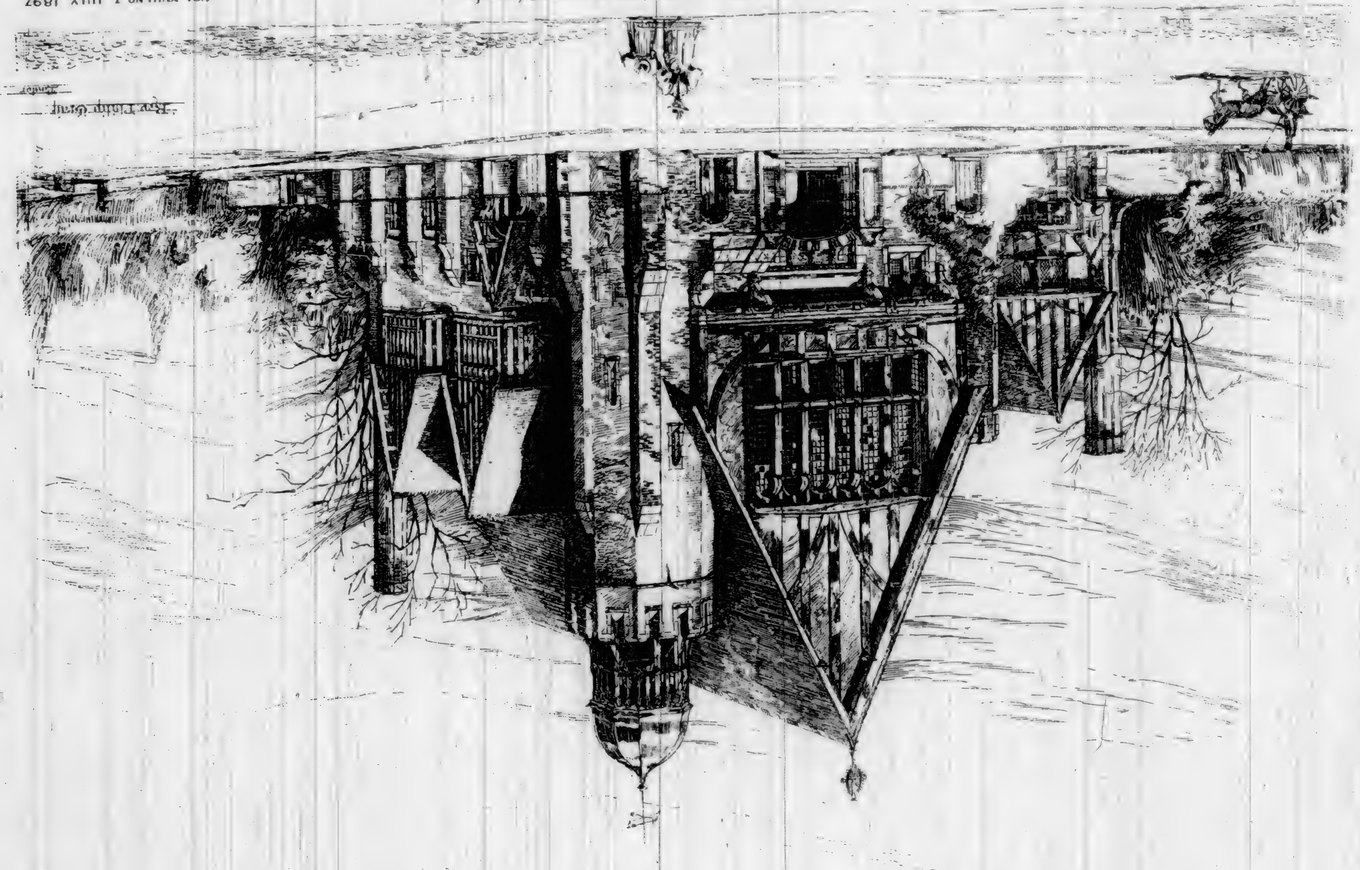


STORES & FLATS
W. J. DUTTON - SAN FRANCISCO.
Percy & Hamilton - Architects.

VOL. XVIII Nº 7 JULY 1897.

SAMUEL NEVIS C.E.
ARCH. ASST. IN CHELAN BLK S.F.

Pier Gothic Ornamental Interior Gothic



Bay Lodge Grand Stairway

BOOKS AND PERIODICALS.

Year Book of the SCHOOL OF ARCHITECTURE, University of California, published by the Architectural Society, 1897. This handsome pamphlet contains a list of the members of the Architectural Soc ety as well as a list of the officers of the same. The work is fully illustrated with drawings of the students from problems given as directions in regard to the design required, many of these are very meritorous and do credit to the students as well as to the University.

A Mountain Moloch by Duffield Osborne is the complete novel in the July LIPPINCOTT'S Magazine. In addition the list of articles are of unusual interest and well worth the price of twenty-five cents.

Sixth Annual Report of the BUREAU OF LABOR, STATISTICS AND MINES to the Governor and Fiftieth General Assembly of the State of Tennessee, 1896. Nashville: Franc. M. Paul, printer to the State, 1897.

This report is fully illustrated by half-tones, and maps; coming as it does at a time when the strike of the coal miners is attracking the attention of the country. The following extract from a letter of M. Wood of the Commission, will be of interest:—

"The growth of Tennessee as a mining and industrial State, as exhibited herein is very encouraging. The figures show that the total value of her mineral products in 1896 was the largest in the history of the State, and it is gratifying to note the material improvement in the physical condition of the Mining properties in the State. The decrease in the number of accidents over the previous year is very appreciable, notwithstanding the large increase of production."

INEXPENSIVE COUNTRY HOMES, a practical book for architects, builders, and those intending to build. A handsome cloth-bound portfolio, consisting of 88 pages, about 11x14, printed on heavy plate paper, and containing 43 designs with floor plans, of practical, tasteful, and comfortable country homes, ranging in cost from $1,000 to $5,000 complete. The designs have been carefully selected, as embodying the best efforts of various architects throughout the country. Every one of the houses has already been built, and all of the illustrations are half-tone engravings, made direct from photographs of the completed structures, taken specially by the *Scientific American* artists. In many cases, two perspective views of the same house are shown. Several illustrations of inexpensive stables are also included among the designs.

The location of the dwellings, the cost, owners' and architects' names and addresses, are given, together with a description of the dwelling, thus enabling, if desired, a personal inspection of the dwelling or direct correspondence with the architect or owner.

Architects, builders, and those intending to build will find many new and valuable suggestions among the up-to-date designs illustrated in this handsome portfolio. Price, $2.00 by mail, postpaid. Munn & Co., publishers of the *Scientific American*, 361 Broadway, New York.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following table we present the number and value of buildings erected in San Francisco during the first six months, it will be noticed there is a decrease in both the number of buildings and the amount of cost as compared with the first six months of last year.

FOR FIRST SIX MONTHS.—1897.

1897	No. of Building	No. of Contracts	Brick Building Value	No. of Building	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry....	12	16	$ 128,040	22	24	$ 53,524	3	3	$ 7,917	37	45	$ 190,081
Feb'ry....	6	17	181,128	21	24	71,475	8	8	28,028	35	49	280,631
March....	10	18	253,122	44	47	135,619	10	10	17,234	64	75	405,975
April.....	6	22	154,782	71	75	227,370	25	25	100,780	102	122	472,932
May.....	13	19	116,956	40	43	147,385	11	11	13,086	64	73	277,427
June.....	7	9	48,718	45	48	102,750	19	20	49,994	71	77	201,462
Total	54	101	$ 888,926	243	263	$ 788,123	76	77	$217,039	373	441	$1,888,488

To this amount has been added the further estimated sum of $500,000 where costs have not been given, which would make the total for the first six months, $2,388,488.

FOR FIRST SIX MONTHS.—1896.

1896	No. of Building	No. of Contracts	Brick Building Value	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry....	5	11	$ 40,743	34	40	$ 177,999	13	13	$ 33,153	52	64	$ 251,295
Feb'ry....	2	7	251,923	56	60	130,778	13	13	25,905	71	80	408,606
March....	2	6	38,062	57	63	215,372	6	6	13,000	65	75	266,434
April.....	32	40	694,417	108	120	365,087	28	28	60,796	168	197	1,120,900
May.....	2	14	246,542	30	36	146,752	30	39	24,047	71	89	406,441
June.....	10	19	221,234	93	103	460,234	17	17	70,890	120	139	752,358
Total	53	106	$1,482,911	378	422	$1,496,192	126	116	$157,991	547	644	$3,130,224

The business of the first six months for several years is shown by the following table.

1885—754	contracts.....	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858
1891—583	"	" 3,916,973
1892—411	"	" 2,942,496
1893—475	"	" 3,024,498
1894—524	"	" 2,456,428
1895—517	"	" 2,625,024
1896—644	"	" 3,636,224
1897—433	"	" 2,388,488

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

When Defects of Construction are not Waived.—A defect in work done on a public building is not waived, where the commissioner of public works takes possession of it from necessity, but expressly states that this is done without prejudice to any rights against the contractor, and refuses to give a certificate that the work is satisfactory.

MacKnight Flintic Stone Co. v. N. Y. City, 43 N. Y. Supp. Rep. 139.

What is Not a Water-Tight Cellar.—A contract to make a cellar "water-tight" is not carried out, where after the work is done water leaks into such cellar; although the contractor puts under the floor an automatic instrument, which while at work keeps the cellar dry.

MacKnight Flintic Stone Co. v. N. Y. City, 45 N. Y. Supp, 139.

Liability of Owner for Delays of Architect.—If the architect employed by the owner to superintend the erection of a building, who is to direct the work, and is by the contract made the arbiter of its proper performance, delays the contractor unreasonably in his work for the benefit of the owner and other contractors, and by allowing such other contractors to obstruct the work, renders it necessary for the contractor to do his part in an unusual manner, which adds largely to the cost, the owner is liable to such contractor for the loss resulting.

Genovese v. Third Ave. R. Co., 43 N. Y. Supp. Rep. 8.

When Injunction will not Lie Against Owner.—That a subcontractor is proceeding with work in a negligent and improper manner, to the injury of adjoining property, affords no ground for a preliminary injunction against the owner, who has no control over the manner in which the work is being done.

Hill v. Schneider, 43 N. Y. Supp. Reporter, 1.

Contract and Plans must be Filed in California.—A contract to erect a house in conformity with plans prepared by and in possession of a designated architect, filed with the recorder without a copy of the plans, does not comply with the law of California (Sec. 1183) which requires building contracts to be in writing, and to be filed before work is commenced.

Pierce v. Birkhold, Cal., 47 Pacific Reporter, 681.

Owner Liable for Delays of Architect.—A provision in a building contract by which the architect is given authority to adjust and make allowance to the contractor for loss of time due to delays caused by other contractors does not preclude a recovery by the contractor against the owner for delays and obstructions caused by the acts of the architect as superintendent for the owner.

Genovese v. Third Ave. R. Co., 34 N. Y. Supp. Rep. 8.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street,

Seth Babson, Pres. W. P. Moore, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec'y. August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

Oscar Lewis, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

HOW THE TUNNEL WAS MADE.

IN CONSTRUCTING the Blackwall tunnel the first difficulties the engineers had to face were the dimensions, which, owing to the amount of traffic the tunnel would have to provide for, were of a size unheard of before in the history of subaqueous tunnels. The largest tunnel of the kind ever constructed prior to the Blackwall was the St. Clair River tunnel, in America, having a diameter of about 20 feet, the Blackwall being 27 feet, says *Lloyd's London Weekly*. This diameter was proposed by Mr. Alexander R. Binnie, the chief engineer of the L. C. C., in order to accommodate both

vehicular and passenger traffic, and by the engineering fraternity generally it was looked upon as a size impossible of accomplishment. Mr. Bennie, in his article in *London* on the planning and construction of the tunnel, says:—"It was frankly held to be an impossible proposal by some of the leaders in the engineering profession. One of the older members—a gentleman of great experience—impressed upon me the fact that failure would mean the loss of all professional reputation, and even the late Mr. Greathead, as an old and kind friend, warned me not to be too sanguine of success." But Mr. Binnie was confident of success—a confidence which he has magnificently justified; all opposition was overcome; and his proposal adopted. The contractors, Messrs. S. Pearson and Son, were the next to be warned of the impossibility of the task they were undertaking, and we are told in *London* that "an engineer of the foremost rank, with an experience greater than that of any other engineer in difficult subaqueous tunnelling, deemed it his duty, from the regard he had for Messrs. Pearson, to advise them not to risk their fortune and reputation in undertaking a task that was impossible of fulfillment." They, however, like Mr. Binnie, had confidence in their own judgment, and like him have also been magnificently justified.

The tunnel is 6,200 feet in length, and of this 1,220 feet is under the bed of the Thames, and the commencement of the work early in 1892 was the making of the approaches on both sides of the river. These approaches had naturally to be of considerable length, so that heavy traffic might not be rendered difficult by steepness of incline, and the gradients nowhere exceed that of the Haymarket. The approaches were commenced on what is technically termed the "cut and cover" system—an excavation, somewhat resembling a railway cutting, being worked out and bricked as it proceeded, but long before the actual river was reached tunnelling was begun, and here the principal instrument in the work came into operation. This was the great cutting-shield, the largest of its kind ever seen. It was suggested by Sir Benjamin Baker, as an improved form of the implement designed by Brunel for cutting the Thames tunnel, but the special and distinguishing features were designed especially for boring the Blackwall tunnel by Mr. E. W. Moir, Messrs. Pearsons' engineer and manager. The total length of this shield is 19 feet 6 inches, and the outside shell consists of four five-eights of an inch steel plates. Air tight diaphragms divide it into two parts, so that a great air pressure could be kept at the working face of the shield, which has four rooms and contains twelve working compartments. The cutting portion of this gigantic implement consists simply of the outer shell referred to fixed by circular girders to an inner skin, the two joining to form a cutting outside edge. This was driven forward by twenty-eight hydraulic rams, the pressure as a rule being 2¾ tons to the square inch. Every time the shield was puthed forward it made room for an iron ring composed of fourteen segments, each weighing a ton, the segments being placed in position by hydraulic elevators attached to the rear of the shield. These rings form the outer lining of the tunnel, being connected with each other by seventy bolts, and no fewer than 17,000 segments have been used in the construction of the great work. Cement concrete faced with white glazed tiles lines the iron skin, and gives the tunnel the bright appearance it now presents.

Another prominent feature in the construction of the tunnel was the use of compressed air in the workings. This driven into the tunnel by engines of 1200 horse power by its pressure against the face of the river bed, as the shield cut it, prevented any inrush of water. An ingenious arrangement called an "air lock" shut off the finished portion of the tunnel from that in progress of construction, preventing the escape of the compressed air yet allowing for a passage from the ordinary atmosphere to the condensed one, on much the same principle that a canal lock allows boats access to or from divisions of water at varying levels. The lock resembled nothing so much as a large iron boiler embedded in a concrete block that hermetically sealed one end of the tunnel. At either end of the boiler were doors, each opening inwards towards the compressed air side. In this boiler a person passing from the ordinary atmosphere to the working one would sit down, a pipe would be opened, and the compressed air rushed in with a roar until the pressure in the lock was equal with that in the workings, when the further door could be opened, and the part of the tunnel in progress entered. The sensation of the person in the thicker atmosphere was merely that of an increased weight and somewhat heavier breathing. It was in the lock during the equalization of the atmospheres that any unpleasantness, singing in the head, popping in the ears, pain across the forehead, and such-like was felt. At least this was the experience of our representative when he visited the tunnel at the time it was bored about half way across the river. A description was given in *Lloyd's* in two illustrated articles in May, 1895. The scene in the workings was weird and striking in the highest degree. Down the middle of the tunnel ran a tramway, bearing trucks that carried the clay or gravel cut out from the face by the men in the shield. Gangs of men moved silently under the electric light, which was used throughout, some fixing cement, others riveting, others "grouting," as the process is called, by which an outer coating of concrete is given to each ring as it is fixed. So, day and night, the work went steadily on, only a small line of foam on the river marking the position of the shield to persons above ground. Some days only a few inches could be made, and on others several feet, but bit by bit it advanced until the two great "caissons," as the shafts on either side the river are called, were connected by this latest London roadway. Never was so great a work carried out with so few accidents, thanks to the ever-careful supervision of the resident engineers Messrs. Hay and Fitzmaurice. Once the cutting edge of the shield was turned by an encounter with a great piece of lime-stone rock, and the implement was only repaired after considerable delay and at a cost of between 7,000*l* and 10,000*l*. This however, was the only great mishap encountered, and the work so many practical men pronounced impossible has been brought to a triumphant issue. In the making of the tunnel a million tiles have been used and seven million bricks, which figures convey but a faint idea of the vastness of the undertaking; and its need and utility in uniting two great districts are made plain by the following fact:—The contractors had occasion to move a large crane from one side of the river to the other. Across the Themes it was about half a mile, but in order to get around it had to be drawn by way of Tower-bridge, miles above, so that the journey was a matter of some ten miles.—[Since the tunnel has bee opened a loud echo has come ito being and it is said the uproar is deafening as vehicles proceed through its spaces.—Ed.]

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STONE PRINCIPALS AND INTERNAL ARCHES.

AVERY rare mode of constructing roofs is that in which stone principals occur instead of timber. The examples in England are few, and one or two are mentioned in the "Architectural Dictionary." The south transept of Minchin Hampton Church, Gloucestershire, has a pair of stone principals, and at Willingham, Cambridgeshire, a smaller instance may be seen. At Carlow a stone principal is constructed in the shape of a trefoiled arch within an acutely pointed arch, the object of which form is apparently to obviate the necessity of counterforts on the outside, though the writer does not give details. The weight of stone concentrated at the "cusps" of the trefoil arch were no doubt intended to act as counterbalancing forces, their centres of gravity falling within the walls. Stone ribs supporting the purlins of roofs are common in many churches, and their object was doubtless to save trouble. Whatever motive induced the old architects to use them, it is quite certain these principals add to the monumental character of a building. The stone arching connects, in a pleasing manner, the two opposite walls, and the roof becomes a more integral part of the structure than it does when timber is employed. But the construction requires considerable care, and the centring should not be "struck" till the work has had good time to settle. If the walls are thick and low, the springing of the ribs may be made to commence low down, and the side walls do not require any buttresses, and it is a common and very effective manner of roofing porches, small chapels, etc. In lofty structures the employment of stone principals is more doubtful, for unless there is ample masonry provided in the form, either in internal piers or extended buttresses, observed in some of the churches in the South of France, great risk is run, as there are not a few examples to witness in spreading naves and fractured arches. In this connection we may point architects to tower and chancel arches, many of which, both in old and modern churches, bear evidence of the "sleepless" activity of the arch, when improperly tampered with or not duly buttressed. Many an old Norman and obtuse-pointed Transitional arch to be seen in the village churches in the south and west of England, show signs of the weakness and instability of the abutments. In probably more than half the cases to be met with, the fault lies with the tampering spirit of later times in making external vaults for interment, or in injudiciously performed alterations—as for instance, the enlargement of a church by the addition of transepts. During the progress of these alterations, the wall is cut through and weakened, no shores are erected to help the abutments, which have been so recklessly deprived of their bond with the adjacent walling, or the excavations for the foundations of new work are made in dangerous proximity to old buttresses or footings. In new churches we have seen chancel arches cracked, and serious signs of instability in the masonry of the walls; it is not unfrequently the practice in these days of partial building, to afford a temporary support to the chancel arch before the aisles are added by the erection of a rough brick flying buttress on the outside; but, it is needless to say, very much more caution is required than is sometimes taken. In one case we know, where this expedient was adopted, the result has proved so bad that the arch will doubtless require to be rebuilt sooner or later. The chief point, of course, is to make such a buttress the permanent one, so that it will not require to be tampered with when the additions are made; and to secure safety the centring should be very carefully "struck," and not until the work has been quite finished, and the mortar set. Architects might very well take a lesson here from their brother professionals the engineers, although the latter cannot be said to be always infallible in their arch construction. A pleasing proportion of an interior arched opening is one in which the eye naturally takes immediate cognizance of the proportion between it and the solid masonry of the abutments, and discerns nothing to offend it. In very many of our new churches, the mass of masonry above the arch-crown often reserved for mosaic or colour decoration is disproportionately large to the abutments, or the span looks exceedingly wide for the buttresses, and whenever we meet with such an instance, the suggest of a counterfort sufficient and necessary to satisfy visual requirements and set the mind at rest is important. The question is one which concerns good proportion as much as mechanical stability; and, in fact, if the eye were consulted and followed in this and similar matters more loyally than it is, we should have better and more carefully designed buildings—appealing to our sense of just balance of parts and artistic fitness.—*The Building News.*

BUSINESS MOSAICS.

George Goodman, Patentee and Manufacturer of artificial stone, is one of the gentlemen who consumes an immense amount of Portland Cement. The result may be seen in many parts of the city, in the good sidewalks, garden warks, as well as foundations and bulkheads. Mr. Goodman does his work well and therefore gets lots of it to do; he can be found at 307 Montgomery street.

L. E. Clawson & Co., 1340 Market street, San Francisco, furnish everything in the line of Patent Chimneys that comply with the new fire ordinance. An illustrated circular sent on application.

Ives Patent Sash Locks are now finished in cold rolled steel, bronze and brass in all the popular finishes. Hobart B. Ives & Co., New Haven, Conn.

Cabot's Creosote Shingle Stains are manufactured by Samuel Cabot, Boston, Mass., can be obtained of Mr. Charles J. Waterhouse, agent, 35 New Montgomery street, San Francisco. The merits of this stain are well known among architects as a protection to wood; it is unequaled—entirely preventing the blackening of redwood. Samples and prices on application to the above address.

The Norton Door Check and Spring with its simple and durable air cushion check, is exactly what you want to prevent the slamming of your door; as this is not liable to get out of order, and duplicate parts can always be obtained if it does—be wise in time and provide yourself with one, thus stopping the slamming of the door.

To those in favor of home industry we suggest the patronizing of P. & B. building paper, manufactnred by the Paraffine Paint Co.; everything supplied by this reliable firm can be depended upon as represented, and home made at that—116 Battery street, San Francisco.

Facts about paint is what we all want who intend painting—therefore go to the fountain head and get W. P. Fuller & Co., to tell you something in this line. They recommend Phoenix Pure Paint because it is made from pure material only and is finely and thoroughly ground and mixed with heavy machinery.

Joseph Budde can be found at his old stand, 575 Mission street, San Francisco. Mr. Budde makes his mark as a manufacturer of sanitary appliances in the plumbing line, and thus you are able to partonize home industry and get what you want in that line at the same time. Mr. Budde has been in the business so many years, is know so favorably to the trade that it is hardly necessary to call attention to his advertisement on page vii of this journal.

Parties desiring to purchase cement should go to W. R. Grace & Co., 203 California street, and get the celebrated Josson brand.

The Pacific American Decorating Company, manufacturers of stained and art glass—offer you the opportunity of having your house decorated with landscapes, marine views or photographs of persons and animals, 26 O'Farrell street, room 3.

CITY BUILDING NEWS.

o near Hoffman. Cottage; owner, John Galloway; cost $1600.

Baker near Greenwich. Two-story frame; owner, J. A. Voegnison; architect, E. Depierre; contractor, A. Dahlberg; signed, June 19; filed, June 21; cost $2725.

Belvedere near Fredrick. Two-story frame; owner, Mrs. M. J. Goodwin; contractor, E. W. Hyde; signed, June 25; filed, June 28; cost $3100.

Beulah near Stanyan. Two-story frame; owner, Henry W. Copp; contractor, John Steirlien; signed, April 30; filed, July 7; cost $4100.

Boardman Place near Bryant. Frame building; owner, Giovanni Camiera; architect, P. De Martini; contractors, Martini & Pagano; signed, June 15; filed, June 21; cost $2550.

Bryant near 3rd. Three-story frame; owner, Alice Colleton, architect, P. J. Lynch; contractor, P. J. Scott; signed, June 21; filed, June 24; cost $3034.

Broadway near Devisadero. Two-story frame; owner, Thomas Magee, Jr.; architects, Percy & Hamilton; signed, June 28; filed, June 30; cost $3800.

Bush near Montgomery. Alterations to the old Standard Theatre; days work; cost $5000.

California and St. Mary's Place. Alterations and additions; owners, Grasso & Co.; architect, W. H. Lillie; contractor, John Miron; signed, July 6; filed, July 7; cost $1300.

Green near Jones. To build; owner, Fred Marriot; architects, Laver & Mullany; contractor, Jno. Blake; cost $800.

Olay near Larkin. Alterations and additions; owner, A. G. Burgner; architect, G. A. Bordwell; contractor, M. J. Logan; signed, June 25; filed, June 25; cost $2275.

Clay Ave. near Clay. Two-story brick school house; owner, John F. English; architects, Havens & Toepke; contractor, J. G. Adams; signed, June 30; filed, July 7; cost $2170.

Clay near Larkin. Alterations and additions; owner, Harriett L. Van Bibber; architect, W. H. Wharff; contractor, A. L. Whitney; signed, July 13; filed, July 13; cost $2278.

Clara near 4th. Alterations and additions; owner, Wallace A. Wise; architect, R. H. White; contractor, A. J. Anderson; signed, July 28; filed, July 3; cost $1580.

Devisadero near Union. To build; owner, Sarah Anderson; architect, T. D. Newsom; contractor, J. H. Simpson; signed, June 14; filed, June 16; cost $2150.

Douglass and 17th. Two-story frame; owner, C. Ruhland; builder, C. Zwierlein; cost $3600.

Ellis near Mason. Concrete foundation for six-story brick; owner, L. H. Sly; contractors, Gray Bros; signed, June 18; filed, June 19; cost $2790.

Ellis near Steiner. Two-story frame; owner, Hugo Klenin; architect, W. H. Armitage; contractors, Garson & Otter; signed, July 1; filed, July 6; cost $2635.

Ellis street, No. 621-631. Alterations and additions; owner, Dr. P. H. Flood; architect, James E. Wolfe; contractor, F. A. Blanchard; signed, July 7; filed, July 7; cost $1570.

Ellis near Mason. Six-story brick; owner, L. H. Sly; days work; cost $60,000.

Ellis and Anna Lane. Carpenter work etc., for six-story brick; owner, W. J. Somers; architects, Percy & Hamilton; contractor, T. M. McLachlan; signed, June 25; filed, July 12; cost $13,040.

Ellis and Mason. Underpinning Langham hotel; contractor, M. Kelleher; cost $1000.

Eighteenth near Church. Cottage; owner, H. E. Brown; contractor, C. W. Duffie; signed, July 8; filed, July 9; cost $1835.

Fell and Masonic Ave. Three-story frame; owner, Martin A. Aronsohn; architect, R. H. White; contractor, Donald Currie; signed, June 8; filed, June 16; cost $5300.

Fell near Scott. Three-story frame; owner, R. Nichols; architect, C. W. Duffie; contractor, S. A. Brown; signed, June 21; filed, June 25; cost $3894.

Fell near Cole. Carpenter work; owner, Martin Kealing; architects, Cahill & Condon; contractor, Bernard Dryer; signed. June 28; filed, July 7; cost $6350.

Folsom and Alice. Alterations and additions; owner, F. J. Hund; architect, C. A. Meusdorffer; contractor, Issac Penny; signed, June 24; filed, June 25; cost $2575.

Folsom near 4th. Two-story brick; owners, Schroth & Westerfield; superintendent, G. T. Watson; contractor, Wm. Little; signed, June 25; filed, June 28; cost $14,350.

Folsom and Harriett. Three-story frame; owner, Harry Bush; contractor, C. M. Depew; cost $5000.

Fourteenth Ave. near M. street. Cottage; owner, Edward Eggers; contractor, M. J. Scott; signed, June 23; filed, June 23; cost $1240.

Franklin and Hickory Ave. Three-story frame; owner, Frank A. Meyer; contractor, R. O. Chandler; signed, July 8; filed, July 8; cost $5200.

Geary and Powell. Additions and alterations; owner, Mrs. Charlotte F. Clarke; architect, P. Schwerdt; contractor, Val Franz; signed, July 10; filed, July 12; cost $11,700

Geary and Stockton. Cast iron fences; owner, Spring Valley Water Works; architect, Clinton Day; contractor, H. Haustein; signed, June 22; filed, July 9; cost $6657.

Geary and Powell. Plumbing work; owner, Mrs. Charlott F. Clarke; architect, F. Schwerdt; contractor, Val Franz; sub-contractor, H. Williamson; signed, July 12; filed, July 14; cost $1350. Brick and granite work; contractor, D. J. Brannan; signed, July 12; filed, July 14; cost $2575.

Golden Court near Sacramento. Repairs; owners, Ellen and John Golden; superintendent, Lawrance Kelly; contractor, J. M. Harcourt; signed, July July 13; filed, July 13; cost not given.

Gough near Sacramento. To build; owner, Robert C. Foutet; architects, Coxhead & Coxhead; contractor, Chas. M. Depew; signed, July 3; filed, July 7; cost $5340.

Haight near Scott. Two-story frame; owner, J. D. Feldmann; architect, Emil John; contractor, C. Kreeker; signed, June 14; filed, June 15; cost $4000.

Haight and Shrader. Two-story frame; owner, I. Steinhart; architect, W. H. Lillie; contractor, M. J. Savage; signed, June 30; filed, July 6; cost $5594.

Harrison near 4th. Three-story frame; owner, John J. Sweeney; architect, Oliver Everett; contractors, Barrett & Leahy; signed, July 7; filed, July 8; cost $5733.

Henry near Castro. Two-story frame; owner, Miss Ann Hall; contractor, Charles Koenig; signed, June 17; filed, June 19; cost $1448.

Hill near Noe. One-story frame; owner, L. A. Smith; contractor, D. Einstein; signed, June 28; filed, July 10 cost $1150.

Jones near Washington. Two-story frame; owner, Henry L. Wagner; architect, Albert L. Fair; contractor, Wm. Knowles; signed, June 14; filed, June 15; cost $8538.

Joost Ave. Frame building; owner, Mrs. Hicks; cost $1200.

Joost Ave. Frame dwelling; owner, Mr. Stammer; cost $1200.

Iowa near Yolo. One-story frame; owners, Thomas and Ellen Commors; architect, M. G. Bughee; contractors, Brennan & Nichols; signed, June 21; filed, July 8; cost $1400.

Larkin near Sacramento. To build; owner, W. J. Harris; builder, C. Zwierlein; cost $8000.

Lily Ave. near Buchanan. Alterations and additions; owner, Margaret Corbett; architect, A. Hildebrand; contractors, Klein & Eickholt; signed, July 8; filed, July 9; cost $1530.

Lundy's Lane near Esmeralda Ave. Cottage; owner, R. Sample; architect, G. H. Batcheider; contractor, W. W. Elliott; signed, June 22; filed, June 24; cost $1000.

Lundy's Lane near Esmeralda. Cottage; owner, R. Sample; contractor, W. W. Elliott; cost $1000.

Market near 5th. Alteration to Pythian Castle Building; architects, Pissis & Moore; contractor, W. A. Lange; cost $1000.

Market and 3rd. Models and carving in sand stone; owner, Claus Spreckels; architects, Reid Bros; contractor, Rupert Schmid; signed, June 12; filed, July 7; cost $1350.

McAllister near Lyon. To build; owner, Eurico G. Bressi; architects, W. Mooser & Son; contractor, A. Stevens; signed, June 19; filed, June 26; cost $2889.

Minnesota near 22d. Alterations and additions; owners, Thomas Brown & Alice Brown; contractor, Frank Coyer; signed, June 11; filed, June 16; cost $1625.

Mission near 18th. One-story brick; owner, Pacific Telegraph and Telephone Co.; contractor, J. A. Wilson; signed, July 1; filed, July 3; cost $4100.

Montgomery and Sutter. Three-story brick; owner, Anna L. Whittell; architect, Townsend & Wyneken; contractors, Veitch & Bros.; signed, June 17; filed, June 12; cost $21689.

Oak and Ashbury. Two-story frame; owner, Geo. F. Gorden; architect, G. A. Behrend; contractor, H. Brown; signed, July 6; filed, July 6; cost $3478.

O'Farrell near Laguna. Alterations and additions; owner, Moses Samuels; architect, A. F. Oakey; contractor, H. Jacks; signed, June 15; filed, June 17; cost $1552.

O'Farrell near Gough. Two-story frame; owner, James Tierney; architect, T. J. Welsh; signed, June 24; filed, June 28; cost $5545.

O'Farrell near Gough. Plumbing, etc.; owner, Jas. Tierney; architect, T. J. Welsh; contractor, W. F. Wilson; cost $883. Painting; contractor, L. J. Dwyer; cost $599. Tinning, etc.; contractors, Conlin & Roberts; cost $274.

Pacific Ave. near Octavia. Plumbing, etc; owner, E. J. McCutchen; architect, E. A. Mathews; contractors, Ickelheimer & Bros; signed, June 15; filed, June 16; cost $1444.

Pacific Ave and Webster. To build; owner, Mrs. James A. Robinson; architect, F. S. Van Frees; contractors, Anderson & Greig; signed, June 11; filed, June 19; cost $5472.

Post and Taylor. Three-story frame; owner, Estate of H. Molleshaner; architect, T. J. Welsh; contractor, J. E. Mooney; signed, June 14; filed, June 22; cost $7700. Plumbing, etc; contractor, Jas. McAllister; signed, June 21; filed, June 22; cost $1275.

Post near Laguna. To build; owner, Chas. H. Gottschalk; architect, Wm. Curlett; contractor, Wm. Linden; signed, June 29; filed, June 30; cost $3835.

Post near Laguna. Three-story frame; owner, Mrs. Wolf; contractors, Phillips & Hood; cost $6000.

Powell near Geary. Brick, carpentry work, etc; owner, Mrs. Margaret A. Skelly; architect, P. Schwerdt; contractor, D. Powers; signed, July 12; filed, July 14; cost $5557.

Powell near Bush. Four-story frame; owner, Julia Hyde; architects, Shea & Shea; contractor, L. W. Coburn; signed, June 17; filed, June 26; cost $4800.

Pine near Polk. Grading, carpentry, iron, etc; owner, E. F. Guedet; architect, cost $5177. Painting, etc; contractor, C. E. Schwartz; signed, July 10; filed, July 12; cost $460. Plumbing, etc; contractors, Schnaz & Grady; signed, July 10; filed, July 12; cost $662.

Sanchez near Alvarado. Cottage; owner, Mrs. Emma Landgrebe; contractors, Carl Schley & C. A. Doss; signed, June 23; filed, June 25; cost $1180.

San Bruno Road near Gates street. One-story frame; owner, Mrs. Elizabeth Taylor; builder C. Zwierlein; cost $1000.

Seventh Ave. near M. Cottage; owner, Nathaniel Hallinan; architect, M. J. Welsh; contractor, J. B. Quinn; signed, June 15; filed, June 16; cost $1300.

Stanley Place near Bryant. Alterations and additiods; owner, Fannie Gluckmay; contractor, R. C. Stiller; signed, June 24; filed, June 24; cost $1067.

Steiner near Broadway. To build; owner, C. R. Havens; architects, Hermann & Swain; contractor, G. Peterson; signed, June 23; filed, June 23; cost $4240.

Stevenson near 3rd. Excavation for brick building; owner, Claus Spreckels; architects, Reid Bros; contractor, J. Tuttle; signed, June 10; filed, June 26; cost $1290.

Sixteenth street. One-story frame; owner, J. H. Burns; days work; cost $1500.

Stockton and Geary. Elevator; owner Spring Valley Water Works; architect, Clinton Day; contractors, Cahill & Hall Elevator Co; signed, July 2; filed, July 2; cost $14,870.

Taylor and Bernard. Additions and alterations; owner, Catherine Fahey; architect, H. D. Mitchell; contractor, Peter Hamilton; signed, June 16; filed, June 18; cost $1200.

Tehama near 2d. To build; owner, John Driscoll; architects, Rowell & Collins; contractor, David R. Perry; signed, July 9; filed, July 10; cost $2300.

Twelfth near Harrison. Alterations and additions; owner, Mrs; L. M. Schmidt; architect, W. H. Wharff; contractors, Enquest & Wright; signed, June 14; filed, June 15; cost $1125.

Twelfth Ave. near A. street. Cottage; owners, Geo. E. Mitchell and Mary Ann Mitchell; contractors, A. P. Ely & J. W. Smith; signed, June 14; filed, June 16; cost $1102.

Twelfth Ave. near A. Cottage; owner, Francis Miller; contractor, L. G. Bergren; signed, July 6; filed, July 8; cost $1180.

Twenty-third near Hoffman. Cottage; owner, F. W. Westfall; cost $1600.

Twenty-third near Hoffman. Cottage; owner, J. Wilhmson; cost $1600.

Twenty-third near Noe. To build; owner, Sarah Nesbitt; contractor, J. O. Dyar; signed, July 6; filed, July 8; cost $2600.

Twenty-seventh and Church. To build; owners, Thomas and Catherine Fanning; contractor, V. G. Godin; signed, June 21; filed, June 22; cost $2450.

Vallejo near Powell. To build; owner, Issac Fox; architect, A. W. Marquis; contractor, D. A. McIntosh; signed, June 16; filed, June 18; cost $1325.

Vermont near Yolo. To build; owner, Mrs. Kelleher; builder, C. Zwierlein; cost $1200.

Washington near Van Ness. Alterations and additions; owner, Mrs. Margaret J. Jones; architects, Coxhead & Coxhead; contractor, M. C. Lynch; signed, June 16; filed, June 21; cost $4831.50.

Washington and Spruce. To build; owner, Ed. G. Carrero; architect, T. P. Ross; contractor, Fred Miller; cost $3980.

Webster near California. Alterations, etc; owner, Lillian D. Reynolds; architects, Herman & Swain; contractors, Anderson & Stockholm; signed, July 2; filed, July 7; cost $1935.

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AS THE MATTER of a New Charter for San Francisco is again on the tapis the time is opportune for remarks as to the position of architects, engineers and builders in it.

In the most important place, this being the age of specialization it seems that the Architectural Department of the Municipal Government should be kept separate from the Engineering Department.

In all American Charters we believe so far no distinction has been made, and all are grouped in the Board of Public Works; who are generally supposed to be engineers.

A little consideration will show that this is very inadvisable. The distinction is very palpable between the two departments; in fact, there is nothing apparently in common between them.

One busies itself with the laying of sewers, building of roads and walks, water supply, gas and electric light supply, bridge building, street cleaning, railroads, telegraphs and telephone, subways, and the charge and care of all these things. It also would naturally include all surveying.

San Francisco being a seaport it would also include all marine engineering such as building of wharves, dockage, etc., and the charge of the same.

All this comes appropriately under the term "Works" so that "Works Department" or "Engineering Department" could be either of them used.

On the other hand the Architectural Department, or what could be called for short the "Building Department" includes all constructions for protection from the weather; and those made for the delight of the eye, such as parks, statues, monuments, gardens, museums and othor art treasures of the City.

One sees at a glance that a different order of men are required to haudle these latter works than those mentioned before—and it is hardly necessary to note that the two geniuses have been very seldom indeed united in one man—and, with the present complexity of public wants, it is im

possible for one man or set of men to do justice to both. The head of the first department should be an engineer, of the second department an architect.

The Architectural Department should have charge of the construction and repair of all public buildings, the lighting and all other installations in connection with said buildings and the furniture within the same.

One bureau of the department should be empowered to make a proper building ordinance including plumbing regulations and see it enforced by Building Inspectors—who would take the place of the present Fire Wardens and Health Inspectors. In regard to the designs of public buildings and monuments, fountains, parks, etc., which more particularly interest the architect—the example of our National Government in the matter is a good one. All constructions of this character costing complete over $50,000, should have designs open to competition.

The City parks would naturally come under the Landscape Architectural Bureau of the Department—being artistic creations—that being made the great distinction between each department; any other classification does not seem to be so satisfactory.

A few thoughts in regard to the carrying out of the work of these two departments may be apropos. The public service has always a large attraction for the citizens, due no doubt to a feeling on his part that he is partly working for himself when working for the city, being a constituent of the body politic—while, when working for a private employer he feels that the profit of none of his work comes back to himself.

So as to allow as many as possible to participate in the fruition of this laudable desire, the hours of the City should never exceed seven hours, and be less whenever the people are educated to the idea. Two ends are gained by this more people are employed and by allowing only seven hours pay, it prevents those who may have private work from rushing into government situations.

Again all the labor required in these departments should be done by the City by day's work and contracts should be tabooed. There is an element of speculation (gambling in English) about a lowest bid contract which is demoralizing; if the work is large, only rich contractors can bid, and the number being small the temptation to pool their issues is great, and the City has to pay more than the work is worth; or, if it be small enough to encourage a large number of bidders, the lowest bidders generally loses; as we find in quite a quantity of national work let out on this system. In the latter case the City gets something for nothing which every honest citizen abhors.

PUBLIC UTILITIES IN SAN FRANCISCO.

CITY GOVERNMENT A NATIONAL QUESTION.

THE problem of municipal government has become one of the highest concern to the entire nation. It is, in truth, a question whose solution affects the interest of all the people. At present one-third of the people of the United States dwell in cities. One-tenth of the entire population of the Republic live in the four great cities of New York, Philadelphia, Boston and Chicago. American cities resemble each other so closely, that the experience of one will generally serve as a lesson for all.

OUR CITY HAS NO PUBLIC DEBT.

In the first place, the early settlers of San Francisco, expecting to return soon to their Eastern homes, were unwilling to discount an uncertain future. They had not in view the requirements of a metropolis of 350,000 people. Therefore, no provision for any public indebtedness was provided; and we have to-day a municipality without bonds. One hundred and sixty miles of paved streets have been constructed, costly public buildings have been erected; a magnificent public park, costing annually a quarter of a million dollars; and yet San Francisco is practically out of debt. No other large city on earth can match this remarkable record.

OUR CITY OWNS NO UTILITIES.

In the second place, San Francisco possesses no public utilities. Other large cities have issued bonds mainly to acquire municipal ownership of the great necessities of the people. San Francisco has done neither. The public property of the city, amounting to $25,000,000, has been either inherited or paid for by current taxation. Nearly all progressive modern cities own and often operate some public utilities. San Francisco has allowed great tax-levying corporations to perform these municipal functions.

VALUABLE FRANCHISES GIVEN AWAY.

Our city has given away for long periods, without compensation or reservation, valuable franchises for street railways, telegraph, telephone, subways, water supply, and gas and electric lighting. Laws governing the sale of franchises have only been enacted within recent years. To recover her lost advantages, San Francisco must now wait until the existing privileges expire by limitation. The present Constitution of California, however, has broken the monopoly of water and light franchises by allowing any person to use the streets for such purposes under reasonable conditions.

MONOPOLY A LOGICAL RESULT.

The natural result of the existence of these gigantic corporations has been powerful monopolies and the imposition of excessive rates for all kinds of service. Morally worse than this has been the resulting suspicion of the curruption of public bodies. Public servants in the Legislature, in the council, and even in the judiciary are exposed to the debasing machinations of these unscrupulous corporations. They have debauched politics and have established an "imperium in imperio," subversive almost of the State government itself.

PUBLIC OWNERSHIP A NECESSITY.

These indisputable facts emphasize more lucidly than any argument the necessity of the public ownership of utilities. With a reform in the civil service, better results could certainly be attained. Moreover, public bodies would not be exposed to the insidious inroads of corruption, carrying with it the ultimate destruction of representative government.

PRIVATE OWNERSHIP INCLUDES TAXATION.

Every rise in the price of water or light is equivalent to an additional tax imposed upon the people. Every divident paid upon watered stock of transportation and other companies using public streets is an unjust and unwarranted imposition upon the people. The public streets belong to the municipality and these corporations cannot exist without their use. The first consideration of lawmakers should be the interest of all the people. Therefore, only reasonable interest should be permitted to be earned upon the actual capital invested. The $2,500,000 contributed annually by the citizens of San Francisco for the universal necessity of water and artificial light is certainly as much taxation as the very taxes levied for the support of the city government. If the people are charged double the value of these necessities, they are unjustly taxed.

ACTUAL COST THE TRUE MEASURE OF VALUE.

Reasonable interest should be estimated upon actual cost and not upon any inflated values. For example, a system of street railway has issued stock for $18,750,000 and has outstanding bonds for $11,000,000. It collects over $3,250,000 annually in fares and thus pays full interest upon all its stock and bonds. Its earning capacity with five-cent fare should, therefore, not be considered the measure of its value. Reasonable dividends could be paid upon its actual value and yet cheaper service rendered, especially during certain hours of the day. A gas company with a plant worth $5,000,000 is paying 6 per cent dividends on $10,000,000; and a water company is paying regular rates of interest on a stock and bond capitalization of $23,000,000. The citizens of San Francisco are paying $7,000,000 annually for water, artificial light and street car transportation, a sum $3,000,000 more than was raised last year by direct taxation for the support of the municipal government.

PUBLIC OWNERSHIP THE BEST SOLUTION.

The ultimate solution of this disturbing problem is municipal ownership and operation of public utilities. Modern American cities, careful to perserve representative institutions in their purity, should be prepared for this public duty. The mere power of regulation has failed to prove an adequate remedy. In practice it is the opportunity of the corrupt and the corruptor. Corporations have their duties as well as their rights.

CAPITALIZATION IS NOT FICTITIOUS.

The apparent inflated capitalization of these gigantic corporations is in reality not fictitious. It actually exists and consists of two distinct parts: first, the indispensable portion contributed by the city, and, second, the part contributed by the corporation. The latter is its actual cost to the corporation and is the basis upon which alone it should be paid.

RISK OF OWNING PUBLIC UTILITIES.

Corporations engaged in handling public utilities incur no unusual risk. They are not, in the first place, obliged to go into that business, nor would the city seriously suffer without their aid. The ownership of all property is attended with risk. Aside from the continual vicissitudes of business, private property is open to competition and may even be condemned for public use. The very magnitude of these corporations excludes ordinary competition. Furthermore, a reasonable interest upon their investments is guaranteed to them by judicial decree.

PUBLIC NECESSITIES NOT A FIELD FOR GAMBLING.

The necessities of the people are not a legitimate field for financial exploitation by private enterprise. Corporate greed should not be permitted to prey upon public bodies. The Government should see that the people are protected, not only against betrayal by their own servants, but also against invasion by corporations of their own creation.—*James D. Phelan in Merchant's Association Review.*

SUPERVISING ARCHITECT, TREASURY DEPARTMENT.

THE United States Civil Service Commission announces a competitive examination to fill the vacancy in the position of Supervising Architect of the Treasury. The salary of this position, which is one of the most important and responsible under the government, is $4500 per annum, and it is hoped that architects of high attainments and reputation may be induced by these considerations to enter the competition. It is the desire of the Department to secure a practical architect of high administrative ability to direct and supervise the work of the office force as well as the contract work done on public buildings throughout the country.

Those who enter the competition will be required to submit:

First—On blanks to be furnished by the Commission, statements relative to their training, education, and technical experience.

2—Drawing or sketch plans, specifications, and photographs or other suitable illustrations of buildings designed by them as architects or constructed under their supervision as superintendents of construction; and other information relating to such buildings of which competitors will be advised upon inquiry of the Commission.

3—(a)—A thesis relative to designing and construction, and (b) a thesis relative to office administration.

4—In addition to the forgoing tests, competitors will be required to appear on September 10, 1897, at points convenient to their place of residence where the Commission has suitable accommodations, to undergo a test in formulating a scheme for competition for a public building and in criticising designs submitted to them for their guidance and inspection.

The information called for under each of the first three heads above mentioned must be forwarded to the Commission by each competitor on or before September 10, 1897. The test under the fourth head will be given September 10, 1897. The examination papers will be rated under the direction of the Commission by a board of distinguished architects.

Those who desire to enter the competition should write at once to the United States Civil Service Commission, Washington, D. C., for application blanks and other information relating to the examination.

DOOR KNOBS.

DOOR KNOBS, in the matter of shape, have gone through quite a series of changes and improvements. The original and simplest was the one of a circular outline; next came the oval outline, which fitted the shape of the palm of the hand better; finally for sake of variety we have the egg shaped. These several shapes have been ornamented in all imaginable styles or left perfectly plain. However, notwithstanding the perfection to which shape and ornamentation has been brought, the connection between the knob and spindle, or more strictly the means of holding the knob on to the spindle, has remained the same, namely, by means of a screw tightening up the two. This primitive method has always been a source of trouble or annoyance to all concerned —to the mechanic, when he screws it up, to the householder, when he wishes to take out the lock, for about that time it is very generally the case the screwdriver cannot be found, and to the tenant when he finds the knob rattling in his hands, giving him a sensation of want of stability which is not pleasant—or finds the worn screw drop out and leave the knob loose. Everything has a good side however, and the noise of the rattling serves as a notice when the baby wants to get into the room to its mother, which no doubt is conducive to the happiness of the baby but not to the peace of the mother.

In these latter days of the century, however, here comes an invention which does away with all these troubles and annoyances. The Weatherwax Door Knob is illustrated below:

FIGURE 1.

Figure one shows the parts separately—A is the door knob and its shank—B is a small metal rod bent into the shape indicated and C is the spindle.

This is pierced with holes large enough to take the smaller leg of B—the small bent piece of metal aforesaid—these holes are ⅛" centres. At A in the shank is a small hole.

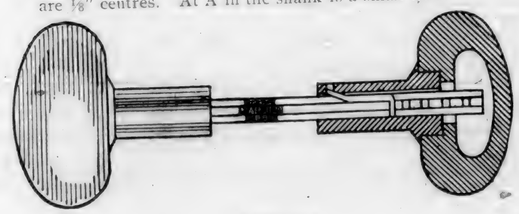

FIGURE 2.

Fig. 2, is a longitudinal section. It shows the knobs in position.

Fig. 3 shows the spindle before it is pushed into place.

The method of fitting these knobs as as follows:

After lock has been placed in position and escutcheon or roses have been screwed onto door, put the knob spindle through the door, then put the spring "B" in one of the holes in spindle; the free end of spring should just clear the escutcheon or rose when swung around. If too short move up one hole, if too long cut off with file or nippers, then put knob on spindle and press into place, when it will securely lock itself.

To remove knob insert a small awl into hole "A" and press spring down, at same time pull gently on knob.

This gives a fixture which is perfectly tight and cannot be shaken or rattled.

It can be sold for the same price as the old style which is an important item these times. It must be more durable, as there is no screw to wear out, and in appearance the lack of the screw head leaves a smooth and more sightly shank;

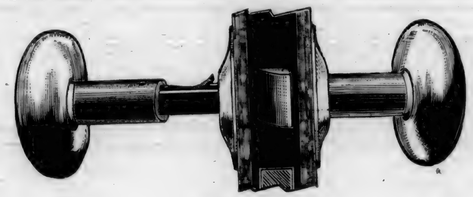

FIGURE 3.

it saves time and patience in applying or removing, and requires no tools except any awl shaped piece of wire which is found almost everywhere where knobs are.

Taking it altogether it does away with all the objections to the present system of door knobing and is in line with the present trend of everything that is labor and time saving.

The spindle and shank of these knobs are made entirely of steel instead of cast iron, the material of which all the knobs now in use are made.

PLANS FOR THE UNIVERSITY OF CALIFORNIA.

REGENT J. B. Reinstein of the University of California has returned from Europe, where he went three months ago, accompanied by H. E. Maybeck, instructor in architectural drawing, to inspect university buildings and consult with prominent architects as to the plans for the new buildings to be erected at Berkeley. The architects generally regard the opportunity presented as one of the greatest ever offered in the history of architecture, for, in addition to the beauty of the site, the large area of the grounds, and their situation on a gently rising hill overlooking the Golden Gate, Mrs. Hearst has not restricted the amount of money necessary to obtain these plans.

Mr. Reinstein stated that there will be an international concurrence of architects, together with artists, sculptors and landscape gardeners, to bring about the best results. Prof. Gaudet of Paris, who has probably had the most extensive experience of any person living in this direction, is preparing the "programme," as it is technically called. This will give in detail the requirements of the University, together with the necessary data, maps and photographs, and will be finished within a month, when copies will probably be sent to the various architects of the world.

Under the arrangements as contemplated at present the architects will be requested to send in sketches of their plans at a given date, and these will be passed upon by a jury consisting of one recognized authority each from France, Germany, England and the United States and a representative of the University, the understanding being that each architect submitting plans will receive some recompense. At least ten of the best sketches will be selected by the jury and the authors will be requested to elaborate their plans. The architects so selected will be permitted to name for additional members of the jury, and these nine jurors will select the ultimate plan. It is probable that there will be about thirty magnificent buildings in all, each of which will be built of marble or other stone. The completion of the work is not expected for many years.—*Mining and Scientific Press.*

THE MAGNETIC DIP OF ANCIENT TERRA-COTTAS.

BY THE CAVALIERE GIACOMO BONI [HON. CORR. M.].

THE DIP of a loadstone or magnetized needle was observed by George Hartmann, of Nuremberg, more than three centuries and a half ago, and was commented upon by him in a letter, dated 4th March 1544, to the Duke Albrecht of Prussia. The prototype of the modern dipping needle was constructed in the year 1676 by Robert Normak, and some measurements were taken with it by Gilbert of Colchester (1540–1603), the "Galileo of magnetism."

It is well known that the loadstone can transmit to iron with which it comes in contact a permanent property like its own, and that the earth itself, as a larger loadstone, produces the same effect; so that, by placing a non-magnetic bar of soft iron in the line of the magnetic meridian, with its axis in the direction of the earth's force (*i. e.* parallel to the line of dip), it will be magnetized inductively, in such a way that its lower end becomes a north pole, and its upper end a south pole. Usually a certain proportion of the magnetism remains after the inducing force is removed.

The phenomenon of magnetization is, however, not confined to iron, but becomes apparent in other materials of which it forms a very small constituent. One of these materials, the ferruginous silicate of alumina, happens to have been—both baked and unbaked—the most extensively used for architectural and domestic purposes, in the shape of bricks and pots.

The ferrous-ferric oxide, which constitutes the magnetic substance of baked clays, possesses a great coercitive force, very little inferior to that of steel, that is to say, the power to store up and preserve the magnetic conditions under which it was baked.

Among these magnetic conditions, the most important, from an historic or even prehistoric point of view, is the magnetic inclination or dip because, as it slowly changes according to what we must assume to be a natural law, we have in terra-cotta a material giving us data to ascertain the age in which some of the objects made with it were baked, and the means to trace or follow the track of this law in prehistoric ages.

Towards the end of the seventeenth century, says the *Journal of the Royal Institute of British Architects*, R. Boyle knew that terra-cottas were permanently loadstones, magnetized according to the direction of the terrestrial magnetism in the place and time they were baked. In the year 1862–63, Gherardi published in our magazine, *Il nuovo Cimento*, some results of his experiences on the polar magnetism of brickwork in Turin, and of Etruscan and Roman terra-cottas, and announced the principle that baked clays retain magnetism in the same direction in which they first conceived it, even for centuries after they were baked.

The subject has lately been resumed, and some interesting experiments were made by Dr. Folgheraiter, the clever assistant of the Physicial Institute of the Roman University, who has extended his researches to many instances of brickwork of ancient buildings, palaces, temples, thermæ, and tombs of Rome and the Campagna, and ascertained that even volcanic rocks employed by Roman architects, such as tufa and lavas, in the primitive walls of Roma quadrata, in the basement stairs of the temple of Vesta in the Royam Forum, in the round temple at the Bocca della Verita, in the walls of Servius Tullius, in the Claudian aqueduct, in the Colosseum, etc., so well retain the primitive magnetic direction that in some cases it points exactly to inverted poles. We may here mention that Melloni, in examining the fragments of leucitophire and of other lavas employed in the amphitheatre of Pompeii, found them magnetized in every possible direction.

In order to familiarize himself with the subject, and to collect data regarding the way in which terrestrial magnetism became fixed in terra-cottas, Dr. Folgheraiter manufactured a series of clay cylinders of different sizes, and vases of different shapes, and had them baked in a vertical position and at different inclinations (see *Rendiconti della R. Accademia dei Lincei*, classe di Scienze, anno 1896). Then he applied the results of these investigations to some vases of the Etruscan epoch, which judging from their shape, had been baked in a vertical position. In four terra-cotta *cistæ* (eight century B. C.), preserved in the museum of the Villa Giulia, the south polarity was found prevalent round the base, and the north polarity at the top of the handle. *Oinochoai* of the same epoch gave the same results, which seem to prove that at the same and place where the vases were baked a magnetic needle would have dipped towards the south pole instead of the north one, as at present. The measurements made gave results which vary from 2°29′ to 25°37′, owing to the difficulty of making the corrections necessitated by the imperfections of the vases, and so could assign within very narrow limits the date of those vases, which from their peculiar shape had undoubtedly been baked in a vertical or otherwise determined position.

On the whole, the results of the investigations carried out at present on the history of magnetization point to the necessity of experimenting on materials which do not leave any uncertainty as to the date, place, and position of their baking. A series of such materials ought to be offered by brick walls which have been subjected to fire, such as the Great Council Hall of the Ducal Palace in Venice, burnt A. D. 1577, and of a great many buildings which suffered from the same cause, including some ancient Roman, and possibly even some Assyrian ones. Volcanic eruptions of historical date may also give us the means of ascertaining the magnetic dip, which they have fixed and embodied in cooling down into hard stone, and that which they have caused the structures to assume with which they came into contact, as is the case at Herculaneum.

Although some of these investigations can be carried out in Italy, their nature requires them to be extended over the largest possible field, and to the utmost limits of historic age. For this aeason I hope that the Royal Institute of

British Architects, recognizing the peculiar interest of the subject, and the possibility that some unhoped-for light may be thrown on the date of some important structures, or of the date at which the enemy destroyed them by fire, will ask its members to contribute a notice of such buildings that exhibit the magnetic dip produced at some period of their existence.

The cipollino columns of the Temple of Serapis at Pozzuoli have preserved for us a record of the geological changes of that territory. Let us hope that scientists may be able to point to some ancient monuments as historical archives of the law of terrestrial magnetism.

Note.—In studying the magnetism of terra-cotta vases, Dr. Folgheraiter has adopted the scheme of dividing into twelve parts the circumference of the base, and that of the mouth or upper rim of each vase (vases, be it understood, of symmetrical shape around a vertical axis at the moment of baking), and measuring the magnetism of each of these divisions of 30 degrees by means of a magnetic needle conveniently suspended and carrying a circular mirror, which serves for the reading of the variation by means of a theodolite.

The force of the positive and negative magnetism, the poles and the magnetic meridian of the vase being known, the magnetic inclination (dip) is reduced by calculating the resultant of the two vertical and horizontal components.

For instance, in subjecting to experiments a Greek amphora of the Museum of Florence, No. 1800 (about 650–500 B. C.), Dr. Folgheraiter read the following deviation:—

Around the base.	Around the upper edge (orlo).
+ 223°0	+ 211°0
178°0	179°0
121°5	130°0
8°0	44°5
— 119°5	— 66°5
215°0	134°5
223°5	147°5
190°5	118°0
147°5	74°0
1°0	+ 69 0
+ 149°5	155°0
+ 191°5	180°0

The maxima and minima of these numbers being considered to belong to the magnetic meridian of the amphora, the following diagram is obtained:—

+ 211°0 — 147°5

+ 223°0 — 223°5

the vertical component

$$= \frac{(223°0 - 211°0) - (-223°5 + 147°5)}{2}$$

$$= \frac{11 + 76}{2} = 43°5;$$

the horizontal component

$$= \frac{223°0 - (-223°5) + 211 + (-147°5)}{2}$$

$$= 402°5;$$

the inclination of the magnetic force (dip)

$$= \text{areotg.} \frac{43°5}{402°5} = 6° 11'$$

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

RESIDENCE for Ex-Congressman T. J. Clunie, N. W. corner of Fell and Lyon streets, San Francisco, Wm. Curlett, Architect.

STUDY for Small Church, W. J. Cuthbertson, Architect.

RESIDENCE for Mr. R. Spreckels, Pacific Ave. and Gough streets, Samuel Newsom, Architect.

COTTAGES, Samuel Newsom, Architect.

FIREPROOF BUILDINGS.

BUILDINGS can be erected that are fireproof and absolutely safe against the ravages of fire. The question has been thoroughly considered by architects and the numerous experiments that have been made of late have convinced them that they have good reasons for this belief. The great Pittsburg fire of May 3 affords an interesting field of study for the architects and a writer in the *Engineering News* has improevd it. To realize the force of the conclusions drawn it is necessary to understand the character of the buildings burned. The fire broke out in a great grocery warehouse, which was slow-burning, but not at all fireproof, and filled with inflamable materials of great heat-producing qualities, like oil, molasses and hams. Separated from it by narrow streets were three office buildings of different types of fireproof construction. One had hard tile floor arches and covering for the steel framing, one porous terra cotta arches, and one concrete floor arch construction. The first named was a store, with an open front unprotected by iron

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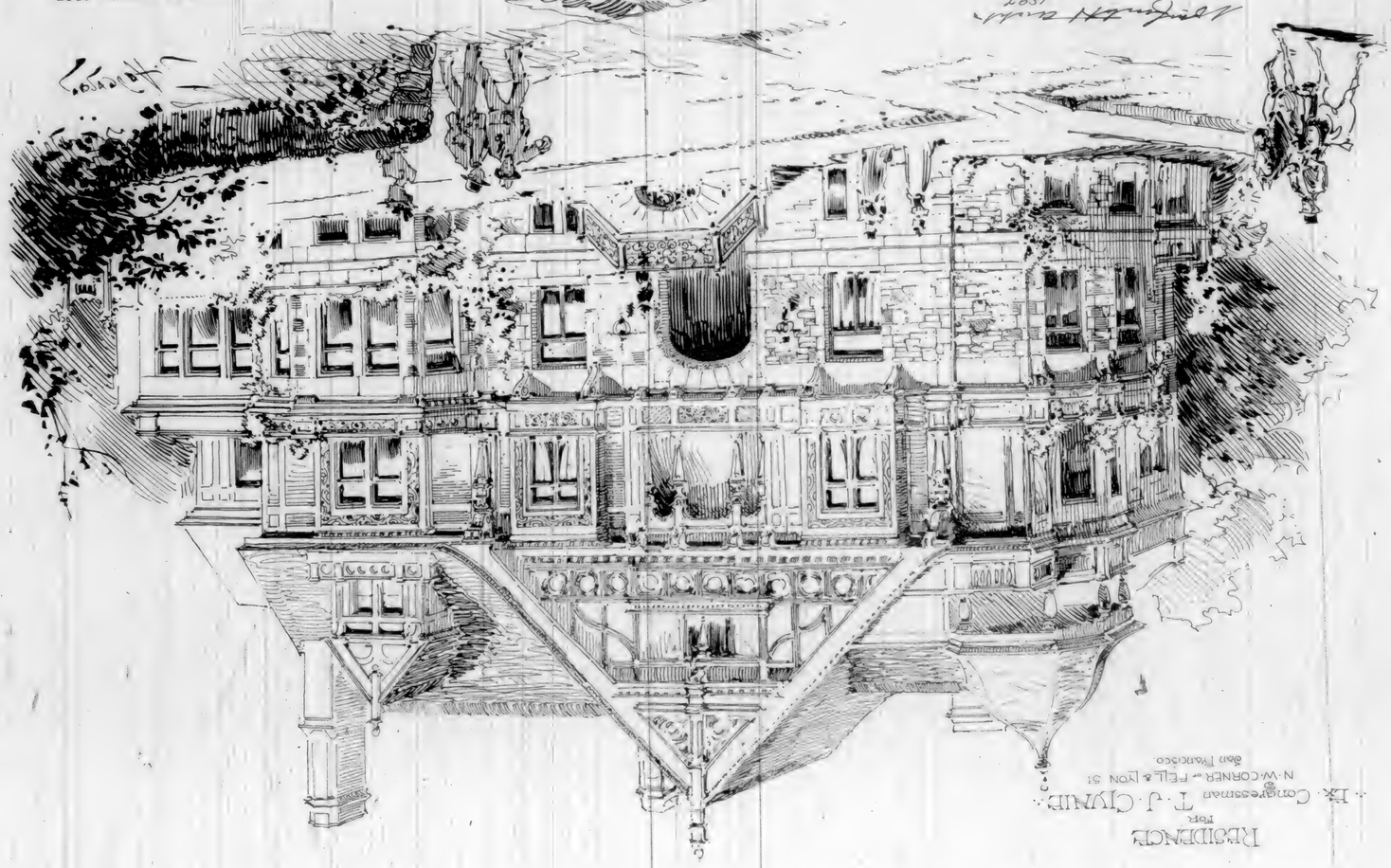
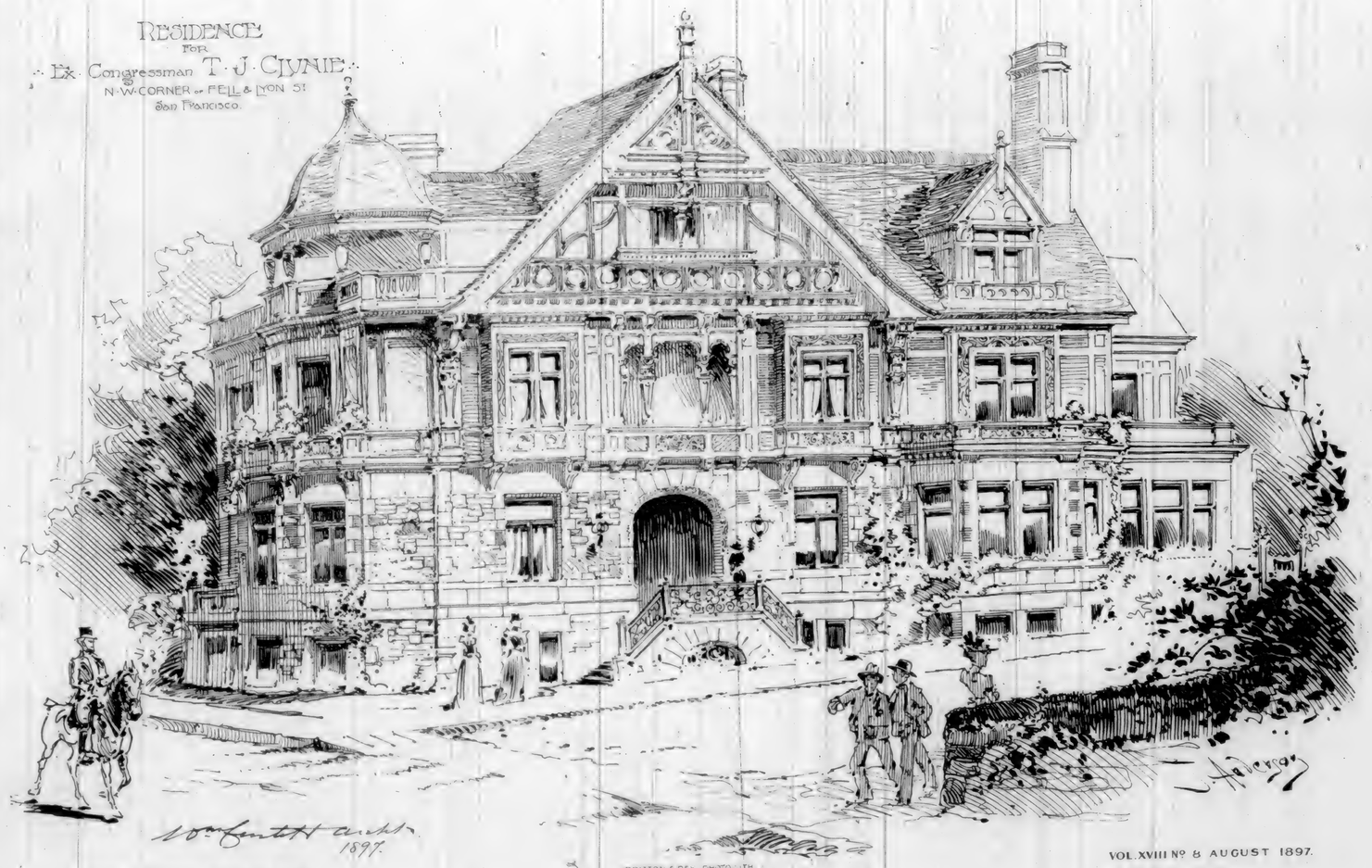
SAN FRANCISCO.

1892



RESIDENCE
FOR
Ex-Congressman T. J. GLYNN
&
N.W.CORNER of FELL & LYON St
San Francisco.

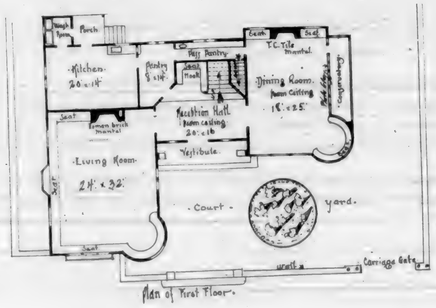
RESIDENCE
FOR
Ex-Congressman T. J. CLUNIE
N.W. CORNER of FELL & LYON Sts
San Francisco.



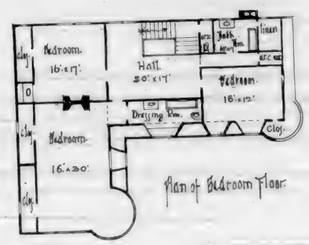
Wm. Curlett Archt.
1897.

BRITTON & REY PHOTO-LITH.

Cottage French Style
Cost $3000.00
Sam'l Newsom Architect, Mills Bldg.

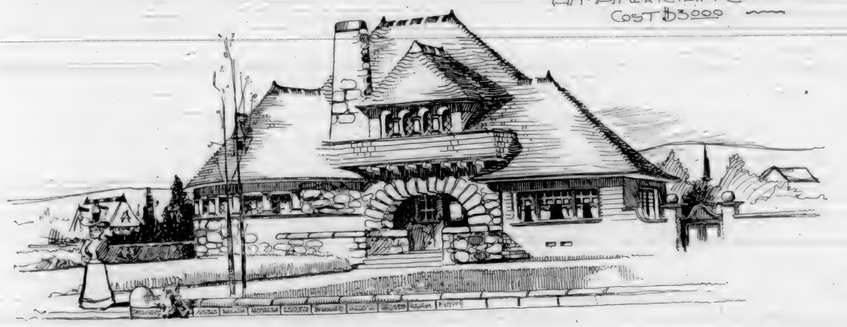


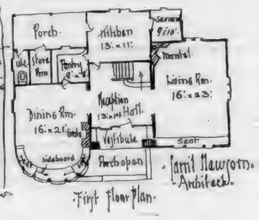
Plan of First Floor.



Plan of Bedroom Floor.

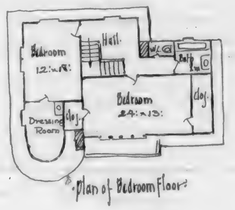
AN AMERICAN COTTAGE
COST $3000



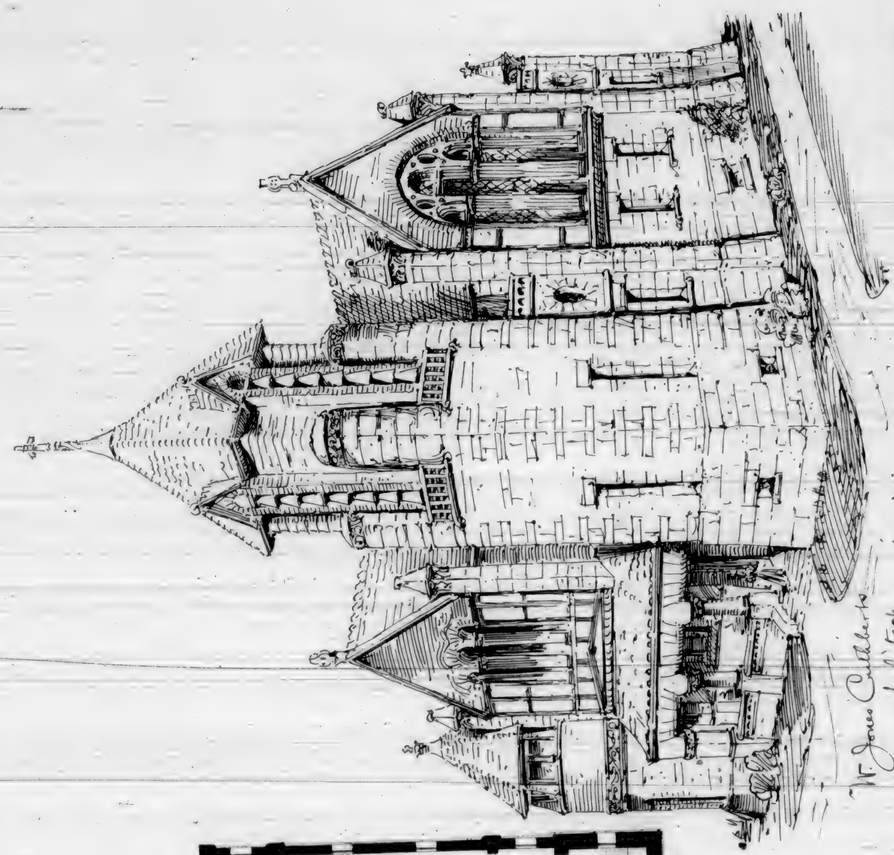


First Floor Plan.

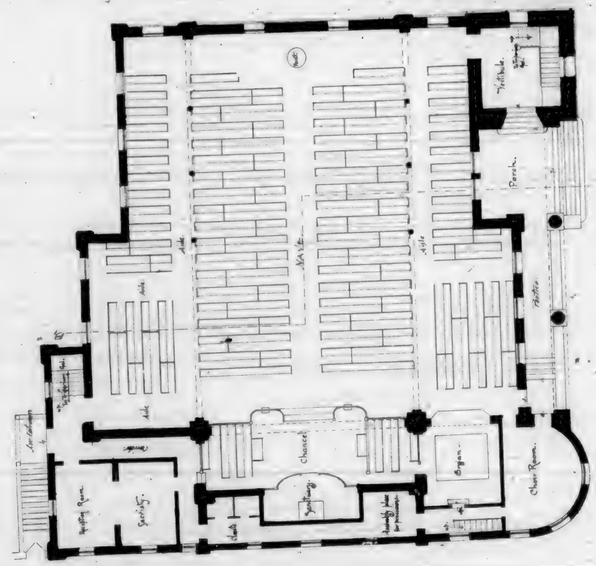
Jarrit Newsom. Architect.



Plan of Bedroom Floor.



Mr. James Cuthbertson
Architect



Plan of Main Floor.

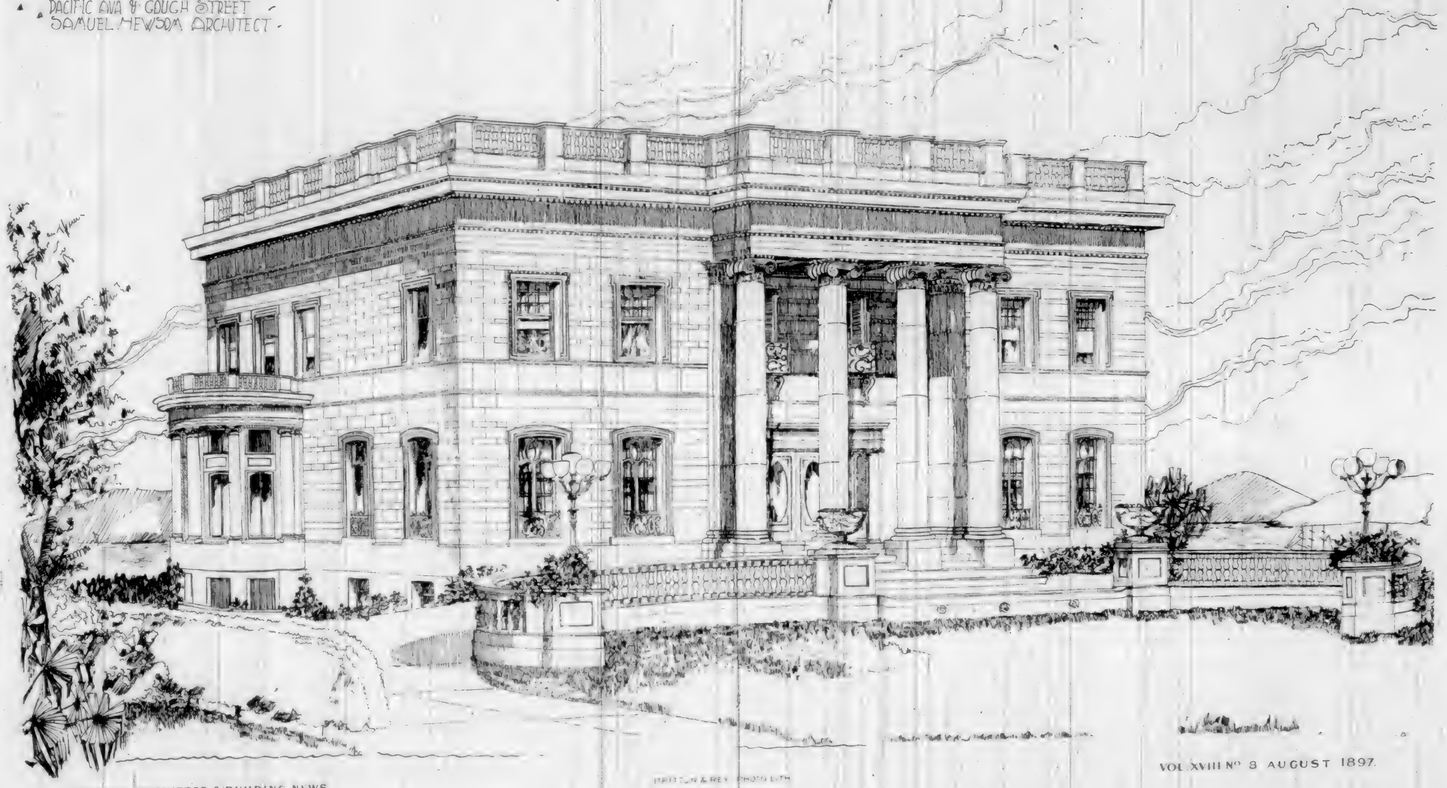
SAINT JOHN'S EPISCOPAL CHURCH
OAKLAND.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XVIII Nº 8 AUGUST 1897.

RESIDENCE FOR MR R SPRECKLES -
PACIFIC AVA & GOUGH STREET
SAMUEL NEWSOM ARCHITECT -



shutters and with floors undivided, so as to be practically a shell full of combustible material. The second was equally open and unprotected at the front, but had many four-inch terra cotta partitions, both longitudinal and transverse, above the ground floor. The third building was devided by wooden stud and metal lath partitions. While all three of these buildings suffered severely from the flames, the usefulness of the steel and terra cotta was revealed by a close examination of the buildings. The steel work, covered with terra cotta or concrete, suffered very little damage and the arches remained in position. All the buildings can be readily repaired. There was no twisting of columns. Of course, where fireproof buildings are full of light woodwork, as these seem to have been, the interiors will not be spared by the flames, and the natural conclusion is that it is absurd to call a building fireproof that contains any considerable amount of wood. In the case of these Pittsburg buildings, the flames found easy entrance because the large front windows and doors had no iron shutters. As soon as the glass cracked the interiors were doomed to destruction. It happened that the rear walls had small openings, with fireproof shutters. The iron in these was heated white and warped, but the flames went no further. The inflammable structures beyond were unharmed. Open floors in one building afforded plenty of opportunity for draughts, which spread the flames. Elevator shafts are especially dangerous in time of fire, but cannot well be dispensed with in tall buildings. The second building, by reason of its terra cotta partitions, suffered much less than the others. Terra cotta and concrete were both given a thorough trial at this fire and experts are unable to decide which better served the purpose of the builders. The chief necessity in fireproof buildings is to avoid unprotected openings in the walls through which the flames may enter; to provide fireproof partitions inside, and to enclose the elevator shafts, particularly at the bottom. After the architects have learned how to build an absolutely fireproof structure, they have still a harder task to convince the client who is paying for it that it is good economy for him to build as well as possible.—*Construction News.*

BOOKS AND PERIODICALS.

We have received from the CALIFORNIA STATE MINING BUREAU, San Francisco, San Francisco, Bulletin No. 12, containing a list by counties of the mineral productions of California for the year 1896. Compiled by Charles G. Yale from direct returns by producers.

Any resident of California can procure a copy by applying to the State Mining Bureau, San Francisco, inclosing a one-cent stamp for postage.

Annual Report of the Board of Regents of the SMITHSONIAN INSTITUTION showing the operations, expenditures and condition of the Institution to July, 1895. Washington—Government printing office, 1896.

This handsome volume of over 800 pages contains as usual a large amount of valuable information of a scientific and practicable nature appealing to the wants of the present time.

A description of the National Zoological Park with an illustration being a bird's-eye view of National Zoological Park from model; also a map of the locality showing adjacent properties give a very good idea of what has been done in the way of embellishment for this park in the District of Columbia. At present this park contains 520 animals on hand June 30, 1895—many of these animals were presented, some from Yellowstone National Park and some by exchange.

Space will not permit giving an extended review of this valuable work, but will call attention to an article that must attract a good deal of attention at the present time on account of our trouble with Japan—it is entitled "The Japanese Nation—A Typical Product of Environment."

AN OBNOXIOUS ORDINANCE.

THE RECENT ORDINANCE OF THE BOARD OF SUPERVISORS IN RELATION TO ROOFING.

WHAT ASPHALTUM MEN SAY.

THE RECENT action of the Board of Supervisors in passing an Amendment to the Ordinance in relation to roof covering on buildings in this city has occasioned a great deal of unfavorable comment and has been the leading topic of discussion among mechanics and all members of the building trades generally. Subdivision 1 of Sec. 30 of order No. 2927 has been amended to read as follows:

ROOF COVERING.

SUB. 1. The roof of all buildings hereafter erected within the fire limits, and the roofs of all brick or stone buildings hereafter erected within the City and County of San Francisco shall be covered with either metal, slate, tiles, terra cotta, or asphaltum, laid over felt, provided however that said asphaltum and felt shall be laid over a surface of either sheet asbestos, at least one-sixteenth (1-16) of an inch thick, tiling or other fireproof material, and shall in addition be covered with at least three-fourths (¾) of an inch of gravel screened through a screen the meshes of which shall not exceed one-half (½) of an inch square, to protect said roof of building from fire.

In Board of Supervisors, San Francisco, June 8, 1897.

After having been published five successive days, according to law, taken up and passed by the following vote:

Ayes—Supervisors Devany, Haskins, Delany, Sheehan, Lackmann, Morton, Britt, Smith, Rivers.

Excused from Voting—Supervisors Dodge, Rottanzi, Clinton.

This Amendment was vetoed by his honor, Mayor Phelan and returned to the Board on June 16th on the ground that such an ordinance savored too strongly of class legislation and was giving the members of one trade the power to make

the price of the labor of another. Despite the objections of the Mayor the order was taken up at the meeting of the board on June 28th and finally approved and passed by the following vote: Ayes—Supervisors Devany, Haskins, Delany, Sheehan, Lackmann, Rottanzi, Britt, Smith, Rivers. Noes—Supervisors Dodge, Morton, Clinton.

The Amendment, so it is claimed was prepared in the interest of the metal roofers of this city and was passed in direct opposition to numerous protests from property owners and the Asphaltum Roofers' Association; they are the most directly interested; as it is certainly an attempt to make asphaltum roofs less popular amongst owners owing to the additional cost, by the provision calling for asbestos or other fireproof lining beneath the felt. As this paper is committed to the defense of all home industries and home products, and as asphaltum is a very important product of this State, it was deemed proper to investigate the matter. The following interviews with some of the leading men in the Asphaltum Roofers' Association show that the sentiment amongst them is that they have been treated unjustly in the matter.

The Paraffine Paint Company is well and favorably known almost all over the entire civilized world, especially for their wood preserving preparations and fireproof roofing felt, and the universally known P. & B. Paint, which is conceded by all to be the greatest preservative paint ever discovered. The company has also been very successful with their pile covering material.

It is now nearly twelve years since this company prepared some of the piles for the Tiburon wharves and about three years ago they were inspected and found to be almost as perfect as when driven.

They are also interested extensively in the roofing business and also ship large quantities of refined asphaltum from their works, about 150 tons being exported by them to New York and Hamburg every year.

Mr. S. C. Irving, the manager of the company, who is also chairman of the Asphaltum Roofers' Association, when seen at the office of the company, 116 Battery street, expressed himself freely in relation to the ordinance and denounced it most forcibly as class legislation and against the interests of a particular line of trade, as well as a large number of taxpayers.

"All of the best buildings," said he, "were being covered with asphaltum and the metal workers commenced to kick, and backed by the International Metal Workers' Union and by the friendship of certain members of the Board of Supervisors, succeeded in having this ordinance passed. If allowed to stand it will add about $2.00 per square to the cost of asphaltum roofs, making them as expensive, if not more so, than tin; by this means, the tin roofers think they can retard the growth of our trade, besides giving the California asphalt mining industry a slap, for the benefit of imported tin. Last year we mined in this State $600,000 worth of asphaltum and that amount could be easily doubled if we had the market for it here. We filed a protest with the Board from property owners, signed by the largest real estate owners in the State, among which may be mentioned the following, as showing the class of taxpayers who favor our roofs: Union Iron Works, Crocker estate, Floyd estate, Sharon estate, Blythe estate, Pacific Imp. Co., Union Oil Co., etc.—but all to no avail."

Upon invitation, Mr. Irving appeared before the Board of Supervisors, who had agreed to grant the asphaltum men a hearing, but he was refused that simple courtesy; he, however, forwarded to the individual members copies of his argument against the adoption of the ordinance, in which he ably expressed himself as follows:

San Francisco, June 8, 1897.

To His Honor, the Mayor, and the Hon. Board of Supervisors of the City and County of San Francisco.

Gentlemen:—As representative of the Asphaltum Roofers of this city, as representatives of thousands of dollars of capital invested in the roofing business, as representative of over one hundred workmen employed by the Asphaltum Roofers, I desire to emphasize the protests which have been submitted to you to-day concerning the proposed change in that part of the fire ordinance which relates to the covering of roofs.

Asphaltum roofs have been used in this city for more than thirty years, and a large percentage of the wholesale business portion of San Francisco is roofed with them, and never during that long period has the Fire Department, the Fire Underwriters or the property owners of San Francisco complained of them as being a menace to the safety of the city.

In the large cities of the East the fireproof qualities of an asphaltum roof are so thoroughly recognized that in Boston, Philadelphia, New York and Chicago, it is estimated that over 90 per cent of the business blocks, warehouses, mills and factories are roofed with asphaltum roofs. For more than thirty years the Underwriters of the United States have in their table of rates made no distinction between buildings covered with asphaltum.

In fact, gentlemen, to day among the better class of architects, among the most careful property owners, the asphaltum roof holds a firmer position than it ever did, and it is for this reason that the opposition on the part of the metal workers to this class of roof has been developed.

It cannot be claimed for a minute that the metal workers and the importers of English tin are the only persons interested in the prevention of fires in San Francisco. The three classes of citizens who are most neeply interested in this subject are the property owners, the fire underwriters and the fire department.

The property owners have not asked for any change in the ordinance. We have submitted here a protest signed by property owners representing millions of dollars of taxable property in San Francisco. These property owners express themselves as being satisfied with the present ordinance.

The fire underwriters of San Francisco state that so far as their rules are concerned a building is a first-class building where all its exterior walls are built of brick, stone, adobe or concrete, and has a metal, slate, tile or composition roof.

The fire department has not asked for a change to be made in this ordinance. Chief Sullivan has submitted his report to you, in which he states that during his long experience he has not known of a fire being communicated to buildings through asphaltum and gravel roofs.

To all these citizens referred to above, the present fire ordinance is satisfactory. This fire ordinance was the result of careful investigation carried on by the heads of the fire department for a number of years, and after consulting the fire ordinances of the different cities of the United States, and, if I mistake not, of Europe and Australia.

In the proposed change your fire committee had added as a prerequisite to the lawful laying of an asphaltum roof the use of a sheet of asbestos 1-16 of an inch thick. This requirement is unjust both to the asphaltum roofers and to the property owners of San Francisco. Its addition does not increase the durability of an asphaltum roof, nor does it add to its fire proof qualities, but it does add to the cost of the roof, and is an unjust tax on the property owners who desire to have their buildings covered with an asphaltum roof.

If, however, this asbestos sheet is deemed essential by your Honorable Body under an asphaltum roof, experience shows that it is doubly necessary under a metal roof.

As shown by the disastrous fire which took place not long ago, where the fire is under the metal, the solder of the joints soon melts and the metal sheets part and create draughts, which add to the fury of the flames. Had that building been covered with an asphaltum roof the roof would not have opened up, but would have remained intact until its supports had burned away, and then would have fallen with a crash, smothering the fire, and aiding the fire department in controlling the situation. That this would have been the result is shown by the statement made by Fire Marshal Swenee of Chicago, who is the leading fire chief of the United States. He states: "I have seen all kinds of roofs tested and will say the standard Composition and Gravel roof from my experience will resist fire both inside and out more successfully than any other kind of roofing in use, except tile and brick when laid over a foundation of felt and composition. Taking all things into consideration, I think firemen can handle a fire more successfully under a gravel roof than under any other kind of a roof, except as above stated. The superiority of gravel roofs over those of metal placed over boards is best seen however when the fire is from the inside, in which case it not only serves to hold the fire in the building, but even when the support of the roof is completely burned away, the composition roofing in falling serves to smother the fire, while metal becomes loose and unsoldered under very little heat."

You, gentlemen, as property owners of San Francisco, and as citizens of the State of California, are anxious to promote the development of home industries, and yet the passage of this ordinance would mean to a large extent the destruction of vested interests, which employ a great number of men and keep considerable sums of money in circulation in this State, for not only do you discredit these products here, but you also discredit them wherever they may be shipped.

To take the place of these home products, you propose to compel the use of a foreign product, and a product which is hostile to this State's welfare, and for no other reason apparently than because a small class of self-interested individuals has asked for this change, individuals who are not interested in the safety of the City of San Francisco other than as far as it contributes to their private interests.

Now, gentlemen, in view of the statements made above, does it seem fair and just to us asphaltum roofers to pass an ordinance which is injurious to our interests and the interests of our clients, and for the benefit of another and smaller class of citizens? We think not, and we firmly believe that if your Honorable Body will carefully consider the case, it will deem that the best interests of this city and of the citizens of this city will lie in the maintaining of the present fire ordinance in relation to the covering of roofs.

We do not come here seeking your charity, but we do come here as the representative of a legitimate industry seeking justice.

Thanking you for the courtesies shown, we respectfully submit our case.

Respectfully submitted,

S. C. Irving,

Chairman Asphaltum Roofers Ass'n.

—*San Francisco Contractor.*

SOCIALISM AND COMMERCIAL ART.

AMONGST certain of our opponents no argument is more popular than that the advent of Socialism will mean the extinction of the artistic, a statement deducted from the fact that the Socialist propaganda generally ignores or contemns what is regarded as art in the present day. Such opponents, by seeming to prove their case so readily, doubtless influence the listening portion of an audience, and have a somewhat demoralizing effect even upon some Socialists. In the interest therefore, of the truth that looks below the surface of things, and to prove the unsoundness of this recurrent argument, it is necessary to enter somewhat fully upon the relationship which Socialism bears to the art of all time, as compared with that of the passing moment.

The stock answer to the statement is well known—that, whereas at present individuality is cramped into a groove and personal aspirations thwarted, Socialism will free both. The idea being that, while everyone must earn his living at the outset, the length of such working hours will be shortened, and facilities for development in any direction increased. It is further agreed that when an individual has shown such aptitude for producing work greateful to the senses as to fairly entitle him to be called an artist (in the specialized sense) he may be freed partly or entirely from the daily labor of "making his living," in order to devote his working hours to the beautifying of the public surroundings. Now, I consider that answer to be, in its way, perfect. Certainly it is merely general, but so is the criticism that called it forth. That which follows is put forward in the hope of affording a practical proof of this conclusion.

My first premise, that the opponent who makes use of the argument quoted has in his mind only whar is technically called fine art (music, painting, sculpture and so farth), may readily be granted, the loose phraseology of the time ignoring the claims to that title of most forms of art other than these. That every town and village, every house and street and garden, should illustrate either the collective or individual artistic sentiment of man; that every room in its furniture, and every human being in its dress, remind one of the loveliness of humanity, or rather act unwittingly on the minds of people by sheer fitness, does not ordinarily, I am afraid, enter his thoughts. Yet in this lies the very reason of the existence of art at all. There is no veritable sense of art in a community which conceives it to be a specialization, a thing for the edification of mere individuals, and yet it cannot be denied that at the present day art, the original property and birth-right of everyone born into the world, has become a matter of deep interest to a few, and utterly unknown to the many. This is a complete reversion of the proper condition of things, and just as Socialism has as its chief end the readjustment of the material means of life in order to properly supply the just needs of all, so it must also readjust the distribution of interest in things beautiful. It needs, then, but a hint to show that, as Socialism is aiming at the root of the material capatilistic system, it is (probably unconsciously) undermining all the art of the present day based upon that system. The parallel holds still further. Many Socialists speak of the coming communal state as a kind of reversion of what once was. It is pointed out that in savage communities the material necessities of life were held practically in common, and that state—modified by the advance already made—it is desirable to again realize through Socialism. At least one notable Socialist has put

his hand to it that in the realm of art also, that which has been must be again. The artistic Messiah who has so often visited the world, each time to die the death, must yet come again in a sort of glory to be lord over the earth. Both arguments are futile. The savage communal state can have no vital connection with the Social-Democratic community. Mediæval art has gone its way, and not a hundred Morrises can make it the art of the age of true freedom. Let us descend to particulars.

In its architectural design. What have we to boast of here? Miles upon miles of the most hideous villadom conceivable, piles of great buildings with no vestige of original idea—being nothing but senseless travesties of classic work, and finally, the most satanic erections of any historic age whatever, the four-square respectable abominations they designate "workmen's dwellings." This is the age that imagines itself imbued with the art of all the ages combined? The thing is a lie, a sham, of a part with the whole great lie upon which the pinchfork edifice of commercialism rests, and as certain to pass away in due course as filth and putrefaction is bound to be dissipated by pure air and bright sunlight in its turn. It will be said, and with perfect truth, that, admitting all this sham art and commercial hideousness, there are still true artists and earnest workmen doing good work in the world, and by their efforts should the time be judged. That is not so. True artists exist in spite of, not because of, commercialism. The fact that the "Banner of the Ideal" which they uphold is yelled at by the world until it is threadbare and outworn shows the nineteenth century artistic conceptions to be as sordid as its money-grubbing aim. By the time your earnest enthusiasts have forced their way to recognition and public acclaim, their fire has abated, their banner a mere wreck of what was, their place in the van taken by new spirits, who are trampled down in their turn. We do not find in the Athens of the Golden Age commercial companies exploiting their slaves by building "workmen's dwellings." They had slaves, and may have treated them ill, but this last great insult they did not—why? Solely because the national artistic instinct was too sincere and deep Not because their "hearts' bled for the deserving poor" (as the lords and ladies who live by the labors of those same poor, would say); not because their heads told them that clean houses meant a lower death-rate all round, but simply because an ugly building hurt the artistic eye—not of a few individuals, but of the nation as a whole.

A. W. POWELL.

London "Justice."

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

TESTIMONY BY ARCHITECT AS TO MATERIALS USED.—In a suit against the owner of a house by one to whom the contractor has assigned his claim subject to the claims of subcontractors and materialmen, the owner set up a defense that he had, since such assignment, paid sums due for certain materials. The court held that after proof that all of oneclass of such materials were furnished by a particular subcontractor, the architect might testify as to the quantity of such materials used in the house.

McCormick v. Sadler, Utah, 47 Pacific Reporter, 667.

WHAT WILL NOT REVIVE LIEN.—The right of a labor to a lien upon a building lost by the lapse of time cannot be revived by subsequent labor upon the building not performed by virtue of the contract with the owner.

Darrington v. Moore, Sup. Jud. Ct. Me., 34 Atlantic Rep. 419.

"OWNER" IN LIEN LAWS.—A party in possession of real estate under a bond for a deed will be deemed "the owner" of same for the purpose of creating a mechanic's lien upon it, as against a subsequent mortgagee of the same party.

Mulvane v. Chicago Lumber Co., Sup. Ct. Kas., 44 Pacific Rep. 613.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

BUSINESS MOSAICS.

Mr. James, the Pacific Coast representative of the J. L. Mott Iron Works can congratulate himself upon the fact that his company being established in 1828 has done more advance and improve the various branches of manufacturing in which they are engaged than any firm in their line of business. In proof of this statement we have only to examine the stock of goods in their show room 27, Flood Building, and compare it with that of others in the same line of business—for both room or kitchen—you will find what you want of the best. The motto of the firm appears to be "We take the front rank let others follow." Call and examine for yourself and you will be convinced of the truth of this statement.

Mike—I want to buy a hat. CLERK—Fedora? MIKE—No, not for Dora for Dinny.

Dixon's Silica Graphite Paint—In an examination of the Maria Kip Orphanage a few days since we could not but reflect what an improvement would have been made in the appearance of the building had the above paint been used for the roof instead of a bright red paint that has already faded. The lasting quality of the roof would doubtless have been greater to say nothing of the improved appearance.

"Why do you laugh at his jokes? It isn't possible you understand them, is it?" "No. But if I don't laugh, he'd try to explain them."—*Brooklyn Life.*

Bradley Bros.—Cement Laundry Trays, manufactured of the best Portland Cement, guaranteed not to leak, crack or sweat, can be found at their factory, 53–57 Tehama street between First and Second, San Francisco.

She—I don't know what makes her so positive? HE—Her sex.—*Puck.*

One can hardly walk in any direction in this city but they will find the use of cement has increased to an enormous extent in the past few years—sidewalks, garden walks, foundations and bulkheads all demand its use. W. R. Grace & Co., 203 California street are the headquarters of this article; if you want Josson, White Star, Scale, Comet or any of the best brands of Portland cement 203 California street is the place to find it.

Man (in barber shop)—I want a hair cut. BARBER—Why not have them all cut?

P. & B. Building Paper manufactured by Paraffine Paint Co., 116 Battery street, San Francisco. By the use of this paper you not only obtain a first-class building paper, the company claim there is none "just as good," but you patronize home industry, a doctrine that is becoming quite universal in our city where there is an increased desire to build up home manufacture and thus keep our money at home stead of sending it east for the benefit of eastern manufacture.

CITY BUILDING NEWS.

A street near 7th Ave. Cottage; owner, Mrs. Mary Comasky; contractor, W. B. Kenny; filed, July 30; cost $1230.

Alvarado near Hoffman Ave. Cottage; owner, J. Heyman; cost $1500.

Brannan near 4th. Two-story frame; owner, Eliza Lamey; contractor, H. Munster; signed, July 15; filed, July 16; cost $3800.

Broadway street No. 1210. Two-story frame; owner, George Goodman; contractor, G. M. Salsbury; signed, July 14; filed, July 16; cost $2000.

Bush near Buchanan. Three-story frame; owner, Mrs. Bella Harris; architect, J. H. Littlefield; contractor, H. Jacks; signed, July 17; filed, July 21; cost $5875.

California and Maple. Three-story frame and brick; owner, Hospital for Children; architect, A. C. Schweinfurth; contractor, Daniel Sweeny; signed, Aug. 2; filed, Aug. 10; cost $7572.

California and Steiner. Three-story frame; owner, Israel Kashow; architect, Geo. A. Bordwell; contractor, B. F. Ellis; signed, July 20; filed, July 22; cost $4461.

California Ave. near Oourtland. Three one-story frame cottages; owner, J. M. Comerford; cost $3000.

California and Laurel. Two-story frame; owner, Geo. F. Lyon; contractor, W. W. Rednell; signed, July 30; filed, July 30; cost $4300.

City Hall Ave. near Park Ave. Two-story brick; owner, Wm. B. Craig; architects, Rowell & Collins; contractor, James Geary; signed, July 28; filed, July 29; cost $5600.

Clay near Laurel. Two-story frame; owner, Walter S. Newhall; architects, Hermann & Swain; contractor, J. H. Simpson; signed, Aug. 2; filed, Aug. 4; cost $3095.

Congo street No. 118, Sunnyside. Cottage; owner, E. T. Picasso; builder, H. H. Easter; cost $1200.

Congo street No. 116, Sunnyside. Cottage; owner, F. Z. Angle; builder, H. H. Easter; cost $1200.

Colma Gulch. Construction of a levee to contain 26,000 cubic yards; owner, Spring Valley Water Works; architect, Engineer of Company; contractor, A. E. Buckman; signed, July 30; filed, Aug. 2; cost 20 cents per cubic yard.

Diamond near 17th. Two-story frame; owner, Ida L. Dillon; contractors, Douglass & Co.; signed, July 30; filed, July 31; cost $1560.

Dorland near Sanchez; One-story frame; owner, J. Egan; architect, O. Everett; contractor, R. Currie; signed, July 26; filed, July 26; cost $1650.

Eddy and Franklin. Changing two-story residence into two separate buildings; owner, Callaghan Estate Co.; architect, C. M. Rosseau; contractor, G. C. Nail; signed, Aug. 3; filed, Aug. 5; cost $4975.

Turk near **Mason.** Excavation, brick work, etc., for three-story brick; owner, Geo. G. Burnett; architect, James E. Wolfe; contractor, M. V. Brady; signed, Aug. 3; filed, Aug. 4; cost $5090.

Turk near **Mason.** Steel beams, etc.; owner, G. G. Burnett; architect, Jas. E. Wolfe; contractor, California Iron Construction Co; signed, Aug. 6; filed Aug. 9; cost $1460.

Union and Vincent. Two-story frame; owner, Jas. B. Wiseman; architect, D. C. Coleman; contractor, D. P. Benson; signed, Aug. 3; filed, Aug. 4; cost $2310.

Eddy and **Mason.** Stage in the Olympia Theatre; owner, A. Walterstein; architects, Salfield & Kohlberg; contractor, H. Behrens; signed, Aug. 4; filed, Aug. 5; cost $1500.

Eighteenth near Collinwood. Cottage; owner, Mrs. Clara Bennett; contractor, G. L. Bergren; signed, June 19; filed, July 15; cost $1048.

Eighteenth near **Diamond.** Frame building; owner, M. J. Barto; contractors, Sarcander & Thompson; signed, July 10; filed, July 17; cost $1200.

Ellis near **Gough.** Two-story frame; owner, Matthew Schwamm; contractor, C. Zwierlein; signed, July 16; filed, July 16; cost $5500.

Fell and **Lyon.** One brick and frame residence; owner, T. J. Clunie; architect, Wm. Curlett; contractor, Wm. Linden; signed, July 20; filed, July 20; cost $9812.

Fell near **Cole.** Plumbing, gasfitting, etc; owner, M. Keating; architects, Cahill & Condon; contractor, G. C. Sweeney; signed, July 20; filed, July 20; cost $1439.

Filbert and **Bay.** Addition to wharf; owner, Board of Harbor Commissioners; contractor, J. A. McMahon; cost $965.

Filbert near **Steiner.** Two-story frame; owner, Mrs. Margaret McBride; contractor, H. T. Grieb; signed, Aug. 6; filed, Aug. 7; cost $2000.

Flood Ave, No. 16, Sunnyside. Cottage; owner, J. D. Moreland; builders, McCarthy Co; cost $1200.

Folsom near **23rd.** Alterations and additions; owners, John A. and Wm. McCormick; architects, Heumann & Swain; contractors, Smith & Ely; signed, July 31; filed, Aug. 2; cost $710.

Fourth Ave. near **Clement.** Cottage; owner, William Alpen; architect, L. T. Fenn; contractors, Weste & Fenn; signed, June 12; filed, July 17; cost $1536.

Francisco near **Dupont.** Cottage; owner, W. H. Milestone; contractors, Morgan & Jackson; signed, July 8; filed, Aug. 3; cost $1525.

Front and **Pacific.** Two brick reel ovens; owner, Standard Biscuit Co.; architect, H. B. Maggs; contractor, J. A. Wilson; signed, July 17; filed, July 17; cost $3085.

Geary and **Stockton.** Interior store finish, etc.; owner, City of Paris; contractors, Home Manf. Co; cost $12,000.

Grove near **Fillmore.** Two-story frame; owner, John L. Koster; architects, Martens & Coffey; contractor, C. Schutt; signed, July 15; filed, July 16; cost $10,300.

Golden Gate Ave. near **Lyon.** Two-story frame; owner, Louis Kiefer; architect, C. M. Rousseau; contractor, R. J. Facert; signed, July 15; filed, July 16; cost $3230.

Golden Gate Ave. near **1st** Ave. One-story frame; owner, Harry Simpson; contractor, A. Dahlberg; signed, July 26; filed, July 26; cost $1085.

Greenwich near **Stockton.** Two-story frame; owner, Mrs. L. Thiel; architect, G. A. Berger; contractor, J. B. Penc; signed, Aug. 5; filed, Aug. 6; cost $2400.

Hardy near **16th.** Two one-story frame cottages; owner, J. M. Comerford; cost $3000.

Hancock near **18th.** Inside finish, painting, etc; owner, T. A. Bermingham; contractor, R. Fahy; signed, Aug. 9; filed, Aug. 10; cost $510.

Harper near **30th.** Cottage; owner, M. S. Moc; contractor, Ed. Stephens; signed, Aug. 5; filed, Aug. 11; cost $1500.

Hoffman Ave. near **24th.** Two-story frame; owner, Christina M. Dettner; contractor, L. F. Williams; signed, Aug. 3; filed, Aug. 4; cost $1225.

Hyde and **O'Farrell.** Alterations and additions; owner, Mark Sheldon; contractor, C. W. Duffie; cost $1000.

Jackson near **Buchanan.** Mantels and wood finish for two-story frame; owner, L. and E. Emanuel; architect, W. H. Lillie; contractor, I. Stassberger; signed, July 6; filed, July 31; cost $1888. Plumbing; contractors, Ickelheimer Bros; signed, July 6; filed, July 31; cost $1340. Painting; contractor, J. H. Keefe; signed, July 7; filed, July 31; cost $1215.

Joost Ave, No. 42, Sunnyside. Cottage; owner, Mrs. Laura J. Woods; builder, H. H. Easter; cost $2000.

Joost Ave No. 215, Sunnyside. Cottage; owner, W. A. Hicks; builder, H. H. Easter; cost $1200.

Kearny and **Sutter.** Plastering, etc; owners, Adams Co; architect, H. A. Schulze; contractor, Jesse E. Sisera; signed, July 22; filed, Aug. 2; cost $2558. Electric lighting; contractor, Electric Lighting Co; cost $1920. Painting; contractor, R. J. Getz; cost $2750.

Laguna near **Filbert.** Two-story frame; owner, Joseph Rolch; architects, Salfield & Kohlberg; contractor, L. M. Weisman; signed, July 17; filed, July 19; cost $1540.

Leavenworth near **Filbert.** Alterations and additions; owner, F. Passe; architects, Salfield & Kohlberg; contractor, H. Behrens; signed, July 29; filed, July 31; cost $2690.

Lombard near **Gough.** Cottage; owner, H. Krause; architect, C. A. Meussdorffer; contractor, F. L. Beach; signed, July 12; filed, July 17; cost $1400.

Market and **Spear.** Carpentor work, etc., for five-story brick; owner, W. W. Young; architects, Kenitzer & Barth; contractor, A. C. Hussy; signed, July 21; filed, July 21; cost $8126. Brick and terra cotta work; contractor, Richardson & Gale; cost $14,370. Steel and iron work; contractors, Western Iron Works; cost $26,370. Terra cotta work; contractors, Gladding, McBean Co; cost $8250. Concrete work; contractor, G. Goodman; cost $11,580. Excavations, piling, capping, etc; contractors, Healy, Tibbitts & Co; cost $10,572. Cut stone work; contractors, Raymond Granite Co; cost $11,265. Plumbing and gas-fitting; contractor, W. F. Wilson; cost $1080. Fire proof floors; contractors, San Francisco Fire Proofing Co; cost $8947.

Market and **Noe.** Seven stores and a church tower; owners, Trustees Trinity M. E. Church; contractor, John O. Dyar; signed, July 15; filed, July 16; cost $3425.

Market near **Taylor.** Three-story brick; owners, Silverman Bros; architect, M. J. Lyon; contractor, W. J. Field; signed, July 24; filed, July 27; cost $1000.

Market near **4th.** Alterations to Emporium Building; owner, The Emporium and Golden Rule Bazaar; architects, Pissis & Moore; contractor, F. W. Kern; signed, Aug. 2; filed, Aug. 3; cost $2515. Fixtures in stock room; contractor, Fred Miller; signed, Aug. 2; filed, Aug. 3; cost $3125.

Maple Street. Two-story frame; owner, M. Marmuth; architects, Kenitzer & Barth; contractor, G. Peterson; signed, Aug. 6; filed, Aug. 11; cost $2545.

Montgomery and **Sutter.** Plumbing, etc; for three-story brick; owner, A. L. Whittell; architects, Townsend & Wyneken; contractor, W. F. Wilson; signed, July 15; filed, Aug. 5; cost $1242. Galvanized iron work; contractor, J. Guilfoy; cost $1000.

Montgomery street No. 419. Repairs; cost $1000; days work.

Mission near **23rd.** Interior copper wainscoting; owner, Mission Masonic Society; architects, Hermann & Swain; contractor, Jas. Guilfoy; cost $1200.

Pacific Ave. and **Buchannan.** Plumbing, etc.; owner, Albert Meyer; architect, Salfield & Kohlberg; contractor, H. Williamson; signed, July 29; filed, Aug. 2; cost $2014.

Peoples' Homestead Assn. Cottage; owners, Joseph J. Magee and Eliza J. Magee; contractor, T. F. Mitchell; signed, July 30; filed, July 30; cost $1226.

Powell Ave. near **California** Ave. Alterations; owners, Lawrence Boyle and wife; contractor, A. O. Brown; signed, July 1; filed, July 15; cost $1240.

Powell and **Geary.** Galvanized iron and tin work; owner, Mrs. Charlotte F. Clark; architect, P. Schwerdt; contractor, J. Guilfoy; cost $1500.

Sacramento near **Spruce.** Two-story frame; owner, C. P. Fonda; contractor, P. Rive; signed, July 19; filed, July 20; cost $2009.

San Bruno Road near **Erie.** Cottage; owner, John E. Eberle; architect, D. C. Coleman; contractor, J. Kenealy; signed, Aug. 2; filed, Aug. 4; cost $1145.

Scott near **Fulton.** One-story frame; owner, R. B. Kittrege; architect, W. O. Banks; contractor, A. G. Johnson; signed, July 27; filed, Aug. 3; cost $1750.

Second Ave. near **Clement.** One-story frame; owner, Charlotte S. McLaughlin; contractor, M. C. Power; signed, July 15; filed, July 16; cost $1600.

Seventh and **Mission.** Excavation for Post Office; owner, United States of America; architect, United States Architect at Washington; contractor, San Francisco Bridge Co.; cost $36,830.

Sixteenth and **Mission.** Alterations and additions; owners, Pattolsen Co; architects, Martens & Coffey; contractor, R. Trost; signed, July 15; filed, July 17; cost $5195.

Spreckels Ave. No. 1, Sunnyside. Cottage; owner, H. H. Easter; cost $1200.

Stevenson near **13th.** Two-story frame; owner, P. Strickert; architects, Salfield & Kohlberg; contractor, L. Thoenges; signed, July 15; filed, July 15; cost $2320.

Stevenson near **3d.** Concrete work for power house; owner, Claus Spreckels; architects, Reid Bros; contractor, Gray Bros; signed, June 28; filed, July 17; cost $3020; with addition of 15 cts. per square foot for basement floor.

Stevenson near **3d.** Excavations, stone and concrete work for two-story brick; owner, San Francisco Gas and Electric Co; architect, Engineer of Co; contractor, J. H. Wilson; signed, July 28; filed, July 29; cost $6017. Carpenter and mill work; contractors, Campbell & Pettus; signed, July 28; filed, July 29; cost $1188. Roofing, etc; contractors, Henshaw Grant Co; signed, July 28; filed, July 29; cost $575.

Tenth near **Harrison.** Two-story frame; owner, Mrs. Susan McClasky; contractor, John Flaherty; signed, July 26; filed, July 26; cost $1700.

Thirteenth Ave. near **Lake.** One-story frame; owners, Henry and Augusta Pape; architect, H. Hess; contractor, A. G. Anderson; signed, July 17; filed, July 24; cost $1304.

Thirteenth near **Stevenson.** Two-story frame; owner, Mrs. Julia E. Spinney; architect, C. M. Rousseau; contractor, P. L. Roberts; signed, July 31; filed, July 31; cost $3050.

Thirtieth near **Merced.** Cottage; owner, Chas. T. Jurges; architect, C. Koenig; contractor, Chas. J. N. Koenig; signed, Aug. 3; filed, Aug. 4; cost $1220.

Turk near **Scott.** Additions; owner H. Miller; contractor, H. Behrens; cost $1000.

The California Architect and Building News.

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A ZOOLOGICAL Garden in the City of San Francisco is no doubt a very good idea and the wish for it should be gratified at as early a date as possible. All cities of the size of San Francisco should be provided with such gardens.

But a greater desideratum yet is the provision of small gardens for recreative purposes scattered amongst the residence part of the city. Fortunately the layers out of the city were farseeing and liberal and provided a number of these in the northern half of ihe City but for some reason or accident left the Mission district unprovided for. Now this matter wants attending to at once, before the prospective rise in real estate takes place—there is no doubt there are some vacant blocks yet left, that could be had cheap—e. g., there are some steep hilly places which it is very costly to cut down so as to make possible for dwellings; these could be made very picturesque parks.

However the agitation for any grounds that involve any large amount of money now is out of place—for the wants of our sick and destitute are of paramont importance over any matter of mere pleasure or even scientific interest. The accommodation required foremost at this time is a good public hospital built with all the appliances and arrangements which characterize a modern hospital, and made such a place that citizens should be able to go there without fear and dread as they go to the present one.

Meanwhile, notwithstanding the shocking state of our present hospital, much could be done in regulating it; and those unfortunate enough to need its use should be treated humanely and courteously and not be at the mercy of any tyro of a medico who may have charge of a patient's case, neither should his recovery be jeopardized for the sake of an exhibition for medical students.

THE FOLLOWING editorial, under the title "Peddling Bids" recently appeared in the *California Contractor*.—"Sub-contractors have a very just cause of complaint in a system which appears to have recently grown up among contractors of pressing or sweating their sub-contractors in a novel and unprofessional manner. They call for bids on a certain job and receive a number from snb-contractors. They then take the lowest bid and go to the man who is next lowest and showing it to him, ask if he cannot get down a notch lower than that; this particular sub-contractor consents to give him a lower bid. This bid is then used to operate the same way on the first mentioned contractor, who figures his bid down lower still and so gets the job, not, however, till about all the profit is squeezed out of the job and the figures at which the work is taken come to be dangerously near presenting a margin of loss to the contractor.

"Of course no reputable contractor would do such a thing as this yet the fact is that it is done by some. It is difficult to see how this sort of business can be prevented except by ascertaining the identity of those contractors who do this thing and letting them become known, then securing an agreement among the sub-contractoes not to figure on any of their jobs. Perhaps if they were known, the architects might hesitate before they would award a contract, for one who would act quasi dishonestly would not have far to go to act dishonest all the way, should the opportunity be favorable. The understanding, when a bid is handed in, of course, is that each man is to stand upon what he has offered and if the sub-contractors who are solicited to give a lower bid would resolutely refuse to do so, of course that would settle it. But the severe competition in business these time forces men to take work almost for the sake of keeping at doing something and they are loath to let any opportunity go however scant such may be. Peddling bids is one of the products of the times. In good times men would neither attempt it, nor respond to the solicitations."

The evil complained of by our contemporary is an evil inherent in our system of so-called civilization. It is the logical and inevitable result of competition, and as long as competition rules our business life as it does to-day, there will be no hope of a better condition of things.

The work undertaken by the original contractor is frequently obtained only through similar means to those he in turn is forced to use towards his sub-contractors. Business is done on the principal of "Do your neighbor, or he'll do you." A modern novelist has just written a book to prove that a christian life cannot be lived under existing conditions. The fact is too self-evident to need argument. Such being the fact, is it just to blame the individual instead of the system of society that is the true cause of the trouble. Suppose nine-tenths of the contractors and a similar proportion of the sub-contractors should agree to change their methods and stand out for a proper price, what would be the result? Simply that the other one-tenth would secure a practical monopoly of the work. Nor is this true of any one line of business only; it is universal. Read the following statement by John P. Altgeld as another illustration:

"During the strike of 1894 one of the largest operators in Illinois stated that he had some excellent men in his employ, who had families to support, who were sober and industrious, and who had not beeen able to make over $8 a month for a year past. The majority of the operators were not to blame; they had to compete in the market in order to sell their coal; they had their money invested in mines and in mining machinery; they found that a few unscrupulous and conscienceless men had taken advantage of the hunger of the miners and got them to go to work at starvation wages, and were thus able to put their coal upon the market at greatly reduced prices. This forced the honest, humane, honorable men engaged in the mining business to sell their coal at a similar price or go out of the business, and the result was they likewise had to reduce wages. So that it was the unscrupulous and conscienceless men who fixed the wages."

PORTLAND CEMENT.

BY RICHARD TAYLOR—READ BEFORE THE GORDON COLLEGE SCIENCE CLUB.

ALTHOUGH Portland Cement is the subject I intend making a few remarks about, I will, in the first instance, leave the word *Portland* out, and say a few words about cement. Cement is a substance which is capable of assuming a liquid form, and of being applied between the surfaces of bodies so as to unite them firmly when solidifying, such as glue, paste or shellac, bnt the cement I wish to speak about is one which has for its chief constituent carbonate of lime; in fact carbonate of lime and cement are so closely allied that it is impossible tc speak of one without touching upon the other; therefore I will first of all direct your attention to carbonate of lime.

Carbonate of lime occurs as a mineral in all geological ages, and it is very widely and abundantly distributed all over the globe. In its natural state it is largely used for building purposes, and when burnt it becomes quicklime, which is used for hundreds of different purposes in our arts and manufactures.

Limestone is divided into many qualities but for the present purpose I will only make three divisions :—

1st. The fat or rich.
2d. The poor.
3rd. The intermediate or hydraulic.

1. Fat or rich lime is that which is most free from foreign matter; when water is poured on a piece it hisses, crackles, and swells, gives off a quantity of hot vapor, and quickly falls to pieces. It increases two or three times in bulk, and if placed in a vessel of water, it falls to the bottom and always remains soft.

2. Poor lime does not increase in bulk when water is poured over it, in fact water scarcely affects it at all; neither does it harden the water.

3. Intermediate or hydraulic lime develops no heat when water is poured over it, nor does it increase in bulk; when, however, it is placed in a vessel of water it becomes a hard solidified mass after a few days, and will continue to harden for months.

To summarise these classes, we have

1. The fat or rich, which does not harden in water, and which will contain over 90 per cent of carbonate of lime.

2. The poor, which is in no way affected by water, and contains less than 50 per cent of carbonate of lime.

3. The intermediate or hydraulic, which when burnt and ground sets in a hard mass when put in water, and contains from 70 per cent to 80 per cent of carbonate of lime.

Smeaton is undoubtedly the engineer to whom we are mostly indebted for our knowledge of hydraulic lime. His great work in rebuilding the Eddystone Lighthouse necessitated him using a lime that would set and become hard in water, and up to that period it was a somewhat doubtful point as to which limes did set in water; one of the commoner ideas was that the harder the limestone, the harder the mortar would ultimately become. Smeaton first tried experiments with a rich lime of undoubted repute for building purposes, but he found that when it was exposed to the action of water it was quite useless. During his searches in the various lime districts he stayed one day with a farmer who told him that the lime in his district was quite unfit for agricultural purposes, and what they used had to be carted a distance of forty miles. On enquiring as to the reason he was told that when the local lime was ground and put on the land it became quite hard after the first shower of rain. This was sufficient to give Smeaton a clue to work on, and he was not long in carrying out a series of experiments, which satisfied him that it was only the intermediate or hydraulic lime which became hard in water. He soon found that limestones containing about 70 parts of carbonate of lime were best suited for hydraulic purposes, and that the remaining 30 parts were an argillaceous clay. Further experiments were then made to see if it were possible to make an artificial hydraulic lime, and for this purpose a fat rich lime was taken and clay added until it became an intermediate lime—in otner words, clay was added to a limestone of 90 per cent until it only contained 70 per cent of carbonate of lime. This, on being burnt and ground, set hard under water and gave a proof to Smeaton that the hydraulic properties of lime were due to its containing certain proportions of clay. These were the experiments that formed the foundation of our present knowledge and method of manufacture of cement and Portland cement.

About this time Roman cement came into use, and this is nothing more or less than an intermediate lime containing, perhaps, rather an excess of clay. It is made from a natural stone found on the east coast of England near Harwich, and called Septaria. There are large deposits of this stone all over England, and there is a small quantity of it to be found in Port Phillip Bay, at Mornington. Lias lime or Lias cement is another intermediate lime, which probably more closely resembles Portland cement in its constituent parts None of these natural hydraulic limes were burnt at a high temperature; they were usually burnt at about the same temperature as ordinary lime. If by any chance any of the material was overburnt, it was thrown on one side as useless, so it was the aim of the burner to get as little overburnt material in his kiln as possible.

About the year 1824, a bricklayer name Aspdin, of Leeds, carried out a number of experiments with artificial hydraulic lime; by chance he ground up some of the overburnt parts—pieces which were burnt to a cinder and which, up to that time, everyone had been careful to exclude. He was surprised to find that these pieces not only set when put in water, but that they set infinitely harder than when only burnt to the same degree as ordinary lime. He was so satisfied that he immediately took out a patent for the manufacture of artificial hydraulic lime, and in his specification, when describing the process, he calls it "Portland cement." This is the first mention we have of Portland cement, and this industry, started in so small a way some sixty years ago is now one of the great commercial industries of the world In its early days it had many difficulties to contend with., especially from the makers of Roman cement, who opposed it by every means that lay in their power. Cases occurred where it failed to do its work, and in more than one instance it gave disastrous results, houses and walls that were built with it collapsing, until people were suspicious and afraid to use it. However, difficulties and troubles were one by one overcome, and many engineering feats which have since been executed, could never have been carried through without its aid.

Portland cement as manufactured to-day is in principle the same as that made by Aspdin, the only difference being in the details, but it is these details which constitute the difference between a good and a first-class cement. The name Portland cement is altogether misleading, and a better term would have been hydraulic or water cement. The name comes from its similarity in color and texture to a building stone extensively quarried at Portland, in the south of England.

To briefly summarize the process of manufacture, I will describe the method carried out at Fyansford as being in our immediate neighborhood. A rich lime containing about 90 per cent of carbonate of lime is thoroughly and carefully mixed with clay, and water is added for the purpose of moulding it into bricks. These bricks are dried and burnt in kilns until they become vitrified; the vitrified bricks or "clinker" are ground, and the resulting powder is cement.

Having roughly gone through the mode of manufacture, we now come to the point when it is delivered to the consumer, and also to the time when testing is requisite.

The tests generally specified are :

1st. Tensile strain.
2d. Soundness.
3rd. Fineness.
4th. Chemical test.

There are other tests, perhaps as equally important, but these fourlare the commonest.

The first test is carried out by making briquettes, which have a sectional area of one inch in the smallest part. These briquettes have to stand a breaking strain of 350 lbs. in 7 days, and 550 lbs. in 28 days. Some engineers require only 300 lbs., while others demand 400 lbs. in 7 days, but 350 lbs. and 550 lbs. will represent a fair average of the standard requirements. Care and manipulation are requisite in making briquettes, and I am sorry to say that instances have come under my notice in this colony where so-called experienced testers have not been able to get a breaking strain of one single pound out of a briquette, while, with proper handling, briquettes made from the same bulk, on the same day, in the same room, and with the same appliances gave a strain of over 400 lbs.

Briquettes are made in the following way :—the cement is gauged with a minimum of water, say from 15 per cent to 20 per cent, and it is put in brass moulds with all speed : the more quickly this operation is performed the better will be the results. For the first 24 hours they are covered with a damp cloth or put in a zinc-lined box—in any case they must not be put in the sun, or wind, or before the fire, so that the moisture can be dried out of them. At the end of the 24 hours they are put in water, where they remain until broken. When removed from the water for the purpose of testing, break them at once; if this operation is delayed an hour or two the breaking strain will be reduced. Such items as the temperature of the air, and of the water used, and the

speed with which the briquettes are made, affect the breaking strain.

I expect some gentleman present will say what is the use of all these tests; it is impossible to use cement in actual practice under such conditions, and it is unnecessary to get a cement giving a breaking strain of 550 lbs. to join two bricks together, when the bricks themselves are not half as strong. Now the object to be gained is to find out the very best results that can be obtained from a certain cement under the most favorable conditions. The foregoing are the standard tests, and provided ever sample is used in the same way, and under the same conditions, it is easy to get at the comparative values of the different brands.

It is a mistake to think that because a cement gives a high breaking strain at an early date it is therefore of more value than one which gives a low or moderate strain, for very often it is just the reverse. A cement that gives 650 lbs. in 7 days only gives 600 lbs. in 28 days, 550 lbs. in three months, and in this way gradually lose strength, until at the end of twelve or eighteen months it has all crumbled away, and has no more cohesion in it than sand. It is far safer to have a sample that will show a moderate strain at an early date, and slowly but continually increase in strength; say 350 lbs. in 7 days, 550 lbs. in 28 days, 700 lbs. in three months, and so on. High breaking strains are obtained by the admixture of a heavy percentage of lime; but it is quite possible to overstep the limit, and if your cement contains more lime than can be neutralized by the silicas, etc., you get free lime, which, while showing great strength to start with, ultimately disintegrates and rots the bulk away.

The test for soundness is an important one; it is carried out by making a small round disc, termed a "pat," about three inches in diameter and a quarter of an inch thick. Mix it with a minimum of water, work it up well, and put it on a piece of glass. This like the briquette, must be kept away from the sun, fire, or any hot dry place. At the end of 24 hours it is put in water and examined from day to day. If at the end of 7 days it shows no signs of cracks or blowing, you can pass it as sound; if, however, there are cracks, further examination is necessary to ascertain the cause. The chances are that the cement is too new and fresh, and if it is allowed to mature for a few days by spreading a sample out in a thin layer, these cracks will not appear with the next pats. If the cracks do occur again, be very chary about using the bulk.

Test for fineness. The usual specification is that it shall be ground so fine as to leave no residue on a sieve having 2500 holes to the square inch, and that not more than 10 per cent will remain on passing it through a sieve having 3,600 holes to the square inch. As a rule manufacturers grind to a far greater degree of fineness than this standard. The fineness of grinding largely determines its usefulness as a constructive material, for it is well known that the finer a cement is ground, the better will be the result obtained when mixed with sand. There is a growing demand for finer cement, but it must be remembered that finer grinding means extra wear and tear on the machinery, and consequently an increased cost.

The chemical test is often of corroborative value in estimating the properties of a sample; at the same time it is a test which is of more use to the manufacturer than to the consumer. The chief constituents of a cement are about—

Lime, 60 parts.
Silica, 24 parts.
Alumina and iron, 12 parts.

The remaining four parts are composed of alkalies, magnesia, and carbonic acid. The alkalies will not average more than 0·75 per cent, and although present in so small a quantity they play a very important part, as they form a flux for the lime and the silica.

You often hear the term "set" applied to cement. It is a very ambiguous one. "Set" usually means the ultimate hardness due to its nature attained by a substance originally in a liquid state. Cement, however, does not attain its ultimate strength for years, so the word in this case has a different signification. Cement sets in a few minutes, or hours; after that it hardens. A very common test to apply to cement to see if it is set is to press the pat with the thumb nail. The proper method is to use the Vicat needle, which is a weighted steel rod of about a quarter of an inch in diameter. The rod is suspended over the pat and allowed to fall on it like the monkey of a pile-driving machine, penetrating the sample until such time as it is sufficiently set to withstand any impression. With regard to a quick or a slow setting cement, this must be determined by the nature of the work for which it is intended. The characteristics of each are that a quick cement will probably attain a fair strength in a short time, but will not improve much afterwards, while the slower setting sample will not do so well as the quick one at an early date, but will eventually attain much greater strength. Cement may be rendered slow in setting by exposing it to the air, but such treatment does not give to a quick-setting sample the characteristics and the ultimate strength of a naturally slow one.

The uses Portland cement is put to are numerous, but in any case it is seldom used in its neat state. For the engineer it is in constant demand for foundations, piers and harbor works, in the shape of concrete. Concrete is composed of an aggregate (such as broken stone), sand and cement in varying proportion according to the class of work to be executed. A very small specification is three parts of aggregate to two of sand and one of cement. This, when set, makes an extremely hard and compact mass. The builder more often uses the cement mixed with sand only, for laying bricks or plastering walls in the proportion of two or three parts of sand to one of cement.

It is sometimes contended that there are instances in which the addition of sand in small quantities improves the cement. Such instances are however quite the exception, for sand can but be regarded as a diluent, and the only reason that can be urged for its use is on the score of economy by the admixture of so much cheaper a material.

These are the chief uses, and I should like to enumerate a few of the abuses, for cement is often asked to do work it was never intended for. One of the most frequent causes of failure in making concrete is the use of unsuitable aggregates, such as a soft sandstone, or a half decomposed basalt or stone overgrown with vegetable matters. Another great trouble is the sand. Sand for concrete or mortar should be entirely free from both loam and clay. Do not take sand out of the road or ditch, or a fine drift sand; neither let it be round-grained or soft. To obtain the best results use a coarse, sharp, angular sand such as one gets from quartz rocks. The greatest enemy to cement is loam, clay or dirt, and it is of the utmost importance that the aggregates or sand should be washed perfectly clean before being used. Too much importance cannot be laid upon this point. A very common practice on the mining fields in this colony is to use the so-called sand or sludge from the mullock heaps. At the best of times this sand is quite unsuitable, having been ground to a very fine state by the stampers, and to use it direct from the heap without washing is throwing good money away, for ordinary lime would answer just as well.

Again in hot weather cement commences to set very quickly, and to get first class work it is necessary to have it in its allotted place as soon as possible after the water has been added. This necessitates mixing a very small quantity at a time, a practice workmen do not care about, and often a larger quantity is gauged than can be used before the setting action commences. The result is that more water is added, to the detriment if not the total destruction of the setting properties of the cement. When cement begins to set crystals are formed, which, when united, becomes one solidified mass, and when the setting action once commences the less the mass is disturbed the better. Another evil is in not having the walls thoroughly wetted when plastering. The water that is added to cement is put there for a purpose—to make it set; now if you put this mortar on to a dry wall the bricks readily absorb a great deal of the water, and deprive the cement of what it requires in order to set and harden.

In the summer months, in a hot climate, plastering and even brickwork in cement, should be well hosed down with water every day or so after the work is done, and on a north wind day no outside plastering should on any account be allowed.—*The Wombat.*

TESTS OF THE WEARING QUALITIES OF FLOORING MATERIALS.

MR. FRANK Furness, the well known architect of of Philadelphia, lately carried out an extremely valuable series of tests to determine the relative durability of various flooring materials. The experiments were made on May 15th, by Messrs William Gray & Sons, large contractors for stone work in Philadelphia, says *Pacific Coast Wood and Iron*. All kinds of material possible for use in flooring were tested and the results proved very interesting as well as instructive. The samples were all placed face downward upon a horizontal iron rubbing wheel 10 feet in diameter, which was run for a space of one hour at a speed of 75 revolutions per minute. A suitable frame held the blocks loosely in place ahd prevented them from rotating with the wheel, care being taken to let the full weight of the blocks bear upon the wheel. The face of the wheel was freely supplied during the test with sharp rubbing sand and water and the friction produced was most intense. The results were all important and many extremely peculiar, the behavior of the marble and mosaics especially. They could not withstand the action of the wheel and their average resistance, indeed, was not as high as that of the woods.

One of the most curious results is shown in the action of the woods, where teak lost nearly double as much as the softer white pine, the wear being respectively 13-16 and 7-16 of an inch. Yellow pine showed the same wear as white pine, and the oak specimen lost the same amount as its great rival Oregon pine, which was reduced by 5/8 of an inch.

FIRE PREVENTION.

FIRE Prevention, an article on this subject in the *Pacific Coast Wood and Iron*, says it is well to have at hand a simple contrivance for extinguishing a small fire at its start, making the suggestion that the use of bottles filled with the following solution to serve as hand grenades:—Take twenty pounds of common salt and ten pounds of Sal Ammoniac (Nitrate of Ammonia to be had at any druggist)and disolve in seven gallons of water.

Sal Ammoniac is, as any druggist will tell you, Chloride of Ammonium, an entirely different substance from Nitrate of Ammonia which would rather add to the danger of a conflagration than surpress it.

THE EMERY SUPPLY.

THE bulk of the world's emery is obtained from the island of Maxos, in the Mediterranean. Its hardness prevents it from being dug out or even blasted, so fires are kept burning around the blocks until they crack, when they are pried open with levers, the process being repeated until the blocks are reduced to a cubic foot or less. Three hundred men are engaged in the work, but no bachelor miner can be admitted to the fraternity, which is composed exclusively of benedicts.—*Architecture and Building.*

Preachleigh—What do you expect on the day of judgment? Spendthrift—Supplementary proceedings.—*Truth.*

VANDERBILT'S FORESTS.

THE BILTMORE WOOD DOWN IN NORTH CAROLINA—HINTS BY WHICH LUMBERMEN MAY PROFIT.

WHERE is no doubt that the Vanderbilt forest and arboretum in North Carolina constitute together one of the greatest undertakings that have ever been attempted by individual enterprise the world over; and ex-Secretary Morton of the United States Bureau of Agriculture, has himself declared that nothing owned by sovereign or subject will compare with it.

There are 110,000 acres of woodlands on the Biltmore estate, says *Milwaukee Journal*, according to the report of the North Carolina State Board of Agriculture, just issued, and the plan and endeavor will be to carry out only those exact principles of forestry which apply as well to Government forests as to timber owned by lumbering firms.

Mr. Vanderbilt has undertaken to furnish the highest possible example of the science of tree culture in every one of its branches; and to this end he has divided his immense tract into two distinct parts, each to be treated by entirely different methods. The first, containing 10,000 acres, lies in the valley of the French Broad river, and is known distinctively as the Biltmore forest. The merchantable timber has been cut out in former years, and so it was decided to grow only firewood there, an ample market being wide open in Asheville, and other near-by towns. The trees are chiefly oak and pine, and as the pine grew the fastest, the oaks were given a start when sapplings by growing them in separate groups, or by cutting back the pines when they

threatened to overtop and kill the oaks. A sufficiently dense covering has to be kept at all times so that the soil may not deteriorate. The other, and larger tract of nearly 100,000 acres, lies almost entirely in the mountains; and is known as Pisgah forest, so called from Mt. Pisgah dominating, which has an elevation of over 5,000 feet.

These are virgin woods and the timber is of large size, some trunks attaining seven feet in diameter, with frequent groups of yellow poplars averaging three or four feet in diameter. There are cherry, curly walnut, hickory and various valuable furniture woods in great abundance.

On this division the forestry department is growing only timber trees, and under this system the amount of eith timber or firewood which shall be cut is fixed by what is known as the "sanctioned annual yield." From the amount of wood fiber added to a tree each year it is quite possible to deduce the amount of wood added to the whole forest each year. If no more than this increment is cut, the forests cannot be diminished. No trees are taken under a specified diameter. The mother trees are left to seed the ground again, which they do most liberally in that particular climate and location. Add, most important of all, the undergrowth is especially looked after. Every tree is felled carefully, the smallest possible amount of danger is done and the uuderbrush is sedulously cleared away.

Here are hints by which the lumbermen of the big woods and north shore might profit. Inordinate gain will alone tempt inordinate haste, else we could all secure from now on a lasting revenue. But odd-zooks! It is so much less trouble just now to haul out the logs this year, let the toppings lie and the fires run! And for the hereafter? Well, we discover simply a charred and unproductive waste.

Up to date the United States has been behind all other nations in the care and management of their timber lands but under the prospects of the great emoluments which this beginning in forestry forecasts (all praise to the genius who inspired it), the country may well congratulate itself that the scheme of segregating large forestry areas of the public domain, to be cared for by the Government, has not miscarried after all; and that the superlative reservations are to stand as defined by the Forestry Commission, except that entries may be made for milling purposes—a provision which is eminently proper and satisfactory.

Within six years a tree nursery has been established on the alluvial flats of the Swannanoa river, near Asheville, and since the erection of the first propagating house, between 3,000,000 and 4,000,000 of forest trees and shrubs have been turned over to the planters, and the annual output may now be estimated at something over 2,000,000 of plants. These are almost inconceivable figures, and yet they constitute only some of the preliminary steps toward the establishment of a vast museum, of living trees and shrubs, to be called the Biltmore Aboretum, in which will be living examples of every species and subspecies of woody vegetation, indigenous and introduced, that will thrive unprotected in the soil and climate of the locality. The line of display will appear like a continuous highway or drive traversing the valleys and slops for a distance of twelve miles, including loop roads; and on either side, extending back for 200 feet or more, will be arrayed the trees and shrubs on permanent exhibition in their fullest perfection and pride of life, in isolated specimens in small masses and in bulk.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SKETCH of Residence on Clay street, Samuel Newsom, Architect.

RESIDENCE for Mr. Parker, Marinita Park, San Rafael, Samuel Newsom, Architect.

HOLY CROSS CHURCH, Cahill & Condon, Architects.

AT THE request of Mr. Cuthbertson we state that through a mistake of the lithographer the title of his "Study of a Church" in our last number was wrong. W. J. Mathews is the architect of St. John's Episcopal Church, Oakland.

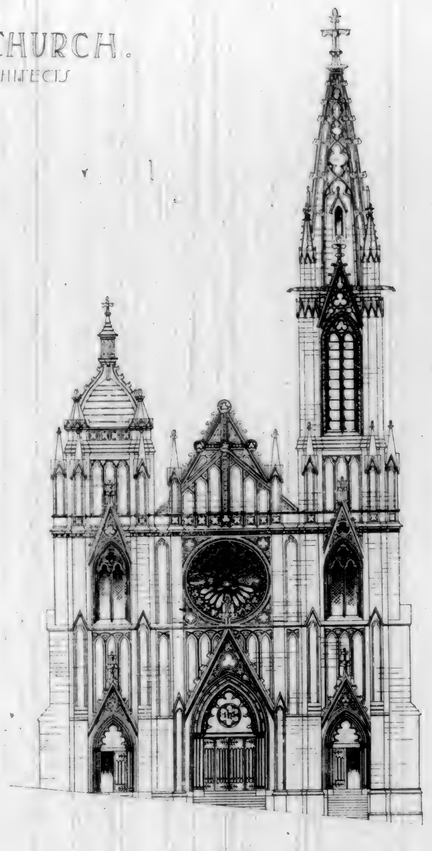
WOLSEY AND ARCHITECTURE.

WOLSEY'S taste and knowledge of architecture must have been great. Who can see the tower of Magdalen College and doubt it? And Christ Church and Hampton Court, though mutilated, bear sufficient testimony to his knowledge and love of that excellent art of architecture which none but superior minds should venture to meddle with, for if it makes greatness and wisdom conspicuous to the world, it makes folly so too, and therefore the more contemptible. Architecture is the natural constructive instinct of a great mind, the throwing off into palpable form of high thoughts. It is part of that noble constructiveness which would build up institutions, the practical language of a governing mind. It is an empire in itself, in which genius

HOLY CROSS CHURCH.

CAHILL & CONDON ARCHITECTS

ACCEPTED DESIGN.



ALTERNATE ELEVATION

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO. LITH.

VOL. XVIII Nº 9 SEPTEMBER 1897.

RESIDENCE FOR MR BARKER MARINITA PARK SAN RAFAEL
SAMUEL NEWSOM ARCHT MILLS BLDG SF

SKETCH OF RESIDENCE
ON CLAY STREET
SAML. NEWSOM ARCHITECT

loves to reign and be supreme. It was highly characteris- of Wolsey. We believe all really great men love architecture. A man who builds to himself a notable palace or house, and by his arrangements adequately shows forth and appropriates a fine estate, makes to himself at least a centre of the world, to which all things come or seem to come, and from which all thoughts radiate by enclosing apparently so much of the world's wilderness as he wants; all within his eye's reach is his real, and all without his imaginary domain. He creates the happiest delusion of space, regulates it by his own ideas, making it what he would have it and ornaments it to charm him. In a fair and noble mansion a man must, in some degree, feel himself a king, for his will has sway and room to move in. It has a tendency to elevate, to give him character, decision and that dignity which ever arises from repose within one's self; that need not be shoved and hustled from meditation and reflection by the too near proximity of ill-assorted things and persons. We look upon the taste for architecture as a national good. It is the means of raising families to a visible responsibility, giving them something to keep up and to hand down to others, greater than the littleness of uncultivated, unadorned republican man. The other arts require it, and all arts thus assisting each other, build up and constitute all that is beautiful in the world, visible and moral. How hard is it to give up anything we make and call our own. Now in nothing was Wolsey's superior greatness more shown than in the readiness of so large a sacrifice as Hampton Court. Had he pride, he had enthroned it here, but his pride was a part of him. Driven out forcibly from one palace, it had a sure refuge in himself. Nothing, no outward act of malice or tyranny, could rob the world's history of Wolsey. He knew it, and even in his fall was greatest. The noble fabric of Hampton Court was, however, readily resigned by Wolsey into the king's hands, who subsequently seized, too, his palace afterward called Whitehall. It is a curious fact, and one that marks a visible retribution upon things, names and persons, whereby a sort of moral history of the world is written by a divine hand and carried on in continuance by striking incidents; it is a curious fact that these two palaces of Wolsey, as they are monuments of the rapine of royalty, so they are of the humiliation of royalty.—*Tesseræ, in London Architect.*

THE PLACE OF RESEARCH IN EDUCATION.

ALTHOUGH the advice given below is from an Englishman's point of view in regard to education it is nevertheless applicable to our own schools.

From an interesting article entitled "The Place of Research in Education" published in the last report of the Smithsonian Institution we extract the following:

"There can be no question that the future of this country is very largely in the hands of its schoolmasters and schoolmistresses, and there are many among us who are convinced that our progress is much hindered by their failure to feel the pulse of the times—who think, indeed, that they do not suitably prepare the material which we subsequently are called on to mold into its final shape. We look to the new commission to recommend drastic changes which will enable us to utilize to the full the marvelous ability latent in the English race, and which will help parents in solving the truly terrible problem with which they are confronted in these days of unreasoning and unreasonable competition when the time comes to secure a career for their children. English boys and girls at the present day are the victims of excessive lesson learning, and are also falling a prey, in increasing numbers year by year, to the examination demand, which threatens to become by far the most ruthless monster the world has ever known either in fact or in fable. Ask any teacher who has to do with students fresh from school his opinion of them, he will say that in the great majority of cases they have little if any power of helping themselves, little desire to learn about things, little if any observing power, little desire to reason on what they see or are called on to witness; that they are destitute of the sense of accuracy and satisfied with any performance however slovenly; that, in short, they are neither inquisitive nor acquisitive, and as they too often are idle as well, the opportunities offered to them are blindly sacrificed. A considerable proportion undoubtedly are by nature mentally very feeble, but the larger number are by no means without ability, and are in fact victims of an acquired disease. We must find a remedy for this state of things or perish in the face of the terrific competition now setting in.

"Boys and girls at school must be taught from the very earliest moment to do and to appreciate. It is of no use our teaching them merely about things, however interesting—no facts must be taught without their use being taught simultaneously; and, as far as possible, they must be led to discover the facts for themselves. Instead of our placing condensed summaries in their hands, we must lead them to use works of reference and acquire the habit of finding out: they must always be at work applying their knowledge and solving problems. It is a libel on the human race to say, as many do, that children can not think and reason, and that they can only be taught facts; early childhood is the time at which these faculties are most apparent, and it is probably through failure to exercise them that they suffer atrophy. The so-called science introduced into a few schools in answer to the persistent demands of its advocates has been in most cases a shallow fraud, of no value whatever educationally. Boys see oxygen made and things burnt in it, which gives them much pleasure; but, after all, this is but the old lesson learning in an interesting shape, and has no superior educational effect. I would here repeat what I have recently urged elsewhere, that in the future all subjects must be taught scientifically at schools, in order to inculcate those habits of mind which are termed scientific habits; the teaching of scientific method—not the mere shibboleths of some branch of natural science—must be insisted on. No doubt some branch of chemistry with a due modicum of physics, etc., is the subject by means of which we may, in the first instance, best instill the scientific habits associated with experimental studies, but it must be true chemistry of the discoverer, not the cookery-book-receipt pseudoform which has so long usurped its place. Whatever be taught, let me repeat that mere repetition work and lesson learning must give place to a system of allowing children to do things themselves. Should we succeed in infusing the research spirit into our teaching generally, then there will be hope that, in the course of a generation or so, we shall cease to be the Philistines we are at the present time; the education given in our schools will be worthy of being named a 'liberal education,' which it never will be so long as we worship the Old World classical fetish, and allow our schools to be controlled by those who reverence this alone, having never been instructed in a wider faith."

COLOSSAL BRICK STRUCTURE.

VERY few know it, but it is a fact, says the Washington *Star*, that the Pension Office Building is the largest brick building in the world. It has been subjected to much criticism, but it can stand it, for as time passes along there are many things seen about it that escaped notice when it was newer. In all there are over 10,000,000 bricks in the building.

General Meigs took liberties with bricks that no other architect had ever attempted. He not only used bricks exclusively for the building, but he used them in constructing the stairs throughout the building. In the matter of stair building bricks have often been used for the riser, but the step has alway been of iron, wood, slate or stone. In the Pension Office both riser and step are of brick. As a brick building, therefore, pure and simple, it is unique in construction, outside of the fact that it is the largest exclusively brick building in the world.

BOOKS AND PERIODICALS.

Weeping Ferry by Margaret L. Woods, is the complete novel in LIPPINCOTTS' for September, a story that had better not have been written. The other articles are of interest. The complete novel for the October number which is promised to be ready September 22d, is entitled A Knight of Philadelphia by Joseph A. Altsheler author of The Sun of Saratoga.

Journal of the WESTERN SOCIETY OF ENGINEERS for August, contained a very interesting article entitled Deep and Difficult Bridge and Building Foundations, by Geo. E. Thomas, M. W. S. E. The illustrations are very good and caenot fail to interest engineer and others engaged in like work.

THE WOMBAT, is the singular name of a little magazine that comes to us from Australia, it is published by the Gordon Technical College and the Allied Associations. An article on Portland Cement by Richard Taylor in the July number of the magazine will be found in another part of our journal.

NOTES AND COMMENTS

ONE IS glad to hear that Mr. Ruskin is in good health, and that he takes daily walks in the neighborhood of Conington. The addresses he delivered some years ago at Oxford on landscape painting are at length to be printed. The reason given for their tardy publication is that Mr. Ruskin has not until recently been satisfied with the progress made in the art of photogravure, it being of course, necessary to have reproductions of those pictures to which he referred. The volume will contain eighteen large plates, including some reproductions from Turner.

CHARLES KNORR, a Chicago architect, killed himself so his creditors could get their pay out of his insurance policy. This is a most delightful system. It certainly equals the suttee custom of the natives of India—where the wives burned themselves on the funeral pyre of their husbands.

"One of the troubles of this period," said the ever-confident politician, "is that we have too much labor-saving machinery." "That's true," replied the ordinary citizen. "There are too many political bosses with schemes to save the people the trouble of thinking for themselves.—*Washington Star.*

FIGHTING FIRES IN TALL BUILDINGS.

AT THE recent convention of the fire chiefs, held in New Haven, Conn., the principal matter under consideration was fighting fires in tall buildings. The large number of these buildings erected of late years in our cities has made this a vital question in case of fire, and while but few of these buildings have actually been destroyed in this way, yet what has been done has shown the utter inadequacy of the departments to meet the demands made upon them in such cases. The general opinion expressed was that laws should be passed restricting the height of such buildings. Legislation against such structures was strongly advocated. It was also advocated that the insurance companies make concessions in favor of buildings of moderate height. No other branch of the city service appreciates more fully the danger from fire that goes with buildings of such immense height, and it was claimed that some day there will be a fatality in a sky-scraper that will appall the world. The part of wisdom is to prevent by law the erection of any structure beyond the number of stories that is consistent with safety and the capacity of fire apparatus.—*Architecture and Building.*

CORRESPONDENCE

The Editor is not responsible for any opinions of Correspondents.

To the Editor of the California Architect and Building News.

I had a few moments to spare while waiting for the San Rafael boat this morning and I strolled along in front of our new depot. I admired the beautiful proportions and the good construction, I thought what a credit it was to the architect, the late A. Page Brown, other works of whom I had often admired; I came to the main entrance and on a huge stone my eye caught some lettering which I found was a statement that the building was build by the present Board of Harbor Commissioners, a Mr. Holmes, engineer, and Mr. Swain the architect; the intention seems to be to ignore the real architect altogether. I do not think this ought to be allowed and I do not think it will be when the matter is understood. Yours truly,

SAMUEL NEWSOM, Architect.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

SUIT FOR QUANTUM MERUIT.—On a quantum meruit—for the amount of work done—on the erection of a building, the owner is entitled to an allowance for attorney's fees incurred in consequence of the failure of the contractor to defend a mechanic's lien filed against the building by a subcontractor.

Dempsey v. Schawacker, Mo., 38 Southwestern Rep. 954.

If a contractor seeks to recover on a quantum meruit, after being denied the opportunity to finish his contract, he must prove what work he did, its value, and that it was not paid for; he cannot throw on the one sued the burden of showing what he omitted under consract.

Wyckoff v. Taylor, 43 N. Y. Supp. Rep. 31.

EVIDENCE AS TO HEATING APPARATUS.—On an issue as to the sufficiency of a heating apparatus to properly warm a building, where it was claimed that its failure was due to the faulty construction of the building, evidence of the comparative results obtained from such plant and another subsequently placed in the same building is admissible.

Kramer v. Messner, Iowa, 69 Northwestern Reporter, 1142.

WHEN COTRACTOR IS NOT LIABLE FOR INFERIOR BRICK.—A building contractor's right to recover the contract price is not defeated by the fact that the bricks purchased by him, in good faith, and used in the building, were made of inferior clay; the defect not being discovered by careful inspection, nor until developed by exposure to the weather after the building was completed.

Wis. Red Pressed Brick Co. v. Hood, Minn., 60 Northwestern Rep. 1091.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,

SETH BABSON, Pres. W. P. MOORE, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday even ing of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

BUSINESS MOSAICS.

If we look backwards to the year 1828, it is surprising to see how little was required in the plumbing line to make homes comfortable. Now this was the year that the J. L. Mott Iron Works was established in the State of New York; ever since that time this firm has been striving to increase the good qualities of articles so essential to the health, comfort and happiness of our people until it appears impossible to make a further advance; still we never can predict certainly of the future, and know not what may be in store in the way of improvements. Nevertheless, those who may be about to fit up their dwellings for health and comfort would do well to call upon Mr. M. S. James who is the Pacific Coast representative of the above named company. A glance at his advertisement on page v of this journal will convince the most prejudiced that they cannot do better than call and see Mr. James at his office, room 27 in the Flood Building.

"Spicer must be fearfully superstitious—he never comes near his office on Friday." "Superstitious nothing! That's the day he tells the collectors to call."—*Chicago Journal.*

Roche Harbor Lime for sale by all the principal dealers, said to be the purest in the world—first-prize awarded at the World's Fair as well as from various other fairs from New Orleans to Washington. For particulars address Tacoma and Roche Harbor Lime Co., box 289 Builders' Exchange, 40 New Montgomery street, San Francisco, Cal.

She—I wonder who first said "It is better to be born luckg than rich?" He—Some old fool whose wife married him for his money, I guess.—*Cleveland Leader.*

The Rischmuller Door Opener and Closer is so well and favorably known that it is hardly worth while to call attention to its merits, nevertheless it may be well to give some of the advantages claimed for this contrivance. As there are two wires used, one for opening and the other for closing the door, it will be seen that the door is under full control. It is perfectly burglar prof as the wires do not run below the floor, and therefore the door cannot be opened from the basement.

A full seized working model can be seen at 320 Nineteenth street, orders should be left with Geo. Rischmuller, at that address.

She—Mr. d'Auber is wedded to his art. He—Well, there's nothing mercenary about the union.—*Life.*

It looks as if before this century is out that the swearful wobbling door knob, which rattles when touched will be a thing of the past—for now come the Patent Screwless Door Knob which is as firm as the rock of Gibralter—immovable and unrattleable.

As well as being a Godsend to the householder and tenant, it is also to the carpenter who will now be saved that niggling handling of small screws which tries his patience; it is labor saving and money saving which says it is in line with modern progress.

Does away with washers and screws and can be adjusted at once to any thickness of doors, fits all locks, and can be removed almost instantaneoesly by any one. It is worthy of all attention.

"Me an' Billy don't have to study 'bout Alasky this year." "Why not?" "Pap's done wore th' map o't our gogafy."—*Free Press.*

Joseph Budde, the manufacturer of sanitary appliances in the plumbing line can be found at his old stand 575 Mission street—architects and others are cordially invited to call at his sample room. He claims that home industry is encouraged when employment is given to this establishment every dollar remains at home.

Mr. Budde is successor to Wm. Smith late of 21 Montgomers street, also of W. B. Rustemeyer & Co., known as the Pacific Water Closet Works, 126 Main street. His motto "First-class work, low price and two years guarantee of all my work!" should make him popular with his customers.

He—What strain is that? She—(playing on the mandolin)—That was no strain; only an ordinary effort.—*Examiner.*

The color effect in Cabot's Creosote Shingle Stains has been very ingeniously illustrated in a colored chart preparod by Samuel Cabot of Boston, Mass. This might be called a movable chart as by turning the leaf the same building is shown in different colors. This chart, like all the work turned out of Mr. Cabot's establishment, is first-class. Nothing could be more convincing of the merits of Cabot's Shingle Stain as the division of the plates allows sixteen separate and distinct combinations to be seen—enough to give a very clear idea of the blending of the various colors.

Subscribe for California Architect and Building News—$3.00 Per Year.

The Pacific Refining and Roofing Co., 113 New Montgomery street, San Francisco, advertise on page vii of this journal, W. P. Shingle Stains and also W. & P. Creosote Paints. The stain is in soft and pleasing tints, of the highest grades of materials, specially adopted to use on redwood, is a Pacific Coast product.

The Creosote Paints are an excellent wood prevervative, for use on surfaces new or old. A first class wood and shingle covering in soft shades resembling state.

Minnie—Nellie is a regular genius. She put her frizzes up in tin foil off champagne corks. Madge—And way off champagne corks? Minnie—Because it makes 'em tight.—*Judge.*

Joseph Dixon Crucible Co., Jersey City, N. J., are always having something new on hand, the latest novelty is Brazing Graphite. Not a little of the expense in brazing is due to the cost of removing the brass which has stuck to the metal where it is not wanted, The removal of this brass is usually attained only by patience and diligent filing. Now comes to the aid of the brazier that unique mineral, graphite, which is not affected by acids, alkalies, heat or cold. Braziers who have made use of Dixon's Pure Flour of Graphite pronounce it worth its weight in gold. A sample will be sent without charge by the Joseph Dixon Crucible Co., Jersey City, New Jersey, who are the only manufacturers.

Sierra Lumber Company corner of Fourth and Channel streets, manufacturers of and dealers in doors, windows, and blinds, also sugar pine, yellow pine, spruce and fir lumber to order.

She—I know that I am not good-looking, but people forget my face when I sing. He—Won't you sing now?—*Fliegende Blatter.*

Dunham, Carrigan & Hayden Co., 17 and 19 Beale street, San Francisco. In their advertisement on page ix of this journal is shown an illustration of their American Sliding Door Hanger for which they claim unusual advantages—great saving of time and expense, and superior excellence in operation. It is trackless, no wheels and also no noise, what more can be wanted of a door hanger? This firm are dealers in the Yale & Towne Manfg. Co's. Celebrated Yale Locks.

"Johnie, I hope you are not beginning to swear?" "Oh, no, not till I am as big as papa!"—*This Wittie World.*

Samson Cordage Works, Boston, Mass.—manufacture Samson Spot Cord, it can be told at a glance and is warranted free from waste and imperfections of braid. Send for samples, 115 Congress street, Boston, Mass.

CITY BUILDING NEWS.

Ashbury near Fredrick. Cottage; owner, T. Wollweber; architects, Kenitzer & Barth; contractor, C. Schutt; signed, Aug. 18; filed, Aug. 19; cost $4880.

Brazil Ave. and Lisbon. Cottage; owner, Mrs. C. Murphy; architect, Thos. McKee; contractor, D. R. Perry; signed, Aug. 28; filed, Aug. 30; cost $1237.

Broderick near Sacramento. Two-story frame; owner, T. G. Cockrill; contractor, E. W. Hyde; signed, Aug. 11; filed, Aug. 13; cost $2700.

Buchanan near Broadway. Two-story frame; owner, Chas. H. Huffman; architects, Percy & Hamilton; contractors, Thomas H. Day & Son; signed, Aug. 13; filed, Aug. 14; cost $4650.

Buchanan and McAllister; Excavation, brick work; owner, Mrs. Louis Junker; architect, C. Haupt; contractors, Gray Bros; signed, Sept. 8; filed, Sept. 8; cost $1596.

Brighton near Holloway. To build; owner, Employee of the branch jail; builders, McCarty Co; cost $3000.

Capp near 24th. Two-story frame; owner, Sarah A. Lawson; architect, F. B. Wood; contractor, Allan De Lair; signed, Aug. 12; filed, Aug. 13; cost $3395.

Capp and 19th. Two-story frame; owner, C. F. Wm. Fahrenkrug; architect, E. J. Vogel; contractor, I. W. Coburn; signed, Sept. 8; filed, Sept. 8; cost $3276.

Chelsea Place near Busn. Three-story frame; owner, Babette Federlein; architect, C. A. Meussdorffer; signed, Aug. 17; filed, Aug. 18; cost $3400.

Church and Clipper. Cottage; owners, Jas. Linden and wife; contractor, John Kenally; signed, Sept. 7; filed, Sept. 13; cost $1060.

Clay and Pierce. Excavation, brick and iron work; owner, Caroline Wingerter; architect, A. C. Lutgens; contractor, Fred Wagner; signed, Aug. 30; filed, Sept. 2; cost $1500.

Clay and Pierce. Carpenter work for two-story frame; owner, Caroline Wingerter; architect, A. C. Lutgens; contractor, J. B. Cogswell; signed, Aug. 30; filed, Sept. 3; cost $4800.

Clayton near Hayes. Two-story frame; owner, Mrs. Wilhelmine English; architects, Hill & Bowers; contractor, F. W. Kern; signed, Aug. 11; filed, Aug. 14; cost $3850.

Clement near 7th Ave. Cottage; owner, R. E. Donohue; contractors, Marcuse & Remmel; signed, July 28; filed, Aug. 31; cost $1400.

Clementina street No. 525. Alterations; owner, Mary Menihan; architect, A. J. Barnett; contractor, Chas. Alsup; cost $1000.

Devisadero near Washington. To build; owner, Frank Kayser; architect, C. M. Rousseau; contractor, W. R. Kenny; signed, Aug. 25; filed, Aug. 27; cost $2800.

Diamond near Sussex. To build; owner, Mrs. F. Smith; contractor, D. Ross; signed, Aug. 18; filed, Aug. 19; cost $1540.

El Dorado and Rhode Island. Office building, bins, etc; owner, Sanitary Reduction Works; architect, Chas. Thackery; contractor, Maccono & Rosso; signed, Aug. 12; filed, Aug. 13; cost $4722.

Ellis near Mason. Brick work, etc., for six-story brick; owner, L. H. Sly; contractor, Thomas Butler; signed, Aug. 28; filed, Sept. 1; cost $9965.

Eighteenth near Castro. Two-story frame; owner, W. C. Johnson; contractor, W. B. Helbing; signed, Aug. 31; filed, Sept. 1; cost $3050.

Eugenia near San Jose Road. One-story frame; owner, Wm. Henly; contractor, C. M. Lee; signed, Sept. 7; filed, Sept. 8; cost $1195.

Fell near Masonic Ave. Two-story frame; owner, B. F. Hawes; contractor, C. Zwierlein; signed, Aug. 21; filed, Aug. 25; cost $4500.

Foerster, Lakeview. Cottage; owner, W. B. Peel; builders, McCarthy Co; cost $1200.

Fredrick near Cole. Two-story frame; owner, Susan Jaenicke; architect, C. F. Robertson; contractor, T. T. Pottinger; signed, Set. 8; filed, Sept. 8; cost $3254.

Golden Gate Ave. near Baker. Cottage; owner, S. G. Seovern; architect, John McHenry; contractor, Thos. Kinread; signed, Aug. 16; filed, Aug. 23; cost $1500.

Golden Gate Ave. near Buchanan. Alterations and additions; owner, Samuel Rainey; contractor, P. Rive; signed, Sept. 10; filed, Sept. 11; cost $1375.

Grove near Fillmore. Plumbing, etc; owner, John L. Koster; architects, Martin & Coffey; contractor, W. F. Wilson; signed, Aug. 27; filed, Aug. 30; cost $1477.

Green near Polk. Cottage; owner, I. H. Goldmeyer; contractor, Geo. M. Salsbury; signed, Aug. 18; filed, Aug. 21; cost $1650.

Guerrero and 26th. Two-story frame; owner, D. J. Shine; architect, C. M. Rousseau; contractors, Thayer & Hughes; signed, Aug. 17; filed, Aug. 19; cost $3673.

Haight near Scott. Two-story frame; owner, G. F. Hanekamp; architect, J. E. Kraft; contractor, J. Wuelfken; signed, Aug. 18; filed, Aug. 21; cost $3240.

Howard near 25th. Alterations; owner, Geo. L. Payne; architect, N. Blaisdel; contractor, Geo. Harris; signed, Aug; 12; filed, Aug. 16; cost $8075.

Jackson near Centeral Ave. Two-story frame; owners, Frieda Stauf and C. C. Dohrmann; architect, N. Blaisdell; contractor, C. Krecker; signed, Sept. 11; filed, Sept. 11; cost $6840.

Jones near Lombard. Three-story frame; owners, Caroline E. G. Jacques and Thomas G. Jacques; contractors, A. W. Pattiani & Co.; signed, Aug. 14; filed, Aug. 16; cost $4639.

Jones near Chestnut. Two-story frame; owner, Peter H. Fleming; contractor, N. G. Chadwick; signed, Aug. 30; filed, Aug. 30; cost $3500.

Jones near Greenwich. Three-story frame; owner, Conrad J. Bill; contractor, H. T. Grieb; signed, Sept. 8; filed, Sept. 8; cost $3530.

Juniper near Folsom. Two-story frame; owner, Mrs. Mary J. Anic; architect, F. P. Rabin; contractors, W. Horstmeyer & Co; signed, Aug. 28; filed, Aug. 28; cost $1200.

Laguna near Washington. Grading, brick work, etc; owner, Dr. A. Barkan; architects, Plasis & Moore; contractor, F. W. Kerr; signed, Sept. 1; filed, Sep. 2; cost, $13,240.

Lakeview (Ingleside). Cottage; owner, Chas. Zissig; contractors, McCarthy & Co.; day's work; cost $3000.

Lee Ave., Lakeview. Cottage; owner, G. G. Unsworth; builder, McCarthy Co; cost $2000.

Lyon near Golden Gate Ave. One-story frame; owner, J. P. Simmons; architect, M. G. Bugbee; contractor, W. Sorensen; signed, Aug. 18; filed, Aug. 19; cost $1200.

Lyon near McAllister. One-story frame; owner, Janet Sutherland; contractor, T. A. Born; signed, Aug. 25; filed, Aug. 27; cost $1618.

Liberty near Castro. Cottage; owner, Jacob Bauer; contractor, W. W. Redhall; signed, Aug. 31; filed, Aug. 31; cost $1830.

Market near Kearny. Alterations; owners, S. N. Woods & Co; architect, M. J. Lyon; contractors, Campbell & Petus; signed, Aug. 14; filed, Aug. 17; cost $2700.

Maple and California. Steam power, etc; owner, Hospital for children, etc; architect A. C. Schweinfurth; contractor, J. G. Grannis; signed, Aug. 23; filed, Sept. 13; cost $3585.

Mission and Precita. Two-story frame; owner, John Collins; contractor, E. N. Jones and J. A. Cotter; signed, Aug. 26; filed, Aug. 27; cost $2550.

Mission and Second. Excavations, bulkhead, etc; owner, Wells, Fargo & Co; architects, Percy & Hamilton; contractors, Buckman Contracting Co; signed, Aug. 27; filed, Aug. 27; cost $1700.

Mission near 2d. Concrete work, etc, for four-story brick; owner, Robert Dalziel; architect, J. W. Mathews; contractor, Geo. Goodman; signed, July 28; filed, July 31; cost $5570. Brickwork, etc; contractor, R. W. Beattie; signed, July 28; filed, Aug. 31; cost $3169. Cast iron work; contractor, Judson M'f'g. Co; signed, Aug. 19; filed, Aug. 31; cost $4700. Carpenter work; contractors, Bignami & Masow; signed, July 17; filed, Aug. 21; cost $5183.

Ninth near Bryant. Two-story frame; owner, Wm. Garms; architects, Salfield & Kohlberg; contractor, H. Munster; signed, Sept. 8; filed, Sept. 8; cost $3270.

Oak and Devisadero. Moving a building; owner, Mrs. S. Mish; architects, McDougall Bros; contractor, John H. McKay; filed, Aug. 12; cost $1700.

Pacific Ave and Buchanan. Painting; owner, Albert Meyer; architects, Salfield & Kohlberg; contractors, J. St. Denis Co; signed, Aug. 7; filed, Sept. 13; cost $10197.

Plymouth near Patton. One-story frame; owner, Martin T. Cooney; contractor, Cornelius March Lee; signed, Aug. 10; filed, Aug. 20; cost $1280.

Post near Lyon. Two-story frame; owner, John Mahoney; contractor, J. T. McInnes; signed, Aug. 28; filed, Aug. 30; cost $2650.

Richmond Ave, block 8 lot 26. Cottage; owner, W. A. Hicks; contractor, McCarthy Co; cost $1000.

Sansome and Pine. Alterations and additions; owner, Royal Insurance Co; architects, Percy & Hamilton; contractors, A. J. Forbes & Son; signed, Sept. 3; filed, Sept. 3; cost $1644.

Sanchez near 17. Dwelling and stable; owner, Martin Nolan; architects, Townsend & Wyneken; signed, Aug. 17; filed, Aug. 18; cost $2055.

Seventh and Mission. Fence around Post-office block; owner, U. S. Government; contractor, J. A. Smilie; cost $1445.

Seventh Ave, near M street. To build; owner, Patrick Hallinan; architect, M. J. Welsh; contractor, J. B. Quinn; signed, Aug. 21; filed, Aug. 21; cost $2650.

Stevenson near 4th. Steel and iron work; owner, Claus Spreckels; architects, Reid Bros; contractor, Pacific Rolling Mills; signed, July 14; filed, Aug. 20; cost $6421. Brick work; contractors, Peacock & Butcher; signed, Aug. 2; filed, Aug. 20; cost $5515.

Stockton and Geary. Grading, concrete, etc; for 6-story brick; owner, Union Trust Co; architects, Pissis & Moore; contractors, Cushing-Wetmore Co; signed, Sept. 1; filed, Sept. 4; cost $2300.

St. Mary's Ave, near Mission. To build; owner, Rev. Peter D. Brady; architects, Shea & Shea; contractors, Barrett & Leahy; signed, Aug. 28; filed, Aug. 31; cost $5505.

Sutter near Kearny. Alterations and additions; owner, A. W. Rose; architects, Percy & Hamilton; contractor, B. F. Ellis; signed, Aug. 21; filed, Aug. 23; cost $1532.

Tenth Ave, near Clement. Cottage; owner, George Hensel; architect, A. J Barnett; cost $1500, day's work.

Third and Market. Marble and slate work; owner, Phoebe A. Hearst; architect, A. Schweinfurth; contractor, Vermont Marble Co; signed, Aug. 27; filed, Sept. 3; cost $9989. Plastering, cementing, etc; contractor, J. R. Tobin; signed, Aug. 31; filed, Sept; 3; cost $13,200. Metal stair case work; contractor, Western Iron Works; cost $3885.

Third Ave. near Lake. Cottage; owner, E. D. Feil; architect, H. D. Munson; contractor, W. R. Kenny; signed, Aug. 13; filed, Aug. 14; cost $1545.

Third near Market. Alterations and additions; owner, Hyman Bros; architect, Percy & Hamilton; contractor, B. F. Ellis; signed, Aug. 13; filed, Aug; 13; cost $4321.

Turk near Mason. Carpentry, etc; for 3-story brick; owner, Geo. G. Burnett; architect, James E. Wolfe; contractor, John Furness; signed, Aug. 5; filed, Aug. 13; cost $4558.

Turk and Taylor. Wood mantels, etc; owner, A. W. Wilson; architects, Shea & Shea; contractors, Lowrey & Daly; signed, Aug. 17; cost about $8000.

Twenty-third and Valencia. To build; owners, Carrie L. Dick and W. M. Cowie, trustees; architects, McDougall Bros; contractor, D. Currie; signed, Aug. 19; filed, Aug. 20; cost $2734.

Twenty-third near Noe. Cottage; owner, E. A. Knowles; contractor, Wm. Plant; signed, Aug. 21; filed, Aug. 27; cost $1900.

Twenty-fourth near Castro. Alterations and additions; owner, Catherine Sullivan; architects, Shea & Shea; contractor, Allen De Lair; signed, Aug. 10; filed, Aug. 12; cost $2000.

Twenty-seventh near Church. To build; owner, James Murphy; architect, M. J. Welsh; contractor, V. G. Goodin; signed, July 19; filed, Aug. 25; cost $1155.

Union near Devisadero. To build; owner, John Martinon; architect, N. Blaisdal; contractors, Campbell & Pettus; signed, August 24; filed, August 26; cost $2725.

Union and Marion Place. Alterations and additions; owner Catherine Hatfield; contractor, L. C. Berger; signed, Sept. 3; filed, Sept. 8; cost $1156.

Valley street near San Jose Ave. To build; owner, Daniel Carmody; architect, M. J. Welsh; contractor, R. Fahy; signed, Aug. 30; filed, Sept. 1; cost $2522.

Van Ness Ave, near Green. To build; owner, Jennie Schonwasser; architect, M. J. Lyon; contractors, Hannah Bros; signed, Aug. 14; filed, Aug. 19; cost $4718.

Vermont near Yolo. To build; owner Mr. Balz; contractor, Casper Zwierlein; cost $1700.

Washington and Baker. Excavation and brick work; owner, Clinton Henry Ball; architects, Laver & Mullaney; contractor, H. H. Larsen; signed, Aug. 26; filed, Aug. 27; cost $1380.

Washington and Baker. Carpentry work; owner, Clinton Henry Ball; architect, Laver & Mullany; contractors, R. Weeks and Son; signed, Aug. 26; filed, Aug. 28; cost $8085. Plumbing and gas fitting; contractor, W. F. Wilson; signed, Aug. 25; filed, Aug. 28; cost $1320.

Yerba Buena near Clay. Two-story frame; owner, Daniel Carmody; architect, M. J. Welsh; contractor, Ed. Mooney; signed, Aug. 30; filed, Aug. 31; cost $2450.

PALO ALTO.

Palo Alto. Cottage; owner, M. D. Hall; architects, Cuthbertson & Williams, contractors, Powell & Dean; signed, Aug. 18; cost $1325.

The California Architect and Building News.

OFFICE, 408 CALIFORNIA STREET, SAN FRANCISCO, CAL., U. S. A

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OUR WORTHY Mayor of San Francisco, with the laudable purpose of securing for the government of this city a suitable organic law, appointed some weeks ago a committee of one hundred citizens representing all shades of political opinion, and requested that they prepare or formulate a new charter on progressive lines, in the hopes that a non-partisan board of free-holders could be elected to officially submit the same to the voters of the metropolis, for their acceptance. This committee has been steadily at work on the task, and has outlined a charter which they hope would be approved by the voters and give a better and more economical government for this city than is possible under the existing antiquated and complicated hodge-podge of special enactments that have from time to time during the last thirty or forty years been enacted by the legislature for the government of San Francisco. The committee has proposed many features that are in line with modern ideas of Municipal government, among others the acquisition and control by the city of public utilities. This naturally would arouse the active opposition of the corporations that profit annually to the tune of millions of dollars by conducting these utilities, and there are signs that they have already begun to lay wires to defeat the charter that will be proposed by the committee of one hundred. Bear in mind that the present committee is unofficial, and that the charter as submitted to the voters must be (at least nominally) prepared by the duly elected freeholders chosen for that purpose. It is the intention of the committee to present to the electors a board of free-holders pledged to the support of the instrument now being formulated. Should this plan be allowed to mature without opposition, there is little doubt that the charter would be ratified by the electors, as the need of a proper and definite governing authority is becoming more and more imperative. But this is dealing with the question

and leaving the corporations and politicians out. The politicians and corporations do no wish to be left out however, and it is dollars to doughnuts that they will make themselves felt. Suppose the regular political machines combine forces and nominate a set of free-holders conjointly; they would certainly have a fighting chance to elect their men in opposition to the candidates proposed by the committee of one hundred, and the result would be that the charter submitted by them to the people for the adoption would be no more like the committee's charter than chalk is like cheese. The developments in the game during the next month will be full of interest to all public spirited citizens.

WITH THE death of one woman and the awful experience of many others, the recent terrible explosion and fire at the California Fuse Company's works, has demonstrated very strongly the necessity of Legislation prohibiting completely the use of any kind of light or fire in any building used for the manufacturing or storing of combustibles and explosives. This fire started from an electric lamp, conclusively corroborating what has been said before. There are plenty of hours during the position of the Sun above the horizon for any employe to work, and any building for the purposes stated above can be planned and built so that the Sun's light penetrates to all corners and places. The only explanation that work has to be done by artificial light or that buildings are built so as to need the same during the daytime, must be therefore the infernal greed for pelf which seems to possess almost all humans, and which should be made a criminal offense when endangering others.

WITHOUT arrest and without trial by judge or jury, twenty workingmen were shot to death the other day by order of the Courts of this country for disobedience to a Court decree. But they were poor men, ignorant of the implicit obedience that all good citizens render to the voice of the constituted anthorities. Thus does the MAJESTY OF THE LAW compel the respect of cringing foreigners. By the way! Some years ago the proper authorities of San Francisco ordered several miles of unused railroad track on Bush street to be torn up: the Courts decided that the order was a lawful order and must be obeyed. Yet the rails still rust peacefully on Bush street and none of the recalcitrant directors of the corporation have as yet been shot. It is high time that San Francisco awoke from her slumbers and took a lesson from the more progressive Eastern States, as to the most effective methods of compelling respect and obedience to the mandates of the Courts. It is really disgraceful that this city should be so much behind the times, and we sincerely trust our sheriff will at once take the necessary steps to secure the number of rifles and gattling guns that may be necessary to place us on an equality with our sister cities, that our citizens may hold their heads erect, proud in the consciousness that San Francisco is no longer a jay town.

IT AFFORDS us considerable satisfaction that verdicts have been given by Juries in at least two recent cases in San Francisco, in favor of architects as against clients. The decision in these cases indicates that in the opinion of the Jury the client desired and tried to effect the robbery of the architect he employed. The opinion of a large class of the building public that an architect is a safe man to mulct is still very rife, and we hope the eminently just decision of the jury in the two cases referred to will serve to make people think twice before attempting to get something for nothing; another name for robbery.

In the first case Laver & Mullany *vs.* Hotaling—the defendant had used the time, labor and talent of the plaintiff in obtaining means by which he could judge of his ability in getting an income out of certain property and offered some petty sum for the experience and advice offered him. When the defendant goes to a physician or lawyer for advice he expects to be called upon to pay a good fee for it, but the plaintiff being only an architect with no organization to back him, he was considered safe prey—the jury luckily thought otherwise.

In the last case that of Deprosse & Meusdorffer *vs.* The Eagle Distilleries the attempt at thievery was just as palpable. The defendant had made working drawings and partly superintended the building, when they were dismissed and payment for their services refused. The Jury evidently could find nothing in the evidence showing why they should not be paid the value of their services and decided accordingly.

We would advise architects in the future to have jury trials, as a body of twelve ordinary men are not swayed by legal quibbles and technicalities as we generally find to be the case when a matter is tried by a judge, as some architects have found to their cost, but look at the honest rights of a case, and when they see an attempt at squirming out of paying for things clients order, give verdicts accordingly.

If the architects had a protective association like all other businesses, giving mutual help and protection against the unconscionable conduct of those who sneak around to get their labor and brains for nothing—such things would not be so ready to attempt it.

PROSPECTUS FOR THE PHEBE HEARST ARCHITECTURAL PLAN OF THE UNIVERSITY OF CALIFORNIA, BERKELEY, CAL.

THE UNIVERSITY OF CALIFORNIA has undertaken an enterprise which it is hoped to make one of the most notable in the history of architecture; and in this hope it asks, through the wise and loving kindness of Mrs. Phebe A. Hearst, the co-operation of the architects and artists of every land and clime, in the preparation of a plan for an ideal home of education.

The purpose is to secure a plan to which all the buildings

that may be needed by the University in its future shall conform. All the buildings that have been constructed up to the present time are to be ignored, and the grounds grounds are to be treated as a blank space, to be filled with a single beautiful and harmonious picture as a painter fills his canvas.

The University of California was founded under an Act of the Congress of the United States, passed in 1862. It received a large land-grant and subsidies, and still receives, in addition, a yearly income from the United States. The Charter of the University was granted to it by the State of California, in 1868, and a part of its income is derived from a tax of two cents on each $100 of the taxable wealth of the State, which income is, of course, constantly increasing in amount.

It will thus be seen that the University has both a National and State character. Its present resources are valued at about nine million dollars and, in addition to the revenue derived from part of such resources, it has a yearly income of about $40,000 from the United States, and of about $250,000 from the State tax. The University has trebled its number of students in six years. It has 777 in 1891: it has 2300 now, and it will probably have 5000 after ten years, which is the number of students for whom the architectural plan should be calculated.

The site of the University of California, at Berkeley, California, comprises two hundred and forty-five (245) acres of land, rising at first in a gentle and then in a bolder slope from a height of about two hundred feet above the sea level to one of over nine hundred feet. It thus covers a range of more than seven hundred feet in altitude, while back of it the chain of hills continues to rise a thousand feet higher.

It has a superb outlook over the Bay and City of San Francisco, over the neighboring plains and mountains, and the ocean. It is the desire of those who have charge of this enterprise, to treat the grounds and buildings together, landscape gardening and architecture forming one composition, which will never need to be structurally changed in all the future history of the University. It is thought that the advantages of the site, whose bold slope will enable the entire mass of buildings to be taken in at a single *coup d' oeil*, will permit the production of an effect unique in the world, and that the architect who can seize the opportunity it offers, will immortalize himself.

It is seldom in any age that an artist has had a chance to express his thought so freely, on so large a scale, and with such entire exemption from the influence of discordant surroundings. Here there will be at least twenty-eight buildings, all mutually related and, at the same time, entirely cut off from anything that could mar the effect of the picture. In fact, it is a city that is to be created,—a City of Learning,—in which there is to be no sordid or inharmonious feature. There are to be no definite limitations of cost, materials, or style. All is to be left to the unfettered discretion of the designer. He is asked to record his conception of an ideal home for a University, assuming time and resources to be unlimited. He is to plan for centuries to come. There will doubtless be developments of science in the future that will impose new duties on the University, and require alterations in the detailed arrangement of its buildings, but it is believed to be possible to secure a comprehensive plan so in harmony with the universal principles of architectural art, that there will be no more necessity of remodeling its broad outlines a thousand years hence, than there would be of remodeling the Parthenon, had it come down to us complete and uninjured.

In the great works of antiquity, the designer came first, and it was the business of the financier to find the money to carry out his plans. In the new building scheme of the University of California, it is the intention to restore the artist and the art idea to their old pre-eminence. The architect will simply design, others must provide the cost.

About five million dollars have already been pledged for a beginning, and such a general desire to contribute has been manifested, that it is thought that all the funds required will be forthcoming as fast as the work can be carried on.

Mrs. Phebe A. Hearst, widow of the late United States Senator George Hearst, and a lady well know for her philanthropy and public spirit, and her interest in and taste for all things artistic, has provided ample funds for securing the architectural plan. For this purpose she has appointed a Board of Trustees consisting of the Governor of the State, James H. Budd, representing the State; one of the Regents of the University, J. B. Reinstein, representing the Board of Regents, and one of the Professors of the Faculty, William Carey Jones, representing the University.

While the method of obtaining the architectural plan has not been decided on in detail, it is thought that it will be done by an international *concours*, open to all the architects of the world, with an international jury of five members, who will have full charge of the *concours* and of the award of all the prizes. This *concours*, while partaking in some degree of the nature of the usual competition, will possess all the main features of an actual co-operation of the best architectural and artistic talent available for the purpose, as will be seen from the programme which has been prepared with that idea as a controlling one.

There will be two competitions, and ample prizes will be provided. Maps, casts and photographs of the gronnd will be placed at various accessible points in Europe and America, for the convenience of architects desiring to enter the *concours*, and the programme thereof, prepared by Professor Guadet, of the School of Fine Arts of France, is now under consideration by the Trustees, and it is hoped to distribute the same within the next sixty days.

Copies of this programme, when issued, may be obtained by architects from the various architectural societies in America and Europe, or upon application to the Board of Trustees, at their office, 217 Sansome street, San Francisco, California.

The University of California is destined in no long time to be one of the great seats of learning of the world, and the architect who plans for it a home worthy of its future, and of what a famous authority has called "the most beautiful site on earth for the purposes of a University," will make his name imperishable.

San Francisco, California,
August 31, 1897.

J. B. REINSTEIN,
JAMES H. BUDD,
WM. CAREY JONES,
Trustees for the Phebe Hearst Architectural Plan of the University of California.

Subscribe for CALIFORNIA ARCHITECT AND BUILDING NEWS—$3.00 Per Year.

ALTERATIONS.

PERHAPS the most troublesome and vexatious of the duties of the architect is that of planning and supervising the alterations of old buildings and premises. We have heard many architects say that they would rather have to do with two new houses than to alter one. In the preparation of designs for a new building, the whole is plain sailing. The requirements understood, the plan and elevations made, the architect has to execute them. There is the site, free and unencumbered by any other buildings, there are no heights and levels to arrange; but, both in area and vertical dimension, there is an unrestricted field for the carrying out of the design which has been previously worked out to scale in plans and sections. The artist feels, too, that he has a *carte blanche* to do what he pleases; he has the instructions and a free scope for his talents without limit. Like the painter with a clear canvas, or the sculptor with a block of marble, he is master of the situation, and can use his own discretion in making the best of his opportunities.

There are two general kinds of architectural alterations. One is when the existing building or premises has to be altered internally or be remodeled; the other when a new portion has to be added, and the parts simply connected without any interference with the older part. More correctly, the latter is an addition. When a partition is erected to divide one into two rooms, or a passage has to be thrown into a room, a staircase altered, we have an alteration coming within the first class. A new wing to an old house, a bay window, a chancel or transept to an old church, or the erection of a spire, all come within the second class of alteration. We all know which of these two classes of work the architect would sooner have to deal with. Take a badly arranged or an old, dilapidated house: several internal alterations are necessary to be made to it: a plan and specification are prepared, and tenders are invited. The first difficulty of those who tender is to know exactly what has to be done. Men of little experience guess at the amount: those of long experience in alterations hesitate—they are careful to make a personal examination before committing themselves to price. Where to stop? How will this wall or that floor or roof bear cutting into or patching? What are the risks and contingencies to be incurred?—these are the sort of questions which arise in the mind of the cautious builder before signing a contract for alterations. A wide margin is the only safeguard, for every one conversant with building alterations knows the utter impossibility of discovering beforehand what a certain alteration will entail, or what lead to, by the time the work is finished. The record of specifications for this class of work and actual experience, as furnished by practical builders, will remove any doubt in the mind of those who think that alterations and building are to be regarded in the same light. Take, for example, an old floor. A partition below it has to be removed to make a room larger. The architect specifies for the shoring up of the floor and ceiling, and the insertion of a beam or rolled girder to carry the ends of joists of the old floor. Actual experience discovers that the plan is impracticable. The joists are found to be too decayed at the ends to be reused; or, what is more probable, the binding-joists are quite incapable of doing duty after they have been disturbed by the operations. Instead of a few new joists or a single girder, the work entails a new floor. Even greater risks attend the alteration or raising of an old roof. The timbers, which might have lasted for years if undisturbed, quickly crumble and the joints of the framing are found to be rotten. Old leadwork is the same; often it will not bear disturbance, such as would be the case in the raising of a flat. Between patching and thoroughly making good the difference is exceedingly great, and there is a strong temptation among small builders on this account to evade the terms of the specification. To remove the old timber or lead and to credit the value of the materials is no easy matter.

Allowance for old timber that may turn out to be rotten is almost impossible. Restorations or repairs are generally involved in contracts for alteration; and in these works credits make a considerable item in the bill. Thus, we constantly find in specifications for alteration the phrase "remove and credit" when the extent of removal may be uncertain, and the condition of materials still more so. In church restoration the difficulties are often great. Thus we find such an item as the following, "Remove roof of aisle, comprising two bays, and make good work disturbed." This may involve the removal of a few squares of boarding, roof-timbers, and lead. Unless the exact quantity of lead is stated the item is a very doubtful one. It is hardly necessary to urge the importance of giving the quantities of the old materials and their position in the building. With regard to such material as lead, it is better to measure the same as it is removed, the contractor stating in his tender how much per cwt. he will allow for it. Much difficulty, however, is avoided when the old materials are sold at the onset, which can only be done when the building is pulled down. But, whichever mode be adopted, there is an element of uncertainty and doubt in tendering for work of this description—one which can only be reduced by a careful and analytical examination of the building before the prices are affixed. As we occasionally find, there is a great difference in work of this kind under architects. One will enforce the terms of the specification, another will allow of a loose interpretation. Hence work executed from the same specification under one man's supervision may cost 50 per cent more or less than under another. For instance, what a divergence of opinion will be found among builders in such matters as cutting out to insert new windows, or in repairs to stonework. In the repair of an east window, which included cutting out decayed stones, inserting new, and the removal of saddle bars and glass, one tender was £10, and another nearly £30: but instances may be multiplied proving the various interpretations placed by builders upon items. Nor can such divergencies be materially lessened by the ordinary methods of practice; the good sense, moderation, and judgment of the architect, and the careful examination of the contractor, are the only means of diminishing the contingencies. In bills of quantities and specifications for alterations, more accurate results would be arrived at by a preamble describing clearly what was intended to be accomplished, so that those who tender may understand the motives and objects of the architect and client, instead of being compeled to grope in the dark, and to find out how best they can meet the liabilities that they will have to incur in the execution of the work. Instead of clearness, vague descriptions are given, and the aim appears rather to throw the interpretation upon the contractor.

But the architect's difficulties do not end with the specification. In the first place, he is tied to existing conditions. He is restricted to certain levels and to a certain style. Structural difficulties are also great, and then when he has done his best the work is unsatisfactory. It is only a compromise after all. Such in brief is the experience of those who have had much to do with alterations of old houses of inferior type. The desire to do what is best and right is constantly interrupted by some existing circumstances, so that very little can be done thoroughly. But the chief troubles commence when the work is begun. Unexpected things are discovered directly the old work is touched, and these often render a different method of procedure necessary. An order for extra work is generally the consequence, needing an incessant attention to details which have perhaps never been thought of before. Much of the trouble and anxiety which interfere with the architect's peace of mind arises from inaccuracies in the drawings, which sometimes are found to disagree with the old work. However careful the dimensions may have been taken, discrepancies will occur; and it may perhaps be worth while to remark that if in such cases architects in furnishing drawings were not to figure dimensions, such as heights, but to direct on the drawings that these are to be taken by the contractor from the actual building before commencing the work, a good d of risk and labor would be saved. We have known of s ta cases being made to agree with a section, which, turning out to be inaccurate in the levels as figured, have had to be altered. Sometimes an additional window has had to be added, much to the detriment of the staircase. But the increased labor and trouble entailed is not estimated by the employer.

It is seldom architects charge more than the customary percentage for alterations, which is miserably inadequate as a remuneration. The drawings may be few—and correct plans and elevations are the chief requirements—but a very full and complete specification is absolutely essential, requiring a close and accurate survey of every part of the structure. In short, the proper plan is to write the specification, or to make notes for it in the building itself, so that no point or detail may escape notice. Quantities for such work can be only accurately prepared from a personal inspection. The greatest task of all is the supervision of alterations. To meet contingencies and difficulties when they appear, and to be able to cope with them, is a trying ordeal for the young practitioner. So much depends upon discovery in the progress of pulling down or removal, that nothing less than a vigilant inspection and watchfulness on the part of the clerk of works or the architect will be of much good. To be forewarned is to be forearmed, and to be able to apply an alternative method to any problem is one of the tests of the resources of the architect. Yet a great deal of uncertainty as well as anxiety might be spared if architects and builders intrusted with alterations were to be permitted to make experimental examinations before plans or estimates were prepared. Superficial surveys, such as making plans, are quite inadequate to discover hidden construction or the actual condition of materials. These ought in all instances to be supplemented by examinations of those parts which are affected by the proposed alterations.—*The Building News.*

WHILE repairing the Heidelberg Castle ruins some workmen found a window group, the style revealed the fact that the castle was not begun in 1411 but about 200 years earlier

EGYPTIAN MONUMENTS.

UPON looking at the monuments of ancient Egypt anterior to the eighteenth dynasty we find two great groups belonging to distinct ages, which are in a certain measure connected, but certainly not linked together by other minor groups which can be proved to stand between them. The first of these groups is that of the pyramids of Gizeh and of the tombs surrounding them. These are unquestionably the oldest monuments of Egypt, and probably of the world. Their massive architecture, which wears an air of primæval antiquity, the similarity of their form to primitive structures in various part of the world, and the archaic style of the sculptures of the tombs, alike prove their remote age. The subjects of the sculptures also differ greatly from those of later Egyptian art. One of the most striking and remarkable distinctions is the absence of representations of divinities and funeral rites, which are constantly found in tombs of a later period. The manners and customs belong to a primitive age. Laboring men are usually represented naked, which is not usual in other monuments; the chief occupations are connected with agriculture and the tending of cattle, and there is no trace of an army. The language appears in a more primitive form, and the inscriptions, which are for the most part merely descriptive of the sculptures, are very difficult to read.—The secsnd important group of monuments bears the names of kings of Manetho's twelfth dynasty. They consist of a small temple, remains of other temples, tombs, obelisks and statues. The architecture is very different from that of the Pyramids, being less massive and more elegant. The sculptures, though still resembling in style those of an earlier date, exhibit a considerable advance. Separate statues have a better form and superior finish. The animals are admirably represented. There is still an absence of religious representations in the tombs, but divinities are portrayed upon other monuments. The subjects are of a less simple character than previously. The arts appear to have been more advanced, and life to have been more refined and luxurious. Soldiers are represented, and the laborers are usually clothed. The language is more developed, and perhaps may be considered to have reached its perfect state. Such is the impression which an intelligent observer would receive upon examining the monuments on the spot. He could have no doubt of the relative age of the two groups, but he would find no means of determining the period of time which intervened between them. He could see that no one in Egypt could possibly confound two such different epochs, and that therefore the priests would place, as a matter of course, the kings of the first group in an earlier dynasty than those of the second group. So far Manetho's account is confirmed by the monuments, but further than this we cannot venture to go before the eighteenth dynasty. Our real knowledge of the most ancient history of Egypt is almost entirely confined to the Pyramids and their builders.—*The Architect.*

TESSERÆ.

DETAIL IN PAINTING.

THE contempt expressed for paintings of fruit, flowers, and what is called still life, is, like most other general and unqualified expressions of the kind, unjust; for though it be true that an artist may be able to paint such things

well without possessing sdill in any of the higher branches of the art, the converse is not so, no artist having been able to paint great things well who could not also paint little things. In the grandest and most perfect production of the pencil, the *Peter Martyr* of Titian, all the trailing plants, spreading leaves and flowers which decorate the foreground are painted from nature, with all the accurate truth of a botanist, though with all the light, airy, playful brilliancy and harmony of effect of a great master. We are aware, indeed, that Sir Joshua Reynolds has hastily denied the fact, and the merit of it if it were so; but the picture, though injured, is still exisiing to attest it; and if significant and entertaining objects can be employed in such decorations, common sense proclaims them to be preferable to unmeaning blots and random flourishes, which, like all other ornaments

yin g nothing, have an offensive character of obtrusive affectation. Hence, so far from despising skilful and elegant imitations of such objects, all the great masters of the art have studiously practised and successfully employed them; and, in proportion to their general excellence in the whole, has been their particular excellence in these subordinate parts. The leaves, fruits and flowers of Titian and Rubens are far superior to those of any professed and exclusive painter of such subjects, and their vases, phials and implements to those of any other artist whatsoever. Even the patriarchs of the truly grand and severe style, the founders of the Roman and the Bolognese schools, found it expedient to pay no less attention to these matters of decoration as the fruit in a picture of Ludovico Caracci, in the Earl of Ashburnham's collection, and the writing-desk, inkstand, books and hour-glass in a portrait of Cardinal Ribbiena by Raphael, publicly exhibited some years in London, may sufficiently evince. Teniers might have envied the fidelity, delicacy and transparency with which the latter are finished. Neither did Salvator Rosa, the most bold, negligent and sketchy of the great painters, think it beneath him to attend to such matters, as appears by the admirable truth, force and brilliancy with which the weathered leaves, tattered volumes and bones of fishes and animals are finished in his picture of Democritus.

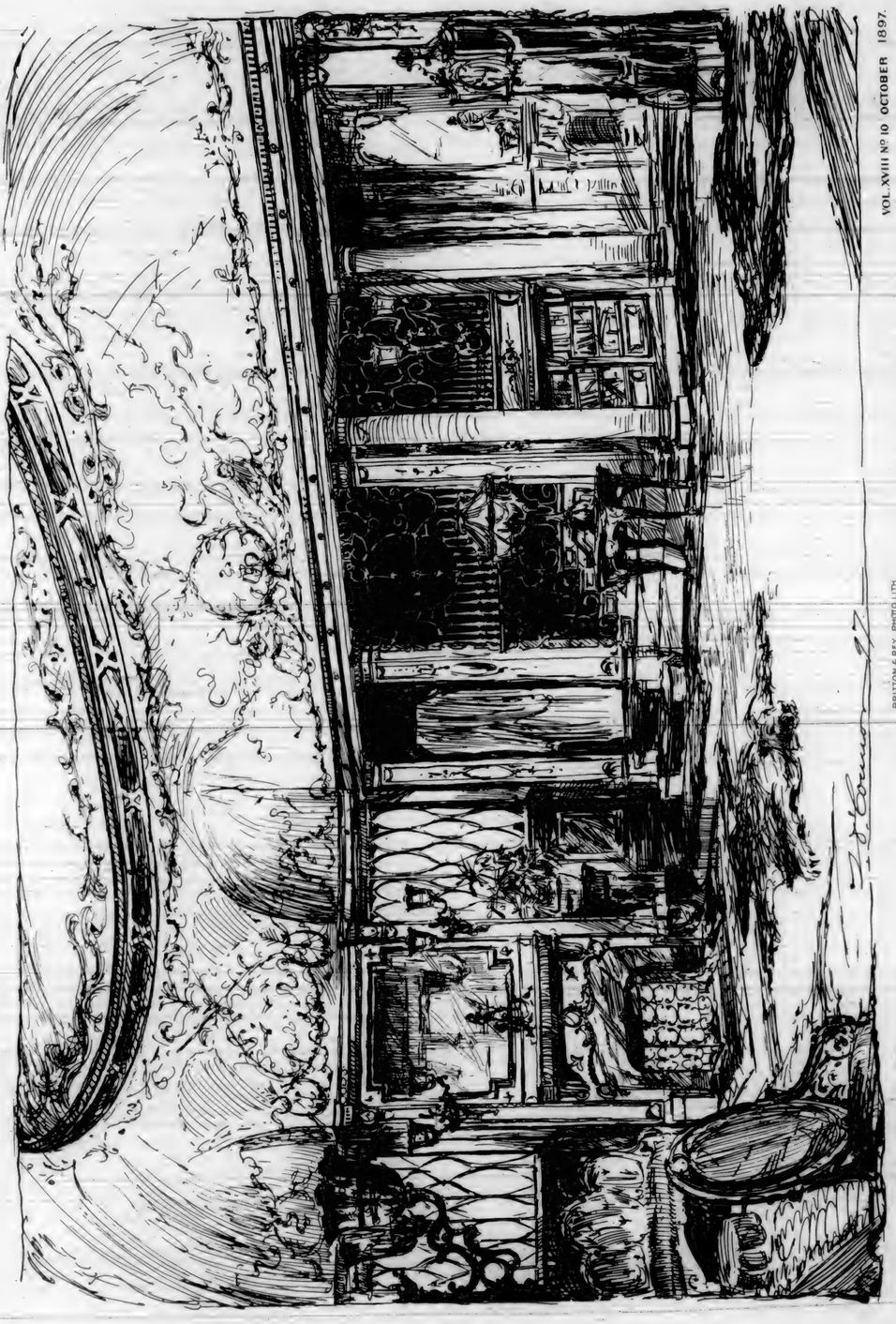
COLOR IN THE ARTS.

The thing in the sense of art called "color" is never absolute in itself, but derives its value, like the varying lots of human life, from comparison with what is next and around it. The same tint will be bright or dull, according to its environments. As a rull, no color in a fine work will be found so bright as it looks, and inversely, no color in bad or oadinary work will look so bright as it is. A tawny sail oh a gray sea and sky by Ruysdael will shine like a ruby, wnile all the reds, blues and yellows, indiscriminately shuffled together, as in some of the painted glass of the present day, will fail to produce the effect of brilliancy, and, indeed, each of them will destroy its neighbor. In this principle of interdependence in the scale of his palette the true painter becomes more and more conscious, his chief art being to work it out in practice. But no similar consciousness can be attributed to unreasoning races. Therefore, for such evidences of the prevalence of fine color as are found among them, a different operation of the same principle must be sought. In countries where there is much light we shall invariably find rich and harmonious coloring in the costumes of men and the trappings of animals. Much light bleaches the landscape, and for the greater part of the year, and, in some localities, for the year round, the eye rests only on an arid and neutral-colored world. This monotony renders all color, as such, both precious and nistinct. Nature sets the example by the brilliant plumage of her birds, and the hues of smaller creatures—a brilliancy never raw or crude; and nature derself gives the materials as well as the example for the same harmonies in the accessories of human life. Eastern races have for ages been aware that only the rich and true colors supplied by their native dyes—the madders, indigos, etc.,—and their combinations, will stand the hot and nazzling conditions of their climate. The use of these colors has therefore become such a mere habit that the reasons for their preference may be said to be forgotten. The selection of the fittest has been made for them by nature herself; it being reserved for the Englishwoman in India, who ignores this law, to discover with dismay the dirty mixture to which her fresh Parisian dress in the last tint of the fashion is promptly reduced. Even in their fadings the dyes of India and Arabia—aided by the quality of the native wools, which have an affinity for them—maintain their relative harmonies; and the painter will often prefer the worn rug or robe to the new one. Nor must we overlook another another reason for rickness and depth of tone, equally independent of the taste of man: namely, the use of color as an ingredient of distinctness. Seen from afar, across the neutral mass of the ocean, the brilliant hues of the ship's flag or pennon are no matter of mere taste or fancy, but of necessity. In the same way the robe and the turban of the traveler in the desert, and the housings of his horse or camel, have their allotted purpose. Thus it happens that the harmonious combinations of the Persian carpet or Indian shawl are hardly to be credited so much to the "feeling for color" of the native weaver as to the light and heat which render all false tints fugitive and which these combinations alone resist; the providence of nature having also bestowed materials in which he can hardly go amiss. Not that we would deny to the Eastern weaver, who in such countries offers the only approach to the position of a painter, the exercise of taste, and that sometimes of a high kind, the result of culture of the eye under long-continued traditional arrangements; but he moves and works, to a great extent, in a groove formed for centuries before him. To turn now to our own land, where, far from having the light and heat and consequent neutral monotony of landscape to which we have endeavored to trace the use of the rich coloring of the East, our native landscape presents, more or less, all the year round, a mass of that color most foreign to the Oriental eye and most grateful to our own, namely, that of a soft and refreshing verdure. We sigh not nothing better, nor for more harmonious correlative than the time-worn hues of stone or brick—the gray church tower and the old brick mansion—the neutral yellows and grays of the cornfield, whether in ear or stubble, and the ever-changing varieties of gray and luminous cloud, all of which receive a relative value from the surrounding green. Other forms of so-called "color," such as masses of sparkling mosaic, patches of enamel, painted architecture, even precious marbles, are not what the prevalent tones of English landscape and sky really relieve. The lady's Indian shawl is known to be the true and choice thing by a limited jury, but, in her heart, the lady's maid thinks it a dull afair to have cost so much. For we have not light, and therefore neutral tint enough to set it off. That under these differing and even unfavoring conditions English art, from the period of its revival, should have been pre-eminent in the quality of "color," may be

Residence of J. L. Koster

MARTENS & COFFEY, Architects.

BRITTON & REY. PHOTO.LITH.



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CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XVIII Nº 10 OCTOBER 1897.

CITY FLATS.
OLIVER EVERETT
ARCHITECT.

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FRONT ELEVATION.

said to be in some degree also the natural consequence of our external world. Dingy cities and gloomy skies engender the desire for mimic scenes of greater brightness. It is characteristic that modern Italian painters frequently choose those misty effects they seldom see—we have too much of them.—*The Architect.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SAN FRANCISCO RESIDENCE. Martens & Coffey, Architects.

SKETCH of Reception Hall in Residence, East Oakland.

CITY FLATS, Oliver Everett, Architect.

AN OLD SWITCHBACK RAILWAY.

THE switchback railway, which has become so popular of late years, is a very old invention, and was a favorite recreation of the Parisians in the beginning of this century. An entertainment garden on much the same lines as Cremorne was opened by a manager named Beaujon. It was situated in the suburbs of Paris, and cost its projector one million and a half of francs, for he had raised the ground till it formed a hill as high as the Vendome column, and on this he built his switchback. It was a peculiarly arranged edifice of two semi-circular flights, commencing at the entrance to the arena. From this point they rose, each with an undulating sweep, to the elevation of a hundred feet, and united under a turret, thus forming on each side a slope of seven hundred feet in length.

The wheels of the car ran in a double groove. The passengers entered it at the turret, and it was launched on the inclined rails, down which it swept till it reached the bottom. It was then drawn by peculiar mechanism up the straight track in the centre till, arrived at the turret once more, it had carried the voyager over a thousand feet in one minute. The turret was surmounted by a lighthouse, which had been made for the port of Toulon, but the enterprising Beaujon secured it as a decoy light to his beautiful garden. At first it was called "Beaujon's Folly," but the magnificence and elegance of the place ultimately earned for it an established success as the most luxurious and fashionable resort in Paris.

NOTES AND COMMENTS

AN ARCHITECT AND BUILDER who was very proud of his efforts in designing a house which he had just planned and built met a well known architect in front of the said house. The architect and builder could not resist the impulse to show the architect his creation—and asked him to step in and have a look round and tell him what he thought of his effort. This happened only just lately and the architect had nothing to do that morning so he obliged the architect and builder by viewing his house. "Well, what do you think of it, pretty good isn't it?" said the A & B—when they had got outside and were looking up at the jig sawed front. "Yes," said the architect, but it seems to me you have got too many rooms." "How can that be?" replied the A & B, "there is the parlor, dining room, kitchen and three bed rooms—I can't for the life of me see where any of these could be left out." "How about that large room for improvement?" said the architect, leaving the A & B scratching his head and trying to locate that room.

LONDON IS SOON to be the richer by another hospital, the members of the Architectural association finding yesterday on a visit to the New Grove Fever hospital of the Metropolitan Asylums Board, that the place was fast nearing completion. The hospital is intended for cases of scarlet fever, enteric fever, diphtheria, and general fever cases. It occupies a site of some 27 acres, and there are 36 blocks. There will be accommodation for 518 patients and 324 persons connected with the medical, administrative, domestics, and nursing staffs.

BASLE, SWITZERLAND, will celebrate the 400th anniversary of Hans Holbein's birth by an exhibition of his paintings and drawings, to which other Swiss museums will contribute what pictures of his they possess. Solothurn cannot send its Madonna, as the risk is too great. The exhibition will be opened early this month and will last through the winter. It will be preceded by an exhibition of the works of Arnold Boecklin, who is a native of Basle and this fall is seventy years of age.

BOOKS AND PERIODICALS.

AMERICAN TRADE is the title of a small paper which is published by the National Association of Manufacturers, at No. 1751 North Fourth street, Philadelphia, Pa. The first issue bears the date of October 1st, and it is announced that it will appear on the first and fifteenth of each month. The purposes of the paper are thus editorially explained in the first issue:

"The publication of a small newspaper has been undertaken by the National Association of Manufacturers of the United States in pursuance of recommendations made by the Executive Committee over a year ago. This little paper is started with no journalistic pretense and with no ambitions save the promotion of the interests of the Association, and, through this organization, the welfare of the industries of the United States. Its establishment is due, also, to the need for some frequent and convenient medium of communication between the members of the Association, who now number more than 1,000.

American Trade has been chosen as a title for this publication because these two words embrace all that comes within the scope of the work of the National Association of Manufacturers and all that the paper itself aims to promote. Whatever the manufacturers of the United States are striving to do in a business way—either individually or collectively in their various organizations—looks to a single end—the promotion of American trade. The enactment of better laws bearing upon American manufacturing interests, the betterment of conditions in the home market, the broader opening of foreign markets for American products, the negotiation of treaties of commercial reciprocity, the establishment of a federal Department of Commerce and Industry, the better protection of patent rights, the restoration of American shipping, and the numerous other branches of public work in which the manufacturers of the United States have an interest.

Journal of the WESTERN SOCIETY OF ENGINEERS August, 1897, gives the Papers, Descriptions, Abstracts and Proceedings of that Society.

Among other articles of interest to the engineer "Limestone Screenings in Cement Mortar" by Arthur N. Talbot, is fully explained and the result of his experiments is given in favor of its use.

"Internal Hydrostatic Pressure in Masonry" as related to the building of dams called forth some description of interest.

We are indebted to J. F. O. Comstock, Superintendent of the UNDERWRITERS' FIRE PATROL of San Francisco, Cal., for the Twenty-second Annual Report for the year ending December 31, 1896. Mr. Comstock recommends if it is possible in the near future that the Patrol Force be increased to twelve permanent and six auxiliary men, including officers.

The directors of the Fire Patrol state that as heretofore the San Francisco Fire Department and the "Patrol" are pulling together without the slightest impairment of friendly relations, the result be successful co-operation.

Annual Report of the Superintendent Physician of the CITY AND COUNTY HOSPITAL for the fiscal year ending June 30, 1897. Together with the report of the Steward and the estimate of expenses of the Hospital up to June 30, 1898.

This report shows what reckless dishonesty has been common among the contractors, as an illustration of this dishonesty Paul Edwards, Steward of the Hospital says it costs the present Administration $3,795.09 to repair the damage incident to the corrupt expenditure of the $10,923.27, that melted in the hands of the past one and for which there was nothing to show but gaping trenches, disconnected sewers, some kalsomining daubed on a few wards and a few dollars worth of carpenter work.

UNITED STATES DEPARTMENT OF AGRICULTURE, Circular No. 16, Division of Forestry, contains a very interesting article upon the "Age of Trees and of Blazing Determined by Annual Rings—full illustrations are given. The conclusion arrived at by B. E. Fernow, Chief of Division of Forestry is that the age of a tree can be ascertained within perhaps one year with proper equipments, time, and preparatory training. This is interesting as it has been frequently stated that the age of a tree could not be ascertained by the annual rings.

HOW TO BUILD A HOME—The house practical being suggestions as to safety from fire, safety to health, comfort, convenience, durability and economy: by Francis C. Moore. Published by Doubleday & McClure Co., New York. 1897. The price is $1.00.

This book deals thoroughly with the practical building of a house, going into the hundreds of details the amateur builder usually learns about through expensive experience. It contains specimen contracts, specifications and plans, and a study of it will save omissions and extras.

Many authorities among architects, builders and contractors have assisted by advice and suggestions in its preparation. An extract from the preface will give a good idea of the nature of the work:

"One builds a home, as a rule but once in a lifetime. Unless an architect or builder by profession, he is liable to make serious mistakes, and to overlook many things which would conduce to the comfort and safety of himself and family. Even if he be an architect and builder, he will do well not to rely entirely upon his own knowledge, but consult others. While he will be likely to escape oversights in proportion as he has had experience, especially if he has been systematic in preserving notes from time to time of discoveries and details for which the memory cannot be relied upon, it is safe for him to assume that some of his acquaintances, especially if experts, may know some things which he does not."

A good Index which adds so much to the value of any book will be found very complete.

THE RISK OF PREMATURE BURIAL.—The following resolution was unanimously passed at the meeting of the Executive committee of the London Association for the Prevention of Premature Burial:—"That taking into consideration the generally admitted unsatisfactory state of death certification at the present time in this country, it is imperative that the State should appoint special officers for the purpose of granting death certificates, as is the custom in Munich, Heidelberg, Stuttgart, and other places, and that no such certificate should be allowed to be issued until the reality of death has been established by careful examination of the body."

A STEEL FLOATING DOCK.

A STEEL floating dock said to be the largest of its kind in the world was recently launched at Wallsend, England. Its length is 450 feet, with a beam of 109 feet, giving a depth of pontoon to the deck of 11 feet, 9 inches. The dock consists of five pontoons and two walls, the former being connected to the walls by a movable joint. The pontoons, which form one immense dock, are of two types—the terminal or end connections, two in number terminating in points, whilst the inner three are rectangular structures. The lifting power of the dock is set down at 10,000 tons, vessels and ironclads of that weight being raised clear of the water in a remarkably brief space of time, whilst with the aid of two large steel caissons, one under each wall, the lifting power can be increased to upwards of 12,000 tons.

The pumping and other machinery is of the latest and most improved class. The pumps are driven by electric motors placed on the engin deck, and connected to the pumps by vertical shafting, the flyers being slung on improved steel ball bearings. Other motors are placed on the side of each wall. The dock throughout will be lit up with electricity, five large arc lamps being arranged on the inside of each of the dock for for the lighting of the well. Special attention has been given to the docking gear, the principal parts of which consist of two self-centering shears, two patent steam winches, rolling and spring tumblers. The bilge blocks, to the number of forty-six, are all made of steel and portable, being controlled by chains form the upper deck. The comfort of the men employed in the working of the dock when in use has been well provided for, a large steel house, tastefully fitted with teak furnishings, having been placed on each side of the upper deck, with direct connections between all the branches of mechanical work, a separate lever being attached to every pump.

This huge dock is to be towed across the Atlantic to Havana, it having been built for the Spanish Government. —*The Age of Steel.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,
SETH BABSON, Pres. H. A. SCHULTZ, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.
JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.
D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
OSCAR LEWIS, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
ADAM BECK, Pres. M. V. BRADY, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

LIABILITY FOR WORK OF INDEPENDENT CONTRACTOR.—Where persons who took the contract for tearing down a brick building, and constructing a new one, let the brickwork, including the tearing down of the old walls, to a subcontractor, the former were liable to a stranger for injuries caused by a hole in the sidewalk in front

of such building, made and left at night ungarded and unlighted by such subcontractor.

Baumeister v. Markham (Ky.) 39 S. W. Rep. 844.

Building Limit.—Where an ordinance prohibits the erection of buildings of combustible material within certain limits other than such as are provided for the ordinance, the removal of a building constructed of combustile materials from some other portion of the fire limits to another place within such limits is unlawful.

Eureka v. Wilson (Utah) 48 Pacific Rep. 150.

What is not Negligence of Roofer.—The owner of a building, or his contractors, while putting on a gravel roof, is not negligent in failing to clear the sidewalk every hour of gravels which fall on it.

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Credit for Payment to Laborers.—A lot owner who pays money due from the contractor to laborers who are seeking file liens on the property is entitled to credit therefor when sued for the contract price.

Kocher v. Mayberry (Tex.) 39 S. W. Rep. 604.

Contract Price Less Damages.—The measure of recovery is the contract price if the work was properly done, less the damages shown to have been sustained by the owner by reason of delay of contractor.

Orem v. Keeley, (Md.) 36 Atlantic Rep. 1030.

BUSINESS MOSAICS.

W. P. Fuller & Co., Pine and Front streets, San Francisco, are always prepared to furnish you with facts about paint. They claim that the best paint is made of white lead, zinc and linseed oil to make pefect paint these materials must be finely ground and thoroughly mixed with heavy machinery, Phœnix Pure Paint is made in that way which accounts for its good qualities.

But you can obtain facts about other things than paint at their establishment as they can tell you all about the new wall finish, or washable water color that petrifies on the wall and will not crack or chip off.

L. E. Clawson& Co., 1340 Market street, San Francisco, Clawson's Patent Hood or Throat and Arch-Bar Combined is well recommended to those that want the best in this line as it complies with the New Fire Ordinance. Every thing in the way of a safe chimney can be obtained at this establishment.

Biggs—That man Mixer reminds me of a horse. Diggt—In what respect? Biggs—You can lead him to drink but you can't make him take water.—*Chicago New.*

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An ounce of prevention you know is worth a pound of cure—see that your gutters are clear and coated with Paraffine Paint.

Snodgrass—The world has a place for everybody. Micawber—Yes; the only trouble is there's generally somebody else in it.—*Boston Traveller.*

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Old Gotrox—Am I, with all my millions, too old for you? Miss Mabel—Oh, no. That would be impossible. *Life.*

Sampson Spot Cord is what you want to use on your window sash, 115 Congress street, Boston, Mass., samples sent upon application warrented free from waste and imperfections of braid.

"Have you read 'The Choir Invisible?'" "No, what I want to learn about is 'The Choir Inaudible.'"—*Chicago Record.*

A. Zellerback & Sons.—The up-to-date paper house. In order to "ship when we promise" have put on two special delivery wagons. They are prepared to fill orders, big or little, the same day as received. For Fall announcements, opening cards and circulars, with full line of Bristols and Art Papers, including the Strathmore Deckle Edge.

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CITY BUILDING NEWS.

Arlington near Roanoke. Frame dwelling; owner, J. P. and Dora M. Sellmer; contractor, H. F. Conrady; signed, Sept. 16; filed, Sept. 16; cost $1375.

Broadway and Hyde. Two-story frame; owner, Michel Schabiagne; architect, J. Godart; contractor, J. B. Pene; filed, , ept. 20; cost $3900.

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Broderick near Bush. Two-story frame; owner, Frank E. Booth; architect, F. B. Wood; contractor, R. Fahy; signed, Sept. 29; filed, Sept. 29; cost $5725.

Buchanan and McAllister. Carpenter work, etc, for three-story frame; owner, Mrs. Louis Juncker; architect, O. Haupt; contractor, C. Schutl; signed, Oct. 6; filed, Oct. 7; cost $4386. Plumbing; contractor, W. F. Wilson; signed, Oct. 6; filed, Oct. 8; cost $870. Painting and varnishing; contractor, Hermann Thanwald; signed, Oct. 6; filed, Oct. 7; cost $455.

Buchanan near Waller. Alterations; owner, O. A. Giles; architect, W. H. Lillie; contractors, Petterson & Person; signed, Sept. 14; filed, Sept. 15; cost $1500.

Bush near Kearny. Alteration; owner, Builder's Assn. of California; contractors, Doyle & Son; signed, Sept. 16; filed, Sept. 16; cost $639.

California near Leidesdorff. Bronze work; owner, Baron Rothschild, et al; architects, Pissis & Moore; contractor, Cal. Artistic Metal Co; signed, Sept. 8; filed, Sept. 14; cost $2106. Office furniture; contractor, R. Herring; signed, Aug. 26; filed, Sept. 14; cost $1355.

Castro near 19th. Two three-story frames; owner, E. W. Bennett; architect, W. H. Lillie; contractors, Petterson & Person; signed, Sept. 30; filed, Oct. 1; cost $6840. Plumbing; contractor, G. C. Sweeney; signed, Sept. 3; filed, Oct. 1; cost $1143.

Church near 16th. Two-story frame; owner, R. Callanan; architect, F. P. R contractor, C; Roeber; signed, Sept. 16; filed, Sept. 16; cost $1578.

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Devisadero and Oak. Two-story frame; owner, Mrs. Sarah Mish; architects, McDougall Bros; contractor, A. Olson; signed, Sept. 25; filed, Sept. 27; cost $10,100. Plumbing, gas fitting, etc; contractor, H. Williamson; signed, Sept. 25; filed, Sept. 27; cost $1490.

Devisadero near Hayes. Two-story frame; owner, Sophia Frances Wasserman; architect, C. F. Robertson; contractor, T. T. Pottinger; signed, Oct. 8; filed, Oct. 11; cost $4150.

Eddy near Polk. Two three-story frame buildings; owner, Mrs. Helene Sylvester; architects, Martens & Coffey; contractor, Wm. Tegeler; signed, Sept. 14; filed, Sept. 15; cost $11,700. Plumbing; contractor, G. C. Sweeny; signed, Sept. 14; filed, Sept. 15; cost $2433.

Eddy near Polk. Painting, etc, for two three-story buildings; owner, Helene Sylvester; architects, Mertans & Coffey; contractor, J. S. Smith; signed, Sept. 23; filed, Oct. 9; cost $1185.

Eleventh near I. S. One-story frame; owner, P. J. Diez; architect, M. J. Welsh; contractor, J. B. Quinn; signed, Sept. 13; filed, Sept. 14; cost $1500.

Ellis near Leavenworth. Alterations and additions; owner, R. H. Lloyd; architects, Salfield & Kohlberg; contractor, J. Bucker; signed, Sept. 24; filed, Sept. 30; cost $1550.

Fell near Franklin. Two-story frame building, twelve flats; owner, Ann Whittell; architects, Townsend & Wyneken; contractors, W. T. Veitch & Bro; signed, Sept. 18; filed, Sept. 20; cost $16,873.

Fell near Franklin. Plumbing; owner, Ann Whittell; architects, Townsend & Wyneken; contractors, Veitch & Bro; signed, Sept. 30; filed, Oct. 6; cost $3428.

First near Natoma. Two-story brick; owner, A. Giess; architect, Oliver Everett; contractor, J. Miron; signed, Sept. 21; filed, Sept. 22; cost $6000.

Folsom street wharf. Sheds, etc; owners, Board of Harbor Commissioners; contractor, T. H. Day; cost $7116.

Flood Ave., Sunnyside. Cottage; owner, J. O. Fair; builders, McCarthy Co; cost $1300.

Fulton near Broderick. Alterations; owner, Moses Samuels; architect, C. M. Rousseau; contractors, Elder & McLaughlin; signed, Oct. 7; filed, Oct. 8; cost $3165.

Geary and Stockton. Metal vault fitting; owner, Spring Valley Water Works; architect, Clinton Day; contractor, C. B. Parcell; signed, Sept. 1; filed, Oct. 7; cost $1714.

Green near Polk. Additions; owner, Thos. Malloy; contractor, Geo. M. Salsbury; signed, Oct. 4; filed, Oct. 6; cost $520.

Hayes near Steiner. Two-story frame; owner, M. J. Conboy; contractors, Douglass & Co; signed, Sept. 28; filed, Oct. 4; cost $1785.

Jackson near Central Ave. Two-story frame; owners, Freda Stauf and C. C. Dohrmann; architect, N. Blaisdell; contractor, W. F. Wilson; signed, Sept. 15; filed, Sept. 24; cost $1127.

Jessie near Second. Additional story to brick building; owner, Sharon Estate; contractor, John Wiren; filed, Oct. 5; cost $4892.

Larkin street, No. 1801. Alterations and additions; owner, H. A. Steffens; contractor, Geo. M. Salsbury; signed, Sept. 18; filed, Sept. 21; cost $690.

Laguna and Olive Ave. Concrete work for six flats; owner, Leopold Kutner; architect, W. J. Cuthbertson; contractors, Staack & Grussel; signed, Oct. 20; cost $544.

Lombard near Gough. To build; owners, G. & C. Valente; contractors, Cavaglia & Cuneo; signed, Sept. 14; filed, Sept. 14; cost $2525.

Market and Third. Doors, etc, for elevator; owner, Mrs. P. A. Hearst; architect, A. C. Schweinfurth; contractor, Cal. Artistic Metal Co; signed, Sept. 13; filed, Sept. 14; cost $5614.

Market and Third. Installation of pneumatic tubes; owner, Mrs. Phoebe A. Hearst; architect, A. C. Schweinfurth; contractors, Bastedo Cash Currier Co; signed, Sept. 26; filed, Oct. 9; cost $2250.

McAllister near Scott. Two-story frame; owner, John J. Doyle; architect, J. W. Rowell; contractor, Ed. J. Lerna; signed, Sept. 21; filed, Sept. 22; cost $5534.

Mission near 24th. Additional story; owner, M. Curran; cost $1000.

Mission near 29th. Alterations and additions; owners, Sherman, Clay & Co; architect, Joseph R. McLean; contractor, John O. Dunn; signed, Sept. 20; filed, Sept. 28; cost $2675.

Page street, No. 410-412. Alterations and additions; owner, M. Getz; architect, G. H. Batchelder; contractors, Christopherson & Thompson; signed, Sept. 15; filed, Sept. 16; cost $795.

Page near Shrader. Two-story frame; owner, Jens. P. Nissum; architects, Copeland & Pierce; contractor, A. G. Johnson; signed, Sept. 17; filed, Sept. 20; cost $3000.

Pierce near Waller. Two-story frame; owner, Jas. R. McElroy; architect, W. H. Lillie; contractor, M. J. Savage; signed, Sept. 30; filed, Oct. 1; cost $2900.

Post near Broderick. Moving and alterations; owner, Jas. Coffey; architect, C. Anderson; signed, Sept. 28; filed, Sept. 28; cost $3700.

Potrero near Oak Ave. Cottage; owners, R. R. and R. F. Steraitsky; architect, H. Gellfuss; contractors, W. Horstmeyer & Co; signed, Sept. 23; filed, Sept. 24; cost $1990.

Presidio. Metal works; owner, U. S. of A; contractor, Rae Building Co; sub-contractor, T. J. Gullfoy; cost $1500.

Pt. Lobos Ave. and 7th Ave. Copyer work for Columbarium; owner, Odd Fellows Cemetery Assn; architects, Cahill & Condon; contractor, T. J. Gullfoy; signed, Sept. 17; cost $1476.

O'Farrell near Laguna. To build; owner, Moris Haas; architect, H. A. Schulze; contractor, F. A. Williams; signed, Sept. 16; filed, Sept. 20; cost $4898.

Second and Mission. Sidewalk, etc; owner, Wells, Fargo & Co; architects, architects, Percy & Hamilton; contractors, Cushing, Wetmore Co; signed, Oct. 4; filed, Oct. 4; cost $8689. Cast iron work; contractor, Joshua Hendy Machine Works; signed, Oct. 2; filed, Oct. 4; cost $15,620.

Seventh near Howard. Alterations and additions; owners, Delia F. Hayes et al; architects, Martens & Coffey; contractor, R. Trost; signed, Sept. 22; filed, Oct. 9; cost $5450. Plumbing, etc; contractor, G. C. Sweeney; signed, Sept. 23; filed, Oct. 9; cost $1472. Painting; contractor, G. Frieke; signed, Sept. 23; filed, Oct. 9; cost $550.

Shrader near Waller. To build; owner, John Brophy; contractor, Jas. P. Burke; signed, Sept. 25; filed, Oct. 2; cost $1450.

Sixth Ave. near A. To build; owner, J. C. Miller; architect, B. R. Van Deusen; contractor, T. B. Goodwin; signed, Sept. 16; filed, Sept. 16; cost $1650.

Stevenson near 3d. Construction of tunnel; owner, Claus Spreckels; architects, Reid Bros; contractors, Gray Bros; signed, Aug. 27; filed, Sept. 16; cost $3850. Carpentry work for three-story brick; contractor, R. Smille; signed, Aug. 23; filed, Sept. 16; cost $5647.

Sutter near Polk. Two additional stories to hospital; owner, Dr. W. F. McNutt; architect, Clinton Day. Carpentry work; contractor, Chris Chisholm; mason work, contractor, M. Miller; concrete work, contractor, C. Griese. Cost $20,000.

Sutter street, No. 508. Alterations and additions; owner, Walter B. Grosh; architect, Wm. Patton; contractors, Walker Bros; signed, Oct. 6; filed, Oct. 6; cost $4800.

Taylor near Washington. Three-story frame; owner, Wm. Hencke; architects, Martens & Coffey; contractor, Carl Schutt; signed, Sept. 25; filed, Sept. 28; cost $6250. Plumbing, etc; contractor, E. Kraw; signed, Sept. 25; filed, Sept. 28; cost $1185. Painting, etc; contractor, J. C. Derbaum; signed, Sept. 25; filed, Sept. 28; cost $650.

Tenth street and Harrison. Furnishing red rock; owner, S. F. and San Mateo Ry. Co; contractor, A. C. Buckman; signed, Sept. 18; filed, Sept. 16; cost thirty-three and one-ninth cents per cubic yard.

Third street and Market. Electric wire system, etc; owner, Mrs. P. A. Hearst; architect, C. Schweinfurth; contractors, Wybro & Lawrence Co; signed, Sept. 15; filed, Sept. 16; cost $18,900.

Third Ave. near California. Two-story frame; owners, H. J. Wright and wife; contractors, C. A. Doss and C. Schley; signed, Sept. 16; filed, Sept. 17; cost $2728.

Thirteenth Ave. near Clement. Cottage; owners, Philip Hilberer and A. J. Troll; contractor, Ed. Ginley; signed, Oct. 4; filed, Oct. 6; cost $1500.

Turk and Taylor. Concrete and cement work; owner, A. Wilson; architects, Shea & Shea; contractor, H. M. Peterson; signed, July 20; filed, Sept. 28; cost $1241.

Twenty-first near York. Cottage; owner, J. E. Heilmann; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, Oct. 2; filed, Oct. 4; cost $1350.

Twenty-second and Noe. Additions to two-story frame building; owner, W. F. Ayres; contractor, Will Grant; signed, Oct. 8; filed, Oct. 11; cost $945.

Twenty-ninth near Fair Oaks. Cottage; owner, Henry J. Kerner; contractor, Hans Peterson; signed, Sept. 16; filed, Sept. 17; cost $2000.

Union near Webster. Two-story frame, owner, George Brin; architect, A. C. Moussdorffer; contractors, Caccia & Pecarich; signed, Sept. 16; filed, Sept. 17; cost $3000.

Van Ness Ave. and Olive Ave. Alterations and additions; owner, T. Frownenfeldt trustee; architects, Salfield & Kohlberg; contractor, Val Franz; signed, Oct. 4; filed, Oct. 7; cost $12,840.

Washington and Scott. Carpenter work; owner, Michael Mullany; architects, Laver & Mullany; contractors, McLeod & Banghman; signed, Oct. 4; filed, Oct. 8; cost $4678.

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

A SPECIAL Election will be held in the City and County of San Francisco on the twenty-seventh of December for the election of a Board of fifteen freeholders who will be charged with the duty of framing a New Charter for the future government of the City and County, which will go into effect after ratification by the voters of the City and approval by the legislature of the State. Probably little interest will be taken by the average voter in this election, though as principles and not men are concerned, it is really of more vital importance than the usual run of general elections. The Republican and Democratic parties are so sure of their following that they do not even take the trouble to outline the general principles of government that will be advocated by their candidates. The Populist party has made the following statement of principles:

"The People's party is, by organization and principle, opposed to centralization of power in the hands of a Mayor. City Charters granting such power have in practice proved the source of bossism and corruption in its worst forms in the City of New York and in other Cities which have such Charters.

"We favor good sanitary conditions, improved sewers, streets and public places, and such Charter provisions as will enable the people to secure public utilities.

"We favor localiself-government by a Charter wherein the powers shall be so blended between representation and direct legislation that it shall be truly a government of, by and for the people. We favor also maintaining the control of the people over the affairs of the City."

The Socialist Labor Party has adopted a platform containing the following demands:

I. The board of Supervisors to be a large body, to whom shall be given full executive powers. They shall be

elected according to the principle of Proportional Representation from the city at large.

II. The veto power of the Mayor to be abolished, and direct veto by the people (sometimes called the Referendum) be substituted therefor.

III. The people to have the right to initiate legislation by petition.

IV. The acquisition by the municipality at the earliest possible date, of all public utilities now carried on under franchises; the employees to operate the same co-operatively under control of the municipal administration, and to elect their own superior officers, but no employee shall be discharged for political reasons.

V. The board of supervisors to be prohibited from extending any existing franchise or granting any new franchise without the approval of the people, expressed at a general or special election.

VI. The profits arising from the conduct of public utilities by the municipality to be used for the following purposes:

First—The establishing of a fund for pensioning sick, aged, or disabled employees and other citizens.

Second—The enlarging and extension of the service as required by the growth of the city.

Third—The increase of the compensation of the employees.

VII. The abolition of the contract system on public works, and the substitution therefor of the direct employment of labor by the municipality. Eight hours to constitute the maximum day's labor, and two dollars per day the minimum pay.

VIII. The establishment of public halls and public parks, where public meetings may be held without expense to the participants.

IX. The abolition of the license tax on any business, industry, or occupation.

X. School book, as a necessary part of the educational system, free, and free meals to be furnished all school children. Clothing to be furnished free upon application.

Besides the candidates of the regular political parties, the Charter Convention of one hundred, an unofficial body appointed by Mayor Phelan, will have a set of candidates who will support the general policy outlined in the work of the Convention now being carried on. As the Convention has not yet completed its labors it is too soon to comment on its work. Civil service in the administration of the Municipality will be insisted on as of great importance.

REPORT ON THE CLASSES IN ARCHITECTURE.

CONDUCTED UNDER THE AUSPICES OF THE SAN FRANCISCO CHAPTER OF THE AMERICAN INSTITUTE OF ARCHITECTS.

To the Members of the San Francisco Chapter A. I. A.

GENTLEMEN:—Having been requested by the President to make a statement as to the origin, progress and present condition of the classes in architecture, now connected with the Hopkins' Institute of Art and usually designated in our proceedings, the Chapter Classes—I beg to make the following report:

In the year 1870–71, shortly after the establishment of the San Francisco Chapter of the A. I. A. in connection with the parent society, in accordance with a suggestion made in the inaugural address of Mr. John Wright, President on that occassion, measures were taken to establish a school of architecture in connection with the Chapter for the benefit of the articled pupils, draughtsmen and assistants, of the members thereof.

The first regular class as formed were in free hand drawing and practical architecture, modelling and mathematics; the students meeting in the afternoon of Saturday and during week evenings in the offices or studios of some of the teachers, volunteers as teachers for the above departments having been found. Wood carving was also to be included in the list of studies but was never really carried into effect. Ultimately modelling and mathematics were dropped, and finally the classes in practical architecture were also abandoned—the free hand drawing along surviving. Much good work was done, however, under all the different departments and it seemed to be purely adventitious causes which led to their cessation—mostly on account of the irregular nature of the efforts made and the want of proper rooms for the use of the school.

Ultimately however a strong movement arose amongst the draughtsmen in the several architects' offices in the City, having the Chapter Class for a nucleus. The practical architecture was reviewed—and for a time the movement seemed to promise success. A sketch club was formed and several competitions were arranged and much fine work resulted amongst the higher class draughtsmen in the City. The Chapter appointed committees of award—and several money prizes, books, and on one occasion medals of bronze and silver were dispensed to the successful students. On many occasions the walls of the Chapter room blossomed forth in lines, tints and touches of great beauty and fine execution. The association however of the high class draughtsmen of experience with the articled pupils of little or none failed to produce the efforts looked for. The former finally separated themselves from the students taking with them some of the most competent of the latter class—forming an organization of their own—and the Chapter Classes soon resumed their former status and practice which seemed to better meet their needs and aspirations.

During the year 1893—Mr. Alfred Colin, graduate of the Ecole Polytechnique of the Department of the Marine, France, offered his services to the class as teacher of free hand drawing, which were accepted and much good work was accomplished under his directions.

About this time, however, owing to the donation of the Hopkins' house to the University of California, for the use of the San Francisco Art Association—an arrangement was affected with the latter whereby, at a reduced rate, the students were admitted to the privileges of the associations together with the use of appartmenis in the mansion—and thereby became a subordinate part of the Mark Hopkins' Institute of Art, (and practically an affiliated branch of the Art Department of the University) securing at the same time the services of Mr. W. B. Mabeck, an instructor in department, who was made Director of the school.

As to the classes in particular, in connection with the above result, and actually leading to it; in the early part of 1895, a strong movement was inaugurated by one or two energetic students of the school, amongst the pupils and draughtsmen of the various city offices, this eventuated in several meetings at the Hopkins' house, one of which was addressed by several of the professors of the University, and others, and finally resulted in the election of a Committee of Directors and the establishment of classes as above mentioned under the direction of Mr. Maybeck, who became instructor in practical architecture and design.

In this class the pupils are exercised in the study of elemental forms and proportions, being led to determine for themselves the possibilities of each subject of design assigned for consideration. The progress of the class under this system has been eminently successful, much good work has been accomplished, and the students become to a large extent their own and each others critics.

The class in construction was undertaken by Mr. Percy (of the firm of Percy & Hamilton), who lectures the class on the nature and use of Materials in Building Construction once a month—supplemented by the weekly technical instruction of Mr. Dutton, of the School of Technology, Boston, one of his able assistants.

The class in history under the writer of this report, finds with satisfaction that it has been following unwittingly the general course or method adopted by Professor Ware of Columbia College—viz: a system of progressive studies of the development of architecture from prehistoric times to the present day. The students make their own investigations from such works as they find in libraries or private collections—in fields mapped out by the teacher, supplemented by drawings and lectures when necessary; and finally summing up the whole in essays accompanied by text illustrations and drawings of their own. Essays on prehistoric architecture, Egyphian, Babylonian and Assyrian architecture have been received so far some of them of much general excellence.

These essays are examined by the Committee of Directors, and awards of merits tabulated, and the results returned with the essays to the pupils.

The class originally numbered about thirty members, but now consists of about a dozen pupils who seem to be really serious in mastering the many intricacies of their adopted calling.

Respectfully submitted,

George Sanders.

[The Directors hope, that while continuing the present class in more advanced studies, to commence the new year with a freshmen's class in all departments—together with such new developments as may seem practicable, with the limited time and means of study, which, under the circumstances, are found to be available.

Intending pupils are hereby notified that applications will be received at the San Francisco Art Association—where further information is obtainable.—Ed.]

The Slate Output of the Country in 1896 aggregated $2,746,205 in value, according to a special geological survey report submitted to the Secretary of the Interior. This is an increase of $47,505 over the previous year. Of the total, all but $482,457 was roofing slate. The value of products by states was: Pennsylvania, $1,726,318; Vermont, $609,506; Maine, $124, 086; Virginia, $107,883; New York, $82,492; Maryland, $72,142; Georgia, $20,388; Tennessee, $1,420; Massachusetts, $1,200; New Jersey, $700.

THE LEGAL STATUS OF THE PENNSYLVANIA CAPITOL COMPETITION.

THE PLAINTIFFS' CASE.

By the Court—The averments of the bill are substantially as follows:

That defendants are members of a commission appointed as provided by the act of April 14th, 1897 (P. L. 19), entitled: An act to provide for the erection of a new Capitol building for the use of the General Assembly, and to secure plans for said building and such other buildings to be erected in the future as may be necessary for executive and departmental purposes, and making an appropriation therefor." That pursuant to the powers and authority vested in them by this act, said Commissioners devised a method for the selection of an architect by competition and specially invited plaintiffs, who are architects, to take part in this competition; and that plaintiffs accepted the invitation. That the Commissioners published a programme, stating the terms of the competition, one of which provided for the selection of a board of experts to pass upon the merits of plans submitted, and that such experts were selected.

That by article 15, part two of the programme, it was provided that the Board of Experts should select from among the designs submitted to them, which should not have violated any of the requirements of the competition, those eight which in the judgement of the board were best, and should give to each a rank in accordance with its merits. That by article 20 of part two of the programme, the Commissioners undertook and agreed, after examination of the designs so presented by the Board of Experts and due consideration of their report and recommendations, to select one of the eight designs most satisfactory in their opinion, and upon ascertainment, in the manner provided for in article 21 of part two of the programme, of the name of the designer of the plan thus chosen as the most satisfactory, to award to such author the prize of the competition by designating and appointing him as the architect of the legislative building on the terms stated in the programme governing such appointment.

That they further undertook and agreed to award a first and second medal to the authors of the designs which should be placed respectively second and third in the competition.

That plaintiffs, at great labor and expense, prepared drawings, designs and specifications which conformed in all respects to the conditions and requirements of the programme, and duly delivered them to the secretary of the Commission.

That the Board of Experts selected the eight designs which in their judgment were best, assigning to each one its respective rank of merit, and presented these eight designs to the Commissioners, with a report of the proceedings of the board conforming in all respects to the requirements of the programme.

That thereupon it became the duty of the Commissioners under the provisions of the programme, after examination of the designs so presented and due consideration of the report and recommendations of the Board of Experts, to select the one of the said designs, in their opinion the most satisfactory, and to designate it as the first choice; and thereupon to identify the author of this design in the manner provided for in the programme, and to award to him the prize of the competition by designating and appointing him the architect of the legislative building. And that it was their further

duty, under the procedure provided for in the programme, to award the first and second medals to the authors of the designs which were respectively second and third in the competition.

That the commissioners have refused to carry out the procedure of the programme and to select an architect from among the authors of the eight designs which the Board of Experts reported to them and have notified plaintiffs that they have cancelled and annulled the provision of said programme.

The bill further alleges that the plaintiffs will sustain great and irreparable injury by this action of the Commissioners, that they have no adequate remedy at law for the injury thus done them and prays the Court to restrain the defendants from selecting an architect in any manner save that provided in the programme, and to decree them to specifically perform the provisions thereof for the selection of an architect, and to select as architect the author of one of the eight designs reported to them by the Board of Experts under the provisions of the programme, with a prayer for further relief.

THE DEFENDANTS' CONDITION.

To this bill defendants (all except Daniel H. Hastings) have demurred, assigning as grounds of demurrer that the court has no jurisdiction; that plaintiffs have no such interest in the subject matter as will entitle them to relief; and that the commission provided for by the act of April 14, 1897, is a deliberative body invested with discretionary powers in respect to the selection of an architect and the adoption of plans, and that the matters complained of in the bill are wholly within the discretionary powers of the Commissioners and a bill will not lie either to review or control the exercise of their discretion.

HISTORY OF THE CASE.

At the hearing on October 2, 1897, before the argument began, the counsel for the respective parties agreed "that the argument of this case upon demurrer shall go upon the understanding that: in the determination of the demurrer, the court shall be entitled to consider the report of the Board of Experts to the commission, and the resolutions passed by the commission under said report; and that a supplemental circular of invitation, dated the 10th of June, 1897, was mailed by the commission to all competing architects, although the complainants have no recollection of ever having received such report."

Looking at these documents thus brought on the record, we find that on July 31, the Board of Experts reported to the commission that they had given to the 30 designs submitted to them the most careful consideration and study, and had selected the eight designs, from among the 30, which in their judgment were the best, grading them from first to eighth, according to their respective merits: discussing these eight designs somewhat in detail; especially commending three and stating that "these three designs, numbers 21, 12 and 18, as already stated, seem to us the only ones worthy of your serious consideration. None of the remaining ones possesses the some order of ability in their authors."

That on September 9, 1897, the Commissioners met, and after consideration of the report of the Board of Experts, adopted certain preambles and resolutions, among which was the following:

"*Whereas*, The said Board of Experts have presented eight designs, which they report cannot be constructed without modification for the amount of the appropriation, thus disregarding the mandatory provision for the programme limiting cost, and none of which are for this reason, as also for reasons relating to light, air and other matters, satisfactory to the Commissioners: Now, therefore, after due consideration, the Commissioners do disapprove of the action of the Board of Experts in excluding from the competition the two designs referred to in their report and in not examining said designs, as also all designs submitted to them, and making report as to the relative merits of the same; and do also, for the reasons stated in the foregoing preamble, decline to approve the report submitted by said board." The Commissioners further resolved and directed that after the names of the several authors of designs submitted by the several architects had been ascertained, their secretary should "return the several designs to their respectiue authors," with the information (inter alia) that "none of said designs have been prepared in accordance with the mandatory provision of the programme limiting cost," and all of the designs were accordingly returned to their respective authors.

Dissatisfied with this action of the Commission, plaintiffs subsequently filed the bill now before us, to which, for the reasons already stated, defendants demurred.

DUTIES OF THE COMMISSIONERS AS PRESENTED IN THE ACT.

Upon the authority vested in, and the duties imposed upon the Commissioners must be ascertained from an examination of the act of April 14, 1897, above referred to. After declaring who shall be members of the Commission, the act provides that they "are hereby authorized and instructed to proceed with the least possible delay to procure the construction of a new Capitol building upon or near the site of the old Capitol building in the City of Harrisburg, of such size and form as may in their judgment be adapted to the present and future use of the General Assembly, its officers, committees and employees." It further enacts that "the said Commissioners shall, with the least possible delay, advise with and employ an architect or architects and adopt plans for the construction of said building, and such other buildings to be erected in the future as may be necessary for executive and departmental purposes," and that "the said Commissioners shall not, in the erection and construction of said new Capitol building, including the architect's services, contract for any expenditure in access of the sum of $550,000."

It thus appears that certain of the provisions of the act are mandatory upon the Commissioners. Thus the site of the building is expressly designated, and the style of architecture and the limit of price are prescribed. Other matters are left to the discretion and judgment of the Commission, such as the size and form of the building and its adaptability to the present and future use of the General Assembly, its officers, committees and employees; the employment of an architect or architects, and the adoption of plans for the construction of the building.

AS TO DELEGATING DISCRETION.

This act is the charter of the rights and duties of the Commissioners; and as it is a public act, not only they, but all persons dealing with them, are bound by its terms. Whatever it commands them to do they are bound to do; whatever it forbids, they cannot do; and whatever judgment and discretion is committed to them must be exercised by them alone, and cannot be committed to any other board or person.

The law on this subject is thus stated in Lyon vs. Jerome, 26 Wend., at page 494: "In all cases of delegated authority, where the delegation indicates any personal trust or confidence reposed in the agent, and especially where such personal trust or confidence is implied by making the exercises and application of the powers subject to the judgment or discretion of the agent or attorney, the general rule is that these are purely personal authorities, incapable of being again delegated to another unless a special power of substitution be added. From an early period of our law this rule has been laid down as to powers given by will or deed to executors, trustees and attorneys to sell land, make leases, etc.; and modern decisions have extended the principle to the less formal appointments of factors, brokers and other lawful agents. How much more strongly, therefore, must the rule apply to the delegation of authority by the State to its high public officers made with the solemnity of a legislative act?"

REGARDING PROGRAMME OF COMPETITION.

The provisions of the programme relied upon by plaintiffs must therefore be considered in the light of this principle. The programme is elaborate and voluminous, and after examining carefully its numerous parts and paragraphs, we are not surprised that a difference of opinion as to its purpose should have arisen between the Board of Experts and the majority of the Commissioners; and that this difference should be emphasized by the counsel on the opposite sides of this case. That this difference of opinion did exist as early as September 3 is apparent from the statement of one of the experts at the meeting of the Commissioners on that day, that "the whole purpose of the competition had been misunderstood; that it had been established solely with the view to the selection of an architect and not the selection of plans. It also appears from the tenor of the action of the Commissioners, which shows that they were looking for and passing upon the merits of plans with a view to obtain such as would, in the language of the act constituting the Commission, secure "a new Capitol building of such size and form as may in their judgment be adapted to the present and future use of the General Assembly, its officers, committees and employes." And as we have said, this difference of opinion was emphasized on the argument when counsel for plaintiffs contended that the competition was designed to secure the selection of an architect and not of a design or plan for the building; while the opposite counsel maintained that its purpose was to obtain a satisfactory plan, with the understanding that the author of the plan satisfactory to the Commission was to be employed to supervise its execution.

There certainly are paragraps and clauses in this elaborate programme which give color to each of these constructions. The programme is entitled: "Programme of a competition for the Selection of an Architect for the New Capitol Building to be Erected by the Commonwealth of Pennsylvania in Harrisburg." Paragraph five of part one states that "the object of the Commissioners in instituting this competition is to select and appoint an architect to design and supervise the new legislative building to be erected in Harrisburg, Pa." Paragraph seven of the same part that "the prize of this competition is the award of a commission to design and supervise the erection of said legislative building." These paragraphs and some others give plausibility to the argument that the design of the competition was the selection of an architect.

To be continued.

ILLUSTRATIONS.

ELEVATION of Proposed Club House for the San Francisco Yacht Club, Havens & Toepke, Architects.

THE DESIGN for stables and coach house at "Monte Robles" San Mateo County is the work of Architect Wm. F. Smith, and was erected for the late millionaire Col. C. F. Crocker who had the same love for fine horseflesh as the late Senator Stanford, whose breeding farm in the same county was celebrated the world over.

The foundations and walls of the building are of concrete, and show what can be done in this material to present a handsome attractive finish. The exterior walls present the appearance of rockfaced sandstone, laid in courses, while the inside is finished with a smooth surface, lined off, and forming the interior finish of the first story, and rendering the building virtually fire proof. The concrete work was done by Carl Griese whose address is 1318 Stanyan street, San Francisco. The carpenter work was done by a contractor residing at San Mateo, Mr. C. W. Wescott. For the plumbing and painting San Francisco men were employed. The former work was done by Mr. R. Rice of 107 Geary street, and nothing but standard open work plumbing was put in, every fixture having an independent cutt off to the sewer, as well as each stall, thus combining elegance and durability with fitness for service.

The painting was done by Mr. J. H. Keefe of 317 Sutter street, who is well known here for the excellence of the work done under his supervision. The exterior of the building was finished entirely with Cabot's stains, and the interior woodwork with shellac and varnish. There is no doubt that the completed building is one of the finest in the country for the purposes it is designed to fill, and reflects credit on both the designer and the mechanics whose ability and skill co-operated with the architect, to carry out his conception of how a perfect stable should be built and equipped.

TWO HOUSES for a large lot in the suburbs of San Francisco which can be built for twenty-eight hundred dollars each. The effort has been in the plan here presented to get the effect and convenience of an expensive house for a small amount of money by combining the two houses which will cost about $2800 each on a large lot and by omitting the usual fence between, a charming garden court can be had.

The arrangement of the rooms are such that plenty of sun can be had and porch space. The rooms are large and well arranged, the outside to be covered with iron lath and cemented. The main arch was to be of red brick, the roof of white cedar shingles. The cement work to be stained cream color and all sash to be white. All the rooms are bright and there are two fire places in each house of red brick, wide and open. The second story rooms have cove ceilings so as to fit the roof but are nine feet high and large and sunny. There is no waste room nor are the corners of the rooms cut

much by the roof as might be expected by the low eave lines, the space where such cut occurs being used as closet space or cupboards; the interior finish to be of Oregon pine or redwood. But novel and charming schemes for the rooms may be worked out with simple, cheap paper in quiet tones, burlaps, etc. The Oregon pine will take stains as good as as oak and some startling and pleasing effects can be had at small expense, plain clean pine vertical grain floors waxed make a good floor for rugs. There is a small cellar with cement floor and steps to same. The open court arranged between the houses would protect the garden from our summer winds and the wide porches facing same would be sheltered also, but would also get the sun. These houses are well adapted for two families who can work together and develop the gardens, etc., in their spare time changes in the plans such as adding sliding doors or closing up same can be easily made without disturbing the scheme.

THE BUILDING shown in our half-tone engraving this month is the handsome home of the Spring Valley Water Company, just completed by Architect Clinton Day. The many thousand stockholders in this company who have for years past been enjoying the dividends distributed with commendable regularity, by this company, do not need to be told of the firm and enduring base on which their prosperity rests. From small beginnings the growth of the company has kept pace with the growth and development of the metropolis of the west, and every native son and every native daughter, as well as those who are not native sons and daughters, have reason to be thankful for the abundant and unfailing supply of pure cold water with which San Francisco is blessed. That the public are fully convinced of the desirability of Spring Valley water stock as a safe and paying investment is shown by the frequency with which the stock is quoted above par. It is only fitting that such a successful enterprise should be housed in quarters befitting its importance and we think we will be pardoned if we devote more space to a description of the building and its builders, than we have lately given to our illustrations.

To begin with the building is six stories in height, of fire proof construction, and being situated on the south east corner of Geary and Stockton streets is very effectively viewed from Union Square. The main entrance is in the center of the Geary street facade, and leads the visitor through a finely tiled vestibule wainscotted with beautiful marbles to the rapidly running elevators whose ample service conducts to the commodious apartments on the upper floors of the building. The basement stories are of granite contrasting well with the buff brick and terra cotta finish of the upper portion of the structure. No modern improvements have been omitted in making the building a model of its class; in fact the architect seems to have vied with the engineer of the company as to which could construct the more enduring monument to his skill. (In this connection, and by way of parenthesis, we want to say a few words about another remarkable construction that owes its being to the president of the company, Mr. Charles Webb Howard: we refer to the remarkable crystal springs dam, the largest mass of solid concrete in the world, and which will remain for centuries to come a more enduring monument to the professional ability of its engineer Mr. Schusler, than any merely commemorative monument that could be erected.) This passing thought gives rise to the idea that possibly the architect of Spring Vallye's new building designed it with the intention to rival in his own profession the achievements of the rival profession of Engineering, as exemplified in the monster dam that successfully retains behind its ponderous mass, billions of gallons of clear sparkling water, always "on tap" for the hundreds of useful purposes to which it is daily and nightly applied by the thousands of men, women and children, the permanent inhabitants and transient guests of the western metropolis.

STEAM HEATING.

The contract for the steam heating apparatus was awarded to the Geo. H. Tay Company on account of the superiority of the system introduced by them. It is the Single Pipe Overhead System of low pressure steam heating, which is acknowledged to be the best, as by this method the basement is kept free from large pipes and the steam and condensation flow in same direction rendering the system entirely noiseless. The steam is taken from the boilers in the basement direct to the attic first, and is then led downwards to the floors. The steam descending heats the various rooms, halls and corridors. The boilers adopted are the Root Water tube boilers, which obtained the prize at the World's Fair at Chicago. The Geo. H. Tay Company are sole agents for these boilers on the Coast. The radiators used are the "Perfection," manufactured by the American Radiator Company, who are the largest manufacturers of radiators in the world. These radiators were also prize winners at Chicago. The Tay Company is also installing this same system at the present time in the Nevada Block, Flood Building, Alliance Assurance Building and W. T. Somers Building.

TERRA COTTA VS. CONCRETE.

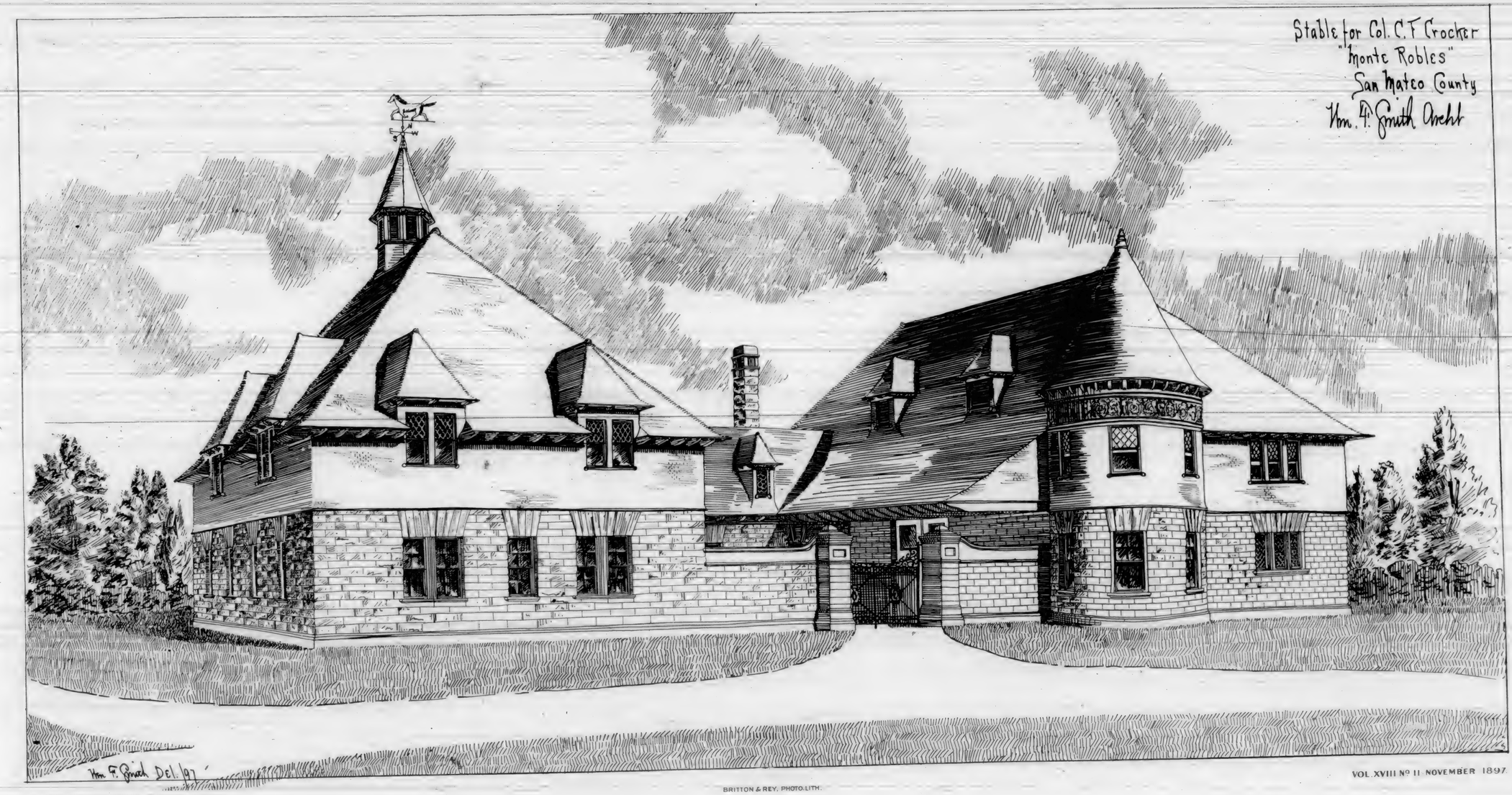
Messrs. Gladding, McBean & Company the contractors for the Terra Cotta work in the Water Co's. Building endorse the following letter as expressing their views as to the relative merit of Terra Cotta vs. Concrete:

The debate between the advocates of terra cotta and concrete resembles the mighty competition of a circus and "side show." While one is considered a legitimate entertainment, the other is contented to be called a 'side show,' and gather its patronage by the lights which illuminate the mammoth tent. But when the circus moves, what happens?

"Peace be to their ashes," seems a peculiar fitting blessing for the advocates of both these systems. Yet could either be subjected to the thorough treatment of their respective methods, "ashes" would no longer express their future state, but in its place would be used terms of "terra cotta" or "concrete," and if concrete dared hope for complete converts 'ashes' would become obsolete.

Thoughtfully, what lesson has been taught by the Pittsburg fire, from which the lengthy argument got its initial momentum? Simply that terra cotta did all that was claimed for it; that no other system ever had such a test; that concrete, where used in a building with a fire that is commonly called a "blaze," protected by wind, time, isolation and the whole fire department, showed unusual weakness, and that the architects having the restoration of the Home Store Building in charge are satisfied with the test, and are to use terra cotta for the reconstruction, and that the weakness show up by the concrete with this incipient fire displayed its faults, and none of its advocates would have cared to have

Stable for Col. C. F. Crocker
"Monte Robles"
San Mateo County
Wm. H. Smith Archt



Wm. H. Smith Del. 97

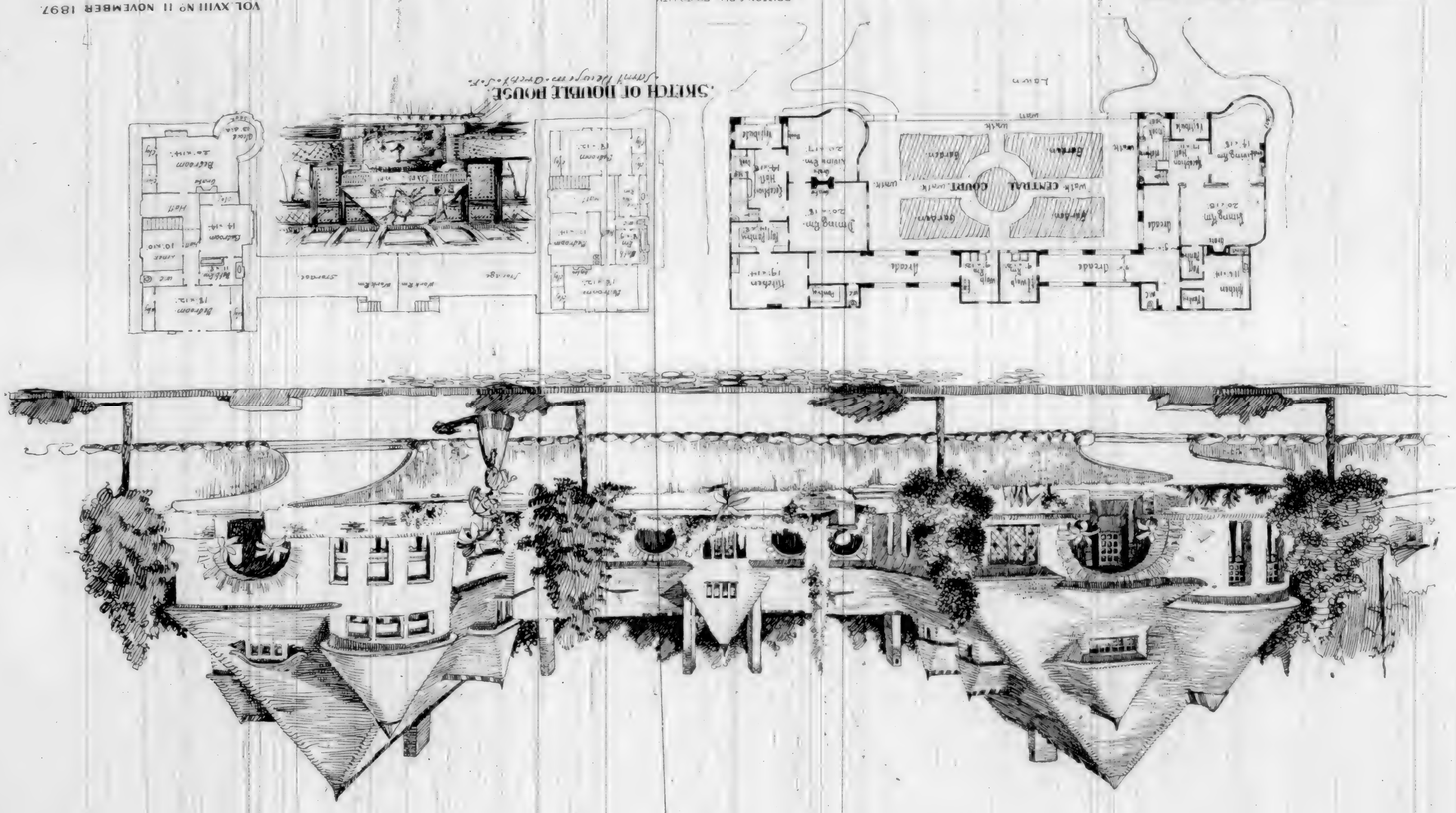
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY, PHOTO LITH.

VOL. XVIII N° 11 NOVEMBER 1897.

SKETCH OF DOUBLE HOUSE.

Front Elevation - Owner's Res.



CALIFORNIA ARCHITECT & BUILDING NEWS
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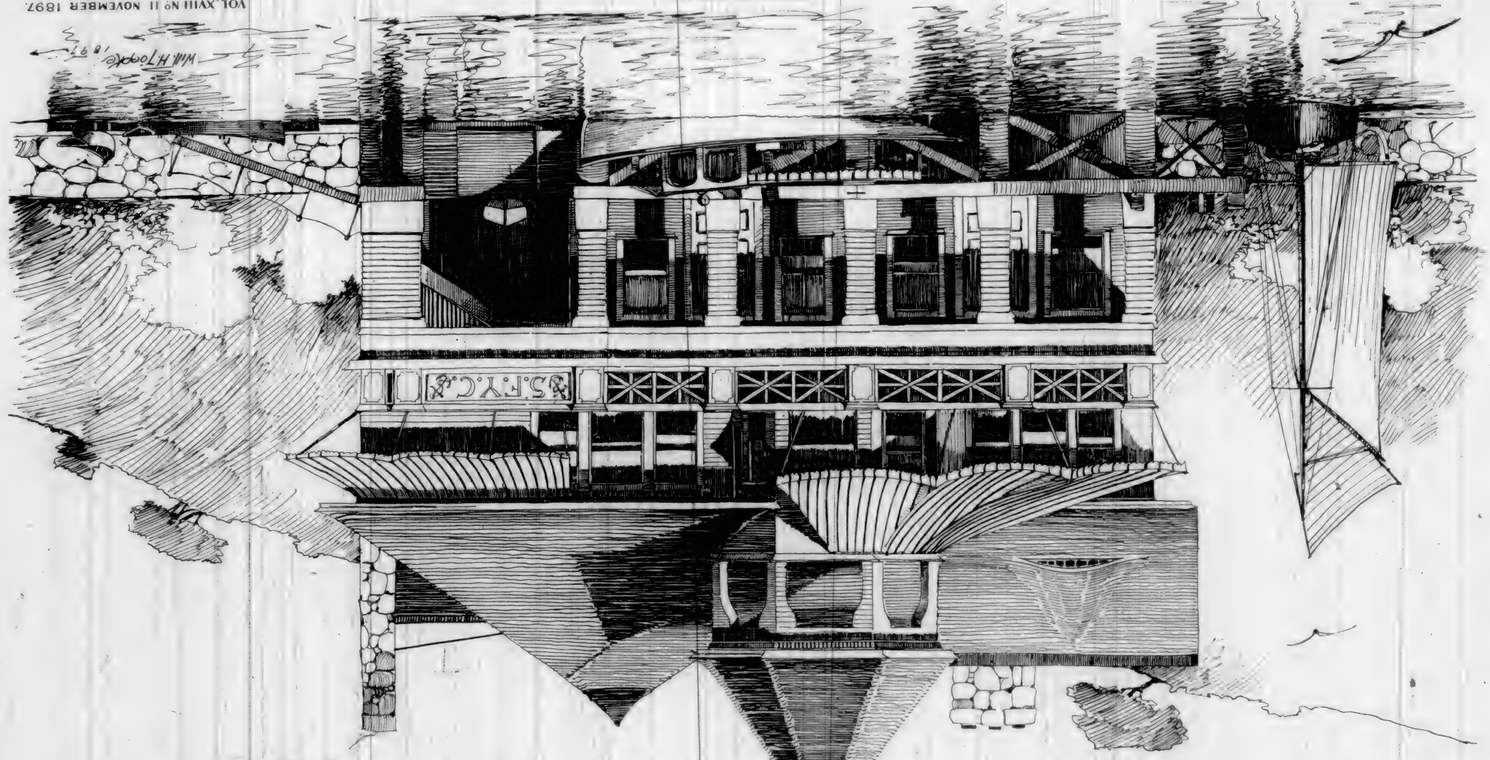
BRITTON & REY, PHOTO LITH.

VOL. XVIII N° 11 NOVEMBER 1897.

Wm. H. Toepke, 1897.



ELEVATION OF PROPOSED
CLUB HOUSE FOR THE SAN
FRANCISCO YACHT CLUB.

HAVENS & TOEPKE. ARCHTS.
55 FLOOD BUILDING SF.

SPRING VALLEY WATER WORKS BUILDING. CLINTON. DAY. ARCHITECT.

had a general inspection immediately after the fire, as such would have caused a lasting injury.

It has shown one thing, however, and that is the shrewdness of the business men who have taken to the advocating of concrete as a business venture. Many, to read their letters to-day, and not knowing the facts relative to this Pittsburg fire, would suppose that all this contention originated from equal tests in an actual fire. They have created among the laymen whom they defend the impression that their system has actually demonstrated fire-resisting qualities under a severe trial.

There have been many reports from chiefs of several different professions—engineers, fire underwriters, building experts and fire-proofing concerns—and all agree that terra cotta was eminently successful. The last report, however, made by a commission of capable engineers and sent to adjust the loss, to condemn all the seriously injured steel and suggest means of using that which has received slight injury, and approve that which was considered proper to stand, after thorough inspection, is to the effect that all iron work not displaced or deformed by the falling of an immense water tank was not seriously enough injured to require removal. Then comes the crumb from which the concrete advocates try and feed the multitude. These same engineers, after making so favorable a report, suggest that some other system should be adopted to more thoroughly protect the steel from heat and a consequent expansion, and recommend concrete. Why a change if the steel is all right? Why concrete, even though a change be desirable? This fire demonstrated no qualities for concrete, but instead, quite the reverse. Where were the weak points of protection to the steel where the construction was with terra cotta? Not where terra cotta was used, but where it was omitted. If more protection for the steel is needed, why not more terra cotta? This material has stood the test in the worst conflagration known for years, and why change for one that an ordinary fire so completely injured that it should and probably will be replaced?

Terra cotta is siill supreme, and concrete will have to prove further than a simple claim that it stands within "hailing distance" of this superior material. Cannot the users, builders and owners see for themselves whether claims are set forth for terra cotta that it cannot fulfill as well as any body of men whose trade or profession is as distinctly different from fire-proofing as dry goods are from groceries? Concrete has been too long in the field not to have known its qualities, and nothing new has been added to it that makes it better to-day for fire-proofing than many years ago. —*F. F. Fernald in Clay Worker.*

CONCRETE VS. TERRA COTTA.

The following extract from a letter published in *Cement and Engineering News*, expressing the views of Mr. L. B. Jenny on what he terms "The Best Fire Proof Construction for Buildings Occupied for Mercantile Purposes," meets the views of Mr. Geo. Goodman, who had the contract for the Concrete Work in the Water Co's Building—and who sends in the following estimate of Mr. Jenney's standing as an architect:

Mr. W. L. B. Jenney of Chicago is one of the most celebrated architects in the United States, and the inventor of the modern steel office building. He has revolutionized th system of high building construction and speaks with authority upon the subject of fireproof construction.

Mr. Jenney says the most important lesson taught by the fire of last May in Pittsburg was the lack of strength displayed by the fire-clay fire-proofing. The buildings were permitted to move in any direction without any material restriction by the fire-proofing. The floor arches showed by the scaling off of the lower webs that they were unable to offer any sufficient force to counteract the tendency to lateral motion. The column protection although composed of the very best obtainable kind of fire-clay tile was also not of sufficient strength.

Owing to the fact that steel columns or girders or beams after being subjected to a long continued fire will assume the same temperature as fire-proofing, and owing to the fact futhermore, that the rate of expansion of the steel is much greater than that of the fire-clay tile, destructive movements are permitted which, as shown in this experience, will result in considerable damage and which damage will increase in direct proportion to the heighth of the building.

In view of these important developments, it is our opinion that important structures of this class thould have a radically different method of fireproofing. The fireproofing should be in it self strong and able to resist severe shocks, and should, if possible, be able to prevent the expansion of the steel work.

There seems to be but one material that is now known that could be utilized to accomplish these results and that is first-class concrete.

BOOKS AND PERIODICALS.

A SYSTEM OF EASY LETTERING by J. Howard Cromwell, Ph. B. Published by Spon & Chamberlain, 12 Cortlandt street, New York, price 50 cts.

The simplicity of this system should recommend it to the student of architecture. The preface of this volume gives the system as follows:

"The formality of a preface may seem scarcely necessary for the supplementing of a system as simple and comprehensible as the one herewith presented. We have but to divide any surface we may wish to letter into squares (or parallelograms as the case may be), in pencil lines; form the required letters, in ink or paint, and according to the style chosen; erace the pencil lines, and the lettering is complete."

LIPPINCOTT'S Magazine for November, 1897, has for a complete novel "The Price of a Wife" by John Strange Winter (Mrs. Stannard).

It is a tale of English domestic life, and one of the best

which the author of "Bootles Baby" has written of late years. To those who have read "Bootles Baby" this novel will be welcome, and to those who have not they will be sure to want to do so after reading "The Price of a Wife". The other contents are as interesting as usual.

LABORATORY OF TESTS AND TECHNOLOGY of the Philadelphia Commercial Museum. Instruction for submitting samples, general information and schedule of official fees. Philadelphia, 1897.

This Laboratory has been established as an adjunct of the Scientific Department of the Philadelphia Commercial Museum. It has for its main object the examination and analysis of raw and manufactured products, which may be sent to it from any of the countries represented in its collections, or from private individuals, who wish to determine through chemical and other tests the commercial value of the materials presented.

UNITED STATES DEPARTMENT OF AGRICULTURE. Division of Forestry. Circular No. 17. Recent Legislation on State Forestry Commissions and Forest Reserves.

In Circular No. 13, of this division, the existing forest fire legislation of the several States and Territories was summarized. Since it appeared, in March 1896, several States have enacted legislation for the erection of forestry commissions and the establishment of forest reservations, and public interest in these important subjects has been greatly stimulated. This increased interest is evidenced in the many requests which reach the Division of Forestry for aid in formulating legislation affecting forest conditions, and it is believed this summary of the more important recently enacted laws will be of material service in work of this kind.

FINAL REPORT OF THE WORLD'S FAIR COMMISSION, including a description of all exhibits from the State of California, collected and maintained under Legislative Enactments, of the World's Fair Columbian Exposition, Chicago, 1893.

This handsome volume of over 300 pages, fully illustrated with views of the California Building as well as the various exhibits from various parts of the State, certainly does much credit to the State, as well as to the following gentlemen who composed the California World's Fair Commission:

Irving M. Scott, President; James D. Phelan, Vice-President; R. McMurry, A. T. Hatch, S. W. Fergusson, L. J. Ross, W. P. Mathews. The fact that of $300,000 appropriated by the State to this Commission over $20,000 was returned to the State should stand to the credit of this Commission as gentlemen who have certainly been faithful to this trust.

LABOR QUESTION IN CHINA.

WHERE is no place in the world where the labor question is so easily solved as in China. There are no lockouts or strikers, nor have there been any for upwards of 2,000 years. The bricklayers, plasterers, carpenters and tinsmiths form lines on either side of the public square and wait until they are wanted. The master builder comes along and puts a chalk mark upon those whose services he requires. They follow him and go to work. No quarrel about wages or overtime. The least sign of discontent calls for the head of the kicker. All are glad to see it fall into the basket, for it gives place for one more to work. The master builder, however, does not have things his own way. There is a fixed rate of wages for each trade, which he must pay, and a certain number of hours defined, above which the employers must not go, only by special permit from the government, and overtime must be paid for accordingly. Once a man employed, he receives his daily pay whether he works or not, so long as the work he is engaged on is not completed, so that if the work is "outside" and rain prevents it going on with, he receives his pay just the same. Loss of time by rain is borne by the owner, so the contractor suffers no loss on this account. Failure to conform to the contract, or to pay wages due his workmen, render the contractor liable to decapitation. The owner, too, is liable to the workmen and material men equally with the contractor. This is a lien law with a vengeance, for in case of failure to pay the workmen, the government pays the debts, confiscates the property, makes headless the culprits, and the whole thing is settled in a few days to the satisfaction of every one but the widows and orphans of owner and contractor. How nice it must be in China to have the labor question settled so promptly!

MARINE SALT IN PLASTER.

ONE of the causes of the decay of the frescoes in the Houses of Parliament is supposed to arise from the use of plaster which was prepared from limestone from Durdham Down, near Bristol. All the beds of Durdham Down limestone are of marine origin, being full of marine shells; and, although in the long lapse of ages since they were deposited, the marine salt, whith which the stone must have been saturated, has for the most part been washed out, yet still a trace of it remains, insensible to an ordinary analysis. It is the general practice to burn this stone into lime with braize (or cinder taken from the scavenger's yard), and this braize always contains sulphur. In burning the minute quantity of marine salt in the stone is coverted, for the most part, into sulphate of soda, or the salt well known in commerce as "Glauber salt." On most of the walls that grow cold in winter needle form crystals are found, varying from a bloom 1-100 of an inch to needles of an inch in length, and in some instances, in damp old walls, such as the cloister walls of a cathedral, the crystals stand out to the length of 1½ inch. They are generally composed of sulphate of soda, in rare instances mixed with nitrate of potash, and sometimes with small quantities of muriate of lime and magnesia. When the weather becomes dry all these bunches of crystal effloresce and are converted in to a lose white powder, much of which drops from the wall, carrying with it shales of plaster, or flakes of paint, or film of whatever material the surface of the wall is covered with. Moisture will condense on the wall if allowed to grow cold in damp weather; the white powder is then dissolved and the liquor, a solution of sulphate of soda, is absorbed by the mortar or plaster. Architects are in the habit of proving the value of the various kinds of stone presented for their use, for the endurance of frost, by a saturated solution of sulphate of soda, similar to this liquor, which on crystallizing imitates the heaving and splitting action of ice forming from water. Accordingly, this liquor is no sooner absorbed as the wall dries than it aggregates into ice like crystals and the plaster is disintegrated and heaved by the dynamical force developed in their formation. The plaster having sustained this injury, the salt transforms itself and shoots out into bunches of needle form crystals, only to fall again into the terrible white powder, as the air becomes warm and dry. Thus a constant succession goes on of solution and desiccation, with the changes of the weather and temperature; and if the wall be permitted to cool with the frost, the ruin of the plaster is insured. Sulphate of soda exists not only in Durdham Down limestone, but unfortunately also in much abundance in all the lias motars, in London clays and in many other stones. In fact, it may be doubted if any London wall is free from its presence. We may, therefore, observe this kind of action of destruction going on more or less almost everywhere. In Rome and Florence, indeed, many frescoes have remained entire, with their colors smooth and in good order, for hundreds of years.—*Architecture and Building*.

PATENT CHIMNEYS ON THE MILLS BUILDING.

CHIMNEY TOPS.

CHIMNEY TOPS extending from the flues in Jas G. Fair's Building to the top of the Mills Building. This work was done by L. E. Clawson & Co. of 1340 Market street, using Gladding, McBean & Co's flue linings and tops. Each joint of pipe was double braced four inches into the wall with wrought iron strong enough to support each joint, the whole being earthquake proof. The joints were wet when placed into position and grouted together with Portland Cement which makes the whole breast as solid as though it were part of the building. The offsets in the chimney are made so as to clear the windows and also the iron frame work that supports the cornice of the Mills Building, which projects five feet. The tops above the cornice are Gladding, McBean & Co.'s no. 143. They are braced with wrought iron bolted to fire wall, thus making a perfectly secure chimney. The manager and master mechanic of the Mills Building, are so well pleased with the work that they suggested that it be photographed. The cost of this kind of work exceeds that of galvanized iron but a trifle. L. E. Clawson & Co. make a specialty of all kinds of chimney work and are experts in the curing of smoky chimneys and are prepared to do work in their line at short notice.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street,

Seth Babson, Pres. H. A. Schultz, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec't. August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, [meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. Kent, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Bilck, Pres. M. V. Brady, Sec.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

Rights of Adjoining Landowners.—Where a lot owner erects a building on one side of same, he cannot enjoin the adjoining lot owner from erecting a high board fence on his line, although it shuts off the light and air from such building.

Triplett v. Jackson, App. Ct. Kans., 48 Pacific Rep. 931.

Precedence of Contractor's Orders.—A contractor having given a bond providing that, before he can receive his pay, all claims against him for labor and materials entering into the construction of the building must be paid, orders given by him upon the owners of the building do not constitute an equitable assignment of the funds owing him in their hands, and they have the right to first pay subsequent orders given by him in favor of laborers and material men.

Hall Co. v. Lloyd Bros. Co. Ohio Cir. Court, 7 Ohio Dec. 203.

Iowa Party Wall Valid.—The law of Iowa (Code sec. 2019) which provides that a party wall may be built on an adjoining lot to the extent of nine inches, without the consent of the owner, but that he shall not be liable for any of the expense for building same, unless he makes use of it, is not unconstitutional as not being taken under due process of law, or as taking private property without compensation.

Swift v. Calnan, Supreme Court Iowa, 71 Northwestern Rep. 233.

Owner's Dealings with Subcontractor.—An owner may contract with a subcontractor for extras, without regard to the provisions relating to extras in the contract between him and the general contractor; and the furnishing of extra labor and material by a subcontractor at the direction of the owner creates a contract on sufficient consideration to render the owner liable to him for such extras.

Foley v. Tipton Hotel Co., Supreme Court Iowa, 71 Northwestern Rep. 236.

When Architect's Certificate Cannot be Required.—Where a builder's contract provides that for all payments a certificate, signed by the architect, as the owner's agent, shall be obtained, a discharge of the architect excuses the contractor from furnishing such certificate.

Fitts & Co. v. Reinhardt, Supreme Ct. Iowa, 71 Northwestern Rep. 227.

Amount of Damages Must be Proven.—Though an owner has been put to extra expense on account of failure of contractor to finish his work as required by the contract, yet if the evidence fails to show how much he had to expend to complete such work, he cannot have same effect as a counterclaim.

Fitts v. Reinhardt, Supreme Ct. Iowa, 71 Northwestern Rep. 227.

BUSINESS MOSAICS.

Parties in want of handsome fixtures for bath room, lavatory or water closets would do well to call upon Mr. M. S. James who represents the Pacific Coast for The J. L. Mott Iron Works. Mr. James has his office at the Flood Building, room 27, where various Sanitary Specialties can be seen, circulars sent on application.

The Titus Patent Improved Gas Trap, Tide and Flushing Gate. This Improved Trap is highly recommended by the most competent authority. See the following certificate:

This is to certify that the Titus Sewer Trap has been in use in building occupied by us for the last twelve years—during which time it has given entire satisfaction.

Baker & Hamilton, by F. Dassonville.

This is to certify that that are three Titus Sewer Traps on this property—Cosmopolitan Hotel, Fifth and Mission streets—for twelve years and they have given perfect satisfaction during that time.

N. Irvine, Engineer for Donahoe Estate.

Mr. G. C. Dallamore the practical plumber, gas and steam fitter, can be found at his office, 414 Devisadero street, bet. Oak and Fell, tel. Pine 1405. Sanitary plumbing and sewerage ventilation a specialty. Personal supervision given all work.

Black Daddy—"Didn't I tole yo' not to go in swimmin' wif a white boy?" Son—"He wasn't white, daddy, when he fust come in."—*Ex.*

The rapid advancement that has been made within the past few years in architecture, and the varied styles now in vogue, have made the question of house painting of greatest importance.

As the cost of applying paint will average twice the cost of material it is of the first importance that the paint employed should be of the best obtainable quality—as the trifling additional outlay for materials will be many times repaid by the superior durability and satisfactory appearance of a first class article.

All prepared or liquid paints which in addition to the usual grinding and mixing, should be ground while in the liquid state as the second grinding brings the oil and pigments into more intimate combination, and gives a uniformity of consistency not to be obtained by mere mixings.

The H. W. Johns' Manufacturing Company in writing on this subject make the broad claim that their liquid paints are so prepared furthermore that they are the only manufacturers who give to their goods the second grinding in the liquid state.

The subject is certainly worthy of special study and as all our readers are interested and Messrs. Henshaw, Grant & Co., the special sales agents, 46-48 Fremont street, are well supplied with literature which can be had for the asking. The H. W. Johns' Manufactured Liquid Paints are now the U. S. Government Standard of purity and durability.

Mr. Ferd. L. Pfingst, 94 Chronicle Building, importer of Hardwood Lumber and Veneers, Maple and Oak Flooring, is prepared at all times to figure on any size contracts.

CITY BUILDING NEWS.

Baker near Vallejo. Two-story frame; owner, A. J. Ferguson; architects, Coxhead & Coxhead; contractors, Hannah Bros; signed, Oct. 2; filed, Oct. 15; cost $2812.

Broadway and Scott. Two-story frame; owner, W. F. Herrin; architect, J. E. Kraft; contractors, Mallory & Swenson; signed, Oct. 25; filed, Nov. 8; cost $8071.

California and Scott. Alterations and additions; owner, Mrs. Hettie M. Redfisch; architect, Albert Sutton; contractors, Walker Bros. & Co; signed, Oct. 11; filed, Oct. 12; cost $2000.

Castro near 18th. Two-story frame; owner, Andrew Spalding; contractor, Wm. Helbing; signed, Nov. 6; filed, Nov. 8; cost $3870.

Cedar Ave. near Larkin. Additions and alterations; owners, Seymour and Ester Attell; architects, Townsend & Wyneken; contractor, F. V. Acker; signed, Nov. 15; filed, Nov. 15; cost $1800.

Clay and Baker. Stone work for basement; owner, Mrs. Ellen Session; architects, McDougall Bros; contractor, Gray Bros; signed, Nov. 13; filed, Nov. 13; cost $1100.

Clay and Baker. To build except stone work; owner, Mrs. Ellen Sessions; architects, McDougall Bros; contractor, J. H. McKay; signed, Nov. 13; filed, Nov. 15; cost $6200. Painting; contractor, John Quadt; cost $804.

Clipper near Church. To build; owner, Gus. Bronig; contractor, C. Erikson signed, Oct. 7, filed, Oct. 12; cost $1580.

Eddy and Mason. Carpentry, mill work, etc., for six-story brick and iron building; owner, Farbizio Nigro; architects, Mooser & Son; contractors, Campbell & Pettus; signed, Oct. 30; filed, Nov. 6; cost $30,034. Granite and brick work; contractor, D. J. Brennan; signed, Oct. 30; filed, Nov. 6; cost $14,700. Wrought iron work, etc.; signed, Oct. 29; filed, Nov. 6; cost $6980. Wiring for incandesent light; contractors, Will & Finck Co; signed, Oct. 30; filed, Nov. 6; cost $1275. Marble wainscoting; contractors, A. Pallinghi & Co; signed, Nov. 4; filed, Nov. 6; cost $1246.50. Cast iron work; contractor, Vulcan Iron Works; signed, Oct. 30; filed, Nov. 6; cost $5390. Elevator work; contractors, Cahill & Hall; signed, Oct. 30; filed, Nov. 6; cost $8265. Mosaic floors, etc; contractors, W. W. Montague & Co; signed, Oct. 30; filed, Nov. 6; cost $2300. Plumbing, etc; contractor, H. Williamson; signed, Oct. 30; filed, Nov. 6; cost $2500. Plumbing, etc; contractor, H. Williamson; signed, Oct. 30; filed, Nov. 6; cost $2100.

Eddy near Hyde. Two-story frame; owner, T. N. Holm; architect, E. J. Vogel; contractor, I. W. Coburn; signed, Nov. 2; filed, Nov. 3; cost $3150.

Eddy near Van Ness Ave. Three-story frame; owner, Ann Smith; architect, Thomas J. Welsh; contractor, J. E. Mooney; signed, Oct. 5; filed, Oct. 20; cost $7700. Sewering, etc; contractor, W. F. Wilson; signed, Oct. 5; filed, Oct. 20; cost $1400.

Eighteenth near Church. Two-story frame; owner, Charles Wagner; architect, B. R. Van Deusen; contractor, Thos. B. Goodwin; signed, Nov. 3; filed, Nov. 3; cost $3190.

Eighteenth near Church. One-story frame; owner, Lorentz Entzminger; architect, B. R. Van Deusen; contractor, T. B. Goodwin; signed, Nov. 3; filed, Nov. 3; cost $1615.

Eighteenth and Harrison. Addition to factory; owner, Mission Soap and Candle Works; architect, T. Schmittacher; contractor, Thomas O'Connor; signed, Nov. 11; filed, Nov. 12; cost $1132.

Eleventh near M. Cottage; owner, Mrs. Julia Sweeney; architect, M. G. Bugbee; contractor, W. Sorenson; signed, Oct. 13; filed, Oct. 15; cost $1013.

Ellis and Anna Lane. Plumbing, marble work, etc; owner, W. J. Somers; architects, Percy & Hamilton; contractors, Gulick & Wetherbee; signed, Oct. 15; filed, Oct. 20; cost $4810. Marble wainscoting and stairs, etc; contractors, Ruffino & Bianchi; signed, Oct. 16; filed, Oct. 20; cost $3464.

Ellis near Mason. Plastering; owner, L. H. Sly; contractor, W. C. Watson; signed, Oct. 20; filed, Oct. 26; cost $4600.

Flood Ave., Sunnyside. Cottage; owner, Walter Bassett; builders, McCarthy Co; cost $1300.

Fillmore near Clay. Concrete, brick and iron for alterations; owner, Gertrude S. Bowers; architects, Hermann & Swain; contractors, Gray Bros; signed, Nov. 1; filed, Nov. 1; cost $1600.

Fifteenth near Howard. Two-story frame; owner, Margaret Keane; contractor, C. J. Antwiber; signed, Nov. 6; filed, Nov. 9; cost $2870.

Franklin and Locust. Additions and alterations; owner, Charlotte Windhauer; architects, Salfield & Kohlberg; contractors, Bucher & Frahs; signed, Nov. 13; filed, Nov. 13; cost $2450.

Geary near Powell. Additions and alterations; owner, Mrs. Golda Alexander; architects, Havens & Toepke; contractor, Jas. Geary; signed, Oct. 11; filed, Oct. 22; cost $4550.

Green street wharf. Widening wharf; owners, Board of Harbor Commissioners; contractors, Healy, Tibbits & Co.; cost $17,382.

Haight near Octavia. Three-story frame; owner, Barbara Schaletzer; architect, J. J. Laferme; signed, Nov. 2; filed, Nov. 3; cost $3490.

Howard near 9th. Additions; owner, Mr. Ambrose; day's work; cost $1000.

Howard near 16th. To build; owner, C. H. Randall; contractor, W. W. Redmall; signed, Nov. 3; filed, Nov. 3; cost $4500.

Hyde and Bay. Two-story frame; owner, Adam Ulm; contractor, Frank Steinman; signed, Oct. 29; filed, Oct. 30; cost $3000.

Hyde near Green. To build; owner, Patrick Dugan; architects, Shea & Shea; contractor, P. G. McIntyre; signed, Nov. 3; filed, Nov. 8; cost $2500.

Jackson near Gough. Two-story frame; owner, Henry Lund; architect, W. H. Lillie; contractor, J. G. Adams; signed, Oct. 25; filed, Oct. 27; cost $8700. Plumbing, etc; contractor, G. C. Sweeney; signed, Oct. 25; filed, Oct. 27; cost $1355.

Laguna and Olive Ave. Painting; owner, L. Kutner; architect, W. J. Cuthbertson; contractor, W. Shafer; signed, Nov. 19; cost $735.

Lake near 13th Ave. To build; owner, Rose B. Gddard; contractors, Marcuse & Remmell; signed, Nov. 4; filed, Nov. 4; cost $1800.

Larkin near McAllister. Two-story brick; owners, Jacob and Jeremiah Browning; architects, Townsend & Wyneken; contractor, R. Parker; signed, Oct. 14; filed, Oct. 14; cost $6100.

Larkin and McAllister. Two-story brick; owners, Jacob and Jeremiah Browning; architects, Townsend & Wyneken; contractor, Rufus Parker; sub-contractors, Miller & Beck; signed, Oct. 18; filed, Oct. 18; cost $2084.

Larkin and Jackson. Three-story frame; owner, Elizabeth W. Baldwin; architect, E. J. Vogel; contractor, J. W. Coburn; signed, Oct. 19; filed, Oct. 20; cost $7300.

Market and 3d. Mosaic work; owner, Mrs. P. A. Hearst; architect, A. C. Schweinfurth; contractor, Campomenosi & Co; signed, Nov. 5; filed, Nov. 6; cost $4122.

Market and 3d. Prismatic sidewalk lights, etc; owner, Claus Spreckels; architects Reid Bros; contractor, P. H. Jackson & Co; signed, Oct. 17; filed, Oct. 20; cost $4536. Kitchen apparatus; contractor, W. W. Montagne & Co; signed, Sept. 28; filed, Oct. 20; cost $1215.

Market and 3d. Finishing wood work for bank; owner, Claus Spreckels; architects, Reid Bros; contractor, West Coast Furniture Co; signed, Oct. 8; filed, Oct. 26; cost $1786. Interior finish for "Call" office; contractors, Fink & Schindler; signed, Sep. 28; filed, Oct. 26; cost $2457.

Market and 3d. Electric light fixture; owner, Mrs. P. A. Hearst; architect, A. C. Schweinfurth; contractor, Cal Art Metal Co; signed, Oct. 22; filed, Nov. 1; cost $3750. Electric elevator; contractor, Sprague Electric Elevator Co, N. Y.; signed, Oct. 1; filed, Nov. 1; cost $10,850.

Market street. Clock for Ferry Depot; owners, Board of Harbor Commissioners; contractor, Howard Clock Co; cost $3630.

Maple near Clay. Two-story frame; owner, C. Beckmann; architect, P. H. Bosworth; signed, Oct. 16; filed, Oct. 18; cost $2800.

McAllister and Baker. Two-story frame; owner, R. Wannermacker; architects Salfield & Kohlberg; contractor, Jos. Bucher; cost $2210.

Mission near 17th. Alteration and additions; owner, S. Nathan; architects, Copeland and Pierce; contractor, Paul Carnouche; signed, Oct. 15; filed, Oct. 18; cost $2615.

Noe and Jersey. Alterations and additions; owner, Peter F. Gilroy; architect, G. A. Dodge; contractors, Moore & Cameron; signed, Nov. 9; filed, Nov. 10; cost $1615.

Page near Pierce. To build; owner, W. J. Conrad; architects, Shea & Shea; contractor, B. Dreger; signed, Oct. 20; filed, Oct 26; cost $4029.

Parnassus Ave. near 4th Ave. Lathing and plastering for Affiliated Colleges; owner, University of California, architects, Martens & Coffey and Kraft; contractor, Silas Carle; sub-contractor, Charles Dunlop; signed, Oct. 12; filed, Oct. 14; cost $15,695.

Pennsylvania Ave. near 18th. Two-story frame; owner, Thomas Brady; architect, M. J. Welsh; contractor, J. A. McDonald; signed, Oct. 11; filed, Oct. 12; cost $2300.

Pine near Dupont. Alteration and additions; owner, D. Cuneo; architect, E. Depierre; contractor, P. A. Antorelli; signed, Oct. 30; filed, Nov. 2; cost $1500.

Post near Gough. Alterations and alterations; owner, Minna Goslinsky; architect, M. J. Lyon; contractor, G. H. Moore; signed, Oct. 19; filed, Oct. 20; cost $1600.

Sacramento near Drumm. Alterations and additions; owner, City of San Francisco; architect, C. Wilson; contractor, C. F. Sheibley; cost $1860.

Sacramento near Davis. Raising and alterations; owner, H. E. Bothin; architects, Percy & Hamilton; contractor, B. F. Ellis; signed, Nov. 2; filed, Nov. 4; cost $9000.

Second and Mission. Granite work for six-story brick; owners, Wells, Fargo & Co; architects, Percy & Hamilton; contractors, Raymond Granite Co; signed, Oct. 21; filed, Oct. 22; cost $48,240.

Seventh Ave. near San Francisco. Alterations and additions; owner, Mrs. L. O'Brien; contractor, Henry Behrens; bond $800.

Stockton and Geary. Granite brick and iron work for five-story brick; owner, Estate of Wm. T. Coleman; architects, Pissis & Moore; contractor, M. V. Brady; signed, Oct. 12; filed, Oct. 26; cost $9090. Sandstone work; contractor, McGilvray Stone Co; signed, Oct. 12; filed, Oct. 26; cost $11,960.99 Carpentry, plastering, etc; contractor, Silas Carle; signed, Oct. 12; filed, Oct 26; cost $10,995. Plumbing, etc; contractors, Duffy Bros; signed, Oct. 12; filed, Oct. 26; cost $4800.

Stevenson and 4th. Plumbing, etc; owner, Claus Spreckels; architects, Reid Bros; contractor, W. F. Wilson; filed, Oct. 26; cost $2982. Electric wiring, etc; contractors, Cal. Electric Works; signed, Sept. 24; filed, Oct. 26; cost $4441. Elevator; contractors, Cahill and Hall Co; signed, Oct. 7; filed, Oct. 26; cost $1975.

Taylor and Turk. Electric elevator; owner, A. W. Wilson; architects, Shea & Shea; contractor, Central Iron Works of Quiney, Ill; signed, Oct. 4; filed, Oct. 14; cost $2237.

Texas near Maraposa. Cottage; owner, W. S. Taylor; contractor, R. O. Davis; signed, Oct. 27; filed, Nov. 1; cost $1450.

Tenth Ave. near Cement. To build; owner, M. I. Cornell; contractors, Marcuse & Remmell; signed, Nov. 1; filed, Nov. 2; cost $2430.

Tenth Ave. near M. To build; owner, W. T. Beck; day's work; cost $3000.

Thirteenth near Guerrero. To build; owner, Ellen F. Kennedy; contractor, Ed. Cox; signed, Oct. 30; filed, Nov. 1; cost $2623.

Tilden near President. Cottage; owner, Miss Petranella Mickelson; architect, T. P. Ross; contractor, Fred Miller; signed, Oct. 18; filed, Oct. 20; cost $1375.

Turk near Mason. Plumbing; owner, G. G. Burnett; architect, J. E. Wolfe; contractors, Ickelheimer & Bros; cost $757.

Union and Hyde. Two-story frome; owner, Catherine Powers; architects Shea & Shea; contractor, L. M. Weismann; signed, Oct. 7; filed, Oct. 16; cost $2497.

Utah and Center. Cottage; owner, Thomas Thompson; architect, H. A. Schulze; contractor, Henry Jacks; signed, Oct. 25; filed, Oct. 29; cost $1885.

Valencia near 14th. To build; owner, James R. Carrick; contractor, A. C. Soule; signed, Oct. 1; filed, Oct. 14; cost $9000.

Van Ness Ave, Geary. Brick building; owner, Ladies Protection and Relief Society; architect, Clinton Day; contractors, Peacock & Halliday; signed, Oct. 8; filed, Oct. 14; cost $3394.67.

Van Ness Ave. and Olive Ave. Plumbing, etc; owner, J. Frownfeldt Trustee; architects, Salfield & Kohlberg; contractors, Ickelheimer and Bros; cost $3000.

Van Ness Ave near Union. Two-story frame; owner, C. H. Rehnstrom; contractor, Wiren and Peterson; signed, Nov. 5; filed, Nov. 13; cost $5756.

Washington near Spruce. To build; owner, Livingston Jenks; architect, J. E. Kraft; contractor, Henry Jacks; signed, Oct. 11; filed, Oct. 27; cost $5400.

Wisconsin near 22d. Cottage; owner, James McKinley; architect, G. A. Bordwell; contractor, R. O. Davis; signed, Nov. 1; filed, Nov. 1; cost $1086.

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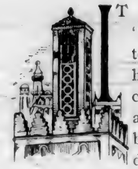
A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

THE WAY that the devil was fooled by the Architect of the Cologne Cathedral according to the legend reminds one forcibly of the way many a poor devil of an architect has been fooled by those who wish to dispense with his services when about to build but still wishes the benefit of his brains. The devil it seems showed the architect the plans of a beautiful Cathedral thinking that he would be willing to sell him his soul for these well designed plans. But the Architect committed the salient points to memory while his satanic majesty was explaining—and therefore was able to tell such majesty that "the plans did not please him and he would not take them."

In these days he had only to get hold of a copy of the blue prints and need not have taxed his memory to such an extent—or he could have sent his wife to the building and borrowed the blue prints from the contractor on the pretense that she was about to build and if said plans suited her she would employ the obliging contractor and thus save the expense of an architect.

THE "TRUMPH" OF MODERN ARCHITECTURE—"HIGH BUILDING" IN OUR CITIES.



IT IS ASSERTED periodically that the "greatest advance of our modern architecture" is in great office buildings. It has been said by one of our architectural critics, in an article treating of modern city architecture, that the modern city office building or commercial structure may be defined as representing the "apotheosis of a cube."

We may rightly ask whether such commonplace, prosaic, structures (as many of them are) can in their riotous banality be considered as worthy of notice. While inspecting examples of such buildings and studying published designs, it occurred to the writer that it would be well to make an examination and analysis of this department of modern design, to ascertain, if possible, how much there may be in it which really counts as an *advance* in architectural evolution, and if such buildings can really be classed as architecture at all, or merely as util tarian constructions masquerading in an external disguise of architectural "features," more or less skillfully applied. Most of us have heard or read a book called "Cliff Dwellers" written by a Chicago author. The aptness of this title is obvious. These great piles certainly recall, in a sense, mountains or cliffs perforated with a huge "rabbit warren" a congeries of dwellings or rooms, such as ancient nations might have made for themselves in some situations to avoid the labor of erecting isolated buildings. The modern buildings of the class considered however, fail in an architectural sense They never could approach the Rock Cut Temples of India in point of architectural impressiveness from the mere fact that they are composed of story on story in succession, all monotonously alike.

What have we at the present day with all our boasted "progress" in architecture or otherwise to compare with the works of ancient times?

It is certainly an acknowledged fact that all of the ancient buildings which are typical, and from which architectural forms have been derived and handed down by a process of evolution, are buildings of *one story*, the modern idea of a building in stories or tiers or stages not even being hinted at until a certain period in the history of Rome, and even then the division of a building into stories by superposed "orders," as seen in the Coliseum or elsewhere, was a chance expedient for "decorative" effect, borrowed from the post and lintel system of the Greeks.

Directly the contrary principle was exhibited in other Roman buildings, as for instance the Baths, The Basilicas and elsewhere. Nearly all were buildings of practically one story with one great "order" in their height, vaulted roofs of course, adding to the height, and most buildings also possessed a basement or "socle". The Coliseum, again by the superposition of "orders" outside, belied the interior which of course was practically in "one story," or one great enclosure; though without roof, (unless the awning or "velarium" be so considered.) One would have expected the outside wall to have been designed with one great order, with the landings of the stairways or inclines marked out merely by belt courses or arches.

Would it not have been equally logical to have designed tiers of orders upon the outer walls of Basilicas or Baths when no corresponding floors existed on the interior? The mere fact of stairs or inclines being required to reach the seats in the Coliseum would not warrant the division of the outer wall into stories.

This reasoning would also apply to the arched construction, without reference to the tiers of orders, for there is to be seen an arcuated style of building developed in the Roman aquducts and bridges generally without the accompaniment of the orders.

A Triumphal Arch, or the modern "Arc de Triumphe" would appear absurd if designed with tiers of "small orders."

To come down to modern work: How would an ancient architect regard our modern buildings of fifteen or twenty stories if he could be brought back to the world to view them?

We do not usually remember, unless our attention is specially called to it, that almost all ancient buildings, whether religious or secular, were build practically in *one story*, in the case of the Greek temples the lighting being upon the "hypœthral" system, or from the roof, in almost all such buildings there is but one tier or range of windows at most, these being placed usually, at a height above the ground or floor.

It is of course only necessary to mention the Egyptian and Greek temples, or the Indian Rock Cut Temples. Most buildings of India, China or Japan which are ancient, also present the same characteristic of an interior practically in one apartment or story, any horizontal divisions into stories or stages being either avoided, or if required being subordinated so as not to affect the general design.

In ancient temples this is especially noteworthy. The restorations of Solomon's Temple and of the Parthenon show the acceptance of this idea, as if it were an inherent characteristic of such buildings.

Again in modern work: The Paris Exhibition buildings and World's Fair structures were nearly all in one height, i. e., one story.

To turn to domestic building, as noted above, the Roman and Pompeiian and Grecian dwellings were arranged in suites of spacious apartments, rarely, except for subordinate rooms, in more than one story. It is only necessary to refer to the writings of Viollet-de-Duc and others to verify this. The examples of domestic building shown at the Paris Exhibition of 1889 also in general bear out the same argument. The houses in Oriental cities and the pueblo dwellings of Mexico show a flat roof system with one, though sometimes two stories; the roof being used as a sleeping place in warm weather, or as a place of security in case of attack.

In viewing the past, one cannot help thinking that those who look upon our modern city buildings as "great monuments," "marking an epoch," constituting a real "new departure" or "new era," "the like of which never has been seen," etc. etc., must be gifted with a very modern pair of spectacles; and there are a few in whom the reverence for and admiration of the ancient examples of architecture is not yet extinct, who cannot join in the extravagant praise occorded by some contemporary writers and critics, to this phase of our city architecture. To inquire futher how the ancient types of architecture have influenced those derived from them, that is, The Medæval, The Rennaissance, and modern styles.

Ferguson gives a large share of praise to those works of the Rennaissance, most of them in the classic or Rennaissance styles, which exhibit the feature of a single large order for the whole height, whether this is used upon the exterior only or in the interior also. In these the successive stories though subordinated, are not however ignored, but given a special and appropriate treatment of their own.

It is obvious that this classification includes those structures which in design are termed "astylar," or without a specially devised scheme of orders, columns and pilasters. Such were the Florentine Palaces; and some other examples.

It is obvious of course, that the introduction of a basement, podium, or socle, an attic or a higher or lower roof, gave opportunity for a variation in proportion.

In Medieval architecture it may be noticed that the best examples of cathedrals are designed like ancient temples, in practically one height or one large apartment, the division of their height into triforium, clerestory, etc., being merely accidental, and subordinated to the general effect. This is shown by the continuation of the vaulting shafts, or in early examples, of piers, rising from floor to roof.

In Medieval castles also, we may remark that there seems to have been a dislike to exhibit the interior division in stories or stages upon the outside, the walls having usually only loop-holes, and presenting a generally blank surface, a sheer height from ground to cornice. It was not until the Renaissance, the fifteenth century, that these walls and towers began to exhibit the internal arrangements by a scheme of applied architecture, pilasters arches, etc. Thus in France especially we notice the cutting up of such buildings into stories by orders of small pilasters and string courses, though several stories were often made to appear as one by the continuation of the vertical lines, an instance of this being in the staircase at Blois, where the pilasters run from ground to roof, the sloping lines of the staircase abutting against them behind; while the landings or stories are virtually ignored; thus being exactly the reverse of that adopted in the Roman Coliseum, which makes a division into stories where they virtually do not exist, the interior consisting of one range of seats from bottom to top.

The intention, in thus enumerating examples, is to call attention, to the special characteristic of modern architecture, as contrasted with that of former periods: That it consists largely of buildings composed of *strata or layers*, instead of being in one story. This is a peculiarity often overlooked.

Seeking other examples in modern architecture and taking Paris as the acknowledged center:

It will be allowed that the most successful buildings there, those which have received most praise, are those in which the principle enunciated here has been fully and completely adopted. Not to mention those structures modeled after the works of Greece and Rome, some of the more modern works will serve to illustrate the doctrine equally well. As a contrast to recent examples of high buildings, for instance: The Arc de Triumphe; The Station du Nord; The Palace de Justice; The Library of Saint Genevieve, and others.

The necessity of building twenty stories eight or ten feet high, one above another, does not compel us to recognize each one in a design striped horizontally "zebra fashion." A new York architect recently propounded a scheme for a "revived Greek style" in which this programme was apparently advocated.

Let us suppose that it is desired to make out the best possible case for the modern "high-building." If as some writers assert the necessity for the construction of vast "rookeries" is necessary and that they form an important adjuct of modern "civilization," that they are indispensable to modern "business methods;" that they are "signs of the times," etc., does this in any way make them more "admirable as works of architecture?" should we be obliged to make all our received ideas upon architectural style and proportion conform to the limitations imposed in carrying out works of this kind, and the "dictates" of real estate operators and owners?

These are questions which have been asked more than once by both architectural authorities and "laymen" and it seems high time that a general concensus of opinion was arrived at.

As matters stand at present, there seems to be no criterion in this department of design, each worker being a "law unto himself."

Possibly there may be some changes near at hand in our social or commercial organization which would influence popular opinion upon these subjects, leading to a modification of received ideas; and "the traditions of business." Such would be for instance, changes in the real estate value prevailing in our cities, and a more uniform distribution of the best "investment property," so called. This might result from the adoption of improved methods of "transit" in cities; for both passenger and freight.

As to the rather extravagant pretensions made by the votaries of "high building." There are many, authorities critics and writers, who continue to hold different opinions. They may do so fairly, having on their side the evidence derived from scientific demonstration, also from commonsense reasoning, and from the greatly superior results secured in Europe, by enforcement of building regulations.

Those who wish for real "advancement" in architecture in this country contrive to lament that so small an area of "this goodly frame the earth" has been allotted to those charged with the administering of our urban architecture.

It is not at all improbable that the improved transit methods referred to, and changes in the distribution of business and population, may make an end of the high building "fad;" a resultant of the present system (or lack of system) of real estate valuation. Some of the French journals have from time to time published accounts of the "high building industry" of this country; speaking of some examples as "*les grandes batisses*" of America. It is not easy to believe that these works are thought worthy of praise by foreign critics. They are probably commented upon as "novelties".

It is said that high building "must go on," etc. Now supposing that the whole southern end of the city of New York were to be covered with "high building" what would be the result. Neither sunlight nor fresh air could penetrate the fastnesses and recesses of the small areas left unoccupied. It would become a "City of Dreadful Night" for artificial lighting would become imperative.

It is well at times to look ahead a little and anticipate the trend of popular ideas, hailing eagerly any of the straws which may serve to show the drift of opinion and enable us to forecast new developments at the beginning of the coming century.

R. S. Athinson.

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THE LEGAL STATUS OF THE PENNSYLVANIA CAPITOL COMPETITION.

OUR READERS will be interested in the following continued text of the opinion of Judge Simonton, of the Court of Common Pleas of Dauphin County, Pa., sustaining the demurrer of four of the five State Capitol Commissioners and dissolving the temporary injunction in the equity proceedings brought by Messrs. Cope & Stewardson, of Philadelphia, and Alden & Harlow, of Pittsburg.

CONTINUED FROM LAST NUMBER.

On the other hand, in paragraph one of part three it is stated that "the problem before the Commissioners is therefore one of securing a general scheme for the arrangement and design of a group of Capitol buildings, in order that the new legislative building, in its arrangement, location and architectural character, may bear a convenient and harmonious relation to a complete system of which it will eventually form a part." And in paragraph two of the same part it is stated that "the problem to which the attention of architects is invited is therefore that of a general design, comprehending the legislative and several departmental structures in addition to the present Executive Building. Such design must permit the erection of a new legislative building without disturbance to either of the old departmental buildings, must accept the executive Building and the proposed Hartranft monument as fixed elements of the design and must not exceed certain limitations of cost."

And in paragraph 35 of part two, it is stated that "upon the appointment of said architect all designs not accepted will be returned forthwith at the expense of the State to their authors, and the names of those not among the authors of the eight designs selected by the Board of Experts will be publicly announced, and no use will be made of any of the drawings not accepted, nor of anything contained in them which is original as to this competition, except by written permission of its author and on payment of proper compensation therefore as determined by the Board of Experts." And section 36 declares that "none of the unaccepted drawings will be exhibited to the public or to any competitor without the written permission of its author."

These and other provisions of the programme which might be quoted certainly tend to give weight to the argument that the primary purpose of the competition was to procure plans for the Capitol buildings, coupled with the provision that the author of the plans accepted should be employed as the architect to carry them into execution.

ARCHITECTURAL COMPETITION CRITICISED.

We find it very hard to believe that this Board of Commissioners would have understandingly adopted the elaborate scheme contained in the programme for the sole purpose of selecting an architect. We do not believe that any business man of ordinary discretion about to expend the sum of $550,000 immediately, and perhaps twice that amount prospectively, would select and employ an architect to prepare plans and supervise the erection of buildings to cost that amount without ever having seen him, without any knowledge whatever of his character, his habits, his executive ability, or his pecuniary responsibility, or any other knowledge of his fitness, except that to be acquired from inspecting a plan for the buildings drawn by him. Yet this is what the Commissioners must have agreed and intended to do if the sole purpose of the competition in question was to determine the selection and employment of an architect.

The programme itself recognizes the unquestionable fact that the result of such a method of selecting an architect might be the selection of one would be "an unsuitable person to be placed in charge of this work;" and it attempts to remedy the evil of such a result by providing that in that event the architect employed "shall at the request of the Commissioners associate with himself in the performance of his duties an architect who shall be acceptable to the Commissioners. And such associated architect shall be paid a portion of the fee provided herein to be paid to such appointed architect, such portion to be as agreed upon by both architects, or in the event of their failure to agree, then as fixed by the Board of Experts." In that event the outcome of the scheme would be, that the Commissioners would have employed as their principal architect "an unsuitable person to be placed in charge of the work," and would have associated with him another architect whose compensation they could not fix. And if this were done there would certainly be danger, which no prudent man would willingly encounter, that this architect and the chief architect, being an unsuitable person, would not act in harmony in carrying on the business. For these and other reasons which might be stated, we think, if the sole purpose of this scheme was the selection of an architect, it is unfortunate that it was ever adopted by the Commissioners.

DELEGATING DISCRETION TO EXPERTS.

But in the view we take of the case, it is not necessary to determine what was the primary and what the secondary purpose of the competition. It was certainly, in some order, designed to secure both an architect and a plan. But the fundamental question, in our opinion, is whether the Commissioners have, by any of the provisions of the programme, delegated to the Board of Experts the right, in whole or in part, to control their discretion, either in the selection of the architect, whom the act requires them to employ, or in the selection of plans for the buildings.

We understand it to be conceded by the counsel for plaintiffs that the Commissioners could not delegate to the Board of Experts, or to any other person or persons, any discretion committed to them by the act, with respect to the selection and employment of an architect, or the adoption of a plan; and whether we are right in so understanding, or not, there can be no doubt that this is the law. But counsel contend that the Commissioners have not done this. They refer us for their position on this question to the opinion of the learned Attorney General reported in 6 District R. 597, wherein he says: "There is no limitation upon the powers of the Commission found in the act of Assembly, in the selection of an architect. They conld have selected one, if they had so chosen, to do the work without competition. They choose, however, to exercise their discretion for what they believe to be the best interests of the Commonwealth, and invited all architects to exhibit their shill. The Commissioners all being laymen, and architecture being a science with which they were not familiar, they ask the Board of Experts to determine the ability of the architect from the design he submitted. Of this all competitors were fully advised, and there can be no reasonable ground of complaint. I therefore conclude, first, that the Commissioners, neither in paragraph 11 of part one nor else where in the programme, have abdicated, as such Commissioners, or delegated to others, the power vested in them; second, that it is the duty of the Commissioners to select as architect of the new capitol building the author of one of the eight designs reported by the Board of Experts as exhibiting the best talent."

This is a clear and concise statement, and does not make it the duty of the Commissioners, on behalf of the plaintiffs. But we regret that after the most careful consideration, we are unable to concur in this conclusion.

ALL DESIGNS MUST BE CONSIDERED BY COMMISSIONERS.

It will be conceded that the act itself does not make it the duty of the Commissioners to select an architect from the eight recommended by the Board of Experts. Guided by the act alone, it would be their duty to select and employ, from all the architects available, the one whom they believe the best for their purpose. It is now their duty to select one of the eight; the range of their discretion has at least been much circumscribed. And this has been done, not by a process of exclusion carried on by themselves, but by a Board of Experts, to whom they have delegated the power to exclude. The learned Attorney-General says: "They ask the Board of Experts to determine the ability of the architect from the design he submitted," and he decides "that it is the duty of the Commissioners to select an architect of the new Capitol building the author of one of the eight designs reported by the Boark of Experts as exhibiting the best talent." But if it be their duty to select one of eight thus nominated by the Board of Experts, they have certainly precluded themselves from exercising an independent judgment and from giving only the weight to the opinion of the experts, to which, in the exercise of their sound judgment and discretion, they may think it entitled.

It will be seen by a reference to paragraph four of part two that the Commissioners have had nothing whatever to do with the selection of a majority of this Board of Experts. The Commissioners selected one. The second was selected by a majority of the six architects asked to compete, and the third was selected by the first and second. The result is, that instead of exercising the discretion given to them in the act to "advise with and employ an architect or architects," the only discretion which the Commissioners retained was to select and employ one of eight propounded to them by a board of experts not selected by the Commissioners, when there were thirty seeking the employment. We are wholly unable to see how it can be even plausibly argued that this does not imply a delegation or surrender of their discretion.

It is true, as it is said by the Attorney General, that, "there is no limitation found in the act of Assembly upon the powers of the Commission in the selection of an architect." It rests in their discretion to determine what information and advice they will obtain, and how they will obtain it, to assist them in making a selection. As is said in Lyon vs. Jerome, above cited, at page 495: "In cases of authority to represent private individuals, the person thus entrusted may have occasion to depend upon scientific or professional advice for the guidance of his own judgment. He may even, in matters out of the scope of his own information, rely entirely upon the authority of his adviser or assistant, yet he is still bound to form a judgment for himself and to assume its responsibility." *He cannot contract in advance that he will adopt the advice of his counselor and thus abdicate his own judgment instead of exercising it.*

The application of the principle does not depend upon the proportion of the discretionary power which is delegated or surrendered. If the Commissioners may agree that they will surrender their discretion and decline to consider the availability of 22 out of 30 architects and plans submitted, it certainly cannot be said that they could not snrrender it as to 26, and if as to 26, then certainly as to 28; yet in that case no one would, we think, contend that they had not limited or circumscribed the discretion vested in them by the express terms of the act.

Counsel contend that the Commissioners exercise the discretion committed to them by the act when they provided for the selection of the Board of Experts in the manner prescribed in the programme, and practically confided to them the selection of the architect. We cannot see the force of this argument. The discretion vested in them is to "advise with and employ an architect," not to determine the manner in which they will bind themselves to employ one named by others.

CANNOT DELEGATE DISCRETION.

It can hardly be necessary to cite authorities to show that the Commissioners cannot delegate to others the discretion vested in them by the act. We refer, however, to a few cases of the many which may be found which declare this to be a well established principle.

In Lyon vs. Jerome, 26 Wend. 485, already cited, the Court, construing an act of the Legislature decided that the authority conferred by the act upon canal commissioners to enter upon and take possession of the land of individuals for the construction of a canal, could be executed only by the Commissioners in person or under their express direction; and that an engineer or any other sub-agent of the State could not lawfully exercise such power except by their express direction, although the construction of the canal in the vicinity of the premises entered upon had been confided to the engineer. Senator Verplanck, delivering the opinion of the Court, said: "The language of the statute, as well as the nature of the trust itself, shows that this is an authority confined to the judgment and discretion of the Commissioners themselves, for the impartial discharge of which they are responsible to the State." And in conclusion he said: "I have only to add that it is of the greatest public importance to establish the general rule of agency, that delegated authority cannot be delegated again without special power so to do as governing the official powers, acts and contracts of our State officers."

In State vs. City of Paterson, 34 N. J. L. 167, it appeared that the charter of the city provided "that the mayor and aldermen of the city of Paterson are hereby authorized and empowered to purchase a city hall or other buildings, or to purchase a suitable site or sites and erect thereon one or more public markets, city hall or other public buildings, and to employ suitable architects, engineers and other persons necessary to accomplish the purpose hereby contemplated, and to pass all such ordinances, rules, regulations and by-laws for the establishment, maintenance, using, renting and governing said markets, city hall or other public buildings as they may deem proper."

The Board of Aldermen of the city, intending to put in effect the provisions of this and other sections of their charter, passed a resolution appointing three commissioners "to proceed in the premises according to law" and purchase a site and build a public market thereon." The power of the mayor and aldermen to appoint this commission being contested, the Court said: "The mayor and aldermen are to purchase a suitable site or sites and erect thereon one or

more public markets, and to employ suitable architects, engineers and other persons necessary to accomplish these purposes. They are therefore required to use judgment and discretion in determining the suitableness of the site, and also of the architects, engineer and other persons employed to accomplish the purpose. This they must use and cannot delegate to others without express legislative authority."

In Birdsall vs. Clark, 73 N. Y. 73 (29 Am. Rep. 105), where it was provided by a city charter that the sidewalks should be built and maintained at the expense of the adjacent owners, and that when the common council should order work thereon and notify the owners thereof, if it was not done within the specified time the common council should by contract or otherwise cause it to be done. The common council directed the superintendent of streets, by resolution, to cause such work to be done when the owners neglected to do so. The plaintiff brought an action to enjoin the superintendent from doing such work in front of the plaintiff's premises. The Court held that the action was maintainable; that the power conferred by the charter, involving the exercise of discretion as to the time and manner of the performance of the work, must be pursued by the council and could not be delegated. And several cases are cited in the note at the end of this case in the American Reports.

Several other questions were argued by the counsel, which it would be necessary to consider if the view which we have taken above was not decisive of the case, but as it is we shall not discuss them.

CONCLUSION.

It will of course be understood that we are concerned with the legal questions only and have nothing to do with, and express no opinion upon, the propriety of the action, professional or other, of either or any of the parties to this controversy.

We sustain the demurrer on the ground that the Commission provided for by the act of April 14, 1897, is a delibrative body invested with discretionary powers in respect to the selection of an architect and the adoption of plans for a new Capitol building; that the terms of the programme referred to in plaintiff's bill, if enforced, would limit the discretion and the duty to exercise their independent judgment committed to, and imposed upon them by the act, and therefore a court of equity will not enforce these provisions of the programme. The demurrer is therefore sustained and the bill is dismissed at the costs of the complainants.—*J. W. Simonton, P. J., in the Engineering Record.*

SHORT SERMONS.

WOE unto him that buildeth his house by unrighteousnes, and his chambers by injustice; that useth his neighbor's service without wages and giveth him not his hire; that saith, I will build me a wide house and spacious chambers, and cutteth him out windows; and it is ceiled with cedar, and painted with vermilion. Shalt thou reign, because thou strivest to excel in cedar?—*Ancient Hebrew Writings.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE residence of Capt. Thomas Mein, designed by William Mooser & Son of San Francisco has been recently completed in Oakland. This building is in the old Colonial style and is situated on the south east corner of Jackson and Lake streets on a lot 100 by 150 feet in size, and consists of two stories, basement and attic. The basement is of brick with five feet of sandstone above the ground, the main walls of the building being covered with narrow clapboards. The front entrance is reached by a flight of marble steps leading to a portico supported by columns; the floors of portico and vestibule being of mosaic. The building is heated by hot water.

The main hall is circular in form, twenty-two feet in diameter the ceiling being arched and supported by a peristyle of eight columns—the space between the arches of the ceiling are ornamented with stucco work. The floor of the main hall is laid with narrow tongue and grooved Mahogany with a wide circular border of parquetry. The stairway, posts and rails are of mahogany, and the balustrades are finished in ivory and gold, the hall hardware being dull brass.

The main stair to second story winds around the hall; the second landing forming a balcony extending into the hall and above this balcony the second story is opened, allowing a view of the ceiling light or dome on the second story ceiling.

Under the balcony there is a large corner fireplace made out of large slabs of Mono County marble and the mantle is of carved Mahogany, circular in form.

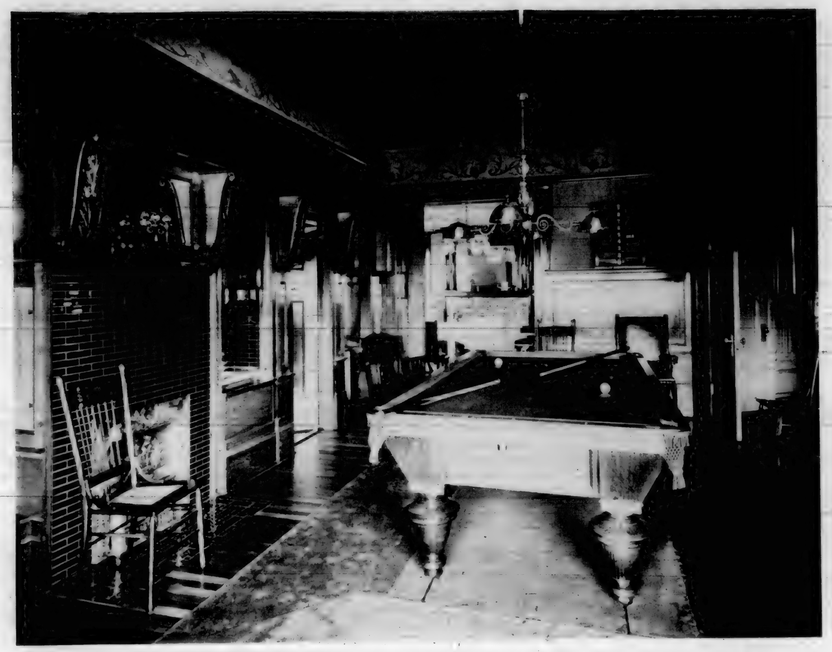
The dining-room, drawing-room, library and small hall to billard-room open from the main hall, so when the folding doors are open the whole of the main story can be thrown together making one large room.

The hall, stairway and second story hall are wainscoted to a height of five feet with ornamental panels and all the doors made to match. The walls are in blue and the woodwork in ivory and old gold; the drawing-room is twenty feet by thirty-four feet long, the fire place being surrounded with a large old Colonial onyx mantle.

The walls are in blue with fleur de lis ornaments and the woodwork finished in old ivory and bright gold with decorated cove and ceiling, the hardware being gilt.

The billiard-room is finished in quartered sawed Eastern White Oak, finished natural, wainscoted to a height of five feet four inches with flush panels and key blocks.

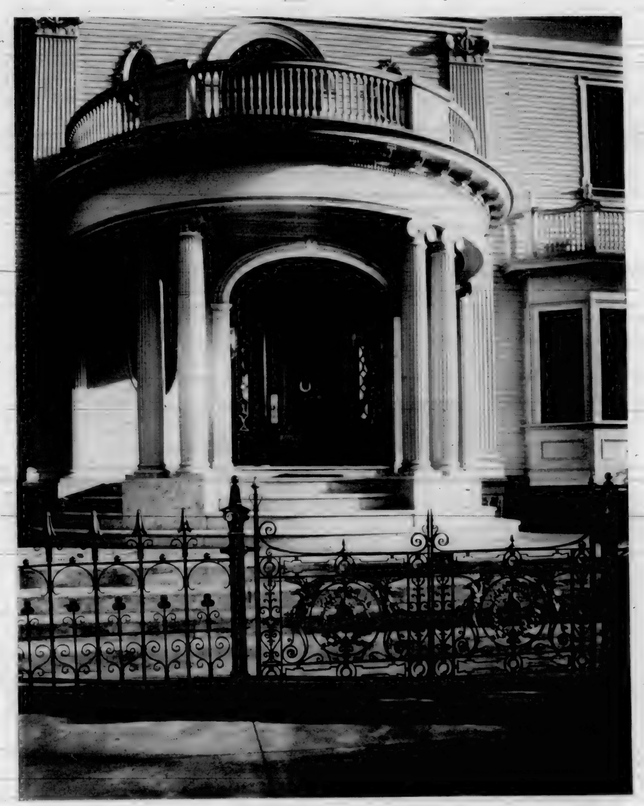
The mantel pieces, wash basins, etc., form a projecting



VIEW IN BILLIARD ROOM, CAPT. THOMAS MEIN'S RESIDENCE, OAKLAND.

VIEW IN HALL, CAPT. THOS. MEIN'S RESIDENCE, OAKLAND.
WM. MOOSER & SON, ARCHITECTS.

RESIDENCE OF CAPT. THOMAS MEIN, OAKLAND.
WM. MOOSER & SON, ARCHITECTS.



ENTRANCE OF CAPT. THOMAS MEIN'S RESIDENCE, OAKLAND.
WM. MOOSER & SON ARCHITECTS.

hood with carved oak brackets supporting the same; the hardware in this room is of antique silver. Off this room and leading to outside rear entrance is the toilet.

The dining-room is oval shaped with large shallow coved ceiling—this room has five large windows, taking up the entire end of room, the size of room is 20x30 feet, and has high wainscot of flush panels with flush key blocks, the China dresser and glass one on each side of the room are made the same shape as the room, the glass one has mirrors on back and side, with plate glass doors and shelves and silver plated brackets, fastenings, etc., the finish of this room is quartered sawed oak Flemish finish.

The library, including mantles, bookcases, etc., are of Mahogany, the hardware in silver.

Both dining-room and billiard-room floor are finished in quartered sawed tongue and grooved narrow Oak boards highly polished.

Between the dining-room and kitchen is the butler's pantry fitted up with all modern appliances, sinks, etc.

The kitchen is fitted up with one of the large latest improven ranges, with hood, etc., and with large sinks and drainboards, there is also a pantry adjoining fitted up with boxes, shelves, bins, marble pastry boards, safes, etc., etc., all completed. Adjoining this is a servants' dining-room.

The second story consists of one chamber having bath and toilets attached, and four other chambers, besides linen closets, housemaids' closets, baths, toilets, etc., etc.

All bathrooms and toilets have open plumbing and the walls are tiled in ivory color and the floors laid in Parquetry.

In the attic there are four chambers, bath; toilet, etc., also a large room all finished in tongue and grooved boards, polished, including the floor.

The basement is fitted up for room for servant, wine cellar, vegetable room, with sinks and marble drainboards, store-rooms, coal and wood-room, heater-room, laundry, etc.

The stable is provided with all the latest improved appliances, space for three stalls and one box stall, with harness-room, man's room, etc. Finished in tongue and grooved redwood boards in colors—floor is cement and stalls lined with wood.

The house stands almost in the centre of the lot, leaving ample space all around for garden and cement walks.

BUILDERS OF THE COMMONWEALTH

The principal contractors were Messrs. Campbell & Pettus whose mills and wood working establishment is located on Brannan street between 4th and 5th. The house itself is the best evidence that they performed their share of the work as per contract.

In the main portion of the house all the hardware is Art Metal work of The Yale and Town Manufacturing Company of Bonn design and is known to all architects for its correctness of design and unrivaled collection of Ornamentations.

The switches and push buttons were made to match the hardware by the same company and fitted with Harts Patent Switches.

The Dunham, Carrigan Hayden Company supplied all of these goods and that is a sufficient guarantee that they will last as long as the building does—and by the way, that Old Colonial Knocker as shown in our illustration of the main entrance is a work of art in itself.

To most of those who read these pages, Orsi is known, if known at all—as a painter of ability and a designer of original invention. By reference to the illustrations and the foregoing description of the interior it will be seen that his method of producing Ivory effects and his color work is unusual and interesting. Mr. Orsi has never done a better piece of work and the finished result is wonderfully rich, suave, toned and harmonious, transferring in every detail the conception of the architect—622 Washington street, is the habitat of the only Orsi.

For the plumbing and heating work Henry Williamson, the well known Sutter Street Plumber had the contract. Mr. Williamson fitted the house throughout with the "Lilly" closets, from the works of the John Douglass Company and these closets have well earned the credit mark of "another advance in sanitary science." This company is represented on the Coast by Mr. E. M. Douglass with store and offices at 208 Ellis Street.

The tiling throughout the house together with the mantels shown in our illustrations of the interior, were furnished by Messrs. Mangrum & Otter of 27 New Montgomery street.

The wood mantels throughout are in themselves works of rare merit both in design and finish and reflect much credit on the contractors.

The Lavatory fittings and wash basins complete, except the marble work, as also all of the little nickle plated conveniences in the bath and toilet rooms were of the exclusive design order of which the J. L. Mott Iron Works are the manufacturers and M. S. James Flood Building the Pacific Coast representative.

The Waterproof and insulating properties of the building are much enhanced through the fact that it is lined throughout with the P. & B. Building Paper.

The Paraffine Paint Company of 116 Battery Street are the manufacturers of this well known make of paper.

The Marble work of which our illustration of the main entrance is a good example was done by Joseph Musto & Son whose yards and finishing works are at 710 Battery street.

The well known and always trustworthy house of John G. Ils & Co., of 814 Kearny street, supplied the kitchen and laundry outfit, which included one of their large, latest improved Cooking Ranges.

ONE of our illustrations this month is the new Union Depot being erected at Mill Valley for the use of the North Pacific Coast Railroad and the Mill Valley and Mount Tamalpais Scenic Railway. The former has the principal interest in the new structure. The station proper is twenty-two feet by seventy-two feet within which limits are included waiting rooms, baggage rooms, ticket office and Wells Fargo's office, two toilet rooms etc.

On the second floor there will be apartments for the station agent with all necessary accomodations.

The entire lower story will be finished in polished redwood. At either end of the waiting room will be two very large Roman brick fireplaces. The train shed is to be 50x150 feet covered with a trussed roof in one span, and so arranged that all passengers can change from one train to the other without leaving the shelter of the shed. The train shed is to be planked throughout and the northern end devoted to the office for the Scenic Railway.

Both these railroads traverse a very picturesque region—

the road up Mount Tamalpais winds through canyons and along the southern slope of the mountains and is well protected from the trade winds. The views to be enjoyed on the trip are alone worth a trip to California to see. The The surrounding hills and Saucelito in the foreground, the Bay of San Francisco and the city by the Golden Gate in the distance combine to make a shifting panorama that long remains in the memory.

It is by the North Pacific Coast Railway that San Rafael is reached, one of the most charming residence towns in the State, and a favorite resort of the elite of San Francisco. The roads extends from there northerly past summer resorts, camping grounds, farms and villiages until at last the Russian river, Duncan's Mills and Cazadero are reached where the majestic redwood trees still stand in closed ranks waiting the woodman's ax. Popular excursions are run during the summer months allowing the sight seer to obtain in a few hours as much enjoyment as can be compressed into a single day, while those who have more time at their disposal and a keen appreciation of the beauties of nature can indulge their taste to the fullest extend, camping, boating, hunting, fishing, swimming and in a hundred other ways enjoy the glow of health resulting from these sturdy out door exercises.

THE CONTRACTORS

The principal contract on the Depot was awarded to Thos. O'Connor of San Rafael. Mr. O'Connor is now as he has been for some years past the principal contractor and house builder of Marin County and is one of those earnest and trustworthy workers who always lives up to his contracts and who can at all times be relied upon to carry out the specifications to the letter.

Every reader of this paper knows that *Multum in Parvo* is the familiar watchword of Mr. Jas. A. Wilson—to whom the brick work was awarded, which fact carries with it that other fact that there's enough said.

The plumbing and lighting work went to Mr. S. M. Burt of Eastland and Mill Valley, and the dwellers of these hillside health retreats are fortunate in one respect if in no other—viz.: In having a plumber always in their midst—for a plumber, like a doctor is "muchly" needed when wanted.

Van Dorn's Steel Joist Hangers will be used throughout the building and it goes without saying that these "Hangers" have no equal.

POINTS ON PRACTICAL WORK.

WHERE is quite generally a false idea prevailing among mechanics (stone masons and stone cutters) in regard to the proper method in which square dressed rubble, or broken ashlar, should be arranged, says *Stone*, and this mistaken idea seems to have originated from the fact that architects' specifications and instructions in contracts for such class of work usually specify that stones not under five (5) inches or over fifteen (15) in height shall be used. Sometimes other dimensions are given, as for instance not under four (4) or over twelve (12) inches, although it seldom happens that any dimensions as to length are given.

As a matter of fact, no such fixed rule is possible in practice, and should the mason hold strictly to certain sizes it would simply reduce the work to dimension stone and thereby add unnecessary cost without any additional beauty to the appearance of the work.

To prepare stone most economically for this class of work —square dressed rubble or broken ashlar—it should be cut in the quarry whenever possible, thereby saving freight or hauling on a large amount of refuse or spawls, and sizes should be from say four (4) to eighteen (18) inches in height or whatever the stones will make without too much waste. It is not at all necessary that the stones should be exactly four, eight, twelve or sixteen inches. Larger than eighteen inches, however, in majority of cases should not be used, although even over this size might be utilized without detracting from the appearance of the work, if, as sometimes happens, such sizes could be used in a wall with large surface, and unbroken by openings. By having the stone delivered on the job, cut and ready to go in the wall, the work can be pushed along very rapidly, and the fitter, or even the mason, can quickly arrange the proper breaks in the courses, and easily make the necessary closures from either the cut or the other stone on the ground.

The place of evey stone as well as the bond was arranged by the writer, he on the ground measuring and sending the stones to the masons to be placed as directed. Two masons set them in place as fast as they could be set up. This was a departure from the ordinary methods of doing this class of work and gave entire satisfaction to contractors and architects. Where broken ashlar is used and there is a great deal of dead work such as invariably exists in churches and public buildings, stones of larger dimensions ccn be used and give to the work a much handsomer appearance to have them properly mixed with the smaller stones, necessitating, however, an increase in length of bed joints.

NOTICE TO ARCHITECTS.

Office of State Normal School of San Diego, San Diego, Cal.

December 16, 1897.

TO ALL ARCHITECTS WHOM THIS MAY CONCERN:

The Board of Trustees of the State Normal School of San Diego, California, hereby invite the submission of plans and specifications in detail for a two-story and basement brick building, to be erected upon the "College Campus" site on University Heights, in the City of San Diego, for the use of said Normal School, to cost when completed not to exceed $100,000.00; provided, however, said plans and specifications must be so prepared, that a portion or section of said building can be properly constructed at once, at a cost not to exceed $35,000.00, and in such a manner as to permit additions to be made thereto.

The Architect whose plans shall be accepted and adopted, shall receive as a premium therefor the sum of $500.00; provided the Board of Trustees reserve the right to accept or reject any or all plans submitted, without incurring any liability to any Architect or person for any plan made or submitted.

The plans and specifications must be delivered to said Board of Trustees, at the Law Offices of W. R. Guy, in San Diego, Cal., on or before the 19th day of January, 1898.

Architects competing are referred to J. L. Dryden, Secretary, at San Diego, for further particulars.

By authority of the Board of Trustees of the State Normal School of San Diego.

J. L. DRYDEN, Secretary. W. R. Guy, President Board of Trustee.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,

SETH BABSON, Pres. H. A. SCHULTZ, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. KENT, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

Subscribe for CALIFORNIA ARCHITECT AND BUILDING NEWS—$3.00 Per Year.

BOOKS AND PERIODICALS.

Journal of the WESTERN SOCIETY OF ENGINEERS for October, 1897. The leading article in this journal on "Motocycles" read September 8, 1897, for the purpose of developing a discussion on Motocycles, in the furtherance of a more general interest and wider dissemination of information on the subject, which would be conductive to the earlier utility of this mode of transportation for commercial uses, and pleasure as well, the Electrical Committee of the Western Society of Engineers, consisting of Messrs. H. M. Brinckerhoff, L. L. Summers and Bion J. Arnold, formulated a circular outlining the following general divisions of the subject for consideration:

1. Preference as to driving power with reason as to selection. 2. Economy. 3. Control. 4. Convenience. 5. Design and construction. 6. Safety and reliability. 7. Field of application. 8. Limiting conditions.

The answers to this circular are given containing much information on this subject.

THE STRENGTH OF MATERIALS. A text book for Manual Training Schools, by Mansfield Merriman, Professor of Civil Engineering in Lehigh University, first edition. Published in New York by John Wiley & Sons; London: Chapman & Hall, 1897. Professor Merriman is the author of several works that have served as text books in many schools and colleges among others A Treatise on Hydraulics, A Handbook for Surveyors, Higher Mathematics, etc. Professor Merriman appears to have a very happy faculty of making his meaning understood with few words; an example of this may be seen in the first chapter under the head of "Elastic and Ultimate Strength."

This book cannot fail to recommend itself to Engineers and Architects but also prove of great value to students in those branches.

LIPPINCOTT'S Monthly Magazine for December, 1897, has for a complete novel "Poor Chola" by Julia P. Dabney. This novel is somewhat out of the common track and describes localities not much known to the general reader, but nevertheless will be considered interesting by many readers. Among other articles of interest "Gold Mining in North America" by George Ethelbert Walsh, reflects the interest now taken by the world in gold mining: if this rage continues, the silver question settles itself by becoming more scarce than gold. To the question "Who are the Greeks?" the reply might be made that it matters not.

THE ARCHITECTS DIRECTORY for 1897-98, published by William T. Comstock, New York: price one dollar. It is always a welcome volume containing as it does a list of the Architects in the United States and Canada, classified by States and towns with the architectural associa-

tions to which they belong indicated against each name. Prepared with the greatest care to secure accuracy both in names and location.

It has also a classified Index of prominent dealers and manufacturers of building materials and appliances. Architects should be thankful to Mr. Comstock for this carefully prepared annual edition now in its fourth year, while to dealers in building materials it is a perfect God send.

THE UNIVERSAL CARPENTER AND JOINER, and Wood Workers Assistant, by Fred. T. Hodgson, published by the Industrial Publication Company, 10 Thomas street, New York. In five parts, the first part with 250 illustrations, Royal 8 vo. bound in stiff cover $1.00.

Mr. Hodgson was formerly a contributor to this journal and well known as the author of "The Steel Square and its Uses," as well as various other volumes on "Practical Carpentry," "Stairbuilding Made Easy," etc.

The aim of the Author is to make the above work the most complete treatise on Carpentry and Joinery published to date, and the publishers have no hesitation in saying that the success which Mr. Hodgson has achieved during the past twenty years in furnishing the mechanics of this country with thoroughly reliable and easily understood textbooks, is a sure guarantee of the excellence of his present effort.

It will be issued in Five Parts, each Part consisting of ouer 100 large royal octavo pages, printed on fine paper, and strongly bound in stiff paper covers; and as it is the intention of the publishers to place this important work within the reach of every industrious mechanic and apprentice in the land, they have placed the price at $1.00 per Part. Many works in the market, containing no more matter than a single Part, and not so well illustrated, are now selling for from $5.00 to $10.00 each.

A REMARKABLE CHURCH.

TO BE BUILT EXCLUSIVELY OF BRICK AND TERRA COTTA.

WHERE IS NOW in the course of construction in Chicago one of the handsomest and most substantial churches in this country, and when completed it will be a remarkable edifice. According to the Portsmouth (O.) *Sentinel*, it will be entirely of brick masonry. Even the window frames in which the glass will be set will be of brick. Erom floor to roofMoutside and inside, walls and ceilings, casements and stairways, the visible and the invisible—will be vitrified clay, depending on itself for support and decoration. The style of architecture is Romanesque and Gothic, after the style of the twelfth and thirteenth centuries. The total length will be 210 feet; width, 110 feet, with two two-towers thirty-two feet square at the bottom and 245 feet high from the sidewalk. The body of the church proper inside will be sixty-eight feet wide. In the erection of this church there will be no plaster, no stucco, no imitation marble, nor shams of any kind. Rev. Geo. D. Heldman, who is in charge, says that "a building consecrated to the teachings of the eternat truth should of itself be true," and as good brick is one of the most durable things in nature or art, he will let it bear witness to its own strength and beauty. The main entrance will be through six pairs of doors into three large vestibules leading directly into the nave and side aisles. The nave will be entirely free from columns. The side aisles will extend all around the church and behind the high altar. The height of the nave will be seventy-five feet; width, forty feet between the columns which divide it from the side aisles. The body of the church expands as the front is approached. They have some buildings of this style in Europe, but nothing of the kind has ever been attempted in this country, and it will be watched with a great deal of interest by those interested in the construction of large buildings.

In consequence of its being so novel, no brick suitable could be found in the market, and the builder had to have made to order the various shapes required. There will be no less than five hundred of these different kinds of bricks and moldings. Terra cotta will be used extensively, both inside and out, from the finials on the spires downward. White terra cotta figures of religious subjects will decorate the interior. The altars, communion rail, front of organ loft and pulpit will all be of terra cotta.

About 2,500,000 brick will be required in its construction, of which about 500,000 will be of fancy moldings. The prevailing color of the brick will be of light buff, with warmer colors for trimmings, running into dark brown. The body of the walls will be of light buff and yellow. The ribs of the arches and groins will be of molded bricks, the keystones of terra cotta. Not a foot of wood nor a yard of plaster will be used in the whole building. The brick casements will have grooves into which the glass will be set and fixed with putty. The great amount of brick used in the construction of this remarkable building will be furnished by the Webster Fire Brick Co., of South Webster, O.

INFLUENCE OF LIGHT ON EDGE TOOLS.

IT IS not generally known that the light of the sun and the moon exercise a deleterious effect on edge tools. Knives, drills, scythes and sickles assume a blue color if they are exposed for some time to the light and heat of the sun; the sharp edge disappears, and the tool is rendered absolutely useless until it is retempered. Purchasers should, therefore be on their guard against buying tools from retail dealers and peddlers, which for show purposes have probably been exposed for days together to the glare of the sun. The unserviceableness of tools acquired under these conditions is generally wrongly attributed to bad material or to inferior workmanship. A similar prejudicial effect has been exercised by moonlight. An ordinary crosscut saw is asserted to have been put out of shape in a single night by exposure to the moon.

WANTED—TRUSTWORTHY AND ACTIVE GENTLEMEN or ladies to travel for responsible, established house. Monthly $65.00 and expenses. Position steady. Reference. Enclosed self-addressed stamped envelope.

The Dominion Company, Dept. V., Chicago.

BUSINESS MOSAICS.

The Pacific Coast representative of the J. L. Mott Iron Works Mr. M. S. James, can be found at his office 27 Flood Building. His show rooms are well worth a visit, the inspection of his stock of sanitary specialities will well repay the trouble.

The constant aim of this company appears to be the production of something new that at the same time is a little better than what has been produced. By reference to their advertisement in this journal a good idea of the various baths, lavatories, etc., can be obtained.

Messrs. N. & G. Taylor Co., Philadelphia, have lately furnished the largest Ventilator we have ever heard of. It has a total diameter of eighteen feet over all, the diameter of the neck being ten feet. It is on the Midland Beach Casino at Midland Beach, Staten Island. It is the "Pancoast" make which appears to be giving such great satisfaction throughout the United States. This same make of Ventilation was also used on the new Astoria Hotel, New York City.

Samples of "The Pancoast Ventilator" may be seen at the office of Mr. Charles J. Waterhouse, who represents Messrs. N. & G. Taylor Co. on the Pacific Coast, at No. 35 New Montgomery street, San Francisco.

The Pacific Loan Association sends us their 13th Annual Report for the year ending Dec. 1, 1897. The totals make up a very flattering showing and are as follows:

Receipts—$131,625.27. Disbursements—$131,625.27. Assets—$313,142.36. Of this $261,462.56 is in mortgage loans. Liabilities, including a reserve fund of $7,839.75. $313,142 36.

The securities in the hande of the Treasurer and the books of the association were examined and verified by the auditing committee, Messrs. I. S. Ackerman and E. Messager and found correct.

Mr. Emil Gunzburger the obliging Secretary of this and seven other Building and Loan Associations can be found by Builders and Architects—on the lookout for a loan—at 214 Pine street.

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Mr. Jackson's long experience in this class of work makes him a first class authority for what is best in his line of business. The faithful manner in which his contracts are executed make it a pleasure to do business with the firm.

LEGAL DECISIONS.

From a large number of Legal Decisions of the higher Court, of the different States of the Union, we select and publish in this column, such as appear applicable to this section of the country.

OWNER ENTITLED TO EXPENSE OF CHANGING PLANS.—A lot owner who after notice that part of his lot was to be condemned, changed the plan of a building which he was erecting, so as to omit that portion of the lot to be condemned, is entitled to compensation for the expense so occasioned.

In re-Trustees Brooklyn Bridge, Sup. Ct. N. Y., 45 N. Y. Supp. Rep. 484.

MANUFACTURER BOUND BY STATEMENT OF AGENTS.—Statements of the agents of the seller of a range that owing to the peculiar construction of the range the pipes did not need to be insulated, are admissible as part of the transaction, in a suit to recover for the destruction of the house by fire originating from such lack of insulation.

Wrought-Iron Range Co. v. Graham, U. S. Cir. Ct. App., 80 Federal Rep. 474.

OWNER NOT LIABLE TO GARNISHMENT.—Where a building contract does not prevent the filing of valid liens against the building, though the owner have funds in hand, he is not liable to garnishment, but may retain such funds, and apply them to the discharge of mechanic's lien filed against the building.

Schotts v. Bell, 18 Pa. C. C. Sep. 427.

ARCHITECT HAS NO LIEN FOR PLANS IN MASSACHUSETTS.—An architect is not entided to a lien for drawing plans and specifications for a building, under the laws of Massachusetts (Pub. St. c. 191, sec. 1) which gives a lien to any person to whom a debt is

due for "labor performed or furnished and actually used in the erection of a building."

Michell v. Pankard, Sup. Jud. Ct. Mass., 47 Northeastern Rep. 113.

WHEN CONTRACTOR TAKES PRECEDENCE.—Where one advanced money to the owner of a building, and took a mortgage on same, while a contractor was erecting it, he is affected with notice of the contractors's lien, and the latter is not lost by reason of the contractor taking the notes of the owner secured by mortgage on the building.

F. & M. Nat'l Bank q. Taylor, Supreme Ct. Tex., 40 Southwestern, Rep. 966.

LIABILITY OF OWNER MAKING CHANGES TO TENANTS.—A tenant of the third and fourth floors of a building, whose water supply is cut off, furniture injured by dust and lime, ingress and egress interfered with, causing damage, by the landlords' repairing the second floor, may recover from the landlord for breach of covenant of quiet enjoyment, irrespective of his negligence.

McDowell v. Hyman, Supreme Conrt Cal, 48 Pacific Rep. 984.

WHEN WIFE IS NOT LIABLE FOR IMPROVEMENTS OF HUSBAND.—Where a husband agrees with his wife to erect improvements on her land, and to pay for the same, one selling lumber to the husband on his credit, and without intent to charge the wife for same, cannot enforce an equitable lien against the land.

Poe v. Ekert, Supreme Ct. Iowa, 71 Northwestern Rep. 579.

CITY BUILDING NEWS.

Alvarado near Hoffman. Cottage; owner, I. E. Laws; builder, J. Hegman; cost $1500.

Broderick near Grove. Two-story frame; owner, Mrs. Rosalia Altmayer; architect, J. E. Krafft; contractor, R. Currie; signed, Nov. 29; filed, Nov. 30; cost $4000.

Buchanan and Lily Ave. Two-story frame; owner, Ida M. Cummins; architect, Wm. T. Cummins; contractor, John Foster; signed, Nov. 18; filed, Nov. 27; cost $6784.

Buchanan and Lily Ave. Plumbing, etc; owner, Ida M. Cummins; architect, W. T. Cummins; contractors, Berarik & Spinks; signed, Nov. 26; filed, Dec. 2; cost $1216.

Buena Vista Ave. Two-story frame; owner, T. L. Henderson; architect, W. H. Lillie; contractor, T. T. Pottinger; signed, Nov. 18; filed, Nov. 19; cost $3835.

Capp near Adair. Cottage; owner, U. A. Hancock; architects, Havens & Toepke; contractor, C. A. Holm; signed, Nov. 13; filed, Nov. 16; cost $1500.

Eddy and Mason. Painting, etc., for six-story brick; owner, Fabrizio Nigro; architects, Mooser & Son; contractor, G. Orsi; signed, Oct. 30; filed, Nov. 17; cost $5250.

Fourth Ave. and Clement. Two-story frame; owner, Charles Hitchcock; contractor, J. Lund; signed, Nov. 15; filed, Dec. 1; cost $4950.

Franklin near Ellis. Two-story frame; owner, J. A. Bergerot; architect, J. Godart; contractor, Donald Currie; signed, Dec. 13; filed, Dec. 13; cost $7650.

Fremont street. Concrete work for brick building; owners, McIntosh & Wolpman; architect, E. Kollofrath; contractors, Camp & Carrillon; signed, Nov. 24; filed, Nov. 26; cost $1516. Carpenter work, etc; contractor, Charles Schutt; signed, Nov. 24; filed, Nov. 27; cost $2430. Brick work, etc; contractor, F. Wagner; signed, Nov. 26; filed, Nov. 27; cost $2940.

Harrison and 9th. Two-story frame; owner, Estate of James Phelan; architect, A. C. Lutgens; contractor, A. H. Wilhelm; signed, Nov. 18; filed, Nov. 19; cost $3490.

Hayes near Fillmore. Two-story frame; owner, Isaac Eliaser; contractor, E. C. Bletch; signed, Nov. 30; filed, Dec. 1; cost $2610.

Hoffman Ave. near Alvarado. Cottage; owner, J. S. Coats; builder, J. Heyman; cost $1750.

Hoffman Ave. near Alvarado. Cottage; owner, J. C. Coats; builder, J. Heyman; cost $1500.

Larkin and Post. Additions and alterations; owner, Fanny Morris; architect, A. J. Barnett; contractor, G. W. Duffie; signed, Nov. 22; filed, Nov. 23; cost not given.

Laguna and Olive Ave. Six flats; owner, L. Kutner; architect, W. J. Cuthbertson; contractor, Kinread Bros.; signed, Nov. 10; filed, Nov. 12; cost $9310. Plumbing work; contractor, Ickelheimer Bros.; signed, Nov. 12; filed, Nov. 12; cost $1447.

McAllister and Lyon. Three-story frame; owner, P. J. Rowan; architects, Shea & Shea; contractors, Demartini & Pagano; signed, Nov. 19; filed, Nov. 22; cost $4845.

Mission and Second. Steel work for six-story brick and granite building; owners, Wells, Fargo & Co.; architects, Percy & Hamilton; contractor, E. F. Jones; signed, Nov. 18; filed, Nov. 19; cost $9800.

Mission and Second. Brick and terra cotta work for six-story brick; owners, Wells, Fargo & Co.; architects, Percy & Hamilton; contractors, Richardson & Gale; signed, Dec. 8; filed, Dec. 9; cost $54,860.

O'Farrell near Webster. Two-story frame; owners, Mary E. & J. C. Konrad; architect, W. H. Armitage; contractor, R. J. Pavert; filed, Nov. 30; cost $2739.

Pacific Ave. near Van Ness. Three-story frame; owner, Frank H. Woods; contractors, Howkins & Lindsay; signed, Dec. 8; filed, Dec. 11; cost $8600.

Page near Masonic Ave. Two-story frame; owner, John H. Crow; contractor, Wm. Helbing; signed, Nov. 29; filed, Dec. 7; cost $5145.

Pulski near Jefferson. Cottage; owner, T. J. Sullivan; builder, J. Hegman; cost $1400.

Sixteenth and Hoffman. Carpentry mill work, etc., for two-story brick; owners, W. H. and Joseph Hyman; architects, Percy & Hamilton; contractors, Anderson & Greig; signed, Dec. 7; filed, Dec. 10; cost $10,875. Excavations, brick and terra cotta work; contractors, Peacock & Butcher; signed, Dec. 8; filed, Dec. 10; cost $3880. Plumbing, etc; contractor, H. Williamson; signed, Dec. 9; filed, Dec. 10; cost $1859.

Turk near Mason. Sidewalk illuminated tile work, etc; owner, G. G. Burnett; architect, J. E. Wolfe; contractor, H. Haustein; cost $640.25.

Twelfth Ave. No. 1726. Alterations, etc; owners, Mary and Annie Hagerty and Lizzie Coyle; contractor, Wm. Gilmour; signed, Nov. 23; filed, Nov. 30; cost $1115.

Van Ness and Olive Ave. Painting, etc; owner, J. Frowenfeld; architects, Salfield & Kohlberg; contractor, J. E. Ritzer; signed, Nov. 15; filed, Nov. 23; cost $1200.

Washington near Montgomery. Alterations and additions; owner, Achille Paladina; architects, Mooser & Son; contractor, L. Cereghino; signed, Dec. 10; filed, Dec. 11; cost $4500.

TITLE THE CALIFORNIA ARCHITECT AND BUILDING NEWS
FORMERLY THE CALIFORNIA ARCHITECT AND BUILDING REVIEW
FORMERLY THE QUARTERLY ARCHITECTURAL REVIEW

AUTHOR

VOLUME XIX

DATE 1898

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

OFFICE
468 California St. Room 16.
$3.00 PER YEAR.

Vol. XIX. No. 1. JANUARY, 1898.

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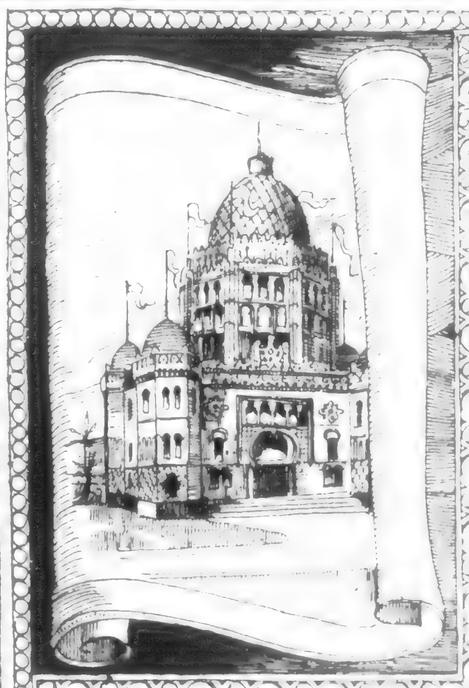

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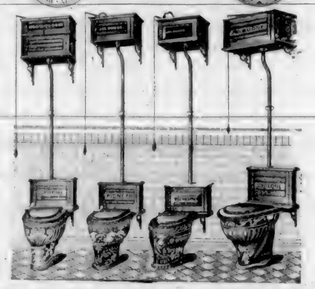

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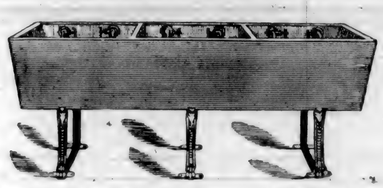

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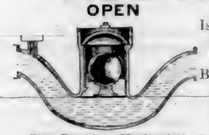

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

E PRINT in another column a paper that was read by Osborn Howes, Secretary Boston Building Fire Underwriters, before the Detroit Convention of Building Commissioners and Inspectors.

In his paper Mr. Howes points out very clearly that it is within the power of the Insurance Companies when these act collectively through a Board of Fire Underwriters, to enforce the building laws and the same course of proceedure on the part of the Insurance Companies would come very near enforcing a rigid observance of the Fire order. It would, in fact, prove a strong factor in doing away with the "pull supervisoral" which is now the great stumbling block of the Fire Warden who is inclined to enforce a strict observance of the Fire order on the property owners anxious to increase his rentals regardless of the rights of others. There would be but little incentive then to "revamp" old wooden rookeries because of the serious disadvantage he would be under when tempting to lease his property.

The remedy for this growing evil, as given in Mr. Howes' paper may have suggested itself to some of the local underwriters, if so it has been the proverbial light under the bushel, in so far as official publicity is concerned, but whether it has or not, the fact remains that the local board is not now acting collectively on these lines and it is to be assumed that internal dissensions have heretofore prevented concurrent action.

Yet the remedy is there, let the Underwriters make it generally known that the board would impose a penal charge of double rates upon buildings put up in palpable and serious defiance of the building laws or of the fire order, and we believe that after the risk assumed became generally known very few "improvers" or "revampers" would care to subject their property to it. Make the "revampers" see that ther was "nothing in in it" then with all hope of repeal gone the necessity for political pressure disappears and the 'revamper" becomes a law abiding citizen with a very wholesome respect for the regulations of the Fire Order as well as for the building laws of the City.

N THIS issue considerable space is given to an article on the wiring of buildings for electric lighting and it is our intention to print during the coming year a series of articles on this subject, an up-to-date knowledge of which, is daily becoming more and more important to every architect, and we do not doubt that many things now unknown to our ubiquitous man about town will see the light for the first time in some of these papers.

Architects realize that they must sooner or later, and the sooner the better, take up this subject seriously as a regular line of study and give to it a very considerable share of their attention, for this question of the efficient wiring of buildings can be no longer left entirely, as heretofore in many offices, to the contracting dealer in electrical supplies, who gives little or no attention himself to the mechanical execution of the work.

The Underwriters National Electric Association publish from time to time many useful suggestions for architects, also the results of recent tests, and these laboratory reports on all devices, after being carefully digested, and printed in these columns should prove very interesting reading to every reader of this Journal.

THE CHARTER makers are once more at their labors—and an appropriate time comes for suggestions. As most interesting to our readers we shall take under advisement for a short period the position of a Board of Public Works in a Charter for a City such as San Francisco. So far, a Board of Public Works has not appeared as an unmitigated success wherever it has had existence. When appointed by the Mayor as a few years ago was the case in our neighboring city of Oakland, it was so little a success that the citizens of that burgh abolished it in that form. Now it consists of the Mayor, City Surveyor and City Attorney, but it doesn't give satisfaction even in that form and the citizens are talking about getting up another new charter.

The Board of Public Works which carried out some quite large projects in London is now a think of the past and we hear of no desires on the part of the citizens to return to its government, but they seem content to have the Works Department carried on by a committee of the Council, the only complaint appearing to come from Contractors, who have been superseded by the system of day labor in vogue under the present regime.

So that looking at it from the standpoint of experience nothing much can be said in its favor. Looking at it from the standpoint of reason can more be said? Does any successful private corporation trust its engineering and architectural works to a Board of Engineers or Architects. No! they have their chief engineer or their architect and he is the man who is responsible for the work in his department—the man who receives the orders from the Board of Directors and carries them out without the aid of any middle Board.

Now why in the name of common sense cannot a corporation of the size of San Francisco—whose works and buildings do not compare with some of the private trusts and corporations do the same thing! Why is this bugbear, this Board of Public Works, allowed to rear its head in all our Charters. It cannot be for its use, for all the executive powers it has can be far more advantageously used by one man than by several, and its legislative powers can far more appropriately be done by a well chosen Committee of the City Council, who are elected by the people for the express purpose of Legislating.

Can it be for its beauty or example? Let the present like Boards now in existence tell us—the Police, Fire or Park Commissioners. Then what is it proposed for? Its only *raison d' etre*, until we receive further enlightenment, seems to be to find places for *political friends and to eat taxes*.

Although we have confined our remarks to a Board of Public Works as being more germane to the objects of our journal and as the Board dealing with the most important matters still the same strictures apply to all permanent Municipal Boards and Commissions.

Experienced men like the Chiefs of the Fire and Police Departments surely must be able to carry on the business of their departments better without the aid of amateurs than with.

The Departments of Education and Health again require no more Boards to carry on their business than the Record Department represented by the Recorder and County Clerk, or the Legal Department represented by the City Attorney and Sheriff—or the Judicial Department or the Financial Department with its heads the Treasurer, Tax Collector and Assessor. All these departments manage to wriggle along without Boards, why not the Works, Fire, Health, Police, Parks and Education.

As a mitigation of the absurdity of the position, it has been recently proposed to make some of the members of the Board of Public Works experts, engineers; but this is simply to make confusion more confounded. It is proverbial the disagreements of professionals—doctors disagree, Judges of the Supreme Courts are divided with diametrically opposed opinions. Architects are not always in accord, and Engineers are in the same boat; Actors render characters in quite different manners, etc., so that the result of having boards of Experts is simply to delay and emasculate the work in hand.

There is one more matter which the Charter Makers no doubt will incorporate into their document, i. e., the compulsory referring to the people before conclusion of all matters involving rights or large sums of money—e. g., such matters as franchises for garbage cremation, the acquisition or sale of public parks or real estate of any kind—or the erection of any building—outside of the ordinary business of the departments.

This is very necessary and good and would prevent temptation to deal in jobs.

AN ORDINANCE to establish the office of Electrical Inspector, printed in another column, is right in line with what should be done, a move in the right direction and there is no equitable reason why its passage should be delayed.

In this ordinance the Superintendent of the Fire Alarm and Police Telegraph of the City is made the Electrical Inspector and this one feature is, as a matter of fact, the only debatable question connected with it. The present superintendent, Mr. Hewitt, is unquestionably the right man in the right place and while it is true that to pass this ordinance means the making of the office purely a political one, this is an appointment that should be placed, simply as a matter of good business policy as far removed from all political combinations as it is possible to place it, in order that the Inspector may be at all times free to do his whole duty without fear or favor. But the Era of Bellamy is not yet and the difference between what we will get and what we want after Supervisonal action will be somewhat wider than Market street.

Looking at the question from all sides, and weighing well the probable effect and results to be obtained by what could be said or done, the political pressure is sure to outweigh all other interests and the chances for getting trustworthy, intelligent inspection would be fully fifty percent better if the appointment be placed in the office of the superintendent of the Fire Alarm and Police Telegraph, over what could be expected to come out of the usual run of "shad political" a spawn about as free to act independently or to conserve the interests of the community at large as the man in the moon would be.

WHO IS TO BLAME—AND HOW GREAT IS THE RISK?

S THE ELECTRICAL industry advances, with its progress arises also certain risks, that should be guarded against, and which cannot be overlooked, without damage to life and property, it is a well known fact that fires are becoming more numerous every day through Electric wiring. If we know the source, it behooves us to ascertain the causes, which are numerous, and when we speak of bad wiring it covers the field, and still leaves us as much in the dark as before, and what the readers of this paper should know is what composes bad wiring, and how to avoid it!

We will point out the principal causes, first willful neglect to comply with the underwriters rules in regard to insulators, and also the use of smaller size wire than that allowed for the same amount of current, poorly insulated wire and excessively heavy currents, inexperienced help, such as boys and men who know nothing of the business, and who are employed to save expense or add more profit—now who is at fault? This state of affairs exists! The blame may be placed in one quarter or another.

Take for example and for the purpose of illustration the case of a large new residence that is supplied with current from the Piedemont Street Railway system, being connected from the feeder at the corner of Santa Clara and Oakland avenues, Oakland, and carried down to the aforementioned residence about a block below. From all appearances the wire used to conduct the current from the feeder to the building is of the cheapest grade.

If the inside wiring is of the same class of workmanship as that of the outside, few if any of the rules and requirements of the National Electric Code—were observed—and the risk to property and even to life becomes five times greater than would be the case if taken from the regular incandescent circuit. Any person can see that a current having 600 volts electric motor force, would be six times greate for the same insulation than 100 volts E. M. F. would be, for of course, it can be readily understood that where a residence is supplied direct from a railway circuit of 600 volts as in the Oakland case specified above, the risk of fires, even with the best of devices and highest insulation of wires is a sufficiently hazardous one, but how much greater this risk becomes where cheap or unskilled labor is employed and low grade insulation. Take again as an illustration the handsome and very costly Chronicle Building and most of our readers will recollect that when the Electric Contractor lighted up the building for the purpose of testing the effectiveness of his work, it was discovered that the insulation used had become worthless by the absorption of moisture from contact with the concrete, into which they were embedded, and the wire used was totally incapable of carrying the amount of current supplied, which was easily apparent as the building was smoking from the lower to the upper stories.

Here, surely, is an example worth pondering over and these sort of things must have their effect on Architects, then why not take up this subjcet and give to it the attention that is most certainly its due. Fire Underwriters can be generally depended upon to look out for their own interests, although, in a fit of rigid economy the the board decided, some time ago to get along without an Electric Inspector, and in consequence the Electrical Contractors have had things pretty much their own way. But the mission of these papers is to stir up the Architects that they may become in their individual capacity, thoroughly versed in the skill of "how to wire" a building, in accordance with the rules and requirements of the "National Electric Code".

TEST OF METAL LATHING.

ON WEDNESDAY, January 26, an interesting test was made at Wells Fargo & Co.'s new building, designed to show the relative merits of different kinds of metal lath on wooden studs as a protection from fire—and incidently to test a variety of cements, concrete and metal partitions.

Under the direction of G. W. Percy, of Percy & Hamilton, Architects, a furnace had been built of brick, 4'0" wide, 8'0" long and 2'6" high above the grate bars with 1'0" space under the grate bars with air inlets all around.

In the sides of this furnace were inserted six panels 12"x20" of various types of metal partitions while the top of furnace was 3" thick of cinder concrete made in the proportions of one part Alsen's Portland cement, two parts sand and three parts of fine cinders, for one half of the top expanded metal was inbedded in the concrete, and the other half had ¼" twisted iron rods placed 3" apart. Over the centre of the furnace was a chimney 3'0"x3'0" and 8'00" high, built with 2"x4" O. P. studs with 2"x4" plate and sill, and width 2"x4" bridging all around near the centre of height. In the cenre of each of the four sides the studs were placed 16" on centres as is usual in frame buildings the corners were formed with two 2"x4" studs.

Each of the four sides were covered with a different kind of lath by the men representing them.

At the bottom the metal laths extended back, about 4"

on the under side of the concrete and nailed to it while at the top it covered the top of plate.

The plastering was applied by a disinterested plasterer in the usual manner of good three coat work of ordinary lime mortar. While some of the metal panels, were plastered outside and inside with lime mortars, some with Alsen cement plaster and some with Kings' Windsor cement.

It was intended to test four different kinds of metal lath in the chimney but the representative of one kind became dissatisfied and wished to prevent the test being made and strongly objected to its being considered a test of his lath, therefore, no further mention will be made of that one.

The three varieties that may be considered to be fairly tested were:—Roebling's Stiffened Wire, The Bostwick Steel Lath and the Expand Metal Lath.

The lower end of the chimney was further protected with Turnbull & Cullerton Steel Lathing nailed over the three coats of mortar and extending about 8" up on the studs and 6" under the concrete. This was plastered on two sides of the chimney with Royal cement plaster, on one side with Anti-Coloric boiler covering and on the other with Alpine cement plastering. The whole had been fairly well dried, when at 9:30 A. M., a small fire was started with dry kindling and a light fire was kept up until 10 o'clock when a hot fire was made with dry Manzinita cord wood fed in from both ends of the furnace. From this time on a hot roaring fire was maintained with the flames at times extending two or three feet above the top of the chimney.

At 10:30 A. M. the brick furnace was cracked on both sides near the centre also the concrete top on each side of the chimney and over the crack in brick work. The cement top which had been loaded with 275 lbs. to the square foot, now showed some deflection while hot steam was being driven from the green lumber forming the chimney.

At 10:45 A. M. the studs were scorched in places on each side and it appeared evident if the lumber was dry it would take fire.

The first fire on the frame occured at 10:47 and at the cross bridging on the Roebling side. Fresh mortar was applied on the outside to stop the fire and about five minutes later or at 10:52 fire started on the side lathed with the Bostwick Lath which was also extinguished with mortar at 10:58 fire started on the Expanded Metal side and was likewise extinguished.

In no case had the plastering fallen from the laths and the hot fire was maintained for 45 minutes longer, when the frame being practically burnt out, water was turned on from a garden hose, the fire extinguished and the chimney pulled down. The plastering freed itself completely from the laths in the fall.

The protecting coat of Royal cement at the bottom of the chimney was in a fair state of preservation.

The cement top which had deflected about ¼" with the heat and load, recovered itself to within 1-16" of a level line when the load was removed and the concrete cooled with water.

The concrete was practically uninjured by the heat and was broken with several blows from a sledge hammer.

All the panels on the sides of the furnace retained a large portion of the plastering on the inside while the outside showed no signs of injury.

This test was witnessed by several prominent Architects, a representative of the Underwriters and one of the Fire Wordens—and while it may not have satisfied any one as to the superiority of one kind of lathing over another it did show conclusively that any one of these metal laths if properly put on and properly plastered will withstand an intense heat for a long time.

FIRE-PROOF CONCRETE FLOOR CONSTRUCTION—THE TEST AT WELLS FARGO & CO.'S NEW BUILDING.

ELSEWHERE is printed the report of a test of metal lathing made at the Wells Fargo & Co.'s new building, under the direction of Mr. G. W. Percy of Percy & Hamilton the Architects of the building. That report covers the part taken in the test by the different kinds of metal lath represented, while it is the purpose of this report to deal with the part taken in the test by the two systems of concrete fireproof floor construction, as witnessed by the representative of this Journal on the ground.

The top of the furnace was three inches thick, made in the proportions of one part Alsens Portland Cement, two of sand and three fine cinders—for one-half of the top 2½ guage expanded metal was embedded in the concrete and for the other half twisted steel rods placed three inches apart were embedded in concrete. The theory on which both of these constructions are based being that concrete having a great compressive strength but very small tensile strength, it should be used exclusively in compression. To obtain the requisite tensile strength, square steel rods, twisted cold—Ransome System—are embedded in the concrete, while the other system in the test get their tensile strength by embedding in the concrete expanded metal—a home production.

Advocates of the steel rod system make two broad claims—1st—That these rods are firmly held in place by the concrete, and that the square surface twisted, forms a hollow which ties the concrete in the direction perpendicular to the rods, and the twist ties in the direction of the rod. 2d—That experiment has taught that narrow ribs of concrete are ample to resist all the strain in the vicinity of the twisted rods.

The advocates of the expanded metal system claim, 1st—that expanded metal embedded in concrete forms a monolithic mass 2d—that with much less weight of metal the construction is positive in strength 3d—that great tensile strength is acquired by placing the expanded metal on the under side of the slab, slightly embedded in the concrete.

After the chimney had burned out and had been torn down, the fire was put out, and top of the furnace was deluged with water then began the destruction of the top of the furnace, a heavy sledge being used for the purpose.

The slab containing the twisted steel rods was broken through as soon as the sledge struck the space between the rods. On the other slab it required many severe blows with the sledge to destroy the monolithic mass that had been formed by the expanded metal system—fully sustaining the claim of great tensile strength, for the advocates of the expanded metal fire-proof concrete floor construction.

THE ENFORCEMENT OF BUILDING LAWS.*

THE MANNER in which building laws can best be enforced is a problem which all municipalities must face which have regulations of this kind. Public interest requires that where a well-considered and tolerably rigid building law has been enacted, its requirements should be strictly complied with, but as such a course ordinarily involves a larger expense to individual citizens than would be incurred by ignoring or evading the building law, it is not at all strange that public spirit proves altogether inadequate to the work of enforcement, and that penalties are needed to compel the self seeking citizen to do what he should do out of regard for his fellow man.

It is always doubtful whether a building law in its requirements should go far in advance of the general sentiments of the people. If public opinion does not in the sustain it, not only will there be numerous infractions, but it will be found difficult to adequately punish those who committed these. For this reason one of the best methods, not only of enforcing a building law but of procuring good building laws, is the endeavor to properly educate the people on all matters relating to good construction.

Another potent factor—a factor which might be made, under proper regulation, even more potent than it is in the enforcement of the law—is the power of the insurance companies, when these act collectively through a board of fire underwriters. It is for the seifish interest of the fire insurance companies that the buildings in a city should be put up in a safe, fire-resisting manner. The fire insurance companies realize that they are likely to gain more by reducing fire losses where there is good construction than the community is likely to gain through the reduction in rates. Both changes will come about, but the profit to the underwriters is the first of these two results secured, and it is ordinarily the larger of the two. For this reason intelligent fire underwriters in all of our American cities can be counted upon to aid the public authorities in the enforcement of such building laws as are believed to be salutary and satisfactory from a fire point of view. Naturally the fire insurance men have very little to say about plumbing and ventilation, and hence are no more likely to interest themselves in these matters than the marine insurance companies would be likely to interest themselves in the matter of the thickness of the walls or the height of the builnings in a city.

While it may not be at all times easy to bring about concurrent action, I am strongly of the opinion that if the building inspectors of any of our large American cities made an appeal to the local board of underwriters the latter would agree to adopt and enforce a system of penal charges in those cases where there was defective construction, a method which would go a long way toward restraining builders and owners of buildings from indulging in these evasions. In these modern days practically all buildings and their contents are insured, and in all business buildings the question of the rate of insurance becomes a matter of no small importance in the competition in trade which is all the time taking place. Thus, for example, the owner of a building the contents of which, in consequence of defective construction, rates twice or three times as high as the rate on the contents of another building, is placed at a serious disadvantage in attempting to lease his property. Hardly a day passes that I am not appealed to by some would-be tenant to find out what his rate will be if he takes the lease of a certain building. The owners of these buildings also realize the merit it is to them of having structures which rate low, and ordinarily are willing to go to quite a little expense for the purpose of attaining this desired end.

Now if it were generally known that the board of underwriters of a city would impose a penal charge of double rates upon buildings put up in palpable and serious defiance of the building law, I am inclined to believe that after the risk assumed became generally known very few builders would care to subject their property to it. A penalty of this kind would in most instances be levied without hope of repeal, because the political pressure which might be brought in play at a city hall would have little or no effect in influencing the action of the members of a board of underwriters. The latter would realize that the defect in question was one which had been indulged in at their expense, and that the only way to prevent the constant repetition of a similar fault was to impose a penalty upon the fault-doer which he or she would not forget. I believe, as I said above, that if the building inspectors asked in this way the co-oporation of the fire underwriters, they would receive the needed aid. The details of this co-operation would consist in an agreement that where buildings were reported by the inspector to be put up in defiance of what he believed to be the building law, the underwriters would agree on their part to materially increase their rates of premium upon the building thus reported and its contents. It would not be impossible to go beyond this and have an arrangement made by which the companies, in the main, would agree not to insure the building at all; but possibly this might be a system of penalization which would be so severe as in the end to defeat itself. It would, however, be possible to make the advance in rates I have referred to, and in order to emphasize the fact in the printed list of rates it would also be possible to have it noted that the rate was increased because the building in question was put up in defiance of the building laws which the State had adopted for the protection of its people.

* Read by Osborne Howes, Secretary Boston Building Fire Underwriters, before the Detroit Convention of Building Commissioners and Inspectors.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE CATHOLIC Church of St. Paul, which is now being built at the corner of Hayne Avenue and 22d Place, Chicago, will when completed, be one of the most remarkable edifices in the country, and Chicago will take the first step in a style that is altogether opposed to the one she invented, the steel skeliton building filled in with terra cotta. The church of St. Paul will be entirely of brick masonry, even the window frames in which the glass is set will be of brick. From floor to roof, outside and inside, walls and ceilings, casements and stairways, the seen and the unseen, will be honest vitrified clay, depending upon itself alone for its support and its decoration.

The style of architecture adopted is late Romanesque and Gothic of the 12th to the 13th Centuries. The total length of the church, including the sacristy, will be 209 feet. The width over all will be 108 feet, and the two towers each 32 feet square at the bottom, will be 245 feet in height above the sidewalk. The body of the church will be 68 feet wide.

Our illustrations are from drawings and a model.

The architect Henry J. Schlacks of Chicago is a young

man of thirty years of age, who has made church building a specialty ha ving traveled extensively in the old world. No doubt the b uilding of St. Paul's church will put him in the front rank.

There will be no plaster in this church, no stucco, no imitation marble, nor shams of any kind, for the Rev. Geo. D. Heldman, who is in charge, considers that a building consecrated to the teaching of the eternal truth should itself be true and, as a good brick is one of the most durable things in nature or art, he will let it bear witness to its own strength and beauty.

The main entrance to the church will be through six pairs of doors into three large vaulted vestibules, leading directly into the nave and side aisles. The nave will be entirely free from columns, as there will be no pews in the side aisles, these being used as aisles only, extending all around the church and back of the high altar.

The height of the nave will be seventy-five feet, its width will be forty feet between the columns which divide it from the side aisles. The body of the church expands as we approach the front and has the bulk of the seating capacity in the transept, so that the majority of the congregation is brought within close proximity to the sanctuary.

This style of building is not anything new in Europe, for there are very old churches there and even Cathedrals, entirely of brick, with vaulted brick roofs, brick groins and ribs, and all the decorative effects are obtained with burned clay in the form of brick or terra cotta. Some of these buildings are very beautiful, and all are in admirable preservation, but as we before stated, nothing of the kind has ever been done in the United States, and the architectural and building world will watch the work with greatest interest, but in consequence of its being so novel here, no bricks that were suitable could be found in the market. Accordingly the builder has had to order the various shapes required. There will be no less than 208 different kinds of these Gothic bricks and mouldings, and they will be specially made by the Webster Fire Brick Company of South Webster, Ohio. The roofing tile, at the moment of writing, has not been selected, though it will be probably before this leaves the press. The terra cotta is being specially made by the North Western Terra Cotta Co., Chicago. This material will be extensively used, both inside and out, from the finials on the spires downward. White terra cotta figures of religious subjects, instead of the usual sculptures, will decorate the interior. The altars, communion rail, front of organ loft and pulpit will all be of terra cotta.

About 2,500,000brick will be used, of which 500,000 are fancy bricks, mouldings, etc.

Window washes and water drips will be of bricks and mouldings of special design. It is stipulated that all face bricks and mouldings shall be vitrified, so that they will be non-absorbent and consequently self-cleaning. Any kind of brick that is absorbent was objected to because experience teaches us that the soot and smoke of a great coal consuming city, is not only irremovably fixed on the face of an absorbent brick, but carried into its pores. A glazed or enameled brick was distrusted because of the uncertainty of the connection between the surface and the body, with consequent risk of crazing and scaling. A vitrified brick or tile is justly felt to be absolutely reliable.

The prevailing color of the brick work will be a light buff, with warmer colors for trims running into dark brown. The body of the walls will be light buff and yellow. The color scheme will be the same in the interior but the exterior will be somewhat lighter. The whole ceiling will be of brick and tile vaulting. This vaulting tile will be of different sizes as required, such as 4"x12", 6"x12", etc., and 1" thick. The ribs of the arches and groins will be of moulded bricks, the keystones of terra cotta. In short, the whole construction will be purely ornamental brick masonry.

The brick casements will have grooves into which the glass will be set and fixed with putty. The grooves are deep, so that the piece of glass being slipped in on one side goes in far enough to enter the opposite groove, thus the glass is held securely, back and front, by the brick, the putty prevents any side movements.

This brick construction would not have been possible in some parts of the City of Chicago. It can be carried on this spot because the foundations go down to the solid rock, which lies at a depth of less than 20 feet from the sidewalk.

AN ELECTRICAL INSPECTOR WANTED.

TO establish the office of electrical inspector for the City and County of San Francisco, and to regulate and define the duties of such office, and to establish rules and regulations concerning electrical appliances.

AN ORDINANCE:

The Board of Supervisors of the City and County of San Francisco, Do Hereby Ordain as Follows:

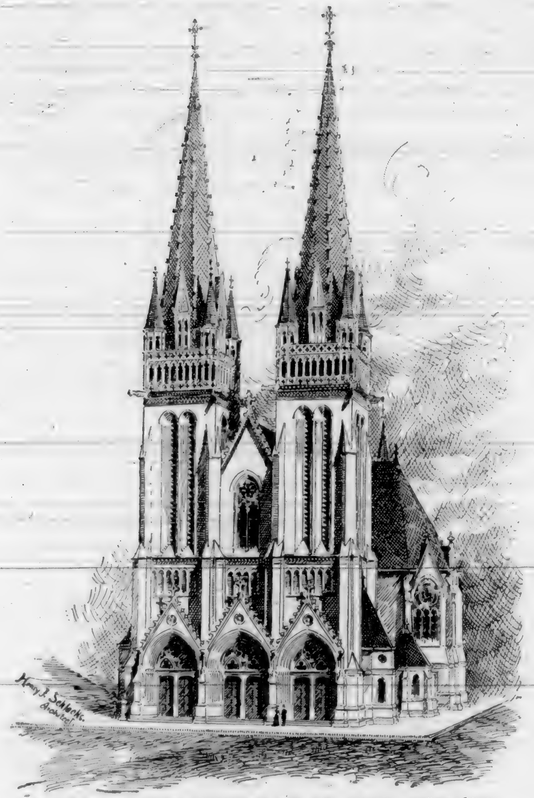
SECTION 1—The Superintendent of the Fire Alarm and Police Telegraph of the City and County of San Francisco, is hereby made the electrical inspector in and for said City and County.

SEC. 2.—The electrical inspector for the City and County of San Francisco, is hereby authorized, empowered and directed to regulate and determine the placing of electric light, heat or power wires in and on buildings in said City and County so as to prevent fires, accidents or injury to persons and property, and to cause all electrical appliances to be so placed, constructed and guarded, as not to cause fires or accidents or endanger life or property; and whenever in the judgment of said electrical inspector any electrical appliance shall be defective by reason of improper or insufficient insulation or for any other cause, the said electrical inspector shall at once cause the immediate removal of such defect.

SEC. 3.—The said electrical inspector, or other competent persons delegated by him, shall have the right at any time to enter any building, manhole or subway, in the discharge of his official duties, or for the purpose of making any tests of electrical apparatus or appliances therein contained. And for that purpose he shall be given prompt access to all buildings, public and private, and to all manholes and subways, on application to the company or individual owning or in charge or control of the same.

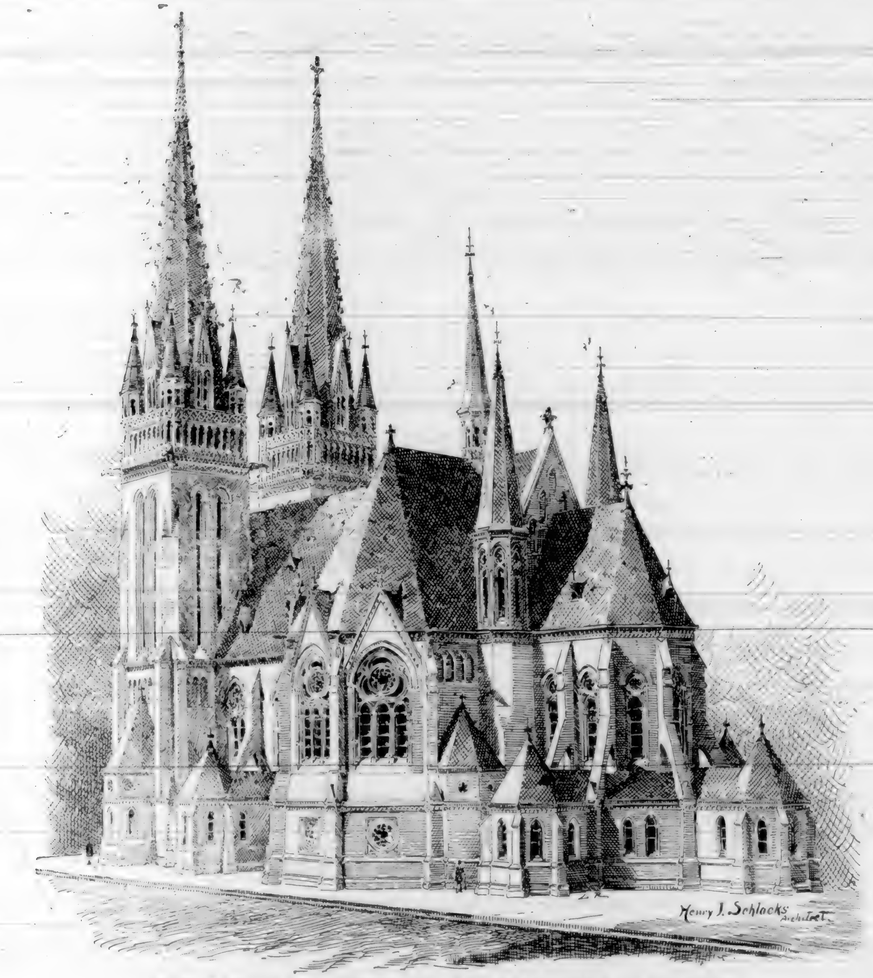
SEC. 4.—The said electrical inspector or competent person delegated by him shall have the power to cause the removal of all wires or the turning off of all currents, where the currents interfere with the work of the Fire Department.

SEC. 5.—No alteration or change shall be made in the wiring of any building, nor shall any building be wired for the placing of electric lights, motors or heating devices, without first securing from the said electrical inspector or competent person delegated by him, a permit therefor, nor shall



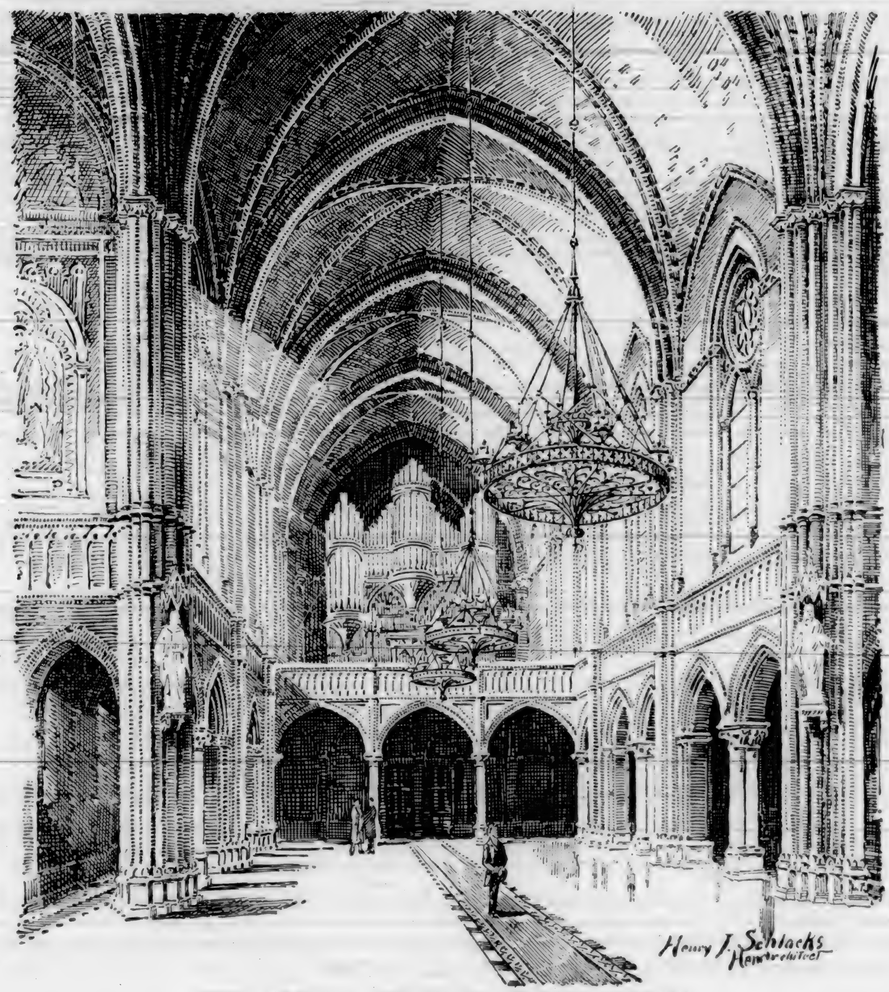
THE CATHOLIC CHURCH OF ST. PAUL, CHICAGO

FRONT ELEVATION



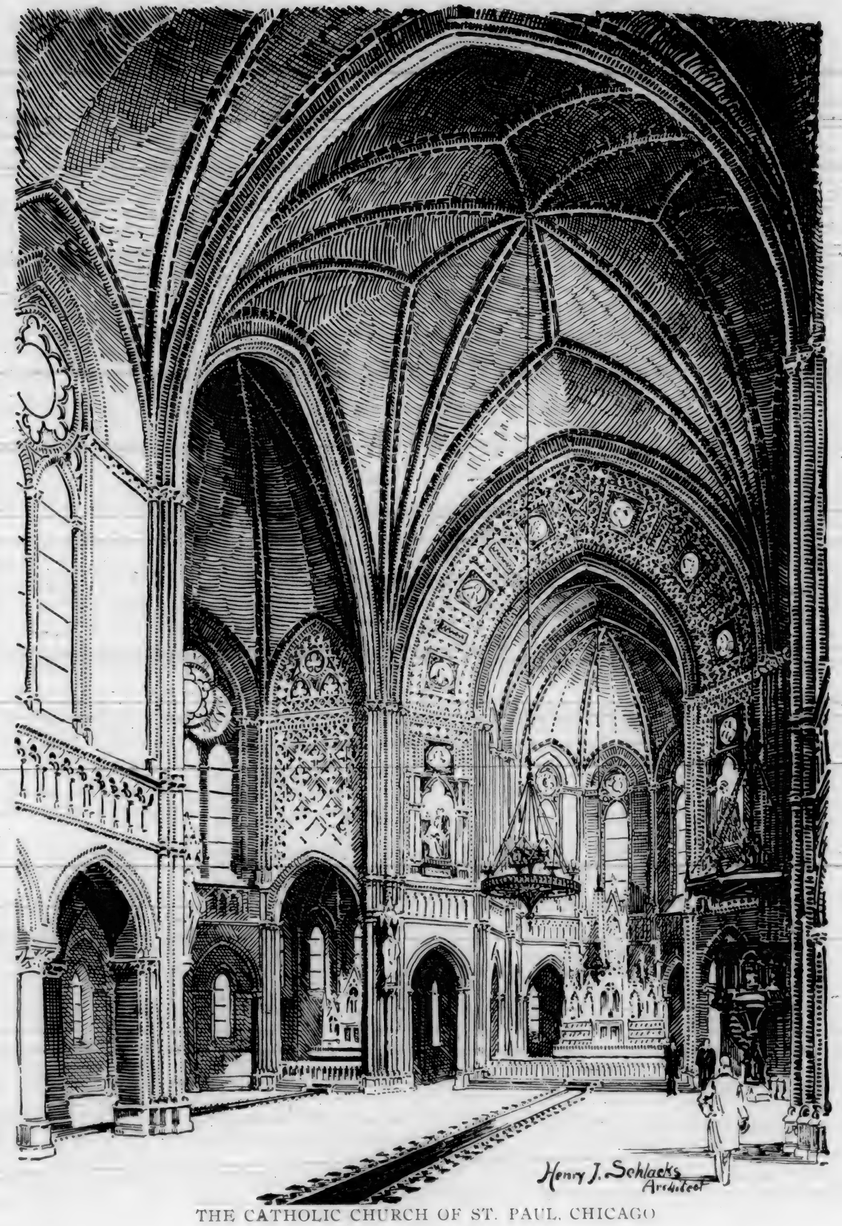
THE CATHOLIC CHURCH OF ST PAUL—SIDE ELEVATION

COR. HAYNE AVE. AND TWENTY-SECOND PLACE, CHICAGO, ILL.



THE CATHOLIC CHURCH OF ST. PAUL, CHICAGO

LOOKING FROM THE ALTAR



THE CATHOLIC CHURCH OF ST. PAUL, CHICAGO

LOOKING TOWARD THE ALTAR

any change be made in any electric plant after inspection without notifying the said electrical inspector or person delegated by him and securing a permit therefor.

Upon the completion of the wiring of any building it shall be the duty of the company, firm or individual doing the same, to notify the said electrical inspector or competent person delegated by him, who shall at once inspect the same, and if approved by him, shall issue a certificate of satisfactory inspection which shall contain the date of such inspection and an outline of the result of such examination; but no such certificate shall be issued unless the electric light, power or heating installation and all apparatus, wires, etc., connected with it, shall be in strict conformity with the rules and regulations hereinafter set forth; nor shall current be turned on such installation until said certificate be issued.

SEC. 6.—Said electrical inspector shall keep a record of all permits given and inspections made.

SEC. 7.—Any person, firm or company who shall violate any of the provisions of this ordinance, or fail, neglect or refuse to comply with the rules and provisions of this ordinance, or who shall fail, neglect or refuse to comply with any order or request of said electrical inspector or competent person delegated by him in pursuance of and by the authority of any of the provisions of this ordinance or rules therein contained, shall be deemed guilty of a misdemeanor, and upon conviction thereby, shall be fined not more than one hundred (100) dollars or to be imprisoned not more than (90) days.

SEC. 8.—All electrical construction, all material and appliances used in connection with electrical work, and the operation of all electrical apparatus, shall be in conformity with the rules and regulations set in what is known as the "National Code of Rules for wiring Buildings for Electric Light, Heat or Power", as the same are now established, and the said rules and regulations, together with any amendments and changes made therein from time to time, are hereby adopted and approved.

SEC. 9.—This ordinance shall take effect and be in force from and after its passage.

CONVENTION OF SANITARY SCIENTISTS.

TO BE HELD IN NEW YORK EARLY NEXT SPRING.

AN INTERNATIONAL Health Exposition will be held at the Grand Central Palace, New York City, for five weeks, beginning April 25th next, under auspices and with a breadth of scope which are a guarantee of conscientious and intelligent effort, and which cannot fail to awaken a wide-spread popular interest.

A number of food shows have taken place in this and other cities, besides collections of building materials, notably in New York, Brooklyn and Chicago, while there is a permanent Hygienic Museum in Washington. But no attempt has heretofore been made to gather together under one roof the wonderful variety of objects which illustrate the immensely wide and important field of sanitary science and the marvelous progress which has been made in that direction of recent years.

The time is ripe for such an undertaking. An extraordinary revival of interest in sanitary matters has lately been shown, partly because of recent epidemics at New Orleans, and at other places, and also as a result of the late municipal reform movements, which have led to an active discussion of street cleaning methods, public baths and play grounds, water supply and other sanitary problems.

There will be a display covering more than three acres of floor space, of practical apparatus and appliances of all kinds, taking in everything from Mr. Atkinson's Aladdin Stove to a huge garbage crematory in actual operation.

There will be all the modern systems of house-heating, ventilation, plumbing, etc., comparative exhibits of new and primitive hospital arrangements, systems of sewerage for cities and villages, a model school room and the other kind, model tenement houses, health food, etc.

The exhibits, however, are not all there is of the exposition. There will be provided by the management a course of popular lectures for every day, discussions by various societies, representatives of Boards of Health, etc., and the whole affair in its full development will be in reality an Educational Congress.

No exhibits will be accepted which have not been approved of by specialists in their respective departments.

Offices of the Exposition are now open at the Grand Central Palace.

One of the most interesting features will be the Department of Electricity, showing its applications not only to health and sanitary matters, but, as an aid in household economics.

Mr. Luther Stiringer, Consulting Electrical Engineer of The World's Fair, Atlanta, Nashville and Omaha Expositions, has been retained in a similar capacity for the International Health Exposition.

This is the first public exhibit which Tesla has ever made in New York, and his accomplishments are always of world-wide interest.

Mr. Charles F. Wingate, the Sanitary Engineer is the Supervising Director, and in conversation with a representative says of his part in the exposition:

"The present Exposition is a product of evolution, and a striking instance of taking the tide at the flood. My own connection with it, which came about quite accidentally, is a case of greatness being thrust upon a person.

"The interest in sanitary subjects is confined to no one class of persons. Dr. Stanley Hall, the famous educator, devoted fully half of his recent address on laying the corner stone of a Womans' College, to the subject of health. Special hygienic departments are being added in many periodicals, and health articles fill much of the womans' page in the daily papers. Boards of Trade and Chambers of Commerce are alike concerned in discussing measures for the protection of the public health.

"A splendid opportunity is therefore presented through the International Health Exposition to educate the public along these various lines, and there can be no question as to its permanent usefulness.

"Probably the most attractive feature in the Exhibition will be the arrangement of what may be called Sanitary Living Pictures, to show certain features in a practical way. For example, a tenement house sweat shop will be shown in actual operation, in contrast to a model work shop with all modern improvements; also a police lodging room redolent with damp, and every kind of foulness, side by side with a model lodging house, such as may be seen opposite Bellevue Hospital; also an old County Poor House cell, with a "mad

woman" chained to the floor, in contrast to a modern insane asylum ward; a model school in contrast to an unmodel school, and so on with every department of practical hygienic.

"An exhibition of this kind appeals chiefly to women, who have the interest of the home so largely at heart. When we consider the services which women have performed in the line of sanitation, it might be call distinctly "Woman's Field."

The list of the Advisory Board already appointed, comprises more than ninety specialists in the various lines of anitary work, among whom may be mentioned:

Dr. Stephen Smith, President Department Public Charities, New York.

Hon. Andrew H. Green.

Albert Shaw, Editor Review of Reviews.

Edward Atkinson.

Alfred T. White, Ex-Commissioner of Public Works, City of Brooklyn.

Samuel Gompers, President American Federation of Labor.

Miss Frances E. Willard, President W. C. T. U.

Dr. H. W. Wiley and B. G. Fernow of the U. S. Dept. of Agriculture.

Mrs. Melville Dewey.

Col. Wm. G. Church, Editor of the Army and Navy Journal.

Dr. H. P. Baker, Secretary Michigan State Board of Health.

Dr. Mary Putnam Jacobi.

Dr. George F. Shrady, Editor Medical Record.

BOOKS AND PERIODICALS.

THE AGE OF STEEL, 40th Anniversary number, St. Louis, Mo., January, 1898. The publishers of the "Age of Steel" celebrated its 40th Anniversary by the issue of a handsomely printed number of over one hundred page giving not only a brief history of the publication from the start in 1857, but also an account of the commercial growth of St. Louis in the forty years. Fully illustrated with portraits of men who have been prominent in forwarding its growth.

LIPPINCOTT'S Magazine for January contains for its complete novel John Olmsteads' Nephew by Henry Willard French—a very interesting but improbable story. The article "Irrigation From under Ground" by John E. Bennett has a peculiar interest for the people of this Coast—while an account of "Druggists Ancient and Modern" by Oscar Harzberg will prove interesting reading to all those who have to avail themselves of the druggists' art to regain their health and happiness.

THE NEW TIME for December, 1897, a Magazine of Social Progress. Published by Charles H. Kerr & Co., 56 Fifth Ave., Chicago, Ill. Price ten cents.

The circulation of "The New Time Magazine" is claimed already as forty thousand copies and the publishers hope to double it three times more before June, 1898. This claim does not appear unreasonable considering the extremely low rate the publishers have placed upon the journal that contains much of interest to the general public, and appeals strongly to that class that is constantly increasing who have an interest in the welfare of Social Progress.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following tables we present the number and value of buildings erected in San Francisco during the first year.

FOR FIRST SIX MONTHS.—1897.

1897	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contract	Alterations & Addit'ns Value.	No. of Buildings	No. of Contracts	Total Value.
Jan'ry	12	16	$ 128,610	22	26	$ 53,524	3	3	$ 7,917	37	45	$ 190,081
Feb'ry	6	17	181,128	21	24	71,475	8	8	28,028	35	49	280,631
March	10	18	293,132	44	47	135,610	10	10	17,234	64	75	465,975
April	6	28	194,762	71	75	217,570	25	25	100,780	102	125	472,912
May	13	19	116,959	40	43	147,385	11	11	13,086	64	73	277,427
June	7	9	48,718	45	48	162,750	19	20	49,994	71	77	261,462
Total	54	101	$ 888,329	243	263	$ 788,123	76	77	$217,039	373	441	$1,888,488

FOR SECOND SIX MONTHS.—1897.

1897	No. of Buildings	No. of Contracts	Brick Building Value.	No. of Buildings	No. of Contracts	Frame Building Value.	No. of Buildings	No. of Contracts	Alterations & Additions Value.	No. of Buildings	No. of Contracts	Total Value
July	20	33	$ 229,655	50	72	$ 165,086	13	14	$ 36,716	92	118	$ 431,457
Aug	10	16	108,534	68	70	170,876	10	10	22,223	88	96	301,633
Sept	7	13	86,803	43	46	109,395	14	14	32,433	64	73	228,631
Oct	6	15	163,215	28	29	100,568	14	17	56,169	48	61	319,952
Nov	3	13	97,119	30	32	149,315	12	12	19,844	45	57	266,276
Dec	3	7	110,629	18	20	67,403	14	10	85,673	35	46	263,705
Total	49	97	$ 795,949	246	269	$ 782,637	77	85	$ 253,058	352	451	$1,781,650
G'd Total	103	198	$1,684,275	489	512	$1,520,760	153	162	$ 470,097	725	862	$4,160,133

To this amount has been added the further estimated sum of $300,000 where costs have not been given, which would make the grand total for the year, $4,460,133.

We give the total values and numbers from 1880 to that our readers may make a comparison:

1880—	397 engagements, value	$ 1,774,455
1881—	533 " "	3,709,7[illegible]
1882—	785 " "	3,8[illegible]
1883—	893 " "	5,2[illegible]
1884—	1,127 " "	6,202,807
1885—	1,457 " "	7,043,999
1886—	1,148 " "	6,401,669
1887—	1,093 " "	6,605,054
1888—	891 " "	6,244,220
1889—	1,081 " "	7,500,000
1890—	1,037 " "	7,095,013
1891—	1,162 " "	6,946,056
1892—	920 " "	5,856,341
1893—	905 " "	3,962,532
1894—	947 " "	4,529,839
1895—	1,086 " "	5,199,235
1896—	880 " "	6,223,375
1897—	862 " "	4,460,11

PROGRAMMES FOR TH INTERNATIONAL COMPETITION FOR THE UNIVERSITY BUILDINGS.

ARCHITECTS desirous of entering the Competition for the Phebe Hearst Architectural Plans for the University of California, can obtain Programmes and Maps, by applying to the Chapter of Architects, room No. 17, 408 California Street, or at this office.

BUSINESS MOSAICS.

The results of the past years hardwood lumber business have been so flattering with Mr. Fred. L. Pfingst that he has decided to enlarge his field of operations by adding more lines of building materials and more accounts. Mr. Pfingst is now visiting the larger manufacturing centres of the Eastern States for the purpose of securing good lines and expects to be back about the first of March fully equipped to battle for his share of this years' business.

As will be seen by the new advertisement of Charles J. Waterhouse on page x of this journal he has removed his office to 421 Market street. Mr Waterhouse is the agent for the sale of Mr. Samuel Cabot's various articles so usefnl to builders of the present day, as Cabot's Creosote Stain, Sheathing and Deafening Quilt, Mortar Stain, Pulps and Brick Preservative. Also agent for the various brands of Roofing Tin as manufactured by the well known firm of N. & G. Taylor Co. of Philadelphia.

The J. L. Mott Iron Work—New York, Boston, Chicago, St. Louis and San Francisco—Established 1828. The Pacific Coast Representative of the above company has, at 27 Flood Building, a splendid show of goods in their line. Any thing in the way of Sanitary Specialties can be seen, from bath room to the kitchen can be furnished with these goods that are always sure to give satisfaction to the purchaser. Parties are especially invited to call at their show rooms as above. Mr. M. S. James will take pleasure in showing these goods and explaining the advantage of their use.

Attention is called to the advertisement of Mr. G. C. Dallamore, 414 Devisadero street, San Francisco, page vii of this Journrl. The Titus Improved Patent Sewer Gas Trap Tide and Flushing Gate has the recommendation of members the Board of Health as well as testimonals from practical men who have the Trap in use. First Premium from Mechanics Institute for a number of years.

Mr. Dallamore, a practical plumber and gas and steam fitter, has had years of experience in his line of business nd can be relied upon as doing well all work undertaken y him.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street,

Seth Babson, Pres. H. A. Schultz, Vice-Pres.
Oliver Everett, Sec. John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec't. August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

E. J. Molera, Pres. W. F. C. Hasson, Vice-Pres.
Otto Von Gelders, Sec. Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. Kent, Pres. Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. M. V. Brady, Sec.

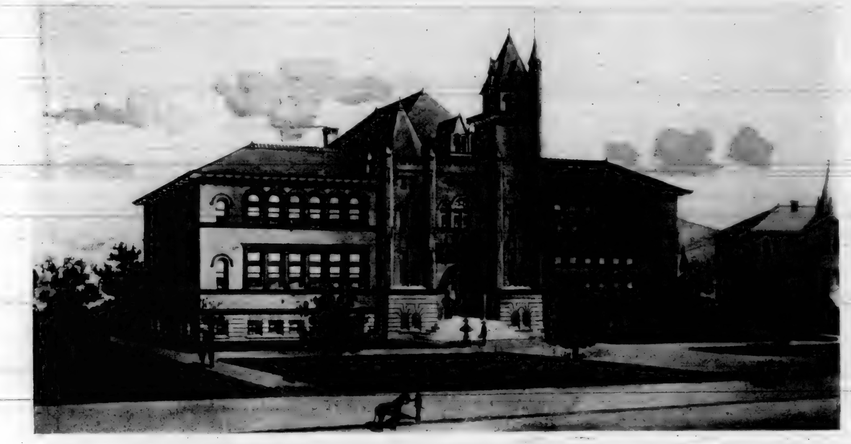
THE VACAVILLE UNION HIGH SCHOOL.

THE cut here represented of the new Union High School Building now being erected in the town of Vacaville, for the Vacaville Union High School District, from the drawings of Cunningham Bros., Architects of Oakland, which were accepted some months past. As the above firm are specialists in school house architecture, the District is assured of a modern building, with rooms properly proportioned, amply lighted, and well ventilated.

The plans contemplate a two-story frame structure of Venetian-Renaissance design. The building will have a frontage of 120 feet, with a maxium depth of sixty-seven feet. There will also be a basement under the entire building, containing lavatories, heating and ventilating plant, recreation rooms, etc.

The main entrance leads to a large entrance hall, on one side of which opens the principal's office, and on the opposite side, the library. The main corridor, will be ten feet wide in the clear, with three class rooms opening off it on the first floor, two class rooms, chemical and physical laboratories, and a large assembly hall, on the second floor. Teachers' lunch and dressing rooms, lavatories, hat and coat rooms, etc., are also provided. The unilateral system of lighting, is used in class rooms throughout. Special attention has been paid to the heating and ventilating. California yellow pine, will be used throughout for the nterior finish.

The building is now enclosed and it will require about fifty days for its final completion.



THE VACAVILLE UNION HIGH SCHOOL. CUNNINGHAM BROS., ARCHITECTS, OAKLAND, CAL.

HEATING, VENTILATING AND CLOSETS.

The Board determined from the start to incorporate the most modern and practical Heating, Ventilating and Sanitary work and appointed a committee of three to personally inspect the workings of the various systems offered.

As a result of this inspection the W. Morgan & Co's. Heating and Ventilating System and also their Ventilated Flushing Water Closet System was adopted complete.

The system is applied in a very systematic manner, occupying but a small portion of the basement, leaving ample play rooms.

A double air warmer or furnace is located at the base of the flues supplying fresh air to the rooms above, these flues drawing their air supply from a brick warm or cold air chamber, which in turn draws its supply from fresh air rooms and windows located on each side of the basement. A powerful ventilating shaft 4x5 feet and 60 feet high draws the foul air out of each room by means of vent flues leading from each room to the base of this main shaft, the amount of exhaust is regulated by a small stack heater placed in the shaft.

By this arrangement each class room has its own independent fresh air supply and foul air exhaust flue, the teacher or occupant of the room having control of the temperature by means of a "heat regulator" which admits either warm or cold air through the same flue.

The practical workings of this system can better be determined by the ten guarantees of the company two of the most important reading as follows

"That each room shall have a continuous fresh air supply—warm or cold—so that if any room should become overheated the temperature can be reduced at the rate of three degrees for ever ten minutes, without opening doors or windows."

"That said apparatus shall secure good ventilation in all rooms, the capacity of the plant being sufficient to supply enough fresh air to each room to renew the entire volumn of air in said rooms from four to six times per hour, without harmful draughts as from open doors or windows."

One of the most important features of this system (different from anything else offered) is the peculiarly constructed furnace, which makes it impossible to "over-heat" the air, the large flange radiating surface insuring an increased volumn of air at a decreased temperature.

In the rear basement rooms are found the boys' and girls' closets.

This closet system is most perfect in operation, and a combination of air and water is used, the latter to wash or flush the troughs and the former to draw all foul oders or gases through the closet vault, and expel same into the open air at the top of the building, keeping these lavatories clean and healthy at all times.

From the practical workings of this entire system in the various school buildings inspected by the committee and from the brief description as herein given it will be apparent that The Vacaville Union High School Building will be one of he fo remost it its Modern Sanitary Appliances.

THE WORLD'S ARTISTS INVITED TO COMPETE.

PLANS FOR A UNIVERSITY—MUST BE IMPOSING, SERIOUS AND NOBLE—THE TRUSTEES OF MRS. HEARST'S MUNIFICENCE MAKE PUBLIC THE CONDITIONS.

THE TRUSTEES of the Phebe A. Hearst architectural plan of the University of California have issued their invitation to the architects of the world to co-operate "in the preparation of a permanent, general plan of the buildings and grounds which are to compose the University of California."

The invitation is in the form of a handsomely printed pamphlet of forty pages, entitled "Programme for an International Competition for the Phebe Hearst Architectural Plan of the University of California." It opens as follows:

The trustees appointed by Mrs. Phebe A. Hearst hereby invite the co-operation of the architects of the world in the preparation of a permanent, general plan of the buildings and grounds which are to compose the University of California, in Berkeley, near San Francisco, Cal.

J. B. Reinstein, James H. Budd, William Carey Jones. Trustees of the Phebe Hearst Architectural Plan of the University of California. Dated at San Francisco, Cal., December 3, 1897.

The competition is to be double, a preliminary and final. The preliminary is open to the world. The final will be limited to those whose work in the preliminary is decided by the jury of award to be of such worth and merit as to entitle them to be considered in the final competition. All plans submitted for the preliminary competition must be deposited with the United States Consul at Antwerp, Belgium, before July 1, 1898.

Rules have been adopted so that the members of the jury of award will not know who is the author of any plan. All plans that the jury do not consider worthy of being retained will be returned to their authors. The plans retained will become the property of the University of California, but the name of a successful author will not be made public without his consent. At least ten plans will be retained, and if only that number the author of each will receive $1500. If not exceeding fifteen plans are retained $1200 will be paid to each, and if more than fifteen are retained $1000 will be paid to each.

Competitors in the final competition who desire to study the site of the proposed buildings on the ground will be provided with transportation and expenses for the journey from their residences to San Francisco and return. A total sum of at least $20,000 will be devoted to premiums for the best plans in the final competition, and of this at least $8000 will be awarded to the plan classed as No. 1. The ultimate execution of the plan is entirely in the hands of the University, and competitors are informed that a contract with any of those receiving an award "will be a desirable consequence of the competition, but in no wise a condition thereof." The preliminary plans retained will be publicly exhibited at the Mark Hopkins Institute of Art.

The jury for the preliminary competition will be international, being composed of these members: Messrs. R. Norman Shaw, 6 Ellerdale Road, Hampstead, London; J. L. Pascal, 8 Boulevard St. Denis, Paris; Paul Wallot, 6 Hahnel-Strasse, Dresden; Walter Cook, 674 Broadway, New York, N. Y.; J. B. Reinstein, 217 Sansome street, San Francisco, Cal. For the final competition four architects will be added to this jury, who will be chosen by its members, aided by lists of names submitted by successful preliminary competitors. Competitors successful in the preliminary competition will have not less than six months after the decision in the preliminary competition within which to send in their plans for the final competition.

Eight thousand copies of this programme have been issued, four thousand copies in the English language, two thousand in the French and two thousand in the German. The programmes, documents, pictorial aids and the material necessary for the competitors have been distributed to the Ministers of Foreign Affairs of the Argentine Republic, Brazil, Chile, China, Japan, the Minister of Public Instruction and Fine Arts in Turkey, the technical societies, respectively, of Spain, Sweden and Roumania, and the leading organizations of architects in Austro-Hungary, Belgium, Canada, Denmark, Germany, Great Britain and Colonies, Holland, Italy, Mexico, Portugal, Russia and Switzerland. In the United States they have been sent to the Secretary of State of every State, to chapters of the American Institute of Architects in Boston, Brooklyn, Buffalo, Chicago, Cincinnati, Cleveland, Denver, Detroit, Indianapolis, Kansas City, Los Angeles, Lynchburg, Va.; New York, Philadelphia, Pittsburg, Providence, Rochester, San Francisco, Seattle, St. Louis, Washington, and to the Mayors of the other principal cities.

It is stated that the various buildings now standing on the grounds need not be taken into consideration; nor need present paths or roads be considered. The general grouping of requirements includes a library with a capacity for 750,000 volumes, a gymnasium with separate halls and appurtenant accommodation for men and women students, and separate swimming baths for each, two auditoriums, of which one shall seat 5000 people, dormitories, club-houses for students and faculty, an elaborate military establishment, an infirmary, and all suitable structures and provisions for the fifteen departments thus far contemplated by the University.

While there are no limitations on the materials to be used, it is stated that California abounds in beautiful and durable building stones. The programme closes with a scientific abstract of climatic conditions at the University of California for the past ten years. Requests for further information may be addressed to Trustees Phebe Hearst Architectural Plan, University of California, 217 Sansome street, San Franrisco, Cal.

CITY BUILDING NEWS.

Bush near Powell. Three-story frame; owner, John G. Fezhl; contractor, Casper Zwierlein; signed, Jan. 4; filed, Jan. 8; cost $5775.

California and Montgomery. Alterations and additions; owner, Thomas J. Clunie; architects, Curlett & McCaw; contractor, Wm. Linden; signed, Dec. 13; filed, Dec. 14; cost $16,890.

Clara street, No. 141. Additions and alterations; owner, E. S. Guglielmetti; architects, Oakey & Jordan; contractor, C. A. Holm; signed, Nov. 10; filed, Dec. 27; cost $1000.

Clayton near Fell. Two-story frame; owner, James T. Gaynor; architects, Shea & Shea; contractor, B. Dryer; signed, Dec. 30; filed, Jan. 3;

Dolores near 17th. Mill work, etc., for four-story and additions; owner, College of Notre Dame; architect, C. J. I. Devlin; contractor, J. W. Smith; signed, Dec. 17; filed, Dec. 17; cost $23,988. Concrete, etc.; contractors, Stauck & Grussel; signed, Dec. 17; filed, Dec. 17; cost $2870. Excavations, brick work etc.; contractors, Peacock & Butcher; signed Dec. 17; filed, Dec. 27; cost $3284. Plumbing; contractor, W. F. Wilson; signed, Dec. 17; filed, Dec. 17; cost $1817. Lathing and plastering; contractor, Martin Carrick; cost $2880. Hot Water Heating; contractors, Holbrook, Merrill & Stetson; cost $3507. Painting, etc; contractors, Joe; Cahill & Co.; cost $1745.

Eddy near Powell. Brick addition to front of Tivoli Theatre; cost $1500.

Eleventh Ave. near Pt. Lobos. Cottage; owner, Mrs. Carrie C. Ayres; contractor, Z. O. Field; signed, Dec. 20; filed, Dec. 23; cost $1087.

Ellis and Pierce. Two-story frame; owner, Margaret O'Brien; contractor, H. E. Kronnick; signed, Dec. 22; filed, Dec. 22; cost $4500.

Fulton and Webster. Alterations and additions; owner, Henry Schmidt; architect, O. Everett; contractor, Jeremiah T. O'Brien; signed, Jan. 5; filed, Jan 5; cost $2814.

Geary near Mason. Additions and alterations; owner, Charles Schroth; architect, A. W. Marquis; contractor, John Wirey; signed, Dec. 20; filed, Dec. 22; cost $2307.

Jackson near Larkin. Alterations and additions; owner, Mrs. Margaret Hyland; architects, Mahoney & Ryland; contractor, S. Saywell; signed, Nov. 22; filed, Dec. 16; cost $2250.

Jackson street, No. 734. Steel work for a tank frame; owner, M. Schuppert; architect, A. C. Lutgens; contractor, H. Ralston; signed, Dec. 27; filed, Dec. 27; filed, Dec. 28; cost $1025.

Kansas near Salona. To build; owner, Mary E. Trowbridge; architect, J. T. Kidd; contractors, Blanchard & McKenzie; signed, Dec. 20; filed, Dec. 21; cost $1166.

Laguna near Grove. Alterations and additions; owner, Judah Boas; architect, M. J. Lyon; contractor, P. Maloney; signed, Dec. 29; filed, Dec. 31; cost $2850.

Market and Third. Galvanized iron tile for roof; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractor, W. Heidt; signed, Dec. 22; filed, Dec. 22; cost $1300.

Market and Third. Babcock and Wilcox boilers; owner, Phebe A. Hearst, architect, A. C. Schweinfurth; contractors, Babcock & Wilcox Co; signed; Dec; 31; filed, Jan. 10; cost $13,144.

Allister and Franklin. Two three-story frame buildings; owners, Jos. and Christina Wannermaker; architects, Sailfield & Kohlberg; contractor, Jos. Bader and Jos. Fuchs; signed, Dec. 13; filed, Dec. 14; cost $12,750. Plumbing; contractor, Henry Hufschmidt; signed, Dec. 13; filed, Dec. 14; cost $1595.

McAllister near Fillmore. Additions; owner, Theresa E. Lee; contractor, C. V. McDonald; signed, Dec. 17; filed, Dec. 18; cost $1600.

Montgomery and California. Additions and alterations; owner, Thomas J. Clunie; architects, Curlett & McCaw; contractors, Duffey Bros; signed, Dec. 17; filed, Dec. 21; cost $2780.

O'Farrell near Jones. Three-story frame; owner, A. McFarlane; architects. Coxhead & Coxhead; contractors, Hannah Bros; signed, Dec. 31; filed, Jan. 4; cost $6470.

Post near Octavia. Alterations and additions; owner, Leonora M. Coleman; architects, Jesson & Holland; contractors, J. J. Jensen & R. Morgan; signed, Dec. 17; filed, Dec. 17; cost $1357.

Post near Laguna. Alterations and additions; owner, Jette Hamburger; contractors, Campbell & Pettus; signed, Jan. 4; filed, Jan. 5; cost $5620.

Pierce near Broadway. Two-story frame; owner, Maud Shirley Gregg; architect, Frank T. Van Trees; contractors, Williams Bros; signed, Jan. 8; filed, Jan. 12; cost $4420.

Scott near Pacific Ave. Two-story frame; owner, W. P. Redington; architect, E. A. Mathews; contractor, Edward Leiter; signed, Jan. 4; filed, Jan. 6; cost $7343.

Second and Mission. Fire proof floors, etc; owners, Wells Fargo & Co; architect Percy & Hamilton; contractor, Richard Keating; signed, Dec. 30; filed, Jan 3; cost $37,755.

Sixth Ave. near California. Six two-story frames; owners, Marcuse & Remmel; days work; cost $18,000.

Stevenson and First. Alterations and additions; owner, L. Schoenberg; architect, Sylvain Schnattacher; contractor, John Flaherty; signed, Dec. 13; filed, Dec. 16; cost $1040.

Stockton street and Stockton Place. Alterations and additions; owner, W. F. Wilson; architect, N. Blaisdel; contractor, R. C. Stifler; signed, Jan. 4; filed, Jan. 5; cost $1220.

Tenth near Howard. Two-story frame; owner, Cascade Laundry Incorporation architect, H. Geilfuss; contractor, F. W. Kern; signed, Dec. 22; filed, Dec. 22; cost $4500.

Van Ness Ave. and Clay. Fence work; owner, Claus Spreckels; architects, Reid Bros; contractor, S. F. Novelty Works; signed, Dec. 20; filed, Dec. 31; cost $1670.

Washington near Buchanan. Two-story frame; owner, Wm. L. Grestte; architect, E. A. Mathews; contractor, A. T. Ruch; cost $7674.

COUNTRY BUILDING NEWS.

OAKLAND

At the last meeting of the Board of Public Works, of Oakland, the plans of Cunningham Bros., architects of that city, for the proposed new fire station, were accepted.

The building will be a two-story brick structure, 40 feet front with a depth of 76 feet, in the Spanish-Renaissane style. The front will be of buff pressed brick, with red trimmings. The estimated cost is $7500. Bids are to be called for within a week.

AUBURN

Building operations in Auburn at this season of the year is not very brisk. A. L. Kennison is just completing a large building 50x70 two stories high, covered with "steel brick" siding. The lower story will contain a store, saloon and bottling works and upper story will be a dance hall. Cost about $3500.

Chas. Barker has just inclosed a neat two-story cottage; cost about $2000; architect, A. D. Fellows; owner Chas. Barker.

Guy Walsh has ready for plaster a neat one-story cottage.

E. B. Beecher will build a cottage on his ranch near town early this Spring.

S. F. Woodworth of Clipper Gap will build a soap and candle factory at Clipper Gap in the Spring.

Burt & Locher have purchased a lot and will erect a warehouse upon the same this Spring.

TUOLUMNE

The Board of Supervisors of Tuolumne County has accepted the plans of Wm. Mooser & Son of San Francisco, for a new Court House Building. The area of the main structure will be 89x47½ feet, and it will have a wing 30 feet square. The height to the apex of the tower will be 88 feet.

The edifice will be three stories, with the main edifice leading to the second floor. Stone will be used for the lower story, the walls above being in Roman brick. Construction will be commenced in April.

LOS ANGELES

Architect R. B. Young, in addition to the plans he has prepared of the Catholic church and parochial school at Pasadena, is now at work on the drawings of an academy, for the same denomination, which will be built on the school site on the corner of Walnut and Fair Oaks avenues. These buildings will be equal to any that have been erected in Pasadena during the past year.

The Los Angeles' Board of Supervisors have directed the clerk to advertise for bids for the construction of a tunnel through the divide at the head of the Poway grade in Sec. 35, twp. 14 south, range 2 west, in accordance with plans and specifications now on file in the county surveyor's office; the bids to be opened by the board upon February 9, 1898.

DUNHAM, CARRIGAN & HAYDEN CO.

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WE show here an illustration of our AMERICAN SLIDING DOOR HANGER for which we claim unusual advantages, great saving in time and expense, and superior excellence in operation, together with the following features not obtained or claimed in other hangers.

TRACKLESS—We obviate the use of a track above or below, and the special framing necessary where a track is used.

NO WHEELS—There are no wheels to bind by reason of warped or sagging track. The movement is perfectly PARALLEL and insures against binding.

NOISELESS—The operation is noiseless and extremely easy.

DOORS EASILY ADJUSTED—The door can be readily adjusted plumb, raised or lowered by drawing them into the opening which gives easy access to the adjusting screws.

QUICKLY PUT UP—The Hangers can be put up in one-third the time required for overhead hangers.

SUBSTANTIAL—The parts are made to carry three times the weight of doors of the sizes given.

ONE PACKAGE—We pack the Hangers fully assembled and ready to attach, in ONE package, including all bolts and screws necessary.

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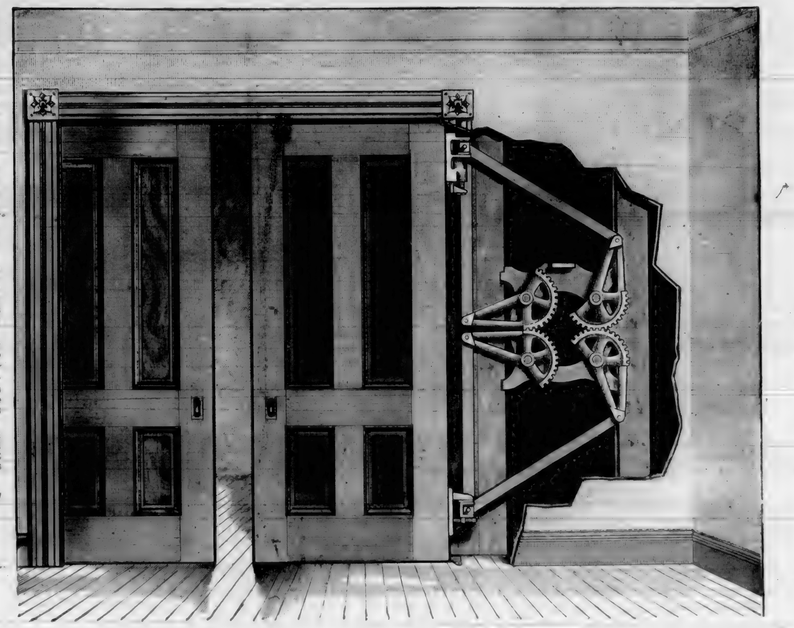

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Southern Marble Co. Marble Hill Georgia, Georgia White Serpentine. Fire and Electric Proof

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Paper. [BUILDING] S & Y BRANDS Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 and 14

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McDonough Weather Strips. Acts as a stop and prevents window from rattling.

Alpine Cement Plaster For brown and white coat

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Varnish. S & Y TRANSPARENT

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Deadening Felt. S & Y BRANDS 1, 1½ and 2 lbs. per sq. yd.

Ornaments. PRESSED WOOD

Casing Blocks Corner, head, center and base blocks

Carvings. [WOOD]

Ceiling. [STEEL CEILING]

Chimney Hood. CLAWSON'S PATENT To prevent smoky fire-places, and increase heat.

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Shingle Stains. DEXTER BRO'S. PERMANENT COLORS A PERFECT PRESERVATIVE

Paints. S & Y EXTRA QUALITY "GRAPHITE" For metal and wood MIXED ROOFING AND HOUSE PAINTS

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Brick Preservative For water-proofing both brick and sandstone; does not change color of brick or stone. Also furnished with pigment to give even color to pressed brick

Roofing Cement. S & Y BRAND For repairing leaks about chimneys, sky lights, copings, and old tin and shingle roofs.

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Infusorial Earth Fire proof. Used for boiler and pipe covering

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STEEL
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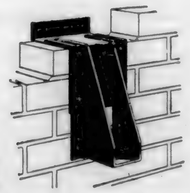
HAS NO EQUAL.



No 1-Steel joist hanger for wooden header

No. 4-Steel joist hanger for brick walls.

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FINANCE.

C. C. Morehouse, Gus. V. Daniels, John Tuttle

	Box No.
Abrahamson, P.; patent ventilators	123
Adams, John G.; contractor and builder	270
Alameda Brick & Tile Co.; brick	170
Arizona Sandstone Co.; building stone	326
Bassett Bros.; contractors and builders	6
Bass-Huter Paint Co.; paints, oils and varnishes	136
Bateman Bros.; contractors and builders	236
Beck, Adam; mason and builder	11
Bell, Wm.; contractor and builder	17
Bibb Lumber Co., D. H.	
Billingham Bay Imp. Co; lumber	214
Boyd, Robert; mason and builder	77
Brady, M. V.; mason and builder	34
Brady, O. E.; mason and builder	260
Brennen, D. J.; mason and builder	51
Brennan James, plasterers	159
Britt, James E.; plumber	36
Brode, R.; iron works	295
Burden, W.; mason and builder	260
Burnham, Stanford Co.; planing mill	28
Burrell, E. H.; building material	146
Burt, W. J.; house mover	296
Butler, Wm. A.; mason and builder	255
California Art Glass Works	63
California Electrical Works	223
California Mills; planing mills	300
Campbell, Alex L; contractor and builder	105
Carey, J. E.; brick manufacturer	382
Carle, Silas; contractor and builder	286
Cartwright, D. S.; teaming	10
Central Lumber & Mill Co.; lumber and planing mill	345
Chatham, Wm.; contractor and builder	62
Chemical Paint Co.	317
Chisholm, C.; contractor and builder	44
Clark, N. & Sons; terra cotta, etc	390
Clawson, L. E., & Co.; patent chimneys	66
Coghlan, Frank; plasterer	91
Collin & Gunn; lathers	114
Concannon Wm., contractor and builder	24
Conlin & Roberts; metal roofers	90
Coppleters & Mockel; grill work	
Cowell, H. & Co.; lime, cement, fire brick, etc	7
Crichton, Peter; contractor and builder	339
Crocker, Wm.; planing mill	12
Cronan, Wm.; Eagle Sheet Metal Works	319
Currie Donald; contractor and builder	27
Currie, Robert; contractor and builder	143
Cushing-Wetmore Co.; concrete and artificial stone	223
Carry, J. M.; stone dealer	35
Daniels, Gus. V.; painter and decorator	85
Davies, E.; plasterer	42
Davis, Geo. & Son; house movers	295
Day, Thos. H., & Sons; contractors and builders	131
Degan, Patrick; stone contractor	366
Depew, Chas. M.; planing mill	19
Dillon, David; teamster and contractor	139
Donovan, M. J.; painter	121
Dougherty, J. P.; plumber	351
Dunbar, Wm.; mason and builder	364
Dunham, Carrigan & Hayden Co.; hardware	4
Dunlop, Chas.; plasterer	59
Dwyer, L. J.; painter and decorator	197
Dyer Bros.; Golden West Iron Works	64
Elam, & Knowles, carpenters and builders	302
Excelsior Mill Co.	72
Feely, M. J.; contractor and builder	180
Fennell, M. & Son; masons and builders	58
Field, Wm. J.; contractor and builder	89
Field, Z. O.	128
Flanagan, L. G.; lime and cement	53
Flint, J. A. & Co.; tiles, etc	234
Foley, Michael; grading and teaming	274
Forderer Cornice Works; patent sky lights, roofing, etc	164
Fortin Brick Co.	98
Frazer, J. P.; painter and decorator	50
Fuller, W. P. & Co.; paints, oils and glass	333
Furness, John; contractor and builder	152
Geier, Frank A.; Market Street Planing Mills	252
Gillespie, G. G.; carpenter and builder	352
Gilett, Secondo; artificial stone	308
Gillogley, Geo.; teaming	324
Girvin & Eyre; Importers	
Gladding, McBean & Co.; architectural terra cotta	162
Golden West Iron Works, Dyer Bros.	64
Goodman, Geo.; artificial stone, etc	334
Grannis, J. G. & Co.; steam heating, etc	331
Grant, W. J.; contractor and builder	84
Gray Bros.; artificial stone and concrete work	86
Griese, Carl; artificial stone and concrete work	231
Hammond, Philip; metal roofer	43
Hansen, A.; planing mill	3
Hansen, F. L.; contractor and builder	108
Hansen, M & Co.; planing mill	187
Harmon Lumber Co.; lumber	314
Haustein, H.; tiles	82
Heidt, W.; cornice works	264
Henzel, Ed. F. & Co.; electricians	375
Herring, R. mill work	70
Hille, Wm.; cornice works	210
Hindes, Ed. B., & Co.; patent blinds	174
Hobson, B. Y.; painter	25
Hock, T. & Son; masons and builders	252
Hoffman, V.; mason and builder	9
Holmes, H. T., Lime Co.; lime, cement, etc	268
Hooper, C. A., & Co.; lumber	341
Huber, Frank; sash, blinds and doors	342
Hurlbut, R. P.; builder	156
Ickelheimer, Samuel & Bro.; plumbers	338
Ingerson & Gore; contractors and builders	57
Jacks, Henry; contractor and builder	267
Jackson, P. H. & Co.; illuminating tiles	27
Jackson, W. E.; curbing	304
Jesse, Geo. R.; stair builder	102
Jordan D., & Son; masons and builders	57
Joshua Hendy Machine Works	188
Judson Mnfg. Co.	
Keating, M.	127
Keatinge, R.	13
Kelleher, M.; house raiser and mover	23
Kendall, A.; Pacific Coast Lumber and Mill Co.	52
Keefe, J. H.; painter and decorator	199
Kent, S. H.; contractor and builder	190
Kern, F. W.; contractor and builder	225
Kittredge, E. H. & Co.; sash, doors and blinds	204
Knox & Cook; contractors and builders	244
Kuss, P. N.; painter, decorator and wood finisher	307
Lang, Geo. R.; contractor and builder	214
Larsen, H. H.; mason and builder	38
Leahy, D.; plasterer	344
Leonard, J.	
Leprohon, P.; steam and hot water heating	239
Logan, J. F.; adjuster and builder	21
Lovell, A. E.; roof repairing and painting	174
Lucas & Co.; Golded Gate Plaster Mills, calcined plaster	31
Lynch, M. C.; contractor and builder	274
Macdonald & McKinnon; lumber	348
Maguire, A. B.; lime, laths, plaster, cement, etc	268
Maguire, James A.; manufacturer's agent	120
Mangiesdorf, M.; Electrical Maintenance Co.	350
Mangrum & Otter; heating, ventilating, tiles, etc	
Market Street Planing Mill	252
McCarthy, John; mason and builder	168
McClure, H. N.; teaming and grading	109
McElroy, A.; contractor and builder	211
McGillvray Stone Co.; stone contractor	340
McGowan, M.; mason and builder	17
McKee, John; stair-builder	262
McLachlan, T. M.; contractor and builder	92
McMahon, Henry; stair builder	113
McPhee & Co.; stone contractors	256
Miller, J. W.; mason and builder	208
Miller & Hamilton; planing mill	110
Mills, A. T.; Mason and builder	95
Mitchell, R.; mason and builder	74
Montague & Co., W. W.; tiles, manlles, etc	
Moore, C. Parker; contractor and builder	80
Moore, G. Howard; contractor and builder	358
Morehouse, C. C.; plasterer	301
Morehouse, J. J.; plasterer	97
Mulcahy, J.; mason and builder	53
Niehaus, Edward F. & Co.; hardwood lumber	295
Niehaus Bros. & Co.; planing mill	20
Nutting, C.;	49
Oakland Art Pottery Works	133
O'Brien, Jas. J.; carpenter and builder	107
O'Brien, P. R. & Son; plumbers	
Ogle, John; contractor and builder	215
O'Sullivan, D.; mason contractor	40
Pacific Bridge Co.	
Pacific Refining & Roofing Co.	310
Pacific Lumber Co.	130
Pacific Rolling Mills	192
Pachtz, Gus. J.; electrician, etc	
Palace Hardware Co.; builders' hardware	282
Paradise Paint Co.; roofers, building paper	144
Patent Brick Co.; brick	172
Peacock & Butcher; masons and builders	122
Petersen Brick Co.; original red pressed brick	68
Petersen, H. M. & Co.; concrete	245
Please, Henry; mason and builder	299
Pool, Jas. R.; house mover and raiser	217
Rae, James; stone contractor	256
Ralston Iron Works	175
Raymond Granite Co.; contractors for stone work	165
Reichley Geo.; contractor and builder	109
Reigle & Jamleson; machine white washing	240
Remillard Brick Co.; pressed stock and common brick	278
Rice, Richard; plumber	253
Richardson & Gale; mason and builders	328
Richmuller, Geo.; door opener	355
Riley John F., masons and builders	329
Ringrose, R.; mason and builder	18
Robinson & Gillespie; contractors and builders	111
Rocklin Granite Co.; granite work	69
Rosenbaum, Fr, H.; glass	96
Ruffino & Bianchi; marble	219
Sacramento Transportation Co.; patent and stock brick	332
San Francisco Lumber Co.	
San Francisco Novelty and Plating Works	291
San Francisco Planing Mill; Wm. Crocker	12
San Joaquin Brick Co.; brick	28
San Jose Brick Co.; brick	5
Saunders, J. S. W.; contractor and builder	250
Schroeder, Wm.; art glass	63
Scott & Van Arsdale Lumber Co.	193
Sessions, M. P.	304
Smith, J. W.; carpenter	71
Smith & Young; building supplies	374
Smith & Quimby; street contractors	67
Snell, E. L.; lime and plaster	101
Snook, W. S. & Son; plumbers	372
Soule Bros.; carpenters	61
Steiger, A., Sons; architectural terra cotta	134
Stevens, F. M.; patent chimneys	15
Stratton, Jno. S.; house mover	362
Sullivan, J. F.; painter and decorator	1
Sullivan, Tim; carpenter	83
Sullivan M. F.; grading and teaming	148
Sweeney, Daniel; carpenter	325
Sweeney, G. C.; plumber	135
Tacoma and Roche Harbor Lime Co.	289
Tay, Geo. H., Co.; plumbers supplies	321
Tobin, J. R.; plasterer	173
Towle & Broadwell	208
Trotter, John; contractor and builder	251
Tupper, O. M.; lime	284
Tuttle, John; teamster, plasterers' supplies	79
Union Lumber Co.; lumber	335
Vermont Marble Co.	
Vulcan Iron Works	284
Wagner, Henry F.; painting and decorator	312
Wagner, J. Ferd; mason and builder	181
Walker, George H.; carpenter	307
Walker J. W.; plasterer	281
Warren, C. A.; grading	272
Washburn & Moen Mnf'g. Co.	
Washington Street Planing Mill	48
Waterhouse, C. J.	78
Watson, W. C.; plasterer	99
Western Granite & Marble Co.	316
Western Iron Works	171
White Bros.; carpenters	257
White Bros.; hardwood lumber	145
Whittle, H.; mason and builder	60
Williams, F. A.; contractor and builder	178
Williamson, H.; plumber	280
Wilson, Bros. & Co.; lumber	354
Wilson, W. F.; plumber	228
Wilson, James A.; mason and builder	221
Wilkie, Andrew; planing mill	305
Worrel, C. R.; mason and builder	2
West Coast Wire Works	273
Western Expanded Metal & Fire Proofing Co.	
Yates & Co.; paints	349

Retail Price List of Lumber.

OREGON PINE, (Douglas Fir.)

ROUGH COMMON.

Ordinary Sizes to 12x12 in. in lengths to 32 ft., inclusive	$14 00 $12 00
Ordinary sizes to 12x12 in. in lengths to 40 ft., inclusive	14 50 12 00
Ordinary sizes to 12x12 in. in lengths to 50 ft. inclusive	15 00 13 00
Ordinary sizes to 12x12 in. in lengths to 60 ft. inclusive	17 50 13 00
2 in. to 4 in. x 14 in. in lenghts to 30 ft	15 00 12 00
2 in. to 4 in. x 14 in. in lengths 31 to 40 feet	15 50 12 00
2 in. to 4 in. x 14 in. in lengths 41 to 50 ft	17 00 13 00
2 in. to 4 in. x 14 in. in lengths 51 to 60 ft	20 00 14 00
2 in. to 4 in. x 16 in. in lengths to 30 ft	15 50 12 50
2 in. to 4 in. x 16 in. in lengths 31 to 40 ft	16 00 13 00
2 in. to 4 in. x 16 in. in lengths 41 to 50 ft	17 50 13 50
2 in. to 4 in. x 16 in. in. lengths 51 to 60 ft	20 50 14 00
1x3 in., assorted lengths	16 00 12 00
1x4 in., assorted lengths	15 00 12 00
Sizes larger than 12x12 in., as also sizes wider that 16 in., subject to special rates additional.	
Refuse, i. e. Firewood	8 00

ROUGH UPPERS.

Rough Select	$17 00
Rough Clears	22 00
Furring, 1x2 in. ½ct. per linear ft	

WORKED UPPERS.

Dressed T. & G. Flooring, 1x3 in.	$25 00 $19 00
Dressed T. & G. Flooring, 1x4 in.	24 00 20 00
Dressed T. & G. Flooring, 1x6 in.	23 00 20 00
Dressed T. & G. Flooring, 1¼x4 in.	26 00 18 00
Dressed T. & G. Flooring, 1¼x6 in.	25 00 19 00
Dressed Stepping, S. 1 S.	31 00 21 00

LATH.

1½ in. x 4 ft. long	$ 2 00
1½ in. x 4 ft. long	2 10

SUNDRIES.

Wool Slats (Rough) 1x1½ in.	$ 7 50
Bed Slate (Rough) 1x3 in. B. M.	13 00

SPRUCE.

ROUGH COMMONS.

Box Stock, assorted widths	$15 00 13 00

ROUGH UPPERS.

Rough Clears	$28 00
Rough Selects	25 00

REDWOOD.

ROUGH.

Lumber to 6x8 and assorted boards	$16 00 $13 00
Boards, 1x12 and specified widths	16 50 13 50
Timbers, 8x8 and over	17 00 14 00
Select, 3x4 and 4x4	19 00
All other Select	21 00
No. 3 and Refuse	10 00

RUSTIC.

1x8 and 1x10, asstd., 12 to 20 ft. long	26 00 24 00
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Rough or Surfaced or T. & G., 1x4, 1x6, 6 to 11 ft	17 00
Rough or Surfaced or T. & G. 1x4, 1x6, under 6 ft	13 00
Worked 2 Sides, extra, $2 M. ft.	

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Plain and Beaded, 1x4, 1x6, under 6 ft	16 00
Plain and Beaded, 2¼x4, 1¼x6, 12 to 20	25 00
Worked 2 sides, extra $2 M. ft.	

SHORT ROUGH CLEAR.

1x4, 7 to 10 ft	$19 00
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1x4 and 1x6, 3 to 6 ft	15 00

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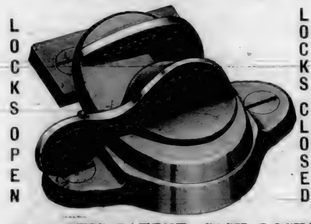

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS
$3.00 PER YEAR
VOLUME XIX. No. 1. FEBRUARY, 1898.

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BUILDING NEWS.

Broadway west of Devisadero. All work for two-story attic and basement frame dwelling; owner, Thomas Magee; architect, Edgar A. Mathews; contractor, Ed. Leiter; cost $3052.

California street, SE cor. of Larkin. All work for additions and repairs to frame hotel building; owner, Henry Kahn; architects, Oakey & Jordan; contractor, M. J. Savage; cost $1020.

Clay, south line W of Laguna. All work for two-story attic and basement frame residence; owner, Caroline B. Watson (by attorney); contractor, W. H. Savage; cost $3000.

Devisadero SW cor. of Sutter. All work, except plumbing, gas-fitting and sewers for two-story frame building; owner, John Murry; cost $2081.

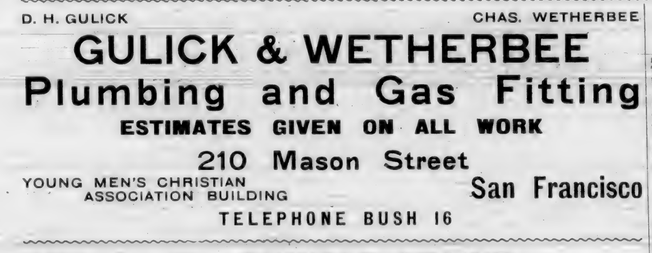
Devisadero W of Ridley. All work for a two-story frame dwelling; owner, James J. Flinn; architects, Shea & Shea; contractors, Demartini & Pagano; cost $1995.

Eighth Ave. cor. D street. All work for a frame cottage and 600 feet of fence; owner, Levi Vanauken; contractor, Geo. M. Saulsbury; cost $971.

Fell south of Broderick. All work for two-story frame dwelling; owner, Mrs. N. M. Lund; contractor, Wm. Helbing; cost $4500.

Fremont near Howard. All work for a three-story and basement brick building; owner, M. W. Belshaw; contractor, W. J. Wissinger; cost $13,306.

Geary street NE cor. of Octavia. All work for additions and alterations to a laboratory; owner, Dr. Jos. C. Hirschfelder; architects, Wright & Sanders; contractor, W. J. Field; cost $2180.



Watch this Space for Description of some well known Article that we must all use.

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After Lock has been placed in position and escutcheon or roses have been screwed onto door, put the Knob Spindle through the Door, then put the Spring "B" in one of the Holes in Spindle; the free end of Spring should just clear the escutcheon or rose, when swung around, if too short move up one hole, if too long cut off with file or nippers, then put Knob on Spindle and press into place, when it will securely lock itself.

To remove Knob, insert a small awl into Hole "A" and press Spring down, at same time pull gentl yon Knob.

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BUILDING NEWT.

Greenwich street, west of Laguna. All work, except mantels, gas fixtures and shades for a one-story attic and basement frame cottage; owner, F. Weisman; architect, Huidreich Hess; contractor, F. C. Rounds; cost $1695.

Harrlett near Folsom. Carpentry, sheet metal and plumbing work for one-story and basement; owner, Julius Radston; architect, A. J. Barnett; contractor, Frank Boerner; cost $1494.

Harriett near Folsom. Grading, brick, concrete, iron work, etc., for cellar and smoke house in basement: owner, Julius Radstone; architect A. J. Barnett; contractor, Rhody Ringrose; cost $1563.

Howard north of Third. Grading, brick work, granite, stone work, etc; owner, E. Mclaughlin; architect, Chas. Geddes; contractor, H. H. Larsen; cost $6277.

Jackson north of Walnut. All work for two-story frame; owner, Geo. F. Beveeridge; architects, Tharp & Holmes; contractor, Z. O. Field; cost $8565.

BUILDING NEWS.

Laguna near Washington. Sewers, plumbing, gas fitting, conductors and marble work for frame dwelling; owner, Dr. A. Barkan; architects, Pissis & Moore; contractor, Duffey Bros; cost $2718.

Market and Third. Painting work, etc; for seven story brick; owner, Phebe A. Hearst; architect, A. C. Schweinfurth; contractor, J. H. Keefe; cost $4235.

Powell bet. Eddy and Ellis. Alterations, additions and repairs to the Columbia Theatre, except painting, decorating and electrical work; owners, E. A. Denicke and F. Siebe; architect, E. Kollofrath; contractor, Charles Schutt; cost $5100.

Sacramento west of Laurel. All work for a two-story and basement frame building, two flats; owner, A. Dahlberg; contractor, A. Dahlberg; cost $3800.

Sagambre near Capitol. Cottage; owner, A. A. Bracken; cost $1500.

Second Ave. south of Clement. All work for two-story frame; owner, W. H. Cameron; architect, J. W. Johnson; contractor, Marcuse & Remmel; cost $2400.

BUILDING NEWS.

Seventh and Eighth streets, bet Irw n and Hubbell. Concrete work for one-story warehouse and a two-story stable; owner, Standard Oil Co; contractor, Gray Bros; cost $13,000.

Shotwell south of Twenty-fifth. All work for two-story frame, four flats; owner, A. H. Denny; architect, Jepson & Holland; contractor, R. H. Pavert; cost $6025.

Sixth Ave. west of California. All work for three eight room dwellings; owner, Felix Marcuse; contractors, Marcuse & Remmel; cost $9000.

Sixteenth and Hoff Ave. Plumbing work, etc., for a row of five-stores and flats; owners, H. W. and Joe. Hyman, trustees of Estate of Solomon and Ruth Hyman; architects, Percy & Hamilton; contractor, Ickelheimer Bros: cost $1990.

Surrey near Diamond. All work except plumbing for one-story cottage; owner, Warren J. Ireland; contractor, Geo. M. Salsbury; cost $661.

F. E. Knowles, President Telephone South 669 Abel Hosmer, Secretary

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BUILDING NEWS.

Third south-west of Jessie. Excavations, brick, iron and stone work, patent chimneys, concrete, marble and mosaic for three-story brick building, also removing old buildings from lot; owner, O. F. Von Rhein; architect, C. A. Meussdorffer; contractor, Miller & Beck; cost $10,378.

Tenth Ave. south of H street. All work for two-story and basement frame cottage; owner, John Leppla; architect, W. Koenig; contractor, Wm. Plant; cost $1800.

Twenty-first east of Folsom. All work except gas and water service, mantels and gas fixtures for a two-story frame building—flats; owner, John Duane; contractor,, J. Keneally; cost $2397.

OAKLAND

Washington cor. of Thirteenth. All work for alterations and additions to brick building; owner, Henry Mathews; architect, Walter J. Mathews; contractor, J. F. Dingwell; cost $2214.

Hamilton Tract, lot 17, block 34. All work for a frame cottage; owner, May L. De Camp; architect, D. F. Oliver; contractor, L. E. Campbell; cost $712.

Collins Tract, lot 17. All work for 1½ story frame dwelling; owner, Chas. N. Walter; architect, W. Smith; contractor, E. P. McGowan; cost $1848.

EAST OAKLAND

Jackson east of Lake Ave. Alterations and additions to frame dwelling; owner, E. J. Lukens; architect, Clinton Day; contractors, Anderson & Greig; cost $9200.

Redwood Road, at Penniman Place. All work for a two-story frame residence; owner, Walter Morosco; architect, V. A. De Prosse; contractor, P. G. MacIntyre; cost $10,850.

Encinal Ave. SE cor. Chestnut. All work for two-story frame building, barn, shed, etc; owners, John L. and Hannal M. Ansel; contractors, A. P. Pattiani & Co; cost $4709.

BERKELEY

Blake Tract, lot 17, block B. Removal of 1st Baptist Church from present location to that given, and alterations in connection therewith; owner, Hartland Law; architect, Wm. Knowles; contractors, Kidder & Cooper; cost $3250.

Ellsworth Tract, lots 14 and 15. All work for a two-story frame dwelling; owner, Oliver Ellsworth; contractor, Frederick Esty; cost $4875.

BUILDING NEWS.

ALAMEDA

Park street, southeast corner Central Ave. All work for two-story frame church building; owner, First Methodist Episcopal Church; architects, Percy & Hamilton contractors, Thos. H., Chas. A. and Henry L. Day; cost $11,477.

Railroad Ave. north of Grand. All work, except brick work, foundations, chimneys and excavating, for two-story frame building; owner, P. N. Antoni; contractor, E. Young; cost $1425.

Seventh street, south of Pacific Ave. All work for a six-room frame cottage; owner, Kate C. Lubben; architect, E. H. Denke; contractor, A. R. Denke, Jr; cost $1675.

BELVEDERE

All work except plumbing and electrical work for two-story and attic frame hotel building; owner, Annie T. Moore; architect, Oscar Haupt; contractor, McLean Bros; cost $9925.

DECOTA

R. P. Hurlbut, a well known San Francisco contractor and builder, secured the contract to erect the Masonic Home at Decota, Alameda County. The amount is $43,510.

SALINAS

Another story will be added to the hotel building now in progress of erection at the sugar factory. It seems the building proved, even before the frame was enclosed, to be too small for future requirements. Hence the additional story is to contain 27 rooms.

SAN JOSE

Second street cor. William. Two-story frame residence; owner, G. E. Lombard; builder, F. D. Wolfe; cost $3150.

D. L. Steward and M. Kenney have secured the sub-contract for brick work on the Phelan Theatre Building, Z. O. Field is the principal contractor. The work will cost about $7500.

SAN DIEGO

For many years San Diego has been renting a building for a City Hall, and paying $3,000 per annum for same. It is now proposed to erect a new City Hall building at a cost of $25,000, the same to be placed in the centre of the plaza. In size, it will be 80x199. Experimental plans have been prepared by Architect C. A. Logan, showing how the property will look when improved.

BUILDING NEWS.

AUBURN

Bus ness at present quiet. Good rains will help us more than any thing else, though it looks as though building would be more brisk in another month. J. E. Walsh and Anderson Bros. will each build a cottage. Other work at present is mostly repairing.

CONTRA COSTA

George W. McNear is about to build a flour mill at Port Costa.

PALO ALTO

Two-story brick building. Owner, William S. Zeller; contractor, M. P. Madison; cost $13,885.

SANTA MARIA VALLEY.

A contract has just been let for the new sugar factory at Guadaloupe Lake, Santa Maria Valley. The contract is for $184,780, the plant to be finished by September 1, and to have a capacity for handling 500 tons of beets every twenty-four hours, and to be so constructed that it may be easily doubled in working power. Marschutz & Cantrell of this city are the contractors.

¡MEXICO

Consul-General Coney has received plans and specifications, calling for bids for a lighthouse-keeper's dwelling at Vera Cruz, Mexico.

LOS ANGELES

The Building Trades Councils of this city have passed resolutions demanding that buildings in course of erection be provided with flooring, temporary or otherwise, for the safety of mechanics working on the building and requesting that the regulations of scaffolding be enforced.

Architect Chas. L. Strange is preparing plans for Meyer Lissner of a two story building of eight flats, each containing six rooms, to be built on the corner of Ninth and Olive streets.

Architect John Parkinson is preparing plans for the American Building and Mortgage Co., of seven residences, two of which will be built on Ocean View Ave. in Knob Hill tract, and five on the corner of Bush and 18th streets.

Architect B. B. Bixby is preparing plans for Adam Boeck, of a two-story frame residence of eight rooms inside finish of yellow pine, plumbing, electric light and other modern conveniences, to be built at Redlands; estimated cost $2500.

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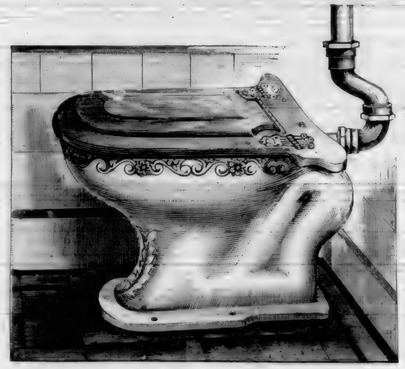

Gold Medal also and Diplomas at the California Midwinter Exposition, 1894, for Water Closet Seats and Supply Tanks.

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BUILDING NEWS.

LOS ANGELES

Architect Edward Neisser has let the contract to T. C. Sears for the first of a series of cottages, to be built on the Woylhcott First street tract. The same architect has prepared plans for extensive changes to the front of the building occupied by Fox & Kellerman, on West Third street, near Broadway, that will cost $1500.

Architect Hugh Todd has prepared plans for the Lan Franco estate, of an additional story to the Central Block, on Spring street, near the corner of Court. The new addition will be occupied by the Order of Forresters, and will have three main assembly rooms, with the usual ante and property room; it will be constructed to conform to the present structure.

In view of the recommendations made by the grand jury, it is expected that the county jail will, at some future time, be converted into a hall of records, and a jail, with criminal courts and sheriff's quarters will be built on the county property, at the corner of Buena Vista and Temple streets.

At a meeting of the Trustees of the First Methodist Church, held Monday evening, it will resolve to receive competitive drawings for a new church building to be built on the northeast corner of Sixth and Hill streets.

The Edison Electric Company has entered into a contract with the Alcatraz Company for the construction of a complete conduit system throughout the business section of the city. This is in line with the ordinance passed by the council, requiring all electric wires and poles to come down by April 1, 1898. The letting of this contract practically decides that there shall be no "common conduit," but that each company will put in its own system. The expense to the Edison Company of establishing its plant here will exceed $150,000. Power is to be furnished by the Southern California Power Company, or Redlands Company, as it has been called. They have also purchased the Lichtenberger homestead, on East Fourth street, between Main and Los Angeles streets, where they will erect a power station and other necessary buildings for the transaction of their business.

The new Stimson Building is to be in every respect equal to the Wilcox Block, it will be erected on the northwest corner of Spring and Third streets. Architects Reid Bros., of San Francisco, are due to arrive in this city, and in a few days matters will be settled.

George W. Robinson will erect a $6000 frame building to contain flats, on South Flower St. Architect Thornton Fitzhugh, Byrne Building, prepared the necessary plans.

Ira Smith will erect a modern residence of 12 rooms to be erected on Adams street, near Figuerora. Architects Elsen & Hunt, Stimson Building, prepared the plans.

A four-story brick hotel building, 80x150 feet in size will be erected on Broadway, between 4th and 5th streets. Henry Martz is the owner, Krause & Jenkins are the architects.

Architect John P. Krempel is preparing plans, for A. Winstel, of a four-story and basement business business building 40x150 feet to be erected on the east side of Broadway, between Fourth and Fifth streets, adjoining the proposed new building of Henry Martz on the south. The front elevation will be of pressed brick and terra cotta, plate glass throughout the front. The building is designed for hotel purposes, and will probably be used in connection with the Martz building. The inside finish has not been decided upon. A union elevator will be put in for use in the duel building. The same architect has also prepared plans of a two-story stable and carriage house for the Oxnard Co., to be built at the factory site at Oxnard, Ventura Co. Also a station building for the Pasadena Pacific Co., to be built at Altadena.

Architect A. M. Edelman has prepared plans, for H. Newmark, of a four-story business and office bufiding, 60x150 feet, to be erected on Broadway, opposite the city hall. The front will be of pressed brick with terra cotta trimmings and marble entrance way; inside finish to be of oak; the building will also be supplied with steam heating throughout, and an electric passenger elevator will be installed. The same architect is also preparing plans, for A. Hamburger & Sons, of a two-story brick business building 40x98 feet, as an addition to their present place of business; it will be built on the east side of New High street, near Franklin street.

ALTADENA

A contract has been let for the erection of a two-story frame dwelling for H. D. West. Consideration, $6449. This does not include the painting, plumbing or mantels. Blick & Moore of Los Angeles, architects; D. W. March, contractor; Horatio D. West, owner.

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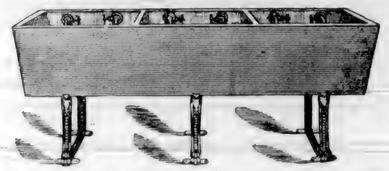

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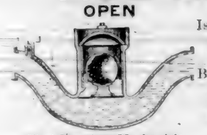

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VOLUME XIX. FEBRUARY 20th, 1898. NUMBER 2.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

SINCE the publication of the last issue, the California Architectural Publishing Company of San Francisco have leased to E. H. Burrell the right to publish THE CALIFORNIA ARCHITECT AND BUILDING NEWS.

Mr. Burrell has for many years been connected with the fortunes of the paper in a business way, and as one of the Directors of the Publishing Company. He will have charge of the business department while for the literary end of its affairs Tom M. Grant will be responsible. A co-partnership having been formed to do business under the firm name of E. H. Burrell & Co., the financial responsibility falls equally upon the shoulders of the partners to the firm—Messrs. Burrell & Grant, who will continue at the old stand, 408 California street.

As to the policy of the paper in the future, it is a certainty that just a trifle more direction and just a trifle more energy, will be infused into its columns under the new regime, while it is equally as certain that outside issues and isms which have no bearing upon nor any part in a Journal devoted to Art, Architecture, Archæology, Engineering and Decoration, will be rigidly excluded.

In this connection it will not be out of place to mention some of the objective points, that in season and out of season will receive considerable attention and unyielding suppor in these columns.

First on the list, because of its far reaching importance, is the passage of a State Law providing for the licensing of architects and regulating the practice of architecture as a profession. Second, the unconditional repeal of the Mechanics Lien Law. Third, compliance on the part of contractors with the rules and regulations as prescribed in the National Electrical Code for the installation of wiring and apparatus for electric light, heat and power, and enforcement thereof by every architect who is a reader of this paper.

The illustrations will be in keeping with the same spirit of liberality and excellence that has characterized them in the past but ever improving by and through the assistance and co-operation of those of our readers who possess the magic touch and willing hand with the pencil.

To place this paper—the only Journal of its kind published on the Pacific Coast—in the front rank of its class in these United States, is the real ambition of its publishers—and to that end and that end only shall all of our efforts and all of our energy be bent.

FIRE UNDERWRITERS and the California Insurance Department entertain very different views of the laws of the State, and will settle their differences in the courts. The commissoner's rulings have attracted the attention which it is evident he desired they should, for he has even gone so far as to furnish the daily newspapers with copies of his letters to underwriters before they could be delivered through the mail. This was hardly a dignified course to pursue.

Some of the commissioner's demands are indefensible. They are absurd to the verge of puerility. The sound, respectable companies will not comply with them, and a number of the largest and strongest companies can not. What can be more ridiculous than to require foreign and eastern companies to keep a San Francisco daily record of all transfers of capital stock in Hartford or London? Nothing, excepting perhaps the commissioner's demand that a company with $50,000,000 surplus should increase its capital stock from $100,000 to $200,000 in order to make its contracts as good as companies with $200,000 capital and only $50,000 surplus.

Many foreign companies have a good deal of subscribed capital stock not paid up. The commissioner professes to hold that this unpaid proportion give these foreigners an illegal "advantage" over California companies, and he has ordered that the unsubscribed proportion be paid up forthwith. Such an order cannot, of course, be complied with.

If the courts should sustain the commissioner in his extreme position, the effects will be very damaging to business interests. Many insurance companies would be compelled to withdraw from the State, and cancellations of policies would be general. Fire insurance is so intimately related to commerce that if its sustaining contracts are withdrawn business generally must be suspended. Building operations would have to cease. The banks would not lend money. A great deal of property would remain uninsured, and fires would cause bankruptcy. Thousands of men would be thrown out of employment.

The office of insurance commissioner has too much authority, since it is possible to provoke such disaster. A dishonest or cranky official, unrestrained by mandamus proceedings, can drive out the most solvent companies or force them to pay him tribute. The object in the creation of the office was merely to give assurance of solvency and to eject and exclude insolvent companies. It was never contemplated that an insurance commissioner should use the power of the office to annoy and hamper ligitimate companies, or to pose in the daily press as a Don Quixote smasher of wind-mill trusts.

For the sake of the business interests of the community it is to be hoped that the courts will teach Mr. Clunie his proper place. A bull in a china shop can do a great deal of harm.

IN CONVERSATION on internal affairs of building and loan associations, an authority in this line says that it is a debatable question as to whether it would not have been better for the cause, that premiums for money loaned had never been injected into the laws under which they operate. In the past they did add materially to the gains, but now but little. They have invariably tended to mystify the borrower and lead to more or less confusion and misunderstanding. The simple payment of dues and legal interest, monthly, in fixed installments, is readily understood and the borrower is satisfied. To pay interest on money retained as premium was never popular but was accepted because it was an established custom at the beginning of the successful era of building societies. Conditions have changed and the earning power of money has likewise, and the sooner the building society managers comprehend the fact the better. There was a time, and not very remote, when the circumstances probably did warrant premiums, but not now. The investor in a society receives a larger rate of interest for his money than if placed on deposit in a trust company or savings fund, and it is this that induces him to put by his earnings. Even if the rate of interest for loans was lowered, and the gains lessened, the borrower would be better off, and the investor at the same time, receive a larger rate of interest than paid him elsewhere. If lower interest would bring better loans, and place the associations on a stronger financial basis it would materially increase their popularity.

THE ELECTRICAL WIRING OF BUILDINGS.

THE FLATTERING manner in which the first paper on the above subject has been received by the progressive architects is assuredly a matter of credit alike to the forethought and enterprise of the paper's new management and to those of its readers who are able to see their weakness and seeing it are not only willing but anxious to absorb strength and enlightenment from any ource that offers that of which they may be lacking.

There are contractors and contractors in this electrical wiring work, and evidence is accumulating in this office which at the proper time and in an indisputable shape, will be placed in the possession of the S. F. Chapter of the A. I. A. Many of these so-called contractors are fakers pure and simple, but the day is at hand when as a matter of self protection no self respecting Architect will permit one of these worthies to figure upon any work that is to be given out of his office.

In the development era of ten or more years ago, everything connected with electrical matters was in an experimental stage bordering on the chaotic, and these fake contractors flourished and prospered. But the unprecedented proportions that the business has assumed each year, forced the growth of experience into like proportions, with the result that the corps of alert and inventive workers were numbered by the tens of thousands. This has brought the business of the installation of wiring and of the manufacture of apparatus for electric light, heat and power down to an exact science.

Then to whom is an knowledge of this exact science more important than the Architect—surely to no one, for since our last issue the Phelan Building, on Market street has had a close call from annihilation by fire—cause—defective and careless wiring for electric lighting of the top floor of the building. Here then, Architects, have a fine object lesson, furnished to order almost. The wires were run up the elevator shaft, in the mouldings, to the attic, and then up on each side of the iron rods that supported the roof truss, and across the truss to the distributing board for the top floor.

These iron rods were bolted through an iron plate thus forming a complete circuit between the wires. No signs of bushing could be found on the wire where it crossed the iron rod in the centre of the truss—and it is more than probable that the neglect of the electrical contractor to bush and tape that wire, at that particular spot, was the real cause of the fire in the Phelan Building.

The narrow escape of the Phelan Building has brought to the attention of this Journal as foul and criminal a piece of electric wiring as it is possible to conceive the most depraved and greedy mind of man contriving at.

The Powell street theatre, as at first wired is referred to, and it was not until the interior of the theatre was being remodeled for the Stockwell lessees that the discovery was made—that for all those preceeding months, the pretty little theatre had been a virtual deathtrap—unknown to everyone, always excepting that evil minded contractor who perpetrated the fraud and made possible a holocaust in the midst of a trusting community.

This contractor, who is still in the business—used in that theatre rolls of brown paper painted black, where bushings were required—to save the cost of the hard rubber bushings specified. These rolls of brown paper—were all hidden and it was also discovered that all the wiring that was hidden was of the very cheapest variety with insulation that was absolutely worthless. It was only wherever the wires were brought through and exposed that they were found to be of standard requirements.

To be Continued.

SPANISH HYCIENDA.

RENT SPACE IN OFFICE BUILDINGS.

FROM THIRTY-FIVE TO FORTY-FIVE PER CENT OF THE GROUND AREA NEEDED TO SECURE DAYLIGHT.

MOST PEOPLE have but a vague idea of the comparative cost of construction and the comparative amount of rentable space in new and old style office buildings. As to cost, the amount, of course, varies greatly according to the inclination and the means at the disposal of the owners. They may simply be content with putting up a good, serviceable structure, with plain every day finish, or they may be bent upon attaining the height of elegance in finish as in convenience. A writer in the *Chicago Times-Herald* in a clever paper gives some good points on the subject from which quotations *ad libitum* are made:

"A fair estimate of the cost of construction of a first-class modern fireproof office building, according to a well-known constructive engineer, is in the vicinity of $3 a square foot of floor space. Thus, a ten-story building, 50 by 100 feet, being 50 by 100 by 10, or 50,000 square feet, can be constructed for $150,000.

Prior to 1880, before the general introduction of what is now known as the Chicago construction, with elevator and steel skeleton, $1 per square foot of floor space was a fair estimate. Office buildings then were mostly four and five stories in height, and floor space was not so much subdivided as in modern structures. The principal elements of cost were labor, bricks, cement and framing timber. The price of labor and bricks has remained about the same, that of cement and framing timber has fallen. Iron and steel are, of course, much cheaper to-day, but these materials did not enter very largely into the construction of non-fireproof structures.

"As to rentable floor space, the general reader will no doubt be much surprised to learn that it takes from 30 to 45 per cent of the ground area of the building lot to procure daylight for all parts of the structure. On this point the authority cited says:

"'As to rentable floor space, the following percentages of the gross area should be available for office uses: In a corner building, 25 by 100, 70 per cent; in an interior building, 25 by 100, 55 per cent; in a corner building, 50 by 100, 72 per cent; in an interior building, 50 by 100, 64½ per cent; in a corner building, 100 by 100, 62½ per cent; in an interior, 100 by 100, 55 per cent. These percentages, however, are attainable only in buildings planned according to approval principles of engineering and architecture, and have not by any means been reached in all modern structures. I should say that 60 per cent of the gross floor area is a fair estimate for the rentable space in modern buildings, as against 70 per cent in the old. The difference is due partly to the presence of elevator shafts and an increased number of partition walls, but especially, perhaps, to a more perfect compliance with the demands of sanitary science.

"'For example, much space is devoted to light courts, proper light not being obtainable in offices beyond say twenty-five feet from the windows. In this, as in other respects, the sanitary condition of the office renter is vastly better to-day than it was seventeen years ago. The consequence has been a tremendous increase in operating expenses, for the landlord is obliged to furnish a thousand and one

conveniences and services not thought of before. Of the average cost of operating modern office buildings, it is impossible to give anything like a fairly accurate estimate. Faulty designing is a frequent source of unnecessary expenditure. I know of buildings of the same size and equivalent hours of service in which the weekly expenses of the one equal the monthly expenses of the other.'''

NATURAL BUILDING STONES OF THE PACIFIC SLOPE.

GRANITE

THE FACT that the principal cities of the Pacific Coast, and especially San Francisco, have reached the stage of permanent improvements in sympathy with the general commercial developments of the whole country, has naturally awakened a general interest in the discussion of the relative merits of our natural resources in building materials. It has long been known in a general way that California is at least as rich in such resources as any region in the world; but it is not generally known that if half the capital and energy that is now devoted to the search for precious metals were devoted to the development of our quarries, the profit to individuals and the gain to the whole community would be larger.

In discussing the relative merits of different natural building materials, granite comes first. Because, though geologically not the oldest of all rock, it is in all essentials the best for certain purposes. It is free from the cellular cavities of all trappean and volceanic rock, with a larger proportion of quartz than the later igneous rock. Composed of feldspar, quartz and mica in confused crystallization, it is the strongest of all building material in resistance to crushing and all other tests. With these qualities it is not remarkable that the demand is greater than for any other stone; the output in the United States reaching an average value of twenty million dollars annually—while the average for the past five years is much greater.

In any permanent building some granite is used, whatever other materials may be superposed; because its wearing qualities as well as its strength, exceed all other materials. The only buildings that have survived for four thousand years or more are granite buildings; and except where fire, violence, or the ebrasion of drifting sand, has made some impression, the carved detail is still as sharp as when it was first executed. Granite is however as various as other materials according to its local peculiarities. The proportion of the different properties, the relative and actual size of the crystals, the cementing material in the interstices, and the color of the quartz, all must be considered in comparing the merits of different granites. In a general way it may be said that as a matter of strength and durability, the smaller the particles, or crystals, and the whiter the quartz, the better—and again: the less lime there is in the cementing. In short granite is an ideal concrete, that nature has kept under a tremendous pressure for innumerable centuries—and she has made it in so many varieties that we are not restricted o mere sombre tones in realizing our designs and desires; but can avail ourselves of beautiful contrasts and harmonies of color. We have the large variety of greys, light and dark, brownish, yellowish or greenish; and nearly white, and the whole grade of reds, to rose pink; the decided greens, and the blues. And all these can be darkened and intensified by polishing—all of the peculiarities of granite being that a polished surface retains its polish under almost all conditions. The exception is where the red or pink granites are exposed to the corrosive action of the atmosphere of manufacturing towns. In such cases the protoxide of iron in the quartz is affected and disintegration sets in. In general the colored varieties of granite have larger crystals than the colorless varieties; but as they are generally selected for decorative reasons, the difference in the comparative strength is not important. California has only begun to develop her granite quarries, but there are already several whose facilities and management are equal to any demands that can be made. That is to say, that these facilities exist in working order to execute several contracts on time, each as large as would be involved in our promised Post-Office.

There is no limit to the size of the blocks that are obtainable in granite, but the practical limits in handling. Our mechanical resources are probably greater than the world has ever known; and if the time shall ever come when for

some object we are willing to meet the necessary expense, we can quarry and transport larger blocks of granite than were ever attempted in Egypt. It is not claimed that California furnishes every variety of granite known, but she furnishes a greater variety than any other region. Each locality has some distinctive peculiarity owing to local influences—the large crystal, blue, and rose colored granites of Aberdeen have not yet been discovered but there is no reason why they should not be, and mean while the people

are not yet wise enough to use what they have for all it is worth.

This short sketch of a very large question is intended merely to arouse interest and discussion, and it is to be hoped that the readers of this Journal will not hesitate to write any queries that are suggested—when answers will be published with the next issue. It is promised to give each month a short treatise like the present on some variety of building stone, and together with a general description, to give some simple rules and suggestions for experimental tests that can be applied without special apparatus or education.

[The Editor is not responsible for anything which appears in this column.]

THE following letters regarding the Concrete floor test at Wells, Fargo & Co.'s new building are self explantory:

THE PACIFIC COAST BORAX COMPANY,
NEW YORK HOUSE, 185 WATER ST.

NEW YORK, Feb. 17, 1898.

To the Editor of the California Architect and Building News.

SIR:—In reference to your article on Fire-Proof Concrete tests in your January issue we desire, through your courtesy, to place before your readers the following facts:

First—We were not invited to participate in the test in anyway. We were entirely unrepresented.

Second—The slab supposed to represent our system, as described by you, was not built as we would have constructed it. The construction was faulty.

We would inquire through you: 1st—If the other system was not represented by an accredited agent. 2d—Who built the slab that was supposed to represent our system.

Yours respectfully,
SMITH & RANSOME CO.
Per Ernest L. Ransome, Pres.

WESTERN EXPANDED METAL AND FIRE PROOFING CO.,
CLAUS SPRECKELS BUILDING, ROOMS 114–15–16.

SAN FRANCISCO, CAL., Feb. 24, 1898.

California Architect aad Building News.

GENTLEMEN:—Your favor of even date, together with Mr. Ransom's letter, are at hand, and in reply, we will say that we furnished the No. 16 guage 2 and ½ inch mesh expanded metal for the test referred to, at the request of Mr. G. W. Percy of Percy & Hamilton, Architects.

This Company paid no further attention to the construction of the slab, as the matter was left entirely in the hands of Mr. Percy and his workmen, and we do not even know what mixture was used and did not know when the test was to be made until notified by Mr. Percy the evening before, to be present the next morning at ten o'clock, at which time General S. W. Backus, secretary, and myself, together with many others, witnessed the test referred to in your Journal.

Very truly yours,
Western Expanded Metal & Fire Proofing Co.
Dict. N. L. B. N. L. BELL, Manager.
CUSHING, WETMORE COMPANY, 508 California St.

SAN FRANCISCO, Feb. 25, 1898.

California Architect and Building News.

GENTLEMEN:—In reply to your favor of the 25th inst., requesting information in regard to concrete slabs built at Wells, Fargo & Co.'s new building, we would say that the slabs were built by us under instructions received from Messrs. Percy & Hamilton, Architects, and under the personal supervision of Mr. James Humphreys, superintendent of construction. The iron and metal lath were furnished us at the building and no agent of neither method was present during the construction of the slab, either did we follow any instructions other than those given us by Mr. Geo. W. Percy and Mr. Humphreys. Very respectfully yours,

Cushing Wetmore Co.
Per Goerge P. Wetmore.

THE Report of the Metal Lathing test, as printed in our last issue, seems to have been anything but satisfactory to the writer of the following letter:

To the Editor of the California Architect and Building News.

DEAR SIR:—In your last issue there appeared a statement which read as follows:

"On Wednesday, January 26, an interesting test was made at Wells, Fargo & Co.'s building designed to show the relative merit of different kinds of metal lath and other materials * *. It was intended to test four different kinds of metal lath in the chimney, but the representative of one kind became dissatisfied and wished to prevent the test being made."

Now then let me here inform your readers the reason why the owner and inventor, Martin Carrick of that "one kind, that became dissatisfied," but whose lath proved itself to all who witnessed the test, to be superior to the others, notwithstanding the disadvantages to which it was subjected, the principal one being the manner in which the coat of mortar was put on, which I boldly assert was not equal in body or workmanship to that which was given to the other makes contesting.

Still, when all the others were scorching and smoking, and long after the wire lath that had already been awarded the contract for the building, was in a blaze, it stood its ground nobly and will stand for all time.

I will now give my reasons for objecting to a test being made on my lath, and I will ask any fair minded man to place himself in my position and see if he would not do as I did under the same circumstances.

Last October I figured on the fire-proofing construction of the new Wells, Fargo & Co's Building, now in course of erection on the corner of Second and Misson streets. Each contractor who was invited to figure on the work, was instructed to submit his own sketches and complete specifications, in order to show the architect how he would perform the fire-proofing construction on said building.

Bids to be submitted on the 13th day of above month at noon sharp. I handed in my bid, sketches and specifica-

tions at the hour and place mentioned and waited developments. Let me say right here, that after several weeks deliberation over the plans and specifications of the selected contractors, the architects made up their minds to make several changes in the fire-proofing work for the building—so they swept aside all bids, plans and specifications that had been submitted and called for new ones, but I was not favored with a second invitation to bid.

Two weeks passed by without hearing any more about the matter, being anxious I decided to call down to the new building, to get some information regarding the work I had figured on; I was met by Mr. Wetmore the contractor for the concrete work, who said to me "Mr. Carrick I am requested by Mr. Percy to ask you if you will be willing to go into a contest with your lath; and furthermore if you will pay your part of the expenses of preparing a furnace to test the different kinds of metal lath?"

My answer was, "all things being equal I was willing."

I called on Mr. Percy in a day or two after that and he said he was going to make a plan of the furnace, and that he would let me know in time, he also said he had "no ax to grind" with anyone; I thanked him and went away. I heard nothing more about the matter until about the first or second of December when I met Mr. Percy on the way to his office, he asked me to walk back with him and he would let me have the plan of the furnace. I got the plan and made panel according to the directions.

We then came to a stand still again until about the 16th of December, when I received a postal informing me that the panel and lath I had prepared for the test was required at once. I delivered them as ordered and all went well until the 4th day of January, when to my great surprise, there appeared in a morning paper of that date, the news of the awarding of the contract to Mr. Keating for the fire-proof construction on the Well, Fargo Co.'s new building for which I thought I was competing and that, more than that, the test which had not yet been made was to be a part of the competition.

In the name of common sense, what interest or gain, was I to receive from that building after the contract had been awarded to another. The day after the news was published I called at the office of Messrs. Percy & Hamilton, for my plans and was told that they had disappeared and that they could not be found, so taking all into account, I think my reasons were well founded and sufficient for taking the stand I did.

In conclusion let me here state, that I wish all who witnessed the test and those who may have read the account in the California Architect, to distinctly understand that I never for one moment entertained any fear as to how my lath was going to stand in the test, I was well aware that it would come out on top, and was ready to put up $100.00 or $500.00 that my lath would outlast the others in any fire-test, all things being equal. It is the invention of a practical plasterer, and is manufactured here in San Francisco.

Respectfully, Martin Carrick.

NOTICE TO ARCHITECTS.

THE BOARD of Managers of the Mendocino State Hospital invite competitive plans and specifications in detail for the erection of an administration building to be erected on the premises of the said Mendocino State Hospital, near Ukiah, in the county of Mendocino, State of California to cost $58,800, including the sum of twenty-eight hundred dollars premium for the plans and specifications adopted and supervision of the erection of said building to completion.

The plans and specifications must be delivered on or before 2 o'clock P. M. of the 19th day of March, 1898, to W. W. Cunningham, secretary, at Ukiah, California.

The Board reserves the right to reject all or any of said plans and specifications.

Further information may be had by applying to W. W. Cunningham, secretary, at Ukiah, Cal.

JANUARY UILDING.

WE ARE indebted to the *Builder and Contractor* for the following summary of building operations at Los Angeles. During the month of January the Superintendent of Buildings issued 161 permits, amounting to $219,325, viz:

108 new buildings, stables, etc	$198,060
39 alterations and repairs	19,355
14 removals	1,910
161	$219,325

Which are classed as follows:

Frame cottages	45
Two-story frame residences	37
Brick and " "	1
One-story brick buildings	8
Three-story " "	1
Warehouses	1
Factories	1
One-story frame stores	4
Stables and sheds, etc	10
Additions and repairs	39
Removals	14
Total permits	161

The Plumbing Inspector issued, during the month of January 268 plumbing and sewer permits.

The County Recorder's office shows 49 contracts filed during the month of January, amounting to $190,891, which are districted as follows:

Los Angeles	42,	amounting to	$167,560
Pasadena	1,	"	4,200
Altadena	1,	"	6,449
Garvanza	1,	"	3,633
Glendora	1,	"	1,345
Azusa	3,	"	7,704
			$190,891

COMPARATIVE BUILDING.

THE FOLLOWING totals, showing the number and amount of the building permits issued during the months of January for the past three years and the present, will be interesting to those who think that the building boom has come to an end:

January, 1895—	Permits issued,	165;	amount		$180,000
" 1896—	"	"	160;	"	244,191
" 1897—	"	"	138;	"	126,020
" 1898—	"	"	161;	"	219,325

By reference to the following table, it will be seen that Los Angeles presents a very favorable showing in a list of some of the principal cities of the union.

CITIES	1896	1897
Chicago	$22,730,615	$22,777,230
St. Louis	10,190,898	9,471,640
Pittsburg	5,591,300	6,899,118
San Francisco	5,673,998	4,460,117
Detroit	5,465,228	4,385,840
Los Angeles	3,805,175	3,660,175
Indianapolis	2,387,864	3,445,047
Cincinnati	3,110,415	2,486,890
New Orleans	3,257,643	1,619,285
Omaha	2,402,591	1,448,776
Kansas City	1,900,458	1,848,390
Denver	1,305,872	1,265,300

THE MAIN ENTRANCE

THE EAST END

THE BANQUET HALL

INTERIOR VIEWS - TEMPLE MISSION LODGE NO. 169 F. AND A. M.

HERMAN & SWAIN, ARCHITECTS.

From "The Roman Triumphal Arches."

Reprinted from The Brochure Series, Boston, June, 1897.

THE ARCH OF TITUS, ROME.

From "The Interiors of Fontainebleau and Versailles."

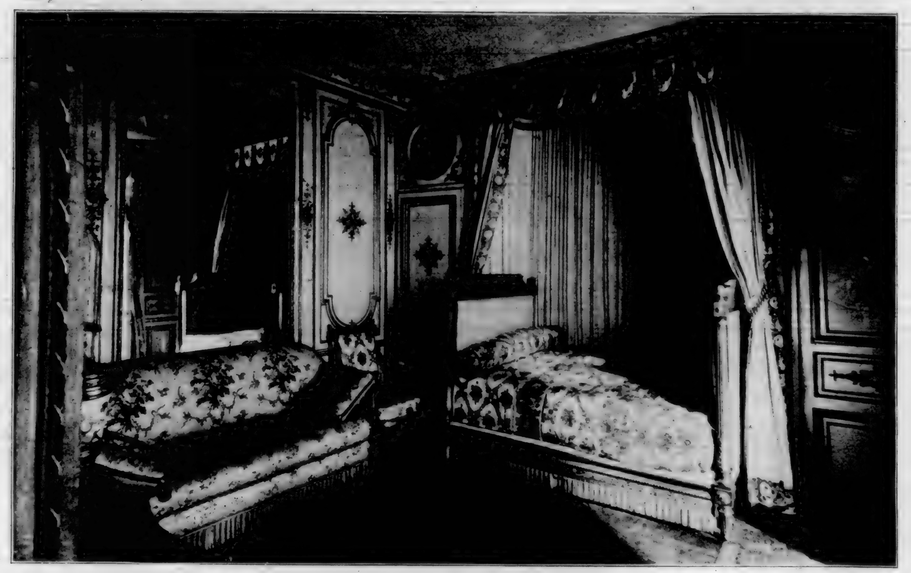
Reprinted from The Brochure Series, Boston, January, 1897.

GALLERY OF HENRY II., FONTAINEBLEAU.

From "Library Architecture."

Reprinted from The Brochure Series, Boston, November, 1897.

THE VATICAN LIBRARY, ROME.



From "The Interiors of Fontainebleau and Versailles."

Reprinted from The Brochure Series, Boston, January, 1897.

BED OF MME. DE MAINTENON, FONTAINEBLEAU.

INTERIOR VIEW—WEST END—TEMPLE MISSION LODGE NO. 169 F. AND A. M.

HERMAN & SWAIN, ARCHITECTS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

ITH this issue we present four illustrations taken from the Brochure Series of Architectural Illustrations, published by Bates & Guild Company, 13 Exchange street, Boston. From the Brochure we reprint the following descriptions of these engravings:

THE Arch of Titus, Rome.—If not the first, certainly one of the earliest examples of the elaborate architectural style in which the triumphal arches were carried out, is the arch of Titus in Rome. Built by the Roman senate and people to commemorate the destruction of Jerusalem in 70 A. D., it was not finished until after the death of Titus in 83, though it was doubtless begun during his life. During the Middle Ages it was made a part of the fortress tower of the Frangipani, and was not isolated until 1822.'

In composition it consists of a single opening framed by the composite order, and is said to be the first ever erected in which that order was employed. Whether or not that be true, itis certainly a graceful example of it, and has been treated as a model of its kind. It is built of large blocks of Parian marble, and is simple in outline and in excellent architectural taste. The archway is flanked on both faces by two engaged composite columns on each side which support the entablature. The frieze is sculptured with sacrificial processions. The shafts gradually diminish from the pedestals, and are surmounted by the usual acanthus capitals. They are doubtless originally all alike, though the outer columns have been restored in a manner unworthy of their old companions. The volutes, and in short all parts of the capitals as well as the details of the entablature, are in a style of profuse ornament. The spandrels are filled by two Victorys; one holding in her hand a standard, and the other apparently a laurel crown. The brackets under the cornice are formed of dolphins resting upon shells. On the keystone, now much decayed but once deemed the finest in Rome, are relics of a helmeted female figure, probably Rome herself.

The famous reliefs of the "Spoils of the Temple" are to be found on the walls of the interior of the passage. The sculptures are now much worn, but may still be recognized by their beauty and vigor as belonging to the first era of Roman art. The attic which surmounts the whole and bears the inscriptions is overpoweringly high, and perhaps detracts from the beauty of the general proportions. The absence of sculpture on each side of the arch is also a defect; for the only logical function of these monuments is to present surface for sculptured decoration. Yet, as a whole, the arch of Titus is certainly the most remarkable in Rome for harmony of proportion and beauty of sculpture.

LIBRARY of the Vatican, Rome.—The Vatican Library was founded by Pope Hilaire I., in the fifth century, and has been enlarged by each of his successors. It occupies one of the wings of the Vatican Palace adjoining the museum and the portion of the building designed by Bramante. The books are arranged in closed cases standing against the piers and wells. The decorations are of the richest type of the Italian Renaissance.

GALLERY of Henry II, Fontainbleau.—The ball-room or gallery of Henry II. is by many considered the masterpiece among the interiors of the French Renaissance. It is 97 feet 4 inches long and 31 feet broad. It has a beautiful outlook on one side upon the gardens, and on the other upon one of the courts, through large arched windows five on each side, having no architraves, occupying the whole space of the alcoves which are 8 feet in depth, separated by piers 7 feet in width. These alcoves are surrounded with seats 13 inches in width and 20 inches high. The wainscot, 8 feet 6 inches high, is of quartered oak with no finish whatever, probably planed and scraped, but not so smooth as would be made by sandpapering. The mouldings and flutes of pilasters are gilded with dull gold. The abundance of light gives an added value to the magnificent decorations of the walls and ceiling. The caissoned wooden ceiling in octagonal panels with rich carved mouldings is of quartered oak of the same color as the wainscot, enriched with gold and silver, the field of the octagonal panels in gold. The polished oak floor laid in an octagonal pattern, seems to reflect the sumptuous design of the ceiling, and from its finish and lack of gold, is a little darker in tone. The walls as far as the frieze, are covered with paintings, low in tone, and of a general effect, containing the emblems of Henry II. and Diana of Poitiers, surrounded with frames of gilded mouldings. Serlio, the architect of this room, designed to cover it with a vaulted ceiling, and the corbels for the springing of the vault may be seen on the piers, now serving to support branching chandeliers. The frieze is a mass of mythologic and ideal figure compositions. The vaults and walls of the bays or alcoves are similarly painted, although with broader and simpler designs. At one end of the room is the musicians' gallery, and at the other the superb mantel shown in our illustration.

The freshness and wonderful preservation of this room are at first sight astonishing. Decorated by Primaticcio and Niccolo dell 'Abbate, between 1552 and 1557, how does it come to be in its present perfect condition? It has been retouched and repaired at various times since then, and has suffered from the would-be improvements of decorators, but was all thoroughly restored in 1834 by Alaux, whose skill and painstaking research have given us a very close approach to the original room.

BED of Mme. De Maintenon, Fontainebleau.—This little room, 12 by 14 feet, is light and cheerful in effect, and simple in design. The walls are finished in grayish white with mouldings and ornaments in dull gold. The furniture

is all of gold with fillets and ornament burnished, and is covered with grayish white silk, lighter and warmer in tone than the walls, with patterns of colored flowers. The foot of the bed is covered with white silk, and the hangings are all of white silk, with a border of yellow, light green and rose.

IN THIS number is illustrated the new Temple of Mission Lodge No. 169 F. and A. M. situated on the west side of Mission street, between 22d and 23rd streets, Hermann & Swain, Architects.

The building occupies a lot 54x125 and is two stories in height in the front portion and three stories in the rear. The building is of fire-proof construction and is provided throughout with all modern conveniences in the matter of heating, lighting, ventilation, plumbing, etc.

The exterior facade is in the Italian Renaissance architecture, executed in buff, Roman brick and cream terra cotta with red tile roof, the whole presenting a pleasing combination.

In the basement is located the heating and ventilating plant, motor and electrical apparatus, the Morgan system being used.

The first story contains two large stores. The main entrance to the building is finished with Tennessee marble dado and mosaic floor and the ceiling of same, paneled in oak.

The second story contains one lodge room, 26x40 in size with two capacious ante rooms.

Also the Masonic Hall 43x63 ft. in size and 22 ft. in height with 7 ante rooms and organ loft in connection with same.

The corridors and stairways in the two upper stories are finished in hard wood with ornamental copper dados, five feet high, all doors and finish being also of ornamental copper. All the antique copper and metal work of the Temple is in keeping with all the metal work done by the well-known house of Jas. Gilfoy & Sons of 208 Eighth street.

The interior of this Masonic Hall is finished in ornamental copper in the most elaborate manner, no expense having been spared in making it the finest hall on the Pacific Coast.

The general finish of this room is in the Roman Corinthian order with massive fluted pilasters on the North and South walls supporting the heavy beam finish of the ceiling above.

The central portion of the ceiling is in the form of a circular dome with 235 incandescent lights, 115 of which are worked into a colored star.

The gas and electric fixtures were selected by the committee in charge, after a most thorough canvas in the market. Designs were submitted by the several firms competing. Mr. Chas. F. Kinsman whose office is in the Claus Spreckels Building succeeded in pleasing all concerned. The same are of novel and neat design, of eastern manufacture, and show in each fixture quite a departure from what are seen in most buildings of this kind.

The Master's station in the East is in the Roman Corinthian order of architecture, with the rising sun in cut glass set in the pediment which is emblematic of the Master's office.

The Senior Warden's station in the West is in the Grecian Ionic order with the setting sun in cut glass set in the pediment, the same being emblematic of the S. W. office.

The Junior Warden's station in the South is in the Grecian Doric order with the meridian sun in cut glass set in the pediment, the same being emblematic of the J. W. office.

The station in the North is the Tuscan order. The cut glass suns in the various stations are lighted with incandescent lamps.

The two golden pillars in the West end of the room were modelled after the pillars in the North Portico of the Great Hall of Xerxes at Persepolis, being the nearest known examples of the two bronze Jachim and Boaz, which were the principal ornaments in the facade of the Temple of Solomon.

These two pillars of Solomon's Temple being of metal were probably much finer in detail and more elaborate in ornamentation than their prototypes of Persepolis, but as we have no other actual examples to compare with, the restoration may be somewhat fanciful.

The carving on the pillars was executed by Frank T. Riley of 528 Fifth street, who was also awarded the contract for the spheres, Celestial and Terrestrial, that are mounted on the two pillars as shown in illustration of West End and Senior Warden's Station.

The treatment of the walls, ornamental stucco work and ceiling of this hall is in blue and gold.

The third story contains the spacious banquet room, seating 200, and also smoking room, janitors' quarters, store rooms, etc.

The furniture, fittings and hardware were all made to order from special designs.

The plumbing work throughout is of the very best, all modern conveniences being provided for in the specifications; the work was done by the "old reliable" firm of Wm. S. Snook & Sons of 554 Clay street, where the "Lilly" closets, from the works of the John Douglass Company are to be found very much in evidence when wanted.

The excavations were made by the John Kelso Company. The California Art Glass Works are responsible for the cut glass Sun bursts and Wm P. Fuller & Co. supplied all the window glass used in the building.

The cost of building, exclusive of site, was $30,000.00.

THE FOLLY OF PRICE CUTTING.

IF ANYBODY is in doubt of where profits sometimes go in producing stone for building, let him consider the price at which Georgia marble has been sold for the new Minnesota Capitol—75 cents a cubic foot, delivered at St. Paul! It is said this price will not net the quarrying company over 21 cents, after delivery charges are paid. Out of this meager price must come cost of quarrying, loading, interest charges and other fixed and incidental expenses always attached to a large production, and the *profit*. It is safe to say it won't take a very large bag to hold the latter. An excuse for the low price is given that "the marble company wanted the advertisement which this structure will give it." As for the result, if the motive is correctly stated, there can be no doubt. The new capitol will be a magnificent exhibit of the splendid qualities of Georgia white marble, and a perpetual advertisement of the company that furnished it. *But*, and here is where the evil of such a bid comes in—the selling price of the marble has been marked down below the point where there is any reasonable profit. If this great producer setsthe example of unprofitable selling prices, competing producers must meet its terms—and a warring over prices will ensue at every contract letting—and we will have the pitiable example of Bedford limestone interests repeated in the strife thus engendered among the Georgia marble producers.

There may be profit in it for the Georgia Marble Company at 21 cents per cubic foot at the quarry, notwithstanding the added value of the advertisement, and the transaction may be, and doubtless is, a perfectly satisfactory one; there may be profit to the Bedford quarryman who sells his No. 1 stone at the quarry for 12 cents a cubic foot; but while contractors and builders are not falling over each other in a scramble to get orders on file for their product, it dosn't seem to us that it is the best for the future of Georgia marble or Bedford stone to cut so deep while the system is in an enfeebled condition. To do so brings onto a level these superior products with the inferior from every quarter. That's something very hard to overcome, particularly if there are any politics in the jobs. We believe defeat has often been met at lettings of important works just because the cheap price at which good stone has been offered was considered by the board good evidence of a degraded character. Like wages, when the price of stone is put down, it is almost impossible ts put it back. Better keep it at a profitable price, and create a demand for it by judicious advertising, than to sell it at a loss, and trust in the advertisement to establish the profitable price. It is well to bear in mind that there are other holes in the ground thanthe one you are digging in.—*Stone*.

WE ARE indebted to *The Investigator*—one of Chicago's brightest papers—published in the Insurance interests—for the Jenny paper together with cuts for illustrating the same.

FIVE hundred thousand dollars has been set aside by the committee on Appropriations, for the S. F. Post-Office Building and the Supervising Architect has decided against experimental contractors for structural material. Granite and granite only will be used all reports to the contrary notwithstanding.

THE USE OF SCULPTURE IN ARCHITECTURE.

WITHIN the past four or five years our buildings have gradually become more ambitious and ornate in style, due, perhaps, to an attempt to evolve something which shall hereafter pose as a standard of excellence. Carvings more or less elaborate are being introduced to a greater degree and, of course, when they are properly arranged in position their effect is harmonious and inspiring. But nowhere save in the East has there been, as yet, an attempt at harmony or judicious arrangement.

The Western architects, almost to a man, have heretofore relied almost solely upon the fact that a certain amount of plastic decoration is required, and in consequence without taking into consideration any method or scheme of arrangement, they have simply dotted over their exteriors with incongruous and fantastical ephemeræ which lack both necessity and meaning.

Art is ideal; and ideality is emblematic of something which has realism for the body and spirituality for the soul of that body. Of course this is less typified by an architectural composition than a creation delineated by means of any allied art, purely because there is more of reality in something devoted to the comforts of man than in that which is intended to conduce to its spirituality. Now, to begin with, as has come within the limits of my experience, there is, say a carved belt course about a contemplated building. The composition of the design to be employed is left to some draughtsman to work upon during an hour when he is not more usefully (?) employed. And this draughtsman is not necessarily the best man in the office. Usually he happens to be a student whose talent, however great, has not as yet been directed into the proper channels. Without regard to the character or the style of the building he proceeus with the first idea which happens to spring into his mind. The details are now complete. The next step is to invite some contractor of "cut stone" work to present an estimate. Of course, competition steps in and, as a rule, the work is "let" to the lowest bidder. He has taken the contract at the lowest figure at which it can be done, so he hies himself away to the presence of some monumental sculptor (?) or, still worse, to an ordinary "every day" stone cutter. Again, there is competition and, not infrequently, the stone-cutter is empowered to execute the carving to the best of his skill. His work is completed and the character of the design—if, by chance, the draughtsman has been lucky enough to give it character—is entirely lost through the lack of the proper artistic training of the artist (?). Thus one of the elements of harmony requisite to the unity of the perfect architectural composition has been debased and consequently the unity of the entire structure destroyed.

Of course we are aware that this force of circumstances is not altogether the work of the architect. Generally the favorite theme of the client, economy, enters largely into the subject. But, if we except even the latter step, the architect still remains guilty of the first impeachment, namely, that of placing the composition of the ornamental details in the care of an inferior workman. As he would not allow inexperience to prepare the drawings for trusses and other constructive work, so should he not allow the novice to experiment with the decorative.—*C. G. Robinstein, in Western Architect and Builder*.

INTERNATIONAL COMPETITION.

THE TRUSTEES, appointed by Mrs. Phebe A. Hearst, hereby invite the co-operation of the Architects of the world in the preparation of a permanent, general plan of the buildings and grounds which are to compose the University of California, in Berkeley, (near San Francisco), California.

Dated at San Francisco, California, December 3, 1897.

J. B. REINSTEIN,
JAMES H. BUDD,
WM. CAREY JONES,
Trustees of the Phebe Hearst Architectural Plan of the University of California.

I hereby guarantee the performance of all the conditions and covenants set forth in this Programme, to be performed by the Trustees of the Phebe Hearst Architectural Plan.

San Francisco, California, December 3, 1897.

PHEBE A. HEARST.

J. B. Reinstein, James H. Budd and Wm. Carey Jones, as Trustees appointed by Mrs. Phebe A. Hearst for the obtainment of an Architectural Plan of the buildings and grounds for the University of California, have deposited with the London, Paris and American Bank, Limited, at San Francisco, California, securities of the value of $50,000, as a fund to guarantee the performance by said Trustees of all their promises and covenants contained in the Programme for an International Competition for the obtainment of such Plan, which Programme is dated December 3rd, 1897. The said fund of $50,000 to be paid over and delivered only upon the order of said Trustees or a majority thereof, and their successors in interest.

December 3, 1897.

London, Paris and American Bank, Limited.
San Francisco, California.

MAPS, CASTS AND PHOTOGRAPHS.

Maps, photographs, casts, and necessary documents can be obtained from Mr. B. R. Maybeck, No. 7 Rue Honore Chevalier, Paris, France, or from the Trustees.

INFORMATION.

All requests for information should be addressed to
Trustees Phebe Hearst Architectural Plan
University of California
217 Sansome Street
San Francisco, California.

THE BEST FIREPROOF CONSTRUCTION FOR BUILDINGS OCCUPIED FOR MERCANTILE PURPOSES.

PAPER READ BY W. L. B. JENNEY BEFORE THE FIRE UNDERWRITERS' ASSOCIATION OF THE NORTHWEST.

THE SERIOUS loss in great stores during the past few years has created an intense interest among owners, underwriters and architects, as to the available methods for protection and their relative merits. This is the subject of my paper.

First we will consider the conditions that usually obtain. The great department stores are necessarily of large capacity—several stories, each floor of large area. The effect or the impression that the store makes upon customers is in proportion to the unobstructed area. This and convenience of business make subdivisions or cross walls undesirable in these retail stores, and notwithstanding the reduction in insurance rates, amounting to a considerable sum on the large amount of property, such walls are exceptional.

The contrary is the case in the wholesale stores where there is no attempt at display. The business itself is divided into departments with different clerks, so that the separation of the building by walls, is not at all objectionable. In the retail store the shelving for the display of goods is not allowed to exceed a reasonable height, because it would have the same effect as cross walls of dividing the store. In the retail store the goods are all out of the cases and piled loosely on wooden shelves. This, together with the large areas, makes the retail store rather more hazardous than the wholesale.

In the great fire of last May in Pittsburgh, a large fireproof store was subjected to very trying conditions, the entire stock burning on several floors at the same time and intensified by the great heat from a raging fire—the burning of a large wholesale grocery store across the street to windward. This fire presents the most practical lessons that exist of the behavior of a fireproof building under the most trying conditions. Fortunately this fire has been very carefully and exhaustively reported by able experts employed as appraisers. These reports have been published in full in the Insurance World of May 8th, June 1st, and July 1st. Fire records alone are conclusive and as these reports are the basis of my argument, we will, if you please, make some extracts therefrom, as I shall have occasion to refer to them repeatedly.

Referring to the map of the burned district, Fig. 1 the

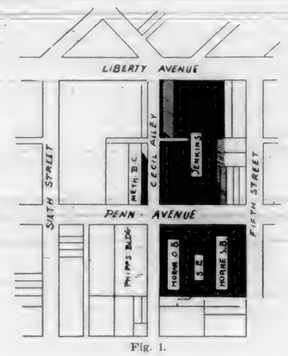


Fig. 1.

morning of May 3d, the Jenkins Building, a great wholesale grocery store filled with goods more or less combustible, some of them exceedingly so—such as oils, hams, bacon, sugars, etc.—that make a very hot fire when once thoroughly ignited—was found to be in flames. The building is reported to be what is known as "Mill Construction" without any subdivisions. When the fire was raging furiously the street wall on Penn avenue fell. The Horne store building across the street a little diagonally was of modern steel construction, each story carried independently on the columns. It was six stories above the sidewalk; the street fronts were some 60 per cent plate glass; the piers being simply steel columns fireproofed with masonry.

Instantly following the fall of the wall of the Jenkins building all the plate glass in the Horne store disappeared from the sash, and the stock was set on fire over the entire building and burned furiously. Across Penn avenue opposite the Jenkins building, was the Horne office building, four stories high, the two lower stories occupied as stores. Across Cecil alley from the Horne building was the new

Phipps building, eight stories high, of steel fireproof construction designed for an office building, recently completed, but at the time not occupied. Immediately across the alley from the Jenkins building was the Methodist Book concern, a building of modern construction but with partitions of wood studding covered with expanded steel lathing and plaster, which, wherever exposed to the heat, was badly damaged, the result of which shows that any woodwork in such a building is a mistake. On the roof of the Horne store stood a water tank weighing some 26 tons when filled. This tank was located directly opposite the elevator shaft where naturally it was particularly exposed to the heat. The supports gave way and the tank was precipitated through the building to the first floor, carrying with it the columns and beams which it came in contact with, causing the greater part of the injury to the building.

The engineer experts, Gustav Kaufman, consulting and contracting engineer, Emil Swensson, general superintendent Keystone Bridge Works, and F. L. Garlinghouse, chief structural engineer employed by the appraisers to assist them, all men of large experience and high standing in the profession, made a very careful and exceedingly valuable report, published in the Insurance World of July 1st, from which I shall quote.

According to the report "but a few moments after the fall of the wall of the Jenkins building, both the Horne office and store buildings became a mass of flames so fierce as to drive the firemen from Penn avenue and Fifth street to the roofs of the buildings surrounding the fire. The new Phipps office building was badly scorched and the Methodist Book building above the fourth floor was completed gutted of its contents." The two Horne buildings were reasonably well constructed and the fireproofing equal to the average. The engineers report that the general effect of the fire was the wreck of the eastern side of the Horne store building, caused principally by the falling of the water tank. After the fire they found a slight lateral movement had taken place in the Horne store building although not sufficient to cause any injury to the steel; still they attribute to this movement the scaling off of many of the lower webs of the floor arches and the dropping out of much of the fireproofing on the underside of the beams and girders. They believe, however, this latter is due at least in part to doubtful methods of attachment. The columns in the building were all carefully examined with a transit instrument and by plumme- observations and close visual scrutiny. The greatest det flection found at any point in a whole tier did not exceed 2 inches. The girder sand beams were also subjected to the closest scrutiny and a careful record made of each and every one. Every rivet in the building that was exposed was tapped and not one loose rivet was found. All connections were also examined and were all found in good condition as far as could be determined. Material that had been subjected apparently to the greatest heat was tested by cutting out test pieces as close to the bend as practicable. These tests were made exactly as is made for the new material—the elastic limit, breaking test, extension, reduction in area, best fireproof construction for buildings . 2 the nature of the fracture, etc. In the opinion of the board, the fire had not damaged the steel, that it had acted rather like an annealing furnace and that the material was rather improved than injured. The slight sinuosity in the various tiers of columns the engineer board does not attribute to the action of the fire alone, as possibly a small amount of it was caused by the setting, and existed originally.

This board makes it comments on the lessons taught by the fire as follows:

"First, in buildings of about this height the distortion of the steel frame work due to the heat of the fire, cannot in any instance be sufficient to work any serious damage nor is it probable that at any time would connection rivets be sheared off. This conclusion is arrived at for the reason

W. L. B. Jenny, Architect.

that there is no probability that any future fire will be fiercer than the one at issue.

"Second, the method of fastening fireproofing to the underside of beams with sheet iron strips should be discarded.

"Third, it cannot be too often reiterated that open front buildings like this should be protected from external fires by metal shutters."

In this I fully concur. Rolling steel shutters such as those in use in the Marshall Field & Co's Wholesale store on Adams street in this city, can be readily applied to the front of a building without detriment to its architectural effect. They are easily worked. If closed every night, as in that store, they are always in order. On the rear and alley elevations the ordinary standard shutters are all sufficient. In the Pittsburgh fire wooden shutters covered with tin did good service and assisted materially in stopping the fire. The engineers also further advise "that all shafts should be provided with metal doors that can be readily closed from all floors." This is attended with serious difficulties. In many of the large department stores there is a central light shaft of considerable dimension. No satisfactory arrangement has as yet been put on the market for the closing of these large openings at each story. Even in the smaller openings of staircases, the doorways in use are scarcely adapted to retail stores. They can, however, be shut off by vertica]

The inventor makes the following claims of merit :— The Heater weighs about 150 pounds and its corrugations are made to a depth of three inches, and this combined furnishes a radiating heat equal to four times of any straight back fire-place, These corrugations also cause a draft at the back of the fire where other fire-places will not burn, and increases and distributes a uniform draft to all parts of the fire, producing perfect and gradual combustion. This Heater burns hard and soft coal to a fine ash, and equal to any base-burner, stove or furnace, and will furnish fully twice the heat of any stove in the market. It is the only fire-place Heater that will start and burn hard coal and in fact any kind of fue. without a blower, the housekeeper is thus relieved of having this article about the rooms.

By the use of the Lytle Heater perfect and slow combustion of fuel is secured and 95 per cent of the heat is utilized-

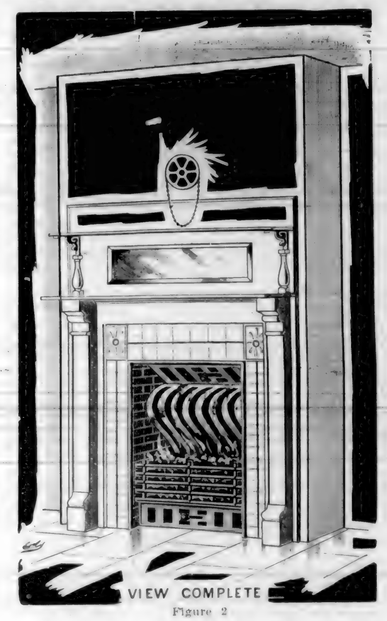


Figure 2

It works simple, and keeps fire over night equal to any stove or furnace.

When gas is used for fuel the flames roll up through the corrugations of the Heater and will heat that body red hot if desired, which causes a flow of hot air through the register that cannot be equaled by any other Gas Heater.

The discharge of hot air into the rooms with the Register located within about three feet from the ceiling forces all the cold and impure air to the floor and the suction at the open fire-place draws the same to the chimney flue and there out, thus taking out of the rooms all exhausted atmosphere, and constantly replenishing with pure heated air without exposure or drafts, and causing perfect ventilation. This feature recommends our Heaters for the nurserooms and hospitals as being unsurpassed for heating and ventilating.

This Heater is economical as well as sanitary in its results. It secures warm floors and equalizes the temperature from floors to ceiling, perfect ventilation is secured.

rolling shutters between stories so that the light shaft be comes a chimney for the escape of the smoke.

"Fourth, the most important lesson taught by this fire was the lack of strength displayed by the fire-clay fireproofing. The building was permitted to move in any direction without any material restriction by the firepoofing. The floor arches showed by the scaling off of the lower webs that they were unable to offer any sufficient force to counteract the tendency to lateral motion.

Fifth, the column protection although composed of the very best obtainable kind of fire clay tile was also not of sufficient strength.

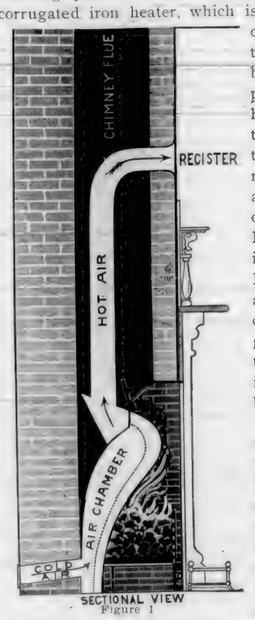
In our opinion it would have been necessary to dismantle the whole steel frame work had this structure been 14 or 15 stories high. The leaning at that height at the same proportion as developed would have entailed the necessity of taking the whole structure down.

Owing to the fact that steel columns or girders or beams after being subjected to a long continued fire will assume the same temperature as fireproofing, and owing to the fact furthermore, that the rate of expansion of the steel is much greater than that of the fire clay tile, destructive movements are permitted which, as shown in this experience, will result in considerable damage and which damage will increase in direct proportion to the height of the building.

To be continued.

THE LYTLE FIRE PLACE HEATER.

FIGURE one shows a sectional view of a Lytle Heater in the fire-place. The cold air taken from outside of the building passes through a pipe into the base of a hollow corrugated iron heater, which is placed upright with its corrugations in the direction of the draft and at the back and crown of the fire-place where the greatest heat is found, which causes the supply of pure air in the air chamber to heat and rise rapidly into the hot air pipe, connecting the top of the Heater and the Register, and thence pass into the rooms through the Register. Figure 2 shows a front view of the Heater complete with its corrugated front at the back of the fire-place, and the position of the Register in the breast of the chimney.



SECTIONAL VIEW
Figure 1

With the adjustment of the top and lower dampers the fire can be regulated to burn slowly and work, if desired, the entire season without rebuilding, the same as any base burner, stove or furnace. This Heater can be put into any fire-place and guaranteed to work in any chimney regardless of stove or furnace working in the same flue.

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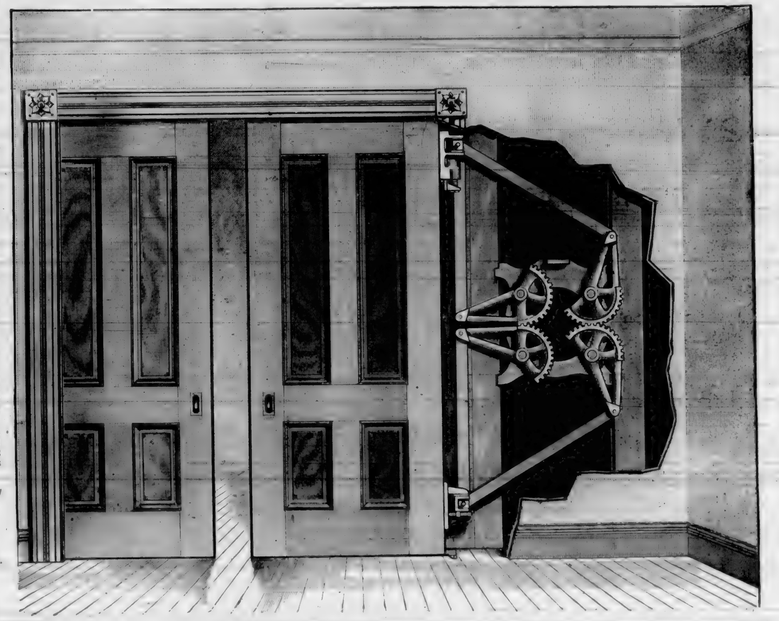

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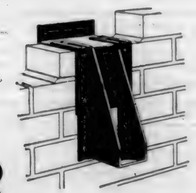

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Arizona Sandstone Co.; building stone	326
Bassett Bros.; contractors and builders	6
Bass-Huter Paint Co.; paints, oils and varnishes	136
Bateman Bros.; contractors and builders	256
Beck, Adam; mason and builder	11
Bell, Wm.; contractor and bu ilder	75
Bibb Lumber Co., D. H	
Bellingham Bay Imp. Co; lumber	241
Boyd, Robert; mason and builder	77
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Brennen, D. J.; mason and builder	51
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Cowell, H. & Co.; lime, cement, fire brick, etc	339
Crichton, Peter; contractor and builder	12
Crocker, Wm.; planing mill	313
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Daniels, Gus. V.; painter and decorator	42
Davies, E.; plasterer	293
Davis, Geo. & Son; house movers	131
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Degan, Patrick; stone contractor	19
Depew, Chas. M.; planing mill	139
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Donovan, M. J.; painter	364
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Dunham, Carrigan & Hayden Co.; hardware	59
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Dwyer, L. J.; painter and decorator	64
Dyer Bros.; Golden West Iron Works	202
Elam, & Knowles, carpenters and builders	72
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Feely, M. J.; contractor and builder	58
Fennell, M. & Son; masons and builders	89
Field, Wm. J.; contractor and builder	128
Field, Z. O	58
Flanagan, L. G.; lime and cement	254
Foley, Michael; grading and teaming	107
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O'Brien, P. R. & Son; plumbers	47
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Fortin Brick Co	50
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Hock, T. & Son; masons and builders	9
Hoffman, V.; mason and builder	268
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Hooper, C. A., & Co.; lumber	342
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Hurlbut, R. P.; builder	353
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Jordan D., & Son; masons and builders	188
Joshua Hendy Machine Works	383
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Keefe, J. H.; painter and decorator	196
Kent, S. H.; contractor and builder	225
Kern, F. W.; contractor and builder	204
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Knox & Cook; contractors and builders	148
Kuss, P. N.; painter, decorator and wood finisher	307
Lang, Geo. R.; contractor and builder	214
Larsen, H. H.; mason and builder	33
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Mitchell, R.; mason and builder	74
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Moore, C. Parker; contractor and builder	80
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Petersen, H. M. & Co.; concrete	245
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Please, Henry; mason and builder	209
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Smith, J. W.; carpenter	71
Smith & Young; building supplies	374
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Snell, E. L.; lime and plaster	101
Snook, W. S. & Son; plumbers	372
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Steiger, A., Sons; architectural terra cotta	134
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Sullivan, J. F.; painter and decorator	1
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Wagner, Henry F.; painting and decorator	181
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Watson, W. C.; plasterer	316
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Wilson, James A.; mason and builder	305
Wilkie, Andrew; planing mill	125
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Worrel, C. R.; mason and builder	273
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Yates & Co.; paints	336
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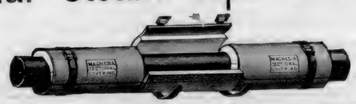

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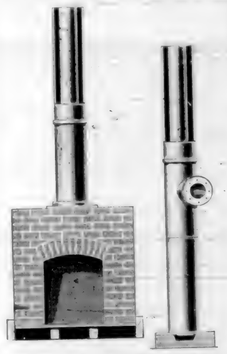

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VOLUME XIX. No. 3. MARCH, 1898.

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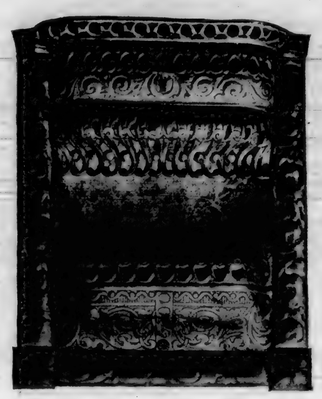

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BUILDING NEWS.

Alpine near 13th. All work for two-story frame; owner, Marin Ferroggiaro; architect, Paul Demartini; contractors, Demartino & Pagano; signed, March 12; filed, March 12; cost $2900.

Battery near Broadway. Cast and wrought iron and steel work for a four-story brick; owner, S. F. and Fresno Land Co; architect, W. F. Smith; contractor, Western Iron Works; signed, Feb. 18; filed, March 1; cost $15,960. Carpenter work; contractor, Thos. H. Day; cost $10,150. Brick and stone work; contractors, Miller & Beck; cost $11,131. Plumbing; contractors, Duffey Bros; cost $1015.

Battery near Broadway. Concrete excavations and Hyatt Light work; owner, S. F. and Fresno Land Co; architect, W. F. Smith; contractor, Gray Bros; signed, Feb. 18; filed, Feb. 21; cost $11,473.

Bonita, N line. All work for two-story and basement brick warehouse; owner, Hartland and H. E. Law; architects, Coxhead & Coxhead; contractor, R. Ringrose; signed, March 14; filed, March 14; cost $2190.

Brannan near 6th. All work for two-story frame; owner, Mrs. M. Hellman; architect, G. M. Roussau; contractor, R. J. Patterl; signed, March 16; filed, March 17; cost $3450.

Central Ave. and Sacramento. All work except electric work, plumbing, gas fitting and painting; owner, S. Delmue; architects, Kenitzer & Barth; contractors, Knox & Cook; signed, March 14; filed, March 14; cost $5220.

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BUILDING NEWS.

Central Ave. near Hayes. Two-story frame; owner, Z. C. Marcy; contractor, Theo. S. Holn; signed, Feb. 28; filed, Feb. 28; cost $3453.

Cherry and Clay. To build; owner, Peter F. Dunne; architect, B. E. Remmel; contractor, Marcuse & Remmel; signed, March 8; filed, March 10; cost $8500.

Cherry and Clay. To build; owner, Peter F. Dunn; architect, J. W. Johnstone; contractors, Marcuse & Remmel; signed, March 11; filed, March 11; cost $8,500.

Chenery near Miguel. Six two-story frame dwellings; owner and contractor, A. Christensen; days work; cost $16,600.

Clayton near Hayes. To build; owner, Henry Winter; architect, F Schwerdt; contractor, Frank Steinman; signed, March 6; filed, March 7; cost $2386.

Davis and Jackson. Foundation, planking, etc.; owner, John G. Gibson, agent; architect, James E. Wolfe; signed, Feb. 18; filed, Feb. 18; cost $2654. Excavation, concrete, brick and granite work; contractor, Thomas O'Connor; $2885. Steel beams, cast and wrought iron, etc; contractor, Western Iron Works; cost $1040.

Dupont and Filbert. Excavations, concrete and artificial stone work for three-story frame; owner, Rosa De Martini; architects, Wm. Mooser & Son; contractor, N. Ferni; signed, March 17; filed, March 17; cost $1000.

Eddy near Devisadero. Excavations, brick and granite work, etc, for brick and stone work; owner, P. W. Riordan; architects, Shea & Shea; contractors, O. E. Brady & Son; signed, Feb. 10; filed, Feb. 18; cost $30,980. Carpentry, steel work, etc; contractor, Daniel Powers; cost $19,000.

Fulton and Laguna. Brick, concrete work, etc. for three-story frame and two-story frame; owner, Chas. Stunker; architects, Martens & Coffey; contractor, C. Schutt; signed, Feb. 18; filed, Feb. 18; cost $10,100. Plumbing, gas fitting, etc; contractors, Gulick & Wetherbee; cost $1295.

Fulton near Lyon. To build; owner, John J. Cunningham; contractor, Dan Einstein; signed, Feb. 28; filed, March 5; cost $1760.

BUILDING NEWS.

Hayes near Baker. All work except plumbing, painting, etc; owner, C. F. Ruppel; architect, Philip Schwerdt; contractor, Robert Currie; signed, March 14; filed, March 15; cost $2389.

Henry near Castro. All work except painting and varnishing owner, David Behrend; architect, T. J. Welsh; contractor, Wm. Plant; signed, March 16; filed, March 17; cost $1825.

Kearny street, no. 36. All work except cast and wrought iron work for alteration to four-story brick; owner, L. Lowenberg; architects, Saifield & Kohlberg; contractor, Val. Franz; signed, Feb. 18; filed, Feb. 18; cost $890.

Laguna and O'Farrell. Three-story frame, flats; owner, L. Kutner; architect, W. J. Cuthbertson; contractors, Kinread Bros; signed, March 15; filed, March 19; cost $5250. Excavation: contractor, Union Paving Co; cost $176. Brick cellar; contractor, W. A. Butler; cost $88.

Laguna and Birch. To build; owner, William A. Middlehoff; architects, Martens & Coffey; contractor, C. Schutt; signed, March 8; filed, March 10; cost $10,900. Plumbing, gas fitting, etc; contractors, Allen & Loomey; cost $1785. Painting, etc; contractor, Joseph Stroetgen; cost $950.

Leavenworth and Chestnut. Six two-story frame dwellings; owner and builder, W. Knopf; days work; cost $30,000.

North Point near Larkin. To build; owner, John Marcolla and wife; architect, H. Hess; contractor, P. Demartini; signed, March 12; filed, March 18; cost $1720.

Octavia near McAllister. To build; owner, J. P. Pichon; architect, J. Godart; contractor, R. Currie; signed, March 4; filed, March 18; cost $4794. Brick work, etc; contractors, Peacock & Butcher; cost $1245.

Octavia and McAllister. Carpentry, glazing, etc; owner, Mrs. C. M. Berger; architect, G. A. Berger; contractor, D. H. Matheson; signed, Feb. 24; filed, March 1; cost $4655.

Market and O'Farrell. Repairs; owner, Phelan estate; superintendents. Mahoney Bros; day work; cost $12,000.

BUILDING NEWS.

Mission, Frances, Alemany Av. and Croke St. To build church and house; owner, Rev R. M. Piperni architects, Shea & Shea; contractor, L. Cereghino; signed, Feb. 14 filed, Feb. 18; cost $9967.

Mission and 1st. Alteration and repairs; owner, Mrs. Leah Meyer and Phillip Meyer; contractor, C. A. Duebel; signed, Feb. 26; filed, Feb. 28; cost $1228.50.

Mason near Eddy. Additions and alterations; owner, R. J. Techau; architect, C. M. Rousseau; contractors, Campbell & Pettus signed, Feb. 24; filed, Feb. 28; cost $10,400. Painting, etc; contractor, M. L. McCord; cost $897. Electrical work; contractor, S. F. Gaslight Co; cost $900. Mason work and house moving; contractor, Thos. Butler; cost $11,648. Plastering; contractor, John Robertson; cost $740. Galvanized iron and tile work; contractor, W. Cronan; cost $628. Iron work, etc; contractor, R. Lulge; cost $2675. Plumbing, etc; contractor, E. J. Lawton; cost $1990.

Mission and Second. Window frames in six-story brick; owner, Wells, Fargo & Co; architect, Percy & Hamilton; contractors, Burnham-Standford Co; signed, March 10; filed, March 12; cost $1610.

Mission near 17th. Finishing up three-story frame; owner, Sol. Nathan; architect, Copeland & Pierce; contractor, Petterson & Person; signed, March 14; filed, March 14; cost $3465.

Montgomery and Sutter. Alterations; owners, W. S. Goodfellow, J. S. Angus, T. G. Crothers, Executors J. G. Fair estate; architects, Tharp & Holmes; contractor, J. Trounson; signed, March 1; filed, March 1; cost $2746.

Page near Clayton. To build; owner, Mrs. Nellie E. Mitchell; architect, William Koenig; signed, March 12; filed, March 12; cost $4300.

Page near Buchanan. To build; owner, Marcus Getz; contractor, Ed. Cox; cost $7100.

Page near Webster. To build; owner, Mrs. Nellie Burnett; contractor, Philip Rive; signed, March 5; filed, March 10; cost $3660.

Page near Greenwich. To build; owner, George Kettner; architect, H. Gellfuss; contractors, W. Horstmeyer & Co; signed, March 16; filed, March 16; cost $2275.

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BUILDING NEWS.

Pine near Buchanan. To build; owner, S. Lindner; architect, C. M. Rousseau; contractor, R. J. Pavert; signed, March 14; filed, March 14; cost $6200.

Pine near Devisadero. Three-story frame; owner, H. E. Brown; contractor, C. W. Duffie; signed, March 7; filed, March 7; cost $5500.

Post near Polk. Three-story brick; owner, Dudley Tait; architect, R. Swain; contractor, F. A. Williams; signed, Feb. 21; filed, Feb. 23; cost $7777. Sewers, plumbing, gas fitting and tiling; contractors, Gulick & Wetherbee; cost $1130.

Sacramento near Maple. To build; owner, J. L. Ballani; architect, H. D. Mitchell; contractor, C. Andressen; signed, March 7; filed, March 8; cost $1180.

Sacramento near Maple. To build; owner, James Ryan; architect, T. J. Welsh; contractor, W. R. Kenny; signed, Feb. 28; filed, Feb. 29; cost $4310.

Scott and Lloyd. Alterations and additions; owner Mrs. C. C. O'Neil; architect, Edward A. Larsen; contractor, Wm. Bell; signed, March 8; filed, March 11; cost $1140. Plumbing, etc; contractor, H. Williamson Co; cost $410.

Second and Mission. Hard and Chrome steel vault linings, etc; owner, Wells, Fargo & Co; architect, Percy & Hamilton; contractor, C. B. Parcells; signed, March 5; filed, March 8; cost $7880.

Spear near Folsom. Brick building; owner, H. E. Bothin; architects, Percy & Hamilton; contractor, J. A. Smile; cost $5685.

Sutter near Steiner. To build; owner, Mrs. M. Wolfen; architects, Kenitzer & Barth; contractor, H. Behrens; signed and filed March 16; cost $4760.

Sutter near Laguna. Alteration and additions; owner, William Miller; architect, M. J. Welsh; contractor, D. Currie; signed, Feb. 21; filed, Feb. 23; cost $2945.

Sutter near Laguna. Alterations and additions; owner, E. K. Ash; architects, Havens and Toepke; contractor, S. R. Doyle; signed and filed, Feb. 18; cost $2439.

Steuart near Mission. Excavation, etc; owner, John F. Boyd; architect, McDougall Bros; contractor, Healey, Tibbitts & Co; signed and filed, March 5; cost $9490.

Stockton and Lombard. Alterations; owner, H. Kohler; superintend, Henry Behrens; days work; cost $5500.

Stockton street no. 216. New store front contractor, John Wiren; cost $1000.

Stockton near Geary. Plumbing, etc; owner, Pierre Priel; architects, Pissis & Moore; contractors, Duffey Bros; signed, March 8; filed, March 9; cost $3310.

Webster near Union. Cottage; owner, William A. Matheson; architect, R. B. White; contractor, Petterson & Person; signed, March 7; filed, March 9; cost $1729.

Webster near O'Farrell. Alterations and additions; owner, Mrs. Carlotta Gaudin; architect, C. M. Rousseau; contractor, Geo. C. Nall; signed March 2; filed, March 4; cost $4800.

Taylor and Washington. To build; owner, Mrs. W. Loaiza; architects, Pissis & Moore; contractors, Bignami & Masow; signed, March 14; filed, March 15; cost $11,390.

Turk near Buchanan. Alterations and additions; owner, Gabriel A. Abraham; architect, A. J. Barnett; contractor, W. Paterson; signed, March 16; filed, March 16; cost $2100.

BUILDING NEWS.

OAKLAND

Thirty-Sixth near Grove. To build; owner, Arthur Beckett; contractor, John P. Beckett; signed, March 7; filed, March 17; cost $2800.

Adeline near 16th A. To build; owner, Meyer Levy; architect, C. A. Doss; contractors, Schley & Doss; signed, March 2; filed, March 4; cost $3000.

Park Ave. and Frederick. Cottage; owner, Mrs. E. A. Davis; architect, Reeves Davis; contractor, Ben. O. Johnson; signed, Feb. 10; filed, Feb. 19; cost $1675.

Adams Point, lot 13, block 5. To build; owner, F. M. Umphred; architect, D. F. Oliver, contractor, S. A. and H. W. Norman; signed, March 7; filed, March 8; cost $3687.50.

Mr. Jacob Levi, of San Francisco, who last week purchased the Wilcox Block at 9th and Broadway, with the two-story frame building on Ninth street, the lot being 100x150, intends to remodel the block into office building.

The Builders' Exchange have passed out of existance—discouraged and shut up shop. Lack of interest, owing principally to the great depression of the building trade, together with a tight money market and consequent failure to pay dues—principal causes.

EAST OAKLAND

Hanover near Newton. To build; owner, Thomas Cowell; architect, W. Budson; contractors, L. E. Compbell, R. H. Fallmer; signed, Feb. 11; filed, Feb. 24; cost $1278.

Jackson near Lake. Plumbing, etc; owner, E. G. Lukins; architect, Clinton Day; contractors, W. S. Snook & Son; signed, Feb. 26; filed, March 1; cost $1795.

ALAMEDA

Bellevue tract, lot 11, block D. To build; owner, C. L. Robinson; architect, Geo. A. Bordwell; contractor, signed, Feb. 17; filed, Feb. 21; cost $2146.

Clinton Ave. and Walnut. Two-story frame; owner, A. B. Pau, Jr.; contractor, E. D. Judd & Co; cost $4300.

San Antonio Ave. near Paru. Two-story frame; owner, Geo. T. and Sophie L. Wright; contractor, A. W. Pattiani & Co; cost $4798.

Benton near Santa Clara. To build; owner, G. A. Rosenberg; architect, M. G. Bugbee; contractor, Theo. Victors; cost $1080.

St. Charles near Louise. To build; owner, Geo. F. Hever; contractor, F. Bammann; cost $1850.

St. Charles near San Antonia. Carpentry work, etc; owner, F. W. Voogt; architect, B. E. Remmel; contractor, D. S. Brehaut; cost $3500.

The Bray school district have cleared away the obstructions that were blocking the way to the issuing of bonds for the new $13,000 school house. Everything now looks favorable for building operations to begin in the near future.

SAN LEANDRO

The County Supervisors have decided to build a concrete arched bridge at San Lorenzo creek, opposite the Meek place.

The plans of architect Smith for a new laundry building at the County Hospital have been accepted and operations will be begun at once.

Cotton Bros.' plans for the new Webster street bridge have been accepten by the supervisor as approved by the Navy Department.

BUILDING NEWS.

BERKELEY

The highlands, block 1, lots 7 to 10. To build; owner H. W. Hawley; architect, F. D. Voorhees; contractor, Siedel & Mohr; cost $3284.

SAUSALITO

Block 5, lots 1 to 3. To build three two-story frames; owner, Charlotte Wilson; architect, Albert Sutton; contractor, Mallory & Swenson; signed, Feb. 17; filed, Feb. 23; cost $4951.

SANTA ROSA

Judge Dougherty and Mr. Shea will erect in the near future a handsome business block on the lots purchased by them last week of Mrs. S. A. Loucks.

STOCKTON

Downing & Hemme, architects are receiving bids at 3 p. m., to-day for a two-story frame residence to cost $3000 for Daniel Harris to be erected on Vine near El Dorado streets.

The following buildings have just been completed and accepted by Geo. Rushforth, architect: The six room brick school building cost $11,000 for the trustees of the South School District, and the new hotel and passenger depot at Jamestown, containing 64 rooms and costing $25,000 for the Jamestown Improvement Co.

The handsome store building to be occupied by the owner D. S. Rosenbaum of this city, is just completed at a cost of $5000; W. W. Oates was the architect.

FRESNO

Chas. Beasley & Son, architect of Stockton has just completed plans for a business store to be erected in Fresno for W. Parker Lyon & Co; bids for brick work, concrete and sidewalk lights are now called for, the front will be constructed entirely of metal, with aluminum sash bars and plate glass and the bids for this and other work will be called for in a few days.

AUBURN

H. C. Herrill, Chas. Keena and Anderson Brothers will soon build cottages.

REDDING

R. S. Jewell is soon to erect another fine modern cottage of six room, brick basement for laundry, wood, etc.

Sacramento parties are soon to commence the erection of a large livery stable and office building on Butte street. There are to be six suites of modern offices above with broad stairs looking up from the street.

F. P. Primm, attorney, will erect opposite the Temple Hotel an office building, stores on first floor of modern methods of construction.

The Episcopal Society are now securing funds to build a new church and to raise $10,000.

Dr. Kohm will erect a two-story brick, store and office and home above.

Hon. E. Frisby, banker, is having ten fine cottage constructed to relieve the demand for houses that is on the constant increase.

Masonic Building Assn. will make many improvements in their building.

GAZELL—Denney Bar Parker Co, will build a large brick store and ware house two story early this Spring.

KESWICK—There will be two brick buildings go up early this Spring; this town has built over 200 houses and 50 business buildings in the past year.

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SAN FRANCISCO LOS ANGELES SAN JOSE

BUILDING NEWS.

LOS ANGELES

Architect F. L. Roennig has prepared plans for Joseph J. Gill, of Pasadena, of a two-story, ten room residence, to be erected on North Madison avenue, near Kirkwood, the estimated cost is $7000.

Architect J. N. Preston is preparing pland for Robert Walker, of a cottage to be built near Thomson street and Union Ave.

Architects Austin & Skilling have prepared plans, for Harvey Cox, of a two-story nine room, residence; white cedar inside finish, plumbing, gas and electric ghting; to be erected on Thirtieth near Hoover.

BUILDING NEWS.

Architects Morgan and Walls are preparing plans for L. A. Thompson, of a twelve room two-story residence, to be built at Kensington Road and Douglass street; it will be complete with all modern conveniences and will have maple floors, plate glass windows, hardwood inside finish, gas and electric lighting.

Plans are being prepared for the Los Angeles School of Osteophotny, of a large two-story frame building, which will be used as a school for the instruction of pupils, to be built on Figueroa street.

Architect Krause and Jenkins are preparing plans

BUILDING NEWS.

for Easton, Eldridge and Co. of two additional cottages, to be built in the Menlo Park Tract.

Sixteen sets of plans were submittrd to the trustees of the First M. E. church in response to their call to architects. The first meeting for the purpose of examining them was held on Saturday evening. Each architect is allowed thirty minutes to explain the best points of his particular set; as it will require a number of meetings to examine the large numbe presented, it will be at least two weeks before a decisi ion can be arrived.

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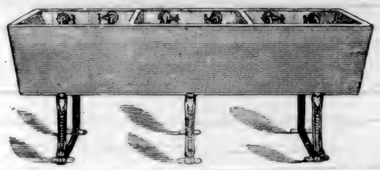

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H. W. JOHNS M'F'G CO.

VOLUME XIX. MARCH 20th, 1898. NUMBER 3.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

SINCE our last issue Mr. E. H. Burrell has succeeded to the interests of Mr. Tom M. Grant in THE CALIFORNIA ARCHITECT AND BUILDING NEWS. Mr. Burrell now being the sole lessee and publisher while Mr. Grant is retained by him as the Editor. All bills against the paper will be paid by Mr. Burrell, and all moneys due and coming due are to be paid to him.

THE GENERAL tendency of business for some years past has been, for a smaller number of individuals as principals, to do a larger business at a smaller profit. But in the business of contracting to build, the tendency has been, on the contrary for a larger number of individuals to do a smaller business, at no profit at all, and often at a loss. This does not often fall upon the contractor, because a large majority have nothing to lose. These conditions have naturally reduced the number of responsible and experienced contractors; many of whom have abandoned the business voluntarily, while others have been obliged to do so, after sacrificing their legitimate accumulations in the throat, cut purse scramble we call competition.

It is claimed by some sufferers that the prevailing conditions have been the result of a grasping disposition on the part of owners; others again insist that architects are to blame in encouraging incompetent, irresponsible bidders. But it must be remembered that the system, if we can call an anarchistic state of things a system, has encouraged incompetent, irresponsible people who have failed at other employments, to adopt the calling of contracting, or the profession of architecture; and it is not wonderful if these disturbers of the peace and prosperity of a community, should combine to get a living at other peoples' expense.

We believe that no improvement can be hoped for as long as the "Lien Law" is in force. The law relieves every body connected with a building operation of responsibility, though it is ostensibly intended to fix responsibility and protect innocent parties. In practical operation it enables any impecunious person to get credit and bonds, in order that he may have the handling of the funds to be distributed, often pro rata; in consequence of the impossibility of doing the work at the contract price, or because in the handling, too large a percentage has adhered to his sticky fingers. Sound business principles are always in the long run, stronger than any statute that conflicts with them, and that

attempts to prevent their action. This is what might be expected, because business principles are the result of the experience of the world for ages, and have become a natural force that can be counted on, like the law of gravity; and any attempt to ignore it or defeat it, brings confusion to the man or class, who make the attempt. It has been believed that the Lien Law was a necessary protection, first to the journeyman mechanic against the misfortunes or dishonesty of his employer; the contractor; then to the sub-contractor against the same. The business community has, however, discounted the practical working of this elaborate machinery to entrap an unwary owner into paying for twice as much as he receives. A counter machine of bonds, and retention of contract money, together with time limits, and other technicalities, was soon set up; and while the expenses and uncertainties of building for all concerned, have been increased by this legislation, and counter legislation, the inevitable net result has been to increase unscrupulous competition; or rather to turn the business into a gambling scheme, as devoid of business principle as a bluff in a game of cards.

The fact is that the Lien Law is class legislation, and as such has been pronounced unconstitutional by the Supreme Courts of more than one State. The Supreme Court of the State of Ohio used this language in a decision in 1897:—"No court can see that it is for the common public welfare that the liberty of contract should be taken away from the owner of a building to enable the seller of materials to collect their value from a man who never purchased them, and who has already fully paid the one with whom he contracted for all that he received."

It will be seen that without a lien law, business would be transacted on the usual basis. Bonds would not be expected, because owners would take only the usual business risks in employing contractors—and these risks would be mutual. Hence only responsible parties could engage on either side, and remuneration would be adjusted as real compensation.

THE United States Circuit Court of Appeals for New York, has held that the burden of proof is on the fire insurance company to prove as a defense that the insured building fell before the fire. It may be doubted if this decision is in the interest of good honest building. The underwriters have a clause in their policies providing that insurance shall immediately cease in the event of a fall of a building, except a fall caused by fire.

FOREIGN fire offices is this country have earned a good reputation for careful underwriting, fair settlement of losses, and prompt payments. They pay their share of taxes and bring capital to the country. We have examined the figures of litigated claims, and find that the percentage resisted by foreign companies is the same low average (less than two per cent) as that of the American companies. In some quarters, not altogether creditable, there are signs of a disposition to make war on the foreign companies, by levying a discriminating tax on their receipts. This narrow, inhospitable spirit is not shared by the respectable American companies' managers. Our readers may confidently accept the indemnity of foreign companies, with the assurance that the security is first-class, that the capital invested here is needed and beneficial, and that the foreign underwriters supply a demand which our home companies and home capitalists are unable to fully supply. It is not true that the foreign underwriters are supplanting American underwriters. The percentage of premiums paid the former remains substantially the same year after year. It is about thirty. The amount of money sent home is surprisingly small. The profits, which average only three per cent of the premiums, are nearly all invested in this country. When a Commissioner of Insurance descends to abuse of foreign insurance companies, which furnish such safe indemnity, his misrepresentations and alleged arguments may be dismissed as the screed of a demagogue who is open to the conviction of the "hush money" argument.

THE BUILDING LAW passed over a year ago in St. Louis has gone into operation, and in future buildings in that City will be limited to one hundred and fifty feet the same as in Chicago.

There has been much discussion in many cities in recent years concerning this subject of limiting the height of buildings. In Chicago this resulted in limiting the height, just as it did in San Francisco, and now the New York Legislature has had a bill before it limiting the height in New York City. It has been whispered that some of the extremely tall buildings in New York and Chicago have shown signs of insecurity that have caused the architects and owners a degree of uneasiness which requires a constant and very careful watch to be kept upon every point. Nor is the fact to be wondered at, when it is considered that some of these buildings are erected on a base so small as practically to assume the form of towers, rather than of buildings. The St. Paul building in New York for instance is 300 feet high, with a frontage of 39 feet, the proportion of base to height being thus nearly one to ten, so that the building has about the proportions of an ordinary lead pencil. Here in San Francisco there is but one building that approaches like proportions, and while that towers up to a height of 310 feet it has a base of 71x75 feet, the proportion of base to height being one to a trifle over four. The St. Paul building is an exaggrated case, but there are a large number of buildings in New York and Chicago between 250 and 300 feet in height which are built on lots of less than 100 feet front.

WE PRINT herewith a view of the elevation of the New Ferry Depot Building, of which Mr. E. R. Swain is the Supervising Architect and the State of California the owner, by the grace of its board of Harbor Commissioners.

A morning paper would have us believe, and all of its many thousands of readers believe, that in the building of this ferry depot every official of the State, save *one*, and every contractor, save *one*, who has had anything to do with the construction, was a bribe taker or a bribe giver, all equally guilty in a gigantic criminal conspiracy to defraud the State out of thousands of dollars.

Many of these contractors, all in fact, with whom we have

a personal acquaintance, have lived in this City for many years, have engaged actively in their several lines of contracting, raised respectable families, accumulated some property, paid their just debts and have been considered, by their fellow men as good and law abiding citizens.

With the business standing or reputations of the State officials who are in anyway responsible to the State for their acts in connection with these alleged frauds, it is not within the province of this journal to deal, probably they are fully up to the average successful politician as he exists in this State to-day, no better and no worse. They at least may be trusted to look after their own affairs, first, last and all the time, and in doing this it is hardly to be credited that they would undertake the carrying out of all these alleged frauds in such an open and bare faced manner as the morning paper would have us believe.

Mr. E. R. Swain, the Supervising Architect of the depot

building, has practiced his profession with unvarying success for something like thirty years. His position for several days, while under fire, must have been a most trying one, but he proved himself equal to the occasion, and after breaking his seal of silence and coming out into the open, assumed responsibilty for all the changes that have been made. He says:

"As the architect of the board, it is my duty to see that the contractors do their work according to the plans and specifications under which their contracts were secured. It is also my duty to attend to all details in consideration with any changes in the plans or specifications that may be contemplated or agreed upon. In doing this I have endeavored to use my best judgment and to have in view the best interests of the State.

"Every change that has been made in the original plans and specifications for the ferry depot building has been at my suggestion or has received my approval. Allowances made to contractors have been made upon my estimates or have received my approval. In other words, all of the work upon the building has been under my supervision. If the Board of Harbor Commissioners, or through it the State, has been victimized by contractors, then I must be either a fool or a knave."

This is direct, straightforward and to the point, and surely is not the utterance of a guilty man nor of that of a fool. On the contrary it has the true ring about it, and must, most assuredly, be given more credence than can be given to charges of corruption and fraud, based upon information furnished by disgruntled contractors, "discharged-for-cause" employees, politicians out of a job, and politicians of opposite political faith who believe in and are always looking for the addition-division-and-silence-end of every proposition in which the State is the paymaster.

As no stream has ever been known to rise above its source how are we to believe that the information furnished the *New Call* can be any more trustworthy than its source. While that paper readily enough gives out the name of its so-called marble expert it masks behind "an eminent authority" the master spirit of all the technical knowledge that has appeared in its columns, illustrations included. This clearly would not be the case unless for cause. The name of a reputable architect given to the community as sponsor for the correctness of the *New Call's* charges would make the charges of fraud and corruption assume another color entirely, and would have carried weight and conviction wherever that paper was read. But as the case stands now the contrary effect is the result, and motives are more looked for and discussed than the charges themselves. There can be but one conclusion regarding this "eminent authority" and the *New Call's* reasons for giving out these technical reports in the anonymous form they have always assumed. It is more than probable that this "eminent authority" would not be entrusted by the proprietor of that paper to build an out-house, that he never has built to that extent for him nor for any member of the family, and what is more, doubtless, never will.

We have excepted in the second paragraph of this article one contractor and one official as being beyond the pale of the *New Call's* charges of fraud. If it is to be presumed that they alone are innocent of all the number that are connected either as officials or contractors, with the ferry depot building, the interesting thing is to know how they escaped their share of the hot pitch.

The excepted official being no other than Mr. Howard C. Holmes, chief engineer to the Board of Harbor Commissioners, whose duty it has been since the inception of the project to guard the interests of the State. Mr. Holmes is not only a very capable engineer, but is a man whose integrity and honesty has never been impugned by the press of this

City, which in view of recent events, and his long services in an official capacity to the State is a remarkable record and one of which he can well be proud.

Yet all the changes of note that have been made at the ferry depot building, have been submitted and passed upon by Mr. Holmes, and upon his approval final action taken by the commissioners and the changes ordered made. For the changes in the floor construction which the *New Call* denounced as a job and a fraud one day and then took it all back, the next, Mr. Holmes assumes his full share of the responsibility. And still the *New Call* has only good words for the Chief Engineer, (who has been "the man in the door" for the commissioners) notwithstanding the fact that these so called fraudulent charges were passed upon and approved by him.

Taking either horn of the dilemma the *New Call* gets the worst of the argument for it is not to be admitted for a moment, that an honest, keen and shrewd official like Mr. Holmes could pass upon and approve these changes of record without knowing their true character, nor could the object for which such changes were made miss being brought home to him.

The one lone contracting firm, who, as mentioned in the second paragraph, has so far escaped the *New Call's* wrath and hot pitch, were the contractors for the foundation walls and included with them, of course, is the side partners who furnished the cement.

So, summing up the whole case, we find that somewhere between February 1 and March 12 the president of the Harbor Commission; in his capacity as Editor of the *Stockton Evening Mail* bore down in its columns in his usual suave, ax-handle manner upon the anomalous political position occupied by the young inexperienced managing Editor of the *New Call*.

The y. i. m. editor to get even and make the Chesterfield of the Harbor Commissioners and rural Editor eat his words or feel the mighty power of a truly Metropolitan Daily, in looking about for the means to an end, which would mean the political end of the rural Editor for all time, pounced upon the new ferry depot building as the most available mark.

The *New Call's* reserve force, the regular force and the irregular force were then equipped with one sided instructions and turned loose upon an unsuspecting community, since which time it has been told day after day, in double column display and in editorial array that the contractors whose records are printed herewith, are robbers, jobbers and conspirators for crooked work.

Here, for instance, is a fair sample of the opening sentence that starts the ball rolling every morning:

"From amid the mass of robbery, jobbery and crooked work that has marked every stage in the progress of the construction of the new ferry depot building, etc., etc., *ad libitum, ad nauseam.*"

All this and more, daily, of the same category, notwithstanding the fact that many of these contractors had acquired honorable distinction in their several walks of life before the y. i. m. editor was born.

But of what avail is your good name, of what avail is mine, of what avail is anything in this work-a-day-world of ours, until the mighty pent up rath of this y. i. m. editor has been appeased, the insult biotted out, and the political death of that rural writing and publishing Harbor Commissioner, an accomplished fact.

By all means let us have an investigation, but let it be thorough and complete. If the Grand Jury is the proper legal authority, then let that body take up the matter, by selecting a commission composed of reputable architects, who can act openly and above board, and whose report when made public will convince the people of this State that the truth and nothing but the truth, has been told in their report. As to the various sums of money that have been saved to the State by the numerous changes and the disposition thereof, let that also be the subject of exhaustive investigation by the Grand Jury, and no matter where the lightning strikes, "let no guilty man escape," say we.

THE CONTRACTORS.

Western Expanded Metal Co., D. E. Garrison, Jr., Pres.: C. F. Runyon, Vice Pres.; Gen. S. W. Backus, Sec'y. and N. L. Bell, Manager.

The Pacific Bridge Company—C. McCarthy, Sec'y. Established 20 years and have never had a law suit of any kind.

W. W. Montague & Co. for forty years the leading house in their line on the Coast—C. Adolph Low, Geo. A. Low and the heirs of the late Admiral Baldwin are the partners.

Bateman Bros., fifteen years in the business of contracting.

Ed. B. Hinds—contractor for rolling gates and shutters. Established 12 years. His work at the Claus Spreckels Building is his best reference.

Wm. Cronan—Established and doing a successful business for twenty yeats.

Duffy Bros., established 20 years. The class of work they do can be seen at the Mills, Claus Spreckels, Mutual Life, Emma Spreckels and Supreme Court buildings.

OBITUARY.

WE REGRET to have to record the death of Mr. Augustus Laver, senior member of the firm of Laver & Mullany. He was a native of London England, and was over sixty-three years old when his useful career was ended. He was a F. R. I. B. A., a member of the A. I. A. and of the Masonic fraternity. As an architect he had an international reputation being associate architect of the Parliament Buildings at Ottawa, Canada and the New York State Capital at Albany. On the occasion of the selection of his plans for the City Hall of San Francisco, he settled in California and has been identified with the best and most solid architecture of that city ever since. His works here are too well known to need enumeration but we may mention—the residences of the Flood family, both in San Francisco and Menlo Park—the Flood and Montague buildings on Market street and the O'Brien Mausoleum.

Of his character the best enconium that can be made is that he was in every respect *a gentlemen*, his manner was courteous and polite to all and the community has lost in him a good specimen of the upright citizen, the Architects a worthy exponent of the dignity of their profession. More than this nought need be said.

HIGH SCHOOL COMPETITION, FULLERTON, CAL.

SATURDAY, April 9th at 1:30 P. M., the Fullerton High School Board will consider plans and specifications for a High School Building. For particulars address,

WILLIAM STARTRICK,
Clerk of Board, Fullerton, Cal.

BURNT WOOD IN DECORATION.

HE WHO has within him the divine fire of genius must perforce give expression to noble ideals: the medium employed, and the hand that wields it, are but servants of his inspired mind. In other words, a good draftsman can draw with anything. The decorations which have best withstood the ravages of time, and are the most chaste and refined, have been produced with the simplest means possible—chisel, mallet, and marble; chisel and wood; modeling-tool, clay, and fire: sheet-metal and hammer. What could be more direct and simple than red-hot iron and wood?

DECORATIVE PANEL FOR CHEVAL MANTEL.

Many years ago the manual labor of the artist in color was reduced to a minimum: he no longer grinds his colors, or makes his canvas and brushes. But up to the present day the artist in burnt wood has toiled on with his rude forge and burning-irons, with the devotion of an old-time alchemist. Singularly enough, relief from the discomforts of this crude mode of work has at last come through the avenue which brings relief from all physical ailments—that of medicine. The thermocautery, a surgical instrument invented for cauterizing, has been adapted to the use of the artist, so that he can work with comparative freedom.

The wood-carvings and wrought-metal work of the middle ages attract the lover of the picturesque by certain irregularities of line and angularities of curve and plane, which do no injury to the whole, yet give it a character not found in the work of the rounded, sandpapered school of to-day. The tools of these masters were often crude, and many of these accidental accents were doubtless due to this fact. Yet these men expressed grand ideals, and their work as it stands to-day has an individuality which is largely due to this very picturesqueness. There are comparatively few workers in wood to-day who appreciate this quality, and only recently has really artistic wood-carving been done by American carvers. One of our most eminent architects, in speaking of the desire of his wood-carvers to destroy all character by the sandpapering process, says that it is necessary to stand over these men and to take to take their work from them while they still consider it unfinished.

Burnt-wood decoration must be something more than a simple scorching or tinting of the wood: the same effect can be more easily produced with bitumen or Vandyke brown. Its value as a means of decoration lies in the wonderful character of its intaglio line-work and flat tones, and in the picturesque inequality of surface which the more or less vigorous burning produces. He who best knows the value of a line can best practice this art; but he who seeks to create modeled realisms can only degrade it. A rigid devotion to accentuated intaglio line work and to the laws of flat decoration must of necessity result in original effects unlike those produced by other mediums.

As of old the master wood-carvers and violin-makers hoarded flawless, dry wood, so must the wood-burner of to-day keep a vigilant eye upon the lumber-yards, and lay in a stock of flawless, dry wood. His material cannot be too well seasoned. It must be white, free from gum, and soft: white because contrasts are wanted, and free from resin that it may not turn black with age. As it is the fiber of the wood which is blackened or carbonized, not the resin, it is obvious that the freer the wood is from gummy substances the better. The most satisfactory fire-etching has been done on panels of French poplar, which is soft, white, close-grained, and free from gum. The common white wood or yellow poplar of America yields readily to treatment with the hot iron, and can be successfully used in conjunction with harder, rarer woods, as beneath the magic touch of the burning tool it becomes rich and solid. The harder woods are more difficult to work, but, by combining the natural grain of woods like maple or oak with the rich burnt tones, beautiful results may be obtained.

I know of a hall which is paneled from floor to ceiling with golden-hued Mexican mahogany upon which has been successfully burned a frieze of delicate Renaissance traceries. On the other hand, I known of a low-toned dining-room paneled in antique black oak, with a deeply burned frieze, add containing in the massive chimneypiece a historical decorative portrait, and in the four walls other similar portraits, all in burnt wood.

PANEL EXECUTED IN BURNT WOOD WORK.

Every architect is willing to acknowledge that the utmost circumspection is necessary in applying any foreign material to architectural spaces. A glaring piece of mural painting, mosaic, or stained glass may destroy the artistic value of an interior, however purely and chastly conceived. It is obvious, therefore, that the very simplicity of the art of wood-burning, the unobtrusive quality of its color, and the utter impossibility of color discord, render it a safe and valuable means of interior decoration. Virtually it is closely allied to low-

relief ornament in wood, stone, leather, or metal, and is adaptable where these forms of decoration are used. Furthermore, its color-quality admits of its application in lieu of mural painting, tapestry, embossed leather, and tiles.

The commercial spirit of the age asks for decoration in large quantities, but it must be supplied cheaply; consequently the lover of truth and artistic originality is disgusted and disheartened at seeing the public accept and approve of mechanically produced decorations which are but base mockeries of nobler realities. The fire-etcher, after years of hard study in the futherance of his art, awoke one morning to find that a clever Teuton had invented a machine with engraved metal cylinders, heated to a certain degree, which reeled off decorative burnt-wood panels *ad nauseam*. It would be useless to compare or contrast this class of burnt-wood work with that of the artist. We can more easily consign it to its proper category—that of the branded shovel-handle and cigar-box cover.

It would be impossible to state positively when this art was first practiced. Burnt panels have been found in various parts of Europe, set into ancient furniture, chimney-pieces, and wainscoting. In the museums of Europe there are marriage-chests, coffers, and panels, dating from the fifteenth century or thereabouts, upon which a species of low-relief woodwork, not unlike the so-called "fret-saw" work of to-day, has been applied or chiseled out, the flat surface being richly ornamented with fine traceries unmistakably burned with heated points. Some years ago a New York artist, while wandering through the sea-shore villages of Whalés, found in a peasant's hut a rare panel of burnt-wood work of the Italian Renaissance (about the fifteenth century). The fisherman had found it on the beach, where it had drifted from some wreck. In the sacristy of the little octagonal church of Sant' Ercolano at Perugia are some ancient chests which were quaintly decorated with hot irons some four hundred years ago.

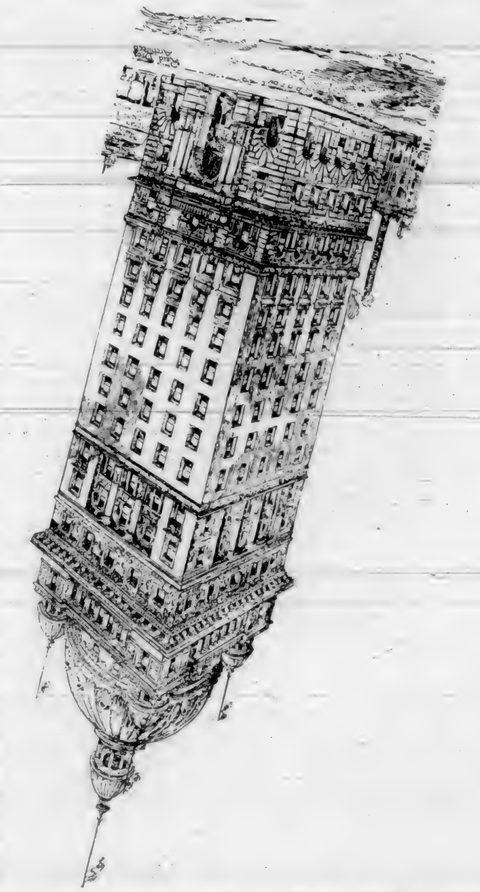
We are all familiar with the Japanese decoration of bamboo with the blowpipe, and any tourist to Switzerland or Germany can recall the rude scorching or tinting of the little carved souvenirs sold in the booths. These latter forms cannot, of course, be classed as manifestations of the art in question.

The art first made its appearance in this country nearly fifty years ago, when Ball Hughes, the English sculptor, residing in Dorchester, Massachusetts, became well known as a burner of "poker pictures." As copies of old English and Italian masters, they possessed merit, being executed with marvelous deftness. They were not decorative, nor were they intended to be such. Only recently has this medium been used in decoration, which is its only legitimate field.

Mr. H. C. Ives, art director of the Columbian Exposition, in his visits to all the capitals of Europe found but one interior completely decorated with burt wood. It was the reception-room of the Stockholm Technological School of Art, which school says Mr. Ives, is one of the best in the world. The apartment—a reception-room adjoining the director's office—was finished in every part by students. The mass of the woodwork was dark; the panels of doors, wainscot, and ceiling were all of satinwood, into which had been burned Renaissance designs. The decorations of the room, comprising stained glass, embossed leather, porcelain, etc., were all the work of students—"a rare pleasure," says Mr. Ives, "to see the true idea of art education thus practically carried out in the adornment of the school edifice itself."

The art of wood-burning may be easily abused. The ignorant may debase it by failing to recognize its proper sphere, but it will become an important factor in the furtherance of pure decoration so long as it is employed by the artist alone; for surely only the artist can give it that seriousness and strength without which it will be merely a passing fad.

J. William Fosdick.



THE *New Call* in its efforts to out do all the "yellow journal" sensations, has got itself turned completely over, and it looks to the "man up a tree" as if the task of righting itself would be found a hopeless one. A leak can sink the largest ship that sails the seas.

CHURCH FOR

HOLY CROSS PARISH.

SHEA & SHEA, ARCHITECTS.

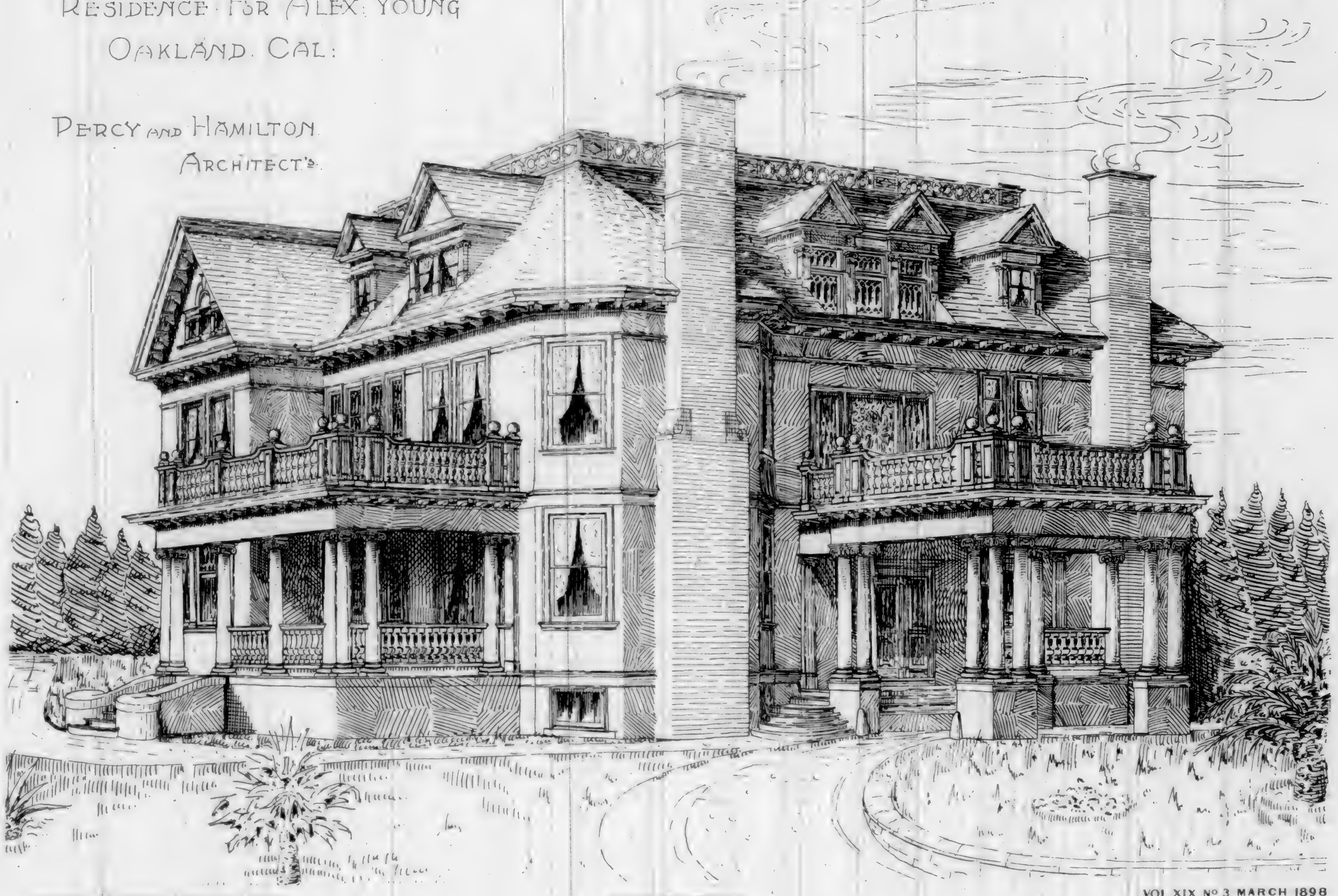
WELLS FARGO AND CO'S EXPRESS BUILDING

SAN FRANCISCO CALIFORNIA

PERCY AND HAMILTON ARCHITECTS

RESIDENCE FOR ALEX. YOUNG
OAKLAND. CAL.

PERCY AND HAMILTON
ARCHITECTS.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY. PHOTO LITH

VOL. XIX No 3 MARCH 1898

ILLUSTRATIONS.

The management of this journal desires to extend a cordia invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

A PERSPECTIVE view is shown this month, in the double page engraving, of the new home now building for the Wells, Fargo & Co. Express, and of which Messrs. Percy & Hamilton are the architects.

A history of this Company's career would really be a history of the progress and development of the middle far Western States, the founding of the Company dating back to the Spring of 1852. Anticipating the regular mail service across the Continent the Company, in April 1860, established the famous Pony Express between St. Joseph, Mo., and Sacramento, Cal., making weekly trips and carrying letters only.

Since the beginning of its career Wells, Fargo & Company has gone on uninterruptedly, maintaining itself successfully, until to-day it literally spans the American Continent "From Ocean to Ocean," and reaches across the seas. It now operates on 27,472 miles of railroads, 2,343 miles of staging, 6,346 miler of ocean steamers and inland navigation; a grand total of 36,171. From 78 offices in 1857, it has increased to 2,829 and gives employment to 6,000 persons.

The new home of the Company will have a frontage of 160'6" on Second St. and on New Anthony St. with a frontage on Mission street of 112 feet and the north end fronts on a private street. It is to have six stories with basement and attic.

The main entrance will be in the centre of the Second street facade, and will lead the patrons through a finely tiled vestibule wainscoted with beautiful marbles, to the elevators, of which there will be two rapid running for passengers and one for freight.

The fronts on all four streets for first and second stories will be in Raymond Granite, the exterior walls above the second story will be in gray bricks and Terra Cotta. The building will be as near fire proof in its construction as it is possible to make it, and the floors and waincoting throughout the corridors will be of finest California marble. It is almost needless to add that the building in every department will be finished in a first-class manner with all the latest improved appliances.

The basement, first, second and third stories will be devoted to the Express business, and the upper three stories divided off into offices for renting.

Richardson & Gale have the contract for the brick work. Mr. R. Keatinge has the contract for the fire-proofing construction which is being done under the Ransome system.

The patent fire-proof ceilings and partitions used in this structure are furnished by the California Artistic Metal and Wire Co., San Francisco.

THE NEW CHURCH of the Holy Cross, of which our illustration is the accepted design, will be erected on the North side of Fddy street between Devisadero and Scott streets.

The Church will cover a lot, seventy-six feet front by one hundred and thirty-seven feet, six inches in depth.

It will be unique in character because of the fact that it will be the first Catholic church in the City of San Francisco, with the interior structural work of steel and the exterior entirely in stone. The total cost of the church will be $50,000. The church will have a seating capacity of seven hundred and fifty, and the interior will be of such arrangement as will permit of a clear auditorium space, an uninterrupted view of the sanctuary from all portions. It will be ornamented in front with two stately towers of equal height, both running to a point 150 feet above the curb. The center will be emphasized or ornamented with a magnificent classic portico, supported by six lofty monolithic columns, 22 feet high and 2 feet in diameter, with ornate capitals. The portico is crowned with a grace pediment extending from tower to tower, drawing all parts into perfect union, creating a harmonious *tout ensemble*. The interior will be of elegant design and fine proportions. The sanctuary transepts and side altars being crowned by ornate arches 28 feet in width, connecting with an arched colonnade, which extends from the transepts to the entrance of the church. The entire interior will be lighted from above by windows placed in the clear story walls. There are no windows in side aisle walls, thereby affording the greatest amount of clear wall space for decoration in the future.

The Colusa Sand Stone Company have the contract for the stone work and Colusa sand stone will be used throughout the church.

A PERSPECTIVE view of residence, building for Alexander Young, Adams and Vernon streets, Oakland, Percy & Hamilton, Architects.

THE ELECTRICAL WIRING OF BUILDINGS.

IN THE *National Electrical Code*, the Rules and Requirements of the National Board of Fire Underwriters for the installation of wiring and apparatus for Electric light, heat and power, architects will find a safeguard that will protect them at every point, providing always that they post themselves sufficiently well with the rules and requirements that they may know on sight whether the contractor is complying with the specifications or not. It is not to be expected that architects will in their specifications enter into all the minute details for wiring, but it is to be very much to their credit when they specify "according to the rules and requirements"

of the National Board of Underwriters, and are in themselves sufficiently familiar with these rules to pass upon the contractor's work.

This solution of the difficulty is the only true one, and architects will find that the sooner such a course of procedure is put in force the sooner this vexed question will be satisfactorily settled.

Among the "General Suggestions" that are printed by the National Board, the following one for Architects is to the point:

"Architects are urged, when drawing plans and specifications, to make provision for the channeling and pocketing of buildings for electric light or power wires, and in specifications for electric gas lighting to require a two-wire circuit, whether the building is to be wired for electric lighting or not, so that no part of the gas fixtures or gas piping be allowed to be used for the gas-lighting circuit."

Had the Architect of the California Hotel specified, "according to the National Electrical Code," the Electrical Contractor's work there would have been of a very different order, and the fire that might have destroyed the premises been avoided. As it was, the wires were run across and so near the heavy iron gas mains beneath the old Kitchen floor, that the same old usual result happened — wires grounded on the iron gas mains and, of course, fire in the Kitchen floor. The only thing that saved the north wing of the Hotel from annihilation was a mere lucky incident — the Engineer's opportune appearance in the Kitchen.

To avoid these dangers to life and property is the clear duty of every Architect.

[The Editor is not responsible for anything which appears in this column.]

To the Editor of the California Architect and Building News.

Gentlemen:—I saw in your February issue an article in reference to fire-proof materials that were tested in the New Wells, Fargo & Co.'s building on Second street. However the test was made I do not know, but I can say that the people who made the test came to the conclusion that concrete material was fire-proof. I would like to ask for information, gentlemen, what the word fire-proof means. Does it mean something that will not light by the application of a match or something that will stand a limited amount of heat—say 1000 degrees Fahr. Now let me ask the gentlemen who were present at the test, how many degrees of heat were raised about the so called fire-proof material and if a stream of cold water was turned on it after it was heated up. Or how do these gentlemen account for the fact that concrete is fire-proof when the principal ingredients will not stand over and above 300 degrees Fahr. Is there any chemical action that takes place after the ingredients are mixed and the mass has set? If there is it is something very unnatural. The principal ingredient of concrete is rock—that is blue trap rock and Portland cement, which disintegrate (after being mixed together forming with the addition of sand or gravel and water what is called concrete) when subjected to a heat of 300 degrees Fahr. In all big fires without exception it has been proven that the only materials that will stand fire without serious damage is burned clay, i. e, brick and terra cotta. It is now about four years since we had a fire that would bear me out in my argument. If people who observed the ruins of that fire near Fourth and Brannan streets about four years ago, and took particular notice, they would have seen all the concrete sidewalks destroyed in front of frame buildings, which had been burned down. The new St. Roses Church, then in course of construction, was damaged by the fire destroying the granite blocks and artificial stone or concrete trimmings, while not affecting the brick-work at all except drying it a little. The only thing that can be fire-proof is a material that has been already tested or burned. Now any kind of clay ware has to stand at least 1500 degrees of heat to be burned—while the genuine terra cotta fire-proofing has to stand about 3000 degrees Fahr. before it is marketable.

Hoping that my question may be answered, which is—What is fire-proof material? I remain,

Very truly yours,
W. A. Butler

MODERN APPLIANCES IN QUARRIES.

The huge beds of stone upon which the two magnificent palaces of the Champs Elysees are to be erected, begin to make their appearance above ground. These two buildings will border the "Grande Perspective Nicolas II." at the Universal Exhibition of 1900. How will it be possible to construct so speedily these imposing monuments destined to remain after the exhibition among the architectural beauties of Paris? We can readily understand how the architects, men of undoubted talent tested by numerous competitions, to whom the work was entrusted, imagined, studied and planned these palaces with marvellous rapidity; but the materials themselves, the stones which form the bulk of the work, how can they be obtained in time, drawn in huge blocks from the quarries? Here is a very interesting object lesson, in which is revealed the power given to human labor by mechanics with its admirable utilization of forces. It is by the cutting, transport and piling of huge blocks that the successive stages of civilization have marked the extent of their grandeur. Are not the obelisks and pyramids a cause of admiration and wonder even to people of the present day? How was it possible for pure manual labor, even when carefully distributed, disciplined, subjugated, to hew those gigantic stones and then move them into their final resting-place? Important works have been written on the subject, from which it appears that the inclined plane and the wedge

no less than patience and length of time contributed to remove these difficulties. But fundamental documents are too frequently denied to seekers; perhaps they were lost, to our deep regret, in the famous and silly destruction by fire of the famous Library of Alexandria. The present generation has consequently been obliged to begin all over again. Very fortunately, steam and electricity have given it perfectly new means of action of such power as to be able to rival the buried secrets of ancient engineers.

A striking example is furnished in the working of quarries where electricity, now co-operating with the steam, wins victories of power of great value. Work must be smart in the cutting of a bed of stone in quarries. The architect who has ordered the ashlar and arch-stones is always in a remarkable hurry. Besides, one has to work in the open air, amid the dust in fine weather and under the pelting rain in bad. The steam engines scattered about the quarry were often injured by such a state of things; they became clogged, suffering from a kind of engine rheumatism, afflicted by untimely condensations, a kink of pulmonary apoplexy, and uttering heart-rending groans, not, however, stone-rending.

With this pliant electric conductors all these inconveniences vanish in many cases. In the great quarries of Euville, for example, for the work of extraction, the machines which cut the stones are electric, the work-yards are lighted by electricity, and water is raised by this same means to a height of 60 metres to feed the boiler of the little steam motor which is situated at the end of the big rolling bridge and raises the stones through space. From an already long experiment it is estimated that a great final saving is thus obtained.

In the quarries of Hainault, also famous, there is a rolling bridge of 60 metric tons power which raises the biggest blocks. It is worked by steam, but illuminated by electricity, and served continuously by pumps, windlasses and electric cranes. The annual production of a quarry exploited in this way is estimated at 20,000 cubic metres of granite. We may also mention the instructive case of the Soignies quarries. When boilers and special motors were employed for the various machines situated in different parts of the work-yards which are about 52 hectares in area, the consumption of coal was 4 to 5 kilogramme per effective horse-power. Since adoption of electricity the consumption of coal fell below one kilogramme per horse. It is a result not to be despised, and which demonstrates the utility of classing motive power. Let us add that, thanks to these powerful electric machines, the time requisite for extraction of stones and their employment has thus been greatly reduced. To build a big monument, palace or imposing edifice of any kind we had formerly to reckon on long delay in extraction, without mentioning the time required to dry the stone and render it frost-proof. The time of drying is about the same with the new rapid methods of extraction; but circumstances change. It is quite a different affair to dry a stone which for months has been subjected to the inclemency of the weather and that which is removed and placed under shelter in a few days.

It is to this powerful and improved extracting plant that the Exhibition of 1900, being now prepared on a scale of incomparable grandeur, will be indebted for the sudden appearance of its palaces above ground, recalling to mind the mythological legend of Orpheus charming the animals, rocks, trees; etc.

In fact, we here find a reply to the question made by Henri Heine: "Had not nature formerly a sensibility similar to that of man and perhaps more? The inspiring power of Orpheus, we are told, led away trees and rocks in a dance. Is such a prodigy possible at the present day?" If Henri Heine were conducted by one of the architects of our future Exhibition through the yards where the marvelous work is being executed he would no doubt exclaim, all poetical skepticism conquered, "The prodigy has happened."—*La vie Scientifique.*

THE CALIFORNIA UNIVERSITY COMPETITION.

AS OUR BRETHREN ACROSS THE WATER VIEW IT.

THE ARRANGEMENTS for this proposed great international competition have now assumed a definite form. The programme and conditions are comprised in a pamphlet of nearly forty pages, issued by the "The Trustees of the Phebe Hearst Architectural Plan," 217 Sansome street, San Francisco, but of which copies, we believe, can be seen or obtained at the Institute of Architects. It may be useful, however, to notice here some of the main points of the programme.

The competition is for a general scheme for the whole laying out of the ground and arrangement of the buildings, "the guiding thought of the entire undertaking," so that, although the whole cannot be carried out at once, those buildings which are erected from time to time may all be carried out as portions of one great design. The competition will be a double one, Preliminary and Final; the final competition, as usual in such cases, being between a limited number of competitors selected from the preliminary competition. It appears, however, that even the preliminary competition will be a matter of considerable detail, as the "general plan" will indicate all the buildings in detail, and not in block only, to a scale of 100 ft. to the inch. The other drawings will be a general elevation and a general section, to the same scale as the plan. The authors will each use his own judgment as to which points of the design he will take for his section and elevation; and as each competitor is to be allowed full liberty to arrange the buildings and sites as he thinks best, it would be difficult to specify any special line for the section or elevation.

The jury will select not less than ten plans from the preliminary designs, but have power to select more. If only ten are retained, their authors will each be entitled to a premium of 300*l.*; if more than ten and not more than fifteen are selected, the premium will be 240*l.* each; if more than fifteen are selected, 200*l.* each. This arrangement seems rather illogical, from the point of view of the architects, as one cannot see why any one man should receive less for his labour on account of the proportion of merit in the other competitors; and as there seems to be plenty of money, we should suggest that it would be much more fair and logical to give the same premium to all those whose works are selected for the final competition, independently of their number. The premiums are not, however, to be paid at once; one third of the sum is to be paid down, and the remainder after the competitor has sent in drawings for the final competition. This is, however, independent of the premiums specially attached to the final competition, for which

a sum of 5,000*l.* has been set aside; of this at least 1,600*l.** will be awarded to the plan classed as No. 1, and at least five of the final competitors will receive premiums; but the jury retain the right of distributing the total allotment among a greater number of competitors if they think fit.

In the final competition a general plan, section, and elevation are again required, accompanied by a general perspective view, all the three latter, as before, to be taken at any point the competitor prefers. What further drawings may be required will be decided by the jury after the preliminary competition; they may require the competitors to give drawings of one division or set of buildings; to a larger scale, we presume, than that of the general plan, though that is not stated in so many words. We observe also that no statement is made as to the scale to which the general drawings are to be made for the final competition; as far as appears, they are to be the same as in the first competition; but the fact that the scale is not defined appears to be an oversight. The point is of some importance as an indication of the amount of work a selected competitor will have to go through before his chance of ultimate success in the final competition. If the scale for the general plans is to be the same, there does not appear to be any reason why a competitor might not send in his general plans again for the final competition, if he is entirely satisfied with them. In connection with this point, however, it may be mentioned that a competitor selected in the preliminary competition has full liberty to modify his designs for the final one, and is not obliged to adhere to his first scheme. All descriptive writing on the plans is to be on the rooms described and not in the margin (a provision, obviously, against the possible waste of time of the jury in referring to schedules and reference letters), and it is all to be in English; no other language will be recognised. For a competition open to all the continental countries we should have thought French would have been more convenient.

The preliminary competition is to be decided by a jury of architects, viz: Mr Norman Shaw, R.A (London), M Pascal (Paris), Professor Wallot (Dresden), Mr. Walter Cook (New York), and Mr J. B. Reinstein (San Francisco). We are rather surprised that the committee did not apply to Mr. Waterhouse to be the English representative on the jury; in that particular function his name, we should imagine, would command more confidence with English competitors (if there are any) than that of any other English architect, more especially as this is a case in which plan is of the highest and most essential importance, and Mr. Waterhouse is a master of plan. For the final competition the jury will be composed of the five members of the preliminary jury, and of four architects who will be chosen by the Phebe Hearst Trustees, assisted by lists of names proposed by the competitors who are selected in the preliminary competition, each of whom will be invited to send five suggested names, the four who have most votes to be selected, subject, however, to proper provision for the international character of the jury.

The preliminary designs are to be delivered, not in San Francisco, but to the care of the United States Consul at Antwerp, by July 1 of this year. No date is yet fixed for the conclusion of the final competition, but it is stated that the selected architects will have not less than six months given them to mature their designs; and they will moreover, if they wish to study the site, receive, under certain conditions, first class transportation and expenses for the journey from their places of residence to San Francisco and return; a provision both liberal and sensible. There is to be no exhibition of the general collection of preliminary plans, but after the final competition the final and preliminary plans of all those who take part in it will be exhibited at the Mark Hopkins Institute of Art at San Francisco.

The programme has been deposited at various centres in different cities, that for London being the Institute of Architects.

Such is the outline of the arrangements for this very exceptional and perhaps unprecedented architectural competition, concerning which it is difficult to predict whether it is likely to result in a grand success or a *fiasco*. The ultimate prize, for the man who comes out the winner in the final competition, is no doubt a grand one; but the work to be done for even the preliminary competition is so serious that it may be questioned whether many architects who are already in possession of a fair practice will care to go through it for the chance of selection to enter the final competition; for the premiums in the preliminary competition, though they may be thought liberal in comparison with ordinary competition standards, will by no means recompense the work to be undertaken. This will be realised at once when we say that the general plan includes no less than twenty-eight blocks of building, many of which must be extensive and elaborate in plan, and the plans of all of which must be given in as much detail as can be shown on the scale of 100 feet to an inch. The following is the list of these Departments, the requirements of which are in some cases drawn out at considerable length; we must content ourselves here with merely indicating the principal rooms required in some of the more important blocks:—

1. Administration: Including entrance to the University, offices of the president and secretaries, and for the meetings of regents and professors, reception-rooms, ante-rooms, committee-rooms, hall of records, etc.
2. University Library: For 750,000 volumes, with large reading-room, hall for papers and periodicals, study-rooms, etc.
3. University Museum: Provision for art, antiquities, ethnology, etc.
4. Auditoriums: Two, each adapted to lecture, concert, and theatre purposes, 5,000 and 5,100 respectively, and a garden arranged for celebrations and receptions.
5. Military Establishment: Four lecture rooms, library, museum, gallery of models and drawings of military works, armoury, drill field, etc.
6. Gymnasia: Two large halls for exercises, each with 200 dressing-rooms, and 100 shower baths; two swimming tanks, large field for athletic games, with stands and seats, "treated in a monumental and majestic style."
7. Printing and publishing Establishment.
8. Habitation: for 3,000 students, and for head of the Material Department and family, assistant doctor, superintendents employees and workmen, etc., and two dining establishments for students.
9. Club Houses: Four, with all modern appointments.
10. Infirmary.
11. Approach and Communication: Porticos, galleries or corridors, interior staircases, elevators, etc.; covered communications between the various groups.
12. Buildings for the General Service: A central plant for production of power, heat, and light; workshops; telegraph and telephone stations; warehouses; fire department tsation, etc., etc.
13. The Departments of Instruction in general; Various adjuncts required in all the groups—cloak-rooms, lavatories, department libraries, study-rooms, etc.
14. Department of Philosophy and Pedagogy; Eleven lecture-rooms, twelve laboratories, etc.
15. Department of Jurisprudence; Eleven lecture-rooms, etc.
16. Department of History and Political Science: Fourteen lecture, rooms, gallery of geographical maps, etc.
17. Department of Ancient and Modern Languages; Fifty-four lecture-rooms.
18. Department of Mathematic: Fifteen lecture-rooms and model-room.
19. Department of Physics: Ten lecture-rooms, thirty-one laboratories, with necessary adjuncts, tower for vertical experiments, long gallery for optical experiments, machine-shop, etc.
20. Department of Astronomy: Observatories for astronomy and meteorology, six lecture-rooms, dwellings for three astronomers and families.
21. Department of Chemistry: Three lecture rooms, thirty-one laborotories, and a long list of accessorp departments.
22. Department of Natural History: Ten lecture rooms, various laboratories and their accessories, dissecting-rooms, vivisection-rooms, large museum of zoological collections in three sections, microscopical laboratories, herbarium, botanical garden, etc.
23. Department of Fine Arts: Providing everything for the teaching of the Fine Arts; painting, sculpture, architecture, music;
24. Department of Agriculture: Seven lecture-rooms, many laboratories; museum for agricultural products, etc.
25. Department of Mechanical Engineering: This department includes electrical engineering. Eight lecture-rooms; eighteen laboratories; five drawing-rooms; three or four workshops. rooms for collections and models, etc.
26. Department of Civil Engineering: Accommodation similar to last department.
27. Deparment of Mining: Similar to No. 25; space and accommodations required for this department are about the same as for the Department of Mechanical Engineering; power supplied from central station.
28. Department of Draughting and Graphical Analysis: Nine drawing-rooms, model-rooms, etc.

Bearing in mind that in the above statement of the requirements for the various blocks we have only given the principal items, and omitted a great quantity of minor detail, it will readily be seen that this is a scheme which no man can adequately consider and sketch out plans for, even on the small scale demanded, between now and July 1, unless he put aside everything else that he was doing and devoted his whole time and thought to this one competition; and is it likely that any man who has a practice and has his living to make by it will abandon all his regular work for the sake of the chances offered to him here? The only people who are likely to go in for it are ambitious young men who have not got into practice, and who have enough to live on to support them while they are engaged in working out the California scheme; so, at least, the probability appears to us; and we do not suppose it was that class of architect which the promoters desired to attract. The promoters, in fact, seem to have been a little bitten with that disease of *megalomania* which is said by Nordau to be a special weakness of the present day; they have desired to have an architectural competition on such a scale as should throw all others into the shade; and they have gone beyond the limits of what it is possible to expect from competitors. They should have asked for a block plan of the site, with a sketch elevation and section, and detailed plans of perhaps two of the blocks, as an indication of the author's efficiency in the details of planning. With such a programme they might have attracted some of the most eminent architects from all countries. As it is, we very much doubt whether they will attract any such men. There may be still time to consider the matter and to announce such a modification of the conditions as we have suggested, through the Press, in such a manner that it should come under the eye of all actual or possible competitors; and the Trustees or their professional advisers would probably do well to take this point into consideration before it is too late, if they wish the competition to be a success. *The Builder, London.*

* In the programme the sums are given, naturally, in dollars; we give them here in English currency.

THE BEST FIREPROOF CONSTRUCTION FOR BUILDINGS OCCUPIED FOR MERCANTILE PURPOSES.

PAPER READ BY W. L. B. JENNEY BEFORE THE FIRE UNDERWRITERS' ASSOCIATION OF THE NORTHWEST.

CONTINUED FROM LAST ISSUE.

N VIEW of these important developments, it is our opinion that important structures of this class should have a radically different method of fireproofing. The fireproofing should be in itself strong and able to resist severe shocks, and should if possible, be able to prevent the expansion of the steel work.

There seems to be but one material that is now known that could be utilized to accomplish these results and that is, first-class concrete. The fire resisting qualities of properly made concrete have been amply proven to be equal if not better than fire clay tile, as shown by the series of tests carried on by the Building Department of the City of New York."

The Engineering Record of September 16, 1897, states that in the Denver test a floor made of end construction porous terra cotta endured eleven alternate applications of fierce flame and cold water, lasting 23 hours and finally endured a 24 hours continuous fire test and afterwards sustained a load of 12,500 lbs. which seems quite satisfactory still, personally, all things considered, I would give the preference to concrete.

From the experience gained in street railway construction in laying continuous rails, it is to a large degree possible to prevent the metal from expanding. In street railway work this has been accomplished merely by the adhesion of the pavement to the side of the rails. In building construction the same results could be obtained by encasing the columns and girders with concrete placed directly against the steel work. The adhesion of the concrete would to a large degree prevent unequal expansion of the concrete and steel. The floor arches should also be constructed of concrete but of sufficient depth to be able to resist lateral forces, except during a fire principally wind pressure. By the use of such floors with the prevention of injurious expansion and the protection of columns with materials that can stand severe shocks of any nature whatever the modern steel frame constructed building would be most thoroughly protected against any fire.

The construction herein suggested should not materially increase the cost of construction. The solid concrete about the colums would be added strength to same, and could no doubt be made self supporting. The same could be said of concrete surrounding beams and girders, as has been amply demonstrated by the strength developed by concrete iron constructions.

As so-called fireproof buildings are not equally and to the same degree, protected against fire, we would recommend to the insurance companies that they should vary the rate of insurance for this class of buildings, depending upon the character of the fireproofing used. The competition between fireproofing companies has been so severe as to reduce the price of their output, in very many instances at the expense of quality. The large fire loss in the Horne building would still have been larger had the fireproofing been of poor quality, and we would further recommend that the insurance companies have prepared standard specifications governing the character of the fireproofing and the construction and putting up of same, and requiring owners of buildings to use fireproofing subject to these specifications, under careful inspection, or be subjected to higher insurance rates."

Before answering the question—"What is the best fireproof construction"—I will call your attention to ahother class of buildings known as "Mill Construction" much in vogue, particularly in St. Louis. The Chicago building ordinance permits building of this class to be 100 ft. in height as against 60 ft. for common construction. The underwriters give them an advantage of rate indicating a less hazardous risk. Are these advantages justified by the facts? I think not. Mill construction as understood by the Chicago Building Department is thus described in the city ordinances—"The term 'Mill Construction' shall apply to all buildings in which all the girders and joists supporting floors and roof have a sectional area of not less than 72 square inches, and above the joists of which there is laid a solid timber floor of thickness not less than 3¾ inches thick. Wooden posts used in buildings of this class shall not be of smaller sectional area than 100 sq. inches. Partitions and elevator enclosures in buildings of this class shall be made entirely of incombustible material. If iron pillars, girders or beams are used in building of this class, they shall be protected as provided for fireproof building; but the wooden posts, girders,

and joists, need not be protected by fireproof covering. The use of wood furring wood laths or steel partitions, shall not be permitted in buildings of this class."

On the 15th of March last there occurred a big fire in the heart of the wholesale district in St. Louis, a building occupied by the Ely-Walker Drygoods Co. Quoting from the St. Louis *Democrat* of the 16th of March, "the loss will be close on to $1,500,000.00. One human life was lost and several people hurt. The fire was one of the worst the St. Louis fire department has had to cope with for a long time and for a time it looked as though there was to be a conflagration that would wipe out the Washington avenue wholesale district. The firm's enormous stock had been recently increased by large purchases of the finest lines of goods in the market, consequently every inch of available floor space was occupied by great piles of dry goods of every description for the spring trade." Desiring to obtain reliable information in regard to the character of the building burned I wrote to W. S. Eames, of Eames & Young, architects. Mr. Eames replied immediately as follows:

"In regard to the recent destructive fire in our city, I beg to send you under separate cover two newspapers which contain very graphic and accurate descriptions of the fire, the amount of damage, the character of the contents of the building, etc. The fire began about half past seven on Monday night, and while I am dictating this letter I can see from my window the engines still attempting to quench it. Portions of all the walls remain, but the building is a total loss unless it be the foundation and the walls of the first and second stories. The building was not a fireproof building in any sense. It is what is known by the St. Louis Board of Fire Underwriters as "a standard slow combustion building." I enclose a printed specification for such buildings as issued by our Board of Underwriters. The building in question complied with all of the requirements of this specification except as to area and height. The building is about 120 ft. square and seven stories in height. It had three street fronts and a blind wall on the other enclosing side. The two principal street fronts were faced with Long Meadow brown sand stone. It was one of the last works of the late H. H. Richardson, and was of course Romanesque in style. Of course the stone work of the two street fronts was principally Ashlar backed with brick work. The building was constructed by Norcross Bros., of Boston. The basement, first and second stories, I think, had cast iron columns enveloped in fire clay casings plastered. The remaining columns were of southern yellow pine. The wooden girders, wooden floor beams and heavy planking were of Long Leaf Mississipppi or Louisiana pine. The building was not equipped with automatic sprinklers and to this defect is attributed the loss of the building and its contents. The stairways and elevators were enclosed in brick shafts with standard metal covered doors to all openings.

The fire burned for about three hours apparently entirely within the building. Then came a collapse (which probably was caused by the fall of the burned wooden posts) whereupon the fifth, sixth, and seventh floors and the roof fell in and created an opportunity for a tremendous conflagration. The enormous mass of heavy dry seasoned beams and flooring made an irresistible fire with a heat of great intensity. The first, second and third floors are still in position but of course the intense heat has damaged what remains of the walls, and the contents of the building are a total and irreparable loss.

Most of the commercial mercantile building in this city have for the past seven or eight years been constructed upon the slow combustion principle. The reason being that the Board of Underwriters gives a rate on such construction that makes it profitable to the owner of the building as well as the occupant. Nearly all of the buildings in the Cupples Block, of which we were the architects, are buildings of this type of construction. But special constructive features have been added to the requirements of the underwriters and the entire plant is thoroughly equipped with the very best system of automatic sprinklers."

The specifications of the St. Louis Board of Fire Underwriters for mill construction, although more in detail, do not differ materially from the Chicago city ordinances, which were quoted. In these buildings there is no lath and no plaster, hence, no covered passages, so that the fire is entirely exposed to the direct action of the fire department. This is certainly an advantage at the outset of a fire. It also enables the fire department, after the fire is well under control, to extinguish it entirely. There is no opportunity for the fire partially extinguished to be hidden under lath and plaster and to break out later. To this extent the system is advantageous but under the conditions under which the Horne building was placed—the raging fire across the street to windward, inflaming the goods in every store at the same instant—mill construction feeds the flame and causes total loss in an incredibly short time. Several Boston fires, the Jenkins building at Pittsburgh, as well as the St. Louis fire, have shown that no advantage as against loss can be expected from this class of construction. The timbers add so much fuel to the flames after the fire is once under way. In these buildings we meet another difficulty. The long heavy timbers required for that construction can be obtained cheapest and easiest in southern or pich pine. Moreover, this material is usually considered to carry a heavier load than oak. For example, a 10 in. x 10 in. post in Georgia pine would require by formulæ in general use to be 11 in. x 11 in. if in oak. Oak is much safer from fire but unfortunately cannot be obtained of the requisite dimensions and moreover costs about 50 per cent more per thousand, than southern or pitch pine, which can be obtained free from knots direct from the mills smooth dressed to the sizes demanded, hence, this is the material usually employed for such buildings. This southern pine, often called pitch pine, is as its name implies full of pitch. It is the most inflamable of all the usual building materials. The pitch distils out by heat and rapidly catches and spreads the fire with rapidity, so that the usual so-called "Slow Burning Construction" often used as a synonym for "Mill Construction" is a misnomer and offers no protection against the burning of a stock of goods beyond the ordinary common construction and is not entitled to any reduction in rate. Indeed, when pitch pine is used, I should be inclined to place this construction as extra hazardous as the building could be set on fire by the burning of a newspaper or by a gas jet flaming against the wood. Such a fire once started usually feeds itself and spreads rapidly over the entire building. I also object to the use of southern pine for the floors and interior finish of apartment houses as unnecessarily hazardous, for there is no doubt but what pitch pine helps along a fire and greatly increases the loss above what it would have been had oak been used instead of the pitch pine.

The Jenkins building at Pittsburg is reported by the Insurance World as of mill construction. Also the store in St. Louis occupied by the Ely-Walker Co., and many of the Boston buildings.

To be Continued.

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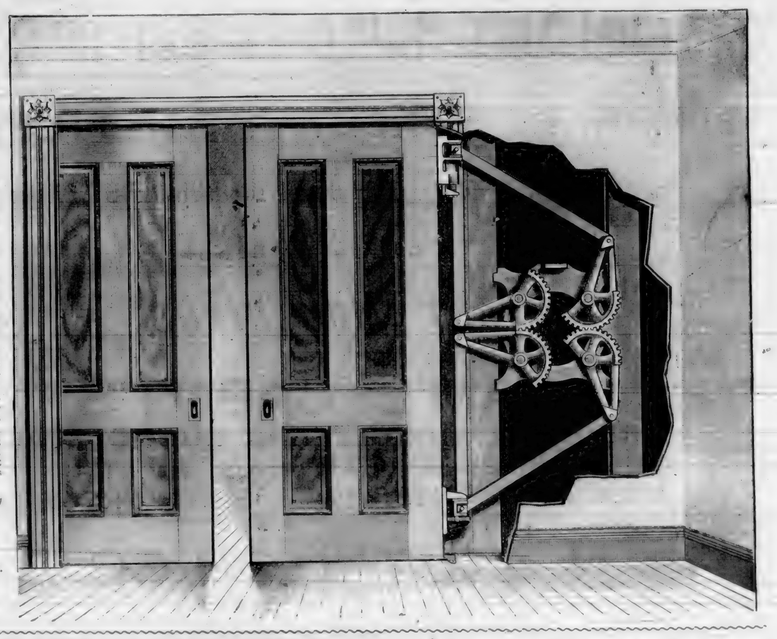

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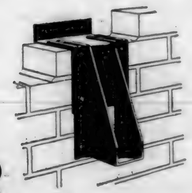

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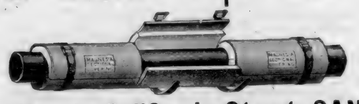

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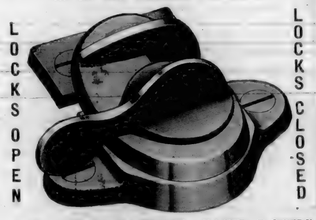

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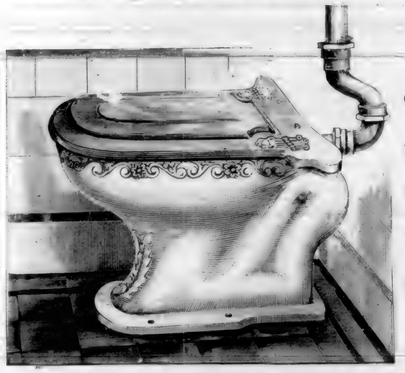

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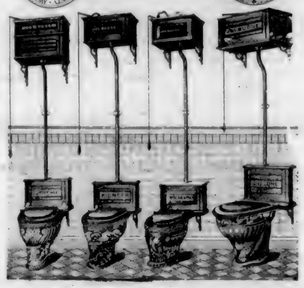

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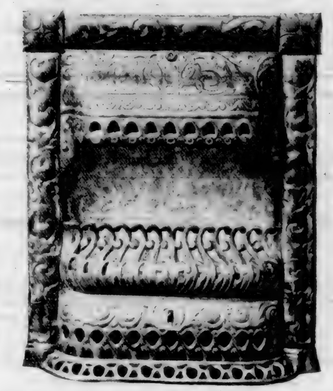

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BUILDING NEWS.

Broadway near Steiner. To build; o. Marie J. Radford; architect, G. K. Radford; c. Kidder & Cooper; signed, March 30; filed, March 31; cost $1435.

Bush near Montgomery. All work except heating and ventilating for additions and alterations to six-story brick; owner, Pacific Telephone and Telegraph Co; a. Albert Sutton; c. Walker Bros. Co; signed, March 26; filed, March 29; cost $14,150. Iron and steel work; c. Walker Bros; sub-c. Ralston Iron Works; signed, March 28; filed, March 30; cost $9493.

Bush near Fillmore. Alterations and additions; o. George E. Schulz; c. Henry Behrens; cost $4100.

Bryant near Boardman Place. Alteration and additions; owner, Louis Gondolph; a. H. D. Mitchell; c. A. N. Nelson; signed, March 30; filed, March 30; cost $1600.

Buchanan near Geary. To build; owner, George Roth; a. Sailfield & Kohlberg; c. H. Behrens; signed, April 2; filed, April 7; cost $7485.

Central Ave. near Jackson. To build; owner, Albert B. McKee; a. Albert L. Farr; c. Reit & Ahlgren signed, April 7; filed, April 6; cost $4700.

Crescent Ave. near Roscoe. To build; o. Edward T. and Lou L. Miller; c. Brick Bros; signed, March 24; filed, April 2; cost $1283.

Dolores and 18th. Three-story frame; o. Martin Gosselk; a. H. Geilfuss; c. W. Horstmeyer & Co; signed, April 2; filed, April 4; cost $4890.

Dupont and Filbert. Three-story frame; o. Rosa Demartini; a. Mooser & Son; c. Caccia & Pecarich; signed, April 7; filed, April 9; cost $3200.

Ellis and Pierce. To build; o. Margaret O'Brien; a. W. F. O'Brien; c. T. B. Smith; signed and filed March 28; cost $1120.

Eleventh Ave. near M. Cottage; o. J. A. Jacobs; cost $1600.

Fell near Lott. Three-story frame; o. Mrs. Elizabeth A. McCord; a. Edward R. Swain; c. George R. Lang; signed and filed April 11; cost $6400.

Ferry Depot. Shed over boilers and heating plant; o. Board of Harbor Commissioners; c. G. W. Campbell; cost $2367.

Geary and **Jones.** To build; o. Ruby A. Root; a. C. A. Meussdorffer; c. Frank Steinman; signed, March 18; filed, March 21; cost $10,674.

Gough and California. To build; o. Lewis Gerstle, a. Edgar A. Mathews; c. Edward Lieter; signed, March 22; filed, March 24; cost $28,075.

Grove and 32d. To build; o. John J. Sill; c. J. P. Beckett; signed, April 1; filed, April 2; cost $1575.

Heron near 8th. To build; o. Margaret A. Mee a. H. M. Woolley; c. D. W. Ross; signed, April 4; filed, April 6; cost $2000.

Hyde near Bay. Construction of a wharf; o. Equitable Gas Co.; c. Darby Laydon & Co; signed, March 7; filed, March 19; cost $3860.

Hyde near Bay. Two gas holders and steel tanks; o. Equitable Gas Light Co; a. Engineer of the Co; c. H. Behrens; signed, April 9; filed, April 11; cost $7200.

Jackson near Polk. Excavations, etc; o. Catherine Hoelz; a. Jules Godart; c. Crawford Ferris; signed, March 19; filed, March 24; cost $1050. Carpentry, mill and stair work, etc; c. W. J. Field; signed, March 22; filed, March 24; cost $4700.

Jessie near 14th. To build; o. Patrick Long; c. W. H. Bagge; cost $2100.

Jones near Filbert. Three-story frame; o. Mrs. Josephine V. Yost; c. E. W. Hyde; cost $4400.

Kearny near Pine. Alterations and additions; o. Charlotte L. Gashwiler; a. J. T. Kidd; c. C. F. Sheibley; signed and filed, March 24; cost $1154.

Laguna and O'Farrell. Plumbing for three flats; o. L. Kutner; a. W. J. Cuthbertson; c. Ickelheimer; cost $800. Painting; c. W. Shafer; cost $400.

Market street, Nos. 937-943. Alterations; o. Claus Spreckels; c. T. T. Potiliger; cost $1570.

Market near Sacramento. Grading, etc; for brick building; o. Emily F. Pope; a. Pissis & Moore; c. Jas. A. McMahon; signed, March 23; filed, March 24; cost $11,085.

Market near 4th. Electric plant in Parrott building o. Central Light and Power Co; c. Union Iron Works; signed, April 5; filed, April 8; cost $50,000.

Main and Folsom. All work for frame and iron building; o. Keystone Boiler Works; a. Percy & Hamilton; c. Anderson & Greig; signed, March 19; filed, March 21; cost $7500.

Mission near 18th. Repairs; o. Walter F. Foster; a. McDougall & Bros; c. P. J. Brennan; signed, March 29; filed, March 30; cost $1470.

Mission near 2d. Iron, steel work, etc; o. Wells, Fargo & Co; a. Percy & Hamilton; c. Joseph F. Forderer; signed, March 26; filed, March 28; cost $12,624.

Oak near Laguna. To build; o. George J. Anderson; a. D. V. Deuel; c. Pettersen & Persson; signed, April 2; filed, April 4; cost $3100.

Railroad Ave. near Oak. Two-story frame; o. B. Vergez and A. Methebat; c. C. A. Henderlong; signed, April 4; filed, April 5; cost $3800.

Second and Mission. Ornamental cast and wrought iron work; o. Wells, Fargo & Co; a. Percy & Hamilton; c. Winslow Bros. & Co; signed, March 19; filed, April 4; cost $28,000.

Second near California. To build; o. Miss Mary McQuaid; c. John Keneally; signed, April 6; filed, April 7; cost $2675.

Scott near Broadway. Two-story frame; o. W. F. Herrin; a. Julius E. Kraft; c. Anderson & Greig; signed, March 17; filed, March 23; cost $6973.

Stockton near Vallejo. Two-story frame; o. Hirsch Bros.; c. H. P. Conrady; signed and filed, April 6; cost $4500.

Sutter near Taylor. Alterations and additions; o. Mrs. Mary A. Gaffney; a. Kenlizer & Barth; c. Hannah Bros; signed and filed, April 4; cost $2300.

OAKLAND

Sixth and Alice. To build; o. Henry Hennings; a. McNally & Stoufey; c. A. R. Denke, Sr; signed, March 23; filed, March 24; cost $4350.

Adeline and 10th. Additions and alterations; o. M. Jones; a. Chas. Mau; c. McCracken & Lee; signed, and filed, March 8; cost $2400.

Tenth and Broadway. To build; o. John Lancaster a. J. Conant; c. J. M. Shay; signed, March 30; filed, March 31; cost $4157.

Butler Ave. near Idaho. To build; o. Wm. J. Elfert; a. John J. and T. D. Newsom; c. J. House; signed, April 7; filed, April 8; cost $1800.

F. E. Knowles, President Telephone South 669 Abel Hosmer, Secretary

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BUILDING NEWS.

Forty near Grove. Two-story frame; o. Arch-Bishop of S. F. by Rev. Father L. Scoda; a. Etienne A. Garin; c. P. G. McIntyre; signed April 6; filed, April 7; cost $3555.

Fourteenth and Clay. Alterations and addition; o. First Methodist Episcopal Church; a. Samuel Newsom; c. M. S. Libbey; cost $3500.

Rio El Valle de San Jose. To build Engine house; o. Phebe A. Hearst; a. F. S. Van Trees; c. Charles and Walter Williams; signed and filed, April 12; cost $5180

Thirty-fifth near Telegraph Ave. To build; o. C. D. and Bessie Littler; c. Todd & Cornell; signed, April 7; filed, April 11; cost $1620.

Union near 12th. Cottage; o. D. Knabbe; a. Chas. Mau; c. J. W. Baughman; signed, April 4; filed, April 12; cost $1940.

Webster near Durant. To build; o. I. M. Condit; a. Geo. A. Bordwell; c. B. C. Allen signed and filed, March 23; cost $2099.

PIEDMONT

Club House. O. Piedmont Development Co; a. D. F. Oliver; c. H. C. Canfield; signed and filed, March 21; cost $2988.

ALAMEDA

Pacific Ave. near Chestnut. Brick and carpenter work; o. Thos. H. Kelly; c. Theo Victors; signed, April 2; filed, April 9; cost $1840.50.

BOLINAS

To build. O. Bell C. and Grace Nichols; a. Oliver Everett; c. Edward Bletch; signed and filed, April 6; cost $1344.

ROSS STATION

Dibble Tract, lot 10. Cottage and barn; o. Edward G. Schmeidell; a. Geo. H. Howard; c. Thos. O'Connor; signed and filed, April 7; cost $3900.

SAN RAFAEL

B street. Cottage; o. C. A. Burkhardt; a. B. A. Brown; c. Thos. O'Connor; signed, April 4; filed, April 6; cost $1350.

By a decisive vote at a recent election here, it was decided to issue bonds to the extent of $15,000 for the purpose of erecting a High School building.

SAUSALITO

On grounds of El Monte Hotel. To build one-story frame dancing pavilion; o. Excelsior Loan Association; a. B. A. Brown; c. J. Strittmatter; signed, April 5; filed, April 6; cost $1350.

BERKELEY

Bancroft Way near College Ave. Two-story frame; o. Lloyd Tevis; a. A. S. Smith; c. Anderson & Stockholm; signed, March 28; filed, March 31; cost $2428.50.

Humboldt Ave. and Prince street. To build; o. Walter Deakin; c. C. M. McGregor; signed, April 11; filed, April 12; cost $1041.

Telegraph Ave. near Durant Ave. Two-story frame o. C. L. Tilden, T. H. Bishop; a. Edward B. Seely; c. Kidder & Copper; signed, April 6; filed, April 7; cost $7727.

BUILDING NEWS.

LOS ANGELES

Henry D. Thompson has purchased the southeast corner of Sixth and Bonnie Brae streets, and is having a plan prepared for a suitable residence.

H. B. Hubbard has purchased a lot on Alvarado street, between Tenth and Eleventh streets, upon which he intends erecting a two-story residence.

Architects Ferris & Kronnick are preparing plans, for James Christie, of a six-room cottage, to be built at Pico Heights.

Architects Bradbeer and Russell have prepared plans for Morris Klein of a six-room cottage, to be erected on Tenth and Union avenues.

Architect R. B. Young, has prepared plans and taken bids for a two-story frame building 50x96 feet, for the Pacific School of Osteopathy. The location may possibly be the corner of Tenth and Figueroa streets.

Architect F. L. Roehrig has prepared plans for the Southern California Savings Bank, for extensive alterations to the southeast corner of court and Spring streets, by which they will occupy when completed the entire ground floor of their bank building.

Architect John P. Krempel is working on the detail drawings for the sugar house of the Oxnard beet sugar factory at Oxnard. Its dimensions are 400x120 feet; steel frame, expanded metal and fire-proof floor construction. The window frames, 360 in number, will be constructed of galvanized iron, and galvanized corrugated iron will be used for roofing. The steel frame work is well advanced, and work on the brick walls will commence shortly.

Architect A. M. Edelman has prepared plans for the estate of S. Heilman of a two-story business building 32x80 feet, to be built on the west side of Main street near Third street.

Architect Edward Neisser has let the contract for the erection of four flats, located on the east side of Olive street, between Tenth and Eleventh streets, to E. C. Shipley.

Architects Bradbeer and Russell have prepared plans for Mrs. E. Woolacott, for a five room cottage to be built on Central avenue, between Seventh and Eighth streets.

Architect H. F. Starbuck is calling for bids for a church building to be erected on Thirtieth street by the congregation of the Knox Presbyterian church.

Architect C. L. Strange has preparrd plans for a two-story 10 room residence, cobblestone foundation natural wood inside finish; to be built on Burlington avenue.

Architects Bradbeer and Russell have prepared plans for a two-story frame for Dr. Jones, to be built on Olive between Second and Third. The same architects have plans for cottage to be built on West Ninth street.

Architect Frank D. Hudson has let the contract for the foundation work of a 4-story and basement brick business building, to be built on the east side of Broadway between Third and Fourth streets.

BUILDING NEWS.

Architects Reid Bros. 401-402 Stimson block have plans and specifications of the new Douglass building all ready for bidders. The building will be 5 stories and basement; the elevation will be either stone or pressed brick and terra cotta; steel columns and girders throughout; wood floor joists, forming a semi-fire-proof structure. Inside finish may possibly be oak.

Martin Bekins, the proprietor of the Van and Storage Co; is about to erect an addition to his brick warehouse at Fourth and Alameda streets, it will be 50x150 feet, and two stories in height.

Architect Krause and Jenkins are preparing plans for Willard Sheldon of a two-story frame; concrete foundation, plastered outside, Spanish tile roof inside finish of oak redwood and yellow pine; to be built on the corner of Twenty-ninth and Menlo avenue.

Architect A. Benton has prepared plans for a new church for the St. John's Church, Episcopal of San Bernardino; it is to be of the perpendicular style with corner tower; side cloister; seating capacity 250; frame building; open timber roof; pine and redwood finish.

A Turkish hotel will be built on Grand avenue between 1st and 2d streets; cost $10,000; architect, A. J. Kosby he is now preparing plans.

BAKERSFIELD

After taking off 30 feet from the proposed plans to his bath house, Mr. Offer has awarded the contract of Geo. Robinson for $4110.

CATALINA ISLANDS

Architect C. H. Brown is preparing plans for the Catalina Yacht club, of a club house, to be built near the pavilion at Terminal Island, it will be 60x100, two stories, and surrounded by a porch 12 feet wide; the first floor will contain a ball room 35x58 feet.

SAN DIEGO

Building permits have been granted to W. R. Rogers for a residence at Seventh and Stevenson streets; to cost $3500.

S. E. Cofes has been granted a permit to build a cottage at Third and Olive streets to cost $1900.

The contract was awarded yesterday for the construction of M. V. Carrol's residence at Fifth street and Robinson avenue.

POMONA

Architect R. B. Young is preparing plans for the Sisters of the Holy Name, of a two-story frame academy building 65x100 feet, to be erected on the corner of Holt and Illinois avenues, Pomona.

RIVERSIDE

Frank A. Miller who intends erecting the new building which will be used jointly as a hotel and court-house, has asked for an extension of time to October 1st, pending the arrival of Walter Raymond from the east.

AUBURN

J. Ford has commenced a five-room cottage. J Thorn will build a three room cottage on the Huntley tract.

Mrs. Champman is building a small cottage.

John Chisholm will build a five room cottage on Linden Heights.

Mrs. I. M. Power will build a small cottage for rent.

Contracts not let and no architects plans accepted for any of these.

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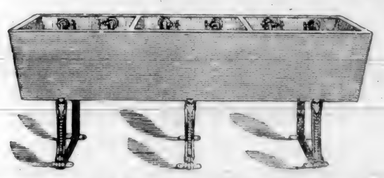

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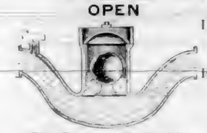

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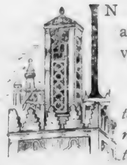
VOLUME XIX. APRIL 20th, 1898. NUMBER 4.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.



IN THE Architects Code of Ethics is an article of very general adoption by the various chapters of America.

It reads about as follows:

Although employed and paid by the owner to protect his interests, the architect should remember that exact justice must be maintained between both parties to a contract. He should so conduct his practice as to maintain and foster a higher and better standard of construction; and to encourage the employment of a better class of skilled contractors and workmen in every department.

Another article of equal strength and general adoption in the Code says:

A number of the architectural profession is found to maintain its honor, and to labor earnestly to extend its sphere of usefulness.

These articles are perfectly right and proper but we feel it clearly within our province to point out the fact that in the matter of plumbing inspection a goodly number of the profession in this City have become sadly forgetful of the existance of the foregoing precepts in their Code of Ethics.

It has become almost a uniform practice to specify the grade of bathtubs, the quality of closet and brand of kitchen sink, etc., etc., then finish the specifications by inserting this clause: "all other plumbing and drainage must comply with the rules and regulations of the Board of Health"—while we have no particular objection to offer to this mode of getting the plumbing contracts into municipal shape—we do most strenously object, to the practice of requiring from the contracting plumber a Board of Health certificate of inspection as a condition to a contract. And our objection to this mode of proceedure is fully sustained by the Ethics of the Code, wherein it says: "Exact justice must be maintained between both parties to a contract."

How can exact justice be maintained for the owner when an architect delegates to a plumbing inspector a duty that is clearly and specifically within the lines of his responsibility.

These inspectors are but human, and it is human to err, and we, who know their little peculiarities well, know that they were never known to err on the side of the owner.

These specifications, which read according to the rules, etc., etc., with the certificate of inspection clause as a condition to the contract, are to the plumber—who knows a thing or two about politics, and who has a friend at court—a source of considerable profit, as they are also to the inspector detailed on the building. But to the plumber who

figures on just what the rules and regulations call for, who is without a close political connection—as he is without the "useful friend at court"—that "certificate of inspection," as a condition to the contract, becomes a bugaboo of insurmountable proportions.

Mark the result, the political plumber banking on his financial and political affiliations with the inspector—more particularly the former—and knowing the exact cost to his competitors for the work as specified, complacently sends in a bid below the actual cost of the work, which when completed is as complacently accepted by his friend the inspector.

Who suffers? The non-political plumber—an honest man as plumbers go—loses caste and business and the architects' confidence in his ability, through no fault of his own. The architect should suffer through loss to his self respect; the owner becomes a sufferer because of the trust he has reposed in the honor and Ethics of the profession supposed to be embodied in his particular architect, to whom he has also entrusted his property and his money.

It is to the architect and to the architect only, that the owner looks for protection; as an employer, the owner expects, and has every right to expect, that exact justice shall be maintained between himself and all parties to contracts entered into for him, by his architect. But this practice of deliberately delegating to an open-handed free-lance inspector, a duty which the Ethics of his profession and his honor as an architect demands shall be performed by himself, certainly cannot be construed by any stretch of the imagination, as obtaining exact justice for any one, nor of maintaining the honor of a profession that should be beyond all else honorable.

THE STEEL SKELETON IN HIGH OFFICE BUILDING CONSTRUCTION GIVEN ITS INITIAL EARTHQUAKE TEST.

THE Earthquake which arrived at 11:42:44 on the night of March 31, last, according to all authorities was by far the severest experienced in this city since 1868. Prof. Lenschner, Director of the Observatory at Berkeley, in reporting of its intensity says: "It must have vastly exceeded all prior shocks in a horizontal direction." So of its severity there can be no doubt.

To be able to furnish to the world at large, and the building world in particular, the initial earthquake test of stability for the steel skeleton constructed high office buildings is now the proud lot of San Francisco.

It is, of course, only meet and just that where a condition of such vast importance as this arises, detailed reports of the effect of the shock upon the high buildings of the City, should be given to the world at large by the men who are responsible for their stability. Therefore the Editor of this Journal submits with much pleasure the following letters upon the subject:

To the Editor of the California Architect and Building News.

San Francisco, April 22, 1898.

Dear Sir—Your favor inquiring as to the noticeable effect of the recent earth-quake on tall buildings of steel skeleton construction, is received.

In reply would say that the Claus Spreckels Building, having a base of 70'0"x75'0" and a height of 315 feet, i. e., having a height of four and one half times its base, has shown no signs of damage.

The closest inspection reveals no cracks, either in stone, mortar joints or plastering. No glass has been broken although some were bent plates of large size (72"x132").

The elevator guides are perfectly true, showing complete recovery from any movement the building may have been subject to.

We have mentioned this building particularly, believing it offers the best proof of the complete immunity of well constructed buildings from damage, from our occasional seismic disturbances.

Other buildings, above the usual height, in relation to their bases, coming under our observation, show no evidence of harm.

Very sincerely yours,

Reid Bros.

To the Editor of the California Architect and Building News.

San Francisco, April 15, 1898.

Dear Sir:—In regard to the last serious earth-quake and its results on high buildings which have been erected under my supervision, I beg leave to state, that having never been in favor of high buildings and never having constructed any buildings on the so-called steel or iron skeleton construction, I cannot give you any absolute information in regard to the effects of same. Have found no damage in any of the buildings which have been put up under my supervision further than slight cracks, especially where the wood partitions and brick walls are joined together, which condition of things have also found has occured in all steel buildings.

In one building only, a ware-house having a front composed of a series of arches which were tied together by very rigid concrete and iron woven panels was there any effect which amounted to anything like a damage, and there so slight, as to be of no consequence. In this case it is very evident that the main building had undergone a decided movement from east to west, during this movement, where unquestionably the piers and walls were out of plumb, the rigid panels caused the brick work to crack on the face, but on cessation of the shock, all these walls and piers regained their original position, now being perfectly true and plumb, and the building as strong as ever, as far as can be seen by very close examination.

Having examined personally fifteen or twenty large brick buildings, including the Telephone Building, the Otis Building, the Grosvner Hotel, and the building opposite the Grosvner Hotel, I found no traces of any damage done.

Yours very truly,

Wm. F. Smith, Architect.

To the Editor of the California Architect and Building News.

San Francisco, Cal., April 15, 1898.

Dear Sir:—In response to your favor of the 9th inst. requesting my opinion as to the effects of the recent earth-quake on steel-frame construction in this city, I am gratified to state that they have stood the test very satisfactorily. While none of us could have desired such an experience we have naturally been curious to know how a severe shock would treat the buildings in question, and it is comforting as well as interesting to observe that while the vibration must have been very marked the buildings show no damage from this cause. The hour of disturbance precluded any concerted opinion as to personal experiences during the shake, as the offices of the buildings were empty, but from the reports of the few people who happened to be on the upper floors of two of the taller structures I judge that force of the oscilation must have been in proportion to the height from the ground and possibly by reason of the rigidity of the steel-frame the shock may have been intensified.

One of the three office buildings in which I have had a professional interest rests on piles averaging twenty-eight feet, driven to hardpan, in which the estimated load is very much within the limit of subsidence for each pile. The occupants of the top story of this building had an uncomfortable shake up, but the building shows no damage.

As the several members of steel-frames are either cased in terra cotta or inbedded in the masonry, we have no ready means of observing the lateral or shearing strains, which are the especial points of interest to the architect, but the fact is demonstrated that in properly constructed steel-frame buildings an earth quake will leave fewer marks of its force than in the cases where the walls have been anchored to wooden beams in the ordinary method of construction.

Very truly yours,

Clinton Day, Architect.

Editor California Architect and Building News.

San Francisco, April 22, 1898.

Dear Sir:—Referring to your favor of April 9th, asking my general observations, together with the result of my examinations, upon buildings which I have built lately in San Francisco, of the effect of the recent earth-quake, I beg to state as follows:—

On the morning following the shock I visited several of the buildings in question, the first one being Mr. W. F. Whittier's residence on the NE. cor. Jackson and Laguna streets, and as far as the exterior of the building was concerned noticed no effect whatever. I did not go inside, but afterwards saw Mr. Whittier at his office and, upon inquiring as to any damage done, he said there was none except the shaking down of a few flakes of loose plaster. The only place that this occurred was on the wall side of the rear stairway where the plastering ran continuously from the first story floor passed and above second story floor. At the junction of the second story floor there are joists usually placed running horizontally and parallel with studding. These joists had shrunk and buckled the plaster off slightly, producing cracks, and it was the loose plaster from the cracks which was shaken down in a fine dust on the floor below. Otherwise no damage throughout the entire building.

In the W. S. Clark Building, NE. cor. Bush and Battery streets, I examined same carefully from top to bottom inside as well as outside, and was unable to detect the slightest damage, there being no cracks visible except such as could be accounted for by natural causes and which existed before the earth-quake occurred. This building is one denominated in the Fire Ordinances as Class B. It was built upon made ground, the foundation being piled. The piling of this building was rather peculiar, inasmuch as the original shore line of the bay of San Francisco ran diagonally from the NW. corner of the building to the SE. corner, thus cutting the lot in half, the Westerly triangle being upon firm ground and the Easterly triangle on mud. This I ascertained when piling, the piles in outer triangle being 60'0" long at the extreme NE. corner of the building and from thence running to SW. corner of building down to 14 or 15 feet in length. The building was originally calculated, however, very carefully, as far as weights were concerned and the same amount of load per square foot imposed upon the foundation in all cases. Whether this had anything to do with its stability I am unable to state positively, but I believe that it had a good effect in keeping the building free from damage. In other words, when the shock came, one part of the foundation being as strong as the other, the building moved as a whole and was not shaken in parts as would probably be the case were one part of the foundation less strong than another.

In the Hobart Building on Market street which I built twelve or thirteen years ago, and which was the first building in San Francisco to use partial steel construction, I noticed no evidence of disturbance on the exterior. I only looked at front however and did not examine the interior, as the building has since been altered and made into offices. Throughout the entire front, which is a very complicated piece of construction I did not notice any cracks whatever.

The Union Depot and Ferry House I examined very thoroughly and carefully throughout, and the only cracks I could find were at the junction of the tile partitions with the overhead beams, and in one or two cases the walls themselves had cracked and some of the plastering fallen off. The cracks at the junction of the beam and top of partition were caused, in my opinion, by there not being placed on the underside of the beams any means of fastening or steadying the tile wall. The original specifications did not provide anything and no steps were ever taken subsequently to fasten them. Had there been a 4" channel placed flat side upwards into which the partition could have been wedged, there would probably been no cracking.

The only other evidences of disturbance I found around the building was in the upper stories of the tower in SE. corner thereof, where a small crack, probably a sixteenth of an inch in thickness, made its appearance in second and third stories.

I examined very thoroughly the junction of the tower with the main building and found no cracks, which was rather remarkable considering the fact that this tower is 245 ft. high and must have vibrated considerably at the top. This would produce a crushing and grinding effect on its junction with the main building, but so far as I could see not the slightest effect was produced.

I examined particularly the grand nave, which is an open space 45'0" wide and 66o'0" long running about north and south, from which direction the shocks came principally. This nave is covered throughout its entire length and width with marble wainscoting in large slabs, there being a base about 2'0" high, then a plain space about 9'0" high, capped with a complicated marble cornice. I looked principally for evidences of disturbance in the vertical joints of the long slabs, which were, as I said before, 9'0" high and about an average of 4'0" wide. I was very much surprised to find that there was not even the slightest crack visible, the original pointing being all in place and no spawling of edges having taken place. This is more remarkable when it is

considered that the wall on Easterly side of nave between the piers is composed of heavy wooden studding diagonally boarded. It would seem that if any damage were to be done it would occur at these points, but, as I said before, nothing was visible.

In the Crocker Building where I have my office, I examined only the rooms which I occupy and found no cracks whatever. I do not think that any cracking was done or any damage on either the exterior or interior of this building, otherwise if there had been I would have heard of it.

Yours very truly,

EDWARD R. SWAIN.

Ca *Architect and Building News.*

SAN FRANCISCO, CAL., April 16, 1898.

DEAR SIR:—Your letter is at hand relative to the recent seismic disturbance in this City, and to general observations and results of examinations made upon high buildings, so that through the opinion of the architects in this city, your valued journal may be able to compare the relative value of the two systems of construction followed in our midst, viz., the old or solid masonry unfortified by metal skeleton, and the new, viz., combination of masonry and steel frame.

In answer I have simply and briefly to say that if you desire to investigate properly the true merit of a certain system of construction it would, I feel, be wisdom to take for example the structures, which because of their excessive height and limited ground area, will be most subject to oscillation from the effect of wind force and earth-quake shock, and should such structure be found to resist the greatest forces, lower buildings, such as the Mills, Crocker, etc., of same construction, with greater ground area, will cenrtainly be proof against the same acting elements and need not become a part of your investigations.

We have in our city two tall structures of comparatively equal height and ground area.

One, The Claus Spreckles' building, square in plan and complete in every detail, with a rigid steel frame, the perpendicular wall surfaces subdivided into panels of minimum height by heavy steel masonry floors and said wall panels again subdivided to the greatest degree by solid partition walls from ground line to uppermost point. It is a splendid example of our modern system of construction as applied to an office building.

The architect was afforded the opportunity, was provided with ample material, took advantage of the situation, proved equal to the occasion, and in a masterly manner gave to the city a building more limited in ground area when compared to its perpendicular than any other building perhaps in the world; beautiful in design and irresistible as far as known forces are concerned in its perfect stability as has been proved beyond question by the recent disturbance.

If The Claus Spreckles' building, therefore, has not been found wanting, the system of construction employed is certainly ideal, no matter what might have developed in other buildings of similar construction, of lesser elevation, for the fault could not be laid at the door of the system but the manner of its employment.

The second structure is the New City Hall Dome, for which I am responsible. It is circular in plan, of equal height, almost same ground area, and after similar system of construction as The Claus Spreckle's building, but incomplete as a perfect building in being destitute up to this date of many essential members, such as its solid floors and partition walls at every story height, all of which were provided for by me in original design, but not placed because o the lack of funds in the public treasury.

And while it is unfortunate and to be regretted that it has been impossible so far to find the way to supply these most necessary re-enforcing members in the Dome, that it might have become as rigid as was originally intended, and be able, thoroughly, to the very last degree to resist all such horizontal and upward forces, as of recent occurence, or of increased intensity, without slightest indications of effect, still the lack of same has now demonstrated the absolute necessity of these things being placed, and also produced ample evidence of the severity and tendency of the shock, which would otherwise be unknown, upon masonry not as yet perfectly re-enforced by steel, as above mentioned, and it also afforded evidence of the imperceptibility of the shock upon the frame itself and all masonry brought in proper relation with said frame from foundation to crown line, and emphasizing, therefore, in this case more than any other the crowning virtue of the steel frame in building.

The Dome, though circular in plan, has been designed originally from an interior point of view as a model office building, with steel frame so arranged that great solid floors may be placed every fifteen feet from base of first order up to the very summit, and each of said floors subdivided by partitions, and as The Claus Spreckels' building for example, without a single floor or partition from foundation up, (one great open shaft) would be robbed of a mighty and indispensible element of its present rigidity, just so is the Dome, at this date, (deprived of these vital members of re-enforcement) possessed of only two-thirds of the strength, rigidity and utility originally contemplated, and was, therefore, as is evident with such existing conditions, subjected during the late tremor to a many fold more serious trial than any other structure in this city or elsewhere.

My examination of the Dome developed these facts, that in every particular the steel frame was rigid, and that all materials in contact with same in perfect condition, but at the very centre of the Dome, because of the nature of the movement or forces, being deprived of the essential weight and horizontal or lateral bracing which would be afforded, as above mentioned floors and partitions, I found one of the terra-cotta wall panels somewhat cracked, which was the sum total of the injury done, and which could never have occured were the Dome entirely complete, as I have above described.

The Dome, therefore, was the only structure, of the many buildings of steel construction in this city, which, though severe as the trial was, bore the slightest evidence that the earth-quake had occured, and the strong reasons in this one particular case, why it could not be otherwise expected, and how it could have been and may yet be easily avoided, I have, I trust, clearly presented.

All other buildings throughout the City and State damaged in any way belong to the system of construction, viz., solid masonry. Hence it is evident to the general public, (for it could never be discussed in the profession), that in a city like ours, subject to periodical tremors like the recent one and perhaps two fold greater, that the only character of building to be erected, if we aim to possess the most perfect type is that of steel frame complete, supporting enclosing walls, if possible, at every floor line, and through which steel frame all weights are transmitted directly to foundation, and by which metal skeleton all parts throughout are perfectly united.

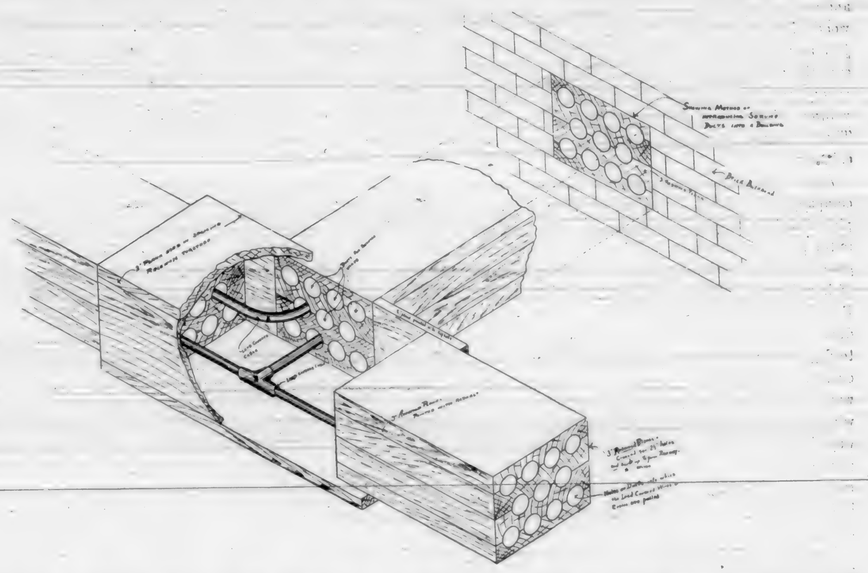
Respectfully,

FRANK T. SHEA.

HOW TWO WEALTHY CITIZENS BECAME EXPERTS IN TIMBER PHYSICS.

THE WORLD'S ELECTRICAL EFGINEERING EXPERTS GIVEN A LESSON IN ECONOMICS, AND INCIDENTALLY IN CONDUIT CONSTRUCTION

The business of selling electric current and telephone communications in large cities has acquired, as every reader of this Journal knows, enormous proportions. The tendencies of municipal legislation, growing more exacting each year, in opposition to the use of poles and all other known supports for overhead wiring, brought the companies who are in the business to stay strictly for the revenue there is in it, face to face with a problem, the solution of which was the underground conduit system. The placing of wires underground becoming compulsory within the limits of traffic congested districts, the question of doing so in the most effective manner conducive with safety to the life and property of others, together with the necessity for obtaining satisfactory results where space was very limited, access to conduits difficult, and where large consumption from many consumers made arrangement of construction very intricate, was a mathematical and mechanical problem that taxed severely the brains of many of the best electrical engineering experts that the world has as yet produced.



One of the greatest difficulties that continues to confront the companies engaged in the business for a legitimate profit, is that of discovering a material from which an ideal conduit may be constructed. The cost is of little consequence to such companies. Expense as an obstacle to the adoption of a conduit should never be considered.

Consideration should be given to, maximum of safety to life and property, minimum of danger to the consumer and to the companies' employees, and lastly, utility for the active service for which it is produced.

These surely are all the considerations that trustworthy men, acting collectively or singly, should allow to enter in judging of what constitutes the better conduit.

This leads to a short Wood digression, made necessary in order that the reader's mind may receive the right amount of preparation for the coming disclosures regarding the great discovery, recently made by two wealthy experts, long residents of this city, and neither of them heretofore suspected of expert knowledge in Timber Physics.

Until very recently no company in any city of the world using conduits for underground wiring service had utilized wood for underground conduits or raceways, as a means of distributing electric currents. This great discovery of wood as a suitable material for such conduits may open up a vast vista of wealth for the owners of redwood forests, and then again it may not.

However that may be, it is a substantiated fact that this great discovery was a simultaneous one on the part of the wealthy investigators. By the expenditure of two cents in postage, jointly contributed, they obtained from the Forestry Division U. S. Dept. of Agriculture the much wanted information, that the most important consideration had heretofore been given to Wood as a material of construction; they also found that the use of Wood as a substance which may be altered physically and chemically is far more important than is generally admitted. Immediately after carefully digesting—mentally—this wonderful piece of intelligence, the wealthy investment producers became imbued with a sudden and consuming joint desire to alter the physical and chemical properties of redwood as a substance

for underground conduits at the very least cost to themselves; but utterly regardless of the cost to the people at large or to fire underwriters in particular.

Among the enumerated physical properties of wood is "color" and "behavior after seasoning." These two physical properties these old sinners—experts, rather—very deftly altered by a burning process of their own, and a graphic description of this process is given in the accompanying description and diagram of the Alma Keith fire, a tenant of his honor, the Mayor.

This fire process through underground redwood conduits brought out some properties of the wood—asphaltum treated—which should attract the attention of the city authorities, as well as the fire underwriting experts. These are its intense propensity to produce dense and penetrating volumes of gases and smoke, under easy provocation. This property of the redwood of course interests the wealthy experts but little; it is just as well, however, to call their attention to it, otherwise something might be lost to them. Perhaps, another great discovery will be the outcome, whereby these penetrating dense volumes of gases and smoke may be turned to some account. The resources of the aforesaid wealthy experts being almost inexhaustive.

And in this Wood digression, with the aid of the accompanying diagram, showing graphically the method employed and the easy access through the open ducts, leading into the premises of patrons, for either fire, smoke, or accumulated gases, will be found the true story of the great discovery and of how it was that these streets underground of poor old San Francisco, became filled with redwood planks, grooved with ducts, piled one on top of the other, spiked together and made to do duty as underground conduits for distributing electrical currents by means of lead covered cables drawn into the raceways. The planks are generally about 3 inches by 12 inches, with 2½ inch grooves cut therein. This set of ducts or raceways is laid in the streets from the powerhouse along the various thoroughfares where it is intended to supply electric current for light and power. (Wherever a consumer along the line is secured, a service is introduced into his basement in a manner similar to the method shown by diagram.)

Every two hundred feet or so a brick manhole is located, having a cast iron top set flush with the paving. This manhole or junction box is installed to facilitate the drawing in and out of the various cables.

It is the custom when installing this system to install extra ducts—i. e., more than present needs demand—in order to have room for additional cables as business increases.

The matter of drawing in these cables is a safe enough proposition from an electrical standpoint, before the conduit has been cut or chopped into to make service connections.

The timber which composes this conduit system not having been laid on a concrete or other stable foundation, soon settles at these service points, and when the additional wires are drawn in the lead and insulation is torn or abraised by the sharp corners, thereby laying bare the conductor. The conductors may be conveying any voltage from 100 to 7,000 volts. It will be readily understood that with a potential anywhere near the latter figure a break in the continuity of the insulating covering will soon cause trouble. This was demonstrated recently in this city. Employees of the Mutual Company while drawing in the cables or in working in the opening in the ducts abraised the lead covering and injured the insulation to such an extent that the leak of current permitted thereby set fire to the asphaltum soaked ducts and soon had the lead melted and insulation burned off adjacent wires, and a general mix-up in the conduit was the result. From this point the smoke and gases traversed the raceways of a nearby service which terminated in the basement of Alma Keith's millinery establishment in the Phelan Building, and causing a loss to the fire underwriters of $1,200.

This same trouble is liable to happen at any time where conduits and raceways are installed in this manner.

Any conduit system employing open ducts is, in addition to being capable of conducting smoke and gases from a fire originating therein, a collector of other gases which have escaped from neighboring pipes conveying illuminating gas which permeates the ground, and if the joints in the conduits are not carefully installed, these may in a short time collect enough gas to become a source of great danger from explosions and fires.

It is from this fact that any company which connects such a system to the basement of a customer, with similar ducts, and does not seal up the ends of the raceways, should be held liable for any damage resulting from this criminal negligence. It might be further stated that the ducts which convey the cables from the main conduit to a basement should be of a fireproof material, certainly never of wood, made more inflammable by a coating of asphaltum. An iron tube with an insulated lining should be insisted upon by the fire underwriters' association.

While the street work may be without the pale of the insurance companies, it comes within their jurisdiction, and strictly within that of the fire marshal, when the wires are brought to the sidewalk line and enter the building basement.

In several prominent places high tension electrical apparatus is installed by Mutual Outfit, where it is within reach of anybody and where not even a sign is placed notifying the public that the potential being carried by the wires and bare parts is up in the thousands and "Hands Off."

Installed in the basement of Lucke's Shoe Store on Market Street, for instance, are several arc cutout switches; these have had, for some reason not known to the writer, their covers removed, thereby exposing the metal current carrying parts for the inspection of the buzz-saw boy. These switches, carrying as they are, a current of several thousand volts, would without a doubt electrocute anyone touching same.

The same condition of affairs, or worse, exists at Summerfield & Roman's, clothiers, Fifth and Market Streets; Johnson's Restaurant, History Building, basement, gore corner of Geary and Market Streets, and several other places. This condition of affairs should be looked into as it is criminal to allow them to exist.

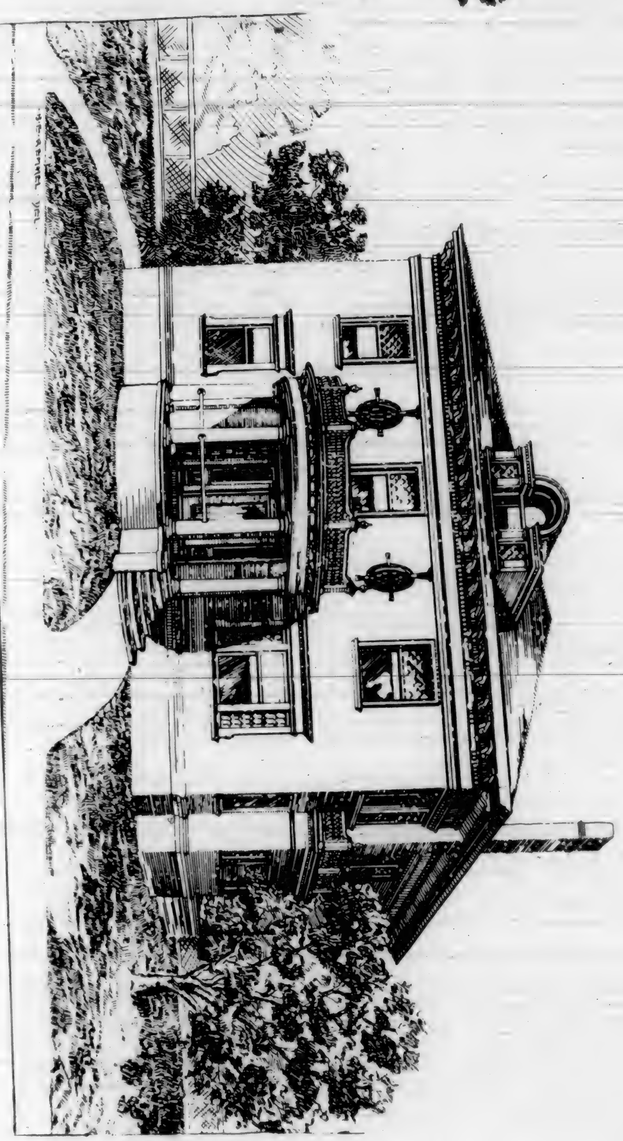
Consumers of electrical current looking for cheap service can find it readily enough, if they assume all risks to life and property that the methods of these experts in Timber physics, and in other things legislative, municipal and judicial, will give them, free of extra compensation. Applications for this kind of cheap service may be made to philanthropist Alvinza Haywood, Esq., care of the People's Anti-Monopoly Low-Price Waterworks Company, Oakland, or to his fellow-discoverer, also a pure philanthropist in his own right, Mr. Barry Cornwall, care of the Coal Combine, U. S. Appraisers Building, or to James

YOUTH'S DIRECTORY.
C.J.I. DEVLIN, Architect.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XIX No 4 APRIL 1898



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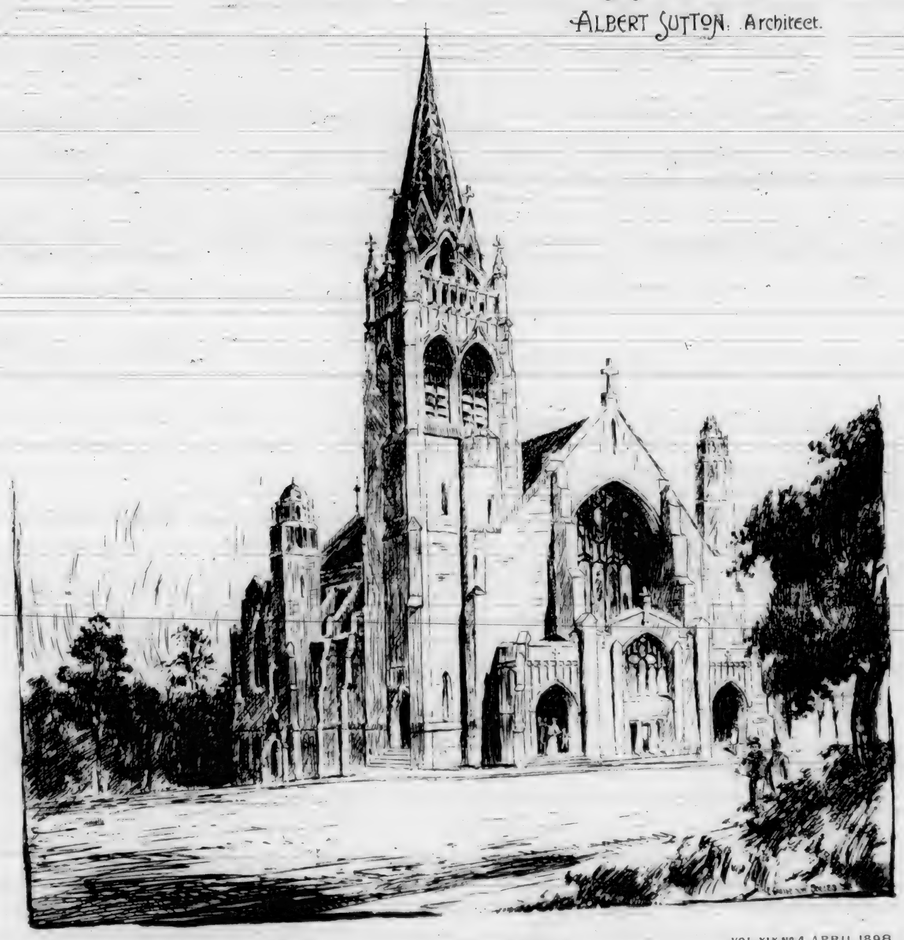
DESIGN FOR A CHURCH.
ALBERT SUTTON. Architect.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XIX N° 4 APRIL 1898

DESIGN FOR STONE BUILDING.
ALBERT SUTTON, Architect.

Fisher, Esq., Secretary of the Mutual Electric Light Company, limited—only as to time of existence.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

RESIDENCE for Mr. F. W. Voogt, Alameda, Cal., B. E. Remmel, Architect.

YOUTH'S DIRECTORY, C. J. I. Devlin, Architect.

DESIGN for a Church, Albert Sutton, Architect.

DESIGN for a stone Building, Albert Sutton, Architect.

THE USE OF STONE IN SKELETON CONSTRUCTION.

E. MCL. LONG, C. E., IN STONE.

A STONE wall is a rigid mass of solid stone and cement from face to back, and is as durable as the foundation on which it rests. Through all ages it has been a symbol of strength, and represents stability and solidity.

All massive structures, and those designed to stand through centuries have been built of stone, or stone and cement, with no other material entering into their construction; and in viewing an edifice of this character, whatever may be its architectural rendering, one cannot be impressed with its appearance of strength. The walls sustain the weight of the building, and are thick, with small openings for doors and windows, thus showing to all observers their ability to do the work for which they are designed.

We have become so accustomed to looking upon stone, when used in the walls of buildings, as the strength-giving material of the structure, that it is rather hard for us to consider it otherwise. It is, therefore, that the architect in applying a covering of stone to a structural steel frame endeavors to create the impression that the building owes its stability to this covering. This hallucination has been partly produced by constructing heavy basement walls and reducing the size of windows to a minimum and giving them deep reveals. While this form of construction may be pleasing to the eye, as we are now trained to look at stone work, it is a fraud and is certainly very undesirable, from an economic standpoint, for stone work is expensive and every extra pound causes an increase in size of beams and columns, and from a practical standpoint since the most desirable thing in an office or store room is to have a maximum amoudt of light. In most instances, however, where light rooms and economy are the prime objects of the designer, the stone is applied so as to produce very queer results. Where the ground floor of a high building is used as a store, the windows and doors occupy nearly all the wall space and we see twenty stories of masonry supported by stone piers scarcely sufficient in size to support their own weight, and stone beams or flat arches three feet deep carrying a superimposed load of hundreds of tons over a span of twenty feet. We can hardly, however, class this as an architectural fraud, for it is self-evident that the stone is not doing the work as represented.

However applied, stone has become very popular, at least, as a covering for the fronts of steel constructed buildings, and while it plays no part in the structural strength of the building, it still has its own duties to perform in affording a protection against the weather both for the interior of the building and for the steel work. So, from the top of the beam at one floor level to the bottom of the one above, it is a stone wall, and as such acts an honest part, and it is an error to say that a steel skeleton is covered with a veneering of stone, for the stone is a necessary part of the structure, and the completed wall is a combination of stone and steel in which each material has its duty to perform.

During the period when the steel skeleton constructed building was first being brought into use, the question was often asked whether two materials, of such different physical natures as stone and steel, could be joined together to form a solid whole. The question has been well answered by the number of examples we have, in none of which have the different rates of expansion and contraction damaged a building. This difference is not as great as most people would suppose. For a rise of 100° in temperature, steel expands one-eight of an inch in sixteen feet. For the same rise in temperature, granite expands one-eight of an inch in twenty feet, and marble one-eight of an inch in eighteen feet. According to these figures, since the stone is exposed to the extremes of temperature and the steel is protected, we might infer that the stone expands or contracts more than the steel. However this may be, since no practical inconvenience is produced, we will let the question drop, and confine out attention to methods of building the masonry to the steel.

The typical steel skeleton building is one in which the frame of steel is designed to carry all permanent and temporary loads and convey such loads through its columns to

the column foundations, and among the permanent loads is included the weight of the walls. The walls rest on beams, commonly called spandrel beams, at each floor level, and thus each wall is the height of one story and has only its own weight to sustain, whether it incloses the first or twentieth floor rooms.

The problem that presents itself to the architect is to construct a wall to fill up a rectangular opening in the side of a building. As a foundation for this wall he has a steel beam, or a combination of beams, to limit its height; he again has beams similar to the foundation beams, and to limit its extent laterally he has steel columns. The foundation beams are designed to carry the weight of the superimposed wall with a minimum amount of deflection and the wall must be designed to be as light as is consistant with strength and its efficiency as a protector against the weather. It is better that this wall should be entirely of stone than of brick with a stone facing.

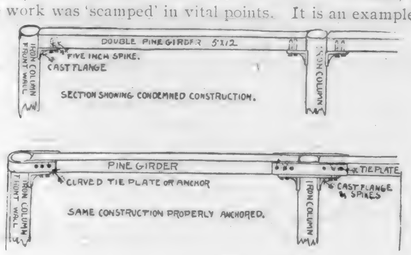
As steel buildings are at present constructed, another condition to be fulfilled is that all beams and columns must be protected against the weather. This will necessitate the outside of the beams and columns being at least 8" within the building line.

To be Continued.

SLOW-BURNING CONSTRUCTION.

THE AYER building in Wabash avenue in this city which, on the 16th inst., collapsed in less than ten minutes after the fire started was a so-called "mill-construction" building. The awful catastrophe demonstrated it to have been nothing but a fire and death trap of the most dangerous description.

It was a large area building, seven stories high, 80 feet wide and 160 feet deep. The front was entirely constructed of iron and glass. It was built in 1890 at a cost of $112,000. The original owner says he gave the architect carte blanche for a substantial mill-constructed building, and that when it was finished it was so well liked by the insurance people that he secured a "very advantageous rate for it." If that is true then the architect has a terrible responsibility hanging over his head. Ten persons lost their lives and a score or more were severely injured, say nothing of the loss of $750,000 worth of property. One of the city building inspectors made an examination of the ruins after the fire and he is reported as saying: "This was not a cheap building. Plenty of first-class materials appear to have been used, but the work was 'scamped' in vital points. It is an example of



pure carelessness on somebody's part, as the cost of doing properly what was neglected in this case would not have exceeded $200 for the whole building."

As to the construction of the building Deputy Commissioner Shea of the building department in his testimony said: "I found the columns with a 1½ in. cast iron flange to receive the wooden girders, and said girders were fastened with two five inch by one-half inch wrought iron spikes (see first diagram). No iron straps around the columns connected with the girders, as there should have been (see second diagram.) I also found the interior girders fastened to columns in the same manner, with an iron strap twenty-four inches long and two inches wide by one-half inch thick, with nail holes in the end of each strap. These straps were fastened to the side of each girder by three-inch by one-quarter-inch spikes. The iron anchors of the north and south walls project about six inches outside of the walls, with two nail holes in the ends. The building was of mill construction. The joists were about nine and a half feet long, four feet apart. Joists were six by twelve inches. The length of girders about sixteen feet, made of two pieces bolted together.

In the same City on the Tuesday following the collapse o the Ayer building, the Shoeneman, another "mill construction" affair, became a total loss by fire, the immediate cause being the explosion of a gasoline can. This building was seven stories in height and the whole inside fell to the cellar in a remarkably short space of time.

If these buildings had in fact been mill-construction they would not have burned as they did. Everybody who knows anything about mill-constructed buildings knows that they are so built to be slow burning. That is what they are built for, and that is why the insurance companies make a lower rate on them than they do on buildings of ordinary construction. But from the frequent and disastrous fires in the last year in so-called fire-proof and mill-constructed buildings, it begins to look as if they were the worst kind of fire-traps, and built solely to deceive the insurance companies. It is about time for the companies to look into the matter. They owe it to themselves and to the public. It will not do to depend upon the city building departments. They cannot be depended on. That has been demonstrated in the Ayer building.—*The Investigator of March 26.*

[NOTE—The Shoeneman stood between the old Colony building, seventeen stories high, on one side, and the Manhattan building, sixteen stories high on the other. Both of these sky-scrapers were of the steel skeleton construction and neither one of these buildings was much endangered by the fierce heat.—[EDITOR.

SOUTHERN UNION STATION AT BOSTON.

A RAILWAY passenger station that in size and equipment will be without equal in the United States, perhaps unequaled anywhere in the world, is now in the course of construction at Cove and Summer streets and Dorchester avenue, Boston. The total investment of the Boston Terminal company, which has conceived this project, will amount to nearly $12,000,000. Four million dollars will be expended in construction, the contract price of the main station building alone being $1,100,000. As a whole, the station was designed by George B. Francis, engineer of the Boston Terminal company, assisted by the chief engineers of the roads that will ultimately use the station.

The design involves a unique feature in station construction. In the first attempt to introduce into one terminal an electric suburban service, and the regular through passenger traffic of a steam railway. The difference in character of the suburban or commutation passenger traffic and the passenger traffic which goes beyond the commutation points

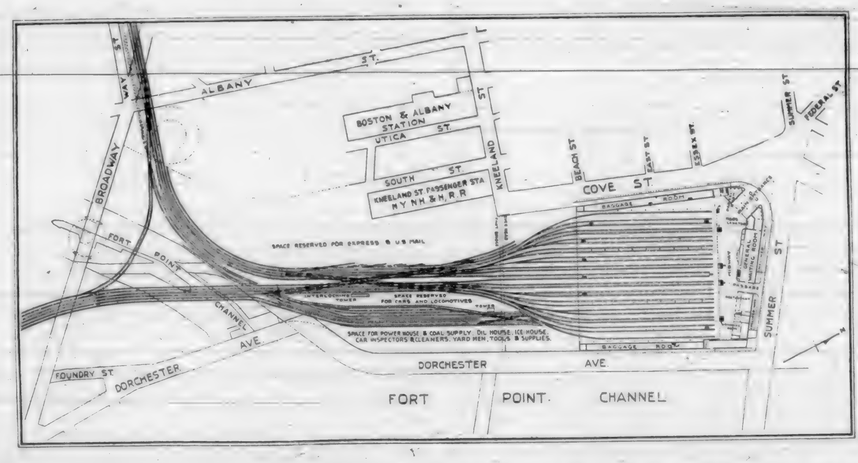
has long been recognized, but the system of handling the former by means of a subway was never successfully projected up to this time. It is the design to handle the traffic of the southern union station upon two floor levels. In the subway two loop tracts with ample platforms will accommodate the entire electric suburban service, while the upper floor will provide for the steam passenger service, with 28 stub tracks capable of holding 350 passenger cars.

The main entrance to the station will be at the corner of Sumner and Cove streets, where it is built on the arc of a circle for a distance of 228 feet. On either side of the curved portion the main building extends 320 feet on Sumner street and the same distance on Cove street, with a further extension of 350 feet on the latter thoroughfare for baggage-rooms. The general waiting-room on the first floor will extend through two stories, and has an area of 65x225 feet.

A general idea of the size of the station may be obtained from the fact that the main and connected buildings have a roof area of 700x650 feet, the largest railway roof in the world. The structures will require about 15,000 tons of steel and will rest upon 40,000 spruce piles. The architects for the building are Messrs. Shepley, Rutan & Coolidge.

The first story and basement are devoted entirely to railroad purposes, the second story to offices of the terminal company and general offices, with restaurant rooms in addition to those provided on the first story. The third, fourth and fifth stories will be occupied by the offices of the several railroad corporations forming the terminal company.

The suburban station in the subway, accessible by either inclines or steps, is below the level of the ocean, which is but one hundred feet away. This necessitates the use of about eight acres of waterproofing material to shut out the water effectually. Above this is placed an average of 3½ feet of concrete to resist the water pressure.



At this time seven-eights of the work on the new station is under contract, and about one third of the construction has been accomplished. Norcross Brothers of Worcester Mass., are the contractors for the foundations and buildings, excepting the steel work for the train shed and the bridging over the suburban tracts, which is let to the Pennsylvania Steel company. About $250,000 is being spent on construction monthly.—*Construction News.*

ELECTRICITY IN MODERN BUILDINGS.

IN THE construction of a certain class of building a steel framework, filled in with stone or other material, is being very largely used, and as electricity is rapidly becoming the means of distributing light and power, and to some extent, even heat, throughout the halls, corridors, offices, etc., of any building which proposes to offer all the best modern conveniences, it may be worth while to consider whether there will take place any interaction between the steel frame work, considered as a conducting network of comparatively low resistance, and the electric circuits which distribute the lighting and power current. It is, of course, evident that such a steel framework will offer a path of comparatively low resistance to any current that may be set up in it, and it is the purpose of this article to formulate those conditions which will tend to the setting up of such currents, and their fiscal effect on the building materials.

Suppose, says a clever writer on matters electric, we have a steel frame building with a complete system of electric distribution—for lighting, elevators, heaters, etc., etc.—it can easily be imagined that there may be set up inductively a most complicated and interlined system of active currents in the various uprights and horizontals forming the frame, and that they may be of quite considerable magnitude. This can occur not only in the steel frame itself, but in the piping for the heating or auxiliary gas lighting services. With a direct current distribution for lighting only, these induced currents would probably have a negligible effect, as it is only at the moment of make and break that inductive action would take place, although even in such a case a direct current, though continuous in direction, will have sufficiently small fluctuations in strength (owing to the fact that the number of coils in the armature is not infinity) to keep up a continual alternating current in all the pipes and beams parallel to it and within the sphere of its influence. But in very many cases current is distributed for elevator and motor purposes, and here we find not only the small fluctuations due (as mentioned above) to the armature construction, but also that fluctuation due to the varying demands of the elevator and motor services, which, while not so rapid, will have an enormously greater amplitude, and so a much greater inductive influence. There are very many buildings, moreover, that employ an alternating current for lighting, the influence of which requires no pointing out. So that it appears that there will always be some circuits induced in such buildings, whether in the frame or the piping.

It is well known that an electric current flowing in a circuit must produce one effect and may produce more. It must heat the conductor and may decompose it. The heat generated in the conductor depends on the amount of current flowing, and on the resistance offered to it, and in a circuit of varying conductivity the greatest heat will be generated at the point of greatest resistance. In a circuit—again taking from the supposable case of the same writer—composed of beams and points of function will be those of highest resistance, and will therefore be the heating points.

Just how far the expansion and contraction due to heating and cooling may be expected to work with the natural vibration to loosen the joints, is a matter that affords a very interesting field for discussion and experiment. But if it be granted that it does have the effect of so loosening them, then such loosening will tend to promote the decomposing action of the current flowing, with the assistance of whatever slight amount of moisture has condensed out of the atmosphere (or elsewhere) on the opposing faces of the loose joint. This latter action of the current is probably of greater importance than the former, as its tendency is to loosen by decomposition, and just where the utmost rigidity and permanence is desired, viz., in the foundations. The electrolytic injury would take place just at the base of a steel pillar, where the current was able to escape to earth, and the effect would be to eat away the metal, as the iron of water pipes is eaten away by the passage of railway currents. The electrolysis of gas and water pipes might be even a serious matter unless precautions be taken to minimize its effect.

While it seems impossible to so arrange as that there shall be no induced currents in framework or piping, still it is possible, and in most cases would be well, to adopt such precautions as will confine them within such small limits that they may become negligible. It would be well to thoroughly ground the entire steel structure by copper wires of large section leading from various points to the earth, and making good contact there with permanently moist soil. It would also be advisable in laying out circuits to so arrange that all those wires carrying the main current shall be as far removed as possible from any part of the structure, and as close together as insurance regulations will permit. If it be necessary for the main wires to be close to a pipe or pillar, and to run parallel to it, then they should be placed one on each side of it so as to neutralize each other's effect.

BOOKS AND PERIODICALS.

THE BROCHURE prints each year over one hundred half-tone engravings from photographs of European architecture, the subjects being carefully chosen, is those likely to be of most value and interest to architects and draughtsmen. Each issue deals with some particular building or class of subjects; the October issue for instance, illustrated in detail the Great Staircase of the Chateau of Blois; the December issue contained photographs of beautiful Italian holy-water fonts; the January number illustrated Sicilian churches.

It will be evident that such pictures are of great value, not alone to architects and draughtsmen and students of art, for whom they are primarily intended, but also to all those to whom the best of the world's architecture appeals. An article of detailed description and comment accompanies each set of illustrations.

Although these photographs and the description of them form the chief features of the magazine they by no means constitute its entire contents. Articles of various kinds are constantly published which interest all who in any way have to deal with architecture. It is a marvel that the magazine can be sold for the subscription price—50 cents a year.

CARRICK'S FIRE-PROOF CONSTRUCTION.

THIS fire-proof system is the invention of a practical plasterer and will remedy many defects and difficulties from which other systems suffer. The obect of this invention is to provide for the construction of complete floors, ceilings, partitions, columns, etc., in which a space is provided for ventilation, making the introduction of pipes and electric light and bell wires a very easy matter. The air space is accessible and wires may be easily run through or removed for repairs.

Partitions constructed of channel iron studding, set at every sixteen centers, bolted and fastened at top and bottom, and with transverse stiffening braces and sheet steel lath fastened thereto columns incased in the same way, ceilings formed with sheet steel lathing secured to angle iron bars, extending beneath the floor beams, and knees or brackets to which they are fastened, said knees being bolted to iron bands, which extend around the I beam, at every sixteen centers.

The concrete flooring to be supported by angle irons and knees or brackets as above, extensions of sheet steel upwards from the angle irons every thirty-two inches, said extensions riveted to the angle irons and having 2x2 inch wooden strips, nailed to the upper edge transversly for the wood floor to rest upon and from a space between floors and concrete for ventilation, piping and wiring purposes.

The sheet steel extensions also divide the concrete at their upper edges into panels, to prevent cracking in case of vibration, contraction and expansion. The lathing is made in sections or sheets, which are preferably made of galvanized sheet steel and by means of dies properly formed, these sheets are stamped with slots or channels, the portion which forms the slot is so cut that it turns inwardly and forms a key or lock to hold the plastering in place on the interior of the lath and also a ledge or support to prevent the plaster which protrudes inwardly, from falling down as is generally the case.

Carrick's lath construction is especially valuable for plastering on brick walls, as it does away with the necessity for plugging and furring, thus saving time and expense.

The sections are attached to the wall by means of large nails driven into the brick joints, while the supporting V shape rib, acts as a furring strip. It should be understood that the system takes in the plastering work as well as the fire-proofing.

The inventor claims the following points of superiority: 1—Simplicity and rapidity in construction. 2—Absolute prevention of cracking or bulging. 3—Easily and quickly repaired. 4—A splendid sound deadener. 5—Fire, water and vermin proof. 6—Gives perfect ventilation, making it especially valuable for use in large buildings.

THE BEST FIREPROOF CONSTRUCTION FOR BUILDINGS OCCUPIED FOR MERCANTILE PURPOSES.

PAPER READ BY W. L. B. JENNEY BEFORE THE FIRE UNDERWRITERS' ASSOCIATION OF THE NORTHWEST.

CONTINUED FROM LAST ISSUE.

WE now reach the question under discussion: "What is the best fireproof Construction for Buildings occupied for Mercantile Purposes." As recommended in the Appraisers' Report (Insurance World, July 1, 1897), "the first requisite is a good foundation," which in Chicago means that the loads shall be uniformly distributed, that is to say, the load upon each footing shall be carefully calculated taking into account the weight of the building and the load within, that is, all the load that will come upon said footing. Then make the size of the footings so that the load per sq. ft. shall be the same in every instance throughout the building. This load should not exceed

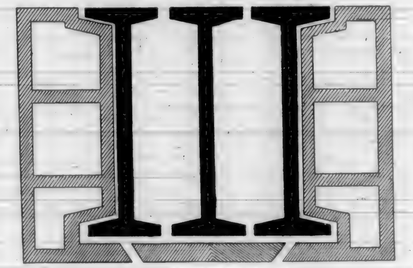


Fig. 2.

3,500 lbs. per sq. ft., for should this load be much in excess the settlement will be so great as to be inconvenient, and moreover continue too long, besides it increases the difficulty of obtaining an absolutely uniform settlement. With the load designated the total settlement should not exceed three inches, and should cease entirely by the end of the first year after the building is fully occupied. Any unequal settlement is not only a disfigurement to the building, but it causes a movement in the fireproofing that may be equal to a disarrangement, loosening the flange protection of the beams and girders so that they will fly off as soon as touched by a stream of water.

Second, fireproofing. This should be much more substantial than what is at present in general use. The recent fires have demonstrated that it is not difficult to protect the steel from injury. The fireproofing as usually constructed protects the steel, but is itself usually destroyed, causing serious loss. The material should be carefully tested by heating to redness and plunging into water, repeating this test five or six times. If it flies to pieces it is worthless. What is known as soft porous terra cotta, if the clay is good, usually stands well. This is manufactured by adding six parts of saw dust to four parts of fire clay. On burning, the saw dust is consumed, and furnishes a tile full of air holes or little cells, rendering it impossible for any hurtful heat to penetrate to the metal. The weakest part in the usual fireproofing is the protection of the soffits of the beams and girders. As usually constructed they are like Fig. 2, a long, weak flange on either side holding in a dove-tailed manner the soffit tile. The tile are also too thin and too close to the flanges of the metal beam. This is a serious fault, because the soffit is the very surface which has to resist the intense heat and action of the fire from the burning goods below, and is exposed to the direct force of the water.

In the *Clay Worker* of April 18, 1897, I find in the report of the proceedings of the last convention of the brick manufacturers at Buffalo, N. Y., a discussion of this subject. Mr. Gates, president of the American Terra Cotta Co. of Chicago, condemns the arrangement of Fig. 2, where the suffit tile

only 1 inch thick is placed close to the flanges of the beams, and only supported by the long weak flanges of the side tile. Mr. James Taylor, Fig. 3, made a diagram of a method he suggested which would overcome the dangerous method of Fig. 2—so justly condemned by Mr. Gates. He proposes a porous terra cotta flange 2 inches thick, Fig. 3, supported

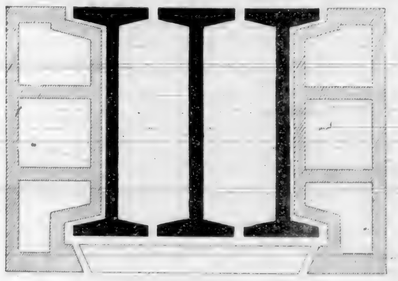


Fig. 3.

by short strong flanges on either side. By this method the whole surface of the metal girder is covered with a non-conducting material which has [illegible] to crack or break under the most [illegible] difference of temperature. The short flanges on either side reduce the liability of cracking or breaking to a minimum, and the additional thickness affords additional solidity without much increase of weight, and greater ability to resist the action of heat and water. In Fig. 4, Mr. Gates showed how the terra cotta could be

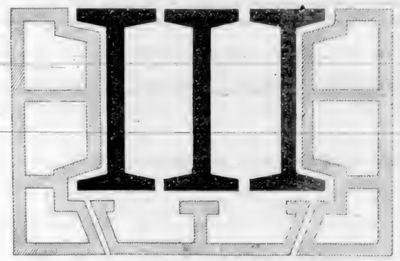


Fig. 4.

used in a double capacity, as a fireproofing protection and as an exterior finish when such girders are used projecting from exterior walls—mouldings can be added at pleasure. Care must be taken in dimensions and shapes in order that the side flanges shall securely hold the soffit tile so that it cannot escape or be knocked out by a stream of water. The floor arches should be very substantial, and what is known as "porous and end construction" is recommended. The laying of the terra cotta is very essential. Common lime mortar should be discarded as unfit for the purpose and Portland cement mortar should be used, adding only sufficient lime mortar to make it work freely under the trowel. Every joint should be filled with mortar over the entire surface and the tile crowded close together. In putting in the key, unless it fits closely, slabs of tile covered by cement mortar should be forced into the joints. It is very essential that these tile floors should be very rigid, as by so doing they prevent the lateral movement of the building not only in case of fire but as against high winds. If this work is well done they will take up a material portion of the wind pressure even in a building of moderate dimensions. In most of the fires that have occurred in fireproof buildings very serious damage has been done to the floor arches by scaling off of the lower webb, necessitating the replacing of the floors at an expense even greater than first cost. Concrete on top of the floor arches should be of good quality. Soft coal cinders should not be used. Crushed slag of the blast furnace is far better; it is full of air cells, and being produced at very high temperature is not affected by any heat likely to obtain. This concrete should not be inferior to that used in sidewalks, and when practicable should form the floor so as to avoid wood floors. The column protection is another detail that should receive the most careful attention, for the columns are the main supports of all that are above, and if a single one should fall it brings down all there is directly above it, and the loss is necessarily very serious.

At the Fair building the columns are doubly protected, see Fig. 5, so that should the outer layer of terra cotta be

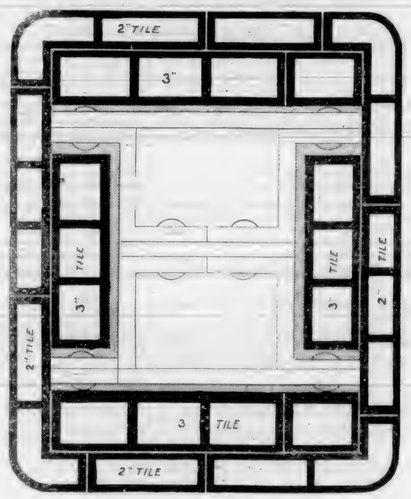


Fig. 5.

knocked off the column would be sufficiently protected by the second layer, which would be sufficient to resist the heat and prevent any serious injury to the column. For round columns there can easily be two layers; the inner one should be bound on firmly by wires or wire netting, which, lying close against the terra cotta, is itself protected. That this is the case can easily be shown by tying a piece of sewing cotton tight around a lead bullet and holding it in the flame of a candle; the lead will melt before the string burns off. The Chicago city ordinances demand in case of buildings devoted to the sale, storage or manufacture of merchandise, the covering of columns shall be of brick not less than 8 inches thick; if of hollow tile these coverings shall be in two consecutive layers each not less than 2½ inches thick; if of porous terra cotta it shall consist of at least two layers, each not less than two inches thick, each course breaking joints and to be so anchored and bonded in itself as to form an independent and staple structure. If this is carried out in a proper manner the protection is all that is necessary.

To be continued.

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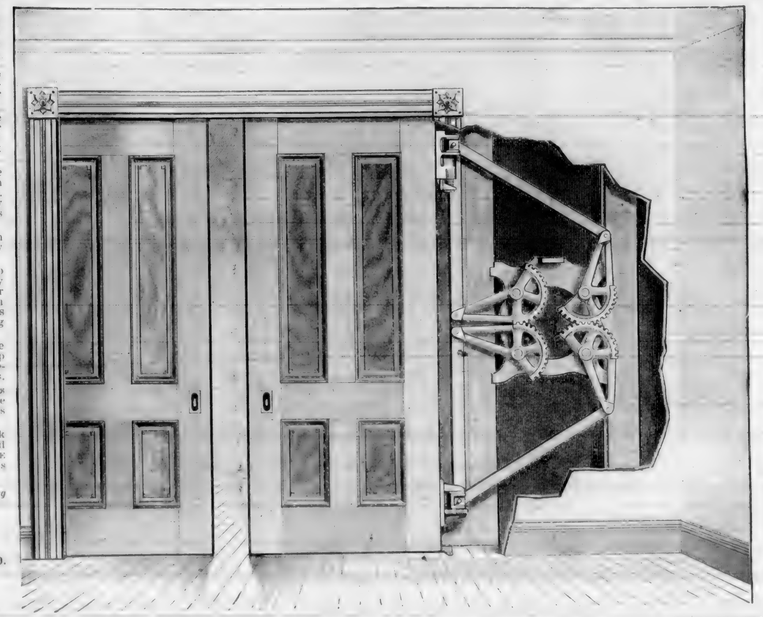

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Soapstone. CRUDE, GROUND AND BOLTED

Mineral Wool For fire-proofing and deadening

only 1 inch thick is placed close to the flanges of the beams, and only supported by the long weak flanges of the side tile. Mr. James Taylor, Fig. 3, made a diagram of a method he suggested which would overcome the dangerous method of Fig. 2—so justly condemned by Mr. Gates. He proposes a porous terra cotta flange 2 inches thick, Fig. 3, supported

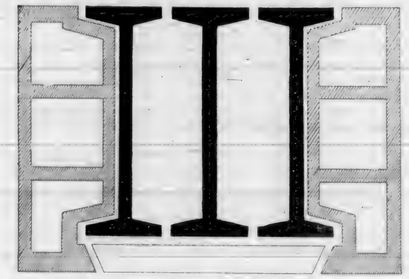

Fig. 3.

by short strong flanges on either side. By this method the whole surface of the metal girder is covered with a non-conducting material which has absolutely no liability to crack or break under the most severe differences of temperature. The short flanges on either side reduce the liability of cracking or breaking to a minimum, and the additional thickness affords additional solidity without much increase of weight, and greater ability to resist the action of heat and water. In Fig. 4, Mr. Gates showed how the terra cotta could be

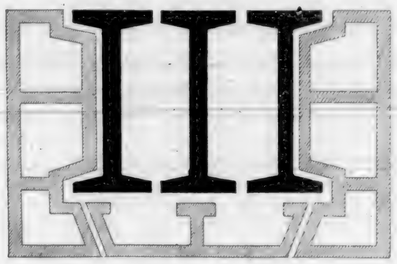

Fig. 4.

used in a double capacity, as a fireproofing protection and as an exterior finish when such girders are used projecting from exterior walls—mouldings can be added at pleasure. Care must be taken in dimensions and shapes in order th the side flanges shall securely hold the soffit tile so that it cannot escape or be knocked out by a stream of water. The floor arches should be very substantial, and what is known as "porous and end construction" is recommended. The laying of the terra cotta is very essential. Common lime mortar should be discarded as unfit for the purpose and Portland cement mortar should be used, adding only sufficient lime mortar to make it work freely under the trowel. Every joint should be filled with mortar over the entire surface and the tile crowded close together. In putting in the key, unless it fits closely, slabs of tile covered by cement mortar should be forced into the joints. It is very essential that these tile floors should be very rigid, as by so doing they prevent the lateral movement of the building not only in case of fire but as against high winds. If this work is well done they will take up a material portion of the wind pressure even in a building of moderate dimensions. In most of the fires that have occurred in fireproof buildings very serious damage has been done to the floor arches by scaling off of the lower webb, necessitating the replacing of the floors at an expense even greater than first cost. Concrete on top of the floor arches should be of good quality. Soft coal cinders should not be used. Crushed slag of the blast furnace is far better; it is full of air cells, and being produced at very high temperature is not affected by any heat likely to obtain. This concrete should not be inferior to that used in sidewalks, and when practicable should form the floor so as to avoid wood floors. The column protection is another detail that should receive the most careful attention, for the columns are the main supports of all that are above, and if a single one should fall it brings down all there is directly above it, and the loss is necessarily very serious.

At the Fair building the columns are doubly protected, see Fig. 5, so that should the outer layer of terra cotta be

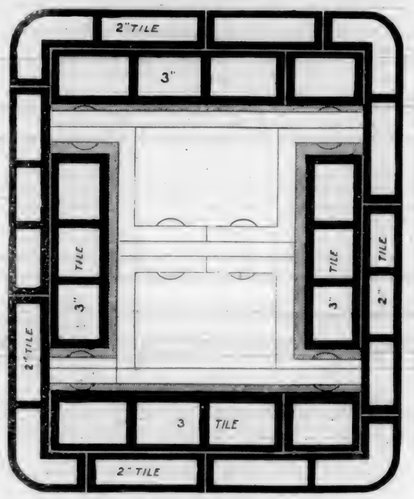

Fig. 5.

knocked off the column would be sufficiently protected by the second layer, which would be sufficient to resist the heat and prevent any serious injury to the column. For round columns there can easily be two layers; the inner one should be bound on firmly by wires or wire netting, which, lying close against the terra cotta, is itself protected. That this is the case can easily be shown by tying a piece of sewing cotton tight around a lead bullet and holding it in the flame of a candle; the lead will melt before the string burns off. The Chicago city ordinances demand in case of buildings devoted to the sale, storage or manufacture of merchandise, the covering of columns shall be of brick not less than 8 inches thick; if of hollow tile these coverings shall be in two consecutive layers each not less than 2½ inches thick; if of porous terra cotta it shall consist of at least two layers, each not less than two inches thick, each course breaking joints and to be so anchored and bonded in itself as to form an independent and staple structure. If this is carried out in a proper manner the protection is all that is necessary.

To be continued.

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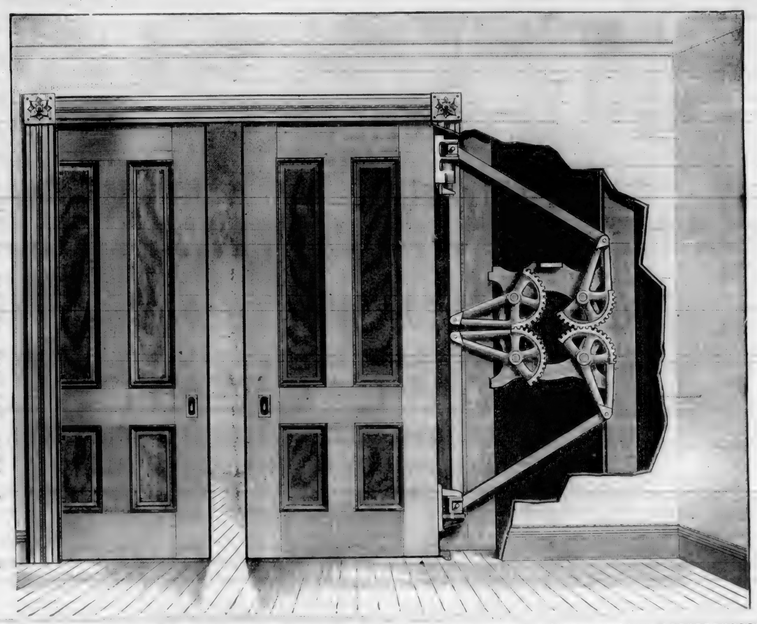

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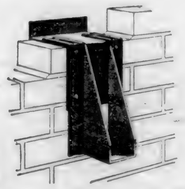

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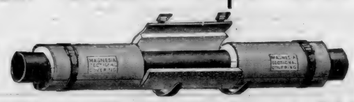

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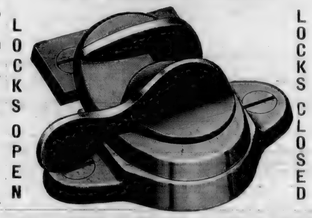

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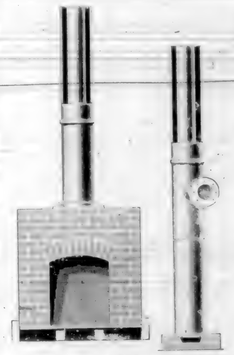

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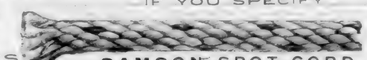

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$3.00 PER YEAR

VOLUME XIX. No. 5. MAY, 1898.

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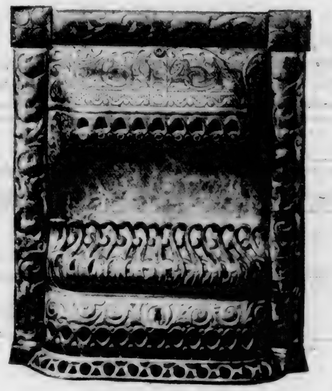

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Bartlett near 23d. To build; owner, Marie C. Kratz; c. H. R. Schmuckert; cost $3760.

Bernice near 12th. Two-story frame, 4 flats; o. Charles Fleischer and wife Kate; a. W. H. Wharff; c. Carl A. Holm; signed, April 27; filed, April 29; cost $3828.

Beulah near Shrader. Cottage; o. Martin Schmitt; c. W. W. Rednall; signed and filed, 12; cost $2300.

Bush and Jones. To build; o. Frederick Tillman, Jr., trustee estate of Claus Mangels; a. Hermann & Swain; c. Petterson & Persen; signed, May 10; filed, May 12; cost $2915. Sewerage, plumbing and gas fitting; c. Ickelheimer Bros; signed, May 10; filed, May 12; cost $1782. Painting, etc; c. W. T. Beck; cost $1400.

Bush near Kearny. Alteration; o. S. H. Seymour, J. W. Murphy; c. William Little; signed, May 2; filed, May 3; cost $2900.

Bush near Sansome. Cast iron work; o. Murphy, Grant & Co's building; o. Murphy, Grant & Co; a. F. S. Van Trees; c. Mahoney Bros; sub-c. Judson M'f'g. Co; signed, April 20; filed, April 23; cost $3292. Painting, varnishing, papering, etc; c. F. A. Jennings; cost $1708.

Central Ave. near Clay. Alterations and additions; o. The Homeopathic Sanitarium; a. Havens & Toepke; c. Z. O. Field; signed and filed, April 29; cost $3480.

Clara near 5th. To build; o. May L. Blake; a. W. Koenig; c. I. W. Coburn; signed, April 14; filed, April 18; cost $2327.

Cole near Frederick. Cottage; o. S. Z. Dolliver; c. John Stierlein; cost $6000.

Davis and Jackson. Partitions, etc; owner, John G. Gibson; a. James E. Wolfe; cost $750; Plumbing, etc; c. J. P. Groom; cost $500.

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BUILDING NEWS.

Devisadero near Eddy. To build; o. J. F. Dunn; a. Havens & Toepke; c. D. B. Munroe; signed and filed, 14; cost $5500.

Devisadero near Fulton. Plumbing, etc; o. Ellen A. Fife; a. N. Blaisdell; c. Peter Crichton; signed, and filed, April 30; cost $16,700.

Devisadero near Fulton. Painting, graining, etc.; a. N. Blaisdell; c. Kuss & Storz; signed, May 5; filed, May 9; cost $1500.

Eddy and Mason. Alterations to build; o. A. W. Wilson; a. Shea & Shea; c. I. W. Coburn; signed, April 12; filed, April 13; cost $1846.

Eddy and Jones. Alterations and additions; signed April 23; filed, April 25; cost $8456.

Eddy and Powell. Lathing, plastering, etc; o. William Bogen; a. Havens & Toepke; c. J. J. Morehouse; signed, April 26; filed, April 28; cost $1494.

Ellis and Cohen. Three-story frame; o. John Blaney; a. F. B. Wood; c. C. E. Shebley; signed, April 12; filed, April 21; cost $8400.

Front and Broadway. Repairs, etc; o. American Biscuit Co; mason work; c. T. Butler. carpentry Campbell & Pettus; a. Wright & Sanders; cost $5000.

Fell near Lott. Plumbing, gas fitting, etc; o. Mrs. Elizabeth A. McCord; a. E. R. Swain; c. Duffey Bros; signed, April 14; filed, April 16; cost $1035.

Geary and Jones. Plumbing, etc; o. Ruby A. Root; a. C. A. Meussdorffer; c. Teichelheimer Bros; signed, April 20; filed, April 22; cost $1923.

Guerrero near 19th. To build; o. John and Nellie Donelly; a. C. N. Jones; c. J. A. Cotter; signed, April 15; filed, March 18; cost $3240.

Jackson near Pierce. Carpentry work, etc; o. Mrs. Camilla Sansomes; a. Salfield & Kohlberg; signed, April 16; filed, April 30; cost $9455.

Jackson and Lyon. To build; o. David Dangers; a. Newsom & Meyers; c. Campbell & Pettus; signed, April 5; filed, April 16; cost $3945.

Jackson near Pierce. Plumbing, etc; o. Mrs. Camilla Samson; a. Salfield & Kohlberg; c. W. F. Wilson; signed, April 12; filed, April 18; cost $1511. Excavations, brick work, etc; c. F. Wagner; cost $1148.

BUILDING NEWS.

Kearny and Washington. Suspension floors for Hall of Justice and morgue; a. Shea & Shea; c. Western Expanded Metal and Fire Proofing Company; signed, Feb. 3; filed, April 28; cost $19,690.

Kearny and Morton. Wrought and cast iron work, etc; o. M. A. Gunst & Co; a. Hermann & Swain; c. J. A. Wilson; signed, May 4; filed, May 4; cost $4740.

Lombard near Gouge. Cottage; o. Henry L. Brickwedel and wife; a. H. Hess; c. Hillyer & Upham signed, April 19; filed, April 22; cost $1750.

Lombard near Gough. Cottage; o. Anton Johnson; a. T. P. Ross; c. Chas. Lundberg; signed and filed, April 23; cost $1300.

Market and Powell. Elevators for hotel; o. E. J. Baldwin; c. W. L. Holman; signed, April 16; filed, April 20; cost $8673.

Morton near Stockton. Trenches, artificial stone, etc., for 6-story brick; o. V. Menesini; a. C. R. Wilson; c. H. M. Peterson & Co; signed, April 28; filed, April 29; cost $2100. Lathing, plastering, etc; c. Frank Coghlan; cost $944. Painting; graining, varnishing, etc; c. J. A. Mohr; cost $650.

North Point street near Larkin. To build; o. George McLean; c. Vaughn & Chadwick; signed and filed, April 27; cost $2295.

Nineteenth and Mission. Excavation, brick work, etc, for 4-story brick; o. Youth's Directory; a. Chas. J. I. Devlin; c. Thomas Butler; signed, April 6; filed, April 14; cost $26,491. Carpentry, mill work, etc; c. J. W. Smith; c. $17,390. Plumbing, gas fitting and drainage; c., G. C. Sweeney; cost $5577. Lathing, plastering and cementing, c. Martin Carrick; cost $2876. Painting, graining, etc; c. J. F. Sullivan; cost $1875.

Page near Laguna. To build; o. Louis Friedlander; a. C. H. Hasty; c. Wilson & Long; signed, May 9; filed, May 10; cost $3400.

Paraguay near St. Johns. Cottage; o. Henry Pfeifer and Marion Pfeifer; a. J. W. Johnson; c. Mareuse & Remmel; signed, April 26; filed, April 22; cost $1500.

Powell and Eddy. Brick work, etc; o. Wm. Bogen; a. Havens & Toepke; c. John Furness; signed, April 4; filed, April 16; cost $10,650. Gas fitting, plumbing, etc; c. Duffey Bros; cost $1800. Decorative plaster work; c. J. P. McMurry; cost $2,000. Concrete flooring, etc; c. Maingrum & Otter; cost $6620.

BUILDING NEWS.

Sacramento and Larkin. Brick work, carpentry etc, for five flats and two stores; o. Mrs. F. de Lariviere per J. S. Perini, attorney; signed, May 14; filed, May 3; cost $7300. Plumbing, gas fitting, sewerage, etc; c. E. Kraus; cost $1200. Painting, graining, etc; c. G. A. Petterson; cost $625.

Scott near Geary. Repairs to Girl's High School; o. Board of Education of S. F.; a. T. J. Welsh; c. Daniel Sherrin & Sons; cost $1600.

Second and Mission. Plumbing work, etc; o. Wells Fargo & Co; a. Percy & Hamilton; c. W. F. Wilson; signed, April 15; filed, April 18; cost $16,856. Elevator work; c. Fraser Electric Elevator Co; signed, April 13; filed, April 18; cost $15,500.

Second and Mission. Marble work, etc; o, Wells, Fargo & Co; a, Percy & Hamilton; c, Duffey Bros; signed, April 9; filed, April 18; cost $25,000.

Shipley near 6th. Alterations and additions; o. Gus. Harshall; a. Salfield & Kohlberg; c. J. V. Hull; signed and filed, May 12; cost $3185.

Sixth Ave. near California. To build; o. Felix Marcuse; c. Marcuse & Remmel; signed and filed, April 29; cost $8000.

Stenart near Mission. Excavations, etc, for 3-story brick; o. John F. Boyd; a. McDougall Bros; c. H. Stettin; signed and filed, May 6; cost $7680.

Sutter near Mason. Electric elevator; o. Maude L. Bertschman and Blanch B. Morton; a. Oscar Haupt; c. W. L. Holman; cost $1625.

Turk near Taylor. Alterations and additions; o. James D. Phelan; a. Curlett & McCaw; c. A. H. Willcim; signed, April 18; filed, April 19; cost $6173.

Twelfth Ave. near Clement. To build; owner and contractor, D. Taylor; cost $2000.

Washington near Mason. Demolitions, and all work except mantels and gas fixtures; o. L. Brizzolara; a. E. Depierre; c. P. A. Antonelli; signed, April 18; filed, April 19; cost $3900.

Washington near Spruce. Two-story frame; o. Dr. J. Mora Moss; a. Sam'l Newsom and F. H. Myer; c. Depew & Brooks; signed, May 14; filed, May 16; cost $2750.

Webster near Post. To build; o. Mrs. Dora Dteckler; a. W. J. Cuthbertson; c. D. Currie; signed, April 22; filed, May 4; cost $1480.

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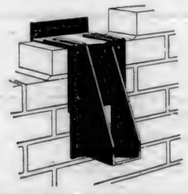

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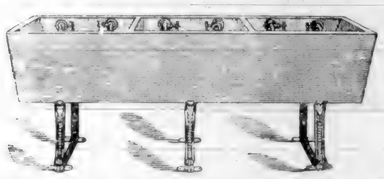

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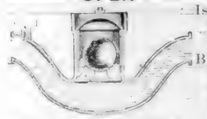

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BUILDING NEWS.

ALAMEDA

Santa Clara Ave, near Lafayette. To build; o, Cullen Bryant; a, A. Sutton; c, Z. O. Field; signed, April 25; filed, April 26; cost $6298. Plumbing and heating apparatus; c, Dalziel & Moller; signed, April 25; filed, April 27; cost $994.

ARIZONA

John Ivancovich contemplates erecting a brick building with stone foundation, adjoining the A. O. U. W. hall, at Tucson. It will be 75x85 feet, with iron and plate glass front.

ANAHEIM

N. B. Mitchell of Pasadena is reported as having plans for a hotel building which he is contemplating building upon his property here.

A High school will be the next enterprise to be started in Anaheim. The people have grown tired of sending their boys and girls to Santa Ana and Fullerton.

AZUSA

Six buildings were burned here last week, involving a loss of $10,000.

BANNING

Mr. M. L. Bridges is expected soon from Los Angeles to build the foundations for the new residence of Charles M. Morris, and to complete the work of plastering, etc., on the new cottage being built for Dr. King.

FRUITVALE

Spring Tract. Cottage; o, Elizabeth L. Murison; a, M. G. Bugbee; c, A. C. Soule; signed May 5; filed, May 5; cost $1580.

BUILDING NEWS.

EL MONTE

Architects Smith & Elder have prepared plans for a frame store building 30x70 feet, for E. J. Dobson, to be built at El Monte. The same architect has plans for a cottage for George Slack, to be built at the same place, by day's work.

OAKLAND

Eleventh and 6th Ave. Alterations and additions; o, C. H. King; a, W. J. Mathews; c, C. Christensen; signed, May 5; filed, May 6; cost $1400.

Webster street, No. 1576. Alterations and additions o, Ann M. Laidlaw; a, W. M. Campell; c, F. Eskilson signed, April 2; filed, April 26; cost $1135.

Hillside Ave. To build; o, J. H. and Julia L. Borrowlough; a, D. E. Oliver; c, H. E. Wharton; signed and filed, April 6; cost $9257.

Myrtle near 12th. To build; o, Adolph Uhl; a, A. W. Smith; c, W. E. and J. C. S. Whalin; signed April 4; filed, April 19; cost $9200.

Eleventh and 6th Ave. Alterations and additions; o, Harriett A. Braun; a, M. G. Bugbee; c, A. C. Soule; signed, May 5; filed, May 7; cost $800.

CLAREMONT

As a result of raising $62,000, since January, Dr. Piersons of Chicago gives $20,000 for a science hall for Pomona college. The hall is to be 60x90 feet, will face Holmes hall on Warren avenue. There will be three floors: the lower floor given to mathematics the second to biology and the third to chemistry and physics. Steps are being taken which will result also in the erection and equipment of a gymnasium.

RIVERSIDE

The supervisors of Riverside county have decided to erect the hospital building, to take the place of the

BUILDING NEWS.

one burned, on the old site at San Jacinto, and will call for bids as soon as matters can be adjusted. The building is to be completed by July 1.

The county clerk has been instructed to advertise for bids for supplying the county with suitable lands and buildings for county hospital purposes to take the place of the building destroyed by fire.

Work on the new passenger depot is progressing. The outer walls are of pressed brick and present a very pleasing effect. The building will cost when completed $10,000.

PASADENA

It is reported that a Mr. Neumeister, formerly of Chicago, will erect an ice plant here.

Work on Hotel Green annex goes steadily on. The decorative architecture begins to show up splendidly.

Ellis Hakes, of Illinois, has purchased a fine building site near the La Pintoresca. He contemplates erecting a home on the property shortly.

Architects Locke & Munsell are preparing plans for the remodeling of the Raymond residence, on Columbia street, Pasadena, which has been purchased by C. W. Smith, president of the Los Angeles and Pasadena Electric Company. The same architects have been instructed by E. S. Chamberlain of Des Moines, Iowa, who is charmed with the Southern California style of architecture, to prepare plans for a handsome brick and stone residence to be erected in that city.

Architect C. W. Buchanan is preparing plans for a nine-room modern residence for D. A. Davis, to be erected on North Moline avenue.

Continued on page x.

VOLUME XIX. MAY 20th, 1898. NUMBER 5.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

ARCHITECTS will examine with interest the illustrations of tile arch construction in the hightest office building in the world, which are shown on another page of this issue.

The *Engineering News*, to whom we are indebted for the article, has further information that similar defects can be seen in the tile floor construction of several buildings now going up in New York City.

That paper in its editorial comments on existing methods of building inspection, emphasizes the fact that competent authority has assured the Editor that these are merely ordinary examples of tile floor construction, such as can be found in odd corners around any first-class fire-proof building in that city.

As to tests and the extravagent claims which have characterized tile floor manufacturers' statements, the *News* pays its respects very neatly in the following paragraph:

"Suppose we accept this view of the case, that tile construction of this sort is common, or at least frequent in fire-proof buildings. If this be true, then it follows that our knowledge of the strength of such floors is to say the least very imperfect; for all the tests which have been made of the strength of such floors have been made on arches carefully constructed, with sound and symmetrical blocks, properly bonded with mortar. That such construction as is shown in our photographs is far weaker than floors built like the test arches, no one would think of denying. Perhaps it is still strong enough for safety; that is a matter which we shall not attempt to decide; the point of importance is that tile floor arches are just as capable of being built in a careless and defective manner, not contemplated by their design, as any other sort of engineering construction; and in view of some of the extravagent claims which have been made for tile floors, we believe, is well worth establishing."

FIRE-PROOF BUILDINGS AND LOW INSURANCE RATES.

800 BUILDINGS OF THIS CHARACTER IN NEW YORK CITY VALUED IN THE AGGREGATE AT NEARLY $200,000,000.

THAT is termed a fire-proof structure is very different from the so-called fire-proof building of twenty years ago. While it is still true that the absolutely fire-proof building scarcely exists, the modern steel-framed building constructed throughout of inconbustible materials is practieally fire-proof. This statement is supported by the test of several fires, and by remarkable concessions in rates by fire underwriters.

Salvage on the fire-proof buildings themselves has always been exceedingly large, the walls and steel framework being only slightly damaged in the fiercest fire, and scarcely entitled to a claim for loss as the result of any ordinary blaze. This can not always be said, however, of the combustible contents; for a degree of heat and amount of water not seriously affecting the building may destroy goods and furniture.

Fire underwriters have carefully studied the risk of the modern fire-proof building. They have employed experts and have accumulated statistics to determine the character of the new risk from their point of view; and they are now satisfied it is a safe risk.

Competition for fire-proof risks has recently been very keen among New York underwriters. This is partly due, it is true, to the recent suspension of rates in the Metropolitan district; but it is mainly due to the fact that the underwriters believe that large losses need not be feared among so-called fire-proof buildings. Rates have been amazingly low. We submit a few examples:

Lord's Court was written at five cents for three years. The Central National Bank building and the fire-proof Arnold. Constable building were written at ten cents for five years. Large lines are carried. On one thirty-two storied steel skeleton building classed as one of the several hundred New York fire-proofs, nine companies wrote $675,000 in sums ranging from $50,000 to $200.000. The total premium for five years was only $675, and it is understood that the broker who placed the risk got twenty-five per cent of this small sum.

The underwriters are not gambling. There are about 800 fire-proof buildings in New York City, valued in the aggregate at nearly $200,000,000. At an average rate of fifteen cents for five years this fire-proof business would produce $300,000 in premiums. As the total destruction of any of these buildings is impossible, the damages to a large number of them could hardly be severe enough to wipe out all profit even at this low premium rate. We may therefore assume as a fact that low rates will continue to be the rule on these superior risks, even after a new rating by a tariff association.

This low rate experience in New York supports one of the strongest arguments urged by architects and builders in behalf of first-class buildings. The difference in insurance rates justifies the construction of first-class buildings of the modern fire-proof type.

AN EXPLANATION THAT EXPLAINS.

OR HOW TO EFFECT PROGRESS EITHER FORWARD OR BACKWARD.

IT IS NOW an open question in building circles as to which building will be first completed and opened for the use of a patient and long suffering public. The Hall of Justice or the new Post-Office. With the former the contractors have been somewhat given to experiments in vast fields of enterprising development of new industries—such as opening up stone quarries and establishing brick yards, in out of the way nooks only known to themselves. These enterprises while laudable and in every way worthy of commendation, take much time and money. Of the former, the now famous firm of brothers, possess or at least act as if they were posessed, of unlimited quantities; of the latter, if dame rumor is to be believed, the Harbor Commissioners have awarded them liberal portions for their now practically completed work on the Ferry Depot.

It is just possible, however, that their supply of the former will be curtailed. More certain things than their grip on continuous extensions have "gang'd aft aglee." The term of office of indulgent supervisors, for instance, will expire one of these days. Then what?

The stone quarry riddle has been eliminated from the case by the firm position taken by the architects—Messrs. Shea & Shea—in standing by their specifications and Colusa stone—now all in place.

The expanded metal people too are about out of the way, having completed the first three stories and are now well on with the fourth.

The brick—just plain ordinary pressed brick, ah! there's the rub—can the contractors plead successfully to the powers that be that they are up against a pressed brick combine, then by working up the old, old story, of self preservation being the first law of nature, gain time enough from this board and the next, to bring to a conclusion this last new enterprise of theirs, viz:—The pressed brick works they are said to have established at Stockton.

This about disposes of the Hall of Justice, and it gives much "the best of it" to the New Post Office building's chances, now under pretty fair headway. The daily papers may retard progress somewhat, in their efforts to assist the marble quarry men for the revenue there is in it. But this is doubtful; and the money could be far better expended at some of the unopened marble quarries in the State. In that quarter there would be a possibility of seeing the color of it again. As things stand now, a lobby at Washington with log rolling tendencies; many small but beautiful exhibits of speculative marble possibilities; with the purchased surport of the said daily newspapers, constituted about all the stock in trade that has been thus far brought forward to inkuce the Treasury Department officials, to seriously consider California marble as a structural possibility.

The Supervising Architects office at Washington has kept the local superintendent, Mr. Roberts, quite busy, for some time back, visiting stone quarries, marble quarries and marble locations. This is all right and should be quite satisfactory to all concerned; but, and what a large but that is, there will be no delay from this time forth, and what is more, the department ruled a long time ago, that "the opening up and development of quarries, had no part in the functions of Government.

THE USE OF STONE IN SKELETON CONSTRUCTION.

E. MCL. LONG IN STONE.

CONTINUED FROM APRIL NUMBER.

SINCE the architectural lines of every building are somewhat different the spandrel beams must be designed, or rather modified, to meet the special cases, and in order to arrive at the most substantial results the architect and the designer of the structural steel should work in unison. Generally the architectural lines of a building, and its adornment, are designed first, and then the structural steel frame is designed to carry a wall of known shape and weight. This is practical, for before an engineer can design a girder to carry a load he must know its weight and how it is to be applied. But still if this method of procedure is carried too far, and the lines of the building as first laid down, before the structural part has been considered, are strictly adhered to, almost impossible problems may be presented to the designer of the frame, and unnecessary expense incurred. Therefore, the structural engineer, when he finds he is being led into too complicated and expensive construction, should consult the architect, and where possible, without injuring the appearance of the building, the original lines should be changed. This architectural change for the most part would consist of a slight change in design or position of pilasters and cornices and some unimportant angles on the exterior of the building.

As in all masonry, the foundation for the curtain wall is of greatest importance. It seems strange at first sight that no standard construction has been agreed upon for this part of the skeleton construction; but when we consider the short time in which this form of architecture has had to develop, and the fact that most of these frames have been constructed by different engineers, each having his individual ideas in regard to a new form of construction, and the variation in decorated front to be supported, the variety we meet with in this detail is not to be wondered at. A long list of details could be shown of combinations of I beams, channels, Z bars, and angles that are now in use, but since these would be uninteresting to the general reader, and those particularly interested in this form of construction can procure them from books and articles on individual buildings, we will confine ourselves for the present to generalized methods and principles.

Besides carrying the wall, this beam serves as a floor girder to receive the ends of the floor beams, or as a floor beam, and as such receives its part of the floor load, therefore its position must be at a floor level. Its position is also limited between the top of one window and the bottom of the one above. In the horizontal plane its position is very much limited, owing to the fact that its ends are to be connected with the columns.

In regard to the manner of loading this spandrel beam we have first the cornice, or horizontal band of stone ornamentation, which in architectural design is between the windows and on about the same elevation as the spandrel beam, so we can assume that this work will be fastened directly on the outside of the spanbrel beam. From this band to the next band above we have the wall, or rather since the wall is mostly windows, the mullions between the windows. Thus we have two kinds of loading, a uniform loading and a loading at intervals along the beam corresponding to the window spaces. Now neither of these loads are over the center of the web of the beam, but are applied externally by means of supports built to the outside of the beam, and tend to produce a twisting moment in the beam which carried to the columns produce the effect of an eccentric loading there. Where the outside wall is of stone and extends out well from the steel frame this twisting moment is quite an item, and must be balanced by having the floor beams at right angles to the spandrel and attached to it, in this way the structural problem becomes one of the cantilever, the supports for the stone work being a continuation of the floor beams with the spandrel acting as a fulcrum and receiving its load centrally and vertically. For causes of economy, the spandrel beam is generally a deep girder (a plate girder). Now the floor beams instead of ending at this girder can project beyond it, and thus form a shelf on the outside of the structural frame, on which can be built a stone wall of any design. If the spandrel beam can be placed so as to receive the floor beams on its top flange the construction is very simple, otherwise it receives the floor beams somewhere on its web and the continuation of the beams are formed by riveting on the outside of the spandrel. It would give a better form of construction if all supports for walls were built as above, but generally if floor beams are perpendicular to the front wall they are parallel to the side walls, and to have the floor beams making right angle connections with all four walls would cause a little complication in construction at the corners of the building. By so doing, however, we are following correct principles of construction and obviating the undesirable twisting that is produced by loading a detached beam on one side. In all structural steel work, except the skeleton of a steel building, all parts of the construction are in view and the steel can be easily examined to see how it is standing usage, and can be constantly repainted as a protection against rust, and when different members show weakness they can be replaced. But when once the steel of a building is covered with masonry it will never see the light of day again, except in the case of fire or the destruction of the edifice. It is, therefore, very important to be sure that all connections are well made and the steel well coated with paint, and that the stone covering is so constructed as not to allow moisture to attack the steel. It is one of the great faults in this form of construction that the structural material and details cannot be inspected, and considering this fact it is surprising to see with what carelessness these frames are often put together.

After the steel work has been erected and the architect is absolutely certain he has a structure that will stand rigidly

all stains produced by loads and wind, the next work to be taken up is the construction of the outside walls. Before the mason starts his work it is well to see that all spandrel beams are in their correct positions, and that the stone work as designed will fit into its place between beams and columns. When everything fits as designed, the methods of constructing a curtain wall will be the same as those employed in erecting a wall in any other position.

The artistic part of the problem, however, is different from anything ever attempted before, and it is in the design of the front wall that the architect expends his best efforts and brings into play his entire knowledge of architectural adornment.

The architect's first aim seems to be to hide all the structural steel work and give the front of his building the appearance of one solid wall of masonry; then he turns his attention to adornment, and we have presented to our view, in cities where high buildings thrive, all manner of walls, from the rigorously plain to the one on whose face every architectural adornment ever conceived finds a resting place. At first sight some of these fronts may please and awe by their striking appearance, but if we see more of even the finest, we admire it less and look upon it as a most unnatural stone wall, and a feeling that a fraud has been penetrated grows upon us. The use of steel in the structural part of architecture has produced a revolution, but into architecture as an art it has not entered. True, architecture is an adornment of the materials of construction, and since our ideas of architecture are gotten from a time when the use of steel was not know, we associate all architectural effects with the materials used in former times. But now, however, since steel is playing such a part as an architectural material of construction, the time is sure to come when the art will recognize it, and not until that time can we hope for pleasing architectural effects in steel construction.

When the front of a skeleton constructed building can be so designed that each curtain wall of stone will show to the untrained eye that it is merely a covering for an open space between two floor beams and two columns, and the fact that the steel frame is carrying the wall made evident, it will then be that the art of architecture is adapting itself to this form of construction. It is not necessary that the building front should be marred by unsightly beams and columns. They may be entirely covered, but yet have the covering so arranged as to suggest what is behind. And then, again, we may have the beams and columns in full view, ornate, and enframing the individual walls of stone, with the stone and steel blending artistically, presenting to view strength and architectural grandeur. When and how such combinations will be made the future alone can reveal. We can rest assured, however, since stone or other non-metalic materials are non-conductors of heat, that they will always find their place in the curtain walls, and that the structural design of our tall buildings, as they are at present, are too near the ideal to be much improved upon. The architect has shown his ability as a selector of materials and as a constructor. The problem before him now is to adorn his construction, not to hide it.

Subscribe for The California Architect and Building News for the year '98.

HOLLOW TILE FIREPROOFING IN THE PARK ROW SYNDICATE BUILDING.

THE PERSISTENT opposition of the Board of Examiners of New York city to the use of concrete fireproof floor systems in office and mercantile buildings of the best class has been pretty fully discussed in past issues of *Engineering News*. Among the buildings concerning which this contest between the manufacturers of concrete floor systems and the Board of Examiners has been the fiercest is the 30-story Park Row Syndicate Building, now being erected at the corner of Park Row and Ann street, opposite the New York Post-Office, and within a stone's throw of the offices of the *Engineering News*. The history of this dispute has been given from time to time, but a brief review of it will aid in making clear to readers the full significance of the defective work illustrated in the accompanying cuts, which are reproduced from photographs recently taken in the building itself.

The architect's specifications for the Park Row Syndicate Building called for either a concrete floor or a hollow tile floor. The first-named was preferred, owing to its being less costly (we understand the difference in price amounted to $20,000 on this building), and also some 30 per cent lighter than tile, thus reducing the foundation loads about 4500 tons, and considerably lightening the column loads. In designing the steel work the beam spacing was made only 5 ft., and all the suggestions of the Department of Buildings respecting the design of the ironwork to be used with the concrete floor were carried out. Notwithstanding all this, the Board of Examiners successively denied three separate petitions filed for the approval of this construction, and absolutely refused to give any reason for its action. Finally a mandamus was obtained from the courts, compelling the Superintendent of Buildings to pass upon the question whether the concrete floor might be used. This he did in December, 1897, approving the concrete system, but by that time hollow tile had already been placed in about half of the floors, that material being finally adopted to avoid delaying the construction of the building.

The views published herewith show the nature of these hollow tile floors, which the Board of Examiners preferred and which the department of buildings have passed as complying with the building laws. Taking these views up separately, Fig. 1 shows an arch with the key out of center, and in which some of the rings are discontinuous; one key and several blocks are broken; the ring-blocks are not on line with the skewbacks; the steel beam is only partially protected; and various joints are open and uncemented. There are plenty of other arches in the building like this one. Fig. 2 shows on the left side abroken skewbsck and irregular, eccentric key blocks. On the right hand side one skewback is broken and both sets of skewbacks are so much out of line with the rings that the ribs do not stand opposite ribs; some of the blocks are broken and some of the joints are open and uncemented. Fig. 3 shows naked maingirders; broken and discontinuous keystones; unsymmetrical rings, and skewbacks and ribs not opposite each other, while two keystones are not down to their proper level by at least 2 ins. Fig. 4 is especially bad in its defective blocks; use of spalls to fill up gaps, and a skewback set for "side construction."

These defects are chargeable both to the poor workmanship and to the use of imperfect material. Summarized briefly, the characteristic ones are the exposed portions of the steel work, the use of broken tile, eccentricity of keystones and carelessness in opposing rib to rib in the same arch ring, failure to cement joints properly, and generally poor workmanship. In other words, the defects are chargeable to the use of injured material and to the method of handling the material rather than to the nature of the arch material itself; and as many of these faults could be corrected by a more careful supervision of the workmen and a closer inspection and more careful handling of the tiles themselves.

Fig. 1. Showing Broken Tiles, Eccentric Keys, Discontinuous Rings, and Open Joints.

Fig. 2. Showing Broken Skewback, Irregular and Eccentric Keys, Discontinuous Arch Rings, Broken Flange Tile and Open Joints.

Fig. 3. Showing Badly Broken Tile, Discontinuous Rings, Eccentric Keys, Holes Filled With Spalls, Etc.

Fig. 4. Showing Absence of Key, Two Keys Not Down to General Level, Skewbacks Dropped Below General Level, Broken Tile, Etc.

Views Showing Bottoms of Porous Terra Cotta, "End Construction," Fireproof Floors in the Park Row Syndicate Building, New York

the makers of tiles are quite as much interested in better work as the owners of the buildings should be. The question now arises, why is the work of this character not objected to by the Department of Buildings of New York? The law certainly contemplates and demands a different class of workmanship in these hollow-tile arches.

Crude as the applying section of the building law is in the light of present knowledge concerning fireproof floor construction, it does not in any way contemplate or countenance such defective work as is shown by the illustrations. It is perhaps but fair to assume, however, that some of these defects will be remedied in part at least. The exposed beam flanges may yet be covered with the plastering which will of course cover them ultimately, but the structural weaknesses resulting from broken tile, keys out of center, and discontinuous arch rings, cannot be remedied except by reconstruction.

From the views furnished the fact is very clearly brought out, that owing to inefficient inspection tile floor arches of even the best design may be erected in actual construction in a very different manner from that which their design contemplated. *This fact is worth emphasizing here, for the reason that one of the leading arguments made by the advocates of clay tile floor systems against concrete floor arches of all kinds is that inferior material can so easily be used and that the strength of the construction depends so largely upon the manner in which the material is put into place. To the answer that proper engineering supervision and inspection can easily prevent this, the reply of the tile men has been that the nature of their material and the rib construction of the usual flat arch made its perfect installation necessary and ensured sound floor arches even in the absence of inspection. How little basis there is for any such claim, the views which are published here show clearly.—Engineering News.*

CORRESPONDENCE

[The Editor is not responsible for anything which appears in this column.]

NEW YORK, N. Y., May 13, 1898.

Editor California Architect and Building News.

SIR:—In your issue of February and March last, we read with interest a paper of Mr. W. L. B. Jenny, Architect, on "The Best Fireproof Construction for Buildings" and beg to take exception to his sweeping assertion that "the fire-resisting qualities of properly made concrete have been amply proven to be equal if not better than fire-clay tile, as shown by the series of tests carried on by the Building Department of the City of New York."

These OFFICIAL tests of 14 differing systems of fireproof construction were published in "Engineering Record" of New York, September 18th, 25th and October 9th, and we defy any one to form any such conclusion on the results there shown.

Mr. Jenny qotes from the report of Engineer experts to the "Insurance World" of July 1st on the Pittsburgh Fire of May 3, 1897—"There is no probability that any future fire will be fiercer than the one at 'isssue'." That fact not being disputed, we beg to refer him to the report of Mr. S. Albert Reed, manager to the Executive Committee of the Tariff Association of New York, dated June 15, 1897, on the Pittsburg Fire:

Horne Department Store—the one undergoing the severest and crucial test was constructed of hard-burnt terra-cotta: conceded to be inferior in fire-resisting qualities to the porous material—"the steel girders and beams supporting the tile roof are entirely bare and had no protective covering at all. The designers of the building evidently relied for protection upon the suspended ceiling of flat tiles carried by light angle or tee-bars. In this they made their error, *and this error is responsible for nearly all the structural damage to the skeleton and walls.*" Is it fair or just to condem a material because the cheese paring designers of the building failed to avail of its protection, when other parts of the building where it was employed, the results amply demonstrated its efficiency?

"The majority of the floor arches in the path of the falling material were smashed through from roof to ground floor. That the wreck of these floor-arches was caused by this and not by the 'action of fire' is seen from the fact that practically not an arch is broken through anywhere in the building except directly under the section of roof that collapsed." The girders (except those of roof) in this building were admirably protected and not one was injured by the fire—the column protection also did extremely well and was an excellent job."

Horne Office Building—adjacent to above structure was constructed of porous terra-cotta floor-arches and partitions, and the report states: "Of this building little need be said, except that the skeleton, floor arches and walls are apparently intact, structurally, and that the protection was good and did its work effectually."

Such testimony coming from a totally impartial source should carry greater weight than the mere personal opinion of some individual Architect. Mr. Jenny is entitled to his personal opinion but against this we can cite those of a great many other Architects certainly the peers of Mr. Jenny. There are of course various qualities of concrete, but we have only to do with such as is usually found in floor construction, and many will agree with us that a great deal of rubbish at present masquerades as concrete.

As fully 90 per cent of the fire-proof buildings erected in this city and elsewhere are of terra-cotta clay-tile; that the fire proof qualities of such are appreciated by Underwriters is evinced by the fact that they have offered to write the Bank of Commerce and the Clearing House Buildings of New York City, at five cents for five years.

These facts alone, even if they were not reinforced by innumerable others clearly show the trend of opinion among Architects, Owners, Underwriters, etc.

It is also necessary to bear in mind that the limits of efficiency of porous terra-cotta clay tile have never been reached, because the manufacturer simply carries out the designs of the Architect, with results as conclusively shown by the defects in the Horne Department Store.

Truly yours,

HENRY MAURER & SON.

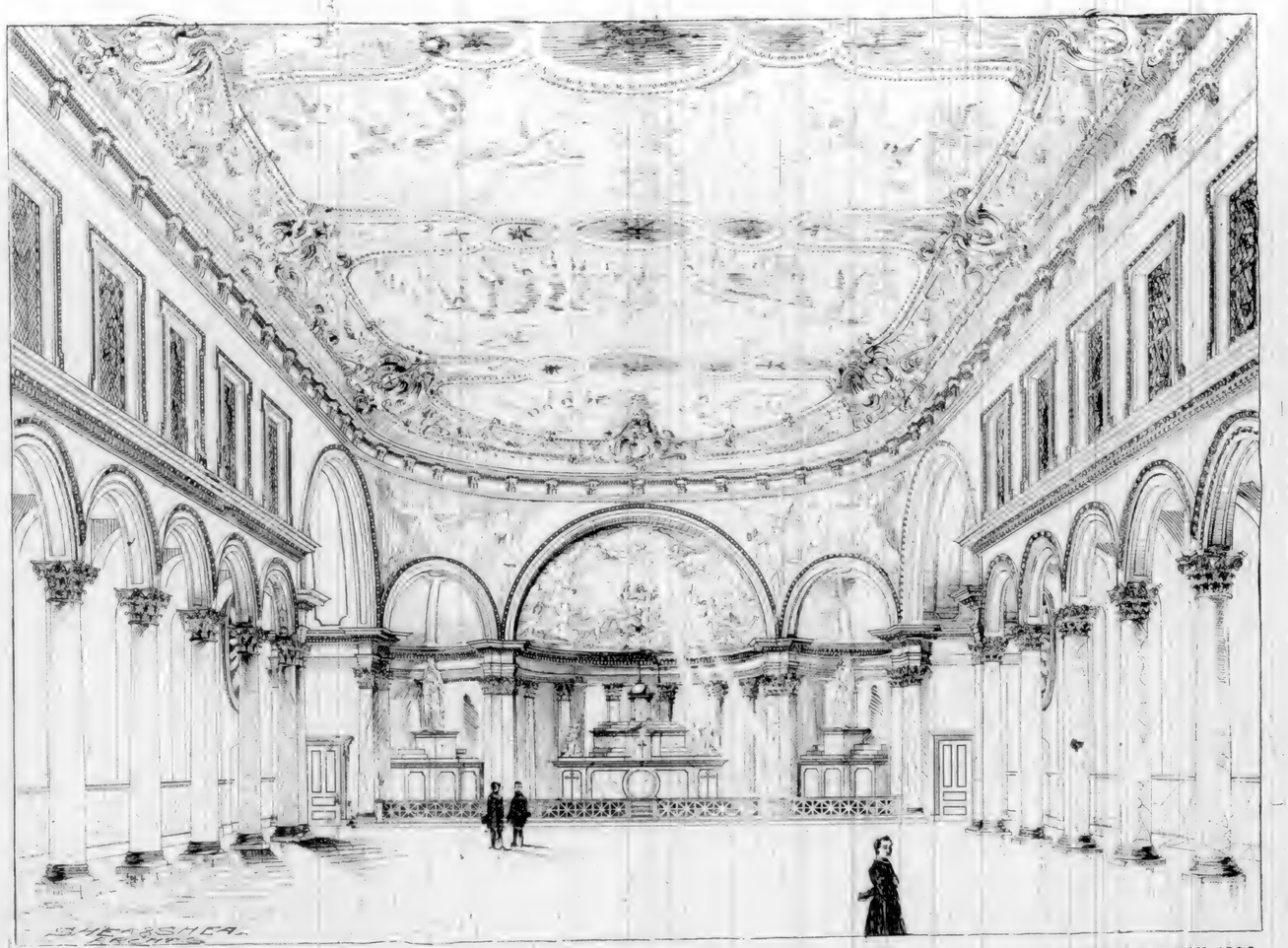
420 E. 23d St., N. Y.

CHICAGO, ILL., April 25, 1898.

To the Editor of the California Architect and Building News.

DEAR SIR:—In reply to your favor of the 16th, would say that the only information which we con give in regard to the condition of the beams and metal lath in the old Chicago Post-Office is, what we saw in them ourselves at the time the builking was torn down. There was at that time, an article written in some paper calling attention to the fact, that iron beams and lath protected by mortar had apparently remained unchanged since the erection of the building, but we do not remember the paper in which the article appeared. This was true so far as we were able to see, but the lath in the building which had been put in when building was erected, was of course, not expanded metal, but sheet metal lath, and that had rusted but very little, and that, on the backside of the lath. All the expanded metal lath that was in the building had been put in in an addition to the building which had been erected only some three years, and was in perfect condition when building was demolished. The iron beams had been painted with red lead, and so far as any of us saw, showed no evidence of rust. As the building had been erected over twenty years, and as the backside of the sheet metal lath would be entirely unprotected, and had not rusted in that time sufficient to weaken or damage it to any appreciable extent, it would seem that open mesh lath like expanded metal or wire cloth embedded in the mortar, would stand for an indefinite length of time without any deterioration. Yours truly,

NORTH WESTERN EXPANDED METAL COMPANY.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY, PHOTO LITH.

VOL. XIX Nº 5 MAY 1898

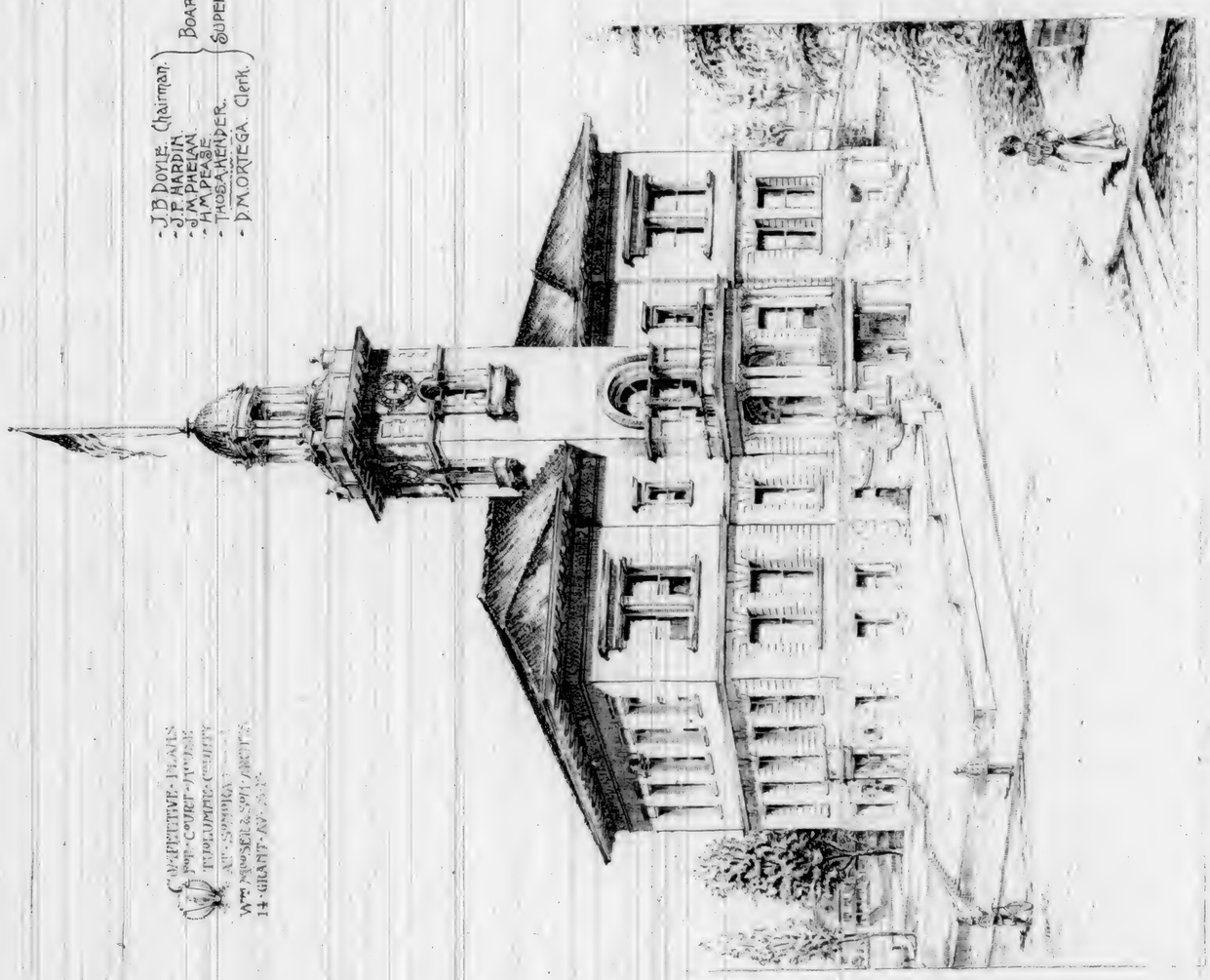
INTERIOR, CHURCH OF THE HOLY CROSS.

COMPETITIVE PLANS
FOR COURT HOUSE
FOR COLUMBIA COUNTY
AT ST. HELENS, OR.
WM. MOOSER & SON, ARCHITECTS
14 GRANT AVE. S.F.

- J.B. DOYLE, Chairman.
- J.P. HARDIN
- J.M. PHELAN
- H.M. PEASE
- THOS. A. HENDER.

BOARD OF SUPERVISORS.

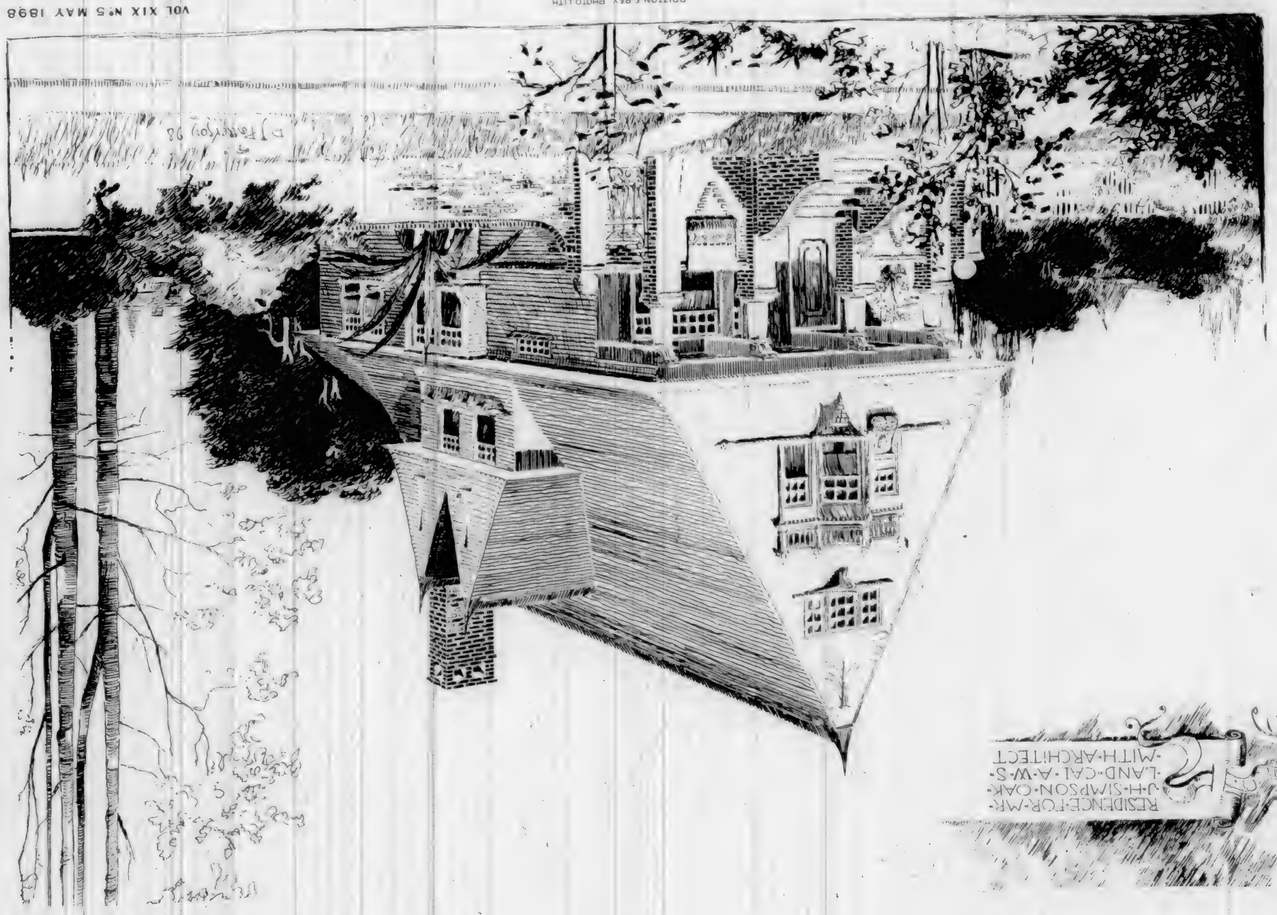
- D. M. ORTEGA, Clerk.



APARTMENT HOUSE.
COR. GEARY & JONES STS.

C.A. MEUSSDORFFER - ARCHITECT
"97" "98" "1ST ANN'S" BLDG
S.F.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO
BRITTON & REY. PHOTO LITH
VOL. XIX N°5 MAY 1898



RESIDENCE FOR MR.
J.H. SIMPSON. OAK-
LAND. CAL. A. W. S-
MITH. ARCHITECT

IRON SHUTTERS.

WHETHER it is accepted or not, the magnitude of the proposed work makes the proposition to raise the massive capitol of Ohio, and place another story under the structure, of more than passing interest to the building trades and to the architectural and engineering professions. The present building at Columbus being inadequate for the needs of the various state departments, the last legislature provided for the remodeling of the structure. The plans adopted to this end, however, entailed so great an expense that much opposition has been met with, and last week senator Miller introduced a bill to provide funds for the raising of the capitol building as proposed by Mr. Harvey Sheeler of Chicago, who says he will accomplish this feat for $300,000. The Ohio capitol covers more than two acres, and built of native limestone, is one of the most massive buildings in the country. Mr. Sheeler proposes to raise this structure, the weight of which will run high into the thousands of tons, without disturbing the work of a single occupant in the building. He would cut off the building at the base and raise it on jack screws, the entire work of remodeling requiring about three months. The building is to be elevated eighteen feet, which would place three full stories at the disposal of the state authorities. The work of raising this structure will be the largest operation of the kind ever attempted in America.

The proposition of H. Sheeler of Chicago to raise the Ohio capitol, intact, one story, serves to remind us that this trade is keeping pace with the advancement in other lines of building work. This fact is established by the notable operations in this department of building in Chicago. As examples, we may cite the moving of the Immanuel Baptist church, Michigan Avenue and Twenty-third street, the shoring and putting in of new foundations for the Church of the Holy Name, North State and Superior streets. and the recent shoring for the music hall in the Studebaker building, all of which work was accomplished by Mr. Harvey Sheeler, who is the leading exponent of this branch of the work in the west. House moving and shoring has developed into a science, and the operations of to-day involve an accuracy of loads and strength of materials, and an ingenuity and practicality of engineering that frequently equals that required in the more established lines of engineering. The feats accomplished during the past years have in succession astonished even those intimately associated with the building business. It was perhaps one of the more recent of these works that presented a problem so enormous as to be unique in the history of raising, and unparalled in that of the removal of structures, the raising of the Immanuel Baptist church 5 feet 6 inches, and its removal a distance of 51 feet. The building was constructed of limestone and covered a ground area of 93 by 161, with a 225-foot tower resting upon a base 24 feet square. The tower was estimated to weigh 1432 tons, and the entire structure 6652 tons. Besides this enormous tower, the auditorium spanned 63 feet. The successful accomplishment of this feat was an important step in the progress of moving and raising buildings, demonstrating the ability of experienced men to handle a concentrated load and to move large open buildings having virtually no cross walls or heavy partitions binding them together. It was a turning point in the history of the business, since it gave architects and owners thorough confidence in the men who had for twenty years successfully pursued this line in lesser operations, and who are now reaping a reward well merited by their past works.—*The Construction News.*

A SIMPLE METHOD OF MAKING DECORATIVE BRICK.

HERE comes to us from Perth Amboy, from Mr. Antonio A. Mundy, a new method of making decorative brick. He says these ornamental bricks can be made in soft or tempered clay, and the brass plate which contains the negative of the ornament must be placed in the side of the mold. The stiff block of clay is then put in and pressed. The plunger of the press forces both the brass plate and the clay from the box of the press; the plate is then removed from the clay, leaving a perfectly formed brick with the required ornament. This method is applicable to the ordinary hand work which is in general use in many sections, and

AN ORNAMENTAL PANEL OF COMMON BRICK.

which presses the brick on the flat. If a press was so constructed as to press a brick on its edge, then the plate containing the ornament would have to be placed in the bottom of the mold. The picture shows what Mr. Mundy has done. He shows the rare quality of those who take an interest in manufacturing methods, being able to select and adopt a beautiful pattern. Most patterns for decorative brick are so irredeemably ugly that one interested in things artistic says, "If this is machine art, we will have none of it." So it is the machine suffers through no fault of its own and through no fault of the mechanical ingenuity of the designer. In order that the machine which produces artistic form should have success, it should be guided by the hand of an artist. Nearly all mechanical inventors imagine they have the artistic as well as the mechanical touch. This is rarely true; hence the loss to the world of many valuable mechanical ideas.—*The Clay Worker.*

ILLVSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

ACCEPTED plan for Court House, Sonora, Tuolomme County, Wm. Mooser & Son, Architects.

INTERIOR VIEW Church of the Holy Cross, Eddy and Devisadero streets, Shea & Shea, Architects.

COTTAGE in Oakland, A. W. Smith, Architect.

APARTMENT House, corner of Geary and Jones streets, C. A. Meussdorffer, Architect.

THE BEST FIREPROOF CONSTRUCTION FOR BUILDINGS OCCUPIED FOR MERCANTILE PURPOSES.

PAPER READ BY W. L. B. JENNEY BEFORE THE FIRE UNDERWRITERS' ASSOCIATION OF THE NORTHWEST.

CONTINUED FROM LAST ISSUE.

THE RECENT fires have demonstrated that steel is more easily protected than is usually thought. For example, beams in the condition of Fig. 6, that is with the lower flange entirely exposed on the ceiling where it is subjected to the greatest

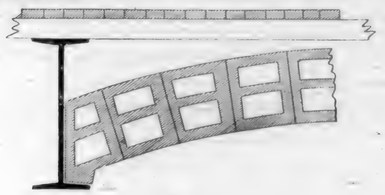


Fig. 7

heat in case of fire. These beams have gone through a severe fire without injury; still, Mr. H. B. Seely in his paper on the art of fireproofing, published in the Engineering News of April 9, 1896, theorizes that a beam in this position is liable, under heat in case of fire, to sag on account of the lower flange of the beam being heated to a considerable degree more than the balance of the beam will necessarily expand, and will cause a deflection of the beam to such an extent that the arches might drop out. Mr. Seely is undoubtedly correct in this theory, still I can find no example of such a serious accident in the reports of any of the fires, which is our only practical test, still as the expense of protecting the lower flange is so small this omission is not to be recommended. The limit by law in height of buildings makes it desirable not to take more than is necessary for the thickness of floors, so that the top flange of girders or beams for convenience is often left uncovered. To this there is less objection. The flange of a beam is such a small part of the whole, and so far removed from the mass of the steel, that no heat that can be produced by the burning of the goods on a floor above will seriously injure the beam. Moreover, the floor is protected by the goods and deluged by the fire department, so that in an ordinary wooden joist building there are records of floors falling from the burning off of the joists and from falling walls, and after the fire was out considerable areas of unburnt floor were found in the basement still covered by partially consumed goods, so that when convenience demands it is not very objectionable to adopt the construction shown in Fig. 7.

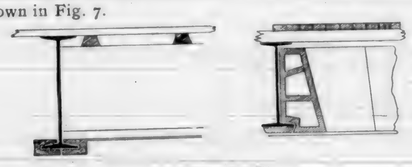


Fig. 8

For partitions the ordinary 3-inch or 4-inch tile the Pittsburg fire shows to be a disappointment. They do not stand any better than wood studding covered on both sides with wire lathing and plastering. Indeed, it is reported that the firemen stated that the hot tile partitions appeared to dissolve and fly into powder as the water struck them. The appraisers noticed that the amount of debris around partitions where considerable portions had been knocked down was very small. From these fire tests it is probable that very satisfactory partitions can be made by steel tees or anchors set vertically, secured top and bottom, covered on both sides by the metal lathing and fireproof plastering (asbestic). Still greater security could be obtained by filling in between lathing with asbestic. The lower six or eight feet of all columns should be protected against damage from shocks by a substantial covering of sheet metal, as boxes of goods are piled up against the columns and they are also subject to be scraped by passing trucks. This outside metal covering will render it impossible for the fireproofing to be stripped off during a fire. There is a still further protection to the columns that I would strongly recommend, which is the filling of the interior of each column with good Portland cement concrete rammed into place. This will protect the interior against rust, and materially strengthen the column as against bending in case of severe fire. This was done in the first nine stories of the Home insurance building in this city.

To be Continued.

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

HAVING in mind the destructive warehouse fire of the Chautauqua Lake Ice Co., which had occurred a few days previous, the writer for the *Engineering News*, while in Pittsburg, Pa., took an opportunity to examine the ruins in a superficial manner, and in doing this observed a remarkable case of column distortion. As stated in the description of this fire, published Feb. 17, 1898, the second floor of this building and the columns below were steel, the floor arches being brick, and the column protection of clay tile. These columns were made up of Z-bars and plates and were about 15-in columns. The particular column which attracted attention had assumed the form indicated roughly by the accompanying sketch; that is, it had buckled and shortened up about 1 ft., causing a plainly observable depression or dishing of the floor above. The destortion or bending of the column laterally was very small, the shaft above and below the immediate point of buckling being nearly in its original position. Adjacent columns, though bent, showed no such appearance of buckling, and it is, perhaps, fair to assume that this particular column, heated by the fierce fire, must have sustained a direct blow from falling debris in the collapse of the floors above. This fact, however, the writer was unable to verify, as there was no access to the floor above.

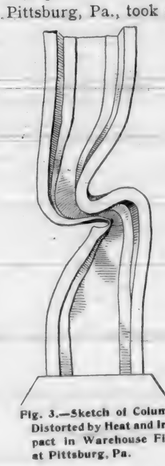


Fig. 3.—Sketch of Column Distorted by Heat and Impact in Warehouse Fire at Pittsburg, Pa.

The incident, however, is most interesting for the manner in which it brings out the reliability of steel as a structural material. Despite its severe distortion, this column still remains in position, and from all appearances was still in condition to carry a pretty heavy load. In the same place a cast-iron column would probably have failed entirely by breaking in two. This fact of toughness was still further evidenced by a close examination of the distorted plates and flanges, which, so far as could be observed, did not show a single crack, though in some places they were bent double. Another noticeable feature was that none of the rivets had been twisted or sheared off by the distortion, though this was sufficient to cause the edges of riveted plates to spread apart between the rivets far enough for the finger to be inserted, while directly at the rivets the two plates were still in contact.

THE statistics of the building department show considerable activity in building operations in St. Louis during the month past, and the prospect for a good building year seems to be as favorable in that city as in any of the larger cities of the middle west. The total number of buildings for which permits were issued during March was 317, and the estimated cost of these structures was $1,096,580, as against 295 buildings, costing $692,007 for the corresponding month in 1897.

This exchange item noting prosperity at the Mound City must be very gratifying to The John Douglas Company, this well-known and popular concern having only recently opened a branch store at that point in order to kept up with the "Course of Empire". Their chain of branch depots now takes in Philadelphia, Chicago, San Francisco, and St. Louis; while their factories at Cincinnati it is currently reported are kept going with full force to supply the demand for their justly popular closets and fittings.

WHAT is known as wire-glass has for some forty years or more been manufactured both in Europe and in the United States. As its name implies it is simply ordinary glass in which wire netting has been introduced while the glass was in the process of being rolled into sheets. Practically the wire insert does not add much to the ductility or strength of the glass sheet, but it has the special quality of keeping the plate together after fracture from impact or heat. In fire-proof qualities it has special value, and is rapidly taking the place of iron fire-proof shutters, as not only resisting fire but admitting light. In a valuable paper on "Recent Developments in the Manufacture and Applications of Wire Glass," by Francis Shuman, read before the Mining and Metallurgical Section of the Franklin Institute, Philadelphia, some forceful illustrations were given of the fire resisting qualities of wire-glass. These practically demonstrated the efficiency of the comparatively new method of resisting fire with a light admitting material. In a series of photographs it was shown that wire glass remained intact after being subjected to a heat, when the walls were cracked, plain glass partly melted, smokestacks had fallen, and fusion had taken place on the face of the brickwork. In other features of utility the authority quoted said:

"In wire-glass the architect and engineer has an article of undoubted value in the light of modern requirements. A medium for enclosing space, fire-proof and water-proof, transmitting light, not liable to disintegration by corrosion or combustion, and difficult of penetration, which still maintains its utility, no matter how much it is sub-divided by cracks, as it will neither leak nor fall apart and injure those below when used in skylights."

It has also been demonstrated that what is known as "rough-ribbed wire glass, such as is used for skylights and windows, adds greatly to the diffusion of light, and the author of the paper further says, "that such rapid strides are being made in perfecting the methods of manufacture, that it will not be long before wire-glass will be generally accepted as an established commercial product, its process of evolution being analogous to that of steel." In resistance to severe storms of snow, hail, etc., the value of wire-glass has been repeatedly demonstrated, and the advantages of its use may be formally summed up in the conclusion reached by experts, that in the near furture, it will be much more extensively used than at present, and in its fire-resisting qualities especially will be found to be of invaluable service. —*The Age of Steel.*

Family Friend—"Does your father suffer much with the rheumatism?" WORRIED DAUGHTER—"No, not half as much as we do."

TRANS-MISSISSIPPI AND INTERNATIONAL EXPOSITION.

JUNE 1 TO NOVEMBER 1, 1898.

JUNE 1, 1898, is the date set for the inauguration of the Trans-Mississippi and International Exposition at Omaha. For five months the gates will open upon a magnificent display of the products, arts, industries and resources of the Greater West.

The Trans-Mississippi Commercial Congress, composed of delegates from every state and territory west of the Mississippi river, by unanimous vote designated Omaha as the Exposition City. The area

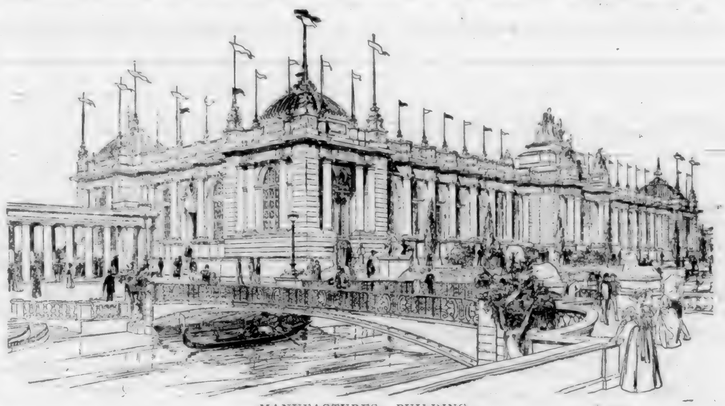
FINE ARTS BUILDING

of the Trans-Mississippi region is more than 2,500,000 square miles, and embraces the great granary of America, vast forests of merchantable timber, and practically all the precious minerals produced in the United States.

A corporation styled the Trans-Mississippi and International Exposition, with a capital of $1,000,000, constituted according to law, is in control of the Exposition. In addition to stock subscriptions and donations, amounting to $500,000, revenues from various sources aggregating not less than $1,000,000 are positively assured. With these resources at command the managers are vigorously pushing the work of preparation of grounds, construction of buildings and of the development of plans to promote the enterprise. The active management of the Exposition is vested in a directory of fifty members, with an executive committee of six department managers. Each department is divided into appropriate bureaus in charge of experts in their respective branches.

The Congress of the United States appropriated $200,000 and made further provision for a government building and exhibits at the Trans-Mississippi and International Exposition. Plans for the Government building have been approved and construction work is in progress. President McKinley has appointed a commission authorized to supervise the collection of exhibits and to have custody of buildings and exhibits during the period of the Exposition.

Facing the Plaza directly inside the main entrance is the Fine Arts Building, in shape a parallelogram 246 feet long and 130 feet wide, the long axis parallel to the Grand Canal. It consists of two separate, symmetrical, domed buildings, connected by a peristylium or open court surrounded by colonnades. The building rests on a ballustraded terrace, and is approached from the Plaza by flights of steps, and also from the avenue bordering the canal, between it and the building. One enters through the portico and vestibule to the dome, central for each building and lighted from the top, forming a suitable place for the effective exhibition of statuary. Surrounding this central feature are the galleries, all lighted by sky-lights, and so arranged as to afford the greatest degree of wall surface for the display of pictures and to allow for the proper circulation of visiting crowds. The two separate buildings offer a better opportunity for the classification of material and at the same time, bring the scale of the architecture to its proper relation with the surroundings and in accord with the general scheme of the Exposition grounds. The colonnade connecting the two parts forms an effective architectural feature, conspicuous from the canal and opposite avenue, and affords a place for the installment of architectural fragments and models, which cannot be so effectively arranged inside the walls. A touch of landscape art lends additional interest to this court. In the exterior design a somewhat free rendering of classic motif has been adopted, the usual severe simplicity of outline being modified sufficiently to bring it in accord with the purpose of the building. The basis of the design is the Corinthian order, which is applied in two dimensions, the larger emphasizing the entrance porticos and repeated on the gables fronting the canal and opposite side; the smaller is adjusted to the height of the flanking walls and connecting peristyle, and serves as a tie to bind the separate elements into one composition. As being quite in accord with the character and purposes of the

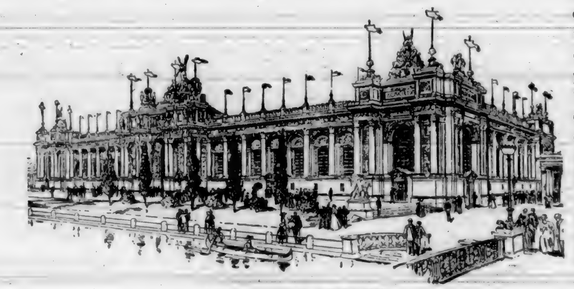


MANUFACTURES BUILDING

building, it was determined to make a liberal use of the sculptors' and painters' art to soften the outline and bring out in greater contrast the severer forms of the architectural

members. To this end the walls behind the columns of the porticos will receive a decorative color treatment, interesting in itself, and forcing into greater prominence their classic outlines. The sculptor is again called upon to crown the pediments and flanking buttresses with groups and figures representing the various arts, and holding out for those who win them, the emblems of success. Eames & Young, Architects, St. Louis.

The Manufactures building designed by John J. Humphreys of Denver, is a handsome structure of the Doric order,



AGRICULTURE BUILDING

modified to comport with nineteenth century requirements. The result is a building of simple dignity, having an air of repose considered requisite in a large building.

The facade presents a frontage of 400 feet, accentuated at center and end with pavilions, sixty-four and forty feet respectively, thereby obtaining sufficient variety of mass. The solidity of these pavilions and their strong perpendicular lines and shadows give a strong contrast of light and shade.

The height of the building to the top of the main cornice is forty feet; the height of order thirty feet, resting on stylobate ten feet high. The height of the center pavilion to the top of the crowning group of statuary is eighty-five feet, while the end pavilion is sixty-five feet to the top of the dome. The large windows, ten feet wide by twenty-four feet high, placed at intervals of sixteen feet, and the roof having a large skylight area, make the interior very bright and cheerful.

The center entrance is twenty-four feet wide by thirty-four feet high, and very rich in decoration, flanked on either side by coupled columns and their accompanying pilasters, standing six feet from the walls. The main cornice breaks around a projection of columns supporting pedestals for groups of statuary. There are also single statues between columns resting on stylobate projected out to receive them. The spandrels above the arch are decorated with bas-reliefs. The end pavilions with their entrances are crowned by shallow domes.

The entire interior elaboration will be confined to classic ornaments. The ceiling, a large barrel vault, with intersecting cross-vault, is richly coffered and elaborately decorated. On the walls it is here proposed to have mural paintings emblematic of manufactures.

The design of the Agriculture building shows a richness of ornament almost to redundancy, which not only gives it the character of an exposition building but suggests the wealth and abundance derived from agriculture. Rich and brilliant color is an important element in the design. This color is applied to the loggias and on the plain wall surfaces, leaving the arches, columns and main architectural parts to stand out in simple, strong masses, having no color themselves but relieved against the colored background. This color treatment produces a beautiful and brilliant effect, whether seen under brilliant sunlight with the strong shadow falling across it, or in half-lights late in the afternoon, reflected in the lagoon or half concealed by the projections of the buildings, as it is seen in the perspective. While the building is of Renaissance or classic type the decorations and ornament will be entirely modeled from agricultural products—festoons of corn and other cereals, and even the common market garden products are given proper place in this decoration. The great semi-circular niche forming the main entrance will be richly decorated in this way in color, and on either side of it there will be figures representing the "Digger" and the "Sower," taken from Millet's famous paintings, supported on either side by lesser figures and the arms of the state and nation. At each side of the great central arch will be recessed niches with rich color decoration, and crowning this central composition will be three sculptured groups, those on either side representing the zodiac and the seasons, while the central figure, crowning the whole composition, will represent "Prosperity," supported by "Labor" and "Integrity." At the corner pavilions there will be figures representing the seasons and the favorable winds, and inscriptions relating to the subject of agriculture. Names of those who have been patrons of agriculture or who have made notable inventions in this field of labor will be inscribed upon the panels in the frieze. The outside dimensions of this building are 148x400. It has a total floor space of 84,260 square feet. The design is the creation of Mr. Cass Gilbert, Architect, St. Paul, Minn.

The design of the Liberal Arts Building is of the French Renaissance school of architecture, harmony and proportion being regulated by the conditions of the other main exhibit buildings in the Grand Court. The Liberal Arts Building is located on the south side of the Grand Canal, near the Arch of the States. The exterior presents the appearance of two stories, the first story or stylobate being low in treatment, with small windows cut into a plain wall surface. The second story is enriched by Corinthian columns, set in pairs with ornamental windows between, and the top of the building is finished with an open balustrade which adds to the general effect.

LIBERAL ARTS BUILDING

At each corner of the building are pavilions with ornamental pediments projecting sufficiently from the main line wall to show a strong corner treatment.

Above the pediments at each corner of the building are

octagonal bases on which will be set groups of statuary. Each group will be composed of four heroic figures, the main one representing the Liberal Arts will be supported by two kneeling figures suggesting industrial art, while in front of all will be a smaller figure supporting a shield on which the attributes of pottery and wrought-iron will be inscribed. An uninterrupted line along the entire front is preserved by the aid of the color-treatment between the pavilions.

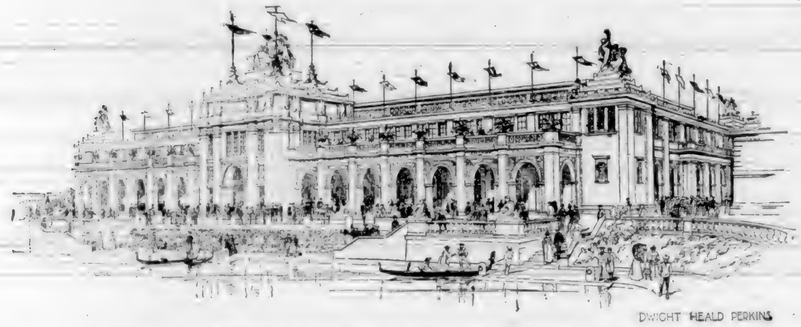
The class of exhibits for which the building is intended will be indicated by the free use of statuary and ornament on the exterior. Color will enter largely into the design and play an important part in the general effect, which will be quiet and dignified, and in strict harmony with the general grouping and masonry of the buildings in the Grand Court, which is buoyant, simple, strong.

The Liberal Arts Building is 246 feet front by 130 feet in depth. The main entrances are on the east, west and north fronts. Fisher & Lawrie, of Omaha, are the architects of the building.

The Machinery and Electricity building is 304 feet front by 144 feet in depth. There are triple entrances on the main floor level in the center of the main front, and similar groups in the centers of the east and west fronts, with four emergency exits in the north wall. In front of the building, flanking both sides of the main entrance, is an open portico sixteen feet wide, running the entire front of the building. The center entrance feature projects beyond the portico, thus forming the grand entrance vestibule. The main floor covers the entire area of the building. Above is a gallery thirty-two feet in width, extending around the four outer walls. The gallery is reached by spacious staircases located in the front corners of the building. This leaves a high central court 248 feet long by 80 feet wide, lighted from the skylights and clere-story windows above the roof.

The character of the exhibits sheltered by this building is shown by the decoration. The ornamental spandrels and panels receive all of their motifs and suggestions from machinery. The cresting at the top is composed of cog-wheels, this principle being carried out in all of the decorations. The underlying principle and function of machinery is symbolized by the groups of statuary on the top of the building. At each of the four corners are groups representing the early supremacy of man over the untamed forces of nature. These forces are represented by wild animals. Men in their youth are seen subduing them for the simple purpose of escaping injury and the preservation of their own lives at the sacrifice of the natural forces. A higher supremacy is shown by the center group, which is the dominating feature of the entire design. In this, man developed beyond the youthful stage, having wisdom, takes these same untamed, unharnessed forces of nature and harnesses them to his chariot, making them do his bidding, symbolizing in a direct way the service which machinery does for man in using the powers of steam, fire, electricity and gravity.

Color enters into the design with maximum importance. The ornaments in the panels under the porticos and over the main entrances will be highly emphasized by small background spaces of strong colors. These are treated in such a way as to give great interest to the spectator near by without detracting from the general quiet and dignity of the view from a distance. The entire building will be a series of yellow and ivory tones, growing more intense as they reach the top, culminating in the dull golden statuary full of primative vigor which surmounts the building and symbolizes its use. The building was designed by Dwight H. Perkins, architect, Chicago.



MACHINERY AND ELECTRICITY BUILDING.

THE COST OF OPERATING ELEVATORS BY STEAM, WATER AND ELECTRICITY.

THE COST of operating elevators by steam, water and electricity has properly become the subject of careful investigation, in view of the extensive and growing use of these appliances. It is stated that in New York, the home of so many sky-scrapers, a larger number of persons are carried vertically in elevators than are transported horizontally by the various forms of traction. Experience with electric elevators in the United States is said to have shown the cost of carrying a useful load 1500 pounds to a height of 100 feet, inclusive of return to starting point, to be one cent. In Berlin and Vienna the cost is reported to be considerably below the figure mentioned. In the former city the cost of lifting by electricity a load of 850 pounds to a height of 80 feet, inclusive of descent, was only one-fifth of a cent.—*The Canadial Architect.*

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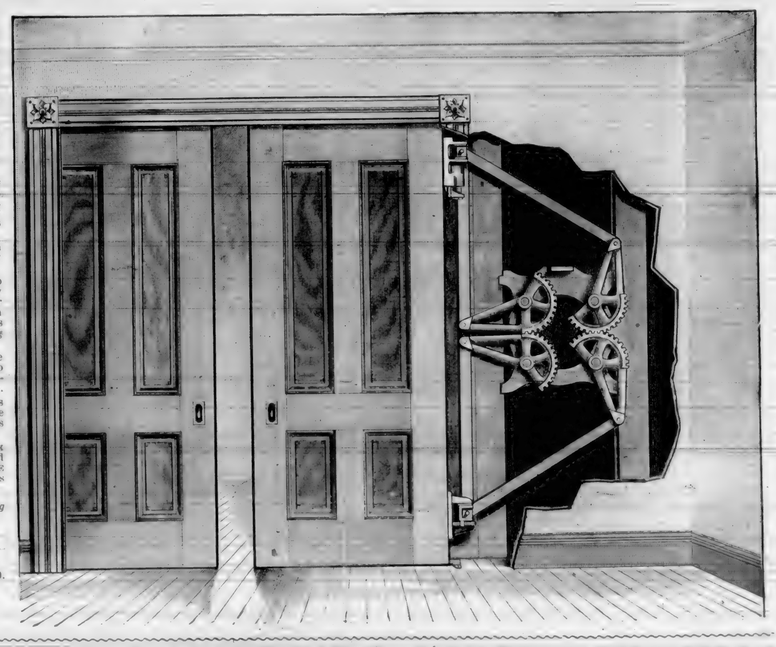

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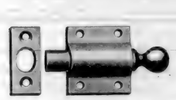
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The "LINCOLN" LAUNDRY TUBS and SINKS

TREASURY DEPARTMENT, OFFICE Supervising Architect, Washington, D. C.; May 19, 1898.—SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 23rd day of June, 1898, and then opened, for the constructive steel work, roof framing, etc., of the U. S. Postoffice, Court House, etc., San Francisco, Cal., in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Superintendent at San Francisco, California.

JAMES KNOX TAYLOR.
Supervising Architect

BUILDING NEWS.

SAN DIEGO

Three large art glass window pieces have been placed in the Elks' lodge rooms by W. P. Fuller & Co. The central piece has a magnificent elk's head blasted in the glass while each of the other two companion pieces has worked in the center a large lighted torch.

The foundations are being prepared for General Churchill's new residence, near the Hotel del Coronado.

Ralph Granger has accepted plans for an extension of his music rooms in his house at Paradise Valley. The addition will be 80x30 feet, and the present music room will be used as a reception room for the new apartment.

F. Kreamer was granted a permit to build a two-story and basement house on Fourth street, between A and B, to cost $1600.

F. Heinlein, architect, is seeking to recover $750 for drawing plans for a new stockhouse, warehouse and other buildings for the S. D. Brewing Co.

SAN PEDRO

Plans and specifications for the construction of the new electric railway that is to be built on San Pedro street, with a proposed terminus at San Pedro harbor are now being considered in the office of the en-

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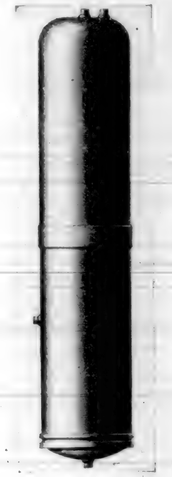

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BUILDING NEWS.

gineer, F. W. Wood. It is expected that work will be commenced in a week or so. In the meantime architects are working on the plans for the buildings to be used in connection with the enterprise.

SAN JACINTO

The Riverside county hospital, at South San Jacinto has been destroyed by fire. The building was valued at $20,000, and was covered by $10,000 insurance. Losses on other buildings destroyed at the same time will amount to $5000. Efforts will be made to rebuild at an early date.

BUILDING NEWS.

STOCKTON

Bids were opened on the 16th in the office of Geo. Rushforth, architect, for a cottage for Mrs. Elizabeth Wermuth to be built on Commerce near North, the contract was awarded to Lewis Todd & Co. the lowest bidders, price $1271.

The same architect is preparing plans for a residence for Jerome Haase to be erected on N Stanislaus street the brick foundation is now constructed, the house complete will run to $4000.

Bids were opened in the office of Chas. Beasley & Son May 4th for a two-story lodging house for Mrs. Simon N San Joaquin street, F H Martin was the lowest bidder at $3850

Herbert Baldwin of this city has just broken ground for the erection of a modern cottage which will be built chiefly by day work, Downing & Lemme are the architects

FRESNO

All the bids have been received for W Parker Lyon building at Fresno and the building is well under way and will cost when completed about $9000, George Rushford of Stockton is the architect, and not Beasley & Son as was erroneously stated in our March issue.

LOS ANGELES

The building committee of the city board of education has recommended as a model for the new Pico Heights school, the Union Avenue building, with some modifications, work will commence shortly.

Architects Howard & Train are preparing plans for Alfred Ottaway of two-story eight room residence, to be built at 18th and Bush.

Archt W. S. Gorrett is preparing plans for J. Williams, for cottage on Winfield near Union ave.

Archts. L. B. Valk & Son are preparing plans for Johnson, Keeney & Co, for 3, 7-room 2-story residences Spanish and Italian style; to be built on Lone Star tract and on 36th st near Vermont ave.

J. R. Vogel, 701 South Broadway is taking bids on the erection of a 3-story business block to be built on the northeast corner of Temple street and Broadway.

Competitive plans are being made for the Edison Electric Co., for their proposed new building, East Fourth between Main and Los Angeles.

BUILDING NEWS.

TREASURY DEPARTMENT OFFICE Supervising Architect, Washington, D. C., May 19, 1898.—SEALED PROPOSALS will be received at this office until 2 o'clock P. M., on the 23rd day of June, 1898, and then opened, for the constructive steel work, roof framing, etc., of the U. S. Postoffice, Court House, etc., San Francisco, Cal., in accordance with the drawings and specifications, copies of which may be had at this office or the office of the Superintendent at San Francisco, California.

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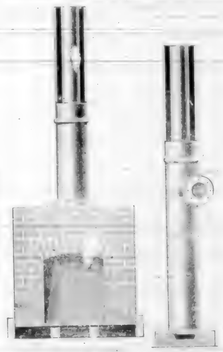

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VOLUME XIX. No. 6. JUNE, 1898.

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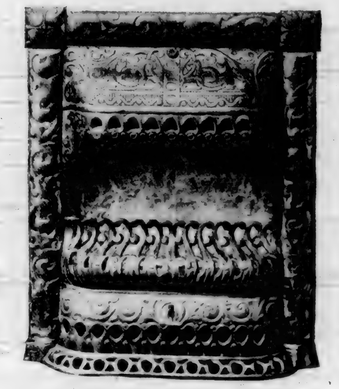

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BUILDING NEWS.

Arlington near Miguel. One-story frame; o, J. Scheuer; a, L. G. Bergren; c, L. G. Bergren; signed, May 17; filed, May 18; cost $1800.

Berry near 4th. Additional story to warehouse; o, Theodore F. Payne and Warren R. Payne; c, Curlett & McCaw; c, F. W. Kern; signed, June 13; filed, June 17; cost $9540.

Broadway near Dupont. Carpentry work, etc; o, Annie Jennings and Isabella Flower; a, Jules Godart; c, Howkins & Lindsay; signed, June 1; filed, June 2; cost $2525.

Broadway near Webster. To build; o, Julius Gall; a, Percy & Hamilton; c, F. H. Mascow; signed, and filed, June 2; cost $8485.

California and Battery. Removal of old brick work and all work except plumbing, etc; o, Gray's Harbor Commercial Co; a, N. Blaisdell; c, Howkins & Lindsay; signed, May 31; filed, June 2; cost $1184.

Devisadero near Golden Gate. To build except plumbing, etc; o, Miss Mary J. Dunn; a, Martens & Coffey; c, Helt & Ahlgren; signed, May 26; filed, June 8; cost $3920. Plumbing, etc; c, E. Kraus; signed, 24; filed, June June 8; cost $600.

Devisadero near Hayes. To build; o, Wm. Mocker a, R. Zimmermann; c, C. Krecker; signed, June 7; filed, June 9; cost $6700.

Eddy and Mason. Metal lathing, etc; o, F. Nigro; a, Wm. Mooser & Son; c, Campbell & Pettus; sub-c, Western Expanded Metal Co; signed, April 2; filed, April 20; cost $5780.

Eddy, No. 123. Elevator work; o, A. M., S. M., E. D. and C. W. Rosenbaum, Julia and Verginia Strassburger; c, W. H. Holman; signed, May 27; filed, May 28; cost $3350.

Ellis near Franklin. All work except plumbing, etc; o, David Cohen; a, F. Schwerdt; c, Val Franz; signed and filed, May 28; cost $5650.

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BUILDING NEWS.

...lis near Franklin. All work except plumbing, ... o; Rosa and Julie Lazarus; a, Sutfield & Kohlberg; ..., J. T. Grieb; signed, June 3; filed, June 4; cost $220.

...seventh Ave, o, Nellie Boege; a, D. A. Mattinely; ... red, J. Maurer; signed, April 19; filed, June 6; ... $1400.

...hteenth near Church. Cottage; o, Henry J. ... er; c, Philipp Schwerdt; signed, May 14; filed, ... 19; cost $.650.

...reka near 18th. Cottage; o, Amelia M. Eggers; ... G. Bugbee; c, F. L. Brookes; signed, May 20; ..., May 21; cost $.695.

...lbert and Taylor. Three-story frame; o, Ernest ...el; a, W. O. Bothke; c, H. Behrens; signed, June ...ed, June 10; cost $1630.

...bert near Jones. To build; o, John Doelger; c, ... Weisman; cost $3500.

...elon near 4th. School house; o, Archbishop P. ...ann; c, Henry Munster; signed, May 18; filed, ... 19; cost $7831.

...emont near Howard. Four-story brick; o, Jane ...and; a, M. Eelshaw; c, J. W. Wissinger; signed, ... 31; filed, June 8; cost $17,500. Brick work; sub-... A. Wilson cost $8250.

...fteenth Ave. near P St. To build; o, D. B. and ... y J. Todd; a, Townsend & Wyneken; c, W. H. ...es; signed, May 18; filed, May 21; cost $2370.

...olden Gate Ave. near Lyon. Alterations; o, ... es Clyde; a, R. H. Wolfe; c, D. H. Matheson; ...ed, May 18; filed, June 8; cost $197.

...night and Scott. Additions and alterations, o, ...ms F. Doehring; a, Sutfield & Kohlberg; c, C. ...Kocker; signed and filed, May 18; cost $1054.

J...ckson and Octavia. Carpentry, mill work, etc; o, Expositor Rose; a, J. F. Krafft; c, ... Chisholm; signed, June 9; filed, June 13; cost $10 000. Painting, etc; c, Wagner Bros; cost $250. Plumbing, etc; c, Ickelheimer Bros; cost $500. Electric lighting, etc; c, Pacific Coast Electric Co; cost $1164.

Jackson and Jones. Excavation, brick work, etc; o, John Shirley; a, C. A. Meussdorffer; c, Miller & Berk; signed, May 17; filed, May 18; cost $3057.

Jackson and Jones. All work except plastering, etc; o, John Shirley; a, C. A. Meussdorffer; c, Frank Steinman; cost $12,490. Plumbing, etc; c, H. Williamson Co; signed and filed, June 4; cost $2218. Painting, etc; c, G. Schmee; signed, June 2; filed, June 4; cost $400.

Jackson near Pierce. Painting, etc; o, Mrs. Camilla Samson; a, Sutfield & Kohlberg; c, Bliss & Storz; signed, June 10; filed, June 18; cost $1000.

Jersey near Sanchez. Cottage; o, Daniel Hurley; c, Douglass & Co; signed, May 16; filed, May 20; cost $1442.

Kearny and Morton. Carpenter work; etc, o, M. A. Gunst & Co; a, Hermann & Swain; c, Petterson & Person; signed, May 19; filed, May 19; cost $9800.

Kearny and Morton. Plumbing; etc; o, M. A. Gunst & Co; a, Hermann & Swain; c, Ickelheimer Bros; signed and filed, May 20; cost $1328.

Kearny and Morton. Painting, decorating, etc; a, Hermann & Swain; c, G. A. Petterson; signed and filed, June 13; cost $975. Brass grill work, etc; c, C. F. Kinsman; signed and filed, June 13; cost $800 Cabinet work, etc; c, Petterson & Person; same, L. & E. Emanuel; cost $3620.

Lyon near Bush. To build; o, Mrs. M. E. Denervaud; a, Nathaniel Blaisdell; c, Edward C. Bleich; signed, June 15; filed, June 17; cost $2675.

Market and Sacramento. Brick and granite work, etc; for 4-story brick; o, Mrs. Emily E. Pope; a, Possis & Moore; c, Richardson & Gale; signed, May 19 filed, May 20; cost $20,847. Carpentry etc; c, S. H. Kent; cost $.2,500. Sand stone; c, Colusa Stone Co; cost $9480.

Market near Golden Gate Ave. Excavations, etc; o, James D. Phelan; a, Curlett & McCaw; c, Z. O. Field; signed, June 10; filed, June 11; cost $1500.

Market, near Golden Gate. Two-story brick; o, J. R. Whitney; a, Lenzen & Son; c, Z. O. Field; signed, May 12; filed, May 31; cost $13, 40.

Main near Market. Electric elevator; o, E. Kronenberg; a, W. L. Holman; signed, June 2; filed, June 4 cost $400.

Mason near Ellis. Addition; o, Harriet McCarty; a, Shea & Shea; c, Campbell & Pettus; signed, June 16. filed, June 20; cost $8014.

Mission and 2d. Heating and ventilating; o, Wells, Fargo & Co; a, Percy & Hamilton; c, Geo. H. Tay & Co; signed, June 8; filed, June 11; cost $5650.

BUILDING NEWS.

Mission near 21st. Two-story brick; o, John Sheehy a, Shea & Shea; c, J. W. Coburn; signed, June 9; filed, June 10; cost $9854.

Montgomery and Sacramento. Seven-story brick; o, Pacific Mutual Life Ins. Co; c, Crane Elevator Co; signed, Jan 4 filed, May 23; cost $3685.

Morton near Stockton. Six-story brick; o, V. Menesini; a, C. R. Wilson; c, J. McCarthy, J. R. Elerath; signed, May 20; filed, May 21; cost $5747.

North Beach near Hyde. Two gas purifiers; o, Equitable Gas Light Co; c, P. F. Daudon; signed, April 20; filed, May 23; cost $.997.

North Point near Hyde. To build; o, Dorsolina Cuneo; c, Henry Weiss; signed and filed, June 1.; cost $.400.

Octavia and Walnut. Painting, etc; o, Mrs. Sarah Morris; a, Sutfield & Kohlberg; c, Fred Wagner; signed, June 7; filed, June 18; cost $650.

Octavia near Sacramento. All work except mill work for three-story brick; o, Adolph Mack; a, Newsom & Meyer; c, Mollory & Swenson; signed, June 9; filed, June 11; cost $12 500. Plumbing, etc; c, Ickelheimer Bros; cost $1335. Painting, tinting, etc; c, Kuss & Storz; cost $1400.

Pacific near Leavenworth. To build; o, J. St. Denis; a, Pissis & Moore; c, L. B. Perramont; cost $.2475.

Pierce near Haight. Plumbing, gas fitting, etc; o, Emma Scholl; a, Kentzer & Barth; c, H. Munster; cost $.2018.

Post near Octavia. Alterations and additions; o, Mrs. Ann Crooks; superintendent J. J. Crooks; c, Thos. Rideout; cost $.370.

Post and Laguna. All work except mason work; o, Mrs. Rose Kahn; a, J. J. Laferme; c Z. O. Field; signed, June 16; filed, 17; cost $8.55.

Powell and Eddy. Painting, etc; o, W. Bogen; a, Havens & Toepke; c, Busch & Wocker; cost $2500.

Point Lobos Ave. near 5th. Additions to French Hospital; o, La Societe Francaise de Bienfaisance Mutuelle; a, Emile Depierre; c, B. Beaus; cost $2750.

Sansome and Bush. Addition; o, Murphy, Grant & Co; a, Frank S. Van Trees; superintendents, Mahoney Bros; cost $20,000.

Scott near Haight. To build; o, Hugh Keenan; c, Charles Keenan; cost $6500.

Continued on page xii.

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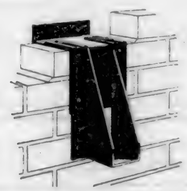

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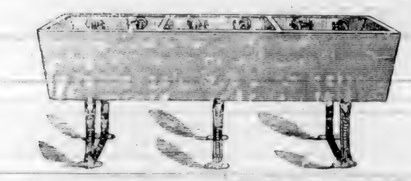

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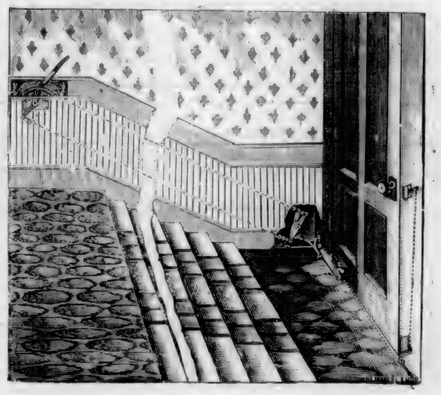


VOLUME XIX. JUNE 20th, 1898. NUMBER 6.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

PLANS and Specifications for Economical Dwellings, Farm Buildings, Etc.: published by the Continental Fire Ins. Co., New York. A copy will be sent to any property-owner who intends to build, (and will insure his property in the Continental), upon written request to the New York or Chicago office. Also contains proper forms of contracts with builders and architects. Plans are for dwellings costing from $500 to $2500.—Coast Review.

We are sure that architects throughout the country who have read the writings of Mr. F. C. More, President of the Continental Fire Ins. Co., of New York, on Slow Burning Construction, Fire Proofing and kindred subjects, will feel as much in sorrow as in anger, while reading the foregoing announcement. Sorrow, because that is the feeling that comes easily and naturally to all intelligent men when first made aware that one of their number has fallen from his place among men, stricken, as is the case in this instance, by the greed of gain.

As a class, architects are men above the average in intelligence and education, and they will hereafter rate Mr. Moore and his insurance company at their true value.

After the feeling of sorrow has passed, anger, righteous in this case, and deep resentment will have their sway. Then will arise a just demand for retaliation, and the vibration of this demand will be felt wherever architects congregate, as clubs, as unions, in Chapters, or in Institutes.

Mr. Moore is the guiding spirit of the Company but neither will be able to escape the consequences of this act, hich can only be classed with methods that are rated by high class commercial bodies as irregular, being looked upon as the exclusive preserves of venders of corn and bunion plasters, jewelry that is without jewels, dispensary specialities and a thousand other charlatine devices, that are offered every day to a gullable public by a class that are purely fakers.

THE *Examiner via*. Insurance Commissioner Clunie's inside rout, gave to its readers, very recently, some specially constructed information to the effect that, the great fight by the State, for a part of the Foreign Companies revenues had been won after a hard battle, solely by the tactful generalship of the Commissioner. But this item of news from Clunie's seat of war, like some other *Examiner* war dispatches, is pure fiction. The real status of the case appearing the same day, in the columns of the *Evening Bulletin*, which was to the effect, on the authority of the *New York Times*, that "Clunie would keep up the fight" having broken off all negotiations, looking toward a peaceful settlement.

So the Commissioner can be safely *rated* from this on to the end of his term of office, as a "warrior among quakers and a quaker among warriors" and to be feared accordingly.

Our "tumtum," to the doughty warrior would be: Come home and become an Economist—Robin Hoods are out of date.

PRESSURE WANTED FROM THE BOARD OF FIRE UNDERWRITERS OF THE PACIFIC COAST.

TO COMPEL SOME LOCAL ELECTRIC LIGHT AND POWER COMPANIES TO COMPLY WITH "RULES AND REQUIREMENTS" OF THE NATIONAL BOARD.

IN THE April issue of the Architect considerable space was devoted to an *expose* of the underground wiring and service system that had been put in force in this city by The Mutual Electric Light Company *limited*. In that article the attention of readers was particularly drawn to the danger to be apprehended from explosions and fire, from the installation of this company's Red Wood Plank Conduit System, at the underground points of connection with consumers premises, in the down town conjested districts. The incident of the Alma Keith fire in the Phelan Building, was illustrated to prove that the fire was the direct consequence of serving electric current through wooden conduits dumped on the underground shifting sands and having raceways for the lead covered cables that were unsealed at the ends. When damages and accidents arise from such an outfit there should be no trouble in convicting the company establishing it, of criminal negligence. But, bad as the M. E. L. Co.'s methods are they have a rival in their badness in the Central Light and Power Company, "*me too*," *limited*. This company also has a system that is productive of fires in the raceways for electric conductors, which only demonstrates the fact more fully that for underground distribution of electric current there are but two systems which are safe, i. e., Edison tubes or lead covered cables insulated in fireproof ducts.

But to get back to the methods of this Central Company, which was first organized to dispose of the surplus current that the Emporium plant could produce, and finding this part of the business profitable, the Company decided that by enlarging the plant and extending the system they would be in a better position to accomplish the real purpose of their creation. So they enlarged, and since that time have made a practice of installing wires covered with simple cotton braid dipped in a compound known as "Weatherproof" insulation, which in reality is but insulation in name. This kind of wire being made for aerial work only. Such a covering offers no impediment to the passage of current from one conductor to another, or in some cases to the ground. The fire in question was caused by this lack of precaution in not providing proper insulation covering for their conductors, thereby allowing the current to leak from one side of the system to the other setting up an arc which in turn burned away the copper cables, and an entire section of the raceway.

As was stated in the April issue there is always a possibility of these open ducts collecting gasses which might be exploded by a fire of this description causing great damage to adjacent property.

Another source of great danger from fire is a practice by these Companies of installing converters, transformers or pressure reducing devices within or upon walls of buildings or in basement under sidewalks. In the event of the coils burning out within the case a great amount of heat is generated, which soon heats up the boxes to such an extent that in most cases, no matter how it has been installed, the adjacent work will be ignited. The proper, and in fact the only places where transformers should be located are upon poles of companies who distribute by means of overhead conductors or in manholes located in the streets for companies who use the uudergrouud system of distribution.

There should be a municipal law enacted at once prohibiting the installing of transformers within or upon buildings. In the meantime owners and tenants should see to it that no transformers are allowed to be installed either within or upon the buildings they occupy, while insurance Companies should prohibit such criminal practice by restrictions in their policies.

Rule No. 13 a of the Code of the National Board of Fire Underwriters says that *transformers must not* be placed inside of any building unless by special permission of the Inspecting Department having jurisdiction.

Equally as stringent and fully as important is the enforcement of the National Code Rules governing the use of cut out switches and entirely at the discretion of the Board of Fire Underwriters of the Pacific. Yet, notwithstanding this fact, the rules are only partially enforced while some of the Companies are permitted to follow a "go as you please" policy.

Now as the rule is enforced in some instances, the question naturally arises why is it not enforced in all? And as this is one of those "purely a matter of dollars and cents" cases with the Board, it is time that a little home pressure was brought to bear in the right quarter. If the "home pressure" was made out to read something like this: "All Electric Light and Power Companies in this jurisdiction, *shall and must* on and after July 1, 1898, be compelled to place a double pole or triple pole quick break switch at point of entrance of *All* installations, the switches would be so placed."

A word to the wise is generally quite as effective as the proverbial pound of prevention.

HERTZ' EXPERIMENTS ON THE ELECTROMAGNETIC THEORY OF LIGHT.

BY DR. CHAS. A. PERKINS.

PROFESSOR OF PHYSICS AND ELECTRICAL ENGINEERING—UNIVERSITY OF TENNESSEE.

THE Industrial applications of electricity have had an astonishing growth within recent years, but the enlargement of our knowledge of the nature of electricity itself, and its relation with various physical forces, has been no less remarkable.

Faraday was the first to prove the intimate connection between electricity and light, showing that the plane of polarization of light is rotated by an electric current, somewhat as it is rotated when passing through a sugar solution. Faraday further ventured the suggestion that light itself might be an electrical vibration, and that electrical and magnetic forces might be exerted by means of the luminiferous ether, "for it is not at all unlikely that, if there be an ether, it should have other uses than simply the conveyance of radiations." These ideas of Faraday were submitted to mathematical tests by Maxwell, who found them

capable of explaining and accounting for the facts, and upon them he based his well known electromagnetic theory of light.

Everyone who has used a telephone is familiar with the fact that when variable electric currents are passing along a wire, currents are thereby set up in the parallel telephone wire. Maxwell showed that if such a disturbance traveled as a wave from one wire to the other through the air, it should travel with the velocity of light. Maxwell's theory is, in short, that light is itself such a wave of magnetic induction. According to this theory, light is produced by rapidly alternating currents in the luminous body, the direction of the currents being reversed about one thousand million million times per second. Several of the optical properties of bodies can be explained by this theory, especially the extreme opacity of metals; and so strong was the evidence in its favor that the theory was considered by scientists to be highly probable, even in the absence of direct experimental proof. Indeed, currents of such a high rate of alternation are not to be measured by any ordinary electrical apparatus, nor is it easy to experiment upon the velocity of a wave which travels (as does light) with a velocity of 186,000 miles in a second.

LECTURE-ROOM IN THE TECHNICAL COLLEGE AT CARLSRUHE, WHERE HERTZ PERFORMED HIS EXPERIMENTS.

Direct experimental evidence was first obtained eight years ago by Prof. Hertz, in the following way:

Two conductors were placed very near each other and connected, one to each electrode of an induction coil, so that when the coil was in operation sparks should pass from one conductor to the other. Under these circumstances the electricity does not simply jump across the gap and come to rest, but vibrates back and forth in a series of sparks which follow each other at a rate depending upon the shape and size of the conductors used. For those first employed by Hertz they succeed each other at the rate of one hundred million per second. Of course there are not one hundred million sparks—perhaps half a dozen, but these follow each other at this rate. On holding near these sparking conductors a ring or rectangle of wire in which was a break at one point, evidence in its favor that the theory was considered by sparks were seen at this break whenever they occurred between the conductors, showing that the electrical vibration had the same power as an electrical current to induce a current in a neighboring wire. Having calculated the number of vibrations per second in these wires, the next question was whether the induction traveled as a wave, or whether the current was produced by the electrical vibration acting directly and instantly upon the wire.

A large sheet of zinc was hung upon the further wall of the room to reflect the wave of induction, if it were a wave, and as a result it was found that at regular distances from the sparking conductors, the induced spark in the wire could not be obtained, while at intermediate points it was intensified, just as when waves upon the surface of water are reflected back, there are certain points where the surface is at rest, while between these points the water rises and falls in a wave more vigorous than before.

Hertz thus found evidence of the existence of a wave of induction, and succeeded in measuring its length, and from the wave length and the number of vibrations per second, he calculated its velocity. This velocity proved to be, as nearly as his experiments would show, equal to the velocity of light.

To further study the similarity between this electrical wave and light, Hertz made two large parabolic mirrors of sheet zinc. In the focus of one of these he placed the two conductors which were in connection with the induction coil; in the focus of the other he placed two similar conductors, between which a spark would jump when they passed between the first pair.

The mirrors were placed facing each other and acted perfectly as reflectors, concentrating the wave and causing a vigorous sparking in the second pair of conductors. Metallic screens placed between the mirrors showed that the wave traveled in a straight line. By a large prism of pitch the wave was bent out of its course as a beam of light is refracted

so complete was the similarity of the electrical wave to that of light, that not a doubt remains in the mind of any physicist as to the identity, or at least the close connection, of the two.

The extreme interest and importance of these experiments led the writer of this article to desire a picture of the lecture room in the Technical college at Carlsruhe, Germany, where the experiments were carried on. The room has been restored, as far as possible, to its condition at the time of the experiments, and such of Prof. Hertz' apparatus as still remains intact is shown in the cut. The large reflectors are shown in position, with the prism of pitch placed between them, to determine its refractive power. The circles and rectangles of wire, reflecting sheets of metal, a large wooden frame on which are strung wires for experimenting on the "polarization" of the wave, are all shown. The man who is represented holding this large frame in his hand is Mr. Amann, who assisted Prof Hertz in carrying out his measurements. The picture also shows the stoves and iron columns at the sides of the room, which Prof. Hertz afterward believed had introduced certain errors into some of the measurements.—*The University Scientific Magazine.*

CHANGING FORM OF STONE BY PRESSURE.

SOME very remarkable experiments in geology and mineralogy are going on at the present moment in the Workman Engineering building at McGill University, Montreal, Province of Quebec, under the direction of Professor Adams, of the Faculty of Arts and Prof. Nicholson, of the Faculty of Applied Science. These experiments tend to show that a substance so hard and brittle as marble may, under certain conditions be moulded like clay. The experiments in brief consists of placing miniature columns of pure Carrara marble, or stone, in sheaths of iron and submitting them to graduated but long continued pressure, with the result that the marble shortens and bulges so as to swell the iron sheath. The iron being cut away, the marble, no longer cylindrical, but greatly altered in shape, remains as solid and brittle as before. No increase of temperature or other agency than the pressure is applied in producing the above change. The experiments so far conducted have been highly successful, and it has been proved beyond the shadow of a doubt that marble by long continued pressure, may be greatly altered in size, shape and appearance, yet remain in as solid condition as it was before the alteration took place.

These experiments, remarkable in themselves, have implications that make them of peculiar interest to geologists and mineralogists, and incidentally, to sculptors. For the geologist the interest in the proof of the plasticity of marble rests on the light the experiments thrown on certain obscure formations of the earth's crust. They prove that under the conditions of pressure existing deep in the crust, stones may be moulded into new shapes without being melted. In point of fact the moulded marble of these experiments, when examined under the microscope, presents many striking resemblances to certain natural rocks whose peculiar cleavage has heretofore been difficult to explain. The recent discovery at McGill, however, shows that, however brittle a rock may seem to be, it is in reality a plastic substance, capable of flowing into new shapes as surely, if not as readily, as putty or dough is moulded.

In commencing these experiments three years ago, Professors Adams and Nicholson wished to ascertain whether it was possible, by subjecting rocks artifically to pressure under the conditions which obtain in the deeper parts of the earth's crust, to produce in them the deformation and catalastic structures exhibited by the folded rocks of the interior of mountain ranges or of the older formations of the earth. They took into consideration the three factors which combined to bring about the conditions to which rocks are subjected in the deeper parts of the earth's crust: (1) Great pressure from every direction; (2) high temperatures; (3) the action of percolating water.

In the several experiments which have taken place at McGill, the attempt has been made to reproduce only the first of these conditions. In subsequent experiments the endeavor will be made to reproduce all three of them.

The experiments so far conducted have been made chiefly with pure Carrara marble, and the process followed is thus described in detail by Prof. Adams: Columns of marble, two centimeters and two and one half in diameter and about four centimeters in length, are very accurately turned and polished. Heavy wrought iron tubes are then made, imitating the plan adopted in the construction of ordnance, by rolling long strips of Swedish iron and welding the strips to the bar as they are rolled around it. When the welding process is completed, the core of soft iron, around which the Swedish iron has been wound, is drilled out, leaving a tube of welded Swedish iron six millimeters thick, and so constructed that the fibers of the iron run round the tube instead of being parallel to its length. The tube is then very accurately fitted on to a column of marble. This is accomplished by giving a very slight taper to both the column and the interior of the tube, and so arranging it that the marble will pass only half way into the tube when cold.

The tube is then expanded by heating so as to allow the

MARBLE COLUMNS BEFORE AND AFTER PRESSURE

IRON CYLINDER INCLOSING MARBLE READY FOR SQUEEZING

marble to pass completely into it, and at the same time leave about three centimeters of the tube free at either end. On allowing the tube to cool, a perfect contact between the iron and marble is obtained, and it is no longer possible to withdraw the latter. Any very slight failure to fit at any point

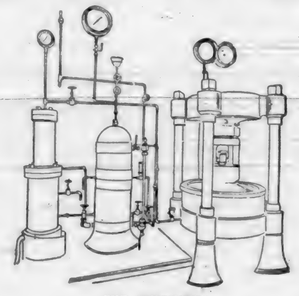
if such a failure exists in any case, is rendered harmless by the fact that under a comparatively low pressure, the limestone is found to be sufficiently elastic not only to fill up any such minute space, but even to stretch the tube, and, on the pressure being relieved, to contract again to its original form, so that it will drop out of the tube which has been thus enlarged.

When the marble has been firmly placed in position in the tube, an accurately fitting sliding steel plug is inserted in either end, and by means of these the marble is submitted to a pressure far above that which would be sufficient to crush it if not so inclosed. The machine employed in obtaining the pressure is so arranged that it (the pressure) might be maintained for weeks, or even months, if required. Under these circumstances the conditions of pressure to which the marble is subjected are those to be found in the "zone of flow" of the earth's crust.

Under the pressure which is applied gradually, and in some cases continued for several weeks, the tube is found to slowly bulge until a very marked enlargement of the portion surrounding the marble takes place. The tube is then cut longitudinally, by means of a milling machine, along two lines opposite to one another.

When thus cut the marble within is found to be firm, so much so in fact that it holds the respective sides of the iron tube, separated as thep are, so tightly together that it is impossible without mechanical aids to tear them apart. By the means of a wedge they can be separated, but the force of

PROF. ADAMS


THE COMPRESSOR

the blow frequently has the effect of splitting the marble through longitudinally.

In one experiment conducted by Professors Adams and Nicholson, the column of marble was reduced from 40 to 21 millimeters in height.

The deformed marble differs somewhat from the original rock in having a dead white color, the glistening cleavage faces of calcite being no longer visible. Although not so hard as the original rock, it is still firm and compact, especially so when its deformation has been carried out very slowly. No accurate measurements as to its strength have yet been made, but it will withstand a very sharp blow, and fragments of it weighing ten grams have been allowed to fall from a height of over eight feet onto a wooden platform from which they have rebounded without breaking. Thin sections of the deformed marble, when examined under the microscope, show that the calcite individuals composing the rock have, in many cases, been twisted and flattened, and, in the majority of cases, a very fine polysynthetic pressure-twinning has been induced in them, with movement along gliding planes, as well as several other structures seen in nature in highly deformed rocks.

To be Continued.

PREVENTION OF CORROSION.

FROM A PAPER READ BEFORE THE WESTERN SOCIETY OF ENGINEERS BY GEN. WILLIAM SOOY SMITH.

THE USE of combustible materials in buildings of all kinds endangers life and property to an extent realized only when we are startled into thinking by some great conflagration or appalling destruction of life by fire. If the great aggregate of destruction of life and property by fire during a single year could be carefully and accurately made up, the world would stand aghast at the horrible revelation. While such wonderful progress has been made during the latter half of the nineteenth century in the development and application of physical science, is it not passing strange that so little has been done to mitigate this stupendous evil? The term "fireproof" is only relative, for there is scarcely anything that will resist the highest known temperatures if applied for a few hours only. And the best and cheapest materials used in buildings do not belong to this class of very refractory substances. The subject of buildings is of vital interest to all mankind. Our convenience, comfort, health and safety depend largely upon the character of our dwellings and of the buildings in which our labor is done and our business transacted. It is especially requisite that the materials employed and the modes of construction of buildings shall be such as to make them strong, durable, safe and economical. They should also be as nearly as possible proof against destruction by fire, or by fire and water combined, as they are generally exposed to the joint action of the two in cases of conflagration.

The "skeleton construction" now so common in large cities for tall buildings is about as faulty and objectionable as it can be when exposed to this combined action. The expansion of the steel the buildings contain is at the rate of a tenth of an inch per foot for a change in temperature of one thousand degrees (red heat). The other materials, stone, brick, terra cotta, etc., each has its own rate of expansion differing from each other and from that of steel. They all differ also in their conductivity of heat. If these materials and steel are raised in temperature equally throughout their whole length, the increase in length will differ in each material, and taking the conditions as they occur in almost all burnings of buildings, the steel will, on this account, be heated much more quickly, and throughout a much greater part of its length, than any of the other materials present. The differences in the total dimensions of the several parts of the building resulting from these causes is so great as to bring about a destructive war between them. This is not mere theory, although it is correct. Close observation of the effects of fire on buildings discloses the same facts.

When a fire is in progress in a building and its parts heated to a high temperature, the fire engines throw powerful streams of cold water on the heated materials, and most of those now commonly employed fly to pieces under this joint action of fire and water. So says chief Swenie, of the Chicago fire department, and all who have become familiar with the effects of fire and water on building material. This is especially true of the light integument of terra cotta built around the steel columns of a skeleton building.

Iron and steel being the strongest materials used in the

construction of buildings, and in proportion to the service to be performed one of the cheapest, have deservedly come to the front rapidly as a building material, particularly in the United States, for the very high buildings that have been erected in the business districts of large cities in which the high prices of lots make it advisable to secure the greatest rentable space practicable on a given area. The experience previously gained in the construction of iron and steel bridges throughout the world prepared the way for the use of these metals in buildings, and to some extent developed correct methods of proportioning and connecting their parts. But it seems remarkable, in view of this experience, that such radical defects still creep into details of iron and steel framing in buildings—such as the flimsy lug and bracket connection of beams and girders with the columns, the eccentricity of loads on the columns, and the want of provision for expansion and contraction of the parts of the skeleton of a building. These defects are easily remedied.

And now supposing that all the metal parts of a building are properly shaped and connected, and all the loads and strains which the skeleton frame is to sustain are amply provided for, two great dangers threatening the safety and durability of the building still remain, viz: the weakening and destruction of the metal members by corrosion or by heat. These dangers are actual and obvious. But the precise rates of weakening by heat, and destruction by corrosion under different circumstances are not as accurately known as they should be. A column of iron or steel, such as those now commonly used in high buildings, would hold little more than its own weight when red hot; and it is well known that there is a dangerous weakening effect of heat at much lower temperatures. The metal while heated loses much of its strength to resist tension and compression, and also loses in greater degree its resistance to lateral fixture, and so the entire skeleton of a building may be deprived of a stiffness necessary to its stability.

It also happens that while the columns, beams and girders are weakened, they are also expanded by heat and unequally, as the degree of heat to which the different members are exposed varies. The unequal expansions of the horizontal beams and girders push the columns out of vertical into buckling positions, rendering almost certain a collapse of the whole structure. This has already occurred in many instances, and is likely to occur whenever fire attacks a skeleton building in which the metal parts are not absolutely protected by proper fireproofing. It also frequently occurs that the horizontal expansions of the beams and girders crack and shove out the walls against which their ends abut.

Many buildings having skeletons of iron and steel imperfectly protected by so-called fire-proofing have failed when heated by fire either in these buildings themselves, or in some instances from the burning of an adjacent building even at a considerable distance away, notably in the case of the Manhattan Savings Bank building, corner of Bleecker street and Broadway, New York, which was ignited by the burning of another building forty feet away and practically destroyed, and the three skeleton (so-called) fireproof buildings ruined by fire in Pittsburg, Pa., on May 3, 1897.

Many other instances may be cited, all teaching the same lesson, viz., that while steel at ordinary atmospheric temperatures is the cheapest, strongest and best building material known, it can only be considered safe and durable when thoroughly protected from high heat and corrosion. The rate of corrosion of iron and steel varies greatly under different circumstances. In pure water, containing no free air, with an airtight covering of paint or imbedded in quicklime, it scarcely corrodes at all, but when in the open air, particularly when alternately wet and dry, it rusts quite rapidly, and when exposed to steam and sulphurous fumes, it is eaten away by corrosion at the rate of one-eighteenth of an inch per annum, as was the case in the floor system of the viaduct in Milwaukee avenue, Chicago, under which locomotives were passing frequently; and corrosion at the same rate occurred in a portion of the western approach of the Eads bridge at St. Louis, where the same circumstances exist.

As the metal in a steel column is usually not more than one-half inch thick, corrosion at the above rate would make a steel building unsafe in less than twenty years. In an iron or steel skeleton building the columns starting at the basement floor, or at the floor at street level, extend to the top of the building. They are hollow and painted only on the outside, and this with paint that is so perishable that it will afford no protection from corrosion after the first five or ten years. The girders are nearly as much exposed as the columns, while the beams are generally bare on the top and bottom surfaces of the flanges, and sometimes over a considerable part of the webs.

Wherever the surfaces inside or outside are left uncovered they are exposed to corrosion that will be more or less rapid according to the temperature and hygrometic conditions of the air surrounding them. And in many instances, particularly in factories, there are destructive elements in the atmosphere, such as sulphur and chlorine, which may cause rapid wasting away of the metal, and which are the more dangerous, as they are apt to escape notice. A steel or iron skeleton building can be made safe and durable only by thorough knowledge of the nature of these metals and careful provision against the dangers that threaten it under all the conditions of their use. Supposing that the structural details are correct, care must next be taken to prevent corrosion. This may be done by covering all metallic surfaces, both inside and outside, with an indestructable coating of a material that will absolutely prevent corrosion. This having been done, all the metal parts must be inclosed in a fireproof and fireproofing material that will not only resist the heat of a conflagration, but so shield the metal from attack by heat as to prevent any considerable charges of its temperature. And this may be best and most certainly accomplished by having an eye to the fireproofing of each individual member.

Slow combustion of buildings can be secured by carefully whitewashing the inside and outside with fireproof material laid on with a brush. And fire departments claim that they can extinguish almost any fire if it is only prevented from spreading too much until they can bring their engines into play. If it of the utmost advantage to protect each building from the danger of ignition in the case of the burning of its neighbors, and this can be at least measurably done by the whitewashing suggested, and by putting fireproof shutters on all windows and openings of every kind. Where there is an open court in a building some sort of fireproof covering should be put upon all parts of such court, and the same protection should be given to stairways and elevator shafts.

The essential characteristics of a fireproofing material for buildings are: First, it must itself be incombustible; second, it must be as nearly as possible a non-conductor of heat; third, it must be strong and durable. While there are very many so-called fireproofing materials in use for which these qualities are claimed, up to a very recent period there

Residence of
G. A. ROSENBERG, ESQ.
ALAMEDA, CAL.

MAXWELL G. BUGBEE.
Architect.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY, PHOTO-LITH.

VOL. XIX. No. 6 JUNE 1898

A Design for a Church

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

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VOL XIX Nº6 JUNE 1898

A Sedley

CALIFORNIA ARCHITECT & BUILDING NEWS
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VOL XIX Nº6 JUNE 1898

FIRST CHRISTIAN CHURCH.
Austin & Skilling Architects
California Bank Building
Los Angeles

was not one of them that was a good non-conductor of heat, that would stand heating to redness, and being plunged into cold water while red hot, without flying to pieces. Within a few months, after years of careful experimenting, and testing the material, "asbestic" was discovered, which possesses all the requisites above enumerated, as proven by severe tests on a large scale at Montreal, New York, Washington and Chicago.

The requirements of a building are that it shall be strong enough to carry all its loads and resist wind pressure and all other strains to which it may be subjected as a whole or in any of its parts. That it shall be nearly as possible fire and weather proof, and that it shall be durable and not unreasonably costly. Supposing that steel is used for the framework of the structure as being preferable to any other for the frames of large buildings, and that proper shapes and sizes of all parts of such frames have been carefully and correctly determined, and the disposition and connections of these parts have been properly made, it only remains to cover the skeleton of a building inside and outside, roof included, with an integument that shall be fireproof, strong and durable; and, if possible, light, tough and elastic and a good non-conductor of heat and impervious to air or water. Such covering can be made of fireproof plaster of any necessary or desirable thickness, and suitable cornices and mouldings can be worked out of the same material.

As soon as the skeleton is erected every part of it should be covered with a thick coat of the fireproof material laid on with a brush. The metal lathing should then be put on, strengthened where necessary by angle or tie iron covering all parts of the frame and leaving an air space between the lathing and every part of the frame. The great weight of tile, brick and stone now used would thus be dispensed with and the much lighter construction described substituted. A very great saving of weight in the frame itself would be saved and the cost of the necessary foundations of the buildings be greatly reduced. There would be so many other important advantages realized that we need not describe them here. Enough has been said to invite the careful and unprejudiced study and criticism of engineers and architects, and out of this kind of investigation there may come a new system of building that may be the ideal one of the future.—*The Construction News.*

AN OFFICE BUILDING WITH FEATURES OF CONSTRUCTION AND SUB-CONSTRUCTION WORK THAT INVOLVE SPECIAL DESIGN AND ARRANGEMENT.

THE Singer Building, a modern iron and brick office building now approaching completion, is located on the northwest corner of Broadway and Liberty streets, New York city. It is about 60 by 111 feet in size and twelve stories in height. It is designed and will be equipped for office requirements, and although not of unprecedented dimentions nor requiring the elaborate foundations of some of the recent tall office buildings, several features of its construction involve special design and arrangement. Although the columns and floor beams of this building are of iron and steel and the floors, partitions, walls, etc., are of fireproof construction, the steel cage system has not been strictly followed, inasmuch as the ends of floor beams are supported by the brick walls. It was not considered necessary to provide independent steel wall columns, because it was determined to give the walls such dimensions as would insure their thorough stability for the moderate height to which they are carried, and this provision independently developed sufficient strength to make them abundantly adequate to carry the floor loads also.

The position of the columns were, as frequently happens, such as to concentrate heavy loads so near the lots lines as not to be coincident with the geometrical centers of the grillages through which their loads were distributed upon the surface of the sandy soil, at a depth of about 25 feet below the curb. The party walls themselves imposed so heavy a pressure upon their foundation courses that they could not be safely carried by the area of soil directly underneath. Therefore the weights of these walls and some of the adjacent columns were distributed over the grillages by means of an unusual arrangement of cross girders. These enabled the grillages to be set in convenient positions and of suitable dimensions, measurably independent of the center lines of columns and wall, excepting that they were chiefly included between them. The columns were set on short, heavy, multiple-webbed girders that are supported on the converging ends of radial beams, which spread out to support the bottom of the wall overhanging the transverse grillage beam upon which they were laid, and transmitted their loads for distribution upon the soil. In other cases sets of distributing beams were placed diagonally across the corners of the walls to support both sills, and were balanced upon the grillage without receiving any column reactions. In still other places openings in the foundation walls were built over sills composed of steel beams parallel to the axis of the wall, which projected beyond each side of the opening and distributed the weight from these portions of the wall to the grillage across the open space. The distributing beams were heavy sections of the deepest steel girders rolled, while the grillages themselves were composed uniformly of 12-inch steel I-beams, and both grillages and girders were set in solid masses of concrete, which extended 6 inches beyond the metal in every direction and was composed of Portland cement, sand and 2-inch stone in the proportions of 1, 3 and 5. It was well rammed into place, and extended between the grillages to form a continuous floor 6 inches thick over the entire area, with a solid filling of concrete carried down around every column to join the foundation beds.

About the time that work was begun on this building a land slide occurred immediately after a violent rain storm, which carried nearly all of the adjacent surface of Liberty street into the excavation and required a large amount of excavating and back filling. Immediately after the accident the street surface was restored by means of a temporary heavy wooden platform or bridge extending from the front of this building over its vaults, across the street through the front of another large building, which was being simultaneously erected on the opposite corner, thus allowing the foundations, retaining walls, etc., to be built at leisure. The retaining walls of the sidewalk vaults were constructed of special design.

These walls consisted of a core formed by two ring brick arches, with vertical axes built between the flanges of 8-inch vertical steel I-beams, spaced about 5 feet apart and bedded at the bottom in a concrete footing. These tops were joined by 6-inch horizontal I-beams and braced laterally by the sidewalk beams 5 feet apart. The arches themselves were

segmental with a rise of about 6 inches, and were built up solid against an 8-inch straight outside face wall. A 4-inch plain curtain wall was built inside against the flanges of the vertical beams inclosing segmental air spaces behind each arch. This construction was carried around the entire vault perimeter, although obviously the arch principle was not needed on the corner where the curved wall itself formed one long arch, but it was maintained for the sake of uniformity and to continue the sidewalk framework.—*Exchange.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

A DESIGN for Church, Reid Bros., Architects.

A STUDY, C. A Meussdorffer, Architect.

RESIDENCE for G. A. Rosenberg, Alameda, M. G. Bugbee, Architect.

FIRST Christian Church, Los Angeles, Austin & Skillings, Architects.

IRON SHUTTERS.

CHIEF Bonner, of the New York fire department, has rudely shaken the faith of those who have hitherto placed their trust in iron doors and shutters as the only proper safeguards against the inroads of fire. He says:

"It is claimed that iron shutters are nearly as good as tin-covered wood shutters, if properly made. This is a mistake. Iron shutters, from my experience, have never withstood fire as the 'Underwriter' shutter has; and they are deceptive in many cases, and have possibly caused more damage by permitting an extension of fire than is generally known. In the case of the Cohnfield fire some years ago, at the corner of Greene and Bleecker streets, iron shutters protected the side of the building on the south side of the Cohnfield building, as well as in the west wall of the Bleecker street building; but, when the flame from the rear of the Cohnfield building took possession of this yard and its surroundings, it opened those iron shutters as if they were unclapped mechanically from the outside; and this is a measure was responsible for the extension of the fire to each of the buildings. I felt confident previous to the opening of those shutters, that the department could hold the fire in check and confine it to the building in which it originated, and I felt some little confidence in the fact that the shutters on both buildings were closed; but I was sadly mistaken, for the first great volume of flame which passed out of the Cohnfield building opened the shutters, as I have already stated, without the slightest trouble, exposing both buildings at the same time to the mercy of the flames. From that time to this I have not taken any stock in iron shutters, and I believe they are deceptive and should not be used where the risk is of any account.—*Fire and Water.*

VALUABLE INFORMATION CULLED FROM OUR EXCHAGES.

A CASE at law in which architects generally are interested is now being tried in New Hampshire. It seems that some two years ago certain trustees invited four architects to prepare competitive sketches for a town hall. Subsequently the plans were received and the trustees reported that the plans came within the required estimate and the competitors were instructed to prepare plans and estimates. These were delivered by the competitors at the time specified. About this time the trustees were induced to admit other competitors and an expert was engaged to adjudicate the competition. The four architects immediately claimed a break in the contract and the trustees were instructed to carry out the original agreement and give the work to one of the four competitors. This they refused to do and awarded the design to another architect. Now one of the original competitors sues for damages.

C. C. Hall, a St. Louis man, brought to Alexandria, Ind., to take charge of the Union Steel Co's chemical laboratory, has made a most remarkable discovery whereby he is enabled to convert limestone into mineral wool; in making experiments lately in hopes of finding a chemical solution needed at the steel mill he found that certain kinds of limestone were converted into a lava when subjected to chemical preparations and heat, instead of becoming brittle. On this he began to work, and has succeeded in making the purest white mineral wool that could be found. In a refined state it can be used in the finer textures, and in the rough state it partakes of the nature of asbestos.

UNDER a new city ordinance, Chicago contractors will hereafter have to pay the city a small anual fee, and file a bond of $10,000 every year to indemnify the city for damages to sidewalks in the laying of foundations. Standpipes and metallic fire escapes must be places on all buildings, old and new, four stories or more in height. When a staircase surrounds an elevator shaft there must be a fireproof wall between the shaft and the stairs, and electro-glazed prisms are favored for shutters for windows in alleys, as they withstand heat, and at the same time are broken more easily than iron or wire, if the firemen wish to enter the building.

A REPORT of the assistant secretary of the United States Navy on fireproof material makes the recommendation that no wood at all be used on torpedo boats. The fire proofed wood which has been tried on some ships has, he states, a tendency to corrode steel with which it may be in contact. Further, the treatment weakens the wood and renders it hard to tool. Laid on decks it wears badly, and if subjected to constant wetting appears to lose its fireproof properties. From these considerations the secretary recommends that the material shall not be used for decking, but thinks it has advantages for interior joiner work, which is less exposed to the action of water.

THE responsibility of the architect for faulty construction has been greatly increased during the past few years. This is especially true of architects in Illinois. The passage of the state law licensing architects and regulating the practice of architecture as a profession increased the moral burden of responsibility for faulty construction with the legal rider of a revocation of the architect's license if he shall endanger life and property by criminal carelessness or malpractice. The recently revised building ordinances of Chicago have drawn the bonds of responsibility of the architect closer than heretofore, and the recent fires in this city, coupled with the loss of life, will result in a closer and more literal enforcement of the provisions of the new laws. Not only do the Chicago ordinances state that any person or persons violating the provisions of the building ordinances shall be each fined in a sum of not less than one hundred dollars, but it specifies that "any architect, having charge of such building, who shall permit it to be constructed in violation of this ordinance, shall be liable to the penalties herein provided and imposed." The stopping of the work of the reconstruction of the Holbrook building at 312 Wabash avenue may be taken as evidence of increased vigilance upon the part of the city building department, and a careful perusal of the new ordinances may save the architect future unpleasant complications.

FIREPROOFING.

READ BEFORE THE WESTERN SOCIETY OF ENGINEERS BY FRANK B. ABBOTT.

OUR MODERN steel skeleton building marks an era in the history of architecture. In times prehistoric, in the Drudical epoch, if I may be permitted the term, the architect practicing without a license but still building wisely and well according to his light and with the primitive materials then available, set up on end, at regular intervals, rough hewn or nature shaped posts of stone. Upon these posts and spanning the intervening spaces he laid other pieces of stone, upon these horizontal pieces he laid wooden poles covering the whole with leaves and grass, and right here the simple principles underlying all architectural form was born, the column and the lintel. Through all the ages that have intervened we have not improved much upon these principles. We have varied them it is true, we have used various materials from which to construct these two primary members, we have embellished them, we have placed a basket with same acanthus leaves growing around it on top of the column, we have inscribed the names of dead heroes on the lintels, but the column is a column still and the lintel is still a lintel, and while some of our profession seem never to have heard the old adage, "Ornament construction but do not construct ornament," and in this violation of the adage have at times almost concealed the true functions of column and lintel, still the two supporting members remain and will remain until the end of time or until nature rearranges its laws. These two members are about all there is in a building aside from the finish and embellishment, for the beams and girders are only ramifications of the lintel, and struts and pilasters only undeveloped columns.

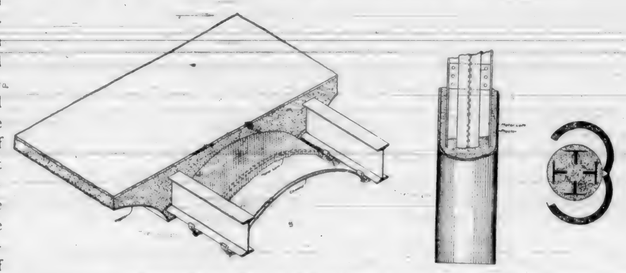
It is only a question of time when all buildings will be of steel construction, residences, churches, warehouses. Our navy to-day is all steel from keel to turret, and our residences and business buildings will be all steel in the near future and not fire traps for the destruction of life and property. The word "fire" reminds me that I was not expected to talk about architecture, or about steel construction of buildings, but about fireproofing, but as you have undoubtedly perceived, the preceeding remarks are intended as a preface to the subject matter, and, it is needless to say, that fireproofing wooden construction is a paradox and a delusion, and fireproofing stone absurd, therefore it is assumed that when we speak of fireproofing, we mean protecting steel and iron from the attacks of fire, for while steel is the best building material, it has an enemy, yes, it has two enemies, and in the light of recent investigations it is difficult to say which is the greater.

Investigations recently made by the American Society of Mechanical Engineers as to the condition of the steel in the frames of modern office buildings, reports of which investigations were published in volume 15 and 16 of their transactions, show that in many instances the metal had been seriously attacked by corrosion, and there is small room for doubt that were the tile and terra cotta coverings removed from the steel skeleton of our great modern buildings, we should find that rust has set up its dangerous work in many places. Putting a covering over the metal and calling this covering fireproofing does not insure the metal against corrosion, and sometimes unfortunately not against fire. Fire and corrosion then, are the enemies of steel, the one bold, flagrant, irresistible, the other unseen, silent, insidious. Now if we can keep these two enemies at bay we have a perfect and enduring building.

To prevent the corrosion of the metal is not, however, a difficult matter, as it is only necessary to keep out oxygen or moisture, but I wish to remarke in passing that painting the metal is but a short-lived protection, as wherever air currents occur along the steel members, as is frequently the case where hollow air spaces are left between the fireproof covering and the steel, particularly where these air currents

originate in basements or areas where there is moisture and warmth combined, the painting will protect the metal at best but a few months.

Now a fireproofing material of whatever kind it may be to properly perform its work must entirely cover the metal on every side, wholly envelope it, and be of such nature and thickness as will prevent the transmission of heat. This being so, it follows as a natural sequence that if this fireproofing material has the further quality of being impervious to air or moisture, we then can successfully resist the two enemies of steel, in buildings, with one material. So far as history is concerned, it shows that iron embedded in cement and concrete is preserved from rust, as, for example, iron cramps lain in cement joints and used to hold together the lintels of the Parthenon have been found intact, and anchors embedded in the concrete of the walls of the Coliseum of Rome when brought to light are as bright and untarnished as when new, and coming down to our own times, we bury the steel beams of foundations in concrete to prevent the action of rust and the inside of the bottoms of the steel ships of our navy are protected from rust by a covering of Portland cement.



SECTIONS SHOWING APPLICATION OF CONCRETE.

Therefore, if our fireproof material is concrete and wholly protects the metal from fire, it will preserve it from rust. The proposition advanced herein then is to surround every column, beam, strut, or other structural member with concrete, and not only surround the metal but envelope it on every side, leaving no air spaces externally or internally. What kind of concrete is best for the purpose? My experience shows that the best concrete is: First, one that is a fire resistant; second, one that will not expand under the action of heat; third, one that is light; fourth, one that is sufficiently strong for the purpose; fifth, one that is high in lime. There is a number of substances which mixed with mortar or cement, will make concrete which will conform in the main requirements to that above described, but they are more or less dense and therefore heavy. In the 10-story manufacturing building, 171-173 Canal street, Chicago, the concrete fire and rust proofing is made of four of cinders to one of cement. These floors weigh about 25 pounds per square foot.

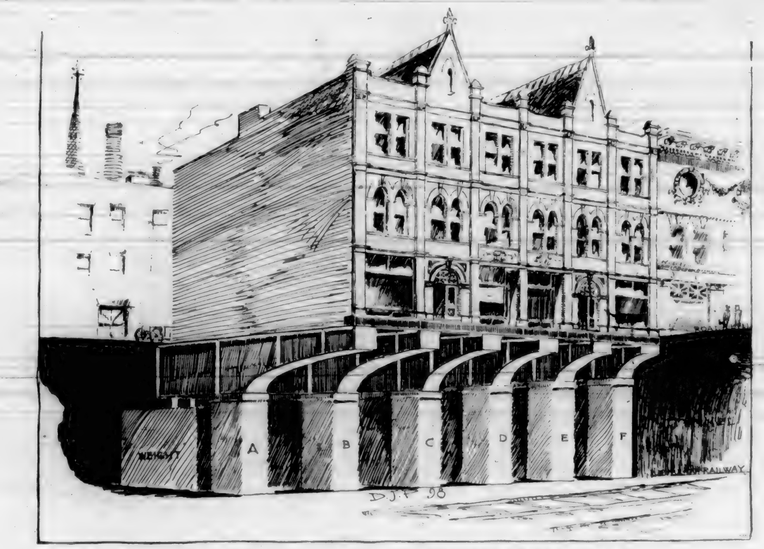
The lime of commerce is one of the best fire resistants known and concrete for fireproofing purposes is best that contains the greatest proportion of this ingredient, consistent with strength. In the Druecker warehouse now being built, the columns will be protected by concrete made of one part natural rock cement, one part lime putty and four parts cinders. This concrete material will be rammed into the internal cavaties as well as entirely surrounding the columns, the nearest approach of the metal to the air being 4 inches when the column is finished. After the concrete is set it will be covered with a metal lath, on which will be spread a thick coat of dense, hard mortar. Wooden cylinders 4 inches long and made of 2-inch staves hinged so as to open in the direction of their length will be set around the columns and the concrete rammed into place from the top. As soon as one 4-foot section is constructed on top of the first, and this process continued to the top of the column before floors are put in, thus securing a continuous envelope to the column, without joins from basement to roof. The metal lath is used to provide a better key for the mortar finish and to protect the concrete from possible injury under high temperatures.

The steel will have no painting whatever, but will be cleaned of mill scale and other foreign substances at the building, before concreting, since nothing should be put upon the steel to prevent the perfect adhesion of the cement to the metal, as the cement in the concrete settles about the metal and deposits upon its surface a coating while the concrete is being rammed into place. The external columns will be covered with hollow bricks and the spaces inside this outside covering filled with concrete material, the same as other columns. In any building during a fire the point most fiercely assailed by the heat and flames is the floor construction directly above the fire, and there has been plenty of evidence to support the statement that if the floor construction of any building is impregnable to fire, which may occur or originate in any story, then the damage from fire in such a building will be slight so far as the building itself is concerned. The fierce heat generated in burning buildings is caused by the floors burning away and thereby creating a draught through several stories.

In a private test made on several pieces of cinder concrete in a furnace under a boiler, the test lasting about forty minutes, the temperature was raised to the fusing point of wrought-iron without showing any serious injury to the concrete blocks These concrete blocks were 5x8x10 inches and various grades of concrete were used. The concrete being made of one part cement, one part lime, 4 parts cinders.

W. H Birkmire, in his recent work, "The Planning and Construction of High Office Buildings," says on page 129: "Of the use of concrete in construction little need be said. It is a conceded fact by those authorities who have given the subject the most thorough and careful study that concrete as a fire-resisting material is unequaled. After the great conflagration in Chicago the committee who examined the effects of this fire reported that concrete was the most thoroughly fire-resisting material that had passed through the ordeal. Iron and steel when completely embedded in and protected by the concrete which forms around it in a homogeneous cast, is undoubtedly better protected from the effects of heat and corrosion than would be possible by any other method. In Europe where concrete has been used in building construction for centuries past, its efficiency is better understood than in this country. More buildings are standing in Europe to-day which were constructed of concrete more than 500 years ago, and which have withstood the attacks of cold and heat for all these centuries and are yet in a good state of preservation."

The relation that fireproofing bears to insurance is an intimate one, and the insurance companies are close observers of condition during fires, and their discernment of the value of fireproof material is constantly being sharpened by destructive fires. Comparisons are odious but facts are stubborn things. In the Felix & Marston warehouse, built about four years ago, which building was fireproofed with cinder concrete in general manner, as shown by details of construction exhibited here, the rate of insurance made by the insurance companies on the building was 45 cents, and that, too, on a building filled from cellar to roof with a very inflammable material, namely, wooden and woolen ware. This is the lowest rate in Chicago on a warehouse stored with this nature of stocks. Mill construction has proven a great disappointment to the architect, the owner and the insurance companies, and while Mr. Atkinson may have been able to produce first-class revenue for the New England mutuals, he has not told us how to arrest the progress of a fire that has once gotton under headway in a mill constructed building. This type of construction in large cities will undoubtedly soon become obsolete.—*The Construction News.*



A BUILDING CURIOSITY IN CARR'S LANE, BIRMINGHAM.

BIRMINGHAM'S BUILDING CURIOSITY.

THE INTEREST of the general public in matters of engineering difficulty is not usually marked, but we give from the *Birmingham Post* a sketch that will help to make clear the nature of an undertaking at present in its early stages in Carr's-lane which may arose considerable interest.

This novelty has been described as "suspending a building"; but the term is hardly correct, and disappointment has been expressed by those who have visited the spot under the impression that they would find a building hanging in the air, "suspended" by goodness knows what! The drawing mentioned will assist in making clear our description. The problem was to deal with a valuable site, with an equally valuable frontage, rendered almost valueless because the tunnel of the Great Western Railway passed under the whole of the frontage, and that so near the surface as to preclude the use of cross-girders. Various architects and engineers had attempted to solve the knotty question of the utilization of the land, but none of the many plans submitted would the engineers of the railway company accept, Mr. Ingles, the engineer of the company, laying it down as a sine qua non that not the slightest weight should rest upon the tunnel. To meet this difficulty, Mr. Ralph Heaton, the architect engaged, has devised a system of cantilevers, as illustrated, to support the three story erection of warehouses and offices designed to cover the space. The building from front to back is 44ft. deep. At the A cantilever the building overhangs the tunnel 25 feet, which leaves only nineteen feet, resting upon a solid foundation. This cantilever supports 270 tons of the building, and as the front or over-hanging part is so much longer than the other, a gigantic weight in the form of a concrete block some 16ft. by 15ft., and weighing 160 tons, is suspended from the short end of the cantilever by steel rods 22 ft. long. The cantilever, B, supports the greatest load, 375 tons, and overhangs 21ft. C supports 360 tons and overhangs 14 ft, the overhang gradually diminishing to 4th at F.

The drawing will convey an idea of the entire arrangement and the substantial nature of the building to be erected, although it is not entirely accurate with regard to the contilever A, which for clearness is shown below the roadway, while, as a matter of fact, it will be some 2ft. above the footpath; and from it will really be "suspended" the paved carriage way that leads to the rear of the building. By this ingenious device will at last be utilized a site which has long been a puzzle to many. The larger cantilevers are at present being placed in position, and when once the ground line is reached and the mystery of the foundations covered in the curious features of the building will be entirely lost to sight.—*Copy of drawing from the Illustrated Carpenter and Builder, London, England.*

THE KEELY MOTOR UP TO DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA.

BY E. J. SCOTT, ACTIVE MEMBER.

THE Keely motor has been a matter of greater or less public interest for twenty-five years, and yet there is now as little general knowledge of what it is as when it was first announced. Probably no other enterprise making as little actual progress was ever kept alive so long. Certainly no other enterprise ever enlisted so much capital without showing more substantial reasons for investing it.

Keely has carefully guarded his secret; even the courts could not extract it from him. In fact the secret constituted the entire property of which Keely was the treasurer, and even the company formed to exploit his supposed invention, has never been able to wrest it from him. Any effort on the part of the stockholders to do so has been met with the objection that Keely controlled the situation and the value of their property depended upon keeping on good terms with him.

Many investigators, scientific and otherwise, have seen his experiments; United States Government officials and experts have witnessed them; capitalists, with millions at their disposal, have sought to control his inventions, yet there has always been an unreadiness on the part of the inventor to do anything practical; he was always just within reach of the goal, but never got there. He is now over seventy years of age, and the possibilities of his secret dying with him have aroused those who have supplied him with funds to the desirability of having him communicate his knowledge to someone who could continue his work.

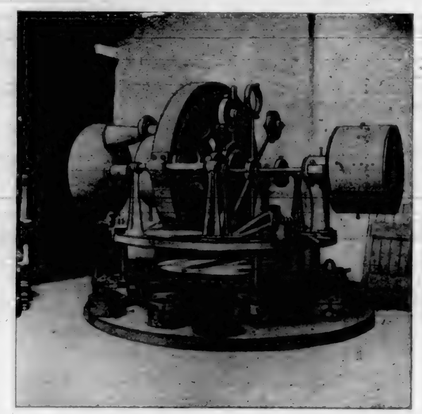
With this idea, Mrs. Bloomfield H. Moore, who has for many years been his staunch supporter through evil and good report, and who, with Keely, controls the enterprise, made an effort to find a suitable person to fill that role. Well-known scientists who were invited to investigate the subject, courteously declined. This was not surprising, for no person had even been given a fair opportunity to observe the operation of Keely's apparatus, and it was a mere waste of time to visit his workshop.

In the fall of 1895, Mrs. Moore, who had but a few weeks before returned from Europe, where she had resided for many years, asked Mr. E. A. Scott to make a visit with her to Mr. Keely's laboratory. She was desirous that someone qualified to speak should see enough of what Keely had done to be able to say that he had discovered a force hitherto unknown, and that he had, to some extent at least, succeeded in harnessing it. Mr. Scott had interviewed Keely on the subject in 1894, and was familiar with the results of former attempts to discover the secrets of Keely's laboratory, which had all been negative because of lack of suitable facilities for observation. He was also familiar with the views of the Government experts who witnessed some experiments made by Keely at Fort Lafayette in 1886.

The visit was made November 9, 1897, and the afternoon of that day was pleasantly spent with Keely at his workshop. The impression which the inventor made upon his visitor, which the latter published at the time in a semi-serious article, is given here in a brief extract from that article:

"John W. Keely is sixty-eight years old, although he looks much younger. He is a large, powerfully built man, with a large head, square shaven jaws, with heavy, dark side-whiskers, tinged with gray, and dark eyes which move rapidly. His movements are nervously quick and his speech is extremely rapid, as though it could not catch up with his thought. He impresses one with the belief that he is absorbed in what he calls his life study, that time is short, and that every nerve must be strained to accomplish practical results while life remains."

A very little conversation satisfied the visitor that he must abandon all preconceived notions of natural philosophy if he thought to make any progress in the study of the new power. The laws of gravity, as laid down by Newton; magnetism, as formulated by Faraday, Henry and others; light and heat, as outlined by Lord Kelvin, and the correlation of forces had to give way to this mysterous force, which practically creates something out of nothing, if we may unquestionably adopt the discoverer's theories.



AERIAL PROPELLER.

At this first interview enough was seen to satisfy the visitor that some, at least, of the experiments witnessed did not depend for their explanation upon any hitherto unknown force. He did not then, nor at any other time, give Keely any reason to think that he did not implicitly believe that the moving force was "Apergy," the name given to this as yet undemonstrated force. Among the experiments witnessed on that first afternoon were (1) The continuing vibration of a short bar of steel which had been "vitalized." (2) The suspension of a heavy weight by simple contact with two small strips of steel, and dropping it by striking a tuning-fork. (3) The levitation experiment, by which heavy weights rise and fall in water in response to notes produced on certain pitches. (4) The constant revolution of a small brass wheel after having been put in step with the vibratory force called "Apergy."

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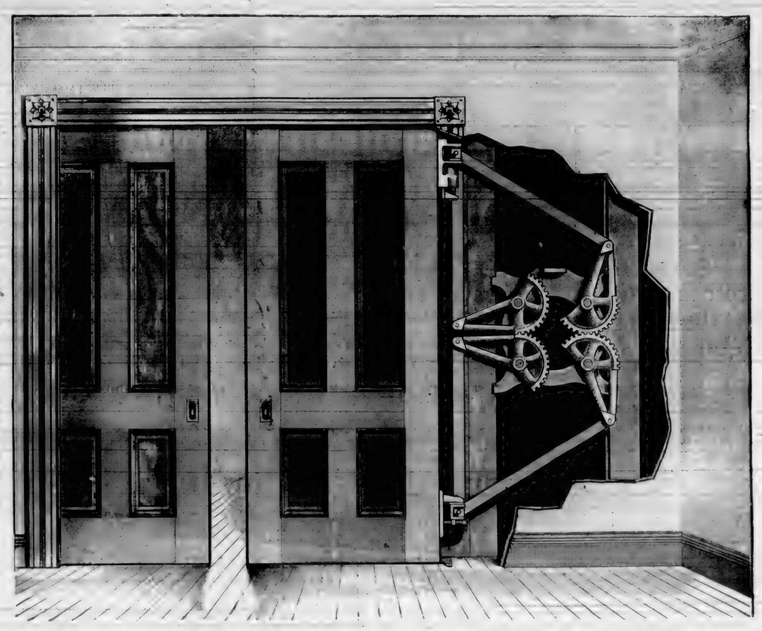

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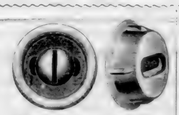

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BUILDING NEWS.

Second and Mission. Cabinet work; o, Wells, Fargo & Co; a, Percy & Hamilton; c, W. Tand R. M. Veitch signed, June 1; filed, June 2; cost $14,980. Rough carpenter work, etc; c, W. T. and R. M. Veitch; cost $14,500. Plastering; c, C. C. Morehouse; cost $8860. Marble and mosaic tiling; c, Ruffino & Bianchi; cost $6550.

Seventh and Townsend. Excavations, etc, for 2-story brick; o, J. L. Flood and J. W. Mackay; a, Percy & Hamilton; c, Cushing, Wetmore Co; signed, May 27; filed, May 28; cost $4653. Carpentry, roofing, etc; c, F. H. Moseley; cost $28,574. Brick and iron work; c, Mi er & Beck; cost $12,855. Plumbing, etc; c, W. F. Wilson; cost $2429.

Sixth near Clement. Cottage; o, Alexander W. McDonald; c, W. Horstmeyer & Co; cost $3425.50.

Taylor near Broadway. All work except plumbing, etc; c, Wm. J. Gray; a, Martens & Coffey; c, C. Schutt; signed, June 2; filed, June 8; cost $5380. Plumbing, etc; c, H. Ernst; cost $950.

Twenty-fourth near Guerrero. To build; o, Mrs. Joseph Munier; a, T. J. Welsh; cost $3497.

Third near Stevenson. Carpentry work, etc; o, D. Keil; a, Edward Swaine; c, John W. Hinshbrough, John M. Robertson; signed, May 26; filed, June 1; cost $28,060 Plumbing, etc; c, W. F. Wilson; cost $2190.

Union and Devisadero. Carpentry, etc; o, Mrs. E. G. Baldwin; a, Tharp & Holmes; c, Moore and Cameron; cost $6373.

Union near Hyde. To build; o, Dennis Collins; a, W. O. Peterson; c, Wiren and Peterson; cost $3000. Concrete work; c, C. T. McGuire and Co; cost $830.

Valencia near Hermann. Additions and alterations; o, Julia A. Monaghan; a, James Wolfe; c, Blanchard and McKenzie; cost $3848. Painting, etc; c, Kuss and Storz; cost $475. Plumbing, etc; c, J. Siebert cost $1135.

Van Ness Ave. and Post. Alterations; o, Mrs. A. E. Hecht; a, J. E. Krafft; c, S. C. Murray; cost $5,089.

Vallejo near Pierce. To build; o, Mrs. F. M. Herlily; a, O. Everett; c, J. E. Bundy; signed May 27; filed, May 31; cost $3248.

Walnut Ave. and Octavia. To build; o, Mrs. Sarah M Morris; a, Sulfield and Kohlberg; c, Peter Crickton; cost $12,100. Gas fitting, etc; c, Ickelheimer Bros; cost $1989.

Washington near Walnut. Concrete work; o, James M. Allen; a, W. F. Smith; c, Carl Griese; cost $175. Carpenter work; c, Thos. H. Day and Son; cost $8156. Plumbing; c, James and Wm. Shepard; cost $1400.

BERKELEY

Bancroft Way and Dana. Church; o, First Unitarian Church; a, A. C. Schwienfurth; c, Kidder and Cooper; cost $3695.

Hillegass property lot 15. To build; o, June Birdsall a, Cunningham Bros; c, B. C. Allyn; cost $3578.50.

BUILDING NEWS.

Plans for a $9000 addition to the State University, to be used as a Mining Laboratory, have been prepared by architect Van Trees.

DECOTA

Two-story brick. Owner, Masonic Orphans Home; a, W. H. Lillie; c, R. P. Hurlbut; signed, June 2; filed, June 4; cost $16,305.

EAST OAKLAND

East 16th. To build; o, C. H. King; a, W. J. Mathewa c, C. Christensen; signed, June 13; filed, June 14; cost $8867.

Ninth Ave. near Clinton. Wood and iron; o, Mrs. Mary R. Smith; a, W. J. Mathews; c, F. W. Knight; cost $2,88.

HAYWARDS.

Main near St. Johns. To build; o, H. and Emma Reimers; a, J. L. Wellbye; c, John H. Haar; cost $4630.

LIVERMORE

Olen Vista Tract. Cottage; o, Marie T. Mel; c, A. R. Denke, Jr, cost $.760.

Olen Vista Tract. Gate; o, Phebe A. Hearst by F. Clark; a, Frank S. van Trees; c, Williams Bros; cost $1650. Machinery, etc; engineers, Cobb and Hesselmeyer; cost $1855.

OAKLAND

Apgar near Grove. To build; o, Marcel Lemer; c, W. Hutson; cost $3075.

Webster near 14th; Alterations and additions; o, Mrs. D. H. Ward; a, Tharp & Holmes; c, Z O. Field; cost $2748.

Thirteenth near Washington. Three-story brick o, E. R. Tutt; a, F. D. voorhees; c, J. C. Caldwell; cost $7420.

Jackson and Lake. Re-modelling and additions; o, M. W. Kales; a, J. M. Curtis; c, W. T. veitch & Bro. cost $7000.

LOS ANGELES

Interior store fittings, etc. Owner Coulter Dry Goods Co; a, John Parkinson: o, Home Mnfg. Co; cost $12,623.

BUILDING NEWS.

Third and Spring. Woodwork; o, estate of Thos. D. Timson; a, Reid Bros.; c, Campbell and Petius; filed, ay 31; cost $46,454.

Architects McCarthy and Mendel have prepared plans for H. L. Hovey; of an eight room, colonial, two story residence, to be built at Glendale.

Architects Howard and Train are preparing plans for E. S. Rowley, for two story nine room residence, to be built on Menlo avenue.

Architects Bradbeer and Russell are preparing plans for Mrs. W. W. Brookner; of 855 Hope street, of an eight room cottage; on Blaine and Ninth.

Architect Preston is preparing plans for Mr. Rowley two two-stories, on West Twenty-fifth.

Architects Eisen and Hunt have prepared plans for J. M. Elliott and F. A. Gibson, for two cottages at Jermimal Island.

Frank Spalding has secured another church.

The special election to be held in thiscity is for the purpose of voting on the proposition of incurring a bonded indepiedness of $150,000 for the acquisition of certain lands, the erection of buildings thereon for fire engines and apparatus.

Milo M. Potter, has just let the contract to Murphy and McLennan, for sixteen more flats to be built on Ninth and Hill.

Architects Bradbeer and Russell are preparing plans for Dr. Jonesfor two flats to be erected on Olive street.

Architects Greene and Greene, of Pasadena, have prepared plans for W. B. Fay for two-story frame, to be built on South Euclid ave.

Architect C. H. Brinkoff has prepared plans for H. D. Thomson, of the Thomson-Boyle Co., for a two-story and basement frame residence, stable and carriage house to be built on corner of Bonnie Brae and Sixth streets.

The same architect is also preparing plans for L. W. Lowenhall, a capitalist, for a stone and brick manson to be erected in Pasadena.

Architect B. B. Bixby is preparing plans for C. J. Fox for a two-story ten room house to be built on north side of Seventh street.

Plans have been drawn for Mrs. Amelia Smead for a two-story frame to be built on west side of Eldon avenue; H. W. Steward is the builder.

Architects Krause and Jenkins are preparing plans for Mrs. Mary R. Conway, for extensive alterations and additions on the corner of Second and Los Angeles streets.

Architect Brinkoff has prepared plans for residence for G. W. Cox to be built on Orange steert.

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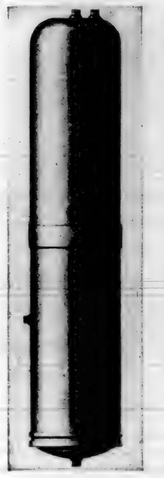

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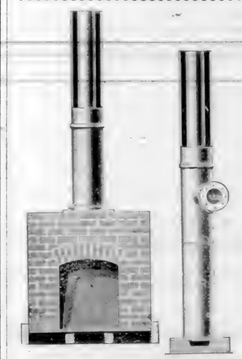

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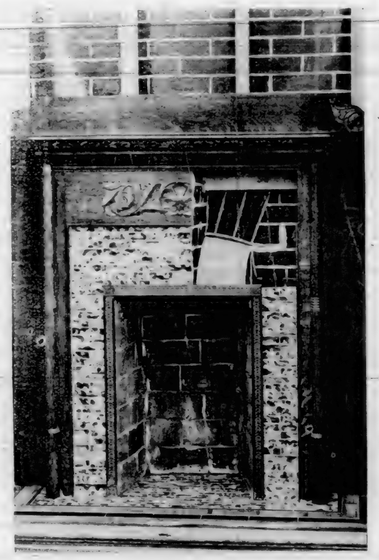

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BUILDING NEWS.

Alms House Tract near Chapel Building. One-story frame library; o, James D. Phelan; a, Curlett & McCaw; c, Z. O. Field; signed, June 21; filed, June 23; cost $3039.

Broadway and Laguna. Two two-story frames; o, Florence N. Ward; a, Coxhead & Coxhead; c, Hannah Bros; signed, June 30; filed, July 2; cost $6595.

Bryant near 16th. Cottage; o, J. E. Nieland and wife, Katharina c, Douglass & Co; signed, July 2; filed, July 5; cost $1200.

Chenery near Palmer. Two one-story cottages; owner and contractor, A. Christensen; cost $3200.

BUILDING NEWS.

Commercial near Montgomery. Repairs to brick building; o, Howard Estate; superintendent, Mr. Smith; cost $7000.

Clementina near 4th. Two two-story brick buildings; o, H. E. Holmes & Co; a, Fred B. Wood; c, J. M. and C. B. Abrams; signed, July 1; filed, July 5; cost $2250.

Crescent Ave. Cottage; o, Fred C. Douglass; c, Erik Boes; signed, July 11; filed, July 14; cost $1370.

Folsom near 18th. Repairs; o, Klopstock & Co; cost $1200.

BUILDING NEWS.

Dehon near 16th. Cottage; o, Aerman Quast; c, Horstmeyer & Co; cost $1345.

First Ave. near Clemen. To build except brick work, painting, etc; o, Samuel McKelvey; c, Ed. Ginley; signed and filed, June 5; cost $1265

Fifteenth and De Haro. Alterations and constructions; o, Sanitary Reduction Works; a, Thomas J. Welch; c, G. H. and S. Walker; signed, June 22; filed, 22; cost $1743.

Fremont near Howard. Two-story brick; o, W. F. Whittier; a, Edward R. Swain; signed, June 29; filed, June 30; cost $9997. Plumbing, etc; c, W. F. Wilson; cost $2400.

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BUILDING NEWS. BUILDING NEWS. BUILDING NEWS.

Haight near Scott. Acceptance of building; o, Charles F. Doehring; a, Saifield & Kohlberg; c, C. Krecker; accepted July 9; 1898; recorded July.

Hayes near Laguna. To build; o, Jas. J. and Mary Silvey; a, T. C. Cochrane; c, — J. Pavert; signed, June 28; filed, June 30; cost $6700.

Hyde near Jackson. Two-story frame; o, Thos. E. Dunne; a, A. J. Barrett; c, W. Paterson; signed, July 9; filed, July 11; cost $4818.

Jackson near Taylor. All work except plumbing, etc; o, Isabella W. Tindal; a, R. H. White; c, J. G. Adams; signed, July 7; filed, July 11; cost $11,161. Concrete work, etc; c, L. M. Zimmerman; signed, July 7; filed, July 11; cost $1020. Plumbing, c, G. C. Sweeney; signed, July 7; filed, July 11; cost $1449. Painting, etc; c, Gus. V. Daniels; signed, July 7; filed, July 11; cost $1294.

Jackson No. 2430. Alterations and additions; a, F. A. Van Trees; c, T. O'Connor; signed, June 6; filed, July 11; cost $2700.

Jones near Lombard. All work except mantels, etc; o, Dennis T. Sullivan; c, Philip Rive; signed, June 28; filed, June 28; cost $1600.

Jones and Telegraph Ave. To build; o, Id E. Wagner; a, Cunningham Bros; c, Anderson & Stockholm; signed, July 7; filed, July 12; cost $1200.

Liberty near Church. Two-story frame; o, A. W. Wallace; c, W. A. Hicks; signed, June 28; filed, July 9; cost $1955.

Market and Hayes. Alterations and additions; o, Bartlett and C. F. Doe; a, Edward R. Swain; c, Robinson & Gillespie; signed, July 6; filed, July 7; cost $8535.

Mason near Pacific. Alterations and additions; o, Mrs. Annie Drossel; a, Kenitzer & Barth; c, C. Krecker; signed, June 27; filed, June 28; cost $1605.

Main near Harrison. Labor to tear down and cart to new location, Post Office building foot of Market street and build tool house; o, J. McMullen; a, J. W. Rowell; c, Moore & Cameron; signed, July 11; filed, July 16; cost $1250.

Natoma and Russ. To build; o, Theresa Murphy; a, M. J. Welsh; c, A. McDonald; signed, July 11; filed, July 13; cost $1400.

Ninth Ave. near Clement. All work except plumbing and painting; o, Frank de Curtori; a, W. H. Armitage; c, A. Dahlberg; signed, June 22; filed, June 23; cost $3200.

Pacific Ave. near Baker. Carpentry, plastering, etc; o, Louis Hoeckele; a, Julius E. Kraft; c, Anderson & Greig; signed, July 6; filed, July 9; cost $3300.

Post and Laguna. Plumbing, sewerage, etc; o, Mrs Rose Kahn; a, J. J. Laferme; c, Schanz & Grundy signed and filed, June 27; cost $1179.

San Bruno Road lot 33, gift map 4. To build, o, Richard and Robert Sternitzky; a, H. Geilfuss; c W. Horstmeyer & Co; signed and filed, July 11; cost $2680.

Seventh and Mission. Structural iron and steel work; o, United States Government; a, U. S. Architect at Washington; c, Marshall & Co; cost $154,715.

Second and Mission. All roofing work; o, Wells, Fargo & Co; a, Percy & Hamilton; c, Paraffine Paint Co; signed, June 30; filed, July 6; cost $1825.

Second Ave. near Clement. Cottage; o, J. M. Talbert; a, Philip Rive; signed, June 21; filed, June 22; cost $1976.

Stevenson near 14th. One-story frame; o, Hugh Cavanagh; a, J. T. Kidd; c, Johnson & Secor; signed, signed, June 21; filed, June 24; cost $1439.

Seventeenth near Castro. To build; o, Mrs. F. R. Mannell; a, M. J. Lyon; c, George Elder signed, June 18; filed, June 23; cost $3200.

Sickels Ave. and Sears. Cottage; o, Jas. J. Casserly; c, Douglass & Co; signed, Jul. 11; filed, July 12; cost $1245.

Stevenson near Ridley. Three-story frame; o, Paul Strickert; a, Saifield & Kohlberg; c, Ph. Schweier; signed, June 25; filed, June 29; cost $2995.

Third and Stevenson. Carpentry, mill work, etc; o, F. and A. Baruch; a, Percy & Hamilton; c, D. B. Munroe; signed, June 28; filed, June 30; cost $13,577. Concrete, stone and brick work; etc; c, Pencock & Butcher; signed and filed, June 24; cost $10,600.

Third near Stevenson. Six-story brick and stone; o, Phillip and Leah Meyer; a, M. J. Lyon; c, G. H. Moore; signed, June 11; filed, June 28; cost $13,147.

Third near Stevenson. Electric elevator; o, David Keil; a, Edward R. Swain; c, W. L. Holman; signed, July 15; filed, July 20; cost $2240.

Twenty-second near Douglass. Cottage; owner and contractor, Jacob Heyman; cost $1600.

Union near Webster. To build; o, John Muldoon; a, Shea & Shea; signed, June 20; filed, June 22; cost $3500.

Webster near Hayes; alterations; o, Edward Leopold; c, W. R. Grant; signed, June 21; filed, June 23; cost $1025.

ALAMEDA

Central Ave. near Union. Alterations and additions; o, J. J. Crawford; a, W. H. Lillie; c, C. P. Christensen; signed, July 8; filed, July 14; cost $4500.

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BERKELEY

Addition to Mining laboratory on grounds of University of California; donator, Phebe A. Heorst; a, F. S. Van Trees; c, Chas. and Walter Williams; signed, July 7; filed, July 8; cost $10,845.

Garber near College Ave. To build; o, Kate, Annie and Bell Forester; a, F. M. May; c, O. G. May & Co; signed, June 11; filed, June 21; cost $1800.

OAKLAND

Broadway and 13th. Alterations and additions; o, Mrs. Ernestina Delger; a, Kenitzer & Barth; c, Ingerson & Gore; signed and filed, June 29; cost $10,300.

Knox Park. To build; o, Jas. Coakley; a, W. Kirk; c, P. J. Brophy; signed. June 29; filed, July 2; cost $2225.

Becketts 2d addition. To build; o, R. P. Bromley; a, A. W. Smith; c, C. M. McGregor; signed and filed, July 11; cost $1960.

EAST OAKLAND

Marion Tract. Cottage; o, Malinda Woodward; c, A. L. Whitney; signed and filed, July 19; cost $1357.

Continued on page xii.

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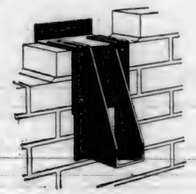

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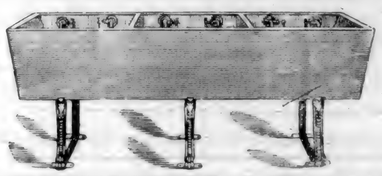

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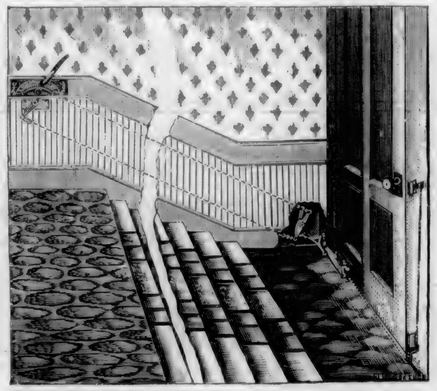


VOLUME XIX. JULY 20th, 1898. NUMBER 7.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

HON. U. S. Grant in the capacity of an aspirant for the Senatorship from California in presenting his views on public questions to the people of this State comes out boldly as an advocate of "Expansion" as the true future course of the nation.

Of local benefits to be derived by such a national policy Mr. Grant expresses himself as follows:

"It is my belief that California, and indeed the nation, stands at the threshold of a new and most promising era. The national tendency toward expansion must benefit the West to an extent beyond all our calculations. We have before us a struggle and a hard struggle. This State must control and must be supreme on this Western coast, and to California must come the vast trade that will properly belong to it, with the new doctrine of expansion. The Northwest will enter the contest for the trade which is to come from the Orient and the isles of the sea. The importance of close and intelligent attention to this subject seems to me to be of the highest importance. Our share of this trade, the definition of our status with respect to it, must be settled early after the present war ceases."

Here at least there will be common ground where the unity of interests will have so much in common and, so much in unity, that the combined forces shall be practically irresistible, and we of the far West should see to it that this policy of "expansion" become irrepressible.

WE HAVE published the following communication from Mr. B. J. S. Cahill relative to a notice appearing in the *Architectural Review*, Vol. IV. No. VII. The *critique* is undoubtedly an unjust one and well merits a reply. The architect explains that stress of work did not permit his giving the subject his attention earlier.—EDITOR.

In discussing the above alternate designs for a church appearing in outline transcript form in the CALIFORNIA ARCHITECT the critic of the *Architectural Review* solemnly delivers himself of the following announcement—"A church first and foremost should have a certain dignified, religious air, which" he goes on to say with more conviction and less truth "unfortunately this design" (No. 1) "does not possess."

Permit me to parody this profound statement. Any criticism first and foremost should have a certain air of justness and intelligence about it which quite fortunately for me, this criticism does not possess.

For instance, Mr. Critic says, with the only flash of discernment anywhere enlightening his review, "The general style is somewhat Mexican in its treatment," but then instead of logically following up the clue and seeing the architect's development of his theme in this light, he goes on to make the extraordinary assertion that "whatever ornament the edifice has, seems to recall rather the Masonic emblem than the motives usually observed in church architecture." The ornamental motives are Mexican truly enough, but I challenge anyone to show a single feature that has a Masonic rather than an ecclesiastical character.

The next statement of the critic is equally unfortunate. He says "the window openings are unstudied." As a matter of fact the window openings are very carefully studied throughout with reference equally to their size, portion, detail and diversity.

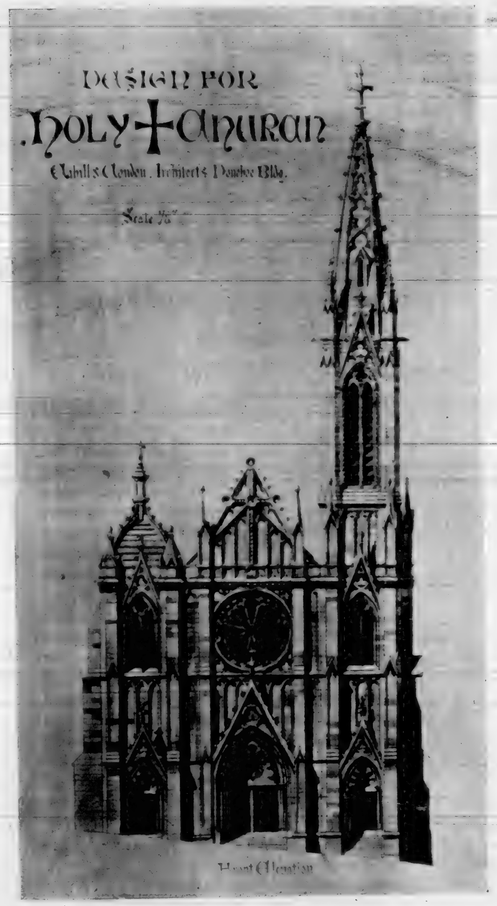
In the upper stories of the towers they are studiedly ornate, those in the Bell tower being studiedly different from those in the Baptistry tower. The large central window opening is studiedly odd in its Mexican contour and is large because it faces south and illumines the entire church, while the windows in the towers at each side are small and quite studied in their position proclaiming as they frankly do that they light a stairway and not an aisle. That the low position of these front tower windows necessitates a large space of plain wall surface above is a matter that needs neither correction nor apology. Finally the square shaped window openings in the basement story of the towers, are studied in the massive simplicity peculiar to the Spanish American style. They are small, since, where little light is needed little light is shown.

The critic could not of course be supposed to know it, but the problem the architect had to solve was this. A Roman Catholic Church had to be planned to seat 800 people on a restricted lot. The building was to be so designed that it could be roofed in and ready for use at the *least possible* outlay. At the same time when the towers were added it should not be lacking in appropriate beauty and impressiveness.

This problem of combining Finance with Fine Arts seemed to the architect to be happily solved by adopting a Mexican or Spanish American style. This style permitted a solid simplicity of treatment up to the main roof line. It justified the candid use of stucco where plain wall surfaces occurred in the front as well as on the side. It dispensed with the costly exactions of ordinary classic and easily allowed a logical harmony of treatment to clothe the entire body of the building and so redeem it of the vulgar error of being a mere show facade of stone architecture with the balance of the walls in bare brick. With these advantages in the way of inexpensive simplicity in the first portion built the style demanded that the towers to be built afterwards should exhibit and express the full value and efflorescence of the architectural motives so sternly repressed in the lower parts. To further compensate for the severity of superficies throughout it was thought that the introduction of a red tile roof over aisles and porches would supply a pleasing note of color in contrast with the cream colored stucco and buff sandstone finish found in the main body of the church. Finally, the regulation Spanish green casings sash bars and grilles, and a gilded weather vane, orb and cross surmounting the towers would complete an effect not only admissible, but pictorially suitable and historically appropriate under the blue sky and in the strong sun light of California.

But all this is lost upon the critic whose next objections are that "the grotesque twisted columns of the front porch are not in scale with the entablature above, and the capping of the dome of the left tower is unfortunate in its profile." Though studiedly unacademic in its proportions, the twisted columns in question do not merit the epithet grotesque. This porch with its round arches, deep reveals, lean-to tile roof, curved gable and unsophisticated bit of architectural finery in the shape of a rather ornate column and capital, etc., is meant to be in every feature reminiscent of the naif spirit seen in the early California Missions. Considering all this, the critics indication of faulty scale, etc., shows more of pedantry than point. Had he known a little more he would have said a little less. The capping to the dome alluded to was changed to what appears above long before it was seen by the *Review*. It was originally in the form of a Font, such as one may see at Santa Barbara Mission and though rather "bossy" and solid quite defensible as a symbolic finial surmounting the roof over a Baptistry.

Concerning the Masonic rather than the religious air, which the design seems to possess according to the critic, he relates an anecdote: "It is said that Renan once happened to enter a church with a companion, and his friend noticed that he removed his hat. 'How is this Renan,' he said 'I thought that you had nothing to do with Mother Church?' 'True' replied Renan, 'but we still have a bowing acquaintance.' If he had seen the church we have just described, it is a question if even this acquaintance would have been justified." The story itself is good enough but desperately *malapropos*. It reminds one forcibly of another story known to most of us. It tells of the man who had just heard a capital gun story, and being at a dinner was dying to recount it. No decent opportunity occurred in the trend of the conversation until a servant let a door close with a mild slam. Instantly our friend started as though he had been shot. "Dear me!" he exclaimed "what a shocking noise, I surely thought there was an explosion! By the way, *talking about explosions* reminds me of an awfully good gun story I heard the other day," etc, etc.



The critic of the *Review* had evidently just heard this Renan story and on no other provocation than the sight of a triangular cartouche over the main entrance, must drag it in to give point to his paragraph at the expense of the architect's design and reputation. For, the architect whose design for a Catholic Church really reminds one of a Masonic Temple is surely as much an ass as the critic who can't distinguish one from the other.

The article concludes with a reference to Design No. 2: "Strangely enough the alternate elevation is a much more attractive building somewhat recalling the early Italian Gothic and showing a good deal of careful study and feeling. The fault most noticeable is the entire lack of cornice to the main tower; the spire rising from the square shaft without any break whatsoever."

It is of course very deplorable that a spire should be made to behave in that way—without any break whatsoever. And far more strange than that a building committee of a second rate parish should adopt the less expensive of two designs submitted, it is that a critic in a first-class review has not written a single paragraph on these designs without making any "break" whatsoever.

The man who sees Masonic Emblems in Catholic Symbols, and an *Early Italian* character in work that is distinctly *Late German* can of course trace resemblances anywhere in any thing. Were he suddenly confronted with a vision of his own precious organ of comparison he would as likely as not be instantly reminded of a parallel of latitude, or a purple cow, or any old thing.

In conclusion he is recommended to let criticism alone, and to devote his unique faculty to tracing the baffling connection said to exist between the Goodwin Sands and Tenterden Church steeple.

GESSO WORK.

OF ALL the fascinating and interesting work that can be accomplished in the home, gesso work is far away in the lead. Already it is exceedingly fashionable. One sees it wherever one goes, as a mural decoration or as an ornamentation to furniture, and it never fails to add an air of elegant comfort to the most unpromising surroundings.

It may not be generally known that many of the art schools are introducing this work as a branch of decorative skill, and it may also come as a surprise that many society men and women are deeply interested in this—the most modern of all arts.

Gesso work has certainly many recommendations. In

the first place, next to no tools are required—all that are necessary being a few hog's hair and camel's hair brushes and a palette knife. Then, again, considering the quality of the work that can be turned out, the material is not so costly as to prevent even those whose pockets are slim from taking it up.

Gesso is made of the best glue and the finest plaster of paris. You put the glue in a jar, and melt it in the usual manner, the jar being placed in a saucepan of water, which is kept at nearly boiling point. Then add the plaster, stirring it carefully, and by drawing the saucepan further from the fire keep it below boiling point, so that the gesso may all get thoroughly heated and mixed without boiling.

Another mode of proceeding is to add scraped whiting to the glue, and to use a little resin, especially if very hardened figures in relief are required.

Both these methods are open to the objection that they are difficult to prepare and somewhat tedious, and learners would do well to avail themselves of the specially made composition that can be obtained at any art store. The difficulty in gesso work is the rapid hardening of the materials, but the composition alluded to is specially prepared and dries slowly, so that more care can be given to the modeling, alterations carried out, etc., as it takes quite half an hour to dry.

Beginners will do well to choose a bold design and to be satisfied with a low relief, and as their hands become more skilled they can attempt something more ambitious. The whole secret of success in gesso work lies in going slowly.

Take for a commencement a panel of wood and give it a coat of green metallic color; when dry, size and varnish it. This is called lacquering. On the green groundwork draw your pattern—a simple scroll, or something easy—then with a brush cover the design with the gesso mixture. Let it dry and give it a second coat. Each coat raises the decoration higher, and you can work up and model the design with the brush while the composition is soft. When dry add a few touches of silver and gold to intensify and bring out the design. Japanese papers will be found useful in supplying suitable designs for the early efforts of the gesso worker. They are generally bold and effective, but not complicated. The learner will find that their birds and flowers can be easily copied. The amateur should bear in mind that gesso work lends itself better to large patterns than to small details.

It will take some practice to perfect the worker in the simple form of gesso work described. When he had succeeded thus far he may attempt the more elaborate patterns.

Having made your drawing on paper copy it on the wood, on which you have laid a thin coat of gesso. You now proceed to work the design in relief with the gesso. You will find that you have to use your palette knife pretty freely in rounding your leaves and flowers.

The breast of a bird would look well done in high relief with fibrous gesso. For this you use cotton wool well pulled into little pieces. Each piece is dipped into a composition made of six parts of size to one of linseed oil. You lay the wool on the design and model it into proper shape. It requires a skilful manipulator to do this successfully, and it is perhaps better for the amateur to content himself with the easier method and produce a higher relief by adding one or more coats of the ordinary gesso mixture. You must let the design dry thoroughly and give it a coat of size if you want the colors you use to come out brightly.

For flowers I should use pale shades of red or pink, because the bird must be gorgeous. His brilliant tail should shine resplendent and this effect is easily attained by using metallic colors. You may on the other hand have a brilliant colored background and make your design in gold and silver. It would be a pity to make a panel all one color, like wood carving, as it would lose so much of the beauty of the spread tail and crest of the bird; but much depends of course on the purpose for which you require it.

There is in fact no end to the variety of changes possible to the succ sful worker in gesso. He has opportunities for modulation of tone, for happy color blending, for originality of design or for successful reproduction of the works of other decorators. Two prosaic facts should be noted—first, that it is well to pour out on the palette only a little at a time of the metallic paint; and second, that when you have finished your work you can clean your palette and brushes with turpentine.—*New York Herald.*

CHANGING FORM OF STONE BY PRESSURE.

[CONTINUED FROM LAST NUMBER]

THE experiments show that limestone and marble, even when dry and at ordinary temperatures, possess a certain degree of plasticity, and can be made to flow, the movements set up developing many structures characteristic of rocks which have been squeezed or folded in the deeper portions of the earth's crust.

It is now the intention of Professors Adams and Nicholson to reproduce more accurately, if possible, the deformation and cataclastic structures of the interior of the earth. For this purpose they have invented an apparatus capable of generating great heat. With this they propose to surround the iron tube, and, by means of steam and heat, obtain those conditions which surround the plastic marble in the bowels of the earth. It has been shown by geologists that marble and other stone foundations become plastic in proportion to the depth they are found in mother earth. Thus, marble found five hundred feet below the surface of the ground is much less brittle than that found, say, at a depth of one hundred feet. The reason for these different degrees of plasticity consists in the fact that the former is subjected to far greater heat and moisture than the latter. By means of their new contrivance Professors Adams and Nicholson are confident that they can reproduce the conditions that prevail far beneath the surface of the earth, and they are awaiting with confidence the results of their future experiments.

PROF. NICHOLSON

The machinery used in all these experiments was designed

and manufactured at McGill, and its counterpart does not exist elsewhere on this continent. It is largely the work of students, who are thus trained in the principles underlying mechanics and hydraulics. The average pressure employed in moulding the marble is 80,000 pounds to the square inch.

THE CYLINDER AFTER FIRST APPLICATION OF PRESSURE.

This is obtained by a number of hydraulic cylinders, which increases the natural pressure of the water mains—130 pounds to the square inch—to the above astounding proportions.

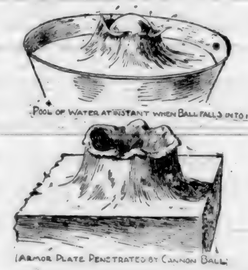
The opinion has been expressed that the experiments suggest a danger from the building of such sky-scrapers as are springing up in our cities. It has been said that if marble, one of the hardest of stones, yields to and becomes plastic under sufficient pressure, then clearly there must be a limit to the height to which one building stone can be heaped upon another in the erection of walls, without incurring the danger of such yielding of the stones of the bottom of the wall or building as will endanger the integrity of a buildihg. For, short of the point at which the stone crumbles, there is apparently a point at which it may slowly change its shape under stress of heavy and long continued pressure.

In reference to the surmise Prof. Nicholson says: "The height of a uniformly thick brick wall required to crush brick work is about one thousand feet, and that of a stone wall to crush either sandstone or limestone about five thousand feet. Long before these heights could be reached the building would have failed from lack of lateral stability under wind pressure, unless the width of base was of similar proportion to the height. Chimneys from five hundred to six hundred feet in height have, it is true, been built, and are still standing, but they have, of course, a regular batter all the way up, reducing the load very much. The crushing pressures assumed by me in my computations on this subject are 800 pounds per square inch for brick work and 4,400 pounds per square inch for sandstone. There is not, therefore, nor can there be any sky-scraper a near approach to the moulding pressures, such as 70,000 to 80,000 pounds per square inch, employed in our experiments at McGill."

COLUMN BEFORE PRESSURE—CYLINDER IN WHICH COLUMN HAS BEEN REDUCED BY PRESSURE AND HAS BURST IRON SHEETING.

Another interesting question on which new light is thrown by this experiment is the perplexing one of the motion of the glaciers. As everybody knows a glacier is in effect a great river of solid ice. It is equally well known that the ice stream flows along its channel, slowly, to be sure, but just as surely as a stream of water. The early students of glaciers doubted this, but numberless careful observations, culminating with the famous ones of Professor Tyndall, have demonstrated the point beyond all controversy. Of course the bed of the ice stream is usually steep, and hence at first sight it seems nothing remarkable that the ice should slide along it. So the famous explorer of the Alps, de Sanssure, who was among the first to recognize the motion of glaciers, explained this motion as a mere sliding of the ice. Very soon, however, other observers saw that this simple explanation by no means sufficed, for the most casual observation showed that the channel through which the glacier moves—its banks or borders—is not usually of uniform width from beginning to end, but, on the contrary, widens and narrows as does the channels of a river. And, like the river of water, this river of ice at all times completely fills its channel, spreading out into lagoons of ice where the channel widens and narrowing into a slender stream as the walls contract. Clearly, then, the ice stream changes its shape just as the stream of water does; yet how is this possible, since ice is a solid, and a very brittle solid at that?

Numberless explanations have been put forward in elucidation of this puzzle, but the one that has seemed to have greatest plausibility and hence has gained greatest currency assumes that the ice in the depths of the glacier is being constantly melted by the pressure of the mass above it, and is constantly recongealed, being molded into new forms during the moment of transition. The justification for this hypothesis is found in the fact which was demonstrated by Professor James Thomson, the brother of Lord Kelvin, that pressure, if sufficient, greatly lowers the melting point of ice; if cut into and broken into fragments will recongeal into one mass if the parts are kept in contact. It was pointed out by the Scotch geologist and mathematician, Dr. Croll, that the sun's rays, beating upon the surface of the glacier, might penetrate into its transparent depths, and, being retarded at the bottom, might heat the ice at a depth to a temperature above that at the surface and this cause would manifestly act in conjunction with the increased pressure at the bottom of the glacier, to effect the melting of the ice there. At no time, however, would there be any great surplus of heat there and the portions of ice thus melted would be certain to recongeal almost instantly, because of the large quantity of heat which is abstracted and rendered latent whenever ice changes into water. But during the instant of transition from ice to water and back to ice again, the particles of the mass might slightly change their form, under influence of pressure and of gravitation; and thus by an endless series of infinitesimal jerks, as it were, the glacier would creep on as it is observed to do.



Now, however, the experiments regarding the mobility of marble put quite a new complexion upon the question of glacial movement. For if it be proved that marble, a substance far harder than ice, and quite as brittle, can be molded by pressure alone into new shape, it seems perfectly plausible that a much less degree of pressure might mold ice into new forms by causing its molecules to slide over one another without the intervention of melting. In this view ice and marble, and, of course, all other solids, are to be regarded as merely very stiff or viscid liquids. Gravitation alone does not suffice to make them flow, as it does more limpid liquids, but when additional force is applied their mobility becomes apparent.

This view, indeed, as applied to such solids as iron and other malleable metals is not new, for the mobility of such solids under pressure, as when hammered, is widely known. A curious experiment recently made by Prosessor Sinclair

has illustrated this in a very vivid way. By means of an ingenious apparatus it has been possible to photograph the surface of a bowl of water at the moment a ball dropped from a height falls into it. The photograph being instantaneous, the water splashed up about the ball gives the impression of a solid crater. But the curious feature is, that exactly such crater as this is formed into a sheet of armor plate. About the mouth of the hole where the ball enters the iron is a bulging rim or crater of iron, which was manifestly splashed up exactly as the water splashes up about the miniature ball, making the observer feel that the iron and the water are really of one physical nature, one being merely a little harder than the other. The experiments at McGill make it clear that the same thing is true of marble also; that, in short, in a broader view, brittle solids are only very fragile liquids, just as malleable solids are very tenacious liquids. Perhaps some day we may mould our statuary out of marble instead of slowly carving it, as is now done.—*Stone.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

COTTAGE for Mr. M. D. Hall at Palo Alto, Cal., W. J. Cuthbertson & E. A. Williams, Architects.

SKETCH for four Residence Interiors, Samuel Newsom, & Fred H. Meyer, Architects.

SKETCH of Stable and Lofts on the Elmwood Premises, Los Gatos, Cal., T. O'Connor, Del.

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

THE supreme court of Montana last week declared valid the contract between Bell & Kent, architects (formerly of Council Bluffs, Iowa, but now of Helena), and the Montana capitol building commission. The supreme coart denied the petition of several competing architects for a writ prohibiting the architects to whom the plans were awarded from proceeding with the work. As previously mentioned in these columns, the Montana law required the capitol architects to be citizens of the state, and the petitioning architects claimed that Bell & Kent, the successful bidders, did not meet the requirements of the law. The suit developed that Bell & Kent came to the state on March 18 and entered into a contract with the capitol building commission March 20. The court held that they had established a residence with bona find intentions and in good faith, and refused to grant the injunction. The decision will permit work on the $275,000 capitol building to be commenced next fall.—*The Construction News.*

CONSIDERABLE agitation has been going on at Washington, D. C., over the height of buildings in general and in particular over the height of apartment buildings on residence streets. A bill has been introduced in the house of representatives to reduce the building limit, and the interpretation of the word "avenues" in the building ordinances is the subject of much contention between the commissioners and the builders of a proposed apartment house, 110 feet in height, on Sixteenth near K street. The building regulations provide that in no case shall a building exceed ninety feet in height on a residence street, nor 110 feet on a business street, "except on avenues 160 feet wide," where a height of 130 feet is allowed. The word "avenues," the owner contended, meant a thoroughfare, in the connection in which it was used in the building regulations, whether that thoroughfare happens to be designed in street nomenclature as avenue or street. The building commissioners refused to grant a permit for the building, and the builders filed an application for a mandamus to compel the commissioners to issue a permit to the complainant. Judge Cole denied the writ of mandamus on the ground that it was the intention of the ordinance to restrict buildings on all residence streets to a height of 90 feet. This decision is likely to be frequently cited as a precedent in future cases.—*The Construction News.*

IN St. Augustine's Church, Brooklyn, N. Y., the tabernacle of the high alter is protected by probably the most novel safe ever devised. This is undoubtedly the first time in which practical science has been used as an adjunct in religious service. Of course, it was very essential that the beautiful alter itself should not be marred in any way by the safe and that it should be operated in a dignified and fitting manner. Unfortunately, in many churches, the richly jeweled receptacle for the sacrament has proved too often a bait for burglars, and many priests have tried to devise some scheme by which the security and sanctity of the tabernacle would be assured.

In the church to which we have referred the receptacle for the sacrament cost $10,000. The safe consists of circular curving doors which slide together, closing the front toward the church. The safe weighs 1,600 pounds and consists of four pieces, the base, a curving piece of steel at the back that is stationary and the two doors which come together. The leaves of these doors are made of Harveyized steel an inch thick. They meet as they close under the dome and overlap each other tightly by a scarf joint. They turn on

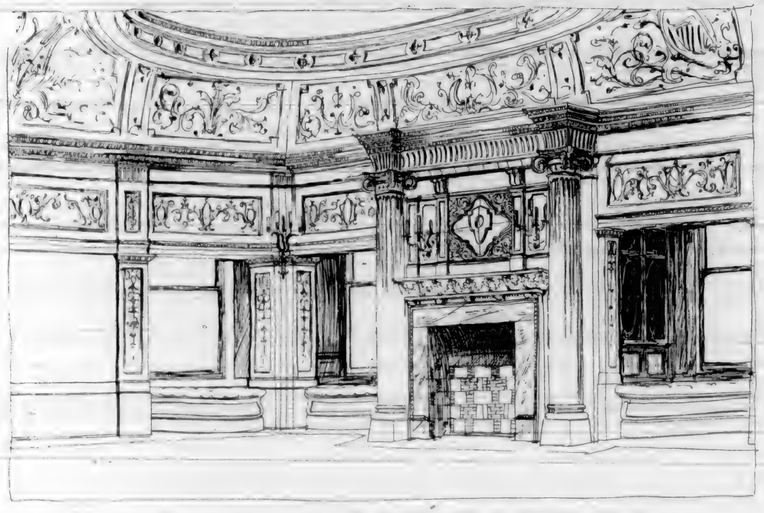
COTTAGE FOR MR. M. D. HALL at PALO ALTO.

W. J. Cuthbertson } Architects.
E. A. Williams }

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY, PHOTO LITH

VOL XIX Nº 7 JULY 1898



SKETCH OF LIVING ROOM & FIRE PLACE (INTERIOR)

SKETCH OF DINING ROOM INTERIOR LOOKING TOWARDS BREAKFAST ROOM

SKETCH OF DINING ROOM SIDE BOARD

RECEPTION ROOM, INTERIOR IN ROCOCO STYLE CALIFORNIA & GOUGH STS

SKETCHES FOR FOUR (4) RESIDENCE INTERIORS

SAMUEL NEWSOM
FRED. H MEYER
ARCHITECTS.

INTERIOR OF ENTRANCE HALL WITH STAIR CASE BEHIND GRILL ARCH & FIRE PLACE

BRITTON & REY. PHOTO LITH.

SKETCH OF STABLE & LOFTS ON THE ELMWOOD PREMISES LOS GATOS CAL.

W. H. Common '98

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roller bearings and they are operated by means of an electric motor. The safe is easily opened by manipulating buttons beside the tabernacle, but these push buttons will have no effect until the motor itself is set in motion in the vault below, the combination lock of the steel vault being known only to the priests of the parish. Electrical protection is also provided which would give notice at once to the nearest police station should the safe be tampered with. Masked in its covering of gold leaf, this steel shell is a superb piece of mechanism and is one of the most ingenious uses to which the electric motor has even been put. The same motor is used to drive a blower intended for the purpose of dusting the elaborately carved marble altar. An exhaust fan sucks away the dust.—*Scientific American*.

THE ACTION OF SEA-WATER UPON HYDRAULIC CEMENTS.

BY DR. WILHELM MICHAELIS — TRANSLATED AND ABSTRACTED BY WALTER FRANCIS REID.

From Proceedings of the Institute of Civil Engineers [England] Vol. CXXIX.

WHEN a saturated solution of lime acts upon the combined hydrates of silica, compounds of ferric oxide and alumina are formed, containing respectively 3, 4 and 5 molecules of lime to 2 of the oxides, and these compounds are united with water in such proportion that at least 1 equivalent of water is combined with 1 equivalent of lime. Hydraulic cements rich in lime must, therefore, during the hardening process, segregate the lime as hydrate. In Portland cement the hardened mass is completely permeated with crystals of calcic hydrate. The hydrate of the combined aluminate and sulphate of lime ($Al^2O_3, 3CaO + 3CaOSO_3 + 30H_2O$) has been observed when the compound was dried over sulphuric acid, and the following calculations are based upon this proportion of water, although in practice it must be far greater. Each molecule of alumina present in hydraulic mortar as the hydro-aluminate of lime can form about 12 parts of this double salt, and the hydro-ferrate of lime acts in the same way. The true Roman cements, containing 1 part by weight of silicate to 1.1 to 1.2 parts by weight of lime, are, from the chemical point of view, the best hydraulic mortars, because, during the hardening process, they form the most stable compounds, without unsaturated seridues. Such cements are, however, burnt at so low a temperature that they are deficient in density, so that mortars made with them shrink considerably when exposed to the air through the evaporation of the water which they have absorbed. All water exceeding in quantity that required for the formation of calcic hydrate must be considered as water of expansion and is very loosely combined. Hydraulic limes, such as that of Teil, bear a close resemblance to Roman cements, but are even looser in texture. Of the 68.6 per cent of lime in Teil lime, 36.48 per cent only would combine with the other constituents during the setting process, leaving 32.12 per cent of lime in an uncombined state.

Portland cement, having been burnt at a higher temperature, is denser than Roman cement in the ratio of 5 to 3; but from the chemical point of view this cement is also defective, because, even supposing the richest calcareous compounks are produced during the setting process, there still remains an excess of uncombined lime. A Portland cement containing 61.04 per cent of lime would leave 13.79 per cent of lime unsaturated, while one containing 68.379 per cent would leave a similar residue of 29.1 per cent. In the case of a Portland cement of averoge composition, with 1 part of silicate to 2 parts of lime, 25 per cent of lime or 33 per cent of calcic hydrate would be segregated.

A body containing a substance of such strong chemical affinity as free lime cannot be regarded as stable. The free lime will continue to react until it forms a saturated compound. When the mortar hardens in the air or in water containing carbonic acid, the lime is converted into carbonate; but in sea-water it is chiefly the sulphates which act upon the lime. In the first instance it is the free lime that is converted into carbonate or sulphate, then the very unstable compound with ferric oxide, then the aluminate, and finally the silicate. The formation of the sulphate with two equivalents of water causes a considerable increase of volume, and may destroy the cohesion of the mass. With this formation of gypsum the production of lime aluminate-sulphate goes hand in hand, and this causes an enormous increase of volume, and a total destruction of the cohesion, for this double compound crystallizes with at least thirty, probably sixty, equivalents of water, and in doing so converts the strongest mortar into a mud, the only part of which retaining any cohesion being those protected by the formation of carbonate. Good Roman cements resist the action of sea-water well because they only contain enough sulphate of lime to form sixteen parts of the double salt which finds sufficient space for expansion in the pores of the mortar. In such hydraulic limes as that of Teil there is little alumina, and consequently the chief increase of volume is due to the formation of calcic sulphate and not to the double salt. One of the reasons why Teil hydraulic lime has proved more successful for marine work than Portland cement is that the blocks made with it are allowed to harden in the air for a long time before immersion, while Portland cement is generally exposed to the action of the sea-water at once. Even if Portland cement concrete blocks be exposed to the air until a protective skin of carbonate of lime is formed, such a skin cannot attain any considerable thickness, and the chemical reactions to which the destruction of the cohesion must be attributed will eventually take place. In order to ascertain the action of carbonic acid and sea-water upon the strength of Portland cement, a series of experiments were carried out. Two sets of briquettes were made according to the German standard rules, one composed of one part by weight of Portland cement to three parts by weight of standard sand, and the other of one part cement to five parts of standard sand. These briquettes were allowed to harden for twenty-four hours in the air, but protected from carbonic acid, and were then placed in boiled distilled water for 56 days, the vessel in which they were kept being hermetically closed. Half of the briquettes were then treated with moist carbonic acid for five weeks, and were finally returned to the closed vessels, in which they remained four weeks longer. When tested, the briquettes were therefore 120 days old. The 1:3 mortar protected from carbonic acid gave a tensile strength of 26.9 kilos per square centimeter, while the briquettes treated with that gas gave 28.5 kilograms per square centimeter (405.3 pounds per square inch). The crushing

strength was 309 kilograms per square centimeter in the first case and 338 kilograme per square centimeter (4,806.3 pounds per square inch) in the second. The 1:5 mortar protected from carbonic acid broke at a tensile strain of 14 kilograms per square centimeter (199 pounds per square inch), and, treated with carbonic acid, the strength increased to 16.8 kilograms per square centimeter (238.9 pounds per square inch). The crushing tests gave 112 and 138 kilograms per squate centimeter (1,592.6 and 1,962 pounds per square inch) respectively.

To be Coutinued.

SEMI-ANNUAL SUMMARY OF BUILDING OPERATIONS.

IN the following tables we present the number and value of buildings erected in San Francisco during the first six months, it will be noticed that there is an increase in the amount of cost as compared with the first six months of last year while the number of buildings is much less.

FOR FIRST SIX MONTHS. 1898.

1898	No. of Building Permits.	No. of Contracts.	Brick Building Value.	No. of Building Permits.	No. of Contracts.	Frame Building Value.	No. of Building Permits.	No. of Contracts.	Alterations & Additions Value.	No. of Building Permits.	No. of Contracts.	Total Value.
Jan'ry	3	4	$ 58,901	19	14	$ 81,286	7	7	$ 27,338	29	25	$ 167,525
Feb'ry	6	10	92,829	15	17	62,981	6	13	33,380	27	40	189,143
March	3	7	77,154	39	37	215,382	11	13	51,870	53	57	346,406
April	3	15	165,301	33	38	139,221	16	19	119,894	52	72	424,415
May	4	12	151,108	19	23	67,980	9	15	41,815	32	50	260,903
June	8	20	313,984	28	42	157,476	14	18	62,156	10	80	533,616
Total	27	68	$ 859,307	153	171	$ 726,329	63	85	$336,650	233	324	$1,922,286

To this amount has been added the further estimated sum of $300,000 where costs have not been given, which would make the grand total for the year, $2,222,286.

FOR FIRST SIX MONTHS.—1897.

1897	No. of Building Permits.	No. of Contracts.	Brick Building Value.	No. of Building Permits.	No. of Contracts.	Frame Building Value.	No. of Building Permits.	No. of Contracts.	Alterations & Additions Value.	No. of Building Permits.	No. of Contracts.	Total Value.
Jan'ry	12	18	$ 128,640	22	25	$ 55,524	3	3	$ 7,917	37	45	$ 190,081
Feb'ry	6		181,428	21	21	71,475	8	8	28,028	35	49	280,931
March	10	18	253,172	44	42	135,019	10	10	17,291	64	75	405,975
April	6		151,762	71	75	217,370	2	25	103,780	102	122	472,912
May	13		119,955	10	10	147,286	11	11	13,066	64	75	277,427
June	7		48,778	15	18	162,750	19	20	44,934	71	77	261,462
Total	54	101	$ 888,426	243	263	$ 788,123	76	77	$247,039	373	441	$1,888,188

The business for the first six months for several years is shown by the following table.

1885—754	contracts.....	value, $4,267,375
1886—670	"	" 2,486,633
1887—516	"	" 3,269,914
1888—437	"	" 2,719,820
1889—546	"	" 3,910,600
1890—556	"	" 3,793,858
1891—583	"	" 3,916,973
1892—411	"	" 2,942,496
1893—475	"	" 3,024,498
1894—524	"	" 2,456,428
1895—517	"	" 2,625,024
1896—644	"	" 3,636,224
1897—433	"	" 2,388,488
1898—324	"	" 2,222,286

ANOTHER BUILDING DISASTER.

FOLLOWING close in the train of the recent building disaster at London, Ont., with its terrible consequences, comes the news of the collapse on February 21, of the roof of a large music hall at Oshawa, Ont. The building is described as a three-story brick structure, with a large assembly hall on the upper floor. It was covered by a flat roof about 75x100 feet in size, which fell to the second floor, completely covering the seats in the music hall. The accident occured at five o'clock in the morning. To this fortunate circumstance is due the fact that a number of lives were not sacrificed. On the preceding Saturday evening a large political meeting was helded in the building, and on the evening of the day on which the accident took place an entertainment was to have been given at which it was estimated there would have been present 800 persons. How terrible, therefore, would have been the consequences had the accident been delayed but a few hours! Doubtless the immediate cause of the collapse was accumulation of snow on the roof, but the fact that the roof was a new one and that the building had recently undergone changes and repairs, at a cost of about $5,000, is sufficient proof of structural weakness. These accidents unmistakably affirm the necessity of a standard of qualification on the part of those who undertake to design and erect buildings—particularly those of a public character. If the title Architect was restricted to persons who had passed a qualifying examination, as is now the case in the province of Quebec and the State of Illinois, the public would at least be enabled to know who were qualified to put up safe structures, and could then govern themselves accordingly. Under present circumstances anybody is at liberty to call himself an architect and to design and erect buildings of every class. So long as this condition of things shall continue, accidents involving injury and loss of life will be the inevitable consequence.—*The Canadian Architect and Builder.*

[The Editor is not responsible for anything which appears in this column.]

BURNT CLAY HAS AN INNINGS.

NEW YORK, N. Y., July 15, 1898.

To the Editor of the California Architect and Building News,

SIR:—We have again to thank you for a copy of your interesting paper of May. It seems to us that the question at issue is primarily: "which is the best material for fireproofing purposes—burnt clay or concrete?" and the solution of this is within the reach of any one. Let him procure a piece of porous terra-cotta and one of cinder concrete such as is used in buildings; place both in any kitchen range; the

when heated red-hot, drop into a bucket of water and noting the result, from his own judgment.

To hold the material responsible for faulty construction such as is shown in your illustrations of the Park Row building in this city, is simply ridiculous; through an agreement entered into some time since between the master builders and unions, the manufacturer of hollow tile is debarred from getting any of his material in New York City, whilst the manufacturers of concrete control the entire operation from first to last.

Give the manufacturer of hollow tile equal privilege to erect his material, grant him at same time leeway to supply any petty deficiencies in the general fireproofing which his experience teaches him is vital and you will secure a structure as thoroughly impervious to fire as the present appliances of science furnishes—and thereby demonstrate clearly what is possible in fireproof construction of burnt clay when unhampered by other considerations than that of perfect efficiency.

The same authority that procured those illustrations could easily satisfy himself that the material is delivered in good condition at the building and that all blame for defective construction and broken tiles rests not with the manufacturer, who deplores, being vitally interested far more than *Engineering News*, such miserable work as you show.

And yet, despite defective setting, which *Engineering News* claims is almost universal in fireproof buildings constructed of hollow tile in New York City, such buildings have withstood the fiercest internal fires with little or no damage; and the Pittsburg fire so demonstrated, Mr. Jenny to the contrary notwithstanding.

If the Firewriters Association of the N. W., desire information as to the best fireproof construction for buildings, it could procure such based on actual experiences, by applying to the New York Board of Fire Underwriters.

A progressive manufacturer of burnt clay fireproofing aims to profit by the lessons which past experiences have taught him; to incorporate in its manufacture every improvement suggested by thoughtful ingenuity and unceasing experiments, but, "there are others".

The other systems of fireproofing which have sprung into recent existence from their very novelty, are limited in practical application to actual building operations and have thereby escaped so far any test of their efficiency in the light of subjection to actual conflagration. We know what to expect of a material which in its manufacture is exposed to a temperature of fully 3000 degrees Fahrenheit, and we have seen its conduct under subsequent fires in numerous instances, but what will result when the newer systems are called upon to prove their claims?

We have a report to the National Fire Protection Association of Boston on a fire of April 2, 1898, No. 278-288 Congress street. "Floors concrete, (Columbian construction). Cause of fire probably spontaneous combustion in the outside surface of three barrels. Did not burn through barrels and floor not scorched. Damage caused by fire starting a Grinnel Sprinkler, which was not discovered by watchman in time."

"The floors which were supposed to be water-proof, allowed water to run through and caused damage in four stories. The action of lime (in concrete) with water, passing through caused silver plated ware to be turned black, necessitating replating and polishing."

As unslaked lime, one of the essential elements of cement and therefore in concrete, is not only a conductor but one of the greatest known absorbents of moisture, electricity will find its way through any moisture, containing material. The concrete system applied in a moist condition, retains its moisture for a more or less extended period and in these days of ever extending electrical appliances in our steel-frame buildings, the danger to that metal of electrolysis is one that is attracting the earnest attention of our Architects and one to be well considered. Hollow tile, on the contrary, is a perfect non-conductor and is absolutely dry when laid.

Yours truly,

HENRY MAURER & SON.

THE CONTINENTAL FIRE INS. CO.'S ARCHITECTURAL BOOMERANG.

Editor California Architect and Building News.

DEAR SIR:—With your permission I desire to draw the attention of Architects to an announcement in the June number of the *Coast Review*, which states that the Continental Fire Insurance Company of New York has published a work containing plans and specifications of economical buildings, etc., a copy of which the company will send to any property owner desiring to build, if the said owner "will insure with the Continental."

This is a new departure, for a respectable corporation to take, but quite in keeping with the "beautiful present" or "something for nothing" idea so prevalent in these days among certain storekeepers.

How the Continental of New York, expects to be benefited in the long run by adopting these tacties is left to conjecture.

Fortunately Architects (and their clients) still have plenty of choice left in the matter of insuring their buildings, and with companies who do not offer plans and specifications as an inducement to obtain premiums and they still have sufficient intelligence left to exercise it.

The publication referred to is also said to contain (for the owners benefit of course) blanks for contracts with builders and "architects". I can only say that if these contracts are of the New York Standard policy type—"ironclad" and duly Harveyized—they would be as useless to an owner, as the said plans and specifications would probably be.

Yours respectfully,

ARCHITECT.

IRON SHUTTERS VS. WOOD SHUTTERS.

NEW YORK, July 13, 1898.

To the Editor of the California Architect and Building News.

DEAR SIR:—In the June number of your Journal I read an article on "Iron Shutters" in which it states that the Fire Department of New York City has lost faith in iron shutters, and that a wood shutter lined with tin is the best shutter in the market today, known as the "Underwriter's Shutter" by the Department.

As one who has been in the business of manufacturing and erecting fire-proof shutters all over this country for twenty years and more, who makes a specialty of shutters, seeing

the ridiculousness of such a claim I take the liberty to write these few words.

If the comparison is made by Chief Bonner between common folded wire shutters and wood lined with tin, I agree with him, as common iron shutters will burst open in thirty minutes under an intense heat—I suppose this is what the Chief had in mind.

In 1886 a large building was erected in Chicago, Ill., designed by the late Mr. Richardson, the Architect, and who took special interest in the shutter question for that building. He selected a shutter which I saw placed in that building in round numbers, seven hundred and fifty in all.

Some six years after the said building was finished, I had a call to put in more shutters for this same concern. In my conversation with the Chief Engineer I asked him "how did the shutters wear in the old building?" His reply was this: "Two years ago we had a terrible fire across the street, burned the whole block and part of another, the shutters you put in were white with heat, then we placed our water on them from the inside as an experiment in our excitment, the shutters had room to expand in the channels and when the fire was all over we had only the painting to do on the shutters."

The above rolling steel shutter was invented by Clark, Bunnet & Co., London.

Yours very respectfully,
J. D. Thomas, Supt., N. Y.

THE SURVIVAL OF THE FITTEST.

IT WAS Herbert Spencer who, when seeking to define his views, touching the Status of man, and the lower animals, in the visible universe, coined the above axiomistic phrase. This sententious deliverance of the great biologist, has long since abundantly justified the claim that

"Many a shaft at random sent
Finds mark the archer 'little meant'."

in that it has been found—or made—to fit conditions its promulgator scarcely contemplated. With our characteristic tendancy to exalt the apposite, we do not hesitate to utilize terms well befitting a "bacillus" to exploit a—well, say for instance—a boiler, or to be quite explicit "A Copper Range Boiler."

If in preparation of plumbing Specifications, wherein the best goods obtainable, are demanded, architects would call for the "Brown Bros. Seamless Drawn Copper Range Boiler, they will certainly obtain what they seek, whereas the words "or e ual' added to the specifications, will most certainly defeat the intention and provide an easy path for "the substitution evil.

This seemless drawn boiler is made of two solid seamless shells cold-drawn from pure Lake Copper and has no brazed seams or rivets. It has successfully withstood the test that tries all things—"time"—and is fully guaranteed by its makers not to collapse.

Architects will find that the experimental element does not enter into the "Brown," and he has the positive assurance that in this boiler, he is giving his client the very best article of its class in ex istance.

FOR STEEL CONSTRUCTION.

THE new building for the Wells, Fargo & Co's., Express consumed nearly 1000 tons of steel in the skeleton structure. To prevent corrosion to this vast amount of metal, covered and fireproofed, as most of it will be with layers of concrete, the architects gave the preference to Dixon's Silica-Graphite Paint.

CABOT'S SHINGLE STAINS.

THOSE who required further evidence of the value of Cabot's Creosote Shingle Stains in this climate will find it in the brochure just issued from the office of the San Francisco agent, Mr Charles J. Waterhouse, 421 Market street. This little book, which is illustrated with half-tones and line sketches of a number of handsome country-houses that have been actually stained with these Stains, contains also the testimony of architects and owners all through this section of their complete satisfaction with the coloring effects, preserving properties and durability of the Creosote Stains. Being in the wood, and not wholly on the surface like paints, they cannot crack or peel off, as paints do, which is a very important advantage in this climate, but perhaps their most unique advantage here is the fact that redwood shingles treated with them never turn black, as they always do otherwise. Mr. Waterhouse carries a full stock here, and Mr. P. H. Mathews, 238 South Main street, is Los Angeles agent.

ROOFING OF WELLS FARGO & CO.'S BUILDING.

The Paraffine Paint Company have the contract for the roofing work and roofing material on the Wells Fargo & Co.'s new building, and the roof is row well in hand.

GOOD LOCKS.

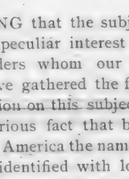
SOME INTERESTING FACTS ABOUT A FAMOUS LOCK. THE PRINCIPLE AS OLD AS THE PYRAMIDS AND MODERN AS THE CENTURY.

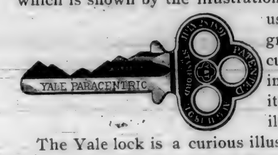
BELIEVING that the subject of locks has a peculiar interest to the class of readers whom our pages reach, we have gathered the following information on this subject:

It is a curious fact that both in England and America the name most prominently identified with locks is that of an American; in the former, that of A. C. Hobbs, and in the latter, that of Linus Yale, Jr.

While the makers of the Yale lock, The Yale & Towne Mfg. Co., of 84–86 Chambers street, New York, have associated the trade name "Yale" with many of their finer products, in connection with locks it can only properly be applied to the original invention of Mr. Yale and to the later improvments thereon which have been developed and introduced since his death by the Company.

The essential characteristics of the Yale system are shown in the accompanying illustrations, and consist in the separation of the key and tumbler mechanism from that of the bolt mechanism, and in the adaptation of a key of sheet metal to the actuation of the peculiar tumbler mechanism shown. The original Yale lock had a perfectly flat, thin key, which was the forerunner of the innumerable forms of flat key now so generally used. It is a common mistake to characterise any lock with a flat key as a "Yale Lock", and many persons are thus misled. The flat key was an incident in Mr. Yale's invention, but its chief importance lies in the form of tumbler mechanism adopted, the vast capacity for key changes which this affords, and the resulting immunity from liability to accidental interchange of keys. In common locks the key changes are counted by the dozen only; in the Yale lock they are counted by the thousand. The flat, steel key of the original Yale lock gave place later to the corrugated key, and this in turn to the latest from, the "Paracentric," which is shown by the illustration. The peculiar key-way used with the latter adds greatly to the original security of the lock, while the intricate form of the key itself practically precludes illicit duplication.





The Yale lock is a curious illustration of the adage that "there is nothing new under the sun". In the pyramids of Egypt locks have been found embodying the pin-tumbler system. Here, however, the resemblance ends. In the application of the principle, and in all refinements of mechanical detail, the difference is as wide as that between the civilization of Egypt under the Ptolomies and that of America at the close of the nineteenth century.

THE KEELY MOTOR UP-TO-DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA.

BY E. J. SCOTT, ACTIVE MEMBER.

CONTINUED FROM JUNE NUMBER.

THE VISITOR also saw the engine built to navigate an airship, recently described in a city journal as a new invention. He saw the engine, afterwards called a "Vibrodyne," which was to revolutionize all commercial machinery. This was not shown in operation. Keely also showed him a large book for the purpose explaining the principles of his vibratory philosophy. It was filled with heavy cardboard leaves, covered with pen drawings, all made by Keely with beautiful exactness. Nearly every one of the plates had one or more bars of music, showing the dominant chords or vibrations which governed certain combinations. The inscription on the Zuni tablets would have been quite as plain to the visitor, and Mr. Keely kindly enlightened him as to their meaning. In explanation of one of the simpler charts, Mr. Keely said: "The chord of polar negative attraction, so far as this sympathetic research is concerned, proves conclusively that the chord of theneutral center of the polar attractive currents of the earth represents the sympathetic chord of B flat, third octave, one-hundredth of a note below the octave, according to sympathetic sub-division."

The visitor had before noted that Keely's language, while sounding perfectly familiar so far as the words were concerned, did not convey any ideas. He soon learned that without a knowledge of the application made by Keely of the terms which fell so glibly from his tongue it would be useless to study the subject by question and answer. Some months afterwards he was given some manuscript of Keely's which was said to be the clearest exposition of his views on the great vibratory principle upon which his discovery is based. The first paragraph of this paper, which serves as the introduction to the subject, reads thus:

"The peculiar sympathetic conditions whereby a magnet is conserved to polar and anti-polar currents of the earth show a duality of sympathetic inflow and outflow as to prove anything but perfect sympathetic equations, as between its reception and distribution in that part of the electrical field that represents one of the triplets that in celestial physics is classified as inter-atomic vibratory oscillation. Now, if this oscillation represents in its alternating action a vibratory wave-motion representing in its corpuscular field of action, say 128,400 exchanges per second between polar reception and anti-polar (or depolar) distribution (which sympathetic philosophy proves most conclusively), the fact is established of its perfect sympathetic concordance to that third of the electrical triplet representing the sixths as classified in sympathetic physics, and thus that line of sympathetic action as represented in the magnet when it is electrically sensitized becomes thoroughly subserved to polar sympathetic attraction as a medium through which a portion of a polar flow is diverted—not latent, but highly active under all conditions as long as its sensitization exists—that is its magnetic sympathy as electrically induced, and associates itself with every medium in nature where this latent element exists, viz: steel, iron, oxygen at a low temperature, etc."

As Keely has made vibratory physics the study of his life, it will be taken for granted that the statement just quoted is authoritative. At the same time the writer confesses that he does not understand it, although it sounds all right.

Mr. Scott left with the understanding that the should make a second visit at some date to be named. In the meantime he discussed the details of what he had witnessed with Mr. Addison B. Burk, President of the Spring Garden Institute, who agreed with him in some of his conclusions, and it was arranged that both would be present at the next visit to Keely, if agreeable to Mrs. Moore. That lady gave her consent, and named November 23, 1892, as the date. It was arranged between them that if the experiments was repeated, each would pay attention to certain details, so as to cover as many points as possible. At this visit the surroundings of the place and arrangement of the rooms constituting the laboratory were noted.

Entrance is made from the street through a large door into a room in which is a carpenter's workbench, some powerful winches, and an assortment of tools; and on one side was an immense box, bound with iron bands, with a cover so heavy that tackle was arranged above it for lifting it. It was closed and padlocked, and was said to contain machinery not now in use. A large door led into a room on the same floor at the rear of the first one, which was not opened on any of the visits. A stairway to the second floor leads to a landing on which are parts of abandoned machinery. A small room on one side of this contains a large desk, with books, instruments and drawings. On the opposite side of the landing is a room somewhat larger, with many expensive looking instruments, or machines, some of which he exhibited in operation. Back of both of these rooms is a large room the full width of the house, in which some of the apparatus was exhibited. To the rear of this is another room, a step or two higher. This last room is over the back room on the first floor, before referred to. To the north of this building is the central power station of the Columbia Electric Light Company.

One fact which may or may not be of importance, in con-

nection with all the visits, is that Keely required of Mrs. Moore twenty-four hours' notice of any visit at which exhibitions were to be made. On the second visit, at which Mr. Burk was present, Keely was asked to show the sensitized round steel bar before referred to. He produced it, and a measurement showed it to be 7½ inches long and 1 1-16 inches in diameter, with a small hole through it longitudinally which could be blown through but no light would pass through it; another larger hole was bored through the bar near one end. By striking it on the floor with one end, it would vibrate with a base note like an organ tone which would continue for more than a minute; a blow on the other end produced a note of high pitch not quite so persistent. Keely's explanation of this phenomenon made at the first visit, was that the bar had been "vitalized" and its proportions had been calculated to a nicety. His exact explanation was: "By vitalizing this bar it produces a molecular oscillation of three times the diameter of the molecule, whereas under ordinary circumstances with a piece of forged steel, the oscillation is only one-third of its diameter, 40,000 times a second, which is perfectly inaudible to the ear. By increasing the magnitude of the vibrations by the sensitizing process to three times the diameter, it gives a molecular swing that brings out an oscillation that produces a chord with three different notes."

Mr. Scott had formed a different theory and asked that the bar be weighed. At just this junction Mr. Keely admitted a caller, a young man with whom he appeared to be well acquainted, and having no scales in his laboratory, he asked the young man to take the bar to a neighboring drug store and have it weighed. He returned, saying its weight was 3 pounds, 3 ounces. During his absence Keely explained that the sensitizing process consisted in treating the metal with hydrogen in an oven, which would sometimes reduce its weight to nearly half the normal. Making allowances for the rounded ends, the bar had evidently suffered a loss in weight, but not in that proportion. Mrs. Moore told the writer that the bar had created a sensation among scientific gentlemen in Europe, and that there was a standing offer of $10,000 for the production of a similar bar.

To test the truth of this theory and not in the hope of reward, the investigators concluded to have a bar made. After several attempts with vibrating single bars inserted in a bored-out piece of steel, Mr. Burk succeeded in having an exceedingly good imitation made at the Spring Garden Institute, by inserting two ordinary tuning forks of different pitches in the bored-out steel, and concealing the work by screwing on an end piece and then turning the bar off in a lathe. It required more work, probably, than the hydrogen process, but the molecules had the requisite swing, and the notes the proper resonance and persistence. This simply shows that there is possibly more than one way of arriving at the same result. After the duplication of this bar, the original could not be seen.

Mr. Keely on this occasion showed his apparatus for sensitizing bars, and also the amalgam disks which form so conspicuous a feature in all his apparatus. It was a glass receiver, from which the air could be exhausted by an air-pump, with an opening at the bottom large enough to admit the object to be sensitized, which must be mounted on glass. The opening was closed with a screw cap. The objects to be treated must not be touched by the hand, as by so doing vibrations might be set up in the body which would defeat the purpose. When the treatment was completed the disks could be handled without detriment.

The disks referred to were about 2½ or 3 inches in diameter, of brass, and an inch thick, with the center turned out, making it like a cap, or cover of a jar. The cap was then filled with an amalgam and finished off smooth, like the obverse brass face of the disk. Keely said the composition of this amalgam had cost him some years of study. It melts at so low a temperature that he had caused much amusement by having spoons made of it, which when put into a cup of hot coffee would melt and disappear. The brass face of the disk was gold plated, which Keely said was essential.

On this visit the levitation experiment was exhibited again. The apparatus consisted of a cylindrical glass jar 41 inches high and about 10 inches in diameter. It was closed hermetically with a cap extending down the sides at least two inches. It was filled with what Keely said was pure water. On the bottom of the jar was one of the disks before described, standing on edge, also a globe covered with gold leaf about the size of an orange, with a small cylindrical projection on one side on which it rested. Keely said the globe was filled with shot. This jar stood on a small pine table upon a thick sheet of glass. In the cap of the jar Keely said there were copper and platinum strips which were responsive to certain vibrations. On the table near the jar he placed what he called a "Sympathetic Negative Transmitter," and connected this with a thumb-screw on the cap of the jar by a platinum wire. This transmitter was a large brass ball about eight inches in diameter, from one side of which protruded a straight cylindrical handle, or bar, which, by turning one way or the other, was projected into or drawn out of the ball. The movements resembled those made in operating the combination of a safe. On the outside of the ball was a small horn formed of a tube of increasing diameter, coiled with its large end outside. Also three small disks of metal into the circumference of which spines of metal of various length were inserted, forming a scale of tones when snapped. One was the diatonic scale, one harmonic, and one attuned to fifths.

Keely then placed a sensitized disk on top of the jar, and another at its base. He explained that the disks and the objects inside the jar were in sympathy with each other, and that it was essential thus to place them. Then turning the knob or handle of his transmitter a few times, as if to adjust it, he snapped the spines on the scales at different points, and soon the weights at the bottom of the jar began to quiver; the disk started slowly upward, followed by the shotted weight, and with a slow, uniform motion they rose to the surface and bumped against the cap, bobbing up and down until they came to rest. The disk, which started first, moved faster than the globe. Keely explained that this was due to the difference in the rates of vibration of their chords of mass. This difference was 120 per minute, and he could, with care, make one ascend while the other descended or remained at the bottom. He played a few notes on a mouth-organ, disconnected the platinum wire from the jar and said the weights would remain at the top indefinitely. The jar was left while the visitors looked at other apparatus, and after a time they were found still on the top. Keely connected the transmitter and jar again by the wire, struck some chords, and the weights descended. He played a chord softly on the mouth-organ, repeating it at short intervals, and both started to rise; using the handle of the transmitter and changing the chord after they had risen three or four inches, the shotted ball dropped to the bottom while the disk continued to the top.

To be Continued.

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NO WHEELS—There are no wheels to bind by reason of warped or sagging track. The movement is perfectly PARALLEL and insures against binding.

NOISELESS—The operation is noiseless and extremely easy.

DOORS EASILY ADJUSTED—The door can be readily adjusted plumb, raised or lowered by drawing them into the opening which gives easy access to the adjusting screws.

QUICKLY PUT UP—The Hangers can be put up in one-third the time required for overhead hangers.

SUBSTANTIAL—The parts are made to carry three times the weight of doors of the sizes given.

ONE PACKAGE—We pack the Hangers fully assembled and ready to attach, in ONE package, including all bolts and screws necessary.

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Porcelite Ename Paint Does not craze or crack

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Varnish. S & Y TRANSPARENT

Filler. S & Y LIQUID AND PASTE

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Casing Blocks Corner, head, center and base blocks

Carvings. [WOOD]

Ceiling. [STEEL CEILING]

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	Box No.
Abrahamson, P.; patent ventilators	123
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Western Expanded Metal & Fire Proofing Co	
Yates & Co.; paints	349
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BUILDING NEWS.

Three-story hospital to be erected on east line of road leading to Reichert's house; o, Fred Finch Orphanage; a, Geo. A. Wright; c, Ingerson & Gor.; cost $4475.

Pleasant and Fruitvale Ave. Carpenter; o, W. O. Ralston; a, W. F. Smith; c, D. S. Brehaut; cost $3425.

MILL VALLEY

Lot 28, Tamalpais Land Co. To build; o, J. Fred Schlingman; a, Edgar A. Mathews; c, Andrew S Ruch; cost $485.

PALO ALTO

On grounds of the Leland Stanford, Jr. Stone work etc; o Mrs. Jane L. Stanford; a, Percy & Hamilton; c, McGilvray Stone Co; signed, June 12; filed, July 14; cost $70,380.

PROSSER, WASH.

J. B. Cape is having plans prepared for an hotel building.

POMONA

L. W. Pierce has plans ready for his new house, which will cost $3500 to $4000. It will be located at the old home place on Pasadena street, the old house having been moved to Gibbs street, south of Pasadena. Ferdinand Davis is the architect, and informs us that the house will have somewhat the appearance of Miss Becker's new house on West Holt.

PASADENA

Architect R. B. Young has prepared plans for the new St. Andrews church of Pasadena. The building will cover an area of 60x130 feet, with a seating capacity of 700. It will be of pressed brick with stone basement and slate or metal tile roof. The architecture is of the Romanesque style, and will be a picture of architectural beauty.

SAN JOSE

Seventh and San Salvador. Two frame cottages o, Mrs. Ida Stevens; a, W. Klinkert; c, C. H. Ames signed, July 4; filed, July 14; cost $800.

SEATTLE, WASH.

The Hotel Denny is to be overhauled throughout the interior. Improvements will cost about $25,000.

REDLANDS

Architect J. W. Forsythe is drawing plans for a $3000 residence to be erected on Cajon street, near Fern by Dr. Jewett.

Architect O. H. Jones of Redlands is preparing plans for Carl Wells, for a two-story brick business building to be erected at that place. The same architect is also preparing plans for Mr. Borer, for a cottage residence.

Albert Johnson is preparing plans for two residences to be built on Jefferson street between Orchard and Vermont avenues.

BUILDING NEWS.

RIVERSIDE

S. L. Alderman is about to commence the erection of a residence in Hidalgo Place, to cost $1800.

Plans have been drawn for the rebuilding of the Methodist church. The new edifice will cost about $4000.

The lumber dealers report a brisk summer trade and the architects are in a good frame of mind.

LOS ANGELES

Architect A. L. Haley is preparing plans for Mrs A. Burgoine o a two-story eight-room residence to be built on West Twelfth street.

Architects Smith & Elder have prepared plans, for John Haddox of a two-story eight-room frame residence to be built at Bassett near el Monte.

Architect Frank D. Hudson has prepared plans for Frank Douglass of a two-story eight-room residence to be built on Burlington Ave.

Architect Fernadd Parmentier has prepared plans for Mr. H. Meyer, for a two-story eight-room residence to be erected corner of Eleventh and Union Ave. Estimated cost about $2000.

Architects Howard & Train have prepared plans for Dr. Pomeroy for extensive alterations to the residence corner of Washington and Toberman streets. The improvements will cost several thousand dollars

Architect O. P. Dennis has prepared plans for Fred S. Langdon for a cottage to be built on Pasadena avenue.

Architect August Wackerbarth has prepared plans for O. E. Roberts of a one and a half story frame residence to be erected at Hollywood.

Architects Eisen & Hune have prepared plans for F. J. Thomas; for a complete remodeling of his residence on Flower street.

Architect C. H. Brown has prepared plans for A. A. Hubbard for a two-story brick stable and carriage house with cement floors and shingle roof to be built on the corner of Ninth and Burlington ave.

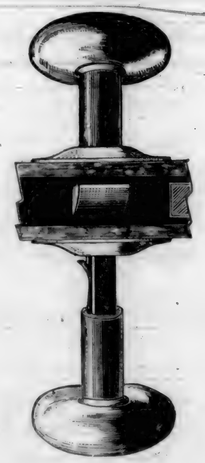
Architects Morgan & Walls are preparing plans for John H. Jones, of a brick block on Spring and West Fifth street.

Plans are being prepared for Geo. D. Rowan, for an up-to-date brick building to be erected on west side of South Broadway.

Architects Eisen & Hune have prepared plans for the San Gabriel Power Company of a one story brick building to be used as an auxiliary power house to their present station on Los Angeles street near Third.

Preparations are being made for the erection of a building at the junction of East First and San Pedro streets. The property is owned by the Wilson estate but has been leased to parties who are making the necessary arrangements.

SPECIFY



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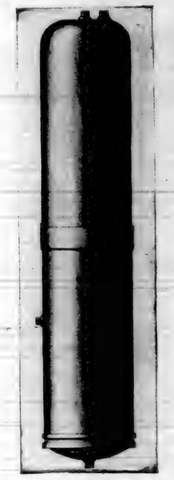

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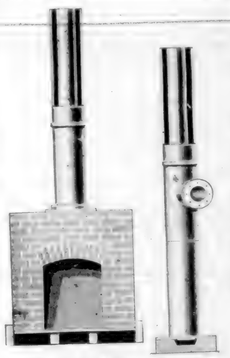

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VOLUME XIX. No. 8. AUGUST, 1898.

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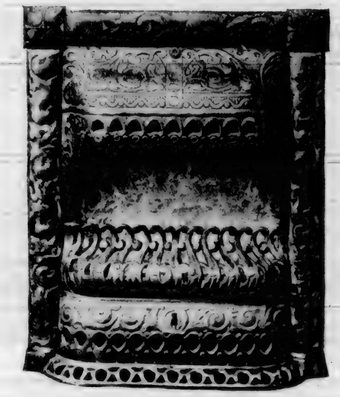

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BUILDING NEWS.

Bay near Leavenworth. To build; o, Neil O'Neil; a, A. W. Smith; c, C. M. MacGregor; signed, Aug. 8; filed, Aug. 11; cost $2170.

Broadway near Sansome: Alterations and additions, etc; o, Board of Education; a, T. J. Welsh; c, W. M. Fletcher; cost $2200.

California near Walnut. To build; o, E. O. Wilkins; a, Martens & Coffee; c, R. Trost; signed, Aug. 15; filed, Aug. 17; cost $2331.

Caselli Ave. near Falcon Ave. Cottage; o, P. Portwig; a, W. H. Armitage; c, D. Ross; signed and filed, Aug. 15; cost $1940.

Clayton near Waller. Three flats; a, C. A. Meussdorffer; c, A. H. Wilhelm; signed, Aug. 13; filed, Aug. 15; cost $4000.

Clayton near Hayes. All work except excavations, etc; o, Mrs. William McCormick; a, T. J. Welsh; c, Wm. Plant signed, July 30; filed, Aug. 1; cost $2232.

Eddy near Van Ness. Grading, brick work, etc; o, P. F. Butler; a, W. H. Lillie; c, John Furness; signed, Aug. 3; filed, Aug. 11; cost $15,288. Sewers, plumbing, etc; o, Ford Bros; signed, Aug. 3; filed, Aug. 11; cost $1880. Painting, etc; c, G. A. Petterson; signed, Aug. 3; filed, Aug. 11; cost $1435.

Ellis near Jones. Brick and terra cotta work; o, L. H. Sly; c, H. H. Larsen; signed, Aug. 15; filed, Aug. 16; cost $6285.

Fourteenth near Guerrero. Alterations and additions; o, Mary I. Keating; a, M. J. Welsh; c, T. F. Foley and H. A. Planz; signed, June 22; filed, July 26; cost $1498.

Fremont near Howard. Brick work, etc; o, Jane E. and C. M. Belshaw; c, J. W. Wissinger; sub-c, J. A. Wilson; cost $7975.

Franklin and Ellis. Excavating, etc; o, D. Jutton; a, C. A. Muessdorffer; c, R. Steglin; signed, Aug. 8; filed, Aug. 8; cost $1658. Carpentry work, etc; c, A. A. Olson; cost $1765. Plumbing, etc; c, G. C. Sweeny; cost $840. Painting, etc; c, J. F. Sullivan; cost $615.

Geary near Mason. Alterations and additions; o, Mrs. M. V. Baldwin; a, W. H. Lillie; c, M. J. Savage; signed, July 27; filed, July 30; cost $9200.

Golden Gate Ave. near Laguna. Excavation, etc; o, Judah Bons; a, M. J. Lyon; c, W. J. Field; signed, Aug. 2; filed, Aug. 13; cost $2094.

Golden Gate Ave. near Hyde. Alterations and additions; o, Mrs. Isabella Boyde; c, Anderson Bros; signed, July 13; filed, July 13; cost $1617.

Guerrero near 24th. Carpentry, brick work, etc; o, Dominican Sisters; a, Shea & Shea; c, Robert Trost; signed, Aug. 8; filed, Aug. 9; cost $2325.

Green near Fillmore. All work except plumbing, etc; o, Amelia M. Burnell; a, W. Mooser & Son; c, Petterson & Person; signed, July 27; filed, July 1; cost $3300.

Herzog Tract, lot 5, block 12. Two-story frame; o, William Strohbeck; c, August Schoor; signed, Aug. 12; filed, Aug. 15; cost $1535.

Hoffman Ave. near Elizabeth. To build; o, Jacob Heyman; c, Jacob Heyman; cost $2250.

Isabella near San Pablo Ave. Two-story frame; o, Lee E. Andrews; c, Robert McBeth; signed, Aug. 9; filed, Aug. 10; cost $1650.

Laguna near Washington. Cabinet work, etc; o, Dr. A. Barkan; a, Pissis & Moore; c, Fink & Schindler; signed, Aug. 8; filed, Aug. 15; cost $8376.

Linden Ave. near Gough. Two-tory tenement house; o, Arthur Kanzee; a, B. C. Clinch; c T. R. Bassett; signed, July 30; filed, Aug. 1; cost $1432.

BUILDING NEWS.

Lombard and Lyon. All work except painting; o, Agness Herman; a, E. A. Garin; c, Cameron & McDonald; signed, Aug. 4; filed, Aug. 4; cost $2888.

Lombard and Baker. To build; o, P. J. McGaffigan c, John Keneally; signed, July 27; filed, July 28; cost $1097.

Market and Hayes. Alterations and additions; o, Barflett and C. F. Doe, administrators; c, Robinson & Gillespie; sub-c, L. J. Campomenosi; signed, June 12; filed, July 21; cost $1860.

Market and Spear. Work for elevators; o, W. W. Young; a, Kenitzer & Barth; c, S. F. Novelty Works; signed, Aug. 10; filed, Aug. 12; cost $1650. Electric elevator; c, Fraser Electric Works; signed, Aug. 10; filed, Aug. 12; cost $4200.

Mission and 14th. Carpentry; iron work, etc; o, Southern Pacific Co; a, H. A. Schulze; c, Z. O. Field; signed, July 20; filed, July 28; cost $13,780. Excavation, etc; c, Quimby & Harrelson; cost $6495. Brick work, etc; c, O'Sullivan & O'Connor; cost $7566. Cast and wrought iron, etc; c, H. Ralston; cost $9198. Plastering, etc; c, Jesse E. Steere; cost $3172. Plumbing, etc; c, W. F. Wilson; cost $8003. Tinning, etc; c, S. F. Cornice Co; cost $1640.

Natoma and Russ. All work except plumbing, etc; o, Teresa Murphy; a, M. J. Welsh; c, Allen McDonald; signed, Aug. 4; filed, Aug. 4; cost $1400.

Pacific Ave. near Webster. Excavation and brick work; o, Jonas Schoenfeld; a, Salfield & Kohlberg; c, Miller & Beck; cost $1200.

Plymouth Ave. and Broad st. To build; o, Herman Kiepen; c, Earl F. Crane; signed, Aug. 15; filed, Aug. 15; cost $1925.

Post near Laguna All work except plumbing, etc; o, Leopold Auerbach; a, J. E. Wolfe; cost $425.

Powell and Vandewater. Two-story frame; o, W. M. Nichols; a, M. J. Welsh; c, K. C Gardner; signed, Aug. 10; filed, Aug. 12; cost $4425.

Second and Mission. Illuminating tiles and iron work for six-story brick; o, Wells, Fargo & Co; c, P. H. Jackson & Co; signed, July 29; filed, Aug. 2; cost $2867.

Silver near Third. To build; o, Mrs. Emilie Ursin; a, C. M. Rousseau; c, W. R. Kenny; signed, July 22; filed, July 26; cost $3135.

Stanyan and Beulah. Three-story frame; o, Antonio Versalovich; c, R. J. Pavert; signed, Aug. 13; filed, Aug 15; cost $4575.

Sixth near Shipley. Alterations and additions; o, Gustave Harshall; a, Shea & Shea; signed, July 30; filed, Aug. 4; cost $4374.50.

Seventh near Howard. All work except plumbing; o, Adolph Cohn; a, F. Schwerdt; c, Bernard Dryer; signed, Aug. 15; filed, Aug. 16; cost $2700.

Texas near 19th. To build; o, James Gallagher; sup. James Glacken; c, John Keneally; signed, Aug. 9; filed, Aug. 12; cost $1147.

Twenty-first and Chattanooga. To build; o, Patrick Ramaur; c, William Helbing; signed, July 26; filed July 22; cost $2500.

Twenty-fourth near San Bruno Ave. To build; a, T. J. Welsh; c, Donovan & Son; signed, Aug. 10; filed, Aug. 12; cost $2775.

Van Ness Ave. and Clay. To build; o, St. Luke's Church; a, Albert Sutton; c, Walker Brother Co; signed, Aug. 13; filed, 15; cost $32,500.

Washington near Spruce. Excavating, etc; o, H. Huddleston; a, Percy & Hamilton; c, Richardson & Gale; signed, Aug. 4; filed, Aug. 6; cost $7580. Carpentry, etc; c, Chris Chrisholm; cost $13,900. Plumbing etc; c, W. F. Wilson; cost $1759.

BUILDING NEWS.

Webster near Filbert. To build; o, Mrs. Agnes M. Goedje; c, W. F. Lloyd; cost $2050.

OAKLAND

Eight and Madison. To build; o, Mary Elfen; a, Alexander Thomson; c, A. Thomson & Co; cost $4414.

Fourteenth and Kirkham. Cottage; o, Ed. Swain; a, A. W. Smith; c, D. McLeod; cost $1240.

Thirteenth near Washington. To build; o, Abramson Bros; a, Chas. Mau; c, J. C. Caldwell; cost $3895.

Fourty-first and Adeline. To build; o, L. D. Fell; a, W. A. Graves; c, Geo. C. Nall; cost $1695.

Grove and 41st street. Brick work, etc. for Sth hool; o, Roman Catholic Archbishop of San Francisco; a, E. A. Garin; c, Cameron & McDonald; cost $7949.

EAST OAKLAND

Fifteenth near 18th. To build; o, D. C. Talbot; a, D F. Oliver; c, Jacob House cost $1280.

CLAREMONT

Architect C. H. Brown is preparing plans for the Pearson Hall of Science, a new building to be erected at Claremont, Cal., at a cost of $25,000. It is an imposing design of two stories high and basement, 60x90 feet, built of brick, faced with cream colored pressed brick and terra-cotta.

MILL VALLEY

Mount Tamalpais. One and one-half story frame; o, Mill Valley and Mount Tamalpais Scenic Railway; a, Percy & Hamilton; c, B. F. Ellis; cost $1765.

BERKELEY

L t 6, block 8, Antisell's Map of Villa Lots. To build; o, P. P. Robertson; a, Cunningham Bros; c, J. C. Caldwell; cost $2308.

BAKERSFIELD

W. H. Scribner has let the contract for a three-story brick building designed for a theatre to be build on Chester avenue.

REDLANDS

Architect J. W. Forsythe has prepared plans for J. H. Fisher for a three-story brick to be on he corner of Orange street; total cost about $14,000.

DUTCH FLAT

A public school building at Dutch Flat will be built soon; bids close on September 3d; P. F. Martin, architect, cost $4500.

LOS ANGELES

A. S. Rendall will creet this fall a brick building on the lot at the corner of Los Angeles and Boyd Sts.

Architect G. F. Costerisan is preparing plans for the trustees of San Fernando school district for an addition of two rooms to their school building. Plans will be ready for bids about Aug. 1st.

Architects Eisen & Hunt have been instructed by the board of supervisors to prepare plans for a one-story brick building to be used as an insane ward on the county hospital grounds on Mission road and the probable cost will be about $2500.

Architects Locke and Munsell have prepared plans for Hugh Phipps of a two-story frame residence to be built on Maryland streets.

Architect Chas. L. Strange is preparing plans for a two story frame and stone residence to be built on W Adams street. He is also preparing plans for four two story residences to be erected at Riverside.

Architect John Parkinson has prepared plans and

Continued on page xii.

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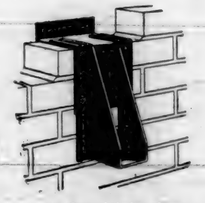

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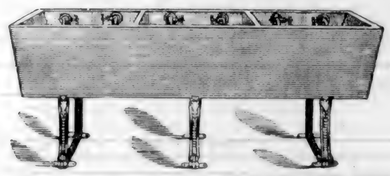

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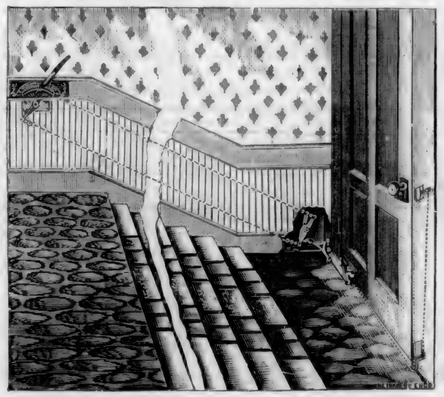

VOLUME XIX. AUGUST 20th, 1898. NUMBER 8.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

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NOTICE is hereby given that Mr. Tom M. Grant is no longer connected with this Journal.—E. H. Burrell, Lessee and Publisher.

THE Editor of the *Architectural Record* endorses the scheme of the Classical Design and Detail Company, Limited, because of the "substantial benefits to architects" in an apology to his readers under the caption "Architecture Made Easy". It is unique in its way so we print it verbatim:

"It is not our practice to admit commercial reading into these pages of the magazine, but, in the case of the circular that follows we have deviated from our fixed policy because of the substantial benefits the "Classical Design and Detail Co." offers to the architectural profession and to the cause of classical art. We are sure nobody will deny that the present conditions of practice demand the formation of a concern like the one just incorporated, which certainly fills most satisfactorily "a long-felt want."

The prospectus of this C. D. and D. Co., is rather startling in many of its announcements which, of course, amounts to innovations as for instance the opening paragraph which boldly declares that "it is well-known that the chief drawback to the successfull practice of architecture in the United States is the enormous burden imposed upon the architect by his *office expenses*." Whereas we were always somewhat inclined to the opinion that a "lack of business" had con-

siderable to do with it, but, of course, with this highly, though apologetically endorsed prospectus before us, we must have time to think.

Further on we are told that this condition of affairs is entirely unnecessary, in the actual condition of architecture in this country, and that it is in view of these facts that the Classic Design and Detail Company has been formed.

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THE ACTION OF SEA-WATER UPON HYDRAULIC CEMENTS.

BY DR. WILHELM MICHAELIS — TRANSLATED AND ABSTRACTED BY WALTER FRANCIS REID.

From Proceedings of the Institute of Civil Engineers [England]

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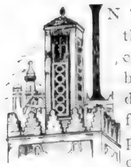

IN THE 1:3 briquettes only 13.3 per cent of the total lime, and in the 1:5 only 24.8 per cent was converted into carbonate. These briquettes being very small, and the conditions for the absorption of carbonic acid favorable, it is evident that even a long exposure of concrete blocks to the air would only cause a very thin film of carbonate to be formed. The whole of the lime was not converted into carbonate until the mortar had been coarsely powdered and exposed to the action of carbonic acid for some time. Immersed in sea-water, or in a 2 per cent solution of magnesium sulphate, the briquettes which had been protected from carbonic acid soon disintegrated, and even those which had been carbonated were strongly attacked in seven months, especially the 1:5 mortar, although this had absorbed more carbonic acid.

In fresh water the conditions are more favorable, for only the free lime can be dissolved or converted into carbonate. The more lime is dissolved out the more insoluble are the residual silicates and aluminates. The whole of the lime can never pass into solution, although this may be effected on a small scale when carbonic acid is excluded. A well mixed and burnt Portland cement may contain 70 per cent of lime and yet resist the action of fresh water.

The magnesia which is deposited during the action of sea-water upon hydraulic mortar is a preservative agent which tends to close the pores of the mass. It would be more correct to speak of the injurious action of the sulphates in sea-water than to attribute such action to the magnesia salts, although it is true that magnesium sulphate is the special salt which acts in sea-water. The sulphates of lime or of the alkalis, in fact, any soluble sulphate, have the same destructive action, but no not act with the same degree of energy.

The author finds as the result of his investigations that those cements which are richest in lime are those which offer the least resistance to sea-water. The addition of lime or of more calcareous cements to Portland cement mortar is therefore unsuitable, and modern Portland cements of high strength, but rich in lime, are less suitabe for marine work than the older cements containing less lime. A mortar containing free caustic lime is as unstable from a physical as from a chemical point of view. By the reaction already explained, great internal strains are produced and expansion and cracking continue, sometimes for many years. All these defects may be avoided by offering to the lime, which remains or becomes free during the hardening process, hydraulic silica or alumina with which it can form more stable compounds. The disadvantage of the efflorescence of caustic alkali cannot be avoided; but as the quantity is small, and it is easily soluble, this caustic alkali cannot endanger the stability of the mortar. In water the alkali is simply washed out; in the air it is only a temporary efflorescence which cannot be washed off.

The addition of milk of lime to Portland cement mortars must be injurious and hastens their destruction. Even in fresh water the advantages of such an addition are only apparent; the excess of lime is easily washed out and the mortar soon becomes porous. Even in two to three years a diminution in the strength of such cement-lime mortars takes place. The action of carbonic acid may come to the rescue, but the chief use of this addition is to make poor mortars more plastic.

In carrying out experiments on the action of sea-water upon cements, it is of importance that the test-pieces should be as porous as possible, otherwise the results would only be delayed. In carrying out a series of experiments with various mortars the author used artificial sea-water, and solutions of calcium sulphate, magnesium sulphate and sodium sulphate. The mortars were moulded in the form of prisms ten centimeters long with a rectangular section of five cubic centimeters. For twenty-four hours the briquettes were allowed to harden in moist air, from which carbonic acid was excluded; they were then placed in the test solutions. The solutions were renewed daily for fourteen days, weekly for three months, and then monthly. One of the mixtures which withstood the action of calcium sulphate best was Teil lime mixed with five parts of standard sand; but all mixtures containing hynraulic silica as hydrate, or in the form of trass or burnt kaolin, were but slightly acted upon, and remained intact after the lapse of two years.

In a one per cent magnesium sulphate solution similar results were obtained. Neat Portland-cement mixtures, without the addition of hydraulic substances, soon disintegrated, especially in the case of those cements rich in alumina. A Bavarian Roman cement containing 47.2 per cent of lime stood well, while a Bosnian Roman cement with 49 per cent of that substance began to show signs of deterioration. Long before there are visible signs of disintegration through the action of sea-water the tensile strength indicates whether an injurious action is taking place. As porous briquettes are more rapidly acted upon than impervious ones, it is advisable to use a mortar containing one part of cement to five parts of sand, rather than one composed of the 1:3 mixture. A number of experiments were carried out by the author, in which the briquettes were composed of one part of cement mixed with five parts by weight of Berlin standard stand.

ON THE SALINE EFFLORESCENCE OF BRICKS.

THE CAUSES LEADING TO IT, AND THE PRACTICAL MEANS OF AVOIDING THE SAME.

BY OSCAR GERLACH (PH. D., BERLIN.)

I PROPOSE in the following article, the first in a brief series, to consider the mode of origin of the common saline efflorescence of bricks. A series of researches which I conducted at the *Laboratory for Clay Industries* of Professor Seeger and E. Cramer, of Berlin, Germany, and which were continued in practical work in America, furnished me with results that not only afford a clear explanation of the origin of efflorescence, but also point to the practical means of avoiding the same. The means of avoidance I shall discuss in a separate article.

By "efflorescence" I understand what is commonly termed "whitewash," wherever and whenever such incrustations appear. For the sake of clearness I shall follow the process of brickmaking in all its successive single stages, as commonly conducted, and point out at each step the causes concerned in the production of the chemical salts occasioning the annoying superficial colorations in question.

Most noticeable and most annoying are the *white* efflorescences on red or yellow brick; less striking are the green and yellow incrustations on light brick. The white efflorescences are always of inorganic or mineral origin, being mainly sulphates of lime, magnesia, and alkalies. We shall consider here the formation of the white efflorescences reserving the green and yellow for another occasion, and as a matter of clearness distinguish carefully between:—

1. The formation of efflorescent sulphates which are found *already formed* in the clay pits, or which are first formed from *allowing the clay to lie unused* for a certain length of time, or which arise at any time *during the making of the clay* into green bricks; and

2. The formation of sulphates which arise during the water smoking and during the burning of the green material in the kilns

This distinction is necessary, because practical brickmakers are prone to think that water-smoking alone is the cause of the whitewashing sulphates making their appearance on the finished products.

I.

ON THE FORMATION OF THE EFFLORESCENT SULPHATES IN THE CLAY BEDS, ETC.

The majority of clays used in brick and terra-cotta making contain greater or less quantities of mineral salts. Chemical analysis has shown that these salts are sulphates of lime and magnesia, less frequently of iron and alkalies. These sulphates are formed by the weathering of finely and uniformly distributed particles of iron pyrites, which is an almost constant accompaniment of the clay. Through the action of water, air, and heat the iron pyrites (FeS^2) is gradually oxidized and converted into ferrous sulphate ($FeSO^4$), which, being easily soluble in water, is, in union with the carbonates of lime, magnesia, and alkalies, whose constant presence can also be shown, converted into the respective sulphates of these combinations. For example, $FeO.SO_3 + CaO.\ CO_2 = FeO.\ CO_2 + CaO.\ SO_3$.

It is readily intelligible now that the more minute the distribution of the iron pyrites is in the clay, and the more the mass as a whole is exposed to the influences of the weather, *i. e.*, to the effects of water, air, and heat, the greater the quantities of iron pyrites oxidized and the greater the quantities of soluble sulphates stored up in the clays. If we are using, for instance, a stony clay belonging to the carboniferous formations, which always contain heavy quantities of iron pyrites (*e. g.*, blue shale), and work the same into green bricks immediately, and at the beds where the clay is found, then certainly the whitewashing is far less apt to be noticeable than if the clay had been suffered to lie for months before using, exposed and in the open air.

To prove this, I analyzed several specimens of clay from the same pit, and so determined the amount of soluble sulphates in each. One specimen was taken from the upper layer of the clay, another from a lower layer quite protected from the air and heat. The analysis showed that the upper layer contained four times as much soluble sulphates as the lower, protected layer.

Another experiment yielded similar results. I took *three* specimens from the *same* layer of clay. Of the first specimen, 100 grams were *immediately* analyzed and the amount of sulphates therein contained determined; of the second specimen, 100 grams were finely pulverized, moistened, and exposed to the weather for three months, and at the expiration of that time analyzed for the amount of sulphates; while 100 grams of the third specimen were likewise finely pulverized and let lie for three months in a dry, hermetically sealed tin box and then analyzed. It turned out that specimens 1 and 3 contained almost equal amounts of sulphates, while specimen 2 showed six times the amount of the others. Another clay, likewise belonging to the carboniferous period, having been let lie for months in the open air, left behind it on the ground where it had been heaped large quantities of beautifully formed gypsum crystals.

But even if such clays are worked into bricks immediately upon being transported from the pits, it does not necessarily follow that the formation of sulphates will be entirely prevented. If the green bricks be let stand a long while in the drying rooms a constant oxidation of the iron pyrites will take place on the surface of the bricks through the action of the moist atmosphere, and, concomitantly with this, the formation of sulphates which, while not visible to the eye in the green bricks, will, after burning, make their appearance in the shape of whitewash. To prevent this, not only is the immediate working of the clay into green bricks necessary, but it is also requisite to dry and to burn the bricks with all the expedition possible.

The oxidation of iron pyrites is accordingly a main cause of the formation of sulphates occasioning whitewash. A second source is the sulphur contained in the water employed in the preparation of the clay. This water frequently con-

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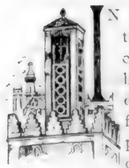

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The oxidation of iron pyrites is accordingly a main cause of the formation of sulphates occasioning whitewash. A second source is the sulphur contained in the water employed in the preparation of the clay. This water frequently con-

tains gypsum; and since many clays require so much as 30 per cent of water for rendering them plastic, the gypsum present in the water naturally contributes a high quota to the formation of the annoying superficial efflorescences in question. So, too, by various other admixtures, as mineral colorings, oxide of iron, ochre, superoxide of manganese, the whitish efflorescences can be argumented. Wherefore, it is necessary that all such substances when used as admixtures should, without exception, be analyzed for the amount of sulphates they contain.

The quantity of water requisite for working the clay depends wholly on the nature of the clay and on the peculiar methods employed in working it. The greater the quantity of water, the greater the quantity of the sulphates dissolved in it, and the greater the quantity of dissolved salts deposited on the surface of the bricks in drying.

The method of drying is also of paramount importance, both as bearing on the formation of these effloresences and as affecting their visibility on the surface. The quicker the drying can be perfected, the more advantageous will be the appearance of the burnt product, for in a perfectly dry brick all further oxidation of the iron pyrites is absolutely excluded; and then again, in consequence of the rapid evaporation of the water, the dissolved sulphates are not wholly deposited on the surface of the product, but in large part are left behind in the pores of the clay. The drying process consequently deserves the highest attention at the hands of the practical brickmaker. But since the space at my present disposal is limited, I shall reserve the discussion of the advantages and disadvantages of the different methods of drying for a future occasion.

To recapitulate: the substances giving rise to the efflorescence or whitewash of green clay products are (1) the soluble sulphates contained in the natural clays, and (2) the sulphates formed during the storing and initial treatment of the clays consequent upon the weathering of the iron pyrites and its resultant transformation into sulphuric bases. It remains to be mentioned that the efflorescences which find noticable lodgment upon the green, unbaked material are subsequently burnt in indelibly on the surface of the brick, and can be removed neither by chemical nor mechanical means.

ON THE FORMATION OF SULPHATES WHICH ARISE DURING THE WATER-SMOKING AND DURING THE BURNING OF THE GREEN MATERIAL IN THE KILNS.

The presence of iron pyrites in the clay is, we have seen, the main cause of the origin of whitewashing sulphates on the surface of the unburnt material, and iron pyrites again is chiefly concerned in the production of whitewashing sulphates during the water-smoking and burning of the green products. This happens in a twofold manner—first, and again, by the presence of iron pyrites in the clay; and secondly, and particularly, by the iron pyrites contained in the coal, which is mostly used as a fuel.

In burning two processes are distinguished: (1) water-smoking, and (2) burning proper.

WATER-SMOKING.

The object of the water-smoking is to expel the water which has been mechanically absorbed by the clay, and which still remains in after drying—the so-called "hygroscopic' water,—whereby the clay is throughly dryed, but losses none of its original physical qualities. The purpose of burning, on the other hand, is (1) the expulsion of the water *chemically* contained in the clay (clay substance being essentially $Al_2O_3(SiO_2)+2H^2O$, (2) the chemical disintegration of the several components of the clay, and (3) a more or less perfect fusion of the individual argillaceous particles, whereby a definitive and permanent alteration of the substance is attained. With the loss of the chemically contained water, the clay losses its plasticity—a property so essential to the manufacture of argillaceous products.

We shall consider the process of water-smoking first, which has for its object the expulsion of the hygroscopic water. Since water is converted into steam at 212 degs. Fahr., this latter is the proper temperature for the process—attainable only by the artificial convection of heat to the products, *i. e.*, by the consumption of fuel. But since the size and the construction of the kiln in which the water-smoking is conducted renders it absolutely impossible for a perfectly uniform temperature to be obtained throughout the whole enclosed space, consequently that portion of the kiln and of the contents of the kiln which first comes in contact with the hot gases from the fireplace will be heated first. At these points a part of the water in the green products will be converted into steam, whilst at points more remote from the fireplace scarcely any rise at all in temperature will be noticeable. At these latter points the water vapor origjnating at the first points will be condensed and precipitated on the surface of the cold green products, whence, since the clay is strongly hygroscopic, it will be absorbed into the interior of the bricks. If the clay, now, still contains soluble sulphates in its interior, these sulphates will be dissolved in the water, and later, when the points in question have in their turn reached evaporating heat, will be drawn to the surface of the bricks, and, as the heat is increased, be burnt in there. If the green clay does not contain sulphates, or if the sulphates be rendered innocuous by the admixture of appropriate chemicals, the water so condensed will have no injurious effect upon the appearance of the bricks, provided the fuel employed contains no sulphur. But if a sulphurous fuel be employed,—for example, coal, which always contains more or less iron pyrites,—the water will absorb the gases of the sulphurous acids producted by the combustion of the iron pyrites, and this diluted acidic solution will act on the carbonates in the clay and form sulphurous salts, which, as the heat increases, will come to the surface and there be oxidized to sulphuric salts, thus causing again the annoying colorations.

To be continued.

THE USE OF SHEET IRON AND STEEL.

THE USE of sheet iron and steel in the construction of buildings has increased enormously of late. Not only are ornamental cornices a feature of some very handsome buildings, but in many instances the entire front of the building is covered with sheet steel in imitation of the pressed brick or rock, which when painted and sanded gives a very handsome effect. Corrugated iron for roofing and siding is used for manufacturing buildings, storage buildings, and of late years has been largely employed for sheds on the docks of various seaport cities. One of the largest buildings that has been covered with sheet iron is that of the Western Oil Manufacturing Company, at Belleville, N. J. The main building is 30x100 feet and 100 feet high. The extension at the right is 30x60 feet and 35 feet high, and the left extension is 100 feet long, a portion of which is 40 feet wide, and the remainder 20 feet wide, and the whole extension is 35 feet in hight. Sheet iron was selected as a covering for this building, owing to the protection afforded against contiguous fires and for its cheapness as compared with clapboarding. Clapboarding of a good quality put on the building was found to be worth between 5 and 6 cents per square foot, and the sheet iron covering of No. 24 black iron, 30x96 inches in size, put on, cost a little more than half the cost of clapboarding, owing to the little labor required, and the large space covered with a sheet of iron. The buildings are of frame construction, and the timbers are covered with a sheeting of 1-inch board. The sheets are attached to these boards with a layer of building paper bedepth, and several tons were required for the covering. After the work was completed the entire building was treated with one coat of red lead paint. The wooden tanks holding the water supply for the buildings, which were not set upright at the time the picture was taken, are also covered with sheet iron. Galvanized iron was used in covering the tanks, and galvanized iron was also used in covering the building which supports the water tanks. This building is 20x40 feet and 100 feet high—*The Improved Bulletin.*

TESTS OF CAST-IRON COLUMNS.

A VERY important series of tests of cast-iron columns has recently been completed at Phœnixville, Pa., by the department of buildings of New York city, and from an extensive account given in *Engineering News* we make some abstracts.

Three sets of columns were tested to destruction in the hydraulic testing machine of the Phœnix Bridge Company, these being respectively 15 feet 10¼ inches long by 15 inches in diameter; 13 feet 4 inches long by 8 inches in diameter; and 10 feet long by 6 inches in diameter; the thickness varying from 1 11-16 inches to ⅝ of an inch. In the first group were two columns taken from the "Ireland Building," which collapsed in the summer of 1895, in New York, and four similar ones cast for the purpose of the test, while the second and third groups each consisted of two columns of kinds used in regular building construction, made by well-known firms, and were fair samples, coming within the provisions of the law.

The data of the tests are tabulated in the paper referred to, and some of the salient features may be especially noted. With but few exceptions the thickness varied materially in different portions of the same column, so that in one instance the metal on one side was 1¼ inches thick, and on the other only ⅝ of an inch; and, although this was an extreme case, there was a decided irregularity of thickness, which probably affected the strength materially. All of the 15-inch columns were broken, except one, which was nearly uniform in thickness, and which remained intact at the maximum pressure of the testing machine—a load of more than 2,082,000 pounds, or more than 40,000 pounds per square inch of area. The breaking load of the others of this group varied from 25,000 to 30,000 pounds per square inch, the variations being apparently due to the presence of cinder, foundry dirt, chaplets, and blow-holes. The smaller columns were all broken with loads ranging from 22,000 to 32,000 pounds per square inch of area.

According to the building law of the city of New York, the strength of all columns and posts is to be computed by Gorden's formula, using a coefficient of 80,000, and a factor of safety of five for cast iron. The application of Gordon's formula, under these conditions, to the columns tested shows that the 15-inch columns should have a breaking strength of 75,000 pounds per square inch, instead of which it actually ranged from 25,000 to 40,000 pounds; while for the 6-and 8-inch columns the breaking strength by the formula should be 40,000 pounds per square inch, instead of 32,000 to 22,000 pounds, as shown by the tests.

Had these columns, therefore, been loaded as heavily as the law permits, the factor of safety in some cases would have been only a little more than 2, instead of 5 as intended. Judging from the physical description given of the columns tested, this discrepancy is much more likely to be due to the defects in the castings than to the inaccuracy of the formula, and apparently a requirement for better material and more-carefully-made castings would raise the strength nearly, if not quite, to that indicated by computation.

An interesting feature of the paper is the description of the calibration of the Phœnixville testing machine by comparison with the Emery testing machine in the United States Arsenal at Watertown, Mass. This calibration was effected by testing a special soft-steel Phœnix column, first at Watertown and then at Phœnixville, using a roller extensimeter reading to 0.0001 inch, the conditions being reproduced as nearly as possible in the second test, and the same extensimeter being used. The result showed the gage readings of the Phœnix machine to be from 15 to 17 per cent higher than the actual values, this being due to fraction of the machine and possibly to gage error. By using this correction, the tests at Phœnixvilte are made comparable with those at Watertown, with a possible error of about 3 per cent.

LESSON FROM FIRE AND PANIC.

WHEN I undertook this subject the fatal fire at the Paris Charity Bazaar had not happened, nor did we anticipate that great disaster among the warehouses at Cripplegate, which has added its own unnecessary lesson. Indeed, neither of these events was necessary, for they conveyed no warning not already known, and they were useless, for by this time they are practically disregarded.

The fact that the destruction of a building by fire is an improbability removes from it the class of considerations with which the architect usually deals. In proportion to the number of buildings fires are exceedingly few, considering the variety of risks I might say surprisingly few; and if it is a hundred thousand to one against a fire in a particular place on a given day, the ordinary man, environed by more threatening perils, will scoff at precaution and take his chance. But after calamity the general public with all its tongues asks who the precaution was not taken, and looks out for a victim. By the standard then set up, and not by

any doctrine of chances, the architect may expect to be judged.

It is a question whether danger from fire is not increasing in spite of Building Acts. Our buildings are getting more lofty, more closely packed together, and more thickly inhabited. In commercial buildings the rooms are larger and more encumbered with goods, among and over which manufacturing processes are carried on. There is more machinery actuated by heat. The timber we use is more easily combustible, fittings are lighter, and everything is kept warmer and drier. All our arrangements for obtaining light, from the lucifer match to gas and mineral oil and electricity, are novel and productive of new dangers. The proportion of window openings to wall space is much increased, and with the growth of honesty outside, or trustfulness within, shutters have been abandoned. The old-fashioned solid window frame that stood flush with the face of the wall, and being dangerous had to be abandoned, is through modern fashion being brought out again from its reveal and made in thin casing which will catch fire and fall into the street. Lifts going through several stories neutralize the advantage of fire-resisting floors. lighting areas common to different premises do away with the security of the party-wall. Unrestricted skylights bring ridicule on the incombustible roof covering of the Building Acts. In fact the most scrupulously legal building of brick or stone and slate may be no more than a kind of grate in which its internal structure and its contents can be most conveniently burned. So in the Cripplegate fire, the progress was about as rapid, and the destruction over its limited area no less complete, than in the Great Fire of 1666; and if our arrangements for the extinction of fire had not made immense progress, this recent event might have rivalled that great calamity.

Our own lesson from this must be to improve by all means the construction and arrangement of buildings, even though we may be in advance of Building Acts. We cannot widen the streets, nor increase the unoccupied areas, nor reduce the necessary openings for light, nor dictate to the trader modes of conducting his business which would make his business impossible, nor can we do much in advance of public opinion to diminish the numbers of an audience or spread them over a larger area. The most that we can do is to diminish the chances of fire and to delay its progress, to prevent its passage from room to room and from house to house, to so arrange the construction that a fire may be more easily put out, and as regards the safety of the inmates, to provide the best means of escape.

We should be wiser if we knew more of the causes of fires. The final comment on most of our great fires is "cause unknown." They have destroyed the evidence of their origin. We learn something from the records of those that are most easily extinguished, and we should learn more from the far greater number that are discovered and dealt with on the first alarm without troubling the fire brigade. In one of those summer exhibitions that are spread over buildings of a temporary character, I had information of ten such alarms within six months. In my own house we have had, through no fault of ours, at least three of the narrowest escapes from the kind of gas explosion by which the house of one of my friends was lately wrecked. We may learn something from these and other failures, but our great lesson must be to distrust the safety from fire of any building unless the greatest care is taken in its construction, and on no account to think that any deficiency in that particular will be made up by carefulness in its occupation and management.

The points which I think is most useful to notice are the following :—

(1.) The structure and arrangement of buildings generally.

(2.) Certain legal and other provisions for preventing loss of life in dwelling houses.

(3.) Certain legal and other provisions for preventing loss of life in factories.

(4.) Certain legal and other provisions for preventing loss of life in public buildings generally.

(5.) Certain legal and other provisions for preventing loss of life in theatres and music halls.

To be Continued.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

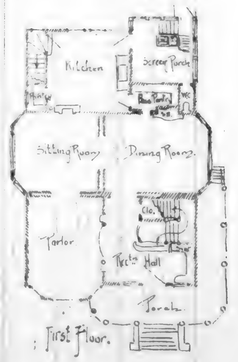
The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

THE "Hotel Nevills," illustrated in this number, which was opened to the public last April, is situated on an elevated site at the terminus of the Sierra Railway, Jamestown, Cal., and was built by Capt. W. A. Nevills of the famous Rawhide Mines, for the Jamestown Improvement Company, from designs by and under the supervision of George Rushforth, architect, of Stockton, Cal. The building which is mainly "frame construction" was begun and completed for occupancy within a period of four months, and in the winter time. The size of the building is 74 feet by 184 feet, two stories in height and attic, containing in all sixty five rooms. The exterior is treated in the Japanese style of Architecture, which is admirably suited to the mountainous landscape surrounding it. The verandahs are 10 feet wide, and extend almost entirely round the building, the lower part of verandah columns also the house base 4½ feet high, are constructed with variously colored "quartz" taken out of gold mines in the neighborhood, and is put up in random rubble fashion; between this and the second-story the walls are covered with steel lath and cement in imitation of ashlar stone. The main floor consists of large reception hall and office, dining room, seating 200, billiard room, bar, barber shop, kitchen, etc., a section of the building nearest the depot being fitted up for the Wells, Fargo & Co's offices and baggage rooms.

Upstairs are the general parlors, private suites with bath-

RESIDENCE of G. H. MILLER Esq.re

Austin & Skilling Architects
California Bank Building
Los Angeles.



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SAN FRANCISCO

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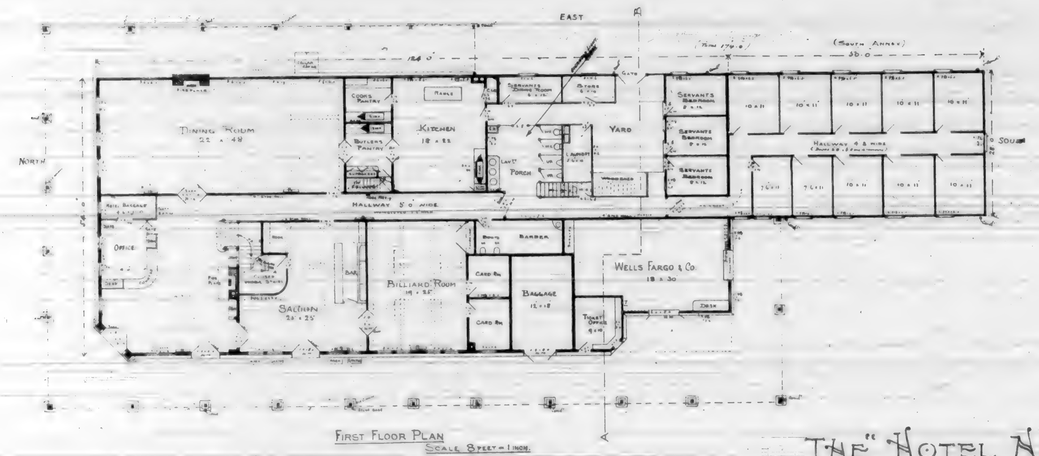
SHEET 1



FIRST FLOOR PLAN
SCALE 8 FEET = 1 INCH.

SHEET 2.

SECOND FLOOR PLAN
SCALE 8 FT = 1 INCH

THE "HOTEL NEVILLS"
JAMESTOWN, CAL.

Geo. Rushforth. Architect.
Stockton. Cal.

ALHAMBRA THEATER
N.E. COR. EDDY AND JONES STS.
M.J. LYON ARCHITECT 120 SUTTER ST.
ALHAMBRA

rooms and toilets, bridal suites, etc., the hallways having exits to balconies.

The principal rooms have large open fireplaces, but the building is also furnished with the gravity system, hot water heating, with direct radiation put in complete by Jackson & Carle of Stockton, who are making a growing reputation for this line of work. The house is lighted by electricity and is wired for return call and fire alarm bells, in fact the entire building is equiped with all the essentials of a modern hostelry. The cost of the building being close to $30,000.

The building was constructed by Robert Powell one of the best established contractors of Stockton.

The Stockton Lumber Co., Joseph Fyfe manager, furnished all the sash, doors, millwork and stairs, their headquarters are at Stockton but have branch establishments located at Jamestown and other parts of the State.

The plumbing and tinning was done by Geo. F. Schuler of Stockton.

Morrell & Mitscher, wood carvers and cabinet makers of Stockton, were engaged to put in the elaborate office and saloon fixtures, they also make a specialty of this class of work.

F. T. Riley of San Francisco supplied all the plaster staff and Japanese characters on the building and E. T. Burrows & Co., Chas. J Waterhouse, San Francisco, agent, furnished the "Copbronze" screens throughout the building.

RESIDENCE for G. H. Miller, Esq., Austin & Skilling, Architects, California Bank Building, Los Angeles.

ALHAMBRA THEATER, N. E. cor. Eddy and Jones streets, M. J. Lyon, Architect.

PAINTING IRONWORK.

THE painting of ironwork is one of the most neglected yet important factors in its preservation and one to which the mechanical engineer rarely devotes much time or thought. The majority of specifications merely state that the iron work is to receive one, two, or three coats, as the case may be, ignoring entirely the quality of the paint. Perhaps the engineer is not wholly to blame for this, as the manufacturers of paint, like other vendors of special articles, puff their rival wares, until everyone, except the expert, is quite at a loss what special paint to choose. As a general rule, price is the first thing which influences the choice of paint, after which comes color, and finally covering power. The preservative action is seldom considered, whereas if this were kept prominently forward, we should have had exhaustive experiments on the subject and some consensus of opinion as to the proper paint to use for ironwork, one which would thoroughly preserve it under the most adverse circumstances, thereby saving the loss due to oxidation.

A paint to preserve ironwork should possess great firmness, good hardening properties; it should be elastic and expand and contract readily with the iron at varying temperatures. Of the best paints those most used are the oxide of iron and red and other colors of lead paints. Oxide of iron paints possess greater covering power than lead paints in the proportion of three to two. From some experiments which have been made with some of Wolston's Torbay oxide of iron paint, it was found that on a surface of ten superficial yards it took for the first coat of oxide, 1 lb.; for the second coat, 1½ lb.; for the third coat, 2 lb.; whilst with the lead paint 1½ lb. were used for the first coat, 2½ lb. for the second coat, 3½lb. for the third coat. It is claimed by the makers of paint from natural oxides that these oxides possess some mysterious advantages over artficial oxides which have been obtained as by-products from chemicals, that the paints from artificial oxides do not possess good covering powers, that they have not the power of amalgamating with oil, and that they have an acid reaction which necessarily corrodes the iron. This may be the fact in some cases, but we have seen artificial oxide paints which have none of these disadvantages, and which have a decided alkaline reaction, thus equalling, if not rivalling, the natural oxide paint, and being made from waste products, they are necessarily cheaper. A good paint for iron work should be free from grit, uniform in quality, unchangeable under atmospheric influences, possess great covering powers, and be of an alkaline nature. The whole of these qualities can be tested by the ordinary painter under proper supervision, except the last, which requires chemical knowledge; and we should strongly recommend the users of paint for ironwork to test their paints in conjunction with a qualified analytical chemist who has made the subject his study.

Before painting the surface of galvanized iron it should be washed by an alkaline solution, as the galvanized iron frequently has a greasy acid surface when it leaves the galvanized bath. In painting constructional ironwork the wrought iron should be allowed to weather first before painting, as the oxide which forms on the surface of the iron when rolled will always, sooner or later; peel off, carrying whatever coats of boiled oil or paint there may be put upon it. We have seen this oxide peel off in flakes 2 ft. and 3 ft. square; we know that engineers are fond of specifying the iron to be oiled whilst hot from the rolls, and we have even seen it specified that castings should be coated with boiled oil whilst red hot. How the gushing engineer expected the castings to be fettled and cleaned before this operation we know not. A good coat of paint improves the appearance of a machine, bridge, or roof, and although it may seem a minor matter, yet we believe there is money to be saved by careful attention to the quality and price of the paint used on ironwork.—*Mechanical World.*

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

CONSIDERABLE dissatisfaction has been manifested in Chicago over the requirement, by the new building ordinances, of the consent of all property owners in a residence block to permit the erection of a building to be used for any

other purpose than that of a dwelling. Sixteen buildings are delayed as a result of this provision, and it is probable that an effort will be made to amend the ordinance by only requiring the consent of the majority of the property owners. As the ordinance now stands any person desiring to erect a business building in a block, where one-third of the existing structures are residences, must secure the written consent of every property owner of both sides of the street in such block. In several cases, one property owner has seen a chance to secure compensation for his consent and has refused to approve of the subject. As a result the plans are tied up in the city building department, and will not be approved until unanimus consents have been obtained. If an attempt is made to amend section 49, it is likely that the commissioner will recommend that livery stables be stricken out of this section, and that they be placed under the same restrictions as spitals.—*The Construction News.*

MR. J. Morton Brydon, the architect who has been selected Mr. Akers-Douglas to design the larger of the two new Government buildings to be erected at Whitehall, has been in conference with the authorities recently, and his plans will shortly be completed. Mr. Brydon is a Scotsman by birth, but his main work has been in London. He designed the Women's Hospital in the Eustonroad, the Free Library at Chelsea, and recently extended the Municipal Building at Bath. The authorities seem to have departed from the ordinary mode of selection. When the Law Courts were projected there was a competition which resulted in the present buildings. Mr. Akers-Douglas, it is understood, consulted the Royal Institute of British Architects, who submitted twelve names, and from these the two architects were adopted.

THE SECOND architect is Mr. William Young, one of best known names in connection with great buildings. He will be responsible for the offices to be built on what is often spoken of as the Carrington House site—that is, the piece of land which has for so long a period been vacant between Whitehall Buildings and Whitehall, and exactly opposite the Horse Guards. Mr. Young has earned an almost world-wide reputation by the Municipal Buildings in St. George's square, Glasgow, which are even more notable for their interior arrangement than for their striking and picturesque exterior. A more recent work by Mr. Young was the erection of Lord Wemyss's seat in Scotland. For the new War Office Mr. Young has an admirable site.

AN idea of the amount of material required in the construction of a modern office building can be secured from the following figures furnished by Charles McCaul, who has charge of the construction of a 16-story skyscraper in Philadelphia.

About 8000 cubic yards of excavations, 4000 yards of concrete and stone masonry, 4,371,555 pounds of steel, 300,000 pounds of ornamental iron, 36,000 pounds of ornamental bronze, 10,000 cubic feet of granite, weighing 900 tons, 260,000 square feet of fire proofing, weighing about 3600 tons, 1360 tons of patent mortar used in plastering to cover 42,000 square yards of plastering; about the same amount of cement mortar used in brick and stone masonry; 40,000 square feet of Pevonizza, Numidian and Italian marble; 15,000 pounds of nails, 10,000 cubic feet of terra cotta, weighing about 290 tons; 325,000 face brick, 1,500,000 common brick, 24,000 sq. ft. of glass, weighing about 73,660 pounds; about thirty miles of electric piping to encase the electric wiring throughout the building, and about ten miles of plumbing and steam-fitters' piping. There were on an average 200 men working on this structure from the start until the finish.

THE PROTECTION OF IRON FROM RUST.

THE use of paint as a protection from rust is so general that to attack its efficacy seems almost a heresy, and yet it is well known that the protection it affords is only partial, and that, in spite of many and frequent coats of paint, iron work will rust. A leading article in *The Engineer*, in discussing this subject, shows that there are many good reasons why paint should not be an efficient protecting material. The pigment contained in a paint possesses no protective value in itself, dependence being really placed upon the liquid matter alone; hence, in using heavy coloring matter, assuming that the proportion of oil per square foot remains constant, the engineer is simply pay ng more money for a substgnce not only of no service, but positively deleterious to the rest of the material.

Linseed oil, however cannot be used alone, since it expands on drying, and the resulting glm is apt to be rugose; moveover, if the adhesion of the oil to the metallic service is not perfect, it may cause the production of blisters. The lack of stability possessed by the solid body resulting from the oxidation of the oil also causes it to crack and fall to pieces; hence as a protection against rust it is not successful.

Varnishes have beeu suggested, but many of them are apt to crack and peel, or else are so porous as to permit moisture to penetrate. A few varnishes are free from these defects, bnt there cost renders their use for this purpose impracticable.

Better results in many ways are obtained by the use of such materials as tar, pitch, or asphaltum, and, although they may not altogether respond to the demands of the ideal specification, they will be found to possess many serviceable qualities. Coal tar has been charged with possessing a corrosive action upon iron, although this action is said to be prevented by heating with lime; but pitch, softened with creosote and dissolued in one of the cheaper light oils recovered during distillation, or in a corresponding petroleum derivative forms an excellent protective varnish.

Asphaltum dissolved in a spirit solvent is also suggested as a safe and suitable paint for the protection of iron work, and this may also be used in connection with linseed oil for a second coat. This, indeed, seems to form the ideal combination. The iron should first be cleaned from all scale or rust, and every trace of moisture removed, after which a thick priming coat of pure boiled linseed oil is applied, and carefully worked into all cracks and crevices. When this has become perfectly dry and hard a second coat of black varnish, composed chiefly of pitch or asphaltum should be applied, the combination forming the best protection against rust at present available.

Probably in this connection the use of the sand blast for obtaining a thoroughly clean surface would greatly assist the protecting medium by enabling it to make a perfect contact with the surface of the metal.

TRADE NOTES.

The Keuffel & Esser Co. of New York are without doubt the leaders in America of drawing materials and surveying instruments. They carry a most complete and assorted stock and their goods are recognized as of standard quality all bearing their trademark. Architects and surveyors should send for their illustrated catalogue as they will be sure to find something that they are in need of. See advertisement on page iii.

EXPERIMENTS OF THE BEHAVIOR OF CAST-IRON COLUMNS IN FIRE.

BY H. SCHULER.

(Abstract from Deutsche Bauzeituug, 1897, in Proceedings of the Institute of Civil Engineers, England, Vol. CXXIX, p. 407.)

IN CONSEQUENCE of the warehouse fire in Hamburg in 1891 the Senate of the city caused experiments to be made with wrought-iron and timber stanchions,* which were continued in 1895, with cast-iron columns 10 feet 8 inches long, 10½ inches diameter, and 1¼ inch or ½ inch metal, centrically or eccentrically loaded, with or without fire-proof casing. They were finished with spherical ends and placed upright, gripped by the two halves of an oven, two yards high, swinging on door-hinges and containing twelve gas-burners which emitted flames at least a yard high. A hydraulic press was below the column and its cross-head above it. The oven was furnished with apparatus for measuring heat, etc., with peep-holes and with the nozzle of a fire-engine. On an average a load of 3.2 tons per square inch, with a red heat of 1400° F. obtained in thirty-five minutes, produced deformation in a centrically loaded column without casing, which showed itself by bulging all round in the middle of the heated part, especially where the metal happened to be thinner; fracture occurred finally in the middle of the thickest point of the bulge. If the load was less this occurred at a higher temperature, and *vice versa*. Jets of water had no effect until deformation heat was reached. The casings tried were of Monier structure, of patent "Korkstein," of asbestic silicious marl and of asbestic cement. These had the effect of increasing the time, till deformation heat was roached, from thirty-five minutes to four hours or five hours, with a measurable temperature of 2,000° F. to 2,500° F. The best result gave a casing of asbestic silicious marl, as a temperature of 2,000° F. was maintained for seven hours, and the deformation diagram justified the conclusion that the column might have stood two hours longer. It is the most expensive casing. The greater thickness of metal in the columns had comparatively little effect on the time, but on the whole a thickness not less than 1¼ inch seems advisable. Ventilation through the column had a beneficial effect. The behavior of hollow cast-iron columns, even without casing, is superior to that of ordinary wrought-iron stanchions.—*M. A. E.*

*Deutsche Bauzeitung, 1895, pp. 274, 290.

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street,
SETH BABSON, Pres. H. A. SCHULTZ, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.
THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.
JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.
D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.
E. J. MOLERA, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.
JAS. E. BRITT, Pres. J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.
S. H. KENT, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.
ADAM BECK, Pres. M. V. BRADY, Sec.

KEELY MOTOR UP-TO-DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA

BY E. J. SCOTT, ACTIVE MEMBER.

[CONTINUED FROM JULY NUMBER]

AN INTERESTING experiment of a different character was made in the third room. The apparatus stood in the northwest corner on a table with a glass top. It was a large ball covered with gold foil mounted upon an axis upon which it revolved stiffly and was considerably out of balance. It looked like an old timer. The two investigators stood by the apparatus while Keely went into the middle room and looked through an aperture, just large enough to show his face, across the room to the ball. From the axis of the globe ran a thread of black silk to Keely and was attached to a zither. Keely said the ball would turn round once, twice or any number of times the visitors might name. One was suggested, and Keely struck a chord on his instrument and the ball turned over once. Three was called, and another chord resulted in its rolling over three times, and so on with other numbers, or it would roll rapidly when so indicated. It went with a wobbling motion and seemed to be rubbing on something. When it stopped it stopped suddenly. It was also noted by

LEVITATION EXPERIMENT

the visitors that the same number of turns did not necessarily require the same chord on the zither.

The great machine for navigating an air-ship also stood in this room. It had wheels not made to revolve, but only to be set to certain combinations. It was covered with resonators, sensitized disks and spiny scales, and had on the end of a large shaft a gong, or Kladna, as Keely called it, which when struck created as much dismay as a fire-ball in the night. This machine, which weighed tons, Keely said would rise like a feather by creating about it a vibratory condition which annihilated gravity. He was understood to say that this same apparatus had been moved about eth room in that very way.

After these three visits Mrs. Moore was plainly told by the two gentlemen that they had seen no evidence of any new force in any of the experiments shown by Mr. Keely. In fact some of them were readily explainable by the laws of nature already known, and no doubt, with proper facilities for investigation in addition to what the eyes alone had afforded, they would be able to explain them all.

Soon after this Mrs. Moore arranged with Professor W. Lascelles-Scott, of London, to come to Philadelphia and examine the apparatus and be instructed by Keely in the secrets of its operation. He arrived in this city in March and entered upon his investigations. Mrs. Moore said to the writer that the Professor was to be allowed to handle and take apart the apparatus, which was a greater privilege than had been allowed to any priot investigator.

There was naturally great curiosity to know what opinion the English scientist would form. He was unknown to the scientific world on this side of the water, but to the writer he said he was "late consulting expert to the India Museum under Dr. Forbes Watson, and lecturer on chemistry and physics to the London Conservatoire." From this it would appear that he had some reputation in his own country, and would be entirely competent, with the facilities afforded him, to pass a proper judgment on Keely's invention. The Professor pursued his inquiries for fully a month before he made any public expression of his views, and it was with great interest that the members of the Franklin Institute, at at the monthly meeting, held April 15th, listened to his remarks.

He stated in brief, that he had commenced to get a glimmering idea of Keely's great principle, which was based upon vibrations, a subject with which the Professor declared himself thoroughly familiar, as he had devoted much attention to it, and had published some of the results of his investigations in that branch of physics. He had, he said, been quite unable for some time to understand Keely's explanations, as they were made in language too unscientific, the terms used being unintelligible, because, although the words were familiar, Keely had used them out of their generally accepted meaning, giving them a signification known only to himself, and possibly to Mrs. Moore. The Professor stated, however, that it was his opinion that "Keely had certainly discovered a means of utilizing a force that has been suspected, but has never been realized in any form." He could say it was neither magnetism nor electricity, either static or in the form of a current.

In saying so much the Professor stated that he told less than he knew. He promised, after he had more fully investigated the matter, to come again before the Institute and tell the result of his study into Keely's secrets. That promise was never fulfilled.

About a fortnight after the Franklin Institute meeting, Mrs. Moore sent for the writer and said that Professor Lascelles-Scott has arranged an experiment which would convince him that he was entirely wrong in his surmises as to the force used in experiments already witnessed, and named Saturday afternoon, May 2d, for a meeting at Keely's laboratory.

On that day there were present Mrs. Moore, Mr. Elliott (a friend of Mrs. Moore's), Professor W. Lascelles-Scott, E. A.

Scott and Mr. Keely. It has been assumed that the writer believed that the platinum wire, connecting the sympethetic negative transmitter with the "vibrodyne" or engine, carried a current of electricity, and the Professor had arranged for a delicate test to show that not the faintest current could be detected in the wire. The mere statement of the object of the experiment was sufficient, and Mr. Scott said he granted the conclusion at once and without experiment, as he had no thought that the wire was used as a conductor of electricity. The wire had been wound in its center, into a small coil of a dozen or more turns, and within this coil it was pcoposed to insert a rod of soft iron, which the Professor stated had been chemically prepared, so as to produce the best results. Keely had himself made this coil and when the Professor carelessly took the wire in his hand to explain it, Keely nervously took it from him, saying it might become broken and that he had wound it with great care. The writer, as on former visits, was not permitted to handle anything, and was repeatly cautioned not to do so. He used his eyes, however, to the best advantage in examining the coil which it had cost Keely so much trouble to wind, to see the evidences of its being a tube, and in the flattening at certain places, the tendency to bend at an angle at others, and its general tendency to bend in the form of a polygon instead of a circle when being wound, there was no reason to doubt his former convictions that the "wire," which seems to be an inseparable abjunct to Keely's apparatus generally, was a thin platinum tube. This latest experiment only afforded additional proof of what was quite well known before.

On one of the visits with Mr. Burk, the writer picked up one end of the platinum wire which had fallen on the floor at the end of an experiment, and held it up so that Mr. Burk could see that it was a tube.

Following his general policy at all these visits, the writer did not avow his belief. A question indicating doubt or a statement of a discovery made would have prevented him from seeing other experiments where he might obtain further confirmation of his views. When Mr. Elliott, who had never before seen any of Keely's experiments, began to ask questions, which both the Professor and Keely answered, the writer asked the privilege of making some stenographic notes, which Keely had permitted on a former visit, and he occasionally asked a question himself on points not well covered by the other questions. This conversation brought out the description of the construction of the "sympathetic negative transmitter," which forms so important a part of the whole system, and without which but few experiments are made. The Professor's description in his own words was, that "it is a hollow globe, the axis of which (a cylinder 1½ inches in diameter) is retractible within certain ranges; that is, it is drawn out or thrust into the globe by turning it like a screw. That axis carries a sensitive disk, called a kladna, which is sensitive to vibrations of every kind, and especially to those vibrations which are inaudible, beyond the voice to utter or ear to perceive. Therefore Keely is quite right when he calls it a sensitive disk. Beyond the kladna is a series of resonators, on this same central axis, and when it is screwed in or out the kladna and the series of tubular resonators (which resemble small organ pipes) go backwards and forwards, and occupy different positions in this globe, sometimes central, sometimes a little to one side and sometimes a little to the other side."

Keely said the moving of the disk inside is to get one way the attraction and the other way the repulsion. He added to the description: "There is also a sympathetic scale, formed of straight wires of different length struck around the edge of a disk, which represents progressive chords, the same as in a piano. This scale is placed on the axis, between the kladna and the resonators, and all are fixed on the central axis. On the outside of the globe is a similar scale, which to a certain degree corresponds to the scale on the inside. There is also another smaller scale on the outside, which has two series of spines or wires. I might use three of these spires for one experiment and half a dozen at another. There is no regular interval of sound between any two of the spines; they vaay one-quarter tone to one-half tone and sometimes a full tone. The larger scale has about seventy spines."

The above description by the English scientist and Keely is all that is known of the interior construction of the "sympathetic negative transmitter." The only apparent use of the axis or handle is to shift the position of the kladna, the resonators and the spines to a greater or less distance from the center of the globe by turning it backwards and forwards.

Keely than exhibited his levitation experiment, or the floating of heavy weights in a jar of water, which the writer had seen on each of his three former visits. He noticed that the jar was a new one and had a different cap or cover from the one he had before seen. The Professor explained that, at his instance, Keely had taken a new jar and that it had been filled with distilled water. He said he was familiar with the general principle of the experiment. Two weights similar in every respect to the weights used in the old jar, were reposing on the bottom, the one, a disk-shaped flat brass box, without a cover, filled with amalgam, and the other, an orange-shaped globe, said to be filled with shot. In answer to the writer, Keely said these were not the same weights which were used in the old jar; the globe, however, had the same indentations and the gold-foil with which it was covered the same spotted appearance which had been particularly noted at his former visits, and the desk seemed to be the very same, although there were no distinguishing marks by which it could be absolutely identified.

The Professor had carefully weighed these weights before they were put into the jar and that the flat disk weighed 68 ounces and 387 grains in air, and 58 ounces 383 grains in distilled water, a difference of 10 ounces and 4 grains, which represented the water displaced. The globular object weighed 53 ounces 3 4 grains in air, and 45 ounces 362 grains in distilled water, a difference of 8 ounces 22 grains. The jar appeared somewhat smaller than the old one, and was 41 inches high, and perhaps 10 inches in diameter. The cover was of glass, and was sealed on with a white cement. A space from one-half to three quarters of an inch was left between the surface of the water and the glass cover. Inserted through the cap was a plug, with a binding screw for attaching a wire. The jar stood on a small, cheap table, with a thick, glass top. Keely placed the sympathetic negative transmitter on the same table, and connected the top of the jar with it by means of the platinum wire. On the top of the jar he placed a disk similar to the one in the jar.

When every thing was ready, Keely turned the handle or axis of the sympathetic transmitter, twanged some of the wires of his scale, blew softly on the mouth-organ, and the round weight started for the top, followed a few seconds later by the disk-shaped weight. In answer to the writer, he said he could not reverse the order of their rising. The

tone of B natural, he said, started the first one to go up, and B flat the second one. He struck a tuning-fork for the purpose of subdividing those notes, he said, and setting a chord for their descent. Then, again turning his handle, and blowing upon his mouth-organ, the disk-shaped weight came down first at the end of about three minutes, the other remaining at the top for a time. He said he could arrest it before it reached the bottom, but failed to do so, and it struck the bottom and bounced up and down three or four times before it finally settled itself. Afterwards, he sent both to the top, and then sent the disk to the bottom, leaving the globular weight at the top, where he said he could make it stay ten years. After about three minutes, with blasts upon the mouth-organ, and turning the handle backwards and forwards, the ball was sent to the bottom, where it struck and bounced up about four inches.

The writer found by jarring the table with his knee, which he did several times unobserved, he could make the weights bounce up 3 or 4 inches without the aid of the sympathetic negative transmitter, the mouth-organ or the "chord of mass," which was rather remarkable, when the specific gaavity of the weights, as given by Professor W. Lascelles-Scott, is taken into consideration. It was an experiment in vibrations which were quite visible, though inaudible, and which produced results that did not demand for their explanation the theoretical force of "apergy."

At this point the Professor gave as his general conclusion on this levitation experiment of Keely's, that if Keely were to take a standard barometer, a standard thermometer, and a standard electroscope, and take the condition of the air at the time of making an experiment, and would also have his scales graduated in precise tones, which they were not at present, than with the barometer reading for instance at 29.5, the thermometer at 55.5, and the electroscope at .26 with a certain response note and chord of mass, and a certain note struck upon the sensitive sympathetic transmitter, he could at all times raise the weights to the top without feeling his was as at present: and another note would as certainly send them to the bottom. This, he said, was the first time he had unbosomed himself so far; but that was his opinion, founded upon what he had seen there. Keely replied that we were just beginning to learn sound sense.

To be Continued.

MANAGEMENT OF QUICKSANDS IN FOUNDATIONS.

TWENTY-FIVE years ago, anticipating that I would probably have to contend with quicksand in my work, I read up on the subject everything that I could find, but with very little satisfaction. In fact the theories set forth by the majority of writers on the subject were virtually of no use when I met with the actual facts in the course of my experience. I investigated the matter very thoroughly, however, finding a very essential point in the fact that in all quicksands a great variety exists in the sizes of the atoms, this variation requiring various plans to be tried to successfully contend with the difficulties that must be overcome.

I did not have long to wait before meeting with a quicksand bottom. I was then engaged on the foundations of the bridge work of the D. L. & W. Railroad, in Hoboken. In foundation east of Henderson street we had to go two feet into a bed of quicksand to get our depth. In this case it happened that I had a large bank of oyster shells in the way, which I utilized. I cribbed my sump large enought to give me plenty of room, mixed the oyster shells with gravel, and put a bed of the mixture all around the sump, shoveling the sand out of the middle and allowing the mixture to sink until I got below the required depth; the mixture closing in and making a solid bottom for sump. After this I uncovered about ten feet square section of the sand, throwing out the sand as quickly as possible with as many men as could conveniently handle a shovel. The moment the required depth was reached we covered the bottom with a foot of the gravel and shells. When this was done and walked over, it would all be in a movement, but after standing a few hours it would become perfectly solid. The cause of its becoming solid is that the larger atoms of the sand passing up through the mixture adhere to the shells, gradually closing up all the crevices. Leading drains across the foundation we successfully completed the work. After this I used crushed stone with better results than with the gravel.

Some years later when superintending the construction of a large tank—200 feet in diameter—for gas holder in Brooklyn at thirty feet in depth—just the depth we had to go—we uncovered a quicksand bed. The contractor was very much excited, having previously lost several thousand dollars in a similar case. I proceeded this time with crushed stone in getting my sump down, sinking a wall of broken stone all around the well hole, got our pipes into their proper depth and made this our sump, leading box drains from this point all over the bottom, uncovering sections of ten feet square and replacing with crushed stone a foot thick, completing the whole bottom of this system with entire success.—*J. B. Gordon in Stone.*

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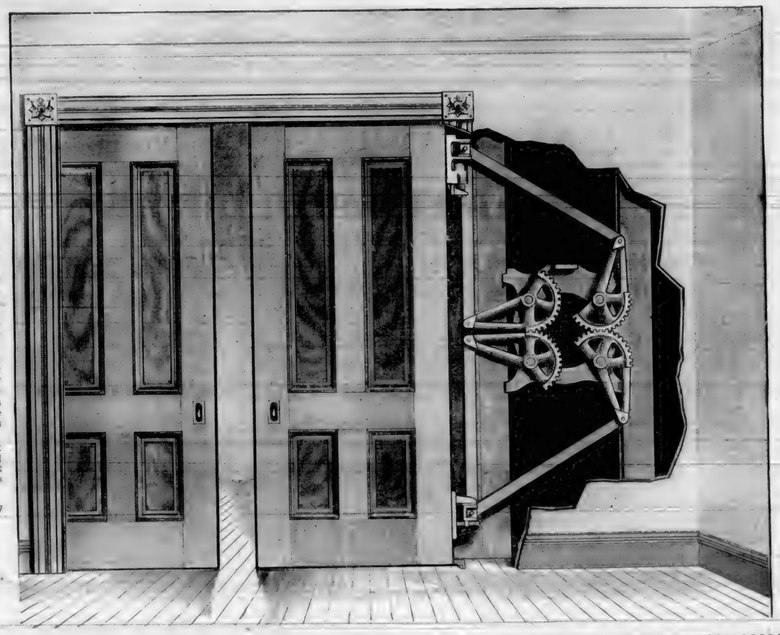

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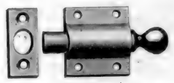

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BUILDING NEWS.

taken bids for a two-story frame residence, with attic and basement for Mrs. Kate P. Miller, to be erected on West sixth street.

Architect Blick and Moore are preparing plans for Capt H. Heaney of the fire department for three cottages to be built on Pasadena avenue.

Architects Smith and Elder are preparing plans for the erection of three cottages to be built on the Wolfskill Orchard tract on Crocker street.

Architect Hugh Todd has prepared plans, etc, for a ~~two-room flat building~~ for H. Mulmow to be erected on a lot on west Eleventh street.

Architect R. B. Young is preparing plans for the St. Andrews Catholic church to be erected on Walnut and Fair streets.

Architect O. P. Dennis has prepared plans for W. G. Nevin for a residence and barn to b built on the southeast corner of Seventh and Garland ave.

An elegant residence is about to be built on the cor. of Sixth and Loma Drive for Mrs. S. H. Van Nuys.

ARIZONA

Architect R. B. Young is preparing plans for E. Block of Prescott, Arizona for a two-story eight room residence.

PASADENA

Architects Locke and Munsell are preparing plans for alterations to the old Glover residence on South Orange Grove avenue, Pasadena. The property has been purchased by Dr. McIlvaine.

Architect Fred L. Roehrig has prepared plans for W. T. Ball for a two-story frame residence on Palmetto street.

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Agnews Insane Asylum. Two brick cottages; o, Board of Managers; a, Wm. Binder; e, Frank Davis; signed, July 18; filed, July 19; cost $15,500.

SAN JOSE

Cottage. Owner P. Russo; a, Wolf & McKenzie; c, Davis Steele; cost $1210.

SAN RAFAEL

Fourth near E street. To build; o, St. Paul's Protestant Episcopal Church of San Rafael; a, B. A. Brown c, S. P. Moorhead; cost $2334.

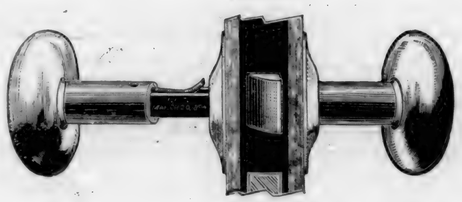
SAN DIEGO

M. F. Heller is building a two-story residence to cost $2500 on the corner of Twenty-fourth and B.

The City Council will purchase the Consolidated National Bank Building 5th and 9th streets and convert it into a City Hall.

Mrs. L. S. Kennedy and Mrs. D. P. Hoyle will erect three-story brick building, for hotel purposes, on Fourth and Diego street. The estimated cost is $50,000.

SPECIFY



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The said plans and specifications to be so prepared that the cost of the building shall not exceed in the aggregate the sum of three hundred thousand ($300,000) dollars.

The architect whose plans are adopted will be appointed architect and superintendent of the building, and will be required to give a good and satisfactory bond to insure the completion and construction of the said building for the amount of the cost as made by the said architect. The architects submitting plans determined by the Board to be second, third and fourth in merit will receive premiums of $1000, $750 and $500 respectively, with the understanding that any features of said plans and specifications which may be considered useful or necessary to be embodied in he plans adopted may be used without urther cost of charge.

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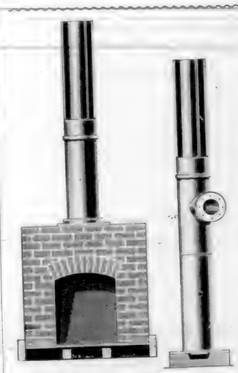

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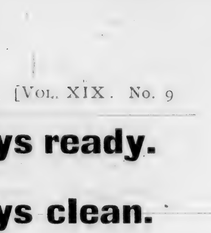

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BUILDING NEWS.

Bartlett near 22d. Onestory and attic; o, W. P. Henry and Mary M. H. Henry; c, J. J. Manseau; signed, Sept. 10; filed, Sept. 15; cost $2400.

Broadway near Filbert. To build; o, Mrs. George Young; a, F. M. Van Trees; c, W. B. Knowles; signed, Sept. 15; filed Sept. 16; cost $6190.

Cherry near Clay. To build; o, Mary B. Kirkpatrick; a, A. Burgren; c, P. Griffin; signed, Aug. 29; filed, Aug. 30; cost $2372.

Chestnut near Jones. To build; o, Miss Collins; c, Thomas C. Cochrane; cost $3000.

Ellis near Franklin. Mill work; o, Morris Lando; a, Philip Schwerdt; c, L. H. Birth; signed, Aug. 16; filed, Aug. 26; cost $1075.

Eleventh Ave. near I street. Cottage; o, Mrs. L. B. Moldrup; a, M. G. Bugbee; c, A. C. Soule; signed, Aug. 30; filed, Aug. 32; cost $1290.

Fourth and Brannan. Addition; o, J. Bruns; superintendent, Mr. Coleman; cost $1500.

Fremont near Howard. Four-story brick; o, Jane F. and C. M. Belshaw; c, J. W. Wissinger; signed, July 29; filed, July 29; cost $17,780.

Guerrero near 17th. Two-story frame; o, B. Mahoney; a, O. Everett; c, J. E. Bindy; signed, Sept. 6; filed, Sept. 8; cost $3565.

Jackson near Scott. All work except plumbing, etc; o, Wm. Wankowski; a, Marteus & Coffey; c, F. A. Williams; signed, Aug. 29; filed, Aug. 29; cost $3453.

Jackson and Buchanan. Five two-story, attic and basement; o, Tucker & Co; a, Wm. Koenig; cost $45,000.

Jackson near Walnut. Brick and concrete; o, William Romaine; a, McDougall Bros; c, P. J. Brennan; signed and filed, Sept. 15; cost $4553.

J street near 8th. Painting, plumbing, etc; o, D. E. Collins; a, M. J. Welsh; c, A. Hermann & Co; signed, Sap. 16; filed, Sept. 17; cost $1350.

Laguna near Filbert. Two-story frame; o, Mrs. Rosa Camuno; c, Wilson & Long; signed, Sept. 15; filed, Sept. 17; cost $2200

Laguna near Filbert. To build; o, Mrs. Rosa Camano; c, Wilson & Long; signed, Aug. 30; filed, Aug. 31; cost $1885.

Locust near California. Brick and concrete work; o, S. F. Theological Seminary; a, McDougall Bros; c, E. W. Hyde; signed, Sept. 13; filed, Sept. 15; cost cost $6600. Plumbing, gas fitting and specification cost $1077.

Lyon near Bush. Cottage; o, John Wills; c, Philip Rive; signed, Aug. 30; filed, Aug. 31; cost $1885.

Mason near Eddy. Gas and electric work; o, R. J. Techau; a, C. M. Rousseau; c, Ickelheimer Bros; signed, Aug. 25; filed, Aug. 26; cost $1370.

Mason and Green. Carpentry, plastering, etc; o, E. Pierron; a, Jules Godart; c, J. B. Pene; signed, July 25; filed, July 23; cost $3530.

Market and Spear. Electric elevator; o, W. W. Young; a, Kenitzer & Barth; c, Crane Elevator Co; signed, Sept. 1; filed, Sep. 19; cost $787.

Montana near Orizaba Cottage; o, Harry W. and Lulu M. Clark; c, J. E. Schulz; signed, Aug. 27; filed, Aug. 30; cost $1143.

Mississippi near 19th. To build; o, Carl Johnson; c, Reit & Ahlgren; signed, 19; filed, Aug. 27; cost $2500

BUILDING NEWS.

O'Farrell near Larkin. Three-story frame; F. Hufschmidt; a, E. J. Vogel; cost $9000.

Post near Jones. Raising house; o, Mrs. Alicia Hoge; a, T. J. Welsh; c, Frank Gallagher; signed, Sept. 14; filed Sept. 15; cost $4000.

Post near Devisadero. To build; o, H. W. Miller; c, Wilson & Long; signed, Sept. 14; filed, Sept. 15; cost $2900.

Post near Devisadero. To build; o, H. W. Miller; c, Wilson & Long; signed, Sept. 14; filed, Sept. 15; cost $2900.

Pacific Ave. near Webster. Plumbing and gas fitting; o, Jo as Schoenfelt; a, Saifield & Kohlberg; c, Ickelheimer & Bros; signed, Aug. 29; filed, Sept. 2; cost $1420.

Pacific near Larkin. Carpentry work, etc; o, Jean Barbe; a, J. Godart; c, J. B. Pene; signed, Sept. 12; filed, Sept. 17; cost $2425.

Presido. Hospital; o, California Red Cross Association; . Newsom & Meyer Mills; c, Mallory & Swenson; signed, Aug. 20; filed, Aug. 22; cost $4322.

Railroad Ave. and 18th. Additions; o, John Puckhaber; c, W. J. Warner; cost $1200.

Third and Minna. Excavation, etc; o, Thomas Jennings; a, Henry Geilfuss; c, J. F. Riley; signed, Aug. 20; filed, Aug. 20; cost $11,595. Carpentry, etc; c, Carl Schutt; cost $18,417. Concrete, basement, etc; c, amp & Carillo ; cost $4055. Structural steel and cast iron work; c, Brode and Clarke Iron Works; cost $8114. Plumbing, gas fitting and sewers; c, Jos. Flood; cost $5800. Electric elevator; c, Cahill and Hall Elevator Co; cost $2775. Painting, graining, etc; c, Gercke & Weber; cost $1197.

Third and Stevenson. Addition to brick building; o, F. and A. Baruch; a, Percy & Hamilton; mason work, Peacock & Butcher; carpentry work; D. M. Munroe; cost about $5000.

Twenty-eight near Chur h. To build; o, Jose Dias Soares; c, August Klahn; signed, Sept. 6; filed, Sept. 10; cost $2842.

Van Ness Ave. and Clay. Brick work; o, St. Luke's Church; a, Albert Sutton; c, Walker Bros; sub-c, David O'Neil; signed, Sept. 10; filed, Sept. 15; cost $9380.

Valencia near 26th. Brick and carpentry work, etc; o, John A. Christen; a, H. Geilfuss; c, A. H. Williams cost $3432.

Webster near Jackson. Alterations and additions; o, Mrs. Minnie A. Taylor; c, William Helbing; signed Sept. 15; filed, Sept. 17; cost $1032.50.

York near 21st. Cottage; o, Christian N. Jensen; c, Fred Miller; signed, July 22; filed, July 23; cost $1400.

ALAMEDA

Grand near Eagle Ave. Cottage; o, Frances Baxter; a, A. Stenbiht; signed, Sept. 7; filed, Sept 3; cost $1400.

Grand near San Jose Ave. To build; o, Elizabeth L. O'Connor; c, D. S. Brehaut, A. W. Cornelius; signed Sept. 5; filed, Sept. 6; cost $3676.

San Antonio Ave. near Walnut. To build; o, W. R. and Grace A. Newman; c, Alameda Land Co; signed, Aug. 24; filed, Aug. 26; cost $2000.

Santa Clara Ave. near Benton. Cottage; o, L. S Warford; a, M. G. Bugbee; c, William Bell; signed, Sept. 6; filed, Sept. 7; cost $1570.

BUILDING NEWS.

BERKELEY

Daley's Scenic Park. Euclid Ave. near Virginia street. To build; o, D. Satoff; a, S. S. Quackenbush; signed, Sept. 8; filed, Sept. 8; cost $2500.

OAKLAND

Hamilton Place near Oakland Ave. To build; o, Sven W. Wallstedt; c, W. A. Forbes; signed, Aug. 17; filed Aug. 18; cost $1100.

Seventh near Center. All work except plumbing; o, Chas. I. MacDermot; a, D. F. Oliver; c, S. A. and H. W. Norman; signed, Aug. 19; filed, Aug. 23; cost $1699.50

Littlefield Tract, lot 6. Cottage; o, L. P. Boyson; a, John Conant; c, E. Clemensen; signed, Aug. 26; filed Aug. 23; cost $1650.

Race track. Club house; o, California Jockey Club; a, M. J. Lyon; c, George Elder; signed, Aug. 18; filed, Aug. 23; cost $3920.

Isabella near San Pablo. To build; o, R. W. Rupe; c, W. A. Forbes; signed, Aug. 24; filed, Aug. 25; cost $1600.

West near 19th. All wo k except plastering, etc; o, Loui Selby; a, A. W. Smith; c, C. Christensen; cost $1120.

West 8th and Cypress. To build; . Carol ne Feege; a, Thos. D. Newsom; o, August Winberg; signed and filed, Aug. 29; cost $2750.

EAST OAKLAND

Washington near Merrill. Carpentry, mill work, etc; o, Trustees Bray School District; a, D. F. Oliver; c, A. N. Frost; signed and filed, Au . 17; cost $6300. Plumbing, etc; c, Dalziel & Moller; cost $1600.

LOS ANGELES

The following prospective buildings are reported by real estate dealers and are given for what they are worth:

Mrs. Florence Maynard has purchased a lot on the east side of Bonnie Brae, between Ninth and Tenth streets, upon which she intends building a residence to cost between $4000 and $5000.

Charles Shaw intends to build on the west side of Breed street between Fourth and Fifth streets.

F. Stavnow is about to build a cottage on Westlake avenue. The contract has been awarded to F. M. Caler.

M. B. Thompson has purchased a lot on East Fourth street, between Chicago and Breed streets, on which he intends to erect an eight room residence roam. He is also about to build a cottage on Star near Pico.

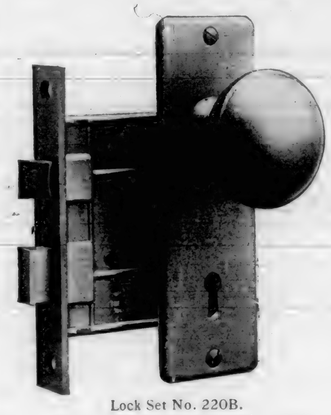
Architect Geo. H. Wyman is preparing plans for two frame buildings to be erected at the Soldiers' Home; one of which is designed as quarters for the women nurses and the other as a bakery building.

J. C. Gladden is about to commence the erection of five or six two-story residences on Westlake avenue, between Tenth and Eleventh streets. Architect A. L. Haley is doing the preliminary work on the plans. These buildings, like numerous others of the same class, are built for speculation.

Continued on page xii.

The "Vulcan" Locks

All Wrought Metal—with "Compensating" Hubs.



Lock Set No. 220B.
One-half Actual Size.

Our General Offices in New York have recently received the following unsolicited letter from a prominent builder and contractor. Believing that the statement of experience it contains will be of interest, we reproduce it below.

An Artistic Brochure on Vulcan Locks, also a Catalogue of 90 pages, will be sent on request.

The Yale & Towne Mfg. Co.

LOCAL OFFICE:
Mills Building, San Francisco.

GENERAL OFFICES: 9-11-13 Murray St., NEW YORK.
WORKS: Stamford and Branford, Conn.

OFFICE OF A. BEINHAUER,
124 Maiden Lane,

NEW YORK, July 11th, 1898.

The Yale & Towne Mfg. Company,
9-11-13 Murray Street, New York.

Gentlemen:-Having lately had occasion to use and apply your "Vulcan Locks" in the Anderson Building, 12-14-16 John Street, I take pleasure in mentioning the fact that in the application of these locks there is a large saving of labor as compared to the ordinary CAST-case locks.

The difference, as I found it, was that while a man put on six to eight of the latter, he could in the same space of time put on twelve to fourteen "Vulcan Locks," thus decreasing the cost of labor to a considerable extent.

Another feature about these "Vulcan Locks" is that while they give as good service as any cast-case lock of their denomination, they do not require as much cutting away of wood in the lock-rail, thereby strengthening the door to an appreciable extent.

Wishing you all success with your "Vulcan Locks," I remain

Yours truly,
(Signed) ALFRED BEINHAUER.

9-11-98 35-1250

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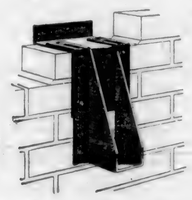

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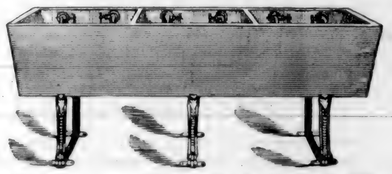

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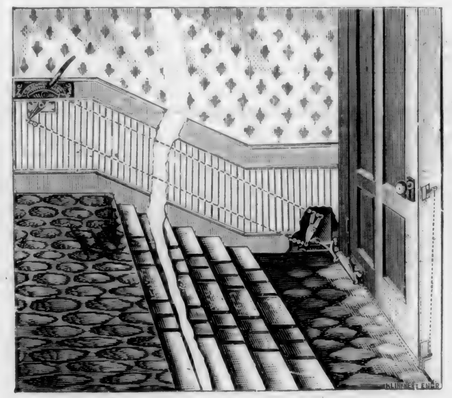
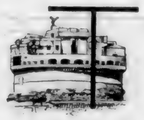


VOLUME XIX. SEPTEMBER 20th, 1898. NUMBER 9.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

NOTICE is hereby given that Mr. Tom M. Grant is no longer connected with this Journal.—E. H. Burrell, Lessee and Publisher.



HERE is not a law upon the statute books of this State as to which there is such widespread dissatisfaction as what is commonly known as "the mechanics' lien law." This dissatisfaction is not confined alone to the owner of property as to which a lien is to be enforced, but it extends to those for whose protection it was supposed the lien law was designed. In the constitution of the State, and in the statute as enacted, there is no cause for complaint. The trouble has come from judicial legislation, which has made the constitution of the State, and the statute passed in pursuance of it, fall short of their purposes. The language of the constitution is plain and simple. In fact so plain and simple that, to the mind of the layman, it seems impossible that there should be any room for construction that would result in judicial legislation. The constitution says—"Mechanics, material men, artisans and laborers of every class, shall have a lien upon the property upon which they have bestowed labor or furnished material for the value of such labor done or material furnished."

To the ordinary reader, this would mean simply that a man performing labor upon and furnishing material for a building, would have a lien to the full extent of the value of the labor performed and the material furnished. But the Supreme Court of this State, not long after the adoption of the Constitution, said, and still adheres to the decision, that this language does not mean what it says, and has added

the following proviso: "Provided the value of such labor done and material furnished shall not exceed the contract price therefor."

Had the Supreme Court left this provision of the Constitution undisturbed, and had not added this proviso, the lien law of this State would have been a very beneficent thing and could have injured no one. In that case, it would have been generally known and understood by the owner of property when contracting for the erection of a structure upon it, that the property would be security to the full value of all labor performed upon and material furnished to it, and he would have protected himself against all liens, by exacting from his contractor a good and sufficient bond. Who would have been hurt then? The laborer and the material man would have gotten their money in full, and the owner would not have been hurt, because he would have been protected by his bond.

Now, however, under this addition made to the provision of the Constitution by the Supreme Court, we are all at sea, and there is not a greater delusion and snare than the mechanics lien law. The laborer and material man are injured, because they so frequently have to accept a pro-rata. This position forced by the decision of the Supreme Court is out of consideration for the owner of the property, and yet, as we have shown, if the provision of the Constitution had been followed by the Court, the owner would not have been injured, because he would have been protected by his bond. But now, when neither the owner, the laborer or material man would have been injured by following the provision of the Constitution, the owner is allowed to defraud the laborer and the material man by getting their labor and material for nothing.

Under the decisions of the Supreme Court, things run along in the building line about as follows: An owner concludes that he wants a structure put upon his property at a cost of $10,000. He goes to his architect, and the architect makes his specifications and draws his plan for such a building, and advertises for bids. When the bids are opened, it is found that some irresponsible contractor has offered to furnished the labor and materials and erect a building according to the plans and specifications for $6000. This bid is accepted. Things go smoothly until towards the end, and all at once the property is plastered with liens. In a rage, the owner goes to his lawyer and complains in bitter terms of the position into which he has gotten. The lawyer quietly waits until he get through fuming, and then smiles and says:—"What are you kicking about? You have gotten a $10,000 house for $6000, and the laborers and material men have paid for the difference between the $6000 and $10,000. In other words, you have been given $4000 of other peoples labor and material." This brings a change over the spirit of the owner's dream, and he goes away satisfied at having made such a fine speculation.

Now, this robbery which the owner is allowed to perpetrate, as we have said, would never have been permitted if the Supreme Court had followed the Constitution of the State, and had left it as it was adopted. The laborer and material man would have been paid in full, the owner would have paid the value of his house, and no more, the bond protecting him against any excess over the contract price.

It is a pity that the building interests of this State have been led into such a quagmire, when, as we have said, the Constitution is plain and simple. The Constitutional convention intended to protect the laborer and the material man, and the protection that it gave to them was without any injury to the owner—the Constitutional Convention, knowing that the owner could protect himself by a bond from the contractor. It is doubtful if the Constitution could ever have been adopted at the time that it was if the people did not understand that this provision had been inserted for the protection of the laborer and the mechanics and material men, and that the building classes had obtained more than a shadow and a delusion by a constitutional provision inserted on their behalf. It is no answer to this to say that the laborer and material man could protect themselver by sitting down and figuring up the cost of the job, and thus finding that its cost would go beyond the contract price. It is not to be presumed that the hod-carrier upon the Crocker Building, in course of construction, nor even the ordinary material man, would be capable of sitting down and figuring upon the cost of marble brought from over the seas for the purposes of that building.

This is not all. The Constitutional provision also intended that the lien referred to by it should be speedily enforced. We have not space in this issue to discuss the practice in regard to the enforcement of this lien. This phase we will defer until our next issue. Then, we propose to call attention to the difference between the practice of our Courts and the provision of the constitution in reference to its speedy enforcement.

THE statement of an influential morning paper that architects were to be shut out from all competition in the designs for a new County Hospital and that the authorities having this important matter in charge, have already selected an architect whose designs were accepted in advance, bears the impress of truth.

No reputable architect ever enters into a competition for municipal buildings but feels that, no matter how meritorious the plans are that he may submit, some one with a "pull" is sure to bear off the honors and emoluments, leaving him with his designs upon his hands and all his labor, time and calculations, thrown away.

This condition of affairs is disheartening to the last degree, not only to the architectural profession but to citizens at large, who would have this great avenue of municipal benificence a credit and not a disgrace to the city, whose revenues they provide. This branch of charity and which involves the citizens of San Francisco in a very large annual expenditure, is one they share without complaining of the heavy cost. By rights, the very best care of the impoverished sick should be given. A hospital of the vast extent required by this city should rank with the best of those supported by sectarian, national or private munificence, and the first thing to be considered is a building fitted with all the appurtenances for healing the sick and caring for the convalescent that modern science has indorsed. No board of supervisors is competent to decide upon the best qualifications for a great public hospital. Such bodies generally lack the experience and education necessary for the selection. Neither are medical experts altogether infallible, though their opinions are entitled to great weight. No plan should be adopted without having been submitted to the judgment of a competent, broadminded and unbiased committee of architects. A combination of architects of ability, scientific physicians and surgeons and practical builders should be employed whose decision should be final.

Moreover no architect who has a decent regard for the ethics of the profession should accept a decision in his favor that comes from underground sources and in defiance of all appearance of good faith towards other members of the profession.

It is said, the specifications have been withheld from all architects who desired an open competition in the plans, and this charge is apparently sustained.

For the good name of the city of San Francisco and in behalf of other cities of the state who so closely follow our examples, this publication protests against any methods in the choice of hospital plans which are not open and above board, in which each and every competing architect is allowed an equal opportunity of winning. Public opinion asks nothing more. It demands that much *at* least.

THE semi-annual meeting of the Builders' Exchange on Monday the 19th was one of the most important that this great organization has ever called together. The several reports of the officers indicated a very satisfactory condition of internal affairs and a promising outlook for the future. At this meeting the Builders' Exchange placed upon record its official indorsement of the national policy of retaining those countries which the valor of our army and navy has won from Spain. Without qualification, the sentiment of the Exchange was decidedly in favor of holding the rich islands of the Phillipines and West Indies and adding them to the domain of the United States. The unanimity with which the proposition was adopted is significant and in conjunction with the action of the Chamber of Commerce, Board of Trade and other commercial organizations, indicates that a great majority of the people of California view with favor holding tight what our troops have won. The Builders' Exchange as representative of the intelligent bone and sinew of the country can not be charged with selfish motives in advocating this addition to our national territory. Unlike Commercial bodies they have no trade interests to bias their judgment.

The several speeches were brief and pointed and reflected great credit upon those who made them.

THE NEW COLUMBARIUM OF THE ODD FELLOWS CEMETERY ASSOCIATION OF SAN FRANCISCO.

By ALEX. F. OAKEY.

THE ODD FELLOWS Cemetery Association of San Francisco has shown the courage of its convictions, in providing handsomely for permanent disposition of incinerated remains, in a Columbarium that in design and execution has the dignity and repose of a grand mausoleum, and the solidity of a fire-proof structure.

The capacity is likely to be equal to the requirements of at least fifteen years, when similar structures may be erected to realize a grand scheme of architectural effect, enclosing a court or *Campo Santo*, with connecting peristyles, that are suggested by the treatment of the existing mass. The demands upon the adjacent crematory have already necessitated the building of an additional furnace. The first incineration

CREMATORY, ODD FELLOWS CEMETERY, SAN FRANCISCO.

at this crematory took place on June 26, 1895, and the increase since that date has been constant.

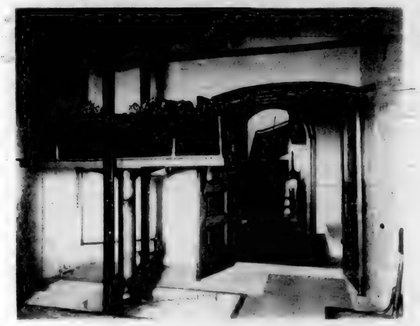
The Odd Fellows crematory is one of twenty-eight institutions of the kind in operation in the United States; and

INTERIOR VIEW OF CHAPEL, CREMATORY.

many more are organizing. Cremation was abolished in Europe about 400 A. D., and it was not till 1658 that any intelligent agitation of the subject was revived; and not till

WAITING ROOM, CREMATORY.

the Vienna exposition of 1873 that any scientific experiments, were made, resulting in the establishment of a crematory at



PREPARATION ROOM, CREMATORY.

Milan in 1874. Since when the practical interest in this method of disposing of the dead has steadily and rapidly increased all over the world. There is still much religious and

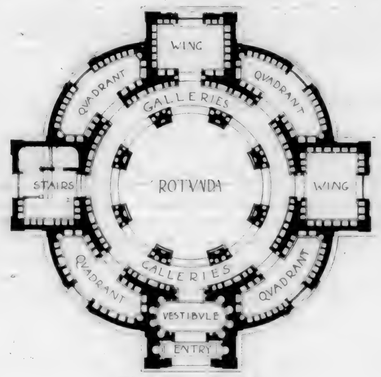
INCINERATING ROOM SHOWING EMPTY CARRIAGE RETURNING FROM RETORT.

sentimental prejudice opposed to incineration, but these do not seem to be so vital as was at first supposed.

The Theosophists insist upon scattering the ashes of the departed upon the waves of the ocean, as a rite illustrating the inevitable return of all matter to its constituent elements: the absorption of all entity in the universal whole. But most of us prefer to have some consecrated spot, some special receptacle, marked more or less emphatically and appropriately, as a record of the dead and preservation of their memory.

The Columbarium erected by the Odd Fellows Cemetery Association of San Francisco provides this spot and permanent receptacle; and while it has all the quiet expression of endurance characteristic of a beautiful church, it is at the same time a cheerful, well lighted and appropriately decorated place.

The fundamental design in plan is a Greek cross, the arms terminating in massive porches. This rectangular scheme is at once relieved and enhanced by the intersection of the sweep of the great circular wall that is concentric with the inner rotunda walls. These walls are the essential features of the whole design both in effect and in construction; and in the treatment of the problems involved in carrying the dome Messrs. Cahill & Condon, the architects, have especially shown their skill and judgment. In one sense the construction of the dome is concealed, in as much as it is carried on a system of steel ribs, each rib com-



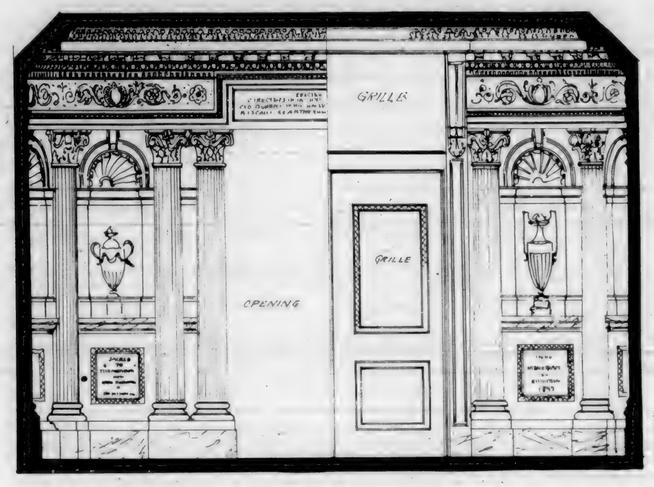
FLOOD PLAN.

posed of two members spreading apart at the shoes to rest on the inner rotunda wall and the next outer concentric wall, or drum. But these ribs determine the actual forms of the inner and outer domes, which may be considered as the covering of these bones rather than any attempt to conceal them.

In other respects the construction is very simple, but is remarkable for the fearless and intelligent employment of concrete and cement throughout, on a scale unprecedented in this part of the world. It will be seen that in no other material could the necessary honey combing of all walls

FRONT ELEVATION

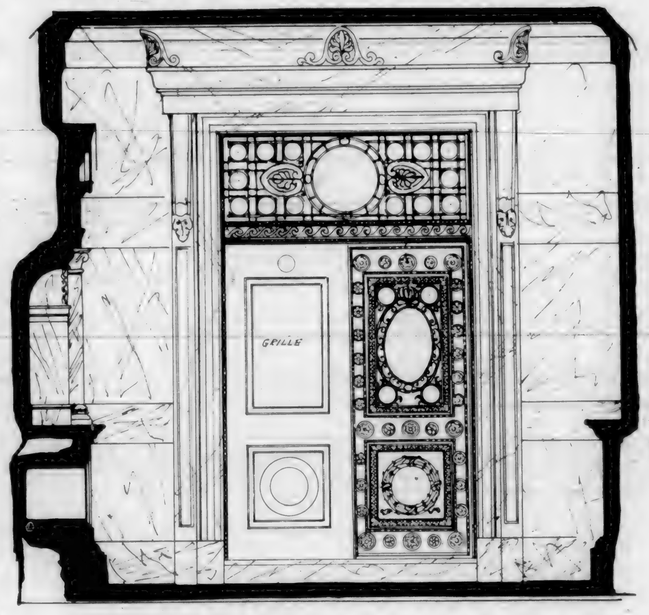
with nitches have been so easily and safely accomplished. The use of copper to encase the great piers of the rotunda is



HALF SECTION LOOKING
INWARD OUTWARD

not only an agreeable relief from the surrounding whiteness, but a practical provision against possible injury to the angles in the constant passage to the corridors. And the mosaic floors have many practical advantages besides their expression of permanent richness. Throughout this interior wherever marble or metal is best for the purpose to be served it will not be found wanting. As to the design as a whole or in detail it repays study. The first impression from the approach is that of simplicity and purity inherent in Greek design, but any suggestion of paganism is obviated by the cruciform plan and the dome above, which indicates the centre of the cross and suggests a unity of purpose. On closer examination we find in every disposition and detail some enhancement of the general purpose: and it cannot be many years before the open nitches in the vestibule and those in the piers of the rotunda, shall be occupied by busts of persons of distinction, whose ashes are contained in some beautiful urn resting in the surrounding walls.

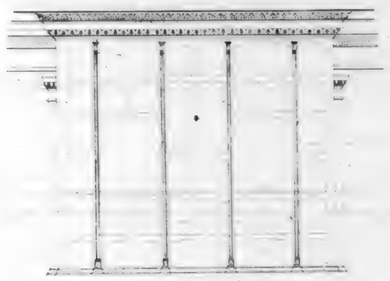
If the abolition of cremation by the early Christians resulted necessarily from their insistance on the resurection of the body, the modern Christian has come to see that such literal interpretation of scripture would exclude from salvation the holy martyrs who suffered at the stake; and that it is the better part of man: his ideas and ideals that are immortal. The Greek names of the winds and the constellations over the portals to the alcoves in this Columbarium are a happy reminder of the imperishability of ideas; keeping the living in constant sympathy with the great majority; with nature and with nature's God.



OUTER VESTIBULE AND DOORS

MEETING OF THE BUILDERS' EXCHANGE.

ON Monday, the 19th inst, the largest and most enthusiastic meeting of the Builders' Exchange in the history of that influential organization was held. A special call had been made by the President, S. H. Kent, Esq., for a large attendance, that, in addition to the customary semi-annual assemblage and the reception of the usual reports of the officers, an expression should be made of the sentiments of the organization on the retention of conquered Spanish territory in line with the San Francisco Chamber of Commerce, State Board of Trade, the Manufacturers' Association



SECTION B. GROUND FLOOR

COLUMBARIUM, I. O. O. F. CEMETERY.

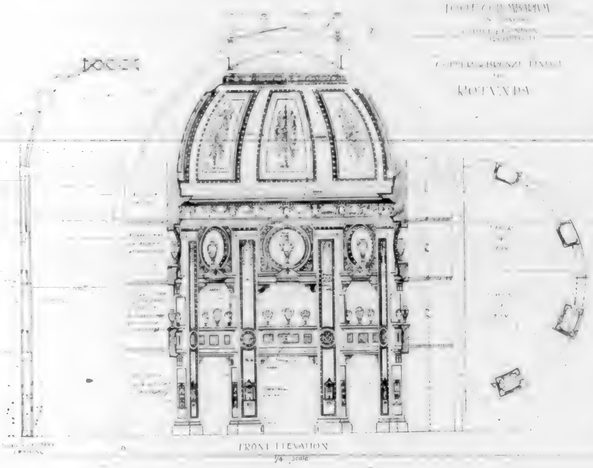
and other commercial and industrial bodies. Over two hundred members were present.

The President's report showed a total membership of 252 and a condition both prosperous and harmonious. An invitation was extended to all who had any objections or grievances, relative to the management of the Exchange, to state them but there were no responses and Secretary James A. Wilson, proceeded to read the report of the Treasurer which showed total receipts during the six months ending September 1st of $1619.28 and expenditure of $2170.50, also of resources, consisting of money in bank or out on interest

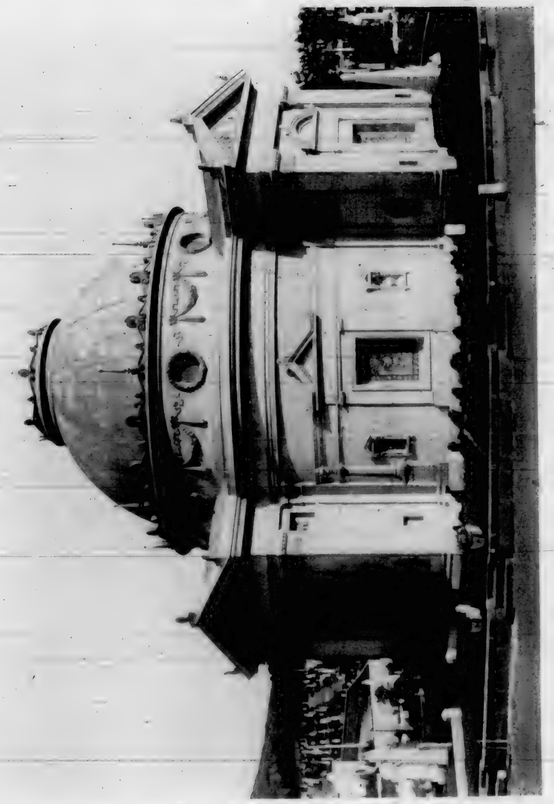
INTERIOR VIEW OF DOME, COLUMBARIUM, I. O. O. F. CEMETERY.

with personal property, all amounting to $7063.95. The reports were referred to the proper committees when the President announced that Hugh Craig, President of the Chamber of Commerce, James W. Kerr, of the Manufacturers' Association and Oscar Lewis, ex-president of the Builders' Exchange would address the meeting on the subject of retaining the Philippines.

Hugh Craig was the first and he was received with great applause: "History," remarked the speaker, "tells us what the result of acquiring new territory means to nations ambitious for expansion and powerful enough to hold, protect and develop them. The gospel of acquisition is not a new doctrine to the people of the United State. The original thirteen states began expansion very early in the history of this country. Florida, Louisiana, California and Alaska and finally Hawaii were all the fruits of that destiny, or Providence, which seems to be directing us in the course to be pursued in the far east. The Philippines, number it is said 1400 islands, separated by deep channels of the sea and contain from 8,000,000 to 10,000,000 people. They measure over 100,000 square miles in area and grow luxuriously all the fruits of the tropics. The soil is rich and exhaustless and their stores of coal, iron, precious metals and valuable woods has never yet been estimated. They are well watered and grow sugar, tobacco, hemp and other commodities which we cannot produce ourselves, more profusely and more cheaply than any where else upon the face of the globe. The harbor



FRONT ELEVATION



COLUMBARIUM, ODD FELLOWS' CEMETERY, S. F.
B. J. S. CAHILL, ARCHITECT.

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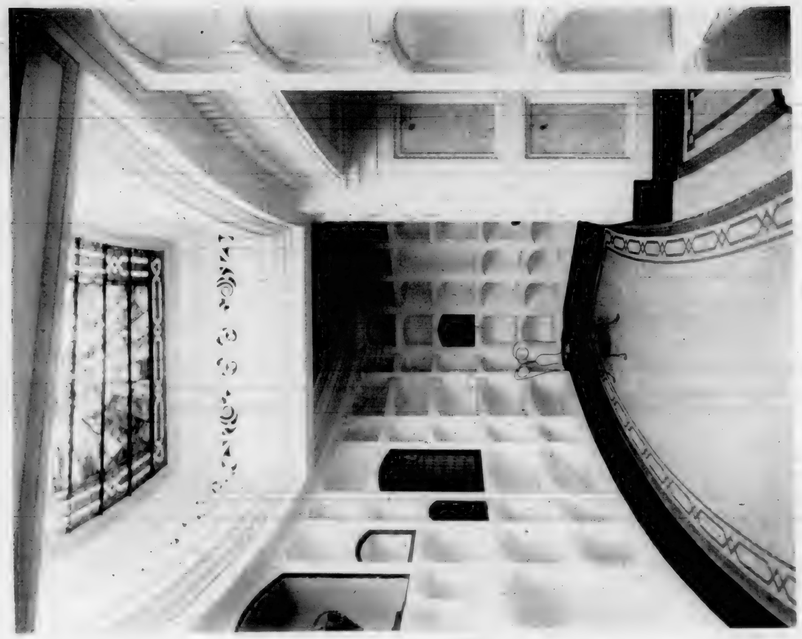
CALIFORNIA ARCHITECT AND BUILDING NEWS.
SAN FRANCISCO.

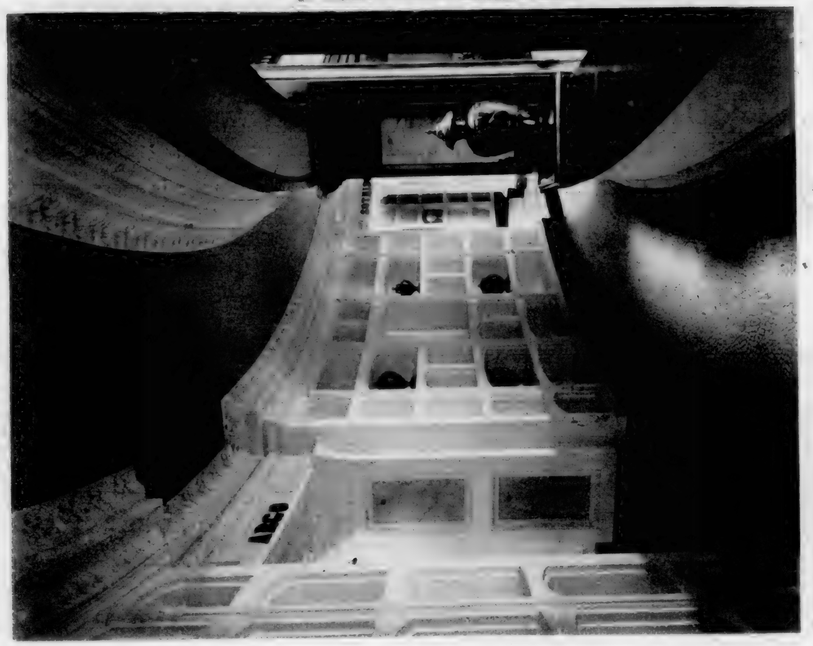
ENTRANCE INTERIOR OF VESTIBULE, COLUMBARIUM, ODD FELLOWS' CEMETERY, S. F.
B. J. S. CAHILL, ARCHITECT.

Interior View, Ground Floor from West Wing, Columbarium, Odd Fellows' Cemetery, S. F.

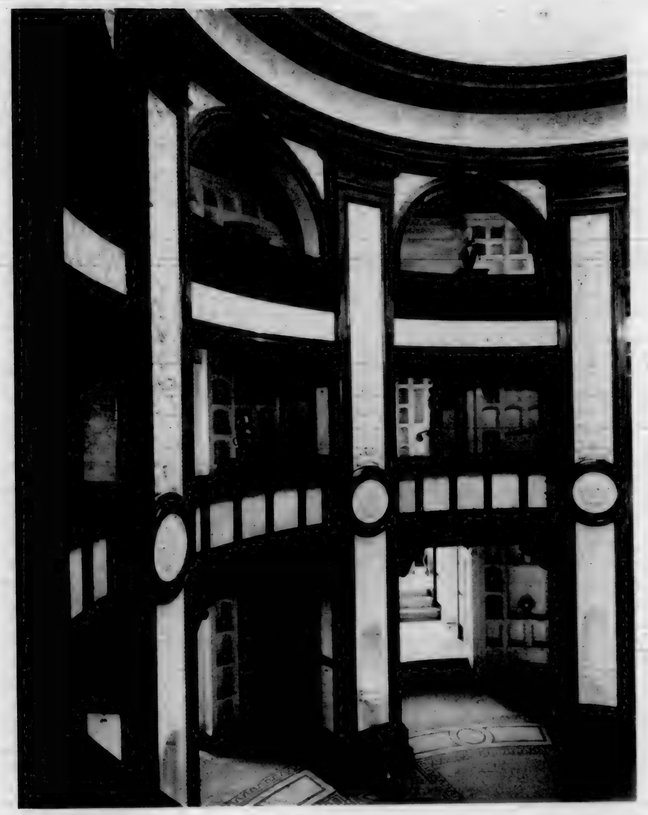
B. J. S. Cahill, Architect.



Interior View of Quadrant, First Floor, Columbarium, Odd Fellows' Cemetery, S. F.

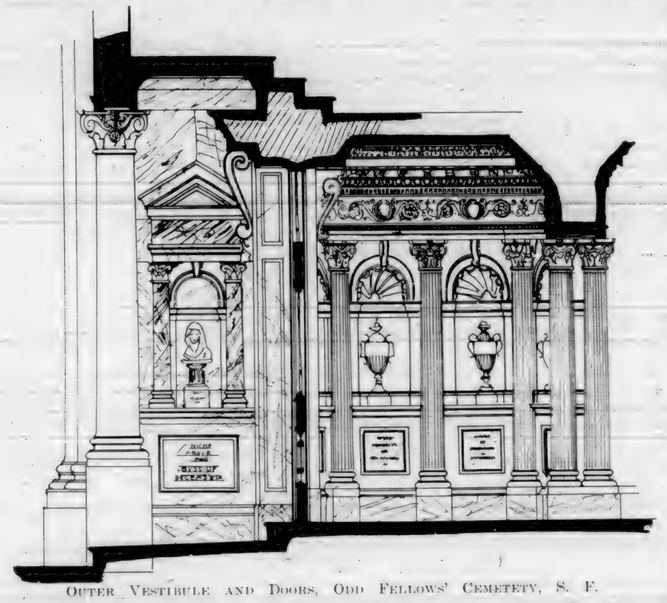


Main Corridor, First Floor, Columbarium, Odd Fellows' Cemetery, S. F.



INTERIOR VIEW OF MAIN ROTUNDA, COLUMBARIUM, ODD FELLOWS' CEMETERY.
SHOWING ENTRANCE TO STAIRWAY AND MAIN COLUMNS SUPPORTING DOME.
B. J. S. CAHILL, ARCHITECT.

of Manila is unsurpassed in extent and situation and is only a few hundred miles from that coast where one-half of the human race exist. There would be no question whatever if the Philippines were located close to our own coast or even as near as the Sandwich Islands. The 7000 miles that separate them from the United States is now easily bridged by submarine telegraphs and rapid steamships. If, under the mediæval rule of Spain, the Philippines produced such royal revenues as are reported, what would they not do under our enlightened laws and influence? As Hawaii has increased in richness and productiveness under our tutelage so would the Philippines. We bring 1,500,000 tons of sugar from Europe and other foreign countries, with the Philippines our own we need not bring a ton. The people who inhabit these islands are the objection, they never can assimilate them, it is argued, but who wants to?



Outer Vestibule and Doors, Odd Fellows' Cemetety, S. F.

They are a bright race and are said to make good laborers. Under fair, equitable laws they would make a contented, happy people. The cost of administering the islands is urged as an objection yet the last report is that the custom receipts of Manila, since the American occupation has not only paid all expenses but left a surplus of over half a million."

Mr. Craig complimented the exchange on the innovation of holding an open discussion upon this important subject.

Mr. James W. Kerr, President of the Manufacturers' Association made the next address which was listened to with profound attention:

"The acquisition of that great territory so far from our own shores," said Mr. Kerr, "is contrary to the traditional policy of this government. Forced into a war to deliver an abased and persecuted people from the tyranical government of Spain, the emergency rests upon the people of the United States to decide what disposition shall be made of this conquered territory. Commercial interests are unaminous in the wish to permanently retain them as our own. They see in the future a rich traffic flowing to and from these islands and opportunities for the accumulation of great wealth. These mercantile classes represent eastern manufacturers whose only interest is to find new and profitable markets for their fabrications but the wage earner sees in the acquisition a reopening ot the Asiatic question whereby the cheapest labor in the world may come in direct competition with themselves. Certainly this class of people, in numbers the large majority, are entitled to as great, if not greater consideration than the rich manufacturer. If this question of labor, which has been pending for so many years, is to be still farther complicated by the introduction of this Philippine element then a serious objection to the retention of those islands is presented. If these Asiatics who have shown such an aptitude for our methods of manufacturing, with their habits of living which our laborers cannot imitate or follow, then a serious injustice will be done our people by the possibility of their being compelled to compete with goods made in our own territory by the cheapest labor in the world. The difficulty which Great Britian escapes by reason of its more flexible constitution might be full of danger to the United Stateswith a constitution adopted only for our own people." Mr. Kerr instanced the manufacture of jute bags, which were once only made in Belfast, but were now a monopoly of Calcutta, owing to its cheap labor. "The United States is responsible for a good government for the Philippines. The question involved is difficult to solve. The consequences ofa retention of the Philippines might do California the greatest injury."

Oscar Lewis opened his remarks by facetiously remarking that, "one of Mr. Craig's recommendations for the Philippines was that those islands produced indigo"—"We don't require any indigo here, business in this Exchange is so bad that we do not need any indigo to dye us a deeper hue then we are"—at which there was great laughter and applause.

Mr. Lewis was generally in favor of keeping the Philippines though he too regarded the possibility of danger from the cheap labor competition of the islands with our own.

Brief remarks were made by Robert Mitchell, L. J. Dwyer, Martin Kelleher, James A. Wilson and others, for and against the question.

The following resolutions were then offered by James A. Wilson and carried with the utmost enthusiasm and without a dissenting voice:

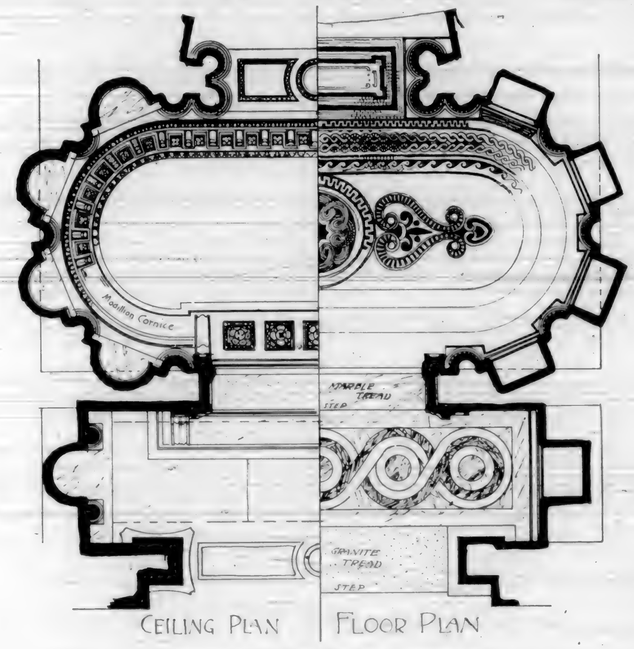
Whereas—"The Builders' Exchange of San Francisco, animated with a sentiment of patrotic pride in the achievements of the Army and Navy of the United States and believing that what has been acquired in our war with Spain should be retained for the welfare of humanity in general and the United States in particular, therefore, be it resolved

that we petition the President of the United States to use every honorable means to retain the Philippines islands and other territory over which the stars and stripes now float by right of conquest.

"Be it further resolved that the early completion of the Nicaragua canal is essential to the welfare and prosperity of the people of the United States.

RESOLVED—"That a copy of these resolutions be forwarded to the President of the United States."

Before adjournment a vote of thanks was given to the speakers by a rising vote.



CEILING PLAN FLOOR PLAN

COLUMBARIUM, ODD FELLOWS' CEMETERY.

LESSON FROM FIRE AND PANIC.

WITH respect to the structure, the party-wall as a separation between buildings is, I think, effectual if no illegal openings are made in it. Whether or not it need be carried up through the roof has been a question, but no satisfactory evidence seems to be forthcoming as to the stoppage of fire by party-walls that are not so carried up. When the London Building Bill of 1893 was before Parliament, the Committee took a great interest in this question, and decided that the old height of fifteen inches above the roof should be raised in the case of a warehouse to three feet.

As to openings in external walls where the streets or back areas are narrow, we want shutters that will delay the passage of fire from without, if only for half an hour, and will obstruct the passage of fire from within. It may be that fire-resisting blinds occupying little space will be found useful. The common lighting areas are formed by what are supposed to be external walls, and the provision of shutters or blinds to the openings in them is even more necessary. Every contrivance of this kind should be actually closed every night.

"I am quite unable to understand the slow progress made in this country by the fire-resisting floor. In Paris fire-resisting floors were common five-and-thirty years ago. I was then carrying out such work here on a large scale, but the case was exceptional; the weight of the floors was great, the walls had to be thickened, and the cost was excessive. Cheap steel and light substitutes for concrete have changed all that.

In the Cripplegate fire, although many of the warehouses were modern, and some had already been burnt out once or oftener, there was not a single fire-resisting floor. There were wooden floors carried on iron girders, but we are familiar with the behavior of wrought-iron girders under such conditions. They expand and contract so as to overthrow the walls, or they become soft so as to hang down like tapes. There are now available fire-resisting floors in great variety in which the iron is more or less protected from the fire. In using them care must, however, be taken that no leakage of gas can accumulate in any hollow spaces. I have seen a large and handsomely decorated house in which fire-resisting floors were used in conjunction with battened walls. Upon applying a light in the usual way to the suspected point of escape the mixture of gas and air accumulated in the hollows exploded, and the ceiling with the wall battening in two stories was stripped away, littering the floors and mixing

with the broken window glass. In that case there were also severe personal injuries.

In the great re-housing schemes of the London County Council I have made every floor fire-resisting by the use of steel joists wide-spaced, and filled in solid with coke breeze concrete upon which the floor-boards are nailed, the plastered ceiling being done under the concrete direct. The cost is no more than that of a good wooden floor, while the total thickness is only seven inches, which saves two or three inches in the height of each story. They are not complained of by the tenants in respect of noise, but in a house where this would be of great consequence a cork covering to the boards under the carpet would be a sufficient remedy.

If it is necessary to adopt wooden construction for floors, the ordinary pugging should at least be used. Joists of double the usual thickness placed two feet apart, and filled in solid with some form of concrete, would offer great resistance to fire. As to the material for pugging, coke breeze and cement concrete, mixed four parts to one, stands fire and water better than anything else. In Switzerland they use coarse plaster stuff, into which long wet shavings have been stirred as hair is stirred into plaster for ceilings; and this, though an imperfect substitute for concrete, will resist a fierce fire for a considerable time, but more experience is required in the use of light solid materials.

I think we have now arrived at a time when architects should at least try to secure an incombustible roof. This is stipulated in the building leases of some very important London estates, and I am told that it raises no difficulty. If the space in the roof is wanted, pugging or concrete is sometimes put between wooden rafters. If a steep roof is necessary, sheets of asbestos put on the roof boarding in place of felt will afford some protection. In a building professing to any degree of fire resistance, the roof should be protected by a ceiling of concrete put over the topmost storey. Ceiling on perforated or expanded metal will give some protection against a small fire.

As to partitions, lath and plaster should be quite abandoned, and brick-nogging also, for a half-brick wall in cement is as easily constructed. There are many kinds of thin partitions from which to choose. I commonly use coke breeze cement concrete two inches in thickness, which is light, tough, and strong enough for stories of the ordinary height. Old lath-and-plaster partitions may be filled in with this material or with brickwork by removing the plaster from one side only. If the structure is otherwise fire-resisting, any wooden panelled partitions may be considered as fixtures and disregarded, particularly if in hard wood.

I mention these and similar details, not as being unknown, but as being too often neglected, even where the cost would not be a serious item. If fire-resisting materials were in more regular demand workmen would become familiar with them and they would cost less. Exaggerated estimates of the cost of fire-resisting construction do much harm. Very important steps can certainly be taken in that direction with very little extra cost on ordinary construction.

The great danger of a staircase arises from the cupboard underneath its lower flight, which will probably be stored with combustible materials. If it is constructed of thin deal it will take fire easily. If more solid or made of hard wood it will resist a small fire for some time. If it is to be fire-resisting, concrete is safer than stone. But if everything about a staircase is incombustible it may be rendered useless by accumulated smoke arising from such a cupboard as I have mentioned, or from an adjoining room.

There are certain precautions necessary in construction whether the materials are fire-resisting or not. I have already suggested the danger of hollow floors and hollow partitions, but all hollow spaces that can contain gas or transmit flame or inflammable vapor, or will even allow a supply of air to pass towards a fire, are highly dangerous. The lining of walls with matchboarding is the most ordinary case of this kind. By means of it fire communicates instantly all over a shop, and up through the floor to the rooms above. The hollows formed in heavy plaster cornices and the hollow spaces behind skirtings transmit flame or inflammable air without any outward warning to adjoining or even distant rooms. One instance or two will illustrate this.

In a fire near Clapham Junction that originated among the Christmas decorations in a draper's window, the smoke and flames passed in this way to the upper floor so quickly, that two girls at work over the back part of the shop lost their lives, although there was an easy means of escape by getting out of the back window on to a flat. In a similar case several persons, probably seized with panic, jumped from first floor windows into the street, instead of stepping out at the back. These are indications of the quick effect of fire in a badly-constructed building.

As to the passage of fire or inflammable vapor by hollow spaces, cases have happened where the origin of a considerable fire was inexplicable until it was traced back to some source at a considerable distance from the scene of the damage. In a "fireproof" building, a workman hung his coat in a cupboard leaving his pipe in the pocket. The coat took fire and fell, setting light to the skirting, behind which a small hole had been left in the brick internal wall. The floor-boards of the adjoining room had been laid on wooden rips that stood above the service of the concrete. The fire passed along the hollow space, doing three thousand pounds' worth of damage in this "fireproof" building. Unless the elasticity of a floor is an object, the boards should be nailed down on to a surface of coke breeze concrete.

If no more serious measures than those I have described are taken in respect of a purely domestic building, they may give very material security as to its behavior in case of fire. For many years past companies have been erecting artizans' dwellings in London, one of them having put up blocks containing nearly six thousand tenements. In only one case has a fire in any artizans' block extended from one tenement to another. This is due to generally careful construction, though there has been no rigid adherence to fire-resisting principles.

In these descriptions of the parts of a fire-resisting building, the work of the carpenter is practically excluded, and there are many buildings in which this principle should be carried out. There is, however, much convenience in the use of timber, and if posts and girders are made in large sizes, they are safer than if made in iron. Solid floors made of deal joists set close together withstand fire for a long time, but are ultimately destroyed by great heat.

Many attempts have been made to render fir timber fire-resisting or slow-burning by chemical treatment or by covering it with paint. Some of these applications are useful when applied to textile fabrics and to thin slips of wood, but I have been unable to meet with any process that renders the mass of a joist or beam fire-resisting throughout. This is a matter well worth further inquiry and experiment, for joinery at least might be protected in this way. As to the public experiments sometimes reported, those in which tar

or mineral oils are liberally used are untrustworthy, for these are light-giving and smoke-producing liquids, and do not imitate the conditions of an ordinary fire.

Although we may succeed in rendering new buildings satisfactorily fire-resisting, a much more important question for the present generation is the improvement of the condition of old buildings. This is well worth the attention of those who have the charge of building estates already covered, of ordinary town property, or of those old historic mansions filled with family treasures, one of which as I write has been added to the number of those wrecked by fire. In an ordinary buil ding, purely domestic, if the joints are not strong enough to carry a filling in of concrete they will carry ordinary pugging, and if no morethan a breadth of three or four feet all round a floor is well filled in on some fire-resisting system, every hollow behind adjacent cornices, skirtings, and partitions being carefully stopped, a very considerable amount of resistance to fire will be afforded. If, besides, the points of contact between chimney stacks and floors and roofs be examined and timber cut away, the condition of an old house might be made approximately as good as that of a new building. In certain cases, where in London a domestic building is changed into a public building, and where a building partly domestic and partly used for trade is increased in area, something of this kind has now to be done.

To be continued.

ON THE SALINE EFFLORESCENCE OF BRICKS.

THE CAUSES LEADING TO IT, AND THE PRACTICAL MEANS OF AVOIDING THE SAME.

BY OSCAR GERLACH (PH. D., BERLIN.)

CONTINUED FROM LAST NUMBER

BURNING

THE efflorescences produced by the sulphates in the green brick or during the water-smoking are always visible on the surface of the burnt product, either in the form of whitewash or in that of minute warty, crystalline kernels. On the other hand, the burnt products may come from the kiln faultless in appearance and without a visible trace of coloration, and yet conceal in their interiors considerable quantities of sulphates, which, when the bricks are later wet by water, are dissolved and make their appearance at the surface. These salts arise always during the burning,—not before,—and are particularly annoying because of their usually appearing first in the finished building, where, through the effects of rain and frost, they gradually are drawn to the surface.

Hitherto the opinion has been erroneously entertained that, in *burning*, only the sulphurous acid gas due to combustion participates in the formation of whitewashing sulphates, whereas the undisintegrated iron pyrites still remaining in the clay was left entirely unnoticed. Now Dr. Hans Guenther, of Carlsruhe, has recently shown by a series of instructive experiments that also the iron pyrites *in the clay* participates in the formation of whitewashing sulphates during the burning; and this is readily intelligible when we reflect that the sulphurous acid gas, produced by the combustion, must act mainly on the surface of the bricks and can only gradually penetrate into their interior, whereas the combustion of the finely distributed iron pyrites in the brick itself brings the generated sulphurous acid gas into immediate contact with the finely distributed carbonates of the clay, and so renders possible a perfect absorption of the acid by the carbonates.

The formation of whitewashing sulphates during burning takes place as follows:—

A part of the sulphur in the iron pyrites (FeS^2) is very loosely combined with the iron, and oxidation of this part begins at approximately 650 degs. Fahr., whereas the other part burns only at red heat. The products of the disintegration are oxide of iron (Fe^2O_3) and sulphurous acid gas (SO^2). Expressed in chemical formulæ, we have:—

$$\text{I. } FeS^2 + 2O = FeS + SO^2$$
$$\text{II. } 2FeS + 7O = Fe^2O^3 + 2SO^2.$$

The sulphurous acid gas SO^2, when heated in contact with solid porous bodies, is oxidized by the superfluous oxygen of the air of combustion to sulphuric acid, or converts existing oxides into sulphuric salts. It was for a long time erroneously believed that the presence of water or of water vapor was necessary to the formation of sulphates; but as early as 1856 Plattner in his book, *Der metallurgische Rost-process*, demonstrated experimentally that sulphurous acid gas in combination with the oxygen of the air and in contact with minute particles, or in contact with porous solid bodies, oxidizes to sulphuric acid, and that the water vapor in the air was not of consequencs for the formation of this acid. If the minute particles or porous bodies are or contain oxides, these oxides are converted into whitewashing sulphuric salts. The following of Plattner's experiments is of special interest to the brickmaker. He conducted a mixture of sulphurous acid gas and atmospheric air, once wet and once dry, over some unslacked lime (CaO) in a glass tube. At red heat the lime was converted into calcium sulphate ($CaO+SO^2+O=CaSO^4$) without a trace of sulphurous acid or sulphuric acid being noticeable at the free end of the tube. All the sulphurous acid, accordingly, was absorbed by the lime and converted by the oxygen of the air into sulphate of calcium. The same experiments were made with other oxides with the same results.

In the burning of clay products the same conditions prevail, provided the fuel contains sulphur and the clay contains carbonates of calcium, of magnesia, or of alkalies—which is to a greater or lesser extent usually the case. At red heat the carbonates, liberating their carbonic acid, are converted into their respective oxides, which, being finely distributed throughout the porous brick by the oxidizing action of the air, combined with the sulphurous acid gas to form whitewashing sulphates.

To turn these laboratory experiments to account for practical brickmaking, the experiments were made on a large scale. Different clays were burnt with different fuels, and

the amount of sulphates contained in the products determined both before and after burning.

EXPERIMENT I. *Clay alone contains sulphur.*

Material. Clay containing both iron pyrites and a small quantity of carbonate of lime.

Mode of Burning. Red heat (about 1650 to 1750 degs. Fahr.). Gas furnace. Oxidizing flame. The gas employed showed only the merest traces of sulphur. A kilogram of the *unburnt* clay contained 0.584 grams $CaSO_4$. *Result.* Since the fuel contained no sulphur, the *fivefold* increase of the amount of whitewashing sulphates in the burnt product must have been *entirely due to the presence of the iron pyrites in the clay.*

EXPERIMENT II. *Both the clay and the fuel contain sulphur.*

Material. Same clay as in Experiment I.

Mode of Burning. Red heat. Coal fuel. Oxidizing flame. Coal contained 3 to 4 per cent FeS^2, or iron pyrites. The amount of sulphates was determined in *several* different burnt bricks. A kilogram of the burnt clay contained on an average 12.76 grams $CaSO^4$.

Result. A more than *twenty-fold* increase of the whitewashing sulphates.

EXPERIMENT III. *Fuel alone contains sulphur.*

Material. Clay free from iron pyrites, but containing much carbonate of lime.

Mode of Burning. Red heat. Fuel, coal, etc., as in Experiment II. One kilogram of the *unburnt* clay contained 0.483 grams $CaSO_4$. One kilogram of the *burnt* clay containing 16.85 grams $CaSO_4$.

Result. An almost *forty-fold* increase of white washing sulphates.

EXPERIMENT IV. *Clay and fuel free from iron pyrites (at least containing traces only).*

Material. Same as in Experiment III.

Mode of Burning. Gas furnace. Oxidizing flame. Red heat. One kilogram of the *unburnt* clay contained 0.483 $CaSO^4$. One kilogram of the *burnt* clay contained 0.621 $CaSO^4$.

Result. A very *slight* increase of whitewashing sulphate.

EXPERIMENT V. *Fuel free from iron pyrites. Clay containing great quantities of iron pyrites, but only traces of carbonate of lime.*

Material. Clay containing large quantities of iron pyrites, but almost free from carbonate of lime and other carbonates.

Mode of Burning. Gas. Oxidizing flame. One kilogram of the *unburnt* clay contained 0.321 grams $CaSO_4$. One kilogram of the *burnt* clay contained 0.510 grams $CaSO^4$.

Result. A *very slight* increase.

EXPERIMENT VI. *Fuel and clay both contain iron pyrites, but the clay shows only traces of carbonate of lime.*

The materials and the results were the same as in Experiment V.

CONCLUSION.—It follows from the above experiments that the whitewashing sulphates are formed in large and annoying quantities only when sulphurous acids and carbonate of lime, or other carbonates, *occur together* in chemical action. Sulphurous acid has no injurious effect on clays containing no carbonates of lime, magnesia, or alkalies. Such clays, accordingly, can be burnt with sulphurous coal without any fear of an increase of whitewashing sulphates, whilst clays containing carbonate of lime require a fuel free from sulphur.—*The Briekbuilder.*

KEELY MOTOR UP-TO-DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA

BY E. J. SCOTT, ACTIVE MEMBER.

[CONTINUED FROM LAST NUMBER]

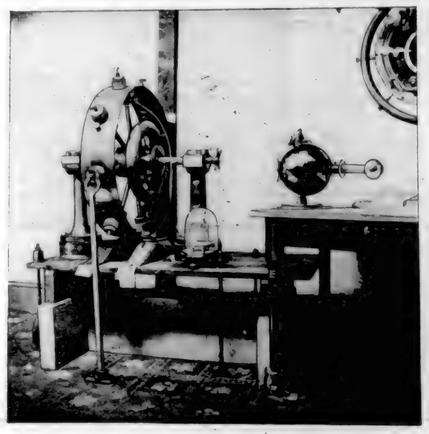
FROM what has already been explained, it will be at once evident that the rise and fall of the weights in the jar of water is due to their varying specific gravity. The weights sink, because they are heavier than the water, bulk for bulk; they rise because they are lighter than an equal volume of water. Keely's weights were so balanced that a slight difference in the air-pressure in the enclosed space above the water would make them rise or fall by changing their size sufficiently to make them of less or greater specific gravity. This is easily accomplished by having some portion of the weight compressible. It is a child's toy. Keely's transmitter, containing compressed air, was capable of increasing the air-pressure in the jar by turning the handle or switch to some point which would connect the jar with the reservoir of compressed air, or diminish the pressure by a change of the switch which would connect the jar with the open air.

Keely, whose eyes were always on the weights, shut off the switch as soon as the weights either rose or fell. With great skill and by letting in the air very slowly, he was sometimes able to leave one weight at the bottom, the other going to the top, or even to send one of them down after it had partly risen. It was particularly noted, however, that the one which always sunk first was the only one which he could arrest in its upward movement. Indeed, he replied to the writer's inquiry on that point, that he could not make the other go down first. He might have done so between the visits of the same investigators by changing the relative specific gravity of the weights. His explanation of his inability to do this was made in such terms of the new science that, while it sounded all right in the ear, it conveyed no meaning to the listener. It may have been stupidity on the part of the visitor. Indeed, when Keely heard of his explanation of the experiments, he said that he "considered that the Professor's testimony outweighed Mr. Scott's suspicions, and he did not think it necessary to do anything to convince him of his ignorance."

The Keely motor, or engine, is the last of the long series of Keely's inventions, of which the apparatus before referred to are only experimental studies. The word "vibrodyne" was coined by Professor W. Lascelles-Scott, as being more nearly expressive of the character of the character of the machine than "dynamo," which Keely had used. It is supposed to embody the principles which Keely has labored so many years to establish. He says it is operated directly by "apergy," a force hitherto unknown, existing in nature and only waiting to be utilized; that it consists, like light, in the extremely rapid vibrations of the ether, or matter infinitely divisble which pervades the universe; the problem being to devise apparatus which will respond to these vibrations. The vibrodyne may be thus described:

A heavy cast-iron bed plate, supported eighteen inches above the floor by an iron slab at each end, bolted to the floor at each of the four corners by heavy iron rods, and braced from the side wall, forms the foundation for a machine which can be prevented from running by the pressure of a finger, or stopped when at full speed by grasping it with one hand.

A flat brass ring about four feet in diameter is supported on two wooden slabs resting upon the iron bed plate, which are held to it by brass straps. On the outside of this ring, at equal distances apart, are fastened clusters of short tubes, each about a half-inch in diameter and three inches long, forming resonators. These tubes are partially filled with amalgam, or stopped up with diaphragms at varying distances from the ends. They are called resonators. There are nine of these clusters on the circumference of the ring, and on the outside of each is a hollow binding post, to which wires can be attached. On the inside of the ring, immediately opposite the resonators, a "sensitized disk" is attached, similar in appearance to the heavier weight used in the jar experiment (a brass cover filled with amalgam). On



THE VIBRODYNE OR KEELY MOTOR.

the inside of this disk is another binding post similar to the one outside the ring, which is also hollow, and making an open passage between the inside and outside binding posts. There is thus a set of nine binding posts and disks pointing inwards, which are connected together by the mysterious platinum wire which figures in nearly all the experiments. The outside resonators and inside disks are about two inches apart.

Concentric with and inside of this ring is the revolving wheel. Its axis is supported at each end upon large iron pillars much enlarged at the bearings of the axle. A large hub in the middle of the axle has radiating from it eight spokes, one less than the number of opposing disks on the inside of the flat ring. These spokes do not terminate in a rim, but on the end of each is a disk similar in size and character to those which project inward from the ring. There is upon the axle near the hub a heavy iron ring about fourteen inches in diameter, which revolves with it, presumably as a balance wheel to make a steady motion. This ring had been added at some time between the last two visits, probably at the suggestion of the Professor.

On the occasion of the last visti Keely set the wheel revolving in the following manner: Taking a 10-inch sympathetic negative transmitter (the large brass ball) he placed it on a table having a glass top, on one side of the room, and connected it with the vibrodyne by a platinum wire, attaching one wire to the binding post of the transmitter, and the other to the binding post projecting from a resonator on the top of the vibrodyne. Then, snapping some of the wires on the scale of the transmitter and turning the handle backwards and forwards, the wheel commenced to revolve, slowly at first and with gradually increasing speed, until the revolutions were about 180 per minute.

The Professor asked: "Am I right that you can stop the wheel by withdrawing that kladna?" (The kladna on the axis would be withdrawn by turning the axis or handle of the transmitter in one direction.)

Keely said "yes," and appeared to turn the handle about twenty times, and, snapping one of the wires, which he said was note B, the wheel slowed down, and finally stopped.

He started the wheel again as before, and said: "As the machine now revolves the subdivision is 42,800 to the second. That is disintegrating vibration. I could disintegrate quartz with that vibration and powder it into dust." He did not offer to powder any quartz in that way, however.

Keely suggested that he could stop the wheel in several ways, two of which he illustrated. He pulled the wire out of the binding post of the transmitter, and it stopped as before. Again starting it, he stopped it by pulling out a plug in a hole in the binding post on the machine, the hole being a continuation of the hole into which the wire was thrust on the other side. This left the transmitter attached to the machine, and gave the writer an unexpected opportunity to further confirm his belief that the so-called platinum wire was a small platinum tube. He had noted on his first visit that the method of attaching the wire to a binding post was peculiar. The post was in form like a T and was hollow. There was no screw to hold the wire in place, but the ends of the wire terminated in plugs which were pushed into the end of the hollow arms of the T. On this occasion he observed that not only the horizontal arms of the T, but also the perpendicular leg, were hollow, leaving a passage down into and through the resonator, the flat ring, the sensitized disk on the inside of the ring and the binding post upon the disk, to which was attached the platinum wire before described, which encircled the interior side of the flat ring.

On the present occasion the writer took his seat next to the revolving wheel, not following Keely's suggestion to take another position. When Keely pulled out the plug from one arm of the T, leaving the wire sticking in the other arm, the other end of the wire still being connected with the sympathetic negative transmitter, he moved his face close to the hole left by the plug, which had been pulled out, and distinctly felt a blast of air from the tube (or "wire").

To make certain that the air current did not come from the revolving spokes, he kept his face in the same position until the wheel had stopped, and still felt the full force of the blast of air from the tube.

Here then was a confirmation of his belief that the wire was a tube carrying compressed air, the reservoir of which was the 10-inch globe of the "sympathetic negative transmitter." It was evident, however, that a sufficient amount of power to run the wheel for any length of time, or to run it at all, could not be stored in a globe of that size. He did not believe that it was so run, but that the air pressure performed the office either of an automatic switch-closer or automatic pole-changer on an electric circuit. This belief was to some extent confirmed by an oracular remark of the Professor to Mr. Elliott, to whom he said: "The wire does not supply the power, but it unlocks the power which runs the wheel." The writer at once said to him: "Professor, you have exactly expressed my opinion."

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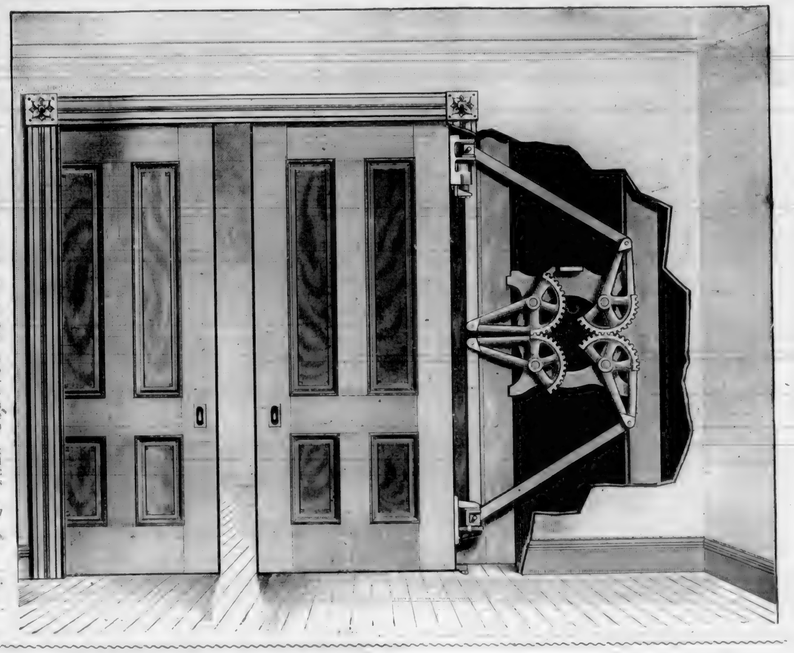

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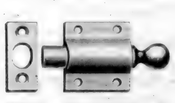

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BUILDING NEWS.

SANTA ANA

Messrs. Bristol & Rawley have leased the corner of Main and Fourth streets for twenty years and intend to erect a two story brick building. It will front 80 feet on Main by 65 feet on Fourth.

City engineer Kellogg has asked for a two weeks extension of time to prepare his report with plans and specifications of the sewer lines through the city at the expiration of which they will be ready for bids.

SANTA BARBARA

A new sugar beet factory to be located near Santa Maria, Santa Barbara County, at a cost of $135,000, is in contemplation.

SANTA ROSA

Simpson and Roberts will begin the erection of an addition to the Miller & Hotchkiss winery at Winsor. The new building will be 80x130 feet. It is the intention of Messrs. Miller & Hotchkiss to increase the capacity of their winery at least two hundred thousand gallons. The new cooperage will be in place in time to receive this year's wine. An addition is being built to the Fulton winery and its capacity will be materially increased. A handsome new cottage is being erected on the site of the one recently destroyed by fire on the Briggs estate property at Fulton.

STOCKTON

Contracts have been awarded for the erection of an eight room brick school building for Fair Oaks District. Chas. Beasley & Son, Architects. Lee & Lewis do the carpenters work and Robbins & Hanks the brickmasons work, the cost aggregating $15,300.

Thos. I. Levy has awarded the contract for building a cottage on California & Lindsay streets to Robt. Powell for $1117.—Geo. Rushforth was the architect.

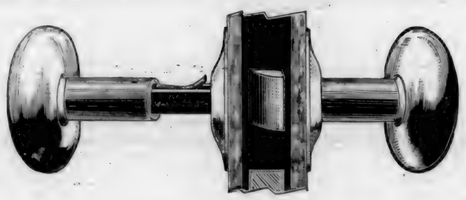
TRACY

Bids for the re-building of the Odd Fellows Building were opened on the 21st of September and the contract for carpenters work, plumbing, ironwork and plastering was awarded to Fk. Woodruff of Stockton and the brickwork to Confer Shannon and Tucker of Stockton their bids aggregating $8080. The Odd Fellows to furnish all brick, cement, lime and sand which will run the cost of building to about $8500. Geo. Rushforth of Stockton is the architect and the building will be pushed to completion under his supervision.

AUBURN

Building is picking up, work is about to start in a $800 school house, Rock Creek School District. A five room cottage for John Davis. Foundation just completed for a $4500 School House at Dutch Flat, J. C. Woodward, contractor. M. T. Barnette is building a small cottage.

SPECIFY



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Public notice is hereby given to architects that competitive plans and specifications for the erection of an hospital building will be received by the Board of Supervisors on MONDAY AFTERNOON, September 12, 1898.

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The said plans and specifications to be so prepared that the cost of the building shall not exceed in the aggregate the sum of three hundred thousand ($300,000) dollars.

The architect whose plans are adopted will be appointed architect and superintendent of the building, and will be required to give a good and satisfactory bond to insure the completion and construction of the said building for the amount of the cost as made by the said architect. The architects submitting plans determined by the Board to be second, third and fourth in merit will receive premiums of $1000, $750 and $500 respectively, with the understanding that any features of said plans and specifications which may be considered useful or necessary to be embodied in he plans adopted may be used without urther cost of charge.

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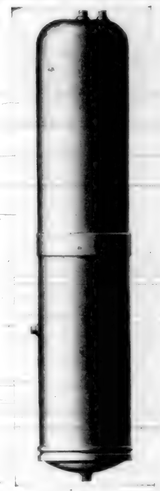

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W. Curlett
Architect
Offices, 307 Phelan Building, Market Street,
SAN FRANCISCO.

Stone & Cahill,
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Fred. B. Wood,
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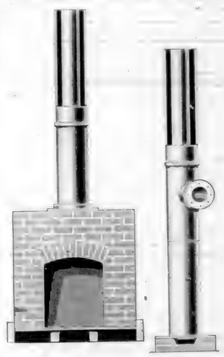

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VOLUME XIX. No. 10. OCTOBER, 1893.

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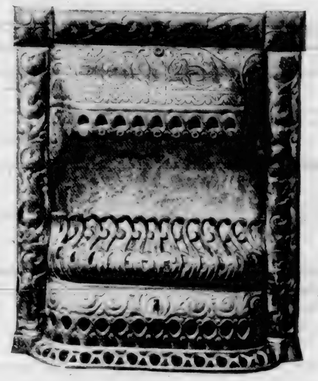

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BUILDING NEWS.

Bartlett near 22d. Alterations and additions; o, Mrs. A. E. McIntyre; a, L. E. Wyneken; c, A. McElroy; signed and filed, Sept. 29; cost $1725.

Broadway near Pierce. Alterations and additions; o, Mrs. C. L. Nokes; a, Frank S. Van Trees; c, T. O'Connor; signed, Sept. 17; filed Sept. 20; cost $2500.

Castro and 22d. To build; o, Theodore Enderle; a, Martens & Coffey; c, John Furness; signed, Sept. 19; filed, Sept 21; cost $3000.

Clay street No. 41-45. Alteration to two-story brick; o, Mrs. Rosa Oppenheimer; a, M. J. Lyon; c, M. Fennell & Son; signed, Oct. 18; filed, Oct. 19; cost $1066.

Clay near Jones. Three flats; o, Jas. A. Johnson; a, M. F. Bugbee; c, Wm. Bell; signed, Oct. 1; filed, Oct. 5; cost $3000.

Connecticut near Napa. To build except plumbing tinning, and mantel; o, William and Jane Williams; c, C. C. Blair; signed, Sept. 23; filed, Sept. 26; cost $1350.

Dolores near 24th. To build; o, Mr. and Mrs. J. F. Anderson; a, C. A. Doss; c, Schley & Doss; signed and filed, Oct. 19; cost $3900.

Dolores near Day. One-story frame; o, B. Dinneen; a, M. J. Welsh; c, D. Currie; cost $1675.

Dupont near Filbert. All work except removal, excavation, etc; o, F. Belizer; a, H. S. Munson; c, H. Behrens; signed, Sept. 24; filed, Oct. 3; cost $2485.

Eddy street, No. 8. Alterations; o, Jesse E. Marks & Co; a, W. O. Banks; c, G. H. and S. Walker; signed, Oct. 17; filed, Oct. 17; cost $2460.

Ellis near Jones. Plastering for five-story brick; o, L. H. Sly; c, Alexander Mennie; signed, Oct. 11; filed, Oct. 13; cost $2100.

Eighteenth Ave. Hot water heating plant for the Institutional buildin s; o, Roman Catholic Orphan Asylum; a, C. J. I. Devlin; c, W. Morgan & Co; signed, Sept. 29; filed, Sept. 30; cost $10,300. Boiler room; cost $3175.

Eleventh Ave. To build; o, A. Legallet; a, Depierre & Righetti; c, L. B. Perramont; signed and filed, Sept 20; cost $2075.

Franklin street, No. 508. Reconstruction and repairs; o, Schussler & Goldman; a, James A. Wolfe; c, Biller & Qualman; cost $863.

Folsom near 22d. Cottage; o, Margaret McKittrick; a, Hermann & Swain; c, J. B. Baubman; signed, Sept. 29; filed, Sept. 21; cost $2315.

Geary near Devisadero. To build; o, Anna Brune; c, C. Zwierlein; signed, Oct. 15; filed, Oct. 17; cost $3500.

Geary near Laguna. To build; o, Mary E. Ackerson a, Martens & Coffey; c, J. E. Mooney; signed, Oct. 2; filed, Oct. 22; cost $2750.

Green street wharf, Pier No. 15; o, R. C. Chandler; engineer, Howard C. Holmes; c, S. F. Bridge Co; signed, Oct. 17; filed, Oct. 22; cost $23,887.

Green near Fillmore. Alterations and additions; o, Clara E. Curtis; a, Tharp & Holmes; c, Moore & Cameron; signed, Sept. 23; filed, Sept. 27; cost $1025.

Guay Place near 1st street. Alterations; o, E. A. Sandstrom; c, Douglass & Co; signed, Oct. 20; filed, Oct. 21; cost $1086.

Guerrero near 13th. Alterations and additions; o, Miss Kate Hynes; c, Robert Currie and Son; signed, Sept 20; filed, Sept. 23; cost $1155.

Howard near 1st. Concrete, brick work, etc; o, Judson Mnfg. Co; a, Percy & Hamilton; c, Miller & Beck; signed, Oct. 12; filed, Oct. 14; cost $9315.

Jones near Vallejo. Alterations and additions; o, S. S. and Sarah Franklin; c, W. O. Peterson; cost $1800.

Kearny near Washington. Iron armored conduit system for electric light wiring of Hall of Justice; o, City of San Francisco; a, Shea & Shea; c, Bateman Bros sub-c, Wybro-Hendy Co; signed, Oct. 7; filed, Oct. 19; cost $2116.

Larkin near Sacramento. To build; o, George W. Harris; a, W. H. Armitage; c, R. J. Pavert; signed, Sept. 19; filed, Sept. 20; cost $6050.

Larkin street, No. 427-429. Sidewalk arears, side wald; dead lights; o, G. G. Burnett; a, James Wolfe; mason work, John Downs; sidewalk lights; P. H. Jackson Cr; cost $700.

Market near Sacramento. Elevator; o, Mrs. E. F. Pope; a, Pissis & Moore; c, W. H. Holman; signed, Sept. 26; filed, Oct. 4; cost $3855.

Main near Howard. To build; o, P. F. Dundon; a, T. J. Welsh; c, A. McElroy; signed, Oct. 14; filed, Oct. 18; cost $6848.

Mason near Washington. To build; o, L. Pierano; a, O. Everett; c, Hugh McCracken; signed, Oct. 10; filed, Oct. 12; cost $6647.

Mission and 20th. To build; o, Henry Joost and Marie Joost; a, J. C. Jepson; c, R. J. Pavert; signed and filed, Oct. 12; cost $4000.

Mission and 14th. Heating and ventilating; o, Southern Pacific R. R. Co; a, Henry A. Schulze; c, Geo. H. Tay Co; signed, Sept. 23; filed, Oct. 1; cost $11,700.

O'Farrell near Pierce. To build; o, Henry Grupe; c, C. Schutt; signed, Sept. 2; filed, Sept. 24; cose $6820.

Pacific near Polk. To build; o, P. J. Hall; a, Shea & Shea; c, Martin J. Gallagher; signed; Sept. 27; filed, Sept. 29; cost $3400.

Pacific Ave. near Pierce. To build; o, Chas. Page; a, F. S. Van Trees; c, Williams Bros; signed, Oct. 15; filed, Oct. 19; cost $12,400. Plumbing, etc; c, W. F. Wilson; cost $2075. Painting, etc; c, J. H. Keefe; cost $1065.

Page near Clayton. Carpentry, etc; o, Mrs. Nellie Mitchell; a, William Koenig; c, Charles A. Depew; signed, Sept. 26; filed, Sept. 27; cost $4200. Plumbing, etc; c, G. C. Sweeney; cost $650. Painting, etc; c, A. Quandt; cost $875.

Page near Clayton. To build; o, Mrs. M. Mitchell; a, William Koenig; cost $3500.

Park Ave. near City Hall Ave. Two-story brick; o, Sadie Foorman; a, N. Blaisdell; c, T. Kinread; cost $3200.

Post and Grant Ave. Alterations and additions to three-story brick; o, Katharine A. Ivers and Eliza Kibbe; a, J. E. Kraft; c, S. H. Kent; cost $3100.

Powell near Geary. Carpentry, etc; o, M. A. Dorn; a, Shea & Shea; c, A. Olson; signed, Sept. 10; filed, Oct. 11; cost $7390. Grading, etc; c, Martin Fennell & Son cost $5000. Plumbing, etc; c, Allen & Looney; cost $2750.

Second and Mission. Painting and whitewashing for 6-story brick; o, Wells, Fargo & Co; a, Percy & Hamilton; c, W. T. Veitch & Bros; cost $1065.

BUILDING NEWS.

Seventh Ave. near Lake. To build; o, S. R. Harvey; a, A. W. Smith; c, C. M. MacGregor; cost $2524.

Seventh Ave. near L. To build; o, William Munder and wife; a, Kenitzer & Barth; c, M. J. Savage; sighed and filed, Sept. 28; cost $2750.

Seventeenth and Capp. Alterations and additions; o, C. Johnson; c, W. W. Redmall; signed and filed, Sept. 29; cost $2075.

Steiner and Elliott Park. To build; —. John R. Aitken; a, M. G. Bugbee; c, Theo. S. Holn; signed, Oct. 7; filed, Oct. 11; cost $7085.

Stevenson ank Third. Seven-story brick; o, Lean and Philip Meyer; a, M. J. Lyon; c, G. H. Moore; signed, Aug. 27; filed, Sept. 20; cost $10,800.

Sutter and Hyde. Alterations and additions; o, Dr. Julius Rosenstein; a, H. A. Schulze; c, W. H. Wickersham; cost $1475.

Sutter near Scott. Carpentry, etc; o, Mt. Zion Hospital Ass'n; a, W. J. Lyon; c, M. J. Field; signed, Sept. 27; Filed, Oct. 4; cost $5550. Excavations, brick work, etc; c, Martin Fennel & Son; cost $804. Sewers, etc; c, Schanz & Grundy; cost $1390. Painting, etc; c, D. Zellinsky; cost $500. Electrical work; c, J. H Wolf; cost $282.50.

Texas near Yolo. To build; o, John P. and Julia Sauer; c, Gustave Rasmussen; cost $600.

Third near Market. Plumbing; o, Ed. Rolkin; a, Percy & Hamilton; c, Ickelheimer Bros; signed, Oct. 13; filed, Oct. 14; cost $1495.

Twelfth Ave. near P St. Cottage; o, Wm. H. and Mary Roch; c, R. Reechenback; signed, Sept. 4; filed, Oct. 1; cost $2000.

Seventy-second and Florida. To build six flats; o, Thomas Pennington; c, Wm. Helbing; signed and filed, Oct. 12; cost $5570.

Twenty-second near Howard. Barn; o, Jas. Burke; c, day's work; cost $1000.

Van Ness and Clay. Steam heating, etc; o, St. Luke's Church; a, A. Sutton; c, W. W. Montague & Co; signed, Oct. 11; filed, Oct. 12; cost $1941.

Washington near Scott. To build; o, E. B. Cutter a, Edgar A. Mathews; c, Edward Leiter; signed, Sept. 22; filed, Sept. 26; cost $7342.

ALAMEDA

Walnut near San Jose Ave. Alterations and additions; o, Mrs. Gardner; a, Charles Shaner; c, C. S. Brown; signed, Sept. 26; filed, Sept. 27; cost $1460.

BERKELEY

Bancroft Way near Bowditch. Ten-room house; o, Annie B. Voorhies; a, A. W. Smith; c, Stockholm & Anderson; signed, Oct 6; filed, Oct. 7; cost $2847.50.

FRUITVALE

Fruitvale Ave. and Telhaut. Heating, etc; o, Trustees of Fruitvale School; a, D. F. Oliver; c, J. S. Burpee; signed, Sept. 23; filed, Sept. 24; cost $8279.

Continued on page xii.

The "Vulcan" Locks

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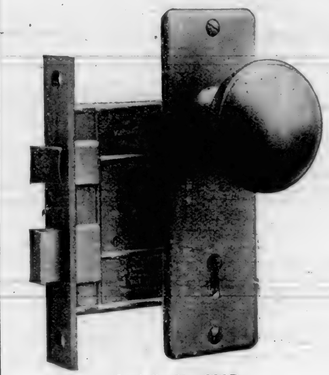

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Our General Offices in New York have recently received the following unsolicited letter from a prominent builder and contractor. Believing that the statement of experience it contains will be of interest, we reproduce it below.

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Mills Building, San Francisco.

GENERAL OFFICES: 9-11-13 Murray St., NEW YORK.
WORKS: Stamford and Branford, Conn.

OFFICE OF A. BEINHAUER,
124 Maiden Lane,

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9-11-13 Murray Street, New York.

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Yours truly,

(Signed) ALFRED BEINHAUER.

9-18-98 25-1250

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VAN DORN'S
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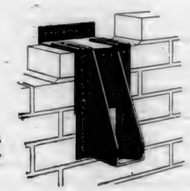

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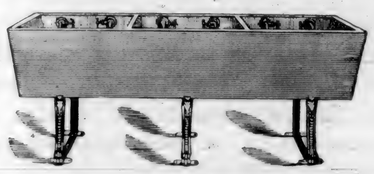

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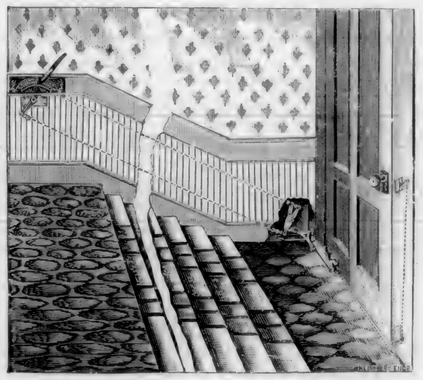


VOLUME XIX. OCTOBER 20th, 1898. NUMBER 10.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

IN OUR issue of the 20th of last month, we called attention to the difference between the Constitution of the State, and as it had been constructed by the Supreme Court of our State, with reference to Mechanic's Liens, and the amount for which they can be enforced, the Constitution saying that the lien should extend to the full value of the labor performed and materials furnished, while the Supreme Court have added the proviso that such amount shall not exceed as to the owner the contract price.

We stated in that issue that we would, in this, call attention to the manner in which the Constitutional provision referred to had also been departed from in practice as to the speedy and efficient enforsement of the lien. The Constitution not only intended by its provision that a man should have a lien for the full value of of his labor and his materials, but that he should also have a speedy and efficient enforcement of it. It meant that he should have an "efficient" remedy, so that his claim would not be exhausted by the expenses of collection, nor impossible of collection by being weighed at every step with impeding technicalities calculated to defeat him. And yet, it is a common thing to hear some of our Superior Judges from the bench state openly that they do not like Mechanic's Liens, and will, at every opportunity, interpose any technicality for the purpose of defeating them. Every technicality open to the conception of the human mind has been resorted to by the trial courts, for the purpose of defeating them, these Courts forgetting that they are called upon to give a most liberal construction in favor of the Mechanic's lien by reason of the fact that the right to it is a Constitutional right and that Constitutional rights are always to be looked upon with favor, instead of with disfavor.

Now, as to the speedy enforcement of the lien. After providing that the lien should be for the value of the labor done and material furnished, the Constitution says:—"the Legislature shall provide by law for the speedy and efficient en-

forcement of such liens." The Constitution intended that there should be no "laws delays" in reference to the enforcement of such liens. In practice, however, since the adoption of the Constitution, mechanic's lien cases are about the hardest to enforce, so far as delays are concerned. A number of cases are commenced against the same party. They are finally set for trial. Then a move is made by the defendant to consolidate all of the cases. The consolidation takes place, and the cases, as consolidated, are continued from time to time, it being difficult to get all of the parties ready at the same time. Then, finally, they are tried, an appeal is taken, and another delay takes place. Neither in the Superior Court nor in the Supreme Court have the cases been set down immediately for trial; but they have had to take their places on the calendars in regular order with other cases, the Constitutional provision that they shall be speedily tried, evidently being overlooked by the Courts.

In marked contrast to this practice in reference to the foreclosure of Mechanic's Liens is the disposition made of an action for unlawful detainer. There is no provision of the Constitution as in the case of a Mechanic's Lien requiring the speedy disposition of an action of unlawful detainer, and yet the Court without any such provision, sets down for trial such actions in advance of other cases and speedily disposes of them. A laborer who has a lien against property is delayed in the enforcement of his lien, and cannot get his money secured by it for the purpose of paying his rent. The landlord, not getting his rent, brings an action of unlawful detainer. The case is at once disposed of, and the laborer is evicted for non-payment of the rent. The wealthy landlord who has no constitutional provision behind him, giving him a speedy remedy, and who is able to wait for his money, commences his action and evicts the laborer and his family, while the laborer, with the constitutional provision behind *him* for the speedy enforcement of his lien, is unable to get his money through its foreclosure, with which to pay his rent. This is an anomalous state of affairs.

THE BEGINNING OF A NEW EPOCH.

THE YEAR 1898 will always be distinguished as the one of all others marking the extremest limit of depression reached by the building trades in California. No great structures were either begun or ended in that year and the number of smaller buildings erected was less in proportion to the population then ever before known. The war, drought, the Klondyke all had their depressing influences but more than all other reasons combined, the drought, which decreased the general income of the State not less than $50,000,000, and universally contracted individual resources in every direction, is directly responsible. It was a catastrophe that no business sagacity or foresight could prevent and coming after years of liquidation and low prices was an additional burden and hard to bear. It is not to be wondered therefore that architects, builders, mechanics and all kindred trades should have suffered from a a period of depression quite unique in the history of the State.

It is believed, however, by men whose judgment is entitled to great consideration, that the extreme limit of business depression has passed and that future indications are unmistakably encouraging. Besides the abundant supplies of money and decreasing rates of interest, real estate has reached a point where any change involves an increase of values. Under these conditions building interests cannot but be stimulated. The period has also arrived when a general movement is to be made in altering the old fashioned office buildings into structures that will attract tenants. The great modern structures like those erected in the last three years are absorbing all the desirable renters. Without transformation there will be no income from these old and desirably located buildings and at the first sign of inprovement in business a general renovation will be in order. It is a highly encouraging indication also that most of the local architects are busy in the preparation of plans for proposed buildings to an unusual extent for this season of the year.

But it is not from these internal or local signs of improvement that lead sagacious men to believe in better times in the near future, it is thought that a great movement has begun towards this coast that will have a wonderful effect upon the future of this city and inaugurate a period of advancement such as San Francisco has never known before.

As soon as the government decides upon a definite policy for the Philippines hundreds of companies that are ready to undertake their development will be found and naturally their head-quarters will be in San Francisco. An era has begun in China that will open that populous country to new enterprises. Russia-Siberia, will soon begin to contribute to this city's trade. All these projects mean increased commerce and new lines of steamers to this port. The result cannot but be stimulating to the last degree. With this new epoch, about to begin, San Francisco cannot but expand in a remarkable degree.

DEPOPULATION OF SAN FRANCISCO.

IT IS estimated by a very reputable authority that the population of San Francisco is now, not in excess of 320,000. In 1890 the census gives the number at 298,977 and if the above estimate is correct the increase for eight years is only 21,000, or considerably less than one per cent per annum, and very much below the average natural increase. While these results may be disputed it is admitted by the most sanguine that neither in commerce or population is San Francisco holding its own. This stagnation appears to be local. The Sound ports, Portland and Los Angeles are each making wonderful strides in advance while Denver has not only recovered from its exploded boom but is building with greater rapidity than ever. Even the small cities over the bay as well as upon the peninsula are making rapid and permanent progress, filling up with people who by preference would live in a city if conditions permitted.

Only San Francisco, notwithstanding its incomparable position as a maritime and commercial metropolis, gives indications of actual retrogression. Never before has the number of vacant tenements and business blocks been so great.

The Klondike exodus or the drought does not explain the general flatness of the building trades or why with the abundant supplies and low interest rates of money and with real estate lower than for many years, a reasonable degree of activity should not prevail. The difficulty is believed to be internal altogether and a natural result following the subordination of business to politics. Taxes, out of all proportion to the benefits accruing, confront the manufacturer and drives him to other locations where the cost of living is less and business not taxed out of existence. The custom also which prevails in San Francisco, with a virulence surpassed no where else, of "nagging" corporations prevents new enterprises and drives capital away. So with the family. It is believed that San Francisco loses hundreds yearly who will not trust the lives and education of their children in schools which common report says are insanitary, overcrowded and out of repair, managed and controlled by a board of directors which is incompetent, venal and corrupt. The numbers who are driven from San Francisco to neighboring cities is too great to be regarded with indifferance. There are other reasons for this wholesale abandonment of San Francisco. When the painful facts are realized perhaps some method of relief may be discovered.

EXTENDING THE FIRE LIMITS.

IT IS said that a movement has already begun, under the auspices of the Board of Underwriters with the active cooperation of the authorities, for a considerable extension of the present restricted fire limits. How soon the change will be made, is not known, it is intimated that it will be gradual, but, it is believed that the practical inclusion of the entire city, excepting possibly the extreme borders, will be accomplished within five years.

That the movement will be opposed by that class of property owners who are indifferent to the general welfare of the city is to be expected. That a change in the fire limits so as to include all those large business sections of the Mission and Western Additions which are now beyond the present boundaries will be welcomed gladly by a large majority of the investing class is already assured. Official notice of an impending change of such great importance ought to be given as early as practicable.

THE HEARST INTERNATIONAL COMPETITION.

THE GREAT international contest of architects to decide the successful competitors for the honor of furnishing plans for the new buildings of the University of California, reached a conclusion at Antwerp on the 4th inst. Over a hundred different plans were submitted, some of them from the most accomplished architects in the world. Foreign architects were greatly interested in the contest and the competition seems to have excited much attention all over the continent of Europe.

Of the one hundred plans submitted, eleven received the unanimous commendation of the committee of experts chosen to decide which were the most worthy. This committee consisted of Norman Shaw, R. A., London; M. Pascal, Paris; Professor Wallot, Dresden; Walter Cook, New York and J. B. Reinstein, San Francisco.

The names of those whose preliminary sketches entitle them to enter for the final competition are as follows:—

Barbaud & Bauhain of Paris; E. Benard, Paris; F. Blunschli, Zurich; D. Dexpradelles & Stephen Codman, Boston; Rudolf Dick, Vienna; J. S. Freedlander, New York; Heraud & Eichmuller, Paris; Howard & Cauldwell, New York; Howells, Stokes & Hornbostel, New York; Whitney Warren, New York.

The reward gained by each successful competitor, besides the distinction of success in such a noted contest, is in cash $1200, and the privilege of entering into the final competition. In addition to this reward, an allowance will be made to those who desire to study the environments of the University, to defray traveling expenses to and from San Francisco. Six months are to be allowed in which to mature the preliminary sketches for the final competition. All the completed plans are then to be placed upon exhibition in this city.

Norman Shaw, the English expert is reported to be enthusiastic over the results of the competition though his predictions as to the ultimate cost of carrying out the plans is ominous of their final acceptance. He is quoted as saying that $100,000,000 would probably be required to complete the plans, though $20,000,000 was the sum suggested as the limit cost of constructing the University buildings.

The adoption of a harmonious plan at this time would not necessitate, of course, immediate construction, but nothing would justify saddling the future with an obligation which events and conditions might prove to be entirely impracticable—especially as at this time the University of California is but an immature child and far removed from full growth. Columbia College of New York, though the wealthiest college in the world, will expend but $7,500,000 on its buildings and the Leland Stanford, Jr., University with an endowment of $20,000,000, finds that $3,000,000 invested in college structures, is entirely adequate to its needs, why then, it is asked, should California contemplate the expenditure of such an enormous sum as proposed or adopt plans for future expenditure of such dimensions? If the purpose is to out do the whole world in lavishness in providing university buildings that result might be attained but at a cost of self respect. It would neither be prudent or sagacious.

It is for this reason that a lack of practical results is feared from the great international competition and explains why California architects hesitated before embarking in an enterprise that from the nature of things, of which they were fully informed, was liable to result in no practical conclusion. The limited time allowed to formulate sketches, might have also had some influence, six months is a very brief period in which to conceive in detail a colossal group of twenty-eight large structures even for architects most fertile in ideas and rapid in execution. The time allowed appears much too contracted too plan that which may take half a century to construct.

As to the style of the selected plans it is known that, generally, they are of French school, certainly the most

admirable in the world, a school that has supplied California with some of its most eminent architects, yet to many it would be disappointing to learn that that the Regents of the University of California should adopt any school so distinctly national as the French as the style in which these buildings are to be erected.

In the opinion of some thoughtful men, there are signs of the development of a new school of architecture, composite it may be, but sufficiently distinctive for our own clime and appropriate to our national life. So splendid an example of college architecture as the university buildings are expected to be will afford an opportunity for the introduction of new ideas embodying in it the traditions, hopes and ambitions of the most lavishly endowed of all the states.

ENGINEERS FOR FIRE PROTECTION.

ONE of the demands of the municipality is that all new buildings and old shall be protected against fire and that any installations contained therein shall be free from any immediate possibility of fire. Modern buildings of large size are equipped with steam and electric light machinery, fire from which could arise at any moment unless precautions are taken of a most definite character to prevent the same. In consequence of this a department of engineering new in its way has been suggested by Mr. H. L. Phillips, which will consider ways and means of protecting property from fire in any form due to the arrangement of machinery within This is a most interesting field of investigation and worthy of serious consideration by not only professional men or engineers, but the public at large, to whom the loss by fire annually exceeds one hundred millions of dollars.

The electrician should feel particularly impressed with the necessity of putting in an installation safe in every respect and amply protected with the proper fuses and adjustment of wires from fire risk. Whenever there is a mystery attached to a fire, allusion is made to the electric light wires in the building; but in answer to this we may say that under no circumstances is a building under less risk from fire than when wired by a conscientious contractor in a manner that meets with all the requirements of the city fire underwriters.

Attention need not be especially directed towards the purely electrical portion of the work, but to the steampipe system, boiler, position of coal supply, etc. The general arrangement of these things counts for a great deal in the eyes of insurance companies when application for insurance is made by a large concern. A casual examination of the interior of a building does not always disclose the immediate chances of fire present there. Such an examination should be backed by considerable experience and an extensive knowledge of the effects of too close a juxtaposition to materials normally safe, but which under the influence of a constant heat, vibration, etc., might change in character and give rise to a conflagration.

As the hygienic demands of city residences became more pronounced and it was necessary to discover and prevent the mischief arising from poor sanitary accommodations, a new field of engineering developed and received recognition in many of the largest universities under the name of "Sanitary Engineering." In the same sense the necessity for a department of fire-protection engineering in some of the universities is obvious. A degree of this kind would confer upon its holder an immense amount of responsibility in the inspection of buildings and demand from him an intimate knowledge of many of the details of construction in electrical and mechanical engineering.

Mr. Phillips makes mention of the fact that "the electrical engineer must give consideration to the element of fire in arranging the lighting or power apparatus, and special rules have already been formulated regarding the installation of such an equipment. All matters of this sort, strictly speaking, come within the scope of fire-protection engineering and should be taken up in connection with it. And here we have another field for men trained in the new science."—*The Electrical Age.*

CORRESPONDENCE

To the Editor of the California Architect and Building News.

DEAR SIR:—Your remarks in your last number as to the interpretation of the Constitution of California by the Supreme Court in regard to Mechanics' Lien Law were very timely and *apropos.*

Taking your quotation of the Constitution as correct, there cannot be any doubt whatever to any man with a mind and who understands the English language, as to the meaning and the intention of said clause. There is only one meaning to this which is self-evident—"Mechanics, material men, artisans and laborers of every class, shall have a lien upon which they have bestowed labor or furnished material for the value of such labor done or material furnished."

There is a moral to all this, and that is, the utter futility of putting the interpretation of Fundamental Law into the hands of men brought up to the practice of law. Six honest unprejudiced men picked up at hazard with a knowledge of the meaning of words, are more to be trusted, experience shows than the greatest jurists, whose education has been the twisting of language from its legitimate meaning.

It would be well in the matter of statute law, to have all bills introduced in the legislature passed upon at once by the Supreme Court, or other more reliable authority—before they became law; this will eliminate all that uncertainty which now prevails as to judicial decisions, continuing until the matter in dispute has gone through all the expensive process of proceedure in the lower courts and final appeal to the Supreme Court—a needless waste of both time and money.

If the proposed amendment to the Constitution passes, allowing an interval between the introduction of bills in the legislature and their consideration, that interval could be used by the Supreme Court or other more reliable authority in finding out and reporting whether these bill are constitutional or not; so that no more time might be wasted on those which are declared unconstitutional.

STROLLER.

ASBESTOS CEMENT FOR FIRE-PROOFING.

AMONGST the various products for fire-proofing, the Asbestos Cement Kuhlewein, invented by Engineer A. Kuhlewein in Berlin, has attracted great attention. This asbestos cement has a fine color (about that of slate), is absolutely fire-proof and smoke-proof, and remains unchanged when exposed to heat or cold, as well as when exposed to any atmospheric conditions and changes, including that of temperature. The cement is capable of being nailed, planed, sawed or cut. It is of very light weight. It also deadens the sound, which latter capacity is by no means unimportant. It can be polished, painted or papered. The highest ministerial building and fire departments have examined and tried this product, and have recommended the use of the same.

At the great official fire trials which took place at Berlin on 9th and 11th February, 1895, where the asbestos cement doors were exposed to the hightest temperature then established of 1200 to 1300 degrees C, and withstood the same, from both sides, without showing any change in shape or material, the asbestos cement Kuhlewein was accorded the diploma on account of its excellence.

Further trials were made in the year 1895 with this cement at Altona, in the yard of the fire department. For this purpose a small house had been built with it in the shape of walls, ceilings, floors, doors, columns, and also as protecting-covers of supports. The trial was extended six hours. All the different parts withstood the heat perfectly, the building was entirely sound and not damaged after the fire.

In Hamburg the same was tried in the gas house by the city authorities on the 30th of September and 18th of October. For these trials shells of asbestos cement about 4 centimeters thick were furnished, which can be put around columns and taken off again; the temperature was 1300 to 1400 degrees D. These shells protected the pillars 4 hours and 35 minutes.

This cement is used for various building purposes, and being absolutely fire and smoke-proof, as well as indifferent to the highest and lowest temperatures, also having the capacity of deadening the sound, being impervious to the influence of weather, its light weight and its adaptability to all kinds of building constructions, renders it one of the most valuable building materials.

Coverings in th ckness of 1½ centimeters, and for walls or doors, etc., of 2 to 3½ centimeters, render the same fire-proof, even in case of prolonged fire. It is to be remembered that a fire-proof material should not only not burn, but it must not be injured by either fire or smoke, nor lose its strength. Asbestos Cement Kuhlewein, is acknowledged the most perfect protection against fire in the form of coverings of iron constructions, as pillars and supports, for fire-proof doors, inferior walls, ceilings, fire-walls, stair-case coverings, cases and safes for documents, money, etc. Further, a protection against heat and cold, and all heating apparatus and hot-air conduits. Also a protection against noise, as for instance in buildings where gas motors are working. How indifferent and protecting against heat and cold was proved in Berlin in the former Gambrinus (now Rudesheimer) cellars, where the hot air conduist pass through the ice cellars without decreasing the heat in the hot-air conduits, nor affecting the ice in the cellars in the least degree.

The deadening of sound was proved by the covering of the motors and covering of the cellar walls and ceiling in the National Hotel, Berlin. The success was perfect, since the noise from the cellar could not be heard in the other parts of the hotel after this was done.

For the shipbuilding industry, the covering of all walls and ceilings would render it impossible that the wood fixings could be affected by fire rising on shipboard.

Doors made of Asbestos Cement Kuhlewein are far preferable to iron doors, in so far as they are fire and smoke-proof, and they do not become hot, and thus the men of the fire department can, at all times, closely approach the same. Furthermore these doors can be more easily demolished in case of necessity to get at the location of the fire. These doors have found their introduction in many of the barracks, manufacturies, mills, warehouses, stables, and they are made in the most simple and most elegant shapes, so that the same can readily be used in dwellings, theatres, museums, etc., etc.

It is brought to commerce in slabs, or other shapes, in thickness of 1½ centimeters and upwards, on zinc wire netting, but also more extensively in the shape of cement powder. In the latter case it is worked as a paste, like all lime, cement and gypsum, upon the zinc wire netting, and can thus be worked by any laborer.

In order to prove the absolute fire-proofness of asbestos cement, the following trial with a safe was made at Aix La Chapelle. The filling of this safe consisted of asbestos cement only. The trial took place on the 15th of April, 1893, in the large furnaces of a local firm, and a number of engineers and experts were present. The safe was filled in the presence of these gentlemen. With papers and printed matter, such as we were handed over by some of the gentlemen present. The safe was closed and put into the furnace.

The heat in the furnace was so great that the safe had reached whiteheat after fifteen minutes. After another fifteen minutes the iron of the safe commenced to burn, emitting sprays of sparks. Then the safe was taken from the furnace, was immediately fastened to a crane and elevated as high as the crane would permit, and then dropped. The temperature of the hot safe was then decreased by applying cold water, and the safe was then opened. The door worked as easily as prior to this trial, and to the greatest astonishment of all the witnesses present the contents were well preserved and undamaged. The experts were unanimous in the opinion that the result of this test, carried to an extreme, was an excellent one and nobody of those present had believed prior to the opening of the safe that of the contents there would be anything found but ashes. The experts signed every one of the papers contained in the safe with their names and the safe itself was stamped with the stamp of the Steam Boiler Revision Association of Aix La Chapelle. The heat required for rendering wrought iron malleable is 1300 to 1400 degrees C; the burning of wrought iron takes place at 1500 to 1600 degrees C. These are, therefore, temperatures to which heretofore safes have not been exposed at any trials, nor at any conflagrations.

The Institute for Testing of Building Materials at Charlottenburg, certify that samples of this asbestos cement of an age of 28 days were exposed to a water pressure of 2 to 2½ atmospheres during three days, and no water percolated the slabs.

The chief of the fire department of Bremen, Germany, Mr. Ditmann, certified under date of September 18th, 1897, that of all materials known at the present time which served as

protection against the effects of fire, or for the fire-proof covering of iron or steel, the Asbestos Cement Kuhlewein is the best, and by far the most effective.

PROPOSED NEW CONSTITUTION FOR THE A. I. A.

THE following draft of a Revised Constitution has been unanimously adopted and recommended as a substitute for the present Constitution by the committee appointed by the President by virtue of a vote passed at the Thirty-first Annual Convention, at Detroit, September 30, 1897, and is now to be submitted for letter-ballot. The amendments to the by-laws will be brought before the convention to be held in Washington, November 1, 2, 3, 1898, for action, an outline of which, prepared by the committee is appended hereto.

ALFRED STONE, *Secretary*.

CONSTITUTION.

ARTICLE I. — NAME.

The corporate name of this Organization shall be, "The American Institute of Architects."

ARTICLE II.—OBJECTS.

SECTION 1. The objects of this Institute are: To organize and unite in fellowship the architects of the United States of America, and to combine their efforts so as to promote the artistic, scientific and practical efficiency of the profession.

ARTICLE III.—MEMBERSHIP.

SECTION 1. The membership of the Institute shall consist of Fellows, Associates, Corresponding and Honorary members.

SEC. 2. The condition of membership shall be honorable service in the field of one of the above classes of membership, as defined in the By-Laws.

SEC. 3. The title of Fellow shall be granted for professional merit only.

ARTICLE IV.—OFFICERS.

The Officers of the Institute shall be a President, First and Second Vice-Presidents, and a Secretary, who shall also be Treasurer; all of whome shall be Fellows. There shall be a Board of Directors consisting of the four above-named officers, *ex officio*, and such additional Fellows as shall be prescribed by the By-Laws.

ARTICLE V.—ORGANIZATION.

This Institute is an association maintaining local organizations of its members known as Chapters, incorporated under the laws of the several States wherein they are established.

ARTICLE VI.—CHAPTERS.

The President and Secretary of each Chapter shall be fellows or Associates of the Institute.

Each Chapter shall hold an annual meeting and present an annual report to the Institute.

ARTICLE VII.—GOVERNMENT.

SECTION 1. The Government of the Institute shall be by Delegates from the Chapters in convention assembled, its Officers and Board of Directors.

SEC. 2. The Board of Directors may by a formal vote delegate its powers in whole or in part to an Executive Committee chosen from its membership, stating the powers granted and a limit of time for their exercise.

SEC. 3. The Board of Directors shall annually elect a Judiciary Committee from its own membership and establish rules for its guidance. This Committee shall hear and adjudge all complaints of members against members, and its findings shall be conclusive upon all questions of fact involved in the evidence submitted. Appeal in writing may be made to the Board of Directors upon questions of professional or ethical policy. If satisfied of the existance of newly discovered evidence material to the issue, the Board may, in its discretion recommit the case to the Committee for a rehearing upon the facts; but, save as to the existence of newly discovered evidence, the Board shall have no evidence except such as may be reported to it by the Committee.

ARTICLE VIII.—MEETINGS.

The Institute shall hold an Annual Convention and such other meetings as are provided for in the By-Laws.

ARTICLE IX.—DEFINITION.

The term "State" throughout this Constitution and the By-Laws shall also apply to the District of Columbia and Territories.

ARTICLE X.—AMENDMENTS.

This Constitution may be added to, altered, or amended, on the written proposition of ten or more Fellows by a three-fourths vote of the delegates voting at an Annual Convention; probided three months previous notice of the proposed change shall have been sent by the Secretary to each member of the Institute and to the Secretaries of the several Chapters.

LESSON FROM FIRE AND PANIC.

ORE important than these details of construction is the question of arrangement of buildings with the view of preventing loss of life from fire. Warned by frequent disasters, the legislature has from time to time made provision for protecting persons from sudden fire and panic, and for insuring to the inmates of certain buildings reasonable means of escape.

Examination of this kind must be thorough, for it is difficult to exhaust the possibility of mischief caused by careless workmen in old or in modern times. I have found in an old house the brickwork of a chimney breast cut away to enlarge a cupboard, a thin board being substituted, which had vidently done duty for years in that position.

And with regard to any building, the architect cannot be too cautious against assuming that reasonable care will be taken in managing it. Most houses are at times, often for a very long time, left in the hands of people without sense of responsibility. That is an additional reason for making every structural provision against the chance of a fire. The fate of Cowdray House, in Sussex, though the story is a hundred years old, contains nothing that might not now be paralleled.

The mansion, which was one of the grandest in the country, was being repaired and decorated in preparation for the owner's wedding, and it was left in the hands of caretakers and workmen. All the more valuable of its contents were temporarily stored in a gallery, and a room close to this place was selected for the carpenter's shop, the fires being closely surrounded with shavings. During the night on which all was finished, fire was observed in the workshop.

The neighbors assembled. The moat was full of water,

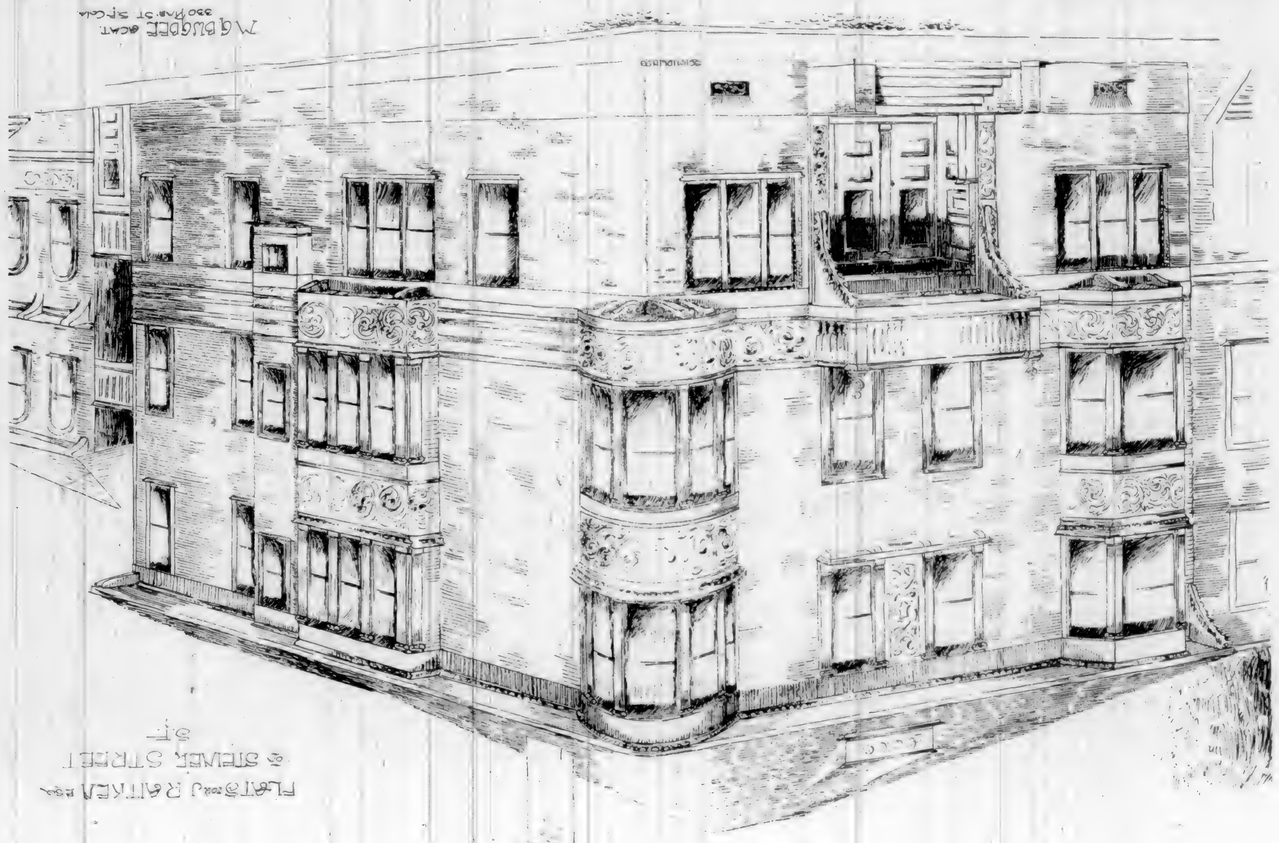
CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

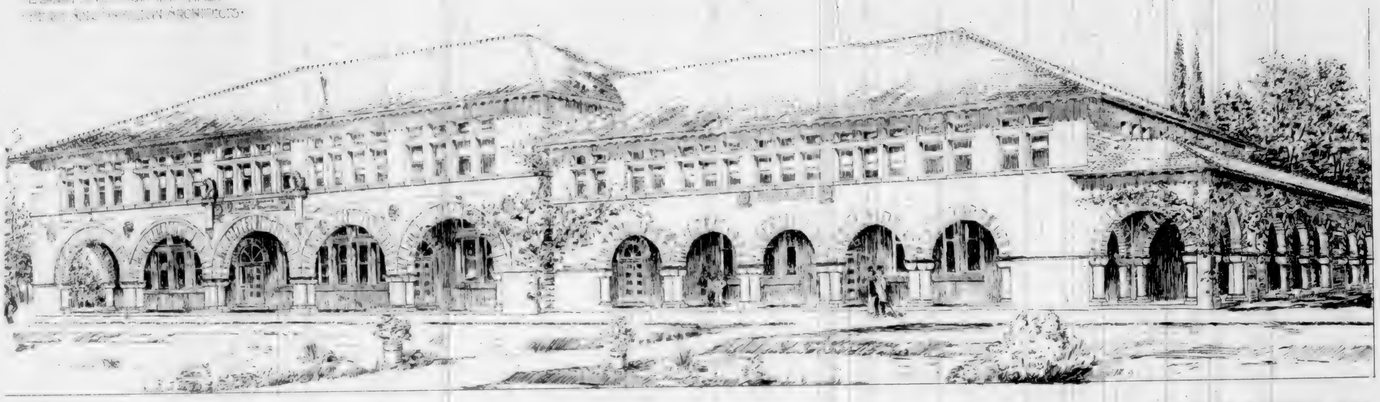
BRITTON & REY, PHOTO LITH.

VOL. XIX № 10 OCTOBER 1898

MAGUIRE & KAHN
ARCHITECTS
350 MARKET STREET

FLATS ON PARK AVENUE
& STEINER STREET
SF





CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

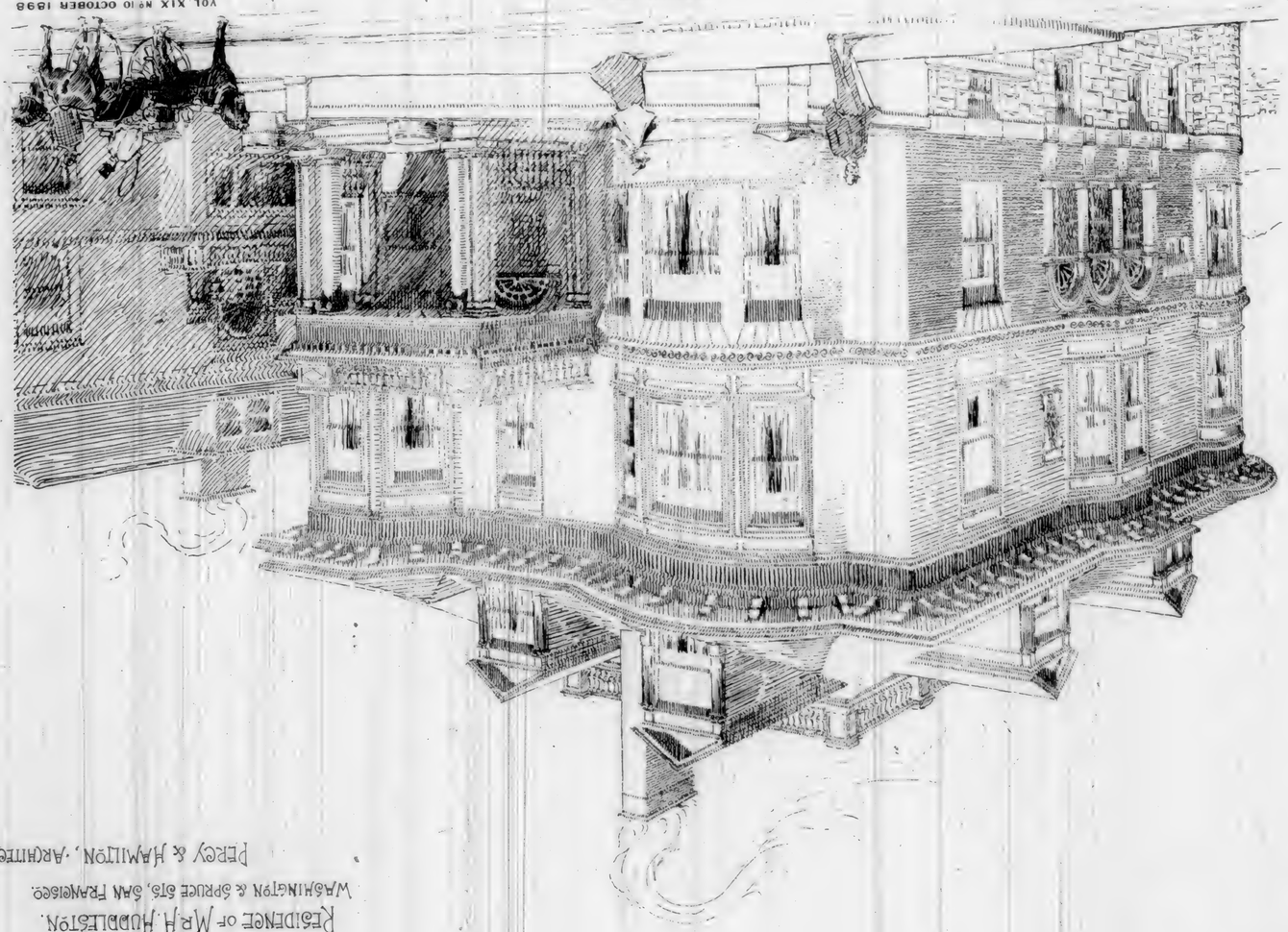
BRITTON & REY, PHOTO LITH.

RESIDENCE FOR A. NEWELL, ESQ.
EAST OAKLAND, CAL.
HAVENS & TOEPKE, ARCHITECTS.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

VOL XIX Nº 10 OCTOBER 1898

BRITTON & REY, PHOTO LITH.



RESIDENCE OF MR. H. HUDDLESTON.
WASHINGTON & SPRUCE STS., SAN FRANCISCO.
PERCY & HAMILTON, ARCHITECTS.

but nobody could find the key of the engine-house. The destruction was practically complete.

The London Building Act, 1894, provides, by Section 61, that every building over 30 feet in height used wholly or in part as a dwelling house or factory, *and having a parapet*, shall have a dormer window or door opening on to the roof, or a trap door with a fixed or hinged stepladder leading to the roof, or with other proper means of escape. If there happens to be no parapet there is no such provision. I venture to think that it would only be ordinary prudence to make this provision in any house or factory where there is reasonable doubt as to the means of escape by the ordinary route. Section 62 partially meets this view by requiring that any storey in the roof, the floor of which is over 60 feet above the street, shall be constructed of fire-resisting materials; and Section 63 provides that every building over 60 feet high shall have on the storeys, where the floors are over 60 feet above the street, "such means of escape in the case of fire for the persons dwelling or employed therein as can be reasonably required in the circumstances of each case." No such storeys can be occupied until the London County Council certifies that this has been done. This is new legislation, and it has now become a very important part of the duty of the Council to say what can be reasonably required in such cases.

The height of 60 feet is fixed because that is the greatest height to which a movable fire-escape will reach, and without some special provision the only means of escape from these high stories would be by descending, if that were possible, to the lower stories, and increasing the number of persons there in peril. Schemes to be applied to lofty hotels and houses more or less crowded at night have come before me in great variety, many of these very inadequate. It seems clear that the law, which leaves the occupiers of floors up to 60 feet in height to take their chance, intends that those on higher floors shall escape. They may have a gallery or an iron ladder or staircase for access to the roof of an adjoining building, or a series of ladders may be contrived that will conduct them clear of the windows of the burning building down to the ground. But 60 feet is a great height from which to expect women, children and sick persons, scantily dressed, suddenly alarmed in the night, and for the first time in their lives, to descend by an external ladder, in any weather, and probably in the dark. We may realize the condition in which people escape, from the account of a fire that happened at the Scottish mansion of the Duke of Argyll, in which praise was given to the Princess Louise for her presence of mind in running back from the garden to get stockings for the rest of the household who had rushed out barefooted. For people in that condition steep ladders with ordinary rounds are useless. They must be of tolerably good slope, have flat treads and hand rails and there must be suitable protection where necessary against falling into areas or through skylights. The escape door must have such fastenings only as can be easily opened from within. It must be easily found by night, and the bottom of the escape must be in some open space quite clear of danger. But whether the escape delivers to the ground or on to some willing neighbor's roof, there is risk that it will be made use of by burglars and by inmates of both premises for improper purposes.

If a separate staircase leading down to a separate door of exit is provided in the building, it will very likely be allowed to go out of use, and will be turned into a store place for lumber. On the other hand, if the construction of dwelling rooms above the 60 feet limit is of very great consequence, the owner may reasonably be required to make and keep up such arrangements, however costly, as will be really efficient.

By the 74th Section of the London Building Act, when a building over 1,000 feet in area is used in part for purpose of trade and manufacture and in part as a dwelling house, the two parts must be separated by walls and floors of fire-resisting materials, and all means of approach to the dwelling house portion must be constructed throughout of fire-resisting material. But the walls of staircases and passages may have openings fitted with fire-resisting doors to communicate between the two portions, for which purpose hard wood two inches thick is reckoned fire-resisting. For staircases hard wood two inches thick is also permitted, and good concrete when filled in between the joists of floors is fire-resisting.

It will be observed that the term "fire-resisting" is used and not "fire-proof." The construction must not add fuel to the fire, but resist it for at least a considerable time, during which the inmates of a building may escape and fire appliances be brought to bear. If the contents of the room or even of the building cannot be saved, so much the worse for the owner or the insurance company; but the fire should rarely extend to the adjoining apartment on either side or to a storey above or below, and the smoke should be kept from staircases and passages. This means giving to adjoining sections of a house as nearly as practicable the same protection against each other as a good party-wall affords to the inhabitants by an adjoining house.

To be continued.

BOOKS AND PERIODICALS.

BUILDING CONSTRUCTION AND SUPERINTENDENCE by F. E. Kidder, Fellow A. I. A., is a work highly esteemed by architects and invaluable to the builder. Part II devoted to Carpenter work has just been issued and is fully equal in practical value to Part I which treated of masonry and its details. Numerous engravings adorn the work.

The complete novel in the November issue of LIPPINCOTT'S, "A Triple Entanglement," by Mrs. Burton Harrison, has its scenes mainly in Spain and England. The hero is an American, whose course of true love does not by any means run smooth, but leads him into a safe harbor at last. The tale is one of this favorite author's best, and perhaps the longest which has ever appeared in LIPPINCOTT'S the rest of the short stories are more than interesting.

STOCKHOLDERS' MEETING.

AT a meeting of the Stockholders of the Western Expaned Metal Fireproofing Company held at their offices in the Claus Spreckels Building, October 6, 1898. The following officers and directors were re-elected for the ensuing year:—D. E. Garrison, Jr., President; Chas. F. Runyon, Vice-president; S. W. Backus, Secretary; Nathan L. Bell, Manager; Chas. F. Kinsman.

PURE WATER IN CITIES.

WATER from wells dug within the limits of a city is always to be looked upon with suspicion, even when its smell is sweet and its taste good.

Those who have had experience in such matters can vouch for the fact that such dug wells may become the receptacles of all sorts of foreign bodies, while neither the taste nor the smell of the water, may be affected. Binghamton, N. Y., has recently furnished a case in point. One of its citizens had a dug well of some fifty feet deep, the purity of whose water was noised abroad all over the neighborhood. Being of a liberal disposition, he allowed all who had a mind so to do to supply themselves freely. They readily availed themselves of his offer during the past summer, when the city water had a pretty nasty taste—though, as the small amount of sickness in Binghamton during the hot months proved, it was by no means unwholesome. It fell upon a day—and a very recent day at that—however, that a sportive kitten toppled over into the well and was drowned, whereupon i was determined to draw out all the water and clean the well thoroughly. There had been no cleaning for years, and the kitten's death was seized upon as a good excuse for having one. The water was accordingly drawn off and a man sent down to scrape the bottom of the well. In the first bucketful he sent up were discovered the remains of three toads, a dead cat, and the sleeves of an old shirt in which had been tied up and consigned to a watery grave, no less than six small kittens! In the next bucket which was hauled up, was a peck of earth worms such as are called "nightwalkers" by fishermen. They were all dead! This was the last straw. The owner of the well, convinced that his well (as is commonly the case in cities) has been used as a dumping place for dead animals, refused to try any further experiments in the cleaning line, and instead, had his much-vaunted well filled up and rendered useless for the future. He now drinks the city water which he onbe so contemptuously despised.—*Fire and Water.*

THE YOUNG BUILDING—MARKET AND SPEAR STREETS.
KENITZER & BARTH, ARCHITECTS.

FLOOR TESTS AT THE YOUNG BUILDING.

A DISTINGUISHING feature of the architectural profession of the Pacific Coast is its prompt recognition and generous encouragement of local enterprises when established on a basis that entitles it to confidence. This is especially true at the present time when the remarkable advancement in the methods of building construction creates a demand for new devices whereby the maximum of efficiency and strength is attained and valuable space economised.

The Western Expanded Metal and Fireproofing Company affords a conspicuous instance of the alacrity with which our architects adopt new and meritorious ideas and the immense demand which has followed the introduction of the productions of the company indicate, more than words can describe, the confidence entertained by builders in their adaptability to structures of every class.

The five-story, steel frame, brick and stone building situated on the corner of Market and Spear streets, and owned by Wm. W. Young, Esq., is one of the latest of considerable magnitude that is fireproofed throughout with expanded metal floors and laths and offered a first class opportunity for a scientific and convincing test of the real merits of the inventions. The test was made on Monday, October 5th, in the presence of several architects of eminence, a number of first-class builders, the owner and many interested spectators, under the supervision of all the officers of the company.

The test was as follows:

San Francisco, Cal., Oct. 25, 1898.

Office of Kenitzer & Barth,
601 California St.

Description of test of an arch constructed by the Western Expanded Metal & Fire Proofing Company in building S. W. cor. Market and Spear streets.

Span of arch 16ft. from centre of bearing. Steel straps 3/8"x5" placed 4 ft. on centers. Thickness of concrete 4 inches with No. 16 expanded metal 2½" mesh at bottom of arch. The concrete for arch is made of the following proportions: 5 parts of cinders, two parts of sand and one part of Josson Portland Cement.

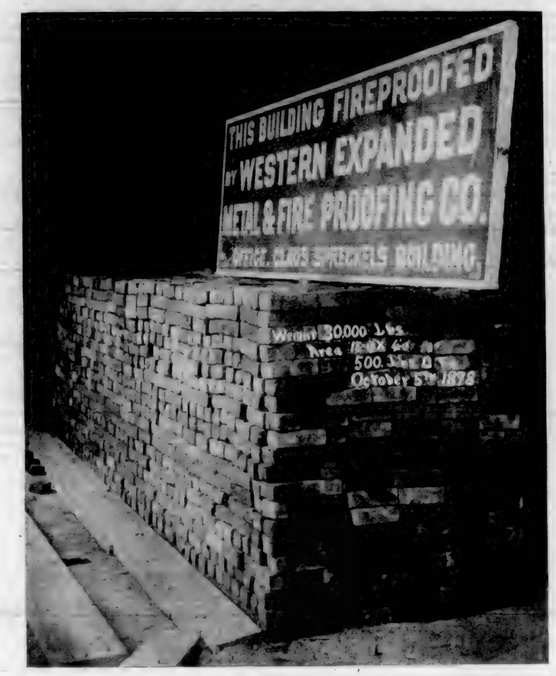
A uniform load of 500 lbs. per square foot was applied over an area extending from center to center of straps and between flanges of the supporting beams—equal to an area of 60 square feet and a uniformly distributed load of 30,000 lbs. The supporting beams were previously propped up so as to guard against their deflection.

The loading was effected by means of bricks, each brick weighing 6.2 lbs. With a load of 200 lbs. per square foot uniformly distributed, the deflection of arch at the center registered ⅛ of an inch, with 287 lbs., nearly ¼ of an inch, with 350 lbs. it deflected 5-16 of an inch, with 450 lbs., 7-16 of an inch.

The loading was then discontinued and allowed to remain on over night. On examination the following morning, it was found that the deflection had not increased. Loading was then resumed until 500 lbs. per square foot was reached, the total deflection then registered ½ of an inch. The load remained on for two hours with no increase in deflection.

On removing the load in the same manner as it had been deposited, the deflection diminished exactly corresponding to the deflection as it had been caused by loading the arch and at the time all the load was removed, the arch had straightened to its original position. It remains to be stated, that the concrete of which said arch is composed, was only six weeks old at the time of testing.

Respectfully, KENITZER & BARTH.



It is but fair to admit that all the gentlemen present were amazed at the solidity and elasticity shown by the floor under the exacting conditions.

It is not surprising therefore that the company reports so rapid an expansion of its prosperous business and that it is being intrusted, in a constantly increasing degree with the interior construction of most of our largest buildings. The great ferry building is a monument of the excellence of its methods which were adopted by the State Harbor Commissioners after the most searching investigation and the new San Francisco Hall of Justice, when completed, will be another instance. Neither is the list of great buildings the company has undertaken complete, that does not include many in Los Angeles, Pasadena—notably the Green Hotel Annex, and others of the larger cities of the State.

Not only for economy in weight of material is the expanded metal and fireproofing distinguished but for a sensible amount of remarkable space saved by their use.

Moreover, it should not be forgotten, the Western Expanded Metal and Fireproofing Company is a local industry, owned, controlled and managed by San Francisco men. The factory is at Third and Townsend streets and interested parties are invited to call and inspect it.

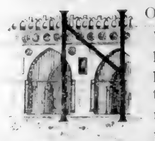
In the advancing prosperity of San Francisco, the company will be a large factor in the new era of scientific reconstruction which is about to dawn.

KEELY MOTOR UP-TO-DATE.

PROCEEDINGS OF ENGINEERS' CLUB OF PHILADELPHIA

BY E. J. SCOTT, ACTIVE MEMBER.

[CONTINUED FROM LAST NUMBER]



OW, as to the electrical features of the vibrodyne. Assuming that the compressed air flowing through the tube performed the office only of a starter, that it produced the conditions in the machine necessary to allow a more potent force to act, what force was applied by its action? The construction of the machine points directly to electricity acting through magnetism. If Professor Lascelles-Scott took the apparatus apart, he must have discovered the mode of its operation. The unnecessarily heavy parts of the machine afforded every opportunity for the concealment of the small wires necessary for the power developed, or the bolts which run down through the floor to hold down the iron foundation could have served as conductors. It was an easy matter to bring a current to electro-magnets concealed in the mine inteaior disks, and no great amount of ingenuity would be required to construct a switch, operated upon both by the compressed air and magnetism, which would cut the magnet into or out of circuit at the proper time to attract the armature on the end of each revolving spoke. Had there been nine spokes as well as nine opposing disks, the wheel would have got on a dead center, and could not always have been started; but with only eight spokes there were always some in a position to receive a magnetic pull before the magnets were cut out of circuit by the opposing disks being exactly opposite each other. The evidence of design here is sufficiently strong to warrant the conclusion that the wheel is operated by electro-magnets. Apergy would not have required this arrangement.

Keely said to the writer that the hub of the wheel was loose on the axle, and that when running at a high rate o speed he could knock out the axle and the wheel would continue to turn in space. Such an exhibition would have been interesting, and would have convinced the writer that the force was not magnetism, which was the chief object of the exhibition, but he did not do it, nor did he offer to do many other things which he spoke of as being easy, and which would have astonished the investigators.

It was decided on the occasion of the second visit by both of the investigators, that magnetism had nothing to do with the jar experiment, as the motion of the bodies was uniform, which it would not have been if actuated by a magnet. The theory of a tube made every thing plain, and Mr. Burk has had constructed a jar which he used in explaining the phenomenon before the Spring Garden Institute last winter, using an air pump for the transmitter.

Within half an hour after the close of the last visit, Mrs. Moore called on the writer at his residence to learn of him his conclusions. He explained to her fully the use of the platinum tube, and advised her to have the experiment repeated and convince herself of the fact by taking a pair of pincers and pressing the sides of the tube together, when the revolving wheel would stop; or to cut for herself a section from the middle of the supposed wire while the machine was in action and examine it. She consented to have the experiment repeated in her presence and permit the writer to make the cut, but he told her she could never persuade Keely to repeat the experiment for such a purpose. She was more than half convinced, but afterwards saw the Professor and asked him to see the writer on this subject.

The English scientist came the same evening, and for four hours the events of the day were discussed. He gave an account of his investigations in vibratory physics, and particularly in reference to the simultaneous explosions of two or more powder mills situated at considerable distances apart, the result of vibration; and considered the phenomenon analogous to some of Keely's experiments. Criticisms by the writer on Keely's work, and inquiries as to the discoveries the Professor had made, led up to the Professor's part in the preparation of the second jar, the one used in the experiments of that day. He told of his care in procuring the distilled water, and in obtaining the exact weight of the globe and disk which were placed in the jar. When asked if he personally placed the weights in the jar or saw them placed there, and saw the jar sealed, he admitted that he did not, but that Keely did this himself. He was asked, "Do I understand that you, a professional expert in physics, would trust to the man you are investigating to do these things, and then have the conscience to make a report to your employer of the result of such an investigation?" He mildly admitted that it would have been better to be present.

Likewise when the platinum tube was mentioned, he stoutly denied that it was a tube, saying that he had several samples of the platinum wire and knew it to be solid. He had taken samples of almost everything he had investigated. When asked where he got his samples and whether he had cut them from wires he had seen used in the experiments, he said he had taken them from a reel of the wire.

The Professor agreed with the writer that the best way to prove or disprove the use of the Tube would be to have the experiments repeated and allow the writer to show the character of the wire employed. The writer told the Professor that Keely would never make such an exhibition under those conditions. The Professor visited Keely the next day, Sunday, and on the following day informed Mrs. Moore that Keely had declined point blank to repeat the experiments, "just as I was told he would do," he added. He suggested to her the absolute necessity of Keely doing this in his own best interest. Keely could not, however, be induced to do so. The Professor left the city at once, and under the circumstances, as he explained, thought it best not to appear a second time before the Franklin Institute.

The explanation here given is not, of course, a complete explanation of all that is to be seen in Keely's laboratory. Indeed it would take more than four visits to look over, which is all that was permitted, the apparatus which was accumulated in a quarter of a century. It is enough, however, to show that nothing was shown in motion which required a force to move it which is not already known. The manner of the use of such forces, as used in these experiments, would probably, in the minds of most people, throw a doubt upon the probability of Keely's knowledge of any more mysterious force.

THE END.

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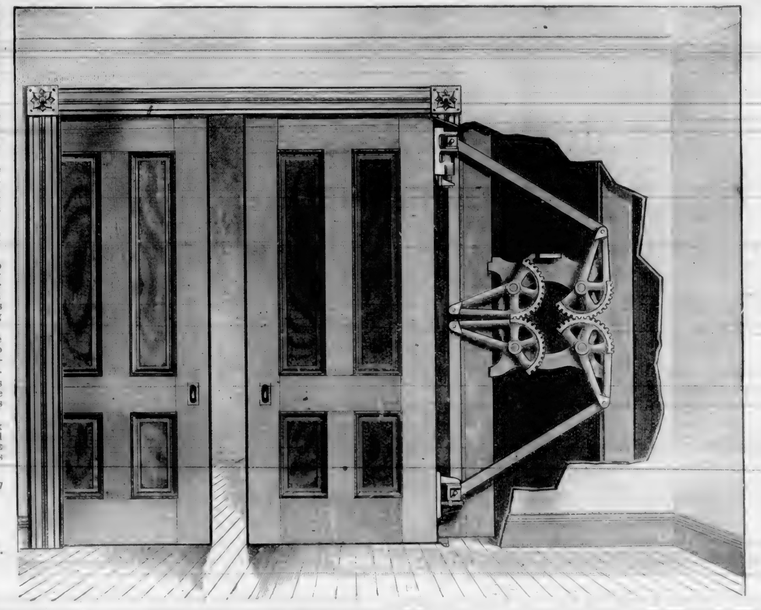

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	Box No.
Abrahamson, P.; patent ventilators	123
Adams, John G.; contractor and builder	270
Alameda Brick & Tile Co.; brick	170
Arizona Sandstone Co.; building stone	320
Bass-Huter Paint Co.; paints, oils and varnishes	136
Bateman Bros.; contractors and builders	230
Beck, Adam; mason and builder	11
Bell, Wm.; contractor and builder	75
Bibb Lumber Co., D. H.	
Bellingham Bay Imp. Co; lumber	211
Boyd, Robert; mason and builder	77
Brady, M. V.; mason and builder	34
Brady, O. E.; mason and builder	360
Brennen, D. J.; mason and builder	51
Brennan James; plasterers	159
Britt, James E.; plumber	36
Brode, R.; iron works	205
Burden, W.; mason and builder	300
Burnham, Stanford Co.; planing mill	28
Burrell, E. H.; building material	146
Burt, W. J.; house mover	206
Butler, Wm. A.; mason and builder	256
California Art Glass Works	63
California Electrical Works	223
California Mills; planing mills	300
Campbell, Alex L; contractor and builder	105
Carey, J. E.; brick manufacturer	262
Bignami and Masow	133
Cartwright, D. S.; teaming	10
Central Lumber & Mill Co.; lumber and planing mill	345
Chatham, Wm.; contractor and builder	62
Chemical Paint Co	317
Chisholm, C.; contractor and builder	44
Clark, S. & Sons; terra cotta, etc	230
Clawson, L. E., & Co.; patent chimneys	66
Coghlan, Frank; plasterer	91
Collin & Grant; lathers	114
Concannon Wm., contractor and builder	24
Conlin & Roberts; metal roofers	90
Coppieters & Mockel; grill work	6
Cowell, H. & Co.; lime, cement, fire brick, etc	7
Crichton, Peter; contractor and builder	320
Crocker, Wm.; planing mill	12
Cronan, Wm.; Eagle Sheet Metal Works	313
Currie Donald; contractor and builder	57
Currie, Robert; contractor and builder	143
Cushing-Wetmore Co.; concrete and artificial stone	218
Curry, J. M.; stone dealer	35
Daniels, Gus. V.; painter and decorator	85
Davies, E.; plasterer	42
Davis, Geo. & Son; house movers	260
Day, Thos. H., & Sons; contractors and builders	131
Degan, Patrick; stone contractor	306
Dillon, David; teamster and contractor	139
Donovan, M. J.; painter	121
Dunbar, Wm.; mason and builder	364
Dunham, Carrigan & Hayden Co.; hardware	4
Dunlop, Chas.; plasterer	60
Dwyer, L. J.; painter and decorator	197
Dyer Bros.; Golden West Iron Works	64
Elam, & Knowles, carpenters and builders	292
Excelsior Mill Co	72
Feely, M. J.; contractor and builder	180
Fennell, M. & Son; masons and builders	58
Field, Wm. J.; contractor and builder	80
Field, Z. O	128
Flanagan, L. G.; lime and cement	53
Foley, Michael; grading and teaming	254
Forderer Cornice Works; patent sky lights, roofing, etc	164
Fortin Brick Co	98
Frazer, J. P.; painter and decorator	50
Fuller, W. P. & Co.; paints, oils and glass	333
Furness, John; contractor and builder	162
Geier, Frank A.; Market Street Planing Mills	252
Giletti, Secondo; artificial stone	308
Gillogley, Geo.; teaming	224
Girvin & Eyre; Importers	
Gladding, McBean & Co.; architectural terra cotta	162
Golden West Iron Works, Dyer Bros	64
Goodman, Geo.; artificial stone, etc	334
Grannis, J. G. & Co.; steam heating, etc	331
Gray Bros.; artificial stone and concrete work	86
Griese, Carl; artificial stone and concrete work	231
Hammond, Phillip; metal roofer	43
Hanson, A.; planing mill	3
Hansen, F. L.; contractor and builder	108
Hansen, M. & Co.; planing mill	187
Harmon Lumber Co.; lumber	314
Harris & Jones, Lumber Dealers	
Haustein, H.; tiles	82
Heidt, W.; cornice works	204
Henzel, Ed. F. & Co.; electricians	375
Herring, R.; mill work	70
Hille, Wm.; cornice works	210
Hindes, Ed. B., & Co.; patent blinds	174
Hobson, B. Y.; painter	25
Hock, T. & Son; masons and builders	282
Hoffman, V.; mason and builder	9
Holmes, H. T., Lime Co.; lime, cement, etc	268
Hooper, C. A., & Co.; lumber	341
Huber, Frank; sash, blinds and doors	342
Hurlbut, R. P.; builder	77
Ickelheimer, Samuel & Bro.; plumbers	358
Ingerson & Gore; contractors and builders	37
Jacks, Henry; contractor and builder	267
Jackson, P. H. & Co.; illuminating tiles	27
Jackson, W. E.; curbing	304
Jesse, Geo. R.; stair builder	102
Jordan D., & Son; masons and builders	57
Joshua Hendy Machine Works	188
Judson Mfg. Co	363
Keating, M. Artificial Stone	127
Kendall, A.; Artificial Stone	13
Kelleher, M.; house raiser and mover	23
Kendall, A.; Pacific Coast Lumber and Mill Co	52
Keefe, J. H.; painter and decorator	100
Kent, S. H.; contractor and builder	190
Kern, F. W.; contractor and builder	225
Kittredge, E. H. & Co.; sash, doors and blinds	204
Knox & Cook; contractors and builders	244
Koss, P. N.; painter, decorator and wood finisher	307
Lang, Geo, R.; contractor and builder	214
Larsen, H. H.; mason and builder	33
Leahy, D.; plasterer	344
Leonard, J., Concrete and Artificial Stone	306
Leprohon, P.; steam and hot water heating	239
Logan, J. F.; adjuster and builder	24
Lovett, A. E.; roof repairing and painting	258
Lucas & Co.; Golded Gate Plaster Mills, calcined plaster	31
Lynch, M. C.; contractor and builder	274
Macdonald & McKinnon; lumber	348
Maguire, A. R.; lime, laths, plaster, cement, etc	263
Maguire, James A.; manufacturer's agent	120
Mangiesdorf, M.; Electrical Maintenance Co	350
Mangrum & Otter; heating, ventilating, tiles, etc	294
Market Street Planing Mill	252
McCarthy, John; mason and builder	168
McClure, H. N.; teaming and grading	109
McElroy, A.; contractor and builder	211
McGilvray Stone Co.; stone contractor	340
McGowan, M.; mason and builder	17
McKee, John; stair builder	202
McLachlan, T. M.; contractor and builder	92
McMahon, Henry; stair builder	113
McPhee & Co.; stone contractors	256
Mennie, Alex., plasterer	84
Miller, J. W.; mason and builder	208
Mitchell, R.; mason and builder	74
Montagie & Co., W. W.; tiles, mantles, etc	237
Moore, C. Parker; contractor and builder	80
Moore, G. Howard; contractor and builder	358
Morehouse, C. C.; plasterer	301
Morehouse, J. J.; plasterer	97
Mulcahy, J.; mason and builder	55
Niehaus, Edward F. & Co.; hardwood lumber	295
Niehaus Bros. & Co.; planing mill	20
North; J. J., Brick manufacturer	98
Nutting, C;	40
O'Brien, Jas. J.; carpenter and builder	107
O'Brien, P. R. & Son; plumbers	65
O'Connor, Thomas, mason and builder	47
Ogie, John; contractor and builder	215
O'Sullivan, D.; mason contractor	277
Pacific Bridge Co	40
Pacific Refining & Roofing Co	346
Pacific Lumber Co	345
Pacific Manufacturing Co., Mill Work	
Pacific Rolling Mills	192
Pachtz, Gus. J.; electrician, etc	81
Palace Hardware Co.; builders' hardware	292
Paraffine Paint Co.; roofers, building paper	144
Patent Brick Co.; brick	172
Pencock & Butcher; masons and builders	122
Petersen Brick Co.; original red pressed brick	68
Petersen, H. M. & Co.; concrete	245
Pingst, F. L., hardwood	76
Please, Henry; mason and builder	209
Pool, Jas. R.; house mover and raiser	217
Rae, James; stone contractor	56
Ralston Iron Works	175
Raymond Granite Co.; contractors for stone work	155
Reichley Geo.; contractor and builder	109
Reigle & Jamieson; machine white washing	240
Remillard Brick Co.; pressed, stock and common brick	278
Richardson & Gale; masons and builders	358
Richmuller, Geo.; door opener	355
Riley John F.; masons and builders	329
Ringrose, R.; mason and builder	18
Robinson & Gillespie; contractors and builders	111
Rocklin Granite Co.; granite work	69
Rosenbaum, Fr. H.; glass	96
Ruffino & Bianchi; marble	219
Sacramento Transportation Co.; patent and stock brick	156
S. F. Lime & Mortar Co. C. Benner	246
San Francisco Lumber Co	157
San Francisco Novelty and Planing Works	291
San Francisco Planing Mill; Wm. Crocker	12
San Joaquin Brick Co.; brick	288
San Jose Brick Co.; brick	5
Saunders, J. S. W.; contractor and builder	250
Schroeder, Wm.; art glass	63
Scott & Van Arsdale Lumber Co	188
Sessions, M. P	304
Smith, J. W.; carpenter	71
Smith & Young; building supplies	374
Smith & Quimby; street contractors	47
Snell, E. L.; lime and plaster	101
Snook, W. S. & Son; plumbers	372
Soule Bros.; carpenters	61
Steiger, A., Sons; architectural terra cotta	134
Stevens, F. M.; patent chimneys	15
Stockton Brick & Terra Cotta Co	297
Stratton, Jno. S.; house mover	362
Sullivan, J. F.; painter and decorator	1
Sullivan, Tim; carpenter	85
Sullivan M. F.; grading and teaming	148
Sweeney, Daniel; carpenter	325
Sweeney, G. C.; plumber	135
Tacoma and Roche Harbor Lime Co	260
Tay, Geo. H., Co.; plumbers supplies	321
Tobin, J. R.; plasterer	173
Towle & Broadwell	298
Trotter, John; contractor and builder	291
Tupper, O. M.; lime	281
Tuttle, John; teamster, plasterers' supplies	79
Union Lumber Co.; lumber	330
Vermont Marble Co	
Vulcan Iron Works	284
Wagner, Henry F.; painting and decorator	312
Wagner, J. Ferd; mason and builder	181
Walker, George H.; carpenter	307
Warren, C. A.; grading	272
Wasshburn & Moen Mfg. Co	310
Washington Street Planing Mill	48
Waterhouse, C. J	78
Watson, W. C.; plasterer	99
Western Granite & Marble Co	316
Western Iron Works	171
White Bros.; carpenters	257
White Bros.; hardwood lumber	145
Whittle, H.; mason and builder	60
Williams, F. A.; contractor and builder	178
Wilson, Bros. & Co.; lumber	294
Wilson, W. F.; plumber	238
Wilson, James A.; mason and builder	221
Wilkie, Andrew; planing mill	305
Wilkie Andrew, Jr	127
Worrel, C. R.; mason and builder	2
West Coast Wire Works	278
Western Expanded Metal & Fire Proofing Co	40
Yates & Co.; paints	340
Young, S. T., grading and teaming	336

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BUILDING NEWS.

OAKLAND

Adams Point Property, lots 6 and 7 block 5. To build; o, Alexander Young; a, Percy & Hamilton; c, W. T. and R. M. Veitch; signed, Oct. 13; filed, Oct. 15; cost $3000.

Broadway and Moss Ave. Work except heating ventilating, etc, for Dottie Cook Annex to Fabiola Hospital; o, Mrs. H. E. Cook; a, D. E. Oliver; c, I. & H. Bingham; signed, Oct. 14; filed, Oct. 20; cost $2757.

Block 61, lots 19 to 24. To build; o, S. Ringolsky; c, Chas. A. Doss; signed, Sept. 26; filed, Oct. 3; cost $2500.

St. Charles and Louisa St. To build; o, Marie Tardif; a, G. A. Wright; c, Knox & Cook; signed, Sept. 10; filed, Sept 16; cost $2500.

Albion near Telegraph Ave. Two-story frame; o, Cynthia C. N. Walter; a, John Laughland; c, E. P. McGowan; signed, Sept. 14; filed, Sept. 15; cost $2100.

Market and 40th All work except plumbing, painting, etc; o, Charles Camden; a, Charles Maul; c, D. McLeod; signed, Sept 17; filed, Sept. 27; cost $1800.

Fifteenth and Castro. Alterations and additions; o, William Quinn; a, A. W. Smith; c, Ben O. Johnson signed, Sept. 23; filed, Sept. 24; cost $1025.

Claremont Ave. To build; o, C. J. Anderson; c, C. A. Henderlong; cost $2250.

Harrison near Durant. To build; c, Geo. Lydikson; cost $1500.

OAKLAND

East 16th near 3d Ave. To build; o, A. J. Wilson; a, Cunningham Bros; c, A. T. Spence; cost $3551

PALO ALTO

Building in connection with Stanford University; o Mrs. Jane Stanford; a, Perrey and Hamilton; c, Thomas and Charles Demicheli and William Schuh; cost $13,268.

AUBURN

Business livery—Anderson Bros building a two-story house to cost $2700 and Burt and Locher will build a warc house of corrugated iron 50x100, architect A. D. Fellows.

S. P. Co will build an over head high way crossing 100 feet long on Colfax Ave.

John Davis is building himself a cottage, cost $1200 Much repairing and fixing for winter.

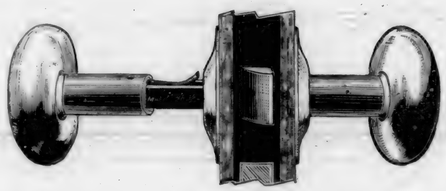
STOCKTON

Frank S. Boggs has just let the contract for the erection of his residence on east Magnolia street according to the plans and under the supervision of Downing a d Lemme, architects; which will cost complete $4200. The design will be of the English "Manor House."

Contractors are bidding upon a two-story brick building 50'x90' for the W. C. T. U; which is to have a handsome front of Roman baick, etc. It will be erected on California street near Weber Ave. Geo. Rushforth is the architect.

The "Christian Church" of Stockton have selected the designs for a new church submitted by Geo. Rushforth, architect, and its erection will be commenced as soon as bids can be received. It will be located on the corner of California and Lindsay streets.

SPECIFY



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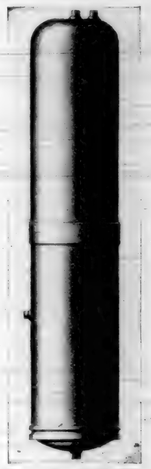

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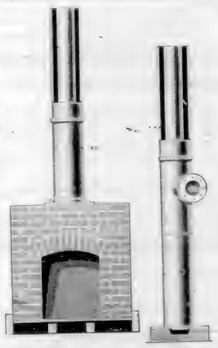

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VOLUME XIX. No. 11. NOVEMBER, 1893.

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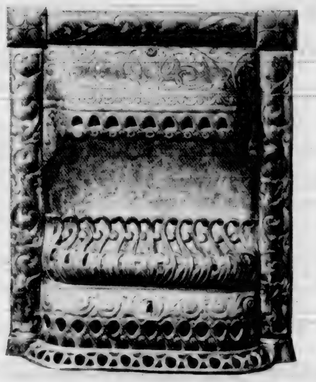

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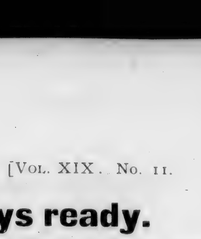

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BUILDING NEWS.

Andover Ave. Additions to cottage; owner and contractor, J. B. Alexander; architect, W. J. Cuthbertson; cost $600.

Bannam Place near Green. Three-story frame; o, Antonio Silvestro; a, John McHenry; c, A. N. Nelson; signed and filed, Oct. 26; cost $1700.

Birch Ave. near Laguna. Additions and alterations; o, I. Kling; c, S. S. Weeks; signed and filed, Oct. 27; cost $1485.

Broadway near Scott. Alteration and additions; o, Mrs. C. L. Nokes; a, F. S. Van Trees; c, Thos. O'Connor; signed and filed, Oct. 29; cost $3662.

Capp and 19th. One-story frame; o, H. Schomaker; a, Martens & Coffey; c, J. T. Lorenzen; signed, Oct. 25; filed, Oct. 26; cost $700. Plumbing; c, Chas. Hehn; signed, Oct. 25; filed, Oct. 26; cost $800. Painting, etc; c, J. Stroetgen; signed, Oct. 25; filed, Oct. 26; cost $550.

Chattanooga near 21st. Two-story frame; o, George Towns; a, W. W. Kednall; c, W. Plant; signed, Nov. 5; filed, Nov. 7; cost $3720.

Church near 15th. Three-story frame; o, Walter A. Green; a, P. Schwerdt; c, Jas. F. Ford; signed and filed, Nov. 19; cost $1290.

Devisadero near Vallejo. Two-story and attic; o, Henry E. Monroe; a, F. D. Van Trees; c, Chas. M. Depew; signed, Nov. 10; filed, Nov. 11; cost $6385.

Fair Oaks near 21st. To build; o, Sol Marks; c, Douglass & Co; signed, Nov. 15; filed, Nov. 17; cost $1880.

Ferry Building. Benches, tables, etc; o, U. S. State Mining Bureau; a, Edward C. Swain; c, John Trounson; signed, Nov. 9; filed, Nov. 11; cost $1488.

Golden Gate Ave. and Lyon. Three-story frame; o, Joseph Jacquemet; a, C. M. Rousseau; c, R. J. Pavert; signed, Oct. 13; filed, Nov. 15; cost $5446.

Green and Devisadero. To build; o, W. J. Gunn; a, E. A. Mathews; c, A. S. Ruch; signed, Nov. 1; filed, Nov. 2; cost $10,068.

Greenwich and Jansen Alley. Alterations and additions; o, A. and T. Sehablagne; a, J. Godart c, P. A. Antonelle; signed, Oct. 27; filed, Nov. 5; cost $2758.

Hayes near Fillmore. To build; o, Isaac Eliaser; c, E. C. Bletch signed, Nov. 12; filed, Nov. 14; cost $2240.

Hayes near Stelner. Carpentry, plastering, etc; o, George Hildebrandt; a, P. Schwerdt; c, T. J. Crawford & Son; signed, Oct. 22; filed, Oct. 27; cost $3100.

Henry near Noe. To build; o, J. F. Fleming; a, William Koenig; c, Ira W. Coburn signed, Nov. 10; filed, Nov. 12; cost $3000.

BUILDING NEWS.

Larkin near Sacramento. Plumbing, etc; o, Geo. W. Harris; a, Shea & Shea; signed, Oct. 29; filed, Nov. 5; cost $1024.

Main near Howard. Furnishing and driving 104 piles; o, Pelton Water Wheel Co; a, Walter J. Mathew c, Jas. A. McMahod; signed, Oct. 22; filed, Oct. 25; cost $2125.

Main near Folsom. Brick warehouse; o, Geo. W. Gibbs; a, Reid Bros; c, C. Krecker; signed, Nov. 15; filed, Nov. 17; cost $1675.

Mason and O'Farrell Alley. Brickwork, chimney etc; o, Thos. Ashworth; a, Newsom & Meyer c, John McCarthy; signed Oct. 25; filed, Oct. 31; cost $2375.

Mason and O'Farrell Alley. Carpentry, concrete, etc; o, Thomas Ashwood; a, Newsom & Meyer; c, Mallory & Swenson; signed, Nov. 10; filed, Nov. 16; cost $16,600. Plumbing, etc; c, James F. Ford; signed, Nov. 10; filed, Nov. 16; cost $4500. Plastering, etc; signed, Nov. 10; filed, Nov. 16; cost $1870. Painting, etc; c, Kuss & Storz; cost $1400.

Market and 8th. Brick work; o, William Wehner; a, O. Everett; c, Sinnott & McCann; signed, Nov. 26; filed, Nov. 27; cost $3368.

McAllister near Laguna. Three-story frame; o, William and Augusta Gans; c, William Heidberg; signed, Oct. 12; filed, Oct. 31; cost $6750.

Mission and 14th. Painting, etc; o, Southern Pacific R. R. Co; signed, Nov. 10; filed, Nov. 15; cost $2340. Wiring for electric lighting, etc; c, California Electrical Works; cost $3431.

Ninth Ave. near C. N. Cottage; o, Capt. Fred Nielsen; c, Marcuse & Remmel; signed, Nov. 1; filed Nov. 15; cost $1800.

Nineteenth and Angelica. Electric light, etc, for four-story brick; o, Youths Directory; a, C. J. L. Devlin; c, Gas Consumers Ass'n; signed, Nov. 7; filed, Nov. 14; cost $1186.50.

O'Farrell near Laguna. Alterations, etc; o, M J. Franklin; a, Philip Schwerdt; c, H. Jacks; signed and filed, Nov. 21; cost $3165.

Pacific Ave. near Pierce. To build; o, Charles Page; a, F. S. Van Trees; c, Chas. and Walter Williams; signed, Nov. 10; filed, Nov. 11; cost $12,469.

BUILDING NEWS.

San Bruno Ave. and Dwight street. To build; o, F. H. Dieckman; c, L. Medus; signed, Oct. 29; filed, Nov. 2; cost $1600.

Second Ave. near Presido Reservation. Plumbing; o, Golf Syndicate; a, F. S. van Trees; c, Walter and Chas. Williams; signed, Oct. 28; filed, Oct. 29; cost $3435.

Seventh near Folsom. Additions and alterations; o, M. S. Johnson; a, Tharp & Holmes; c, F. W. Knight signed, Nov. 15; filed, Nov. 18; cost $2185.

Seventh and Minna. Two-story and three-story to building; o, Thomas G. Taylor; a, Martens & Coffey; c, J. B. Gonyuau; signed, Nov. 3; filed, Nov. 7; cost $10,147. Plumbing, etc; c, Henry Ernst; cost $1475.

Seventeenth near Folsom. Concrete, brick and wood building; o, The St. Nicholas Laundry Co; c, F. W. Kern; signed, Oct. 31; filed, Nov. 2; cost $5650.

Sutter street, No. 828. Additions and alterations; o, Mr. Weil; a, P. Schwerdt; c, F. Schweier; cost $2500.

Elizabeth near Hoffman Ave. Cotages; o, and c, Jacob Heyman; cost $3000.

Treat Ave. near 22d. Alterations; o, John C. Flood; a, C. M. Rousseau; c, George C. Nail; signed, Oct. 24; filed, Oct. 26; cost $1400.

OAKLAND

Army Tract lots 12, 13 and 14, block A. To build; o, Dr. G. and Bertha Thomas; a, D. F. Oliver; c, A. T. Spence; signed, Oct. 15; filed, Nov. 17; cost $1462.

Center street near 8th. Cottage; o, W. J. and John Edwards; a, A. W. Smith; c, Jacob House; signed, Nov 1; filed, Nov. 2; cost $1796.

Eighteenth and West. To build; o, Thomas Moran; a, Cunningham Bros; c, Chas. S. Barnard; signed, Nov. 7; filed, Nov. 12; cost $1948.

Knox Place. Two-story frame; o, Mrs. William Owens; a, F. S. Van Trees; c, William Bros; signed, Nov. 4; filed, Nov. 5; cost $3680.

Moller Tract. To build; o, Wm. B. and Elizabeth M. Ward; c, A. W. Pattiani & Co; signed, Nov. 17; filed, Nov. 17; cost $1417.

Oak and 12th. To build; o, Thos. W. Corder; a, Thos. D. Newsom; c, G. W. Flick; signed, Oct. 27; filed, Oct. 27; cost $4691.

Terminal Depot. Changing present heating plant; o, Southern Pacific R. R. Co; a, Engineer of Company c, Geo. H. Tay Co; signed, Nov. 4; filed, Nov. 19; cost $1100.

ALAMEDA

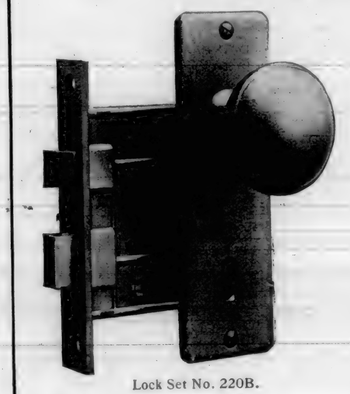
Santa Clara Ave. Frame dwelling; o, O. W. Moore; a, B. E. Remmel; c, Brehant & Cornelius; signed, Oct. 25; filed, Oct. 27; cost $2970.

Telegraph Ave. near Webster. To build; o, Miss M. Darling; a, A. W. Smith; c, C. M. MacGregor; signed, Nov. 14; filed, Nov. 15; cost $1930.

Continued on page xii.

The "Vulcan" Locks

All Wrought Metal—with "Compensating" Hubs.



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One-half Actual Size.

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The Yale & Towne Mfg. Co.

LOCAL OFFICE:
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WORKS: Stamford and Branford, Conn.

OFFICE OF A. BEINHAUER,
124 Maiden Lane,

NEW YORK, July 11th, 1898.

The Yale & Towne Mfg. Company,
9-11-13 Murray Street, New York.

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Wishing you all success with your "Vulcan Locks," I remain

Yours truly,
(Signed) ALFRED BEINHAUER.

9/19-98 25-1250

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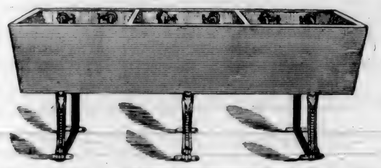

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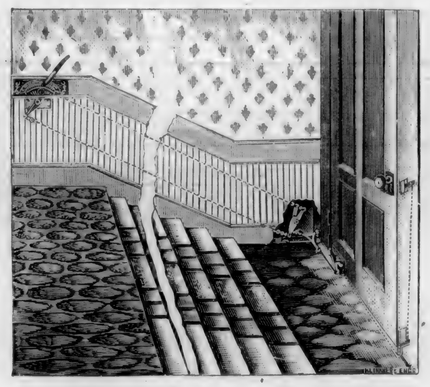

VOLUME XIX. NOVEMBER 20th, 1898. NUMBER 11.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

THE SUCCESSFUL architects who participated in the great Hearst competition and gained the coveted rewards have all arrived on this side of the Atlantic and by the time this number of the CALIFORNIA ARCHITECT AND BUILDING NEWS is issued most. if not all, of the visitors will have reached this city and be busily engaged in studying the environments of the University of California at Berkeley. It is said that before leaving Europe all the successful competitors arranged to meet in New York the latter part of November and then proceed in a body to California. The date of arrival will be duly announced. Beyond a corporation reception presided over by Mayor Phelan, which, it is expected, will be tendered the distinguished strangers, no general movement seems to have been made for entertaining them by local architects so far as heard from. Perhaps it is thought that a welcome from personal members of the profession will answer every purpose but it appears to us that the opportunity for a combined and representative acknowledgment of the presence of the strangers would be a highly gracious attention to accord. The Hopkins Art Institute could be secured for the purpose and every student of architecture ought to be allowed the chance of making the acquaintance of these giants of the profession and to listen to the words of wisdom and enlightenment that is sure to fall from their lips. The hospitality to be extended to these eminent men ought to be equal to that displayed by the people of the Dutch metropolis at least. But this can safely be left to the right feeling of our local architects, who will remember that the reputation of California hospitality is very great and extended and that it will be their pleasant duty to see that it suffers no diminution at their hands.

The presence of these accomplished gentlemen ought to be of equal value to themselves and to local architects as well. They will be interested in observing the adaptation of the rules of construction to the peculiar conditions that exist here unlike as they are, to those of any great capita

in the world. Neither need our architects be ashamed of the results of their labors. There are plenty of examples among our public buildings, mansions and business blocks that are monuments of original design and difficulties overcome. Fortunately there are but few "gems" of architecture like the Chronicle and Hearst buildings to blush for, but such blemishes are more than offset by others which are the admiration of every one who makes building construction a serious study.

The impression that the splendid site of the University will make upon these gentlemen can be faintly imagined. Such another location, no institution in the world possesses. A combination of vast extent of mountain, sea and plain, is rarely to be witnessed. It will be an inspiration that will be quickly grasped by the strangers and their designs can but receive added beauty and increased impressiveness after personal contact with the sites and scenes where their mental embodiments are to take visible shape.

DESTRUCTION OF THE BALDWIN.

THE total destruction of the Baldwin Hotel by fire is to be regretted. That such a fate was to be the ultimate destiny of this building was fore-ordained. It was a monument of lavish expenditure and depraved architectural methods. The destruction is so complete that a new structure will now be required. The location is unequalled for hotel purposes and a new one surpassing in magnificence anything in the west will probably take the place of the building that is to day in ashes. The site for a grand opera house could not be excelled. It is to be hoped that when the new hotel is planned a dramatic and musical temple will be part of its equipment. The site is too central to remain unoccupied longer than the time required to replace the odd structure. California architects will here have an opportunity for acquiring new distinction.

PASSING OF THE OLD BUILDINGS.

A CHEERING indication of the general revival of faith in the future of this great city is the fact that numerous owners of down town buildings that were at one time occupied as offices, professional or otherwise, are contemplating, in many instances, either total demolition of their out-of-date holdings or else such a transformation or rearrangement of the interiors as to make them quite as desirable for business purposes as those lofty and complete structures that have been erected during the past three years in other sections of the city. It would seem that the natural wholesale center is in that section bounded by Market, Kearny and Clay streets and there is no reason why it should not remain within these boundaries for all time unless the business public should be driven away by a lack of proper facilities for transacting their commercial affairs. It ought not to be forgotten also that in these days of telephonic connections the necessity of a location within easy proximity to the center of exchange is not so great as formerly. It might be remembered also that within the past forty years one change has been made that carried the commercial center from Dupont to California street and there is nothing to prevent the same thing happening again. The actual trend of finance is to the south of California street. Banks and other financial institutions are slowly but surely moving in the direction of Market street where the crowd is concentrating. The new Federal buildings at Seventh and Mission will have a powerful influence upon locating a new business center. Something ought to be done towards retaining what is left of California street as the commercial center and a general movement that will eliminate the old and obsolete office building as in order. The early architects of this city have much to answer for. There is hardly an architectural feature of the early days that could, with advantage, be retained. Such unscientific treatment of floor space as these early edifices show excites the derision of up-to-date architects.

The Merchant's Exchange is a conspicuous example of absolutely defective architecture. It ought to be torn down forthwith. Fully one half of its superfices is wasted. It occupies as much ground as the Mills building—compare the two structures as rent producers. It can be easily established that in replacing any of the old style buildings fully one half more space can be utilized in its present cubical area than now and not taking into account the possible increased height either.

Therefore it is to be hoped that the elimination of the old style building, so auspiciously begun will be continued until every one of "those monuments of early days" will be allowed to disappear. A chance is here given for the architectural adornment of the city's streets. Here a responsibility is laid upon the profession that should never be lost sight of.

DR. BAZET'S MICROBE HATCHERY.

AT a recent meeting of the local Board of Health a proposal was made by Dr. Bazet, a member, to abandon the plan of erecting a stone or brick hospital for the county and substitute a cheap temporary affair built of wood that could be destroyed every "ten or fifteen years or so" and another built in its place. This process to continue indefinitely. The advantage gained being in the saving of cost between a first class and a make shift hospital. Dr. Bazet in his remarks advocating this plan of his on the occasion referred to, stated that a wooden hospital would be very cheap and could be made at the same time "very attractive". The learned doctor, however, neglected to state whether a wooden affair would be attractive to the patient or to the microbes, whose propagation was to be thus encouraged until such a time as the hospital became thoroughly infested when it would be burned down and another one erected. Such a hospital, Dr. Bazet advocated in the interest of science admitting that medical science was impotent in its capacity to remedy evils requiring only cleanliness and antiseptic solutions for completely extirpation. Dr. Bazet is too competent a physician to have much faith in the claim of a certain medical charlatain, that he could cure by drawing the microbe responsible for the disease out of the patient with the aid of a powerful magnet but his proposition to make the conditions about his hospital "attractive" seems to indicate something of that sort

Dr. Bazet's proposition seems to be open to serious objection in more than one respect. He deliberately favors a plan that encourages the accumulation of filth, a plan also that has never been adopted by any first class municipality in the world and that originated in the tropics as the fruit of military exigency which required certain precautions against the spread of virulently infectious diseases never met with in this latitude excepting in sporadic form. In the new hospital no infectious diseases will be treated, separate provision being made for occasional cases received. It would seem to be a mean thing for a great, wealthy city, like San Francisco, to ask the poor wretches dependent upon it for care during wasting illness, to go to a hospital no better built than a pioneer shack or an Indian tepee. The management of such a hospital would also be seriously affected by the temporary character of the buildings. The effort to keep affairs in perfect condition would be dominated by the knowledge that in a short time the hospital would be destroyed any way. Does the Board of Health wish to perpetuate the scandals, conflicts and corruptions which always accompany the erection of every municipal structure and leave such a legacy to their successors? Is it not known that in ten years a movement for the removal of such a temporary hospital would be demanded wherever it may be placed? Would Mr. Phelan care to distinguish his administration by a measure that would bring ridicule upon it forever or have his name associated with the only structure erected during his term of office that would require obliteration, on the score of public health, in ten years or so? It would be thought not.

The fact is that Dr Bazet's plan has been thoroughly considered by scientific minds on both continents, and it has yet to be learned, the Glasgow instance notwithstanding, of one single municipality that has even seriously considered its adoption. The great St. Luke's hospital of New York, erected at a cost of $3,000,000, and the finest in the world, is one that will last for generations. The new Chicago hospital is permanent and the cities pride. London's hospitals are of the most substantial character and every where except possibly in China or India where plague is always rampant and where hospitals are necessarily temporary in their character, these monuments of the magnanimity of communities are strong, substantial and architecturally beautiful.

The plan of Dr. Bazet, to a layman, appears to be rather for the propagation and cultivation of diseased microbes, and designed to convey infection to the thousands of those unfortunates who in the "ten or fifteen years or so" will be obliged to accept its ministrations and through them the entire community will have to endure an ever present and increasing danger from infection.

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Address—C. E., California Architect and Building News.

COLOR IN STREET ARCHITECTURE.

THE GREATER attention given to exterior coloring is a pleasant feature of building of to day. Architects have heretofore, evinced timidity in advising the use of more positive coloring for decorating buildings or have been restrained from following their own artistic conceptions on the subject by property owners who, as a matter of course, have the final word and, as a general thing, hesitate to take the initiative in defiying long established custom. It is a sign of progress in the right direction when color as an adjunct of street ornamentation is receiving more intelligent attention from the architect. The people of tropical or semi-tropical countries seem to understand this subject better than we of temperate zones. The bright colors either in combination or otherwise that are to be observed in all communities of Southern people is a feature of the most pleasing character to travelers and is frequently remarked. These people are simply following their own artistic instincts of beauty and fitness and while the effect is sometimes grotesque and extravagant yet the general result is bright, pleasing and cheerful.

The Saxon on the contrary is disposed to confine all color to the interior and to regard any effort to make the exteriors of their dwellings, otherwise then dull, as a violation of good taste. The Greeks, whose judgment in all matter relating to absolute correctness in art was undeniable even covered their temples, constructed of the purest Pentalican marble, with color and the statues of Phidias, in their opinion, derived added beauty from applied colors by making them more like the living subjects which these unequalled statutes were carved to represent. Under such skies as are usually to be observed in San Francisco where cloudy days are the exception and bright sunshine the rule, a greater latitude in color for outside adornment ought to be permitted. Market street, from the ferry to Sixth represents a most monotonous effect of color, occasionally a yellow or brick red but almost altogether drab, cheerless, dispiriting, inartistic. There are some bright instances of street color, notably on the crest of California street, where half dozen handsome structures afford an example of the pleasing effect of decided tints. How much would be added to the appearance of the new City Hall if, instead of an exterior covering which now only emphasizes the cheap material of which it is constructed and detracts from the real beauties which the edifice possesses, it were colored in white or a light terra-cotta. The expense would not be great and the result would be a distinct gain. There is a building near Mason and Ellis streets whose exterior is glazed brick of a deep bottle green. The effect is beautiful.

In the city of Mexico, opposite Hotel Iturbide, there is a mansion of a Mexican grandee, as large as the Flood residence and constructed in Spanish style, with a large *patio* in the center, filled with tropical foliage and protected from the street by a splendid wrought iron grill. The whole exterior of this house is veneered with light blue and white porcelain tile, imported from Paris at enormous cost but producing a most striking and beautiful effect. It would require great courage for a builder in this latitude to follow such an ex-

ample but there is no house in the United States that is its equal and very few builders that could afford it.

To make street color more effective will require time and the destruction of old established prejudices but that a harmonious result would be accomplished and the general appearance of our cities be greatly enhanced few will doubt.

MEMBERS OF THE ARCHITECTURAL STUDIO HARD AT WORK.

THE members of the Architectural studio of the Mark Hopkins Institute of Art have buckled down to hard work for the Winter season. At the last monthly competition held on November second nearly every member presented drawings and sketches which were ably criticized by Mr. Coxhead. The subject of the competition was "Given the intersection of two narrow and crowded streets to cut away the buildings on the corners so as to relieve the traffic and produce an imposing architectural effect. The schemes followed the plan of the London "Circuses" only they were octagonal instead of circular and the general criticism was that sufficient importance was not given to the skyline. The sketches were the preliminary studies for a park bridge, the subject of the next competition, finished drawings of which are to be presented on the first Wednesday in December.

The Class in History, after having pursued, under the direction of Mr. Sanders, the subjects of Prehistoric, Egyptian, Babylonian, Assyrian, Persian and Jewish architecture is now fairly advanced in the study of Grecian architecture. The life class still retains its hold on the members and is both profitable and interesting.

At a recent meeting it was decided to compile a paper for publication in the CALIFORNIA ARCHITECT AND BUILDING NEWS on the greatest architectural need of San Francisco. It is hoped that by showing how and where the architecture of the city may and should be improved that popular interest may be aroused that will result in many needed improvements and architectural reforms.

THE ACOUSTICS OF TRINITY CHURCH.

TRINITY Church in this city is one of the finest ecclesiastical structures in the state, and will comfortably seat nine hundred persons. It is built in the Old English style and architecturaly is attractive and complete. Nearly $200,000 is invested in the edifice and its splendid adornments. Its congregation is aristocratic, wealthy and influential and its rector, scholarly and devoted. Everything that the most exacting worshipper can possibly demand is found in this sacred edifice but, after the church building was newly occupied it was discovered that the acoustics were fataly defective and that no matter how loud the clergyman might shout only those in the immediate proximity of the chancel could understand what was said and even then but imperfectly. The sound ever berated again and again and became a mixed jumble of discordant words. Even the tones of a powerful organ failed to make the proper impression and the most exquisite harmonies were distorted by the sharp and protracted echoes that followed the sounding of the key board. The result is discouraging to the last degree and efforts have been and are being made to remedy the evils or at least mitigate them. It is thought by some who have studied the case that the interior architecture of the church is faulty and that no absolute cure will be accomplished until drastic changes are made. Over the junction of nave and transepts there is a tower of large dimensions, open to the roof and extending several feet above the ceiling of the church. This tower forms a great square cavern into which the words of the preacher and the tones of the organ are first carried and are then shattered against the four walls into a mass of unintelligible echoes. It is believed that the whole fault lays in the defective construction of the tower. Some time ago, following the suggestion of an architect, the west walls of the church were hung with silk curtains but the result was not noticeable. Lately a sounding board was placed over the pulpit and an improvement was apparent at once. The sounds were thus carried away from the tower and into the nave. But the defects have not yet been entirely remedied. It is now proposed to string innumerable wires across the opening to the tower and possibly the effect of this experiment will be an improvement but architects generally are disposed to believe that nothing but an entire rearrangement of the architecture of the tower whereby the great opening may be completely or partially closed, will eliminate the distressing echoes and purify the acoustical defects. The problemn is an interesting one and excites great interest.

THIRTY-SECOND ANNUAL CONVENTION OF THE AMERICAN INSTITUTE OF ARCHITECTS.

WASHINGTON, D. C., Nov. 1.—The proceedings of the Thirty-Second Annual Convention of the American Institute of Architects opened at 10:30 this morning in the Banquet Hall of the Arlington Hotel, with Mr. George B. Post, the President, in the chair, and with about 100 delegates in attendance from various parts of the country, among whom were: George B. Post, Robert W. Gibson, Julius Kastner, Wm. Martin Aiken, John M. Carrere, T. E. Crossman, Charles I. Berg, Edward Kendall, Henry C. McKey, New York; Alfred Stone, Ed. J. Nickerson, George A. Frederick, Edward F. Eley, Providence, R. I.; W. L. B. Jenney, Charles S. Frost, G. A. Trent, Robert Craik McLean, editor *Inland Architect*, Chicago, Ill.; A. W. Longfellow, Edwin J. Lewis, Jr.; A. G. Everett, H. Langfort Warren, Boston, Mass.; C. M. Bartberger, Thomas Boyd, T. D. Evans, S. F. Heckert, Pittsburg; F. H. Young, Jacob Agne, Jr., Utica, N. Y.; C. A. Wallingford, Bernard Vonnegut, Indianapolis, Ind.; Guy Kirkhorn, Springfield, Mass.; A. W. Hayward, J. W. McLaughlin, George W. Rapp, Gustav W. Drach, A. O. Elzmere, Cincinnati, O.; Isaac Ditmaes, A. G. Thomson, A. Porter, L. D. DeCorb Berg, Walter Dickson, Brooklyn, N. Y.; Frank C. Baldwin, John M. Donaldson, A. W. Chittenden, J. S. Rogers, Jr., George D. Mason, Detroit, Mich.; Addison Hutton, Frank Miles Day, Philadelphia, Pa.; Charles F. Swinefurth, Levi T. Schofield, Cleveland, O.; J. W. Yost, Columbus, O.; L. Boucherts, Youngstown, O.; J. Foster Warner, Rochester, N. Y.; J. H. Pierce, Elmira, N. Y.; E. C. Ernest Lamb, F. B. Pyle, A. Didden, T. F. Schneider, Robert Stead, James K. Taylor, James G. Hill, J. L. Smithmeyer, Washington, D. C.; M. S. Mahurin, Fort Wayne, Ind.; W. H. Conway, George H. Helme, Springfield, Ill.; E. B. Green, John H. Coxhead, C. Cary Buffalo, N. Y.; J. O'Rourke, Newark, N. J., Robert E. Dexter, Dayton, O.; F. D. Allen, Juliet, Ill.; Prof. Trowbridge, Cornell University; Arthur N. Gibb, Ithaca, N. Y.; Henry Brunse, F. B. Noel Wyatt, E. G. Lind, Baltimore; Md.; N. W. Mortimer, M. S. Malewin, Fort Wayne.

The address of Welcome by Mr. J. C. Hornblower in behalf of the Washington Chapter, was short and to the point. This was followed by Commissioner Wight who said:

"I extend to the American Institute of Architects a hearty welcome on behalf of the D strict Commissioners of the District of Columbia and on behalf of the District itself, to all I give a kindly welcome, and venture to express the hope that it will be as agreeable for you to be with us as it is to us to have you here.

"Last week it was my privilege to welcome to the District another convention, that on Municipal Improvements. They took up for consideration the subjects of sewerage, street improvements, electric lighting, etc., all of which were important, and in which we, as a city were greatly interested, but not any more so than the matters that will be dealt with here by this Institute. This meeting of your Institute is very timely in coming to us when we have begun some important steps in the matter of the architecture of our public buildings. We have expressed ourselves as of the opinion that the designing of our public buildings and bridges should not all be the work of one person, and our experience leads us to believe that we have taken a wise step. We believe that the competition in the matter of public bridges and grounds should only be open to those who have shown that they were able to design such structures, so that the result may be designs that will be an addition to the architecture of this District, both as to beauty and suitability for the purpose for which they were designed.

"Another step upon which we insist is that there shall be no sky-scrapers in the District of Columbia; to that end we have enacted that the maximum height of buildings shall be 90 feet, unless on business avenues of 160 feet in width.

"We trust these matters will commend themselves to you and will receive your support. I therefore again welcome you in the name of the Commissioners of the District of Columbia."

PRESIDENT'S ADDRESS

"The programme of the Thirty Second Convention of the American Institute of Architects as usual requires that the proceedings shall be opened by an address from your president.

"On former occasions I have directed your attention to the unexampled rapidity with which the fine arts have developed in America since the first organization of this association, and to the prominent part taken by the architects in this development; to the growth of the association itself from a body weak in numbers and weaker still in the influence of its members individually and collectively, to an organization extending over the length and breadth of this enormous country; an organization which has become a recognized power in all questions directly or indirectly pertaining to architectural art.

"I have directed your attention to the dangers which menace our art, and to the fact that if true to itself the future of the profession is clearly in the control of this Institute.

"I now desire to extend to its members my most hearty congratulations, for although a period of general depression in individual business, the past year has been marked by three events which will form an era in the history of American architecture.

"The wise Secretary of the Treasury, the present honored head of that Department which is the great builder for the Government, has not only established a most important precedent and practically made a public recognition of the fact that educated talent is essential to economy and success in the work of our profession, but more important still, that there should be no politics in art:—by the appointment of a Supervising Architect after a most careful and exhaustive competitive examination conducted by a specially appointed Civil Service Commission, consisting of a Board of Architects of recognized position in their profession.

"For almost the first time in the last three decades we have seen architects in private practice selected by fair competition judged by expert jurors, for the design and erection of Governmental buildings. A practical recognition of the fact for years asserted by the unanimous vote of the profession that worthy architecture cannot possibly be secured, except by accident, from a Government office; no matter how great the ability of its chief, where the mass of bus ness in the maintenance and repair of existing buildings is so enormous that the work of design is of necessity largely delegated to assistants. Under these circumstances excellence must be at best a lottery.

"In all ages and in all countries employment for the design and erection of Government work has been the maximum reward of professional distinction. Consequently the structures erected by the Government of a country have been generally and properly accepted as the most reliable and decisive proof of the civilization of the period and race by which they were produced.

"Alas for the verdict of future ages upon the excellence of the art and civilization of America in the latter half of the Nineteenth Century, if judged by such monuments as the Pension Building and the Post Office, and the great majority of structures erected from designs prepared in the offices of our Government.

"Unfortunately these buildings are built with extravagant excellence and will stand for ages a travesty upon the art of the country, a reproach to the intelligence of those in power who have refused to listen to the urgent and repeated opinions of those qualified by education and experience to give advice, and have persistently refused to use the means always at their hands to procure designs which should at least represent the average skill and economy daily shown by the architects of the country in private practice.

"It is the clear duty of this body, the great representative society of American architects, never for an instant to relax its efforts until such time as the creation by the Government of such artistic monstrosities shall be impossible.

"We have seen by the recent precedent established by the Treasury Department that persistent protest and untiring effort will surely bear its fruit.

"This Institute should never pause in its exertions until Congress has passed the necessary amendments to make it

mandatory that for the design and construction of each important building to be erected by the government in any of its departments, there should be appointed directly or by limited competition, an architect whose ability has been thoroughly proved by success in private practice, and that the fees paid for his services by the Government shall be those recognized throughout the civilized world as the proper and just recompense for such services—the fees rehearsed in the Schedule of Charges of the American Institute of Architects, and uniformly paid by individuals and corporations in all of our great business centres.

"Provisions should be demanded for the appointment of proper juries of award composed of experts in the case of all competitions, and to provide for the expenses of such juror as well as for the payment of a moderate and proper fee.

"For the first time in its history the Institute has established a permanent headquarters. As is eminently proper the permanent home of the national organization is located in the National Capital

"In the march of events the institution has outgrown its old code of laws and under a new constitution you are called upon to consider a new code of by-laws. It is a matter of regret that so large a part of the time of this convention must be of necessity devoted to this subject, and it is earnestly hoped that your consideration of the subject may be so careful and your decisions so wise that the time of future conventions may be free for the discussion of the mass of subjects of more general interest than the minute details of interior organization."

This left the meeting open for the general order of business, which opened with the report of the Board of Directors, read by Mr. Alfred Stone, the genial secretary of the Institute, who is so ably fitted for the responsibilities of the arduous position which he occupies.

The report is as follows:

"To-day the Institute enters upon a new era in its history which is fraught with no little anxiety. The step it has taken without precedent, as no similar society has broken away from the commercial metropolis of the country and established its home in the National Capital. It may therefore, properly be called an experiment, and is one that will depend for its success upon the individual and united efforts of the members of the Institute, and may easily prove to be a failure without such effort. The first way in which it may make itself manifest is by an increase in its membership, which the proposed by-laws, if adopted, will facilitate. It is only by a membership large in numbers and representing the best equipped members of the profession who not only combine to a high degree professional skill and training, but exalted views as to the ethics of the profes ion that the Institute can realize the full advantage of its mission and reap the benefits of its new departure.

"The question of the present home for the Institute has been an ever-recurring subject for consideration, and many years ago an effort was made to procure a building fund, but not until after the passage of the following vote on February 11, 1898, was any real progress made:

"Voted—That a committee of three be appointed by the president to secure a lease of the so-called 'Octagon House,' Washington, D. C., for a term of five years if possible, for a rental not exceeding $360 per year, and with further power to formulate a plan, obtain funds and put the house in condition for occupancy."

It was also voted "That the committee be authorized to issue debenture bonds of small denominations to an amount not exceeding $5000, and that the form of the bond is to be approved by the Executive Committee before issuing the same."

In pursuance of that vote the president of the Institute, in accordance with instructions of the Board of Directors, appointed Frank Miles Day, Robert Stead and Wilson Eyre, Jr., a committee to procure a lease of the Octagon House and put it in a condition for occupation, and issue bonds to the extent of $5,000 to meet the expense thereof. To-day we shall open and enter upon the occupation of our new home and the enjoyment of the fruits of their labors.

The passage of this vote was the outcome of the report of the Washington Chapter presented to the Board of Directors at that time. Among the advantages set forth in this report were: That it afforded the broadest field for the Institute to obtain national legislation in relation to art and construction; that it could here more efficiently advocate the establishment of a Government testing station and a National Architectural Museum, and would be in a position to make its influence felt in the methods adopted by the Government for procuring designs for national buildings, which has been so successfully inaugurated under the direction and by order of the Secretary of the Treasury, the Hon Lyman J. Gage, an honorary member of the Institute and an efficient supporter of the best interests of the profession.

A fuller and detailed history of the movement and its results will be visible at the reception, to take place this afternoon, and will be heard in a report of the chairman of the committee which has so successfully accomplished the task set before it.

At the last annual meeting the conduct of the competition for the Pennsylvania State Capitol furnished an engrossing todic of consideration, but without producing the desired results. In fact, the outcome is, if possible, still more discreditable to the State than was anticipated, but in other quarters several notable competitions which have been conducted with fairness and in compliance with ethical rules of practice although they may not have resulted to the individual satisfaction of each and every individual competitor, and it is not improbable that the publicity which was given to the action of the Institute in the matter of the Harrisburg Capitol has not even greater effect than if it had resulted in the adoption or the course advised by the Institute.

The more than questionable conduct of the commissioners, their unjust treatment of its professional advisers, the defeat of the machinations of the firm that expected to capture the prize and the subsequent still more scandalous action of the commissioners has been an object lesson to what ends publicity and unfair dealings may lead, and it is believed that the State of Pennsylvania has but entered upon a gigantic scheme that will extend through many years and be productive of still other and larger results to the discredit of the State and with heavier demands upon its treasury. In view of the failure of the Pennsylvania State Capitol competition and the success of that for the New York Public Library building, it has been suggested by a distinguished member of the New York bar, that the Institute appointed a committee to have power to employ legal counsel to prepare a formal programme of competitions and have it recognized in legal enactments and ordinances authorizing commissioners to secure an architect by means of competitions; such an act or ordinance might make it legally incumbent upon a corporate body or even upon a State itself, to pay promised fee, which the State of Pennsylvania successfully dodged, with no legal redress for the architects employed by it. There is,

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Havens & Toepke
Architects. 1891.

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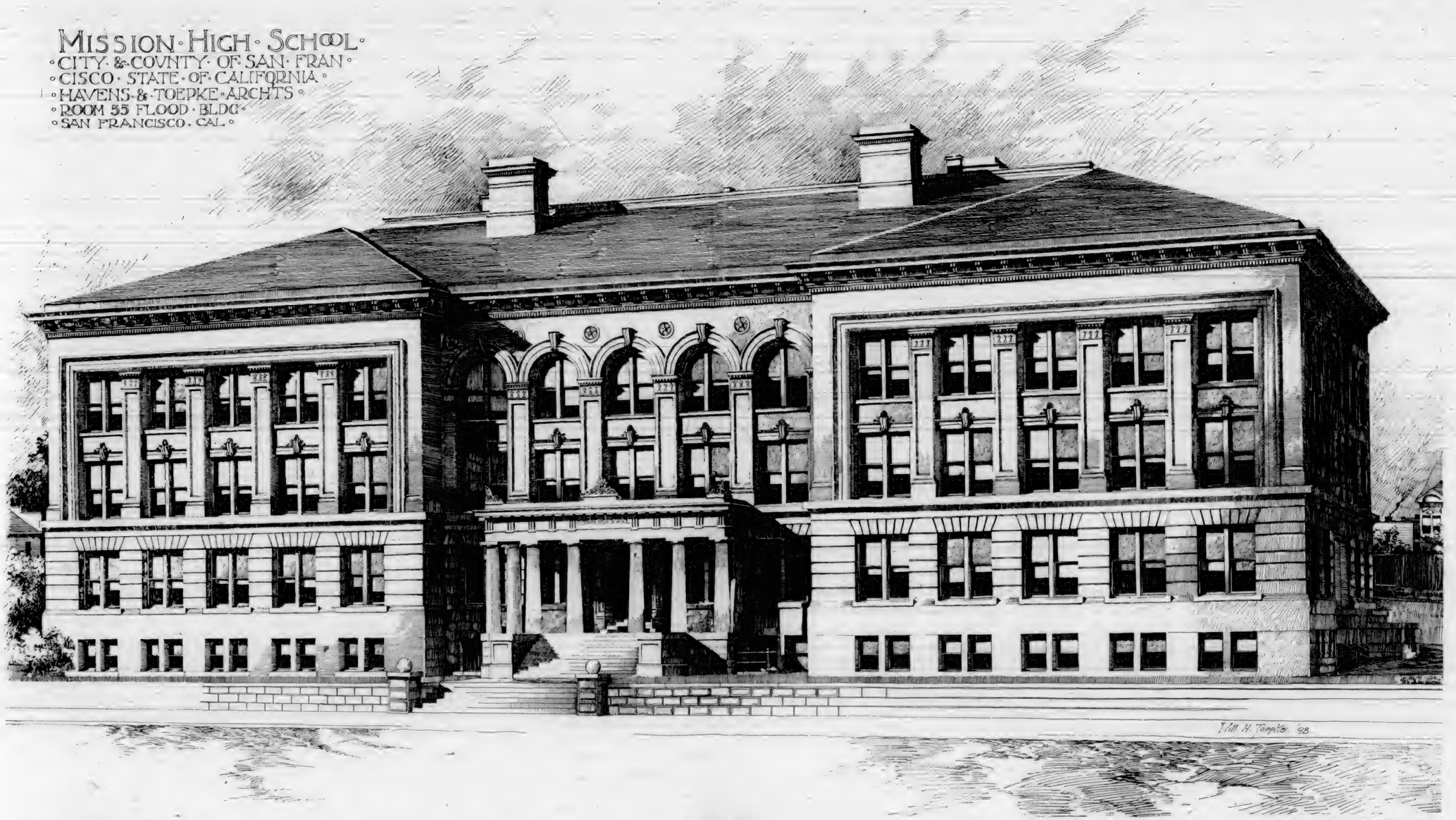

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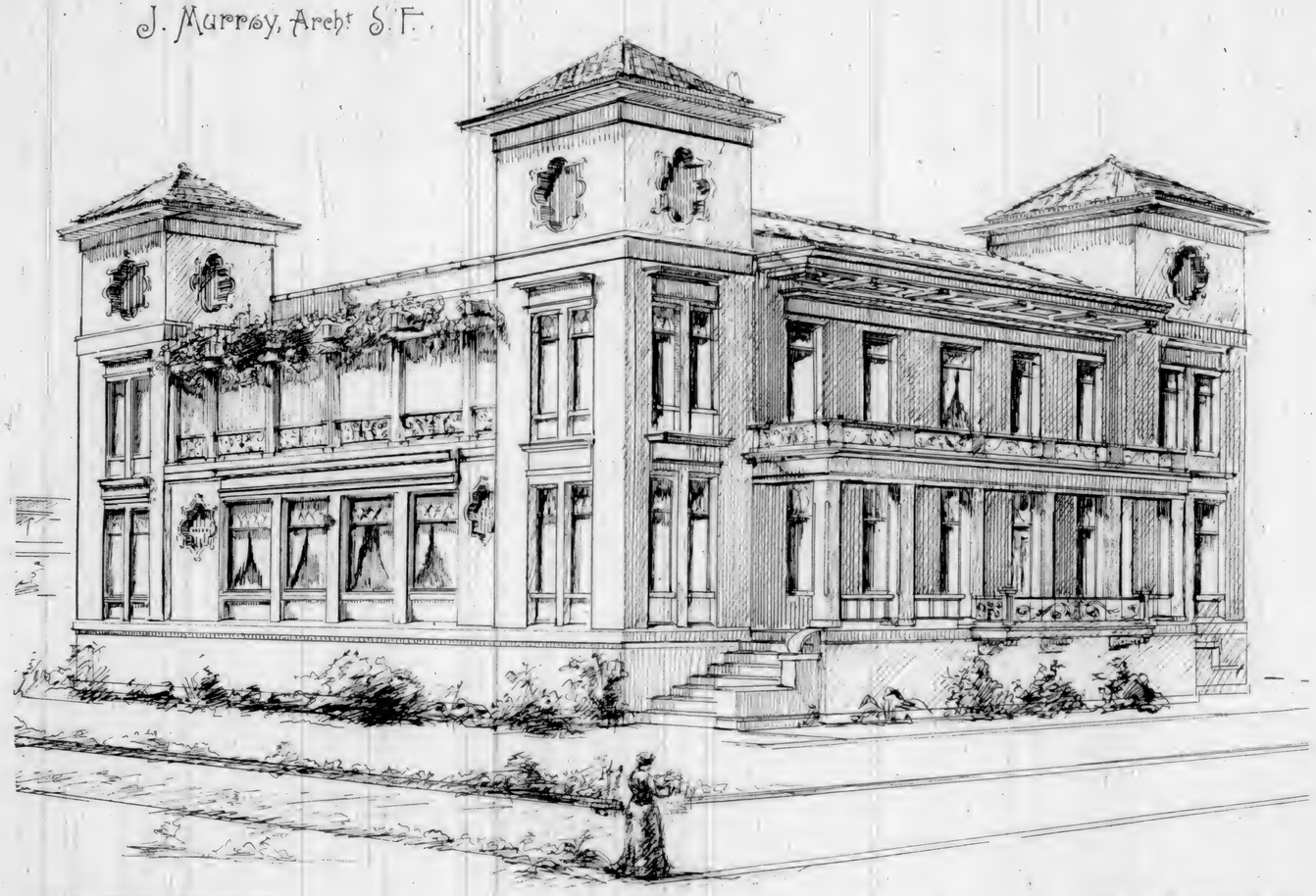
Country Residence.

J. Murray, Arch't S. F.



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL XIX № II NOVEMBER 1898

however, something stronger than legal enactments by State or city, and that is the recognition of the unwritten law of ethics which a professional body establishes for its own conduct, and which will be respected by the public and will be complied with to just that extent with which it is respected by the profession and complied with by its practitioners.

It may be expedient to procure legal enactment; it is imperative that our practice be in accordance with professional ethics.

The letter ballots on the adoption of the amendment to the constitution have been opened and it is found that the amendments have been adopted with but eight negative votes out of 131 ballots sent in.

The consideration of the revised by-laws will be brought to your attention, and it is trusted that such action will be taken as will save the Institute from the necessity of devoting the time of its annual conventions to changes therein, and will insure a large and permanent increase in the membership of the Itstitute.

The deaths among the Fellows of the Institute since the Detroit Convention have been F. A. Coburn, of Cleveland, O.; Alfred Smith, of Chicago, and Elbridge Boyden, of Worcester, Mass. The latter was probably the oldest member on the rolls of the Institute, and contemporary with him was William W. Boyington, of Chicago, a former Fellow of the Institute, who died in Chicago on October 16, in his eightieth year. A memorial and resolution to his memory, prepared by Mr. P. B. Wight, F. A. I. A., has been received from the secretary of the Illinois Chapter.

The death of Oliver C. Smith, a Fellow of the Institute, occurred on December 1, 1896, but was not known to the secretary until after the publication of the proceedings of the thirty-first convention.

M. Charles Garnier is the only person among the honorary members of the Institute who is known by the secretary to have deceased during the year.

This was followed by the report of the treasurer, which showed that the receipts from September 10, 1897, to October 22, 1898, amounted to $3,916.08, the expenditure to $3,334.01, leaving a balance in the treasury amounting to $382.07. A separate statement was made by the treasurer on account of the expenditures and receipts for the Octagon House, whence it was shown that the receipts up to date amounted to $1968, the expenditures to $325.50, leaving a balance on hand of $1,642.50.

The report of the treasurer was referred to an auditing committee composed of J. G. Hill, C. I. Berg and Geo. A. Frederick.

Next on the programme was the reports of chapters, which was given in condensed form by the secretary, taking the chapters in their chronological order, as follows: New York, Philadelphia, Illinois, Boston, Cincinnati, San Francisco, Indianapolis, Washington, Michigan, Central New York, Buffalo, St. Louis, Pittsburg, Central Ohio, Worcester, Colorado, Southern California, and Brooklyn. These reports were referred to a committee to be appointed later.

Next in order came the report of standing committees, the first of which consisted of a humorous report from the chairman of the committee on foreign correspondence, which included extracts from the circular received by the committee during the past summer, calling attention to the First International Convention of Public Art, which was held in Brussels on September 24-28, and to which an invitation was extended. The report of that congress has not yet been received.

The report on education is laid over until later in the meeting.

The report on publication and library, as presented by its chairman, Frank Miles Day, is as follows:

"As chairman of the committee on publications and library, I beg to report that no meeting of the committee has been held, as no useful purpose would be subserved by bringing the members together. So far as the library is concerned, it is the condition shown by the report of the committee last year. As soon as the Octagon House shall have been put in repair the committee will endeavor to get together all the books and papers of the Institute, and will, with the approval of the Board of Directors, fit up a suitable library in the building.

"Regarding the relations of this committee to the publications of the Institute, we would say that the publications appear to consist entirely of the annual report, which is so adequately prepared by the secretary that the relation of the committee on publication in regard to it is merely *pro forma*."

No report was presented by the committee on conservation of public buildings, and the committee on building laws asked to be allowed to make their report later. No report was made by the committee on arts and sciences, but a paper was presented by that committee which was a review of the progress made in civil architecture and the decline of ecclesiastical architecture during the last half-century. The matter was ruled out of order at the present stage of the proceedings, and will be taken up later.

Alfred Stone, the delegate to National Conference on Standard Electrical Rules, made the following report:

REPORT OF THE DELEGATE TO THE NATIONAL CONFERENCE ON STANDARD ELECTRICA RULES.

"The delegate of the Institute to the National Conference on Standard Electrical Rules attended, by invitation of the architectural committee of the National Underwriters' Association, a meeting of said committee, and took part in its delibrations and the consideration of the National Electrical Code.

"It is the desire of the conference that the Institute shall elect a delegate to represent it at future meetings of the Conference, or of the electrical committee of the Underwriters' Association, for the purpose of taking part in the deliberations for the amendment of the code as occasion may require.

"There has been no expense incurred on account of the representation during the past year."

(Signed) ALFRED STONE,
Delegate to the National Conference on
Standard Electrical Rules.

OFFICERS ELECTED.

The following officers have been elected: President, Henry Van Brunt; First Vice-President, W. L. B. Jenney; Second Vice-President, J. W. McLaughlin; Secretary and Treasury, Glenn Brown; Auditor, two years, S. A. Treat; Auditor, one year, E. H. Kendall; Directors—one year, Frank Miles, T. D. Evens, Joseph C. Hornblower; two years, Robert W. Gibson, Levi T. Schofield, W. M. Poindexter; three years, George B. Post, Arthur G. Everett, W. C. Smith. Place of next meeting Pittsburg.—*Architecture and Building*.

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OBITUARY.

THE architectural profession in San Francisco learned with regret of the untimely death of Mr. W. H. Lillie, one of its most promising and respected members. Mr. Lillie was but thirty-six years of age and had during his professional career acquired a most enviable position as a studious, honorable and conscientious architect. One of the last works of importance that he designed was the Masons Home for Widows and Orphans at Decoto which will ever remain a monument of his skill and judgement. The city is full of beautiful examples of his fertile mind. The obsequies were held by the order by which he was most affectionately regarded and his remains were followed to the grave by a large number of deeply grieved and devoted friends.

TRADE NOTES.

THE new Ferry Depot has just been fitted up with Clawson's Patent Revolving Ventilator with fan attachment. These ventilators receive their power from the wind and are continually acting day and night, thereby having pure fresh air in circulation all the time. They give entire satisfaction wherever used and are always open to public inspection.

ATTENTION is called to the advertisement of the Bolles Revolving Sash Company appearing for the first time in this issue. Messrs. J. E. & L. L. Kennedy have recently established agencies in this city and Los Angeles and make a fine showing of work done in the east. The sash in operation is shown in their office in this city where can also be seen their full line of overhead and mullion pulleys and various specialties in window hardware.

THE ATTENTION of our readers is called to the advertisement of N. & G. Taylor Co., Philadelphia, manufactures of the "Taylor Old Style" brand of Roofing Tin. Their trade-mark of the target and arrow is quite familiar to our readers; each sheet is stamped, or embossed, with this trade-mark; the thickness IC or IX; the brand "Old Style", and the name of the Manufacturer N. & G. Taylor Co., Philadelphia. This is done for the protection of architects, roofers, property owners, etc.

Messrs. N. & G. Taylor Co. were the originators of the idea, and were the first to put into practice the stamping of sheets of roofing tin with the name of the brand and the thickness. They have handled this kind of tin for the past sixty-eight years. It is the heaviest coated plate made, and manufactured entirely by the palm oil process. No rolls or machinery are used each sheet being dipped and re-dipped, by hand labor in open pots of metal of different degrees of temperature. It has other merits which our limited space will not allow us to describe, but which entitle the brand to the confidence of the trade. This firm can point to roofs in the old parts of Philadelphia, covered with this same kind of tin that are just as good to-day as when first put on nearly seventy years ago. They have samples in their office testifying to this fact. They have agencies in every large city from Boston to San Francisco.

To those wanting a tin roof that will last a life time, we advise their using this brand. This firm are represented in our city by Mr. Chas. J. Waterhouse, 421 Market steet.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

MISSION High School, Havens & Tœpke, Architects.

FLATS, Havens & Tœpke, Architects.

COUNTRY Residence, J. Murray Architect.

HOTEL GREEN, PASADENA.

HOTEL Green began in a small way, and was originally known as Hotel Webster. In 1888 it was purchased by Col. G. G. Green. He built in 1890 a brick and stone addition to the northern end of the building, which, when completed, more than doubled the capacity of the hotel. The name was changed to Hotel Green shortly after its purchase. The improvement continued. Property directly across the street was purchased and a beautiful park, with fountains, trees and flowers, was laid out and named Hotel Green Park.

When the Colonel visited Pasadena last year its marked development and growth impelled him to have constructed in the center of the park an annex, unequaled by any hotel on the Coast in point of elegance and completeness.

The two buildings are connected by a steel bridge 205 feet long, which is high enough to allow the Pasadena and Los Angeles electric cars to pass under it, trolley and all. The Annex is six stories in height, with a roof garden. The exterior is beautiful in architectural design, and lacks the tiresome similarity so frequent in large structures. The broad varanda, with its massive columns, on the eastern and

southern sides of the first floor; the sixty wrought-iron balconies, opening out from every suite of rooms in the building; the elaborate staff work, the greenery of the roof garden, the copper domes of the two southern towers and the picturesque file of the projecting roof, all combine to produce an imposing and luxurious effect.

The Moorish design is carried out in detail from top to bottom. The building is absolutely fire-proof, being constructed of steel, stone and brick. The skeleton of the structure is made of 1,460,000 pounds of steel, riveted together in such a manner that were it turned over it would still remain intact. The walls are of plaster and expanded metal, 60,000

GREEN HOTEL ANNEX, PASADENA, LOS ANGELES CO., CAL.

FREDERICK L. ROEHRIG, ARCHITECT.

square yards of the latter being used. Ninety thousand feet of expanded metal is used in the floors, which are finished in cement. Fifty tons of channel iron are used in the partitions, and 1,250,000 bricks are contained in the structure. The fact that 3000 barrels of cement were consumed demonstrates the strength of the floors and the general construction. Four hundred tons of Alpine plaster are contained in the walls.

The ceilings of all floors but the first are ten feet high, and the first is fifteen. Crossing the broad veranda one meets in the vestibule with the exquisite onyx finish. The main stairway is directly opposite the vestibule and is ten feet in width. It is made of steel, with a wrought and cast-iron railing topped with heavy oak. The steps are fourteen inches in width, with a six-inch rise, and are of marble.

There is also a stairway in the north end of the building which, with a rapid transit elevator, makes any portion o the house accessible quickly and easily.

Perhaps the most interesting portions of the building are the basement and the roof garden, two extremities. In the one may be found a double, standard-gauge bowling alley and a shooting gallery, while on the other the beauties of the whole surrounding country are at hand, to be enjoyed amid flowers, in the fresh breeze of the after-noon. In the middle of this garden the ball room, or sun parlor, is located. It is a room 60x60, entirely covered with glass. Its western side is a wall of windows, while on the east there are seven doors opening upon a pleasure balcony. The north and south ends are open to the roof garden by arched doorways, and in the northeast corner is a circular alcove for musicians. A canvas has been made to fit the northern end of the roof garden, and on special occasions, when the nights are warm, the guests may dance in the open air under the rays of the full moon. Seven flagpoles have been set at various places around the railing, and the whole garden is naturally adapted to elaborate decoration and brilliant illumination when occasion demands. In the northwest corner of the basement is the bicycle room, which is approached by a gradual decline.

A better water supply than this hotel has could hardly be wished for On the south end of the annex roof are two tanks, each of 3000 gallons capacity. Water is pumped into these by power generated at the power house. From here the water flows by gravity into two tanks on the other build-

ing, which is somewhat lower. These tanks also hold 3000 gallons each and, as they are fitted with ball values, are continually full. The water is all filtered before going into the tanks and is then filtered again when necessary. This makes a water supply for the two buildings of 12,000 gallons which is never allowed to lower.

One of the many novel conveniences of the hotel is the underground tunnel, which connects the Annex with the main building. It contains a flat car, which can rapidly transport dinner trays from the culinary department, located in the main building.

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street, at 4 p. m.

Seth Babson, Pres. — H. A. Schultz, Vice-Pres.
Oliver Everett, Sec. — John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

Theo. A. Eisen, Pres. — Arthur B. Benton, Vice-Pres.
William C. Aiken, Sec'y. — August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock p. m., the first Friday of each month, except July and August.

Jos. C. Hornblower, Pres. — Jas. G. Hill, Vice-Pres.
E. W. Dunn, Jr., Sec. — W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. — T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

BOOKS AND PERIODICALS.

The complete novel in the December issue of LIPPINCOTT'S is by Annie Eliza Brand, and has its action mainly in London. "Mrs. Russell's Sister" is a young, well-to-do and attractive widow, who takes a small house in a back street with a view to benefiting her humble neighbors; but her philanthropic efforts are apt to require masculine assistance, and all her fortitude cannot keep her lovers at a distance.

SEWERAGE AND SEWAGE DISPOSAL is the title of a new book, by Henry Robinson, on a subject matter which relates to both house and extensive land drainage. The work is confined, as far as possible, within the limit of data implied in the title, although in dealing with River Pollution and Fitration of Impure Water, the allied subjects of Water Pollution and Sewage Purification necessarily overlap. Mr. Robinson summarizes the chief conditions requiring to be complied with in the drainage of houses and in the sewering of towns. The calculations of flow in sewers are also dealt with, and the diagrams at the end of the book of discharges and velocities in oval and circular sewers will enable results to be rapidly scaled.

Considerable portion of the work is given to the best methods of profitably utilizing sewage for the fertilization of land for agricultural purposes; various schemes are discussed from the standpoints of economy, effectiveness, and practicability; copious illustrations are drawn from the experience of cities both in Europe and America. The book is published by Spon & Chamberlain, 12 Cortlandt street, New York, and is for sale by them at the published price of $4.50.

THE DAY OF VENGEANCE—This volume certainly will be valued for its extensive collection of facts and figures relating to almost every phase of social, political, financial and religious matters, as they bear upon the present situation. Nor are these dryly stated: on the contrary they are introduced in such a manner as to fascinate every reader who is at all interested in the consideration of the wonderful events of "our day." Popular edition 35 cents; in cloth binding, embossed $1.50 at all bookstores.

TESTS OF CAST-IRON COLUMNS.

A VERY important series of tests of cast-iron columns has recently been completed at Phœnixville, Pa., by the department of buildings of New York city, and from an extensive account given in *Engineering News* we make some abstracts.

Three sets of columns were tested to destruction in the hydraulic testing machine of the Phœnix Bridge Company, these being respectively 15 feet 10¼ inches long by 15 inches in diameter; 13 feet 4 inches long by 8 inches in diameter and 10 feet long by 6 inches in diameter; the thicknesses varying from 1 11-16 inches to ⅝ of an inch. In the first group were two columns taken from the "Ireland Building," which collapsed in the summer of 1895, in New York, and four similar ones cast for the purpose of the test, while the second and third groups each consisted of two columns of kinds used in regular building construction, made by well-known firms, and were fair samples, coming within the provisions of the law.

The data of the tests are tabulated in the paper referred to, and some of the salient features may be especially noted. With but two exceptions the thickness varied materially in different portions of the same column, so that in one instance the metal on one side was 1¼ inches thick, and on the other only ⅝ of an inch; and, although this was an extreme case, there was a decided irregularity of thickness, which probably affected the strength materially. All of the 15-inch columns were broken, except one, which was nearly uniform in thickness, and which remained intact at the maximum pressure of the testing machine—a load of more than 2,082-000 pounds, or more than 40,000 pounds per square inch of area. The breaking load of the others of this group varied from 25,000 to 30,000 pounds per square inch, the variations being apparently due to the presence of cinder, foundry dirt, chaplets, and blow-holes. The smaller columns were all broken with loads ranging from 22,000 to 32,000 pounds per square inch of area.

According to the building law of the city of New York, the strength of all columns and posts is to be computed by Gorden's formula, using a co-efficient of 80,000, and a factor of safety of five for cast iron. The application of Gordon's formula, under these conditions, to the columns tested shows that the 15-inch columns should have a breaking strength of 57,000 pounds per square inch, instead of which it actually ranged from 25,000 to 40,000 pounds; while for the 6-and-8-inch columns the breaking strength by the formula should be 40,000 pounds per square inch, instead of 32,000 to 22,000 pounds, as shown by the tests.

Had these colums, therefore, been loaded as heavily as the law permits, the factor of safety in some cases would have been only a little more than 2, instead of 5 as intended. Judging from the physical description given of the columns tested, this discrepancy is much more likely to be due to the defects in the castings than to the inaccuracy of the formula, and apparently a requirement for better material and more carefully made castings would raise the strength nearly, if not quite, to that indicated by computation.

An interesting feature of the paper is the description of the calibration of the Phœnixville testing machine by comparison with the Emery testing machine in the United States Arsenal at Watertown, Mass. This calibration was effected by testing a special soft-steel Phœnix column, first at Watertown and then at Phœnixville, using a roller extensimeter reading to 0,0001 inch, the conditions being reproduced as nearly as possible in the second test, and the same extensimeter being used. The result showed the gage readings of the Phœnix machine to be from 15 to 17 per cent higher than the actual values, this being due to friction of the machine and possibly to gage error. By using this correction, the tests at Phœnixville are made comparable with those at Watertown, with a possible error of about 3 per cent.

LESSONS FROM FIRE AND PANIC.

BY THE Factory Act, 1891, every new factory in which more than forty persons are employed must be provided on the stories above the ground floor with such means of escape in case of fire as can reasonably be required under the circumstance of each case. Every old factory must, after notice, be similarly provided, subject to arbitration in case of difference. The factory Act of 1895 extends these provisions to certain workshops and laundries. I think that the chief fatalities during recent years have been in factories employing less than forty, but there are other provisions for safety and for facilitating escape which may be put in force by the inspectors if the provisions above mentioned are not applicable. As to the application of these structural provisions, it has been said that if the workpeople on the upper floors are provided with means of getting to the ground floor they cease to be subject to the Act, but this view does not seem to be supported by the words of the Act, which require that such persons are to have "means of escape," and the ground floor might be on fire and not available for that purpose. These persons therefore must have means of getting clear of the building either into a street, or by arrangement on to adjoining premises, or into an open yard of ample area. In a confined yard they would be subject to the glow and heat of the fire, and this is fatal. Many of the victims at the Paris Bazaar fire died in the open yard at the rear, which was of some size, but which afforded no shelter from the fire.

The circumstances of each case which the authority or the arbitrator is to take into account appear to be such as arise from the nature and quantity of materials used, the processes employed, the danger from lifts which will communicate fire and smoke, the numbers of workmen and workwomen respectively, and the description of the premises surrounding the factory. It is sometimes argued that "the circumstances of each case" which are to be taken into consideration include such as arise from the insufficiency or inconvenience of the site, the owners system of supervision, or other matters which might have been foreseen and provided against in the selection of the site or the construction of the building, and that allowances should be made for such matters of difficulty. But there must at any rate be means of escape, and those which may be sufficient in an ordinary case may reasonably be increased and not omitted if the site, or the buildings, or the system of management are worse than common. If a factory has combustible floors and roof, the requirements may be more stringent than if it is fire-resisting throughout. But unless the plan is satisfactory, the smoke from a very small fire will quickly spread, disabling the workpeople or causing a sudden panic, whether the building is fire-resisting or not.

Some of the causes of danger are the inflammability of the stock, the way it is allowed to accumulate so that insufficient room may be left even for passages, the chance that access to staircases may be cut off by the fire, the insufficient width of the staircases, the bad arrangement of their steps, and their liability to become filled with smoke. As in theatres, there should be alternative means of escape at different extremities of the building. Two rooms may be united by a doorway, each room having its staircase at the other extremity, or two buildings having their own staircases may be united by a bridge on each floor. Generally the staircases should be concrete, secondary staircases of minor importance being of oak or teak, the treads 10 inches, the risers 7¼ inches, the width 3 feet 6 inches to 4 feet 6 inches. There should be a fire-resisting enclosure to each, with self-closing doors opening by pressure in the direction of each, but not so as to obstruct the landings. The staircase should be well ventilated and should adjoin an external wall. If that is impracticable, it should communicate with the street by a very short passage of fire-resisting construction. The roof of the staircase should be fire-resisting. If iron or other fixed sashes are to be used some should be made to open, so that persons could be rescued by means of them.

I will here allude to other means of escape which are no doubt contemplated. Iron external staircases kept clear of windows through which fire can pass may be constructed. Movable fire-escapes are to some extent recognized, for the factory inspector may require them and the magistrate may order them. But these are things properly within the duty of the tenant, and do not seem to be what the acts require of the owner, whose duty it is to put his building into a proper state structurally. Movable escapes are not satisfactory as

substitutes for structural requirements. When a new staircase was demanded in an old building the occupier pointed out that there was a movable escape ready to be let down at one of the windows. When asked to show how it worked the window was found to be fastened down, and he proposed to send for a carpenter, who was in the basement. I need not enlarge on the risks of such contrivances when used by persons not in the frequent habit of using them.

Escape downward by means of the staircase being liable to interruption by fire and smoke, other means must be made available. Very little has so far been done to provide escape by the horizontal route towards adjoining buildings or upwards through the roof. To both of these there are, however, serious objections.

The London Building Act prohibits openings through party-walls between houses in different occupations; besides which, few people would run the risk of the improper user of such convenient modes of getting from house to house without the knowledge of the owners. The late Sir Henry Bessemer showed me an ingenious arrangement by which this last objection was sought to be removed. An opening only 16 inches wide by 3 feet 6 inches high was made in the party-wall at a foot above the floor level. On each side was a very strong iron door and frame, on the inner side of which was a pair of knockers. On an alarm of fire in either house the inmates would open their own door, and ply the knockers on that of the neighbor, who might be expected to come quickly to the rescue. The outside balcony is a much better arrangement, and if it could be generally adopted on each story, or only for alternative stories, there would be in most cases reasonable facilities for rescue. But the balcony, though a beautiful architectural feature, is almost unused in this country. It might cause apprehension of improper access from house to house or from room to room. I have, however, lived for many years in a district where every house has a spacious balcony above the ground story, and I have not heard of this objection. There is an easy means of passing from the window of one house to the nearest window of the adjoining house by fixing a short length of balcony between them crossing the end of the party-wall.

But the best means of escape after the staircase is by way of the roof, a good flight of stairs being provided to the roof door, which should have an automatic fastening. The Cripplegate fire happened to originate in one of the manufacturing warehouses which was first dealt with by the London County Council under the Factory Act of 1891. The two upper stories were occupied by seventy or eighty workgirls, and the owner willingly put a proper door to lead on to the roof. By this route he and they got away, and without it they must all have perished. But easy as it was, there was considerable difficulty in getting the girls out in the few minutes available, some having fainted or become uncontrollable in their excitement. As the workwomen are usually accommodated, often by hundreds, on top stories, this is a useful lesson in construction of means of escape.

I do not suppose that roof doors will be willingly adopted where valuable stocks are kept, but in a district of warehouses where the roofs were properly adapted for escape there might be a watch kept on the roof against thieves and the outbreak of fire.

The construction and arrangement of public buildings, that is, places of worship, schools, hospitals, workhouses, theatres, halls, exhibition room, and other public places of assembly in London, are in certain respects regulated by the London Building Act, 1894. The general construction must be to the approval of the district surveyor, subject to a tribunal of appeal, but the Act requires that the floors of lobbies, corridors, passages and landings, and the flights of stairs shall be of fire-resisting material. Besides this the dimensions of passages, staircases, and exits of new churches, chapels, meeting houses, public halls, lecture rooms, exhibition rooms, or places of assembly are laid down in the Act. Staircases must be carried and enclosed by nine inch walls, and with the corridors and passages shall be not less than four feet six inches wide, but if not more than two hundred persons are accommodated this is reduced to three feet six inches. If for more than four hundred persons an addition of six inches for every additional hundred is to be made up to a maximum of nine feet and when the width is over six feet there is to be a dividing hand-rail. If two staircases or passages are put instead of one, each must be of two-thirds the above dimensions, but not less than three feet six inches. And if one portion of the public is accommodated over another portion they must have a separate exit. All doors and barriers must open outwards, and no outside locks or bolts are to be fixed.

As regards public buildings in general these are new provisions. They are a somewhat mild adaption of the much more stringent regulations that have long been applied to theatres and music-halls, and they were very much required.

I was once asked by a member of a Parliamentary Committee who desired to ridicule our theatre regulations why we did not seek to apply them to churches, and could only suggest the comparatively infrequency of accidents in such places. But the reason was inadequate and Parliament has since recognized this in the above provisions. There are many more accidents in places of worship than is commonly supposed, and the most serious have happened in such places. The crowds are often more dense, and precautions are hardly thought of. One, or perhaps two doors are thought enough for many hundreds of people. The organ and heating apparatus and vestry are in dangerous proximity, artificial light and decoration are on the increase. A senseless panic ensues on the least alarm.

To go back rather a long way, in 1120 the monastic church of Vezelay, in France, was burnt, with 1127 men and women. And other similar fatalities are found in old records. Some seventy years ago, at a festival, when the cathedral of a South American city was crowded with the whole female population, the elaborate decorations which thoughtless people always add on festal occasions, took fire, and 2000 perished, hardly any escaping. A few months ago some decorations in Pisa Cathedral took fire, and in a panic twelve persons were crushed to death and twenty injured. A few weeks ago, fifty-four people were killed and eighty injured at a fire in a church in Russia. A few days ago, the organ and gallery of a chapel in Hull were blazing when the Sunday morning congregation assembled. If this outbreak had been delayed for half an hour we might have had an object lesson in panic. I mention these matters because the architect will feel that he ought not to provide anything less than the moderate securities demanded by the London Building Act; and if one or two additional doors are required, they are at all times a convenience to a crowded congregation. If the precautions above mentioned are required in a new building, I am unable to see why they should not within a reasonable time be demanded in old buildings as well.

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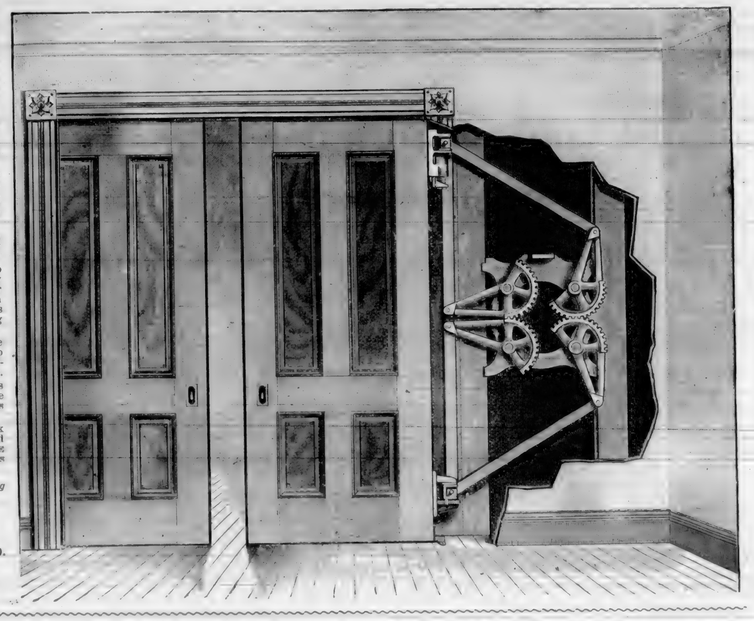

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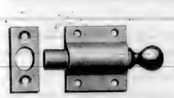

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BUILDING NEWS.

LOS ANGELES

The board of trustees of the Los Angeles branch have made its biennial report to Gov. Budd for incorporation in his next message to the legislature. The board ordered contracts let for the construction of asphalt walks and the laying out of a portion of a portion of the grounds for gardens for the use of the botany class.

Among the improvements recommended is $30,000 for improvements, consisting of moving the gymnasium building two floors, one for a manual training work room and one for enlarging the training school and $5000 for improvements in the present training school quarters. For the library, $10,000 is asked. This will give a building 40x48 feet and will be ample for the students as well as the books.

For necessary repairs and painting $1500 is asked; and for furniture and apparatus $4000. The total amount necessary for the support of the school, besides the new buildings mentioned is $124,5000.

Plans have been prepared for Whiting Thompson, for a two-story 8-room frame residence to be built on Orange street near Union venue. The work on the building is being done by day's work.

Architect R. B. Young has prepared plans for Jas. B. Lankershim, for a warehouse building, 100x100 feet, two stories and basement, as an addition to the factory of Bishop & Co; at Seventh and Alameda street and will be ready for bids next Monday.

Architects Howard & Train are preparing plans for Mr Williams, an attorney in the Laughlin building, for a one-story frame residence of seven rooms, to be built on Burlington avenue near Eight streets; the inside finish of the principal rooms will be in oak balance in Oregon pine.

PASADENA

Architect R. B. Young has let the contract for the excavating for the new Catholic church to J. H. Dovey; it is expected that bids for the structure will be opened soon.

John M. Smith of Montana has purchased 150 feet frontage on West Colorado street between Terrace drive and Orange Grove avenue. It is the intention of the present owner to improve the property with a handsome residence.

RIVERSIDE

J. W. Babcock will begin at once the erection of a $1500 house on the ten acres on the corner of Indiana avenue and Jefferson street.

SANTA ANA

Bids for the construction of the internal sewer system have been opened last week. Fourteen firms competed; the lowest being the Williams, Belcher Co. of San Francisco for $86,844.44.

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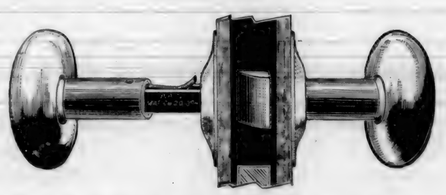

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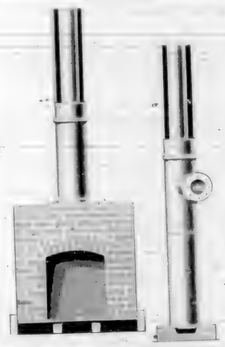

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THE CALIFORNIA ARCHITECT AND BUILDING NEWS

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VOLUME XIX. No. 12. DECEMBER, 1898.

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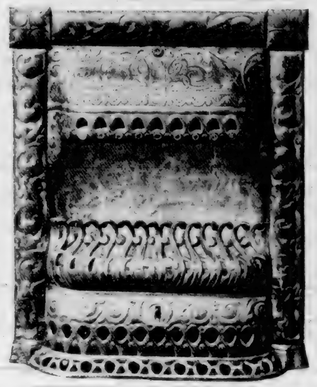

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Expense stopped when heat is not needed. This is not so with coal.

Examine the various designs of Grates and Heaters of the
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A modern home for a modern man, planned by an up-to-date Architect is always sheathed with

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The only Water-proof and Vermin-proof paper on the market that is odorless.

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The California Architect, $3.00 Per Year.

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Our recent announcement that inferior goods had been sold and billed on the Coast as our goods, and that our trademark numbers had been counterfeited, has disclosed an even greater extent of these practices than we had supposed to exist. To make the resulting damage to the reputation of our goods as small as possible and to protect our would-be patrons we repeat:

All our catalogue goods, except those listed by us as manufactured by others are stamped with our name "Keuffel & Esser Co." or our initials "K. & E. Co." and where there is room for it, with our trademark trademarks or . **We never stamp our goods with catalogue** Our German drawing instruments bear only the **numbers only,** and goods so stamped are therefore not ours. All our goods are fully warranted to conform to the description we give of them in our catalogue and to be of the quality and grade specified. We make some lines of cheaper goods for the jobbing trade, but they differ from our catalogue goods in quality and appearance. These inferior goods are not stamped with any of our trade marks. Our catalogue goods are not furnished to any dealer or agent without our complete stamp as described above, and any claim that we furnish our catalogue goods by special arrangement without our stamp is therefore an attempt to deceive. Our special papers in rolls or sheets

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are watermarked or stamped along the edge with their name. Any claim that our papers are furnished by us in bulk without these names or that these papers have been obtained otherwise than through us, are absolutely false.

We will thankfully accept any information bearing on the counterfeiting of our trademark numbers or the palming off of other goods as ours.

VERY RESPECTFULLY,
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Plumbing and Gas Fitting
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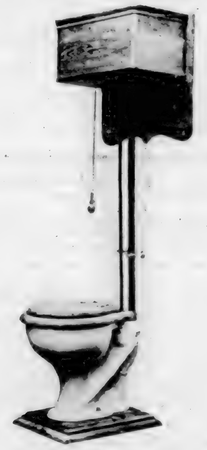
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Three Syphon Jet combinations, with seat attached to bowl; woodwork made of selected cherry quartered oak, and walnut. Polish finish.

For our other combinations, see '98 Catalogue or visit our showroom.

Ask for Catalogue. Correspondence solicited.
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THE JOHN DOUGLAS COMPANY,
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D. E. GARRISON, Jr., President. S. W. BACKUS, Secretary, C. F. RUNYON, Vice-President.
N. L. BELL, Manager.

WESTERN EXPANDED METAL AND FIRE PROOFING CO.

MAUFACTURERS OF AND CONTRACTORS FOR

Expanded Metal System of Fire Proof Construction.

Fire proof arches, solid partitions and attaching metal lath to ceilings, walls, columns, beams, etc.

LATH ALWAYS IN STOCK.

OFFICE: Rooms 414-15-16 CLAUS SPRECKELS BUILDING. TELEPHONE Main 5829

FACTORY: Corner Townsend and Clarence Streets, San Francisco.

BUILDING NEWS.

Bartlett near 23d. Two-story frame; o, Mrs. Amelia P. Hogan; c, W. H. Hanchett; signed, Dec. 15; filed, Dec. 16; cost $2780.

Broadway near Fillmore. Grading, brick, stone, etc; o, Mrs. Hannah Liebes; a, M. J. Lyon; c, John Furness; signed, Dec. 3; filed, Dec. 8; cost $9500. Sewers, plumbing, etc; c, W. F. Wilson; signed, Dec. 5; filed, Dec. 8; cost $925.

Bush near Fillmore. Carpentry, etc; o, Elizabeth Walcom; a, Chas. Geddes; c, Samuel E. Thompson; signed, Nov. 15; filed, Nov. 26; cost $2243.

Bush and Polk. Alterations and additions; o, W. Piper; c, F. V. Acker; cost $800.

Camino (Real (San Jose Ave.) Cottage; o, Henry C. Hagensen; c, L. G. Bergren; signed, Dec. 15; filed, Dec. 17; cost $1460.

Clay near Laurel. Except painting, etc; o, Emma D. Buckbee; a, F. S. Van Trees; c, W. H. Bugge; signed, Oct. 4; filed, Oct. 6; cost $6200.

Clayton near Frederick. To build; o, T. P. and Ellen L. Riordan; a, Chas. J. I. Devlin; c, C. F. Shebley; signed, Nov. 14; filed, Nov. 29; cost $8425.

De Boom Tract, lots 14 and 15. All work except mantels, etc; o, Rachael Berg; c, C. Schweizer; signed, Nov. 28; filed, Dec. 5; cost $1400.

Dolores near 21st. To building; o, Johanna A. Theisen; a, Salfield & Kohlberg; c, I. W. Coburn signed, Dec. 1; filed, Dec. 6; cost $2680.

Ellis near Jones. Carpentry, etc., for five-story brick; o, and c, L. H. Sly; cost $20,000.

Ellis near Gough. Excavation, o, H. and I. Wolf; a, Philip Schwerdt; c, John Tuttle; signed; Dec. 15; filed, Dec. 17; cost as per terms given below.

Filbert and Filmore. All work except plumbing, etc; o, Frank Mecchi; a, W. H. Lillie; c, Demartini & Traverso; signed, Oct. 30; filed, Dec. 8; cost $3300.

Haight near Webster. Carpentry, brick work, etc; o, Patrick Barron; a, R. H. White; signed, Dec. 12; filed, Dec. 13; cost $6463.

Hayes near Broderick. To build; o, Mrs. Mary R. Gurmendez; c, Philip Rive; signed and filed, Dec. 5; cost $3680.

Hermann near Webster. To build; o, Mrs. Lena Beshorman; c, Wilson & Long; signed, Oct. 31; filed, Nov. 28; cost $2700.

Howard near Stewart. Two-story brick; o, E. A. Howard; signed and filed, Dec. 12; cost $6482.

BUILDING NEWS.

Kearny near Broadway. Concrete retaining wall; o, Cuneo & Costa; a, W. J. Cuthbertson; c, Zanetti & Co; cost $400.

Laguna and Golden Gate Ave. To build; o, Kate A. Fallon; a, Martens & Coffey; c, John Furness; signed, Nov. 30; filed, Dec. 3; cost $9200.

Larkin near Sacramento. Three-story frame; o, George W. Harris; a, Shea & Shea; signed, Nov. 21; filed, Nov. 28; cost $8200.

Laurel Hill Cemetery near Buena Vista Ave. Granite work for a Pyramidical Tomb; o, W. B. Bourn; a, Percy & Hamilton; c, Raymond Granite Co; signed, Dec. 7; filed, Dec. 9; cost $11,286.

Main near Howard. Brick work for four-story brick; o, Pelton Water Wheel Co; a, Walter J. Mathews; c, Miller & Beck; signed, Dec. 7; filed, Dec. 9; cost $5785.

Main near Howard. Concrete work, etc; o, Pelton Water Wheel Co; c, Geo. F. and H. N. Gray; signed and filed, Nov. 22; cost $1655.

Market and Main. All work for a water tight, concrete floor; o, Augusta K. Gibbs; signed, Nov. 22; filed, Nov. 26; cost $2740.

As above. Electric freigh elevator; c, A. J. McNicoll & Co; signed, Nov. 26; filed, Nov. 28; cost $2900.

Mission near 3d. Excavations and concrete work; o, Flood & Mackay; a, M. H. Bugbee; c, Cal. Concrete Co; signed, Nov. 21; filed, Nov. 22; cost $1060.

Mission near 18th. Alterations and additions; o, Mary J. Bodwell, Annie I. Packord; c, C. W. Duffie; signed, Dec. 8; filed, Dec. 9; cost $4500.

Montgomery near Broadway. To build; o, Harvey Dickerson; c, H. Behrens; cost $3600.

Morton near Grant Ave. To build; o, Sharon Estate; c, Richardson & Gale; cost $5,000.

Noe and Henry. To build; o, Jeremiah F. Fleming a, W. Koenig; c, Ira W. Coburn; cost $4000.

Oak and Lyon. To build two-story and basement; o, D. Einstein; cost $7000. Oak and Lyon. Two-story frame; o, D. Einstein; cost $4000. Lyon near Oak. o, D. Einstein; cost $4500.

Olive Ave. near Van Ness Ave. To build; o, Joseph Henry; a, Copeland & Pierce; filed, Oct. 6; cost $2250.

Polk near California. To build; o, W. B. Bradbury; c, R. O. Chandler; signed, Nov. 25; filed, Nov. 26; cost $8052.

Post near Larkin. To build except plumbing, etc; o, E. Kasson; a, E. J. Vogel; c, D. Currie; signed, Nov. 17; filed, Nov. 25; cost $2550.

BUILDING NEWS.

Powell and Ellis. Carpentry, mill work, etc; o, Leonhardt & Haggarty; a, F. S. Van Trees; c, A. J. Forbes & Son; signed, Oct. 1; filed, Oct. 6; cost $3275

Sacramento near Dupont. Additions and alterations to 3-story brick; o, Lee Chun & Wong Wan; a, Charles Z. Soule; c, M. V. Brady; signed, Dec. 1; filed, Dec. 3; cost $10,250.

Sacramento and Lyon. Raising, moving, etc; o, Jacob Schutten; a, H. Geilfuss; c, Val Franz; signed, Dec. 3; filed, Dec. 5; cost $2075.

Spruce and Clay. To build; o, F. E. Rich; a, T. Paterson Ross; c, C. M. Depew; signed, Nov 21; filed, Nov. 28; cost $2600.

Taylor near Turk. Grading, excavation, etc; o, M. Hefferman; a, T. J. Welsh; c, Warren & Malley; signed, Dec 6; filed, Dec. 7; cost $2703.

Tiffany Ave. and 20th. Three frame cottages; owner and contractor, W. C. Hamerton; cost $5800.

Valencia and 19th. Double 3-story frame, 6 flats; owner, Peter Crichton; cost $16,000.

Valencia near 16th. To build; o, R. Faussig; a, Salfield & Kohlberg; c, W. Horstmeyer & Co; signed, Dec. 2; filed, Dec. 6; cost $2520.

Van Ness Ave. near Broadway. To build; o, H. W. Smith; a, Fred Wood; c, Wm. Bell; signed, Oct. 3; filed, Oct. 7; cost $2700.

Van Ness Ave. and Clay. Galvanized iron, etc; o, St. Luke's Church; a, A. Sutton; c, Walker Bros; sub-c, Gulfoy Cornice Works; signed, Sept. 30; filed, Oct. 6; cost $1839.

Van Ness near Union. To build; o, Robert G. Langrebe; c, Biller & Qualman; signed, Dec. 3; filed, Dec. 4; cost $2166.

Waller near Octavia. To build; o, N. Simi; a, Martens & Coffey; c, Caccia & Pecarich; signed, Dec. 12; filed, Dec. 13; cost $3445.

ALAMEDA

Santa Clara Ave. and Grand street. Guild Hall and class room; o, Christ Church; a, M. G. Bugbee; c, Eber & Libbey; signed, Dec. 7; filed, Dec. 5; cost $2344.

BERKELEY

Daley's Scenic Tract, lot 12, block 19. To build; o, Lydia Atterbury; a, McCrea & Knowles; signed, Nov. 21; filed, Nov. 22; cost $1950.

Grove near Parker. To build; o, Harry A. Sully; c, Fred Estey; signed, Nov. 17; filed, Nov. 29; cost $1542.

Continued on page xii.

The Yale & Towne Mfg. Co.

LOCAL OFFICE:

Mills Building, San Francisco.

The "Yale" Locks with new Paracentric Key, afford the highest standard of security. They are made in hundreds of styles and sizes, adapted to almost every possible use.

The Builders' Hardware, made by this Company, and used in connection with the "Yale," "Vulcan" and "Branford" lines of locks, forms collectively the largest assortment in the trade and covers respectively, as used with these locks, fine, medium and cheap goods.

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As to Prices. While the goods made by this Company are always "the best for the money," the range of products and grades is such as to meet conditions where cost is a FIRST requisite, as well as where the greatest perfection of design and finish is alone considered.

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Nos. 9, 11 and 13 Murray Street, New York City.

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N. L. BELL, Manager.

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9199-98-25-12½

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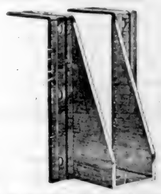

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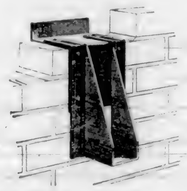

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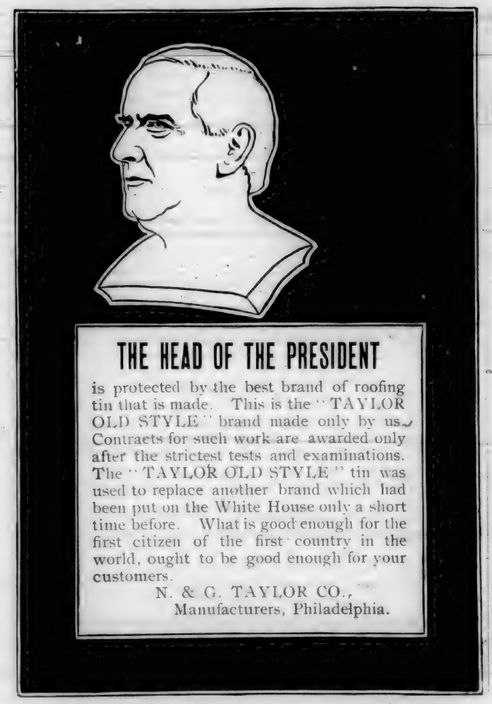

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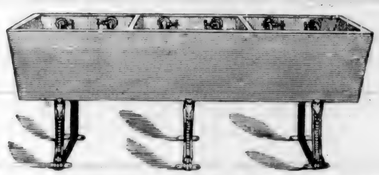

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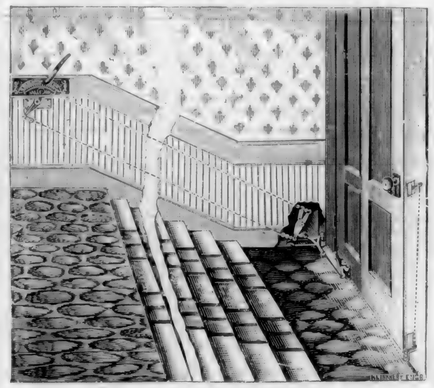
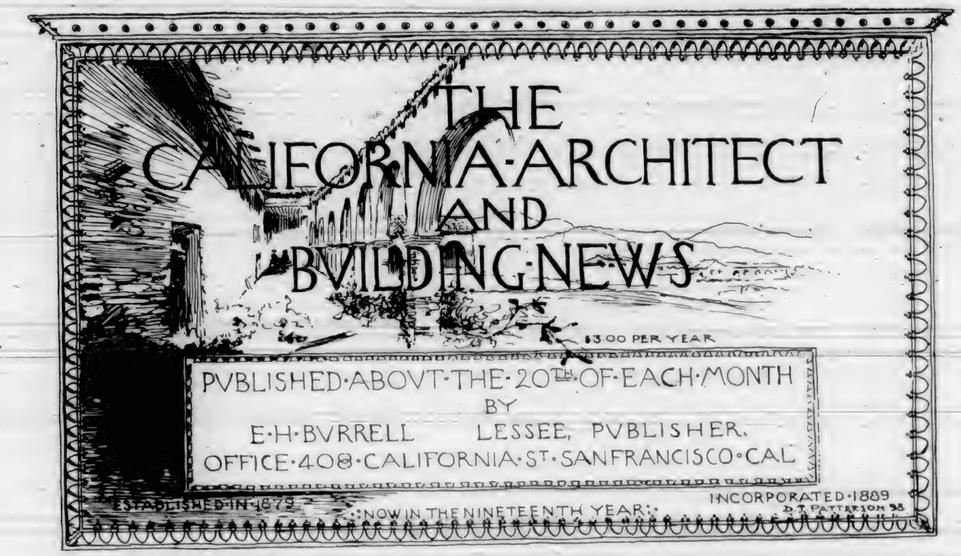




VOLUME XIX. DECEMBER 20th, 1898. NUMBER 12.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

THE CALIFORNIA ARCHITECT AND BUILDING NEWS extends the seasons warmest greetings to its patrons and friends The efforts to render this publication worthy of the profession and commensurate with the patronage it enjoys is every day bearing fruit. The words of appreciation expressed by contemporaries and individuals are in the highest degree cheering. It encourages attempts at improvement and increases the determination to equal, if not surpass, the very best publications that issue from older communities. It is believed that a new era is opening for San Francisco and the coast, one that will bring added prosperity to this lavishly endowed section of the country and open out a period of advancement and wealth in which the architectural profession and builders generally will, of necessity, have a great share. It will be the continued aim of the publisher, as it has always been, to support actively the interests to which it is devoted by every means in its power. Its loyalty to San Francisco and the coast and to every interest that aids to bring new developments and increased prosperity throughout the state is known and appreciated. No assurance is needed of continued effort. THE CALIFORNIA ARCHITECT AND BUILDING NEWS is accepted all over the world as the representative and exponent of the builders profession of California. It reaches every architect west of the Rocky mountains and its value as a means of communication between the manufacturer and the especial interests of which it is the organ is attested by its increased advertising patronage and swelling circulation. To all our friends, east and west, we tender congratulations and a sincere hope that the future will prove a prosperous season to one and all.

LAW LICENSING ARCHITECTS.

THE coming session of the State legislature gives an opportunity for a renewed attempt to be made to secure the enactment of a statute compelling all architects to take out licenses and authorizing builders to employ only such architects as have duly complied with the law. The sentiment toward such a statue is growing in the east and in every settled community the necessity of such a law is becoming more and more manifest. Illinois has a model statue on this subject, passed soon after the Chicago fire had demonstrated a necessity for such action on the part of those interested in the welfare and protection of communities. The country is in the throes of a tremendous expansion. Building construction has advanced so rapidly that the methods of ten years ago are almost obsolete. The demands of the present require a nearer approach to fire-proof standards then ever before and greater attention to scientific details. The architect of today to be successful is necessarily compelled to master these details and to expend more time in acquiring the education that fits him for the excessive responsibilities demanded. The law exacts heavy penalties for those who presume to trifle with the health of communities and practice medicine without the license of competent authority and it appears to many that architects as the guardians of the safety of the people should be protected from the competition of every amateur who thinks himself sufficiently gifted to plan a dwelling.

FROM FORT POINT TO THE CLIFF.

HIS HONOR, Mayor Phelan, at the dinner to the visiting architects at the Bohemian Club a few evenings ago, surprised and delighted the gentlemen present by an announcement that Mrs. Hearst had authorized the formation of a committee to have in charge and to formulate some general plan for the adornment of San Francisco, with special attention to a new system of sewerage, tree planting, laying out boulevards and the like, the design being to render the city attractive to the outward senses and more delightful as a place of residence. It would be difficult to imagine a more opportune or useful suggestion or one more in line with the spirit of the age. San Francisco has always relied too much upon its fine situation and impressive surroundings to give sufficient attention to artificial adornment but it is learning and now one of the missions of Golden Gate Park is at least being manifested. The park has demonstrated how the most unpromising conditions may be made into a scene of beauty and enchantment by the expenditure of a moderate amount of money and the employment of competent landscapeists. What has been done in this one location may be accomplished in lesser degree any where else in the city. Such an example of floral beauty and improvement is possible no matter how small the area available for the purpose may be. Improvement of home lots is thus stimulated and rivalry between neighbors becomes acute. The appearance of the streets is also vastly enhanced and at the same time mor valuable for building purposes and thus the tendency to remain a resident rather than to seek the enticements of suburban localities is lessened. Architects are intensely interested in this question of municipal improvement for upon it rests the question, in a large measure, of the rapidity of future expansion. This committee, which has been most judiciously selected, will, ere long, be seeking the assistance of those who can help by suggestion or otherwise. In the matter of laying out new boulevards much can be said. The present is the time to begin. Land is cheaper then it will ever be again and vacant properties on the line of these proposed new roadways may be acquired at low prices. The time is especially opportune, as the government is disposed to aid in the improvement on account of the future importance of San Francisco as a center of military operations. All of the projected boulevards connect with those of the Presidio, for the reason that these are already constructed and furthermore because of the wonderful natural attractions of the reservation. Practically a boulevard extends from Market street by the way of Van Ness Avenue to Fort Mason and thence along Lombard street to the Presidio where it extends to Fort Point as well as to Pacific Avenue. Lombard street should be widened to the dimensions of Van Ness Avenue at once. The government would assist and by this means several miles of perfect drives would be obtained at very slight expense. The extension of a boulevard from Fort Point to the Cliff House is perfectly feasible though an expensive project. Those who have inspected the Riverside drive along the Hudson at New York understand the enhusiasm with which that splendid improvement is regarded. There is an opportunity for not only exceeding the splendors of Riverside but of constructing one that will be unequaled in the whole world by following the line of the coast from Fort Point to Point Lobos, a distance of perhaps four miles. Could any thing finer be possible. Imagine a driveway as wide as Van Ness Avenue stretching the entire distance, adorned with trees and shrubbery, with facilities for pedestrians, affording at every step a splendid prospect of one of the great views of the world. The entire distance from Fort Point to the Cliff would be one long panorama of scenes of unsurpassable beauty. The expense of constructing a roadway along the Cliff would be great but would be more then offset by the advance in the property along its course which would soon be appropriated for home sites. The roadway, moreover, would give the government access to the fortifications which in time will be erected at the entrance to the bay and it would, without doubt, liberally assist by appropriation the carrying out of such a design. No professional instinct is necessary to the understanding of the result of the construction of a shoreway as suggested. The immediate consequence would be the appropriatino of all the land frouting on the bay shore and the construction of palatial homes each with terraced lawns extending down to the waters edge. Neither would the expense be beyond the ability of the community. No difficulty whatever, in an engineering sense, exists that would prevent the execution of such a design. It would be simply a question of grading and the disposition of the material.

A shoreway drive along this route would form a connecting link between the center of of population and the grand ocean drive way that is partially constructed along the western border of the city and would give access to the park from the west besides running through a territory which street car lines would never invade or obstruct. Such a driveway, which is suggested only in general terms, would also add greatly to the beauty of the harbor entrance and prove an impressive exhibition of the power and wealth of the city to every one who enters through the Golden Gate by the pathway of the sea.

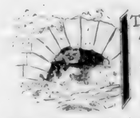
THE COMING OF THE NEW SCHOOL.

ONE of the signs of the times is the unexpressed longing or aspiration for a new school of architecture that will be American in its distinctive character and national in its type. This hope is not confined to the architectural profession. Heretofore this nation has had to be content to follow the ancient schools. Every civilization but our own has furnished to the world some conceptions or types that were purely characteristic and original and reached their highest perfection or development just before these nations began to retrograde or decline. Perhaps the luxuriance reached in matters pertaining to art was an indication that the fruit was ripe and that the worm of decay was already at work. Examples of such coincidences are too numerous not to have been remarked by philosophical observers and some have accepted as an axiom that extreme development of the purely inellectual arts is a positive indication of a lack of national strength and of ultimate effeminacy. If such theories are well founded the American nation has a long life before it judging from the imperfect development of the arts and our utter dependence upon Europe for every thing to art pertaining.

So far America has contributed nothing but the tall building in return for all the architectural contributions it has received from older nations. The tall building is distinctive only as an example of audacity and new methods of construction and is confessedly inartistic and ugly but at the same time great. The painful sensation that srrikes the American traveler on finding that all the architectural wonders of his own land are merely repetitions of a type to be met with in every considerable city of Europe is distressing as it compels a confession of inferiority. Regrets at the dependence and lack of invention of the American architect will aries unbidden for even the details of his work as we learn by the examination of a certain carefully edited work, copiously illustrated on "Architectural Details" published by a master of the art and filled with foreign studies of windows, doors, arches, gargoyles, minarets and little tid bits, especially for the use of American architects. The Apostle of the new school has not yet deigned to indicate a sign of his early appearance. The faithful are longing for the day of the prophets arrival and in the meantime have to be content to follow in the old beaten tracks. It is said that all the successful plans of the Hearst competition for the California University are of the French school, and if carried out on these lines a type will be established in California from which the state will not be emancipated for a hundred years. The fact is ominous for the rise of a new school of architecture on the western coast and is a lasting witness to the lack of originality possessed by present day architects.

It would appear to a non-professional that the day for the classic, Romanesque, Italian, Gothic and other styles which had their rise centuries ago and which survive only on account of inability to invent better ones, is past. Sublime as some of the instances of these types existing are, a complaint of repetition and monotony in the building of later days is made on good grounds. The nations which are the great builders are so rich and their resources so vast that ordinary plans of construction are insufficient as an expression of the spirit of the age. An era of construction is about to begin in our own land that will dwarf all early efforts. The industrial future of the country is to surpass the most sanquine expectations of the greatest optimist and the growth of wealth will be evidenced by the size, number and grandeur of the builders creations. It may be that the new school that is to arise will find its germs in California where the Mission or Morosco types has numerous examples. It would not be surprising if the oldest architectural methods and character should supply the suggestions for a distinct school for the newest and greatest of nations.

OUR FOREIGN VISITORS.



IT has been flattering to the publisher of THE CALIFORNIA ARCHITECT AND BUILDING NEWS to learn that even in the distant capitals of Europe this publication is accepted as the ultimate authority in all matters relating to architecture and building in this part of the world. Nearly all of the eminent architects who are visiting San Francisco in the interests of the great University competition, from Paris, Vienna, London and Dresden, have done us the honor of calling and taking advantage of our facilities for information which has been most freely tendered. The universal expression from the visitors is of admiration and astonishment at the great progress made by San Francico in its brief existence. The people, the country, the buildings, all are away beyond their anticipations. "Almost like Paris," remarked a gentlemen from La Belle, France. The impression left by the visitors has been most agreeable. May they all win.

MORE RESIDENCE SPACE.

WHEN the late Adolph Sutro set about making the Heights at the Cliff the attractive spot that it now is, his purpose was not altogether selfish. He had acquired enormous tracts of sand covered real estate in that vicinity and, undoubtedly, hoped to influence its advance in value by demonstrating that these bleak, barren and exposed acres were capable of high cultivation and would richly repay the care

and expense necessary to demonstrate that fact. Mr Sutro, notwithstanding his capacity to drive hard bargins was a good deal of an idealist which was proved by his fondness for art and the remarkable judgement he displayed in the choice and selection of his art treasures. The Heights which he developed into a show place, surpassed by very few in the world, is a demonstration of his refined taste and cultivated mind. He appreciated the most magnificent of all Pacific Ocean views and foresaw that the whole plateau bounded by the harbor entrance almost to Golden Gate Park would eventually be covered with the homes of that rich and cultivated class which in the future will be included in the population of San Francisco. It is a matter of great surprise that in planing this city some one did not suggest a series of grand boulevards. In only one instance is there a residence street of more than ordinary width, Van Ness Avenue. Possibly those early engineers did not anticipate the rapid growth of the city or else there were no mayors like Sutro or Phelan to suggest that in the laying out of a great city only utilitarian purposes were to be considered. San Francisco seems to have been laid out on a principle that secured the largest number of building lots in the smallest possible area. At all events the rich who build fine homes and spend most money in adorning them were not considered when the present plans for arrangement of the streets were adopted. The spectacle is actually afforded in this city of no place where the rich can live and be surrounded on all sides by sympathetic and congenial companionship. What is meant by this some what surprising statement is that in all San Francisco there is no portion of it exclusively designed for the wealthy. New York has its Fifth Avenue, Boston, its Back Bay, Cleveland its Euclid Avenue but San Francisco nothing but Van Ness Avenue which in a few years will be monopolized by business and given up to commercial pursuits. In the not distant future residence will be banished from the entire section east of Van Ness Avenue. The beautiful streets running west are not by any means overlooked in this controversy but there is hardly one of these that are not almost ruined by their extraordinary and impossible grades.

What is now needed is a section devoted exclusively to residence for the opulent, where the wealthy can make such display as suits them by building expensive homes and laying out attractive grounds, where broad avenues can be devoted to public drives and street cars do not invade, in fact a Boston Back Bay in which the rich may indulge in their fancies and the public at large be benefitted by the example. There is plenty of space in the north west section of the municipality to create just such an ideal. The ground is level and no where is there to be found grades not of the mildest character. The views in every direction are superb and easy access can be gained to the park or to the sea. The Sutro lands are in the market at reasonable prices and land is no where in this section extravagantly high. Let some enthusiastic and energetic real estate dealer take hold of the idea, let capital absorb the lands necessary for this purpose and the reward of the enterprise will be great. The wealthy would quickly respond, and a new section, built up in splendid homes, adorned with smooth lawns and rich in foliage would soon become a fact. Let street cars be forever banished from the broad, level roadways and only structures worthy of the place be allowed. Such a residence section would attract and in a short time its enhanced beauty would become the boast of the western half of the continent.

PROTECTION OF IRON AND STEEL AGAINST FIRE.

It is just as impossible, under prevailing conditions, to construct absolutely fire-proof buildings as it is to prevent the occurrence of conflagrations altogether. What can be and should be demanded of our architects and builders, however, is that their constructions shall be made fire resisting to such a degree that the efforts of the Fire and Police Departments towards life and property saving have reasonable chance and time for success. In residences and busine s edifices, where structural iron or steel is necessarily employed, and where the danger of a fire gaining headway is increased by the more or less inflammable contents, iron and steel have proved most dangerous building materials. At the great conflagrations of the warehouses in Hamburg, Germany, 1894-5, and of the Borsig Mill in 1898, it became evident that a fire lasting but a comparatively short time would alsolutely demolish the strength of unprotected iron columns. The exposure to heat of a very small portion of the surface of a support of this material is sufficient to promptly destroy the whole structure depending on same. The power of resistance of iron diminishes very rapidly at increasing temperatures.

Calling the tensile strength of iron at 20° C. 53,400 lbs. to the square inch, 100 per cent, it is at

150° C.	97 per cent	
200° "	95 "	
250° "	93 "	melting point of Tin.
300° "	90 "	
350° "	85 "	Lead melts at 330
400° "	73 "	melting point of Zinc
450° "	61 "	
500° "	38 "	melting-point of Magnesium
550° "	23 "	at this point iron appears red-hot in darkness
600° "	19 "	
700° "	16 "	dark red
800° "	11 "	dark cherry red
900° "	6 "	cherry red
1000° "	4 "	light cherry red

A limited space or portion of structural iron can readily become red-hot by the flames striking it. Even if the danger be lessened by heavy construction, these conflagrations have proved that increasing the weight five fold does not avert collapse of the structure at 700° C. Red-hot cast iron also cracks at the joints easily, and at 1100° it begins to melt. Iron being a good conductor, renders it all the more dangerous, and so does the great expansion of the material in heat, causing disastrous bending. When water is applied rapid contraction ensues; hastening collapse. Moderate heat suffices to destroy arches or vaults resting on iron or steel.

The conflagration of the Borsig Mill showed the most fanciful bending and twisting of iron and steel columns, girders and supports, and many of them must have been as soft as dough. The building was totally dastroyed.

Wood has proved greater power of resistance at these conflagrations than could be expected. Constructions of wood at time of fire can be fairly judged by inspection, enabling the fire department to estimate the probable time of collapse. At these conflagrations iron and steel constructions have however, nearly always collapsed unexpectedly, rendering the work of the department very dangerous.

Structural iron and steel should therefore be protected by fireproof covering. There are numerous materials offered for this purpose, but when tried they have generally been exposed to moderate heat (under 1100° C.) only, and then only for about an hour. Fires in warehouses, manufactories, etc., however, generally lasts for hours. Of a fireproof material it must be expected:

1. That it does not burn itself.
2. That its strength must not suffer materially when exposed to heat for a considerable time.
3. It must be a sufficiently poor conductor of heat, so as to protect structural iron or steel for hours from deformation.

Among the newer materials, the Asbestos Cement, invented by Engineer Kuhlewein, has after many severe tests, extending over hours, been conceded the first place as the most valuable fire-proofing material extant, and its use has consequently found rapid extension. This Asbestos Cement is fire and smokeproof, a very poor conductor of heat, weatherproof, and deadens the sound. Ceilings, walls, floors, doors are made of the same. It is used in the construction of hot-air conduits, elevator shafts, for the covering of stair cases (lower side) of columns, girders, supports, etc., the filling of fireproof safes, by the Imperial German Navy for isolation of magazines on board ship, etc.

The Hamburg Fire Department made tests showing that the Asbestos Cement Kuhlewein in the form of a covering of 1,6 inches in thickness protected a cast iron column against a temperature of 1400° C. for over four and one-half hours. The Altona Fire department made tests in which cast iron girders and columns with Asbestos Cement covering stood a temperature of 1000° 1200° C. for six hours without bending or deformation of any kind.

The Asbestos Cement Kuhlewein is a powder like Portland Cement, and is used like the latter. It sets when mixed with water. No sand is used. Any efficient laborer can apply it without difficulty. The price is moderate. Thickness of Asbestos Cement covering required is from 0.8 1.6 inches say on an average 1.2 inches. No air space is left between the metal and the Cement covering.

The Chief of the Fire Department in Bremen, Mr. Dittman, certifies that Asbestos Cement Kuhlewein is by far the most efficient material known so far for fireproofing.

The Fire Marshal of San Francisco, Mr. Chas. Towe, states as follows:

"A short time ago you gave me a sample of Kuhlewein's Asbestos Cement. I mixed it with water and spread it on a sheet of paper, one-eight of an inch thick, letting it dry over night only, I then placed it over a Primus oil stove which gives a great heat under an air pressure, it was over the fire for thirty minutes, and the paper which was on top of the Cement, was not discolored, it was long enough to satisfy me that it is the best fireproofing I ever saw or experimented with, and I hope it may be universally used as plaster on partitions, walls and ceilings, thus making a frame structure slow burning, confining a fire in the room in which it may start.

"As a covering for columns and iron girders, it would surely cause them to be fire resisting, keeping the heat and water from coming in contact with them in case of fire, thus causing them to stand and retain the heft they may be carrying and to a great extent insure the safety of the building from fire. It is a wonderful fire resisting Cement."

NEW YORK BUILDING LAWS.

In several recent issues of the *Engineering Record* the weak points in the New York building law are pointed out, and the subject illustrates very well how the growth of a city and the introduction of new methods may render many points in once adequate ordinances quite obsolete or insufficient. When the existing building laws were enacted, the system of conducting business buildings was altogether different from that now in use. The limit of height was five to six stories; light brick walls, timber columns and floors, and moderate loads were the rule; the moderate tall building, with its steel skeleton and deep foundations, was unknown, and any attempt to regulate the practice in modern building work by rules based upon the older conditions must necessarily be defective.

It is doubtless true that the modern great buildings of New York are well designed and properly built, not because the ordinances have required proper work, but because the engineers and architects in charge have attended to it on their own and their client's account. This, however, is not a good state of affairs, and should not be depended upon.

"Good architects, good engineers and good builders have in many cases done what the building ordinance has failed to require them to do; but that is not enough. Well-intentioned men are sometimes not well qualified to do those things which they may desire to do, and such things as indifferent and careless, not to say unscrupulous, building are not unknown."

Most of the criticisms of the building ordinance of New York are naturally made on the score of omission—a thing to be expected when the practice has outgown the legislation—and a few of these defective features are worthy of mention. In the question of the quality of materials employed, vague terms, such as "the best material, made in the best manner," should be replaced by specific terms of precise, legal, and scientific meaning, about which no difference of opinion could exist. The methods of testing and describing materials of construction are well enough known to permit of accurate specification, and materials of lower grades could be clearly specified as permissible for those purposes for which they are fitted, and no hardship wrought and no danger incurred. The present law includes some attempts to use scientific formulas for certain limited purposes, but so indefinitely as to permit almost any proportions to be deduced.

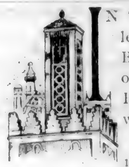
Working stresses permitted on iron, steel, masonry, timbers, etc., need careful revision and extension, in accordance with the advance of knowledge concerning the behavior of the materials and the changed conditions under which they are used. Some valuable materials, which are now practically excluded, because of the omission to provide load factors, should be included, and altogether a much broader scope for materials to be used is desirable, and, with proper provision for test requirements, would be perfectly safe.

These are but a few of the important points which have been advanced to show the weak points of the present antiquated law, and the urgent need for proper revision. That this revision should be made with the assistance and advice of competent engineering specialists is evident.

"The work of revision of the structural features of the building law should be put into the hands of a small committee of experts in structural matters whose broad experience in engineering and architecture, and whose character as reasonable men, would ensure a comprehensive, safe, and thorough treatment of every feature of the whole matter, so that a building law truly worthy of the greater New York would be secured."

THE NEW POODLE DOG RESTAURANT BUILDING.

WM. MOOSER & SON, ARCHITECTS.



IN THE past few years it has been the privilege of the CALIFORNIA ARCHITECT AND BUILDING NEWS to chronicle the erection of more buildings of the first class in San Francisco then in all the previous years in which this publication has been issued.

Each of these great structures have marked a distinctive advance upon its predecessor and denoted the friendly rivalry existing among architects and builders as to which should produce the most perfect example of architecture of to-day's methods. The property owner has been stimulated into greater expenditure and the result is that the streets of San Francisco have been highly improved in appearance and the city supplied with structures that have no superiors in any of the great mercantile centers of this country.

A SUITE ON THE THIRD FLOOR.

The latest edifice to which particular attention is called and in the construction of which the most advanced ideas have been embodied, combined with the utilization of all the arts capable of employment in the creation of a harmonious whole, is the conception of Wm. Mooser who is one of the rising local architects. It is the new building of the Poodle Dog restaurant, at the corner of Mason and Eddy streets, the final home of an institution which for thirty years, in less sumptuous quarters, has been the scene of many gastronomic triumphs of the past.

The lot upon which the new restaurant stands is 44x85 feet in dimensions. The foundations are of solid concrete laid so massively that no disturbance, however great, can have the slightest effect upon the stability of the lofty walls of the superstructure which surmounts them, indeed, so compact are they that if it had been desirable to double the present height of the building, these solid concrete foundations, made of the famous Josson cement, would have withstood the great additional pressure without a strain.

The foundation of a structure is a positive indication of the character of the building above it and the solidity and massiveness of those that support this lofty edifice, corresponds with the immovable and stable building that is built to endure for a hundred years to come.

Upon the shoulders of Mr. G. Moore rested the entire responsibility of building adequate foundations as well as the task of plastering the entire structure, a difficult undertaking as the results of all the art effects depends largely upon the smoothness and grain of the surface upon which they are to be placed. Experts pronounce the work of Mr. Moore in this structure as beyond criticism.

The style of the building is Italian Renaissance and is an almost perfect embodiment of this difficult school. The striking symetry and exquisite proportions of the exterio are remarkable. Fortunately, the dimensions of the land available afforded ample space for a high structure and unlike many others, built upon narrow lots, the appearance of too great slenderness is entirely wanting here.

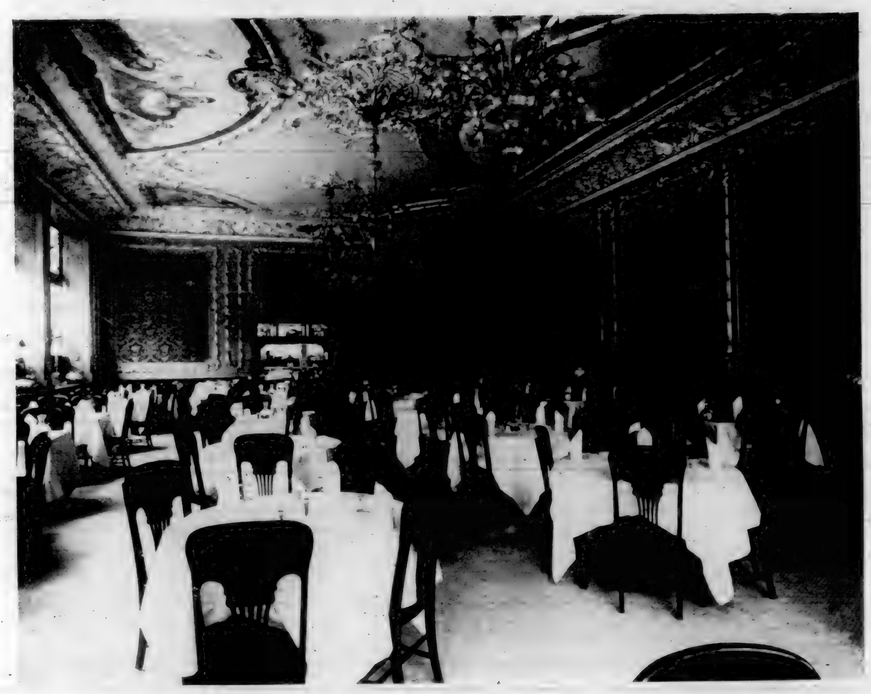
The beautiful simplicity and refinement of the exterior, adds, rather than detracts from the impression of dignity which at once strikes the studious observer.

This effect would not have been possible but for the judicious choice of material for the exterior which is of Roman brick and cream colored terra cotta, supplied by N. Clark & Sons from their great pottery works in Alameda. The critic who advocates greater variety of color that may be judiciously employed as an effective adjunct of street architecture should carefully note the soft, warm tone imparted by the beautiful tint of the terra cotta covering in this instance. It is most pleasing to the outward senses but has a painful effect, by comparison on the neighboring structures.

It is without astonishment therefore to learn of the enormous increase in the employment of terra cotta for exterior adornment in all pretentious buildings. Its clear cut effects

THE NEW POODLE DOG RESTAURANT—CORNER EDDY AND MASON STREETS SAN FRANCISCO—CAL.

WM. MOOSER & SON—ARCHITECTS.



MAIN DINING ROOM.

WM. MOOSER & SON, ARCHITECTS.

RECEPTION ROOM, SECOND FLOOR.

WM. MOOSER & SON, ARCHITECTS.

PANEL IN CEILING OF VESTIBULE.

WM. MOOSER & SON, ARCHITECTS.

and the admirable mouldings of this material, which are to be observed at all the salient points of the structure, are infinitely superior to the old fashioned and inaccurate stone carvings hitherto employed. Terra cotta mouldings are always exact duplicates. Each is as perfect as are all the others. The exquisite perfection of the terra cotta employed in this building is due as much to the fine mechanical devices which Messrs. Clark & Sons control, as to the superior quality of clay used which comes from Ione, a place among the foot hills of the Sacramento Valley.

The smoothness and finish of the outer walls of the new structure is to be credited to the superior workmanship of the contractor to whom was intrusted this important portion of the work Mr. D. J. Brennan.

Experts acknowledg that the walls of the new restaurant exhibit the most perfect specimen of brick laying to be found west of the Missouri River.

The building, like all others of its type, has an inner frame of steel around which the exterior walls of the structure arise. The solidity and endurance of the edifice is assured by the quality of the workmanship and material employed in the construction of this steel frame. Properly constructed such building is proof against earthquake, fire or decay. The Western Iron Works were awarded this part of the work and have fully justified their past reputation for conscientious fulfillment of all their undertakings by the superior manner in which the steel work, including fire escapes, of the building have been performed.

In this connection attention is particularly called to the efficient work of the Vulcan Iron Works which supplied the cast iron columns and other work of the same character and whose admirable and precise fulfillment of their obligations won the encomiums of the exacting architect.

Passing to the interior of the new building it is here proper to observe that no considerations of economy or contracted financial resources influenced or controlled, in the slightest, the choice of the work to be accomplished or which firms should perform it. In this matter the architect had a free hand. His instructions where "to have the best of everything" and this explains why so perfect and harmonious results were every where achieved.

The completed structure, as it now stands, is an object lesson for all prospective builders, either of mansion, public or ecclesiastical, on account of the absolute perfection in finish as well as the appropriate selection of every detail, usually considered as subordinate to the great general plan, but which goes so far towards arriving at artistic harmony and contributing so effectually to the confort and satisfaction of the individual.

In any description of the newly erected great building in this city, the Western Expanded Metal and Fire Proofing Company is always remarked. The part in which this great corporation is deservedly prominent in all these great structures while not always apparent to the naked eye, is to apply their wonderful inventions in the plan of erecting an absolutely perfect structure and giving to the edifice that strength and durability combined with fire proof construction which is accomplished by a system of concrete arches and partitions and metal lathing. No great building is complete without the application of this company's principles of construction by which space is economised and perfect results attained.

The plaster used in the Poodle Dog building from banquet hall on the top floor to the basement below is that famous brand known everywhere as the Alpine Plaster of which Smith & Young are the agents.

In referring to the workers who have so distinguished themselves on the new Poodle Dog building, Mr. J. P. Donovan, connected with the Western Expanded Metal and Fire Proofing Company in a responsible capacity should not be forgotten.

The artistic possibilities of steel, iron, copper and brass is conspicuous throughout and is lavishly displayed in every part of the building. The balustrades and grill work are exquisite in design and execution. The San Francisco Novelty Works are famous for their great accomplishments but they have never succeeded in so thoroughly establishing their fame, beyond any or all competition, as by the elegant and truly artistic work they have performed on this structure. Both exterior and interior is thus adorned. In the perfection of every detail this work is surprisingly complete.

A description of one of the eighteen suites into which the third, fourth and fifth floors are divided involves that of the

BATH ROOM ADJOINING EACH SUITE.

entire number. Each one is furnished in a different wood of its natural color, and each suite is furnished in royally lavish and elegant style, especially so in the appurtenances of the bath, every suite being provided on the most liberal scale with tubs, sitz and shower baths, closets, etc., and everythiug else that can contribute to comfort and cleanliness. The utmost care and research was expended in bringing this especial feature of the establishment to the highest degree of perfection and efficiency, and in the active competition for the distinction of furnishing so great a work as this the very finest apparatus and material of the country was represented. Messrs. George H. Tay & Co. were the fortunate ones, the perfection of their goods, their artistic design and their unapproachable quality was so well understood that other competitors were nowhere. The porcelain tubs aud sitz baths are

models of elegance and convenience, and they are all fitted with the most perfect devices for easy and efficient management. Messrs. George H. Tay & Co., it must be understood, supplied from their fine establishment all plumbing goods used in the great building, and so satisfactory to all concerned as to win most enthusiastic encomiums. The perfection of the latest developments of sanitary science is here demonstrated.

It should be noticed also that all the water closets, of which an unusual number were required, are of the famous "Royal" brand of manufacture supplied by The John Douglass Co.

However perfect the appliances may be, in this important feature of all construction, they are of no avail unless worked by a master hand. The task of the plumber in this building was one of the most difficult ever undertaken, and required the exercise of the most scientific attainments. Besides being a work of uncommon magnitude it involved the application

BANQUET HALL.

of certain improvements designed for the attainment of absolute perfection. To Mr. Joseph Butler this task was given, and how magnificently he fulfilled his contract the work emphatically demonstrates. In this work, Mr. Butler has surpassed himself, though in hundreds of other instances he has proved how thoroughly competent in handling this branch of household science he is.

The bath rooms, which are all exhibitions of remarkable attainments in the art of plumbing, are distinguished also; and no one can enter one without being struck by the beauty of the wall tiling which, in each, cover fully one-half the surface and adds so much to the air of elegance, which is the distinguishing feature of this part of the work. Messrs. Mangrum & Otter had here a splendid opportunity of showing their fine capabilities in this class of workmanship, and thoroughly improved it. The building throughout exhibits fine examples of their consummate and conscientious skill.

Upon every floor, and prominent throughout the structure, marbles of varied hues have been freely employed. In the stairways, along the walls and in exposed places, the artistic effects have been heightened and elaborated by a full use of marble. The richness of the general appearance of the interior has been greatly enhanced thereby. Messrs. J. Musto & Son have reflected infinite credit upon themselves by their admirable work besides proving so effectually the great resources of their establishment.

To Mr. G. Orsi was intrusted the painting, decoration and polishing of the new Poodle Dog building, which had to be completed in a style in harmony with the balance of the work, and required the highest professional skill in accomplishment. The careful workmanship and evident taste displayed by Mr. Orsi is greatly commended.

The artistic decoration of the establishment was placed in the capable hands of Moretti & Trezinni, the Italian fresco artists, who have demonstrated their high artistic instincts in the adornment of such edifices as St. Ignatius Church and others of equal importance in this city and elsewhere. In the Poodle Dog Building a fine opportunity was given these noted artists, and in the banquet halls of the upper story and the great restaurant on the lower floor, their felicity of design and fine execution showed to supreme advantage. The two allegorical groups in the restaurant are admirable in composition and color. They are the work of Henry Rascher, who was especially employed on account of his great artistic gifts. The composition on the ceiling in the vestibule of the ground stairway, at the street entrance, is the work of Mr. Moretti. It shows to especial advantage at night in the full glare of strong artificial light. It is a gem. The capacity of these gentlemen is displayed in the beautiful variety of the frescoes. Many patrons of the new restaurant will come often to look at the beautiful exhibits shown in the skilfully colored and groupings of the frescoes.

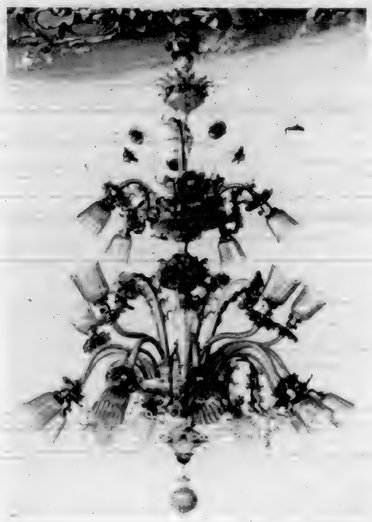
A building of such superior construction even though made absolutely fire proof cannot altogether dispense with the services of the carpenter. In this particular instance the presence of the master workmen are conspicuously manifest.

The wood work in this building is evidence of high artistic skill as well as splendid workmanship. When it is remembered that golden oak, curley birch, mahogony, maple woods were employed in the finishing of the costly suites in turn as well as in the great dining room of the first floor and the banquetting hall on the sixth, the services of highly competent workers in wood was extremely necessary, how Messrs. Campbell & Pettus have fulfilled their part of an arduous undertaking let their work speak for itself. The execution of the beautiful suites, each in a different kind of wood and rich in carving, testifies abundantly to their taste and skill.

Design of Handles on Entrance Door.

The perfection of detail displayed throughout the building is apparent to the most careless observer. In one respect, and in many others as well, the careful attention shown in the attention paid to minor matters has a very considerable influence upon the general effect as intended. No one who enters the building can fail to give his attention to the perfection and beauty displayed in the locks and door handles which were made expressly for the Poodle Dog by the Yale & Towne Manufacturing Company in special Fairfax designs, through Messrs. Dunham Carrigan & Hayden Company of this city. The locks in the main vestibule and the large restaurant are sure to be greatly admired and commented upon. They are of the Fairfax design in oxidized silver.

A particular feature of the main dining room on the first floor is the great chandelier in the center of the ceiling and the two smaller ones that flank it on either side, altogether the most beautiful examples of Venetian glass work on the coast. They are of light ruby in tint and blown in shapes of calla lillies and cactus flowers with the foliage of each, all



CENTER CHANDELIER IN MAIN DINING ROOM.

connected in serpentine branches. They are the importation of C. F. Kinsman of this city, imported under special designs from Vienna.

A word should be spoken for the tasteful, complete and lavish furniture, not only of the suites but of the reception hall, private dining rooms and also those designed more particularly for the general public. It was a difficult task to furnish so extensive an establishment in such perfect harmony and style but the California Furniture Company triumphantly fulfilled all requirements.

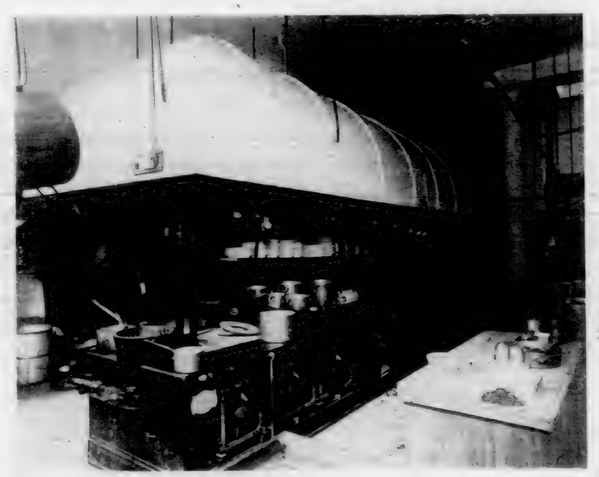
The department upon which the success of a great restaurant depends is often inconspicuous to the public gaze and sacred from intrusion to any one except cooks and waiters. The fitting up of the culinary department was done by the firm of John G. Ills & Co., and shows beyond doubt the capacity of that firm for such work. The great range on the first floor has capacity for 400 persons while the one adjacent to the great banquet hall is but little inferior in size. One special feature of the larger range is the arrangement for carrying the fumes and smoke from below instead of from above. A very great success.

The very handsome and roomy elevator is from the manufactory of Cahill & Hall and is a model of handsome design: every appliance for safety has been attached.

The care for the safety of those guests who are likely to fill the establishment at all times is evidenced by numerous reels for fire hose to be used in cases of extreme emergency. These hose reels are a special feature, furnished by R. S. Chapman and though the structure is fireproof they could not be dispensed with here.

The determination that every detail of this building should be absolutely perfect is evidenced by the introduction into every grate and chimney of the Clawson patent hoods and cross-bars, without which no chimney is complete, which were supplied by L. E. Clawson & Co. These devices are potent in assuring a perfect chimney and unobstructed draft; moreover, whenever employed, no workman, however careless he may be, can possibly construct an imperfect flue. All the best buildings in the city have introduced these valuable patents with most satisfactory results.

The final word in this eulogistic description of the last great building erected in San Francisco is in commendation of the fabrics of the Paraffine Paint Company who furnished the roofing and other required material that is to assure this great building protection from moisture. The architect speaks of this company in enthusiastic terms.



KITCHEN RANGE.

HYDRAULIC MORTAR.

CEMENT and mortar tests have been so extensively made and discussed that the subject may seem almost exhausted, but the value of such tests depends so much upon the manner in which they are conducted and investigated that a study as scientific as that made by M. Feret, the head of the laboratory of the *Ponts et Chaussees* at Boulogne, and published in the *Bulletin de la Societe d'Encouragement* demands recognition.

M. Feret first describes and tabulates the extensive series of tests for resistance to tension, compression, piercing, and shearing which were made in the laboratory under his charge, the same Portland cement being used in all cases, in connection with various kinds of natural and artificial sands, the intention being to investigate rather the physical properties of various mixtures than the comparative merits of different cements. The results are given in tabular form, and also plotted in curves, showing graphically the general

behavior of the materials, after which the effect of variations in a series of test samples is discussed.

Attention is called to the fact that widely different results may be obtained from the same material, according to the manner in which the tests are made, and emphasis is strongly laid upon the point that tests are not comparable unless they have been made in the same manner.

In tests for flexure, for instance, the size of the specimen is of great importance, since the distance of the outer and more resistant portion from the neutral axis has a great influence upon the result, and in general the greatest resistance of any specimen is found in that portion nearest the exterior. An unequal distribution of stresses must, therefore, appear in tension tests as well as in those for flexure, and this inequality is still greater when the mixture is not perfectly homogeneous.

According to the theory of resistance of materials, tests by flexure and by tension should lead to the same ultimate strength, but deductions based upon materials of supposedly perfect elasticity do not hold good for mortars, especially as the point of rupture is approached. M. Durand-Claye has shown that the resistance deduced from flexure tests is almost double that obtained from direct tension, and the tests of M. Feret bear out the fact that there is a definite ratio between the two resistances—namely, the resistance by flexure is to that by tension as 1.89 to 1, or, in round numbers, as 2 to 1.

Similar relations were deduced between the resistance to compression and to shearing and punching, a constant and proportional ratio being found. There does not appear, however, to be any such proportionality existing between the results obtained by tension and by compression tests, and two different mortars having the same resistance under compression may show very different results in tension. As a result of much experience deduced from many tests, M. Feret states that he believes the test by compression gives the real measure of the coherence of a mortar more nearly than does a tension test. In all cases the compression tests gave more uniform and consistent results, both for large and small specimens and for various conditions of homogeneity.

The most important part of M. Feret's paper, however, is that relating to the physical constitution of a hydraulic mortar, especially with regard to the size of ultimate particles of the materials employed, and to the thoroughness of the admixture.

For a very fine sand the resistance to crushing is much greater than for a coarse sand, the proportion of sand to cement being the same in both cases. A tabulated series of tests, using a constant quantity of cement and sand, but with different proportions of fine and coarse sand, showed that the resistance to compression was two and one-half times greater with fine sand than with coarse, and corresponding variations appeared with the other mixtures.

An approximate measure of the nature of a mortar in this respect may be obtained by determining the density, or, as M. Feret calls it, the "compactness," of the mixture, since this bears a relation to the proportion of voids between the particles, which doubtless plays an important part in the strength of the mortar. In plotting the results of the tests made with sands of various degrees of fineness, M. Feret uses the ingenious form of triangular pyramid adopted by Professor Thurston in his investigation of the strength of various bronzes, and in this manner the results are shown with a clearness not otherwise possible. Similar diagrams are given for mixtures of sand, cement, and pulverized slag, and the paper closes with data as to the effect of the addition of a proportion of puzzolana to cement and sand, especially for hydraulic mortars which are to be exposed to the action of sea-water. *The Engineering News.*

PRECOCIOUS ARCHITECTS.

WHE time may have been once when success in architectural design was a matter of accident, or when those to whom the creation of great buildings was entrusted could depend upon their instincts and the inspiration of the Muses; but we have changed all that with our modern civilization, and if their is any one profession of to-day that requires long and arduous preparation, it is that of the architect. Constant, unremitting study is the only safe program for the man who would take rank. It has been our editorial privilege to be called upon repeatedly for advice to those who contemptate becoming architects. The usual rule is to find the young man eager to enter an office, anxious to begin actual work, looking forward to immediate worlds of conquest. Even when a kindly restraining influence has harnessed him into the routine of one of our best technical schools, his impulse after graduation is still to build, to hang out his shingle, to get to work, and the idea seems to be that if by some mental *tour de force* he can compress into three years the amount of study that is laid out for five or six, it is well worth the effort. The difference between this point of view and the principle which seems to actuate the French students of architecture goes, perhaps, a considerable way towards explaining the manifest superiority of the French school in its methods. With us the aim is to complete the studies as speedily as possible and start to work. With them it is not in how little time can education be acquired, but rather how many years can the student devote to preliminary training. It is often discouraging to the aspirant, who has, perhaps, come from the Institute flushed with his diplomatic honors, to be told to take a humble seat and keep on studying for five or six years more before he allows his kind friends to give him a job, but all experience shows that our young men are apt to start too soon rather than to delay too long, and that, other things being equal, the man who hangs out his sign and begins his professional career with the greatest amount of experience behind him will have the richest measure of true success. The secret of success in any profession, in these days, is not inspiration, not native talent, nor even that *sine qua non* of the architect, good and complacent friends, but thorough preparation and unlimited, hard dig.—*The Brickbuilder.*

TRADE NOTE

BECAUSE of the excessive storm in this locality the roof of our brass and copper rolling mill caved in on Sunday morning, November 27, on account of which we have been somewhat delayed in filling orders for this class of material during the past week.

We have finished removing the debris of the wreck and have erected temporary constructions over the machinery, and the brass mill will be in full running order December 5, when we will have all the rolls running in this department, and will be able to furnish sheet brass to all of our customers promptly.

The entire brass and copper mill will be in full operation December 12. No damage or interruption occurred in any other department of the works, and the seamless tube, brazed tube, kettle and boiler plants were in full operation Monday morning November 28 as usual. The damage to the machinery was very small, less than $1000 and the cost of replacing the roof with a permanent and substantial wooden roof will not exceed $6000, or if an iron roof is used will not exceed $12,000, which expenditure will put the mill in better condition than before the accident. Very respectfully,

RANDOLPH & CLOWES.

SOME POINTS ON ESTIMATING.

IT IS the close figures that makes the most reliable estimate, and where contracts generally prove satisfactory all round. Every inch of material and every minute of time should be counted, and the figures should always avoid that dangerous risk "that's near enough." There is no such thing in successful estimating as "near enough:" "exactly right" is what is required, then you know what you are doing. Remember always, that it costs more to do the same work in an upper story than it does in a lower one. Doors, same size, equal finish, same time, and furnished with same style of hardware, cost from one to three per cent more to finish when in an upper story. The higher up, the higher the cost, and what is true of doors is also true of every other kind of work. It is utterly impossible to tell the exact cost of one part of a building by comparing it with the cost of a similar piece of work. You may get near it, but you should not be satisfied with that. It pays the estimator to estimate on everything and to be exact in every estimate. Avoid accepting figures that are not your own, and, above all, put no trust in estimates of cost as given in architectural books and journals, unless such estimates are itemized and you have gone over the figures yourself. Many a young builder has lost his reputation—and his money—by taking it for granted that a certain house, illustrated, can be finished complete for the sum stated in book or journal. These are traps and snares for the unwary—avoid them. Estimates obtained from an architect's office are generally correct so far as quantities are concerned, but are generally woefully lacking in the time, labor and prices. There are so many things the architect wots not of, such as scaffolding, handling material, and other things, that render his figures doubtful, that it is always better to make your own. It is just as bad to overdo an estimate as to underdo it, for in one case you lose your work and in the other your money, and in these days of close—yea, savage—competition, it is the man who figures everything, and figures exact, that takes the work. If you cannot estimate with confidence in your own ability, or have no trusted workman who can estimate, you had better let "contracting" alone, or you will find yourself in deep water before you are aware of it.—*The Canadian Architect.*

LESSONS FROM FIRE AND PANIC.

BUT THESE are matters in which we must expect no help or sympathy from the persons whose lives are thus safeguarded. Twenty years ago the densely crowded church of which I was the people's warden had outer doors opening inwards, and with the support of the vicar I insisted on an internal lobby with doors opening outwards. We did this in spite of unanimous opposition and as no panic has occurred the opponents may say they were in the right.

A few years ago a thoughtful architect provided to the west end of a church the only efficient arrangement of exit doors that I have seen, but fitted them with a lock. I went to the opening service to see the result. The place was full, even to standing room, and when the procession from the choir turned to come down the centre passage they could not advance a step. Then, if ever, was the time to throw open the exit doors, but the key was in the vicar's pocket, and he could not be reached except by means that would have been impracticable, and with delay that would have been fatal in case of a panic.

I think it probable that we may not again hear of the fitting up of one of our great churches for some important function with a forest of timber, in stages and seats and galleries, so that either through accident or through malice, a fire may be raised which might result in a calamity even greater than any that has hitherto been known. At the induction of the Dean of Canterbury, when a great crowd was expected, those in charge of the Cathedral were properly careful, and limited the admissions to those who could be accommodated with a reasonable chance of safety to themselves.

Our theatre regulations are made under the Metropolis Management Amendment Act, 1878, and have been much strengthened in recent years, largely through the advice of Sir E. M. Shaw, K. C. B., formerly the chief owner of the Metropolitan Fire Brigade, while the application of the regulations has become more stringent as their necessity has been more generally appreciated. They are applicable to all places where the public are invited, for music or dancing or stage plays, whether on payment, or by ticket or free. I can only mention a few of the things which must now be done in the case of a newly-licensed building, and which are demanded so far as is reasonable and practicable in the case of an old building. As to the latter there is an appeal to the arbitrator.

I am not sure that many theatre architects entirely approve every one of our regulations, but some approve certain of them and others probably approve the rest, for whereas a few years ago not many plans were submitted that would bear examination, there is now a large and increasing number of architects who, so far as their clients will permit them, produce excellent plans and heartily concur in our regulations as a whole. And as to clients, all the more experienced managers are alive to the risks of their undertakings, and very large sums have been willingly spent by them in the improvement of old buildings. Manchester has taken a good lead in theatre architecture. At the present time, when new theatres are being built in all our London suburbs, and even in small provincial towns, no class of buildings is better understood.

In London the site for a new theatre or music-hall must abut for one-half of the boundary upon public thoroughfares, one of which must be not less than forty feet wide. This is exactly one half of the requirement as to site in most continental cities, where, as in Manchester, the theatre must be entirely isolated. But our own moderate demand may be relaxed if the building is of small importance or if the design or surroundings seem to warrant it. We are now actually getting isolated theatres, whereas a few years ago there was not one in London. Not many years ago the owner of a site intended for a theatre would insist on devoting the best portion of his frontage to shops. If the site consisted chiefly of back land, the owner would consider it particularly eligible for a theatre. Of such a site I once said to the proposer, "Surely nature intended this for a coal yard," but he was careful to correct me—it had really been a timber yard.

Our regulations provide for the separation of dressing-rooms, and such sources of danger as workshops, stores, painting-rooms, property-rooms, scene-docks, engine-rooms, and gas meter rooms, and regulate the supply of gas, electric light, lime, light and water. They require a fire-resisting curtain and a high roof with lantern light over the stage. The mischief of window opening near adjacent property is sometimes imperfectly guarded against by protecting them with hoppers. Recently a fire was caused in a music-hall by an old accumulation of rubbish carried by the wind into one such hopper and fired by burning soot from a neighboring chimney. Our great difficulties arise out of staircases, corridors, and exits.

People who talk of clearing a theatre in two or three minutes fail to realize the suddenness with which smoke and poisonous vapors spread, nor do they appreciate the effect of a panic, which may prevent an audience getting out at all. If a fire breaks out among the scenery the whole is at light at once; the vapours make for the upper parts of the auditorium; and the people die where they sit. In the great theatre fires it has been estimated that all the victims died from suffocation within five minutes. These are matters which can be reckoned with, hence the provision of "fireproof" curtains and high roofs over the stage. But no one can reckon with panic. It needs no fire or other danger. It is a madness to escape from no one knows what. The exits from a public place must allow for panic as well as for fire. Two exits, well-lighted by some independent means, must be provided from every part of the building; and as one may be blocked, each must be capable of taking the whole of that part of the audience. They should deliver into different streets. One of these, which will also be an entrance, may be connected with a vestibule that is common to three entrances, and the doorways of this vestibule must be one-third wider than the combined widths of these three separate entrances. The least width for an exit is four feet six inches in the clear. Too frequently I find that the exits are actually made of this dimension between the brick-work, so that after deducting the thickness of doors and projecting handles only three feet four inches is left. I consider it unfair to expect one to overlook such mistakes in so important a matter.

All exit doors having fastenings must be fitted with bolts yielding to pressure from within. This necessary regulation gives rise to great difficulty. A manager will suspect that persons get access through these exit doors, and also that his servants get out an improper times. In view of the importance of this point, and the impossibility of securing by any system of inspection the opening every night of a door that has locks and bolts, it may be hoped that there is mechanical ingenuity enough to get over any such objection as I have indicated.

The impossibility of getting the employes about a public place to understand that exit doors and passages are meant to be at all times free and well lighted may be illustrated from experience. The first new theatre that was opened in my time had been rebuilt after a fire, and the proprietor, confident in his arrangements, invited my inspection on the opening night. I found the exits without lights and their doors blocked by the debris thrown out of the building at the last moment. In another case a few years ago the architect had provided admirable exits, but insisted on fitting the doors with locks. In the middle of the first performance I found every door locked and the key at the box office, to be used I was told if required. In a third case, when everything had been found in order, a final visit an hour before the opening disclosed that handsome fixed grills were being put to every exit door, only to be removed in case of need. We have found exit passages turned into lumber rooms, or obstructed by spare tables, by chairs intended for extra and illegal seates in the gangways, by perambulators, and by bicycles. In one case the exit was the home of a savage dog. The architect must never depend on the care with which his building will be managed, and in spite of good intentions the accumulation of spare scenery belonging to pieces that have been taken off or are coming on, and the storing of rubbish, is always a danger. In important continental theatres a separate warehouse is provided as near as possible to, but detached from, the building, and there all scenery and properties not actually in use are kept.

And with respect to this last consideration, experience teaches that in cases of sudden danger no audience, no crowd in a house or factory, and indeed no individual, can be trusted to take the obviously reasonable course to prevent accident or to get to a place of safety. Their escape must be ensured for them by the provision of unobstructed exits that are used habitually, that are as short as possible, and that will take a crowd of people as fast as they can get away. Thus the planning of a building in relation to its exits is often of even more importance than its materials or the question of its site and surroundings, which last is a question often beyond the architect's control. I have advised a theatre architect to begin by laying down on his plan eight staircases and ten or twelve exit doors, and then see whether he had room left for a stage and auditorium. This is more reasonable than planning first these last-named parts and then using up any spare corners for scanty and inconvenient stairs and passages.

There is no class of public building so risky as the parochial or mission hall or club room which exists for purposes of instruction or social recreation. The licensees of such places are very often too inexperienced to feel any sense of responsibility, and the amateurs who usually manage such matters have no sense of danger. Having consented to preside at an amateur charity performance when the stage had been fitted up by the company, I found the footlights to consist of a row of dwarf candles, each being simply struck down on a penny piece. During the play one of the canvas wings fell upon these footlights.

Unwarned by the Paris disaster, bazaars are got up regardless of the danger from stalls heaped up with flimsy materials and lighted up by Japanese lanterns, without any special means of fire extinction and with indifferent means of escape. In a particularly bad case, while the chairman of the committee was arguing against the possibility of accident, a lantern took fire and fell. No more than this is necessary to produce the worst of those accidents which such premises may be said to invite, and the contents of only one stall would have sufficed.

In view of the wide range of this Paper and the familiarity of this audience with the details of construction, I have for the most part been content to suggest principles upon which we ought to act. And on account of the importance of these questions in relation to the safety of life, I trust we shall agree that there is a moral duty in every one charged with the erection or care of a building to make it as secure against fire and panic as he can. I confess to some feeling approaching pain when an architect, assuming something like the position of a legal advocate, endeavors to argue that provisions made by law for the safety of life and property mean less than they are commonly supposed to mean, or struggles to get some relaxation of the law which, perhaps unfortunately, the public authority has power to grant. Every relaxation beyond what a prudent man would consider safe is in the nature of a wager that nothing shall happen during the whole time that the building will be in existence which will call for the particular precaution which on the responsible advice of the architect has been injudiciously omitted. It may be that the wager will be won, but the risk is considerable and always there; and this is a consideration which I desire to impress most strongly upon those who are charged with such responsibilities as I have mentioned.

THE END.

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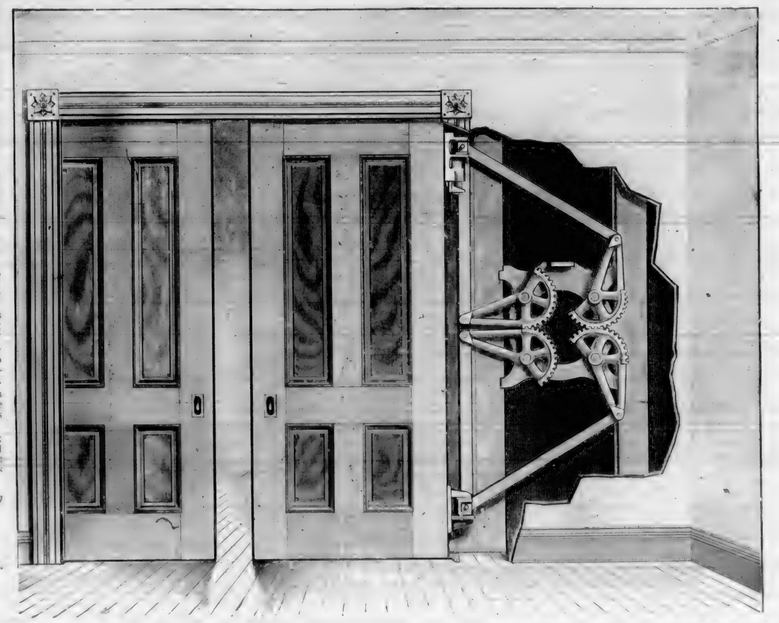

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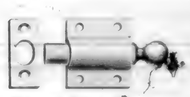

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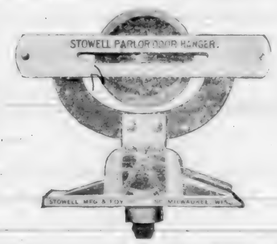

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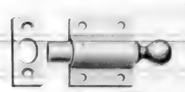

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BUILDING NEWS.

CONCORD

Two-story frame; Owner, A. W. Maltby; Robert Farr; c. Reif & Ahlgren; signed, Oct. 5; cost $1650.

EAST OAKLAND

East 14th. To build; o, E. B. Stone; a, Albert Sutton & L. Whitnew; signed, Dec. 7; filed, Dec. 14; cost $2,0[illegible].

Eleventh Avenue east 21st. To build; o, Agnes and James Brown; c, Anderson & Stockholm; signed, Sept. 28; filed, Oct. 3; cost $1250.

FRUITVALE

Fruitvale station. To build; o, Laura A. Cowan; a, G. A. Reinemann; c, Henry Hahn; signed, Nov. 7; filed, Dec. 12; cost $1150.

OAKLAND

Eighth near Peralta. To build; o, George H. Garrett; a, W. H. Rutson; cost $2500.

Oakland View homestead association. To build; o, E. J. Steward; a, A. W. Smith; c, C. S. Ballard; signed, Dec. 2; filed, Dec. 12; cost $2061.

Linden street No. 1225. Alterations and additions; o, Lizzie C. and J. W. Nelson; a, A. W. Smith; c, Anderson & Stockholm; signed, Sept. 29; filed, Oct. 3; cost $400.

Moss Ave. near Broadway. Maternity cottage; o, Fabiola Hospital Assn; a, D. E. Oliver; c, Mohr & Pfluger; signed, Nov. 26; filed, Nov. 29; cost $1200.

Sixteenth and Myrtle. To build; o, Carrie L. Booth; a, E. H. Barnes; signed, Dec. 1; filed, Dec. 5; cost $2300.

Webster near Durant. To build; o, S. R. Sempham; a, William Kirk; c, Flint & Libbey; signed, Dec. 13; filed, Dec. 16; cost $1747.

SAN RAFAEL

Lot 3, block 8 Townsite. Heating, ventilating, etc; o, Board of Education; a, Cunningham Bros; c, Morgan Bros; signed, Nov. 18; filed, Nov. 26; cost $200.

Margarita Tract. Club House; o, San Rafael Golf Club; a, Newsom & Meyer; c, Jensen & Schlosser; signed, Dec. 2; filed, Dec. 6; cost $2200.

Lot 3, block 5, Townsite. School building; o, Board of Education; a, Cunningham Bros; c, Thos. O'Connor signed, Nov. 19; cost $10,145.

LOS ANGELES

Architect Geo. H. Wyman has prepared plans and is now taking bids for the estate of M. Mueller, for a two story and basement business building which will connect with the present building on the north west corner of Fifth and Broadway. The outer dimensions are 6x100 feet. The front elevation will be laid up in Sespe stone. The first floor is designed for the use of the Los Angeles Electric Company and the second floor for apartments. The inside finish will be in Oregon pine. A cement floor will be laid in the basement.

The same architect has prepared plans for the Soldiers Home, for an additional story to the hospital building 40x100 feet, to be used as nurses' quarters also for a two-story frame building 64-68 feet to be used as a bakery; the bids for which will be opened to day.

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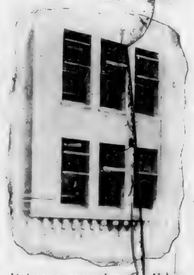

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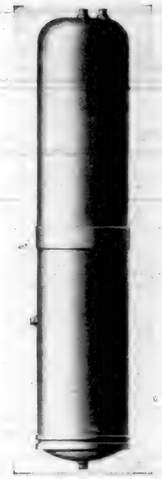

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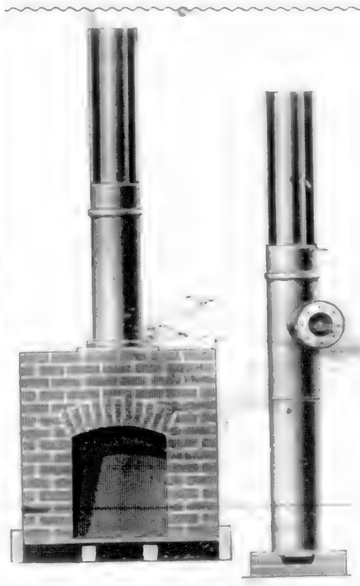

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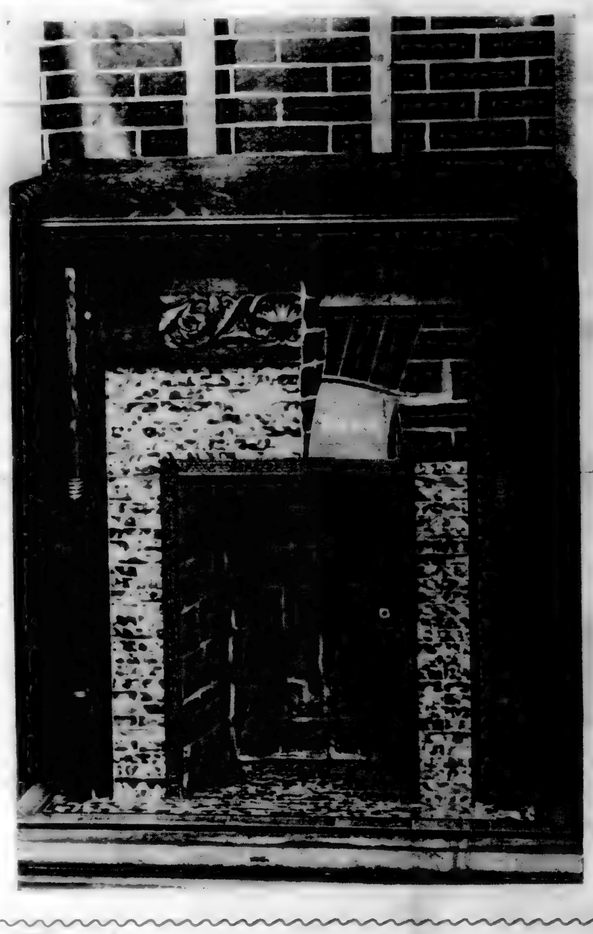

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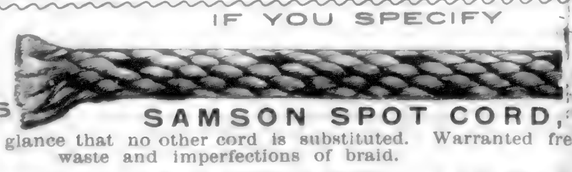

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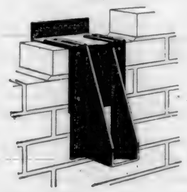

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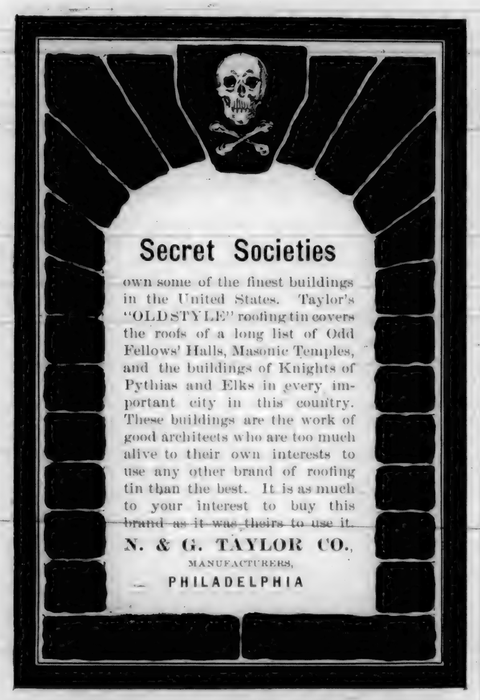

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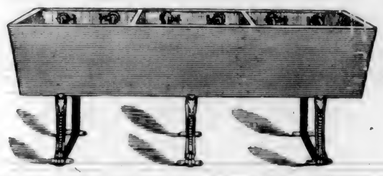

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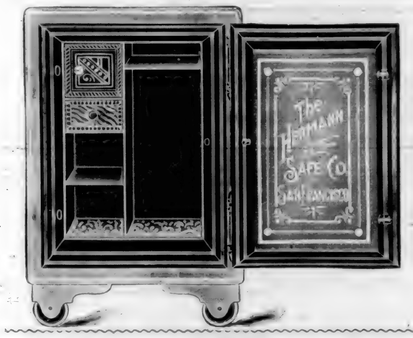

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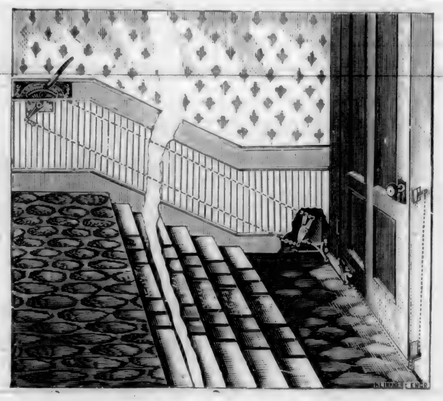

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

WHILE the people of the middle and western states provide themselves with caves to avert the fury of cyclones, which from their instantaneous attacks coupled with great power, are a standing menace to property and life, the people throughout the United States submit tamely to be without protection from a danger more terrible than the cyclone, namely, fire. So accustomed are we to putting our trust in our own care, in fire companies, and in insurance companies, that in the midst of the most inventive age the world ever saw, the conditions as to fire remain the same. No, not the same, for in times past people built more solidly, and of materials that would, for a short time at least, resist the progress of fire, as would heavy timbers, and stone walls. To-day, houses erected for the sheltering of valuable property and precious lives are the merest shells—worse than shells, for they are tinder boxes, light and inflamable, story over story, built in blocks and in flats they seem to invite conflagration. The use to a very great and growing extent, of inflamable oils for fuel and lighting increases the danger. A mis-step, the accidental overturning of a lamp, or, as frequently happens, an explosion, starts a conflagration which may consume the product of the labor of years for many householders, may destroy the gains of corporate industry to a vast amount, or lay in ashes the property of the municipality.

But that is not the worst of it. Every now and then there is a holocaust, when some great hotel, some theatre, or other place of entertainment, takes fire, and many lives are sacrificed. Everything depends upon the firemen, who amid fearful perils are striving to save frenzied people, suddenly confronted with a horrible death. Too often in their efforts they go down, themselves, the victims of the existing conditions.

Why is it that this ever present haunting threat of death by fire is not met with that intelligence which is applied to other affairs. If those who live in dread of cyclones provide means of safety from the storm which may come any day, shall not we who live in hotels, flats, or in blocks of tenant

houses be made comparatively at least, secure from a never absent peril? The ancients suffered much less by fire than we. The causes of their exemption are not far to find. Their public buildings were of stone, and their decorations were not of a kind easily ignited or affected by heat, being mostly of sculpture, and of painting on hard walls. In warm countries there were no arrangements for heating, and the only fire introduced was the sacred flame kept alive by constant attendance, on the altars of their Gods. Their dwellings also were of adobe, brick, or stone, not high, and had non-combustible roofs. Even in streets where a wheeled vehicle could not pass conflagrations were rare, and seldom extensive. In the colder countries of Northern Europe their was similar immunity, the great fire-place with its logfire, or in more modern times the porcelain store, being unproductive of accidents. Not so with us. We build to burn, and with our resinous lumber, our paint and varnish, our lavish furnishings and our elevator shafts to produce the fatal draft, we resign ourselves to our fate.

When is the man going to appear who will find a remedy for this condition? How are we to render safe our public or our private buildings, in whole or in part? Who will produce, and teach us how to apply the material which will make wooden houses fire-proof? Failing in that, who will so construct a building that some portion of it, say the hall and staircases, will be a safe refuge for a reasonable time, where helpless people may await succor or find means of escape? Some flooring ought to be invented which could not be eaten up by flames before persons suddenly awakened out of sleep could reach and traverse it. In the same way certain walls should be made secure against the irruption of flames. Probably builders will at once fancy that to effect such changes will involve great expense. But granting that it would, which is by no means certain, the money saved in the long run in the general outlay of cities would be quite sufficient to cover the additional cost, while public buildings would undoubtedly improve in the direction of permenancy and good taste.

THEN AND NOW IN ARCHITECTURE.

TAKING Egypt, as we have, for the starting point of architectural orders, and assuming as we must, that Greece derived her fundamental ideas from Egypt there are still some questions remaining unanswered as to the means by which this knowledge was conveyed to Greece, and the route taken. From about the time, 1300 B. C., that Moses led the Israelites out of Egypt, temple building ceased, and architecture declined. But in the meantime Assyria had risen into power, and exhibited its affluence and its pride in costly structures, which however, took the form of palaces rather than of temples. The materials of which they were built were not able, like the granite of Egypt, to resist the tooth of time, and they crumbled to the ground carrying their history with them. Enough only remained to show that the general form of their palaces was square; that they were built upon a raised platform, and approached by stairs, or by long slopes. A large courtyard was a feature of these buildings, placed at one side of the platform, instead of centrally, the apartments opening upon it. The walls of the oldest building yet discovered in Assyria dating back more than 2200 B. C., are built with a series of vertical projections thickening them at regular intervals like a pilaster or a straight buttress, and later walls have the same vertical treatment in the form of reeds, which would suggest Egyptian derivation, especially as they are alternated with flat surfaces which may have been reserved for decoration. In certain details also, the Assyrian architecture followed Egyptian examples. But the most striking similarity between Egyptian and Assyrian ideas was the placing as guardian at their gates the Sphinx—a bull with a human head, and winged—in which respect it differed from the Egyptian sphinx. That the Assyrians modified, and as they believed, improved upon the earlier styles of Egypt, a declining power, is a natural conclusion.

Several centuries later, after having reached a height of luxury which made her the envy of the neighboring nations, Assyria hereself was conquered by the Medes and Persians, who in their turn became copyists of whatever they chose in the works of the subjugated people. The resemblance between the palaces of Assyria and Persia are remarkable, even to the placing of them upon platforms, approached by a grand flight of steps. Although like those of Assyria they were constructed of perishable materials, enough is left to show a more artistic spirit than that they displayed in their models. Even the slab supporting each step of the grand entrances of the palaces at Persepolis was decorated with bas-reliefs of royal sports in the hunting field, and groups of royal personages with their attendants. The remains of the Egyptian type of building are seen in the placing of columns, equally spaced, inside their great halls, although it could not have had the motive or the meaning attaching to them which it had in Egypt where they were used in the first place to support the roof, and in a religious sense to deepen the solemnity of the approach to the mystery concealed in the darkest chamber of their temples. In the Assyrian palaces small windows may have been placed near the top of the wall, above the line of capitals of the lower ranges of columns, as was sometimes done in Egypt, in what are termed hypostile halls, which were thickly set with columns, of which the side rows were lower, leaving a space above the lintels which could be utilized for the admission of as much light as was sifted through barred stone windows. The Persians, while evidently expending vast sums upon their architectural creations, evolved little that was worthy of imitation. They obtained certain details plainly Egyptian, and like every nation which has left us architectural remains, attempted to form new orders of capitals for the pillars or columns first designed in the Nile country. One of these seems wholly a reminiscence of Egypt, with its reedy column, and its spreading top like the seed-pod of the water-lily—very simple and pleasing in so far as it retains this character, but awkwardly surmounted by a bundle of reeds with curling ends, forming another capital inferior in character to the first, and spoiling the effect of the whole. On the other hand the bull capital, which is a double bracket facing in opposite directions, has a decidely artistic effect, and is peculiar ot Persia The roofs of Persia, like those of Egypt and Assyria were usually, and necessarily, in their columnar halls particularly, flat. There have been found, however, on their bas-reliefs some representations of domed buildings. Whether they were fanciful or were reminiscences from Asiatic sources imported by foreign artists is not certainly known.

The developement of architecture, as recognized by us, proceeded westward through Asia Minor towards the Mediterranean; but here as in Assyria and Persia, the materials used lacked this enduring qualities of Egyptian stone, and remains of any value are rare. Many interesting examples are found of the more ancient rock-hewn temples and monuments. The period of their execution is suggested by their imitation of timber construction, even to the hewing out of the beams on which the floor is supposed to rest, and the projecting ends of other beams and supports used in a wooden building. Some of these houses are cut out all round, and have gabled roofs, with a frieze, cornice and triglyphs under the architrave, thus mingling some of the architectural features of stone buildings with those belonging to a period when architecture as a science did not exist. Subterranean tombs and galleries have also been discovered with the stones laid in regular courses, the printed arch being used for the openings, and are supposed to date about 1000 B. C. Not strictly belonging to architecture, they may be referred to as guides to some subsequent developments of this science. These are not peculiar to Asia Minor, but are found also in Greece and Italy, and are known to writers on architecture as "Pelasgic".

That which strikes us in following the traces of an art or a science, is not that we are able to discover proofs of the migration of certain forms of civilization, but that such long periods of time as centuries should have passed between these movements, the territories often lying adjacent. Two reasons are historically given for this, namely, the jealousy with which each nation guarded its frontier from invasion and the prohibition of foreign forms of worship. As temples were the expression of religious ideas they could not be copied except by people who had first embraced the religion they represented; wholly, or in part. Owing to this inhibition we do not find the Egyptian temple proper in Assyria, although through wars and commerce many features of Egyptian architecture were grafted upon whatever original ideas these people possessed. In like manner some of these characteristics were carried beyond into neighboring nations, and modified according to the sentiments of those receiving them.

There is not in Grecian architecture the same evidence of an amalgamation of styles that is found in Assyria or Asia Minor, but there is apparent a deliberate choice of Egyptian styles, with also a deliberate intention to improve them. The Egyptians were not naturally an artistic people. They built up slowly and ponderously an impressive but not a beautiful style. The Greeks, on the contrary, having attempted the development of art had various examples to choose from. With their extraordinary love for, and insight into its true principles, they arrived in the course of two or three hundred years at a greater perfection than Egypt had attained in as many thousand. Without aiming at originality in the creation of orders, taking for models those originating in Egypt, they preserved the principal features, treating them in a manner reminiscent of the founders yet with a result quite different, more refined and more beautiful. The Greeks, like the Egyptians, were temple builders, both nations being polytheistic, and worshipping the same deities under different names, and with less austerity; and these differences had undoubtedly some influence in modifying their architectural creations.

The points of likeness and unlikeness which are to be observed are, for the former, the simplicity of shape and the use of columns to support beams over head instead of any arched or domed support: for the latter, the different disposition of the columns, and the change from a flat to a sloping roof, with the additional features of the architrave, frieze, cornice and pediment. Having formed a style they adhered to and perfected it, making it the admiration of the world for all time. Out of the heavy and rather squat Egyptian models they produced the light yet strong and symmetrical Doric column; stripping it of all suggestion of natural objects such as were characteristic of the parent style, retaining only the vertical lines of the fluting as essential to the upward effect. The Doric capital was entirely without ornament, being a simple block expanding by graduated curves towards the top into the just mathematical proportion to express its purpose in supporting the entablature. Indeed, the perfect charm of this style of columnar architecture was its scientific proportion, and its delicacy of finish, corresponding with it. This care as to effect is illustrated in the elevation of some straight lines into curves to correct optical illusions. There was a deviation made of about half an inch from the straight line in a height of a little more than thirty-one feet in the Doric column, to prevent the tendency to appear slightly hollow. Accurate observation has shown that this long curve has its apex about one-third up the shaft. In accordance with this principle in optics the steps of the Parthenon, the top one of which measures one hundred feet in length, gave an unward curve of about four inches, and the end cornice is carved to correspond. On the other hand, an angle column was made slightly thicker than the others to allow for the lessening effect of a dark object seen against the light. Not only these optical illusions were rectified in the best specimens of Grecian architecture, but the whole body of columns was made to lean slightly inwards, while the entablature was given a just discoverable backward deviation from the perpendicular. So nice was the Greek sense of symmetry, recognizing that principle in pictured art which requires an object to be represented as it seems, rather than as it actually is; and in architecture to make it seem as it should.

In both Egyptian and Greek architecture the column was the main feature. The Egyptian built walled temples with several chambers opening into each other, each smaller than the preceding one, giving them great longitudinal extent. The larger and outer one enclosed rows of columns, and was not roofed. The second chamber had also its rows of columns, and was only dimly lighted from the first (except in the so-called hypostyle halls); the third chamber was filled with a forest of columns obstructing the view completely; and the fourth or last, had a group of columns before the entrance on the inside. The several chambers were separated by walls, the doors being in the centre and opposite to each other. The last partition however, was pierced on each side of the main entrance to give access to several smaller chambers or cells. It was here that the sacred "mystery" of the Egyptian religion resided. The Greeks, on the other hand, placed their columns outside of the temple walls. The eastern *cella* of the Parthenon, one hundred feet in length, which contained the magnificent ivory and gold statue of Athene, and the Virgins chamber beyond it, were concealed from view by the outer and inner rows of columns surrounding it which formed the portico, and was thus given a semblance of the seclusion of the Egyptian temples. But the spirit of the whole was different. One represented an impenetrable idea, the other invited observation by its exquisite charm and ease of approach. The

Athenians had also chosen an elevated position for the temple of their tutelar deity, another method of removing it from profane encroachment. The Parthenan was built of white marble on a base approached by three steps which was one hundred feet front and two hundred and twenty-eight on its sides. From the uppen step to the top of the pediments was fifty-seven feet. The portico had on its outer edge forty-six columns, eight supporting the pediment at each end, and fifteen on each side exclusive of the end columns. Within the outer row, and two steps higher than this, was a second row of columns. The spaces of the inter-columinations, and the size of the capitals vary slightly, according to their position. Upon the eastern pediment the sculptures related to the birth of Athene, and consisted of independent statues resting upon the cornice. Upon the western pediment was represented the dispute of Minerva or Athene with Neptune respecting the land of Altita. The Metopes upon these of Egypt; and the statues, although showing just proportions, having all a conventionally smiling countenance without expression. On these, and on the sculptures of the best Athenian period, color and gilding were used, traces of which remain on the frieze of the hall in which stood the statue of Athene. This practice was directly derived from Egypt.

As to the domestic architecture of Greece, there could have been only differences between the Grecian and the Roman houses. Examples of the latter which have been uncovered at Pompeii, showing the same elegant simplicity of the Egyptian houses of the best period of refinement in the Nile valley. In the centre of the dwelling there was usually a garden, in the middle of which was a marble basin with a fountain flowing into it, the whole enclosed by a portico of columns. Figures of lions, children, dogs, fauns and other animal forms were grouped about the fountain. The rooms

the frieze represented in bas-relief the battles of Hercules and Theseus, the centaurs and Amazons, with other mythological and historical subjects. The frieze around the upper border of the cella represented the Panathenaic festival in honor of Minerva which occurred every four years, and was the highest festival of the Athenians. At this time the sacred garment, or peplos, woven and embroidered by Athenian maidens, was borne in procession to the temple. This ceremony, as represented on the frieze, has the peplos preceded by Gods and Goddesses, and followed by Virgins with offerings, and by horsemen, chariots, and sacrificial animals. Amid hundreds of figures no two of which are alike, all are full of action, grace and majesty. Such was the perfection to which the Doric order of architecture, and sculpture had attained in the Periclean age, about four-and-a-half centuries, B. C.

Two other orders the Ionic of Asiatic origin, and the Coriuthian mainly Egyptian, were developed. Yet the earliest examples of Grecian art found at Corinth, dating somewhere between 500 and 600 B. C., are distinctively Egyptian in proportion, the columns being even more massive than constituting the dwelling surrounding the garden, had their walls painted in red and black, which contrast produced a pleasing effect in a semi-obscurity. Arabesques of a charming alainess were used to relieve the dead level of the foundadation color—not copies of familiar objects, but gods and goddesses, cupids, dancing women, young girls in graceful attitudes, slight landscape views or a half mythical animal like the griffin—the coloring of the decorations being designedly subdued, the object being to entertain the mind without subjecting it to the fatigue of criticism, by suggestions of poetic grace with healthful activity. Such might well have been a Grecian house. Music, dancing, and recitation of verse were Athenian accomplishments. The dwellings of the lyric poets were conservatives where pupils thronged to be taught, and which furnished choruses for funeral or wedding pageantries. The Athenians believed that their gods were gratified by the spectacle of beautiful well-developed bodies in all attitudes displaying health and strength. This made their most sacred festivals operatic processions, and displays of grace. The influence of this an sculpture in teaching attitudes, was inestimable; it made their bas-reliefs

seem moving. The Olympic games and gymnasium tended to the same result.

From the Greek love of beauty, grace, poetry and activity, came the idea of the theatre, which was a place for the display of all these. It was a building, at least not an enclosed one, but an amphitheaterin the open air. The site selected was a concave slope, laid out with concentric stone seats in rows raising one above another. The usual form was semicircular, the centre being reserved for the orchestra, which fronted the rather narrow stage, backed, it is supposed, by a colonade. A colonaded gallery sometimes ran around the upper circle. The colosseum at Rome, derived from the Greek theatre, was more strictly architectural being built up from the ground, and its outer walls pierced with arched windows between which were pillars or the semblance of them, placed merely for ornament. The one exception discovered, to the semi-circular form of Geek auditorium, is found at Megalopolis, of date probably about 370 B. C. It is square, with parallel rows of columns, one within the other, carried completely around three sides; the columns being placed in radiating lines from the centre of the fourth side, or stage, to interfere as little as possible with the view of the spectators. This idea is the exact opposite of the Egyptian method, of obstructing the view by the arrangement of columns, as the motives were opposite—one to impress the spectator with awe the other to give him pleasure.

The Grecian tomb, as described by Homer, and the few examples descovered, have little resemblance to the tumuli of Egypt, except that they may have had a pyramidal roof. They had neither the extent, nor the significances of the pyramids of the Nile valley. One mausoleum, at Halicarnasses, appears to have been constructed in steps, and had a chariot group at the apex. But however slight the resemblance, in every order and style of Grecian architecture, and however modified by other influences, we find the germs if not the flower of the temple building worshippers of Osiris and Isis.

To be continued.

THE SENATE AND THE SUPERVISING ARCHITECT.

HE Senate, as in Commiittee of the Whole, resumed the consideration of the bill (H. R. 11414) making appropriations for the legislative, executive, and judicial expenses of the Government for the fiscal year ending June 30, 1900, and for other purposes.

The reading of the bill was continued to the end of the clauses making appropriations for "Office of the Supervising Architect," on page 35, line 12.

Mr. Cockrell—I should like to ask the Senator from Illinois to what extent the provision on page 34 and 35 has been carried out in the Treasury Department? The provision reads:—

And the service of skilled draughtsmen, civil engineers, computers, accountants, assistants to the photographer, copyists, and such other services as the Secretary of the Treasury may deem necessary and specially order, may be employed in the office of the Superviaing Architect exclusively to carry into effect the various appropriations for public buildings, to be paid for from and equitably charged against such appropriations: *Provided*, That the expenditures on this account for the fiscal year ending June 30, 1900, shall not exceed $210,000, and that the Secretary of the Treasury shall each year in the annual estimates report to Congress the number of persons so employed and the amount paid to each.

To what extent has that been carried out? In other words, when a public building is authorized to be erected, does the Supervising Architect of the Treasury under this provision employ draughtsmen to complete the drawings, the plans, the specifications and the estimates, so that the Supervising Architect can advertise and make a contract for the completion of the entire building within a given reasonable time?

Mr. Cullom—All that I know about the subject is found in the "Book of Estimates," on page 353:—

APPENDIX B.

In connection with the estimates for "Salaries, Office of Supervising Architect.

List of employes in Office of Supervising Architect, Treasury Department, and amounts paid each, during the fiscal year ended June 30, 1898, from appropriations for public buildings, furnished under requirements of the Act of Congress approved March 15, 1898, "Statutes at Large," vol. 30, p. 288.

Then follows a long list of names, the positions the persons occupy, the salaries they get, and I think, if it could be run down to the end, it would show exactly where the money goes in connection with each public building.

Mr. Cockrell—But what has been the effect of the requirement or authorization? Has it hastened the completion of public buildings?

Mr. Cullom—I confess I am not able to state whether it has or not.

Mr. Cockrell—We authorize the construction of a public building and limit the cost. The building goes on year after year, and there is no reason on earth why there should be such delay.

Mr. Cullom—I agree with the Senator fully; but that seems to have been the state of the case for a good many years.

Mr. Cockrell—It has been the case indefinitely—at least for a long time

Mr. Cullom—I suppose if we had time to investigate the report in the "Book of Estimates" it might explain very much of this matter, but that is all I know about it.

Mr. Cockrell—We have a public building on Pennsylvania Avenue, the City Post-Office Building; we have a building at Kansas City, which has been under construction I do not know how long; and there are other public buildings which will require years and years to complete. No individual and no corporation in this country which constructs a building of that kind ever lets it hang on their hands, year after year, with a superintendent and a parcel of employes drawing salaries out of the appropriation, thus reducing the amount that is actually put into the building.

Mr. Cullom—I fully agree with the Senator that that has been the history of all our public buildings under the system which has been pursued for an indefine time. I have myself alway felt that when a building was begun by the Government its construction ought to be vigorously prosecuted until it is completed and the people who had been employed discharged. I suppose such employes will be discharged if

they ever get a public building finished, but they never seem to succeed to that extent.

Mr. Cockrell—They seldom get a building finished. I see in another branch having coequal authority with this body a large number of bills have been passed for the erection of public buildings. These buildings cost from $50,000 to $100,000 or $200,000 or more. There is no reason in the world why a $50,000 building, a $100,000 building, a $150,000 building, or a $200,000 building should not be completed in one season. Any individual can do it, and if the Supervising Architect of the Treasury cannot secure persons who can draw the plans, specifications, and details of such work we ought to take the construction of public buildings out of his hands, and place it in the hands of somebody who will do it.

Mr. Cullom—I agree to that fully.

Mr. Gallinger—Mr. President, in that connection I wish to say that I have been very much interested of late to notice that when we propose to erect public buildings we now provide that private architects shall enter into competition in the matter of furnishing plans, as was provided in the case of the Library Building, and I think a similar provision was made for the public building in Chicago. In other words, Mr. President, we have this bureau in the Treasury Department and we have a very expensive force there, and not only are we dawdling along in reference to the erection of public buildings, but we are now commencing the policy of taking from them the work which, under the law, properly belongs to them.

I recall the circumstance that when a Supervising Architect was recently appointed it was done under the civil-service rules. A man came here, a very distinguished architect, who has erected some of the finest buildings in this country. He had not written a letter with his own hand in five years, he told me, but he is one of the most distinguished architects in the United States. He was put down to a table and compelled to write without cessation seven or eight hours, and of course he did not pass a very good examination.

Mr. Cockrell—Will the Senator permit me to ask him a question?

Mr. Gallinger—Certainly.

Mr. Cockrell—Do I understand that a civil-service examination was held for Supervising Architect of the Treasury?

Mr. Gallinger—Certainly; and the man who occupies that position to-day is a product of the civil-service system of the United States. After obtaining that position by a civil-service examination, which, to my mind, is an absurdity, we are now discrediting him and saying that he is not competent to make plans for a public library in Washington or a public building in Chicago, but that we must let out the job to an architect who could not pass the civil-service examination. That is all I care to say on the matter.

Mr. Cullom—I want to add to what the Senator has said that I tried very hard to bring about some sort of system by which an architect could be chosen without going through that performance, because no first-class architect would agree to it. The result is that we have got the kind of a man who has been described—I do not know who he is—and no community as to which a bill has passed for the erection of a first-class public building is willing to trust to the Supervising Architect to build it. So it is in Chicago. We have an architect for the public building there who is a first class architect, and he is in charge of that building because, so far as I was concerned, and so far as the people there were concerned, we were unwilling to leave it in the hands of an architect such as was usually selected by whoever might be the Secretary of the Treasury.

So I agree with all that has been said about this matter, and I sincerely hope that some of these days we may agree upon a plan that will result in securing an architect who is capable of taking charge of public buildings and constructing them within a reasonable time and in a proper way.

Mr. Gallinger—Or else abolish the office.

Mr. Cullom—Yet; or else abolish the office. I agree to that.

Mr. Cockrell—Mr. President, Judging from the declarations made in the Senate occasionally, and those made by my good friend from New Hampshire, Mr. Gallinger, and those made in another body not a thousand miles distant, the civil-service law must be a terrible failure, for all the sins of maladministration are charged to that law. I want to defend that law, although it may not need a defence. It is not the civil-service law, I say to my friend from New Hampshire, that is to blame for a Supervising Architect being subjected to such an examination under it, but it is the President of the United States.

Mr. Gallinger—Mr. President I do not know that I go that far in agreeing with my friend, but on general principles I agree with him that it is somebody outside of the law. I have never very seriously attacked the original civil-service law, in fact, I am in favor of it.

Mr. Cockrell—All right.

Mr. Gallinger—But what I have attacked has been this aggression, this reaching-out, this grasping of power and bringing under the law classes and individuals who, in my judgment, never were intended to be included in the law and never ought to have been included in it.

Mr. Cockrell—In that I heartily agree with the Senator from New Hampshire. He is exactly right. It is not the law, but it is the executive authority which takes these places and puts them within the provisions of the law. It is within the hands of the President at this moment to make any change he chooses.

Mr. Allison—Will the Senator inform the Senate when the Supervising Architect of the Treasury was placed under the civil-service law?

Mr. Cockrell—I have no idea when, and it is a matter of profound indifference to me whether it was done by the predecessor of the present incumbent of the Presidential office or done by the present incumbent. By whomsoever done, it was unnecessary and unjustifiable, in my opinion.

Mr. Gallinger—It was done for the first time, I will say to the Senator, when the present incumbent of the Supervising Architect's Office received his appointment. I know that from the fact that a friend of mind, a very distinguished architect, came here seeking that position, and, to his surprise, he found that he had to go through a civil-service examination.

Mr. Cockrell—When was the present Supervising Architect appointed?

Mr. Gallinger—I should say two or three years ago, I think, as I remember the matter.

Mr. Cullum—This situation I think, prevailed under a previous administration, but I am not sure when it began.

Mr. Gallinger—It never prevailed before the appointment of the present incumbent, I will say to the Senator, whenever that may have been.

Mr. Cockrell—But the present incumbent, my recollection

PERSPECTIVE SKETCH,

J. MURRAY, ARCH.
SAN FRANCISCO.
CAL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL. XX Nº3 MARCH 1899

HOTEL PHOENIX

PHOENIX ARIZONA

DRAWING BY

C. M. RUSSELL.

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO LITH.

VOL XX Nº 3 MARCH 1899

SKETCH OF OFFICE BUILDING .....
FOR MR. E. P. MURPHY .....
COR. OF CALIFORNIA & KEARNY STS.
SHEA & SHEA. ARCH'TS. .....

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO.

BRITTON & REY. PHOTO-LITH

VOL. XX N°3 MARCH 1899

is, was appointed by the present President of the United States.

Mr. Allison—As I understand, he was appointed under an order spreading the blanket of the civil-service law over the Office of Supervising Architect.

Mr. Cockrell—Under President Cleveland's order?

Mr. Allison—I think so.

Mr. Cockrell—Then it was the duty of the present incumbent of the Presidential office, if he did not approve of that order, to refuse to carry it out, to rescind it. The orders of one President, under the civil-service law, have no binding force upon his successor, and his successor has ample authority to make any change or modification he may desire.

Mr. President, I desire to express my hearty approval of what the Senator from New Hampshire, Mr. Gallinger, has said in regard to the administration of the civil-service law. The order extending the operation of that law to its present scope is, in my opinion, the most deleterious action which could have been taken. The idea of putting a messenger, or a watchmen, or a laborer, or a copyist, or a cook, or any employe of that kind under the civil-service law is, to me supremely ridiculous. I see no justification for it. The selection of an officer of the character necessary to fill the position of Supervising Architect, with all his responsibility, should never be left to a mere technical examination. It is too important an office for that. There are millions and hundreds of millions of dollars entrusted to his expenditure, and in the large cities where public buildings have been authorized they are commenced and they are hardly ever completed. Before such buildings are completed they run almost through two or three administrations. That is not done in the private affairs of individuals and corporations and bodies that erect large buildings, and there is no reason why it should be done by the Treasury Department of the United States.

It is just as easy in these buildings to draw the plans and specifications entire for the whole work, let it out by contract, and have it completed within a given time, as it is to do it by piecemeal. Now a contract is let out for a part of a building, and when this part is done than a contract will be let out for another part of it, and so it goes, one part waiting upon another, instead of having a contract made such as can be made and such as is made by individuals and corporations in the construction of great buildings.

If there is not a change for the better, I shall insist that we devise some other plan of constructing public buildings than the plan we have pursued, which has proved such an ignominious and disgraceful failure.

Mr. Perkins—Mr. President, I wish to say one word in relation to the Supervising Architect; not to criticise civil-service reform or to criticise the qualifications of the Supervising Architect. I do not pretend to know anything about his qualifications, but it is the result to which I desire to direct attention. A tree is known by its wood or the fruit it bears.

Congress has appropriated a million and some odd hundred thousand dollars for a site for a building in the city and county of San Francisco. The building is to cost two or three million dollars or more. It is to contain the post-office, it is to hold the land office, the sub-treasury, the different courts of California, and the circuit court in that city. The building should be an ornament to the city and a credit to Government. The plans have been submitted to the judges who compose that circuit and judicial district, which embraces four States and three Territories. Their criticism of the plan is that it is not suited for the purpose of a court-room; that the library-room, the offices of the marshall, and the general arrangements of the building are such that they are not suitable to be occupied by our United States courts.

The plan was submitted to architects in San Francisco, and they revised it and made an estimate of the cost of changing the interior part of the building, and the estimate of its cost. This was submitted to the Supervising Architect in this city. He went over it and said he knew what they required better than the people did themselves. Yet these judges are appointed for life; they hold their positions, not as the result of civil-service examination but by reason of their judicial knowledge, by reason of their high character and standing as lawyers and citizens of the country. They

will now have jurisdiction of our new possessions in the Pacific Ocean, as well as of Alaska and Arizona, the States of Washington, Oregon and California. Yet the Supervising Architect, although they have sat upon the bench for years and years, say they do not know what kind of a court-room they should occupy: that they have no knowledge of the requirements of the jury-rooms, of the waiting-rooms, of the marshal's room or the library; but they must take this plan, the Architects says, without any back talk.

Our people felt so wrought up and indignant at this action that they have said: "We will ourselves raise a fund and donate it to the Government for the purpose of planning a building whose exterior shall be pleasing to the eye and which shall compare favorably with the private buildings erected by private capital in our city. We will have the plan so arranged—we will have the architect so arrange the different court-rooms that they will be acceptable to the judges, convenient to the jurors, and the litigants who there assemble from time to time to have their cases adjudicated." I have a picture of the building proposed, as it appears in the report of the Supervising Architect. I submit it to any impartial critic. I want to say parenthetically, although perhaps it is not necessary for me to say so, that I am not versed in architecture. Yet I know Grecian from Gothic; I know Byzantine from Moorish architecture; but I know, what is better than all, that which is agreeable and pleasing to the sight and the senses.

There are in San Francisco one thousands buildings whose exteriors, as compared with the proposed building, are as a painting by one of the masters compared to a chromo, and yet we must take this. We can appropriate the money for this purpose, but the building must be constructed against the protest of the judges of the court, against the protest of our people. The building must be thus constructed, and we must make appropriations for it, because the Supervising Architect, who has passed a civil-service examination, says he knows what we want.

Mr. Tillman—(examining picture.) Is this the picture of the building which the Senator from California has so eloquently described?

Mr. Perkins—That is the picture. It is the Supervising Architect's report.

Mr. Tillman—It looks like a cotton-factory.

Mr. Perkins—Our jail in San Francisco is a pleasant picture as compared with that. We have a half-dozen power-houses that generate power to run printing-presses more beautiful to the eye than that splendid picture here, submitted as a work of art by this architect.

I did not intend to say anything about this matter at the present time, as it is not the time or the occasion, but I could not resist, after hearing the remarks of my friend, the Senator from New Hampshire. At the proper time I shall propose that the people of San Francisco, public spirited as they are, may raise the money by public subscription to pay an architect—one of our architects in San Francisco, who has grown up from an office-boy to his present high position, and who has constructed some of those magnificent buildings—to design a building. The design shall not cost the Government a cent. I hope when the proper time comes that those of you who have looked at the picture of this beautiful structure will join me in saying that such a monstrosity shall not be erected in the great metropolis of the Pacific Coast, where the Pacific Ocean sings the sunset song of the nation.

Mr. Cullom—I hope the reading of the bill will be proceeded with. There is no amendment pending before the Senate.

Mr. Gorman—Mr. President, I have no word of criticism of the present occupant of the office of Supervising Architect of the Treasury. I know nothing of him. I take it for granted he is as competent a man as can be had for the compensation allowed for this office, $4500 per annum. I had nothing to do with the mode of his appointment and I have no criticism to make upon it. But I think it would be a wise and proper thing if Congress at this session were to increase the compensation of the Supervising Architect of the Treasury, and so enable the President or the Secretary of the Treasury, without regard to the technical examination by the Civil-Service Commission, to appoint a proper man to that position, with sufficient power to control his office. I see no reason why we should not do it. I believe in economy at the right place.

Mr. President, this bill bristles from the first chapter to the last with increased appropriations for clerks. How many new men are provided for I do not know, and I think it would be a very difficult matter for any Senator or member to ascertain just the number of small offices it is proposed to increase.

The organization of the office of the Supervising Architect has been imperfect for a long time. It is imperfect now. It stands with the second executive office in control held by a man whom the Secretary of the Treasury can not reach directly, nor can he select his successor without reference to examination.

I assert without fear of contradiction that there are but few men, sufficiently skilled, who would submit themselves to technical examination before the appointment was tendered to them. It is an embarrassment to the Government. I happen to be informed from some familiarity with that office, and I do not hesitate to say now, upon the floor of the Senate, that the may who is in charge of the executive branch of it—I do not mean the Architect, but his assistant—if he were in my employ, would not remain five minutes. Yet he is held there because he is under the civil service. That is one reason. There may be others of a general and political nature.

It is known to everybody that no such mismanagement has taken place in any other department of the Government. Yet in this very bill you have an extraordinary provision, such as ought not to be found in any appropriation bill for any of these offices. It provides that the expenditures on account of those who will be employed in providing plans and for the superintendence of these buildings shall be paid out of the general fund, the appropriation for public buildings not to exceed $200,000 per annum. It is a lump appropriation. It is true it is always provided that the Secretary of the Treasury shall, in his annual estimate, report to Congress the number of men and the compensation of the persons so employed. But that ought to be placed upon a business basis, as every other department of the Government is placed, making him estimate for the number of clerks, the number of draughtsmen, the number of engineers he desires to employ, and let us appropriate for them and place them all under the Secretary of the Treasury, and then hold him responsible for the work. . . .

Mr. Cullom—Mr. President, there is no amendment before the Senate, and I shall therefore say only a word. I appreciate the remarks of the Senator from Maryland, that when these appropriations are made it is difficult to cut them off, even after the occasion for them has in any degree passed away. The bill in many of its provisions has tried to anticipate the time when these extraordinary expenditures of money for clerks, etc., shall pass away. There are provisions limiting the approporiations to a given time. But we find ourselves involved in extra expenses on account of the war, on account of the general situation, which is new, and which we all hope, at least, will pass by in a very short time, when much of the expenditures provided for in the pending bill for clerk-hire and for other purposes to carry on the Government shall have passed away.

As to the Architect's office, we all agree that that has been badly managed and that there ought to be a new law providing for the conduct of that office and getting rid of the present mode of selecting the Architect I do not know who is in the office now, and if I have said anything which reflects upon any individual I hope it may be understood that I do not know the gentleman. I have had no occasion to have anything to do with the office during the present administration, or at least since a very short time after the administration came in, when I tried to bring about a general arrangement and secure the appointment of some man who would not have to go through a civil-service examination, because the very best architects in the country declined to do that.

Now, Mr. President, I hope the reading of the bill will be proceeded with.

Mr. Cockrell—In response to what the Senator from Illinois said, I will state that neither do I know the Supervising Architect. I do not even know his name. I do not know that I ever heard it.

Mr. Cullom—Nor I either.

Mr. Cockrell—What I have said has no reference to him personally, but it is to the system of administration that has existed there ever since I have known the office.

Mr. Cullum—That is my feeling about it.

Mr. Cockrell—It has been one continuous system, and no one has made any improvement upon it.—*Congressioual Record*.

TRADE NOTES.

A FINE half-tone plate, about 11x15½ in size, of the new Terminal Station at Boston, from a negative by Soderholtz, is being sent out to architects by Mr. Samuel Cabot of Boston. Interestiug statistics in regard to the building (which is the largest railway station in the world) are given, and attention called to the fact that 62,000 sqr. ft., of Cabot's Insulating Quilt were used to insulate the heating and veltilating ducts, under specification of Prof S. Homer Woodbridge, the expert, who has used the Quilt many times before in his work, notably the Rutland Hospital at Rutland, Mass., the Highschool at Newton, Mass., the Insane Hospital at Medfield, Mass., etc. The Quilt is made with or without the Asbestos covering and is a wonderfully efficient and cheap insulator and deadener; and it is claimed for the Asbestos Quilt that it is the only article made, which combines the qualities of a heat insulation, sound deadening and fireproofing.

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NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street, at 4 p. m.

SETH BABSON, Pres. H. A. SCHULTZ, Vice-Pres.
OLIVER EVERETT, Sec. JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

THEO. A. EISEN, PRES. ARTHUR B. BENTON, Vice-Pres.
WILLIAM C. AIKEN, Sec't. AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. PERCY, Pres. W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. J. L. E. FIRMAN, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. KENT, Pres. JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday even ing of each month.

ADAM BECK, Pres. M. V. BRADY, Sec.

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

SKETCH of Office Building for E. P. Murphy, cor. California and Kearny streets, Shea & Shea, Architects.

HOTEL PHOENIX, Phoenix Arizona, C. H. Russell, Del.

PERSPECTIVE SKETCH, J. Murry, Architect.

INFORMATION CULLED FROM OUR EXCHANGES.

When the present growth of cypress timber is harvested that wood will practically disappear, for it is so extremely slow in maturing that there will be no second growth.

There are about 400 different species of so-called timber trees in the United States, but only about 20 of them attain commercial prominence, the rest being either too small or unfitted for commercial purposes, or consumed in small quantities for special uses.

The fact that the locust tree attains in 25 to 30 years the same thickness as the pine in 50 and the oak in 100 years, caused I. Kausch to conduct experiments with this variety of wood. The author gained the conviction that acacia wood has an important future, especially as regards its use for mining purposes. Acacia timber excels by great firmness and durability, and is, therefore, also well suited for many other purposes, such as wheels, bungs, ladder steps, etc. The locust tree thrives in the poorest soil, even in the rubbish of sandstone quarries and in slaty declivities. All that is necessary is to make a little hole in the latter, to fill it with mother soil, and to plant the young tree therein. In wet soil the locust tree does not thrive.

Many people think, says the *Canadian Trade Review*, that because there are dark streaks in maple flooring when it is first put down, that those dark streaks will remain to mar the floor. But this is an error. After the floor has been laid for a time and has frequently been scrubbed, as all maple floors usually are, the dark streaks are merged into the uniform light gray of the ordinary maple floor. Thus the appearance of a maple floor after it has been used for some time is very different from what it was when first put down.

In some cases architects have complained that where maple flooring has been specified the stock delivered was not all white lumber, and therefore should not be classed as clear flooring. They would have no trouble in securing such stock if the contractors were willing to pay the difference in price between that and the ordinary firsts and seconds. There are many dealers who make a separate grade of strictly white flooring and sell it at a price about $10 a thousand higher than that of the ordinary grade. But the clear white lumber must be treated differently from the ordinary run. It must be set on end and thus dried, because it will stick stain if dried in the common manner, and other precautions must be taken to protect it against stain.

In converting maple logs into lumber no great depth of cutting can be done before the saw runs into the heart. Even when the effort is to take off the white side clear of dark wood the saw is apt to run into the heart portion and streaks are left in the lumber. The most profitable way is to utilize all the log except the soft heart, which is worthless, and grade up the whole without reference to color. Then, if the manufacturer's trade requires all of the white flooring it can be selected out. One of the most prominent maple flooring concerns refuses to guarantee all white strips in its sales. Its first and second flooring includes both white and dark, with 50 per cent. of white as a general thing. On this basis large contracts are taken to supply office buildings, stores, public structures, etc., at the regular price of firsts and seconds. When such lumber is laid in floors the color becomes so nearly uniform in a short time that it gives entire satisfaction.

THE ADVANCEMENT OF PUBLIC TASTE IN ARCHITECTURE.

PAPER PRESENTED AT THE ELEVENTH CONVENTION OF THE ONTARIO ASSOCIATION OF ARCHITECTS.

BY MR. SIDDALL.

A FEW weeks ago Mr. Langton came to my office and asked for the title of the paper I was to read at the Conference this year. This was the first intimation I had received that a paper was expected from me. However, I believe it is the duty of every member of the society to do his share towards making our annual meeting a success, and although through want of leisure my attempt will not be of the value I would like it to be; I will not withhold it on that account, but give it for what it is worth.

A few days after the interview with Mr. Langton, I have just mentioned, I had the privilege of hearing the Rev. Mr. Shortt lecture to the Toronto Chapter, and he gave me the keynote for my remarks to-day in deploring the state of ignorance existing in the public mind regarding architecture, and suggesting that some method should be found and used, by architects, for its enlightenment. I therefore selected the subject you find on the agenda, "The advancement of Public Taste in Architecture." I will not, however, promise to stick very closely to my text, as I shall have, perhaps, quite as much to say about the taste of architects themselves.

The architect from the popular point of view is a pictorial artist on a large scale, and of all the arts his is the one most capable of prolonged effort in design, music and poetry coming next. Again the painter will produce pictures to frame and hang on a wall to be seen only by a chosen or limited number; a sculptor will adorn a pedestal with his effort, and only those who seek it find it; music and poetry reach an increased number, but architecture, as a decorative art, is seen by all men at all times, and its silent influence, consciously or unsciously, affects the minds of the cultured and uncultured.

To speak broadly, there are two faculties displayed in the architectural art—invention and imagination—one constructional and the other asthetic. Invention has to do with the plan and scheme of a building and the relationship of its parts—the artist calling this faculty into play in much the same way as the dramatist creates characters; disposes of their destinies; thinks out the course of events in his story, and sets the scenes. This can all be done by the faculty of invention. Having made the plan and settled the scheme of the structure, its heights and sizes, imagination does the rest, and clothes it with beauty. The construction will, of course, give the motive of the design. Every structural problem will be met and solved before the building is begun, and the architectural design keep pace step by step with the construction, partly modifying it and making it obedient to artistic consideration.

It is of the decorative or imaginative side of the art that I wish to speak—the side which appeals most to the public.

We are all the time seeing and handling things which are beautiful and give us pleasure, or ugly and give us pain. There is nothing, however, to compel us to look at poor pictures or distorted statues; but we cannot escape the ugly buildings which disfigure our streets. Nor can we prevent the baneful influence of such bad buildings on the minds of our children, who, unfortunately, grow familiar with them, and whose tastes will, in all probability, become as corrupt as those of the public to-day.

Considering then that architecture as a decorative art is so transcendently important, is it not astonishing that the bad architecture should have been so long a matter of indifference, or at any rate so long tolerated by the educated public?

The first question I ask therefore, and will endeavor to answer is—"How is the Public Taste to be trained to a better judgment in matters of architecture—a better appreciation of art—and taught to know good architectural design from bad"?

The first essential is, that the public shall be induced to take an interest in architecture, and shall be educated to do so. How is this to be achieved? Not so much by talking as by doing. Not so much by lectures and papers and art criticism as by our actual work in stone and brick and wood. By the quality of the art set before it will the public taste be healthy or unhealthy. It depends, therefore, upon the architects themselves in the greatest measure whether there shall be any advancement in the popular appreciation of our art.

The next essential is closer and more friendly relations between the public and the profession. While I don't agree that the feeling of contempt that is sometimes spoken of exists, except amongst the least thinking class, it is undoubtedly true that there could be a more mutual feeling of respect between them.

It is said that culture only means the development of new relations between ourselves and the world around us—a better understanding of how one things affects another. This can be made clear perhaps by imagining the way in which every individual would conduct himself towards the rest is a society of the highest possible culture. Courtesy would of course be the rule. Each person would recognize the welfare of the whole as of the utmost importance, and do all in his power to establish it. Nothing would be done in a spirit of selfishness or to draw attention. All would be in sympathy and work in harmony. Under conditions such as these architecture could attain to something like popular appreciation.

My second question is—"Are we architects going to work in the right way to produce the best of which we are capable, or are we working under hopeless conditions, which must prevent not only any originality, but even tolerably good work?"

Any art is valuable only so long as the artist can be seen in it. The inanimate material which the artist handles, be it a lump of clay, a stretch of canvas, or a heap of stones or bricks, is quickened into life by the artist's communication of his own spirit into the thing. I mean, of course, without pre-mediation, resulting in unconscious expression. We all know of some buildings which have been erected under conditions where the thought of the architect can be read, and his hand traced not only in the general design but in the minutest feature. Such buildings are interesting because they have character, and they owe it to the impress of the architect's personality on his work; and it is only such that can charm and interest the uneducated as well as the educated, and that really deserve the name of architecture.

In the middle ages very much was left to the trained workmen which the architect—or master builder—employed, but they worked under his personal direction, and he was always on the spot to tell them what to do and how to do it; and often himself worked with mallet and chisel on the sculpture which adorned the building.

If this supervision over every part of the building was necessary then, when the architect had under him a skilled body of artizans, trained to the methods of a single school: how much more necessary must it be at the present day when he has no such traditions? They have to work one week in one style and the next in another, and then probably in no style at all. No wonder they are hopelessly at sea when left to themselves. The architect of to-day should, therefore, think no part of his work too small for his attention; everything should be thought out, studied, and the smallest detail designed as carefully as the more important.

It is hardly necessary to say that this has not been done with a large proportion of the buildings in our cities. It is a melancholy fact that much that has been produced is either positively bad or absolutely uninteresting. The buildings

that are offensively bad are so from sheer ignorance or contempt for the recognized rules of art, and those that are dull and stupid often are so from the mere mechanical repetition of stock forms and stale ideas, which do duty for thought and save trouble of invention. With others truth has been sacrificed to whim, orders have been painfully caricatured, the details are inappropriate and often out of their proper position—a meaningless combination of forms, freaks and devices, dressed up to look fresh and clever. An uncultured and unappreciative public will call any extravagance fresh and clever until they are taught to know that there is a violation of some law. But the architect who does these things wins a cheap, but doubtful, reputation by pandering to a taste, which if he does not know is bad it is because his taste is no better than their own. He does not fear to blunder in his details, because he knows there is no one to detect them. His safety is in public ignorance.

How essentially different was it when the Greek architects were building. They were encouraged or admonished by the knowledge that they were watched by the trained and cultured eyes of all the Athenian people.

Every citizen was an intelligent critic. No Greek architect could deceive the public with a false proportion or vulgar profile; neither were they deceived by abundance of ornament covering a weak design. Nothing put purity and perfection obtained for the architect a reward. But when their high ideal of art was reached the appreciation and applause were promptly and ungrudgingly given and the reward—riches, honor and fame.

But alas for the architect to-day who is endowed with creative imagination and a keen sense of duty—whose profession is dear to him because of his love for his art. There is little in the condition of public sentiment from which he may draw inspiration and encouragement. He will see bad work pretty generally admired poor work too often approved.

I now come to the question, "Is not the public taste in Architecture retarded by a want of respect amongst architects for each other, and for which they are responsible more or less? I mean an absence of professional etiquette—the esprit-de-corps of other professions.

Sometime ago I read in a professional journal of an incident which occurred in the States and was singularly like one in which I was personally interested. A brother architect was in the witness box, having been called by the plaintiff to testify in certain points regarding professional charges. On cross-examination the opposing counsel asked "Is it not very common for architects to offer to submit plans on a venture, hoping that they may be accepted?" The question was objected to by the plaintiff's counsel, but the objection was not sustained by the judge, who remarked that the architectural profession was not like that of doctors or lawyers who never solicited work, but that it was well-known that architects were always glad to compete. The incident shows how little the architect's point of view is appreciated even by the educated portion of the community. But was it not to some extent true? The temptation to get work at any price is a constant one, and while the profession is open to any one, irrespective of ability, it is not strange that good and bad should be lumped together by the public in a single category.

It is true that there is a fundamental difference between the architectural profession and the others mentioned. A lawyer to practice must be a member of the Bar, the physician must have received his degree from the Medical University. The architect, however, is let loose upon the public with or without training. It is not to be expected then tha there shall be respect in the public for a profession which does not discriminate amongst its own members, and which is content to let its professional name be used by untrained individuals. Law and medicine have taken measures to protect the public from inefficiency. Architecture has not.

Another element in the want of appreciation of architecture as an art by the public is the established level charged for the services of all; the authoritive schedule of charges sanctioned by the mass of the profession.

The most carefully educated and gifted man gets no more for his services than an ignorant bungler. In other professions, such as music, painting, sculpture, medicine and law, artistic ability is so remunerated that there is always an incentive and opportunity for still further increase, and the public demand for a high artistic standard is established in these professions. It is evident that the value of the work of a true artist is greater than that of the man of small ability. Moreover, the system takes little account of the nature of the design and the amount of brain work required to produce it; the carefully studied and elaborate detail of a first-class residence is of no more value, judged by the existing standard, than the unadorned school house or barn.

A writer in one of the papers has summed up the question in these words—"By the present mode of payment the public first refuses to recognize the difference in the artistic capacity of individuals; second, it refuses to recognize the artistic difference in widely varying services rendered by the same individual; and, third, it refuses to pay the architect in a way that will enable him to give its work his best attention." But the strangest anomaly of all is, that the financial interests of the architect and his client are diametrically opposite. Take the case of a building of the normal value to say $50,000, the commission for which would be $2500. An architect unskilled and giving little thought to his work would probably spend $60,000 in carrying out the work, for which he would be paid a commission of $3000. Another architect by thought, labor and diligence, and making various studies and changes in his drawings is enabled to reduce the cost by $5000. His faithfulness and care are rewarded, not by extra payment for extra study and labor; he receives no payment at all for that, and the original commission is reduced by $250.00, 5 per cent on the amount saved for his client. The better he serves his client the more his commission is reduced.

To recapitulate and conclude, I would say, that before we architects accuse the public of being indifferent we shall do well to look at home and see whether the work we turn out has any real claim to be interesting, and before we claim that they do not know good work from bad, it is our business to ask ourselves whether we have given them a fair chance of seeing what good work is. We shall educate them to be critics by giving them good and faithful work as a standard by which to judge the qualify of the whole, and we can depend that every piece of really meritorious work will be an object lesson for the education of the popular taste and public appreciation.—*The Canadian Architect and Builder.*

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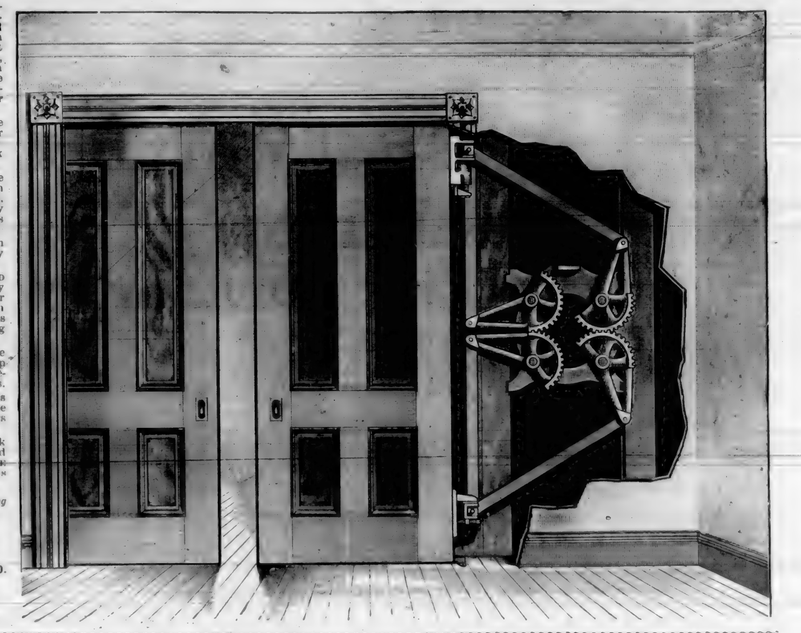

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JAMES KNOX TAYLOR.
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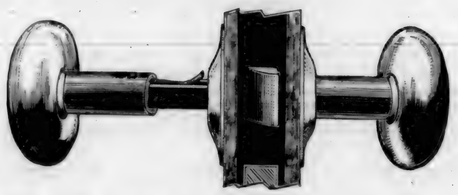

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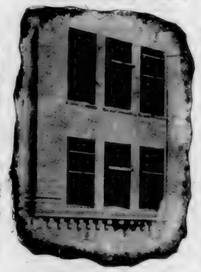

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Office, 1504 Market St., Cor. of 4th. Rooms 7-8.
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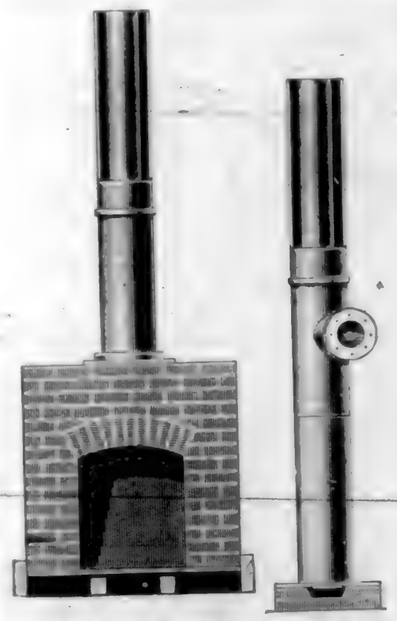

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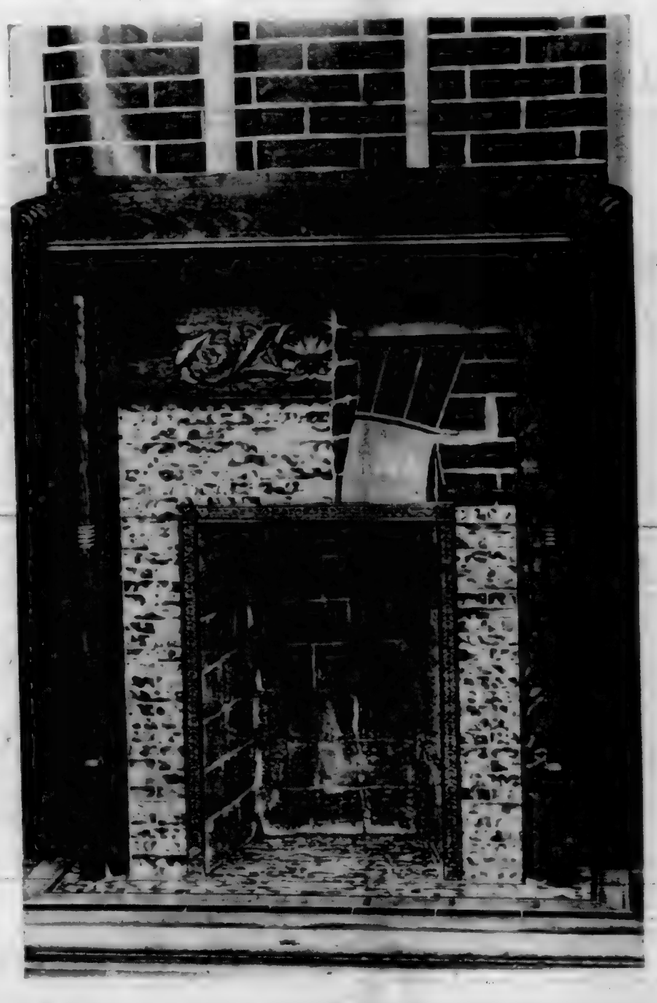

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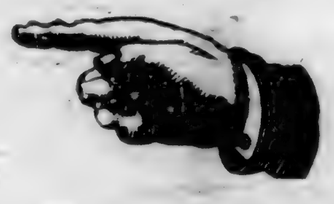

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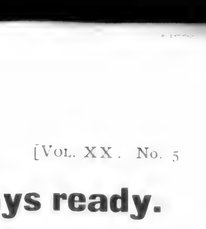

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Baker near Greenwich. To build; o, Otto Kaiser and wife; a, Martins & Coffee; c, S. B. Kress; signed, May 2; filed, May 3; cost $1882.

Bluxome near 4th. Concrete, etc; o, City of S. F.; a, T. J. Welsh; c, F. A. Williams; cost $15,391. Excavations, etc; c, San Francisco Bridge Co; cost $2118.50 Plumbing, etc; c, J. E. Britt; cost $1187.

Broad near Plymouth. To build; o, Father J. A. Cooper; a, B. J. Clinch; c, J. H. Hughes; signed, May 24; filed, May 25; cost $2236.

Broderick near Sacramento. To build; o, Geo. E. Ames; a, Wm. Koenig; c, Ira W. Coburn; signed and filed, May 18; cost $12,700.

Broderick near California. To build; o, J. H. and C. T. Dumbrell; c, R. C. Stiller; signed and filed, May 8; cost $3875.

Bryant Ave. near 21st. To build; o, H. Jacoby; a, Salfield & Kohlberg; signed and filed, May 8; cost $3025.

Buchanan near Golden Gate. To build; o Alex. Levison; a, A. J. Baurett; c, John Ogle; signed, May 5; filed, May 12; cost $4095.

California near Scott. To build; owner and contractor, J. F. Ortman; days work, cost $8000.

California near Franklin. Plumbing, etc; o, Kaspar; c, W. F. Wilson; signed, May 12; filed, May 13; cost $2912.

Capp near 16th. To build; o, Louis Weule; a, Aug. Nordin; c, J. T. Lorenzen; signed, May 6; filed, May 8; cost $4500.

Castro near 18th. To build except brick work, etc; o, T. L. Trouin; a, C. M. Rousseau; cost $1075.

Clay near Locust. Carpentry, etc; o, Dr. J. C. Spencer; a, F. R. Van Trees; c, W. H. Bagge; signed, May 10; filed, May 12; cost $5500. Painting, etc; c, J. H. Keefe; cost $600. Plastering, etc; c, J. R. Tobin; cost $435. Painting, etc; c, G. C. Sweeney; cost $953.

Drumm near Pacific. One-story brick; o, A. B. McCreery; a, Herbert B. Maggs; c, J. W. Wissinger; signed, May 9; filed, May 18; cost $12,200.

Dupont near California. To build; o, Tong Bong; a, J. J. Newsom; signed, May 10; filed, May 11; cost $1200.

Eddy near Webster. Brick, stone, etc, two-story brick; a, Percy & Hamilton; c, Peacock & Butcher; signed, April 27; filed, April 28; cost $7780.

Ellis near Powell. Gradin and bulkheading; o, Henry Kahn and Jules Levy; a, Albert Pissis; c, John Tuttle; signed, May 4; filed, May 5; cost $1500.

Ellis street No. 418. Electric elevator; o, Mrs. E. and R. J. Hancock; c, W. L. Holman; signed, May 24; filed, May 26; cost $2400.

BUILDING NEWS.

Fell near Masonic Ave. To build; o, J. Meyer; a, Martens & Coffee; c, C. Schutt; signed, May 5; filed, May 8; cost $5600.

Fourteenth and Jessie. Excavation, etc; o, College of Physicians and Surgeons; a, H. A. Schultze; c, Siller Bros, signed, March 23; filed, March 28; cost $22,565. Plumbing, etc; c, Ickelheimer Bros; signed, March 23; filed, March 28; cost $4634.

Geary and Stockton. Two-story brick; o, Chas. C. Butler; a, G. A. Betrud; c, Wm. Bell; signed, May 16; filed, May 18; cost $16,250.

Green near Buchanan. To build; o, Arthur McCracken; a, Wm. Mooser & Son; c, Petterson & Person; signed, May 4; filed, May 6; cost $5185.

Haight near Baker. To build; o, Mrs. Bessie McFadden; c, H Keenan; signed, April 26; filed, April 28; cost $5.50.

Jones near Washington. To build; o, J. B. Arrambide; a, C. J. Wilson; c, A. Christensen; signed, May 12; filed, May 13; cost $10,200.

Kearny and California. Concrete work, etc; o, Eugene P. Murphy; a, Shea & Shea; c, A. L. uch; signed, April 20; filed, April 27; cost $2455.

Larkin near Turk. To build; o, George Gamper; c, G. G. Gillespie; signed, May 10; filed, May 20; cost $2400.

Market street, No. 325. Electric elevator; o, Claus Spreckels; c, W. L. Holman; signed, May 16; filed, May 24; cost $2086.

Ninth near Folsom. To build; o, John Tamoney; carpenter sup't, Alex McKay; cost $6000. Plumbing, etc; c, W. T. O'Brien; cost $1150.

Noe and Henry. To build; o, Angelo O'Reilly; c, B. Martin; signed, May 18; filed, May 18; cost $3050.

Oak near Central Ave. To build; o, L. Friedlander c, Wilson & Long; signed, May 2; filed, May 3; cost $4525.

Oak and Ashbury. Carpentry, etc; o, Ellen B. Copp c, C. Winchler Hansen; cost $10,621. Plumbing, etc; c, James F. Ford; cost $1888.

O'Farrell near Pierce. To build; o, D. Cassassa; a, W. H. Armitage; c, W. Horstmeyer & Co; signed, May 22; filed, May 25; cost $7300. Plumbing, etc; c, John Doherty; signed, May 23; filed, May 25; cost $1175.

O'Farrell near Powell. Grading, etc; o, Emilie M. Chabot; a, Shea & Shea; c, J. Tuttle; signed, April 21; filed, May 2; cost $1172.

Pacific and Franklin. Alterations; o, Henry Meyer; a, Salfield & Kohlberg; c, Geo. R. Lang; signed, April 27; filed, April 29; cost $1196.

Page near Devisadero. Brick work, etc; o, H. Mangles; a, H. Geilfuss; signed and filed, May 8; cost $1140.

BUILDING NEWS.

Primrose near Waller. Cottage; o, F. Nelson; day's work; cost $20,000.

Pine near Octavia. Carpentry, etc; o, Jonas Schoenfeld; a, Salfield & Kohlberg; c, Val Franz; signed, May 15; filed, May 22; cost $13,940.

Rhode Island street. To build; o, B. J. Curtin; c, P. Rasmussen; cost $1100.

Sacramento and Franklin. Carpentry, etc; o, Esther Hellman; a, J. E. Krafft; c, C. Chisholm; signed April 25; filed, April 28; cost $3585.

Sansome near California. Alterations and additions; o, Mutual Life Ins. Co; a, N. Blaisdell; c, R. McKillican; signed, May 10; filed, May 13; cost $15,990.

Second and Minna. Four-story brick; o, C. Froelich a, A. Sutton; c, J. A. Wilson; signed, May 5; filed, May 9; cost $15,033.

Stockton and Pacific. To build and alterations; o, Twinkling Star Imp. Co.; a, Bert Hasty; c, Hannah Bros; signed, May 6; filed, May 9; cost $23,250

Sutter near Grant Ave. Four-story brick; o, Goldberg, Bowen & Co; a, Edward R. Swain; c, George R. Lang; signed, May 20; filed, May 22; cost $12,750. Roofing, etc; c, Wm. Cronan; cost $919. Plastering, etc; cost $1320. Excavation, brick work, etc; c, John F. Riley; cost $820. Cast iron work, etc; c, Cal. Artistic Metal and Wire Co; cost $5370. Plumbing, etc; c, Richard Rice; cost $2500.

Sycamore Ave. near Valencia. To build; o, August G. Wietman; a, M. J. Welsh; c, Thos. H. Bassett; cost $2500.

Tennessee near 22d. Cottage; o, Michael F. Gray; c, C. J. Antweiler; cost $1200.

Twenty-third Ave. near Pt. Lobos. To build; o, W. A. Deane; c, E. C. Blaisdell; c, E. C. Bletch; cost $3979.

Waller near Primrose. Four two-story frames; o, F. Nelson; cost $20,000.

Washington and Laguna. Excavation; c, Wm. G. Irwin; a, Reid Bros; c, Gray Bros; signed, May 8; filed, May 20; cost $8200. Cast and wrought iron; c, Judson M'f'g. Co; cost $11,277.

Webster near Filbert. To build; o, A. J. Kennedy; a, M. J. Bugbee; c, E. A. McCarthy; cost $2200.

Union near Octavia. To build; o, Johanna Slattery; a, J. P. Dunn; c, Douglass & Campbell; cost $3175.

Vallejo near Octavia. Carpentry etc; o, Joseph Goetz; c, Wm. Plant; cost $8825. Plumbing, etc c, J. E. Britt; cost $1990.

Van Ness and Union. To build; o, Mrs. Antonio F Bendmann; a, M. J. Lyon; c, G. Roberts Elder; cost $3350.

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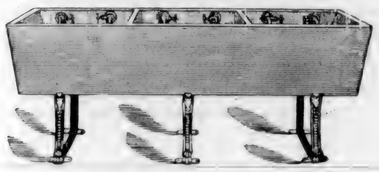

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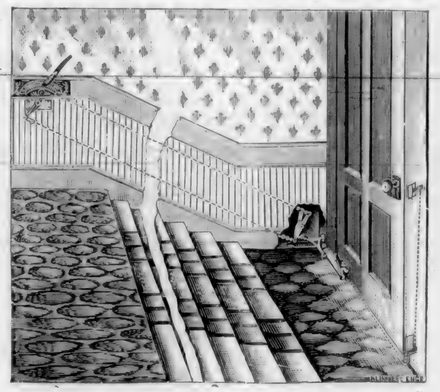

VOLUME XX. MAY 20th, 1899. NUMBER 5.

A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

TO THE critical judgment nothing is more offensive than the positive, pretentious and false in art. A small boy may show us his drawing of a horse, expecting commendation, which we give, in a degree, because the work has some merit as the attempt of an untutored child. But when a man of mature years presents us a Rosinante on canvass as a work of art, we feel an impulse to devote it to the flames. The fact that the author of the work has so poor an opinion of our taste and judgment as to attempt to impose upon us, arouses our resentment. His reputation as an impostor is at once established, and although he may afterwards produce a fairly creditable work, we regard him with suspicion.

Hence a house painter, or a man who decorates furniture, carriages and steamboats may not assume to belong to that profession which furnishes pictures for the art institute or the salon. If he is a good house painter or decorator, let him be satisfied to be that. If a stone cutter can hew out architectural details in stone, according to the design furnished him, let him do that as perfectly as he can, but not call himself a sculptor. In doing his own work well lies the true distinction.

One may read, in a by-street of an eastern city, on a swinging sign, this legend: "Professor of Whitewashing." Of course the professor is a colored individual whose ambition is to be above his humble calling. But however we may sympathize with his aspirations, we are forced to smile at the vanity which prompted the title he has given himself.

In the case of the professor of whitewashing no harm is done, because nobody is deceived. It is a different proposition when men who have no right to call themselves architects go about the streets of San Francisco spying out contemplated improvements, and offering building plans which they too frequently get accepted because of their alleged economy.

A man is not an architect who . only a carpenter or a

builder. It is true that he must thoroughly understand the *principles* of carpentry and building, and the various ways and methods of their application in the practice of his profession, in order to be an architect in the proper sense; but to these must be added scientific knowledge, and the artistic quality of brai With all these, and an honest intention to apply them for the benefit of his clients, for a reasonable amount of pay, he may be permitted to make contracts.

There is a great deal of false economy practiced by property owners in this city, by which the tenant class of householders and others suffer damage. In the first place there is the cheap "architect." He brings in the cheap contractor. They stand in together. A house is quickly built, for a seemingly low price, but in such a way as to leave a good margin of profit for the contractor. The lumber in it would hardly make a respectable woodpile for a New England household during a New England winter.

The walls of the structure are scarcely thicker than a packing-box. The floors are faulty, the stairs creak, the flues are unsafe, the plumbing is bad, the plaster cracks, and, in fact, the whole thing is a miserable pretense. But when the owner first sees his completed house, in all the glory of newness, before winds or earthquakes have shaken it, before sun and sand have defaced it, before it has shrunken, twisted, faded, grown old, he looks upon this creation with much satisfaction. Not being an architect, nor even a carpenter, he does not at first detect the fraud. The sense of being cheated comes, however in a very few years, if not in a few months. Tenants are always asking for repairs, and moving to newer houses. If he is unlucky enough to own several of these tenements in a row, he has the pleasure of seeing the windows placarded with TO LET month after month, until he is tempted to join the street urchins in stoning them. In vain he ponders on the problem of how to get interest on the value of his real estate. The longer his houses are empty the less willing is he to tempt renters by lowering the rent. He says he cannot afford it.

There are two factors entering into this condition of the property owner's mind. The first is the excessive value put upon ground in San Francisco; the second the cheapness of the buildings erected upon the high priced ground. The value of the ground increases, or should do so, while the value of the improvements rapidly decreases, and the joint value is not sustained. Neither can it be restored, except by tearing down, and building up again.

No city in the United States of the size of San Francisco shows so many vacant houses. The impression it gives the passing observer is that the population is growing less. This is not, however, the case. The vacancies occur chiefly from the inferior character of the houses that are built to let. The new houses are taken as soon as completed, and in a few years are in turn deserted. There is, all around, room for reform in business methods. Let us have it.

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THEN AND NOW IN ARCHITECTURE.

PLACES of religious worship have in every country led the architectural idea. The temples of Egypt, India, Persia, Assyria, Greece, Rome, were the structures on which the genius and the wealth of these countries were lavished. Palaces or government buildings came next in importance, not only because kings, princes and captains were possessed of great wealth, but because in ancient times these persons were revered as half divine—demigods—and entitled to honors next to the supreme deity. Tombs of great men for the same reason were made costly, and as nearly imperishable as possible—they contained the mummies or the ashes of sacred personages.

Imitation led to the adoption of certain adaptable features of public buildings in private houses; hence the use of columns, which we have seen was the foundation of all the ancient "orders". The destruction which fell upon ancient Rome left only a few ruins as examples of its architectural achievements. The removal of the capital to Byzantium, and the introduction of Oriental ideas even into the Christian religion, which Constantine had forced upon the people, had a tendency to obliterate something of the past, while it had not strength enough to substitute any very positive features in place of those that were lost.

Rome for centuries after Christianity was nominally accepted as the religion of the people, was still pagan in sentiment, as her thousands of Christian martyrs give evidence. Not until the eighth century did the Church have strength enough to possess itself of temporal rule, and thus secure an opportunity to revive theocracy in a new form. With that revival came the necessity for Christian temples, or churches. Naturally the earliest Christian architecture was a modified, and often a very meager form of the older Roman. In fact the first public places of worship were pagan temples despoiled of their magnificence, as the Pantheon.

But before this period, while Christians were suffering persecutions which prohibited public worship, certain architectural ideas became fixed in their minds, which govern church architecture to this day. Their root was in the Egyptian temple, which had the portico, the vestibule, the cella, and at the end another more sacred enclosure. The Greeks had the same gradual approach to the mysteries, although their columns were outside, instead of inside the walls. The Romans, as has been shown, retained this idea in their public halls, or basilicas, even to having at the end a semi-circular apse behind a row of columns. This was used by the magistrates for hearing complaints. Even a Roman dwelling had its columned portico and hall, beyond which were the private apartments.

Therefore, whether it was the basilica or the private residence, in which the persecuted Christians first held religious services, that was imitated in the earliest churches, it clearly is still the inside form of our church edifices from the simple village structure to the grandest cathedral. To the long straight hall, growing darker as it was more deeply penetrated, there have been added side aisles, with apses, and niches to accommodate statues, with other modifications; but the Egyptian, Grecian and Roman model of temple-building, with the sacred enclosure from which the worshipper was excluded, remains to us.

The mediæval period showed a transition from classicism evidently experimental, as when the basilica form was raised to two or three stories, each narrower than the other until the uppermost elevation became insignificant, and the whole outline unpleasing. Buttresses were developed from the Greek pilaster, being merely a thickening of the flat wall at points where greater strength was required. The tendency to accentuate upward lines instead of horizontal ones gave a different character to buildings, and the introduction of windows as a feature, were all innovations which produced a style called Romanesque, or early Gothic (on account of its rudeness) but out of which the perfected Gothic in the course of half a dozen centuries was evolved.

A STUDY

Columns, as the change progressed, became adjuncts to instead of the main features of a building. While they still occupied their former position as supports to the roof of a portico, they were replaced in the walls by flying buttresses used to resist the pressure of the roofing, and on the inside were employed as the base from which sprang arches of nave and transept, or the supports of the dome itself. They divided the interior of churches into three aisles, and formed colonnades in lateral projections adding grandeur but not mystery to the sacred place. Domed roofs, high arched windows, lofty bell towers and great size united to impress the beholder.

But all these were simply the back ground on which, in the Renaissance of the arts, painting and sculpture, with mosaic and bronze work, were employed. Inside and outside, churches were decorated with a richness wonderful and worthy of admiration, if not in every instance in correct taste. The guild of masons was granted by the Popes special priveleges and exceptions on account of their importance in church architecture. Artists of every guild received high honors and rich rewards. The treasure of all Europe was at the disposal of the church. Cities rivalled each other in patronizing art, and princes surrounded themselves with scholars and men of genius.

To this sunburst of imagination and learning the Crusades

had contributed not a little. Religion, romance, adventure had given life to the germs of intellectual activity which during the many centuries of mental darkness in Europe had lain dormant. From the Orient the fittest to survive returned with new knowledge. Those who had gone simply as mendicant pilgrims perished by thousands. Others who remained a home, in the absence of their feudal lords learned to become their own masters, and although the wealth which was brought back went chiefly into the coffers of the church, it was the Crusades that first lifted the yoke of surfdom from the neck of darkened Europe, and gave a fresh impulse to civilization.

Not only was Rome awakened to new life, but many cities of southern Europe, Venice, Pisa, Sienna, Perugia, Florence and Milan, in Italy, with others in France, Spain, Germany and England strove together for five centuries to discover new styles which should combine the religious sentiment with grandeur and beauty in the most perfect form.

The trade of the Mediterranean cities with the east, the invasion of Spain by the Saracens, the study of the remains of classic art all contributed to the development and completeness of the Gothic style. In this pursuit the suggestions of climate are plainly evident, the more northern countries contributing to Gothic architecture a greater slant in the roof with more projecting cornices, and more projecting buttresses than were thought necessary in the south of Europe. Also the sculptures used as architectural features had a character of their own, as different as the legends of the early northern writers are different from the classic poetry of Greece and Rome. Despite these characteristics the architectural idea continued to soar heavenward on lines of ever increasing beauty until there seemed nothing left, in some instances, to be desired.

The clever critic, however, who approaches St. Peters at Rome, so commonly regarded as the show church of the world, soon becomes sensible of a defect in its proportions. The designer had not sufficiently studied perspective and proportion to give the beholder a true idea of its great size, or even a magnified one, which would be better. There is nothing with which to compare it, or scale by which to measure it, and it becomes commonplace by looking like a smaller building seen through a spectroscope. The rule in Gothic architecture is the height of a man multiplied, not exaggerated. It is this careful study of proportion, both real and seeming, which constituted the charm of Grecian art.

The interior of the St. Peters has the fault just referred to, the paintings upon the dome being of special scriptural subjects, whereas at such a distance from the eye they should be of a decorative style only, and simple for effect as ornament, while the coloring should be so delicate as to increase the apparent height instead of lowering it, as very strong colors would do. But even Micheal Angelo had some things to learn; and besides, his patrons required scriptural subjects visibly portrayed.

But the glory of St. Peters was the successful erection of so vast a dome, the effect of which was afterwards lessened by the lengthening of the nave, causing it to sink, apparently, as the structure is approached from the west front. With its magnificence in size, in decoration, in art treasures, and material wealth, to which each one of the long succession of Popes has added something, St. Peters may well be regarded as an architectural wonder, the rival to which our age is not likely to produce, because the conditions can never again be the same that they were from the eighth to the sixteenth centuries.

As a matter of fact, Italy never fully adopted the pointed Gothic style, although it is found with modified features in such structures as the cathedrals at Florence, Sienna and Milan. The latter, indeed, is architecturally faulty, being impressive chiefly on account of its size and its richness of ornament rather than its design. The Gothic period ended with the beginning of the Renaissance in the thirteenth century, but it is to the monuments constructed during its continuance that we turn with most interest. It is the history of architectural experiment carried on for a thousand years, and under many hampering vicissitudes. It shows us combinations which, if lacking in classic simplicity and elegance, suggest strength, invention, sentiment, and achievement lacking in this our age.

Although the germ of the ancient temple, as has been stated, had been preserved in the portico, the columned aisle, and the apse at the *east* end of the aisle (an Oriental idea) the change in religion in the Christian period called for changes in the interior and exterior arrangement of churches which gave great scope to all the arts. The campanile or bell-tower, and the baptistery were usually seperate structures, treated often in a style quite different from the church. The pulpit and the choir afforded opportunities for the employment of original designs, both by architects and sculptors. Upon these features were lavished years of labor and large sums of money.

Taking for example the pulpit of the baptistery at Pisa in Italy, executed in the latter half of the thirteenth century: It is of marble in a hexagonal form, supported upon seven pillars, while two more support the staircase. Three of the columns rest upon figures of lions with smaller animals in their claws. Three animal figures, a lion, a tiger and a griffin support the central column, and at the foot of the stairs is the recumbent figure of a lion. The shafts of five of the main columns are of different kinds of granite, while the two under the stairs are of Parian marble, and two others are of Sicilian jasper and brocatello. There are two desks so placed as to constitute ornamental features. Above the columns are allegorical figures of Prophets and Evangelists. There are, carved in relief upon the five sides of the pulpit, scenes from the Annunciation, the birth of Christ, the Adoration of the Kings, the Presentation in the Temple, the Crucifixion and Last Judgement.

All this suggests the early Pagan idea of ornamentation, which indeed it resembled, the details being brought out with painful minuteness, black paste being used to accentuate the pupils of the eyes, the cavities of the nostrils and ears, and the lines about the lips. The hair and ornaments were gilded, and the figures all in such high relief as to be very nearly detached.

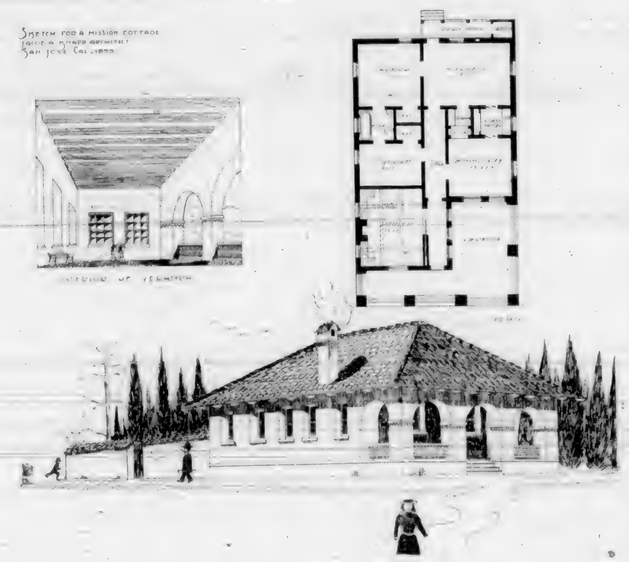
It has been remarked concerning this work that the figures are two grand and noble for the proper representation of such scenes, which called for tenderness and humility. The explanation is to be found in the fact that the artist, who was also the architect, had studied the Roman antiques. The same artist being called upon to invent devils to suit the popular notion of Satan and his imps, made them with repulsively grotesque head and features, the body and claws of a vulture, joined to the legs of an ox. Such was the luxuriance of the mediæval imagination applied to church building, both inside and outside.

All the most famous cathedrals of Europe are restorations of the earlier Christian churches, as, for instance, that of Milan, so celebrated by writers of books of travel. The name of its original architect is not known, but the architect

who undertook its reconstruction, in 1386, was an Italian Giam Galeazzo Viconti. The work proceeded slowly, notwithstanding that masons were called from Germany to assist in it.

It was not finally completed until 1805. The form is that of a cross, the length four hundred and seventy-seven feet, with a width of one hundred and eighty-three feet. The height of the nave is one hundred and fifty-five feet, that of the cupola two hundred and twenty-six, and of the tower three hundred and sixty feet.

A work done by so many masters could not have a perfect



purity of style. The Gothic style of the first intent is destroyed by Romanesque windows, portals, and other features. The interior has two aisles, and there are aisles in the transepts. The roof is supported by fifty-two columns, with canopied niches for statues in place of capitals. The painted glass windows of the apse are very brilliant; the carvings are elaborate; there are hundreds of colossal statues upon the cornice, roof and various projections, all of which, together with the immensity of the white marble pile form an object bewildering as captivating to the beholder. But the Cathedral of Milan cannot be said to have a distinct place in the history of architecture.

Rome had converted basilicas into churches. In the beginning of the fourteenth century Florence converted a market place into the church of Or San Michele, the artist taking eleven years to complete the change. A shrine to the Virgin was erected in the form of a Gothic pyramid, of white marble, which rose nearly to the roof, and was beautifully proportioned. The life of the Virgin is illustrated in nine scenes in bas-relief, two upon each face of the basement, and the ninth, a large scene, covering the back of the tabernacle or shrine. All the work is graceful and refined, including the beautiful statuettes and the clustered columns and pinnacles. Its rich mosaics and exquisite finish make good its claim to be called the "Jewel of Italy." Its cost was eighty-six thousand gold florins—money that had been poured into the treasury of the church during the prevalence of the plague of 1348, when miracles were worked by the shrine of the Virgin.

In the beginning of the fifteenth century there was a meeting of engineers at Florence, competing for the acceptance of plans for raising the cupola of the Cathedral San Marcia del Fiori, the largest dome, measured diametrically, in the world. The work was entrusted to architect Filippo Brunellesco, who was also a sculptor. It was of an excellence of construction that has never been surpassed, but Michael Angelo, who greatly admired it, made the dome of St. Peters to excel it in beauty

Branellesco had much to do with the Renaissance or rebuilding period of architecture in Italy. He rebuilt the church of San Lorenzo at Florence, and built the church of Santo Spirito, the interior of which is in his best style. He was one of the competitors for the honor of designing the second bronze door of the Baptistry at Florence which was secured by Lorenzo Ghiberti, and begun in 1403, and which has been the admiration of the world for four and a half centuries, as it must continue to be for all time.

Turning from churches to palaces, Brunellesco designed the Pitti Palace, at Florence, which is among the earliest efforts of the Renaissance in this branch of architecture. It is monumental in grandeur, with a facade four hundred and sixty feet in length, of three stories, each forty feet in height, and built of undressed stone, or fragments of rock rugged and dark. Immense round arcades support the windows, and a simple balustrade runs along the top of the wall. No attempt is made to imitate any order.

Some reason other than indifference to architectural effects should be looked for in accounting for the bestowal of all the arts could bring to beautify churches, while the residences of princes were still rude in construction. That reason was probably to be found in the fact that churches were places of sanctuary, where life and treasure were safe from foes or plunderers, while palaces in the frequent wars between neighboring states were points of attack. Gradually as civilization developed the reign of peace, the embellishment of dwellings amplified, and there arose in the sixteenth century many instances of the genius of the age applied to the homes of the rich and powerful.

The farther from Rome we pursue the subject, the more we find of originality of fancy in combinations of styles. From Venice to London, through France, Spain and Germany, there occur continually new features. The Romans adhered more or less tenaciously to the classic, or ancient Roman models. Florence violated this classic idea by superimposing several stories of columns supported by cornices, with arched windows between, in flat walls. Venice hung balconies and oriels out from her windows, and was profuse in wall decorations, both as to design and color, using different marbles to produce effects. The French built their chateaux with round towers at the angles and steep roofs, dormer windows in the upper story continuing the architectural design above the cornice; while their town houses made up for this simplicity by a confusion of orders and details which, while not strictly correct, were undeniably picturesque.

England had less to do with the Renaissance than continental Europe. What corresponds to it, known as the Elizabethan period, is really the perfection of the Gothic style of which England furnishes the finest examples, St. Paul's in London being the chief. About the middle of the seventeenth century the restoration of the old St. Paul's church was projected, and undertaken by Sir Christopher Wren, who promised to remodel it "after a good Roman manner," and also not "to follow the Gothic rudeness of the old design." In the same year, however, London was burned, and only a portion of the walls of St. Paul's left standing.

Two or three years afterwards Wren was again commissioned to execute the rebuilding of the church. His first plan had too many features of the "Roman manner" to please the dean and chapter, and another was substituted in which the architect finally modified and improved upon the former ones, the result being the present St. Paul's, whose symmetry is unrivalled by any Gothic structure in Europe. He overcame the defect in St. Peter's of the apparent sinking of the dome, by placing a second external higher dome of wood over the internal one, thus preserving the interior proportion while giving the necessary elevation on the outside. By an ingenious device he furnished odequate support to the stone lantern surmounting the dome, which gives the effect of great elevation to the structure.

Wren rebuilt several of the many churches destroyed by the great fire, besides designing numerous public buildings in London and elsewhere. His genius is impressed indelibly upon English architecture.

Germany was less affected by the revival of art than was England. Spain was subject to such conditions, through the influence of the Moorish spirit, as to take it out of the category of the countries prompted by the Renaissance spirit. Of the great buildings erected during this period the most noted are St. Peters in Italy, the Escurial in Spain, Versailles in France and St. Paul's in London. In contemplating its glorious achievements the student of architecture must be reverently impressed with the power of the human intellect, and be led to ask himself, "What of the future?"

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

WORK has commenced on the third $60,000 structure to be built this year in San Francisco. It will be erected by Frederick Kronenberg on the northeast corner of McAllister and Franklin streets, and will cover an area of 137:6x120 feet. The main front will be on McAllister street, where five stores will be situated on the ground floor with rooms in the rear. Above will be sixteen flats, access to which will be by means of ten tiled vestibules so arranged that each apartment will have its separate entrance. The construction will be of the most modern character and the interior appointments will be of the most convenient kind. In addition to the main building a smaller one containing four flats will be placed on the end of the lot facing on Locust avenue. Salfield & Kohlberg are the architects of the Kronenberg building.

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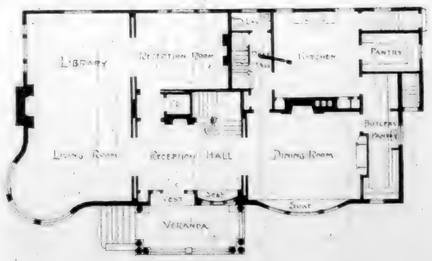
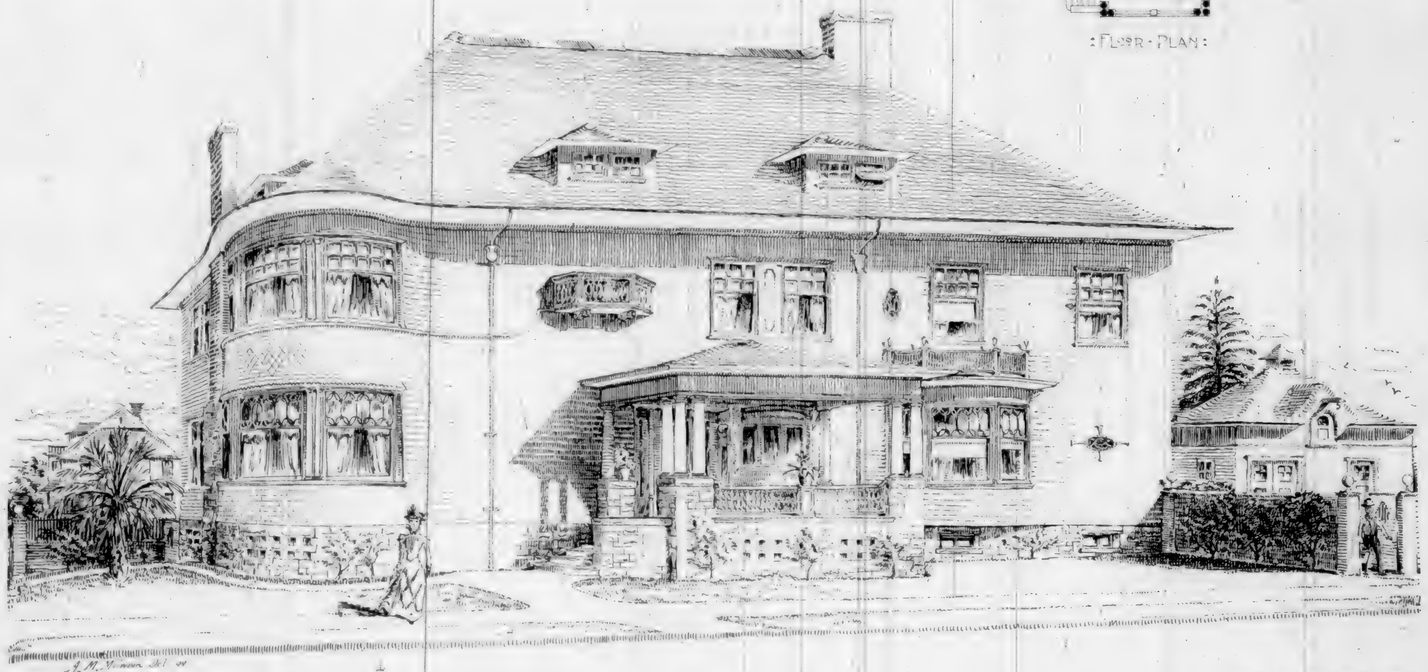
STUDY for a hotel, F. R. Collins, Des. and Del.

:RESIDENCE·FOR·SAM'L·J. DAVIS·ESQ:
:BERKELEY·CAL:

:WM. MOOSER & SON· ARCHITECTS:
:14 GRANT·AV· SAN FRANCISCO:



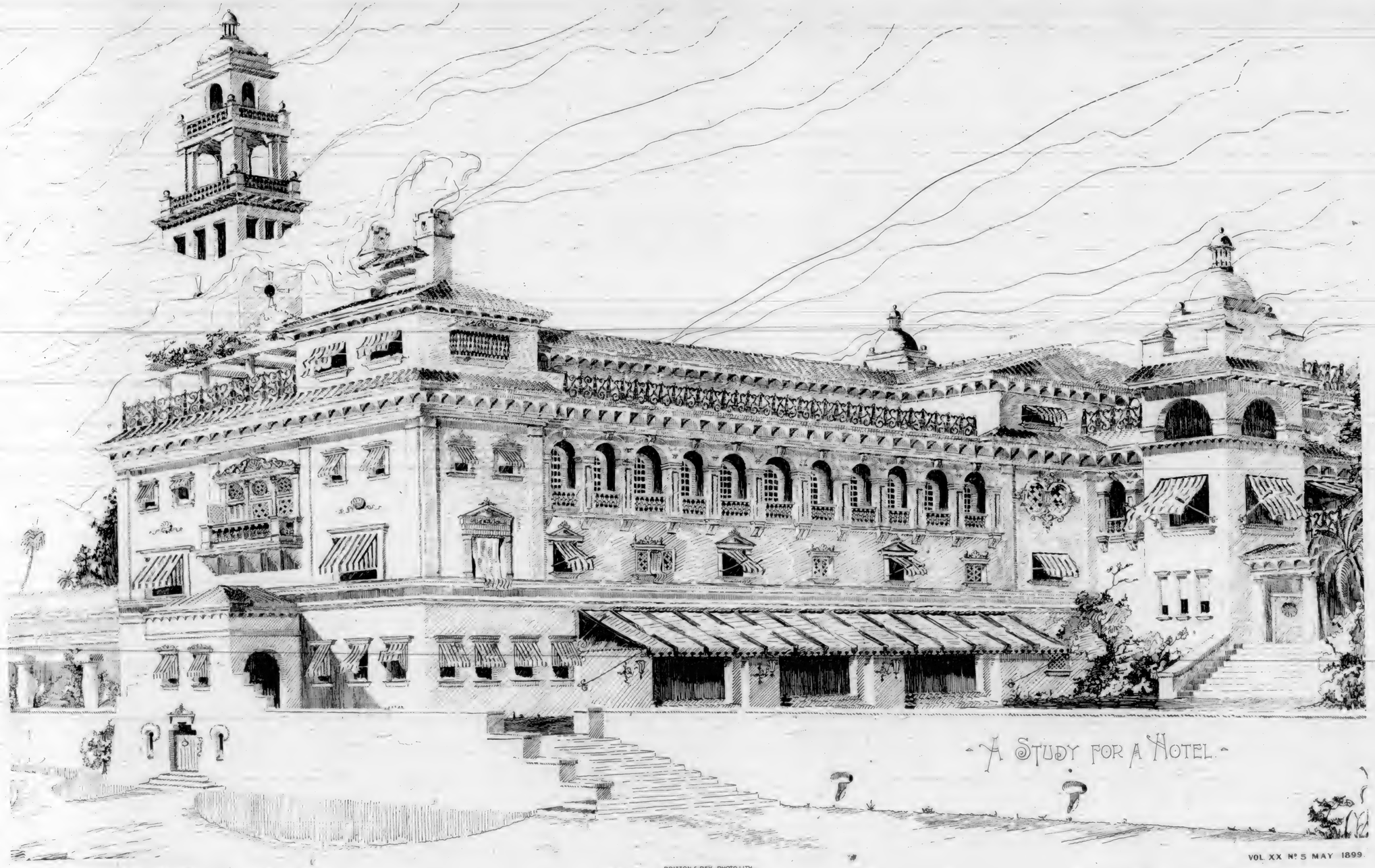
:FLOOR·PLAN:



CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

BRITTON & REY. PHOTO LITH.

VOL XX Nº 5 MAY 1899.



A STUDY FOR A HOTEL.

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KRONENBERG · BUILDING ·

SALFIELD & KOHLBERG
ARCHITECTS ·

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THE REAPER CLAIMS A PIONEER ARCHITECT.

WILLIAM PATTON DIES AT HIS HOME IN ALAMEDA.

WILLIAM PATTON, one of the pioneer architects of the Pacific Coast, who designed a portion of San Francisco's new City Hall, died this month at his home, 2253 Central avenue, Alameda. He had been ill for a number of months, suffering from cancer of the throat, and his death had been expected daily. Deceased was a native of Sunderland, England, aged 78 years. When a boy he entered an architect's office and served his apprenticement. When news of the gold discoveries in California reached the old country he was among the first to start for the new El Dorado.

After passing several years in the mines, Mr. Patton returned to San Francisco and opened an architects office on Washington street, where he followed his profession with great success and amassed a fortune, part of which, however, was lost in late years by unprofitable speculation. Mr. Patton married in San Francisco. About twenty years ago he built his home at 2253 Central avenue and took up his residence in Alameda.

Many of San Francisco's early landmarks were designed by Mr. Patton. Some of them have since been torn down, while others are still standing monuments to the architect's skill. He was a member of the San Francisco Chapter of the American Institute of Architects. Among the San Francisco buildings designed by him are the Sutter street Synagogue, the Safe Deposit building, Donahue block, Mission and Fremont streets; the old Star King church, since replaced by the new structure; the old Chronicle building, Bush and Kearny streets, and the Alcazar building. He was supervising architect of the new City Hall, and designer of the northwest and northeast wings, the City Prison and the Hall of Records. Many of the finest buildings in Alameda were also designed by him.

Mrs. Patton died about fourteen years ago. Two sons, William and Clarence, survive the father. Deceased was a member of the Society of California Pioneer. The funeral services will be held under the auspices of the society.

A MAMMOTH BLOCK OF STONE.

THE SOUTHERN Marble Company, of Marble Hill, Ga., has won the distinction of taking from its quarries in Pickens County one of the largest blocks of marble that has been quarried in the world dcring modern times. The marble was taken out last month, and has been shipped north for use in one of the contracts of the great firm of Norcross Brothers.

The block of marble is almost pure white and measures 27 feet 2 inches long by 4 feet 3 inches wide, having in all the mass 500 cubic feet.

The officials of the company are proud of the fact that the block was removed after careful labor without a break, as it is considered very difficult to remove such a mass without some accident happening to it in the process of removal from the quarry.

The exact weight of the block, according to the statement of the manager of the company, is 100,066 pounds, requiring an immense amount of labor to finally place it on board the car for its journey to the north.

The next largest block of marble ever taken out of a quarry in Georgia was on exhibition at the Cotton States and International Exposition and weighed only 45,200 pounds, or less than half of the weight of the monstrous block taken out last week.

Notice of the removal of the monster monolith was sent to Professor Yeates, of the Geological Survey, and a photograph of the block, just befor it was put upon the cars, will be placed in the permanent exhibit of the survey.—*Stone.*

NOTICE OF MEETINGS.

SAN FRANCISCO CHAPTER, AMERICAN INSTITUTE OF ARCHITECTS, meets second Friday of each month at 408 California street, at 4 p. m.

SETH BABSON, Pres. — H. A. SCHULTZ, Vice-Pres.
J. W. REID, Sec. — JOHN M. CURTIS, Treas.

SOUTHERN CALIFORNIA CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

A. B. BENTON, PRES. — ARTHUR B. BENTON, Vice-Pres.
JOHN P. KREMPEL, Sec't. — AUGUST WACKERBARTH, Treas.

WASHINGTON CHAPTER AMERICAN INSTITUTE OF ARCHITECTS, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

JOS. C. HORNBLOWER, Pres. — JAS. G. HILL, Vice-Pres.
E. W. DUNN, JR., Sec. — W. J. MARSH, Treas.

ASSOCIATION OF ARCHITECTS OF ARIZONA, meetings held at Phoenix, Arizona.

D. W. MILLARD, Pres. — T. H. MADDOX, Vice-Pres.
W. R. NORTON, Sec. and Treas.

TECHNICAL SOCIETY OF THE PACIFIC COAST, meets first Friday of each month at Academy of Sciences Building.

GEO. W. PERCY, Pres. — W. F. C. HASSON, Vice-Pres.
OTTO VON GELDERN, Sec. — EDWARD T. SCHILD, Treas.

MASTER PLUMBERS' ASSOCIATION, meets every first and third Friday of each month at the Flood Building.

JAS. E. BRITT, Pres. — J. L. E. Firman, Sec.

BUILDERS' EXCHANGE, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. KENT, Pres. — JAS. A. WILSON, Sec.

MASONS' AND BUILDERS' ASSOCIATION, meet first Friday evening of each month.

ADAM BECK, Pres. — M. V. BRADY, Sec.

ANCIENT AND MODERN BUILDING IN PALESTINE.

AT A meeting of the English Architectural Association in January, Mr. Beresford Pite gave an illustrated lecture on this subject.

Mr. Pite declared that it would be impossible for him to cover the subject with any thoroughness in one lecture, and he could only relate what struck him most forcibly when he visited Palestine. The lecturer then showed how the architectural interests of Palestine began with caves and rock tombs, cisterns and oil and wine presses, and then the buildings. The variety of influences which passed over the land in its early history had its effect on the people and their work. Beginning with Egyptian influence, they came to periods when Phœnician, Assyrian, Græco-Roman and Roman styles could be traced. Then the history of the country became obscure as they passed through dark ages to the Arab period. The years of crusading followed, dotting Palestine with interesting examples of Mediæval art. Turkish sway, too, had left its memorials, and as landmarks of modern work and travel some buildings presented the strong characteristics of the Gothic Revival. Apart from the artistic and historic periods there was the material to be considered. The building material most ready to hand was a hard limestone, difficult to work and offering little opportunity for ornamentation. The soil of the land was poor and yielded but scanty crops of coarse grain, so that when seeking to copy from nature the native imitated the heaviness of his surroundings. The country was also the seat of endless wars and disasters, so that durability and not beauty was the great aim of those engaged in architecture. The lecturer then gave some practical hints to those who might have to design for buildings in Palestine. The consideration of aspect was most important. It was always well to avoid an eastern aspect, and near Jerusalem itself it was advisable to turn the building away from the road because of the quantity of dust, which was terrible during the hot months when there was a drought of water. There were only two wells in Jerusalem, and the city was wholly dependent on the rain fall for its supply of water. In the absence, therefore, of a water supply the cost of water had to be seriously considered. If water ran out during building operations it meant an increase in the cost of construction. It was, therefore, necessary to begin building operations by constructing and excavating a cistern for the season's rainfall, thus providing against the drought which would certainly arise during the hottest months. There was an absence of any system of drainage, and no kind of cesspit could be properly adopted because of the hardness of the rock and the small depth of earth which covered it.

When designing a building the arrangements for heating had hardly to be considered. Fireplaces resembling those of the Western nations were not generally used. In buildings established for the protection of Russian subjects Mr. Pite said he noticed more attention had been paid to the heating of the building, and stoves had often been adopted. The carriage of materials was a most important item when doing work in the East. The railway could only carry coal, so that it was impossible to send up heavy material in large quantities. Camels were the beasts of burden. In order that foreigners might erect a building of any size a royal fireman from Constantinople was necessary, and even when this Imperial permission had been obtained the local authorities had to be pacified and a liberal amount of backshish expended before operations could be commenced. If mosques were in the vicinity of the site the permission was more difficult to obtain, the religious traditions and superstitions of the case bearing an important part in the negotiations. There seemed to be no builder, and consequently no contractor, in Jerusalem; but still the lecturer, with the assistance of a German architect resident in Jerusalem, had overcome such difficulties. Plans made in London had been carried out with the utmost accuracy. The workmen would only recognize one master, and thus the man who gave the orders must also have the paying of the men engaged on the job. There was an entire absence of sand for building purposes, but a good supply of lime was to be obtained.

Mr. Pite then gave a list of the prices charged for work in Jerusalem:

Roofing.—Tiles came from Marseilles and cost 25 francs per 1,000. The work was wired to battens; rewiring was necessary every ten years.

Bricks.—The best were foreign, the native ones were worth nothing. Bricks cost from 7 to 12 francs per 100 (*i. e.*, 4*d.* to 5*d.* per 1000).

Paving Tiles cost from 6 to 8 francs per square metre.

Timber.—About five times the cost paid at home.

Building cost for cubing about 12 francs per cubic metre, about 10 francs for foundations, and cisterns 10 francs.

Lime costs about one-twelfth of whole buildings; lime costs about one-fifth of cost of wall, including probably plastering; for girls' school (not plastered), one-seventh to one-eighth.

Walling.—Stones for inner side 1 piastre each, for outer side, hewn, 2 piastres each. Lime, 5 to 6 piastres. Wages and hauling, 10 piastres, or, in all, 12½ francs per square metre. Foundation walls, 10 to 11 francs, above ground, 14 to 16 francs; partition walls, 10 francs; dolma walls, *i. e.*, wooden framework filled with framing, 6 francs; vaulting, 8 francs—all per square metre.

Various Details.—Facade stone, 100 pieces, from 10 to 14 francs. External pointing, ½ franc per square metre. Corner stones or quoins, 2 francs each. Lintels and cornices; 3 francs per lineal metre, or 40 francs per door and window opening. Plastering, 1½ to 2 francs per square metre. Cementing new cisterns, 3½ to 4 francs. Plastering ceiling, 2½ francs. Tile roofs, including wood, labor, nails, etc., 12 francs; with heavier woodwork, 15 francs. Carpentry for window, glazed, painted and fixed, 50 francs. Per internal door complete, 50 francs; per pair of shutters complete, 40 francs. Iron bars fixed, ½ franc per kilo. Girls' school, Jerusalem, including boundary wall, gate-house and cistern, and clearing site, about 12 francs per cubic metre. Not plastered.

In the discussion that followed the lecture, Mr. A. C. Dickie said: The more modern Jerusalem had really few attractive features as regarded the construction of buildings. New settlements were springing up outside the walls of the old city, and German shops were being opened. One of these settlements or villages had become famous, inasmuch as old and empty petroleum tins had been largely employed in its construction. The Kaiser's visit to the Holy Land would long be remembered by those interested in the antiquities and beauties of Palentine. Prior to the Kaiser's visit to Jerusalem, when the authorities were trying to improve the look of streets, etc., several acts of vandalism were committed. Although the streets were then said to present a cleanly appearance, it was hardly true, as the refuse and dirt of the principal streets were merely swept into the smaller and less frequented ones. Where old gilt-work in mosques had become dull, a little yellow pain was used to restore (such was the taste of the Turk) its first charm.—*Stone.*

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

THE first contract in the construction of the largest grain elevator in the world was let a few days ago by the great Northern railway. Schmidt Brothers of West Superior got the contract for the foundation, their bid being $85,000. The elevator is to be located at West Superior, and will be built of steel, at a total cost of over $2,000,000. Its capacity is to be 6,500,000 bushels of grain, or 2,5000,000 more than the largest existing elevator.

THE Treasury Department last week sent invitations, under the provision of the Tarnsey act, to twenty leading architects to submit competitive plans for the new custom house building, to be erected on the Bowling Green site in New York City.

JAMES G. Hill, of Washington, D. C., has been selected selected to design the new building for the government printing office, for which Congress appropriated $2,000,000.

ARCHITECTS and engineers are watching with much interest the character of foundations now being put in for the new office building which is being erected at 57 Washington street for the Western Methodist Concern, after plans by Architect H. B. Wheelock. The entire structure with rest on 32 caissons or concrete wells, each 4 feet in diameter, with a bearing of 9 feet at the bottom on hardpan, which is about 75 feet below the street grade. The maximum load on each well is 617,500 pounds, including the weight of the concrete, or about 9,700 pounds per square foot. This will not create any perceptible impression on the hardpan found in this location. The manner in which the concrete is lowered and tamped in these wells will also cause a friction against the walls of clay for its entire height. There is practically no settlement in this form of foundation, only that due to the shrinkage of the concrete, thus avoiding the uncertain settlement experienced in most all of our skyscrapers having the steel floating foundation; the particular preference over the pile foundations is the fact that surrounding property and buildings are not disturbed in any way, add that every concrete column acually rests on hardpan.—*The Construction News.*

THE Report of the Pennsylvania State Capitol Commission has been made public, and the politicians are busy extracting from it nutriment for their respective views of public affairs. With these, of course, we have nothing to do, but it is interesting to observe that the Commission seems simply to have thrown the instructions of the Legislature overboard, at the suggestion of the architect. That the latter should have thought it desirable, instead of scattering the departments among a cluster of separate buildings, to gather them under a single roof, is quite intelligible; in fact, the same idea would occur to most architects; bnt that the Commission should have thought itself authorized by the statute under which it acted to adopt such a scheme is extraordinary, and it seems to us more extraordinary still that their action should have been supported by the Courts. If a man should commission another to buy him a coat, for $50 mentioning that he expected at some latter time to get the rest of a suit, and his agent should bring him back a shirt, with the information that he had expended the fifty dollars for this, and had ordered in his name a four-hundred-and-fifty-dollar suit, he would hardly think that he had been well served; yet this is practically what the Commission has done for the State of Pennsylvania; for, according to its report, it will cost four million dollars, in addition to the amount already expended, to complete the building according to the designs prepared by the architect with the Commission's approval. If this is what Pennsylvania people like, and what Pennsylvania courts consider proper, we have nothing to say, except to warn architects and other unsuspecting people from trusting either in future. Meanwhile, we commend the closing paragraph of the Commission's report, with which it presents the shirt to the would-be purchaser of a coat, to the attention of the curious. "That the building in which the General Assembly now sits is not as handsomely decorated and finished, either internally or externally, as many people of the State would desire, arises solely from the fact that the Commission did not have at its disposal any money to expend upon unnecessary ornamentation." We hope that the owner of the shirt will be quite satisfied with this explanation.—*The American Architect.*

THE London Chamber of Commerce recently appointed a committee to inquire into the subject of secret discounts and commissions, by which many persons endeavor to secure business, at the expense, of course, of honest people. The report of the committee showed the extent of the evil, but without proposing any definite means for correcting it: and the architects, who see more than other professional men, perhaps, the injustice done to innocent persons by frauds of this sort, seem to have been roused to an earnest desire to have them corrected, if possible, by some sort of concerted action; and as the same evil flourishes here, our architects will watch with interest the course of their English brethren. In England, as here, the trouble does not seem to lie so much with the giving of bribes, which have small attraction for architects, whatever they may have for official persons, as with the practice of certain dealers and manufacturers of having a variety of prices for the same thing, varying in inverse proportion to the honesty or inexperience of the purchaser. We heard of a case recently, for example, where a certain appliance for steam-heating was called for by name in the specification for a building. The article was a good one, and the architect undoubtedly thought he was doing his employer a service in demanding it in the specification. About the same time, another contract of nearly the same importance was carried out for steam-work, in which the contractor, although not restricted except by a general provision that he should do a good job, used the same appliance. In everything but price the articles used under the two specifications were exactly similar, but the contractor who was required by his contract to use that particular thing,

and no other, had to pay more than three times as much for it as the contractor who was left at liberty in the matter; and, of course, the extra cost came out of the pocket of the owner of the building. As any architect knows, this is a very common experience, and notwithstanding the impassioned appeals of manufacturers to specify their goods, and their gratuitous supply of specifications mentioning them, the older men in the profession are very reluctant, and with good reason, to call for any appliance or material whatever by name in their specifications. In many cases, knowing the superior quality of a certain article, they would be glad to do so, if it were not for their conviction that they would in that way expose their clients to the risk of being robbed; and they prefer to leave the matter open to competition, even if they have to accept something not quite so good as they would like. That this state of things is not satisfactory either to architects, who wish their cliants to have the best things made, or to the manufacturers, who think that their efforts to improve their goods ought to be encouraged, is evident; but the latter have only themselves, or more probably, their selling agents, to thank for rhe view which architects take of the matter. No doubt injustice is done to some honoroble manufacturers by the suspicion and discredit which the tricks of the other sort have aroused in the profession; but this is not the fault of the architects, who have no means of judging, except by analogy, of the conduct of parties not personally known to them, and are columns are always open to the affidavits of dealers who can lay their hands on their hearts and swear that the net price of their goods to contractors is exactly the same where they are called for in the contract as where they are struggling to "introduce" them in competition with other articles of the same sort.—*American Architect.*

THE twenty architects invited to enter the competition for the New York custom house have all signified their acceptance, and the Treasury Department has mailed them the programme upon which the competition will be based. The new custom house will be one of the most important structures ever erected by the government outside of Washington, its cost being variously estimated between three and four million dollars. The architect who will compete for the plans for the new building are: In Chicago—D. H. Burnham & Co., Henry Ives Cobb; in New York, McKim, Mead & White, George B. Post, Bruce Price, Carrere & Hastings, Francis H. Kimball, James B. Baker, Cady, Berg & See, Clinton & Russell, Robert W. Gibson, Israels & Harden, Babb, Cook & Willard, H. J. Hardenbergh, Cass Gilbert, Trowbridge & Livingston, George Martin Huss, Howard, Cauldwell & Morgan; in Boston, Peabody & Stearns, Shepley, Rutan & Coolidge. The programme for the building, as sketched out roughly to the proposed competitors, suggests a structure six stories hight, with 212,000 feet of floor space the absolute requirement. A hint is thrown out that it may be desirad to add two more stories later, and designs may be drawn with reference to this possibility. The material of which the building is to be constructed is not designated, but is left to the discretion of the designers. According to press dispatches, it is the intention of the Secretary of the Treasury to award to the successful competitior the full five per cent commission on the total cost of the building. A commission, composed of the supervising architect of the Treasury and two architects or experts in the construction of buildings, are to be th judges, and report to the Secretary of the Treasury as to the relative merits of the designs and plans submitted.—*The Construction News.*

MILL-CONSTRUCTION is being severely criticised in Chicago, and, if the underwriters have their way, it will soon be a thing of the past. The loss-record for this class of buildings—even sometimes when equipped with automatic sprinklers—has been unsatisfactory, and before the committee of the Board of Underwriters the argument was made that such structures are destroyed even more quickly than buildings of ordinary construction. Rapidly-spreading fires and total losses, it was stated, seem to be characteristic of the class. The Kaestner, Armour, Felt, Traders' warehouse, Jackson Street, and other buildings recently wholly destroyed, are cited to prove their lack of fire-resisting qualities. It is therefore, proposed to suspend all allowances for unequipped mill-constructed buildings, and a sub.committee has been authorized to make the necessary investigations, and report as soon as possible. The underwriters' association has for years made liberal allowances for mill-construction, upon the theory that such buildings were slow-burning, and fires in them could be extinguished with moderate loss. Possibly for this reason, and because so many rates would be upset by withdrawing all existing allowances, it is xuite likely that whatever action is taken will apply only to new structures. But the day of mill-construction has probably passed, not to return.—*Exchange.*

A COMMITTEE appointed by the American Institute of Architects reported upon the subject of architectural education at the last annual convention. The first architectural school in the United States was established in 1869, at the Massachusetts Institute of Technology, by Prof. W. R. Ware, who is now Professor of Architecture in Columbia University. Since that time flourishing schools have been established at Cornell, the University of Illinois, Columbia University, Syracuse University, University of Pennsylvania, University of Chicago, Harvard, Tulane, and McGill Universities. Since their establishment no less than 3250 students have received instruction; 650 have hraduated, and a large number are now in practice. The committee favored the establishment of an educational requirement for admission to the Institute, and suggested that the diploma of a graduate of a recognized school might be accepted in lieu of an examination.

A MONUMENT to General Lafayette is now in course of construction on the Brandywine battlefield, in Chester County, Pennsylvania, near the spot where the general was wounded. The height of the structure is to be 78 feet, and the size of the base 24 feet square. The material is Brandywine granite, and the largest stone, which is the die, is to weigh fifteen tons. On this stone are to be four bronze panels, inscribed with the full record of General Lafayette, setting forth the battles he was engaged in and designating on what spot he was wounded. The monument is to be crowned with an historic broze figure of Lafayette 12 feet in height. The memorial is the gift of John G. Taylor, of West Chester, who nat only builds the monument but has set asid a sum for the perpetual care of the surrounding grounds.—*Exchange.*

FIRE PROTECTION OF TALL BUILDINGS.

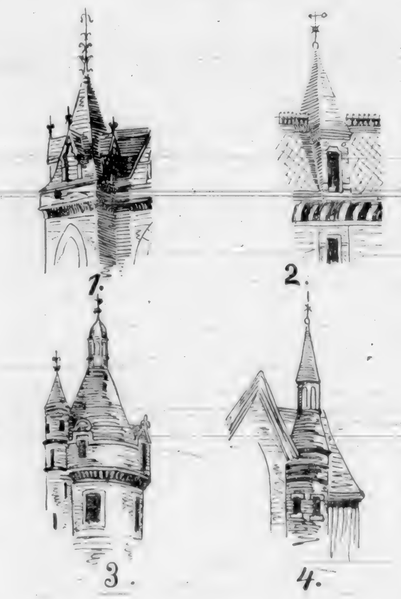
IT WILL be remembered that when the upper eight stories of the Home Life building were out in the recent fire, the chief of the New York Fire Department stated that the failure of the firemen to do any effective work above the ninth story was what he had predicted whenever one of these tall buildings came to be tested by a serious fire. There is a limit of height above which the ordinary methods of fire-fighting by pumping water through a hose are inadequate. Much valuable time is lost in dragging the hose from floor to floor; it is always liable to injury from fire or falling debris; and of course there is the danger of bursting from overpressure, a risk that naturally increases when the water has to be forced to the upper floors of a twenty-story building.

The New York Fire Department has recently made a test of the height at which an effective stream of water can be delivered from its engines, which shows that our tall buildings are better protected than is generally supposed. A fire engine was connected to the mains and to a standpipe that extends the full height of the St. Paul building, and succeeded in forcing a considerable stream of water from the roof—at a height of 307 feet above the street level. With a pressure of 180 pounds at the engine, the water was thrown over St. Paul's Church, on the opposite side of Broadway, and fell into the churchyard beyond, a horizontal distance of about 250 feet. Unfortunately, the failure of one of the couplings on the standpipe within the building prevented the test being made with the maximum pressure at the engine of 300 pounds to the square inch; but enough was done to prove that the engines of the department can deliver water at a satisfactory pressure on any of the floors of our tall buildings. At the time the standpipe failed the engine was throwing over 250 gallons a minute at a height of over 300 feet, with only 60 per cent of the maximum pressure.

While it is true that the tall buildings are provided with their own fire service in the shape of tanks on the roof or special fire pumps in the basement, experience has shown that the system is not very reliable. The tanks are liable to be empty, or the pumps may not be available because of insufficient steam supply in the boilers, or the whole plant may be crippled by the flooding of the basement during the progress of a fire. But by the new system, if a fire should break out in a building supplied with adequate standpipes and a good elevator service, the firemen will be enabled to command a good service of water on any of the highest floors within a few minutes after reaching the scene of the fire.

The failure of the standpipe in the St. Paul building suggests that the fire system of these tall structures should be put in under the rigid inspection of the Building Department; that it should be of ample capacity; and that it should not be passed by the department until it has been subjected to a test pressure considerably beyond that which will obtain in actual service.

A further development of the idea of having the service of these buildings operated by the engines of the Fire Department would be to lay down separate salt water mains at stated intervals from Broadway to the Hudson and East Rivers, with connections at the water front to enable the powerful pumps of the fireboats to be concentrated upon a fire. This system is already installed in some Western cities, and it provides a supply of water far in excess of anything that could be secured by the use of the ordinary fire engines. A combination of both systems and the provision of ample standpipes in every tall building would render these structures practically proof against destruction, so great would be the flood of water that could be let loose upon a fire. It should also be borne in mind that these towering buildings would not only be indestructible themselves, but they would afford an excellent protection against the spread of a conflagration. Their great mass would form an efficient fire-screen, tending to localize an outbreak, while they would serve as giant watertowers, from the upper floors of which a vast amount of water could be thrown upon the burning buildings below.—*Scientific American.*



PORTLAND CEMENT MADE FROM SLAG.

PORTLAND cement from iron slag has been so profitably and successfully produced from the refuse at the Sparrow's Point Works in Maryland, and at the works of the Illinois Steel Company, that a plant is to be established at Birminghrm, Ala. The supply of slag will be drawn from the Emsley furnaces of the Tennessee Coal and Iron Company, the plan being to have an initial capacity of 1000 barrels a day. Machinery has been ordered for the plant, which will be in working order, it is expected, in about four months. This utilization of what was heretofore a useless by product of pig-iron works is one that promises to add largely to the profits of the ironmakers, even though the production of the cement, as in this Birmingham case, is turned over to an independent company.—*Boston Transcript.*

BOOKS AND PERIODICALS.

BRIDGES AND FRAMED STRUCMURES, an illustrated monthly magazine, has made its debut with the April number. It is published by The Ranck Publishing Co., Chicago, at $3 a year. The initial number contains the following interesting and readable contributions: A review of the life and works of Sir John Fowler; Pneumatic caissons for ordinary foundations; Assumptions made to determine draw span stresses; The architecture of bridges; Modern Spanish bridge engineering; The bridge work's estimating department; Chemical and physical construction of steel. Measurements for granite viaduct.

The matter is well edited and digested as well as pertinent to the field of enterprise which the title indicates. The articles are aptly illustrated, and the magazine printed on good paper. We bespeak for it a wide field of usefulness.

TRADE NOTES.

THE Grand Rapids Carved Moulding Company are known all over the country as the only concern that manufacture the real thing in carved mouldings. There are imitators and pressed mouldings and pressed pot metal that is in use in ornament, but when you want the genuine article in carved mouldings the above firm are the people who can supply your wants. Why? Because they are cut, the wood is displaced. They bear the same relation to the hand carved work that the machine stuck or shaped mouldings of the present have to the old hand worked. They are more even and perfect than can possibly be produced by hand and at a very small per cent of the cost. Where can you find ornaments that are acknowledged as correct as the Fgg and Darts, Dentals, Fliets, Beads and numerous others that they produce? Send for their catalogue. See advertisement on page iii.

THE TALLEST CHIMNEY IN AMERICA.

THE trade press throughout the country has been giving considerable time and attention to the tall chimney and the electric power station of the Metropolitan Street Railway Company, in New York. New York City will soon be the possessor of two of the largest electric power stations in the world, says *Clay Worker*, designed to furnish current to two street railways. The delay in introducing electric traction has been a very advantageous one, since it is now possible to utilize the latest advancements in electrical engineering in both the generation and transmission of high potential currents. A further advantage is the concentration of all the current-generating machinery in a single enormous station, so located that coal can be obtained and ashes deposited at the lowest possible cost, and where an ample supply of condensing water is available.

Alternating current at high potential will be transmitted from this central station to small sub-stations scattered throughout the system, where it will be transformed to direct current at low voltage, and fed directly into the mains along the road. The new power-house has been designed for a normal output of 45,000 horse-power.

It will be divided into two parts, one containing the boilers and coal bins and the other the engines and generators. There will be 87 water-tube boilers arranged in three tiers, each having a maximum capacity of 800 horse-power. The storage bin will be capable of holding about 10,000 tons. The engine room will contain 11 engines, each direct-connected to a three-phase 6000 volt generator. The engines have a maximum capacity of 6000 horse-power each, but an economical load of about 4000 horse-power.

The most conspicious feature of this new plant is the immense brick chimney, the largest ever constructed. A solid block of concrete 88x85 1-3 20 feet forms the foundation. Starting with a square pyramid base 55 feet on a side, it gradually diminishes until at a height of 15 feet from the ground it is but 40 feet, at which point it continues up to 80 feet, with a side dimension of 38 feet, 10 inches. At this height it begins to change to a circular section, which change is completed at 95 feet, from whence it continues with a taper of five sixteenths inch to the top. The ornamental top begins at a height of 317 feet, the chimney at that point having a diameter of 26 feet, 10 inches.

A 12-inch fire-brick wall extending up 85 feet divides the chimney into two semi-circular compartments, preventing the current of hot gases from one set of boilers having any influence upon the gases coming from the flues on the other side. About four feet below the floor of the lowest flue, the fire-brick lining of the chimney commences, and extends about 8 inches in thickness to 5 feet above the upper flue, and from that point, 4 inches in thickness up to 115 feet.

The weight of the overhanging enlarged portion at the top is counteracted by three steel rings, the first at a height of 333½ feet and the other two at 3 and 6 feet respectively above the first. In the thickest portion of the cap the brick work is 6½ feet thick, sloping off to 20 inches at the top The chimney is protected at the top by an iron cap made up of 40 cast-iron sectors bolted together into a complete ring and anchored to a steel ring embedded in the brick work about 14 feet below the cap. The diameter of the cap at its widest portions is 35 feet and the inside or flue diameter is 22 feet, or the same as the interior of the chimney all the way up.

The chimney is well protected from lightning by ten copper rods, 1¼ inches in diameter, projecting 6 feet above the top, terminating in four pronged points, each tipped with platinum for about 2 inches.

The fact that mechanical draft will be used at the other station, will furnish available data for drawing interesting comparisons. This station will have four stacks of modern height, sufficient only to discharge above the nuisance level. Taking the cost of the immense chimney at about $100,000 and the cost of the induced draft plant at about one-th rd of this, and considering interest, depreciation and all standing expenses, it will be very interesting to calculate the relative merits of the two systems of producing furnace draft.—*Clay Record.*

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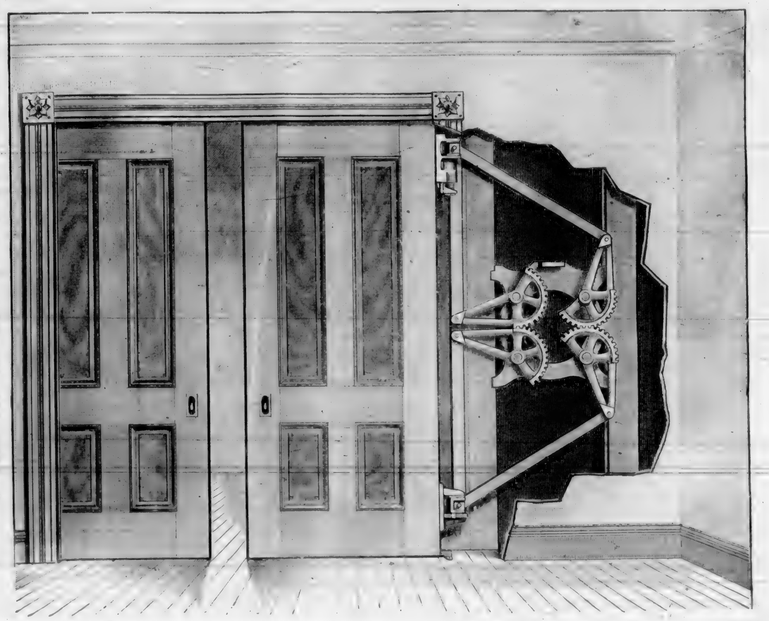

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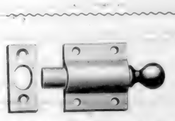

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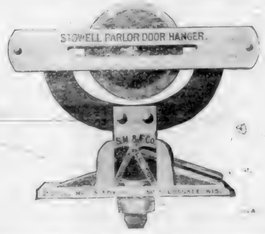

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Alameda Brick & Tile Co.; brick	170
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Maguire, James A.; manufacturer's agent	120
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Relchley Geo.; contractor and builder	109
Reigle & Jamieson; machine white washing	240
Remillard Brick Co.; pressed stock and common brick	278
Richardson & Gale; masons and builders	328
Richmuller, Geo.; door opener	335
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Trotter, John; contractor and builder	251
Tupper, O. M.; lime	281
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West Coast Wire Works	273
Western Expanded Metal & Fire Proofing Co.	
Yates & Co.; paints	349
Young, S. T., grading and teaming	330

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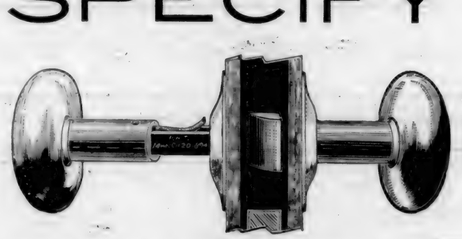
TREASURY DEPARTMENT Office, Supervising Architect, Washington, D. C., May 18, 1899. SEALED PROPOSALS will be received at this office until 2 o'clock P. M. on the 20th day of June 1899, and then opened, for the construction, (except heating apparatus, elevator and electric wire conduits), of the U. S. Public Building at Helena, Montana, in accordance with the drawings and specification, copies of which may be had at this office or the office of the Custodian of the site at Helena, Montana. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT Office Supervising Architect, Washington, D. C., May 20th, 1899. Sealed proposals will be received at this office until 2 o'clock P. M., on the 22th day of June, 1899, and then opened, for Repairs to Stonework, etc., of the U. S. Branch Mint San Francisco, Cal., in accordance with drawing and specification, copies of which may be had at this office or at the office of the Superintendent of Construction of the U. S. Post Office, Court House, etc., at San Francisco, Cal. JAMES KNOX TAYLOR, Supervising Architect.

SPECIFY



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Patent Screwless Door Knob.

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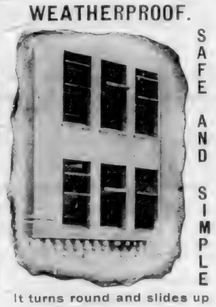

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BUILDING NEWS.

ALAMEDA

Encinal Park Track. To build; o, Capt. J. C. Eschen c, D. Straub & Son; cost $6000.

St. Charles and Louisa. To build; o, E. H. & J. C. Lancel; cost $3347.

BERKELEY

Bowditch and Channing. To build; o, S. J. Davis; a, Wm. Mooser & Son; c, Petterson & Persson; signed, April 26; filed, May 6; cost $6550. Plumbing, etc; c, R. Rice; cost $1510.

Crystal Spring Track, lot 9 block G. To build; o, Fannie Ashbury; a, J. T. Kidd; c, John E. Bigelow; cost $1450.

Lot 45 block 3. To build; o, Mr. Harmon; c, John G. Adams; signed, April 13; filed, April 27; cost $3700.

ELMHURST

Carpentry, etc; o, Josephine Wallace; a, J. F. Freeman; c, H. Wharton; signed, April 24; filed, May 5; cost $12,970. Concrete, etc; c, Mr. Stone; cost $2450. Mason work; c, J. A. Wilson; cost $1225. Plastering, etc; c, W. C. Watson; cost $1200. Plumbing, etc; c, Shepard Bros; cost $2730. Painting, etc; P. N. Kuss & Co; cost $1185.

OAKLAND

Broadway and Tenth. One-story brick; o, Lillian M. McPike, Nellie R. Lutz and Mary H. Miller; a, A. W. Smith; c, Ben O. Johnson; signed, May 16; filed, May 17; cost $5194.

Jayne Ave. and Lee St. To build; o, Mary S. Cope; a, Cunningham Bros; c, Mr. Lake; cost $4141.50.

Mountain View Cemetery. Granite coping, etc; o, Mt. View Cemetery Ass'n; c, Daniel Dwyer; cost $2942.

Santa Rita Road. Alterations; o, Chas. B. Charlesworth; a, J. L. Wellbye; cost $2110.

Thirty-second near Markes. To build; o, Fred and Zine Jepson; c, A. W. Pattiani & Co; signed, May 17; filed, May 20; cost $1578.

HEALDSBURG

Two-story brick; o, Mr. Norton; a, Martens & Coffey signed, May 1; filed, May 4; cost $9000.

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Factory; o, H. W. Bodwell; c, C. W. Duffie; signed, May 10 filed, May 11; cost $2000.

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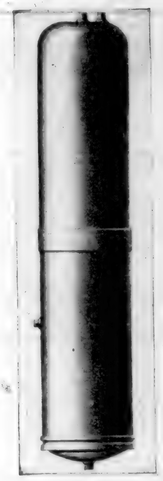

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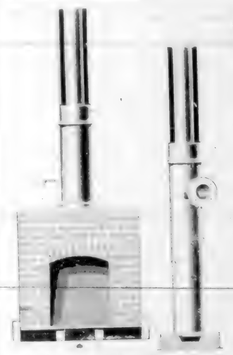

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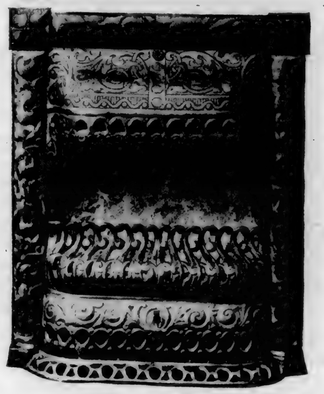

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BUILDING NEWS.

Broadway near Fillmore. Alterations and additions; o, B. Sheideman; a, Salfield & Kohlberg; c, J. Bucher; signed, June 19; filed, June 20; cost $650. Plumbing, etc; c, Ickelheimer; cost $1125.

Bush and Battery. Concrete work; o, H. and S. Sachs; a, Salfield & Kohlberg; c, Cal. Concrete Co; signed, June 14; filed, June 17; cost $1565.

California street, No. 1916. Alterations; o, Joseph Hyman; a, Percy & Hamilton; c, F. W. Kern.

California near Franklin. Painting, etc; o, Kaspar Pischel; c, J. H. Keefe; signed, June 1; filed, June 5; cost $1745.

Central Ave. near Page. Four two-story dwellings; o, D. Einstein; cost $20,000.

Central Ave. and Page Two-story frame; o, D. Einstein; cost $6500.

Chestnut and Pierce. Filling in and grading; o, John N. Kennedy; signed, June 2; filed, June 3; cost $16,237.

Clay near Laurel. To build; o, Chas. F. Hunt; a, E. A. Hermann; c, Petterson & Persson; signed, June 17; filed, June 20; cost $6300.

Clay near Gough. Carpentry, etc; o, Mrs. Marietta Sheeline; a, Salfield & Kohlberg; signed, June 15; filed, June 19; cost $5200. Plumbing, etc; c, E. R. Tutt; cost $1689.

Devisadero near Grove. To build; o, W. H. Mocker; a, R. Zimmermann; c, Chesney & Muller; signed, June 8; filed, June 9; cost $1588.60.

Drumm near Pacific. Additional story to brick building; o, A. B. McCreery; a, H. B. Maggs; c, J. W. Wissinger; cost $7200.

Eddy street No. 430. To build; o, J. Moloney; a, Curtis Tobey; c, J. B. Gonyeau; signed, June 8; filed, June 18; cost $8349.

Eighteenth and Stanyan. To build; o, Jennie E. Strauss; a, A. J. Barnett; c, W. R. Kenny; signed, May 25; filed, June 8; cost $1600.

Ellis street No. 712. Alterations; o, A. G. McFarland; c, J. B. McKenzie; signed, June 8; filed, June 9; cost $1,650.

Folsom near 6th. Alterations and additions; o, Aaron Shenson; a, C. M. Rousseau; c, H. Wilson; signed, June 20; filed, June 21; cost $1386.

Fremont near Market. Re-building; o, W. R. S. Foye; a, Wright & Sanders; c, Robin on & Gillespie; cost $33,432.

Geary near Grant Ave. Additions and alterations o, Mr. Kimber; c, F. V. Acker; cost $4000.

Golden Gate Park. Stone and brick work for music stand; o, Claus Spreckles; a, Reid Bros; c, Colusa Stone Co; signed, June 14; filed, June 16; cost $51,040. Concrete and cement work, ect; o, S. Giletti & Co; cost $4637.

BUILDING NEWS.

Gough near Grove. Excavations, etc; for two three story frames; o, Ellen and Charlette E. Dore; a, Thos. J. Welsh; c, S. A. Born; signed, May 24; filed, May 27; cost $8090. Sewering, plumbing, etc; c, James E. Britt; signed, May 24; filed, May 27; cost $2297.

Grove near Lyon. To build; o, S. Garber; c, R. D. Cranston & Son; signed, June 12; filed, June 17; cost $1250.

Haight near Steiner. To build; o, Andrew Burke; a, Shea & Shea; c, Paul Demartini; signed, May 27; filed, June 3; cost $3250.

Jackson near Baker. Carpentry, etc; o, Lizzie Peiser; a, Salfield & Kohlberg; c, W. Horstmeyer; signed, June 16; filed, June 20; cost $3654.

Jackson near Buchanan. To build; o, E. S. Tucker, a, Wm. Koenig; c, I. W. Coburn; signed and filed, June 3; cost $4040.

Kearny and Washington. Metal grille work, etc; o, City and County of S. F.; a, Shea & Shea; c, Geo. H. Fuller; filed, June 1; cost $45,486. Gas and electric combination fixtures; c, S. F. Novelty Works; cost $16,950. Water filter system; c, Cal. Art Metal Works; cost $2450. Tinting and decorating; c, Geo. J. Smith & Sons; cost, $900. Electrical apparatus, etc; cost $3235.

Lombard near Fillmore. To build; o, Edward Ehrhorn and wife; c, Martin Weber; cost $1150.

Lombard and Stockton. Alteration and additions; a, Deplerre & Righetti; c, F. Dalgero; signed, May 29; filed, June 1; cost $2350.

Market and 5th. Electric elevator; o, Desire Fricot; a, I. I. Brown; c, W. L. Holman; signed, June 15; filed, June 19 cost $2400.

Masonic Ave. near Frederick. To build; o, Kate W. Healey; a, A. R. Denke; c, Denke Bros; signed, June 4; filed, June 5; cost $1592.

Montgomery near Pacific. Iron work, etc; o, Ferdinand; a, R. Zimmermann; c, H. L. Peterson; cost $1351.

Noe near 14th. Carpentry, etc; o, John Stelling; a, A. Gellfuss; c, A. Howking; signed, June 15; filed, June 19; cost $4425. Plumbing, etc; c, Jos. Flood; cost $1105.

O'Farrel near Powell. Carpentry, etc; o, Emilie M. Chabot; a, Shea & Shea; c, B. Dyrer; cost $10,481. Brick, etc; c, J. S. Fennell; cost $14,198. Construc. tional steel, etc; cost $2947. Lath of expanded metal; c, Western Expanded Metal Co; cost $1035. Plastering etc; c, Floodberg & McCafferey; cost $2898. Plumbing, etc; c, Allen & Looney; cost $2879. Ornamental plaster c, J. R. Schroeder; cost 1340. Electric work; c, Will & Finck Co; cost $1335. Marble work, etc; c, Lowry & Daly; cost $1326.

Pacific Ave. near Octavia. Roofing, etc; o, Abe Stern; a, R. Hunt; c, Conlin & Roberts; signed, May filed, June 22; cost $2490. Plastering, etc; cost $2993.

BUILDING NEWS.

Pierce near Filbert. To build; o, Mrs. Elizabeth Gugelsberger; c, L. Cuneo; signed and filed, June 1; cost $2250.

Page near Central Ave. To build; o, D. Einstein; cost $4500.

Pine near Octavia. Painting and graining; o, Jonas Schoedfelt; a, Salfield & Kohlberg; c, Lutge & Nagel; cost $1450. Plumbin , etc; c, Ickelheimer; cost $4950.

Russ street Nos. 114 to 120. Addition; o, R. McNeil; a, M. J. Welsh; c, S. Doyle; cost $3000.

Second and Stevenson. To build; o, J. S. Morgan; a Havens & Toepke; c, Weismann & Whittle; signed, June 8; filed, June 9; cost $17,280.

Second and Minna. Elevators; o, Christian Froelich; a, A. Sutton; c, Cahill & Hall; cost $1800.

Seventeenth near Howard. To build brick; o, City of San Francisco; a, Shea & Shea; cost $16,925.

Seventeenth near Channel. Fire-proofing, etc; o, City of San Francisco; a, Shea & Shea; c, D. T. Pierce; sub-c, Western Expanded Metal; signed, June 9; filed, June 21; cost $4860.

Spruce near Sacramento. To build; o, Margaret K. Foulkes; a, J. Mora Moss; c, C. M. Depew; signed, June 10; filed, June 14; cost $3725.

Steiner near California. To build; o, William Trost; c, C. Zwierlein; signed, May 27; filed, May 31; cost $1275.

Sutter near Grant Ave. Wainshoting, etc; o, Goldberg; a, Edward R. Swain; c, California Marble Co; signed, June 16; filed, June 20; cost $1090.

Taylor and Post. Painting and decorating; o, Congregation Sherith Israel; a, Salfield & Kohlberg; c, D. Zelinsky; signed, June 10; filed, June 15; cost $1200.

Tennessee near 22d. To build; o, Thomas and Alice M. Cummins; c, Wm. W. Rednall; signed, June 7; filed, June 3; cost $2310.

Third and South Park. Three-story frame to contain 10 flats and 6 stores; o, James D. Phelan, Alice P. Sullivan, and Alice Phelan executors of Phelan estate; a, Curlett & McCaw; c, A. McElroy; signed, June 3; filed, June 9; cost $25,974.

Twenty-sixth near San Jose. To build; o, Mr. Corvell; cost $1800.

Twenty-third and Noe. To build; o, Jacob Kugel; c, J. T. Melmis; signed, May 23; filed, May 27; cost $3705.

Turk near Webster. To build; o, Wm. Rotrosky; c, P. Rive; signed and filed, June 8; cost $4231.50.

Union Square Ave. near Grant Ave. Brick building; o, Bernard Schweitzer; a, Percy & Hamilton c, J. W. Miller; signed, June 6; filed, June 10; cost $3178.

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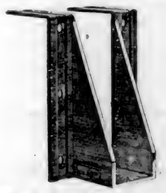

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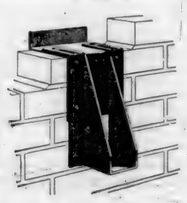

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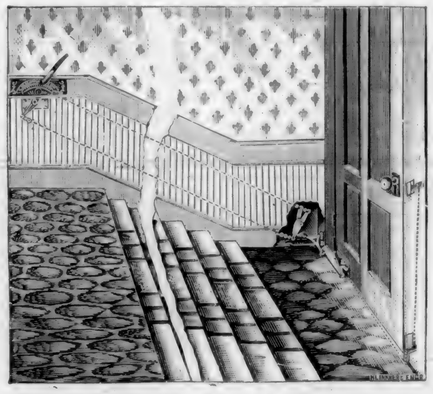

THE CALIFORNIA ARCHITECT AND BUILDING NEWS

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PUBLISHED ABOVT THE 20TH OF EACH MONTH

BY

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ESTABLISHED IN 1879 NOW IN THE NINETEENTH YEAR INCORPORATED 1899

D. T. PATTERSON 38

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A MONTHLY JOURNAL DEVOTED TO THE ARCHITECTURAL INTERESTS OF THE PACIFIC COAST.

CAUTION—Pay no money to persons representing themselves to be connected with the CALIFORNIA ARCHITECT AND BUILDING NEWS unless a written authority to receipt for the same is shown and accept no receipt unless it be on our printed blanks. All Checks and Drafts are to be made payable to the order of E. H. Burrell.

AS A FEATURE in building designs, color is receiving some attention. There is here a field for exploitation, the subject being one of greater interest than at the first glance appears. Asthetically it belongs to high art, and should be handled by artists in color, and by students of art such as Ruskin.

There is, moreover, the natural side to it, nature being the first teacher of art. Nature decrees that the sky and the sea should be blue or gray, in different shades; that the earth should be brown, in many shadings, from the yellow brown of the desert to the dark muck of the bog; and that the herbage and foliage that cover the earth should be in various tints of green. Gray is also a strong hue on nature's palette. With this she paints rocks and the stems of trees, and softens her too vivid greens everywhere they occur in large masses.

But nature does not confine herself to these general colors. She illumines the sky occasionally with rainbows and clouds edged with the strongest prismatic hues. She decorates the fields with flowers of many dyes, and plants in endless shades. She variegates her rocks, and richly colors her minerals. She beautifies with consummate skill inorganic, organic, and animal life by means of her wondrous pigments.

All this is for some purpose. The color scheme of the universe is intentional. It is not an accident nor a vagary of the infinite mind. That it largely contributes to the welfare and happiness of man there can be no question. That we have failed to appropriate to ourselves all the good there is in it, goes without contradiction. But how to make it apply to our house-building—that requires some thought.

If we were to undertake to follow the painter of the Universe, we should make all large masses of building of some quiet color, using brighter tints only for decoration, and that sparingly. But we moderns have not yet ventured upon the experiment to any considerable or appreciable ex-

tent. No doubt we shall make many blunders before we master the art of building houses singly, or in rows, made beautiful by color effects.

There is something, however, which can be done in the interest of dwellers in cities—and especially in the city of San Francisco—whose eyes are being ruined by having to see by sunshine reflected from light-colored walls. Bad as it is to strive to see by insufficient light, it is worse to have to endure the torture to the eyes which comes from the glare thrown into rooms frome neighboring house, painted, as a majority of San Francisco houses are, of a tint closely resembling the sands of Sahara. The desert itself could hardly be more fatal to vision than this reflected light inflicted upon helpless dwellers in buildings on the north or the west side of lots or streets built up on the opposite side with these colorless houses.

The effect of such light upon the optic nerve is entirely different from that of pure sunshine. Your room may be flooded with sunshine and no harm come to you, but light thrown against a wall and returned into your eyes, has the same effect that is produced by shimmering water or bright metal. Yet thousands of women sew, or write, or pursue other nerve trying occupations in just such light. Doubtless also, some schools are similarly situated, and the children are having their eyes ruined. Men's offices do not suffer so much from this cause, being in more closely built up districts, and among darker walled buildings.

Here is an opportunity for experiment in house coloring. From the expedient we may reach the beautiful, and cities be made studies of art instead of ugliness. Science must be invoked even in such matters as house painting.

ARCHITECTURE OF THE AMERICAN COLONIES.

THERE is no such thing in America, in the United States, at least, as a distinctive order, or a strictly American style of architecture. The aboriginal dwelling was usually a moveable one, owing to the wandering habits of the native races. Those tribes who lived by fishing, hunting and corn-growing, as along the Atlantic Coast, built more substantially, out of logs and bark of trees, than those on the western prairies who lived by the chase and root digging. These being almost constantly on the move, sheltered themselves in tepees or tents of a circular or conical form, with an opening at top for the passage upwards and outwards of the smoke of their fires. Constructed of dried skins of animals, they were impervious to wind, and protected their inmates from the cold of the severe winters of the plains, especially as they were usually placed in sheltered locations.

Still farther west, under the milder skies of the Pacific Coast, a brush tent, or wickiup, sufficed for the gathering place of the family, and could be abandoned at pleasure. This was the style of dwelling of the California coast tribes. But farther north, in and above the Columbia River region, rude houses were constructed of planking made out of the easily split cedar of the northern coast.

These houses consisted of a basement a couple of feet in depth, often of from thirty to fifty feet in length, and twenty o thirty feet in width, over which was built the wooden part of the structure. This was done by setting posts at the corners, and between, to which the planking was fastened by such means as were at hand. The wooden walls being set back two or three feet beyond the earth wall of the basement, left a bench of earth quite around the interior, which, being covered with grass matting, and skins, served for seating and sleeping accommodations. The roof, of planking and cedar bark, was supported by a ridge-pole and stringers. The only light admitted came through the doorway, which was at one end, and a square opening in the roof, left for the escape of smoke, the fire being built upon the earthern floor in the center of the house. It will be perceived that this dwelling, which cannot be classed under any recognized style, belonged nevertheless to what is known as the trabeated, or beamed style, like the Egyptian and Grecian structures. It is easy to trace the differences to their causes, while recognizing the single underlying idea of an oblong structure, with upright posts or columns in certain positions, and flat, or nearly flat, roofs.

Still farther north, indeed, we come upon detached columns outside the walls, rudely carved with genealogical emblems, or tokens, much after the Egyptian example of a goddess-faced capital. The human intellect, it would appear, starts out upon similar lines of progress throughout the world.

* * *

The first buildings by the white races in America were mere make-shifts—architectural accidents—due to unusual circumstances or exigences, like those found at Newport and Woods Holl, Rhode Island, believed to have been erected by Norsemen, about 1507. That one at Newport, known as the "Old Mill," is a round structure of stone, supported upon short pillars and arches, in the early Roman or Etruscan style. The other, at Woods Holl, is also round, and of stone, but is built up from the ground, and has a battlemented top. It is without openings in the wall, except the entrance, and narrow windows immediately under the cornice, suggesting the idea of a fortification.

* * *

The second oldest building by white people in what is now United States territory, and the oldest known residence, is in St. Augustine, Florida, which was settled in 1564, when the monks of St. Francis erected this house for their occupation. It is constructed of coquina, a mixture of sea shells and mortar, which forms a cement as solid as natural rock.

Sir. Francis Drake, while roving the seas in quest of riches, in 1585, destroyed the town of St. Augustine, but was unable to demolish this monastery. Its age, quaintness of design, and historic interest, has of recent years lead to repairs, and to its preservation as a museum, where has been gathered relics of past centuries. The round tower and the walls of the lower story are intact, the latter being sustained by heavy buttresses. The frame work of the second story gives evidence of being more recent by a century; and some even more modern features appear, in windows and balconies.

A deputy of the Spanish government in 1590 came into possession of the building, which remained in the family until 1882, when it was sold to Dr. C. P. Carver, who more recently transferred it to J. H. Henderson, Esq., the present owner.

A feature of the house is a curiously designed door-knocker of wrought iron, weighing twelve pounds, which was taken from the ducal palace of Ponce de Leon in Seville, Spain. Evidently, it was not intended that the inmates should yield too much to the sleepy influences of the Florida climate.

The furniture of the house is antique. Among the art treasures are an elaborately carved bedroom set of the time

The Oldest Hnuse in the United States at St. Augustine. Florida

of Louis XII, and a rosewood sideboard which was the property of Napoleon I. On the walls are paintings by the old masters once the property of the Spanish nobility. To these relics have been added a collection of ceramics representing all the rare colonial designs, including the Martha Washington plate, presented by La Fayette and other Frenchmen.

This building gives us the first and the last glimpse of a power which once possessed the continent. It is the irony of fate that just as every vestige of former empire is being wiped off the map of the new world discovered by Spain, we, her latest conquerers, should be carefully preserving relics of her earlier occupancy. We pay to a glorious past the reverence which even a recreant present cannot overcome.

* * *

There is still standing in Jamestown, on the Potomac, the bell-tower of a church erected by the first colonists of Virginia in 1610—three years only after the settlement of that place. The building was sixty feet in length by twenty-four feet in breadth, and constructed of brick. It had "a baptismal font, a tall pulpit, a chancel of red cedar, and in the tower two bells." The tower, which is still as firm as stone, stood over the vestibule, which had an arched entrance.

This first Protestant church in America was the type after which colonial churches were built for many generations, and after which they are still built in new settlements generally—the steeple, with a single bell, being substituted for the more costly and dignified tower. The portico was often omitted, puritanic plainess dispensing with whatever was unnecessary, or paucity of means rendering architectural effects impracticable. But churchbuilding for at least two centuries adhered to that early Christian type, which, as we have seen, was born in Rome, and was descended primarily from the Egyptian plan of temple-building. The Gothic graft which modified it fourteen hundred years later still continues to derive its sap from the ancient root.

Williamsburg, the old capital of Virginia, was the seat of the second church in this colony, and was founded in 1632. As befitted a church of England edifice, where royal governors and other titled personages joined in the liturgy, and listened to mild discourses upon the divine right of kings, was a more costly building than its predecessor, as well as a larger one.

Families of ordinary mortals sat in large square pews, much at their ease, but the king's representatives and their families sat in the "royal gallery," a room of considerable size, which they entered and departed from by a private door, as did royalty itself in Old England. An American lady, a republican, is to-day supporting similar vice-regal customs in the Queen's possessions in the East Indies. "So runs the world away."

There are no detached columns in the Williamsburg church, which is still in a good state of preservation, but simulated square pillars support the cornice beneath the ceiling, which is decorated. There are tall arched windows, and a square altar-rail guards the sacred and spacious enclosure where stands the reading desk, and the actual gray marble baptismal font from which the Indian princess Pochahontas was baptised into civilization, and marriage with John Rolfe. The silver communion service was a gift of Queen Anne.

* * *

William and Mary College, built in 1693, and burned, was rebuilt in 1705, and may be taken as an example of college architecture in the latter part of the seventeenth century. Sir Christopher Wren had furnished the plan of the original building, which is now lost. That which succeeded it is a severely plain two-story structure, with a long frontage, and having many right-angled windows at equal distances apart. The roof is low, rather than high, and hipped at the ends. It has a portico, carried up to the roof, supported by arches, and supporting a pediment above the cornice. A small cupola or bell-tower rises from the center of the roof. Many similar college buildings have arisen all over the United States—all equally repellant to the artistic sense.

The house of the president of the college was built of brick made in England, of two colors, red and gray, used to present a checkered effect, a fashion which prevailed in the mother country two centuries ago.

* * *

A hundred years had brought to the colonies many of the architectural ideas prevailing or developing in England. These were not of the better sort, for art was again in a decline. Such as they were, they were modified and adapted to the climatic and other conditions in the new world.

The style of house most in favor with the Virginians was square, or nearly so, with a wide hall in the center extending through it, and large rooms opening on either side. A feature rarely omitted was the wide portico, with columns usually extending to the roof, and supporting a pediment. If the roof was low, it was hipped; if high, it had also dormer windows. Wings and supplementary buildings were addsd as required, but this was the central plan of the colonial "mansion house." The spacious hall had a grand staircase, sometimes spiral, sometimes with square landings to break the steep ascent, and with niches in the wall for statuary, or a place for the high-cased eight-day clock. The balustrade was high, and the posts supporting the rail often quaintly twisted or carved. If the house were large, the long hall might be divided by arches. In the immense rooms were fireplaces with decorated mantels of the hardest

wood or the finest marble. The furnishings were imported from Europe, and indicated the taste or the wealth of the owner.

* * *

The Dutch, who settled New York in 1614, brought with them from Holland certain architectural tastes and predelictions, which were shown in the thick walls of their low houses, their steepley-pitched and windowed roofs, and the indispensable "stoop," wherever it could be attached. Like the Virginians' portico, the stoop was the hospitable reception-room of the house.

In that rare and delightful book, "An American Lady," by Mrs. Grant of Scotland, is the following concerning the Dutch manner of living at Albany in ante-revolutionary times:

"The city of Albany stretched along the banks of the Hudson. One very long wide street lay parallel to the river, the intermediate space between it and the shore being occupied by gardens. A small, but steep hill rose above the centre of the town, on which stood a fort, intended (but very ill adapted) for the defence of the place, and of the neighboring country. From the foot of the hill another street was built, sloping pretty rapidly down until it joined the one before mentioned that ran along the river. This street was still wider than the other: it was only paved on each side, the middle being occupied by public edifices. These consisted of a market place, a guard-house, a town hall, and the English and Dutch churches. The English church, belonging to the Episcopal persuasion, and in the diocese of the Bishop of London, stood at the foot of the hill, at the upper end of the street. The Dutch church was situated at the bottom of the descent, where the street terminated. Two irrgeular streets, not so broad, but equally long, ran parallel to those, and a few even ones opened between them.

The town, in proportion to its population, occupied a great space of ground. This city, in short, was a kind of semi-rural establishment: Every house had its garden, well, and little green behind; before every door a tree was planted, rendered interesting by being co-eval with some beloved membered of the family. Many of their trees were of prodigious size and extraordinary beauty, but without regularity, every one planting the kind that best pleased him, or which he thought would afford the most agreeable shade to the open portico at his door, which was surrounded by seats, and ascended by a few steps. It was in these that each domestic group was seated in summer evenings to enjoy the balmy twilight, or the serenely clear moonlight.

"Each family had a cow, fed in a common pasture at the end of the town. In the evening the herd returned all together, of their own accord, with their tinkling bells hung at their necks, along the wide and grassy street, to their wonted sheltering trees, to be milked at their masters' doors. * * A town which contained not one very rich or very poor, very knowing or very ignorant, very rude or very polished, individual. * * These primitive beings were dispersed *in porches*, grouped according to similarity of years and inclinations."

Of New York Mrs. Grant says: "Society was there more various and more polished than in any other part of the continent. * * Unless a man, by singular powers or talent, fought his way from the inferior rank, here was hardly an instance of a person getting a subaltern's commission whose birth was not at least genteel, and who had not interest and alliance."

These allusions to New York colonial customs help us greatly to understand architectural features. The long, low, hip-roofed house of Albany, or of the manors along the Hudson, became in the capital city the aristocratic three-storied house of brick or stone, but without losing its distinctive Dutch style. New Jersey, also settled by the Dutch, still affords many examples of colonial buildings—of houses constructed of brown stone, the blocks thick enough to furnish window-seats eighteen or twenty inches deep.

These houses have, usually, the main building of one-story and an attic, in whose steep roof dormer windows are inserted; and a wing at one end, without the attic, which was devoted to domestic uses. Stout oaken doors, called "Indian doors," that opened across the middle, immense fireplaces and high mantels, with cupboards in every available space, were interior features of these houses, that often contained imported furniture and pictures of great value.

* * *

Perhaps the best example of the New York manor house is that of the Philipse family, at Yonkers, erected in 1682, which is in a good state of preservation. The plan is simply that of an oblong building of considerable size, and two-stories high. The roof is a mansard with dormer windows, and a balustrade running around the flat space at the top. The main entrance is by a door in the front end, which opens into a central hall. A small square portico, the roof of which slants forward from the wall, and is supported at the corners by two columns, shelters the doorway.

The windows, of which there are two on each side of the entrance, and five in the story above, are oblong, with twenty-four small panes of glass in each. Windows are placed at equal distances on the sides, six in the lower, and eight in the upper story. Two doors open on the side which faces a street, one having the porch with seats, the other being a walled porch, or "winter door," and leading to the kitchen. A delicate cornice is carried along the side of the building over the lower windows and doors, and a heavier one, of the same design, beneath the roof.

Certainly, a very plain, unostentatious house. But on the interior was lavished a wealth of decoration, architectural and applied. Painted ceilings, columns supporting tall carved mantels and mouldings, doorways crowned with sculptured pediments, handsome staircases, with quaintly-fashioned balusters, rich imported furniture and selections from European art-galleries revived in colonial homes recollections of a more settled, but scarcely more enjoyable existence over seas.

* * *

The Jumel mansion, or Fort Washington, in New Jersey, is an equally good example of the suburban New York mansion. It is in a style very similar to that of the Virginia town, or suburban house, being of brick, nearly square, with the imposing Roman portico whose pediment rises above the cornice of the upper story, supported by columns in the graceful Ionic order. The roof is hipped and balustraded, with the further relief from plainness afforded by a central chimney and a single painted dormer window. In the rear is a second detached building in a similar style, where the servants were quartered.

The interior of this house, built in 1758, at Harlem Heights, was finished and furnished as not many American houses were in that day. It had been erected by Roger Morris for his bride, Mary Philipse. In 1810 it passed into the hands of Stephen Jumel, a merchant of New York, who had married the beautiful Miss Eliza Bowen of Providence, Rhode Island. His wedding gift to her was this now celebrated mansion, which was refurnished with all the splendors of the wealth and taste of the period.

In addition to the contents of drawing room, dining-room, hall, tea-room, and many private apartments, was a gallery of paintings selected from art centers in Italy, France, Holland and Germany. Twenty-five thousand dollars was paid to the widow of a French count for furniture and jewels which had belonged to Napoleon I and Josephine, including articles which had previously belonged to Charles X.

After the death of Mousieur Jumel, his widow married Aaron Burr, whom she outlived, dying at the age of eighty-nine, in 1866. From first to last the house on Harlem Heights, back of Jersey City, sheltered at different periods the most distinguished personages of colonial times, military and civil, royalist and republican.

* * *

Turning to the New England colonies, we find a prevailing style not altogether dissimilar to the Dutch, yet with characteristics of its own equally well marked. Lands were

not possessed in large holdings by individuals, as in Virginia and New York; hence we have not the manor-house with its aristocratic dimensions and accessories, but the farm and the town house. The former was, for the first century, a very plain, and often a very uncomfortable residence. It seldom achieved more than a single story, with a steep roof that slanted backward from the ridge pole, covering the lean-to. The door was in the middle of the front, opening directly into the kitchen or living-room, and without the shelter of a porch. The windows were few, and glazed with small panes. Before the door was a flat stone, in place of steps.

This entire absence of architectural effects in the early New England house was not so much the expression of the English Puritan character (although undoubtedly it affected that of their descendants, as it was a revelation of the poverty of their resources and the qualities of the climate. Having to contend with a niggarly soil, short, scorching summers, and long arctic winters, at the same time defending themselves from Indian attacks, left little time to think of anything beyond the primary wants of existence. Whatever pause came to them was required by their religion, in the cultivation of that self-abnegation which their circumstances called for.

The interior of the early New England homestead was in keeping with the exterior. The kitchen was the only habitable room in winter. Whatever of comfort it afforded was imparted by the immense fireplace and chimney, where during the winter months the hardwood logs were kept burning continually. When bed-time came the huge "back-log" was heaped over with coals and covered with ashes, as carefully as a steamer's engineer banks his fires when his ship is at rest. If it chanced that a heavy snow storm sifted an avalanche of snow down the wide chimney during the night, so much the worse for the early riser next morning. To the New Englander fire-worship should have seemed perfectly logical.

In commending the ventilation afforded by colonial "interiors," where the "great room" of a mansion might have nine doors, and a chimney twelve feet square at its foundation, we must not forget the frequency of deaths by consumption, and the sufferings of rheumatic old age, consequent upon the unavoidable draughts. Our colonial ancestors usually had several wives in the graveyard, and a good many of the fathers died before their time.

Notwithstanding these drawbacks, as time wore on the homes of New England gradually acquired, and by very reason of the difficulties to be overcome, more of the real comforts of life than those of the more western or more southern colonies. All the exigencies of Indian wars, hard winters and hot summers were provided for.

Brick and stone houses were erected with particular care for their solidity. Wooden buildings were constructed with double walls interlined with brick, to resist Indian bullets. Hidden closets and under-ground passages were in some instances provided, with a view to the safety of the family in case of attack. Attached to the kitchen was the wood-house in which the year's store of cordwood was neatly piled. Close by, and often under its roof, was the well which supplied the household with water. In the tightly-walled and capacious cellar were bins for fruit and vegetables. Somewhere off the kitchen were the pantry and dairy.

In supplying these numerous needs, colonial domestic architecture became picturesque by its very homeliness. The better class of houses in the early part of the eighteenth century were still severely plain on the exterior, with steep roofs, giving if needed, extra rooms in the attic, which usually however, was used for storing unused articles, and relics.

The increase of wealth, and the residence among the colonists of royal appointees, led gradually to the introduction of more varied and attractive styles. Porches, pediments, balustraded roofs, projecting wings and gables, marked the later colonial dwellings. But the stately, columned manor house of New York and Virginia was never a feature of New England.

If we would study the life of the first half-dozen generations of Americans in this quarter of the United States, we must look for it at the fireside, in the library, or in the halls of old Harvard, founded in 1638, when Massachusetts Colony was but eighteen years old. The founders turned from heavy toil and savage warfare to religion, philosophy, poetry, and patriotism, and were ever busy in "building better than they knew," the only really free republic on earth. They could afford to wait for results.

* * *

When we speak of colonial architecture, it should be re-

membered that the several colonies represented separate nationalities, and that America, like Rome, drew to itself many peoples. Without the wealth of Rome, it adopted that which was most convenient, rather than that which was artistic. It will be well for us when our day of luxury is at hand, if we observe, as did the Greeks, simplicity with refinement.

THE ELDORADO SCHOOL BUILDING, STOCKTON, CAL.

WE PUBLISH in this issue, accounts of three recently erected Public School Buildings in this State. During the last five years more attention has been paid to the construction of this class of building than ever before, and the work has resolved itself into various specialties, the architect assuming the general responsibility for the exterior design and planning the interior to best meet the requirements.

The matter of "lighting" has been one under discussion for several years and has resulted in the general acceptance of strong light from one side of class room only. Recent opinion also proves "green" in place of "black" for the boards in the room. Perhaps of all specialties, the one commanding the most thought and attention at present time is the matter of proper "warming and ventilating" and thorough sanitation of this class of buildings. Every thinking man will at once realize the importance of pure air in these crowded class rooms and how to obtain this at a nominal expense has engaged the thoughts of leading engineers and mechanics throughout the world.

From the above it would appear that one duty of the architect, at the present time, is to give his clients the benefit of whatever he may know or possess and also (by being well informed as to the various specialties) by combining the knowledge of several, give his clients a completed structure possessing all the modern features that make a building perfect.

In the matter of "plumbing" and "sanitation" work a like advancement has been made and the toilet rooms in these buildings are as free from disagreeable odors as are our parlors in our private homes.

A recent report from the Board of Health, on the "heating, ventilating and sanitary system" in the El Dorado School Building, Stockton, Cal., in connection with this subject, will be of interest.

EL DORADO SCHOOL.—W. W. OATES, ARCHITECT.
Warmed and ventilated by Morgan & Co.

STOCKTON, CAL., Dec. 23, 1898.

To the Honorable Board of Education of the City of Stockton.

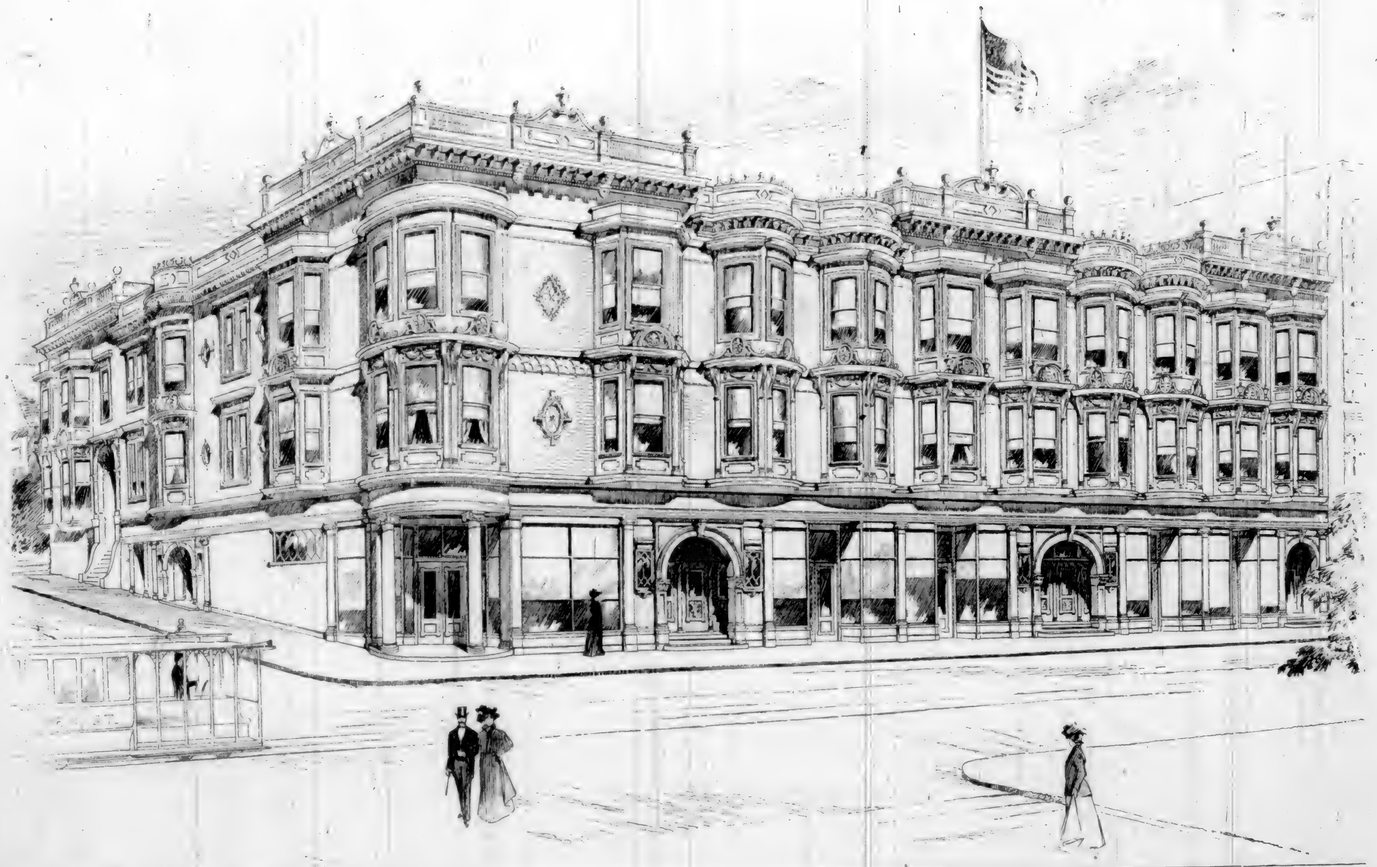
LADIES AND GENTLEMEN:—The request of your Honorable Body that the Board of Health examine the heating and ventilating system and water flush closet apparatus inserted in the El Dorado School Building, was referred by said Board to the Committee on Public Buildings, consisting of the undersigned and Dr. Fitzgerald.

Accompanied by Dr. Fitzgerald and Health Office Ruggles, I have made a close inspection of the El Dorado School Building as regards its sanitary condition, its warming and ventilating system, lighting, etc.

The building seems well adapted to its requirements as to room and arrangement. The water closets and urinals are the most perfect system that could be possibly had, being free from all possible odor and so ventilated as to make it impossible that any air or odor from them can enter any

COMPETITION DESIGN
FOR STORES & FLATS

Martens & Coffee, Architects.



PERSPECTIVE SKETCH

SALINAS HIGH SCHOOL

Louis J. Stone Architect

CALIFORNIA ARCHITECT & BUILDING NEWS
SAN FRANCISCO

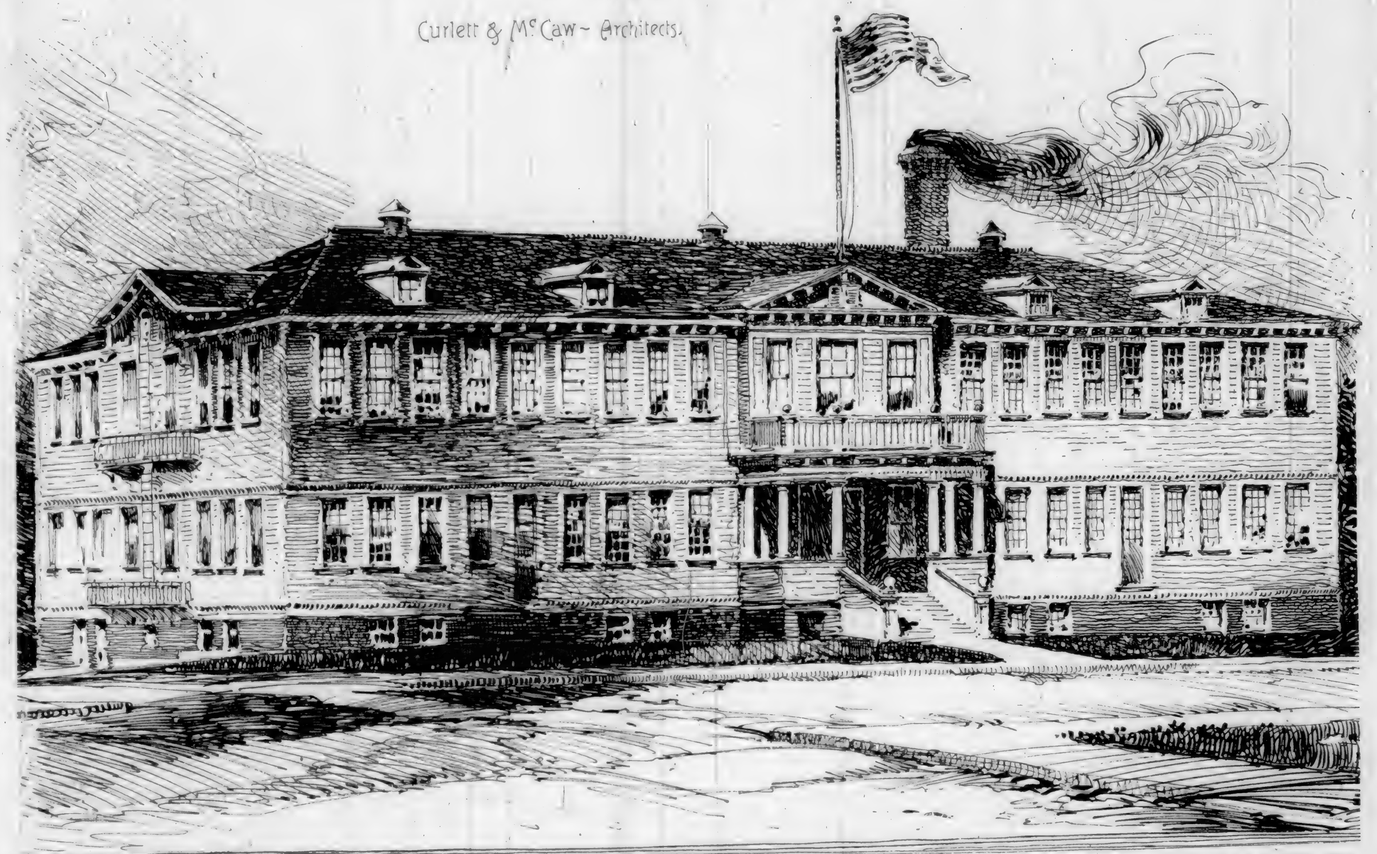
BRITTON & REY, PHOTO LITH

VOL XX Nº6 JUNE 1899.

WILMERDING SCHOOL
OF INDUSTRIAL ARTS

Cor. of 17th & Utah Sts.

Curlett & McCaw ~ Architects.



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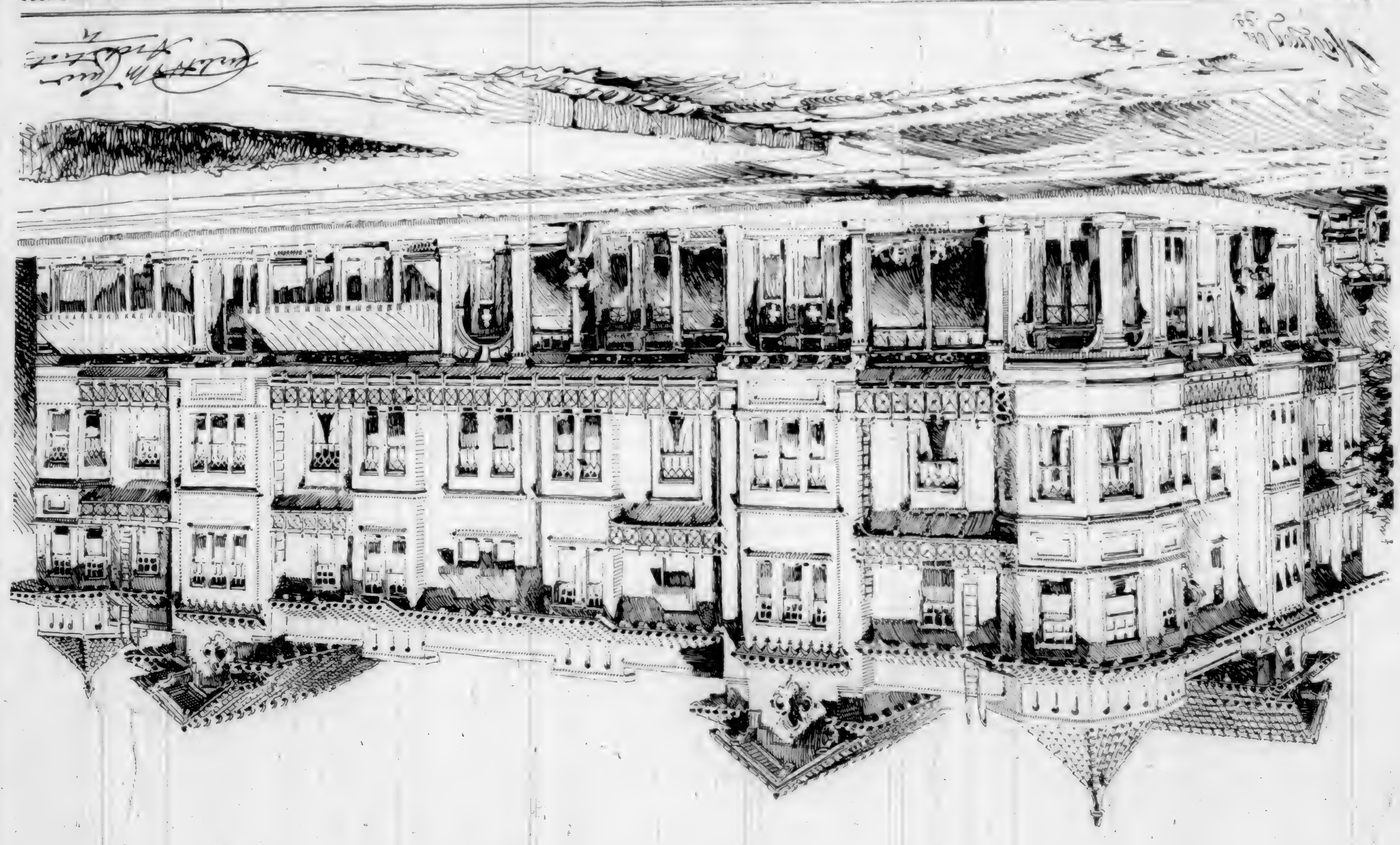


STORES & FLATS FOR
THE PHELAN ESTATE
(or South Park and Third Street.

other part of the building. The closets and urinals are arranged with automatic flushes that can be regulated to flush any number of times per hour desired.

The heating and ventilation are accomplished by a most perfect system, by which a large amount of fresh air is warmed but not overheated, and admitted into the rooms in such a manner as not to produce a draught, an amount of impure air equal in volume to the pure air admitted being withdrawn from the floor where the impure air is most apt to be found.

By the most careful tests we found that the entire air of the room was changed at least 7½ times an hour, keeping the air fresh and pure and giving the room a fresh, spring-like feeling. A test for carbonic acid gas the most contaminating element to be found in crowded and poorly ventilated rooms, gave as a result an amount of said gas scarcely above that of the out door air, thus proving beyond a doubt that the system is a perfect success and that the children who attend the El Dorado School have nothing to fear from a cold or vitiated atmosphere. Contageous disease in such a school if once introduced, would not have the tendency to spread, as in those without these very excellent sanitary advantages. The children would average better scholars and brighter students and make better citizens, when grown to manhood or womanhood, than will those attending schools unprovided with equal sanitary appliances.

During the past school year Drs. Ruggles, Fitzgerald and myself have visited many of the school buildings of this City to investigate and if possible suggest improvements in their sanitary condition.

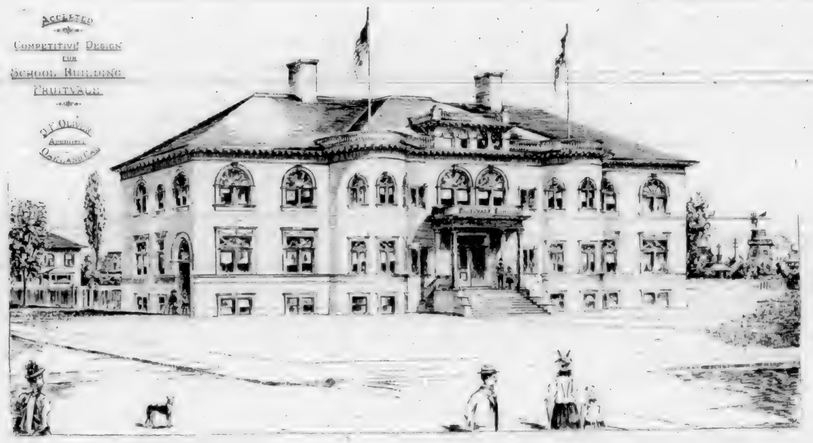
We found in most buildings, the heating and ventilating were about as imperfect as possible. Many of the rooms crowded with from 40 to 55 children are warmed with stoves and have no means of ventilation provided, excepting such as is most likely to remove the warm air and admit the cold air in such a manner as to give draughts affecting the children within the immediate vicinity. Thus some of the children are too warm, some too cold and all with cold feet and hot heads. To fully appreciate the condition of most of our schools and to understand what they should be, one should read a paper which I carefully prepared and read before the San Joaquin County Medical Society in March 1895, after having visited most of the school buildings in company of the School Board.

With due appreciation of its importance, this report is respectfully submitted.

(Signed) S. B. Davis, M. D.
Chairman Com. on Public Buildings of Board of Health.

We have carefully read the above report submitted by Mr. Davis, Chairman of the Committee on Public Buildings, and heartily endorse it and concur in all its suggestions and recommendations.

(Signed) William E. Gibbons, M. D.; W. W. Fitzgerald, M. D.; S. N. Cross, M. D.; C. A. Ruggles, M. D.

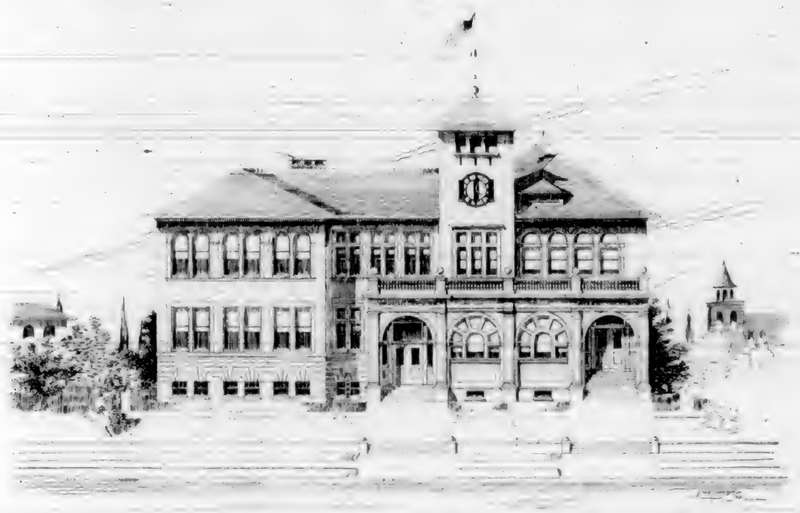


THE ACOUSTIC PROPERTIES OF BRICK AND TERRA COTTA.

ALTHOUGH a great deal is known concerning the acoustic properties of wood, and of various metals used in construction, it is not a little remarkable that analogous properties in brick, tile, faience and terra cotta should be so little understood. This ignorance arises in great measure from the circumstance that both physicists and architects have contented themselves hitherto by considering acoustics from the point of view of the shape of interiors of buildings only. Or, in a secondary way, the materials lining the walls, and such as may be regarded as capable of reinforcing sound.

have received some attention. As a matter of fact, in many large buildings such things as resonant boards, reflectors, and match-board dados are quite subservient to the chief materials of construction as often laid bare in the walls of the higher part of the building inside. Again, we commonly find that at least some considerable part of the walls is lined with clay goods in some shape, such as tiles, glazed panels, and the like.

Everybody who has studied the acoustics of large buildings admits that the chief enemy to deal with is reflection of sound, which produces echoes and general uncertainty in hearing, no matter whether the lecturer be strong or weak in voice. Consequently we find that when, the building having been newly put up, the acoustic properties are bad, the first thing the architect flies to is that which he understands best, namely wood. During the present century utilized for the performance of music, we commonly find that attempts are made to lessen it by using drapery. An interior, designed by the architect to show off its noble proportions, or enriched by the frescoes of some Royal Academician, or embellished by beautiful marble panelling and mouldings, is thus ruined. For the right interpretation and appreciation of orchestral music it is absolutely essential to stifle echo at its birth. We should hear only that which proceeds direct from the executants to our ears, and the harmony should not be disturbed by the reverberation of the musical notes from side to side of the building. It is to be noted that intensity of the sound is not the leading factor in such a case as this. If a little water be violently thrown on to the surface of a smooth-faced wall it glances off, and the same thing will happen with a large quantity; on the other hand, if either the large or the small quantity be



High School and Library—San Rafael, Cal.

there has been quite a boom in that material, though we ought not to torget the metal reflector placed over the pulpit in St. Paul's Cathedral, which has been so successful in that particular case.

Yet, but a little consideration of some elementary problem in physics suffices to show that wood is by no means always desirable, or can be in any way successful, in the interior of many edifices. Wood is a great reinforcer of sound by reason of its elasticity, but that very property is disastrous in certain interiors.

Sound is most perfectly reflected from smooth surfaces, and when acoustics of the interior are bad owing to form of construction, and reflection is wanted, what could be better than glazed surfaces? Large glazed tiles, or faience work in panels, are most admirably adapted for the purpose, but how often do architects use them for their acoustic properties. On the other hand, when owing to interior shape of the building reflection from the walls is not wanted, where can any better material than porous clay-goods be found? When echo is too manifest, and the building is largely thrown on to a wall having a porous surface much in either case will soak in. And so it is with sound. If the grand interior which we have just been alluding to were constructed of porous clay-goods, the architect, the Royal Academician, and the embellisher still have their chance, and the drapery could be done without.

We do not ask modern artists, with all their fanatic and æsthetic ideas, to succumb to science or to pander to the worker in clay, but we are perfectly justified in reminding them that many of the ancient works of art which they all but worship are the work of clayworkers. They seem to forget this. Their ideas are confined (like the latest craze in art) in straight lines and angles; they have set up for themselves a certain number of cast-iron regulators, which may be likened unto the by-laws of a county Council. They can see art in ancient clay-work, but not in modern—that is because they have moulded themselves into that train of thought. Once get rid of that, and we can furnish both the artist and the architect with materials such as the ancients had in the interior of their buildings, which were then, and are now, in many respects acoustically perfect, which were then, and are now (in ancient structures) admired for their artistic beauty.

We have said that clay work is often superior to wood work for acoustic purposes; we will substantiate that point by referring more particularly to the merits and defects of both for the uses named. Let us begin with wood. Here we have a material with a fibre; we cannot get wood without fibre. Fibres act as wires and are conductors of sound like the latter. Consequently if sound strikes a match-board surface, much of it is immediately given a biased direction in the direction of the fibres. This bias is useful when the wood is to act as a species of sounding-board, but when echoes are to be minimized (as is more frequently the case) it is to be deprecated. Wood with knots is better as retarding the propagation of sound within the fibres, than is wood with straight fibres.

But for sound-proof walls, if wood is to be employed, it has to be cut in such a way as to make the general construction somewhat expensive. Now all this can be done away with if such a material as terra-cotta be employed. The velocity of sound in a body is a fair index of the use of that body for acoustic purposes. As would naturally be supposed, the velocity is not so great in loosely compacted materials as in those more closely aggregated. If the object in the wall be to stop sound from going through it, then it might be lined with exceedingly porous terra-cotta. If, on the other hand, the surface is to be of a neutral character, terra-cotta with a "semi-vitreous" face is more suitably employed. If, as in many small country churches, the upper parts of the wall above the dado are to be left bare, the bricks showing should always have a fairly hard surface so as not to soak in the sound too much. But, for a church having a central dome, underneath the centre of which the pulpit is to be usually placed, the interior of the dome if left bare (commonly the case with small churches) should be made of strong rubbers, and we should not object to the light porous kieselguhr brick for such a purpose.

It may be taken for granted that the velocity of sound is greatest in hard brick, such as ruabon reds, metalline, hard blues, firebrick, and stocks, and least in gaults, ordinary reds, and sand rubbers. To recapitulate, therefore, the former class should be employed for conducting and reinforcing sound, and the latter for the reverse—as sound-proof materials, and in stifling echoes.

Majolica and faience, when used in broad and flat surfaces, must increase echo, and when used very thin must be fairly resonant; when much broken up, however, either by frequent jointing, or when projecting in pattern, sunk or raised, its effects must be mainly of a neutral character.

The problem of the obnoxious party wall may be readily solved by using soft brick jointed with good mortar, taking that the wall is solid throughout; the difficulty of noise in flats from one floor to the other might be very considerably done away with by using majolica and faience ceiling mouldings for all angles, and by constructing the face of the wall of the porous brickwork, faced by plaster of a more or less porous character. Sound reflectors for public building, not for reinforcement of sound, but for giving it direction, would be more suitable when of porous earthenware, and this would be much less unsightly than metal reflectors and tubes.

In short, the capabilities of clay goods in the directions indicated for assisting and modifying sound, are much more worthy the attention of architects than has hitherto been thought: less worthy materials have had a long trial, now give "brick, tile and terra cotta" a better chance.—*Clay Record.*

ILLUSTRATIONS.

The management of this journal desires to extend a cordial invitation to all architects on this coast and elsewhere to contribute designs for publication.

Drawings should be made with perfectly black lines on a smooth white surface. Good tracings, if made with black ink, answer the purpose.

The designs selected will be published without charge. All drawings, whether accepted or not, will be returned to their authors, who must bear express charges both ways.

WILMERDING SCHOOL of Industrial Arts, Corner of Seventeenth and Utah Streets. Curlett & McCaw, Architects.

STORES and flats for the Phelan Estate corner South Park and Third street, Curlett & McCaw, Architects.

COMPETITION Design for frame business block, Martens & Coffee Architects.

PERSPECTIVE View, Salinas High School, L. P. Stone, Architect.

VALUABLE INFORMATION CULLED FROM OUR EXCHANGES.

THE results of some experiments to ascertain the most effective material for checking the percolation of water through brick or stonework are given by Mr. A. W. Hale in a recent number of the Engineering and Mining Journal. The investigation was mainly carried out in connection with the new Croton aqueduct of New York, and the substances employed in the experiments were numerous and varied. It was found that Portland cement gave the best results, and that the hydro-carbons, which are commonly regarded as suitable materials for rendering brick or stone impervious to water, oxidized by exposure to air and gradually disappeared. It was also found that a brick was rendered im-

pervious to water by cement more rapidly when the cement was applied as a wash by means of a brush than when applied with a trowel in the usual manner. A brick which had been treated with four cement washes was found at the expiration of two months to be quite impervious to water, even under a pressure of two hundred pounds per square inch.

IF Andrew Carnegie has mastered the art of making money, he has been equally conspicuous in a discreet but munificent manner of giving it away. In the course of the last twenty-five years he is credited with giving away $17,000,000 for public purposes. He is evidently a robust believer in educating the people, and in the forces for good that are the dynamics of intelligence. His benefactions to libraries have been ungrudging and wide-spread. Among nineteen of these the iron king has distributed not less than $5,483,000, ranging from $8000 to $3,000,000. These are big figures, and are but a portion of what has really been a massive benefaction to human good. Nor has the water all gone over the dam.—*The Age of Steel.*

A FARM of three hundred and fifty acres is being worked by electric power in the state of New York. There are two waterfalls on the farm, and these furnish the power for operating the electric plant. One motor, of ten horse-power, operates a hay cutting machine, another a threshing machine, and another a circular saw for cutting logs. The dwelling house is well lighted and is also heated by electricity. Cooking is done by electricity and churns, milk separators and other dairy appliances are operated by the same agency. The power is also used for lighting barns and other buildings. As more power is generated than is necessary, the surplus is rented to two knitting factories. This is claimed to be one of the most complete and unique installations ever yet made on a farm, and its success will probably lead to others of its kind, with like facilities of water power being on equal terms.—*The Age of Steel.*

AT a meeting of the Franklin Institute long since past Prof. Edward J. Houston speaks of the physiological effects of alternating currents of high frequency. He divides electric discharges into three varieties. First, galvanic currents; second, alternating current, commonly called faradic; and third, electro statis discharges which may be called Franklinic currents. It seems as though Franklinic and faradic currents produce about the same effect upon the muscles. Another fact is equally true that as the rapidity of alternation increases, the severity of the physiological effects decreases until when enormously high frequencies are reached, the discharges become harmless. These facts have been demonstrated by Dr. Tatum for comparatively high frequencies and by Nikola Tesla for enormously high frequencies. To quote from Tesla, we conclude with the following: "I have found that by using the ordinary low frequencies the physiological effects of the current required to maintain at a certain degree of brightness a tube four feet long provided at the ends with outside and inside condenser coatings is so powerful that I think it might produce serious injuries to those not accustomed to such shocks; whereas with 20,000 alternations per second the tube may be maintained at the same degree of brightness without any effect being felt."—*The Electrical Age.*

NOTICE OF MEETINGS.

San Francisco Chapter, American Institute of Architects, meets second Friday of each month at 408 California street, at 4 p. m.

Seth Babson, Pres. — H. A. Schultz, Vice-Pres.
J. W. Reid, Sec. — John M. Curtis, Treas.

Southern California Chapter American Institute of Architects, meets first Wednesday of each month at 114 Spring street, Los Angeles, Cal.

A. B. Benton, Pres. — Arthur B. Benton, Vice-Pres.
John P. Krempel, Sec't. — August Wackerbarth, Treas.

Washington Chapter American Institute of Architects, regular meetings at 8 o'clock P. M., the first Friday of each month, except July and August.

Wm. E. Boone, Pres. — Jas. G. Hill, Vice-Pres.
Charles W. Saunders, Sec. — W. J. Marsh, Treas.

Association of Architects of Arizona, meetings held at Phoenix, Arizona.

D. W. Millard, Pres. — T. H. Maddox, Vice-Pres.
W. R. Norton, Sec. and Treas.

Technical Society of the Pacific Coast, meets first Friday of each month at Academy of Sciences Building.

Geo. W. Percy, Pres. — W. F. C. Hasson, Vice-Pres.
Otto Von Geldern, Sec. — Edward T. Schild, Treas.

Master Plumbers' Association, meets every first and third Friday of each month at the Flood Building.

Jas. E. Britt, Pres. — J. L. E. Firman, Sec.

Builders' Exchange, Directors meet first Friday in each month at Mission and New Montgomery.

S. H. Kent, Pres. — Jas. A. Wilson, Sec.

Masons' and Builders' Association, meet first Friday evening of each month.

Adam Beck, Pres. — M. V. Brady, Sec.

THE STATES AGAINST THE TRUSTS.

WHILE it is unfortunate, it was inevitable, that the anti-trust agitation should develop a difference of views as to where the proper power is lodged for the suppression of the trusts. The dual character of our government affords a basis for honest differences on this point, especially as to many of the suggested methods of heroic procedure against the evil. Hence it happens that we find the opinion of the Attorney-General of the United States opposed to that of Justice Harlan, of the United States Supreme Court, on the general proposition that the Federal Government is competent to deal with the trusts. The Attorney-General holds, in effect, that domestic corporations must be controlled by the States; while in his dissent from the opinion of the Supreme Court in the Sugar Trust case, Justic Harlan expressed himself in this wise:

"We have before us the case of a combination which absolutely controls, or may, at its discretion, control, the price of all the refined sugar in this country. Suppose another combination, organized for private gain and to control prices, should obtain possession of all the large flour mills in the United States; another of all the grain elevators; another of all the oil territory; another of all the salt-producing regions; another of all the cotton mills, and another of all the great establishments for slaughtering animals and the preparation of meats. What power is competent to protect the people of the United States against such dangers except a national power—one that is capable of exerting its sovereign ruthority throughout every part of the territory and over all the people of the nation?"

It is not to be denied, to be sure, that Congress may not in a variety of ways hamper and discourage the trust movement—as, for instance, by the enactment of a law placing all foreign merchandise competitive with trust products on the free list; but as against congressional power of extirpation by taxation, or by means quite as drastic and even more direct, constitutional questions are interposed in number.

Inasmuch as delay favors the trusts; gives strength to their commercial and financial standing, and opportunity and encouragement for their further formation—it is evident that if the evil is to be checked before it has run its full course, the States must attack it upon their own account, without reference to anything the Federal Government may or may not do in the fulness of time.

This is the Texas view of the situation, and it is a sensible and business-like one. Governor Sayres of that State has determined, according to newspaper reports, to call a conference of the Governors and Attorney-Generals of the Southern and Western States for the purpose of "discussing and agreeing upon a concerted and effective policy and line of legislation against trusts and monopolies." This conference will recommend to the Legislature of the several States represented in it such measure as will, if enacted, insure uniform and effective laws for trust suppression.

There is no doubt that if such a programme as this is followed by fifteen or twenty, or more, of the Southern and Western States the subjugation of the trusts will be assured. But can such concert of action be had? Still, the plan is a good one, even if it cannot be carried out—and it is certainly worth the trying.—*The Age of Steel.*

TALKING ALONG A RAY OF LIGHT.

IT SEEMS very much like a fairy tale to hear of a public exhibition being given showing how human intelligence can be transmitted along a beam of light. At the Electrical Exhibition, on Saturday afternoon, May 13th, the radiophone was shown in operation. This is an instrument of such construction that by means of a search light beam, speech can be transmitted a distance of seventy-five yards and heard with distinct enunciation. The property of selenium makes it immediately susceptible to the influence of light so that if used in conjunction with some variable light producing apparatus a telephone in circuit with it will give issuance to sounds in perfect harmony with these optical changes. A system of this kind can truly be called wireless telephony thus giving prominence to this latest exposition as the first in the world's history in which telegraphing and telephoning was carried on without a visible intervening medium between the transmitter and receiver. We remember in the fables of the Arabian Nights of the magic eye piece by means of which one of the characters delineated there was able to see the actions and motions of his friends though miles away from them. We have practically reached that state of ideal development, for at this present hour it is possible to send sketches over the wire through a distance of hundreds of miles, to send speech and signals through the ethereal atmosphere without employing the familiar means hitherto in use. Tesla's idea of transmitting power in vast quantities without wires at a distance far above the upper strata of clouds is one which may receive considerable attention in the near future. Within the last fifty years Americans have begun to invent and apply the forces of nature for many utilitarian purposes. If progress keeps up at the rate indicated there is much truth in the statement "that the marvels of the times have not yet appeared" for it seems very likely that many of our fondest delusions will be shattered by scientific successes which may strike out from Funk & Wagnall's dictionary the word "imposible." The radiophone represents an old principle through a new construction, but selenium, the metal utilized, seems to be permanently associated with all experiments that lead us to hope that images and speech will some day be transmitted commercially without wires. In our efforts to reach a higher efficiency in mechanical and commercial operations we are not over-reaching ourselves in directing investigations along such a channel of inquiry. The wireless telegraph system has come to stay. Why not wireless telephony?—*The Electrical Age.*

NOTE.

It Pleases us to notice the return to this city of Mr. M. S. James, agent of the J. L. Mott Iron Works, whose office in San Francisco is in the Flood Building. This firm has agencies in all the large cities of the United States, and furnishes the latest improvements in plumbing to builders throughout the country. Mr. James is a genial gentleman, and all around, up-to-date man. Call on him.

NEW YORK SURPRISED HIM.

A YOUNG Frenchman, wealthy, educated, and of an investigating turn of mind, departed for home a few days ago, taking with him some remarkable impressions of New York. He spent two weeks in this city, and, having some excellent letters of introduction, he met many persons well qualified to show him the sights of the American metropolis. Although an experienced traveler in European lands, this young Frenchman had never before been in the United States, and he frankly admitted that objects were presented to his view here such as he never saw before. Being impressionable, he naturally fell a victim to the irrepressible New York practical joker.

The tall office buildings astonished this visitor, and after luncheon one day on the thirty-sixth floor (as he believed) of one of them, he readily swallowed the yarn that vegetables and poultry were raised on the roof, because it would cost too much to get them at the markets.

While riding up Broadway with a waggish friend a few days before he went home, he noticed for the first time a slender thread of steam curling up from a manhole. "What is that?" he asked.

"Oh, that is one of the vents of the public radiator," was the reply.

"Public radiator," exclaimed the Frenchman. "You don't mean to tell that the streets here are heated by steam?"

"Certainly, in cold weather," was the unblushing answer. "Don't you feel warm and comfortable?"

"Indeed, I do," responded the Frenchman, enthusiastically. "But I never heard of such a thing as heating the streets of a great city. Well, well, New York certainly does beat the world."—*Heating and Ventilating*.

HYDRAULIC MORTAR.

CEMENT and mortar tests have been so extensively made and discussed that the subject may seem almost exhausted, but the value of such tests depends so much upon the manner in which they are conducted and investigated that a study as scientific as that made by M. Feret, the head of the laboratory of the Ponts et Chaussees at Boulogne, and published in the Bulletin de la Societe d'Encouragement demands recognition.

M. Feret first describes and tabulates the extensive series of tests for resistance to tension, compression, piercing, and shearing which were made in the laboratory under his charge, the same Portland cement being used in all cases, in connection with various kinds of natural and artificial sands, the intention being to investigate rather the physical properties of various mixtures than the comparative merits of different cements. The results are given in tabular form, and also plotted in curves, showing graphically the general behavior of the materials, after which the effect of variations in a series of test samples is discussed.

Attention is called to the fact that widely different results may be obtained from the same material, according to the manner in which the tests are made, and emphasis is strongly laid upon the point that tests are not comparable unless they have been made in the same manner.

In tests for flexure, for instance, the size of the specimen of great importance, since the distance of the outer and more resistant portion from the neutral axis has a great influence upon the result, and in general the greatest resistance of any specimen is found in that portion nearest the exterior. An unequal distribution of stresses must, therefore, appear in tension tests as well as in those for flexure, and this equality is still greater when the mixture is not perfectly homogeneous.

According to the theory of resistance of materials, tests by flexure and by tension should lead to the same ultimate strength, but deductions based upon materials of supposedly perfect elasticity do not hold good for mortars, especially as the point of rupture is approached. M. Durand-Claye has shown that the resistance deduced from flexure tests is almost double that obtained from direct tension, and the tests of M. Feret bear out the fact that there is a definite ratio between the two resistances—namely, the resistance by flexure is to that by tension as 1.89 to 1, or, in round numbers, as 2 to 1.

Similar relations were deduced between the resistance to compression and to shearing and punching, a constant and proportional ratio being found. There does not appear, however, to be any such proportionality existing between the results obtained by tension and by compression tests, and two different mortars having the same resistance under compression may show very different results in tension. As a result of much experience deduced from many tests, M. Feret states that he believes the test by compression gives the real measure of the coherence of a mortar more nearly than does a tension test. In all cases the compression tests gave more uniform and consistent results, both for large and small specimens and for various conditions of homogeneity.

The most important part of M. Feret's paper, however, is that relating to the physical constitution of a hydraulic mortar, especially with regard to the size of ultimate particles of the materials employed, and to the thoroughness of the admixture.

For a fine sand the resistance to crushing is much greater than for a coarse sand, the proportion of sand to cement being the same in both cases. A tabulated series of tests, using a constant quantity of cement and sand, but with different proportions of fine and coarse sand, showed that the resistance to compression was two and one-half times greater with find sand than with coarse, and corresponding variations appeared with the other mixtures.

An approximate measure of the nature of a mortar in this respect may be obtained by determining the density, or, as M. Feret calls it, the "compactness," of the mixture, since this bears a relation to the proportion of voids between the particles, which doubtless plays an important part in the strength of the mortar. In plotting the results of the tests made with sands of various degrees of fineness M. Feret uses the ingenious form of triangular pyramid adopted by Professor Thurston in his investigation of the strength of various bronzes, and in this manner the results are shown with a clearness not otherwise possible. Similar diagrams are given for mixtures of sand, cement and pulvarized slag, and the paper closes with data as to the effect of the addition of a proportion of puzzolana to cement and sand, especially for hydaaulic mortars which are to be exposed to the action of sea-water.—*Clay Record*.

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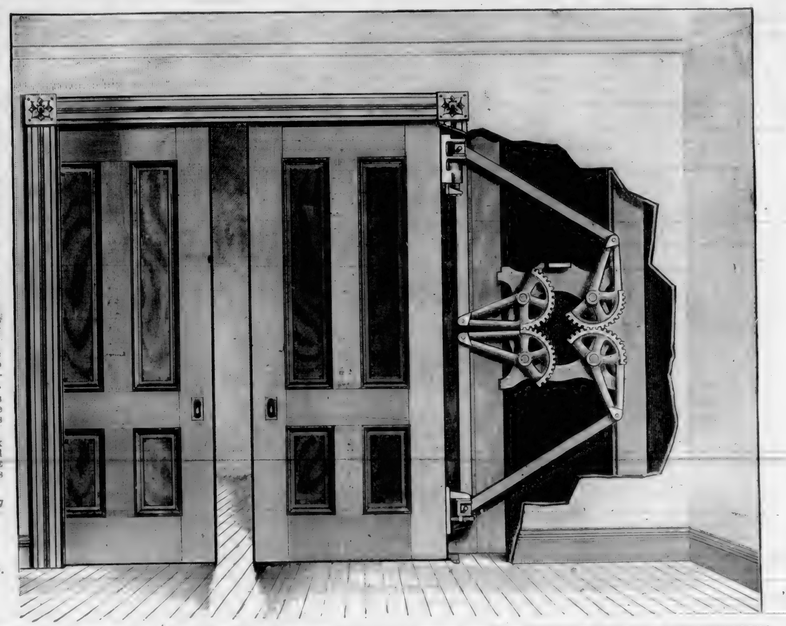

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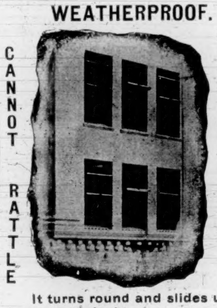

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BUILDING NEWS.

Vallejo near Webster. To build; o, Mrs. Jessie T. Boyce; a, A. Nordin; c, C. Koenig; cost $3394.

Van Ness near Green. To build; o, Chas. Heinz; a, C. A. Meussdorffer; c, H. T. Greib; signed, May 29; filed, June 2, cost $4750. Plumbing, etc; c, W. J. J. Weekes; cost $900.

Van Ness Ave. and Jackson. Additions and alterations; o, M. Heller; a, J. Krafft; cost $1789.

Washington and Laguna. Wiring for electric light; o, W. G. Irwin; a, Reid Bros; c, Cal. electric works; signed, June 6; filed, June 19; cost $4241. Carpentry; c, Hansbrough & Roberts; cost $4296. Tin and galvanized iron work; cost $1419. Plumbing etc; c, W. F. Wilson; cost $6139.

Washington near Devisadero. To build; o, Jeanette Clabrough; a, C. A. Meussdorffer; c, Masters & Creamer; cost $6195.

ALAMEDA

San Antonio near Willow. To build; o, A. Merle; c, F. Bammann; cost $2250.

BERKELEY

Channing Way near Telegraph Ave. To build; o, John W. Richards; a, F. A. Mathews; signed, June 5; filed, June 6; cost $5267.

Vine and Arch. To build; o, B. M. Newcomb; a, Cunningham Bros; c, W. T. Veitch & Bros; signed, May 29; filed, June 2; cost $8105.

OAKLAND

Additions to dwelling; o, J. L. Fogg; a, S. Babson; c, Anderson & Stockholm.

Telegraph Ave. and 30th. To build; o, Pauline Sanders; a, Chas. Mau; c, J. H. Dingwell; cost $3594.

PALO ALTO

Stanford University. Carpenter work, etc; o, Mrs. Jane Stanford; a, H. A. Schulze; c, R. P. Hurburt; signed, May 16; filed, May 31; cost $32,000. Grading, etc; c, Geo. Goodman; cost $20,645. Sand stone, etc; c, McFilvray Stone Co; cost $79,879.

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Block 31. To build; o, R. C. Archbishop of S. F; a, C. J. F. Devlin; c, Phil. Sheridan. cost $3537.

SAN RAFAEL

Fourth and B. Two-story brick; o, Mr. McNear; a, Chas. Paff; c, Rodd & Rodd; cost $8450.

STOCKTON

West Popular. Cottage; owner, Frank Goodell; architects, Beasley & Son; contractor, C. M. Long; cost $1869.

Foundation for Stockton "Mall" Building; W. W. Oates architect; brick and stone work by Doyle & Son, contractors; balance of work by R. Powell, contractor, cost $28,000.

Residence for H. Williamson, corner of Sutter and Oak streets; Geo. Rushforth, architect; H. W. Murray contractor; cost $4800.

West Acacia near Fikorapo. Residence; Frankin Davis owner; Geo. Rushford, architect; C. M. Long, contractor; cost $3157.

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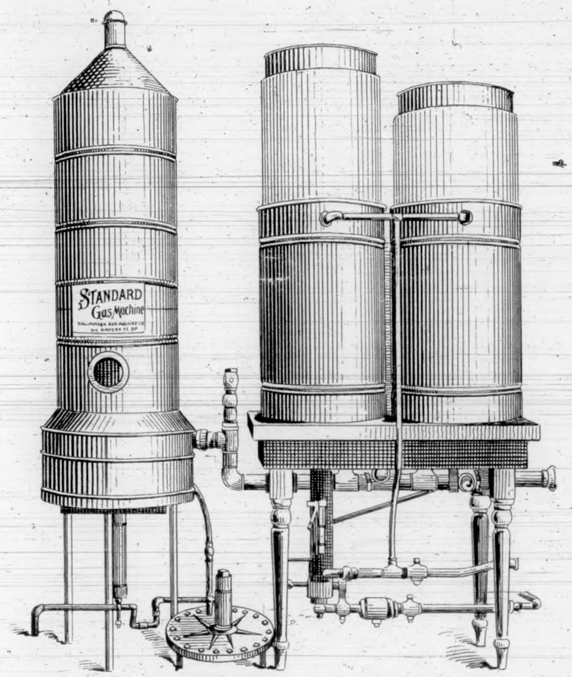

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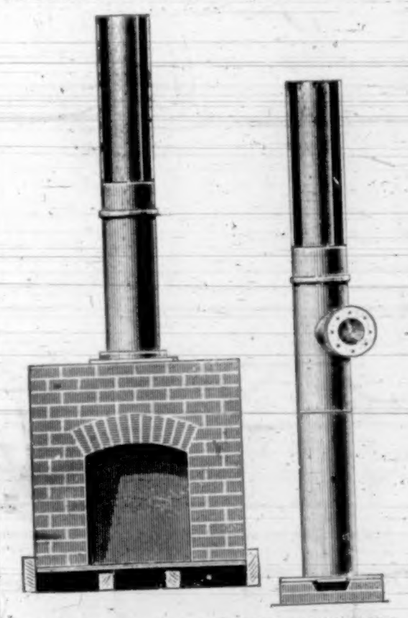

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